WEST VALLEY DEMONSTRATION PROJECT

6 NYCRR PART §373-2
HAZARDOUS WASTE PERMIT APPLICATION

WVDP-443

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SECTION D

PROCESS DESCRIPTION

INTRODUCTION

This section of the application presents the container storage and treatment units, tank storage and treatment units, and containment building identified at the WVDP that are to be included in the permit. Specific details associated with each of the units, such as layout and construction, are discussed in the text and tables. Available drawings of the respective units are also provided in the appendices.

This section also includes a justification as to why requirements for air emission standards (for process vents - Subpart AA, equipment leaks - Subpart BB, and tanks and containers - Subpart CC), as well as for miscellaneous units do not apply to the equipment at the WVDP.

The information and details provided in this permit application section have been compiled from available site information and present the operational and management practices implemented at the WVDP to meet the regulatory requirements for container storage and treatment units, tank storage and treatment units, and containment building storage and treatment units. The container storage and treatment unit information included in this permit section is presented in accordance with the requirements of 6 NYCRR §373-1.5(b)(1 through 4), as well as 6 NYCRR §373-2.2(i)(2) and (3) and 6 NYCRR §373-2.9(b),(c),(d),(f),(g), and (h).

The tank storage and treatment unit information included in this permit section is presented in accordance with the requirements of 6 NYCRR §373-1.5(c), 6 NYCRR §371.3(b and d) and 6 NYCRR §373-2.10.

The containment building storage and treatment unit information included in this permit section is presented in accordance with the requirements of 6 NYCRR §373-2.30.

It is important to note that while the process details, operations, and management of the vitrification treatment unit are discussed in Section D, the unit was shut down in September 2002 and dismantlement activities are expected to be completed in December 2004. A closure plan for this mixed waste storage and treatment unit was originally submitted to NYSDEC in July 2002 for approval. This closure plan was revised pursuant to NYSDEC comments and has been resubmitted in this permit application for approval. The vitrification treatment process equipment is currently being removed for disposal. The unit may continue operation under the 6 NYCRR §373-2 permit only as a container storage and treatment unit. Also, the tank 8D-1 and tank 8D-2 storage and treatment units and the STS portion of the IRTS tank treatment unit are discussed in this section. However, the tanks including the STS were deactivated in February 2002 and a closure plan was submitted to the NYSDEC. Comments on this plan have been received, and a revised closure plan is included in Section I of this application (Section I, Appendix I-2).

Container storage and treatment units LSA #1, LSA #2 Hardstand, and HIC Storage Area are discussed in this section; however, it is anticipated that these units will be closed under Interim Status Standards before the 6 NYCRR §373-2 operating permit is issued because these units do not meet the Final Status Standards (i.e., 6 NYCRR §373-2.9[f]). Although the CPC-WSA container storage unit will not meet secondary containment standards pursuant to 6 NYCRR §373-2.9(f), the unit is requested to remain operational until all wastes can be treated through the RHWF. It is felt that this should be considered because it is currently being effectively managed under an inspection and monitoring program, and the difficulty and inherent safety precautions that would be needed to move the waste material prior to its processing through the RHWF.

D-1 CONTAINERS

The WVDP has 14 container storage units identified in the RCRA Part A Permit application. These 14 units are further addressed by unit-specific closure plans, as presented in Section I, *Closure Plans, Post-Closure Plans, and Financial Requirements*. The 14 container storage units to be permitted include the following:

- CPC-WSA (design drawings provided in Appendix D-1)
- Contact Size-Reduction Facility (CSRF) (design drawings provided in Appendix D-2)
- HIC Storage Area (design drawings not available)
- HWSL #1 (design drawing provided in Appendix D-3)
- HWSL #2 (design drawing provided in Appendix D-3)
- HWSL #3 (design drawing provided in Appendix D-3)
- HWSL #4 (design drawing provided in Appendix D-3)
- IWSF (design drawing provided in Appendix D-4)
- LSA #1 (design drawings provided in Appendix D-5)
- LSA #2 Hardstand (design drawings not available)
- LSA #3 (design drawings provided in Appendix D-6)
- LSA #4 (design drawings provided in Appendix D-7)
- LSB (design drawings provided in Appendix D-8)
- Vitrification Facility Storage; consists of the A&PC Hot Cells, HLWIS Facility and Vitrification Cell (design drawings provided in Appendix D-9, D-10, and D-11, respectively)

Note that LSA #1 has never been used for the storage of mixed or hazardous waste and will be closed in accordance with an approved closure plan. It is anticipated that the LSA #2 Hardstand and the HIC Storage Area will be closed under approved closure plans based on their inability to meet the secondary containment requirements pursuant to 6 NYCRR §373-2.9(f). Although the vitrification treatment process within the Vitrification Cell will be closed, the unit may continue to operate for container storage and treatment. As previously discussed, the CPC-WSA does not meet RCRA standards and will be closed once the waste has been processed and a closure schedule can be developed. Currently wastes managed in the CPC-WSA are awaiting appropriate mixed waste treatment technology.

Alternatively, based on consultation with NYSDEC, the WVDP may elect to upgrade container units scheduled for closure (i.e., LSA #1, LSA #2 Hardstand, and the HIC Storage Area) in lieu of closure to meet regulatory standards, or may request a variance from certain Final Status Standards (i.e., a variance from secondary containment standards based on a demonstration that the contained waste that will be stored in a unit does not contain any free liquids). Currently under Interim Status Standards, all container storage units can manage wastes containing free liquids (except for PCB-containing wastes with free liquids, which are restricted to the IWSF). For purposes of this permit application, the HIC Storage Area, LSA #1, and LSA #2 Hardstand will be discussed in Section D-1B.

The following subsections present the container storage areas according to whether they contain free liquids or no free liquids.

D-1A Containers with Free Liquids

The WVDP intends to manage and store both hazardous (nonradioactive) and mixed waste containing free liquids on site for periods exceeding 90 days in the following waste storage units:

- CPC-WSA
- CSRF
- HWSLs (1-4)
- IWSF
- LSA #1
- LSA #3
- LSA #4
- LSB
- Vitrification Cell, A&PC Hot Cells, and HLWIS Facility

Hazardous wastes are stored in the four HWSLs and have been historically stored in the IWSF. These hazardous wastes are predominantly liquid in form. Mixed wastes stored in the CPC-WSA may contain only a small amount of free liquids. The WVDP does not require specific labeling or segregation of containers with free liquids. Each container is labeled with a waste profile number that documents the potential presence of free liquids and dictates the need for the addition of sorbent material, as appropriate.

The Vitrification Cell, A&PC Hot Cells, HLWIS Facility associated with the Vitrification Facility, and the CSRF are located within the Main Plant. Inspections of the floors of all units are routinely performed to ensure the integrity and maintenance of the floors and their coatings. Soil-bearing capacities have been calculated for the container storage units using site-specific soil boring data. These data are presented in Table D-1. In addition, Table D-2 provides details associated with container storage, container types, numbers of containers, and container arrangement to allow for evaluation of container loading and soil-bearing data. Loading/unloading and transfer of containers is typically performed outside of the individual storage units. Therefore the facility structures are not compromised by loading/unloading. The strength of all loading zones is sufficient to sustain all loading equipment used on site (Section B-4 and Figure B-12). All loading/unloading and transfer zones are graded and sloped to divert precipitation into the SPDES storm water system.

Also, the containers used in all container storage units are designed to elevate the waste from contact with the gravel pad and/or are staged on pallets in accordance with 6 NYCRR §373-2.9(f)(2)(ii). For example, most waste boxes have a raised base to allow these containers to be moved by forklifts. Other types of waste storage containers, such as drums, are staged on steel pallets. Mixed waste are characterized, labeled, stacked, and handled according to WM-250, *Waste Stream Characterization*, SOP 09-07, *Labeling/Color-Coding of Waste Containers*, and SOP 300-07, *Waste Generation, Packaging, and On-Site Transportation*. These procedures minimize inadvertent/accidental releases, as well as contact with standing liquids. These procedures also require that all liquid containers include internal secondary containment packaging, absorbent be added to any containers with free liquids during the packaging process, and that inspections be performed regularly on all stored containers. Routine inspections, as discussed in Section F, provide additional control to avoid potential contact with standing liquids by eliminating free liquids within 24 hours of discovery. Any spills or releases that may occur are contained immediately and cleaned up to minimize contact with other containers in accordance with Section G-4I, *Container Spills and Leakage*, of this permit application.

Table D-3 provides a reference to facility drawings illustrating the design and construction features associated with each unit. The design

drawings referenced for each waste management unit are presented in appendices as indicated in the unit descriptions provided in Table D-3.

1. Chemical Process Cell - Waste Storage Area (CPC-WSA)

The CPC-WSA is a compacted graveled pad covered with an arched, 12-gauge galvanized-steel panel structure (Appendix D-1). The metal structure prevents contact of the containers with precipitation. The approximate dimensions of the structure are 200 ft (61 m) long by 64 ft (19.5 m) wide by 25 ft (7.6 m) high. The storage area inside this structure measures approximately 120 ft (36.6 m) long by 64 ft (19.5 m) wide and has a storage capacity of approximately 342,400 gal (1,294,272 L) Table D-3). The CPC-WSA mixed wastes are contained in 22 separate and elevated sealed boxes. The storage array is surrounded by 46 concrete hexagon containers (SUREPAK™) measuring approximately 6 ft (1.8 m) across each flat by 10 ft (3 m) high. In addition, there are eight elevated steel mixed waste storage boxes at one end of the array and nine elevated steel mixed waste storage boxes at the other end. The containers are inspected on a regular basis per the procedures included in Appendix F.

There is no secondary containment around this storage area. The compacted gravel pad immediately adjacent to the metal structure is sloped away from the structure so that storm water flow is directed away from the storage area, thereby minimizing any potential for run on.

2. Contact Size-Reduction Facility (CSRF)

The CSRF is located in the northeastern corner of the Main Plant at ground level, and is an enclosed structure constructed of concrete block. It is divided into four work rooms (cutting area, decontamination and survey area, small item decontamination area, and the large item decontamination and survey area), and two personnel entry airlock rooms and one equipment airlock room. The cutting area, large item decontamination area and a portion of the survey area are approximately 26 ft (7.9 m) by 35 ft (10.7 m), with a height of 18 ft (5.5 m). The remainder of the survey area and the equipment entry air lock occupy an area approximately 15 ft (4.6 m) by 35 ft (10.7 m) by 18 ft (5.5 m) high (Appendix D-2). Adjacent to the CSRF is the MSM repair shop with another personnel entry airlock. The MSM repair shop and associated airlock is not included in the CSRF permitted area.

As described in the RCRA Part A Permit Application (Appendix D-1, Attachment B, Section XI, *RCRA Unit Summary)* the CSRF is primarily used for volume reduction of nonhazardous LLW. Volume reduction may include various mechanical processes, such as abrasive cutting, band saw cutting, or plasma arc cutting. In addition, the CSRF may be used for staging, sampling, sorting, consolidation, and repackaging mixed waste and low-level waste containers. These activities will not include size reduction processes which would be comparable to containment building activities. Typically wastes are stored less than two weeks, however, the CSRF could be utilized for longer term container storage if necessary. The storage capacity of the CSRF is approximately 9,430 gal (35,645 L)

Table D-3). Prior to the setup of the CSRF and lining the floors, floor drains in the MSM Repair Shop (including the section in the CSRF) were plugged. The floors, walls, and ceilings of the cutting room and large item decontamination room are lined with stainless steel The remaining rooms do not have any liners or coatings for secondary-containment purposes. During operational activities, the walls and floors are lined with herculite. The effective secondary containment capacity of the cutting room and large item decontamination room is 20,288 gal (76,798 L) (based on 48-inch height [i.e., approximate height of S-70 box]). The slope of the pavement surrounding the CSRF directs water away from the area and controls run on from precipitation.

3. Hazardous Waste Storage Lockers (HWSLs) #1-4

The HWSLs are pre-engineered lockers containing segregated containers sized up to and including 55-gal (208-L) drums that contain hazardous waste (Appendix D-3). Each locker is identical in size, with dimensions of 8 ft (2.4 m) by 15 ft (4.6 m) by 8 ft (2.4 m). The storage capacity in each HWSL is 2,550 gal (9,639 L) (a total of 10,200 gal [38,556 L]) (Table D-3). Each contains a manufacturer-designed spill basin beneath a steel grate floor with a capacity of 255 gal (964 L), equivalent to 10% of the maximum volume of material that can be stored in the locker. The lockers are designed to contain flammable materials. All four lockers are equipped with fire suppression devices, remote and local fire alarm systems, explosion-proof electrical components, and explosion-proof vents. Acids, solvents and other industrial (nonhazardous) and hazardous wastes are segregated and stored in appropriate lockers to provide separation of incompatible waste.

The entry doors to the HWSLs are raised above the surface so that storm water run on will not enter into these storage units.

4. Interim Waste Storage Facility (IWSF)

The IWSF is a pre-engineered metal structure measuring approximately 34 ft (10.4 m) by 34 ft (10.4 m) by approximately 15 ft (4.6 m) high (Appendix D-4). The storage capacity in the IWSF is approximately 29,290 gal (110,875 L) (Table D-3). It is supported by a clear span frame and anchored to a bermed, concrete foundation. The building is constructed upon a compacted gravel pad that is overlain with an 8-inch-thick (20-cm) concrete slab. The concrete slab is continuous with an 8-inch-high (20-cm) concrete curb that is sealed to the foundation walls. The surrounding grade slopes away from the building to direct precipitation away from the building and minimize the potential for run on. The 8-inch-high (20-cm) concrete curb that encloses the inner perimeter provides approximately 5,215 gal (19,455 L) of effective secondary containment capacity (including the sump) in the event of a spill or leak. The concrete slab, berm, and sump were constructed to facilitate the collection and subsequent removal of free liquids. Fifty-five-gallon (208-L) drums and smaller containers of wastes are typically stored within the building.

Floor/expansion joints are sealed with butyl caulk, or equivalent. The concrete floor is sealed with two coats of an epoxy coating, per manufacturers' recommendations. The epoxy coating was added to meet PCB liquid waste storage requirements. Inspections are performed regularly as presented in Section F. Any spills or releases that may occur will be contained and removed within 24 hours to minimize contact with other containers.

5. LAG Storage Additions (LSAs) #3 and #4

LSA #3 is a pre-engineered metal frame structure and LSA #4 is a pre-engineered metal frame enclosure (Appendices D-6 and D-7, respectively). The two structures are of identical size, 88 ft (26.8 m) by 291 ft (88.7 m) (Appendix D-6). They function as low-level and mixed waste storage facilities. The buildings are constructed on concrete slabs formed upon compacted gravel pads, which slope away from the buildings to direct precipitation away from each building and minimize the potential for run on. LSA #3 provides approximately 1,203,840 gal (4,557,030 L) of storage volume while LSA #4 provides approximately 1,238,850 gal (4,689,557 L) of storage volume.

LSAs #3 and #4 are both equipped with a concrete slab floor, bordered by a 6-inch-high (15-cm) by 8-inch-thick (20-cm) berm, providing approximately 83,670 gal (316,272 L) of effective secondary containment. Any containers that will contain essentially all free liquids will be overpacked or double contained, to provide for extra protection against leaks or spills.

Within LSA #4 is the Shipping Depot and the Container Sorting and Packaging Facility (CSPF), which is included in the storage capacity determination for LSA #3. The CSPF is constructed of pre-fabricated, interlocking modular 22-gauge 304 stainless-steel panels. The CSPF is approximately 40 ft (12.2 m) by 28 ft (8.5 m) by 8 feet (2.4 m) high in the airlock and waste-handling rooms and 12 ft (3.7 m) high in the sorting room. The CSPF has not been used for container storage activities. The 85-ft (25.9-m) by 91-ft (27.7-m) Shipping Depot was added onto the east side of LSA #4. The concrete block addition is constructed upon an at-grade concrete slab. The Shipping Depot is not constructed with secondary containment features to allow for storage of hazardous/mixed wastes.

Floor/expansion joints are sealed with butyl caulk, or equivalent. The concrete floor is sealed with two coats of an epoxy coating, per manufacturers' recommendations.

6. LAG Storage Building (LSB)

The LSB is a pre-engineered metal structure (a "Butler"-style building) located approximately 400 ft (122 m) northeast of the Process Building (Appendix D-8). The building is constructed upon a compacted gravel pad, which slopes away from the building to direct precipitation away from the building and minimize the potential for run on. The building is supported by a clear span frame and anchored to a 140-ft-long (42.7-m) by 60-ft-wide (18.3-m) concrete foundation. A 6-

inch-high (15-cm) curb, poured monolithically with the floor, extends around the outer edge of the floor and is sealed against the foundation. The LSB itself provides approximately 350,110 gal (1,323,416 L) of storage and operations. The curbing around the floor slab provides approximately 26,289 gal (99,515 L) of effective secondary containment for spills.

Floor/expansion joints are sealed with Sealtight #164, manufactured by W.R. Meadows, or equivalent. The concrete floor is sealed with two coats of an epoxy coating, per manufacturers' recommendations. Inspections are performed regularly as presented in Section F. Any spills or releases that may occur will be contained and removed within 24 hours to minimize contact with other containers.

A pre-fabricated modular area (approximately 15 ft [4.6 m] by 20 ft [6.2 m] by 12 ft [3.7 m] high) is attached to the southwest side of the LSB. This building is identified as the Sample Storage and Preparation Facility. This building has never been used for mixed waste storage and is now used as a contamination control zone through an air lock. The building floor is lined with rubber matting and the walls are lined with herculite.

7. Vitrification Facility Container Storage Areas

The Vitrification Facility container storage areas are located within or attached to the Main Plant. The Vitrification Cell and the HLWIS Facility are located on the ground floor and the A&PC Hot Cells are located on the third floor. The Vitrification Cell and the Main Plant are enclosed structures that were designed and constructed to prevent run on from precipitation into the building(s).

a. Analytical and Process Chemistry (A&PC) Hot Cells

The five A&PC Hot Cells are each 6-ft (1.8-m) by 6-ft (1.8-m) by 6.5-ft-high (2-m) cells located in the Main Plant. Each hot cell has a storage capacity of 67 gal (253 L) (a total of 335 gal [1,266 L] for five units)(Table D-3). The concrete walls are a minimum of 2-ft-thick (0.6-m). The floor and walls are lined with stainless steel to a height of 18 inches (46 cm)(Appendix D-9). The secondary containment capacity for each hot cell is 404 gal (1,529 L) and 2,020 gal (7,646 L) total. It should be noted that a floor drain is present in each hot cell that gravity drains to tank 7D-14 with a capacity of 520 gal (1,968 L).

The A&PC Hot Cells have not yet been used for mixed waste storage. However, they may be needed during D&D activities. Due to their size, they are limited to containers that will fit inside a cell, such as 0.13 gal (500 mL) plastic sample bottles.

b. High-Level Waste Interim Storage (HLWIS) Facility

The HLWIS Facility is located in the former CPC area of in the Main Plant. The CPC is 93 ft (28.4 m) by 22 ft (6.7 m) by 43 ft (13.1 m) high, with 5-ft-thick (1.5-m)

concrete walls. The HLWIS Facility within the CPC, formerly identified as the Failed Equipment Storage Area, is 22 ft (6.7 m) by 13 ft (4 m), with a storage capacity of approximately 16,760 gal (63,353 L) (Table D-3). The CPC floor and walls are lined with stainless steel to a height of 18 inches (46 cm) (Appendix D-10), providing approximately 20,664 gal (77,993 L) of effective secondary containment. Two sumps present in the CPC are monitored with level instrumentation to detect the presence of free liquids. If free liquids are detected in a sump, they can be evacuated via jetting for proper management.

c. Vitrification Cell

The Vitrification Cell is a 63-ft (19.2-m) by 34-ft (10.4-m) by 46-ft-high (14-m) cell constructed of reinforced concrete with walls and floors varying in thickness from 2 ft (0.6 m) to 4 ft (1.2 m). In the Vitrification Cell is a concrete pit approximately 34 ft (10.4 m) by 25 ft (7.6 m) by 14 ft (4.3 m) deep. The useable storage capacity for the Vitrification Cell is approximately 17,805 gal (67,303 L) (see Table D-2). A sump is located on the north wall of the pit; the entire Vitrification Cell, including the pit area and sump, are lined with 1/8-inch-thick (0.32-cm) stainless-steel to a height of 18 inches (46 cm) on the cell walls (Appendix D-11), providing approximately 21,633 gal (81,773 L) of effective secondary containment. The sump is equipped with level instrumentation to detect the presence of free liquid. If free liquids are detected in the sump, they can be removed via jetting through a waste header into tank 8D-4.

D-1B Containers Without Free Liquids

Mixed waste containers that do not contain free liquids may be managed in all 14 of the container storage units (listed in Section D-1) at the WVDP. These container storage units include units that are designed with secondary containment, as well as areas that are not designed with secondary containment. Wastes containing free liquids are currently staged in container storage units with gravel pads that are graded and/or sloped to drain and remove liquids resulting from precipitation in accordance with 6 NYCRR §373-2.9(f)(2)(i). However, as described in the following subsections, container storage units consisting of gravel pads will not manage free liquids and will conform with 6 NYCRR §373-2.9(f).

At present, the WVDP does not manage (nor is expected to manage) the F-listed wastes (i.e., F020 through F027) identified in 6 NYCRR §373-2.9(f)(3).

1. Test for Free Liquids

The WVDP uses the paint filter liquid test in addition to process knowledge and a visual examination of wastes for identification of free liquids. This test is performed on routinely generated waste streams and on newly generated waste streams in accordance with the WAP presented in Section C.

If free liquids are observed during visual examination of containers, absorbent material may be added to the container to reduce or eliminate the presence of free liquids, provided this will not change waste codes or physical/chemical properties of the waste, or a sample of the free liquid will be collected for laboratory analysis. Analytical results will determine appropriate management of free liquid (i.e., removal and containerizing or the addition of absorbent material).

Containers that do not contain free liquids are managed in the areas as presented in the previous subsection.

2. High-Integrity Container (HIC) Storage Area

The HIC Storage Area consists of a 2,400-ft^2 (223-m^2) access-controlled gravel pad (approximately 40 ft [12.2 m] by 60 ft [18.3 m]) within a larger area referred to as the Fuel Receiving and Storage (FRS) North Yard. It is used to store high-solid content, radioactive and mixed wastes packaged in HICs. A HIC is a 125-ft^3 (3.5 m^3) container constructed of high-density, cross-linked polyethylene. Each HIC is overpacked into a 70,000-pound (31,752 kg), hexagonal-shaped, concrete, steel-reinforced SUREPAK™ for radiation shielding and secondary containment purposes.

The surface area of the HIC gravel pad is large enough to store approximately eight HIC/SUREPAKs™. This equates to a storage capacity of 1,000 ft^3 (28 m^3) or 7,480 gal (28,274 L).

The SUREPAK™ overpackaging for the HICs provides secondary containment for all waste stored in the HIC Storage Area. There are no berms, liquid collection systems or additional secondary containment systems for the HIC Storage Area. The gravel hardstand of the HIC Storage Area is graded to minimize precipitation and surface water run on in accordance with the storm water management plan managed by the WVDP SPDES Permit.

LAG Storage Addition (LSA) #1

LSA #1 is a pre-engineered frame and fabric enclosure 23 ft (7m) high that covers an area 191 ft (58.2 m) long by 55 ft (16.8 m) wide over a leveled, compacted gravel pad (Appendix D-5). The area used for management of containers is 144 ft (43.9 m) by 50 ft (15.3 m) based on the frame construction. The structure is constructed of a galvanized steel frame covered by a vinyl-coated, polyester, flame-resistant fabric. The southern half of the gravel pad is covered with an 8-inch-thick (20-cm) concrete pad. The gravel area outside of LSA #1 is sloped to direct storm water away from the storage area and control precipitation and surface water runoff in accordance with the storm water management plan managed through the WVDP SPDES permit. The storage capacity in LSA #1 is 302,980 gal (1,145,264 L) based on a 4-tier container storage height (approximately 18 ft [5.5 m]). Historically, only LLW has been stored within this unit.

4. LAG Storage Addition (LSA) #2 Hardstand

The LSA #2 Hardstand consists of leveled, compacted gravel covering a 275-ft (83.9-m) by 75-ft (22.9-m) area that tapers

down to a width of 30 ft (9.1 m) at a distance of approximately 215 ft (65.5 m). The hardstand was enclosed with a fabric cover until 1993 when tears in the fabric resulted in the enclosure being dismantled. The storage capacity on the LSA #2 Hardstand is approximately 446,305 gal (1,687,0334 L) based on a 2-tier container storage height.

Only appropriately characterized waste is stored at the LSA #2 Hardstand (e.g., no wastes containing PCBs are stored in this area). There are no berms, liquid collection systems, or other secondary containment systems for the LSA #2 Hardstand. The compacted gravel of the LSA #2 Hardstand is graded to control precipitation and surface water runoff and run on in accordance with the storm water management plan managed by the WVDP SPDES permit.

D-1C Requirements for Ignitable or Reactive Wastes and Incompatible Wastes

As discussed in Section C-2F, all wastes are evaluated for ignitability, reactivity, and incompatibility before the container is placed into storage. Signs are present in all container storage areas, indicating that smoking is not permitted in accordance with 6 NYCRR §373-2.2(i)(1), as well as the restriction of reaction sources, such as open flames, sparks, and cutting/welding. Waste handlers are trained to use specific precautions when handling ignitable or reactive wastes. This includes restricting the storage of ignitable wastes in HWSL #2, and restricting the storage of reactive wastes in HWSL #3. HWSLs #1 and #4 can also be used for either ignitable or reactive wastes, although currently these wastes are only stored in HWSLs #2 and #3.

Compatibility evaluations and segregation methods for storage of reactive and incompatible wastes are determined prior to management in one of WVDP's permitted waste storage units. Incompatible wastes are not placed in the same container in accordance with 6 NYCRR §373-2.9(h)(3). However, incompatible waste containers can be put into the same HWSL or in the IWSF if the containers are separated by being placed into secondary containment structures within the same locker. Incompatible wastes can also be separated by storage in separate storage units.

The history of waste generation at the WVDP indicates that ignitable and reactive wastes, as well as incompatible wastes, are typically associated with small quantities of laboratory and maintenance wastes. The procedures implemented at the WVDP to manage ignitable, reactive, and incompatible wastes are in accordance with 6 NYCRR §373-2.2(i)(2) and (3). These requirements are complied with by (1) implementing waste characterization procedures, (2) maintenance of characterization associated documentation in the form of analytical data and/or process knowledge, (3) following routine inspections, (4) management of inspection forms in the RCRA Operating Records, and (5) waste management operations that follow SOP 300-07. Additional requirements for ignitable, reactive, and incompatible wastes are described in Section F, *Hazard Prevention Procedures*. These requirements include:

1. No ignitable or reactive wastes are stored within 50 ft (15.3 m) of the WVDP perimeter (which is secured from unauthorized entry) in accordance with 6 NYCRR §373-2.9(g). Figure B-4 identifies the locations of the waste management units in relation to the WVDP boundary and perimeter fence.

2. The WVDP is manned 24 hours a day, seven days per week.

3. As discussed in Sections F and G, WVDP personnel are trained for incipient stage fires only; therefore, the waste management units are equipped with access to adequate water supply, and in most cases, fire suppression systems. Additionally, the WVDP has negotiated memoranda of understanding (MOU) with area fire departments and emergency response organizations.

Also discussed in Section F-5D is the management of washed and reused containers to minimize the potential for mixing of incompatible wastes.

D-1D Container Management

Container management is discussed below relative to hazardous waste that is typically generated during laboratory and maintenance operations and mixed wastes that are typically generated through D&D activities.

1. Description of Containers

Hazardous and mixed wastes generated and managed at the WVDP are stored in a wide variety of containers based on the physical state of the waste (solid, sludge, liquid), radioactivity levels, radioactive waste classification (i.e., LLW, TRU, HLW), amount of waste being generated, hazardous waste type (characteristic or listed), and other factors. Table D-4 provides a comprehensive list of containers utilized at the WVDP. The containers presented in the list conform to applicable DOT shipping regulations. Low volume laboratory wastes may be stored in the A&PC Hot Cells, HWSLs, and IWSF. These wastes are often stored in their original containers, which are placed in trays, buckets, or other secondary containment devices and may be stored on racks or shelves until they are prepared for off-site disposition. Prior to off-site disposition, compatible laboratory wastes that are similar in characteristics are packaged together in DOT-approved containers (lab packs) in accordance with the designated treatment method. The containers are provided with sufficient absorbent medium to meet DOT and TSDF requirements, and to reduce the likelihood of container breakage, thus preventing the mixing of wastes.

2. Container Handling Practices

Preparation of a container for on-site and/or off-site management includes a visual inspection of the container and its contents by cognizant personnel. WS&D is notified of the intent to transport wastes on site. WVDP procedures specify that WS&D be involved in the planning stages of work that will generate waste to ensure that waste characterization profiles exist for the waste that is generated and that proper storage containers are available and selected. The waste generator is responsible for labeling and segregating all waste so that specific waste streams are packaged together to minimize subsequent resorting activities. Also, as an aid in maintaining segregation and accountability of wastes, generators secure packages or wrap wastes immediately after generation or if leaving the area. Waste generators also ensure that all bungs, lids, and closure devices are properly

secured prior to transport. Waste generators must also identify any leaking, corroded, or otherwise suspect containers that may not be transported unless they are either overpacked, the contents transferred to another container, or the container moved together with transportable secondary containment. Drum-handling equipment, forklifts, cranes, and rigging gear used for transport or handling of waste packages must be inspected, maintained, and load-tested in accordance with additional WVDP SOPs (SOP 00-38, SOP 15-29, and SOP 15-56). Cognizant personnel complete appropriate paperwork to document shipping information and practices and submit the paperwork to WS&D for waste tracking purposes. SOP 300-26, *Off-Site Transportation of Waste and Hazardous Materials*, provides the procedures to prepare paperwork for off-site shipment, inspect waste packages/containers, load and secure waste containers on transport vehicles, and complete the shipment release form. All waste shipment records are tracked and files are maintained in the WVDP RCRA Operating Record.

Wastes are transported to the hazardous and mixed waste management units either by pickup trucks or forklift trucks. If a pickup truck is used, the waste is loaded on the truck by hand. Prior to transport, a final check is made to ensure that the container(s) is properly sealed and secured to prevent the container(s) from moving or falling over during transport.

Wastes are loaded into and out of units by hand or forklift trucks through man doors or overhead doors. Many of the waste management units are equipped with sloped ramps to facilitate the transport of containers over containment berms using a forklift and/or drum-handling equipment. At the waste management facility receiving the waste, personnel inform the cognizant unit personnel of any potential storage issues within the unit as appropriate, such as proper segregation of incompatible wastes.

Adequate aisle space is provided to allow waste management unit personnel to inspect all sides of the hazardous or mixed waste containers, and in emergency situations, to allow for unobstructed access to any area within the unit to deploy fire protection, spill control, overpacks, and decontamination equipment.

There may be occasions when containers with low exposure rates may be used to provide radiation shielding for containers with high radiation exposure rates (i.e., dense packing). If dense packing is used, adequate means of detecting, locating the source of, responding to a release within 24 hours of detection, and mitigation of any significant release, are maintained.

The maximum container stacking height varies from one to four containers depending on the container type, the maximum weight, and the allowable configuration within a given container storage unit. The controlling factors for determining stacking height within each container storage unit are the design and construction of the concrete pad, the interior height of the structure, the strength of the container(s), and the gross weight of the containers.

After the containers are properly placed, the containers are opened only to inspect the contents, collect samples, verify compatibility of the waste with other containers, add to or repackage the waste within an existing container, or transfer the contents to another container. Compatibility regarding the latter actions is assured by verifying the containers' contents (through internal waste identification and certification forms or the container labels). During storage, the wastes are in the custody of the unit's cognizant supervisor who retains accountability for their disposal.

When the hazardous or mixed wastes are being removed from any waste management unit for off-site disposal, appropriately trained personnel and/or trained waste disposal vendor employees will remove the wastes from a unit, and an authorized, WVDP-approved, New York State-permitted hazardous waste hauler will transport the wastes from the WVDP to a permitted TSDF.

3. Inspections

Inspections of the container storage units are performed, at a minimum, weekly and documented in accordance with the inspection protocols presented in Section F. These inspections are performed, among other things, to ensure that containers are free from hazards due to corrosion, leaks, ruptures, or spills and that the structural integrity of the unit and secondary containment remains intact.

D-2 TANKS

At the WVDP, the majority of tanks are located inside the Main Plant building; however, there are four treatment and storage tanks present in underground vaults (tanks 8D-1, 8D-2, 8D-3, and 8D-4). Tanks 8D-1 and 8D-2 have been removed of wastes to the extent practical using in-place equipment. These tanks have been isolated by the disconnection of product transfer lines and blanking the ends to reduce or eliminate the transfer of wastes into these tanks. Tank 8D-3 will continue to be used for storage of decontamination liquid wastes prior to processing in the LWTS. Tank 8D-4 will be used for storage of higher activity radioactive mixed waste including tank heels and decontamination wastewater from the Vitrification Cell. These wastes will continue to be stored in tank 8D-4 in accordance with the milestones and planning activities in the *Site Treatment Plan* (WVDP-299) pursuant to the requirements of the WVDP's FFCA. The tanks systems utilized at the WVDP for storage and/or treatment of liquid mixed wastes are identified in Table D-5. Currently there are no tanks or tank systems at the WVDP that manage solid hazardous or mixed waste. The design criteria for tanks and ancillary equipment associated with the STS, LWTS and CSS portions of the IRTS are presented in WVNS-DC-013, *Design Criteria Supernatant Treatment System,* WVNS-DC-025, *Design Criteria Liquid Waste Treatment System* and WVNS-DC-020, *Design Criteria Cement Solidification System,* respectively. The design criteria for tanks and ancillary equipment for the vitrification treatment system is presented in WVNS-C-022, *Design Criteria Vitrification of High-Level Waste,* and WVNS-DC-046, *Design Criteria Sludge Mobilization Removal System.* As previously stated, tanks 8D-1 and 8D-2 and the STS portion of the IRTS have been deactivated. In addition, the vitrification treatment system is being dismantled. The closure plan for the Vitrification Facility is being resubmitted in this permit application submittal and is pending NYSDEC review and approval.

D-2A Assessment of Existing Tank System

The HLW tanks were constructed in 1965 during NFS operation of the facility. In 1985 and 1986, construction activities were initiated for the STS, LWTS, and CSS tank treatment systems. In 1988, retrofitting of the LWTS was completed with the pressure and leak testing of new piping and equipment tied into the existing piping system. Also in 1988, construction of the STS and CSS were completed and subsequently, the three tank treatment systems (i.e., IRTS) began hot operations. In May 1990, NYSDEC was authorized by the EPA to regulate mixed waste in New York State. Therefore, tanks 8D-1, 8D-2, 8D-3, and 8D-4, the STS, LWTS, and the CSS are regulated as existing tank systems pursuant to 6 NYCRR §370.2(b)(66).

The existing tanks that are associated with the tank systems identified in the WVDP's June 2001 Part A Permit application are presented with supporting information summarized in Table D-5 and detailed in Section D-2D below. Figure D-1 is a generalized flow diagram of the HLW Tank Farm, IRTS, RHWF, and the Vitrification Facility. The tank drawings referenced in Table D-5 are presented in Appendix D-12. In addition, the general layout of the Process Building cells indicating where tanks associated with the LWTS are located is presented in Appendix D-13.

D-2B Design of New Tank System

The vitrification treatment system in the WVDP's June 2001 Part A Permit application identified the vitrification process as other treatment (i.e., T004 process code) and did not identify any of the system components as tank treatment units.

In preparation for treatment by vitrification, the Vitrification Facility was constructed to preclude the release of hazardous waste and hazardous constituents to the environment. This was accomplished by the following:

- constructing a subbase drainage layer to convey potential groundwater away from the reinforced concrete base/floor
- installing waterstops between the floor, pit walls, and the building walls to minimize infiltration
- constructing the building and surrounding area to convey runoff away from the building and minimize/eliminate the potential for precipitation to enter the building
- lining of the Vitrification Cell floor, pit, walls, and sump with stainless steel
- installing sumps, liquid level monitors, and steam jets to detect and remove any accumulated liquids from the Vitrification Cell. Currently, the vitrification treatment system is being dismantled and removed from the Vitrification Cell for on-site storage pending off-site disposal.

D-2C Installation of New Tank System

This permit section is not applicable to the WVDP since no new hazardous and/or mixed waste tank systems have been or are planned for installation. Should the need arise for a new tank system, the tank system will meet the requirements of 6 NYCRR §373-2.10(c)(2 through 7).

D-2D Secondary Containment for Tank Systems

The tanks and tank systems identified in this permit are all equipped with secondary containment as presented in Table D-6. Descriptions of the secondary containment features associated with tanks and tank systems are summarized and presented with the associated regulatory requirement in Table D-7. The drawings depicting secondary containment for the tanks referenced in Table D-5 are provided in Appendices D-14, D-15, D-16, D-17, and D-18, respectively, for the HLW Tank Farm, Uranium Product Cell (UPC), Extraction Cell #3 (XC-3), Liquid Waste Cell (LWC), and CSS. Secondary containment drawings for the Sludge Mobilization System (SMS) and the Vitrification Facility (i.e., vitrification treatment unit) are presented in Appendices D-19 and D-20, respectively.

1. Tank/Cell Vaults

a. Tank 8D-1 Vault

The vault walls are 18 inches (46 cm) thick, the floors are 27 inches (69 cm) to 60 inches (152 cm) thick, and the roof is 24 inches (61 cm) thick. The tank rests on two layers of perlite blocks set on a 3-inch (7.6-cm) layer of pea gravel within a carbon steel pan that is compatible with the waste managed in tank 8D-1. The pan rests on the additional 3-inch (7.6 cm) layer of pea gravel within the reinforced concrete vault. The vault system exterior (i.e., bottom and sides) is coated with 8-millimeter-thick polyvinyl chloride sheeting (i.e., Permacel 306) applied to the vault with Permacel EZ-4390 primer for concrete surfaces to serve as a moisture barrier. The soil around the vault is a glacial silty till. Hydraulic control is maintained around the vault by operation of a dewatering well.

The area immediately surrounding the vault has a series of wells that permit monitoring the groundwater level and sampling for radioactivity. A dewatering well maintains the water level outside the vault above the level that the supernatant could rise to in the vault if tank 8D-1 failed completely. This elevation difference provides a hydrostatic pressure on the vault's exterior.

The vault's steel pan is equipped with a liquid level indicator, a recorder, and an alarm system. A transfer pump in the pan allows accumulated liquids in the pan to be transferred to either the LLWTF or to tank 8D-1. Formerly, another liquid level indicator, recorder, and alarm system in the vault operated with a steam jet to transfer the contents of the vault to the pan, if required. Nitrogen gas is injected into the concrete vault to reduce oxidation rate of the steel pan in the presence of liquids.

A leak in tank 8D-1 would be detected by the pan/vault liquid level monitoring system. The vault sump's liquid level indicator is alarmed and is read and recorded twice a day. If the liquid level indicators show an accumulation of liquid in the vault, a sample of the liquid would be obtained and analyzed for radiological contamination. If a leak occurs, the waste would be contained by the pan and/or vault until it could be pumped into tank 8D-2.

The tank 8D-1 vault system does not prevent run on or infiltration of precipitation into the vault. However, surface grout was injected into adjacent soils in 2003, greatly reducing the volume of infiltration into the vault. In addition, the water level within the vault is closely monitored, and liquid is pumped from the pan and vault on a routine basis, thereby maintaining adequate capacity in the event of tank failure.

At this time there is approximately 14,200 gal (53,753 L) of waste present in tank 8D-1 and additions to the tank have been discontinued by isolation of the tank's piping. The waste being managed in this tank is not ignitable or reactive; therefore, there is no possibility for formation and ignition of vapors.

b. Tank 8D-2 Vault

The vault and level detection system for tank 8D-2 is identical to that for tank 8D-1, including the compatibility of the carbon steel pan with the HLW. One difference is that the carbon steel pan in the tank 8D-2 vault is not isolated from the vault; in 1978, testing showed that there is a connection between the pan and vault that allows water to pass between them. Therefore, when water is pumped from the pan, the water level in the vault also is lowered. Nitrogen gas is injected into the concrete vault to reduce oxidation rate of the steel pan in the presence of liquids. The sump liquid level indicators are read and recorded during each shift (i.e., twice a day).

At this time there is approximately 4,800 gal (18,000 L) of waste present in tank 8D-2 and additions to the tank have been discontinued by isolation of the tank's piping. The waste being managed in this tank is not ignitable or reactive; therefore, there is no possibility for formation and ignition of vapors.

c. Tanks 8D-3 and 8D-4 Vault

The vault system for tanks 8D-3 and 8D-4 was designed to prevent the infiltration of water or runoff. The below-grade vault is constructed of steel-reinforced concrete with 21-inch-thick (53-cm) walls and 24-inch-thick (61-cm) roof and floor. The vault system exterior was coated with asphalt sealant (ASTM D449) and felt backing (ASTM D226) at the time of installation, which serves as a moisture barrier. A stainless-steel liner in the bottom of the vault extends 18 inches (46 cm) up the side walls.

A sump in the floor of the vault/pan collects accumulated liquids within the vault. An air-bubbler level probe monitors the liquid level in the sump and a steam operated jet transfers the contents to tank 8D-3.

Based on the depth below grade of this vault and its distance from the dewatering well, the dewatering well is expected to have little, if any, impact on this vault.

d. Liquid Waste Treatment System

The majority of the LWTS equipment is located in XC-3, Product Purification Cell (PPC), UPC, and ULO Pump Room. The major vessels, process equipment, and piping for the LWTS are contained in XC-3. There are 36-inch-thick (91-cm) concrete walls between XC-3 and the normally occupied areas of the Process Building; 18-inch-thick (46-cm) concrete walls between XC-3 and the PPC; and 18-inch-thick (46-cm) walls between the UPC and ULO. The XC-3, PPC, and UPC are constructed with 18-inch-high (46-cm) welded stainless-steel liners and are coated with an epoxy material (i.e., carbolene) above the 18-inch (46-cm) level. The cells are also equipped with sumps, sump level indicators, and high-level alarms. All piping for LWTS processing is routed through the XC-3 shield wall to the adjacent PPC. All valves are located in the PPC, which supports the XC-3 equipment (except the evaporator), in a shielded valve gallery or in the ULO. Adjacent to the UPC is the ULO Pump Room, which consists of a poured concrete floor with an epoxy coating and block wall. The ULO Pump Room houses the pumps required for evaporator feed and concentrates transfer and is furnished with a sump and level detection instrumentation.

Penetrations from XC-3 to the Lower Warm Aisle (LWA) Pump Niche utilize single-walled piping through existing sleeves in the concrete walls. The niche is fully lined with welded stainless steel, is connected (for ventilation) to XC-3, and is equipped with a drain routed directly to the XC-3 sump. Removable reinforced concrete hatch covers provide access to the pump niche for maintenance. The LWA pump niches are line with 3/16-inch-thick (0.48-cm) stainless-steel. Three pump niches in the LWA drain into a stainless-steel-lined sump located in XC-2. The pump niche area is equipped with a continuous air monitor (CAM) set to alarm in the event of a leak and resulting airborne contamination.

The Upper Extraction Aisle (UXA) and the Lower Extraction Aisle (LXA) supports the operation of the evaporator located in XC-3 and the sampling of tanks 5D-15B, 5D-15A1, and 5D-15A2, respectively. The UXA and the LXA are approximately 85 ft (26 m) long by 18 ft (5.5 m) to 36 ft (11 m) wide and 16 ft (4.9 m) high. The concrete floors and walls range in thickness from 0.5 ft (15 cm) to 5 ft (1.5 m) and are coated with epoxy paint. Valves for operation of the evaporator are in the UXA, as well as reach rods that are used to sample the tanks referenced above. The samples from tanks 5D-15B, 5D-15A1, and 5D-15A2 are collected at a stainless-steel glove box (i.e.,

PSC-II) located in the LXA. A floor drain in the UXA conveys liquids (if any) to the LWTF.

Tanks 3D-2, 7D-2, 7D-14, and 13D-8 are located in the LWC. The LWC is constructed of reinforced concrete walls and floor ranging in thickness from 2.3 feet (0.7 m) to 5.8 feet (1.8 m). The floor and walls are lined with stainless steel to a height of 18 inches (46 cm) and the remaining walls are coated with epoxy. A sump is present in the LWC for the transfer of accumulated liquids.

Piping to and from tanks 3D-2, 7D-2, and 7D-14 is also present in the CPC and XC-2. The secondary containment features associated with the CPC were discussed in Section D-1A(7)(b) and drawings are presented in Appendix D-10. XC-2 is 21 ft (6.4 m) by 21 ft (6.4 m), with a stainless-steel liner present in the cell, to a height of 18 inches (46 cm). A stainless-steel-lined sump in XC-2 transfers liquids to the LWC by an eductor, as necessary.

e. Cement Solidification System

The Waste Dispensing Cell (WDC) contains the Waste Dispensing Vessel. The WDC walls are composed of 20-inch-thick (51-cm) concrete and coated with epoxy. The cell floor is a minimum of 9 inches (23 cm) thick and is constructed with a welded stainless-steel liner that is 18 inches (46 cm) high. The volume of the liner can easily contain the entire contents of the Waste Dispensing Vessel. The WDC has a sump which is equipped with continuous bubbler-type level indicating instruments and a high-level alarm.

The Process Cell walls are 20-inch-thick (51-cm) concrete. The floor is poured concrete, at least 9 inches (23 cm) thick, epoxy-coated, and sloped to a sump. The sump is equipped with continuous level indication instrumentation and a high-level alarm.

f. Sludge Mobilization System (SMS)

The SMS consists of pump pits associated with tanks 8D-1, 8D-2, 8D-3, and 8D-4, piping from these tanks to the Concentrator Feed Make-up Tank (CFMT)in the Vitrification Cell, and return lines from the CFMT to the HLW tanks. The stainless-steel transfer piping is contained within other stainless-steel piping to collect any potential leaks. The interstitial space is monitored with leak detection equipment and valved and sloped to remove liquids into a connected pump pit(s). These transfer and secondary containment lines are constructed in a concrete trench to provide additional support to the piping. The floors and walls of the reinforced-concrete pump pits (i.e., 8Q-1, 8Q-2, 8Q-4, and 8Q-5) are lined with stainless steel (to a height of 4 feet [1.2 m]) and the remaining walls are coated with carboline paint. The pits are sloped to collect liquids in a sump that is monitored with liquid level equipment. The sumps are equipped with a steam jet to transfer any accumulated liquids into its associated waste tank.

The joints in the pump pit and the associated tanks are constructed with waterstops. In addition, the exterior pit walls and the bottom of the concrete pipe trench are coated with waterproofing to eliminate the potential for infiltration of groundwater into the structures.

g. Vitrification Facility

The Vitrification Facility is a structural-steel, metal-sided building approximately 145 ft (44.2 m) long by 91 ft (27.7 m) wide by 50 ft (15.2 m) high. The Vitrification Facility consists of the following work and support areas: Vitrification Cell; Equipment Decontamination Room; Transfer Tunnel; Crane Maintenance Room; Cold Chemical Facility; and Load-In Facility.

The Vitrification Cell is a 63-ft-long (19.2-m) by 34-ft-wide (10.4-m) by 46-ft-high (14.0-m) cell constructed of reinforced concrete, with walls and roof varying from 2 to 4 ft (0.6 to 1.2 m) thick with a 3/8-inch-thick (0.95-cm) stainless-steel liner on the inner side. The RCRA vitrification treatment process vessels are located inside the Vitrification Cell pit. This pit is lined by a 1/8-inch-thick (0.32-cm) stainless-steel plate for containment of spills and for decontamination after the vitrification campaign. The pit is 34 ft (10.4 m) wide, 25 ft (7.6 m) high in a north-to-south direction, and 14 ft (4.3 m) deep. The pit floor slopes north to a channel which leads to a sump nearly centered on the floor along the north wall.

The Equipment Decontamination Room is a 44-ft-long (13.4-m) by 29-ft-wide (8.8-m) by 25-ft-high (7.6-m) room used as the entry port from the load-in/load-out facility for empty canisters, large equipment, and transfer cart maintenance and recharging. The 13.5-ft (4.1-m) by 19.6-ft (6.0-m) soaking pit is lined with 1/8-inch-thick (0.32-cm) stainless steel.

The Transfer Tunnel is approximately 32 ft (9.8 m) by 16 ft (4.9 m) and the floors and walls are lined with stainless steel. The Transfer Tunnel connects the Vitrification Cell to the Equipment Decontamination Room and acts as an airlock between the areas. Drains in the floor are directed to the south sump in the Vitrification Cell. A ceiling hatch provides access to the Crane Maintenance Room above.

The Crane Maintenance Room is located above the transfer tunnel and is fitted with heavy-duty hoists and large hatches in the floor and ceiling for equipment removal. The Crane Maintenance Room is lined with 3/8-inch (0.95-cm) 304-L stainless steel.

The Cold Chemical Facility is a separate area attached to the Vitrification Facility. The building is 56 ft (17.1 m) by 34 ft (10.4 m). The Cold Chemical Facility received, staged, and stored non-radioactive vitrification process chemicals.

The Load-In Facility is located adjacent to the west walls of the Equipment Decontamination Room. The Load-In Facility is approximately 55.3 ft (16.9 m) by 40 ft (12.2 m) and was primarily used to move empty canisters into the Vitrification Cell and for staging vitrification cold chemicals, as necessary.

2. Ancillary Equipment and Secondary Equipment

It should be noted here that piping penetrations discussed in the following subsections are single-walled through sleeves, unless otherwise noted. The piping and instrumentation diagrams (P&IDs) identified in the following subsections have the active piping and ancillary equipment associated with these systems indicated in yellow. As units/systems are closed and drawings are revised to account for system modifications, the closed piping and ancillary equipment will be indicated in purple.

a. High-Level Waste Tanks and Supernatant Treatment System

for the HLW tank system are presented in Appendix D-21 and the P&IDs for the STS are presented in Appendix D-22. Process flows from tanks 8D-1 and 8D-2 that entered and exited the STS were directed through the STS pipeway and the STS valve aisle. The STS pipeway is located directly above a portion of the 8D-1 vault and extends across the top of the vault to the valve aisle within the adjacent STS Building. Remotely-operated valves and instrumentation located within the STS valve aisle controlled the flow of the supernatant through the filter, cooler, and four zeolite columns located in tank 8D-1. Valves and other removable equipment are located on jumpers, pipe sections, and in the valve aisle, and could be removed remotely for maintenance or repair by removing the jumpers.

Personnel responsible for the operation of the STS and the WTF, when active, were on site 24 hours a day, 7 days a week to monitor critical instruments associated with the HLW tanks and STS that were equipped with alarms with predetermined set points. These instruments provided alarms at the WTF, the STS, the Main Plant Control Room, and the site Guard House; therefore, allowing for immediate response to alarms, as appropriate. Additionally, operators were in constant radio communications with the Main Plant Supervisor and Security. The HLW tanks and STS levels and system monitoring equipment are currently read and recorded during each shift (i.e., twice a day).

Tank 8D-2 contained residual alkaline HLW supernatant and sludge from fuel reprocessing and plant decontamination. Mobilization pumps that performed the sludge washing and the mixing of these wastes for transfer to the STS and Vitrification Facility are located in this tank.

Supernatant liquid was drawn from the tank 8D-2 through a floating suction centrifugal pump through 1999. Since 1999, a floating suction pump or a submersible pump attached to the 8D-2 pump was used to perform waste

product transfers. The pump motor and discharge piping is located inside a stainless-steel-lined pump pit on top of the vault. This pit liner is seal welded to the riser pipe from tank 8D-2 and drains back into the tank and is equipped with a conductivity probe moisture detector.

Four stainless-steel, 2½-inch (6.4-cm) process pipes pass between the pump pit and STS, including the discharge piping from the pump, a spare discharge line, a return line from STS, and a flush line. Three lines have independent 4-inch (10-cm) stainless-steel jackets. The three jacketed pipes and the one single line are inside a 20-inch (51-cm), stainless-steel pipe. This assembly passes through the pump pit wall and is sealed to the pipeway wall with a welded plate and silicone caulking.

The transfer pipe is routed underground through a corrugated pipe chase filled with pea gravel that slopes toward tank 8D-2. The jacketed pipes and the outer pipe were normally closed and valved for draining into tank 8D-2, if necessary. These lines are equipped with redundant conductivity probe moisture detectors. Radiation detectors, alarmed to the STS Building, were installed in the pit to detect the presence of supernatant or condensation in these drain lines.

The tank 8D-1 transfer pipe is seal welded to the STS pipeway wall. The STS pipeway consists of two adjacent concrete chambers, the vault pipeway, and the backwall pipeway, which together create a contained pathway for the pipes that conveyed supernatant to and from the STS process vessels within tank 8D-1 and the pipes that conveyed decontaminated supernatant to or from tank 8D-3. In addition to containing the STS ion-exchange columns suspended from its ceiling, tank 8D-1 also received the spent zeolite and the flush water used to remove radioactive elements from the supernatant.

This epoxy-coated concrete vault pipeway is supported by the vault and has water seals in the joint connections with the vault. A floor drain is present to direct leaks to tank 8D-1. Leaks from the pipes in the vault pipeway would have been detected during the routine recirculation of the STS.

The two areas of the vault pipeway that house pipes that contained supernatant are the valve aisle and the backwall pipeway. Additional transfer lines in and out of STS also traverse the backwall pipeway and connect to the backwall of the valve aisle. The epoxy-coated floor of the backwall pipeway has a sump to collect liquids. This sump connects with the sump in the valve aisle, which has level detectors and a transfer pump. All piping in this area is welded stainless steel.

The valve aisle is a steel and concrete room that houses valves, pumps, instruments, and other items that were in contact with the supernatant. The valve aisle floor is lined with stainless steel to a height of approximately 12 inches (30.5 cm) and has a sump that is equipped with

level detectors and a transfer pump to convey liquids to tank 8D-2.

The liquid level was and currently is monitored and recorded twice a day by the operators. Any leaks in the system would have been indicated by a loss in volume of the recirculating flush water.

Supernatant was transferred from the STS valve aisle through a jacketed underground line to tank 8D-3. The processed supernatant was collected and sampled in tank 8D-3 before being transferred to the LWTS. A submerged suction transfer pump, G-007, is located inside tank 8D-3 with the motor and discharge piping inside a pump pit located on top of the vault. Pump G-007 is used to transfer liquid waste to the LWTS for volume reduction. In past operational activities, liquid waste from 8D-3 could have been returned to tank 8D-2 for further decontamination.

Three process lines, contained in an 18-inch (46 cm) stainless-steel containment pipe that slopes for drainage to tank 8D-3 through the G-007 pump pit, pass between the STS and tank 8D-3. This drain line has a moisture detector to monitor for leaks in the process lines and is alarmed in the STS control room. Both the drain line and detector are located in the transfer pump pit. Two of the process lines branch out of the 18-inch containment pipe before the pump pit and tie into what was a spare process line into tank 8D-3. They are contained by a 4-inch (10.2- cm) stainless-steel pipe that drains to a drip pan mounted to the inside of the vault wall. A sample pipe allows sampling any liquid collected. The third line is the discharge pipe from the G-007 pump, which goes from the pump pit to the STS valve aisle.

The stainless-steel-lined G-007 pump pit houses the drive motor and discharge piping for G-007 pump. The pump pit has a drain line that passes outside of the vault and ties into the line with the other process lines from the STS to tank 8D-3. This drain line is jacketed and is kept plugged with an inflatable plug. To drain liquids from the pit, the plug is remotely deflated and then remotely reinflated after the pipe is drained. A moisture detector that alarms in the STS Control Room is mounted inside the pit to monitor for accumulation of liquid.

A portion of pump G007 discharge line flow continuously returned to tank 8D-3 through the recirculation line. Valves in the valve aisle controlled the destination of the processed supernatant either to tank 8D-2 through the transfer pipe described above or to the LWTS.

The flow of liquid waste from tank 8D-3 to tank 5D-15B in the LWTS is directed through the STS valve aisle and into an underground stainless-steel pipe, which then enters the Vitrification System off-gas trench located on the west side of the Process Building. This stainless-steel waste transfer pipe and its companion spare pipe are contained in a fiberglass-reinforced plastic (FRP) pipe that is encased in concrete for additional support and

mechanical protection. The FRP pipe is sealed at its exit from the STS pipeway and from the off-gas trench. The process pipes and FRP pipe slope from a high point at the entrance to the off-gas trench toward the STS pipeway.

The FRP pipe is equipped with a capacitance-type moisture detector that alarms in the STS control room. There is also a riser pipe in the FRP pipe to allow for pumping liquids from the secondary containment, if required.

The off-gas trench is constructed of reinforced concrete located partially below-grade with radiation shield covers above-grade. The bottom of this trench slopes toward the VF, and it has a sump at the low end. A moisture detector in the sump alarms in the LWTS Control Room, and liquids that may collect in the sump can be sampled and pumped, as required. The off-gas trench is also externally coated with a water sealant and lies in a gravel interceptor drain that routes runoff away from the trench.

The transfer piping exits the off-gas trench to the P-01 pump pit that contains a booster pump required to push the liquid waste to tank 5D-15B in the LWTS. The pump supply and return transfer lines between the trench and the pump pit are encased in an outer stainless-steel containment pipe. This pipe is equipped with a drain pipe to the pump pit. All pipes slope toward the booster pump pit that is monitored with liquid level detection equipment. The pit is also furnished with a low-point drain that is sloped to an adjacent vault, the General Crane Room (GCR) extension drain tank vault, which is located between the booster pump pit and the Process Building. The GCR vault is equipped with a sump and is capable of being pumped to a catch tank, if necessary.

b. Liquid Waste Treatment System

Liquid waste discharged from booster pump P-01 flows through double-walled pipe in the off-gas trench to the 01-14 Building. The double-walled pipe enters the 01-14 Building through a vertical concrete pipe chase at the north end of the building, and enters the WDC. Leaks in any of the pipes would be detected by liquid level detectors in the off-gas trench sump and the WDC sump.

Liquid waste flows in stainless-steel pipe contained in a 4-inch-thick (10.2 cm) carbon steel pipeway (i.e., double-walled piping) from the WDC in the 01-14 Building to the XC-3 in the Process Building. The shielded pipeway is sloped toward the WDC at the west end and toward XC-3 at the east end and is chemically compatible with the liquid wastes transferred.

The double-walled pipeway is present within the normally occupied areas of the Process Building to the point where it enters XC-3. The waste flows through the PPC distribution manifold for collection in tank 5D-15B. Liquid wastes are transferred from tank 5D-15B in the UPC to the pump P-04 in the ULO Pump Run through piping back into the UPC into the PPC and XC-3 to be volume reduced

in the Evaporator (tank 31017). After cooling of the evaporator condensates in the condenser portion of the evaporator, they are held for monitoring in XC-3 in the Distillate Surge Tank (D-005). The Distillate Pump, P-15, and associated valves are located in the LWA pump niche adjoining XC-3. Secondary containment features associated with this cell are discussed in Section D-2D(1)d and Table D-5 and D-6.

The evaporator concentrates cooled in a shell-and-tube heat exchanger located next to the evaporator in XC-3, are pumped to either side of a double-compartmented tank (i.e., concentrates storage tanks 5D-15A1 and 5D-15A2) by the concentrates pump, P-16, located in the LWA Pump Niche. Waste transfers to tanks 5D-15A1 and 5D-15A2 pass through the XC-3 to the adjoining PPC and then to the UPC.

P&IDs for the LWTS are presented in Appendix D-23.

c. Cement Solidification System

The concentrated decontaminated supernatant is pumped from tank 5D-15A1 or tank 5D-15A2 by pumps P-05 or P-06 in the ULO Pump Room to the Upper Warm Aisle (UWA) through the shielded pipe chase to the 01-14 Building and the CSS. Transfer of concentrated decontaminated supernatant from the tanks 5D-15A1 and 5D-15A2 to the CSS is through a single-walled, welded stainless-steel pipe enclosed in the shielded overhead pipeway that is constructed of carbon steel. A trap or seal-leg in the pipeway forms an airtight seal at the XC-3 end of the pipeway. The penetration is seal-welded to a backup steel plate where the pipeway joins both XC-3 and the WDC, and the backup plate is grouted to the wall.

In the CSS, the decontaminated supernatant was mixed with cement and stabilized to generate a storable nonhazardous cement waste form. The WDC contains the Waste Dispensing Vessel.

Three closed circuit television cameras provided a view of the WDC floor and sump area during solidification operations. Aboveground single-walled piping systems are either inspected on a daily basis or are capable of being inspected by the camera. The WDC sump pumps are seamless air-driven double-diaphragm pumps.

Liquid waste from the Waste Dispensing Vessel was pumped to either of the two mixers using a progressing-cavity pump, located in the Process Cell. A short length of piping from the outlet of the Waste Dispensing Vessel to the Waste Dispensing Pump is constructed of welded stainless steel and is equipped with a double internal mechanical seal furnished with an external source of clean water. The pump was inspected daily by personnel entry during solidification operations and can also be inspected by camera.

The solidification of SBW will be performed using limited areas and equipment associated with the CSS. It is

anticipated that a pump or pumps associated with tanks 5D-15A1 and 5D-15A2 will be used, along with a contractor-provided pump, to supply the SBW to an in-container treatment system via contractor-supplied piping. The treatment and solidification activities will be performed in the CSS Truck Bay.

A P&ID for the CSS is presented in Appendix D-24.

d. Liquid Waste Cell Ancillary Equipment

The LWC includes liquid waste transfers into Tank 7D-14 from the A&PC Hot Cells, transfers from tank 7D-2 to either tank 8D-2 (pre-July 2003) or tank 5D-15B, and waste transfers between tanks 7D-14, 7D-2, 3D-2, and 13D-8. Single-walled stainless-steel piping conveys analytical laboratory waste from the A&PC Hot Cells by gravity to tank 7D-14. Within the LWC, stainless-steel piping was constructed between tanks. However, some of the transfer piping between tanks 7D-14, 7D-2, and 3D-2 also passes through the CPC and XC-2. Individual steam jets are used to convey liquid waste from the tanks inside the cell into associated discharge piping followed by gravity feed to the receiving tank. Analytical waste was conveyed from tank 7D-2 to tank 8D-2 through single-walled stainless until July 2003. Since July 2003, waste transfers from tank 7D-2 have been conducted via a steam jet to Sample Feed Tank D-009 in XC-3. After sampling, the waste could be transferred to tank 5D-15B through the PPC header.

P&IDs for the tanks 3D-2, 7D-2, 7D-14, and 13D-8 of the LWTS are presented in Appendix D-25.

e. Sludge Mobilization System

The SMS was used to transfer HLW supernatant from tanks 8D-1, 8D-3, and 8D-4 to tank 8D-2, and then from tank 8D-2 to the CFMT in the Vitrification Cell. All waste transfers originated through pump pits associated with each tank. Pump pits 8Q-1, 8Q-2, 8Q-4, and 8Q-5 are associated with tanks 8D-1, 8D-2, 8D-4, and the transfer system/trench, respectively. Single-walled stainless-steel piping is present in each pump pit. Transfers from pump pits to individual tanks were through stainless-steel piping constructed within stainless-steel piping to provide secondary containment. Leak detection is present in the annular space between the piping. The secondary containment piping is sloped to each originating pump pit for collection. A sump is present in the pump pits to convey any accumulated liquid into the tank.

P&IDs for the SMS are presented in Appendix D-26.

f. Vitrification Treatment Unit

The vitrification process was composed of batch make-up and holding vessels, a melter, off-gas collection and treatment, and supporting equipment. Melter feed preparation consisted of those processes necessary to prepare the HLW, glass formers, and other additives for

introduction into the Melter for vitrification. The homogenized HLW waste mixture was transferred from the HLW tank to the CFMT in the Vitrification Facility. Once transferred, nitric acid and glass formers were added. The CFMT was the first mixed waste treatment vessel in the vitrification system and was the primary tank for melter-feed preparation. As such, it was the main receiver of all chemical process constituents. These constituents first included HLW from tank 8D-2, recycled liquids from the submerged bed scrubber (SBS), liquid recycle streams from the canister decontamination process, and transfer of liquids from the north sump. Following sampling and analysis, a recipe for chemical addition was prepared, the CFMT contents were concentrated, and the glass-forming chemicals were added. The glass-forming elements were principally silicon, boron, and sodium, to which small amounts of glass modifiers may have been added. After the slurry feed was prepared and verified to meet the specified recipe, it was transferred from the CFMT to the MFHT via a steam jet. The MFHT provided the necessary surge volume for smooth operation and was the transition point between the batch feed preparation process in the CFMT and a continuous feed to the Melter, where the slurry was vitrified.

Molten glass was contained within a highly corrosion-resistant refractory encased in a highly corrosion-resistant Inconel shell. The glass was uniformly heated by passing an alternating current between three electrodes in contact with the molten glass. The bulk glass was maintained in the melter cavity between 1,150°C to 1,200°C and exited the Melter through the throat of the discharge riser located near the bottom of the Melter. Molten glass was airlifted up this riser into a separate overflow chamber, where it then flowed down through a trough and was poured into a receiving canister. The material was then in a state where the hazardous and radioactive constituents were immobilized as a nonleachable, nonhazardous, radioactive waste form.

A turntable was used to position the empty canister beneath the melter pour spout and then the turntable rotated the canister out of the way after it had been filled with molten glass. The turntable accommodated four canisters. Filled canisters were allowed to cool before being removed from the turntable and placed at the weld station, where a stainless-steel lid was welded to the top flange of the canister. The canister was then taken to the radiological decontamination station where it was decontaminated to reduce radioactivity levels on the outside of the stainless steel canisters. Canisters were then loaded onto a transfer cart and moved to the HLWIS Facility via the transfer tunnel.

Steam, feed carryover, and volatiles evolved during the melting process were vented to the process off-gas system. The first stage of off-gas treatment was at the SBS, where the off-gases percolated through a submerged column of beads. After the SBS, the gas was drawn to the mist eliminator and preheater. Moisture was removed and

drained back to the SBS. The off-gas was heated and then directed to the high-efficiency mist eliminators (HEMEs) and HEPAs. The oxides of nitrogen were removed and the final stages of particulate filtering occurred before the off-gases were exhausted out of the plant stack.

All process vessels, with the exception of process off-gas equipment, were vented by the vessel vent system. This arrangement also provided an emergency bypass of the SBS for the melter, should the off-gas line become plugged, and also maintained the CFMT and MFHT under negative pressure (partial vacuum). The gases first passed through a condenser and then joined the process off-gas prior to the mist eliminator-preheater in front of the parallel HEMEs and process HEPAs.

P&IDs for the vitrification treatment unit are presented in Appendix D-27.

D-2E General Tank Operating Requirements

The WVDP operates tanks systems in accordance with several SOPs. The liquid collection and transfer operations associated with the mixed wastes tanks are identified in SOP 50-23, *Tank 8D-3 Liquid Collection and Transfer Operation*, which is presented in Appendix D-28. The liquid collection and transfer operations associated with the LWTS are identified in SOP 07-08, *Process Building Liquid Waste Handling*, SOP 71-02, *Operation of the LWTS High TDS Treatment System*, SOP 71-06, *Tank 12-35104, Tank 7D-13, and Tank 13D-8 Transfers*, and SOP 71-10, *Transfer of LWTS Evaporator Concentrate Tanks* are provided in Appendix D-29.

In an October 18, 1991 correspondence from Mr. Paul Counterman, P.E. of NYSDEC (Appendix D-30) to the co-operators and NYSERDA, the NYSDEC approved the WVDP's request to place Hazardous Waste labels in areas visible to personnel who may enter the tank cells or rooms pursuant to the requirement of 6 NYCRR §373-3.10(e) (which is equivalent to 6 NYCRR §373-2.10[e]).

D-2F Requirements for Ignitable or Reactive Waste Storage in Tanks

The regulatory requirements of 6 NYCRR §373-2.10(i) do not apply to the tanks at the WVDP since ignitable and reactive mixed wastes are not managed in WVDP tank systems.

D-2G Requirements for Incompatible Wastes Storage in Tanks

The regulatory requirements of 6 NYCRR §373-2.10(j) do not apply to the tanks at the WVDP since incompatible wastes are not managed in WVDP tank systems.

D-2H Tank Inspection

Section F-2B(2) provides details of the tank inspection procedures performed at the WVDP to meet the regulatory requirements or the intent of the regulatory requirements of 6 NYCRR §373-2.10(f) for radioactive tank systems that are not accessible for visual evaluations.

D-2I Tank Spills and Leakage

Inspections of the tank systems are carried out as discussed in Section F. These inspections allow for the determination of potential spills/releases from the tank systems. The tank systems are constructed such that spills and leaks are collected within secondary containment systems, which are monitored by various processes, including direct observation and instrument detection. Should a spill or release be detected, a system can be isolated to minimize the volume of a release. The released material would typically be accumulated within a sump for management in accordance with WVDP protocols. The WVDP has implemented WV-915, *Spill/Release Notification and Reporting*, to address the spill response and notification for the site.

In the event of a spill or release from a tank system, any major repairs made to the tank system will be certified by an independent, New York State-registered PE.

D-2J Closure and Post-Closure

In-place closure is identified as the closure alternative for tanks 8D-1, 8D-2, 8D-3, and 8D-4; therefore a post-closure plan has been prepared pursuant to the regulatory requirements of 6 NYCRR §373-2.10(h)(3). The post-closure plan is presented in Section I, within Appendix I-16.

D-3 MISCELLANEOUS UNITS

This permit section does not apply to the WVDP since vitrification activities (vitrification treatment unit) at the WVDP were completed in September 2002; the melter has been shutdown and is pending completion of equipment removal activities for the unit.

D-4 AIR EMISSION STANDARDS FOR PROCESS VENTS, SUBPART AA

This permit section does not apply since the WVDP LWTS evaporator ("distillation") process is exempt from regulation under 6 NYCRR §373-2.27, pursuant to 6 NYCRR §373-2.27(a)(4), as emissions from the evaporator are subject to regulation under a 40 CFR Part 61 Clean Air Act permit.

D-5 AIR EMISSION STANDARDS FOR EQUIPMENT LEAKS, SUBPART BB

This permit section does not apply since process equipment at the WVDP does not manage wastes with greater than 10% VOs, by weight, as specified in 6 NYCRR §373-2.28(a)(2).

D-6 AIR EMISSION REQUIREMENTS FOR TANKS AND CONTAINERS, SUBPART CC

This permit section does not apply to the WVDP as the waste management container storage and tank storage areas are used solely for mixed wastes as specified in 6 NYCRR §373-2.29(a)(2)(ii) and (vi). In addition, hazardous wastes in HWSL #1 through #4 are managed in small quantities, specifically in containers less than 26 gal (98 L) in capacity, and thereby are exempt pursuant to 6 NYCRR §373-2.29(c)(3). Larger containers are kept closed and sealed while in storage. As an additional level of caution, hazardous wastes containers are not opened and/or mixed in these four storage areas.

D-7 CONTAINMENT BUILDINGS

The information provided in this section is submitted in accordance with the requirements of 6 NYCRR §373-2.30 (a) and (b). The design and operating standards for the storage and treatment of hazardous waste in containment buildings at the RHWF are addressed herein. The RHWF is not subject to the definition of land disposal in 6 NYCRR §373-2.30(b).

The RHWF supports the decommissioning (mechanical size reduction) and decontamination of radiological-contaminated components. The RHWF was constructed to support the decommissioning (remote mechanical size reduction) and decontamination of radiological-contaminated components. The design and construction of the RHWF has been certified by a New York State-registered PE. The RHWF is used to treat and store solid and LLW, mixed waste, and TRU waste.

The RHWF is defined as a RCRA containment building because it is used to contain and confine contamination while treating and/or storing uncontainerized wastes. Treatment consists of mechanical segmenting and size reduction and limited radiological decontamination. Waste storage in containers also occurs within the containment building pending disposition off site or to another on-site waste management facility.

The location of the RHWF in the northwest corner of the WVDP is presented on Figures B-2 and B-4. Figure D-2 is a general process flow diagram depicting the flow of wastes through the RHWF.

D-7A Design Standards for Containment Buildings

1. The RHWF, a free-standing structure, is approximately 188 ft (57 m) long by 91 ft (28 m) wide and 40 ft (12 m) high. It consists of a reinforced concrete main building with a Receiving Area extension at the north end, an adjoining Load Out/Truck Bay on the east side, and adjoining office building at the south end. The final design package including engineering drawings and design criteria, inclusive of applicable codes and standards, are included in Appendix D-31 of this permit application.

   General design criteria are as follows:

   Design Floor Loads:

   Floors in the office, process areas, and operating aisle are constructed of reinforced concrete designed for a uniform live load of 100 lb/ft^2 (4.05 kg/m^2) + dead load + additional dead load required per the design.

   Floors on grade in loading and unloading areas are constructed of reinforced concrete designed for a uniform live load of 300 lb/ft^2 (12 kg/m^2) and 10,000 lb (4,536 kg) concentrated load.

   Design Roof Loads:

   Design Roof loads are calculated at 40 lb/ft^2 (1.6 kg/m^2) snow load + roof dead load + additional dead load required per the design.

Design Wind Forces:

Building structures and equipment on the exterior of the building is designed to 100-year wind of 80 mph (129 kph) with a gust response factor of 1.21.

Design Pressure Differential:

Concrete building structures are designed to withstand negative pressure with respect to the outside atmosphere. The off-normal interior design pressure shall be a negative 2487 Pa (-10 inches of water) which bounds the credible negative pressure that the HVAC exhaust fans can pull on the heating, ventilation, and air conditioning (HVAC) system, concrete building and associated structures

Design Rainfall:

Intense rainfall is not considered to be a hazard to the facility and will not result in release of radioactivity or hazardous waste/material to the environment

Seismic Design:

The confined structure is designed to an acceleration of 0.1 g at ground level (horizontal load).

Radiation Exposure Rate:

The shield walls, doors, and windows of the RHWF are constructed so that the radiation exposure rate in normally occupied areas will be no greater than 0.1 milliroentgen per hour.

The RHWF contains the following waste-handling areas:

- Receiving Area
- Buffer Cell
- Work Cell
- Contact Maintenance Area
- Radiation Protection Operations Area
- Waste Packaging and Survey/Spot Decontamination Area
- Load Out/Truck Bay
- Wash Down Collection Tank Room

Additional support areas are contained within the RHWF, but they will not receive, manage, store, or treat wastes. Support areas include the Air-Cleaning Unit Fan Room, Mechanical Equipment Room, Office Area, and the Operating Aisle.

a. Floors and Walls

The RHWF is designed to provide complete enclosure of both the primary and secondary waste streams managed within the facility from the time they are received within the Receiving Area until they are removed through either the Load Out/Truck Bay or from the Wash Down Collection Tank Room. The RHWF prevents exposure of wastes to the elements and assures complete containment of the managed wastes. Wastes managed within the RHWF include radiologically contaminated wastes that display

the hazardous waste characteristics of toxicity due to the presence of toxic metals. No incompatible wastes are treated or stored.

A short summary of each waste handling work area along with a description of the floor and wall dimensions and design criteria is presented below.

1. Receiving Area

The Receiving Area provides weather protection during the unloading of packaged wastes from transport vehicles, and is a secondary buffer area to ensure the confinement of radioactive contamination. The Receiving Area utilizes a bridge crane to unload waste containers from transport vehicles into the Buffer Cell. A roll-up door provides access to the Receiving Area.

The Receiving Area is approximately 52 ft (16 m) long by 27 ft (8 m) wide by 45 ft (14 m) high and consists of two sections. The first 16.5 ft (5.0 m) of this area serves as the truck dock and is constructed of steel-framed, insulated, double-walled sheet metal with an insulated metal standing seam roof. The next 35.5 ft (10.8 m) of this area, which provides access to the Buffer Cell, is constructed using shielded, reinforced concrete with a roof height of 45 ft (13.7 m). The Receiving Area floor is 4 ft (1.2 m) below the level of the Work Cell floor to allow containers to be rolled off the transfer vehicles and onto the powered roller system located in the floor of the Buffer Cell.

Equipment in the Receiving Area includes a remotely controlled 20-ton bridge crane with rails extending the full length of the Receiving Area, Buffer Cell, and Work Cell. Shielding, contamination control, and crane access between this area and the Buffer Cell is provided by a shield door.

2. Buffer Cell

The Buffer Cell provides an air lock between the normally radioactively uncontaminated Receiving Area and the potentially-highly-radioactively contaminated Work Cell. The powered roller system in the floor combined with the operation of the bridge crane, remotely transfers waste containers from the Buffer Cell to the Work Cell. The Buffer Cell also acts as a radiological control area for contact-handled operations such as overpacking or removing over-sized waste boxes from the Work Cell.

The Buffer Cell is approximately 22 ft (7 m) by 22 ft (7 m) by 37 ft (11 m) high and is constructed entirely of shielded, reinforced concrete, sealed to prevent releases of radioactive and hazardous

waste contaminants and designed to facilitate cleanup and decontamination. The thickness of the walls and floors of the Buffer Cell is approximately 2.5 ft (0.7 m). The Buffer Cell floor and portions of the wall are lined with 10-gauge stainless steel. Those areas not lined, are coated with protective coating (e.g., epoxy or equivalent). Expansion joints between concrete slabs are sealed with butyl caulking or equivalent.

A shielded window is located on the concrete shield wall between the Buffer Cell and the Operating Aisle to allow direct observation of Buffer Cell operations.

Shielding, contamination control, and crane access between this area, the Receiving Area, and the Work Cell is provided by shield doors. Sealed curbs are present on the floor between the Receiving Area and the Buffer Cell to prevent the spread of contaminated liquids.

3. Work Cell

The Work Cell is approximately 55 ft (17 m) long by 22 ft (7 m) wide by 37 ft (11 m) high and constructed of shielded, reinforced concrete. The thickness of the walls and floors of the Buffer Cell are approximately 2.5 ft (0.7 m). The Work Cell floor and portions of the wall are lined with 10-gauge stainless steel. Those areas not lined are coated with protective coating (e.g., epoxy or equivalent). Expansion joints between concrete slabs are sealed with butyl caulking or equivalent.

Sliding shield doors and air-flow control doors provide a means for waste transfer and the passage of bridge cranes between the Work Cell and the Buffer Cell. One bridge crane utilizes two telescoping tubes, each equipped with a powered dexterous manipulator.

The powered roller system on the floor near the sliding shield doors provides access to the Buffer Cell and allows the incoming waste containers to be staged adjacent to adjustable work platforms. A wall-mounted jib crane with a powered dexterous manipulator supports activities to be performed at the work platforms. Storage shelves and racks are present in the Work Cell for the storage of materials awaiting analysis, partially filled liners, and powered dexterous manipulator equipment.

Filled drum and box liners are transferred from the Work Cell to the Waste Packaging and Survey/Spot Decon Area using a waste transfer system. This system allows the transfer of contaminated liners to waste packages in a manner

that prevents surface contamination of packages as they are moved to the Load Out/Truck Bay. Equipment is also present in the Work Cell to decontaminate the work surfaces, cranes, manipulators, and other waste handling equipment in this area. A wash down collection and drain system is present in the floor slab in a north south direction and sloped to the south. This trench and drain system contains a stainless-steel screen within a filter cartridge to remove particulates present in the decontamination rinsate.

4. Contact Maintenance Area

The Contact Maintenance Area is constructed of shielded, reinforced concrete. The thickness of the walls and floors is approximately 1.5 ft (46 cm). The Contact Maintenance Area floor and portions of the wall are lined with 10-gauge stainless steel. Those areas not lined are coated with protective coating (e.g., epoxy or equivalent). Expansion joints between concrete slabs are sealed with butyl caulking or equivalent.

The Contact Maintenance Area is adjacent to the Work Cell so that personnel can perform maintenance on the crane, manipulators, and other equipment. Four floor levels provide worker access for maintenance of the crane's telescoping tube. A stainless-steel-lined space provides for wash down of pumps and valves in a shielded box. Floor drains convey wash down water to sumps located in specific work areas. The liquids collected are then transferred to the wash down collection tanks located below the floor of the Contact Maintenance Area in the Wash Down Collection Tank Room. Two intermediate platform levels provide worker access to all levels inside the Contact Maintenance Area without exiting the area. The floor at the top level is stainless-steel-lined and has floor drains to collect bridge crane and powered dexterous manipulator wash water.

5. Radiation Protection Operations Area

The Radiation Protection Operations Area receives Work Cell samples via the Sample Room shielded sample lift system. This area is also equipped with a sample transfer glove box to receive swipe samples of waste packages using the swipe sample survey rods in the adjacent Waste Packaging and Survey/Spot Decon Area and a shielded liquid sample glove box with a drain.

6. Waste Packaging and Survey/Spot Decon Area

The Waste Packaging and Survey/Spot Decon Area is 11 ft (3.4 m) long by 20 ft (6.1 m) wide and provides an area for transferring filled waste

drums and boxes out of the Work Cell via the waste transfer system. The Waste Packaging Area floor and portions of the wall are lined with 10-gauge stainless steel. Those areas not lined are coated with protective coating (e.g., epoxy or equivalent). Expansion joints between concrete slabs are sealed with butyl caulking or equivalent.

The waste transfer system is comprised of a drum cart and box cart on rails that extend from the area directly below the waste transfer system shield covers to the Load Out/Truck Bay.

The packaging area is equipped with a periscope and swipe sample survey reach rod on exit shield doors that allow operators in the survey area to remotely monitor and survey operations. A sample transfer glove box allows the collection of swipe samples from one reach rod through the Work Cell shield wall for transfer directly to the Radiation Protection Operations Area.

A 6-ton monorail transfer hoist in the survey area lifts and places drum and box transfer shield lids. In addition, a floor drain (plugged when not in use) allows wash down of the waste packaging area. Wash down waters from this area are also conveyed to the receiving tanks.

7. Load Out/Truck Bay

The Load Out/Truck Bay consists of a clear span pre-engineered building, approximately 60 ft (18 m) by 50 ft (15 m), with a metal wall and roof system. The packaged and repackaged waste containers are loaded onto transport vehicles in the Load Out/Truck Bay for off-site shipment to a TSDF or to an authorized temporary on-site storage location. The waste packages are loaded onto transport vehicles using forklifts.

8. Wash Down Collection Tank Room

The Wash Down Collection Tank Room is located below the Contact Maintenance Area and therefore was not designed for routine entries. Two receiving tanks are present in the tank vault for the collection of decontamination water. The majority of wash down liquid waste, and also the most contaminated waste, comes from the Work Cell. The Work Cell liquid waste is collected and stored in the Work Cell wash down receiving tank with 1,500 gal (5,678 L) total capacity and a working capacity of 1,200 gal (4,542 L). All other liquid wastes, primarily from washing down within the Buffer Cell and Contact Maintenance Areas, is collected and stored in the Buffer Cell/Contact Maintenance Area wash down receiving tank with a 750-gal (2,839-L) tank total capacity with a working capacity of 600 gallons (2,271 L). A third

tank (1,500 gal [5,678 L]) within the tank vault is used to transfer wash down water batches to the on-site LWTS within 90 days of their generation. Double-walled piping is used to convey the decontamination water from the Batch Tank to the LWTS.

The Wash Down Collection Tank Room floor (including a sump) and portions of the wall are lined with 10-gauge stainless steel. Those areas not lined are coated with a protective coating (e.g., epoxy or equivalent). Expansion joints between concrete slabs are sealed with butyl caulking or equivalent. The sump is monitored with level control instrumentation and an alarm to detect any leaks in the tanks or double-walled piping.

b. Design of the Primary Liner

The primary liner of the RHWF consists of the freestanding concrete structure and its structural components. The RHWF has been constructed to physically accommodate the outer dimensions and weights of waste items and containers identified for treatment and/or storage in Section B of this permit application. The wastes to be processed in the RHWF are a variety of sizes, shapes, and materials, including structural steel, concrete, grout, resins, plastics, filters, wood, and water. These materials will be in the form of tanks, pumps, fabricated steel structures, light fixtures, conduits, jumpers, reinforced concrete sections, PPE, general rubble, and debris. The maximum allowable outer dimensions and weight of solid items treated at the RHWF are 50 ft (15.2 m) long by 12 ft (3.7 m) wide by 11 ft (3.4 m) high and weighing 53,800 pounds (24,403 kg). The maximum dimensions of waste components identified to date are 50 ft (15.2 m) long, 12 ft (3.7 m) wide, and 11 ft (3.4 m) high. The maximum weight of waste components identified to date is 53,800 pounds (24,403 kg). Waste items at or below the stated design dimensions and weight will move through the RHWF unencumbered on the roller system and without physical contact with the interior walls.

Shield doors are located between the Receiving Area and Buffer Cell, between the Buffer Cell and Work Cell, and between the Work Cell and the Contact Maintenance Area. Shield windows are located within the Buffer Cell and Work Cell to allow operators to observe operations within these areas. The shield windows and closed shield doors are completely sealed against the migration of radiological contamination, provide an effective barrier against fugitive dust emissions, and prevent the spread of contamination between work areas. The RHWF is designed in a fashion to ensure that wastes do not come in contact with shield windows or doors.

Additional measures employed to achieve isolation of uncontaminated from contaminated areas are: conducting operations in separate cells, the use of local HVAC for

high-radioactivity contamination areas, and eliminating cross traffic. Confinement of radioactive and/or mixed waste is accomplished using sufficiently airtight physical boundaries. Multiple barriers such as different pressure zones, building walls, and double air locks are provided as buffer zones.

The RHWF is designed with a system of shield doors, air locks, ventilation and filtration to prevent the release of radioactivity and fugitive emissions to the environment. The ventilation system operates continually while the facility is in operation. Pressure differentials are maintained between each confinement zone and between the outermost zone and the outside atmosphere. Air flow travels from zones of lesser contamination potential to zones of greater contamination potential under normal and off-normal conditions. Air stream from all Zone 1 designated areas (areas that are expected to contain radioactive materials during normal operations) are filtered by a minimum of two banks of fire-resistant high-efficiency air particulate (HEPA) filters in series prior to the exiting to the atmosphere. Air streams from all Zone 2 (operating areas and other potentially contaminated areas surrounding Zone 1) spaces are filtered by a minimum of one bank of fire resistant HEPA filters prior to exiting to atmosphere.

Dust and fine particulate-capture units are provided inside the Work Cell. These units collect airborne material generated during process operations (cutting and sawing) inside the Work Cell. The filtered air from the RHWF is discharged to the atmosphere through a stack. The stack is sampled and monitored, and is equipped with an alarm system to detect any abnormal activity. The specific design criteria of the ventilation system and air cleaning unit are provided in WVNS-DC-071, *Design Criteria Remote-Handled Waste Facility*. Stack releases are subject to applicable EPA, NYSDEC, and DOE regulations, Orders, Directives, and agreements.

Waste treatment operations are conducted utilizing remote mechanical operations to reduce the potential for human exposure and escape of radiological contamination. Wastes are moved through the facility utilizing a system of cranes, rollers, and a power conveyor. The RHWF lifts, positions, opens containers, removes and replaces container contents, and repackages waste streams by remote operation. Waste samples are extracted, removed, and transferred through the use of a powered dexterous controller, a transfer drawer, and shielded sample lifter to additionally eliminate the spread of radiological contamination.

2. Secondary Containment System

Liquid wastes are generated as a secondary waste stream within the Buffer Cell, Work Cell, and Contact Maintenance Area and drained to the Wash Down Collection Tank Room. These waste management areas are lined with stainless steel and/or coatings to fully contain the wastes and are additionally

fitted with a secondary containment system to collect and remove liquid wastes. Liquid wastes are primarily generated as a result of periodic equipment and cell decontamination wash downs. Small quantities of liquid waste may also be contained or trapped within components of the solid waste and released during the treatment (segmenting) process.

A liquid waste collection and transfer system has been designed to collect, store, sample and transfer secondary liquid wastes within the RHWF. This system consists of a wash down collection trench, two wash down receiving tanks, a batch transfer tank, and the LWTS for treatment of the accumulated liquids.

Sealed curbs are present on the floor between the Receiving Area and the Buffer Cell to contain liquids within the Buffer Cell. Within the Buffer Cell, Work Cell, and Contact Maintenance Area, the floor is sloped toward a wash down collection trench, isolating wash down waters in two separate sumps located in specific work areas. The system of curbs, shield doors, and isolating sumps prevents the release of liquids from one portion of the building to another. Liquid wastes are conveyed by gravitational flow into one of two receiving tanks. The concrete floor and trench are lined with 10-gauge stainless steel, are free of gaps, and impervious to leaks. The trench and drain system additionally contains a coarse stainless-steel screen to remove particles present in the wash down waters.

The two receiving tanks and a batch transfer tank are located beneath the first floor of the Contact Maintenance Area in the Wash Down Collection Tank Room. Each tank is equipped with level and alarm instrumentation which are used in lieu of manual-entry inspections for the secondary containment tank system. The batch transfer tank, a 1,500-gal (5,678-L) total capacity tank with a working capacity of 1,200 gal (4,542 L), is used to transfer wash down water batches through double-walled piping to the LWTS.

The liquid waste collection and removal system recirculates liquid waste to prevent sediment deposit. After a predetermined liquid waste level is detected in the wash down tank using a dip tube tank level sensor (bubbler), the waste is circulated using an air operated double diaphragm pump. The liquid waste is circulated in a loop starting from the drain of the tank. Then, the transfer/recirculation pumps (one per tank) draw up the liquid waste where a side stream sample is collected in the liquid sample glove box. The sample analysis will determine the content of the waste and the pathway for processing. The batch transfer tank uses similar waste level detection and recirculation system. Wastewaters are not expected to be mixed wastes. However, if sampling indicates the liquid waste meets the definition of a characteristic hazardous waste, the contents of the waste collection and removal system will be transferred to the LWTS within 90 days of the liquid waste generation date.

The floor and walls of the Wash Down Collection Tank Room are lined with stainless steel. The secondary containment capacity of the stainless-steel-lined area of this room is approximately 12,119 gal (4,542 L). There is a sump in the

floor equipped with a level indicator and alarm to detect any leaks from the tanks. If a leak occurs in any of the tanks, wastewater will be collected in the sump. The wastewater can then be transferred to any non-leaking tank. A manned entry will be made to the vault to fix the leak. If the leak occurs, the incidence will be logged in the operation logbook. The tank will be sampled before being transferred to other tanks on site depending upon the result of the test.

D-7B Operating Requirements for Containment Buildings

1. RHWF Operating Requirements

When operating at maximum capacity, the RHWF will operate 24 hours per day and seven days per week. The daily throughput will vary from 5 to 67 ft^3 (0.14 to 1.9 m^3) per day. Operations are monitored from within the operations aisle, which is manned during operations. Both audible and visual alarms warn operators in advance of conditions exceeding operating limits. The RHWF is equipped with remote viewing (video camera) capability to provide real-time recording of processing activities and to document container integrity.

The operation of the RHWF is governed by the *RHWF Integrated Run Plan* (WVNS-IRP-006). SOPs for operation of the RHWF are contained in the 313-series SOPs for the WVDP.

The WVDP will maintain a log of mixed wastes received and removed from the RHWF, which will become part of the WVDP RCRA Operating Record. Each waste component/container will be entered on the log. Upon receipt of the waste, the following information will be entered on the log or maintained on the generator's turn-in document.

- Log number (each container will be assigned a log number),
- Date of mixed waste receipt at the RHWF,
- Mixed waste origin, and
- Mixed waste description and classification.

The RHWF operations manager will direct the placement and removal of waste components from the transport vehicles to the Receiving Area. The RHWF supervisor ensures that only wastes meeting the specified criteria (i.e., height, weight, waste classification) are scheduled for treatment at the RHWF and that the unit does not exceed its handling capacity.

All waste streams are monitored prior to being approved for release from the RHWF through the Load Out Area. An in-situ object radiation monitoring system is installed in the Load Out Area to provide non-destructive assay of each container before it leaves the facility. Additionally, the RHWF will include a system to determine the exterior radiological contamination levels and dose rates of filled waste packages to ensure they meet requirements for transfer, on-site storage and transportation. All processed wastes are packaged and contained in appropriate and approved containers.

The controls and practices as established within the SOPs ensure containment of the primary wastes, secondary wastes,

radiological contaminants, chemical (hazardous) wastes, liquids, and fugitive dusts within the RHWF. Strict adherence to operating procedures combined with a rigorous inspection and maintenance program ensures that the unit is free of cracks, gaps, corrosion, or other deterioration that could cause hazardous waste to be released.

A certificate from an independent, New York State-registered PE stating that the building meets the containment building requirements of 6 NYCRR §373-2.30(b)(1 through 3) is maintained in the WVDP RCRA Operating Record.

2. Maintenance of the Building

Inspection and maintenance procedures are detailed in Section F of this permit application.

To facilitate routine maintenance operations, components that require routine maintenance are located outside the remote areas to the maximum extent possible. Mechanical and electrical systems are designed so that preventive, corrective, and predictive maintenance can take place on primary and backup power without compromising safety or environmental protection.

Throughout the active life of the RHWF, if a condition is revealed that has or could lead to a release of hazardous waste, the condition will be promptly repaired in accordance with the following procedures:

a. Upon detection of a condition that has lead to a release of hazardous waste (e.g., upon detection of leakage from the primary barrier) WVDP will:

- Enter a record of the discovery in the RCRA Operating Record
- Immediately cease process operations in the portion of the containment building affected the condition
- Determine what steps must be taken to repair the containment building, remove any leakage from the secondary collection system, and establish a schedule for accomplishing the cleanup and repairs
- Notify the Commissioner of the condition within seven days after the discovery of the condition, and provide written notice to the Commissioner with a description of the steps taken to repair the containment building, and provide a schedule for accomplishing the work within 14 working days.

b. The Commissioner will review the information submitted, make a determination regarding whether the containment building must be removed from service completely or partially until repairs and cleanup are complete, and notify the owner or operator of the determination and the underlying rationale in writing.

c. Upon completing all repairs and cleanup, the WVDP will notify the Commissioner in writing and provide a verification, signed by a qualified New York State-registered PE, that the repairs and cleanup have been completed according to the written plan submitted in accordance with the requirements of 6 NYCRR §373-2.30(b)(3)(iii)('a')('4').

d. Inspect and record in the operating record, at least once every 7 days, data gathered from monitoring equipment and leak detection equipment, as well as visual inspection data from the containment building and the area immediately surrounding the containment building to detect signs of releases of hazardous waste.

D-8 HAZARDOUS WASTE MUNITIONS AND EXPLOSIVE STORAGE

This permit section does not apply to the WVDP since it does not operate as a hazardous waste munitions and explosives storage facility.

SECTION D TABLES

TABLE D-1
SOIL-BEARING CAPACITY FOR CONTAINER STORAGE UNITS

LOCATION	BEARING CAPACITY AT 0.5 FT.[1]		N-VALUES	K=1+0.33 (D/B)	K=1+0.33(D/B) Depth(D) feet	Width(B) (feet)	Foundation Type
	MEYERHOFF'S "Q ALLOWABLE" (KSF)	BOWLES' "Q ALLOWABLE" (KSF)					
A&PC Hot Cells[2]	39.47	59.21	35	1.33	0.5	0.5	Piles
CPC-WSA	6.21	9.93	29	1.168	0.5	3.91	Gravel (grade)
CSRF CSRF	2.39 2.46	3.59 3.69	13 13	1.009 1.011	0.5 0.5	1.8 1.4	Shale-on-Grade Concrete
HIC Storage Area	2.71	4.06	13	1.21	0.5	7.7	Bitimuncus on Grade
HLWIS Facility	3.19	4.78	19	1.029	5	64	Concrete Mat at Depth
HWSLs	4.48	6.71	23	1.084	0.5	8	Steel on Grade
IWSF	1.94	2.90	11	1.004	0.5	34	Slab on-grade Concrete
LSB	4.64	6.96	27	1.002	0.5	60	Slab on-grade Concrete
LSA #1	4.62 6.48	6.94 10.36	27 27	1.009 1.042	0.5 0.5	55 3.91	Gravel (grade)
LSA #2	5.50	8.80	23	1.045	0.5	3.64	Gravel (grade)
LSA #3	1.93	2.30	9	1.002	0.5	88	Slab on-grade concrete
LSA #4	1.53	2.30	9	1.002	0.5	85	Slab on-grade Concrete
Vitrification Cell	3.19	4.78	19	1.029	5	64	Concrete Mat at Depth
RHWF	4.00	NA	NA	1.33	4	2	Office/RECEIVING area - spread/stripe
RHWF	3.00	NA	NA	1.13	4	9.5	Work Cell - Spread/Structural Mat
RHWF	2.50	NA	NA	1.19	10	16	Tank Room - Structural Slab

Notes:

Bowles' equation reflects the nonconservative case.
ksf : Kips per square foot, where 1 kip equals 1,000 pounds).
Meyerhoff's equation assumes one inch of associated settlement.
Q ; Soil-bearing capacity.
[1] Values of bearing capacity for the RHWF were taken directly from the following reference - Glynn Geotechnical Engineering, November 29th, 1999, Proposed Remote Handled Waste Facility, West Valley Demonstration Project, Geotechnical Investigation GGE99-1114
[2] The asterisk adjacent to the AP cell label is to identify the high loading capability of the piles beneath the plant. The bearing values indicated are for the soil at structure bottom beneath that portion of the WVNS main plant.

TABLE D-2
CONTAINER STACKING ARRANGEMENTS FOR EVALUATION OF LOAD BEARING AND STORAGE CAPACITIES

Container Storage Unit	Storage Container Used to Determine Capacity	Maximum Gross Weight of Storage Capacity (lbs)	Storage Area[1] (ft^2)	Floor/Pad Construction Material	Total Stacking Spaces	Stacking Arrangement
A&PC Hot Cells	500-mL Bottle	1.1	36	Concrete	504	9 rows, 2 bottles wide per row, 28 bottles long per row
CPC-WSA	B-25 Box	12,155	7,800	Gravel	508	23 rows, 5 boxes per row, 4 tiers of boxes and 3 rows, 4 boxes per row, 4 tiers of boxes
CSRF	S-70 Box	10,250	910	Concrete	18	4 rows, 5 boxes in 3 rows and 3 boxes in 1 row, 1 tier of boxes
HIC Storage Area	SUREPAK™	77,000	2,400	Gravel	8	2 rows, 4 SUREPAKs™
LAG Storage Building	B-25 Box	12,155	8,400	Concrete	520	26 rows, 5 boxes per row, 4 tiers of boxes
LSA #1	B-25 Box	12,155	10,505	Concrete and Gravel	450	50 rows, 3 boxes per row, 3 tiers of boxes
LSA #2 Hardstand	S-70 Box	10,250	19,275	Gravel	852	10 rows, 32 to 37 boxes per row, 2 tiers of boxes
LSA #3	B-25 and SR-144 Boxes	12,155 and 24,000	25,608	Concrete	1,500 and 60	33 rows, 5 B-25 boxes per row, 4 tiers of boxes; 21 rows, 10 B-25 boxes per row, 4 tiers of boxes; and 5 rows, 5 SR- 144 boxes per row, 2 tiers of boxes
LSA #4	B-25 Box	12,155	25,608	Concrete	1,840	28 rows, 5 boxes per row, 4 tiers of boxes and 35 rows, 10 boxes per row, 4 tiers of boxes
HLWIS Facility	S-70 Box	10,250	286	Concrete	32	4 rows, 2 boxes per row, 4 tiers of boxes
HWSLs	55-Gallon Drum	900	120	Steel	18	3 rows, 6 drums per row, 1 tier of drums
IWSF	55-Gallon Drum	900	1,156	Concrete	240	5 rows, 2 drums wide per row, 12 drums long per row, 2 tiers of drums
Vitrification Cell	S-70 Box	10,250	2,142	Concrete	34	6 rows, 2 to 8 boxes per row, 1 tier of boxes

Notes:

1. The storage capacities for each unit are presented in Table D-3.
2. The capacity for the HWSLs and IWSF were based on the volume occupied by the drums indicated.
3. Container storage unit capacities are calculated by the number of storage containers multiplied by the capacity of the container(s) multiplied by a conversion factor of 7.481 gallons per cubic foot.
4. S-70 boxes have a capacity of 70 cubic feet.
5. B-25 boxes have a capacity of 90 cubic feet.
6. SR-144 boxes have a capacity of 432 cubic feet.
7. 55-gallon drums have a capacity of 7.35 cubic feet.

TABLE D-3
6 NYCRR PART §373 CONTAINER STORAGE UNIT ENGINEERING DETAILS

CONTAINER STORAGE UNIT	DRAWINGS	USEABLE STORAGE AREA DIMENSIONS (L X W IN FT)	STORAGE CAPACITY[2] (GALLONS)	SECONDARY CONTAINMENT FEATURES	SECONDARY CONTAINMENT DIMENSIONS (L X W X H IN FEET)	TOTAL SECONDARY CONTAINMENT CAPACITY[3] (GALLONS)	EFFECTIVE SECONDARY CONTAINMENT CAPACITY-LESS CONTAINERS[4] (GALLONS)
CPC-WSA	DWG Nos. 900-D-6769 (sheets 1 & 2); 900-D-3540; 85110-C-0019	120 x 65	342,400	Compacted gravel pad	None Present	Not Applicable	Not Applicable
CSRF	DWG No. 900-D-1310 (sheets 1 & 2); 900-D-1314; 900-D-1315 (sheets 1 & 2); 900-D-1316; and 900-D-1546 (sheets 1 & 2)	18 x 26 and 15 X 14	9,430	Cutting Room floor and walls are stainless-steel-lined; remaining areas are epoxy-coated concrete floors and walls; lined with Herculite; no sump	13 x 26 x 18 and 15 x 14 x 18 (stainless-steel-lined)	14,004[5] 6,284[5] (80,288 total)	12,603 5,656 18,259 total)
HIC Storage Area	None available	40 x 60	7,480	None present	None Present	Not Applicable	Not Applicable
HWSL #1	HAZ-SAFE Buildings by Design - DWG No. 89-119	15 x 8	2,550	Built in spill containment basin designed for 10% of total locker volume.	Steel basin and alarmed sump	255	255
HWSL #2	HAZ-SAFE Buildings by Design - DWG No. 89-119	15 x 8	2,550	Built in spill containment basin designed for 10% of total locker volume.	Steel basin and alarmed sump	255	255
HWSL #3	HAZ-SAFE Buildings by Design - DWG No. 89-119	15 x 8	2,550	Built in spill containment basin designed for 10% of total locker volume.	Steel basin and alarmed sump	255	255
HWSL #4	HAZ-SAFE Buildings by Design - DWG No. 89-119	15 x 8	2,550	Built in spill containment basin designed for 10% of total locker volume.	Steel basin and alarmed sump	255	255
IWSF	DWG No. 900-D-312	34 x 34	29,290	34' x 34' x 8"; 8-inch berm; epoxy-coated floor; sump	34 x 34 x 0.67	5,794	5,215
LSA #1	DWG No. 900-D-7949 (sheets 1 & 2)	144 x 50[1]	302,980	None present	None Present	Not Applicable	Not Applicable
LSA #2 Hardstand	None available	275 x 75	446,305	None present	None Present	Not Applicable	Not Applicable
LSA #3	DWG Nos. AB-1; S-1; 9-2B (sheets 2, 3, & 4)	291 x 88	1,203,840	291' x 88' x 6"; 6-inch berm; epoxy-coated floor; no sump	289 x 86 x 0.5	92,966	83,670
LSA #4	DWG Nos. AB-2; AB-4; 900-D-6536 (sheets 1 & 2)	291 x 88	1,238,850	291' x 88' x 6"; 6-inch berm; epoxy-coated floor; no sump	289 x 86 x 0.5	92,966	83,670

TABLE D-3 *(concluded)*
6 NYCRR PART §373 CONTAINER STORAGE UNIT ENGINEERING DETAILS

CONTAINER STORAGE UNIT	DRAWINGS	USEABLE STORAGE AREA DIMENSIONS (L X W IN FT)	STORAGE CAPACITY[1] (GALLONS)	SECONDARY CONTAINMENT FEATURES	SECONDARY CONTAINMENT DIMENSIONS (L X W X H IN FEET)	TOTAL SECONDARY CONTAINMENT CAPACITY[3] (GALLONS)	EFFECTIVE SECONDARY CONTAINMENT CAPACITY-LESS CONTAINERS[4] (GALLONS)
LAG Storage Building	DWG Nos. 900-D-118, 900-D-1550	140 x 60	350,110	140' x 60' x 6" ; 6-inch berm; no sump; epoxy-coated floor; no sump	137 x 57 x 0.5	2,921	26,289
Vitrification Facility							
A&PC Hot	DWG Nos. 15A-M-55, 58, 60, 61, and 62	6 x 6	67/unit 335 total	6' x 6'; stainless-steel-lined floor to a height of 18 inches; drain	6 x 6 x 1.5	404/unit[5] 2,020 total	364/unit[5] 1,818 total
HLWIS Facility	DWG No. 905-D-031; 15A-M-18; 15A-M-19	22 x 13	16,760	93' x 22'; stainless-steel-lined floor and walls to a height of 18 inches	93 x 22 x 1.5	22,959	20,663
Vitrification Cell	DWG Nos. 905-D-030; DWG 905-D-126; DWG 900-D-2434; 905-D-127; 905-D-128	63 x 34	17,805	63' x 34'; stainless-steel-lined floor and walls to a height of 18 inches	63 x 34 x 1.5	24,036	21,633

Notes:

[1] The storage areas for this unit are less than the area (191 ft by 55 ft) of the entire unit.
[2] The total capacity of all units is 3,975,785 gallons, as reported in the RCRA Part A Permit.
[3] The secondary containment capacity has been calculated using the maximum (contiguous) volume of the storage area, which in cases is larger than the useable storage area. Unit conversion is 7.481 gal/ft^3.
[4] This calculation is 90% (approximation for container storage) of secondary containment capacity (except for HWSLs, which have separate spill containment basins).
[5] This calculation is based on one-tier stacking of S-70 box (approximately 4 feet in height).
[6] Each A&PC Hot Cell has a floor drain that conveys liquids to tank 7D-14 (capacity of 520 gal).

The soil-bearing capacity for soils required for construction of on-site structures is a minimum of 3,000 lbs/ft^2.

The concrete strength specified for new building construction is 4,000 psi. Historically, buildings were constructed using a minimum concrete strength of 3,000 psi (based on drawings referenced above).

Butyl caulk, or equivalent, is used in the expansion joints between concrete slabs in construction of the IWSF, LAG Building, LSA #3, and LSA #4.

TABLE D-4
TYPICAL STORAGE AND SHIPPING CONTAINERS USED AT THE WVDP

DESCRIPTION	EMPTY WEIGHT (LBS)	MAX INTERNAL VOLUME (FT^3)	DISPOSAL VOLUME (FT^3)	MAX GROSS WEIGHT (LBS)
1-gal poly	0.16	0.13368	0.14	20
2-liter wide mouth poly	0.205	0.08	0.087	15
20-gal. drum	30	2.8	2.93	250.8
30-gal. drum	38	4	4.3	530
5-gal. steel pail	5.5	0.72	0.85	100
5-gal. poly pail	5.5	0.72	0.85	100
55-gal. drum liner	17	7.09	7.35	660
55-gal. drum w/30 gal drum	88	7.35	7.5	930
55-gal. white (no liner)	60	7.35	7.5	900
55-gal. white w/poly liner	77	7.09	7.5	900
55-gal. black drum w/poly	67	7.09	7.5	900
87-Series box	660	87	101.1	5,660
B-12 container	500	44.1	55.2	6,500
B-25 box	655	90	103	12,155
B25 overpack	990	122	143	11,500
B25 overpack w/B-25 box	1,645	115	122	8,000
Curatek BRM-110 overpack	3,850	8.07	18.6	4,575
Ed Pak	6,500	37.5	64	10,000
EL-210 HIC	975	167.5	215.8	13,000
FRS debris baskets	15	2,041	2.5	500
FRS vacuum dry system box	420	36.6	38.1	6,000
FRSCT special boxes	5,295	650	858.6	20,000
HEC 30 gal	40	4	4.3	530
Intermodal	6,500	685.8	685.8	50,000
Intermodal IP1	7,200	686	686	67,200
Lift liner	44	258	258	24,000
PL-8-120-FEDX HIC	725	107.6	120.3	7,500
Roll off	6,000	860	1,008	70,000
S-144 type box	4,100	324	406.25	15,000
S-70 box	690	70	81	12,190
S-70 with S-70 liner	1,290	48	48.5	12,190
Sealand	7,000	296	1,162	67,200
SP-089, 090, 091	1,830	146	200	19,000
SP-099	2,753	340	365.75	9,000
SP-116, 117	2,305	180	253	6,000
SP-132, 133, 134, 135	1,460	69.86	74	12,960
SP-140 & 141	1,400	91.7	133.8	9,400
SP-145-150 (New)	3,215	613	760	10,000
SP-151-154 (New)	3,995	809	938	10,000
SP-155 (New)	2,195	182	261	10,000
SP-159	2,568	328.6	445	23,000
SP-160	3,922	423.3	547	24,000
SP-165	3,169	300	403.7	24,000
SP-166 thru SP-170	5,305	37.5	64	9,005
SR-144	2,930	425	432	18,800
Tanker	1,000	170	200	25,000
TC-132-TC151	860	90	96	6,000
TC-195/196 & TC-200-214	1,000	90.1	120.3	11,000
TC-197-199	5,440	80.2	120.3	11,000
TC-215-TC220&TC-229	10,250	64	128.8	12,500
TC-221-TC-228	6,900	84	141	9,000
TC-230-233, TC-240-245	5,455	90	150	9,455
TC-267-TC-274	1,350	80	124	6,000

TABLE D-5
TANKS INCLUDED IN 6 NYCRR §373-2 PERMIT APPLICATION

WASTE MANAGEMENT UNIT	TANK ID	TANK CONTENTS	TANK DESCRIPTION	TANK LOCATION	DRAWING NUMBER	TANK DIMENSIONS (L FT X D FT)	DESIGN CAPACITY (GALLONS)	CONSTRUCTION MATERIALS
Mixed Waste Process Tanks	8D-1	Liquid waste and spent zeolite	In-Ground Storage Tank	Waste Tank Farm	8A-Q-1	27 x 70	760,000	Carbon Steel Shell With Carbon Steel Girders and Columns
	8D-2	Formerly HLW (i.e., PUREX and THOREX); currently residual liquid wash from generation of SBW concentrates.	In-Ground Storage Tank	Waste Tank Farm	8A-Q-1	27 x 70	760,000	Carbon Steel Shell With Carbon Steel Girders and Columns
	8D-3	Formerly decontaminated liquid from STS; VF Closure distillates; currently decontamination liquids and wastes from RHWF	In-Ground Storage Tank	Waste Tank Farm	8B-D-4	15.8 x 12	15,000	A 240/TP 304L Stainless Steel
	8D-4	Formerly HLW (i.e., THOREX); currently mixed waste from decontamination	In-Ground Storage Tank	Waste Tank Farm	8B-D-4	15.8 x 12	15,000	A 240/TP 304L Stainless Steel
Supernatant Treatment System	C-001	Ion-exchange media (zeolite)	Ion-exchange column A	Tank 8D-1	900-C-966	13 x 3	900	304-L Stainless Steel
	C-002	Ion-exchange media (zeolite)	Ion-exchange column B	Tank 8D-1	900-C-967	13 x 3	900	304-L Stainless Steel
	C-003	Ion-exchange media (zeolite)	Ion-exchange column C	Tank 8D-1	900-C-968	13 x 3	900	304-L Stainless Steel
	C-004	Ion-exchange media (zeolite)	Ion-exchange column D	Tank 8D-1	900-C-969	13 x 3	900	304-L Stainless Steel
	50-D-001	Formerly HLW	Supernatant Feed Tank	Tank 8D-1	900-D-499	14.5 x 4.5	1,840	304-L Stainless Steel
	50-F-002	Formerly decontaminated HLW	Decontaminated Supernatant Post Filter	Tank 8D-1	900-C-1077	6 x 2	150	304-L Stainless Steel

TABLE D-5 *(concluded)*
TANKS INCLUDED IN 6 NYCRR §373-2 PERMIT APPLICATION

WASTE MANAGEMENT UNIT	TANK ID	TANK CONTENTS	TANK DESCRIPTION	TANK LOCATION	DRAWING NUMBER	TANK DIMENSIONS (L FT X D FT)	DESIGN CAPACITY (GALLONS)	CONSTRUCTION MATERIALS
Liquid Waste Treatment System (LWTS)	5D-15B	Evaporator Feed	Evaporator Feed Tank	UPC	5B-D-17	27.5 x 9.5	15,000	A 240/TP 304L Stainless Steel
	31017	Evaporator Liquids	Evaporator	XC-3	22-31017-1	14.5 x 4	1,380	SA 240/TP 304L Stainless Steel & Ti
	5D-15A1	Evaporator Bottoms (Concentrates)	Concentrate Tank	UPC	5B-D-11	18.5 x 9.5	10,000	A 240/22 304L Stainless Steel
	5D-15A2	Evaporator Bottoms (Concentrates)	Concentrate Tank	UPC	5B-D-11	9 x 9.5	5,000	A 240/22 304L Stainless Steel
	71-D-003	Distillate from zeolite ion exchange	Distillate Zeolite Ion Exchanger	XC-3	900-C-848	7 x 4	480	SA 312 304L Stainless Steel
Liquid Waste Treatment System (LWTS) *(concluded)*	71-D-005	Distillates	LWTS Distillate Surge Tank	XC-3	900-C-826	10.3 x 4	1,000	A 240 304L Stainless Steel
	3D-2	Plant sumps, EDR soaking pit, and tank 35104	Condensate Catch Tank	LWC	3B-D-2	8.5 x 4.5	1,000	SA 240/TP 304L Stainless Steel
	7D-2	Plant sumps, EDR soaking pit, and tank 35104	LLW Evaporator Feed Tank	LWC	7B-D-3	22 x 8	8,510	A 240/TP 2 304L Stainless Steel
	7D-14	Laboratory wastes	Hot Analytical Cell Drain Catch Tank	LWC	7B-D-13	7 x 3.5	520	Hastelloy "C" (B-334)
	13D-8	Plant sump wastes	Solvent Waste Hold Tank	LWC	13B-D-3	14.5 x 3.5	680	A 240/TP 304L Stainless Steel
Cement Solidification System (CSS)	70-D-001	LWTS evaporator concentrates	Waste Dispensing Vessel	CSS	900-C-520	8.5 x 4	500	SA 240/TP 304L Stainless Steel

Notes:

CFMT - Concentrator Feed Makeup Tank
EDR - Equipment Decontamination Room
LWC - Liquid Waste Cell
MFHT - Melter Feed Hold Tank
SBS - Submerged Bed Scrubber
STS - Supernatant Treatment System
UPC - Uranium Product Cell
VF - Vitrification Facility
XC-3 - Extraction Cell #3

TABLE D-6
SECONDARY CONTAINMENT FEATURES FOR PERMITTED TANKS

WASTE MANAGEMENT UNIT	TANK ID	TANK LOCATION	SECONDARY CONTAINMENT	SECONDARY CONTAINMENT DESCRIPTION	DRAWING NUMBER	SECONDARY CONTAINMENT CAPACITY (GALLONS)
Mixed Waste Process Tanks	8D-1 and 8D-2	Waste Tank Farm	Vault	Concrete vault (75.5' diameter by 32.5'H) with 27"-thick floors and 18"-thick walls, and 24"-thick roofs. Carbon steel pan under tanks equipped with liquid level indicator, recorder, alarm system, and transfer pump. Waterproof membrane applied to exterior vault walls, including base/floor.	8A-Q-1 8A-D-3 900-D-6746 900-D-7225 900-D-557 900-D-558	Approximately 1,100,000 (includes existing tanks)
	8D-3 and 8D-4	Waste Tank Farm	Vault	Concrete vault (32'L x 19'W x 23.3'H) with 2'-thick pad and 1.5'-thick walls. Stainless-steel (Grade 304L) vault pan extending 18 inches up the walls. Waterproof membrane applied to outside walls and pad of vault.	8A-Q-9 8A-M-2	Approximately 100,000 (includes existing tanks)
Liquid Waste Treatment System	5D-15B 5D-15A1 5D-15A2	UPC	Building	Concrete vault is approx. 46'L x 26.5'W x 12.8'H with a 15"-thick floor. Stainless-steel (Grade 340L) floor pan extending 18 inches up the walls. Remaining walls are coated with carbolene paint.	15A-A-162; 15A-Q-22; 15A-M-43	97,450 (11,420)
	71-D-003 71-D-005 31017	XC-3	Building	Concrete vault (21.3'L x 15'W x 57'H) with 3'-thick floor and north and south walls (east and west walls are 1.5' thick). Stainless-steel (Grade 340L) floor pan extends 18 inches up the walls. Remaining walls are coated with carbolene paint.	15A-M-30; 15A-Q-18; 15A-Q-19	135,850 (3,575)
	3D-2 and 7D-2 7D-14 13D-8	LWC	Building (Sealed)	"L" shaped area (N-S is 47.3' x 17' and E-W is 19' x 15.8' x 19.5'H). Reinforced concrete wall thickness ranges from 2.3' to 5.8'. Floor is 3'-thick. Stainless-steel (Grade 340L) floor pan extends 18 inches up the walls. Remaining walls are coated with carbolene paint.	15A-A-156; 15A-A-157; 15A-M-37; 15A-Q-20	157,625 (12,125)
Cement Solidification System	70-D-001	CSS	Building	Concrete vault is 14'L x 12.5'W. Stainless-steel (Grade 340L) floor pan extends 1.5' up the walls.	901-D-031;033; 034; 037; and 038	(1,960)

NOTES:

1. Secondary containment for the STS tanks identified in Table D-5 is provided by tank 8D-1.

2. Secondary containment capacities are calculated for the stainless-steel-lined floor and wall area, and the carboline painted surfaces. The capacity of the stainless-steel-lined areas is provided in parentheses.

TABLE D-7
SECONDARY CONTAINMENT SYSTEMS AND REGULATORY REQUIREMENTS

SECONDARY CONTAINMENT SYSTEM	TANK SYSTEM/ANCILLARY EQUIPMENT	REGULATORY CITATION
Tank 8D-1 and Tank 8D-2 Vaults	Reinforced concrete vault designed as a self-supporting underground structure capable of supporting the weight of the tanks, the tank contents (including releases), and the ancillary equipment. Vault exterior coated with waterproofing/waterstop.	6 NYCRR 373-2.10(d)(1),(3), (4), and (5)
	In the event of either tank failing, the individual vaults can contain 100% of the volume of each tank.	6 NYCRR 373-2.10(d)(5)
	The concrete vault, hydrostatic pressure maintained by the dewatering well, and the wet silty till provide additional hydraulic control for tanks 8D-1 and 8D-2.	6 NYCRR 373-2.10(d)(2)and (5)
	Tank rests on a steel pan within vault that is equipped with a liquid level indicator, a recorder, and an alarm system. A transfer pump in the pan allows for the removal of accumulated liquids in the pan. The vaults have a sump equipped with a liquid level indicator (alarmed) and is read and recorded twice a day. If liquids are detected in the vault, a liquid sample would be obtained and analyzed for radiological contamination. Increases in radiation levels would be an early indicator that a release may have occurred.	6 NYCRR 373-2.10(d)(2)
	The groundwater outside the vault can be monitored for radioactivity to detect any migration.	6 NYCRR 373-2.10(d)(2)
Tanks 8D-3 and 8D-4 Vault	The reinforced concrete-stainless-steel-liner construction is chemically compatible with the HLW; the vault is a self-supporting underground structure capable of withstanding external pressure gradients and supporting the tanks, ancillary equipment, and waste without failure. Vault exterior coated with waterproofing/waterstop.	6 NYCRR 373-2.10(d)(1), (3), (4), and (5)
	Should tanks 8D-3 and 8D-4 fail simultaneously, the vault is capable of retaining the maximum operating volume of waste.	6 NYCRR 373-2.10(d)(5)
	The vault system was designed to prevent the infiltration of water or runoff. A stainless-steel liner in the bottom of the vault extends 18 inches (46 cm) up the side walls. A sump in the vault's floor is equipped with a steam jet to transfer accumulated liquids. An air-bubbler level probe monitors the liquid level in the sump.	6 NYCRR 373-2.10(d)(2), (3), and (5)
Tank 8D-2; G-001 Pump Pit	The stainless-steel-lined pump pit on the tank 8D-2 vault contains the pump motor and discharge piping. This pit liner drains into tank 8D-2 and is equipped with a conductivity probe moisture detector and radiation detectors (alarmed to the STS Building). An SOP for the pump included shut down of the pump if a moisture detector alarmed.	6 NYCRR 373-2.10(d)(2)and (3)

TABLE D-7 *(continued)*
SECONDARY CONTAINMENT SYSTEMS AND REGULATORY REQUIREMENTS

SECONDARY CONTAINMENT SYSTEM	TANK SYSTEM/ANCILLARY EQUIPMENT	REGULATORY CITATION
Tank 8D-2; G-001 Pump Pit to STS	Four 2½-inch, stainless-steel process pipes; three of which have independent 4-inch (10-cm), stainless-steel jackets. The valved pipes are inside a valved, 20-inch (51-cm), stainless-steel pipe filled with pea gravel and sloped to tank 8D-2 for draining. Lines are equipped with redundant conductivity probe moisture detectors.	6 NYCRR 373-2.10(d)(6)
Tank 8D-1 to STS via Concrete Vault Pipeway	This concrete vault pipeway is coated with epoxy, supported by the vault, and has water seals in the joint connections with the vault. The top of the vault is coated with epoxy to provide a barrier to potential leaks. A floor drain is present to direct leaks back to tank 8D-1. Leaks from the pipes in the vault pipeway would have been detected during the routine recirculation of the STS. The vault pipeway serves as secondary containment for the welded stainless-steel transfer lines that traverse its cavity.	6 NYCRR 373-2.10(d)(3), (5), and (6)
Tank 8D-3; G-007 Pump Pit	The three stainless-steel process lines between tank 8D-3 and the STS are jacketed and compatible with the HLW; the 18-inch and 4-inch jacketing lines provide secondary containment and structural stability to protect the process lines from pressure gradients. Leak detection and drainage from these lines is provided by the pump pit drain line moisture detector or the tank 8D-3 sump level indicator. These lines slope toward tank 8D-3.	6 NYCRR 373-2.10(d)(2), (3), and (6)
8D-3 to STS through G-007 Pump Pit	18-inch (46-cm) containment pipe for process lines drains into tank 8D-3. A moisture detector in the drain line and containment pipe alarms in the STS Control Room. 4-inch (10-cm) containment pipes jacketing the two process lines after they branch out of the 18-inch (46-cm) pipe or in the pit drain line would collect in the drip pan inside the vault. Leakage inside the pump pit would be detected by a moisture detector and collect in the pit for draining to tank 8D-3 by deflating a drain plug in the pit's drain line.	6 NYCRR 373-2.10(d)(2) and (6)
8D-3 to LWTS via VIT Off-Gas Trench	Stainless-steel waste transfer pipe and its companion spare pipe are contained in a sealed FRP pipe encased in concrete for additional support and mechanical protection. The FRP pipe is equipped with a capacitance-type moisture detector that alarms in the STS control room. A riser pipe in the FRP pipe allows for removal of liquids.	6 NYCRR 373-2.10(d)(2), (3), and (6)
Transfer Piping from HLW Tanks to STS	Three transfer lines have independent 4-inch (10-cm), stainless-steel jackets. The three jacketed pipes and the one single line contained within a common 20-inch (51-cm), stainless-steel pipe.	6 NYCRR 373-2.10(d)(2), (3), and (6)
Pump Pit G-001 (8D-2)	Stainless-steel pit liner is seal welded to the riser pipe from tank 8D-2 and drains back into the tank. The pit is equipped with a conductivity probe moisture detector.	6 NYCRR 373-2.10(d)(2), (3), and (6)
Tank 8D-1 vault pipeway	The vault pipeway serves as secondary containment for all of the welded stainless-steel transfer lines that traverse its cavity.	6 NYCRR 373-2.10(d)(2), (3), and (6)
STS Backwall Pipeway	The backwall pipeway has an epoxy-coated floor and sump to collect liquids. This sump connects with the valve aisle sump that has level detectors and a transfer pump.	6 NYCRR 373-2.10(d)(2), (3), and (6)

TABLE D-7 *(continued)*
SECONDARY CONTAINMENT SYSTEMS AND REGULATORY REQUIREMENTS

SECONDARY CONTAINMENT SYSTEM	TANK SYSTEM/ANCILLARY EQUIPMENT	REGULATORY CITATION
STS Valve Aisle	The valve aisle floor and walls are lined with stainless steel to an approximate height of 12 inches (30 cm). A sump with level detectors and a transfer pump was used to pump liquids to tank 8D-2.	6 NYCRR 373-2.10(d)(2), (3), and (6)
STS to Vitrification Off-Gas Trench	FRP is compatible with the waste.	6 NYCRR 373-2.10(d)(5)
Vitrification Off-Gas Trench	Reinforced-concrete off-gas trench has external water sealant coating and lays in a gravel interceptor drain to convey runoff from the trench. The trench provides the necessary structural support to ensure that pressure gradients do not cause failure of the pipe.	6 NYCRR 373-2.10(d)(2), (3), (5), and (6)
P-01 Pump Pit @ Off-Gas Trench	Pump supply and return transfer lines between the trench and the pump pit are encased in an outer stainless-steel containment pipe and slope toward pump pit. Containment pipe is equipped with a drain pipe to the pump pit that is monitored with liquid level detection equipment. Single-walled piping is present in the 10-inch-thick (25-cm) reinforced concrete pump pit. The pit is also furnished with a low-point drain that slopes to the adjacent GCR extension drain tank vault. This vault is equipped with a sump capable of being pumped to a catch tank, if necessary. All pit and vault joints are elastomeric expansion joints and are furnished with moisture barriers.	6 NYCRR 373-2.10(d)(2), (3), (5), and (6)
01-14/WDC	Leak detection is provided by drains to the sumps at each end, and continuous level indication is provided for both sumps.	6 NYCRR 373-2.10(d)(6)
XC-3, PPC, UPC, and ULO	The XC-3, PPC, and UPC cells function as vaults for the tanks. The floors and walls are constructed with 18-inch-high (46-cm) welded stainless-steel liners and are coated with epoxy above the 18-inch (46-cm) height. The cells are also equipped with sumps, sump level indicators, and high-level alarms for the LWTS process tanks, piping, and ancillary equipment. The cells are capable of holding more than 100% of the equilibrium volume of the waste tanks and vessels. As part of the Process Building, the cells are not subject to run on infiltration. Precipitation that occasionally enters the cells through the roof hatches and other sources is removed quickly from sumps. The stainless-steel liners and the aboveground construction of the building precludes the need for chemical resistant water stops at joints or exterior moisture barriers.	6 NYCRR 373-2.10(d)(2 through 6)
ULO Pump Room	The ULO pump room is constructed of poured concrete floor with an epoxy coating and block wall. The ULO pump room is furnished with a sump and level detection instrumentation. Routine inspection are performed by operators. Single-walled piping system and pumps in the ULO Pump Room are visually inspected on a daily basis. The ULO is equipped with a continuous air monitor which provides a continuous indication of airborne contamination levels in the area.	6 NYCRR 373-2.10(d)(2), (3), (5), and (6)

TABLE D-7 *(concluded)*
SECONDARY CONTAINMENT SYSTEMS AND REGULATORY REQUIREMENTS

SECONDARY CONTAINMENT SYSTEM	TANK SYSTEM/ANCILLARY EQUIPMENT	REGULATORY CITATION
Lower Warm Aisle Pump Niche	The LWA Pump Niche penetrations from XC-3 utilize single-wall piping through sleeves in the concrete walls. The niche is fully lined with welded stainless steel, is connected to XC-3 for ventilation, and is equipped with a drain routed to the XC-3 sump. Removable reinforced concrete hatch covers provide access to the niche for maintenance. The niche area is equipped with a continuous air monitor (CAM) set to alarm in the event of a leak and resulting airborne contamination.	6 NYCRR 373-2.10(d)(2), (3), (5), and (6)
01-14 Building Waste Dispensing Cell	The WDC acts as a vault for the Waste Dispensing Vessel. Walls of the WDC are 20-inch (51 cm) thick concrete and coated with epoxy. The cell is constructed with an 18-inch high, welded stainless-steel liner, which can contain the entire contents of the Waste Dispensing Vessel. The WDC has a sump which is equipped with continuous bubbler-type level indicating instruments a high-level alarm, and a steam jet for liquid removal.	6 NYCRR 373-2.10(d)(2 through 6)
01-14 Building Process Cell	The Process Cell walls are 20-inch (51-cm)-thick concrete. The floor is poured concrete, at least 9 inches (23 cm) thick, epoxy-coated, and sloped to a sump. The sump is lined with hand lay-up fiberglass. The sump is equipped with continuous level indication instrumentation and a high-level alarm. The Waste Dispensing Pump is equipped with a double internal mechanical seal furnished with an external source of clean water. The pump was inspected daily by personnel entry during solidification operations and can also be inspected by camera. Radiological conditions are monitored by a CAM, providing a continuous record of any airborne contaminants.	6 NYCRR 373-2.10(d)(2), (3), (5), and (6)
SMS	All transfer and secondary containment piping stainless steel, valved and sloped to drain accumulated liquid, interstitial space has leak detection, and piping rests within a concrete transfer trench that is coated with a waterstop to prevent infiltration.	6 NYCRR 373-2.10(d)(2), (3), (5), and (6)

SECTION D FIGURES

FIGURE D-1
VITRIFICATION PROCESS AND INTEGRATED RADIOACTIVE WASTE TREATMENT SYSTEM (IRTS) GENERALIZED PROCESS FLOW DIAGRAM

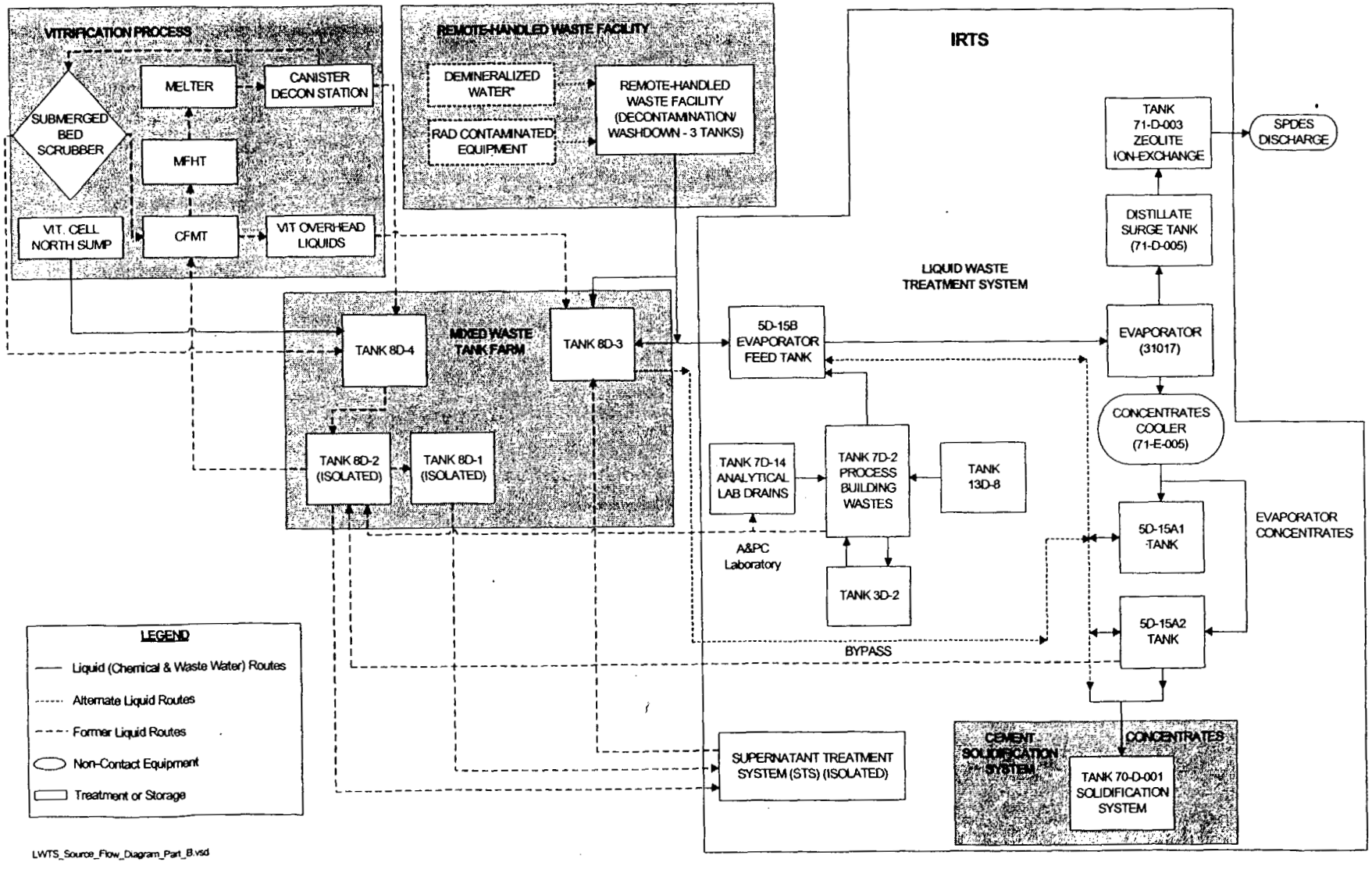
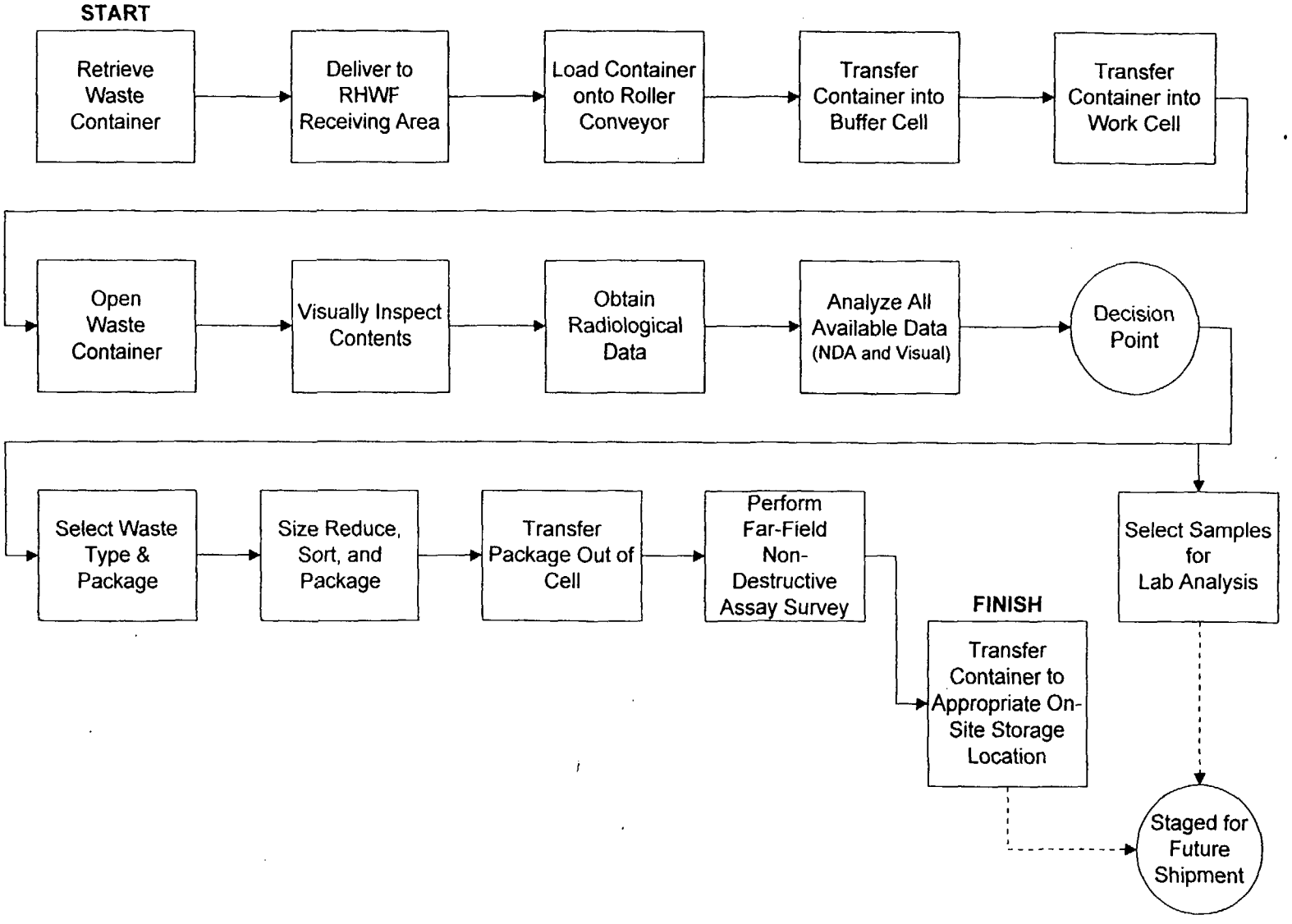


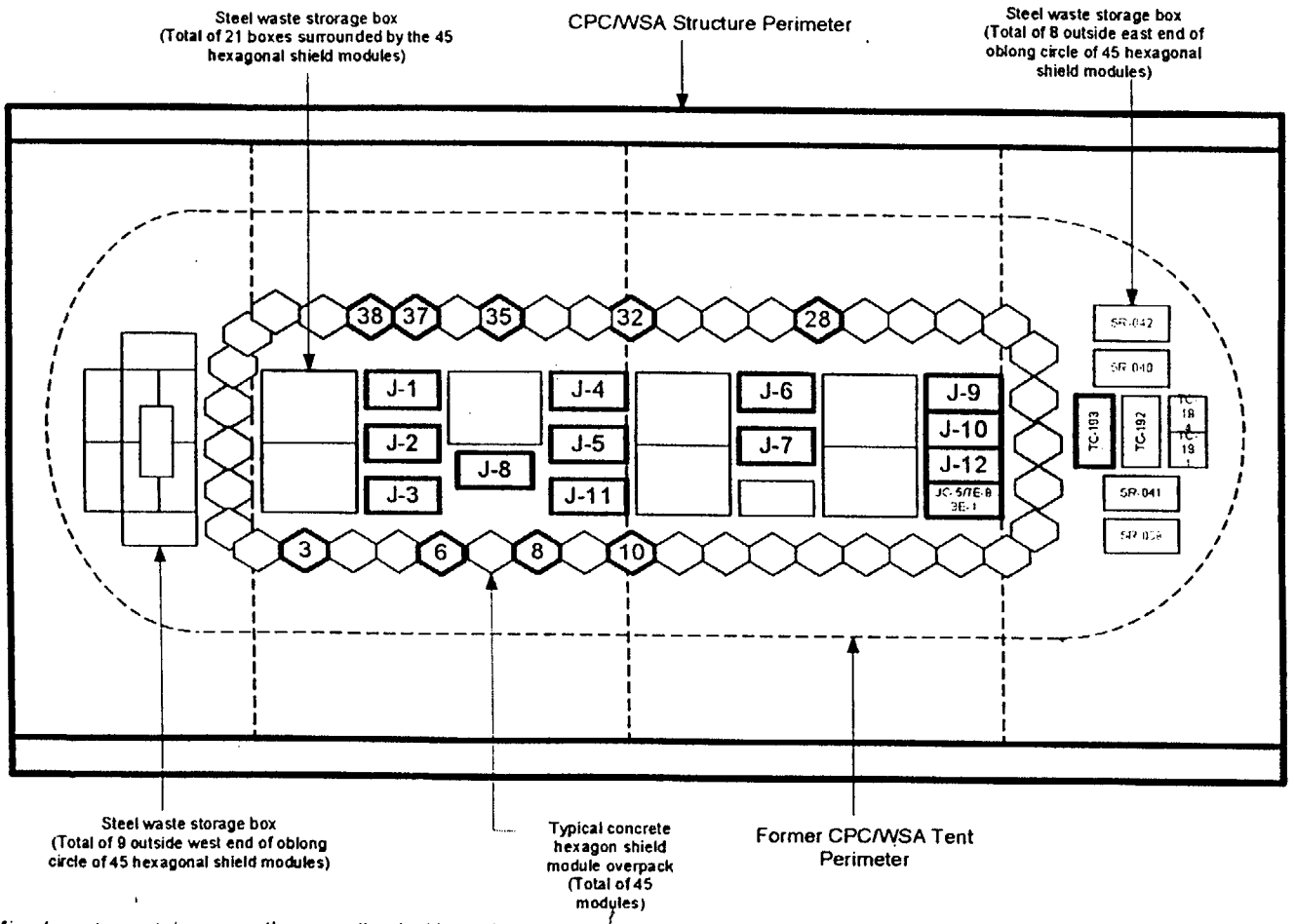
FIGURE D-2
RHWF PROCESS FLOW PATH (GENERAL)



APPENDIX D-1

CPC-WSA DESIGN DRAWINGS
(5 DRAWINGS)

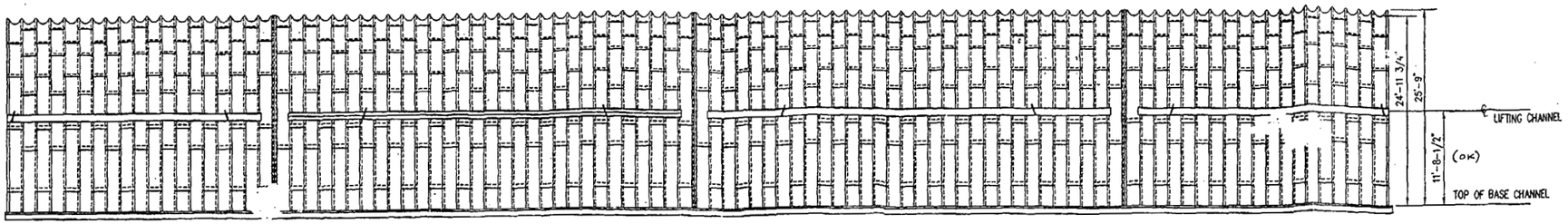
CPC/WSA LAYOUT



NOTE *1. Mixed waste containers are those outlined with a thick line (i.e., Boxes J-1, J-2, J-3, J-4, J-5, J-6, J-7, J-8, J-9, J-10, J-11, J-12, JC-5/7E-8/3E-1 and TC-193; and Superpaks 3, 6. 8, 10, 28, 32, 35, 37, and 38).*

2. This figure is taken from SOP 09-24. Chemical Process Cell Waste Storage Area and LAG Storage Inspection.

CHANGES PRIOR TO EACH USE.
INIT_____ DATE_____



NORTH ELEVATION

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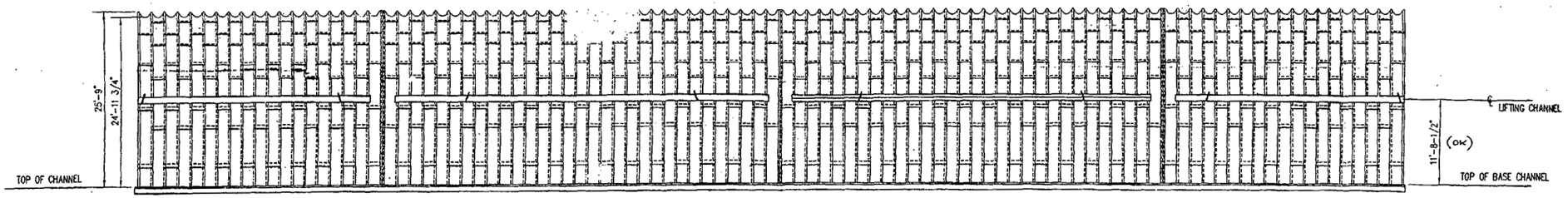

SOUTH ELEVATION

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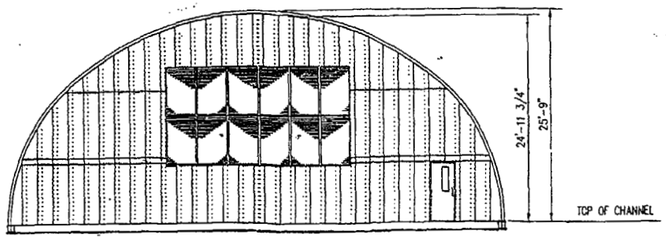
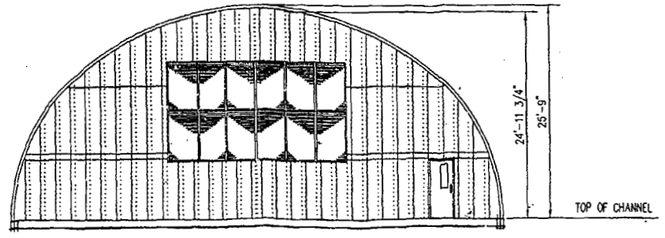


WEST ELEVATION

1/8"=1'-0"



EAST ELEVATION

1/8"=1'-0"

BUTLER CONSTRUCTION CO.
APPROVED
BY: [signature] DATE: 12/31/96

P.O. NO. 19-85110-C-DO
AR NO. 0024 H
SHEET 15 OF 60

AS-BUILT

REV.NO	BY	DESCRIPTION	DATE
0	mt	ER3864	3/7/97
2	OA	GENERAL	09-04-96
1	HL	GENERAL	07-30-96

Project Drawing No. 85110-C-0019 Rev. C

ELEVATIONS

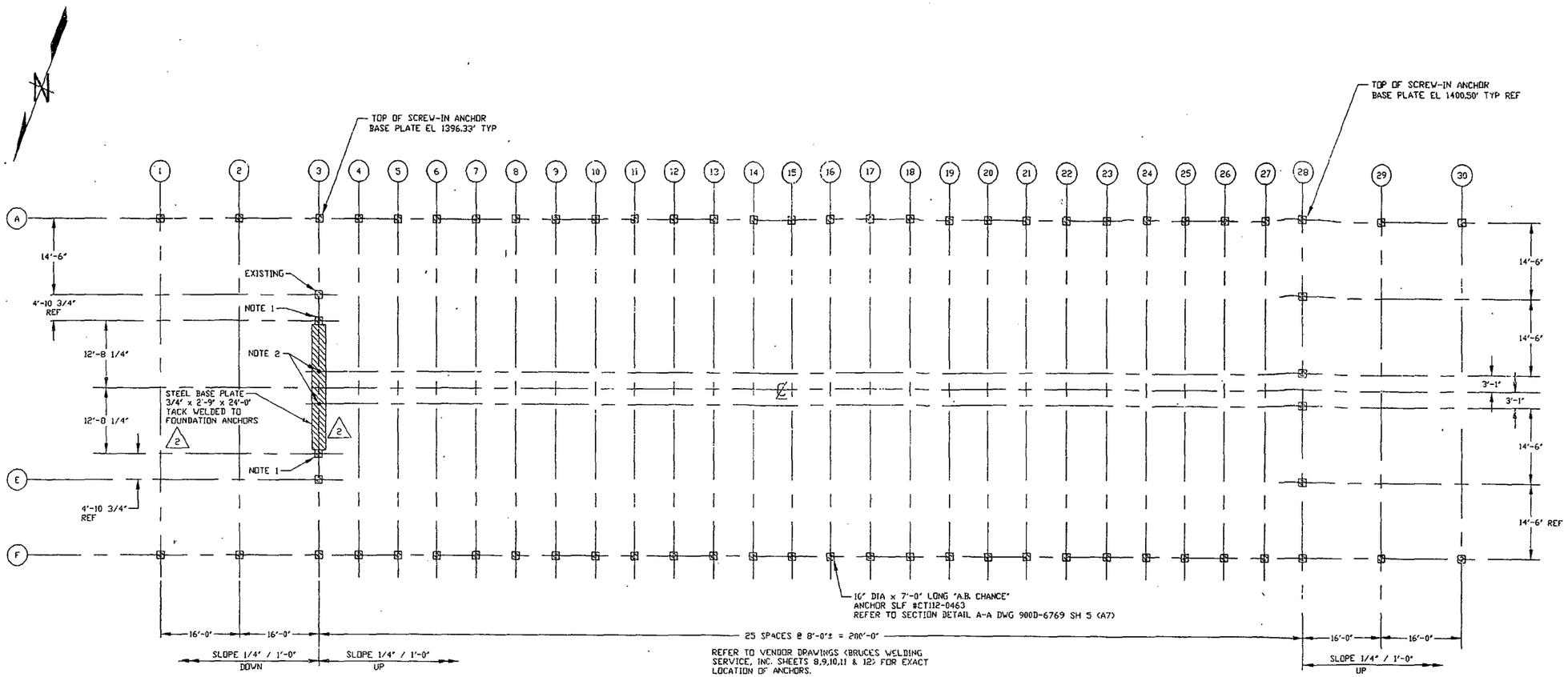
APPLIED DESIGN

WEST VALLEY NUCLEAR-SERVICES CO., INC.
WEST VALLEY, NY
ARCH TECHNOLOGY CORPORATION
.11N024 RIPPLBURGER RD, P.O.BOX 6 PLATO C.IL.60170

APPLIED DESIGN ASSOCIATES, LTD.
ARCHITECTS INTERIOR DESIGNERS ENGINEERS
200 E. EVERGREEN AVE(847)259-7528 MT. PROSPECT IL 60056

DRAWN BY: C T
CHECKED BY: FAT
DATE: 07-09-96
SCALE: 1/8" = 1'-0"
JOB NO: AE 960607
SHEET 6 OF 24
A6

CHANGES PRIOR TO EACH USE.
INIT_____ DATE_____



REFER TO VENDOR DRAWINGS (BRUCES WELDING SERVICE, INC. SHEETS 8,9,10,11 & 12) FOR EXACT LOCATION OF ANCHORS.

REFERENCE DRAWINGS:

900D-3541 SH1 CPC-WSA, ENCLOSURE ELEVATIONS-EAST END WALL
900D-3542 SH1 CPC-WSA, MODIFICATIONS FOR DOOR INSTALLATION, SECTIONS & DETAILS
900D-3542 SH2 CPC-WSA, MODIFICATIONS FOR DOOR INSTALLATION, SECTIONS & DETAILS
900D-6769 SH1 CPC-WSA, ENCLOSURE REPLACEMENT, INSTALLATION FOUNDATION PLAN

NOTE:

1 SCREW-IN ANCHORS INSTALLED TO ALLOW INSTALLATION OF OVERHEAD DOOR
2 ABANDONED SCREW-IN ANCHOR

REVISIONS

REV	DESCRIPTION	APVD
0	ER4527 9/19/2000	CCG
1	WSA-001 BP 10/25/2000	HAB
2	WSA-004 CAM 11/7/2000	[illegible]

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS IN INCHES

FILE NAME 3540D001
PLOT SCALE 1=128.00
D SPEC # 3679
NEXT ASSEMBLY

DRAFTER M. CAPRIO DATE 5/31/2000
CHECKER J. HENRY DATE 9/19/2000
ENGINEER W. COYER DATE 9/19/2000

Westinghouse
Government Services Group
WEST VALLEY NUCLEAR SERVICES CO.
WEST VALLEY N.Y.

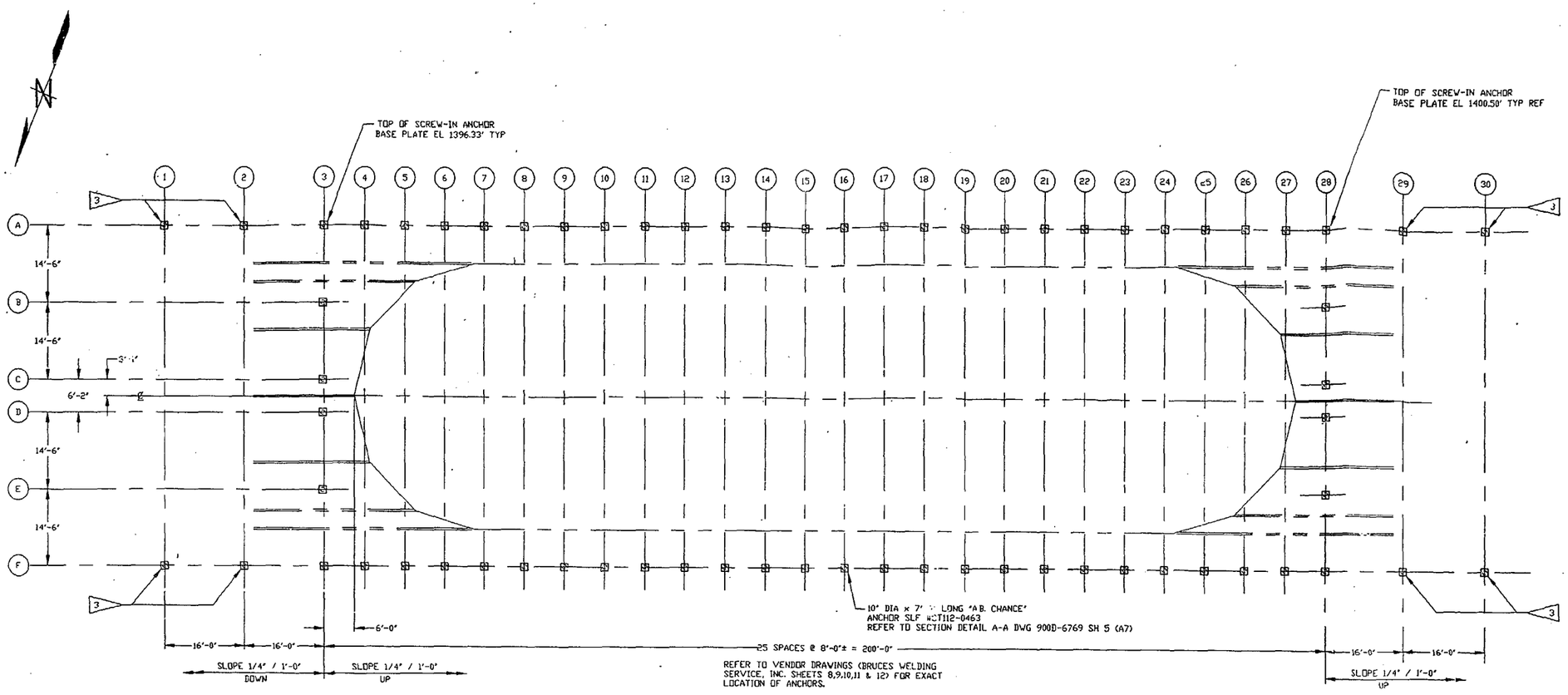
CPC-WSA
ENCLOSURE
FOUNDATION PLAN

DATABASE LINKED DRAWING. SEE ENGINEERING RELEASE
DWG SIZE
SCALE 3/32"=1'-0"
WEIGHT
DWG # 900D-3540
REV 2

D DRAWING-DO NOT
/ISE THIS ORIGINAL

08 08:10:23 2000 HAB

CHANGES PRIOR TO EACH USE.
INIT _____ DATE _____



REFER TO VENDOR DRAWINGS (BRUCES WELDING SERVICE, INC. SHEETS 8,9,10,11 & 12) FOR EXACT LOCATION OF ANCHORS.

⚠4 SUPERSEDED BY 900D-3540 SH1
ECN 12887 JHS 11/20/2000.

3 USE A BEAM CLAMP TO MOUNT A FIBERGLASS FOUR FOOT LONG CORD WITH A YELLOW OR RED FLAG, 18" LONG MOUNTED AT THE TOP

2 FABRICATION OF ALL STRUCTURAL STEEL TO BE PER AISC CODE REQUIREMENTS

1 TOP OF SCREW-IN ANCHOR BASE PLATES TO BE IN-LINE FROM END TO END, WITH A 1/4" PER 1'-0" SLOPE USING ELEVATION GIVEN

NOTE:

REVISIONS				
REV	DESCRIPTION		APVD	
0	ER 3637	2/29/96	JRH	
1	FCN CPC-001 BP	06/24/96	HAB	
2	FCN CPC-024 BP	12/18/96	HAB	
3	ECN 10650 DCL 4/23/97		DRS	
4	ECN 12887 JHS	11/20/2000		

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS IN INCHES
TOLERANCES: 2PL DEC ± N/A; 3PL DEC ± N/A; DO NOT SCALE DRAWING
FRACTS ± N/A; ANGLES ± N/A; FINISH N/A
FILE NAME 6769D001
PLOT SCALE 1=128.00
D SPEC NO. 2718
NEXT ASSEMBLY

DRAWER L. PARIS DATE 12/15/95
ENGINEER H. BARKER DATE 2/16/96
ENGINEER J. SPARSHOTT DATE 2/16/96

A/E CONTRACT NO. CODE IDENT NO.

FOR WEST VALLEY NUCLEAR SERVICES CO.
WEST VALLEY N.Y.

CPC-WSA
ENCLOSURE REPLACEMENT
INSTALLATION FOUNDATION PLAN

SEE ENGINEERING RELEASE FORM (ER) FOR DRAWING APPROVAL SIGNATURES.

DWG SIZE D
SCALE 3/32"=1'-0"
DWG NO. 900D-6769
REV 4
WEIGHT
A/E DWG NO.
SHEET 1 OF 8

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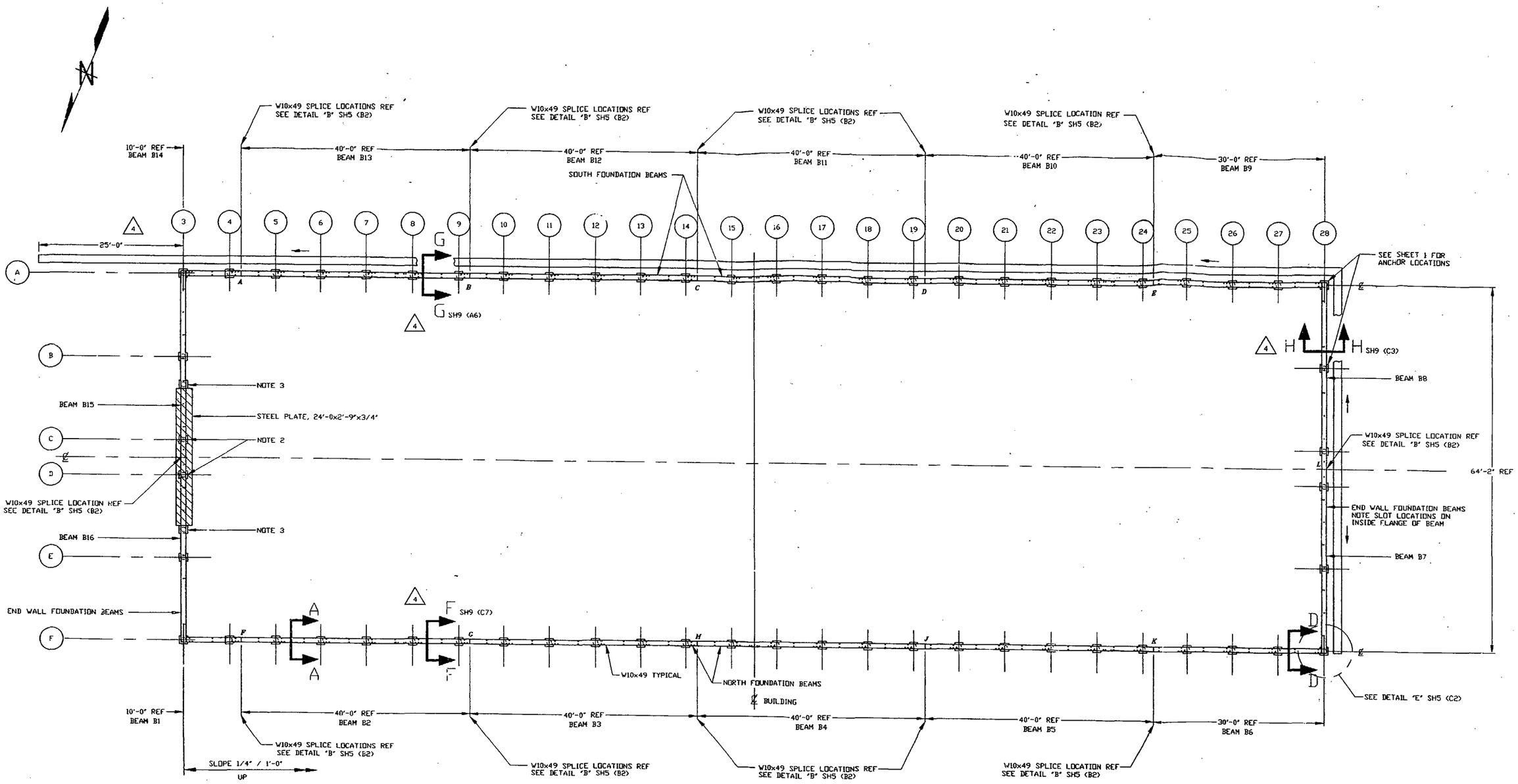

REFERENCE DRAWING:

900D-3540 SH1 CPC-WSA, ENCLOSURE FOUNDATION PLAN

NOTES:

1 REFER TO VENDOR DWG (BRUCE WELDING SERVICE, INC SHEET 5) FOR BEAM LAYOUT.

2 ABANDONED ANCHOR

3 ANCHOR INSTALLED FOR DOOR MODIFICATION

REVISIONS				APVD
REV	DESCRIPTION			
0	ECR 3637	2/29/96	JRH	JRH
1	FCN CPC-001	06/24/98	HAB	HAB
2	ECN 10650 DLL	4/23/97	DRS	DRS
3	ECN 12887 JHS	11/20/2002	JLH	JLH
4	ECN 13481 LP	08/30/2002	HAB	HAB

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT _____ DATE _____

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS IN INCHES
TOLERANCES
2PL DEC ± N/A | 3PL DEC ± N/A
FRACTS ± N/A | ANGLES ± N/A | FINISH N/A
DO NOT SCALE DRAWING
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PLOT SCALE 1=96.00
D SPEC NO. 2718
NEXT ASSEMBLY

DRAFTER D. KUREK DATE 2/7/96
CHECKER H. BARKER DATE 2/16/96
ENGINEER J. SPARSHOTT DATE 2/16/96

SEE ENGINEERING RELEASE FORM (ER) FOR DRAWING APPROVAL SIGNATURES.

A/E CONTRACT NO. CODE IDENT NO.

FOR
WEST VALLEY NUCLEAR SERVICES CO., INC.
WEST VALLEY N.Y.

CPC-WSA ENCLOSURE REPLACEMENT STRUCTURAL FOUNDATION PLAN

DWG SIZE D | SCALE 1/8"=1'-0" | WEIGHT | A/E DWG NO. | DWG NO. 900D-6769 | REV 4 | SHEET 2 OF

CAD DRAWING-DO NOT REVISE THIS ORIGINAL

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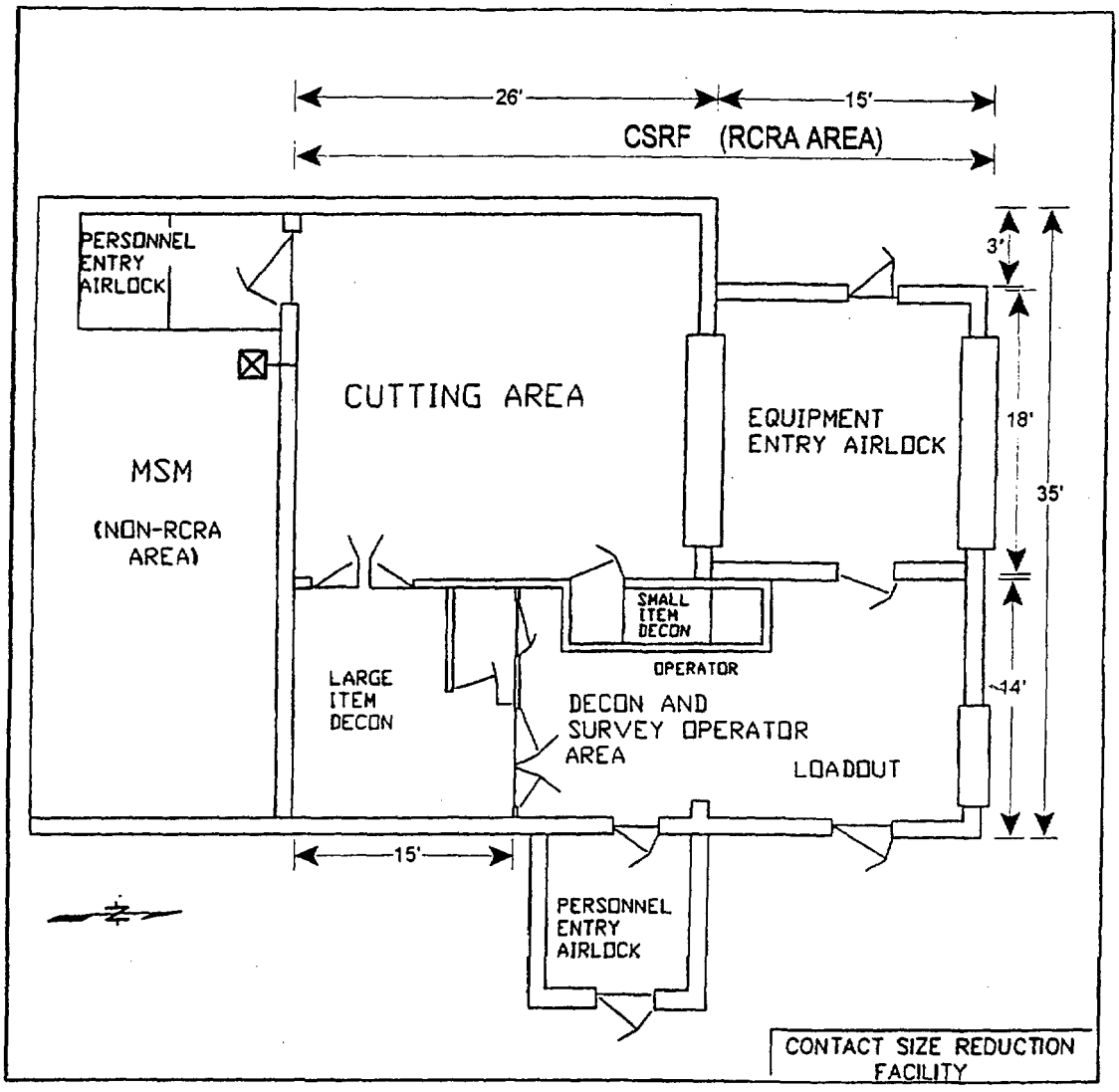
APPENDIX D-2

CSRF DESIGN DRAWINGS
(9 DRAWINGS)

CONTACT SIZE-REDUCTION FACILITY



REVISIONS					
ZONE	REV	DESCRIPTION	BY	DATE	APPROVED
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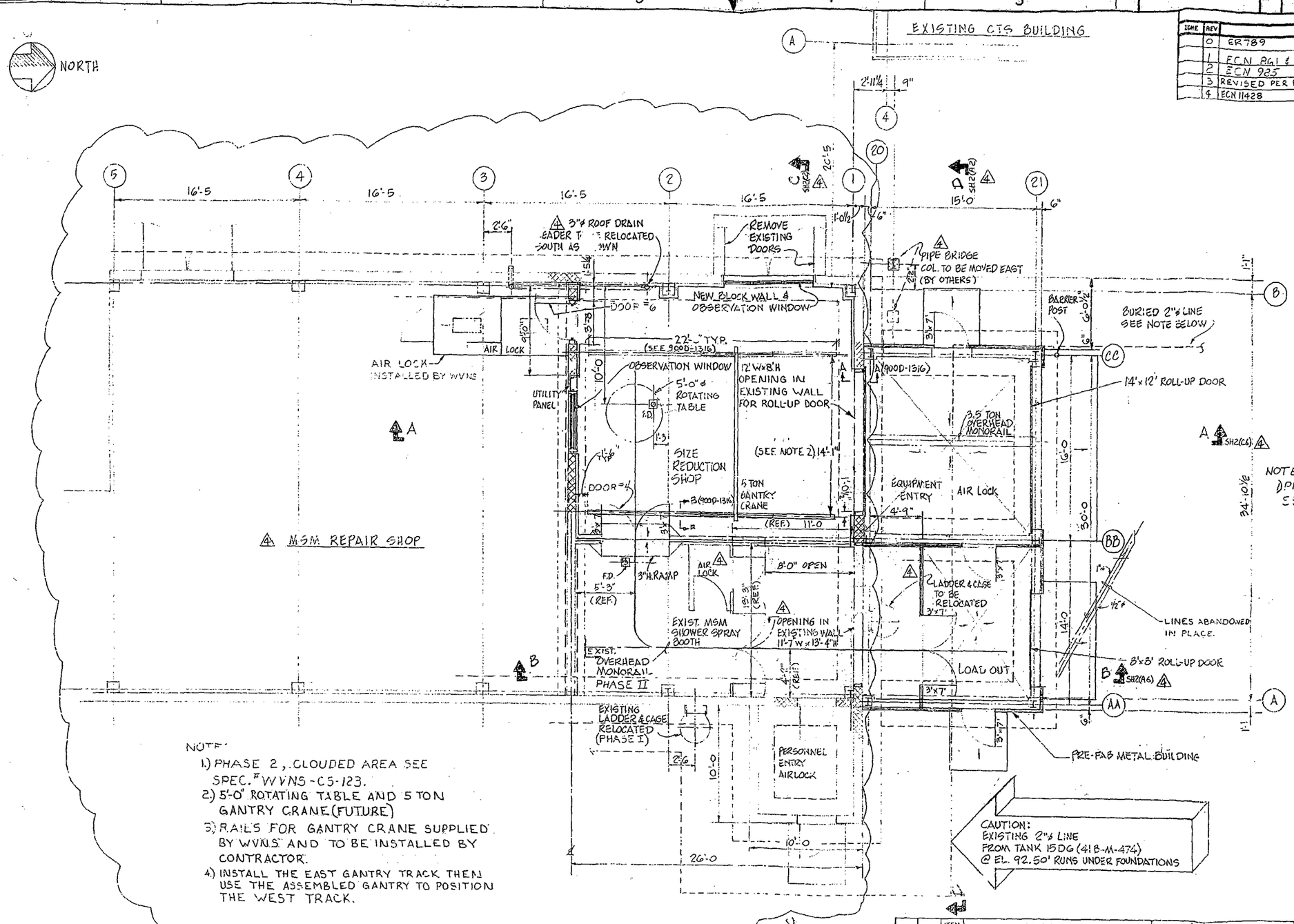
	1	ECN 861 & ECN 887		[illegible]	[illegible]
	2	ECN 925		9/7/86	[illegible]
	3	REVISED PER ECN 1303		12/31/86	LRP LRB
	4	ECN 11428	MJC	10/7/98	HB



NOTES:
1) PHASE 1, UNCLOUDED AREA SEE SPEC. # WVNS CS-131.

NOTE:
1.) PHASE 2, CLOUDED AREA SEE SPEC. # WVNS-CS-123.
2.) 5'-0" ROTATING TABLE AND 5 TON GANTRY CRANE (FUTURE)
3.) RAILS FOR GANTRY CRANE SUPPLIED BY WVNS AND TO BE INSTALLED BY CONTRACTOR.
4.) INSTALL THE EAST GANTRY TRACK THEN USE THE ASSEMBLED GANTRY TO POSITION THE WEST TRACK.

QTY. REQD.	SYM	ITEM NO.	NOMENCLATURE OR DESCRIPTION	CODE IDENT. NO.	PART OR IDENTIFYING NO.	MATERIAL	SPECIFICATION	ZONE

PARTS LIST

INDEX CODE NUMBER				UNLESS OTHERWISE SPECIFIED	CONTRACT NO.		A/E CONTRACT NO.	CODE IDENT NO.
AREA	DWG. TYPE	CL.	ORIG.		DFTSPN. GACA	DATE OF DWG. 6/6/86	FOR West Valley Nuclear Services Co., Inc. West Valley, New York	
138	06		01	TOLERANCES - DO NOT SCALE	CHECKER P. Kranz	DFTG. SUPVR. [illegible]		
SPEC CODE				2PL DEC ± / 3PL DEC ± / ANGLES ± / FRACTIONS ±	DESIGN [illegible]	ENGR. P. Kranz	MSM DECONTAMINATION GENERAL ARRANGEMENT PLAN	
					FACILITIES [illegible]	[illegible]	DWG. SIZE D	SCALE 1/4" = 1'-0" WEIGHT A/E DWG NO.
					ENGR. [illegible]	[illegible]	DWG NO. 900D-1310	REV 4
							SHEET 1 OF 2	

10/18/04 11:28:43 AM PERRO

INIT. DATE

DWG NO. SH

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
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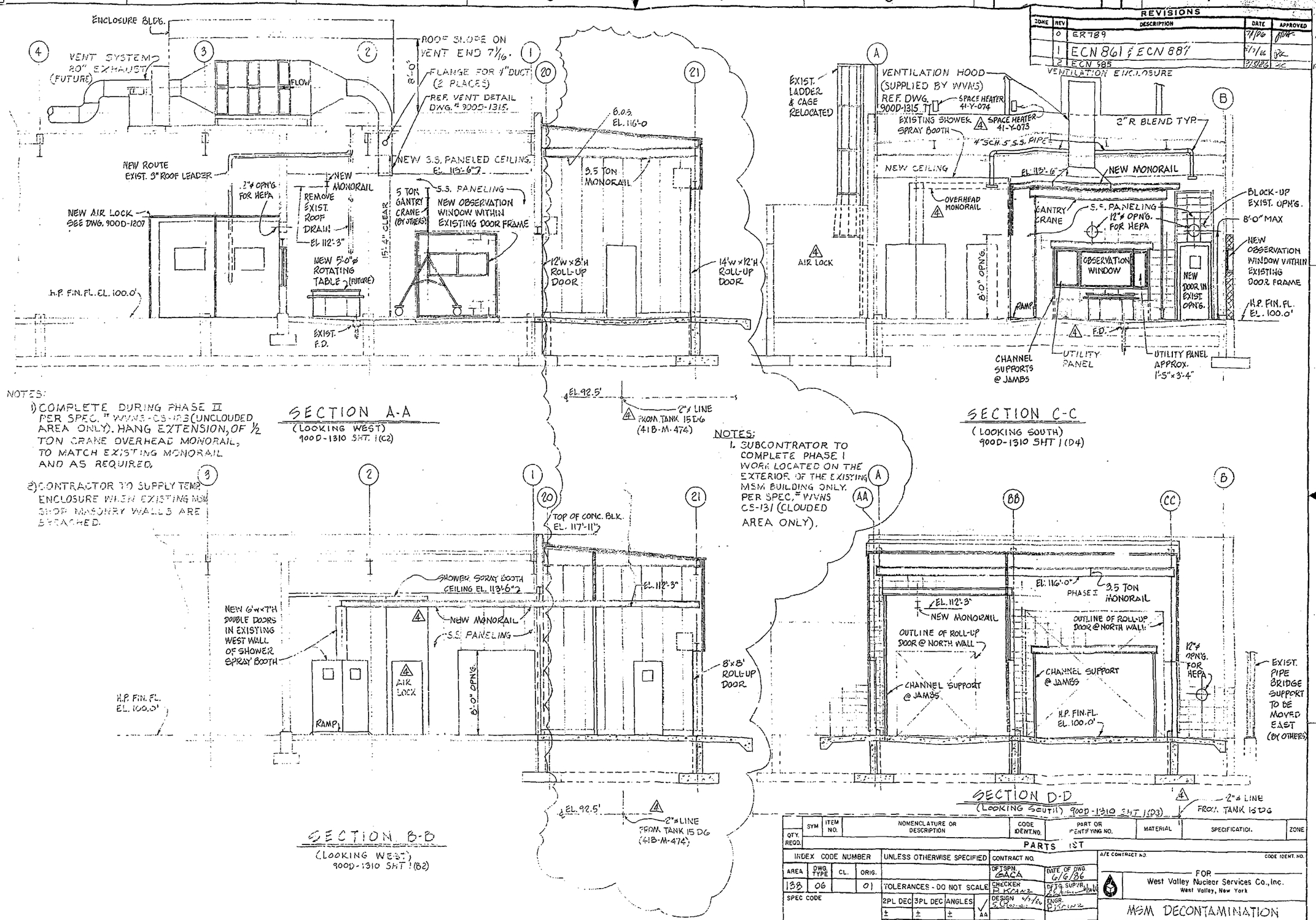
	2	ECN 985	3/5/98	



NOTES:

1) COMPLETE DURING PHASE II PER SPEC. # WVNS-CS-123 (UNCLOUDED AREA ONLY). HANG EXTENSION OF ½ TON CRANE OVERHEAD MONORAIL, TO MATCH EXISTING MONORAIL AND AS REQUIRED.

2) CONTRACTOR TO SUPPLY TEMP. ENCLOSURE WHEN EXISTING MSM SHOP MASONRY WALLS ARE BREACHED.

SECTION A-A
(LOOKING WEST)
900D-1310 SHT. 1 (C2)

SECTION B-B
(LOOKING WEST)
900D-1310 SHT 1 (B2)

NOTES:

1. SUBCONTRACTOR TO COMPLETE PHASE I WORK LOCATED ON THE EXTERIOR OF THE EXISTING MSM BUILDING ONLY. PER SPEC. # WVNS CS-131 (CLOUDED AREA ONLY).

SECTION C-C
(LOOKING SOUTH)
900D-1310 SHT 1 (D4)

SECTION D-D
(LOOKING SOUTH) 900D-1310 SHT 1 (D3)

REVISIONS					
ZONE	REV	DESCRIPTION	BY	DATE	APPROVED
	4	ECN 11478	MJC	01/7/98	
	3	REVISED PER ECN 1303		12/31/96	LRP/DLJ

QTY. REQD.	SYM	ITEM NO.	NOMENCLATURE OR DESCRIPTION	CODE IDENT. NO.	PART OR IDENTIFYING NO.	MATERIAL	SPECIFICATION	ZONE

PARTS LIST

INDEX CODE NUMBER			
AREA	DWG. TYPE	CL.	ORIG.
138	06		01

SPEC CODE

UNLESS OTHERWISE SPECIFIED
TOLERANCES - DO NOT SCALE
2PL DEC ± | 3PL DEC ± | ANGLES ± | AA
FRACTIONS ±

CONTRACT NO.
DFTSPN. GACA — DATE OF DWG. 6/6/96
CHECKER P. KRANZ — DFTG. SUPVR.
DESIGN S. GLOWACKI 4/7/96 — ENGR. P. KRANZ
FACILITIES N/A — ENGR. E&OS

A/E CONTRACT NO. — CODE IDENT. NO.

FOR West Valley Nuclear Services Co., Inc. West Valley, New York

MSM DECONTAMINATION GENERAL ARRANGEMENT SECTIONS

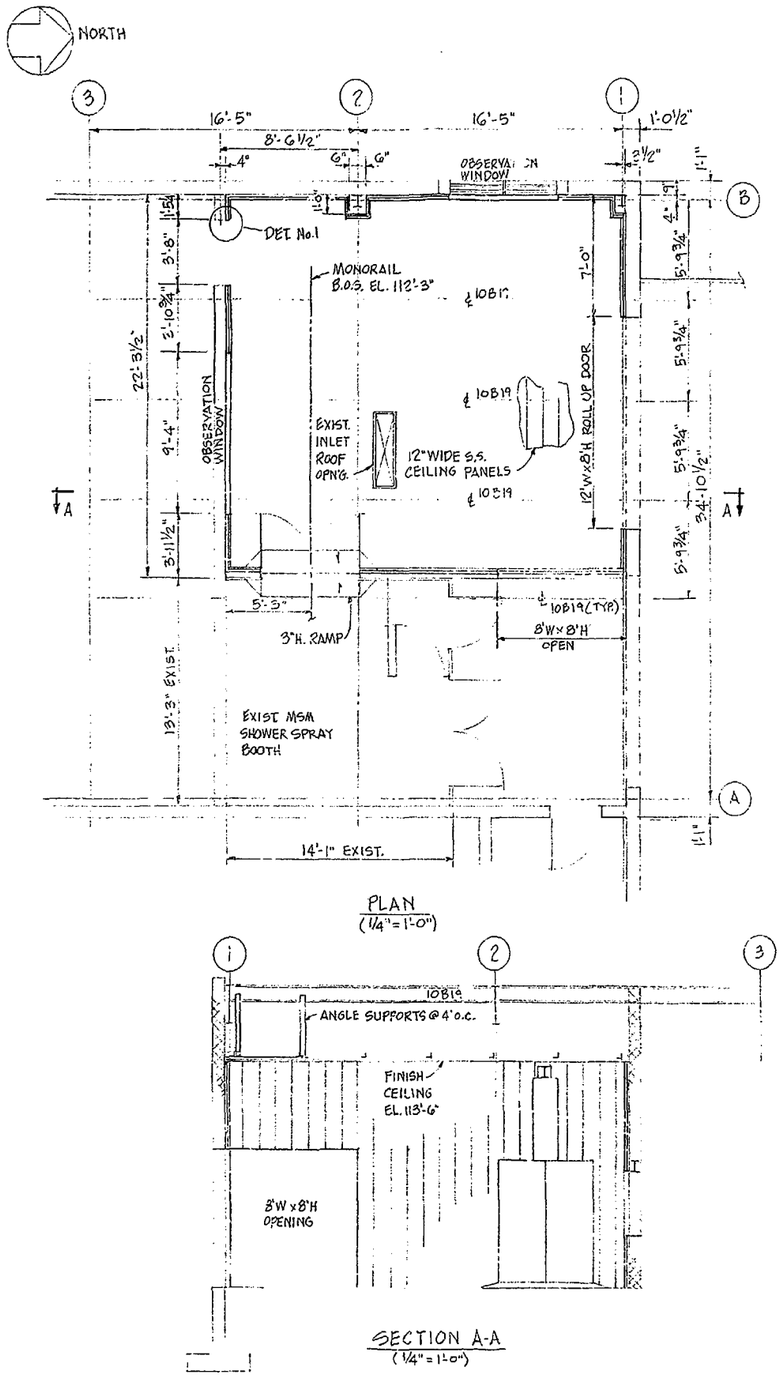
DWG SIZE D — SCALE 1/4" = 1'-0" — WEIGHT — A/E DWG NO. — DWG NO 900D-1310 — REV 4

SHEET 1 OF 2

CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE.
INIT_____ DATE_____

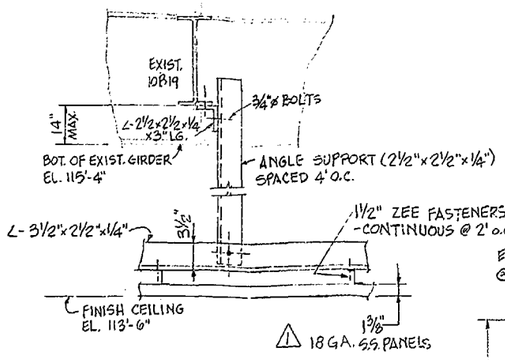
DWG NO. | SH

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	2	E2789	7/1/96	[illegible]
	1	REVISED PER ECN 785	9/5/84	GW

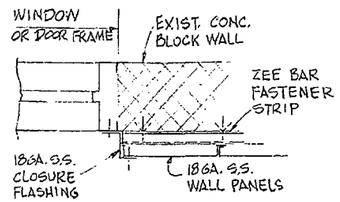


PLAN
(1/4"=1'-0")

SECTION A-A
(1/4"=1'-0")

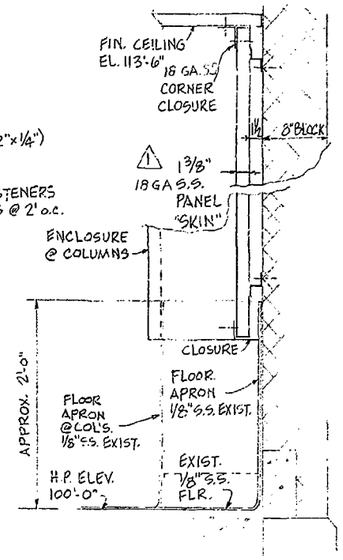


SECTION THRU CEILING
(1 1/2"=1'-0")

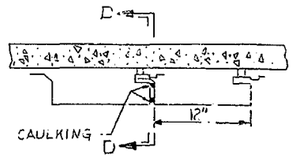


DETAIL No.1
(1 1/2"=1'-0")

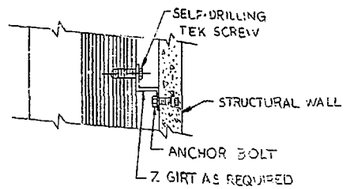
JAMB DETAIL @ DOOR/WINDOW (TYP.) 1



SECTION @ BLOCK WALL
(1 1/2"=1'-0")



1 WALL PANEL
N.T.S.



1 SECTION "D-D"
N.T.S.

NOTES:
1. 1) EXTEND PANELING TO FLOOR WHERE FLOOR APRON IS ABSENT.
1. 2) STAINLESS STEEL PANELS SHALL BE ARCHITECTURAL PANELS INC. FIO4 FN. 18 GA. 304 S.S. AS DISTRIBUTED BY ROLLISON CONST. SALES. 216 E. MAIN ST. BATAVIA, N.Y. (716) 343-6400 OR APPROVED EQUAL.
1. 3) CAULK ALL PANEL JOINTS WITH DOW CORNING 795 STRUCTURAL SILICON SEALANT (CLEAR).

QTY. REQD.	SYM	ITEM NO.	NOMENCLATURE OR DESCRIPTION	CODE IDENT. NO.	PART OR IDENTIFYING NO.	MATERIAL	SPECIFICATION

PARTS LIST

INDEX CODE NUMBER				UNLESS OTHERWISE SPECIFIED
AREA	DWG TYPE	CL.	ORIG.	
138	06		01	TOLERANCES - DO NOT SCALE
SPEC CODE				2PL DEC ± / 3PL DEC ± / ANGLES ± / √ AA
				FRACTIONS ±

CONTRACT NO.
DFTSPN. R ACA — DATE OF DWG. 5/3/86
CHECKER D Kelsey — DFTG. SUPVR. [illegible]
DESIGN [illegible] — ENGR. [illegible]
EACH TIER — TOA

A/E CONTRACT NO. — CODE IDENT NO.

FOR
West Valley Nuclear Services Co., Inc.
West Valley, New York

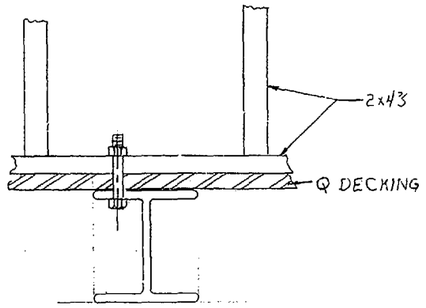
MSM DECONTAMINATION
SH. "SKIN"

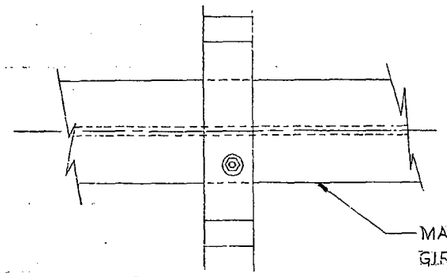
DWG. — SCALE — DWG NO. [illegible] — REV

CHANGES PRIOR TO EACH USE.
INIT_____ DATE_____

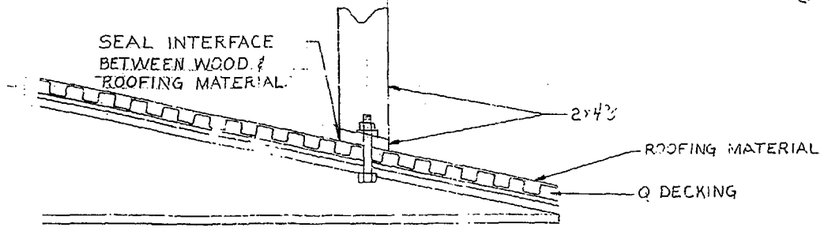
DWG NO. | SH

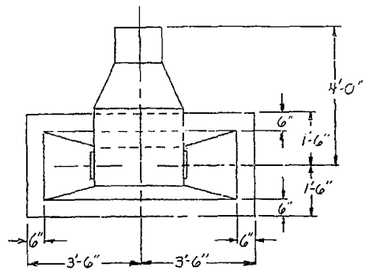
REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	0	CREATED PER ECN 985, EP&S2	9/8/06	

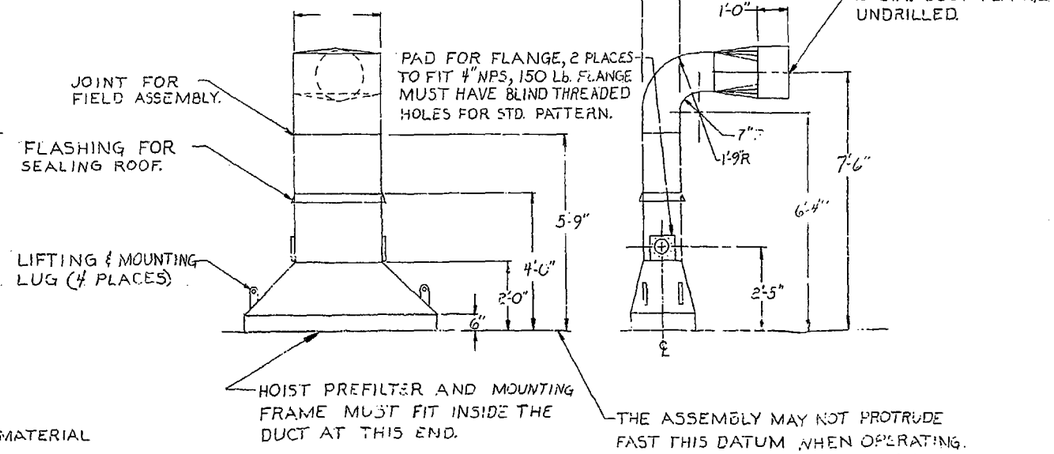




3/4" BOLT ANCHORING DETAIL TYP. 6 PLACES







QTY REQD	ITEM NO.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	MATERIAL OR SPEC

PARTS LIST

UNLESS OTHERWISE SPECIFIED	DRAFTER		DATE 9/8/06
	CHECKER		DATE 9/12/06
TOLERANCES—DO NOT SCALE	ENGR.		DATE 9/8/06
2 PL DEC ± / 3 PL DEC ± / ANGLES ± / AA	COG. MGR. APPVL		DATE 9/8/06
FRACTIONS ±	E&OS APPVL		DATE
D. SPEC. NO.	Q.A. APPVL		DATE
NEXT ASSEMBLY	DFTG. SUPV.		DATE

A/E CONTRACT NO. | DOE IDENT. NO.

FOR
West Valley Nuclear Services Co., Inc.
West Valley, New York

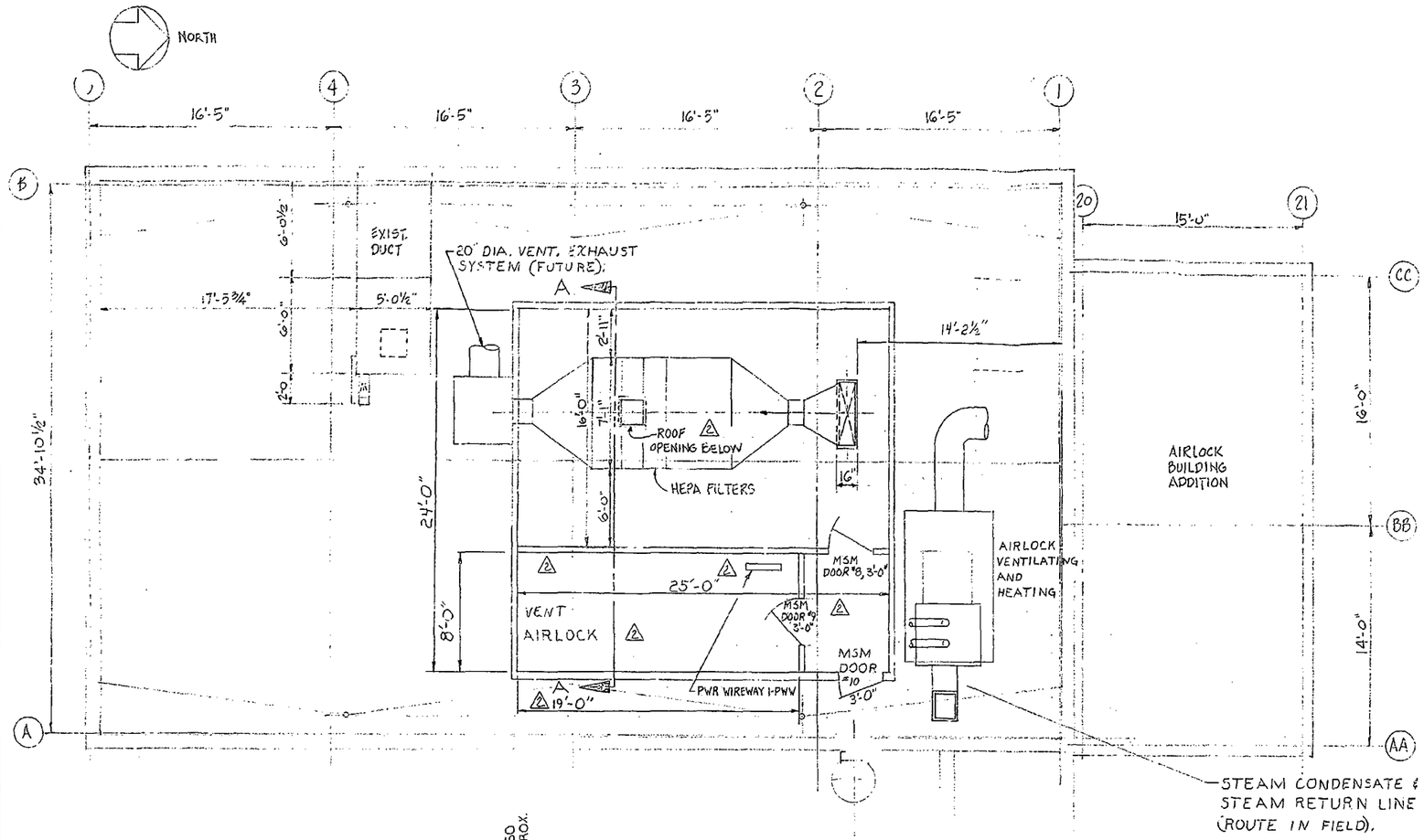
MSM DECONTAMINATION
HEATING & VENTILATING
DETAILS

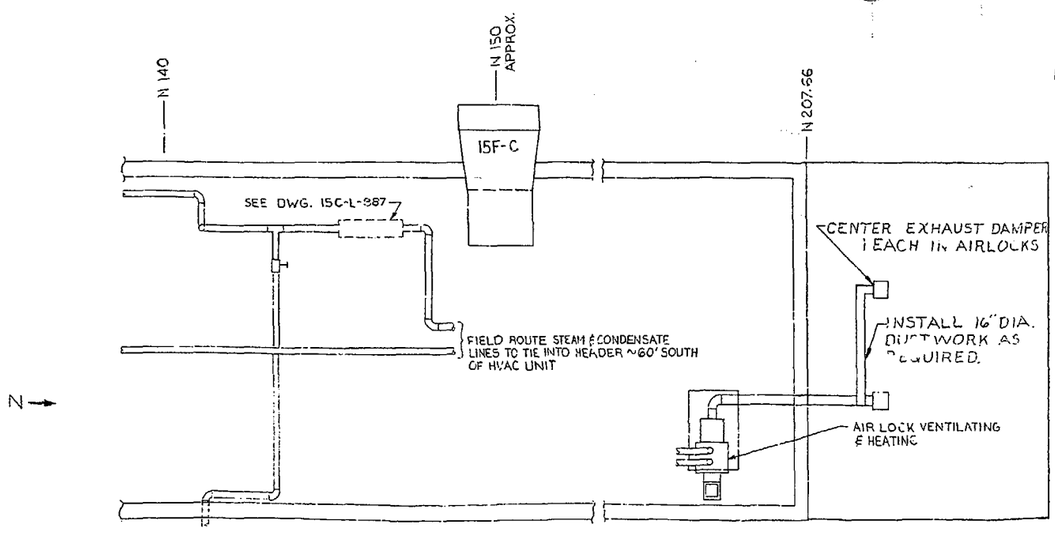
DWG SIZE	SCALE	WEIGHT	DWG NO.	REV
D	NTS		900D-1315	0

10/18/04 11:26:37 AM PERRO

CHANGES PRIOR TO EACH USE.
INIT_____ DATE_____

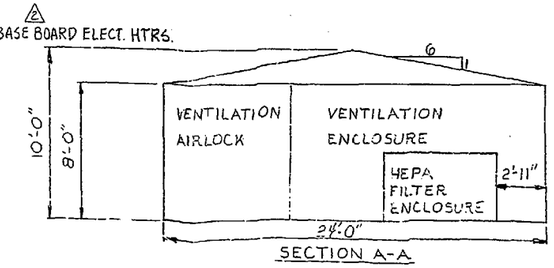
REVISIONS					
ZONE	REV	DESCRIPTION	BY	DATE	APPROVED
	0	ER789		7/1/86	[illegible]
	1	REVISE PER ECN 925		9/8/91	[illegible]
	2	ECN 11428	MJC	10/9/98	[illegible]





STEAM SUPPLY PIPING & AIR LOCK VENTILATING & HEATING
N.T.S.

NOTES:
1) EXISTING VENTILATION SYSTEM TO BE REMOVED BY SUBCONTRACTOR.
2) FOR ELECTRICAL LIGHTING, RECEPTACLES & BASE BOARD ELECT. HTRS. SEE DWG. 900D-1313.



SECTION A-A

QTY. REQD.	SYM	ITEM NO.	NOMENCLATURE OR DESCRIPTION	CODE IDENT. NO.	PART OR IDENTIFYING NO.	MATERIAL	SPECIFICATION	ZONE

PARTS LIST

INDEX CODE NUMBER				UNLESS OTHERWISE SPECIFIED	CONTRACT NO.	
AREA	DWG. TYPE	CL.	ORIG.		DFTSPN. GACA	DATE OF DWG. 5/6/86
138	46		01	TOLERANCES - DO NOT SCALE	CHECKER D. Krane	DFTG. SUPVR. [illegible]
SPEC CODE				2PL DEC ± / 3PL DEC ± / ANGLES ± / AA	DESIGN S. Greenan	ENGR. D. Krane
				FRACTIONS ±		
					FACILITIES N/A	[illegible]
					ENGR. [illegible]	E & OS [illegible]

A/E CONTRACT NO. — CODE IDENT. NO.

FOR
West Valley Nuclear Services Co., Inc.
West Valley, New York

MSM DECONTAMINATION HEATING & VENTILATING

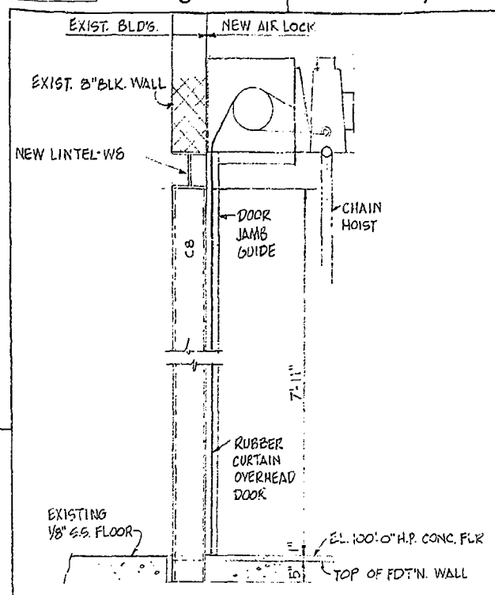
DWG. SIZE	SCALE	DWG NO.	REV
D	WEIGHT	900D-1315	2
	A/E DWG NO.	SHEET 1 OF 2	

10/18/04 11:27:42 AM REPRO1

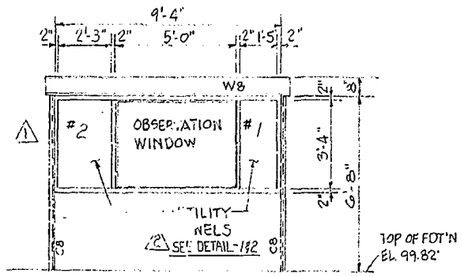
CHANGES PRIOR TO EACH USE.
INIT _____ DATE _____

DWG NO. _____ SH _____

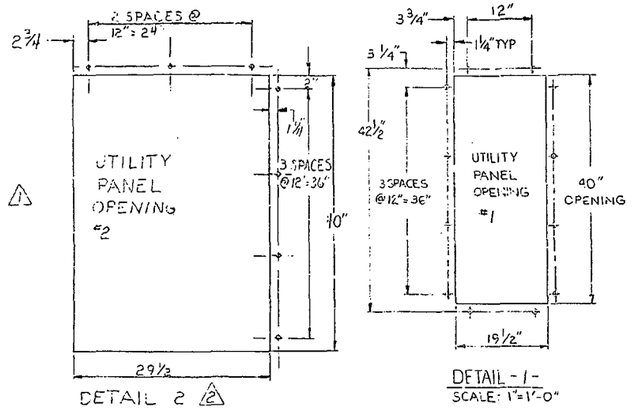
REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	0	ER789	7/1/86	JEK
	1	ECN 861 GLOVE BOX REMOVED	9/16/86	GK
	2	REVISED PER ECN 985	12/8/86	GK
	3	REVISED PER ECN 1303	4/31/86	LRP/JEK



SECTION A-A (900D-1310)
(3/4" = 1'-0")

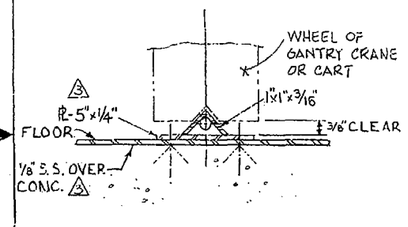


ELEVATION
(3/8" = 1'-0")

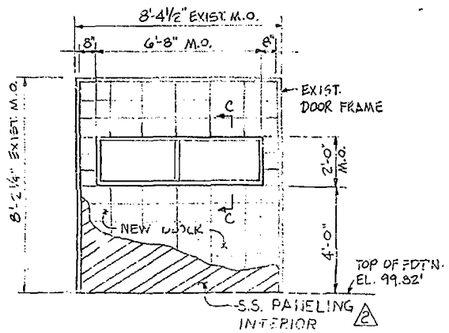


DETAIL 2 (2)

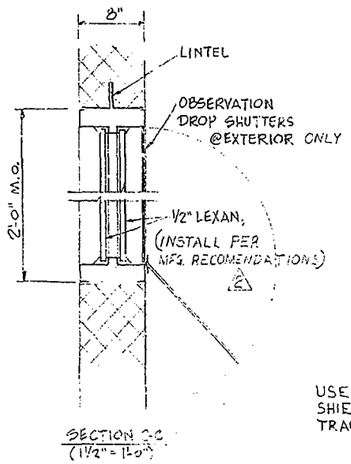
DETAIL - 1 -
SCALE: 1"=1'-0"



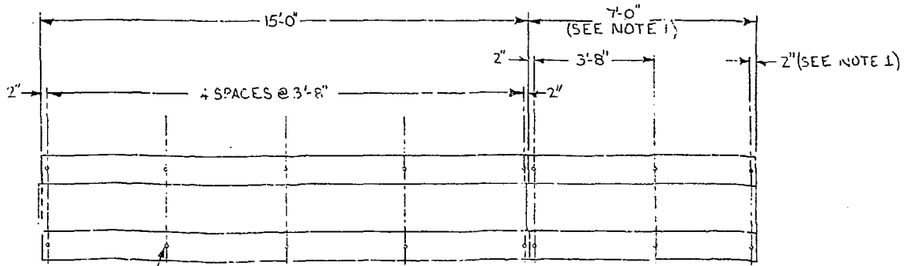
SECTION B-B (900D-1310)
(6" = 1'-0")



ELEVATION
OBSERVATION WINDOW
(3/8" = 1'-0")



SECTION C-C
(1 1/2" = 1'-0")



(3) GANTRY TRACK ASS'Y.
TYP. 2 PLACES
(SCALE-1/2"=1'-0")

USE 3/8" BOLTS W/EXPANSION SHIELDS TO ANCHOR TRACK (16 PLACES).

NOTES-
(1) 1. CUT A 7' LONG TRACK SECTION FROM A 15' LENGTH. THE 7' LONG SECTION IS TO CONTAIN THE MALE ANGLE END TO INSERT INTO THE FULL LENGTH TRACK ANGLE. DRILL 2 HOLES IN THE PLATE, 2" FROM THE CUT END, SAME AS THE EXISTING HOLES TO ANCHOR THE TRACK. (TRACK SUPPLIED BY WVNS).

QTY. REQD.	SYM	ITEM NO	NOMENCLATURE OR DESCRIPTION	CODE IDENT. NO.	PART OR IDENTIFYING NO.	MATERIAL	SPECIFICATION	ZONE

PARTS LIST

INDEX CODE NUMBER				UNLESS OTHERWISE SPECIFIED	CONTRACT NO.	
AREA	DWG. TYPE	CL.	ORIG.		DFTSPN.	DATE OF DWG.
135	90		-1	TOLERANCES - DO NOT SCALE	CHECKER	DFTG. SUPVR.
SPEC CODE				2PL DEC ± / 3PL DEC ± / ANGLES ± / √ RA	DESIGN	ENGR.
				FRACTIONS ±	FACILITIES	QA
					ENGR.	ENGR.

A/E CONTRACT NO. _____ CODE IDENT. NO. _____

FOR
West Valley Nuclear Services Co., Inc.
West Valley, New York

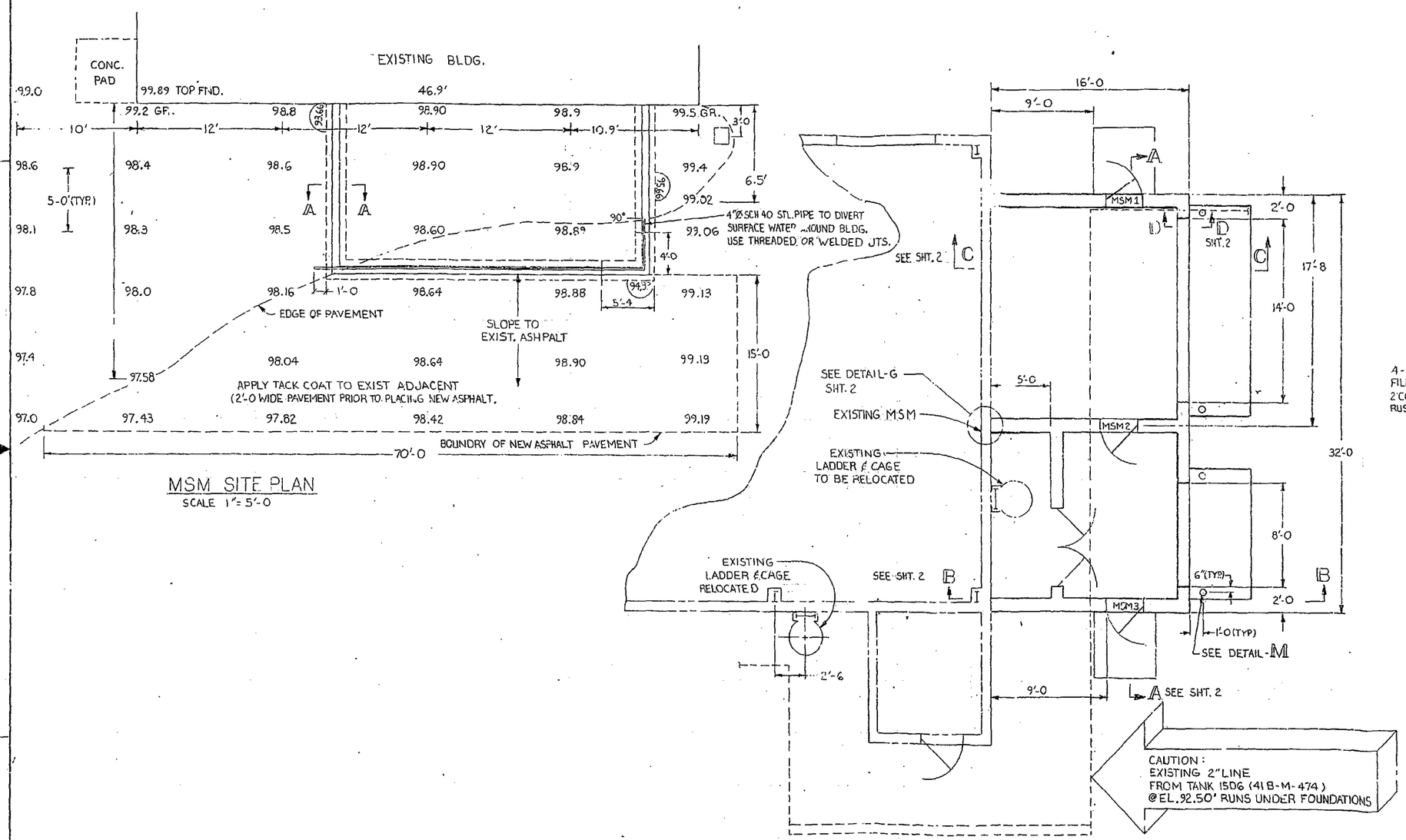
MSM DECONTAMINATION MISC. DETAILS

DWG SIZE	SCALE	DWG NO.	REV
D	WEIGHT	900D-1316	3

10/10/94 11:05:50 AM PEDRO

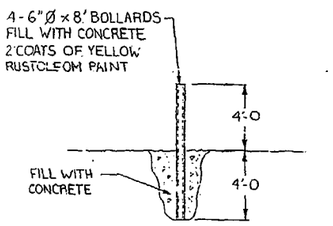
CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE.
INIT_____ DATE_____

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	0	ER 889	10/15/86	[illegible]



MSM SITE PLAN
SCALE 1"=5'-0

PLAN VIEW



BOLLARD DETAIL M
SCALE 1/4"=1'-0

QTY REQD.	SYM	ITEM NO.	NOMENCLATURE OR DESCRIPTION	CODE IDENT. NO.	PART OR IDENTIFYING NO.	MATERIAL	SPECIFICATION	ZONE

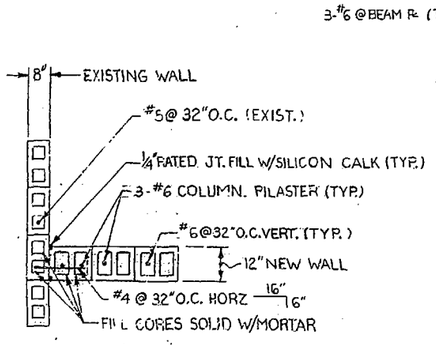
PARTS LIST

INDEX CODE NUMBER				UNLESS OTHERWISE SPECIFIED	CONTRACT NO.		A/E CONTRACT NO.	CODE IDENT. NO.
AREA	DWG. TYPE	CL.	ORIG.		DFTSPN. HABERMEHL	DATE OF DWG. 10-6-86	FOR West Valley Nuclear Services Co., Inc. West Valley, New York	
				TOLERANCES - DO NOT SCALE	CHECKER	DFTG. SUPVR.		
SPEC CODE				2PL DEC ± / 3PL DEC ± / ANGLES ± / AA	DESIGN	ENGR.	MSM BUILDING DECONTAMINATION (GENERAL ARRANGEMENT-PLAN)	
				FRACTIONS ±				
					FACILITIES N/A	Q.A. N/A	DWG. SIZE D	SCALE 1/4"=1'-0" / WEIGHT / A/E DWG NO.
					ENGR.	E&OS N/A	DWG NO. 900D-1546	REV 0
							SHEET 1 OF 2	

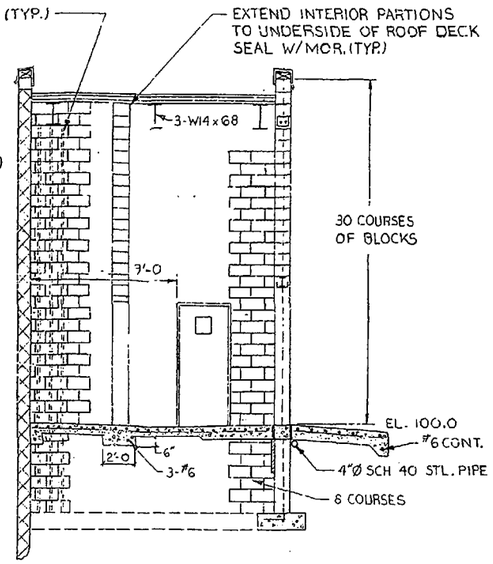
CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE. INIT. DATE

DWG NO.	SH

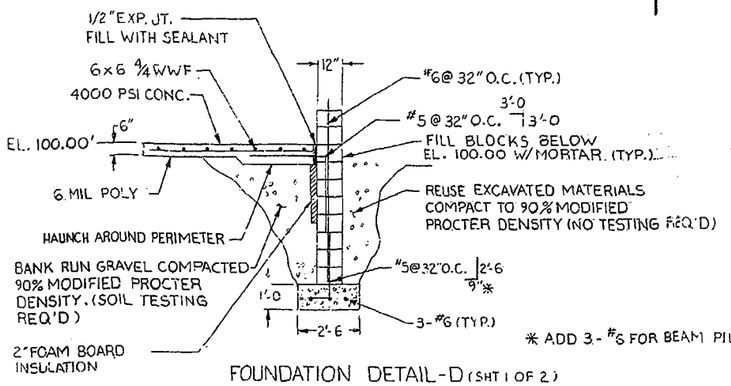
REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	0	ER 889	10/13/86	



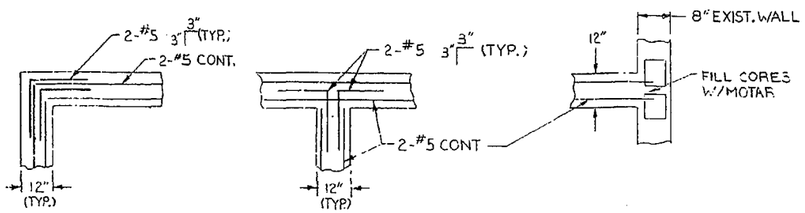
NEW TO EXISTING WALL CONNECTION (TYP.)
DETAIL-G (SHT. 1 OF 2)
SCALE 1/2"=1'-0"



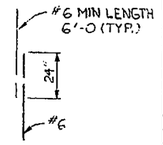
SECTION B-B (SHT. 1 OF 2)
LOOKING WEST



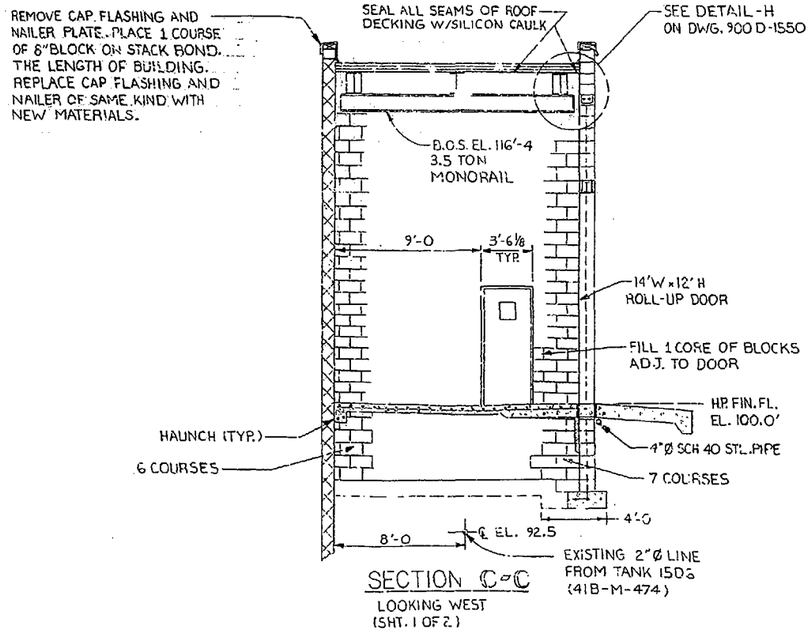
FOUNDATION DETAIL-D (SHT 1 OF 2)
SCALE = 3/8"=1'-0



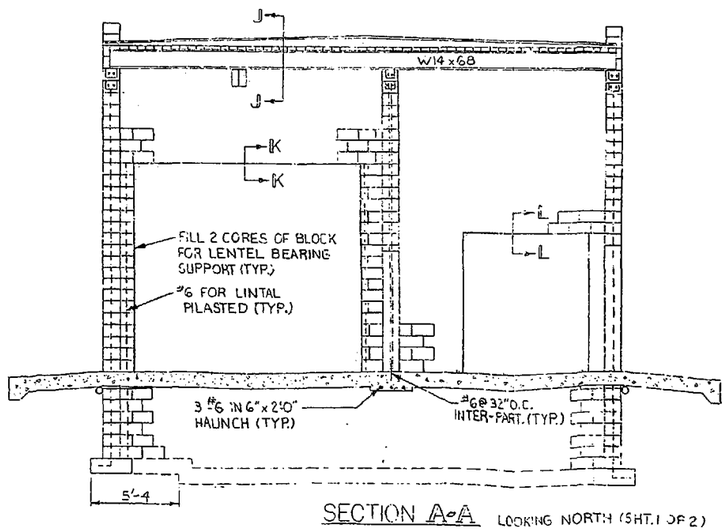
BOND BEAM CORNER DETAILS (TYP.)
N.T.S.



REBAR SPACE DETAIL (TYP)



SECTION C-C
LOOKING WEST
(SHT. 1 OF 2.)



SECTION A-A LOOKING NORTH (SHT. 1 OF 2)

QTY. REQD.	SYM	ITEM NO.	NOMENCLATURE OR DESCRIPTION	CODE IDENT. NO.	PART OR IDENTIFYING NO.	MATERIAL	SPECIFICATION	ZONE

PARTS LIST

INDEX CODE NUMBER: AREA | DWG. TYPE | CL. | ORIG.
SPEC CODE
UNLESS OTHERWISE SPECIFIED
TOLERANCES - DO NOT SCALE
2PL DEC ± | 3PL DEC ± | ANGLES ± | √ AA
FRACTIONS ±

CONTRACT NO.
OFTSPN. HABERMEHL | DATE OF DWG. 10-6-86
CHECKER | DES. SUPVR.
DESIGN | ENGR.
FACILITIES N/A | Q.A. N/A
ENGR. | EBOS N/A

A/E CONTRACT NO. | CODE IDENT. NO.

FOR
West Valley Nuclear Services Co., Inc.
West Valley, New York

MSM BUILDING DECONTAMINATION
(SECTIONS & DETAILS)

DWG. SIZE D | SCALE 1/4"=1'-0" | WEIGHT | DWG NO. 900D-1546 | REV 3
A/E DWG NO. | SHEET 2 OF 2

10/18/04 11:25:25 AM REPRO

APPENDIX D-3

HWSL #S 1-4 DESIGN DRAWING

NG NUMBER

TION • IRVINE, CALIFORNIA
NUMBER 07SAR

DRAWING NUMBER

PLAN HOLD CORPORATION • IRVINE, CALIFORNIA
REORDER BY NUMBER 07SAR

DRAWING NUMBER

PLAN HOLD CORPORATION • IRVINE, CALIFORNIA
REORDER BY NUMBER 07SAR

DRAWING NUMBER
89-119

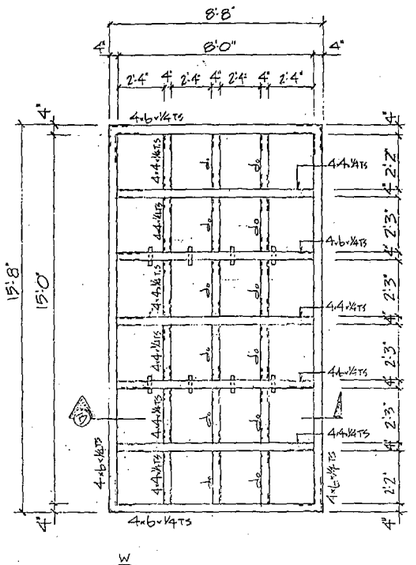
PLAN HOLD CORPORATION • IRVINE, CALIFORNIA
REORDER BY NUMBER 07SAR

DRAWING NUMBER

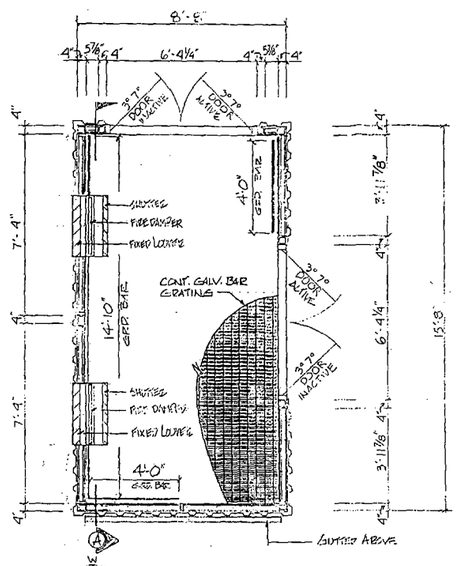
PLAN HOLD CORPORATION • IRVINE, CALIFORNIA
REORDER BY NUMBER 07SAR

DRAWIN

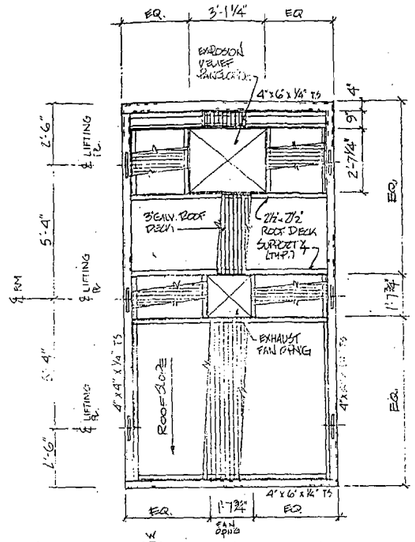
PLAN HOLD CORPORATIO
REORDER BY NU



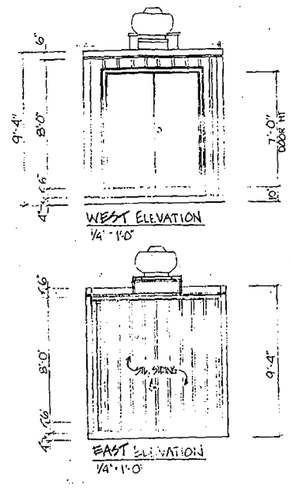
PLAN VIEW FLOOR STR.
3/8" = 1'-0"



FLOOR PLAN
3/8" = 1'-0"

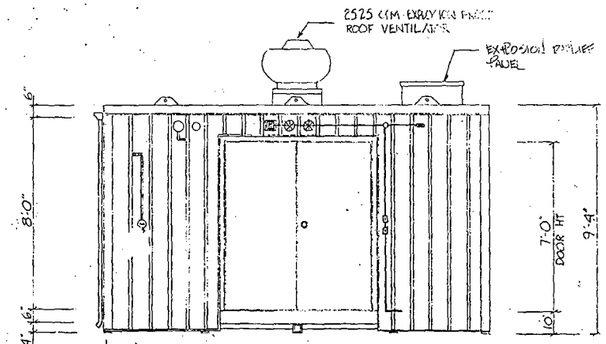


PLAN VIEW ROOF STR.
3/8" = 1'-0"

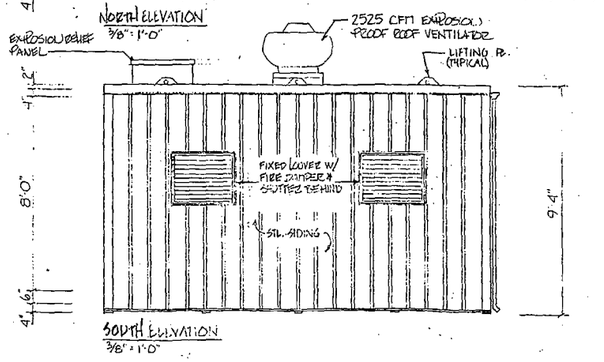


WEST ELEVATION
1/4" = 1'-0"

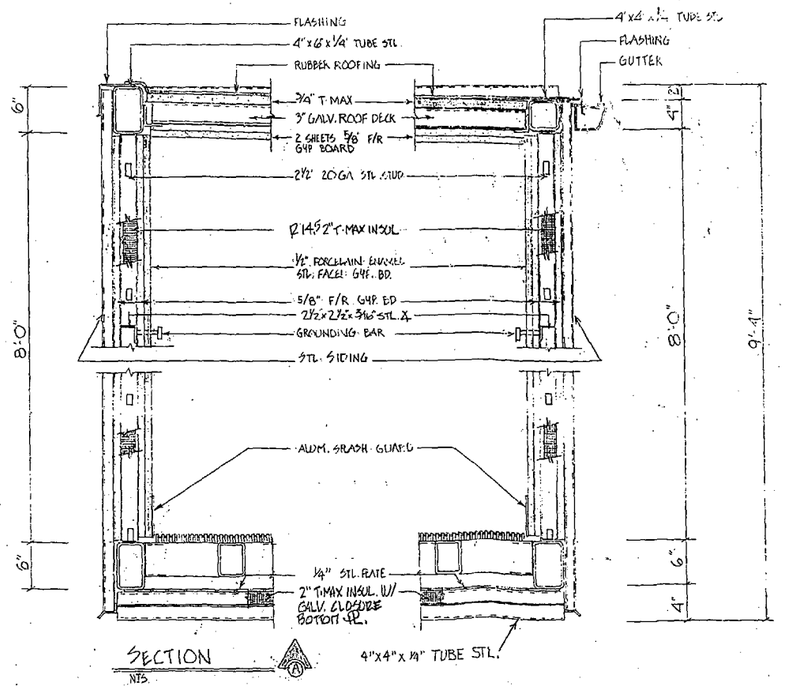
EAST ELEVATION
1/4" = 1'-0"



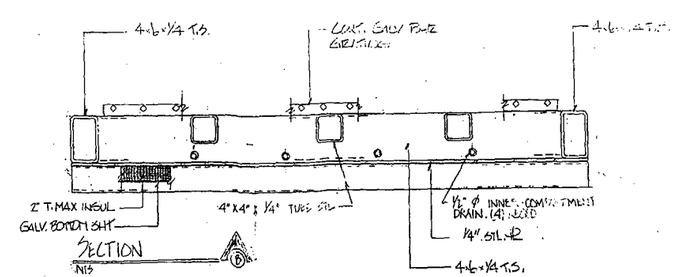
NORTH ELEVATION
3/8" = 1'-0"



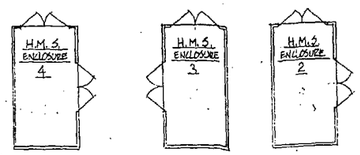
SOUTH ELEVATION
3/8" = 1'-0"

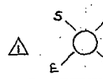


SECTION
NTS



SECTION
NTS





GENERAL ARRANGEMENT
N.T.S.

REV	DATE	DESCRIPTION	APPR
6	8 FEB. 1990	ADDED SWITCH	
5	8 FEB. 1990	CHANGED ENCLOSURE NUMBERS	
4	8 FEB. 1990	ADDED 2" T-MAX INSUL.	
3	8 FEB. 1990	CHANGED FROM 10 GA. TO 1/4" STL. PL.	
2	8 FEB. 1990	CHANGED DIRECTIONAL INDICATION	
1	8 DEC. 1989	AS BUILT	
0	4/2/90	ER 1824	

CID associates, inc.

LIFTABLE

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CID associates, inc.
P.O. BOX 808, LEECHBURG, PA 15656 • TELEPHONE 412/842-2130 FAX 845-7834

IN PLANT OFFICE FACILITIES
FORKLIFTABLE CRADLE
& CROWN BUILDINGS ©

DIAMOND ENGINEERED SPACE
PITTSBURGH PA.

SCALE AS NOTED | DRAWN BY | APPROVED

HAZARDOUS MATERIAL STORAGE ENCLOSURE
PLAN VIEWS, ELEVATIONS, & SECTIONS

10/18/04 11:36:31 AM REPRO

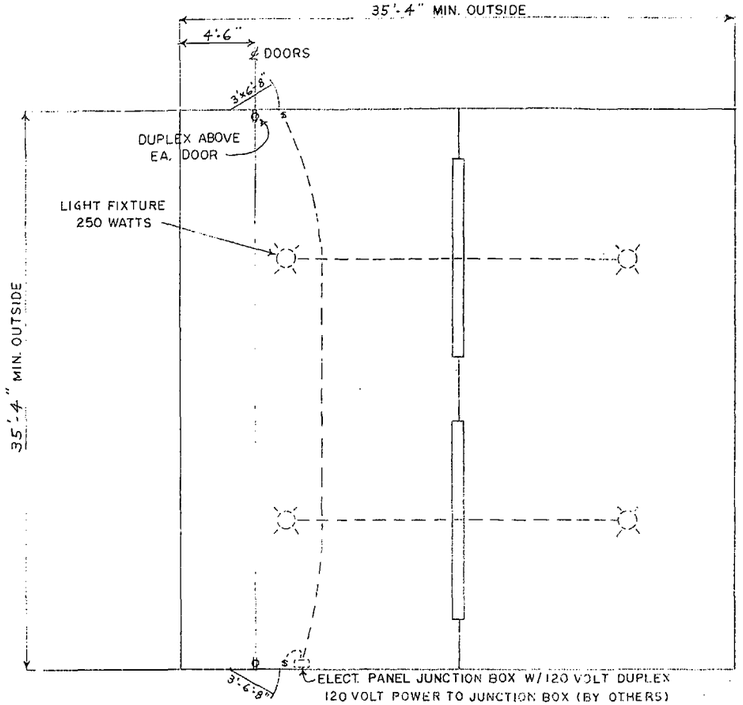
APPENDIX D-4

IWSF DESIGN DRAWING

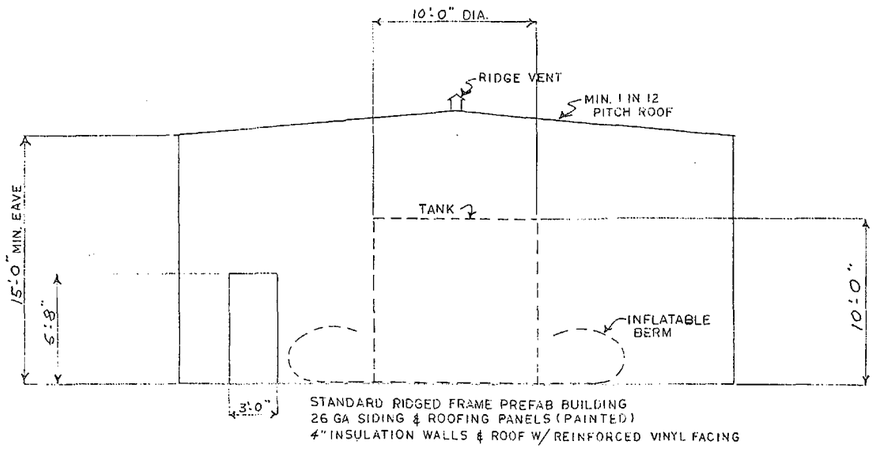
900D-312

DWG NO. 900D-312 SH

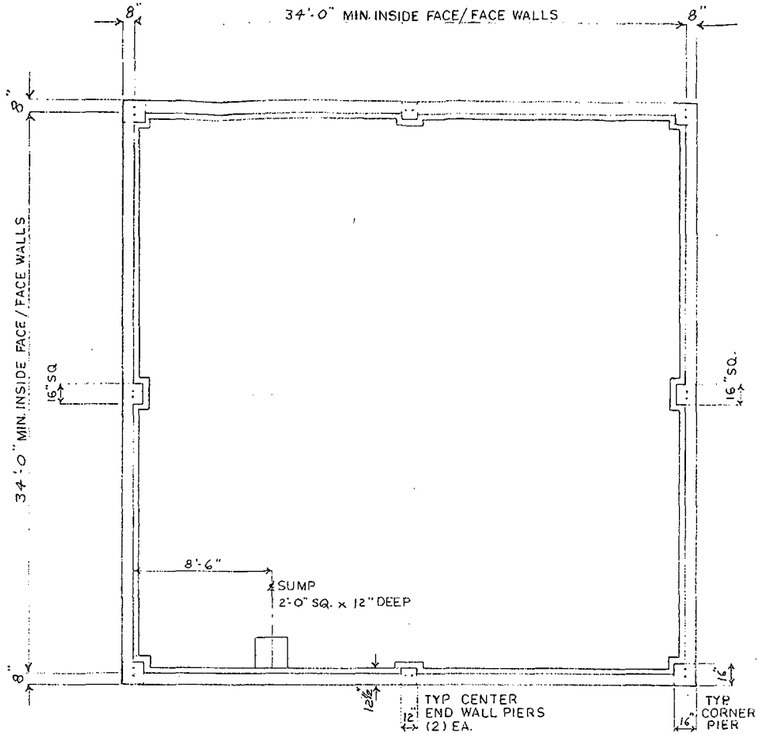
REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	0	ER 116	8/6/84	JRH
	1	ECN 25854 LRO	2/5/04	[illegible]



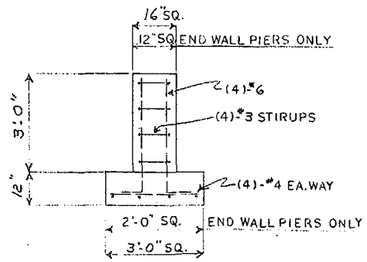
ROOF PLAN



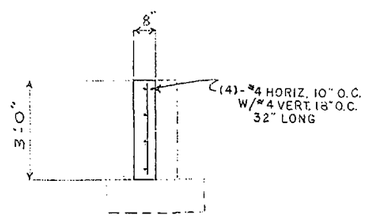
ELEVATION



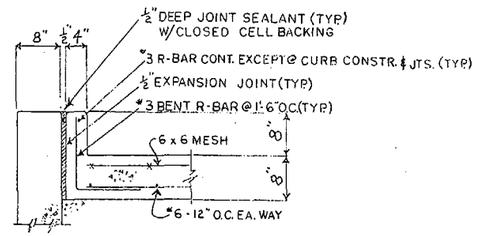
FOUNDATION PLAN



MAIN COLUMN SUPPORTS



FOUNDATION WALL



CURB DETAIL

MATERIAL SPECIFICATIONS

1. CONCRETE WORK SHALL CONFORM TO ALL REQUIREMENTS OF "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" ACI 301-72 (REVISED 1975), EXCEPT AS MODIFIED BY THE SUPPLEMENT REQUIREMENTS BELOW.
2. ALL CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH @ 28 DAYS OF 4,000 PSI AND HAVE A MAXIMUM SLUMP OF THREE (3) INCHES.
3. CONCRETE AGGREGATES SHALL CONFORM TO ASTM C-33 MAXIMUM SIZE SHALL BE 1 INCH.
4. POURED FOUNDATION WALLS SHALL BE POURED ON UNDISTURBED SOIL TO A DEPTH AS SHOWN ON DRAWING.
5. CAST-IN-PLACE CONCRETE SHALL BE POURED CONTINUOUSLY WITH NO COLD JOINTS. MATERIAL SHALL BE ADEQUATELY VIBRATED TO PREVENT OCCURRENCE OF AIR POCKETS AND HONEYCOMB EFFECTS.
6. ALL REINFORCING BARS SHALL CONFORM TO ASTM A-615 DEFORMED BARS WITH A MINIMUM YIELD STRESS OF 60,000 PSI.
7. PROVIDE A 1/2" RADIUS TOOLED EDGE ON FOUNDATION WALLS AND PIERS.
8. BACKFILLING AROUND FOOTINGS AND FOUNDATION WALLS SHALL BE DONE IN 8" LIFTS AND COMPACTED TO 95% DENSITY.
9. REMOVE MATERIAL INSIDE FOUNDATION TO 24" BELOW TOP OF FOUNDATION WALL AND REPLACE WITH R.U.B. GRAVEL AND COMPACT TO 95% DENSITY.
10. FINAL GRADE INSIDE OF FOUNDATION WALL WILL BE 16" BELOW TOP OF FOUNDATION WALL.
11. JOINT FILLER MATERIAL SHALL BE FIBRE (AS MANUFACTURED BY W. R. MEADOWS OR EQUAL).
    JOINT SEALER MATERIAL SHALL BE SEALTIGHT #164 (AS MANUFACTURED BY W. R. MEADOWS OR EQUAL).
12. ALL WELD WIRE MESH SHALL BE 6 x 6 - W/4 x W/4 AND CONFORM TO ASTM A-185.
13. CURING SHALL BE ACCOMPLISHED BY APPLICATION OF PRIMER AND SEALER CURING COMPOUND (AS MANUFACTURED BY AMERON OR EQUAL) CONFORMING TO ASTM C-309 AND SPRAY APPLIED AS PER MANUFACTURER'S SPECIFICATION.

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT ____ DATE ____

QTY. REQD.	SYM	ITEM NO.	NOMENCLATURE OR DESCRIPTION	CODE IDENT. NO.	PART OR IDENTIFYING NO.	MATERIAL	SPECIFICATION	ZONE

PARTS LIST

INDEX CODE NUMBER				UNLESS OTHERWISE SPECIFIED	CONTRACT NO.		
AREA	DWG. TYPE	CL.	ORIG.		DFTSPN. KEVIN QUEALY	DATE OF DWG. 4/15/84	
				TOLERANCES - DO NOT SCALE	CHECKER	DFTG. SUPVR.	
SPEC CODE				2PL DEC ± / 3PL DEC ± / ANGLES ±	DESIGN	ENGR.	
				FRACTIONS ±	AA		
						FACILITIES	

A/E CONTRACT NO. CODE IDENT NO.

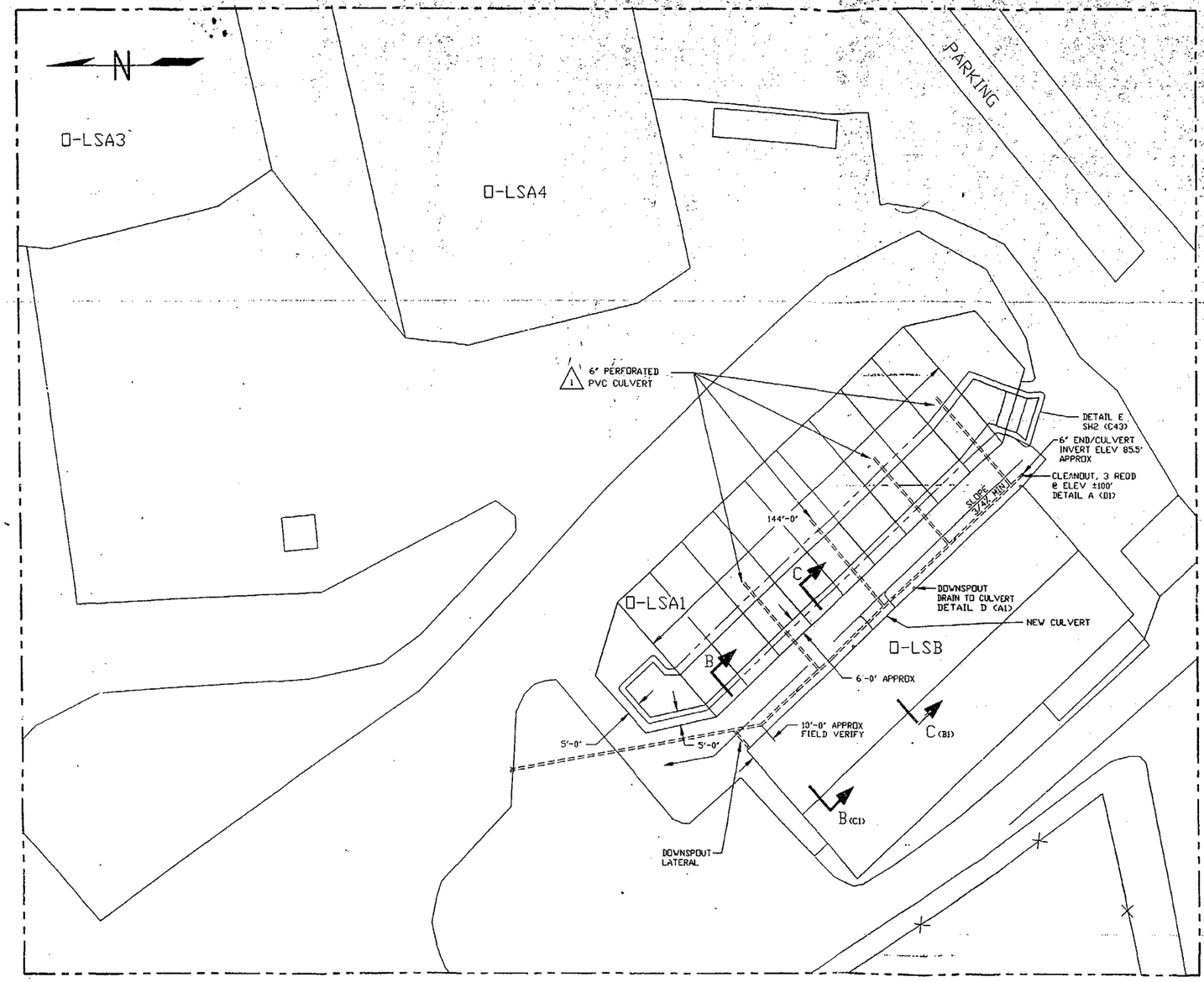
FOR
West Valley Nuclear Services Co., Inc.
West Valley, New York

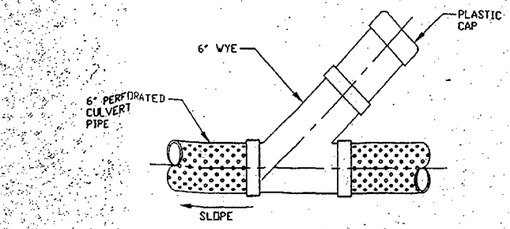
INTERIM WASTE STORAGE FACILITY
⚠ - ARR'T.

DWG. SIZE	SCALE 1/2" & 1/8" = 1'-0"	DWG. NO. 900D-312	REV 1
	WEIGHT		

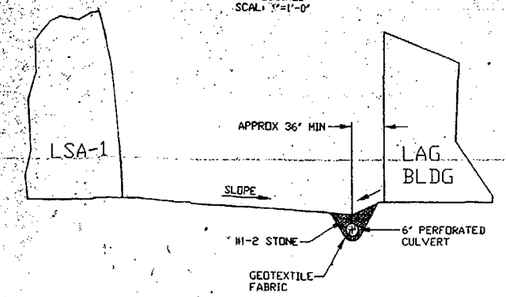
APPENDIX D-5

LSA #1 DESIGN DRAWINGS
(2 DRAWINGS)

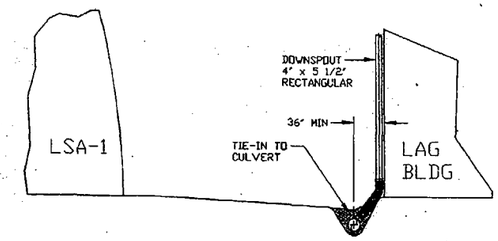




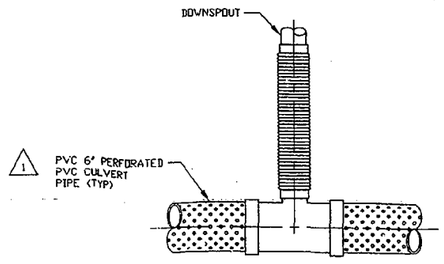
DETAIL A (C4)
CLEANOUT
5 REQUIRED
SCALE 1"=1'-0"



SECTION B-B (B5)
SCALE 1/4"=1'-0"



SECTION C-C (B4)
SCALE 1/4"=1'-0"



DETAIL D (B4)
DRAIN TO CULVERT
4 REQUIRED
SCALE 1"=1'-0"

REVISIONS				
REV	DESCRIPTION	APVD	DATE	
0	ER4377	CLG	09/21/99	
-	ECN 13247	KAJ	3/22/2002	

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT _____ DATE _____

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS IN INCHES

FILE NAME 7949D001
PLOT SCALE 1=240.00
D SPEC NO. 3506
NEXT ASSEMBLY

DRAFTER B. PORTER	DATE 07/20/99	A/E CONTRACT NO. / CODE IDENT NO.
CHECKED E. CIANCONE	DATE 09/21/99	FOR WEST VALLEY NUCLEAR SERVICES CO. INC. WEST VALLEY N.Y.
ENGINEER F. CIANCONE	DATE 09/21/99	

LSA 1
FLOOR REPAIR
GENERAL ARRANGEMENT

DATABASE LINKED DRAWING
SEE ENGINEERING RELEASE FORM (ER) FOR DRAWING APPROVAL SIGNATURES.

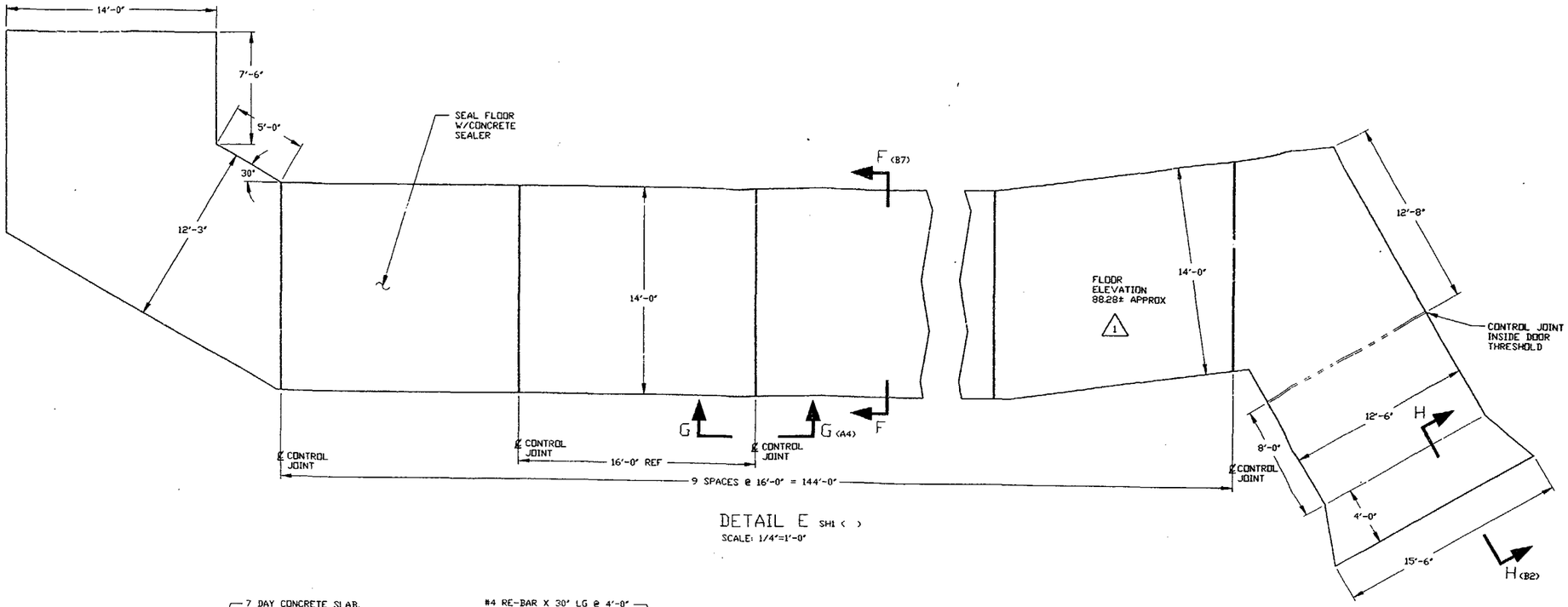
DWG SIZE D

SCALE 1"=20'-0" | DWG NO. 900D-7949 | REV 1
WEIGHT | A/E DWG NO. | SHEET 1 OF 2

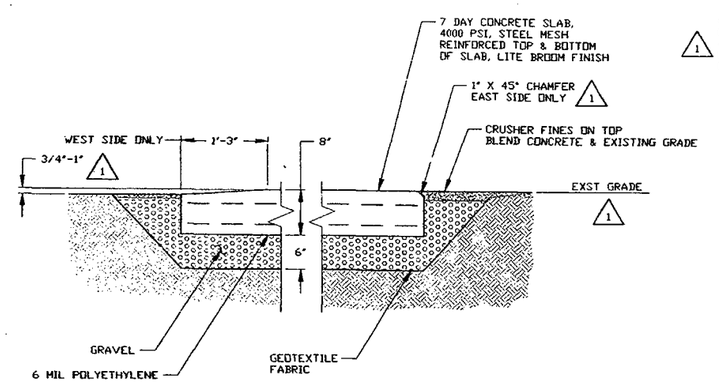
CAD DRAWING-DO NOT REVISE THIS ORIGINAL

10/18/04 11:40:43 AM REPRO

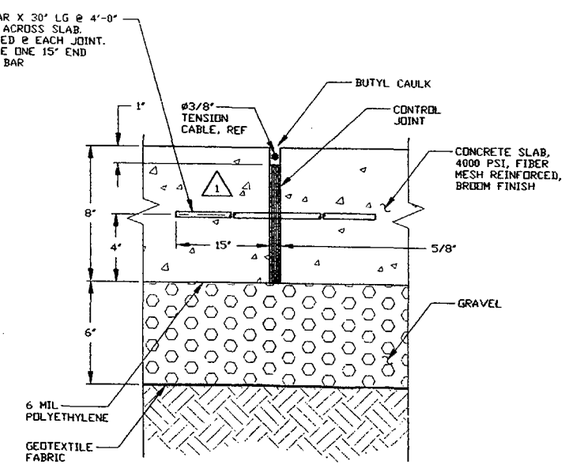
Mon Mar 25 09:33:12 2002 HAB



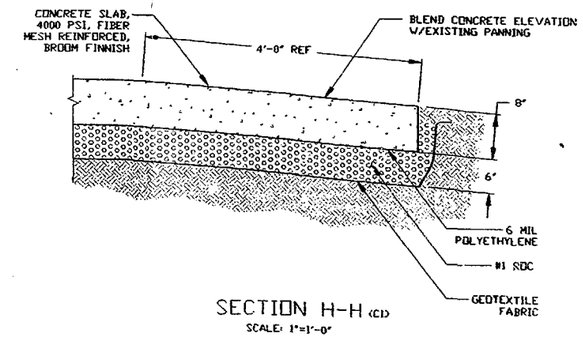
DETAIL E SH1 ( )
SCALE: 1/4"=1'-0"



SECTION F-F (D4)
SCALE: 1"=1'-0"



VIEW G-G (C4)
SCALE: 3"=1'-0"



SECTION H-H (C1)
SCALE: 1"=1'-0"

REVISIONS

REV	DESCRIPTION	APVD
0	ER4377 09/21/99	CCG
1	FCN DBA-0298 & 0300 CAM 10/1/99	DRS

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS IN INCHES

DRAFTER B. PORTER	DATE 07/20/99	A/E CONTRACT NO.
CHECKER E. CIANCONE	DATE 09/21/99	CODE IDENT NO.
ENGINEER E. CIANCONE	DATE 09/21/99	FOR WEST VALLEY NUCLEAR SERVICES CO. INC. WEST VALLEY N.Y.

FILE NAME 7949D002
PLOT SCALE 1=48.00
D SPEC NO. 3506
NEXT ASSEMBLY

LSA 1
FLOOR REPAIR
GENERAL ARRANGEMENT

DATABASE LINKED DRAWING
SEE ENGINEERING RELEASE FORM (ER) FOR DRAWING APPROVAL SIGNATURES.
DWG SIZE D
SCALE NOTED
WEIGHT
A/E DWG NO.
DWG NO. 900D-7949
REV 1
SHEET 2 OF

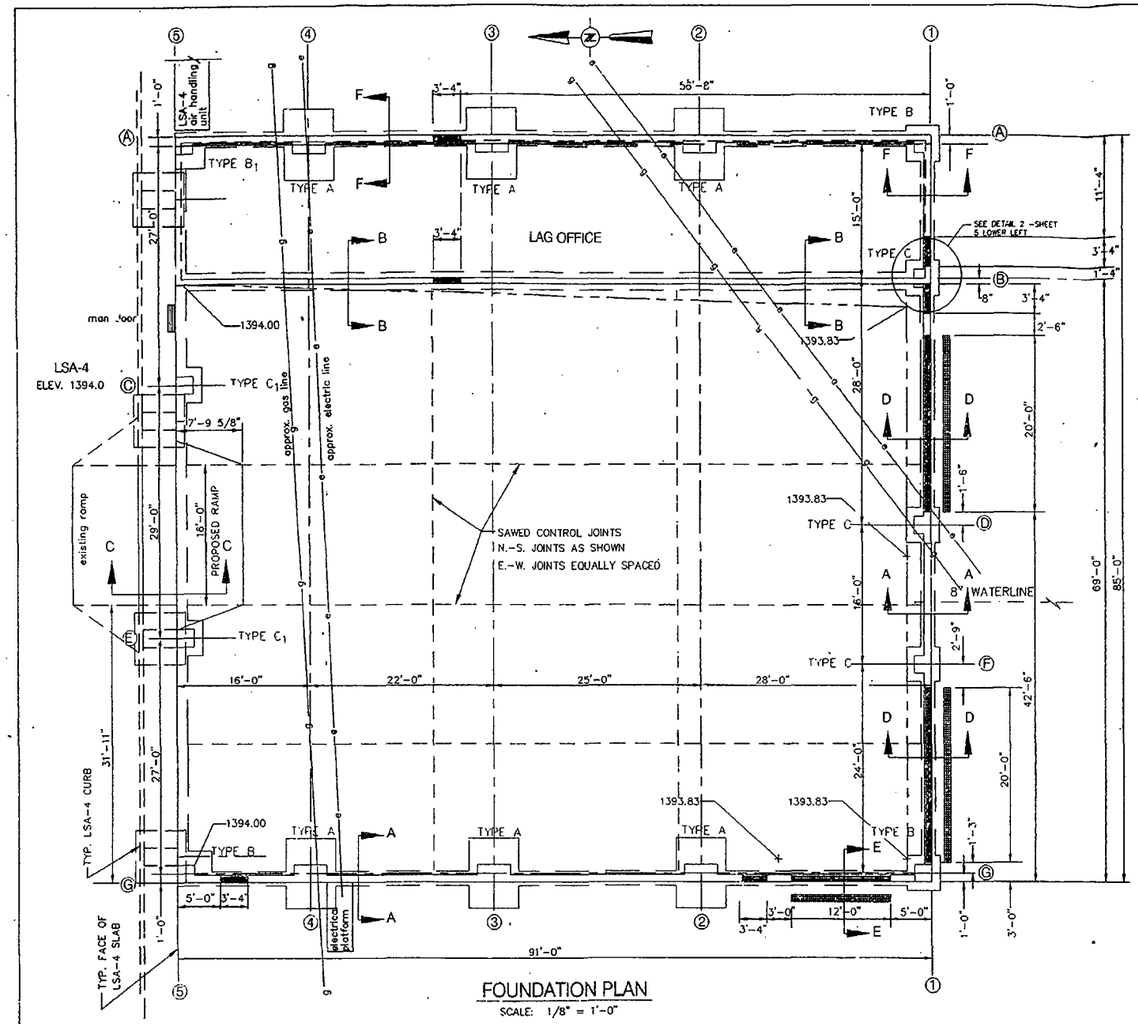
CAD DRAWING-DO NOT REVISE THIS ORIGINAL

10/18/2004 11:48 PEDRO

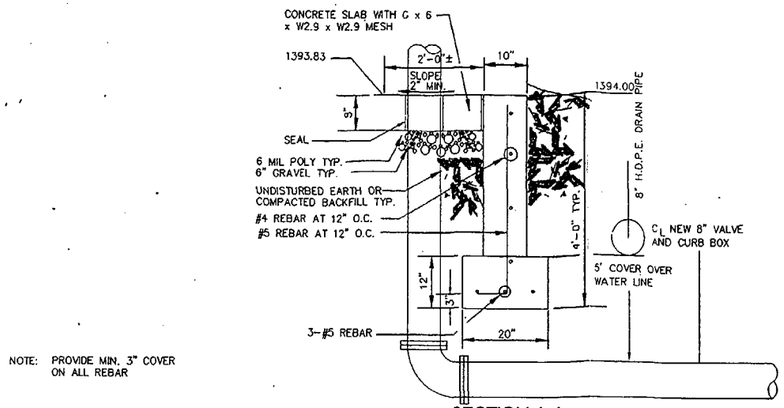
APPENDIX D-6

LSA #3 DESIGN DRAWINGS
(5 DRAWINGS)

CHANGES PRIOR TO EACH USE.
INIT_____ DATE_____

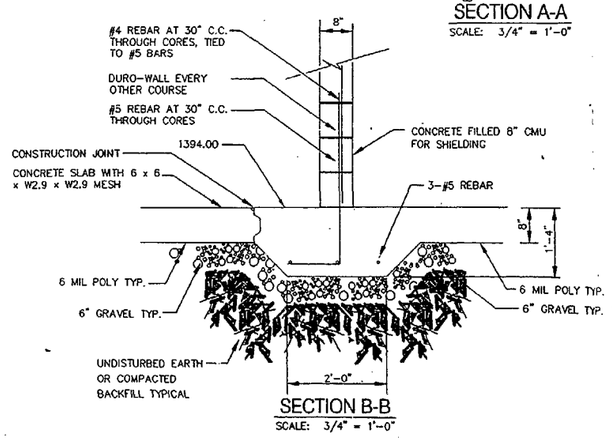


FOUNDATION PLAN
SCALE: 1/8" = 1'-0"

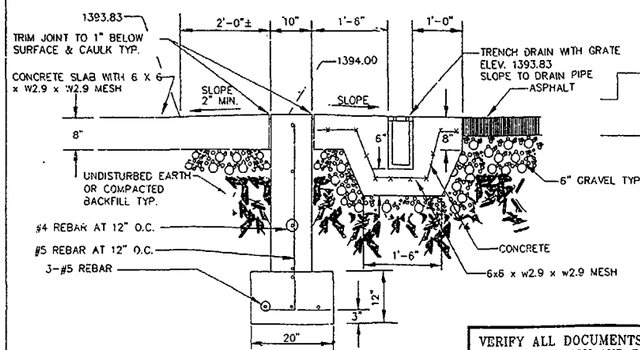


NOTE: PROVIDE MIN. 3" COVER ON ALL REBAR

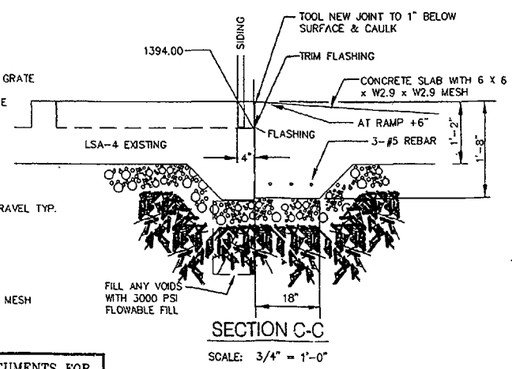
SECTION A-A
SCALE: 3/4" = 1'-0"



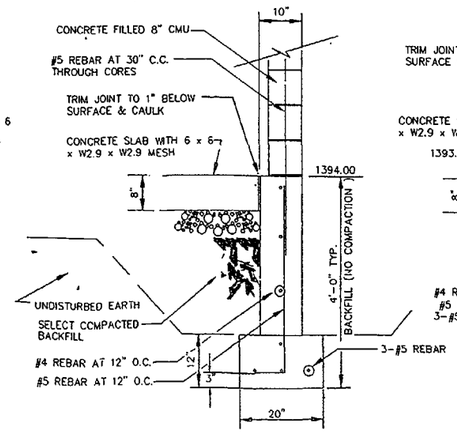
SECTION B-B
SCALE: 3/4" = 1'-0"



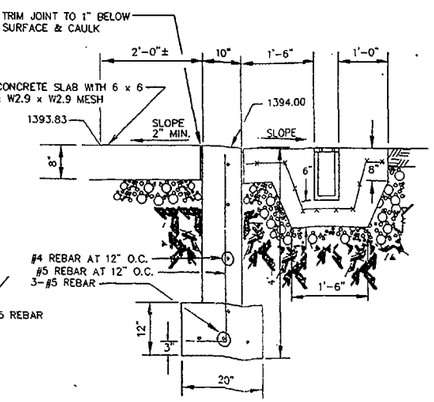
SECTION D-D
SCALE: 3/4" = 1'-0"



SECTION C-C
SCALE: 3/4" = 1'-0"



SECTION F-F
SCALE: 3/4" = 1'-0"



SECTION E-E
SCALE: 3/4" = 1'-0"

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT _____ DATE _____

E & M Engineers and Surveyors, P.C.
P.O. Box 159 - 482 South Cascade Drive
Springville, New York 14141-0159
Ph:(716) 592-2851-Fax:(716) 592-3558
E-Mail : "springville@emengineers.com"

RAND & JONES ENTERPRISES
36 HOPKINS ROAD
WILLIAMSVILLE, NEW YORK 14221

LSA-4 DEPOT PROJECT
WEST VALLEY DEMONSTRATION PROJECT
WEST VALLEY, NEW YORK 14171

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Revisions		
No.	Date	Description
1	11-11-99	ADDED LSA-4 CONTINUOUS PIERS & FOOTERS
0	12/20/2000	ER 4565 CCG

Scale: AS SHOWN

FIELD BOOK	HOLLAND LAND COMPANY
BK. PG.	LOT ** T. ** R. **

DRAWING FILE : CAD_SERVER\CAD_FILES\EP\DATA\1929047\1927047.DWG

DISK NO. : 779-9-1	DATE : 10-07-99
Project Number: 1929047	Drawn By: JR
Designed By: GMH	Checked By: CDC

Sheet Title:
FOUNDATION PLAN

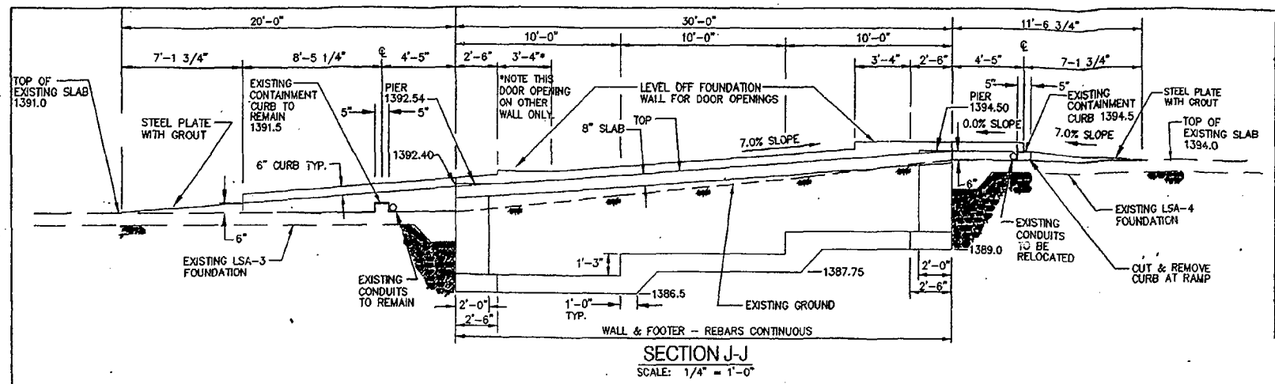
File Number : 9-2B

SHEET 2 OF 6

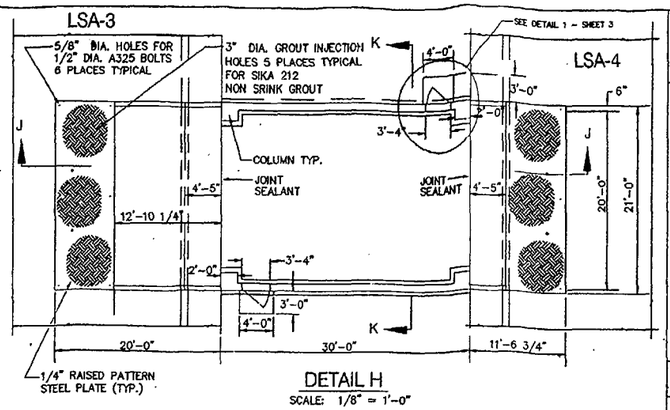
8376D002 1=1.00

10/18/04 11:47:38 AM REPRO

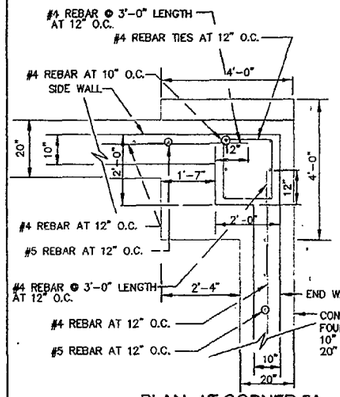
CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE.
INIT _____ DATE _____



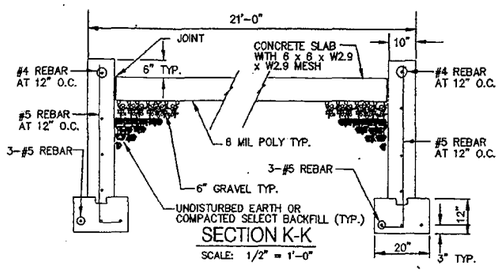
SECTION J-J
SCALE: 1/4" = 1'-0"



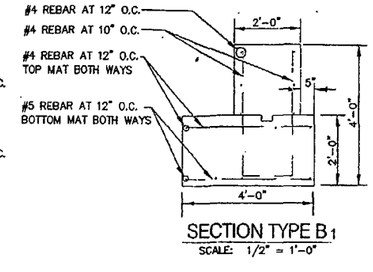
DETAIL H
SCALE: 1/8" = 1'-0"



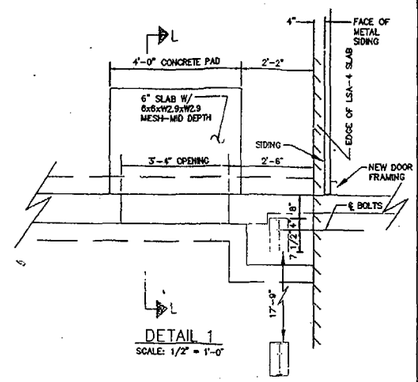
PLAN AT CORNER 5A
FOUNDATION FOR COLUMN TYPE B_1 @ CORNER
SCALE: 1/2" = 1'-0"



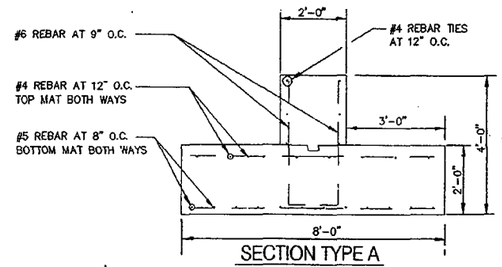
SECTION K-K
SCALE: 1/2" = 1'-0"



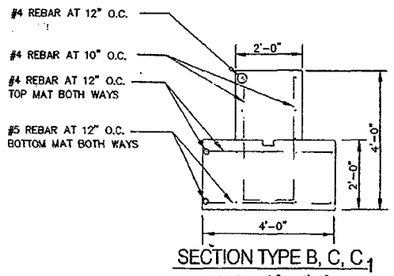
SECTION TYPE B_1
SCALE: 1/2" = 1'-0"



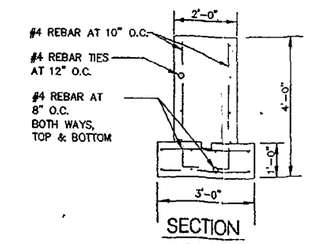
DETAIL 1
SCALE: 1/2" = 1'-0"



SECTION TYPE A
SCALE: 1/2" = 1'-0"

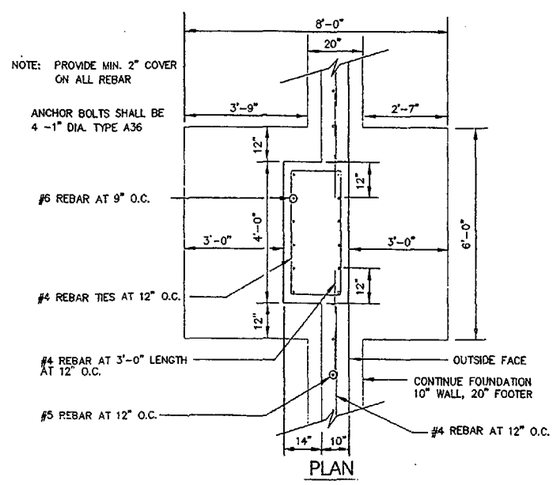


SECTION TYPE B, C, C_1
SCALE: 1/2" = 1'-0"

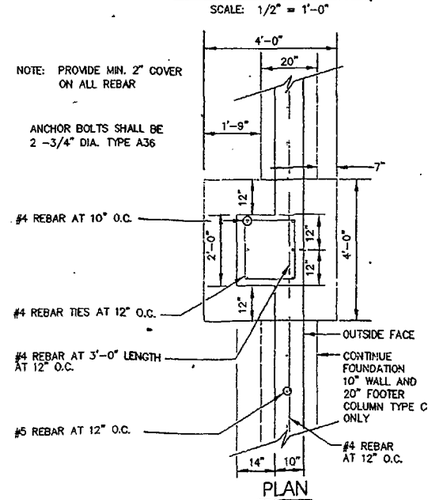


SECTION AT CORRIDOR
SCALE: 1/2" = 1'-0"

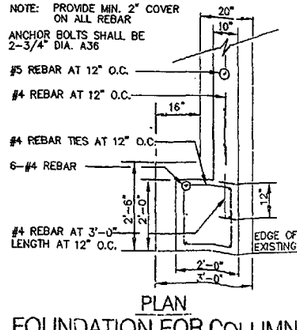
PLAN AT CORNERS 1A ,5G
MIRROR IMAGE FOR 1G
(SECTION SAME AS TYPE B)
FOUNDATION FOR COLUMN TYPE B @ CORNERS
SCALE: 1/2" = 1'-0"



PLAN
FOUNDATION FOR COLUMN - TYPE A
SCALE: 1/2" = 1'-0"



PLAN
FOUNDATION FOR COLUMN - TYPE C AND C_1
SCALE: 1/2" = 1'-0"



PLAN
FOUNDATION FOR COLUMN AT CORRIDOR
SCALE: 1/2" = 1'-0"

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT _____ DATE _____

E & M Engineers and Surveyors, P.C.
P.O. Box 159 - 482 South Cascade Drive
Springville, New York 14141-0159
Ph : (716) 592-2851 - Fax : (716) 592-3558
E-Mail : "springvilleemengineers.com"

RAND AND JONES ENTERPRISES
36 HOPKINS ROAD
WILLIAMSVILLE, NEW YORK 14221

LSA-4 DEPOT PROJECT
WEST VALLEY DEMONSTRATION PROJECT
WEST VALLEY, NEW YORK 14171

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Revisions		
No.	Date	Description
0	12/20/2000	ER 4565 CCG

SCALE AS SHOWN

FIELD BOOK	HOLLAND LAND COMPANY		
BK.	PG.	LOT **	T. ** R. **

DRAWING FILE : CAD-SERVER\CAD-FILES\EP\DATA\19290047\DEPOT.DWG

DISK NO. : 779-B-2	DATE : 10-07-99
Project Number: 19290047	Drawn By: DRS
Designed By: GMH	Checked By: GDC

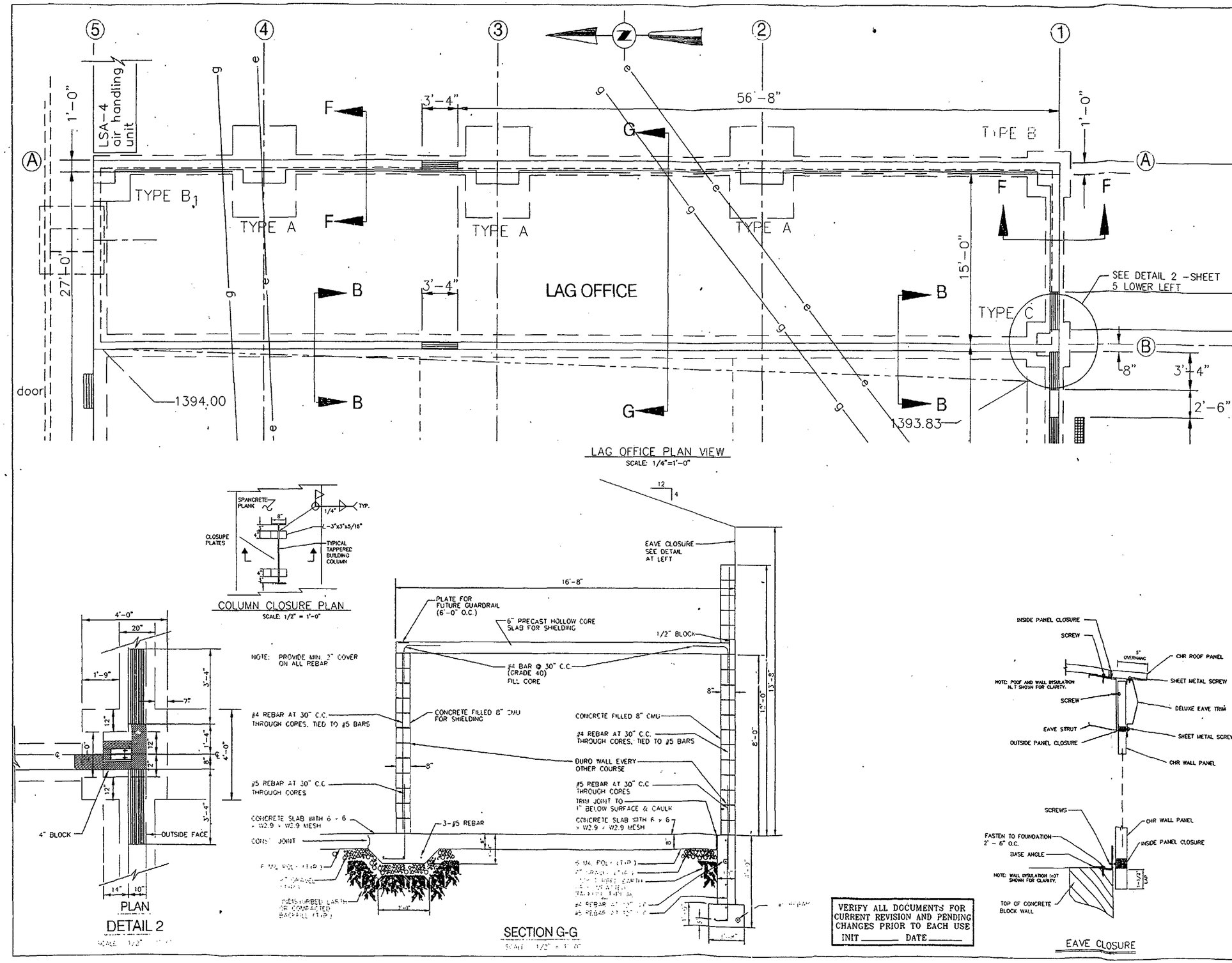
Sheet Title:
FOUNDATION DETAILS

File Number	SHEET
9-2B	3 OF 6

8376D003 1=1.00

10/18/01 11:45:28 AM PEDRO

CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE.
INIT_____ DATE_____



VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT _____ DATE _____

E & M Engineers and Surveyors, P.C.
P.O. Box 159 - 482 South Cascade Drive
Springville, New York 14141-0159
Ph.:(716) 592-2851-Fax :(716) 592-3558
E-Mail : "springville@emengineers.com"

RAND & JONES ENTERPRISES
36 HOPKINS ROAD
WILLIAMSVILLE, NEW YORK 14221

LSA-4 DEPOT PROJECT
WEST VALLEY DEMONSTRATION PROJECT
WEST VALLEY, NEW YORK 14171

ANY ALTERATION OF THIS DOCUMENT SHALL CONFORM TO THE EDUCATION LAW
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Revisions

No.	Date	Description
1	9/21/99	~~Added C.B. on West side~~
0	12/20/2000	ER 4565 CCG

Scale: 1/4" = 1'-0"

FIELD BOOK		HOLLAND LAND COMPANY		
BK.	PG.	LOT **	T. **	R. **

DRAWING FILE : CAD_SERVER\CAD_FILES\EP\DATA\1929047\1927047.DWG

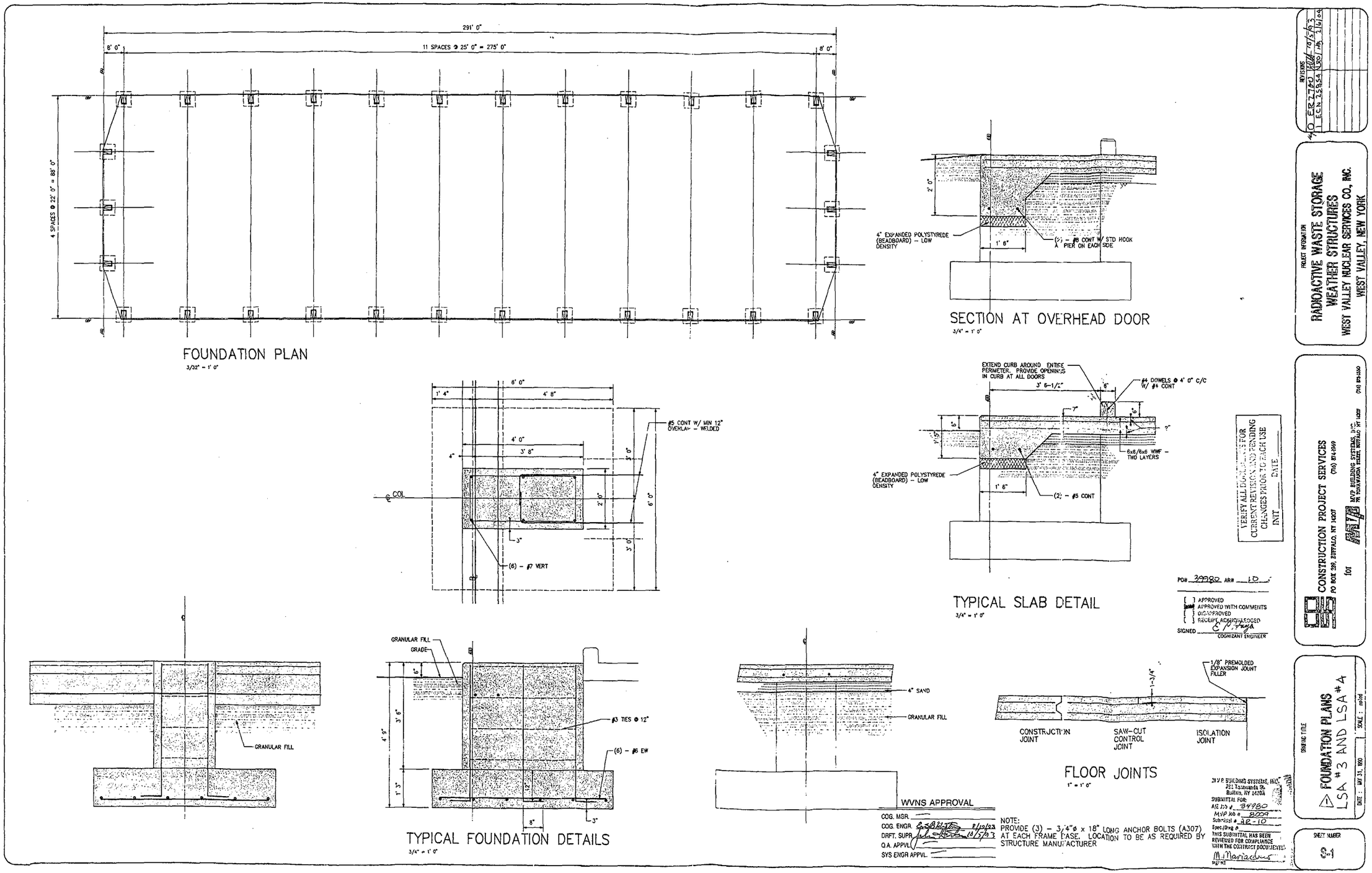
DISK NO. : 779-B-1 DATE : 10-01-99

Project Number: 1929047 Drawn By: DRS

Designed By: GMH Checked By: GDC

LAG OFFICE DETAILS

File Number : 9-2B SHEET 4 OF 6



WVNS APPROVAL

COG. MGR.
COG. ENGR. 8/10/93
DRFT. SUPR. 10/5/93
Q.A. APPVL.
SYS ENGR APPVL.

NOTE:
PROVIDE (3) - 3/4"ø x 18" LONG ANCHOR BOLTS (A307) AT EACH FRAME BASE. LOCATION TO BE AS REQUIRED BY STRUCTURE MANUFACTURER

MVP BUILDING SYSTEMS, INC.
751 Tonawanda St.
Buffalo, NY 14208
SUBMITTAL FOR:
A/E Job # 34980
MVP Job # 8009
Submittal # AR-10
Spec/Dwg #
THIS SUBMITTAL HAS BEEN REVIEWED FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS.
M. Mariachus
Signed

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT DATE

PO# 39980 AR# 10
[ ] APPROVED
[X] APPROVED WITH COMMENTS
[ ] DISAPPROVED
[ ] RECEIPT ACKNOWLEDGED
SIGNED C. P. Fuya
COGNIZANT ENGINEER

REVISIONS
0 ER 2700 10/5/93
1 ECN 25954 NRO/HA 2/6/04

PROJECT INFORMATION
RADIOACTIVE WASTE STORAGE WEATHER STRUCTURES
WEST VALLEY NUCLEAR SERVICES CO., INC.
WEST VALLEY, NEW YORK

CONSTRUCTION PROJECT SERVICES
PO BOX 239, BUFFALO, NY 14207 (716) 874-9949
for MVP BUILDING SYSTEMS, INC.
751 TONAWANDA STREET, BUFFALO, NY 14207 (716) 873-5550

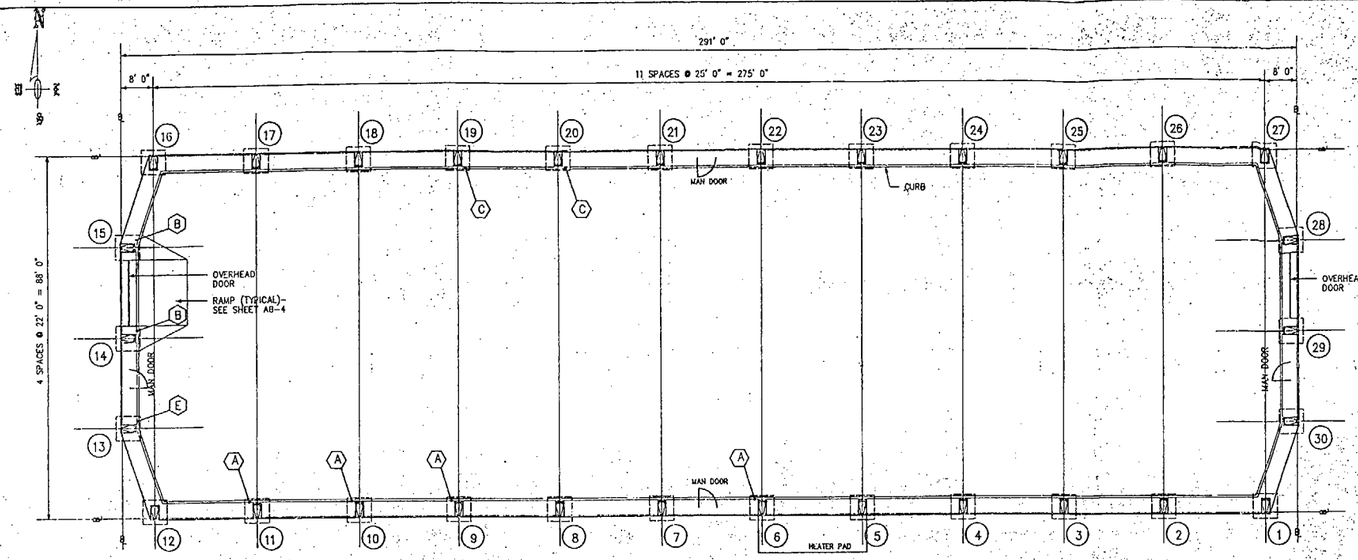
DRAWING TITLE
FOUNDATION PLANS
LSA #3 AND LSA #4
DATE: MAY 31, 1990
SCALE: noted

SHEET NUMBER
S-1

AR-10

AB-1

MVP Buildings

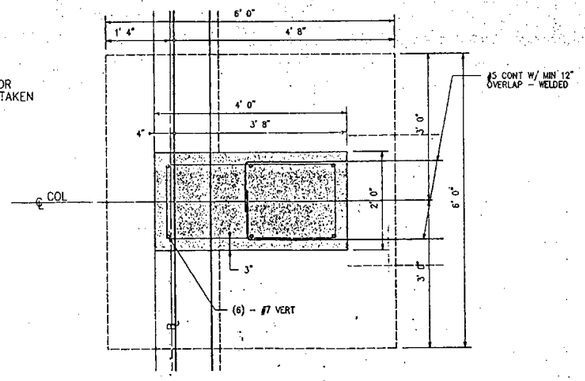


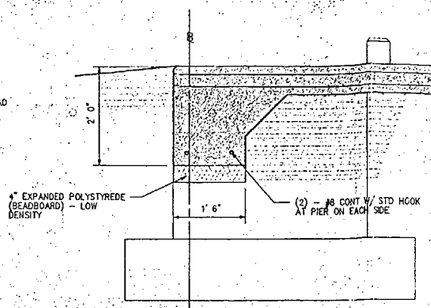
FOUNDATION PLAN

3/32" = 1' 0"

(0) INDICATES FOOTING DESIGNATION

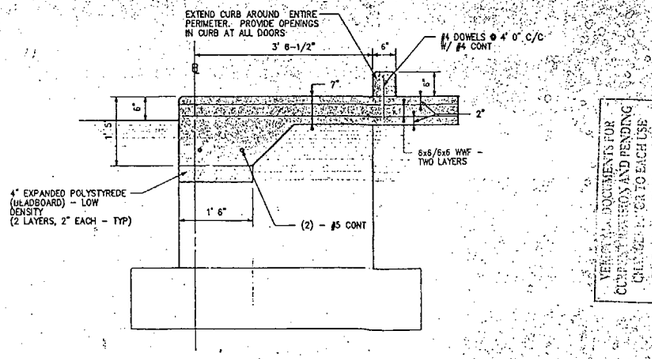
(◇0) INDICATES PIER/FOOTING PROBLEMS ENCOUNTERED - SEE SHEET AB-3 FOR EXPLANATION & CORRECTIVE ACTION TAKEN





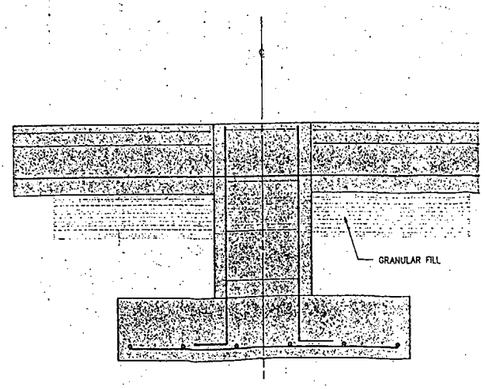
SECTION AT OVERHEAD DOOR

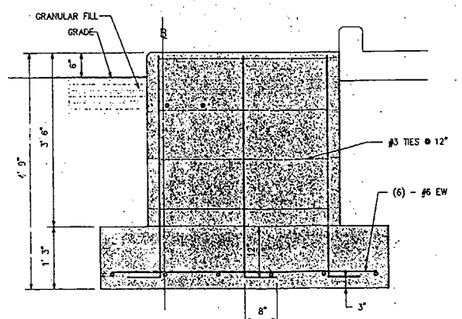
3/4" = 1' 0"



TYPICAL SLAB DETAIL

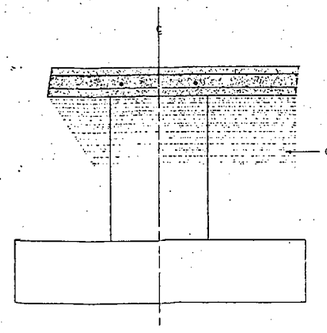
3/4" = 1' 0"

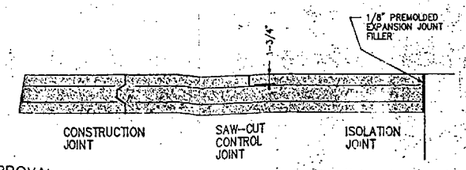




TYPICAL FOUNDATION DETAILS

3/4" = 1' 0"





FLOOR JOINTS

1" = 1' 0"

NOTE:
PROVIDE (3) - 3/4"ø x 18" LONG ANCHOR BOLTS (A307) AT EACH FRAME BASE. LOCATION TO BE AS REQUIRED BY STRUCTURE MANUFACTURER

WVNS APPROVAL
COG. MGR. 1/31/92
COG. ENGR. 1/17/92
DRFT. SUPR. 1/16/92
Q.A. MGR.
R & S MGR.

MVP BUILDING SYSTEMS, INC.
791 Tonawanda St.
Buffalo, NY 14207
SUBMITTAL FOR:
A/E Job # 39980
Job # 8202
Submittal # AR-107
Specific # 03300
THIS SUBMITTAL HAS BEEN REVIEWED FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS.

ERZ201 ZACAD V2E
TECH 2.5B5.0 11/6/96 09:49:

RADIOACTIVE WASTE STORAGE WEATHER STRUCTURES
WEST VALLEY NUCLEAR SERVICES CO., INC.
WEST VALLEY, NEW YORK
PROJECT INFORMATION

CONSTRUCTION PROJECT SERVICES
PO BOX 280, BUFFALO, NY 14207 (716) 874-8999
MVP BUILDING SYSTEMS, INC.
791 TONAWANDA STREET, BUFFALO, NY 14207

VERIFY DOCUMENTS FOR CONSTRUCTION AND PENDING CHANGE ORDER PRIOR TO EACH USE
DATE
INIT

EQ# 39980 ARR 107
[ ] APPROVED
[ ] APPROVED WITH COMMENTS
[ ] DISAPPROVED
[ ] RECEIPT ACKNOWLEDGED
SIGNED COGNIZANT ENGINEER

SHEET TITLE
AS-BUILT DRAWINGS
FOUNDATION PLANS
LSA #3
SCALE: noted
DATE: MARCH 7, 1997

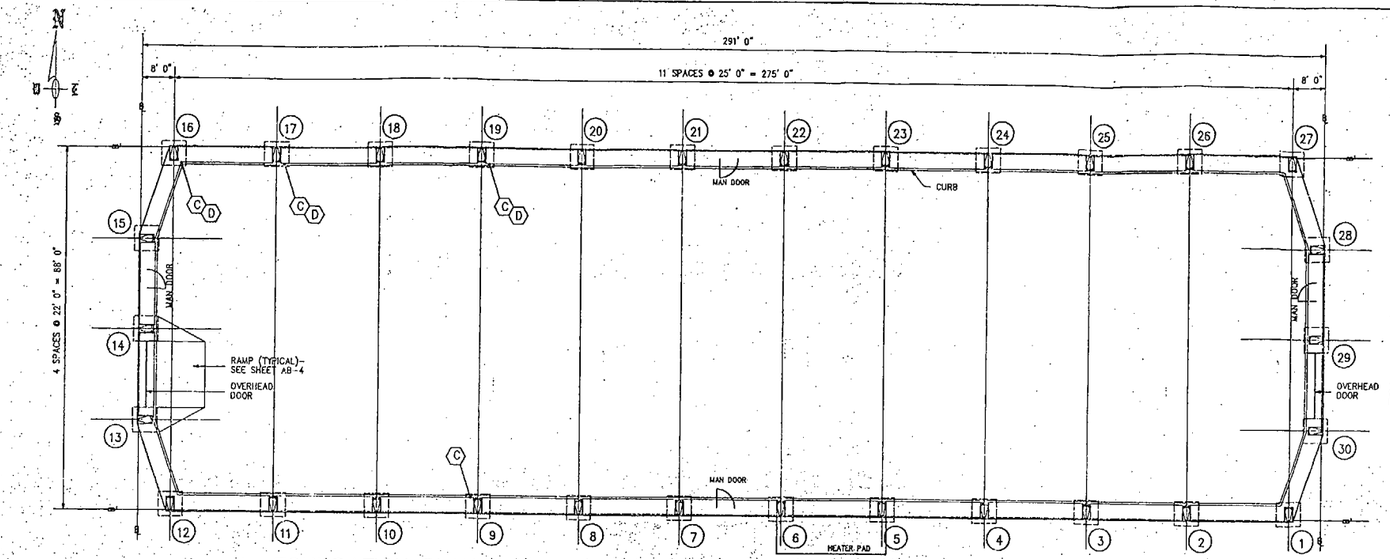
SHEET NUMBER
AB-1 of 4

APPENDIX D-7

LSA #4 DESIGN DRAWINGS
(4 DRAWINGS)

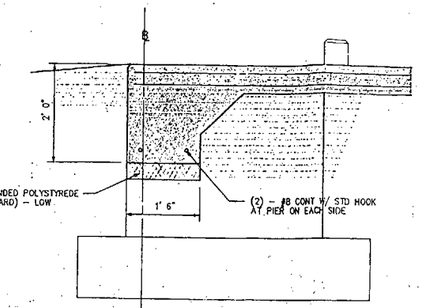
AB-2

MVP Buildings



FOUNDATION PLAN

3/32" = 1' 0"

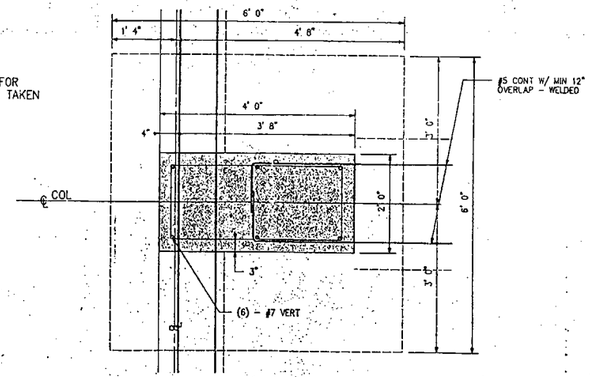


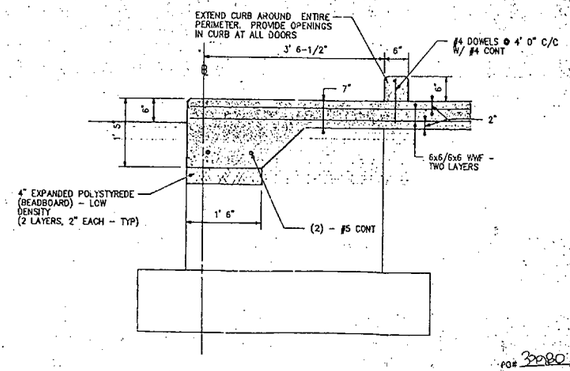
SECTION AT OVERHEAD DOOR

3/4" = 1' 0"

(0) INDICATES FOOTING DESIGNATION

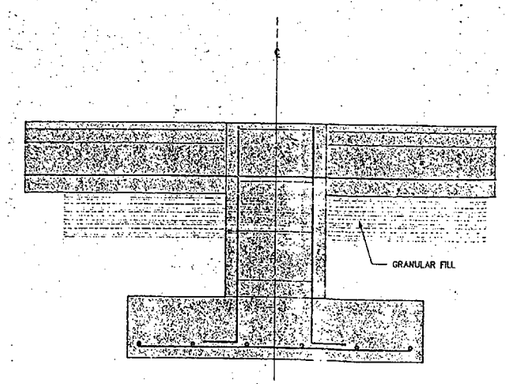
(0) INDICATES PIER/FOOTING PROBLEMS ENCOUNTERED - SEE SHEET AB-3 FOR EXPLANATION & CORRECTIVE ACTION TAKEN

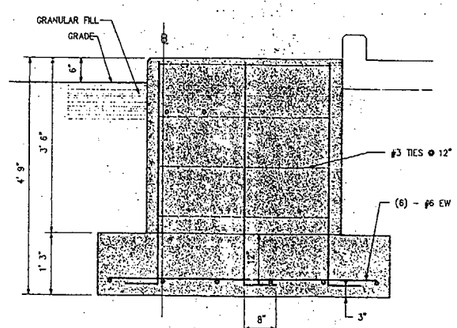




TYPICAL SLAB DETAIL

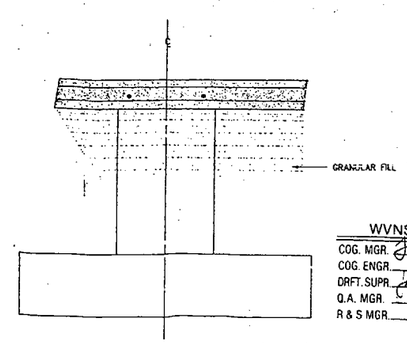
3/4" = 1' 0"

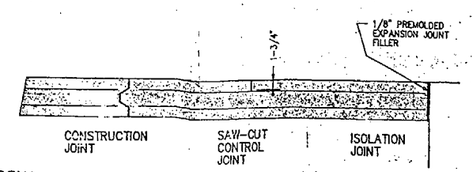




TYPICAL FOUNDATION DETAILS

3/4" = 1' 0"





FLOOR JOINTS

1" = 1' 0"

WVNS APPROVAL

COG. MGR. [signature] 2/25/92

COG. ENGR. E P Hays 1/17/92

DRFT. SUPR. [signature] 2/26/92

Q.A. MGR.

R & S MGR.

NOTE:
PROVIDE (3) - 3/4"ø x 18" LONG ANCHOR BOLTS (A307) AT EACH FRAME BASE. LOCATION TO BE AS REQUIRED BY STRUCTURE MANUFACTURER

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE

INIT. DATE

PO# 39980 AR# 107

[ ] APPROVED
[ ] APPROVED WITH COMMENTS
[ ] DISAPPROVED
[ ] RECEIPT ACKNOWLEDGED

SIGNED E P Hays COGNIZANT ENGINEER

MVP BUILDING SYSTEMS, INC.
791 Tonawanda St.
Buffalo, NY 14207
SUBMITTAL FOR:
A/E Job # 39980
Job # 8002
Submittal # AR-107
Spec./Dwg # 03300
THIS SUBMITTAL HAS BEEN REVIEWED FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS.
signed [signature]

REVISIONS

0	ER2291	2/26/92
1	ECN25854	2/6/04 LRO

PROJECT INFORMATION

RADIOACTIVE WASTE STORAGE
WEATHER STRUCTURES
WEST VALLEY NUCLEAR SERVICES CO., INC.
WEST VALLEY, NEW YORK

CONSTRUCTION PROJECT SERVICES
PO BOX 289, BUFFALO, NY 14207 (716) 874-1969
for MVP BUILDING SYSTEMS, INC.
791 TONAWANDA STREET, BUFFALO, NY 14207 (716) 874-1969

DRAWING TITLE

AS-BUILT DRAWINGS
FOUNDATION PLANS
LSA #4

DATE: MARCH 7, 1991 SCALE: noted

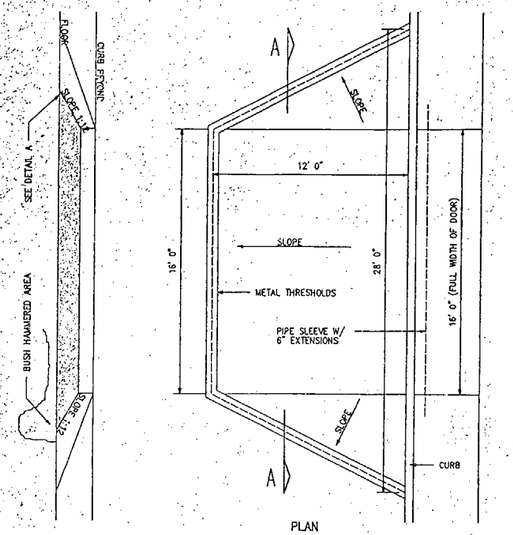
SHEET NUMBER

AB-2 of 4

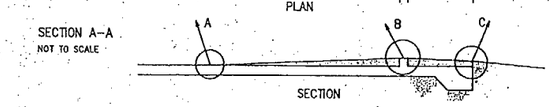
AB-4

MUP Buildings

FCN #SS-011



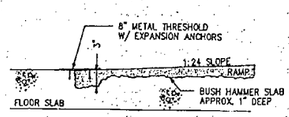
PLAN



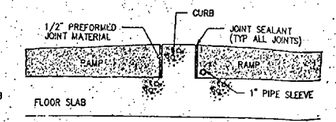
SECTION

SECTION A–A
NOT TO SCALE

OVERHEAD DOOR RAMP
1/4" = 1' 0"



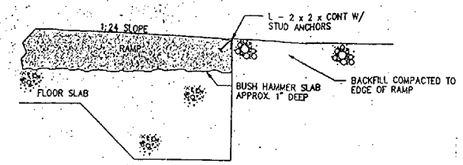
RAMP DETAIL A
1" = 1' 0"



RAMP DETAIL B
1" = 1' 0"

RAMP NOTES

1) FINISH RAMP WITH DEEP BROOM FINISH
2) USE CONCRETE MIX No 202C
3) APPLY "WELDCRETE" TO BUSH HAMMERED SURFACES
4) PLACE 6x6/6x6 WWF AT MID-POINT OF RAMP
5) USE CS-193 FOR PREFORMED JOINT MATERIAL AND JOINT SEALANT INFORMATION



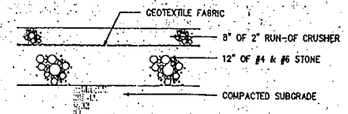
RAMP DETAIL C
1" = 1' 0"

FCN #SS-012

1) INSTALL OVER THE INTERIOR LIGHTING PANEL IN EACH STRUCTURE A NIGHT LIGHT UTILIZING A 150 WATT INCANDESCENT FIXTURE. USE RIGID STEEL CONDUIT.
2) LOCATE THE LIGHTING PANEL ON THE AREA OF CURBING BETWEEN THE MAN-DOOR AND OVERHEAD DOOR. THE FACE OF THE PANEL IS NOT TO EXTEND BEYOND THE INTERIOR FACE OF THE CURB LINE.
3) INSTALL A SWITCH IMMEDIATLY ADJACENT TO THE MAN-DOOR TO OPERATE THE INCANDESCENT FIXTURE.

FCN #SS-013

1) CUT OUT EXISTING MATERIALS AND INSTALL EARTHEN RAMPS TO THE NORTHERN AND SOUTHERN STRUCTURES AS FOLLOWS:



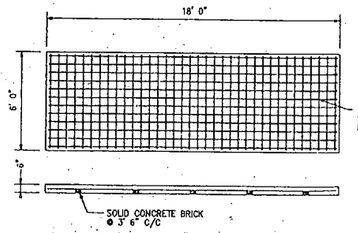
NOTES:

1. GEOTEXTILE MUST BE ANCHORED TO PERFORM ADEQUATELY.
2. OVERLAPS SHALL BE A MINIMUM OF 1.0'
3. 2" ROC SHALL BE COMPACTED TO 95%
4. WIDTH OF RAMPS SHALL BE 18.0' MINIMUM
5. RAMPS SHALL EXTEND FROM THE EQUIPMENT DOORS OUT TO MEET THE EXISTING ACCESS ROAD. APPROXIMATELY 75 LF FOR THE NORTHERN STRUCTURE AND 25 LF FOR THE SOUTHERN STRUCTURE

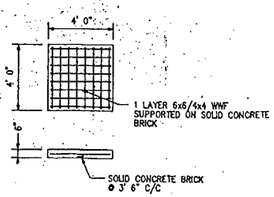
FCN #SS-016

1) 90% COMPACTION IS ADEQUATE FOR THE FOLLOWING AREAS OF LSA III

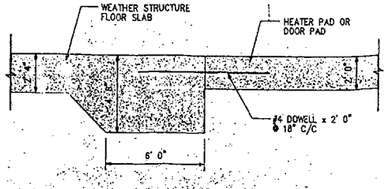
a) MAN-DOOR - SOUTH SIDE
b) MAN-DOOR - EAST SIDE
c) PERMANENT HEATER PAD



HEATER PAD DETAIL
1/4" = 1' 0"

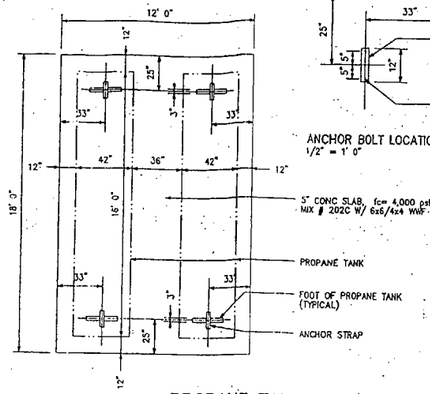


DOOR PAD DETAIL
1/4" = 1' 0"

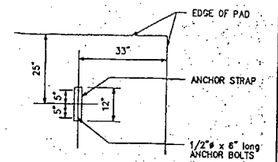


DOWELING DETAIL
1" = 1' 0"

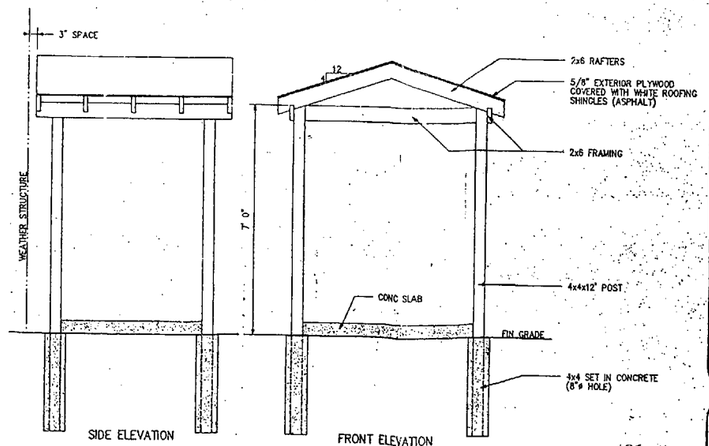
FCN #SS-017



PROPANE TANK PADS
1/4" = 1' 0"

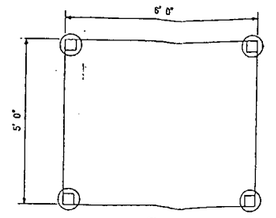


ANCHOR BOLT LOCATIONS (TYPICAL)
1/2" = 1' 0"



SIDE ELEVATION

FRONT ELEVATION



PLAN

MAN DOOR SHELTER
1/2" = 1' 0"

WVNS APPROVAL

COG. MGR.	[illegible] 1/10/02
COG. ENGR.	[illegible] 1/10/02
DRFT. SUPR.	[illegible] 2/4/02
Q.A. MGR.	
R & S MGR.	

REVISIONS

NO	DESCRIPTION	DATE	BY
1	PER ECN 25584	1/15/04	DBO

PROJECT INFORMATION

RADIOACTIVE WASTE STORAGE WEATHER STRUCTURES
WEST VALLEY NUCLEAR SERVICES CO., INC.
WEST VALLEY, NEW YORK

CONSTRUCTION PROJECT SERVICES
MVP BUILDING SYSTEMS, INC.
91 TONAWANDA STREET, BUFFALO, NY 14207
(716) 874-8969
PO BOX 289, BUFFALO, NY 14207

VERIFY AS-BUILT DIMENSIONS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
DATE
INIT

PO# 39980 ARF 107

[ ] APPROVED
[X] APPROVED WITH COMMENTS
[ ] DISAPPROVED
[ ] RECEIPT ACKNOWLEDGED

SIGNED [signature] COGNIZANT ENGINEER

MVP BUILDING SYSTEMS, INC.
91 Tonawanda St.
Buffalo, NY 14207

SUBMITTAL FOR:
A/E Job # 39980
Job # 5002
Submittal # AB-4
Spec/Dwg # 02200

THIS SUBMITTAL HAS BEEN REVIEWED FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS

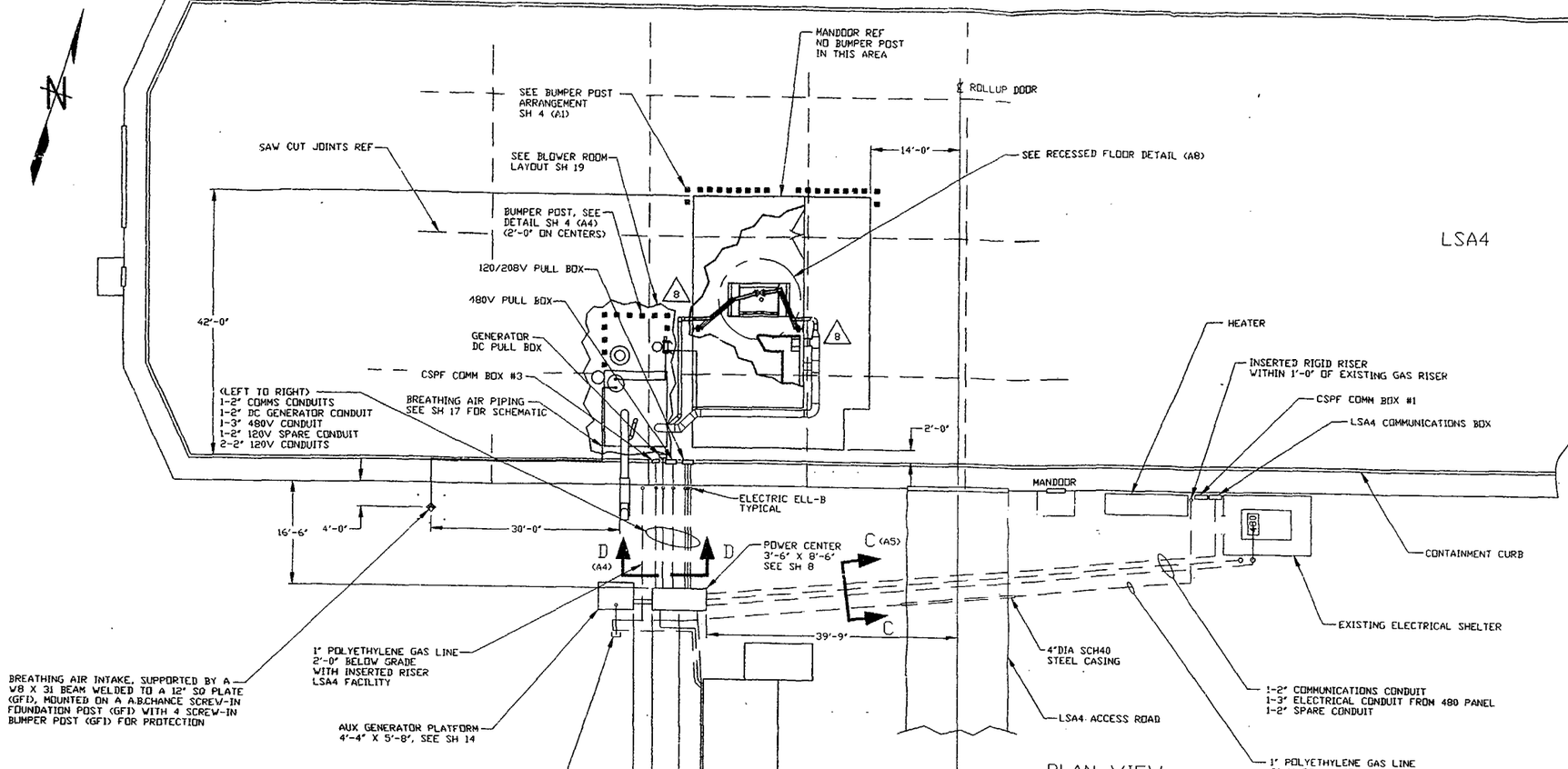
Signed

DRAWING TITLE
AS-BUILT DRAWINGS
FOUNDATION PLANS
LSA #3 AND LSA #4

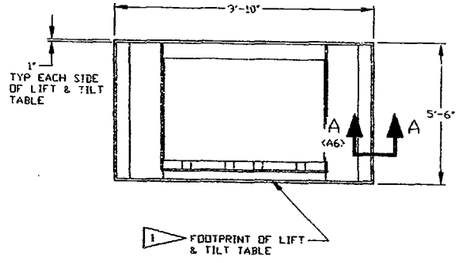
DATE: MARCH 1, 1991
SCALE: noted

SHEET NUMBER
AB-4 of 4

10/18/04 11:53:24 AM REPRO



PLAN VIEW
SCALE: 1"=10'



RECESSED FLOOR DETAIL (D4)
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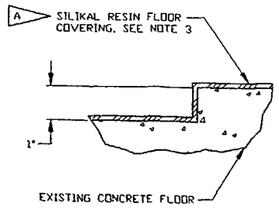
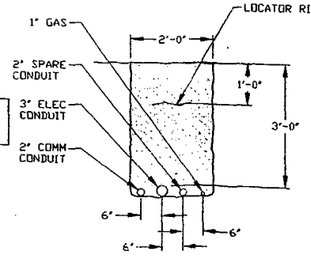
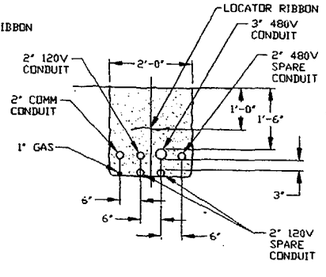


SECTION A-A (A7)
FLOOR RECESS FOR
LIFT & TILT TABLE BASE
SCALE: 6"=1'-0"



SECTION C-C (C5)
NTS



SECTION D-D (C6)
NTS

8 B NEDERMAN, I...
39115 WEST WARREN
WESTLAND, MI 48185

A SILIKAL RESIN SYSTEMS
2050 MAIN ST
NEW WOODSTOCK, NY 13122
(800) 477-4545

ADDRESS:

CONSTRUCTION DRAWINGS:

900D-4286	LSA3 & LSA4 STORAGE STRUCTURES UTILITY SERVICES
900D-4817 SH 1	WVDP COMMUNICATION CABLE & CONDUIT ROUTING
900D-5283	WVDP BELOW GRADE & EXTERIOR NATURAL GAS LINES
900D-6536 SH 2	CSPF GENERAL ARRANGEMENT
900D-6536 SH 3	CSPF STEEL FRAMING
900D-6536 SH 4	CSPF MISCELLANEOUS DETAILS
900D-6536 SH 5	CSPF LIFT & TILT TABLE LAYOUT
900D-6536 SH 6	CSPF VENTILATION ARRANGEMENT
900D-6536 SH 7	CSPF VENTILATION SUPPORT DETAILS
900D-6536 SH 8	CSPF POWER CENTER
900D-6536 SH 9	CSPF POWER CENTER DETAILS
900D-6536 SH 10	CSPF ELECTRICAL LIGHTING-CEILING EXTERIOR
900D-6536 SH 11	CSPF ELECTRICAL POWER AND INSTRUMENTATION
900D-6536 SH 12	CSPF ELECTRICAL SINGLE LINE AND DETAILS
900D-6536 SH 13	CSPF ELECTRICAL SCHEMATIC & DETAILS
900D-6536 SH 14	CSPF ELECTRICAL FIRE ALARM & COMMUNICATION SYSTEMS
900D-6536 SH 15	CSPF AUXILIARY GENERATOR PLATFORM
900D-6536 SH 16	CSPF INTERIOR GUARDRAIL DETAILS
900D-6536 SH 17	CSPF BREATHING AIR, NATURAL GAS & VENTILATION SCHEMATICS
900D-6536 SH 18	CSPF EXAUST HOOD
900D-6536 SH 19	CSPF BLOWER ROOM ARRANGEMENT
900D-6536 SH 25	CSPF STACK AIR SAMPLER SHELTER
900D-6536 SH 34	CSPF STACK SAMPLING SYSTEM P&ID
900D-6536 SH 35	CSPF RACK & EQUIPMENT PIPING
900D-6536 SH 36	CSPF RACK ASSEMBLY
8 900D-6536 SH 37	VENTILATION DETAILS
8 900D-6536 SH 38	VENTILATION DETAILS
8 900D-6536 SH 39	VENTILATION DETAILS
900D-6537 SH 1	CSPF PARTITION WALL & ELECTRICAL LAYOUT
900D-6537 SH 2	CSPF CEILING PARTITION LAYOUT
900D-6538	CSPF SORTING TABLE GENERAL ARRANGEMENT
900D-6539	CSPF WASTE CONTAINER LID HOLDER

3 SYSTEM:
FULL FLAKE
R51 PRIMER
R61 ROLLCOAT PIGMENTED PS
COLORED FLAKE BROADCAST (x2); LIGHTLY SANDED
R71 TOPCOAT (3 COATS)
'FLAKE MIX'
10% NO F1
10% NO F16
15% NO F17
65% NO F2

2 CONCRETE FLOOR (INSIDE LSA4), 4000 LB X 6" DEEP
W/6 X 6 DN 6 X 6 WELDED WIRE FABRIC

1 LIFT & TILT TABLE DIMENSIONS WITH SIDE FLANGES ARE 5'-4" X 9'-8", FOR LOCATION SEE SH 2

NOTES:

REVISIONS			
REV	DESCRIPTION		APVD
0	ER 3411	7/19/95	JRH
1	GEN REV CDN 9139 CGR	8/7/95	JAV
2	GEN REV CDN 9275 CGR	9/22/95	JAV
3	ECN 9847 LRP	4/24/96	HAB
4	ECN 10284 MJC	9/26/96	HAB
5	ECN 10254 JHS	10/15/96	HAB
6	ECN 10454 JHS	12/17/96	HAB
7	ECN 10587 LRD	2/1/97	HAB
8	ECN 12195 LRD	10/11/99	KKS

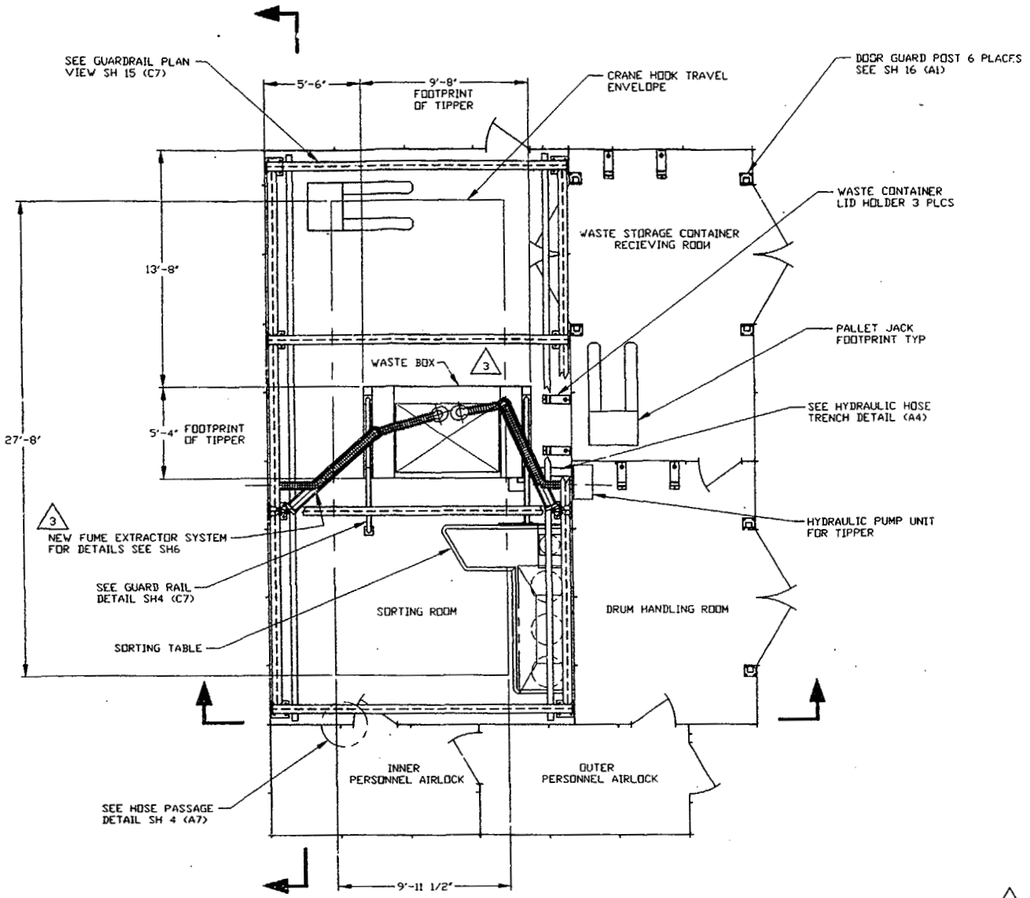
THIS DRAWING CONTAINS AS-BUILT INFORMATION

UNLESS OTHERWISE SPECIFIED	DRAFTER C. ROBLEE	DATE 4/24/95
TOLERANCES: 2PL DEC ± N/A; 3PL DEC ± N/A; DO NOT SCALE DRAWING	CHECKED T. RAMDINO	DATE 5/22/95
FRACTS ± N/A; ANGLES ± N/A; FINISH N/A	ENGINEER J. WOODWORTH	DATE 5/22/95
FILE NAME 6536D001	A/E CONTRACT NO.	CODE IDENT NO.
PLOT SCALE 1=120.00	FOR WEST VALLEY NUCLEAR SERVICES CO., INC. WEST VALLEY N.Y.	
D SPEC NO. 2556	SYSTEM 312	
NEXT ASSEMBLY	CONTAINER SORTING & PACKAGING FACILITY (CSPF) PLAN VIEW	
SEE ENGINEERING RELEASE FORM (ER) FOR DRAWING APPROVAL SIGNATURES.	DWG SIZE D; SCALE 1"=10'; WEIGHT; A/E DWG NO.	DWG NO. 900D-6536; REV 8; SHEET 1 OF 39

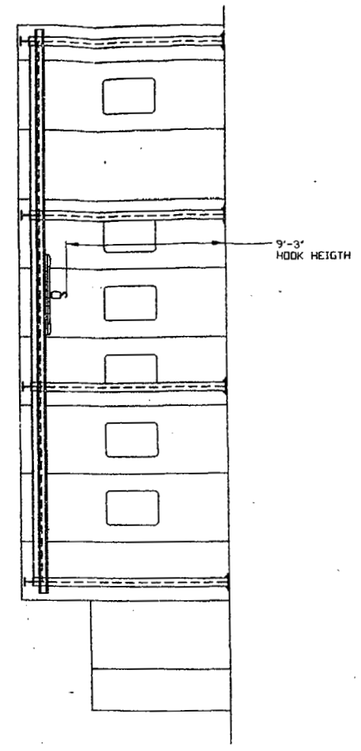
Mon Nov 15 08:28:19 1999 HAB

10/18/2004 12:48 PEDRO

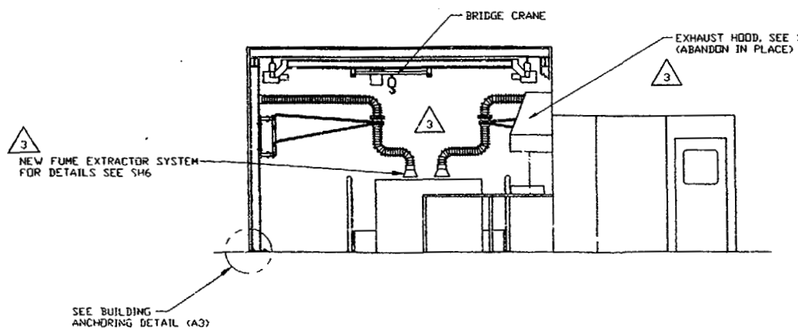
CAD D' SWING-DD NOT REVISE THIS ORIGINAL

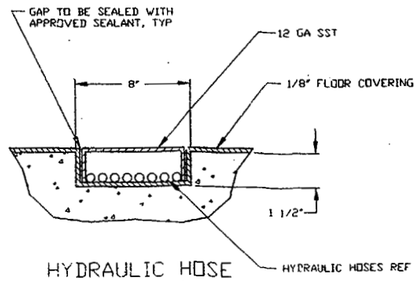


PLAN VIEW



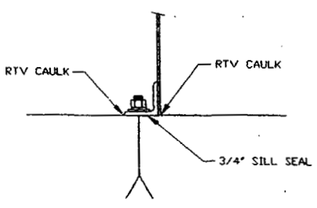
3 NOTE: EXTRACTOR ARM AND FLEXHOSE NOT SHOWN





HYDRAULIC HOSE TRENCH DETAIL (C6)

NTS



BUILDING ANCHORING DETAIL (A8)

CONTAINER SORTING & PACKAGING FACILITY VENTILATION REQUIREMENTS

1. ALL ROOMS WITHIN THE FACILITY SHALL BE SUPPLIED WITH A MINIMUM OF 6 AIR CHANGES PER HOUR.
2. THE SORTING ROOM SHALL BE MAINTAINED WITH A .1 INCH NEGATIVE PRESSURE AT ALL TIMES, WHICH INCLUDES THE TIMES WHEN THE DOUBLE DOORS TO RECEIVING OR HANDLING ROOMS ARE OPEN, OR WHEN A PERSONNEL AIR LOCK DOOR IS OPEN. THE PERSONNEL AIR LOCKS AND THE RECEIVING AND HANDLING ROOM SHALL HAVE A .1 INCH NEGATIVE PRESSURE, WHILE THE DOORS ARE CLOSED.
3. PRIMARY PATHS OF AIR FLOW SHALL BE AS FOLLOWS:
   A) FROM THE EXTERIOR OF THE STRUCTURE TO THE OUTER PERSONNEL AIR LOCK TO THE INNER PERSONNEL AIR LOCK TO THE SORTING ROOM.
   B) FROM THE EXTERIOR OF THE STRUCTURE TO THE WASTE STORAGE CONTAINER RECEIVING ROOM TO THE SORTING ROOM.
   C) FROM THE EXTERIOR OF THE STRUCTURE TO THE DRUM HANDLING ROOM TO THE SORTING ROOM.
3 4. EXHAUST AIR FROM THE SORTING ROOM SHALL BE THROUGH THE BENCH HOOD OVER THE SORTING TABLE AND, THROUGH TWO FUME EXTRACTOR ARMS OVER WASTE BOX.
5. ADJUSTABLE DAMPERS, WITH 25% ROUGHING FILTERS, SHALL BE PROVIDED BETWEEN EACH ROOM, WITH THE FLOW DIRECTION TOWARD THE SORTING ROOM, WHICH CAN BE COMPLETELY CLOSED. ADJUSTMENT SHALL BE MANUAL.
6. ADJUSTABLE MAKEUP AIR DAMPERS, WITH 25% ROUGHING FILTERS, SHALL BE PROVIDED THROUGH THE EXTERIOR WALLS OF THE SORTING ROOM, WITH A MINIMUM OF 15% OF THE MAKEUP AIR INTO THE SORTING ROOM COMING THROUGH THESE MAKEUP AIR DAMPERS.
7. THE VENTILATION SYSTEM SHALL INCURPORATE HEPA FILTRATION INSTALLED ON THE INLET SIDE OF THE BLOWER.
8. PROVIDE ROUGHING FILTER(S) UPSTREAM OF THE HEPA FILTERS.
9. FILTER ASSEMBLY SHALL BE OF STAINLESS STEEL CONSTRUCTION AND SHALL CONFORM WITH CHAPTER 5.6 OF ANSI N509-1989, "NUCLEAR POWER PLANT AIR CLEANING UNITS AND COMPONENTS", AND THE DOCUMENTS REFERENCED THEREIN.
10. PROVISIONS SHALL BE MADE FOR IN-PLACE DOP TESTING OF HEPA FILTERS, PER ANSI N509 AND ANSI N510.
11. PROVISIONS SHALL BE MADE FOR BAG-IN/BAG-OUT FILTER CHANGES. PROVIDE A MEANS FOR MAINTAINING THE FILTER HOUSING UNDER NEGATIVE PRESSURE DURING FILTER CHANGES.
12. PROVIDE INSTRUMENTATION, CALIBRATED AND TRACEABLE TO NIST, FOR DIFFERENTIAL PRESSURE ACROSS HEPA FILTERS.
13. HEPA FILTERS SHALL BE NOMINAL 24" X 24" X 12" UNITS, APPLIED AT FLOW RATES NOT EXCEEDING 1000 SCFM EACH. FILTERS SHALL BE AS DEFINED IN ANSI N509 CHAPTER 5.1. TO BE SUPPLIED BY WVNS
14. SUPPLY AIR VELOCITIES ENTERING SPACES THROUGH DAMPERS, ETC. SHALL BE LIMITED DURING NORMAL OPERATION TO 250 FPM.
15. DUCTWORK SHALL BE ARRANGED TO LIMIT NOISE CONDUCTED INTO THE WORK SPACE. MAX VELOCITY IN EXHAUST DUCT SHALL BE 2000 FPM, MAX VELOCITY IN SUPPLY DUCT SHALL BE 1000 FPM.
16. PROVISIONS SHALL BE MADE FOR SEALING BUILDING CONSTRUCTION JOINTS, WALL TO FLOOR JOINTS, DOOR EDGES, ETC. TO MINIMIZE THE VENTILATION SYSTEM CAPACITY REQUIRED TO MAINTAIN SPECIFIED PRESSURE DIFFERENTIALS.
17. VENTILATION SYSTEM SHALL BE EQUIPPED WITH AN ALARM SYSTEM, BASED ON LOSS OF NEGATIVE PRESSURE, WITH THE ALARM SET POINT AT .02 IN WATER. ALARM SHALL BE BOTH STROBE AND HORN.

VENDOR REF DWGS:

CRANE STEEL- ALP STEEL CORP DWG'S: ALP 1 THRU ALP 6

WASTE CONTAINER LID HOLDER- NFS/RPS RADIATION PROTECTION SERVICES DWG: RPS 10998

FACILITY PLAN- NFS/RPS DWG'S: RPS 10996, RPS 10997, RPS 10998, RPS 11001, RPS 11002, KK# 3743, RPS SS #1 THRU #5 & RPS ES #1 THRU 38

EXHAUST HOOD- NFS/RPS DWG: RPS 11002 SH 2 & 3

THIS DRAWING CONTAINS AS-BUILT INFORMATION

REVISIONS REV	DESCRIPTION	APV'D
0	ER 3411 7/19/95	JRH
1	GEN REV EGN 9139 CGR 8/7/95	JAV
2	ECN 9275 CGR 3/22/95	JAV
3	ECN 12195 LRD 10/26/99	R.K.S

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS IN INCHES
TOLERANCES: 2PL DEC ± N/A; 3PL DEC ± N/A; FRACTS ± N/A; ANGLES ± N/A; DO NOT SCALE DRAWING; FINISH N/A
FILE NAME 6536D002
PLOT SCALE 1=48.00
D SPEC NO. 2556
NEXT ASSEMBLY

DRAFTER C. ROBLEE DATE 5/9/95
CHECKER T. RAMOINO DATE 5/22/95
ENGINEER J. WOODWORTH DATE 5/22/95

SEE ENGINEERING RELEASE FORM (ER) FOR DRAWING APPROVAL SIGNATURES.

A/E CONTRACT NO. CODE IDENT NO.
FOR WEST VALLEY NUCLEAR SERVICES CO., INC. WEST VALLEY N.Y.

SYSTEM 312
CONTAINER SORTING & PACKAGING FACILITY (CSPF)
GENERAL ARRANGEMENT

DWG SIZE D; SCALE AS NOTED; WEIGHT; DWG NO. 900D-6536; REV 3; A/E DWG NO.; SHEET 2 OF

10/18/2004 12:44 REPRO

Mon Nov 15 08:28:31 19

CAD DRAWING-DO NOT REVISE THIS ORIGINAL

APPENDIX D-8

LAG STORAGE BUILDING DESIGN DRAWINGS
(2 DRAWINGS)

DRAWING NUMBER

DRAWING NUMBER

DRAWING NUMBER

DRAWING NUMBER **900D-118**

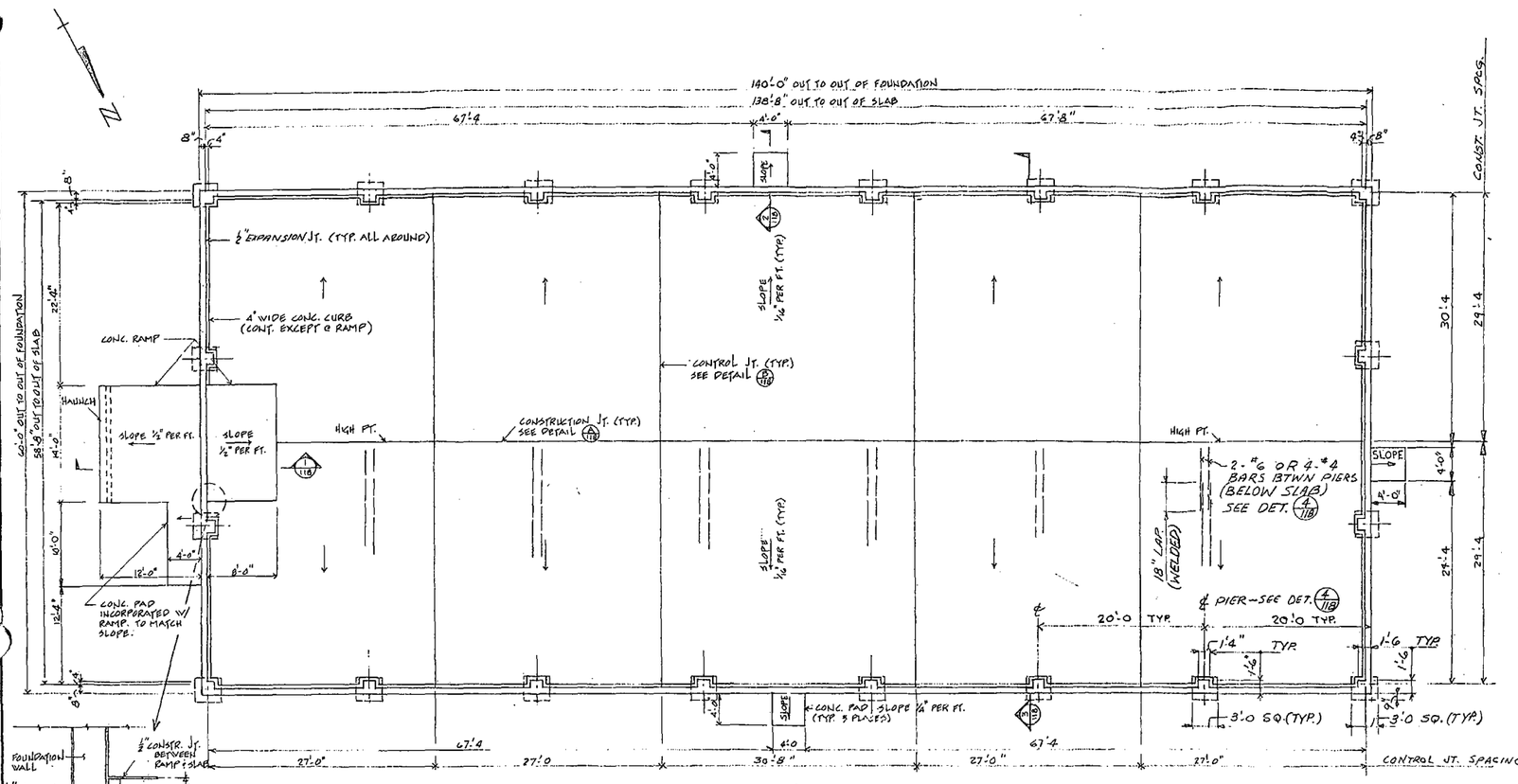
DRAWING NUMBER

8 7 6 5 4 3 1

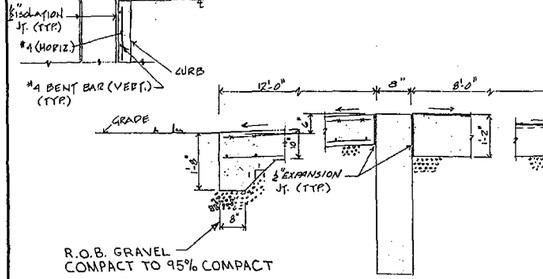
DWG NO. 900D-118 | SH

REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED
	1	AS BUILT	9/20/83	FJK/RMS
	2	ECN 25854	2/5/04	LRO/

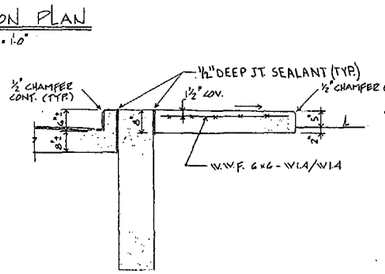


FOUNDATION PLAN
SCALE: 1/8" = 1'-0"



NOTE: REINF. OF RAMPS SAME AS SLAB-ON-GRADE

SECTION 1/118
SCALE: ½" = 1'-0"



SECTION 2/118
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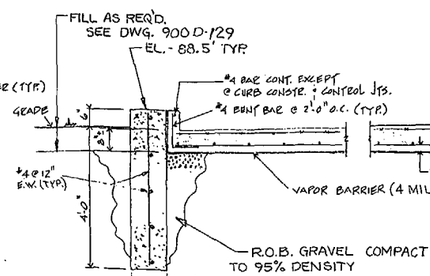

SECTION 3/118
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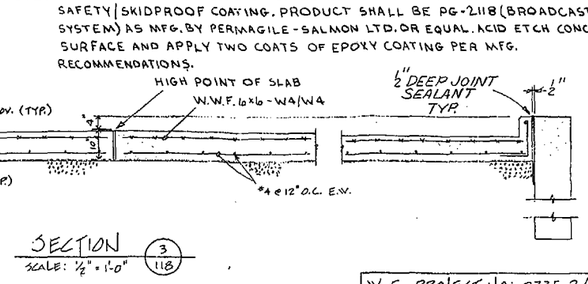
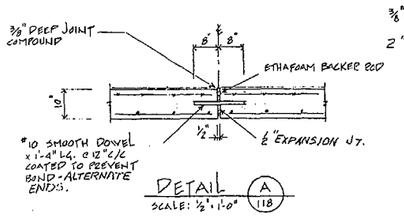


MATERIAL SPECIFICATIONS

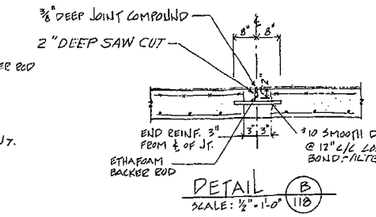
1. CONCRETE WORK SHALL CONFORM TO ALL REQUIREMENTS OF "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" ACI 301-72 (REVISED 1975), EXCEPT AS MODIFIED BY THE SUPPLEMENTAL REQUIREMENTS BELOW.
2. ALL CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH @ 28 DAYS OF 4,000 PSI FOR SLAB & HAVE A MAXIMUM SLUMP OF THREE (3) INCHES. FOUNDATION TO BE 3,000 PSI @ 28 DAYS.
3. AIR ENTRAINING AGENT SHALL CONFORM TO ASTM C-260, ADDED TO ALL CONCRETE TO PRODUCE CONCRETE W/ 5% AIR ± 1.5% BY VOLUME.
4. CONCRETE AGGREGATES SHALL CONFORM TO ASTM C-33. MAXIMUM SIZE SHALL BE 1 INCH.
5. THE FINISHED SURFACE SHALL CONFORM TO CLASS A TOLERANCES (THE FINISHED SURFACE MUST BE A TRUE PLANE WITHIN ⅛ INCH IN TEN FOOT, AS DETERMINED BY A TEN FOOT STRAIGHT EDGE PLACED ANYWHERE ON THE SLAB IN ANY DIRECTION.
6. POURED FOUNDATION WALLS SHALL BE POURED ON UNDISTURBED SOIL TO A DEPTH AS SHOWN ON DRAWING.
7. CAST-IN-PLACE CONCRETE SHALL BE POURED CONTINUOUSLY WITH NO COLD JOINTS. MATERIAL SHALL BE ADEQUATELY VIBRATED TO PREVENT OCCURRENCE OF AIR POCKETS AND HONEYCOMB EFFECTS.
8. CONCRETE SLAB SHALL BE POURED ON A BASE COURSE OF R.O.B. GRAVEL-SIX(6) INCHES IN THICKNESS, MECHANICALLY COMPACTED TO 95% DENSITY.
9. ALL CONCRETE SURFACES TO RECEIVE COATINGS SHALL HAVE A TROWELED FINISH. ALL OTHER SURFACES TO BE FORMED OR STEEL TROWELED.
10. CURING SHALL BE ACCOMPLISHED BY APPLICATION PRIMER AND SEALER LIQUID MEMBRANE CURING COMPOUND (AS MANUFACTURED BY AMERON OR EQUAL) CONFORMING TO REQUIREMENTS OF ASTM C-309 AND SPRAY APPLIED AS PER MANUFACTURERS SPECIFICATIONS.
11. JOINTS:
    - CONSTRUCTION - FILLER MATERIAL SHALL BE FIBRE (AS MANUFACTURED BY W.R. MEADOWS OR EQUAL.)
      - JOINT COMPOUND SHALL BE SEALED WITH SEALTIGHT #164 AS MANUFACTURED BY W.R. MEADOWS OR APPROVED EQUAL.
    - CONTROL - ETHAFORM BACKER ROD (AS MANUFACTURED BY POW CHEMICAL OR EQUAL.)
      - JOINT COMPOUND SHALL BE THE SAME AS FOR CONST. JT.
    - ISOLATION - FILLER MATERIAL SHALL BE THE SAME AS FOR CONST. JT.
      - SEALANT SHALL BE SEALTIGHT #164 AS MF'G'D. BY W.R. MEADOWS OR EQUAL.)
12. ALL REINFORCING BARS SHALL CONFORM TO ASTM A-615 DEFORMED BARS WITH A MINIMUM YIELD STRESS OF 60,000 PSI.
13. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-185.

NOTE: CONCRETE SLAB AND CURB SHALL BE COATED WITH A CHEMICALLY RESISTANT SAFETY/SKIDPROOF COATING. PRODUCT SHALL BE PG-2118 (BROADCAST SYSTEM) AS MFG. BY PERMAGILE - SALMON LTD. OR EQUAL. ACID ETCH CONCRETE SURFACE AND APPLY TWO COATS OF EPOXY COATING PER MFG. RECOMMENDATIONS.



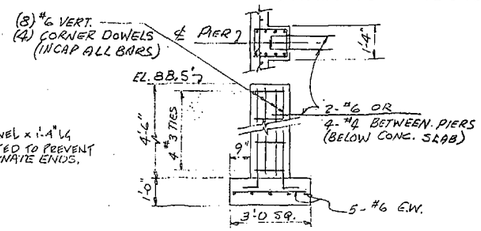
DETAIL A/118
SCALE: ½" = 1'-0"

— TYPICAL CONSTRUCTION JOINT —



DETAIL B/118
SCALE: ½" = 1'-0"

— TYPICAL CONTROL JOINT —



DETAIL 4/118
3/4" = 1'-0"

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GENERAL NOTES:
1. CONTRACTOR SHALL SUPPLY SIX (6) TEST CYLINDERS PER POUR FOR SLAB AND FOUNDATION. APPROACHES & RAMP POURS DO NOT HAVE TO BE TESTED. TESTING SHALL BE CONDUCTED BY W.V.N.S. APPROVED COMMERCIAL TESTING LABORATORY IN COMPLIANCE WITH A.S.T.M. C-31 & C-39.
2. CONTRACTOR SHALL REMOVE ALL EXCAVATED MATERIALS ON SITE. DUMP SITE IS LESS THAN ¼ M. FROM CONSTRUCTION AREA.
3. PROVIDE A ½" CHAMFER ON ALL EDGES OF RAMPS & PADS. ALSO PROVIDE ½" CHAMFER ON PERIMETER CONC. CURB INSIDE EDGE.

W.E. PROJECT NO: 2335.2/010

WENDEL ENGINEERS P.C.
consulting engineers/planners/surveyors
LOCKPORT N.Y. - BUFFALO N.Y.

PARTS LIST

QTY REQD	SYM	ITEM NO.	NOMENCLATURE OR DESCRIPTION	CODE IDENT NO.	PART OR IDENTIFYING NO.	MATERIAL	SPECIFICATION	ZONE

UNLESS OTHERWISE SPECIFIED
INTERPRET DWG PER D03-D-1000
DIM. IN INCHES BASED ON 68°F
TOLERANCES — DO NOT SCALE
2PL DEC ± | 3PL DEC ± | ANGLES ±

CONTRACT NO.
DFT/SMN K.P.L.
CHECKER G-W-V
DESIGN
ANALYSIS
MAYL
DATE OF DWG 4 AUGUST 1983
RELBL & QA
MFG
STRESS
DESIGN SURVEY

SPECIFICATION | TYPE
DWG CODE NO.

(SEE) ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT ____ DATE ____

West Valley Nuclear Services Co. Inc.
West Valley, New York

2 LAG STORAGE BUILDING
FOUNDATION PLAN, SECTIONS, DETAILS AND SPECIFICATIONS

DWG SIZE	CODE IDENT NO.	DWG NO.	REV
D		900D-118	2

SCALE AS NOTED | WT ACTL | WT CALC | SHEET 1 OF 1

CHANGES PRIOR TO EACH USE.
INIT _____ DATE _____

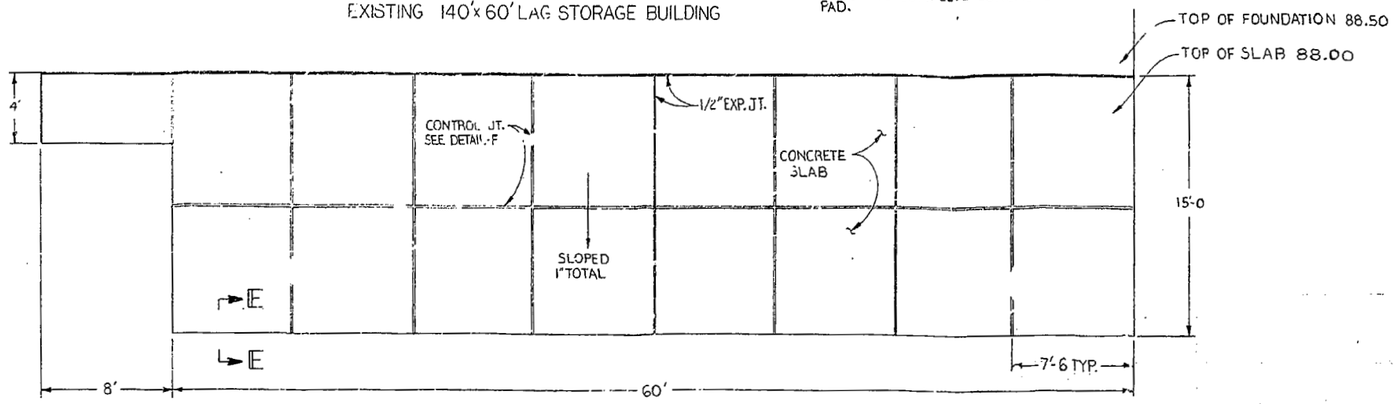
DWG NO. _____ SH _____

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	0	E.R 889	11/5/86	[illegible]
	1	REV. PER E.C.N 13914	2-9-87	[illegible]

N

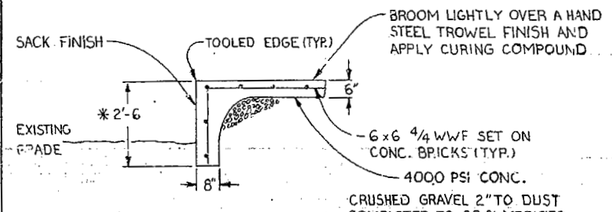
EXISTING 140'x 60' LAG STORAGE BUILDING

NOTE:
CONTRACTOR IS TO PROVIDE ALL MATERIALS, TOOLS, AND LABOR TO COMPLETE CONCRETE PAD.



NEW CONCRETE SLAB

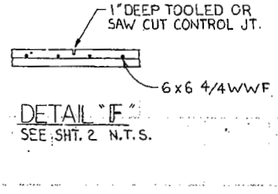
SCALE: 1/4"=1'-0"



* HEIGHT OF HANCH SHALL VARY ALONG NORTH & SOUTH EDGES SO THAT THERE IS A MIN. OF 6" OF CONC. BELOW EXISTING GRADE.

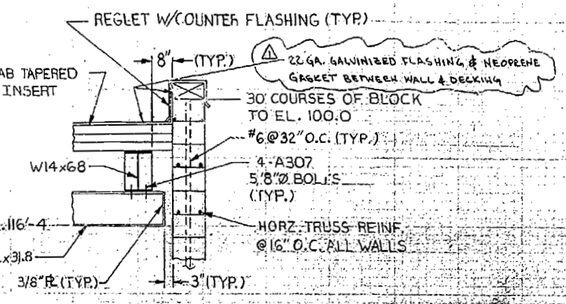
SECTION E-E (TYP.)

SEE SHT. 2 SCALE: 1/2"=1'-0"



DETAIL "F"

SEE SHT. 2 N.T.S.



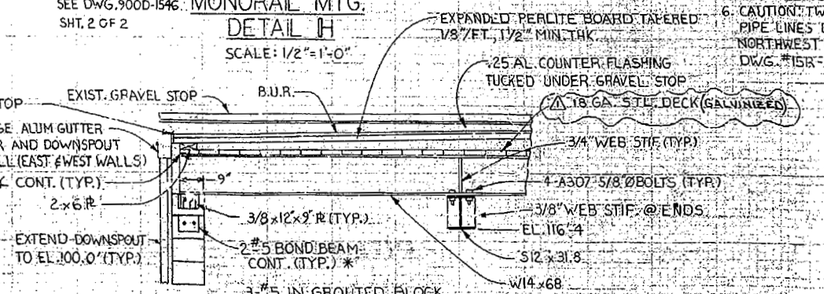
NOTES: FOR LAG STORAGE CONC. PAD ONLY

1. REMOVE TOPSOIL AND COMPACT EXISTING GRADES PRIOR TO PLACING FILL.
2. COMPACT FILL IN 6" LIFTS WITH A ONE TON WALK BEHIND VIBRATORY ROLLER (MIN.). USE 10 PASSES (MIN.) OR UNTIL SIGNIFICANT RUTTING IS ELIMINATED PRIOR TO PLACING NEXT LIFT.
3. CONCRETE SHALL BE 4000 PSI AIR CONTENT 6-8%. SLUMP 2-4". NO CONCRETE TESTING REQ'D. PROTECT CONCRETE FROM FREEZING.
4. SEAL CONCRETE WITH THOMPSON'S WATER SEAL OR APVD. EQUAL.
5. RESTORE ALL AREA DISTURBED BY CONSTRUCTION. REUSE EXISTING TOPSOIL, HAND RAKE AND SEED.
6. CAUTION: TWO RADIOLOGICALLY CONTAMINATED UNDERGROUND PIPE LINES DESIGNATED 8P-11 & 15WW 929 RUN NEAR NORTHWEST CORNER OF THE CONC. PAD. LINES ARE SHOWN ON DWG. #15R-L-81 AND THE BOT. IS AT APPROX. EL. 82'-0"

SEE DWG. 900D-1546 SHT. 2 OF 2

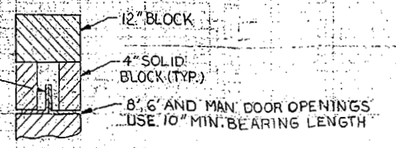
MONORAIL MTG. DETAIL "H"

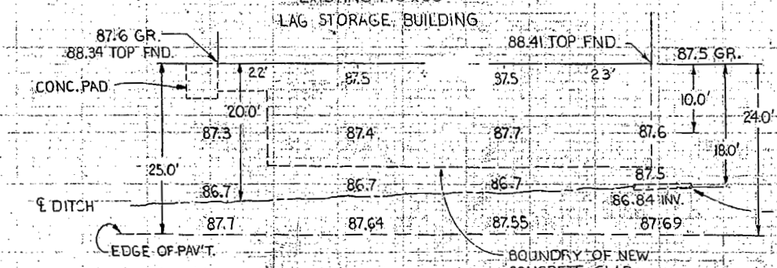
SCALE: 1/2"=1'-0"



SECT. J-J ROOF

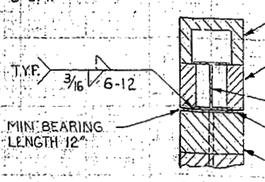
SCALE: 1/2"=1'-0"
SEE DWG 900D-1546 SHT. 2 OF 2





LAG STORAGE SITE PLAN

SCALE: 1"=10'-0"



SECT. K-K LENTEL 14" DOOR OPENING

SEE DWG 900D-1546 SHT. 2 OF 2
N.T.S.

SECT. L-L LENTEL

SEE DWG 900D-1546 SHT. 2 OF 2
N.T.S.

QTY PER ASSY	ITEM NO.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	MATERIAL OR SPEC

PARTS LIST

UNLESS OTHERWISE SPECIFIED	DRAFTER HABERMEHL	DATE 10-6-86	A/E CONTRACT NO. / CODE IDENT. NO.
	CHECKER	DATE 8 OCT 86	FOR: West Valley Nuclear Services Co., Inc., West Valley, New York
TOLERANCES—DO NOT SCALE	ENGR	DATE 8 OCT 86	LAG STORAGE ADDITION COMPACTION TRAILER PAD AND DETAILS
2 PL DEC / 3 PL DEC / ANGLES: ± ± ± AA	COG. MGR. APPVL	DATE 10-3-86	
FRACTIONS ±	E&OS APPVL N/A	DATE	
D. SPEC. NO.	Q.A. APPVL	DATE 8 OCT 86	DWG SIZE D; SCALE NOTED; WEIGHT; A/E DWG NO.
NEXT ASSEMBLY	DSTO. SUPT.	DATE 10/15/86	DWG NO. 900D-1550; REV 1; SHEET 1 OF 1

NEWKIRK [illegible]

APPENDIX D-9

A&PC HOT CELLS DESIGN DRAWINGS
(5 DRAWINGS)

PLAN AT EL. 137'-0"

SECTION 1
15A-M-55

LIST OF MATERIAL

ITEM	QUAN.	DESCRIPTION	ORDERING.
1		CU. YD. CONCRETE MIXC (3000 PSI)	FIELD
2		CU. YD. HIGH DENSITY CONCRETE MIX K (3500 PSI)	
3	1 LOT	REINFORCING STEEL — NO. 4, 5, 7, 8, 9, 10, 11 — LBS.	15B-5
4	27	3/4"φ x 1'-3" (L) LG TYPE 2 ANCHOR BOLTS WITH 1-CPSF HEX. NUT	FIELD
5	7	PL 27x3/4x2'-3" PER DET. 9 (C.S.)	15M-19
6	4	PL 11x3/4x8'-11" PER DET. 10 (C.S.)	15M-19
7	4	PL 8 1/2x1 1/2x2'-4" PER DET. 11 (C.S.)	15M-19
8	2	INSERTS BI-4J PER DWG. 15A-M-119	FIELD
9	7	INSERT BI-4H PER DWG. 15A-M-119	FIELD
10	5	INSERT BI-4B PER DWG. 15A-M-119	FIELD
11	65	LIN. FT. UNISTRUT CONCRETE INSERTS P-3300 SERIES	15M-33
12	1 LOT	1/4" THICK MASONITE	FIELD
13	1 LOT	PVC RODOFOAM PREMOLDED JOINT FILLER (#423) 1" THK. BY ELECTROVERT INC., N.Y.	FIELD
14	1 LOT	MOLYCOTE G LUBRICANT (MFD. BY ALPHA MOLYCOTE CORP. OF STANFORD, CONN.)	FIELD
15	18	MANIPULATOR WALL EMBEDMENT PER DET. 17 DWG. 15A-M-58 (3'-0" WALL) C.S.	15M-19
16	2	8"φ x 16 GA. CORRUGATED PIPE SLEEVE (ARMCO OR EQ.) PER DET. 16 DWG. 15A-M-58	FIELD
17	4	10"φ x 16 GA. CORRUGATED PIPE SLEEVE (ARMCO OR EQ.) PER DET. 16 DWG. 15A-M-58	FIELD
18	16	3/4"(d) x 1'-2"(L) LG. TYPE 2 ANCHOR BOLT W/ 1-HEX. NUT (S.S.)	FIELD
19	12	3/4"(d) x 1'-3" (L) LG. TYPE 2 ANCHOR BOLT W/ 2-HEX. NUT - 2 1/4" THREAD (S.S.)	FIELD
20	2	HATCH FRAME PER DET. 19 DWG. 15A-M-58 C.S.	15M-19
21	2	HATCH COVER PER DET. 19 DWG. 15A-M-58 C.S.	15M-19
22	7	LAMP SLEEVE INSERT PER DET. 18 DWG 15A-M-58	15M-19
23	3	INSERTS BI-5 PER DWG 15A-M-119	FIELD
24	38	1/2"φ x 1'-0" (L) LG. TYPE 2 ANCHOR BOLT W/1 CPSF HEX NUT	FIELD

FOR LIST OF MATERIAL (CONT.) SEE DWG. 15A-M-58

(SEE NOTE ON 15A-M-58)

GENERAL NOTES

1. BEFORE POURING CONC. VERIFY REQUIREMENTS OF ALL SERVICES FOR THE LOCATION OF PIPES, UTILITIES, ETC.
2. FOR LOCATION SEE DWG. 15A-A-181
3. FOR ADDITIONAL GENERAL NOTES SEE DWG. 15A-R-4
4. FOR LINER, LINER INSERTS & ANCHOR BOLTS AND INSERTS NOT SHOWN SEE DWG. 15A-M-60
5. HIGH DENSITY GROUT SHALL BE COMPOSED OF THE FOLLOWING MIXED PROPORTIONS:
   - 1 PART VIBRO-FOIL (A.C. HORN CO.) = 100 LBS
   - 1 PART PORTLAND CEMENT = 1 SACK
   - 3.7 PART HIGH DENSITY ILMENITE SAND = 370 LBS
   - YIELDS 3.0 CU. FT.
6. FOR PIPING & ELECTRICAL PENETRATIONS SEE DWGS. 15A-L-104 & 15A-P-12.

LEGEND:
- = CONCRETE BLOCK WALL
- = HIGH DENSITY CONCRETE
- = DOOR MARK PER SCHEDULE DWG. 41A-R-11
- C.J. = CONSTRUCTION JOINT
- C.S. = CARBON STEEL
- S.S. = STAINLESS STEEL
- A.B. = ANCHOR BOLT

REFERENCE DRAWINGS

EQUIPMENT ARRANGEMENT - ANALYTICAL CELLS SH. 1	15A-A-181
ELEVATIONS & SECTIONS	15AM-56
PLAN, SECTIONS & DETAILS	15A-M-58
REINF. PLANS & DETAILS	15A-M-57
FLOOR PLAN AT EL. 131'-0"	15A-M-67
FLOOR PLAN AT EL. 144'-0"	15A-M-68
PLANS - PMC	15A-M-2
WALL ELEVATIONS - CPC	15A-M-117
ELEVATIONS, SECTS. & DETS - EX. CELLS & PPC	15A-M-26
BEAM INSERT DETAILS	15A-M-119
STEEL SHIELDING DOORS FOR ANALYTICAL CELLS	15A-M-131
PIPING PLAN & SECTIONS - ANALYTICAL CELLS	15A-L-104
TRANSFER DRAWER 15M-15 - ANALYTICAL CELLS	15A-T-50
WALL LINER FOR WINDOWS 15M-23A, B & C V.P.	15M-8-0
WALL LINER FOR WINDOW 15M-25 V.P.	15M-17-4
WALL LINER FOR WINDOW 15M-5A, B, C, D & E V.P.	15M-17-2
PLANS - LINERS, INSERTS & ANCHOR BOLTS - ANC	15AM-60
FOUNDATION KEY PLAN - PROCESS BUILDING	15A-Q-4
TYP. CONCRETE DETAILS	16B-M-102
ELECTRICAL PLAN - ANALYTICAL CELLS	15A-P-12
SECTIONS & DETAILS - SHT. 3 - PMC	15A-M-6
SECTIONS & DETAILS - SHT. 3 CPC & SR	15A-M-21
PLANS & ELEVATIONS - VWR	15A-M-126
ANCHOR BOLTS	D-9-510

NO.	DATE	REVISIONS	BY				
4	2/6/95	REV/ECN 8720	PD	KQ			
3		REVISION PER ECN 2690	GW	WB		WB	
2		ADDED STAIR REFERENCES / ADD DOOR MARKS	RS				
1		ADD PLAN SECTION, SEC. & REV. GENERAL NOTE & REF. DWGS					
0		ISSUED FOR CONSTRUCTION					

SCALE 3/8" = 1'-0" DRAWN GCW

BECHTEL CORPORATION
SAN FRANCISCO NEW YORK LOS ANGELES

ENGINEERING BY
BECHTEL ASSOCIATES

NUCLEAR FUEL SERVICES, INC.
SPENT FUEL PROCESSING PLANT

PLAN & SECTION
ANALYTICAL CELLS

BECHTEL — JOB No. 4413 — DRAWING No. 15A-M-55 — REV. 4

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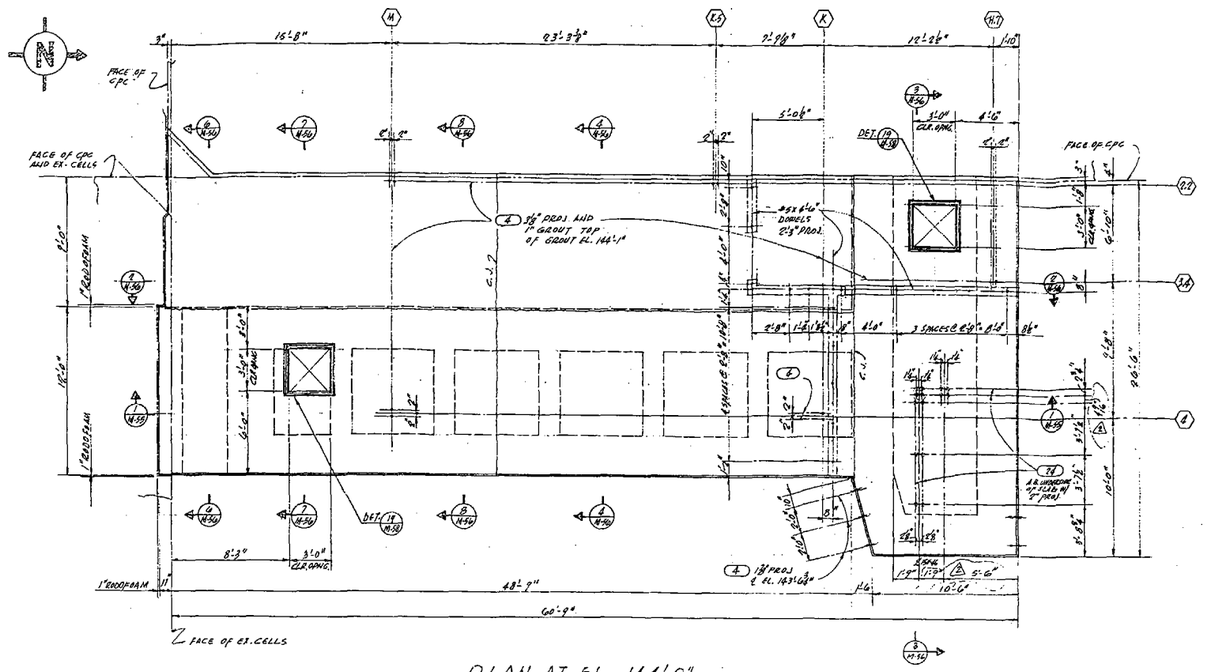
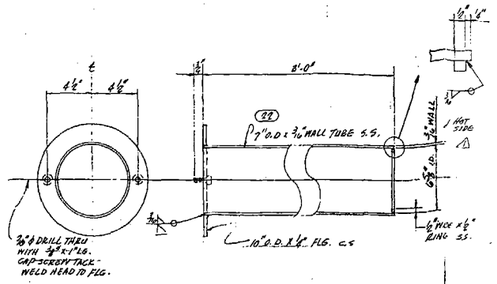
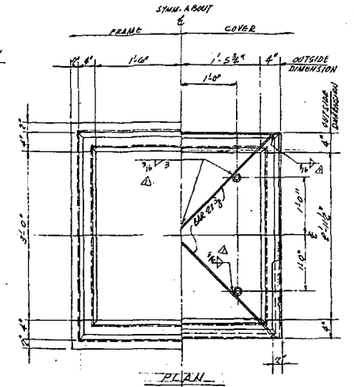
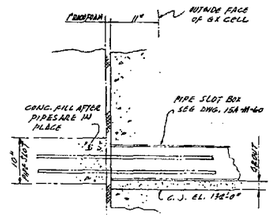
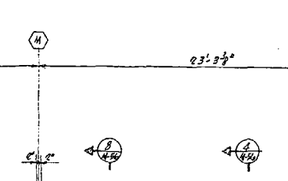
X1

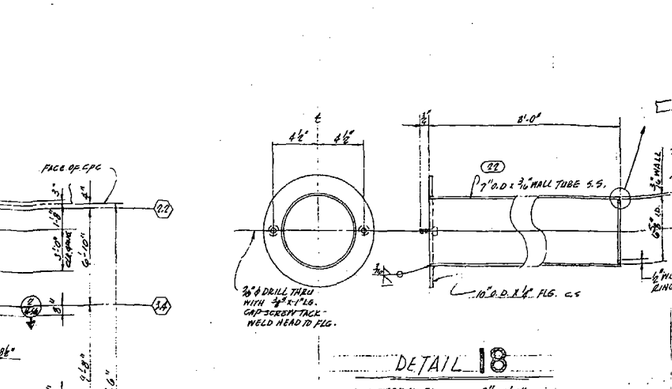












LIST OF MATERIAL (CONT.)			
ITEM	QUAN	DESCRIPTION	ORDER NO
26	1	SHELF FOR DETAIL 21	15M-19
26	2	PLS 6"x3 1/2"x 5/16" (C.S.) CONC. w/ 3-5/8"ø STUDS	FIELD
27			
28	20	ACCESS PLUG & SLEEVE FOR DET. 22	15M-19
29	1	6" ø x 16 GA CORRUGATED PIPE SLEEVE (ARNCO OR EQ.) FOR DET. 16 CONC. 15A-M-58	FIELD

NOTES:
1. FOR LIST OF MATERIAL, REFERENCE DRAWINGS AND GENERAL NOTES SEE DWG. 15AM-55
* 2. ITEMS MARKED THUS IN LIST OF MATL SHALL HAVE ALL EXPOSED JOINTS SEAL WELDED AND GROUND SMOOTHE. ALL EXPOSED SURFACES SHALL BE PRIME PAINTED WITH CARBOLINE 305 PRIMER IN ACCORDANCE WITH SPEC. 4413-X-1.

NO.	DATE	REVISIONS	BY	CHK'D	APPD	CHIEF ENG'R	CLIENT
3	10/16	REV. ANCHOR RODS DIAM. ON PLAN	HT	PAL	DGM		
2	9/64	ADD. DET. TO 8/19 CONT. ON PLAN, REVS. 21, 22 & A/H CONT.	AP	PAL	LLA		
1	7/16	ISSUED FOR CONSTRUCTION	GEM	PAL	LLA		

SCALE: 1/4"=1'-0" AS NOTED | DESIGNED | DRAWN GEM

BECHTEL CORPORATION
SAN FRANCISCO NEW YORK LOS ANGELES
ENGINEERING BY
BECHTEL ASSOCIATES

NUCLEAR FUEL SERVICES, INC.
SPENT FUEL PROCESSING PLANT

PLAN, SECTIONS & DETAILS ANALYTICAL CELLS

JOB No.	DRAWING No.	REV.
4413	15A-M-58	2

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LIST OF MATERIAL

	ITEM	QUAN.	DESCRIPTION	ORDER NO.
*	1	365	LIN. FT. "TEE" PER DET. 2	15M-19
△1 *	2	228	LIN. FT. L 2½x2½x¼ WITH ANCHOR PER DET. 4 C.S.	15M-19
*	3	50	LIN. FT. BENT PL 2½x2½x¼ WITH ANCHOR PER DET 3	15M-19
	4	140	INSERTS PER DETAIL 5 (S.S.)	15M-19
	5	1-LOT	1/8" THK STAINLESS STEEL SHEETS.	15M-1
	6	1-LOT	14 GA. STAINLESS STEEL SHEETS	15M-1
△1	7	5	2" ϕ PIPE ASSEMBLIES PER DET 19	15M-19
	8	1	STAINLESS STEEL SUMP PER DET. 7	15M-19
△1 *	9	20	LIN. FT "TEE" PER DET. 15	15M-19
*	10	1	LIN. FT. BENT PL PER DET. 16.	15M-19
	11	14	½" ϕ x 1'-1" (L) LG. TYPE 2 ANCHOR BOLT W/2 CPSP HEX NUT 2½ THD. S.S.	FIELD
△1	12	1	3/16" PL LINER PER SECT. 18	15M-19
	13.	3	3/16" PL LINERS PER DET. 1	15M-19
△1	14	2	3/16" PL LINERS PER SECTION 9	15M-19
	15	1	¼" PL PIPE SLOT PAN PER DET. 10	15M-19
	16	1	¼" PL PIPE SLOT COVER PER DET 10	15M-19
	17	1	¼" PL LINER PL PER SECT. 13.	15M-19
	18	1	18" ϕ SCH. 10 PIPE PER DET. 8	15M-19
	19	2	½" ϕ x 1'-0" (L) LG TYPE 2 ANCHOR BOLT WITH 1 WING NUT S.S.	FIELD
△3 △1	20	30	INSERT PL 6"x6"x3/8" S.S. PER DET. 21	15M-19
	21	-10	WORK PANS PER DET. 20	15M-19
	22	8	2" ϕ PIPE ASSEMBLIES PER SECT. 22	15M-19
	23	2	3'-6" LONG "TEE" PER SOUTH WALL ELEV. DWG. 15A-M-62	15M-19
	24	2	¾" ϕ x 1'-5" (L) LG. TYPE 2 ANCHOR BOLT WITH 2 CPSF HEX NUT 2⅛" THD. S.S	FIELD
△3	25	8	⅝" ϕ x 1'-2" (L) LG. TYPE 2 ANCHOR BOLTS WITH 2-CPSF HEX. NUTS - 2¼" THD (STAIN. STL)	FIELD

△1 * ITEMS MARKED THUS SHALL BE FABRICATED TO EXACT LENGTHS AND PIECE MARKED ON A PLACING DRAWING FOR FIELD IDENTIFICATION

GENERAL NOTES

1. STAINLESS STEEL SHALL BE TYPE 304L, TYPE 2D FINISH FOR SHEET AND HOT ROLLED FOR 3/16" PL & ¼" PL
2. ALL WELDS SHALL BE 1/8" EXCEPT AS NOTED.
3. ALL WELDING SHALL BE IN ACCORDANCE WITH APPLICABLE PORTIONS OF THE AWS CODE & PARAGRAPH 4 OF SPEC. 4413-C-2
4. ALL SHARP EDGES OF SHEARED PLATES SHALL BE GROUND OFF. ALL WELDS WHICH PROJECT ABOVE FINISHED SURFACES SHALL BE GROUND SMOOTH
5. INSERTS SHALL BE CUT TO CLEAR ALL ANCHOR BOLTS AND WALL PENETRATIONS.
6. ALL ELEVATIONS AND DIMENSIONS ARE TO FINISHED CONCRETE.
7. FOR LOCATION OF PIPE & ELECTRICAL PENETRATIONS SEE DWG. 15A-L-104 & 15A-P-12
8. △1 FABRICATOR TO PROVIDE 4-3/16" ϕ HOLES IN EACH WALL EQUIPMENT INSERT. LOCATE HOLES DIAGONALLY OPPOSITE CORNERS OF PLATE. ALL WALL LINER INSERTS SHALL HAVE 5/16" HOLES @ 24" O.C. (2 HOLES MINIMUM PER INSERT).

LEGEND

- (weld symbol) = SEAM SHOP WELD
- S.S. = STAINLESS STEEL
- C.S. = CARBON STEEL

REFERENCE DRAWINGS

ELEVATIONS - LINERS, INSERTS & ANCHOR BOLTS	15A-M-61
SECTIONS & DETAILS	15A-M-62
PLAN & SECTION - ANALYTICAL CELLS	15A-M-55
STEEL SHIELDING DOORS FOR ANALYTICAL CELLS	15A-M-131
TRANSFER DRAWER, 15M-15 - ANALYTICAL CELLS	15A-T-60
ANCHOR BOLTS	D-B-510
PIPING PLAN & SECTIONS - ANALYTICAL CELLS	15A-L-104
ELECTRICAL PLAN - ANALYTICAL CELLS	15A-P-12
SECTION & DETAILS - SHT 3 - PMC	15A-M-6
△1 INTER-CELL CONVEYOR 15V25 4413	15-V-79-1
SAMPLE-CONVEYOR 15V-60 - GENERAL ARRANGEMENT 4413	15-V-85-2

10/18/04 12:49:46 PM REPRO

No.	DATE	REVISIONS	BY	CHK	DPTG. SUPVR.	ENG'R	CHIEF ENG'R	CLIENT
△3	[illegible]	REV. ITEM 20 & ADDED ITEM 25 IN L/M. LOCATED ANCH. BOLT FOR [illegible]	RS	[illegible]	[illegible]			
△2	8/18/[illegible]	RELOCATED A.B. TO SUIT VENDOR	[illegible]	FVB	[illegible]			
△1	7/[illegible]	REV PL [illegible]. L/M & DET. 12. ADDED NOTE & REF. DWG. REMOVED "HOLD" FOR 15M-60	AT	FVB	[illegible]			
△	7/1[illegible]	ISSUED FOR CONSTR. ANGLES, TEES ON FLR. SLAB ONLY	AT	[illegible]	[illegible]			

SCALE: NONE OR AS NOTED | DESIGNED | DRAWN BGB AT

BECHTEL CORPORATION

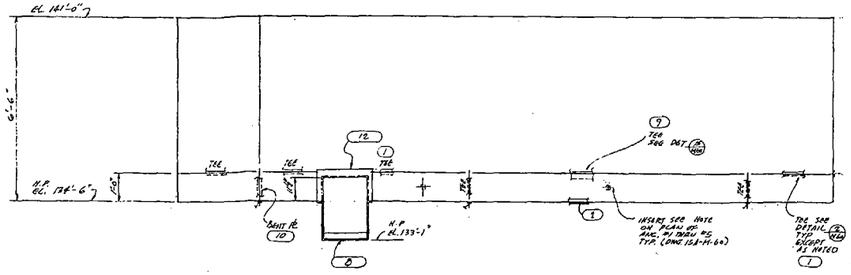
SAN FRANCISCO — NEW YORK — LOS ANGELES

ENGINEERING BY
BECHTEL ASSOCIATES

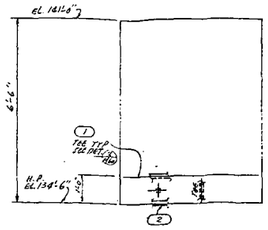
NUCLEAR FUEL SERVICES, INC.
SPENT FUEL PROCESSING PLANT

PLANS - LINERS, INSERTS & ANCHOR BOLTS
ANALYTICAL CELLS, SAMPLE & SAMPLE STORAGE CELLS

JOB No.	DRAWING No.	REV.
4413	15A-M-60	3

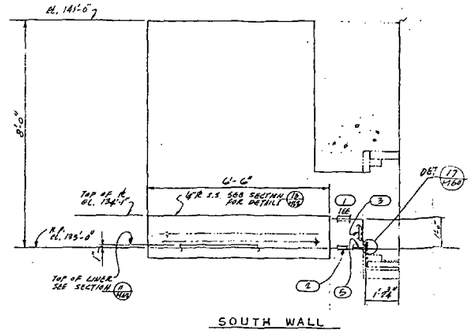


SOUTH WALL



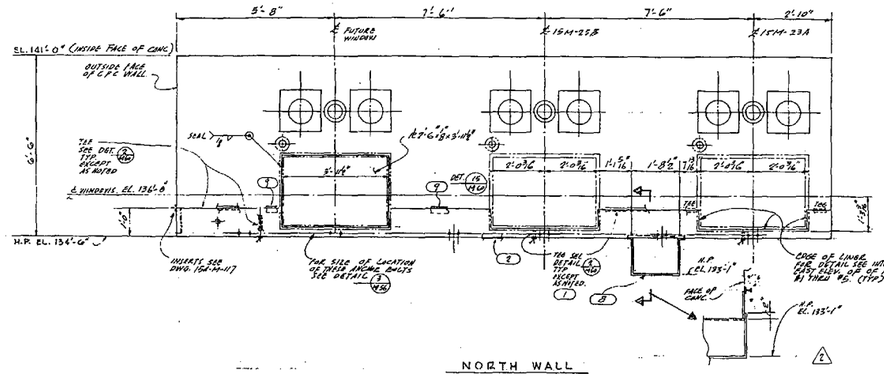
EAST WALL

INTERIOR ELEVATIONS - SAMPLE STORAGE CELL

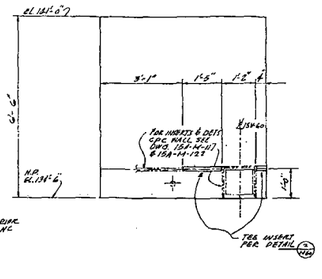


SOUTH WALL

INTERIOR ELEVATIONS - SAMPLE CELL

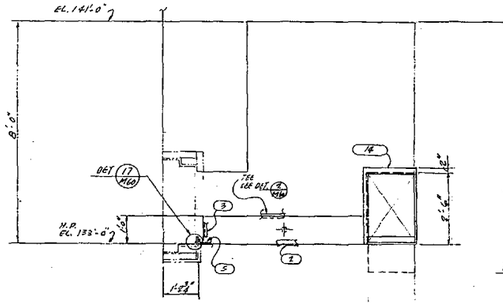


NORTH WALL



EAST WALL

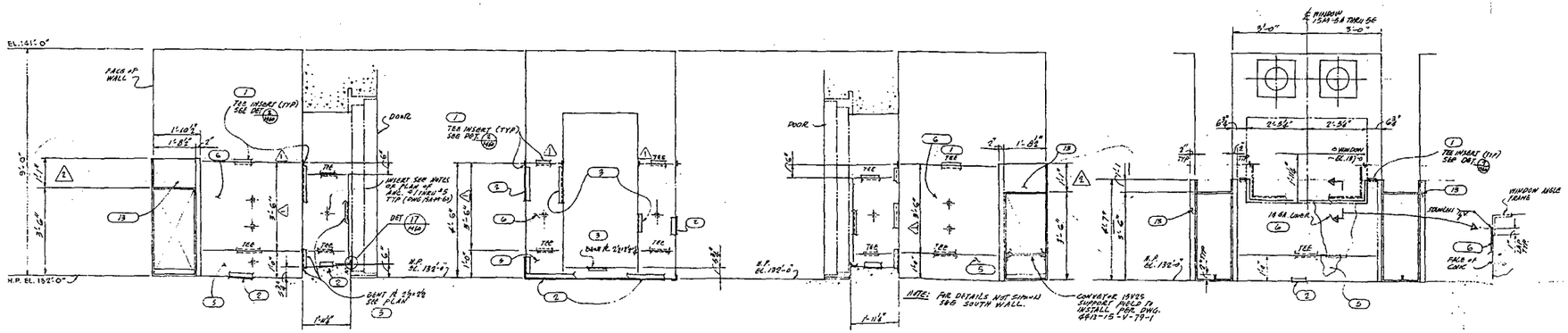
INTERIOR ELEVATIONS - SAMPLE STORAGE CELL



NORTH WALL

EAST WALL

INTERIOR ELEVATIONS - SAMPLE CELL



SOUTH WALL

FOR SOUTH WALL CELLS #2, #3 & #4
FOR SOUTH WALL CELLS #1 & #5 SEE DWG 15A-M-62

WEST WALL

NORTH WALL

EAST WALL

INTERIOR ELEVATIONS - ANALYTICAL CELLS #1, #2, #3, #4 & #5

FOR LIST OF MATERIAL, GENERAL NOTES & REFERENCE SEE DWG. 15A-M-60.

MK	DATE	REVISIONS	BY	CHK	ENGR SUPV.	ENGR SUPV.	CLIENT
3	7/84	REVISED DWG. AT CONVEYOR TUNNEL LOCA.	JRC	WLK	DLK	JWK	
2	7/84	REVISED DWG. STEEL FRAME	RCS		BAC		
1	7/84	ISSUED FOR CONSTRUCTION	MT		PJD		

SCALE 1/2" = 1'-0" DESIGNED DRAWN SGB CHKD MT

BECHTEL CORPORATION

SAN FRANCISCO NEW YORK LOS ANGELES

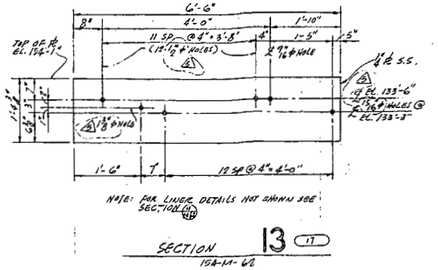
ENGINEERING BY
BECHTEL ASSOCIATES

NUCLEAR FUEL SERVICES, INC.
SPENT FUEL PROCESSING PLANT

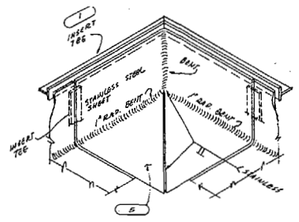
ELEVATIONS - LINERS, INSERTS & ANCHOR BOLTS
ANALYTICAL CELLS, SAMPLE & SAMPLE STORAGE CELLS

BECHTEL | JOB No. 4413 | DRAWING No. 15A-M-61 | NO. 2

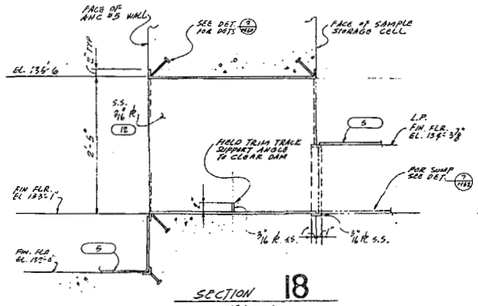
10/18/04 12:49:16 PM REPRO



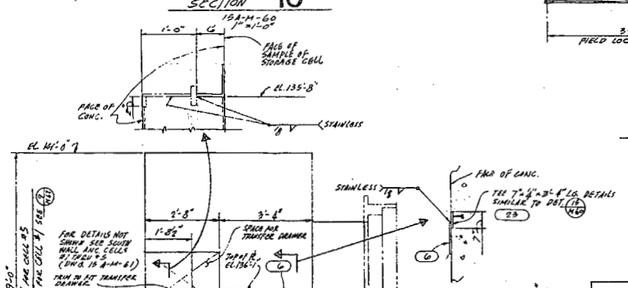
SECTION 13 (17)
15A-M-62



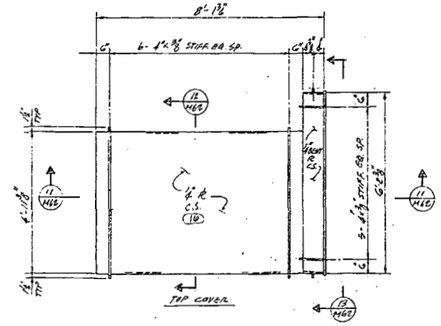
ISOMETRIC VIEW OF TYPICAL CORNERS



SECTION 18
15A-M-60

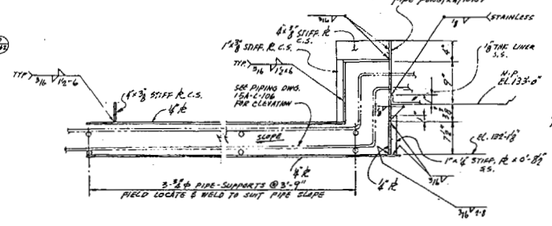


SOUTH WALL
INTERIOR ELEVATION CELLS #1 & #5

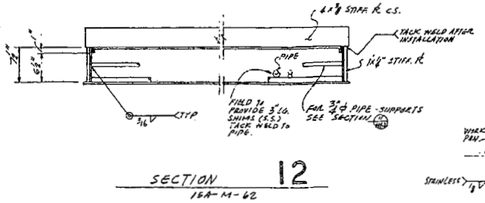


BOT. PAN PLAN

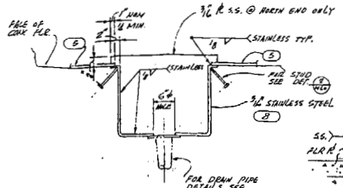
DETAIL 10
15A-M-60



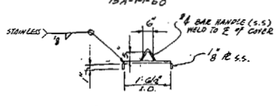
SECTION 11
15A-M-62

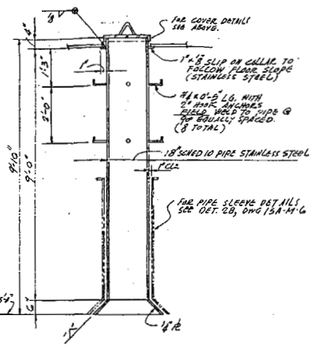


SECTION 12
15A-M-62

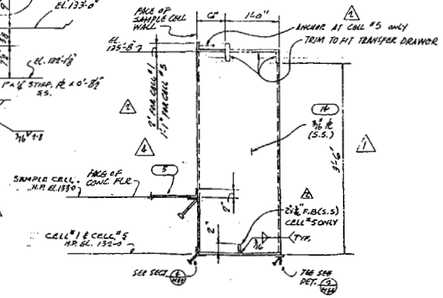


SECTION 7
15A-M-60

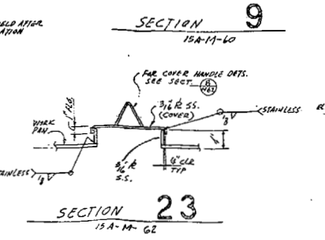




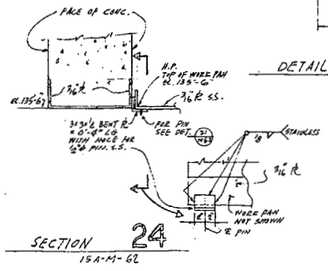
SECTION 8
15A-M-60



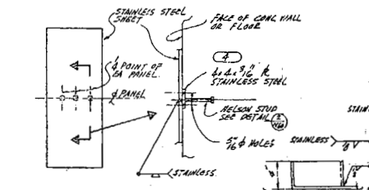
SECTION 9
15A-M-60



SECTION 23
15A-M-62

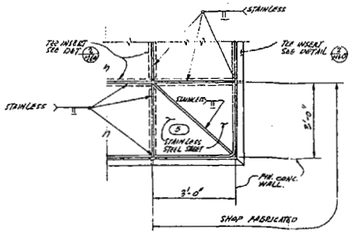


SECTION 24
15A-M-62

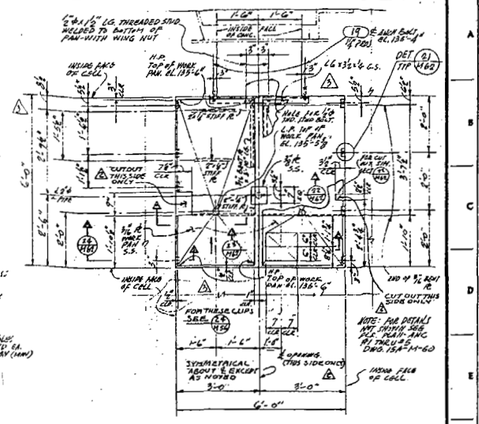


TYPICAL INSERT PLUG WELD FOR WALL & FLOOR LINER

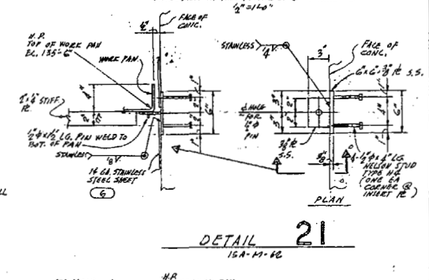
DETAIL 5
15A-M-60



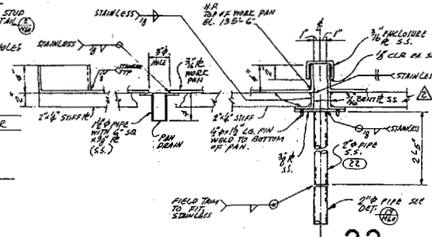
DETAIL 6
15A-M-60



DETAIL 20
WORK PANS AT ANALYTICAL CELLS #1 THRU #5
3/4"=1'-0"



DETAIL 21
15A-M-60



SECTION 22
15A-M-62

FOR LIST OF MATERIAL, GENERAL NOTES & REFERENCE DRAWINGS SEE DWG. 15A-M-60

NO.	DATE	REVISIONS	BY	CHK	APPD.	SHEET	CLASS
4	7/84	REVISED INSERT DTAIL – SHEET 13	MT	WCB			
3	7/84	REVISED TRACK DETAIL	ABC	WCB			
2	7/84	REVISED SIZE OF WORK PAN	MT	WCB			
1	9/84	ADDED SECTS. 23 & 24 TO PREV. SHEET & REVISED SECTS. 8 & 9 FOR SOUTH WALL CLOSURES	PVB	CPC			
0	9/84	ADDED ADDITIONAL DETAILS ON SHEET 4	PVB	WCB			
0	9/84	ISSUED FOR CONSTRUCTION	MT	WCB			

SCALE: NONE & AS NOTED | DESIGNED | DRAWN: MT

BECHTEL CORPORATION

SAN FRANCISCO NEW YORK LOS ANGELES

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NUCLEAR FUEL SERVICES, INC.
SPENT FUEL PROCESSING PLANT

SECTIONS AND DETAILS
LINERS, INSERTS AND ANCHOR BOLTS
ANALYTICAL CELLS, SAMPLE & SAMPLE STORAGE CELLS

JOB NO.	DRAWING NO.	REV.
4413	15A – M – 62	5

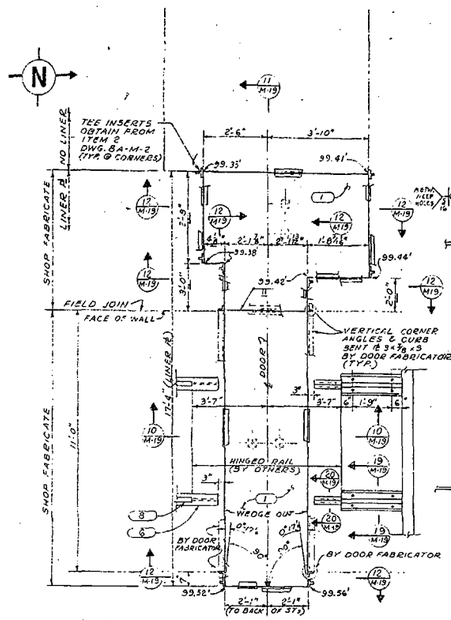
10/18/04 12:48:51 PM REPRO

APPENDIX D-10

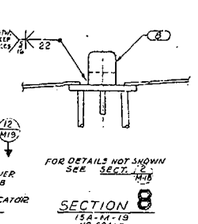
HLWIS FACILITY DESIGN DRAWINGS
(3 DRAWINGS)

INIT _____ DATE _____

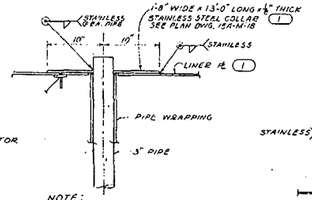
15A-M-19



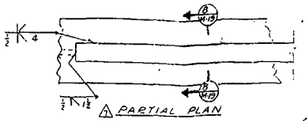
DETAIL 7
1/2" = 1'-0"
15A-M-19
SEE SECT. 10 FOR TYP. LOC. OF LINER ELEV.

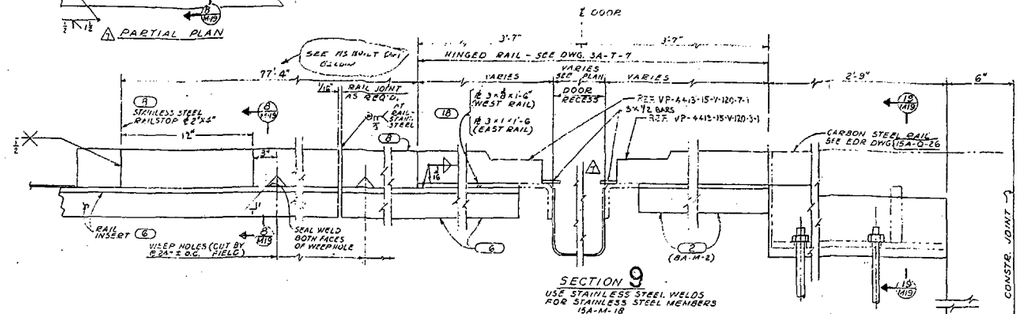


SECTION 8
15A-M-19
NO SCALE

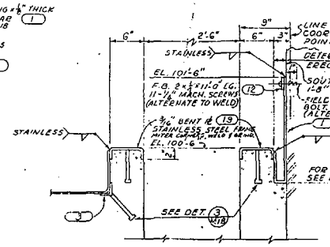


SECTION 17
15A-M-18
1/2" = 1'-0"

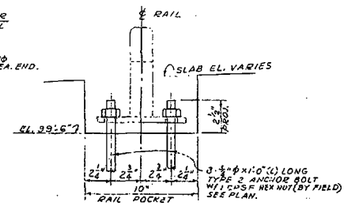




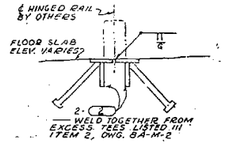
SECTION 9
USE STAINLESS STEEL WELDS FOR STAINLESS STEEL MEMBERS
15A-M-18



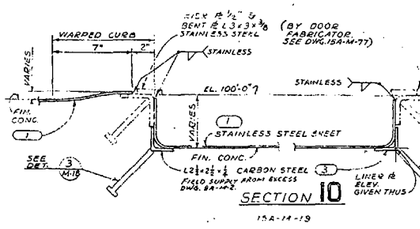
SECTION 18
15A-M-18
1/2" = 1'-0"
SEE SECT.



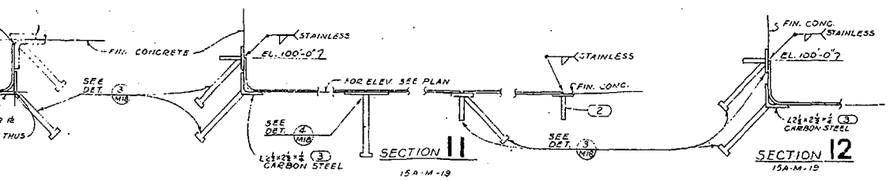
SECTION 19



SECTION 20

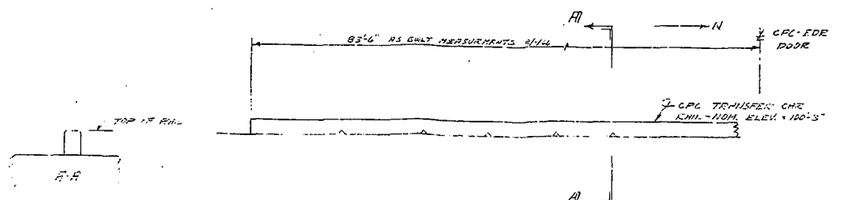


SECTION 10
15A-M-19



SECTION 11
15A-M-19

SECTION 12
15A-M-19



REVISED RAIL STOP LOCATIONS

NOTES:
1. FOR LIST OF MATERIAL, GENERAL NOTES & REFERENCE DRAWINGS SEE DWG. 15A-M-18

No.	Date	Revisions	By	Chk	Eng	Cons
7	10/18/04	ECN 11811	GH			
6	7/16/04	REVD PER ECN 12839	CTC		KBM	
5	7/1/04	REVISED AS BUILT RAIL STOPS	SJS			
4	5/4/04	REV. SECT. 3-3-10	RS	MDF	MDF	
3	4/22/04	REV. DTLS "DRT-7"	RS	MW	MDF	
2	4/14/04	REVISED PER ECN 12839	RS	MDF	MDF	
1	3/24/04	REVISED PER ECN 12839	RS	MDF	MDF	
0	3/16/04	ISSUED FOR CONSTRUCTION	RS	SJS	MDF	

BECHTEL CORPORATION
SAN FRANCISCO NEW YORK LOS ANGELES

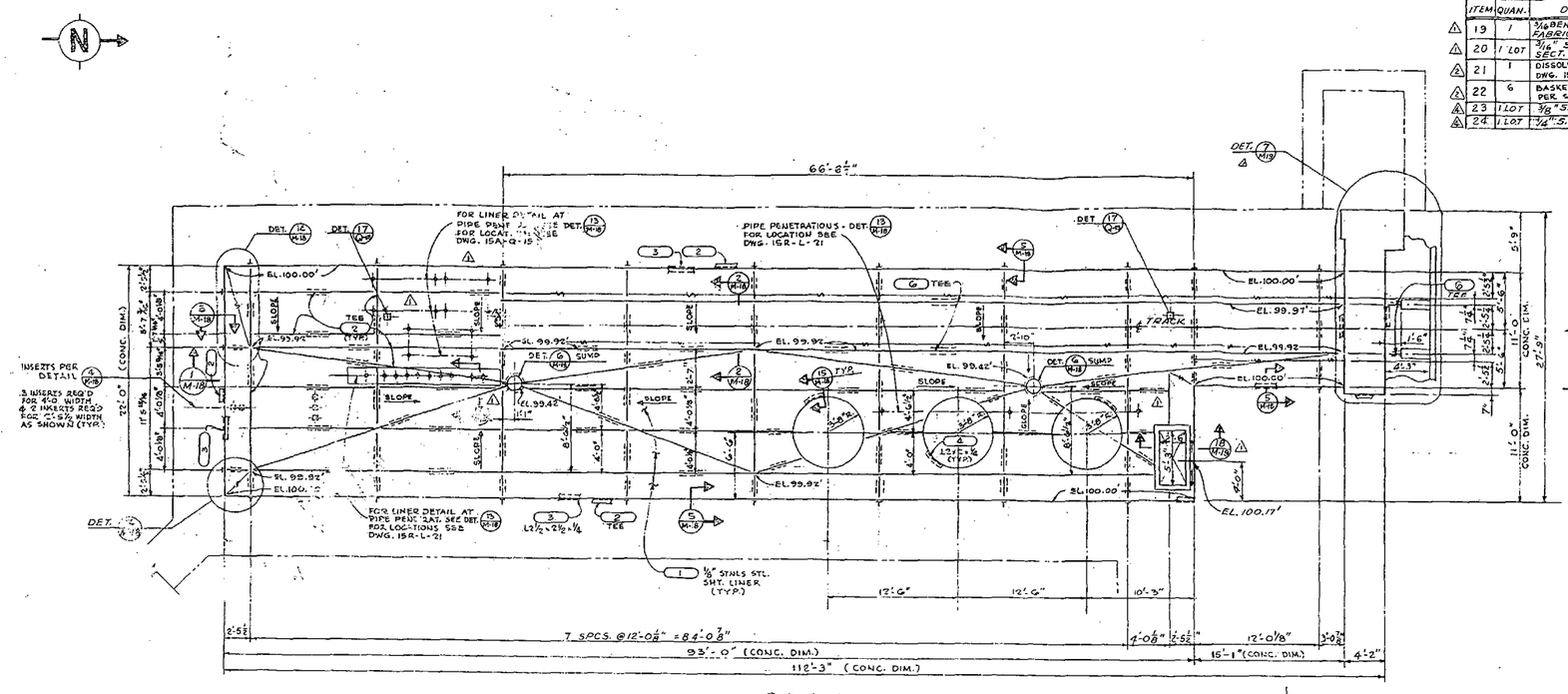
ENGINEERED BY BECHTEL ASSOCIATES

NUCLEAR FUEL SERVICES, INC.
SPENT FUEL PROCESSING PLANT

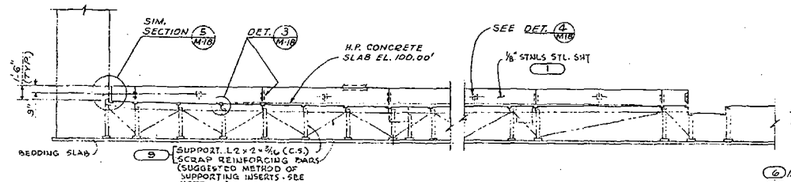
SECTIONS & DETAILS INSERTS & LINERS CHEMICAL PROCESS CELL

BECHTEL | JOB NO. 4413 | DRAWING NO. 15A-M-19 | SH. 7

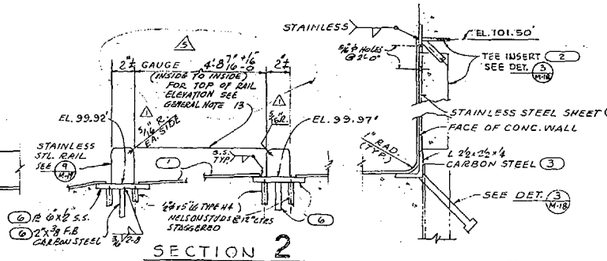
10/18/04 1:02:56 PM REPRO



PLAN
3/16" = 1'-0"

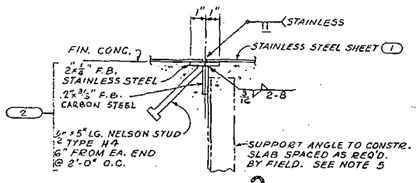


SECTION 1
15A-M-18

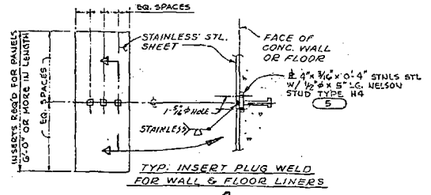


SECTION 2
15A-M-18

SECTION 5
15A-M-18

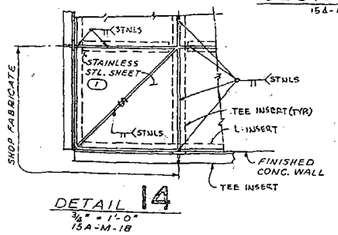


DETAIL 3
3" = 1'-0"
15A-M-18

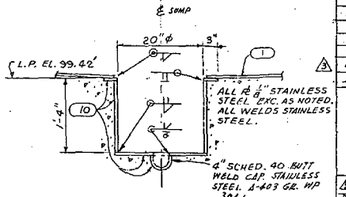


TYP. INSERT PLUG WELD FOR WALL & FLOOR LINERS

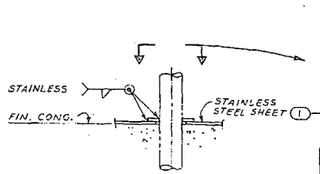
DETAIL 4
15A-M-18
NO SCALE



DETAIL 14
3/8" = 1'-0"
15A-M-18



DETAIL 6
1" = 1'-0"
15A-M-18



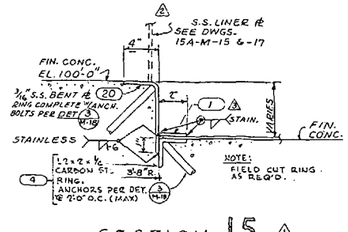
ELEV.

PLAN

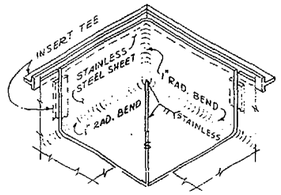
TYPICAL PIPE OR ANCHOR BOLT PENETRATION

DETAIL 13
15A-M-15

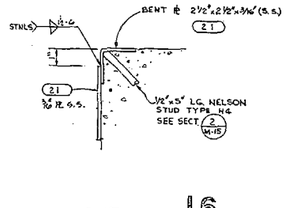
PIPE OR A.B.	⅛" THK COLLAR O.D.	I.D.	NO. REQ'D
3/4	6 5/16"	3 5/16"	25
1 1/2	4 5/16"	1 5/16"	36
1 1/4	4 5/16"	1 5/16"	45



SECTION 15
15A-M-15 & 15A-M-17



ISOMETRIC VIEW OF TYP. CORNER



DETAIL 16
15A-M-15

LIST OF MATERIAL (CONT.)

ITEM	QUAN.	DESCRIPTION	ORDER Nº
19	1	3/16 BENT PL FRAME (STAINLESS STEEL) FABRICATED PER SECT. 18 DWG. 15A-M-19	15M-14
20	1 LOT	3/16" STAIN. STEEL BENT PL PER SECT. 15, DWG. 15A-M-18	15M-14
21	1	DISSOLVER CORE LINER PER SECTS. 1 & 2 DWG. 15A-M-15	15M-19
22	6	BASKET RECESS WITHOUT GUIDE PER SEC. 11, DWG. 15A-M-17	15M-19
23	1 LOT	3/8" S.S. PL PER SECT. 6, 15A-Q-13	15M-1
24	1 LOT	1/4" S.S. PL PER SECT. 6, 15A-Q-13	15M-1

LIST OF MATERIAL

ITEM	QUAN	DESCRIPTION	ORDER Nº
1	1-LOT	1/8" THK. STAINLESS STEEL SHEET LINER	15M-1
2	1010	L.W. FT. TEE INSERT PER DET. 3 & SECT. 5	15M-14
3	270	L.W. FT. L2½x2½x⅜ (CARBON STEEL) w/ ANCHORS PER. SECT. 5	15M-14
4	3	L2x2x⅜ (CARBON STEEL) RING w/ ANCHORS PER. SECT. 15	15M-14
5	64	INSERTS PER DET. 4	15M-14
6	193	L.W. FT. TEE INSERT PER SECT. 2	15M-14
7	1-LOT	STAINLESS STEEL COLLARS PER DET. 15	15M-14
8	1 SET	RAILS AS DETAILED ON SECT. 2 THIS DWG. & SECT. 9 DWG. 15A-M-19	15M-23
9	1-LOT	SUPPORT L2x2x4/16 PER SECT. 1 (SEE NOTE 3)	FIELD
10	2	STAINLESS STEEL SUMP PER DET. 6	15M-14
11	80	L.W. FT. 2½"x2½"x¼" BENT PL (STAINLESS STEEL) w/ANCHORS PER DET. 16 & DET. 7	15M-14
12	1 LOT	E.B. 2 X 1/4 X XIII'-0" (STAINLESS STEEL) WITH HOLES TO MATCH 2½"x2½"x¼" BENT PL (STAINLESS STEEL) WELD TO 2½"x2½"x¼" BENT PL PER DET. 16	(ALTERNATE)
13	6	BASKET RECESS WITH GUIDE PER SEC. 11, DWG 15A-M-17	15M-19
14	1	ANG. FRAME PER SECT. 6 SECTION 1 DWG 15A-M-18 FOR KEY SEAT STAINLESS STL.	15M-19
15	1	COVER PER DET. 5 DWG. 15A-M-15 STAINLESS STL.	15M-19
16	12	LINER PER SECT. 10 DWG. 15A-M-17	15M-1
17	1 LOT	TEE PER SECT. 10 DWG. 15A-M-17	15M-2
18	1 LOT	STAINLESS STEEL FILLER PLS PER SECT. 9	15M-19

GENERAL NOTES

1. ALL WELDING SHALL BE IN ACCORDANCE WITH APPLICABLE PORTIONS OF THE AWS CODE & PARAGRAPH 4 OF SPECIFICATION 9413-C-2
2. ALL SHARP EDGES OF SHEARED PLATES SHALL BE GROUND OFF. ALL WELDS SHALL BE FLUSH WITH LINER PLATE.
3. SUGGESTED METHOD OF SUPPORTING FRAMING MEMBERS PROVIDES FLEXIBILITY IN ALIGNING MEMBERS FOR USE AS SCREEDS. MEMBERS MAY BE CLAMPED TO SUPPORT ANGLES PRIOR TO WELDING TO INSURE PROPER ALIGNMENT. SUGGESTED SIZE OF SUPPORTS, L 6x2x 3/16; SUGGESTED SPACING, SIX FEET. ADDITIONAL POSTS & BRACING SHOULD BE PROVIDED IF REQUIRED TO INSURE RIGIDITY & ALIGNMENT OF FRAMING.
4. FOR ANCHOR BOLT LOCATION SEE DWG. 15A-Q-15
5. PLAN DIMENSIONS ARE TO CONCRETE FACE OF STAINLESS STEEL SHEET.
6. FOR LOCATION OF PIPE PENETRATIONS SEE DWG. 15R-L-21.
7. FOR SLOPE IN FLOOR SEE DWG. 15A-Q-14
8. INSERTS SHALL BE CUT TO CLEAR ANCHOR BOLTS OR PIPE PENETRATIONS.
9. —A— INDICATES SHOP SPLICE
10. STAINLESS STEEL SHALL BE TYPE 304L & TYPE 2D FINISH.
11. ALL WELDS SHALL BE ⅛" EXCEPT AS NOTED
12. LINER FABRICATION TO BE COMPLETELY SEAL WELDED UNLESS OTHERWISE SHOWN ON DWG.
13. TOP OF RAIL NOMINAL ELEVATION 100'-3". EACH RAIL TO BE LEVEL WITHIN 1/16" IN 4'-0" AND WITH RESPECT TO EACH OTHER WITHIN 1/16" IN 4'-0" RAIL SHALL BE EQUAL TO WITHIN 1/8" IN 4'-0" ALONG THE RAILS.

REFERENCE DRAWINGS

KEY FOUNDATION PLAN	15A-Q-4
PLANS, SECTIONS & DETAILS SHT. 1	15A-Q-13
PLANS, SECTIONS & DETAILS SHT. 3	15A-Q-15
PART PLANS	15A-M-13
PLANS, SECTS. & DETS. - INSERTS & LINERS	15A-M-19
CONCRETE CORE FOR 3C-1 & 3C-2	15A-M-15
PLAN, SECTIONS & DETAILS SHT. 2	15A-Q-14
EQUIPMENT ARRANGEMENT - CPC	15R-A-145
PIPE PENETRATIONS - CPC FLOOR	15R-L-21
SOAKING PIT - EQUIP. DECONTAMINATION ROOM	15A-Q-28
LINER FOR SOAKING PIT - E.D.R.	15A-M-104
HINGED RAIL & OPERATING DEVICES.	3A-7-7
ANCHOR BOLTS	D-Q-510

MK	DATE	REVISIONS	BY	CHK	ENGR	MGR	CHMN
A	9/14	REV. SECTION 8 ITEM 16 & 17 M ADDED GENERAL NOTE 13	MT	BW	WMD	DBH	WDH
A	9/14	ADDED ITEMS 23 & 24 TO 1/4	RS	FVB			
A	9/17	REV. DIMS. & PLAN - ZERO ITEMS 18-28 & SECT 8	RS				
A	9/18	REV. SECT. 16, DET. 16 & 17	M				
A	9/18	GEM-HOLD ON LINER, ADDED PENETRATS., ADDED MATL & REV. 1/4	RS				
A	9/14	ISSUED FOR CONSTRUCTION	RS				

SCALE: NONE UNLESS NOTED | DESIGNED | DRAWN: R. SWARTZ, B.B.

BECHTEL CORPORATION

SAN FRANCISCO NEW YORK LOS ANGELES

ENGINEERING BY BECHTEL ASSOCIATES

NUCLEAR FUEL SERVICES, INC.
SPENT FUEL PROCESSING PLANT

PLAN, SECTIONS & DETAILS
INSERTS & LINERS
CHEMICAL PROCESS CELL

BECHTEL | JOB NO. 4413 | DRAWING NO. 15A-M-18 | REV. 5

10/18/04 1:02:32 PM REPRO

The drawing and the designs it shows are the property of BECHTEL. They are not to be altered and are the borrowed (OR one signature if not in ink) and are to be returned, signed, loaned, published, sold and retained to the finished way and are not to be used for any other purpose without prior written consent given by the Lender to the borrower. Unauthorized use of these designs or plans will be prosecuted by any written consent given by the Lender to the borrower.

CHANGES PRIOR TO EACH USE.
INIT_____ DATE_____

NO.	DATE	REVISION	DR	CH	APPROVED
F	11-03-86	GENERAL REVISION PER EBAR NO. 1147	BFR	CA	RJL FSK FJE FJES
G	06-30-89	GENERAL REVISION	FJS	SE	RJL FJE FSK FJES
0	07-13-89	ER 1646			JRH
01		ECN 3387	YP	ATV	
2	03/18/96	ECN-9757	SAB	HAB	
3	10/4/96	GEN/ECN 10251	RAS		

NO.	DATE	REVISION	DR	CH	APPROVED
B	11-11-86	GENERAL REVISION			RJL FSK RJL FSK MDW
C	04-21-87	GENERAL REVISION PER EBAR 881A DATED 3-19-87.			TJK FJP RJL FSK MDW
D	11-04-87	GENERAL REVISION PER TA-612			TJK SJE RJL FSK MDW
E	04-21-88	GENERAL REVISION PER TA-688 & 724.			TJK MJS RJL FSK MDW

905-D-036 (III)

NOTES

1. FOR NOTES, LEGEND AND REFERENCE DRAWINGS SEE 905-D-032.

N

STAIRWELL # 2

VIT TRANSFER TUNNEL (NEW)

EDR (EXISTING)

3'-0

11'-7

N50159.17

11' X 14' DOOR OPENING

SCRAP REMOVAL FLR EL 100.00'

VIEWING WINDOW EL

93'-0

VENT DUCT

AIR INTAKE

FAILED EQUIPMENT STORAGE AREA

CHEMICAL PROCESS CELL (CPC)

CANISTER STORAGE AREA (395 CANISTERS)

(GEN ARRGT 900E-6672)

FAN COOLER 68-E-2B

FAN COOLER 68-E-2A

22'-0

CANISTER TRANSFER CART (500B-5299)

11'-0" X 14'-0" OPENING

TRACK E.9801.08

TOP OF RAIL EL 100.25'

10'-0

CUT OUT NEW DOORWAY 12'-2 X 14'-5 OPENING

FOR THE REMOTE HANDLING SYSTEM IN THE CELL, TUNNEL AREA, EDR & CPC, SEE DWGS 900D-6585 SH 1 THRU 3.

MATCHLINE SEE DWG 905-D-030

SOAKING PIT FLR EL 84.00' COVERED AT EL 101'-0"

SUMP

8" CURB W/ REMOVABLE HANDRAIL

HVAC AREA SECONDARY FILTER RM

40'-0

FLR EL 100.00'

SHIELDING PLATE

ABANDONED IN PLACE

DOOR (D21)

FILL IN EXISTING DOORWAY

EQUIPMENT DECONTAMINATION ROOM (EDR)

CANISTER TRANSFER SYSTEM 63-W-023

UPENDER

CHANGE ROOM

MOVABLE SHIELD PLUG

(D47) 12'X14' OPENING

EDR SHIELD DOOR 63-M-003

AIRLOCK

35104 PIT ROOM

20'-0

CANISTER STAGING AREA

14

15'-6

7

8

LOAD-IN FACILITY (907-D-020)

36'-0 TO COL 5

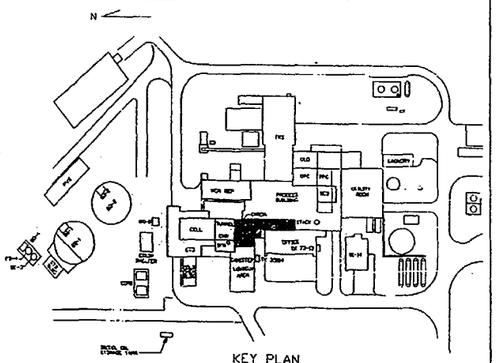
39'-0

6

A 905-D-037 (J10)

PLAN EL 100.00'

C



FOR DRAWING INDEX SEE DRAWING NO.

APPRVD WVNS CO.		EBASCO SERVICES INCORPORATED
PROJECT MGR M.D.WEINGART	08-26-86	A/E O.F.S. NO.2388 TASK ORDER 009
ENGINEER SUPV [illegible]VA.CZYK	08-26-86	FOR WEST VALLEY NUCLEAR SERVICES COMPANY,INC WEST VALLEY,NEW YORK
LISC ENGR [illegible]ALCZYK	08-26-86	WEST VALLEY DEMONSTRATION PROJECT
R[illegible]WSKO	08-26-86	GENERAL ARRANGEMENT VITRIFICATION FACILITY EDR,CPC PLAN EL.100.00'
CHECKED T.J.PIAZZA	08-26-86	
DRAWN R.J.LEWKO	DATE 08-26-86	
DE-AC07-81NE44139 PROJECT NO.		SIZE D; INDEX CODE NUMBER: AREA, DR.TYP, CL, ORIG; DRAWING NO. 905-D-031; REV. 3
[illegible]SEWV-02275 SUBCONTRACT NO.		
ISSUED FOR CONSTRUCTION		SCALE 3/16"=1'-0; SPEC. CODES; A/E SHEET NO. 905-D-031 G

10/18/04 1:01:53 PM REPRO

APPENDIX D-11

VITRIFICATION CELL DESIGN DRAWINGS
(5 DRAWINGS)

REV NO	DATE	REVISION	DR	CH	APPROVED
B	3-25-87	GENERAL REVISION REV. E BAR 885&885A		M.H.	
C	10-15-87	REVISED PER FA 530 & AS CIRCLED		MH	
D	5-18-88	GENERAL REVISION		MH	
0	5-31-88	ER 1376			
1	4-14-93	REV PER ECN 6082	GW	DES	
2	6/30/88	REV. PER ECN 2510	WAB		
3	9-9-88	REV. PER ECN 2603	GW		
4	5-8-89	REV PER ECN 2931	GW		
5	11-9-89	REV PER ECN 3017	GW	DRS	
6	12-12-89	REV. PER ECN 3322	CGR	DRS	
7	3-26-90	REV PER FCN VF-1-119	GW	DRS	
8	6-18-90	FCN VF-1-196 & VF-1-191		HAE	
9	10-29-90	REV PER ECN 3966		HAE	
10	7-10-91	REV. PER ECN 4261	CW	HAB	

REVS. CONT BELOW

NOTES:

1. FOR GENERAL NOTES SEE DWG. 905-D-122, FOR CS-134
2. FOR REFERENCE DWGS. SEE DWG. 905-D-122 & 142
3. ASTM A108 GR 1018 W/A MIN. YIELD=45000 PSI. CMTR'S TO INCLUDE PHYSICAL TESTS FOR YIELD AND TENSILE STRENGTHS.
4. FOR GENERAL NOTES SEE DRAWING 905-D-710
5. PENET. 5014 TO BE ROTATED 90° COUNTER CLOCKWISE. CUT EXST. KICK PL. FLUSH WITH T/CURB. CUT 6-64-11/2-082 (905D-061) AT BOTTOM OF 2 x 11/2 CONC. RDCR. WELD 1x4x8 SS PL TO SS LINER AS SHOWN IN DETAIL "A" AND SECTION E-E ON 905D-061. WELD KICK PL. WITH PENET. 5014 TO THE 1x4x8 SS PL AS SHOWN IN DETAIL "A" AND SECTION A-A ON 905D-061. REJOIN 6-64-11/2-082 (905D-061) WITH CONC. RDCR.

THIS DRAWING IS PART OF CS-134 EXCEPT AS NOTED AND RELATED DETAILS (CS-139)

WORK THIS DWG. WITH DWG. 905-D-126 & 127

FOR DRAWING INDEX SEE DRAWING NO.

EBASCO SERVICES INCORPORATED
A/E O.F.S. NO. 2388 TASK ORDER

FOR: WEST VALLEY NUCLEAR SERVICES COMPANY, INC. WEST VALLEY, NEW YORK

WEST VALLEY DEMONSTRATION PROJECT

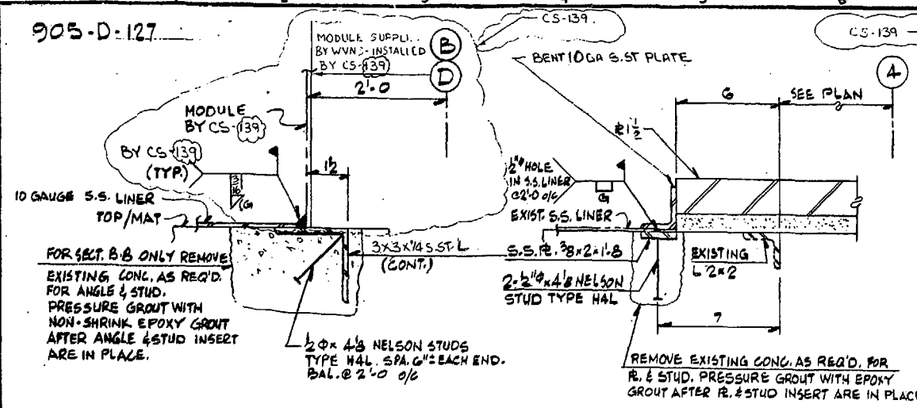
VITRIFICATION FACILITY LINER SUPPORT SH. 3 SECTION AND DETAILS

SIZE D | DRAWING NO. 905D-128 | REV. 11

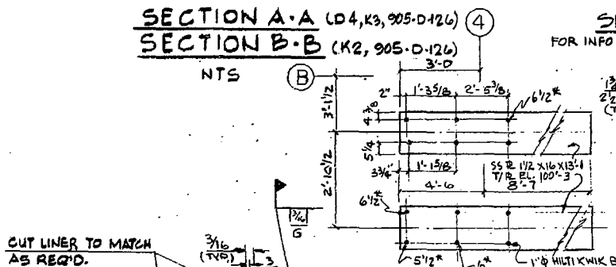
PROJECT NO. 13-CWV-02275

ISSUED FOR CONSTRUCTION

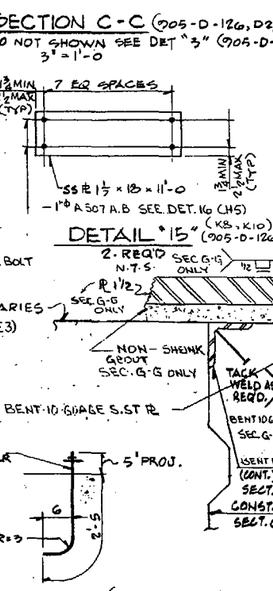
905-D-127



SECTION A-A (D4, K3, 905-D-126)
SECTION B-B (K2, 905-D-126)
NTS

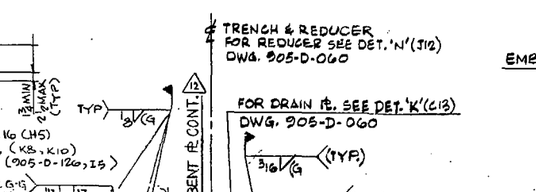


SECTION F-F (D3, I3, 905-D-126)
NTS

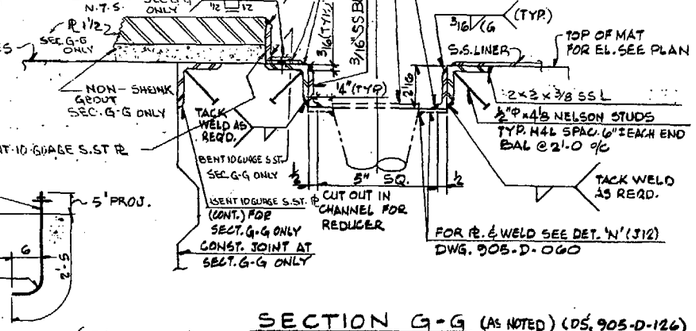


DETAIL "K6" (E4, 905-D-126, H13)
68-REQ'D
N.T.S

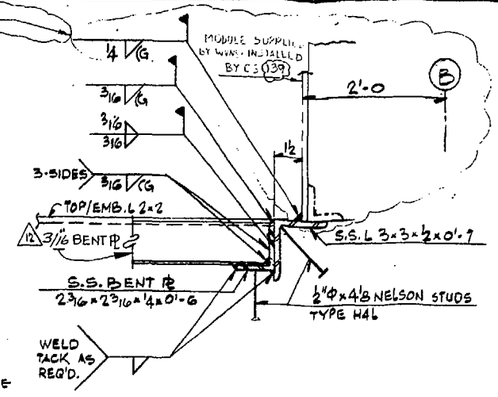
SECTION C-C (905-D-126, D2, E2)
FOR INFO NOT SHOWN SEE DET "3" (905-D-126, J12)
3" = 1'-0

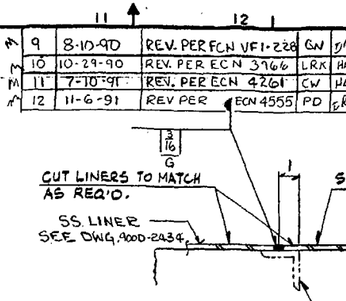


DETAIL "15" (K8, K10) (905-D-126, I5)
2 REQ'D SEC. G-G ONLY
N.T.S.



SECTION D-D (D4, 905-D-126)
NTS

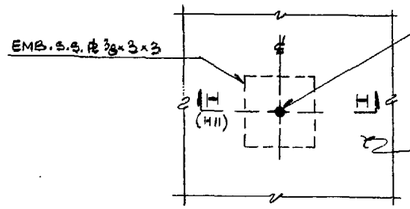




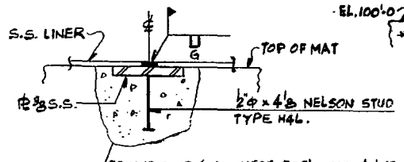
REV NO	DATE	REVISION	DR	CH	APPROVED
B	3-25-87	GENERAL REVISION PER E BAR 8858985A		MH	
C	10-15-87	REVISED PER TA 330 & AS CIRCLED		MH	
D	5-18-88	GENERAL REVISION		MH	
0	5-31-88	ER 1376		m	
1	6/24/88	REV. PER ECN 2491	WAB	m	
2	6/30/88	REV. PER ECN 2510	WAB	m	
3	9-9-88	REV. PER ECN 2603	GW		
4	5-8-89	REV. PER ECN 2931	GW		
5	11-9-89	REV. PER ECN 3017	GW		
6	12-12-89	REV. PER ECN 3322	CGR		
7	3-26-90	REV. PER ECN VF-1-119	GW		
8	6-18-90	ECN VF-1-196 & VF-1-191			
9	8-10-90	REV. PER ECN VF1-228	GW		
10	10-29-90	REV. PER ECN 3766	LRK		
11	7-10-91	REV. PER ECN 4261	CW		
12	11-6-91	REV PER ECN 4555	PD		

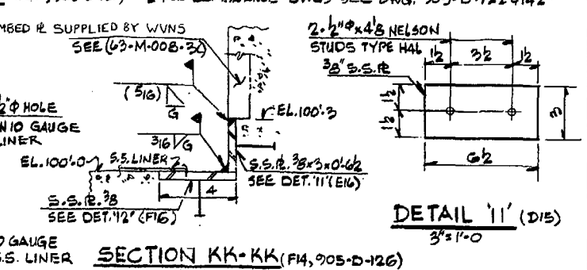
NOTES: CONT'D (B11)
1-FOR GENERAL NOTES SEE DWG. 905-D-122 FOR CS-134 (905 D-710 FOR CS-139)
2-FOR REFERENCE DWGS SEE DWG. 905-D-122 & 142

SECTION E-E (E1, 905-D-126)
N.T.S.



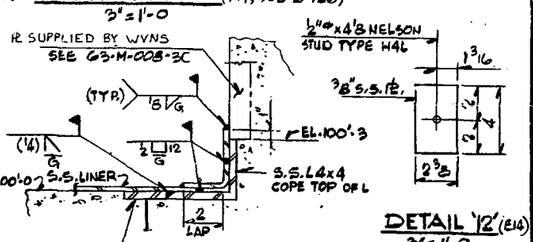
DETAIL '1' (E3, 905-D-126)
TYPICAL LINER ATTACHMENT
FOR LOCATION SEE PLAN





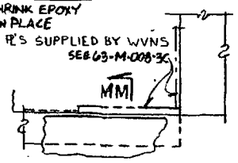
DETAIL '11' (D15)
3" = 1'-0

SECTION KK-KK (F14, 905-D-126)
3" = 1'-0

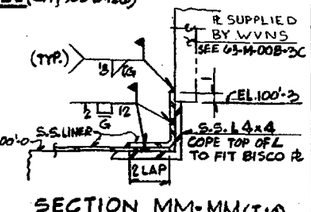


DETAIL '12' (E14)
3" = 1'-0

SECTION LL-LL (G14, 905-D-126)
3" = 1'-0

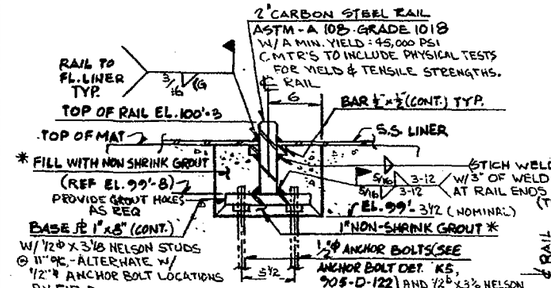


DETAIL '13' (D11, 905-D-126)
1"=1'-0

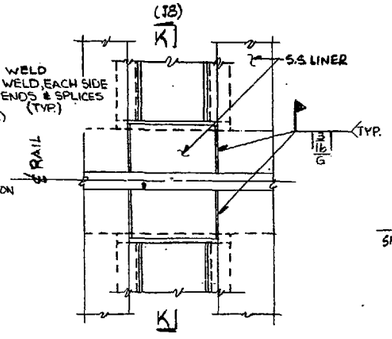


SECTION MM-MM (I14)
3" = 1'-0

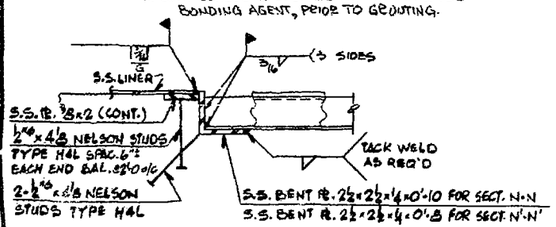
SECTION G-G (AS NOTED) (D5, 905-D-126)
SECTION G'-G (D9, 905-D-126)
NTS



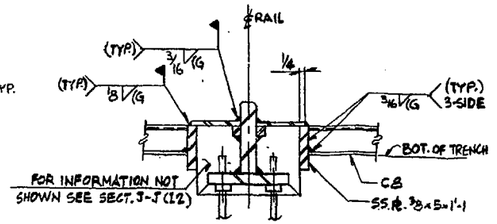
SECTION J-J (E10, F3, F10, 905-D-126)
(NTS)
* COAT CONCRETE SURFACE WITH AN APPROVED BONDING AGENT, PRIOR TO GROUTING.



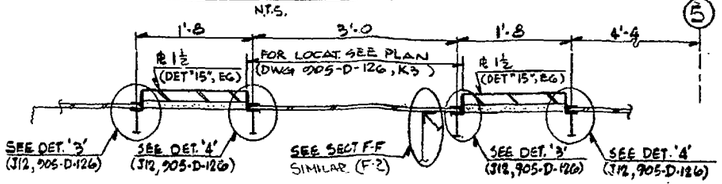
DETAIL '2' (E4, E9, F4, F9, 905-D-126)
NTS



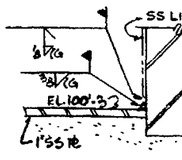
SECTION N-N (G4, 905-D-126)
SECTION N'-N' (G5, 905-D-126)
3" = 1'-0



SECTION K-K (H8)
N.T.S.

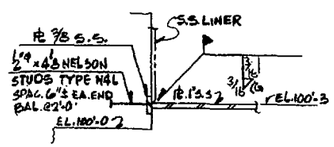


SECTION M-M (905-D-126, I6)
1" = 1'-0



SECTION S-S (B6, 905-D-126)
1 1/2" = 1'-0

SECTION R-R (G6, 905-D-126)
1 1/2" = 1'-0



SECTION H-H (E11)

WVNS APPROVAL

COG. MGR.	
COG. ENGR.	
DRFT. SUPV.	
Q.A. MGR.	
RAS MGR.	
PROJ. MGR.	

THIS DRAWING IS PART OF CS-134 BY REFERENCE (E1) CS-139

WORK THIS DWG. WITH DWG. 905-D-126 & 128

FOR DRAWING INDEX SEE DRAWING NO.

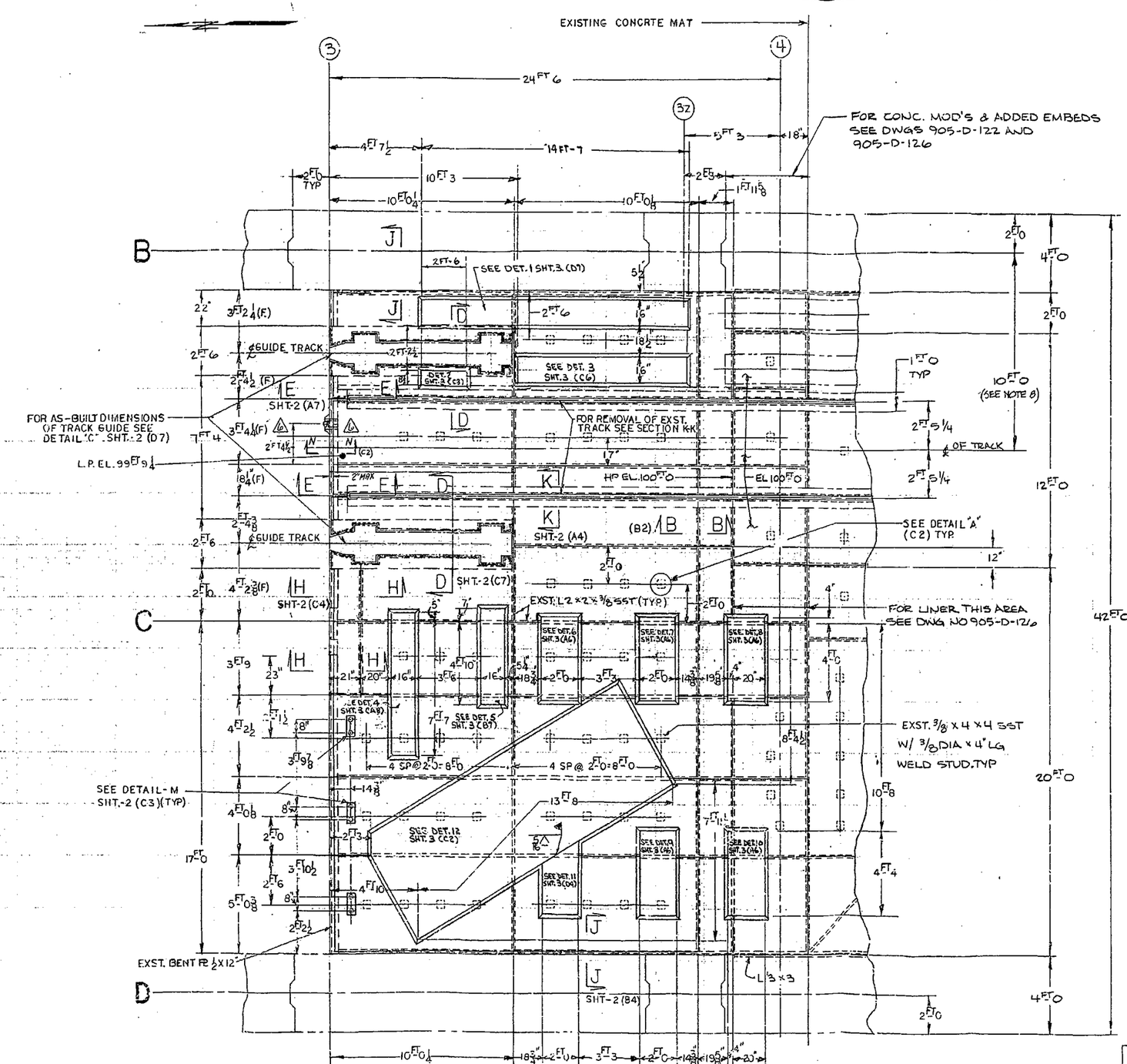
APPRVD WVNS CO.		EBASCO SERVICES INCORPORATED
PROJECT MGR		A/E O.F.S. NO. 2388 TASK ORDER 9
ENGINEER SUPV		FOR WEST VALLEY NUCLEAR SERVICES COMPANY, INC WEST VALLEY, NEW YORK
LEAD DISC. ENGR		WEST VALLEY DEMONSTRATION PROJECT
DESIGN R. PARASHURAM	10-29-90	VITRIFICATION FACILITY
CHECKED A.G. SCHAPHORST	10-29-90	LINER SUPPORT SH. 2
DRAWN T.M. GUARNIERI	DATE 10/29/90	SECTION AND DETAILS
DE-NCOT-81WE44139 PROJECT NO.		SIZE D; INDEX CODE NUMBER; DRAWING NO. 905D-127; REV. 12
19-CWT-00275 SUBCONTRACT NO.		DISCIPLINE TYP. CL SEQ.
ISSUED FOR CONSTRUCTION		SCALE AS NOTED; WVNS CODE; A/E SHEET NO. 905-D-127D

CHANGES PRIOR TO EACH USE.
INIT_____ DATE_____

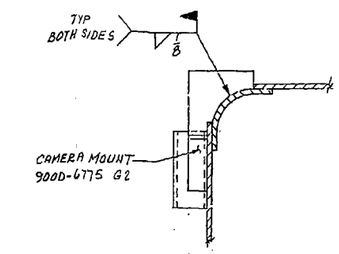
DWG NO. 900D-2434 SH 1

REVISIONS

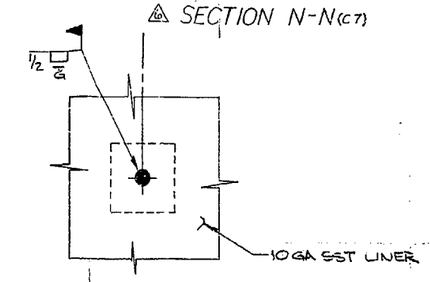
ZONE	REV	DESCRIPTION	CH	BY	DATE	APPROVED
	0	ER 1461			9/23/88	[illegible]
	1	PER ECN 3261 & 3322 CHKD DRS	CGR	[illegible]	12-11-89	[illegible]
	2	REV. PER FCN VF-1-111 CHKD DRS		GW	3-26-90	[illegible]
	3	REV. PER FCN VF-1-197 AND FCN VF-1-211 7-11 CHKD DRS 7-30 DRS		GW RKG	6-22-90 7-28-90	[illegible]
	4	REV. STATUS PER FCN VF-239	[illegible]	GW	8-24-90	[illegible]
	5	REV. PER ECN 4075	[illegible]	RKG	11-30-90	[illegible]
	6	REV/ECN 9678	DRS	RMS	3 96	



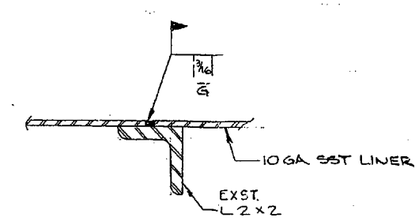
PLAN EL. 100-0



SECTION N-N (C7)



DETAIL A (C4)
1/2" = 1 FT 0



SECTION B-B (C5) 1/2 = 1 FT 0
TYPICAL LINER JOINT DETAIL

8. SEE "RAIL INSTALLATION NOTES" ON DWG. 905D-185 FOR VERIFICATION OF THEORETICAL RAIL LOCATION
7. ALL HILTI ANCHORS SHALL BE LOCATED TO CLEAR SLAB REINFORCING. ANY UNUSED HOLES SHALL BE SEAL WELDED & GROUND FLUSH

6. (F.) DENOTES FIELD DIMENSIONS
5. FOR EXISTING EMBEDDED STEEL IN FLOOR SEE DWG. 902D-101
4. ADDED 1 1/2 PLATES TO BE INSTALLED TRUE & LEVEL W/IN 1/8" ADJACENT PL.
3. 1 1/8 Ø THRD. ROD (ASTM A193, GRADE B) WITH 8 1/2 MIN. EMBEDMENT. UTILIZE ONE HILTI HEA 1", PLUS ONE HILTI HEA 5/8" CARTRIDGE PER ANCHOR. INSTALL PER MANUFACTURERS INSTRUCTIONS.
2. FOR ADDITIONAL NOTES SEE DWS. 905D-126
1. FOR GENERAL NOTES SEE DWG'S. 905D-122

QTY REQD	ITEM NO.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	MATERIAL OR SPEC

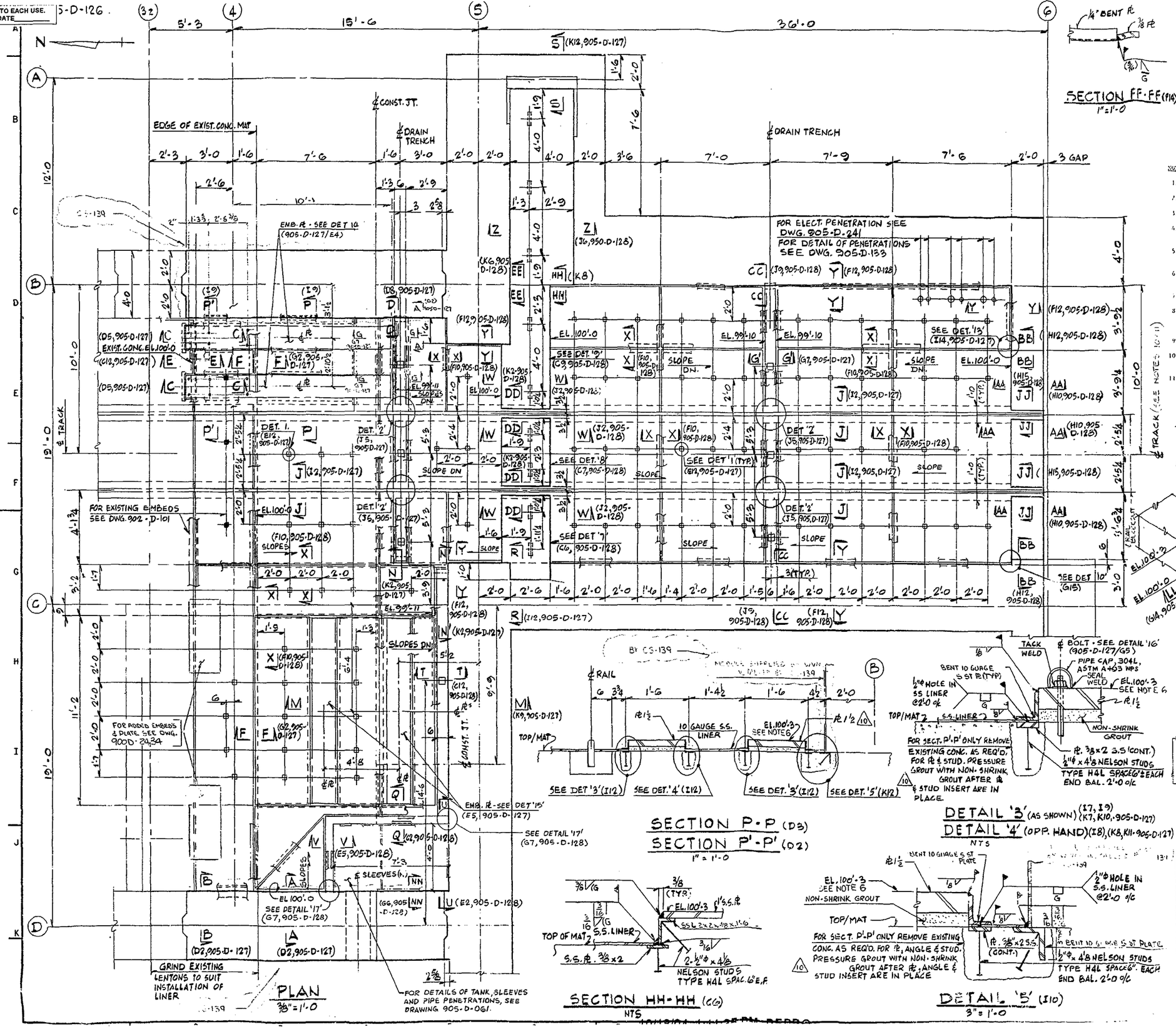
PARTS LIST

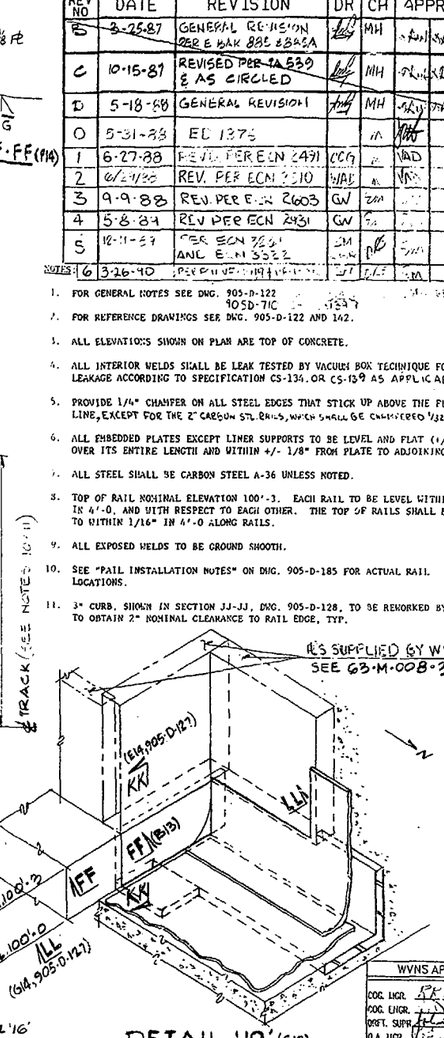
UNLESS OTHERWISE SPECIFIED	DRAFTER P. WOLFLING	DATE 9-2-88	A/E CONTRACT NO. CODE IDENT. NO.
	CHECKER [illegible]	DATE 9/2/88	FOR West Valley Nuclear Services Co., Inc. West Valley, New York
TOLERANCES - DO NOT SCALE	ENGR. V. DesCamp	DATE 9-21-88	
2 PL DEC ± — 3 PL DEC ± ~ ANGLES ± ~	[illegible]	[illegible]	VITRIFICATION FACILITY FLOOR LINER & SUPPORTS PLAN @ EL. 100 FT 0
FRACTIONS ± 1/8	COG. MGR. APPVL [illegible]	DATE [illegible]	
D. SPEC. NO. 1326	E&OD APPVL [illegible]	DATE 9/25/88	DWG SIZE D — SCALE 3/8" = 1 FT 0 — WEIGHT — DWG NO. 900D-2434 — REV. 6
NEXT ASSEMBLY	Q.A. APPVL [illegible]	DATE 9/23/88	A/E DWG NO. — SHEET 1 OF 3
	OFFG. SUPR. [illegible]	DATE 9/26/88	

50/18/04 1:12:15 PM REPRO

CHANGES PRIOR TO EACH USE.
INIT_____ DATE_____

5-D-126





REV NO	DATE	REVISION	DR	CH	APPROVED
B	3-25-87	GENERAL REVISION PER E BAK 885 & 885A		MH	
C	10-15-87	REVISED PER TA 539 & AS CIRCLED		MH	
D	5-18-88	GENERAL REVISION		MH	
0	5-31-88	ED 1375			
1	6-27-88	REV. PER ECN 2491	CCG		VAD
2	6/29/88	REV. PER ECN 2510	WAD		
3	9-9-88	REV. PER ECN 2603	GW		
4	5-8-89	REV PER ECN 2931	GW		
5	12-11-89	PER ECN 3261 AND ECN 3322			
6	3-26-90	PER ECN [illegible]			

NOTES:

1. FOR GENERAL NOTES SEE DWG. 905-D-122 905D-710 [illegible]
2. FOR REFERENCE DRAWINGS SEE DWG. 905-D-122 AND 142.
3. ALL ELEVATIONS SHOWN ON PLAN ARE TOP OF CONCRETE.
4. ALL INTERIOR WELDS SHALL BE LEAK TESTED BY VACUUM BOX TECHNIQUE FOR ZERO LEAKAGE ACCORDING TO SPECIFICATION CS-134. OR CS-139 AS APPLICABLE.
5. PROVIDE 1/4" CHAMFER ON ALL STEEL EDGES THAT STICK UP ABOVE THE FLOOR LINE, EXCEPT FOR THE 2" CARBON STL. RAILS, WHICH SHALL BE CHAMFERED 1/32" (MAX. 1/16")
6. ALL EMBEDDED PLATES EXCEPT LINER SUPPORTS TO BE LEVEL AND FLAT (+/- 1/8") OVER ITS ENTIRE LENGTH AND WITHIN +/- 1/8" FROM PLATE TO ADJOINING PLATE.
7. ALL STEEL SHALL BE CARBON STEEL A-36 UNLESS NOTED.
8. TOP OF RAIL NOMINAL ELEVATION 100'-3. EACH RAIL TO BE LEVEL WITHIN 1/16" IN 4'-0, AND WITH RESPECT TO EACH OTHER. THE TOP OF RAILS SHALL BE EQUAL TO WITHIN 1/16" IN 4'-0 ALONG RAILS.
9. ALL EXPOSED WELDS TO BE GROUND SMOOTH.
10. SEE "RAIL INSTALLATION NOTES" ON DWG. 905-D-185 FOR ACTUAL RAIL LOCATIONS.
11. 3" CURB, SHOWN IN SECTION JJ-JJ, DWG. 905-D-128, TO BE REWORKED BY FIELD. TO OBTAIN 2" NOMINAL CLEARANCE TO RAIL EDGE, TYP.

REFERENCE DRAWINGS:

V.F. M&R FOUNDATION PLAN & DET'S.	905-D-122 & 123
PIPING PLAN-VITRIFIC. DRAINAGE SYSTEM	905-D-060 & 061
V.F. COND. LAYOUT	905-D-133
V.F. HVAC-VENT. SYSTEM	905-D-401

REV.	DATE	REVISION	DR	CH	APPROVED
10	11-7-91	REV PER ECN 4555	PD		
7	8-9-90	REV PER ECN. VF1-228	CW		

WORK THIS DWG WITH 905-D-127 & 905-D-128

FOR DRAWING INDEX SEE DRAWING NO. _____

APPRVD WVNS CO.	EBASCO SERVICES INCORPORATED
PROJECT MGR.	A/E O.F.S. NO. 2388 TASK ORDER 9
ENGINEER SUPV	FOR WEST VALLEY NUCLEAR SERVICES COMPANY, INC WEST VALLEY, NEW YORK
LEAD DISC. ENGR	WEST VALLEY DEMONSTRATION PROJECT
DESIGN	VITRIFICATION FACILITY
CHECKED	LINER SUPPORT SH. 1
DRAWN S.M. GUARNIERI	PLAN AT EL 100'-0
DE-AC07-81NE44139 PROJECT NO.	SIZE D · INDEX CODE NUMBER · DRAWING NO. 905D-126 · REV. 10
19-CWV-02275 SUBCONTRACT NO.	
ISSUED FOR CONSTRUCTION	SCALE AS NOTED · SPEC. CODES · A/E SHEET NO. 905-D-126 D

WVNS APPROVAL
COG. MGR.
COG. ENGR.
DEPT. SUPR.
Q.A. MGR.
RES MGR.
PROJ. MGR.

905-D-030

NO.	DATE	REVISION	DR	CH	APPROVED
G	06-30-89	GENERAL REVISION	PJS	SE	RJL FSK FJES
0	7-13-89	ER 1646		JRH	
15	03/19/96	ECN 9757	SAB	HAB	
16	04/02/96	ECN 9739	SAB	HAB	
17	5/13/96	ECN 9681	JHS	HAB	
18	5/28/96	ECN 9774	SRD	DRS	
19	8/30/96	ECN 10178	JHS	HAB	
20	10/2/96	GEN/ECN 10251	RAS	HAB	
21	06/12/97	ECN 10638	DLL	DRS	

NO.	DATE	REVISION	DR	CH	APPROVED
B	11-11-86	GENERAL REVISION		RJL	FSK RJL FSK MDV
C	04-21-87	GENERAL REVISION PER EBAR 851A DATED 3-19-87		TJK	TJP RJL FSK MDV
D	11-04-87	GENERAL REVISION PER TA-612		TJK	SJE RJL FSK MDV
E	04-21-88	GENERAL REVISION PER TA-688 & 724.		TJK	MJS RJL FSK MDV
F	11-03-88	GENERAL REVISION PER EBAR NO. 1147		BFR	CA RJL FSK FJE FJES

NOTES

1. FOR NOTES, LEGEND AND REFERENCE DRAWINGS SEE 905-D-032.
2. FOR CELL INTERIOR SEE DRAWING PNL-240-01 THRU-20 AND PNL-500-01, 02, 03.
3. FOR INSTR LOCATIONS, SEE DWG 905D-370 SH 1 THRU 9
4. FOR VENTILATION SYS, SEE DWG 905D-401 THRU 905D-407 & 905D-465 THRU 905D-472.

KEY PLAN

APPRVD WVNS CO		EBASCO SERVICES INCORPORATED
PROJECT MGR M.D.WEINGART	08-26-86	A/E D.F.S. NO.2388 TASK ORDER 009
ENGINEER SUPV F.KOWALCZYK	08-26-86	FOR WEST VALLEY NUCLEAR SERVICES COMPANY,INC WEST VALLEY,NEW YORK
LEAD DISC ENGR F.KOWALCZYK	08-26-86	WEST VALLEY DEMONSTRATION PROJECT
DESIGN R.J.LEWKO	08-26-86	GENERAL ARRANGEMENT VITRIFICATION FACILITY PLAN EL 100.00'
CHECKED T.J.PIAZZA	08-26-86	
DRAWN R.J.LEWKO	DATE 08-26-86	
DE-AC07-81NE44139 PROJECT NO.		SIZE D; INDEX CODE NUMBER: AREA DR.TYP CL DRIG; DRAWING NO. 905-D-030; REV. 21
19-CWV-0227S SUBCONTRACT NO.		SCALE 3/16"=1'-0; SPEC. CODES; A/E SHEET NO. 905-D-030 5
ISSUED FOR CONSTRUCTION		

10/18/2004 12:22 REDRO

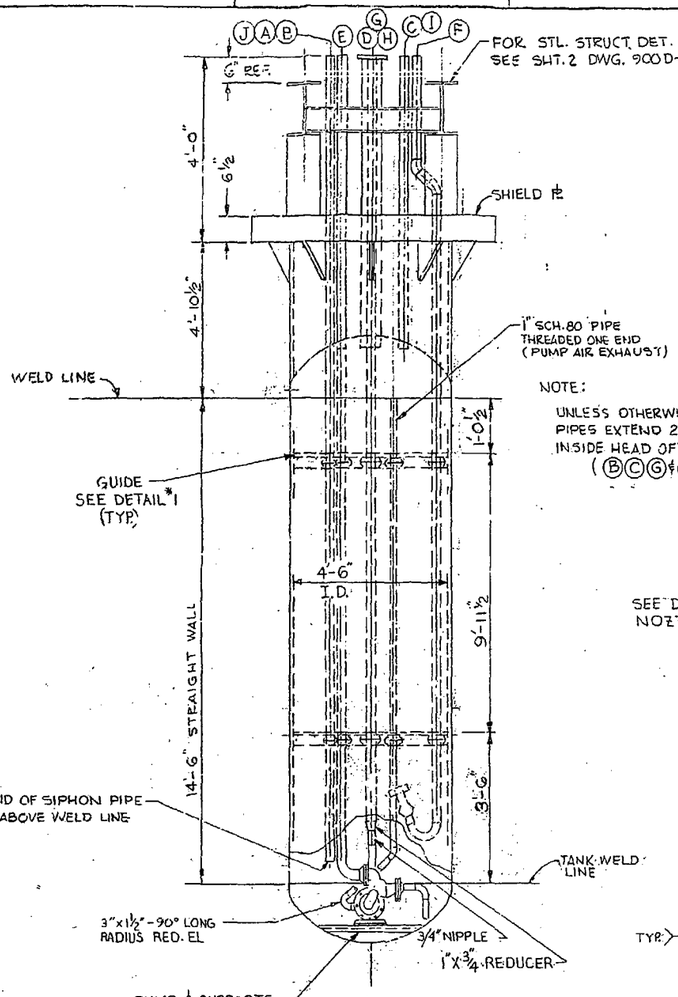
APPENDIX D-12

TANK DRAWINGS
(22 DRAWINGS)

CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE.
INIT._____ DATE_____

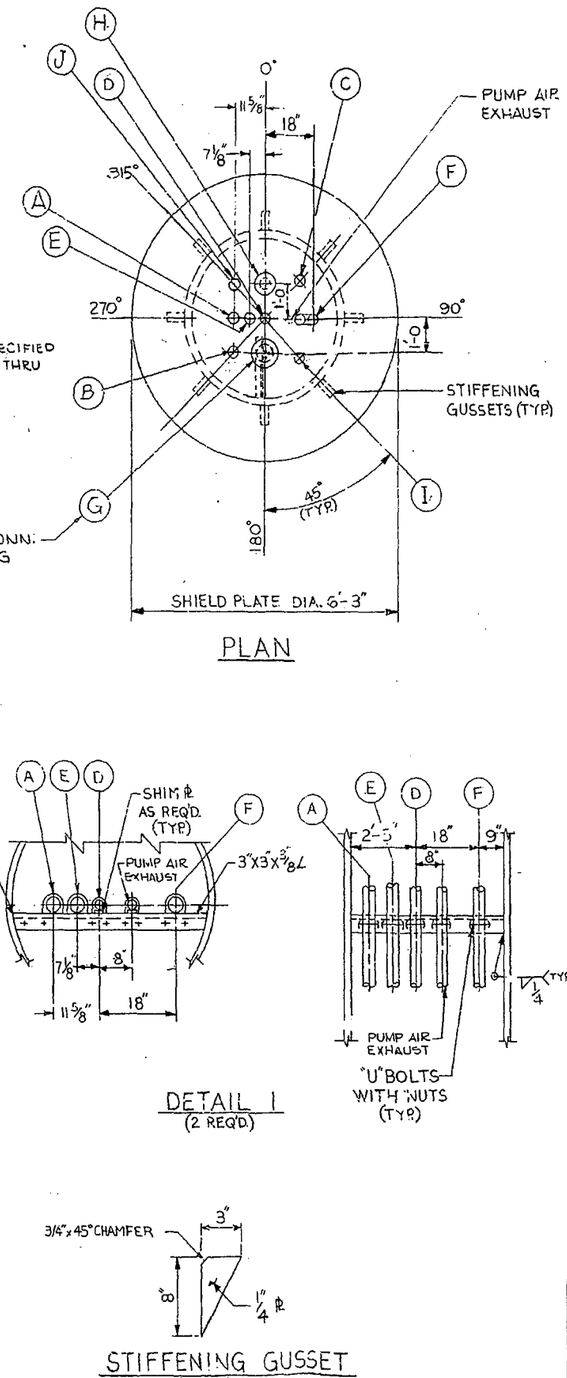
DWG NO. 900 D-496 SH 1

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	1	REVISED IN ACCORDANCE WITH DFC 323	7/8/85	
	2	REVISED IN ACCORDANCE WITH DFC 422	11/11/85	
	3	REVISED PER ECN 648	4/29/86	

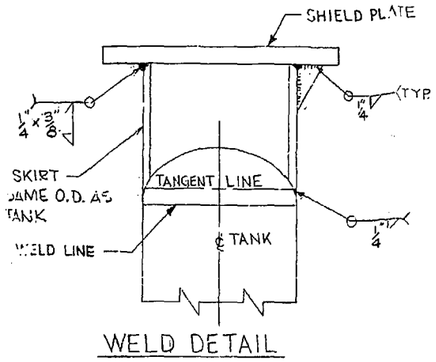


ELEVATION

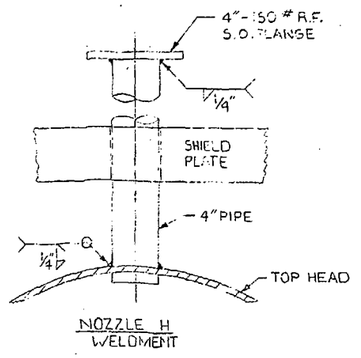
NOTE:
UNLESS OTHERWISE SPECIFIED PIPES EXTEND 2" MAX. THRU INSIDE HEAD OF TANK (B C G & H)



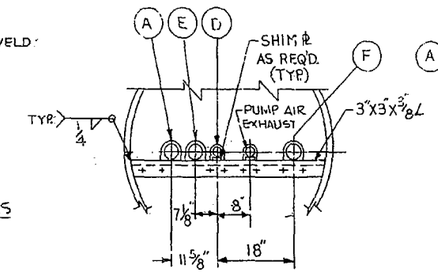
PLAN



WELD DETAIL



NOZZLE H WELDMENT



DETAIL I
(2 REQ'D)

TABLE OF CONNECTIONS				
SYMBOL	SIZE	FACING	ORIENTATION	SERVICE
A	1½	B.W.	270°	SIPHON
B	2"	B.W.	225°	SUPERNATANT INLET
C	2"		45°	VENT
D	1"		CENTER	AIR INLET FOR PUMP G-002
E	1½		270°	DISCHARGE FOR PUMP G-002
F	1½		90°	INLET TO EDUCTOR
G	6"		180°	INSTRUMENT CONNECTIONS
H	4"	BLIND FLG.	0°	INSTRUMENT CONNECTION
I	2"	B.W.	135°	VENT FROM IX COLUMNS
J	2"	B.W.	315°	BLEED FROM IX COLUMNS (VALVE BY

STIFFENING GUSSET
(8 REQ'D)

EDUCTOR PIPING DETAIL

NOTE: ROTATE TANK EDUCTOR AWAY FROM ANGLE

SECTION A-A (TYP.)

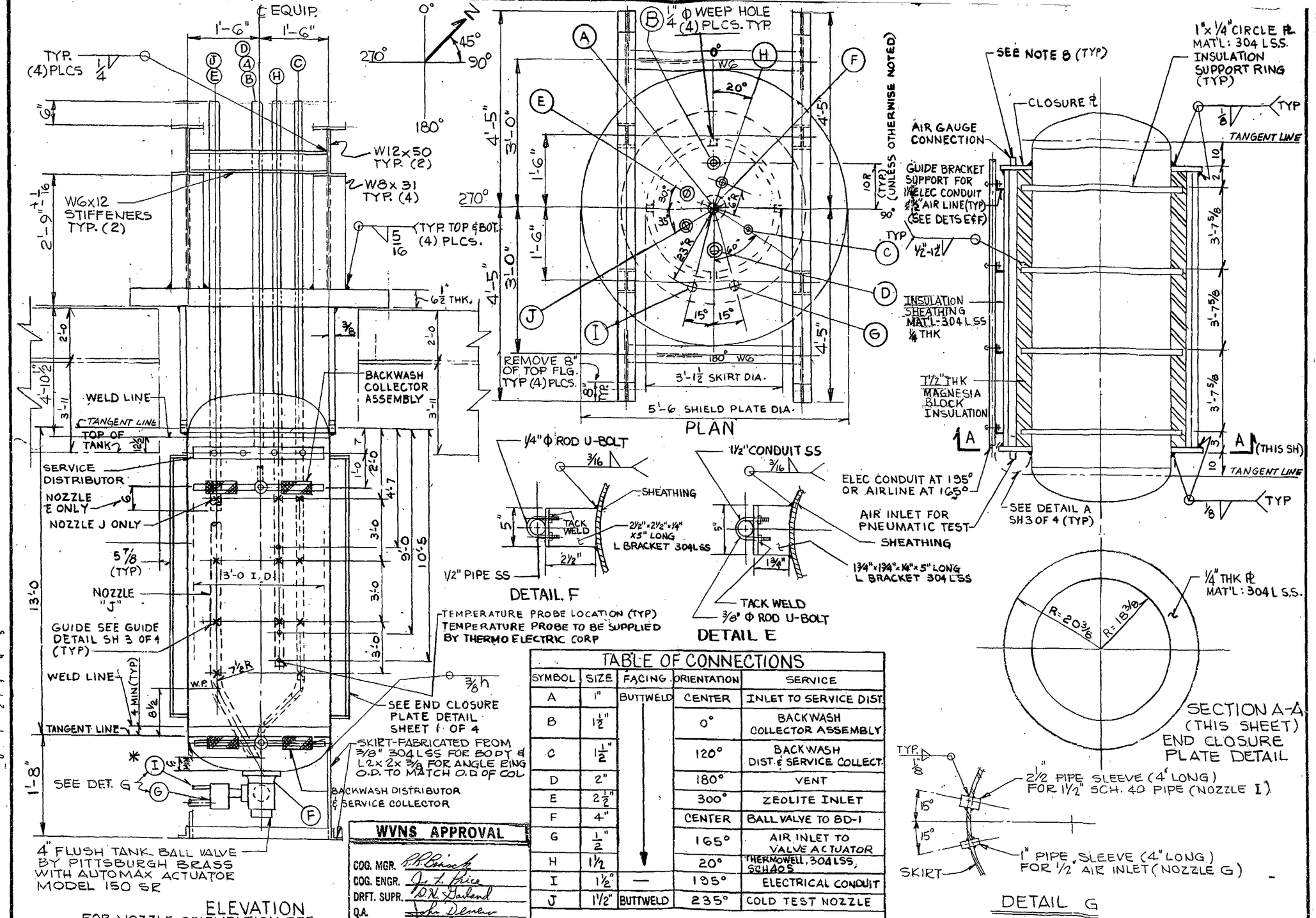
DETAILS OF INSTRUMENT CONNECTIONS-NOZZLE G

QTY REQD.	SYM	ITEM NO.	NOMENCLATURE OR DESCRIPTION	CODE IDENT NO.	PART OR IDENTIFYING NO.	MATERIAL	SPECIFICATION	ZONE

PARTS LIST

INDEX CODE NUMBER				UNLESS OTHERWISE SPECIFIED	CONTRACT NO.		A/E CONTRACT NO.	CODE IDENT NO
AREA	DWG. TYPE	SYS	ORIG.		DES'SN. Rudy	DATE OF DWG. 12-12-34	FOR West Valley Nuclear Services Co., Inc. West Valley, New York	
800	72	50	01	TOLERANCES - DO NOT SCALE	CHECKER SJS	ENGR. SUPVR.		
SPEC CODE				2PL DEC ±0.01 / 3PL DEC ±0.015 / ANGLES ±0°05' / 250 AA	DESIGN	ENGR.	STS-SUPERNATANT TREATMENT SYSTEM SUPERNATANT FEED TANK D-001	
				FRACTIONS ± 1/16	FACILITIES N/A			
					ENGR. N/A	E&OS N/A		

DWG SIZE	SCALE NONE	DWG NO 900-D-496	REV 3
	WEIGHT		
D	A/E DWG NO	SHEET 1 OF 2	



ELEVATION

FOR NOZZLE ORIENTATION SEE PLAN & TABLE OF CONNECTIONS

* NOTE: FOR NOZZLE (I) PROVIDE 304 LSS SCH 40S FLEXIBLE CONNECTION TO SUIT BETWEEN VALVE POSITIONER CONNECTION AND ELECTRICAL CONDUIT

PLAN

DETAIL F

DETAIL E

SECTION A-A (THIS SHEET) END CLOSURE PLATE DETAIL

DETAIL G

TABLE OF CONNECTIONS

SYMBOL	SIZE	FACING	ORIENTATION	SERVICE
A	1"	BUTTWELD	CENTER	INLET TO SERVICE DIST.
B	1 1/2"		0°	BACKWASH COLLECTOR ASSEMBLY
C	1 1/2"		120°	BACKWASH DIST. & SERVICE COLLECT.
D	2"		180°	VENT
E	2 1/2"		300°	ZEOLITE INLET
F	4"		CENTER	BALL VALVE TO BD-1
G	1/2"		165°	AIR INLET TO VALVE ACTUATOR
H	1 1/2		20°	THERMOWELL, 304 LSS, SCH 40S
I	1 1/2"	—	195°	ELECTRICAL CONDUIT
J	1 1/2"	BUTTWELD	235°	COLD TEST NOZZLE

WVNS APPROVAL

COG. MGR. R.R. Bonsch
COG. ENGR. J. L. Price
DRFT. SUPR. D.H. Garland
Q.A. John Denew

SK-WVNS-2388-M-172 ST. 1 REV. B

FOR NOTES SEE SHEET 4 OF 4

REV	DATE	BY	APPROVED	
5				
4				
2	11/11/85	SJS	435	JLP
1	10-7-85	SJS	409	JLP
0	10-7-85	SJS	ER 512	JLH

1	1	0	2	REV	REV STATUS
4	3	2	1	SHEET	OF SHEETS

EBASCO SERVICES INCORPORATED

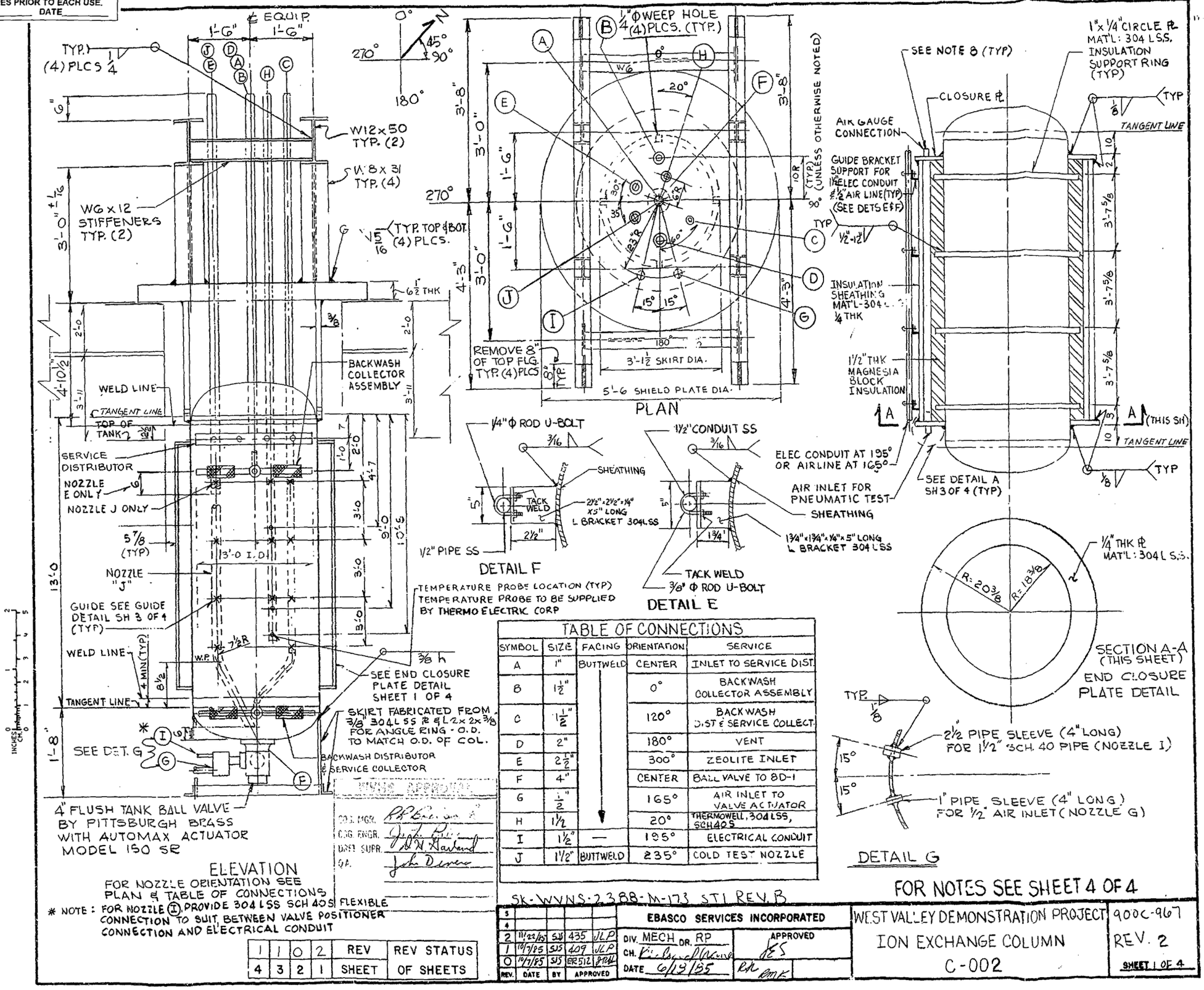
DIV. MECH DR. RP
CH. Richard Crane
DATE 6/18/85
APPROVED JES

WEST VALLEY DEMONSTRATION PROJECT
ION EXCHANGE COLUMN
C-001

900C-966
REV. 2
SHEET 1 OF 4

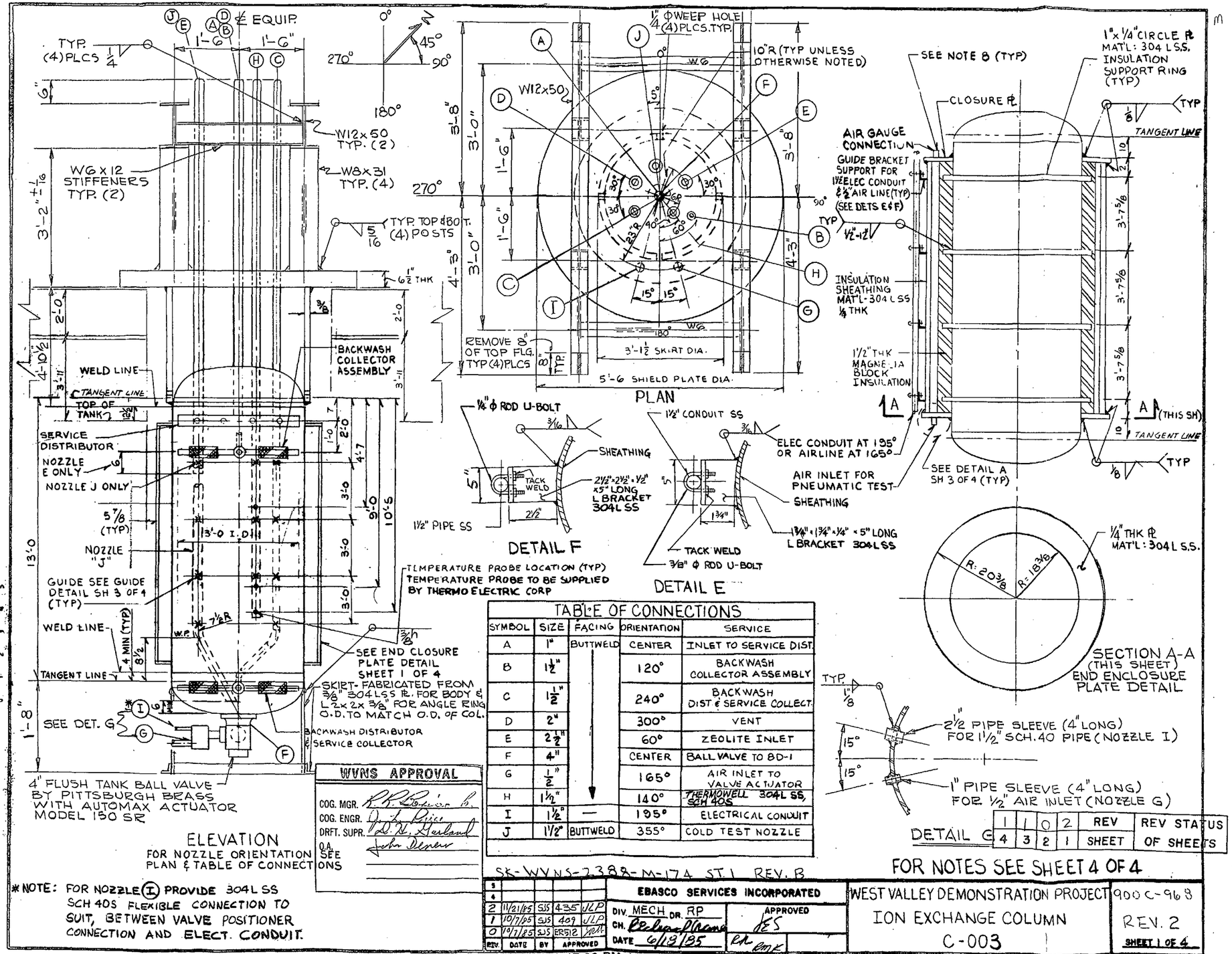
10/18/04 2:33:34 PM REPRO

CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE.
INIT_____ DATE_____



ST. 1

900C-968



ELEVATION
FOR NOZZLE ORIENTATION PLAN & TABLE OF CONNECTIONS SEE

TABLE OF CONNECTIONS

SYMBOL	SIZE	FACING	ORIENTATION	SERVICE
A	1"	BUTTWELD	CENTER	INLET TO SERVICE DIST.
B	1½"		120°	BACKWASH COLLECTOR ASSEMBLY
C	1½"		240°	BACKWASH DIST & SERVICE COLLECT.
D	2"		300°	VENT
E	2½"		60°	ZEOLITE INLET
F	4"		CENTER	BALL VALVE TO BD-1
G	½"		165°	AIR INLET TO VALVE ACTUATOR
H	1½"		140°	THERMOWELL 304L SS, SCH 40S
I	1½"	—	195°	ELECTRICAL CONDUIT
J	1½"	BUTTWELD	355°	COLD TEST NOZZLE

WVNS APPROVAL

COG. MGR. R.R. Rogers B.
COG. ENGR. J.L. Rizzo
DRFT. SUPR. D.R. Garland
QA John Denver

*NOTE: FOR NOZZLE (I) PROVIDE 304L SS SCH 40S FLEXIBLE CONNECTION TO SUIT, BETWEEN VALVE POSITIONER CONNECTION AND ELECT. CONDUIT.

SK-WVNS-2388-M-174 ST 1 REV. B

REV.	DATE	BY	APPROVED
3			
4			
2	11/21/85	SJS	435 ULP
1	10/7/85	SJS	409 ULP
0	10/1/85	SJS	ER512 ULP

EBASCO SERVICES INCORPORATED
DIV. MECH DR. RP
CH. Rodney Plasma
DATE 6/13/85
APPROVED JES

WEST VALLEY DEMONSTRATION PROJECT
ION EXCHANGE COLUMN
C-003

900C-968
REV. 2
SHEET 1 OF 4

1	1	0	2	REV	REV STATUS
4	3	2	1	SHEET	OF SHEETS

FOR NOTES SEE SHEET 4 OF 4

10/18/04 2:47:03 PM blueprint, repro

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE.
INIT_____ DATE_____

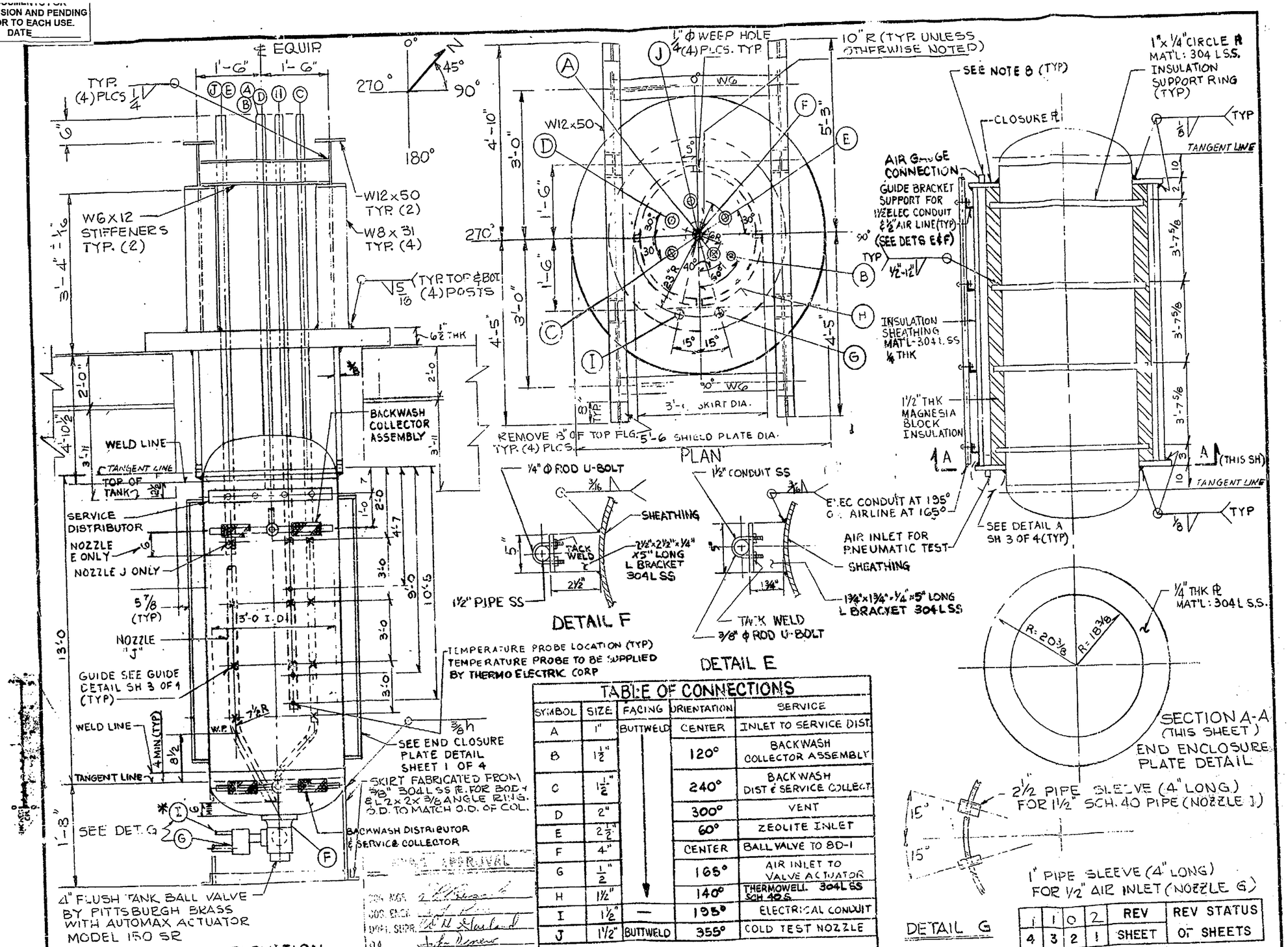


TABLE OF CONNECTIONS

SYMBOL	SIZE	FACING	ORIENTATION	SERVICE
A	1"	BUTTWELD	CENTER	INLET TO SERVICE DIST.
B	1 1/2"		120°	BACKWASH COLLECTOR ASSEMBLY
C	1 1/2"		240°	BACKWASH DIST & SERVICE COLLECT.
D	2"		300°	VENT
E	2 1/2"		60°	ZEOLITE INLET
F	4"		CENTER	BALL VALVE TO BD-1
G	1/2"		165°	AIR INLET TO VALVE ACTUATOR
H	1 1/2"		140°	THERMOWELL 304L SS SCH 40S
I	1 1/2"	—	195°	ELECTRICAL CONDUIT
J	1 1/2"	BUTTWELD	355°	COLD TEST NOZZLE

*NOTE: FOR NOZZLE (I) PROVIDE 304L SS SCH 40S FLEXIBLE CONNECTION TO SUIT, BETWEEN VALVE POSITIONER CONNECTION AND ELECTRICAL CONDUIT.

REV	DATE	BY	APPROVED
3			
4			
2	11-21-85	SJS	435 JLP
1	10-7-85	SJS	401 JLP
0	10-7-85	SJS	ER512

SK-WVNS-2388-M-175 ST 1 REV. B

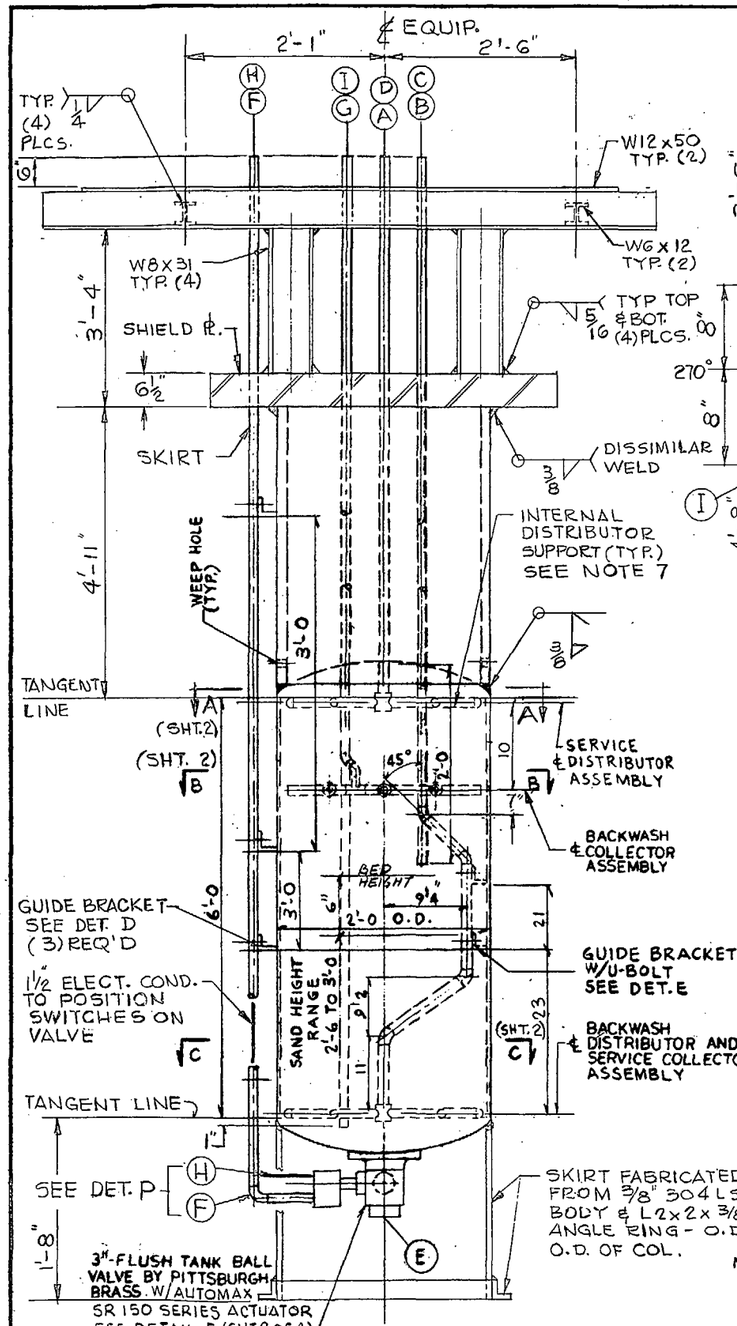
REV	1	1	0	2	REV	REV STATUS
4	3	2	1		SHEET	OF SHEETS

FOR NOTES SEE SHEET 4 OF 4

EBASCO SERVICES INCORPORATED
DIV. MECH DR. RP
CH. [signature]
DATE 6/18/85
APPROVED JES

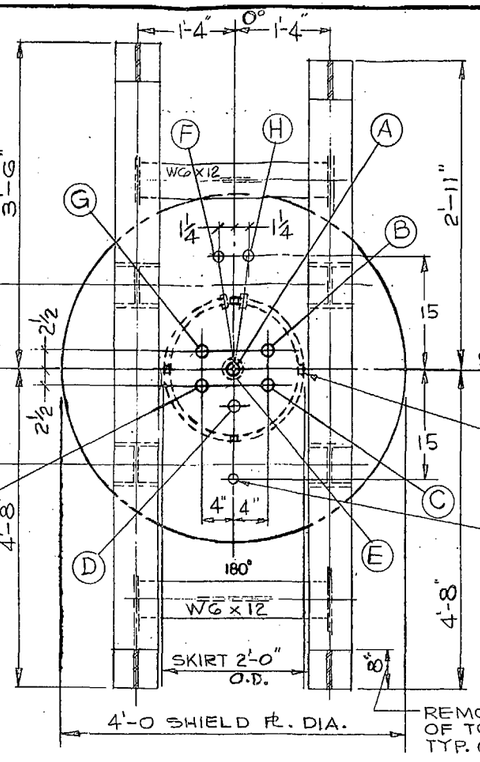
WEST VALLEY DEMONSTRATION PROJECT
ION EXCHANGE COLUMN
C-004

400C 969
REV. 2
SHEET 1 OF 4



ELEVATION (FOR NOZZLE ORIENTATION SEE PLAN & TABLE OF CONN)

NOTE: SKIRT-TO-HEAD WELDS & SKIRT-TO-SHIELD PLATE WELDS SHALL BE LIQUID DYE PENETRANT TESTED.



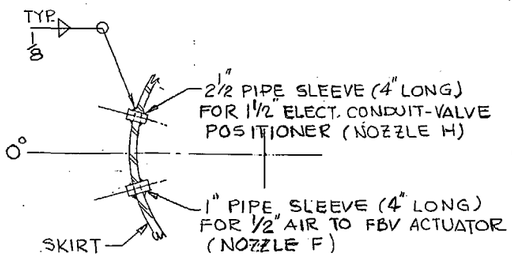
PLAN (NOZZLE ORIENTATION)

FOR NOTES SEE SHEET 4 OF 4

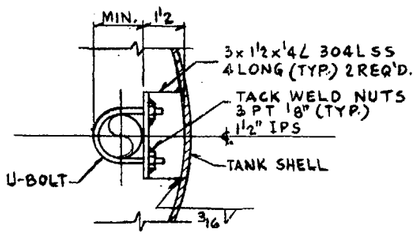
¼" DIA. WEEP HOLE TYP. (4)

½" DIA. THRU HOLE IN SHIELD PL.

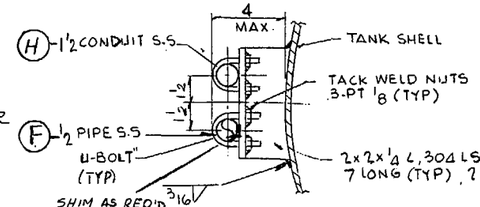
TABLE OF CONNECTIONS				
SYMBOL	SIZE	FACING	ORIENTATION	SERVICE
A	1½"	BW	CENTER	FILTER INLET TO SERVICE DISTRIB.
B	1½"	BW	58°	BACKWASH DIST. / SERVICE COLLEC.
C	1½"	BW	122°	SAND SLURRY INLET
D	1½"	BW	180°	VENT
E	3"	BW	CENTER	SAND DUMP OUTLET FBV
F	½"	BW	0°	COMPRESSED AIR LINE TO FBV ACTUATOR
G	1½"	BW	302°	BACKWASH COLLECTOR
H	1½"	NPT	0°	ELECT. CONDUIT-VALVE POSITIONER
I	1½"	BW	238°	SPARE (DIP TUBE)



DETAIL P



DETAIL E
GUIDE BRACKET INSIDE



DETAIL D
GUIDE BRACKET OUTSIDE
FOR DRAWING INDEX SEE DRAWING NO.

REV	DATE	BY	CH	APPROVED
1	12/20/85	SJS	DFG 4-61	[illegible]
0	11/26/85	[illegible]	ERSSS	[illegible]
B	11/18/85	[illegible]	[illegible]	[illegible]

FOR NOZZLE (H) PROVIDE A 304 LSS SCH. 40S FLEXIBLE CONNECTION TO SUIT BETWEEN VALVE POSITIONER CONNECTION & ELEC. CONDUIT

10/18/04 2:25:39 PM blueprint, repro

APPRVD VVNS CO.	[illegible]	11/26/85
PROJECT MGR	J.E. Stein	11/20/85
ENGINEER-SUPV	[illegible]	11/26/85
LEAD DISC ENGR	[illegible]	11/26/85
DESIGN	[illegible]	11/26/85
CHECKED		
DRAWN	C.L. FORESE	DATE 11/26/85
DE-ACO7-81ME44139 PROJECT NO.		
19-CVV-02275 SUBCONTRACT NO.		
ISSUED FOR CONSTRUCTION		

EBASCO SERVICES INCORPORATED
A/E O.F.S. NO. 2388 TASK ORDER 013
FOR
WEST VALLEY NUCLEAR SERVICES COMPANY, INC
WEST VALLEY, NEW YORK

WEST VALLEY DEMONSTRATION PROJECT
DECONTAMINATED
SUPERNATANT POST FILTER
50-F-002

SIZE	INDEX CODE NUMBER				DRAWING NO.	REV.
	AREA	DR. TYP	CL	ORIG		
C					900C-1077	1
SCALE NONE	SPEC. CODES				A/E SHEET NO. SK-M-193 SHT 1B	

DRAWING NUMBER

DRAWING NUMBER

DRAWING NUMBER

DRAWING NUMBER 8B-D-4

DRAWING NUMBER

DRAWING NUMBER

SIZE D (ASA)

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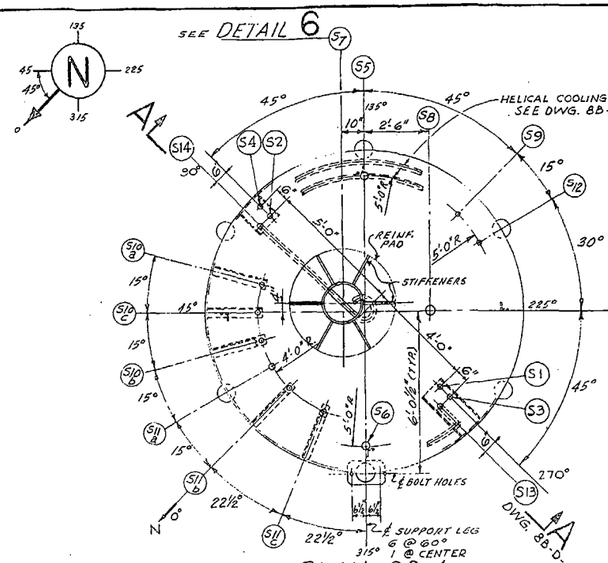
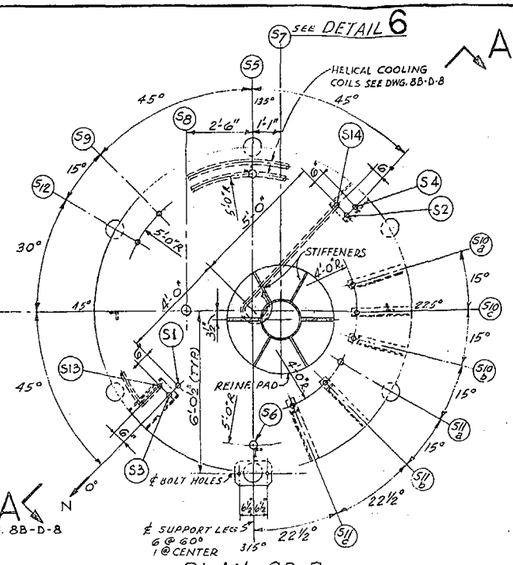
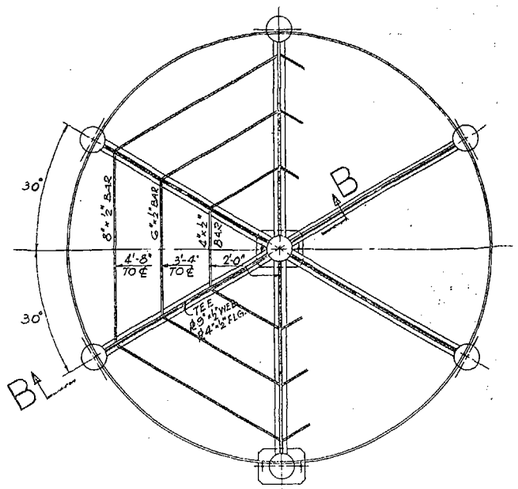


PLAN 8D-4

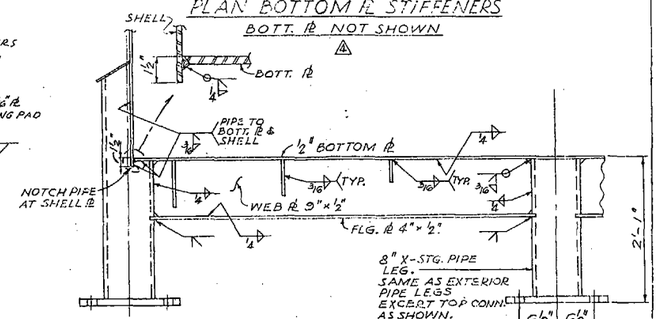


PLAN 8D-3

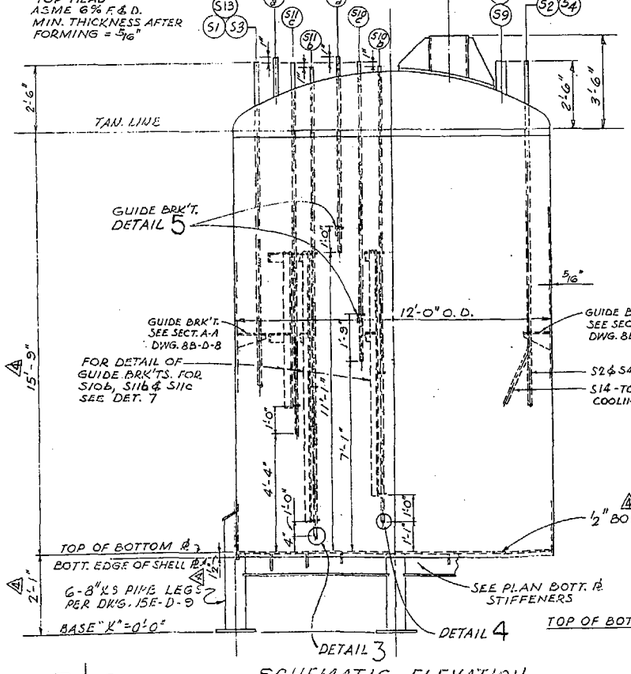


PLAN BOTTOM ℄ STIFFENERS

BOTT. ℄ NOT SHOWN ⚠



SECT. B-B TYPICAL ⚠

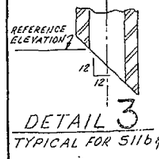


SCHEMATIC ELEVATION

TRUE ORIENTATIONS SHOWN IN PLANS

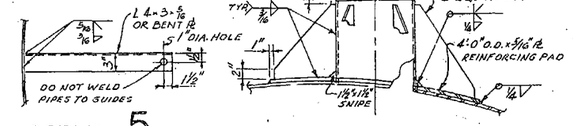
COOLING COILS NOT SHOWN

FOR ARRANGEMENT & DETAILS OF COILS SEE DWG. 8B-D-8



DETAIL 3

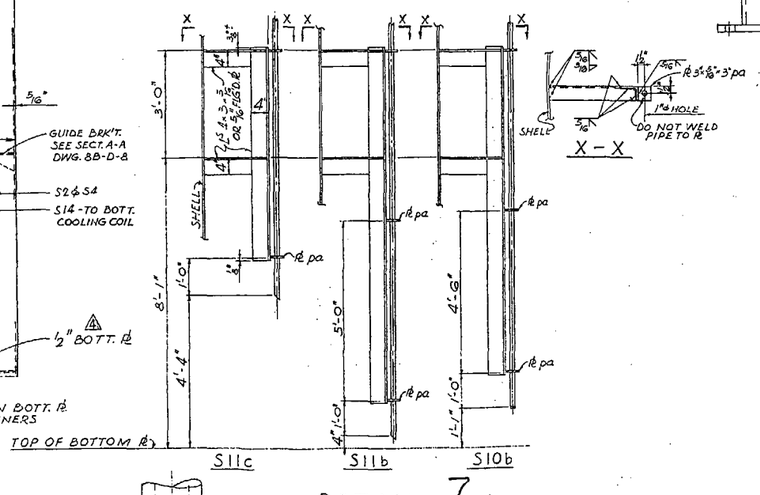
TYPICAL FOR S11b & S11c



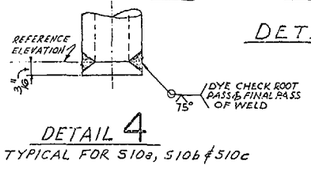
DETAIL 5

1 EA. REQ'D FOR S10a & S10c

DETAIL 6



DETAIL 7



DETAIL 4

TYPICAL FOR S10a, S10b & S10c

NOTES FOR REVISION ⚠

DELETED: BOTTOM F.&D. HEAD.
ADDED: FLAT PLATE HEAD W/ STIFFENERS & PIPE LEG AT CENTER. PLAN OF BOTTOM STIFFENERS & SECT. B-B SHOWN.
REVISED: DIM. FROM TOP HD. TAN. LINE TO TOP OF BOTTOM ℄ & FROM ℄ TO BOTT. OF PIPE LEGS.

NOZZLES

TANKS 8D-3 & 8D-4

NOZZLE	SIZE	NO. REQUIRED	DIA. "A" PER DWG. 15E-D-5	SERVICE	REMARKS
S1	1½"	1	0.145"	COOLING WATER INLET - INNER COIL	W/INT'L.
S2	1½"	1	0.145"	COOLING WATER OUTLET - INNER COIL	Do
S3	1½"	1	0.145"	COOLING WATER INLET - OUTER COIL	Do
S4	1½"	1	0.145"	COOLING WATER OUTLET - OUTER COIL	Do
S5	3"	1	0.216"	INLET FROM TD-10	
S6	3"	1	0.216"	SPARE	
S7	18" O.D.	1	0.312"	ACCESS OPENING	18" O.D. x 5/16" ℄ STUB
S8	4"	1	0.237"	VENT TO 8C-1	
S9	1½"	1	0.145"	RETURN FROM VAULT	
S10a	½"	1	0.147"	T1 & T2 CONNS	W/INTERNAL
S10b	½"	1	0.147"		DO
S10c	½"	1	0.147"		DO
S11a	½"	1	0.147"	L1, PR & LAH CONNS	
S11b	½"	1	0.147"		W/INTERNAL
S11c	½"	1	0.147"		W/INTERNAL
S12	½"	1	0.147"	UTILITY AIR PURGE CONN.	
S13	1½"	1	0.140"	COOLING WATER INLET, BOTTOM COIL	W/INTERNAL
S14	1½"	1	0.140"	COOLING WATER OUTLET, BOTTOM COIL	W/INTERNAL
				NOTE: ALL CONNECTIONS TO BE BEVELED INTERNALLY TO MATCH CONNECTING PIPE THICKNESS	

NOTES

1. DESIGN DATA:
   INTERNAL PRESSURE = 6 PSIG
   TEMPERATURE (MAX. STORAGE) = 131°F
   TEMPERATURE (STEAM OUT) = 240°F
   CORROSION ALLOWANCE = 0.07"

2. FABRICATION TO BE IN ACCORDANCE WITH ASME CODE SECTION VIII AS APPLICABLE, AND SPEC. 4413-C-2. CODE STAMP NOT REQ'D.

3. MATERIAL:
   SHELL & HEADS ~ PLATE A-240 TP-304L
   INTERNAL ATTACHMENTS ~ A-240 TP-304L
   EXTERNAL SUPPORTS ~ TP-304 OR 304L
   PIPE ~ A-312 TP-304L SEAMLESS

   ADDITIONAL MATERIAL TESTING PER SPEC. 4413-C-2, PAR. 3.2 IS REQUIRED.

4. INSPECTION AND TESTING:
   (a) VESSEL TO BE 100% X-RAYED PER SPEC. 4413-C-2.
   (b) VESSEL TO BE HELIUM LEAK TESTED IN SHOP PER SPEC. 4413-C-2.
   (c) VESSEL TO BE HYDROSTATICALLY TESTED IN SHOP TO 30 PSIG AT TOP.
   (d) COILS TO BE TESTED PER SPEC. 4413-C-2, PAR. 5.2.
   (e) ALL BUTT WELDS IN COILS TO BE 100% X-RAYED.

5. CONNECTIONS:
   (a) SEE DWG. 15E-D-5 FOR DET. OF STUB NOZZLES.
   (b) EXCEPT AS OTHERWISE NOTED, PIPE WALL THICKNESS SHALL CONFORM TO THE FOLLOWING:
   1" & SMALLER = SCH. 160S
   1½", 1½" & 2" = SCH. 80S
   3" THRU 6" = SCH. 40S
   (c) SEAMLESS LONG RADIUS WELDING FITTINGS SHALL BE USED UNLESS OTHERWISE NOTED.
   (d) CONNECTION TO VESSEL TO BE PER CODE FIG. UW-16.1 (c).

6. THE USE OF BACK-UP STRIPS WHICH REMAIN IN PLACE IS NOT ACCEPTABLE. (SEE NOTE 9.)

7. SHOP PAINT: NONE.

8. NAME PLATE: NONE.
   PROVIDE REMOVABLE METAL IDENTIFICATION TAG FOR SHIPPING. NO ATTACHMENTS OTHER THAN THOSE SHOWN SHALL BE WELDED TO VESSEL.

9. FOR SEAMS WHICH CANNOT BE WELDED FROM BOTH SIDES, ROOT PASSES TO BE MADE BY TUNGSTEN INERT GAS PROCESS.

REFERENCE DRAWINGS

STUB NOZZLE DETAILS	15E-D-5
PIPE LEG SUPPORTS	15E-D-9
COOLING COIL DETAILS	8B-D-8

NOTES FOR REVISION ⚠

COOLING COILS REVISED AND REDRAWN, (DELETED ONE FLAT COIL, ADDED 2- HELICAL COOLING COILS, REVISED SIZE AND LOCATION OF BOTTOM COIL).
REVISED LOCATION AND SERVICE FOR S1, S2, S3 & S4.
REVISED GUIDES FOR S10 & S11.
REVISED CORROSION ALLOWANCE (WAS ⅛").
ADDED S13, S14 AND REF. DWG.

NOTES FOR REVISION ⚠:

REVISED # RENUMBERED CONNECTIONS.
REVISED LAYOUT FOR COOLING COILS.
ADDED ORIENTATIONS & DETAILS.

NOTES FOR REVISION ⚠:

REVISED: LENGTH OF SUPPORT LEGS (WERE 3'-2"), INCREASED LENGTH OF INT. PIPES @ S11a & S11c, SIZE OF S7 (WAS 24"), SIZE OF S11a (WAS 1"), PROJECTION FOR S7 (WAS 2'-6" TO ?'-L.), REORIENTED S7 & S11c.
ADDED: CONN. S12, REINF. PAD & STIFFENERS @ S7, GUIDE CLIP @ S11c

No.	DATE	REVISIONS	BY	CHK'D	DPTG. SUPVR.	ENGR.	CHIEF ENGR.	CLIENT
⚠	3/18/66	SEE REVISION NOTE #4 AT LEFT	LSH	N	RDN			
⚠	2/18/66	SEE REVISION NOTE #3 ABOVE	LSH	N	RDN			
⚠	11/16/64	SEE REVISION NOTES ABOVE	N	EDE	RDN			
⚠	7/29/64	SEE REVISION NOTES ABOVE. ISSUED FOR COMPLETION OF DESIGN	N	EDE	RDN			
⚠	10-4-63	ISSUED FOR QUOTATIONS	REA	EDE		RDN		

SCALE | DESIGNED | DRAWN EDE | CHK'D

BECHTEL CORPORATION
SAN FRANCISCO

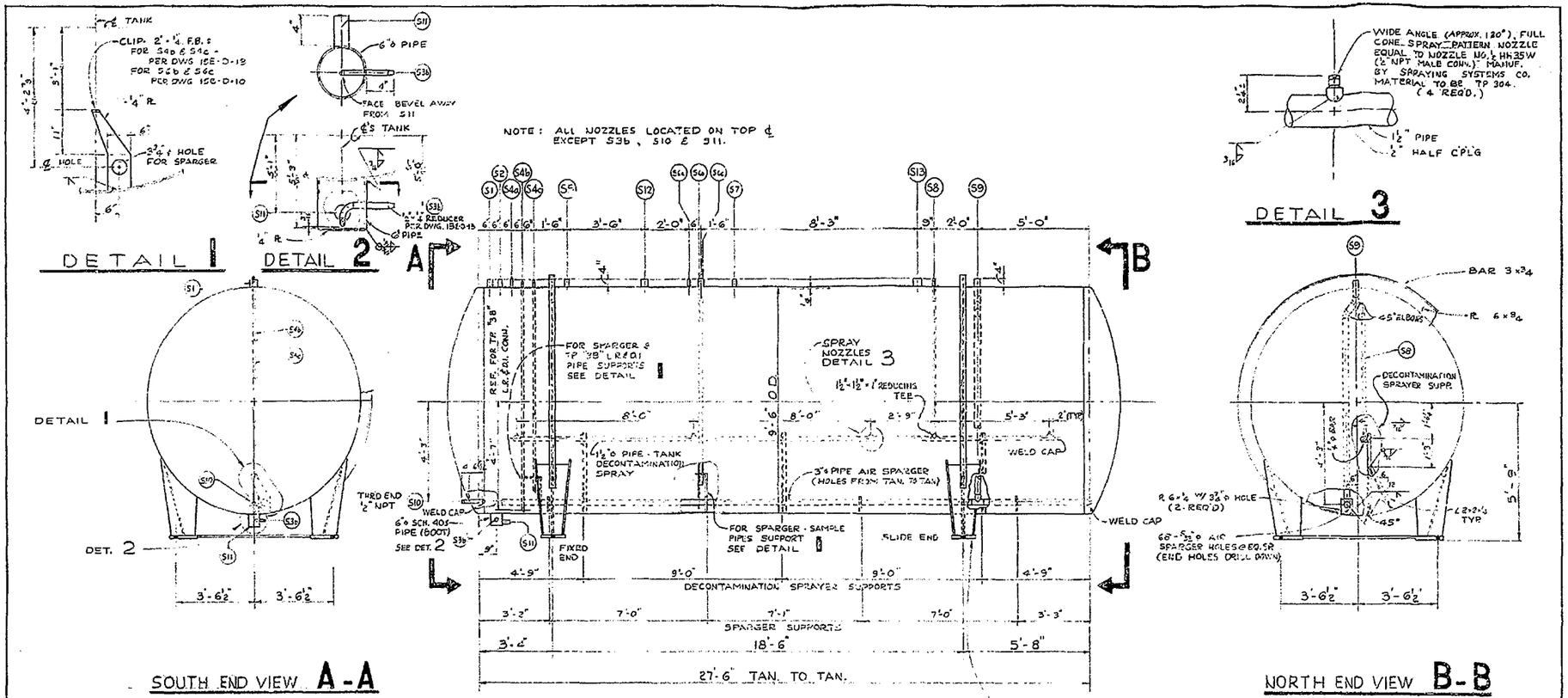
CON-ED WASTE STORAGE TANKS
8D-3 & 8D-4

BECHTEL | JOB No. 4413 | DRAWING No. 8B-D-4 | REV. 4

CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE.
INIT_____ DATE_____

5B-D-17

SIZE B



*2 REVISION NOTE
ADDED: NOZZS. S12 & S13 RELOCATED: NOZZS. S4a, S4b, S4c, S5 & S9.
DELETED: NOZ. S3a REVISED: SERVICE FOR NOZ. S3b.

NOTES

1. MAX. OPERATING CONDITIONS : ATMOSPHERIC PRESSURE @ 240°F.
2. FABRICATION TO BE IN ACCORDANCE WITH ASME CODE SECTION VIII AS APPLICABLE, AND SPEC. 4413-C-2. CODE STAMP NOT REQUIRED.
3. MATERIAL :
   SHELL AND HEADS - A-240 TP 304L
   INTERNAL ATTACHMENTS - A-240 TP 304L
   EXTERNAL SUPPORTS & STIFF. RINGS - TP 304 OR 304L
   PIPE - A-312 TP 304L SEAMLESS
   ADDITIONAL MATERIAL TESTING PER SPEC. 4413-C-2 PAR. 3.2 IS REQUIRED.
4. INSPECTION AND TESTING :
   (a). VESSEL TO BE 100% X-RAYED PER SPEC. 4413-C-2.
   (b). VESSEL TO BE HELIUM LEAK TESTED IN SHOP PER SPEC. 4413-C-2.
   (c) VESSEL TO BE HYDROSTATICALLY TESTED IN SHOP TO 20 PSIG.
   (d). COILS TO BE TESTED PER SPEC. 4413-C-2 PAR. 5.2.
5. CONNECTIONS :
   (a) SEE DWG. 15E-D-5 FOR DET. OF STUB NOZZLES
   (b). EXCEPT AS OTHERWISE NOTED, PIPE WALL THICKNESS SHALL CONFORM TO THE FOLLOWING :
   1" & SMALLER - 160S
   1½ & 2" - 80S
   3" THRU 6" - 40S
   (c). SEAMLESS LONG RADIUS WELDING FITTINGS SHALL BE USED UNLESS OTHERWISE NOTED.
   (d) CONNECTIONS TO THE VESSEL TO BE PER CODE FIG. UW - 16.1 (c)
6. THE USE OF BACK-UP STRIPS WHICH REMAIN IN PLACE IS NOT ACCEPTABLE. (SEE NOTE 9)
7. SHOP PAINT : NONE
8. NAME PLATE : NOTE. PROVIDE REMOVABLE METAL IDENTIFICATION TAG FOR SHIPPING. NO ATTACHMENTS OTHER THAN THOSE SHOWN SHALL BE WELDED TO THE VESSEL.
9. FOR SEAMS WHICH CANNOT BE WELDED FROM BOTH SIDES, ROOT PASSES TO BE MADE BY TUNGSTEN INERT GAS PROCESS.

M/R 4413-15D-2

REFERENCE DRAWINGS

STUB NOZZLE DETAIL	15E-D-5
TYPE "3B" & "3B" L.R.E.D.I.	15E-D-13
TYPE 3S SAMPLE CONN.	15E-D-12
SADDLE SUPPORTS FOR HORIZ. VESSELS	A-C-527
PRESSURE VESSEL TOLERANCE	C-C-515

NOZZLES

NOZZLE	SIZE	NO. REQD.	DIM. "A" PER DWG. 15E-D-5	SERVICE	REMARKS
S1	3"	1	0.120	VENT	
⚠2 S2	1½"	1	0.145	PUMP DISCHARGE	
S3a				DWG. TYPE "3B" CONN.	
S3b	½"	1	—	L.C.L. TYPE "1B" CONN.	SEE DET. 2
S4a	½"	1	—	L.R.E.D.I. TYPE "3B" CONN.	PER DWG. 15E-D-13
S4b	½"	1	—	Do	Do
S4c	½"	1	—	Do	Do
⚠2 S5	1½"	1	0.145	PUMP DISCHARGE	
S5a	½"	1	0.147	TYPE "3S" SAMPLE CONN.	PER DWG. 15E-D-12
S6b	⅜"	1	0.095	Do	Do
S6c	⅜"	1	0.095	Do (AIR CONN.)	Do
S7	1½"	1	0.145	PUMP DISCHARGE	
⚠2 S8	1"	1	0.133	CHEMICAL ADD.	W/ INT'L
S9	3"	1	0.120	SPARGER AIR INLET	Do
S10	½"	1	—	T.I.	Do
S11	1½"	1	0.145	PUMP SUCTION	
S12	3"	1	0.216	INSPECTION OPENING	
S13	4"	1	0.237	Do.	Do.

⚠3	3/1/71	REV. PER ECN 1562	SJS	DIR
2	10/6/70	SEE REVISION NOTE *2 ABOVE.	LSH	//
1	7/16/70	ISSUED FOR CONSTRUCTION	JWP	//
0	04-6	ISSUED FOR QUOTATIONS	JWP	//

SCALE 3/8" = 1'-0" DRAWN JWP

[illegible] CORPORATION

LOW ENRICHMENT URANIUM STORAGE LWTS
TANK SD-15B "HIGH TDS STORAGE TANK" ⚠3

4413 5B-D-17 ⚠3

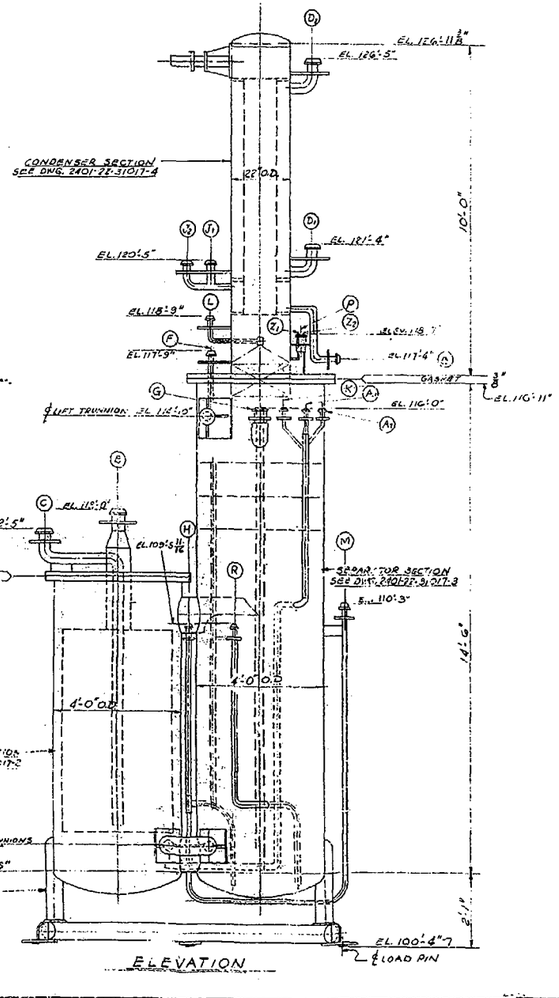
10/19/04 1:22:42 PM BERRA

CHANGES PRIOR TO EACH USE.
INIT_____ DATE_____

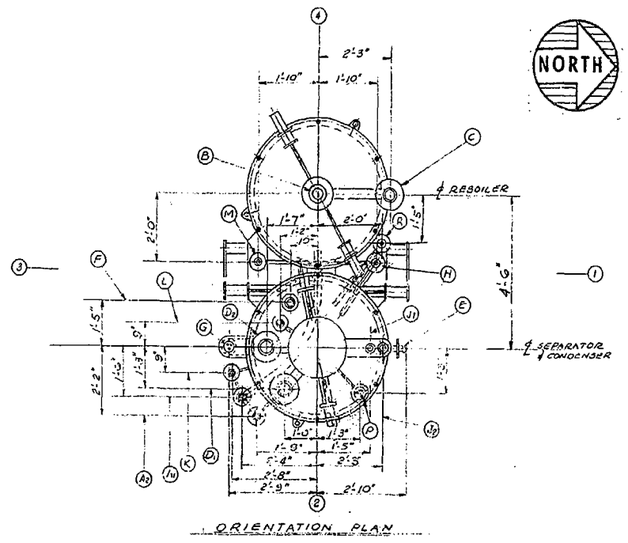
22-31017-1

DRAWING NO.

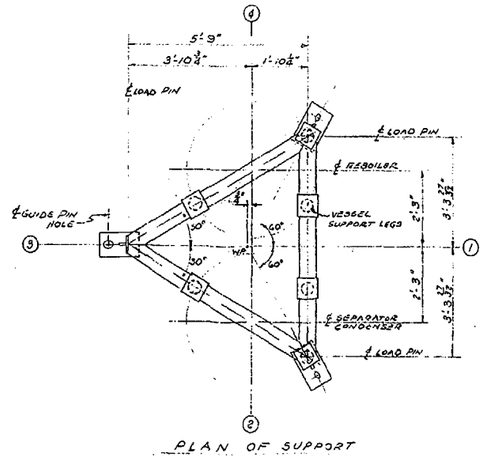
BALANCING: (IN FABRICATOR'S SHOP)
WITH REBOILER TUBE BUNDLE & CONDENSER SECTION REMOVED, EVAPORATOR IS TO BE BALANCED IN THE FOLLOWING MANNER:
UNIT IS TO BE SUSPENDED BY LIFTING VERTICALLY USING LIFT TRUNNIONS. VERTICAL CENTER LINE OF SEPARATOR SECTION IS TO BE PLUMB WITHIN ½". BALANCING MAY BE ATTAINED BY ADDITION OF WEIGHTS TO SUPPORT GUNNAGE. WEIGHT MAY BE EITHER S.S. 304 PLATES OR BLOCKS OF LEAD. IF LEAD BLOCKS ARE USED, THEY ARE TO BE ENCASED IN S.S. 304 PLATE OR SHEET.



ELEVATION



ORIENTATION PLAN



PLAN OF SUPPORT

ITEM NO. 31017	NO. REQ'D. ONE (1)
REFERENCES BK SPEC. 2401-VS, STD SPEC. V1.2	
DESIGN CONDITIONS	
VESSEL 5 PSIG	300 °F.
REBOILER SHELL AV & 83 PSIG	300 °F.
CONDENSER SHELL 75 PSIG	300 °F.
OPERATING CONDITIONS	
VESSEL PSIG	°F.
PSIG	°F.
MATERIALS	
SHELL & HEADS 5/16" & 1/2" WHERE OTHERWISE NOTED, ALL MATERIAL TO BE STAINLESS STEEL TYPE 304-L	
BOLTING	
GASKETS	
SUPPORTS STAIN. STEEL TYPE 304	
CORROSION ALLOWANCE NONE	
THICKNESS (AS SPECIFIED ON DWG.)	
SHELL TOP HEAD BOTTOM HEAD	
JACKET JACKET HEAD COIL	
CONSTRUCTION FUSION WELDED - ALL T.I.G. PROCESS	
CODE ASME SECT VIII DIV. 1 & TEMA "B" FOR EXCHANGER SECTION	
STRESS RELIEF RADIOGRAPH 100%	
TESTING PER CODE & HALOGEN SNIFFER PER V1.2	
INSPECTION BY BUYER & CODE APPROVED AGENCY	
STAMPING ASME & NATIONAL BOARD	
NAME PLATE NONE	
PAINT NONE	
OPERATING CAPACITY GAL. %FILL	
FULL CAPACITY GAL. S.G. OF PROD.	
ESTIMATED WEIGHT	
EMPTY LB. FULL OF H_2O LB.	
OPERATING LB. FULL OF PROD. LB.	
INSULATION SUPPORTS ARE NOT REQUIRED	
NOTE: ALL WELDS CONTINUOUS	
INSULATION: AREA TO BE INSULATED - REBOILER SHELL FROM A POINT JUST BELOW BODY FLANGE TO 1" ABOVE BOTT. HEAD WELD LINE. SEPARATOR SHELL FROM EQUATION OF TOP BUBBLE CAP TRAY TO 1" ABOVE BOTT. HEAD WELD LINE. THESE SURFACES TO BE COVERED WITH 2" THICK FIBERGLASS BLANKETING WITH STAINLESS STEEL TYPE 304 SHEATH. INSULATION SHALL HAVE A CONTENT NOT GREATER THAN 50 PPM CHLORINE.	

REFERENCE DWGS:
2401-22-31017-2
2401-22-31017-3
2401-22-31017-4
2401-22-31017-5
2401-31000-1
2401-31000-2
2401-07-31018-3

MARK	NO. REQ'D.	SIZE	NOZ. RATING SCH.	FACING	REMARKS
Z	2	½"	160		PJT
X	3	½"	160		LEVEL - DENSITY
R	1	⅛"	160		SPARE JET CONN.
P	1	2"			ADAPTER FOR (Z1)(Z2)
M	1	1"	160		STEAM
L	1	1"	80		SPRAY WATER
K	1	1"	80		DEMINERALIZED WATER
J	2	2"	80		VENT
H	1	1½"	160		BOTTOMS PRODUCT
G	1	2"			ADAPTER NOZZLE FOR (X1)(X2)(X3)
F	1	2"			T.T.
E	1	2"	40		CONDENSATE OUTLET
D	2	3"	10		COOLING WATER
C	1	3"	10		CONDENSATE OUTLET
B	1	4"	10		STEAM INLET
A	2	1½"	30		INLETS - FEED

NO.	DESCRIPTION	MADE BY	CHKD BY	DATE CHKD
4	REVISED CONDENSER AND REBOILER ELEV. TRUNNIONS	JC	RMC	8-19-71
3	GENERAL	RE	RMC	11-30-70
2	INSULATION REQUIRED	RMC		11-20-70
1	ELEV. & ORIENT. REVISED	RMC		9-9-70
7	ADDED CONN. (R)	RMC		6-6-72
6	VESSEL DESIGN PRESSURE WAS 15 PSIG	RMC		4-17-72
5	REVISED PIPING SELECTION	RMC		9-20-71

NO.	DATE	B-K CO.	B-K CO.	N.F.S. INC.
7	6-6-72	R.M. CERVAS		
6	4-17-72	R.M. CERVAS		
5	9-20-71	R.M. CERVAS		
4	11-30-70	R.M. CERVAS		

APPROVED FOR CONSTRUCTION

NO. REV. RELEASED FOR APP. DATE

F.D. 22-110-1

	BY	DATE
APPR.	LWG	9-9-70
APPR.		
APPR.		
APPR.		
DRAWN	RMC	7-9-70
TRCD.		
CHKD.	R.E.	19 MAR. 71
SCALE	½"=1'-0"	

UNIT
TITLE HIGH LEVEL WASTE EVAPORATOR ASSEMBLY
FOR NUCLEAR FUEL SERVICES, INC.

BLAW-KNOX COMPANY
CHEMICAL PLANTS DIVISION
PITTSBURGH, PENNSYLVANIA

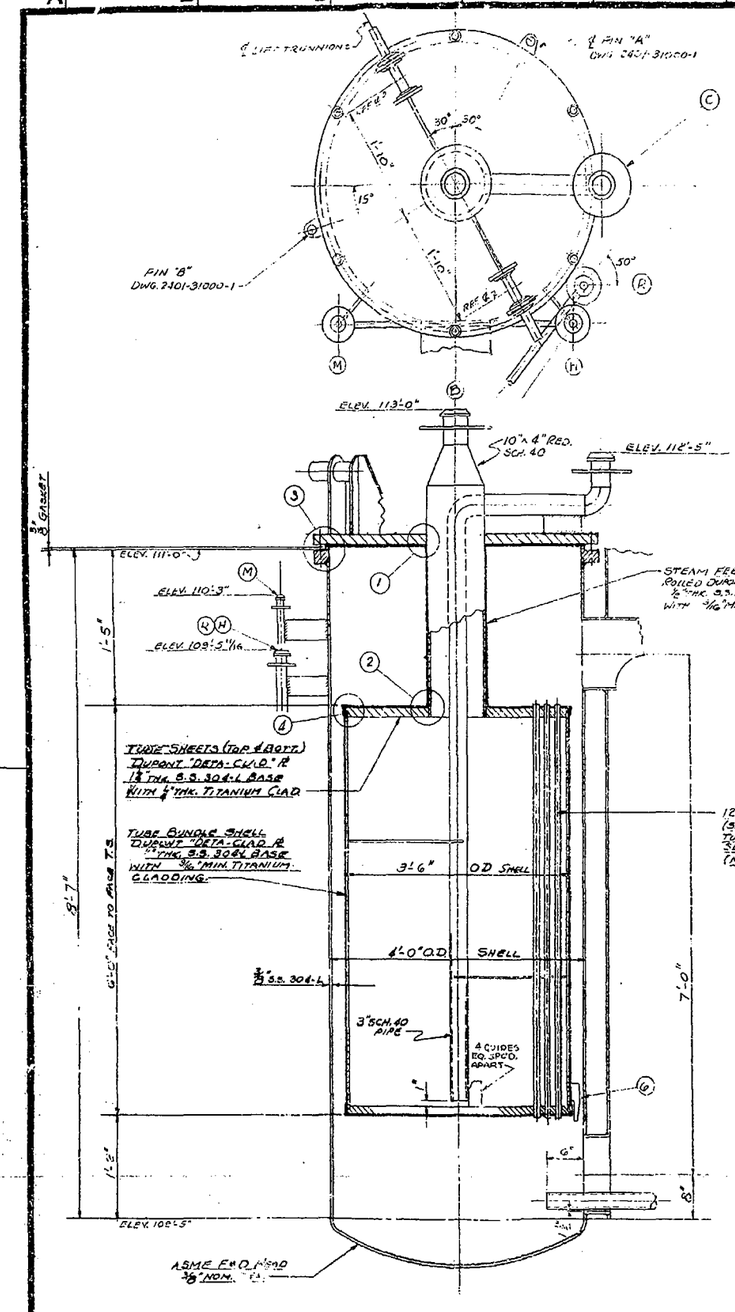
DRAWING NUMBER 2401-22-31017-1 REV. (7)

CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE.
INIT DATE

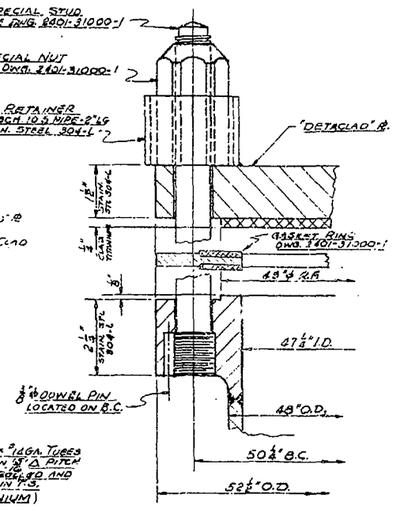
CONTINUED ON DRAWING NO.

A B C D E F G H I J K L M N O P

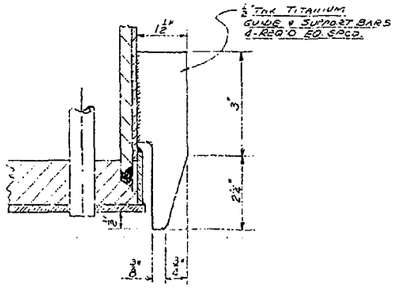
Q R S T U V W X Y Z



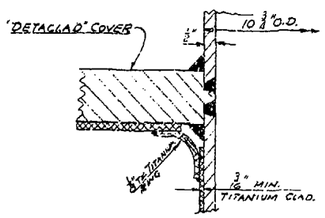
REBOILER SECTION
FOR TRUE ORIENTATION SEE DWG. 2401-31017-1



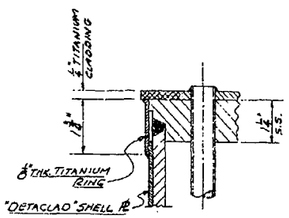
DETAIL (3)



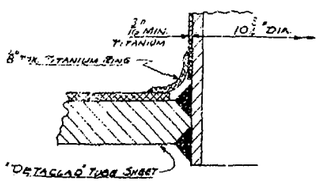
DETAIL (1a)



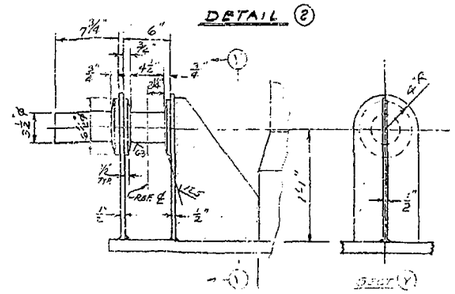
DETAIL (1)



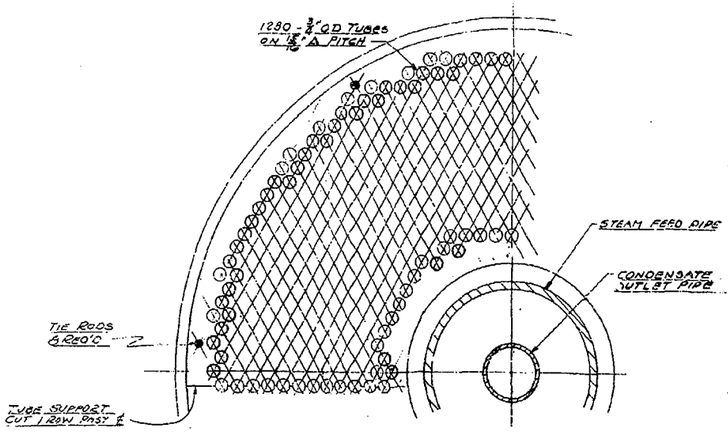
DETAIL (4)
CONSTRUCTION SAME G BOTT. T.S.



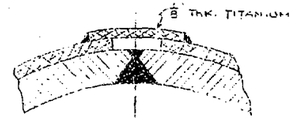
DETAIL (2)



DETAIL (5)
LIFT TRUNNION



TUBE LAYOUT



DETAIL OF LONG WELD

NO.	DESCRIPTION	MADE BY	CHKD BY	DATE CHKD
4	REVISED PER 7 NUMBERS	?		5-19-71
3	GENERAL			4-26-71
2	TUBE COUNT CHGD. SHELL O.D. & 6'-0" O.D. RING REV.			3-26-71
1	CONNTS REVISED	J.M.C.		12-9-70
6	ADDED CONN (R)			6-17-72
5	SKETCH REVISED	D.K.C.		6-17-72

NO.	DATE	B-K CO.	B-K CO.	IN. F. & INT.
5	6-6-72	RH. CERVAS	Winston Vincent	
3	3-17-72	R.H. CERVAS	J.R. Jones	
2	1130-70	R.H. CERVAS	C.J. Vincent	J. Rose

APPROVED FOR CONSTRUCTION

	BY	DATE
APPR.	C.J.V.	9-9-70
APPR.		
APPR.		
APPR.		
DRAWN	R.M.C.	6-18-70
TRCD.		
CHKD.		5 FEB 71

SCALE

UNIT
TITLE HIGH LEVEL WASTE EVAPORATOR
REBOILER SECTION DETAILS
FOR

BLAW-KNOX COMPANY
CHEMICAL PLANTS DIVISION
PITTSBURGH, PENNSYLVANIA

DRAWING NUMBER 2401-22-31017-2 REV. 6

RELEASED FOR

NOTE: THIS DRAWING PRINTED IN RED INDICATES THE ISSUE TO BE "PRELIMINARY" PRINTED IN BLUE OR BLACK INDICATES THE ISSUE TO BE "OK FOR PURCHASE AND CONSTRUCTION" EXCEPT AS NOTED OR STAMPED TO THE CONTRARY.

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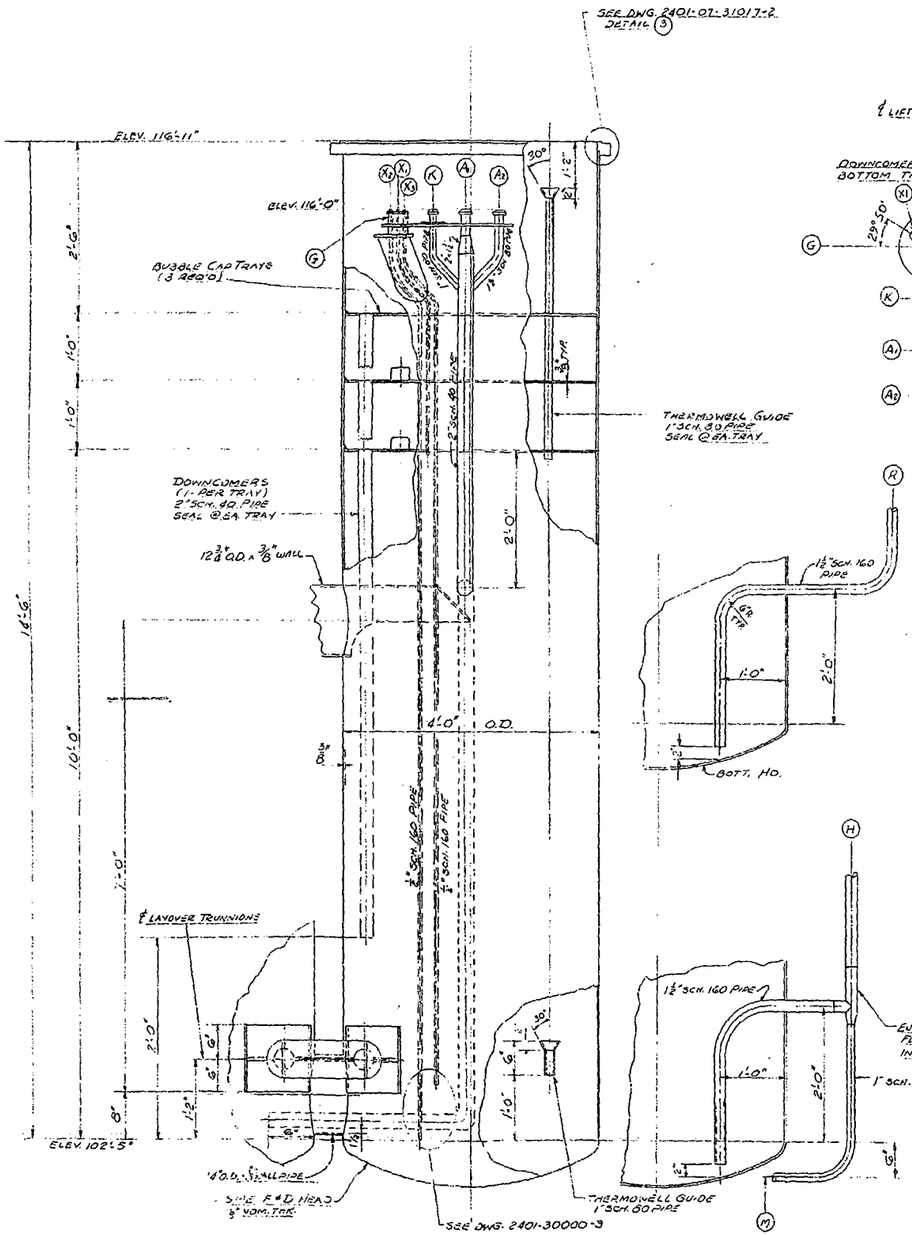
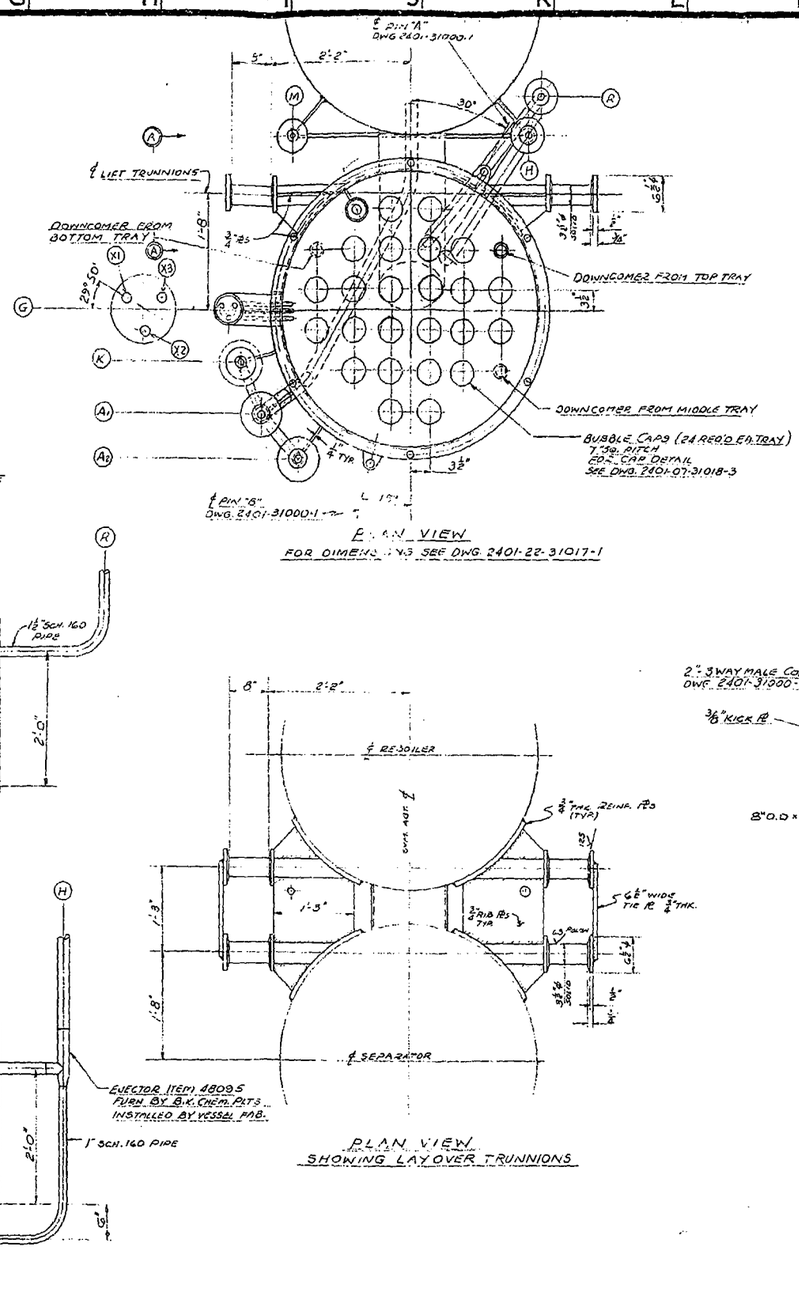
FORM NO. B-355-REV. 7-65 "P"

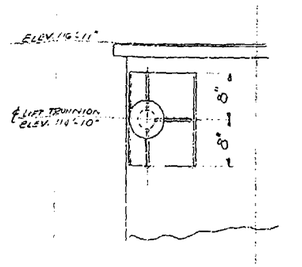
CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE.
INIT DATE



SEPARATOR SECTION
FOR TRUE ORIENTATION SEE DWG 2401-22-31017-1

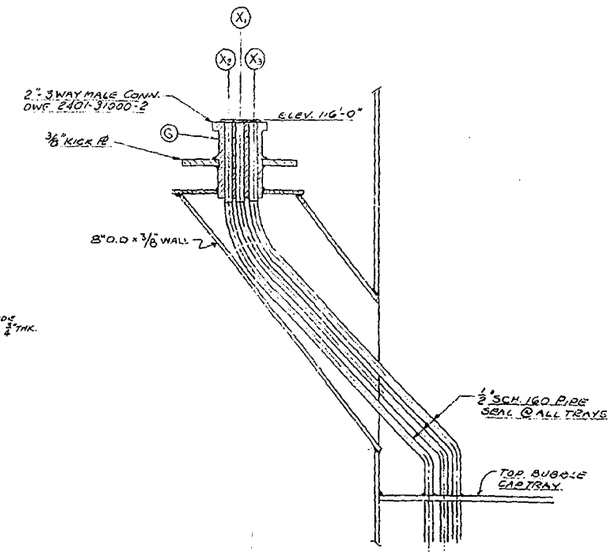


PLAN VIEW
FOR DIMENSIONS SEE DWG. 2401-22-31017-1



VIEW (A) SHOWING LIFT TRUNNION

PLAN VIEW
SHOWING LAYOVER TRUNNIONS



DETAIL CONN (G)
SEE ORIENTATION PLAN FOR TRUE LOCATION

REV. NO.	DESCRIPTION	MADE BY	CHKD BY	DATE CHKD
4	EJECTOR PIPING REVISED	RMC		
3	GENERAL	RE. RMC		3/4/71
2	18" DOWN MAN R.	RMC		11/3/70
1	NOZZLE CONNS. ADDED PLATFORMS REVISED	RMC		9/4/70
5	ADDED CONN (R) IN PLAN VIEW & ELEVATION	RMC		6-8-72

NO.	DATE	B-K CO.	B-K CO.	H.F.S. INC.
5	6-8-72	R.M. CERVAS	[illegible]	[illegible]
4	3-20-71	R.M. CERVAS	[illegible]	[illegible]
2	11-30-70	R.M. CERVAS	[illegible]	[illegible]

APPROVED FOR CONSTRUCTION

NO.	REV.	RELEASED FOR	APP.	DATE

	BY	DATE		BY	DATE
APPR.	[illegible]	9-9-70	DRAWN	RMC	8-17-70
APPR.			TRCD.		
APPR.			CHKD.	RE	4 FEB 71
APPR.			SCALE		

UNIT
TITLE: HIGH LEVEL WASTE EVAPORATOR SEPARATOR SECTION DETAILS
FOR: NUCLEAR FUEL SERVICES, INC.

BLAW-KNOX COMPANY
CHEMICAL PLANT'S DIVISION
PITTSBURGH, PENNSYLVANIA

DRAWING NUMBER: 2401-22-31017-3
REV: 7

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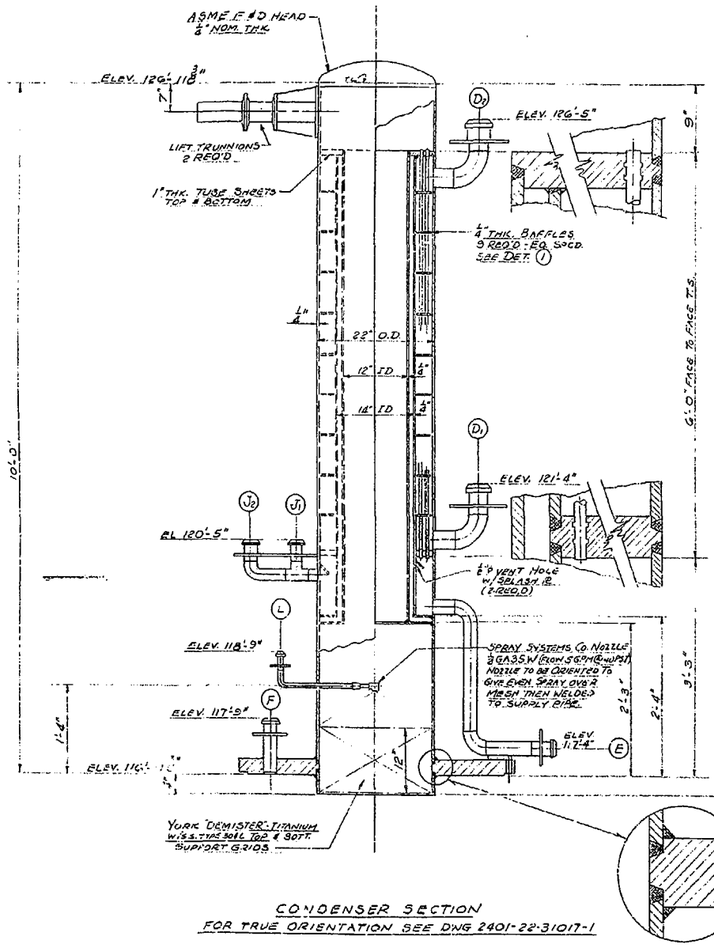
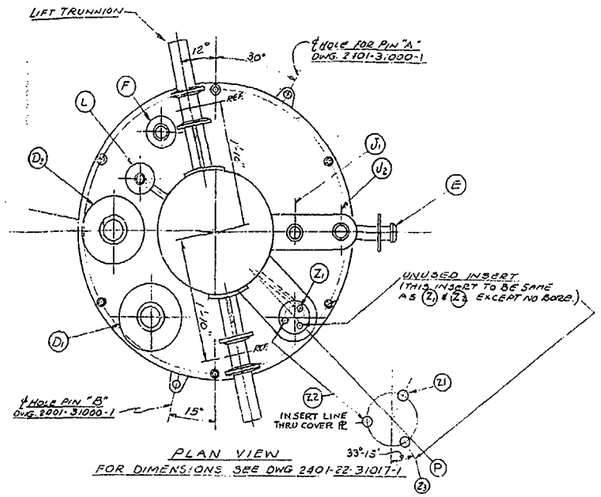
FORM No. 11-303—REV. 7-65 "P"

CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE.
INIT_____ DATE_____

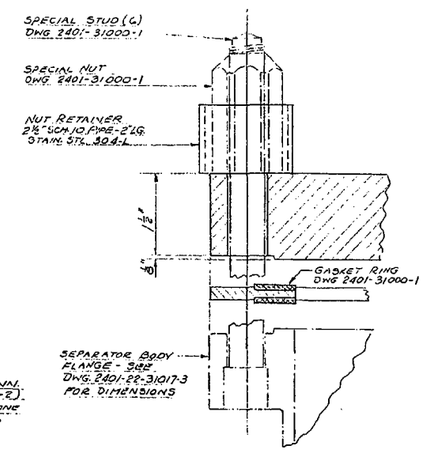
DRAWING NO.



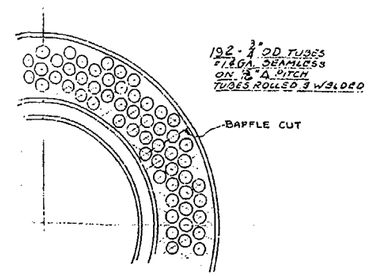
CONDENSER SECTION
FOR TRUE ORIENTATION SEE DWG 2401-22-31017-1



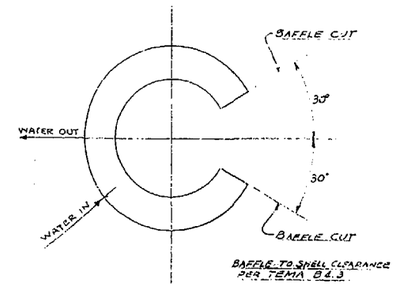
PLAN VIEW
FOR DIMENSIONS SEE DWG 2401-22-31017-1



DETAIL (3)

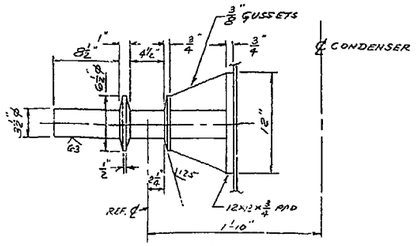


TUBE LAYOUT



BAFFLE TO SHELL CLEARANCE PER TEMA R.C.B.

DETAIL 1



DETAIL (2) LIFT TRUNNIONS (2 REQ'D)

REV. NO.	DESCRIPTION	MADE BY	CHKD BY	DATE CHKD
4	TUBE COUNT W.R.S. 1/16	RMC		2-16 71
3	GENERAL	RS	RMC	12-22-70
2	ELEV. (B) WAS 117'-8" OUTSIDE PIPING REV.	RMC		11-25 70
1	200 GPM (6) TYP. (2) PLAN REVISED	RMC		9-18 70
7	GASKET REVISED	RMC		4-17 72
6	BUSHING AND TRUNNIONS CENTER THROUGH SEC.	RMC		8-19 71
5	RE-DRAWING CONNS. (2) (3) (6)	RMC		8-30 71

NO.	DATE	B-K CO.	B-K CO.	N.F.S. INC.
7	4-17-72	RM CORMS	J.R. SIMMS	
2	11-30-70	R.M. CORMS	Williams for	

APPROVED FOR CONSTRUCTION

RELEASED FOR

	BY	DATE
APPD.	CLW/RS	9-9-70
APPR.		
APPR.		
APPR.		

	BY	DATE
DRAWN	RMC	8-13-70
TRCD.		
CHKD.	RE	8-31-71
SCALE		

UNIT

TITLE
HIGH LEVEL WASTE EVAPORATOR
CONDENSER SECTION DETAILS

FOR
NUCLEAR FUEL SERVICES INC

BLAW-KNOX COMPANY
CHEMICAL PLANTS DIVISION
PITTSBURGH, PENNSYLVANIA

DRAWING NUMBER
2401-22-31017-4

REV. 7

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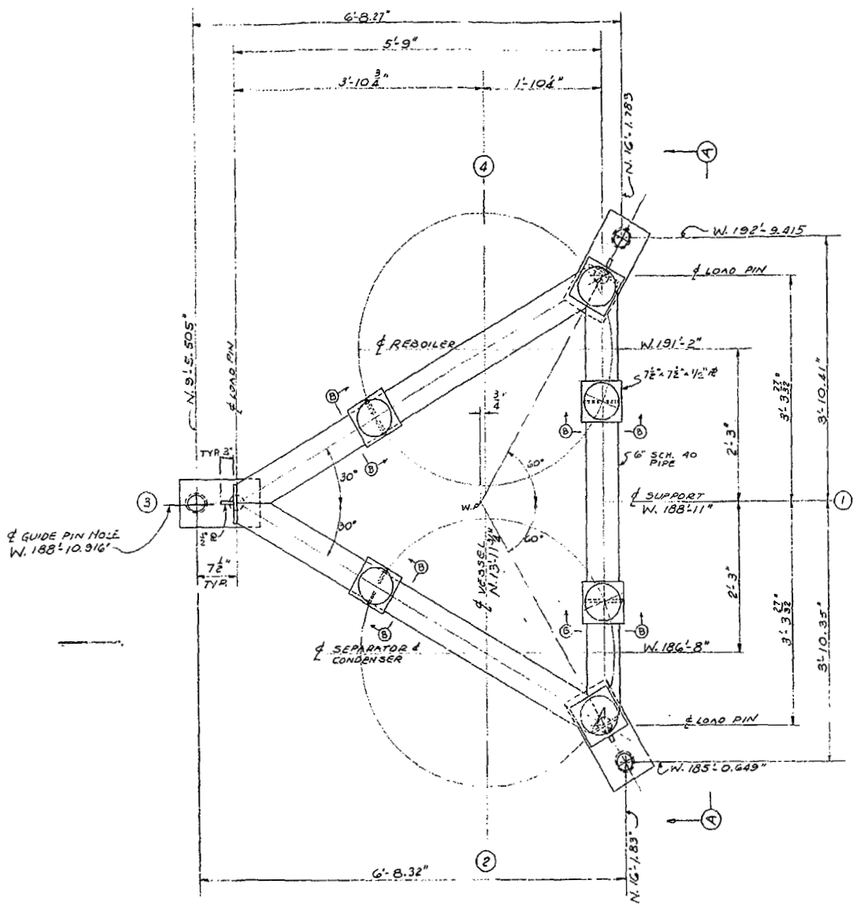
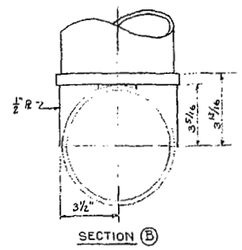
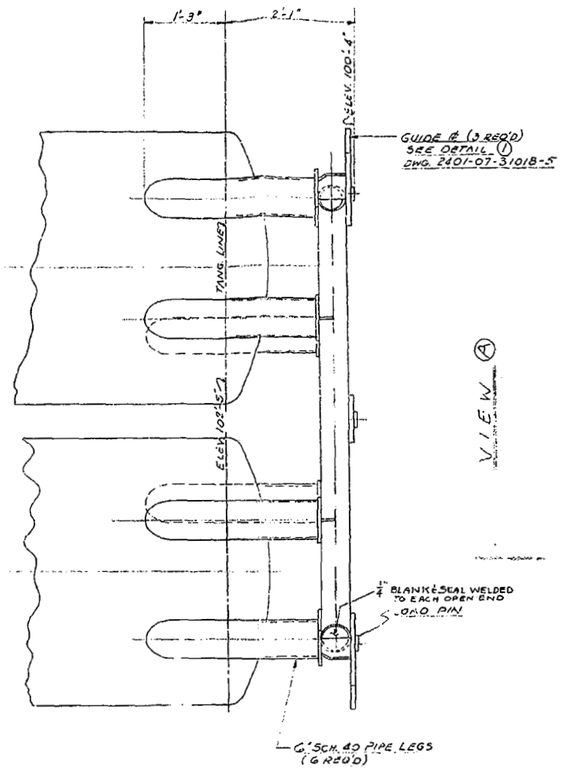
CHANGES PRIOR TO EACH USE.
INIT_____ DATE_____

DRAWING NO.





SECTION (B)



REV. NO.	DESCRIPTION	MADE BY	CHKD BY	DATE CHKD
2	REVISED DIMENSIONS TO TANKS W/TOLERANCES	RMC	RSC	1-24-71
1	GENERAL	RS	RSC	10-7-70

NO.	DATE	B-K CO.	B-K CO.	N.F.S. INC.
8	4-26-71	RM Cowns	W Baughn	

APPROVED FOR CONSTRUCTION

NO.	REV.	RELEASED FOR	APP.	DATE

	BY	DATE		BY	DATE
APPR.			DRAWN	RMC	10-7-70
APPR.			TRCD.		
APPR.			CHKD.	RE	19 MAR. 71
APPR.			SCALE		

UNIT
TITLE: HIGH LEVEL EVAPORATOR SUPPORT DETAILS
FOR NUCLEAR FUEL SERVICES, INC.

BLAW-KNOX COMPANY
CHEMICAL PLANTS DIVISION
PITTSBURGH, PENNSYLVANIA

DRAWING NUMBER 2401-22-31017-5 REV. 2

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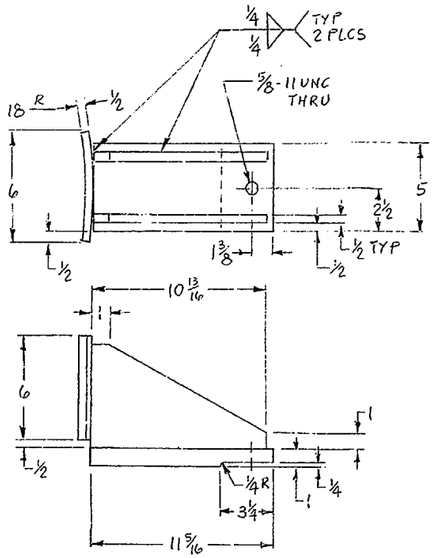
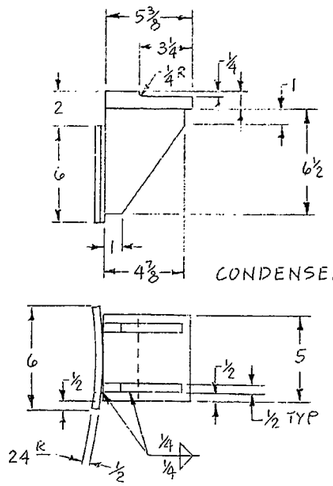
FORM NO. C-353-REV. 7-65 ("D")

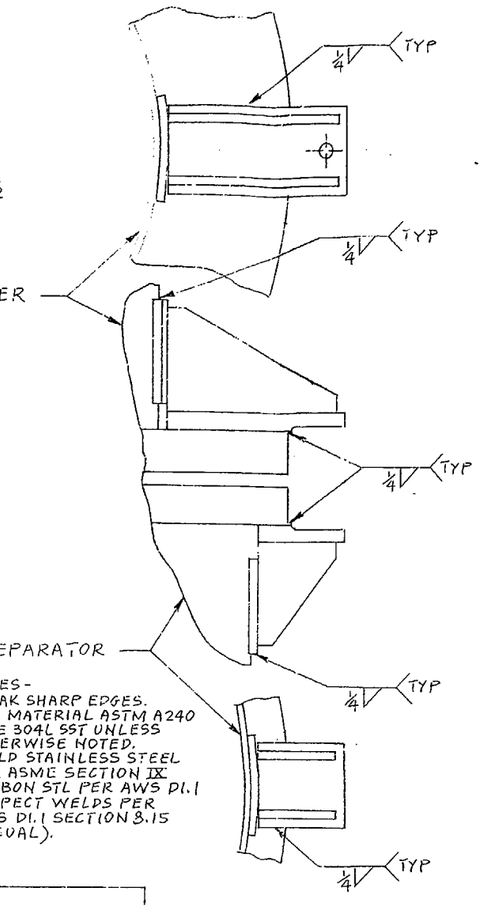
CONTRACTOR TO VERIFY ALL DIMENSIONS PRIOR TO FABRICATING. ENGINEER TO BE NOTIFIED OF ANY CHANGES PRIOR TO EACH USE.
INIT_____ DATE_____



LIFTING BRACKET CONDENSER
SCALE-1/4



LIFTING BRACKET SEPARATOR
SCALE-1/4

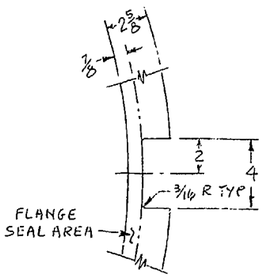


NOTES-
1. BREAK SHARP EDGES.
2. ALL MATERIAL ASTM A240 TYPE 304L SST UNLESS OTHERWISE NOTED.
3. WELD STAINLESS STEEL PER ASME SECTION IX CARBON STL PER AWS D1.1
4. INSPECT WELDS PER AWS D1.1 SECTION 8.15 (VISUAL).

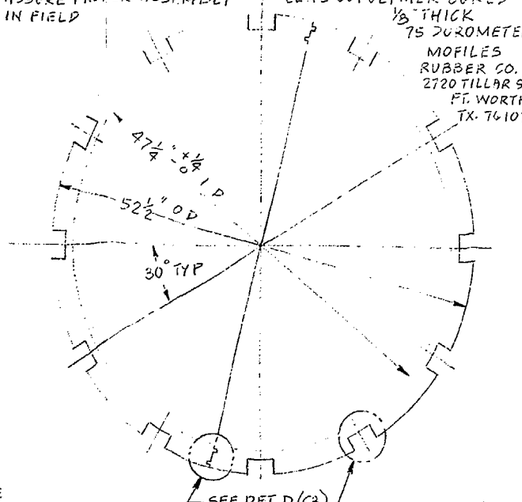
BRACKET INSTALLATION DETAIL
SCALE-1/4

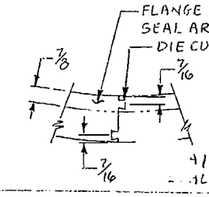
NOTE: DOVE TAIL JOINTS TO BE ORIENTED AS SHOWN TO ASSURE PROPER ASSEMBLY IN FIELD

MATERIAL - AFLAS TETRA-FLUOROETHYLENE PROPYLENE COPOLYMER CURED 1/8 THICK 75 DUROMETER MOFILES RUBBER CO. 2720 TILLAR ST. FT. WORTH, TX. 76107



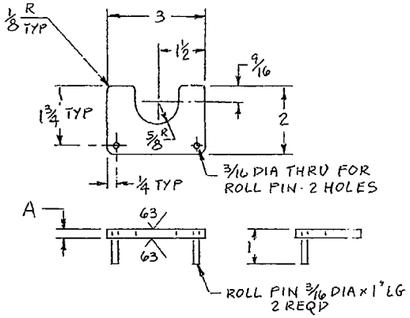
DETAIL C(C1)
SCALE-1/4





AIL D(C1)
ALE-1/4

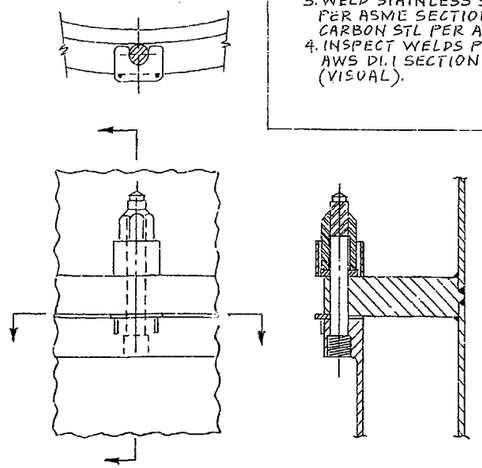
GASKET DETAIL
SCALE-1/8



FLANGE SPACER SHIM
SCALE-1/2

SHIM #	A * DIM
1	.185
2	.237
3	.178
4	.199
5	.231
6	.169

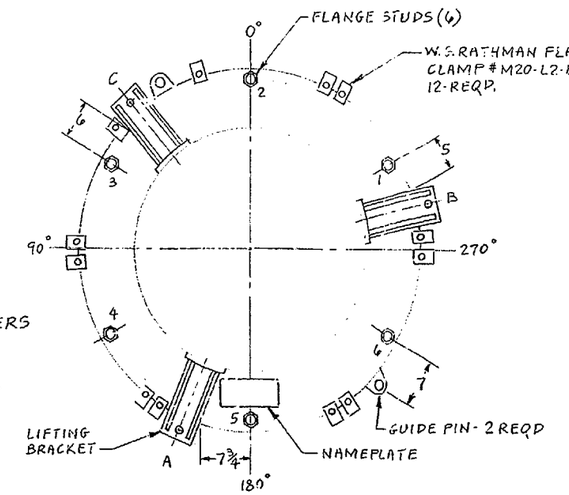
* TOLERANCE ± .000 / .004



FLANGE SPACER SHIM INSTALLATION AT STUD
SCALE-1/4

NOTES-
1. MATL 300 SERIES STAINLESS STEEL.
2. BREAK SHARP EDGES.
3. TOLERANCES .X ± .1, .XX ± .03, .XXX ± .002, FRACTIONS ± 1/32.
4. MARK, VIBRA-ETCH OR EQUAL, SHIM NUMBER ON TOP OF SHIM BY ROLL PINS.

NOTES -
1. NUMBER ON STUDS MATCH EXISTING NUMBERS MARKED ON CONDENSER FLANGE.
2. STAINLESS STEEL SHIMS, ARE TO BE INSTALLED BETWEEN THE CONDENSER/SEPARATOR FLANGES AROUND THE STUDS. THE SHIMS ARE MATCHED TO THE STUDS AND ARE NUMBERED WITH THE STUD NUMBER.
3. FLANGE STUDS ARE TO BE TORQUED TO 500 FT-LBS FOLLOWING A 1-4-5-2-3-6 SEQUENCE (OR EQIV.) IN FOLLOWING INCREMENTS -
   100 FT LBS — 300 FT LBS
   200 FT LBS — 500 FT LBS
4. TWO FLANGE CLAMPS ARE TO BE INSTALLED MIDWAY, OR AS SHOWN BETWEEN THE STUDS AND TORQUED TO 75 FT. LBS. CLAMPS TO BE RETORQUED TO ASSURE BOTH CLAMPS ARE AT THE SAME TORQUE. NO SEQUENCING REQUIRED FOR THE CLAMP TORQUING.
5. RETORQUE FLANGE STUDS TO 500 FT. LBS IN A 1-2-3-4-5-6 SEQUENCE OR EQIV.
6. RETORQUE CLAMPS TO 75 FT LBS.



JAYGO INC.
40 WHITNEY RD.
MAHWAH, N. J.
07430

PLAN VIEW-EVAPORATOR CONDENSER FLANGE
SCALE-NTS

QTY REQD	ITEM NO.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	MATERIAL OR SPEC
		PARTS LIST		

REV	DESCRIPTION	APVD
0	ER# 26229 CREATED PER EC: 45891 4-30-93 J.H.	

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS IN INCHES
TOLERANCES-DO NOT SCALE
2 PL DEC ± N/A | 3 PL DEC ± N/A | ANGLES ±0°30' | 125 V AA
FRACTIONS ± 1/16
D.SPEC.NO.
NEXT ASSEMBLY

DRAFTER J. HENRICH — DATE 4-21-93
CHECKER J. Baska — DATE 05.17.93
ENGR. Jaya Chivukula — DATE 5-17-93
CTG MGR. APPVL. — DATE 9-13-93
QA APPVL. — DATE 5-4-93
DFTG. SUPR. — DATE

A/E CONTRACT NO. — SUBCONTRACT NO.
FOR
Vest Valley Nuclear Services Co. Inc.
West Valley, New York

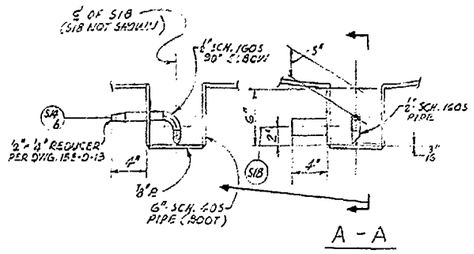
LWTS EVAPORATOR 71-31017 CONDENSER/SEPARATOR FLANGE MODIFICATION

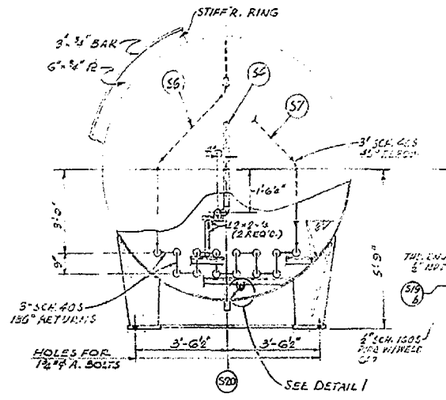
DWG SIZE D | SCALE AS NOTED | WEIGHT | DWG NO. 900D-807 | REV 0
A/E DWG NO. | SHEET 6 OF 6

ENGINEERING SUPPLY COMPANY INSTEP

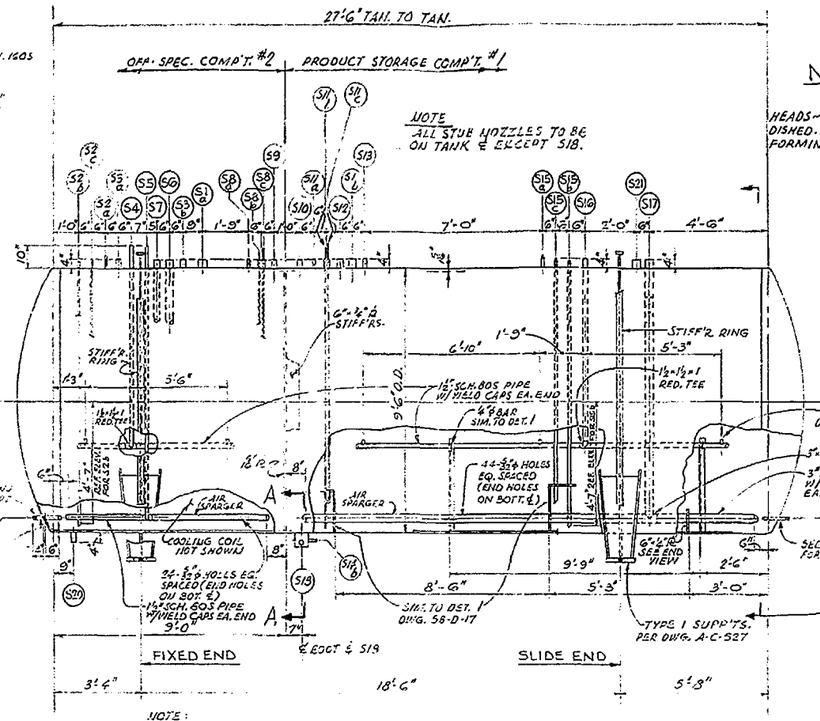
VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE.
INIT_____ DATE_____

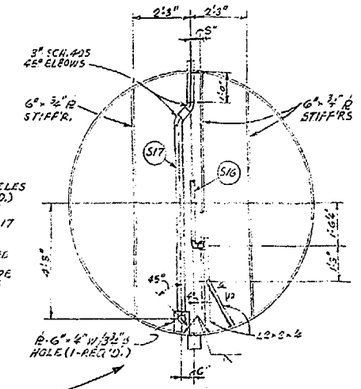
SIZE B



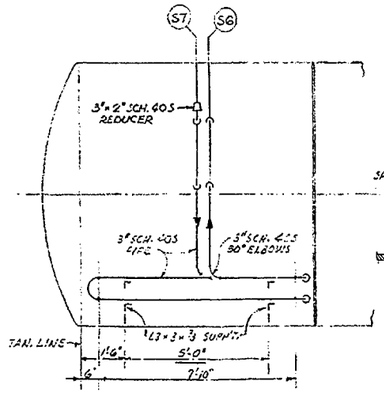


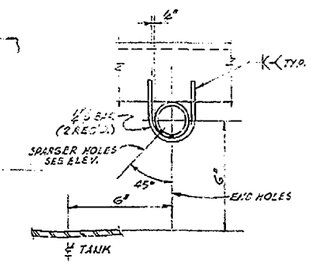
SOUTH END VIEW





NORTH END VIEW





SCHEMATIC ELEVATION

S21	3"	1	0.216"	INSPECTION OPENING		
S20	1"	1	0.179"	PUMP SUCTION	W/INTERNAL	
S19b	¼"	1	THREAD END	T1	Do.	
S19a	½"	1	"	T1		
S18	12"	1	0.165"	DRAIN (PUMP SUCTION)		
S17	3"	1	0.216"	SPARGER		
S16	1"	1	0.179"	CHEMICAL ADD.	W/INT'L.	
S15c	2"	1	2"x2"RED. L.R. S.O.L. (CENT'L. COMM. PER		DWG. 15E-D-13)	
S15b	1"	1	Do.	Do	Do	
S15a	½"	1	Do.	Do	Do	
S14b	2"	1	Do.	L.C.L. TYPE "B" CONN.	SEE SECT. A-A	
S14a	2"					
S13	12"	1	0.145"	CAPPED		
S12	12"	1	0.145"	PUMP DISCHARGE		
S11c	6"	1	0.095"	SAMPLE COMM. "35"	PER 15E-D-10	
S11b	3"	1	0.095"	Do	Do	
S11a	2"	1	0.147"	Do	Do	
S10	12"	1	0.145"	PUMP P-16 DISCHARGE		
S9	12"	1	0.145"	PUMP DISCHARGE		
S9c	6"	1	0.095"	SAMPLE COMM. "35"	PER 15E-D-10	
S9b	3"	1	0.095"	Do	Do	
S9a	2"	1	0.147"	Do	Do	
S7	2"	1	0.154"	COOLING WATER IN		
S6	3"	1	0.120"	COOLING WATER OUT		
S5	12"	1	0.145"	SPARGER		
S4	1"	1	0.179"	CHEMICAL ADD.	W/INT'L.	
S3b	12"	1	0.145"	CAPPED		
S3a	12"	1	0.145"	PUMP DISCHARGE		
S2c	2"	1	2"x2" RED. L.R. S.O.L. (CENT'L. COMM. PER		DWG. 15E-D-13)	
S2b	2"	1	Do.	Do	Do	
S2a	2"	1	Do.	Do	Do	
S1b	3"	1	0.120"	VENT		
S1a	3"	1	0.120"	VENT		

NOZZLES — SERVICE — REMARKS

*2 REVISION NOTE
ADDED: NOZ'S. S2a + S21; ORIENTATION (NORTH END); LOCATED "FIXED END" SUPPORT; "A" DIM. FOR NOZZLES"; REF. ELEV. FOR NOZ'S. S2b & S15a
RELOCATED: NOZ'S. S16, S3a, S4, S5, S7, S8a, S8b, S8c, S15a, S15b, S15c, S16 & S17; SUPPORT 'A' FOR AIR SPARGER.
REVISED: SERVICE FOR NOZ'S. S9, S12 & S14b; SIZE NOZ. S6 (WAS 2"), NOZ. S7 (WAS 3").

3	4/63	REVISED PER ECN 1562	SLS DJR	DJR
2	4/63	SEE REVISION NOTE *2 ABOVE	RLSH. N	EDN
1	12/62	ISSUED FOR CONSTRUCTION	RLS JWP	JWP
Δ	9/62	ISSUED FOR QUOTATIONS	RLS EDE	JWP

3B - 1-0 JWP EDE

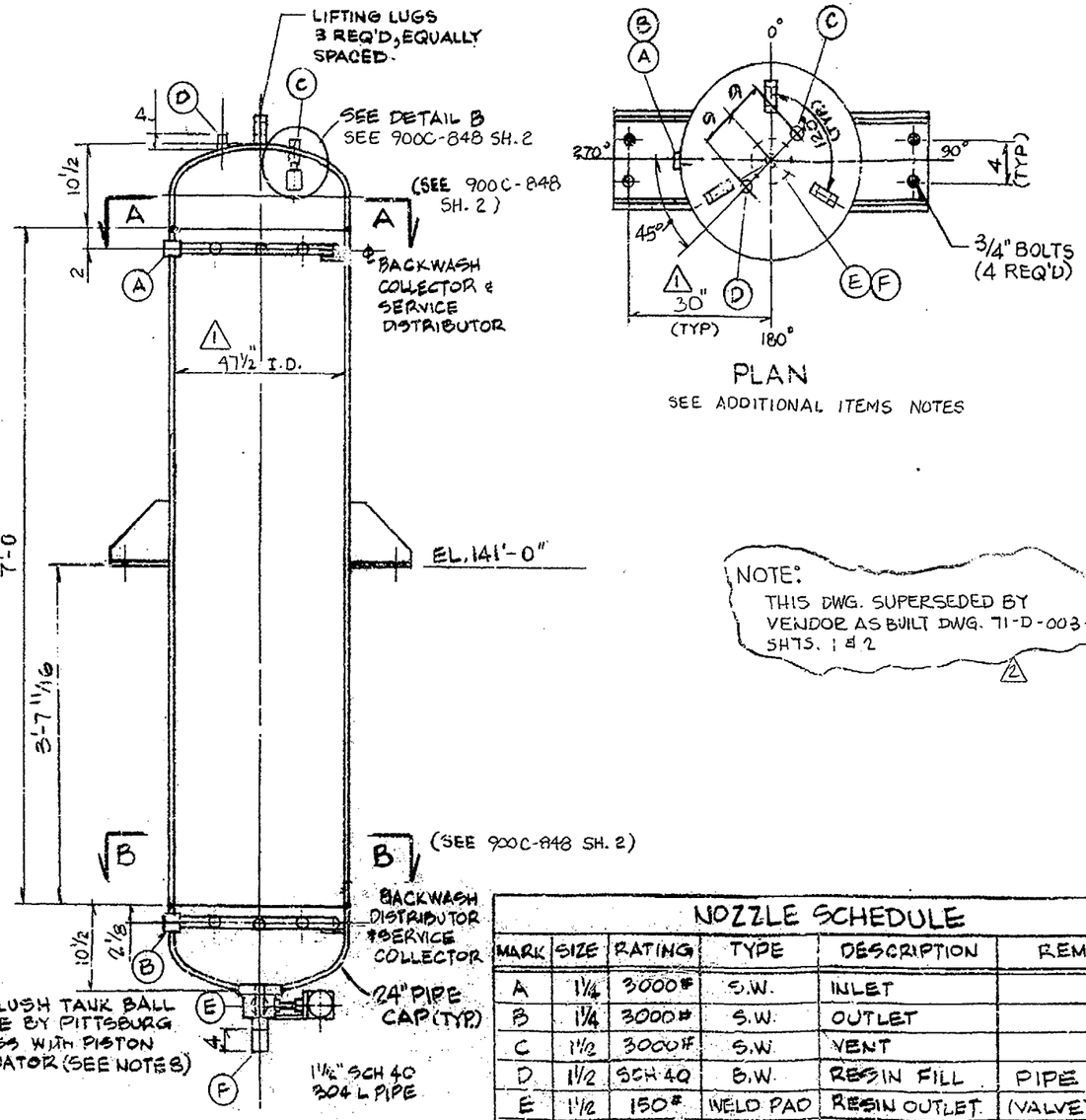
M/R. NO 15D-2

LOW ENRICHMENT URANIUM STORAGE
LWTS
TANK 5D-15A "CONCENTRATES STORAGE TANK"

4413 5B-D-113

PERIPHERAL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE.
INIT_____ DATE_____

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	1	REVISED PER D/FC 432	2/4/86	LRP/[illegible]
	2	REV. PER ECN 1597 SJS	5/5/97	DJR



ELEVATION

PLAN

SEE ADDITIONAL ITEMS NOTES

NOTE:
THIS DWG. SUPERSEDED BY VENDOR AS BUILT DWG. 71-D-003-3231 SHTS. 1 & 2

NOZZLE SCHEDULE					
MARK	SIZE	RATING	TYPE	DESCRIPTION	REMARKS
A	1¼	3000#	S.W.	INLET	
B	1¼	3000#	S.W.	OUTLET	
C	1½	3000#	S.W.	VENT	
D	1½	SCH 40	B.W.	RESIN FILL	PIPE
E	1½	150#	WELD PAD	RESIN OUTLET	(VALVE)
F	1½	150#	B.W.	RESIN OUTLET	(PIPE)

SCALE : NONE

REV	1	2
SHEET	2	3
REV STATUS OF SHEETS		

INDEX CODE 123 | SPEC CODE 72 | DWG NUMBER 71 | 03

ADVANCED ENGINEERING & DESIGN CO.

UNLESS OTHERWISE SPECIFIED: TOLERANCES - DO NOT SCALE DRAWING. DEC ±.005 | FRAC ±1/64 | ANGLES ±2°. FINISH 125 RMS

DRAWN [illegible] 3-14-85 | CHECKED [illegible] 3/14/85 | ENGR APPR. [illegible] 3/14/85 | MFG APPR. [illegible] 3/14/85 | QUALITY APPR. [illegible] 3/14/85

CODE IDENT NO. | PART OR IDENTIFYING NO. | NEXT ASSY | USED ON | MATERIAL | DESCRIPTION

DISTILLATE LWTS ZEOLITE ION EXCHANGER 71-D003

West Valley Nuclear Services Co., Inc. FOR West Valley, New York

DWG NO 900C-848 | REV 2 | SCALE | SHEET 3 OF 3

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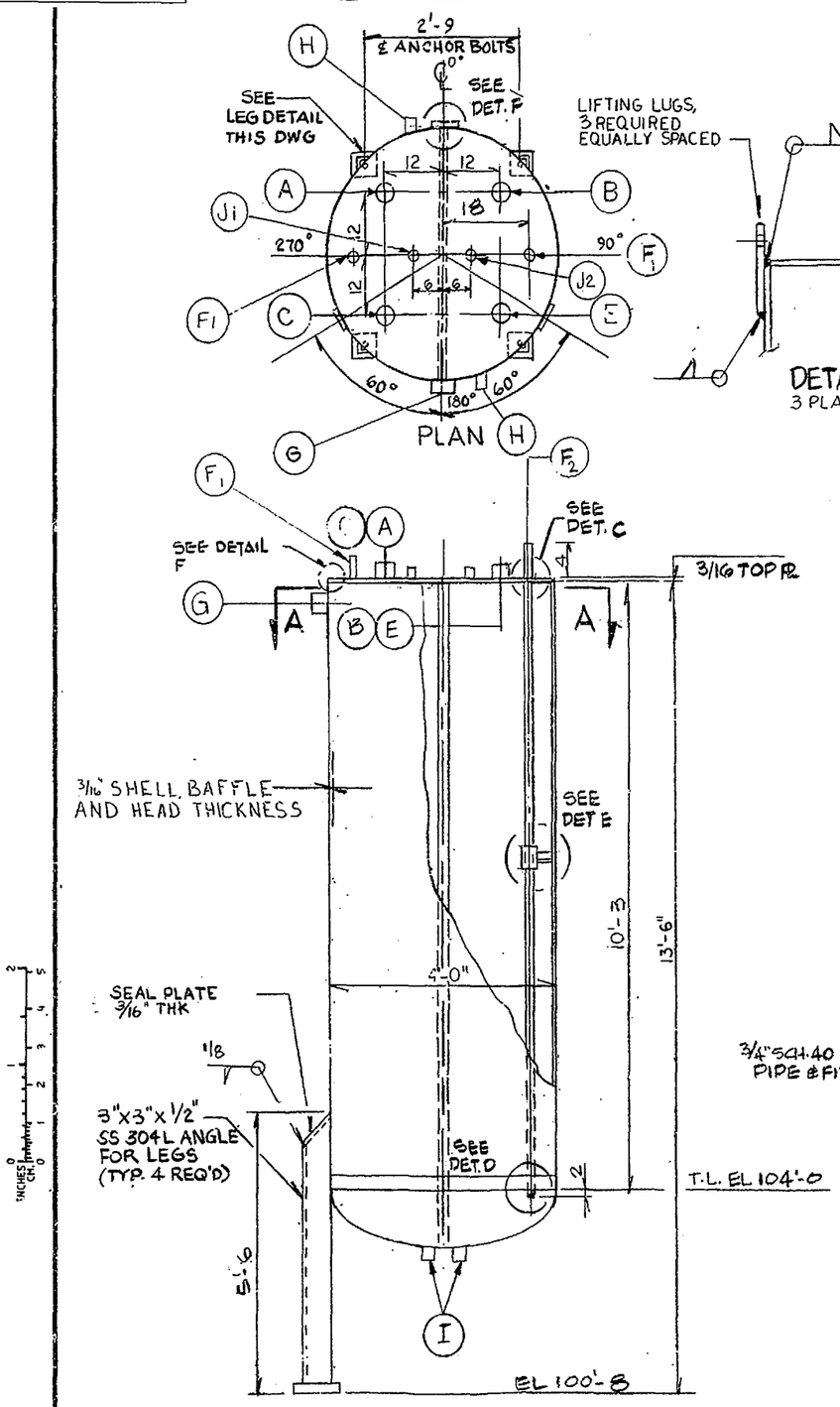
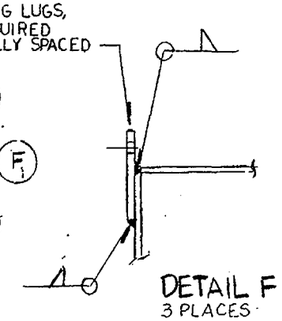
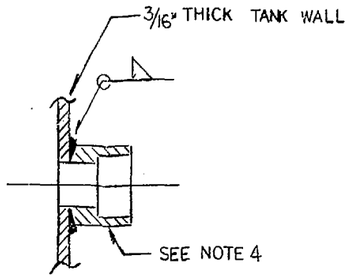
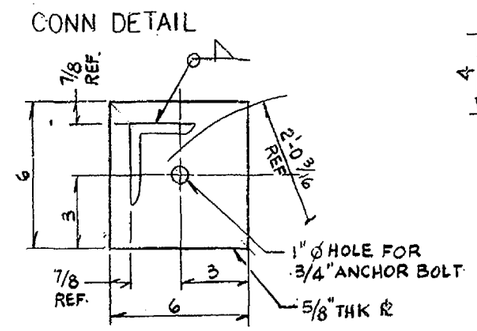
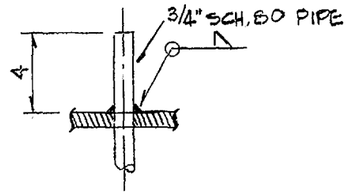
VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE.
INIT_____ DATE_____

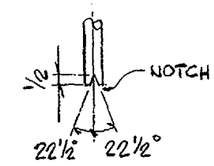


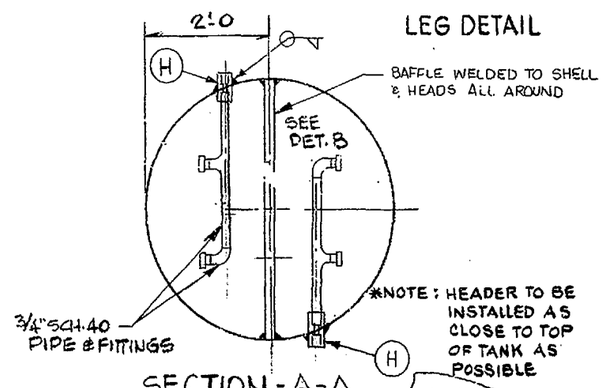


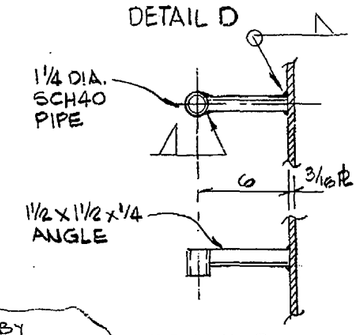


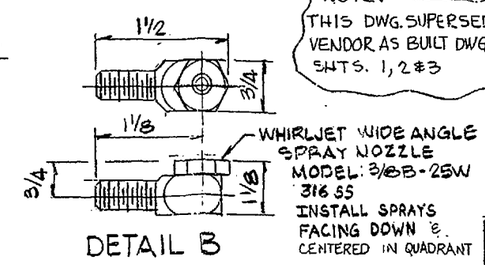












NOTE:
THIS DWG. SUPERSEDED BY VENDOR AS BUILT DWG. 71-D-005-3225 SHTS. 1, 2 & 3

NOZZLE SCHEDULE

MARK	SIZE	RATING	TYPE	DESCRIPTION	REMARKS
A	1½	3000#	S.W.	DISTILLATE FEED	½ CPLG
B	1½			RECY. DIS. FEED	
C	2			VENT	
E	2			VENT	½ CPLG
F1 & F2	¾	150#	PIPE (P.E.)	LIQ. LEVEL LOWER	BUBBLER (2 REQ'D)
G	1½	3000#	SW	RECIRC.	½ CPLG
H	¾			FLUSH	FULL CPLG (2 REQ'D)
I	2			OUTLET	½ CPLG (2 REQ'D)
J1 & J2	½	SCH 40	NIPPLES	LIQ. LEVEL UPPER	

—	2	2	REV	REV STATUS
3	2	1	SHEET	OF SHEETS

SK-WVNS-2388-M-140 R.B

WVNS APPROVAL

COG. MGR. J.C. Cuyman 8/6/85
COG. ENGR. P. Burn 8/6/85
DRFT SUPR. N.H. Garland 8/8/85
Q.A. [signature] 8/9/85
R/SD [signature] 8/8/85
M.P. Golden 8/6/85
C.ENG'G [signature] 8/7/85

REV	DESCRIPTION	DATE	APPROVAL
2	REV. PER ECN 1514 SJS	5/5/87	DJR
1	CHANGED PER DFC 356	8/15/85	WLW MPG

EBASCO SERVICES INCORPORATED
DIV. MECH DR. RD
CH. [signature]
DATE 8-11-85
APPROVED

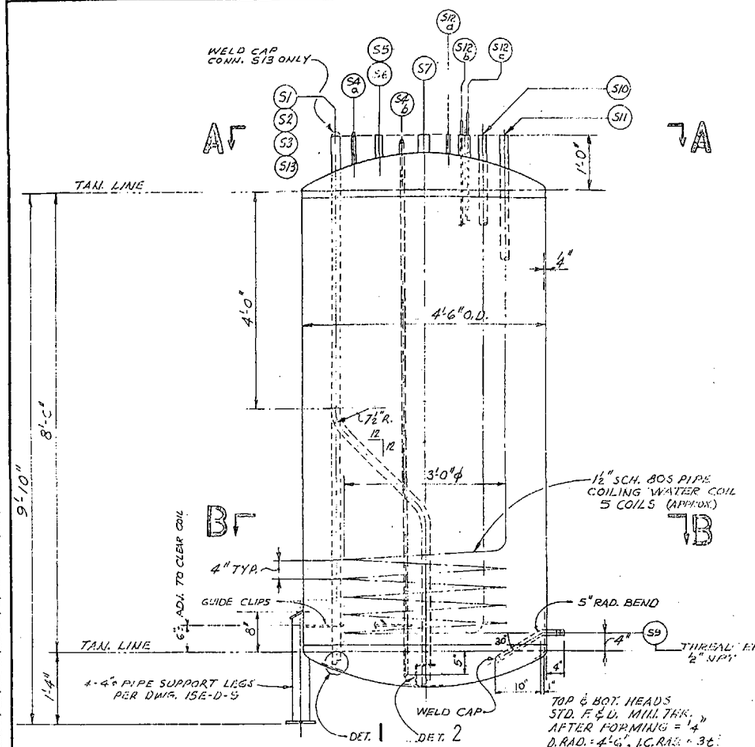
WEST VALLEY DEMONSTRATION PROJECT
LWTS
DISTILLATE SURGE TANK
71-D-005

900C-826
R.2

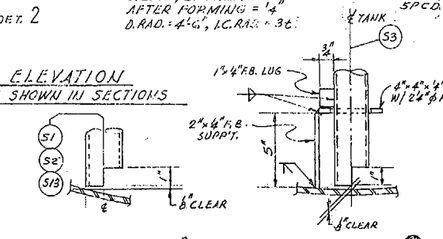
SHEET 1 OF 2

3B-D-2

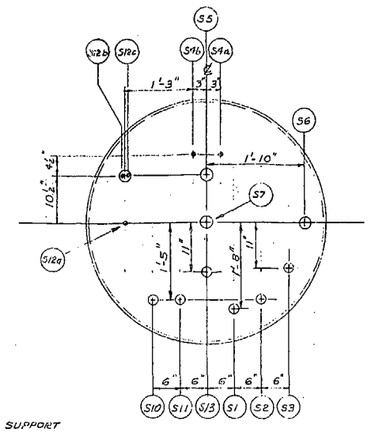
SIZE B

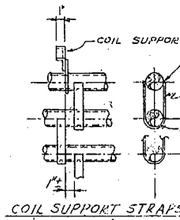


SCHEMATIC ELEVATION
TRUE ORIENTATIONS SHOWN IN SECTIONS

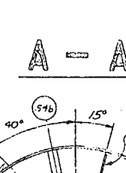


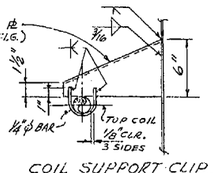
DETAIL 1 DETAIL 2
EDUCTOR PIPES



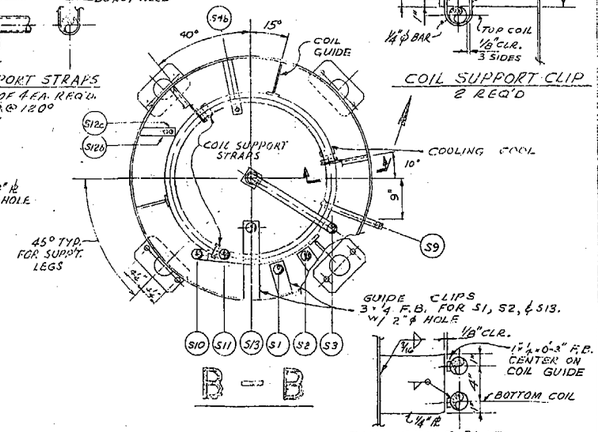


COIL SUPPORT STRAPS
3 SETS OF 4 EA. REQ'D. SPCD @ 120°





COIL SUPPORT CLIP
2 REQ'D



NOTES

1. MAX. OPERATING CONDITIONS: ATMOSPHERIC PRESSURE @ 240°F.
2. FABRICATION TO BE IN ACCORDANCE WITH ASME CODE SECTION VIII AS APPLICABLE, AND SPECIFICATION 4413-C-2. CODE STAMP IS NOT REQ'D.
3. MATERIAL: SHELL AND HEADS — PLATE A-240 TYPE 304L
   INTERNAL ATTACHMENTS — A-240 TP-304L
   EXTERNAL SUPPORTS — TP 304 OR 304L
   PIPE — A312 TP304L SEAMLESS.
   MATERIAL TESTING PER SPEC. 4413-C-2, PAR. 3.2 IS REQUIRED.
4. INSPECTION AND TESTING:
   (a) VESSEL TO BE 100% X-RAYED PER SPEC. 4413-C-2.
   (b) VESSEL TO BE HELIUM LEAK TESTED IN SHOP PER SPEC. 4413-C-2.
   (c) VESSEL TO BE HYDROSTATICALLY TESTED IN SHOP TO 45 PSIG
   (d) COILS TO BE TESTED PER SPEC. 4413-C-2 PAR. 5.2
5. CONNECTIONS:
   (a) SEE DWG. 15E-D-5 FOR DETAIL OF STUB NOZZLES.
   (b) EXCEPT AS OTHERWISE NOTED, PIPE WALL THICKNESS SHALL CONFORM TO THE FOLLOWING:
   1" & SMALLER — SCH. 160S
   1½ & 2" — SCH. 80S
   3" THRU 6" — SCH. 40S
   (c) CONNECTION TO VESSEL TO BE PER CODE FIG. UW-16.1 (c).
6. THE USE OF BACKING STRIPS WHICH REMAIN IN PLACE IS NOT ACCEPTABLE. (SEE NOTE 3.)
7. SHOP PAINT: NONE.
8. NAME PLATE: NONE. PROVIDE REMOVABLE METAL IDENTIFICATION TAG FOR SHIPPING. NO ATTACHMENTS OTHER THAN THOSE SHOWN SHALL BE WELDED TO VESSEL.
9. FOR SEAMS WHICH CANNOT BE WELDED ON BOTH SIDES, ROOT PASSES TO BE MADE BY TUNGSTEN INERT GAS PROCESS.

NOTES FOR REVISION 2

CHANGED: ALL NOZZLE ORIENT. EXCEPT S7 ORIENT. OF COIL GUIDE CLIPS, S9's INT'L. LENGTH & ELEV. (ALSO BENT INT'L) ORIENT. OF COIL SUPPORT CLIPS & STRAPS, S3 INTERNAL, CLEARANCE @ BOT. OF S1, S2 & S13.

ADDED: BARS 1"x¼"x0'-3" TO COIL @ CONTACT W/ GUIDES 1" FLG TO COIL SUPPORT CLIP, NOZ. S13, DETAIL 2.

DELETED: NOZ. S8.

REQUISITIONS: VESSEL _____ ITEM _____
ITEM _____
TEST PRESSURES @ TOP: CODE _____ PSIG.
SUBSEQUENT _____ PSIG.

M/R. Nº 15D-2

DESIGN

ASME SECTION VIII, _____ EDITION, _____ ADDENDA.
FABRICATION SPECIFICATION _____
SEE REFERENCE DWGS. FOR MATERIALS NOT COVERED BELOW.

DESIGN DATA

MATERIAL (ASTM)	SHELL & HEADS	
	BASE METAL	
	CLADDING	
DESIGN PRESSURE	INTERNAL, PSIG	
	EXTERNAL, PSI	
DESIGN TEMPERATURE °F		
CORROSION ALLOWANCE (MIN.)	VESSEL WALL	
JOINT EFFICIENCY		
RADIOGRAPH		
STRESS RELIEVE		
INSULATION THICKNESS		
OPERATING CONDITIONS	PRESS. PSIG	
	TEMP °F	

GENERAL REQUIREMENTS

1. NOZZLE & MANWAY EXTENSION FROM INSIDE OF SHELL TO FACE OF FLANGE SHALL BE: _____ FOR 3" SIZE & SMALLER, _____ FOR 4" SIZE & LARGER) UNLESS NOTED
2. BOLT HOLES SHALL STRADDLE CENTERLINES.
3. HEADS SHALL BE ONE PIECE CONSTRUCTION UNLESS NOTED.
4. EXTERNAL SUPPORT CLIPS SHALL BE INCLUDED IN VESSEL FABRICATOR'S BID FOR -A, -B, -C, -D, -E, -F, -G, -H, SETS OF CLIPS PER DRAWING B-C-529. FINAL CONSTRUCTION SHALL BE IN ACCORDANCE WITH LISTED PLATFORM DRAWINGS AND ITS REFERENCES.
5. VESSEL PARTS NOT DETAILED SHALL BE PER MFG'S. STANDARD.
6. VESSEL FABRICATOR SHALL FURNISH ALL ITEMS SPECIFIED ON THIS DRAWING AND THE LISTED REFERENCES EXCEPT:
   (a) PER PARAGRAPH _____ OF SPECIFICATION _____
   (b) FINAL GASKETING FOR NOZZLES & MANWAYS.
   (c) _____
7. SHOP PAINT _____

NOZZLES, MANWAYS AND BOSSES

Nozzle	SIZE	NO. REQ'D.	RATING	WALL THK. MIN.	SERVICE	REMARKS
S1	12"	1	300# RFFE	A-.145"	EDUCTOR (SH-8)	W/INT'L.
S2	12"	1		A-.145"	EDUCTOR (SH-9)	Do
S3	12"	1		A-.145"	EDUCTOR (SH-10)	Do
S4a & S4b	6"	2		—	TYPE "28" LR	PER DWG 15E-D-5
S5	12"	1		A-.145"	FEED INLET (COND. IN)	
S6	2"	1		A-.154"	ACID INLET (MISC. ADD)	
S7	3"	1		A-.216"	VENT	
S9	2"	1		SCH 80 END	TI	W/INT'L.
S10	12"	1		A-.145	COOLING WATER OUT	Do
S11	12"	1		A-.145	COOLING WATER IN	Do
S12a	6"	1		A-.197	TYPE "35" SAMPLE CONN.	PER DWG 15E-D-10
S12b	⅛"	1		A-.095	Do	Do
S12c	⅛"	1		A-.095	Do (AIR CONN.)	Do
S13	12"	1	300# RFFE	—	SPARG	W/INT'L. & CAP

REFERENCES

DRAWING No.	TITLE
15E-D-9	PIPE LEG SUPPORTS
15E-D-5	STUB NOZZLE DETAIL
15E-D-10	TYPE "35" SAMPLE CONNECTION
15E-D-13	TYPE 28 & 38 L.R.F.U.L. CONNECTIONS

PLATFORM DRAWING (SEE NOTE 4)

THE FOLLOWING BECHTEL STANDARD DRAWINGS APPLY TO THIS VESSEL AND ARE ATTACHED TO THE FABRICATION SPECIFICATION: ~~C-C-509, C-C-510, 15-C-511~~; C-C-515, ~~A-C-524, C-C-525, E-C-537, B-C-527, B-C-529~~.

No.	DATE	REVISIONS	BY	CH'K	DFTG. SUPVR.	ENG'R	CHIEF ENG'R	CLIENT
3	10/18/04	REV. SIZE & "A" DIM. FOR ST (NAS 2")	N	EDE	RON			
2	9/30/04	SEE NOTES FOR REVISION 2	REH	JWP	EDE	RJM		
1	10/16/63	ISSUED FOR CONSTRUCTION	REH	JWP	N	WDT		
0	10-7-63	ISSUED FOR QUOTATION	CGK	EDE	N	WDT		

SCALE ¾"=1'-0" & AS NOTED — DESIGNED — DRAWN EDE JWP

BECHTEL CORPORATION
SAN FRANCISCO

CONDENSATE CATCH TANK
3D-2

JOB No.	DRAWING No.	REV.
4413	3B-D-2	3

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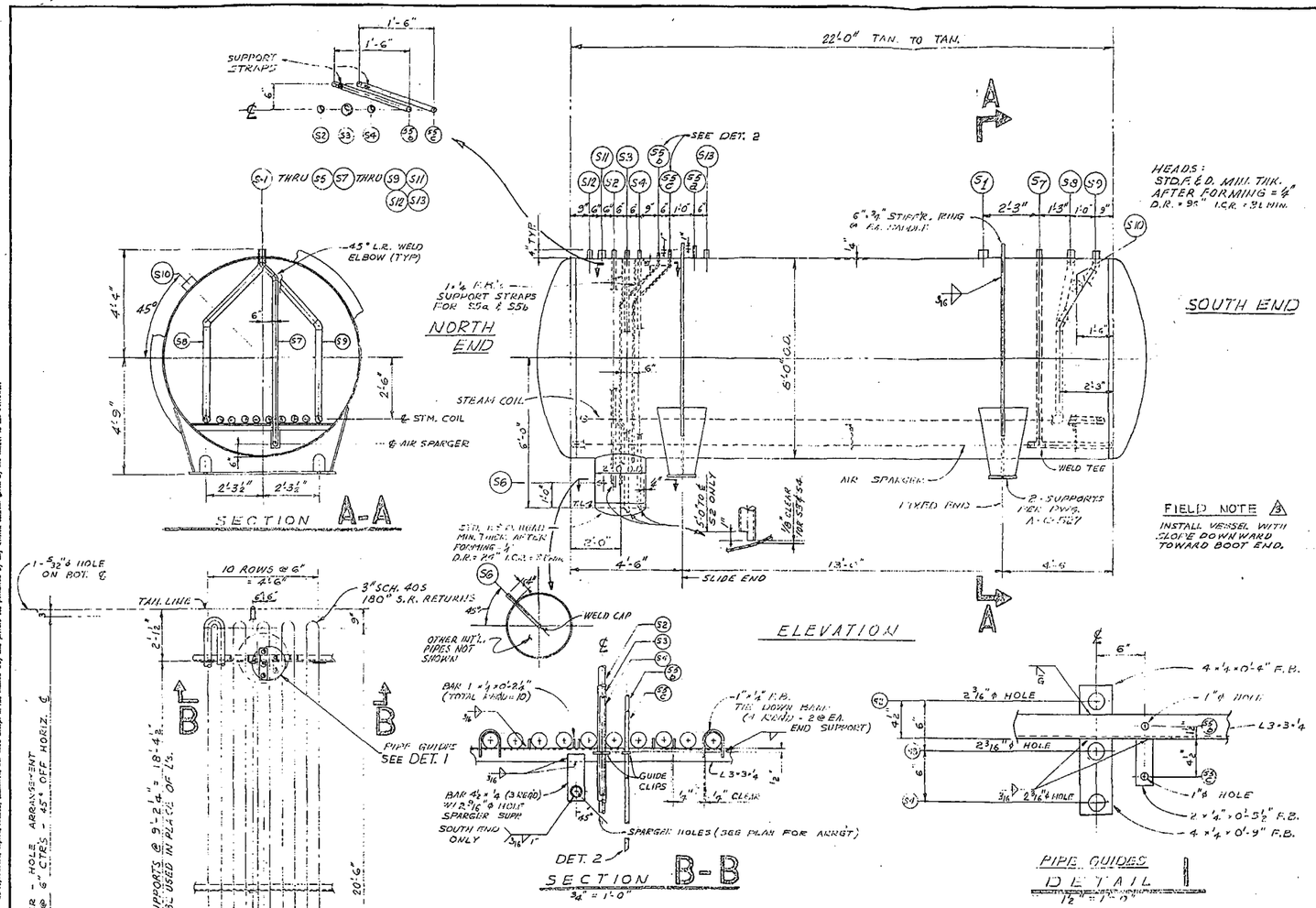
FORM E-2 8-61 H PRINTED ON DIEPO 1000H CLEARPRINT

10/18/04 2:00:35 PM blueprint, repro

7B-D-3

SIZE B



MATERIAL REQUISITION: VESSEL 4413-15D-2

NOZZLE	SIZE	NO. REQ'D	RATING	SERVICE	REMARKS
S13	1 1/4"	1		A=.145" INLET FROM 3D-2	
S12	1 1/2"	1		A=.145" INLET FROM GCR SUMP	
S11	3"	1		A=.216" INLET FROM SOAK PIT	
S10	6"	1		A=.280" PROCESS INLET HDR	
S9	3"	1		A=.120" COOLING WATER OUT	
S8	3"	1		A=.120" COOLING WATER IN	
S7	2"	1		A=.154" SPARGER - AIR INLET	
S6	1/2"	1		THRD END TEMP. IND. PT.	W/ INT'L.
S5a	1/2"	1			
S5b	1/2"	1			
S5c	1/2"	1		TYPE "3B" LR & DI	PER DWG. 15E-D-1B
S4	1 1/2"	1		A=.145" EDUCTOR TH-1	
S3	1 1/2"	1		A=.145" EDUCTOR TH-2	
S2	1 1/2"	1		A=.165" PROCESS OUT EDUCTOR TH-3	W/ INT'L.
S1	4"	1	37dB NOZ.	A=.120" VENT	

LIST OF STUB NOZZLES

NOTES

1. MAX. OPERATING CONDITIONS: ATMOSPHERIC PRESSURE @ 240°F.
2. FABRICATION TO BE IN ACCORDANCE WITH ASME CODE SECTION VIII AS APPLICABLE, AND SPECIFICATION 4413-C-2. CODE STAMP IS NOT REQ'D.
3. MATERIAL:
   SHELL AND HEADS: PLATE A-240 TYPE 304 L
   INTERNAL ATTACHMENTS - A-240 TP-304 L
   EXTERNAL SUPPORTS & STIFF. RINGS - CARBON STEEL
   PIPE - A-312 TP-304 L SEAMLESS
   MATERIAL TESTING PER SPEC. 4413-C-2, PAR. 3.2 IS REQUIRED.
4. INSPECTION AND TESTING:
   (a) VESSEL TO BE 100% X-RAYED PER SPEC. 4413-C-2.
   (b) VESSEL TO BE HELIUM LEAK TESTED IN SHOP PER SPEC. 4413-C-2.
   (c) VESSEL TO BE HYDROSTATICALLY TESTED IN SHOP TO 20 PSIG.
   (d) COILS TO BE TESTED PER SPEC. 4413-C-2, PAR. 5.2
5. CONNECTIONS:
   (a) SEE DWG. 15E-D-5 FOR DETAIL OF STUB NOZZLES.
   (b) EXCEPT AS OTHERWISE NOTED PIPE WALL THICKNESS SHALL CONFORM TO THE FOLLOWING
   1" & SMALLER = SCH. 160S
   1 1/2" & 2" = SCH. 80S
   3" THRU 6" = SCH. 40S
   (c) CONNECTION TO VESSEL TO BE PER CODE FIG. UW-16.1 (c).
6. THE USE OF BACK-UP STRIPS WHICH REMAIN IN PLACE IS NOT ACCEPTABLE. (SEE NOTE 9.)
7. SHOP PAINT: ALLOY MATERIAL - NONE. CARBON STEEL MATERIAL - PREPARE SURFACES & APPLY ONE COAT OF CARBOLINE NO. 305 PRIMER IN ACCORDANCE WITH SPEC. 4413-X-1.
8. NAME PLATE: NONE. PROVIDE REMOVABLE METAL IDENTIFICATION TAG FOR SHIPPING. NO ATTACHMENTS OTHER THAN THOSE SHOWN SHALL BE WELDED TO VESSEL.
9. FOR SEAMS WHICH CANNOT BE WELDED FROM BOTH SIDES, ROOT PASSES TO BE MADE BY TUNGSTEN INERT GAS PROCESS.

REFERENCE DRAWINGS

STUB NOZZLE DETAIL	15E-D-5
SADDLE SUPP'TS. FOR HORIZ. VESSELS & EXCH'RS.	A-C-527
PRESSURE VESSEL TOLERANCE	C-C-515
TYPE "2B" & "3B" LEVEL RECORDER & DENSITY IND. CONNS.	15E-D-1B

No.	DATE	REVISIONS	BY	CHK	ENG'R SUPV'R	CHIEF ENG'R	CLIENT
3	5/16/1965	REVISED FIELD NOTE	N		KDM		
2	2/5/64	DELETED INTERNAL PIPE AT S10. REVISED BOT. END OF INT. PIPE AT S2, S3 & S4. DELETED: S10 OR 6" PIPE @ SG. ADDED: BOOT SHELL THK. REVISED: SIZE OF S3 (WAS 2") SIZE OF S4 (WAS 1"), LOC. OF S6, S7, S8 & S9, SIZE OF S8 (WAS 2"), SHOP PAINT (WAS AMERCOAT NO 65).	EJE	N	KDM		
1	9/16/63	ISSUED FOR CONSTRUCTION	RKA	JWP	N	JWD	
0	8/14/63	ISSUED FOR QUOTATIONS	RKA	LSH EDB	N	WDY	

BECHTEL CORPORATION
SAN FRANCISCO

LOW LEVEL WASTE EVAPORATOR
FEED TANK 7D-2

DESIGNED	DATE	DRAFT'G SUPV'R	ENG'R	CHIEF ENG'R	CLIENT
DRAWN LSH	JOB No. 4413	DRAWING No. 7B-D-3			REV. 3
CHECKED					
SCALE 3/8" = 1'-0"					

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FORM E-2 8-65 H PRINTED ON DIEPO 100OH CLEARPRINT

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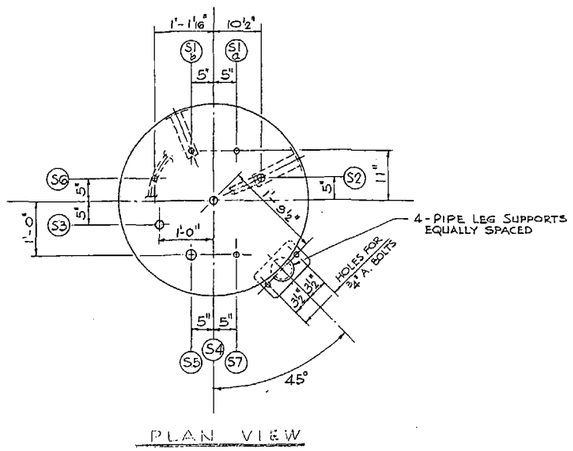
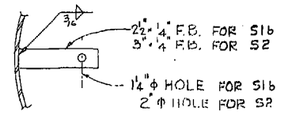
7B-D-13

SIZE B

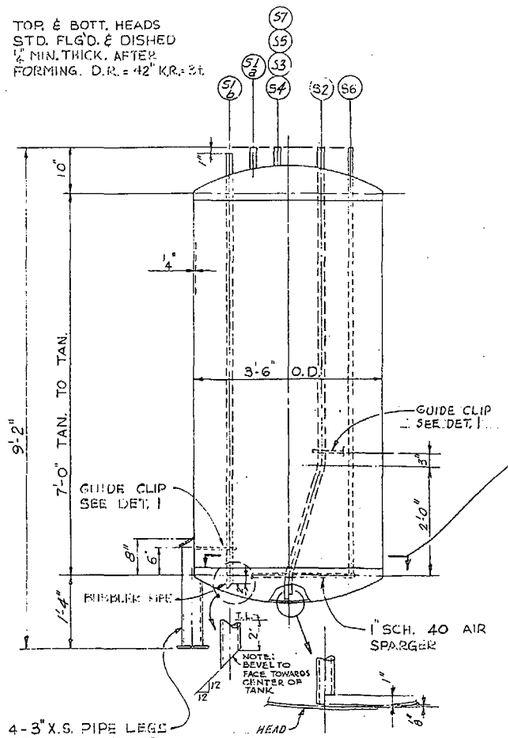


PLAN VIEW



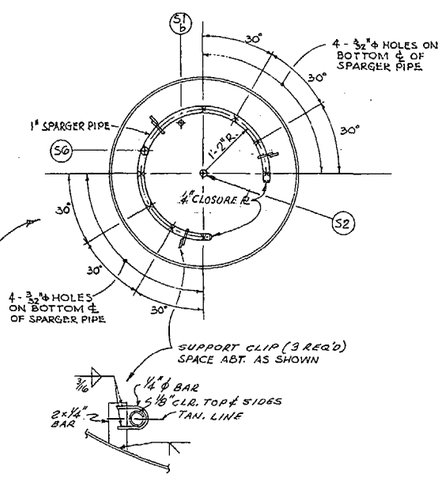
GUIDE CLIP DETAIL

TOP & BOTT. HEADS STD. FLG'D. & DISHED 1/4" MIN. THICK. AFTER FORMING. D.R. = 42" K.R. = 3.1.



SCHEMATIC ELEVATION

TRUE ORIENTATIONS SHOWN IN SECTIONS



NOTES

1. MAX. OPERATING CONDITIONS: ATMOSPHERIC @ 240° F.
2. FABRICATION TO BE IN ACCORDANCE WITH ASME CODE SECTION VIII AND SPECIFICATION 4413-C-2 EXCEPT AS OTHERWISE NOTED. CODE STAMP NOT REQUIRED.
3. MATERIAL: ASTM
   SHELL AND HEADS - PLATE B-334 (HASTELLOY "C")
   INTERNAL ATTACHMENTS - B-334 (HASTELLOY "C")
   EXTERNAL SUPPORTS - TY-304 OR 304L
   PIPE - HASTELLOY "C" SEAMLESS
   MATERIAL TESTING PER SPEC. 4413-C-2, PAR. 3.2 IS NOT REQUIRED.
4. INSPECTION & TESTING:
   (a) VESSEL TO BE 100% X-RAYED PER SPEC. 4413-C-2
   (b) VESSEL TO BE HELIUM LEAK TESTED IN SHOP PER SPEC. 4413-C-2
   (c) VESSEL TO BE HYDROSTATICALLY TESTED IN SHOP TO 75 PSIG
   (d) ALL WELDS TO BE EXAMINED BY THE LIQUID PENETRANT METHOD PER CODE REQUIREMENTS.
5. CONNECTIONS:
   (a) SEE DWG. 15E-D-5 FOR DETAIL OF STUB NOZZLES
   (b) EXCEPT AS OTHERWISE NOTED, PIPE WALL THICKNESS SHALL CONFORM TO THE FOLLOWING:
   1" & SMALLER = SCH. 40S
   1 1/2" THRU 3" = SCH. 40S
   (c) CONNECTION TO VESSEL TO BE PER CODE FIG. UW-16.1 (c).
6. THE USE OF BACK-UP STRIPS WHICH REMAIN IN PLACE IS NOT ACCEPTABLE. (SEE NOTE 9.)
7. SHOP PAINT: NONE.
8. NAME PLATE: NONE. PROVIDE REMOVABLE METAL IDENTIFICATION TAG FOR SHIPPING. NO ATTACHMENTS OTHER THAN THOSE SHOWN SHALL BE WELDED TO THE VESSEL.
9. FOR SEAMS WHICH CANNOT BE WELDED FROM BOTH SIDES, ROOT PASSES TO BE MADE BY TUNGSTEN INERT GAS PROCESS.

REFERENCE DRAWINGS

PIPE LEG SUPPORTS	15E-D-9
PRESSURE VESSEL TOLERANCE	C-C-515

NOTES FOR REVISION 1:
REVISED SUPPORT LEGS, SIZE OF S5, PIPE SCHEDULES, NOTES & MATERIAL (MAT'L WAS TY-304L STNLS. STL.) REVISED M/R No. (WAS 15D-2).

NOTES FOR REVISION 2
RE-ORIENTED NOZZLES IN PLAN
REVISED: SIZE OF S1a & S1L (WERE 1/2"); SIZE S5 (WAS 3")
NOTE 5, PIPE SCH. FOR PIPE 1" & SMALLER (WAS SCH. 80S)
PREPARATION OF STUB ENDS FOR FIELD WELDING (SEE NOZ. SCHED.)
DELETED: REF. DWGS. 15E-D-5 & 15E-D-13.
REDUCERS AT S1a & S1b.

M/R 4413-7-D-11

NOZZLES

NOZZLE	SIZE	NO. REQ'D	EXTERNAL END PREP.	SERVICE	REMARKS
S1a	3/4"	1	SEE NOTE 5	TYPE "80" L.R. 90°	
S1b	3/4"	1			
S2	1 1/2"	1		EDUCTOR SUCTION	W/INTERNAL
S3	1 1/2"	1		PROCESS INLET (MISC. APP.)	W/INTERNAL
S4	3"	1		VENT	
S5	2"	1		PROCESS INLET (ANAL. DRAIN)	
S6	1"	1		UTILITY AIR INLET	W/INT'L
S7	1"	1		PROCESS INLET (MIN. CELL)	

No.	DATE	REVISIONS	BY	CHK'K	DEPT'D. SUPV'R.	ENG'R	CHIEF ENG'R	CLIENT
3	8/19/64	REVISED: SIZE OF S5 (WAS 1 1/2"); ADDED OPTION TO INT. PIPE @ SEP. REM. CLEARANCE @ BOT. END; DELETED: WELD CAPS & TEE ON AIR SPARGER	EJL	N	RDN	REA 8/19/64		
2	7/3/64	SEE REVISION NOTES ABOVE	LSH	N	RDN			
1	11/8/63	SEE REVISION NOTES ABOVE, REA ISSUED FOR QUOTATIONS & CONSTRUCTION	N		RDN	WJS 11/8/63	REA 11/8/63	
0	10-1-63	ISSUED FOR QUOTATIONS	JWP	N	RDN	WJS 10/1/63	REA 10/1/63	

SCALE 3/4" = 1'-0" U.N. | DESIGNED | DRAWN JWP

BECHTEL CORPORATION
SAN FRANCISCO

HOT ANALYTICAL CELL DRAIN CATCH TANK 7D-14

JOB No.	DRAWING No.	REV.
4413	7B-D-13	3

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13B-D-3

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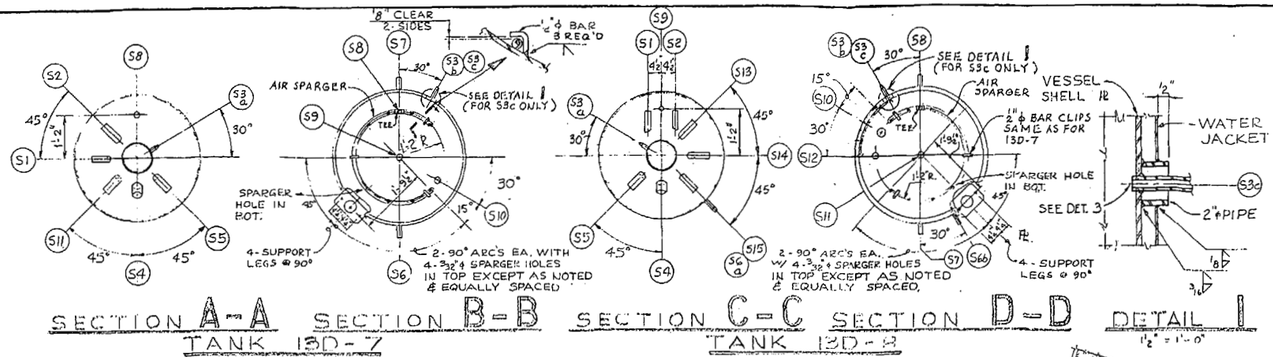
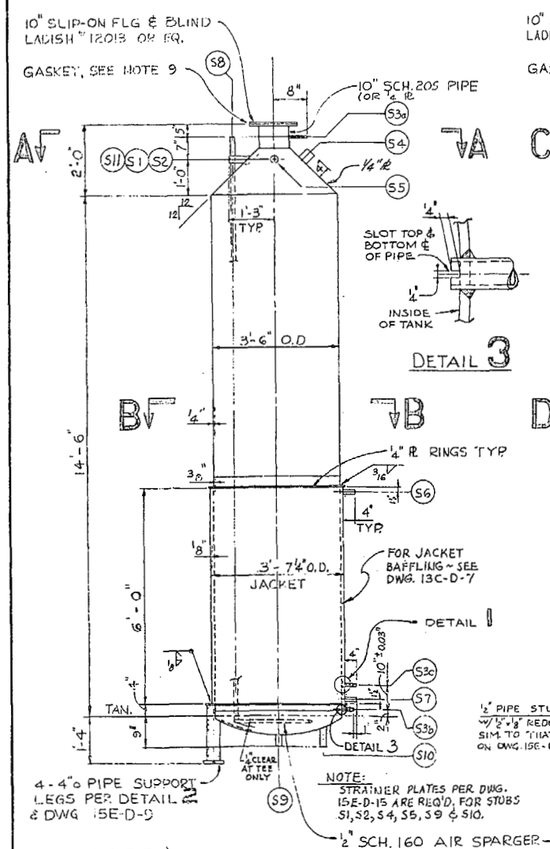


SECTION A-A SECTION B-B SECTION C-C SECTION D-D DETAIL 1

TANK 13D-7 TANK 13D-8

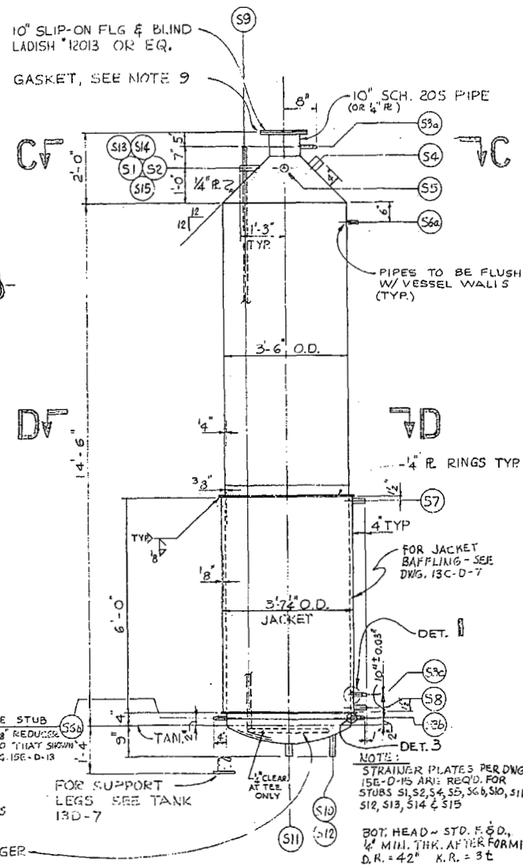
1/2" = 1'-0"



SOLVENT WASTE CATCH TANK 13D-7

SCHEMATIC ELEVATION

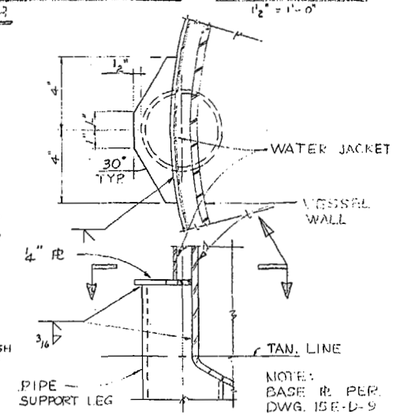
TRUE ORIENTATIONS SHOWN IN SECTIONS



SOLVENT WASTE HOLD TANK 13D-8

SCHEMATIC ELEVATION

TRUE ORIENTATIONS SHOWN IN SECTIONS



DETAIL 2

1/2" = 1'-0"

TWO TANKS REQ'D. M/R 4413-15D-2

NOZZLES

NOZZLE	SIZE	NO REQ'D	DIM. "A" PER DWG 15E-D-9	SERVICE	REMARKS
				SOLVENT WASTE CATCH TANK 13D-7	
S1	1/2"	1	0.145"	PROCESS INLET	
S2	2"	1	0.154"	" "	
S3a	1/2"	1	——	L.R. ϕ D.I. (EXT. CONN. PER DWG 15E-D-13)	
S3b	1/2"		——		
S3c	1/2"		——		
S4	3"	1	0.120"	VENT	
S5	2"	1	0.154"	OVERFLOW	
S6	1/2"	1	0.145"	C.W. OUTLET	
S7	1 1/2"	1	0.145"	C.W. INLET	
S8	1/2"	1	0.147"	SPARGER AIR INLET	W/ INT'L
S9	1/2"	1	0.145"	EDUCTOR SUCTION	
S10	1/2"	1	0.145"	" "	
S11	1/2"	1	0.147"	PROCESS INLET	
				SOLVENT WASTE HOLD TANK 13D-8	
S1	1/2"	1	0.145"	EDUCTOR DISCH. INLET	
S2	1 1/2"	1	0.145"	" "	
S3a	1/2"	1	——	L.R. & D.I. (EXT. CONN. PER DWG. 15E-D-13)	
S3b	1/2"		——	" " " " " "	
S3c	1/2"		——	" " " " " "	
S4	3"	1	0.120"	VENT	
S5	2"	1	0.154"	OVERFLOW	
S6a	1/2"	1	0.147"	SAMPLE CONN. RETURN	
S6b	1/2"		——	" " OUTLET	W/ REDUCER SEE ELEV.
S7	1 1/2"	1	0.145"	C.W. OUTLET	
S8	1/2"	1	0.145"	" " INLET	
S9	1/2"	1	0.147"	SPARGER AIR INLET	
S10	2"	1	0.154"	EDUCTOR SUCTION	
S11	1 1/2"	1	0.145"	" "	
S12	1 1/2"	1	0.145"	" "	
S13	1/2"	1	0.145"	INLET FROM EXC. #2 SUMP	
S14	1/2"	1	0.145"	INLET FROM EXC. #3 SUMP	
S15	1 1/2"	1	0.145"	INLET FROM EXC. #4 SUMP	

NOTES

1. MAX. OPERATING CONDITIONS :
   (a) VESSEL - ATMOSPHERIC @ 240° F.
   (b) JACKET - 65 PSIG @ 100° F
   AND 25 PSIG @ 240° F
2. FABRICATION TO BE IN ACCORDANCE WITH ASME CODE SECTION VIII AS APPLICABLE, AND SPEC. 4413-C-2. CODE STAMP NOT REQ'D.
3. MATERIAL :
   SHELL AND HEADS - I.R. A-240 TYPE 304L
   JACKET (EXTERNAL P'S) - TP 304 OR 304L
   EXTERNAL SUPPORTS - TP 304 OR 304L
   PIPE - SEAMLESS - A-312 TP 304L
   INTERNAL ATTACHMENTS - A-240 TP 304L
   ADDITIONAL MATERIAL TESTING PER SPEC. 4413-C-2 PAR. 3.2 IS REQ'D.
4. INSPECTION AND TESTING :
   (a) VESSEL TO BE 100% X-RAYED PER SPEC. 4413-C-2.
   (b) VESSEL TO BE HELIUM LEAK TESTED IN SHOP PER SPEC. 4413-C-2.
   (c) VESSEL TO BE HYDROSTATICALLY TESTED IN SHOP TO 60 PSIG.
   (d) JACKET TO BE HYDOSTATICALLY TESTED IN SHOP TO 100 PSIG.
5. CONNECTIONS :
   (a) SEE DWG. 15E-D-15 FOR DET. OF STUB NOZZLES
   (b) EXCEPT AS OTHERWISE NOTED, PIPE WALL THICKNESS SHALL CONFORM TO THE FOLLOWING:
   1" AND SMALLER - 160 S
   1 1/2" & 2" - 80 S
   3" THRU 6" - 40 S
   (c) SEAMLESS LONG RADIUS WELDING FITTINGS SHALL BE USED UNLESS OTHERWISE NOTED.
   (d) CONNECTION TO VESSEL TO BE PER CODE FIG. UW - 16.1(c)
6. THE USE OF BACK-UP STRIPS WHICH REMAIN IN PLACE IS NOT ACCEPTABLE. FOR SEAMS WHICH CANNOT BE WELDED FROM BOTH SIDES, ROOT PASSES TO BE MADE BY TUNGSTEN INERT GAS PROCESS.
7. NAME PLATE : NONE
   PROVIDE REMOVABLE METAL IDENTIFICATION TAG FOR SHIPPING. NO ATTACHMENTS OTHER THAN THOSE SHOWN SHALL BE WELDED TO VESSEL.
8. GASKETS FOR BLIND FLANGES TO BE FURNISHED BY VESSEL FABRICATOR. GASKETS TO BE TP. 304 STAINLESS STEEL INSERT INCASED IN TEFLON - DURCO "TASK-LINE" OR EQUAL.
9. SHOP PAINT : NONE.

REFERENCE DRAWINGS

LIST OF REVISIONS EFFG. PRICE - TK-13D-7	DS-13D-1
LIST OF REVISIONS EFFG. PRICE - TK-13D-8	DS-13D-2
STUB NOZZLE DETAIL	15E-D-5
PIPE LEG SUPPORTS	15E-D-9
TYPE "2B" & "3B" L.R. & D.I.	15E-D-13
PRESSURE VESSEL TOLERANCES	C-C-515
WATER JACKET BAFFLING - TKS. 13D-7 & 8	13C-D-7
STRAINER RES FOR PACKED TKS	15E-D-15

NOTES FOR REVISION 2

13D-7 & 13D-8

REVISED : STRAINER RES. (NO. REQ'D. & TYPE), JACKET BAFFLING & O.D. OF JACKET, R&R DWG'S.

13D-7

ADDED : S11, INTERNAL PIPE @ S9
REVISED : LOC. OF S2, S3a, b & c, S6 & S9, "A" DIM. FOR S8, PROJ. OF S3a, S9 & S10.

13D-8

ADDED : S13, S14 & S15, INTERNAL PIPE @ S9.
REVISED : LOC. OF S3a, b & c, S6b, S9, & S11, "A" DIM. FOR S9, PROJ. OF S3a, S10, S11 & S12.

2	10-4-04	REVISED INTERNAL END OF NOZ'S S8 & S9 PER (ADDED) DET. 3. NOTED CLEARANCE BTW. AIR SPARGER TEE & BOTT. HEAD	REB	LSH	N		
1	9-16-04	SEE NOTES FOR REVISION 2	REB	DE	N		
0	10-4-04	ISSUED FOR CONSTRUCTION	REB	JWP	N		
	10-4-04	ISSUED FOR QUOTATIONS	REB	JWP	N		

1/2" = 1'-0" U.N.

JWP

SOLVENT WASTE CATCH TANK 13D-7

SOLVENT WASTE HOLD TANK 13D-8

4413 13B-D-3 3 ©

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VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE.
INIT_____ DATE_____

NOZZLE SCHEDULE

	PIPE DESC.	RATING	SERVICE
A	2" SCH 40S	150 LB	RECIRC.
B	2" SCH 40S	150 LB	TEMP.
C	2" SCH 40S	150 LB	SLURRY
D	8" SCH 40S	150 LB	~~MIXER~~ SPARE
E	1" SCH 40S	150 LB	~~INSTRUMENT~~ SPARE
F	6" SCH 40S	150 LB	OUTLET
G	2" SCH 40S	150 LB	DRAIN
H	1" SCH 40S	NPT	STM. OUTLET
I	1" SCH 40S	SQ CUT	VENT
J	1" SCH 40S	SQ CUT	SPRAY
K	½" SCH 40S	NPT	ST. RELIEF
L	1" 3000 HC	NPT	TEMP.
M	1½" SCH 40S	150LB	ST. INLET
N	1" SCH 40S	150 LB	DEWATERING
O	¾" 3000 HC	NPT	¼ TEMP. CONT.
P	3" SCH 40S	150 LB	LEVEL CONT.
Q	2" SCH 40S	150LB	LEVEL CONT.
R	2" SCH 40S	150LB	SPARE
S	1½ BOSS		SPARE

DETAIL A
FOR NOZZLES A,B,C & E

DETAIL J
NOZZLE "S"

DETAIL F
NOZZLE F
SCALE: ½

DETAIL G
NOZZLE G
SCALE: ½

DETAIL H
NOZZLE M
SCALE: ½

DETAIL D
NOZZLE P
SCALE: ½

SECTION G-4
(D-8)
SCALE: ⅛

SECTION B-3 (C-4) SCALE: ½

DETAIL B
NOZZLE O
SCALE: 1/1

DETAIL C
NOZZLE L
SCALE 1/1

DETAIL E
NOZZLE N
SCALE: ¼

QTY REQD GR3	GR2	GR1	ITEM	MODEL	PART NAME/DESCRIPTION	PART NO OR REF SPEC	MATL SPECIFICATION
2			01		HEAD, FLG & DISHED 48.00 O.D. ASME		SA-240 TYPE 304
1			02		LONG CYLINDER 47.25 O.D. x 3.00 LG		SA-240 TYPE 304
1			03		ROLLED CYLINDER 51.00 LG.		SA-240 TYPE 304
1			04		ROLLED CYLINDER 38.00 LG.		SA-240 TYPE 304
1			05		12.00-SCH 40S 2 in. LG PIPE		SA-312 TP 304
1			06		12.00 x 6.00 CONCENTRIC REDUCER 40S		SA 403 WP 304
1			07		LONG CONE 47.25 OD x 12.75 O.D x 44.00 LG.		SA-240 TYPE 304
4			08		LEG		SA-36
4			09		BASEPLATE		SA-36
8			10		SPACE		SA-36
4			11		PAD		SA-240 TYPE 304
1			12		REINFORCING PAD 25.00 O.D. x 13.00 I.D.		SA-240 TYPE 304
6			13		2.00-150 LB R.F. SOF		SA-182 F 304
1			14		8.00-150 LB R.F. SOF		SA-182 F 304
2			15		1.00-150 LB R.F. SOF		SA-182 F 304
1			16		6.00-150 LB R.F. SOF		SA-182 F 304
1			17		3.00-150 LB. R.F. SOF		SA-182 F 304
1			18		PAD 21.00 x 16.00 ELLIPSE		SA-240 TYPE 304
4			19		2.00-SCH 40S PIPE		SA-312 TP 304
1			20		8.00-SCH 40S PIPE		SA-312 TP 304
5			21		1.00-SCH 40S PIPE		SA-312 TP 304
1			22		.50-SCH 40S PIPE		SA-312 TP 304
1			23		1.00-3000 LB H.C.		SA-182 F 304
1			24		.75-3000 LB H.C.		SA-182 F 304
1			25		3.00-SCH 40S PIPE		SA-312 TP 304
1			26		1.00-SCH 40S BUTT WELD TEE		SA-403 WP 304
4			27		HANGER		SA-240 TYPE 304
1			28		1.00-SCH 40S 45° ELBOW		SA-403 WP 304
3			29		2.00-SCH 40S 45° ELBOW		SA-403 WP 304
1	A		30		8.06 O.D. x 7.50 I.D. / 7.25 SCREEN		304 S STL
1			31		SHORT CONE 12.750 O.D. x 7.500 O.D. x 7.2 LG.		SA-240 TYPE 304
1			32		1½ SCH. 40 PIPE		SA-312 TYPE-304
1			33		1½ x 5" DIA. PLATE		SA-240 TYPE 304
1			34		1½-150 LB R.F. SOF		SA-182 F 304
1			35		ROLLED PLATE .375 x 32 x 2.8		SA-240 TYPE 304
1			36		8"-150 LB. BL. FLANGE		SA-182-T304
1			37		3"-150 LB. BL. FLANGE		SA-182-T304
1			38		1½"-150 LB. BL. FLANGE		SA-182-T304
1			39		2"-150 LB. BL. FLANGE		SA-182-T304
1			40		1"-150 LB. BL. FLANGE		SA-182-T304

A. B.O. FR. JOHNSON UOP, ST. PAUL, MINNESOTA.
JOHNSON CIRCUMFERENTIAL REROLLED SCREEN
SLOT: .004
CONST: 63/156
FITTINGS: 11.875 DIA x 7.50 I.D. x .50 THK RING FLANGE EACH END.
FLOW: INSIDE TO OUTSIDE.

B. B.O. FR. JOHNS-MANVILLE, DENVER, CO.

NOTES
1. PENETRANT TEST FINAL SURFACE.
2. SHELL (ITEM 3 & 4) O.D. & OUT OF ROUNDNESS TOLERANCE TO BE WITHIN THE LIMITS OF SIZE OF THE HEADS (ITEM 1)
3. STEAM JACKET DESIGNED PER 1977 ASME CODE SECT. VIII, DIV 1 THRU SUMMER 1978 ADDENDUM. CODE STAMP IS REQUIRED. DESIGN P = 60 PSI DESIGN T = 300°F
4. ALL CARBON STEEL SURFACES SHALL BE PAINTED WITH 2 COATS OF DIMETCOTE STEEL PRIMER NO. 2. EACH COAT SHALL HAVE A NOMINAL THICKNESS OF 1.5 MILS TO 2 MILS.
5. STEAM JACKET SHALL BE HYDROTESTED IN ACCORDANCE WITH SECTION VIII DIV 1. HYDROTEST PRESSURE 85 PSIG.
6. ALL NOZZLES PROJECT 6.00 UNLESS NOTED.
7. FOR LEVEL PROBE STILL WELL DETAIL AND INSTALLATION SEE DWG. 1000-13A8

REMOVE EXIST. DAMAGED 2" FLG. & REPLACE WITH 2" 150 R.F. SOF 4" FROM TAN

REMOVE EXIST. MANHOLE & INSTALL PLATE 35

REMOVE EXIST. ½ BENT NOZZLE INSTALL NEW

FOR SUPPORT BASE SEE DWG. 1463F24

THIS DRAWING DEVELOPED FROM (W) NUCLEAR ENERGY SYSTEMS DWG. 1553E87

REVISIONS	DESCRIPTION	
	PER OFC. Ltr. LOG-130 TQ	
	REV. PER ECN # 1001	
	REV. PER ECN # 1048	

DESIGNED	Pudup	12-17-84
DRAWN	R Regen	
TRACED	R Regen	
CHECKED	Only	
ENGINEER	Pudup	
PROJECT ENGINEER		

Baselined

CEMENT SOLIDIFICATION SYSTEM DISPENSING VESSEL DETAIL & ASSEMBLY

900 C-520

Westinghouse Waste Technology Services Division
Madison, Pennsylvania 15663

CEMENT SOLIDIFICATION SYSTEM
DISPENSING VESSEL
DETAIL & ASSEMBLY

SPEC 571A32-A1
ENGINEERING RELEASE

DWG NO 1737E11 SHT 3

APPENDIX D-13

GENERAL ARRANGEMENT OF PROCESS BUILDING
(5 DRAWINGS)

15A-A-117

10/18/04 2:53:34 PM REPRO

STAIRWELL NOT FIRE RATED

OFFICE 41A-R-6

EQUIPMENT DECONTAMINATION ROOM

SOAKING PIT EL. 84'-0"

FIRE BARRIER

ACID RECOVERY PUMPS 15A-A-168

OFF GAS BLOWER CELL 15A-A-158

OFF GAS CELL 15A-A-158

CHEMICAL PROCESS CELL 15R-A-145

SCRAP REMOVAL

SRR AIRLOCK

RUD

AKPR AIRLOCK

STAIRWELL #3

STAIRWELL NOT FIRE RATED

PLYWOOD AIRLOCK

CPC VALVE PITS

LIQUID WASTE CELL 15A-A-156 EL. 92'-0"

MECHANICAL OPERATING AISLE

STAIRWELL #2

GAS CYLINDERS

EXTRACTION CELL 1 15A-A-147

EXTRACTION CELL 2 15A-A-149

EXTRACTION CELL 3 15A-A-151

LOWER WARM AISLE 15A-A-103

RAM EQUIPMENT ROOM

PROCESS MECHANICAL CELL

MSM REPAIR SHOP

SOUTH MSM (SHOP)

UTILITY ROOM 31R-A-5

CELL ACCESS AISLE

CRA CHANGE ROOM

PMC TRANSFER PORT

SNOOR

SRR HYD PUMP 2-Q-050

MECHANICAL OPERATING AISLE

MCC "B" 15EA

URANIUM PRODUCT CELL (15A-A-162)

PRODUCT PURIFICATION CELL (15A-A-163) NOTE 4 ON 15A-A-115

HEAD END FILTER HOUSE 15-A-Q-750

TRANSFORMER

WP# 69146

WP# 75681

PRODUCT PACKAGING AND SHIPPING 15R-A-171

AIR LOCK

URANIUM LOAD OUT ROOM EL. 96'-0"

STAIRWELL #1

FUEL RECEIVING & STORAGE

PCM ROOM DWG 900D-5274

NOTES FOR REV. 9
1. REVISED ARR'GT. FOR PPS.
2. ADDED LOCATING DIMENSIONS FOR CELLS.
3. AT NORTH END OF PMC, DELETED AIR LOCK DOORS.
4. ADDED MCC & CPC VALVE PITS AT WEST OF MOR.
5. REVISED OGC & AR CELLS TO AGREE WITH THE LATEST EQUIPT. ARR'GT. DWGS.
6. ADDED PLATFORM FOR ACCESS TO XCB & UPC.

NOTES FOR REV. 4
1. RELOCATED ACCESS DOOR TO U.R.
2. REV. OGC & AR CELL ARR'GT.
3. ADDED PARTITION FOR R.E.R.

FOR NOTES, SEE DWG. 15A-A-116

NO.	DATE	REVISIONS	BY	CHK'D	APP'D	CLIENT
13	11/04	ECN 25698	DP			
12	9/04	ECN 13504	LRO			
11	5/04	ECN 25421	DP			
10	3/04	ECN 13472	DP			
9	12/03	ECN 13392				
8	9/03	REV. ECN. 4227				
7	2/03	REVISED ADDED FIG NO.				
6		REVISED SCRAP REMOVAL DOOR TO AGREE WITH TRAILER ARRANGING				
5	7/02	REV. PER 1 & WEST END OF CPM, & PART OF C. & ECC-1 (NO CHANGE IN STAT				
4	7/02	SEE REV NOTE 4 ABOVE				
3	6/02	SEE REVISION NOTE 3 ABOVE.				
2	4/02	GEN. REVISION, ISSUED FOR CONSTR				
1	12/01	REDRAWN - ISSUED FOR REVIEW				

SCALE 1/8"=1'-0" ASSEMBLED DRAWN E.L.C.C.

BECHTEL CORPORATION
SAN FRANCISCO NEW YORK LOS ANGELES
ENGINEERING BY BECHTEL ASSOCIATES

NUCLEAR FUEL SERVICES, INC.
SPENT FUEL PROCESSING PLANT

GENERAL ARRANGEMENT PROCESS BUILDING PLAN AT ELEV. 100'-0"

BECHTEL | JOB NO. 4413 | DRAWING NO. 15A-A-117 | REV. 13

FIG. IV-2-6

GRAPHIC SCALE

VERIFY ALL DOCUMENTS FOR CURRENT ATTACHMENT AND EXISTENCE PRIOR TO ENTRIES
INIT. DATE

OFFICE BUILDING

STAIRWELL NOT FIRE RATED

CHEMICAL VIEWING AISLE
EL. 117'-0"

EQUIPMENT DECONTAMINATION ROOM
15A-A-174

ACID RECOVERY CELL
15A-A-159
CEL. 111'-6"

OFF GAS CELL
15A-A-149

CHEMICAL PROCESS CELL

STAIRWELL #3

EQUIPMENT DECON. ROOM AISLE

SAMPLE BLISTER

OPERATING PLATFORM

CHEMICAL OPERATING AISLE

EXTRACTION CELL 1

EXTRACTION CELL 2

EXTRACTION CELL 3

PRODUCT PURIFICATION CELL

VENTILATION WASH ROOM
15A-A-177

PROCESS MECHANICAL CELL

MECHANICAL CRANE ROOM
EL. 114'-0"

UTILITY ROOM

UPPER WARM AISLE
15A-A-166

LOWER EXTRACTION AISLE

INSTRUMENT SHOP

INSTRUMENT ROOM

VENTILATION SUPPLY ROOM
15A-A-180

SPACE FOR FUTURE OFFICES & LABORATORIES

GLOVE BOX 15V-52

GLOVE BOX 15V-44

STAIRWELL #1

ROOF

FIRE BARRIER

NOTES FOR REV. 4
1. ADDED INSTR. REPAIR ROOM, FUTURE AC SPACE, SAMPLE GLOVE BOX FOR UPC AND SAMPLE BLISTER FOR TYPE "D" REV. ARRAY OF O.G & A.R. CORRECTED N-S DIM. AT THE CORNER OF EQR.

FOR NOTES, SEE DWG. 15A-A-118

NOTES FOR REV. 3
1. ADDED LOCATING DIMENSIONS FOR CELLS.
2. ADDED INSTRUMENT ROOM
3. ADDED TYPE "C" SAMPLE BLISTER

B	10/18/04	ECN 25688	BP	MB			
7	3/19/03	REVISED	MB				
6	7/19/02	REV. RMA & STR. WALLS FM BOX 3 MCR & ADD'L EQR. DOORS & REMV SHAFT & TRS. T BAC	BCM		BP	MB	
5	7/19/02	REVISED & RE-COORDINATE OF SAMPLE BOX FROM 15-V-52 TO 15-V-44	ALC		MB	MB	
4	7/19/02	SEE REV. NOTE 4 ABOVE	C.C.	C	MB	MB	
3	7/19/02	SEE REVISION NOTE 3 (ABOVE)	C.C.	C	MB	EKS	
2	7/19/02	GEN. REVISION, ISSUED FOR CONSTR	E.S.		MB	CH	
1	7/19/02	REDRAWN-ISSUED FOR REVIEW		C	EKS		
No.	DATE	REVISIONS	BY	CHK	ENGR APPR.	DWG APP'D	DWG RELD

SCALE 1/8"=1'-0" | DESIGNED | DRAWN BP

BECHTEL CORPORATION
SAN FRANCISCO NEW YORK LOS ANGELES

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NUCLEAR FUEL SERVICES, INC.
SPENT FUEL PROCESSING PLANT

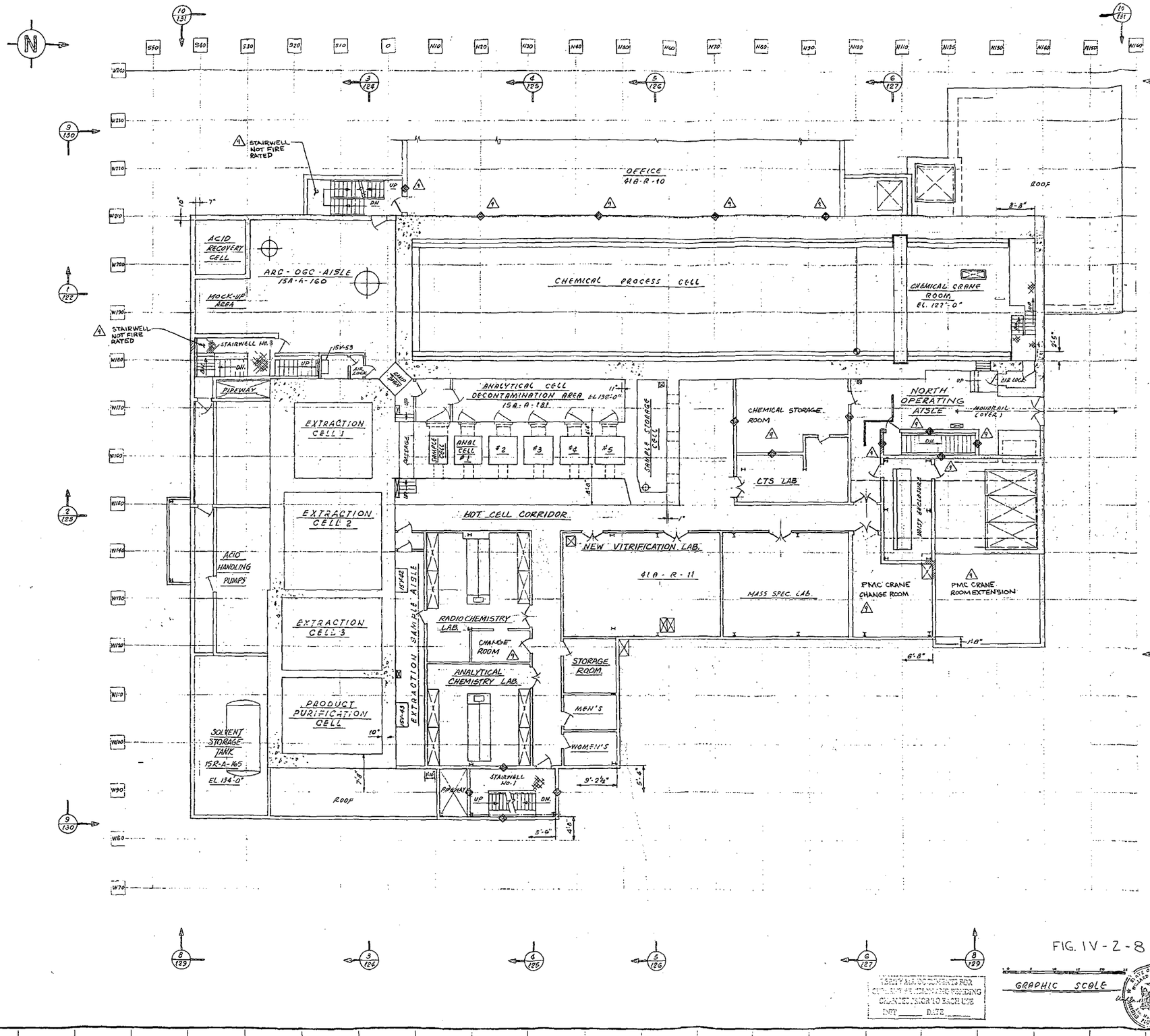
GENERAL ARRANGEMENT
PROCESS BUILDING
PLAN AT ELEV. 114'-6"

BECHTEL | JOB No. 4413 | DRAWING No. 15A-A-118 | REV. 8

FIG. IV-2-7

GRAPHIC SCALE

10/18/04 2:53:00 PM REPRO



NOTES FOR REV. 4
1. REV OGC ADD'GT AND ARR'G'T OF LAB., CORRECTED LOCATION DIM. AT N.E. CORNER OF PPC.

FOR NOTES, SEE DWG. 15A-A-115

NOTES FOR REV. 3
1. ADDED LOCATING DIMENSIONS.
2. REARRANGED SAMPLE STORAGE CELL & CHEM. LAB.
3. REVISED OGC & AR CELLS TO AGREE WITH EQUIPT ARR'GT DWGS.
4. ADDED PLATFORMS FOR CCR.

No.	DATE	REVISIONS	BY	CHK'D	ENGR. APPR'L	ENGR. DEPT'L	CLIENT
9	10/18/04	ECN 25688	BP	MG			
8	3/29/04	REV/ECN 3720	PD	KQ			
7	9/9/03	REVISED PER ECN 3620	AN.	BP			
6	10/1/01	ADDED ACID HANDLING PUMPS	JR				
5	7/2/01	REV. WEST END OF 337 STAIRWELL NO. 3, ORDER LIST & ECN.	GEM	RPC			
4	9/9/99	SEE REV. NOTE 4 ABOVE	C.C.	C			
3	4/6/99	SEE REVISION NOTE 3 ABOVE	CC	C			
2	11/6/98	GEN. REVISION ISSUED FOR CONSTR	C.C.	C			
1	7/16/98	REDRAWN AND ISSUED FOR REVIEW	GCM	C			

SCALE 1/8"=1'-0" | DESIGNED | DRAWN GCM

BECHTEL CORPORATION
SAN FRANCISCO NEW YORK LOS ANGELES

ENGINEERING BY
BECHTEL ASSOCIATES

NUCLEAR FUEL SERVICES, INC.
SPENT FUEL PROCESSING PLANT

GENERAL ARRANGEMENT PROCESS BUILDING PLAN AT ELEV. 131'

JOB NO. 4413 | DRAWING NO. 15A-A-119 | REV. 9

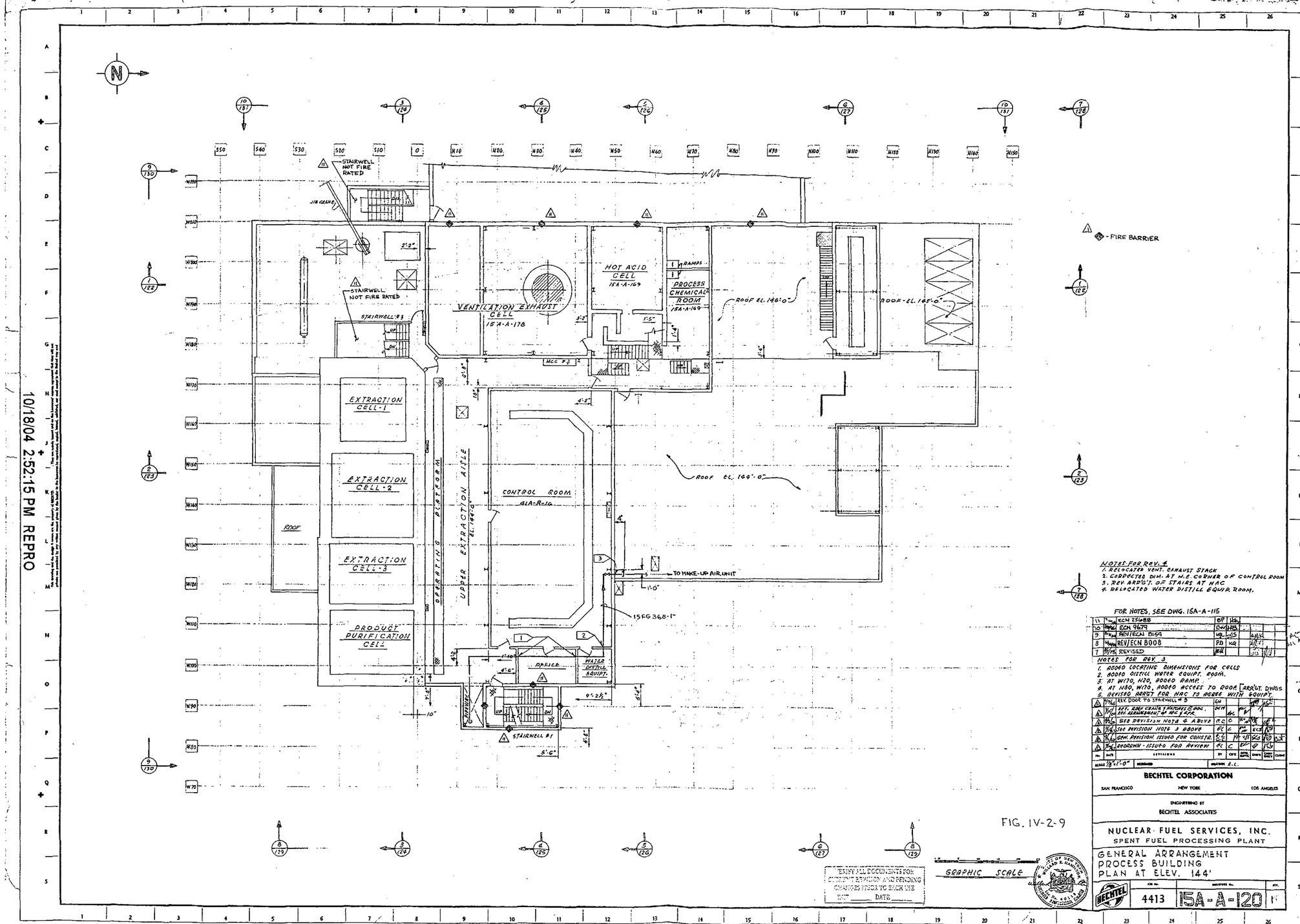
FIG. IV-Z-8

GRAPHIC SCALE 0 5 10 15 20 25

SATISFACTORY PRINTS FOR CONSTRUCTION TO EACH USE
INIT. _____ DATE _____

10/18/04 2:52:41 PM REPRO

15A-A-120



NOTES FOR REV. 4
1. RELOCATED VENT. EXHAUST STACK
2. CORRECTED DIM. AT N.E. CORNER OF CONTROL ROOM
3. REV. ARR'GT. OF STAIRS AT HAC
4. RELOCATED WATER DISTILL EQUIP. ROOM.

FOR NOTES, SEE DWG. 15A-A-115

11	7/14/86	ECN 25688	BP		
10	4/14/86	ECN 9679	CW	HB	
9	4/14/86	REV/ECN 8154	MR	JS	
8	4/14/86	REV/ECN 8008	PD	KR	
7	4/1/78	REVISED			

NOTES FOR REV. 3
1. ADDED LOCATING DIMENSIONS FOR CELLS
2. ADDED DISTILL WATER EQUIPT. ROOM.
3. AT W170, N20, ADDED RAMP.
4. AT N80, W170, ADDED ACCESS TO ROOF [ARR'GT. DWGS
5. REVISED ARR'GT FOR HAC TO AGREE WITH EQUIPT.

6	4/14/86	REV. DOOR TO STAIRWELL # 3	GW				
5	7/1/86	REV. ROOF CRANE & HATCHES @ ROOF. REV. ARRANGEMENT OF HAC & AFR.	GCW				
4	4/1/86	SEE REVISION NOTE 4 ABOVE	CC	C			
3	4/1/86	SEE REVISION NOTE 3 ABOVE	EL	C			
2	4/1/86	GEN. REVISION ISSUED FOR CONSTR.	EL	C			
1	7/1/86	REDRAWN - ISSUED FOR REVIEW	EL	C			
	DATE	REVISIONS	BY	CHK	APPD.	DWG	CHKD

SCALE 1/8"=1'-0" DESIGNED DRAWN E.L.

BECHTEL CORPORATION
SAN FRANCISCO NEW YORK LOS ANGELES

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NUCLEAR FUEL SERVICES, INC.
SPENT FUEL PROCESSING PLANT

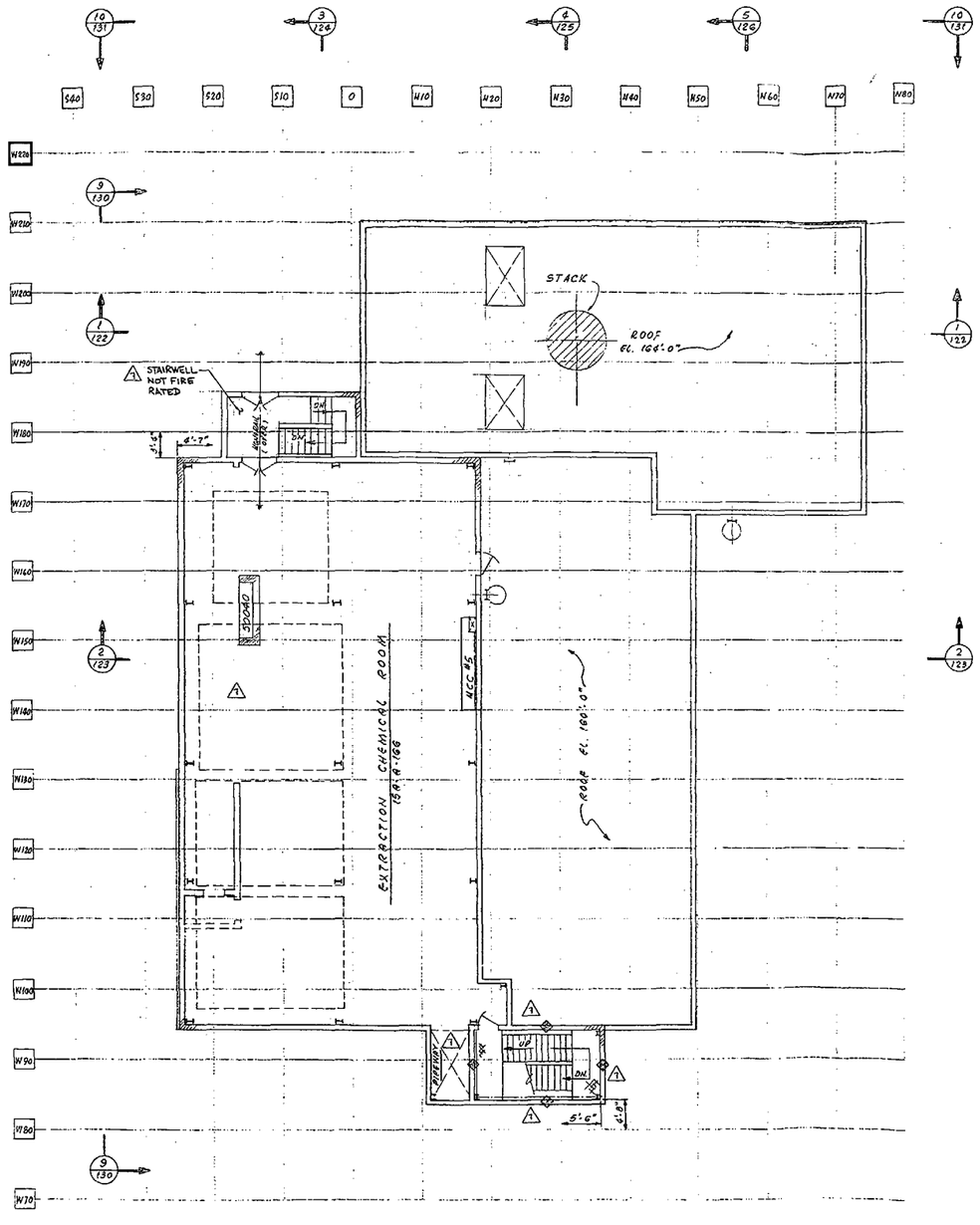
GENERAL ARRANGEMENT
PROCESS BUILDING
PLAN AT ELEV. 144'

BECHTEL JOB No. 4413 DRAWING No. 15A-A-120 REV. 1

FIG. IV-2-9

EXIST ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT ____ DATE ____

10/18/04 2:52:15 PM REPRO



FIRE BARRIER

FOR NOTES, SEE DWG. 15A-A-115

NOTES FOR REVISION

1. ADDED LOCATING DIMENSIONS
2. ADDED PULSER AISLE

No.	Date	Revisions	By	Chk'd	Engr'g Approval	Date	Client
7	10/18/04	ECN 25688	BP				
6	10/7/04	ADDED SOUTH GLOVE BOX	JK				
5	9/30/04	REV. ROOF EL. 164'-0" TO EL. 168'-0" ADD. LADDER	JK				
4	9/16/04	RELOCATED AIR LOCK FOR P&A	CC	C			
3	7/30/04	SEE REVISION NOTE 3 ABOVE	EG	C			
2	7/1/04	GEN REVISION. ISSUED FOR CONSTR.	EG	C			
1	3/19/04	REDRAWN - ISSUED FOR REVIEW	EC	C			

Scale 1/8"=1'-0" | Designed | Drawn

BECHTEL CORPORATION

SAN FRANCISCO NEW YORK LOS ANGELES

ENGINEERING BY
BECHTEL ASSOCIATES

NUCLEAR FUEL SERVICES, INC.
SPENT FUEL PROCESSING PLANT

GENERAL ARRANGEMENT
PROCESS BUILDING
PLAN AT ELEV. 160'

BECHTEL | Job No. 4413 | Drawing No. 15A-A-121 | Rev. 7

FIG. IV-2-10

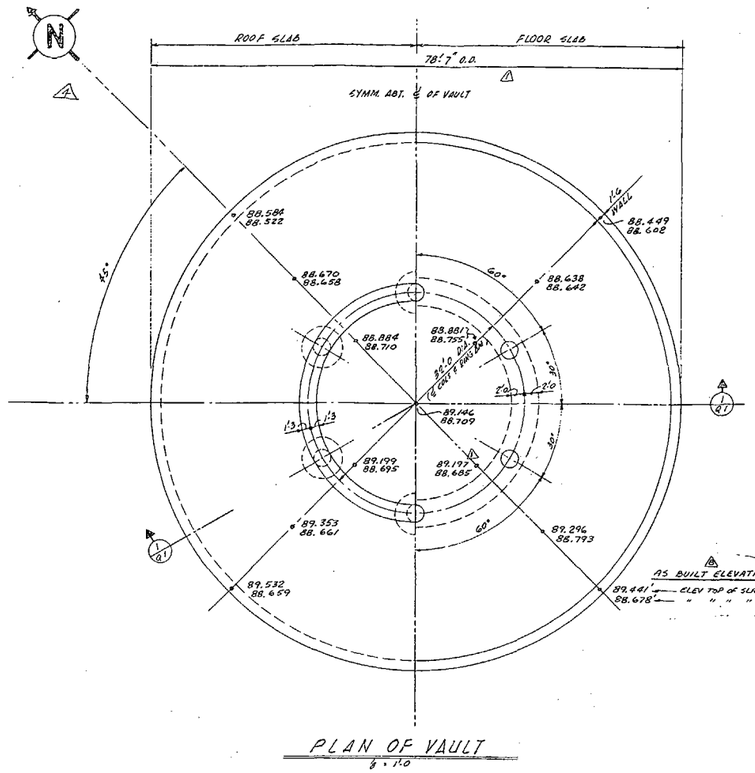
GRAPHIC SCALE

NOTICE: ALL DOCUMENTS FOR CONSTRUCTION TO REMAIN SUBJECT TO AGREEMENT DATED ____ DATE ____

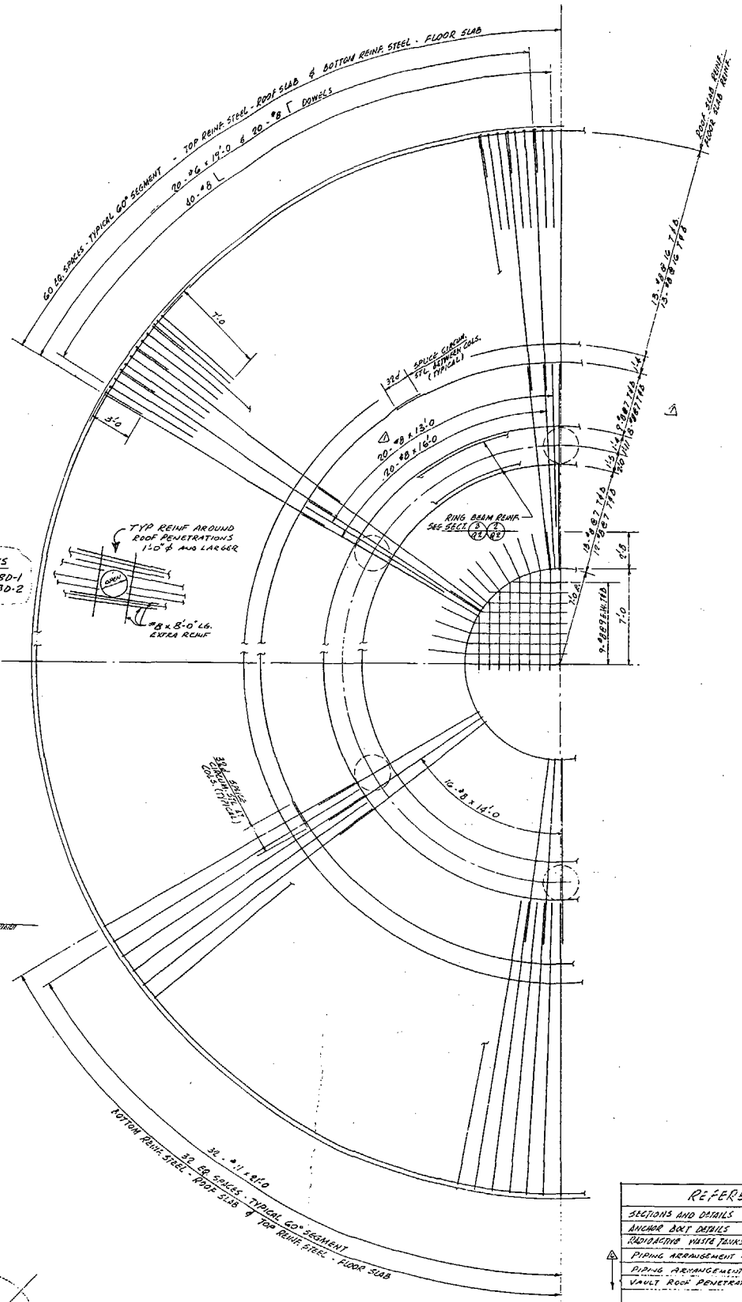
10/18/04 2:51:46 PM REPRO

APPENDIX D-14

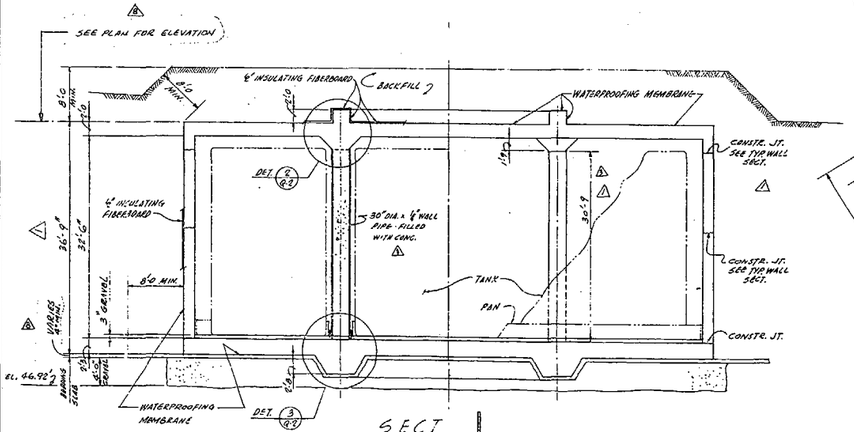
WASTE TANK FARM SECONDARY CONTAINMENT DRAWINGS
(8 DRAWINGS)



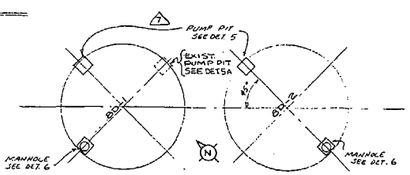
PLAN OF VAULT
½ = 1'-0



REINFORCING PLAN
½ = 1'-0



SECT.
½ = 1'-0



KEY PLAN
FOR ROOF PENETRATIONS SEE DWGS 8A-L-1, 2 & 3

LIST OF MATERIAL *

ITEM	QUAN.	DESCRIPTION	ORDER Nº
1	1333	CU. YDS. - CONCRETE (3750 PSI - TYPE P) FOR VAULT	FIELD
2	80	CU. YDS. - CONCRETE (2500 PSI) FOR BEDDING SLAB	FIELD
3	1 LOT	REINFORCING STEEL A-432 △1 Nº 3 6 8 11 LBS △2 33360 154700 61600	15Q-5
4	5000	LBS - ⅝ϕ SPIRAL - 3" PITCH △3 △2 (USED CONC. FOR ITEM 1)	15Q-5
5	82	CU. YDS. PEA GRAVEL PER NOTE 15	FIELD
6	6	31" O.D. x 6" THICK x 8" BAR STEEL RING	FIELD
7	6	30" DIA. PIPE COLUMNS - ½" THK. WALL - 30'-9" LG.	FIELD
8	1 LOT	WATERPROOFING MEMBRANE - "PERMACEL" 306 POLYVINYL CHLORIDE SHEET) 8 MIL x 58" WIDE	FIELD
9	1 LOT	6" THICK INSULATING FIBERBOARD	FIELD
10	1 LOT	ADHESIVE - FOR APPLICATION OF WATERPROOFING MEMBRANE AND FIBERBOARD	FIELD
11	1 LOT	4 LB SOFT LEAD FLASHING	FIELD
12	1 EA.	C.S. HATCH FRAME & COVER FRAME PER DET. 5	FIELD
13	1 EA.	C.S. MANHOLE FRAME & PLUG FRAME PER DET. 6	FIELD

* LIST OF MATERIAL SHOWN ABOVE IS FOR ONE VAULT. TWO VAULTS ARE REQUIRED.

GENERAL NOTES

1. DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH SPECIFICATION 4813-Q-2
2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH AT AGE OF 28 DAYS AS INDICATED ON LIST OF MATERIAL. △
3. CONCRETE COVERAGE (CLEAR) FOR MAIN REINFORCEMENT UNLESS OTHERWISE NOTED.
   a) CONCRETE POURED AGAINST EARTH = 3"
   b) CONCRETE POURED AGAINST CONSTRUCTION SLAB = 2"
   c) FORMED SURFACES EXPOSED TO WEATHER OR GROUND = 2"
   d) FORMED SURFACES NOT EXPOSED TO WEATHER OR GROUND = 1½"
4. ALL EXPOSED EDGES OF CONCRETE SHALL HAVE 1-INCH CHAMFER.
5. ELEVATIONS OF FOUNDATIONS AND STRUCTURES ARE GIVEN TO A DATUM OF 100.00' WHICH IS THE PLANT DATUM. ACTUAL ELEVATION OF PLANT DATUM IS 1415.00'.
6. ALL ANCHOR BOLTS SHALL BE IN ACCORDANCE WITH DRAWING D-Q-510. ALL ANCHOR SLEEVES SHALL BE FILLED WITH GROUT.
7. CONSTRUCTION JOINT DETAILS (SEE SPEC. Q-2 PARAGRAPH 10.7) AND LOCATIONS AS SHOWN ARE CRITICAL AND SHALL NOT BE CHANGED EXCEPT BY ENGINEERING. BOTTOM SLAB, WALLS, AND TOP SLAB SHALL EACH BE POURED IN COMPLETE UNITS WITHOUT CONSTR. JOINTS EXCEPT AS DETAILED. △
8. FOR THE CONSTRUCTION JOINT BETWEEN WALL AND ROOF, THE CONSTRUCTION JOINT TREATMENT AS DETAILED IN SPEC. Q-2 SHALL BE APPLIED FOR 7 DAYS AFTER THE WALLS ARE POURED, AND REPEATED FOR 2 DAYS IMMEDIATELY BEFORE THE ROOF IS POURED.
9. CURING SHALL BE ACCOMPLISHED BY THE USE OF WATER SPRAY OR WET BURLAP KEEPING THE CONCRETE CONTINUOUSLY WET FOR SEVEN DAYS AFTER PLACEMENT. NO CURING COMPOUND MAY BE USED. HEAVY LOADS MUST NOT BE PLACED ON OR MOVED ACROSS SLABS UNTIL CURING IS COMPLETED.
10. FOR WATERPROOFING CONSTRUCTION SEE NOTE 14.1 SPEC. Q-3. △2
11. ALL GROUT SHALL BE COMPOSED OF THE FOLLOWING MIX AND PROPORTIONS △

1 PART VIBRO-FOIL (A.G. HORN CO.)	100 LBS.	MAKE 3 CU. FT.
1 PART PORTLAND CEMENT	1 SACK	
1 PART CONCRETE CLEAN SAND	100 LBS	
1¼ PARTS OF ½" PEA GRAVEL	150 LBS	

SEE DWG. 8A-Q-2 FOR CONT. GENERAL NOTES.

No.	DATE	REVISIONS	BY	CHK.	APP'D	DWG.	CHG. ORD.	CLIENT
△ 1/16	10/18/04	CHANGED POSITION OF MANHOLE FROM DET. 5 TO DET. 6 ON SHT. 1	G.P.					
△ 2 thru 5	10/18/04	ADDED KEY PLAN, REVISED DET. 6 FROM 8'-0" DIA. TO 6'-0" DIA. REC. SHAFT, & DETAIL 5A TO SUIT.	MGK	MGK				
△ 6	9/14/04	ADDED ITEM #5 @ 1/4	PT	MGK	MGK			
△ 7	9/14/04	ADDED NORTH ARROW	PT	MGK	MGK			
△ 8 thru 11	9/14/04	REV. & REVISED WALL ON SECT. REV. COST ESTIMATE & ADDED GENERAL NOTES.	GCM	MGK	MGK			
△ 12	9/14/04	REV. 4 & 5 & ADDED GENERAL NOTES.	PT	MGK	MGK			
△ 13	9/14/04	REV. HEIGHT & SIZE OF PANEL & REVISED GENERAL NOTES 1 & 3 GENERAL NOTES & ADDED NEW GENERAL NOTE 10	PT	PVB	MGK			
△ 14	9/14/04	ISSUED FOR APPROVAL	PT	MGK	MGK			

SCALE 1/2 = 1'-0" | DESIGNED GCM | DRAWN MGK

BECHTEL CORPORATION
NEW YORK SAN FRANCISCO LOS ANGELES

ENGINEERING BY
BECHTEL ASSOCIATES

NATURAL FUEL SERVICE INC.
BREW TAVERN PT. CROSSING PLANT

PLANS
VAULT FOR 8D-1 & 8D-2

BECHTEL | JOB No. 4413 | DRAWING No. 8A-Q-1 | REV. 8

REFERENCE DRAWINGS

SECTIONS AND DETAILS	8A-Q-2
ANCHOR BOLT DETAILS	D-Q-510
FOUNDATION WATER TANKS BD-1 & BD-2	8A-D-3
PIPING ARRANGEMENT - PROCESS PIPING	8A-L-1
PIPING ARRANGEMENT - UTILITY PIPING	8A-L-2
VAULT ROOF PENETRATIONS	8A-L-3

No.	DATE	REVISIONS	BY	CHK.	APP'D	DWG.	CHG. ORD.	CLIENT
△ 1	9/16/04	ADDED AS BUILT ELEVATIONS TO PLAN. REVISED SEC. 1 TO SUIT.	MGK					

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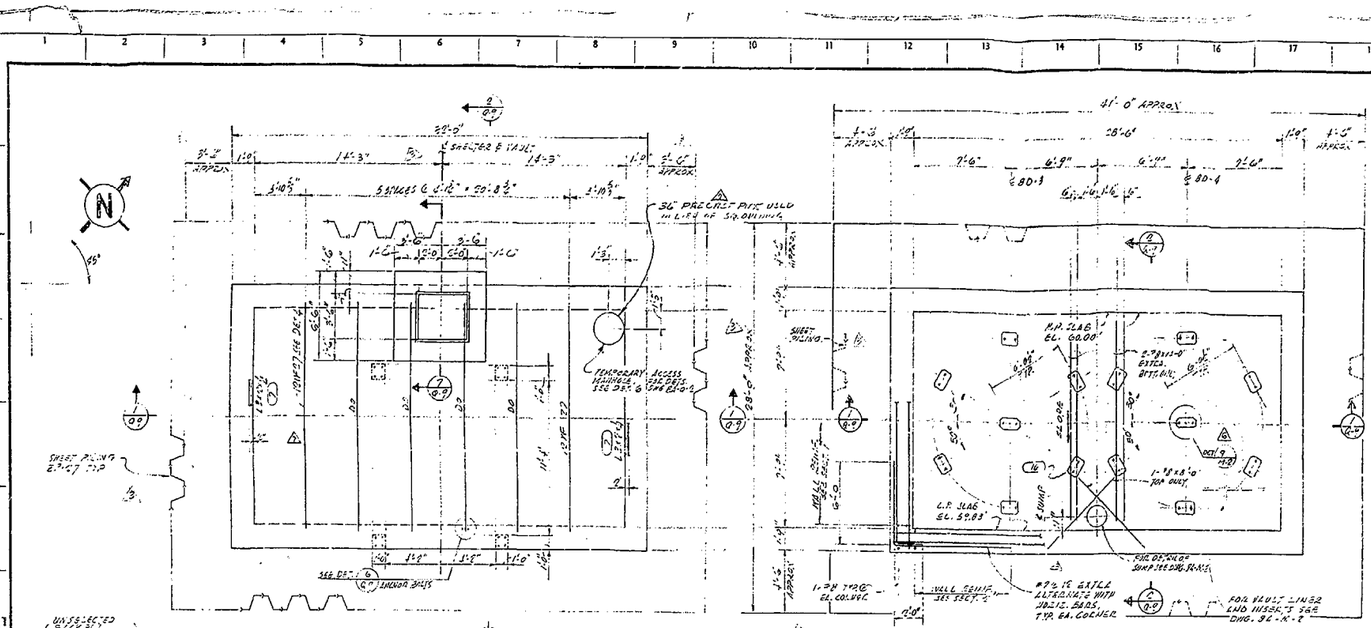
10/18/04 3:20:03 PM blueprint, repro

CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT_____ DATE_____

8A-Q-9



LIST OF MATERIAL

ITEM	QUAN.	DESCRIPTION	SPEC. NO.
1	85	CU. YDS. CONCRETE (3750 PSI) FOR BOT. SLAB	FIELD
2	14	SQ. YDS. CONCRETE PAVEMENT SLAB (6" THICK)	4SED
3	1.10T.	STRUCTURAL STEEL: MB | S | C | WT | L | PL; LBS | MB | S | C | WT | L | PL	15G-5
4	1.10T.	WATERPROOFING MEMBRANE 3 PLY (15 LB. FELT OR UNDRIED ASPHALT) MOPPED ON 1 1/2 LB. PER SQUARE YD.	FIELD
5	1.20T.	6" THICK INSULATING FIBERBOARD	FIELD
6	1.10T.	APPLY 2 PLY WATERPROOFING MEMBRANE FOR BOTTOM SLAB	FIELD
7	1.20T.	FABRICATED STRUCTURAL STEEL	15M-6
8	1.20T.	DECKING 20 GA. TYPE OR EQUAL WITH PLASTIC OR NEOPRENE CLOSURE & WELDING WASHERS	FIELD
9	24	3/4" (+A) x 12" (L) I.G. TYPE 2 ANCHOR BOLT WITH 1 CAPER NUT	15D-6
10	12	8'-0 VESSEL SUPPORT PER DET 3	15M-12
11	135	CU. YDS. CONCRETE (3000 PSI) FOR WALLS	FIELD
12	45	CU. YDS. CONCRETE (3750 PSI) FOR TOP SLAB	FIELD

GENERAL NOTES

1. FOR LOCATION OF VAULT SEE DWG. 40-R-1-27
2. FOR ADDITIONAL GENERAL NOTES SEE DWG. 8A-Q-1.
3. WALL BACKFILL MAY BE PLACED WITHOUT TOP SLAB IN PLACE. NO PUMPING OF GROUND WATER REQUIRED TO PREVENT FLOTATION OF VAULT.
4. Concrete Strengths
   - Bottom Slab f'_c = 3750 PSI
   - Walls f'_c = 5000 PSI
   - Top Slab f'_c = 3750 PSI

REFERENCE DRAWINGS

PAVING, GRADING & UNDERGROUND LINES	10A-S-27
PLANT - VAULT FOR 8D-1 & 8D-2	8A-Q-1
ANCHOR BOLT DETAILS	D-Q-510
PLAN & DETAILS - METAL LINER & INSERTS	8A-M-9
CON-ED WASTE STORAGE TANKS 8D-3 & 8D-4	8A-D-6
LIQUID WASTE STORAGE PIPING PLAN	
CONCRETE BLOCK ENCLOSE AT CON-ED VAULT	8B-M-8

ROOF PENETRATIONS NOT SHOWN SEE 8A-L-12

MK	DATE	REVISIONS	BY	CHK	ENGR	PROJ ENGR
4	9/14	AS BUILT INFORMATION ADDED INCL. FIBER BOARD, SHIELDING PLUG ANCHOR	VEC			
3	7/14	ADDED CENTER SUMP AT FENCE PER ECO-2237.	MW			
2	6/14	REVISED NOTE 6 & 4 PLAN	MW			
1	11/13	ADDED #6 STIRRUPS TO WALL IN SECT. 1 - ADDED NOTE 1	GJ			
3	11/13	NOW SHOW SECT. 7 ADDED PENETRATIONS PLAN - ADDED SECT. 7, DET. 8 & SEE 2ND DET. SHEET 1 & 2 & SEE 1ST SHEET FOR REVISED NOTE 3	VEC			
2	10/13	ADDED INFORMATION ON WELDING WASHER, ANCHOR BOLTS - NOT FOR CONSTRUCTION	MW			
1	7/13	ISSUED FOR COMP. SLAB & WALLS ONLY - HOLD ON CONC. ON LID &	MW			
0	4/13	ISSUED FOR CONSTRUCTION	SCA			

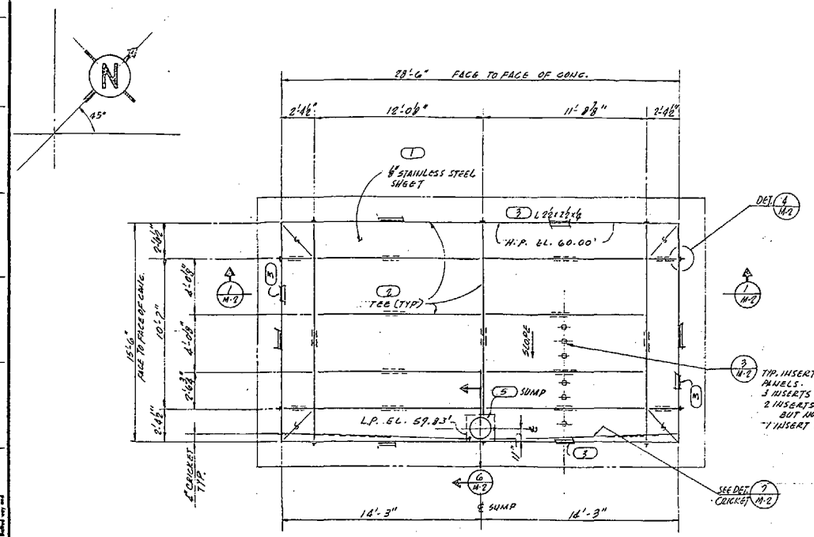
SCALE 1" = 1'-0" (2:1 ADDITION) DESIGNED R.M.S. / M.E.W. DRAWN G.C.W.

BECHTEL CORPORATION
SAN FRANCISCO NEW YORK LOS ANGELES
VP. 4413-15-M-6634-7
ENGINEERING BY
BECHTEL ASSOCIATES

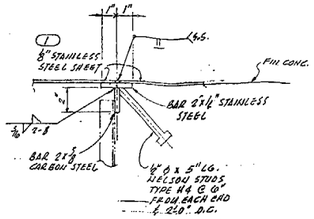
NUCLEAR FUEL SERVICES, INC.
SPENT FUEL PROCESSING PLANT

PLAN, SECTIONS & DETAILS
VAULT FOR 8D-3 & 8D-4 (EWO 92)

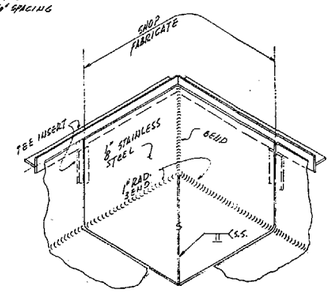
BECHTEL | JOB NO. 4413 | DRAWING NO. 8A-Q-9 | REV. 7



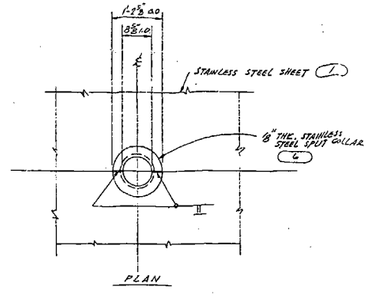
PLAN



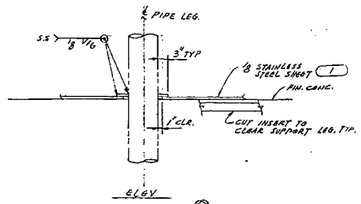
DETAIL 4 (2)
NO SCALE



DETAIL 5
NO SCALE

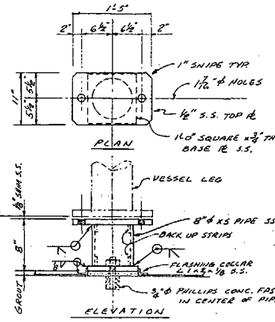


PLAN



ELEV

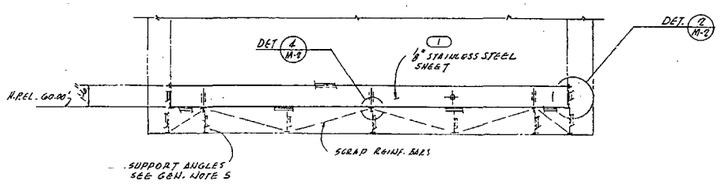
DETAIL 8
TYP VESSEL SUPPORT LEGS PENETRATION DETS.
(PERIMETER LEGS)



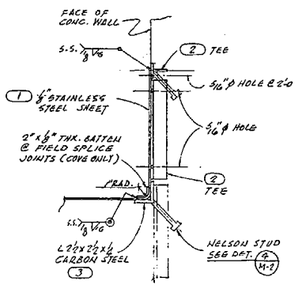
ELEVATION

NOTE: FOR INSTALLATION SEQUENCE, SEE DET 9, DWG 8A-Q-7.

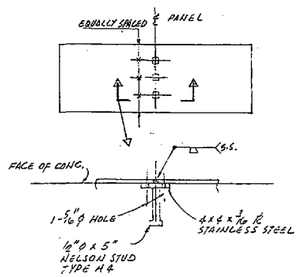
DETAIL 9 (A)
VESSEL CENTER SUPPORT & FLASHING DETAIL



SECTION 1

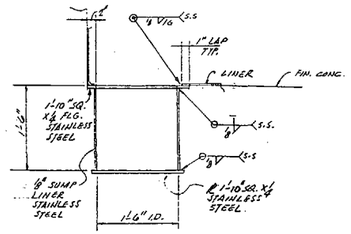


DETAIL 2
½" = 1'-0"

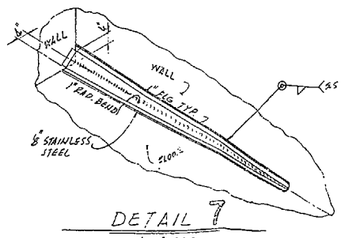


TYP INSERT PLUG WELD FOR WALL & FLOOR LINERS

DETAIL 3
NO SCALE



SECTION 6
½" = 1'-0"



DETAIL 7
NO SCALE

LIST OF MATERIAL

ITEM	QUAN.	DESCRIPTION	ORDER NO.
1	1 LOT	16" THK. STAINLESS STEEL SHEET LINER	15M-1
2	255	LIN. FT. TEE PER DET. 4 (STAINLESS STL.)	15M-14
3	88	LIN. FT. L 2½x2½x¼ PER DET. 2 C.S.	15M-14
4	30	INSERTS PER DET. 3 (STAINLESS STL.)	15M-14
5	1	SUMP LINER PER SECT. 6 (STAINL. STL.)	15M-14
6	12	STAINLESS STEEL COUCHES PER DET. 8	15M-1
7	2	S.S. SUPPT LEGS & FLASHING PER DET. 9.	—

GENERAL NOTES

1. STAINLESS STEEL SHALL BE TYPE 304 L, TYPE 2D FINISH.
2. ALL WELDS SHALL BE ⅛" EXCEPT AS NOTED.
3. ALL WELDING SHALL BE IN ACCORDANCE WITH APPLICABLE PORTIONS OF THE AWS CODE AND PARAGRAPH 4 OF SPECIFICATION 4613-C-2.
4. ALL SHARP EDGES OF SHEARED PLATES SHALL BE GROUND OFF. ALL WELDS WHICH PROJECT ABOVE FINISHED SURFACES SHALL BE GROUND SMOOTH.
5. SUGGESTED METHOD OF SUPPORTING FRAMING MEMBERS PROVIDES FLEXIBILITY IN ALIGNING MEMBERS FOR USE AS SCREEDS, MEMBERS MAY BE CLAMPED TO SUPPORT ANGLES PRIOR TO WELDING TO INSURE PROPER ALIGNMENT. SUGGESTED SIZE OF SUPPORTS L 2 x 2 x ¼, SUGGESTED SPACING, SIX FEET. ADDITIONAL POSTS & BRACING SHOULD BE PROVIDED IF REQUIRED TO INSURE RIGIDITY & ALIGNMENT OF FRAMING.
6. LINER FABRICATION TO BE COMPLETELY SEAL WELDED UNLESS OTHERWISE SHOWN ON DWG.
7. —5— INDICATES SHOP WELD.

REFERENCE DRAWINGS

PLAN, SECTS. & DETS. VAULT FOR 8D-3 & 8D-4	8A-Q-7

NO.	BY	DATE	APPD.	CHK'D	CUSTOM
2	WCR	6/4/64			
1	WCR	5/4/64			
0	GCH	4/1/64			

1 5/4/64 ADDED DET. 9 PER ECO-277 WCR GCH
2 6/4/64 ISSUED FOR CONTRACTION OF DESIGN-END "E". ADDED DETS. 7 AND 8 ON DRAWING. WCR WCR
0 4/1/64 ISSUED FOR CONSTRUCTION GCH RPC

REVISIONS

SCALE 1/2"=1'-0" UNLESS NOTED DESIGNED DRAWN GCH

BECHTEL CORPORATION

SAN FRANCISCO NEW YORK LOS ANGELES

ENGINEERING BY
BECHTEL ASSOCIATES

NUCLEAR FUEL SERVICES, INC.
SPENT FUEL PROCESSING PLANT

PLAN AND DETAILS METAL LINER AND INSERTS VAULT FOR 8D-3 AND 8D-4

JOB NO.	DRAWING NO.	REV.
4413	8A-M-2	2

10/18/04 8:04:43 PM REPRO

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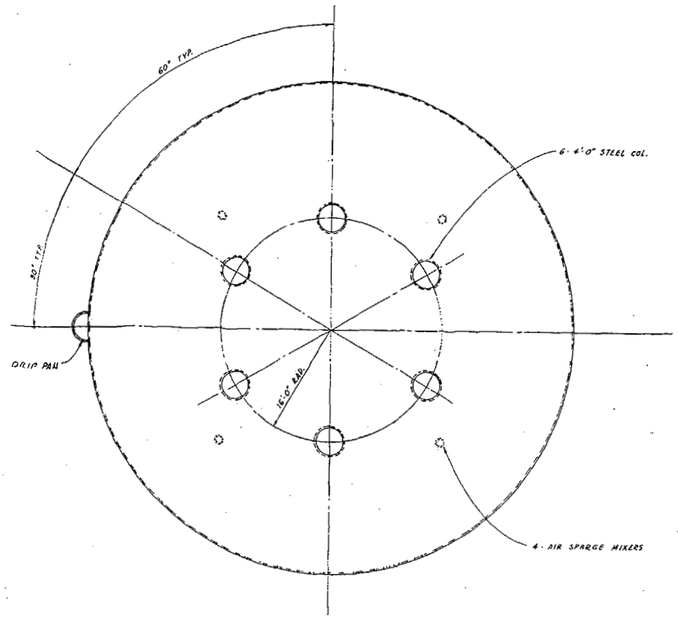


ROOF PLAN

DESIGN NOTES

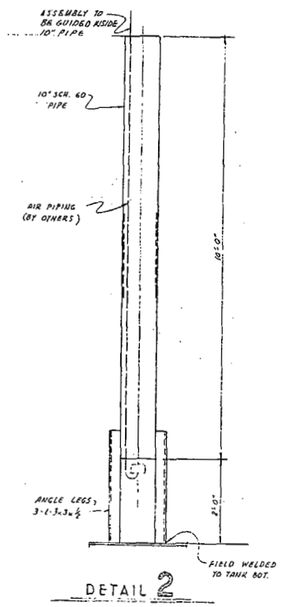
1. NORMAL OPERATING PRESSURE AT 250°F ---- ATMOSPHERIC.
2. DESIGN PRESSURE AT 500°F ---- 6 PSIG INTERNAL AT TOP OF TANK.
3. DESIGN CAPACITY ---- 80% FULL.
4. SPECIFIC GRAVITY OF CONTENT ---- 1.6.
5. NOMINAL TOTAL CAPACITY ---- 750,000 GALS.
6. ACTUAL TOTAL CAPACITY ------ 760,000 GALS.
7. INTERNAL COL. LOAD FOR VAULT 200# CONST. --- 40,000 LBS./COL.
8. TANKS SHALL CONFORM TO SPECIFICATION 6013-D-1 "RADIOACTIVE WASTE STORAGE TANKS."
9. TANKS SHALL BE DESIGNED FOR ANY OF THE FOLLOWING OPERATING CONDITIONS WHICHEVER GOVERNS.

CONDITION	1	2	3
INTERNAL PRESSURE PSIG	6	6	6
% FULL	80	80	40
SPECIFIC GRAVITY, LIQUID	1.6	1.0	1.6

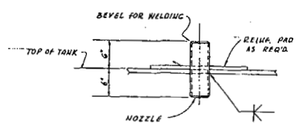
10. PERLITE INSULATION SHALL BE FURNISHED BY THE TANK FABRICATOR AND IT SHALL BE HIS RESPONSIBILITY TO PROTECT IT FROM WETTING DURING CONSTRUCTION PRIOR TO STAGE RELIEVING.
11. FOR NOZZLE ORIENTATION AND DETAILS SEE DWGS. 8A-D-5 & 8A-D-6.

NOZZLE DATA

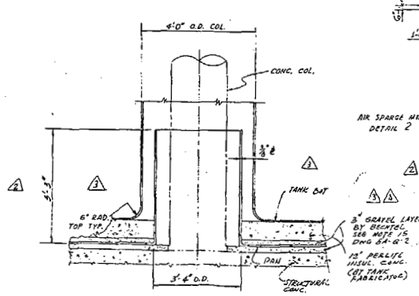
NOZZLE	SIZE	NO. REQ'D	MATT.	SERVICE	REMARKS
N-1	8"	1	C.S.	D1, C1, PAN, P2	
N-2	1½"	6	C.S.	T2	
N-3					
N-4					
N-5					
N-6					
N-7	6"	4	C.S.	SERVICE AIR & DISTRIBUTOR	
N-8	1½"	1	C.S.	T1 (LOCAL)	
N-9	2"	1	C.S.	FROM GENERAL PURPOSE EVAPORATOR	
N-10	2"	1	C.S.	FROM 8D-6	
N-11	2"	1	C.S.	DISCH. FROM PAN	
N-12	2"	1	C.S.	SPARE	
N-13	3"	1	S.S.	FROM 7D-4 & 7D-10	
N-14	3"	1	S.S.	SPARE	
N-15	8"	1	C.S.	VENT	
N-16					
N-					
N-					
N-					
N-					
N-					
N-1	24"	1	C.S.	MANWAY & PUMP OUT	SIM. TO NOZZLE



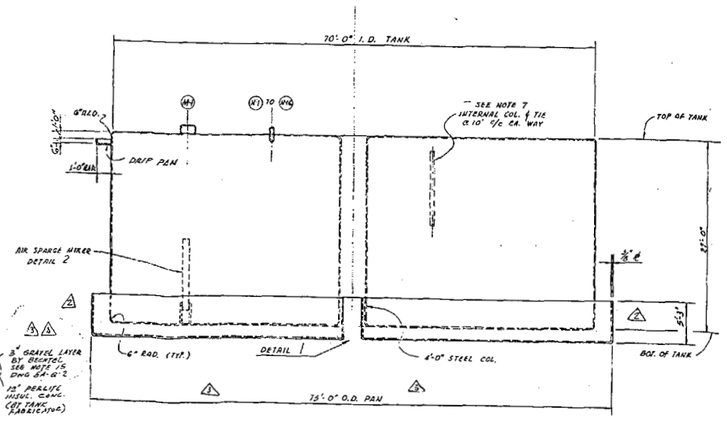
DETAIL 2
4 REQ'D.



NOZZLE DETAIL



DETAIL 1



ELEVATION

MK	DATE	DESCRIPTION	DCM	CHK	APP
4	10/04	REVISED COLLECTED NOZZLE DATA ADDED CONCRETE TOPPING TO PERLITE SEE NOTE 12 & REVISED NOTE 9 TO ADDED NOTE 9/D REVISED NOTES 10 & 11 ADDED NOTE 11 REV. PDT. & PAN @ ELEVATION	MM	MM	MM
3	10/03	ISSUED FOR CONSTRUCTION	MM	MM	MM
2	10/02	ISSUED FOR APPROVAL & CONSTRUCTION	MM	MM	MM

DRAWN: [illegible] | TRACED: [illegible]

BECHTEL NATIONAL, INC.

SAN FRANCISCO NEW YORK LOS ANGELES

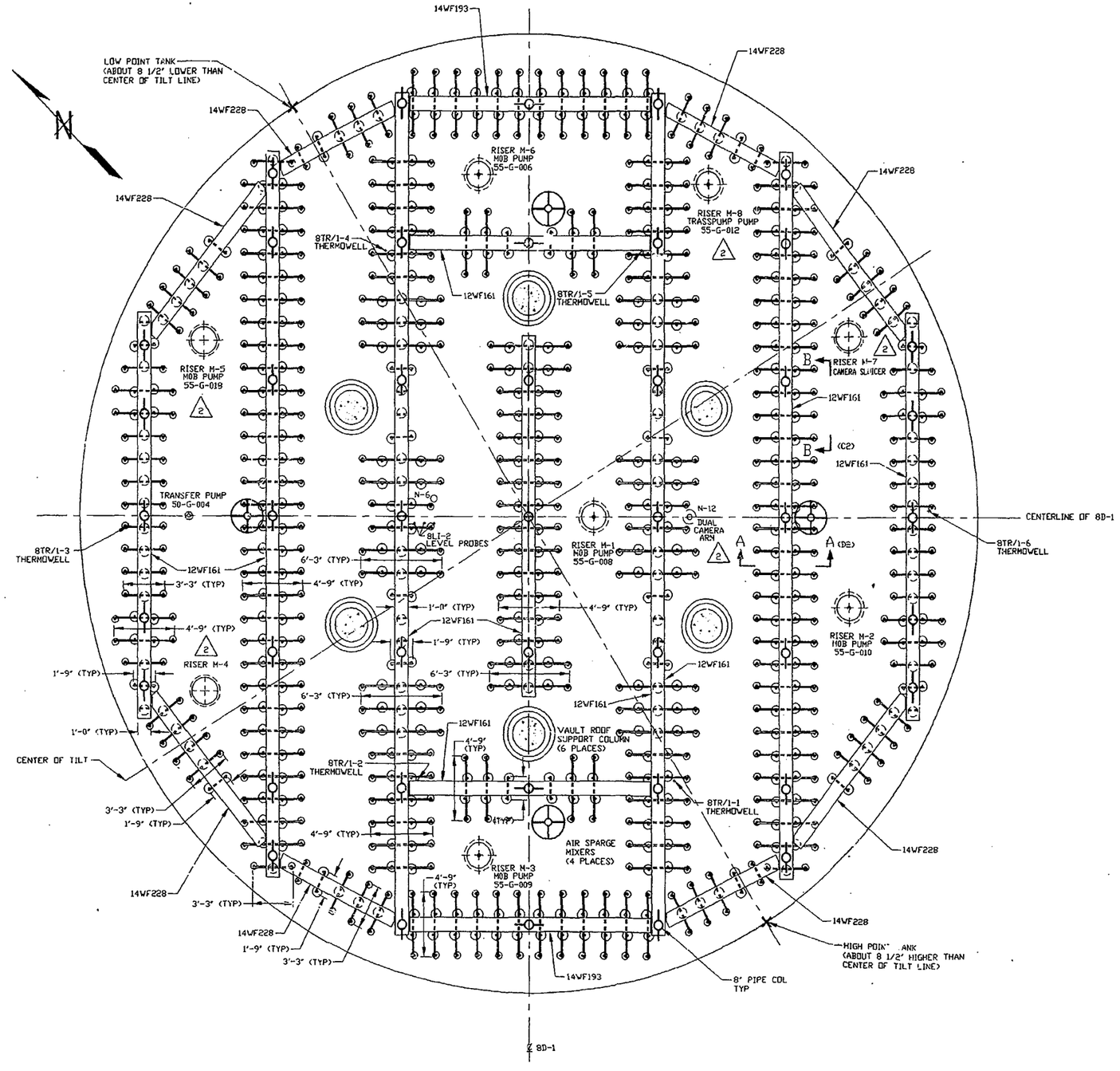
ENGINEERED BY: [illegible]

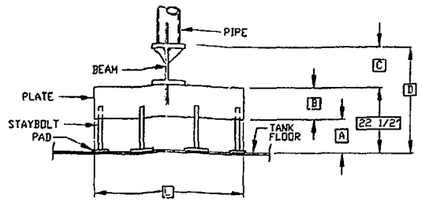
RADIOACTIVE WASTE TANKS 8D-1 & 8D-2
WASTE TANK FARM

BECHTEL | JOB No. 4413 | DRAWING No. 8A-D-3 | REV. 4

10/18/04 3:04:20 PM REPRO

CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE.
INIT._____ DATE_____





SECTION A-A (C4)
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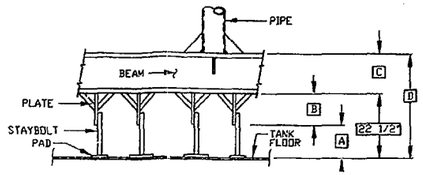


SECTION B-B (C4)
SCALE: NONE

LEGEND

BEAM SUPPORT PLATES

L LENGTH	B WIDTH	A CLEARENCE
6'-3	12 1/2"	10"
4'-9	11"	11 1/2"
3'-3	9"	1'-1 1/2"
1'-9	9"	1'-1 1/2"
1'-0	9"	1'-1 1/2"

BEAMS

SECTION	C	D
12WF161	1'-1 7/8	3'-0 3/8
14WF193	1'-3 1/2	3'-2
14WF228	1'-4	3'-2 1/2

SUPPORT PLATE STAYBOLT PADS

- ⊙ 6" DIA x 3/4" THK
- ⊙ 9" DIA x 1" THK

REFERENCE DRAWINGS:

908D-557	TANK 8D-1 ROOF FRAMING & BOTTOM GRIDWORK ARRANGEMENT AND RISER LOCATIONS
908D-7225	TANK 8D-2 BOTTOM GRIDWORK
904D-108	RISER LOCATIONS AS-BUILT
8A-Q-1	PLANS - VAULT FOR 8D-1 & 8D-2
8A-L-3	VAULT ROOF PENETRATIONS
8A-D-5	ROOF PENETRATIONS
8A-L-7	PIPING ARRANGEMENT SECTIONS & DETAILS
4413-8-D-12 SERIES	CHICAGO BRIDGE & IRON COMPANY TANK CONSTRUCTION

REVISIONS

NO	DESCRIPTION	APVD	
D	ER3838 1/31/97	JRH	HAB
C	GEN/ECN 10588 JHS 4/1/97		
B	ECN 12172 JRH 8/12/99		

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS IN INCHES
TOLERANCES: 2PL DEC ± N/A; 3PL DEC ± N/A; FRACTS ± N/A; ANGLES ± N/A; DO NOT SCALE DRAWING; FINISH N/A
FILE NAME 6746D001
PLOT SCALE 1=1.00
D SPEC NO. 2704
NEXT ASSEMBLY

DRAFTER J. SCHELBLE DATE 10/30/95
CHECKER B. SHAFFER DATE 1/28/97
ENGINEER M. DEMANN DATE 10/30/95

A/E CONTRACT NO. CODE IDENT NO.
FOR WEST VALLEY NUCLEAR SERVICES CO, INC. WEST VALLEY N.Y.

WTF
8D-1 TANK BOTTOM
GENERAL ARRANGEMENT-PLAN & SECTIONS

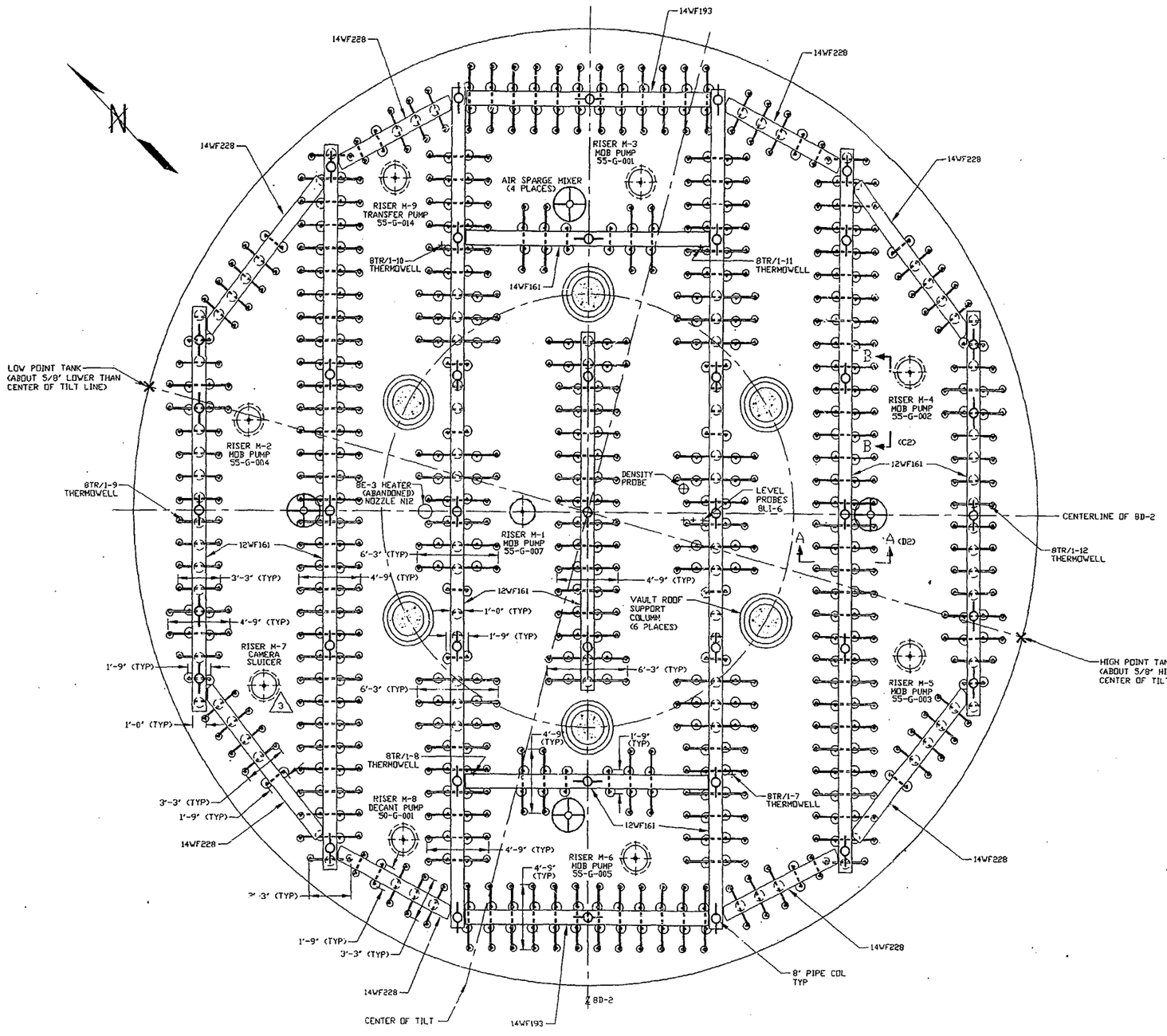
SCALE 1/4"=1'-0" SIZE D DWG NO 908D-6746 REV 2

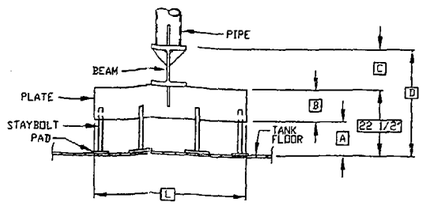
SEE ENGINEERING RELEASE

7 11:45:39 1999 HAB

DRAWING-DO NOT THIS ORIGINAL

CHANGES PRIOR TO EACH USE.
INIT_____ DATE_____





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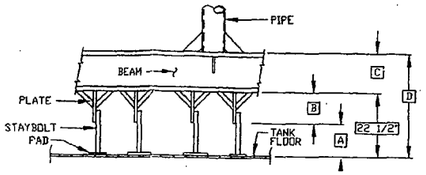


SECTION B-B (C4)
SCALE: NONE

LEGEND

BEAM SUPPORT PLATES

L LENGTH	B WIDTH	A CLEARENCE
6'-3	12 1/2"	10"
4'-9	11"	11 1/2"
3'-3	9"	1'-1 1/2"
1'-9	9"	1'-1 1/2"
1'-0	9"	1'-1 1/2"

BEAMS

SECTION	C	D
12WF161	1'-1 7/8	3'-0 3/8
14WF193	1'-3 1/2	3'-2
14WF228	1'-4	3'-2 1/2

SUPPORT PLATE STAYBOLT PADS

⊙ 6" DIA x 3/4" THK
⊙ 9" DIA x 1" THK

REFERENCE DRAWINGS:

900D-557	TANK 8D-1 ROOF FRAMING & BOTTOM GRIDWORK ARRANGEMENT AND RISER LOCATIONS
900D-7225	TANK 8D-2 BOTTOM GRIDWORK
904D-117	RISER LOCATIONS AS-BUILT
8A-Q-1	PLANS - VAULT FOR 8D-1 & 8D-2
8A-L-3	VAULT ROOF PENETRATIONS
8A-D-6	ROOF PENETRATIONS
8A-L-7	PIPING ARRANGEMENT SECTIONS & DETAILS
4413-8-D-12 SERIES	CHICAGO BRIDGE & IRON COMPANY TANK CONSTRUCTION

REVISIONS

REV	DESCRIPTION	APVD
0	CR3838 01/31/97	JRH
1	GEN/ECN 10568 JHS 4/1/97	HAB
2	ECN 11135 EP 6/21/98	DRS
3	ECN 12172 JEH 8/12/99	

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS IN INCHES
TOLERANCES: 2PL DEC ± N/A | 3PL DEC ± N/A | DO NOT SCALE DRAWING | FRACTS ± N/A | ANGLES ± N/A | FINISH N/A
FILE NAME 7225D001
PLOT SCALE 1=48.00
D SPEC NO. 2975
NEXT ASSEMBLY

DRAFTER B. PORTER DATE 11/27/96
CHECKER D. SHAFFER DATE 1/27/97
ENGINEER R. CLIFFORD DATE 1/27/97

A/E CONTRACT NO. CODE IDENT NO

FOR WEST VALLEY NUCLEAR SERVICES CO., INC. WEST VALLEY N.Y.

WTF
8D-2 TANK BOTTOM
GENERAL ARRANGEMENT-PLAN & SECTIONS

SEE ENGINEERING RELEASE FORM (ERF) FOR DRAWING APPROVAL SIGNATURES.

DWG SIZE D | SCALE 1/4"=1'-0" | WEIGHT | A/E DWG NO. | DWG NO. 900D-7225 | REV 3 | SHEET 1 OF 1

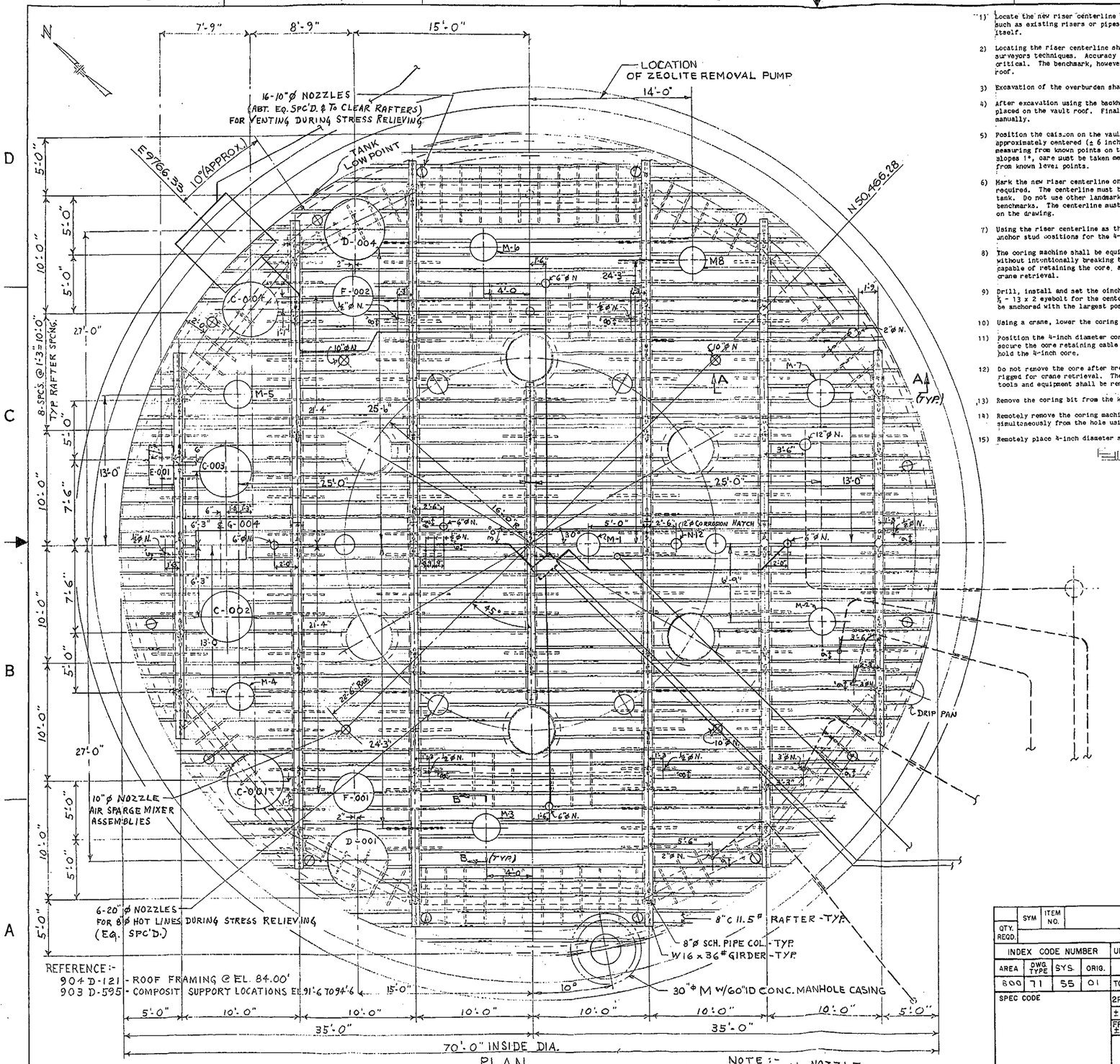
Tue Aug 17 11:12:59 1999 DRS

IF THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION, USE THIS ORIGINAL

900D-557

DWG NO. 900D-557 SH 1

ZONE	REV	DESCRIPTION	DATE	APPROVED
	B	RELOCATED MANWAY M3, ADDED NOTE #2 & SECTION A-A	3/23/85	FJK / RWS
D-5 TO D-6 G-8	C	RELOCATED PROPOSED HOLE LOCATION, ADDED M-9 HOLE & REMOVED SIGNATURES.	10/10/85	DON SHAFFER
	D	REVISED SECT. A-A, REMOVED M-9 HOLE & BLDG., ADDED NOTES, SECT. B-B W/ELEV.	1/13/86	DON SHAFFER MRB
A-2 D-7 B-1 C-1	E	ROUNDED ELEV.; ADDED TOL., LOW PT., REMOVED TRANSMITTER ENCLOSURE & CONDUIT RUNS, M-2 OR M-7 HOLE DEPTH CHANGED FR. 8'-0 TO 9'-0 ADDED ELEV. M-8 N-12 M-1	2/20/86	GEO LESLIE JCH 2/14/86
	0	ER 6070	3/12/86	JCH
	1	ECN 714	6-26-86	JCH 7/14/86
	2	REV. PER ECN 2482 KMQ	7/22/88	
	3	ECN 11397 DAK	5/12/98	JCH



PLAN

REFERENCE:-
904 D-121 - ROOF FRAMING @ EL. 84.00'
903 D-595 - COMPOSIT SUPPORT LOCATIONS EL 91'-6 TO 94'-6

NOTE:- N = NOZZLE
M = MANWAY PWR-OUT & SAMPLE TUBE

1) Locate the new riser centerline using known surface points on the tank, such as existing risers or pipes, which are attached to the tank roof itself.

2) Locating the riser centerline should proceed according to conventional surveyors techniques. Accuracy for the purpose of excavation is not critical. The benchmark, however, must be a known point on the tank roof.

3) Excavation of the overburden shall be accomplished by using a backhoe.

4) After excavation using the backhoe, the construction caisson shall be placed on the vault roof. Final clearing of the vault shall be done manually.

5) Position the caisson on the vault roof and verify that the caisson is approximately centered (± 6 inches) on the new riser centerline by measuring from known points on the tank roof. Since the vault roof slopes 1°, care must be taken measuring that all measurements are taken from known level points.

6) Mark the new riser centerline on the vault roof. This time accuracy is required. The centerline must be located relative to known points on the tank. Do not use other landmarks, such as buildings or fencelines, as benchmarks. The centerline must be ± ½ inch from the location called out on the drawing.

7) Using the riser centerline as the point of reference, locate and mark the anchor stud positions for the 4-inch diameter coring machine.

8) The coring machine shall be equipped to make the 24-inch deep hole without intentionally breaking the core. In addition, it shall be capable of retaining the core, and it shall be balanced and rigged for crane retrieval.

9) Drill, install and set the 6inch anchors for coring machine. Use a ½ - 13 x 2 eyebolt for the centerline position. The coring machine shall be anchored with the largest possible studs.

10) Using a crane, lower the coring machine into position on the vault roof.

11) Position the 4-inch diameter coring machine on the anchoring studs and secure the core retaining cable (or wire) to the centerline eyebolt, to hold the 4-inch core.

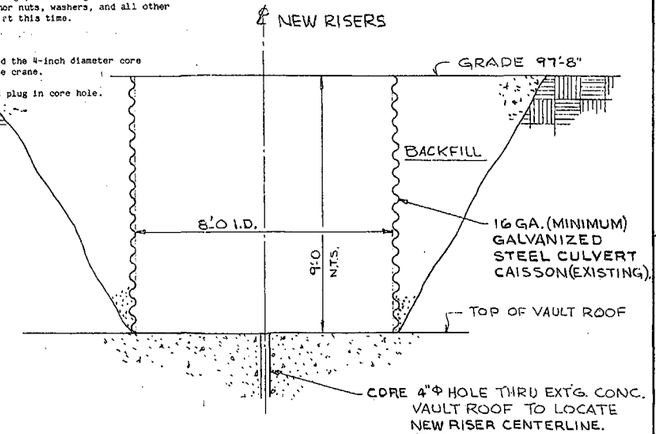
12) Do not remove the core after breakthrough, the coring machine shall be rigged for crane retrieval. The anchor nuts, washers, and all other tools and equipment shall be removed at this time.

13) Remove the coring bit from the kerf.

14) Remotely remove the coring machine and the 4-inch diameter core simultaneously from the hole using the crane.

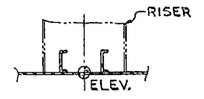
15) Remotely place 4-inch diameter shield plug in core hole.

16) RISER LOCATION DIMENSIONS SHOWN ON THIS DWG ARE FOR REFERENCE ONLY. FOR AS-BUILT RISER LOCATIONS SEE DWG 904D-108 SH2



SECTION A-A
SCALE: ½"=1'-0

RISER	TANK TOP ELEVATIONS
M-1	83.08'±0.01'
M-2	83.36 "
M-3	83.33 "
M-4	82.98 "
M-5	82.62 "
M-6	82.65 "
M-7	83.09 "
M-8	82.70 "
N-12	83.15 "



SECTION B-B
TYP. SECT. FOR RISERS
SCALE: ½"=1'-0"

PARTS LIST

QTY. REQD.	SYM	ITEM NO.	NOMENCLATURE OR DESCRIPTION	CODE IDENT. NO.	PART OR IDENTIFYING NO.	MATERIAL	SPECIFICATION	ZONE

INDEX CODE NUMBER: AREA 800 | DWG TYPE 71 | SYS. 55 | ORIG. 01
SPEC CODE
UNLESS OTHERWISE SPECIFIED
TOLERANCES - DO NOT SCALE
2PL DEC ± 0.01 | 3PL DEC ± | ANGLES ± ½° AA
FRACTIONS ± 1/4
0" 1'0 6" 3'0 6" 0" 2'0 4'0 6'0

CONTRACT NO.
DFTSPN. KEVIN QUEALY — DATE OF DWG. 1/25/85
CHECKER 3/6/86 D. SHAFFER — DFTG. SUPVR. [illegible] 3/7/86
DESIGN 1/A — ENGR. [illegible] 3/7/86
FACILITIES N/A — ENGR. [illegible]
A/E CONTRACT NO. — CODE IDENT. NO.

FOR
West Valley Nuclear Services Co., Inc.
West Valley, New York

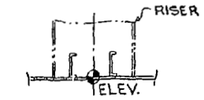
TANK 8D-1
ROOF FRAMING & BOTT. GRID WORK ARRG'T. AND RISER LOCATIONS

DWG. SIZE D | SCALE ½" = 1'-0" | WEIGHT | A/E DWG NO. | DWG NO. 900D-557 | REV 3 | SHEET 1 OF 1

CHANGES PRIOR TO EACH USE.
INIT_____ DATE_____

DWG NO. 900D-558 SH 1

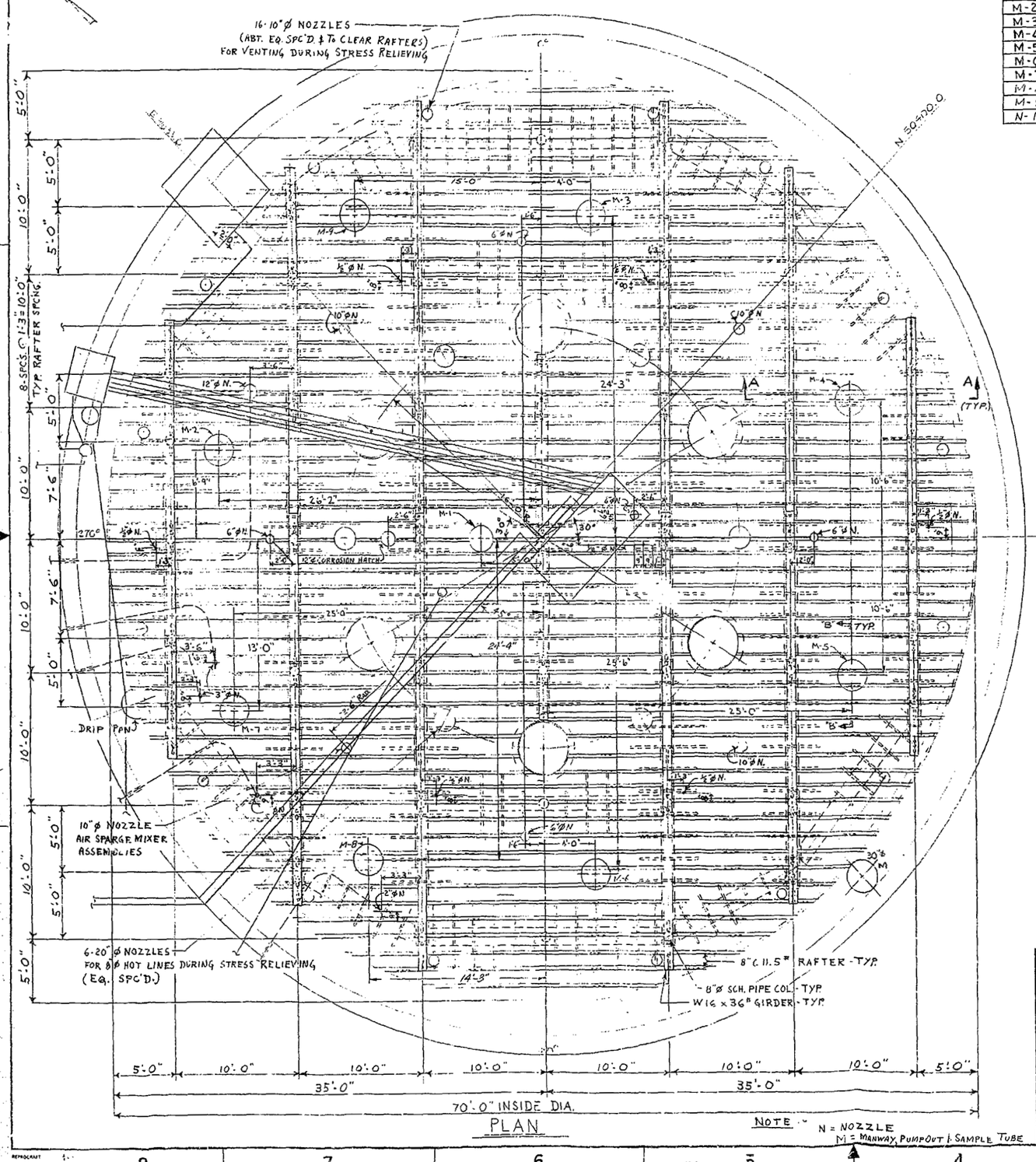
RISER	TANK TOP ELEVATIONS
M-1	82.63' ±0.07'
M-2	82.59' "
M-3	82.56' "
M-4	82.62' "
M-5	82.69' "
M-6	82.72' "
M-7	82.65' "
M-8	82.70' "
M-9	82.54' "
N-12	82.62' "



SECTION B-B
TYP. SECT. FOR RISERS
SCALE: 1/2"=1'-0"

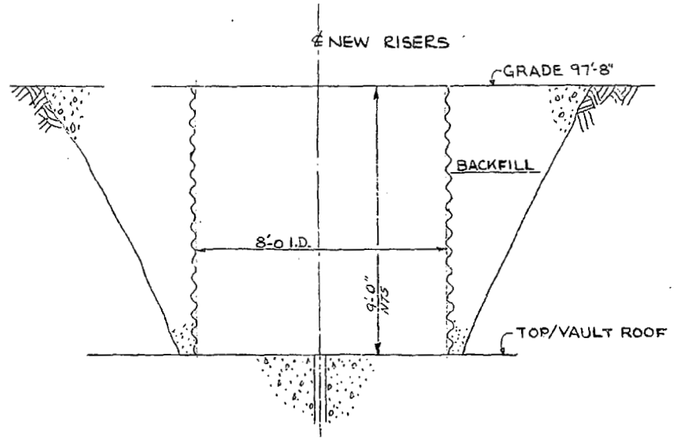
REVISIONS

ZONE	REV	DESCRIPTION	BY	DATE	APPROV.
	A	DRAWN			
B-2 A-6	B B1	ADDED SECT. & NOTE REMOVED PROPOSAL NOTE	DES	1-10-86	MAS 1-10-86
D-3	C	ADDED ELEV. & SECT. B-B ADDED M-8 & M-9 RISER	GPL	2-21-86	3/7/86
	0	ER670		5/12/86	
	1	ECN 11397	BAK	5/12/88	



PLAN

NOTE: N = NOZZLE
M = MANWAY, PUMPOUT & SAMPLE TUBE



SECTION A-A
SCALE: 1/2"=1'-0

1) FOR FURTHER INFORMATION ON SECT. A-A AND ALL OTHER NOTES, SEE DWG. 900D-557.

2) RISER LOCATION DIMENSIONS SHOWN ON THIS DWG ARE REFERENCE ONLY. FOR AS-BUILT RISER LOCATIONS SEE DWG 904D-117 SH2

QTY. REQD.	SYM	ITEM NO.	NOMENCLATURE OR DESCRIPTION	CODE IDENT. NO.	PART OR IDENTIFYING NO.	MATERIAL	SPECIFICATION	ZONE

PARTS LIST

INDEX CODE NUMBER				UNLESS OTHERWISE SPECIFIED	CONTRACT NO.	
AREA	DWG. TYPE	SYS.	ORIG.		DF/SPN. KEVIN GUEALY	DATE OF DWG 1/25/85
800	71	55	01	TOLERANCES - DO NOT SCALE	CHECKER 3/6/86 D. SHAFFER	DFTG. SUPVR. 3/7/86
SPEC CODE				2PL DEC ±0.01 / 3PL DEC ± / ANGLES ± 1/2°	DESIGN MA	ENGR. 3/7/86
				FRACTIONS 1/4	FACILITIES N/A	QA 3/7/86
					ENGR. 3/7/86	ENGR. 3/7/86

A/E CONTRACT NO. CODE IDENT. NO.

FOR
West Valley Nuclear Services Co., Inc.
West Valley, New York

TANK 8D-2
ROOF FRAMING & BOTT. GRID WORK
ARRG'T. & RISER LOCATIONS

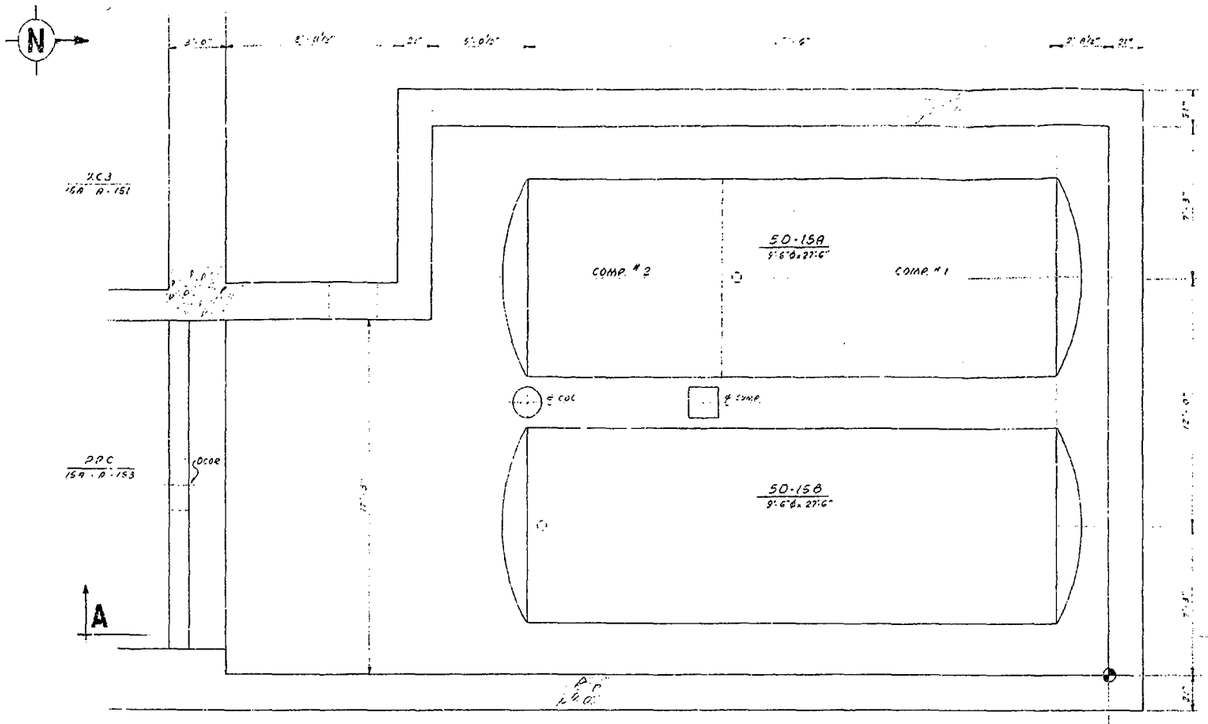
DWG. SIZE D | SCALE 1/2" = 1'-0" | WEIGHT | A/E DWG NO. | DWG NO. 900D-558 | REV 1 | SHEET 1 OF 1

APPENDIX D-15

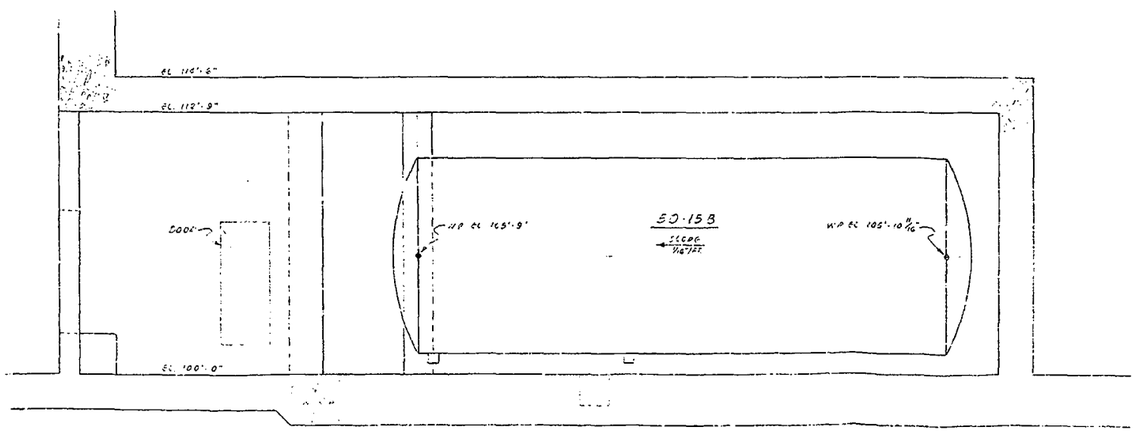
UPC AND ULO PUMP ROOM SECONDARY CONTAINMENT DRAWINGS
(5 DRAWINGS)

INIT. _____ DATE _____

SIZE A



PLAN



A-A

GRAPHIC SCALE

REFERENCE DRAWINGS

EQUIP ARRG'T 5% CELL NO. 3 - PLANS 15A-A-151
EQUIP ARRG'T PRODUCT PURIFICATION CELL - PLANS 15A-A-153

NOTES

1 FOR GENERAL ARRANGEMENT OF PROCESS BUILDING SEE DWGS 15A-A-116 THRU 15A-A-121

REVISIONS					
A					
A					
A					

BECHTEL CORPORATION
NEW YORK SAN FRANCISCO LOS ANGELES
ENGINEERING BY BECHTEL ASSOCIATES
NUCLEAR FUEL SERVICES, INC.
SPENT FUEL PROCESSING PLANT
EQUIPMENT ARRANGEMENT
URANIUM CONTACT CELL
PLAN AND SECTION

BECHTEL 4413 15A-A-162 2

10/18/04 3:26:36 PM REPRO

CHANGES PRIOR TO EACH USE.
INIT_______ DATE_______

LIST OF MATERIAL

ITEM	QUAN.	DESCRIPTION	ORDER NO.
1	96	YDS. CONCRETE (3500 PSI) MIX 9	FIELD
2	10	YDS. CONCRETE FOR BEDDING SLAB	FIELD
3	1 LOT	REINFORCING BARS — NO. 4 / 5 / 6 / 7 / 8; LBS 720 / 360 / 1800 / 13,100 / 225	15B-5
4	4	1½" AMERICAN STD. HEAVY HEX. JAM NUT, STAINLESS STEEL	15-A-6
5	8	1½" ⌀ x 2'-3" (L.) LG. TYPE C ANCHOR BOLTS WITH HEX-NUT (STAINLESS STEEL)	15-A-6
6	1 LOT	WATERPROOFING MEMBRANE (PLASTICIZED POLYVINYL CHLORIDE SHEET) 8 MIL. THICK MIN.	FIELD
7	1 LOT	ADHESIVE FOR APPLICATION OF WATERPROOFING MEMBRANE	FIELD
8	1 LOT	INSULATING FIBRE BOARD (½" THK.)	FIELD
9	8	¾" LEVELING PL. PER DET. 9 STAINLESS STL.	15-M-14
10	1 LOT	1" RIGID FIBERGLAS FILLER OR PVC HARD RUBBERFOAM PREMOLDED JOINT FILLER ½" THK BY ELECTROVERT INC. N.Y.	FIELD
11	8	3" LEVELING PL. PER DET. 9 STAINLESS STL.	15-M-14

GENERAL NOTES

1. FOR LOCATION OF COORDINATE POINT SEE OVERALL PLAN DWG. 15A-A-115.
2. FOR ADDITIONAL GENERAL NOTES SEE KEY PLAN DWG. 15A-Q-4
3. NUTS AT SLIDE END SHALL BE CAREFULLY TIGHTENED AS FOLLOWS:
   - (a) ALLOW 1/32" CLEARANCE BETWEEN BASE OF BOTTOM NUT AND SUPPORT FOOT.
   - (b) TIGHTEN JAM NUT SECURELY.
   - (c) BE SURE THAT SLOTTED OR OVERSIZED HOLES IN VESSEL FOOT WILL ACCOMMODATE EXPANSION AT SLIDE END.
4. SLOPE LEVELING PLATES (1/8" PER FOOT) TO FOLLOW SLOPE OF VESSEL.
5. DO NOT COMPACT TOP TWO FEET OF BACKFILL UNDER 15" SLAB.

REFERENCE DRAWINGS

FOUNDATION KEY PLAN	15A-Q-4
OVERALL PLAN PROCESS AREA	15A-A-115
PLAN - URANIUM PRODUCT CELL	15A-M-40
PLAN OF LINER & INSERTS - UPC	15A-M-43
VESSEL 5D-15A	5B-D-11
GENERAL ARRANGEMENT - PLAN - EL. 100'-0"	15A-A-117
FDN. PLANS - FUEL RECEIVING & STORAGE BLDG	1A-Q-3
FDN. PLAN - EXTRACTION & PPC CELLS	15A-Q-19
ANCHOR BOLTS	D4-510
VESSEL 5D-15B	5B-D-17
UNDERGROUND LINES	15A-L-47

NO.	DATE	REVISIONS	BY	CHK	APPD
4		ADDED CONSTRUCTION JOINTS & PLAN & SECT. 1, 2, 3			
3		ADDED PILES & REVISED PLAN & SECT.			
2		ADDED DOWELS TO PLAN & SECT.			
1		ISSUED FOR CONSTRUCTION			

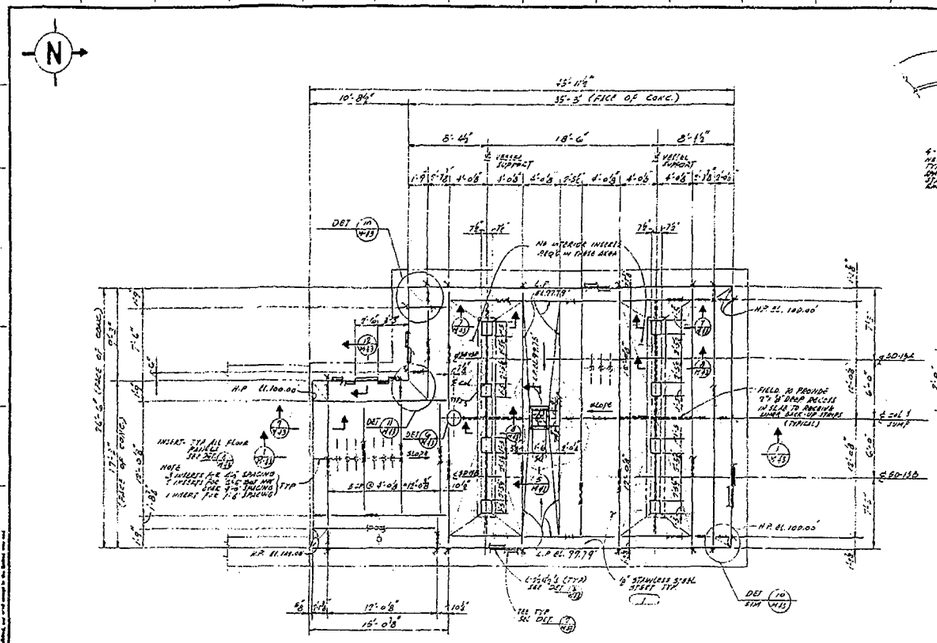
SCALE 3/8" = 1'-0" — DESIGNED J.S. & U.W. — DRAWN GCW

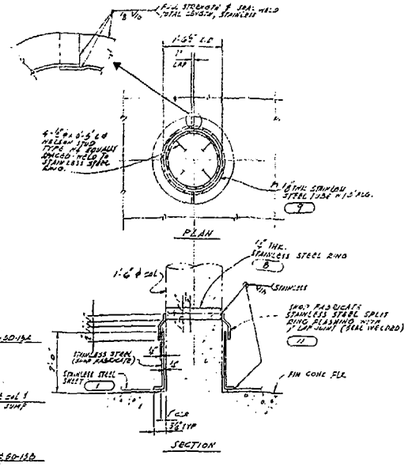
BECHTEL CORPORATION
SAN FRANCISCO — NEW YORK — LOS ANGELES
ENGINEERING BY
BECHTEL ASSOCIATES

NUCLEAR FUEL SERVICES, INC.
SPENT FUEL PROCESSING PLANT

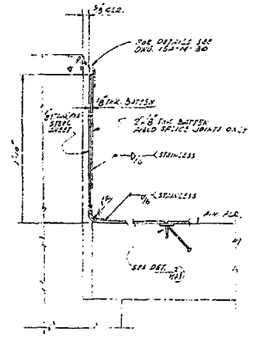
FOUNDATION PLAN AND SECTIONS URANIUM PRODUCT CELL

JOB NO. 4413 — DRAWING NO. 15A-Q-22

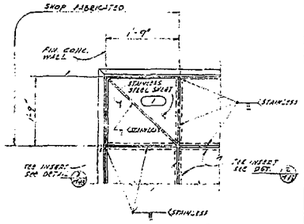




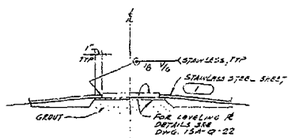
DETAIL 6
ISA-M-43



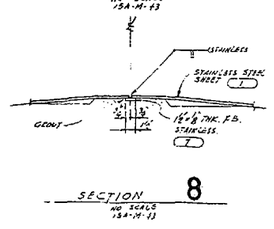
SECTION 9
ISA-M-43



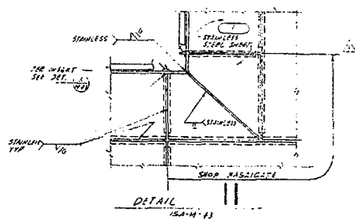
DETAIL 10
ISA-M-43



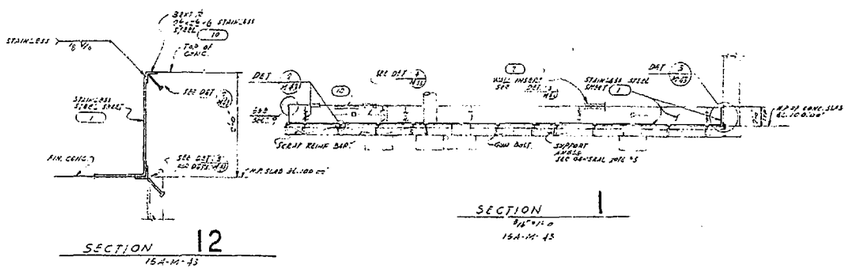
SECTION 7
NO SCALE
ISA-M-43



SECTION 8
NO SCALE
ISA-M-43

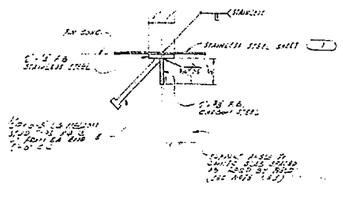


DETAIL 11
ISA-M-43

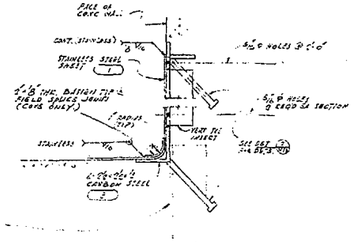


SECTION 1
3/16"=1'-0"
ISA-M-43

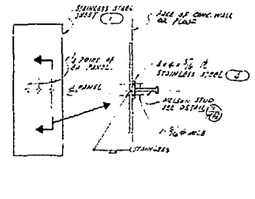
SECTION 12
ISA-M-43



DETAIL 2
ISA-M-43

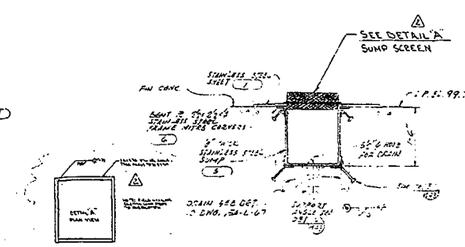


DETAIL 3
ISA-M-43



TYPICAL INSERT PLUG
WELD FOR WALL & FLOOR LINERS

DETAIL 4
ISA-M-43



SECTION 5
ISA-M-43

LIST OF MATERIAL *

ITEM	QUAN	DESCRIPTION	GOODE NO.
1	A/R	6" THK. STAINLESS STEEL SHEET LINER	ISA-1
2	879	LIN. FT. "SEL" PER DET. 2 (STAINLESS STEEL)	ISM-12
3	140	LIN. FT. SPECIAL SHAPE PER DET.	MIS-12
4	7	ANGLE PER DET. 2 STAINLESS STEEL	ISM-12
5		3" DIA STAINLESS STEEL DWG PER SHEET 5	ISM-13
6		STAINLESS STEEL BAR AT SEAM WITH WELDED STUD SPACING PER SHT. 5	ISM-13
-	50	LIN. FT. 1½" x ⅜ STAINLESS STEEL SEAL PER DET. 6	ISM-13
8	1	2'-3" DIA. x 1'-6" x ⅜ RING PER DET. 6 STAINLESS STEEL	ISM-13
9	1	1'-0½" I.D. x ⅜ THK STAINLESS STEEL RING WITH 3/4" x 3/4" DEEP REBATE IN FACING PER DETAIL 6	ISM-13
10	2.5	LIN FT. 3" DIA. x 20 x .25" ϕ PER SECTION 12 (STAINLESS STEEL)	ISM-12
11	1	⅜ STAINLESS STEEL SPLIT RING FLASHING PER DET 6	ISM-13
12	A/R	STRUCTURAL CARBON STEEL (SEE NOTE 1)	ISA-C

* NOTE: SEE GENERAL NOTE NO. 1 FOR TYPE OF STAINLESS STEEL REQUIRED

GENERAL NOTES

1. STAINLESS STEEL SHALL BE TYPE 304L, TYPE 2D FINISH.
2. ALL WELDS SHALL BE ⅜ EXCEPT AS NOTED.
3. ALL WELDING SHALL BE ACCOMPLISHED WITH APPROVED POSITIONS TO THE WELD LOCK AND PARAGRAPH 6 OF SPECIFICATION SA/8-C-2.
4. ALL STEEL BOOTS OR GUARD PLATES SHALL BE GOOD PRACTICE. ALL EDGES AND CORNERS SHALL BE FINISHED SMOOTH.
5. SUGGESTED METHOD OF SUPPORTING SEAMING MEMBERS PROVIDES FLEXIBILITY IN FINAL ADJUSTMENT. SEE DETAILS 6 & 8. ANGLES MARKED "A" MAY BE CLAMPED TO PROPER ALIGNMENT AND WELDED TO EMBEDDED PLATES. ALTERNATE METHOD IS TO WELD ANGLES TO EMBEDDED PLATES & SHIM AS REQUIRED. PARTS & SHIMS SHALL BE MACHINED OR GROUND TO INSURE GOOD FIT AND ALIGNMENT OF FRAMES.
6. FOR PIPE PENETRATIONS IN WALLS SEE DWG. ISA-L-13
7. ALL SEAMS (JOINTS) TO BE COMPLETELY SEAL WELDED UNLESS OTHERWISE SHOWN ON DWG.

REFERENCE DRAWINGS

KEY FOUNDATION PLAN	ISA-C-6
FOUNDATION PLAN - URANIUM PRODUCT CELL	ISA-C-22
PIPE PENETRATIONS - U.P.C.	ISA-L-13
UNDERGROUND LINES	ISA-L-67

MK	REVISION PER ECN 9130	BY	CHK	APP	DATE
2	ADDED HOLES FOR 12mm ϕ BOLTS & SEE ALSO DETAIL 6	EDM	JWC	JWC	10/8
1	REVISED PER CONSTRUCTION	HT	CW	CW	7/1
NO.	REVISIONS	BY	CHK	APP	DATE

BECHTEL CORPORATION
SAN FRANCISCO NEW YORK LOS ANGELES

ENGINEERING BY
BECHTEL ASSOCIATES

NUCLEAR FUEL SERVICES, INC.
SPENT FUEL PROCESSING PLANT

METAL LINER AND INSERT DETAILS
URANIUM PRODUCT CELL

JOB NO.	DRAWING NO.	REV.
4413	ISA-M-43	2

CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE.
INIT_____ DATE_____

901-D-135

N

ZONE	REV	REVISIONS DESCRIPTION	DATE	APPROVED
	8	REV. PER ECN # 2358	DES 11/1/88	DJR
	9	ECN 12630	GW 7-10-2000	

REV NO	DATE	REVISION	DR	CH	APPROVED
B	NOV 19, 85	ADDED: SEC. L (1:12), NOTES (P2, CH. 2 & 3 NOTES), BOLT MK. L (PDP), REV. DIMS (7, 11, 12 & C, F & H), NOTES (D15, D16, K16)	HE	JC	
C	DEC 31, 85	ADDED: DET (T3) (PADS, E1) NOTES (1-5), SECT (K4), ANC PL (E3), PIPE SLEEVE (C2, D7), PIPE SLEEVE (K12), DIM (C10, D2, E2, F10, I5, J8, M2) DEL: EMB PL (C2)	TJK	JG	
0	9-5-85	ER 492 REV A			
1	1-9-86	DFC 469 REV B, C	WLW	DJR	
2	3-27-86	ECN 532	CCG	MKS	
3	4-15-86	ECN 632	FJK	FEK	
4	4-30-86	ECN 652	DHB	MKS	
5	5-19-86	ECN No. 696	RBH	BB	
6	6-3-86	ECN 728	RGL	BB	
7	3-11-87	ECN 1463	DDK	WLI	

NOTES:

1. CAST IN PLACE CONCRETE : f'_c = 4000 PSI AT 28 DAYS. CONCRETE REINFORCING STEEL : FY = 60,000 PSI.
2. CONCRETE MATERIALS, REINFORCING, AND ALL CONCRETE WORK SHALL COMPLY WITH ACI 318-77 BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE.
3. CONCRETE WORK SHALL CONFORM TO ALL REQUIREMENTS OF ACI 301-72, SPEC FOR STRUCTURAL CONC OF BLDG.
4. REINFORCING STEEL SHALL BE INTERMEDIATE GRADE BILLET STEEL BARS CONFORMING TO ASTM A 615 (DEFORMED BARS) GRADE 60.
5. SLAB FINISH TOLERANCES SHALL BE CLASS "A" AS PER ACI 301-72. SLAB SURFACE SHALL BE TROWELED FINISH.
6. LAP SPLICES SHALL BE CLASS "C" AS PER ACI 318-77 UNLESS OTHERWISE NOTED.
7. ALL BARS SHALL HAVE 2" MINIMUM CONCRETE COVER UNLESS OTHERWISE NOTED.
8. SHIFT OR BEND BARS TO CLEAR ANCHOR BOLTS, DRAINS, PIPE SLEEVES AND EMBEDDED PARTS.
9. GROUT SHALL BE NON-SHRINKABLE TYPE.
10. DRILL 2" ϕ HOLES & PRESSURE GROUT AFTER DOWELS ARE IN PLACE. LOCATION OF HOLES SHOULD CLEAR EXIST CONC. REINF. ABANDONED HOLES SHALL BE PRESSURE GROUTED.

FOR CONTINUATION OF NOTES SEE DWG 901-D-136

REFERENCE DRAWINGS :

G.A.- LWTS PLAN EL 100.00'	901-D-041
G.A.- LWTS SECTIONS	901-D-046
PILE PLAN - PROCESS BLDG	15A-Q-1
FOUNDATION PLAN AND SECTIONS URANIUM PRODUCT CELL	15A-Q-22
FOUNDATION PLAN PRODUCT PACKAGING AND SHIPPING	15A-Q-24
SECTIONS AND DETAILS PRODUCT PACKAGING AND SHIPPING	15A-Q-25
STEEL FRAMING ELEVATIONS PROCESS BUILDING	15A-M-129
HVAC PROCESS BLDG EL 95.00' REVISION TO EXIST DUCTWORK - ULO PUMP RM	5K-2388-H-017
PROCESS BLDG ULO PUMP ROOM MODIFICATION SH. 2	901-D-136
LWTS PIPING IN ULO	901-D-082, 901-D-083 & 901-D-084
LWTS PIPING IN ULO - SUPPORT LOCATIONS	901-D-582, 901-D-583 & 901-D-584
LWTS CONDUIT & GROUNDING LAYOUT	901-D-236

WORK THIS DRAWING WITH 901-D-136
FOR DRAWING INDEX SEE DRAWING NO.

PLAN AT EL 95.67' (H.P)

SECT A (C4)

SECT B (E4)

SECT C (C3)

SECT D (D3)

SECT F (G11)

SECT G (I2)

SECT L (G11)

SECT M (I2)

DET. N

DET. O

DET E (J10)

DET K (D3)

ELEV W (D2)

ELEV Y (E4)

DET E (E2)

KEY PLAN

APPRVD WVNS CO.		
PROJECT MGR		6/11/85
ENGINEER SUPV		6/10/85
LEAD DISC ENGR		6/7/85
DESIGN		6/7/85
CHECKED C.H. CHEN		6/7/85
DRAWN T. REICH		6/7/85

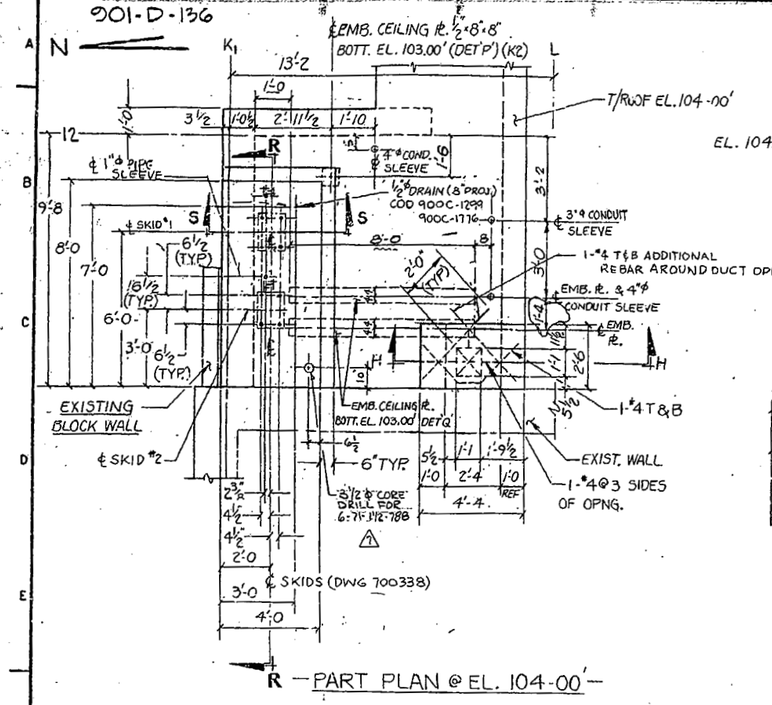
EBASCO SERVICES INCORPORATED
A/E O.F.S. NO. 2388 TASK ORDER 011
FOR
WEST VALLEY NUCLEAR SERVICES COMPANY, INC
WEST VALLEY, NEW YORK
WEST VALLEY DEMONSTRATION PROJECT
PROCESS BLDG
ULO PUMP ROOM
MODIFICATION SH. 1

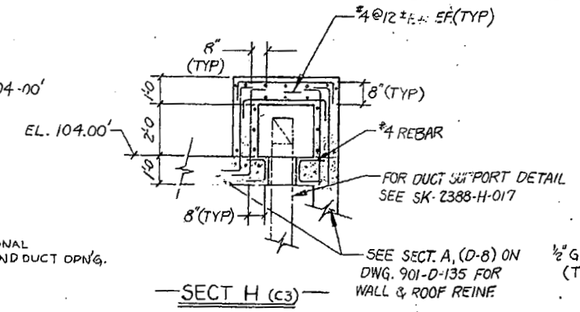
DE-AC07-81NE44139 PROJECT NO.
19-CWV-02275 SUBCONTRACT NO.
ISSUED FOR CONSTRUCTION

SIZE D | INDEX CODE NUMBER: AREA, DR. TYP, CL, ORIG | DRAWING NO. 901D-135 | REV. 9
SCALE 3/8"=1'-0 UNLESS NOTED | SPEC. CODES | A/E SHEET NO. 901-D-135

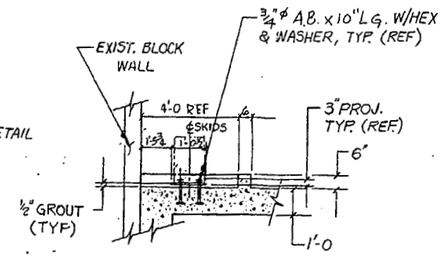
CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE.
INIT_____ DATE_____

901-D-136





— SECT H (C3) —



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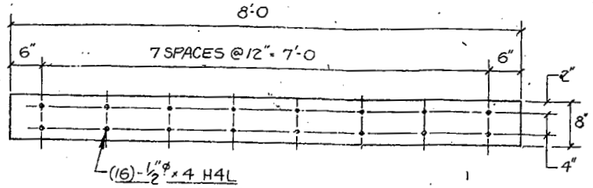
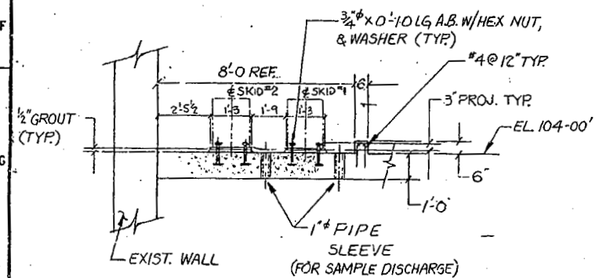
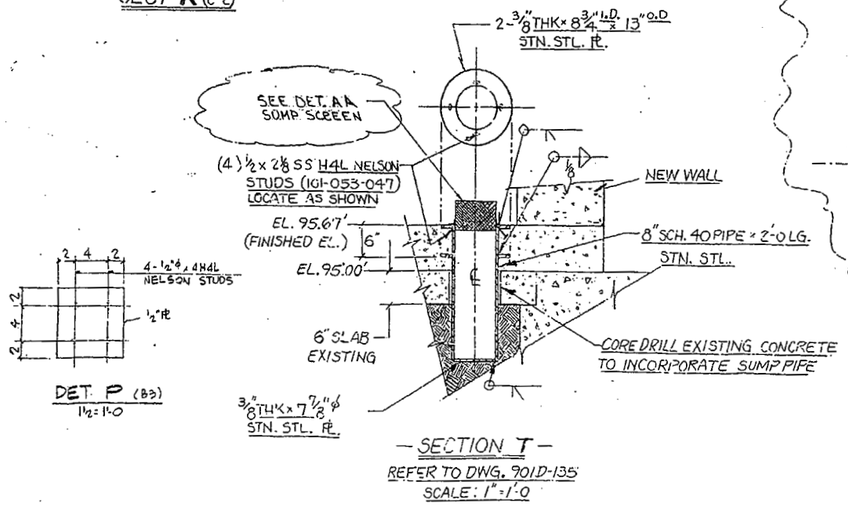


— DETAIL Q —
½" x 8" x 8'-0 LG. STL PL
2-REQ'D
SCALE: 1" = 1'-0

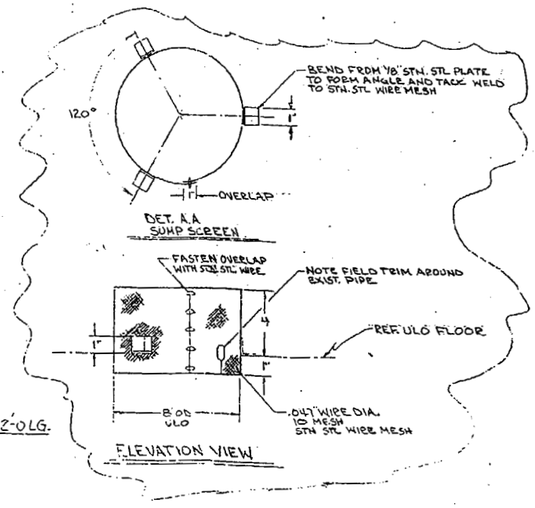


— SECT R (C2) —



— SECTION T —
REFER TO DWG. 901D-135
SCALE: 1" = 1'-0

DET. P (B3)
1½" = 1'-0



ELEVATION VIEW

REV NO	DATE	REVISION	DR	CH	APPROVED
B	NOV 15, 1985	REV'D. NOTES (DIG. G14 & K16) AND DRG. NOTES # NO. (B14); DTWG L-23, L-66 D3); DELETED: NOTES (C14, C15)	H.E.	J.C.	
C	DEC 31, 1985	REV'; PLOT PLAN (E), NOTE (K16) ADD: DET (K12), SECT (K4).	T.R.	J.C.	
0	9-5-86	ER 492 REV A			
1	1-9-86	DFC 469 REV B, C	WLW		DJR
2	3-27-86	ECN 532	CCG		MKS
3	7-15-86	ECN 826 & 841	WAB		MKS

CONTINUED FROM 901-D-135

NOTES:

11. ALL STRUCTURAL STEEL, ASTM A36 UNLESS NOTED.
12. ANCHOR BOLTS: ASTM A307 TYPE B UNLESS NOTED.
13. STAINLESS STEEL PLATES AND SHAPES TYPE 304L ASTM A240, A276.
14. DRILLED-IN EXPANSION ANCHORS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325 GROUP II, TYPE 4, CLASS 1, SUCH AS "HILTI KWIK BOLT" BRAND OR APPROVED EQUAL.
15. STEEL DESIGN, FABRICATION AND ERECTION SHALL BE IN ACCORDANCE WITH AISC SPECIFICATION FOR DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL, EIGHTH EDITION, PART 1.
16. SHOP CONNECTIONS SHALL BE WELDED, UNLESS NOTED.
17. CONTRACTOR SHALL FURNISH ALL PLATES, CLIP ANGLES, CONNECTIONS, ETC. REQUIRED FOR THE COMPLETION OF THE STRUCTURE EVEN IF EVERY SUCH ITEM IS NOT SHOWN ON DRAWINGS.
18. ADEQUATE TEMPORARY BRACING, SUPPORTS, SHORING AND SCAFFOLDING SHOULD BE PROVIDED DURING CONSTRUCTION AND UNTIL ALL NEW CONSTRUCTION ELEMENTS ACHIEVE THEIR REQUIRED STRENGTHS.
19. COPING SHALL BE KEPT TO A MINIMUM. ALL COPES, BLOCKS AND RE-ENTRANT CUTS SHALL HAVE A ½" MINIMUM RADIUS FILLET.
20. ALL WELDING SHALL BE IN ACCORDANCE WITH THE STRUCTURAL WELDING CODE AWS D1.1 - 84, OF THE AMERICAN WELDING SOCIETY. ONLY E70XX LOW HYDROGEN ELECTRODES SHALL BE USED FOR THE WELDING OF CARBON STEEL. THE ELECTRODES FOR WELDING STAINLESS STEEL SHALL CONFORM TO E308 OR ER308. ALL WELDS SHALL BE VISUALLY EXAMINED TO THE REQUIREMENTS OF 8.15 OF AWS D1.1; DEFECTS SHALL BE REMOVED BY CHIPING OR GRINDING AND THEN REWELDED. THE PRE HEAT AND INTERPASS TEMPERATURE FOR WELDING TO EMBEDMENTS SHALL NOT EXCEED 250 DEGREES F. THE MAXIMUM INTERPASS TEMPERATURE FOR WELDING STAINLESS STEEL SHALL BE 350 DEGREES F.
21. STAINLESS STEEL BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A193 GR B8, CLASS 2. STAINLESS STEEL NUTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A194 GRADE 8.
22. THE WELD METAL TO JOIN THE BASE METALS SHALL BE AS FOLLOWS:
    a) - AWS-A5.1 E70XX TO JOIN CARBON STEEL TO CARBON STEEL.
    b) - ASME SFA 5.4, CLASSIFICATION E308 TO JOIN STAINLESS STEEL TO STAINLESS STEEL.
    c) - ASME SAF 5.4, CLASSIFICATION E309 TO JOIN STAINLESS STEEL TO CARBON STEEL.
23. ALL DRILLED HOLES EITHER FOR DOWELS OR EXPANSION BOLTS SHALL CLEAR EXISTING REINF. ALL ABANDONED HOLES SHALL BE PRESSURE GROUTED. EXCEPTION: ANCHOR BOLTS FOR EQUIPMENT & EQUIPMENT SUPPORT PLATES.
24. FIELD CONNECTIONS SHALL BE ASTM A325 HIGH STRENGTH BOLTED FRICTION TYPE UNLESS OTHERWISE NOTED. HARDENED STEEL WASHER SHALL BE PROVIDED UNDER THE NUT OR BOLT HEAD WHICHEVER IS TURNED IN TIGHENING.
25. ALL CONTACT SURFACES WITHIN HIGH STRENGTH BOLT CONNECTIONS AND WELDING AREAS SHALL BE FREE OF OIL, PAINT, LACQUER OR GALVANIZING.
26. FOR RAD. MONITOR SKID GEN. ARR'GT. SEE DWG 900 D-1148.

WORK THIS DRAWING WITH 901-D-135
FOR DRAWING INDEX SEE DRAWING NO.

ZONE	REV	DESCRIPTION	BY	DATE	APPROVED
	7	ECN 12630	GW	7-10-2000	WH
	6	REVISION PER EC-1 1950	GW	9-30-87	DJR
	5	ECN-1573	FJK	4/15/87	FJK
C-4	4	REV./ECN #922	DES	7/16/86	

APPRVD WNS CO.	J.C. Peretz	1/7/86
PROJECT MGR	R. Stein	7/16/85
ENGINEER, SUPV	J. Wills	7/11/85
LEAD, DISC ENGR	G. Harrison	7/9/85
DESIGN	E. [illegible]	7/11/85
CHECKED	C. YU	7-9-85
DRAWN	T. REICH	DATE 7/9/85
DE-AC07-81NE44139 PROJECT NO.		
19-CWV-02275 SUBCONTRACT NO.		

EBASCO SERVICES INCORPORATED
A/E O.F.S. NO. 2388 TASK ORDER 011
FOR
WEST VALLEY NUCLEAR SERVICES COMPANY, INC
WEST VALLEY, NEW YORK
WEST VALLEY DEMONSTRATION PROJECT
PROCESS BLDG
ULO PUMP ROOM
MODIFICATION SH. 2

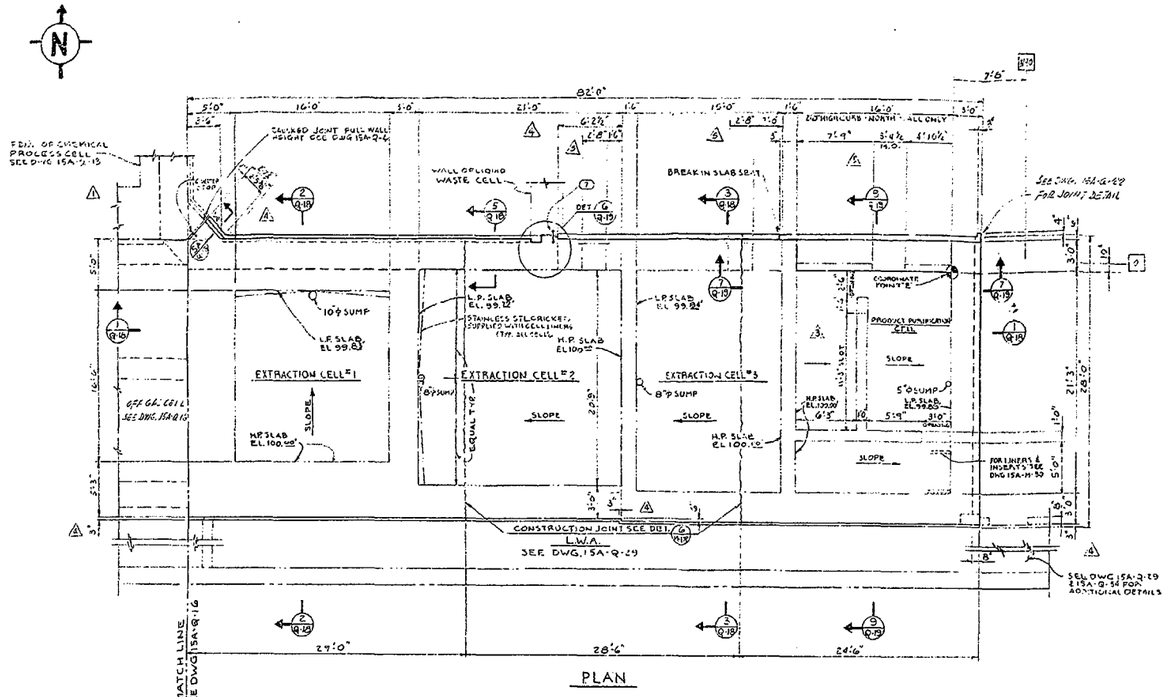
SIZE	INDEX CODE NUMBER					DRAWING NO.	REV.
	AREA	DR. TYP	CL	ORTG			
D						901D-136	7

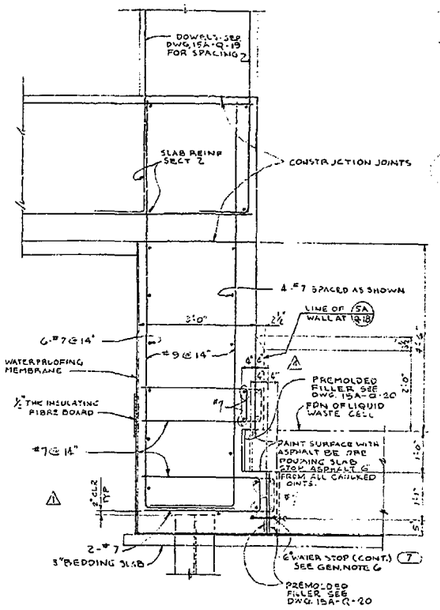
APPENDIX D-16

XC-2, XC-3, UWA, AND LWA SECONDARY CONTAINMENT DRAWINGS (6 DRAWINGS)

INIT_____ DATE_____

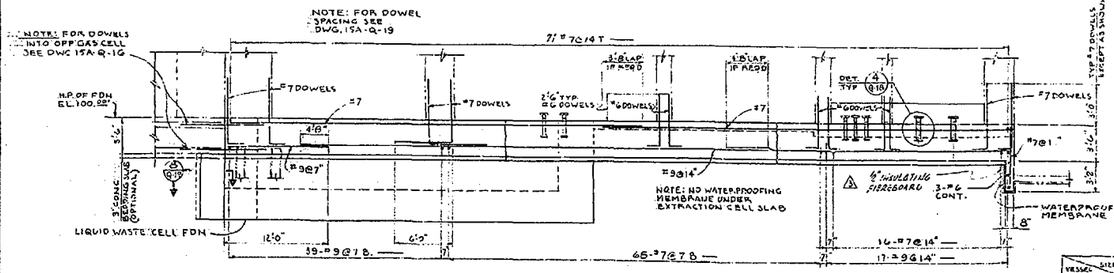
SIZE A





SECTION 5
15A-Q-18
3/8"=1'-0"

⚠ SECTION 5A SIMILAR AND NOTED

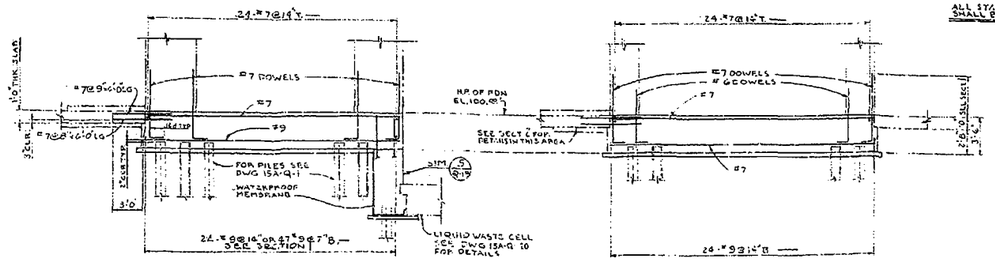


SECTION 1
15A-Q-18

VESSEL SIZE	A	B	C	D	E	F	G
40-G	6½	5	½	1½	3	2'-7"	1'-6"
50-12 A & B	11½	7	½	1½	4½	3'-5"	1'-6"
50-13 A & B	5	5	½	1½	3	2'-3"	1'-6"

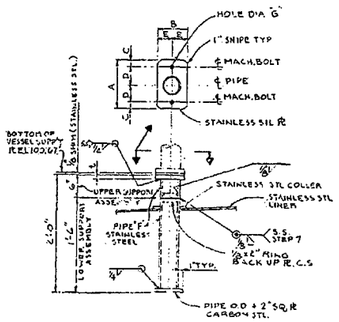
NOTE: DIMS IN INCHES

ALL STAINLESS STEEL SHALL BE TYPE 304L



SECTION 2
15A-Q-18

SECTION 3
15A-Q-18



ERECTION PROCEDURE

1. FABRICATE UPPER AND LOWER ASSEMBLIES WITH PLATES AND BACK UP RING.
2. JOIN UPPER & LOWER ASSEMBLIES WITH 2 SMALL TACK WELDS.
3. SET AND TEMPLATE TO TRUE POSITION AND PLACE CONCRETE.
4. CHIP OR SAW TACK WELDS. REMOVE UPPER ASSEMBLY.
5. INSTALL CELL LINER & "WASHER" FLASHING.
6. REPLACE UPPER ASSEMBLY.
7. SET VESSEL AND WELD ASSEMBLIES TOGETHER

DETAIL 4
15A-Q-18
3/4"=1'-0"

LIST OF MATERIAL

ITEM	QUAN	DESCRIPTION	ORDER NO.
1	327	C.Y'DS CONCRETE MIX B (2500 PSI)	FIELD
2	1 LOT	REINFORCING STEEL (A-432)	15A-S
		No. 4 6 7 9	
		LBS 830 1320 24080 10930	
3	21	CU YDS CONCRETE (BEDDING SLAB)	FIELD
4	1 LOT	WATERPROOFING MEMBRANE (WAX IMPREGNATED POLYFIBRE FABRIC SHEET) @ MIL THK MIN.	FIELD
5	1 LOT	ADHESIVE FOR APPLICATION OF WATERPROOFING MEMBRANE	FIELD
6	30	6" WATER STOP (CONT.) TYPE 'A' GREENSTREAK 635 OR EQUIVALENT	FIELD
7	50	LIN. FT EXP. CHARGING WATERSTOP TYPE 'A' GREENSTREAK 635 OR EQUIVALENT	FIELD
8	1 LOT	EXPANSION PREMOLDED JOINT FILLER 1" THK OR EQUIVALENT	FIELD
9	1 LOT	INSULATING FIBRE BOARD ½" THK	FIELD
10	13	2" Ø VESSEL SUPPORT LEGS PER DET 4	15P-16
11	16	1"Ø x 3" LG MACH BOLTS WITH 1 HEX NUT (STAINLESS STEEL	FIELD
12	8	4"Ø VESSEL SUPPORT LEGS PER DET 4	15M-12
13	2	8"Ø VESSEL SUPPORT LEGS PER DET 13 DWG 15A-Q-19	15S-0

GENERAL NOTES

1. DESIGN & CONSTRUCTION SHALL BE IN ACCORDANCE WITH SPECIFICATION 4413-Q-2.
2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH AT AGE OF 28 DAYS AS INDICATED IN THE LIST OF MATERIAL.
3. FOR LOCATION OF COORDINATE POINT SEE OVERALL PLAN DWG 15A-A-115.
4. FOR ADDITIONAL GENERAL NOTES SEE KEY PLAN DWG 15A-Q-4.
5. BEFORE POURING CONCRETE VERIFY REQUIREMENTS OF ALL SERVICES FOR THE LOCATION OF PIPES, UTILITIES, ETC.
6. THE WATERSTOP SYSTEM SHALL PROVIDE A COMPLETE & CONTINUOUS BARRIER ACROSS ALL EXPANSION JOINTS BELOW EL 101.25', & SLAB CONSTRUCTION JOINTS BELOW EL 99.00' AND WALL CONSTRUCTION JOINTS BELOW EL. 99.00'. ALL JOINTS SHALL BE MADE IN COMPLIANCE WITH THE MANUFACTURER'S DIRECTIONS TO PRODUCE A SOUND CONNECTION FOR FULL STRENGTH AND WATER RESISTANCE.

REFERENCE DRAWINGS

FOUNDATION KEY PLAN	15A-Q-4
OVERALL PLAN - PROCESS AREA	15A-A-115
PLANS - EXTRACTION CELLS & UWA	15A-M-25
PILE PLAN	15A-Q-1
PLANS, SECTIONS & DETAILS - CPC & SP.	15A-Q-13
PLAN - LIQUID WASTE CELL	15A-M-34
METAL LINER & INSERT DETAILS - EXT. CELLS	15A-M-30
FDN PLANS & ELEV. ACID RECOVERY CELL & OFF GAS CELL	15A-Q-16
ANCHOR BOLT & REINFORCING DETAILS	15A-Q-19
ANCHOR BOLTS	0-Q-510
FOUNDATION PLAN & SECTS. - LIQUID WASTE CELL	15A-Q-20
TYPICAL CONCRETE DETAILS	12B-M-102
FOUNDATION PLAN & SECTS. - UWA	15A-Q-22
PLAN & SECTIONS - UWA	15A-Q-29
ELEC. PLAN BELOW GRADE - PROCESS BLDG.	15A-P-16
PLAN, SECTS & DETAILS - UWA, E.P.C.S. AIR LOCK	15B-Q-34

NO.	DATE	REVISIONS	BY	CHK'D	APP'D
1	10/4	REV. DIMS. OF SUMP OPENINGS	MP	[illegible]	[illegible]
2	11/4	REVISED PLAN, SECT. & ELEV. & ADDED SHT. SA. SEE DWG.	RVD	[illegible]	[illegible]
3	11/4	REVISED PLAN OF PDFD, SECT. & LIST OF MATERIAL ADDED PER DWG.	RVD	[illegible]	[illegible]
4	12/4	ISSUED FOR CONSTRUCTION	RVD	[illegible]	[illegible]
5	12/4	ADDED SECTION 5 & 5A & REVISED SECTION 4	RVD	[illegible]	[illegible]
6	12/4	LOCATIONS & FLOOR SLOPES	RVD	[illegible]	[illegible]

SCALE 1"=1'-0" | DESIGNED W.W | DRAWN SVE

BECHTEL CORPORATION
SAN FRANCISCO

NUCLEAR FUEL SERVICES, INC
SPENT FUEL PROCESSING PLANT

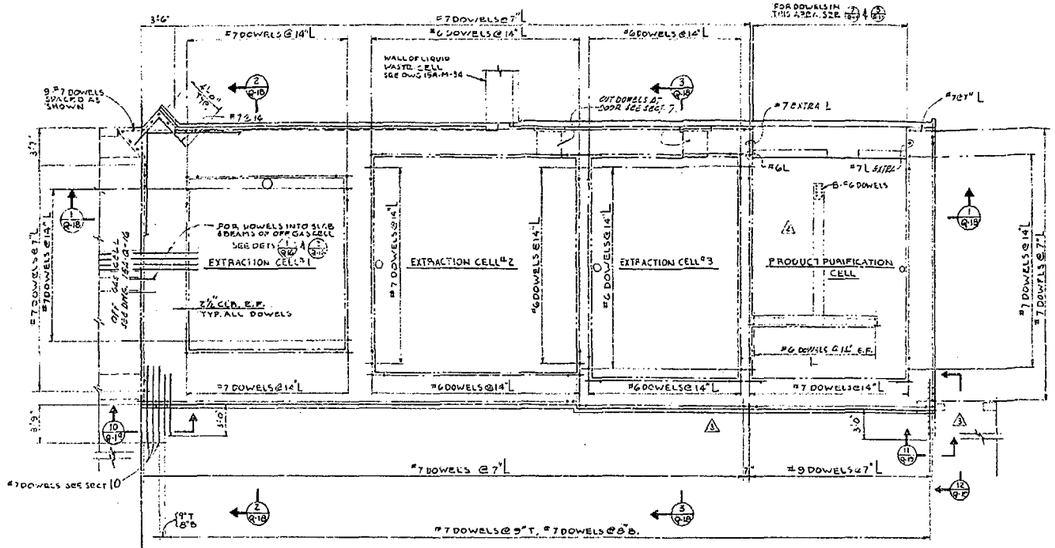
FOUNDATION PLAN & SECTIONS EXTRACTION & PROD. PURIFICATION CELLS

BECHTEL | JOB No. 4413 | DRAWING No. 15A-Q-18 | REV. 6

10/18/04 3:31:45 PM PEPPO

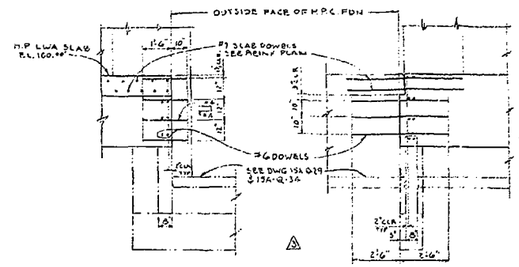
CHANGES PRIOR TO EACH USE.
INIT_____ DATE_____

15A-Q-19



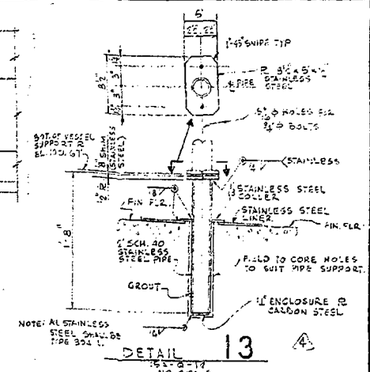
REINFORCING PLAN

FOR REINFORCING NOT SHOWN SEE SECTIONS

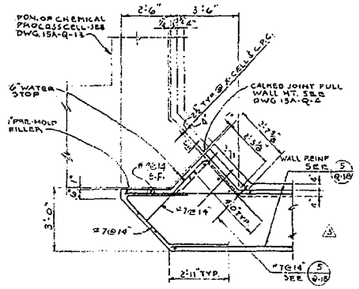


SECTION 11
15A-Q-19
3/8" = 1'-0"

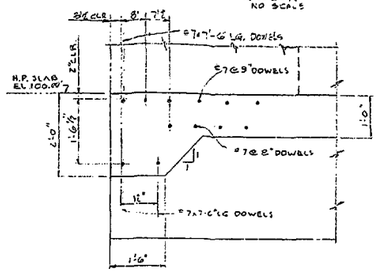
SECTION 12
15A-Q-19
3/8" = 1'-0"



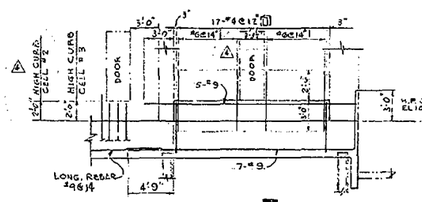
DETAIL 13
15A-Q-19
NO SCALE



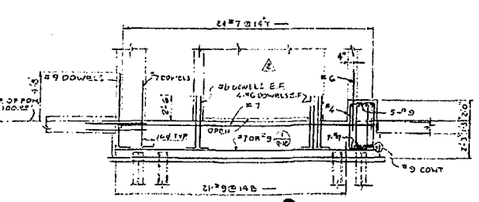
SECTION 8
15A-Q-18
3/8" = 1'-0"



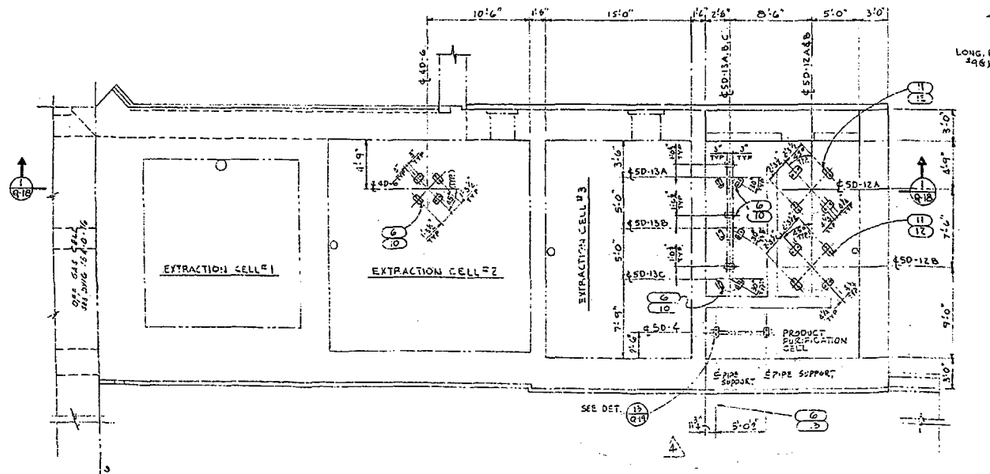
SECTION 10
15A-Q-19
3/4" = 1'-0"



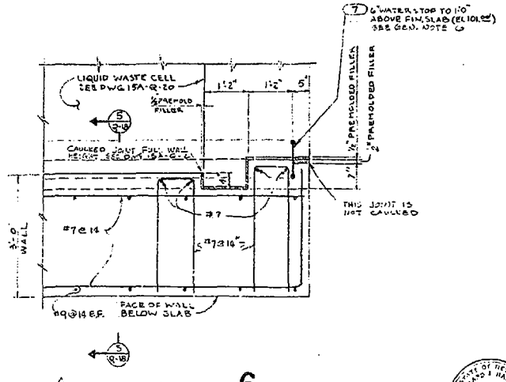
SECTION 7
15A-Q-18



SECTION 9
15A-Q-18



ANCHOR BOLT PLAN



DETAIL 6
15A-Q-18
3/8" = 1'-0"
PLAN BELOW EL 96.58

NOTE:
FOR REFERENCE DRAWINGS, GENERAL NOTES & LIST OF MATERIAL SEE DWG. 15A-Q-18.

NO.	DATE	REVISIONS	BY	CHK'D	ENGR'D	CLIENT
6	7/74	REF. DWGS & DOWELS @ DOOR TO CELL #2 ADDED SECT 10 & ENLARGED PLAN & DETAIL 13	DVB	BW		
5	7/74	REVISED REINF. PLAN & SECT 8, ADDED SECT 11 & 12	DVB	BW		
4	6/74	REVISIONS PLAN @ RPC & SECT 9	DVB	BW		
3	5/74	ISSUED FOR CONSTRUCTION	DVB	BW		
2	3/74	REVISED PLAN, ADDED SECT 7, 8 & 9, REVISED SECT 10 & 11, ADDED NOTES & DETAIL 6	DVB	BW		
1	2/74	ISSUED FOR PERMIT	DVB	BW		

DESIGNED W. W. DRAWN D.V.B.

BECHTEL CORPORATION

SAN FRANCISCO NEW YORK LOS ANGELES

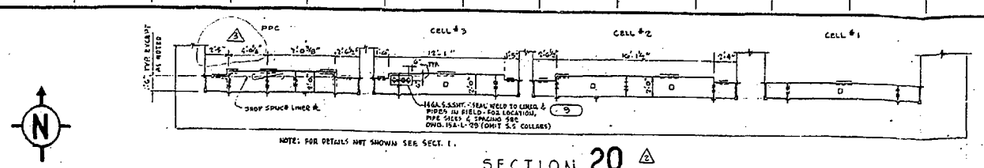
ENGINEERED BY BECHTEL ASSOCIATES

NUCLEAR FUEL SERVICES, INC.
SPENT FUEL PROCESSING PLANT

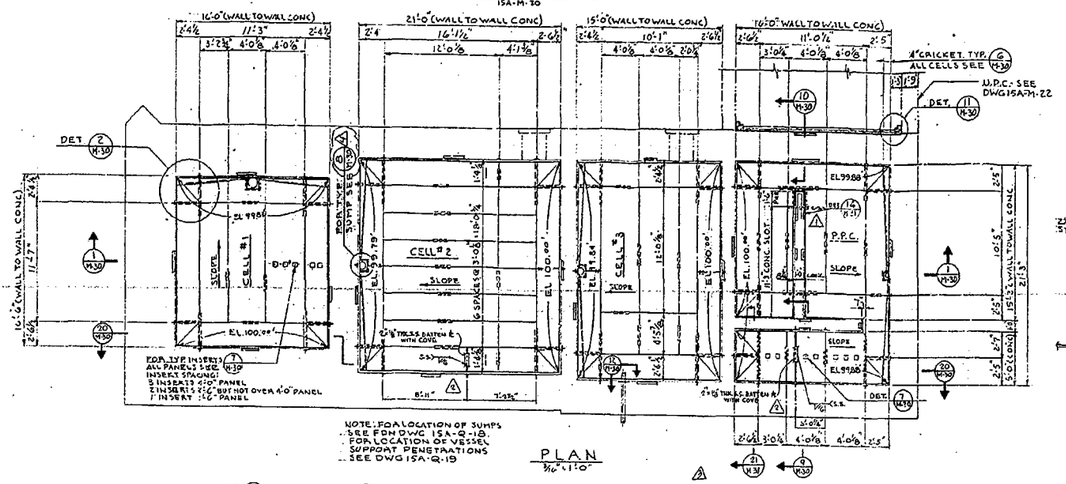
ANCHOR BOLT & REINFORCING DETAILS EXTRACTION & PROD. PURIFICATION CELLS

JOB NO. 4413 DRAWING NO. 15A-Q-19 REV.

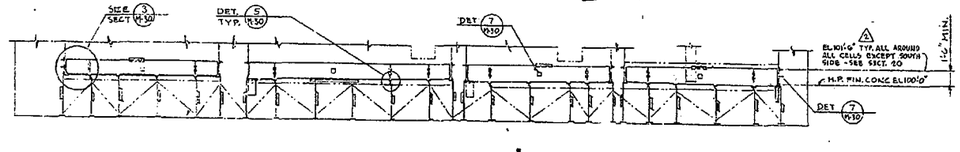
CHANGES PRIOR TO EACH USE.
INIT DATE



SECTION 20
15A-M-30

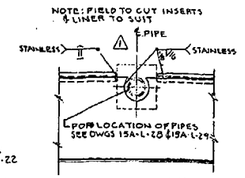


PLAN
3/16" = 1'-0"

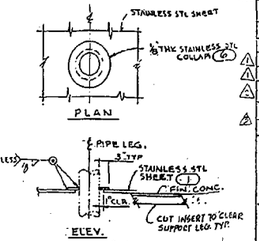


SECTION 1
15A-M-30
3/16" = 1'-0"

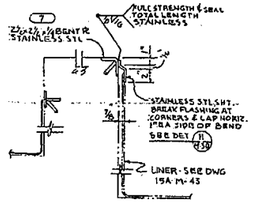
NoREQ'D	O.D	I.D.
13	8⅝"	2⅛"
8	10¾"	4½"



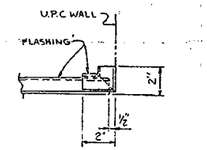
SECTION 12
TYPICAL DETAIL OF PIPE PENETRATIONS



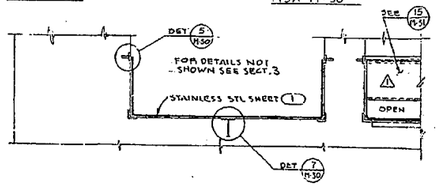
DETAIL 13
TYPICAL PENETRATION DETAILS OF VESSEL SUPPORT LEGS



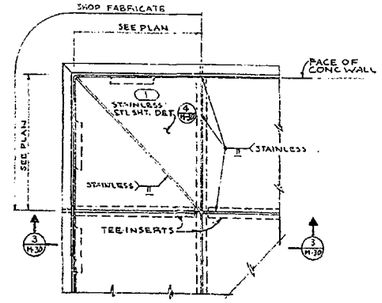
SECTION 10
15A-M-30



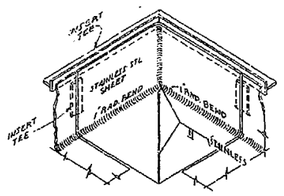
DETAIL 11
15A-M-30



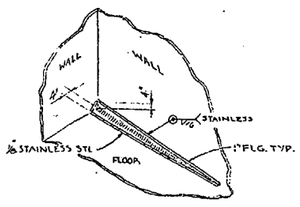
SECTION 9
15A-M-30



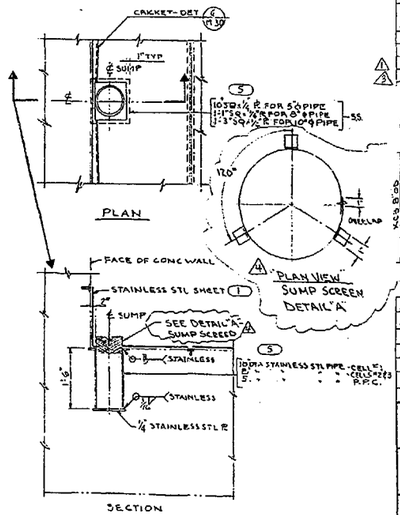
DETAIL 2
15A-M-30



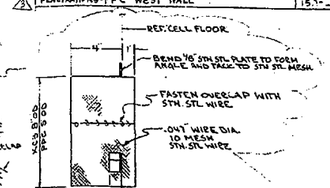
DETAIL 4
ISOMETRIC VIEW OF TYPICAL CORNER
15A-M-30

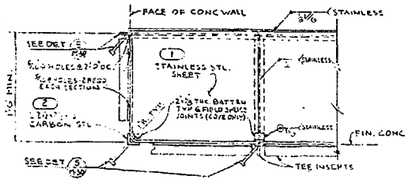


DETAIL 6
ISOMETRIC VIEW OF TYPICAL CRICKET
15A-M-30

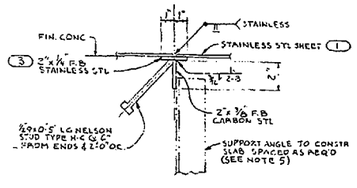


DETAIL 8
15A-M-30

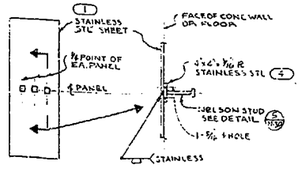




SECTION 3
15A-M-30



DETAIL 5
15A-M-30



DETAIL 7
15A-M-30

LIST OF MATERIAL

ITEM	QUAN	DESCRIPTION	ORDER NO.
1	1 LOT	⅛ THICK STAINLESS STL SHEET LINER	15M-1
2	325	LIN FT 1½"x1½"x¼" ANGLES PLATES 3 (CARBON STL)	FIELD
3	907	LIN FT TEE PER DETAIL 5 (STAINLESS STL)	15M-16
4	121	INSERTS PER DETAIL 7 (STAINLESS STL)	19M-16
5	4	SUMP LINERS PER DETAIL 8 (STAINLESS STL)	15M-16
6	1 LOT	STAINLESS STL COLLARS PER DET 13	15M-1
7	20	LIN FT 2½"x2½"x¼" BENT 8 (STAINLESS STL)	15M-16
8	1	SLOT LINER WITH TEE INSERTS PER DET 19	15M-16
9	1	PC. 16 GA. STAINLESS STEEL SHEET FOR PIPE FLASHING - SEE SECT. 20	15M-19
10	1	PC. 9'-6½"x1'-0"x⅜" U BOLT 2 (STAINLESS STL)	FIELD
11	1	PC. 7'-8" O.D. x ⅜" ϕ ANCHOR. PER SECT. 21 (STAINLESS STL)	FIELD

GENERAL NOTES

1. STAINLESS STEEL SHALL BE TYPE 304L, TYPE 2D FINISH.
2. ALL WELDS SHALL BE ⅛ EXCEPT AS NOTED.
3. ALL WELDING SHALL BE IN ACCORDANCE WITH APPLICABLE PORTIONS OF THE AWS CODE AND PARAGRAPH 6 OF SPECIFICATION 4613-C-2.
4. ALL SHARP EDGES OF SHEARED PLATES SHALL BE GROUND OFF. ALL WELDS WHICH PROJECT ABOVE FINISHED SURFACES SHALL BE GROUND SMOOTH.
5. SUGGESTED METHOD OF SUPPORTING FRAMING MEMBERS PROVIDES FLEXIBILITY IN ALIGNING MEMBERS PER USE AS A CARRIER. MEMBERS MAY BE CLAMPED TO SUPPORT ANGLES PRIOR TO WELDING - TO INSURE PROPER ALIGNMENT SUGGESTED SIZE OF SUPPORT - 4"x 4"x ¼". SUGGESTED SPACING, SIX FEET. ADDITIONAL 2"x2"x ¼" BRACING SHOULD BE PROVIDED IF REQUIRED TO INSURE RIGIDITY AND ALIGNMENT OF FRAMING.

REFERENCE DRAWINGS

KEY FOUNDATION PLAN	15A-Q-4
FOUNDATION PLAN & SECTIONS - SYT. CELLS	15A-Q-18
PIPING PENETRATIONS - SOUTH WALL XC-1 & XC-2	15A-L-28
" " " " XC-3 & P.P.C	15A-L-29
SECTIONS & DETS - METAL LINER & INSERTS: SYT & PR. CELLS	15A-M-31
PENETRATIONS - P.P.C WEST WALL	15.1-.35

MARK	DATE	REVISIONS	BY	CHK'D	APP'D	CHK'D
1	10/1/64	REVISED PER BECHTEL ECN 1930	GGJ	GJR		
2	11/6/64	REVISED PER BECHTEL ECN 1930 SEE SHT. 27 OF MATERIAL & ADDED DETAIL 21 AND 22 REFERENCE DWG. 3150 DRW. 560.726	PT		M.S.	
3	11/16/64	REVISED CURB & ACCESS OPENING ON SOUTH SIDE OF CELL #3 & P.P.C. ADDED DET. 20	BBB			
4	12/7/64	REVISED PLAN @ P.P.C. SECTS 8 & 9	SVD			
5	12/8/64	LIST OF MATERIAL ADDED PIPE DWG. 5	SVD			
6	12/9/64	ISSUED FOR CONSTRUCTION	SVD			

NOTE OR AS NOTED	DESIGNED	DRAWN FVD	TRACED	CHK'D

BECHTEL CORPORATION
SAN FRANCISCO NEW YORK LOS ANGELES

ENGINEERING BY
BECHTEL ASSOCIATES

NUCLEAR FUEL SERVICES, INC.
SPENT FUEL PROCESSING PLANT

PLAN & DETAILS
METAL LINER & INSERTS
EXTRACTION & PROD. PURIFICATION CELLS

BECHTEL | JOB NO. 4413 | DRAWING NO. 15A-M-30 | SHT. 4

10/18/04 3:34:28 PM PERRO

DRAWING NUMBER

DRAWING NUMBER

DRAWING NUMBER

DRAWING NUMBER

15A-M-110

Drawing No. Mod 1

N

PLAN - UPPER WARM AISLE

PLAN - LOWER WARM AISLE

SECTION 11

SECTION 12

SECTION 13

SECTION 14

DETAIL 16
ELECTRICAL PNG. RECEPTACLE FLASHING DETAIL

DETAIL 1

DETAIL 2

DETAIL 3

DETAIL 4
TYP ANCHOR BOLT PENETRATION DETAIL

DETAIL 5
TYP INSERT PLUG WELD FOR WALL AND FLOOR LINERS

DETAIL 6
TYP PIPE & ELEC CONDUIT PENETRATIONS THRU LINER

DETAIL 9

DETAIL 10

DETAIL 15
ISOMETRIC VIEW OF TYP INSERT FOR CAPILLARY TUBES

SECTION 7
TYP DRAIN DET FOR LWA & UWA NICHE

ISOMETRIC VIEW TYP DETAILS

SECTION 8

LIST OF MATERIAL

ITEM	QUAN.	DESCRIPTION	ORDER No.
1	328	LIN. FT. "TEE" PER DET. 3	15 M-19
2	418	LIN. FT. L 2-2½"x¼" CARBON STEEL	15M-19
3	1 LOT	14 GA. STAINLESS STEEL SHEET	15 M-1
4	57	INSERTS - TYP. PER DET. 3	15M-19
5	1 LOT	STAINLESS STEEL COLLAR - PER DET. 4	15M-1.
6	75	8" COVER FRAME - PER SECTION 8 (SEE GEN. NOTE - 9) STAINLESS STEEL	15M-19
7	80	LIN. FT. ANGLE 2"x2"x¼" MFR. PER "A" STAINLESS STEEL *	15M-19
8	6	CAPILLARY TUBES, INSERT - PER DET. 15	15 M-19
9	8	4½"x4½"x¼" S.S. PER DET. SEE SECT. 16	
10	8	6"x6"x10" S.S. PER DET. SEE SEC. 16	
11	16	5/8"-11 UNC-2B STEEL PULLER, AS BOR CAPILLARY INSERT.	15-M-19

* WATER ¼ SHALL BE CUT TO EXACT LENGTHS REQ'D FOR EACH NICHE.

GENERAL NOTES

1. STAINLESS STEEL SHALL BE TYPE 304L, TYPE 20 FINISH FOR SHEET AND HOT ROLLED FOR ¼" PLATE.
2. ALL WELDS SHALL BE ¼" EXCEPT AS NOTED.
3. ALL WELDING SHALL BE IN ACCORDANCE WITH APPLICABLE PORTIONS OF THE A.W.S. CODE AND PARAGRAPH 6 OF SPECIFICATION A.S.M.E. C-2.
4. ALL SHARP EDGES OF SHEARED PLATES SHALL BE GROUND OFF. ALL WELDS WHICH PROJECT ABOVE FINISHED SURFACES SHALL BE GROUND SMOOTH.
5. INSERTS SHALL BE CUT TO CLEAR ALL ANCHOR BOLTS AND WALL PENETRATIONS.
6. ALL ELEVATIONS & DIMENSIONS ARE TO FINISHED CONCRETE.
7. ALL FLOOR & WALL LINERS ARE 14GA. STAINLESS STEEL SHEET UNLESS OTHERWISE NOTED.
8. FOR LOCATION OF PIPE & ELECTRICAL CONDUIT PENETRATIONS SEE DWG. 15A-L-68, 15A-P-4, & 15A-P-8
9. COVER FRAMES SHALL BE SHOP FABRICATED & SHIPPED IN SECTION 15' LONG AS PRACTICABLE. FIELD JOINTS SHALL BE LOCATED ON STRAIGHT SECTION OF FRAME & BACK UP PLATES SHALL BE PROVIDED FOR FIELD WELDING AS SHOWN ON TYP CORNER DETAIL. FABRICATOR TO PROVIDE BRACING FOR SHIPPING.
10. FIELD TO BLOCK AND BRACE COVER FRAME WHILE POURING CONCRETE TO HOLD ALIGNMENT TO WITHIN ¼" TOLERANCE.

LEGEND

⟋ = SEAM-SHOP WELDED

REFERENCE DRAWINGS

KEY FOUNDATION PLAN	15A-C-4
FDN. PLAN - SECTIONS & DETAILS - LOWER WARM AISLE	15A-C-59
PLANT BOUNDARY - STORAGE TANKS, UPPER & LOWER WARM AISLE	15"-M-1106
EXCAVATION - SECTIONS & DETAILS - CELLS & TRENCHES	15A-C-62
PENETRATIONS - CIVIL	15A-C-66
PENETRATIONS - STRUCTURAL	15A-C-67
ELECTRICAL PLAN - EL 116'-6"	15A-P-6
ELECTRICAL PLAN - EL 100'-0"	15A-P-8

NO.	REVISIONS	BY	APP'D	DATE
5	ADD'L DETAILS	RDF	[illegible]	[illegible]
4	REVISED DETAIL 15, ADDED ITEM 11	RDF	[illegible]	[illegible]
3	ADD'L DETAILS, REVISED TYP. DETAILS & MISC. NOTES	RDF	[illegible]	[illegible]
2	REVISED PER COMMENTS	RDF	[illegible]	[illegible]
1	ISSUED FOR CONSTRUCTION	RDF	[illegible]	[illegible]

DESIGNED - W. H. DRAWN - R.D.F.

BECHTEL CORPORATION
SAN FRANCISCO NEW YORK LOS ANGELES

ENGINEERED BY
BECHTEL ASSOCIATES

NUCLEAR FUEL SERVICES, INC.
SPENT FUEL PROCESSING PLANT

PLAN OF NICHE LINER & INSERTS - LOWER & UPPER WARM AISLE

BECHTEL JOB NO. 4413 DRAWING NO. 15A-M-110 SH. 3

STATE OF NEW YORK ATOMIC ENERGY COMMISSION

10/18/2004 4:37:01 PM PERRO

CHANGES PRIOR TO EACH USE
INIT _____ DATE _____

N COORDINATES TO BE FILLED IN BY PISCO PER AS BUILT PIPING IN NICHES

SCHEDULE NICHE COVER PENETRATIONS

SEE DET 2 OR 3 ON DWG 15A-M-160

PUMP No.	LINE No.	% VALVE BODY ELEVATION	% VALVE BODY COORDINATE
13G-1 AND 13G-2	13SP-18"-3"-C		
	13SP-8"-3"-C		
	13CA-68"-1"-C		
	13SP-10"-3"-C		
	13P-16"-3"-C		
	DRAIN (1) 13P-3"-3"-C		
	DRAIN (2) 13P-4"-3"-C		
	DRAIN (3) 13P-4"-3"-C		
	13P-260"-1"-C		
	DRAIN (4) 13P-3"-3"-C		
	13P-3"-3"-C		
	DRAIN (5) 13P-3"-3"-C		
	DRAIN (6) 13P-3"-3"-C		
	DRAIN (7) 13P-3"-3"-C		
	13P-208"-1"-C		
	DRAIN (8) 13P-3"-3"-C		

SCHEDULE NICHE COVER PENETRATIONS

SEE DET 2 OR 3 ON DWG 15A-M-160

PUMP No.	LINE No.	% VALVE BODY ELEVATION	% VALVE BODY COORDINATE
13G-5 AND 13G-6	13SP-91"-3"-C		
	13P-98"-3"-C		
	13CA62"-1"-C		
	13CB13"-1"-C		
	13P-92"-3"-C		
	13P-92"-2"-C		
	DRAIN (1)		
	DRAIN (2)		
	DRAIN (3)		
	13P-85"-1"-C		
	DRAIN (4)		
	13P-84"-3"-C		
	13P-84"-2"-C		
	DRAIN (5)		
	DRAIN (6)		
	DRAIN (7)		
	13P-217"-1"-C		
	DRAIN (8)		

SCHEDULE NICHE COVER PENETRATIONS

SEE DET 2 OR 3 ON DWG 15A-M-160

PUMP No.	LINE No.	% VALVE BODY ELEVATION	% VALVE BODY COORDINATE
13G-3 AND 13G-4	13P-93"-3"-C		
13T-1	13P-84"-3"-C		
	13CB60"-1"-C		
	13CB62"-1"-C		
	13P-95"-3"-C		
	13P-94"-3"-C		
	DRAIN (1)		
	DRAIN (2)		
	DRAIN (3)		
	13P-90"-3"-C		
	13P-89"-3"-C		
	13P-88"-3"-C		
	DRAIN (4)		
	DRAIN (5)		
	DRAIN (6)		
	13P-218"-1"-C		
	DRAIN (7)		
13G-14	13P-255"-1"-C		
	DRAIN (8)		
	13P-249"-1"-C		
	13P-226"-1"-C		
	13P-231"-1"-C		
	13CB-E"-1"-C		
	13P-226"-1"-C		
13T-1	13P-226"-1"-C		
	13P-249"-1"-C		
	13CB236"-1"-C		
	13P-237"-1"-C		
	DRAIN (9)		
SOLVENT CYCLE VALVE MANIFOLD NICHE	13P-163"-1"-C		
	13P-164"-1"-C		
	13P-166"-1"-C		
	13P-165"-1"-C		
	13P-164"-1"-C		
	13P-167"-1"-C		
	13P-168"-1"-C		
	13P-179"-1"-C		
	13P-182"-1"-C		
	13P-178"-1"-C		
	13P-253"-1"-C		

LIST OF MATERIAL

ITEM	QUAN.	DESCRIPTION	ORDER No.
1	PILOT	NICHE COVERS AS DETAILED ON THIS DWG. (ONE SET 13G-1 & 13G-2)	LATER

GENERAL NOTES

1. ALL COVER FRAMES FRAMES SHALL BE CARBON STEEL
2. ALL WELDING SHALL BE IN ACCORDANCE WITH APPLICABLE PORTIONS OF THE A.W.S. CODE
3. ALL SHARP EDGES OF REAPED PLATES SHALL BE GROUND OFF. ALL WELDS ON EXPOSED FINISHED SURFACES SHALL BE GROUND SMOOTH.
4. ALL EXPOSED SURFACES OF COVER FRAME SHALL BE PAINTED WITH ONE COAT OF CARBOLINE 305 PRIMER @ IN ACCORDANCE WITH SPEC. 4613-R-1

REFERENCE DRAWINGS

PLUG - SOLVENT CYCLE VALVE & UPPER & LOWER WARM AISLES	15A-M-104
PLAN OF NICHE COVER & PENETR. LOWER & UPPER WARM AISLES	15A-M-110
PIPING ISOMETRIC - R.W.A.	15CH 721
PIPING ISOMETRIC - R.W.A.	15CH 732
PIPING ISOMETRIC - R.W.A.	15CH 797
PIPING ISOMETRIC R.W.A.	15CH 800
PIPING ISOMETRIC R.W.A.	15 CH 801
PIPING ISOMETRIC R.W.A.	15 CH 808
VALVE EXTENSION STEM DETAILS	15A-L-91

NO.	DATE	REVISIONS	BY	CHK	APPD	CUST APPD
3	11/6	REV. PER ECN 2077	JPC	DJR	DJR	
2	9/66	REV. PER ECN 1904 COVER PLUG DETAIL	WAB		DJR	
1	7/66	ISSUED FOR CONSTRUCTION	P.J.F.			

WORK IN CIVIL — DRAWING No. 15A-M-160 3

BECHTEL CORPORATION
SAN FRANCISCO NEW YORK LOS ANGELES
ENGINEERING BY BECHTEL ASSOCIATES

NUCLEAR FUEL SERVICES, INC.
SPENT FUEL PROCESSING PLANT

NICHE COVERS FOR UPPER WARM AISLE

BECHTEL — JOB No. 4413 — DRAWING No. 15A-M-160 — SH. 3

PLAN - NICHE COVERS UPPER WARM AISLE

NOTE: ALL DIMENSION SHALL BE VERIFIED BY FIELD BEFORE CONSTRUCTION OF COVERS

FOR HOLE PLUG DETAIL SEE DWG. 9000-1232 (THIS COVER ONLY)

DETAIL 3 15A-M-160

DETAIL 4 15A-M-160

DETAIL 5 15A-M-160

DETAIL 6 15A-M-160

SECTION 1 15A-M-160
TYPICAL COVER FOR PUMP NICHES - (PUMPS: 13G-5 & 13G-6)(13G-5 & 13G-6)(13T-1 SIM.) AND 13G-11 & (13G-11A)(13G-13 & 13G-14)(13G-8) SIM. L.P.S.

SECTION 2 15A-M-160 (2)
TYP COVER FOR PUMP NICHES - PIPES (13G-1 & 13G-2),(13G-10 AND 13G-9 (13G-12), (13G-5 & 13G-6) SIM. L.W.A.

TYP LIFTING ANCHOR AT CONC. & STEEL R. COVERS 15A-M-160

TYP LIFTING ANCHOR AT CONC. COVERS 15A-M-160 (4 REQ'D. PL PIECE)

SHIELDING REQUIREMENTS FOR NICHE COVERS

13G-1, 13G-2, 13G-14	10" R.D. CONC. + 2" THICK STL R
13G-3, 13G-4, 13T-1	12" R.D. CONC.
13G-8, 13G-6	12" ORDINARY CONC.
SOLVENT CYCLE VALVE MANIFOLD	12" ORDINARY CONC.

DETAIL 7 15A-M-160 — TYP SPRAY NOZZLE PENETRATION

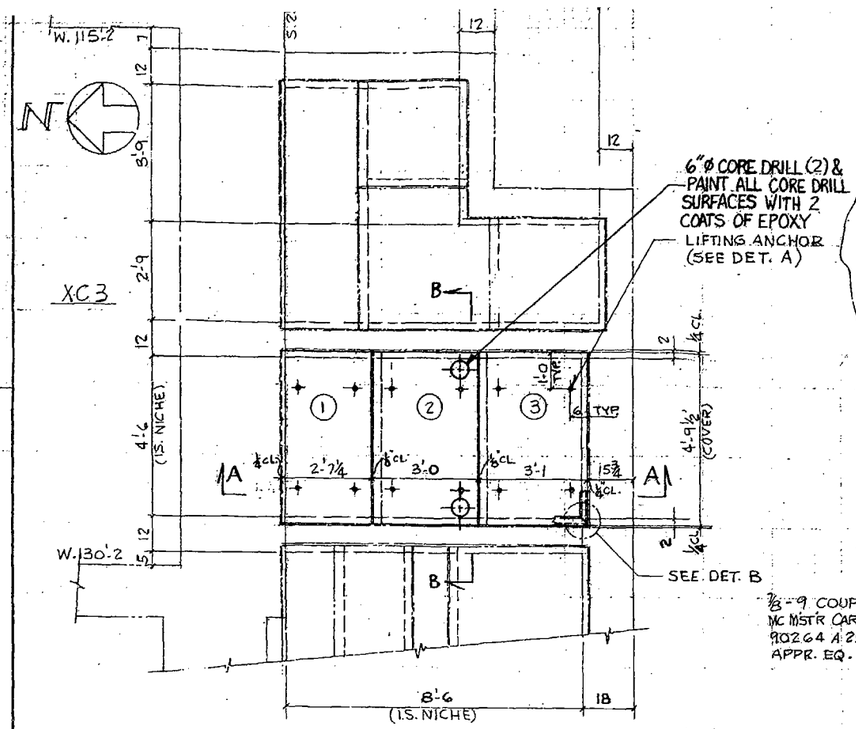
DETAIL 8 15A-M-160 — TYP 12" R.D. CONC. CAL. ORD. CONC. COVERS

DETAIL 9 15A-M-160 — TYP VALVE STEM PENETRATION

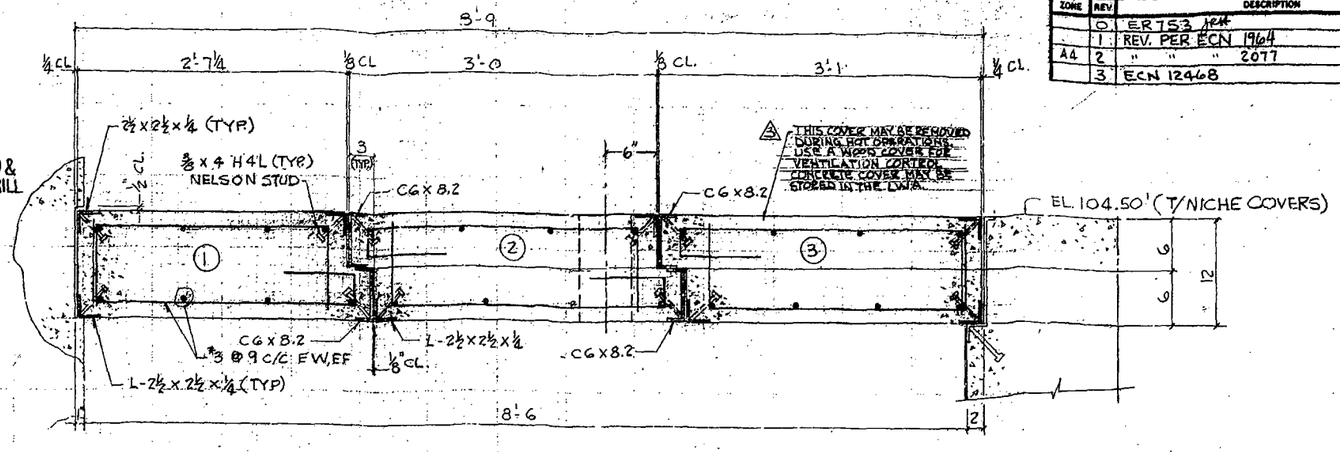
SEE DWG. 15A-L-91 FOR VALVE STEM DETAILS

This drawing is the property of Bechtel Corporation and is not to be used in any way detrimental to the interest of Bechtel Corporation and its client.

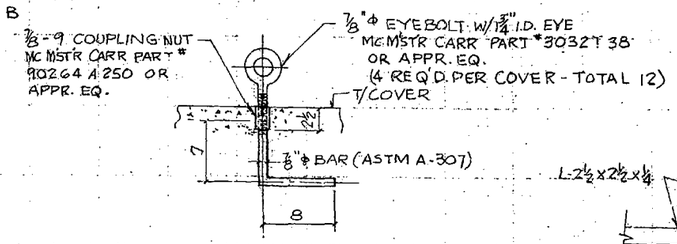
ZONE	REV	DESCRIPTION	DWN BY	DATE	APPROVED
	0	ER753		5/21/86	
	1	REV. PER ECN 1964	WAB	10/8/87	
A4	2	" " " 2077	DRS	12/3/87	DJR
	3	ECN 12468	CW	2-24-2000	



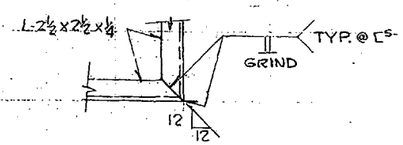
PART PLAN @ EL. 104.50'
½" = 1'-0



SECTION A-A
1½" = 1'-0



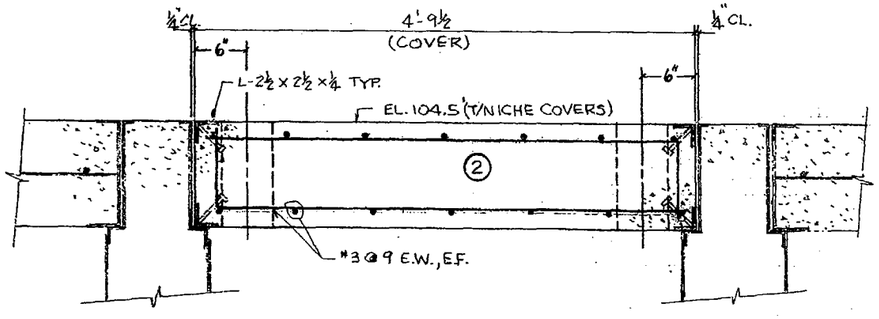
DETAIL A
1½" = 1'-0



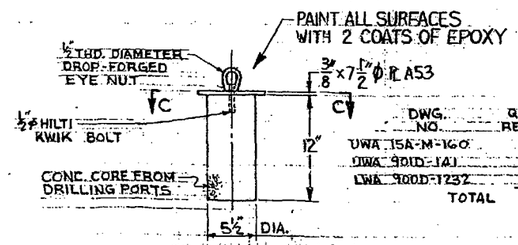
DETAIL B 1½ = 1'-0
(TYP. @ ALL CORNERS)

NOTES:

1. COVER FRAME STEEL - ASTM A-36 UNLESS NOTED.
2. CONTRACTOR TO VERIFY ALL DIMENSIONS IN EXISTING STRUCTURE BEFORE ANY WORK IS TO BEGIN.
3. ALL SHARP EDGES OF SHEARED PLATES AND ALL EXPOSED FINISH SURFACES OF WELDED JOINTS SHALL BE GROUND SMOOTH.
4. FOR ADDITIONAL NOTES SEE DWG 900D-135 AND 900D-136.

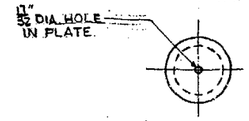


SECTION B-B
1½" = 1'-0



DWG. NO.	QTY. REQ'D.
UWA 15A-M-160	2
UWA 900D-141	2
LWA 900D-1232	2
TOTAL	6

SHIELD PLUG ASS'Y
6 REQ'D.



VIEW C-C
1½" = 1'-0

REFERENCE DRAWINGS: (BECHTEL CORP.)

PLAN -	LOWER	WARM	AISLE	15A-M-106
SECTIONS	"	"	"	15A-M-107
NICHE LINER	"	"	"	15A-M-110
NICHE COVERS	"	"	"	15A-M-159
" "	UPPER	"	"	15A-M-160

QTY. REQD.	SYM	ITEM NO.	NOMENCLATURE OR DESCRIPTION	CODE IDENT. NO.	PART OR IDENTIFYING NO.	MATERIAL	SPECIFICATION	ZONE

PARTS LIST

INDEX CODE NUMBER				UNLESS OTHERWISE SPECIFIED	CONTRACT NO.		A/E CONTRACT NO.	CODE IDENT. NO.
AREA	DWG. TYPE	SYS.	ORIG.		DFTSPN. FJKasperek	DATE OF DWG. 4-23-86	FOR West Valley Nuclear Services Co., Inc. West Valley, New York	
120	09	71	01	TOLERANCES - DO NOT SCALE	CHECKER	DFTG. SUPVR.		
SPEC CODE				2PL DEC ± / 3PL DEC ± / ANGLES ± / AA	DESIGN	ENGR.	LWTS PROCESS BLD'G. LOWER WARM AISLE EL. 100.00' P15 & P16 PUMP NICHE COVER DET.	
				FRACTIONS ±				
					FACILITIES	Q.A.	DWG. SIZE D	SCALE AS NOTED
					ENGR.	E&DS	WEIGHT	DWG. NO. 900D-1232 REV 3
							A/E DWG NO.	SHEET 1 OF 1

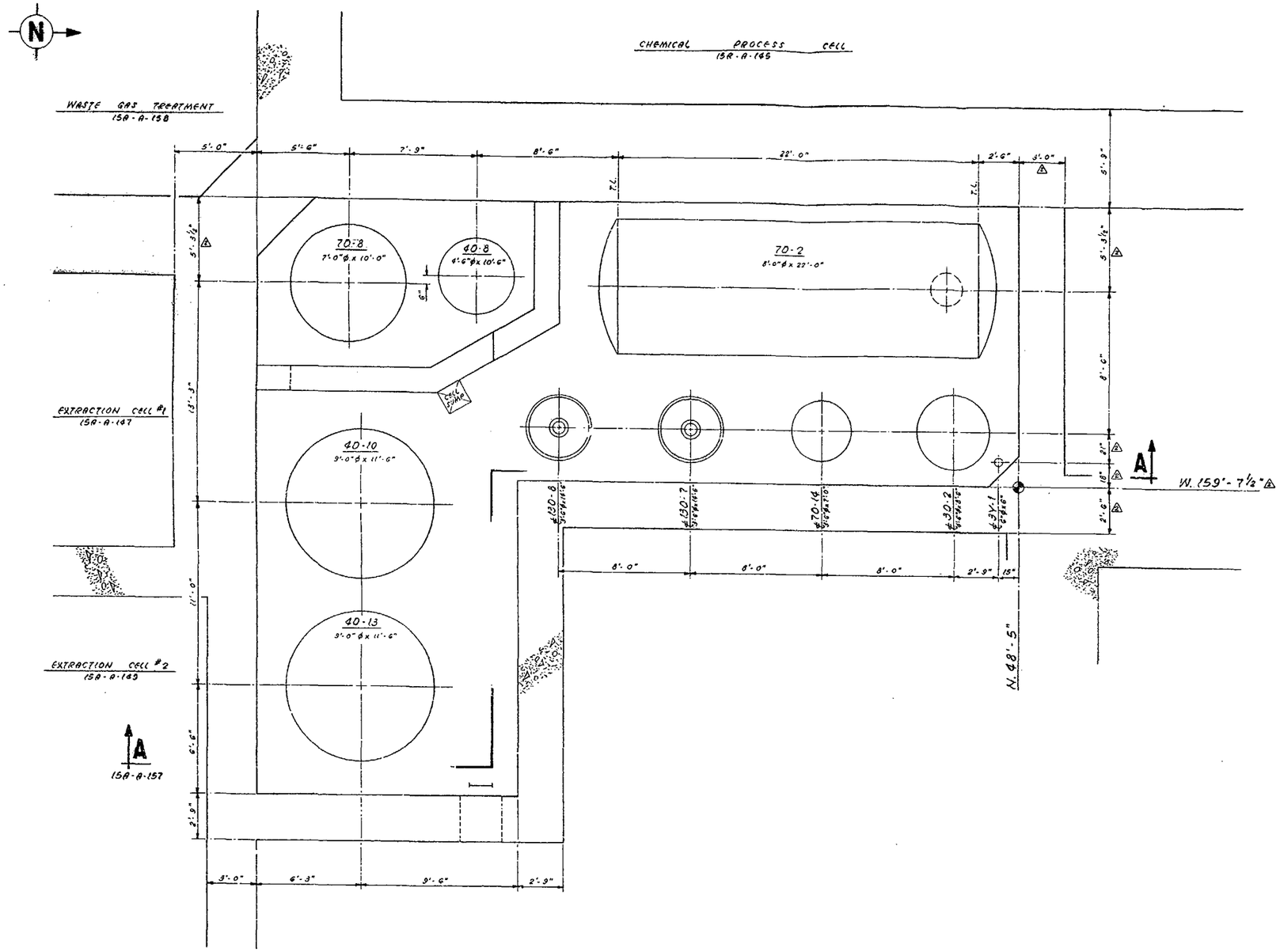
10/18/04 3:36:23 PM REPRO

APPENDIX D-17

LWC SECONDARY CONTAINMENT DRAWINGS
(4 DRAWINGS)

SIZE A

EQUIPMENT NUMBER	DESCRIPTION
30-2	CONDENSATE CATCH TANK
3Y-1	FLOW DIVERTER FOR 30-2
40-8	Pu CYCLE WASTE CATCH & HOLD TANK
40-10	FIRST U CYCLE WASTE CATCH TANK
40-13	SECOND U CYCLE WASTE CATCH TANK
70-2	LOW LEVEL WASTE EVAPORATOR FEED TANK
70-8	REWORK EVAPORATOR FEED TANK
70-14	HOT ANALYTICAL CELL DRAIN CATCH TANK
130-7	SOLVENT WASTE CATCH TANK
130-8	SOLVENT WASTE HOLD TANK



REFERENCE DRAWINGS	
EQUIP. ARRGT. EXTRACTION CELL #1 - PLANS	15A-A-167
EQUIP. ARRGT. EXTRACTION CELL #2 - PLANS	15A-A-169
EQUIP. ARRGT. CHEMICAL PROCESS CELL - PLAN	15A-A-165
EQUIP. ARRGT. LIQUID WASTE CELL - SECT. A-A	15A-A-157
EQUIP. ARRGT. WASTE GAS TREATMENT - PLAN	15A-A-158

NOTES

1. FOR GENERAL ARRANGEMENT OF PROCESS BUILDING SEE DWGS 15A-A-116 THRU 15A-A-121.

REVISION NOTE 3

REVISED COORDINATE, WALL THICKNESS AND MOVED EQUIPMENT 3½" EAST. RELOCATED 3Y-1.

NO.	DATE	REVISIONS	BY	CHK	MECH.	PROC.	CLIENT
3	7/24/63	ADD FIG NO.	RB				
2	7/24/63	SEE REVISION NOTE ABOVE.	EL	RMB	JW		
1	5/24/63	ISSUED FOR CONSTRUCTION	EL	RMB	JW		
0	3/24/63	ISSUED FOR APPROVAL OF PROCESS EQUIPMENT	EL	RMB	JW		

BECHTEL CORPORATION
NEW YORK SAN FRANCISCO LOS ANGELES
ENGINEERING BY BECHTEL ASSOCIATES
NUCLEAR FUEL SERVICES, INC.
SPENT FUEL PROCESSING PLANT

EQUIPMENT ARRANGEMENT
LIQUID WASTE CELL
PLAN

DESIGNED	DRAWN	TRACED	CHECKED	SCALE
	EL			3/8"=1'-0"

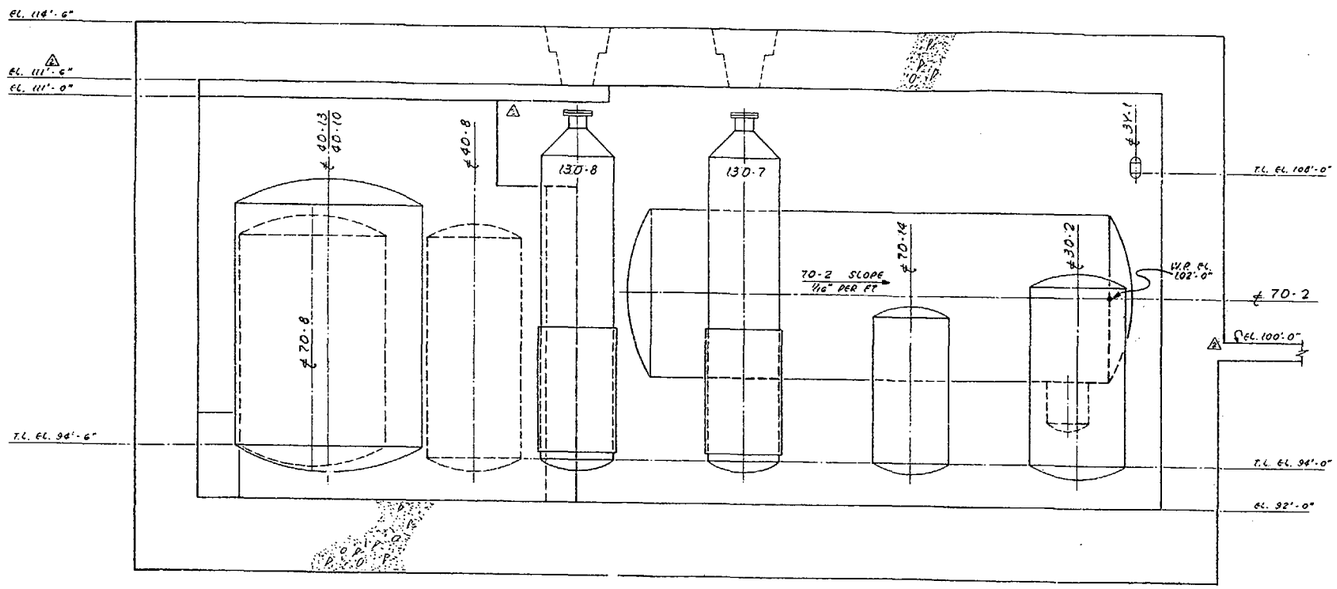
JOB NO.	DRAWING NO.	REV.
4413	15A-A-156	3

1 0 2 4 6 8 10 Feet
GRAPHIC SCALE

FIG. IV-2-31

F.G.M. 8-15-63 M/R 3-21-63

10/18/04 3:39:21 PM REPRO



A – A
15A-A-156

NOTES

1. FOR PLAN SEE 15A-A-156

No.	DATE	REVISIONS	BY	CHK	DESIGN	DRAWN	CHKD	CLIENT
3	9/21/64	REVISED CEILING & WALL THICKNESS. INCREASED HEIGHT OF INTERIOR SHIELD WALL	EL					
2	9/21/64	ISSUED FOR CONSTRUCTION	EL					
1	9/21/64	ISSUED FOR APPROVAL OF PROCESS EQUIPMENT	EL					

BECHTEL CORPORATION
NEW YORK SAN FRANCISCO LOS ANGELES
ENGINEERING BY BECHTEL ASSOCIATES
NUCLEAR FUEL SERVICES, INC.
SPENT FUEL PROCESSING PLANT

EQUIPMENT ARRANGEMENT
LIQUID WASTE TANKAGE CELL
SECTION A-A

GRAPHIC SCALE 1 0 2 4 6 8 10 FEET

F.G.M. 8-15-63

SWP 8-21-63

DESIGNED
DRAWN EL
SCALE 3/8"=1'-0"

BECHTEL

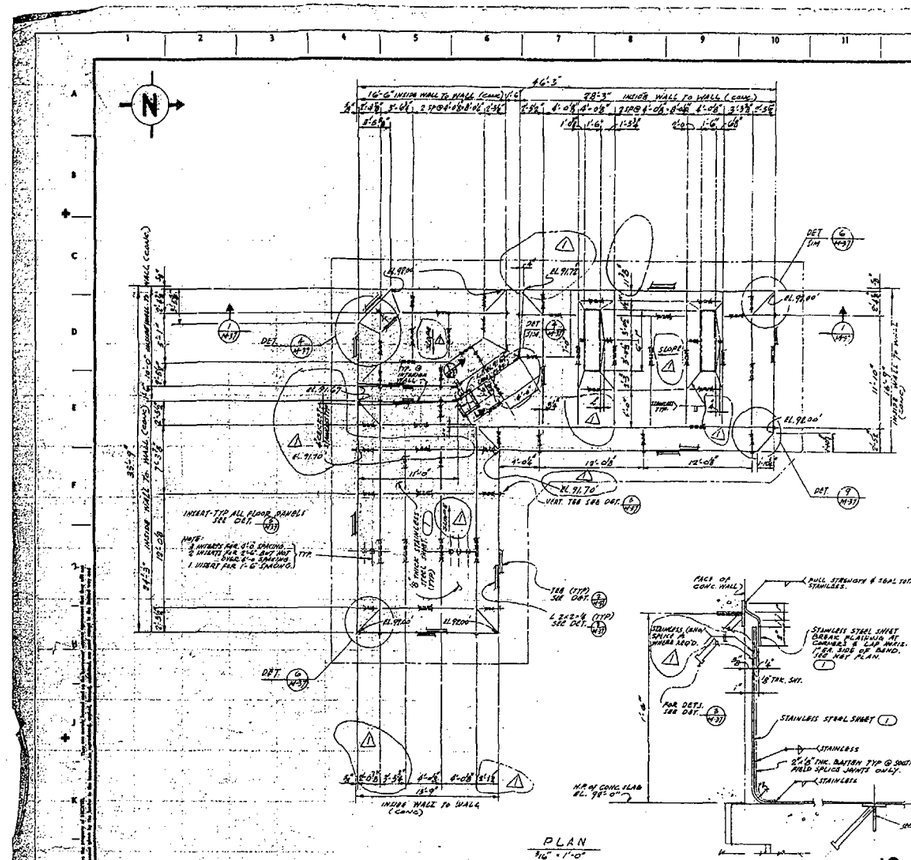
JOB No. 4413 DRAWING No. 15A-A-157 REV. 2

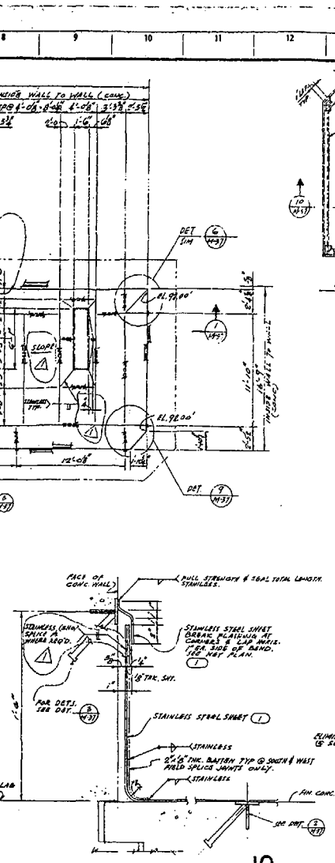
SIZE A

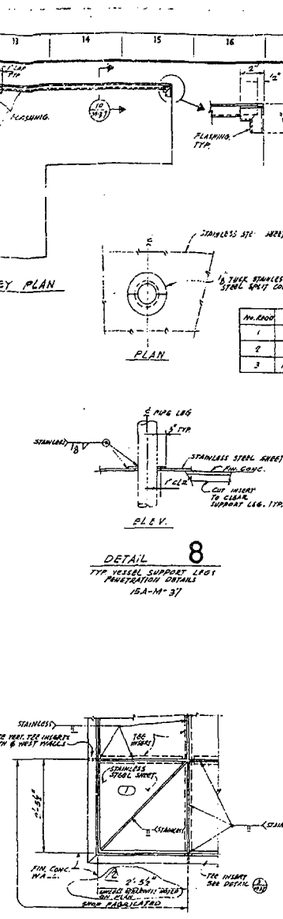
10/18/04 3:38:54 PM REPRO

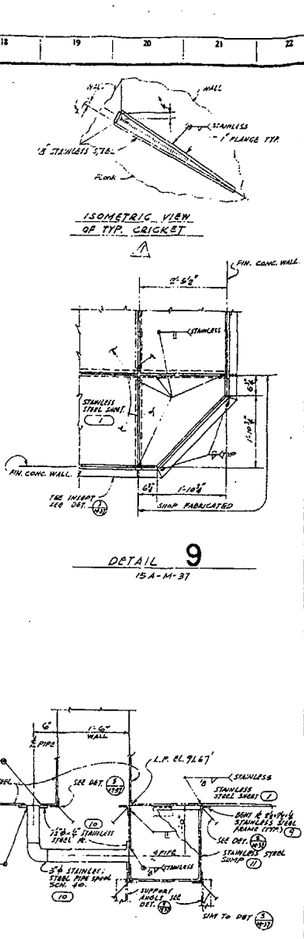
CHANGES PRIOR TO EACH USE
INIT. _____ DATE _____

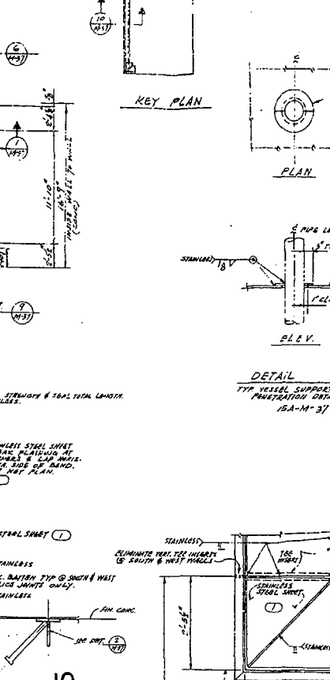
15A-M-37

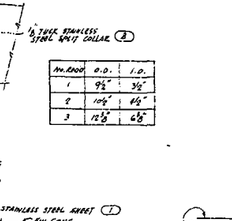












LIST OF MATERIAL *

ITEM	QUAN	DESCRIPTION	ORDER NO
1	1 LOT	¼" THICK STAINLESS STEEL SHEET LINER	15M-1
2	612	LIN. FT. "TEE" PER DET. 2 (STAINLESS STEEL)	15M-16
3	716	LIN FT L 2½"x2½"x¼ W/ANCHOR PER DET. 3	FIELD
4	72	INSERTS PER DET. 5 (STAINLESS STEEL)	15M-16
5	1 LOT	L 2½"x2½"x⅜ CARBON STEEL 300 120 lb/ft (5)	FIELD
6	3	LIN. FT. SHIFT IB PER DET. 6	FIELD
7	6	LIN. FT. SHIFT IB PER DET. 6	FIELD
8	1 LOT	STAINLESS STEEL COLLAR PER DET. 8	15M-1
9	1	STAINLESS STEEL SHIFT IB FRAME W/REBAR STUD ANCHORS PER DET. 9	15M-16
10	1	3" ø STAINLESS STEEL PIPE SPOOL PER DET. 7	15M-16
11	1	STAINLESS STEEL SUMP PER DET. 7	15M-16

* NOTE: SEE GENERAL NOTE NO 1 FOR TYPE OF STAINLESS STEEL REQUIRED.

GENERAL NOTES

1. STAINLESS STEEL SHALL BE TYPE 304 L, TYPE 2D FINISH.
2. ALL WELDS SHALL BE ¼" EXCEPT AS NOTED.
3. ALL WELDING SHALL BE IN ACCORDANCE WITH APPLICABLE PORTIONS OF AWS D1.1 "STRUCTURAL WELDING CODE" SPECIFICATION 1.4.3-C.2.
4. ALL CHAIR BOARS OF SWEPTED PLATES SHALL BE GROUND SMOOTH. ALL WELDS WHERE PRODUCT SHOWS FINISHED SURFACES SHALL BE GROUND SMOOTH.
5. SUGGESTED METHOD OF SUPPORTING REAMING MEMBERS PREVIOUS TO ALIGNING REAMERS AND USE OF ADJUSTING SHIMS, NUT OR CLAMPS TO SUPPORT REAMING MEMBERS & WELDING TO INSURE PROPER ALIGNMENT. SUPPORTS SHALL BE FURNISHED BY FABRICATOR. SEE PART 1 SECTION 1 FOR REAMING. SHIMS SHALL BE PROVIDED AS REQUIRED TO INSURE RIGIDITY AND ALIGNMENT OF REAMING.

REFERENCE DRAWINGS

KEY FOUNDATION PLAN	15A-0-4
FOUNDATION PLAN - LIQUID WASTE TANKAGE	15A-2-20

NO.	DATE	REVISIONS	BY	CHK'D
1	5/73	ADDED PIPE SPOOL DET.	JT	
2	6/73	REVISED PIPE CONSTRUCTION	JT	

SCALE: AS NOTED | PREPARED | DRAWING

BECHTEL CORPORATION
SAN FRANCISCO NEW YORK LOS ANGELES

ENGINEERING BY
BECHTEL ASSOCIATES

NUCLEAR FUEL SERVICES, INC.
SPENT FUEL PROCESSING PLANT

METAL LINER AND INSERT DETAILS
LIQUID WASTE TANKAGE

JOB NO. 4413 | DRAWING NO. 15A-M-37 | SHT. 1

10/18/04 3:38:2 PM PEDRO

CHANGES PRIOR TO EACH USE.
INIT_______ DATE_______

SIZE A

LIST OF MATERIAL

ITEM	QUAN	DESCRIPTION	ORDER NO
1	130	CU YDS CONCRETE MIX 3 (2500 PSI)	FIELD
2	1-LOT	REINFORCING STEEL: #10, #5, 5, 6, 7, 10, 11 — LBS [illegible]	15Q-5
3	16	CU. YDS CONC. (BEDDING SLAB)	FIELD
4	1-LOT	WATER PROOFING MEMBRANE (PLASTICIZED POLYVINYL CHLORIDE SHEET) 8 MIL THICK MIN.	FIELD
5	1-LOT	ADHESIVE FOR APPLICATION OF WATERPROOFING MEMBRANE	FIELD
6	4	1½"φ x 2'-3" LG TYPE 2 ANCHOR BOLT W/1 CPSF HEX NUT (STAINLESS STEEL)	15Q-6
7	8	¾"φ x 2½" LG. MACH. BOLTS W/1 CPSF HEX NUT (STAINLESS STEEL)	FIELD
8	52	1"φ x 3" LG MACH. BOLTS W/1 CPSF HEX NUT (STAINLESS STEEL)	FIELD
9	36	1"φ x 3½" LG. MACH. BOLTS W/1 CPSF HEX NUT (STAINLESS STEEL)	FIELD
10			
11			
12	4	3"φ VESSEL SUPPORT LEGS PER DET. 6	15M-14
13	16	6"φ VESSEL SUPPORT LEGS PER DET. 6	15M-14
14	18	5"φ VESSEL SUPPORT LEGS PER DET. 6	15M-14
15	1	[illegible] LG. SLIDE PLATE PER DET. 8 (STAINLESS STEEL)	15M-14
16	2	[illegible]"φ AMERICAN STD. HEX HEAVY JAM NUT (STAINLESS STEEL)	15Q-6
17	1-LOT	PVC [illegible] PREMOLDED JOINT FILLER ½" THK. BY ELECTROVERT INC. N.Y.	FIELD
18	24	LIN. FT. DURAJOINT WATERSTOP TYPE [illegible] 6" x [illegible]" MADE BY ELECTROVERT INC. N.Y.	FIELD

GENERAL NOTES

1. DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH SPECIFICATION 4413-Q-2
2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH AT AGE OF 28 DAYS AS INDICATED IN THE LIST OF MATERIAL.
3. FOR LOCATION OF COORDINATE POINT SEE OVERALL PLAN DWG. 15A-A-115.
4. FOR ADDITIONAL GENERAL NOTES SEE DWG 15A-Q-4
5. BEFORE POURING CONCRETE VERIFY REQUIREMENTS OF ALL SERVICES FOR THE LOCATION OF PIPES, UTILITIES, ETC.
6. NUTS @ SLIDE END SHALL BE CAREFULLY TIGHTENED AS FOLLOWS.
   (a) ALLOW 1/32" CLEARANCE BETWEEN BASE OF BOTTOM NUT & SUPPORT FOOT.
   (b) TIGHTEN JAM NUT SECURELY
   (c) BE SURE THAT SLOTTED OR OVERSIZE HOLES IN VESSEL FOOT WILL ACCOMMODATE EXPANSION AT SLIDING END.
7. THE WATERSTOP SYSTEM SHALL PROVIDE A COMPLETE & CONTINUOUS BARRIER ACROSS ALL EXPANSION JOINTS BELOW EL. 101.00' AND SLAB CONSTRUCTION JOINTS BELOW 92.00' AND WALL CONSTRUCTION JOINTS BELOW EL. 99.00' ALL JTS. SHALL BE MADE IN COMPLIANCE WITH THE MANUFACTURERS DIRECTIONS TO PROVIDE A SOUND CONNECTION FOR FULL STRENGTH & WATER RESISTANCE.

LEGEND

[illegible] · INDICATES PROCESS BUILDING PLANT GRID COORDINATES SYSTEM ORIGINATING @ POINT "A".

REFERENCE DRAWINGS

FOUNDATION KEY PLAN	15A-Q-4
OVERALL PLAN - PROCESS AREA	15A-A-115
FOUNDATION PLAN - EXTRACTION CELLS & PUMP AISLE	15A-Q-18
FOUNDATION PLAN - CHEM. PROCESS CELL & SCRAP REMOVAL	15A-Q-13
PLAN - LIQUID WASTE CELL	15A-M-34
PLAN - EQUIPMENT ARRANGEMENT LIQUID WASTE CELL	15A-A-155
ELEVATION - EQUIPMENT ARRANGEMENT, LIQUID WASTE CELL	15A-A-157
ANCHOR BOLTS	D-Q-510
PIPE LEG SUPPORTS	15E-D-9
SECTIONS & DETAILS - LIQUID WASTE CELL	15A-M-36
ELEVATIONS - LIQUID WASTE CELL	15A-M-35
PILE PLAN	15A-Q-1
METAL LINER & INSERT DETAILS	15A-M-37

No.	DATE	REVISIONS
4	[illegible]	CORRECTED DIMENSION ON PLAN & REV. DETAIL 7
3	[illegible]	CORRECTED DIMENSION ON PLAN
2	[illegible]	[illegible] ELEVATION OF SLAB
1	[illegible]	[illegible]
0	[illegible]	ISSUED FOR CONSTRUCTION

SCALE [illegible] DESIGNED DRAWN

BECHTEL CORPORATION
NEW YORK SAN FRANCISCO LOS ANGELES

ENGINEERING BY BECHTEL ASSOCIATES
NUCLEAR FUEL SERVICES, INC
SPENT FUEL PROCESSING PLANT

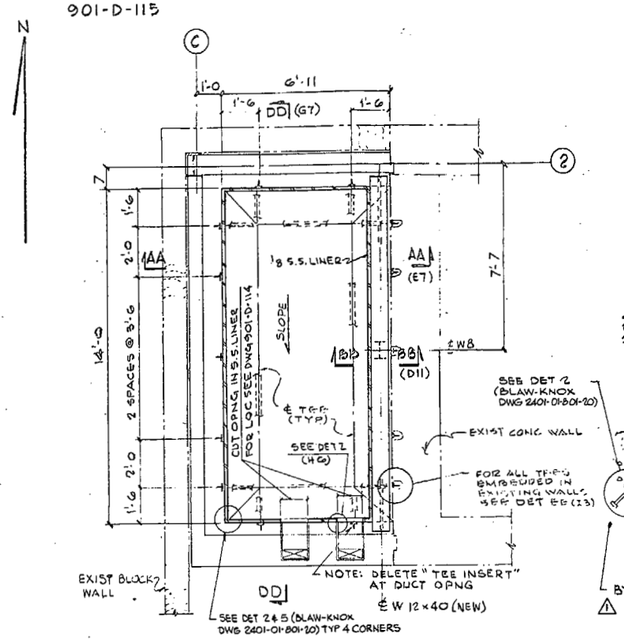
FOUNDATION PLAN AND SECTIONS
LIQUID WASTE CELL

BECHTEL | JOB No. 4413 | DRAWING No. 15A-Q-20 | REV 4

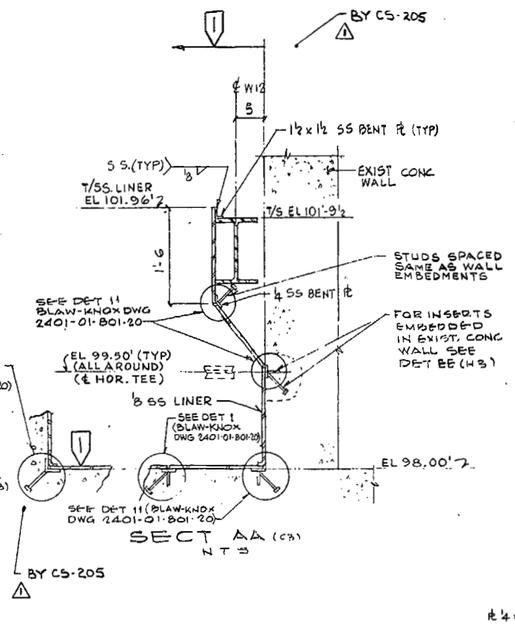
APPENDIX D-18

CSS SECONDARY CONTAINMENT DRAWINGS
(8 DRAWINGS)

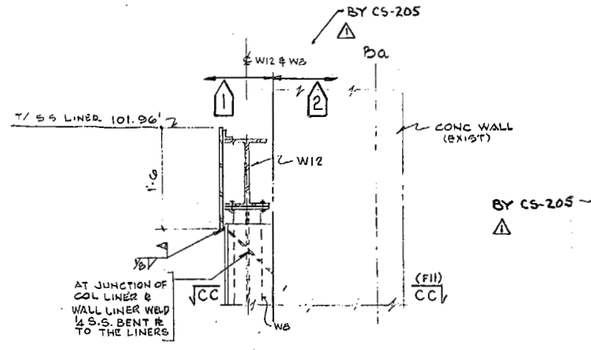
901 D-115



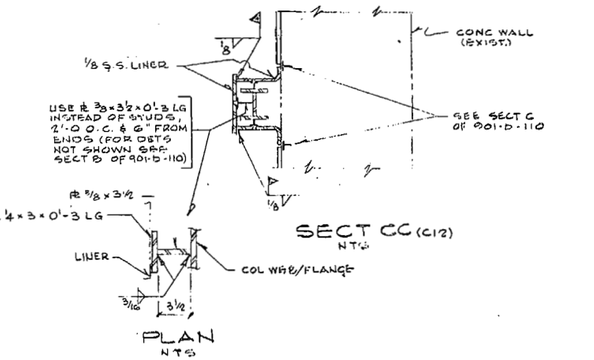
PART PLAN
3/8 = 1'-0



SECT AA (C8)
N T S

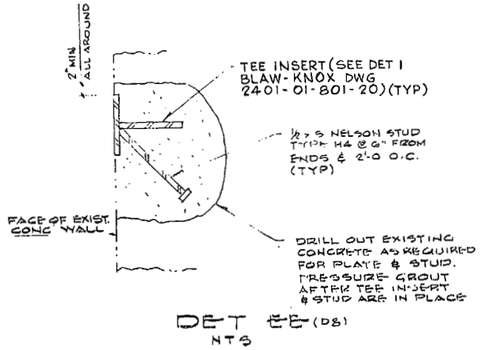


SECT BB (D3)
NTS

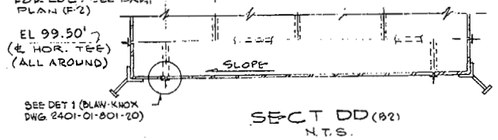


SECT CC (C12)
NTS

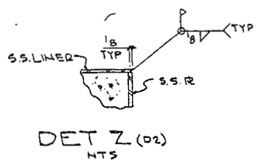
PLAN
NTS



DET EE (D8)
NTS



SECT DD (B2)
N.T.S.



DET Z (D2)
NTS

REV NO	DATE	REVISION	DR	CH	APPROVED
0	7/29/85	ER 456			
1	5-8-94	REV PER ECN 7821	GW	DRS	

NOTES:

1) FOR REFERENCE DRAWINGS SEE 901-D-114
2) WORK THIS DRAWING WITH 901-D-114
3) FOR PIPING PENETRATION LOCATIONS AND DETAILS SEE DRAWINGS 902-D-80, 902-D-81 & 902-D-82
4) SEE DRAWING 2401-701-201 FOR SCOPE OF WORK KEY AND LEGEND

GENERAL NOTES

1. Allowable soil bearing: 5,000 PSF.
2. Frost penetration depth: 4'-0
3. Cast in place concrete: f'c = 4,000 PSI at 28 days.
4. Concrete reinforcing steel: fy = 60,000 PSI.
5. Structural steel: fy = 36,000 PSI, ASTM A36.
6. Stainless steel plates and shapes type 304L: fy=25,000 PSI, ASTM A240, A276.
7. Anchor Bolts: fy=36,000 PSI, ASTM A307, type B or fy=81,000 PSI, ASTM A325.
8. Concrete materials, reinforcing and all concrete work shall comply with ACI 318.77 "Building Code Requirements for Reinforced Concrete".
9. Concrete work shall conform to all requirements of ACI 301-72 "Spec for Structural Concrete of Building".
10. Reinforcing steel shall be intermediate grade billet steel bars conforming to ASTM A615 (Deformed Bars) Grade 60.
11. Weld studs shall be "Nelson" type H4L, size as noted or approved equal.
12. Expansion anchors shall conform to Federal Specification FF-S-325 Group II, Type 4, Class 1, "Hilti" or approved equal.
13. Lap splices shall be Class C as per ACI 318 unless otherwise noted.
14. All bars shall have 2" minimum concrete cover unless otherwise noted.
15. Shift or bend bars to clear anchor bolts, drains, pipe sleeves and embedded parts.
16. Provide construction JTs in walls to limit the lift to a maximum of 10.0'. For lifts exceeding 10.0', Submit details to WVNS.
17. Grout shall be non-shrinkable type.
18. Steel design, fabrication and erection shall be in accordance with AISC Specification for Design, Fabrication, and Erection of Structural Steel, eighth edition, Part 1.
19. Shop connections shall be welded.
20. Field framing connection shall be high strength bolted friction type made up with ASTM A325 bolts, unless noted otherwise.
21. Plate welds shall have full penetrations and all welds shall be visually examined to the requirements of paragraph 8.15 of AWS D1-1. Defects shall be removed by chipping or grinding and then rewelded.
22. The use of leveling plates under column base plate will not be permitted.
23. All steel surfaces that are to be encased or abutting placed concrete in the finishen work shall be unpainted. All other surfaces of steel members shall receive one coat of zinc-chromate primer conforming to Federal Spec. TT-E-645 and two coats of enamel TT-E-489, Class A.
24. All contact surfaces within high-strength bolt connections and welding areas shall be free of oil caint lacquer or galvanizing.
25. Contractor shall furnish all plates clip angles, connections, etc. required for the completion of the structure even if every such item is not shown on drawings.
26. All welding shall be in accordance with the Structural Welding Code - AWS D1-1-[illegible], of the American Welding Society. Only low Hydrogen El ctrodes shall be used. The interpass temperature for welding to embed's shall not exceed 250°F. The maximum interpass temperature for welding stainless steel shall be 350°F.
27. Base ℞ are symmetrical about centerline of columns unless noted.
28. Adequate temporary bracing, supports, shoring and scaffolding should be provided during construction and until all new construction elements achieve their required strengths.
29. Coping shall be kept to a minimum. All copes, blocks and re-entrant cuts shall have a minimum radius fillet.
30. Size and location of pipe sleeves, conduits and other openings in floors not shown on design drawings shall be established by the field from reference drawing. All sleeves should be in place before concrete is placed. Minimum embedment for expansion anchors shall be as follows: 5-/4 dia., 5¼-5/8" dia., 5"-3/4" dia.
31. Slab finish tolerances shall be Class A, as per ACI 301-72. Slab surface shall be troweled finish.
32. ALL BACK-FILL TO BE COMPACTED TO 95% MODIFIED PROCTOR.
33. THE WELD METAL TO JOIN THE BASE METALS SHALL BE AS FOLLOWS:
    a) - AWS - A5.1 E70XX TO JOIN CARBON STEEL TO CARBON STEEL.
    b) - ASME SFA 5.4, CLASSIFICATION E308 TO JOIN STAINLESS STEEL TO STAINLESS STEEL.
    c) - ASME SFA 5.4, CLASSIFICATION E309 TO JOIN STAINLESS STEEL TO CARBON STEEL.

FOR DRAWING INDEX SEE DRAWING NO. _____

APPRVD WVNS CO. R.P. Vitko	8/2/85
PROJECT MGR R.Starr	4/1/85
ENGINEER SUPV [illegible]	4/1/85
LEAD DISC ENGR [illegible]	4/3/85
DESIGN R.PARASURAMA	4/3/85
CHECKED S.CASUBA	4/3/85
DRAWN S.TRAINOR	DATE 4/3/85
DE-AC07-81ID12139 PROJECT NO.	
19-CIV-02275 SUBCONTRACT NO.	
ISSUED FOR CONSTRUCTION	

EBASCO SERVICES INCORPORATED
A/E O.F.S. NO. 2388 TASK ORDER 004
FOR
WEST VALLEY NUCLEAR SERVICES COMPANY, INC
WEST VALLEY, NEW YORK
WEST VALLEY DEMONSTRATION PROJECT
01/14 BUILDING MODIFICATION
PUMP NICHE LINERS

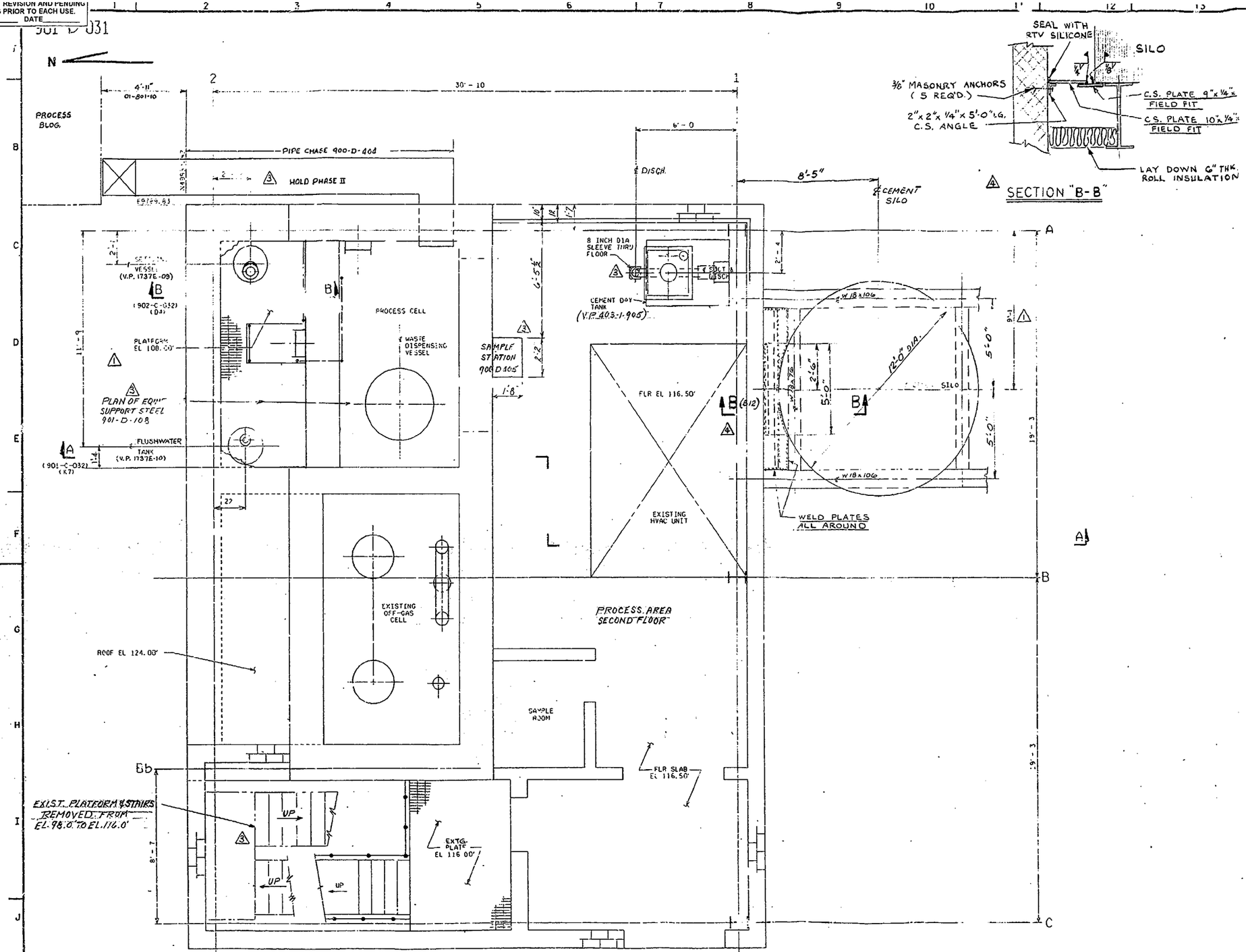
SIZE	INDEX CODE NUMBER: AREA	SYS. TYP	CL	ORIG	DRAWING NO.	REV.
D					901D-115	1

SCALE AS NOTED | SPEC. CODES | A/E SHEET NO. 201-D-115

10/18/04 2:56:55 PM PEDRO

CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE.
INIT_____ DATE_____

901 D 031



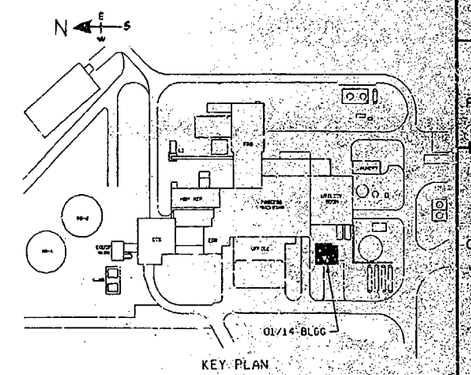
PLAN EL 116.50'

SECTION "B-B"

NO.	DATE	REVISION	DR	CH	APPROVED
1	7-20-84	FOR CONSTRUCTION			
2	8-20-84	REVISED TO SPECIFICATION			
3	8-29-84	REV. TO D.F.C. LOG No. 086	RBH		PWD
4	5/21/85	PER DFC-254	CP		

NOTES

FOR NOTES AND REFERENCE DRAWINGS SEE DWG 901-C-030.



KEY PLAN

3/8"=1'-0"

REV. B - 11-15-84

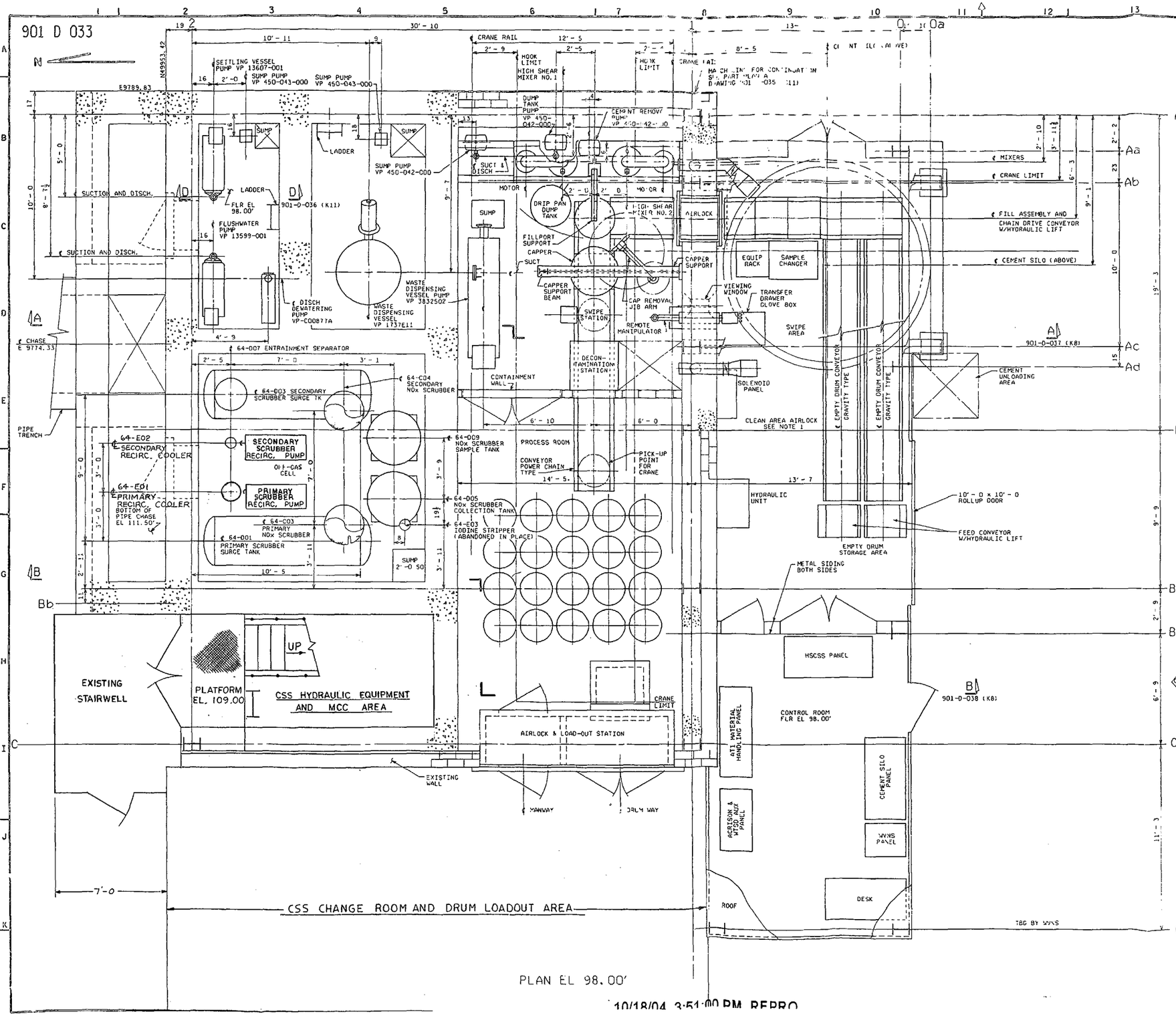
FOR DRAWING INDEX SEE DRAWING NO. 900-D-362

APPRVD WVNS CO.	7/22/85	EBASCO SERVICES INCORPORATED A/E O.F.S. NO. 2388 TASK ORDER 007
PROJECT MGR	7/5/84	FOR
ENGINEER SUPV	7/5/84	WEST VALLEY NUCLEAR SERVICES COMPANY, INC WEST VALLEY, NEW YORK
LEAD DISC ENGR	7/5/84	WEST VALLEY DEMONSTRATION PROJECT
DESIGN	7/5/84	GENERAL ARRANGEMENT 01/14 BUILDING PLAN EL 116.50' CEMENT SOLIDIFICATION BUILDING
CHECKED	7/5/84	
DRAWN T. KEHRBERGER	DATE 7/7/84	
DE-AC07-61NE44139 PROJECT NO.		SIZE D · INDEX CODE NUMBER: AREA 850, DR. TYP 05, CL 70, ORIG 01 · DRAWING NO. 901D-031 · REV. 4
19-CWV-02275 SUBCONTRACT NO.		
ISSUED FOR CONSTRUCTION		SCALE 3/8"=1'-0 · SPEC. CODES · A/E SHEET NO. 901-C-031 · A

BASELINED ON REV. NO. 2 DTD 8-20-84

10/18/04 3:53:38 PM REPRO

901D-033



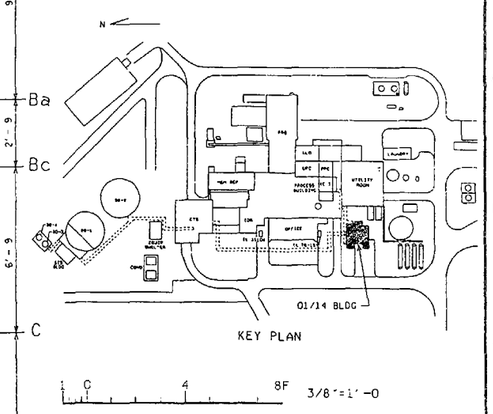
NO.	DATE	REVISION	DR	CH	APPROVED		
B	4-4-85		DH	RAN	RJL	PSK MDB	LES
GENERAL REVISION							
C	10/24/85		DH	[illegible]	[illegible]	[illegible]	[illegible]
GENERAL REVISION PER TA-347							
0	12/5/85	ER 568			[illegible]		
1	9/18/89	ECN 3160	LR	KMQ	RPV		

NOTES

1. THERE ARE TO BE NO RADIOACTIVE OPERATIONS IN THIS AREA.
2. THESE GENERAL ARRANGEMENTS 901-D-033 THRU 038 SUPERSEDES EBASCO GENERAL ARRANGEMENTS 901-C-030 THRU 032 IN THEIR ENTIRETY.

REFERENCE DRAWINGS

GENERAL ARRANGEMENT-01/14 BUILDING PLAN EL 116.50'	901-D-034
GENERAL ARRANGEMENT-01/14 BUILDING PLAN EL 130.00' & SECTIONS	901-D-035
GENERAL ARRANGEMENT-01/14 BUILDING PLAN EL 144.00' & SECTIONS	901-D-036
GENERAL ARRANGEMENT-01/14 BUILDING SECTIONS	901-D-037
GENERAL ARRANGEMENT-01/14 BUILDING SECTIONS	901-D-038



KEY PLAN

3/8"=1'-0

FOR DRAWING INDEX SEE DRAWING NO.

APPRVD WVNS CO. R.P. VITKO	12-9-85	EBASCO SERVICES INCORPORATED A/E O.F.S. NO. 2388 TASK ORDER 014
PROJECT MGR L. E. SHAW	2-15-85	FOR WEST VALLEY NUCLEAR SERVICES COMPANY, INC WEST VALLEY, NEW YORK
ENGINEER SUPV H. D. WEINGART	2-15-85	
LEAD DISC ENGR P. KOWALCZYK	2-15-85	WEST VALLEY DEMONSTRATION PROJECT
DESIGN R. J. LEWKO	2-15-85	GENERAL ARRANGEMENT 01/14 BUILDING PLAN EL 98.00'
CHECKED R. MILLER	2-15-85	
DRAWN D. HARDY	DATE 2-15-85	

DE-AC07-81NE44139 PROJECT NO.
19-CUV-02275 SUBCONTRACT NO.
ISSUED FOR CONSTRUCTION

SIZE D | INDEX CODE NUMBER: AREA, DR. TYP, CL, ORIG | DRAWING NO. 901D-033 | REV. 1

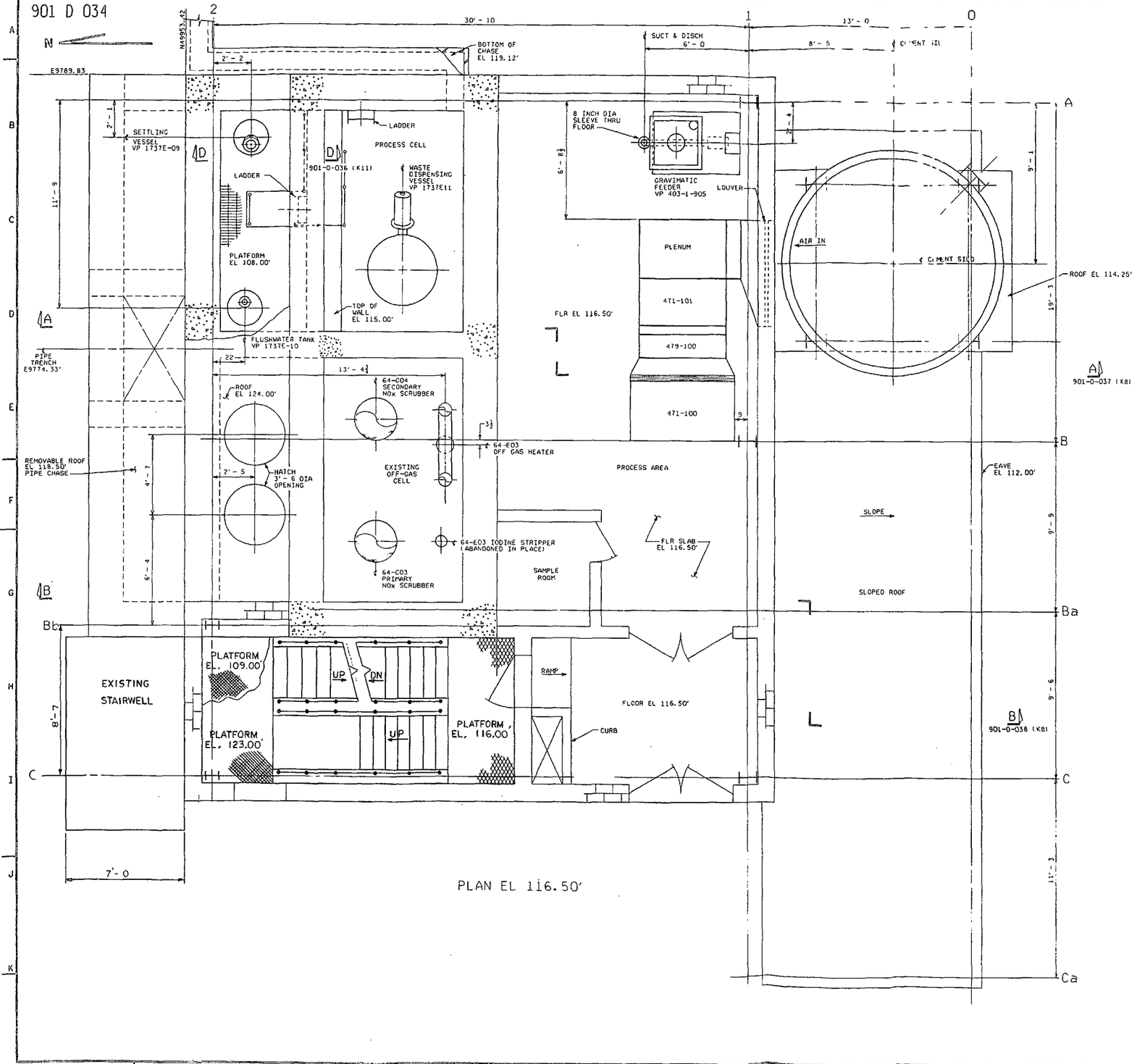
SCALE | SPEC. CODES | A/E SHEET NO.

10/18/04 3:51:00 PM REPRO

901D-034

901 D 034

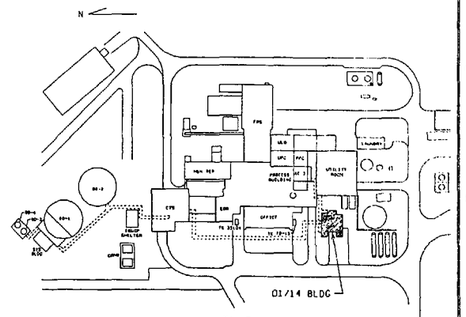
NO.	DATE	REVISION	DR	CH	APPROVED
B	4-4-85	GENERAL REVISION	DH	RAN	RJL, FSK ADW, LBS
C	10/18/04	GENERAL REVISION PER TA-347	DH	RAN	RJL, FSK ADW, LBS
0	12/5/85	ER 568			RJL
1	9/21/89	ECN3160	LR	KMQ	RJL



PLAN EL 116.50'

NOTES

FOR NOTES AND REFERENCE DRAWINGS SEE DWG 901-0-033.



KEY PLAN

1 0 4 8F 3/8"=1'-0

FOR DRAWING INDEX SEE DRAWING NO. ____

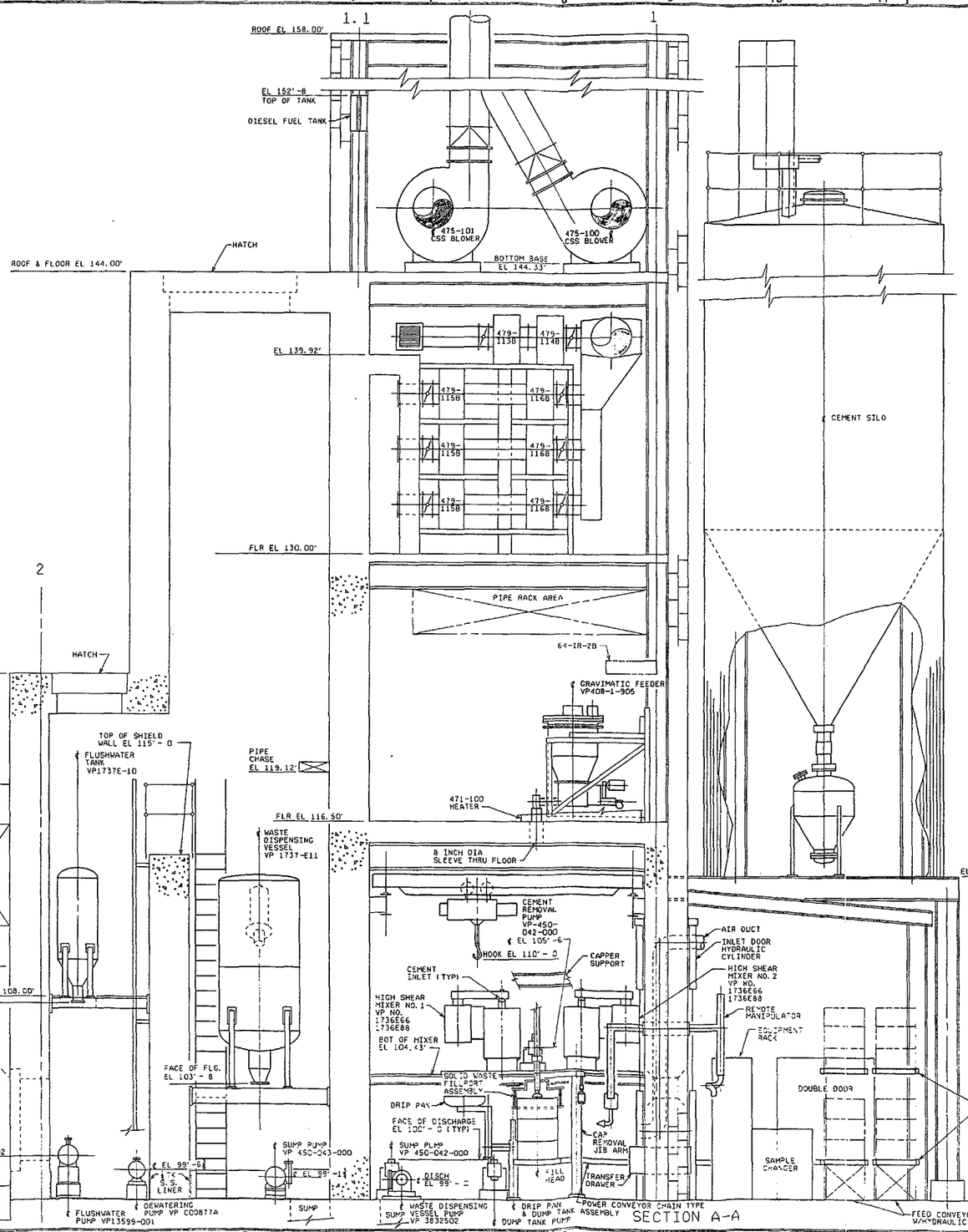
APPRVD WNS CO. R.P. VITKO	12-9-85	EBASCO SERVICES INCORPORATED
PROJECT MGR L. E. SHAW	2-11-85	A/E O.F.S. NO. 2388 TASK ORDER 014
ENGINEER SUPV M. D. WEINGART	2-11-85	FOR WEST VALLEY NUCLEAR SERVICES COMPANY, INC WEST VALLEY, NEW YORK
LEAD DISC ENGR P. KOWALCZYK	2-11-85	WEST VALLEY DEMONSTRATION PROJECT
DESIGN R. J. LEBKO	2-11-85	GENERAL ARRANGEMENT 01/14 BUILDING PLAN EL 116.50'
CHECKED R. MILLER	2-15-85	
DRAWN D. MARDY	DATE 2-15-85	
DE-AC07-81NE44139 PROJECT NO.		SIZE D; INDEX CODE NUMBER AREA, DR. TYP, CL, ORIG; DRAWING NO. 901D-034; REV. 1
19-CNV-02275 SUBCONTRACT NO.		SCALE 3/8"-1'-0; SPEC. CODES; A/E SHEET NO. 901-D-034 C
ISSUED FOR CONSTRUCTION		

D2C(C2A,81-170[1083482.DGN;882
22:46:08 10/18/04
d:12345678\012345678\012345678\012345678\012345678\01 34

10/18/04 3:46:48 PM REPRO

901D-037

901 D 037

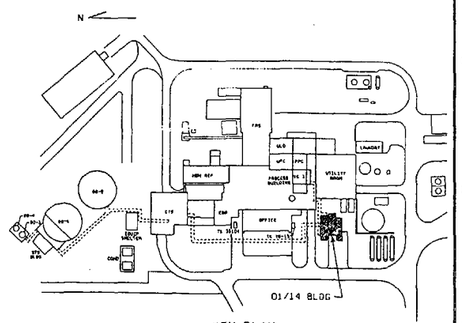


SECTION A-A

NO.	DATE	REVISION	DR	CH	APPROVED
B	4-4-85	GENERAL REVISION	DH	RAN	RJL PSK MDW LES
C	11/24/85	GENERAL REVISION PER TA-347	DH	RAN	RJL PSK MDW LES
D	12/5/85	ER 568			

NOTES

FOR NOTES AND REFERENCE DRAWINGS SEE DWG 901-D-033.



KEY PLAN

1 0 4 8F 3/8"=1'-0

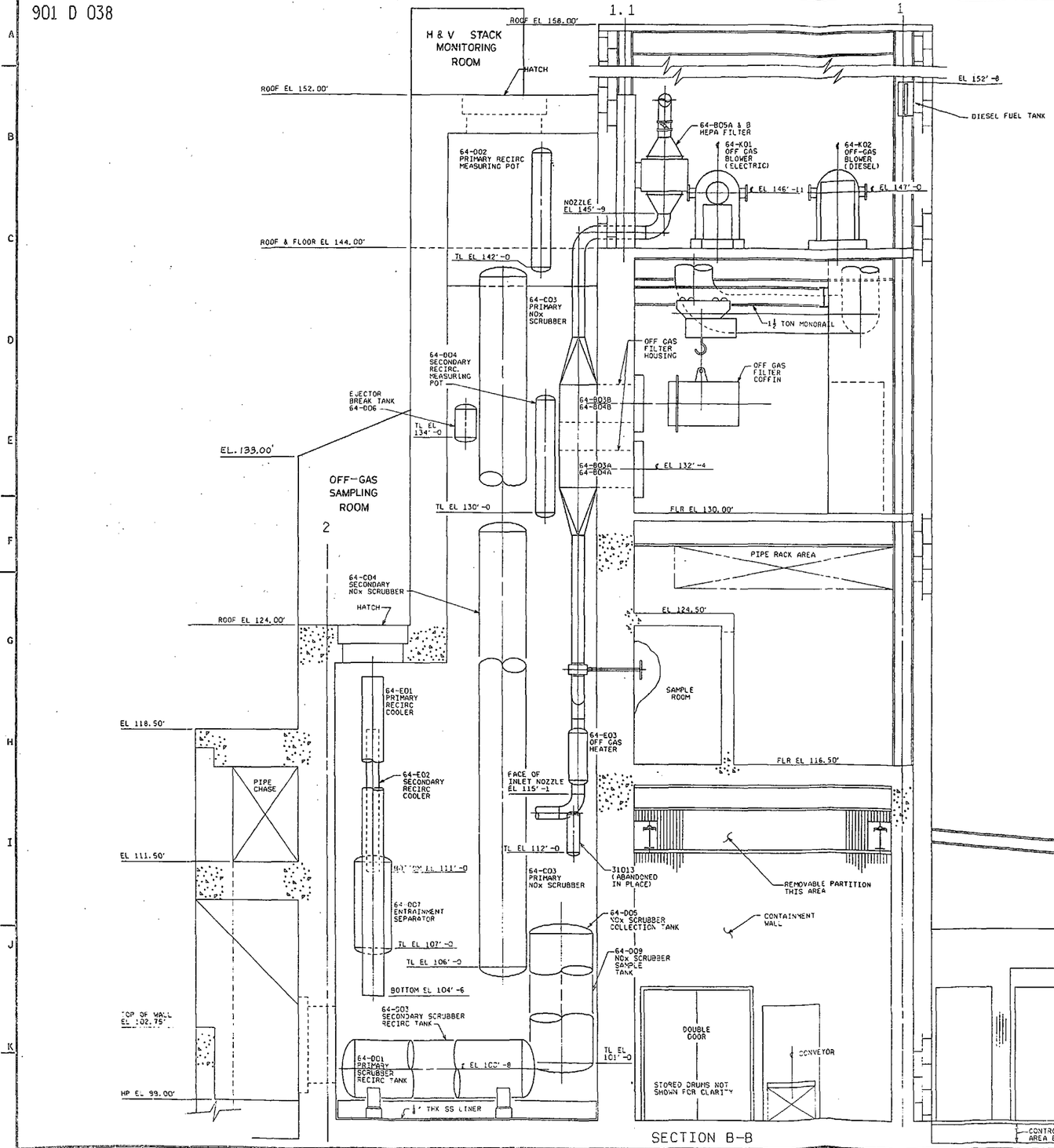
FOR DRAWING INDEX SEE DRAWING NO.

APPRVD VNNS CO. R.P. VITKO	12-7-85	EBASCO SERVICES INCORPORATED
PROJECT MGR L.E. SHAW	2-15-85	A/E O.F.S. NO. 2388 TASK ORDER 014
ENGINEER SUPV H.D. WEINGART	2-11-85	FOR WEST VALLEY NUCLEAR SERVICES COMPANY, INC WEST VALLEY, NEW YORK
LEAD DISC ENGR F. KOTALCZYK	2-15-85	WEST VALLEY DEMONSTRATION PROJECT
DESIGN R. J. LEWKO	2-11-85	GENERAL ARRANGEMENT 01/14 BUILDING SECTIONS
CHECKED R. MILLER	2-15-85	
DRAWN D. HARDY	DATE 2-15-85	
DE-AC07-81NE44139 PROJECT NO.		SIZE D; INDEX CODE NUMBER AREA DR.TYP CL ORIG; DRAWING NO. 901D-037; REV. 0
19-CIN-02275 SUBCONTRACT NO.		
ISSUED FOR CONSTRUCTION		SCALE 3/8"=1'-0; SPEC. CODES; A/E SHEET NO. 901-D-037 C

10/18/04 3:45:38 PM REPRO

901D-038

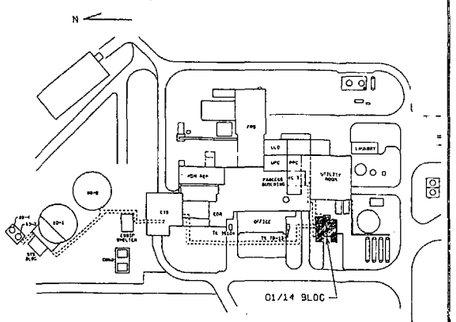
901 D 038



NO.	DATE	REVISION	DR	CH	APPROVED		
B	4-4-85		DH	RAN	RJL	FSK MDB	LES
		GENERAL REVISION					
C	10/14/85		DH				
		GENERAL REVISION PER TA-347					
0	12/5/85	ER 568					
1	9/21/89	ECN3160	LR	KMQ	RPV		

NOTES

FOR NOTES AND REFERENCE DRAWINGS SEE DWG 901-C-033.



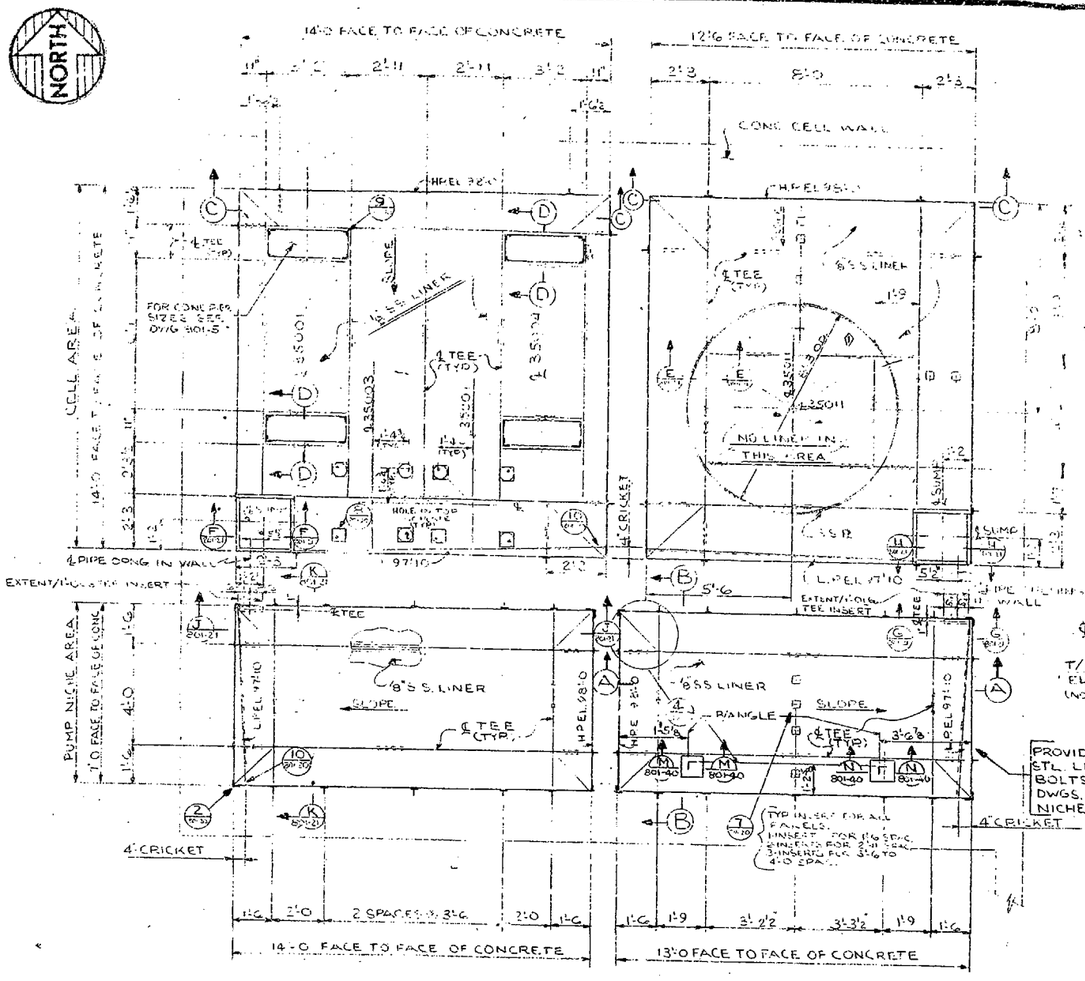
KEY PLAN

1 0 4 8F 3/8"=1'-0

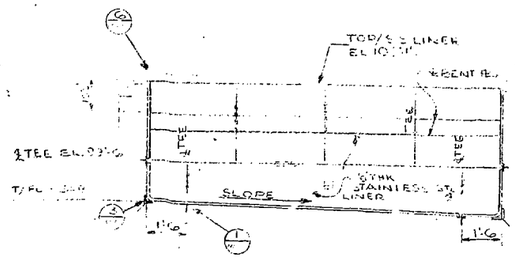
FOR DRAWING INDEX SEE DRAWING NO.

APPRVD WNS CO. R. P. VITKO	12-9-85	EBASCO SERVICES INCORPORATED A/E O.F.S. NO. 2388 TASK ORDER 014 FOR WEST VALLEY NUCLEAR SERVICES COMPANY, INC WEST VALLEY, NEW YORK
PROJECT MGR L. E. SHAO	2-15-85	
ENGINEER SUPV M. D. WEINGART	2-15-85	
LEAD DISC ENGR F. KOWALCZYK	2-15-85	WEST VALLEY DEMONSTRATION PROJECT
DESIGN R. J. LEMKO	2-15-85	GENERAL ARRANGEMENT 01/14 BUILDING SECTIONS
CHECKED R. MILLER	2-15-85	
DRAWN D. HARDY	DATE 2-15-85	

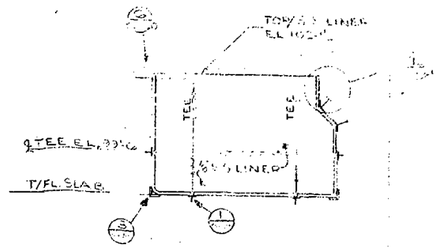
DE-AC07-81NE44139 PROJECT NO.	SIZE D	INDEX CODE NUMBER AREA DR. TYP CL ORIG	DRAWING NO. 901D-038 REV. 1
19-CIV-02275 SUBCONTRACT NO.			
ISSUED FOR CONSTRUCTION	SCALE 3/8"-1'-0.	SPEC. CODES	A/E SHEET NO. 901-D-038 C



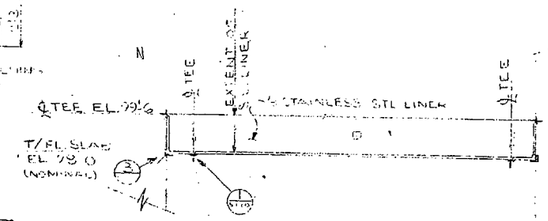
PLAN - LINERS & INSERTS



SECTION (A)

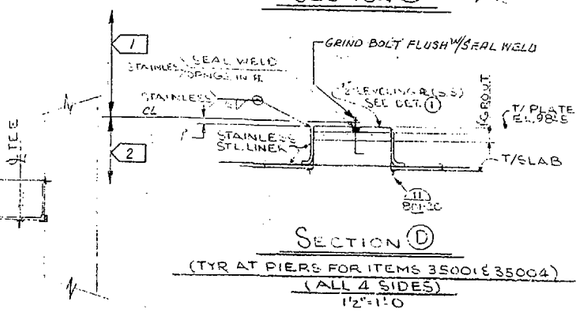


SECTION (B)



SECTION (C)

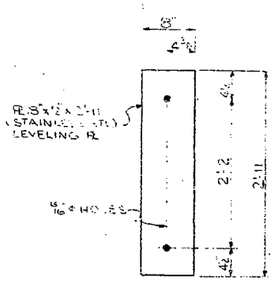
(TYP. FOR CELL AREA) ALL 4 WALLS



SECTION (D)

(TYP AT PIERS FOR ITEMS 35001 & 35004) (ALL 4 SIDES)

1"=1'-0



DETAIL (1)

(LEVELING PLATE) 4 REQ'D.

1"=1'-0

General Notes:

1) ALL STAINLESS STEEL LINERS SHALL BE TYPE 304-L, TYPE 2B FINISH.
2) ALL SHARP EDGES OF SHEARED PLATES SHALL BE GRINDING OFF. ALL WELDS WHICH PROJECT ABOVE FINISHED SURFACES SHALL BE GROUND SMOOTH.
3) LINER FABRICATION TO BE COMPLETELY SEAL WELDED UNLESS OTHERWISE SHOWN ON DWG.
4) FOR LOCATION OF ALL EQUIPMENT ON GROUND FLOOR AND FOR LOCATION OF ANCH. BOLT PENETRATIONS SEE DWG. 801-5.
5) FOR TYP PIPE & ANCHOR BOLT PENETRATION DETAIL SEE DWG. 801-21.
6) FOR STAINLESS STEEL SPECIFICATION SEE S.F.S.I.
7) WORK THIS DWG. WITH DWG. 801-5 &
8) FOR PIPING PENETRATIONS IN STAINLESS STEEL LINERS SEE DWGS. 701-6, 7, & 11.
9) IF INSERTS INTERFERE WITH PIPING PENETRATIONS THEY ARE TO BE CUT IN FIELD TO SUIT.
10) REFER TO DWG 2401-701-201 FOR SCOPE OF WORK KEY AND LEGEND.

PER ECN 6132 PD 3-24-93
THIS DWG SUPERSEDED BY 9000-369

NO.	DESCRIPTION	MADE/CHKD BY	APP'D BY	REV. NO.
6	REV. PER ECN 6160 8-26-92	ES / MB	MR	2
5	REV. PER ECN 6134 1-6-93	CW	MB	RPV
4	REV. PER ECN 6132 3-24-93	LM	MB	RPV
3	REVISED SECTION (A) & TEXT	JG	MB	RPV

NO.	DESCRIPTION	MADE/CHKD BY	APP'D BY	REV. NO.
2	REVISED PLANS NOTE 7 & 8 ADDED, NOTES 9&10 REVISED NOTES 3 & 4 REMOVED HOLES IN PLAN REVISED SECTIONS (A) & (B)	JG	RD	9/4/92
1		JG	RD	9/4/92

NO.	DATE	B-K CO.	B-K CO.	N-P-SL INC.
3	5/10/93	E. Neveril	W.F. Creek	W. Bell
2	4/6/93	E. Neveril	W.F. Creek	W. Bell
1	3/4/93	E. Neveril	W.F. Creek	W. Bell
0	6/4/92	E. Neveril	W.F. Creek	W. Bell

APPROVED FOR CONSTRUCTION

RELEASED FOR

	BY	DATE
APPR.	WAO	4-9-70
APPR.	W. BELL	4-7-70
APPR.		
APPR.		

	BY	DATE
DRAWN	J. GEORGE	3-20-70
TRCD.		
CHKD.		4-3-70
SCALE 3/16"=1'-0		

UNIT
TITLE
IODINE RECOVERY BLDG. AREAS 101, 14
STRUCTURAL
METAL LINERS & INSERTS FOR CELLS & PUMP NICHE
FOR
NUCLEAR FUEL SERVICES, INC. N.Y.

BLAW-KNOX COMPANY
CHEMICAL PLANTS DIVISION
PITTSBURGH, PENNSYLVANIA

DRAWING NUMBER 2401-01-801-19 REV. G

COLOR WARNING: PRINTS OF THIS DRAWING ON PINK PAPER ARE "PRELIMINARY" AND SHALL NOT BE USED FOR MANUFACTURING OR CONSTRUCTION PURPOSES

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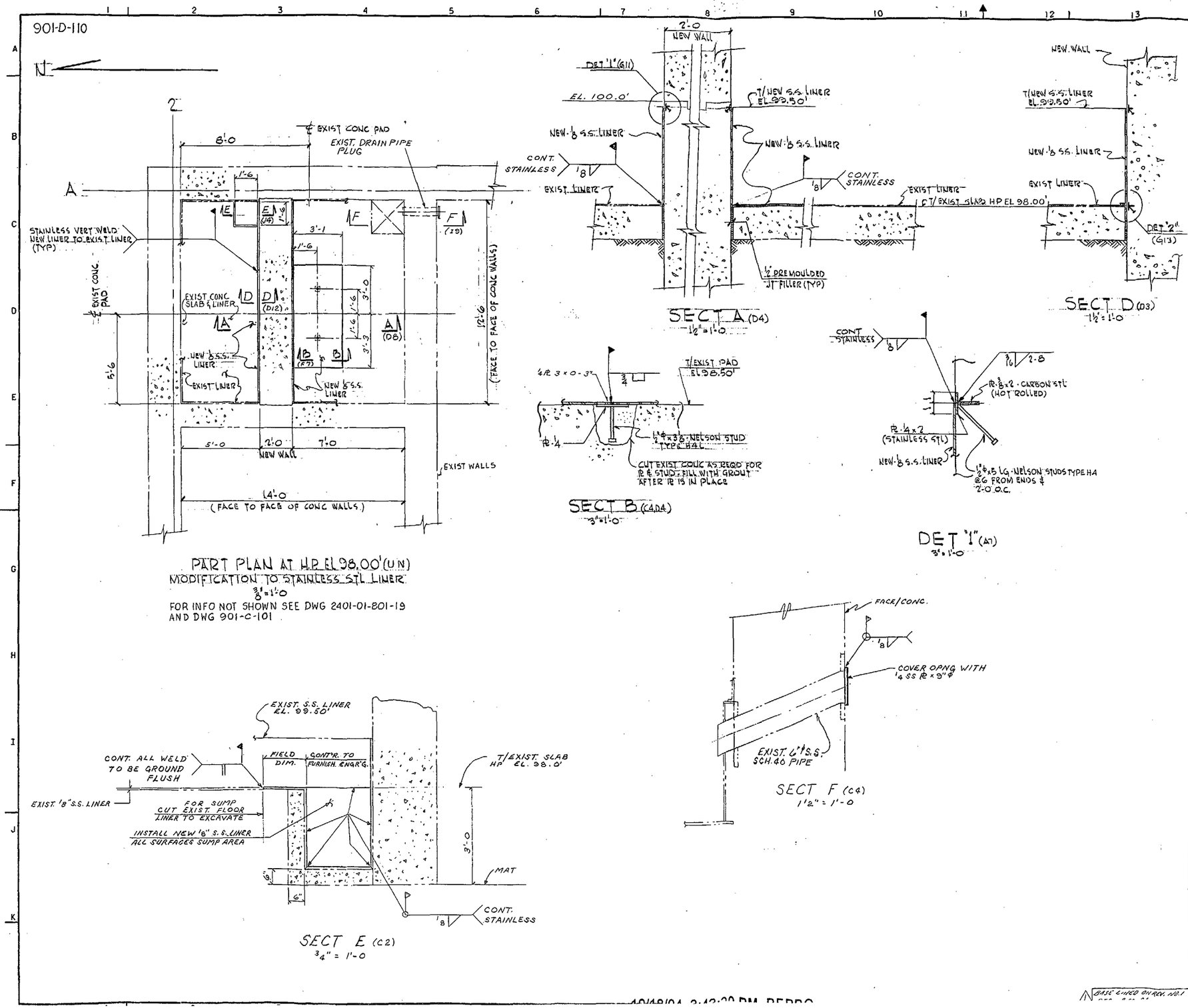
SEPIA COPY

FORM NO. E-333-REV. 6-66

10/18/2004 15:52 REPRO

901D-110



REV NO	DATE	REVISION	DR	CH	APPROVED
1	8-20-84	REVISED TO SPECIFICATION	D.A.S.		PMP

NOTES

FOR GENERAL NOTES SEE DWG 901-C-101 & 102
FOR REFERENCE DWGS SEE DWG 901-C-103

FOR DRAWING INDEX SEE DRAWING NO. 900-D-362

APPRVD WVNS CO.	8/1/85	EBASCO SERVICES INCORPORATED
PROJECT MGR	6/8/84	A/E O.F.S. NO. 2388 TASK ORDER 007
ENGINEER SUPV	6/8/84	FOR WEST VALLEY NUCLEAR SERVICES COMPANY, INC WEST VALLEY, NEW YORK
LEAD DISC ENGR	6-8-84	WEST VALLEY DEMONSTRATION PROJECT
DESIGN R. PARASHURAMA	6-8-84	CSS 01/14 BUILDING MODIFICATION
CHECKED R. WINKLER	6/8/84	MODIFICATION TO STAINLESS
DRAWN A. COLEN	DATE 6-8-84	STEEL LINER

DE-AC07-81NE44139 PROJECT NO.	SIZE	INDEX CODE NUMBER AREA	DR. TYP	CL	ORIG	DRAWING NO.	REV.
19-CWV-02275 SUBCONTRACT NO.	D	850	07	70	01	901D-110	1
ISSUED FOR CONSTRUCTION	SCALE	SPEC. CODES	A/E SHEET NO.				

BASE LINED ON REV. NO. 1

APPENDIX D-19

SLUDGE MOBILIZATION SYSTEM SECONDARY CONTAINMENT DRAWINGS (20 DRAWINGS)

PLAN
1/4" = 1'-0

REV NO	DATE	REVISION	DR	CH	APPROVED
B	4/13/90		PLP	ATV	
		GENERAL REVISION			
0	6/8/90	ER1874			
1	6/28/90	REV. PER ECN 3742	CGR	HAB	J.M.
2	10-12-90	REV. PER ECN 3930	GW	HAB	
3	5-1-92	GEN/REV PER ECN 4831	PD	HB	
4	6-1-92	REV. PER ECN 5155	DAK	DRS	
5	8-10-92	REV/FCN VF-2B-0063	PD	HB	
6	11-2-93	REV/ECN 7016	PD	KQ	P.B.

NOTES:

1.
2. ALL TRANSFER PIPING ELBOWS TO BE LONG RADIUS. ALL CONTAINMENT (GUARD) PIPING ELBOWS TO BE SHORT RADIUS UNLESS INDICATED BY (M), WHICH WILL BE GUARD PIPE MITERED TO FORM THE REQUIRED BEND. SEE DETAILS 1 OR 2 AS REQUIRED.
3. NO ALLOWANCE HAS BEEN MADE FOR WELDS & GASKETS.
4. FITTINGS & COMPONENTS NOT DIMENSIONED ARE FITTING TO FITTING.
5. CUT BACK EXISTING PIPING TO INSTALL NEW ANCHORS FOR TRANSFER LINES TO GUARD PIPE SEE DWG. 904D-560
6. WORK POINT (WP) LOCATIONS SEE 900D-2960

CONTINUED BELOW

REF. DWG'S.

SMS TRANSFER LINES LEAK DETECTION	900D-2818
SMS HLW TRANSFER PIPING	904D-060 SH. 2
SMS PIT LINER TYP SECT & DET'S.	904D-133
CONDENSATE HEADER TO 8D-3	PNL-293-01
WASTE HEADER 63-V-045	PNL-294-01
VIT. CELL WEST WALL COL. 2 & 3 MODULE INSTALLATION	H-3-53846
SMS 2" VERTICAL WALL NOZZLE WALL EMBEDMENT 8Q-1	900D-2812
SMS TRANSFER PIT 8Q-5 WALL NOZZLE EMBEDMENT ASSY.	900D-2914 SH.1&2
SMS 2" DRAIN LINE INTERFACE DET.	904D-133
VIT. CELL WEST WALL COL. 2 & 3 COMPONENT MODULE	H-3-53845 SH.7
HLW TRANSFER PROCESS PIPING SUPPORT LOCATIONS	904D-560
℄ S.M.S. TRENCH	900D-2960

NOTES: CONTINUED

7. Work Point (WP) elevations shown, except as otherwise noted, are for center line of pipe.
8. All pipe segments between the Vitrification Facility and pit 8Q-1 shall slope continuously from the high point elevation of the pipe to the low point elevation of the pipe at 1/8" (+1/16", -1/16") per foot. Pipe segments between Pit 8Q-1 and Pit 8Q-4 shall slope continuously at 1/4" (+1/8", -1/8") per foot. Work Point elevations, and length of pipe from WP's establish slope within each segment
9. Each pipe segment shall be run with the noted slope from point to point using ending embed Work Point elevations unless intermediate WP elevations are give. If an intermediate WP elevations are given, the pipe segment shall be worked from each of the given WP's while maintaining the noted slope from the high elevation to the low elevation of the two end points.

WVNS APPROVAL	
COG. MGR.	
COG. ENGR.	
DRFT. SUPR.	
Q.A. MGR.	
R & S MGR.	
PROJ. MGR.	

FOR DRAWING INDEX SEE DRAWING NO.

APPRVD WVNS CO.	
PROJECT MGR	8/25/89
ENGINEER SUPV	8/25/89
LEAD DISC ENGR	8/25/89
DESIGN R J LEWKO	8/25/89
CHECKED A. VIRGO	8/25/89
DRAWN S. ELIA	DATE 8/25/89
DE-AC07-81NE44139 PROJECT NO.	
19-CWV-02275 SUBCONTRACT NO.	
ISSUED FOR CONSTRUCTION	

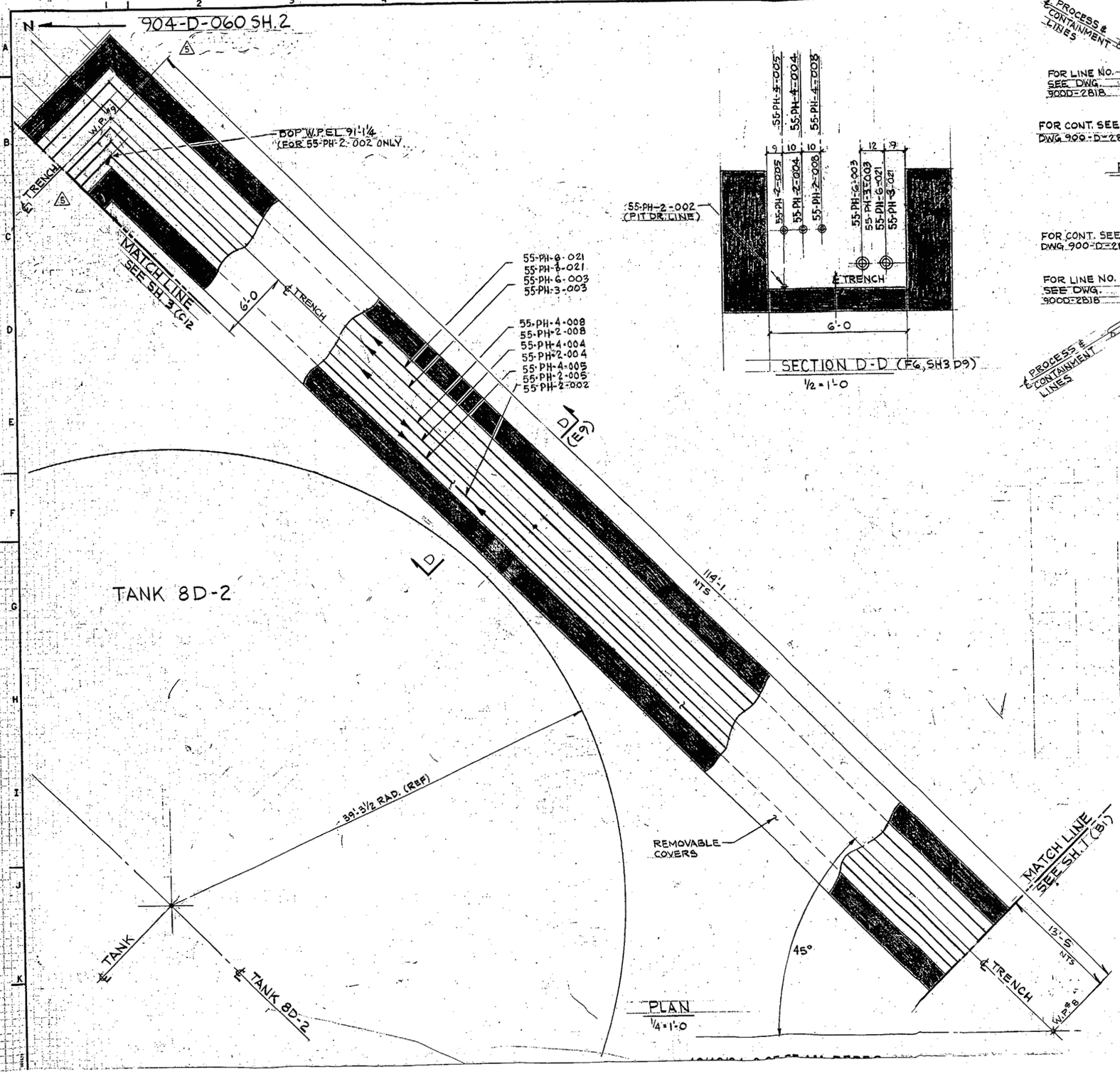
EBASCO SERVICES INCORPORATED
A/E O.F.S. NO. 2388 TASK ORDER 015
FOR
WEST VALLEY NUCLEAR SERVICES COMPANY, INC
WEST VALLEY, NEW YORK

WEST VALLEY DEMONSTRATION PROJECT

SLUDGE MOBILIZATION SYSTEM
HLW TRANSFER PIPING

SIZE D | INDEX CODE NUMBER: AREA, DR. TYP, CL, ORIG | DRAWING NO. 904D-060 | REV. 6
SCALE AS NOTED | SPEC. CODES | A/E SHEET NO. 904-D-060 SH.1 B

DRAWING NUMBER 904D-060 SH. 2



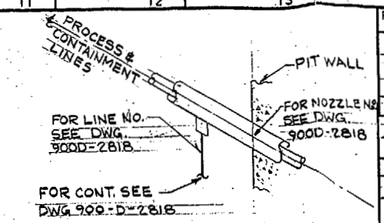


FIGURE 1

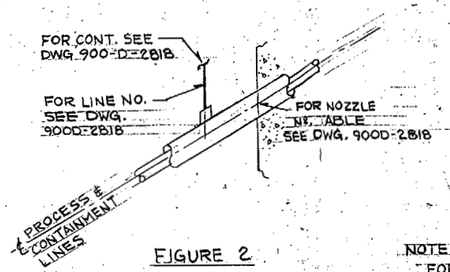
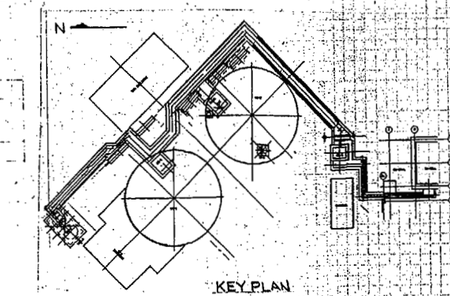


FIGURE 2

REV NO	DATE	REVISION	DR	CH	APPROVED
B	4/13/90		PLP	AV	
		GENERAL REVISION			
0	6/8/90	ER 1874			
1	6/28/90	REV. PER ECN 3742	CGR	HAB	J.M.
2	10-12-90	REV. PER ECN 3930	GW	HAB	
3	5-4-92	GEN REV. PER ECN 4831	PD	HAB	
4	5-28-92	REV. PER ECN 5155	DAK	DRS	
5	8-10-92	REV/FCN VF-28-0063	PD	HB	

NOTE
FOR GENERAL NOTES & REFERENCE DRAWINGS SEE DWG. 904-D-060 SH.1

REF. DWG'S:
SMS HLW TRANSFER PIPING 904D-060 SH.1
SMS HLW TRANSFER PIPING 904D-060 SH.3
SMS TRANSFER LINES LEAK DETECTIONS 900D-2818



KEY PLAN

FOR DRAWING INDEX SEE DRAWING NO.

APPRVD WVNS CO.	
PROJECT MGR	8/25/89
ENGINEER SUPV	8/25/89
LEAD DISC ENGR	8/25/89
DESIGN RJLEWKO	8/25/89
CHECKED A. VIRGO	8/25/89
DRAWN S. ELIA	DATE 8/25/89
DE-AC07-81NE44139 PROJECT NO.	
19-CWV-02275 SUBCONTRACT NO.	
ISSUED FOR CONSTRUCTION	

WVNS APPROVAL
COG. MGR. 5/18/90
COG. ENGR. 5/18/90
DRFT. SUPR. 6/18/90
Q.A. MGR. 6/18/90
R & S MGR. 6/18/90
PROJ. MGR.

EBASCO SERVICES INCORPORATED
A/E O.F.S. NO. 2388 TASK ORDER 015
FOR
WEST VALLEY NUCLEAR SERVICES COMPANY, INC
WEST VALLEY, NEW YORK

WEST VALLEY DEMONSTRATION PROJECT
SLUDGE MOBILIZATION SYSTEM
HLW TRANSFER PIPING

SIZE	INDEX CODE NUMBER				DRAWING NO.	REV.
	AREA	DR. TYP	CL	ORIG		
D					904D-060	5

SCALE AS NOTED | SPEC. CODES | A/E SHEET NO. 904-D-060 SH 2 B

DRAWING NUMBER

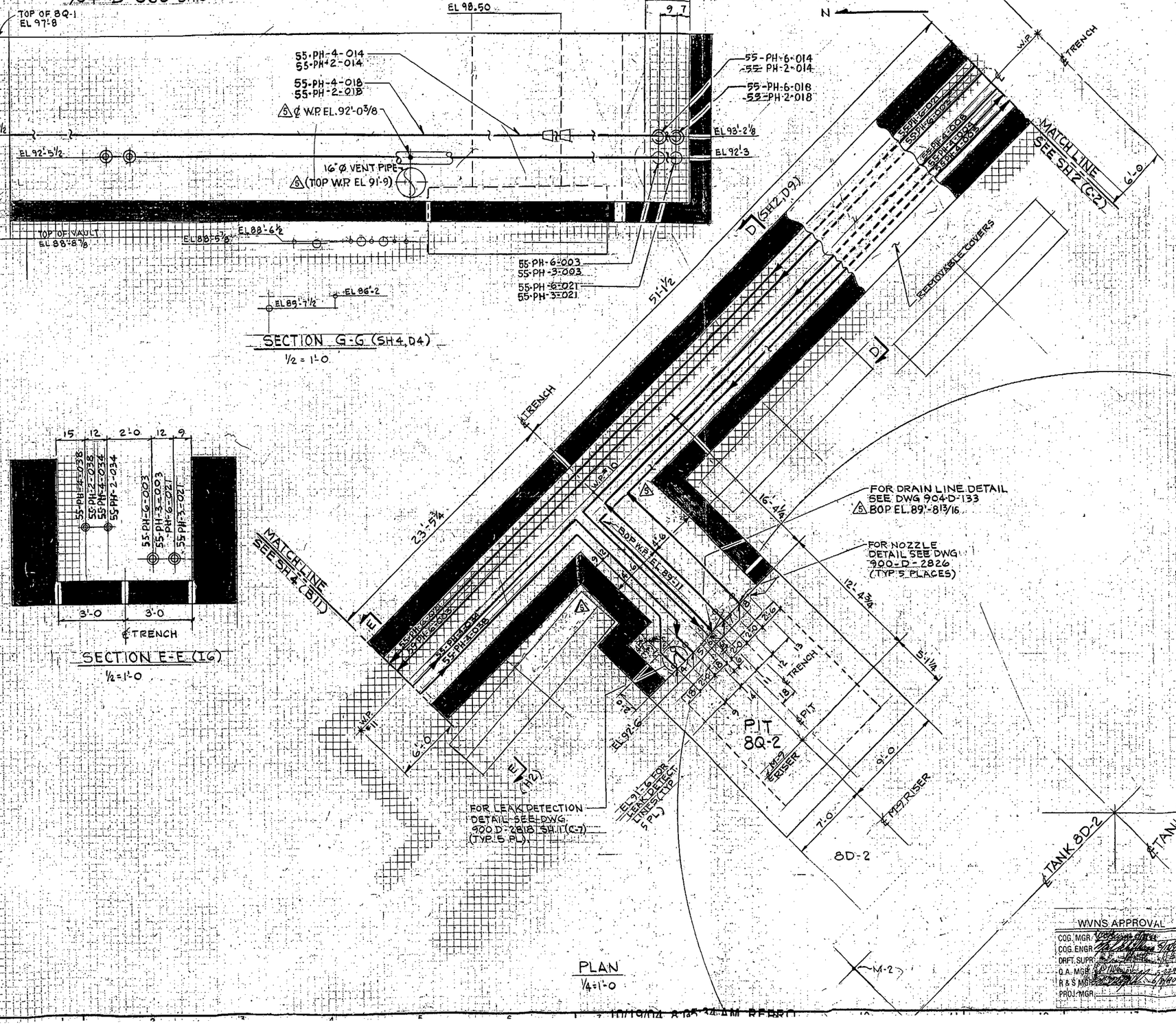
DRAWING NUMBER

DRAWING NUMBER 904D-060 SH. 3

DRAWING NUMBER

REV NO.	DATE	REVISION	DR	CH	APPROVED
B	4/13/90		AS	APP	
		GENERAL REVISION			
0	6/8/90	ER1874			
1	6/29/90	REV. PER ECN 3742	CGR	HAB	J.M.
2	10-12-90	REV. PER ECN 3930	GW	HAB	
3	5-4-92	GEN REV PER ECN 4831	PD	HAB	
4	5-28-92	REV. PER ECN 5155	DAK	DRS	
5	8-10-92	REV/FCN VF-2B-0063	PD	HAB	

904-D-060 SH3

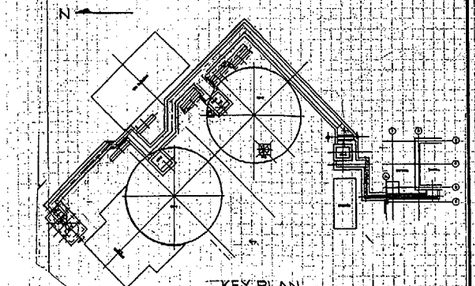


NOTE

FOR GENERAL NOTES & REFERENCE DRAWINGS SEE DWG 904-D-060 SH. 1

REF. DWGS.:

- SMS HLW TRANSFER PIPING 904D-060 SH. 2
- SMS HLW TRANSFER PIPING 904D-060 SH. 4
- SMS HLW PIT LINER SUPPORT TYP SECT & DETS. 904D-133
- SMS TRANSFER LINES LEAK DETECTION 900D-2818
- SMS TRANSFER PIT 8Q-2 WALL NOZZLE 900D-2826 EMBEDMENT



KEY PLAN

FOR DRAWING INDEX SEE DRAWING NO.

WVNS APPROVAL

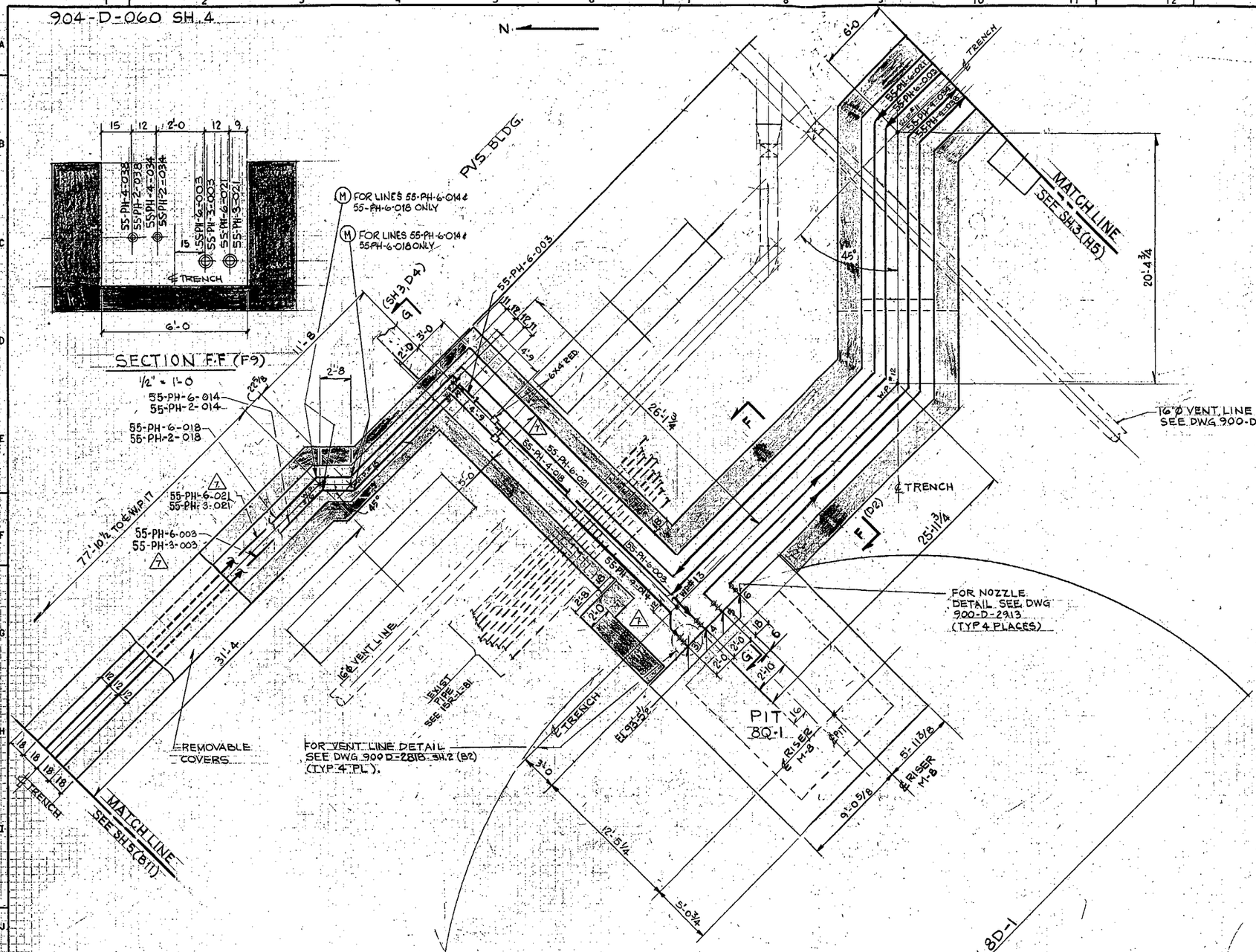
COG. MGR.	
COG. ENGR.	
DRFT. SUPR.	
Q.A. MGR.	
R & S MGR.	
PROJ. MGR.	

APPRVD WVNS CO.		EBASCO SERVICES INCORPORATED A/E O.F.S. NO. 2388 TASK ORDER 015
PROJECT MGR	9/25/89	FOR
ENGINEER SUPV.	9/25/89	WEST VALLEY NUCLEAR SERVICES COMPANY, INC. WEST VALLEY, NEW YORK
LEAD DISC. ENGR	9/25/89	WEST VALLEY DEMONSTRATION PROJECT
DESIGN D.J. LENKO	9/25/89	SLUDGE MOBILIZATION SYSTEM
CHECKED A.VIRGO	9/25/89	HLW TRANSFER PIPING
DRAWN S. ELIA	DATE 9/25/89	
DE-AC07-81NE44139 PROJECT NO.		SIZE D; INDEX CODE NUMBER AREA OR. TYP CL ORIG; DRAWING NO. 904D-060-5; REV.
19-CWV-02275 SUBCONTRACT NO.		
ISSUED FOR CONSTRUCTION		SCALE AS NOTED; SPEC. CODES; A/E SHEET NO. 904-D-060 SH 3 B

904-D-060 SH.4

REV NO	DATE	REVISION	DR	CH	APPROVED
B	4/13/90		AB		
		GENERAL REVISION			
0	6/8/90	ER 1874			
1	6/29/90	REV. PER ECN 3742	CGR	HAB	
2	10-23-90	REV. ECN 3930 & 3930A	GW	HAB	
3	5-4-92	GEN REV PER ECN 4831	PD	HB	
4	6-1-92	REV. PER ECN 8155	PAK	DLS	
5	6-26-92	REV. PER FCN VF-2B-0114	RAJ	HB	
6	8-10-92	REV/FCN VF-2B-0063	PD	HB	
7	2-15-95	REV ECN 8636	MIL	DLS	

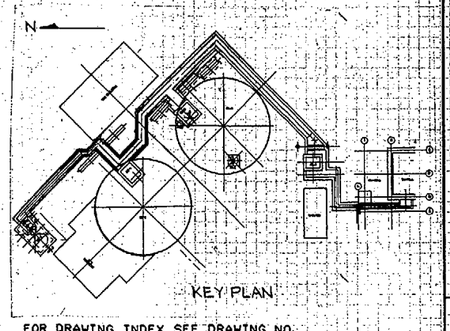
SECTION F-F (F9)
1/2" = 1-0
55-PH-6-014
55-PH-2-014
55-PH-6-018
55-PH-2-018



PLAN
1/4" = 1-0

REF. DWG'S.:

SMS HLW TRANSFER PIPING	904D-060 SH.3
SMS HLW TRANSFER PIPING	904D-060 SH.5
TANK FARM VENTILATION TANKS 8D-1 & 8D-2	900D-1176
SMS TRANSFER LINES LEAK DETECTION	900D-2818
SMS 2" HORIZ. 4 NOZZLE WALL EMBEDMENT	900D-2913
PIPING ARRANGEMENT INTERCONNECTING LINES	150-L-81



KEY PLAN

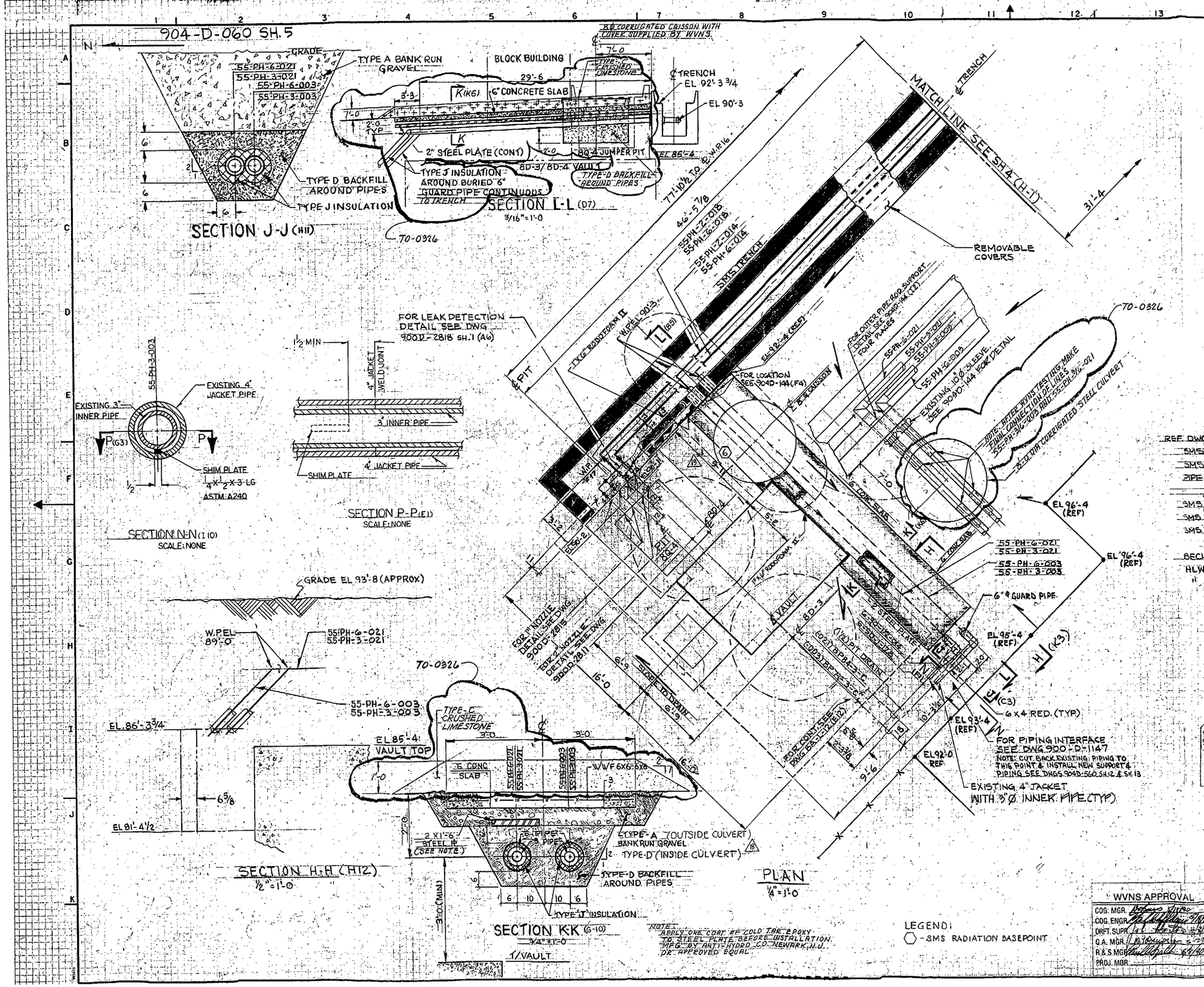
FOR DRAWING INDEX SEE DRAWING NO.

WVNS APPROVAL

COG. MGR.	
COG. ENGR.	
DRFT. SUPR.	
Q.A. MGR.	
R & S MGR.	
PROJ. MGR.	

APPRVD WVNS CO.		EBASCO SERVICES INCORPORATED
PROJECT MGR	8/25/89	A/E O.F.S. NO. 2388 TASK ORDER 015
ENGINEER SUPV	8/25/89	FOR WEST VALLEY NUCLEAR SERVICES COMPANY, INC. WEST VALLEY, NEW YORK
LEAD DISC ENGR	8/25/89	WEST VALLEY DEMONSTRATION PROJECT
DESIGN: EJLewko	8/25/89	SLUDGE MOBILIZATION SYSTEM
CHECKED SAVIRGO	8/25/89	HLW TRANSFER PIPING
DRAWN S. ELIA	DATE 8/25/89	
DE-AC07-81NE44139 PROJECT NO.		SIZE D; INDEX CODE NUMBER AREA DR. TYP CL ORIG; DRAWING NO. 904D-060; REV. 7
15-CWV-02275 SUBCONTRACT NO.		
ISSUED FOR CONSTRUCTION	SCALE AS NOTED	SPEC. CODES; A/E SHEET NO. 904-D-060 SH. 4

DRAWING NUMBER 904 D-060 SH. 5



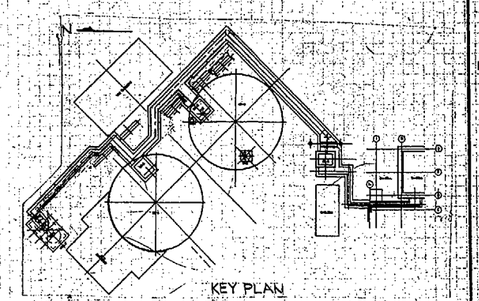
NOTE: APPLY ONE COAT OF COLD TAR EPOXY TO STEEL PLATE BEFORE INSTALLATION. MFG BY ANTI-HYDRO CO. NEWARK, N.J. OR APPROVED EQUAL.

LEGEND:
⬡ - SMS RADIATION BASEPOINT

REV NO	DATE	REVISION	DR	CH	APPROVED
B	4/13/90		PLP	ATV	RJL
		GENERAL REVISION			
C	4/19/90		AV	RJL	RJL
		GENERAL REVISION			
0	4/8/90	ER1874			
19	5/20/96	REV/ECN 9946	SRD	HB	
2	10-15-90	REV. PER ECN 3930	GW	HB	
3	11/5/90	REV. PER ECN 4022	RKG	HAB	
4	5-4-92	GEN REV PER ECN 4831	PD	HB	
5	6-1-92	REV PER ECN 5155	DAK	DRS	
6	8-10-92	REV/FCN VF-2B-0063	PD	HB	
7	4-27-93	GEN REV PER ECN 6059	PD	HB	
8	6-18-93	REV/FCN VF-2B-0981	PD	DRS	
9	9-8-93	REV/ECN VF-2B-0980	RMS	HB	P.B.
10	9-27-93	REV/ECN 6647A	PD	DRS	P.B.
11	1-12-94	REV/FCN VF-2B-1594	AAJ	HB	P.B.
12	5-24-94	REV/FCN VF-2B-1142	DJN	HB	P.B.
13	6-21-94	REV/FCN VF-2B-2321	MJL	HB	P.B.
14	7-9-94	REV/FCN VF-2B-2401	PD	HB	P.B.
15	9-14-94	REV PER ECN 2402	GW	HB	P.B.
16	11-21-94	REV/FCN VF-2B-1561	PD	GW	P.B.
17	11-1-95	REV/ECN 9309	RMS	GW	
18	4-16-96	REV/ECN 2245	SRD	HB	

NOTES:
FOR GENERAL NOTES & REFERENCE DRAWINGS SEE 904-D-060 SH. 1
DENOTES DIRECTION OF SLOPE AT FINISHED GRADE
ELEV'S DENOTES TOP OF SLOPE AT FINISHED GRADE

REF. DWG'S:
SMS HLW TRANSFER PIPING 904D-060 SH. 4
SMS TRENC-PLAN & SECT'S. SH. 4 904D-144
PIPE ROUTING & MECH. DET. FROM VALVE AISLE TO 8D-3 900D-1147 SH. 1
SMS 2" HORIZ. 2 NOZZLE WALL EMBEDMENT 900D-2811
SMS TRANSFER PIT 8Q-4 1" WALL NOZZLE EMBED. 900D-2815
SMS TRANSFER LINES LEAK DETECTION PIPING PLAN & SECTIONS 900D-2818
BECHTEL CON-ED WASTE STORAGE TANKS BA-L-12
HLW TRANSFER PROCESS PIPING SUPPORT LOCATIONS 904D-560 SH. 12
" " " " " " 904D-560 SH. 13



FOR DRAWING INDEX SEE DRAWING NO.

WVNS APPROVAL
COG. MGR.
COG. ENGR.
DRFT. SUPR.
Q.A. MGR.
R.& S. MGR.
PROJ. MGR.

APPRVD WVNS CO.	
PROJECT MGR	8/25/89
ENGINEER SUPV	8/25/89
LEAD DISC ENGR	8/25/89
DESIGN	8/25/89
CHECKED	8/25/89
DRAWN	DATE
S. ELIA	8/25/89

EBASCO SERVICES INCORPORATED
A/E O.F.S. NO. 2388 TASK ORDER 015
FOR
WEST VALLEY NUCLEAR SERVICES COMPANY, INC
WEST VALLEY, NEW YORK

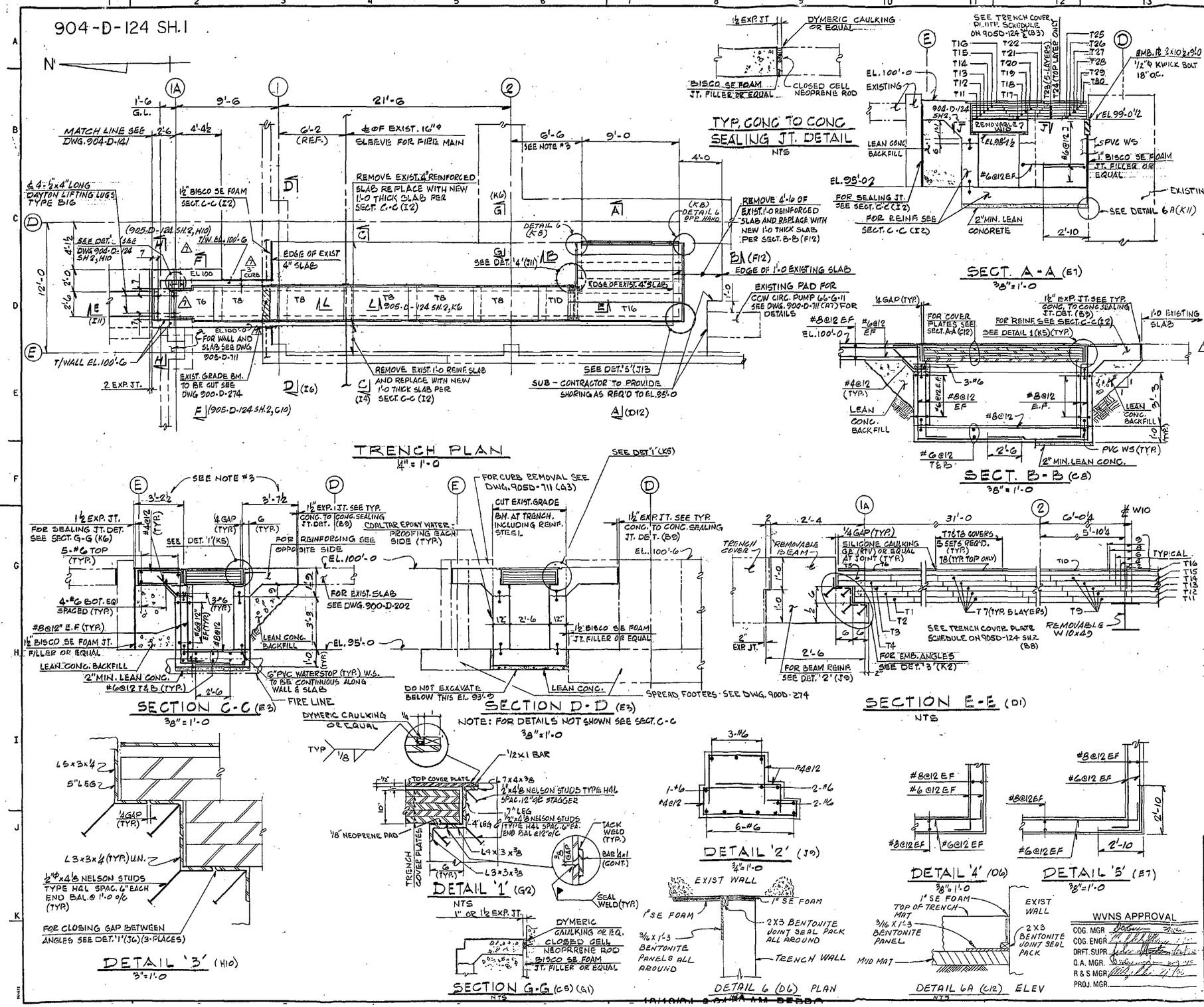
WEST VALLEY DEMONSTRATION PROJECT
SLUDGE MOBILIZATION SYSTEM
HLW TRANSFER PIPING

DE-AC07-81NE44139
PROJECT NO.
19-CWV-02275
SUBCONTRACT NO.
ISSUED FOR CONSTRUCTION

SIZE D | INDEX CODE NUMBER: AREA, DR. TYP, CL, ORIG | DRAWING NO. 904D-060 | REV. 19
SCALE AS NOTED | SPEC. CODES | A/E SHEET NO. 904-D-060 SH 5 C

904D-124 SH. 1

904-D-124 SH.1



REV NO	DATE	REVISION	DR	CH	APPROVED
B	10-13-89	REVISED PER EBAR 1305	[illegible]	AGS	[illegible]
C	1-25-90	REVISED PER EBAR 1305A	[illegible]	AGS	[illegible]
0	2/12/90	ER1775			[illegible]
1	2-16-90	REV. PER ECN 3475	GM	DRS	[illegible]
2	2-26-90	GEN REV PER ECN 3486	GW	TEC	[illegible]
3	3-21-90	REV. PER ECN 3544	GW	DRS	[illegible]
4	9-7-90	REV. PER FCN VF-2A-025	CGR	HAB	[illegible]
5	10-17-90	REV. PER FCN VF-2A-004	CGR	HAB	[illegible]
6	2-1-91	REV/FCN VF-2A-123	RMS	HAB	[illegible]
7	5-20-91	REV. PER FCN VF-2A-187 VF-2A-242	CW	HAB	[illegible]

NOTES:

1- FOR GENERAL NOTES SEE DWG. 905D-710

2- ALL CONCRETE SURFACES AS WELL AS ALL SURFACES OF STEEL SHIELDING PLATE ASSEMBLIES, AND THE STEEL PIPE SUPPORTS SHALL BE COATED AS PER SPEC. WVNS-CS-194

3- VERIFY DIMENSIONS IN FIELD PRIOR TO EXECUTION OF WORK.

4- PREVENT UNDER MINING OF EXISTING GRADE BEAM AND FOOTING DURING CONSTRUCTION ACTIVITIES.

5- 2" THK PLATES SHALL BE DRILLED AND TAPPED FOR 3/4"Φ LIFTING LUGS. THE HOLE SHALL BE COUNTER-SUNK FOR THE PLACEMENT OF 3/4"Φ FLAT HEAD SCREWS. 1/2" THICK PLATES SHALL BE DRILLED & TAPPED THROUGH FOR 3/4"Φ LIFTING LUGS, WITH 3/4"Φ FLUSH THREADED PLUG. SUB-CONTRACTOR SHALL SUPPLY ALL REQUIRED SCREWS AND LIFTING LUGS.

6- ALL EMBEDS, ANGLES, PLATES, STUDS ETC. TO BE GALVANIZED AFTER WELDING, BUT PRIOR TO INSTALLATION.

7- WORK THIS DRAWING WITH 904D-124 SH.2

REFERENCE DRAWINGS:

FDN. PLAN AT EL. 100'-0 & STRUCT. NOTES	900-D-202
COMPONENT TEST STAND EXTENSION FDN. PLAN AT EL. 100'-0 SECT & PIER DET.	900-D-274
CTS CLOSED LOOP COOLING WATER SYS. ARRG'T. PUMP AND PIPING	900-D-711
SMS TRENCH PLAN	904-D-141
V.F. PLAN AT EL. 100'-0 SLAB ON GRADE, GRADE BMS & FTGS.	905-D-711
SLUDGE MOBILIZATION SYSTEM TRENCH IN V.F.	904-D-124 SH.2
VITRIFICATION FACILITY GENERAL NOTES AND REFERENCE DRAWINGS	905-D-710

FOR DRAWING INDEX SEE DRAWING NO.

APPRVD WVNS CO.	
PROJECT MGR [signature]	7/7/89
ENGINEER SUPV [signature]	7/7/89
LEAD DISC ENGR [signature]	7/7/89
DESIGN [signature]	7-7-89
CHECKED A.G. SERAPHIDES	7-7-89
DRAWN S.M. GUARNIERI	DATE 6/30/89
DE-AC07-81NE44139 PROJECT NO.	
19-CWV-02275 SUBCONTRACT NO.	
ISSUED FOR CONSTRUCTION	

EBASCO SERVICES INCORPORATED
A/E O.F.S. NO. 2388 TASK ORDER 015
FOR
WEST VALLEY NUCLEAR SERVICES COMPANY, INC
WEST VALLEY, NEW YORK

WEST VALLEY DEMONSTRATION PROJECT
SLUDGE MOBILIZATION SYSTEM
TRENCH IN V.F.

SIZE	INDEX CODE NUMBER				DRAWING NO.	REV.
D	AREA	DR. TYP	CL	ORIG	904D-124	7
SCALE AS NOTED	SPEC. CODES				A/E SHEET NO. 904-D-124 SH.1	C

WVNS APPROVAL
COG. MGR [signature]
COG. ENGR [signature]
DRFT. SUPR [signature]
Q.A. MGR. [signature]
R & S MGR [signature]
PROJ. MGR.

904-D-124 SH 2

* FIELD MEASURE FOR AS BUILT DIMENSIONS

TRENCH COVER PLATE SCHEDULE

MARK	NO REQ'D	A	B	*C	D	*E	F	PL. THK.	PL. TYPE
T1	1	3'-5½	4'-1	1'-0	2	6	2	2	II
T2	1	3'-5½	3'-11	1'-0	2	6	2	2	II
T3	1	3'-5½	3'-9	1'-0	2	6	2	2	II
T4	1	3'-5½	9'-1	1'-6	2	1'-0	2	2	II
T5	1	3'-5½	3'-11	1'-6	2	1'-0	2	2	II
T6	1	3'-11	3'-10	1'-6	2	1'-0	2	½	II
T7	25	3'-5½	6'-0	—	—	—	—	2	I
T8	5	3'-11	6'-0	—	—	—	—	½	I
T9	5	3'-5½	3'-3	—	—	—	—	2	I
T10	1	3'-11	3'-3	—	—	—	—	½	I
T11	1	2'-6	9'-11½	—	—	—	—	2	I
T12	1	2'-4	10'-1½	—	—	—	—	2	I
T13	1	2'-2	10'-3½	—	—	—	—	2	I
T14	1	2'-0	10'-5½	—	—	—	—	2	I
T15	1	1'-10	10'-7½	—	—	—	—	2	I
T16	1	1'-9	10'-11¼	—	—	—	—	½	I
T17	1	1'-4½	9'-11½	—	—	—	—	2	I
T18	1	1'-8½	10'-1½	2	7	—	—	2	III
T19	1	2'-0½	10'-3	4	9	—	—	2	III
T20	1	2'-4½	10'-5½	6	11	—	—	2	III
T21	1	2'-8½	10'-7½	8	1'-1	—	—	2	III
T22	1	2'-10½	10'-11¼	6¼	1'-2	—	—	½	III
T23	5	1'-6	9'-11½	—	—	—	—	2	I
T24	1	1'-6	9'-11½	—	—	—	—	½	I
T25	1	1'-8½	9'-11½	—	—	—	—	2	I
T26	1	1'-6½	9'-11½	—	—	—	—	2	I
T27	1	1'-4½	9'-11½	—	—	—	—	2	I
T28	1	1'-2½	9'-11½	—	—	—	—	2	I
T29	1	1'-0½	9'-11½	—	—	—	—	2	I
T30	1	11½	10'-5	—	—	—	—	½	I

REV NO	DATE	REVISION	DR	CH	APPROVED
0	2/12/90	ER 1775			
1	2-16-90	REV. PER ECN 3475	GM	DRS	
2	2-27-90	GEN REV. PER ECN 3486	GW	REC	
3	3-21-90	REV PER ECN 3544	GW	DRS	
4	10-17-90	REV. PER FCN VF-2A-004	CGR	HAB	
5	2-4-91	REV PER FCN VF-2A-024	DAK	HAB	
6	2-13-91	REV PER FCN VF-2A-111	DAK	HAB	
7	5-20-91	REV. PER FCN VF-2A-242	GW	HAB	
8	7-15-91	REV. PER FCN VF-2A-324	AAL	HAB	

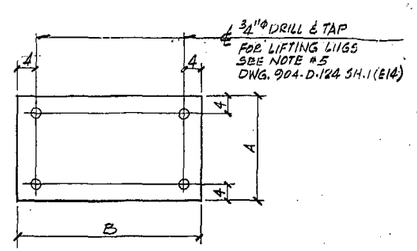
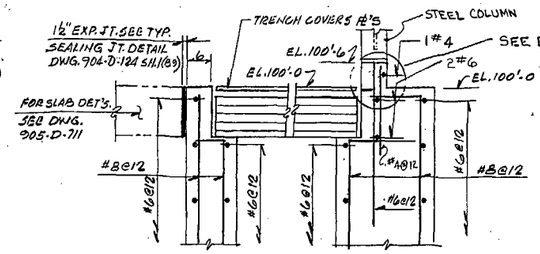


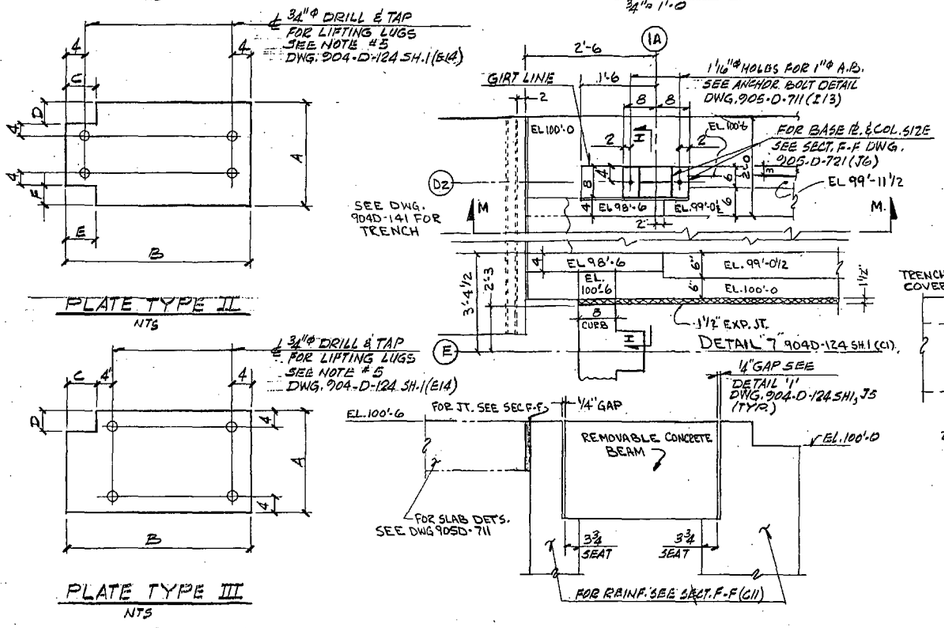
PLATE TYPE I
NTS

PLATE TYPE II
NTS

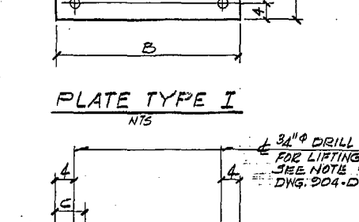
PLATE TYPE III
NTS



SECTION F-F (904-D-124 SH.1, E2)
¾"=1'-0

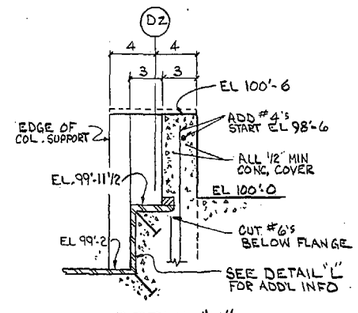


SECTION H-H (904-D-124 SH.1, C1)
¾"=1'-0

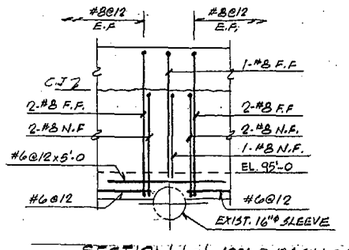


SECTION J-J (904-D-124 SH.1, B11)
¾"=1'-0

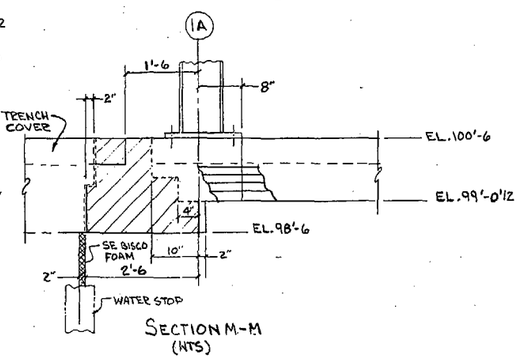
SECTION K-K (I5)



DETAIL "N" (A13)



SECTION L-L (904-D-124 SH.1, D4)
¾"=1'-0



SECTION M-M
(NTS)

NOTES:

1- FOR GENERAL NOTES & REFERENCE DWGS. SEE DWG. 905-D-710
2- FOR ADD'L. NOTES SEE DWG. 904-D-124-SH.1
3- WORK THIS DWG. WITH DWG. 904-D-124 SH.1

REFERENCE DRAWINGS:

SLUDGE MOBILIZATION SYS. TRENCH IN V.F.	904-D-124 SH.1
V.F. PLAN - EL. 100'-0 SLAB ON GRADE, GRADE BEAMS & FTG.	905-D-711
V.F. NEW COLUMN SCHEDULE & FRAMING DET.	905-D-721
V.F. GENERAL NOTES & REFERENCE DRAWING	905-D-710

FOR DRAWING INDEX SEE DRAWING NO.

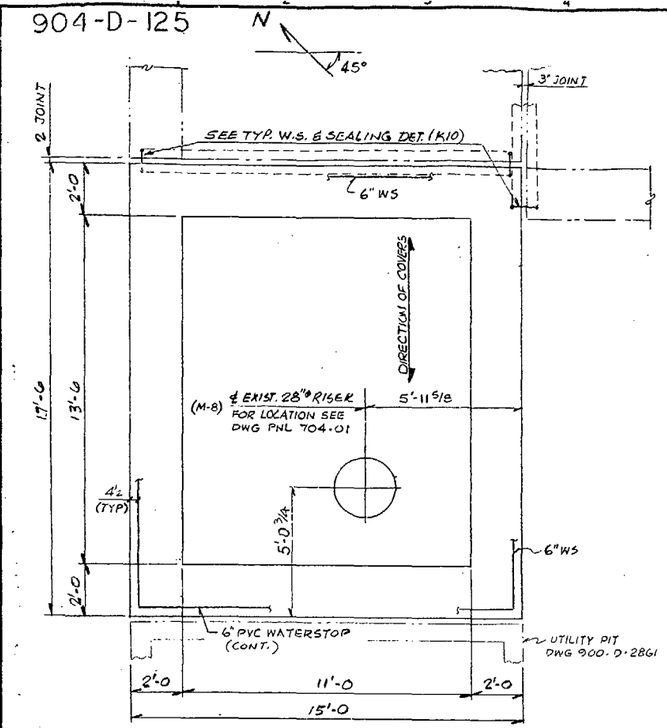
WVNS APPROVAL

COG. MGR.	
COG. ENGR.	
DRFT. SUPR.	
Q.A. MGR.	
R & S MGR.	
PROJ. MGR.	

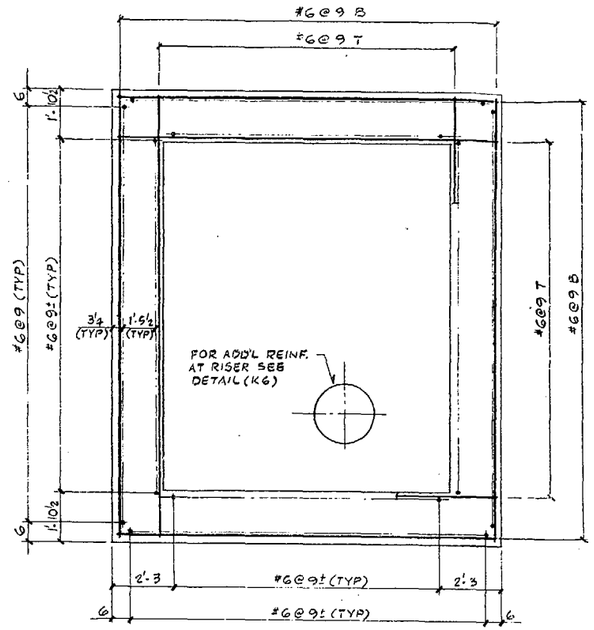
APPRVD WVNS CO.		EBASCO SERVICES INCORPORATED
PROJECT MGR	1/24/90	A/E O.F.S. NO. 2388 TASK ORDER 015
ENGINEER/SUPV	1/25/90	FOR WEST VALLEY NUCLEAR SERVICES COMPANY, INC WEST VALLEY, NEW YORK
LEAD DISC ENGR	1/25/90	WEST VALLEY DEMONSTRATION PROJECT
DESIGN A.G. SERAPHIDES	1-25-90	SLUDGE MOBILIZATION SYSTEM
CHECKED A.G. SERAPHIDES	1-25-90	TRENCH IN V.F.
DRAWN E.M. GARNIER	DATE 1-25-90	

DE-AC07-81NE44139 PROJECT NO.	SIZE	INDEX CODE NUMBER				DRAWING NO.	REV.
		AREA	DR. TYP	CL	ORIG		
19-CWV-02275 SUBCONTRACT NO.	D					904D-124	8
ISSUED FOR CONSTRUCTION	SCALE NONE	SPEC. CODES				A/E SHEET NO. 904-D-124 (SH.2)	A

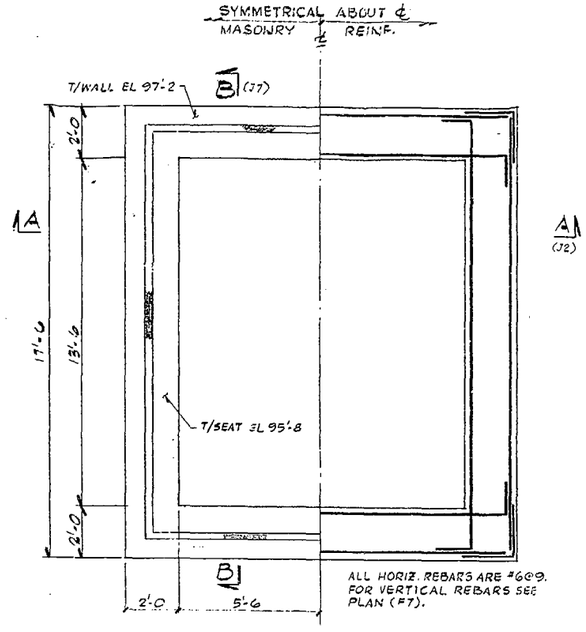
904-D-125



FOUNDATION PLAN
(MASONRY)



PLAN
(FDN REINF. & DOWELS)



PLAN
(WALLS - M&R)

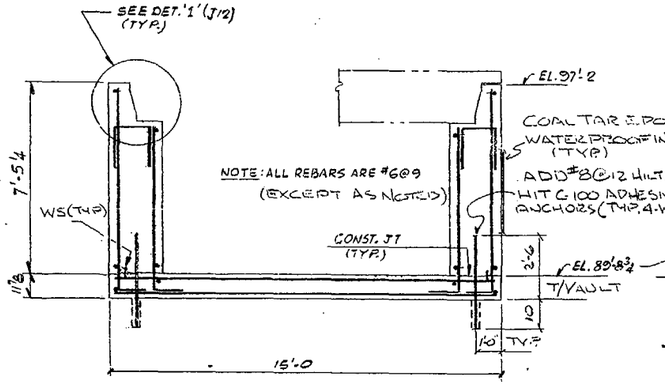
REV NO	DATE	REVISION	DR	CH	APPROVED
B	10-7-92	GENERAL REVISION	[illegible]	AGS	[illegible]
C	1-26-90	GENERAL REVISION AND AS PER EBAR 1325A	VB	[illegible]	[illegible]
0	2/12/90	ER1775			
1	2-16-90	REV. PER ECN 3475	GM	DRS	
2	2-22-90	REV. PER ECN 3483	CGR	DRS	
3	4-26-91	REV. PER ECN 4173	AAL	[illegible]	
4	5-14-91 5-23-91	REV. PER FCN VF-2A-247 FCN VF 2A-267	GW	[illegible]	
5	8-1-91	REV PER ECN 4443	GW	DRS	
6	8-5-92	REV/ECN 5420	PD	HB	

NOTES:

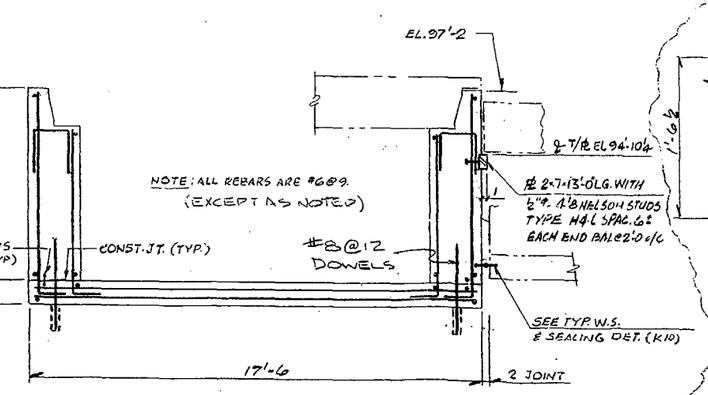
1- FOR GENERAL NOTES SEE DWG. 905-D-710
2- SEE DWG. 904D-140 FOR KEY PLAN
3- FOR LINER EMBED LOCATIONS SEE DWG 904D-129 & PNL-704-01 SH.1
4- FOR LINER SUPPORT SECTIONS & DETAILS SEE DWG 904-D-133.
5- FOR WALL PENETRATIONS SEE DWG PNL-704-01.
6- FOR COVERS SEE DRAWINGS 904-D-150 & 151.
7- FOR RISER DETAILS SEE DWG 904-D-061.
8- THE 8Q-1 VAULT TOP ELEVATION UNDER THE 8Q-1 PUMP PIT WALL VARY. THE PIT INVERT ELEV. SHALL BE MAINTAINED.
9- INVERT OF PIT SLOPES TO PIT DRAIN. SEE DWG 904D-061 FOR DRAIN ELEVATIONS
10- THE INSTALLATION OF HILTI-ADHESIVE ANCHORS SHALL BE INSTALLED AS PER MANUFACTURER'S SPECIFICATIONS RELOCATE DOWELS TO CLEAR HARDWARE: RE-BARS, PIPE, SLEEVES, ETC. (± 3" IN BOTH DIRECTIONS)

THIS DRAWING IS PART OF CS-194 EXCEPT AS NOTED BELOW:

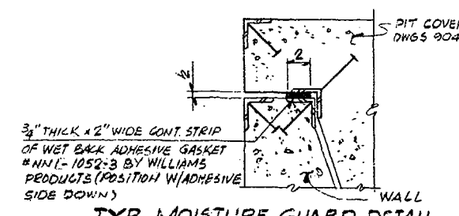
CS-139 ZONE (GB) AND RELATED DETAILS



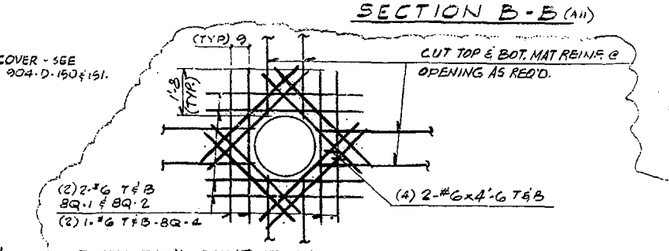
SECTION A-A (B13)



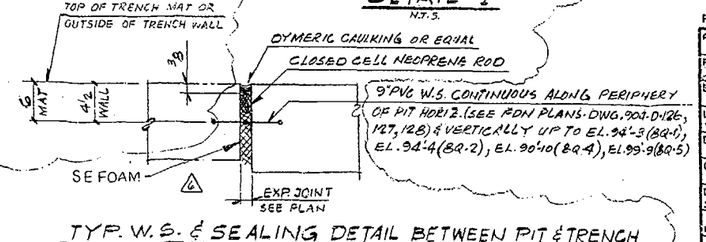
SECTION B-B (A11)



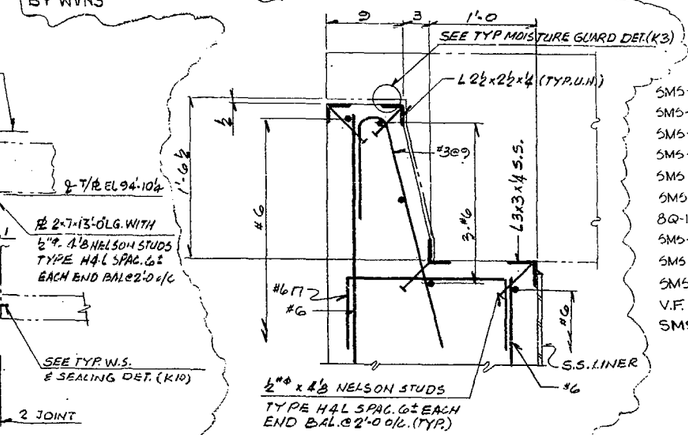
TYP. MOISTURE GUARD DETAIL
NTS



TYP. ADD'L REINF. AT ALL RISER OPENINGS
NTS



TYP. W.S. & SEALING DETAIL BETWEEN PIT & TRENCH
NTS



DETAIL 1
N.T.S.

REFERENCE DRAWINGS:

SMS-8Q-1 UTILITY PIT M&R PLAN & SECTIONS	900-D-2861
SMS-8Q-2 PUMP PIT M&R PLAN & SECTIONS	904-D-126
SMS-8Q-4 PUMP PIT M&R PLAN & SECTIONS	904-D-127
SMS-8Q-5 PUMP PIT M&R PLAN & SECTIONS	905-D-128
SMS TYP PIT COVER M&R PLAN & SECTIONS SH.1	904-D-150
SMS TYP PIT COVER M&R PLAN & SECTIONS SH.2	904-D-151
8Q-1 PUMP PIT LINER LAYOUT	PNL-704-01
SMS-8Q-1, 8Q-2, 8Q-4 RISER FLANGES DETAILS	904-D-061
SMS-8Q-1 PUMP PIT LINER PLAN & SECTIONS	904-D-129
SMS PIT LINER SUPPORT TYP. SECT. & DET.	904-D-133
V.F. GENERAL NOTES AND REFERENCE DWGS.	905-D-710
SMS KEY PLAN	904D-140

WVNS APPROVAL

COG. MGR. [illegible]
COG. ENGR. [illegible]
DRFT. SUPR. [illegible]
Q.A. MGR.
R & S MGR.
PROJ. MGR.

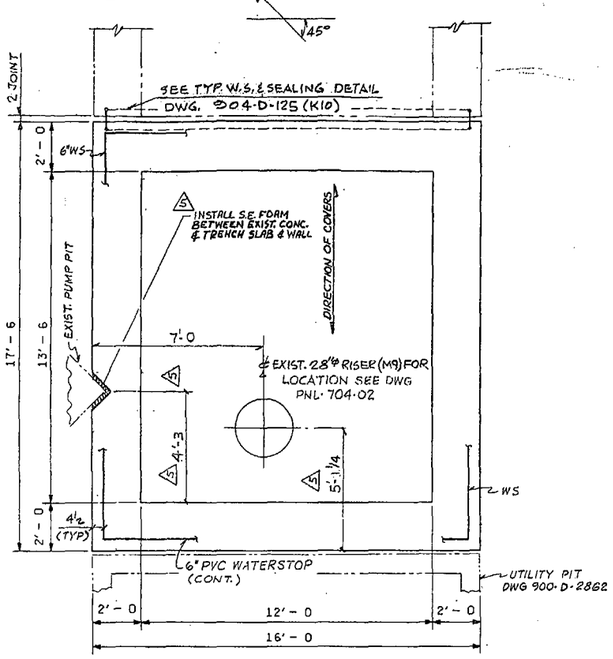
FOR DRAWING INDEX SEE DRAWING NO.

APPRVD WVNS CO.		EBASCO SERVICES INCORPORATED
PROJECT MGR		A/E O.F.S. NO. 2388 TASK ORDER 015
ENGINEER SUPV	8/1/92	FOR WEST VALLEY NUCLEAR SERVICES COMPANY, INC WEST VALLEY, NEW YORK
LEAD DISC ENGR	8/1/92	WEST VALLEY DEMONSTRATION PROJECT
DESIGN	8-11-92	SLUDGE MOBILIZATION SYSTEM
CHECKED	8-11-92	8Q-1 PUMP PIT M&R PLAN & SECTION
DRAWN S.M. GUARNIERI	DATE 8-11-92	
DE-AC07-81NE44139 PROJECT NO.		SIZE D; INDEX CODE NUMBER AREA DR. TYP CL DRIG; DRAWING NO. 904 D 125; REV. 6
19-CWV-02275 SUBCONTRACT NO.		
ISSUED FOR CONSTRUCTION		SCALE 3/8"=1'-0; SPEC. CODES; A/E SHEET NO. 904-D-125 C

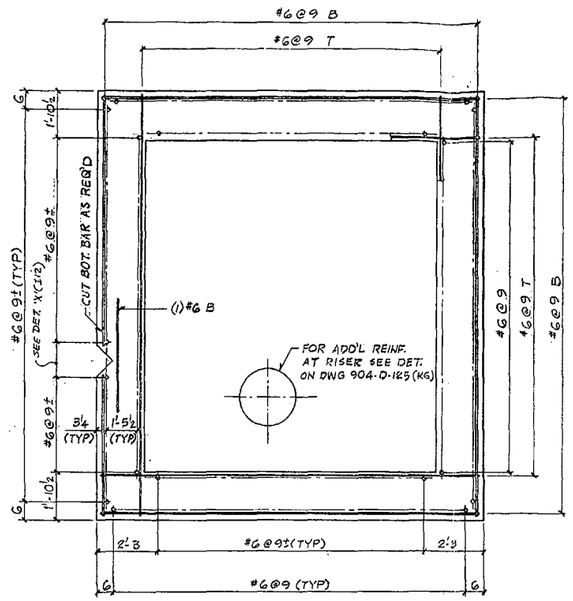
10/19/2004 08:25 REPRO

DRAWING NUMBER | DRAWING NUMBER | DRAWING NUMBER | DRAWING NUMBER 904D-126 | DRAWING NUMBER | DRAWING NUMBER

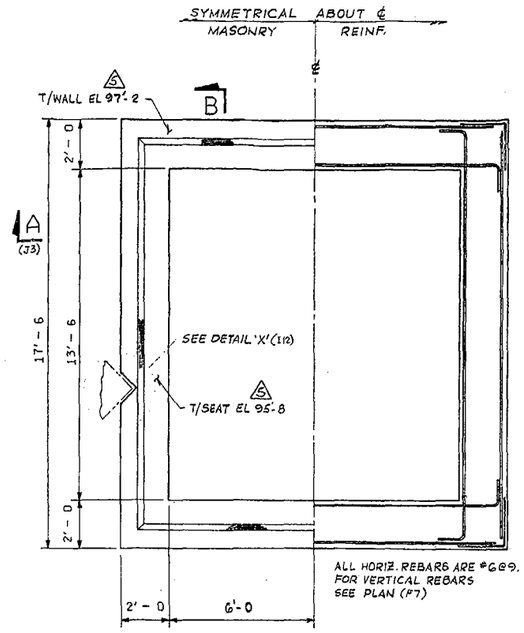
904-D-126



FOUNDATION PLAN
(MASONRY)



PLAN
(FDN REINF. & DOWELS)



B (J8)

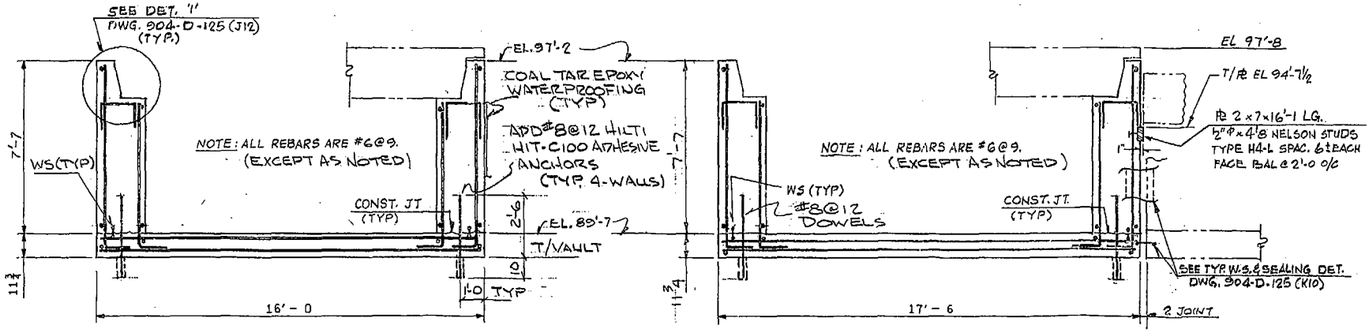
PLAN
(WALLS - M&R)

NO.	DATE	REVISION	DR	CH	APPROVED
B	10-13-89	GENERAL REVISION	[illegible]	AGS	[illegible]
C	1-26-90	GENERAL REVISION AND AS PER ECAR 13254	V.S.	RC	[illegible]
0	2/12/90	ER 1775			[illegible]
1	2-16-90	REV. PER ECN 3475	CM	DES	[illegible]
2	2-22-90	REV. PER ECN 3483	CGR	DRS	[illegible]
3	10/31/90	REV PER FCN VF-2A-056	LRK	HAB	[illegible]
4	4/26/90	REV. PER ECN 4173	ADJ	HAB	[illegible]
5	5-14-91	REV. PER FCN VF-2A-247	GW	HAB	[illegible]

A

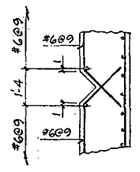
NOTES:

1. FOR GENERAL NOTES SEE DWG. 905-D-710
2. SEE DWG. 904D-140 FOR KEY PLAN
3. FOR LINER EMBED LOCATIONS SEE DWG. 904D-130 & PNL-704-01 SH.2
4. FOR LINER SUPPORT SECTIONS & DETAILS SEE DWG 904-D-133.
5. FOR WALL PENETRATIONS SEE DWG PNL-704-02.
6. FOR COVERS SEE DRAWINGS 904-D-150 & 151.
7. FOR RISER DETAILS SEE DWG 904-D-061.
8. THE 8D-2 VAULT TOP ELEVATION UNDER THE 8Q-2 PUMP PIT WILL VARY. THE PIT INVERT ELEVATION SHALL BE MAINTAINED
9. INVERT OF PIT SLOPES TO PIT DRAIN. SEE DWG. 904D-061. FOR DRAIN ELEVATIONS
10. THE INSTALLATION OF HILTI-ADHESIVE ANCHORS SHALL BE INSTALLED AS PER MANUFACTURER'S SPECIFICATIONS. RELOCATE DOWELS TO CLEAR HARDWARE: REBARS, PIPE SLEEVES, ETC. (±3" IN BOTH DIRECTIONS)



SECT A-A (C10)
NTS

SECT B-B (F11)
NTS



DETAIL 'X' (C1, C11)
N.T.S.

REFERENCE DRAWINGS:

SMS - 8Q-2 UTILITY PIT M&R - PLAN & SECTIONS	900-D-2862
SMS - 8Q-1 PUMP PIT M&R - PLAN & SECTIONS	904-D-125
8Q-2 PUMP PIT LINER LAYOUT	PNL-704-02
SMS-8Q-1, 8Q-2 & 8Q-4 RISER FLANGE DETAILS	904-D-061
V.F. GENERAL NOTES AND REFERENCE DWGS.	905-D-710
SMS-8Q-2 PUMP PIT LINER PLAN AND SECT.	904-D-130
SMS PIT LINER SUPPORT TYP. SECT. & DET.	904-D-133
SMS TYP. PIT COVER M&R PLAN & SECT. SH. 1 & 2	904-D-150 & 151
SMS KEY PLAN	904D-140

WVNS APPROVAL

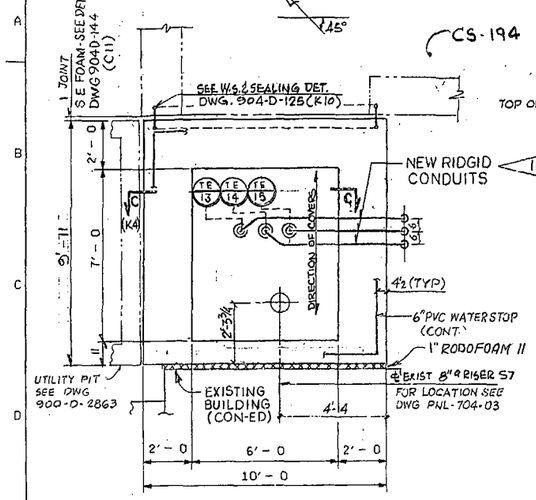
COG. MGR.	[illegible]
COG. ENGR.	[illegible]
DRFT. SUPR.	[illegible] 4/2/90
Q.A. MGR.	[illegible]
R & S MGR.	[illegible]
PROJ. MGR.	

FOR DRAWING INDEX SEE DRAWING NO.

APPRVD WVNS CO.		EBASCO SERVICES INCORPORATED
PROJECT MGR	3/14/91	A/E O.F.S. NO. 2388 TASK ORDER 015
ENGINEERING SUPV	2/11/91	FOR
LEAD DISC. ENGR	12/11/89	WEST VALLEY NUCLEAR SERVICES COMPANY, INC WEST VALLEY, NEW YORK
DESIGN E. GILES	8/11/89	WEST VALLEY DEMONSTRATION PROJECT
CHECKED S. BUSLICE	8/11/89	SLUDGE MOBILIZATION SYSTEM 8Q-2 PUMP PIT M & R PLAN & SECTION
DRAWN S.M. GILES	DATE 8-11-89	
DE-AC07-81NE44139 PROJECT NO.		SIZE D; INDEX CODE NUMBER AREA OR. TYP CL ORIG; DRAWING NO. 904D-126; REV. 5
19-CWV-02275 SUBCONTRACT NO.		
ISSUED FOR CONSTRUCTION		SCALE 3/8"=1'-0; SPEC. CODES; A/E SHEET NO.

DRAWING NUMBER 904D-127

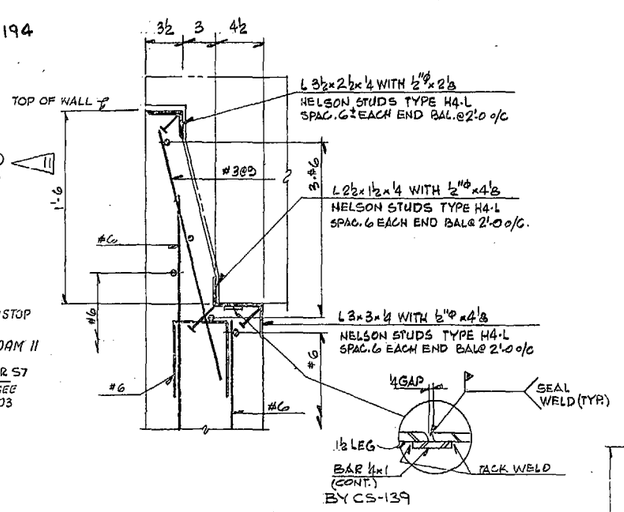
904-D-127



FOUNDATION PLAN

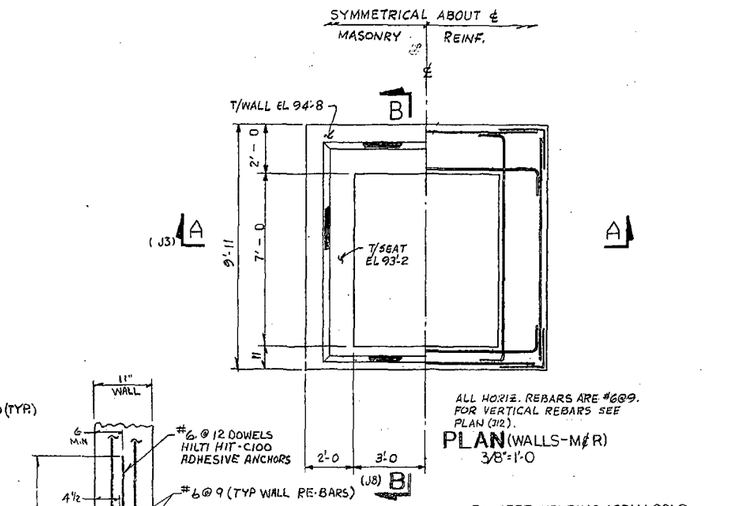
(MASONRY)

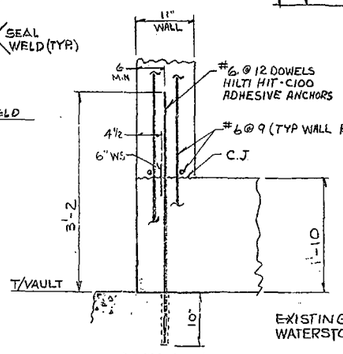
3/8" = 1'-0



DETAIL '3' (G5)

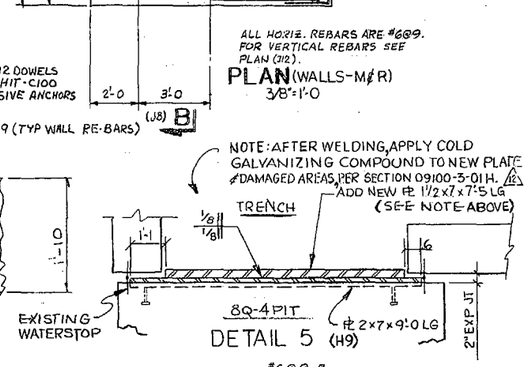
NTS





DETAIL 4

DOWEL PLACEMENT AT 11" WALL



DETAIL 5 (H9)

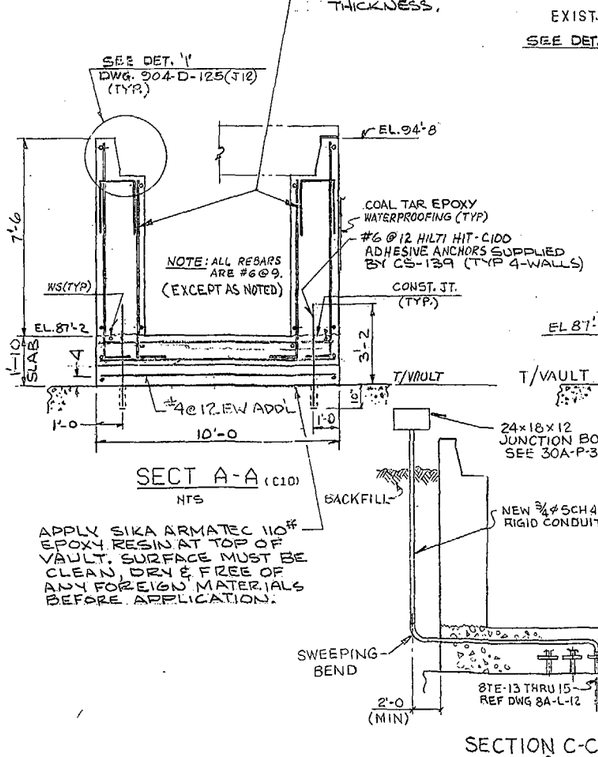
NO.	DATE	REVISION	DR	CH	APPROVED
B	10-13-89	GENERAL REVISION		AGS	
C	1-26-90	GENERAL REVISION AND AS PER EBAR 1335A	V.S.		
0	2/12/90	ER 1775			
1	2-16-90	REV. PER ECN 3475	ZM	DRS	
2	2-22-90	REV. PER ECN 3488	CGR	DRS	
3	11-1-90	REV. PER FCN VF-2B-057	ZM	HB	
4	2-5-91	REV. PER FCN VF-2B-058	CW	HB	
5	8-2-91	REV. PER ECN 4443	CW	DRS	
6	6-1-92	GEN REV PER ECN 5062	AAJ	DRS	
7	8-5-92	REV/ECN 5420 PD REV/ECN 5434 DRS REV/ECN 5432 DRS		HB	
8	8-24-92	REV/ECN 5456	RMS	DRS	
9	9-21-92	REV/ECN 5524	PD	HB	

NOTES:

1. FOR GENERAL NOTES SEE DRAWING 905-D-710
2. SEE DWG. 904D-140 FOR KEY PLAN
3. FOR LINER EMBED LOCATIONS SEE DWG. 904D-131 & PNL-704-01 SH. 3
4. FOR LINER SUPPORTS SECTIONS & DETAILS SEE DWG 904-D-133.
5. FOR WALL PENETRATIONS SEE DWG PNL-704-03.
6. FOR COVERS SEE DRAWINGS 904-D-150 & 151.
7. FOR RISER DETAILS SEE DWG 904-D-061.
8. THE BD-3/4 VAULT TOP ELEVATION UNDER 8Q-1 PUMP PIT WILL VARY. THE PIT INVERT ELEV. SHALL BE MAINTAINED.
9. INVERT OF PIT SLOPES TO PIT DRAIN. SEE DWG. 904D-061 FOR DRAIN ELEVATION.
10. NEW VAULT PLUG TO BE INSTALLED IN PLACE BY WVNS PRIOR TO PLACEMENT OF PUMP PIT CONCRETE. SEE DWG. 900D-2863
11. WORK PROCEDURE FOR WVNS APPROVAL IS REQUIRED PRIOR TO REPLACING THESE CONDUIT.

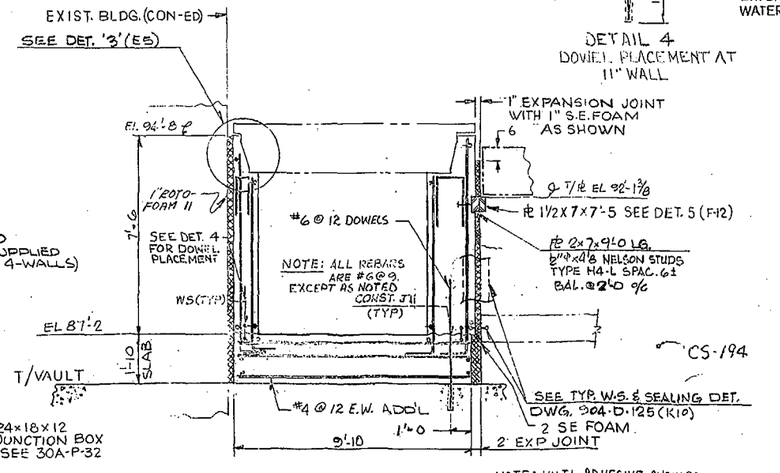
THIS DRAWING IS PART OF CS-139 EXCEPT AS NOTED BELOW:

CS-194, ZONE A4, H10 WVNS SUPPLIED MATERIALS, ALL RE-BAR AND EMBEDS EXCEPT AS NOTED



SECT A-A (C10)

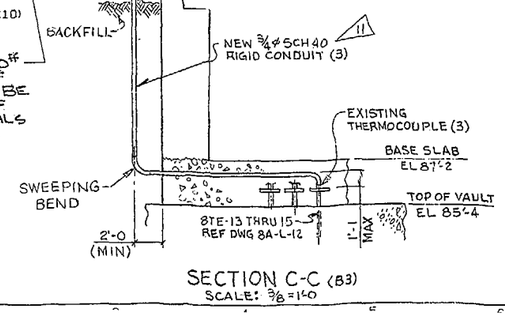
NTS



SECT B-B (E11)

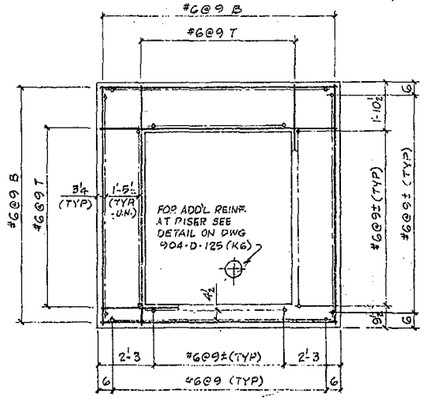
NTS

NOTE: HILTI-ADHESIVE ANCHORS TO BE INSTALLED AS PER MANUFACTURERS SPECIFICATIONS. RELOCATE DOWELS AS REQ'D TO CLEAR HARDWARE: RE-BARS, PIPE, SLEEVES, ETC. (± 3" IN BOTH DIRECTIONS)



SECTION C-C (B3)

SCALE: 3/8" = 1'-0



PLAN

(FDN REINF & DOWELS)

3/8" = 1'-0

REFERENCE DRAWINGS:

SMS-8Q-4 UTILITY PIT M&R PLAN & SECT'S	900-D-2863
SMS-8Q-1 PUMP PIT M&R-PLAN & SECTIONS.	904-D-123
8Q-4 PUMP PIT LINER LAYOUT	PNL-704-03
V.F. GENERAL NOTES AND REF. DRAWINGS	905-D-710
SMS 8Q-1, 8Q-2, AND 8Q-4 RISER FLANGE DETS.	904-D-061
SMS 8Q-4 PUMP PIT LINER PLAN AND SECT.	904-D-131
SMS PIT LINER SUPPORT TYP. SECT. & DETAILS	904-D-133
SMS TYP. PIT COVER M&R PLAN & SECT. SH. 1&2	904-D-150/151
SMS KEY PLAN	904D-140

NO	DATE	REVISION	DR	CK	APV, APV
M 12	9-13-93	REV/FCN VF-2B-1143	PD	DRS	RB
S 11	5-14-93	REV/FCN VF-2B-0500	PD	DRS	
10	10-13-92	VF-2B-0426, VF-2B-0372	PD	DRS	
N	10-8-92	REV/FCN VF-2B-0356,			

WVNS APPROVAL

COG. MGR.
COG. ENGR.
ORFT. SUPR.
Q.A. MGR.
R & S MGR.
PROJ. MGR.

FOR DRAWING INDEX SEE DRAWING NO.

APPRVD WVNS CO.	
PROJECT MGR	11/1/93
ENGINEER-SUPV	8/11/93
LEAD DISC. ENGR	8/11/93
DESIGN	8/11/93
CHECKED	8/11/93
DRAWN	DATE 8-11-93
DE-AC07-81NE44139 PROJECT NO.	
19-CWV-02275 SUBCONTRACT NO.	
ISSUED FOR CONSTRUCTION	

EBASCO SERVICES INCORPORATED
A/E D.F.S. NO. 2388 TASK ORDER 815
FOR
WEST VALLEY NUCLEAR SERVICES COMPANY, INC
WEST VALLEY, NEW YORK

WEST VALLEY DEMONSTRATION PROJECT
SLUDGE MOBILIZATION SYSTEM
8Q-4 PUMP PIT M&R PLAN & SECTION

SIZE	INDEX CODE NUMBER				DRAWING NO.	REV.
	AREA	DR. TYP	CL	ORIG		
D					904D-127	12

SCALE	SPEC. CODES	A/E SHEET NO.
AS NOTED		904-D-127 C

904D-128

904-D-128

REV NO	DATE	REVISION	DR	CH	APPROVED		
C	1-26-90	REVISED PER EBAR Nº 1375A REVISED & REDRAWN	VS				
0	2/12/90	ER 1775					
1	2-16-90	REV. PER ECN 3475	GM	DRS			
2	2-22-90	REV. PER ECN 3483	CGR	DRS			
3	10-11-90	REV. PER ECN 3636	CCR	HAB			
4	11-13-90	PER FCN VF-2A-064	JLH	DRS			
5	4/4/91	PER FCN VF-2A-203	JLH	HAB			

FOUNDATION PLAN
(MASONRY)
¼" = 1'-0

FOUNDATION PLAN
(FDN REINF. & DOWELS)
¼" = 1'-0

PLAN
(TOP OF WALLS)
¼" = 1'-0

NOTES:

1. FOR GENERAL NOTES SEE DRAWING 905-D-710.
2. SEE DWG 904D-140 FOR KEY PLAN
3. FOR LINER EMBED. LOCATIONS SEE DWG. 904D-132 & PNL-704-01 SH4
4. FOR LINER SUPPORT SECTION & DETAILS SEE DWG 904-D-133.
5. FOR WALL PENETRATIONS SEE DRAWING PNL-704-04.
6. FOR COVERS SEE DRAWINGS 904-D-150 & 151.

SECTION A-A (D1, D8, D13)
⅜" = 1'-0

SECTION B-B (C11, D11, G4)
¾" = 1'-0

DETAIL '5' (C10)
½" = 1'-0

DETAIL '6' (B13)
½" = 1'-0

SECTION C-C (H13)
½" = 1'-0

ISOMETRIC - DETAIL

DETAIL #7 (B4, E4)
SCALE: NTS

TYP. WALL CORNER DETAIL
(REINF.)
N.T.S.

TRENCH WALL DETAIL
¾" = 1'-0

REFERENCE DRAWINGS:

SMS - 8Q-1 PUMP PIT PLANS & SECTIONS - M&R	904-D-125
SMS - TRENCH PLAN & DETAILS - SH 1	904-D-141
SMS - 8Q-4 PUMP PIT PLANS & SECTIONS - M&R	904-D-127
SMS - 8Q-5 UTILITY PIT PLAN & SECTIONS - M&R	900-D-2864
SMS - HLW TRANSFER PIPING SUPPORT LOCATIONS	904-D-560
V.F. GENERAL NOTES AND REFERENCE DWGS.	905-D-710
PUMP PIT LINER LAYOUT 8Q-5	PNL-704-04
SMS 8Q-5 PUMP PIT LINER PLAN & SECTION	904-D-132
SMS PIT LINER SUPPORT TYP. SECT. & DET.	904-D-133
SMS TYP. PIT COVER M&R PLAN & SECT. SHT. 1 & 2	904-D-150 & 151
SMS KEY PLAN	904D-140

WVNS APPROVAL
COG. MGR.
COG. ENGR.
DRFT. SUPR.
Q.A. MGR.
R & S MGR.
PROJ. MGR.

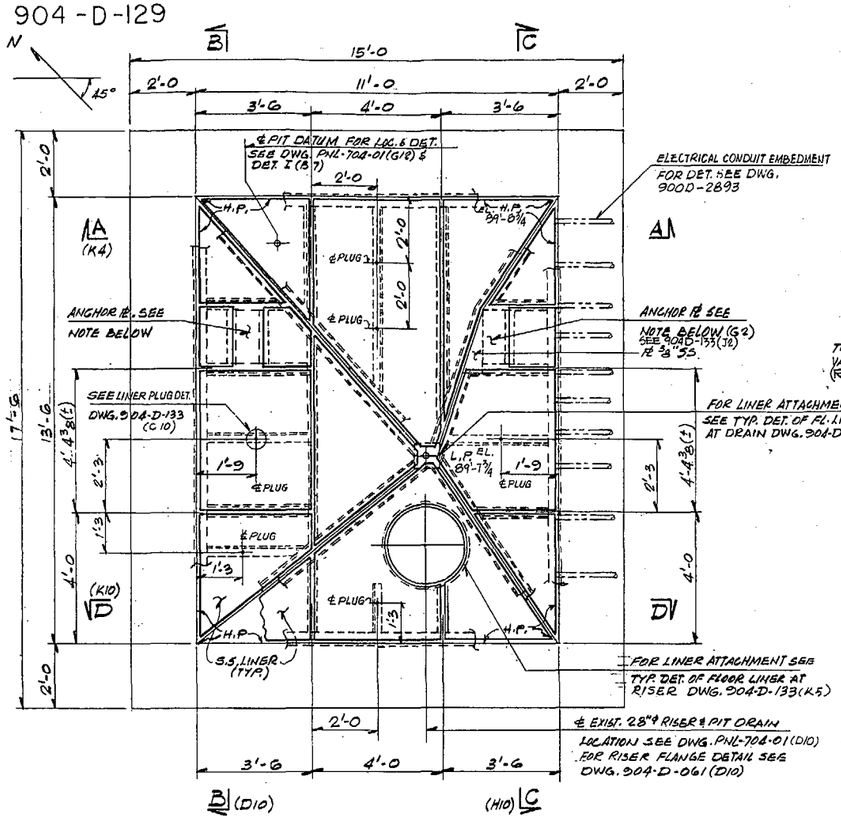
FOR DRAWING INDEX SEE DRAWING NO. ______

APPRVD WVNS CO.		EBASCO SERVICES INCORPORATED A/E O.F.S. NO. 2388 TASK ORDER 015
PROJECT MGR	1/26/90	FOR WEST VALLEY NUCLEAR SERVICES COMPANY, INC WEST VALLEY, NEW YORK
ENGINEER SUPV	1/26/90	
LEAD DISC ENGR	1/26/90	WEST VALLEY DEMONSTRATION PROJECT
DESIGN	1/26/90	SLUDGE MOBILIZATION SYSTEM 8Q-5 DIVERSION PIT M&R PLANS & SECTIONS
CHECKED	1-18-90	
DRAWN V. SEKERKA	DATE 1-18-90	
DE-AC07-81NE44139 PROJECT NO.	SIZE D	INDEX CODE NUMBER: AREA / DR. TYP / CL / ORIG — DRAWING NO. 904D-128 — REV. 5
19-CWV-02275 SUBCONTRACT NO.		
ISSUED FOR CONSTRUCTION	SCALE	SPEC. CODES — A/E SHEET NO.

DRAWING NUMBER: 904D-129

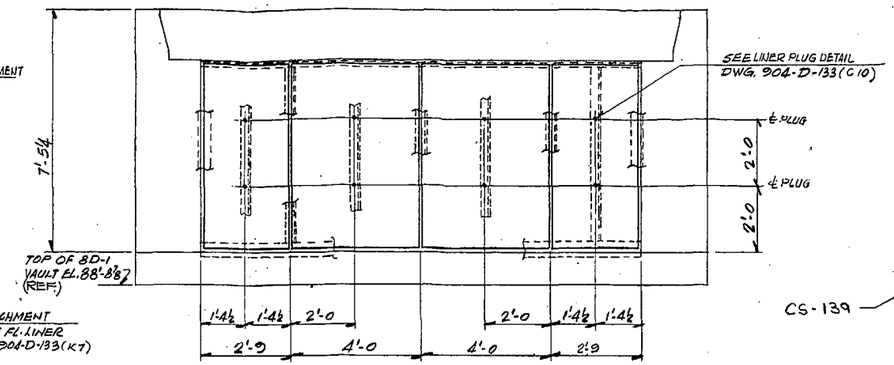
904-D-129

REV NO	DATE	REVISION	DR	CH	APPROVED
B	10-13-89	GENERAL REVISION	[illegible]	AGS	[illegible]
C	1-19-90	GENERAL REVISION AS PER EBAR 1837A	F.M.	AGS	W.C.
D	2/12/90	ER1775			
1	2-16-90	REVISED/ECN 3473(3475A)	RMS	KMQ	
2	1-16-90	REV. PER FCN VF-2A-008	GW	HAB	
3	8-7-91	REV. PER ECN 4443	GW	DLB	



PLAN

NOTE: FOR ANCHOR PLATE LOCATION SEE DWG. PNL-704-01



ELEVATION B-B (G2)

CS-139

NOTES:

1- FOR GENERAL NOTES SEE DWG. 905-D-710

2- TOLERANCES ON EMBEDDED SS. BARS AND ANGLES FOR LINER ATTACHMENT SHALL BE AS FOLLOWS:
- a) LOCATION ± 1/8 INCH
- b) ELEVATION ± 1/8 INCH
- c) FLATNESS ± 1/8 INCH OVER 10'-0

3- STAINLESS STEEL PLATES & SHAPES TYPE 304L: Fy-25,000 PSI, ASTM A 240, A276.

4- FOR CONDUIT EMBEDMENT DETAILS SEE DWG. 900-D-2893

5- FOR LINER EMBEDMENT DETAILS SEE DWG. 904-D-133

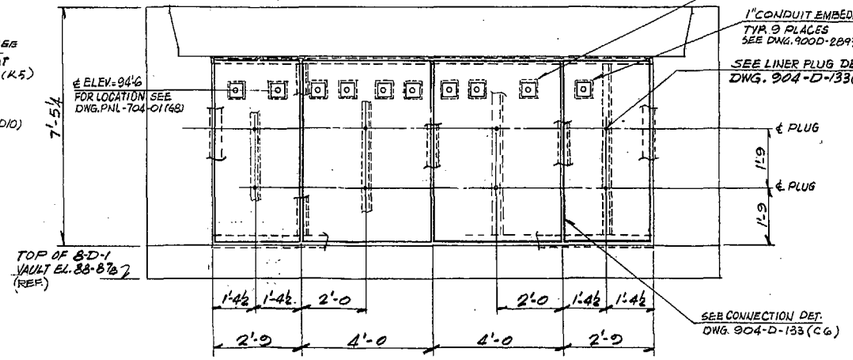
6- FOR WALL PENETRATION LOCATIONS SEE DWG. PNL-704-01

7- FOR M&R PLAN & SECTION SEE DWG. 904-D-125

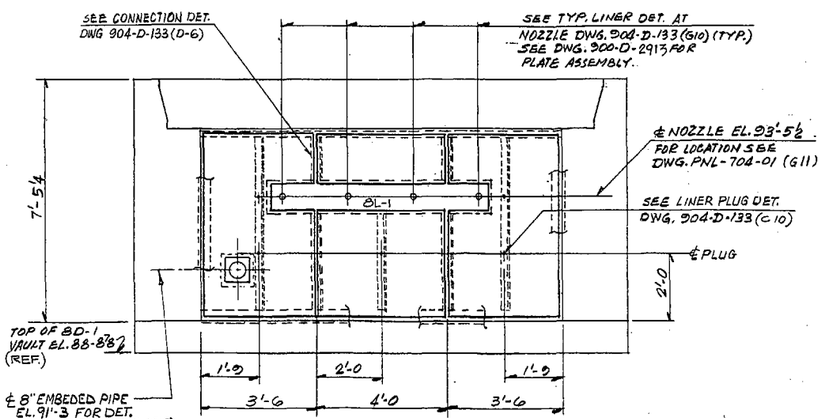
8- FOR TIP, LP ELEV'S SEE DWG PNL-704-01 & 904-D-061 RESPECTIVELY.

REFERENCE DRAWINGS:

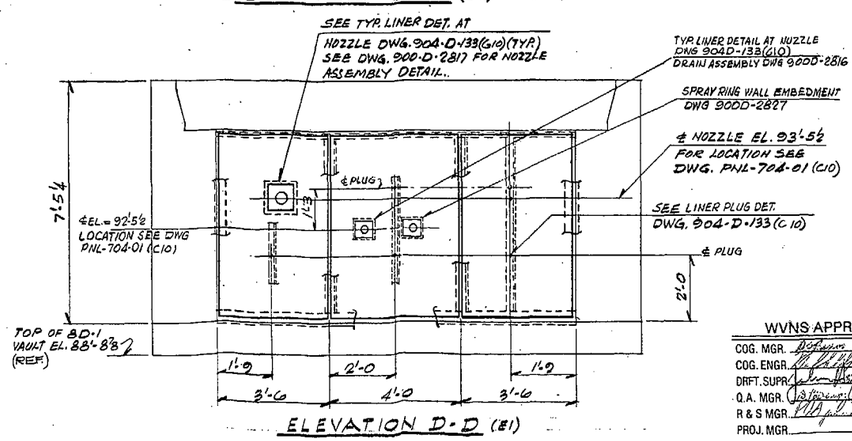
BQ-1 PUMP PIT LINER LAYOUT,	PNL-704-01
V.F. GENERAL NOTES & REF. DWG'S.	905-D-710
SMS PIT WALL EMBEDMENT 2" UTILITY LINE DRAIN	900D-2816
SMS PIT WALL EMBEDMENT 2" UTILITY LINE	900D-2817
SMS JUMPER PIT ELECTRICAL CONDUIT EMBED'MT.	900D-2893
SMS BQ-1, BQ-2, & BQ-4 RISER FLANGE DETAILS	904D-061
SMS PIT LINER SUPPORT TYPICAL SECTION & DETAILS	904D-133
SMS 2" HORIZ. 4 NOZZLE WALL EMBEDMENT	900D-2913
SMS 1" SPRAY RING, WALL EMBEDMENT	900D-2827



ELEVATION C-C (G4)



ELEVATION A-A (B1)



ELEVATION D-D (B1)

⚠ THIS DRAWING IS PART OF CS-194 EXCEPT AS NOTED BELOW:

CS-139, ZONE B14

FOR DRAWING INDEX SEE DRAWING NO.

WVNS APPROVAL

COG. MGR. [illegible] 9/10/91
COG. ENGR. [illegible]
DRFT. SUPR. [illegible]
Q.A. MGR. [illegible]
R & S MGR. [illegible]
PROJ. MGR.

APPRVD WVNS CO.		EBASCO SERVICES INCORPORATED
PROJECT MGR [illegible]	1/31/89	A/E O.F.S. NO. 2388 TASK ORDER 015
ENGINEER SUPV [illegible]	2/1/89	FOR WEST VALLEY NUCLEAR SERVICES COMPANY, INC WEST VALLEY, NEW YORK
LEAD DISCIENGR [illegible]	2/27/89	WEST VALLEY DEMONSTRATION PROJECT
DESIGN I. SIMULESCU	8/31/89	SLUDGE MOBILIZATION SYSTEM
CHECKED C.M. ENACHE	8/31/89	8Q-1 PUMP PIT LINER
DRAWN S.M. GUARNIERI	DATE 8/11/89	PLAN & SECTION

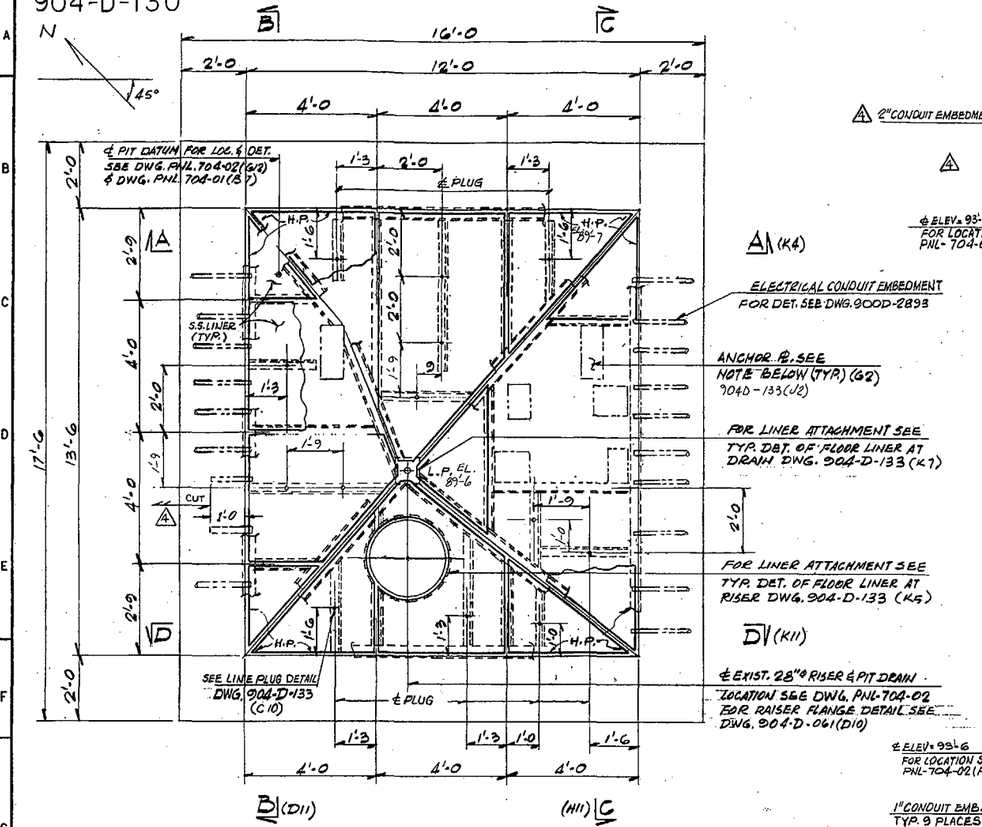
DE-AC07-81NE44139 PROJECT NO.
19-CMV-02275 SUBCONTRACT NO.
ISSUED FOR CONSTRUCTION

SIZE	INDEX CODE NUMBER				DRAWING NO.	REV.
	AREA	DR. TYP	CL	ORIG		
D					904D-129	3

SCALE . SPEC. CODES A/E SHEET NO.

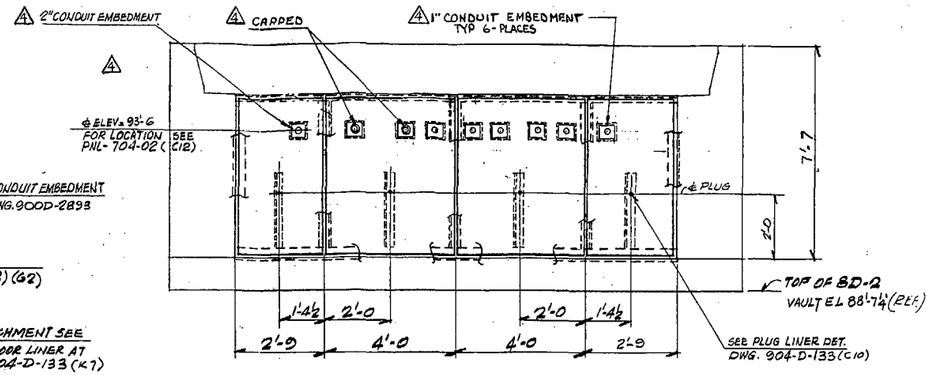
DRAWING NUMBER: 904D-130

904-D-130



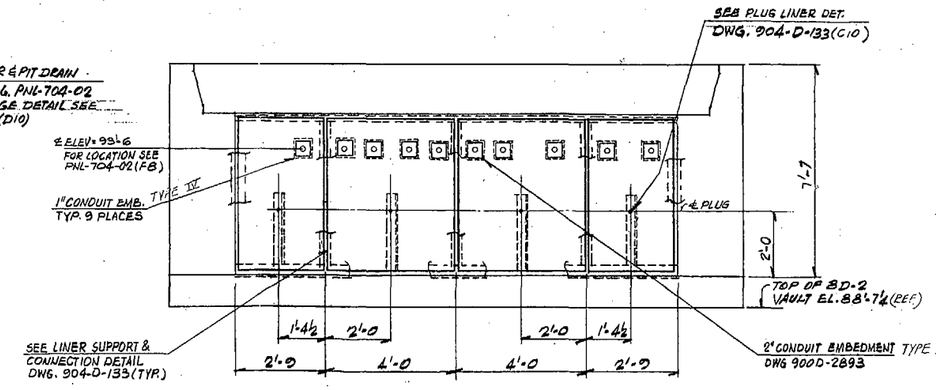
PLAN

NOTE: FOR ANCHOR PLATE LOCATION SEE DWG. PNL-704-02



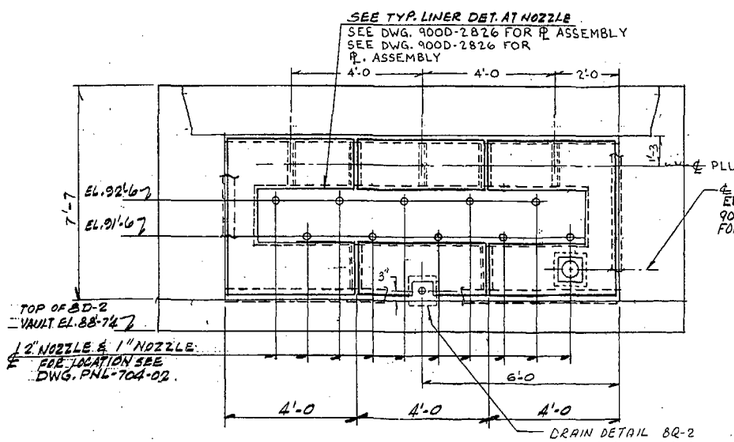
ELEVATION B-B (G2)

NTS



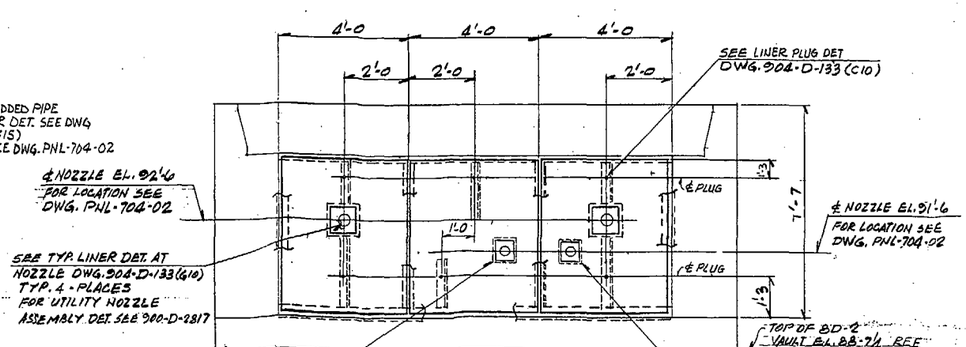
ELEVATION C-C (G4)

NTS



ELEVATION A-A (B6)

NTS



ELEVATION D-D (E6)

NTS

REV NO	DATE	REVISION	DR	CH	APPROVED
B	7/13/90	GENERAL REVISION	[illegible]	AGS	[illegible]
C	1/19/90	GENERAL REVISION AS PER EBAR 1337A	P.M.	AGS	[illegible]
0	2/12/90	ER1775			
1	2-16-90	REV./ECN#3473 & 3473A	EMS	KMQ	
2	10/31/90	REV PER FCN VF-2A-056	LRK	HAB	
3	12-20-90	REV. PER FCN VF-2A-008	GW	HAB	
4	5-24-91	REV. PER FCN VF-2A-273	GW	HAB	

NOTES:

1. FOR GENERAL NOTES SEE DWG. 903-D-710
2. FOR ADD'L. NOTES SEE DWG. 904-D-120
3. -
4. FOR CONDUIT EMBEDMENT DETAILS SEE DWG. 900-D-2893
5. FOR LINER EMBEDMENT DETAILS SEE DWG. 904-D-133
6. FOR WALL PENETRATION LOCATION SEE DWG. PNL-704-02
7. FOR M&R PLAN & SECTION SEE DWG. 904-D-126
8. FOR HP, LP ELEV'S SEE DWG'S PNL-704-02 AND PNL-704-01 RESPECTIVELY.

REFERENCE DWGS:

V.F. GENERAL NOTES & REF DWG'S.	903-D-710
SMS BQ-1, BQ-2 & BQ-4 RISER FLANGE DETAILS	904-D-061
SMS BQ-2 PUMP PIT M&R PLAN & SECTION	904-D-126
SMS, 2" UTILITY LINE DRAIN, PITWALL EMBEDMENT	900-D-2816
SMS, 2" UTILITY LINE PIT WALL EMBEDMENT	900-D-2817
SMS, TRANSFER PIT BQ-2 AND BQ-5, WALL NOZZLE EMBEDMENT ASSEMBLY	900-D-2826
SMS, 1" SPRAY RING, WALL EMBEDMENT	900-D-2827
SMS, TRANSFER PIT, ELECTRICAL CONDUIT EMBEDMENT	900-D-2893
BQ-1 PUMP PIT LINER LAYOUT	PNL-704-01
BQ-2 PUMP PIT LINER LAYOUT	PNL-704-02
SMS PIT LINER SUPPORT TYP. SECTIONS & DETAILS	904D-133

WVNS APPROVAL

COG. MGR.	[illegible] 3/6/92
COG. ENGR.	[illegible] 3/6/92
DRFT. SUPR.	[illegible] 3/6/92
O.A. MGR.	[illegible]
R & S MGR.	[illegible] 3/6/92
PROJ. MGR.	

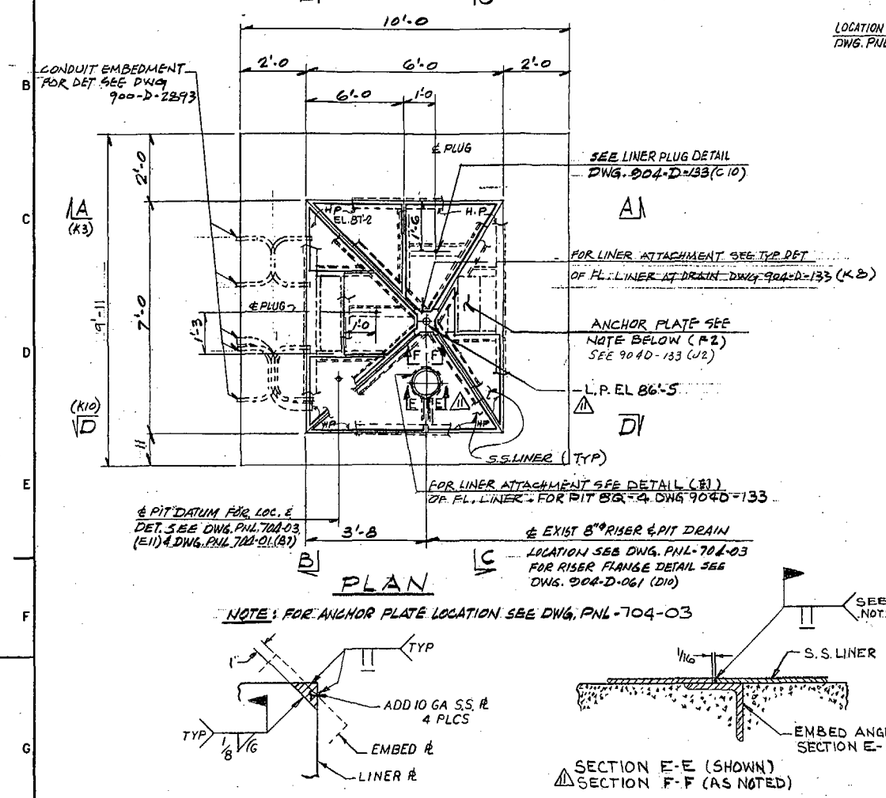
FOR DRAWING INDEX SEE DRAWING NO.

APPRVD WVNS CO.		EBASCO SERVICES INCORPORATED
PROJECT MGR [illegible]	3/6/92	A/E O.F.S. NO. 2388 TASK ORDER 015
ENGINEER SUPV [illegible]	3/6/92	FOR WEST VALLEY NUCLEAR SERVICES COMPANY, INC WEST VALLEY, NEW YORK
LEAD DISC ENGR [illegible]	3/6/92	WEST VALLEY DEMONSTRATION PROJECT
DESIGN I SIMULESCU	8/6/92	SLUDGE MOBILIZATION SYSTEM
CHECKED C.M. ENACHE	8/6/92	BQ-2 PUMP PIT LINER
DRAWN [illegible]	8/6/92	PLAN & SECTION

DE-AC07-81NE44139 PROJECT NO.	SIZE	INDEX CODE NUMBER				DRAWING NO.	REV.
		AREA	DR. TYP	CL	ORIG		
19-CWV-02275 SUBCONTRACT NO.	D					904D-130	4
ISSUED FOR CONSTRUCTION	SCALE: 3/16"=1'-0		SPEC. CODES			A/E SHEET NO. 904-D-130 C	

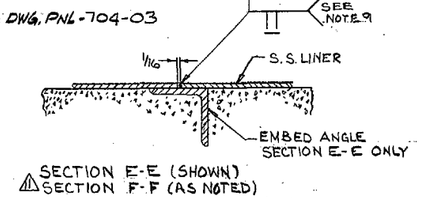
10/10/04 7:56:40 AM PERRO

904-D-131

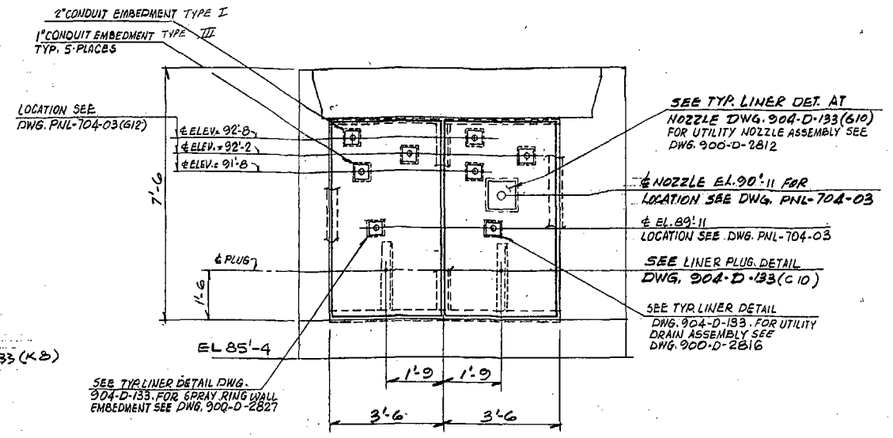


NOTE: FOR ANCHOR PLATE LOCATION SEE DWG. PNL-704-03

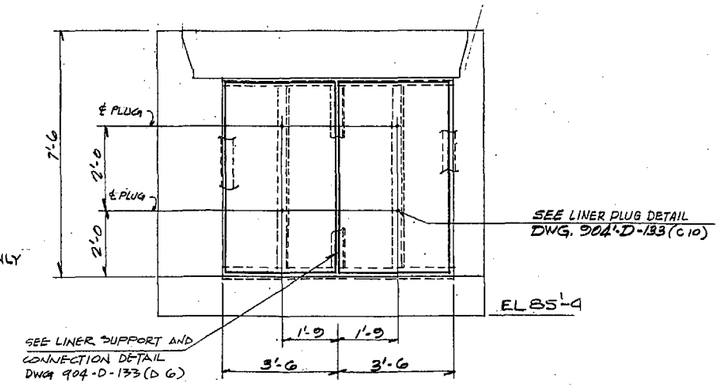
DETAIL E (K5)



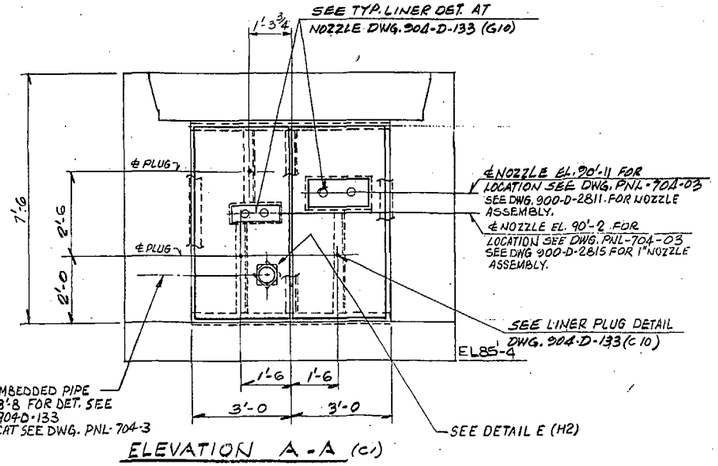
SECTION E-E (SHOWN)
⚠ SECTION F-F (AS NOTED)



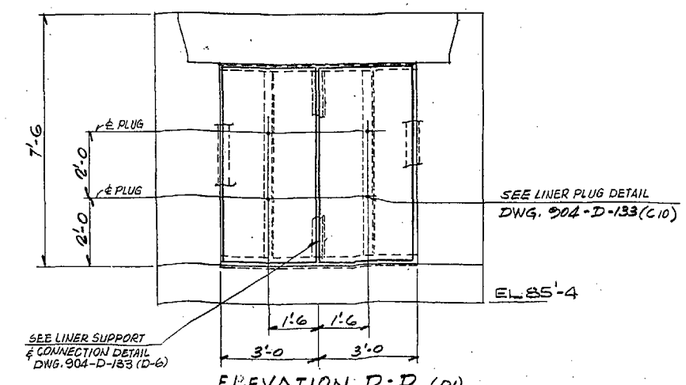
ELEVATION B-B (B2)



ELEVATION C-C (B3)



ELEVATION A-A (C1)



ELEVATION D-D (D1)

REV NO	DATE	REVISION	DR	CH	APPROVED		
B	10-13-89	GENERAL REVISION		AGS			PJB
C	1-19-90	GENERAL REVISION AS PER EBAR 1337 A	FM	AGS	WC	WC	
D	2/12/90	ER 1775					
10	9-19-93	REV/ECN VF-28-1277	GW	HAB	PB		
11	12-17-93	REV/ECN 7073/PCN 1548	GW	HAB	PB		
3	12-20-90	REV. PER FCN VF-2A-008	GW	HAB			
4	2-4-91	REV PER FCN VF-2A-043	PAK	HAB			
5	8-2-91	REV. PER ECN 4443	GW				
6	6-1-92	REV PER ECN 5062	AAL	DRS			
7	11-6-92	REV/FCN VF-28-0420	PD	HAB			
8	8-11-93	REV PER ECN 6566	GW	KQ	PB		
9	8-17-93	REV/ECN 6628	EMS	KQ	PB		

NOTES:

1- FOR GENERAL NOTES SEE DWG. 905-D-710
2. FOR ADD'L. NOTES SEE DWG. 904-D-129
3-
4- FOR CONDUIT EMBEDMENT DETAILS SEE DWG. 900-D-2893
5- FOR LINER EMBEDMENT DETAILS SEE DWG. 904-D-133
6- FOR WALL PENETRATION LOCATIONS SEE DWG PNL-704-03
7- FOR M&R PLAN & SECTION SEE DWG. 904-D-127
8- FOR HP, LP ELEV'S SEE DWG'S PNL-704-03 AND PNL 709-01 RESPECTIVELY.
⚠9- P.T. TESTING SHALL BE DONE IN LIEU OF VACUUM BOX TESTING DUE TO THE INACCESSIBILTY OF THE WELD, WHERE NOTED

REFERENCE DRAWINGS:

BQ-1 PUMP PIT LINER LAY...	PNL-704-01
BQ-4 PUMP PIT LINER LAY...	PNL-704-03
SMS 2" HORIZ, 2 NOZZLE WALL EMBED...	900D-2811
SMS TRANSFER PIT BQ-4 1"ϕ ... EMBEDMENT	900D-2815
SMS JUMPER PIT ELECTRICAL CONDUIT EMBEDMENTS	900D-1593
SMS BQ-1, BQ-2 & BQ-4 PIPE FLANGE DETAILS	904D-061
SMS PIT LINER SUPPORT TYPICAL SECTIONS & DETAILS	904D-133
Y.F. GENERAL NOTES & REF DWG'S.	905-D-710

ALL EMBEDS AND STAINLESS STEEL LINER SUPPLIED BY WVNS

FOR DRAWING INDEX SEE DRAWING NO.

APPRVD WVNS CO.		EBASCO SERVICES INCORPORATED
PROJECT MGR	6/1/89	A/E O.F.S. NO. 2388 TASK ORDER 015
ENGINEER SUPV	8/31/89	FOR WEST VALLEY NUCLEAR SERVICES COMPANY, INC WEST VALLEY, NEW YORK
LEAD DISC. ENGR	8/31/89	WEST VALLEY DEMONSTRATION PROJECT
DESIGN	8/15/89	SLUDGE MOBILIZATION SYSTEM
CHECKED C.M. GNACHE	8/15/89	80-4 PUMP PIT LINER - PLAN & SECTION
DRAWN E.M. GUARNIERI	6-11-89	DE-AC07-81NE44139 PROJECT NO.
19-CWV-02275 SUBCONTRACT NO.		SIZE D; INDEX CODE NUMBER AREA DR. TYP CL ORIG; DRAWING NO. 904D-131; REV. N
ISSUED FOR CONSTRUCTION		SCALE SPEC. CODES A/E SHEET NO.

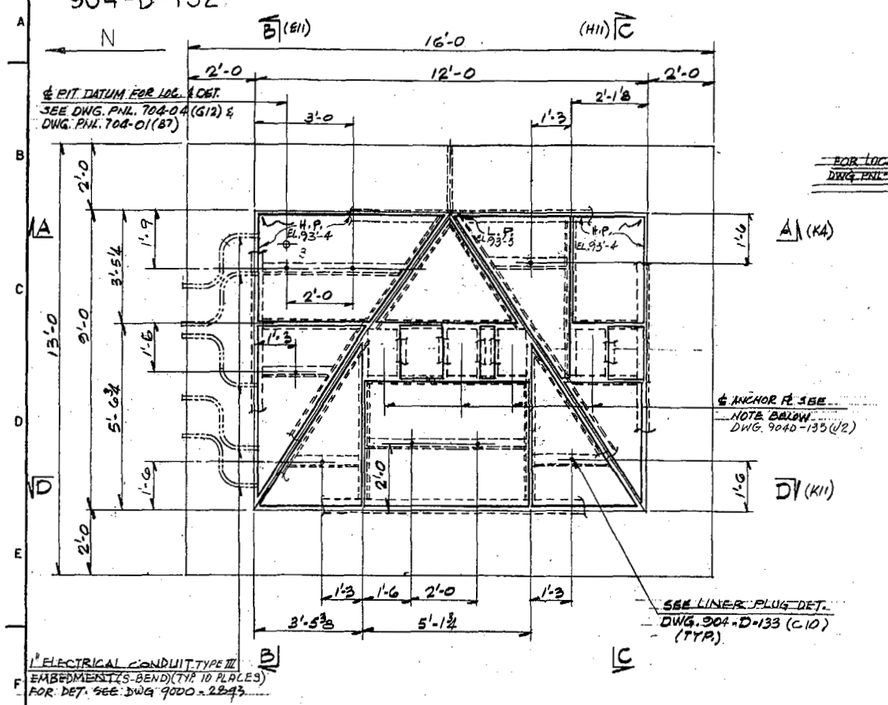
WVNS APPROVAL

COG. MGR.
COG. ENGR.
DRFT. SUPR.
Q.A. MGR.
R & S MGR.
PROJ. MGR.

DRAWING NUMBER: 904D-132

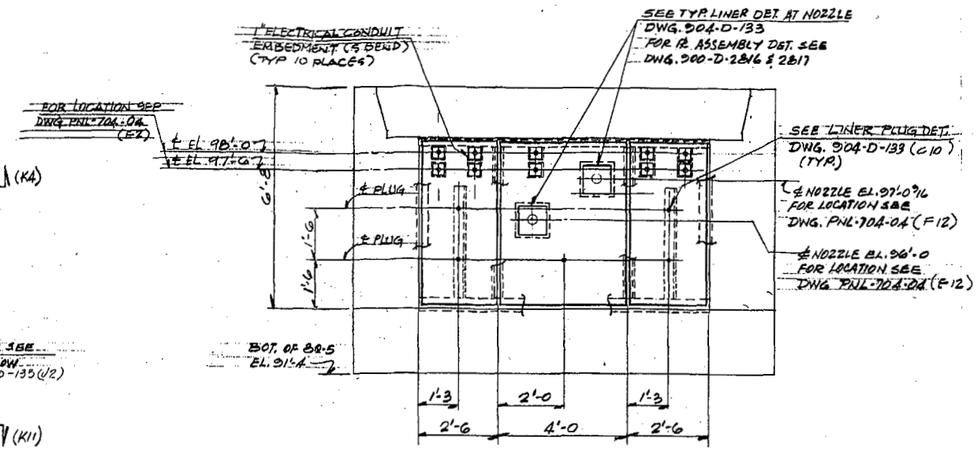
904-D-132

REV NO	DATE	REVISION	DR	CH	APPROVED
B	10-13-89	GENERAL REVISION	MMG	A.G.S.	
C	1-19-90	GENERAL REVISION AS PER ER&R 1337 A	DB	AGS	
0	2/12/90	ER 1775			
1	2-16-90	REV/ECN 3473 & 3472A	EMS	KMG	
2	9-7-90	REV. /FCN VF-2A-026	CGR	MMB	
3	12-20-90	REV. PER FCN VF-2A-008	GW	MMB	
4	5/20/96	REV/ECN 9946	SRD	MMB	

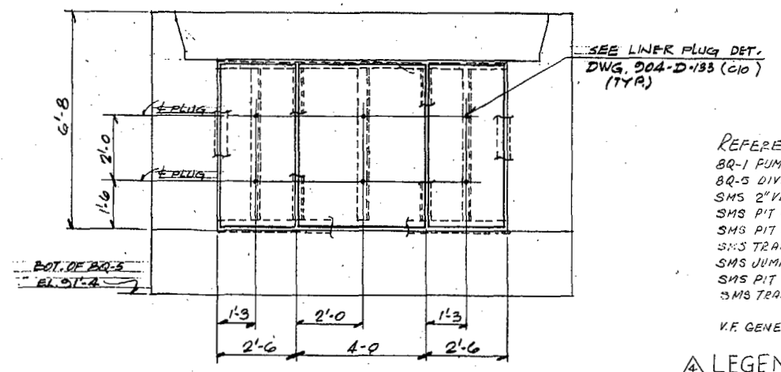


PLAN

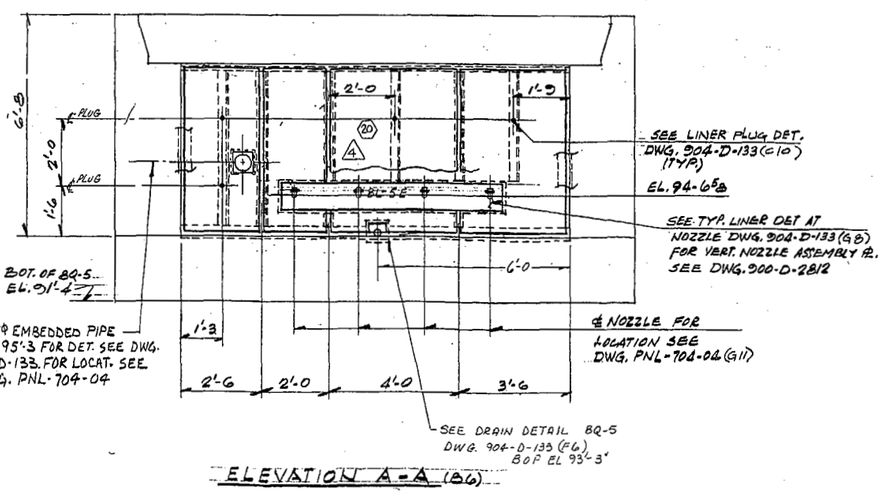
NOTE: FOR ANCHOR PLATE LOCATION SEE DWG. PNL-704-04



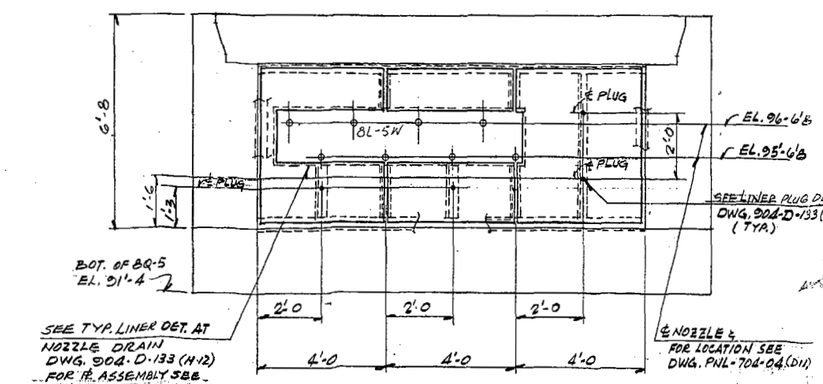
ELEVATION B-B (A2)



ELEVATION C-C (A4)



ELEVATION A-A (B6)



ELEVATION D-D (D6)

NOTES:

1. FOR GENERAL NOTES SEE DWG. 905-D-710
2. FOR ADDL. NOTES SEE DWG. 904-D-120
3.
4. FOR CONDUIT EMBEDMENT DETAILS SEE DWG 904-D-2893
5. FOR LINER EMBEDMENT DETAILS SEE DWG 904-D-733
6. FOR WALL PENETRATION LOCATIONS SEE DWG PNL-704-04
7. FOR M&R PLAN & SECT SEE DWG 904-D-128
8. FOR HP, LP ELEV'S SEE DWG PNL-704-04 AND PNL-704-04 RESPECTIVELY.

REFERENCE DRAWINGS:

BQ-1 PUMP PIT LINER LAYOUT	PNL-704-01
BQ-5 DIVERSION PIT LINER LAYOUT	PNL-704-04
SMS 2" VERT. & NOZZLE WALL EMBEDMENT	900D-2812
SMS PIT WALL EMBEDMENT 2" UTILITY LINE DRAIN	900D-2816
SMS PIT WALL EMBEDMENT 2" UTILITY LINE	900D-2817
SMS TRANSFER PIT BQ-5 WALL NOZZLE EMBEDMENT ASSY.	900D-2914
SMS JUMPER PIT ELECTRICAL CONDUIT EMBEDMENTS	900D-2873
SMS PIT LINER SUPPORT TYP SECTIONS & DETAILS	904D-133
SMS TRANSFER PIT EMBEDMENT ASSEMBLY BQ-5 WALL NOZZLE	900-D-2914
V.F. GENERAL NOTES & REF. DWG'S.	905-D-710

△4 LEGEND:
⬡ - SMS RADIATION BASEPOINT

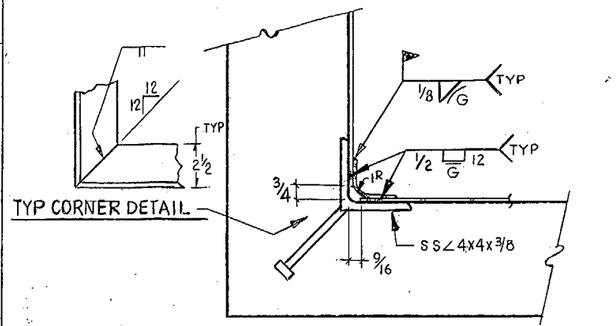
WVNS APPROVAL

COG. MGR.	5/19/96
COG. ENGR.	5/17/96
DRAFT. SUPR.	5/17/96
Q.A. MGR.	
R & S MGR.	5/16/96
PROJ. MGR.	

FOR DRAWING INDEX SEE DRAWING NO.

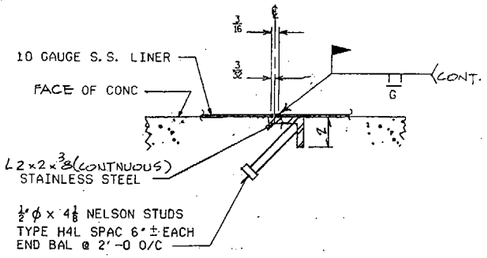
APPRVD WVNS CO.		EBASCO SERVICES INCORPORATED
PROJECT MGR	5/16/96	A/E O.F.S. NO. 2388 TASK ORDER 015
ENGINEER CHRG	8/31/95	FOR
LEAD DISC. ENGR	8/31/95	WEST VALLEY NUCLEAR SERVICES COMPANY, INC WEST VALLEY, NEW YORK
DESIGN J. SIMULESCU	8/31/95	WEST VALLEY DEMONSTRATION PROJECT
CHECKED C.M. ENACHE	8/31/95	SLUDGE MOBILIZATION SYSTEM
DRAWN E.M. GUARNIERI	DATE 8-11-95	8Q-5 DIVERSION PIT LINER PLAN & SECTION
DE-AC07-81NE44139 PROJECT NO.		SIZE D; INDEX CODE NUMBER: AREA, DR. TYP, CL, ORIG; DRAWING NO. 904D-132; REV. 4
19-CWW-02275 SUBCONTRACT NO.		
ISSUED FOR CONSTRUCTION		SCALE: 1 EBASCO ADDRESS: A/E SHEET NO.

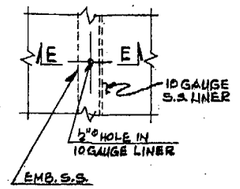
904-D-133

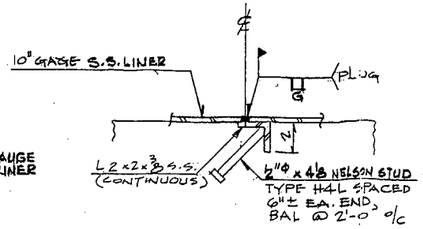


TYP CORNER DETAIL

TYP WALL ℄ TO FLOOR ℄ CONNECTION







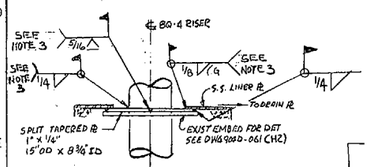
SECTION E-E

LINER PLUG DETAIL
TYP. FOR WALLS & FLOORS.
FOR LOCATION SEE PLAN & ELEVATION

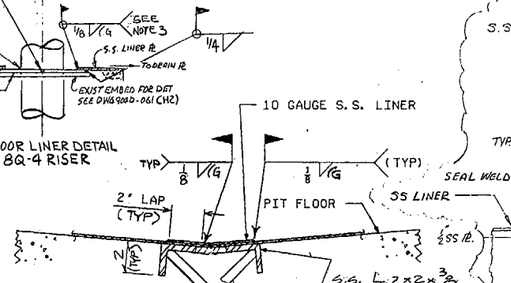
NO.	DATE	REVISION	DR	CH	APPROVED
5	10-13-89	GENERAL REVISION	[illegible]	AGS	[illegible]
C	1-19-90	GENERAL REVISION AS PER ECN# 1337A	DB	AGS	WC WC
0	2/12/90	ER1175			
10	11-29-93	REV PER ECN 7073	CW	HAB	P.B.
2	10-11-90	REV. PER ECN 3636	CGR	HAB	
3	1-2-91	REV PER FCN VF-2A-008	CW	HAB	
4	2-14-91	PER FCN VF 2A 108	A/N	HAB	
5	8-2-91	REV. PER ECN 4443	CW	DRS	
6	5-14-93	REV/FCN VF-2B-0534	PD	DRS	
7	8-11-93	REV PER ECN 6566	CW	KQ	P.B.
8	8-17-93	REV/ECN 6612	RMS	KQ	P.B.
9	10-14-93	REV/ECN 6880	PD	DRS	ALN

NOTES:

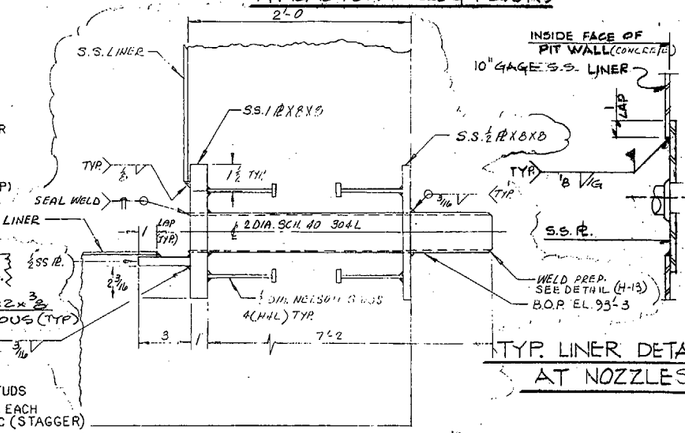
1. FOR GENERAL NOTES SEE DWG. 905D-710
2. FOR ADD'L. NOTES SEE DWG. 904-D-129
3. P.T. TESTING SHALL BE DONE IN LIEU OF VACUUM BOX TESTING DUE TO THE INACCESSIBILITY OF THE WELD, WHERE NOTED.



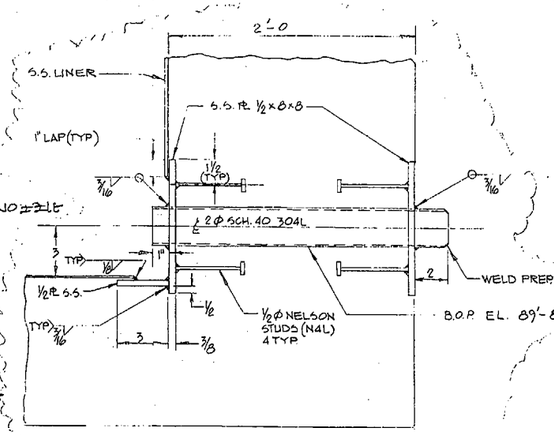
FLOOR LINER DETAIL AT 8Q-4 RISER

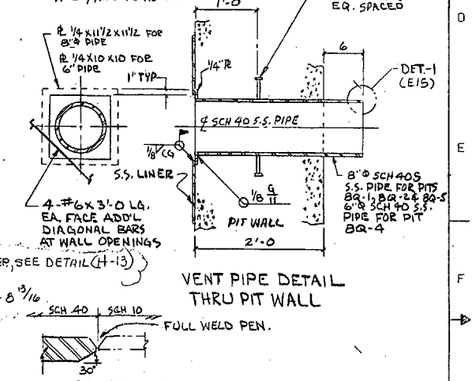


LINER SUPPORT & CONNECTION DETAIL
TYPICAL FOR WALLS & FLOORS

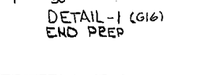


TYP. LINER DETAIL AT NOZZLES



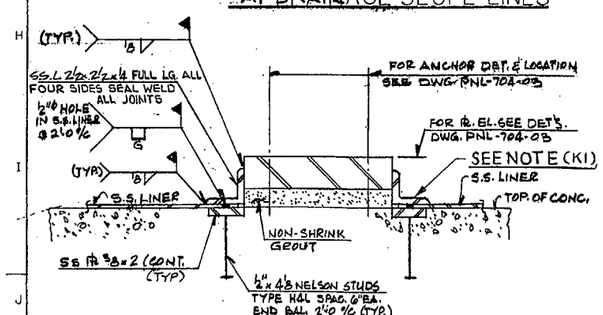


VENT PIPE DETAIL THRU PIT WALL



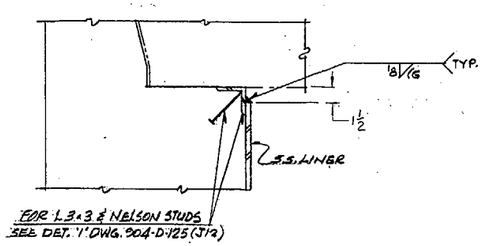
DETAIL-1 (G16)
END PREP

TYP. DET. OF FLOOR LINER CONNECTION AT DRAINAGE SLOPE LINES

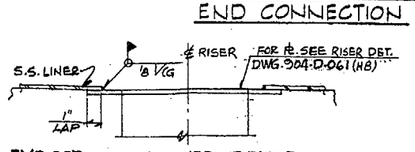


DRAIN DETAIL 8Q-5

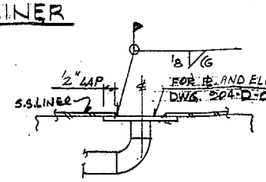
CS-194



TYP. DET. OF WALL LINER END CONNECTION



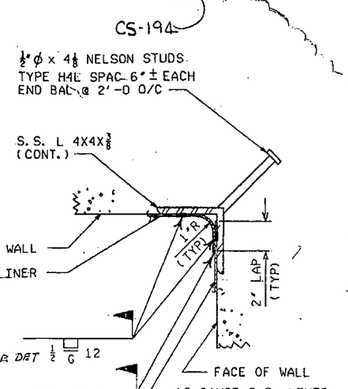
TYP. DET. OF FLOOR LINER AT RISER IN PITS 8Q-1 & 8Q-2



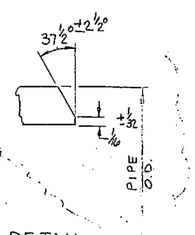
TYP. DET. OF FLOOR LINER AT DRAIN

DRAIN DETAIL 8Q-2

CS-194



TYP. CORNER DET. AT WALL INTERSECTION



DETAIL
ENLARGED VIEW
WELD END PREP
SCALE: NONE
NOTE: FOR OPEN ROOT OR SPLIT BACKING RING.

REFERENCE DRAWINGS

8Q-4 PUMP PIT LINER LAYOUT	PNL-704-03
SMS 8Q-1, 8Q-2, 8Q-4 RISER FLANGE DET	904-D-061
SMS 8Q-1 PUMP PIT M&R PLAN & SECTIONS	904-D-125
SMS 8Q-2 PUMP PIT LINER PLAN & SECTIONS	904-D-130
SMS 8Q-5 DIVERSION PIT LINER PLAN & SECTION	904-D-132
V.F. GENERAL NOTES & REF. DWGS.	905-D-710

THIS DRAWING IS PART OF CS-139 EXCEPT AS NOTED BELOW:

CS-194, ZONE G8 AND RELATED DETAILS.

ALL EMBEDS AND STAINLESS STEEL LINER SUPPLIED BY WVNS.

TYP. LINER DET. AT ANCHOR PLATE

NOTE:
THE 2½ x 2½ x ¼ ANGLE FRAME IS TYPICAL FOR PITS 8Q-1, 8Q-2 & 8Q5. FOR PIT 8Q-4, SUBSTITUTE 10 GAGE S.S. BENT PLATES. HORIZONTAL LEG TO BE 1½" MINIMUM AND THE VERTICAL LEG TO BE SIZED TO SUIT THE SLOPE OF THE PIT BASE SLAB. TYPICAL 4 SIDES, SEAL WELD ALL JOINTS.

WVNS APPROVAL

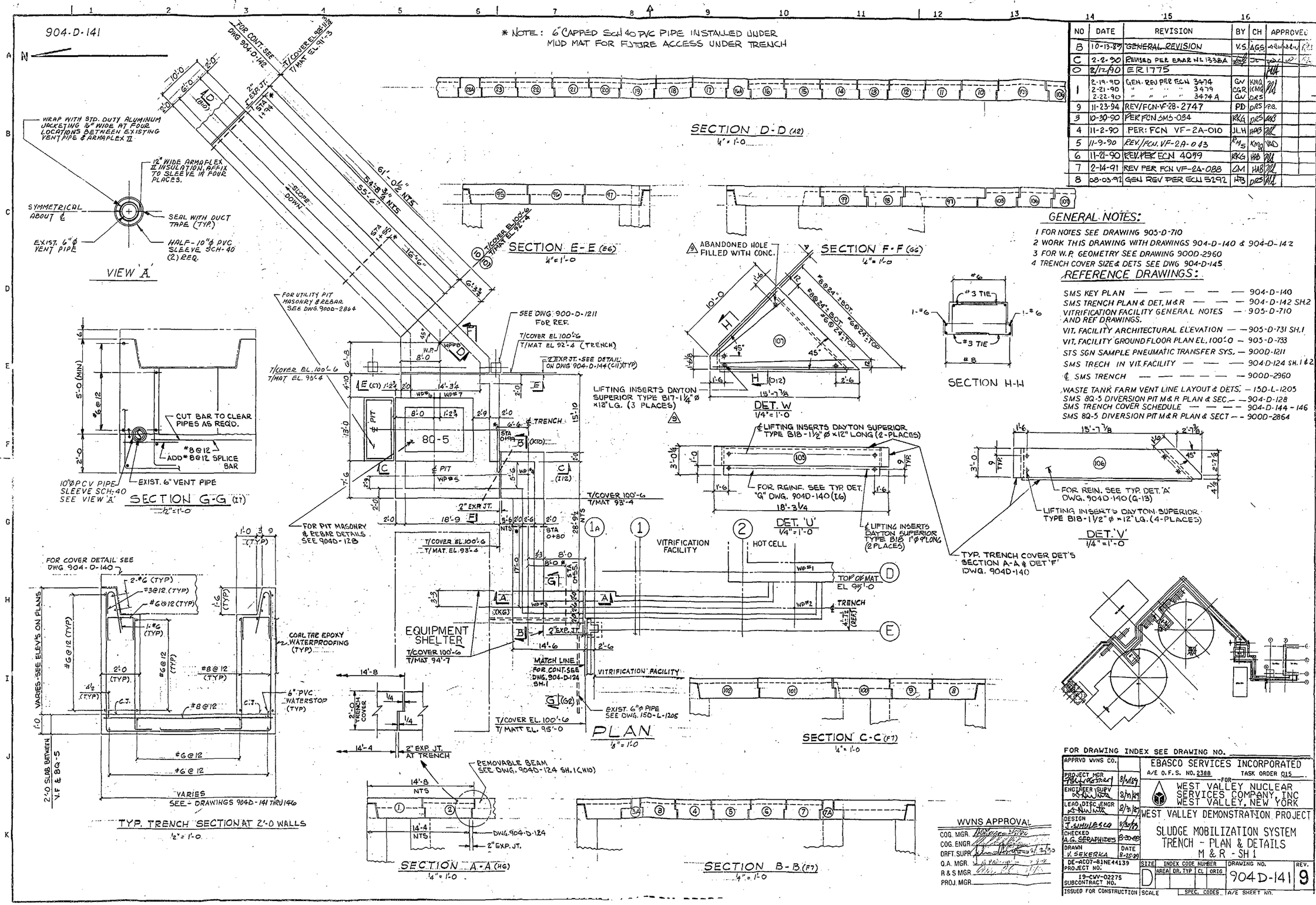
COG. MGR.	
COG. ENGR.	
DRFT. SUPR.	
Q.A. MGR.	
R & S MGR.	
PROJ. MGR.	

FOR DRAWING INDEX SEE DRAWING NO.

APPRVD WVNS CO.		EBASCO SERVICES INCORPORATED A/E O.F.S. NO. 2388 TASK ORDER 015
PROJECT MGR.	9/21/89	FOR WEST VALLEY NUCLEAR SERVICES COMPANY, INC WEST VALLEY, NEW YORK
ENGINEER SUPV.	8/31/89	
LEAD DISC. ENGR.	8/31/89	WEST VALLEY DEMONSTRATION PROJECT
DESIGN A. SIMULESCU	8/16/89	SLUDGE MOBILIZATION SYSTEM
CHECKED D. BUSUIOC	8/16/89	PIT LINER SUPPORT
DRAWN S.M. GUARNIERI	DATE 8-16-89	TYPICAL SECTIONS & DETAILS

DE-AC07-81NE44139 PROJECT NO.	SIZE	INDEX CODE NUMBER AREA	DR. TYP	CL	ORIG	DRAWING NO.	REV.
19-CWV-02275 SUBCONTRACT NO.	D					904D-133	10

ISSUED FOR CONSTRUCTION | SCALE | SPEC. CODES | A/E SHEET NO.



NO	DATE	REVISION	BY	CH	APPROVED
B	10-13-89	GENERAL REVISION	V.S.	AGS	
C	2-2-90	REVISED PER EBAR No. 1338A			
0	2/12/90	ER1775			
1	2-19-90 2-21-90 2-22-90	GEN. REV PER ECN 3474 " " " " 3479 " " " " 3474 A	GN CGR GN	KMQ KMQ DRS	
9	11-23-94	REV/FCN-VF-28-2747	PD	DRS	P.B.
3	10-30-90	PER FCN SMS-034	RKG	DRS	
4	11-2-90	PER: FCN VF-2A-010	JLH	HAB	
5	11-9-90	REV./FCN. VF-2A-043	RMS	KMQ	VAD
6	11-21-90	REV. PER ECN 4059	RKG	HAB	
7	2-14-91	REV PER FCN VF-2A-088	CM	HAB	
8	08-03-92	GEN REV PER ECN 5292	HB	DRS	

GENERAL NOTES:

1 FOR NOTES SEE DRAWING 905-D-710
2 WORK THIS DRAWING WITH DRAWINGS 904-D-140 & 904-D-142
3 FOR W.P. GEOMETRY SEE DRAWING 900D-2960
4 TRENCH COVER SIZE & DETS SEE DWG 904-D-145

REFERENCE DRAWINGS:

SMS KEY PLAN — 904-D-140
SMS TRENCH PLAN & DET. M&R — 904-D-142 SH.2
VITRIFICATION FACILITY GENERAL NOTES AND REF DRAWINGS. — 905-D-710
VIT. FACILITY ARCHITECTURAL ELEVATION — 905-D-731 SH.1
VIT. FACILITY GROUND FLOOR PLAN EL. 100'-0 — 905-D-733
STS SGN SAMPLE PNEUMATIC TRANSFER SYS. — 900D-1211
SMS TRECH IN VIT. FACILITY — 904-D-124 SH.1 & 2
℄ SMS TRENCH — 900D-2960
WASTE TANK FARM VENT LINE LAYOUT & DETS. — 15D-L-1205
SMS 8Q-5 DIVERSION PIT M&R PLAN & SEC. — 904-D-128
SMS TRENCH COVER SCHEDULE — 904-D-144 - 146
SMS 8Q-5 DIVERSION PIT M&R PLAN & SECT — 900D-2864

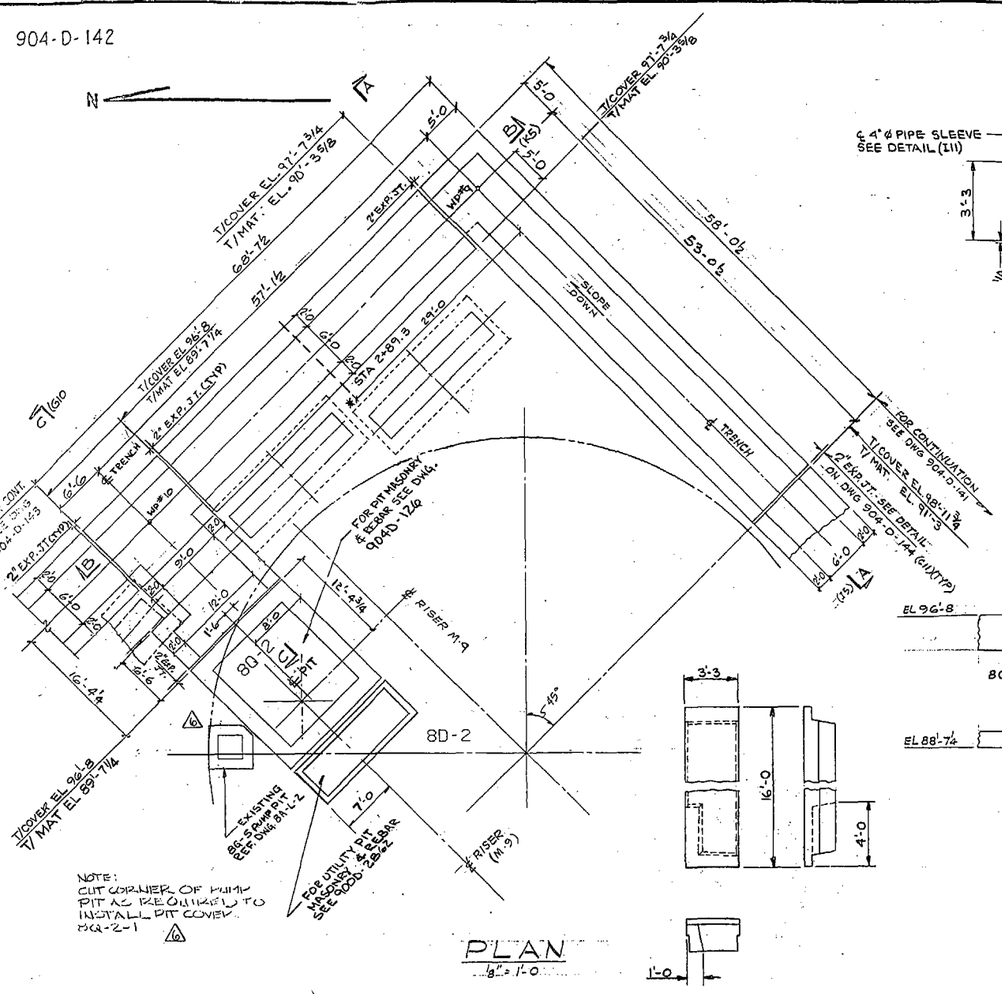
FOR DRAWING INDEX SEE DRAWING NO.

APPRVD WVNS CO.	EBASCO SERVICES INCORPORATED A/E O.F.S. NO. 2388 TASK ORDER 015
PROJECT MGR	FOR
ENGINEER SUPV	WEST VALLEY NUCLEAR SERVICES COMPANY, INC WEST VALLEY, NEW YORK
LEAD DISC ENGR	WEST VALLEY DEMONSTRATION PROJECT
DESIGN J. SIMULESCO	SLUDGE MOBILIZATION SYSTEM TRENCH - PLAN & DETAILS M & R - SH 1
CHECKED A.G. SERAPHIDES	
DRAWN V. SEKERKA	DATE 8-25-89
DE-AC07-81NE44139 PROJECT NO.	SIZE D — INDEX CODE NUMBER: AREA, DR. TYP, CL, ORIG — DRAWING NO. 904D-141 — REV. 9
19-CWV-02275 SUBCONTRACT NO.	
ISSUED FOR CONSTRUCTION	SCALE — SPEC. CODES — A/E SHEET NO.

WVNS APPROVAL
COG. MGR.
COG. ENGR.
DRFT. SUPR.
Q.A. MGR.
R & S MGR.
PROJ. MGR.

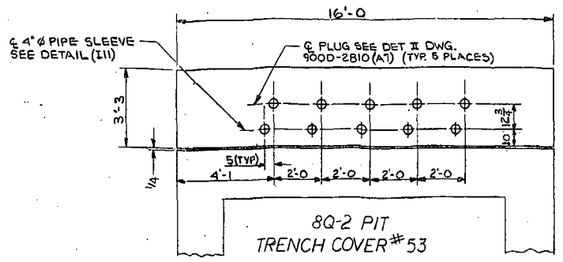
904D-142

904-D-142

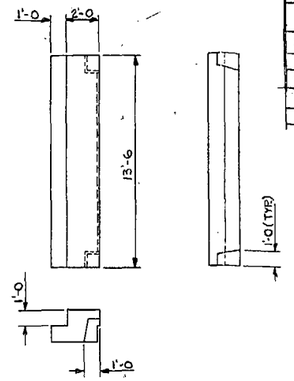


PLAN
1/8" = 1'-0

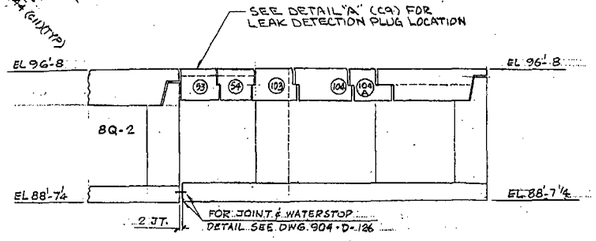
DETAIL-T (PANEL #54)



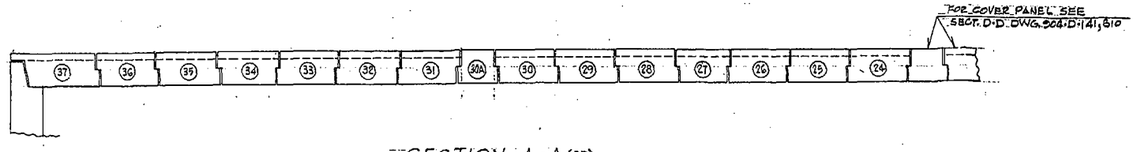
DETAIL 'A'
LEAK DETECTION PLUG
SCALE: 3/8" = 1'-0



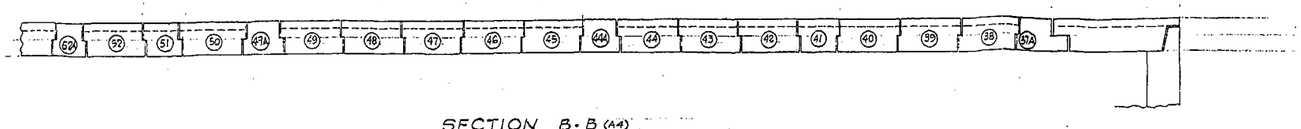
DETAIL-S (PANEL #104A)



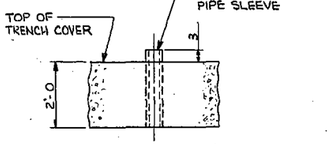
SECTION C-C (D1)
NTS



SECTION A-A (E7)
1/4" = 1'-0



SECTION B-B (A4)
1/4" = 1'-0



TYPICAL DETAIL
4" ϕ EMBEDDED PIPE SLEEVE
THRU TRENCH COVER
NTS

NO.	DATE	REVISION	BY	CH	APPROVED
B	10-13-89	GENERAL REVISION	V.S.	AGS	
C	2-2-90	REVISED PER EBAR NE1338 A			
D	2/12/90	ER 1775			
1	2-20-90 2-22-90	GEN REV. PER ECN 3474, & 3477 " " " " 3474 A	GW	KMH	
2	10-15-90	PER ECN 3636 & FCN VF-2A-004	CGR	HAB	
3	10-30-90	REV PER FCN SMS-034	RKG	DRS	
4	5-14-91	REV. PER FCN VF-2A-247, 217	GW	HAB	
5	08-03-92	REV PER ECN 5292	HB	DRS	
6	4-6-94	REV 1 FCN VF-2B-1712	KGZ		MEM

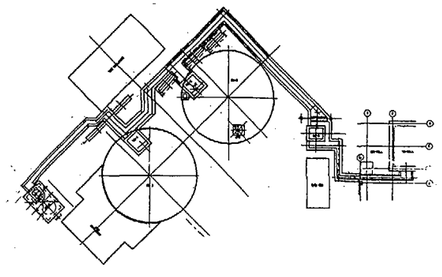
GENERAL NOTES:

1. FOR NOTES SEE DRAWING — — — — — — 905-D-710
2. FOR W.P. GEOMETRY SEE DRAWING — — — — — — 900D-2960
3. WORK THIS DRAWING WITH DRAWINGS — — — — 904-D-140, 141, & 143
4. FOR TRENCH COVER SIZES SEE DRAWING — — — — 904-D-145

REFERENCE DRAWINGS:

VITRIFICATION FACILITY GENERAL NOTES AND REF DWG'S. — 905-D-710
SMS 8Q-2 PUMP PIT M&R PLAN & SECTION — — — 904-D-125
SMS KEY PLAN — — — — — — — — 904-D-140
SMS TRENCH PLAN & DET. M&R — — — — — 904-D-141 SH. 1, 3, & 4; 904-D-143 & 144
PIPING ARRANGEMENT WASTE STORAGE TANKS — — — 8A-L-2
8D-1 & 8D-2 PLAN-UTILITY PIPING
℄ SMS TRENCH — — — — — — — — 900D 2960
SMS 8Q-4, 8Q-5 PIT COVER VALVE ACCESS PENETRATIONS — 900D-2810

* NOTE: 6" CAPPED SCH 40 PVC PIPE INSTALLED UNDER MUD MAT FOR FUTURE ACCESS UNDER TRENCH



FOR DRAWING INDEX SEE DRAWING NO. —

APPRVD WVNS CO.		EBASCO SERVICES INCORPORATED
PROJECT MGR	8/31/89	A/E O.F.S. NO. 2388 TASK ORDER 01
ENGINEER, SUPV	8/31/89	FOR WEST VALLEY NUCLEAR SERVICES COMPANY, INC. WEST VALLEY, NEW YORK
LEAD DISC ENGR	8/31/89	WEST VALLEY DEMONSTRATION PROJECT
DESIGN J. SIMULESCU	8/31/89	SLUDGE MOBILIZATION SYSTEM TRENCH - PLAN & DETAILS M & R - SH 2
CHECKED A.G. SERAPHIDES	8-30-89	
DRAWN V. SEVERYN	DATE 8-25-89	
PROJECT NO. DE-AC07-81NE44139		DRAWING NO. 904D-142 REV 6
SUBCONTRACT NO. 19-CWV-02275		SIZE D; INDEX CODE NUMBER: AREA, DR. TYP, CL, ORIG
ISSUED FOR CONSTRUCTION		SCALE AS SHOWN; SPEC. CODES; A/E SHEET NO. 904-D-142

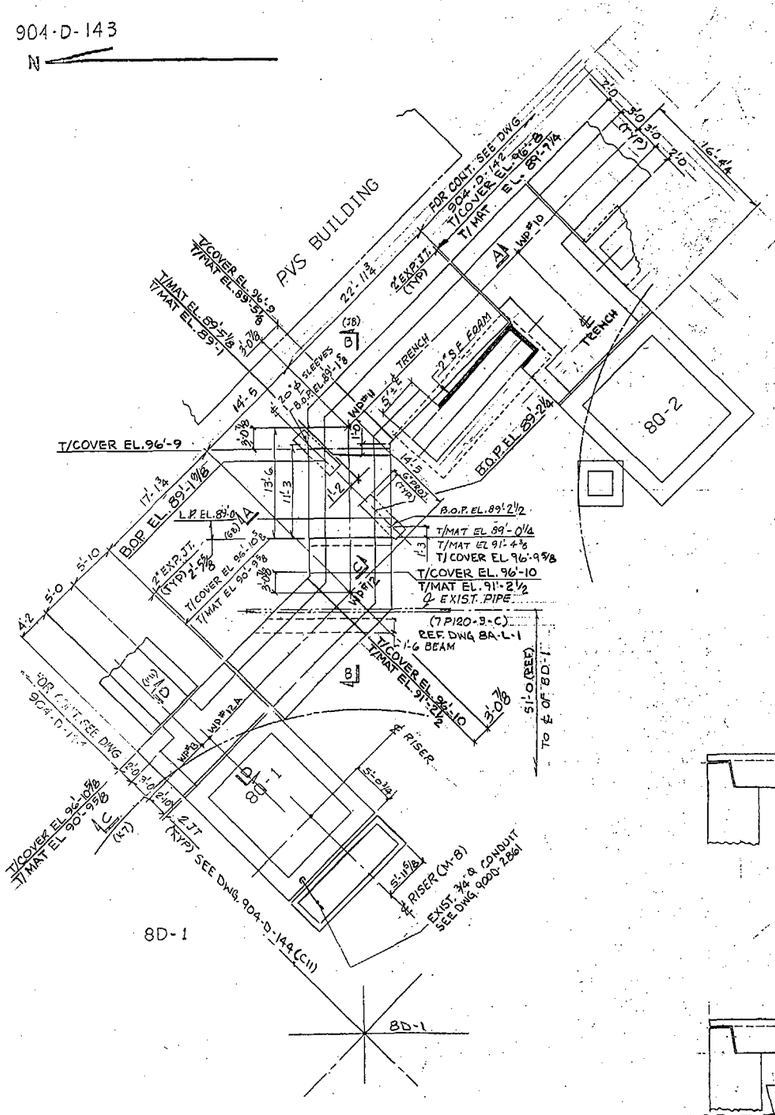
WVNS APPROVAL

COG. MGR	
COG. ENGR	
DRFT. SUPR	
Q.A. MGR.	
R & S MGR	
PROJ. MGR	

904D-143

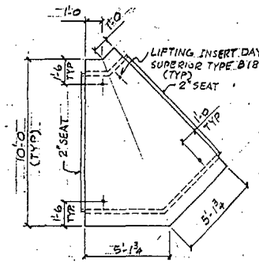
904-D-143

N



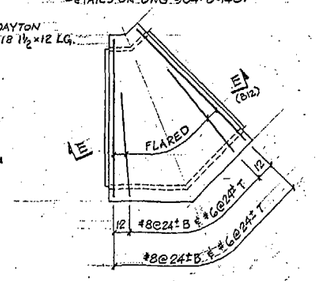
8D-1

PLAN
1/8" = 1'-0

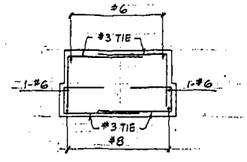


PLAN - MAS.
1/4" = 1'-0

NOTE: FOR INFORMATION NOT SHOWN SEE DETAILS ON DWG. 904-D-140.

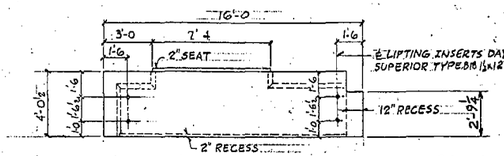


PLAN - REINF.
1/4" = 1'-0



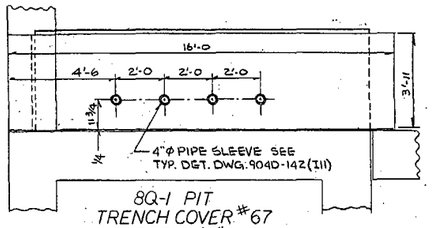
SECTION E-E (A10)
1/2" = 1'-0

DETAIL 'A' - COVER PANELS 59 & 63

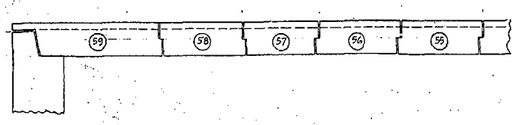


NOTE: FOR INFORMATION NOT SHOWN SEE DETAILS ON DWG 904-D-140.

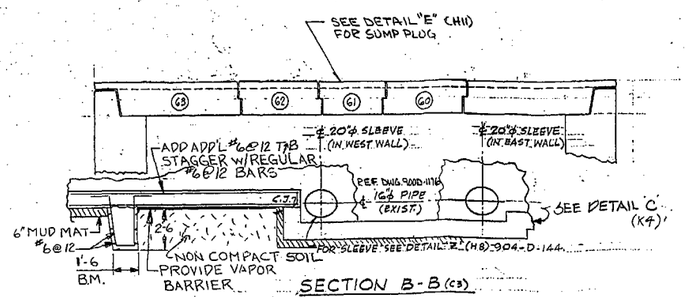
DETAIL 'B' - COVER PANEL 68
1/4" = 1'-0



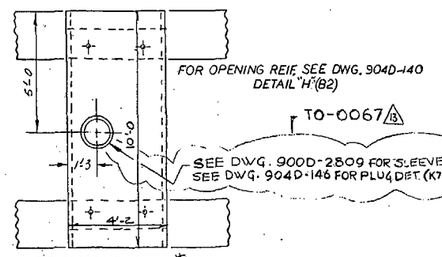
8Q-1 PIT
TRENCH COVER #67
DETAIL "D"
LEAK DETECTION PLUG



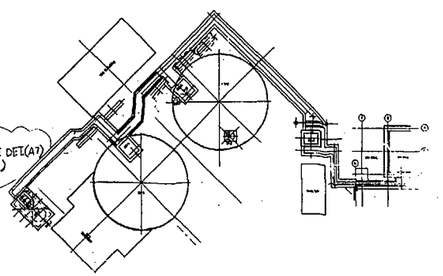
SECTION A-A (02)
1/4" = 1'-0



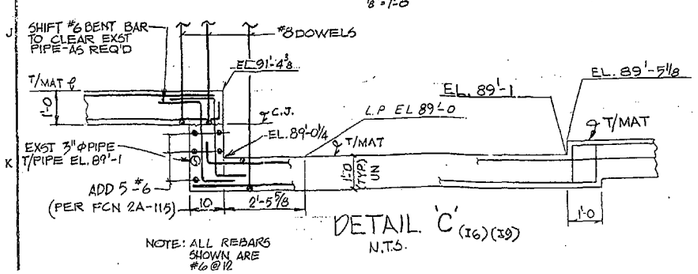
SECTION B-B (C3)
1/4" = 1'-0

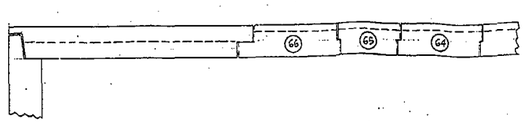


TRENCH COVER #61
DETAIL "E"
TRENCH SUMP PLUG

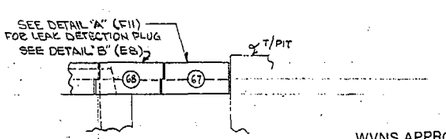


PLAN
1/8" = 1'-0





SECTION C-C (G1)
1/4" = 1'-0



SECTION D-D (F1)
1/4" = 1'-0

NO	DATE	REVISION	BY	CH	APPROVED
B	10-13-89	GENERAL REVISION	V.S.	SC	
C		REVISED PER EBAR No. 1338A	VS	SC	
0	2/12/90	ER 1775			
1	2-19-90	GEN REV PER ECN 3474 & 3477 3474 A	CW	KMB	
2	10-16-90	PER ECN 3636 & FCN VF-2A-004	CGR	HAB	
3	10-30-90	REV PER FCN SMS-034	RKG	DCS	
4	11-8-90	REV PER FCN VF-2A-032	DMK	DRS	
5	11-16-90	REV PER FCN VF-2A-050	RKG	KMB	
6	11-26-90	PER FCN VF-2A-067	JCH	HAB	
7	11-28-90	REV PER ECN 4059	RKG	HAB	
8	1-31-91	REV/FCN VF-2A-069	RMS	HAB	
9	2-6-91	REV/FCN VF-2A-133	RMS	HAB	
10	2-14-91	REV. PER FCN VF-2A-126	GM	HAB	
11	3-7-91	REV. PER FCN VF-2A-027 VF-2A-115	CW	HAB	
12	5-15-91	REV. PER FCN VF-2A-247, VF-3A-258 VF-2A-217	CW	HAB PRS	
13	3-3-95	REV/FCN-TM-0028	PD	CJS	PB.

GENERAL NOTES:

1 FOR NOTES SEE DRAWING — — — 905-D-710
2 FOR W.P. GEOMETRY SEE DRAWING — — 900D-2960
3 WORK THIS DRAWING WITH DRAWINGS — 904-D-140, 141, 142 & 144
4 FOR TRENCH COVER SIZES & DETS. SEE 904-D-145

REFERENCE DRAWINGS:

VITRIFICATION FACILITY GENERAL NOTES — 905-D-710
AND REFERENCE DRAWINGS
SMS KEY PLAN — — — — — — 904-D-140
℄ SMS TRENCH — — — — — — 900D-2960
SMS TRENCH PLAN & DET. M&R — — — 904-D-141 SH. 1-4, 142, & 144
TANK FARM VENTILATION TANKS 8D-1 & 8D-2 — 900D-1176
VENTILATION PIPING & SERVICE BUILDING
PIPING ARRANGEMENT WASTE STORAGE — 8A-L-1
TANK 8D-1 & 8D-2 PLAN - PROCESS PIPING
SMS 8Q-4, 8Q-5 PIT COVER ACCESS PENETRATIONS — — 900D-2810

WVNS APPROVAL
COG. MGR.
COG. ENGR.
DRFT. SUPR.
Q.A. MGR.
R & S MGR.
PROJ. MGR.

FOR DRAWING INDEX SEE DRAWING NO. _____

APPRVD WVNS CO.		EBASCO SERVICES INCORPORATED
PROJECT MGR	4/21/89	A/E O.F.S. NO. 2388 FOR TASK ORDER 015
ENGINEER SUPV	2/8/89	WEST VALLEY NUCLEAR SERVICES COMPANY INC WEST VALLEY, NEW YORK
LEAD DISC ENGR	2/8/89	WEST VALLEY DEMONSTRATION PROJECT
DESIGN J. SIMULESCU	8/29/88	SLUDGE MOBILIZATION SYSTEM TRENCH - PLAN & DETAILS M & R - SH 3
CHECKED S. CARUSO	8-30-89	
DRAWN V. SEKERKA	DATE 8-25-89	
DE-AC07-81NE44139 PROJECT NO.		DRAWING NO. 904D-143 REV 13
19-SWV-02275 SUBCONTRACT NO.		SIZE D; INDEX CODE NUMBER: AREA, DR. TYP, CL, ORIG
ISSUED FOR CONSTRUCTION		SCALE; SPEC. CODES; A/E SHEET NO. 904-D-143

DRAWING NUMBER
9040-144

904-D-144

N

NOTE: VERT BARS NOT SHOWN FOR CLARITY

TYPICAL REBAR DETAIL AT WALL WITH VARYING THICKNESS
NTS

TYP REINF FOR 11" WALL
TYP REINF FOR 1'-6 WALL

PLAN
1/8 = 1'-0"

SECTION C-C (E1)
1/4" 1'-0

TYP ADD'L REINF AT WALL OPENING
NTS

DET Y (PANEL 85)
NTS

DET X (PANEL 79)
NTS

SECT D-D (F3)
1/2" = 1'-0

DET Z (C5)
1/2" = 1'-0

SECTION F-F (F2)

ELEVATION A-A

SECTION B-B (B6)
1/8" = 1'-0

SECTION G-G (F2)

SECTION H-H (F2)

SECTION J-J (J5)
NTS

TYP WALL CORNER REINF DETAIL
NTS

8Q-4 PIT TRENCH COVER #94 DETAIL "A" LEAK DETECTION PLUG & TRENCH SUMP PLUG

* NOTE: 6" CAPPED SCH 40 PVC PIPE INSTALLED UNDER MUD MAT FOR FUTURE ACCESS UNDER TRENCH

NO	DATE	REVISION	BY	CH	APPROVED
14	8-6-92	REV/ECN 5420	PD	HAB	
15	8-24-92	REV/ECN 5456	PMS	DRS	
16	9-10-92	REV/ECN 5495	PD	HAB	
17	3-10-93	REV/FCN VF-2B 0458	PD	DRS	
18	1-5-94	REV PER FCN VF-2B-1010	KZ	DRS	

NO	DATE	REVISION	BY	CH	APPROVED
B	3-7-91	REV. PER FCN VF-2A-027	GW	HAB	
9	4-4-91	PER: FCN VF-2A-199	TCH	HAB	
10	5-15-91	REV. PER FCN VF-2A-180, VF-2A-217 & VF-2A-247	GW	HAB	
11	8-2-91	REV. PER ECN 4443	GW	DRS	
12	6-1-92	REV. PER ECN 5155	PAK	DRS	
13	08-03-92	REV PER ECN 5292	HAB	DRS	

NO	DATE	REVISION	BY	CH	APPROVED
8	10-19-89	GENERAL REVISION	V.S.	SC	
C		REVISED PER EDAR 1238 A	DD	SC	
O	2/12/90	ER 1775			
19	1-24-94	REV PER FCN VF-2B-1595	GW	DRS	
20	3-3-95	REV/FCN-TM-0028	PD	PB	
3	10-31-90	REV PER FCN SM5-034	RKG	DRS	
4	11-8-90	REV PER FCN VF-2A-032	DAK	DRS	
5	11-21-90	REV PER ECN 4099	RKG	HAB	
6	2-4-91	REV./FCN VF-2H-133	PMS	HAB	
7	2-13-91	REV PER FCN VF-2A-111	DAK	HAB	

REFERENCE DRAWINGS:

SMS 8Q-4, 8Q-5 PIT COVER VALVE PENETRATIONS 900D-2810
& SMS TRENCH — 900D-2960
PIPING ARRANGEMENT WASTE STORAGE TANKS 8D-1 & 8D-2 PLAN UTILITY PIPING — 8A-L-2
VITRIFICATION FACILITY GEN. NOTES AND REF. DWGS. — 905-D-710
SMS KEY PLAN — 904-D-140
SMS TRENCH PLAN & DET. M&R — 904-D-143
SMS 8Q-1 PUMP PIT M&R PLAN & SECT. — 904-D-125
SMS TRENCH IN VF. — 904-D-124

PLAN SECTION & DETAILS VAULT FOR 8D-3 & 8D4 — 8A-Q-9
CONCRETE BLOCK SHELTER AT CON-ED VAULT — 8B-M-4

GENERAL NOTES:

1. FOR NOTES SEE DRAWING — 905-D-710
2. FOR W.P. GEOMETRY SEE DRAWING — 900D-2960
3. WORK THIS DRAWING WITH DRAWINGS — 904-D-140, & 143
4. FOR TRENCH COVER SIZES & DETS. SEE — 904-D-145

THIS DRAWING IS PART OF CS-194 EXCEPT AS NOTED BELOW:
CS-139, ZONE F3, F4, I2

FOR DRAWING INDEX SEE DRAWING NO.

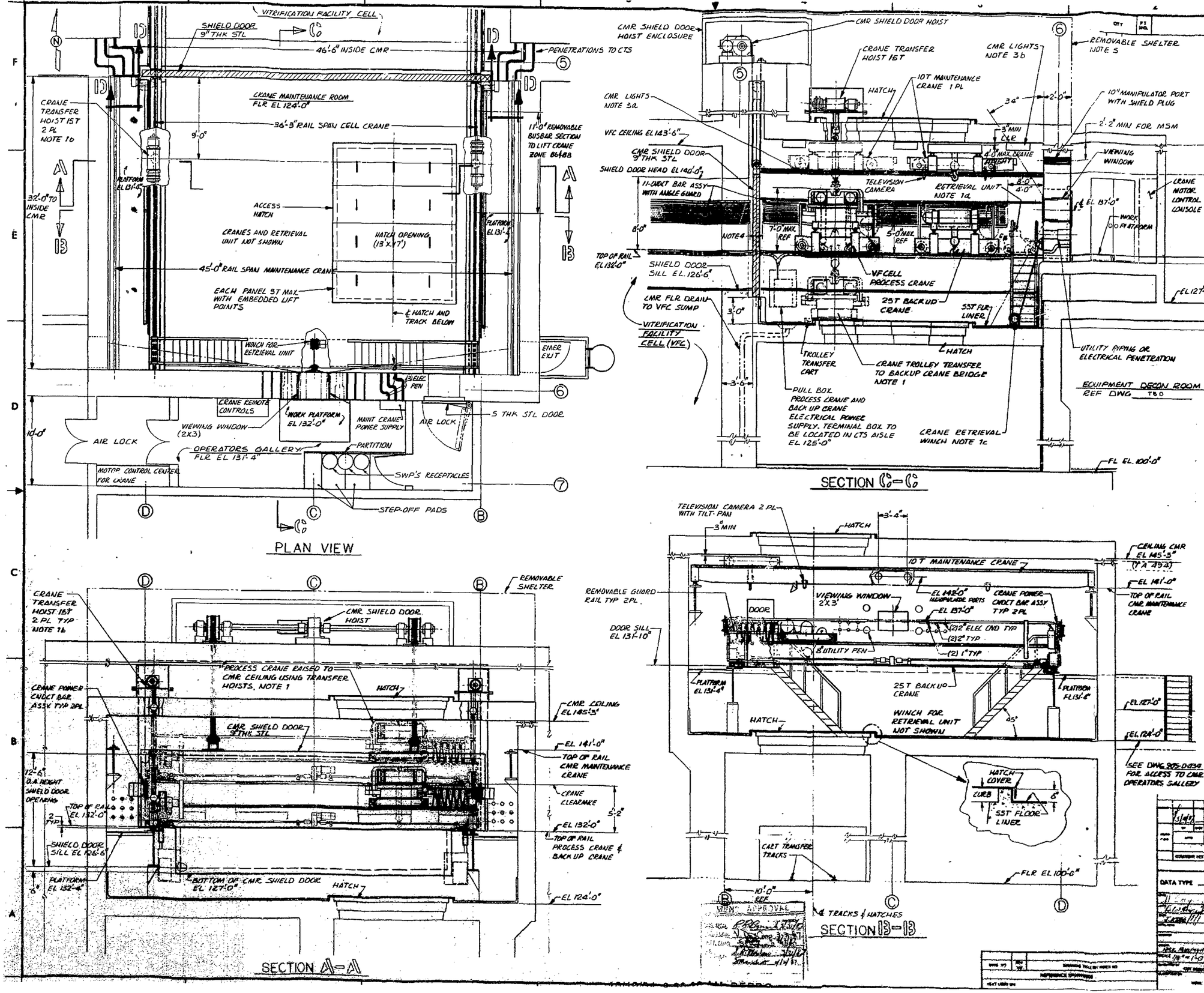
WVNS APPROVAL

COG. MGR.	
COG. ENGR	
DRFT. SUPR	
Q.A. MGR.	
R & S MGR.	
PROJ. MGR.	

APPRVD WVNS CO.		EBASCO SERVICES INCORPORATED
PROJECT MGR	8/31/89	A/E O.F.S. NO. 2388 TASK ORDER 015
ENGINEER SUPV	8/31/89	FOR WEST VALLEY NUCLEAR SERVICES COMPANY, INC WEST VALLEY, NEW YORK
LEAD DISC ENGR	8/31/89	WEST VALLEY DEMONSTRATION PROJECT
DESIGN J. SIMUNESCU	8/30/89	SLUDGE MOBILIZATION SYSTEM TRENCH - PLAN & DETAILS M & R - SH 4
CHECKED	8-30-89	
DRAWN V. SEKERKA	DATE 8-25-89	
DE-AC07-81NE44139 PROJECT NO.		SIZE D; INDEX CODE NUMBER AREA / DR. TYP / CL / ORIG; DRAWING NO. 904D-144; REV 20
19-CWV-02275 SUBCONTRACT NO.		
ISSUED FOR CONSTRUCTION		SCALE AS SHOWN; SPEC. CODES; A/E SHEET NO. 904-D-144

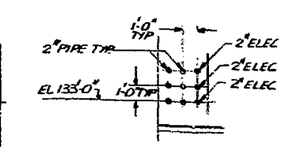
APPENDIX D-20

VITRIFICATION FACILITY SECONDARY CONTAINMENT DRAWINGS (3 DRAWINGS)



GENERAL NOTES:

1. CRANE MAINTENANCE IN CMR TO INCLUDE (PER F/OR DCD WVNS-AA-018):
   a. REMOVE CRANE TROLLEYS USING CMR MAINTENANCE CRANE, LOWER TO FLOOR, AND TRANSFER TO 2d CRANE BRIDGE.
   b. RAISE PROCESS CRANE OR BACKUP CRANE USING TRANSFER HOISTS TO ALLOW 2d CRANE TO PASS AND/OR INTO VF CELL.
   c. USE BATTERY-POWERED RETRIEVAL UNIT OR 2d CRANE TO RETRIEVE DISABLED CRANE FROM VFC.
   d. RETRIEVAL UNIT TO BE STORED IN AN OUT OF THE WAY POSITION ON THE CMR FLOOR. THE HOIST AND PULLEY SHOULD BE STORED IN THE SAME AREA.
2. LOCATE CHANGE ROOM/PERSONNEL DECON NEAR CMR PERSONNEL ACCESS/ENTRY TO GALLERY.
3. LIGHTS: a) SODIUM LIGHTS ARE FOR USE DURING REMOTE OPERATIONS IN CMR WHILE VIEWING OPERATION THROUGH SHIELDED WINDOWS AND CCTV.
   b) INCANDESCENT LIGHTS ARE FOR USE WHEN PERSONNEL ARE IN CELL.
4. CONDUCTOR BARS TO BE SEPARATED FOR SHIELD DOOR PASSAGE PER CRANE SPEC. WVNS-EQ-230
5. SHELTER HOIST WITH REMOVABLE ROOF.



VIEW D-D

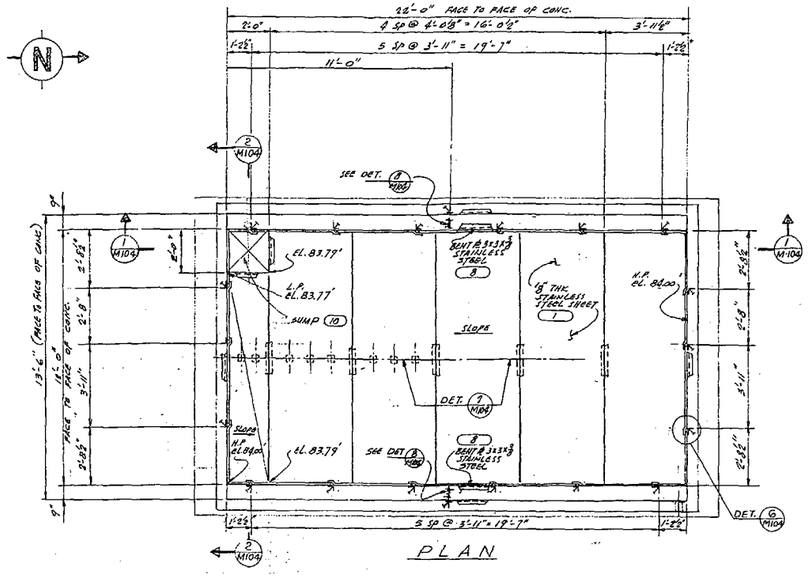
ER 1014	0
RELEASED PER WVNS-AR-14	0

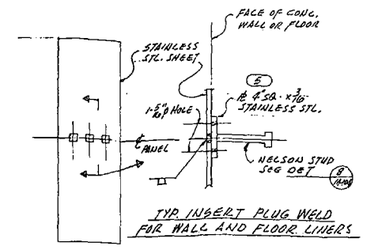
U.S. Department of Energy
Richland Operations Office
Hanford Engineering Development Laboratory
Westinghouse Hanford Company

CRANE MAINTENANCE ROOM
VITRIFICATION FACILITY CELL
GENERAL ARRANGEMENT

WEST VALLEY DEMONSTRATION PROJECT

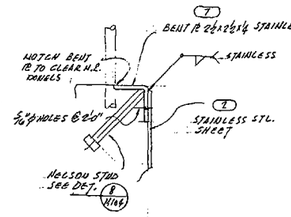
H-3-53751


22'-0" FACE TO FACE OF CONC.
4 SP @ 4'-0⅜" = 16'-0½"
5 SP @ 3'-11" = 19'-7"
11'-0"
SEE DET. 9 M105
BENT R 3"x3"x⅜ STAINLESS STEEL
⅜" THK. STAINLESS STEEL SHEET
SLOPE
SUMP 10
EL. 83.77'
L.P. EL. 83.77'
H.P. EL. 84.00'
DET. 7 M104
DET. 6 M104
5 SP @ 3'-11" = 19'-7"
PLAN

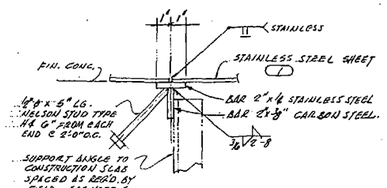


TYP INSERT PLUG WELD FOR WALL AND FLOOR LINERS

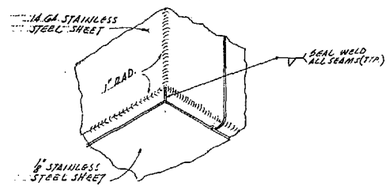
DETAIL 7
No" SCALE



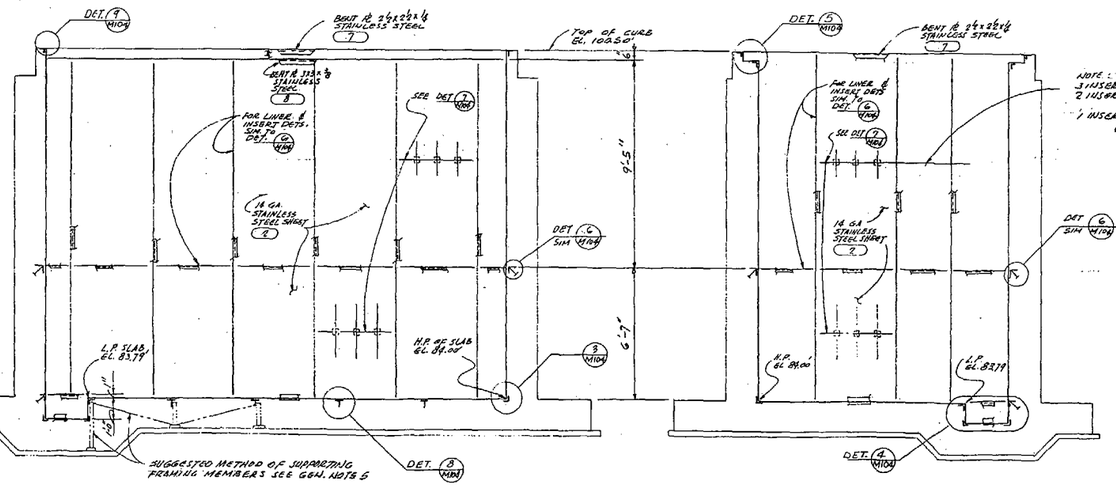
DETAIL 9
3" = 1'-0"



DETAIL 8
3" = 1'-0"

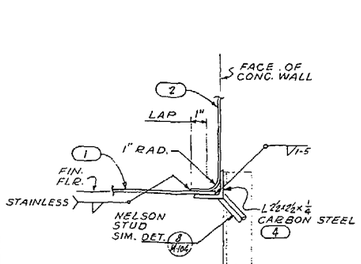


TYP CORNER DETAIL

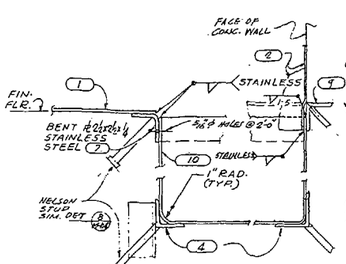


SECTION 1

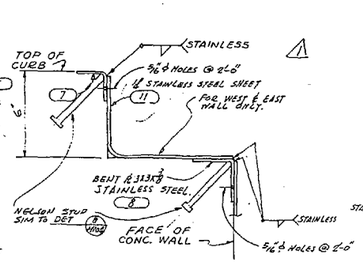
SECTION 2



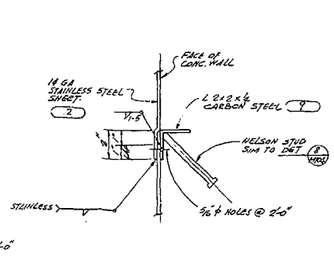
DETAIL 3
3" = 1'-0"



DETAIL 4
3" = 1'-0"



DETAIL 5
3" = 1'-0"



DETAIL 6
3" = 1'-0"

LIST OF MATERIAL

ITEM	QUAN.	DESCRIPTION	ORDER NO.
1	1 LOT	6" STAINLESS STEEL SHEET LINER	15M-1
2	1 LOT	14 GA. STAINLESS STEEL SHEET LINER	15M-1
3	62	LIN. FT. "TEE" PER DET. 8	15M-14
4	72	LIN. FT. L 2½ x 2½ x ⅜ PER SECT. 4	15M-14
5	113	INSERTS PER DET. 7	15M-14
6	96	LIN. FT. L 2x2x5/16 (SEE NOTE 5)	FIELD
7	75	LIN. FT. BENT STAINLESS STEEL PL 2½x2½x¼ PER DET. 9	15M-14
8	44	LIN. FT. BENT STAINLESS STEEL R 3"x3"x⅜ PER DET. 5	15M-14
9	370	LIN. FT. L 2½2½¼ CARBON STEEL PER DET. 6	15M-16
10	1	6" THK. STAINLESS STEEL SUMP PER DET. 6	15M-16
11	1 LOT	14 GA. STAINLESS STEEL SHEET LINER	15M-1

GENERAL NOTES

1. STAINLESS STEEL SHALL BE TYPE 304 L, TYPE 2D FINISH.
2. ALL WELDS SHALL BE 3/16" EXCEPT AS NOTED.
3. ALL WELDING SHALL BE IN ACCORDANCE WITH APPLICABLE PORTIONS OF THE AWS CODE AND PARAGRAPH 6 OF SPECIFICATION 46A-3-C-2.
4. ALL SHARP EDGES OF SHEARED PLATES SHALL BE GROUND OFF. ALL WELDS WHICH PROJECT ABOVE FINISHED SURFACES SHALL BE GROUND SMOOTH.
5. SUGGESTED METHOD OF SUPPORTING FRAMING MEMBERS PROVIDES FLEXIBILITY IN ALIGNING MEMBERS FOR USE AS SCREENS. MEMBERS MAY BE CLAMPED TO SUPPORT ANGLES PRIOR TO WELDING TO INSURE PROPER ALIGNMENT. SUGGESTED SIZE OF SUPPORTS, L 2" x 2" x ¼", SUGGESTED SPACING, SIX FEET. ADDITIONAL POSTS & BRACING SHOULD BE PROVIDED IF REQUIRED TO INSURE RIGIDITY AND ALIGNMENT OF FRAMING.

REFERENCE DRAWINGS

KEY FOUNDATION PLAN	15A-Q-4
SOAKING PIT - EQUIPMENT DECONT. ROOM	15A-Q-78

NO.	DATE	REVISIONS	BY	CHK'D	STRUCTURAL	ENGR. DEPT.	CONST. DEPT.	CLIENT
4	10/19/04	ISSUED FOR CONSTRUCTION	RS					
3		REV. DET. 5 & 2/M4	DT					

SCALE 3/16"=1'-0" UNLESS NOTED OTHERWISE — DRAWN R. SWARTZ

BECHTEL CORPORATION

SAN FRANCISCO NEW YORK LOS ANGELES

ENGINEERING BY BECHTEL ASSOCIATES

NUCLEAR FUEL SERVICES, INC.
SPENT FUEL PROCESSING PLANT

LINER & INSERTS FOR SOAKING PIT
EQUIPMENT DECONTAMINATION ROOM

BECHTEL | JOB NO. 4413 | DRAWING NO. 15A-M-104 | REV. 4

10/19/04 8:30:10 AM REPRO

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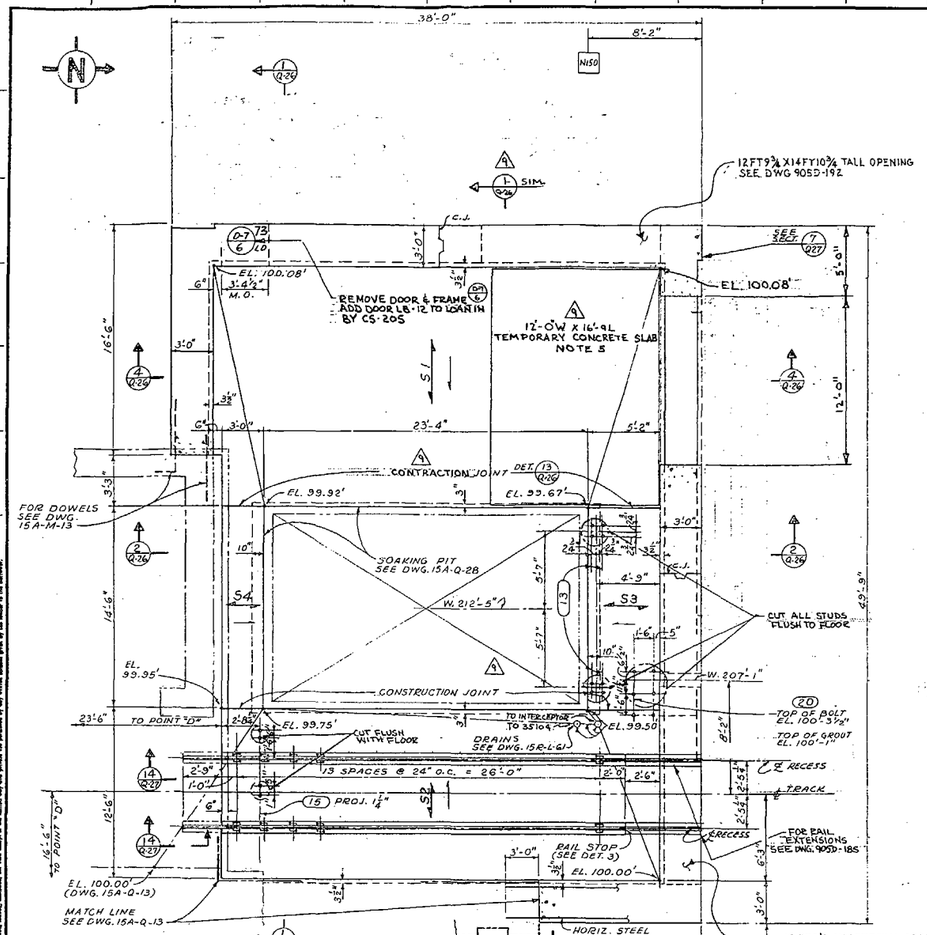
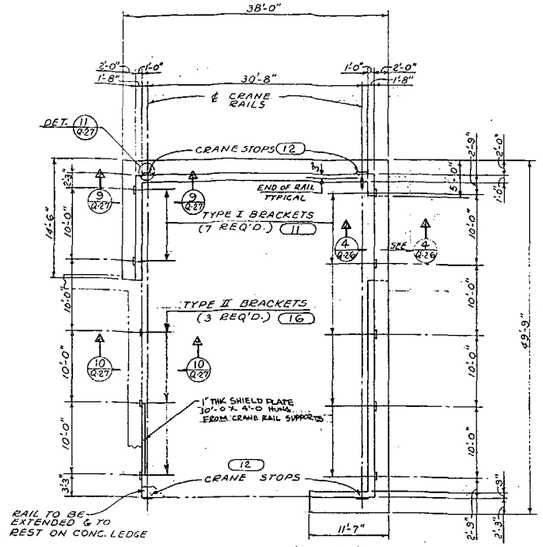
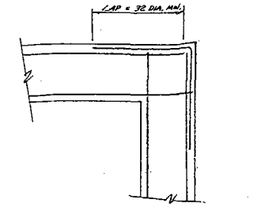
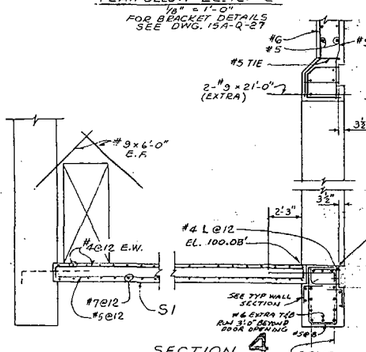
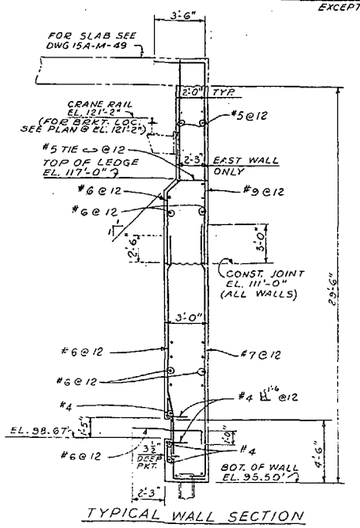




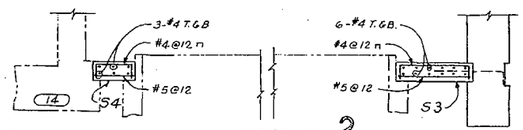




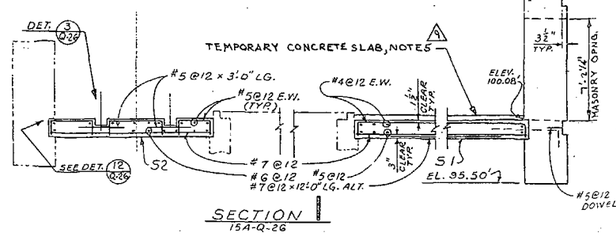
SECTION 4
15A-Q-26



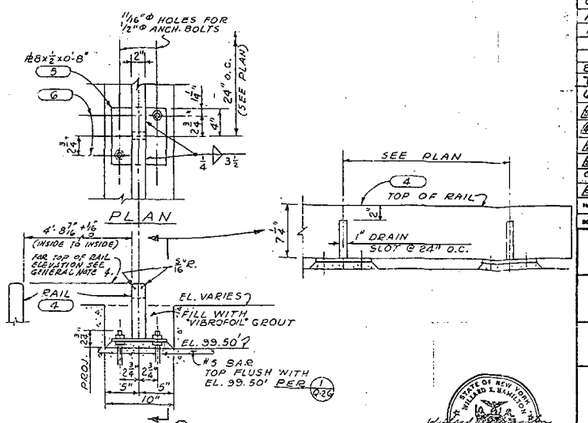
TYPICAL WALL SECTION



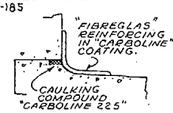
SECTION 2
15A-Q-26



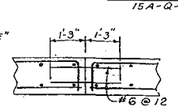
SECTION
15A-Q-26



DETAIL 3
1½" = 1'-0"
15A-Q-26



DETAIL 12
SLAB END DETAIL
NO SCALE



DETAIL 13
CONTRACTION JOINT DETAIL
NO SCALE

LIST OF MATERIAL

ITEM	QUAN.	DESCRIPTION	ORDER NO.
1		CU. YDS. CONCRETE MIX B (2500 PSI)	FIELD
2		CU. YDS. CONCRETE MIX D (3000 PSI)	FIELD
3	1 LOT	REINFORCING STEEL N° 4 5 6 7 9 LBS.	15Q-5
4	64	LIN. FT. FABRICATED BAR 7½ x 2" RAIL W/ RAIL STOPS PER DET. 3 DWG. 15A-Q-26 (CARBON STEEL	15M-19
5	28	PL 8" x ½ x 10'-8" (CARBON STEEL) PER DET. 3, DWG. 15A-Q-26	15M-19
6	104	½"Φ x 3" (L) LONG TYPE 2 ANCHOR BOLT W/ 1 HEX NUT & 1 LEVELING NUT.	15Q-6
7	24	PL 4 x ½ x 0'-8" (CARBON STEEL) PER DET. 5 DWG. 15A-Q-26	15M-6
8	48	LIN. FT. 60 LB. ASCE RAIL	15M-6
9	70	⅛"Φ x 2'-0" (L) LONG TYPE 3 ANCHOR BOLT W/2 HEX NUTS	15Q-6
10	24	1"Φ x 2'-0" (L) LONG TYPE 3 ANCHOR BOLT W/2 HEX NUTS	15Q-6
11	7	TYPE I BRACKETS & EMBEDDED PL PER SECT. 9, DWG. 15A-Q-27	FIELD
12	4	CRANE STOPS PER DET. 11 DWG. 15A-Q-27	15M-19
13	26	⅜"Φ x 1'-3" (L) LONG TYPE 2 ANCHOR BOLT W/1 CAST HEX NUT	15Q-6
14	1	PL 8 x ½ x 2'-3" (CARBON STEEL) PER SECT. 14, DWG. 15A-Q-27	15M-19
15	4	¾"Φ x 3'-0" (L) LONG TYPE 2 ANCHOR BOLTS W/ 2 HEX NUTS (304 STAINLESS STEEL)	FIELD
16	3	TYPE II BRACKETS & EMBEDDED PL PER SECT. 10, DWG. 15A-Q-27	FIELD
17	1 LOT	10 WE 39 CRANE RAIL SUPPORTS 60 LB. ASCE RAIL WITH 4 BOLTS AND CONNECTING ¾"Φ U.T. BOLTS TO BRACKETS	15M-6
18	3	LIN. FT. 12"Φ - 16 GA. CORRUGATED METAL PIPE.	FIELD
19	4	⅝"Φ x 1'-0" (L) LONG TYPE 2 ANCHOR BOLT W/2 CAST HEX NUTS (CARBON STEEL)	FIELD
20	12	¾"Φ x 1'-6" (L) LONG TYPE 2 ANCHOR BOLTS W/1 CAST HEX NUT (ALL CARBON STEEL)	FIELD

GENERAL NOTES

1. FOR ADDITIONAL GENERAL NOTES SEE DWG. 15A-Q-4
2. USE 3000 PSI CONCRETE MIX D FOR SLABS S1 THRU S4.
3. SEE DWG 15A-Q-3 FOR DOOR SCHEDULE
4. TOP OF RAIL NOMINAL ELEVATION 100'-3" EACH RAIL TO BE LEVEL WITHIN 1/16" IN 4'-0" AND WITH RESPECT TO EACH OTHER THE TOP OF RAILS SHALL BE EQUAL TO WITHIN 1/16" IN 4'-0" ALONG THE RAILS.
5. TEMPORARY CONCRETE SLAB INSTALLED FEB. 2004. SLAB THICKNESS DEPTH VARIES FROM 8" THICK AT SHIELD DOOR TO 4'-6" AT SOAKING PIT KNEE WALL. SLAB HAS 10x10 ON 10x10 WWF AND 4000PSI CONCRETE. SLAB WAS PLACED OVER HERCULITE AS A BOND BREAKER, EDGE FORMS CONSISTED OF ALUMINUM ANGLE FASTENED TO THE EXISTING CONCRETE WITH POWDER ACTUATED FASTENERS, WHERE NEEDED, AND WERE LEFT IN PLACE. SLAB CURED WITH #48 CURE+SEAL MANUF. BY SEAL WALL 440-951-3445

REFERENCE DRAWINGS

ELEVATIONS, SECTIONS & DETAILS	15A-Q-27
SOAKING PIT	15A-Q-28
PLANS, SECTIONS & DET.-CPC - SHEET 1	15A-Q-13
FDN. - KEY PLAN - CPC	15A-Q-4
PLANS, SECTIONS & DETAILS-SHEET 2	15A-Q-14
MISCELLANEOUS DETAILS-CPC-SHEET 4	15A-Q-30
ANCHOR BOLTS	D-Q-510
PIPE PENETRATIONS-EDR-N.S.E. WALLS	15A-L-56
UNDERGROUND LINES-PROCESS BLDG.	15R-L-61
EQUIPMENT ARRANGEMENT PLAN	15A-A-174
EDR STRONGBACK STORAGE RACKS	3A-T-22
OVERALL PLAN-PROCESS BLDG.	15A-A-115
PIPE PENETRATIONS	15A-L-108
PLAN & EL. 100 - PROCESS BLDG	15A-Q-3
DECON ROOM MOD.	905D-185
SHIELD DOOR MOD.	905D-192

8	11/4/04	ECN 11871	GJ	DES			
7	7/14/04	ECN TM-1145	CWJ	WP			
6	7/14/04	REV'D. PER ECN 7853	JH	KQ		2MB	
5	5/14/04	REV'D PER ECN 2859	CTC			RSS	
4	11/6/03	REV. DETAIL 3 & PLAN OF EL. 100'-3" ADDED GENERAL NOTE 5	MF	MW	MCK	JLC	
3	8/26/03	ADD BELTH TO SEC. 6 AND DOOR PIECE MARK GENERAL NOTE 3	MCK	MCK	MCK	BP-1	
2	7/28/03	ADD 8in EMBED PL TO SEC. 9 (2) & TO SEC. 10 (3) PIECE MARK & BOM QUAN.	MCK	MCK	MCK	BP-1	
1	7/24/03	ECN 12909	LRQ	LRQ		JMD	
0	2/28/03	ISSUED FOR CONSTRUCTION	RS	RS		RSS	
No.	DATE	REVISIONS	BY	CHK	ENGR APPD	PROJ MGR APPD	CLIENT APPD

SCALE: 1/8" = 1'-0" & AS NOTED | DESIGNED: W. W. | DRAWN: R. SWARTZ

BECHTEL CORPORATION

SAN FRANCISCO NEW YORK LOS ANGELES

ENGINEERING BY
BECHTEL ASSOCIATES

NUCLEAR FUEL SERVICES, INC.
SPENT FUEL PROCESSING PLANT

PLANS, SECTIONS & DETAILS
EQUIPMENT DECONTAMINATION ROOM

BECHTEL | JOB No. 4413 | DRAWING No. 15A-Q-269 | REV. 8

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10/19/04 8:29:47 AM REPRO

APPENDIX D-21

P&I DIAGRAMS FOR THE HLW TANKS
(3 DRAWINGS)

CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE.
INIT_____ DATE_____

STS VALVE AISLE

50-PH-FCV-015 | 50-PH-FV-007 | MIXER 50-PM-G-009 | 50-G-002 | 50-PH-HV-720 | 50-PH-FV-101 | 50-PH-FV-102A | 50-PH-FV-202A | 50-PH-FV-302A | 50-PH-FV-402B | 50-PH-FV-029 | 50-PH-FCV-035 | 50-PH-FV-064

TO PVS BLDG 8P29-16-A5 900D-1666
FROM 80-2 & 80-5 900D-7162 SH2
FROM 80-4 900D-7162 SH3
TO 8D-2 900D-7162 SH2
PREFILTER BYPASS 900D-7162 SH2
50-PH-FCV-078
6-50-1-047
6-50-1-040
6-50-1 1/2-075
50-PH-H-001
6-50-1 1/2-007
6-50-2 1/2-018
6-50-1 1/2-010
6-50-1 1/2-019
6-50-1 1/2-020
6-50-1 1/2-030
6-50-1 1/2-014
6-50-1 1/2-041
DECONTAMINATED SUPERNATANT TO 8D-3
900J-1363
8R-A-1
FROM VASTE TANK OFF-GAS K.O. DRUM (8D-6)
TO WASTE TANK OFF-GAS K/O RELIEF DRUM (8D-7)
WASTE TANK OFF-GAS CONDENSER (8E1 & 2A7 VIA LINE 8P29-16-A5

THOREX (OR WASTE HEADER WASTES) FROM 80-4 & 80-4 PUMP PIT
THOREX (OR WASTE HEADER WASTES) TO 80-2 PUMP PIT
ZEOLITE TO 80-2 PUMP PIT
55-VE-6-207 | 55-VE-8-208 | 55-VE-8-209 | 55-VE-BU-296 | 55-VE-BU-298
55-PH-2-014 | 55-PH-2-018 | 55-PH-2-034 | 55-PH-2-038
55-PH-H-022 | 55-PH-H-004 | 55-PH-H-019 | 55-PH-H-016 | 55-PH-H-013
55-PH-2-100 DRAIN
TO EXIST WTF VENT SYSTEM
PLANT STACK
6-50-1 1/2-375
6-50-1 1/2-003
6-50-1 1/2-122
6-50-1 1/2-004
6-50-1 1/2-075
6-50-2 1/2-361
6-50-2 1/2-362 RECIRC TO 8D-2
FROM 50-G-001 DISCH IN 8D-2
55-DV-2-2222 (MAIN HEADER)
903J-020 SH2
55-UV-1-194
55-G-002 PUMP DISCH
55-G-012 ZEOLITE REMOVAL PUMP
55-G-004 WATER PUMP OUT TO SLUICE TANK (8D-4) AND FEED TANK (8D-2)
MOBILIZATION PUMPS
PUMP RISER#
55-G-006 (M6)
55-G-008 (M1)
55-G-009 (M3)
55-G-010 (M2)
LATER (M5)
6-50-1 1/2-067
6-50-2-023
SUPERNATANT FEED TANK 50-D-001
BLOW-BACK RESERVOIR
SUPERNATANT PRE FILTER 50-F-001
SUPERNATANT COOLER 50-E-001
ZEOLITE SLURRY TO COLUMNS
50-PH-FV-043
6-50-3-132
6-50-1 1/2-005
6-50-1 1/2-015
6-50-1 1/2-010
6-50-1 1/2-010
6-50-2 1/2-055
VENT HEADER 6-50-2 1/2-080
CESIUM REMOVAL COLUMN 50-C-001
CESIUM REMOVAL COLUMN 50-C-002
CESIUM REMOVAL COLUMN 50-C-003
CESIUM REMOVAL COLUMN 50-C-004
SLUICE WATER
6-50-3-058
6-50-3-069
6-50-3-070
6-50-3-071
SPENT ZEOLITE DUMP VALVE (TYP)
50-PH-FV-122
50-PH-FV-222
50-PH-FV-322
50-PH-FV-422
DECONTAMINATED SUPERNATANT FILTER 50-F-002
50-PH-FV-031
SLUICE/LIFT WATER TANK 50-D-004
6-50-1 1/2-119
7P112-3-C (GRAVITY) FROM MAIN PLANT WASTE STREAMS
7P170-2-A5/A (GRAVITY) C-130
8P12-3-C (GRAVITY) B-1604
8P13-12-A5
8P11-2-A5 (GRAVITY) B-340 TO LAGOON (ABANDONED) 15A-A-72
8UV2-3/4-A5/A A-110 8R-A-1
MIST ELIMINATOR FILTER & PUMP 56-V-003
COLUMN FLUSH
50-PH-HV-722
PVS STACK
30-G-003 PAN PUMPOUT PUMP 8G-4
8-SH-153-3/4-A 8R-A-1
ANNULUS EDUCTOR (8H-4)
VAULT
PAN
CAPPED UNDERGROUND

8Q-1 PUMP PIT
8Q-1 UTILITY PIT
55-CH-2-037 | 55-CH-2-024 | 55-UV-1-057
55-CH-GL-024 | 55-CH-GL-196 | 55-UV-GL-023 | 55-CH-GL-187
55-UA-H-026 | 55-CH-H-027
55-UA-H-252 | 55-CH-H-243
55-UA-1-023
904D-016
904D-015
55-CH-2-025

8D-1 TANK

REFERENCE DRAWINGS

7R-A-1	MAIN PLANT SYSTEMS P&ID
8R-A-1	WTF TANKS 8D-1 & 8D-2 P&ID
8R-A-4	WTF TANKS 8D-3 & 8D-4 P&ID
15A-A-72	UTILITY SYSTEMS P&ID
901D-021	LWTS P&ID
901D-022	LWTS P&ID
901D-023	LWTS P&ID
901D-024	LWTS P&ID
901D-025	LWTS P&ID
901D-026	LWTS P&ID
903D-016	STS P&ID
903D-017	STS P&ID
903D-018	STS P&ID
903D-019	STS P&ID
903D-020	STS P&ID
903D-021	STS P&ID
904D-011	SMS P&ID
904D-012	SMS P&ID
904D-013	SMS P&ID
904D-014	SMS P&ID
904D-015	SMS P&ID
904D-016	SMS P&ID
900J-1363	INTERFACE DIAGRAM
900D-1666	PVS P&ID
906E-017	OFF-GAS TRENCH P&ID

LEGEND
RCRA Permitted Tank System/Equipment
RCRA Closed Tank System/Equipment

REV	DESCRIPTION	APVD
0	CR 3012 12/19/96	JRH
1	ECN 11692 10/27/98	HMB

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS IN INCHES
TOLERANCES: 2PL DEC ± N/A; 3PL DEC ± N/A; DO NOT SCALE DRAWING
FRACTS ± N/A; ANGLES ± N/A; FINISH N/A
FILE NAME 71620001
PLOT SCALE 1=1.00
D SPEC NO 2913
NEXT ASSEMBLY

DRAFTER D. KUREK 9/23/96
CHECKER D. SHAFFER 12/19/96
ENGINEER R. VITKO 12/16/96
A/E CONTRACT NO.
CODE IDENT NO.
FOR WEST VALLEY NUCLEAR SERVICES CO., INC. WEST VALLEY N.Y.

WTF
8D-1 TANK, 8Q-1 PUMP PIT AND 8Q-1 UTILITY PIT FLOW DIAGRAM

SEE ENGINEERING RELEASE FORM (ERF) FOR DRAWING APPROVAL SIGNATURES.
DWG SIZE D
SCALE NONE
WEIGHT
DWG NO. 900D-7162
REV 1
SHEET 1 OF 2

DRAWING-DO NOT USE THIS ORIGINAL

Oct 28 11:40:00 1998 BHB

CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE.
INIT_____ DATE_____

STS VALVE AISLE
50-PH-FV-077

6-50-P 1/2-001 TO SUPERNATANT PREFILTER F-001
900D-7162 SH1

6-50-2 1/2-002 RECIRC FROM SUPERNATANT PREFILTER F-001
50-PH-HCV-004

8UW-98-3/4-A5-A
15A-A-72

8P25-2-A5 TO 8P-11 (GRAVITY)
15A-A-72

TO LAGOON (ABANDONED)

8R-A-1 8P28-12-A5 TO WASTE TANK OFF-GAS RELIEF K.O. DRUM (8D-7)/ WASTE TANK OFF-GAS CONDENSER (8E-18A) VIA LINE 8P29-16-A5

8R-A-1 8P27-3-C FROM WASTE TANK OFF-GAS K.O. DRUM (8D-6) (GRAVITY)

9011-021 SH6 8P113-3-C FROM TANK 7D-2 (GRAVITY)

8R-A-1 8P57-2-A5/A CAPPED UNDERGROUND (GRAVITY)

903D-020 SH2 55-DV-2-2735 (MAIN HEADER)

903D-016 6-50-2 1/2-049 FROM PSE'S, SUPERNATANT FLUSH, LWTS

6-50-1-048 PREFILTER BYPASS 900D-7162 SH1

6-50-1 1/2-016 SUPERNATANT RECYCLE FROM PUMP 50-G-007 900D-7162 SH3

6-50-1-047 PREFILTER BYPASS 900D-7162 SH1

6-50-2 1/2-138

6-50-2 1/2-140 (SPARE)

B-340

A-101

C-130

D-1604

A-411

M

55-PH-P-104 DRAIN

8Q-2 PUMP PIT

55-PH-H-082 55-PH-H-083 55-PH-H-084 55-PH-H-085 55-PH-H-086

55-PH-H-087 55-G-014 DISCH 55-PH-H-095 55-PH-H-096 55-PH-H-076

55-XX-001

55-UW-H-195

55-PH-H-028

SLUDGE WASTE (SPARE) FROM PUMP PIT 8Q-2

SLUDGE SLURRY FROM PUMP PIT 8Q-2

BASIC WASTE RETURN TO PUMP PIT 8D-2

ZEOLITE FROM 8Q-1 PUMP PIT 900D-7162 SH1

THOREX (OR WASTE HEADER WASTE) FROM 8Q-1 PUMP PIT 900D-7162 SH1

55-PH-2-038 55-PH-2-034 55-PH-2-006 55-PH-2-004 55-PH-2-005

900D-7162 SH1 55-VE-8-209 55-VE-8U-297 VENT TO PVS BLDG

55-VE-8-210 VENT TO PVS BLDG

55-VE-8-209

904D-016 904D-015

55-UA-1-029 55-CH-2-031

55-CH-2-094 55-CH-2-064

8Q-5 UTILITY PIT

55-CH-GL-206 55-CH-GL-104 55-CH-GL-106

55-CH-H-248 55-CH-H-103 55-UA-H-253 55-UA-H-102

55-PH-H-119 55-PH-H-137 55-PH-H-122 55-PH-H-123 55-PH-H-121

55-PH-H-135 55-PH-H-129 55-PH-H-126 55-PH-H-125 55-PH-H-136

8Q-5 HLW DIVERSION PIT

DRAIN TO 8Q-2 PUMP PIT

55-UV-1/2-187 55-UV-1-059 55-CH-2-091 55-CH-2-036 55-PH-2-002

ACID WASTE RETURN TO 8D-4 900D-7162 SH3

55-PH-2-006 55-PH-2-015 55-PH-2-033 55-PH-2-032

WASTE RETURN
SPARE WASTE RETURN
HLW TRANSFER
HLW SPARE

CONCENTRATOR FEED MAKE-UP TANK (CFMT)

MIST ELIMINATOR FILTER & PUMP 56-V-003

PVS STACK

PAN PUMPOUT PUMP 8G-5

8R-A-1 8-SH-154-3/4-A ANNULUS EDUCTOR (8H-5)

VAULT

PAN

MOBILIZATION PUMPS

SUPERNATANT REMOVAL PUMP 50-G-001

HEAT EXCHANGER 8E-2

SLUDGE REMOVAL PUMP 55-G-014

PUMP#	RISER#
55-G-001	(H3)
55-G-003	(H5)
55-G-004	(H2)
55-G-005	(H6)
55-G-007	(H1)
55-G-002	(H4)

8D-2 TANK

8Q-2 UTILITY PIT

55-UV-H-178 55-UV-1/2-050 904D-015

55-CH-H-246 55-CH-2-028 904D-015

55-UA-H-254 55-UA-1-026 904D-016

55-CH-GL-064 55-CH-GL-200 55-CH-GL-199 55-CH-GL-067 55-CH-H-066 55-UA-H-065

LEGEND
RCRA Permitted Tank System/Equipment
RCRA Closed Tank System/Equipment

NOTE:
FOR REFERENCE DRAWINGS SEE SHEET 1

REV	DESCRIPTION	ORG/D
0	ER 3812 12/19/96	JRH
1	ECN 11692 10/27/98	WCK

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS IN INCHES
TOLERANCES: 2PL DEC ± N/A; 3PL DEC ± N/A; FRACTS ± N/A; ANGLES ± N/A; DO NOT SCALE DRAWING; FINISH N/A
FILE NAME 7162D002
PLOT SCALE 1=1.00
D SPEC NO. 2913
NEXT ASSEMBLY

DRAFTER D. KUREK 5/24/96
CHECKER D. SHAFFER 12/19/96
ENGINEER R. VITKO 12/16/96
SEE ENGINEERING RELEASE FORM (ER) FOR DRAWING APPROVAL SIGNATURES.

A/E CONTRACT NO. CODE IDENT NO.
FSR
WEST VALLEY NUCLEAR SERVICES CO., INC. WEST VALLEY N.Y.

WTF
8D-2 TANK, 8Q-2 PUMP PIT, 8Q-2 UTILITY PIT, 8Q-5 DIVERSION PIT AND 8Q-5 UTILITY PIT
FLOW DIAGRAM

DWG SIZE D; SCALE NONE; WEIGHT; DWG NO. 900D-7162; REV 1; A/E DWG NO; SHEET 2 OF

CAD DRAWING-DO NOT REVISE THIS ORIGINAL

Wed Oct 28 11:40:16 1998 HAB

6/21/04 3:43:26 PM PERRO

CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE.
INIT_____ DATE_____

8 7 6 5 4 3 2 1

6-50-2-015
SUPERNATANT TO TANK 35104
50-PH-FV-067
90ID-021 SH1 D3

6-50-1 1/2-014
DECONTAMINATED SUPERNATANT
9000-7162 SH1 D1

55-PH-3-021
CONDENSATE RETURN FROM VIT
904D-014 D8

6-50-1 1/2-128
RECYCLE

8P73-4-C
TO WASTE TANK OFF-GAS SCRUBBER 8C-1
8R-A-4

D8 904D-014
55-PH-3-003
FROM VIT WASTE HEADER

C-2608

D1 9000-7162 SH2
55-PH-2-189
ACID WASTE RETURN FROM 8Q-5 PIT

55-PH-2-018
THOREX OR WASTE HEADER WASTE) TO 8Q-1 PUMP PIT
9000-7162 SH1 D8

55-PH-2-014
THOREX OR (WASTE HEADER WASTE) TO 8Q-1 PUMP PIT
9000-7162 SH1 D8

8SH80-1-RIC-WIL
150# STEAM
8R-A-1

8P69-3-C
FROM HLW ACCOUNTABILITY & NEUTRALIZER TANK 7D-10 (ABANDONED)
7R-A-1

8P86-4-C
TO WASTE TANK OFF-GAS SCRUBBER (8C-1)
8R-A-4
TO 8P-73-4-C

C-5614M

55-VE-6-207
9000-7162 SH1
VENT TO 8Q-1 PUMP PIT

D C 6
6-50-1 1/2-016
9000-7162 SH2
50-PH-FV-068
SUPERNATANT RECYCLE TO 8Q-2

15CW561-3-A5
COOLING WATER RETURN
15A-A-72 D1

15A-A-72 D1

15CW560-3-A5
COOLING WATER SUPPLY

15CW561-3-A5
COOLING WATER RETURN
15A-A-72 D1

15CW560-3-A5
COOLING WATER SUPPLY
15A-A-72 D1

8P02-1 1/2-C

C-430

8Q-4
UTILITY PIT

8Q-4
PUMP
PIT

55-PH-H-039

55-PH-H-038

8P82-1 1/2-C

7R-A-1
7P120-3-C
FROM HLW ACCOUNTABILITY & NEUTRALIZER TANK 7D-10 (ABANDONED)
C-5614M

55-PH-2-099
DRAIN

55-CH-H-047

55-C-GL-095

55-CH-GL-057

55-CH-H-241

55-CH-2-095

55-PH-H-037

55-G-013
PUMP DISCH.

55-UA-H-046

55-CH-GL-075

55-UA-H-250

55-UV-GL-062

55-UV-1-051

55-CH-2-090

55-PH-H-045

55-UV-1-193

M

1 1/2
PIT DRAIN

55-CH-2-054
904D-015 D3

55-UA-1-092
904D-016

8P73-4-C

55PH-3-021

15CW560-3-A5
COOLING WATER SUPPLY

A-210 A-210 A-210

A-110 A-110 A-110

8CV134-1 1/2-C
8CV76-1 1/2-C
8CV76-1 1/2-C
8CV77-1 1/2-C
8CV75-1 1/2-C
8CV133-1 1/2-C

8CV136-1 1/2-C
8CV89-1 1/2-C
8CV91-1 1/2-C
8CV90-1 1/2-C
8CV408-1 1/2-C
8CV135-1 1/2-C

8SH80-1-C
8P31-1 1/2-C

SUMP EDUCTOR (8H-3)
8P79-1 1/2-C

DECONTAMINATED SUPERNATANT PUMP
50-G-007

THOREX OR WASTE HEADER WASTE REMOVAL PUMP
55-G-013

8D-3 TANK

8D-3/8D-4
TANK VAULT

8D-4 TANK

SUMP

LEGEND
RCRA Permitted Tank System/Equipment
RCRA Closed Tank System/Equipment

NOTE:
FOR REFERENCE DRAWINGS SEE SHEET 1

REVISIONS			
REV	DESCRIPTION		APV'D
0	ER 3812	12/19/96	JRH

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS IN INCHES
TOLERANCES: 2PL DEC ± N/A | 3PL DEC ± N/A | DO NOT SCALE DRAWING
FRACTS ± N/A | ANGLES ± N/A | FINISH N/A V
FILE NAME 7162D003
PLOT SCALE 1=1.00
D SPEC NO. 2913
NEXT ASSEMBLY

DRAFTER D. KUREK DATE 9/27/96
CHECKER D. SHAFFER DES DATE 12/19/96
ENGINEER R. VITKO DATE 12/16/96

DATABASE LINKED DRAWING
SEE ENGINEERING RELEASE FORM (ER) FOR DRAWING APPROVAL SIGNATURES.

DWG SIZE D

A/E CONTRACT NO. CODE IDENT NO.

FOR WEST VALLEY NUCLEAR SERVICES CO, INC. WEST VALLEY N.Y.

WTF
8D-3 & 8D-4 TANKS, 8Q-4 PUMP & UTILTITY PITS
FLOW DIAGRAM

SCALE NONE
WEIGHT
A/E DWG NO.
DWG NO. 9000-7162 REV 0
SHEET 3 OF

8 7 6 5 6/21/04 3:43:31 PM REPRO 3 2 1

DO NOT REVISE THIS ORIGINAL DRAWING

APPENDIX D-22

P&I DIAGRAMS FOR THE STS
(4 DRAWINGS)

903-D-016

NO.	DATE	REVISION	DR	CH	APPROVED
B	9-13-88	GENERAL REVISION	DH		
0	11/25/85	ER 554			
14	7-6-93	REV. PER ECN 6485	MJC		
15	7-22-93	REV/ECN 6551	RMS		
16	2-28-94	REV. PER ECN 7553	JH		
17	3-14-94	REV/ECN 7575	PD		
18	6-30-97	ECN 10815	CW		
19	2-3-2000	ECN 12384	TFS		
20	11-30-2000	ECN 12886	TFS		
21	12-16-2002	ECN 13543			
22	6-6-2003	ECN 25598			
23	6-24-2003	ECN 25589	BP		
11	1-29-91	REVISED PER ECN 4133	GW	HAB	
12	3/22/91	PER ECN 4210	JH	HAB	
13	10/4/91	REVISED PER ECN 4597	BB	HAB	

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT_____ DATE_____

NOTES:

1. FOR SYMBOLS, NOTES AND LEGEND SEE DRAWINGS 900D-436 SHT. 1-4
2. OPERATING VALVE POSITIONS ARE SHOWN IN THE PROCESS NARRATIVE AND CONTROL CONCEPTS DOCUMENT.
   LEGEND
   RCRA Permitted Tank System/Equipment
   RCRA Closed Tank System/Equipment
3. EXISTING INSTRUMENT.
4. VALVES CABLE SEALED, CLOSED UNLESS NOTED
5. SELF-DRAINING PIPE SYSTEM TO TANK D-001.
6. DELETED
7. AIR LEGEND AS FOLLOWS:
   AS1 = 100 psig - UTILITY AIR
   AS2 = 50 psig - INSTRUMENT AIR
   AS3 = 20 psig - INSTRUMENT AIR
   AS4 = 100 psig - INSTRUMENT AIR
8. LINE TO BE SELF-DRAINING, NO POCKETS FROM FCV-015 TO F-001 MODULES.
9. INFLATABLE BLADDERS(2) SEAL 50-G-001A DISCHARGE TO EXISTING FLOATING SUCTION PIPE
10. BLOCK CONNECTOR MUST BE BORED TO ½".
11. HEEL REMOVAL PUMP 50-G-001A INSTALLED ON TANK BOTTOM IN MARCH 2003
12. ⊤ DENOTES HANDWHEEL FOR MANUAL VALVES THAT ARE OPERATED REMOTELY WITH MANIPULATOR ARMS.
13. INSTRUMENT RACK LEGEND
    SVB=SOLENOID VALVE BOX 50-IR-010
    D = I/P CONVERTER, DP CELLS AND BUBBLER RACK 50-IR-040, DC= DC JUNCTION BOX 50-IR-030
    WM = WALL MOUNTED
14. THE SYSTEM DESIGNATION FOR STS IS 50. ALL INSTRUMENT LOOP NUMBERS ARE PRECEDED BY A 50-. ALL VALVE TAG NUMBERS ARE PRECEDED BY 6-50.
16. LIMIT SWITCH SYMBOLS - [LS] SHOWN WITH VALVES ARE ALL INTERLOCKED WITH THE PROGRAMMABLE CONTROLLER PLC 2/30
17. INTERLOCKS: ⟨I⟩ → THIS SYMBOL INDICATES A PROCESS CONTROL INTERLOCK EXISTS WITH THAT PARTICULAR ELEMENT THRU THE PROGRAMMABLE CONTROLLER PLC 2/30 FOR INTERLOCK DETAIL DESCRIPTION SEE WVNS-EQ-268

FOR DRAWING INDEX SEE DRAWING NO.

EBASCO SERVICES INCORPORATED
A/E O.F.S. NO. 2368 TASK ORDER 013

WEST VALLEY NUCLEAR SERVICES COMPANY, INC
WEST VALLEY, NEW YORK

WEST VALLEY DEMONSTRATION PROJECT

P & ID
SUPERNATANT TREATMENT SYSTEM
FILTRATION AND COOLING SECTION

PROJECT MGR	L. B. SHAW
ENGINEER SUPV	R. KEENAN
LEAD DISC ENGR	W. SANFORE
DESIGN	R. J. LEWKO
CHECKED	R. FEENEY
DRAWN	D. HARDY

SIZE D | DRAWING NO. 903D-016 | REV. 23

ISSUED FOR CONSTRUCTION | SCALE

903-D-017

NO.	DATE	REVISION	DR	CH	APPROVED
B	9-13-85		DH	RAH	
		GENERAL REVISION			
0	11/25/85	ER 554			JRH
18	1-8-2003	ECN 13510	LRO		
19	6-24-2003	ECN 25589	BP		
3	3/25/87	REV. PER ECN 1839	GJN		
4	11-4-87	REV. PER ECN 2024	GW		
5	12-10-87	REV. PER ECN 2087	CCG		
6	3-14-88	REVISED PER ECN 2297	LWN		
7	6-17-88	REV. PER ECN #2488	DES		
8	9-19-89	REV. PER ECN 2900	RJR		
9	3-21-90	REV. PER ECN 3537	CGR		
10	1-30-91	REV. PER ECN 4147	GW		
11	7-11-91	REV. PER ECN 4157	GM		
12	2-10-95	REV/ECN 8562	PD		
13	7-1-97	ECN 10815	EN		
14	9-21-99	ECN 12299	JAB		
15	2-21-01	ECN 12975			
16	4-24-2001	ECN 13058	GW		
17	12-16-2002	ECN 13543			

NOTES:

1. FOR SYMBOLS, NOTES AND LEGEND SEE DRAWINGS 901-M-008/-010 AND 903-D-016.
2. OPERATING VALVE POSITIONS ARE SHOWN IN THE PROCESS NARRATIVE AND CONTROL CONCEPTS DOCUMENT.
3. FV-108 AND FV-208 ARE WELDED DIRECTLY TO THE BOTTOM HEAD OF THE COLUMN ON THE CENTERLINE.
4. FOR INTERLOCKING DETAILS OF COLUMN VALVES FOR VARIOUS SYSTEM OPERATIONS & CHANGEOUT SEQUENCING, SEE SKETCHES PER WVNS-EQ-268.
5. COLUMN A AND B DUMP VALVES ARE ABANDONED IN THE OPEN POSITION WITH A PLUG ATTACHED TO THE BOTTOM OF EACH VALVE.
6. JUMPER J-21 (FV-201A) REMOVED AND BLANK BLOCK CONNECTORS INSTALLED (F-12 THIS DRAWING)
7. 50-TI-211 OUT OF SERVICE ABANDONED IN PLACE
8. STS COLUMN RADIATION MONITORS 50-RI-113 AND 50-RI-213 REMOVED FROM SERVICE.
9. FV-201 REMOVED TO ACCOMODATE J-17-27, COLUMN A BYPASS

○ I/P AIR SUPPLY DISCONNECTED.
■ SOLENOID DISCONNECTED OR FUSE REMOVED

LEGEND

RCRA Permitted Tank System/Equipment
RCRA Closed Tank System/Equipment

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT _____ DATE _____

FOR DRAWING INDEX SEE DRAWING NO.

EBASCO SERVICES INCORPORATED
A/E C.F.S. NO. 2388 TASK ORDER GW-1
FOR
WEST VALLEY NUCLEAR SERVICES COMPANY, INC.
WEST VALLEY, NEW YORK
WEST VALLEY DEMONSTRATION PROJECT
P & ID
SUPERNATANT TREATMENT SYSTEM
ION EXCHANGE SECTION - SHEET 1
DRAWING NO. 903-D-017 REV. 19
SCALE NONE

6/16/04 9:37:33 AM REDRO

903-D-018

NO.	DATE	REVISION	DR	CH	APPROVED
8	9-13-89		DH	RWM	MJS MAC JRS
		GENERAL REVISION			
0	11/25/85	ER 534			JRS
12	5/2/95	REVD. PER ECN 8855	BP	KQ	
13	7-1-97	ECN 10815	GW	DLS	
14	10-27-99	ECN J22164	GW	DBS	
15	2-2-2000	ECN 12384	TFS	DBS	
16	2-24-2001	ECN 13038	GW	MB	
17	7-12-02	ECN 13400	ARJ	TLL	
18	1-8-2003	ECN 13510	CRO	MB	
19	6/24/2003	ECN 25589	BP	MB	
9	1-30-91	REV. PER ECN 4147	GW	MAB	TLL
10	2-11-91	REV. PER ECN 4157	GM	MAB	CFR
11	7-7-92	REV. PER ECN 5285	GW	MB	DRE

NOTES:

1. FOR SYMBOLS, NOTES AND LEGEND SEE DRAWINGS 901-M-008/-010 AND 903-D-016.
2. OPERATING VALVE POSITIONS ARE SHOWN IN THE PROCESS NARRATIVE AND CONTROL CONCEPTS DOCUMENT.
3. FV-308 AND FV-408 ARE WELDED DIRECTLY TO THE BOTTOM HEAD OF THE COLUMN ON THE CENTERLINE.
4. FOR INTERLOCKING DETAILS OF COLUMN VALVES FOR VARIOUS SYSTEM OPERATIONS & CHANGEOUT SEQUENCING, SEE SKETCHES PER WVNS-EQ-268
5. COLUMN C DUMP VALVE IS ABANDONED WITH THE VALVE LEFT IN THE OPEN POSITION AND A REMOVABLE PLUG ON THE VALVE.
6. COLUMN D DUMP VALVE IS ABANDONED WITH THE VALVE LEFT IN A PAPTIALLY OPEN POSITION.
7. FV-302 B (J-17) REMOVED FROM BACK WALL AND BLANKED.
8. J-12 HAS BLANK BLOCK CONNECTORS INSTALLED ON TOP & BOTTOM CONNECTIONS.
9. JUMPER J-114 B (FV-403B) IS CONFIGURED TO TRANFER LWTS SOLUTION TO TANK 8D-1 (AT J-8)
10. STS COLUMN RADIATION MONITORS 50-RI-313 AND 50-RI-413 REMOVED FROM SERVICE.
11. PSE-415 (J-54) REMOVED FROM BACKWALL AND BLANKED.
12. JUMPER J-17-27 (FV-309) BYPASSES COLUMN A FOR C-B SEQUENCE

▲ ■ SOLENOID DISCONNECTED OR FUSE REMOVED

LEGEND

RCRA Permitted Tank System/Equipment

RCRA Closed Tank System/Equipment

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT: _____ DATE: _____

FOR DRAWING INDEX SEE DRAWING NO.

APPRVD WVNS CO.	11/25/85	EBASCO SERVICES INCORPORATED
PROJECT MGR L. E. SHAW	1-23-85	A/E O.F.S. NO. 2386 TASK ORDER 013
ENGINEER SUPV R. KENNY	1-23-85	FOR WEST VALLEY NUCLEAR SERVICES COMPANY, INC. WEST VALLEY, NEW YORK
LEAD DISC ENGR W. SANFORD	1-23-85	WEST VALLEY DEMONSTRATION PROJECT
DESIGN R. J. LEWKO	1-23-85	P & ID SUPERNATANT TREATMENT SYSTEM ION EXCHANGE SECTION - SHEET 2
CHECKED R. FEENEY	1-25-85	
DRAWN D. HANDY	DATE 1-25-85	
DE-AC07-81NE44139 PROJECT NO.		SIZE D; INDEX CODE NUMBER AREA 903 SYS 170 PR 0 SEQ 0; DRAWING NO. 903D-018; REV. 19
19-CON-00276 SUBCONTRACT NO.		
ISSUED FOR CONSTRUCTION		SCALE: NONE; ENG. CODE; A/E SHEET NO. 903-D-018

6/16/04 9:57:10 AM PERRO

903 D 019

NO.	DATE	REVISION	DR	CH	APPROVED		
B	9-12-86		DH	RHH	WLS	MWZ	WLS
		GENERAL REVISION					
0	11/25/85	ER 554					
14	02-05-2003	ECN 25451	BP	JLH			
15	06-05-03	ECN 25598		HPB			
16	10/24/2003	ECN 25589	BP	HPB			
17	07-23-2003	ECN 25595		HPB			
5	1-25-88	REV'D. PER ECN 2138	LWN		CLA		
6	7-14-88	REV'D PER ECN 2513	CCG		CLA		
7	8-2-88	REV'D PER ECN 2545	CTC		CLA		
8	6/26/89	REVISED PER ECN 3005	EHB	CTC	WSS		
9	9-14-89	REVISED PER ECN 3125	SW	RMG	SFG		
10	11-21-90	REV. PER ECN 4038	RKG	HMB	SMW		
11	1-29-91	REV. PER ECN 4134	GM	HMB	LLC		
12	8-6-91	REV. PER ECN 4459	GM	DRS	LLC		
13	7-7-92	REV. PER ECN 5285	GM	HPB	EMS		

NOTES:

1. FOR SYMBOLS, NOTES AND LEGEND SEE DRAWINGS 901-M-008/-010 AND 903-D-016.
2. OPERATING VALVE POSITIONS ARE SHOWN IN THE PROCESS NARRATIVE AND CONTROL CONCEPTS DOCUMENT.
3. DELETED.
4. DELETED
5. DELETED.
6. PUMP RECIRCULATION LINE 6-50-128 SHOULD BE TIED INTO VERTICAL SECTION AS CLOSE TO TANK 8D-3 AS POSSIBLE.
7. BLOCK CONNECTOR MUST BE BORED TO 1/2 INCH
8. OSBL=OUTSIDE BATTERY LIMITS.
9. LEVEL LOOP 601 PUMP PIT LEVEL
   LEVEL LOOP 602 PIPE CASING LEVEL
10. POWER SUPPLY SEALED OFF
11. THREE-WAY MANUAL VALVE INSTALLED JUNE 2003

LEGEND
RCRA Permitted Tank System/Equipment
RCRA Closed Tank System/Equipment

ECN(S) PENDING #25945

Q I/P AIR SUPPLY DISCONNECTED

■ SOLENOID DISCONNECTED OR FUSE REMOVED

50-G-007 PIT COVER
50-G-007 PUMP
8D-3/8D-4 VAULT
8D-3 TANK
OVER BURDEN
50-IA-H-0263
IA REF: 8R-A-I SH3
FLOOR DRAIN
6-50-1½-016
1½" PIT DRAIN LINE
55-PH-3-021
50-IB-600 = 1½" INFLATABLE BLADDER (VALVE) SEALING PIT FLOOR DRAIN. (SEE 900-D-1147 SH2)

50-G-007 PUMP PIT FLOOR DRAIN DETAIL (NOT ALL LINES SHOWN)

DEMINERALIZED OR RECYCLE WATER FROM BREAK TANK 903D021(H12) 6-50-2-042
SLUICE WATER FROM C-001 903D017(A6) 6-50-3-068
SLUICE WATER FROM C-003 903D018(A6) 6-50-3-070
SLUICE WATER FROM C-002 903D017(A11) 6-50-3-069
DECONTAMINATED SUPERNATANT FROM COLUMNS A, B, C, D 903D018(E13) 6-50-1 1/2-010
SLUICE WATER FROM C-004 903D018(B13) 6-50-3-071
WATER PUMP-OUT TO SUPERNATANT FEED TANK D-001 903D016(D13) 6-50-1 1/2-067
TO SLUICE LIFT WATER TANK D-004 903D020(F13) 6-50-1 1/2-075
PRESSURE RELIEF TO 8D-2 903D021(J4)
SPENT ZEOLITE FROM C001 903D017 (H5) 6-50-1½-201
SPENT ZEOLITE FROM C002 903D017 (H10) 6-50-1½-202
SPENT SAND FROM F002 903D019 (G7) 6-50-1½-205
SPENT ZEOLITE FROM C004 905D018 (H10) 6-50-1½-204
SPENT ZEOLITE FROM C003 905D018 (H5) 6-50-1½-203
VENT HEADER 903D021(C12) 6-50-2 ½-080
FROM C-015 903D021(I12)
FROM C-015 903D021(J12)
SAND SLURRY TO VENT HEADER 903D01C(B10)
903D016(A10)
6-50-1-149
6-50-2-134
6-50-1 1/2-095
6-50-1½-130
6-50-1 1/2-131
6-50-1 1/2-010
6-50-1 1/2-095
6-50-1 1/2-067
6-50-1 1/2-075
6-50-1 1/2-041
6-50-1 1/2-014
6-50-1-118
6-50-2-141
6-50-2-160
903D-013 (J-8)
6-50-2-044
6-50-2-015
6-50-1-128
6-50-2-153
6-50-2-015
6-50-1 1/2-016
6-50-2 -015
903D018 (C13) 6-50-2-153
911-D-020 313-2"-0000
RETURN FROM LWTS DECON. SUPERNATANT TO 35104 901D021 SH1 D-3 6-50-2-153
(OR RHWF WASTE WATER) 901D021 SH1 D-3 6-50-2-015
SUPERNATANT RECYCLE TO D-001 903D016(H-9)
FROM LOW LEVEL TREATMENT SYSTEM 9D1D024(C13)
TANK 8D1S8 LEVEL
DECONTAMINATED SUPERNATANT TO 8D-2
SUPERNATANT RECYCLE 903D016(K1)
TO BD1
CAPPED JUNE 2003
F-002 DECONTAMINATED SUPERNATANT FILTER
TANK 8D-1 (EXISTING)
G004
SEE NOTE #9 G-007 PUMP PIT DECONTAMINATED SUPERNATANT COLLECTION TANK 8D-3 (EXISTING)
G-007 NOTE 10
SEE 50-G-007 FLOOR DRAIN DETAIL ABOVE (C9)
SYSTEM 3:3 RHWF VALVE PIT
480 VOLTS 903-B-31 SH 3
PVS INSTR. RACK
J-1 J-2 J-3 J-4 J-5 J-6 J-8 J-9 J-10 J-11 J-12 J-13 J-14 J-15 J-16 J-17 J-18 J-19 J-20 J-21 J-22 J-23 J-24 J-25 J-26 J-27 J-28 J-29 J-30 J-31 J-32 J-33 J-34 J-35 J-36 J-37 J-38 J-39 J-40 J-41 J-42 J-43 J-44 J-45 J-46 J-47 J-48 J-49 J-50 J-51 J-52 J-53 J-54 J-55 J-56 J-57 J-58 J-59 J-60 J-61 J-62 J-63 J-64 J-65 J-66 J-67 J-68 J-69 J-70 J-71 J-72 J-73 J-74 J-75 J-76 J-77 J-78 J-79 J-80 J-81 J-82 J-83 J-84 J-85 J-86 J-87 J-88 J-89 J-90 J-91 J-92 J-93 J-94 J-95 J-96 J-97 J-98 J-99 J-100 J-101 J-102 J-103 J-104 J-105 J-106 J-107 J-108 J-109 J-110 J-111

C - SECONDARY CONTAINMENT

I HEREBY CERTIFY THAT ALL DOCUMENTS HAVE CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE.
NAME DATE

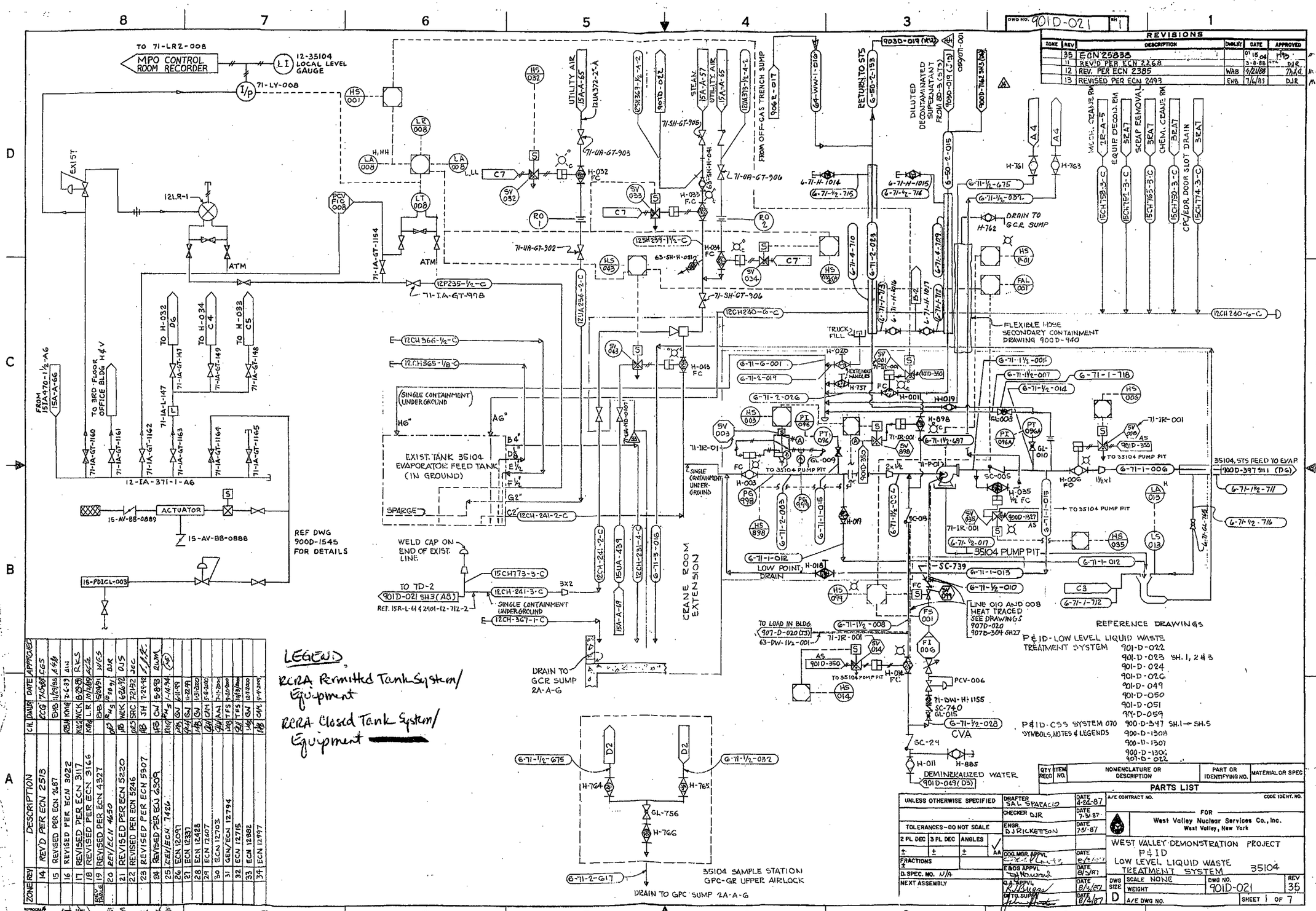
FOR DRAWING INDEX SEE DRAWING NO.

APPROVED AS NOTED P.O. MOB	9/22/93	EBASCO SERVICES INCORPORATED A/E C.F.S. NO. 2388 TASK ORDER 213
PROJECT MGR L. R. SHAW	1-25-93	FOR WEST VALLEY NUCLEAR SERVICES COMPANY, INC. WEST VALLEY, NEW YORK
ENGINEER SUPV R. KERNAN	1-25-93	
LEAD DISC ENGR. W. SANTORE	1-25-93	WEST VALLEY DEMONSTRATION PROJECT
DESIGN R. V. LEMKO	1-25-93	P & ID SUPERNATANT TREATMENT SYSTEM FINAL FILTRATION & STORAGE
CHECKED R. FEENEY	1-25-93	
DRAWN D. HARDT	DATE 1-25-93	
CONTRACT NO. DE-NCOT-81NM44339 PROJECT NO.		SYS. INDEX CODE NUMBER: D SEA PA TYP SQ. ORIG. DRAWING NO. 903-D-019 17
SUBCONTRACT NO. 18-SWV-02275		
ISSUED FOR CONSTRUCTION	SCALE NONE	SPEC. SERIES A/E SHEET NO.

APPENDIX D-23

P&I DIAGRAMS FOR THE LWTS
(5 DRAWINGS)

901D-021 Sh.1



LEGEND

RCRA Permitted Tank System/ Equipment

RCRA Closed Tank System/ Equipment

REFERENCE DRAWINGS

P&ID-LOW LEVEL LIQUID WASTE TREATMENT SYSTEM
901-D-022
901-D-023 SH. 1, 2 & 3
901-D-024
901-D-026
901-D-049
901-D-050
901-D-051
901-D-059

P&ID-CSS SYSTEM 070 SYMBOLS, NOTES & LEGENDS
900-D-347 SH.1 → SH.5
900-D-1308
900-D-1307
900-D-1306
901-D-022

ZONE	REV	DESCRIPTION	CH.	DWNR	DATE	APPROVED
	14	REV'D PER ECN 2513		RCG	7/15/88	CGS
	15	REVISED PER ECN 2687		EHB	11/29/88	[illegible]
	16	REVISED PER ECN 3022	RBH	KMG	7-6-89	AW
	17	REVISED PER ECN 3117	KWG	WCK	8-29-89	RKS
	18	REVISED PER ECN 3166	KMG	L.R	10/26/89	[illegible]
REV TABLE	19	REVISED PER ECN 4327		EHB	5/24/91	WGS
	20	REV/ECN 4650		RMS	10-28-91	DJR
	21	REVISED PER ECN 5220		WCK	6-26-92	DJS
	22	REVISED PER ECN 5246		SRC	7-21-92	JEC
	23	REVISED PER ECN 5307		JH	7-29-92	[illegible]
	24	REVISED PER ECN 6309		CW	5-8-93	RWM
	25	REV/ECN 7426		RMS	1-14-94	[illegible]
	26	ECN 12097		GW	6-11-99	
	27	ECN 12337		GW	11-22-99	
	28	ECN 12428		GW	11-31-2000	
	29	ECN 12607		CAM	5-8-2000	
	30	ECN 12703		AAJ	7-21-2000	
	31	GEN/ECN 12794		TFS	9-20-2000	
	32	ECN 12715		TFS	10/13/2000	
	33	ECN 12882		GW	12-7-2000	
	34	ECN 12997		CAM	9-4-2001	

QTY REQD	ITEM NO.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	MATERIAL OR SPEC

PARTS LIST

UNLESS OTHERWISE SPECIFIED	DRAFTER SAL SPARACIO	DATE 4-24-87	A/E CONTRACT NO. / CODE IDENT. NO.
	CHECKER DJR	DATE 7-31-87	FOR West Valley Nuclear Services Co., Inc. West Valley, New York
TOLERANCES-DO NOT SCALE	ENGR. DJ RICKETTSON	DATE 7-31-87	
2 PL DEC ± / 3 PL DEC ± / ANGLES ± / AA	COG. MGR. APPVL	DATE 8/4/87	WEST VALLEY DEMONSTRATION PROJECT P&ID LOW LEVEL LIQUID WASTE TREATMENT SYSTEM 35104
FRACTIONS ±	E&OS APPVL	DATE 8/3/87	
D. SPEC. NO. N/A	Q.A. APPVL	DATE 8/3/87	DWG SIZE D / SCALE NONE / DWG NO. 901D-021 / REV 35
NEXT ASSEMBLY	DI TO SUPPT	DATE 8/4/87	WEIGHT / A/E DWG NO. / SHEET 1 OF 7

DWG NO. 901D-021 SH 2

ZONE	REV	DESCRIPTION	DATE	APPROVED
	0	REVISED PER ECN 1378 & 13734, ER 11115	7-21-87	
	9	ECN 13041	7/1/91	
	10	ECN 12930	9/13/91	LRO/
	11	ECN 13181	9/20/91	LRO/
	4	REVISED PER ECN 3117	8/29/89	WCW/
	5	REVISED PER ECN 6309	5-8-93	
	6	ECN 11715	1-6-99	
	7	ECN 12091	6-23-99	
	8	ECN 12965	12-15-2001	

CONCENTRATES
900D-397 SH1(D8)
G-71-1-095
CONCENTRATES
901D-024-E1
FROM 7D-13 TO PPC MANIFOLD
900D-397 SH1(D9)
G-71-1½-029
FROM 7D-13 TO PPC MANIFOLD
901D-022 (D15)
35104 STS FEED TO EVAP
900D-397 SH1(D8)
G-71-006
35104 STS FEED TO 31017 EVAP
901D-022 (E1)
900D-397 SH1(D8)
G-71-1½-024
FILTER BACKWASH SPENT RESIN, SPENT ZEOLITE
901D-026 (K12)
900D-397 SH1(C8)
G-71-1½-G43
901D-023 SH2(H2)
TO XC3 SUMP
XC-3
10" LOOP SEAL
FILL CAP
DRAIN
H-735
H-733
G-71-1½-G44
SHIELDED PIPE CHASE BETWEEN 01/14 & XC3
HEAT TRACED
HEAT TRACE AMPMETERS LOCATED ABOVE I/O 209 IN LWTS CONTROL ROOM
01/14
901D-051 (F8)
PCV-201
FI 197
G-71-1½-G41
PI 197
H-732
G-71-1½-G42
H-731
H-869
FC
SV
HS
EXISTING IA OGA
¾" PET COCK
71-DA-GT-0076
71-SH-T-0028
COND. PIT. TO S.W. STAIRWELL
150# STM.
15A-A-57
71-SH-GT-0075
901D-051 (F16)
UTILITY AIR
15A-A-65
71DA295-½"-A
71-DA-GT-0078
901D-051(F16)
SC726
SC725
SV 037
SV 036
H-037
H-036
71-SCH-GT-0077
RO-868
SC-276
GT-131
SC-275
GT-132
G-71-1-G96
AIR PURGE
EXIST. AIR SUPPLY
71-SH-GL-0076
LA 014
LR 014
TO CONT. ROOM RECORDER
7-LR-11
P/T
LR 11
LAH 17
FIC 014
LT 014
FIC 014
HI LO
EXIST ROTO MTR.
EXIST AIR HDR.
15A-1-85
LOOP SEAL
ANALYTICAL AREA DRAINS
7S158-1"
7S154-a
7S154-b
7P156-2"-C3
7P155-1"-C
6R-A-1
6-71-1-G96
7H-19
2" @ EL. 94'-0"
7P111-4"-C
7P137-2"-C
SEE DET. A THIS SHT ZONE 3C
15WW895-4"-C
7J154-c
7P177-1½"-C FROM 7E-13
(GRAVITY)
7R-A-2
C1G14
7P180-2-C
71-UA-ND-0242
71-UA-ND-0271
DECOMMISSIONED REMOVED FROM ARPR UNDER W.O.# 0100030
DETAIL "A" NTS
7P-331 B-C
7P-331 C-C
GT-126
GT-127
GT-125
7P-331 A-C (LINE PLUGGED)
7P 331-C
SCREWED CAP FOR SAMPLES OUTSIDE SOUTHWEST STAIRWELL
6-71-2-714
6-71-3/8-712
6-71-½-713
½"
¾"
2"
ABANDONED
6-71-4-022
HEAT TRACE
GL-774
7P111
NOZZLE S7
TANK 7D-13
UTILITY AIR
901D-051 (H12)
SC-272
H833
UTILITY WATER FLUSH
GL-770
7P-331 b
GL-772
GL-773
GL-771
7P-331 a
FLUSH LINES
7D-13 SAMPLE STATION SOUTHWEST STAIRWELL
71-D-H-0017
6-71-¾-712
6-71-3/8-712
4"ϕ
3"ϕ
2"ϕ
1½"ϕ
1"ϕ
#3 SUMP PUMP G-103 900D-397 SH2 (C8)
WDV AND G-001 MOYNO PUMP DRAIN
SECTION
WDV AND G-001 MOYNO PUMP 900D-397 SH2 (C7)
G-001 MOYNO PUMP 900D-397 SH2 (B8)
G-010 DECANT PUMP DISCHARGE 900D-397 SH3 (B8)
RECYCLE LOOP DRAIN NOT SHOWN
CSS PROCESS ROOM
#1 SUMP PUMP G-101 900D-397 SH1 (C1)
G-106 DEWATERING PUMP DISCHARGE 900D-398 SH1 (B6)
#2 SUMP PUMP G-102 900D-397 SH1 (C8)
G-106 DEWATERING PUMP SEAL WATER 1900-398 SH1 (C6)
CSS 14 CELL
070/071-001
BTM EL. 188'-2"
S1 S2 S3 S4a S4b S5 S6a S6b S7 S8
G-71-2-031
G-71-2-020
G-71-2-021
G-71-4-022
7D-13 VALVE PIT
BLIND FLANGE
7P271-2"-C
71-P-H-0120
LOCATED BEHIND ARPR AIRLOCK
TO INTERCEPTOR VIA 15WW848
15-A-A-85
ARPR FLOOR
71-12-002
71-P-GT-0122
EXIST. VALVES ARPR
PCV-1275 UTILITY RM
15-IA-ND-1276
EXIST. SUPPLY
7D-13 VALVE AIR ON - AUTO VALVE OPEN TO INTERCEPTER
AIR OFF - AUTO VALVE CLOSED
DECOMMISSIONED REMOVED
7D-13
900D-397 SH1 (D-2)
TO PPC MANIFOLD VIA 01/14 & PIPE CHASE
71-UA-ND-0240
71-UA-ND-0286
71-UA-ND-0267
901D-051 (G12)
901D-051 (G12)
HS 022
SV 022
HS 021
SV 021
IR-002
IR-001
H-022
H-021

7D-13
MISC. WASTE COLLECTION
(IN GROUND)

LEGEND
RCRA Permitted Tank System/Equipment
RCRA Closed Tank System/Equipment

QTY REQD	SYM	ITEM NO.	NOMENCLATURE OR DESCRIPTION	CODE IDENT. NO.	PART OR IDENTIFYING NO.	MATERIAL	SPECIFICATION	ZONE

PARTS LIST

INDEX CODE NUMBER: AREA | DWG. TYPE | CL. | ORIG.
UNLESS OTHERWISE SPECIFIED
TOLERANCES - DO NOT SCALE
2PL DEC ± | 3PL DEC ± | ANGLES ±
FRACTIONS ±
SPEC CODE
CONTRACT NO.
DFTSPN. SAL SPARACIO — DATE OF DWG. 7-10-87
CHECKER SJR — DFTG. APPVD.
DESIGN — ENGR. 7-21-87 BJ RICKETSON
FACILITIES — ENGR.
A/E CONTRACT NO. — CODE IDENT NO.
FOR West Valley Nuclear Services Co., Inc. West Valley, New York
WEST VALLEY DEMONSTRATION PROJECT
P & I D
LOW LEVEL LIQUID WASTE TREATMENT SYSTEM
7D-13
DWG SIZE D — SCALE NONE — WEIGHT — DWG NO. 901D-021 — REV 8
A/E DWG NO. — SHEET 2 OF 7

901-D-022 Rev.

901-D-022

NO.	DATE	REVISION	DR	CH	APPROVED
B	10-09-85	GENERAL REVISION	DH	FAR	RJL / RM FSK / LES
C	1-6-86	GENERAL REVISION PER EBAR-470A	DH	RWM	DH / RWM
0	1-24-86	ER# 597			RWM
16	5-8-93	REVISED PER ECN 6309	GW	HB	RWM
17	8-5-99	ECN 12143	GW	HB	
18	10-27-99	ECN 12372	GW	HB	
19	1-4-2000	ECN 12368	TFS	DES	
20	1-20-2000	ECN 12328	GW	DES	
21	3-3-2000	ECN 12388	GW	HB	
22	3-22-2000	ECN 12387	GW	RWM	
23	4-7-2000	ECN 12479	GW	RWM	
24	8-17-2000	ECN 12496	GW	RWM	
25	5-2-2000	ECN 12476	GW	HB	
26	6-5-2000	ECN 12652	GW	RWM	
27	11-8-2000	ECN 12445	GW	RWM	
28	12-11-2000	ECN 12723	GW	RWM	
29	11-19-2003	ECN 25784		HB	
15	6-26-92	ECN 5239	GM	HB	

FOR NOTES, LEGEND AND REFERENCE DRAWINGS SEE DRAWING 901-D-021.

NOTES:

LEGEND
RCRA Permitted Tank System/ Equipment
RCRA Closed Tank System/ Equipment

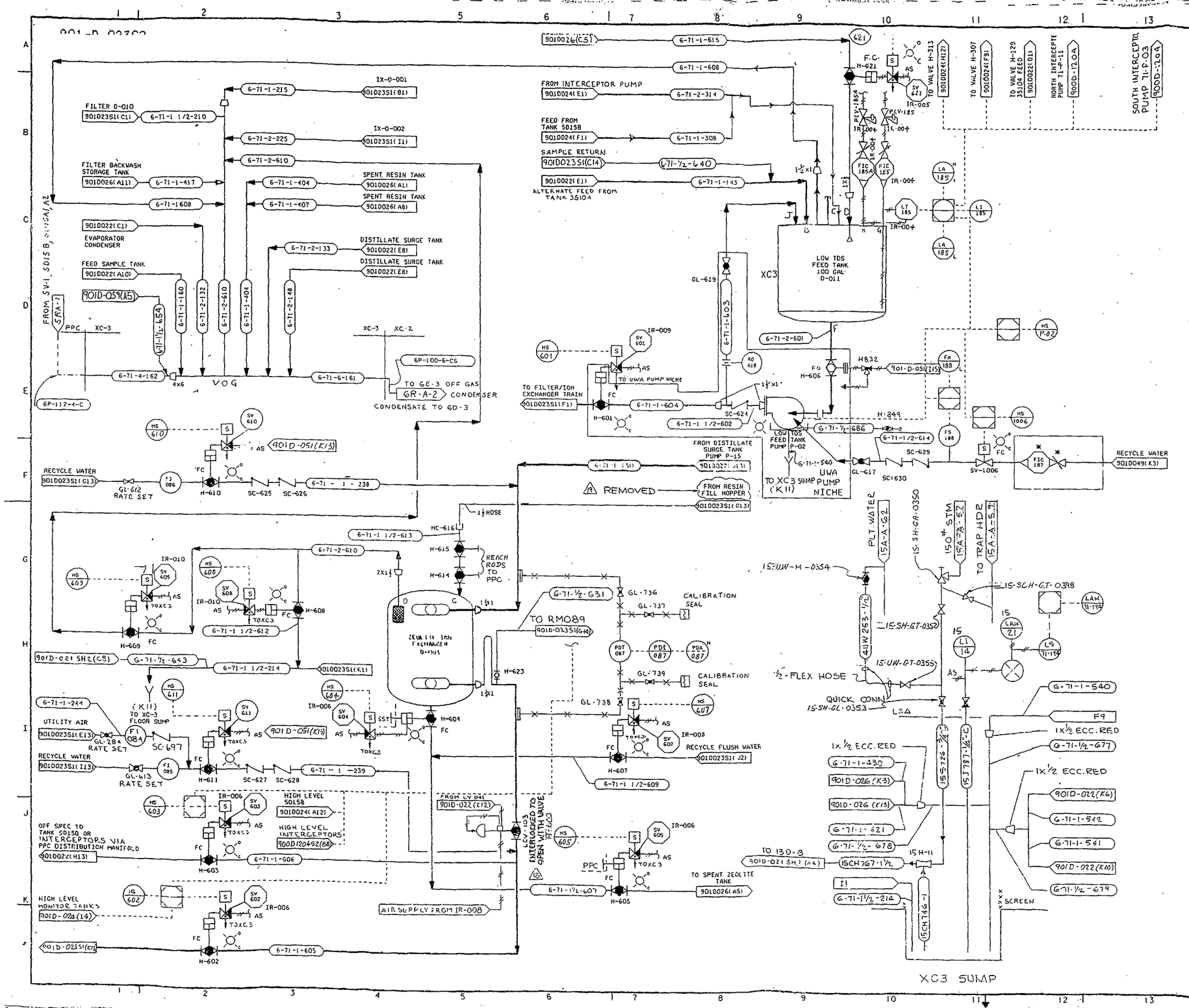
FOR DRAWING INDEX SEE DRAWING NO.

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT ____ DATE ____

APPRD	WVNS CO.	
PROJECT MGR	L. B. SHAW	1-7-85
ENGINEER SUPV	R. MEYERS	1-7-85
LEAD DISC ENGR	F. J. TULIPANO	1-7-85
DESIGN	R. J. LEPKO	1-7-85
CHECKED	T. J. PIAZZA	5-7-85
DRAWN	D. HARDY	DATE 5-7-85
QE-ACQT-81KE44139 PROJECT NO.		
19-GWV-02275 SUBCONTRACT NO.		
ISSUED FOR CONSTRUCTION		

EBASCO SERVICES INCORPORATED
A/E O.F.S. NO. 2388 TASK ORDER 013
FOR
WEST VALLEY NUCLEAR SERVICES COMPANY, INC
WEST VALLEY, NEW YORK
WEST VALLEY DEMONSTRATION PROJECT
P & ID
LIQUID WASTE TREATMENT SYSTEM

SIZE	INDEX CODE NUMBER	DRAWING NO.	REV.
	AREA / SYS / TYP / SEQ / ORIG	901-D-022	29
SCALE NONE	SPEC. CODES	A/E SHEET NO. 901-D-022 C	



B	01-06-86		DH	RAM	

GENERAL REVISION

0	1-24-86	ER#597			
1	2-6-86	REV. PER D/FC #504	K.Q.		
2	2/17/86	D/FC 507	K.Q.		
3	3-28-86	REV'D. PER ECN #573	LRP		
4	5-23-86	REVISED PER ECN 692	LRP		
5	12-17-86	REV'D. PER ECN 1302	KMQ		DJR
6	4-7-87	REV. PER ECN 1556	SJS		DJR
7	9-23-87	REV. PER ECN 1931	WZ		DJR
8	3-9-88	REV'D PER ECN 2268 & 2268A	CTC		DJR
9	7/7/88	REVISED PER ECN 2493	EHB		DJR
10	1-14-94	REV/ECN 7426	PMS	KMQ	
11	5-9-97	ECN 10705	GW	DRS	
12	6-17-99	ECN 12097, 12091	GW		
13	10-27-99	ECN 12272	GW		
14	1-5-2000	ECN 12368	TFS	DRS	
15	3-22-2000	ECN 12397	GW		
16	5-2-2000	ECN 12469	GW		
17	12-11-2000	ECN 12723	GW		
18	5-25-2001	ECN 13030	DDD		
19	5-12-2003	ECN 25438	BP		

NOTES

FOR NOTES, LEGEND AND REFERENCE DRAWINGS SEE DRAWING 901-D-021.

LEGEND

RCRA Permitted Tank System/Equipment

RCRA Closed Tank System/Equipment

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE

INIT _____ DATE _____

FOR DRAWING INDEX SEE DRAWING NO. _____

APPRVD WVNS CO.	1/23/86
PROJECT MGR L. E. SHAW	10-9-85
ENGINEER SUPV F. KOWALCZYK	10-9-85
LEAD DISC ENGR J. MEYERS	10-9-85
DESIGN R. LEWKO	10-9-85
CHECKED F. ROMANO	10-9-85
DRAWN D. HARDY	DATE 10-9-85
DE-AC07-81ME44139 PROJECT NO.	
19-CWV-02275 SUBCONTRACT NO.	
ISSUED FOR CONSTRUCTION	

EBASCO SERVICES INCORPORATED

A/E O.F.S. NO. 2388 TASK ORDER 011

FOR

WEST VALLEY NUCLEAR SERVICES COMPANY, INC
WEST VALLEY, NEW YORK

WEST VALLEY DEMONSTRATION PROJECT

P & ID
LIQUID WASTE
TREATMENT SYSTEM

SIZE	INDEX CODE NUMBER				DRAWING NO.	REV.
	AREA	DR. TYP	CL	ORIG	901D-023 SHT. 2	19
D						

SCALE NONE | SPEC. CODES | A/E SHEET NO. 901-D-023S2 B

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE.
INIT_____ DATE_____

901-D-024 Rev

901-D-024

NO.	DATE	REVISION	DR	CH	APPROVED
			DH	PAR	RJL / RN FSK / LES
B	10-02-85	GENERAL REVISION			
C	01-06-86	GENERAL REVISION PER EBAR-470	DH	ROM	RJL / RN FSK / LES
0	1-24-86	ER # 597			
20	1-20-2000	ECN 12328	RGW		
21	3-3-2000	ECN 12388	GW		
22	3-22-2000	ECN 12397	GW		
23	4-6-2000	ECN 12414	GW		
24	4-26-2000	ECN 12408	GW		
25	7-13-2000	ECN 12636	GW		
1	3-3-88	REV'D PER ECN 2226's	CTC		DJR
8	7/7/88	REVISED PER ECN 2493	EHB		DJR
9	7/15/88	REVISED PER ECN 2513	CCG		CCG
10	7/26/88	REVISED PER ECN 2523A	EHB		DJR
11	9/2/88	REVISED PER ECN 2523 B	LRK		DJR
12	3/9/89	REVISED PER ECN 2837	EHB		DJR
13	9-19-89	REVISED PER ECN 3125	LW	KMQ	DJR
14	5-23-90	REV'D PER ECN 3653	JAW	FJK	MB
15	1-25-91	REVISED PER ECN 4141	GW	HAB	MB
16	12-13-94	REV/ECN 7426	BMS	KMQ	
17	10-27-99	ECN 12272	GW	HBS	
18	11-17-99	ECN 12268	GW	DES	
19	1-5-2000	ECN 12368	TFS	DES	

PROCESS LINE	PT	PR	PUMP	FLUSH VALVE	BRANCH LINE
1-313	107	107	04	765	708
1-302	113A	113A	05	766	709
1-303	1138	1138	06	767	710

LEGEND:
R12A Permitted Tank System/Equipment
RCRA Closed Tank System/Equipment

FOR DRAWING INDEX SEE DRAWING NO.

APPRVD WVNS CO.		EBASCO SERVICES INCORPORATED
PROJECT MGR L. E. SMAT	1-7-91	A/E O.F.S. NO. 2388 TASK ORDER 011
ENGINEER SUPV C. MEYERS	1-7-91	FOR WEST VALLEY NUCLEAR SERVICES COMPANY, INC WEST VALLEY, NEW YORK
LEAD DISC ENGR T. J. TULIPANO	1-7-91	WEST VALLEY DEMONSTRATION PROJECT
DESIGN J. J. LETKO	1-7-91	P & ID LIQUID WASTE TREATMENT SYSTEM
CHECKED T. J. PIAZZA	5-7-65	
DRAWN D. HARDY	DATE 5-7-65	
DE-AC07-81NE44139 PROJECT NO.		SIZE D; INDEX CODE NUMBER AREA OR. TYP CL ORIG; DRAWING NO. 901D-024; REV. 25
19-CVV-02275 SUBCONTRACT NO.		
ISSUED FOR CONSTRUCTION	SCALE NONE	SPEC. CODES; A/E SHEET NO. 901-D-024 C

APPENDIX D-24

P&I DIAGRAMS FOR THE CSS
(2 DRAWINGS)

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE.
INIT_____ DATE_____

900D-397

ZONE	REV.	DESCRIPTION	DATE	APPROVED
	4	REVISED & REDRAWN PER ECN 1336	1/3/87 CH	DWH
53-5	5	REVISED PER ECN 1638	EHG 5/15/87	RWP
A3	6	REV'D PER ECN 1731	6-25-87	RWP
B8			ETC	
C3	7	REV'D. PER ECN 1935	WCK 9-17-87	RWP
	8	REV'D PER ECN 2218	WCK 2-23-88	RWP 2/25/88

CONTINUED A8

LEGEND:
RCRA Permitted Tank System/ Equipment
RCRA Closed Tank System/ Equipment

FEED FROM 3510A TO PROCESS BLDG (9010-021 SH.2 (D8))
FILTER BACKWASH SPENT RESIN AND ZEOLITE (9010-021 SH.2 (C4))
CONCENTRATES 5D-15A (9010-021 SH.2 (C6))
LWTS PIPE CHASE DRAIN AIR PURGE (9010-021 SH.2 (C8))

7-CP-051 | 71-CP-051 | HS 024 | 71-IR-013 | SV 024 | AS | 71-H-024 | F.C. | 71-H-027 | HS 027 | SV 027
FROM PUMP P-3510A | 9010-021 SH.1 (B1) | 9010-021 SH.1 (B1)
VITRIFICATION PENETRATION 5019 | 9086-017
OFF GAS PIPE TRENCH | 9000-1905 SH.2 | SPARE LINE | 2" | WDC
FROM 7D13 | 9010-021 (B8,3) SH.2 | SPARE | (01-CELL) OIP201 PENETRATION
7D13 TO PROCESS BLDG TANK 5D15B | 9010-021 SH.2(D8) | TO VESSEL OFF-GAS

6-71-1-004 | 6-71-1½-024 | 6-71-1-005 | 6-71-1½-644 | 6-71-1-018 | 6-71-2-025 | 6-71-1½-029 | 6-64-1½ | 6-71-1½-053 | 6-71-1-030 | 6-71-1½-077 | 6-71-2-095 | 6-71-1½-024

AIR | U | P | ZLL 004 | ZLH 004 | FT 2002 | ZTL 004 | ZTH 004 | FS 2002 | FV 004 | 1"X2" | F.C. | 2"X1" | SYSTEM 71 | SYSTEM 70
ZLL 007 | ZLH 007 | FT 2004 | ZTL 007 | ZTH 007 | FS 2004 | FV 007
ZLL 006 | ZLH 006 | FT 2003 | ZTL 006 | ZTH 006 | FS 2003 | FV 006 | FIQ 2080 | FT 2080 | FE 2080 | 2"X1½"
TO 070/071-001 DWG. 900J-1363 | 071/070-001 | 071/070-002 | 071/070-003 | HV 135 | 70-PL-130

71-CP-051 | HS 030 | 71-IR-013 | SV 030 | AS | 71-H-030 | F.C.
3 BLD. FLG. CONN. | 070-VE-053 | FROM LT 2001 & DT-2001 (SEE SHEET 5) | 070-UW-C068 | UW | 070-UW-128
2" BLIND FLG'D. CONN. | CAPPED | 1" | 2" | 3 | 070-D-001 | 070-PL-C02 | WASTE RECIRCULATION
1" BLIND FLG'D. CONN. | 2" BLIND FLG'D. CONN. | ½" BLIND FLG'D. | 1" PLUGGED | ¾" PLUGGED | TO 070/071-001 DWG. 900J-1363 | 070-WW-128
070-UW-005 | 2"X1½" | 1½"X1" | ¾ | TI 2006 | TE 2006 | 070-K-005 | 1½" | 2" | ½" | 10" | 070-G-101
070-PL-013 | 2" BLIND FLG'D. CONN. | 6" | N.O. | HV 008 | 070-WW-073 | TO WASTE DISPENSING VESSEL PUMP | HANDWHEEL, SEE DETAIL-A DWG. #900-D-402, SHT. 1

070-UW-067 | 070-WW-096 | 1½" | 070-G-102 | P.I. 2039 | P.T. 2039 | 070-UW-065 | HV 090 | N.O. | ½" | FI 2038 | FS 2038 | 1½"X1" | 070-PL-008 | 070-G-106 | FV 046
ZLL 046 | ZLH 046 | ZTL 046 | ZTH 046
TO 070/071-001 DWG. 900J-1363 | 070-PL-014 | TO PUMP SOLENOID VALVE Y-151 SHEET #5 OF 5
LAH 2091 | LT 2091 | LIC 2091 | HS 2091 | LE 2091 | 070-WW-078 | HV 059 | N.C. | ½" | 070-WW-010 | FILL TUBING TO TEST SUMP LEVEL SEE 900D-397, SHT 4, D-8
SUMP #2

FILL TUBING TO TEST SUMP LEVEL 900D-397, SHT 4, D-8
TO PUMP SOLENOID VALVE Y-150 SHT. #5 OF 5
HS 2090 | LIC 2090 | LT 2090 | LAH 2090 | LE 2090 | 070-WW-073
TO WASTE DISPENSING VESSEL PUMP
SUMP NO. 1

WASTE DISPENSING CELL
PROCESS ROOM

070-G-102
SUMP PUMP #2
SAME TYPE OF PUMP AS SUMP PUMP #1

070-G-106
DEWATERING PUMP
GOULD MODEL 3196 ST
1½ x 1-8, 20 G.P.M., 50' T.D.H., 1½ HP - 1750 R.P.M., 3 PH., 60 HZ., 460 VOLT

070-D-001
WASTE DISPENSING VESSEL
M.O.C.-T-304 STAINLESS STEEL
48" DIA. x 7'-5" STRAIGHT HEIGHT DISHED HEAD TOP AND CONE BOTTOM WITH JACKET. REFER TO DWG. # 900-D-520

070-K-005
WOV AIR SPARGE
½" SCH 80 TP 316 SS
PEP DWG. 900-C-1864

070-G-101
SUMP PUMP #1
WARREN-RUPP MODEL NO. SB 1½-A TYPE 4 DIAPHRAGM TYPE, 1½" SUCTION & DISCHARGE

NOTES:
1. FOR SYMBOLS AND LEGENDS SEE DWG. 900-D-1306, 1307, 1308
2. ALL INSTRUMENTS, VALVES, ETC. DESIGNATIONS ARE PRECEEDED BY 070 (SYSTEM) NOT SHOWN FOR CLARITY

ZONE	REV	DESCRIPTION	DATE	APPROVED
	18	REVISED PER ECN 6310 GN	5-1-88	RWP
	17	REVISED PER ECN 4150 DHS	10/25/91	DLB
	16	PER: ECN 4294 JHL	6-5-91	DLB
	15	REVISED PER ECN 4182 JHS	1-25-91	DLB
A4	14	REVISED PER ECN 3170	12-10-89	LR
	13	REVISED PER ECN 2186, 2196	2-17-89	LRK
	12	REVISED PER ECN 2101	11-11-88	CW
A4	11	REVISED PER ECN 2435	9/22/88	CW
	10	REVISED PER ECN 2345	4-27-88	RWP
B8 C8	9	REVISED PER ECN 2268	3-3-88	ETC

QTY. REQD	ITEM NO.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	MATERIAL OR SPEC

PARTS LIST

UNLESS OTHERWISE SPECIFIED	DRAFTER C. BABERMEHL	DATE 1-9-87	A/E CONTRACT NO.
	CHECKER P. PETRONE	DATE 3/5/86	CODE IDENT. NO.
TOLERANCES-DO NOT SCALE	ENGR P. PETRONE	DATE 3/5/86	FOR West Valley Nuclear Services Co., Inc. West Valley, New York
2 PL DEC ± / 3 PL DEC ± / ANGLES ± / 4A	FACILITIES M.F. SALISBURY	DATE 5/1/85	
FRACTIONS ±	COG. MGR. APPVL J.C. CWYNAR	DATE 4/24/85	CSS SYSTEM 070 PROCESS & INSTRUMENTATION DIAGRAM
D. SPEC. NO.	E&OS APPVL R. KEEL	DATE 4/22/85	
NEXT ASSEMBLY	Q.A. APPVL A.E. BAKER	DATE 5/1/85	DWG SIZE D / SCALE NO.: / WEIGHT NONE / DWG NO. 900D-397 / REV 18

CLEAN DRUM ROOM

CSS AIR DRYER ROOM

15-V-028

BLANKED

7.5 HP 2,000 CFM

70-BU-864

8" VENT PIPE

AUX AIR FLOW

70-VE-4-845

AIRFLOW

PP-2 CB-21 120 VAC

MCC-1 8C 900-D-392 SHI

SAMPLE PUMP

70-VFD-802

70-DS-801

PDI 001

PDI 002

PDIS 8180

LWTS/CSS CONTROL ROOM

IL 826

LSH 826

E WVNS PANEL

G 47-8-022 01-14 VENTILATION CONTROL PANEL

F LWTS CONTROL PANEL

B REMOTE START/STOP FOR 71-P-5 & 6 PUMPS

CSS CELL

DRIP PAN

70-FCV-852

70-FCV-850

70-FCV-851

70-GV-802

PI 834

LAH 804

LIS 804

IL 804

LT 804

AIR FLOW

1" HIGH OVER-FLOW

70-H-846

70-H-847

70-H-848

70-H-849

LINE FLUSH VALVES

CONTAMINATION AREA

PT 803

PIS 803

PAH 803

IL 803

FT 901

FI 801

LT 805

LS 805

IL 805

70-H-879 DRIP PAN DRAIN VALVE

6" VENT PIPE

SUMP #3 2.3 GAL/INCH

SUMP #1

LT 2090

LT 2092

CONTAMINATION AREA

AIRFLOW

70-H-844

PDI 875

70-GV-876

70-GV-875

70-XX-878 I-129 ADSORBER

70-H-886

70-H-885

DOWN STREAM SAMPLE TAP 70-H-888

UPSTREAM SAMPLE TAP 70-H-887

AIR LOCK

LOADOUT AREA

70-T-873

DOUBLE DOOR UNDER FILTERS

70-T-874

AIR FLOW

70-UA-1-110

70-UW-1-120

70-HV-188

70-HV-185

70-H-862

70-H-861

70-H-841

70-H-838

70-UW-3/4-837

70-UA-3/4-836

FI 802

FT 802

3/4"

RRV 889

PI 840

SHIELD DOOR "A"

01 CELL

AIR LOCK

CONTAMINATION AREA

VENDOR NAHS ADD PUMP

UA

CONTAMINATION AREA

VENDOR FILL HEAD VENT SKID

VE

FT 883

FI 883

TENT AREA

TENT ROLL-UP FLAP

2 CONNECTS TO ONE FILL HEAD AT A TIME

WS-01

SA-01

SV-01

70-T-872

AIR FLOW

70-H-860

70-H-843

70-BP-842

70-H-859

70-H-840

70-BP-839

SHIELD DOOR SUPPORT FRAME

LINER EAST FILL HEAD

LINER WEST FILL HEAD

LINER CART 70-XX-867

NOTE: CART POSITIONS MAY BE REVERSED DURING OPERATIONS

LINER CART 70-XX-868

CSS TRUCK BAY

CAPT STAGING

BUFFER AREA

CSS MCC-1-7A 900-D-392 SHI

70-DS-700

VENDOR DRY MATERIAL TRANSFER SYSTEM

DRY MATERIAL FROM OUTDOOR BAG BREAK

70-T-877 AIR INTAKE TO TENT

CABLE REEL

70-DS-869

70-VFD-870

VENDOR CONTROL PANEL

VENDOR HYDRAULIC SKID

PDI 800

CHANGE ROOM PANEL CB-13 900-C-5888

A WVNS PVU CONTROL PANEL 70-CP-804

UPS B WVNS PUMP & VALVE CONTROL PANEL 70-CP-805 912-D-0564

OUTDOOR BUFFER AREA CLEAN SIDE

PAD

PORTAL MONITOR

CLEAN SIDE

90% ARGON 10% METHANE GAS BOTTLES

NOX-MCC-1-2B DWG 906-D-201 SHI

DS 70-DS-865

BERM AREA

C 70-VFD-857

D 70-VFD-856

SODIUM SILICATE STORAGE TANK (UNUSED)

70-UA-GL-502 (SERVICE AIR)

PIPE CHASE

XC3

PPC

6-71-1 1/2-024

TO VOG SYSTEM

SPENT RESIN

LT 2001

LI 2001

HSCSS PANEL MOUNT

WDV 70-D-001

70-VE-053

1" 1/2"

71-H-853

FROM VIT 6-71-2-025

71-H-027

71-FV-007

71-FV-006

71-HV-135

01-14 CELL

14 CELL (WDC)

REF DRAWING 900-D-397 SHI

HALF WALL

AIR FLOW

FROM 35104 6-71-1-018

71-FV-004

70-PL-1-130

LT 2091

SUMP #2

71-H-306

71-H-302

71-H-334

71-H-331

71-H-300

71-H-301

71-SC-717

71-P-5

71-H-806

71-H-81

71-H-807

71-H-808

71-H-305

71-H-303

71-SC-718

71-P-6

71-H-822

SP-400

SP-375

SP-362

SP-399

FLUSH WATER

RV

LT 111A

LR 111A

71-H-800

71-H-801

SP416 (SAMPLE)

SP545 (SAMPLE)

71-H-803

EVAPORATOR CONCENTRATES FROM P-16 901-D-024 (4 PLACES)

AIR SPARGE LINES

71-UA-GT-1117

71-UA-GT-940

71-H-336

71-H-335

71-UA-GT-941

71-UA-GT-1116

SP-330-36 TO VOG SYSTEM

CHEM ADD 901-D-059

71-UL-527

LT 111B

LR 111B

71-GL-339

71-GL-340

FS 115A

FIC 115A

S SV-1031

S SV-1032

ULO PUMP ROOM

REF DRAWING 901-D-024

UPC

01-14 VENTILATION PLENUM 906-D-018

01 CELL AIRLOCK

47-VE-BB-162

47-VE-BB-163

47-T-002

47-T-003

47-VE-BB-161

G

NOX BLOWER ROOMS 4TH FLOOR 906-D-018

LEGEND:

- OPEN VALVE
- CLOSED VALVE
- NEEDLE VALVE
- BUTTERFLY VALVE

LEGEND (CON'T):

- S - SOLENOID VALVE
- M - MOTORIZED VALVE
- T - TEST VALVE
- QUICK CONNECT (ELECTRICAL)
- QUICK CONNECT (PIPE)
- HOSE WITH QUICK CONNECTS
- 4" FLEX DUCT
- RV - RECYCLED WATER
- IA - INSTRUMENT AIR
- P - 4" PORT
- VE - VACUUM EDUCTOR

NOTES:

1 70-G-856/857 = ISOCHEM MODEL CMML-ASNFEYSS 5HP. 50 GPM @ 132 FT TDH

2 FILTERS 70-T-872, 873, 874 & 877 WVNS STOCK #0403.02

3 LAH-804 ACTIVATES ABOVE 20" PAH-803 ACTIVATES ABOVE 99 PSIG. BOTH ALARMS WILL STOP ALL PUMPS AND CLOSE MOTORIZED VALVES

4 LAH-805 WILL ACTIVATE A LAMP WITH THE DRIP TRAY LEVEL ABOVE 1/2"

5 LSH-826 WILL ACTIVATE A LAMP WHEN WVNS PANEL HIGH SUMPS ALARMS ACTIVATE

6 VALVE LINE-UP SHOWN FOR TRANSFER FROM SDI5AI TO VENDOR SKID USING P-5 PUMP

THE FOLLOWING ARE DEPICTED WITHOUT SYSTEM NUMBERS AND/OR LEADING ZEROS

47-PDI-0001	70-LT-0804	70-LT-2001
47-PDI-0002	70-LIS-0804	70-LI-2001
70-PDI-0800	70-LAH-0804	70-LT-2090
70-FT-0801	70-IL-0804	70-LT-2091
70-FI-0801	70-LT-0825	70-LT-2092
70-FT-0802	70-LS-0805	71-LT-111A
70-FI-0802	70-IL-0805	71-LP-111A
70-PT-0803	70-LSH-0826	71-LT-111B
70-PIS-0803	70-IL-0826	71-LP-111B
70-PAH-0803	70-PI-0831	70-PRV-889
70-IL-0803	70-PDI-0875	70-PI-890
		47-PDI-8180

LEGEND)

RCRA PERMITTED TANK SYSTEM/EQUIPMENT

RCRA CLOSED TANK SYSTEM/EQUIPMENT

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE

INIT _____ DATE _____

REVISIONS			
REV	DESCRIPTION	BY	APVD
10	CR 25937 8/13/04	CJG	
9	CER/ER 26121 09/15/2004	HAB	
8	ECN 26134 09/24/2004	HAB	

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS IN INCHES

DRAFTED L. OFTEDAHL DATE 05-28-04

CHECKED DATE

ENGINEER J. CRUMLISH DATE 8/13/2004

FILE NAME 2 4 8 3 9

PLOT SCALE 1:1.00

D SPEC # 25937

WVNSCO

West Valley Nuclear Services Company

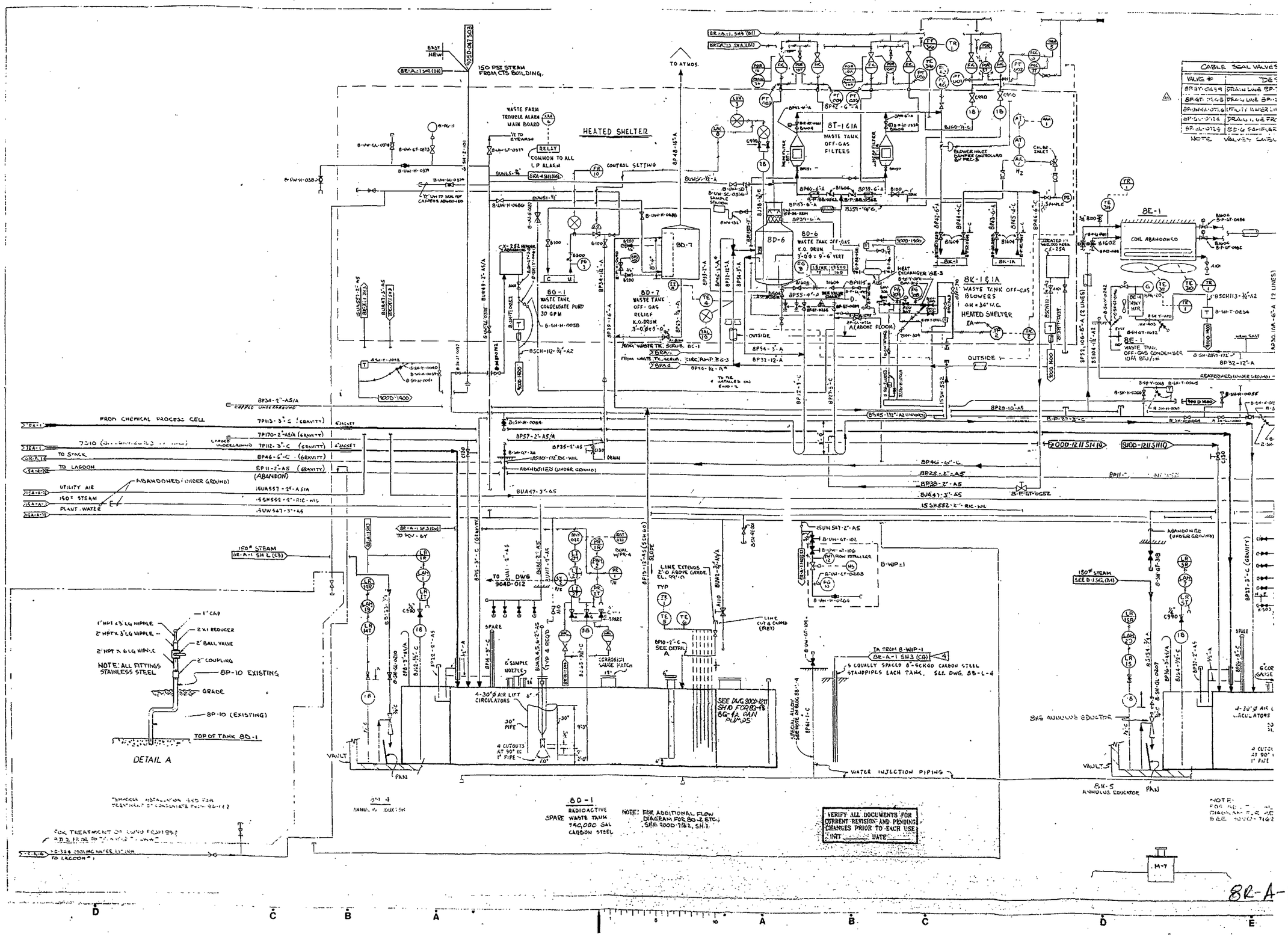
SODIUM BEARING WASTE SOLIDIFICATION SYSTEM P&ID

DATABASE LINKED DRAWING | DWG | SCALE NONE | DWG # | REV

DRAWING DO NOT SCALE THIS ORIGINAL

APPENDIX D-25

P&I DIAGRAMS FOR TANKS 3D-2, 7D-12, 7D-14, AND 13D-8
(10 DRAWINGS)



HEATED SHELTER
150 PSI STEAM FROM CTS BUILDING
TO ATMOS.
8T-1 & 1A WASTE TANK OFF-GAS FILTERS
8D-6 WASTE TANK OFF-GAS K.O. DRUM
8D-7 WASTE TANK OFF-GAS RELIEF K.O. DRUM
8G-1 WASTE TANK CONDENSATE PUMP 30 GPM
8K-1 & 1A WASTE TANK OFF-GAS BLOWERS
HEATED SHELTER
8E-1 WASTE TANK OFF-GAS CONDENSER 10M BTU/HR
COIL ABANDONED
FROM CHEMICAL PROCESS CELL
TO STACK
TO LAGOON
UTILITY AIR
150# STEAM
PLANT WATER
ABANDONED (UNDER GROUND)
150# STEAM
TO DWG 904D-012
LINE EXTENDS 2'-0 ABOVE GRADE EL. 99'-0
TYP
SPARE
6" SAMPLE NOZZLE
CORROSION GAUGE HATCH
4-30"Ø AIR LIFT CIRCULATORS
30" PIPE
4 CUTOUTS AT 90° IN 1" PIPE
SEE DWG 900D-1211 SH10 FOR 8G-1 & 8G-4 PAN PUMPS
5 EQUALLY SPACED 8"-SCH40 CARBON STEEL STANDPIPES EACH TANK. SEE DWG. 8B-L-4
WATER INJECTION PIPING
8H-5 ANNULUS EDUCATOR
8H-4 ANNULUS EDUCATOR
8D-1 RADIOACTIVE WASTE TANK 750,000 GAL CARBON STEEL
SPARE
NOTE: FOR ADDITIONAL FLOW DIAGRAM FOR 8D-2 ETC., SEE 900D-7162, SH.1
VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT DATE
DETAIL A
NOTE: ALL FITTINGS STAINLESS STEEL
8P-10 EXISTING
GRADE
8P-10 (EXISTING)
TOP OF TANK 8D-1
1" CAP
2"x1 REDUCER
2" BALL VALVE
2" COUPLING
VAULT
PAN
M-7
8R-A-1

CABLE SEAL VALVES IN WTF SHELTER JUNE 2003		
VALVE #	DESCRIPTION	POSITION
BP-GT-0439	DRAIN LINE BP-27-3"-C TO BD-2 FROM BD-6 MANIFOLD	CLOSED
BR-A-1-0265	DRAIN LINE BP-12-3"-C TO BD-1 FROM BD-6 MANIFOLD	CLOSED
BR-UW-GL-0124	UTILITY WATER LINE TO BP-27-3"-C	CLOSED
BP-GL-0124	DRAIN LINE FROM FILTER HOUSING TO BP-27-3"-C	CLOSED
BP-GL-0125	BD-6 SAMPLER ISOLATION VALVE TO BP-27-3"-C	CLOSED

NOTE: VALVES CABLE SEALED, CLOSED UNLESS NOTED

LEGEND:
CHAIN OPERATED VALVE

NOTES CONT:
6. AIR LIFT LINES FILLED WITH FOAM AND CAPPED

RCRA Permitted Tank System/Equipment
RCRA Closed Tank System/Equipment

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT _____ DATE _____

27	1-12-98	REV PER E.C.N 4886	GW	HAB	
49	6-03	ECN 25599		HB	
48	4-9-08	ECN 13296	GW	HB	
47	12-11-08	ECN 13235	GW	HB	
46	11-6-08	ECN 13236	GW	GW	
45	9-24-08	ECN 13225	GW	GW	
44	11-6-08	ECN 13215	GW	HAB	

REVISION 9 NOTE:
"AS BUILT"
1. ADDED BH-4 & BH-5
2. ADDED L1-18, L1-15, LAH-19, C LAH-20

43	5-4-06	ECN 13156	LSG	HB	
42	4-4-06	ECN 13112	TSK	HB	
41	11-15-05	ECN 12986	LRN	GW	
40	1-27-05	ECN 11810	SG	RN	
39	11-23-04	ECN 11743	HB	HB	
38	12-23-03	ECN 10144	RNK	HB	
37	12-4-03	ECN 10041, 10360, 10378	GW	MS	
36	8-4-03	GEN REV ECN 10229	GW	MS	
35	6-12-03	ECN 10011	GW	LTS	
34	11-3-02	REV/ECN 7827	PB	DCS	
33	10-16-02	REV PER E.C.N 7817	TM	KG	

FOR TEMP. CONDENSATE SYSTEM REFER TO NFS DWG. 00-26814

NOTE

1. FOR P & I.D. LEGEND & GENERAL NOTES SEE DWG. 15C-A-84
2. PANEL MOUNTED INSTRUMENTS ARE ON LOCAL PANEL EXCEPT AS NOTED.
3. ALL INSTRUMENTS ON THIS DRAWING CARRY PREFIX 'B' EXCEPT AS NOTED.
4. ONE STANDPIPE TO BE FITTED WITH DIRECT READING TOP MOUNTED LEVEL GAGE POSITIONED TO PROVIDE EASY READING FROM PLANT WATER VALVE STATION.
5. PUMP BD-2 TO BE MOUNTED ON PUMP BASE PER DWG. BE-L-15 AND THEN FLANGED TO NOZZLE 'D' PER DWG BA-L-3

6	12-6-84	"AS BUILT" SEE REV NOTE	CBD		
5	3-28-84	REVISED PER DWG. BE-A-5 REV. D	GH		
4	11-2-84	REVISED CONDENSATE GRAVITY FLOW REQUIREMENT SYSTEM AT 100% BE, REVISED CLOSED VALVE ON LINE BP12-3"-C TO BD-1 FROM BD-6 MANIFOLD, ADDED VALVE NO. BP-GT-0439 ON LINE BP27-3"-C TO BD-2 FROM BD-6 MANIFOLD, ADDED NOTE 6	GW		
3	11-1-84	ADDED 3/4" DRAIN LINE FROM FILTER HOUSING TO BP27-3"-C, ADDED VALVE NO. BP-GL-0124 ON LINE BP27-3"-C TO BD-2 FROM BD-6 MANIFOLD, ADDED VALVE NO. BP-GL-0125 ON LINE BP27-3"-C TO BD-2 FROM BD-6 SAMPLER	GW		
2	10-4-84	ADDED TO INCLUDE CONTROL	GW		
1	8-16-84	ISSUED FOR CONSTRUCTION	JM		
0	7-18-84	ISSUED FOR APPROVAL	GW		
	7-6-84	ISSUED FOR APP. I	HF		
	6-29-84	ISSUED FOR DESIGN SCOPE	GW		
	5-14-84	ISSUED FOR DESIGN SCOPE	GW		

APPROVED			
NONE			

BECHTEL CORPORATION
NEW YORK SAN FRANCISCO

ENGINEERS & CONTRACTORS
NUCLEAR FUEL SERVICES

FLOW, PIPING & INSTRUMENT DIAGRAM
WASTE TANK FARM
SPENT FUEL PROCESSING PLANT

44	15		49

FIG. IV-4-3

BD-1
RADIOACTIVE WASTE TANK 750,000 GAL CARBON STEEL
NOTE: FOR ADDITIONAL FLOW DIAGRAM FOR BD-2 ETC. SEE 9000-7182, SH. 1

BD-2
WASTE TANK 750 000 GAL CARBON STEEL

BE-2
WASTE TANK HEAT EXCHANGER 4.8 M BTU/HR

BG-5
SUMP DISPOSAL PUMP

7Y-1
HEAD POT
XC1
6'Ø x 24'

7Y-3
DECANTER
XC1
14'Ø x 43'

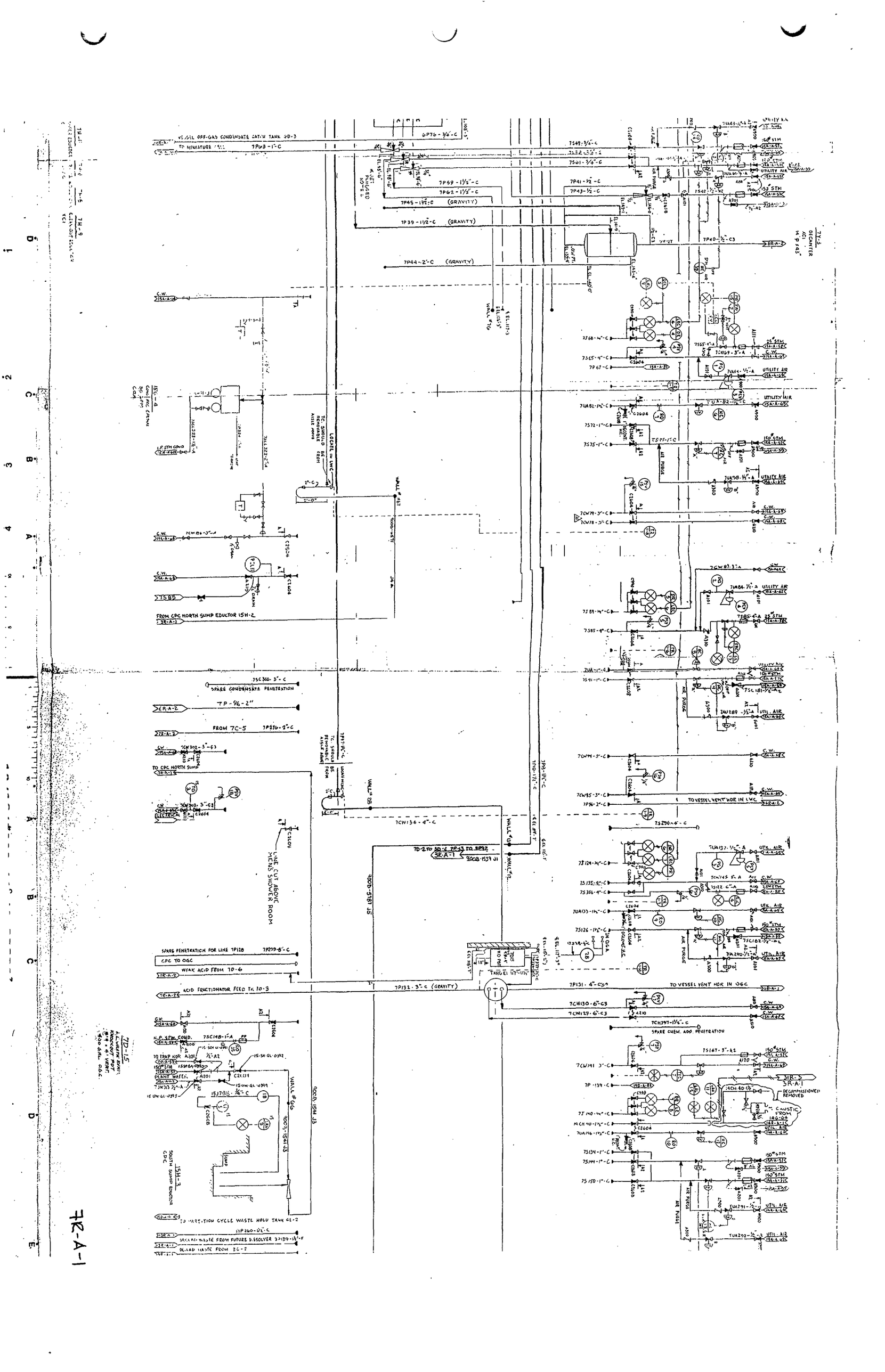
7D-2
H.L. WASTE EVAPORATOR
FEED TANK
8'-0" Ø x 22'-0" HIGH
LWC
8500 GAL

7D-1
H.L. WASTE EVAPORATOR
FEED TANK
6'-0" Ø x 8'-0" VERT
XC1
1750 GAL

7D-8
REWORK EVAPORATION
FEED TANK
7'-0" Ø x 10'-0" VERT.
LWC
3000 GAL

7H-3 TRANSFER EDUCTOR LWC
7H-2 RATE EDUCTORS LWC
7H-1 RATE EDUCTORS LWC
7H-4 RATE EDUCTOR XC1
7H-11 TRANSFER EDUCTOR LWC
7H-6 RATE EDUCTORS LWC
7H-5 RATE EDUCTORS LWC
7H-9 CLEAN-OUT EDUCTOR XC1

7R-A-1


TO MINIATURE
7P03 - 1"-C
7P59 - 1½"-C
7P62 - 1½"-C
7P45 - 1½"-C (GRAVITY)
7P39 - 1½"-C (GRAVITY)
7P44 - 2"-C (GRAVITY)
7P40 - ½"-C3
7P41 - ½"-C
7P43 - ½"-C
7549 - ¾"-C
7501 - ¾"-C
7568 - ¾"-C
7565 - ¾"-C
7P67 - ¾"-C
7572 - 1"-C
7575 - 1"-C
7P77 - 1"-C
7W79 - 3"-C
7W78 - 3"-C
7589 - ¾"-C
7591 - 1"-C
7W79 - 3"-C
7W85 - 3"-C
7P86 - 2"-C
TO VESSEL VENT HDR IN LWC
7W136 - 4"-C
7W303 - 3"-C3
7W302 - 3"-C3
7P96 - 2"
FROM 7C-5 7P876-2"-C
SPARE CONDENSATE PENETRATION
7C302 - 3" - C
FROM CPC NORTH SUMP EDUCTOR 1SH-2
TO CPC NORTH SUMP
LINE CUT ABOVE MENS SHOWER ROOM
SPARE PENETRATION FOR LINE 7P128
7P209-8"-C
CPC TO OGC
WEAK ACID FROM TD-6
ACID FRACTIONATOR FEED TK TD-3
7P132 - 3"-C (GRAVITY)
7P131 - 4"-C39
7CW130 - 6"-C3
7CW129 - 6"-C3
7CH297 - 1½"-C
SPARE CHEM. ADD. PENETRATION
TO VESSEL VENT HDR IN OGC
7S167 - 3"-A2
7CW191 3"-C
7P-139-C
7S 140 - 4"-C
7CH 140 - 1½"-C
7UA196 - 1½"-C
7S134 - 1"-C
7S199 - 1"-C
7S 150 - 1"-C
7UA292 - ½"-3
7UA791 - ½"-C
7UA289 - ½"-A
7UA87 - ½"-A
7UA84 - ½"-A
7UA82 - ½"-C
7UA98 - ½"-A
7UA133 - ½"-A
7UA103 - ½"-C
7UA290 - ½"-A
7S126 - ½"-C
7S 124 - ½"-C
7S 132 - ½"-C
7S 396 - ½"-C
7S 122 - ¾"-A
7S 181 - ½"-A
7S 182 - ½"-A
7S 183 - ½"-A
7S 184 - ½"-A
7S 185 - ½"-A
7S 186 - ½"-A
7S 187 - ½"-A
7S 188 - ½"-A
7S 189 - ½"-A
7S 190 - ½"-A
7S

NOTES CONTINUED

6. ALL VALVES THAT DRAIN TO CPC MAY ALL JETS THAT JET TO CPC ARE LOCKED AND TAGGED.

7) REFERENCE DRAWING 9010-021

LEGEND

RCRA Permitted Tank System/Equipment

RCRA Closed Tank System/Equipment

REV 10 NOTE

1. REVISED 7C-1, 7C-2, & 7C-4 TO STEAM FLOW CONTROL, ADDED PRESSURE RECORDERS, STEAMTRAPS, 7C-2 COND COOLER, COND PUMP.
2. REVISED 70-13 PIPING, ADDED B TYPE SAMPLER.
3. REMOVED DEMISTER ON 7C-2.
4. ADDED TCC TO 7D10 TRANSFER

REV. 8 NOTE:

"AS Built"

1. ADDED LINES 7UA-316 & 7UA-317
2. REVISED (38) LINE SIZE IN VESSEL 7C-4, 7C-1, 7C-2, 7D-10, & 7D-4
3. ADDED LINE SPEC. TO BLANK JUMPER CONN 7D-10 & 7D-4
4. REVISED FRC-1

REV. 9 NOTE

1. ADDED LL KNOCKOUT POT 7D-15, IN U.G.C.
2. ADDED PRESSURE CONTROL VALVE FOR 7E-4 (7C-1)
3. ADDED PRESSURE CONTROL VALVE FOR 7E-6 (7C-2)

NOTES

1. FOR P. & I. D LEGEND & GENERAL NOTES SEE DWG 15C-A-84
2. ALL INSTRUMENTS ON THIS DRAWING CARRY PLANT PREFIX "7", EXCEPT AS NOTED
3. ELEVATIONS SHOWN FOR INTERNAL JETS ARE APPROXIMATE. FINAL ELEVATIONS WILL BE GOVERNED BY VESSEL INTERNALS.
4. ALL ELEVATIONS SHOWN FOR LINES ARE HIGH POINT OF LINE EXCEPT AS NOTED
5. LINES 15WWB5 AND 7P111 SHALL HAVE 8" SEALS JUST BEFORE ENTERING 7D-13

● JUMPER CONNECTOR

MALE CONNECTOR W/DUST CAP

SPECIAL FLANGED CONNECTOR FOR LINES OVER 4"

NO	DATE	REVISION	BY	CHK	ENGR	PROJ ENGR
26	10/30/68	ECN 12930	LRO	AW		
25	10/22/68	ECN 12929	GM	DM		
24	9/18/68	EC-J12,829	KAJ	AW		
23	8/28/68	ECN 12090	TPS	LRO		
22	6/24/68	ECN 12291	GM	MB		
21	10/25/67	ECN 10705	GM	RC		
20	10/25/67	REVISED PER ECN 9333	WS	KCJ		FRC
19	9/26/67	REV PER ECN 4266	WS	RC		FRC
18	9/26/67	REVISED PER ECN 2899	WS			CVT
17	9/26/67	REVISED PER ECN 1572	LRP	DJR		DJR
16	9/26/67	REVISED PER DFC 402	LRP	9/26/67		CVT
15	9/26/67	GEN. REVISION AS PER CUSTOMER COMM.	WS			

NO	DATE	REVISIONS	BY	CHK	ENGR	PROJ ENGR
14	3/4/66	REVISED	TPM			
13	11/24	GEN. REV. FOR O.A.E.	LRP	11/24	MP	
12	7/14/65	REVISED FOR O.A.E.	RM	7/14	MP	
11	5/24/65	CHANGED MISDIMENS. ON 7D-2	MP			
10	8/1/65	"AS BUILT" SEE REV NOTE	WW			
9	9/1/65	"AS BUILT" SEE REV NOTE	WS			
8	5/6/65	"AS BUILT" SEE REV. NOTE	WS			
7	4/1/65	REVISED PER DWG. 7E-A-13 REV 3	S.W			
6	1/6/65	REVISED PER DWG. 7E-A-13 REV 2	WW			
5	10/1/64	REVISED PER DWG. 7E-A-13	AL			
4	7/31/64	REVISED PER DWG. 7E-A-13				
3	7/1/64	REVISED PER 7D-A-6 REV. 2				
2	4-6-64	REVISED & ISSUED FOR CONSTR.	MA			
1	12/26/63	ISSUED FOR CONSTRUCTION	MA			
0	3-18-63	ISSUED FOR APPROVAL	MA			

ISSUE NONE

BECHTEL CORPORATION
SAN FRANCISCO

NUCLEAR FUEL SERVICES, INC.
SPENT FUEL PROCESSING PLANT

PROCESS PIPING & INSTRUMENT DIAGRAM
REWORK & WASTE EVAPORATION

BECHTEL | 4413 | 7R-A-1 | 26

1-17-66

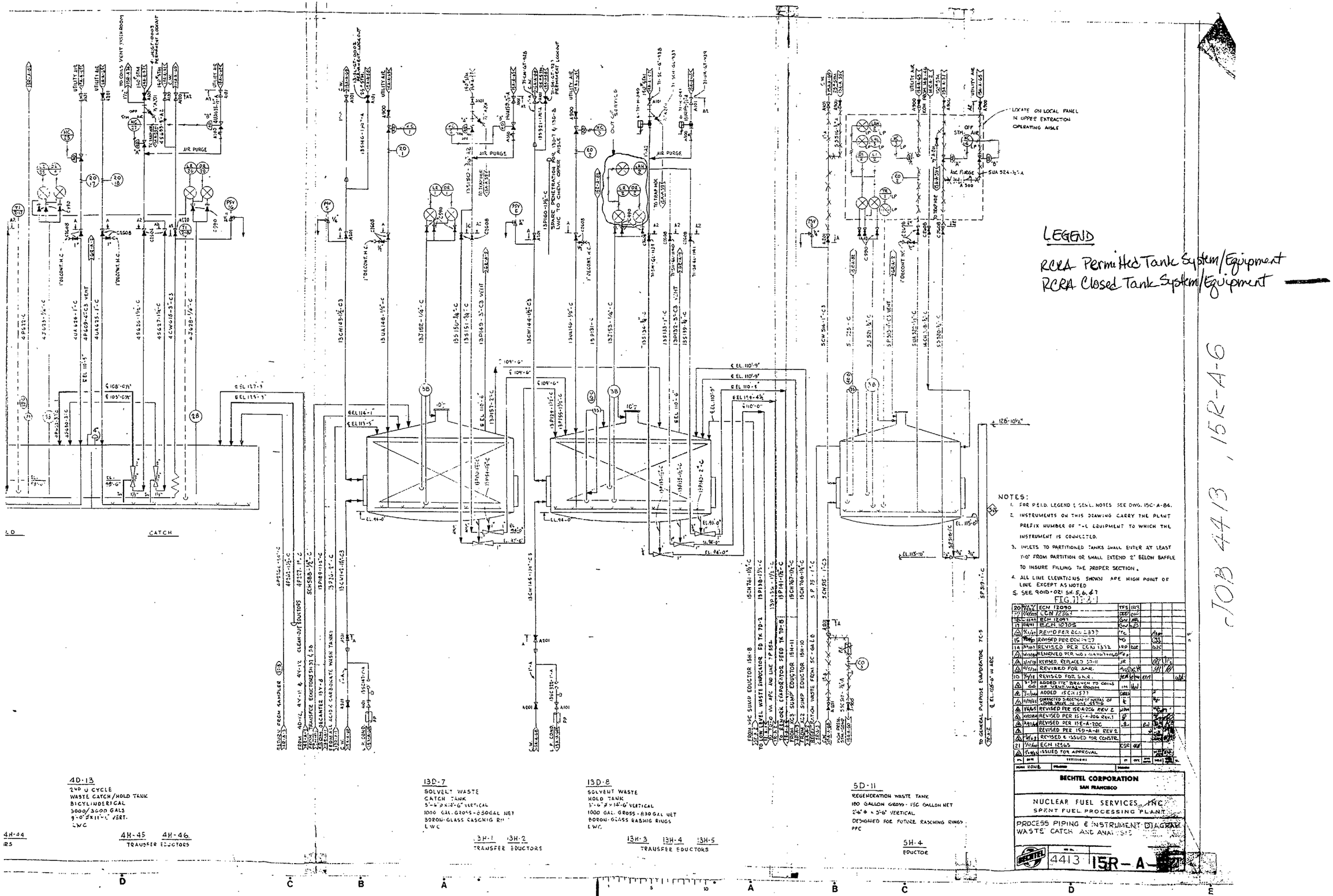
7D-14
HOT ANALY. CELL DRAIN CATCH TANK
MAT. 'C'
3'-6" ϕ x 7'-0"
LWC
500 GAL

7D-13
LAUNDRY & ANALYTICAL DRAIN CATCH TANK
3'-0" ϕ x 13'-0" HORIZ.
YARD - UNDERGROUND
1000 GAL.

7H-18
TRANSFER EDUCTOR
LWC

7R-19
TRANSFER EDUCTOR
YARD

FIG. III-8-2



NOTES:

1. FOR P&I.D. LEGEND & GEN'L. NOTES SEE DWG. 15C-A-86.
2. INSTRUMENTS ON THIS DRAWING CARRY THE PLANT PREFIX NUMBER OF THE EQUIPMENT TO WHICH THE INSTRUMENT IS CONNECTED.
3. INLETS TO PARTITIONED TANKS SHALL ENTER AT LEAST 1'-0" FROM PARTITION OR SHALL EXTEND 2" BELOW BAFFLE TO INSURE FILLING THE PROPER SECTION.
4. ALL LINE ELEVATIONS SHOWN ARE HIGH POINT OF LINE EXCEPT AS NOTED
5. SEE 9010-021 SH. 5, 6, & 7 FIG 11.2-1

20	12/6/77	ECN 12090	TFS	[illegible]		
19	11/10/77	ECN 12364	DEP	DJC		
18	10/4/77	ECN 12091	SCV	ABL		
17	10/6/77	ECN 12705	SCV	ABL		
16	9/6/77	REVISED PER ECN 12339	TFS		4H-44	
15	7/26/77	REVISED PER ECN 11427	MG		4H	
14	7/14/77	REVISED PER ECN 11312	KRD	DJC	4H	
13	6/10/77	REMOVED PER NOZ [illegible]	KRD			
12	5/5/77	REVISED, REPLACED 5D-11	JR			
11	4/27/77	REVISED FOR S.A.R.	[illegible]			
10	3/9/77	REVISED FOR S.A.R.	HFR	[illegible]		
9	2/3/77	ADDED 1½" DRAIN TO COILS OF VENT/VALVE ROOM	JM			
8	1/11/77	ADDED 15CH1577	GMS			
7	12/16/76	CORRECTED DIRECTION OF PIPING OF 1508 VALVE ON 13H-4 & 13H-5	JM			
6	9/6/76	REVISED PER 15E-A-206 REV 2	WRM			
5	8/20/76	REVISED PER 15E-A-206 Rev. 1	JM			
4	7/21/76	REVISED PER 15E-A-206	JM			
3		REVISED PER 15D-A-81 REV 2				
2	4/6/73	REVISED & ISSUED FOR CONSTR.				
1	7/17/68	ECN 12565	CSR	MM		
0	11/4/63	ISSUED FOR APPROVAL				
NO.	DATE	REVISIONS	BY	CHK	ENGR	MGR

WORK DONE PROJECT

BECHTEL CORPORATION
SAN FRANCISCO

NUCLEAR FUEL SERVICES, INC.
SPENT FUEL PROCESSING PLANT

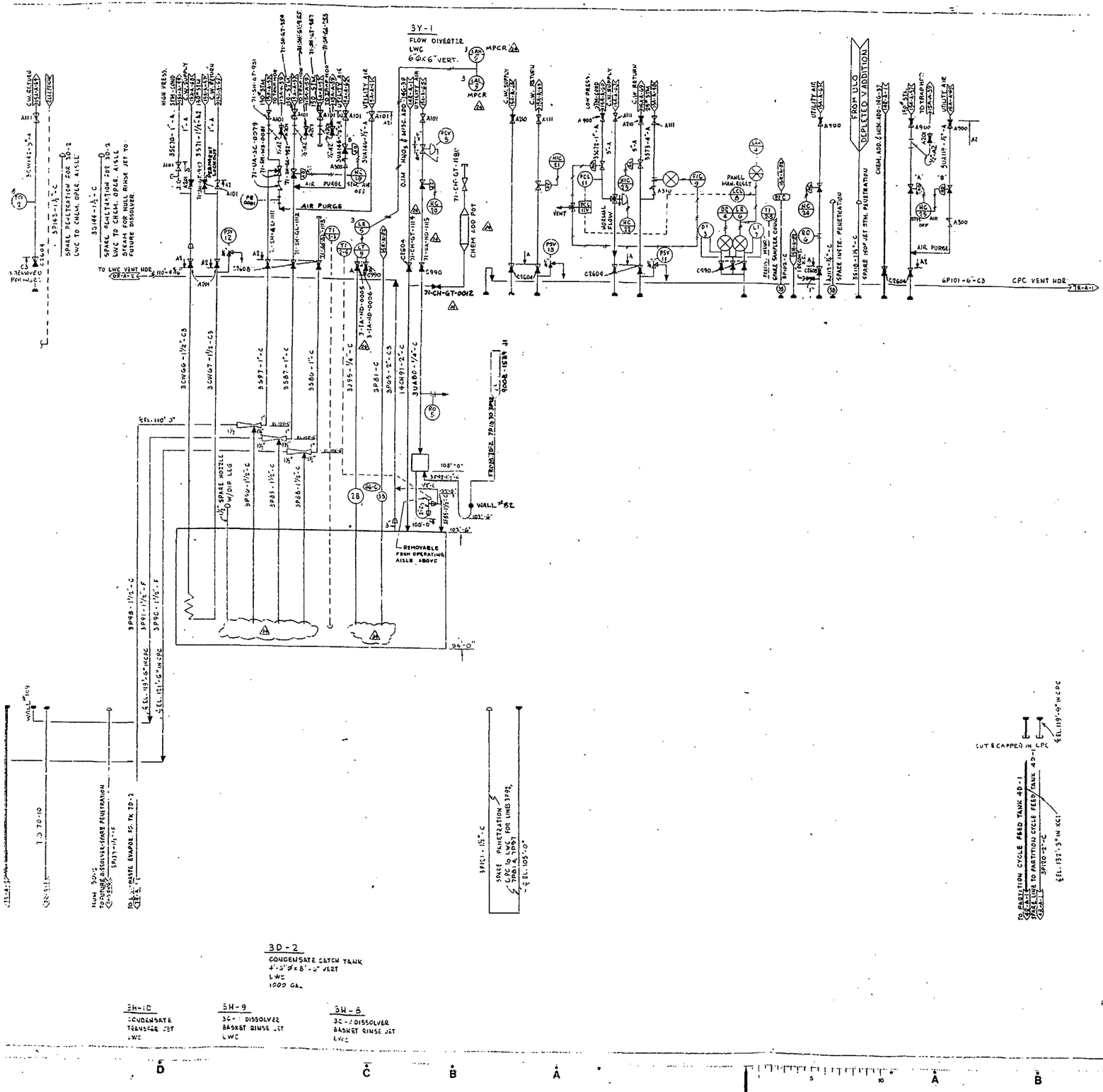
PROCESS PIPING & INSTRUMENT DIAGRAM
WASTE CATCH AND ANALYSIS

BECHTEL 4413 15R-A-6

LEGEND

RCRA Permitted Tank System/Equipment
RCRA Closed Tank System/Equipment

15-R-A-6
703 4413



LEGEND

RCRA Permitted Tank System/Equipment

RCRA Closed Tank System/Equipment

REV. 12 NOTE:
"AS BUILT"

1. CORRECTED DESCRIPTIONS OF JETS ON 3C-2, 3C-1 & 3D-2
2. ADDED LINE SPEC. TO BLANK JUMPER CONN. ON 3D-2 & 3C-2
3. CONNECTED LINE 3S122 TO 3CW2
4. CONNECTED LINE 3S140 TO 3CW34
5. ADDED PUMP 3G-1
6. REF 9010-021

NOTES:

ELEVATIONS SHOWN FOR INTERNAL JETS ARE APPROXIMATE. FINAL ELEVATIONS WILL BE GOVERNED BY VESSEL INTERNALS. ALL ELEV'S SHOWN FOR LINES ARE HIGH POINT OF LINE, EXCEPT AS NOTED.

- ● JUMPER CONNECTOR
- ▮ SPECIAL FLANGED CONNECTOR FOR LINES OVER 4"
- JUMPER CONNECTOR W/DUST COVER

FOR PIPING, INSTRUMENT LEGEND & GENERAL NOTES SEE DWG. 15C-A-84

ALL INSTRUMENTS ON THIS DRAWING CARRY PLANT PREFIX "3", EXCEPT AS NOTED

NO.	DATE	REVISIONS	BY	CHK'D
25	7/7/89	ECN 13841	GW	MWS
22	12/22/88	ECN 12441	RJR	JDK
21	9/9/88	ECN 12090	TFS	JFD
20	6/2/88	ECN 11705	GW	MWS
19	3/9/87	ECN 10105	GW	CLC
18	12/24/86	REV. PER ECN 9226	MJ	CLC
17	12/23/86	REV. PER ECN 8896	MJG	MWS
16	7/7/86	REV'D PER ECN 2899	TC	JDK
15	12-24-85	REVISED PER DFC 403	LRP	JDK
14	7/17/18	REVISED	JDK	
13	7/7/84	REVISED FOR S.A.R.	GJS	JDK
12	7/20/84	"AS BUILT" SEE REV NOTE	GJS	U
11	7/20/84	DELETED DUP CONNECTING 3SP10 & 3SP28 TO 3SP35 & 3SP45 RESP.	TC	
10	11/1/83	CORRECTED VALVE NUMBERS 3S-M7-3S118 FROM A-130 TO A901, ADDED FLOW ORIFICE TO ALL TEMP. CONNS. TO CPC LOOP	RC	
9	11/1/83	ADDED REVERSE FLOW ORIFICE NOTE		
8	7/5/83	REVISED PER DWG 3E-A-19 REV 8	TC	
7	7/5/83	REVISED PER DWG 3E-A-19 REV 7	HCM	
6	1-27-83	REVISED PER DWG. 3E-A-19, REV 6	SW	RD
5	1-16-83	REVISED PER DWG 3D-A-4 REV 3	TC	CRM
4	7/6/82	REVISED & ISSUED FOR CONSTR	LG	CRM
3	4/6/82	ISSUED FOR CONSTRUCTION	MK	RDS
24	6/30/89	ECN 12919	TS	TFS

NONE — HCM

BECHTEL CORPORATION
SAN FRANCISCO

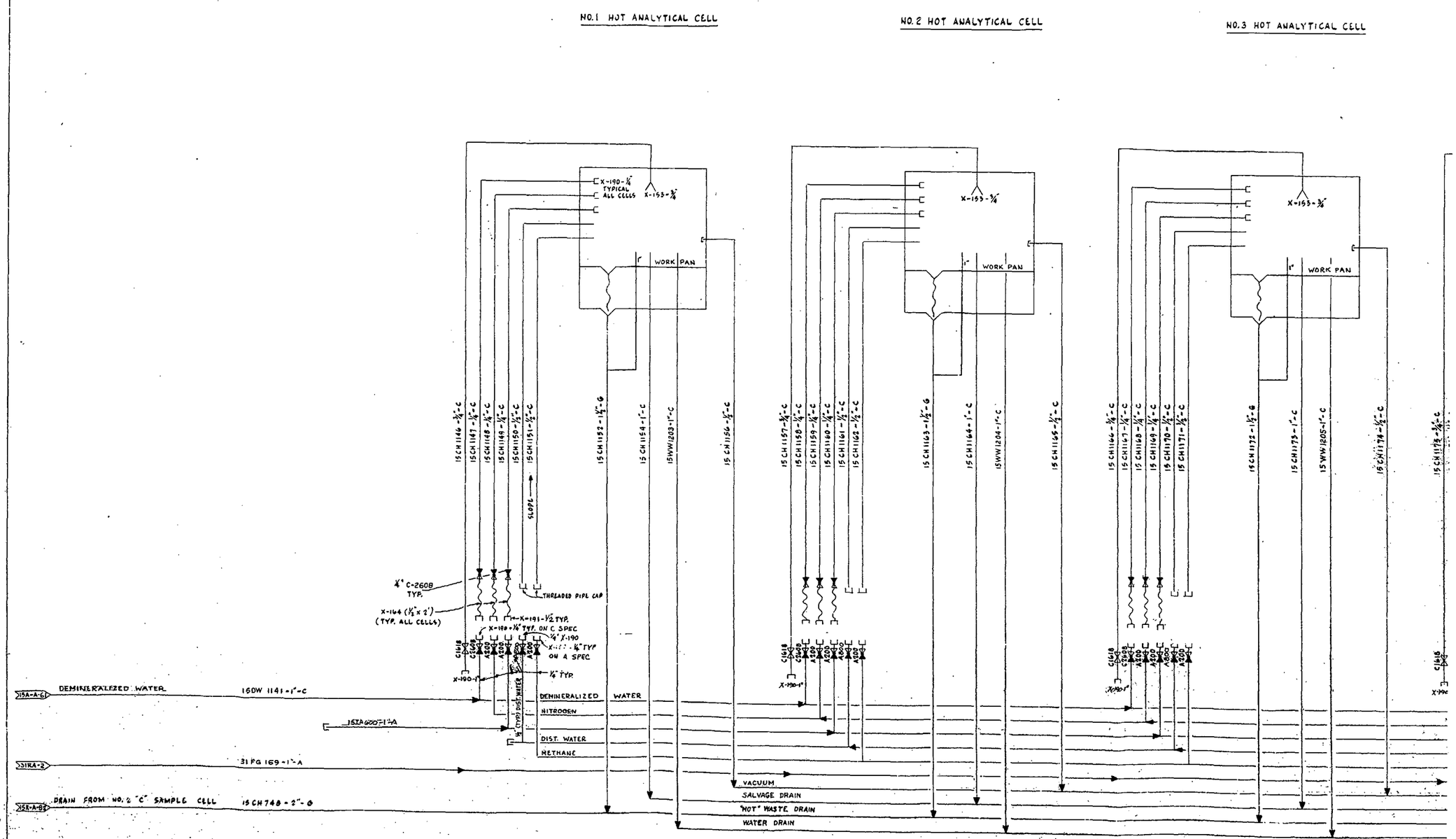
NUCLEAR FUEL SERVICES, INC.
SPENT FUEL PROCESSING PLANT

PROCESS PIPING & INSTRUMENT DIAGRAM
DISSOLUTION & FEED PREPARATION

BECHTEL 4413 3R-A-1 24

FIG. III-A-1

REV. 17


NO.1 HOT ANALYTICAL CELL
NO.2 HOT ANALYTICAL CELL
NO.3 HOT ANALYTICAL CELL
X-190-1/4" TYPICAL ALL CELLS
X-153-3/4"
WORK PAN
SLOPE
THREADED PIPE CAP
X-164 (1/2" x 2') (TYP. ALL CELLS)
X-191-1/2" TYP.
X-190-1/4" TYP. ON C SPEC
1/4" X-190
X-190-1/4" TYP ON A SPEC
1/4" TYP.
DEMINERALIZED WATER
15DW 1141-1"-C
15IA 600-1"-A
31FG 169-1"-A
DRAIN FROM NO. 2 "C" SAMPLE CELL
15CH 748-2"-G
DEMINERALIZED WATER
NITROGEN
DIST. WATER
METHANE
VACUUM
SALVAGE DRAIN
"HOT" WASTE DRAIN
WATER DRAIN

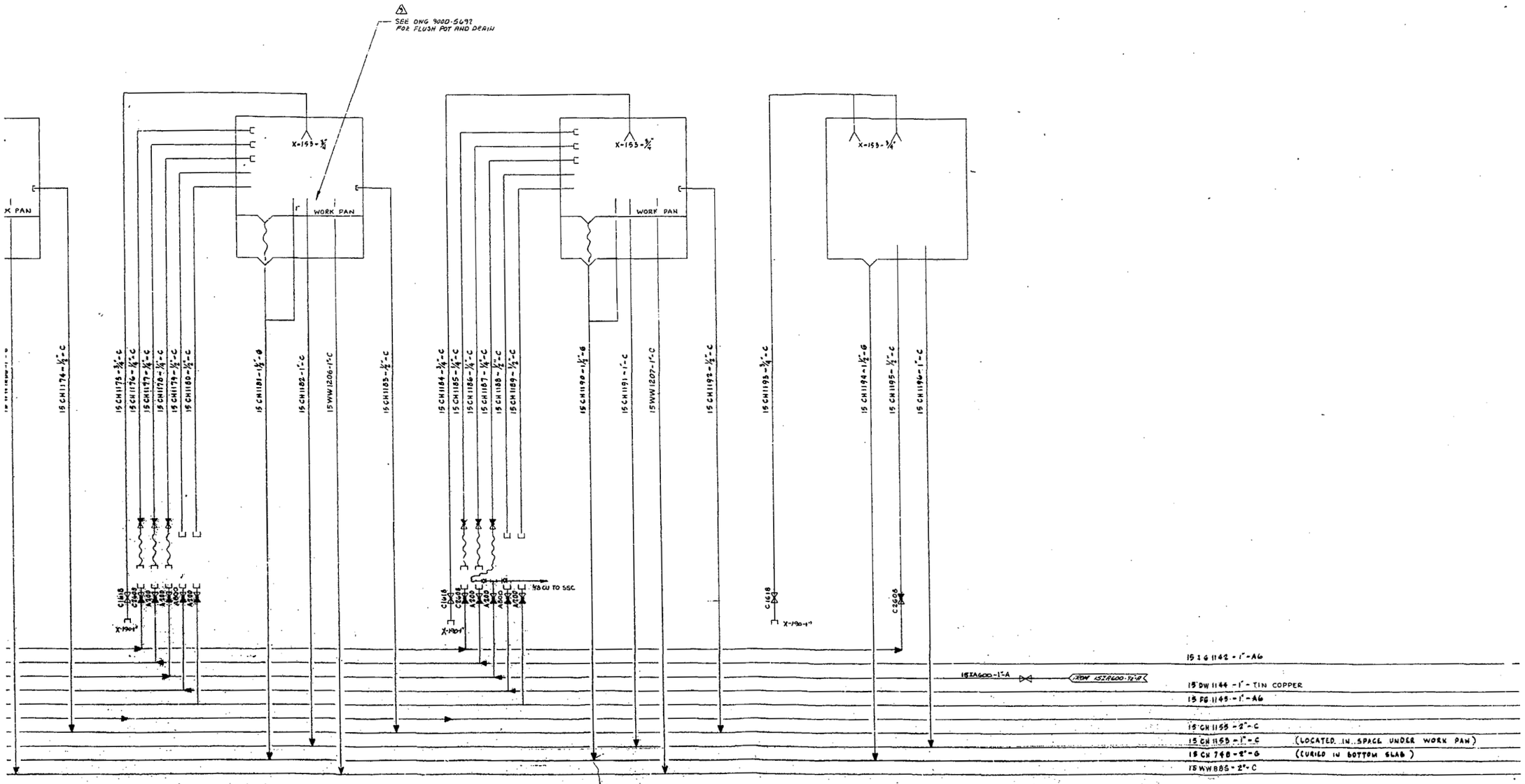
15R-A-201

NL CELL

NO. 4 HOT ANALYTICAL CELL

NO. 5 HOT ANALYTICAL CELL

SAMPLE STORAGE CELL

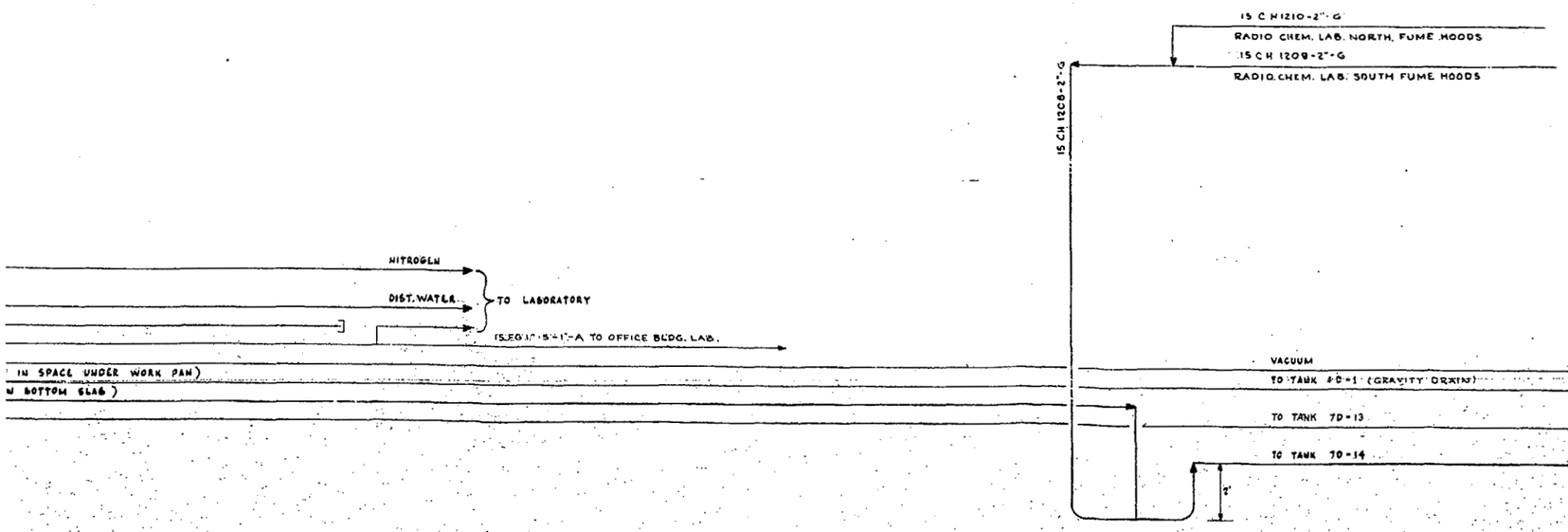


15R-A-201

LEGEND

RCRA Permitted Tank System/Equipment

RCRA Closed Tank System Equipment



REVISION NOTE 2

1. REVISED STOCK CODE NO. OF VALVE ON DIST. WATER LINE AT 15V-65 (WAS C1618)
2. CHANGED LINE NO. OF LINES 15 CH 1208 THRU 15 CH 1214 (WAS 15WW1208 THRU 15WW1214)
3. ~~ADDED RELIEF VALVES AT NITROGEN & METHANE BOTTLE RACKS (WERE BY VENDOR)~~ / (DELETED)
4. ADDED STOCK CODE NO. TO HOSE CONNECTIONS ON DIST. WATER STUBS
5. ADDED LINE SIZES TO STUB LINES TO CELLS
6. ADDED VALVE A200 TO LINE 15FG1142 & 15FG1145

REVISION NOTE 1

ADDED LINE 12 FG 1215

CHANGED LINE 15WW1202 TO LINE 15WW685

ADDED LAB. DRAIN SYSTEM

9	10/10/95	REV/ECN 9333	RMS	KQ			
8	9/11/95	ECN 9187	PD	CP			
7	4/14/95	ECN 9148	EW	PS			
6	4/14/92	"AS BUILT"	MCP				
5	7/16/88	SEE REVISION NOTE 2	TS				
4	8/16/88	SEE REVISION NOTE 1	AL				
3	8/16/88	REVISED AS NOTED					
2	5/7/88	REVISED PER 15-L-X-207	ESW				
1	12/6/87	ISSUED FOR CONSTRUCTION	RJ				
0	7/8/88	ISSUED FOR APPROVAL	AL				

REVISIONS

BECHTEL CORPORATION

NEW YORK — SAN FRANCISCO — LOS ANGELES

ENGINEERING BY BECHTEL ASSOCIATES

NUCLEAR FUEL SERVICES, INC.

SPENT FUEL PROCESSING PLANT

PIPING & INSTRUMENTATION DIAGRAM

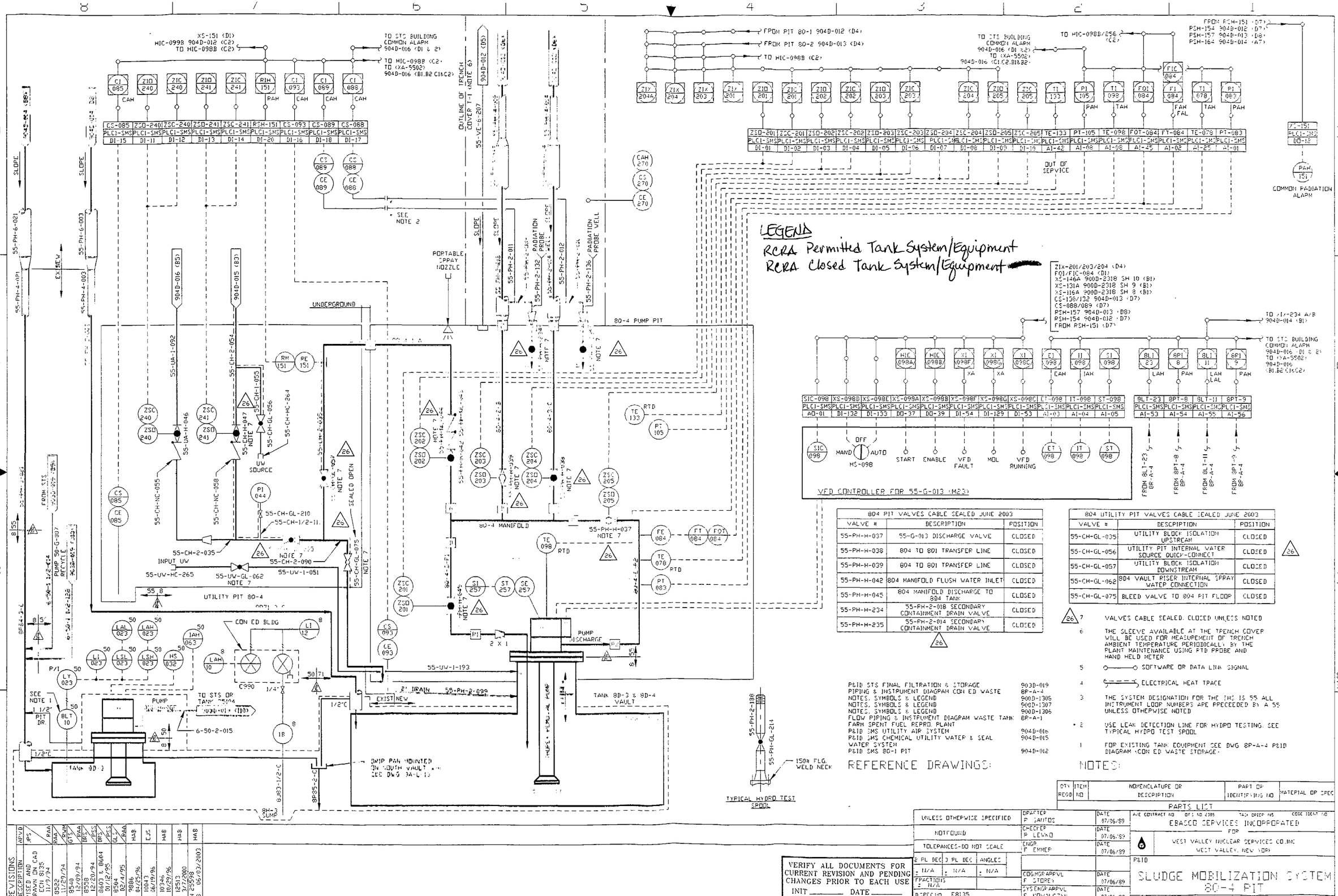
HOT ANALYTICAL CELLS

15 R-A-201

4/13

APPENDIX D-26

P&I DIAGRAMS FOR THE SMS
(4 DRAWINGS)



804 PIT VALVES CABLE SEALED JUNE 2003		
VALVE #	DESCRIPTION	POSITION
55-PH-H-037	55-G-013 DISCHARGE VALVE	CLOSED
55-PH-H-038	804 TO 801 TRANSFER LINE	CLOSED
55-PH-H-039	804 TO 801 TRANSFER LINE	CLOSED
55-PH-H-042	804 MANIFOLD FLUSH WATER INLET	CLOSED
55-PH-H-045	804 MANIFOLD DISCHARGE TO 804 TANK	CLOSED
55-PH-H-234	55-PH-2-018 SECONDARY CONTAINMENT DRAIN VALVE	CLOSED
55-PH-H-235	55-PH-2-014 SECONDARY CONTAINMENT DRAIN VALVE	CLOSED

804 UTILITY PIT VALVES CABLE SEALED JUNE 2003		
VALVE #	DESCRIPTION	POSITION
55-CH-GL-035	UTILITY BLOCK ISOLATION UPSTREAM	CLOSED
55-CH-GL-056	UTILITY PIT INTERNAL WATER SOURCE QUICK-CONNECT	CLOSED
55-CH-GL-057	UTILITY BLOCK ISOLATION DOWNSTREAM	CLOSED
55-CH-GL-062	804 VAULT RISER INTERNAL SPRAY WATER CONNECTION	CLOSED
55-CH-GL-075	BLEED VALVE TO 804 PIT FLOOR	CLOSED

26 7 VALVES CABLE SEALED, CLOSED UNLESS NOTED

6 THE SLEEVE AVAILABLE AT THE TRENCH COVER WILL BE USED FOR MEASUREMENT OF TRENCH AMBIENT TEMPERATURE PERIODICALLY BY THE PLANT MAINTENANCE USING RTD PROBE AND HAND HELD METER

5 SOFTWARE OR DATA LINK SIGNAL

4 ELECTRICAL HEAT TRACE

3 THE SYSTEM DESIGNATION FOR THE SMC IS 55 ALL INSTRUMENT LOOP NUMBERS ARE PRECEEDED BY A 55 UNLESS OTHERWISE NOTED

* 2 USE LEAK DETECTION LINE FOR HYDRO TESTING. SEE TYPICAL HYDRO TEST SPOOL

1 FOR EXISTING TANK EQUIPMENT SEE DWG 8P-A-4 P&ID DIAGRAM (CON ED WASTE STORAGE)

NOTES:

P&ID STS FINAL FILTRATION & STORAGE	903D-019
PIPING & INSTRUMENT DIAGRAM CON ED WASTE	8P-A-4
NOTES, SYMBOLS & LEGEND	900D-1305
NOTES, SYMBOLS & LEGEND	900D-1307
NOTES, SYMBOLS & LEGEND	900D-1306
FLOW PIPING & INSTRUMENT DIAGRAM WASTE TANK FARM SPENT FUEL REPRO. PLANT	8P-A-1
P&ID SMS UTILITY AIR SYSTEM	904D-016
P&ID SMS CHEMICAL UTILITY WATER & SEAL WATER SYSTEM	904D-015
P&ID SMS 80-1 PIT	904D-012

REFERENCE DRAWINGS:

QTY REQD	ITEM NO	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO	MATERIAL OR SPEC

PARTS LIST

REVISIONS			
DESCRIPTION	APVD		
REVISED AND REDRAWN ON CAD PER ECN 8135	JPS	RAA	11/9/94
CN 9522	RAA	RAM	11/29/94
CN 9540	RAM	GLS	12/09/94
CN 9558	GLS	RAA	12/20/94
CN 8607 & 8604	RAA	PSS	01/12/95
CN 9564	PSS	PSS	02/14/95
CN 9886	GLS	RAA	04/25/96
CN 10043	RAA	HAB	06/19/96
CN 10346	HAB	EJS	10/29/96
CN 12513	EJS	HAB	3/7/2000
CN 25598	HAB	HAB	06/03/2003

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT _____ DATE _____

UNLESS OTHERWISE SPECIFIED	DRAFTER P SANTOS	DATE 07/06/89	A/E CONTRACT NO DES NO 2385 TAD ORDER NO CODE IDENT NO
NOTFOUND	CHECKER P LEWKO	DATE 07/06/89	EBASCO SERVICES INCORPORATED FOR
TOLERANCES-DO NOT SCALE	ENGR F EMMER	DATE 07/06/89	WEST VALLEY NUCLEAR SERVICES CO.INC WEST VALLEY, NEW YORK
2 PL DEC 3 PL DEC ANGLES			P&ID
± N/A ± N/A ± N/A	COGMGR APPVL F STOREY	DATE 07/06/89	SLUDGE MOBILIZATION SYSTEM 80-4 PIT
FRACTIONS ± N/A	SYSENGR APPVL F KOWALCZYK	DATE 07/06/89	
DSPECNO E8135			DWG SCALE 1=1 DWG NO REV
NEXT ASSEMBLY			

CAD DRAWING-DO NOT REVISE THIS ORIGINAL

1=100
28514

80-1 PIT VALVES CABLE SEALED JUNE 2003		
VALVE #	DESCPIPTION	POSITION
55-PH-H-003	55-G-012 DISCHARGE VALVE	CLOSED
55-PH-H-004	80-1 TO 80-2 TRANSFER LINE	CLOSED
55-PH-H-016	80-1 MANIFOLD DISCHAPGE TO 8D-1 TANK	CLOSED
55-PH-H-022	80-4 TO 80-1 TRANSFEP LINE	CLOSED
55-PH-H-019	80-1 MANIFOLD FLUSH WATEP INLET	CLOSED

80-1 UTILITY PIT VALVES CABLE SEALED JUNE 2003		
VALVE #	DESCRIPTION	POSITION
55-CH-GL-024	UTILITY BLOCK ISOLATION DOWNSTREAM	CLOSED
55-CH-GL-187	UTILITY BLOCK ISOLATION UPSTREAM	CLOSED
55-CH-GL-196	BLEED VALVE TO 80-1 PIT FLOOR	OPEN
55-CH-GL-036	UTILITY PIT INTERNAL WATER SOURCE QUICK-CONNECT	CLOSED
55-UW-GL-064	8D-1 M8 PISER INTEPNAL SPRAY WATER CONNECTION	CLOSED

80-2 UTILITY PIT VALVES CABLE SEALED JUNE 2003		
VALVE #	DESCRIPTION	POSITION
55-CH-GL-199	UTILITY BLOCK ISOLATION DOWNSTREAM	CLOSED
55-CH-GL-067	UTILITY BLOCK ISOLATION UPSTREAM	CLOSED
55-CH-GL-200	BLEED VALVE TO 80-1 PIT FLOOR	OPEN
55-CH-GL-076	UTILITY PIT INTERNAL WATEP SOURCE QUICK-CONNECT	CLOSED
55-UW-GL-064	8D-2 M9 PISER INTERNAL SPRAY WATER CONNECTION	CLOSED

80-2 PIT VALVES CABLE SEALED JUNE 2003		
VALVE #	DESCPIPTION	POSITION
55-PH-H-087	55-G-014 DISCHAPGE VALVE	CLOSED
55-PH-H-084	80-2 TO 80-5 TRANSFEP LINE 55-PH-2-008	CLOSED
55-PH-H-085	80-2 TO 80-5 TPANSFEP LINE 55-PH-2-004	CLOSED
55-PH-H-086	80-2 TO 80-5 TPANSFER LINE 55-PH-2-005	CLOSED
55-PH-H-082	80-2 TO 80-1 TRANSFER LINE 55-PH-2-038	CLOSED
55-PH-H-083	80-2 TO 80-1 TPANSFER LINE 55-PH-2-034	CLOSED
55-PH-H-095	80-2 MANIFOLD DISCHAPGE TO 8D-2 TANK	CLOSED
55-PH-H-096	ZEOLITE GRINDER INLET	CLOSED
55-PH-H-207	ZEOLITE GRINDER DISCHARGE	CLOSED
55-PH-H-098	ZEOLITE GRINDER COOLING WATER SUPPLY	CLOSED
55-PH-H-236	55-PH-2-038 SECONDARY CONTAINMENT DRAIN VALVE	CLOSED
55-PH-H-237	55-PH-2-034 SECONDARY CONTAINMENT DRAIN VALVE	CLOSED
55-PH-H-238	55-PH-2-008 SECONDAPY CONTAINMENT DRAIN VALVE	CLOSED
55-PH-H-239	55-PH-2-004 SECONDARY CONTAINMENT DRAIN VALVE	CLOSED
55-PH-H-240	55-PH-2-005 SECONDAPY CONTAINMENT DRAIN VALVE	CLOSED
55-PH-H-079	80-2 MANIFOLD WATEP INLET	CLOSED

NOTES:

1. FOR NOTES SEE DWG. 904D-011
2. FOR EXISTING TANK 8D-1 EQUIPMENT SEE DWG 8R-A-1 P&ID
3. SOFTWARE OR DATA LINK SIGNAL
4. BLANK CONNECTOR
5. PORTABLE TEMPORARY INSTRUMENTS
6. PORTABLE INSTRUMENT INPUTS
7. VALVES CABLE SEALED. CLOSED UNLESS NOTED (22)

LEGEND
RCRA Permitted Tank System/Equipment
RCRA Closed Tank System/Equipment

REFERENCE DRAWINGS:

P&ID STS PERMANENT VENTILATION SYSTEM	900D-1666
WASTE MOB PUMP PROCESS & INSTR. DIA. 8D-1-M1	900D-2318 SH 5
WASTE MOB PUMP PROCESS & INSTR DIA 8D-1-M2	900D-2318 SH 4
WASTE MOB PUMP PROCESS & INSTR DIA. 8D-1-M3	900D-2318 SH 3
WASTE MOB. PUMP PROCESS & INSTR. DIA 8D-1-M4	900D-2318 SH 2
WASTE MOB. PUMP PROCESS & INSTR. DIA. 8D-1-M6	900D-2318 SH 1
P&ID SMS UTILITY AIR SYSTEM	904D-016
PIPING & INST DIA CON ED. WASTE	8R-A-4
FLOW PIPING & INST DIAG WASTE TANK FARM SPENT FUEL REPROCESSING PLANT	8R-A-1
P&ID SMS CHEM. UW & SEAL WTR SYS	904D-015
P&ID SMS 80-2 PIT	904D-013
P&ID SMS 80-4 PIT	904D-011

QTY REQD	ITEM NO	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO	MATERIAL OR SPEC

PARTS LIST

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT ________ DATE ________

UNLESS OTHERWISE SPECIFIED
ALL DIM IN INCHES
TOLERANCES-DO NOT SCALE
2 PL DEC N/A | 3 PL DEC N/A | ANGLES N/A
FRACTIONS N/A
DISPEC NO E8135
NEXT ASSEMBLY

DRAFTER P. SANTOS DATE 07/06/89
CHECKER F. EMMER DATE 07/06/89
ENGR F. EMMER DATE 07/06/89
COG MGR APPVL F. J.E. STOREY DATE 07/06/89
SYS ENGR APPVL F. J. KOWALCZYK DATE 07/06/89
QA APPVL DATE

A/E CONTRACT NO ORG 2299 TASK ORDER 015 CODE IDENT NO
EBASCO SERVICES INCORPORATED FOR WEST VALLEY NUCLEAR SERVICES CO. INC WEST VALLEY, NEW YORK

P&ID
SLUDGE MOBILIZATION SYSTEM 80-1 PIT

DWG SIZE | SCALE 1=1 | WEIGHT | DWG NO 904-D-01[illegible]

CAD DRAWING-DO NOT REVISE THIS ORIGINAL

1=1.00 128515

REVISIONS

REV	DESCRIPTION	APVD
1	REVISED AND REDRAWN ON CAD PER ECN 8135 DJN 11/29/94	JPS
2	ECN 8522 DJN 11/29/94	RAA
3	ECN 8540 DJN 12/09/94	RWM / RAA
4	ECN 8693 BP 01/12/95	PSS / DRS / RAA
5	ECN 9116 DMM 07/25/95	GLS
6	ECN 10346 DMM 10/28/96	HAB
7	ECN 12018 RJR 5/21/99	DRS
8	ECN 12513 VCK 3/7/2000	HAB
9	ECN 25598 HAB 06/04/2003	HAB

TO (XA-5502) 904D-016 (B1,B2,C1&C2)
TO STS BUILDING COMMON ALARM 904D-016 (D1 & 2)
TO XS-151 904D-011 (D1)
MIC-0998 904D-011 (C2)
MIC-0998 904D-012 (C2)
MIC-1298 (C1)
TO MIC-998, 904D-011 (C2) / MIC-0998 904D-012 (C2)
TO 904D-014 (B1)
TO MIC-1295 (C1)
OUTLINE OF TRENCH & COVER 1-50 (NOTE 3)
904D-012 (D5)
SLOPE
55-VE-8-209
904D-014 (D8)
TO (XA-5502) 904D-016 (B1,B2,C1&C2)
TO STS BUILDING COMMON ALARM 904D-016 (D1 & 2)
904D-013 (D8)
904D-014 (B1)
904D-011 (D4)
TO (C1)
CI 115 | ZIO 248 | ZIC 248 | ZIO 249 | ZIC 249 | PSH 157 | CI 130 | CI 132 | CI 134 | CI 138 | CI 143
CAH | RAH
TE-132 | PT-104 | ZSO-217 | ZSC-217 | ZSO-220 | ZSC-220 | ZSO-222 | ZSC-222 | ZSO-223 | ZSC-223 | ZSO-224 | ZSC-224 | ZSO-225 | ZSC-225 | ZSO-226 | ZSC-226 | ZSO-227 | ZSC-227 | ZSO-228 | ZSC-228 | XY-0152B | XY-0152A
PLC1-SMS
AI-41 | AI-07 | DI-45 | DI-46 | DI-51 | DI-52 | DI-55 | DI-56 | DI-57 | DI-58 | DI-59 | DI-60 | DI-61 | DI-62 | DI-63 | DI-64 | DI-117 | DI-118 | DI-119 | DI-120 | DO-33 | DI-131
TO 904C-705 SH 2 (A7) WASTE TFNH,FEP
FROM 904C-705 SH 2 (A7) WASTE TFNH,FEP FROM 80-2
CS-115 | ZSO-248 | ZSC-248 | ZSO-249 | ZSC-249 | PSH-157 | FOT-256 | FT-258 | CS-130 | CS-132 | CS-134 | CS-138 | CS-143
PLC1-SMS
DI-66 | DI-121 | DI-122 | DI-123 | DI-124 | DI-104 | AI-48 | AI-31 | DI-67 | DI-68 | DI-69 | DI-70 | DI-71
CS 130 / CE 130 | CS 132 / CE 132 | CS 134 / CE 134 | CS 138 / CE 138 | CS 143 / CE 143
SEE NOTE 2 - DWG. 904D-011
CAH 271 | CS 271 | CE 271
FOT 256 | FT 258
PORTABLE SPRAY NOZZLE
ABANDONED IN PLACE
UNDERGROUND
80-2 PUMP PIT
55-PH-2-040 | 55-PH-2-013 | 55-PH-2-140 RADIATION PROBE WELL
55-PH-2-041 | 55-PH-2-016 | 55-PH-2-144 RADIATION PROBE WELL
55-PH-2-045 | 55-PH-2-039 | 55-PH-2-148 RADIATION PROBE WELL
55-PH-2-044 | 55-PH-2-022 | 55-PH-2-152 RADIATION PROBE WELL
55-PH-2-043 | 55-PH-2-020 | 55-PH-2-156 RADIATION PROBE WELL
55-PH-4-008 | 55-PH-2-008
55-VE-8-210
TO 904D-012 (D5)
PE C04
NOTE 6
TO (XA-5502) 904D-016 (B1,B2,C1&C2)
TO STS BUILDING COMMON ALARM 904D-016 (D1 & 2)
904D-014 (B7) FROM (C4)
CS-148/149 904D-014 (B7)
CS-138/143 (D6)
XS-128C (A6)
PSH-157 (D8)
FROM 1X-235/236 (D1)
FOIC 114 | FIC 114 | PI 113 | TI 108 | TI 129
FOT 114 | FT 114 | FAL | PAH | TAH | TAH
FOT-114 | FT-114 | PT-113 | TE-108 | TE-129
PLC1-SMS
AI-47 | AI-18 | AI-17 | AI-29 | AI-30
ZIX 227 | ZIX 220 | ZIX 225 | ZIX 226
HIC 129A | HIC 129B | XI 129F | XA | XI 129G | XA | XI 129C | EI 129 | EAH | II 129 | TAH | JI 129
SIC-129 | XS-129D | XS-129E | XS-129A | XS-129B | XS-129F | XS-129G | XC-129C | ET-129 | IT-129 | JT-129
PLC1-SMS
AO-03 | DI-136 | DI-137 | DO-29 | DO-31 | DI-75 | DI-73 | DI-74 | AI-20 | AI-21 | AI-22
SIC 129 | HAND / OFF / AUTO HS-129 | START | ENABLE | VFD FAULT | MOL | VFD RUNNING | ET 129 | IT 129 | JT 129
VFD CONTROLLER FOR 55-G-014A (M22)
55-UV-1/2-059 | 55-UA-1-026 | 55-CH-2-028
904D-015 (B2) | 904D-016 (B4) | 904D-015 (B2)
55-UV-UV-GL-218
PI 117
ZSC 248 / ZSO 248
55-UA-H-065
ZSC 249 / ZSO 249
55-CH-H-066
RM 157 / RE 157
PI 155
55-CH-GL-076 NOTE 8
55-CH-1-058
55-CH-HC-268
55-CH-1/2-127
55-CH-GL-215
55-CH-GL-199 NOTE 8
55-CH-NC-201
55-CH-NC-202
55-CH-2-036
55-UW-1/2-143
PI 119
PCV 118
55-CH-GL-067 NOTE 8
55-CH-2-091
SEALED OPEN
55-UW-GL-216
55-CH-GL-200 NOTE 8
55-UW-1/2-187
55-UW-1/2-151
55-UW-GL-217
55-UW-1/2-130
55-UW-H-021
55-UW-1-059
55-CH-HC-269
55-UW-GL-064 NOTE 8
EXIST
NEW
80-2-2-G1
CS 115 / CE 115
UTILITY PIT 80-2
VFD GRINDER 55-G-00X
80-2 GRINDER 55-XX-002 CONTROL
AT MCC-A
OFF
LOCAL / REMOTE
HS-128
START | ENABLE | RUNNING
1T 128
PSL 123
ZSC 217 / ZSO 217
55-PH-H-082 NOTE 8
55-PH-H-083 NOTE 8
80-2-5-C
ZSC 222 / ZSO 222
ZSC 223 / ZSO 223
ZSC 224 / ZSO 224
ZSC 225 / ZSO 225
55-PH-H-085 NOTE 8
ZSC 226 / ZSO 226
55-PH-H-086 NOTE 8
PE
ZSO 228
ZSC 228
NOTE 6
ZSC 220 / ZSO 220
ZSC 218 / ZSO 218
55-PH-NC-099
55-PH-NC-205
55-PH-H-098 NOTE 8
55-XX-002
NOTE 7
M25
SI 128 | ST 128 | SE 128 (A2)
TE 135 RTD
55-UW-1/2-205
CE 254
CS 254
ZSC 227 / ZSO 227
PT 255
B2 TO PT-255
NOTE 8
VE 260
VE 261
VE 262
SE 259 | ST 259 | SI 259
TE 129 RTD
ZSC 219 / ZSO 219
80-2-63-P1
55-PH-H-207
P1
P2
G1
G3
PUMP
M-9 RISER
55-PH-2-002
SLOPE
80-2 MOB PUMP ENCLOSURE
VI 260 / VI 261 / VI 262
DRAIN FROM UTILITY PIT 80-5
904D-014 (D8)
FROM SLY-6 8P-A-1
FROM 8PY-P4 8P-A-1
CS 074 / CE 074
55-PH-2-104
2" DRAIN
900D-4509 (C2)
N-12 RISER
DD-25 | DD-26 | DI-113 | AI-19 | DI-76 | DI-47 | DI-48 | DI-49 | DI-50 | AI-39 | AI-44 | AI-15 | DI-72 | AI-51 | AI-52 | DI-65
PLC1-SMS
XS-128A | XS-128B | XS-128C | IT-128 | PSL-123 | ZSO-218 | ZSC-218 | ZSO-219 | ZSC-219 | TE-128 | TE-135 | PT-255 | CS-254 | SLY-6 | 8PY-P4 | CS-074
HIC 128A | HIC 128B | XI 128C | II 128 | PIL 123 | ZIO 218 | ZIC 218 | ZIO 219 | ZIC 219 | TI 128 | TI 135 | FI 255 | CI 254 | SLI 6 | 3PI P4 | CI 074
IAH | PAL | TAH | TAH | PAL | CAL | LAH LAL | PAH | CAH
TO (XA-5502) 904D-016 (B1,B2,C1&C2)
TO STS BUILDING COMMON ALARM 904D-016 (D1 & 2)
TO HIC-1298 (C1) & HIC-0998 904D-012 (C2)
RTD
TE 128
TE 132
PT 104
FE 114
PT 113
FOT 114
FT 114
55-PH-LC-414
55-PH-LC-415
55-PH-H-417
55-PH-H-418
55-PH-H-416
55-PH-H-041
PT 255
55-PI-309
QUICK DISCONNECT
DRAIN TO PIT FLOOR
GRINDER SEAL POT CHARGING WAND
MATING CONNECTOP IN 80-2 PIT
CHARGING WAND REMOVED EXPANSION PLUG INSTALLED JUNE 2003
GRINDER SEAL WATER WAND ACCESS PORT (B5)
(B5)
(A4)
(A5)
(A6)
(A7)
(B1)
(B2)
(B3)
(B4)
(B5)
(B6)
(B7)
(C1)
(C2)
(C3)
(C4)
(D1)
(D2)
(D3)
(D4)
(D5)
(D6)
(D7)
(D8)

6 PE = RADIATION PROBE.

5 SLUDGE TRANSFER PUMP 55-G-014A VIBRATION MONITORING SENSORS ARE DESIGNATED AS FOLLOWS: 55-VE-260 - HORIZONTAL 55-VE-261 - HORIZONTAL 55-VE-262 - VERTICAL FOR SENSOR LOCATION DETAIL: SEE DRAWING D28952-1-E

4 FLOW ELEMENT (55-FE-258) WAS RENAMED ALONG WITH JUMPER H-11-7761 AND REPLACED WITH JUMPER H-11-7487. ALL CABLES FOR 55-FE-258 HAVE BEEN COILED UP INSIDE THE PIT FOR FUTURE USE.

3 THE SLEEVE AVAILABLE AT THE TRENCH COVER WILL BE USED FOR MEASUREMENT OF TRENCH AMBIENT TEMPERATURE PERIODICALLY BY THE PLANT MAINTENANCE USING PTD PROBE AND HAND HELD METER

2 —o—o— SOFTWARE OR DATA LINK

1 FOR NOTES SEE DWG 904D-011

NOTES:

WASTE MOB. P&ID 80-2-M1 — 900D-2318 SH 10
WASTE MOB. P&ID 80-2-M2 — 900D-2318 SH 11
WASTE MOB. P&ID 80-2-M3 — 900D-2318 SH 12
WASTE MOB. P&ID 80-2-M5 — 900D-2318 SH 17
WASTE MOB. P&ID 80-2-M6 — 900D-2318 SH 18
PIPING & INSTRUMENT DIAG CON ED WASTE — 8P-A-4
FLOW PIPING & INSTRUMENT DIAG WASTE TANK FARM SPENT FUEL PERPOC PLANT — 8P-A-1
P&ID SMS UTILITY AIR SYSTEM — 904D-016
P&ID SMS CHEM., UTILITY WATER & SEAL WATER SYSTEM — 904D-015
P&ID SMS 80-5 PIT — 904D-014
P&ID SMS 80-1 PIT — 904D-012

REFERENCE DRAWINGS:

8 VALVES CABLES SEALED. SEE DWG 904-D-012 FOR LIST

7 POWER SUPPLY, CABLE SEALED OFF

QTY PER/D	ITEM NO	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO	MATERIAL OR SPEC

PARTS LIST

REV	DESCRIPTION	APVD	
17	REVISED AND REDRAWN ON CAD PER ECN 8135 DJN 11/9/94	JPS / RAA	
18	ECN 8522 DJN 11/29/94	RAA / GLS	
19	ECN 8540 DJN 12/09/94	RAA / DRS	
20	ECN 8558 DJN 12/20/94	DRS / PJS	
21	ECN 8603 BP 01/12/95	BRS / PJS	
22	ECN 8504, 905 ECN 9837 CAB 04/16/96	GLS / RAA	
23	ECN 10043 SAB 06/19/96	HAB	
24	ECN 10188 DAK 8/13/96	EJS	
25	ECN 10346 DMM 10/28/96	DPS	
26	ECN 11311 DMM 03/12/98	HAB	
27	ECN 11265 DLL 6/25/98	HAB	
28	ECN 11623 KJP 11/10/98	HAB	
29	ECN 11700 KJP 2/16/99	HAB	
30	ECN 12018 PJP 5/21/99	DPS	
31	ECN 12826 PJP 10/17/2000	HAB	
32	ECN 12928 DAV 1/2/2001	JLH	
33	ECN 35998 HAB 06/04/2003	HAB	

LEGEND
RCRA Permitted Tank System/Equipment
RCRA Closed Tank System/Equipment

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT _____ DATE _____

UNLESS OTHERWISE SPECIFIED
TOLERANCES-DO NOT SCALE
2 PL DEC ± N/A | 3 PL DEC ± N/A | ANGLES ± N/A
FRACTIONS ± N/A
D.SPEC NO E8135
NEXT ASSEMBLY

DRAFTER F SANTOS	DATE	07/06/89
CHECKER F EMMER	DATE	07/06/89
ENGR F EMMER	DATE	07/06/89
COG.MGR.APPVL	DATE	
F STOFFEL	DATE	07/06/89
SYS.ENGR.APPVL F ADWALOZYK	DATE	07/06/89
D.A APPVL	DATE	
QPTS/SUPP / DESIGN	DATE	

A/E CONTRACT NO. DE-AC 07-81NE 2288 — TASK ORDER NO. — CODE IDENT NO

EBASCO SERVICES INCORPORATED
FOR
WEST VALLEY NUCLEAR SERVICES CO INC
WEST VALLEY, NEW YORK

P & I D
SLUDGE MOBILIZATION SYSTEM
80-2 PIT

DWG SIZE D1 | SCALE NONE | WEIGHT | DWG. NO. 904-2-01 B34 | REV

1:100 12.95in

CAD DRAWING DO NOT PLOT OR EDIT THIS ORIGINAL

CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE.
INIT_____ DATE_____

904D-011 (D8)
904D-011 (D9)
904D-013 (D5)
904D-013 (D5)
904D-013 (D5)
904D-013 (B3)
904D-013 (D5)

SLOPE 55-PH-6-021
SLOPE 55-PH-3-021
SLOPE 55-PH-6-003
SLOPE 55-PH-3-003
SLOPE 55-PH-2-008
SLOPE 55-PH-2 004
SLOPE 55-PH-2-005
SLOPE 55-PH-2-002
SLOPE 55-VE-8-209
SLOPE 55-PH-2-006
SLOPE 55-PH-2-015
SLOPE 55-PH-2-003
SLOPE 55-PH-2-032

OUTLINE OF TRENCH

D COVER T-27 (NOTE 3)

55-PH-GL-213
55-PH-GL-211
55-PH-GL-209
55-PH-GL-208

HYDRO TEST VENT CONN

UNDERGROUND

UTILITY PIT 80-5

55-UA-1-029
904D-016 (B3)
55-CH-2-031
904D-015 (B2)

55-UA-H-102
55-CH-1-065
55-CH-H-103
55-CH-NC-204
55-CH-NC-270
55-CH-GL-105
55-CH-1/2-135
55-CH-GL-220
55-CH-GL-104
55-CH-GL-106
55-CH-2-064
55-CH-2-094
55-CH-GL-206
80-5-10-K-L

ZSO 252 / ZSC 252 — 55-CH-NC-203
ZSO 253 / ZSC 253
RM 164 / RE 164
PT 162
CS 133 / CE 133

80-5-8-D
80-5-7-C
80-5-6-B
80-5-5-A
55-PH-H-119
55-PH-H-122
55-PH-H-123
55-PH-H-124
ZSO 229 / ZSC 229
ZSO 230 / ZSC 230
ZSO 231 / ZSC 231
ZSO 232 / ZSC 232

55-PH-NC-116
55-PH-H-136
ZSO 238 / ZSC 238
55-PH-NC-117
55-PH-H-137
ZSO 239 / ZSC 239

55-VE-8-209
55-PH-2-096
55-PH-2-095
55-PH-2-097
55-PH-2-189
55-PH-4-005
55-PH-4-004
55-PH-4-008
55-PH-4-189
55-PH-4-015
55-PH-4-033
55-PH-4-032

PORTABLE SPRAY NOZZLE
80-5 DIVERSION PIT

CE 147 / CS 147
CE 145 / CS 145
SEE NOTE 2 904D-011
RADIATION PROBE WELL
55-PH-2-059
55-PH-2-060
55-PH-2-160
55-PH-2-164
55-PH-2-048
55-PH-2-061
55-PH-2-168
55-PH-2-047
55-PH-2-062
55-PH-2-172
55-PH-2-046
55-PH-2-063
55-PH-H-219
55-PH-H-125
55-PH-H-126
55-PH-H-227
55-PH-H-223
55-PH-H-127
55-PH-H-260
55-PH-H-135
ZSO 233 / ZSC 233
ZSO 234 / ZSC 234
ZSO 235 / ZSC 235
ZSO 236 / ZSC 236

CE 148 / CS 148
CE 149 / CS 149

VIT FAC. TRENCH
55-PH-1/2-180
55-PH-1/2-221
55-PH-1/2-181
55-PH-H-223
55-PH-1/2-183
55-PH-H-224
55-PH-1/2-184
55-PH-H-222
55-PH-1/2-185
55-PH-H-225
55-PH-1/2-186
55-PH-H-226
VIT FAC PENETRATION
4225 / 4226 / 4224 / 4223 / 4033 / 4031
63K 55

2"- P0106 900E-705 SH2 (B7) SPARE TO CFMT
2"- P0107 900E-705 SH2 (B7) TO CFMT
900E-705 SH2 (B7) SPARE FROM CFMT
2"- P0117 900E-705 SH2 (B7) FROM CFMT
3"- P4509 900E-705 SH4 (C6) WASTE HEADER
V-016 900E-705 SH9 (H2) CONDEN RETURN

RTD
TE 134
PT 108
CS 144 / CE 144
2" DRAIN

TO 900E-705 SH 18 (D7) PERMISSIVE FOR WASTE RETURN TO 80D-2
TO 900E-705 SH 18 (D7) PERMISSIVE FOR WASTE RETURN TO 80D-4

DI-93 | PLC1-SMS | ZSO-252
DI-94 | PLC1-SMS | ZSC-252
DI-114 | PLC1-SMS | CS-133
DI-95 | PLC1-SMS | ZSO-253
DI-96 | PLC1-SMS | ZSC-253
DI-97 | PLC1-SMS | RSH-164
CAH
RAH
ZIO 252 / ZIC 252 / CI 133 / ZIO 253 / ZIC 253 / RIH 164

DI-77 | PLC1-SMS | ZSO-229
DI-78 | PLC1-SMS | ZSC-229
DI-79 | PLC1-SMS | ZSO-230
DI-80 | PLC1-SMS | ZSC-230
DI-81 | PLC1-SMS | ZSO-231
DI-82 | PLC1-SMS | ZSC-231
DI-83 | PLC1-SMS | ZSO-232
DI-84 | PLC1-SMS | ZSC-232
DI-125 | PLC1-SMS | ZSO-238
DI-126 | PLC1-SMS | ZSC-238
DI-100 | PLC1-SMS | CS-147
DI-99 | PLC1-SMS | CS-145
DI-127 | PLC1-SMS | ZSO-239
DI-128 | PLC1-SMS | ZSC-239
DI-85 | PLC1-SMS | ZSO-233
DI-86 | PLC1-SMS | ZSC-233
DI-87 | PLC1-SMS | ZSO-234
DI-88 | PLC1-SMS | ZSC-234
DI-89 | PLC1-SMS | ZSO-235
DI-90 | PLC1-SMS | ZSC-235
DI-91 | PLC1-SMS | ZSO-236
DI-92 | PLC1-SMS | ZSC-236
DI-102 | PLC1-SMS | CS-149
DI-101 | PLC1-SMS | CS-148
DI-103 | PLC1-SMS | CS-144
AI-16 | PLC1-SMS | PT-108
AI-43 | PLC1-SMS | TE-134
CAH CAH CAH CAH PAH
ZIO 229 / ZIC 229 / ZIO 230 / ZIC 230 / ZIO 231 / ZIC 231 / ZIO 232 / ZIC 232 / ZIO 238 / ZIC 238 / CI 147 / CI 145 / ZIO 239 / ZIC 239 / ZIO 233 / ZIC 233 / ZIO 234 / ZIC 234 / ZIO 235 / ZIC 235 / ZIO 236 / ZIC 236 / CI 149 / CI 148 / CI 144 / PI 108 / TI 134

DD-35 PLC1-SMS XX-0117B
DD-41 PLC1-SMS XX-0117A
XIX 233A / XIX 233B / XIX 234A / XIX 234B

TO STS BUILDING COMMON ALARM 904D-016 (D1 & 2)
TO XS-151 904D-011 (D1) HIC-129B 904D-013 (C1)
TO (XA-5502) 904D-016 (B1,B2,C1&C2)
TO 904D-013 (C2) 904D-013 (C1)
FROM 904D-013 (D4) 904D-013 (D7) 904D-011 (C1)
TO STS BUILDING COMMON ALARM 904D-016 (D1 & 2)
TO (XA-5502) 904D-016 (B1,B2,C1&C2)

17

CTS VESSEL VENT SYSTEM 900E-705 S19
CTS WASTE HEADER V-045 VIT CELL P&ID 900E-705 S04
CTS CONCENTRATOR FEED MAKE-UP TANK 63-V001 P&ID 900E-705 S02
P&ID SMS UTILITY AIR SYSTEM 904D-016
P&ID SMS CHEN, UTILITY WATER & SEAL WATER SYSTEM 904D-015
P&ID SMS 80-2 PIT 904D-013

REFERENCE DWGS:

3 THE SLEEVE AVAILABLE AT AT TRENCH COVER WILL BE USED FOR MEASUREMENT OF TRENCH AMBIENT TEMPERATURE PERIODICALLY BY THE PLANT MAINTENANCE USING RTD PROBE AND HAND HELD METER
2 —o—o— SOFTWARE OR DATA LINK
1 FOR NOTES SEE DRAWING 904D-011

NOTES:

LEGEND
RCRA Permitted Tank System/Equipment
RCRA Closed Tank System/Equipment

REV	DESCRIPTION	APVD	CHK
13	REVISED AND REDRAWN ON CAD PER ECN 8135 DJN 11/9/94	JPS	RAA JPS
14	ECN 8540 DJN 12/09/94	JPS	PSS
15	ECN 8613 DJN 01/12/95	BRS	PSS
16	ECN 10043 SAB 06/19/96	EJS	
17	ECN 10346 DMM 10/29/96	dh3	

QTY REQD	ITEM NO.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	MATERIAL OR SPEC

PARTS LIST

UNLESS OTHERWISE SPECIFIED
NOTFOUND
TOLERANCES-DO NOT SCALE
2 PL DEC ± N/A | 3 PL DEC ± N/A | ANGLES ± N/A
FRACTIONS ± N/A
D.SPEC.NO. 58135
NEXT ASSEMBLY

DRAFTER P. SANTOS 07/06/89
CHECKER F. EMMER 07/06/89
ENGR. F. EMMER 07/06/89
COG.ENGR.APPVL F. STOREY 07/06/89
SYS.ENGR.APPVL F. KOWALCZYK 07/06/89
Q.A.APPVL
DFTG.SUPR. / DESIGN

A/E CONTRACT NO. DE-AC-07-84ID12584 TASK ORDER NO. 95 CODE IDENT. NO.
EBASCO SERVICES INCORPORATED
FOR
WEST VALLEY NUCLEAR SERVICES CO.,INC.
WEST VALLEY, NEW YORK

P&ID
SLUDGE MOBILIZATION SYSTEM
80-5 PIT

DWG SIZE D | SCALE NONE | WEIGHT | DWG NO. 904D-014 | REV 17

1=100
D0140001

CAD DRAWING-DO NOT REVISE THIS ORIGINAL

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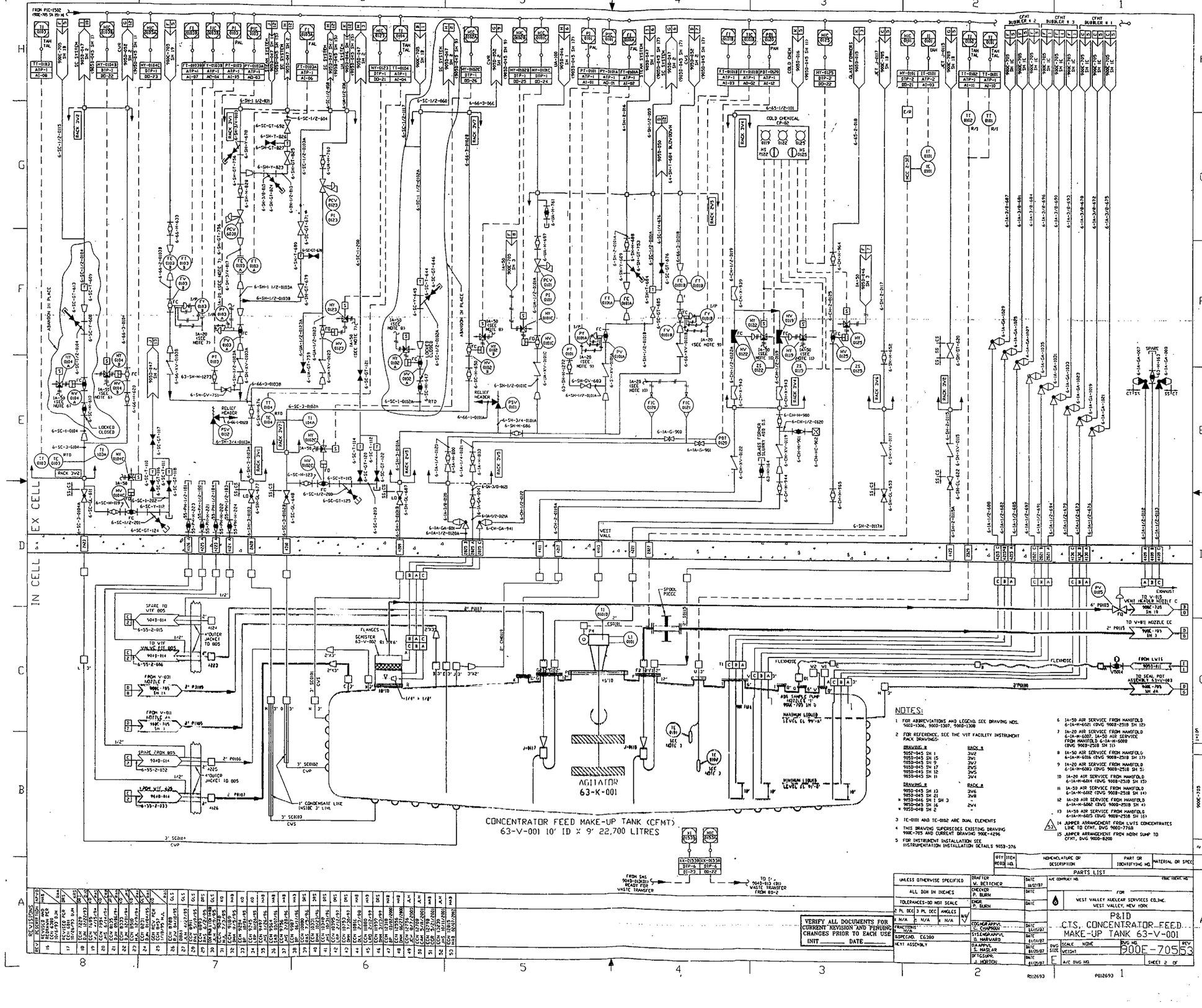
ber 30 08:06:36 1996

APPENDIX D-27

P&I DIAGRAMS FOR THE VITRIFICATION TREATMENT UNIT (14 DRAWINGS


CONCENTRATOR FEED MAKE-UP TANK (CFMT)
63-V-001 10' ID × 9' 22,700 LITRES
AGITATOR
63-K-001
EX CELL
IN CELL
NOTES:
1 FOR ABBREVIATIONS AND LEGEND SEE DRAWING NOS. 9003-1306, 9003-1307, 9008-1308
2 FOR REFERENCE, SEE THE VIT FACILITY INSTRUMENT RACK DRAWINGS:
3 TE-0101 AND TE-0102 ARE DUAL ELEMENTS
4 THIS DRAWING SUPERSEDES EXISTING DRAWING 9008-705 AND CURRENT DRAWING 9008-4296
5 FOR INSTRUMENT INSTALLATION SEE INSTRUMENTATION INSTALLATION DETAILS 9053-376
6 1A-50 AIR SERVICE FROM MANIFOLD 6-1A-M-6021 (DWG 9008-2518 SH 12)
7 1A-20 AIR SERVICE FROM MANIFOLD 6-1A-M-6007, 1A-50 AIR SERVICE FROM MANIFOLD 6-1A-M-6008 (DWG 9008-2518 SH 13)
8 1A-50 AIR SERVICE FROM MANIFOLD 6-1A-M-6016 (DWG 9008-2518 SH 17)
9 1A-20 AIR SERVICE FROM MANIFOLD 6-1A-M-6002 (DWG 9008-2518 SH 5)
10 1A-20 AIR SERVICE FROM MANIFOLD 6-1A-M-6004 (DWG 9008-2518 SH 15)
11 1A-50 AIR SERVICE FROM MANIFOLD 6-1A-M-6002 (DWG 9008-2518 SH 14)
12 1A-20 AIR SERVICE FROM MANIFOLD 6-1A-M-6002 (DWG 9008-2518 SH 4)
13 1A-50 AIR SERVICE FROM MANIFOLD 6-1A-M-6005 (DWG 9008-2518 SH 16)
14 APPER ARRANGEMENT FROM LVIS CONCENTRATES LINE TO CFMT, DWG 9000-7768
15 APPER ARRANGEMENT FROM HORN SUMP TO CFMT, DWG 9000-8200
LEGEND
RCRA Permitted Tank System/Equipment
RCRA Closed Tank System/Equipment
VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT ____ DATE ____
PARTS LIST
P&ID
CFMT, CONCENTRATOR FEED MAKE-UP TANK 63-V-001
WEST VALLEY NUCLEAR SERVICES CO.INC.
WEST VALLEY, NEW YORK
900E-70553
6/21/04 3:43:33 PM REPRO
CAD DRAWING-DO NOT REVISE THIS ORIGINAL

CHANGES PRIOR TO EACH USE
EX CELL
IN CELL
SEAL POT ASSEMBLY
63-V-003 ('ID X 3'-3'
FROM CFMT
63-V-051
TO WASTE HEADER
V-045 NOZZLE H
GLASS FORMER SLURRY ADD
FLUSH WATER TO JET
FLUSH
LEGEND
RCRA Permitted Tank System/Equipment
RCRA Closed Tank System/Equipment
NOTES:
1 FOR ABBREVIATIONS AND LEGEND SEE DRAWING NOS. 900D-1306, 900D-1307, 900D-1308
2 FOR NOTES SEE DRAWING 900E-705 SH 2
QTY REQD
ITEM NO.
NOMENCLATURE OR DESCRIPTION
PART OR IDENTIFYING NO.
MATERIAL OR SPEC
PARTS LIST
UNLESS OTHERWISE SPECIFIED
TOLERANCES-DO NOT SCALE
2 PL DEC
3 PL DEC
ANGLES
FRACTIONS
DSPEC NO. E8893
NEXT ASSEMBLY
DRAFTER H. LEE
DATE 12/11/94
CHECKER K. DUEALY
DATE 12/11/94
ENGR. R. MEIGS
DATE 12/13/94
COG.ENGR.APPVL D. CARL
DATE 12/13/94
SYS.ENGR.APPVL D. CARL
DATE 12/13/94
QA APPVL D. DEMPSTER
DATE 12/13/94
DFTG.SUPR.
DATE
A/E CONTRACT NO.
FOR
WEST VALLEY NUCLEAR SERVICES CO.,INC
WEST VALLEY, NEW YORK
P&ID
CTS, CONCENTRATOR FEED
MAKE-UP TANK 63-V-001
DWG SIZE F
SCALE NONE
WEIGHT
DWG NO. 900E-705
REV 7
CAD DRAWING-DO NOT REVISE THIS ORIGINAL

CHANGES PRIOR TO EACH USE.
INIT _____ DATE _____

EX-CELL

IN-CELL

MELTER FEED HOLD TANK 63-V-011 10'-0" DD X 19'-0" H 22,000 LITRES

LEGEND
RCRA Permitted Tank System/Equipment
RCRA Closed Tank System/Equipment

NOTES:

1 FOR ABBREVIATION AND LEGEND, SEE DRAWING NOS. 9000-1306, 9000-1367, 9000-1368

2 FOR REFERENCE, SEE THE VIT FACILITY INSTRUCTION RACK DRAWINGS

DRAWING #	RACK #
9050-045 SH 1	2W5
9050-045 SH 12	2W7
9050-045 SH 13	2W6
9050-045 SH 14	3W7
9050-045 SH 15	3W8
9050-045 SH 16	2W8
9050-048 SH 2	---
9050-046 SH 1	---

3 TE-1111 & TE-1112 ARE DUAL ELEMENTS

4 THIS DRAWING SUPERSEDES EXISTING DRAWING 900E-705 AND CURRENT DRAWING 900E-4296

5 IA-20 AIR SERVICE FROM MANIFOLD 6-IA-H-6005 (DWG 9008-2518 SH 5)

6 IA-20 AIR SERVICE FROM MANIFOLD 6-IA-H-6005 (DWG 9008-2518 SH 7)

7 FOR INSTRUMENT INSTALLATION SEE INSTRUMENTATION INSTALLATION DETAILS (DWG 9050-176)

REVISIONS																															
REV	DESCRIPTION	APVD	DATE	REV	DESCRIPTION	APVD	DATE	REV	DESCRIPTION	APVD	DATE	REV	DESCRIPTION	APVD	DATE	REV	DESCRIPTION	APVD	DATE	REV	DESCRIPTION	APVD	DATE	REV	DESCRIPTION	APVD	DATE	REV	DESCRIPTION	APVD	DATE
14	REVISED AND ISSUED AS CDM 9729.3M	MAG	10/1/93	15	CDM 7229	DPS	5/5/94	16	CDM 7416	DPS	7/28/94	17	CDM 7678	DPS	9/28/94	18	H.A. 4/21/94	KO	4/21/94	19	CDM 8267	KO	9/7/95	20	CDM 8861	KO	10/3/95	21	CDM 9048	MAB	10/31/95
22	CDM 9167	KO	11/21/95	23	CDM 9266	MAB	12/19/95	24	CDM 9564	KO	2/7/96	25	CDM 10093	DRS	5/13/97	26	CDM 10153	KO	7/2/97	27	CDM 10453	DRS	2/12/98	28	CDM 13099	MAB	12/17/98	29	CDM 13164	MAB	6/25/99

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT _____ DATE _____

UNLESS OTHERWISE SPECIFIED	DRAFTER L. NOU	DATE 12-8-86
ALL DIM IN INCHES	CHECKER P. BURN	DATE
TOLERANCES-DO NOT SCALE	ENGR P. BURN	DATE
2 PL DEC ± .01 3 PL DEC ± .005 ANGLES ± 1°	COG/ENGRAPPVL C. CHAPMAN	DATE 4/15/87
FRACTIONS ± N/A	SYS/ENGRAPPVL B. HARVARD	DATE 5/14/87
DO NOT SCALE DRAWING	QA APPVL S. HASLAR	DATE 6/20/87
NEXT ASSEMBLY	DRAFTG/SUPR	DATE

A/E CONTRACT NO. | CODE IDENT. NO.

FOR WEST VALLEY NUCLEAR SERVICES CO.,INC WEST VALLEY, NEW YORK

P&ID
MELTER FEED HOLD TANK 63-V-011

SIZE A | SCALE NONE | WEIGHT | DWG NO. 900E-70529 | REV 29

QTY PER UNIT	ITEM NO.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	MATERIAL OR SPEC
PARTS LIST				

CAD DRAWING-DO NOT REVISE THIS ORIGINAL

EX-CELL
IN-CELL
SEAL POT ASSEMBLY
63-V-013
FROM MFHT NOZZLE U
TO WASTE HDR V-045 NOZZLE G
SPARE
SPARES
LEGEND
RCRA Permitted Tank System/Equipment
RCRA Closed Tank System/Equipment
NOTES:
1 IA-20 AIR SERVICE FROM MANIFOLD 6-IA-H-4904 (DWG. 900B-2518 SH 6)
2 FOR ABBREVIATIONS AND LEGEND, SEE DRAWING NOS 900D-1306, 900D-1307, 900D-1398
REVISIONS
UNLESS OTHERWISE SPECIFIED
ALL DIM IN INCHES
TOLERANCES-DO NOT SCALE
DRAFTER D. NEFF 1/24/95
CHECKER K. DUCALY 2/6/95
ENGR. R. ATENCIO 2/7/95
COG.ENGR.APPVL D. PLOETZ 2/8/95
SYS.ENGR.APPVL D. CARL 2/8/95
Q.A.APPVL P. ATCHINSON
PARTS LIST
FOR WEST VALLEY NUCLEAR SERVICES CO.INC. WEST VALLEY, NEW YORK
P&ID
MELTER FEED HOLD TANK
63-V-011
SCALE NONE
CAD DRAWING-DO NOT REVISE THIS ORIGINAL

ECN(S) PENDING
#25867

NOTES:

1. FOR ABBREVIATIONS AND LEGEND, SEE DWG NOS 900-D-1304, 900-D-1307, 900-D-1308
2. INSTRUMENTATION INSTALLATION DETAILS 900-B-276.
3. THIS DWG SUPERSEDES EXISTING DWG 900-E-705 & CURRENT DWG 900-E-4296
4. 1A-20 AIR SERVICE FROM MANIFOLD 6-1A-M-6005 (DWG 900-B-2318 SH 7)
5. 1A-20 AIR SERVICE FROM MANIFOLD 6-1A-M-6010 (DWG 900-B-2318 SH 13)

LEGEND

RCRA Permitted Tank System/Equipment

RCRA Closed Tank System/Equipment

REVISIONS										
REV NO	DESCRIPTION	DATE	BY	CHK	APP	REV NO	DESCRIPTION	DATE	BY	CHK	APP
12	REVISED AND REDRAWN PER ECN 7938	9/28/93	DJH			19	ECN-9894 DEL 5/23/95				
13	ECN 7938 DJH 10/20/93					20	ECN-10000 DEL 11/29/95				
14	ECN 8153 ADJ 5/25/94					21	LDP 2221/97				
15	ECN 8153 THK 12/27/94					22	ECN 11880 DEL 12/2/97				
16	ECN 8153 THK 1/25/95					23	ECN 12315				
17	ECN 8893 DEL 5/23/95					24	ECN 12407/08				
18	ECN-9894 DEL 10/05/95					25	ECN 12780/12805				

QTY REQD	ITEM NO	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO	MATERIAL OR SPEC

PARTS LIST

UNLESS OTHERWISE SPECIFIED	DRAFTER L. NEU	DATE 11/19/86	A/E CONTRACT NO.
ALL DIM IN INCHES	CHECKER P. BURNS	DATE 11/19/86	CODE IDENT NO.
TOLERANCES-DO NOT SCALE	ENGR C. CHAPMAN	DATE 4/15/87	FOR
2 PL DEC 3 PL DEC ANGLES	P. BURNS	DATE	WEST VALLEY NUCLEAR SERVICES CO INC WEST VALLEY, NEW YORK
± N/A ± N/A ± N/A	COG/MGR APPVL	DATE	
FRACTIONS N/A	CYC ENGR APPVL D.J. HOWARD	DATE 4/24/87	P&ID WASTE HEADER 63-V-045 VIT CELL
DISPECHD (8893) NEXT ASSEMBLY	QA APPVL C.R. MASLER	DATE 4/27/87	SCALE NONE DWG NO 900-E-705 REV 25
	DFTG SUPV J. HORTON	DATE 4/21/87	WEIGHT SHEET 4 OF
			A/E DWG NO

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT _____ DATE _____

CAD DRAWING-DO NOT REVISE MFG ORIGINAL

CHANGES PRIOR TO EACH USE
INIT _____ DATE _____

11/19

FROM MELTER OFF-GAS DWG 900E-705 SH 21 AND VESSEL OFF-GAS DWG 900E-705 SH 22

FROM PRIMARY SCRUBBER DWG NO. 900C-705, SH 14

FROM MELTER EX-CELL OFF-GAS SYSTEM DWG 906D-915

FROM VF MELTER EX-CELL OFF-GAS SYSTEM DWG 906E-111, SH 1

RACK 2NB

UA SYSTEM 9059-046 SH 1 (9059-045 SH 10)

AIR ACCUM 2 LTR

ABANDON IN PLACE

ADS FEED PUMP (DS)

AIR TO FEED PUMP (DS)

LEMO RECEPTACLE

TO MELTER 63-V-020 900E-705 SH 9

ACTUATOR

ADS FEED PUMP 63-G-011 MOUNTED IN NOZZLE "D" OF FHT 63-V-011

10'- 1/2"

EX-CELL

IN-CELL

LEGEND

RCRA Permitted Tank System/Equipment

RCRA Closed Tank System/Equipment

NOTES:

1 FOR ABBREVIATIONS AND LEGEND, SEE DRAWING NOS. 9000-1306, 9003-1307, 9003-1308

2 FOR REFERENCE SEE THE V&I FACILITY INSTRUMENT RACK DRAWING:

DRAWING #	RACK #
9059-045 SH 10	2NB

3 THIS DRAWING SUPERSEDES EXISTING DRAWING 900E-705 AND CURRENT DRAWING 9003-4296

REVISIONS																														
REV	DESCRIPTION	DATE	BY	CHK	APVD	REV	DESCRIPTION	DATE	BY	CHK	APVD	REV	DESCRIPTION	DATE	BY	CHK	APVD	REV	DESCRIPTION	DATE	BY	CHK	APVD	REV	DESCRIPTION	DATE	BY	CHK	APVD	
10	REVISED AND RESTAMP PER 1004-97 E.H	10/4/97	KD			11	ECN 29111	12/11/94	DRS			12	ECN 29326	1/11/95	DRS			13	ECN 29351	1/11/95	DRS			14	ECN 29427	1/13/95	DRS		
15	ECN 29443	1/23/95	DRS			16	ECN 29592	2/15/95	DRS			17	ECN 30012	3/1/95	DRS			18	ECN 30429	4/21/95	DRS			19	ECN 30476	5/1/95	DRS		
20	ECN 30516	5/2/95	DRS			21	ECN 29952	5/19/95	DRS			22	ECN 29952	6/14/95	DRS			23	ECN 30852	7/7/95	DRS			24	ECN 30839	7/26/95	DRS		
25	ECN 30844	10/24/95	DRS			26	ECN 30970	11/2/95	DRS			27	ECN 30823	2/16/96	DRS			28	ECN 29952	7/19/96	DRS			29	ECN 31210	4/16/97	DRS		
30	ECN 31210	4/16/97	DRS																											

QTY ITEM NO.	QTY REQD	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	MATERIAL OR SPEC
		PARTS LIST		

UNLESS OTHERWISE SPECIFIED: ALL DIM IN INCHES; TOLERANCE-DO NOT SCALE; 2 PL DEC 3 PL DEC ANGLES ± N/A ± N/A ± N/A; FRACTIONS; DIMENSIONS ARE AFTER ASSEMBLY

	DRAFTER	DATE
	L. NEU	12/15/86
	CHECKER P. BURN	4/21/87
	CHECK C. CHAPMAN	4/21/87
	COG/MGR APPVL	DATE
	SYS ENGR APPVL HARWARD	DATE 4/21/87
	D&A APPVL J.P.K.	DATE 4/21/87
	QA/TG SUPR	DATE

A/E CONTRACT NO. CODE IDENT. NO.

FOR WEST VALLEY NUCLEAR SERVICES CO.,INC. WEST VALLEY, NEW YORK

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT _____ DATE _____

P&ID FHT - ADS PUMP 63-G-011

DWG SIZE E | SCALE NONE | WEIGHT | DWG NO. 900E-705 30 | REV

CAD DRAWING-DO NOT REVISE THIS ORIGINAL

900E-705 | 1:1.00 | 2700E066

Jul 24 15:15:45 1991 HAB

LEGEND

RCRA Permitted Tank System/Equipment

RCRA Closed Tank System/Equipment

NOTES:

1. FOR ABBREVIATIONS AND LEGENDS, SEE DRAWING NOS. 900D-1306, 900D-1307, 900D-1308
2. FOR REFERENCE, SEE THE VIT FACILITY INSTRUMENT RACK DRAWINGS:

DRAWING #	RACK #
905D-045 SH 9	3V7
905D-045 SH 2	3E8
905D-045 SH 9	3E9
905D-046 SH 1	
905D-052 SH 2	

3. THIS DRAWING SUPERSEDES EXISTING DRAWING 900E-705 AND CURRENT DRAWING 900E-4296
4. IA-20 AIR SERVICE FROM MANIFOLD 6-IA-M-6017 (DVG 900B-2518 SH 18)
5. IA-20 AIR SERVICE FROM MANIFOLD 6-IA-M-6018 (DVG 900B-2518 SH 6)
6. IA-20 AIR SERVICE FROM MANIFOLD 6-IA-M-6017 (DVG 900B-2518 SH 18)
7. IA-50 AIR SERVICE FROM MANIFOLD 6-IA-M-6019 (DVG 900B-2518 SH 19)

REVISIONS

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT _______ DATE _______

QTY REQD	ITEM NO.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	MATERIAL OR SPEC

PARTS LIST

UNLESS OTHERWISE SPECIFIED
ALL DIM IN INCHES
TOLERANCES-DO NOT SCALE
2 PL. DEC ± N/A | 3 PL. DEC ± N/A | ANGLES ± N/A
FRACTIONS ± N/A
DSPEC NO. FTM0173
NEXT ASSEMBLY

DRAFTER H. RIPPINGER
CHECKER R. ZAMA
ENGR. H. BEARY
COGNGR APPVL
SYS ENGR APPVL C. CHAPMAN — DATE 9/24/86
QA APPVL
DFTG SUPR. J. HORTON — DATE 9/24/86

FOR WEST VALLEY NUCLEAR SERVICES CO., INC.
WEST VALLEY, NEW YORK

P & ID
MELTER PNEUMATIC
INSTRUMENTATION

DWG SIZE E | SCALE NONE | DWG NO. 900E-705 | REV 48
SHEET 9 OF

900E-705 | 9

CAD DRAWING-DO NOT REVISE THIS ORIGINAL

6/21/04 3:43:52 PM REPRO

LEGEND
RCRA Permitted Tank System/Equipment
RCRA Closed Tank System/Equipment

NOTES:

1. FOR ABBREVIATIONS AND LEGEND, SEE DRAWING NOS. 900D-1306, 900D-1307, 900D-1308
2. FOR REFERENCE SEE THE VIT FACILITY INSTRUMENT RACK DRAWINGS:

DRAWING #	RACK #
905D-045 SH 16	2V4
905D-045 SH 7	2V3
905D-045 SH 13	3V6
905D-045 SH 5	2V2
905D-046 SH 1	-
905D-052 SH 2	-

3. TE-3101, TE-3102 AND TE-3103 ARE DUAL ELEMENTS
4. THIS DRAWING SUPERSEDES EXISTING DRAWING 900E-705 AND CURRENT DRAWING 900E-4296
5. IA-20 AIR SERVICE FROM HA FOLD 6-IA-H-6002 (DWG 900B-2518 SH 4)
6. IA-50 AIR SERVICE FROM (DWG 900B-2518 SH 3)
7. IA-20 AIR SERVICE FROM MANIFOLD 6-IA-H-6000 (DWG 900B-2518 SH 2)

QTY REQD	ITEM NO.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	MATERIAL OR SPEC

PARTS LIST

UNLESS OTHERWISE SPECIFIED
TOLERANCES-DO NOT SCALE
2 PL DEC ± | 3 PL DEC ± | ANGLES ±
FRACTIONS ±
D.SPEC.NO. E6380
NEXT ASSEMBLY

DRAFTER C. SUMMER
CHECKER R. ZAHA
ENGR. C. CHAPMAN
COGNGR.APPVL H. BEARY
SYS.ENGR.APPVL N. CHAPMAN
Q.A.APPVL R. BRIGGS
DFTG.SUPR. J. HORTON — DATE 9/22/86

A/E CONTRACT NO.
CODE IDENT. NO.
FOR WEST VALLEY NUCLEAR SERVICES CO., INC. WEST VALLEY, NEW YORK

P&ID PRIMARY SCRUBBER SCRUB SECTION

DWG SIZE E — SCALE NONE — WEIGHT — DWG NO. 900-E-705 — REV 26
A/E DWG NO. — SHEET 14 OF

CAD DRAWING-DO NOT REVISE THIS ORIGINAL

CHANGES PRIOR TO EACH USE
INIT _____ DATE _____

EX-CELL

IN-CELL

TO COLD CHEMICAL CP-02 DWG 900E-705 SH 1

FROM EES 900E-705 SH 14

FROM HEMES CONDENSATE FROM HEMES V/A NOZZLE D100 & D101 900E-705 SH 21

TO WASTE HEADER V-045 NOZZLE B 900E-705 SH 4

FROM DECON WASTE HEADER V-647 NOZZLE 3 900E-705 SH 23

63-DV-N-0495

63-DV-XV-0496

6-DV-3/4-201

63-DV-GL-0246

6-DV-2-200

MOTOR STARTER

MOTOR

PUMP 63-G-013

1" FLEX HOSE

BLANK 3" PUREX (SEE NOTE 8)

MAX OPERATING LEVEL 95'-9"

MIN LIQUID LEVEL 89'-9"

SPARE

SEAL POT
8" ID X 4'-8" OAL

RACK 3V2

RACK 2V2

RACK 2V3

RACK 3V3

RACK 3V1

NOTES

1 FOR ABBREVIATIONS AND LEGEND, SEE DRAWING 9000-1305, 9000-1307, 9209-1308

2 FOR REFERENCE, SEE THE VIT FACILITY INSTRUMENT RACK DRAWINGS:

DRAWING #	RACK #
9058-045 SH 3	2V2
9058-045 SH 9	2V3
9058-045 SH 7	3V2
9058-045 SH 1	3V3
9058-052 SH 2	

3 FE-3118 IS A DUAL ELEMENT

4 THIS DRAWING SUPERSEDES EXISTING DRAWING DRAWING 900E-705 AND CURRENT DRAWING 900E-4296

5 1A-20 AIR SERVICE FROM MANIFOLD 6-1A-M-6009 (DWG 9008-2518 SH 2)

6 1A-50 AIR SERVICE FROM DWG 9008-2518 SH 3

7 1A-20 AIR SERVICE FROM MANIFOLD 6-1A-M-6009 (DWG 9008-2518 SH 12)

8 PRIMING LINE ONLY CONNECTED WHILE PRIMING PUMP THEN DISCONNECT FROM PUMP AND STORE IN CELL

63-V-031

SUBMERGED BED SCRUBBER (SBS)

PRIMARY SCRUBBER

(RECEIVER TANK)

8'- 0" OD X 10'- 9"

6,815 LITRES NORMAL LIQUID VOLUME

LEGEND

RCRA Permitted Tank System/Equipment
RCRA Closed Tank System/Equipment

REVISIONS																								
REV	DESCRIPTION	INITIALS	DATE	INITIALS	DATE	INITIALS	DATE	INITIALS	DATE	INITIALS	DATE	INITIALS	DATE	INITIALS	DATE	INITIALS	DATE	INITIALS	DATE	INITIALS	DATE	INITIALS	DATE	APPVD
13	ADDED NOTE 8 REVISED PER ECN 19284		9/29/94																					
14	REVISED PER ECN 19284		10/26/95																					
15	REVISED PER ECN 19799		1/9/96																					
16	ECN 19884		1/15/96																					
17	ECN 19892		1/16/96																					
18	ECN 19979		1/16/96																					
19	ADD 11/6/96		11/6/96																					
20	ECN 20127		1/23/97																					
21	ECN 20192		7/29/97																					
22	ECN 20465		2/18/98																					

QTY	ITEM RECDS NO	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	MATERIAL OR SPEC

PARTS LIST

A/E CONTRACT NO. CODE IDENT. NO.

UNLESS OTHERWISE SPECIFIED — ALL DIM IN INCHES — TOLERANCES-DO NOT SCALE — 2 PL DEC ± N/A — 3 PL DEC ± N/A — ANGLES N/A — FRACTIONS ± — FINISH — NEXT ASSEMBLY

DRAFTER C. SUMNER — CHECKER P. ZAKA — ENGR. M. BEARY — COG/ORGAPPVL C. CHAPIN — SYS/ENGRAPPVL — QAAPPVL S. HASLER — DFD/GSPR J. HORTON — DATE

FOR WEST VALLEY NUCLEAR SERVICES CO.,INC. WEST VALLEY, NEW YORK

P&ID

PRIMARY SCRUBBER RECIEVER TANK

DWG SIZE E — SCALE NONE — WEIGHT — DWG NO. 900E-7052 — REV 22

A/E DWG NO. — SHEET 1 OF 1

CAD DRAWING-DO NOT REVISE THIS ORIGINAL

CHANGES PRIOR TO EACH USE.
INIT _____ DATE _____

EX-CELL

IN-CELL

COLD CHEMICAL CP-02

HSS-1511

COLD CHEM. 9053-016 9053-045 SH 11

IA SYSTEM 9053-046 SH 3 9053-045 SH 11

6-1A-H-6012 9053-2518 SI4

6-1A-3/4-122

6-1A-H-629

6-1A-1/2-1501

6-1A-3/4-123

RACK 3V4

PY-1501 ATP-11 AI-12

FROM PUG SH 21

6-1A-1/2-1502

6-1A-FR-626

6-1A-H-626

6-1A-1/2-1504

6-1A-H-627

ABANDONED IN PLACE

IA-50 (SEE NOTE 5)

HT 1501

HT 1511

FIC 1501

PT 1501

ZS 1501

ZS 1511

HV 1511

HV 1501

6-1A-H-628

6-CH-1/2-1511

6-CH-V-946

6-CH-1/2-4405

6-CH-2V-1501

SS CS

6-CH-XV-1511

6-CH-H-947

6-CH-H-5005

6-CH-2-5004

6-CH-GL-757

COLD CHEMICAL CP-02

HSS-1507

COLD CHEM. 9053-016 9053-045 SH 11

6-63-1/2-183

6-CH-1/2-1507

6-CH-X-954

6-CH-1/2-1507

6-CH-X-955

6-CH-XV-1507

6-CH-H-956

6-CH-2-1507A

FROM PUG SH 21

IA-50 (SEE NOTE 5)

HT 1507

ZS 1507

FC

FO 1507

PT 1505

IA-20 (SEE NOTE 6)

FIC 1503

FIC 1505

FIC 1504

6-1A-G-923

LT 1506

6-1A-G-922

6-1A-G-921

PDT 1505

6-1A-G-924

6-1A-G-925

PT 1505

6-1A-G-477

6-1A-1/4-776

TO 6-1A-1/4-0111 (9050-0455H(3)(A(1)))

RACK 3V5

6-1A-1/4-1506

6-1A-H-841

6-1A-1/4-1505

6-1A-H-839

6-1A-1/4-1504

6-1A-H-835

6-1A-GA-842

6-1A-3/8-1506

6-1A-GA-839

6-1A-3/8-1505

6-1A-GA-836

6-1A-3/8-1504

6-1A-1/2-1506A

6-1A-1/2-1505A

6-1A-1/2-1504A

LI 1506 LAH

PDI 1505

PI 1505 PAH PAL

LT-1506 ATP-11 AI-13

PDT-1505 ATP-11 AI-15

PT-1505 ATP-11 AI-14

RX-1508A RX-1508B DTP-10 DTP-01 SO-24 SI-21

E/R

CVS 9053-052 SH 2

6-66-3-064

6-66-GL-646

6-66-3-089

CVS 9053-052 SH 2

6-66-1-4069

6-66-2-01019

RACK 3V1

6-66-H-630

TI 1508

FE 1508

FT 1508

CS CAP

6-66-3-1504A

TD

TY 1508

I/P

TV 1508

IA-20 (SEE NOTE 7)

TO RELIEF HEADER

6-66-H-631

6-66-1-1508B

PSV 1508

6-66-3/4-1508A

6-66-1-15089

6-66-GA-632

6-66-3-1508

TO EFNT 9052-065 SH 21

FT-1508 ATP-12 AI-05

TIC 1502

TT-1508 ATP-11 AI-05

TT 1502

TM TAL

TT-1502 ATP-12 AI-04

PIC 1502

PY-1502 ATP-11 AO-04

TT 1502 R/I

IA SYSTEM 9053-046 SH 3

6-1A-1/2-1502B

PI 1502

PCV 1502

6-1A-1/4-1502A

PI 1502A

PCV 1502A

VENT

PY 1502

I/P

BOOSTER

6-1A-H-163

6-1A-1/2-1502C

6-1A-H-160

6-1A-1/2-1502D

6-1A-1/2-1502E

6-1A-H-164

9053-046 SH 3

9066-705 SH 21

6-DV-2-006

6-DV-GT-609

6-DV-2-1513

6-DV-H-1513

6-DV-GT-533

6-DV-2-1513A

6-DV-1/2-1513

6-DV-H-608

CHEM FILL

6-DV-HC-162

TO 60-5 PIT CSMS-34 9041E-R4

55-PH-1-621

55-PH-1-1021

6"X4"RED

4"DN

55-PH-H-226

SECONDARY CONTAINMENT VENT

55-PH-1/2-186

ELEVATION 96'-6"

TO CTS (CFNT) 900E-705 SH 2 (H8)

6" V1501

2" CH1511

2" CH1507

4" X 2"

3" CH1507

3" CH1511

2" DV1513

4" V1502

10 MIST ELIMINATOR 63-E-032 900E-705 SH 21

SLOPE

1/2" IA1508

1/2" IA1504

1/2" IA1506

VESSEL VENT CONDENSER 63-E-015 30'DIA X 10'-0"

V1504

STUB VALL

SEE NOTE 3

TE 1502

SUPPLY SIGNAL

EXHAUST

FO PY 1502

V-1503

6110

RISE

EL 99'-9

EL 95'-6

EL 104'-4"

EL 92'-2

40'

2" PI502

V-016

NEUTRALIZED TANK 63-V-046 900E-705 SH 23

2" PI522

FROM WASTE HEADER 900E-705 SH 3

2" PI504

FROM STCH V-020 900E-1312 SH 9

FROM V-011, NOZZLE 2 900E-705 SH 3

3" FLEXHOSE

FROM STRT. V-011 900E-1175 SH 3

4" PI102

FROM STRT. V-021 900E-705 SH 2

6" PI105

FO 4431

FO 4504

NOTES:

1 FOR ABBREVIATIONS AND LEGEND, SEE DRAWING NOS 9001-1306, 9000-1207, 9002-1308

2 FOR REFERENCE, SEE THE VIT FACILITY INSTRUMENT RACK DRAWINGS

DRAWING #	RACK #
9053-045 SH 11	3V4
9053-045 SH 12	3V5
9053-045 SH 15	3V1
9053-048 SH 2	----
9058-052 SH 2	----
904-D-014	----

3 TE-1502 IS A DUAL ELEMENT

4 THIS DRAWING SUPERSEDES EXISTING DRAWING 900E-705 AND CURRENT DRAWING 900E-4296

5 IA-50 AIR SERVICE FROM MANIFOLD 6-1A-H-6012 (DWG 9003-2518 SI4)

6 IA-20 AIR SERVICE FROM MANIFOLD 6-1A-H-6014 (DWG 9003-2518 SI5)

7 IA-20 AIR SERVICE FROM MANIFOLD 6-1A-H-6007 (DWG 9003-2518 SI1)

LEGEND

RCRA Permitted Tank System/Equipment

RCRA Closed Tank System/Equipment

REV	DESCRIPTION	APVD
13	ECN 9457 REDRAWN PER 167-793 9 JUN	
14	ECN 9853 PER 167-794	
15	ECN 8333 PER 167-795	
16	ECN 9575 ECC 8/17/94 DSA 9/10/95	
17	ECN 9448 PER 167-795	
18	ECN 9522/25	
19	ECN 9948 PER 167-795	
20	ECN 9457 PER 167-796	
21	ECN 8396/96	
22	ECN 9737/96 PER 167-796	
23	ECN 9737/96	
24	ECN 10375 PER 167-797	
25	ECN 10549 PER 167-800	
26	ECN 11364 PER 167-801	

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT _____ DATE _____

QTY PER UNIT	ITEM NO	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO	MATERIAL OR SPEC

PARTS LIST

UNLESS OTHERWISE SPECIFIED
ALL DIM IN INCHES
TOLERANCES-DO NOT SCALE
2 PL DEC 3 PL DEC ANGLES
± N/A ± N/A ± N/A
FRACTIONS ± N/A
DSPECNO E6280
NEXT ASSEMBLY

DRAFTER S. SPARACIO DATE 11/25/86
CHECKER P. BURN DATE 3/25/87
ENGR. P. BURN DATE 4/13/87
CM/PROJ APPVL C. CHAPMAN DATE 4/15/87
SYS ENG APPVL D. HARWARD DATE 4/21/87
QA APPVL DATE
DTG SUPV. J. WROTEN DATE

A/E CONTRACT NO. DOE CONT. NO.

FOR WEST VALLEY NUCLEAR SERVICES CO.,INC. WEST VALLEY, NEW YORK

P&ID CTS- VESSEL VENT SYSTEM

DWG SIZE E SCALE NONE WEIGHT DWG NO. 900E-705 REV 26

CAD DRAWING-DO NOT REVISE THIS ORIGINAL

CHANGES PRIOR TO EACH USE.
INIT _____ DATE _____

LEGEND
RCRA Permitted Tank System/Equipment
RCRA Closed Tank System/Equipment

NOTES:
1. FOR ABBREVIATIONS AND LEGEND, SEE DRAWING 565 9000-1700, 9000-1707, 9000-1308
2. FOR REFERENCE, SEE THE VIT FACILITY INSTRUMENT RACK DRAWINGS.

DRAWING #	RACK #
9000-645 SH 11	3W4
9000-645 SH 12	3W3
9000-645 SH 13	3W1
9000-645 SH 14	3W5
9000-645 SH 2	---

3. TE-3212 IS DUAL ELEMENT
4. THIS DRAWING SUPERSEDES EXISTING DRAWING 900E-705 AND CURRENT DRAWING 900E-4296
5. IA-50 AIR SUPPLY FROM MANIFOLD 6-1A-M-6012 (DWG 9008-2518 SH 14)
6. IA-20 AIR SUPPLY FROM MANIFOLD 6-1A-M-6210 (DWG 9008-2518 SH 13)
7. IA-50 AIR SUPPLY FROM MANIFOLD 6-1A-M-6208 (DWG 9008-2518 SH 11)
8. IA-20 AIR SUPPLY FROM MANIFOLD 6-1A-M-6014 (DWG 9008-2518 SH 15)

QTY REQD	ITEM NO	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	MATERIAL OR SPEC

PARTS LIST

REVISIONS			
DESCRIPTION	REV	BY	DATE
ECN 2117	10		
ECN 2117	9		
ECN 1632	8		
ECN 1632	7		
ECN 1632	6		
M.R. 1211/86	5		
ECN 1632	4		
ECN 1632	3		

UNLESS OTHERWISE SPECIFIED	DRAFTER S. SPARACIO	DATE 10/5/86
ALL DIM IN INCHES	CHECKER P. BURNS	DATE 1/26/87
TOLERANCES-DO NOT SCALE	ENGR. P. BURNS	DATE 4/13/87
2 PL DEC ± N/A / 3 PL DEC ± N/A / ANGLES ± N/A		
FRACTIONS N/A	COG ENGR APPVL C. CHAPMAN	DATE 4/15/87
DSPEC NO. 1007	SYS ENG APPVL B. HARWARD	DATE 4/14/87
NEXT ASSEMBLY	QA APPVL	DATE

WE CONTRACT NO. | EDP/ECT NO.

WEST VALLEY NUCLEAR SERVICES CO.,INC.
WEST VALLEY, NEW YORK

P&ID
MELTER OFF-GAS SYSTEM PRE-HEATER AND HEMES

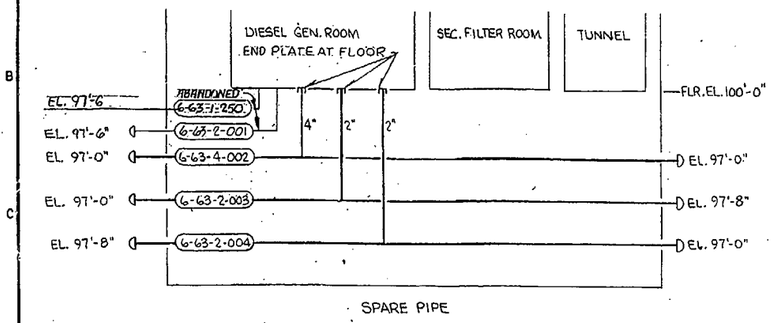
BNG SIZE	SCALE NONE	DWG NO. 900E-705	REV 16
	WEIGHT		

CAD DRAWING-DO NOT REVISE THIS ORIGINAL

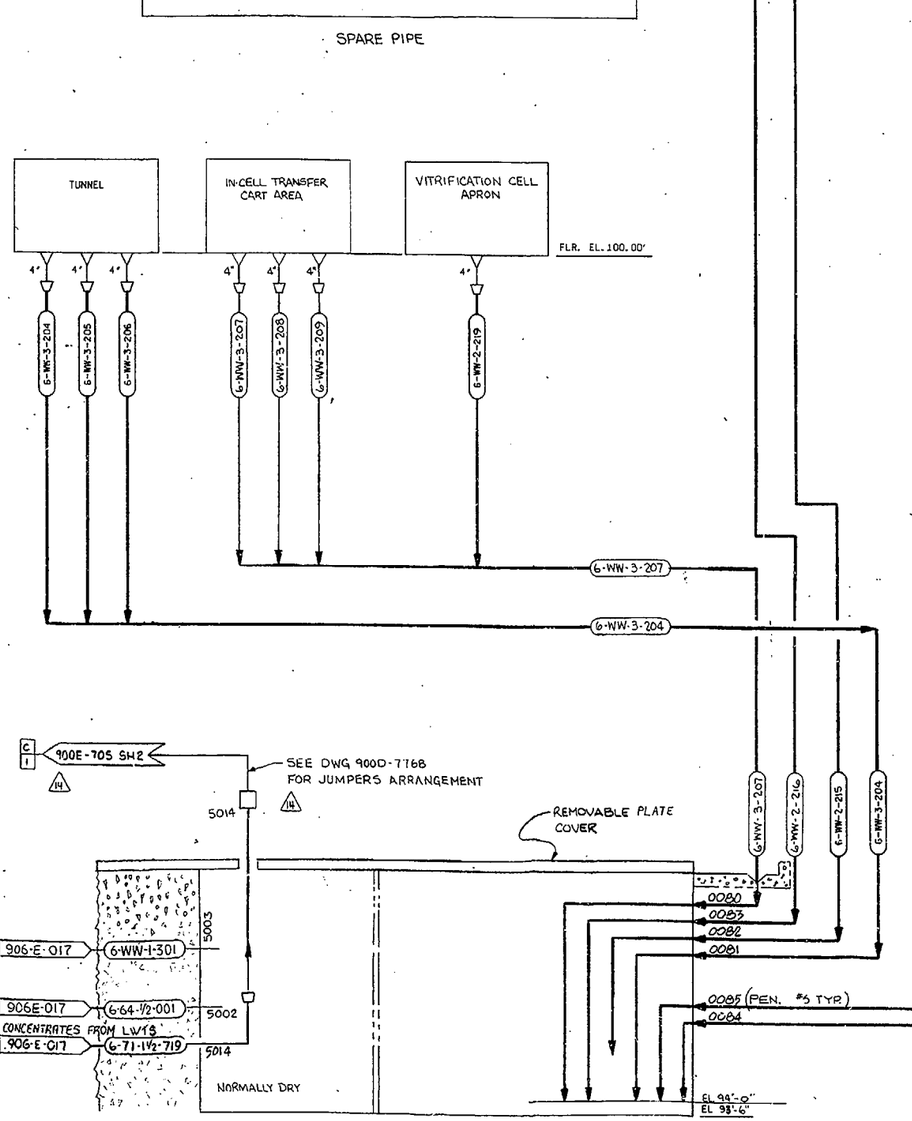
FILTER PRE-HEATER-1- E-034
FILTER ASSEMBLY NO.2 T-028
FILTER PRE-HEATER-2- E-037
POST HEATER HOUSING E-039 (EMPTY)
POWER CONTROLLER
EX-CELL
IN-CELL
SPARE
SPARES
SEE NOTE 3
TO FHT-ADS PUMP DWG 900E-705 SH 6
OFF-GAS LINE TO OVIT
FROM MEMC 2 NOZZLE B (NO JUMPER)
900E-705 SH 21
LEGEND
RCRA Permitted Tank System/Equipment
RCRA Closed Tank System/Equipment
NOTES:
1 FOR ABBREVIATIONS AND LEGEND, SEE DRAWING NOS. 900D-1306, 900D-1307, 900D-1308
2 FOR REFERENCE, SEE THE VIT FACILITY INSTRUMENT RACK DRAWINGS
DRAWING # RACK #
905D-045 SH 1 3V2
905D-045 SH 14 3V3
905D-045 SH 16 2V4
3 TE-3408, TE-3709, TE-3914 AND TE-3915 ARE DUAL ELEMENTS
4 THIS DRAWING SUPERSEDES EXISTING DRAWING 900E-705 AND CURRENT DRAWING 900C-4296
5 IA-20 AIR SERVICE FROM MANIFOLD 6-I- -M-6009 (DWG 900B-2518 SH 12)
6 IA-20 AIR SERVICE FROM MANIFOLD 6-IA-M-6010 (DWG 900B-2518 SH 13)
REVISIONS
QTY REQD | ITEM NO. | NOMENCLATURE OR DESCRIPTION | PART OR IDENTIFYING NO. | MATERIAL OR SPEC
PARTS LIST
UNLESS OTHERWISE SPECIFIED
ALL DIM IN INCHES
TOLERANCES-DO NOT SCALE
2 PL DEC ± N/A 3 PL DEC ± N/A ANGLES ± N/A
FRACTIONS ± N/A
DSPEC NO. C8837
NEXT ASSEMBLY
DRAFTER C. HABERMEHL DATE 4/10/87
CHECKER P. BURN
ENGR. P. BURN DATE 4/15/87
COG.ENGR.APPVL C. CHAPMAN DATE 4/13/87
SYS.ENGR.APPVL
QA APPVL S. HASLER DATE 4/21/87
DFTG.SUPR. J. HORTON DATE 4/21/87
FOR WEST VALLEY NUCLEAR SERVICES CO.,INC. WEST VALLEY, NEW YORK
P & ID
VESSEL OFF-GAS
FILTERS AND HEATERS
DWG SIZE E
SCALE NONE
WEIGHT
DWG NO. 900E-705
REV 25
SHEET 22 OF
CAD DRAWING-DO NOT REVISE THIS ORIGINAL

CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE.
INIT_____ DATE_____

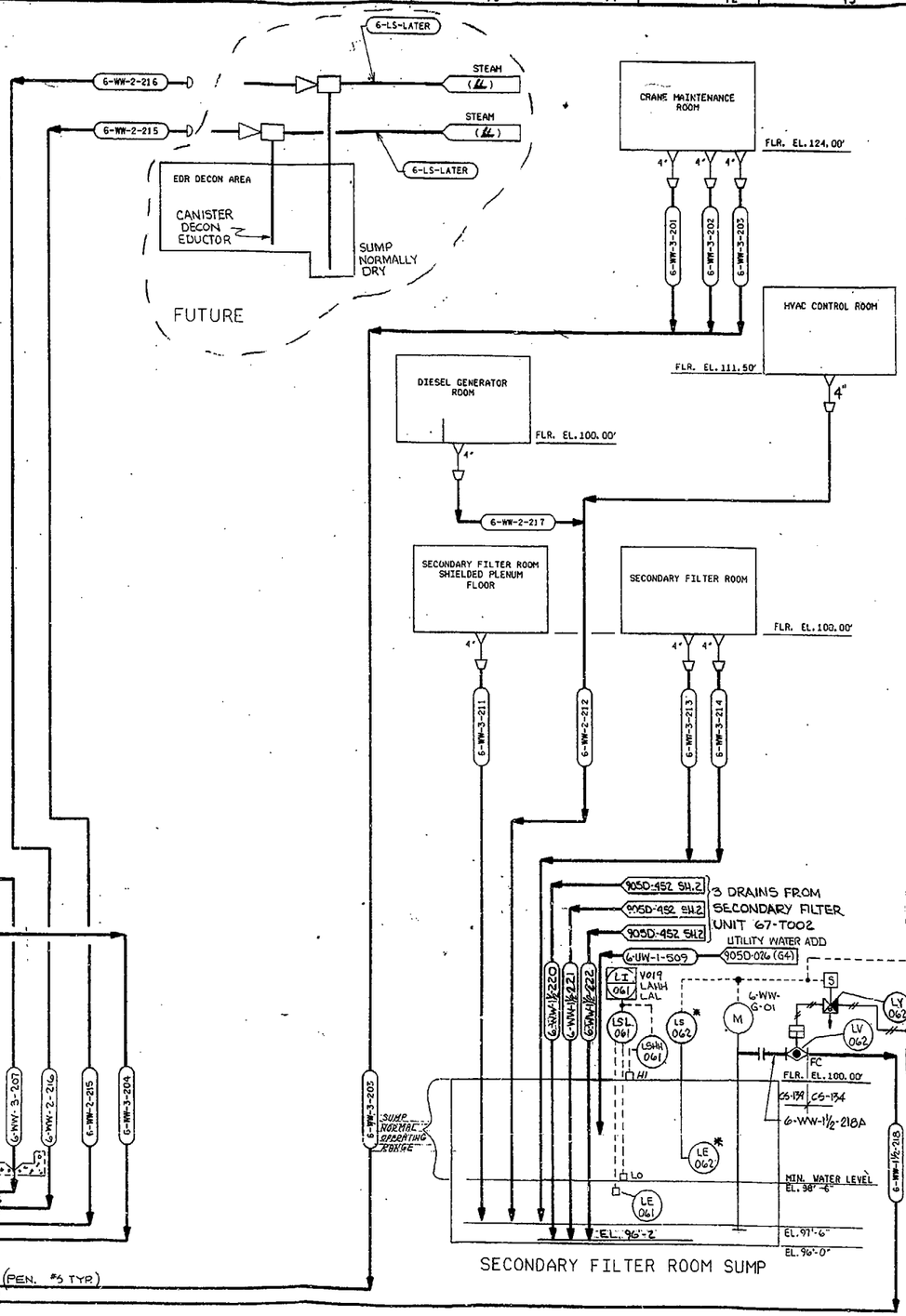
905-D-011 C



SPARE PIPE



VITRIFICATION SOUTH CELL SUMP
(900E-705 SH4)



SECONDARY FILTER ROOM SUMP

NO.	DATE	REVISION	DR	CH	APPROVED
B	09-12-86	GENERAL REVISION	RJL	TJP	RJL PSK MDW
C	11/20/86	GENERAL REVISION	RJL	PSK	RJL PSK MDW
0	3/9/89	ER 1567			
1	3/23/89	REVISED PER ECN 2879	EHB		DJR
2	12/2/89	REV. PER ECN 3287	CGR	DRS	RPV
3	5-9-90	REV. PER ECN 3631	GM	FJK	DJR
4	7-11-90	REV. PER ECN 3773	BJR	DRS	DJR
5	11-17-92	REV PER ECN 5684	PD	HB	DJR
6	12-31-92	REV/ECN 5738	PD	HB	HAJ
7	5-5-93	REV/ECN 6301	PD	KMQ	DJR
8	5-13-93	REV/ECN 5745	DAW	DRS	MJR
9	8-31-93	REV PER ECN 6636	JH	KMQ	DJR
10	12-30-93	REV/ECN 7302	RHS	HB	DJR
11	2-9-94	REV./ECN 7324	SRD	KQ	DJR
12	5-11-94	REV/ECN 7470	MJL	HB	DJR
13	4-15-97	ECN 10546	DLL	HB	
14	5-22-2001	ECN 12798	CGR	HB	

NOTES

1. * INDICATES INSTRUMENTS TO BE SUPPLIED BY SUMP PUMP VENDOR.
2. ALL INSTRUMENT TAG NUMBERS ARE PRECEDED BY SYSTEM DESIGNATOR 63
3. ALL DRAIN LINES TO SLOPE TOWARD SUMP ⅛" PER FOOT MINIMUM.
4. DRAINAGE PIPING IN SUMP SHALL BE 12 INCHES BELOW MINIMUM WATER LEVEL AT ALL TIMES

REFERENCE DRAWINGS

P&ID VITRIFICATION DRAINAGE SYSTEM LOW LEVEL WASTE	905-D-050

LEGEND

RCRA Permitted Tank System/Equipment
RCRA Closed Tank System/Equipment

WVNS APPROVAL

COG. MGR.	V. DeGroup 3/9/89
COG. ENGR.	R.P. VITKO
DRFT. SUPR.	[illegible] 3/9/89
Q.A. MGR.	[illegible] 3/9/89
R & S MGR.	D.A. Cooley 3/9/89
PROJ. MGR.	

FOR DRAWING INDEX SEE DRAWING NO. _____

APPRVD WVNS CO. R.P. VITKO	2-8-89	EBASCO SERVICES INCORPORATED
PROJECT MGR M. D. WEINART	07-25-86	A/E O.F.S. NO. 2388 TASK ORDER 009
ENGINEER SUPV P. KOWALCZYK	07-25-86	FOR WEST VALLEY NUCLEAR SERVICES COMPANY, INC WEST VALLEY, NEW YORK
LEAD DISC ENGR P. KOWALCZYK	07-25-86	WEST VALLEY DEMONSTRATION PROJECT
DESIGN R. J. LEWKO	07-25-86	P & ID VITRIFICATION DRAINAGE SYSTEM HIGH LEVEL
CHECKED T. J. PIAZZA	01-25-46	
DRAWN R. J. LEWKO	DATE 07-25-86	
DE-ACDT-81ME44139 PROJECT NO.		SIZE D; INDEX CODE NUMBER: SPEAL DR. TYP CL ORIG; DRAWING NO. 905D-011; REV. 14
19-CWV-02275 S.H.B. CONTRACT NO.		
ISSUED FOR CONSTRUCTION	SCALE	SPEC. CODES A/E SHEET NO.

REFERENCE DWGS

P & ID CSS SYSTEM (6-71-1 1/2-029, 6-71-2-025, 6-71-1-006 & SPARE-NO LINE NUMBER) — 900D-397 SHI
P & ID LWTS (6-71-2-023, 6-50-2-015 & 6-71-1-006) — 901D-021 SHI
P & ID VF DIESEL FUEL OIL TRANSFER SYSTEM (6-FO-1-714) — 905D-023
P & ID VF DRAINAGE SYSTEM LOW LEVEL (6-VV-3-274 & 6-VV-3-282) — 905D-050
HVAC FLOW DIAGRAM AND P & ID (VENTILATION-NO LINE NUMBER) — 906D-019
P & ID VF DRAINAGE SYSTEM HIGH LEVEL — 905D-011
P & ID VESSEL OFF GAS FILTERS & HEATERS — 900E-705 SH22
P & ID VF UA SYSTEM — 905D-046 SH1
P & ID VF IA SYSTEM — 905D-046 SH3
P & ID VF WATER SYSTEM — 905D-048 SH2
UTILITY ROUTING DIAGRAM-STEAM — 2401-01-170-1
SYMBOLS, NOTES & LEGEND — 900B-1306, 1307 & 1308
P & ID VF VENT HEADER SYSTEM — 905D-056
P & ID VF MELTER EX-CELL OFF GAS SYSTEM — 906E-011
P & ID VF MELTER EX-CELL OFF GAS SYSTEM — 906E-013

VF HOT CELL
VF BUILDING
OFF-GAS SAMPLE GLOVE BOX 64-V-001
PUMP PIT
01/14 PIPE CHASE
01/14 BLDG
VF BUILDING
TRENCH SUMP
FRENCH DRAIN
OFF GAS TRENCH
CONDENSATE TANK 64-D-05 145 GAL.
CONDENSATE PUMP 64-G-002
TRENCH SUMP PUMP 64-G-001
ENTRAINMENT SEPARATOR 64-V-003
CONDENSATE PUMP 64-G-003
CONDENSATE COLLECTION SUMP SC-D-001

NOTE:
1 CABLE SEALED CLOSED

LATER NOT BY PO 61954

LEGEND
RCRA Permitted Tank System/Equipment
RCRA Closed Tank System/Equipment

REV	DESCRIPTION	APVD
0	EFR-2362 02/17/93	JPH
1	GENERAL REVISION PER CCN 6134 AND 6140/6150	MAB
2	PER CCN 6134 AND 6140/6150	MAB
3	PER CCN 6134 AND 6140/6150	MAB
4	PER CCN 6134 AND 6140/6150	MAB
5	PER CCN 6134 AND 6140/6150	MAB
6	PER CCN 6134 AND 6140/6150	MAB
7	PER CCN 6134 AND 6140/6150	MAB
8	PER CCN 6134 AND 6140/6150	MAB
9	PER CCN 6134 AND 6140/6150	MAB
10	PER CCN 6134 AND 6140/6150	MAB
11	PER CCN 6134 AND 6140/6150	MAB
12	PER CCN 6134 AND 6140/6150	MAB
13	PER CCN 6134 AND 6140/6150	MAB
14	PER CCN 6134 AND 6140/6150	MAB
15	PER CCN 6134 AND 6140/6150	MAB
16	PER CCN 6134 AND 6140/6150	MAB
17	PER CCN 6134 AND 6140/6150	MAB
18	PER CCN 6134 AND 6140/6150	MAB

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT _____ DATE _____

DRY PROD	TECH PROC	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO	MATERIAL OR SPEC

PARTS LIST

UNLESS OTHERWISE SPECIFIED
ALL DIMS IN INCHES
TOLERANCES-SO NOT SCALE
2 PL DEC ± .1 1 PL DEC ± .2 ANGLES ± N/A
FRACTIONS ± 1/32
DECIMAL .1705
NEXT ASSEMBLY

DRAFTED A. JAWORSKI 10/11/92
CHECKED D SHAFFER 02/03/93
ENGR P. MESTER 02/03/93
COG/PROJ APPVL P. VANCE 02/03/93
STG ENGR APPVL J. LEDESKELL 02/10/93
QA APPVL P. KRAFT 02/17/93
OPS SUPT APPVL M. HOPTON 02/17/93

A/E CONTRACT NO. CCDC TRACT NO.
FOR WEST VALLEY NUCLEAR SERVICES CO.,INC WEST VALLEY, NEW YORK

VF
PIPING & INSTRUMENT DIAGRAM
OFF-GAS TRENCH

DWG SIZE E | SCALE N/A | WEIGHT | DWG NO 906E-017 | REV 18
A/E DWG NO
SHEET 1 OF 1

ECN(S) PENDING
#254195

CAD DRAWING-DO NOT REVISE THIS ORIGINAL

APPENDIX D-28

SOP 50-23, TANK 8D-3 LIQUID COLLECTION AND TRANSFER OPERATION

VERIFY HARD COPY AGAINST WEB SITE IMMEDIATELY PRIOR TO EACH USE

Required only for copies.
Copy valid for 24 hours from verification time/date.

Date _____ Time _____ Verified By _____
Date _____ Time _____ Verified By _____
Date _____ Time _____ Verified By _____
Date _____ Time _____ Verified By _____
Date _____ Time _____ Verified By _____
Date _____ Time _____ Verified By _____
Date _____ Time _____ Verified By _____
Date _____ Time _____ Verified By _____
Date _____ Time _____ Verified By _____

Revision Number 9

Revision Date 03/24/04

SOP 50-23

Tank 8D-3 Liquid Collection and Transfer Operation

Cognizant Author: J. Baker

Cognizant Manager: D. C. Meess

Facility Manager: J. P. Curcio

HLW:

YES	NO	N/A
	X	

QUALITY LEVEL: C

SAFETY CLASS: C

PROCEDURE USE CLASSIFICATION		MULTIPLE USE BY SECTION
X	CRITICAL USE	ALL
	REFERENCE USE	

ALARA PLANNING

[X] The work described in this procedure does not require ALARA planning.

[ ] The work described in this procedure may require ALARA planning.

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1.2 Applicability 3

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TANK 8D-3 LIQUID COLLECTION AND TRANSFER OPERATION

1.0 INTRODUCTION

1.1 Purpose

This procedure provides instructions for the collection, sampling and transfer of solution in Tank 8D-3.

This procedure gives instructions for the collection, sampling, and transfer of STS effluent and/or Vitrification Process condensate solutions in Tank 8D-3 to the LWTS Tank 5D-15B or 5D-15A-1.

1.2 Applicability

This procedure is applicable for 8D-3 influents and for condensate from the Vitrification Process System Concentrator Feed Make-Up Tank (CFMT). It is also applicable to solutions being transferred to the LWTS. Plant Systems Operations (PSO) will perform this procedure unless otherwise indicated.

2.0 GENERAL INFORMATION

Solutions which enter and are collected in Tank 8D-3 can be condensate from the Vitrification Process, or liquid from the 8D-3/8D-4 vault sump. Tank 8D-3 serves as the Condensate Catch Tank from the Vitrification System. Any condensable material entering the Vitrification Process Off-Gas system will condense and flow into Tank 8D-3. Most of the condensate from the Vitrification Process will result from boildown of the contents of the Concentrator Feed Makeup Tank (CFMT). The Remote Handled Waste Facility (RHWF) ties-in to the STS/LWTS transfer line 6-50-2-015 at the RHWF Valve Pit, where RHWF waste can be directed to the LWTS.

3.0 PRECAUTIONS AND LIMITATIONS

3.1 Precautions

Not Applicable.

3.2 Limitations

[1] Transfers from 8D-3 to the LWTS will meet the transfer criteria of either a Cs-137 concentration of < 10.0 μCi/mL or an acceptable effluent rad monitor reading of 50-RI-037 < 2.0k.

[2] Transfer from 8D-3 to the LWTS can not take place when liquid from the RHWF is being transferred to the LWTS per SOP 313-06.

4.0 PREREQUISITE ACTIONS

4.1 Field Preparations

[1] Observe that the STS Programmable Logic Controller (PLC) is on by verifying that the PLC Run light is ON inside the control panel.

4.2 Approvals and Notifications

[1] The Shift Supervisor (SS) must approve all transfers to the LWTS which meet the transfer criteria. The Site Operations Manager must approve any out-of-specification transfers.

[2] All steps marked by a [+] in the left hand margin require the recording of data and/or a signoff in the appropriate appendix to this procedure or a logbook. The appropriate data entry location will be specified in the procedural step or section.

5.0 PROCEDURE

5.1 Recirculation and Sampling of Tank 8D-3

NOTE *Additions to the tank may continue during sampling and transfer.*

[+] **[1]** Verify on the STS Control Panel that valves 50-FV-067 and 50-FV-068 are CLOSED and record on Appendix A. If panel indicator light does not operate, visually verify valve position at the Valve Aisle.

[+] **[2]** Start pump 50-G-007 after 8D-3 reaches approximately 30%, to monitor the integrity of the tank, by turning HS-032 to START and record discharge pressure from 50-PI-069 on Appendix A. If the pressure is NOT normal (30-40 psig), then shut off the pump and notify the SS.

[+] **[3]** IF Tank 8D-3 is filling, THEN record radiation level from 50-RI-037 on Appendix A approximately every 30 minutes until the transfer is complete.

NOTE *Additional sample analyses may be requested by the SS.*

[4] IF an 8D-3 sample is requested, THEN sample Tank 8D-3 at sample tap S-006, after the recirculation period of at least one hour, or when 8D-3 reaches approximately 50%. Sampling operations are covered in SOP 50-29.

[5] Request sample analysis per the SOP 00-13 sampling plan unless directed otherwise by PSOSS.

NOTE *50-RAH-037 is located in the recirculation loop of 50-G-007.*

5.2 Preparation for Transfer of 8D-3 Solution

NOTE *The STS rad monitor reading is used in lieu of the Tank 8D-3 sample to indicate acceptable transfer criteria for routing 8D-3 contents to the LWTS.*

[+] **[1]** Record either the 8D-3 sample data or the effluent rad monitor 50-RI-037, on Appendix A.

[2] Obtain Approval for transfer of the 8D-3 solution based acceptability of the transfer criteria:

[+] **[a]** IF either the 8D-3 Cs-137 concentration is <10.0 μCi/mL or the system effluent rad monitor readings is acceptable, (50-RI-037 < 2.0k THEN the solution may be transferred to the LWTS with the SS approval. SS to sign for transfer approval on Appendix A, Data Sheet.

[+] **[b]** IF, either the 8D-3 Cs-137 concentration is >10.0 μCi/mL or the system effluent rad monitor readings is unacceptable, (50-RI-037 > 2.0k THEN the solution may be transferred to the LWTS with the Site Operations Manager's approval.

5.3 Transfer of Solution from 8D-3 to LWTS

NOTE1 *During this transfer, the flow to Tank 8D-3 may continue. Radiation monitor 50-RI-037 shall alarm if a process upset or fluctuation occurs during the transfer, see Section 5.5.*

NOTE2 *High radiation alarm on 50-RAH-037 will cause 50-FV-067 to close, stopping the transfer to LWTS.*

[+] **[1]** Record Tank 8D-3 level (8-LI-023) on Appendix A and start the Appendix A Tank Transfer Data Sheet.

[2] Verify on the STS Control Panel that valves 50-FV-067 and 50-FV-068 are CLOSED. If panel indicator light does not operate, visually verify valve position at the valve aisle.

[+] **[3]** CLOSE or verify CLOSED by visual inspection valve 313-DMV-H-0012, RHWF Isolation Valve in the RHWF Valve Pit and valve 313-DMV-H-0128, Batch Transfer Tank D-003 Offsite Transfer Isolation in the RHWF and document on Appendix A, Tank Transfer Data Sheet.

[4] OPEN or verify OPEN valves 50-DMV-H-0013 and 50-DMV-H-0014 in the RHWF Valve Pit.

[+] **[5]** Verify that LAH-458 is NOT in alarm and document on Appendix A.

[6] Start Pump 50-G-007 by turning HS-32 to START, on the STS Control Panel, if not already in recirculation. Discharge pressure should be 30-40 psig. IF the pressure is not within this range, THEN shut off pump and notify the SS.

[7] OPEN 50-FV-067 on the STS Control Panel while maintaining communications with the LWTS Control Room.

[+] **[8]** Record on Appendix A: time of transfer start, the transfer start reading from 50-FQI-035.

NOTE *Transfer time to LWTS for 8,300 gallons from 8D-3 is approximately 5-1/2 hours.*

[9] Stop Pump 50-G-007 by turning HS-32 to STOP on the STS Control Panel when transfer is completed.

[10] Notify LWTS Control Room when the transfer is complete.

[+] **[11]** Record time of transfer completion, final 50-FQI-035 reading, and the volume in the CFMT at this time on Appendix A.

[+] **[12]** CLOSE valve 50-FV-067 fifteen minutes after the transfer is complete, allowing the line to the LWTS to drain back to 8D-3, and record on Appendix A.

[+] **[13]** Record final Tank 8D-3 level (8-LI-023) on Appendix A.

[+] **[14]** Calculate and record the volume transferred and the material balance, if applicable, using the Appendix A Tank Transfer Data Sheet.

[+] **[15]** PSOSS review the material balance and document on Appendix A.

5.4 High Radiation Alarm Response

[1] For 50-RAH-037 respond as follows:

[a] Verify that 50-FV-067 automatically closes. Manually close 50-FV-067 if necessary.

[b] Notify SS of radiation alarm.

[c] Notify LWTS Control Room of transfer interruption.

[2] Refer to SOP 50-32 for further alarm response.

6.0 RECORDS

The following forms, data sheets, logs, reports, or any other form of documentation considered to be a record and generated in response to this procedure shall be prepared, maintained, and transferred to the MRC in accordance with WVDP-262. Refer to RIDS for further information.

[1] Data Sheet, SOP 50-23 Appendix A

7.0 REFERENCE DOCUMENTS

7.1 Drawings

903D-017
903D-018
903D-019
906E-017
8R-A-4
901D-021 SH 1

7.2 Procedures

SOP 63-21, Concentrator Feed Make-Up Tank Operations.
WVNS-SAR-001, Safety Analysis Report for Waste Processing and Support Activities
SOP 50-29, STS Sampling and Pneumatic Sample Transfer
SOP 50-32, STS Alarm Response Procedure
SOP 00-13, WTF/STS/LWTS Run Plan and Fissile Material Tracking
WVDP-359, High Level Waste Operations Technical Manual
SOP 313-06, RHWF Waste Water Collection and Transfer System Operation

8.0 SOURCE REQUIREMENTS

No source requirements are implemented by this procedure.

9.0 APPENDICES

Appendix A - Data Sheet

APPENDIX A
DATA SHEET
(Page 1 of 3)

Source of Liquid: Vault Liquid _____ VIT Condensate _____

STEP NUMBER	DESCRIPTION	SIGN-OFF/DATE
5.1	Recirculation and Sampling of Tank 8D-3	
[1]	50-FV-067 and 50-FV-068 are Closed.	_____ Operator/Date
[2]	50-PI-069 Reading _____	_____ Operator/Date
[3]		

Time (HRS)	50-RI-037 (CPM)	TIME (HRS)	50-RI-037 (CPM)	TIME (HRS)	50-RI-037 (CPM)

_____
PSO Operator

APPENDIX A
DATA SHEET
(Page 2 of 3)

STEP NUMBER	DESCRIPTION	SIGN-OFF/DATE
5.2	Determination of Routing of 8D-3 Contents	
[1]	8D-3 Analytical Results or N/A if rad monitor reading is used	
	8D-3 Sample Number _____	
	Date/time of sample _____/_____	
	Anal Log Number _____	
	Cs-137 (µCi/ml) _____	
	pH (S.U.) _____	
	Density _____	
[2]	8D-3 Routing	
	[a] 8D-3 to be transferred to LWTS (Cs-137 <10.0 µCi/ml or 50-RI-037 < 2k)	_____ SS / Date
	[b] 8D-3 to transferred to LWTS (Cs-137 ≥10 or 50-RI-037 >2k	_____ Site Operations Mgr. / Date
5.3	Transfer of Solution from 8D-3 to LWTS	
[1]	8-LI-023 _____ percent	_____ Operator/Date
[3]	Valves 313-DMV-H-0012 and 313-DMV-H-0128 are CLOSED	_____ Operator/Date
[5]	LAH-458 is NOT in alarm	_____ Operator/Date

[8]		Transfer Time (HRS)	50-FQI-035 (gal)	Volume in CFMT (gal)
	Start Time	_____	_____	_____
[11]	Completion Time	_____	_____	_____

_____ Operator/Date

[12]	50-FV-067 closed	_____ Time	_____ Operator/Date
[13]	8-LI-023 _____ (%)		
[14]	Volume transferred _____ (gal.)		_____ Operator/Date

APPENDIX A
TANK TRANSFER DATA SHEET
(Page 3 of 3)

FOR TRANSFERS FROM 8D-3 TO 5D-15B OR 5D-15A-1

VAULT LIQUID _____ VIT CONDENSATE _____

DATE _____ SAMPLE TRANSFER NO. _____

8D-3 ANALYSIS or N/A: ANALYTICAL LOG NO. _____ (Copy attached)

DENSITY (g/mL) _____ CESIUM-137 _____ (uCi/mL) pH _____

50-RI-037 _____ (< 2.0k)

SIGNATURE REQUIRED BEFORE START OF TRANSFER

Tank levels before transfer are recorded below and approval is given to transfer.

SS SIGNATURE	DATE	SITE OPS. MGR. or N/A	DATE

SENDING TANK 8D-3	BEFORE TRANSFER	AFTER TRANSFER	CHANGE
LEVEL % (LI-023)			
VOLUME (Liters)			
50-FQI-035 (Gallons)			
RECEIVING TANK _____	BEFORE TRANSFER	AFTER TRANSFER	CHANGE
LEVEL %			
DENSITY			
VOLUME (Liters)			
CFMT VOLUME (Gallons)			

TRANSFER START TIME _____ TRANSFER END TIME _____

MATERIAL BALANCE:

(1) 50-FQI-035 CHANGE X 3.785 _____ Liters

(2) CFMT VOLUME CHANGE X 3.785 + _____ Liters

(3) VOLUME ADDED TO 8D-3 = _____ Liters

(4) VOLUME CHANGE IN 8D-3 _____ Liters

(5) VOLUME ADDED TO 8D-3 (Line 3) + _____ Liters

(6) VOLUME TRANSFERRED FROM 8D-3 = _____ Liters

THIS SECTION IS NOT APPLICABLE IF RADMONITORS ARE USED IN LIEU OF 8D-3 SAMPLE

(7) Cs-137 CONCENTRATION IN BATCH = _____ uCi/mL

(8) VOLUME TRANSFERRED FROM 8D-3 (Line 6) x _____ Liters

= _____ x 1000

(9) Cs-137 ACTIVITY IN BATCH = _____ uCi

(10) RECEIVING TANK VOLUME CHANGE _____ Liters

DATA REVIEWED, MATERIAL BALANCE ACCEPTABLE: _____

PSOSS DATE

WVNSCO RECORD OF REVISION

Rev. No.	Description of Changes	Revision On Page(s)	Dated
0	Initial Document	All	08/88
FC1	E-1, E-2, 4, 7	All	08/88
FC2	Incorporate new TR references and make operating changes	2,3,5-11,A-1, A-2,A-3,A-4, Attachment F	01/89
FC3	Correction to FC#2	6, A-1	02/89
FC4	Add reference to flush material and make operating changes	i,iii,4, 7, B-1, E-1 E-2	02/89
1	Incorporate all FCs	2-11, A-1 - A-4, B-1,E-1,G-1,H-1	04/89
FC1	Replace Attach. F-1 & F-2	i, F-1, F-2	09/89
FC2	Changes Steps 7, 8 and 9 on Page D-1, (Attachment D) Add OSR reference, pH requirement, change Attachment F-1 to include transfers to 8D-2.	i, 9, F-1, D-1	08/90
FC3	Replace Attachment F-1, delete page iii, add column to page i.	i, iii, F-1	09/90
FC4	Add Table of Contents, update to current operating conditions, add PAH-458 and LAH-457 responses.	i, iii, 4, 5, 10A,B,C,A-1, B-1	10/91
FC5	Change LAH-457 response. Correct spelling of legitimate.	i, 10B 10A, 10C	04/92
FC6	Delete reference to TR-IRTS-5.	i, ii, 4, 6, 7, 8	06/93
FC7	Section 2.1 - Delete DF definition. 3.3 - Change IRTS to Operations Technical Support. 5.0 - Delete reference to DF and to Attachment E. 6.2.6 - Delete reference to Attachment E. 6.2.7 - Change SOP 50-42 to SOP 00-13. 6.2.10 - Reword step to change acceptance criteria from DF to concentration in concentrates. 6.2.11 - Change wording to delete reference to DF. 6.2.12 - Reword to change acceptance criteria from DF to concentrates cesium concentration. 6.2.13 - delete step entirely. 6.2.14 - Reword to delete reference to DF and Attachment E. 7.0 - Change title for Attachment B to read: Cesium Calculation Work Sheet Change title for Attachment E to read:	3 & 5 6 8 10 10 11	06/94

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC7 (Cont.)	Table of Density and TDS Correlation	18	
	6.2.11 - Change signoff to reflect change in step 6.2.11. 6.2.12 - Delete reference to DF.		
	6.2.13 - Delete step entirely.	20	
	Attachment B - Delete DF - Add concentrates cesium concentration calculation.	23	
	Attachment E - Change from DF table to density/TDS table.	26	
FC8	Sections 6.2.10, 6.2.11, 6.2.12, and 6.2.14 Changed to allow higher cesium concentration for 8D-3 solution which will not be sent to the CSS.	11, 12, 13	06/95
	Added Records Maintenance section, 6.7.	18, 19	
	Added step 6.2.10 to Attachment A	21	
	Attachment A, 6.2.1 - Reworded for material not processed through CSS.	21	
	Attachment B - Added signoff and wording for material which will not be processed through the CSS.	24	
FC9	Sections 6.2.11 - corrected typographical error, Section 6.2.12 - changed to include OSR-GP-7 requirements, Section 6.2.13, 6.2.14 - changed to clarify signoffs for transfer. Att. A-1 - Added gross alpha recording for step 6.2.12, changed signoffs for 6.2.13 and 6.2.14 to agree with text. Changed uCi to µCi on various pages.	12, 13, 21, Various	06/95
2	General Revision	All	04/18/96
FC1	Include tank 5D-15A1 to component list	7	05/18/96
	Include 5D-15A1 as receiving tank on Appendix E	26	
FC2	Delete TDS analysis.	11, 19, 26	06/25/96
FC3	Added step 3.2 [10] SOP 50-39	8	03/07/97
	Step 5.3 [4] [b] Add: Record FQI-035 Reading	13	
	Step 5.3 [10], Change forward copy to LWTS to "Contact LWTS Control Room for LWTS tank level and volume date"	14	
	Step 5.4 [1], Changed Appendix D to Appendix A	14	
	Step 5.6 [1], Deleted [+]	16	
	Step 5.3 [4]-[10], Added space between signoff lines add titles to signoff lines	20	
	Appendix D, Corrected typos	25	
	Appendix E, Delete 71-FE-515	26	

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC4E	Emergency Field Change	15	03/12/97
FC4	5.4 [7] Added words to allow the WTFOSS to terminate the transfer at a 50-LI-023 level >12%.	15	03/13/97
FC5	3.2 - Added "WVNS-SAR-002" Deleted SOP 50-29, SOP 50-32, SOP 50-33, and SOP 00-13	9	06/18/97
	3.3 - New section "Performance Documents" Included SOP 50-29, SOP 50-32, SOP 50-33, and SOP 00-13		
	3.4 - Renumbered old 3.3 "Approvals and Notifications" to 3.4	10	
	4.2 [3] - Reworded step to clarify 8D-3 radiation monitor setting and added [+] in margin	11	
	5.2 [1] - Added NOTE prior to step which states that CS-137 results must be received prior to transfer, but other analyses may be pending.	13	
	Repaginated for field change	All	
FC6	3.2 [8] - Add "Tank".	5	10/14/97
	3.2 [10] - Add "in STS".	5	
	3.3 [4] - Update title.	5	
	3.4 [1] - Change "IRTS" to "WTF".	6	
	5.1 [1] - Deleted step. This step was to notify Vitrification Process Control Room that sampling of 8D-3 is to be performed and that no more condensate could be transferred from Vit. to tank 8D-3.	7	
	5.1 [2] - Step changed to eliminate statements preventing STS from operating if other solution is being transferred to 8D-3 and statement that no more Vit. Condensate may enter tank 8D-3 after sampling.	7	
	5.1 [3] - Changed "STS" to "WTFO".	8	
	5.1 [5] - Added statement to also record 50-RI-037 each 30 minutes as well as the 50-RI-034 reading.	8	
	5.1 [6] - Change NOTE3 to say: "High radiation alarm on 50 RAH-037 will cause 50-FV-067 to close, stopping the transfer to LWTS.	8	
	5.1 [7] - Added second sentence: "If CFMT boiloff is in progress, do not shut off 50-G-007. Changed "STS" to "WTFO".	8	
	5.3 [1] - NOTE1 - Deleted "from STS".	10	
	5.3 [1] - NOTE2 - Deleted	10	

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC6 (Cont.)	5.3 [3] Added "and if Vit Process Operations is boiling off the CFMT, request present CFMT volume. Record on Appendix A".	10	
	5.3 [6] Added "and VPCR, if boiloff is in progress during progress. Also added "and the volume in the CFMT at this time".	11	
	Appendix A, 5.1 [1] - Deleted entirely	16	
	Appendix A, 5.1 [5] - Added 50-RI-037 readings as well as 50-RI-034.	16	
	Appendix A, (page 3 of 4), 5.3 [3] Added CFMT volume reading.	18	
	Appendix A 5.3 [6] added CFMT volume reading.	18	
	Appendix D, #6, added "Initial CFMT Vol. ____gal.	23	
	Appendix D, #7. Corrected error step 5.3 [9] should be 5.3 [6]. Added "Final CFMT vol.___gal.	23	
	Appendix D, #8, added the following: "+ CFMT (Line 7 - Line 6) x 3.785".	23	
	Appendix E - Changed "IRTS" in title to "WTFO" Added "+ CFMT". Added CFMT volumes.	24	
	Appendix F - Added abbreviations for CFMT, IRTS, and VPCR.	25	
	Repaginated to allow for field change	All	
3	Major Change Revision	All	07/31/98
FC1	Cover sheet updated	1	11/02/98
	Section No. 3.2[2] - Add: "The combined volume of tanks 8D-1 and 8D-2 shall not exceed 720,000 gallons" and flag as PSR-11	4	
	Section No. 5.4[2][a] - Add PSR-11 flag. [+] Add "Calculate the volume of tanks 8D-1, 8D-2 and 8D-3 based on the current analytical results and the level as read on 8LI-2, 8LI-6, and 8LI-023 and verify that it is <720,000 gallons on Appendix A.	8	
	Section No. 9.0 - Add: Source Requirements; The following source requirements are implemented by this procedure: [1] PSR-11, High-level Waste Tank Spare Capacity Requirements, Surveillance Requirements 1 and 2	11	
	Appendix A (Page 3 of 3) - Add PSR-11 flag. Add 5.4[2] [a] Combined volume <720,000 gallons. Add sign-off for operator.	14	
FC2	Section 5.2: Added [+] to Step 5.2[2][c];	6	10/06/99
	Appendix A - corrected Step No. 4.2 to 4.1	13	

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC3	Added Appendix F and Table 1 to Table of Contents;	2	10/29/99
	Section 3.2[1] - Deleted sentence "If the solution pH is ≤8.0, caustic must be added to neutralize the acidity." In its place, added "or Tank 8D-2 must contain sufficient hydroxide to allow transfer of the acidic solution from 8D-3 to 8D-2."	4	
	Section 4.2[3] - new step with NOTE preceding step. Note says analysis of the contents of tank 8D-1 will be used in place of 8D-2 analysis because the 8D-1 and 8D-2 solutions have been mixed to the point of being essentially homogeneous. Step says: "Ensure a recent (within one month) sample of tank 8D-1 or tank 8D-2 solution has been taken and analyzed."	4	
	Section 5.3[6] - Deleted NOTE2 and deleted "as directed by WTFOSS."	7	
	Section 5.4[1] - Rewrote step to provide steps to determine if Tank 8D-2 can accept acidic waste.	8	
	Section 5.4[3][c] - Changed 5.4[4] to 5.4[3][c]	9	
	Section 5.4[4] - New step added saying "At least one sludge mobilization pump is operating in tank 8D-2 per SOP 55-07."	9	
	Section 5.4[8]- Deleted NOTE and added new sub-step [a] to shut down any operating sludge mobilization pumps.	9	
	Section 8.0 - Added Appendix F and Table 1	12	
	Appendix A, 5.2[2][c] - Added "or Appendix F determination indicates transfer is acceptable."	14	
	Appendix A, 5.4[1] - Added "or Appendix F has been completed, verifying 8D-2 has sufficient hydroxide to allow transfer of 8D-3 to 8D-2 without neutralization."	15	
	Appendix A, 5.4[3][c] - Changed step number; formerly 5.4[4].	15	
	Appendix A, 5.4[4] - New step to verify at least one sludge mobilization pump is operating to mix Tank 8D-2 contents.	15	
	Appendix B - Converted from gallons to liters.	16	
	Appendix F - New appendix, "Data Sheet for Determination of Acceptability for Transfer of Acidic 8D-3 Solution to 8D-2."	21	
	Table 1 - New; "Theoretical Relationship, pH VS. OH^-."	22, 23	

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC4	Added Note to step 5.1[4] allowing additional sample analysis to be requested per 9923232-I/DCIR.	5	11/29/99
FC5	Updated cover sheet to comply with EP-5-002 use classifications. Add option to not run a mob pump if the pH of 8D-3 is >8.0 per 0020297-I/DCIR Add "lifetime quality assurance" to 6.0[1] per IA-99-10.	Cover 9 11	01/28/00
4	NEW TYPE Revision to incorporate Field Change	All	02/08/00
FC1	Added author to cover to comply with EP-5-002. Added 5.5 to TOC and repaginated. Add 8D-1 to pH < 8.0 limitation. Updated title or references to reflect field change. Delete 8D-3 calibration chart in Appendix C and Insert Transfer 8D-3 to 8D-1 data sheet. Add "using Appendix B". Deleted independent verification of 50-G-001. Added new section Transfer of Solution from Tank 8D-3 to Tank 8D-1. Revise data sheets to match field change. Added Appendix D, Batch Transfer from Tank 8D-3 Worksheet to Appendix E Tank Transfer Data Sheet. Combined Appendix E and D into A per DCIR. Repaginated Appendix F to D.	1 2 3,4,6,7,8,14,15 7,20 8 9 10 16-19,,21,22 6,8,9 8	04/14/00
FC2	Emergent field change used in the field on 12/6/00 to correct numbering of Appendix A in correlation to the procedure. Section 6.0 {3} - Updated RM section to Records and Information Department, removed SOP 00-01 and replaced with "WVDP-262, "WVNS Manual for Records Management and Storage."	18 14	12/08/00
FC3	5.4.1 -Deleted "and proceed as follows." 5.4.1[a] - Deleted, redundant step." 5.4.2[a] - corrected from "to" to "per." Appendix A - Material balance #8, corrected formula to divide rather than multiply, typo. Reference: DCIR 0121006	8 19	03/19/01
FC4	6.0[1] & [3] RM section updated per WVDP-262. Appendix A - Material balance #7 added "Concentration". #8 returned formula back to dividing since it is calculated in uCi, multiplying would result in Ci. PCE changed to WTF Engineer Reference DCIR 0121206 Repaginated to accommodate new printer driver.	13 19 19,20 All	05/09/01

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC5	Updated Cover Sheet per EP-5-002.	1	07/27/01
	Sections 4.1 [2] and 7.2 - Deleted reference to SOP 50-33 as it has been canceled.	4,14	
	Appendix A (Page 1 of 4)- Deleted Sections 4.1 and 4.1 [2] and corresponding sign off.	16	
	PSR-11 flags added to step 5.5[3], and to Appendix A (Page 3 of 4) sign offs 5.4[3][a], 5.5[3]. Added "of Tank s 8D-1, 8D-2, and 8D-3 are" to Appendix A sign off steps 5.4[3]a and 5.5[3] per QA review comments.	10,18	
	Adjusted line height Appendix A, (Page 4 of 4) per Operator request. Reference DCIR 0121703	19	
5	**NEW-TYPE REVISION INCORPORATION OF FIELD CHANGES**	**ALL**	**08/08/01**
FC1	Cover Sheet - corrected typo in title was "2" should be "3"	1	09/12/01
	Updated RM section to identify on HLWTFO rids. Added that completed data sheets be sent to the RCRA file custodian.	14	
	Source Requirements changed to "Limiting Conditions of Operation 1 and 2" per QA review.	15	
	Appendix A - 5.2[1] deletion of Gross Alpha and Alpha Pu recordings.	17	
	Added footnote stating that Appendix D copy be sent to the RCRA file. Reference DCIR 0121847, 0121985. HLWTF Operations are affected by these changes.	22	
FC2	PSO-STS/LWTS/RHWF are affected by the following change:		12/12/02
	Coversheet-Updated FM;delete issue date.	Cover	
	2.0 Updated to include RHWF tie-in.	3	
	5.1[4]Change specified analysis to "sample per SOP 00-13 or Eng." reference.	5	
	5.3[3]Add step to verify V1 CLOSED. 5.3[4]Add step to OPEN 0013 and 0014. 5.3[5]Add step to verify LAH-458 NOT in alarm.	7	
	5.5[8]-Delete 50-FV-7868 to reflect field	11	
	5.5[11]Add step to verify V1 CLOSED. 5.5[12]Add step to OPEN 0013 and 0014. 5.5[13]Add step to verify LAH-458 NOT in alarm. condition of J-74/J-29 per ECN 13543.	12	
	5.5[24]Add 71-H-898 to match Appendix C.	13	
	6.0[2]&[3]Update RIDS and dept. title.	14	
	7.2-Update SOP and PSR titles.	15	
	App. A-Update to reflect field change; renumber remaining steps.	17,18	
	App. C - Updated to reflect field change.	21	
	App. D-Update Dept. title.	22	
	Table 1-Add page numbers. These changes will reflect RHWF valve pit tie-in to STS/LWTS transfer line 6-50-2-015 per ECN 25012.	23,24	

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
6	PSO-STS/LWTS operations are affected by the following: Updated department titles throughout. 3.2-Added new limitation for transfer criteria to allow transfer to LWTS without an 8D-3 sample based on acceptable 50-RI-034/037 readings of <2.0k and/or <10.0k, respectively. 4.2[1]Updated approvals to match field change. 5.1[2]Added "to monitor the integrity of the tank" 5.1[3]Relocated note and step to follow pump start. 5.1[4]Added "IF an 8D-3 sample is requested..." 5.2 Revised section to reflect the use of acceptable radiation monitor readings to determine transfer routing in lieu of an 8D-3 sample. 5.3[14]Added "if applicable" 5.3[15]Added WTF Eng. review step to agree with Appendix sign-off. App. A-Added 50-RI-034 and/or 50-RI-037, caveat for Cs-137 calculation, and Site Ops. Mgr sign off to correspond with text.	ALL 4 4 5 5 5 6 8 8 19	01/14/03
FC1	EMERGENT FIELD CHANGE STANDARD FIELD CHANGE PSO is affected by the following change: 3.2[3],5.2[2][a]&[b], and App. A, page 4 of 4- fixed typo(reversed 034 and 037).	4,6 19	01/14/03 01/15/03
7	General Revision. This revision affects PSO. Deleted sections covering Transfers from 8D-3 to 8D-1 or 8D-2. Also deleted data sheets covering neutralization of 8D-3. Also performed administrative changes to reflect current organization HLW/PSO issues. Updated procedure per DCIP-100.	All	07/31/03
8	Changes are being made to accept RHWF liquid. Operations and Sodium Bearing Waste Disposition Project are impacted by these changes.	All	02/18/04
9	Changes are being made to accept RHWF liquid to Tanks 5D-15B or 5D-15A-1 Operations and Sodium Bearing Waste Disposition Project are impacted by these changes.	3, 11	03/24/04

APPENDIX D-29

SOP 07-08, *PROCESS BUILDING LIQUID WASTE HANDLING*
SOP 71-02, *OPERATION OF THE LWTS HGH TDS TREATMENT SYSTEM*
SOP 71-06, *TANK 12-35104, TANK 7D-13, AND TANK 13D-8 TRANSFERS*
SOP 71-10, *TRANSFER OF LWTS EVAPORATOR CONCENTRATE TANKS*

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Date _____ Time _____ Verified By _____

Revision Number 14

Revision Date 07/30/03

SOP 07-08

PROCESS BUILDING LIQUID WASTE HANDLING

Cognizant Author: C. E. Hodge

Cognizant Manager: D. C. Meess

Facility Manager: J. P. Curcio

HLW:

YES	NO	N/A
		X

QUALITY LEVEL: C

SAFETY CLASS: C

PROCEDURE USE CLASSIFICATION		MULTIPLE USE BY SECTION
X	CRITICAL USE	ALL
	REFERENCE USE	

ALARA PLANNING

[X] The work described in this procedure does not require ALARA planning.

[ ] The work described in this procedure requires ALARA planning.

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PROCESS BUILDING LIQUID WASTE HANDLING

1.0 INTRODUCTION

1.1 Purpose

This procedure gives direction for transferring contaminated liquid wastes collected in the Process Building waste tanks. This procedure addresses the actions necessary to sample, transfer and neutralize liquid wastes collected in various vessels in the plant.

1.2 Applicability

Plant Systems Operations (PSO) perform transfers per this procedure.

2.0 GENERAL INFORMATION

This procedure establishes guidelines for the transfer and storage of contaminated liquid wastes collected in the various vessels in the plant. From these collection points, liquid wastes can be transferred to 7D-2. Sufficient liquid is transferred from 7D-2 to 3D-2, sampled, neutralized, and transferred back to 7D-2. The waste is then transferred to 5D-15B.

Prior to any transfer, the levels of the tanks involved and the volume(s) of liquid to be transferred must be determined. Analysis of the tanks must be available, or samples must be taken from the sending and receiving tanks. The only exceptions are for transfers from 7D-14.

When jetting liquid under this procedure, a sump high level alarm requires stopping the jetting operation and notifying the Plant Systems Operations Shift Supervisor (PSOSS).

When performing a work instruction classified as "Critical Use," the worker(s) MUST have the work instruction present and open with each step performed exactly as written. The worker(s) must review the work instruction prior to performing the work, paying special attention to any Precautions and Limitations. In the "Reader Worker Method" of meeting the intent of the use classification, a qualified individual is assigned to read the steps to the worker prior to performance of each step. With this method it is imperative to ensure that the means of communication between the reader and worker provides and allows clear and concise information exchange.

3.0 PRECAUTIONS AND LIMITATIONS

3.1 Precautions

[1] An RWP is required for work being performed in the Main Plant.

[2] Steam and water cannot be safely mixed in a closed piping system without risking condensate induced water hammer. Do not mix steam with water either by injecting water into a closed steam system or by injecting steam into a closed piping system that includes water (condensate).

[3] Do not close a valve which isolates a section of piping that is not provided with properly-positioned steam traps and drain valves.

[4] Exposed steam lines are thermally extremely hot and can cause burns to flesh with very short contact time. Avoid contact with any exposed steam line or valve.

[5] Do not stand directly in front of a steam valve when operating it. Stand to one side such that if the valve fails, the steam is not aiming at you.

[6] Operators should perform frequent checks on systems that are turned on or shut down to assure that the system does what is expected, i.e., water flows, pressure rises, etc. If the required action does not happen, (1) STOP - Do not attempt to perform the next step, (2) SECURE system in a safe mode, and (3) NOTIFY shift supervisor immediately.

3.2 Limitations

PSR-1 **[1]** Fissile uranium and fissile plutonium in solution shall not be precipitated. Prior to adding caustic to 15D-6 or to 3D-2 for neutralization of 7D-2, an analyses must be performed to ensure that fissile uranium and fissile plutonium will not precipitate. Prior to transfer of contents from a sending tank to a receiving tank, an analysis shall be performed and documentation provided that mixing of the contents of the two tanks shall not cause precipitation. If precipitation of fissile material is possible, written authorization of the Radiation and Safety (R&S) Committee is required prior to caustic addition and the evidence of R&SC authorization shall be provided with Appendix A.

PSR-1 **[2]** Fissile uranium and fissile plutonium concentration in liquids in both the "sending tank" and "receiving tank" involved in a liquid transfer shall be in compliance with the limits of PSR-1 Table 1. Tank 7D-14 does not require sampling prior to transfer; however, an estimate of fissile material in the tank shall be provided by A&PC prior to transfer. Tank 7D-2 is transferred to Tank 3D-2 for sampling, prior to receiving a 7D-14 transfer.

[3] Tank 7D-2 shall not normally be jetted below 15%. Jetting below 15% causes the tank level to drop rapidly with the potential to expose the eductor into the tank if the tank level continues to decrease below approximately 5%. This would pressurize Tank 7D-2.

4.0 PREREQUISITE ACTIONS

4.1 Notifications and Approvals

[1] All steps in this procedure that require an inspection, the recording of data, a sign-off, or a notification will be denoted by a [+] in the left-hand margin. The inspection results, data, or sign-off shall be recorded on the procedure data sheet(s) or in the appropriate log book.

4.2 Materials/Special Tools and Equipment List

[1] If performing steam valving, the following personal protective equipment is required in addition to that required by the RWP:

Kevlar gloves
Kevlar sleeves (optional)

[2] If performing steam valving, this procedure may direct use of the following equipment:

Thermocouple with hand held readout Range 0 - 400°F
Hand held pyrometer
Ultrasonic detector (For steam trap troubleshooting)

[3] Two-way radio

5.0 PERFORMANCE SECTIONS

NOTE *Individual sections within this procedure may be performed out of sequence depending on the evolution in progress.*

5.1 Jetting 7D-2 to 3D-2

[+] **[1]** Verify that 3D-2 is 0%-5% as read on 3-LR-5 in the Main Plant Control Room (MPCR) and record on Appendix A.

[+] **[2]** Record level in 7D-2 from 71-LR2-009 in the MPCR control room on Appendix A.

[+] **[3]** Compute and record inches depth and volume of 7D-2 on Appendix A using the Tank 7D-2 calibration table.

[+] **[4]** Record the CPC North, CPC South and LWC sump levels, as read on 15-LI-3, 15-LI-5 and 15-LI-4, on Appendix A.

[5] Secure any transfers into 7D-2 until 3D-2 is returned to 7D-2 following sampling unless the verification in Section 5.4 [6] is performed.

[+] **[6]** PSOSS authorize transfer on Appendix A.

[7] OPEN 71-UA-GL-1105 two (2) turns on line 7-UA3-2"(COA).

[8] Place 7HC-1 to the OPEN position in the MPCR and sparge for a minimum of 15 minutes prior to transfer.

[a] – Monitor the VOG on 6PRC-1 for upset while sparging Tank 7D-2. IF indication becomes erratic, THEN notify the PSOSS. (Normal range -2.9 to -3.6)

[9] CLOSE or verify CLOSED in COA: [Reference: Figure 2]

71-SH-GL-1106 on line 7S-15
71-SH-GL-1107 on line 7S9-1½"
71-SH-GL-1108 on line 7S12-¾"

NOTE *Trap 15-SCH-T-0838 is an inverted bucket trap. Temperature alone will provide a gross indication of trap operation.*

[10] Verify that 15-SH-T-0844 and 15-SCH-T-0838, the 150# header traps in the LXA, are operational by performing the following:

[a] Measure the trap surface temperature using a thermocouple or a hand held pyrometer. IF the trap is cold (<90◦F), THEN stop and notify the PSOSS.

[b] Listen to hear if 15-SH-T-0844 cycles properly, producing a click at least once in 3 minutes.

WARNING

Do not remain in an area if water hammer occurs, or personal injury may result if a steam line ruptures.

[11] Slowly OPEN 71-SH-GL-1108 on line 7S-12 to 7H-1 transfer jet.

NOTE *A minimum of 40% on 3LR-5 will provide enough level to sample 3D-2.*

[12] Set 7PIC-1 to maximum steam pressure in MANUAL control position in the MPCR.

[13] Index 7HC-42 to STEAM to transfer liquid to 3D-2 and monitor the 3D-2 level on 3LR-5 in MPCR.

[a] IF an alarm is received for the LWC (15LAH-13) or CPC North/South sump (15LAH-8/9), THEN secure the transfer and notify the PSOSS.

[14] Index 7HC-42 to AIR in the MPCR and purge for 30 seconds when 3D-2 reaches a minimum of 40% on 3LR-5.

[15] Reduce 7PIC-1 to zero in the MPCR.

[16] Return 7HC-42 to OFF.

[17] CLOSE 7HC-1.

[+] **[18]** Record time, date, initial and explain level change on 71-LR2-009 and 3LR-5 charts in MPCR.

[19] CLOSE the following valves in the COA:

71-SH-GL-1108 on line 7S-12
71-UA-GL-1105 on line 7UA-3

[+] **[20]** Record the LWC, CPC North and South sump levels, as read on 15-LI-3, 15-LI-5 and 15-LI-4, on Appendix A. Notify the PSOSS if levels increase.

[21] Notify the PSOSS that the transfer is complete.

[+] **[22]** Complete the "After" transfer portions of Appendix A.

[+] **[23]** PSOSS review data and sign Appendix A.

5.2 Sampling 3D-2

NOTE *Since there is no density probe in 3D-2, specific gravity of the sample is requested to determine liquid volume in 3D-2.*

[+] **[1]** Initiate an Analytical Request form (WV-1113) including the following analysis: gross alpha, gross beta, Cs-137, density, pH, neutralization normality, total U, and total alpha Pu.

NOTE1 *The only way to agitate 3D-2 is with the level instrumentation air, there is no sparge in 3D-2.*

NOTE2 *Valving out the transmitter to 3D-2 will cause a low-level alarm, 3LAL-5, in the MPCR.*

[2] Note the rotameter setting for 3LT-5 then valve off air to the instrument transmitter as follows:

[a] CLOSE the high and low pressure valves.

[b] OPEN the bypass valve.

[c] Increase instrument airflow through 3J-95B by increasing the rotameter setting to full OPEN - this will provide a sparging action in 3D-2.

[d] Acknowledge 3D-2 low-level alarm, 3LAL-5, in the MPCR.

[e] Notify Analytical and Process Chemistry (A&PC) to send transfer cart down to 1-C sampler.

[3] Sparge 3D-2 for at least 30 minutes prior to sampling.

[a] Monitor the VOG on 6PRC-1 for signs of upset while sparging tank 3D-2. IF indication becomes erratic, THEN notify the PSOSS. (Normal range -2.9 to -3.6)

[4] Obtain a sample from 3D-2 at the "1C" sample station located in the COA. Sampling procedures are covered in SOP 71-11.

[5] Valve 3D-2 instrumentation back in as follows:

[a] Return the 3D-2 rotameter to its original setting.

[b] CLOSE the bypass valve.

[c] Slowly OPEN the high pressure valve.

[d] Slowly OPEN the low pressure valve.

[6] Update the LLWO Status Board to track tank sample status.

5.3 Neutralization of 3D-2

NOTE *"Caustic" refers to sodium hydroxide, potassium hydroxide, or lithium hydroxide.*

[+] **[1]** Record 3D-2 analytical results on Appendix B.

[+] **[2]** Calculate total volume of 7D-2 and 3D-2 from the calibration tables using the specific gravity supplied from lab analysis and document on Appendix B.

[+] **[3]** WTF Engineer calculate the volume of caustic required to neutralize 7D-2 and 3D-2 on the neutralization batch data sheet using the calculations on Appendix B. The data sheet permits excess caustic addition to reduce corrosion as necessary.

PSR-1[+] **[4]** A&PC Manager perform an evaluation ensuring that fissile uranium and fissile plutonium will not precipitate as required per PSR-1. Document approval for neutralization on Appendix B. If precipitation of fissile material is possible, authorization by the Radiation and Safety Committee on Appendix A is required prior to the caustic addition.

[+] **[a]** If precipitation of fissile material is possible, obtain R&S Committee authorization for caustic addition.

[5] OPEN or verify OPEN in the COA:
71-CW-GL-1109 (Cooling Water (CW) into 3D-2)
71-CW-GL-1110 (CW out of 3D-2)
71-CW-GL-946 (CW to 3D-2)
71-CW-GT-948 (CW out of 3D-2)

[+] **[6]** Obtain an IWP for caustic use for 3D-2 neutralization. Record IWP# on Appendix B.

[7] Obtain and stage the quantity and type of caustic indicated on Appendix B.

NOTE *Valving out transmitter to 3D-2 will cause low-level alarm, 3LAL-5, for 3D-2 in the Main Plant Control Room.*

[8] Note the rotameter setting for 3LT-5 then valve OFF air to the instrument transmitter:

[a] CLOSE the high and low pressure valves.

[b] OPEN the bypass valve.

[c] Increase instrument airflow through 3J-95B by increasing the rotameter setting to full OPEN - this will provide a sparging action in 3D-2.

[d] Acknowledge 3D-2 low-level alarm, 3LAL-5, in MPCR.

[9] CLOSE or verify CLOSED in the COA:

71-CH-GT-1114 on line 14CH91-2"
71-CH-GT-1180 on caustic addition pot

[10] Carefully remove threaded cap on pot.

[11] OPEN 71-CH-GT-1180.

WARNING

DO NOT handle caustic without proper PPE as indicated on the IWP or caustic burns may incurred.

[12] Carefully pour up to one gallon of caustic into the pot.

[13] CLOSE 71-CH-GT-1180.

[14] OPEN 71-CH-GT-0012.

[15] Carefully vent the pot by cracking open 71-CH-GT-1180.

[16] CLOSE:

71-CH-GT-0012
71-CH-GT-1180

[17] Repeat steps 5.3 [10] through 5.3 [15] until the required amount of caustic has been added to 3D-2.

[18] Partially fill the carboys with water. Rinse and drain the carboys and caustic addition pot using steps 5.3 [10] through 5.3 [16].

[19] Allow sparge and cooling water to operate for at least 30 minutes to thoroughly mix and cool 3D-2 contents.

[20] CLOSE:

71-CW-GT-948 (CW out of 3D-2)
71-CW-GL-1110 (CW out of 3D-2)

[21] Valve 3D-2 instrumentation back in as follows:

[a] Return the 3D-2 rotameter to its original setting.

[b] CLOSE the bypass valve.

[c] Slowly OPEN the high pressure valve.

[d] Slowly OPEN the low pressure valve.

[+] **[22]** Record amount and type of caustic added on Appendix B.

[23] Re-sample 3D-2 per Section 5.2 requesting pH.

[+] **[24]** WTF engineer verify re-sample analysis indicates acceptable amount of caustic is in 3D-2 to neutralize the entire volume of 7D-2. IF pH is less than 7, THEN ask the analytical labs to run a neutralization normality analysis. Document acceptance on Appendix B.

[25] Return 3D-2 liquid to 7D-2 per Section 5.4 of this procedure.

5.4 Transfer 3D-2 to 7D-2

[+] **[1]** Record level in Tank 3D-2, from 3LR-5 in the MPCR on the "Before" transfer sections of Appendix A.

[+] **[2]** Compute and record the volume in 3D-2 on the "Before" transfer section on Appendix A using the Tank 3D-2 calibration table.

[+] **[3]** Record level in Tank 7D-2, at 71-LR2-009 in the MPCR, on the "Before Transfer section of Appendix A.

[+] **[4]** Compute and record volume in 7D-2 on tank transfer data sheet using the Tank 7D-2 calibration table.

[5] Verify that the amount to be transferred does not exceed the available space in 7D-2 (25,131 liters minus 7D-2 volume in liters = maximum volume that can be transferred).

PSR-1 [+] **[6]** If liquid has been added to 7D-2 during the absence of the 3D-2 volume, THEN the PSOSS must verify that the concentration of fissile material in 3D-2 does not exceed the limits of PSR-1 Table 1 (Appendix C) and document on Appendix A.

[+] **[7]** PSOSS authorize transfer on Appendix A.

[8] Verify CLOSED:

71-SH-GL-1111
71-SH-GL-1112
71-SH-GL-1113

NOTE *Trap 15-SCH-T-0838 is an inverted bucket trap. Temperature alone will provide a gross indication of trap operation.*

[9] Verify that 15-SH-T-0844 and 15-SCH-T-0838, the 150# header traps in the LXA, are operational by performing the following:

[a] Measure the trap surface temperature using a thermocouple or a hand held pyrometer. IF the trap is cold (<90◦F), THEN stop and notify the PSOSS.

[b] Listen to hear if 15-SH-T-0844 cycles properly, producing a click at least once in 3 minutes.

[10] IF 3D-2 has been neutralized, THEN OPEN or verify OPEN the following cooling water valves:

71-CW-GL-981 (CW into 7D-2)
71-CW-GL-1103 (CW into 7D-2)
Throttle (½ turn) 71-CW-GL-1104 (CW out of 7D-2)
Throttle (½ turn) 7-CW-GL-977 (CW out of 7D-2)

WARNING

DO NOT remain in an area if water hammer occurs, or personal injury may result if a steam line ruptures.

NOTE *Position valve 71-SH-W3-0081 such that arrow on handle is toward desired utility.*

[11] Set 3-way valve 71-SH-W3-0081 OPEN to 71-SH-GT-951.

[12] Slowly OPEN 71-SH-GL-1111 (to 3H-10 transfer jet) in the COA.

[a] Monitor the tank levels at 3LR-5 and 71-LR2-009 in the MPCR.

NOTE *Position valve 71-SH-W3-0081 such that arrow on handle is toward desired utility.*

[13] Set 3-way valve 71-SH-W3-0081 OPEN to 71-UA-GT-961 when 3-LT-5 in the COA reaches 0-5%.

[14] Air purge jet 3H-10 for at least 30 seconds and then CLOSE 71-SH-GL-1111 and 71-SH-W3-0081.

[15] If cooling water was valved in, THEN CLOSE the following valves:

71-CW-GL-1104 (CW out of 7D-2)
71-CW-GL-977 (CW out of 7D-2)

[+] **[16]** Record time, date, initial, and explain level change on 71-LR2-009 and 3LR-5 charts in the MPCR.

[+] **[17]** Notify the PSOSS that the transfer is complete.

[+] **[18]** Complete the "After" transfer sections of the tank transfer data sheet, Appendix A.

[+] **[19]** PSOSS review data and sign Appendix A.

5.5 Transfer 4D-10H to 7D-2

CAUTION
Do not perform this transfer without an engineering evaluation being completed to verify the existence of a transfer path.

5.6 Transfer 7D-14 to 7D-2

[1] PSOSS notify the A&PC labs to stop sending liquid to 7D-14.

[+] **[2]** Record levels in Tanks 7D-14 and 7D-2 on Appendix A as read on 7LR-10A and 71-LR2-009 in the MPCR.

NOTE *Tank 7D-14 does not have sampling capability or density instrumentation.*

[+] **[3]** Compute the volume in 7D-14 using the Tank 7D-14 calibration table and assuming a density of 1.0. Record the volume of liquid in 7D-14 on Appendix A.

[+] **[4]** Compute the volume in 7D-2 using the Tank 7D-2 calibration table and density from 7DI-011. Record the volume of liquid in 7D-2 on Appendix A.

[+] **[5]** Record the LWC, CPC North and South levels, as read on 15-LI-4, 15-LI-3 and 15-LI-5, on Appendix A.

[6] Verify the amount to be transferred does not exceed the available space in 7D-2 (25,131 liters minus volume of 7D-2 in liters = maximum volume that can be transferred).

NOTE *At this time, 7D-14 cannot be sampled. Approval to transfer 7D-14 to 7D-2 without a sample is based on process knowledge.*

PSR-1 **[7]** A&PC Manager perform an evaluation of Tank 7D-14 contents. The analysis shall include an estimate of the total U concentration in mg/mL and alpha Pu in μCi/mL in tank liquids and shall also provide an analysis to determine if the mixing of 7D-14 contents with 7D-2 will result in the precipitation of fissile materials. If precipitation of fissile material is possible in Tank 7D-2, authorization by the Radiation & Safety Committee on Appendix A is required prior to performing the transfer of 7D-14 to 7D-2.

[a] Forward the evaluation to the PSO Manager and attach a copy to the transfer data package.

[+] **[b]** A&PC Manager document approval for transfer on Appendix A.

PSR-1 [+] **[c]** PSOSS verify that the concentration of fissile material in the samples added to 7D-14 does not exceed the limits of PSR-1 Table 1 (Appendix C). Document approval to transfer on Appendix A.

PSR-1 [+] **[8]** Determine if a transfer has been received in 7D-2 since the last sample analysis was performed using the LLWO Status Board. If a transfer has been received since the last analysis, THEN obtain a sample of Tank 7D-2 per Sections 5.1 and 5.2 of this procedure and request the following analysis to be performed on form WV-1113: gross alpha, gross beta, density, pH, total uranium, and total alpha plutonium.

[+] **[9]** Notify the PSOSS of intent to transfer.

[10] OPEN blocking valve 71-UA-GL-1143 on line 7UA26-1".

[11] Index 7HC-19 to the OPEN position in the MPCR to sparge Tank 7D-14 for a minimum of 15 minutes prior to transfer.

NOTE *Trap 15-SCH-T-0838 is an inverted bucket trap. Temperature alone will provide a gross indication of trap operation.*

[12] Verify that 15-SH-T-0844 and 15-SCH-T-0838, the 150# header traps in the LXA, are operational by performing the following:

[a] Measure the trap surface temperature using a thermocouple or a hand held pyrometer. IF the trap is cold (<90◦F), THEN stop and notify the PSOSS.

[b] Listen to hear if 15-SH-T-0844 cycles properly, producing a click at least once in 3 minutes.

WARNING

Do not remain in an area if water hammer occurs, or personal injury may result if a steam line ruptures.

NOTE *Position valve 71-SH-W3-0082 such that arrow on handle is toward desired utility.*

[13] Set 3-way valve 71-SH-W3-0082 OPEN to 71-SH-GT-913.

[14] Slowly OPEN valve 71-SH-GL-1142 on line 7S-24 to jet 7H-18.

[a] IF a high level alarm on the LWC (15LAH-13) or North CPC sump (15LAH-9) is received, THEN stop the transfer and notify the PSOSS.

NOTE *Position valve 71-SH-W3-0082 such that arrow on handle is toward desired utility.*

[15] Set 3-way valve 71-SH-W3-0082 OPEN to 71-UA-GT-911 when 7LR-10R indicates 0-5% in the MPCR.

[16] Air purge for at least 30 seconds then CLOSE the following:

7HC-19 (MPCR)
71-SH-W3-0082
71-SH-GL-1142 on line 7S-24 (COA)
71-UA-GL-1143 on line 7UA-26 (COA)

[+] **[17]** Record the time, date, initial, and explain level change on 7LR-10R and 71-LR2-009 charts in the MPCR.

[+] **[18]** Record the LWC, CPC North and South levels, as read on 15-LI-4, 15-LI-3 and 15-LI-5, on Appendix A. Notify the PSOSS if the levels have increased.

[19] Notify the PSOSS that the transfer is complete.

[+] **[20]** Complete the "After" transfer portions of the Appendix A tank transfer data sheet.

[21] Update the LLWO Status Board to reflect tank status.

[+] **[22]** PSOSS review data, status board update, and sign Appendix A.

5.7 Sampling 15D-6 (See Figure 1)

5.7.1 Sampling 15D-6

[1] Turn ON the 15D-6 air sparger.

[2] Obtain a sample from 15D-6 at the station located in the MSM shop.

PSR-1 [+] **[3]** Request that gross alpha, gross beta, neutralization normality, pH, density, total uranium and total alpha plutonium analysis be performed on Form WV-1113.

[4] Turn OFF the 15D-6 air sparger.

[5] PSOSS determine the destination of 15D-6 waste solution based on the sample results.

5.7.2 Neutralizing 15D-6

[+] **[1]** Record 15D-6 analytical results on Appendix B.

[+] **[2]** Calculate the amount of caustic required for neutralization using the calculation on the neutralization batch data sheet in Appendix B.

PSR-1 [+] **[3]** A&PC Manager perform an evaluation ensuring that fissile uranium and fissile plutonium will not precipitate as required per PSR-1. Document approval for neutralization on Appendix B. If precipitation of fissile material is possible, authorization by the Radiation and Safety Committee on Appendix A is required prior to the caustic addition.

[a] Forward the evaluation to the PSO Manager and attach a copy to the transfer data package.

[+] **[b]** A&PC Manager document approval for neutralization on Appendix B.

[4] Turn ON the 15D-6 sparger.

[+] **[5]** Obtain an IWP and caustic for 15D-6 neutralization. Record IWP# on Appendix B.

[6] Slowly add the required amount of caustic to one of the MSM Shop floor drains.

[7] Obtain another pH sample and add additional caustic as required.

[8] Turn OFF the air sparger.

[+] **[9]** Record amount and type of caustic added on Appendix B.

[10] Re-sample 15D-6 per Section 5.8.1.

[+] **[11]** WTF Engineer verify that caustic added is acceptable to neutralize 15D-6 based on a re-sample. Record verification on Appendix B.

6.0 POST COMPLETION CONFIGURATION

Not applicable.

7.0 RECORDS

The following forms, data sheets, logs, reports, or any other form of documentation considered to be a record and generated in response to this procedure shall be prepared, maintained, and transferred to the MRC in accordance with WVDP-262. Refer to RIDS for further information.

7.1 Appendix A, Tank Transfer Data Sheet

7.2 Appendix B, Neutralization Batch Data Sheet

8.0 REFERENCES

8.1 Procedures

SOP 06-02, Vessel Off-Gas System Operation
SOP 15-04, Sampling Operations
SOP 15-06, Jetting Sumps
SOP 71-11, LWTS Sampling Procedures
WVDP-010, Radiological Controls Manual
WVDP-359, Technical Manuals
WVNS-SAR-001, Rev. 8, Safety Analysis Report for Waste Processing and Support Activities

8.2 Process Plant P&IDs

3R-A-1
6R-A-1
7R-A-1
8R-A-1
15R-A-6
15R-A-82
901D-021, Sh. 3, 6, 7

9.0 SOURCE REQUIREMENTS

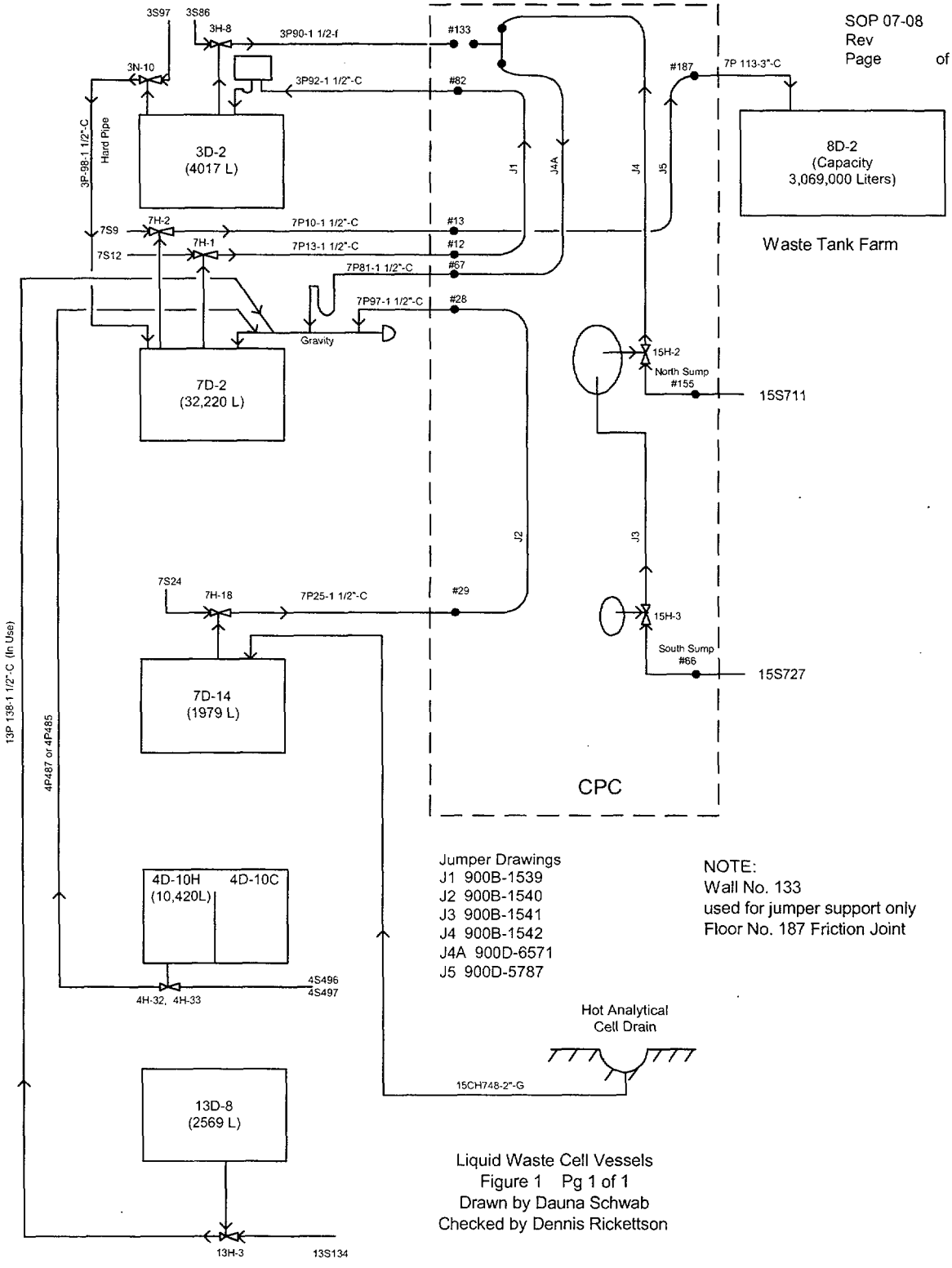
The following source requirements are implemented by this procedure:

PSR-1 Requirements for Liquid Transfers of Fissile Material, Surveillance Requirement 1 & 2.

10.0 APPENDICES

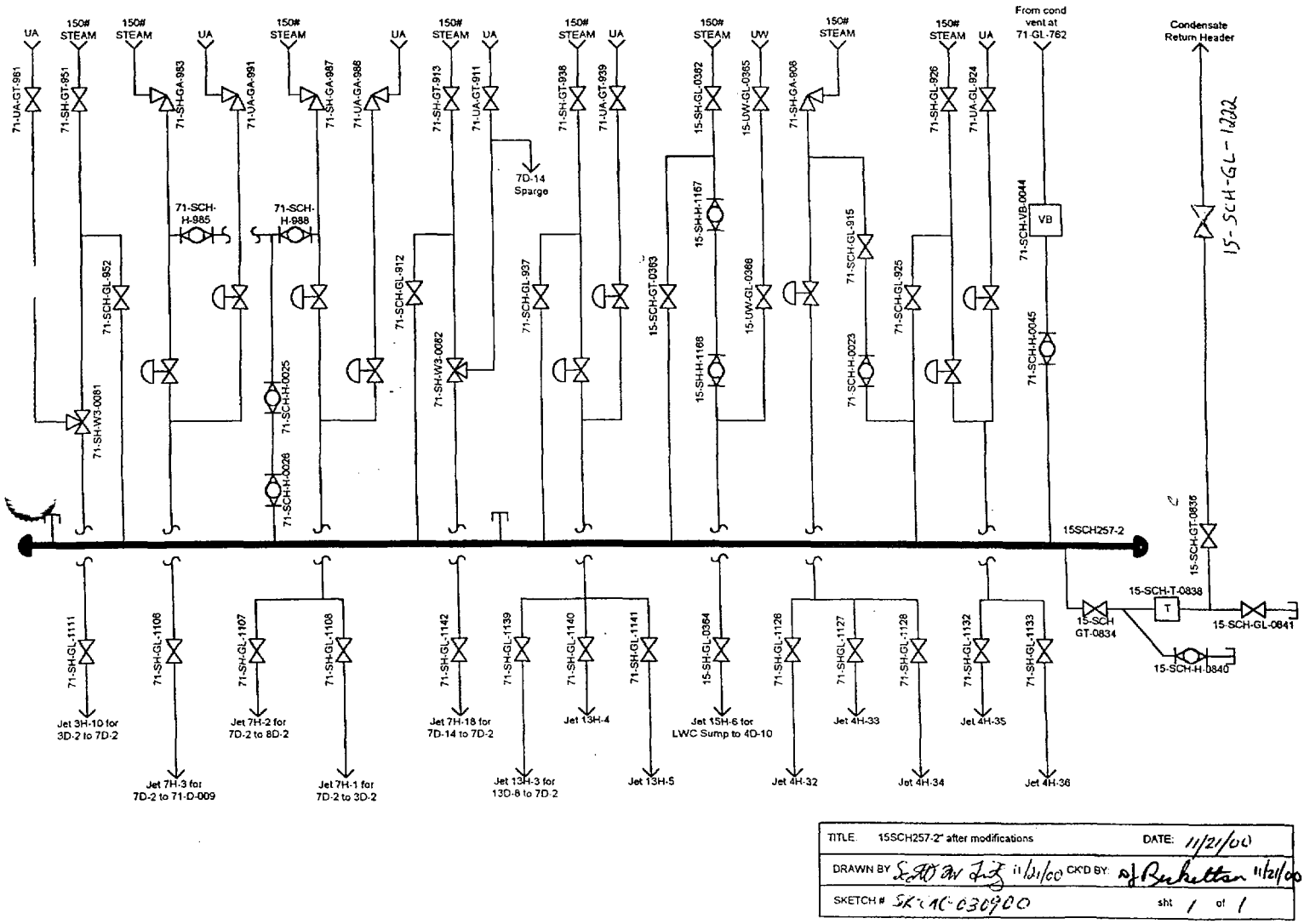
Figure 1 - Liquid Waste Cell Vessels
Figure 2 - 15SCH257-2" after modifications
Appendix A - Tank Transfer Data Sheet
Appendix B - Neutralization Batch Data Sheet

FIGURE 1



Liquid Waste Cell Vessels
Figure 1 Pg 1 of 1
Drawn by Dauna Schwab
Checked by Dennis Rickettson

FIGURE 2



TITLE: 15SCH257-2" after modifications		DATE: 11/21/00
DRAWN BY: Scott Jr 11/21/00	CK'D BY: DJ Burkett 11/21/00	
SKETCH # SK-1C-030900		sht 1 of 1

APPENDIX A
TANK TRANSFER DATA SHEET
(Page 1 of 1)

TRANSFER DATE_____

	SENDING TANK _____		RECEIVING TANK _____	
ANALYTICAL ANALYSIS NUMBER				
GROSS ALPHA				
TOTAL U (ug/mL)				
ALPHA Pu (uCi/mL)				
DENSITY FROM DI OR ANALYSIS				
AVAILABLE VOLUME IN RECEIVING TANK				
	BEFORE	AFTER	BEFORE	AFTER
TANK LEVEL FROM LI/LR				
INCHES DEPTH FROM CALIBRATION TABLES				
LITERS VOLUME FROM CALIBRATION TABLES				

(N/A signatures/sump levels not directed to obtain by procedural step.)

APPROVAL TO TRANSFER:

_____ _____
PSOSS

_____ _____
A&PC MANAGER

_____ _____
R&SC Chairman
(Required if tank transfers present potential for precipitation of fissile material)

PSR-1>_____ _____
PSOSS verify tank contents do not exceed PSR-1 limits

SUMP LEVEL

	BEFORE	AFTER
CPC NORTH	_____	_____
CPC SOUTH	_____	_____
LWC	_____	_____

TRANSFER COMPLETE:

_____
LITERS TRANSFERRED

_____ _____
OPERATOR

_____ _____
DATA REVIEWED, STATUS BOARD UPDATED
PSOSS

APPENDIX B
NEUTRALIZATION BATCH DATA SHEET

DATE _____

	TANK _____
ANALYTICAL ANALYSIS NUMBER	
NEUTRALIZATION NORMALITY	
DENSITY	
pH	

CAUSTIC REQUIRED: (circle correct formula)

*Total Volume in Tank(s) (from calibration tables and density) _____ Liters

NaOH LiOH KOH

$$\frac{(\text{Liters in Tank(s)})(\text{Neutralization Normality})^{**}(1.01)}{\text{M Stock Caustic}} = \text{Liters Caustic Required}$$

(_____)(_____)(1.01) = _____ Liters Caustic Required

_____ M

_____
WTF Engineer/Date

PSR-1 Approval for neutralization based on precipitate evaluation per PSR-1.

_____
A&PC Manager/Date

CAUSTIC ADDED: IWP# _____

_____ Liters of NaOH LiOH KOH

_____
Operator/Date

WTF Engineer verify acceptable neutralization based on re-sample results of _____ neutralization normality per analytical analysis number _____.

_____
WTF Engineer/Date

** Add 3D-2 and 7D-2 volumes for 7D-2 neutralization.*
*** The neutralization normality corresponds to desired pH to be achieved following the neutralization, normally pH 7.0 to 12.0, based on WTF Engineer input.*

APPENDIX C

PSR-1 TABLE 1
(Page 1 of 1)

TABLE 1

CRITERIA FOR DETERMINING THE ALLOWABLE FISSILE URANIUM and FISSILE PLUTONIUM CONCENTRATIONS FOR LIQUID TRANSFERS [1]

Column 1		Column 2
Concentration of Total Uranium [2]		Corresponding Maximum Plutonium Concentration (Pu-239 + Pu-240)
µg/mL		µCi/mL
Greater Than or Equal to	But Less Than	
		Greater than 190 [3]
0	50	190 [3]
50	500	170
500	1,000	140
1,000	2,000	94
2,000	2,500	71
2,500	3,000	46
3,000	3,500	20
3,500 [3]		

1. Column 1 is the concentration of total FISSILE URANIUM and Column 2 is the corresponding allowable concentration of FISSILE PLUTONIUM. For a sample containing total uranium in the range shown in Column 1, the corresponding value in Column 2 provides the concentration limit for Pu-239 plus Pu-240.

2. The total uranium limits in Table 1 correspond to 100 weight percent (w/o) U-233 + U-235 enriched solutions. Although such streams do not exist at the WVDP, laboratory analyses for specific uranium isotopes are typically not provided. However, if isotopic data are available, the values for U-233 + U-235 may be compared to the values of Table 1.

3. Written authorization of the Radiation and Safety Committee is required for processing liquids at these concentrations.

WVNSCO RECORD OF REVISION

Rev. No.	Description of Changes	Revision On Page(s)	Dated
5	Major Revision	All	
6	Complete revision to incorporate OSRs and field changes	All	
FC1	Step 6.14.6: Specify sampling of 7D-2 at 3D-2. Step 6.14.8: Specify IRTS Operations Manager in lieu of Main Plant Ops. Mgr.	i, iii, 41	
FC2	Step 6.14.15: Replace 7S-12 with 7S-9 valve Step 6.14.19: Replace 10% with 15% level Step 6.14.22: Add "The Neutralization Data Sheet, if addition is required." Delete page iii	i, 42, 43	
FC3	Step 6.5.7: Add requirement for memo from Ops. Mgr. to R/S Mgr. Step 6.5.16: Delete step. Delete iii, renumber iv to iii.	iii, iv, 16, 18	
FC4	Revise Attachment A-50, Tank Transfer Data Sheet	i, A-50	1/91
7	Complete revision to incorporate field changes	All	7/91
FC1	Update 7D-2 to 3D-2 and 7D-2 to 8D-2 transfer valving	ii, iii 5,6,7,13 14,48,49,50	5/92
FC2	Add OSR-IRTS-1 Reference.	ii, 3, 13	08/93
	Change 6.13.5 through 6.13.11 to "6.2.5 through 6.2.11" Change step. Add NOTE (6.2.12)	8, 9, 10,	
	Change "A gamma scan..." to "total uranium and total alpha plutonium."	11, 13, 16, 18, 19 21, 24, 26, 29, 32, 35, 38, 41, 44, and 46	

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC3	Section 6.2.12 - Change Note. Attachment A - Step 10. Add PCE Signature.	3 & 14 56	09/94
FC4	5.1 Added statement for engineering to evaluate transfer path in steps 6.5, 6.6, 6.10, 6.12, 6.13 & 6.15. Delete steps 6.1.5, 6.4.9, 6.8.9, and 6.9.11 jumper installation verification. Attachment A - Deleted jumper installation sign-off. Attachment E - Reinserted missing tank volume chart.	8 9, 17, 28, 30 56 69, 73, 77, 81 84, 89, 96	11/05/96
FC5	Cover sheet - Add compliance level: Strict - All	Cover	02/26/98
	TOC - Rearranged sections to reflect current procedure format. Deleted "Definitions." Changed title of Appendix D from Calibration Sheets" to "Criticality Criteria Table."	2	
	1.0 - Changed title to Introduction. Added "Purpose" and "Applicability." Reworded "Scope."	3	
	2.0 - Deleted "Definitions" section. Section 2.0 is now "General Information."	3	
	3.2 [1] Add Tank 7D-2 shall not be jetted below 15%.	5	
	3.0 - Renamed section from "Responsibilities" to "Precautions and Limitations." "Responsibilities' list is deleted.	4	
	4.0 - Renamed "Prerequisite Actions" from "Tools, Equipment, Components, and References." "Components" list is deleted and references are renamed to "Source Requirements and placed in Section 6.3.	4	
	5.0 - This section, which was "General Information' is now Section 2.0. "Procedure" is now 5.0.	5	

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC5 (Cont.)	5.1 - New section, "Sampling 3D-2."	5	
	5.2 - Was Section 6.1, is now 5.2. Renumbered steps to bracketed numbers for action steps per SOP 00-02 and included valve numbers in the steps.	6, 7, 8	
	5.3 - Renumbered	8,9,10	
	5.3[1] - Reword step to "Record 3D-2 analytical results on Appendix A."	9	
	5.3[4] - Add step "Compare fissile concentrations to values in Appendix D to determine allowable fissile solution concentrations for plant transfers."	9	
	5.3[21] - Add step "Record amount of caustic added on Appendix A."	11	
	5.3[23] - Add sentence "IF pH is less than 7, THEN ask the analytical labs to run neutralization equivalent."	11	
	5.3[24] - Add step "WTFO Manager to approve transfer to 8D-2 on Appendix A."	11	
	5.4 - Was Section 6.3, is now 5.4. Renumbered steps to bracketed numbers for action steps per SOP 00-02 and included valve numbers in the steps.	11, 12, 13	
	5.5 - Was Section 6.4, is now 5.5. Renumbered steps to use bracketed numbers for action steps per SOP 00-02 and included valve numbers in the steps.	13, 14, 15, 16	
	5.6 and 5.7 - Added a caution to complete an engineering evaluation prior to transfer to verify existence of a flow path and a step to perform same.	16 and 19	
	5.6 - Was Section 6.5, is now 5.6. Renumbered steps to use bracketed numbers for action steps per SOP 00-02 and included valve numbers in the steps.	19, 20, 21	

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC5 (Cont.)	5.7 - Section was 6.6, is now 5.7. Renumbered action steps with bracketed numbers.	19, 20, 21	
	5.8 - Section was 6.7, is now 5.8. Renumbered action steps with bracketed numbers.	22, 23, 24, 25	
	5.9 - Was Section 6.8, is now 5.9. Renumbered action steps with bracketed numbers and included valve numbers in the steps.	25, 26, 27	
	5.10 - Was Section 6.9, is now 5.10. Renumbered action steps with bracketed numbers and included valve numbers in steps.	27, 28, 29, 30	
	5.11 - Was Section 6.10, is now 5.11. Renumbered action steps with bracketed numbers.	30, 31, 32	
	5.12 - Was Section 6.11, is now 5.12. Renumbered action steps with bracketed numbers.	33, 34, 35, 36	
	5.13 - Was Section 6.12, is now 5.13. Renumbered action steps with bracket numbers and included valve numbers in steps.	36, 37, 38, 39	
	5.14 - Was Section 6.13, is now 5.14. Renumber action steps with bracketed numbers.	39, 40, 41, 42	
	5.15 - Was Section 6.14, is now 5.15. Renumbered action steps with bracketed numbers.	42, 43, 44, 45	
	5.16 - Was Section 6.15, is now 5.16. Renumbered action steps with bracketed numbers.	45, 46, 47, 48	
	5.17 - Was Section 6.16, is now 5.17.	49, 50	

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC5 (Cont.)	6.0 - Was old Section 4.3, is now 6.0. Title of section changed from "References" to "Documents."	50	
	6.1 - New title "Procedures"	50	
	6.2 - Was 4.3.2.	50	
	6.3 - New subsection, "Source Requirements."	51	
	7.0 - Title changed from "Attachments" to "Appendixes."	51	
	Appendix A - Change IRTS to WTFO and R/S to RCO.	55	
	Appendix A - Renamed from "Attachment A" "Appendix A."	55, 56	
	Renumber steps to match revised procedure. Delete step 1. Delete 3. Delete 8 and 9. Add 5.3[4] sign-off: "Results acceptable for transfer according to criticality criteria table." Change OSR/IRTS-1 to PSR-11. Change Tank Farm to WTF and delete (TFE). Change "Signature" to "WTF Eng and WTFO Manger."	56	
	Appendix B - Renamed from "Attachment B" to "Appendix B."	58, 59	
	Appendix C - Renamed from "Attachment C" to "Appendix C."	60, 61	
	Appendix D - Renamed from "Attachment D" to "Appendix D." Retitled to "Criticality Criteria Table."	66	
	Appendix E - Renamed from "Attachment E."	67	
	5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.9, 5.10 - Inserted valve numbers to match P&ID.	7, 8, 11, 12 14-29, 37-39	

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC6	Appendix E - Insert page 2 of the 7D-14 calibration chart which was previously omitted	98	03/04/98
8	New-Type Revision	All	07/21/98
	Incorporation of Field Changes		
FC1	Appendix A Add space for information under sending and receiving tank columns.	54	09/10/98
ON-HOLD	Document placed in ON-HOLD status	All	05/04/99
9	General Revision	All	07/06/99
FC1	Changed chart recorder ID from 7-LR2-009 to 71-LR-009	7	08/05/99
	Replace step 5.1[13]with: Run a hose from 15-SCH-H-840 to the nearest floor drain.	8	
	Change chart recorder ID from 3-LR-5 to 3LR-5 in the MPCR	9	
	Change chart recorder ID from 7-LR2-009 to 71-LR2-009.	10	
	Add location to end of step "in the MPCR"		
	Change chart recorder ID from 3-LR-5 to 3LR-5	15	
	Change chart recorder ID from 7-LR-009 to 71-LR-009	16	
	Replace step 5.4[12] with Run a hose from 15-SCH-H-0840 to the nearest floor drain	17	
	Changed chart recorder ID from 71-LR-009 to 7LR2-009.	18	
	Add location in the MPCR to the end of step		
	Change chart recorder ID from 7-LR2-009 to 71-LR-009.	19	
	Replace step 5.5[13] with Run a hose from 15-SCH-H-0840 to the nearest floor drain	21	
	Changed chart recorder ID from 7-LR2-009 to 71-LR-009.	23	
	Add location to end of step "in the MPCR"		
	Change chart recorder ID's from 71-LR-014 and 7LR2-009 to read 7LR-10A and 71-LR-009.	23	
	Replace step 5.8[17] with Run a hose from 15-SCH-H-0840 to the nearest floor drain	25	

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC1 (Cont.)	Add location "in the MPCR" to the end of the step	26	
	Change chart recorder ID 71-LR-014 to 7LR-10R	26	
	Change chart recorder 71-LR-014 and 7LR-2-009 to 7LR-10R and 71-LR2-009. Add location "in the MPCR" to the end of the step.	27	
FC2	Section 5.1 [30] - Added caution, note and step.	11	09/14/99
	Section 5.4 [22] - Added caution, note and step.	19	
	Section 5.5 [28] - Added caution, note and step.	24	
	Section 5.8 [27[- Added caution, note and step.	29	
	Repaginated to accommodate the Field Change		
	This field change incorporated DCIR 9922445.		
FC3	Delete steps and notes for energizing the 3D-2 steam header.	9,10,22-24	09/16/99
	Remove steam isolation valves from closed lineup to allow for depressurization.	10,19,24,28	
	Add steam isolation valves to closed lineup.	11,19,24,29	
	Add "verify OPEN"	8,18,22	
	Add 71-SH-GL-1111	17	
	Repaginated to accommodate Field Change	ALL	
FC4	Reword for clarity: 3.2[3], 4.2[2], 5.5[6], 5.8[8].	5,6,20,26	10/29/99
	Add "verify OPEN"	27	
	Delete 71-SCH-H-0025	8,22	
	Change 71-SCH-H-988 to 71-SCH-H-0025	9,22,23	
	Delete 5.1[17] and 5.5[17]		
	Change 71-SH-GA-987 to 71-SCH-H-0025		
	Changed crack to "throttle"	8,18,22,28	
	Document Repaginated	All	
FC5	Updated cover to meet EP-5-002.	1	01/22/00
	Added steps to use LLWO status board for tracking tank sample status per 9923290-I/DCIR.	13,21,26,30,35	
	Added steps/notes to allow back to back tank transfers. Updated step references to reflect field change. Reordered steps.	8,11,17,19, 20,22,24, 27,29,30	
	Revised Step 5.4[23][b] to allow depressurization to be completed after one hour since valve 71-SH-GT-951 leaks by.	20	
	Add "Lifetime quality assurance" to 7.0[1].	32	
FC6	5.4[9] Changed 71-SH-GT-1112 to 71-SH-GL-1112.	17	01/27/00

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
10	NEW-TYPE REVISION, INCORPORATION OF FIELD CHANGES	ALL	02/08/00
FC1	Cover updated	1	03/03/00
	Revised Steps 5.4[18],[21] and [22] to make cooling water optional based on contents of 3D-2.	19	
	Update referenced steps to reflect field change.	19,20	
FC2	Add Reference: Figure 2 to section 5.10	7	6/28/00
	Add Reference: Figure 2 to section 5.5.10	17	
	7.0 - Updated Records Maintenance section by deleting "Lifetime quality assurance" from description and changing department name in accordance with current organization chart.	25	
	Listed Figure 2 in 10.0 Appendices	26	
	Insert Figure 2 [Reference DCIR 0021405]	28	
	Reference to 71-UA-GL-984 removed throughout. All steps for using a hose to drain the condensate header on startup and shutdown are removed. The header will remain energized. All steps for depressurizing the condensate header are removed. Reference to 71-UA-GA-986 removed throughout. Reference to 71-SCH-H-0025 and 71-SCH-H-0026 removed throughout. Use of new valves 71-SH-W3-0081 and 71-SH-W3-0082 added to procedure.		
	Reference to 71-UA-GT-911 removed throughout.	All	
FC3	Step 3.2.5 added for WTF Engineers to evaluate 8D-2 Pan Sample analyses for radioactivity prior to and after 7D-2 to 8D-2 transfers and then to document on Appendix A.	5	10/05/00
	Step 5.5.3(a) added for WTF Engineers to verify pan sampled, results received, and documented on Appendix A.	18	
	Step 5.5.34(a) added for Operations to sample 8D-2 pan and document on Appendix A.	21	
	Appendix A -sign-off lines for new steps added.	32	

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
11	Revision to incorporate previous field changes. Add check of 15-SCH-T-0838 prior to tank jetting operations throughout. Add Note that 15-SCH-T-0838 is an inverted bucket trap and temp. alone will indicate operation. Add Note that 71-SH-W3-0081 should be positioned such that the arrow on the handle is pointed toward the desired utility. Update Figure 2. Change RM title to Records and Info. Dept. Added requirement to attach A&PC evaluation to 7D-14 and 15D-6 transfer data packages per 0120347-I/DCIR and IR-0369.	All	02/15/01
FC1	Fix typo (71-SH-W3-0081 to 0082).	23,24	05/23/01
FC2	Update cover to comply with EP-5-002. Add LCO 1 & 2 of PSR-11 to 3.2. Delete Transfer 6D-3 to 7D-2 references (evolution added to SOP 06-02). Delete 5.9.2[2]. Revise PSR-11 reference from "surveillance requirement" to Limiting Conditions for Operation and corrected PSR-1 reference. Added PSR-11 calculation to Appendix A. Reference 012184-I/DCIR and QA SR#01-393.	Cover 5,6 5,21 26 28 32	08/27/01
FC3	HLWTFO and MPO are affected by the following: Update cover per EP-5-002. Applicability section -removed specified qualifications per FM. Updated dept. name. 3.2[4]-added possible ventilation consequences if tank is jetted below 15%. Deleted reference to organic solvents as there are none. 5.1[2]-changed LWTS to MPCR. 5.1[8]- changed throttling to turning two times to OPEN 71-UA-GL-1105. 5.1[2],5.4[3],5.5[1],5.8[1] corrected valve from 71-LR-009 to 71-LR2-009. 5.4[10],5.5[12][a],5.5[15][a],5.8[14][a], 5.8[17][a],5.8[21]-changed LWTS to HLWTFO. 5.4[3],5.5[1], 5.8[1]-changed LWTSCR to MPCR. 5.9.1[5], added HLWTFO to specify which SS. 5.1[10],5.5[11]-added 71-SH-GL-1106 to list of valves to be CLOSED or verified CLOSED. Added steps 5.1[13] & 5.5[14] to independently verify correct valve opening. Appendix A-added sign offs for 5.1[13] & 5.5[14] Repaginated to accommodate Field Change. Reference: - 0220006 I\DCIR and 0122655-I\EFS	 Cover 3 5 7 7 7,15,17,21 16,19,22,23,24 15,17,21 24 8,18 8,18 30	02/01/02

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC4	HLWTFO is affected by the following change: Reference 0220556-I/DCIR 5.8 [17} - Delete 7HC-18 operations as it does not exist in the field. 5.8 [19] - Delete 7HC-18	 23	05/20/02
12	HLWTFO is affected by the following revision: Incorporated previous field changes. Appendix A - deleted sump levels not addressed in text.	 ALL 31	07/11/02
FC1	PSO and the Criticality Safety Engineer are affected by the following changes implementing PSR-1 Revision 2 changes. Updated cover to new Facility Manager. 3.2[1]-Relocated as a note in Section 5.8. 3.2[2]-Changed "processing/intermixing" to "fissile uranium and fissile plutonium" to agree with PSR-1 Rev.2 limiting condition for operation 2 wording. 3.2[3]-Reworded to agree with PSR-1 Rev.2 limiting condition for operation 1. 5.2[1]-Add Cs-137 to analysis request per Eng. 5.3[4]-Changed "processing/intermixing" to "fissile uranium and fissile plutonium". 5.4[6]-Change Criticality Safety Engineer to SS and add reference to Appendix C. 5.5[8] **NOTE1**-Changed reference of "WVNS-SAR-002" to "WVNS-SAR-001, Rev.8." 5.7[7]-Changed "processing/intermixing" to "fissile uranium and fissile plutonium" and added "as required per PSR-1". 5.7[9]-Change Criticality Safety Engineer to SS and add reference to Appendix C. 5.7[10]-Deleted SS authorization step. 5.8-**NOTE** information relocated from 3.2[1]. 5.8.2[3]-Changed "processing/intermixing" to "fissile uranium and fissile plutonium". 7.0[3]-Updated department title and changed "WVNS" to "WVNSCO". 8.1-Changed "WVNS-SAR-002" to "WVNS-SAR-001, Rev. 8, Safety Analysis Report for Waste Processing and Support Activities." 9.0-Add surveillance Requirement 2. App. A-Deleted Criticality Safety Engineer sign-off to reflect field change. This change will implement the requirments of PSR-1 Revision 2. App. C - Added PSR-1 Table 1 as Appendix C.	 Cover 5 5 5 10 12 15 18 21 22 22 24 25 27 27 28 31 33	12/06/02

WVNSCO RECORD OF REVISION CONTINUED

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC2	PSO is affected by the following change: 2.0 Update department title. 5.5[7]Note-Deleted Rev. 8 from SAR reference. 5.5[8]Note-Deleted note pertaining to neutralizing Tank 7D-2 prior to transfer. This is not necessary if there is excess hydroxide in Tank 8D-2. Added note allowing sample results to lag behind transfer, as Tank 8D-2 is exempt from PSR-1 requirements. 5.5[8]Added option to document and attach an excess hydroxide calculation or neutralize in the event of a <7 pH. 7.0[2]Updated RIDS title. This change was requested by HLWTFDE and the FM.	 3,4 18 27	01/31/03
13	General Revision This change is made per the request of WTF Engineers. Changes include deleting scope per DCIP-100, adding requirement to the procedure to obtain written authorization if precipitation is possible during neutralization of 7D-2. Also updated Appendix B to clarify pH desired for neutralization. PSO is affected by these changes.	All	06/06/03
14	General Revision. This change was made to remove steps and requirements related to jetting tank 7D-2 to 8D-2. This change affects PSO.	All	07/30/03

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Revision Number 17

Revision Date 02/19/04

SOP 71-02

Operation of the LWTS High TDS Treatment System

Cognizant Author: C. Hodge

Cognizant Manager: D. Meess

Facility Manager: J. Curcio

HLW:

YES	NO	N/A
		X

QUALITY LEVEL: C

SAFETY CLASS: C

PROCEDURE USE CLASSIFICATION		MULTIPLE USE BY SECTION
X	CRITICAL USE	All
	REFERENCE USE	

ALARA PLANNING

[X] The work described in this procedure does not require ALARA planning.

[ ] The work described in this procedure may require ALARA planning.

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FIGURE 1 - LWTS DISTILLATE TREATMENT 58

OPERATION OF THE LWTS HIGH TDS TREATMENT SYSTEM

1.0 INTRODUCTION

1.1 Purpose

This procedure gives instructions for the transfer of liquid from STS tank 8D-3, the Remote Handled Waste Facility (RHWF) and Tank 7D-2 to LWTS tank 5D-15B and the subsequent processing of 5D-15B liquid through the Liquid Waste Treatment System (LWTS) evaporator 31017.

1.2 Applicability

This procedure is to be performed by Plant Systems Operations.

2.0 GENERAL INFORMATION

Waste streams are fed from Tank 5D-15B to the evaporator for volume reduction. Concentrated liquid resulting from evaporation is transferred to storage Tank 5D-15A1 or 5D-15A2 by pump 71-P-16. Distillates, or liquids resulting from the condensation and subcooling of the evaporator vapors are collected in the Distillate Surge Tank 71-D-005. The Distillate Surge Tank is divided into "Start-up" and "Run" sides. During start-up, eductor J-01 recirculates distillates back to the evaporator. When distillate radiation levels (RM-037) are acceptable the liquid is sent to the run side. The distillate is then pumped, via pump 71-P-15, through the Zeolite Ion Exchanger 71-D-003, mercury abatement ion-exchangers 71-D-012 and 71-D-013, and to sample pot 71-D-014 in the ULO. Sample pot 71-D-014 overflows through a loop seal to the Interceptor. See Figure 1 for LWTS Distillate Treatment overview.

3.0 PRECAUTIONS AND LIMITATIONS

3.1 Precautions

[1] An RWP is required for valving located in radiologically controlled areas.

[2] An IWP is required for filling the sample pot 71-D-014 loop seal.

3.2 Limitations

[1] LWTS processing must cease if mercury breakthrough is indicated by sample analysis results of >10 ppb on the mercury ion exchange column.

[2] Operators should perform frequent checks on systems that are de-energized or shutdown to ensure that the system meets expected performance standards, i.e., water flows, pressure rises, etc. If the required performance standards or actions do not occur, stop - Do Not attempt to perform the next step, secure system in a safe mode, and notify the shift supervisor (SS) immediately.

4.0 PREREQUISITE ACTIONS

4.1 Material/Special Tools and Equipment

[1] 71-H-604 has a reach rod located in the solvent storage terrace (SST) if needed.

4.2 Notifications and Approvals

[1] Procedural steps requiring inspections, the recording of data, or a sign-off are denoted by [+] in the left-hand margin. The resultant information is recorded on data sheet(s) or in a log (book) as specified in the procedure. The user/operator is responsible for completing the sign-off unless otherwise directed in the procedure.

5.0 PERFORMANCE SECTIONS

NOTE *SOP 71-14 is the LWTS Alarm Response Procedure that addresses operational and unexpected alarms.*

5.1 Transfer to 5D-15B

5.1.1 Transfer from 8D-3 or RHWF to 5D-15B

NOTE1 *Transfers from 8D-3 will also be performed per SOP 50-32. Transfers from RHWF will also be performed per SOP 313-06.*

NOTE2 *Sample analysis will lag behind current evaporator run.*

[+] [1] SS or WTF Engineer record any data required by SOP 00-13 and verify on Appendix A.

[+] [2] Verify that LAH-7701, the Off-Gas Trench Sump High, is NOT in alarm. Document on Appendix A.

[+] [3] Verify that LAH-457, the RHWF Valve Pit Level High, is NOT in alarm. Document on Appendix A.

[+] [4] Perform the following valve lineup and record completion on Appendix A:

[a] CLOSE, or verify closed, on the Low Level Waste Operations (LLWO) Status Board:

71-H-018	line 6-71-1-006 low point drain
71-H-019	71-P-01 influent drain to 35104 sump
71-H-1019	71-P-01 to WTF
71-GL-008	71-P-01 recirculation to tank 35104

[b] OPEN, or verify open, on the LLWO Status Board:

71-H-804	PPC Distribution Manifold to 5D-15B
71-GL-009	71-PT-096 isolation
71-GL-010	71-PT-096A isolation

[+] [5] Update the LLWO status board to reflect valve positions. Document completion on Appendix A.

[+] [6] Perform the following valving and record completion on Appendix A:

[a] Verify the following valves indicate CLOSED on the LWTS Control Panel:

71-H-001	8D-3 to 35104
71-H-003	35104 to 71-P-01
71-H-014	71-P-01 flush water
71-H-035	71-P-01 to 35104 sample station
71-H-129	PPC Manifold to 71-D-011
71-H-150	35104 to evaporator
70-FV-004	71-P-01 to WDV

[b] Turn the selector switches for the following valves to OPEN from the LWTS Control Panel:

71-SV-099	Seal Water to 71-P-01
71-H-024	71-P-01 Discharge Isolation Valve
71-H-128	71-P-01 Discharge Isolation Valve
71-H-006	71-P-01 Discharge Isolation Valve
71-H-898	8D-3 to 71-P-01 suction

[7] Maintain telephone communications with STS Control Room or RHWF operator during start of transfer.

[8] Establish flow from 8D-3 or RHWF to 5D-15B as follows:

[a] Monitor 71-PI-096 for a pressure increase when STS opens 50-FV-067 or when the RHWF begins pumping wastewater from Tank 313-D-003.

[b] Set the selector switch for 71-P-01 to START when 71-PI-096 indicates a pressure increase.

[9] Set the following selector switches to AUTO in the order listed when 8D-3 or RHWF (Tank 313-D-003) to 5D-15B flow is established:

71-SV-099
71-P-01
71-H-898

[+] [10] Monitor and record 5D-15B level (71-LR-105), and transfer flow rate (71-FI-003) hourly on Appendix A.

[11] Set the following selector switches to STOP or CLOSED at completion of transfer:

71-P-01
71-SV-099
71-H-898

[12] Notify STS Control Room or RHWF operator of transfer completion.

[13] After the transfer to Tank 5D-15B is complete, flush 71-P-01 and transfer line 6-71-1-006 with demineralized water as follows:

[a] Set the selector switch for 71-H-014 to OPEN and flush for approximately 4 minutes or per SS instruction.

[b] Set the selector switch for 71-H-014 to CLOSED.

[14] Complete transfer operations as follows:

[a] Set the following selector switches to CLOSED:

71-H-128
71-H-024
71-H-006

+] [15] Record the ending level and volume of 5D-15B on Appendix A.

5.1.2 Transfer 7D-2 to 5D-15B

+] [1] Record the level, density, and volume in tank 7D-2 on Appendix I.

+] [2] Record the LWC, XC-2, XC-3, PPC and UPC sump levels on Appendix I.

+] [3] Record the level, density and volume in 5D-15B on Appendix I.

[4] Determine if a sample analysis exists for the contents in 7D-2 and 5D-15B in order to complete Appendix I transfer sheet.

[a] If no sample analysis exists, sample per SOP 71-11.

[+] [5] Record the Total U and Alpha Pu concentrations for tanks 7D-2 and 5D-15B on Appendix I.

PSR1[+] [6] PSOSS verify that the concentrations in both 7D-2 and 5D-15B are in compliance with the limits listed in PSR-1. Record on Appendix I.

PSR1[+] [7] A&PC manager perform an evaluation that the fissile material contained in 7D-2 and 5D-15B will not precipitate. Record on Appendix I.

[+] [8] PSOSS to verify that pre-transfer data has been entered on Appendix I and that approvals for transfer have been received.

[9] Coordinate with (DDWO) such that during the transfer a manned entry is not being made in XC-2. The transfer line passes through the XC-2 cell.

[10] Place 7HC-1 to the ON position in the Main Plant Control Room to supply air to the sparge.

[11] Crack OPEN 71-UA-GL-1105 on line 7UA-3 to throttle air flow to the sparge.

[a] Monitor the VOG for upset conditions due to the air sparging. Throttle GL-1105 as required to keep VOG stable.

[12] Sparge 7D-2 for a minimum of 15 minutes.

[13] Check CLOSED the following valves in the COA:

71-SH-GL-1106 on line 7S-15
71-SH-GL-1107 on line 7S-9
71-SH-GL-1108 on line 7S-12

[14] Verify that 15-SH-T-0844 and 15-SCH-T-0838, the 150 psi header traps in the LXA are operational.

[a] Measure the trap surface temperature using a hand held pyrometer. If the traps are >90°F continue.

[b] Listen to hear if 15-SH-T-0844 cycles properly, producing a click at least once in 3 minutes.

[15] Slowly OPEN 71-SH-GL-1106 on line 7S-15.

[16] OPEN 71-D-009 drain valve H-134

[17] Set the selector switch for 71-H-038/71-H-039 to Steam.

[18] Monitor the levels in 7D-2 and 5D-15B as an indication that the transfer is taking place as expected. The 7D-2 transfer jet is rated for 17 GPM flow.

[19] Monitor the level in 71-D-009

[a] If the level approaches 80%, stop the transfer by turning off steam to the transfer jet and let D-009 gravity drain. Do not air purge the jet line. Restart the jet transfer when D-009 level approaches zero.

[20] If high level alarm is received for the sumps in LWC, XC-2, XC-3, PPC or UPC, stop the transfer and notify PSOSS.

[21] Stop transfer when 7D-2 level reaches 15%.

[a] Set selector switch for 71-H-038/71-H-039 to AIR for about 10 seconds to stop the transfer and purge the transfer line.

[22] CLOSE the following valves:

71-SH-GL-1106 on line 7S-15
7HC-1
71-UA-GL-1105 on line 7UA-3
71-H-134

+] [23] Record the LWC, XC-2, XC-3, PPC and UPC sump levels on Appendix I.

+] [24] Complete the "After Transfer" columns and total volume transferred portion of Appendix I.

5.2 Transfer from 8D-3 or RHWF to 5D-15A1

NOTE *Sample analysis will lag behind current evaporator run.*

[1] Place the evaporator in ready-recirculation mode per Section 5.11.

+] [2] SS or WTF Engineer record any data required by SOP 00-13 and verify on Appendix J.

+] [3] Verify that LAH-7701, the OFF-Gas Trench Sump High, is NOT in alarm. Document on Appendix J.

+] [4] Verify that LAH-457, the RHWF Valve Pit Level High, is NOT in alarm. Document on Appendix J.

[5] Flush 71-LCV-100 to ensure it seals closed for transfer as follows:

[a] Verify CLOSED at the LWTS Control Panel:

71-H-309	71-P-04 to 31017 valve
71-H-129	PPC Manifold to 71-D-011
71-H-128	71-P-01 Discharge Isolation Valve
71-FV-004	71-P-01 to Waste Dispensing Vessel (WDV)
71-H-898	8D-3 to 71-P-01 suction
71-H-035	71-P-01 to 35104 sample suction
71-H-003	35104 to 71-P-01

[b] Verify CLOSED on the LLWO Status Board:

71-H-018	Line 6-71-1-1006 low point drain
71-H-1019	71-P-01 to WTF
71-GL-008	71-P-01 recirculation to tank 35104
71-H-019	71-P-01 influent to drain 35104 sump

[c] Ensure that the level in 31017 is ≤ 52% (90 inches). If it is not, THEN pump down the evaporator as follows:

a) SS determine whether Tank 5D-15A1 or 5D-15A2 will be utilized for pump down.

b) Turn the selector switch for 71-H-124 or 71-H-125 to the OPEN position and observe appropriate valve indicates open at the control panel per SS.

c) OPEN, or verify open, 71-H-159, inlet valve to 71-P-16, and 71-SV-1021, 71-P-16 seal water valve.

d) Place 71-DIC-029 at 100% output in MANUAL.

e) Place 71-P-16 selector switch to START and pump until the level is approximately 50% (87 inches).

f) Set the selector switch for 71-P-16 to STOP.

g) CLOSE 71-H-159 and set the selector switch for 71-SV-1021 to CLOSED.

h) Set the 71-DIC-029 controller to MANUAL at 0% output.

[d] OPEN the following at the LWTS Control Panel:

71-H-006	71-P-01 Discharge Isolation Valve
71-H-024	71-P-01 Discharge Isolation Valve
71-H-150	35104 to evaporator
71-H-014	71-P-01 flush water

[e] Place 71-LCV-100 in MANUAL and slowly cycle from 0 to 100% for 1-2 minutes during flush. Monitor the level of 31017 on 71-LI-024.

[f] CLOSE at the LWTS Control Panel:

71-H-014	71-P-01 flush water
71-H-006	71-P-01 Discharge Isolation Valve
71-H-024	71-P-01 Discharge Isolation Valve
71-H-150	35104 to evaporator

[g] CLOSE either 71-H-124 (Concentrates to 5D-15A1) or 71-H-125 (Concentrates to 5D-15A2) at the LWTS Control Panel per SS direction.

[h] CLOSE 71-LCV-100 by placing in MANUAL at 0% output.

[i] Verify the following valves indicate CLOSED on the LWTS Control Panel:

71-H-001	8D-3 to 35104
71-H-003	35104 to 71-P-01
71-H-014	71-P-01 flush water
71-H-035	71-P-01 to 35104 sample station
71-H-129	PP Manifold to 71-D-011
71-H-128	71-P-01 Discharge Isolation Valve
70-FV-004	71-P-01 to Waste Dispensing Vessel (WDV)
71-LCV-100	71-LIC-024 in MANUAL at 0% output
71-H-310	71-P-04 Discharge Valve
71-H-307	71-D-011 Isolation Valve
71-H-306	5D-15A2 Isolation Valve
71-H-303	71-P-06 Discharge

[j] Turn selector switches for the following valves to OPEN from the LWTS Control Panel:

71-SV-099	Seal Water to 71-P-01
71-H-024	71-P-01 Discharge Isolation Valve
71-H-150	35104 to 31017
71-H-006	71-P-01 Discharge Isolation Valve
71-H-898	8D-3 to 71-P-01 Suction
71-H-309	71-P-04 to 31017 valve
71-H-308	ULO manifold valve

[+] [6] Perform the following valve lineup and record on Appendix J:

[a] CLOSE, or verify closed, on the Low Level Waste Operations (LLWO) Status Board:

71-H-018	line 6-71-1-006 low point drain
71-H-019	71-P-01 influent drain to 35104 sump
71-H-1019	71-P-01 to WTF
71-GL-008	71-P-01 recirculation to tank 35104

[b] OPEN, or verify open, on the LLWO Status Board:

71-GL-009	71-PT-096 isolation
71-GL-010	71-PT-096A isolation

[7] Verify the following valve positions on the LLWO status board:

[a] Verify OPEN 5P399.

[b] Verify CLOSED 5P400.

+] [8] Update the LLWO status board to reflect valve positions. Document completion on Appendix J.

[+] [9] Perform the following valving and record completion on Appendix J:

[a] Verify the following valves indicate CLOSED on the LWTS Control Panel:

71-H-001	8D-3 to 354104
71-H-003	35104 to 71-P-01
71-H-014	71-P-01 flush water
71-H-035	71-P-01 to 35104 sample station
71-H-129	PPC Manifold to 71-D-011
71-H-128	71-P-01 Discharge Isolation Valve
70-FV-004	71-P-01 to Waste Dispensing Vessel (WDV)
71-LCV-100	71-LIC-024 in MANUAL at 0% output
71-H-310	71-P-04 discharge valve
71-H-307	71-D-011 isolation valve
71-H-306	5D-15A2 isolation valve
71-H-303	71-P-06 discharge

[b] Turn the selector switches for the following valves to OPEN from the LWTS Control Panel:

71-SV-099	Seal Water to 71-P-01
71-H-024	71-P-01 Discharge Isolation Valve
71-H-150	35104 to 31017
71-H-006	71-P-01 Discharge Isolation Valve
71-H-898	8D-3 to 71-P-01 Suction
71-H-309	71-P-04 to 31017 valve
71-H-308	ULO manifold valve

[10] Maintain telephone communications with STS Control Room or RHWF operator during start of transfer.

[11] Establish flow from 8D-3 or RHWF to 5D-15A1 as follows:

[a] Monitor 71-PI-096 for a pressure increase when STS opens 50-FV-067 or when RHWF starts transfer.

[b] Set the selector switch for 71-P-01 to START when 71-PI-096 indicates pressure increase.

[12] Set the following selector switches to AUTO in the order listed when flow is established:

71-SV-099
71-P-01
71-H-898

[+] [13] Monitor and record 5D-15A1 level (71-LR-111A) and transfer flow rate (71-FI-003) hourly on Appendix J.

[+] [14] Monitor and record evaporator level (71-LI-024), 71-D-005 start side level (71-LI-043), and mesh pad differential pressure (71-PDL-033), and evaporator pressure (71-PDR-223) once per hour on Appendix J.

[a] IF an erratic and/or increased 71-PDR-223 indication occurs, THEN proceed to Section 5.9.1.

[15] Set the following selector switches to CLOSED at completion of transfer:

71-P-01
71-SV-099
71-H-898

[16] Notify STS Control Room or RHWF Operator of transfer completion.

[17] Flush 71-P-01 and transfer line 6-71-1-006 with demineralized water as follows:

[a] Set the selector switch for 71-H-014 to OPEN and flush for approximately 4 minutes or per SS instruction.

[b] Set the selector switch for 71-H-014 to CLOSED.

[18] Set the following selector switches to CLOSED:

71-H-150
71-H-024
71-H-006
71-H-308
71-H-309

+] [19] Record the ending level and volume of 5D-15A1 on Appendix J.

5.3 Evaporator Pre-start Valving

NOTE1 *This section may be performed in parallel with Section 5.4.*

NOTE2 *Valve position should always be checked by attempting to turn the valve in the closed direction.*

[1] Obtain a RWP for valving located in radiologically controlled areas.

+] [2] Perform the Evaporator Operation Normal Line-Up per Appendix H in any order if system configuration is in doubt due to maintenance, etc. (N/A step if line-up not performed.) Record completion on Appendix B.

+] [a] IF the Evaporator Operation Normal Line-Up is completed per Appendix H, THEN SS review completed line-up and resolve any discrepancies, indicating completion on Appendix H.

[3] OPEN 71-WW-H-1371 to drain the sample pot to the interceptor.

[4] CLOSE 71-WW-H-1371 when sample pot has drained.

[5] OPEN fully or confirm as fully opened, cooling water valve 71-GT-114 on the LXA Catwalk.

[6] OPEN steam valve to reboiler, 6-SH-GL-112.

5.3.1 Purge the Level and Density Probes to 31017

NOTE *This section to be performed prior to evaporator start-up and at SS direction only during operation.*

[1] CLOSE the high and low pressure valves on transmitters:

71-LT-024
71-DT-029
71-PDT-223

[2] OPEN the bypass valves on transmitters:

71-LT-024
71-DT-029
71-PDT-223

[3] CLOSE the three isolation valves on the east end of instrument rack 004 (IR-004):

71-IA-H-0084
71-IA-H-0085
71-IA-H-0086

[4] OPEN Whitey valves (trickle purge discharge valves):

71-H-1002
71-H-899
71-H-1001

[5] Adjust trickle purge rotameters to full OPEN for approximately one minute:

71-FIC-213
71-FIC-214
71-FIC-215

[6] Adjust to 1 cc/min:

71-FIC-213
71-FIC-214
71-FIC-215

[7] OPEN the three isolation valves on IR-004:

71-IA-H-0084
71-IA-H-0085
71-IA-H-0086

[8] Adjust air purge rotameters to full OPEN for approximately one minute:

71-FIC-026
71-FIC-027
71-FIC-028

[9] Adjust to 1 SCFH:

71-FIC-026
71-FIC-027
71-FIC-028

[10] Restore transmitters 71-LT-024, 71-DT-029, and 71-PDT-223 to service as follows:

[a] OPEN the high side block valve.

[b] CLOSE the bypass valve.

[c] OPEN the low side block valve.

[+] [11] Record completion of purging level and density probes on Appendix B.

5.4 Evaporator Operation Prerequisites

CAUTION
DO NOT commence evaporator start-up without ELAB notification or a SPDES Permit violation may result.

NOTE *ELAB representatives may be reached at Extension 4160, 4124 or via beeper during off-hours at 515-6222.*

NY-0000973

+] [1] SS notify the Environmental Lab (ELAB) of anticipated evaporator start-up/restart and run duration in order to set up the composite sampler at the Sample Pot (71-D-014). Document who was notified, date and time on Appendix B.

+] [2] SS to indicate whether Tank 5D-15A1 or 5D-15A2 will be utilized for concentrates transfer on Appendix B.

+] [3] SS or WTF Engineer verify that evaporator heel analysis exists for the last batch of concentrates transferred out of Tank 5D-15A1 or 5D-15A2 and is below SOP 00-13 limits by reviewing the LWTS Evaporator Fissile Mass Balance Log Book. Record on Appendix B.

+] [a] IF no analysis exists, THEN sample tank per SOP 71-11 and record on Appendix B. Request alpha plutonium (μCi/mL) and total uranium (μg/mL).

5.5 Evaporator Warm Up

[1] Notify the Utility Room operator of intended steam use **prior** to evaporator start-up.

[2] CLOSE, or verify closed, 71-H-145.

[3] OPEN, or verify open, 71-H-154.

[4] Turn the selector switch for 71-H-124 (to 5D-15A1) or 71-H-125 (to 5D-15A2) as indicated by the SS on Appendix F, to the OPEN position and observe appropriate valve indicates open at the control panel.

NOTE *Section 5.6 and the remaining steps of Section 5.5 may be performed anytime after Step 5.5[4] is initiated during evaporator warm up.*

[5] Adjust 71-FIC-025 in MANUAL or AUTO until 71-FI-025 indicates an increase of 250-350 lb/hr. Allow the system to stabilize for at least 10 minutes until TR-031 (concentrates temperature) stabilizes and stops increasing at approximately 100°C.

CAUTION

Steam flow must be maintained or 71-GT-128 must be opened to prevent a loss of positive pressure to the evaporator steam coils.

[6] CLOSE, or verify closed, reboiler air supply valve 71-GT-128.

[7] Set 71-TIC-038 at 75 percent OPEN. Adjust as necessary to maintain a temperature differential of 5-20 degrees between 71-TR-034 and 71-TR-036.

NOTE1 *Jetting 71-D-005 start-up side must be performed before 71-LI-043 reaches 80%. A level of 90% on 71-LI-043 will close the feed and steam inlets to the evaporator.*

NOTE2 *The 71-D-005 start-up jet may be operated in automatic mode by setting the 71-H-155/156 switch to AUTO.*

[8] Jet the 71-D-005 start-up side as necessary to maintain a level below 80% as follows:

[a] Set the selector switch for 71-H-155/71-H-156 to STEAM.

[b] Monitor 71-LI-043 and 71-LIC-024 during jetting operation.

[c] Set the selector switch for 71-H-155/71-H-156 to OFF prior to 71-D-005 reaching 20% on 71-LI-043, or 99" on 71-LIC-024.

[d] Set the selector switch 71-H-155/71-H-156 to AIR for approximately 30 seconds to provide an air purge to the steam jet.

[e] Set the selector switch for 71-H-155/71-H-156 to OFF.

[9] IF the level in the evaporator cannot be maintained, THEN add water as follows:

[a] Verify that 71-FCV-157 is CLOSED.

[b] Set the following selector switches to OPEN:

71-H-159
71-H-123

[c] Fill 31017 to 50 - 55% as read on 71-LI-024.

[d] Set selector switches 71-H-123 and 71-H-159 to CLOSED.

[10] Repeat Step 5.5[5] until 71-FIC-025 is at desired steam flow to achieve 1-9 gpm distillates flow as specified by the SS.

5.6 Feed 5D-15B to the Evaporator

NOTE1 *Section 5.6 and 5.7 are independent of one another, that is, they can be performed in parallel.*

NOTE2 *Processing of 5D-15B through the evaporator can proceed based on analytical results of 8D-3. It is not necessary to receive sample results for 5D-15B prior to initiation of processing. However, when 5D-15B results become available, the WTF Engineer may recalculate the evaporator density*

CAUTION

A representative sample of Tank 5D-15B contents must be obtained prior to or directly following feeding 5D-15B to the evaporator or uranium and plutonium tracking data may be inaccurate.

[1] Sample 5D-15B at any time that the level is between 30% and 80% as follows:

[a] OPEN 71-H-337 to sparge Tank 5D-15B for at least 20 minutes prior to sampling.

[b] Sample 5D-15B per SOP 71-11.

[c] CLOSE 71-H-337 when 5D-15B has been sparged for 20 minutes.

[+] [d] Request, at a minimum: gross alpha (μCi/mL), gross beta (μCi/mL), density (g/mL), TDS (w/o), Cs-137 (μCi/mL) total U (μg/mL) alpha Pu (μci/mL), Chloride (μg/mL), Fluoride (μg/mL), (and pH (s.u.). Record delivery of sample to labs and log number on Appendix B.

[+] [2] Complete all applicable "Before Transfer" sections of Appendix E, 5D-15B to 31017 transfer data sheet.

[3] CLOSE or confirm closed on the LLWO Status Board:

71-H-807

[4] OPEN or confirm open on the LLWO Status Board:

71-GL-311
71-GL-341
Cell wall block valve on line 5P377

[5] Confirm the following valves CLOSED on the LWTS Control Panel:

71-H-3065D-15B to 5D-15A2
71-H-3075D-15B to 71-D-011
71-H-3085D-15B to 5D-15A1
71-H-15071-P-01 to evaporator

[+] [6] Update LLWO Status Board and record completion of valve line-up on Appendix B.

[7] Set the selector switch for 71-H-312 to OPEN.

[8] Set 71-LIC-024 controller in MANUAL at 0% output.

NOTE *Pump 71-P-04 will not start in AUTO until seal water has been established for at least 10 seconds or if the level in 5D-15B is below 20%.*

[9] Set the selector switches for 71-SV-1033 and 71-P-04 to AUTO. IF the level of 5D-15B is ≤20%, THEN operate 71-P-04 in MANUAL.

[10] Set the selector switches for 71-H-309 and 71-H-310 to OPEN.

[11] Operate 71-LIC-024 in MANUAL or AUTOMATIC to maintain the desired level per SS instruction.

5.7 Distillate Flow from 71-D-005 to Interceptor

[1] Monitor for a concentrates temperature of greater than 99°C (71-TR-031) or a level increase of at least 5% in the 71-D-005 start-up tank (71-LI-043).

[2] CLOSE or confirm as closed on the LLWO status Board:

71-H-614 Resin Fill Hopper to 71-D-003
71-H-615 Resin Fill Hopper to 71-D-003

[3] CLOSE, or verify closed, the following valves on the LWTS Control Panel:

71-H-134 71-D-009 to PPC Distribution Manifold
71-H-136 7D-13 to PPC Distribution Manifold
71-H-602 71-D-003 to Batch Monitor Tanks
71-H-604 71-D-003 discharge to 71-D-007
71-H-608 71-D-003 vent to XC-3 sump
71-H-609 71-D-003 to VOG
71-H-610 Recycle water to 71-D-003
71-H-611 Recycle water to 71-D-003 effluent

+] [4] Update the LLWO Status Board to reflect the final position of all valves and record completion of lineup in Appendix B.

+] [5] Record the 71-FQI-305 flow meter pre-start total on Appendix B.

[6] Place 71-RM-037 on-line as follows:

[a] Place the RM-037/070 selector switch in RM-037 position.

[b] Start 71-P-21 by setting the selector switch to START.

[7] Throttle to obtain desired flow rates through radiation monitors:

71-H-633 71-D-003 effluent sample (RM-089)
71-H-634 Evaporator distillate sample (RM-037)

[+] [8] SS to verify 71-RI-037 is operational, on-line, RA-037 is not in alarm, and distillates are not being transferred to the interceptor on Appendix B.

[+] [9] SS authorize distillate transfer to interceptor. Obtain signature on Appendix B.

[10] Set the selector switch for 71-H-145 to OPEN and the selector switch for 71-H-154 to CLOSED.

[11] Establish distillate flow to the interceptor as follows:

[a] Allow 71-LI-041 to reach approximately 50 to 60 percent to prevent draining 71-D-003.

[b] Verify 71-RA-037, evaporator radiation high, is NOT in alarm.

[c] Set the selector switches for 71-H-145 and 71-H-154 to AUTO and observe that 71-H-145 remains OPEN and 71-H-154 remains CLOSED.

[d] Set the selector switch for 71-H-101 to OPEN.

[e] Set the selector switches for 71-SV-1022 and 71-P-15 to AUTO.

[f] Place 71-RM-089 on-line by placing the RM-082/089 selector switch to the RM-089 position.

[g] At the discretion of the SS line-up discharge of 71-P-21 to suction of 71-P-15 by opening 71-WW-H-1333 and closing 6-71-H-709.

[h] OPEN 71-H-137.

[i] Set the following selector switches to AUTO:

71-H-133
71-H-1012
71-H-603

NOTE *FA-045, the high flow alarm for FR-045, may alarm due to higher than normal flow until the ion exchange bed is full. Even with LCV-103A, the control valve for 71-LIC-041, throttled, the flow through FR-045 may indicate high flow until the bed becomes full and stabilizes (< 1 hour).*

[j] Set the controller for 71-LIC-041 to MANUAL and adjust the output as necessary to maintain the level of 71-D-005 Run-Side between 30 and 70 percent and 1 - 9 gpm as read on 71-FR-045.

[k] If 71-LIC-041 is used to limit discharge flow as read on 71-FR-045, then throttle 71-FIC-025 as necessary to maintain 30 to 70 percent in 71-D-005 Run Side.

5.8 Concentrates Transfer from Evaporator to 5D-15A1 or 5D-15A2

+] [1] When 71-DIC-029 achieves the density specified by the SS or WTF Engineer, complete all applicable "Before Transfer" sections of Appendix F, 31017 to 5D-15A1/A2 transfer data sheet.

[2] Set the selector switches for 71-H-159 to OPEN and 71-SV-1021 to AUTO.

NOTE *Pump 71-P-16 will not start in auto until seal water has been established for at least 10 seconds and 71-DIC-029 is at least 5% OPEN.*

[3] Set the selector switch for 71-P-16 to AUTO.

[4] Set controller 71-DIC-029 to MANUAL and adjust to open 71-FCV-157 to 80%.

[5] Operate 71-DIC-029 in MANUAL at the desired density setting.

[6] CLOSE 71-FCV-157.

[7] Set the selector switch for 71-P-16 to OFF.

[8] Set the selector switches for 71-H-159 and 71-SV-1021 to CLOSE.

5.9 Evaporator Monitoring, Data Collection and Sampling

[1] Monitor steam flow, evaporator feed, concentrates removal, and distillate removal continuously.

[+] [2] Record Evaporator Operation readings on Appendix C every six hours, reporting any out of spec. condition to the SS.

[a] IF 71-DPI-301/302 readings become > 7 psid, THEN proceed to the Backwash of Mercury Ion Exchange Columns section in this procedure.

[+] [3] Record Appendix D data once per shift and test Radiation Monitors as follows:

[a] Ensure the Radiation Monitor detector is causing a Local Panel CPM display.

[b] Notify the Control Room prior to testing.

[c] Press and hold the TEST push button at each panel and record both the Local Panel and Control Room readings and High Radiation Alarms for streams 37 and 89 respectively.

[4] Sample 71-RM-037 and 71-RM-089 per SOP 71-11, or other work document, a minimum of once per 24 hours of evaporator operation.

[5] Sample 71-D-012 once per 24 hours per SOP 71-11. If mercury breakthrough is indicated by sample analysis results of >10 ppb on the lead mercury ion exchange column THEN, LWTS processing must cease and WTF Engineering be notified.

5.9.1 Temporary Reduction of Steam to Evaporator

NOTE *Sections 5.9.1 and/or 5.9.2 to be performed when 71-PDR-223 becomes erratic or indicates an increase during normal operation. Typically the reduction of steam would be performed prior to any flushing activity.*

[1] Notify the UR operator of intended reduction in steam usage.

[2] Set 71-FIC-025 controller to MANUAL and slowly reduce to 0% output.

[3] Set the selector switch for 71-H-310 to CLOSED.

[4] Allow approximately 10 minutes to pass while monitoring 71-PDT-223.

[5] Slowly increase 71-FIC-025 to reestablish normal steam flow.

[6] Set the selector switch for 71-H-310 to OPEN.

[7] IF 71-PDR-223 does not indicate normal operating pressure (20-46% of scale), THEN perform Section 5.9.2.

5.9.2 31017 Demister Pad Flush

NOTE *Sections 5.9.1 and/or 5.9.2 to be performed when 71-PDR-223 becomes erratic or indicates an increase during normal operation. Typically the reduction of steam would be performed prior to any flushing activity.*

[1] Notify the UR operator of intended reduction in steam usage during flush.

[2] Reduce 71-FIC-025 to achieve a steam flow rate of approximately 300 lbs/hr.

[3] Set the selector switch for 71-H-310 to CLOSED.

[4] Secure concentrates pump 71-P-16.

[5] Set the selector switch for 71-FCV-130 to OPEN for approximately two minutes:

[a] Monitor the 71-PDT-033 magnehelics.

[b] Monitor evaporator level on 71-LIC-024.

[6] Terminate demister pad flush after 2 minutes as follows:

[a] Set the selector switch for 71-FCV-130 to CLOSED.

CAUTION

Allow a minimum of 15 minutes for stabilization prior to repeating the flush or instrumentation may become inaccurate.

[7] Allow a minimum of 15 minutes to pass and determine if the 71-PDT-033 magnehelics indicate normal operating negative pressures. i.e. (-3.0 to -5.0) respectively. IF not, THEN repeat Step 5.9.2[5] as required.

[8] Increase 71-FIC-025 slowly, until operating steam flow rate is reached.

[9] Set the selector switch for 71-H-310 to OPEN to resume evaporator feed from 5D-15B.

[10] Restart 71-P-16 and operate 71-DIC-029 in AUTO or MANUAL to maintain desired evaporator density.

5.10 Placing Evaporator in Standby

5.10.1 Secure Steam Supply to the Evaporator

[1] Notify Utility Room operator that steam to the evaporator will be secured and cooling water flow will be reduced.

CAUTION

Steam flow must be maintained or 71-GT-128 must be opened to prevent a loss of positive pressure to the evaporator steam coils.

[+] [2] OPEN 71-GT-128, air to reboiler. Record position on Appendix B.

[3] Set the 71-FIC-025 controller to MANUAL and slowly reduce to 0% output.

[4] CLOSE 6-SH-GL-112.

5.10.2 Secure 5D-15B Feed to the Evaporator

[1] Set the 71-LCV-100 controller to MANUAL at 0% output.

[2] Set the selector switches for the following valves/pump to CLOSE/STOP:

71-P-04
71-SV-1033
71-H-309
71-H-310
71-H-312

+] [3] Complete all applicable "After Transfer" sections of Appendix E, 5D-15B to 31017 transfer data sheet.

[4] Gradually decrease 71-TIC-038 controller to 50% output and throttle down on 71-GT-114 on the LXA Catwalk until approximately half open.

[5] Set the selector switches for 71-H-154 to OPEN and 71-H-145 to CLOSE.

5.10.3 Secure Distillate Flow to the Interceptor

+] [1] SS notify ELAB representative of intent to secure flow to the Interceptors. Record time and who was notified on Appendix B.

[2] Pump distillate surge tank 71-D-005 run side until the level is ≤50 percent.

[3] Set the selector switch for 71-P-15 to STOP.

[4] Set the selector switches for the following valves to CLOSE:

71-H-603
71-SV-1022
71-H-101
71-H-137
71-H-133
71-H-1012

[5] Set the 71-LIC-041 controller to MANUAL at 0% output.

[6] Set local cabinet display 71-RM-037/070 and 71-RM-082/089 switches to 71-RM-070 and 71-RM-082, respectively. Record completion on Appendix B.

[7] OPEN, or verify open, 6-71-H-709 and CLOSE, or verify closed, 71-WW-H-1333.

[8] Place 71-P-21 in the STOP position.

5.10.4 Pump Down of Evaporator Concentrates

NOTE *Perform either Sections 5.10.4 and 5.10.5 OR Section 5.12, Evaporator Draining and Flushing as directed by the SS.*

[1] OPEN, or verify open, 71-H-159, inlet valve to 71-P-16, and 71-SV-1021, 71-P-16 seal water valve.

[2] Place 71-DIC-029 at 100% output in MANUAL.

[3] Place 71-P-16 selector switch to START and pump concentrates from the evaporator until the level is approximately 75 inches as indicated on 71-LIC-024.

[4] Set the selector switch for 71-P-16 to STOP.

[5] CLOSE 71-H-159 and set the selector switch for 71-SV-1021 to CLOSED.

[6] Set the controller for 71-DIC-029 to MANUAL at 0% output.

[+] [7] Complete all applicable "After Transfer" sections of Appendix F, 31017 to 5D-15A1/A2 transfer data sheet.

5.10.5 Perform Flushes of Evaporator Components

[1] Perform demister pad flush as follows:

[a] Set the selector switch for 71-FCV-130 to OPEN and monitor the evaporator level on 71-LIC-024.

[b] After flushing two minutes, set the selector switch for 71-FCV-130 to CLOSE.

[2] Perform concentrates cooler flush as follows:

[a] Set or verify that 71-DIC-029 is in MANUAL at 0%.

[b] Set the selector switch for 71-H-123 to OPEN and selector switch for 71-H-159 to OPEN.

[c] Monitor evaporator level indicator controller 71-LIC-024.

[d] Set the selector switches for 71-H-123 and 71-H-159 to CLOSED when 71-LIC-024 indicates 88-90 inches, or when the low level alarm LA-024 clears, whichever occurs first.

[3] Set the selector switch for 71-H-124 or 71-H-125 to CLOSE.

[+] [4] Independently verify valves 71-GT-128 and 71-GT-129 are OPEN and record on Appendix B.

[5] Shut off evaporator trickle purges as follows:

[a] Reduce 71-FIC-213, 71-FIC-214, and 71-FIC-215 to 0 cc/min.

[b] CLOSE : 71-H-1002

71-H-899
71-H-1001

5.11 Placing Evaporator in Operational Ready Recirculation

NOTE *Operational ready recirculation is a mode of short term standby for the LWTS evaporator. Steam remains on to the evaporator up to temperature and stable.*

[+] [1] SS approve ready recirculation on Appendix B.

[+] [2] SS notify the ELAB of intent to place the evaporator in ready recirculation. Record notification on Appendix B.

[3] Set 71-FIC-025 controller to MANUAL and slowly adjust steam flow to maintain stable operating level in the evaporator (approximately 2000-4000 lb/hr).

[4] Secure 5D-15B feed to the evaporator per the following valves/pump to CLOSE/STOP:

71-P-04
71-SV-1033
71-H-309
71-H-310
71-H-312

[5] Place 71-LCV-100 in MANUAL and reduce to 0%.

[6] Set the selector switches for 71-H-154 to OPEN and 71-H-145 to CLOSE.

[7] Secure distillate flow to the interceptor per the following:

[a] Pump the distillate surge tank 71-D-005 run side until the level is ≤50 percent.

[b] Set the selector switch for 71-P-15 to STOP.

[c] Set the selector switches for the following valves to CLOSE:

71-H-603
71-SV-1022
71-H-101
71-H-137
71-H-133
71-H-1012

[d] Set the 71-LIC-041 controller to MANUAL at 0% output.

[e] Set the 71-RM-082/089 switch to 71-RM-082 leaving 71-RM-037 on line to monitor distillate activity.

[f] OPEN, or verify open, 6-71-H-709, and CLOSE, or verify closed, 71-WW-H-1333.

[8] Secure concentrates transfer from the evaporator per the following:

[a] Set the selector switch for 71-P-16 to STOP.

[b] Set the selector switch for 71-SV-1021 and 71-H-159 to CLOSED.

[c] Set the controller for 71-DIC-029 to MANUAL to 0% output.

[+] [9] Complete all applicable "After Transfer" sections of Appendix F, 31017 to 5D-15A1/A2 transfer data sheet.

[+] [10] Complete applicable "After Transfer" sections of Appendix E.

[11] Monitor evaporator level (71-LIC-024), 71-D-005 start side level (71-LI-043), and mesh pad differential pressure 71-PDI-033 and evaporator pressure 71-PDR-223).

[a] IF an erratic and/or increased 71-PDR-223 indication occurs, THEN proceed to Section 5.9.1.

[12] Operate the selector switch for 71-D-005 startup side eductor 71-H-155/71-H-156 to STEAM to maintain the evaporator at a stable level.

[a] Secure jet (when not needed) by turning the selector switch 71-H-155/71-H-156 from STEAM to AIR for 30 seconds then to OFF.

[b] Repeat steps [10] and [11][a] as necessary.

[13] IF the level in the evaporator cannot be maintained, THEN add water as follows:

[a] Verify that 71-FCV-157 is CLOSED.

[b] Set the following selector switches to OPEN:

71-H-159
71-H-123

[c] Fill 31017 to 50 - 55% as read on 71-LI-024.

[d] Set the following selector switches to CLOSED:

71-H-123
71-H-159

[e] Proceed to Section 5.4 Evaporator Operation Prerequisites, to resume evaporator operation or to Section 5.10 placing evaporator in Standby, if necessary.

5.12 Evaporator Draining and Flushing

NOTE *Performance of this section is optional per SS direction.*

[1] Set the selector switch for 71-H-124 or 71-H-125 to OPEN.

[2] Set the selector switches for 71-H-159 and 71-SV-1021 to OPEN.

[3] Set the controller for 71-DIC-029 to MANUAL at 100% output.

[4] Set the selector switch for 71-P-016 to START.

[5] Pump evaporator down to 14 inches as indicated on 71-LIC-024 or to a level directed by the SS.

[6] Set the selector switch for 71-P-016 to STOP.

[7] Set the following selector switches to CLOSED and adjust 71-DIC-029 controller to 0% output in MANUAL:

71-SV-1021
71-H-124 or 71-H-125

[8] Complete all applicable "After Transfer" sections of Appendix F, 31017 to 5D-15A1/A2 transfer data sheet.

[9] Set the selector switch for 71-H-123 to OPEN and monitor evaporator level on 71-LIC-024.

[10] Set the following selector switches to CLOSED when 71-LIC-024 reaches 88 inches or until 71-LA-024 alarm clears, whichever occurs first:

71-H-123
71-H-159

5.13 Operation of Shielded Pipe Chase

NOTE *Operation of the shielded pipe chase is performed for line 6-17-1/2-643 seal leg once every six months.*

[1] CLOSE valve 71-H-733 in the Upper Warm Aisle (UWA) and remove threaded fill cap.

[2] OPEN valve 71-H-733 to check for air flow into XC-3 with a smoke tube or equivalent.

[3] If air flow is evident, THEN add water to the line to create a seal leg per the following:

[a] Add one pint of demineralized water to line 6-17-1/2-643.

[b] Check for air flow into XC-3 with a smoke tube or equivalent.

[4] IF air flow is still evident, THEN repeat water addition to line up to two more times. After repeating water addition, up to two times, if there is still evidence of airflow, notify Engineering.

[5] Place the cap on line 6-17-1/2-643 and inform SS of results of operation.

5.14 Filling Sample Pot Loop Seal

WARNING

DO NOT enter the ULO without first checking the IWP for current requirements, there is a potential for airborne mercury vapor in the ULO.

NOTE *Filling sample pot loop seal is performed per PM card if the LWTS has not operated in 3 months.*

[1] Fill a properly labeled container with one gallon of demineralized or utility water.

[2] Loosen and swing aside the cover bolts for sample pot 71-D-014.

[3] OPEN sample pot cover and add one gallon of water.

[4] Secure sample pot cover with swing bolts.

[5] OPEN 71-WW-H-1371 to drain the sample pot and fill the loop seal.

[6] CLOSE 71-WW-H-1371.

5.15 Backwash of Mercury Ion Exchange Columns

NOTE *This section to be performed when the differential pressure on the mercury ion exchange columns exceeds the normal operating range.*

[1] Obtain approval from the system engineer and SS to perform backwash operation.

[2] Notify the Elab of intent to perform backwash.

[3] IF operating the evaporator, THEN place the system in ready recirculation per Section 5.11, otherwise, proceed.

[4] Perform the following valving to backflow through Column A and normal flow through Column B:

[a] CLOSE in the ULO/WRPA:

71-WW-H-1363	Mercury Process Inlet Isolation
71-WW-H-1323	Mercury IX Col A Sample Isolation
71-WW-H-1324	Mercury IX Col B Sample Isolation
71-WW-H-1306	Mercury IX Col. B Inlet

[b] OPEN the following in the WRPA:

71-WW-H-1307	Mercury IX Col B Inlet

[5] Set the controller for 71-LIC-041 to MANUAL and adjust the output to OPEN 71-LCV-103A.

CAUTION

System should be filled slowly (approximately 3 gpm) to prevent resin carry over.

[6] THROTTLE OPEN 71-DW-H-1313, Mercury IX Col A Demin Water Supply, in the WRPA to fill system.

[7] CLOSE 71-DW-H-1313 when flow is established at 71-FQI-305 and allow resin to settle for a minimum of 10 minutes.

[8] OPEN 71-DW-H-1313 to commence backflush at approximately 30 gpm for a total of 75 gallons as read on 71-FQI-305.

[9] THROTTLE 71-DW-H-1313 to reduce flow to 3-5 gpm for an additional 10 minutes.

[10] CLOSE 71-DW-H-1313 and allow 10 minutes for resin to settle.

[11] Perform the following valving to backflow through Column B and normal flow through Column A:

[a] CLOSE in the WRPA:

71-WW-H-1308 Mercury IX Col. B Drain

[b] OPEN in the WRPA:

71-WW-H-1304 Mercury IX Col. A Drain

[12] OPEN 71-DW-H-1314 in the WRPA to commence backflush at approximately 30 gpm for a total of 75 gallons as read on 71-FQI-305.

[13] THROTTLE 71-DW-H-1314 to reduce flow to 3-5 gpm for an additional 10 minutes.

[14] CLOSE 71-DW-H-1314.

[15] Perform the following valving to restore original configuration when the backwash is completed:

[a] CLOSE in the WRPA:

71-WW-H-1307 Mercury IX Col. B Inlet
71-WW-H-1304 Mercury IX Col. A Drain

[b] OPEN in the ULO/WRPA:

71-WW-H-1363 Mercury Process Inlet Isolation
71-WW-H-1323 Mercury IX Col. A Sample Isolation
71-WW-H-1324 Mercury IX Col. B Sample Isolation
71-WW-H-1306 Mercury IX Col. B Inlet
71-WW-H-1308 Mercury IX Col. B Drain

[16] Set the controller for 71-LIC-041 to MANUAL and adjust the output to CLOSE 71-LCV-103A.

[17] Notify the Elab of backwash completion.

[18] Proceed to Section 5.4 to restart evaporator at SS direction.

6.0 POST COMPLETION CONFIGURATION

Not applicable.

7.0 RECORDS

The following forms, data sheets, logs, reports, or any other form of documentation considered to be a record and generated in response to this procedure shall be prepared, maintained, and transferred to the MRC in accordance with WVDP-262. Refer to RIDS for further information.

[1] Transfer Data Sheet for 8D-3 or RHWF to 5D-15B, 71-02 Appendix A

[2] Operation of the LWTS High TDS Treatment System, 71-02 Appendix B

[3] Evaporator Operation, 71-02 Appendix C

[4] LWTS Radiation Monitor Data Sheet, 71-02 Appendix D

[5] Transfer Data Sheet for 5D-15B to 31017 Transfer, 71-02 Appendix E

[6] Transfer Data Sheet for 31017 to 5D-15A1/5D-15A2, 71-02 Appendix F

[7] Evaporator Operation Normal Valve Line-Up, 71-02 Appendix H

[8] 7D-2 to 5D-15B Transfer Data Sheet, 71-02 Appendix I

[9] Transfer Data Sheet for 8D-3 to 5D-15A1, 71-02 Appendix J

8.0 SOURCE REQUIREMENTS - The following source requirements are implemented by this procedure.

PSR-1	-	Requirements for Liquid Transfers of Fissle Material
WVDP-359	-	High Level Waste Operations Technical Manual
WV-1113	-	Analytical Request Form
WVNS-EQ-248	-	LWTS Control Concept
WVNS-EQ-249	-	LWTS Process Interlocks
WVNS-EQ-250	-	Fundamental Process Narrative

SPDES Permit NY-0000973, Parts I and II

9.0 REFERENCE DOCUMENTS

9.1 Procedures

[1] SOP 00-13 - WTF/STS/LWTS Run Plan and Fissile Material Tracking
[2] SOP 50-23 - Tank 8D-3 Liquid Collection and Transfer Operation
[3] SOP 71-10 - Transfer of LWTS Evaporator Concentrates Tanks
[4] SOP 71-11 - LWTS Sampling Procedures
[5] SOP 71-14 - LWTS Alarm Response Procedure
[6] SOP 15-04 - Sample Operations
[7] SOP 71-19 - LWTS Safe Shutdown During an Emergency Evacuation
[8] SOP 313-06 - RHWF Waste Water Collection and Transfer System Operation

9.2 Drawings

15A-A-85	Utility P&ID, Cold Waste Water System
901D-021	LWTS P&ID
901D-022 SH 1, 2	LWTS P&ID
901D-023 SH 1, 2	LWTS P&ID
901D-024	LWTS P&ID
901D-049	LWTS P&ID, Utility Water System Interface
901D-050	LWTS P&ID, Steam and Condensate Interface
901D-051	LWTS P&ID, Instrument and Utility Air Interface
901D-059	LWTS P&ID
900D-397	CSS Building 01-14 P&ID
900D-1204	LWTS P&ID, Recycle Water System

10.0 APPENDICES

Appendix A	- Transfer Data Sheet for 8D-3 or RHWF to 5D-15B
Appendix B	- Operation of the LWTS High TDS Treatment System
Appendix C	- Evaporator Operation
Appendix D	- LWTS Radiation Monitor Data Sheet
Appendix E	- Transfer Data Sheet for 5D-15B to 31017 Transfer
Appendix F	- Transfer Data Sheet for 31017 to 5D-15A1 or 5D-15A2 Transfers
Appendix H	- Evaporator Operation Normal Valve Line-Up
Appendix I	- 7D-2 to 5D-15B Transfer Data Sheet
Appendix J	- Transfer Data Sheet for 8D-3 to 5D-15A1
Figure 1	- LWTS Distillate Treatment

APPENDIX A
TRANSFER DATA SHEET FOR 8D-3 or RHWF to 5D-15B
(Page 1 of 1)

5.1 Transfer from STS tank 8D-3 or RHWF to 5D-15B

Transfer from: ___ 8D-3 ___ RHWF

5.1.1[1] SOP 00-13 Data taken _____ SS/WTF Engineer

5.1.1[2] LAH-7701 is NOT in alarm. _____ LWTS OPERATOR

5.1.1[3] LAH-457 is NOT in alarm. _____ LWTS OPERATOR

5.1.1[4] Valve lineup complete _____ LWTS OPERATOR

5.1.1[5] LLWO status board updated _____ LWTS OPERATOR

5.1.1[6] Valve lineup complete for transfer to 15B _____ LWTS OPERATOR/OR NA

5.1.1[10]

TIME	71-FI-003	71-LR-105

5.1.1[15] 8D-3 or RHWF Transfer completed, 5D-15B _____ *LWTS Operator*

ending level _____ %

and volume _____ Liters

APPENDIX B
OPERATION OF THE LWTS HIGH TDS TREATMENT SYSTEM
(Page 1 of 2)

5.3 EVAPORATOR PRESTART VALVING

5.3[2] Appendix H Line-Up performed
(N/A this step for restart following Ready Recirc or if deemed unnecessary)

_____
LWTS OPERATOR

5.3.1[11] Evaporator level and density probes purged and set

_____
LWTS OPERATOR

5.4 EVAPORATOR OPERATION PREREQUISITES

5.4[1] Notify ELAB of evaporator start-up/restart.

_____
SS

_____
ELAB representative/Date/Time

5.4[2] Concentrates to be sent to 5D-15A __

_____
SS

5.4[3] 5D-15A1/A2 sample taken or heel analysis exists.
Fissile PU and fissile U are below SOP 00-13 limits.

_____
LWTS OPERATOR

5.4[3][a] 5D-15_ sampled per SOP 71-11 or N/A.

_____
SS or WTF Engineer

5.6 FEED 5D-15B TO THE EVAPORATOR

5.6[1][d] 5D-15B sample delivered to labs.
Sample # _____

_____
LWTS OPERATOR

5.6[6] Valve lineup completed and LLWO Status Board Updated

_____
LWTS OPERATOR

5.7 DISTILLATE FLOW FROM 71-D-005 TO INTERCEPTOR

5.7[4] Valve lineup completed and LLWO Status Board updated. (N/A for restart following ready recirc.)

_____
LWTS OPERATOR

5.7[5] 71-FQI-305 pre-start total _____ Gallons

_____
LWTS OPERATOR

5.7[8] SS verify 71-RI-037 is operational, on-line, and RA-037 is not in alarm.

_____
SS

5.7[9] Request SS to authorize distillate flow to interceptor.

_____
SS

APPENDIX B
OPERATION OF THE LWTS HIGH TDS TREATMENT SYSTEM
(Page 2 of 2)

5.10	PLACING EVAPORATOR IN STANDBY	
5.10.1[2]	Reboiler coils air supply valve 71-GT-128 OPEN.	LWTS OPERATOR
5.10.3[1]	Notify ELAB of intent to secure flow to the interceptors.	SS ELAB representative/Date/Time
5.10.3[6]	Rad. Monitors switched to 71-RM-070 and 082.	LWTS OPERATOR
5.10.5[4]	71-GT-128 and 71-GT-129 verified OPEN.	LWTS OPERATOR
5.11	PLACING EVAPORATOR IN OPERATIONAL READY RECIRCULATION	
5.11[1]	Ready Recirculation Approval	SS
5.11[2]	Notify ELAB of intent to secure flow to the interceptors.	SS ELAB representative/Date/Time

5.9[2]

APPENDIX C
EVAPORATOR OPERATION
(Page 1 of 2)

ITEM	OPERATING RANGE/SETPOINT	1ST READING	2ND READING	3RD READING	4TH READING	5TH READING	6TH READING
71-FI-025	0 - 7.0K lb/hr						
71-FIC-025 SET POINT	AS REQUIRED						
71-LR-105	0 - 80%						
71-FI-515	0 - 13 GPM						
71-CI-P04	AS REQUIRED						
71-LIC-024 SET POINT	88 - 94"						
71-LI-024	49 - 57%						
71-DIC-029 SET POINT	1.0- 1.40 g/mL						
71-DI-029	1.0 -1.40 g/mL						
71-TR-034	15 - 27°C						
71-TR-036	27 - 38°C						
71-TIC-038 SET POINT	AS REQUIRED						
71-TR-038	15 - 38°C						
71-TR-031	21 - 108°C						
71-TR-049	15 - 40°C						
71-TR-054	15 - 38°C						
DATE							
TIME	-----						
OPERATOR INITIALS	-----						
SS INITIALS	-----						

NARRATIVE SECTION _____

5.9[2]

APPENDIX C
EVAPORATOR OPERATION
(Page 2 of 2)

ITEM	OPERATING RANGE/SETPOINT	1ST READING	2ND READING	3RD READING	4TH READING	5TH READING	6TH READING
71-PI-050	0 - 35 PSIG						
71-LR-111A	0 - 80%						
71-LR-111B	0 - 80%						
71-LI-041	30 - 70%						
71-LIC-041 SET POINT	AS REQUIRED						
71-PI-044	0 - 65 PSIG						
71-FR-045	1 - 9 GPM						
71-RM-037	$<5 \times 10^{-1}$						
71-RM-089	$<8 \times 10^{-4}$						
71-PDT-033 HIGH	0 to -5 inches						
71-PDT-033 LOW	0 to -5 inches						
71-PDR-223	20-46% of scale						
DATE	-----						
TIME	-----						
OPERATOR INITIALS	-----						
SS INITIALS	-----						

NARRATIVE SECTION _____

APPENDIX D
LWTS RADIATION MONITOR DATA SHEET
(Page 1 of 1)

5.9[3]

DATE							
TIME							
ITEM	INDICATION	1st	2nd	3rd	4th	5th	6th
RM-037 INITIAL READING LOCAL	0-5000 CPM						
CONTROL PANEL 71-RI-037	$<5x10^{-1}$ uCi/mL						
RM-037 TEST READING LOCAL	288k or 289k CPM						
31017 RADIATION HIGH ALARM	OFF						
RM-089 INITIAL READING LOCAL	0-200 CPM						
CONTROL PANEL 71-RI-089	$<8x10^{-4}$ uCi/mL						
RM-089 TEST READING LOCAL	288k or 289k CPM						
71-D-003 RADIATION HIGH ALARM	OFF						
71-WW-SG-0001	SAT=No elemental mercury						
71-DPI-301 Column A	0-7 psid						
71-DPI-302 Column B	0-7 psid						
71-DPI-304 71-T-001	0-4 psid						
OPERATOR							
SS							
COMMENTS:							

APPENDIX E
TRANSFER DATA SHEET
FOR 5D-15B TO 31017 TRANSFER
(Page 1 of 1)

DATE _____

SAMPLE ANALYSIS NAME 5D-15B # ____

COMPLETE FOR SENDING TANK:

5D-15B	BEFORE TRANSFER	AFTER TRANSFER
71-LR-105		
71-DR-104		
71-TI-103		
VOLUME (LITERS)		

_____
OPERATOR/DATE

VOLUME TRANSFERRED _____ liters

TRANSFER COMPLETE

_____
OPERATOR/DATE

_____
SS/DATE

APPENDIX F
TANK TRANSFER DATA SHEET
FOR 31017 TO 5D-15A1 OR 5D-15A2
(Page 1 of 1)

DATE _____

DESIRED DENSITY SETPOINT (71-DIC-029) _____

COMPLETE FOR RECEIVING TANK (INDICATED BELOW):

5D-15A	BEFORE TRANSFER	AFTER TRANSFER
LR % CHART		
DR gm/cc		
TEMPERATURE (DEG C.)		
VOLUME (LITERS)		

_____
OPERATOR/DATE

VOLUME TRANSFERRED _____ liters

TRANSFER COMPLETE

_____
OPERATOR/DATE

_____
SS/DATE

Appendix H
Evaporator Operation Normal Valve Line-Up
(Page 1 of 5)

VALVE	DESCRIPTION	LOCATION	POSITION	INITIAL
71-H-260	71-D-002 effluent sample (RM-082)-(PPC)	LLWO Status Board	CLOSED	
71-H-264	71-D-002 effluent sample (RM-070)-(PPC)	LLWO Status Board	CLOSED	
71-H-169	Distillate sample (RM-037)(PPC)	LLWO Status Board	OPEN	
71-H-623	71-D-003 effluent sample (RM-089)(PPC)	LLWO Status Board	OPEN	
71-H-1014	2-way valve in ULO pump (ULO Pump Room)	LLWO Status Board	OPEN	
71-H-1013	3-way valve in ULO pump room (open to 5D-15B)-(ULO Pump Room)	LLWO Status Board	OPEN	
71-GL-760	From condensate return pump	LXA	CLOSED	
71-H-1003	Water flush to 31017 level probe	LXA	CLOSED	
71-H-1004	Water flush to 31017 density probe	LXA	CLOSED	
71-H-1005	Water flush to 31017 common probe	LXA	CLOSED	
71-SC-GT-0047	Condensate Manifold Vent to Condensate Header	LXA	CLOSED	
71-SC-GT-0002	Condensate Manifold Vent to Condensate Header	LXA	CLOSED	
71-IA-H-0083	71-PDT-223 Line drain tap	LXA	CLOSED	
15-UA-GT-600	Utility Air Supply (NW wall, LXA)	LXA	OPEN	
71-GL-1188	Utility Air Supply to Condensate Pump	LXA	OPEN	
71-GL-763	Utility Air to condensate return pump (30-50 psi during cycle)	LXA	THROTTLED	
71-GL-764	From condensate return pump	LXA	OPEN	
71-SCL-GT-0011	Condensate return pump vent	LXA	OPEN	
71-GL-761	Condensate return manifold	LXA	OPEN	
71-GL-762	From condensate return manifold	LXA	OPEN	
6-SC-GL-727	Condensate return from 31017	LXA	OPEN	
71-SC-GT-0007	Condensate Manifold Vent to Atmosphere	LXA	OPEN	
6-SC-GL-775	Condensate Return from 31017	LXA	OPEN	
6-SCH-GT-763	71-D-005 Educator Condensate Isolation Valve	LXA	OPEN	
71-SC-GT-0048	Sight Glass Isolation Valve	LXA	OPEN	
71-SC-GT-0049	Sight Glass Isolation Valve	LXA	OPEN	
71-GT-128	Utility air to reboiler	LXA	OPEN	

Appendix H
Evaporator Operation Normal Valve Line-Up
(Page 2 of 5)

VALVE	DESCRIPTION	LOCATION	POSITION	INITIAL
71-GT-129	Utility air to reboiler	LXA	OPEN	
71-GT-117	Water supply to 31017 level probe	LXA	OPEN	
71-GT-118	Water supply to 31017 density probe	LXA	OPEN	
71-GT-119	Water supply to 31017 common probe	LXA	OPEN	
6-SC-GT-782	Condensate isolation valve for steam trap 71-T-729	LXA	OPEN	
71-SCH-H-0045	Isolation valve for 71-SCH-VB-0044	LXA	OPEN	
6-CW-GT-103	Cooling water to 31017 condenser	LXA CATWALK	OPEN	
71-GT-105	Water supply to 31017 trickle purges	LXA CATWALK	OPEN	
71-GT-104	Recycle water to 31017 demister pad	LXA CATWALK	OPEN	
13-CW-112	Cooling water supply to 71-E-005	LXA CATWALK	OPEN	
13-CW-113	Cooling water return from 71-E-005	LXA CATWALK	OPEN	
6-SL-GL-101	Steam supply to reboiler	LXA CATWALK	OPEN	
6-SH-GL-103	Steam supply to 71-D-005 eductor	LXA CATWALK	OPEN	
6-UA-GT-104	Utility Air supply to 71-D-005 eductor and air purge to reboiler	LXA CATWALK	OPEN	
71-SC-GL-765	Condensate return isolation valve	LXA CATWALK	OPEN	
71-SC-GL-766	Condensate return isolation valve	LXA CATWALK	OPEN	
71-SC-GL-767	Condensate return isolation valve	LXA CATWALK	CLOSED	
6-71-GL-682	Concentrates line flush water	LWA	OPEN	
6-71-GL-158	71-P-16 seal water isolation	LWA	OPEN	
6-71-GL-161	71-P-15 seal water isolation	LWA	OPEN	
71-H-834	Sample panel in (RM-037)	ULO	CLOSED	
71-H-835	Sample valve (RM-037)	ULO	CLOSED	
71-H-836	Sample out (RM-037)	ULO	CLOSED	
71-H-837	Sample panel in (RM-070)	ULO	CLOSED	
71-H-838	Sample valve (RM-070)	ULO	CLOSED	
71-H-839	Sample out (RM-070)	ULO	CLOSED	
71-H-840	Sample panel in (RM-082)	ULO	CLOSED	
71-H-841	Sample valve (RM-082)	ULO	CLOSED	
71-H-842	Sample out (RM-082)	ULO	CLOSED	
71-H-843	Sample panel in (RM-089)	ULO	CLOSED	
71-H-844	Sample valve (RM-089)	ULO	CLOSED	

Appendix H
Evaporator Operation Normal Valve Line-Up
(Page 3 of 5)

VALVE	DESCRIPTION	LOCATION	POSITION	INITIAL
71-H-845	Sample out (RM-089)	ULO	CLOSED	
71-P-H-0196	Test Isolation Valve	ULO	CLOSED	
71-P-H-0197	Test Return Valve	ULO	CLOSED	
71-P-H-0198	Test Sample Valve	ULO	CLOSED	
71-H-635	71-D-002 effluent sample (RM-082)	ULO	CLOSED	
71-H-636	71-D-002 effluent sample (RM-070)	ULO	CLOSED	
71-H-710	RM-082/089 Discharge	ULO	CLOSED	
71-WW-H-1301	Mercury abatement bypass valve A	ULO	CLOSED	
71-WW-H-1302	Mercury abatement bypass valve B	ULO	CLOSED	
71-WW-H-1365	Drain valve on piping to Sample Pot	ULO	CLOSED	
71-WW-H-0257	Mercury Trap 71-XX-002 Isolation	ULO	CLOSED	
71-WW-H-0259	Mercury Trap 71-XX-002 Isolation	ULO	CLOSED	
71-WW-SG-0001	Needle valve for Mercury Trap Flow Meter	ULO	CLOSED	
71-WW-H-1370	RM-082/089 Drain Line	ULO	CLOSED	
71-WW-H-0097	Mercury Vapor Loop Seal Drain	ULO	CLOSED	
71-WW-H-1311	Mercury Sample Pot Drain	ULO	CLOSED	
71-WW-H-1371	Mercury Vapor Loop Seal Drain	ULO	CLOSED	
71-H-709	71-P-21 to 5D-15B	ULO	OPEN	
71-H-1007	71-P-21 Pump discharge isolation	ULO	OPEN	
71-H-633	71-D-003 effluent sample (RM-089)	ULO	THROTTLED	
71-H-634	Evaporator distillate sample (RM-037)	ULO	THROTTLED	
71-WW-H-0098	Mercury vapor loop seal vent	ULO	OPEN	
71-WW-H-1312	Flow meter FQI-305 Isolation	ULO	OPEN	
71-WW-H-1363	Mercury Process Inlet Isolation	ULO	OPEN	
71-WW-H-1364	LWTS/Mercury Isolation	ULO	OPEN	
71-WW-H-1332	RM 082/089 Shut Off	ULO	OPEN	
71-WW-GL-1300	Mercury Manual Flow Control Valve	ULO	THROTTLED	
71-WW-H-1333	RM 037/070/P-21 Shut Off	ULO	CLOSED	
71-WW-H-0254	71-XX-002 Mercury Trap Drain Isolation	ULO	OPEN	
71-WW-H-0255	Mercury Trap 71-XX-002 Vent	ULO	OPEN	
71-WW-H-0256	Mercury Trap 71-XX-002 Isolation	ULO	OPEN	
71-WW-H-0258	Mercury Trap 71-XX-002 Isolation	ULO	OPEN	
71-WW-H-1355	Outlet Isolation RM-089	ULO	OPEN	
71-WW-H-1356	Outlet Isolation RM-037	ULO	OPEN	

Appendix H
Evaporator Operation Normal Valve Line-Up
(Page 4 of 5)

VALVE	DESCRIPTION	LOCATION	POSITION	INITIAL
71-DW-H-1337	Demin Water Header Isolation	ULO	OPEN	
71-WW-H-1354	Instrument Cal Connection PI-300 Isolation	WRPA	CLOSED	
71-WW-H-1351	Mercury Process Supply Future PH/ORP Iso.	WRPA	CLOSED	
71-WW-H-1362	Mercury Supply Header Drain	WRPA	CLOSED	
71-WW-H-1304	Mercury IX Col. A Drain	WRPA	CLOSED	
71-VE-H-1315	Mercury IX Col. A Vent	WRPA	CLOSED	
71-CH-H-1357	Mercury IX Col. A Sluice out	WRPA	CLOSED	
71-CH-H-1358	Mercury IX Col. A Sluice in	WRPA	CLOSED	
71-WW-H-1343	Instrument Cal Connection DPI-301 Hi Isolation	WRPA	CLOSED	
71-WW-H-1344	Instrument Cal Connection DPI-301 LO Isolation	WRPA	CLOSED	
71-UA-H-1317	Mercury IX Col A Air Sparge	WRPA	CLOSED	
71-WW-H-1341	Instrument Cal Connection PI-310 Isolation	WRPA	CLOSED	
71-DW-H-1313	Mercury IX Col. A Demin Water Supply	WRPA	CLOSED	
71-DW-H-1314	Mercury IX Col. B Demin Water Supply	WRPA	CLOSED	
71-WW-H-1305	Mercury IX Col. A Inlet-Polishing Mode	WRPA	CLOSED	
71-DW-H-1338	Demin Water Supply drain	WRPA	CLOSED	
71-VE-H-1316	Mercury IX Col. B Vent	WRPA	CLOSED	
71-CH-H-1359	Mercury IX Col. B Sluice out	WRPA	CLOSED	
71-CH-H-1360	Mercury IX Col. B Sluice in	WRPA	CLOSED	
71-WW-H-1345	Instrument Cal Connection DPI-302 HI Isolation	WRPA	CLOSED	
71-WW-H-1346	Instrument Cal Connection DPI-302 LO Isolation	WRPA	CLOSED	
71-UA-H-1318	Mercury IX Col. B Air Sparge	WRPA	CLOSED	
71-WW-H-1342	Instr. Cal Connection PI-311 Isolation	WRPA	CLOSED	
71-WW-H-1307	Mercury IX Col. B Inlet	WRPA	CLOSED	
71-WW-H-1347	Instrument Cal Connection DPI-304 HI Isol.	WRPA	CLOSED	
71-WW-H-1348	Instrument Cal Connection DPI-304 LO Isol.	WRPA	CLOSED	
71-WW-H-1331	Mercury Filter Drain Valve	WRPA	CLOSED	
71-WW-H-1349	Mercury IX Col. A Sample Valve	WRPA	CLOSED	
71-WW-H-1350	Mercury IX Col. B Sample Valve	WRPA	CLOSED	
71-WW-H-1326	Mercury IX Col. B PI-311 Isolation	WRPA	OPEN	
71-WW-H-1309	Mercury Filter Inlet	WRPA	OPEN	
71-WW-H-1327	Mercury Filter DPI-304 Hi Isolation	WRPA	OPEN	
71-WW-H-1328	Mercury Filter DPI-304 LO Isolation	WRPA	OPEN	
71-WW-H-1310	Mercury Filter Outlet	WRPA	OPEN	
71-WW-H-1352	Piping Penetration Containment Drain (Behind Col. A)	WRPA	OPEN	
71-WW-H-1353	Mercury Process Supply Pressure PI-300 Isolation	WRPA	OPEN	

Appendix H
Evaporator Operation Normal Valve Line-Up
(Page 5 of 5)

VALVE	DESCRIPTION	LOCATION	POSITION	INITIAL
71-WW-H-1303	Mercury IX Col. A Inlet	WRPA	OPEN	
71-WW-H-1323	Mercury IX Col. A Sample Isolation	WRPA	OPEN	
71-WW-H-1321	Mercury IX Col. A DPI-301 HI Isolation	WRPA	OPEN	
71-WW-H-1368	DPI-301 Isolation	WRPA	OPEN	
71-WW-H-1322	Mercury IX Col. A DPI-301 LO Isolation	WRPA	OPEN	
71-WW-H-1325	Mercury IX Col. A PI-310 Isolation	WRPA	OPEN	
71-WW-H-1306	Mercury IX Col. B Inlet	WRPA	OPEN	
71-WW-H-1324	Mercury IX Col. B Sample Isolation	WRPA	OPEN	
71-WW-H-1308	Mercury IX Col. B Outlet	WRPA	OPEN	
71-WW-H-1319	Mercury IX Col. B DPI-302 HI Isolation	WRPA	OPEN	
71-WW-H-1369	DPI-302 Isolation	WRPA	OPEN	
71-WW-H-1320	Mercury IX Col.B DPI-302 LO Isolation	WRPA	OPEN	

Valve Line-Up Completed: _____
Operator

Checklist reviewed/discrepancies addressed: _____
SS

Appendix I
7D-2 to 5D-15B Transfer Data Sheet
Page 1 of 1

5.1.2 Transfer date_____

	7D-2 (3D-2)		5D-15B	
Analytical Analysis Number				
Total U Concentration (μg/ml)				
Alpha Pu Concentration (μCi/ml)				
Density				
	Before	After	Before	After
Tank Level				
Inches depth from calibration tables				
Liters volume from calibration tables				
Total Liters Transferred				

SUMP	SUMP LEVELS	
	Before	After
LWC		
XC-2		
XC-3		
PPC		
UPC		

Approval to Transfer:

(5.1.2 [7]) _____
A&PC Manager

(5.1.2 [6]) _____
PSOSS (PSR1 Requirements Verified Met)

(5.1.2[8]) _____
PSOSS (Approvals for transfer recieved)

APPENDIX J
TRANSFER DATA SHEET FROM 8D-3 TO 5D-15A1
(Page 1 of 1)

5.2 Transfer from STS Tank 8D-3 or RHWF to 5D-15A1

Transfer from: ___ 8D-3 ___ RHWF

5.2[2] SOP 00-13 Data taken _____ SS/WTF Engineer

5.2[3] LAH-7701 is NOT in alarm. _____ LWTS OPERATOR

5.2[4] LAH-457 is NOT in alarm. _____ LWTS OPERATOR

5.2[6] Valve lineup complete _____ LWTS OPERATOR

5.2[8] LLWO status board updated _____ LWTS OPERATOR

5.2[9] Valve lineup complete for transfer to A1 _____ LWTS OPERATOR/OR NA

5.2[13]
5.2[14]

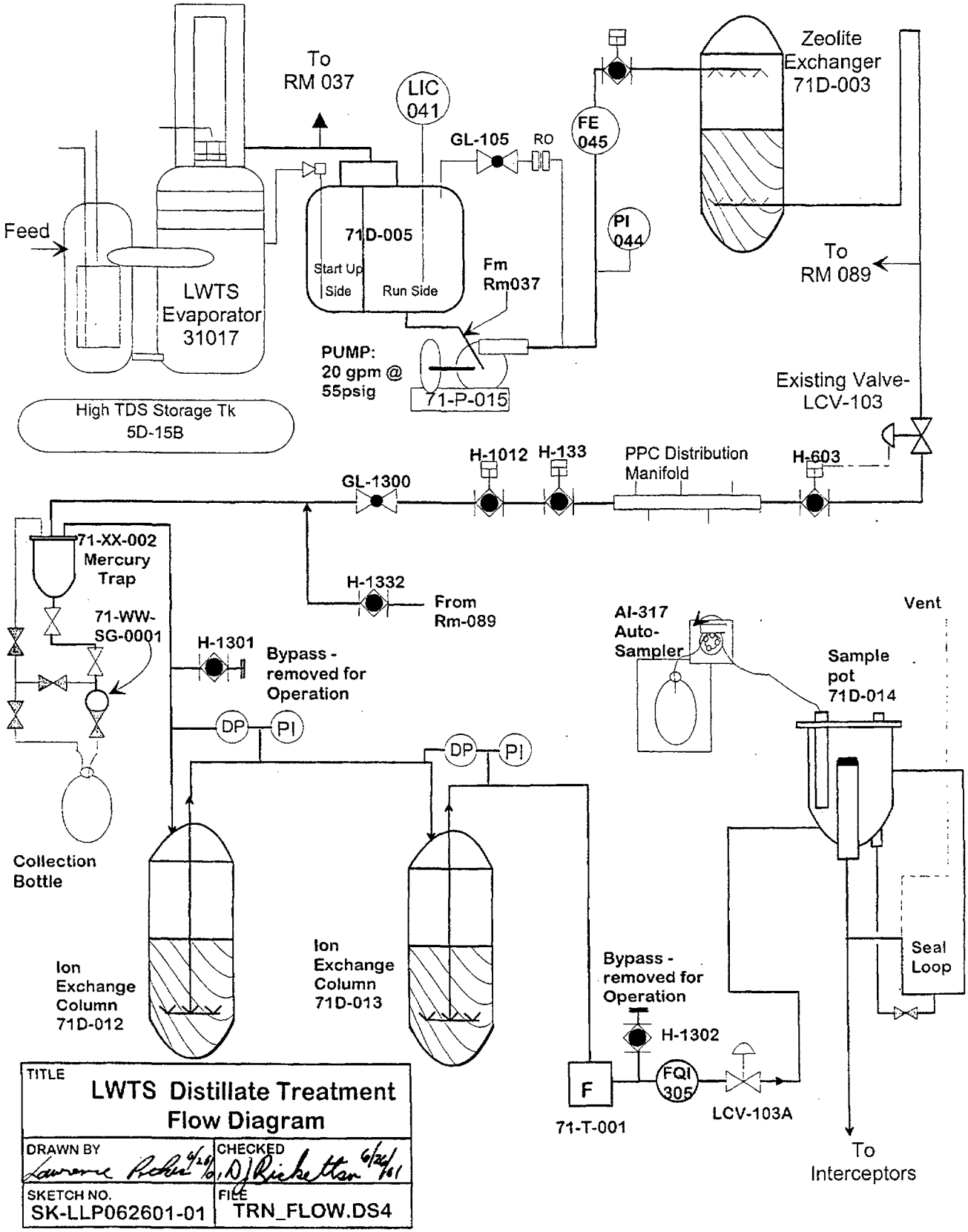
TIME	71-LI-024	71-LI-043	71-FI-003	71-LR-111A	71-PDL-03	71-PDR-223

5.2[19] Transfer completed, 5D-15A1 _____ LWTS Operator

ending level _____ %

and volume _____ Liters

Figure 1
LWTS Distillate Treatment



WVNSCO RECORD OF REVISION

Rev. No.	Description of Changes	Revision On Page(s)	Dated
0	Original Issue	All	
1	Field Changes 1, 2 and 3. Deleted sections concerning Tank 35104 and added transfer from STS Tank 8D-3 to 5D15B.	All	
FC1	Adds directions for radiation monitor effluent control valves.	i, iii, 15, 19, 24, 32	
FC2	Changes "Low Level Waste Engineering" to Process Control Engineering. Removes maximum steam flow upper limit. Removes requirement to stop cooling water flow to the concentrates cooler after shutdown. Adds PCE review of data sheets.	i, iii, iv, 4, 6, 11, 21, 25, 28, 29, 33, A1, A2, A3, A4, B.	
FC3	Attachment A: Changes "Attachment J" to "Attachment G", Attachment G: adds "...or 8D-3". Revises Para. 6.3.4.	i,iii,2,14, 15, 21, 24, 27, 31, 33, 34, A-1, G	
FC4	Secures air purge to the reboiler during operation. Modifies shutdown procedure to eliminate short term and long term evaporator lay-up. Flushing and pump down options are now identified as optional. Eliminates redundant tank readings from Attachment B.	i, iii, 22, 31 32, 33, 34, A-4 B	
FC5	Adds valve 71-H-006 to valve lineup list Step: 6.1.1.1: Allows equivalent calculation to Appendix G sign-off for Add step 3.7 and revise step 6.0 to add notification of Main Plant supervision of evaporator run.	i, iii, 6, 11, 12	
FC6	Attachment A-3, step 6.3.4 Change "3.3 uCi/Ml" to "1.75 Uci/Ml"	ii, iii, A-3	
FC7	Change Steps 6.3.5 and 6.3.6 to allow 5D-15B pump down below low level alarm.	ii, iii, 21	
FC8	Deletes requirement to have seal water flow during flush.	i, iii, 12, 13, 14, A-1	

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
2	Field Changes 1 - 8 added. Option to volume reduce 8D-1 liquid. General rewrite of text.	ALL	08/89
FC1	Adds Para. 6.2.1.2: Purging of Level and Density Probes With Steam Change Step 6.3.7 to eliminate inadvertent switching of valve position. See Critique CM89132.	ii, 14, 15,16, 16a, 16b, 16c, 16d, 16e, 16f, 17, 18, 21, 24 25, 26, 38, A-4, J-1, J-2, J-3, K-1	01/90
FC2	Add OSR/TR reference, add attachments J and K, delete page iii	ii, iii, 9, 12, 13, 14, 15, 19, 22, 23, 27,28, 29, 30, 34, 40, I-1, J-1, J-2, J-3, K-1	02/90
3	Incorporate FC's and update operating parameters.	ALL	03/90
FC1	Correct 5D-15A2 volume corresponding to reading of 32%. It should read 5213 rather than 5413.	iii, F-1	07/90
FC2	Allows continuous processing	iii, 13, 28, I-2, I-2A	09/90
FC3	Change sentence in step 6.3.1, replace data sheets A-1 & A-3, and replace Attachment I-1.	iii, 28, A-1, A-3, I-1	10/90
4	Distinguishes steps between batch and continuous processing.	All	01/91
FC1	Add TR-IRTS-11 criteria and remove continuous processing.	iii, 1, 9, 12, 16, 16a, 22, 22a, 23, 35, 40, A-1, A-2, H-1, I-2, I-3, I-4	03/92
FC2	Change TDS of Concentrates	iii, 29, 30, 40, A-4	04/92
FC3	Add: <u>VALVES CLOSED</u> 71-H-1019 LWTS to tank 8D-2 71-H-757 LWTS to 35104	iii, 13	07/92
FC4	Change Density Setpoint	iii, 17, 31, 32, 33, B-1, and G-1	10/92

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
5	Deletes sections for continuous mode of operation. Added steps relevant to demister pad operation.	All	06/93
FC1	Add activity limit for 26% TDS.	Appendix J	08/93
FC2	Add steps to allow evaporator to be placed in operational ready recirculation	4, 15, 16, 21, 23 24, 24a, 28, 33a, 33b, 40, 42	02/94
FC3	Delete step 6.1.18 Section 6.4 - Add Caution statement to sample 5D-15B. Delete step 6.4.1. Add step 6.6.8 to sample 5D-15B. Add step 6.6.9 to record 5D-15B analytical log number. Appendix F - enlarge table, delete step 6.4.1, add steps 6.6.8 and 6.6.9.	4,16 21 22 27 27 43,44,45	03/94
FC4	Deleted step 6.12.8	35	07/94
FC5	Added description for FC5 Added "WVNS-PCP-005 - Process Control Plan for Cement Solidification of Decontaminated THOREX Wash Liquid Using Portland Type V Cement Changed "Decontaminated Sludge Wash Solution" to "Decontaminated Solution" Deleted "Sludge Wash" Added Records Maintenance Section Appendix J	5 8 11 36 and 37 50	01/95
FC6	6.1.2 added last sentence 6.4.3 Added requirement to record evaporator density setpoint for 71-DIC-029 Appendix F, Added space to record setting on 71-DIC-029 for step 6.4.3 Appendix J, Revised - added table Appendix K - Revised Repaginated to allow for field change	13 23 44 50-52 53 All	06/95

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC7	6.2.1 A., B., C., & D. - Added valves.	17&18	03/05/96
	6.2.1 F&G - Deleted.	19	
	6.7.1 - Added valves.	27	
	6.7.2. H. 2) - Deleted.	28	
	6.8.4 - Reword step to throttle 71-GT-114.	30	
	6.8.10 F. - Deleted, replaced with step G.	31	
FC8	2.2.2 Delete OSR/TRs from reference section.	9	04/15/96
	3.4 Deleted reference to OSRs/TRs.	10	
	5.1.1 Deleted reference to TR-IRTS-7.	11	
	5.1.2 Change "is" to "shall be".	11	
	5.1.3 Deleted OSR-GP-7 statement.	11	
	6.1.2 & 6.1.3 Deleted "technical requirement flags".	14	
	6.1.12 inserted "once per hour"	17	
	6.2.1 D Inserted, "adjust for 40 ± 10 psig during cycle".	19	
	6.3.10, 6.3.11 Deleted "technical requirement flags".	23	
	6.4 Deleted "technical requirement flags".	23	
	6.4.3 Deleted "technical requirement flags".	24	
	6.6.8 Deleted "technical requirement flags".	28	
	6.7.2 H Change wording to "Terminate demister pad flush after 2 minutes as following."	29	
	6.7.2 H 2) Inserted "Repeat as required, until 71-PDT-223 and 71-PDT-033 magnehelics indicate normal operating negative pressures."	29	
	6.11.2 Deleted OSR-GP-7.	34	
	6.11.4 & 6.11.5 Deleted OSR-GP-7 statement and flags.	35	
	Appendix B - Changed 129 to 229.	40	
	Appendix B - Deleted Asterisk at 34%	40	
	Appendix C - Changed 4654 to 4564 and 27130 to 27430.	41	
	Appendix C - Deleted Asterisk at 34%	41	
	Appendix D - Deleted Asterisk at 37%	42	
	Appendix F - Deleted "technical requirements flags."	46	
	Appendix H - Change 71-TI-105 to 71-TI-103	49	
FC9	5.1.2 Delete reference to TR-IRTS-11.	11	05/08/96
	6.3.10 Change 315 to 450, and 1050 to 1500.	23	
	Appendix F, 6.3.10 - Change 315 to 450, and 1050 to 1500.	45	

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC10	Inserted references to tank 5D-15A1	8, 14, 18, 19	05/21/96
	Added valves 5P399 and 5P400 to valve lineup	15	
	Inserted references to tank 5D-15A1	16	
	Added step to allow transfer to tank 5D-15A1	17	
	Inserted references to tank 5D-15A1	17	
	Inserted additional valving requirement	18	
	Updated Appendix F to address changes to text	46	
	Repaginated to allow for field change	All	
FC11	Added required valves to valve line-up.	17, 18	5/31/96
FC12	Appendix J - Added reference to use of 8D-2 (8D-1) density or density from VIOE. Appendix.	53	06/21/96
	Appendix K - Changed maximum cesium concentration from 45 to 35 µCi/ml in two places. Added reference to use TDS of 8D-2 (8D-1) or per VIOE.	54	
FC13	Changes resulting from RM-037 alarm setpoint adjustment. Also added new valves to steam condensate line-up.	21, 22, 27, 29, 51	07/24/96
	Repaginated to allow for field change	All	
FC14	5.3 Removed "OSR" from abbreviations list and added "PSR".	14	03/07/97
	6.1.4 A Changed "8D-3" to "8D-2" to correct erroneous references to 8D-3.	16	
	6.3.6 Changed wording from "Reduce 71-TIC-038 from full open to 75 percent open." to "Set 71-TIC-038 at 75 percent open."	24	
	6.8.2 A Changed "increased to full flow" to "reduced".	32	
	6.12.4 Delete	38	
	Appendix F, 6.8.1 Add "or N/A for Ready Recirculation".	49	
	Appendix F, 6.12 Add step "Ready Recirculation Approval."	49	
	Appendix G - Deleted space for reading and range of 71-PDI-087 and add reading of 71-PI-044 and range of 0-65 psig.	51	
FC15	6.6.8 Added statement after step to allow the step to be performed out of order.	30	05/22/97
6	NEW-TYPE REVISION INCORPORATION OF FIELD CHANGES	ALL	12/16/97

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
7	Major Change Revision	All	06/24/98
FC1	Cover Sheet updated	1	10/28/98
	4.2 Note 3 - delete note	10	
	4.9 Note - delete last sentence	21	
	4.10.5 Note - delete note	25	
	9.0 - Delete Appendix E - Radiation control requirements	32	
	Appendix D - Change 79 to 76	36	
	Appendix E - Delete appendix	37	
	Appendix F 4.1[3] - Add "(N/A for 5D-15A1 transfers)."	38	
FC2	Step 4.4[9], 4.10.1[3], Appendix F 4.10.1[3] delete and "71-GT-129"	14,23,25,40	02/22/99
	Appendix F 4.10.5[6] deleted "per step 4.10.1[3]"	40	
FC3	Change Appendix F to E	4 – 9	05/13/99
	Delete reference to radcon requirements Appendix	17	
	Added Appendix E	30, 32	
	Separate page 1 of Appendix F into Appendix E	37 - 40	
	Change WTFOSS to LWTS SS	6, 14, 15, 16 22, 27, 29, 37-40	
FC4	Add 71-IA-H-0083	11	08/09/99
	Add Whitey valve identifiers	12, 13	
	Reorder steps 4.6[1], Delete 71-PDT-223.	20,22	
	Charge 71-PDR-223 range	40,41	
	Repaginated to accommodate for Field Change	ALL	
FC5	Appended statement to existing step to read: ", or one to five gpm as read on FR-045, per LWTS SS."	20	08/26/99
	Added Step [i]: If 71-LIC-041 is used to control flow in "gpm" as read on FR-045, adjust FIC-025 to maintain 30 to 70 percent in 71-D-005 Run Side.	20	
	Appendix G: Changed 71-LIC-041 Set point to: 37 to 87 inches	41	
	Appendix G: Changed 71-FI-025 to: 0 to 7.0K pounds per hour	40	
	Appendix G: Changed 71-FR-045 Range to 1 to 10 gpm	41	
	Repaginated to allow for Field Change	All	

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
8	New-Type Revision to incorporate all field changes	All	09/01/99
FC1	Changed "five" to "four gpm as read on FR-045" in Section 4.6[11][h]; reworded "control flow in gpm" to "limit discharge flow" and added "as necessary" in Section 4.6[11][i]; changed 1-10 GPM to 1-4 GPM on Appendix G (page 2)	20 41	09/03/99
FC2	1.2 Changed "steady state" to "normal, stable" 1.3 Added "under the direction of a qualified Shift Supervisor or designee 4.1 Renumbered referenced section and corrected Supervisor and Engineer titles in several steps - deleted entry into the ULO - to SS - Corrected typo - changed "positive pressure" To "pressure increase" 4.2 Corrected error in referenced step number Corrected valve designator errors 4.4 Changed steam flow criteria to match current operations - Changed LWTS SS and WTF Engineer to SS and PCE several places 4.5 Corrected SS and Engineer titles in several steps - Deleted valve 71-H-810; valve is capped 4.6 Reworded steps 4.6[2] and [3] for clarity Deleted reference to ready recirculation Clarified steps dealing with criteria for Transferring distillates to the interceptor 4.8 Changed section title to "Evaporator Monitoring and Data Collection" Clarified steps 4.9 Changed "steady state" to "normal" Clarified steps for operation of Pump 71-P-16 4.10 Corrected SS and PCE designations and Corrected referenced step number and Reordered and clarified steps to match operating sequence - Reordered valve opening And closing order to prevent draining of IX bed Retitled section 4.10.4 to "Pump Down of Evaporator Concentrates" - Reordered and clarified steps for P-16 operation 4.12 Section renumbered to 4.11 Reworded steps to agree with current operating conditions - deleted step 4.11[2] To contact UR operator, changed steam flow Parameters to agree with current operating conditions and clarified when to do the flush Added missing valves to steps	3 4-9 10,11,12 16 17 19,21 22 23,24 24 - 27 28,29,30	10/12/99

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC2 (Cont.)	4.11 Renumbered section to 4.12 - corrected SS and PCE titles - and specified manual operation Specified to have low level alarm on Evaporator cleared before stopping filling	30,31	
	Appendixes - Corrected step numbers, added PDR-223 to App. G, pg. 2 and matched with text	39-46	
FC3	4.1[9] - Changed 0% OPEN to 0% output	7	10/20/99
	4.1[15] - Changed "OFF" to "STOP"	9	
	4.4[5] - Deleted "LWTS"	15	
	4.4[8] - Changed range from "15-25" to "5-20"	15	
	4.4[10][d] - Changed "one minute" to "30 seconds"	16	
	4.5[10] - Added "IF the level in tank 5D-15B is ≤20%, THEN operate 71-P-04 in MANUAL".	18	
	4.6[5] - Added sub step saying "IF RI-037 is ≥$5x10^{-3}\mu$Ci/mL, THEN await sample results before transferring distillation to the interceptor	19	
	4.6[13][h] - Deleted "LWTS"	21	
	4.10.1[2] - Deleted "71-GT-129"	24	
	4.10.3 [6] - Added new step	26	
	Former 4.10.3 [6] renumbered due to addition of new step.	26	
	Appendix F - Corrected typo step 4.6[5]	41	
	Appendix G, page 1 - Changed operating range of 71-FI-015 and 71-TIC-038 setpoint - added line in narrative	42	
	Appendix G, page 2 - Changed operating page for 71-FI-050, 71-PDR-223, and 71-LIC-041 setpoint	43	
	Appendix J, page 1 - Changed "WVNS-SAR-005" to "WVNS-SAR-002"	46	
FC4	Section 4.1[4] - insert new step for verifying that LAH-7701 is not in alarm per 9922372-I/DCIR;	6	11/16/99
	Section 4.1[5] - insert new step for flushing 71-LCV-100 prior to receiving a transfer to 5D-15A1 per 9922965-I/DCIR;	6	
	Section 4.5[3] NOTE - Add "However, when 5D-15B results become available, the PCE may recalculate the evaporator density."	20	
	Section 4.6[4] - Reorder to 4.6[2] to 4.6[4] per 9922877-I/DCIR;	22	
	Section 4.6[13][c] - Add missing text: "s CLOSED" per 9923067-I/DCIR;	24	
	4.6[13][g]&[h] - Divided	24	
	Appendix E - Update step numbers to reflect changes;	42	
	Appendix F - Add ≤25μCi/mL to 4.5[3].	43	
	Appendix J - Update step references.	49	
FC5	4.5[1]-Add 5D-15B sparge valving.	20	12/02/99

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC6	Add steps to add water to 31017-4.4[11] and 4.11[9]	19,35	12/20/99
	Add CLOSE 71-H-124/125. Delete CLOSE 71-H-124/125.	36	
	Update App. F step numbering for field change.	46	
FC7	Move Closing Valves "71-H-124 or 71-H-125" from step 7 to step 10 to allow operators to refill the LWTS evaporator while observing evaporator level in inches.	36	12/23/99
	Updated TOC to match text.	2 & 3	
9	Major revision to add mercury abatement system sample pot 71-D-014 operation to sections 5.6 and 5.10.3. Incorporated SOP 71-18 Rad Monitor Operations per 9922783-I/DCIR. Deleted PCE verification of 8D-3 material following transfer to LWTS step per 9923475-I/DCIR. Changed the operating range of 71-PDT-033 from 0 to -4 to 0 to -5 per 9923476-I/DCIR. Added caveat for ULO to interceptor valving "if not in ready recirc" per 9923477-I/DCIR.	ALL	02/21/00
FC1	Correct H-170 identifier from 71-WW to 6-71 to match P&ID.	23	03/10/00
	Change FR-045 readout from 1-4 to 1-5.5 GPM per 71-TM-085.	26	
	Delete repeat direction to record.	28	
	Add time and date to App. B sign-off.	42	
	Change 71-FR-045 range from 1-4 to 1-5.5 GPM per 71-TM-085.	45	
FC2	5.6[6][d] Change H-1007 and H-709 valve identifiers from 71-WW to 6-71 to match P&ID. Delete "IF not	04/10/00	
	in ready recirc., THEN"	24	
	App. C Delete 71-PDR-223 range of (0-6 inches)	45	
FC3	Step 2.0 update to eliminate start-up sample (Reference USQD # 00-USQ-012).	3	05/08/00
	Delete Step 5.6.4	21	
	Delete Step 5.6.9	23	
	Delete 5.6.10 [a] and 5.6.10 [b].	23	
	Update Appendix B for field change.	40	
	Repaginated to allow for Field Changes	All	

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
10	NEW-TYPE REVISION Incorporation of field changes. This new-type revision was processed prior to FC5, because the field change indicators for previous field changes were inadvertently deleted during the last field change processed.	All	06/15/00
FC1	5.6 [5][b] - Deleted 71-H-634 valve verification 5.6 [5][c] - Added 71-H-634 valve verification Instead of verifying the valve open in the ULO, it should be throttled to obtain desired flow-rate through rad. monitors. (Reference DCIR 0021384) 7.0 - Records Maintenance section updated: deleted "Lifetime quality assurance" from description; identified records as part of HLW Tank Farm Operations RIDS schedule.	21 22 35	06/15/00
FC2	Incorporated changes for ECN 12555A Section 5.6 [6][b][c] and [d].	22,23	06/29/00
FC3	5.1 [19] added step to close valves following an 8D3 to 5D15B transfer.	11	06/29/00
FC4	EMERGENT FIELD CHANGE PERFORMED STANDARD FIELD CHANGE ISSUED 5.4 [8] add the following information - until TR-031 (concentrates temperature) stabilizes and stops increasing at approximately 100°C.	16	09/12/00 09/14/00
FC5	5.4[14] change to refer to SOP 00-13 for fissile limits.	17,39	10/04/00
11	MAJOR REVISION Updated to include Phase II Mercury Abatement equipment modifications. Consolidated valve line-up into Appendix H. Added Sections 5.13 Filling Sample Pot Loop Seal and 5.14 Backwash of Mercury Ion Exchange Columns. Added mercury column and 71-T-001 ΔP readings to App. D. Changed 71-P-01 description. Changed position of 71-GL-762 from CLOSED to OPEN in initial valve line-up. Added section 5.8.1 "Temporary Reduction of Steam to Evaporator". Changed all references of PCE to WTF Engineer. Deleted the recording of 71-PI-208 on Appendix B. Removed 71-PDI-033 from Appendix C. Added Figure 1-LWTS Distillate Treatment. Minor changes & repagination (Reference DCIR 0022356, 0021926, 0022188, 0022540, 0021461, 0022686, 0023404, 0022591)	ALL	12/13/00

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC1	EMERGENT FIELD CHANGE used in the field 12/13/00. Step 5.1[5][c] changed to read "Ensure that the level in 31017 is ≤ 52% (90 inches). If it is not, THEN pump down the evaporator as follows:"	6	12/18/00
FC2	EMERGENT FIELD CHANGE used in the field ½/01. 5.14 - Added Caution to fill container at an approximate speed of 3 gpm. 71-FQI-308 references changed to 71-FQI-305. Appendix H - 71-H-633 and 634 positioning changed to THROTTLED.	 34 34,35 51	01/04/01
FC3	EMERGENT FIELD CHANGE. STANDARD FIELD CHANGE Deleted 6-SH-GL-112 from Appendix H valve line-up due to duplicate action.	 49	01/16/01 01/17/01
FC4	Minor field change to Appendix H, pg 2 of 5 Valve 71-H-837 description changed from RM-037 to RM-070. Pg. 3 of 5 valve 71-WW-GL-1300 positioning changed to THROTTLED as per Operations Request.	50,51	01/18/01
FC5	EMERGENT FIELD CHANGE. STANDARD FIELD CHANGE01/25/01 Fix step references on Appendix B to match text.	 40-41	01/20/01 01/25/01
12	Major revision to incorporate previous field changes and 0120309-I/DCIR. Changed frequency of Appendix C evaporator readings from 4 to 6 hours. Added evaporator run number to Appendix D. Changed 71-FR-054 from 5.5 to 9 GPM. Deleted recording evaporator parameters during ready recirc.	All	02/20/01
FC1	EMERGENT FIELD CHANGE STANDARD FIELD CHANGE Modified valve line up and procedure steps to divert RM-037 discharge to the suction of Pump 71-P-15. Prior to this change, the RM-037 discharge was directed to Tank 5D-15B.	20,26, 30,41	04/10/01 04/11/01
FC2	Added step to proceed to Section 5.5 if returning from ready recirculation. Updated step reference due to addition of step. Change 5.5[6]to 5.6[8] per 0121199-I/DCIR. Fix step reference to 5.8.2[7]. Add Mercury Test Column valving to Appendix H (Page 3 of 5) valve line-up per ECN 12978.	15 17 19 24 51	04/20/01

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC3	Updated cover to comply with EP-5-002.	Cover	07/18/01
	Reworded Applicability section to remove qualification limitations.	3	
	Added 71-H-125 to 5.1[5][d] and 5.1[5][f] and clarified order for valving in 5.1[13] per Operations to satisfy PLC interlocks.	7,10	
	Deleted references to Appendix G.	14,21,37,40	
	Change temporary reduction of steam to evaporator from 2 1/2 - 5 to approximately 10 minutes.	23	
	Changed RM-037 range from 0-2000 to 0-5000 cpm on Appendix D per 0121630-I/DCIR.	44	
	Deleted the Appendix G Activity Calculation in Evaporator 31017 per 0121254-I/DCIR.	47	
	Added column for operator initials to Appendix H per 0121490-I/DCIR.	48-52	
	Corrected position of GL-1300 and added 71-XX-002 on Figure 1 per 0121629-I/DCIR.	53	
	Added equipment number 71-XX-002 to App. H valve lineup descriptions per 0121437-I/DCIR.	50 & 51	
FC4	Deleted "per Section 5.5" in 5.1[5] to keep reference current with 00-13 revision.	5	09/24/01
	Deleted "for initial system start up or" from step 5.2[2] and added "N/A this step if line-up not performed" to add clarity per 0122237-I/DCIR.	12	
	Add a step to open 71-H-733 to Section 5.12 per 0121840-I/DCIR.	32	
	Appendix B - Added "this step" in 5.2 [2] and and deleted analytical log number space per 0122237-I/DCIR.	40	
	HLWTFO personnel are affected by these changes.		
13	HLWTFO personnel are affected by the following:		12/18/01
	Revised to incorporate previous field changes.	All	
	Updated cover per EP-5-002.	Cover	
	Added steps to section 5.7 to manually shutdown P-16 to avoid damage due to the absence of a recirculation line per 0122398-I/DCIR.	21,22	
	Appendix A -changed to match SOP wording.	39	
	Appendix E -removed analytical log # which is no longer required per 0122482-I/DCIR.	45	
FC1	**EMERGENT FIELD CHANGE**		05/03/02
	STANDARD FIELD CHANGE		05/06/02
	HLWTF Operations are affected by the RM-037 setpoint change on Appendix C and D from $<5 \times 10^{-3}$ to $<5 \times 10^{-1}$ to allow for increase in background radiation levels.	43,44	

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC2	5.3-Add SPDES permit **CAUTION** and **NOTE** for ELAB notification.	14	08/07/02
	5.3[1] ELAB notification/documentation step And SPEDES permit citation added.	14	
	5.6[6] Add record 71-FQI-305 total step.	19	
	5.6[10] Add confirm SPDES sample or waive step.	20	
	5.9[1] Consolidate step to include 5.9[1][[a], and delelted [a].	25	
	5.9.3[1] Add step to notify ELAB when securing distillate flow to interceptors.	26	
	5.10[2] Add step to notify ELAB of ready recirc. mode.	28	
	7.0[3] Updated Records title.	37	
	8.0 Added SPDES permit reference per EA.	37	
	Appendix B-Added 5.3[1], 5.6[6],5.6[9], 5.9.1[2] changed to 5.9.1[3], added 5.9.3[1] and 5.10[2] sign-offs; repaginated steps. HLWTFO, EA, and the E. Lab's are affected by these changes.	40,41	
FC3	**EMERGENT FIELD CHANGE**		08/14/02
	STANDARD FIELD CHANGE		08/15/02
	PSO (STS) and the ELAB are affected by the following:		
	5.6[10] Deleted confirmation of ELAB being ready to sample step per Operations request.	20	
	App. B-Deleted 5.6[1] and 5.9.3[8] sign-offs, added date to 5.9.3[1] sign-off per EA request, and corrected step numbering to match text.	40-41	
FC4	PSO (STS) and ELAB are affected by the following:		01/14/03
	Updated FM	Cover	
	5.1[2] - Deleted step to record 8D-3 Cs-137 results. This is covered per STS transfer procedure 50-23.	5	
	5.5 Note 2 - added option for using STS effluent rad monitor reading in lieu of 8D-3 sample results.	17	
	5.7[1] - changed to allow WTF Engineer/SS to determine density setting.	21	
	5.7[5] - changed to allow more flexible density setting.	21	
	7.0[2] - Updated RIDS title.	37	
	7.0[3] - Changed "WVNS" to "WVNSCO".	37	
	App. A-Updated 5.1[2] to agree with field change.	39	
	App. B - 5.3[3] removed "Acceptable Cesium limits".	40	
	App. C-Changed 71-DI/DIC-029 ranges from 1.0-1.28 g/mL to 1.0-1.40.	42	
	App. F-Add desired density setpoint and A1 sample per HLWTF Deactivation Engineering request in support of SBW processing.	46	

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
14	PSO and HLWTFDE are affected by the following revision: Incorporated previous field changes. 5.1[1]Changed the step for placing the evaporator into ready-recirculation to allow the option for continued evaporator operation when transferring 8D-3 5D-15B. If transfer is to 5D-15A1, then the system will be placed in ready-recirculation. 5.1[4]Added caveat "IF transferring to 5D-15A1" to LCV-100 flush. The flush cannot be done during 8D-3 to 5D-15B while evaporating. 5.1[15]Added "on-line or in" to step for recording evaporator readings during transfer. 5.1[20]Deleted volume transferred calculation as this is performed per SOP 50-23. App. A-Updated to agree with text.	ALL 5 10 11 39	01/17/03
15	General Revision. This revision affects PSO operations. Deleted sections for ready recirculation, and using 5D-15A1 as a feed hold tank. Added section for transfers from 7D-2 to 5D-15B. This transfer must meet the requirements of PSR-1.	ALL	07/31/03
16	Minor Revision. Added SOP 313-06 to list of references. This change is administrative in nature and has no direct affect on any organization.51	36	12/11/03
17	General Revision. This change is made to update the procedure for RHWF transfers to 5D-15B, add a section for transfers to 5D-15A1, add a section for evaporator ready recirculation, update Appendix A to allow for RHWF transfers to be documented, added Appendix J for transfers to the A1 tank, make other minor editorial changes, and renumerated and repaginated to allow for revision. This change affects PSO.	All	02/19/04

FC1>

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Revision Number 3

Revision Date 07/19/01

Field Change Number 1,2

SOP 71-06

Tank 12-35104, Tank 7D-13 and Tank 13D-8 Transfers

Cognizant Author: K. J. Mansfield

Cognizant Manager: D. C. Meess

FC2> Facility Manager: J. P. Curcio

HLW:

YES	NO	N/A
		X

QUALITY LEVEL: C

SAFETY CLASS: C

PROCEDURE USE CLASSIFICATION		MULTIPLE USE BY SECTION
X	CRITICAL USE	ALL
	REFERENCE USE	

ALARA PLANNING

[X] The work described in this procedure does not require ALARA planning.

[ ] The work described in this procedure requires ALARA planning.

WEST VALLEY NUCLEAR SERVICES CO.

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TANK 12-35104, TANK 7D-13 AND TANK 13D-8 TRANSFERS

1.0 INTRODUCTION

1.1 Purpose

This procedure provides instruction for the following transfers: Tank 13D-8 to Tank 7D-2, Tank 12-35104 to Tank 7D-2 or Tank 5D-15B, and Tank 7D-13 to Tank 5D-15B or the Main Plant Interceptors.

1.2 Scope

This procedure provides instructions for operating the Cell Sump Collection Tank 13D-8 and 01-14 Building Cell Sump/Analytical Drain Collection Tank 7D-13, Secondary Evaporator Feed Tank 12-35104, and associated valves and piping used in conjunction with the LWTS.

1.3 Applicability

HLWTF Operations will perform the actions described in this procedure, unless otherwise noted.

2.0 GENERAL INFORMATION

This procedure establishes guidelines for the storage and transfer of contaminated liquid wastes in Tanks 12-35104, 13D-8, and 7D-13.

3.0 PRECAUTIONS AND LIMITATIONS

3.1 Precautions

[1] An RWP is required for any work being performed in the Main Plant.

[2] Steam and water cannot be safely mixed in a closed piping system without risking condensate induced water hammer. Do not mix steam with water either by injecting water into a closed steam system or by injecting steam into a closed piping system that includes water (condensate).

[3] Do not close a valve which isolates a section of piping that is not provided with properly-positioned steam traps and drain valves.

[4] Exposed steam lines are thermally extremely hot and can cause burns to flesh with very short contact time. Avoid contact with any exposed steam line or valve.

[5] Do not stand directly in front of a steam valve when operating it. Stand to one side such that if the valve fails, the steam is not aiming at you.

[6] Operator should perform frequent checks on systems that are energized or shutdown to ensure that the system meets expected performance standards, i.e., water flows, pressure rises, etc. If the required performance standards or actions do not occur, (1) STOP - Do not attempt to perform the next step, (2) SECURE system in a safe mode, and (3) NOTIFY shift supervisor immediately.

3.2 Limitations

[1] Tank 12-35104 may not be transferred to 7D-2 or 5D-15B without performing an engineering evaluation. The discharge pipeline from 12-35104 transfer jet is a single walled stainless steel pipe.

PSR-1 [2] The fissile uranium and fissile plutonium concentrations in liquids in both the "sending tank" and "receiving tank" involved in a liquid transfer shall be in compliance with the limits listed in Table 1 of PSR-1.

PSR-1

[3] Fissile uranium and fissile plutonium in solution shall not be precipitated.

[4] Prior to any transfer, the levels of the tanks involved and the volume(s) of liquid to be transferred must be determined. Analysis of the tanks must be available or samples must be taken from the sending and receiving tanks.

[5] When jetting liquid under this procedure, a sump high-level alarm requires stopping the jetting operation and notifying the LWTS Shift Supervisor (SS and the Main Plant Operations Shift Supervisor(MPO SS).

4.0 PREREQUISITE ACTIONS

4.1 Material/Special Tools and Equipment

[1] If performing steam valving, the following personal protective equipment is required in addition to RWP requirements:

Kevlar gloves

[2] If performing steam valving, the procedure may direct use of the following equipment:

Thermocouple with hand held readout Range 0 - 400° F
Hand held pyrometer
Ultrasonic detector (for steam trap troubleshooting)

[3] Two-way radio

4.2 Notification and Approvals

[1] All steps in this procedure that require an inspection, the recording of data, a sign-off, or a notification will be denoted by a [+] in the left-hand margin. The inspection results, data, or sign-off shall be recorded on the procedure data sheet(s) or in the appropriate log book, unless otherwise indicated.

5.0 PERFORMANCE SECTION

NOTE *Individual sections in this procedure may be performed out of sequence.*

5.1 Tank 13D-8 to Tank 7D-2 Transfer

PSR-1

[+] **[1]** Complete the "Before Transfer" portion of Appendix A, using current analyses of Tanks 13D-8 and 7D-2.

[a] If representative samples of Tank 13D-8 and 7D-2 are not available, then obtain samples per SOP 71-11. Request the following analysis: pH, density, gross alpha, gross beta, total uranium and alpha plutonium.

[+] **[2]** Verify that the amount of liquid to be transferred does not exceed the available working volume in Tank 7D-2 using tank calibration tables. (25,131 liters minus 7D-2 volume in liters = maximum volume that can be transferred.) Sign and date Appendix A.

FC2>

PSR-1 **[3]** A&PC Manager perform an evaluation ensuring that fissile uranium and fissile plutonium in solution shall not be precipitated fissile material out of solution as required per PSR-1:

[a] Forward the evaluation to the HLWTFO Manager and attach a copy to the transfer data package.

[+] **[b]** A&PC Manager document approval for transfer on Appendix A.

FC2>

PSR-1 [+] **[4]** SS verify that the fissile concentration in the tanks will not exceed the limits of PSR-1. Document acceptance on Appendix A.

FC2> **[5]** DELETED.

[+] **[6]** Record the "Before Transfer" LWC sump level, 15LI-4, on Appendix A.

[7] OPEN Valves 71-UA-GA-935 and 71-UA-GL-1138 on Utility Air Line 13UA-156.

[8] OPEN 13HC-3 in the Main Plant Control Room (MPCR) to Sparge Tank 13D-8 with air for a minimum of fifteen minutes prior to transfer.

NOTE1 *Trap 15-SCH-T-0838 is an inverted bucket trap. Temperature alone will provide a gross indication of trap operation.*

NOTE2 *Refer to Figure 1, 15SCH257-2" After Modifications for normal valve configuration.*

[9] Verify that 15-SH-T-0844 and 15-SCH-T-0838, the 150# header traps in the LXA, are operational by performing the following:

[a] Measure the trap surface temperature using a thermocouple or a hand held pyrometer. IF the trap is cold (<90°F), THEN stop and notify the SS.

[b] Listen to hear if 15-SH-T-0844 cycles properly, producing a click at least once in 3 minutes.

WARNING

Do not remain in an area if water hammer occurs, or personal injury may result if a steam line ruptures.

[10] Verify CLOSED:

71-SH-GL-1140 on Line 13S-133
71-SH-GL-1141 on Line 13S-139

[11] OPEN Penetration Valve 71-SH-GL-1139 on Line 13S-134 to 13D-8 transfer jet, 13H-3.

CAUTION

DO NOT continue with transfer if a high-level alarm is received on LWC Sump.

[12] Turn Valve 71-H-040 to "STEAM" at the LWTS control panel to transfer the contents of Tank 13D-8 to Tank 7D-2.

[13] Turn Valve 71-H-040 to "OFF" to terminate the transfer when the level in Tank 13D-8 reaches 3 percent as read on 71-LR-015.

[14] Turn Valve 71-H-041 to "AIR" at the LWTS Control Panel to purge 13D-8 transfer jet for one minute.

[15] Turn Valve 71-H-041 to "OFF".

[16] CLOSE the following Valves:

13HC-3
71-UA-GA-935
71-UA-GL-1138
71-SH-GL-1139

[+] **[17]** Record "After Transfer" LWC sump level, 15LI-4, on Appendix A. Notify SS if level has increased.

[+] **[18]** Complete the "After Transfer" portion on Appendix A.

[+] **[19]** Calculate and record the volume transferred on Appendix A. Sign and date Appendix A.

[+] **[20]** SS update LLWO status board to reflect transfer to 7D-2, review data and document completion on Appendix A.

5.2 Tank 12-35104 to Tank 7D-2 Transfer

NOTE *Discharge pipe line 15CH773, from 12-35104 transfer jet to 7D-2 is a single wall underground stainless steel pipe. (See Dwg. 901-D-021 SH 1 and 15R-L-61).*

1
[+] **[1]** Complete the "Before Transfer" portion of Appendix B using current analyses from Tanks 12-35104 and 7D-2.

[a] If representative samples of Tanks 12-35104 and 7D-2 are not available, THEN obtain samples per SOP 71-11. Request the following analysis: pH, density, gross alpha, gross beta, total uranium and alpha plutonium.

[+] **[2]** Verify the amount of liquid to be transferred does not exceed the available working volume in Tank 7D-2 using tank calibration tables. (25,131 liters minus 7D-2 volume in liters = maximum volume that can be transferred.) Sign and date Appendix B.

FC2>
PSR-1 **[3]** A&PC Manager perform an evaluation ensuring that fissile uranium and fissile plutonium in solution shall not be precipitated as required per PSR-1:

[a] Forward the evaluation to the HLWTFO Manager and attach a copy to the transfer data package.

[+] **[b]** A&PC Manager document approval for transfer on Appendix B.

FC2>

PSR-1 [+] **[4]** SS verify that the fissile concentration in the tanks will not exceed the limits of criticality in PSR-1. Document acceptance on Appendix B.

FC2> **[5]** DELETED.

[+] **[6]** Record "Before Transfer" LWC sump level as read on 15LI-4 on Appendix B.

[7] Verify OPEN or OPEN valves 71-UA-GT-903 and 71-UA-GT-902 on Utility Air Line 12-UA-234 in the CVA.

[8] OPEN Valve 71-H-032 on the LWTS control panel to sparge Tank 12-35104 with air for a minimum of fifteen minutes prior to transfer.

[9] CLOSE 71-H-032 at the LWTS control panel to shut off the sparge to Tank 12-35104.

[10] Verify OPEN Steam Header Isolation Valve 71-SH-GT-905 on Line 12-SH-239-1 ½.

[11] Verify OPEN or OPEN isolation valve 63-SH-H-041 and Penetration Valve 71-SH-GT-906 on Line 12-SH-239-1 ½ to 12-35104 transfer jet.

[12] Verify that 63-SH-T-048 is functioning by performing the following:

[a] Measure the trap surface temperature using a thermocouple or a hand held pyrometer. IF the trap is cold (<90°F), THEN stop and notify the LWTS SS.

[13] Verify OPEN Isolation Valve 71-UA-GT-906 on Line 12UA-373 to 35104 transfer jet.

[14] OPEN Jet Suction Leg Valve Isolation Valve 71-H-043 at the LWTS control panel.

CAUTION

DO NOT continue with transfer upon receipt of a high-level alarm 15-LAH-13 on LWC Sumps.

[15] Turn Valve 71-H-033 to "STEAM" at the LWTS control panel to transfer the contents of Tank 12-35104 to Tank 7D-2.

[16] Turn Valve 71-H-033 to "OFF" to terminate the transfer when the level in Tank 12-35104 from 71-LR-008 reaches 10%.

[17] Turn Valve 71-H-034 to "AIR" at the LWTS control panel to purge 12-35104 transfer jet for one minute.

[18] Turn Valve 71-H-034 to "OFF."

[19] CLOSE Jet Suction Leg Valve Isolation Valve 71-H-043 at the LWTS control panel.

[20] CLOSE the following Valves:

71-UA-GT-902
71-UA-GT-903
71-SH-GT-906
63-SH-H-041

[+] **[21]** Record the "After Transfer" LWC sump level, 15LI-4, on Appendix B. Notify the SS if level increased.

[+] **[22]** Complete the "After Transfer" portion of Appendix B.

[23] Calculate and record the volume transferred on Appendix B. Sign and date Appendix B.

[+] **[24]** SS update the LLWO status board to reflect transfer to 7D-2, review data and document completion on Appendix B.

5.3 Tank 7D-13 to Tank 5D-15B Transfer

CAUTION

DO NOT transfer Tank 7D-13 without first performing an engineering evaluation. An accumulation of solids in the tank have compromised the accuracy of the tank level instrumentation.

[+] **[1]** System engineer perform an engineering evaluation of Tank 7D-13 prior to proceeding with transfer and document on Appendix C.

PSR-1

[+] **[2]** Complete the "Before Transfer" portion of Appendix C using current sample analyses from Tanks 7D-13 and 5D-15B.

[a] If representative samples of Tanks 7D-13 and 5D-15B are not available THEN obtain samples of Tanks 7D-13 and 5D-15B per SOP 71-11. Request the following analysis: pH, density, gross alpha, gross beta, total mercury, total uranium and alpha plutonium.

[+] **[3]** Verify the amount of liquid to be transferred does not exceed the available working volume in Tank 5D-15B using tank calibration tables. (40,510 liters minus 5D-15B volume in liters = maximum volume that can be transferred.) Sign and date Appendix C.

FC2>

PSR-1 **[4]** A&PC Manager perform an evaluation ensuring that fissile uranium and fissile plutonium shall not be precipitated as required per PSR-1:

[a] Forward the evaluation to the HLWTFO Manager and attach a copy to the transfer data package.

[+] **[b]** A&PC Manager document approval for transfer on Appendix C.

PSR-1 [+] **[5]** SS verify that the fissile concentration in the tanks will not exceed the limits of criticality in PSR-1. Document acceptance on Appendix C.

FC2> **[6]** DELETED.

[+] **[7]** Record the "Before Transfer" PPC, UPC and WDC North and South sump levels on Appendix C from 15-LI-11, 15-LI-19, 70-LI-2091 and 70-LI-2090.

NOTE *Valve 71-H-814 is normally closed. A UPC entry is required to open Valve 71-H-814.*

[8] OPEN Tank 5D-15B Inlet Isolation Valve 71-H-814 on Line 5P-304.

[9] Verify OPEN Valve 71-UA-GT-0074 and 71-UA-GT-131 on Utility Air Line 6-71-1-696.

[10] Verify CLOSED valve 71-UA-GT-132 on Utility Air Line 6-71-1-696.

[11] OPEN 71-H-869 on the LWTS control panel to sparge Tank 7D-13 with air for a minimum of fifteen minutes prior to transfer.

[12] Verify OPEN ½-inch Condensate Drain Valve 71-SCH-GT-0077 off Line 7S-158 to drain the steam header condensate.

[13] Verify OPEN Steam Header Isolation Valve 71-SH-GT-0075 on Line 7S-158.

[14] Verify that 71-SH-T-0028 is functioning properly by performing the following:

[a] Measure the trap surface temperature using a thermocouple or a hand held pyrometer. IF the trap is cold (<90°F), THEN stop and notify the SS.

[b] Listen to hear if 71-SH-T-0028 cycles properly, producing a click at least once in 3 minutes.

[15] OPEN Penetration Valve 71-SH-GL-0076 on Line 7S-158 to 7D-13 transfer jet, 7H-19.

[16] OPEN or verify OPEN Penetration Valve 71-UA-GT-0078 on Line 7UA-295 to 7D-13 transfer jet, 7H-19.

[17] Verify CLOSED on the LWTS Control Panel:

71-H-030
71-H-136

[18] OPEN Valves 71-H-021 and 71-H-135 at the LWTS control panel allowing a transfer path to Tank 5D-15B.

CAUTION

DO NOT continue with transfer upon receipt of a high-level alarm on PPC Sump or UPC Sump, or an increase in WDC North Sump or WDC South Sump.

[19] Turn Valve 71-H-037 to "STEAM" at the LWTS control panel to transfer the contents of Tank 7D-13 to Tank 5D-15B.

[20] Turn Valve 71-H-037 to "OFF" to terminate the transfer when the level in Tank 7D-13 from 71-LR-014 reaches 20%.

[21] Turn Valve 71-H-036 to "AIR" to purge the 7D-13 transfer jet for one minute.

[22] Turn Valve 71-H-036 to "OFF."

[23] CLOSE the following Valve on the LWTS control panel:

71-H-869
71-H-021
71-H-135

[24] CLOSE the following Valves:

71-SH-GL-0076
71-UA-GT-0074
71-UA-GT-131
71-H-814

[+] **[25]** Record the "After Transfer" PPC, UPC, and WDC North and South sump levels (15-LI-11, 15-LI-19, 70-LI-2091 and 70-LI-2090) on Appendix C. Notify the SS if the levels increase.

[26] Complete the "After Transfer" portion of Appendix C.

[+] **[27]** Calculate and record the volume transferred on Appendix C. Sign and date Appendix C.

[+] **[28]** SS review data and document completion on Appendix C.

5.4 Tank 7D-13 to Interceptor Transfer

CAUTION

DO NOT transfer Tank 7D-13 without first performing an engineering evaluation. An accumulation of solids in the tank have compromised the accuracy of the tank level instrumentation.

[+] **[1]** System engineer perform an engineering evaluation of Tank 7D-13 prior to proceeding with transfer and document on Appendix D.

[+] **[2]** Complete the "Before Transfer" portion of Appendix D using current sample analyses of Tank 7D-13.

[a] If a representative sample of Tank 7D-13 is not available, THEN obtain a sample of Tank 7D-13 per SOP 71-11. Request the following analysis: pH, density, total mercury, gross alpha, and gross beta, total uranium and alpha plutonium.

[+] **[3]** SS calculate the total activity (the addition of the gross alpha and gross beta) and record on Appendix D.

NOTE *Managers may supply additional instructions on Appendix D concerning the transfers (example: size of transfers or batch transfers required).*

[+] **[4]** If the total activity of 7D-13 is $>5E^{-3}$ µCi/ml, THEN MPO Manager approve transfer by signing Appendix D. If $<5E^{-3}$, then N/A.

[+] **[5]** If the total activity of 7D-13 is >5E-3 µCi/ml, THEN obtain the Radiation Protection Manager's approval to transfer on Appendix D. If $<5E^{-3}$, then N/A.

NOTE *Tank 7D-13 is not a RCRA permitted tank and can not be used to manage mercury waste.*

[+] **[6]** Obtain Environmental Affairs approval on Appendix D to transfer 7D-13 to the Interceptors. IF mercury has been detected in the sample analysis, THEN 7D-13 must be transferred to 5D-15B per Section 5.3 of this procedure.

[+] **[7]** SS approve transfer on Appendix D.

[+] **[8]** Notify IH&S that LWA and UR floor drain monitoring for mercury vapor may be necessary during transfer. Document notification on Appendix D.

[+] **[9]** MPO Supervisor approve transfer on Appendix D.

[+] **[10]** Record the "Before Transfer" WDC North and South levels on Appendix D from 70-LI-2091 and 70-LI-2090.

[11] CLOSE or verify CLOSED 71-H-021.

[12] OPEN or verify OPEN Valves 71-UA-GT-0074 and 71-UA-GT-131 on Line 6-71-1-696.

[13] OPEN 71-H-869 on the LWTS control panel to sparge Tank 7D-13 with air for fifteen minutes.

[14] Verify OPEN ½-inch Condensate Drain Valve 71-SCH-GT-0077 off Line 7S-158 to drain the steam header condensate.

[15] Verify OPEN Steam Header Isolation Valve 71-SH-GT-0075 on Line 7S-158.

[16] Verify that 71-SH-T-0028 is functioning properly by performing the following:

[a] Measure the trap surface temperature using a thermocouple or a hand held pyrometer. IF the trap is cold (<90°F), THEN stop and notify the SS.

[b] Listen to hear if 71-SH-T-0028 cycles properly, producing a click at least once in 3 minutes.

[17] OPEN Penetration Valve 71-SH-GL-0076 on Line 7S-158 to 7H-19, the 7D-13 transfer jet, 7H-19.

[18] OPEN Penetration Valve 71-UA-GT-0078 on Line 7UA-295 to 7D-13 transfer jet, 7H-19.

[19] OPEN 71-H-022 at the LWTS control panel, allowing a transfer path to the interceptor.

[20] Notify Utility Room Operator to OPEN 15-IA-ND-1276 (located on the North wall of the UR next to 31C-3) to OPEN the auto valve to the INTERCEPTOR, located in the ARPR on line 15WW848.

CAUTION

DO NOT continue with transfer if a high-level alarm is received or an increase is noticed in WDC Cell North Sump or WDC Cell South Sump.

[21] Turn Valve 71-H-037 at the LWTS control panel to STEAM to transfer the contents of Tank 7D-13 to the on-line interceptor.

[22] Turn Valve 71-H-037 to OFF to terminate the transfer when the level in Tank 7D-13 from 71-LR-014 reaches 20%.

[23] Turn Valve 71-H-036 to AIR to purge the 7D-13 jet for one minute.

[24] CLOSE the following Valves on the LWTS control panel:

71-H-036
71-H-869
71-H-022

[25] CLOSE the following Valves:

71-UA-GT-0074
71-UA-GT-131
71-SH-GL-0076

[26] Notify Utility Room Operator to CLOSE 15-IA-ND-1276 to CLOSE the air actuated valve to the INTERCEPTOR in the ARPR on line 15WW848.

[+] **[27]** Record the "After Transfer" WDC North and South sumps on Appendix D from 70-LI-2091 and 70-LI-2090. Notify the SS if levels increased.

[+] **[28]** Complete the "After Transfer" portion of Appendix D.

[+] **[29]** Calculate and record the volume transferred on Appendix D.

[+] **[30]** SS review data and document on Appendix D.

5.5 Tank 12-35104 to Tank 5D-15B Transfer

NOTE *Discharge pipe line from 12-35104 transfer jet is a single wall underground stainless steel pipe. (See Dwg. 901-D-021 SH1 and 15R-L-61.)*

PSR-1

[+] **[1]** Complete "Before Transfer" section of Appendix E using current analyses from Tanks 12-35104 and 5D-15B.

[a] If representative samples of Tank 12-35104 and 5D-15B are not available, THEN obtain samples per SOP 71-11. Request the following analyses: pH, density, gross alpha, gross beta, cesium, total uranium, and alpha plutonium.

PSR-1 **[2]** A&PC Manager perform an evaluation ensuring that fissile uranium and fissile pluonium shall not be precipitated as required per PSR-1:

[a] Forward the evaluation to the HLWTFO Manager and attach a copy to the transfer data package.

[+] **[b]** A&PC Manager document approval for transfer on Appendix E.

FC2>

PSR-1 [+] **[3]** SS verify the fissile material concentration in 12-35104 is within the limits of the Table 1 of PSR-1. Document acceptance on Appendix E.

FC2> **[4]** DELETED.

[+] **[5]** Verify on Appendix E that 5D-15B has sufficient reserve capacity to accept the transfer of the Tank 12-35104 contents using tank calibration charts.

[6] Perform the following valve alignments. Record completion on Appendix E, "Tank 12-35104 to Tank 5D-15B Transfer Data Sheet":

[+] **[a]** CLOSE or confirm CLOSED on LWTS Status Board:

71-H-018 - Line 6-71-1-106 Low Point Drain Valve
71-H-019 - Pump 71-P-01 Suction Drain to GCR Sump
71-H-1019 - Pump 71-P-01 Discharge to Tank 8D-2
71-GL-008 - Pump 71-P-01 Recirculation to 12-35104

[+] **[b]** OPEN or confirm OPEN on LWTS Status Board:

71-H-804 - Influent Isolation Valve to 5D-15B
71-GL-009 - 71-PT-096 Isolation Valve
71-GL-010 - 71-PT-096A Isolation Valve

[+] **[c]** OPEN or confirm OPEN the following valves in the CVA:

71-H-011 - 71-P-01 Flush Water Supply
71-GL-015 - 71-P-01 Seal Water Supply
71-DW-H-1155 - 71-P-01 Seal Water Supply

[+] **[d]** CLOSE or confirm CLOSED the following on the LWTS Graphic Panel:

71-H-043 - 12-35104 to Steam Eductor to 7D-2
71-H-014 - Pump 71-P-01 Flush Water
71-H-898 - 8D-3 to Pump 71-P-01 Suction
71-H-035 - Pump 71-P-01 to 12-35104 Sample Station
71-H-150 - Tank 12-35104 to LWTS Evaporator
71-H-129 - Influent to 71-D-011
70-FV-004 - Pump 71-P-01 to the Waste Dispensing Vessel

FC1▷[+] **[7]** Perform an independent verification of Step 5.5[6][a]-[d] valve line-up and document on Appendix E.

[+] **[8]** At the LWTS Control Panel, turn selector switches for the following to OPEN:

71-SV-099	- Seal Water to Pump 71-P-01
71-H-006	- Pump 71-P-01 Discharge Isolation
71-H-024	- Pump 71-P-01 Discharge Isolation
71-H-128	- Pump 71-P-01 Discharge to 5D-15B
71-H-003	- Tank 12-35104 to 71-P-01 Suction

[+] **[9]** Perform independent verification that the above valves are OPEN and document on Appendix E.

[+] **[10]** Turn pump 71-P-01 to START. Record discharge pressure on 71-P-01 from 71-PI-096A on Appendix E.

[11] Turn 71-SV-099 and 71-P-01 to AUTO when 71-PI-096A shows steady pressure. If pump does not operate in AUTO, turn 71-P-01 back to START, then monitor pressure continuously during transfer.

[12] Turn 71-P-01 and 71-SV-099 to OFF and CLOSED, respectively when the level in 12-35104 reaches approximately 10%.

[13] Flush 71-P-01 and the suction line from 12-35104 to 71-P-01 as follows:

[a] CLOSE valve 71-H-006.

[b] OPEN valve 71-H-014 and flush the suction line, line 6-71-2-003/12-CH-241-2" for one minute.

[c] CLOSE 71-H-014 and 71-H-003.

[14] Flush the discharge line 6-71-1-006 to 5D-15B as follows:

[a] OPEN valve 71-H-006

[b] OPEN valve 71-H-014 and flush the discharge line to 5D-15B for 4 minutes.

[c] CLOSE valve 71-H-014.

[+] **[15]** CLOSE or verify closed the following at the LWTS graphic panel and record on Appendix E:

71-SV-099	- Seal Water to Pump 71-P-01
71-H-006	- Pump 71-P-01 Discharge Isolation
71-H-024	- Pump 71-P-01 Discharge Isolation
71-H-128	- Pump 71-P-01 Discharge to 5D-15B
71-H-003	- Tank 35104 to 71-P-01 Suction

[+] **[16]** Perform independent verification that the above valves are closed and record on Appendix E.

[+] **[17]** Record the "After Transfer" data on Appendix E for both Tank 12-35104 and for 5D-15B.

[+] **[18]** SS review data and document on Appendix E.

6.0 POST PERFORMANCE ACTIVITIES

Not Applicable.

7.0 RECORDS MAINTENANCE

[1] Quality assurance records generated as a result of implementing this procedure are identified as follows:

[a] Tank 13D-8 to Tank 7D-2 Transfer Data Sheet, SOP 71-06, Appendix A.

[b] Tank 12-35104 to Tank 7D-2 Transfer Data Sheet, SOP 71-06, Appendix B.

[c] Tank 7D-13 to Tank 5D-15B Transfer Data Sheet, SOP 71-06, Appendix C.

[d] Tank 7D-13 to Interceptor Transfer Data Sheet, SOP 71-06, Appendix D.

[e] Tank 12-35104 to 5D-15B Transfer Data Sheet, SOP 71-06, Appendix E.

[2] Records are identified on HLWTF Operations' Records Inventory and Disposition Schedule (RIDS).

FC2> [3] Records shall be prepared, maintained, and transferred to the Records and Configuration/Document Control Department for storage in accordance with WVDP-262, "WVNSCO Manual for Records Management and Storage."

8.0 REFERENCES

8.1 Procedures

SOP 71-11 - LWTS Sampling Procedures
SOP 15-04 - Sample Operations
SOP 15-13 - Interceptor Operation
SOP 00-13 - WTF/STS/LWTS Run Plan and Fissile Material Tracking
SOP 71-14 - LWTS Alarm Response Procedure
SOP 07-08 - Process Building Liquid Waste Handling
WVDP-359 - Technical Manuals

8.2 **Memos**

WVNS Letter IE:87:0001 - Dated October 29, 1987 Evaluation of Tank 12-35104

8.3 **Drawings**

15A-A-57
15R-L-61
15SCH257 SH1
900-D-397 SH1
901-D-021 SH1, SH2, SH3, SH7
901-D-022 SH1
901-D-023 SH2, SH3
901-D-024
907-D-022

9.0 SOURCE REQUIREMENTS

The following source requirements are implemented by this procedure:

FC2> PSR-1, Requirements for Liquid Transfers of Fissile Materials, Surveillance Requirements 1 and 2.

10.0 APPENDICES AND ATTACHMENTS

Appendix A - Tank 13D-8 to Tank 7D-2 Transfer Data Sheet
Appendix B - Tank 12-35104 to Tank 7D-2 Transfer Data Sheet
Appendix C - Tank 7D-13 to Tank 5D-15B Transfer Data Sheet
Appendix D - Tank 7D-13 to Interceptor Transfer Data Sheet
Appendix E - Tank 12-35104 to Tank 5D-15B Transfer Data Sheet
Figure 1 - 15SCH257-2" After Modifications

5.1 [1]/[18]

APPENDIX A

(Page 1 of 1)

TANK 13D-8 TO TANK 7D-2 TRANSFER DATA SHEET

	Before Transfer		After Transfer	
	Tank 13D-8	Tank 7D-2	Tank 13D-8	Tank 7D-2
	71-LR-015	71-LR-009	71-LR-015	71-LR-009
Tank Level				
Analytical Log Number				
pH				
Density				
Gross Alpha				
Gross Beta				
Total Uranium				
Alpha Pu				
Inches Depth				
Tank Volume				

[2] Volume transferred will not exceed working volume

_____ Operator _____ Date

PSR-1

[3][b] Precipitate evaluation performed

_____ A&PC Manager _____ Date

PSR-1 [4] Fissile concentration in tanks will not exceed the limits of PSR-1

_____ SS _____ Date

[5] DELETED

[6]/[17] LWC sump level 15LI-4

	Before	After
	_____	_____

[19] Volume transferred _____ liters

_____ Operator _____ Date

[20] Data reviewed/ Status Board Updated

_____ SS _____ Date

FC2> 5.2 [1]/[22]

APPENDIX B
(Page 1 of 1)

TANK 12-35104 TO TANK 7D-2 TRANSFER DATA SHEET

	Before Transfer		After Transfer	
	Tank 12-35104	Tank 7D-2	Tank 12-35104	Tank 7D-2
Tank Level	71-LR-008	71-LR-009	71-LR-008	71-LR-009
Analytical Log Number				
pH				
Density				
Gross Alpha				
Gross Beta				
Total Uranium				
Alpha Pu				
Inches Depth				
Tank Volume				

[2] Volume transferred will not exceed working volume

Operator _____ Date _____

PSR-1

[3][b] Precipitate evaluation performed

A&PC Manager _____ Date _____

PSR-1

[4] Fissile material concentration within PSR-1 limits

SS _____ Date _____

[5] DELETED

[6]/[21] LWC sump level 15LI-4

Before	After

[23] Volume transferred _____ liters

Operator _____ Date _____

[24] Data reviewed, status board updated.

SS _____ Date _____

5.3[2]/[26]

APPENDIX C
(Page 1 of 1)
TANK 7D-13 TO TANK 5D-15B TRANSFER DATA SHEET

	Before Transfer		After Transfer	
	Tank 7D-13	Tank 5D-15B	Tank 7D-13	Tank 5D-15B
Tank Level	71-LR-014	71-LR-105	71-LR-014	71-LR-105
Analytical Log Number				
pH				
Density				
Gross Alpha				
Gross Beta				
Total Uranium				
Alpha Pu				
Inches Depth				
Tank Volume				

[1] Engineering evaluation of Tank 7D-13 performed.

_____ _____
System Engineer Date

[3] Volume transferred will not exceed working volume

_____ _____
Operator Date

PSR-1

[4][b] Precipitate evaluation performed

_____ _____
A&PC Manager Date

PSR-1

[5] Fissile material concentration within PSR-1 limits

_____ _____
SS Date

[6] DELETED

[7]/[25]

		Before	After
PPC sump	15-LI-11	_____	_____
UPC sump	15-LI-19	_____	_____
WDC North sump	70-LI-2091	_____	_____
WDC South sump	70-LI-2090	_____	_____

[27] Volume transferred _____ liters

_____ _____
Operator Date

[28] Data reviewed

_____ _____
SS Date

FC2> 5.4 [2]/[28]

APPENDIX D

(Page 1 of 1)

TANK 7D-13 TO INTERCEPTOR TRANSFER DATA SHEET

	Before Transfer		After Transfer	
	Tank 7D-13	Interceptor	Tank 7D-13	Interceptor
Level	71-LR-014	(Observe)	71-LR-014	(Observe)
Analytical Log Number				
pH				
Density				
Mercury				
Gross Alpha				
Gross Beta				
Total U				
Alpha PU				
Inches Depth				
Volume				

[1] Engineering evaluation performed _____ _____
System Engineer Date

[3] Total activity (add gross alpha and gross beta) _____ _____ _____
SS Date

[4] Approval to transfer (if total activity if >5E-3 µCi/ml) _____ _____
MPO Manager Date
Special instructions_____
_____

[5] Approval to transfer (if total activity is >5E-3 µCi/ml) _____ _____
RP Manager Date
Special instructions_____
_____

[6] Approval to transfer _____ _____
Environmental Affairs Date

[7] Approval to transfer _____ _____
SS Date

[8] Notify IH&S _____ _____
Operator Date

[9] Approval to transfer _____ _____
MPO SS Date

		Before	After
[10]/[27]	WDC North sump 70-LI-2091	_____	_____
	WDC South sump 70-LI-2090	_____	_____

[29] Volume transferred _____ liters _____ _____
Operator Date

[30] Data reviewed _____ _____
SS Date

FC2> 5.5[1]/[17]

APPENDIX E
(Page 1 of 2)
TANK 12-35104 TO TANK 5D-15B TRANSFER DATA SHEET

	Before Transfer		After Transfer	
	Tank 12-35104	Tank 5D-15B	Tank 12-35104	Tank 5D-15B
	71-LR-008	71-LR-105	71-LR-008	71-LR-105
Tank Level				
Tank Sample #				
Analytical Log Number				
pH				
Density				
Gross Alpha				
Gross Beta				
Cesium (μCi/mL)				
Total Uranium (g/l)				
Alpha Pu (g/l)				
Inches Depth				
Tank Volume				

PSR-1
[2][b] Precipitate evaluation performed

A&PC Manager Date

PSR-1
[3] Fissile material concentration within PSR-1 limits

SS Date

[4] DELETED

[5] Receiving Tank 5D-15B has sufficient working capacity to accept transfer.

Operator Date

[6][a] The following are CLOSED per the LWTS Status Board:
71-H-018 71-H-019
71-H-1019 71-GL-008

Operator Date

[b] The following are OPEN per the LWTS Status Board:
71-H-804 71-GL-009
71-GL-010

Operator Date

Appendix E
(Page 2 of 2)

TANK 12-35104 TO TANK 5D-15B TRANSFER DATA SHEET

[c] The following valves in the CVA are OPEN:
71-H-011 71-GL-015
71-DW-H-1155

Operator Date

[d] The following are closed on the LWTS Graphic Panel:
71-H-043 71-H-014
71-H-898 71-H-035
71-H-150 71-H-129
71-FV-004

Operator Date

FC1 [7] Independent Verification of 5.5[6][a] - [d]

Operator Date

[8] The following are OPEN on the LWTS Graphic Panel:
71-SV-099 71-H-006
71-H-024 71-H-128
71-H-003

Operator Date

[9] Independent Verification of 5.5 [9]

Operator Date

[10] 71-P-01 Discharge pressure on 71-PI-096A _____PSI

Operator Date

[15] The following are CLOSED at the LWTS Grapic Panel:
71-SV-099 71-H-006
71-H-024 71-H-128
71-H-003

Operator Date

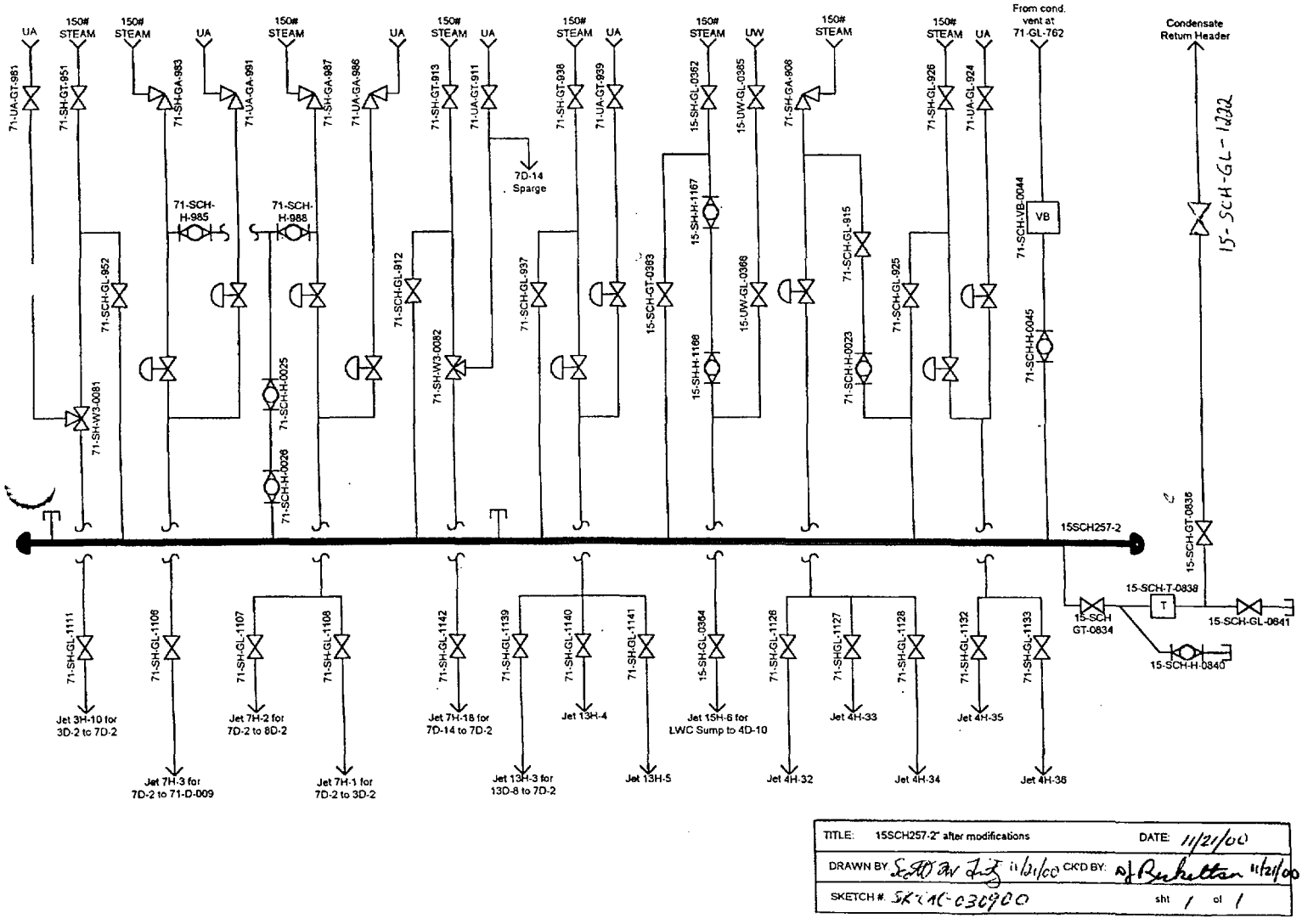
[16] Independent Verification of 5.5[16]

Operator Date

[18] Data reviewed

SS

FIGURE 1
15SCH257-2" AFTER MODIFICATIONS



TITLE: 15SCH257-2" after modifications		DATE: 11/21/00
DRAWN BY: Scott Ziz 11/21/00	CK'D BY: J. Burkhalter	11/21/00
SKETCH #: SK21C-030900	sht 1 of 1	

WVNS RECORD OF REVISION

Rev. No.	Description of Changes	Revision On Page(s)	Dated
0	Initial Document	All	04/88
FC#1	Update OSR References	i, 6, 9, 11, 13, 14	05/88
FC#2	Revise criteria and sign-off sheet for 7D-13 transfer to the interceptors. Delete sentences referring to >><< in text.	i, 13, 14, A-7	03/90
FC#3	Revise 7D-13 Transfer Procedure	8, 13a, 14, A-7	05/92
FC#4	Delete: Open Valve H-184	i, 14	06/92
1	Incorporate FC#1-4. Changes format per SOP 00-02, Rev 8, Includes step to transfer Tank 12-35104 to Tank 7D-2	All	12/93
FC#1	2.1.1 F - Deleted	4	01/02/98
	6.2.9 - Changed "LWTS" to "WTFO" and delete second sentence of step. Added CAUTION from 6.2.12 to before 6.2.3.	13	
	6.2.10 - Deleted	13	
	6.2.11 - Deleted	13	
	6.2.15 - Deleted	13	
	6.2.16 - Deleted	13	
	6.2.17 - Changed wording to say: "Open isolation valve 63-SH-H-041 and open penetration valve 71-SH-GT-906 on line 12-SH-239, 1-1/2 " to the 12-35104 transfer jet.	13	
	6.2.25 - Deleted valve 71-SH-GT-905 and added valve 63-SH-H-041 to the valves to be closed.	13	
	7.0 - Added new Records Maintenance section and renumber remaining section.	21	
	Appendix B - Deleted steps 6.2.10 and 6.2.11 and deleted "Copy sent to Regulatory Compliance" from step 6.2.30 and added "Data Reviewed" and signoff for Tank Farm and IRTS Engineer.	24	
	Removed references to OSR/GP-7 from margins on steps 5.0, 6.1.3, 6.1.4, 6.1.11, 6.2.3, 6.2.4 6.3.3, 6.3.4, 6.3.11, 6.4.2.	All	
	Repaginated for field change.	All	

WVNS RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC2	Table of Contents - Updated	2	01/13/98
	3.1 Added new section	5	
	3.2 Corrected R&S to RCO	5	
	5.0 Corrected LWTS Supervisor to WTFO Supervisor	7	
	5.4 Changed title/Added PSR-1	8	
	6.1.21 Corrected wording of CAUTION to WTFO	11	
	6.2.3 Changed wording to include uranium and alpha Plutonium analyses for all samples of 12-35104	12	
	6.2.4 Changed wording to include Total Uranium and alpha Plutonium for 7D-2 sample	12	
	6.2.20 Changed LWTS in CAUTION to read WTFO	14	
	6.3.9, 10 Changed wording to read WTFO vice IRTS	16	
	6.3.21 Corrected LWTS Supervisor to WTFO in Caution for this step	17	
	6.4.7 In CAUTION Corrected wording to WTFO	19	
	6.4.10 Changed LWTS to WTFO	19	
	6.4.11 Changed LWTS to WTFO	19	
	6.4.22 Corrected wording in cautions to say WTFO	20	
	6.5 Added new section	21	
	Appendix B Added three rows in table for Cesium, Total Uranium, and Alpha Plutonium	28	
	Appendix E Added new Appendix	26&31	
	Repaginated to allow for field change	All	
2	General Revision	ALL	07/15/99
FC1	Section 4.1[2] - delete "may be used as necessary;" delete "Optional"	5	10/27/99
	Change 15-SCH-HC-0842 to 15-SCH-H-0840;	7	
	Add "verify OPEN;"	8	
	Delete 71-SCH-GL-937 to 15-SCH-GT-0834; Add new step 5.1[25], CAUTION and NOTE;	9, 10	
	Add STEAM/OFF/AIR positions to valves 71-H-040/041, 71-H-037/036, 71-H-033/034	9, 15	
	Add "and 71-UA-GT-131" to 5.3[8]	14	
	Repaginated to accommodate this Field Change.	ALL	
FC2	Cover sheet update to delete Working Use category.	1	03/14/00
	Added step and caution for system engineer to perform an engineering evaluation prior to transferring Tank 7D-13 per CM 2000-005 in sections 5.3 and 5.4.	13,16	
	Updated Appendices C and D to reflect added sign-off.	28,29	
	Repaginated.	All	

WVNS RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
3	Major revision to delete manual condensate header start-up for 13D-8 to 7D-2. Added mercury to 7D-13 analyses. Added updating LLWO status board for transfers to 7D-2. Changed path for 7D-13 to interceptor from through PPC to through ARPR per 0120394-I/DCIR. Added Figure 1, 15SCH257-2" After Modifications to show normal valve configuration for steam header. Added all associated drawings to references. Deleted engineering evaluation for 12-35104 transfers per system engineer.	All	07/19/01
FC1	HLWTFO are affected by the following: Updated cover per EP-5-002. 5.5[7]-corrected step # to 5.5[6][d] Appendix E, pg 2-corrected step number for step [7] to 5.5[6][a]-[d]. Changes are being made per 0122649-I/DCIR	 Cover 20 30	01/17/02
FC2	PSO and the Criticality Safety Engineer are affected by the following changes: Updated cover to reflect new Facility Manager. Revised to implement PSR-1 Revision 2 changes. 5.1[3]-Change "process/intermixing" to fissile U/Pu to agree with PSR-1 wording. 5.1[4]-Change Criticality Safety Engineer to SS verifcation that PSR-1 limits are met. 5.1[5]-Deleted SS authorization to transfer. 5.2[3]-Change "process/intermixing" to fissile U/Pu to agree with PSR-1 wording. 5.2[4]-Change Criticality Safety Engineer to SS verification that PSR-1 limits are met. 5.2[5]-Deleted SS authorization to transfer. 5.3[4]-Change "process/intermixing" to fissile U/Pu to agree with PSR-1 wording. 5.3[5]-Change Criticality Safety Engineer to SS verification that PSR-1 limits are met. 5.3[6]-Deleted SS authorization to transfer. 5.5[2]-Change "process/intermixing" to fissile U/Pu to agree with PSR-1 wording. 5.5[3]-Change Criticality Safety Engineer to SS verification that PSR-1 limits are met. 5.3[4]-Deleted SS authorization to transfer. 7.0[3]-Update department title, and changed "WVNS" to "WVNSCO." 9.0-Added PSR-1 surveillance Requirement 2. Appendix A, B, C, and E-Change sign-offs to match text change. Appendix D-Added "Total U" and "Alpha PU" to table.	 Cover 6 7 7 9 10 10 12 13 13 19 19 19 23 24 25-27, 29 28	12/06/02

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Date _____ Time _____ Verified By _____

Revision Number 5

Revision Date 11/14/01

Field Change Number 1,

SOP 71-10

Transfer of LWTS Evaporator Concentrate Tanks

Cognizant Author: K. J. Mansfield

Cognizant Manager: D. C. Meess

Facility Manager: R. A. Dunn

HLW:

YES	NO	N/A
	X	

QUALITY LEVEL: C

SAFETY CLASS: C

PROCEDURE USE CLASSIFICATION		MULTIPLE USE BY SECTION
X	CRITICAL USE	ALL
	REFERENCE USE	

ALARA PLANNING

[X] The work described in this procedure does not require ALARA planning.

[ ] The work described in this procedure requires ALARA planning.

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TRANSFERS OF LWTS EVAPORATOR CONCENTRATE TANKS

1.0 INTRODUCTION

1.1 Purpose

This procedure is for performing transfers between the evaporator concentrates, evaporator feed tanks, and the waste dispensing vessel.

1.2 Scope

This procedure provides instructions for transferring solution from LWTS Concentrates Tanks (5D-15A1/5D-15A2) to the CSS Waste Dispensing Vessel (70-D001). It also provides instructions for transfer between the two concentrates tanks, transfer from the two concentrates tanks to Evaporator Feed Tank (5D-15B), transfer from 5D-15B to Tank 5D-15A1, and for dilution of the two concentrates tanks.

1.3 Applicability

High-Level Waste Tank Farm Operations (HLWTFO) will perform the actions in this procedure.

2.0 GENERAL INFORMATION

The concentrated waste produced by the evaporator is discharged into concentrates tank 5D-15A2, which serves as surge or holding vessel prior to transfer to Tank 8D-2 or 8D-1.

Out-of-specification liquid (due to low TDS) may be transferred to Tank 5D-15B from 5D-15A1 and 5D-15A2, or out-of-specification liquid (due to high TDS) may be diluted then resampled.

CSS has been secured in a shut down mode.

3.0 PRECAUTIONS AND LIMITATIONS

3.1 Precautions

[1] Operator should perform frequent checks on systems that are de-energized or shutdown to ensure that the system meets expected performance standards, i.e., water flows, pressure rises, etc. If the required performance standard or actions do not occur, (1) Stop - Do not attempt to perform the next step, (2) Secure system in a safe mode, and (3) Notify shift supervisor immediately.

3.2 Limitations

None

4.0 MATERIALS / SPECIAL TOOLS AND EQUIPMENT

None

5.0 FIELD PREPARATIONS

None

6.0 PERFORMANCE

NOTE *Procedural steps requiring inspections, the recording of data, or a sign-off are denoted by [+] in the left hand margin. The resultant information is recorded on data sheet(s) or in a log (book) as specified in the procedure. The user/operator is responsible for completing the sign-off unless otherwise directed in the procedure.*

6.1 Transfers to CSS WDV Prerequisites

CAUTION

Do not perform this section without first verifying operability of valves and alarms. CSS is in a shutdown mode and may require maintenance to achieve desired transfer path.

[+] [1] Verify that WDV is available to receive concentrates and that the WDV high-level alarm is clear, if applicable. Document on Appendix A.

[+] **[2]** Perform initial valve lineup as listed below and sign off on Appendix A when complete:

CLOSE OR VERIFY CLOSED:

71-H-801	71-H-300	71-H-334
71-H-803	71-H-301	71-H-306
71-H-806	71-H-302	71-H-308
71-H-808	71-SV-1031	71-H-333
71-H-813	71-H-305	71-SV-1032
71-H-027	71-H-304	70-FV-007
	71-H-303	

OPEN OR VERIFY AS OPEN ON THE LLWO STATUS BOARD:

71-H-800	71-H-801

OPEN OR VERIFY AS OPEN:

71-H-809	71-GL-339	5P-375 (ULO niche)
71-GL-340	5P-362 (ULO niche)	

[+] **[3]** Update the status board and note changes to these valve positions in the Operations Log.

[+] **[4]** Obtain SS approval for transfer on Appendix A and proceed to the following applicable section(s) of the procedure to perform the transfer:

[a] Transfer from Tank 5D-15A1 to 70-D-001 -Section 6.2 -Appendix A.

[b] Transfer from Tank 5D-15A2 to 70-D-001 -Section 6.3 -Appendix B.

6.2 Concentrates Transfer from Tank 5D-15A1 to CSS WDV

CAUTION

Do not perform this section without first verifying operability of valves and alarms. CSS is in a shutdown mode and may require maintenance to achieve desired transfer path.

[+] **[1]** Read the level of Tank 5D-15A1 at 71-LR-111A and the density at 71-DR-110A. Record readings on Appendix C - Tank Transfer Data Sheet.

[+] **[2]** Calculate the volume in Tank 5D-15A1 in accordance with the WVDP-359 tank calibration table and record on Appendix C - Tank Transfer Data Sheet.

[+] **[3]** Record date that the contents of Tank 5D-15A1 were last sampled on Appendix C. Obtain and use this analysis if no additions (check Log and procedure data sheets) have occurred since the last sample. Obtain a sample of Tank 5D-15A1, per SOP 71-11, if there have been additions to Tank 5D-15A1 since last sample.

NOTE1 *Sampling of 5D-15A1 is required once per 5,000 gallons.*

NOTE2 *Before sampling, Tank 5D-15A1 has to be sparged for 20 minutes by opening Valve 71-H-335 then closing the valve after the sparging is complete.*

[+] **[4]** Complete Analytical Request Form if a new sample was obtained in step 6.2[3].

[+] **[5]** Read the level in the Waste Dispensing Vessel at 70-LI-2001. Record results on Appendix C, Tank Transfer Data Sheet.

[+] **[6]** Ensure SS verifies analytical results are within limits for Cesium-137 concentration and authorizes transfer on Appendix A.

NOTE *Transfer approval (Appendix A) is required only for start of the transfer unless additions have been made to 5D-15A1.*

[7] Switch Valve 70-FV-007 selector switch from CLOSE to AUTO. Verify that 70-FV-007 opens.

NOTE *Valve 71-SV-1031 will not open until switch for Pump 71-P-05 is activated to start the pump.*

[8] OPEN Valves 71-SV-1031, 71-H-300, and 71-H-301 by turning their selector switches to AUTO.

NOTE *71-P-05 will not start in AUTO if 5D-15A1 is at or below 20 percent. Notify supervisor prior to placing selector switch in START to lower tank level below 20 percent.*

[9] Set selector switch for Pump 71-P-05 to AUTO. Observe that the pump starts.

[10] Ensure that concentrates are being transferred to the WDV by monitoring FIQ 2080 and 70-LI-2001.

[11] Stop the transfer when the WDV reaches 90 percent. Refer to SOP 71-14 for course of action to be taken if Low Flow Alarm, 71-FA-114A sounds during the transfer.

NOTE *Valve 71-H-301 closes automatically (by interlock action), Pump 71-P-05 shuts off, and WDV high-level alarm is actuated at the LWTS panel upon a high level in the WDV. If this fails, a high-high level alarm will actuate at the HSCSS panel.*

[+] **[12]** Repeat valve lineup check prior to each batch transferred. A batch transfer of about 400 gallons (1,514 liters) should take about 15 minutes. Up to ten batches may be recorded on one Tank Transfer Data Sheet (Appendix C).

[+] **[13]** Set Pump 71-P-05 selector switch to STOP and close valves 71-H-300, 71-H-301, and 71-SV-1031 when the transfer is complete. Record completion on Appendix A.

[14] CLOSE Valve 70-FV-007.

[+] **[15]** Read the level and density in Tank 5D-15A1 at 71-LR-111A and 71-DR-110A and read the level in the WDV at 70-LI-2001. Record readings on Appendix C - Tank Transfer Data Sheet.

[+] **[16]** Calculate the volume of concentrates transferred to the WDV and record results on Appendix C - Tank Transfer Data Sheet.

6.3 Concentrates Transfer from Tank 5D-15A2 to CSS WDV

CAUTION

Do not perform this section without first verifying operability of valves and alarms. CSS is in a shutdown mode and may require maintenance to achieve desired transfer path.

[+] **[1]** Read and record the level in Tank 5D-15A2 from 71-LR-111B and the density from 71-DR-110B on the Appendix C - Tank Transfer Data Sheet.

[+] **[2]** Calculate the volume in Tank 5D-15A2 in accordance with the WVDP-359 tank calibration chart and record on Appendix C - Tank Transfer Data Sheet.

[+] **[3]** Record the date that the contents of Tank 5D-15A2 were last sampled on Appendix C. Obtain and use this analysis if no additions (check Log and SOP data sheets) have occurred since the last sample. Obtain a new sample of Tank 5D-15A2, per SOP 71-11, if there have been additions to Tank 5D-15A2 since last sample.

NOTE *Before sampling, Tank 5D-15A2 contents have to be sparged for 20 minutes by opening Valve 71-H-336 then closing it after sparging is complete.*

[+] **[4]** Complete Analytical Request Form in accordance with WVNS Process Control Plan (WVNS-PCP-004 or WVNS-PCP-005) if a new sample was obtained in step 6.3[3].

[+] **[5]** Read the level and the volume in the Waste Dispensing Vessel at 70-LI-2001 and record on Appendix C - Tank Transfer Data Sheet.

[+] **[6]** Ensure SS verifies that analytical results are within limits for Cs-137 concentration and authorizes transfer on Appendix B.

NOTE *Transfer approval (Appendix B) is required only for the start of the transfer unless additions have been made to 5D-15A2.*

[7] Switch Valve 70-FV-007 selector switch from CLOSE to AUTO.

[8] Valves 71-SV-1032, 71-H-305, and 71-H-304 by turning the selector switches to AUTO.

NOTE *Valve 71-SV-1032 will not open until switch for Pump 71-P-05 is activated to start the pump.*

[9] Start Pump 71-P-06 by switching selector switch to AUTO. Observe that the pump starts.

NOTE *71-P-06 will not start in AUTO if 5D-15A2 is at or below 20 percent. Notify supervisor prior to placing selector switch in START to lower tank level below 20 percent.*

[10] Ensure that concentrates are being transferred to the WDV by monitoring FIQ 2080 and 70-LI-2001.

[11] Stop the transfer when the WDV reaches 90 percent. Refer to SOP 71-14 for course of action to be taken if Low Flow Alarm, 71-FA-114B, sounds during the transfer.

NOTE *Valve 71-H-304 closes automatically (by interlock action), Pump 71-P-06 shuts off, and WDV high-level alarm is actuated at the LWTS panel upon high level in the WDV. If this fails, a high-high level alarm will actuate at the HSCSS panel.*

[12] Repeat valve lineup check prior to each batch transfer.

NOTE *A batch transfer of about 400 gallons (1,514 liters) should take about 15 minutes. Up to ten batches may be recorded on one Tank Transfer Data Sheet (Appendix C).*

[+] **[13]** Stop Pump 71-P-06 by turning its selector switch to STOP and closing valves 71-H-305, 71-H-304, and 71-SV-1032 if transfer is complete. Record completion on Appendix B.

[14] CLOSE Valve 70-FV-007.

[+] **[15]** Read the level and the density in Tank 5D-15A2 at 71-LR-111B and 71-DR-110B, and the level in the WDV at 70-LI-2001. Record readings on Appendix C - Tank Transfer Data Sheet.

[+] **[16]** Calculate the amount of concentrate transferred to the WDV and record on Appendix C - Tank Transfer Data Sheet.

6.4 Transfer from Tank 5D-15A1 to 5D-15A2

[+] **[1]** Record level, density, and volume of Tank 5D-15A1 on Appendix D.

[+] **[2]** Record level, density, and volume of Tank 5D-15A2 on Appendix D.

[+] **[3]** Obtain SS approval for transfer on Appendix D.

[4] OPEN or verify OPEN valves 5P375 and 5P400 in ULO niche. Update the status board.

[5] OPEN valves 71-SV-1031, 71-H-300, and 71-H-302 by turning their respective selector switches to AUTO.

NOTE *Valve 71-SV-1031 will not open until switch for Pump 71-P-05 is activated to start the pump.*

[6] Start Pump 71-P-05 from the LWTS Control Panel. Verify pump control switch is set to AUTO.

NOTE *71-P-05 will not start in AUTO if 5D-15A1 is at or below 20 percent. Notify supervisor prior to placing selector switch in START to lower tank level below 20 percent.*

[7] Monitor tank levels to verify correct transfer path.

NOTE *Valve 71-H-302 closes automatically (by interlock action) and Pump 71-P-05 shuts-off upon high level in Tank 5D-15A2.*

[8] Set selector switch for Pump 71-P-05 to STOP when transfer is complete.

[9] CLOSE valves 71-H-300, 71-H-302, 71-SV-1031 and 5P400. Update status board.

[10] Read and record the level and density of contents in Tanks 5D-15A1 and 5D-15A2 as follows:

[+] **[a]** Observe level and density indicated at 71-LR-111A and 71-DR-110A. Record on Appendix D under Tank 5D-15A1.

[+] **[b]** Observe level and density indicated at 71-LR-111B and 71-DR-110B. Record on Appendix D under Tank 5D-15A2.

[+] **[c]** Calculate the amount of liquid transferred from 5D-15A1 to 5D-15A2 and record an Appendix D.

6.5 Transfer from Tank 5D-15A2 to 5D-15A1

[+] **[1]** Record level, density, and volume of tank 5D-15A1 on Appendix D.

[+] **[2]** Record level, density, and volume of tank 5D-15A2 on Appendix D.

[+] **[3]** Obtain SS approval for transfer on Appendix D.

[4] OPEN or verify OPEN valves 5P-362 and 5P-399 in ULO niche. Update the status board as necessary.

[5] OPEN valves 71-SV-1032, 71-H-305, and 71-H-303 by switching them to AUTO.

NOTE1 *Valve 71-SV-1032 will not open until switch for Pump 71-P-06 is activated to operate the pump.*

NOTE2 *71-P-06 will not start in AUTO if 5D-15A2 is at or below 20 percent. Notify supervisor prior to placing selector switch in START to lower tank level below 20 percent.*

[6] Set Pump 71-P-06 selector switch to AUTO to start pump.

[7] Monitor tank levels to verify transfer path.

NOTE *Valve 71-H-303 closes automatically (by interlock action) and Pump 71-P-06 shuts off upon high level in Tank 5D-15A1.*

[8] Set Pump 71-P-06 selector switch to STOP.

[9] CLOSE valves 71-H-305, 71-H-303, and 71-SV-1032 when transfer is complete.

[10] Read and record the level and density of contents in Tanks 5D-15A1 and 5D-15A2 as follows:

[+] **[a]** Observe level and density indicated at 71-LR-111B and 71-DR-110B. Record on Appendix D.

[+] **[b]** Observe level and density indicated at 71-LR-111A and 71-DR-111B. Record on Appendix D.

[+] **[c]** Calculate the volume transferred from 5D-15A2 to 5D-15A1 and record on Appendix D.

6.6 Transfer from Tank 5D-15A1 to 5D-15B

[+] **[1]** Obtain SS approval for transfer on Appendix D.

[+] **[2]** Read and record 5D-15A1 and 5D-15B level, density, and volume on Appendix D - Tank Transfer Data Sheet.

[3] Perform valve lineup as follows:

CLOSE or Verify CLOSED

71-H-024
71-H-301
71-H-307
71-H-308
71-H-310
71-H-312
ULO house valve on Line 5P400-1 ½-C (at LLWO Status Board)
71-LCV-100

OPEN or Verify OPEN

71-H-128
71-H-150
71-H-300
71-H-302
71-H-306
71-H-309
ULO Hand Valve 71-GL-311 (at LLWO Status Board)
71-H-804 (at LLWO status board)

Verify Valve in AUTO

71-SV-1031 (P-05 Seal Water)

[4] Set Pump 71-P-05 selector switch to START.

[5] Monitor Tanks 5D-15A1, A2, and 15B levels throughout transfer.

[6] Perform final valve lineup after transfer completion:

[a] Set Pump 71-P-05 to STOP and 71-SV-1031 to CLOSED.

[b] CLOSE Valves

71-H-128
71-H-150
71-H-300
71-H-302
71-H-306
71-H-309

[c] Ensure 71-GL-311 remains OPEN.

[d] Update status board.

[+] **[7]** Read and record the level, density, and volume in Tanks 5D-15B and 5D-15A1, then calculate volume transferred and document on Appendix D.

6.7 Transfer from Tank 5D-15A2 to 5D-15B

[+] **[1]** Obtain SS approval for transfer on Appendix D.

[+] **[2]** Read and record 5D-15A2 and 5D-15B level, density, and volume on Appendix D - Tank Transfer Data Sheet.

[3] Perform valve lineup as follows and update status board when complete:

CLOSE or Verify CLOSED

71-H-304
71-H-306
71-H-307
71-H-309
71-H-333
71-H-314
ULO house valve on Line 5P399-1 ½-C (at LLWO Status Board)

OPEN or Verify OPEN

71-H-303
71-H-305
71-H-308
71-H-310
ULO hand valve 71-GL-311 (at the LLWO Status Board)

Verify Valve in AUTO

71-SV-1032 (P-06 Seal Water)

[4] Set Pump 71-P-06 selector switch to START.

[5] Monitor 5D-15A1, A2, and 15B levels throughout transfer.

[6] Perform final valve line-up after transfer completion:

[a] Set Pump 71-P-06 to STOP.

[b] CLOSE Valves 71-H-303, 71-H-305, 71-H-308, 71-H-310, and 71-SV-1032.

[c] OPEN ULO house valve on line 5P399-1 ½-C.

[d] Verify 71-GL-311 is OPEN.

[e] Update status board.

[+] **[7]** Read and record the level, density, and volume of Tank 5D-15B and Tank 5D-15A2 then calculate volume transferred on Appendix D.

6.8 Dilute Tank 5D-15A1

[1] Ensure the WTF Engineer calculates volume of water to add to 5D-15A1, using Appendix E as a guide.

[+] **[2]** Read and record the level of Tank 5D-15A1 from 71-LR-111A and the density from 71-DR-110A on Appendix D - Tank Transfer Data Sheet. Enter "N/A - Dilution Water" in sending tank data spaces.

[3] Perform valve lineup for ADDING WATER:

CLOSE or Verify CLOSED

71-H-301
71-H-302
71-H-332
71-H-333
71-SV-1031

OPEN or Verify OPEN

71-H-331
71-H-300
5P-375 (ULO niche)
5P-399 (ULO niche)

[4] OPEN Valve 71-H-334 to add water to Tank 5D-15A1.

[5] OPEN Valve 71-H-335 to sparge tank when approaching expected level.

[6] CLOSE Valves 71-H-335, 71-H-334 and 71-H-331 when expected level has been reached.

[7] Mix contents of Tank 5D-15A1 and Line 6-71-1 ½-301 by recirculating through P-05 as follows:

[a] CLOSE or Verify CLOSED

71-H-809 (ULO niche)
71-H-027
70-FV-007
71-H-302
71-H-305
71-SV-1032
71-H-308

[b] OPEN or Verify OPEN

5P-375 (ULO niche)
5P-399 (ULO niche)
71-H-300
71-H-301
71-H-304
71-H-303
71-SV-1031

[c] Start Pump 71-P-05 by switching selector switch to AUTO or START. Ensure that the pump starts.

[d] Ensure that concentrates are NOT being transferred to the WDV by monitoring FIQ 2080 and 70-LI-2001.

[e] Allow the contents of Tank 5D-15A1 to mix for approximately 10 minutes or for a period directed by the SS.

[f] Set Pump 71-P-05 selector switch to STOP when mixing is complete and perform the following valve lineup:

CLOSED	OPEN
71-H-300	71-H-809 (ULO niche)
71-H-301	5P-375 (ULO niche)
71-H-304	5P-399 (ULO niche)
71-H-303	
71-SV-1031	

[g] Update status board as necessary.

6.9 Dilute Tank 5D-15A2

[1] Verify that WTF Engineer calculates volume of water to add to 5D-15A2 using Appendix E as a guide.

[+] **[2]** Read the level of Tank 5D-15A2 indicated at 71-LR-111B and the density indicated at 71-DR-110B. Record readings on Appendix D - Tank Transfer Data Sheet. Enter "N/A - Dilution Water" in sending tank data spaces.

[3] Perform Valve lineup:

CLOSE or Verify CLOSED

71-H-304
71-H-303
71-H-332
71-H-334
71-SV-1032

OPEN or Verify OPEN

71-H-331
71-H-305
5P-362 (ULO niche)
5P-400 (ULO niche)

[4] OPEN Valve 71-H-333 to add water to Tank 5D-15A2.

[5] OPEN Valve 71-H-336 to sparge tank when approaching expected level.

[6] CLOSE Valves 71-H-336, 71-H-333, and 71-H-331 when expected level has been reached.

[7] Mix contents of Tank 5D-15A2 and Line 6-71-1 ½-300 by recirculation through P-06:

[a] CLOSE or Verify CLOSED

71-H-809 (ULO niche)
71-H-027
70-FV-007
71-H-303
71-H-300
71-SV-1031
71-H-306

[b] OPEN or Verify OPEN

5P-362 (ULO niche)
5P-400 (ULO niche)
71-H-305
71-H-304
71-H-301
71-H-302
71-SV-1032

[c] Set Pump 71-P-06 selector switch to AUTO. Ensure that the pump starts.

[d] Ensure that concentrates are NOT being transferred to the WDV by monitoring FIQ 2080 and 70-LI-2001.

[e] Allow the contents of Tank 5D-15A2 to mix for approximately 10 minutes or for a period directed by the SS.

[f] Set Pump 71-P-06 selector switch to STOP when mixing is complete, then perform the following valve lineup:

Valves CLOSED	Valves OPEN
71-H-305	71-H-809 (ULO niche)
71-H-301	5P-362 (ULO niche)
71-H-304	
71-H-302	
71-SV-1032	
5P-400 (ULO niche)	

[g] Update status board.

6.10 Transfer Tank 5D-15B to Tank 5D-15A1

[+] **[1]** Record the level and density of Tank 5A-15A1 indicated at 71-LR-111A and 71-DR-110A on Appendix D - Tank Transfer Data Sheet.

[+] **[2]** Record the level and density of 5D-15B indicated at 71-LR-105 and 71-DR-104 on Appendix D.

[3] Perform valve lineup:

CLOSE or Verify CLOSED

71-H-300
71-H-301
71-H-302
71-H-303
71-H-304
71-H-305
71-H-306
71-H-307
71-H-027
71-H-309

OPEN or Verify OPEN

71-H-308
71-H-310
71-H-312
71-GL-311 (at LLWO status board)
71-SV-1033
5P-377 (at LLWO status board)
5P-399 (at LLWO status board)

Update status board.

[4] Set 71-P-04 selector switch to AUTO or START.

[5] Set 71-P-04 selector switch to STOP when 71-LR-111A indicates expected level.

[6] CLOSE Valves 71-H-308, 71-H-310, 71-H-312, and 71-SV-1033.

[+] **[7]** Complete Appendix D - Tank Transfer Data Sheet.

6.11 Transfer Tank 5D-15B to 5D-15A2

FC1> **[1]** Verify that the WTF Engineer calculates the volume of 5D-15B to be added to Tank 5D-15A2. Perform calculations based on the most recent sample results.

[+] **[2]** Record the level and density of Tank 5D-15A2 indicated at 71-LR-111B and 71-DR-110B on Appendix D - Tank Transfer Data Sheet.

[+] **[3]** Record the level and density of 5D-15B from 71-LR-105 and 71-DR-104 on Appendix D.

[4] Perform valve lineup:

Valves CLOSED	Valves OPEN
71-H-300	71-H-306
71-H-301	71-H-310
71-H-302	71-H-312
71-H-303	71-GL-311
71-H-304	71-SV-1033
71-H-305	5P-377
71-H-307	5P-400
71-H-308	
71-H-027	
71-H-309	

Update status board.

[5] Set 71-P-04 selector switch to AUTO or START.

[6] OPEN Valve 71-H-336 to sparge Tank 5D-15A2 as expected level approaches.

[7] Set 71-P-04 selector switch to OFF when 71-LR-111B indicates expected level.

[8] CLOSE Valves 71-H-306, 71-H-310, 71-H-312, 5P-400 and 71-SV-1033.

[9] Sparge 5D-15A2 for a minimum of 20 minutes.

[10] Close Valve 71-H-336 to end sparge.

[+] **[11]** Complete Appendix D - Tank Transfer Data Sheet.

6.12 Disposition of Liquid Collected During ULO Components Maintenance

[1] Perform initial valve lineup:

[a] CLOSE Radiation Monitor Discharge Valve 71-H-709.

[b] CLOSE Valve 71-H-865 between ULO Sump and 71-P-20 (sump pump).

[c] Verify CLOSED 71-WW-H-0097.

[d] Verify OPEN, Valves 71-H-761 and 71-H-1014.

[e] Verify 3-way Valve 71-H-1013 is directed to 5D-15B.

[f] CLOSE sump pump air supply valve 71-UA-GT-0096.

[2] Fill sump with demineralized water to high level as follows:

[a] Verify Valve 71-H-864 is CLOSED.

[b] OPEN or verify OPEN Valve 71-H-863.

[c] Coordinate with Control Room Operator to OPEN Demineralized Water Valves H-331 and H-332.

[d] OPEN valve 71-H-864 to manually fill the sump.

[e] CLOSE valve 71-H-864 upon receipt of the ULO sump alarm LAH-193 or to prevent the sump from overfilling.

[f] Ensure that Control Room Operators close valves H-331 and H-332 upon receipt of ULO Sump High-level Alarm 71-LAH-193.

[3] Pump liquid to 5D-15B as follows:

NOTE *The ULO Sump Pump has been modified with a ½" tee and tygon tubing connection on the suction side.*

[a] Insert tygon tubing into bottle of liquid to be disposed and OPEN Valve 71-WW-H-0097 on that line.

[b] OPEN sump pump air supply valve 71-UA-GT-0096 to allow liquid to be pumped to 5D-15B.

[c] CLOSE pump air supply valve 71-UA-GT-0096 and Valve 71-WW-H-0097 on tygon when bottle is empty.

[d] Repeat steps 6.12[3][a] through 6.12[3][c] for any remaining bottles of liquid.

[e] Bag tygon tubing line in a Radiological Materials bag after all bottles are emptied.

[4] Pump out ULO Sump and realign valving:

[a] OPEN Valve 71-H-865 between sump and sump pump.

[b] OPEN air supply valve 71-UA-GT-0096 to pump out sump to 5D-15B.

[c] OPEN Valve 71-H-709.

[d] Verify Valves 71-H-761, 71-H-1014, are OPEN.

6.13 Flush Pump 71-P-05

[+] **[1]** Obtain SS approval on Appendix F to perform flush.

[2] Record current 5D-15A1 level and volume on Appendix F.

[+] **[a]** Obtain desired flush volume from SS or WTF Engineer and record on Appendix F.

[+] **[b]** Calculate tank volume increase and corresponding level after adding volume determined in 6.13[2][a] and record on Appendix F.

[+] **[3]** OPEN, or verify OPEN on the LWTS Status Board, 5P-399 and document on Appendix F.

[+] **[4]** Perform the pre-flush valve line up per Appendix G.

[5] OPEN valve 71-H-334 to initiate the flush.

[6] CLOSE valve 71-H-334 to terminate flush when tank reaches level determined in step 6.13[2][b].

[+] **[7]** Perform post flush valve line up per Appendix G.

[+] **[8]** Record final tank level and volume on Appendix F.

6.14 Flush Pump 71-P-06

[+] **[1]** Obtain SS approval on Appendix H to perform flush.

[+] **[2]** Record current 5D-15A2 level and volume on Appendix H.

[+] **[a]** Obtain desired flush volume from SS or WTF Engineer and record on Appendix H.

[+] **[b]** Calculate tank volume increase and corresponding level after adding volume determined in 6.14[2][a] and record Appendix H.

[+] **[3]** OPEN, or verify OPEN on the LWTS Status Board, 5P-400 and document on Appendix H.

[+] **[4]** Perform the pre-flush valve line up per Appendix I.

[5] OPEN valve 71-H-333 to initiate the flush.

[6] CLOSE valve 71-H-333 to terminate flush when tank reaches level determined in step 6.14[4][a].

[+] **[7]** Perform the post-flush valve line up per Appendix I.

[+] **[8]** Record final tank level and volume on Appendix H.

6.15 Flush Pump 71-P-04

[+] **[1]** Obtain SS approval on Appendix J to perform flush.

[+] **[2]** Record current 5D-15B level and volume on Appendix J.

[+] **[a]** Obtain desired flush volume from the SS or WTF Engineer and record on Appendix J.

[+] **[b]** Calculate tank volume increase and corresponding level after adding volume determined in 6.13[2][a] and record on Appendix J.

[+] **[3]** OPEN, or verify OPEN on the LWTS Status Board, 5P-398 and document on Appendix J.

[+] **[4]** Perform the pre-flush valve line up per Appendix K.

[5] OPEN valve 71-H-332 to initiate the flush.

[6] CLOSE valve 71-H-332 to terminate flush when tank reaches level determined in step 6.15[2][b].

[+] **[7]** Perform the post-flush valve line up per Appendix K.

[8] Record final tank level and volume on Appendix J.

7.0 RECORDS MAINTENANCE

[1] Records generated as a result of implementing this procedure are identified as follows:

[a] Appendix A - Transfers From 5D-15A1 to the WDV

[b] Appendix B - Transfers From 5D-15A2 to the WDV

[c] Appendix C - Tank Transfer Data Sheet

[d] Appendix D - Tank Transfer Data Sheet

[e] Appendix F - 71-P-05 Flush Data Sheet

[f] Appendix G - 71-P-05 Flush Valve Line-Up

[g] Appendix H - 71-P-06 Flush Data Sheet

[h] Appendix I - 71-P-06 Flush Valve Line-Up

[i] Appendix J - 71-P-04 Flush Data Sheet

[j] Appendix K - 71-P-04 Flush Valve Line-Up

[2] Records are identified on HLWTF Operations Records Inventory and Disposition Schedule (RIDS).

[3] Records shall be prepared, maintained, and transferred to the Records and Information Department for storage in accordance with WVDP-262.

8.0 SOURCE REQUIREMENTS

There are no source requirements implemented by this procedure.

9.0 REFERENCES

9.1 Procedures

SOP 00-13	WTF/STS/LWTS Run Plan and Fissile Material Tracking
SOP 15-04	Sample Operations
SOP 71-11	LWTS Sampling Procedure
SOP 71-14	LWTS Alarm Response Procedure

10.0 APPENDICES AND ATTACHMENTS

Appendix A - Transfers from 5D-15A1 to the WDV
Appendix B - Transfers from 5D-15A2 to the WDV
Appendix C - Tank Transfer Data Sheet
Appendix D - Tank Transfer Data Sheet
Appendix E - Water Dilution Formula
Appendix F - 71-P-05 Flush Data Sheet
Appendix G - 71-P-05 Flush Valve Line-Up
Appendix H - 71-P-06 Flush Data Sheet
Appendix I - 71-P-06 Flush Valve Line-Up
Appendix J - 71-P-04 Flush Data Sheet
Appendix K - 71-P-04 Flush Valve Line-Up

APPENDIX A
TRANSFERS FROM 5D-15A1 TO THE WDV
(Page 1 of 1)

DATA SHEET		CAMPAIGN NO.:
STEP NO.	DESCRIPTION	SIGN-OFF/DATE
6.1	**Prerequisites**	
6.1[1]	WDV is available to receive concentrates	Operator / Date
6.1[2]	Valve lineup complete	Operator / Date
6.1[4]	Transfer approved	SS / Date
6.2	**Transfer of Tank 5D-15A1 Contents to WDV**	
6.2[6]	Cesium-137 analytical results acceptable for transfer	SS / Date
6.2[13]	Transfer complete, 71-P-05 OFF, valves CLOSED	Operator / Date

APPENDIX B
TRANSFERS FROM 5D-15A2 TO THE WDV
(Page 1 of 1)

DATA SHEET		CAMPAIGN NO.:
STEP NO.	DESCRIPTION	SIGN-OFF/DATE
6.1	**Prerequisites**	
6.1[1]	WDV is available to receive concentrates	_____ Operator / Date
6.1[2]	Valve lineup complete	_____ Operator / Date
6.1[4]	Transfer approved	_____ SS / Date
6.3	**Concentrates Transfer from Tank 5D-15A2 to CSS WDV**	
6.3[6]	Cesium-137 analytical results acceptable for transfer	_____ SS / Date
6.3[13]	Transfer complete, Pump 71-P-06 OFF, & valves CLOSED.	_____ Operator / Date

APPENDIX C
TANK TRANSFER DATA SHEET
(Page 1 of 1)

6.2[1], 6.2[2], 6.2[3], 6.2[5], 6.2[12], 6.2[15], 6.2[16], 6.3[1], 6.3[2], 6.3[3], 6.3[5], 6.3[15], 6.3[16]

Page _____ of _____

DATE_____ SENDING TANK 5D-15A1/A2 RECEIVING TANK WDV
ANALYSIS REQUEST SAMPLE NAME_____ LOG NO._____
TRANSFER START TIME_____ TRANSFER END TIME_____
CAMPAIGN NO. _____
EVAPORATOR RUN NO. _____

COMPLETE FOR SENDING TANK. (INDICATE BELOW)

TANK NO. 5D-15A_____	BEFORE FIRST TRANSFER
LR % CHART	
DR gm/cc	
TEMP °F	
LITERS VOLUME	

_____/_____
Operator Signature Date

	Valve Line-up Check	5D-15A_____ LR% BEFORE	5D-15A_____ LR% AFTER	WDV (70-LI-2001) LR% BEFORE	WDV (70-LI-2001) LR% AFTER	OPERATORS INITIALS	GALLONS TRANSFERRED
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

TANK 5D-15A	AFTER LAST TRANSFER
LR % CHART	
DR gm/cc	
TEMP °F	
LITERS VOLUME	

VOLUME TRANSFERRED

_____/_____
OPERATOR SIGNATURE DATE

TRANSFER COMPLETE:

_____/_____
SHIFT SUPERVISOR SIGNATURE DATE

APPENDIX D
TANK TRANSFER DATA SHEET
(Page 1 of 1)

*****USE FOR TRANSFERS BETWEEN 5D-15A1, 5D-15A2, AND 5D-15B*****
6.4[1], 6.4[2], 6.4[3], 6.4[10][a]-[c], 6.5[1], 6.5[2], 6.5[3], 6.5[10][a]-[c], 6.6[1], 6.6[2], 6.6[7], 6.7[1], 6.7[2], 6.7[7], 6.8[2], 6.9[2], 6.10[1], 6.10[2], 6.10[7], 6.11[2], 6.11[3], 6.11[11]

(Sheet _____ of _____)

DATE_____ SENDING TANK_____ RECEIVING TANK_____

SS APPROVAL _____ /DATE _____

SENDING TANK TANK NUMBER 5D-15_____		RECEIVING TANK TANK NUMBER 5D-15_____	
BEFORE TRANSFER:			
LR % CHART DR gm/cc TEMP. °C LITERS VOLUME		LR % CHART DR gm/cc TEMP. °C LITERS VOLUME	
AFTER TRANSFER:			
LR % CHART DR gm/cc TEMP. °C LITERS VOLUME		LR % CHART DR gm/cc TEMP. °C LITERS VOLUME	
VOLUME CHANGE		VOLUME CHANGE	

FINAL VALVE LINEUP COMPLETE;
AND STATUS BOARD UPDATED: _____ /_____
Operator Signature Date

_____ /_____
Shift Supervisor Signature Date

APPENDIX E
WATER DILUTION FORMULA
(Page 1 of 1)

$$WATER = \left(\frac{TDS_1}{TDS_2} - 1 \right) x \; V \; x \; d$$

V	=	Volume (liters) in tank being diluted. (prior to addition)
d	=	density (g/ml) in tank being diluted. (prior to addition)
TDS_1	=	TDS in tank being diluted. (prior to addition)
TDS_2	=	Target TDS needed. (post dilution)
Water	=	Liters of water needed to achieve target TDS (TDS_2).

APPENDIX F
PUMP 71-P-05 FLUSH DATA SHEET
(Page 1 of 1)

6.13[1]	SS approval for flush to proceed	SS / Date
6.13[2]	Record current 5D-15A1 level and volume Level Volume	Operator / Date
6.13[2][a]	Desired Flush Volume	SS or WTF Engineer/ Date
6.13[2][b]	Expected 5D-15A1 level and volume Level Volume	SS or WTF Engineer/ Date
6.13[3]	Verify 5P-399 OPEN	Operator / Date
6.13[8]	Record final 5D-15A1 level and volume Level Volume	Operator / Date

APPENDIX G
PUMP 71-P-05 FLUSH VALVE LINE UP
(Page 1 of 1)

6.13[4] Preflush Valve Line Up

Verify CLOSED	Operator	Independent Verifier
71-H-300		
71-H-302		
71-H-305		
71-H-308		
FV007		
71-H-027		
71-H-332		
71-H-333		

Verify OPEN	Operator	Independent Verifier
71-H-331		
71-H-301		
71-H-303		
71-H-304		

6.13[7] Post Flush Valve Lineup

Verify CLOSED	Operator	Independent Verifier
71-H-303		
71-H-304		
71-H-301		
71-H-331		

APPENDIX H
PUMP 71-P-06 FLUSH DATA SHEET
(Page 1 of 1)

6.14[1]	SS approval for flush to proceed	_____ SS / Date
6.14[2]	Record current 5D-15A2 level and volume _____ Level _____ Volume	_____ Operator / Date
6.14[2][a]	Desired Flush Volume _____	_____ SS or WTF Engineer/ Date
6.14[2][b]	Expected 5D-15A2 level and volume _____ Level _____ Volume	_____ SS or WTF Engineer/ Date
6.14[3]	Verify 5P-400 OPEN	_____ Operator / Date
6.14[8]	Record final 5D-15A2 level and volume _____ Level _____ Volume	_____ Operator / Date

APPENDIX I
PUMP 71-P-06 FLUSH VALVE LINE UP
(Page 1 of 1)

6.14[4] Preflush Valve Line Up

Verify CLOSED	Operator	Independent Verifier
71-H-300		
71-H-303		
71-H-305		
71-H-306		
FV007		
71-H-027		
71-H-332		
71-H-334		

Verify OPEN	Operator	Independent Verifier
71-H-331		
71-H-301		
71-H-302		
71-H-304		

6.14[7] Post Flush Valve Lineup

Verify CLOSED	Operator	Independent Verifier
71-H-302		
71-H-301		
71-H-304		
71-H-331		

APPENDIX J
PUMP 71-P-04 FLUSH DATA SHEET
(Page 1 of 1)

6.15[1]	SS approval for flush to proceed	_____ SS / Date
6.15[2]	Record current 5D-15B level and volume _____ Level _____ Volume	_____ Operator / Date
6.15[2][a]	Desired Flush Volume _____	_____ SS or WTF Engineer/ Date
6.15[2][b]	Expected 5D-15B level and volume _____ Level _____ Volume	_____ SS or WTF Engineer/ Date
6.15[3]	Verify 5P-398 OPEN	_____ Operator / Date
6.15[8]	Record final 5D-15B level and volume _____ Level _____ Volume	_____ Operator / Date

APPENDIX K
PUMP 71-P-04 FLUSH VALVE LINE UP
(Page 1 of 1)

6.15[4] Preflush Valve Line Up

Verify CLOSED	Operator	Independent Verifier
71-H-310		
71-H-312		
71-H-313		
71-H-314		
71-H-333		
71-H-334		

Verify OPEN	Operator	Independent Verifier
71-H-331		

6.15[7] Post Flush Valve Lineup

Verify CLOSED	Operator	Independent Verifier
71-H-331		

WVNS RECORD OF REVISION

Rev. No.	Description of Changes	Revision On Page(s)	Dated
0	Initial Document	All	
1	Streamlined Data Sheet Requirements, Added Transfer of Out of Specification Concentrates Back to 5D-15B	All	
FC1	Corrected references for 5D-15A2 and 71-P-06	i, iii, A-2	
FC2	Clarifies transfers to WDV	i, iii, 9, 11, A-1, A-2, B-5	
FC3	Clarifies valve lineups for 5D-15A1 or 5D-15A2 to 5D-15B	i, iii, 17, 49	
2	Incorporates FC 1, 2 and 3. Updates TR requirements and modifies the tank volume charts. Adds steps to dilute the contents of 5D-15A1 and 5D-15A2 when necessary to obtain allowable density. Adds Tank Transfer Data Sheet, and 5D-15B volume vs. Reading Chart.	All	
FC1	Procedural Clarification	i, 7, 14, 15, 21, 22, 23, 24, 25	
FC2	Adds "Evaporator Run No. ___" to Data Sheet	ii, iii, 25, 25a	04-90
FC3	Adds steps for disposition of liquid collected during maintenance to ULO components.	ii, iii, 6, 6a, 25b, 25c, 25d	12-90
FC4	Allows normal pumping 5D-15A1 and 5D-15A2 below 20% level.	ii, 6, 6a, 10, 13, 14, 15	08-92
	Specifies 19 to 21 weight percent solids in the concentrates.		
FC5	Deletes references to decontaminated supernatant, adds sludge wash liquid at 19 to 21 percent solids, replaces PCE with OTS	ii, 3, 5, 6, 9, 11 12, 16, 18	10/92
	Corrects spelling errors	1, 17	
FC6	Revised 6.1.3 VALVES CLOSED section.	7	03/93
FC6	Cancels FC #6 dated 03-18-93. Deleted valve #71-H-1012 from Section 6.1.3	7	03/93
FC7	Updates references to TRs and PCPs. Changes WDV High Alarm to reflect actual condition.	ii, 5, 6, 9, 10, 11 12, 13	07/93

WVNS RECORD OF REVISION

Rev. No.	Description of Changes	Revision On Page(s)	Dated
3	Incorporates FC #1-7. Changes format per SOP 00-02, Rev 8	All	10/93
FC1	Section 2.2 Add "WVNS-PCP-005....Cement" Section 6.2.4 Add "WVNS-PCP-005" Section 6.3.4 Add "WVNS-PCP-005" Section 7.0 Add Records Maintenance Section Repaginated to allow for field change	6 12 14 32 All	01/95
FC2	Section 6.9.7A Change erroneous valve number	26	03/95
FC3	2.1.1 Deleted reference to TR-IRTS-7. 6.1.2 Included, "AS OPEN ON THE LLWO STATUS BOARD:" and "OPEN OR VERIFY AS OPEN:." 6.2.6 Deleted reference to TR-IRTS-7. 6.3.6 Deleted reference to TR-IRTS-7. 6.4.4, 6.5.4 Changed "Verify" to "Open or verify open" and included, "Update the status board, as necessary." 6.7.4 Add "Update status board when complete." 6.6.7 E, 6.7.7 E, 6.8.7 G, 6.9.7 G, 6.10.4, 6.11.4, add "Update status board as necessary." Appendix G - after "FINAL VALVELINEUP COMPLETE" add "; AND STATUS BOARD UPDATED:" Repaginated to allow for field change.	6 11 13 16 17, 19 22 21, 23, 25, 28, 29, 30 40 All	03/29/96
FC4	Additional valves included in valve lineup verification. Replaced Appendix C, D, & E with Appendix B, C, & D of SOP 71-02 to correct volume errors. Repaginated to allow for field change.	20, 21 37, 38, 39 All	05/18/96
FC5	6.8 - Included 71-H-331 in valve line up 6.9 - Corrected valve line up to read 71-H-336, 71-H-333 and 71-H-331	24 27	03/11/97

WVNS RECORD OF REVISION

Rev. No.	Description of Changes	Revision On Page(s)	Dated
4	New-Type Revision Incorporation of Field Changes	All	07/16/98
FC1	Updated Cover Sheet, Table of Contents	1,2	09/09/98
	Steps 6.13 - 6.15, Inserted to address flushing	34, 35	
	Appendix I, Added 71-P-05 Flush Data Sheet	43	
	Appendix J, Added 71-P-05 Flush Valve Line Up	44	
	Appendix K, Added 71-P-06 Flush Data Sheet	45	
	Appendix L, Added 71-P-06 Flush Valve Line Up	46	
	Appendix M, Added 71-P-04 Flush Data Sheet	47	
	Appendix N, Added 71-P-04 Flush Valve Line Up	48	
	Repaginated to allow for field change	All	
FC2	Delete reference to WVNS-PCP—004 & 5 per system engineer;	5,11	11/02/99
	Add caution;	9,10,13	
	Delete 6.6.7 C PER 9922574-I/DC1R in order to eliminate ULO entry to CLOSE 5P-400;	19	
	Add "at the LWTS Status Board;"	19,20	
	Delete "as necessary;"	10,15,20,21,27,28,29	
	Add 5P-400 to CLOSED;	16,26,29	
	6.10 - change title and delete step 6.10.1;	26	
	Updated Section 1.0	4	
	Fix typo	6,19	
	Deleted step	18,20,27,28	
	Add close 71-SV-1031 to 6.6.7A and delete OPEN 5P-400 in 6.6.7C	19	
	Change location to status board	20	
FC3	Update cover sheet to comply with EP-5-002.	1	02/25/00
	Update TOC to reflect field change.	2	
	Update titles and references.	4,5,11,13,21,24,31	
	Add valve identifiers and detail to Section 6.12.	29-31	
	Delete Appendices C-E, 5D-15B, A1 and A2 calibration charts.	10,13,34,37-39	
FC4	Deleted PCE from Abbreviation List	7	01/17/01
	RM section updated in accordance with WVDP-262, RIDS changed to HLWTF Operations dept.	34	
	Appendix A - PCE changed to WTF Engineer	35	
	Appendix B - PCE changed to WTF Engineer	36	
	Appendix F - PCE data review deleted, minor change to page format due to Laserjet Easy printing format.	40	
	Appendix G - PCE approval and review deleted, associated step number added to top of page as Requested by Operations on DCIR 9923467.	41	
	Repaginated to allow for changes.	All	

WVNS RECORD OF REVISION

Rev. No.	Description of Changes	Revision On Page(s)	Dated
5	Revision.		11/14/01
	HLWTF Operations are affected by:		
	Incorporated previous field changes.	All	
	Updated cover sheet as per EP-5-002.	Cover	
	Deleted non-applicable steps from Appendix D at the request of Operations on DCIR 0122349.	31	
	Revised RM section per WVDP-257.	26	
	Formatted Appendix A and B into tables.	28,29	
	Renumbered steps and Appendices due to deleted steps and Appendix C/D/E from previous field changes. Repagination.	All	
	Updated titles and formatted to meet EP-5-002 criteria.	All	
FC1	HLWTF Operations are affected by the following:		03/26/02
	6.11 section title changed to "Transfer Tank 5D-15B to 5D-15A2". 6.11[1]-named specific tank.	21	
	6.11[10]-corrected typo.	21	
	Changes are being made at Engineering's request for clarity.		

APPENDIX D-30

OCTOBER 28, 1991 CORRESPONDENCE FROM NYSDEC

Rec'd.
Rec. Mgmt.
October 24, 1991

RW:91:0033

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233

Thomas C. Jorling
Commissioner

OCT 1 8 1991

Mr. T. J. Rowland, Director
West Valley Project Office
PO Box 191
West Valley, NY 14171-0191

Mr. T.K DeBoer
Director
Radioactive Waste Management Program
NYS Energy Research and Development Authority
Two Rockefeller Plaza
Albany, NY 12233

Mr. J. J. Buggy, Jr., President & General Manager
West Valley Nuclear Services, Inc.
PO Box 191
West Valley, NY 14171

RE: Labeling and Marking of Radioactive Mixed Waste Tanks

Dear Sirs:

The Department of Environmental Conservation (NYSDEC) and the Environmental Protection Agency (EPA) has reviewed your September 24, 1991 letter regarding compliance with Part 6NYCRR Part 373-3.10(e)(4) requiring the owner or operator to identify the contents of hazardous waste tanks.

Providing the labeling is sufficient to identify the tank contents in an area visible to any person who may enter the tank cells or rooms, then the labeling and marking practices conducted by West Valley Demonstration Project meet the regulatory requirement.

OCT 2 5 1991

If you should have any questions regarding this matter, do not hesitate to call Mr. Timothy I. DiGiulio, P.E., at 518/457-9253 or Mr. John Gorman at 212/264-5974.

Sincerely,

Paul R. Counterman, P.E.
Director
Bureau of Hazardous Waste Facility Management
Division of Hazardous Substances Regulation

for

John Gorman, Chief
New York Compliance Section
Hazardous Waste Compliance Branch
US Environmental Protection Agency
Region II

cc: J. Gorman, EPA Region II
F. Shattuck, Region 9
P. Counterman
P. Merges
T. DiGiulio

APPENDIX D-31

RHWF FINAL DESIGN PACKAGE
(24 DRAWINGS)

UTILITY AIR SYSTEM
B 8 — 911-D-025 — UA-2-0624

DEMINERALIZED WATER DISTRIBUTION SYSTEM
B 8 — 911-D-027 — DW-2-0421 — NO — DW-SC-0451 — DW-H-0450 — DW-2-0421

WASTE PACKAGING AREA DRAIN
B 1 — 911-D-026 — WASTE PACKAGING AREA DRAIN HUB — DMV-2-0103

CMA UPPER LEVEL DRAIN HUBS
B 2 — 911-D-026 — UPPER CONTACT MAINTENANCE AREA DRAIN HUB — DMV-2-0104

WORK CELL TRENCH
C 2 — 911-D-026

BUFFER CELL
B 1 — 911-D-026

CMA LOWER LEVEL DRAIN HUB
A 2 — 911-D-026

RAD. PROT. OPER. AREA
LIQUID SAMPLE GLOVE BOX
GLOVE BOX SAMPLE LINES (SEE DET 1)
DMV-H-0154
CMA

CONTACT MAINTENANCE AREA

PLC — NOTE 11 — FIC 0031A — LT 0031 — REF LEG — FIC 0031B

PLC — NOTE 11 — FIC 0042A — LT 0042 — REF LEG — FIC 0042B

PLC — SEE NOTE 10 — FT 0030

PLC — NOTE 11 — FIC 0033A — LT 0033 — REF LEG — FIC 0033B

PLC — NOTE 11 — FIC 0032A — LT 0032 — REF LEG — FIC 0032B

DMV-H-0101 — DMV-SC-0135 — DMV-H-0102 — DMV-SC-0136 — DMV-H-0103 — DMV-SC-0134 — DMV-H-0104 — DMV-SC-0137 — DMV-H-0166

DMV-2-0132 — DMV-2-0131 — DMV-2-0127 — SPEC CLASS S15B — SPEC CLASS S15A — FOR PENETRATION SEE DWG. 911-D-072 SHT. 01 DETAIL 4 — NOTE 13 — DMV-H-0165

VENT — DMV-H-0162 — UA-1-0632 — DMV-2-0129 — UA-1-0633 — VENDOR CONN. — DMV-H-0125 SEE NOTE 9 — UA-2-0624 — DMV-2-0130 — DMV-H-0126

DMV-SC-0105 — UA-H-0632 — UA-H-0633 — UA-H-0634 — UA-1-0634

PI 0046 — UA-ND-0658 — PI 0047 — UA-ND-0659 — PI 0048 — UA-ND-0660

DMV-SC-0106 — DMV-H-0159 — DMV-H-0148 — DMV-H-0160 — DMV-H-0152 — DMV-H-0123 — DMV-H-0161 — DMV-H-0156

DMV-2-0112 — DMV-SC-0113 — DMV-2-0115 — DMV-SC-0129 — DMV-2-0116

DMV-SC-0117 — DMV-H-0114 — DMV-H-0115 — DMV-H-0151 — DMV-H-0155

1x3/4 — EXHAUST AIR — EXHAUST AIR — EXHAUST AIR

DMV-H-0107 — DMV-H-0146 — DMV-H-0150 — DMV-H-0154 — DMV-2-0123 — DMV-2-0143

TRANSFER/RECIRC. PUMP AIR OPERATED DIAPHRAGM PUMP (C-001) — TRANSFER/RECIRC. PUMP AIR OPERATED DIAPHRAGM PUMP (C-002) — TRANSFER/RECIRC. PUMP AIR OPERATED DIAPHRAGM PUMP (C-003)

DMV-H-0149 — DMV-H-0153 — DMV-H-0157 — DMV-H-0158

DMV-2-0122 — DMV-1/2-0150 — DMV-2-0121 — DMV-2-0144 — DMV-H-0124

DMV-H-0143 — DMV-2-0142 — DMV-H-0121 NOTE 4 — DMV-H-0144 — DMV-H-0145 — DMV-3/4-0144 — DMV-H-0132 — NOTE 4 — DMV-H-0133

1/2" TUBING — DMV-2-0139 — DMV-3/4-0133 — 1/2" TUBING — DMV-2-0121 — DMV-3/4-0135 — DMV-H-0141 — DMV-H-0111 — DMV-2-0138 — DMV-H-0140 — DMV-H-0142 — DMV-2-0141 — DMV-H-0112 — NOTE 4 — NOTE 12 — NOTE 12 — DMV-3/4-0145 — NOTE 12 — 1/2" TUBING — DMV-2-0123

FLOOR EL. 102' -6"

BUFFER CELL

DISPOSABLE STRAINER (T-001) — WASHDOWN COLLECTION TRENCH

WORK CELL

DISPOSABLE STRAINER (T-002) — OPEN ENDED TANK VENT

ATMOS. OPEN TO — DMV-3/4-0134 — DMV-3/4-0140

SAMPLE LINE CONNECTIONS FROM / TO SHIELDED LIQUID SAMPLE GLOVE BOX (D6) (NOTE 1) — BOX

LOWER CONTACT MAINTENANCE AREA DRAIN HUB (XX-009) — DMV-3/4-0124

SAMPLE LINE CONNECTIONS FROM / TO SHIELDED LIQUID SAMPLE GLOVE BOX (D6) (NOTE 1)

SAMPLE LINE CONNECTIONS FROM / TO SHIELDED LIQUID SAMPLE GLOVE BOX (D6) (NOTE 1)

ALL PENETRATION THRU CMA BOUNDARY TO USE OFFSET GEOMETRY (S-BENDS)

DOUBLE WALL PIPE — TO 803 OR AS DESIGNATED BY WVNS — SLOPE

WASHDOWN COLLECTION TRENCH — SLOPE — SLOPE — SLOPE — DMV-3/4-0146 — DMV-2-0125 — DMV-2-0113 — DMV-3/4-0147 — DMV-2-0126 — DMV-3/4-0126 — DMV-2-0116 — DMV-3/4-0148 — DMV-3/4-0124 — DMV-2-0119 — DMV-3/4-0137

DMV-2-0105 — DMV-2-0106 — SLOPE — SLOPE — DMV-3/4-0149 — DMV-3/4-0136

BUFFER CELL DRAIN HUB (XX-07) — BUFFER CELL DRAIN PIPE — WORK CELL DRAIN HUB (XX-08) — DOUBLE WALL PIPE

BUBBLER — BUBBLER — BUBBLER

PLC — TE 0043 — PLC — TE 0044 — PLC — TE 0045

NOTE 2 — SLOPED BOTTOM — NOTE 2 — SLOPED BOTTOM — NOTE 2 — SLOPED BOTTOM

WORK CELL WASHDOWN RECEIVING TANK (SPARE) (D-001) — SUMP — CONTAINMENT PIPE FROM GLOVE BOX

TANK VAULT

BUFFER CELL/CONTACT MAINTENANCE AREA WASHDOWN RECEIVING TANK (SPARE) (D-002)

BATCH TRANSFER TANK (SPARE) (D-003)

FLOOR EL. 93' -0"

NOTES:
1. ALTHOUGH THREE GLOVE BOXES ARE SHOWN AT B2, B3, & B4, THE THREE SAMPLE LINES WILL BE ROUTED INTO ONE GLOVE BOX SHOWN AT D6. (TO IMPROVE DRAWING CLARITY) PIPING PENETRATION THROUGH CMA SHALL BE DOUBLE WALL PIPE.
2. LIQUID LEVEL OF THE TANK SHALL BE MAINTAINED 3" ABOVE DRAINAGE LINES.
4. TAP FOR HIGH PRESSURE AIR (UTILITY AIR) DE-PLUGGING OR DRAINING. DE-PLUGGING TAPS NOT TO BE ON BOTTOM OF HORIZONTAL RUN OF MAIN PIPE TO AVOID POTENTIAL CRUD TRAP.
5. ALL EQUIP. & COMPONENT NUMBERS ON THIS DRAWING ARE PREFIXED BY THE SYSTEM NUMBER "313-" UNLESS OTHERWISED NOTED.
6. FOR GENERAL NOTES, SYMBOLS, AND ABBREVIATIONS SEE DWG 911-D-060 SH. 1
7. FLOW RATE AND FLOW TOTALIZATION WILL BE PERFORMED BY THE PLC (PROGRAMMABLE LOGIC CONTROLLER).
8. DELETED
9. VALVE DMV-H-0125 TO BE INSTALLED AS CLOSE TO LINE DMV-2-0123 AS POSSIBLE.
10. FLOW INSTRUMENT IS A 1" FLANGED VORTEX FLOW METER WHICH REQUIRES A MINIMUM STRAIGHT RUN OF 1" SCH 40 PIPE, 10ø UPSTREAM AND 5ø DOWNSTREAM SEE INSTRUMENT DATA SHEETS 79303-252-01.
11. LOCATE PIT'S, LT AND FIC OUTSIDE CMA.
12. COLLECTION CONTAINER.
13. USE 6" DIA. SCH 160 PIPE SLEEVE, T.O.E. WITH PIPE CAP TO PROVIDE SHIELDING WHEN NOT IN USE. SLOPE PROCESS LINE DMV-2-127 1/8" PER FT TO ALLOW DRAINAGE BACK TO DMV-2-0142

SAMPLING VIAL — GLOVE BOX DETAIL SEE NOTE 1

AS BUILT

REV	DESCRIPTION	APV'D	DESIGN ENGINEERING
1	INCORPORATED DCN 074 AND 075	DATE 5/9/01	
2	FOR ACTION ITEM CM1 RESOLUTION	DATE 9/28/01	
3	INCORPORATED FCN-0142	DATE 7/29/03	DESIGN ENGINEERING
4	INCORPORATED FCN-230,249 INCORPORATED ON EARLIER REVISION WCN-049	DATE 9/30/03	DESIGN ENGINEERING
5	DELETED PIT-0046, 0047, 0048 & REPLACED WITH PI PER FCN 295. ADDED LIQ. SAMPLE GLOVE BOX DRAIN LINE AS PER FCN 304. ADDED VENT LINE TO CMA FLR. DMV-3/4-0136 PER FCN 289.		
0	INCORPORATED FCN 305	ER 25935	02/6/2004 CCG

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT _____ DATE _____

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS IN INCHES

FILE NAME 911-D-023_001_000
PLOT SCALE 1=1.00
D SPEC #
NEXT ASSEMBLY

DRAFTER VENDOR — DATE
CHECKER VENDOR — DATE
ENGINEER VENDOR — DATE

DATABASE LINKED DRAWING
SEE ENGINEERING RELEASE FORM (ER) FOR DRAWING APPROVAL SIGNATURES

DWG SIZE D

VENDOR: BUTLER CONSTRUCTION CO. OF WNY, INC. RAYTHEON NUCLEAR, INC.

WVNSCO
West Valley Nuclear Services Company

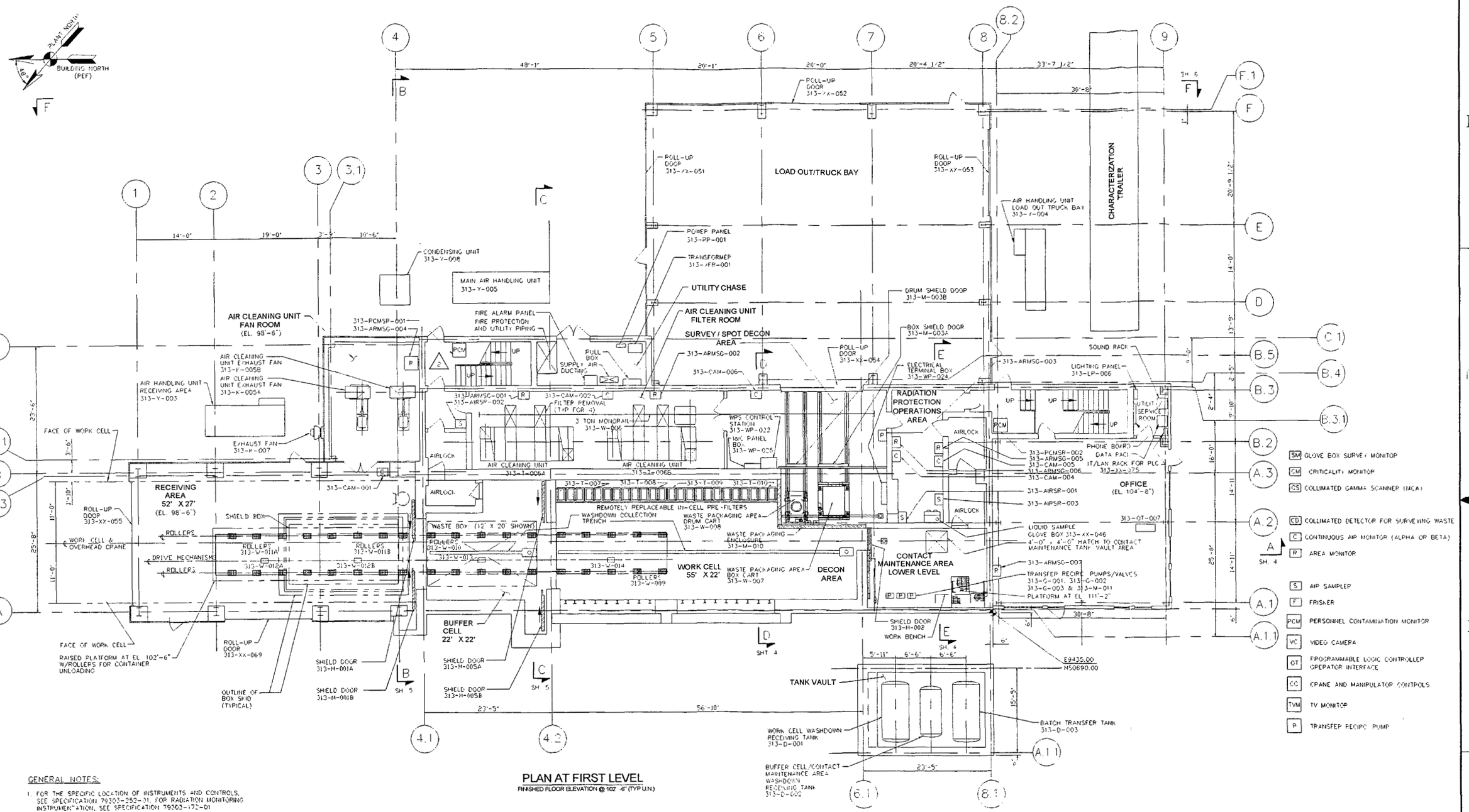
REMOTE HANDLED WASTE FACILITY PIPING & INSTRUMENT DIAGRAM WASTE COLLECTION & TRANSFER SYS.

SCALE 1:1 — WEIGHT — A/E DWG # — A/E CONTRACT # — DWG IDENT #

DWG # 911-D-023 — REV 0 — SHEET 1 OF 1

CAD DRAWING-DO NOT REVISE THIS ORIGINAL

10/19/04 2:10:27 PM REPRO



PLAN AT FIRST LEVEL

FINISHED FLOOR ELEVATION @ 102'-6" (TYP U.N.)

PARTIAL PLAN AT EL. 93'-0"

GENERAL NOTES:

1. FOR THE SPECIFIC LOCATION OF INSTRUMENTS AND CONTROLS, SEE SPECIFICATION 79303-252-01. FOR RADIATION MONITORING INSTRUMENTATION, SEE SPECIFICATION 79303-172-01
2. FOR THE SPECIFIC LOCATION AND COMPONENT NUMBERS OF THE TV CAMERAS, SEE SPECIFICATION 79303-139-01
3. SEE ARCHITECTURAL DRAWING SERIES 911-D-150 FOR LAYOUT OF THE OFFICE BUILDING

AS BUILT

REV.	DESCRIPTION	INIT/DATE	CDG
1	INCORPORATE THE FOLLOWING DCNS: 046, 047, 059, 060, 061, 065, 066, 067, 068, 069 P1, 070 & 075.	LC 05/24/04	
2	FOR ACTION ITEM CLOSEOUT GENERAL REVISION AS CIRCLED	WS 09/22/04 KAS 09/22/04 LC 09/22/04 EO 09/22/04	
3	GENERAL REVISION AS CIRCLED	LC WS EO 10/14/04	
4	REVISED AS CIRCLED	LC WS EO 10/27/04	
5	EDITORIAL CHANGES PER WWIS REQUEST		
0	EP 25Sep 04/28/04		CDG
1	ELN 25Sep 04 HAB 04 Sep 2004		HAE
2	ETN 30Sep 04 HAB 06 Oct 2004		HAE

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT _____ DATE _____

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS IN INCHES

TRAPPING DATE
MACHINING DATE
REVISED DATE

WVNSCO
West Valley Nuclear Services Company

FILE NAME 911_D_031_001.dgn
PLOT SCALE 1=96.0

PLAN GENERAL ARRANGEMENT PLAN AT FIRST LEVEL

D SPEC # 0000
NEXT ASSEMBLY

DATABASE LINKED DRAWING
SEE ENGINEERING RELEASE FOR REVISED DRAWING APPROVAL SIGNATURES

SCALE 1:96
SIZE D
WEIGHT

D.C.N. # 911-D-031 REV. 2

10/19/04 10:15:20 AM PERRO

CAD DRAWING, DO NOT EDIT OUTSIDE THIS DRAWING

GENERAL NOTES:

1. WORKING POINT (WP) COORDINATES ARE BASED ON SITE COORDINATES SHOWN ON THE SITE PLAN OF GLYNN GEOTECHNICAL INVESTIGATION REPORT GGE99-1114, DATED NOVEMBER 29,1999.
2. ELEVATIONS SHOWN ON THE DRAWINGS ARE BASED ON THE FOLLOWING REFERENCE:
   100.00' SITE ELEVATION IS EQUIVALENT TO 1415.21' ABOVE MEAN SEA LEVEL, USGS.
3. CONSTRUCTOR SHALL BE RESPONSIBLE FOR THE DESIGN, INSTALLATION AND FINAL REMOVAL/CLEARANCE OF ANY REQUIRED SHORING OR BRACING OF STRUCTURES.
4. FOUNDATIONS AND SLABS ON GRADE ARE DESIGNED TO BEAR ON SOIL OR ENGINEERED FILL PREPARED IN ACCORDANCE WITH GLYNN GEOTECHNICAL INVESTIGATION REPORT GGE99-1114, DATED NOVEMBER 29, 1999.

DESIGN CRITERIA:

CODES, SPECIFICATIONS, AND DESIGN LOADS SHALL BE IN ACCORDANCE WITH THAT SPECIFIED IN SDD R09.

CONCRETE & REINFORCING STEEL NOTES:

1. CONSTRUCTION SHALL CONFORM TO THE APPLICABLE REQUIREMENTS IN BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318-99) AND SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS (ACI 301) AND IN ADDITION SHALL COMPLY WITH ALL LAWS AND ORDINANCES. WHERE CONFLICTING REQUIREMENTS OCCUR, THE MORE STRINGENT REQUIREMENTS SHALL APPLY.
2. CONCRETE SHALL DEVELOP A MINIMUM 28 DAY COMPRESSIVE STRENGTH AS FOLLOWS:

ALL STRUCTURAL CONCRETE	4000 PSI
MUD MAT CONCRETE	2000 PSI

3. MINIMUM UNIT WEIGHT OF STRUCTURAL CONCRETE SHALL BE 138 lb/cuft.
4. MINIMUM CONCRETE COVER AT REINFORCING STEEL SHALL BE AS FOLLOWS:

CAST AGAINST EARTH	3"
EXPOSED TO EARTH OR WEATHER	2"
COLUMNS AND BEAMS	2"
SLABS AND WALLS NOT EXPOSED TO WEATHER	1"

5. REINFORCING STEEL SHALL BE GRADE 60, DEFORMED BARS, CONFORMING TO ASTM A615.
6. DETAILING, FABRICATION AND PLACING OF REINFORCING STEEL SHALL CONFORM TO ACI 315, MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES.
7. PLACING DIMENSIONS ARE GIVEN TO CENTER OF BARS UNLESS NOTED OTHERWISE.
8. BAR SPLICES SHALL BE CLASS "B" TENSION LAP SPLICES IN ACCORDANCE WITH ACI 318.
9. SPLICE TOP BARS AT CENTER OF SPANS IF REQUIRED.
10. SHIFT OR BEND BARS TO CLEAR ANCHOR BOLTS, DRAINS, PIPE SLEEVES AND EMBEDDED PARTS.
11. REINFORCING BAR HOOKS SHALL BE ACI STANDARD 90 DEGREE HOOKS IN ACCORDANCE WITH ACI 318.
12. CONSTRUCTION JOINTS IN SLABS SHALL BE LOCATED IN THE MID THIRD OF THE SPAN IF REQUIRED.
13. ANY VERTICAL CONSTRUCTION JOINT MUST BE MADE WITH FORMED KEY AND CONTINUOUS REINFORCING AS SHOWN ON THE DRAWINGS.
14. HORIZONTAL CONSTRUCTION JOINT SHALL BE ROUGHENED CONCRETE PREPARED IN ACCORDANCE WITH ACI 318 REQUIREMENTS.
15. ALL DRAIN PIPES, ELECTRICAL CONDUITS AND EMBEDDED ITEMS SHALL BE IN POSITION BEFORE CONCRETE IS PLACED.
16. FORM ALL EXPOSED EXTERNAL CORNERS OF CONCRETE WITH 3/4" x 45 DEGREE CHAMFER.
17. EXPOSED FLOOR SLAB SURFACES SHALL BE TROWEL FINISHED UNLESS NOTED OTHERWISE.

STEEL NOTES:

1. DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE AISC "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, ALLOWABLE STRESS DESIGN AND PLASTIC DESIGN", NINTH EDITION.
2. STRUCTURAL STEEL SHALL BE ASTM A36 (FY=36 KSI) UNLESS NOTED OTHERWISE.
3. STAINLESS STEEL BARS AND SHAPES SHALL BE ASTM A-276 TYPE 304 STEEL. STAINLESS STEEL PLATES SHALL BE ASTM A-240 TYPE 304/304L STEEL.
4. SHOP CONNECTIONS SHALL BE MADE BY WELDING.
5. WELDING SHALL CONFORM TO AISC, AWS D1.1 "STRUCTURAL WELDING CODE", AND AWS D1.6 "STRUCTURAL WELDING CODE - STAINLESS STEEL".
6. FIELD CONNECTIONS SHALL BE MADE WITH 3/4" DIAMETER HIGH STRENGTH BOLTS CONFORMING TO ASTM A325. CONNECTIONS SHALL BE DESIGNED AS BEARING TYPE WITH THREADS IN THE SHEAR PLANE UNLESS NOTED OTHERWISE. ALL HIGH STRENGTH BOLTS SHALL BE FULLY PRETENSIONED.
7. HARDENED WASHERS SHALL BE INSTALLED OVER SHORT SLOTTED OR OVERSIZED HOLES OCCURRING IN THE OUTER PLY OF THE CONNECTION. A PLATE WASHER OF AT LEAST 5/16" THICKNESS WITH STANDARD HOLES SHALL BE INSTALLED OVER LONG SLOTTED HOLES OCCURRING IN AN OUTER PLY OF THE CONNECTION.
8. CONTACT SURFACES AT SPLICE AND BEARING ENDS OF COMPRESSION MEMBERS, AND COLUMN BASES AND BASE PLATES SHALL BE FINISHED IN ACCORDANCE WITH AISC "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS" CHAPTER M.
9. NO OPENINGS SHALL BE CUT IN STRUCTURAL MEMBERS UNLESS NOTED OTHERWISE.
10. WELDS FOR EXTERIOR STEEL (EXPOSED TO WEATHER) SHALL BE CONTINUOUS ON TOP AND SIDES TO SEAL CONTACT SURFACES.
11. ANCHOR BOLTS SHALL BE ASTM A307 BOLTS OR SAE J429 GRADE 1 BOLTS UNLESS NOTED OTHERWISE ON THE DRAWING.

ABBREVIATIONS:

ADDL ..... ADDITIONAL	JT ..... JOINT
ALTN..... ALTERNATE	LG .....LENGTH
AB ..... ANCHOR BOLT	LL ..... LIVE LOAD
ARGMT .....ARRANGEMENT	LP.....LOW POINT
@ ..... AT	MATL ..... MATERIAL
B/ ..... BOTTOM OF	MAX ..... MAXIMUM
BB ..... BACK TO BACK	MECH ..... MECHANICAL
BOT ..... BOTTOM	MIN .....MINIMUM
B.O.S. ..... BOTTOM OF STEEL	MISC .....MISCELLANEOUS
BLDG..... BUILDING	NF .....NEAR FACE
BRKT .....BRACKET	NS .....NEAR SIDE
℄ .....CENTER LINE	NTS ..... NOT TO SCALE
CHK'D R .....CHECKERED PLATE	OC ..... ON CENTERS
CLR ..... CLEAR	OPNG ..... OPENING
COL..... COLUMN	OPP ..... OPPOSITE
CONC ..... CONCRETE	OF ..... OUTSIDE FACE
CONN ..... CONNECTION	ℙ ..... PLATE
C.J. ..... CONSTRUCTION JOINT	PJF ..... PREMOLDED JOINT FILLER
CONT.....CONTINUED	PJTN ..... PROJECTION
DET .....DETAIL	R ..... RADIUS OR RISER
DL .....DEAD LOAD	REF ..... REFERENCE
DIA OR ℘...DIAMETER	REINF ..... REINFORCING
DIM .....DIMENSION	REQD. ..... REQUIRED
DN .....DOWN	REV ..... REVISION
DO .....DITTO	SCHED .....SCHEDULE
DWG .....DRAWING	SECT ..... SECTION
DWL ..... DOWEL	SH ..... SHEET
EA ..... EACH	SP ..... SPACE
EF ..... EACH FACE	SQ ..... SQUARE
EL ..... ELEVATION	SST ..... STAINLESS STEEL
ELEC..... ELECTRICAL	STD ..... STANDARD
EMBMT..... EMBEDMENT	STIF ..... STIFFENER
EW..... EACH WAY	STRL ..... STRUCTURAL
EQL .....EQUAL	SYMM .....SYMMETRICAL
EQPT..... EQUIPMENT	T/ ..... TOP OF
EXPJT..... EXPANSION JOINT	TB ..... TOP AND BOTTOM
FF..... FACE TO FACE	T.O.S ..... TOP OF STEEL
FS .....FAR SIDE	THD ..... THREAD
FIN .....FINISHED	THK ..... THICK
FL .....FLOOR	THRU..... THROUGH
FDN .....FOUNDATION	TYP ..... TYPICAL
GA .....GAGE	U.N. ..... UNLESS NOTED
GALV ..... GALVANIZED	U.N.O. ..... UNLESS NOTED OTHERWISE
GR BM .....GRADE BEAM	VERT .....VERTICAL
HNDRL .....HAND RAIL	WP ..... WORKING POINT
HORIZ .....HORIZONTAL	W.S. ..... WATERSTOP
HPT .....HIGH POINT	

AS BUILT

REV	DESCRIPTION	APVD
1	INCORPORATED AB #200-COMMENTS AND DOE-0972	CCG
0	ER 25701 10/21/2003	

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT _____ DATE _____

UNLESS OTHERWISE SPECIFIED

VENDOR: BUTLER CONSTRUCTION CO. OF WNY, INC. RAYTHEON NUCLEAR, INC.
FOR
WVNSCO
West Valley Nuclear Services Company

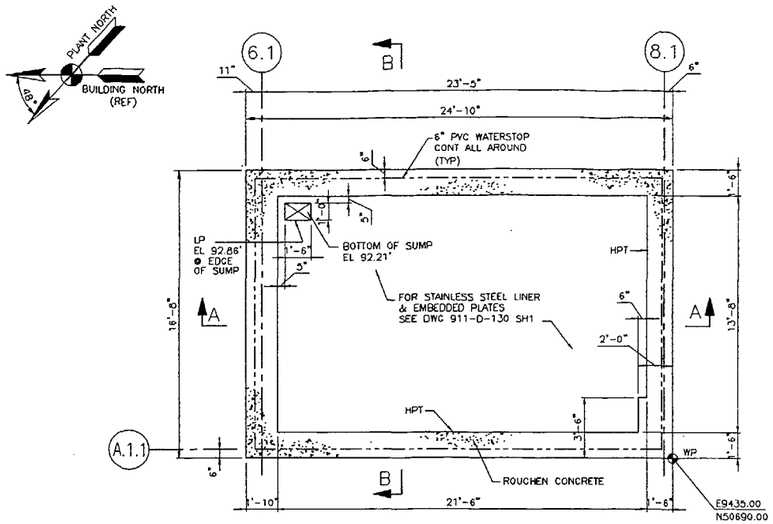
DRAFTER FY	DATE 09/20/00	
CHECKER KW	DATE 09/20/00	
ENGINEER WC	DATE 09/20/00	

REMOTE HANDLED WASTE FACILITY
CIVIL/STRUCTURAL GENERAL NOTES

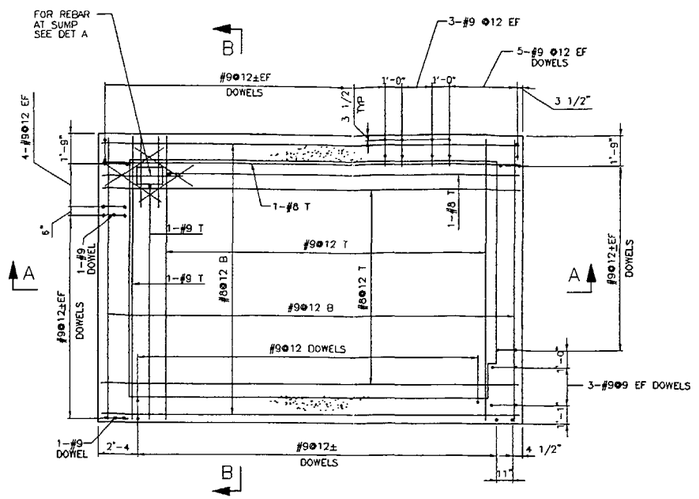
FILE NAME 134524
PLOT SCALE 1=48.00
D SPEC # 0000
NEXT ASSEMBLY -
DATABASE LINKED DRAWING
SEE ENGINEERING RELEASE FORM (ER) FOR DRAWING APPROVAL SIGNATURES.
DWG SIZE D
SCALE NONE
WEIGHT -
A/E DWG # -
A/E CONTRACT #
DWG # 911-D-100
REV 0
SHEET 1 OF 1
DWG IDENT #

10/19/04 2:09:51 PM REPRO

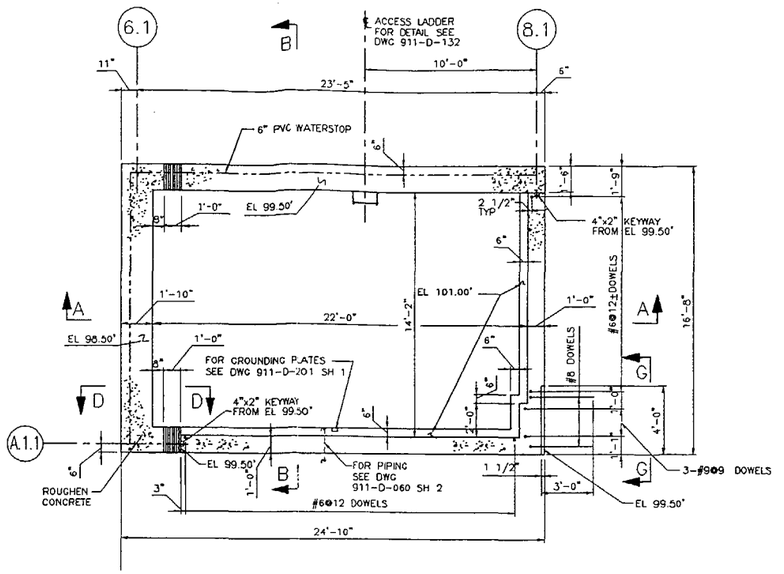
CAD DRAWING-DO NOT REVISE THIS ORIGINAL



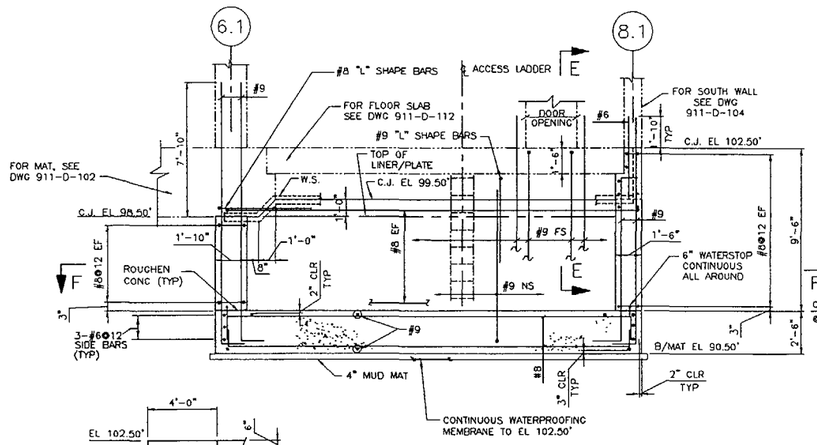
1 PLAN AT HPT EL 93.00' (U.N.)



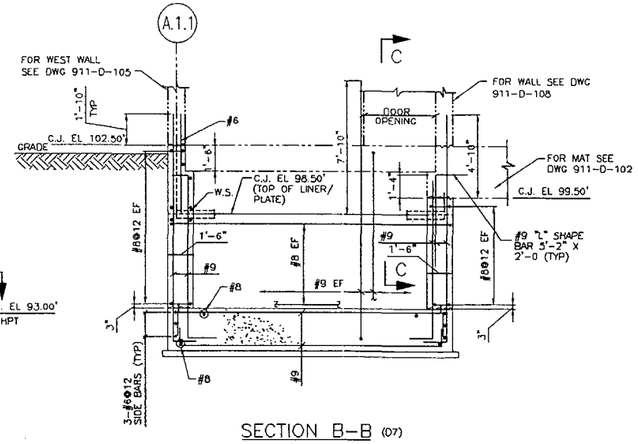
PLAN AT HPT EL 93.00'



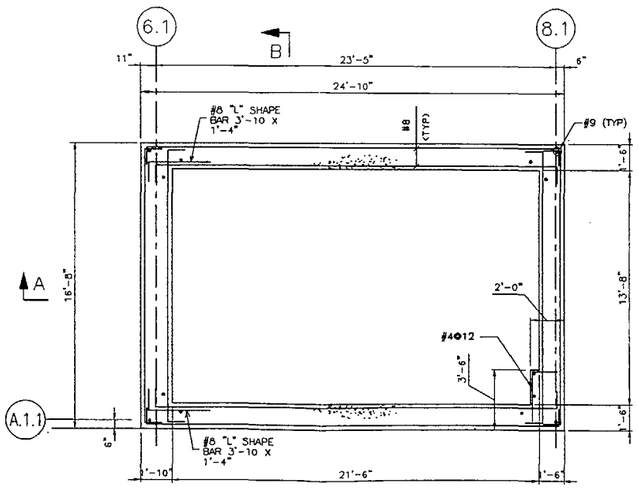
PLAN AT EL 102.50'(U.N.)



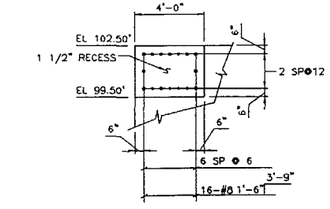
SECTION A–A (D8)



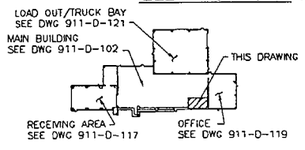
SECTION B–B (D7)



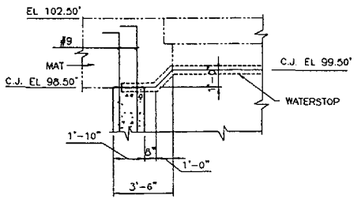
B SECTION F–F (B8) 1



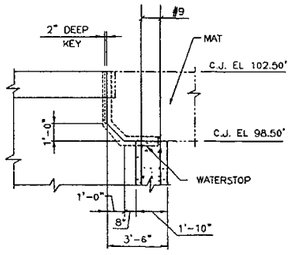
ELEVATION G–G (C1)



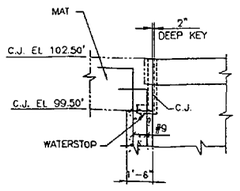
KEY PLAN
NTS



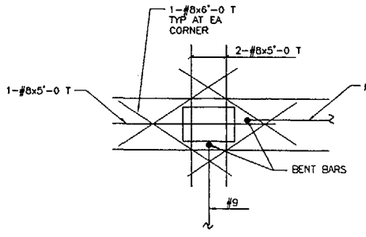
SECTION C–C (C4)



SECTION D–D (C3)



SECTION E–E (C7)



DETAIL A (D5)
SCALE:1/2"=1'-0"

NOTES:

1. FOR GENERAL NOTES AND ABBREVIATIONS SEE DWG 911-D-100.
2. WORK THIS DRAWING WITH DRAWING 911-D-130 SH 1.
3. ALL DIMENSIONS & ELEVATIONS ARE MEASURED TO THE FACE OF CONCRETE EXCLUDING STAINLESS STEEL LINER UNLESS NOTED OTHERWISE.
4. FOR GROUNDING SEE DWG 911-D-201 SH 1.
5. FOR MECHANICAL PIPING SEE DWG 911-D-060 SH 2.
6. WATERSTOP SHALL BE GREENSTREAK DUMBBELL No.746 OR EQUAL.
7. WATERPROOFING MEMBRANE SHALL BE CETCO VOLTEX BENTONITE GEOTEXTILE WATERPROOFING OR EQUAL.

REFERENCE DRAWINGS:

CIVIL/STRUCTURAL GENERAL NOTES	911-D-100
MAT AT ELEVATION 102.50'	911-D-102 SH 1
SOUTH WALL	911-D-104
WEST WALL	911-D-105 SH 1
MISCELLANEOUS WALLS	911-D-108 SH 1
FLOOR DETAILS	911-D-112
STAINLESS STEEL LINER DETAILS	911-D-130 SH 1
PLATFORMS & LADDERS	911-D-132
PIPING ARRANGEMENT AT TANK VAULT (MECH)	911-D-060 SH 2
ELECTRICAL MAIN GROUNDING PLAN (ELEC)	911-D-201 SH 1

REVISIONS

REV	DESCRIPTION	APVD	
1	INCORPORATED PCAL-0011, PCN-002 & PCN-003	CCG	HAB
0	ER 25701 10/2/2003	CCG	HAB
1	ECN 25852 01/30/2004	HAB	

AS BUILT

10/19/04 1:42:34 PM REPRO

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT _____ DATE _____

UNLESS OTHERWISE SPECIFIED

DRAFTER FY	DATE	09/20/00
CHECKER KTV	DATE	09/20/00
ENGINEER WC	DATE	09/20/00

FILE NAME 911-D-101 REV 1
PLOT SCALE 1=48.00
D SPEC # 0000
NEXT ASSEMBLY
DATABASE LINKED DRAWING
SEE ENGINEERING RELEASE FORM (ER) FOR DRAWING APPROVAL SIGNATURES.

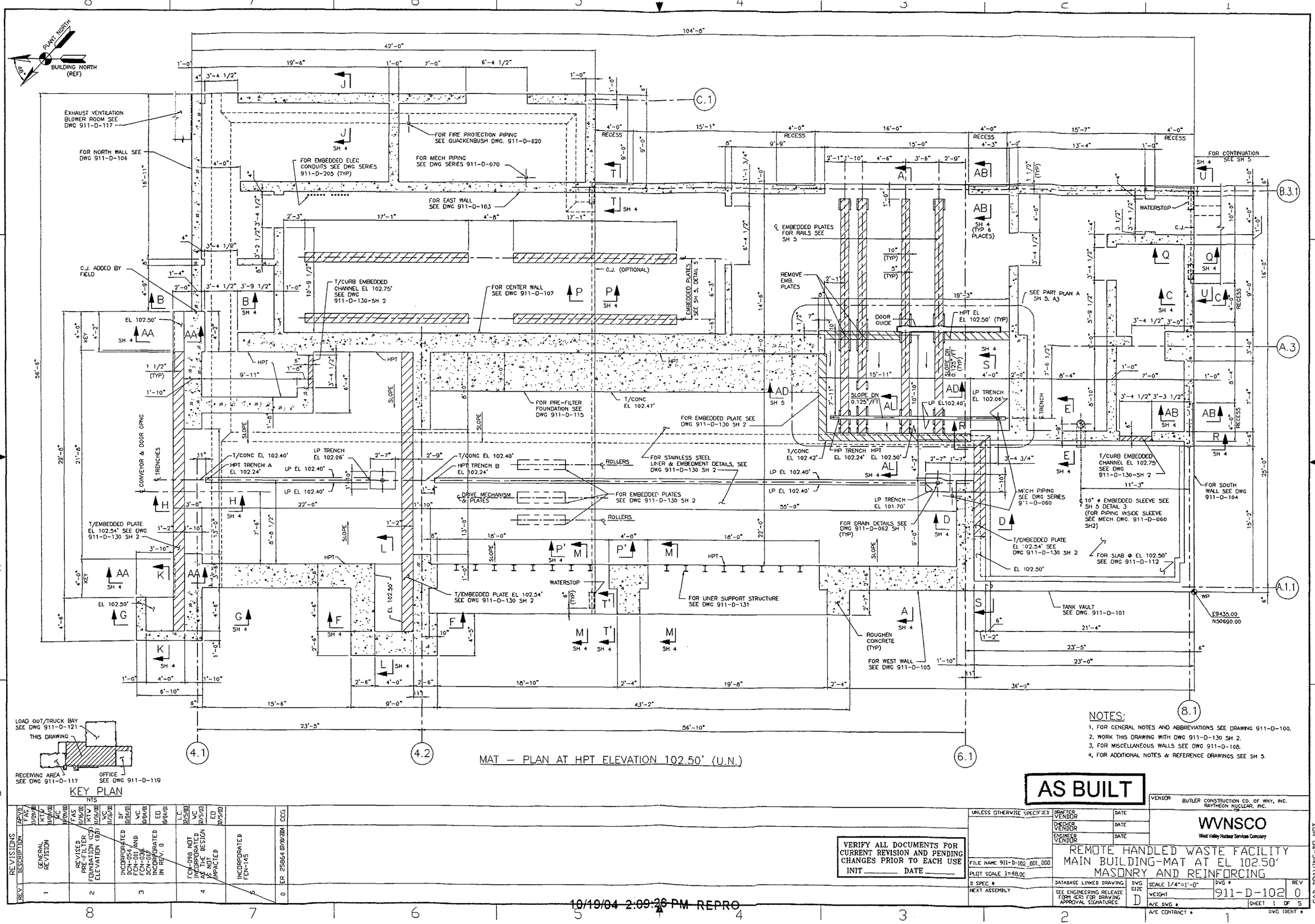
VENDOR: BUTLER CONSTRUCTION CO. OF WNY, INC. RAYTHEON NUCLEAR, INC.
FOR

WVNSCO
West Valley Nuclear Services Company

REMOTE HANDLED WASTE FACILITY
MAIN BUILDING-TANK VAULT
MASONRY AND REINFORCING

DWG SIZE: D
SCALE 1/4"=1'-0" U.N.
WEIGHT
A/E DWG #
A/E CONTRACT #
DWG # 911-D-101
REV 1
SHEET 1 OF 1
DWG IDENT #

CAD DRAWING-DO NOT REVISE THIS ORIGINAL



MAT — PLAN AT HPT ELEVATION 102.50' (U.N.)

NOTES:

1. FOR GENERAL NOTES AND ABBREVIATIONS SEE DRAWING 911-D-100.
2. WORK THIS DRAWING WITH DWG 911-D-130 SH 2.
3. FOR MISCELLANEOUS WALLS SEE DWG 911-D-108.
4. FOR ADDITIONAL NOTES & REFERENCE DRAWINGS SEE SH 5.

REV	DESCRIPTION	APVD	
1	GENERAL REVISION	FAS / 11/09/00	KTV 11/08/00 W/C 11/09/00
2	REVISED PRE-FILTER FOUNDATION (CG) ELEVATION (BB)	FAS 11/16/00	KTV 11/16/00 W/C 11/16/00
3	INCORPORATED DCN-054, FCN-011 AND FCN-036 NOT INCORPORATED IN REV. 0	DF 10/04/01	W/C 10/04/01 ED 10/04/01
4	FCN-098 NOT INCORPORATED AS THE DESIGN IS NOT IMPACTED	L.E. 12/5/03	W/C 12/5/03 ED 12/5/03
5	INCORPORATED FCN-145		CCG
0	ER 25864 02/19/2004		

AS BUILT

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT _____ DATE _____

UNLESS OTHERWISE SPECIFIED

DRAFTER VENDOR	DATE	
CHECKER VENDOR	DATE	
ENGINEER VENDOR	DATE	

VENDOR BUTLER CONSTRUCTION CO. OF WNY, INC. RAYTHEON NUCLEAR, INC.

for WVNSCO
West Valley Nuclear Services Company

REMOTE HANDLED WASTE FACILITY
MAIN BUILDING-MAT AT EL 102.50'
MASONRY AND REINFORCING

FILE NAME 911-D-102_001_000
PLOT SCALE 1=48.00

D SPEC #
NEXT ASSEMBLY

DATABASE LINKED DRAWING
SEE ENGINEERING RELEASE FORM (ER) FOR DRAWING APPROVAL SIGNATURES.

DWG SIZE D

SCALE 1/4"=1'-0"
WEIGHT
A/E DWG #
A/E CONTRACT #

DWG # 911-D-102
REV 0
SHEET 1 OF 5
DWG IDENT #

10/19/04 2:09:26 PM REPRO

CAD DRAWING-DO NOT REVISE THIS ORIGINAL

NOTE:

FOR NOTES AND OTHER INFORMATION SEE SHEET 1.

AS BUILT

REV	DESCRIPTION		
0	ER 25701 06/21/2003		CCG
1	REVISED PRE-FILTER FOUNDATION (C5)	KTW	FAS
2	INCORPORATED FCN-008 & FCN-044		WC

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT ______ DATE ______

UNLESS OTHERWISE SPECIFIED	
FILE NAME	134526
PLOT SCALE	1=48.00
D SPEC #	—
NEXT ASSEMBLY	—
DRAFTER	FAS — DATE 11/09/00
CHECKER	K.T.WU — DATE 11/09/00
ENGINEER	W.CHAO — DATE 11/09/00
VENDOR	BUTLER CONSTRUCTION CO. OF WNY, INC. RAYTHEON NUCLEAR, INC. FOR

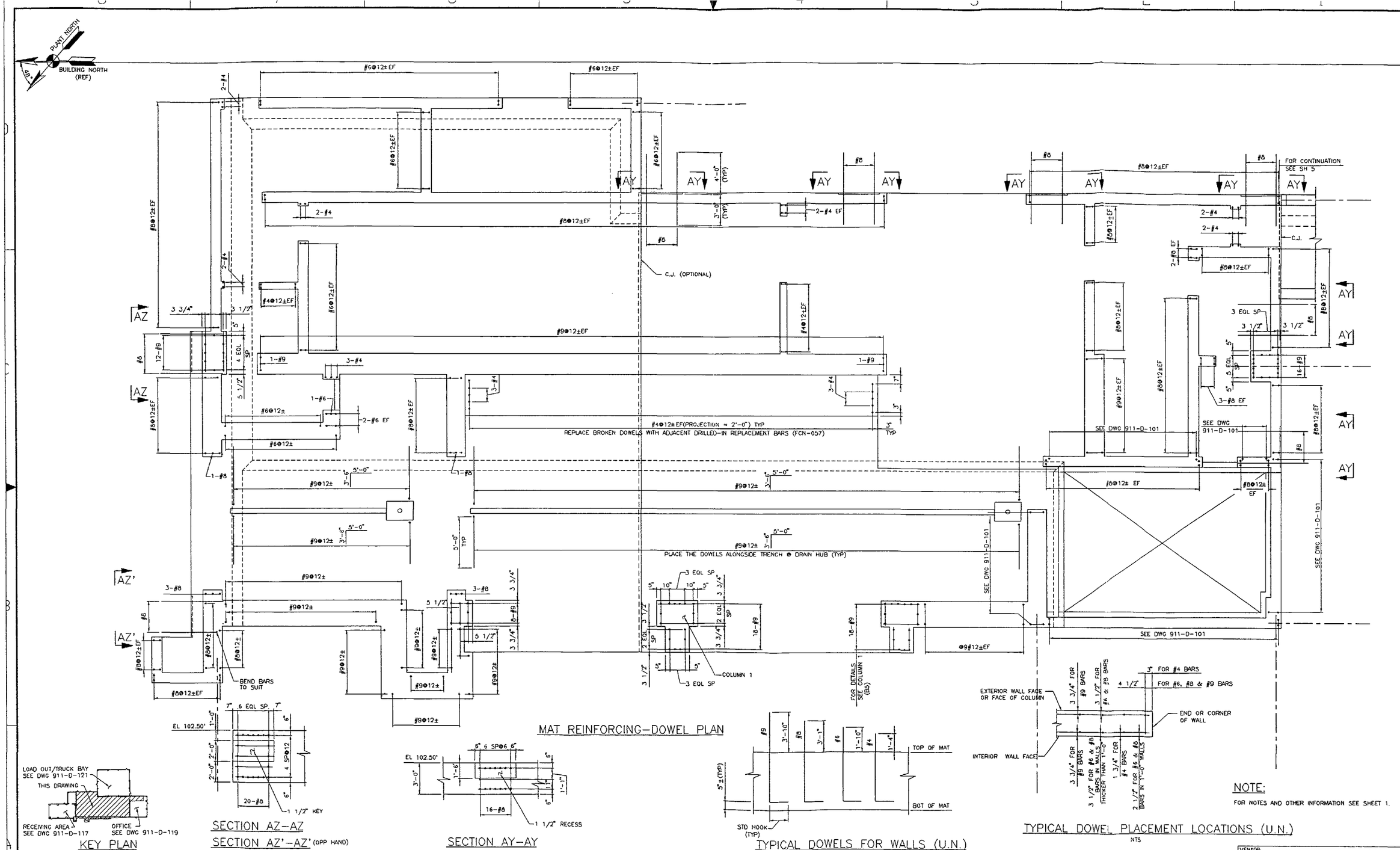
WVNSCO
West Valley Nuclear Services Company

REMOTE HANDLED WASTE FACILITY
MAIN BUILDING-MAT AT EL 102.50'
MASONRY AND REINFORCING

DATABASE LINKED DRAWING	
SEE ENGINEERING RELEASE FORM (ER) FOR DRAWING APPROVAL SIGNATURES.	
DWG SIZE	D
SCALE	1/4"=1'-0" U.N.
WEIGHT	—
A/E DWG #	—
A/E CONTRACT #	
DWG #	911-D-102
REV	0
SHEET	2 OF 5
DWG IDENT #	

CAD DRAWING-DO NOT REVISE THIS ORIGINAL

10/19/04 2:08:54 PM REPRO



MAT REINFORCING-DOWEL PLAN

KEY PLAN
NTS

SECTION AZ-AZ
SECTION AZ'-AZ' (OPP HAND)

SECTION AY-AY

TYPICAL DOWELS FOR WALLS (U.N.)
NTS

TYPICAL DOWEL PLACEMENT LOCATIONS (U.N.)
NTS

NOTE:
FOR NOTES AND OTHER INFORMATION SEE SHEET 1.

REV	DESCRIPTION	APVD	DATE
1	REVISED PRE-FILTER FOUNDATION (C5)	FAS 11/09/00 KTW 11/09/00 VC 11/09/00	
2	INCORPORATED FCN NO. 011, 013 & 057		
0	ER 25701 08/21/2003	CCG	

REVISIONS

AS BUILT

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT _____ DATE _____

UNLESS OTHERWISE SPECIFIED
DRAFTER FAS DATE 11/09/00
CHECKER K.T.WU DATE 11/09/00
ENGINEER W.CHAO DATE 11/09/00

VENDOR: BUTLER CONSTRUCTION CO. OF WNY, INC. RAYTHEON NUCLEAR, INC.

WVNSCO
West Valley Nuclear Services Company

REMOTE HANDLED WASTE FACILITY
MAIN BUILDING-MAT AT EL 102.50'
MASONRY AND REINFORCING

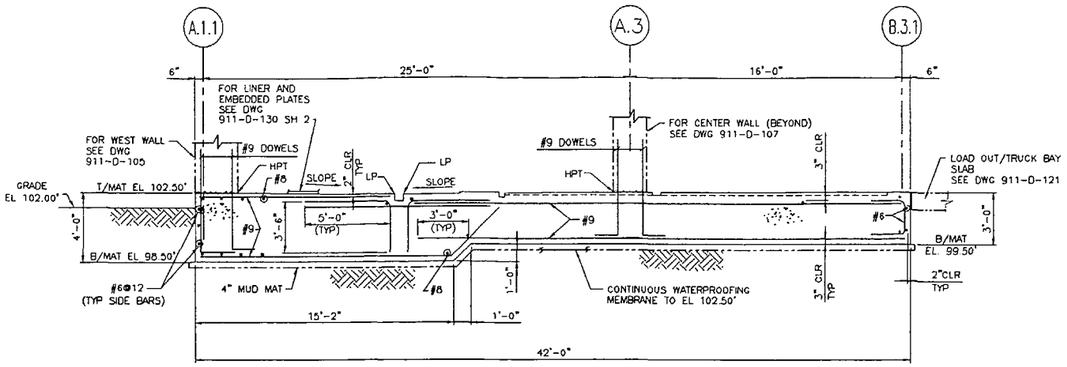
FILE NAME 134527
PLOT SCALE 1=48.00
D SPEC # —
NEXT ASSEMBLY —

DATABASE LINKED DRAWING
SEE ENGINEERING RELEASE FORM (ER) FOR DRAWING APPROVAL SIGNATURES.

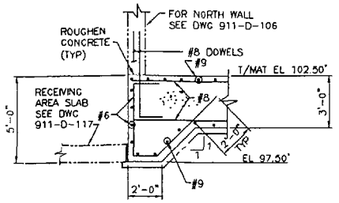
DWG SIZE D
SCALE 1/4"=1'-0"U.N.
WEIGHT —
A/E DWG # —
A/E CONTRACT #
DWG # 911-D-102
REV 0
SHEET 3 OF 5
DWG IDENT #

CAD DRAWING-DO NOT REVISE THIS ORIGINAL

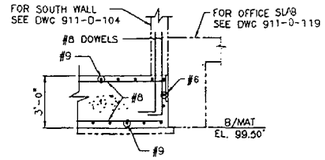
10/19/04 2:08:44 PM REPRO



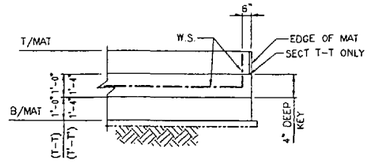
SECTION A–A (SH 1,B3)



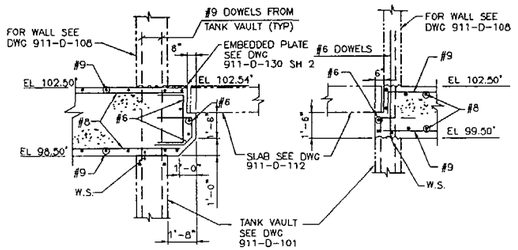
SECTION B–B (SH 1,C7)



SECTION C–C (SH 1,C1)

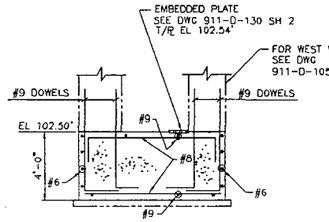


SECTION T–T (SH 1,D5) (AS SHOWN)
SECTION T'–T' (SH 1,B5) (OPP HAND)

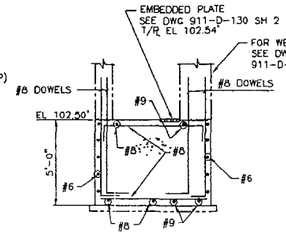


SECTION D–D (SH 1,B3)

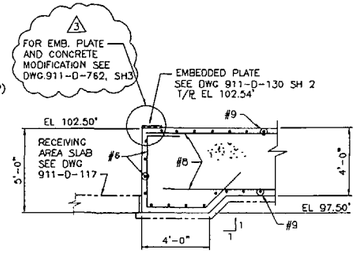
SECTION E–E (SH 1,B2)



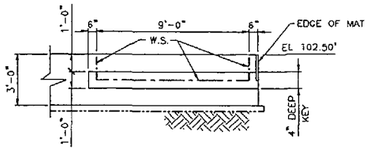
SECTION F–F (SH 1,B6)



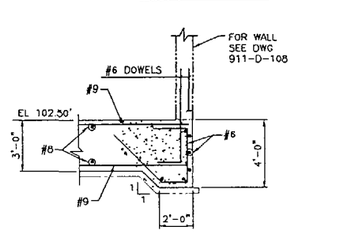
SECTION G–G (SH 1,B7)



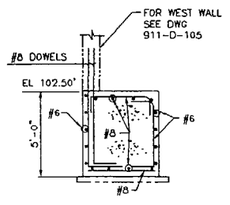
SECTION H–H (SH 1,B7)



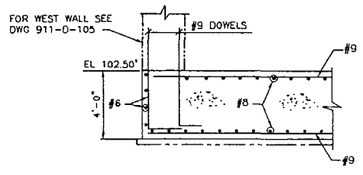
SECTION U–U (SH 1,D1)



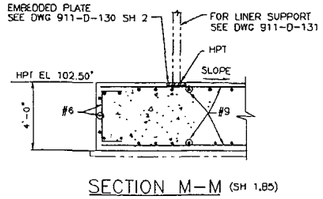
SECTION J–J (SH 1,D6)



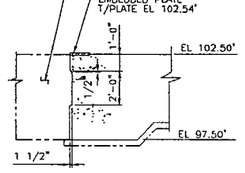
SECTION K–K (SH 1,B8)



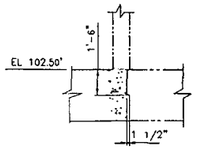
SECTION L–L (SH 1,B6)



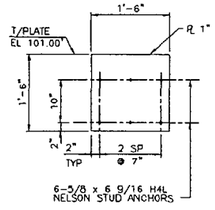
SECTION M–M (SH 1,B5)



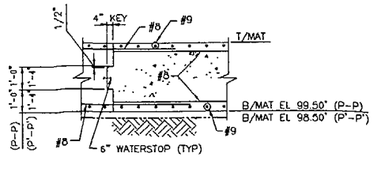
SECTION AA–AA (SH 1,B8, C8)



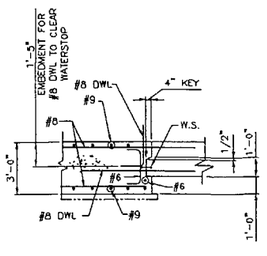
SECTION AB–AB (SH 1,C1, D2)



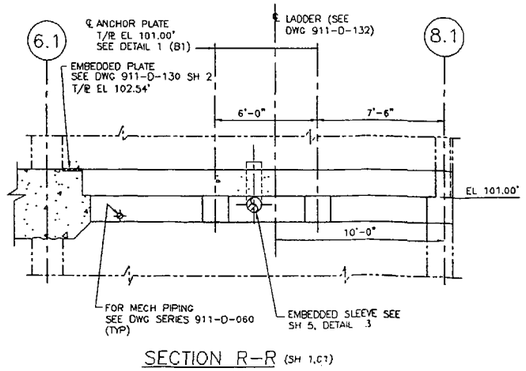
DETAIL 1 (5 REQD) (A5,A3)
NTS



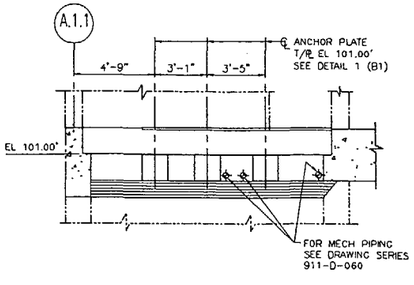
SECTION P–P (SH 1,C5)
SECTION P'–P' (SH 1,B5)



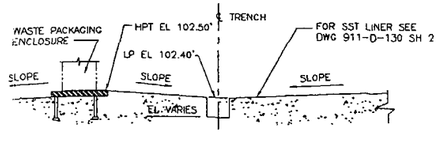
SECTION Q–Q (SH 1,C1)



SECTION R–R (SH 1,C1)



SECTION S–S (SH 1,C2)



SECTION AL–AL (SH 1, B3)
NTS

NOTE:
FOR NOTES AND OTHER INFORMATION SEE SHEET 1.

AS BUILT

REV	DESCRIPTION	
1	GENERAL REVISION	AEVD TAS 11/09/00 PKV 11/09/00 VJC 11/09/00
2	REVISED SECT G-G (A6) ELEVATION (B1)	AEVD TAS 11/16/00 PKV 11/16/00 VJC 11/16/00
3	ADD NOTE TO SECTH-H	CCG
0	ER 25811	12/17/2003

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT _____ DATE _____

UNLESS OTHERWISE SPECIFIED
DRAFTER VENDOR — DATE
DESIGN VENDOR — DATE
ENGINEER VENDOR — DATE

VENDOR: BUTLER CONSTRUCTION CO. OF WNY, INC. RAYTHEON NUCLEAR, INC.

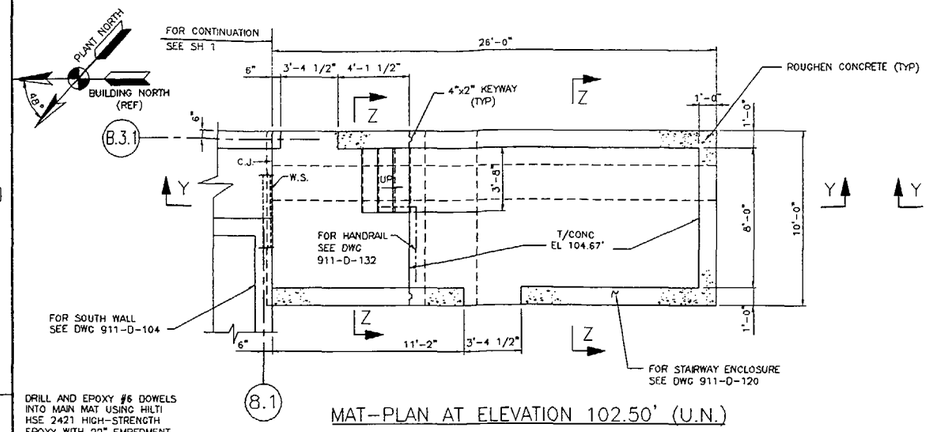
WVNSCO
West Valley Nuclear Services Company

REMOTE HANDLED WASTE FACILITY
MAIN BUILDING-MAT EL 102.50'
MASONRY AND REINFORCING

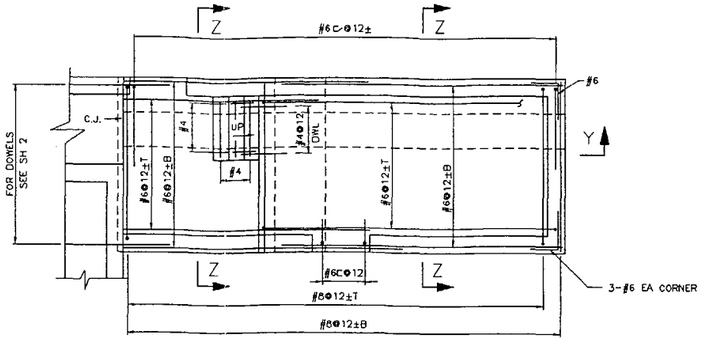
FILE NAME 911-D-102_004_000
PLOT SCALE 1=48.00
D SPEC #
NEXT ASSEMBLY
DATABASE LINKED DRAWING
SEE ENGINEERING RELEASE FORM (ER) FOR DRAWING APPROVAL SIGNATURES.
DWG SIZE D
SCALE 1/4"=1'-0" U.N.
WEIGHT
A/E DWG #
A/E CONTRACT #
DWG # 911-D-102
REV 0
SHEET 4 OF 5
DWG IDENT #

CAD DRAWING-DO NOT REVISE THIS ORIGINAL

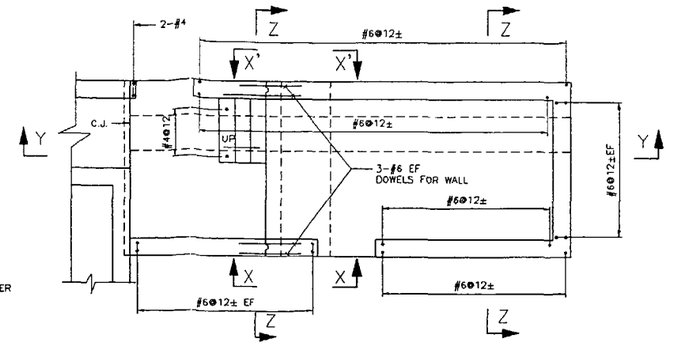
10/19/04 2:08:23 PM REPRO



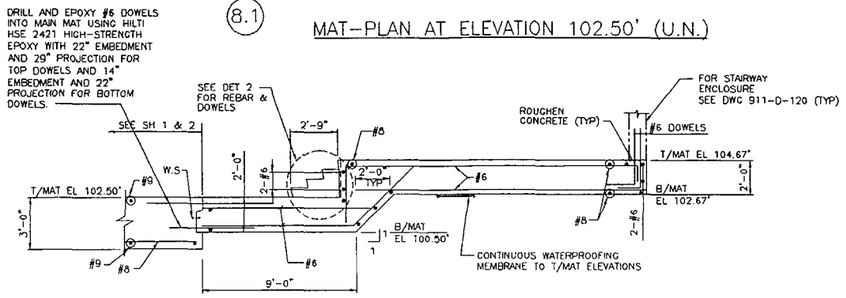
MAT-PLAN AT ELEVATION 102.50' (U.N.)



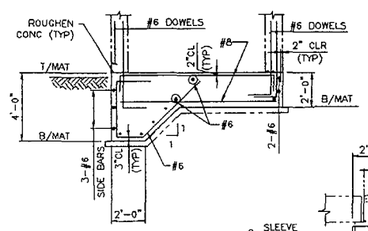
MAT REINFORCING- PLAN



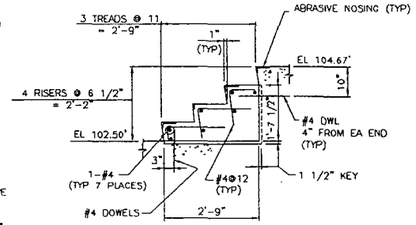
MAT REINFORCING-DOWEL PLAN



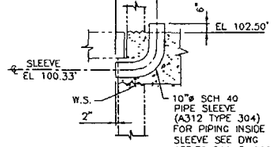
SECTION Y-Y (D8)



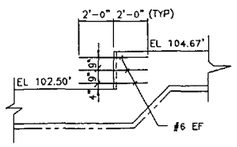
SECTION Z-Z (D6, D7)



DETAIL 2 (C6)
SCALE: 1/2"=1'-0

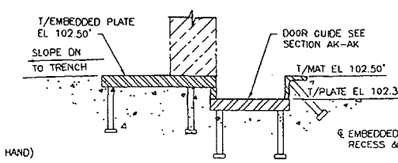


DETAIL 3 (SH 1,B2)
NTS

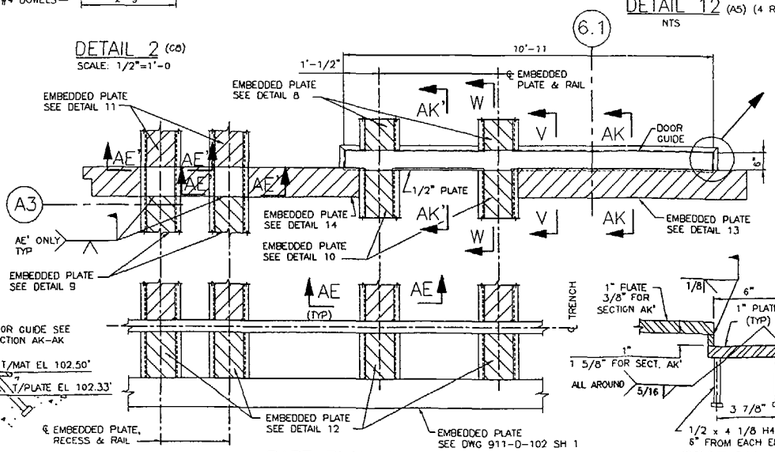


SECTION X-X (D2)

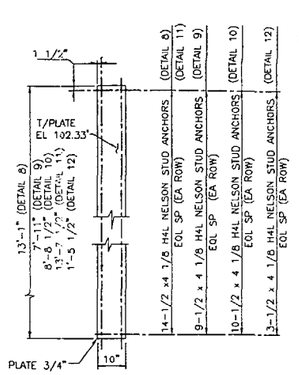
SECTION X'-X' (D2) (OPP HAND)



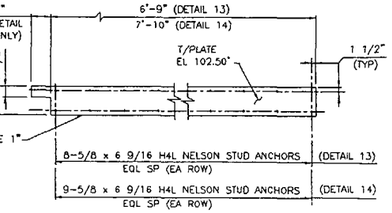
SECTION V-V
NTS



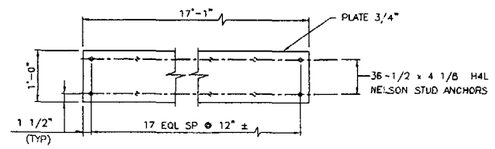
PART PLAN A (SH 1, C3)
NTS



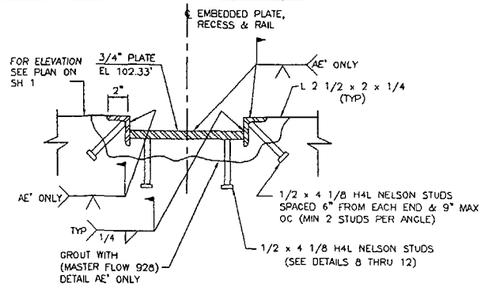
DETAIL 8 (A5) (2 REQD)
DETAIL 9 (A5) (2 REQD)
DETAIL 10 (A5) (2 REQD)
DETAIL 11 (A5) (2 REQD)
DETAIL 12 (A5) (4 REQD)
NTS



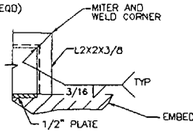
DETAIL 13 AS SHOWN (1 REQD)
DETAIL 14 AS SHOWN & NOTED (1 REQD)
NTS

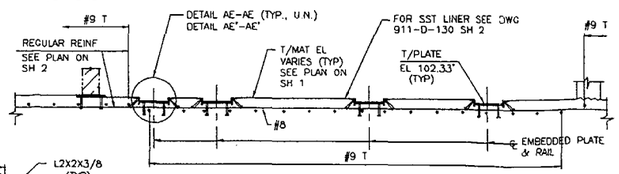


DETAIL 5 (SH 1,C4) (4 REQD)
EMBEDDED PLATE FOR AIR CLEANING UNIT
NTS

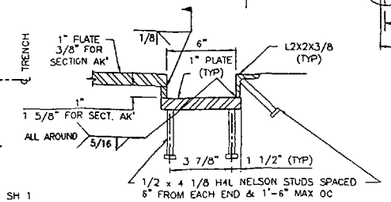


DETAIL AE-AE (SHOWN)
DETAIL AE'-AE' (NOTED)
NTS

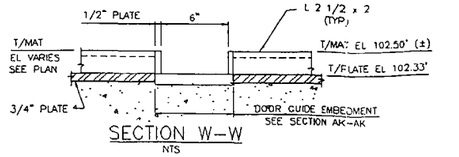




SECTION AD-AD (SH 1, C4)
NTS



SECTION AK-AK (AS SHOWN)
SECTION AK'-AK' (AS NOTED)
NTS



SECTION W-W
NTS

NOTES:

1. FOR NOTES AND OTHER INFORMATION SEE SHEET 1.
2. ALL DIMENSIONS & ELEVATIONS ARE MEASURED TO THE FACE OF CONCRETE EXCLUDING STAINLESS STEEL LINER UNLESS NOTED OTHERWISE.
3. ALL EMBEDDED PLATES TO BE LEVEL WITHIN +/- 1/8" OVER ITS ENTIRE LENGTH.
4. FOR GROUNDING SEE DWG 911-D-201 SH 1.
5. FOR EMBEDDED PIPING SEE DWG SERIES 911-D-060 AND 070.
6. FOR FLOOR DRAIN DETAILS SEE DWG 911-D-062 SH 1.
7. WATERSTOP SHALL BE GREENSTREAK DUMBBELL No 746 OR EQUAL.
8. WATERPROOFING MEMBRANE SHALL BE CETCO VOLTEX BENTONITE GEOTEXTILE WATERPROOFING OR EQUAL.
9. AN OPTIONAL CONSTRUCTION JOINT AT EL 101.50' ± IS PERMISSIBLE PROVIDED THAT THE CONSTRUCTION JOINT IS PREPARED AS ROUGHENED CONCRETE IN ACCORDANCE WITH ACI CODE REQUIREMENTS.
10. FOR FIRE PROTECTION PIPING SEE DWG 911-D-620.
11. FOR FOR ELECTRICAL EMBEDDED CONDUIT SEE DWG 911-D-205.

REFERENCE DRAWINGS:

CIVIL/STRUCTURAL GENERAL NOTES	911-D-100
TANK VAULT	911-D-101
EAST WALL	911-D-103
SOUTH WALL	911-D-104
WEST WALL	911-D-105
NORTH WALL	911-D-106
CENTER WALL	911-D-107
MISCELLANEOUS WALLS	911-D-108
FLOOR DETAILS	911-D-112
STAINLESS STEEL LINER	911-D-130 SH 2
PIPING ARCH'T (MECH)	911-D-060
PIPING DRAIN DETAILS (MECH)	911-D-062 SH 1
ELECTRICAL MAIN GROUNDING PLAN (ELEC)	911-D-201 SH 1
ELECTRICAL UNDERGROUND CONDUIT LAYOUT	911-D-205
FIRE PROTECTION PIPING	911-D-620
WASTE COLLECTION AND TRANSFER SYSTEM	911-D-060
UTILITY PIPING SYSTEMS	911-D-070
SHIELD DOORS, PLAN, SETIONS & DETAILS	911-D-762 SH 3

REV	DESCRIPTION	APV'D	
1	INCORPORATED AR #200 COMMENTS, FCN-911-040, 044 & DCN-864.	D.F. 10/04/00	W.C. 10/04/00 E.O. 10/04/00
2	INCORPORATED FCN-445.		CCG
0	ER 25811		12/17/2003

AS BUILT

10/19/04 2:07:36 PM REPRO

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT _____ DATE _____

UNLESS OTHERWISE SPECIFIED

FILE NAME 911-D-102_005_000

PLOT SCALE 1=48.00

D SPEC #

NEXT ASSEMBLY

DRAFTER VENDOR — DATE
CHECKER VENDOR — DATE
ENGINEER VENDOR — DATE

DATABASE LINKED DRAWING

SEE ENGINEERING RELEASE FORM (ERF) FOR DRAWING APPROVAL SIGNATURES.

DWG SIZE: D

SCALE 1/4"=1'-0" U.N.

WEIGHT

A/E DWG #

A/E CONTRACT #

VENDOR: BUTLER CONSTRUCTION CO. OF WNY, INC. RAYTHEON NUCLEAR, INC.

FOR

WVNSCO
West Valley Nuclear Services Company

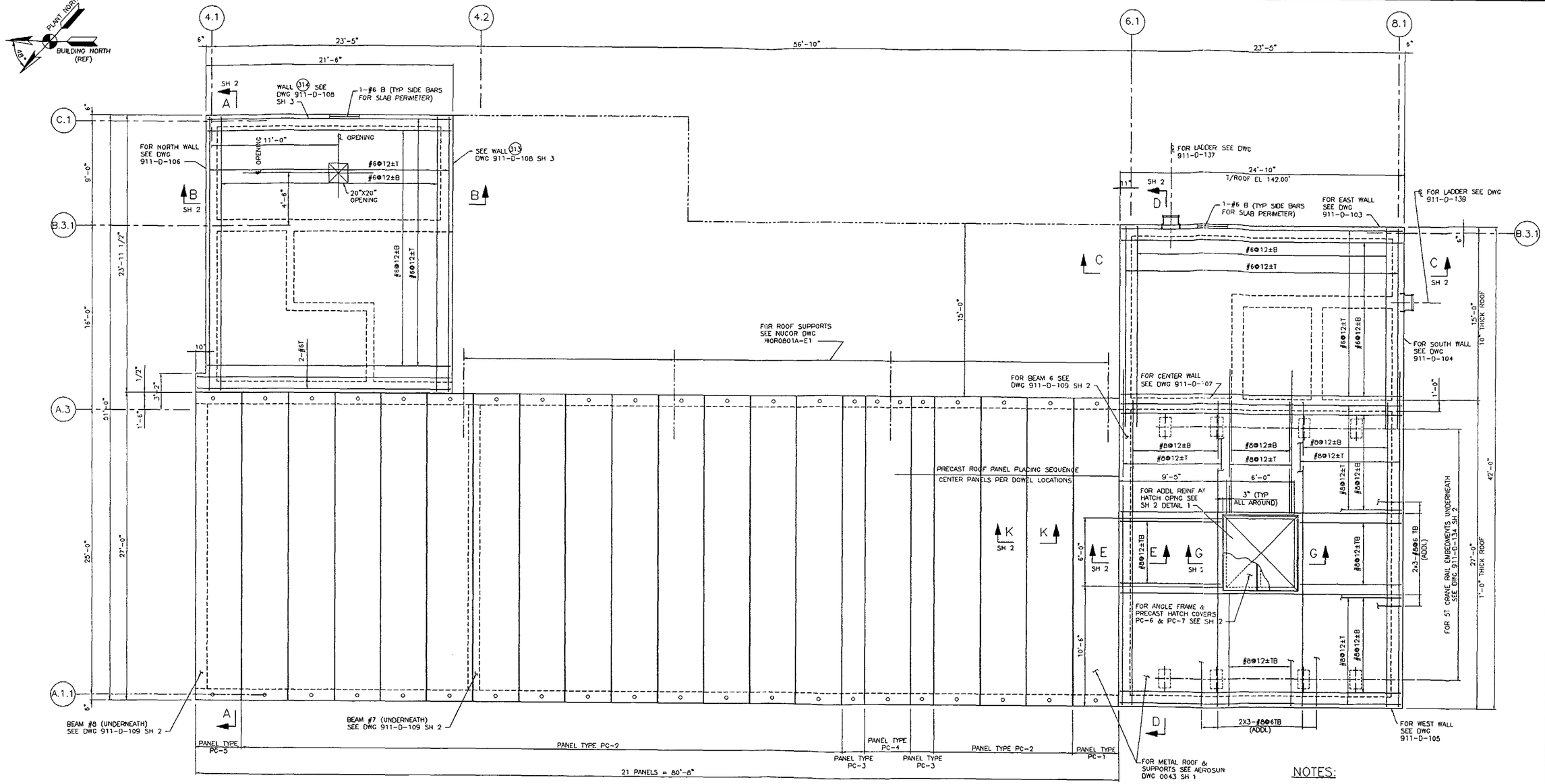
REMOTE HANDLED WASTE FACILITY
MAIN BUILDING-MAT AT EL 102.50'
MASONRY AND REINFORCING

DWG # 911-D-102 REV 0

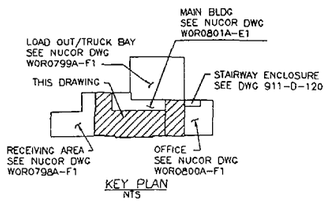
SHEET 5 OF 5

DWG IDENT #

CAD DRAWING-DO NOT REVISE THIS ORIGINAL



ROOF PLAN AT EL 139.50' U.N.O.



KEY PLAN
NTS

REFERENCE DRAWINGS:

CIVIL/STRUCTURAL GENERAL NOTES	911-D-100
EAST WALL	911-D-103
SOUTH WALL	911-D-104
WEST WALL	911-D-105
NORTH WALL	911-D-106
CENTER WALL	911-D-107
MISCELLANEOUS WALLS	911-D-108
CRANE SUPPORTS DETAILS	911-D-134 SH 2
MISCELLANEOUS PLATFORMS & LADDERS	911-D-137
OFFICE - PLATFORMS & LADDERS	911-D-139
ROOF BUILDING (NUCOR)	WOR0801A-E1
ROOF PLAN (AEROSUN)	0043 SH 1

NOTES:

1. FOR GENERAL NOTES AND ABBREVIATIONS SEE DWG 911-D-100.
2. FOR WALLS UNDER THE ROOF SEE DWG'S 911-D-103 THRU 911-D-108.
3. TOLERENCE FOR HATCH COVERS, PRECAST PANELS AND OPENINGS ARE:
   A. HATCH COVER DIMENSION TOLERANCE = +0", - 1/8"
   B. OPENING DIMENSION TOLERANCE + 1/8", -0"
   C. SURFACE FLATNESS WITHIN ± 1/8"
   D. SQUARENESS OF RECTANGULAR SURFACES AND OPENINGS. DIAGONALS EQUAL WITHIN 3/8"
   E. PENETRATION PERPENDICULARITY: ± 1/8" VARIATION BETWEEN TOP AND BOTTOM.

AS BUILT

REV	DESCRIPTION	APVD
1	INCORPORATED AR #01 COMMENTS AND DCN-042. FCN-051-NOT INCORPORATED AS ITEMS IS NOT IMPACTED.	CCG
0	ER 25826 08/02/2004	

REVISIONS

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT _____ DATE _____

UNLESS OTHERWISE SPECIFIED
FILE NAME 911-D-113_001_000
PLOT SCALE 1=48.01
D SPEC # 25826
NEXT ASSEMBLY

DRAFTER VENDOR — DATE
CHECKER VENDOR — DATE
ENGINEER VENDOR — DATE
DATABASE LINKED DRAWING
SEE ENGINEERING RELEASE FORM (ERF) FOR DRAWING APPROVAL SIGNATURES

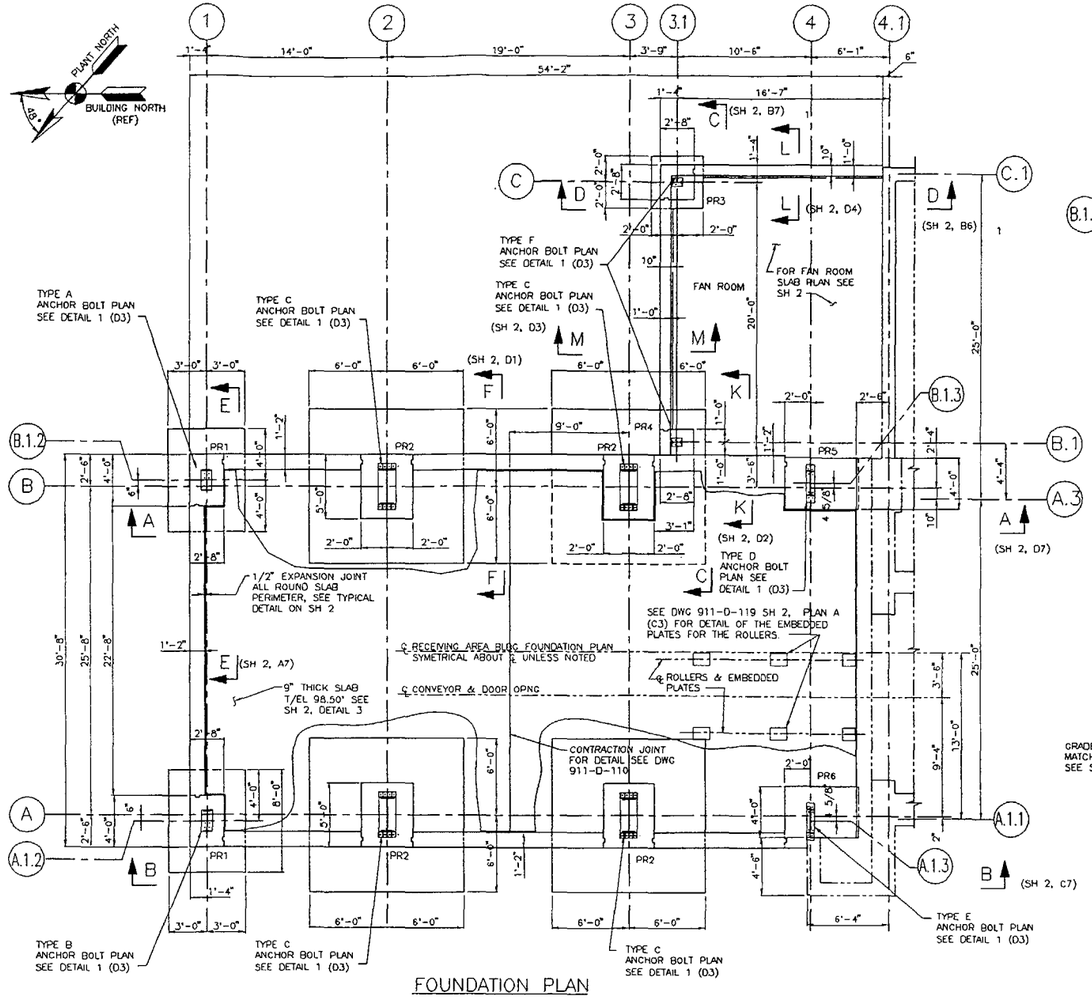
VENDOR: BUTLER CONSTRUCTION CO. OF WNY, INC. RAYTHEON NUCLEAR, INC.
for
WVNSCO
West Valley Nuclear Services Company

REMOTE HANDLED WASTE FACILITY
MAIN BUILDING-ROOF
MASONRY & REINFORCING

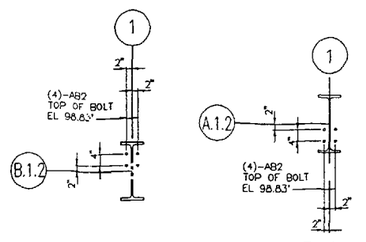
DWG SIZE D | SCALE | WEIGHT | A/E DWG # | A/E CONTRACT # | DWG # 911-D-113 | REV 0 | SHEET 1 OF | DWG IDENT #

CAD DRAWING-DO NOT REVISE THIS ORIGINAL

~~10/19/04 2:07:30 PM REPRO~~

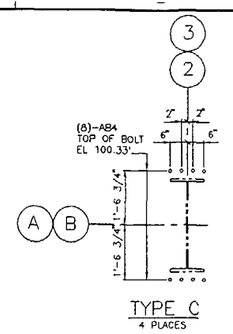


FOUNDATION PLAN

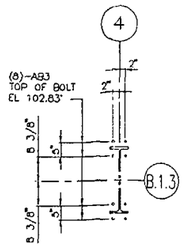


TYPE A
1 PLACE

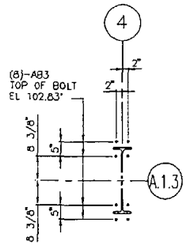
TYPE B
1 PLACE



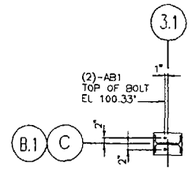
TYPE C
4 PLACES



TYPE D
1 PLACES

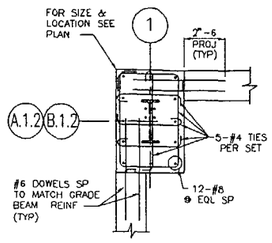


TYPE E
1 PLACES

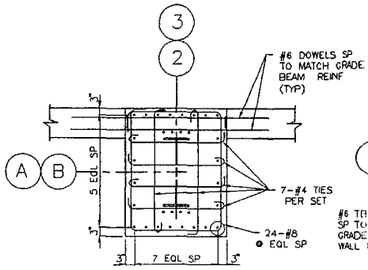


TYPE F
2 PLACES

DETAIL 1
ANCHOR BOLT LOCATION PLAN
NTS



PIER TYPE PR1



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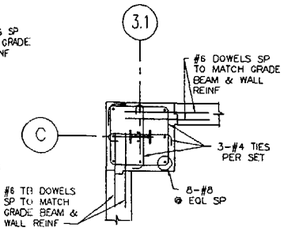
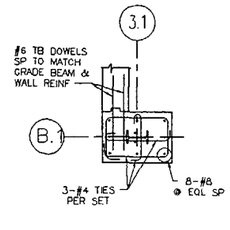
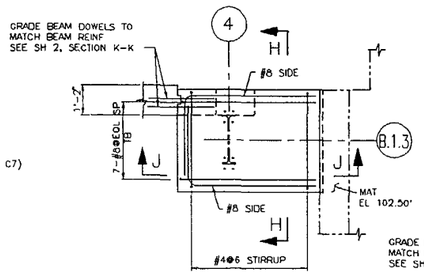


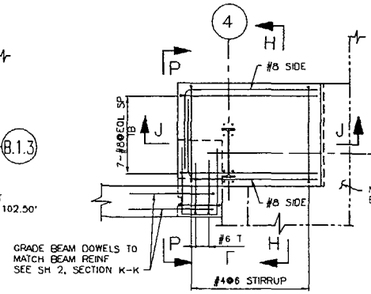
PIER TYPE PR3



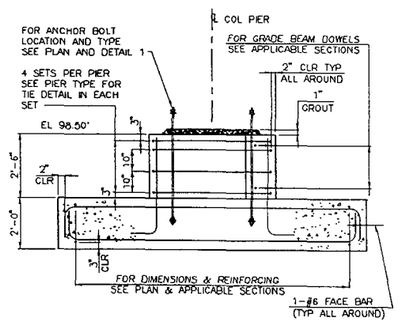
PIER TYPE PR4



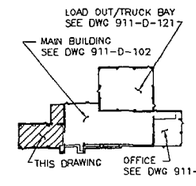
PIER TYPE PR5



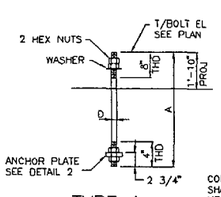
PIER TYPE PR6



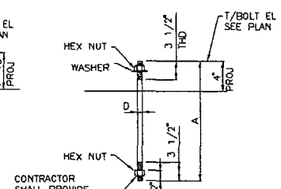
TYPICAL COL FOOTING PIER DETAIL
NTS



KEY PLAN
NTS



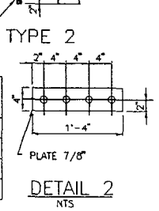
TYPE 1



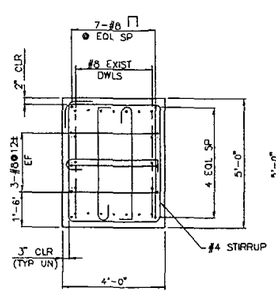
TYPE 2

ANCHOR BOLT SCHEDULE

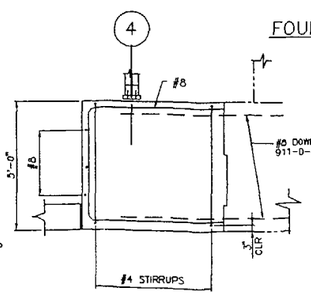
BOLT							NUTS	ANCHOR PLATE			REMARKS
MARK	TYPE	QTY	DIA (D)	LENGTH (A)	THD	MATERIAL	QTY	QTY	SIZE	MATERIAL	
AB1	2	4	3/4"	1'-5"	3 1/2"	A307	8				OR J429 GRADE 1
AB2	2	8	1"	1'-7	3 1/2"	A307	16				OR J429 GRADE 1
AB3	2	16	1 1/4"	1'-9"	3 1/2"	A307	32				OR J429 GRADE 1
AB4	1	32	1 1/4"	5'-10"	8"	A449	128	8	7/8"x4"x1'-4"	A-36	SEE DETAIL 2



DETAIL 2
NTS

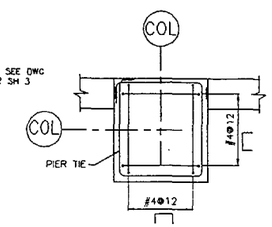


SECTION H-H
NTS

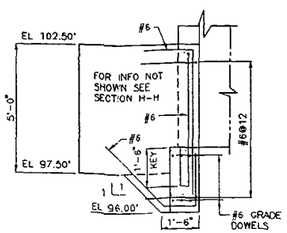


SECTION J-J
NTS

FOUNDATION PIER REINFORCING DETAILS
NTS



TYPICAL COL PIER TOP REINF DETAIL
NTS



SECTION P-P
NTS

NOTES

1. FOR GENERAL NOTES AND ABBREVIATIONS SEE DRAWING 911-D-100.
2. WORK THIS DRAWING WITH DRAWING 911-D-119 SH 2.
3. GROUND FLOOR SLABS SHALL BE TREATED WITH A LIQUID HARDENER, SONOSIL OR EQUAL. SURFACE PREPARATION AND APPLICATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S PRINTED INSTRUCTIONS. SONOSIL IS MANUFACTURED BY CHEMREX INC., SONNEBORN DIVISION OF SHAKOPEE, MINNESOTA.

REFERENCE DRAWINGS:

CIVIL/STRUCTURAL GENERAL NOTES	911-D-100
MAT AT EL 102.50'	911-D-102
FLOOR AT EL 115.50'	911-D-110
FIRST FLOOR MECHANICAL LAYOUT	911-D-410
OFFICE FOOTINGS, BEAMS & SLAB NUCOR - RECEIVING BUILDING	911-D-119 SH 2 WOR0798A-F1

AS BUILT

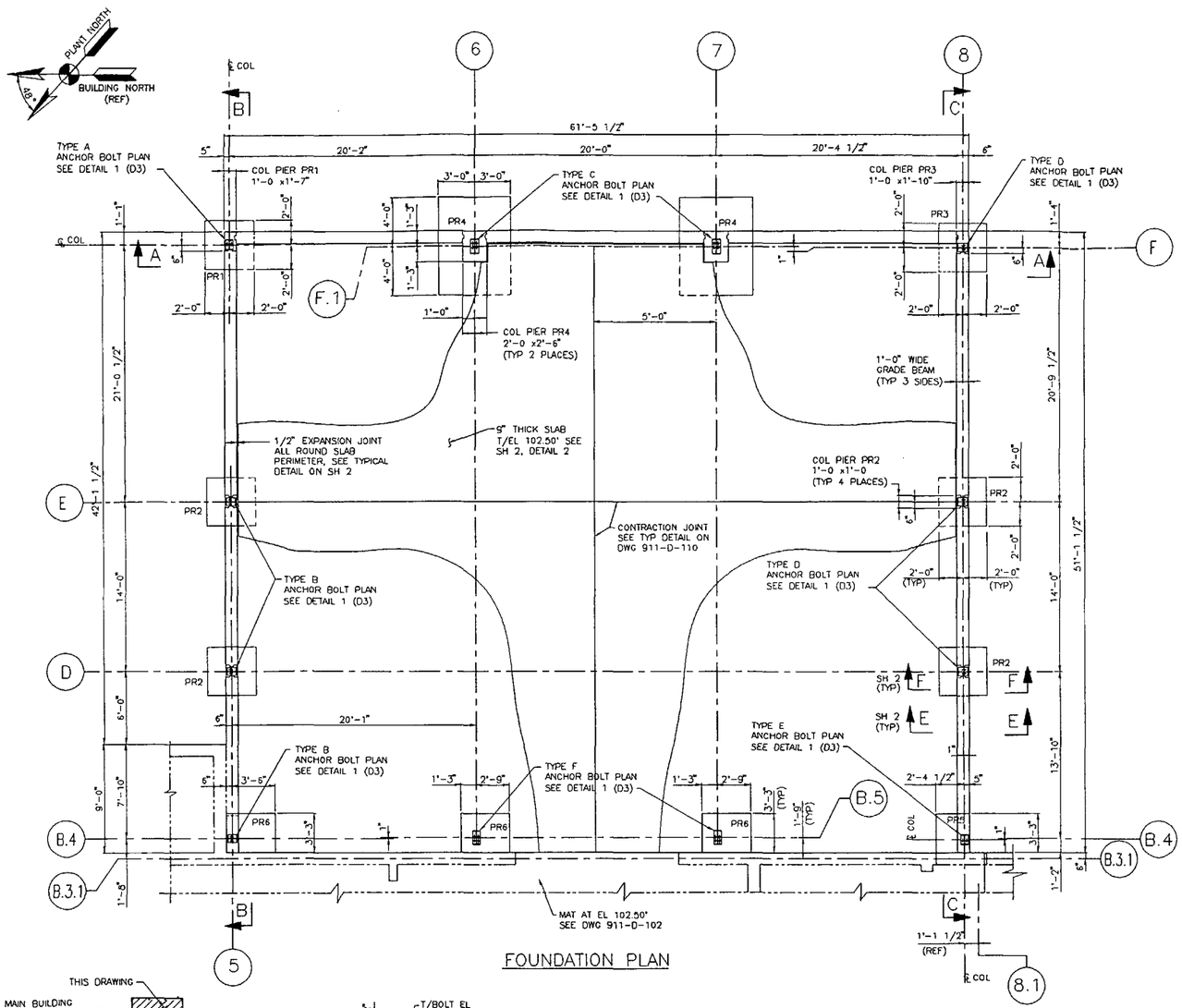
VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT _____ DATE _____

REVISIONS REV	DESCRIPTION	APVD	
0	ER 25701 INCORPORATED AR #200 COMMENTS AND PCR-079	08/21/03	CCS

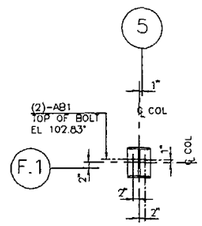
UNLESS OTHERWISE SPECIFIED	DRAFTER F.AS	DATE 04/20/01	VENDOR: BUTLER CONSTRUCTION CO. OF WNY, INC. RAYTHEON NUCLEAR, INC. TSA
	CHECKER R.C.	DATE 04/20/01	WVNSCO West Valley Nuclear Services Company
	ENGINEER V.C.	DATE 04/20/01	REMOTE HANDLED WASTE FACILITY RECEIVING AREA-FOOTINGS, BEAMS & SLAB, MASONRY & REINFORCING
FILE NAME 134529			
PLOT SCALE 1=64.00			
D SPEC # —	DATABASE LINKED DRAWING	DWG SIZE D	SCALE 1/4"=1'-0" DWG # 911-D-117 REV 0
NEXT ASSEMBLY —	SEE ENGINEERING RELEASE FORM (ER) FOR DRAWING APPROVAL SIGNATURES.		WEIGHT — SHEET 1 OF 2
			A/E DWG # — A/E CONTRACT # —

10/19/04 2:06:09 PM REPRO

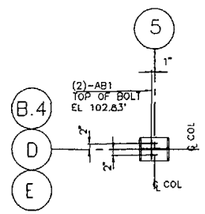
CAD DRAWING-DO NOT REVISE THIS ORIGINAL



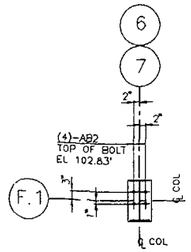
FOUNDATION PLAN



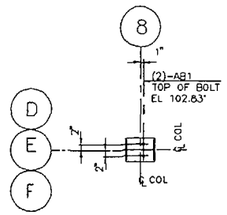
TYPE A
1-PLACE



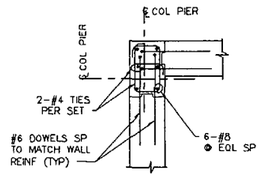
TYPE B
3-PLACES



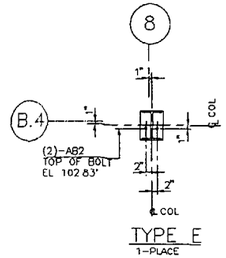
TYPE C
2-PLACES



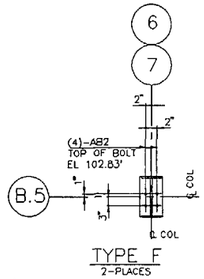
TYPE D
3-PLACES



PIER TYPE PR1
1-PLACE

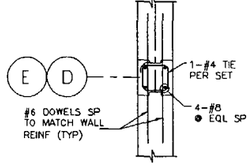


TYPE E
1-PLACE

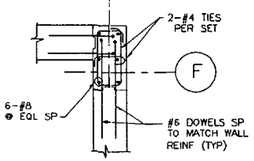


TYPE F
2-PLACES

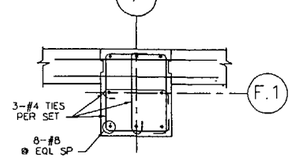
DETAIL 1
ANCHOR BOLT LOCATION PLAN



PIER TYPE PR2
4-PLACES

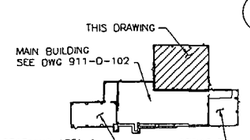


PIER TYPE PR3
1-PLACE

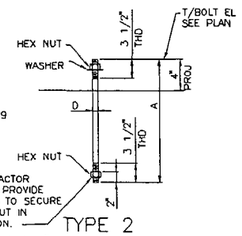


PIER TYPE PR4
2-PLACES

FOUNDATION PIER REINFORCING DETAILS
NTS



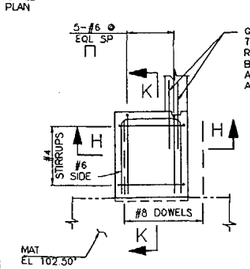
KEY PLAN
NTS



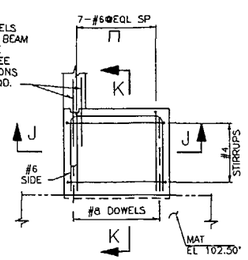
TYPE 2

ANCHOR BOLT SCHEDULE

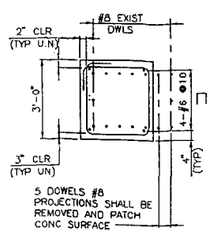
BOLT							NUTS	REMARKS
MARK	TYPE	QTY	DIA (D)	LENGTH (A)	THD	MATERIAL	QTY	
AB1	2	14	3/4"	1'-5"	3 1/2"	A307+	28	+ OR J429 GRADE 1
AB2	2	18	1"	1'-7"	3 1/2"	A307+	36	+ OR J429 GRADE 1



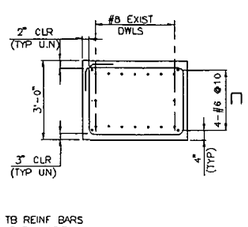
PIER TYPE PR5
1-PLACE



PIER TYPE PR6
3-PLACES

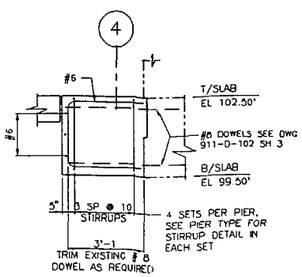


SECTION H-H
NTS



NOTE:
#6 SIDE & TB REINF BARS NOT SHOWN FOR CLARITY

SECTION J-J
NTS



SECTION K-K
NTS

NOTES:

1. FOR GENERAL NOTES AND ABBREVIATIONS SEE DRAWING 911-D-100.
2. GROUND FLOOR SLABS SHALL BE TREATED WITH A LIQUID HARDENER, SONOSIL OR EQUAL. SURFACE PREPARATION AND APPLICATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S PRINTED INSTRUCTIONS. SONOSIL IS MANUFACTURED BY CHEMREX INC., SONNEBORN DIVISION OF SHAKOPEE, MINNESOTA.

REFERENCE DRAWINGS:

CIVIL/STRUCTURAL GENERAL NOTES	911-D-100
MAT AT EL 102.50'	911-D-102
FLOOR AT EL 115.50'	911-D-110
NUCOR - LOAD OUT BUILDING	WOR0799A SH. F1 & F2

REVISIONS

REV	DESCRIPTION	APVD	
-	DELETED DIM LINE (B6)		CCG
0	ER 25701	09/20/2003	

AS BUILT

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT _____ DATE _____

UNLESS OTHERWISE SPECIFIED

FILE NAME 134532
PLOT SCALE 1=64.00
D SPEC # -
NEXT ASSEMBLY -

DRAFTER FAS 04/20/01
CHECKER RC 04/20/01
ENGINEER WL 04/20/01

DATABASE LINKED DRAWING
SEE ENGINEERING RELEASE FORM (ER) FOR DRAWING

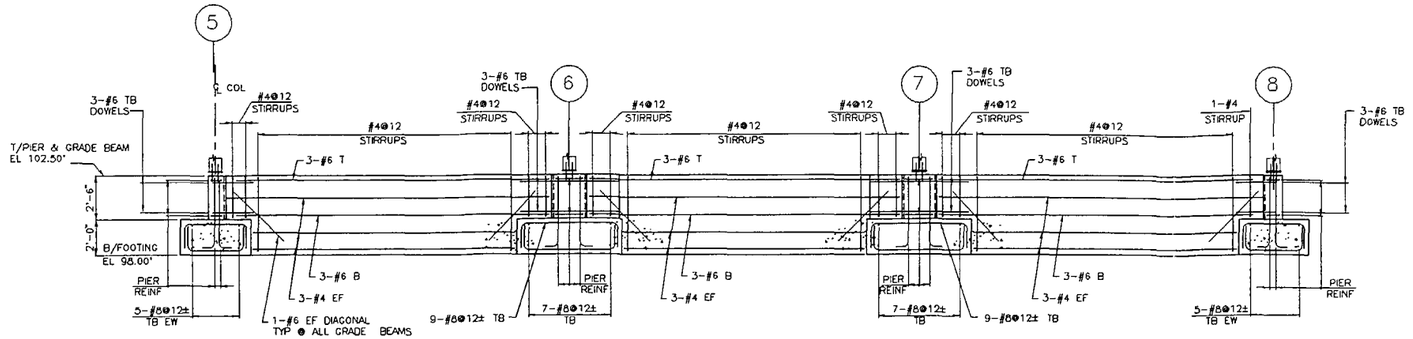
DWG SIZE D
SCALE 3/16"=1'-0"(U.N.)
WEIGHT -

VENDOR: BUTLER CONSTRUCTION CO. OF WNY, INC.
RAYTHEON NUCLEAR, INC.
FOR
WVNSCO
West Valley Nuclear Services Company

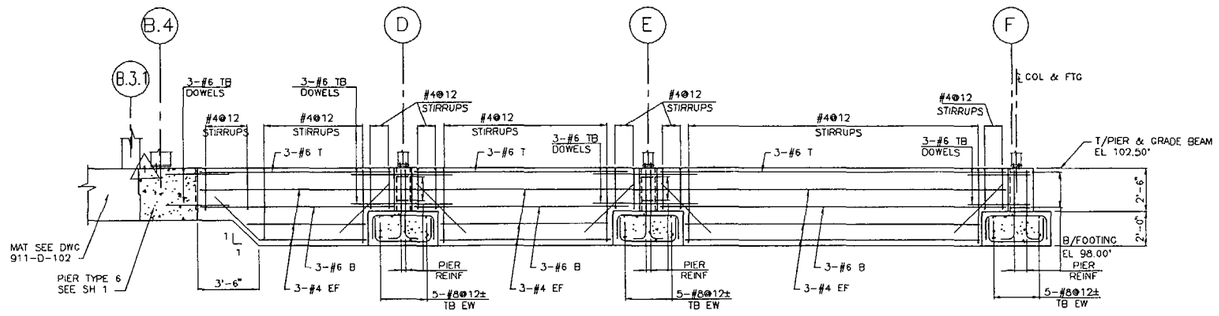
REMOTE HANDLED WASTE FACILITY
LOAD OUT BAY - FTGS, BEAMS & SLAB
MASONRY& REINFORCING

DWG # 911-D-121
REV 0

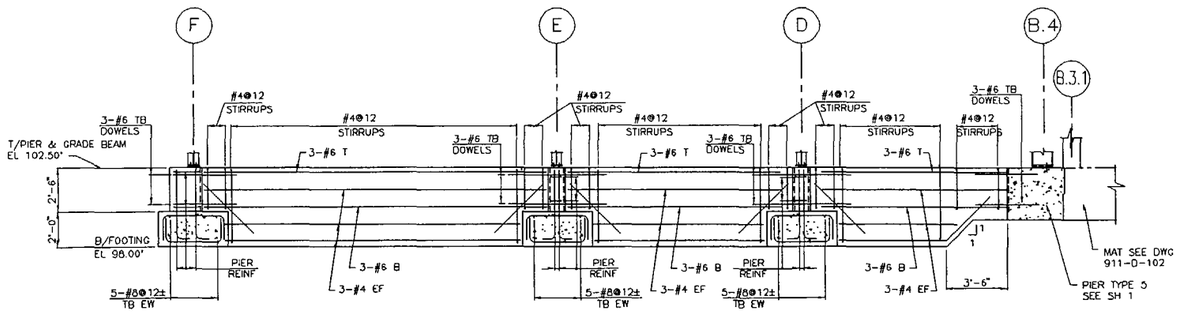
CAD DRAWING-DO NOT REVISE THIS ORIGINAL



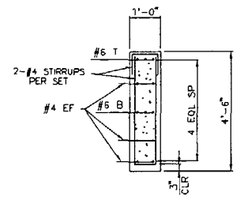
SECTION A–A



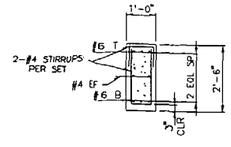
SECTION B–B



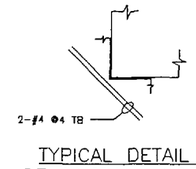
SECTION C–C



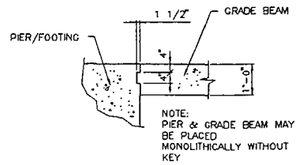
SECTION E–E (SH 1, C5)
NTS



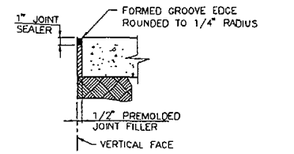
SECTION F–F (SH 1, C5)
NTS



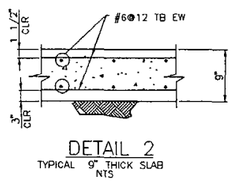
TYPICAL DETAIL AT RE-ENTRANT CORNER
NTS



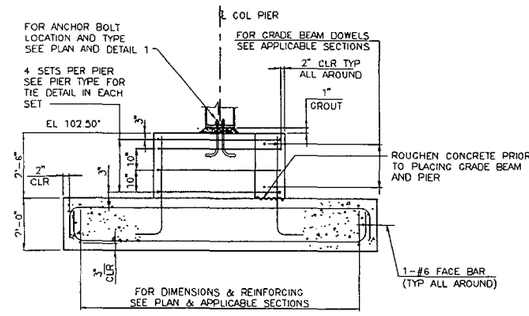
TYPICAL VERT KEY DETAIL
NTS



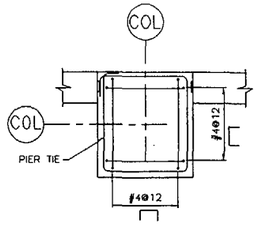
TYPICAL EXPANSION JOINT
NTS



DETAIL 2
TYPICAL 9" THICK SLAB
NTS



TYPICAL COL FOOTING PIER DETAIL
NTS



TYPICAL COL PIER TOP REINF DETAIL
NTS

NOTES:

1. FOR NOTES AND REFERENCE DRAWINGS SEE SHEET 1.

AS BUILT

REVISIONS			
REV	DESCRIPTION		APVD
0	ER 25701	8/21/2003	CCG

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT _____ DATE _____

UNLESS OTHERWISE SPECIFIED
FILE NAME 134533
PLOT SCALE 1=64.00
D SPEC # –
NEXT ASSEMBLY –

DRAFTER FAS	DATE 04/20/01	
CHECKER RC	DATE 04/20/01	
ENGINEER WC	DATE 04/20/01	

DATABASE LINKED DRAWING.
SEE ENGINEERING RELEASE FORM (ER) FOR DRAWING APPROVAL SIGNATURES.

DWG SIZE D

VENDOR: BUTLER CONSTRUCTION CO. OF WNY, INC.
RAYTHEON NUCLEAR, INC.
FOR

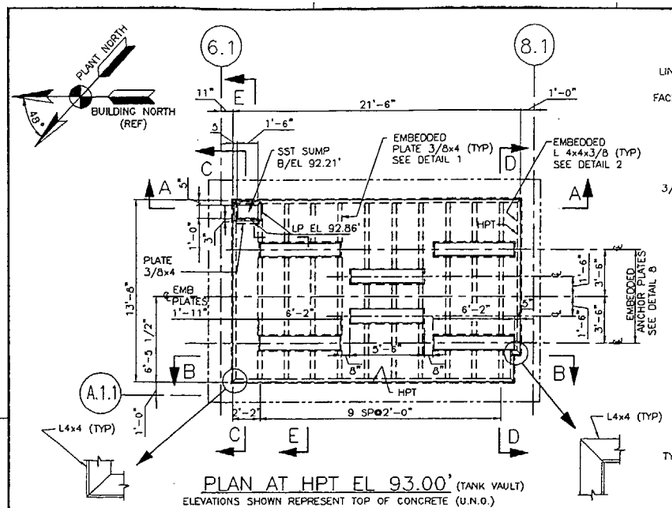
WVNSCO
West Valley Nuclear Services Company

REMOTE HANDLED WASTE FACILITY
LOAD OUT BAY - FTGS, BEAMS & SLAB
MASONRY & REINFORCING

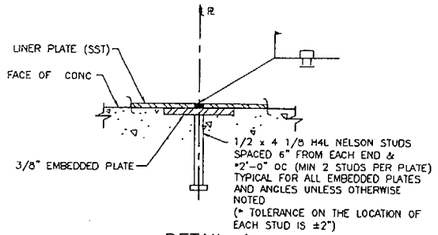
SCALE 1/4"=1'-0" (U.N.)
WEIGHT –
A/E DWG # –
DWG # 911-D-121
REV 0
SHEET 2 OF 2
A/E CONTRACT #
DWG IDENT #

10/19/04 10:39:46 AM REPRO

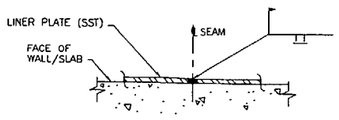
CAD DRAWING-DO NOT REVISE THIS ORIGINAL



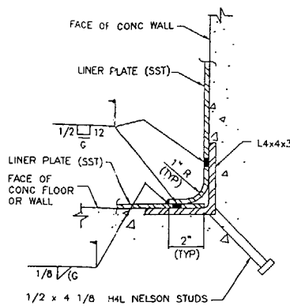
PLAN AT HPT EL 93.00' (TANK VAULT)
ELEVATIONS SHOWN REPRESENT TOP OF CONCRETE (U.N.O.)



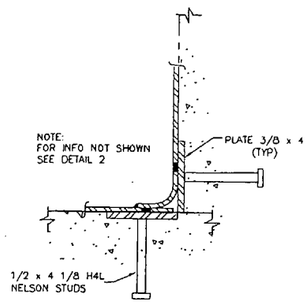
DETAIL 1
TYPICAL LINER PLATE LONGITUDINAL ATTACHMENT TO EMBEDDED PLATE
NTS



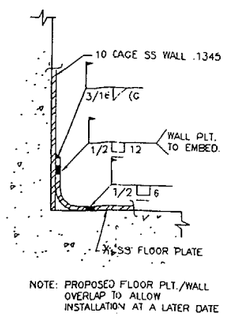
DETAIL 4
TYPICAL BUTT WELD IN TRANSVERSE DIRECTION ACROSS WIDTH OF LINER PLATES
NTS



DETAIL 2
TYPICAL DETAIL AT FLOOR & WALL INTERFACE OR WALL CORNER
NTS

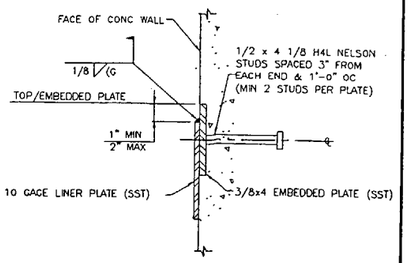


DETAIL 2A
ALTERNATE DETAIL AT FLOOR & WALL INTERFACE OR WALL CORNER
NTS



NOTE: PROPOSED FLOOR PLT./WALL OVERLAP TO ALLOW INSTALLATION AT A LATER DATE

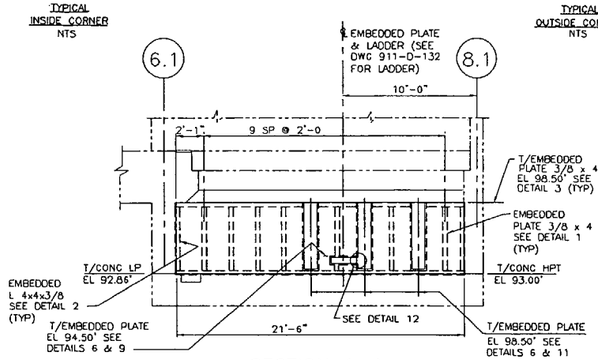
DETAIL 2B
ALTERNATE WALL/FLOOR CORNER DETAIL
NTS



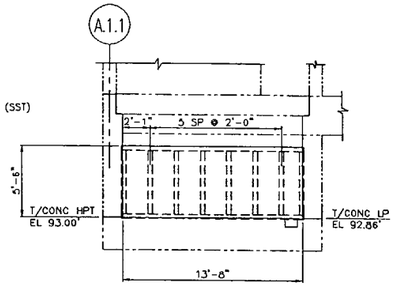
DETAIL 3
TYPICAL WALL LINER TOP CLOSURE PLATES
NTS

TYPICAL INSIDE CORNER
NTS

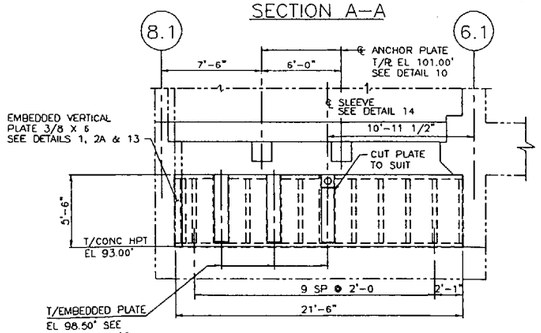
TYPICAL OUTSIDE CORNER
NTS



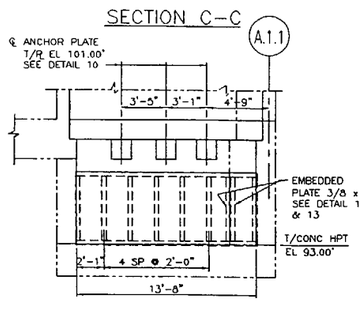
SECTION A–A



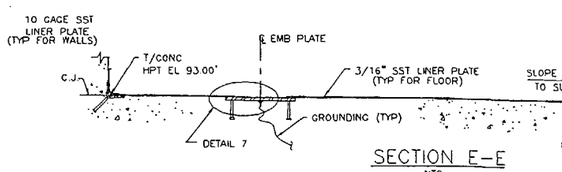
SECTION C–C

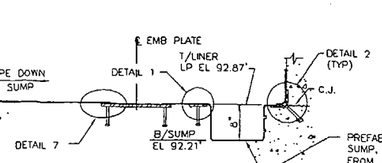


SECTION B–B

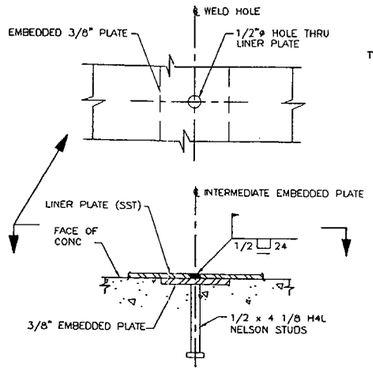


SECTION D–D

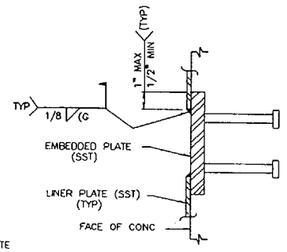




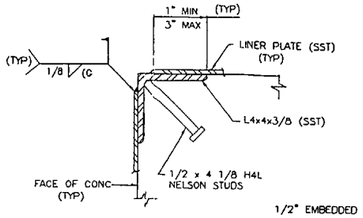
SECTION E–E
NTS



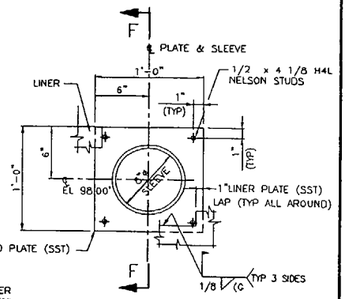
DETAIL 5
TYPICAL LINER ATTACHMENT TO INTERMEDIATE EMBEDDED PLATE
NTS



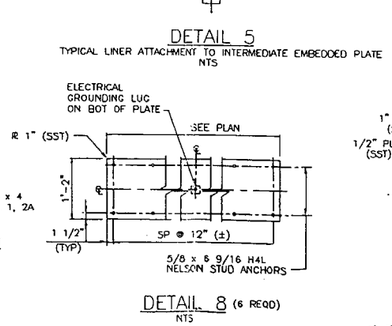
DETAIL 6
TYPICAL LINER CONNECTION AT EMBEDDED PLATES
NTS



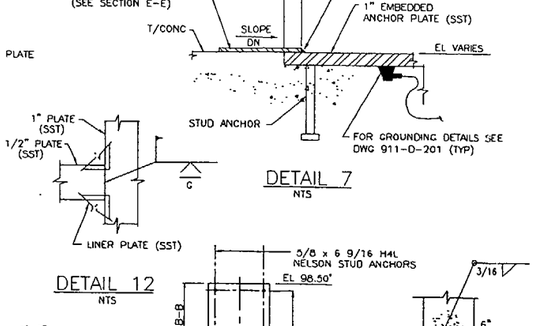
DETAIL 13
TYPICAL LINER CONNECTION DETAIL AT OUTSIDE CORNER FOR ALTERNATE DETAIL AT OUTSIDE CORNER SEE DETAIL 13A ON DWG 511-D-130 SH 4 & DETAIL 13B ON DWG 911-D-0130 SH7
NTS



DETAIL 14 (1 REQD)
PIPE SLEEVE THRU LINER PLATE
NTS

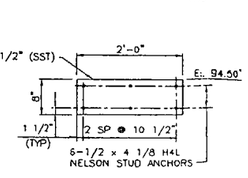


DETAIL 8 (6 REQD)
NTS

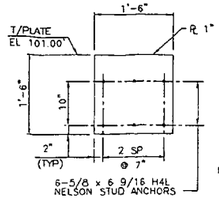


DETAIL 7
NTS

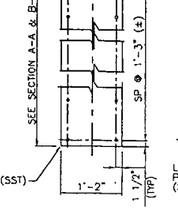
DETAIL 12
NTS



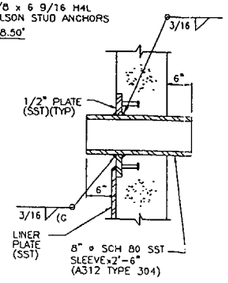
DETAIL 9 (1 REQD)
NTS



DETAIL 10 (5 REQD)
NTS



DETAIL 11 (6 REQD)
NTS



SECTION F–F
NTS

NOTES:

1. FOR GENERAL NOTES & ABBREVIATIONS SEE DWG 911-D-100.
2. WORK THIS DRAWING WITH DWG 911-D-101.
3. STRUCTURAL STEEL SHALL BE OF ASTM A36 UNLESS OTHERWISE NOTED. STRUCTURAL STAINLESS STEEL SHALL BE OF ASTM A276 TYPE 304. LINER PLATES SHALL BE OF ASTM A240 TYPE 304/304L. EMBEDDED STUDS SHALL BE NELSON STUDS TYPE H4L OR EQUAL. EMBEDMENTS COMPLETELY COVERED BY THE STAINLESS STEEL LINER MAY BE MADE OF CARBON STEEL PLATE.
4. WELDING OF STAINLESS STEEL LINER SHALL BE PERFORMED IN ACCORDANCE WITH AWS D1.6 "STRUCTURAL WELDING CODE – STAINLESS STEEL". AND THE FOLLOWING:
   - A. WELDING SHALL BE PERFORMED USING THE PULSED OR SPRAY TRANSFER MODE SEMIAUTOMATIC GAS–METAL ARC (GMAW), SEMIAUTOMATIC FLUX–CORED ARC WELDING (FCAW) OR THE MANUAL GAS–TUNGSTEN ARC (GTAW) PROCESS. USE AWS A5.9 ER308L OR A5.22 E308LTX–X, FILLER METAL, AS APPLICABLE. WELDING OF STAINLESS STEEL TO CARBON STEEL SHALL BE PERFORMED USING AWS A5.9 ER309 OR A5.22 E309TX–X, AS APPLICABLE. THE MAXIMUM INTERPASS TEMPERATURE SHALL BE 350° F / WELDING ELECTRODES SHALL BE AWS A5.4 E308L FOR P8 TO P8 AND AWS A5.4 E309 FOR P8 TO P1 BASE MATERIALS.
   - B. PLUG WELDS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF AWS D1.6, 3.19 AND 3.30.
   - C. COMPLETED WELD SURFACES SHALL BE GROUND TO A SMOOTH CONTOUR AND VISUALLY EXAMINED IN ACCORDANCE WITH THE ACCEPTANCE CRITERIA OF AWS D1.6, 6.28.1.
   - D. LINER WELDS SHALL BE LIQUID PENETRANT EXAMINED IN ACCORDANCE WITH TECHNIQUE AND ACCEPTANCE CRITERIA REQUIREMENTS OF AWS D1.6.
   - E. LINER WELDS SHALL BE VACUUM BOX LEAK TESTED IN ACCORDANCE WITH THE REQUIREMENTS AND ACCEPTANCE CRITERIA OF ASME CODE SECTION V, ARTICLE 10 AND APPENDIX II.
5. ALL EMBEDDED PLATES EXCEPT LINER SUPPORTS TO BE FLAT (±1/8") OVER ITS ENTIRE LENGTH AND WITHIN ±1/8" FROM THE LOCATION SHOWN.
6. SURFACE OF THE EMBEDMENT SHALL BE FLUSH WITH CONCRETE SURFACE UNLESS NOTED OTHERWISE.
7. STAINLESS STEEL LINER AND PLATES SHALL HAVE STANDARD #2B FINISH OR EQUIVALENT; 3/8" LINER PLATES AT CMA EL. 128.50' SHALL HAVE HRAP STAINLESS STEEL. GLASS BEAD BLASTING OF ALL SURFACES PER WVNS–E0–383 SHALL BE PERFORMED TO PROVIDE A DECONTAMINATIBLE SURFACE.
8. FOR GROUNDING DETAILS SEE DRAWING 911-D-201 SH 1
9. AFTER LINER INSTALLATION, SEAL WELD ALL EXPOSED JOINTS BETWEEN ABUTTING EMBEDDED PLATES & ANGLES.
10. NO CARBON STEEL SHALL BE EXPOSED WITHIN SST LINED AREAS.
11. FOR PROPER INSTALLATION OF STAINLESS STEEL LINER WHERE FORMING TOLERANCE OF CONCRETE SURFACES ARE EXCEEDED SEE NOTE 6 ON DWG. 911-D-130 SH 4
12. FOR TYPICAL LINER CONNECTION AT SURFACE MOUNTED PLATES, SEE DWG. 911-D-130 SH 7.

REV	DESCRIPTION	APVD	DATE
1	INCORPORATED AR #200 COMMENTS AND FCN-005, 006, 007 & 033	D.F. V.C. E.D.	10/20/04 10/20/04 10/20/04
2	INCORPORATED ECN-066, 074, 089, 104, 237	CCG	12/17/2003
0	ER 25811		

AS BUILT

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT _____ DATE _____

10/19/04 10:22:09 AM REPRO

UNLESS OTHERWISE SPECIFIED	DRAFTER VENDOR	DATE
	CHECKER VENDOR	DATE
	ENGINEER VENDOR	DATE
FILE NAME 911-D-130_001_000		
PLOT SCALE 1=64.00		
D SPEC •	DATABASE LINKED DRAWING	
NEXT ASSEMBLY	SEE ENGINEERING RELEASE FORM (ER) FOR DRAWING APPROVAL SIGNATURES	

VENDOR BUTLER CONSTRUCTION CO. OF WNY, INC. RAYTHEON NUCLEAR, INC.

WVNSCO
West Valley Nuclear Services Company

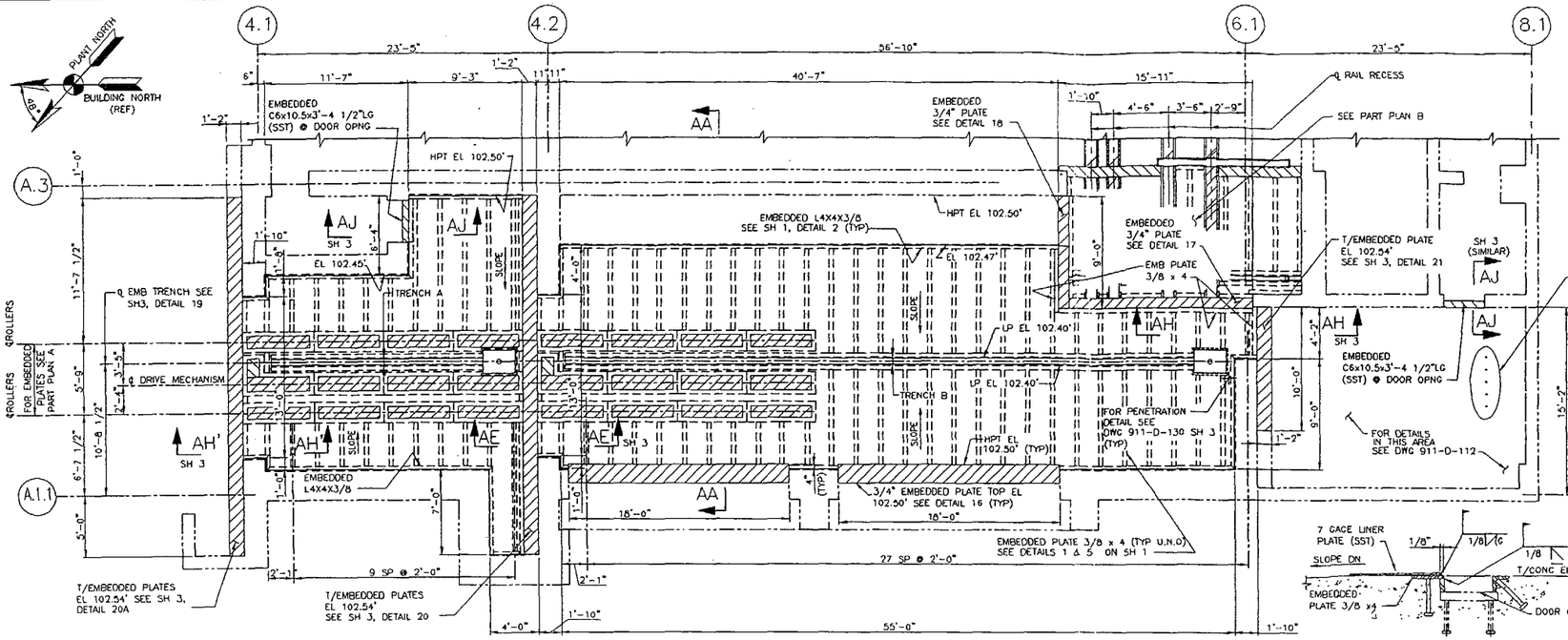
REMOTE HANDLED WASTE FACILITY
MAIN BUILDING
STAINLESS STEEL LINER DETAILS

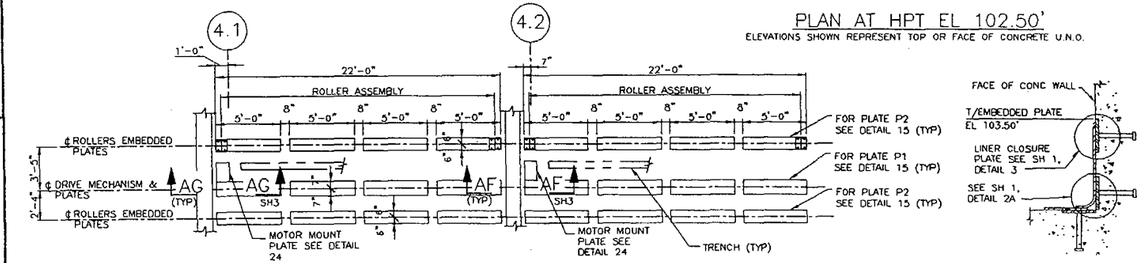
DWG SIZE	DWG •	REV
D	911-D-130	0
SCALE 3/16"=1'-0" U.N.	WEIGHT	SHEET 1 OF 2
A/E DWG •		

CAD DRAWING–DO NOT REVISE THIS ORIGINAL

PLAN AT HPT EL 102.50'

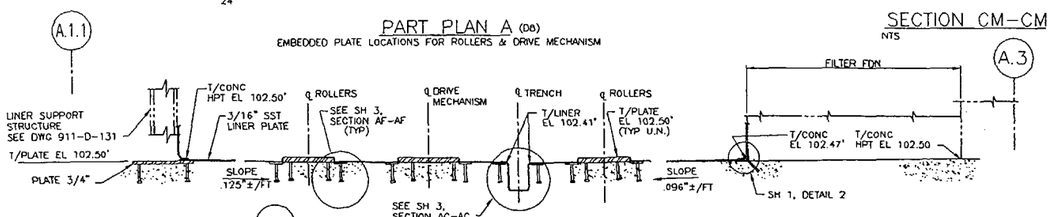
ELEVATIONS SHOWN REPRESENT TOP OR FACE OF CONCRETE U.N.O.





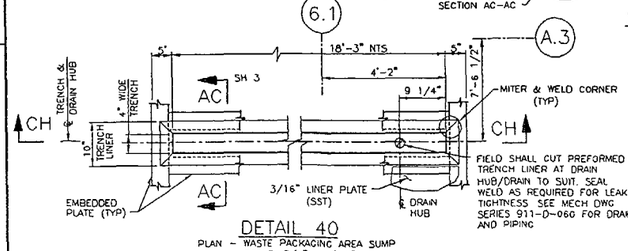
PART PLAN A (D8)

EMBEDDED PLATE LOCATIONS FOR ROLLERS & DRIVE MECHANISM



SECTION AA-AA (C6)

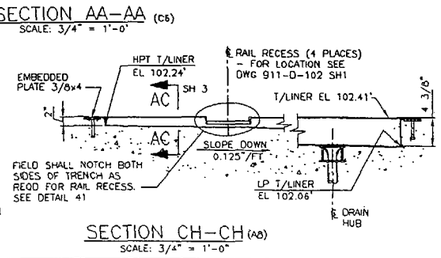
SCALE: 3/4" = 1'-0"



DETAIL 40

PLAN - WASTE PACKAGING AREA SUMP

SCALE: 3/4" = 1'-0"

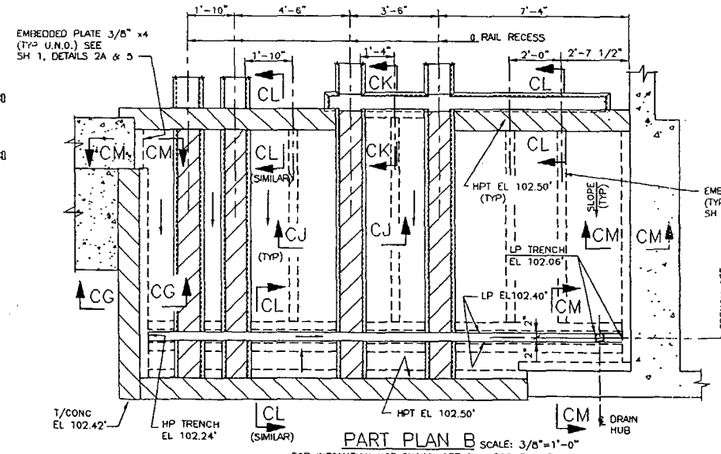


SECTION CH-CH (A8)

SCALE: 3/4" = 1'-0"

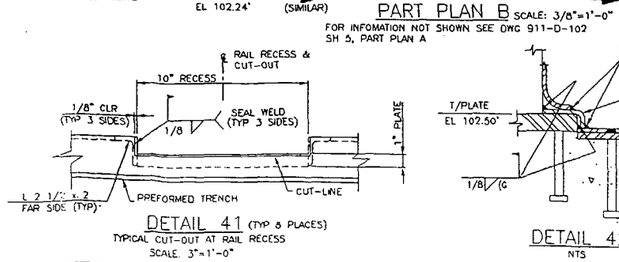
SECTION CM-CM

NTS



PART PLAN B SCALE: 3/8"=1'-0"

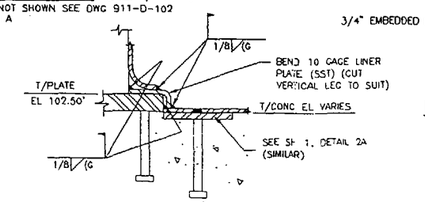
FOR INFOMATION NOT SHOWN SEE DWG 911-D-102 SH 5, PART PLAN A



DETAIL 41 (TYP 8 PLACES)

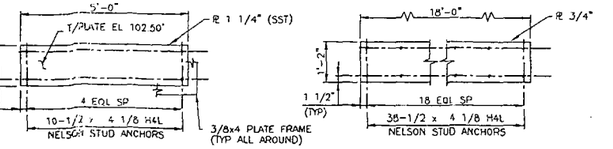
TYPICAL CUT-OUT AT RAIL RECESS

SCALE: 3"=1'-0"



DETAIL 42

NTS



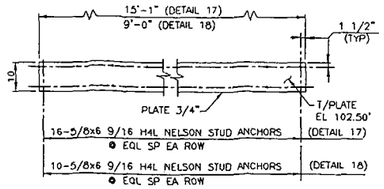
DETAIL 15 (PLATES P1 & P2) (B6)

EMBEDDED PLATE FOR ROLLERS & DRIVE MECHANINSM (8 REQD FOR P1) (16 REQD FOR P2)

N.T.S.

DETAIL 16 (C5) (2 REQD)

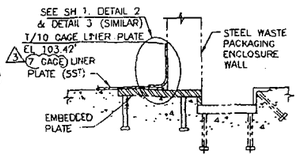
SCALE: 1/2" = 1'-0"



DETAIL 17 (D4) (1 REQD)

DETAIL 18 (D5) (1 REQD)

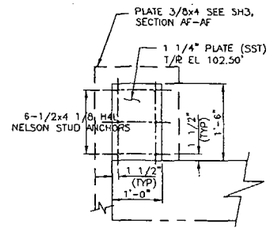
SCALE: 1/2" = 1'-0"



SECTION CL-CL

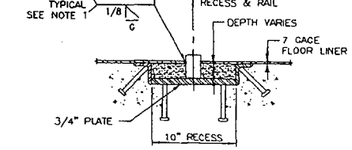
TYP @ 4 1/2" & 6" STEEL WALLS

NTS



DETAIL 24 (B6, B7) (2 REQD)

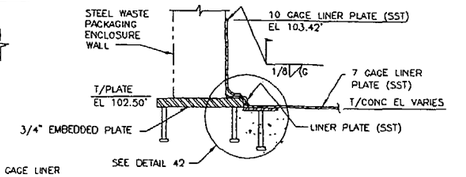
SCALE: 3/4" = 1'-0"



SECTION CJ-CJ

NTS

NOTE #1: GRIND LINER WELDS FLUSH TO CLEAR CART WHEELS RUNNING ON RAIL



SECTION CG-CG

NTS

NOTES:

1. FOR GENERAL NOTES & ABBREVIATIONS SEE DWG 911-D-100.
2. WORK THIS DRAWING WITH DWG 911-D-102 SH 1 THRU 5.
3. FOR ADDITIONAL NOTES AND DETAILS SEE SH 1.
4. FOR ALTERNATE WALL/FLOOR CORNER DETAIL SEE SECT. B2-B2 DWG. 911-D-130 SH 6, AND DETAIL 2B

REV	DESCRIPTION	APP'D	
1	REVISED PER DCN 06, 34, 35) DIMENSION (C4), SECT MARK CL-CL (A4), SCALE (A1), CDL CALCULAT (A7), (A8), (A9) DELETED DET 23 (D2) ADDED SCALE (A3)	FAS 11/9/00 / KTW 11/16/00	V.C 11/16/00
2	INCORPORATED AR #260 COMM AND DCN-054	D.F. 09/27/01	V.C. 09/27/01
3	INCORPORATED TCN-224237, 253,074,098		E.D. 09/27/01
0	ER 25811	12/17/2003	CCG

AS BUILT

10/19/04 1:54:37 PM REPRO

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE

INIT _____ DATE _____

UNLESS OTHERWISE SPECIFIED

FILE NAME 911-D-130_002_000

PLOT SCALE 1=1.00

D SPEC #

NEXT ASSEMBLY

DRAFTG VENDOR | DATE

OTHER VENDOR | DATE

ENGINEER VENDOR | DATE

DATABASE LINKED DRAWING

SEE ENGINEERING RELEASE FORM (ER) FOR DRAWING APPROVAL SIGNATURES

DWG SIZE: D

A/E DWG #

A/E CONTRACT #

DWG IDENT #

VENDOR: BUTLER CONSTRUCTION CO. OF WNY, INC. RAYTHEON NUCLEAR, INC.

FOR

WVNSCO

West Valley Nuclear Services Company

REMOTE HANDLED WASTE FACILITY

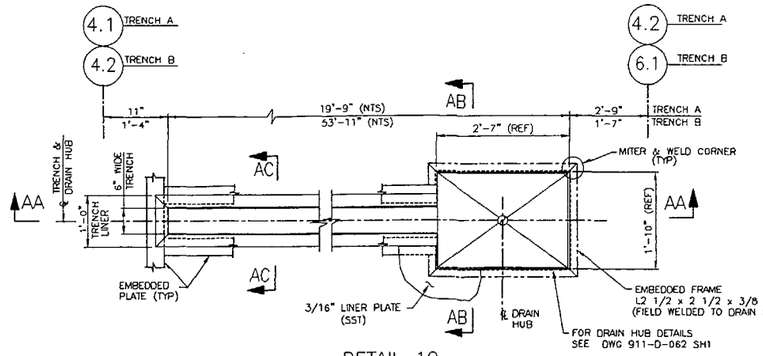
MAIN BUILDING

STAINLESS STEEL LINER DETAILS

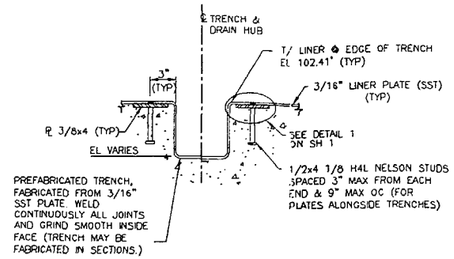
SCALE 3/16"=1'-0"UN | DWG # 911-D-130 | REV 0

WEIGHT | SHEET 2 OF 7

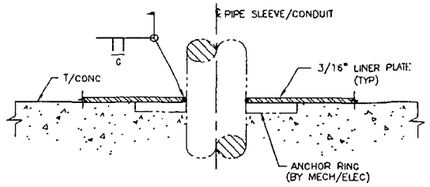
CAD DRAWING-DO NOT REVISE THIS ORIGINAL



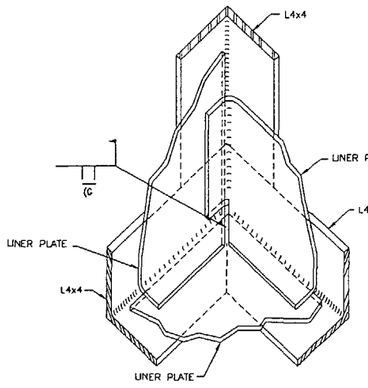
DETAIL 19 (SH 2, D8)
PLAN - WASHDOWN COLLECTION TRENCHES A & B
SCALE: 3/4" = 1'-0"



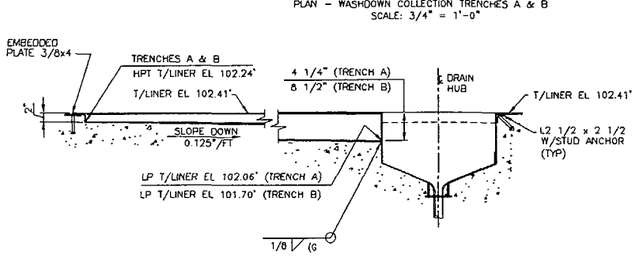
SECTION AC-AC (D8)
SCALE: 1 1/2" = 1'-0"



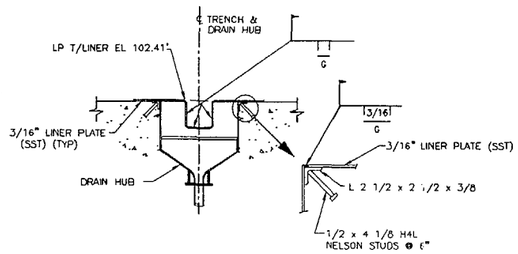
TYPICAL PIPE/CONDUIT DETAIL THRU LINER PLATE
NTS



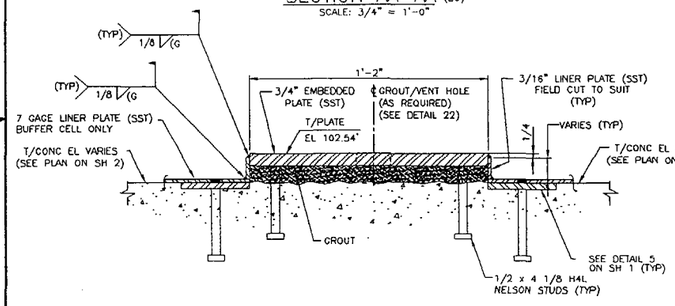
TYPICAL INTERIOR CORNER DETAIL AT INTERSECTION OF FLOOR AND WALLS
FOR ALTERNATE DETAIL AT INTERIOR CORNER, SEE DWG 911-D-130 SH 7
NTS



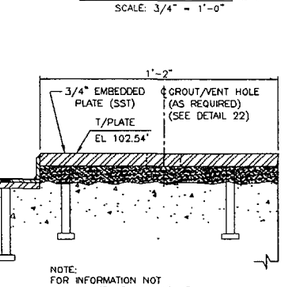
SECTION AA-AA (D6)
SCALE: 3/4" = 1'-0"



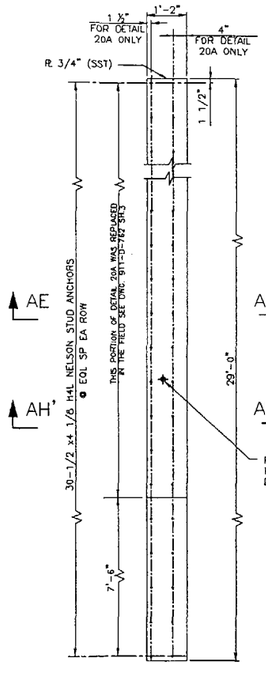
SECTION AB-AB (D7)
SCALE: 3/4" = 1'-0"



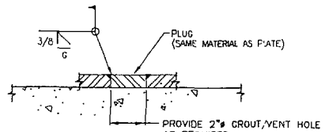
SECTION AE-AE (B4, SH 2, C6)
NTS (FOR DETAIL 20)



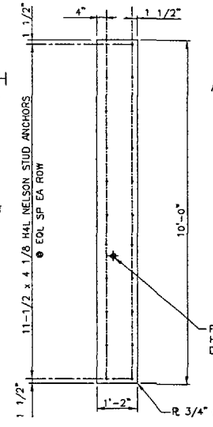
SECTION AH-AH (B4, SH 2, D4)(FOR DETAIL 21)
SECTION AH'-AH' OPPOSITE HAND (B4, SH 2, C8) (FOR DETAIL 20A)
NTS



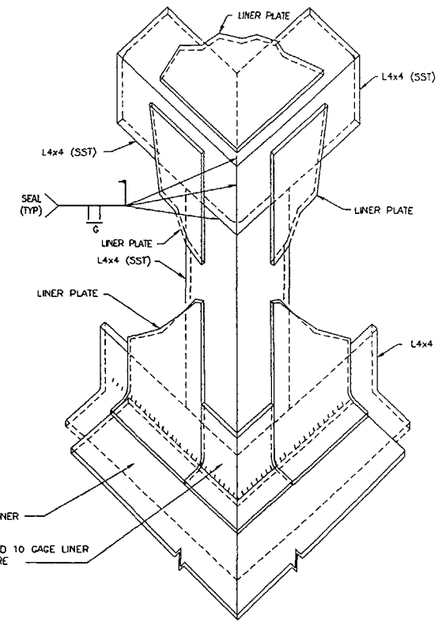
DETAIL 20 (SH 2, C7) (1 REQD)
DETAIL 20A (SH 2, C8) (1 REQD)
SCALE: 1/2"=1'-0



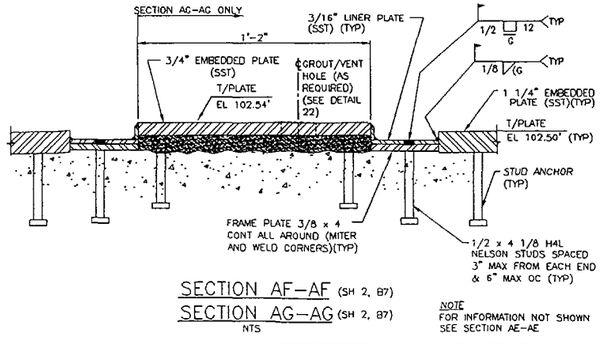
DETAIL 22
TYP GROUT HOLE/REPAIR IN EMBEDDED PLATE
NTS



DETAIL 21 (SH 2, C4) (1 REQD)
SCALE: 1/2"=1'-0

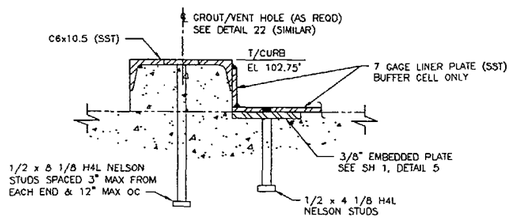


TYPICAL WALL EXTERIOR CORNER DETAIL AT INTERSECTION OF FLOOR AND WALLS
FOR ALTERNATE DETAIL AT OUTSIDE CORNER SEE DETAIL 13B DWG. 911-D-139 SH.7
NTS



SECTION AF-AF (SH 2, B7)
SECTION AG-AG (SH 2, B7)
NTS

NOTE
FOR INFORMATION NOT SHOWN SEE SECTION AE-AE



NOTE
FOR INFORMATION NOT SHOWN SEE SECTION AE-AE

SECTION AJ-AJ (SH 2, D3, 07)
NTS

NOTES:

1. FOR GENERAL NOTES & ABBREVIATIONS SEE DWG 911-D-100.
2. WORK THIS DRAWING WITH SH 2.
3. FOR ALTERNATE WALL/FLOOR CORNER DETAIL SEE SECT. BZ-BZ DWG. 911-D-130 SH.6, AND DETAIL 2B DWG. 911-D-130 SH.1

REV	DESCRIPTION	APV'D	C.F.	W.C.	E.D.	
1	INCORPORATED AR #200 COMMENTS AND FCN-069		10/30/03	10/30/03	10/30/03	CCG
2	INCORPORATED FCN-066, 224, 074-069 NCR-035,036					
0	ER 25811					12/17/2003

AS BUILT

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT _____ DATE _____

10/19/04 1:54:04 PM REPRO

UNLESS OTHERWISE SPECIFIED
FILE NAME 911-D-130_003_000
PLOT SCALE 1=64.00
D SPEC #
NEXT ASSEMBLY

DRAFTER VENDOR DATE
CHECKER VENDOR DATE
ENGINEER VENDOR DATE

VENDOR: BUTLER CONSTRUCTION CO. OF WNY, INC
RAYTHEON NUCLEAR, INC.

WVNSCO
West Valley Nuclear Services Company

REMOTE HANDLED WASTE FACILITY
MAIN BUILDING
STAINLESS STEEL LINER DETAILS

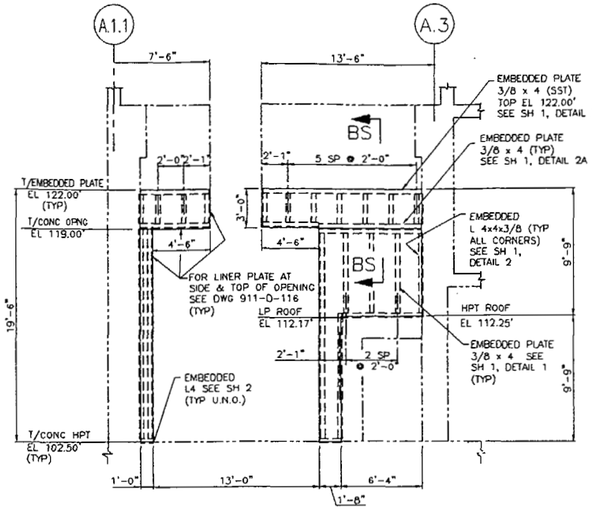
DATABASE LINKED DRAWING
SEE ENGINEERING RELEASE FORM (ER) FOR DRAWING APPROVAL SIGNATURES.

DWG SIZE D

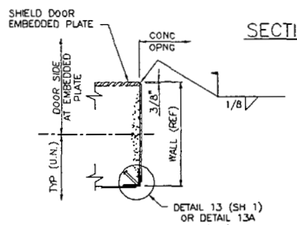
SCALE 3/16"=1'-0" U.N
WEIGHT
A/E DWG #
A/E CONTRACT #

DWG # 911-D-130
REV 0
SHEET 3 OF 7
DWG IDENT #

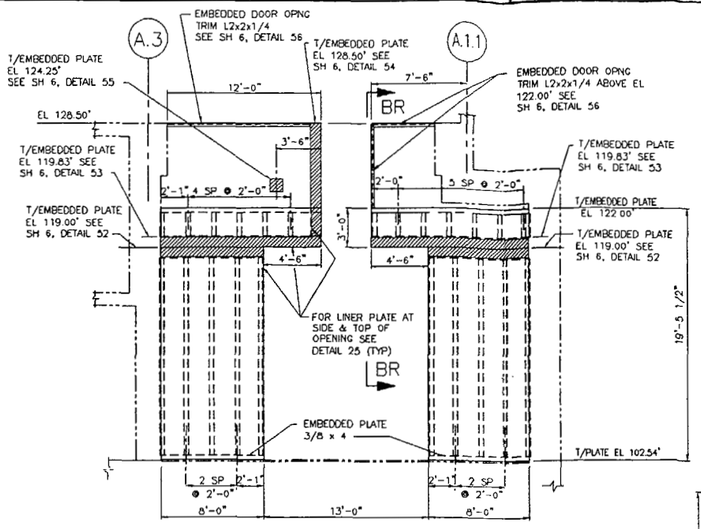
CAD DRAWING-DO NOT REVISE THIS ORIGINAL



SECTION BA–BA (D3)

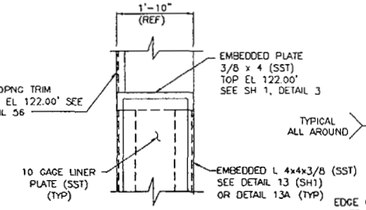


DETAIL 25 (A4, B8, D5, D8)
LINER PLATE TRIM AT SHIELD DOOR OPENINGS
NTS

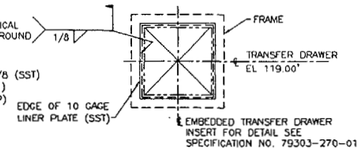


SECTION BB–BB (D2)

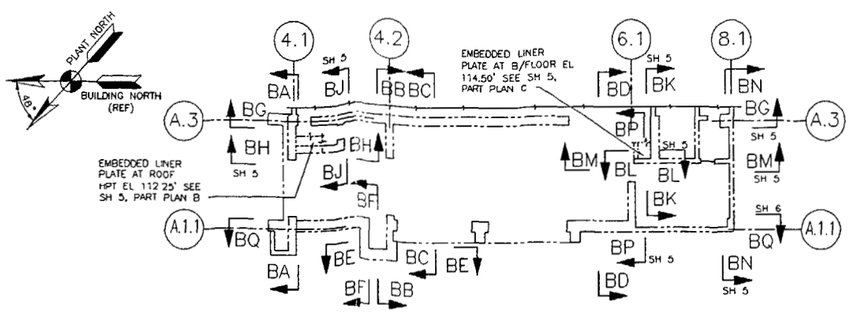
NOTE:
FOR INFORMATION NOT SHOWN SEE SECTION BA–BA



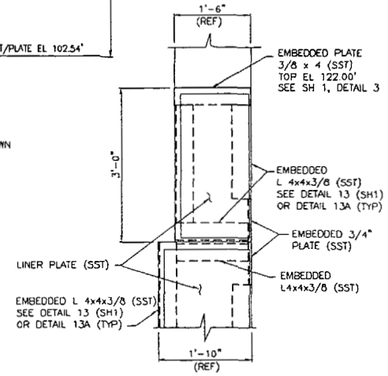
SECTION BT–BT (B5)
NTS



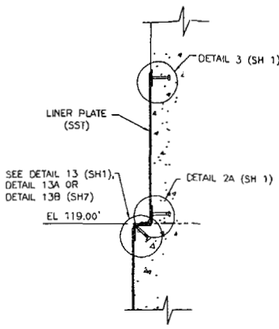
DETAIL 48
(SEE SECTION BC–BC ON SH. 5)
NTS



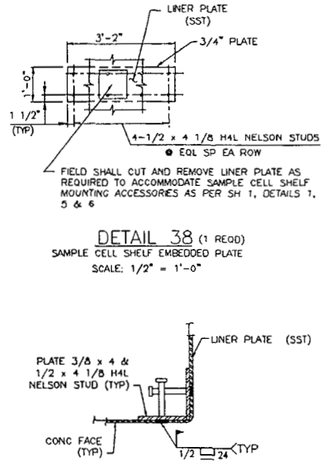
KEY PLAN AT HPT EL 102.50'
NTS



SECTION BR–BR (B7, D5)
NTS

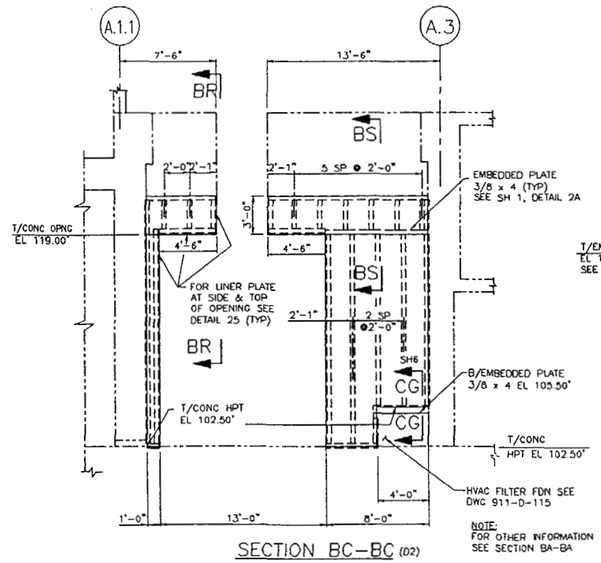


SECTION BS–BS (B7, D7)
NTS



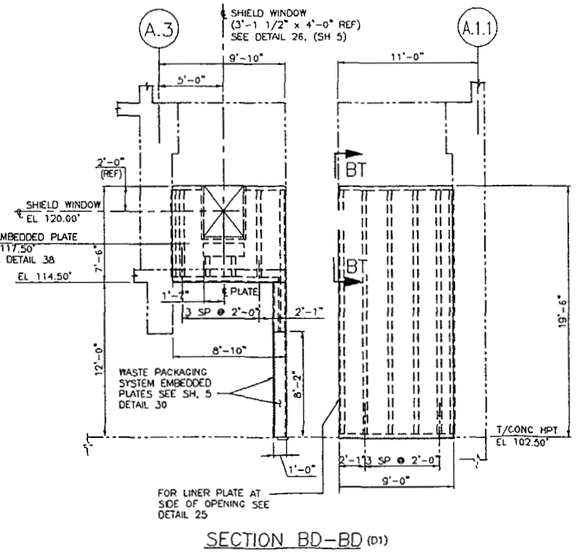
DETAIL 38 (1 REQD)
SAMPLE CELL SHELF EMBEDDED PLATE
SCALE: 1/2" = 1'-0"

DETAIL 13A
ALTERNATE DETAIL AT OUTSIDE CORNER
NTS

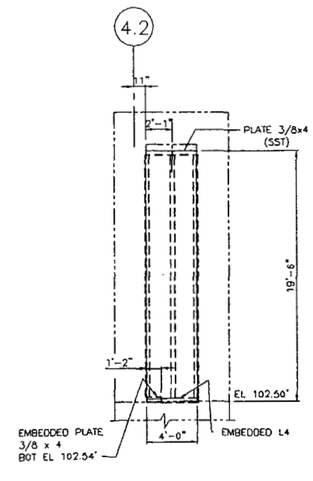


NOTE:
FOR OTHER INFORMATION SEE SECTION BA–BA

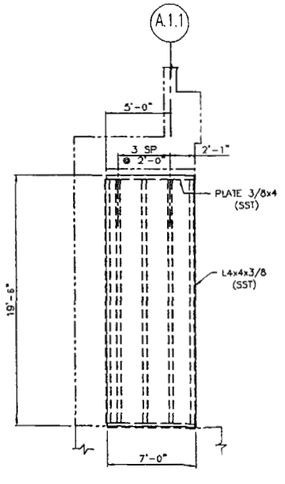
SECTION BC–BC (D2)



SECTION BD–BD (D1)



SECTION BE–BE (D2)



SECTION BF–BF

NOTES:

1. FOR GENERAL NOTES & ABBREVIATIONS SEE DWG 911-D-100.
2. WORK THIS DRAWING WITH DWG 911-D-102 THRU 108.
3. FOR ADDITIONAL NOTES AND DETAILS SEE SHEET 1.
4. FOR EMBEDMENTS IN MAT SEE SHEET 2.
5. ALL EMBEDDED STEEL SHALL BE FLUSH WITH CONCRETE SURFACE UNLESS NOTED OTHERWISE.
6. REPAIR MEASURES TO ALLOW PROPER INSTALLATION OF THE STAINLESS STEEL LINER WHEN FORMING TOLERANCES OF CONCRETE SURFACES ARE EXCEEDED:
   - INSTALL CARBON STEEL SHIMS AS NEEDED TO SUPPORT THE STAINLESS STEEL WALL LINER MATERIAL, AS DESIGNED.
   - PLUG WELD LOCATION SHIMS SHALL BE 3" BY 3" FLAT STOCK OF VARYING THICKNESSES, AS NEDEED, WITH A 3/8" BY 1 1/2" LONG WELD ON TWO EDGES.
   - CONTINUOUS WELD LOCATION SHIMS SHALL BE 3" WIDE BY CONTINUOUS LENGTHS OF APPROPRIATE THICKNESSES TO PROPERLY SUPPORT THE LINER.
   - WELD SHALL BE 3/8" BY 1" LONG ON 12" CENTERS ON EACH SIDE OF THE SHIM STOCK.
   - ALL FIT UP TOLERANCES SHALL CONFORM TO AWS D1.1.
   - GROUT BEHIND STAINLESS STEEL LINER WITH MASTERFLOW 928 GROUT
   - QA SHALL DOCUMENT LOCATIONS IN APPROPRIATE WORK PACKAGES.
7. FOR ALTERNATE WALL/FLOOR CORNER DETAIL SEE SECT. BZ–BZ DWG. 911-D-130 SH.6, AND DETAIL 2B

REV	REVISIONS DESCRIPTION	APVD	
1	DELETED: SECT MARKS (D3), COORDINATES (B3). REVISED: NOTE (D8).	FAX 10/5/01	EV 10/5/01 / VC 10/15/01
2	INCORPORATED ECN(S): 077, 088		CCG
0	ER 25811 12/17/2000		

AS BUILT

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT _____ DATE _____

10/19/04 1:53:40 PM REPRO

UNLESS OTHERWISE SPECIFIED

DRAFTER VENDOR	DATE
DESIGNER VENDOR	DATE
ENGINEER VENDOR	DATE

FILE NAME 911-D-130_004_000
PLOT SCALE 1=64.00
D SPEC #
NEXT ASSEMBLY

DATABASE LINKED DRAWING
SEE ENGINEERING RELEASE FORM (ER) FOR DRAWING APPROVAL SIGNATURES.

VENDOR: BUTLER CONSTRUCTION CO. OF WNY, INC. RAYTHEON NUCLEAR, INC.

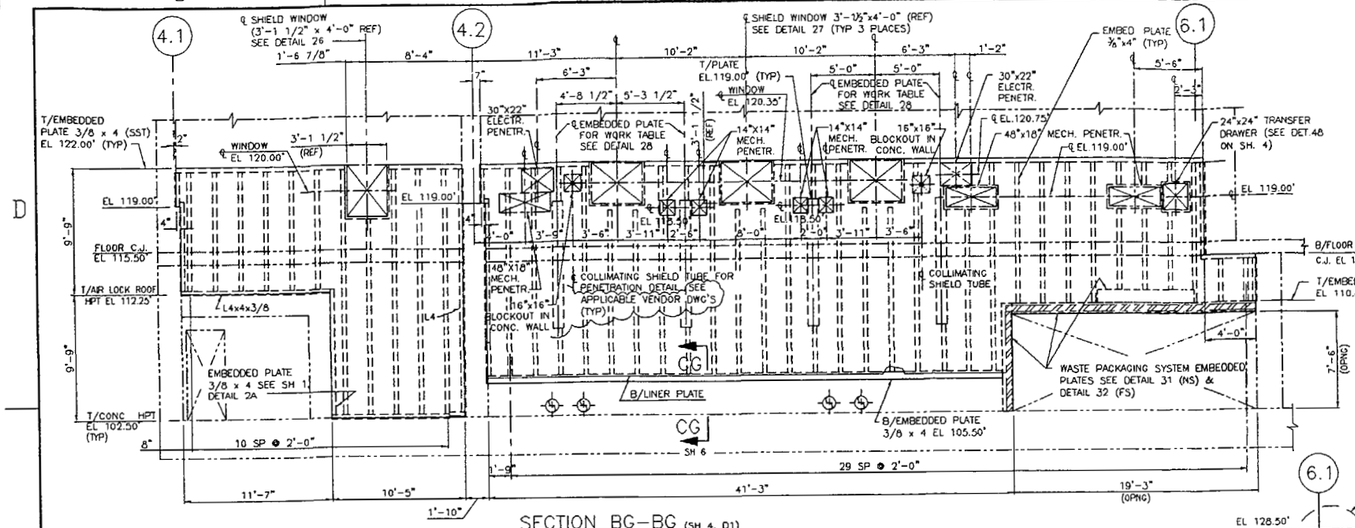
WVNSCO
West Valley Nuclear Services Company

REMOTE HANDLED WASTE FACILITY MAIN BUILDING STAINLESS STEEL LINER DETAILS

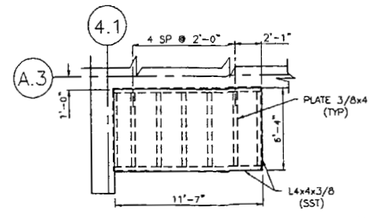
BWG SIZE	DWG #	REV
D	911-D-130	0

SCALE 3/16"=1'-0" U.N.
WEIGHT
A/E DWG #
SHEET 4 OF 7
A/E CONTRACT #
DWG IDENT #

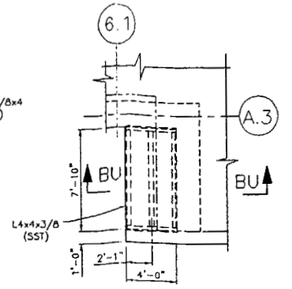
CAD DRAWING–DO NOT REVISE THIS ORIGINAL



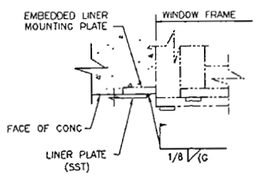
SECTION BG–BG (SH 4, D1)



PART PLAN B (SH 4, D3)
ROOF PLAN @ HPT EL 112.25'

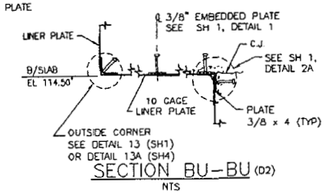


PART PLAN C (SH 4, D2)
B/FLOOR PLAN @ EL 114.50'

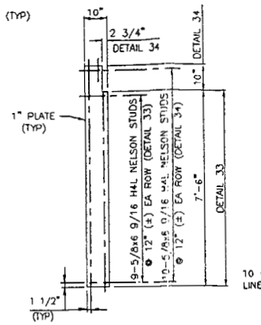


SECTION BV–BV (C1)

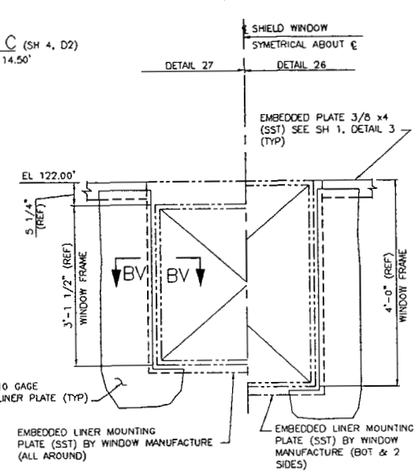
NOTE: LAP 10 GAGE SST LINER ONTO SHIELD WINDOW FRAME BETWEEN ¾" AND 2" MAX AT THREE SIDES.



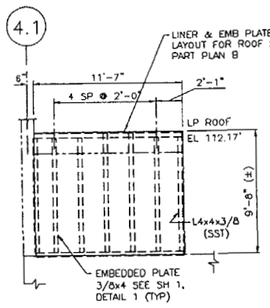
SECTION BU–BU (D2)
NTS



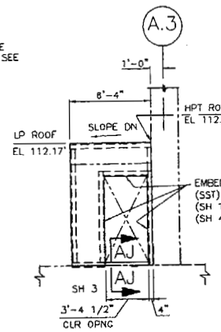
DETAIL 33 (C6)
DETAIL 34 (B6)
NTS



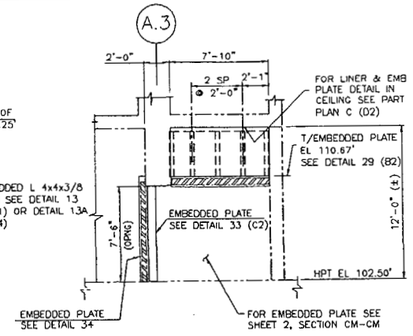
DETAIL 26 (D7 & SH 4, B5)
DETAIL 27 (D6)
SCALE: 3/4"=1'-0"



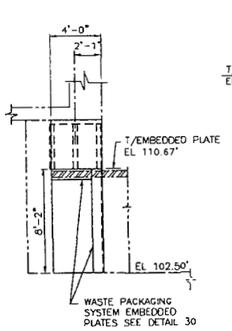
SECTION BH–BH (SH 4, D3)



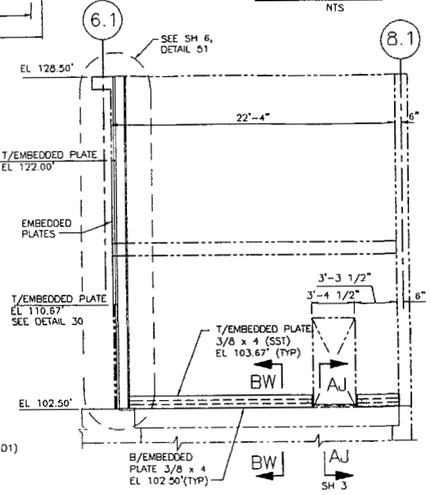
SECTION BJ–BJ (SH 4, D3)



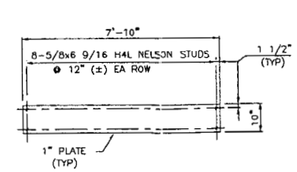
SECTION BK–BK (SH 4, D1)



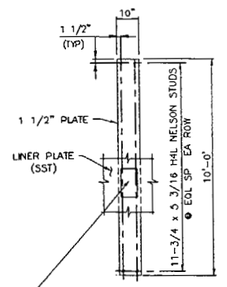
SECTION BL–BL (SH 4, D1)



SECTION BM–BM (SH 4, D1)

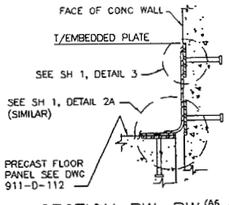


DETAIL 2C (C5)
NTS

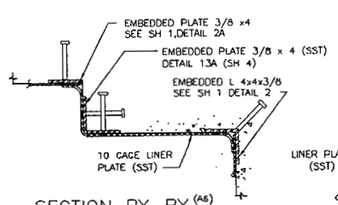


FIELD SHALL CUT AND REMOVE LINER PLATE AS REQUIRED TO ACCOMMODATE WORK TABLE ATTACHMENT AS PER SH 1, DETAILS 1, 5 & 6

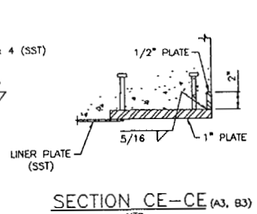
DETAIL 28 (4 REQD, D6)
WORK TABLE EMBEDDED PLATES
NTS



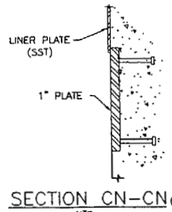
SECTION BW–BW (A6, A8, B3) (SH 6, D8)
NTS



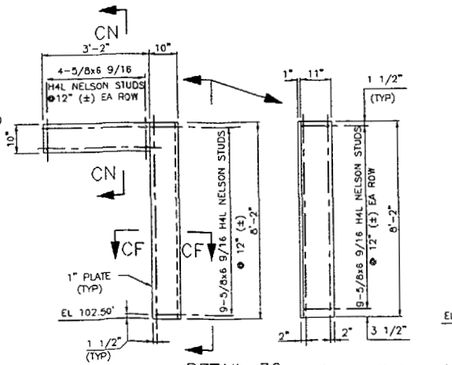
SECTION BY–BY (A6) (SH 6, D8)
NTS



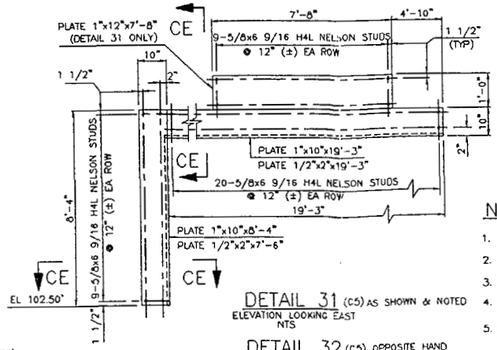
SECTION CE–CE (A3, B3)
NTS



SECTION CN–CN (B4)
NTS

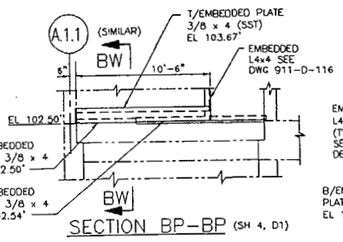


DETAIL 30 (B4, B5) (SH 4, A6) (SH 6, B3)
NTS

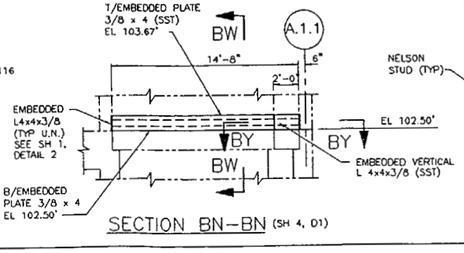


DETAIL 31 (C5) AS SHOWN & NOTED
ELEVATION LOOKING EAST
NTS

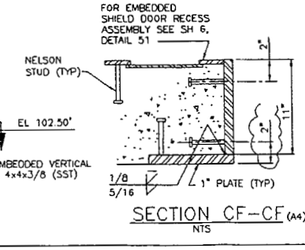
DETAIL 32 (C5) OPPOSITE HAND
ELEVATION LOOKING WEST AS SHOWN
NTS



SECTION BP–BP (SH 4, D1)



SECTION BN–BN (SH 4, D1)



SECTION CF–CF (A4)
NTS

NOTES:

1. FOR GENERAL NOTES & ABBREVIATIONS SEE DWG 911-D-100.
2. WORK THIS DRAWING WITH DWG 911-D-102 THRU 108.
3. FOR ADDITIONAL NOTES AND DETAILS SEE SHEET 1.
4. FOR ADDITIONAL NELSON STUDS AT SHIELD WINDOWS (TYP 3 PLC'S), SEE DETAIL 27A SHEET 7.
5. FOR ALTERNATE WALL/FLOOR CORNER DETAIL SEE SECT. BZ-BZ DWG. 911-D-130 SH.6, AND DETAIL 28

REV	DESCRIPTION	APVD	DATE
1	DELETED: (04), HOLES (04), MISSING INFO ADDED: NOTE (B6)	F.A.S. K.T.W. W.C.	03/20/01 03/13/01 03/15/01
2	INCORPORATED PCN-020, 023, 034, 035, 046, 074,062.	CCG	
0	ER 25811		12/17/2003

AS BUILT

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT _____ DATE _____

10/19/04 1:53:11 PM REPRO

UNLESS OTHERWISE SPECIFIED

DRAFTER VENDOR		DATE
CHECKER VENDOR		DATE
ENGINEER VENDOR		DATE

FILE NAME D-130_SHS_REV2
PLOT SCALE 1=64.00
D SPEC #
NEXT ASSEMBLY

VENDOR: BUTLER CONSTRUCTION CO. OF WNY, INC. RAYTHEON NUCLEAR, INC.

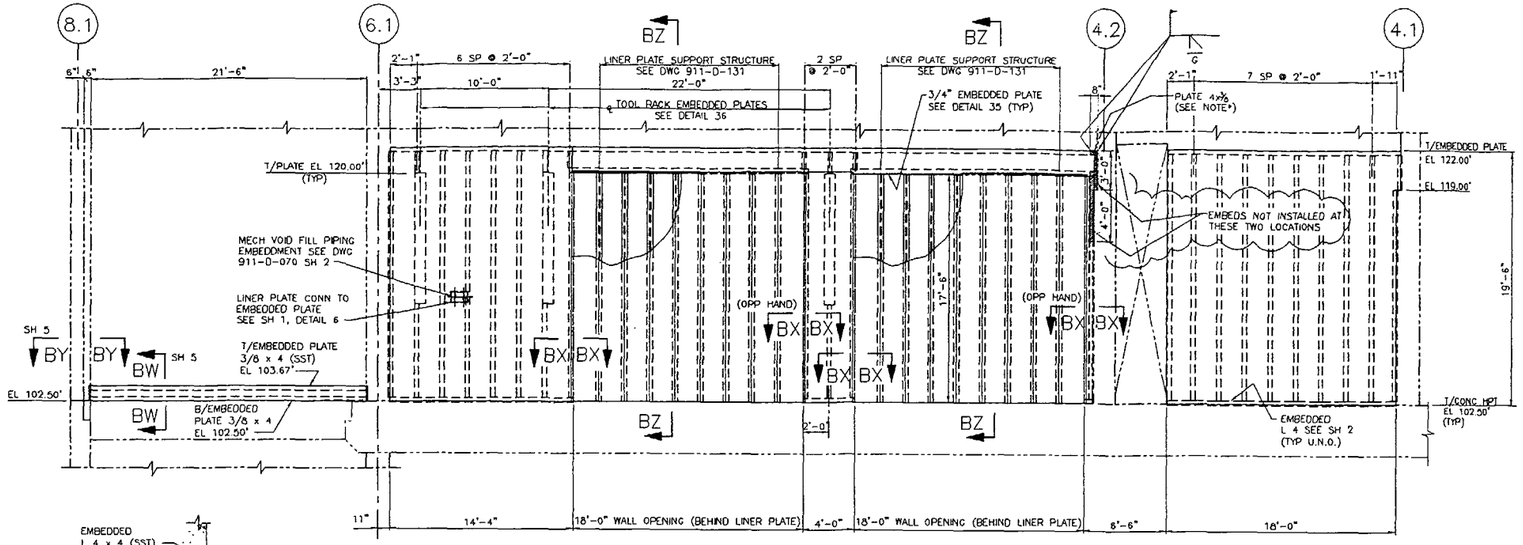
WVNSCO
West Valley Nuclear Services Company

REMOTE HANDLED WASTE FACILITY
MAIN BUILDING
STAINLESS STEEL LINER DETAILS

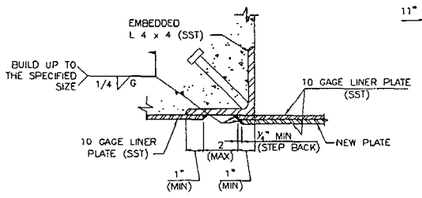
DATABASE LINKED DRAWING
SEE ENGINEERING RELEASE FORM (ER) FOR DRAWING APPROVAL SIGNATURES.

DWG SIZE: D
SCALE 3/16"=1'-0" U.N.
WEIGHT
A/E DWG #
A/E CONTRACT #
DWG # 911-D-130
REV 0
SHEET 5 OF 7
DWG IDENT #

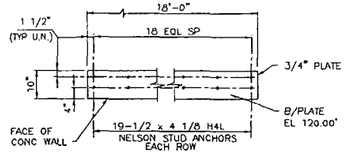
CAD DRAWING-DO NOT REVISE THIS ORIGINAL



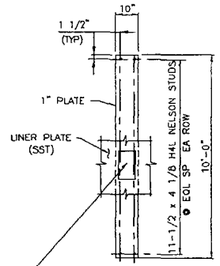
SECTION BQ–BQ (SH 4, D1)



DETAIL 49 (A8, B8)
SCALE: 3" = 1'-0

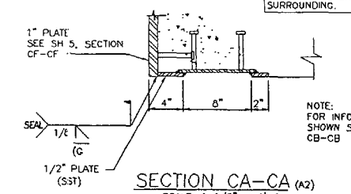


DETAIL 35 (A7, D5) (2 REQD)
SUPPORT STRUCTURE EMBEDDED PLATE
SCALE: 1/2" = 1'-0"



FIELD SHALL CUT AND REMOVE LINER PLATE AS REQUIRED TO ACCOMMODATE TOOL RACK ATTACHMENT AS PER SH 1, DETAILS 1, 5 & 6.

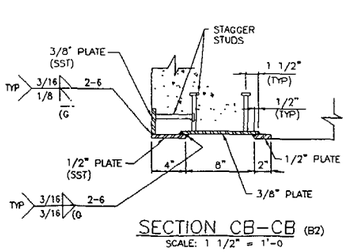
DETAIL 36 (3 REQD, D6)
TOOL RACK EMBEDDED PLATES
NTS



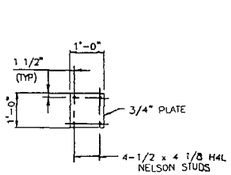
SECTION CA–CA (A2)
SCALE: 1 1/2" = 1'-0

NOTE:
FOR INFORMATION NOT SHOWN SEE SECTION CB–CB

NOTE:*
BUSH CONCRETE SURFACE TO A DEPTH OF APPROXIMATELY ½" AT THE HORIZONTAL STAINLESS STEEL EMBED. LOCATION. SECURE 4x3/8 PLATE BY WELDING AT EACH END. MIX AND PLACE EMBACO 885 GROUT TO FILL SPACE BEHIND AND ADJACENT TO SECURE PLATE. FINISH EXPOSED CONCRETE TO MATCH SURROUNDING.

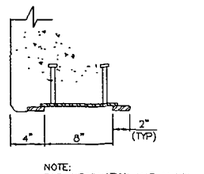


SECTION CB–CB (B2)
SCALE: 1 1/2" = 1'-0



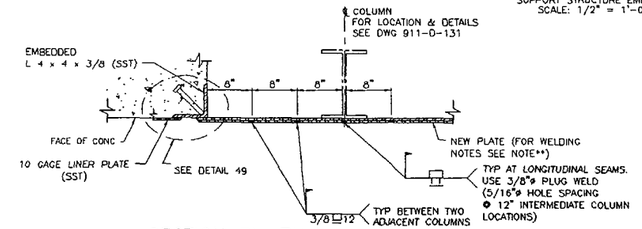
911-D-106 SH 2, C6) (1 REQD)

DETAIL 55 (SH 4, D6) (1 REQD)
SHIELD DOOR MOUNTING PLATE
NTS

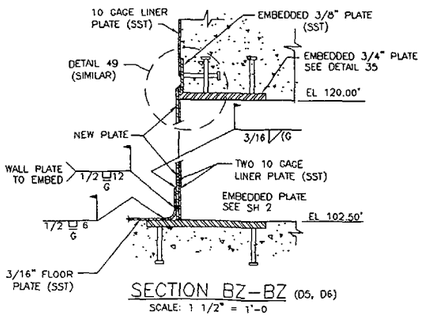


NOTE:
FOR INFORMATION NOT SHOWN SEE SECTION CB–CB

SECTION CC–CC (B2)
SCALE: 1 1/2" = 1'-0

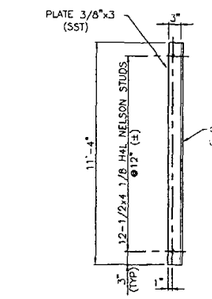


SECTION BX–BX (D5, D6)
SCALE: 1 1/2" = 1'-0

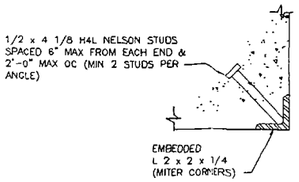


SECTION BZ–BZ (D5, D6)
SCALE: 1 1/2" = 1'-0

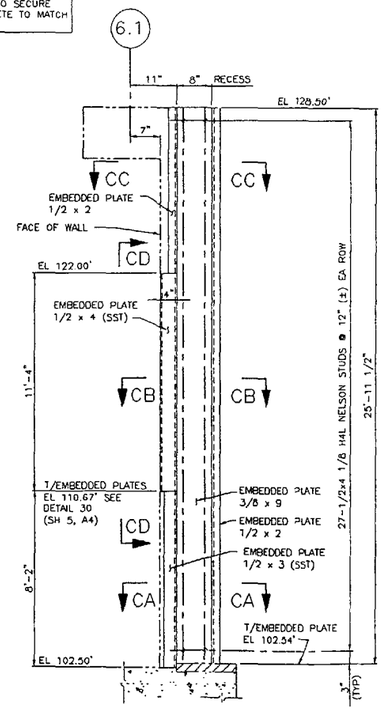
NOTE:**
1. WELDING OF STAINLESS STEEL LINER SHEET FOR WEST WALL LINER RESTORATION SHALL BE PERFORMED IN ACCORDANCE WITH AWS D1.6-99 "STRUCTURAL WELDING CODE-STAINLESS STEEL", EXCEPT FOR ARC PLUG WELDS WICH SHALL BE WELDED IN ACCORDANCE WITH NOTE 3 AND AWS D1.3-98, "STRUCTURAL WELDING CODE-SHEET STEEL".
2. WELDING SHALL BE PERFORMED USING EITHER THE MANUAL TUNGSTEN ARC (GTAW) PROCESS OR THE SEMIAUTOMATIC GAS-METAL ARC (GMAW) WELDING PROCESS. USE AWS A5.9 ER308L FILLER MATERIAL.
3. THE ARC PLUG WELD JOINT SHALL EMPLOY A 5/16" DIAMETER HOLE IN THE OVERLAY SHEET TO ATTAIN THE WELD METAL MINIMUM DIAMETER OF 3/8" IN ACCORDANCE WITH AWS D1.3-98, PARAGRAPH 2.3.7.2.



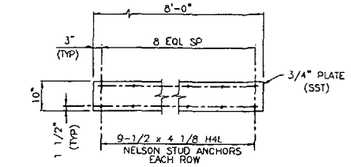
SECTION CD–CD (B3)
NTS



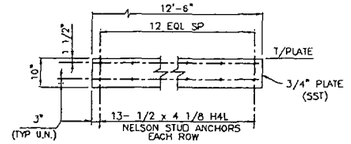
DETAIL 56 (SH 4, D4, D5)
TYPICAL SHIELD DOOR OPNG TRIM ANGLE
SCALE: 3" = 1'-0



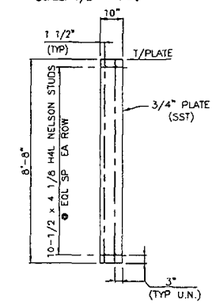
DETAIL 51 (SH 5, A5, C4)
SHIELD DOOR RECESS ASSEMBLY
NTS



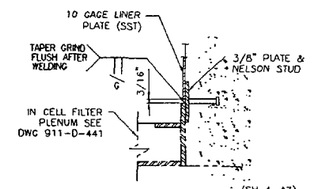
DETAIL 52 (SH 4, D4, D6) (2 REQD)
SHIELD DOOR MOUNTING PLATE
SCALE: 1/2" = 1'-0"



DETAIL 53 (SH 4, D4, D6) (2 REQD)
SHIELD DOOR MOUNTING PLATE
SCALE: 1/2" = 1'-0"



DETAIL 54 (SH 4, D5) (1 REQ'D)
SHIELD DOOR MOUNTING PLATE
NTS



SECTION CG–CG (SH 4, A7) (SH 5, C6)
NTS

NOTES:

1. FOR GENERAL NOTES & ABBREVIATIONS SEE DWG 911-D-100.
2. WORK THIS DRAWING WITH DWG 911-D-102 THRU 108.
3. FOR MECH VOID FILL SYSTEM EMBEDDED PLATE & PIPE ASSEMBLY LOCATION AND DETAIL SEE DWG 911-D-070 SH 2.
4. FOR ADDITIONAL NOTES AND DETAILS SEE SHEET 1.

AS BUILT

REV	DESCRIPTION	APV'D	F.A.S.	W.C.	D.F.	W.C.	E.O.	CCG
1	DELETED: DETAIL 47 (A6), MISSING INFO. (A5) ADDED: NOTES (B4, D2)	03/19/01	K.J.W. 03/15/01	03/15/01				
2	INCORPORATED AR #200 COMMENTS				09/21/01	W.C. 09/21/01	E.O. 09/21/01	
3	INCORPORATED NCR-024, FCN-074, 091							
0	ER 25811							12/17/2003

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT _____ DATE _____

UNLESS OTHERWISE SPECIFIED

FILE NAME 911-D-130_006_000
PLOT SCALE 1=64.00
D SPEC #
NEXT ASSEMBLY

DRAFTER VENDOR — DATE
CHKR'D VENDOR — DATE
ENGINEER VENDOR — DATE

DATABASE LINKED DRAWING
SEE ENGINEERING RELEASE FORM (ER) FOR DRAWING APPROVAL SIGNATURES.

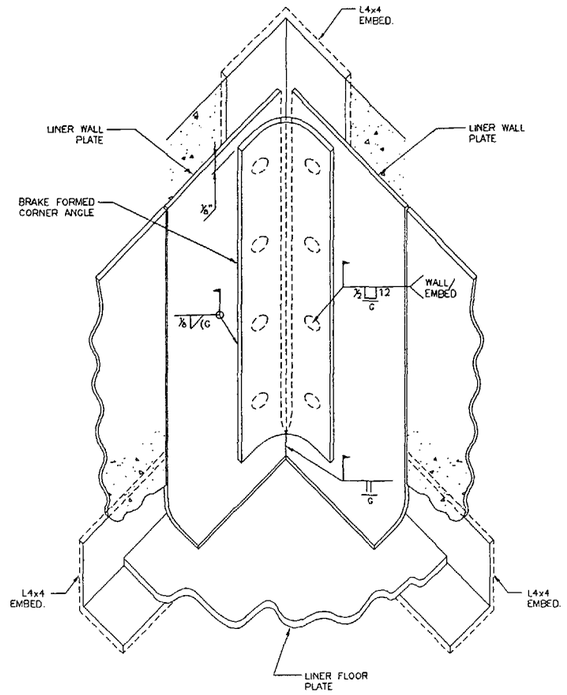
VENDOR: BUTLER CONSTRUCTION CO. OF WNY, INC. RAYTHEON NUCLEAR, INC.
FOR
WVNSCO
West Valley Nuclear Services Company

REMOTE HANDLED WASTE FACILITY
MAIN BUILDING
STAINLESS STEEL LINER DETAILS

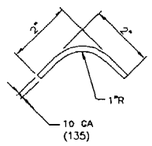
SCALE 3/16"=1'-0 U.N.
WEIGHT —
A/E DWG # —
DWG SIZE D
DWG # 911-D-130
REV 0
SHEET 6 OF 7
A/E CONTRACT #
DWG IDENT #

CAD DRAWING-DO NOT REVISE THIS ORIGINAL

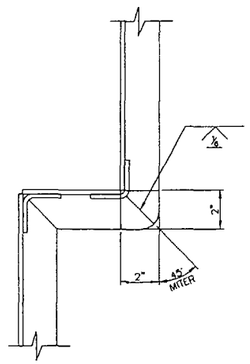
10/19/04 1:52:45 PM REPRO



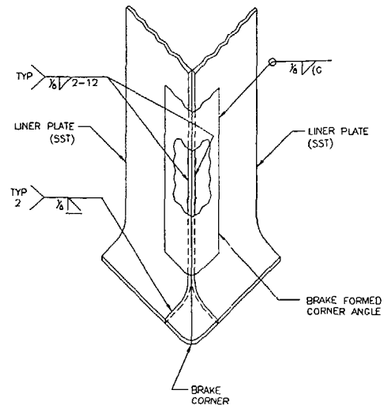
ALTERNATE INTERIOR CORNER DETAIL
AT INTERSECTION OF FLOOR AND WALLS
SEE DWG. 911-D-130 SH 3 AT (C1)
NTS



BRAKE FORMED CORNER ANGLE
NTS

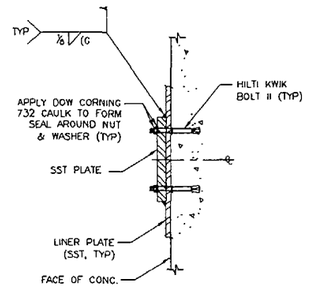


PLAN

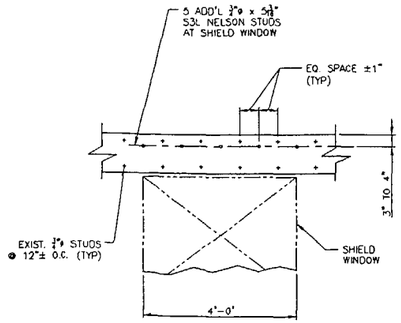


ISO OUTSIDE CORNER

DETAIL 13B
ALTERNATE DETAIL AT OUTSIDE CORNER
SEE DWG. 911-D-130 SH 1 AT (C2) & SH 4 AT (C3)
NTS



TYPICAL LINER CONNECTION AT
SURFACE MOUNTED PLATES
(SEE NOTE 12, DWG. 911-D-130 SH 1)
NTS



DETAIL 27A
(SEE NOTE 4, DWG. 911-D-130 SH 5)
NTS

NOTES:

1. FOR GENERAL NOTES & ABBREVIATIONS SEE DWG 911-D-100.

AS BUILT

THIS DRAWING INCORPORATES FCN-023,
FCN-066, FCN-089 & FCN-237

REVISIONS			
REV	DESCRIPTION	DATE	APPVD
0	ER 25611	12/17/03	CCG

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT _____ DATE _____

UNLESS OTHERWISE SPECIFIED

FILE NAME 911-D-130_007_000
PLOT SCALE 1=64.00
D SPEC # —
NEXT ASSEMBLY —

BRAFTER VENDOR DATE
CHECKER VENDOR DATE
ENGINEER VENDOR DATE
DATABASE LINKED DRAWING
SEE ENGINEERING RELEASE FORM (ERF) FOR DRAWING APPROVAL SIGNATURES

VENDOR: BUTLER CONSTRUCTION CO. OF WNY, INC
RAYTHEON NUCLEAR, INC.
FOR
WVNSCO
West Valley Nuclear Services Company

REMOTE HANDLED WASTE FACILITY
MAIN BUILDING
STAINLESS STEEL LINER DETAILS

BWG SIZE D
SCALE 3/16"=1'-0" U.N.O.
WEIGHT —
A/E DWG # —
A/E CONTRACT #
BWG # 911-D-130
REV 0
SHEET 7 OF 7
BWG IDENT #

CAD DRAWING-DO NOT REVISE THIS ORIGINAL

10/19/04 1:52:24 PM REPRO

ROOM FINISH SCHEDULE

ROOM NUMBER	ROOM NAME	FLOOR MAT'L	FLOOR FINISH	BASE	NORTH WALL MATL.	NORTH WALL FINISH	SOUTH WALL MATL.	SOUTH WALL FINISH	EAST WALL MATL.	EAST WALL FINISH	WEST WALL MATL.	WEST WALL FINISH	CEILING MATL.	CEILING FINISH	REFERENCE DWG	NOTES
001	TANK VAULT	CONC.	F-4	B-2	CONC.	W-3/W-5	CONC.	W-3/W-5	CONC.	W-3/W-5	CONC.	W-3/W-5	CONC.	C-2	911-D-157-1	
1ST FLOOR																
100	LOAD OUT/TRUCK BAY	CONC.	F-1*	–	SIDING/CONC	W-1/W-6*	SIDING	W-1*	SIDING	W-1*	CONC.	W-6*	NONE	NONE	911-D-157-SH1	* SEE NOTE ** AND CIVIL STR. DWG. 911-D-121
101	SURVEY/SPOT DECON A.	CONC.	F-2	–	CONC.	W-3	CONC.	W-3	CONC.	W-3	CONC.	W-3	CONC.	C-2	911-D-157-1	
102	RADIATION PROTECTION	CONC.	F-2	–	CONC.	W-3	CONC.	W-3	CONC.	W-3	CONC.	W-3	CONC.	C-2	911-D-157-1	
103	AIR LOCK	CONC.	F-2	–	CONC.	W-3	CONC.	W-3	CONC.	W-3	CONC.	W-3	CONC.	C-2	911-D-157-1	
104	AIR LOCK	CONC.	F-2	–	CONC.	W-3	CONC.	W-3	CONC.	W-3	CONC.	W-3	CONC.	C-2	911-D-157-1	
105	MEN'S TOILET ROOM	CONC.	F-3	B-1	GWB	W-4	GWB	W-4	GWB	W-4	GWB	W-4	ACT	–	911-D-157-1	
106	WOMEN'S TOILET ROOM	CONC.	F-3	B-1	GWB	W-4	GWB	W-4	GWB	W-4	GWB	W-4	ACT	–	911-D-157-1	
107	OFFICE	CONC.	F-3	B-1	GWB	W-4	GWB	W-4	GWB	W-4	GWB	W-4	ACT	–	911-D-157-1	
110	CORRIDOR	CONC.	F-3	B-1	GWB	W-4	GWB	W-4	GWB	W-4	GWB	W-4	ACT	–	911-D-157-1	
109	UTILITY/SERVICE ROOM	CONC.	F-3	–	CONC.	W-6	GWB	W-4	GWB	W-4	GWB	W-4	–	–	911-D-157-1	
108	CORRIDOR	CONC.	F-3	B-1	GWB	W-4	GWB	W-4	GWB	W-4	GWB	W-4	ACT	–	911-D-157-1	
111	LUNCH ROOM	CONC.	F-3	B-1	GWB	W-4	GWB	W-4	GWB	W-4	GWB	W-4	ACT	–	911-D-157-1	
112	CONFERENCE ROOM	CONC.	F-3	B-1	GWB	W-4	GWB	W-4	GWB	W-4	GWB	W-4	ACT	–	911-D-157-1	
113	CONTACT MAINTENANCE A	PRECAST	F-4*	–	CONC.	W-3	CONC.	W-3	CONC.	W-3	CONC.	W-3	–	–	911-D-157-1	* STAINLESS STL."PAN" ON FLOOR
114	WASTE PACKAGING AREA	CONC.	F-4*		STEEL/CONC.	W-3	CONC.	W-3	STEEL	W-3	STEEL/CONC	W-3	STEEL/CONC	W-3		* STAINLESS STL."PAN" ON FLOOR
115	WORK CELL	CONC.	F-4	B-2	CONC.	W-5	CONC.	W-5	CONC.	W-5	CONC.	W-5	–	–	911-D-157-1	
116	UTILITY CHASE	CONC.	F-5	–	CONC.	W-6	CONC.	W-6	CONC.	W-6	CONC.	W-6	CONC.	C-3	911-D-157-1	
117	AIR CLEANING/FILTER R.	CONC.	F-2	–	CONC.	W-3	CONC.	W-3	CONC.	W-3	CONC.	W-3	CONC.	C-2	911-D-157-1	
118	VESTIBULE	CONC.	F-2	–	CONC.	W-3	CONC.	W-3	CONC.	W-3	CONC.	W-3	CONC.	C-2	911-D-157-1	
119	AIR LOCK	CONC.	F-2	–	CONC.	W-3	CONC.	W-3	CONC.	W-3	CONC.	W-3	CONC.	C-2	911-D-157-1	
120	AIR LOCK	CONC.	F-2	–	CONC.	W-3	CONC.	W-3	CONC.	W-3	CONC.	W-3	CONC.	C-2	911-D-157-1	
121	BUFFER CELL	CONC.	F-4	B-2	CONC.	W-5	CONC.	W-5	CONC.	W-5	CONC.	W-5	–	–	911-D-157-1	
122	AIR CLEANING/FAN ROOM	CONC.	F-5	–	SIDING/CONC	W-1/W-6	SIDING/CONC	W-1/W-6	SIDING/CONC	W-1/W-6	SIDING/CONC	W-1/W-6	NONE	NONE	911-D-157-1	
123	RECEVING AREA	CONC.	F-1*	–	SIDING	W-1*	CONC.	W-2*	SIDING/CONC	W-1/W-6*	SIDING/CONC	W-1/W-6*	NONE	NONE	911-D-157-1	* SEE NOTE** AND CIVIL STR. DWG. 911-D-117 FOR FLOOR SEALER
ST1	STAIR1	CONC.	F-5	–	CONC.	W-6	CONC.	W-6	CONC.	W-6	CONC.	W-6	–	–	911-D-157-1	
ST2	STAIR2	CONC.	F-5	–	CONC.	W-6	CONC.	W-6	CONC.	W-6	CONC.	W-6	–	–	911-D-157-1	
2ND FLOOR																
200	SAMPLE ROOM	CONC.	F-2	–	CONC.	W-3	CONC.	W-3	–	–	CONC.	W-3	CONC.	C-2	911-D-157-2	
201	OFFICE	CONC.	F-3	B-1	GWB	W-4	GWB	W-4	GWB	W-4	GWB	W-4	ACT	–	911-D-157-2	
202	CONTACT MAINTENANCE A	*	*	*	CONC.	W-3	CONC.	W-3	CONC.	W-3	CONC.	W-3	CONC.	C-2	911-D-157-2	* SEE STRUCTURAL DWG. FOR PLATFORMS
203	WORK CELL	–	–	–	CONC.	W-3	CONC.	W-3/W-5	CONC.	W-3/W-5	CONC	W-3/W-5	–	–	911-D-157-2	
204	BUFFER CELL	–	–	–	CONC.	W-3/W-5	CONC.	W-3/W-5	CONC.	W-3/W-5	CONC.	W-3/W-5	–	–	911-D-157-2	
205	RECEVING AREA	*	*	*	SIDING	W-1*	CONC.	W-2*	SIDING/CONC	W-1/W-6*	SIDING/CONC	W-1/W-6*	–	–	911-D-157-2	* SEE NOTE ** AND STRUCTURAL DWG. FOR PLATFORMS
206	OPERATING AISLE	CONC.	F-2	–	CONC.	W-6	CONC.	W-6	CONC.	W-6	CONC.	W-3	CONC.	C-3	911-D-157-2	
207	UTILITY CHASE	CONC.	F-5	–	CONC.	W-6	CONC.	W-6	CONC.	W-6	CONC	W-6	CONC.	C-3	911-D-157-2	
ST1	STAIR1	CONC.	F-5		CONC.	W-6	CONC.	W-6	CONC.	W-6	CONC.	W-6	–	–	911-D-157-2	
ST2	STAIR2	CONC.	F-5		CONC.	W-6	CONC.	W-6	CONC.	W-6	CONC.	W-6	–	–	911-D-157-2	
3RD FLOOR																
300	MECHANICAL EQUIPMENT	CONC.	F-5	–	CONC.	W-6	CONC.	W-6	CONC./SIDING	W-6/W-1	CONC.	W-3	CONC./NONE	C-3/NONE	911-D-157-2	
301	VESTIBULE	CONC.	F-2	–	CONC.	W-3	CONC.	W-3	CONC.	W-3	CONC.	W-3	CONC.	C-2	911-D-157-2	
302	AIR LOCK	CONC.	F-2	–	CONC.	W-3	CONC.	W-3	CONC.	W-3	CONC.	W-3	CONC.	C-2	911-D-157-2	
303	AIR LOCK	CONC.	F-2	–	CONC.	W-3	CONC.	W-3	CONC.	W-3	CONC.	W-3	CONC.	C-2	911-D-157-2	
304	CONTACT MAINTENANCE A	CONC.	F-4	B-2	CONC.	W-3	CONC.	W-3	CONC.	W-3	CONC.	W-3	CONC.	C-2	911-D-157-2	
305	WORK CELL	–	–	–	CONC.	W-3	CONC.	W-3	CONC.	W-3	CONC.	W-3	CONC.	C-2	911-D-157-2	
306	BUFFER CELL	–	–	–	CONC.	W-3	CONC.	W-3	CONC.	W-3	CONC.	W-3	CONC.	C-2	911-D-157-2	
307	RECEIVING AREA	*	*	*	SIDING	W-1*	CONC.	W-2*	SIDING	W-1*	SIDING	W-1*	NONE	NONE	911-D-157-2	* SEE NOTE ** AND STRUCTURAL DWG. FOR PLATFORMS
308	STACK MONITOR	CONC.	F-5	–	CONC.	W-6	CONC.	W-6	CONC.	W-6	CONC.	W-6	CONC.	C-3	911-D-157-2	
ST1	STAIR1	CONC.	F-5	–	CONC.	W-6	CONC.	W-6	CONC.	W-6	CONC.	W-6	CONC.	C-3	911-D-157-2	
ST2	STAIR2	CONC.	F-5	–	CONC.	W-6	CONC.	W-6	CONC.	W-6	CONC.	W-6	CONC.	C-3	911-D-157-2	

NOTE**
Paint exposed structural columns with wall finish W-6, system B or C as may apply.

ABBREVIATION/LEGEND

CONC = CONCRETE
GWB = GYPSUM WALL BOARD
STL = STEEL
ACT = ACOUSTICAL CEILING TILE
SIDING = INSULATED METAL SIDING

WALL FINISHES
W-1 PRE-FINISHED METAL SIDING
W-2 EXPOSED CONC
W-3 EPOXY PAINT
W-4 EGGSHELL LATEX PAINT
W-5 STAINLESS STEEL
W-6 ALKYD SEMIGLOSS ENAMEL PAINT

CEILING FINISHES
C-1 PRE FINISH METAL SIDING
C-2 EPOXY PAINT
C-3 ALKYD SEMIGLOSS ENAMEL PAINT

FLOOR FINISHES
F-1 CONCRETE SEALER
F-2 EPOXY PAINT
F-3 TILE
F-4 STAINLESS STEEL
F-5 ALKYD SEMIGLOSS ENAMEL PAINT

BASE FINISHES
B-1 RUBBER BASE
B-2 STAINLESS STEEL

PARTITION SCHEDULE

TYPE 1. 1 5/8" METAL STUDS WITH ONE LAYER 5/8" GWB 8'-4" AFF .

TYPE 2. 3 5/8" METAL STUDS WITH ONE LAYER 5/8" GWB 8'-4" AFF .

TYPE 3. 3 5/8" METAL STUDS WITH ONE LAYER EACH SIDE 5/8" GWB 8'-4" AFF. EXTEND STUDS 4'-0" O.C. TO STRUCTURE ABOVE.

A. Latex system (Gypsum Board)

Primer/ Sealer: One coat Sherwin-Williams (or equal) Promar 200 Latex Wall primer B28, 2.0 mills DFT

Finish: Two coats Sherwin-Williams (or equal) ProMar 200 Ltaex Egg-Shell Enamel B20, 1.5 mils DFT each coat.

B. Semi-Gloss Alkyd Enamel (Shop Primed Ferrous Metal)

Finish: Two coats Sherwin-Williams (or equal) ProMar Salon Alkyd Semi-Gloss 2.7 mils DFT each coat.

C. Semi-Gloss Alkyd Enamel (Ferrous Metal Un-primed)

Primer: One coat Sherwin-Willaims (or equal) Kem-Kromic universal metal primer B50Z, 3.0 mils DFT.

Finish: Two coats Sherwin-Williams (or equal) ProMar Salon alkyd Semi-Gloss, 2.7 mils DFT each coat

D. Semi-Gloss Alkyd Enamel (Concrete)

Primer/ Surfacer: One coat Sherwi-Williams (or equal) Loxon Block surfacer, 3.6 mils DFT.

Finish: Two coats Sherwin-Williams (or equal) ProMar Salon Alkyd Semi-Gloss, 2.7 mils DFT each coat.

E. Epoxy Coating (Concrete)

Filler / Sealer: Apply a cork-floated finely textured finish surface to produce a smooth decontaminatable surface.

Finish: Two coats Amerlock 400, 4-8 mils DFT, each coat.

Based upon the manufacturers recommendations and project requirments to produce an appropriate decontaminatable coating, all concrete surfaces to be painted shall be prepared with the following steps:

1. Mechanically abrade concrete surfaces as required to remove fins, projections and loosely adhering concrete and perform "cosmetic" grouting to patch tie holes, expansion anchor holes and minor surface defects.
2. Abrasive blast clean all concrete surfaces that will recieve a paint coating system, per ASTM D-4259-88 (Reapproved 1999).
3. Apply a cork-floated finely textured finish surface, per ACI 301-99.
4. Apply two separate coats consisting of 4 to 8 mils each of Amerilock 400 paint to produce a smooth decontaminatable surface.

The above procedure shall be demonstrated by producing a sample finish panel showing each of the steps separately. Upon proper curing of the two coat epoxy system, adhesion shall be tested according to test method ASTM D-4541-95, Pull-off strength of coatings using portable adhesion testers.

Amerlock 400 is Manufactured by Ameron of Brea, California or equal.

F. Tile (floors)

12 x 12 x 1/8" thick Vinyl Composition tile by Armstrong Contract Interiors or approved equal. Provide transition strips between office and stairs.

G. Rubber Base

4" high x 1/8"thick coved rubber base with pre molded external corners by Flexco Company or approved equal.

H. Acoustical Ceiling Tile

Grid 15/16" exposed tee system by USG or approved equal Acoustical Tile 24 x 48"inch and 24 x 24 x 5/8" thick by USG or approved equal with class B interior finish rating.

NOTE:

1. ALL COLORS FOR FINISHES TO BE SELECTED BY ARCHITECT AND APPROVED BY OWNER.
2. FOR CONCRETE SEALER SEE STRUCTURAL DWG 911-D-121.
3. FOR STRUCTURAL STEEL FINISHES SEE STRUCTURAL DWGS.
4. ALL INTERIOR FINISH PRODUCTS/COATINGS SHALL HAVE A MINIMUM CLASS B INTERIOR FINISH RATING

HARDWARE SETS

HS001
EXTERIOR SINGLE LEAF/RATED
LOCKSET ANSI F86
1 1/2 PAIR BUTT
PANIC HARDWARE UL LABEL "A"
(DYNALOCK ELECTRIC PANIC HARDWARE ON DOORS ST1, ST1A, AND ST2 ONLY) 4
WEATHER STRIPPING & ALUM. THRESHOLD
CLOSER

HS002
EXTERIOR SINGLE LEAF/NON-RATED
LOCKSET ANSI F86
1 1/2 PAIR BUTT
WEATHER STRIPPING & ALUM. THRESHOLD
CLOSER W/HOLD-OPEN ARM

HS003
INTERIOR DOUBLE LEAF/NON-RATED
LATCHSET ANSI F86
3 PAIR BUTT
DOOR STOPS/WALL BUMPERS
SILENCER
DOOR STOPS & HOLDER

HS004
EXTERIOR DOUBLE LEAF/NON-RATED
LOCKSET ANSI F86
3 PAIR BUTT
WEATHER STRIPPING & ALUM. THRESHOLD
CLOSER W/HOLD-OPEN ARM

HS005
INTERIOR SINGLE LEAF/NON-RATED
LOCKSET ANSI F90
1 1/2 PAIR BUTT
DOOR STOPS/WALL BUMPERS
SILENCER
DOOR STOPS & HOLDER

HS006
INTERIOR SINGLE LEAF/SPECIAL-RATED
LATCHSET ANSI confirm w/site
1 1/2 PAIR BUTT
SPECIAL STRIPPING & ALUM. THRESHOLD
CLOSER
4

HS007
INTERIOR SINGLE LEAF/RATED
LOCKSET ANSI F75
1 1/2 PAIR BUTT
CLOSER

HS008
INTERIOR SINGLE LEAF/NON-RATED
LOCKSET ANSI F86
1 1/2 PAIR BUTT
CLOSER W/HOLD-OPEN ARM

HS009
INTERIOR SINGLE LEAF/NON-RATED
LATCHSET ANSI F76
1 1/2 PAIR BUTT
CLOSER
SILENCER
DOOR STOPS & HOLDER

HS010
EXTERIOR SINGLE LEAF/RATED
LATCHSET ANSI F04 OR LOCKSET ANSI F75
1 1/2 PAIR BUTT
PANIC HARDWARE UL LABEL "A"
CLOSER W/FEATURE TO HOLD OPEN
WEATHER STRIPPING & ALUMN. THRESHOLD

HS011
INTERIOR DOUBLE LEAF W/DOUBLE LEAF OVERHEAD NON-RATED
LOCK/LATCH SET SEE MANUF. SPECS
3 PAIR BUTT
CLOSER W/FEATURE TO HOLD OPEN

HS012
INTERIOR DOUBLE LEAF/RATED
LATCHSET ANSI F86
3 PAIR BUTT
DOOR STOPS/WALL BUMPERS
SILENCER
DOOR STOPS & HOLDER
ASTRAGAL
FLUSH BOLT ON IN-ACTIVE LEAF

HS013
INTERIOR SINGLE LEAF/RATED
LOCKSET ANSI F75
1 1/2 PAIR BUTT
PANIC HARDWARE UL LABEL "A"
(DYNALOCK ELECTRIC PANIC HARDWARE ON DOORS ST1, ST1A, AND ST2 ONLY) 4
CLOSER

HS014
INTERIOR SINGLE LEAF/NON-RATED
LOCKSET ANSI F86
1 1/2 PAIR BUTT
PANIC HARDWARE UL LABEL "A"
CLOSER W/HOLD-OPEN ARM

AS BUILT

REVISIONS

REV	DESCRIPTION	APVD		
1	FOR ACTION ITEM CHIT RESOLUTION	VI 8/22/01	MS 8/22/01	VM 8/22/01
2	INCORPORATED FCN NO. 071 & 112	LC 1/09/03	WC 1/09/03	EO 1/09/03
3	INCORPORATED FCN NO. 144	MZ 11/14/03	SCK 11/14/03	WC 11/14/03
4	INCORPORATED FCN 273			
0	ER 25935 03/26/2004	CCG		

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT ______ DATE ______

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS IN INCHES
FILE NAME 911-D-161_001_000
PLOT SCALE 1=1.00
D SPEC #
NEXT ASSEMBLY

DRAFTER VENDOR | DATE
CHECKER VENDOR | DATE
ENGINEER VENDOR | DATE

VENDOR: BUTLER CONSTRUCTION CO. OF WNY, INC. RAYTHEON NUCLEAR, INC. FOR

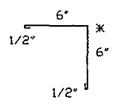
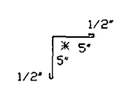
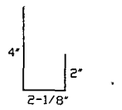
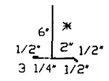
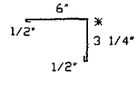
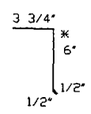
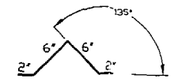
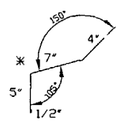
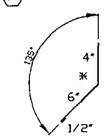
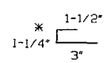
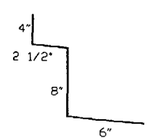
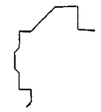
WVNSCO
West Valley Nuclear Services Company

REMOTE HANDLED WASTE FACILITY
ARCHITECTURAL-ROOM FINISH
SCHEDULE & PARTITION TYPES

DATABASE LINKED DRAWING
SEE ENGINEERING RELEASE FORM (ER) FOR DRAWING APPROVAL SIGNATURES.
DWG SIZE D
SCALE NONE
WEIGHT
DWG # 911-D-161
REV 0
A/E DWG #
SHEET 1 OF
A/E CONTRACT #
DWG IDENT #

CAD DRAWING-DO NOT REVISE THIS ORIGINAL

10/19/04 1:50:43 PM REPRO

(A) BASE TRIM Color: Lightstone Girth: 12" Qty: 33 Length: 10'-0"	(B) OUTSIDE CORNER TRIM  Color: Lightstone Girth: 13" Qty: 26 Length: 10'-0"	(C) INSIDE CORNER TRIM  Color: Lightstone Girth: 9" Qty: 23 Length: 10'-0"	(D)  16 Gage Galvanized Girth: 8-1/8" Qty: 43 Length: 10'-0"	(E) WINDOW / DOOR HEADER TRIM  Color: Lightstone Girth: 12 3/4" Qty: 16 Length: 10'-0"	(F) JAMB TRIM  Color: Lightstone Girth: 10 1/4" Qty: 28 Length: 10'-0"	(G) SILL TRIM  Color: Lightstone Girth: 10 3/4" Qty: 2 Length: 10'-0"	(H) ANGLE  12 Gage Galvanized Girth: 16" Qty: 14 Length: 10'-0"
(J)  Color: Lightstone Girth: 16 1/2" Qty: 7 Length: 10'-0"	(K)  Color: Lightstone Girth: 10 1/2" Qty: 7 Length: 10'-0"	(M) CHAIR IF REQUIRED  Girth: 5 3/4" Qty: 16 Length: 10'-0"	(N)  Girth: 20 1/2" Qty: 26 Length: 10'-0"	SCULPTURED EAVE TRIM Color: Burnished Slate Part No. MK. SET01 STANDARD PART SIZE Qty: 23 Length: 10'-0"	DRIP FLASH Part No. MK. LED01 Girth: 2 1/2" Qty: 23 Length: 10'-0"	RAKE ANGLE Part No. MK. MAR02 STANDARD PART SIZE Qty: Length: 10'-0"	RAKE TRIM  Color: Burnished Slate Part No. MK. RTA STANDARD PART SIZE Qty: 25 Length: 10'-0"
RAKE TRIM RETAINER Color: Burnished Slate Part No. MK. RRA01 Girth: 4" Qty: 48 Length: 10'-0"	BASE TRIM Part No. MK. BSB01 Color: Lightstone Girth: Qty: 22 Length: 10'-0"	RAKE ANGLE CLIP Part No. MK. H2051 STANDARD PART SIZE Qty: Length: 10'-0"	RAKE ANGLE Part No. MK. MAR01 STANDARD PART SIZE Qty: Length: 10'-0"	Z-PURLIN 16 Gage Galvanized Girth: 6 1/8" Qty: Length:	EAVE PLATE 16 Gage Galvanized Girth: 8 1/2" Qty: 26 Length: 10'-0"		

* COLOR

SEALANT/CAULK

1. 3/4" TAPE MASTIC MK. H3000
2. 1 1/2" TAPE MASTIC MK. H3001
3. 2 1/4" TAPE MASTIC MK. H3020
4. 8" PRECUT TAPE MASTIC H3640
5. CAULK

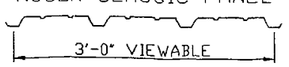
8 BUNDLES REQUIRED

BUNDLE	ELEV.		BUNDLE	ELEV.	
1	1	47 PANELS @ 39'-7"	4	5	12 PANELS @ 13'-6"
2	2	9 PANELS @ 15'-6"			9 PANELS @ 16'-0"
3	3	9 PANELS @ 36'-10"		8	3 PANELS @ 16'-1"
2	4	4 PANELS @ 10'-11 3/8"	2	9	9 PANELS @ 15'-3 3/4"
5	6	16 PANELS @ 37'-0"			3 PANELS @ 13'-8"
6	7	7 PANELS @ 22'-5"	7	10	15 PANELS @ 2'-6"
		5 PANELS @ 21'-0"	8	11	4 PANELS @ 3'-6"
					7 PANELS @ 4'-6"

CLOSURES

PANEL VOID CLOSURE H2630
OUTSIDE PANEL CLOSURE
H3410 @ "CLASSIC PANEL"

NUCOR CLASSIC PANEL



FASTENERS

1. H-1040 @ EACH SUPPORT
2. H1060 12' O.C. BETWEEN SUPPORT RETAINER MK. RRA01
3. H1030 (4" O.C.) @ MK. RTA
4. H1020 (2 PER CLIP)

REVISIONS

REV	DESCRIPTION	APVD	CDG
0	ER 25864 2/25/2004		

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT _____ DATE _____

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS IN INCHES

BUTLER CONSTRUCTION

FILE NAME 911-D-605_001_000

PLOT SCALE 1=12.00

D SPEC #

NEXT ASSEMBLY

DRAFTER VENDOR	DATE 02/13/2004	
CHECKER VENDOR	DATE	
ENGINEER VENDOR	DATE	

DATABASE LINKED DRAWING

SEE ENGINEERING RELEASE FORM (ER) FOR DRAWING APPROVAL SIGNATURES

DWG SIZE D

SCALE 1=1

WEIGHT

A/E DWG #

A/E CONTRACT #

VENDOR: AERODUN CONSTRUCTION ENT. INC
BUTLER CONSTRUCTION CO. of W.N.Y., INC.
FOR

WVNSCO
West Valley Nuclear Services Company

RHWF
SIDING AND ROOFING

DWG # 911-D-605

REV 0

SHEET 1 OF

DWG IDENT #

CAD DRAWING-DO NOT REVISE THIS ORIGINAL

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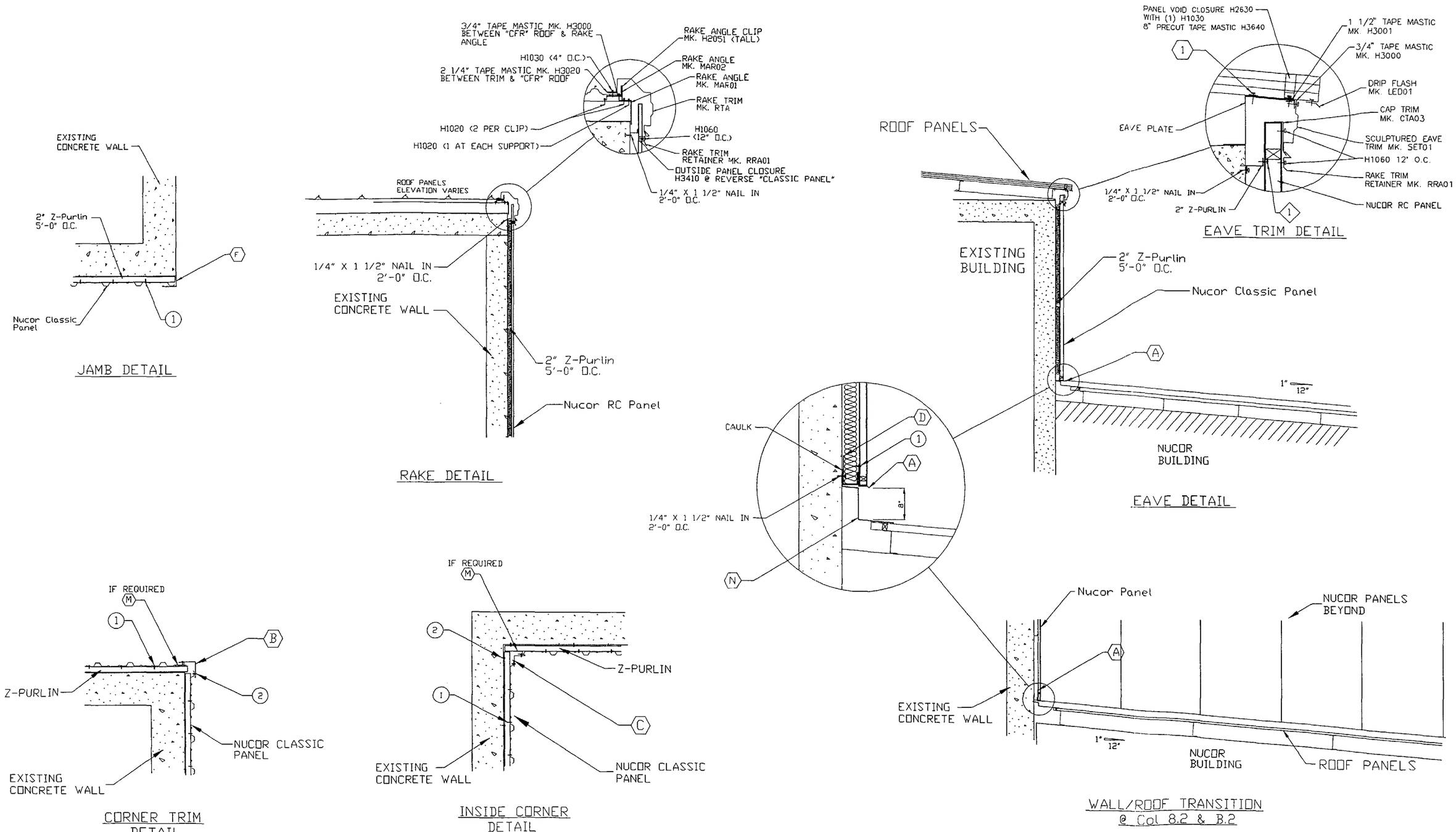


REV	DESCRIPTION	APV'D
1	Jamb Detail	
0	ER 25864 2/25/2004	CCG

REVISIONS

AS BUILT

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT _____ DATE _____

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS IN INCHES
BUTLER CONSTRUCTION
FILE NAME 911-D-605_005_000
PLOT SCALE 1=24.00
D SPEC #
NEXT ASSEMBLY

DRAFTER VENDOR DATE 02/13/2004
CHECKER VENDOR DATE
ENGINEER VENDOR DATE

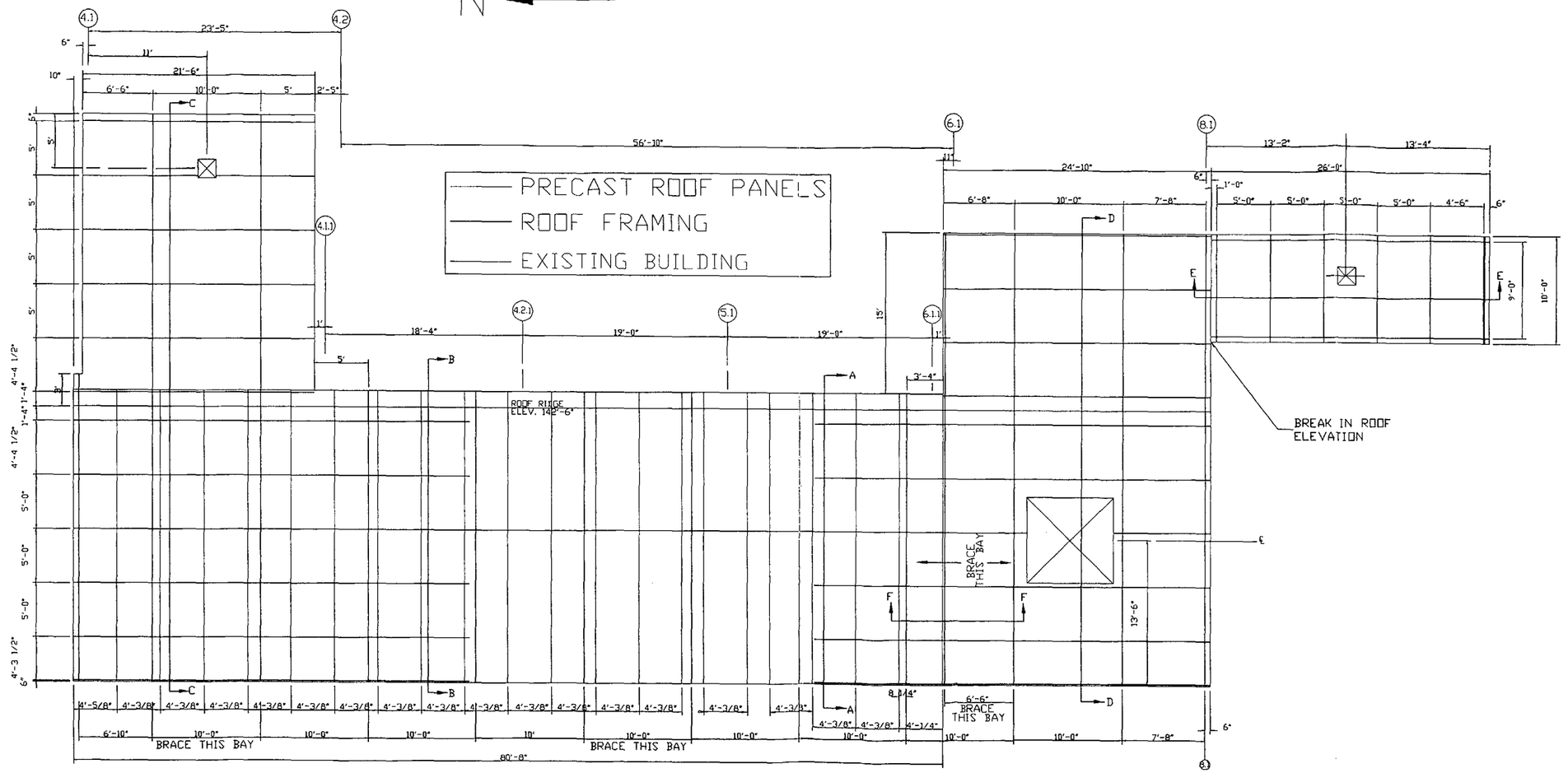
VENDOR: AEROSUN CONSTRUCTION ENT. INC. BUTLER CONSTRUCTION CO. of W.N.Y., INC.
FOR
WVNSCO
West Valley Nuclear Services Company

RHWF
SIDING AND ROOFING

DATABASE LINKED DRAWING
SEE ENGINEERING RELEASE FORM (ER) FOR DRAWING APPROVAL SIGNATURES.
DWG SIZE D
SCALE 1=1
WEIGHT
A/E DWG #
DWG # 911-D-605
REV 0
SHEET 5 OF

CAD DRAWING-DO NOT REVISE THIS ORIGINAL

10/19/04 10:17:04 AM BERRO



PLAN VIEW

AS BUILT

REV	DESCRIPTION	APVD
1	ROOF OPENING CURB POSITION	
2	ROOF OPENING CURB POSITION	
0	ER 25935 03/26/2004	CCG

REVISIONS

VERIFY ALL DOCUMENTS FOR CURRENT REVISION AND PENDING CHANGES PRIOR TO EACH USE
INIT _____ DATE _____

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS IN INCHES
BUTLER CONSTRUCTION

FILE NAME 911-D-606_001_000
PLOT SCALE 1=64.00
D SPEC #
NEXT ASSEMBLY

DRAFTER VENDOR | DATE
CHECKER VENDOR | DATE
ENGINEER VENDOR | DATE

DATABASE LINKED DRAWING
SEE ENGINEERING RELEASE FORM (ER) FOR DRAWING APPROVAL SIGNATURES.

DWG SIZE D

VENDOR: BUTLER CONSTRUCTION CO. of W.N.Y., INC. AEROSUN CONSTRUCTION ENT. INC.
FOR
WVNSCO
West Valley Nuclear Services Company

REMOTE HANDLED WASTE FACILITY
SIDING AND ROOFING

SCALE NONE
WEIGHT
A/E DWG #
DWG # 911-D-606
REV 0
SHEET 1 OF 8

CAD DRAWING-DO NOT REVISE THIS ORIGINAL

10/19/04 10:16:34 AM REPRO

SECTION E

CORRECTIVE ACTION

E-1 APPLICABILITY

In March 1992, the DOE and NYSERDA entered into a RCRA §3008(h) Administrative Order on Consent (Appendix E-1), hereafter referred to as the RCRA §3008(h) Consent Order, with the EPA and NYSDEC. In accordance with the RCRA §3008(h) Consent Order, DOE has performed the following:

- Interim Measures (IMs) to reduce or eliminate any threats to human health or the environment
- RFIs to fully determine the nature and extent of any release(s) of hazardous waste and/or hazardous constituents from the WVDP into the environment
- notification to the EPA and NYSDEC, in writing, within 15 days of discovery of any new SWMU
- preparation of a SWMU assessment plan within 60 days from notification of a new SWMU, including a proposed schedule of implementation and completion for each new SWMU identified subsequent to issuance of the RCRA §3008(h) Consent Order
- submittal of quarterly progress reports within 45 days following the end of a quarter to the EPA and NYSDEC until termination of the RCRA §3008(h) Consent Order. (First Quarter is October 1 to December 31; Second Quarter is January 1 to March 31; Third Quarter is April 1 to June 30; and Fourth Quarter is July 1 to September 30.)

The Corrective Measures section of this hazardous waste permit application only applies to the SWMUs within the WVDP boundary for which DOE has authority under the WVDP Act. Specific provisions and limitations of DOE's and NYSERDA's responsibilities are defined in the March 1992 WVDP 3008(h) Consent Order as follows:

- Section IV. Findings of Fact. Interim Status Facility. d. specifies: ". . . DOE asserts that it has no authority under the WVDP Act with respect to those portions of the Facility not used pursuant to the WVDP Act and that it does not generally have authority under the WVDP Act for disposition of facilities beyond the WVDP."
- The respective duties of the site owner and operator are delineated in Section VI. Order: Work to Be Performed by DOE and NYSERDA. 8. Coordination of Activities. as follows:

  a) "DOE and NYSERDA will jointly conduct the RFI and CMS required under this Order. DOE and NYSERDA intend to complete these activities as part of the joint EIS process.

  b) DOE will conduct interim measures that are required under this Order with respect to sources of contamination on the WVDP portion of the facility, as defined in section IV, subsection 9(b), and as illustrated in the map at Attachment 3. NYSERDA will conduct interim measures that are required under this Order with respect to sources of contamination on any other portion of the Facility, as that term is defined in section IV, subsection 9(a), and illustrated in the map at Attachment 3.

  c) The allocation set forth in subparagraph (b), above, is for the purpose of implementing this Order only and does not affect the resolution of related issues, including financial issues, between DOE and NYSERDA. Both parties reserve their

rights against each other as indicated in section XV of this Order."

- Section XV. Reservation of Rights. 8. States: "Nothing in this Order and no determinations made or action taken (including any failure to act) pursuant to the Order, including, without limitation, any determination of resolution resulting from Dispute Resolution under Section XIX, shall constitute an admission or evidence of an admission by Respondents or otherwise constitute an adjudication of any fact or conclusion of law, except in an action or proceeding by EPA to enforce the terms of this Order, nor shall anything in this Order release, waive, or otherwise affect or diminish any right, defense, authority, responsibility, immunity or claim for relief which NYSERDA or DOE may have against the other (or any person or entity not a part to this Order) under applicable provisions of law or contract, including, without limitations, NYSERDA and DOE's respective rights, authorities and responsibilities under the WVDP Act or the Cooperative Agreement."

In the RCRA §3008(h) Consent Order, DOE is identified as the operator of the WVDP and NYSERDA is identified as the operator of the WNYNSC, except those parts that are used or are in the possession of DOE as part of the WVDP. As indicated in the RCRA §3008(h) Consent Order, DOE and NYSERDA reserve the right to seek judicial review of disputes between them concerning their respective authority and responsibility arising from or related to the WVDP Act or the Cooperative Agreement.

In addition to DOE activities performed as summarized above, NYSERDA has sole responsibilities under Section VI of the RCRA §3008(h) Consent Order for the SDA; however, these responsibilities are not presented in this permit application because NYSERDA addresses their SWMUs under a separate EPA I.D. number and a separate RCRA Part A Permit application. It should be noted that in December 1994, NYSERDA completed an RFI for the NYSERDA-maintained portions of the Western New York Nuclear Service Center, including the SDA.

To date, 47 SWMUs have been identified at the WVDP and notification was made to the NYSDEC regarding each unit's history and status. Additionally, several cells in the Process Building, referred to as "Sealed Rooms" are included in Super Solid Waste Management Unit (SSWMU) #3. The individual SWMUs, including the Sealed Rooms, are presented on Figure B-2.

An RFI Work Plan (WVDP-RFI-014) was developed for the WVDP and approved by the EPA and NYSDEC (September 30, 1993, Appendix E-2), and implemented for the originally-identified SSWMUs and their respective SWMUs. Because some SWMUs were contiguous or so close as to make monitoring separate units impractical, individual SWMUs were grouped into 12 SSWMUs (Table E-1) for the purpose of completing the RFI. For SWMUs identified later and therefore not addressed in the RFI Work Plan, RCRA Facility Assessments (RFAs) and Preliminary Reviews (PRs) have been subsequently performed. The RFI, the RFA, and the PR Reports were previously transmitted to the EPA and NYSDEC and subsequently approved by the Agencies, as discussed and referenced in Section E-2. The only exceptions to this are for SWMU #45 - Breach in Laundry Wastewater Line, SWMU #46 - Concrete Vault Staging Area, and SWMU #47 - Remote-Handled Waste Facility. SSWMU #11, includes individual SWMUs identified as non-WVDP SWMUs in the RCRA §3008(h) Consent Order. NYSERDA is responsible for complying with the RCRA §3008(h) Consent Order for these SWMUs; therefore, they are not discussed in this permit application.

In accordance with the RCRA §3008(h) Consent Order, two IMs were implemented and completed at the WVDP. One IM was related to the detection of volatile organic compounds (VOCs) in a groundwater seep. The results were included in the NYSDEC-approved RFI Report for the Construction and Demolition Debris

Landfill (CDDL) (WVDP-RFI-019). The other IM was a groundwater interceptor trench installed at the NDA. A description and the results were included in the NYSDEC-approved RFI Report for the NDA (WVDP-RFI-018). The RFI Reports are publically-available documents and are not attached to this permit application.

E-2 SOLID WASTE MANAGEMENT UNIT SUMMARIES

A summary for each of the 47 SWMUs identified for the WVDP is presented below. The SWMU summaries are structured to present the following information, as requested in the January 27, 2004 facsimile transmittal from L.M. Winterberger of NYSDEC to M.N. Maloney of DOE entitled *SWMU Info for Part B Application*, as well as regulatory requirements of 6 NYCRR §373-2.5(a)(4):

- Unit Description
- Operational History
- Investigations and Findings
- Conclusions and Recommendations

Table E-2 provides the regulatory citation of SWMU information and where that information is presented and/or referenced in the permit application. Table E-3 includes the SWMU number, unit name, evaluation document, unit status, and the dates of agency status response letters. Based on the conclusions and recommendations presented in each SWMU summary, the corrective action determination for each unit will be ultimately determined by NYSDEC.

As previously stated, SWMU #25 is the responsibility of NYSERDA, and therefore is not presented in this section. Since NYSERDA is responsible for addressing the SDA, any future corrective actions associated with this SWMU will be specifically addressed by NYSERDA.

At the time of this permit application, NYSDEC and EPA have agreed to use the Decommissioning EIS process for closure of the WVDP. This EIS process will integrate and coordinate the requirements of the RCRA §3008(h) Consent Order. Together with DOE and NYSERDA, the NRC, NYSDEC, and EPA are participating as cooperating agencies in the EIS process. The results of the EIS process will determine the final closure activities for units such as the NDA and HLW tanks.

Acronyms used throughout this section are presented in this permit application immediately following Section K.

E-2A SWMU No. 1 - Construction and Demolition Debris Landfill (CDDL)

1. Description of Unit:

The CDDL is located northeast of the Process Building. It is approximately 1.5 acres in area and approximately 10 ft (3 m) in depth. The wastes were typically placed on pre-existing grade; however, some areas of the CDDL were excavated to a depth of 6 ft (1.8 m) prior to disposal activities. Below the CDDL is a sand and gravel geologic unit underlain by the Lavery till.

2. Operational History:

The CDDL received nonradioactive construction, office, and facility debris, and incinerator ash from the burning of paper and cardboard wastes from 1965 through initiation of landfill closure activities in December 1984. Landfill closure

activities were performed in accordance with closure and post-closure requirements pursuant to 6 NYCRR §360-7, *Construction and Demolition Debris Landfills*, and completed in August 1986. The NYSDEC subsequently approved and certified closure of the CDDL in October 1986.

3. Investigations and Findings:

Upon completion of landfill closure activities, surface water sampling activities were performed in the vicinity of the CDDL. In addition, leachate outbreak samples and landfill cap surface soil samples were collected in 1990 for laboratory analysis. In 1991, routine groundwater monitoring was initiated for monitoring wells adjacent to the CDDL. RFI sampling activities were performed in 1993 and 1994, followed by the submittal of an RFI Report to EPA and NYSDEC. Recommendations of the RFI Report for continued groundwater monitoring for VOCs and metals, and modification of the inspection and maintenance SOP for the CDDL, were implemented.

4. Recommendations and Conclusions:

Based on historical groundwater data trends; the CDDL closure and NYSDEC certification of compliance with 6 NYCRR §360-7 regulations; agency approval of the RFI Report conclusions (August 27, 1996, Appendix E-2); and ongoing groundwater and landfill monitoring activities, no further action is recommended for this SWMU.

E-2B SWMU No. 2 - NRC-Licensed Disposal Area (NDA)

1. Description of Unit:

The NDA is located on the topographically-flat South Plateau between Erdman Brook and Frank's Creek. The 5.1-acre waste burial area is rectangular and measures approximately 370 ft (113 m) by 600 ft (183 m) with some supporting ancillary structures. NFS disposed of solid LLW in burial holes located in a U-shaped area within the east, north, and west sides of the NDA. WVDP disposals were in trenches in the central portion of the NDA within the U-shaped area.

Additional features associated with the NDA include a groundwater interceptor trench (NYSDEC-approved IM and SWMU #23) and liquid pretreatment facility, the IWSF (SWMU #11/11a, also an interim status unit), a hardstand (SWMU #39), a buried, former wastewater transfer line from the SDA, and an active plant water line. The NDA interceptor trench is located along the northwest and northeast boundaries of the burial area. The IWSF is a metal building (36 ft [11 m] by 36 ft [11 m] by 15 ft [4.6 m]) that is anchored to a concrete slab foundation along the north side of the disposal area. The NDA hardstand is a three-sided cinder block facility with a compacted gravel/earth floor outside the southeast corner of the NDA. The buried wastewater line is a 2-inch-diameter PVC pipeline along the northeast side of the NDA that was used to transfer precipitation, runoff, and trench leachate liquids from the SDA lagoons to Lagoon 2, but was discontinued in 1991 for this use. However, the downstream section of this

wastewater transfer line from the NDA interceptor trench continues to be used.

2. Operational History:

From 1966 to 1982, NFS disposed solid LLW that was generated during the nuclear fuel reprocessing operations at the Main Plant. These wastes included leached fuel hulls, fuel canisters, ruptured fuel assemblies encased in concrete, spent ion-exchange resins and diatomaceous filter media, and radioactively-contaminated clothing and equipment. Waste such as leached fuel hulls and ruptured fuel hulls with high radioactive dose rates were buried in deep burial holes approximately 2.6 ft (0.8 m) by 6.5 ft (2 m) by 50 ft (15 m) deep. The special burial holes (various horizontal dimensions to a depth of 20 ft [6.1 m]) were used for wastes with lower dose rates. NFS disposal records indicate that at least twenty-two 1,000-gal (3,785-L) tanks containing a mixture of tributyl phosphate (TBP) and n-dodecane used in the fuel reprocessing solvent extraction process were disposed in several special holes during the late 1960s and early 1970s.

The buried, 2-inch-diameter PVC wastewater line along the northeast side of the NDA was used to transfer precipitation, runoff, and trench leachate liquids from the SDA lagoons to Lagoon 2, but was discontinued in 1991. This line is used to transfer water collected in the interceptor trench to Lagoon 2. The length of the line not being used from the SDA to the NDA was capped when taken out of service.

From 1982 through 1986, the WVDP disposed of approximately 200,000 ft^3 (5,663 m^3) of solid LLW in 12 trenches and four carbon-steel caissons. The disposal trenches were 14 ft (4 m) to 30 ft (9 m) deep and of variable lengths and widths. The four carbon-steel caissons are 50 ft (15 m) to 65 ft (19 m) deep and 7 ft (2.1 m) in diameter. The tops and bottoms of the caissons are capped with concrete. WVDP operations generated LLW during Process Building decontamination activities, including radioactively-contaminated Process Building equipment, protective clothing, and contaminated soils that were disposed in the NDA.

WVDP trenches 1 through 7, 10, and 12 were capped with clay (i.e., Lavery till) that had been excavated during their construction. Trenches 8, 9, and 11 were also capped with excavated clay, as well as a geotextile cap to reinforce the soil and to minimize the formation of dessication cracks. The trench 11 clay cap was constructed with a geogrid reinforcement and bentonite-lined sides. In addition, an intermediate drainage layer, a trench bottom sump, and settlement plates were installed to monitor this trench.

3. Investigations and Findings:

From December 1983 to February 1984, an investigation was performed to assess TBP/n-dodecane migration in the NDA. The investigation identified the source of the TBP/n-dodecane, the mechanism for its presence in the weathered Lavery till, and the analytical composition of impacted groundwater. The analytical data indicated that the impacted groundwater was nonhazardous and only limited VOCs were detected. This

investigation led to the kerosene mitigation program, as discussed in the SWMU 11/11a summary. Following the investigation into the source of the kerosene, an IM was performed to remediate the kerosene source and resultant environmental impacts. The IM implemented was the removal of kerosene tanks identified as the source, and installation of the interceptor trench (SWMU #23) to collected kerosene-impacted groundwater and eliminate/minimize migration of impacted groundwater from the NDA. In December 1989, three monitoring wells previously installed within the NDA were sampled in response to increases in the concentrations of TBP/n-dodecane.

In 1991, routine groundwater monitoring was initiated for monitoring wells adjacent to the NDA. RFI sampling activities (soil, groundwater, surface water, air, and sediment) for the NDA were performed in 1993 and 1994, followed by the submittal of an RFI Report to EPA and NYSDEC.

The conclusions and recommendations resulting from the RFI included: no listed wastes were identified as being disposed in the NDA; no need for short term corrective actions; continue operation of the interceptor trench; and continue groundwater monitoring in accordance with WVDP's *Groundwater Monitoring Plan* (WVDP-239).

4. Recommendations and Conclusions:

An evaluation of remedial technologies is currently being performed as part of the Decommissioning Environmental Impact Statement (EIS). The final remedial alternative for the NDA will be determined through the EIS process. Operation of the interceptor trench continues, as does groundwater monitoring in accordance with agency approval and clarification of the RFI (January 24, 1996 and July 23, 1996, Appendix E-2).

E-2C SWMU No. 3 - Lagoon 1

1. Description of Unit:

Lagoon 1, which was part of the LLWTF, SSWMU #1, is located east of the Process Building. The LLWTF contained several facilities, including Lagoon 1, that were used to treat low-level radioactive wastewater. Lagoon 1 was constructed as an unlined settling basin excavated in the alluvial sand and gravel deposits within the North Plateau. The lagoon was approximately 82 ft (25 m) by 82 ft (25 m) by 5 ft (1.5 m) deep with a capacity of approximately 300,000 gal (1,135,000 L).

2. Operational History:

Lagoon 1 began receiving wastewater in 1965 from the interceptors, the HLW tank farm, several yard drains located outside the Process Building, and leachate from the SDA. In 1984, Lagoon 1 was taken out of service by removing and transferring a 3.5-ft-thick (1.1-m) layer of radioactively-contaminated sediment to Lagoon 2; rerouting, capping, or removing all pipelines to and from Lagoon 1; and placing radioactively-contaminated asphalt, soil and vegetation from

the old NFS hardstand (SWMU #9) as backfill material. The lagoon was then capped with 1.5 ft (0.5 m) of clay and covered with 2 ft (0.6 m) of topsoil.

3. Investigations and Findings:

In 1991, routine groundwater monitoring was initiated for monitoring wells adjacent to the LLWTF. RFI sampling activities (soil, groundwater, and sediment) for the LLWTF were performed in 1993 and 1994, followed by the submittal of an RFI Report (WVDP-RFI-021) to EPA and NYSDEC. The RFI Report concluded that no further action was necessary other than continued groundwater monitoring and an investigation into elevated levels of chromium and nickel in groundwater, which was subsequently performed.

4. Recommendations and Conclusions:

Based on groundwater monitoring data collected since 1991 (including chromium and nickel data); historical groundwater data trends; continued groundwater monitoring; isolation and closing of Lagoon 1; and agency approval of the RFI Report conclusions (November 22, 1996, Appendix E-2); no further action is recommended for this SWMU.

E-2D SWMU No. 4 - Active Lagoons 2, 3, 4, and 5

1. Description of Unit:

Lagoons 2, 3, 4, and 5 are part of the LLWTF, which is located east of the Process Building on the North Plateau. These lagoons are currently being used to manage low-level radioactive wastewater. Lagoons 2 and 3 are unlined basins that were excavated into the Lavery till geologic unit in 1965. Lagoons 4 and 5 were constructed in 1971 in the alluvial sand and gravel deposits and initially lined with silty till and then subsequently lined with synthetics. The lagoons function as settling/holding basins for radioactive wastewater. Lagoon 2 is approximately 280 ft (85.3 m) long by 195 ft (59.4 m) wide by 17 ft (5.2 m) deep with a capacity of approximately 2,400,000 gal (9,084,000 L). Lagoon 3 is approximately 280 ft (85.3 m) long by 195 ft (59.4 m) wide by 24 ft (7.3 m) deep with a capacity of approximately 3,300,000 gal (12,491,000 L). Lagoons 4 and 5 have a capacity of approximately 240,000 gal (908,400 L) and 185,000 gal (700,225 L), respectively.

2. Operational History:

From 1965 to 1971, plant process wastewater was conveyed from Lagoon 1 into Lagoon 2 for transfer to Lagoon 3, and then for discharge to Erdman Brook, as appropriate. In 1971, the LLWTF building (O2 Plant) was constructed to receive and treat wastewater from Lagoon 2 for transfer into either Lagoon 4 or 5 and eventual discharge into Lagoon 3. In 1998, the O2 Plant was replaced for treatment of wastewater from Lagoon 2 by LLW2. Lagoon 2 has received wastewater from the interceptors after the closure of Lagoon 1 in 1984, as well as wastewater from the NDA interceptor trench, the SDA lagoons, and the HLW tank farm. Since 1971, Lagoons 4 and 5 received wastewater treated in the O2 Plant, which received wastewater from Lagoon

2. In 1972, sediment was removed from Lagoon 3 for burial in the NDA as part of the LLWTF upgrade. In 1974, Lagoons 4 and 5 were identified as potential sources of tritium in groundwater and subsequently lined with ethylene propylene diamine membranes.

3. Investigations and Findings:

In 1991, routine groundwater monitoring was initiated for monitoring wells adjacent to the LLWTF. RFI sampling activities (soil, groundwater, and sediment) for the LLWTF were performed in 1993 and 1994, followed by the submittal of an RFI Report (WVDP-RFI-021) to EPA and NYSDEC. Based upon data collected during the RFI, it was concluded that no further action is necessary for Lagoons 2, 3, 4, and 5, other than downgradient groundwater monitoring for VOCs, metals (including mercury), semivolatile organic compounds (SVOCs), and radiological indicator parameters downgradient of Lagoon 2. In addition, an investigation into elevated levels of chromium and nickel was recommended and subsequently performed.

4. Recommendations and Conclusions:

Based on groundwater monitoring data collected for the RFI and continued groundwater monitoring under the WVDP's *Groundwater Monitoring Plan* (WVDP-239); proven containment provided by the Lavery till (Lagoons 2 and 3) and the impermeable liners in Lagoons 4 and 5; and agency approval of the RFI Report conclusions (November 22, 1996, Appendix E-2), no further action is recommended for this SWMU. Upon completion of operations, Lagoons 2, 3, 4, and 5 will be closed in accordance with the SPDES requirements of 6 NYCRR §750-2.11, as well as 6 NYCRR §373-2.6(1).

E-2E SWMU No. 5 - Demineralizer Sludge Ponds

1. Description of Unit:

The demineralizer sludge ponds, which are part of SSWMU #2 (Miscellaneous Small Units), were built between 1964 and 1965 during construction of the Process Building on the North Plateau. The sludge ponds are two unlined, rectangular basins located southeast of the Process Building. Each pond is 50 ft (15 m) by 100 ft (30 m) and approximately 5 ft (1.5 m) deep. The ponds were designed to discharge through a weir box and underground piping to a SPDES-permitted outfall.

2. Operational History:

The demineralizer sludge ponds were designed to receive discharge solutions backflushed from the process water demineralizer and water softener, and sludge from the raw-water clarifier. Until 1985, only the north pond was used when the effluent mixing basin was brought on line. From 1985 to 1994, only the south pond was used to receive water softener regeneration and clarifier blowdown. The demineralizer sludge ponds have remained inactive since June 1994, as referenced in the RFI Report.

3. Investigations and Findings:

Five sediment cores were collected from the sludge ponds in 1988 for the laboratory analysis of radiologic parameters and TCLP metals. TCLP metals analytical results were reported as being below regulatory levels. In 1991, routine groundwater monitoring was initiated for monitoring wells adjacent to the sludge ponds. RFI sampling activities (soil, groundwater, and sediment) for the demineralizer sludge ponds were performed in 1993 and 1994, followed by the submittal of an RFI Report (WVDP-RFI-020) to EPA and NYSDEC. Analytical results from the RFI did not indicate the presence of a release of hazardous constituents from this unit. The RFI Report concluded that no further action was necessary for this unit.

4. Recommendations and Conclusions:

Based on groundwater monitoring data collected since 1991; the fact that the unit is no longer being used for receipt of process water discharges; and agency approval of the RFI Report conclusions (November 4, 1996, Appendix E-2), no further action is recommended for this SWMU.

E-2F SWMU No. 6 - Solvent Dike

1. Description of Unit:

The solvent dike, which is part of SSWMU #2, was built in 1966 on the North Plateau east of the Process Building. The solvent dike was a "D"-shaped, unlined impoundment, approximately 45 ft (14 m) by 50 ft (15 m). The solvent dike was partially excavated into the surficial sand and gravel deposits then bermed.

2. Operational History:

The solvent dike received runoff from the Solvent Storage Terrace located on the Process Building from 1966 to 1987. Radioactive TBP and n-dodecane that was spilled from solvent tanks in this area mixed with precipitation and was conveyed through a floor drain and related underground piping to the dike. The solvent dike was removed from service in 1987 by removing and packaging the berm and radiologically-contaminated soil/sediment, including the drain line, as referenced in the RFI Report, and has remained inactive since.

3. Investigations and Findings:

In 1991, routine groundwater monitoring was initiated for monitoring wells adjacent to the solvent dike. RFI sampling activities (soil, groundwater, and sediment) for the solvent dike were performed in 1993 and 1994, followed by the submittal of an RFI Report (WVDP-RFI-020) to EPA and NYSDEC. Analytical results from the RFI did not indicate the presence of a release of hazardous constituents from the solvent dike. The RFI Report concluded that no further action was necessary for this unit.

4. Recommendations and Conclusions:

Based on groundwater monitoring data collected since 1991, the fact that the unit is being removed from service in 1987, and agency approval of the RFI Report conclusions (November 4, 1996, Appendix E-2), no further action is recommended for this SWMU.

E-2G SWMU No. 7 - Effluent Mixing Basin

1. Description of Unit:

The effluent mixing basin, which is part of SSWMU #2, was constructed on the North Plateau (east of Warehouse I) as part of the WVDP's conventional sewage treatment system. The mixing basin measures approximately 50 ft (15 m) by 125 ft (38 m) by 7 ft (2 m) deep, and has an operating capacity of 250,000 gal (946,250 L). The mixing basin, which has a Hypalon® liner and is underlain by a sand drain, serves as a replacement for the demineralizer sludge ponds (SWMU #5). The mixing basin discharges through a SPDES-permitted discharge outfall.

2. Operational History:

The effluent mixing basin was brought into service in December 1985 to receive inflow from the WVDP's sewage treatment plant and boiler water blowdown, and sand filter backwash from the utility room. In July 1989, the sludge pond outfall was rerouted to the mixing basin. Until June 1994, the mixing basin received inflow from the former sludge ponds. Due to SPDES discharge exceedances in 1987, bottom sludges from the drained basin were removed and transported off site for disposal. Because of SPDES discharge exceedances in 1990, basin water was periodically shipped off site for treatment and disposal. Upgrades to the mechanical operation of the mixing basin have been performed periodically since 1989. The mixing basin is currently operational as an influent mixing basin for nonhazardous wastewater from utility room operations, as well as sewage treatment plant wastewater.

3. Investigations and Findings:

In 1991, routine groundwater monitoring was initiated for monitoring wells adjacent to the effluent mixing basin. RFI sampling activities (soil, groundwater, and sediment) for the effluent mixing basin were performed in 1993 and 1994, followed by the submittal of an RFI Report (WVDP-RFI-020) to the EPA and NYSDEC. Analytical results from the RFI did not indicate the presence of a release of hazardous constituents from the effluent mixing basin. The RFI Report concluded that no further action was necessary for this unit.

4. Recommendations and Conclusions:

Based on groundwater monitoring data collected since 1991; the fact that the unit only manages nonhazardous wastewater; and agency approval of the RFI Report conclusions (November 4, 1996, Appendix E-2), no further action is recommended for this SWMU. Upon completion of operations, this unit will be closed under the SPDES requirements pursuant to 6 NYCRR §750-2.11.

E-2H SWMU No. 8 - Maintenance Shop Leach Field

1. Description of Unit:

The Maintenance Shop leach field is located northeast of the Process Building on the north side of the Maintenance Shop and the Test and Storage Building on the North Plateau. This SWMU is comprised of three septic tanks, a distribution box, a tile drain field, and associated piping. The dimensions of one septic tank are 8 ft (2.4 m) by 4 ft (1.2 m) by 5.75 ft (1.75 m) high, while the dimensions of the other two septic tanks are unknown. Records indicate that the leach field covered an area of approximately 1,500 ft^2. The Maintenance Shop leach field was taken out of service in 1988 and has remained inactive since.

2. Operational History:

The components of the Maintenance Shop leach field were built in several stages between 1968 and 1972 to manage sanitary waste generated in the Maintenance Shop and test and storage building. In 1968, the first septic tank, the distribution box, leach field, and associated piping were installed to manage sanitary waste from the Test and Storage Building. In 1970, the Maintenance Shop was built and a second septic tank was installed and connected into the existing system. The third septic tank was tied into the existing system in 1972, based on planned renovations to the Test and Storage Building. However, this tank was reportedly never used, as the planned renovations were not performed. After taking the Maintenance Shop leach field out of service in 1988, the line leading to the leach field was plugged and one septic tank was filled with sand. In 1997, the remaining two septic tanks were backfilled with sand in accordance with a plan approved by NYSDEC.

3. Investigations and Findings:

In 1990, two soil samples were collected for laboratory analysis (including VOCs). In 1991, routine groundwater monitoring was initiated for monitoring wells adjacent to the Maintenance Shop leach field. RFI sampling activities included sediment and water collection from the septic tanks and area soil and groundwater sampling in 1993 and 1994, followed by the submittal of an RFI Report (WVDP-RFI-025) to the EPA and NYSDEC. Based upon data collected during the RFI, it was determined that groundwater monitoring for potential contamination and indicator parameters was appropriate, in addition to removing the contents and closing the two remaining septic tanks.

4. Recommendations and Conclusions:

Based on groundwater monitoring data collected since 1991 (including chromium and nickel data); the fact that the unit is being closed; and implementation of agency comments and clarifications to the RFI Report conclusions (June 16, 1997, Appendix E-2), no further action is recommended for this SWMU.

E-2I SWMU No. 9/9a - Old/New Hardstand Storage Area

1. Description of Unit:

The Old/New Hardstand Storage Area, which is part of SSWMU #6 (Low-Level Waste Storage Area), was constructed north of the Process Building and immediately south of LSA #3 on the North Plateau. The old and new hardstands both occupied the same general area. The old hardstand was a paved asphalt pad measuring approximately 150 ft by 150 ft (46 m by 46 m). The pad was slightly elevated above the surrounding ground surface, and drainage ditches existed around the perimeter. The old hardstand was taken out of service in 1984. The asphalt and some soil was removed and used as fill during the closure of Lagoon 1. The new hardstand was constructed in the same location in 1986 as a compacted gravel pad.

2. Operational History:

The old hardstand was used by NFS to store radioactive equipment. The new hardstand has been used to store packaged radioactive steel, stainless steel, concrete rubble, and miscellaneous LLW. The radioactive wastes stored in this area are all non-liquid.

3. Investigations and Findings:

Before the excavation and removal of the old hardstand, soil and vegetation samples were collected from the area and analyzed for radiological parameters. In 1991, routine groundwater monitoring was initiated for monitoring wells adjacent to the old hardstand storage area. RFI sampling activities (soil, groundwater, and sediment) for the old and new hardstands were performed in 1993 and 1994, followed by the submittal of an RFI Report (WVDP-RFI-022) to the EPA and NYSDEC. Analytical results from the RFI did not indicate the presence of a release of hazardous constituents from this unit. The RFI Report concluded that no further action was necessary for this unit.

4. Recommendations and Conclusions:

Based on both groundwater monitoring data collected since 1991 and agency approval of the RFI Report conclusions (July 30, 1996, Appendix E-2), no further action is recommended for this SWMU.

E-2J SWMU No. 10 - Waste Paper Incinerator

1. Description of Unit:

The waste paper incinerator, which is part of SSWMU #2, was constructed on the North Plateau north of Warehouse I. The incinerator was a PLIBRICO model 1-AGF-260, multiple-chamber retort incinerator. It was mounted on two rails on a concrete pad and had a listed capacity of 290 pounds (118 kg) per hour of combustible material. The incinerator was operated under a NYSDEC-issued permit for air emissions throughout its service period.

2. Operational History:

The incinerator was used from 1970 to 1985 for the burning of paper, packaging, and wood generated during site operations. The ash was routinely discarded into the CDDL for disposal until its closure in 1984. Following the discontinued use of the incinerator, the unit was padlocked by the NYSDEC in January 1991 to prevent its use upon expiration of the air emission permit. In May 1996, the incinerator was removed from its original location, disassembled, and placed in on-site storage.

3. Investigations and Findings:

Two composite soil samples were collected southeast of the incinerator in July 1990 for TCLP analysis. Also in 1990, samples of incinerator ash were analyzed by TCLP. The results of these analyses were below regulatory levels. In 1991, routine groundwater monitoring was initiated for monitoring wells adjacent to this unit. RFI sampling activities (soil groundwater, and sediment) for the incinerator were performed in 1993 and 1994, followed by the submittal of an RFI Report (WVDP-RFI-020) to the EPA and NYSDEC. Analytical results from the RFI did not indicate the presence of a release of hazardous constituents from this unit. The RFI Report concluded that no further action was necessary for this unit.

4. Recommendations and Conclusions:

Based on groundwater monitoring data collected since 1991; the fact that the unit is no longer being used and has been packaged for disposal; and agency approval of the RFI Report conclusions (November 4, 1996, Appendix E-2), no further action is recommended for this SWMU.

E-2K SWMU No. 11/11a - Kerosene Tanks and NDA Container Storage Area

1. Description of Unit:

The Kerosene Tanks and NDA Container Storage Area is now referred to as the IWSF. The IWSF is a RCRA container storage unit constructed as a 35-ft (10.7-m) by 35-ft (10.7-m) by 15-ft-high (4.6-m) metal building that is anchored to a concrete slab foundation along the north side of the disposal area. An 8-inch-high (20-cm) berm surrounds the epoxy-coated concrete floor to provide secondary containment capacity. Attached to the IWSF is a 10-ft (3.1-m) by 15-ft (4.6-m) metal frame shed anchored to a concrete slab to house the high-expansion foam fire suppression system for the IWSF.

2. Operational History:

The IWSF was constructed in 1985 to house the kerosene tanks and treatment system for the TBP/n-dodecane mitigation project (i.e., NDA Trench Interceptor Project). The IWSF was not used for that purpose since pretreatment of water collected by the NDA interceptor trench was not needed. In 1990, this unit was included in the RCRA Part A Permit application as a container storage and treatment unit. The IWSF has since been used for the storage of solid and liquid radiological, mixed, and hazardous wastes in containers. The container sizes managed in

the IWSF range from 0.01 gal (50 milliliters) to 55 gal (189 L). In addition, wastes undergoing waste characterization are stored in this building awaiting analytical results to determine the appropriate long-term waste storage location or off-site disposal. The IWSF has also been used for the preparation of radiological waste shipments. One holding tank located within a temporary weather structure was used in 1986 to temporarily store radioactively-contaminated liquid removed from TBP/n-dodecane storage tanks excavated from the NDA.

3. Investigations and Findings:

Weekly and monthly inspections of the waste containers and facility structure are performed. These inspections have not identified any spills or releases within this unit. Therefore, no investigations have been warranted. However, since the IWSF is located within the NDA, investigations of the NDA have been performed, as summarized for SWMU #2.

4. Recommendations and Conclusions:

The RFI Report and the no further action recommendation for the IWSF was subsequently approved by the agency (July 23, 1996, Appendix E-2). In addition, the IWSF is subject to RCRA closure under Interim Status or Final Status Standards pursuant to 6 NYCRR §§373-3.7 or 373-2.7, respectively. It is anticipated that upon meeting RCRA clean closure performance standards, a "No Further Action" determination will be requested for this unit under the RCRA §3008(h) Consent Order, or equivalent requirements that may be incorporated into the 6 NYCRR §373-2 permit.

E-2L SWMU No. 12/12a - Vitrification Test Facility Waste Storage Area

1. Description of Unit:

The Vitrification Test Facility Waste Storage Area, which is part of SSWMU #4 (High-Level Waste Storage Area), is located northeast of the Process Building on the North Plateau. The building is an approximate 43-ft (13.1-m) by 120-ft (36.6-m) metal building that is anchored to an 8-inch-thick (20-cm) concrete slab foundation. A 6-inch-high (15-cm) berm is present around the floor perimeter. The concrete floor and berm are coated with carbolene paint. The unit included two aboveground storage tanks. One stainless-steel tank, which was located on a curbed concrete pad within the building, had a capacity of 11,000 gal (41,635 L). The second stainless-steel tank was situated outside the north wall of the Vitrification Test Facility within a secondary containment vessel designed to hold 110% of the tank's 6,000-gal (22,710-L) capacity.

2. Operational History:

This unit was used during nonradiological and functional checkout testing of the vitrification system's waste feed storage tank and scrubber solution hold tank. The waste feed storage tank was operated from late 1985 to November 1989. Upon completion of test operations, this tank was moved to the Cold Chemical Building. The scrubber solution hold tank was used during testing performed between 1985 and 1989. This tank

is no longer used, has been emptied, and all ports have been blanked and sealed.

3. Investigations and Findings:

In 1991, routine groundwater monitoring was initiated for monitoring wells adjacent to SSWMU #4. RFI sampling activities (soil, groundwater, and sediment) for the Vitrification Test Facility were performed in 1993 and 1994, followed by the submittal of an RFI Report (WVDP-RFI-024) to EPA and NYSDEC. Analytical results from the RFI did not indicate the presence of a release of hazardous constituents from this unit. The RFI Report concluded that no further action was necessary for this unit.

4. Recommendations and Conclusions:

Based on groundwater monitoring data collected for the RFI; the unit no longer being used for scale vitrification testing; closure and/or removal of associated tanks; and agency approval of the RFI Report conclusions (February 11, 1997, Appendix E-2), no further action is recommended for this SWMU.

E-2M SWMU No. 13 - High-Level Waste (HLW) Tank Farm

1. Description of Unit:

The HLW Tank Farm, which is part of SSWMU #4, is located north of the Process Building on the North Plateau. The unit consists of four below-ground storage tanks (tanks 8D-1, 8D-2, 8D-3, and 8D-4). Tanks 8D-1 and 8D-2 are 70 ft (21.3 m) in diameter and 27 ft (8.2 m) high and have an operating capacity of 760,000 gal (2.8 million L). The tanks are constructed of 7/16-inch-thick carbon steel plate sides and roof, and 9/16-inch-thick carbon steel floor inside individual reinforced concrete vaults. Tank 8D-1 includes the zeolite columns of the STS. The vault walls and roof are 18 inches (46 cm) and 24 inches (61 cm) thick, respectively. Each tank rests on two layers of perlite blocks set on a 3-inch (7.6-cm) layer of pea gravel within a carbon-steel pan. The steel pans are equipped with a liquid level indicator, a recorder, and an alarm system for monitoring purposes. Another liquid level indicator, a recorder, and an alarm system are present in each vault system. There are a series of wells present around tanks 8D-1 and 8D-2 to monitor and control hydraulic conditions in the vicinity of the tank systems.

Tanks 8D-3 and 8D-4 are 12 ft (3.7 m) in diameter and 16 ft (4.9 m) high and have an operating capacity of 14,335 gal (54,186 L). The tanks are constructed of 5/16-inch-thick stainless-steel plate sides and roof, and ½-inch-thick stainless-steel floor inside a single reinforced concrete vault. The vault dimensions are 32 ft (9.8 m) by 19 ft (5.8 m) by 25 ft (7.7 m) high. The walls and floor are 21 inches (53 cm) and 24 inches (61 cm) thick, respectively. The floor and walls (up to an 18-inch [46-cm] height) are lined with 1/8-inch-thick stainless steel. The stainless-steel-lined vault pan is equipped with a liquid level alarm system for monitoring purposes.

2. Operational History:

Tank 8D-2, the primary storage tank, was used to hold PUREX waste in the form of supernatant (i.e., liquid) and sludges from the reprocessing of spent nuclear fuel. Tank 8D-1 was identified as a backup tank to 8D-2 in the event of a release or failure of this tank; however, this tank was never used for the storage of PUREX wastes. Tank 8D-1 was modified in the late 1980s by the WVDP to support operation of the STS and was used to process the HLW supernatant and sludge wash solutions through the STS to reduce the level of radioactivity. Tank 8D-2 has historically held upwards of 600,000 gal (2,272,000 L) of PUREX waste. Tank 8D-3 is used as a storage tank to transfer radioactive waste into the LWTS for treatment by evaporation. Tank 8D-4 was used as a backup tank for 8D-3 and was used to store THOREX wastes generated during processing of thorium oxide fuel. In 1995, after neutralization of the THOREX waste and subsequent sludge washing, the resultant THOREX waste was transferred to tank 8D-2 for processing through the vitrification system. In 2003, the final volume of SBW resulting from historical tank operations were transferred from tank 8D-2 through the STS and into the LWTS.

Upon completing the processing of SBW, HLW storage activities within these units were completed and tanks 8D-1 and 8D-2 (including the STS) were isolated in July 2003. A hazardous waste closure plan for tanks 8D-1 and 8D-2 and the STS was submitted to the NYSDEC in December 2002 for approval. Concurrent with the isolation of these units, grout was strategically injected into the soil around tank 8D-2 to limit the potential infiltration of groundwater into the tank containment vault. Liquid levels in the HLW tank vaults are monitored with liquid-level indicators that are read and recorded twice a day. Tanks 8D-3 and 8D-4 continue to be used for storage and processing of radioactive and mixed wastewater.

3. Investigations and Findings:

Historical liquid-level data from the tank vaults maintained in the WVDP Operating Record indicate that these tanks have not leaked during their operational history. Tank vaults are monitored with liquid-level indicators that are read and recorded twice a day. Prior to 1989, there was one documented release associated with operations of the tank farm. In 1985, a leaking flange valve led to the release of approximately 500 gal (1,900 L) of condensate that was being transferred to tank 8D-2. Migration of the release material was mitigated and impacted soil was excavated and placed in containers. RFI sampling activities (soil, groundwater, and sediment) for the HLW Tank Farm were performed in 1993 and 1994, followed by the submittal of an RFI Report (WVDP-RFI-024) to the EPA and NYSDEC. Since 1989, all spills and releases at the WVDP are recorded and tracked in a database. Based on database records, any spills or releases in the vicinity of the tank farm were immediately containerized and cleaned up. Any potentially-contaminated soils were excavated and properly dispositioned. Analytical results from the RFI did not indicate the presence of a release of hazardous constituents from the tank farm. It was concluded in the RFI Report that no further action other

than continued groundwater monitoring be performed for this unit.

Daily, weekly, and monthly inspections of the tank farm and routine groundwater monitoring in the vicinity of the tank farm have continually been performed. The inspections and groundwater monitoring results have not identified any unremediated spills or releases associated with this unit.

4. Recommendations and Conclusions:

Agency approval of the RFI Report conclusions (February 11, 1997, Appendix E-2) concurred with the continued groundwater monitoring and RCRA closure of the tank system and ancillary equipment pursuant to 6 NYCRR §373 requirements. An evaluation of remedial technologies is currently being performed for the tank farm as part of the Decommissioning EIS. The final remedial alternative for the tank farm will be determined through the EIS process. The identified remedial alternative will address RCRA closure under Interim Status or Final Status Standards pursuant to 6 NYCRR §§373-3.7 or 373-2.7, respectively, as applicable at the time of RCRA closure. For purposes of this permit application, it is anticipated that RCRA closure will encompass the grouting of the HLW tanks, installing a slurry wall around the tanks, and constructing a RCRA landfill cap, followed by post-closure monitoring.

E-2N SWMU No. 14 - Chemical Process Cell Waste Storage Area (CPC-WSA)

1. Description of Unit:

The CPC-WSA, also identified as SSWMU #7, was constructed northwest of the Process Building in 1985 on the North Plateau. This unit consists of a compacted gravel pad, upon which a pre-engineered, metal structure is constructed. The arched, 12-gauge galvanized-steel panel structure is approximately 200 ft (61 m) by 70 ft (21 m) by 30 ft (9 m) in height.

2. Operational History:

The CPC-WSA has been operated since 1985 for the storage of containerized mixed and low-level wastes principally generated from the D&D of the CPC. The CPC-WSA was protectively filed in the 1990 RCRA Part A Permit, and was subsequently identified as an interim status container storage unit in 1994 for the storage of mixed waste. Twenty-two carbon steel storage boxes are arranged in the center of the CPC-WSA, of which 13 have been identified as containing mixed waste. The container boxes were surrounded by 45 hexagonally-shaped concrete shield containers (i.e., SUREPAKs™). The SUREPAKs™ are 6.75 ft (2.1 m) wide by 10.5 ft (3.2 m) high, with each containing twenty-one 55-gal (208-L) steel drums. The drums are filled with solid radioactive waste or clean nonradioactive material. These concrete containers are used to reduce radiation exposure levels from the materials stored in the inner boxes. Ten of the SUREPAKs™ were identified as containing mixed waste.

3. Investigations and Findings:

RFI sampling activities (soil, groundwater, and sediment) for the CPC-WSA were performed in 1993 and 1994, followed by the submittal of an RFI Report (WVDP-RFI-023) to the EPA and NYSDEC. Results of the RFI did not indicate the presence of a release of hazardous constituents from the CPC-WSA. It was concluded in the RFI Report that no further action was recommended for this unit.

Weekly inspections of the CPC-WSA waste containers and quarterly inspections of the unit structure and support systems are performed and documented. These inspections have not identified any spills or releases within this unit; therefore, no investigations have been warranted.

4. Recommendations and Conclusions:

The RFI Report and the recommendation of no further action was subsequently approved by the agency (November 22, 1996, Appendix E-2). The CPC-WSA is subject to RCRA closure under Interim Status or Final Status Standards pursuant to 6 NYCRR §§373-3.7 or 373-2.7, respectively, as applicable at the time of RCRA closure. It is anticipated that upon meeting RCRA clean closure performance standards, a "No Further Action" determination will be requested for this unit under the RCRA §3008(h) Consent Order, or equivalent requirements that may be incorporated into the 6 NYCRR §373-2 Permit.

E-20 SWMU No. 15 - Containerized Low-Level and Transuranic Waste Storage Area (LAG Storage Areas #1 and #2 Hardstand)

1. Description of Unit:

SWMU #15, which is part of SSWMU #6, is comprised of LSA #1 and LSA #2. These units were constructed on the North Plateau north and northeast of the Process Building. LSA #1 was constructed in 1987 on a compacted gravel pad. The 191-ft (58-m) by 55-ft (17-m) by 23-ft-high (7-m) building is a pre-engineered metal frame and fabric enclosure. The fabric is vinyl-coated polyester that is fire resistant and self-extinguishing. LSA #2 was originally a metal frame and fabric enclosure constructed upon a compacted gravel pad in 1988. The structure was removed in 1993 and the gravel pad has continued to be used as a hardstand.

2. Operational History:

LSA #1 was identified in the 1990 RCRA Part A Permit as a container storage unit and has been operated for the storage of containerized LLW generated from WVDP activities. No mixed or hazardous wastes have been historically stored in this unit. LSA #2 was protectively filed in the 1993 RCRA Part A Permit revision and has been principally used to store containerized LLW. During the last two years, the LSA #2 Hardstand has been used for the temporary storage of containerized low-level and mixed wastes.

3. Investigations and Findings:

In 1991, routine groundwater monitoring was initiated for monitoring wells adjacent to the LSAs #1 and #2 Hardstand. RFI sampling activities (soil, groundwater, and sediment) for this SWMU were performed in 1993 and 1994, followed by the submittal of an RFI Report (WVDP-RFI-022) to the EPA and NYSDEC. Results of the RFI did not indicate the presence of a release of hazardous constituents from LSA #1 and/or LSA #2 Hardstand. It was concluded in the RFI Report that no further action was recommended for this unit.

4. Recommendations and Conclusions:

The RFI Report and the recommendation of no further action was subsequently approved by the agency (July 30, 1996, Appendix E-2). Additionally, the LSAs #1 and #2 Hardstand are subject to RCRA closure under Interim Status or Final Status Standards pursuant to 6 NYCRR §§373-3.7 or 373-2.7, respectively, as applicable at the time of RCRA closure. It is anticipated that, upon meeting RCRA clean closure performance standards, a "No Further Action" determination will be requested for this unit under the RCRA §3008(h) Consent Order, or equivalent requirements that may be incorporated into the 6 NYCRR §373-2 Permit.

E-2P SWMU No. 16/16a - LAG Storage Building (LSB) Extension, and Addition Areas (LSA #3 and LSA #4)

1. Description of Unit:

The LSB, identified as SWMU #16, is part of SSWMU #6. The LSB was constructed northeast of the Process Building in 1984 on the North Plateau. It is a pre-engineered, insulated metal, Butler-style structure supported by a clear span frame anchored to a 140-ft (43-m) by 60-ft (18-m) concrete slab. The concrete slab is approximately 20 inches (50.8 cm) thick in the center and slopes to a thickness of eight inches at the perimeter. A 6-inch-high (15.2-cm) concrete berm is present around the sides of the slab and the concrete floor and berm have been coated with epoxy. The building height is 17 ft (5.2 m) in the center and 15.7 ft (4.8 m) at the eaves.

LSA #3 and LSA #4, collectively referred to as SWMU #16a, were originally constructed as pre-engineered aluminum and fabric enclosures on concrete pads in 1992. In 1996, the fabric was replaced with pre-engineered metal siding and roofing on both buildings. The dimensions of both structures are approximately 291 ft (88 m) by 88 ft (26 m) by 40 ft (12 m) high. The perimeter of the concrete floors in both buildings are lined with a 6-inch-high (15.2-cm) concrete berm. The floors, berms, and the enclosed ramp that allows for the transfer of containers between both buildings are epoxy coated for spill protection. In 1995, the CSPF was constructed within LSA #4 and is constructed of pre-fabricated, interlocking stainless-steel panels. In 1999, a 91-ft (28-m) by 85-ft (26-m) Shipping Depot was constructed on a concrete pad attached to the east side of LSA #4.

2. Operational History:

The LSB has been operated for the storage of containerized mixed and low-level wastes generated from WVDP activities. Waste boxes are stored in stacks to a maximum height of four high, and drums are staged on steel pallets to a maximum height of four. In 1987, a supercompactor (SWMU #38) was installed in a prefabricated trailer attached to the LSB to reduce the volume of radiologically-contaminated, compressible items. The supercompactor was equipped with a HEPA filter, the floors were lined with rubber mats, and the walls were lined with Herculite to prevent the spread of contamination. The supercompactor was taken out of service in 1992.

LSAs #3 and #4 have been used for the storage of mixed and low-level wastes since 1992. The CSPF continues to be used to sort and repackage LLW into approvable shipping containers. The Shipping Depot has been used as the loadout area for low-level and mixed wastes stored in LSA #3 and LSA #4. In addition, the Shipping Depot has been periodically used for the storage of containers prior to loading for off-site disposal and for asbestos abatement projects.

3. Investigations and Findings:

During the 1990 excavation activities for LSAs #3 and #4 footings, 32 soil samples were collected for laboratory analysis of metals. The analytical results were within concentration ranges typical of native soils. In 1991, routine groundwater monitoring was initiated for monitoring wells adjacent to the LSB and LSAs #3 and #4. RFI sampling activities (soil, groundwater, and sediment) for the LSB and LSAs #3 and #4 were performed in 1993 and 1994, followed by the submittal of an RFI Report (WVDP-RFI-022) to the EPA and NYSDEC. Results of the RFI did not indicate the presence of a release of hazardous constituents from the LSB, LSA #3 and/or LSA #4. It was concluded in the RFI Report that no further action was recommended for this unit.

4. Recommendations and Conclusions:

The RFI Report and the recommendation of no further action was subsequently approved by the EPA and NYSDEC (July 30, 1996, Appendix E-2). Additionally, the LSB and LSAs #3, and #4 are subject to RCRA closure under Interim Status or Final Status Standards pursuant to 6 NYCRR §§373-3.7 or 373-2.7, respectively, as applicable at the time of RCRA closure. It is anticipated that upon meeting RCRA closure performance standards, a "No Further Action" determination will be requested for this unit under the RCRA §3008(h) Consent Order, or equivalent requirements that may be incorporated into the 6 NYCRR §373-2 permit.

E-2Q SWMU No. 17/17a/17b - LLWTF Building (02 Plant and LLW2), Neutralization Pit, and Interceptors

1. Description of Unit:

The neutralization pit is the first unit in line of the LLWTF system. The pit receives wastewater from the Process Building

via underground piping. The neutralization pit is 9 ft (2.7 m) by 7 ft (2.1 m) by 5.5 ft (1.7 m) deep and constructed of concrete. The tank is equipped with a mixer and has a working volume of 800 gal (3,028 L).

Wastewater from the neutralization pit is transferred to the interceptors (old or new). The old interceptor is a concrete structure that is 25 ft (7.6 m) by 40 ft (12.2 m) by 11.5 ft (3.5 m) deep. The old interceptor has a capacity of 50,000 gal (189,250 L). The structure is covered by a steel roof. The new interceptor is a below-grade, stainless-steel-lined concrete basin that has two compartments. The overall dimensions of the new interceptor are approximately 40 ft (12 m) by 22 ft (6.8 m) by 11.5 ft (3.5 m) deep and each compartment has a working capacity of 21,000 gal (79,485 L). Wastewater in the interceptors is then transferred to Lagoon 2.

The LLWTF building (O2 Plant), constructed in 1971, was located east of the Maintenance Shop and the Neutralization Pit, and the Interceptors are located southeast of the FRS Building on the North Plateau. Until 1998, the O2 Plant received wastewater from Lagoon 2 and processed the water through a series of zeolite columns to reduce the radioactivity levels in the wastewater. In 1998, the O2 Plant was removed from service and replaced by a new treatment facility (i.e., LLW2). The LLW2 is approximately 50 ft (15 m) northeast of the O2 Plant.

2. Operational History:

The neutralization pit and the old interceptor were constructed in 1965. The neutralization pit was relined with stainless steel and stainless-steel baffles were added to improve mixing in 1967. From 1965 to 1988 sodium hydroxide was added to the neutralization pit to adjust the pH of the wastewater. Since 1988, sodium hydroxide has been added upstream of the neutralization pit. In 1967, the new interceptor was built as a replacement for the old interceptor. However, both units continue to be used at the WVDP with the new interceptor as the primary unit and the old interceptor as a backup. In 1970, a 1-ft-thick (0.3-m) layer of concrete was placed on the floor of the old interceptor as shielding for radioactivity.

In 1971, the O2 Plant was constructed to treat wastewater from Lagoon 2 by removing cesium and strontium. Wastewaters were then discharged to Lagoons 4 or 5. In 1998, the O2 Plant was removed from service (i.e., decommissioned) and replaced by LLW2.

3. Investigations and Findings:

In 1991, routine groundwater monitoring was initiated for monitoring wells adjacent to the LLWTF. RFI sampling activities (soil, groundwater, and sediment) for the LLWTF were performed in 1993 and 1994, followed by the submittal of an RFI Report (WVDP-RFI-021) to EPA and NYSDEC. The RFI Report concluded that no further action was necessary for the LLWTF, other than continued groundwater monitoring.

4. Recommendations and Conclusions:

Based on groundwater monitoring data collected for the RFI and continued groundwater monitoring under the WVDP's *Groundwater Monitoring Plan* (WVDP-239); analytical results presented in the RFI Report; decommissioning of the O2 Plant; and agency concurrence with the RFI Report conclusions (November 22, 1996, Appendix E-2), no further action is recommended for this SWMU. Upon completion of operations, these units will be closed in accordance with the SPDES requirements of 6 NYCRR §750-2.11.

E-2R SWMU No. 18 - Liquid Waste Treatment System (LWTS)

1. Description of Unit:

The LWTS, which is part of SSWMU #3, was installed in several decontaminated cells within the Process Building. The primary components or tanks of the LWTS are housed in XC-3, PPC, and UPC. The floors of these three cells are lined with stainless-steel pans, and walls are coated with carbolene. The primary valves and ancillary equipment associated with the LWTS are housed in the ULO, UWA, LWA, Extraction Chemical Room, and Lower Extraction Aisle. The pump niches in the LWA are lined with stainless steel and the walls and the floor of the ULO are coated with carbolene.

2. Operational History:

The LWTS became operational in 1988 and was listed in the 1990 RCRA Part A Permit as a mixed waste treatment unit. The LWTS utilizes a high-efficiency evaporator to reduce the volume of mixed LLW and TRU wastes. The liquid concentrates were typically accumulated in a storage tank or tanks for eventual treatment in the CSS. The distillate waste stream is treated through zeolite columns and managed through the LLWTF. The LWTS has historically supported the processing of mixed wastes for the vitrification and cement solidification activities.

3. Investigations and Findings:

Daily inspections of the LWTS have been performed since the startup of operational activities in 1988. There are additional weekly and quarterly inspections of the LWTS support features. These inspections have not identified any spills or releases within this unit; therefore, no investigations have been warranted.

RFI sampling activities (soil and groundwater) for the LWTS were performed in 1993 and 1994, followed by the submittal of an RFI Report (WVDP-RFI-021) to EPA and NYSDEC. The analytical results from RFI did not indicate the presence of a release of hazardous constituents from this unit. The RFI Report concluded that no further action was necessary for the LWTS, other than continued groundwater monitoring.

4. Recommendations and Conclusions:

The RFI Report and the recommendation of no further action was subsequently approved by the agency (March 6, 1997, Appendix

E-2). Additionally, the LWTS, as part of the IRTS, is subject to RCRA closure under Interim Status or Final Status Standards pursuant to 6 NYCRR §§373-3.7 or 373-2.7, respectively, as applicable at the time of RCRA closure. It is anticipated that upon meeting RCRA clean closure performance standards, a "No Further Action" determination will be requested for this unit under the RCRA §3008(h) Consent Order, or equivalent requirements that may be incorporated into the 6 NYCRR §373-2 permit.

E-2S SWMU No. 19 - Supernatant Treatment System (STS)

1. Description of Unit:

The STS is part of SSWMU #4, HLW Storage and Processing Area. The STS consists of the STS Support Building, the zeolite treatment columns, and ancillary equipment and piping. The 40-ft (12.2-m) by 49-ft (14.9-m) STS Support Building is constructed of concrete and steel on pilings adjacent to tank 8D-1. There are four zeolite columns located (i.e., suspended) in tank 8D-1. Additional ancillary equipment includes the supernatant feed tank, supernatant cooler, and sluice lift tank.

2. Operational History:

The STS became operational in 1988 and was listed in the 1990 RCRA Part A Permit as a mixed waste treatment unit. The STS was designed to strip cesium from the PUREX/THOREX supernatant and sludge-wash solutions and from return high-activity wastewaters from the LWTS. This process was not designed to remove RCRA hazardous wastes or hazardous constituents. Supernatant was moved from tank 8D-2 to the supernatant feed tank, which was then filtered to remove suspended fines, diluted with water, and cooled for processing. The supernatant then passed through the zeolite columns and was filtered to remove zeolite fines, before transfer to the holding tank (i.e., tank 8D-3). When the zeolite in the columns reached its loaded capacity, the zeolite was discharged into tank 8D-1 and the columns were refilled with fresh zeolite. The spent zeolite was processed with the HLW through the vitrification system.

3. Investigations and Findings:

Daily inspections of the STS were performed during operational activities from 1988 to July 2003, when the STS was inactivated and isolated from the LWTS. There were additional weekly and quarterly inspections of the STS support features. Inspections of the STS continue pending NYSDEC approval of the hazardous waste closure plan submitted in December 2002. These inspections did not identify any spills or releases within this unit. Therefore, no investigations have been warranted.

In 1991, routine groundwater monitoring was initiated for monitoring wells adjacent to the SSWMU #4. RFI sampling activities (soil, groundwater, and sediment) associated with this unit were performed in 1993 and 1994, followed by the submittal of an RFI Report (WVDP-RFI-024) to EPA and NYSDEC. Analytical results from the RFI, and subsequent groundwater

monitoring activities, did not indicate the release of hazardous constituents from this unit. The RFI Report concluded that no further action was necessary for this unit.

4. Recommendations and Conclusions:

Agency approval of the RFI Report conclusions (February 11, 1997, Appendix E-2) concurred with the continued groundwater monitoring and RCRA closure of the tank system and ancillary equipment pursuant to 6 NYCRR §373 requirements. An evaluation of remedial technologies is currently being performed for the STS as part of the Decommissioning EIS. The final remedial alternative for the STS will be determined through the EIS process. The identified remedial alternative will address RCRA closure under Interim Status or Final Status Standards pursuant to 6 NYCRR §§373-3.7 or 373-2.7, respectively, as applicable at the time of RCRA closure. For purposes of this permit application, it is anticipated that RCRA closure will encompass the grouting of HLW tank 8D-1 (which houses the zeolite columns of the STS) and its vault, installing a slurry wall around the tank, and constructing a RCRA landfill cap, followed by post-closure monitoring.

E-2T SWMU No. 20 - High-Level Waste (HLW) Vitrification Facility

1. Description of Unit:

The HLW Vitrification Facility, which is part of SSWMU #4, is located on the North Plateau just north of the Process Building. The Vitrification Facility (this SWMU definition pertains exclusively to the Vitrification Cell) contains the slurry-fed ceramic melter (Melter), the CFMT, a melter feed hold tank (MFHT), and other components that support the vitrification process. The Vitrification Facility was identified in the 1990 RCRA Part A Permit application as an "other" treatment unit (i.e., T04). The Vitrification Facility was added as a container storage unit (i.e., S01) in the June 2001 RCRA Part A Permit, including the A&PC Hot Cells and the HLWIS Facility. The Vitrification Cell is 63 ft (19.2 m) by 34 ft (10.4 m) by 46 ft (14 m) high and includes a pit, which is sloped to a sump. The entire Vitrification Cell is lined with stainless steel. The Vitrification Cell provides 17,805 gal (67,392 L) of container storage capacity.

The A&PC Hot Cells (5), located on the third floor of the Process Building, are 6 ft (1.8 m) by 6 ft (1.8m). The floors and walls are lined with stainless steel. A floor drain is present in each room, which conveys liquid via gravity to tank 7D-14. Each A&PC Hot Cell can provide approximately 67 gal (253 L) of storage capacity.

The HLWIS Facility is located in the former CPC on the first floor of the Process Building. The CPC is 93 ft (28.4 m) by 22 ft (6.7 m), of which an area of 22 ft (6.7 m) by 13 ft (4.0 m) is identified as the HLWIS Facility. The floor of the CPC is lined with stainless steel and two sumps in the floor are equipped with level sensors.

2. Operational History:

The vitrification system completed its nonradioactive testing in early 1996 and began processing HL-RMW in July 1996. The vitrification system was designed to stabilize HLW into borosilicate glass that meets the LDR "Best-Demonstrated Available Technology" for this waste stream. After stainless-steel canisters (2-ft-diameter [0.6-m] by 10-ft [3.3-m]) were filled with borosilicate glass, the containers were transferred to the HLWIS Facility for on-site storage until off-site disposal is approved. Currently, 275 canisters of vitrified wastes are being stored in a storage rack system in the HLWIS Facility.

The A&PC Hot Cells were used from 1966 through 1972 for analyses to support reprocessing operations, such as the analysis of dissolver solutions, leached hulls, and HLW solutions. Samples analyzed in these cells from the HLW tanks are a RCRA-regulated hazardous waste due to corrosivity and/or the presence of metals. There are no known releases of any material from the ANC. The cells continue to be used for radioactive analysis until final decontamination and decommissioning at the WVDP is scheduled.

The CPC contained the fuel dissolvers, feed measurement vessel, waste and rework evaporators, and waste neutralization tank. The CPC was used for fuel dissolution. Concentration and neutralization of acidic wastes (i.e., PUREX) generated during fuel dissolution were also performed in the CPC prior to transfer of this material to tank 8D-2. The equipment was designed for remote maintenance using cranes for installation or removal. The operations were partly by mechanical movement of materials and by standard movement of liquids, such as jet transfer evaporation, condensation, pumping, and gravity flow.

The CPC functioned as the fuel solution and HLW evaporator area. In the dissolver, the uranium, plutonium, and fission products were leached from the chopped fuel with boiling nitric acid, leaving behind the metal hulls. Since the reprocessing facility was designed to store neutralized wastes, the volumes of wastes associated with the various cycles of reprocessing were reduced by recovering much of the nitric acid for recycling by evaporation and fractionation. After fuel reprocessing ceased, decontamination of the CPC was performed by NFS. Additional decontamination efforts were later performed by the WVDP for reuse in support of HLW project activities. Equipment and vessels used in the CPC during spent fuel reprocessing were removed during the two decontamination efforts.

The CPC was outfitted with canister storage racks and is used for the interim storage of HLW in the form of borosilicate glass logs produced during vitrification. In addition, RCRA-regulated hazardous waste or hazardous constituents are currently being managed in the HLWIS Facility. In addition, from 1966 to mid-1971 during the regeneration of scrubber solutions in the dissolver off-gas scrubber in the off-gas cell, mercury from mercurous or mercuric nitrate was transferred from the off-gas cell to the dissolvers in the CPC. Since this material was part of the NFS spent fuel cycle it was contained within the NFS process equipment through the

dissolution, solvent extraction, and waste reduction stages until it was transferred to the HLW tanks for management.

3. Investigations and Findings:

In 1991, routine groundwater monitoring was initiated for monitoring wells adjacent to the SSWMU #4. RFI sampling activities (soil, groundwater, and sediment) for the Vitrification Facility were performed in 1993 and 1994, followed by the submittal of an RFI Report (WVDP-RFI-024) to the EPA and NYSDEC. Analytical results from the RFI did not indicate the presence of a release of hazardous constituents from this unit. The RFI Report concluded that no further action was necessary for this unit.

Daily inspections of the Vitrification Cell were performed during operational activities from July 1996 to the present. Daily inspections are also performed for the HLWIS Facility; however, no inspections of the A&PC Hot Cells are performed because mixed wastes have not been stored in these units. These inspections have not identified any spills or releases within this unit.

4. Recommendations and Conclusions:

Based on groundwater monitoring data collected for the RFI; the fact that the vitrification cell is no longer being used for vitrification activities; closure and/or removal of associated tanks; the A&PC Hot Cells not having been used for storing mixed waste; the HLWIS Facility began managing mixed wastes in June 2004; and agency approval of the RFI Report conclusions (February 11, 1997, Appendix E-2), no further action is recommended for this SWMU. Additionally, the HLW Vitrification Facility is subject to RCRA closure under Interim Status or Final Status Standards pursuant to 6 NYCRR §§373-3.7 or 373-2.7, respectively, as applicable at the time of RCRA closure. It is anticipated that upon meeting RCRA clean closure performance standards, a "No Further Action" determination will be requested for this unit under the RCRA §3008(h) Consent Order, or equivalent requirements that may be incorporated into the 6 NYCRR §373-2 Permit.

E-2U SWMU No. 21 - Radwaste Treatment System (RTS) Drum Cell

1. Description of Unit:

The RTS Drum Cell, which is designated as SSWMU #10, is located south of the NDA and west of the SDA on the South Plateau. The drum cell consists of a concrete base pad, shielded walls, and waste handling equipment inside a pre-engineered steel building. A 15-ft-high (4.6-m) by 20-inch-thick (51-cm) reinforced concrete shield wall surrounds the pad. The building is 375 ft (114 m) by 60 ft (18 m) by 26 ft (8 m) high. The floor perimeter is lined with a berm and the floor and berm are coated with epoxy.

2. Operational History:

The drum cell has been used since 1987 for the storage of cement-solidified LLW. This waste resulted from the treatment, by cement solidification, of decontaminated supernatant salts and sludge wash solutions. These treatment activities were completed in 1995. Sample results confirmed that the cement-solidified wastes are not RCRA characteristic hazardous wastes. There are presently just under 20,000 drums of solidified wastes stored in the drum cell. The drum cell wastes met the LDR treatment standards (the 2nd third) at the time of treatment and meet the "grandfather clause" of 40 CFR 268-40(h) and 6 NYCRR 376.4(a)(8) to meet current LDR standards.

3. Investigations and Findings:

Groundwater monitoring of radiological indicators in the vicinity of the drum cell has not indicated the presence of a release. In addition, the nature and chemical composition of the solidified waste indicate the waste met the LDR treatment standard and is therefore nonhazardous. The RFI Work Plan (WVDP-RFI-014) discussed the drum cell and provided a recommendation of no further action for this unit to the EPA and NYSDEC based on the nature, chemical composition, and final waste form, as well as containment/inspection activities performance.

4. Recommendations and Conclusions:

The RFI Work Plan was approved by the NYSDEC and EPA in their correspondence dated September 30, 1993 (Appendix E-2). Based on the recommendations provided in the RFI Work Plan; cement-solidified waste analytical data; and agency approval of the RFI Work Plan, no further action is recommended for this SWMU.

E-2V SWMU No. 22 - Cement Solidification System (CSS)

1. Description of Unit:

The CSS, which is part of SSWMU #3, LWTS, is located within the 01-14 Building, using space previously occupied by the Acid Recovery System employed during fuel reprocessing activities by NFS. The 01-14 Building is located adjacent to the southwest corner of the Process Building. The CSS operations were performed in an approximate 40-ft (12.2-m) by 40-ft (12.2-m) area typically across four floor/plan elevations. An approximate 15-ft (4.6-m) by 25-ft (7.6-m) drum load out area was added to the west side of the 01-14 Building and a 12-ft-diameter (3.7-m-diameter) cement silo was constructed on the south side of the 01-14 Building.

2. Operational History:

The CSS was initially used from 1987 to 1995 to solidify liquid HLW supernatant and sludge wash solutions that were previously evaporated in the LWTS. The HLW consisted of PUREX and THOREX wastes contained in tanks 8D-2 and 8D-4, respectively. These wastes were processed and then eventually combined in tank 8D-2 for vitrification activities. Prior to

the vitrification activities, these combined waste streams were washed and processed through LWTS for concentration and processing/treatment through the CSS. The radioactive waste processing operations were performed on the first floor of the 01-14 Building. Approximately 20,000 drums of nonhazardous, cement-solidified LLW waste was produced, which are currently stored in the RTS Drum Cell (SWMU #21).

The CSS is being planned for use to treat remaining liquid. The SBW was generated during the flushing of HLW sludges in tank 8D-2. Approximately 11,200 gal (42,392 L) of concentrated SBW has been generated which will undergo treatment into a cement-solidified waste form meeting the LDR treatment standards of 6 NYCRR §376.4.

3. Investigations and Findings:

Daily inspections of the CSS were performed from 1987 to 1995 during operational activities. These inspections did not identify any spills or releases within this unit; therefore, no investigations have been warranted.

RFI sampling activities (soil and groundwater) for the LWTS were performed in 1993 and 1994, followed by the submittal of an RFI Report (WVDP-RFI-021) to the EPA and NYSDEC. Analytical results from the RFI did not indicate the presence of a release of hazardous constituents from this unit. The RFI Report concluded that no further action was necessary other than continued groundwater monitoring.

4. Recommendations and Conclusions:

The RFI Report and the recommendation of no further action was subsequently approved by the agency (March 6, 1997, Appendix E-2). Additionally, the CSS is subject to RCRA closure under Interim Status or Final Status Standards pursuant to 6 NYCRR §§373-3.7 or 373-2.7, respectively, as applicable at the time of RCRA closure. It is anticipated that upon meeting RCRA clean closure performance standards, a "No Further Action" determination will be requested for this unit under the RCRA §3008(h) Consent Order, or equivalent requirements that may be incorporated into the 6 NYCRR §373-2 Permit.

E-2W SWMU No. 23 - Trench Interceptor Project

1. Description of Unit:

The NDA Interceptor Trench, which is part of SSWMU #9, is located along the northwest and northeast boundaries of the NDA. The approximate 4-ft (1.2-m) wide by 12- to 16-ft (3.7- to 4.9-m) deep, and 875-ft (267-m) long trench is excavated within the Lavery till and includes a 7-inch-diameter (18-cm) perforated drain pipe. The trench is lined with a geotextile material, backfilled with pea gravel, and slopes to a central collection sump. The trench is also covered with a clay cap. Including the collection sump, there are seven manholes within the interceptor trench.

2. Operational History:

The NDA Interceptor Trench, which is an IM designed to capture any potential hazardous constituent releases from the NDA, was completed in 1991. The trench continues to be used for the collection of potentially-contaminated groundwater passing through the weathered Lavery till within the NDA. The interceptor trench is equipped with a high-level alarm and the sump (i.e., manhole #4) is equipped with a full/low-level sensor. Should TBP/n-dodecane be present in the sump liquids, the groundwater would be transferred to the liquid pretreatment system. To date, the liquid pretreatment system has not been used. Groundwater levels in the vicinity of the trench are recorded quarterly and evaluated to ensure that an inward hydraulic gradient exists. The results of this evaluation are summarized in a quarterly report that is transmitted to NYSDEC and EPA.

3. Investigations and Findings:

In 1991, routine groundwater monitoring was initiated for monitoring wells adjacent to the NDA. RFI sampling activities (soil, groundwater, surface water, air, and sediment) for the NDA were performed in 1993 and 1994, followed by the submittal of an RFI Report to EPA and NYSDEC. The findings of the RFI concluded that continued monitoring, maintenance, and operation of the interceptor trench was necessary.

Since the trench interceptor is located within the NDA, investigations of the NDA have been performed, as summarized for SWMU #2. Groundwater collected in the trench to date has not required pretreatment of organics.

4. Recommendations and Conclusions:

Monitoring, maintenance, and operation of the interceptor trench continues along with the submittal of quarterly reports evaluating the data collected in accordance with agency approval and clarification of the RFI Report (January 24, 1996, Appendix E-2). Based on the RFI, the NYSDEC and EPA indicated that monitoring and operation of the interceptor trench should continue while alternatives for decommissioning and/or closure of the NDA are evaluated as part of the EIS process.

E-2X SWMU No. 24 - Hazardous Waste Storage Lockers (HWSLs) No. 1-4

1. Description of Unit:

The HWSLs were designated as SSWMU #12. The four pre-engineered storage HWSLs are located on the North Plateau, north of the Process Building and south of the LSA #2 Hardstand. Each locker is identical in size and fabrication; 8 ft (2.4 m) by 15 ft (4.6 m) by 8 ft (2.4 m) high, providing 960 ft^3 (25 m^3) of storage capacity. Each locker is constructed with a spill basin beneath a steel grate floor that provides 335 gal (1,268 L) of secondary containment capacity. All four lockers are equipped with fire suppression devices, remote and local fire alarm systems, explosion-proof

electrical components and vents, and explosion-proof relief panels.

2. Operational History:

The HWSLs were placed on site in 1990 and used as exempt, 90-day storage areas until being listed in the 1993 RCRA Part A Permit application as an interim status container storage unit. The lockers have been used to store containerized solid and liquid hazardous wastes awaiting off-site disposal. HWSL #2 has also been designated for the storage of PCB waste. To date, no mixed wastes have been stored in the HWSLs.

3. Investigations and Findings:

An assessment of the HWSLs, which was included in the agency-approved RFI Work Plan, indicated that there were no known or suspected releases from the lockers. Weekly inspections of the HWSLs have been performed since 1990. These inspections have not identified any spills or releases within any of the lockers; therefore, no investigations have been warranted.

4. Recommendations and Conclusions:

The RFI Work Plan, which was approved by the NYSDEC and EPA in their correspondence dated September 30, 1993 (Appendix E-2), recommended no further action for this SWMU. Additionally, the HWSLs are subject to RCRA closure under Interim Status or Final Status Standards pursuant to 6 NYCRR §§373-3.7 or 373-2.7, respectively, as applicable at the time of RCRA closure. It is anticipated that upon meeting RCRA clean closure performance standards, a "No Further Action" determination will be requested for this unit under the RCRA §3008(h) Consent Order, or equivalent requirements that may be incorporated into the 6 NYCRR §373-2 Permit.

E-2Y SWMU No. 25 - Inactive Scrap Material Landfill Adjacent to Bulk Storage Warehouse

As indicated in the RCRA §3008(h) Consent Order, NYSERDA has responsibility for SWMU #25 and several other non-WVDP SWMUs associated with the SDA (which is operated under a separate EPA ID number).

E-2Z SWMU No. 26 - Subcontractor Maintenance Area

1. Description of Unit:

The Subcontractor Maintenance Area is an area approximately 20 ft (6.1 m) by 30 ft (9.1 m) located on the South Plateau portion of the WVDP. The area is flat, covered with compacted stone, and is adjacent to a paved roadway.

2. Operational History:

Prior to 1991, a WVDP construction subcontractor had used this area to clean asphalt paving equipment by spraying the equipment with diesel fuel. The diesel fuel would soak into the asphalt that coated the equipment and aid in its removal. During these cleaning operations, some of the diesel fuel and asphalt material dripped off the equipment and fell onto the

ground surface. In November 1991, the area was remediated and site policy was amended to prohibit the use of diesel fuel for equipment cleaning. The remediation involved removing the upper 6 inches (15 cm) of soil and replacing the exhumed soil with clean gravel. The exhumed soil was tested and disposed as a RCRA nonhazardous solid.

Since 1991, the area has been used for a staging area for heavy equipment and inert construction materials (e.g., stone, gravel, etc.).

3. Investigations and Findings:

A formal site inspection was conducted with an on-site NYSDEC coordinator during the fall of 1993. During this inspection, no signs of discharge, such as soil discoloration, was evident. This inspection also included the collection of soil samples underlying the recently-emplaced gravel layer. The analytical results of the two soil samples did not show the presence of any RCRA hazardous constituent VOCs or SVOCs, and the metals detected were below background and/or regulatory action levels.

4. Recommendations and Conclusions:

Based on the fact that there were no signs of discharge (i.e., soil discoloration) during the 1993 inspection; results of the RFA report; current use of the unit; and agency concurrence with the RFA report (January 12, 1995, Appendix E-2), no further action is necessary for this SWMU.

E-2AA SWMU No. 27 - Fire Brigade Training Area

1. Description of Unit:

The Fire Brigade Training Area is an approximate 20-ft (6.1-m) by 20-ft (6.1-m) vacant field north of Lagoons 4 and 5, and south of the CDDL, on the North Plateau.

2. Operational History:

This area was used from two to four times a year, between 1982 and 1993, for the purpose of fire training exercises. Available documentation indicates that all training exercises were conducted pursuant to the Restricted Burning Permits issued for the training area. During the fire training exercises, wood was piled up, coated with kerosene or diesel fuel, ignited, and then extinguished with water and/or foam. Another exercise conducted was to place water in a shallow metal pan, add diesel fuel, and then ignite the mixture. The burning fuel was extinguished using a steady stream of water and/or foam.

3. Investigations and Findings:

During the September 1993 visual inspection of this SWMU, two distinct areas were identified as the Fire Brigade Training Area burn locations. The analytical testing of a composite soil sample from these areas for VOCs, SVOCs, and metals indicated, for the few compounds detected, that those

concentrations were below background and/or regulatory action levels.

4. Recommendations and Conclusions:

Based on analytical sampling results from the September 1993 inspection; results of the RFA Report; removal of equipment and materials from this unit and no current use for this area; and agency concurrence with the RFA Report (May 22, 1995, Appendix E-2), no further action is necessary for this SWMU.

E-2AB SWMU No. 28 - Vitrification Hardstand

1. Description of Unit:

The Vitrification Hardstand was a flat, graveled hardstand with dimensions of approximately 150 ft (46 m) by 200 ft (61 m) located on the North Plateau, southeast of the Process Building.

2. Operational History:

The Vitrification Hardstand operated from 1984 to 1993 to store double-lined drums containing Melter refractory bricks and nonradiological vitrification test glass awaiting disposition. The drums were staged on pallets and covered with tarpaulins to prevent contact with precipitation. In addition, vitrification test equipment was also staged in this area.

3. Investigations and Findings:

One historical spill/release of vitrification test glass was documented for this area, which was observed during a visual site inspection in November 1992. Analytical characterization of the Melter refractory brick indicated that only nonhazardous bricks were staged in this hardstand area. In addition, the vitrification test glass was also characterized as nonhazardous.

4. Recommendations and Conclusions:

Based on the nonhazardous characterization of the waste types staged in this hardstand; results of the PR Report; NYSDEC's Visual Site Inspection; and agency concurrence with the PR Report (November 21, 1994, Appendix E-2), no further action is necessary for this SWMU.

E-2AC SWMU No. 29 - Industrial Waste Storage Area

1. Description of Unit:

The Industrial Waste Storage Area was an approximate 40 ft (12 m) by 100 ft (31 m) graveled pad gently sloped to provide for water runoff. This storage area is located east of the FRS area of the Process Building near the interceptors on the North Plateau.

2. Operational History:

The Industrial Waste Storage Area was used historically for the staging of excess equipment from Process Building upgrades between 1976 and 1982. The equipment was predominantly piping, pipe fittings, and hardware. The material was stored on pallets and covered with tarpaulins. These materials were managed as nonhazardous wastes. From 1990 to 1992, the area was used for temporary storage of industrial waste prior to off-site transport. These containerized wastes were placed on pallets and covered with tarpaulins. The area has since been graveled, two metal lockers have been placed in the area for storage of lawn care equipment, and one lubrication locker has also been added to this area.

3. Investigations and Findings:

No historical spills or releases have been documented for this area. In addition, no observations of spills/releases were observed during a visual site inspection in 1992. Additionally, the wastes stored in this area were characterized as nonhazardous waste.

4. Recommendations and Conclusions:

Based on the nonhazardous characterization of the waste types staged in this area; no documented releases or spills; no signs of spills/releases observed during visual inspection; results of the PR Report; and agency concurrence with the PR Report (July 31, 1997, Appendix E-2), no further action is necessary for this SWMU.

E-2AD SWMU No. 30 - Cold Hardstand Area

1. Description of Unit:

The Cold Hardstand Area is an approximate 40 ft (12 m) by 100 ft (31 m) graveled pad located west of the CDDL and north of the CDDL roadway. This hardstand area is located northeast of the Process Building on the North Plateau.

2. Operational History:

This hardstand was used as a general, nonradiological waste staging area from 1984 to 1993. Drum management in this area occurred from 1989 to 1993. Materials managed in this hardstand included pallets, empty drums, load test weights, insulated (asbestos) piping, drums of Portland cement, and drums of nonhazardous vitrification test glass. In addition, historical information indicates that containerized paint, used oil, and spill cleanup material were staged in the hardstand. These wastes were stored in drums, staged on pallets, and covered with tarpaulins. In 1989, approximately 20 drums of waste were stored on this hardstand pending laboratory waste characterization analytical results. The hardstand has been used for equipment storage since 1993 and for empty drum crushing operations. Occasionally, heavy equipment was also staged in this area.

3. Investigations and Findings:

No spills or releases were documented for this area. In addition, no visual observations of spills/releases were observed during a visual site inspection in November 1992. The waste drums from waste characterization activities in 1989/1990 were subsequently transported to the HWSLs for storage prior to off-site disposal.

4. Recommendations and Conclusions:

Based on the nonhazardous characterization of the majority of waste types staged in this area; no documented releases or spills; results of the PR Report; and agency concurrence with the PR Report (October 20, 1994, Appendix E-2), no further action is necessary for this SWMU.

E-2AE SWMU No. 31 - NRC-Licensed Disposal Area (NDA) Trench Soil Container Area

1. Description of Unit:

The NDA Trench Soil Container Area consists of two parcels; one located south of the NDA and the other located west of the NDA across the existing roadways. The gravel pad container areas together encompass approximately two acres on the South Plateau.

2. Operational History:

Prior to 1994, soil contained in roll-off containers were staged on the gravel pad area located west of the NDA. These containers were then moved to the area located south of the NDA. The roll-off containers were tarped to prevent the infiltration of precipitation, and the rear gate was lined with a rubber gasket to prevent the discharge of soil or liquids to the pad surface. The soils in these containers were generated during installation of the NDA groundwater interceptor trench, which was completed in 1990. The soils had the potential to be contaminated with TBP and n-dodecane. The soils were radiologically screened during excavation activities and staged in this area or other areas based on results of the screening. The majority of soils staged in the trench soil container area have been disposed off site. Several roll-off containers of LLW remain in the unit.

3. Investigations and Findings:

The soils generated during the trench excavation activities were characterized as nonhazardous based on analytical data of soil samples collected during excavation activities, indicating constituent concentrations below regulatory levels, as well as analytical data of trench groundwater.

4. Recommendations and Conclusions:

Based on the nonhazardous characterization of the waste types staged in this area; the storage of soils in secured roll-off containers; no documented releases or spills; environmental monitoring data from the trench; results of the PR Report; and

agency concurrence with the PR Report (August 26, 1997, Appendix E-2), no further action is necessary for this SWMU.

E-2AF SWMU No. 32 - Old Sewage Treatment Facility

1. Description of Unit:

The Old Sewage Treatment Facility was located approximately 25 ft (7.6 m) south of the water cooling towers near the Process Building on the North Plateau. This treatment facility provided primary and secondary treatment of sanitary wastewater generated at the WVDP. The unit consisted of a concrete basin, approximately 10 ft (3 m) by 20 ft (6 m) by 10 ft (3 m) in depth constructed with a capacity of 5,000 gpd. The facility consisted of control boxes, a surge tank, an aeration tank, and a clarifier.

2. Operational History:

The Old Sewage Treatment Facility functioned as a sanitary wastewater treatment facility from 1966 to 1985. The effluent from the facility was monitored since 1978 as part of the SPDES regulatory program. The treatment plant received wastewater from the Main Plant locker room floor drains, sinks and toilets, and other on-site sanitary waste streams. The treatment plant was taken out of service in 1985. Discharge lines were removed and influent lines were capped to prevent flow to and from the plant. Some miscellaneous piping, the control boxes, and the concrete basins remain in place. No industrial wastewater was routed to the treatment facility; however, low levels of radioactivity were documented in this facility. A potential piping source was identified, pipes were replaced, and the radioactivity occurrences were eliminated.

3. Investigations and Findings:

There have been no suspected or documented evidence of releases or spills of hazardous waste or hazardous constituents from the treatment facility. In addition, there is no documented evidence of hazardous waste or hazardous constituents being present in wastewaters treated by the facility in this treatment system. Sludges removed from the basin were radiologically contaminated as a result of inadvertent contamination, which occurred in the late 1970s, and then subsequently addressed by the replacement of process piping.

4. Recommendations and Conclusions:

Based on no documented evidence of hazardous waste or hazardous constituents being present in wastewaters treated by the facility; no documented releases or spills; results of the PR Report; and agency concurrence with the PR Report (October 20, 1994, Appendix E-2), no further action is necessary for this SWMU.

E-2AG SWMU No. 33 - Existing Sewage Treatment Facility

1. Description of Unit:

The Existing Sewage Treatment Facility was constructed in 1984-1985 south of the Process Building and east of Warehouse I on the North Plateau. This treatment facility provides biological treatment for an average of 10,000 gpd (37,850 LPD) of sanitary wastewater generated at the WVDP. Following biological treatment, the effluent is disinfected by chlorination prior to discharge. The treatment facility consists of six grinder stations, a 25,000-gal (94,625-L) aeration tank, a 10,000-gal (37,850-L) clarifier, and a baffled tank for chlorination and dechlorination.

2. Operational History:

The existing treatment facility was brought into service in 1985 to replace the Old Sewage Treatment Plant. Since 1985, the treatment facility has continually operated to treat sanitary wastewaters generated at the WVDP.

3. Investigations and Findings:

There have been no suspected or documented evidence of releases or spills of hazardous waste or hazardous constituents from the treatment facility. In addition, there is no documented evidence of hazardous waste or hazardous constituents being present in wastewaters treated by the facility. MSDSs for water conditioner chemicals used in the utility room do not indicate the presence of any hazardous constituents.

4. Recommendations and Conclusions:

Based on no documented evidence of hazardous waste or hazardous constituents being present in wastewaters treated by the facility; no documented releases or spills; results of the PR Report; and agency concurrence with the PR Report (October 20, 1994, Appendix E-2), no further action is recommended for this SWMU. Upon completion of operations, this unit will be closed under the SPDES requirements of 6 NYCRR Part 750-2.11.

E-2AH SWMU No. 34 - Storage Locations for Well Purge Water

1. Description of Unit:

The well purge water storage locations originally consisted of four, but now consist of two 55-gal (208-L) steel drums with 52-gal (197-L) poly liners used for the accumulation of well purge water. The drums are located on the North Plateau during sampling events, in addition to a polyethylene tank which is used for the collection of purged groundwater during sampling events.

2. Operational History:

Purge waters generated from selected monitoring wells during sampling events have been collected since 1989. This will continue until waste characterization is completed based on

laboratory analytical results. The purge waters are then managed in accordance with the characterization information. The containers are labeled and inventory sheets documenting the contents are attached. The drums are kept closed when not in use, and drummed contents are managed appropriately based on the most recent purge water/groundwater characterization data.

3. Investigations and Findings:

Although low levels of hazardous constituents have been detected in some monitoring wells, none of the purge water has been characterized as hazardous waste. Since groundwater quality may vary over time, the monitoring/characterization data is reviewed on a quarterly basis. In addition, no releases have been associated with the accumulated well purge water since 1989.

4. Recommendations and Conclusions:

Based on documented analytical data indicating purge waters are nonhazardous; no documented releases or spills; results of the PR Report; and agency concurrence with the PR Report (October 20, 1994, Appendix E-2), no further action is recommended for this SWMU.

E-2AI SWMU No. 35 - Construction and Demolition Area

1. Description of Unit:

The Construction and Demolition Area was a 25-ft (7.6-m) by 25-ft (7.6-m) depression in the ground located on the North Plateau southwest of the RHWF (SWMU #47). The area was bermed (2- to 3-ft [0.6- to 0.9-m] high) on the north and east sides, and sloped toward the middle on the west and south sides. The bottom of the depression was less than 16 inches (41 cm) below grade.

2. Operational History:

This area has been used since 1990 for rinsing and removal of residual concrete from cement truck chutes after completing delivery to various WVDP locations. The concrete was staged in this area until it set, after which it was placed in an adjacent dumpster for off-site disposal.

3. Investigations and Findings:

The MSDSs associated with the concrete additives indicate the absence of hazardous constituents within the additives. In addition, the components of concrete (water, cement, sand, and gravel) are not considered RCRA hazardous wastes.

4. Recommendations and Conclusions:

Based on no documented evidence of hazardous waste or constituents associated with cement; no other wastes having been managed in this area; results of the PR Report; and agency concurrence with the PR Report (October 20, 1994, Appendix E-2), no further action is recommended for this SWMU.

E-2AJ SWMU No. 36 - Old Schoolhouse Septic System

1. Description of Unit:

The Old Schoolhouse Septic System is associated with a 25-ft (7.6-m) by 45-ft 13.7-m), two-story building located on the east side of Rock Springs Road, approximately 1 mile (1.6 km) south of the WVDP. Surrounding the building is a small gravel parking lot and vacant, undeveloped fields. A septic system, including a concrete tank and distribution box, is in place at this building to treat domestic sewage and sink drain waste.

2. Operational History:

The building served as a schoolhouse prior to 1960. From the mid-1960s to 1983, NFS (mid-1960s to 1972) and WVDP (1981 to 1983) used the building as an environmental laboratory to perform environmental testing. Bioassay testing was also performed in this building from the mid-1960s until 1972. The environmental testing included pH, specific conductance, gross alpha, gross beta, gamma spectroscopy counting and whole body counting. After 1983, the building has been used for offices, a classroom/training facility, and most recently as a deer check facility during the fall WNYNSC deer-hunting season administered by NYSERDA.

3. Investigations and Findings:

In 1994, an RFA was performed that included an evaluation of past operations and analytical testing of sediment/sludge from the septic system's distribution box. Analytical data of the sediment/sludge sample were reported below regulatory soil guidance levels. The review of past operations concluded that the only known wastes managed through the septic system were domestic sewage and typical sink drain waste.

4. Recommendations and Conclusions:

Based on results of the RFA Report; current use of the unit and agency concurrence with the RFA Report (February 1, 1995, Appendix E-2), no further action is necessary for this SWMU.

E-2AK SWMU No. 37 - Contact Size-Reduction Facility (CSRF)

1. Description of Unit:

The CSRF is housed in the refurbished decontamination room of the MSM repair shop, which is located at the north end of the Process Building on the North Plateau. The CSRF consists of a 27-ft (8.2-m) by 37-ft (11.3-m) section of the MSM and a 15-ft (4.6-m) by 30-ft (9.2-m) concrete block addition. A cutting room, large item decontamination area, decontamination and survey operator area, equipment entry airlock, and loadout areas are present in the CSRF. The walls in these areas were stripped and repainted with epoxy paint. Concrete was removed, replaced, and coated with epoxy during the MSM repair shop building upgrades. The concrete floor in the cutting room is lined with stainless steel to an 18-inch (46-cm) height on the walls.

2. Operational History:

The CSRF was constructed within a portion of the former fuel reprocessing plant, and is used to size reduce and decontaminate large metallic items that are radiologically contaminated. Actual CSRF operations were initiated in November 1987, after construction of the concrete-block building addition to the north end of the MSM repair shop. Radiologically-contaminated tanks, vehicles, demolition debris, and other wastes were managed in the CSRF. Non-metallic wastes included vehicle coolant, brake and transmission fluids, and gasoline and diesel fuels. Historical decontamination activities utilized liquid abrasive or water spray procedures. The decontamination waters were collected, filtered, and managed appropriately. Decontamination is now performed by wiping waste surfaces using commercial and/or biodegradable cleaners. In June 2001, the WVDP submitted a modification to the RCRA Part A Permit application that included the addition of the CSRF as a mixed waste storage unit. Accordingly, this unit has been operated in accordance with the hazardous waste management regulations of 6 NYCRR §373.

3. Investigations and Findings:

Based on the containment integrity of the CSRF provided by the stainless-steel liner and the fact that there are no documented spills or releases of hazardous waste or hazardous constituents from this unit to the environment, no further action was recommended in the PR Report. In addition, subsequent groundwater analytical data from the RFI associated with the Process Building did not indicate the presence of a release from this unit.

4. Recommendations and Conclusions:

The PR Report and the recommendation of no further action was subsequently approved by the agency (January 29, 1998, Appendix E-2). Additionally, the CSRF is subject to RCRA closure under Interim Status or Final Status Standards pursuant to 6 NYCRR §§373-3.7 or 373-2.7, respectively, as applicable of the time of RCRA closure. It is anticipated that upon meeting RCRA clean closure performance standards, a "No Further Action" determination will be requested for this unit under the RCRA §3008(h) Consent Order, or equivalent requirements that may be incorporated into the 6 NYCRR §373-2 Permit.

E-2AL SWMU No. 38 - Drum Supercompactor

1. Description of Unit:

The drum supercompactor, which is part of SSWMU#6, was installed in a prefabricated trailer attached to the southwest side of the LSB.

2. Operational History:

The drum supercompactor was operated from 1987 to 1992 for the volume reduction of radiologically-contaminated, compressible

wastes. The supercompactor was equipped with a HEPA filter, the floors were lined with rubber mats, and the walls were lined with Herculite to prevent the spread of contamination. In January 1990, two small capacitors containing PCBs were unknowingly present in drums and inadvertently crushed in the supercompactor. The supercompactor was subsequently decontaminated to remove the residual PCBs that were present inside. The supercompactor was taken out of service in 1992 and in May 1999, it was removed from the WVDP and shipped to the Savannah River Site.

3. Investigations and Findings:

In 1991, routine groundwater monitoring was initiated for monitoring wells adjacent to the supercompactor. RFI sampling activities (soil, groundwater, and sediment) for the supercompactor (as part of SSWMU #6) were performed in 1993 and 1994, followed by the submittal of an RFI Report (WVDP-RFI-024) to EPA and NYSDEC. The RFI Report concluded that PCBs present in drums crushed in the supercompactor were not released to the environment.

4. Recommendations and Conclusions:

Based on groundwater monitoring data collected for the RFI; PCBs not being released to the environment from drum crushing activities; the unit being taken out of service and transported off site; and agency approval of the RFI Report (July 30, 1996, Appendix E-2); no further action is necessary for this SWMU.

E-2AM SWMU No. 39 - Staging Area for the NDA

1. Description of Unit:

The staging area for the NDA (also known as the NDA hardstand), which is associated with SWMU #2, is located outside the southeast corner of the NDA. It is a three-sided, cinder block-walled unit with a gravel pad.

2. Operational History:

There are no known operating records for the NDA staging area. The unit was used from 1965 to 1986 to stage waste with elevated radiation levels while awaiting burial in the NDA and SDA. The cinder block walls were used for shielding purposes. Lead shielding used during burial operations was staged in this location until 1989. This area is no longer used for waste management activities.

3. Investigations and Findings:

The analytical results of the two surface soil samples collected in December 1993 during RFI activities indicated that RCRA hazardous constituents detected in environmental samples were below regulatory limits. Based on these data, no further action was recommended in the RFI Report for the NDA.

4. Recommendations and Conclusions:

Based on the location of the NDA staging area outside of the NDA proper; the analytical results from RFI sampling activities indicating the presence of RCRA hazardous constituents below action levels; and agency concurrence with the RFI Report (January 24, 1996, Appendix E-2), no further action is recommended for this SWMU.

E-2AN SWMU No. 40 - Satellite Accumulation Areas (SAAs) and 90-day Storage Areas

1. Description of Unit:

The SAAs and 90-day storage areas are currently composed of eight active SAAs and two 90-day storage areas (one of which is identified as SWMU #43). The locations of the current areas are identified on Figure B-3. The locations of these areas change periodically due to their nature as temporary collection points located near the source of waste generation.

2. Operational History:

By definition, SAAs are areas for short-term accumulation of hazardous and mixed wastes under direct control of the operator at or near the point of initial generation. The SAAs are managed in accordance with SOP 300-04 and RCRA regulations, which limit accumulation at the point of generation to 55 gal (208 L) of waste. Once the RCRA waste accumulation limit is neared or met, the container is transported to an appropriate on-site storage facility. The 90-day storage areas involve the temporary storage of hazardous or mixed wastes in containers or tanks. These areas are managed in accordance with ECS-345, *90-Day Storage Area Requirements for Tanks and Containers*, and 6 NYCRR §373-1.1(d)(1)(iii) and wastes must be relocated to permitted storage areas or shipped off site within 90 days of their generation.

3. Investigations and Findings:

There have been no historical records of spills or releases in the SAAs or the 90-day storage areas. Containers are labeled and tracked for inventory purposes. Due to the periodic use and closure of SAAs and 90-day areas, several waste streams have been managed historically.

4. Recommendations and Conclusions:

Based on the fact that there have been no documented spills or releases in SAAs or 90-day storage areas; the active monitoring, maintenance, and inspections performed in accordance with SOP 300-04 and RCRA regulations; results of the PR Report; and agency concurrence with the PR Report (November 24, 1994, Appendix E-2), no further action is recommended for this SWMU.

E-2AO SWMU No. 41 - Designated Roadways

1. Description of Unit:

The Designated Roadways consists of approximately 0.68 miles (1.1 km) of former dirt roadways within the WVDP. The roadways are located between the electrical substation on the northeast corner of the North Plateau to the Maintenance Shop and the road from Warehouse I to the NDA.

2. Operational History:

The identified roadway sections (now paved), were previously dirt roadways that were historically (between 1970 and 1980) sprayed with used oils for dust suppression. An evaluation performed under the RFI program indicated that the used oil may have potentially contained solvent residues commingled from parts washing operations in the Maintenance Shop. Approximately three to six drums of used oil were applied to roadways once or twice a year. This management practice was discontinued in 1980 when used oil was transported off site for recycling purposes.

3. Investigations and Findings:

During RFI investigations, two surface and five subsurface soil samples were collected from seven locations in roadway sections that were historically sprayed with waste oil. The analytical data from these RFI soil sampling locations indicated that soil concentrations for VOCs, SVOCs, pesticides, PCBs, and metals were below regulatory guidance levels, or comparable to established site background concentrations (in the case of metals). Based on these data, no further action was recommended.

4. Recommendations and Conclusions:

Based on analytical concentrations reported below established guidance levels for the hazardous constituents detected in soil samples; post-RFI groundwater monitoring; results of the PR Report; and agency concurrence with the PR Report (March 9, 1998, Appendix E-2), no further action is recommended for this SWMU.

E-2AP SWMU No. 42 - Product Storage Area

1. Description of Unit:

The Product Storage Area was an open-air storage area consisting of an asphalt pad approximately 20 ft (6.1 m) by 60 ft (18.3 m) in size located in the southeastern portion of the North Plateau, adjacent to the southern end of the Warehouse I. The area is generally flat with little surface runoff, and had been previously enclosed by a perimeter fence.

2. Operational History:

Until mid-1985, the area was used for the staging of containerized raw materials, including lubricating oils, degreasers, TBP, and n-dodecane.

3. Investigations and Findings:

There have been no documented spills or releases in this area. A formal site inspection was conducted with an on-site NYSDEC coordinator on November 8, 1994. During this inspection, no signs of discharge, such as asphalt or soil discoloration, was evident. This also included the collection of five samples of soil underlying the surficial asphalt. The analytical results of the samples did not indicate the detection of any VOC or SVOC hazardous constituents in the soil underlying surficial asphalt. Metals detected were consistent with background concentrations and/or were reported below regulatory action levels.

4. Recommendations and Conclusions:

Based on the analytical results of soil sampling; the current use of the area; results of the site inspection and RFA Report; and agency concurrence with the RFA Report (December 16, 1996, Appendix E-2), no further action is recommended for this SWMU.

E-2AQ SWMU No. 43 - Warehouse Extension Staging Area

1. Description of Unit:

The Warehouse Extension Staging Area is an indoor storage area with a concrete floor measuring approximately 50 ft (15.2 m) by 80 ft (24.4 m) in the southern end of Warehouse II. Two sides of the staging area are bermed.

2. Operational History:

The staging area became operational in 1991 with the temporary storage of wastes. This area is used as a 90-day storage area for industrial wastes, hazardous wastes and materials, batteries, and recyclables. This area also functions as a supply area for both Hazardous Waste Operations and the former Hazardous Materials (HazMat) Response Team.

3. Investigations and Findings:

There have been no historical records of spills or releases in this staging area. Weekly and monthly inspections are performed when the 90-day storage area is active. Containers are labeled, weighed, and tracked for inventory purposes. Due to the nature of this unit, numerous nonhazardous wastes that are managed in this area may contain hazardous constituents.

4. Recommendations and Conclusions:

Based on the fact that there have been no documented spills or releases in this staging area; results of the December 1993 visual inspection; the active monitoring, maintenance, and inspections performed; results of the PR Report; and agency concurrence with the PR Report (November 21, 1994, Appendix E-2), no further action is recommended for this SWMU.

E-2AR SWMU No. 44 - Fuel Receiving and Storage Area HIC and SUREPAK™ Staging Area

1. Description of Unit:

The HIC Storage Area is located north of the FRS and consists of a gravel pad where the containers are staged.

2. Operational History:

The HIC Storage Area is used to store overpacked containers containing spent filter media from the FRS wastewater treatment unit. The radioactive and/or mixed waste is packaged in the Hittman Building and then placed on the gravel pad north of the Hittman Building. In September 1995, the WVDP submitted a modification to the RCRA Part A Permit application that included the addition of the HIC Storage Area gravel pad as a mixed waste storage unit. Accordingly, this unit has been operated in accordance with the hazardous waste management regulations of 6 NYCRR §373. In addition, closure of this unit will be performed pursuant to regulatory requirements of 6 NYCRR §373-2.7. As of December 2003, there were five HICs containing radioactive waste and one HIC containing mixed waste staged in this area.

3. Investigations and Findings:

There have been no historical records of spills or releases in this container storage area. Radiological surveys are performed weekly for the Hittman Building, and monthly for the storage area. Additionally, the storage area is inspected weekly for signs of container deterioration and leaks. Based on the activities performed in the FRS, chromium is the only hazardous waste/hazardous constituent potentially present in the mixed waste HIC. The PR Report concluded that no further actions are necessary for this unit based on no reported releases, the HIC and SUREPAK™ containers providing primary and secondary containment, no additional hazardous waste to be generated, and the disposition of the generated mixed waste addressed.

4. Recommendations and Conclusions:

The PR Report and the recommendation of no further action was subsequently approved by the agency (December 15, 1997, Appendix E-2). Additionally, the HIC Storage Area is subject to RCRA closure under Interim Status or Final Status Standards pursuant to 6 NYCRR §§373-3.7 or 373-2.7, respectively, as applicable at the time of RCRA closure. It is anticipated that upon meeting RCRA clean closure performance standards, a "No Further Action" determination will be requested for this unit under the RCRA §3008(h) Consent Order, or equivalent requirements that may be incorporated into the 6 NYCRR §373-2 Permit.

E-2AS SWMU No. 45 - Breach in Laundry Wastewater Line

1. Description of Unit:

As a result of an inspection required by the NYSDEC Division of Water, the breach was discovered in a 3-inch-diameter (7.6-cm) sewer line used to convey wastewater from the WVDP's laundry operations to the LLWTF on the North Plateau. Based on the inspection, the breach appeared roughly elliptical in shape and was estimated to be approximately 2 inches (5.1 cm) long and 1.5 inches (3.8 cm) wide. The breach was located approximately 8 ft (2.4 m) to 10 ft (3.1 m) below grade.

2. Operational History:

The sewer line was installed in 1986 and has conveyed discharges from the laundry operations since 1995. Two source areas were historically connected to the breached drain line; a floor drain in the UWA airlock and a steam condensate drain from the Product Packaging and Shipping area. The UWA airlock floor drain was disconnected in May 2002. The Product Packaging and Shipping drain line was utilized from 1997 to 2000. The breach in the process sewer line was confirmed on October 20, 2003; however, the exact timing of the breach is unknown. The effluent discharge from the laundry has been redirected into an intact sewer line that discharges to the LLWTF. The laundry operation is surfactant-based and does not include the use of organic solvents. There are no known instances of hazardous or mixed waste disposal through the breached line.

3. Investigations and Findings:

During RFI activities, there were no indications that RCRA hazardous waste or hazardous constituents were discharged from the UWA airlock. As for the Product Packaging and Shipping area, there were minimal flows and it is anticipated that RCRA hazardous constituents have not been present. Video inspection activities were initiated for WVDP process sewers in October 2003. Samples of wastewater from the laundry were analyzed on two occasions for radiological and chemical parameters. Analytical data indicate that RCRA constituents concentrations were below regulatory levels.

4. Recommendations and Conclusions:

Based on a NYSDEC request for the collection of representative soil samples to assess the sewer line breach, soil samples were collected in the summer of 2004 for laboratory analysis. Laboratory data and recommendations/conclusions will be submitted to NYSDEC upon receipt and evaluation.

E-2AT SWMU No. 46 - Vitrification Vault and Empty Container Hardstand

1. Description of Unit:

SWMU #24 consists of a graveled area west of the HWSLs where pre-fabricated concrete vaults were constructed to contain low-level and remote-handled TRU wastes generated during D&D of the Vitrification Facility and the Process Building. The

wastes are first placed in shielded containers before being staged in the vaults. This gravel pad is large enough to accommodate several concrete vaults. Generally, the vaults are expected to have interior dimensions of 16.5 ft (5 m) by 63 ft (19.2 m) by 5.7 ft (1.7 m) high, and the concrete vault walls, floor, and cover are a minimum of 14 inches (36 cm) thick, but may vary based on shielding and waste stream requirements.

2. Operational History:

This unit has been primarily used as an empty container storage area and nuclear criticality staging area for solid (physical-state) wastes removed from the Process Building during D&D activities. TRU wastes from other D&D activities are temporarily staged in this area until all nuclear safety data has been obtained and reviewed. Upon approval of waste acceptance criteria, the containers are then relocated to appropriate on-site storage facilities. In addition, the HLW tank mobilization pumps are stored in concrete vaults with this unit.

During D&D activities where RCRA mixed wastes were identified, a temporary 90-day storage area was established until the nuclear criticality safety requirements were reviewed. The mixed waste containers were then relocated to on-site permitted storage facilities. Three mixed waste containers were managed in the 90-day area for criticality evaluation purposes. Lead, chromium, and mercury were identified in the mixed waste containers.

3. Investigations and Findings:

No investigations have been performed on this SWMU, as the unit was identified based on its intended use.

4. Recommendations and Conclusions:

This SWMU will be monitored for evidence of releases during the operating life of this radioactive waste storage area.

E-2AU SWMU No. 47 - Remote-Handled Waste Facility

1. Description of Unit:

The RHWF is located northwest of the Process Building on the North Plateau, adjacent to the CPC-WSA. The containment building is a free-standing structure that is approximately 188 ft (57 m) by 91 ft (28 m). The RHWF was designed to meet 6 NYCRR §§373-2.30 and 373-3.30 regulatory requirements for containment buildings.

2. Operational History:

The RHWF became operational as a containment building for treatment of radioactive and mixed waste in June 2004 and is currently operating.

3. Investigations and Findings:

No investigations have been performed on this SWMU, as the unit was constructed in an area of the WVDP that was not impacted by site activities, as well as the unit beginning operations in June 2004.

4. Recommendations and Conclusions:

The RHWF is subject to RCRA closure under Interim Status or Final Status Standards pursuant to 6 NYCRR §§373-3.7 or 373-2.7, respectively, as applicable at the time of RCRA closure. It is anticipated that upon meeting RCRA clean closure performance standards, a "No Further Action" determination will be requested for this unit under the RCRA §3008(h) Consent Order, or equivalent requirements that may be incorporated into the 6 NYCRR §373-2 Permit.

E-2AV Sealed Rooms

1. Description of Unit:

In the original Sealed Rooms Report (WVDP-RFI-0161), the DOE and NYSERDA identified 11 sealed rooms within the Process Building to be investigated as SWMUs. The sealed rooms identified included the following:

- Process Mechanical Cell
- Ram Equipment Room
- General Purpose Cell
- Miniature Cell
- XC-1
- XC-2
- UWA Pump Niches
- Hot Acid Cell
- Liquid Waste Cell
- Off-Gas Blower Room
- Ventilation Wash Room.

In December of 1994, NYSDEC concluded their review of the Sealed Rooms Report. In their response to the WVDP concerning this report, they identified five additional rooms as SWMUS. They include:

- Acid Recovery Cell
- Acid Recovery Pump Room
- Hot Acid Cell
- Off-Gas Cell
- Scrap Removal Room.

The Process Building was designed to recover uranium and plutonium from spent nuclear fuel. The physical and chemical reprocessing operations were conducted in specially-designed cells, rooms, and aisles within the Process Building. The cells were shielded enclosures with limited access where the fuel was physically and chemically processed. The rooms were designed to support the reprocessing operations and the aisles were areas occupied by people that remotely controlled the physical and chemical reprocessing of fuel in the cells.

2. Operational History:

Nuclear fuel was reprocessed from April 1966 until early 1972, when the Process Building was shut down for modification and expansion purposes. Since the facility did not become operational again, decontamination activities have been conducted in several of the identified rooms since 1972. Table E-2 summarizes the operational history for each cell/room.

3. Investigations and Findings:

As part of the WVDP RFI activities being performed for the SSWMUs, environmental data collected for site-specific SWMUs were evaluated for Sealed Rooms, based on potential discharge areas. These data have indicated that releases from specific Sealed Rooms did not exceed regulatory levels. In addition, analytical data from waste characterization activities associated with D&D activities have been generated. These data have been transmitted to the agencies in Quarterly Progress Reports pursuant to the RCRA 3008(h) Consent Order. In addition, the agencies concurred with the Final Sealed Rooms Paper Characterization Report (May 1994) that "it appears that the sealed rooms do not pose a significant threat from the release of hazardous waste or hazardous constituents into the environment" in their December 12, 1994 correspondence. In a January 22, 1998 correspondence from the agencies, their review of soil and groundwater sampling/monitoring data in the vicinity of the sealed rooms "support the conclusion that the sealed rooms do not pose a significant threat from release of hazardous waste or hazardous constituents."

4. Recommendations and Conclusions:

Based on the information provided in the *Sealed Rooms Paper Characterization*, information and analytical data generated during D&D operations of the cells identified in Table E-3, information transmitted in Quarterly Progress Reports pursuant to the RCRA 3008)h) Consent Order, and letters of approval for recommendations of no further action received from the agencies, no further action is recommended for the Sealed Rooms SWMUs.

SECTION E TABLES

TABLE E-1
WVDP SUPER SOLID WASTE MANAGEMENT UNITS (SSWMUS)

SSWMU #	DESCRIPTION
1	Low-Level Water Treatment Facility (LLWTF) 1. SWMU #3 - Lagoon 1 2. SWMU #4 - Lagoons 2, 3, 4, and 5 3. SWMU #17 - LLWTF
2	Miscellaneous Small Units 1. SWMU #5 - Demineralizer Sludge Ponds 2. SWMU #6 - Solvent Dike 3. SWMU #7 - Effluent Mixing Basin 4. SWMU #10 - Paper Waste Incinerator
3	Liquid Waste Treatment System (LWTS) 1. SWMU #18 - LWTS 2. SWMU #22 - CSS 3. Sealed Rooms
4	High-Level Waste Storage and Processing Area 1. SWMU #13 - High-Level Waste Tanks 2. SWMU #19 - STS 3. SWMU #20 - Vitrification Facility
5	Maintenance Shop Sanitary Leach Field 1. SWMU #8 - Maintenance Shop Sanitary Leach Field
6	Low-Level Waste Storage 1. SWMU #9 - Old Hardstand 2. SWMU #9a - New Hardstand 3. SWMU #15 - LAG Storage Building 4. SWMU #16 - LAG Storage Extensions 1 and 2 5. SWMU #16a - LAG Storage Extensions 3 and 4
7	Chemical Process Cell-Waste Storage Area 1. SWMU #14 - Chemical Process Cell-Waste Storage Area
8	Construction and Demolition Debris Landfill 1. SWMU #1 - Construction and Demolition Debris Landfill
9	NRC-Licensed Disposal Area (NDA) 1. SWMU #2 - NRC-Licensed Disposal Area 2. SWMU #11 - Kerosene Tanks 3. SWMU #11a - IWSF 4. SWMU #23 - Trench Interceptor Project 5. SWMU #31 - NDA Trench Soil Container Area 6. SWMU #39 - Staging Area for NDA
10	Integrated Radwaste Treatment System (IRTS) Drum Cell 1. SWMU #21 - Integrated Radwaste Treatment System (IRTS) Drum Cell
11	State-Licensed Disposal Area (SDA) 1. Outside of WVDP boundary and managed by NYSERDA
12	Hazardous Waste Storage Lockers 1. SWMU #24 - Hazardous Waste Storage Lockers 1-4

TABLE E-2
INFORMATION FOR SOLID WASTE MANAGEMENT UNITS

6 NYCRR §373-1.5(a)(4) REQUIREMENT	INFORMATION PROVIDED IN:
(i)('a') the location of the unit on the topographic map required under subparagraph (2)(xix) of this section	Figure B-2 of this permit application
(i)('b') designation of the type of unit	Section E-2, Subsection 1, *Description of Unit*, of this permit application
(i)('c') general dimensions and structural descriptions (supply available drawings)	Section E-2, Subsection 1, *Description of Unit*, and Section D of this permit application; RFIs, RFAs, and PR reports previously submitted to NYSDEC (see Table E-3)
(i)('d') when the unit was operated	Section E-2, Subsection 2, *Operational History*, of this permit application
(i)('e') specification of all wastes that have been managed at the unit, to the extent available	RFIs, RFAs, and PR reports previously submitted to NYSDEC (see Table E-3)
(ii) The owner or operator of any facility containing one or more solid waste management units must submit all available information pertaining to any release of hazardous wastes or hazardous constituents from such unit or units.	RFIs, RFAs, and PR reports previously submitted to NYSDEC (see Table E-3)
(iii) The owner or operator must conduct and provide the results of sampling and analysis of groundwater, land surface and subsurface strata, surface water, or air, which may include the installation of wells, where the commissioner ascertains it is necessary to complete a RCRA Facility Assessment that will determine if a more complete investigation is necessary.	RFIs, RFAs, and PR reports previously submitted to NYSDEC (see Table E-3)

TABLE E-3
SWMU STATUS SUMMARY

SWMU NO.	UNIT NAME	EVALUATION DOCUMENT	UNIT STATUS	NYSDEC/EPA RECOMMENDATION	NYSDEC/EPA STATUS LETTER
1	Construction and Demolition Debris Landfill	RFI Vol. 3, WVDP-RFI-019, 4/96	Closed and capped	Groundwater Monitoring	August 27, 1996
2	NRC-Licensed Disposal Area	RFI Vol. 2, WVDP-RFI-018, 9/95	Active	Groundwater Monitoring	January 24, 1996 and July 23, 1996
3	Lagoon 1	RFI Vol. 4, WVDP-RFI-021, 1/97	Closed and capped	Groundwater Monitoring	November 22, 1996
4	Active LLWTF Lagoons 2, 3, 4, and 5	RFI Vol. 4, WVDP-RFI-021, 1/97	Active	Groundwater Monitoring	November 22, 1996
5	Demineralizer Sludge Ponds	RFI Vol. 5, WVDP-RFI-020, 1/97	Inactive	No Further Action	November 4, 1996
6	Solvent Dike	RFI Vol. 5, WVDP-RFI-020, 1/97	Inactive	No Further Action	November 4, 1996
7	Effluent Mixing Basin	RFI Vol. 5, WVDP-RFI-020, 1/97	Active	No Further Action	November 4, 1996
8	Maintenance Shop Leach Field	RFI Vol. 9, WVDP-RFI-025, 7/97	Inactive	No Further Action	June 16, 1997
9/9a	Old/New Hardstand Storage Area	RFI Vol. 6, WVDP-RFI-022, 10/96	Active	No Further Action	July 30, 1996
10	Waste Paper Incinerator	RFI Vol. 5, WVDP-RFI-020, 1/97	Inactive	No Further Action	November 4, 1996
11/11a	Kerosene Tanks and NDA Container Storage Area	RFI Vol. 2, WVDP-RFI-018, 9/95	Active Hazardous Waste Management Unit (Interim Waste Storage Facility)	No Further Action	July 23, 1996

TABLE E-3 *(continued)*
SWMU STATUS SUMMARY

SWMU NO.	UNIT NAME	EVALUATION DOCUMENT	UNIT STATUS	NYSDEC/EPA RECOMMENDATION	NYSDEC/EPA STATUS LETTER
12/12a	Vitrification Test Facility Waste Storage Area	RFI Vol. 8, WVDP-RFI-024, 4/97	Inactive	No Further Action	February 11, 1997
13	High-Level Waste Tank Farm	RFI Vol. 8, WVDP-RFI-024, 4/97	Active Hazardous Waste Management Unit	Groundwater Monitoring	February 11, 1997
14	Chemical Process Cell Waste Storage Area	RFI Vol. 7, WVDP-RFI-023, 12/96	Active Hazardous Waste Management Unit	Groundwater Monitoring	November 22, 1996
15	Containerized Low-Level and Transuranic Waste Storage Area (LAG Storage)	RFI Vol. 6, WVDP-RFI-022, 10/96	Active Hazardous Waste Management Unit (LSAs #1 and #2 Hardstand)	Groundwater Monitoring	July 30, 1996
16/16a	LAG Storage Building, Extension, and Addition Area	RFI Vol. 6, WVDP-RFI-022, 10/96	Active Hazardous Waste Management Unit (LAG Storage Building and LSAs #3 and #4)	Groundwater Monitoring	July 30, 1996
17/ 17a/ 17b	Low-Level Waste Treatment Facility	RFI Vol. 4, WVDP-RFI-021, 1/97	Active	Groundwater Monitoring	November 22, 1996
18/18a	Liquid Waste Treatment System	RFI Vol. 10, WVDP-RFI-026, 5/97	Active Hazardous Waste Management Unit	Groundwater Monitoring	March 6, 1997
19	Supernatant Treatment System	RFI Vol. 8, WVDP-RFI-024, 4/97	Active Hazardous Waste Management Unit	Groundwater Monitoring	February 11, 1997
20	High-Level Waste Vitrification Facility	RFI Vol. 8, WVDP-RFI-024, 4/97	Active Hazardous Waste Management Unit	Groundwater Monitoring	February 11, 1997

TABLE E-3 *(continued)*
SWMU STATUS SUMMARY

SWMU NO.	UNIT NAME	EVALUATION DOCUMENT	UNIT STATUS	NYSDEC/EPA RECOMMENDATION	NYSDEC/EPA STATUS LETTER
21	RTS Drum Cell	RFI Workplan, WVDP-RFI-014, 4/96	Active	No Further Action	September 30, 1993
22	Cement Solidification System	RFI Vol. 10, WVDP-RFI-026, 5/97	Active Hazardous Waste Management Unit	Groundwater Monitoring	March 6, 1997
23	Trench Interceptor Project	RFI Vol. 2, WVDP-RFI-018, 9/95	Active	Groundwater Monitoring	January 24, 1996
24	Hazardous Waste Storage Lockers 1-4	RFI Workplan, WVDP-RFI-014, 4/96	Active Hazardous Waste Management Unit	No Further Action	September 30, 1993
25	Inactive Scrap Metal Landfill Adjacent to Bulk Storage Warehouse	Addressed by NYSERDA	Addressed by NYSERDA	Addressed by NYSERDA	Addressed by NYSERDA
26	Subcontractor Maintenance Area	RCRA Facility Assessment Report, 8/94	Active	No Further Action	January 12, 1995
27	Fire Brigade Training Area	RCRA Facility Assessment Report, 3/95	Inactive	No Further Action	May 22, 1995
28	Vitrification Hardstand	Preliminary Review Report, 6/94	Inactive	No Further Action	November 21, 1994
29	Industrial Waste Storage Area	Preliminary Review Report, 6/94	Active	No Further Action	July 31, 1997
30	Cold Hardstand Area (near CDDL)	Preliminary Review Report, 6/94	Active	No Further Action	October 20, 1994
31	NDA Trench Soil Container Area	Preliminary Review Report, 6/94	Active	No Further Action	August 26, 1997
32	Old Sewage Treatment Facility	Preliminary Review Report, 6/94	Inactive	No Further Action	October 20, 1994
33	Existing Sewage Treatment Facility	Preliminary Review Report, 6/94	Active	No Further Action	October 20, 1994

TABLE E-3 *(concluded)*
SWMU STATUS SUMMARY

SWMU NO.	UNIT NAME	EVALUATION DOCUMENT	UNIT STATUS	NYSDEC/EPA RECOMMENDATION	NYSDEC/EPA STATUS LETTER
34	Storage Locations for Well Purge Water	Preliminary Review Report, 6/94	Active	No Further Action	October 20, 1994
35	Construction and Demolition Area	Preliminary Review Report, 6/94	Inactive	No Further Action	October 20, 1994
36	Old Schoolhouse Septic System	RCRA Facility Assessment Report, 12/94	Active	No Further Action	February 1, 1995
37	Contact Size Reduction Facility	Preliminary Review Report, 6/94	Active Hazardous Waste Management Unit	No Further Action	January 29, 1998
38	Drum Super Compactor	RFI Vol. 8, WVDP-RFI-024, 4/97	Inactive	No Further Action	July 30, 1996
39	Staging Area for NDA	RFI Vol. 2, WVDP-RFI-018, 9/95	Inactive	No Further Action	January 24, 1996
40	Satellite Accumulation Areas and 90-Day Storage Areas	Preliminary Review Report, 6/94	Active	No Further Action	November 24, 1994
41	Designated Roadways	Preliminary Review Report, 6/94	Inactive	No Further Action	March 9, 1998
42	Product Storage Area	RCRA Facility Assessment Report, 7/95	Inactive	No Further Action	December 16, 1996
43	Warehouse Extension Staging Area	Preliminary Review Report, 6/94	Active	No Further Action	November 24, 1997
44	Fuel Receiving and Storage Area's High Integrity Container and SUREPAK™ Staging Area	Preliminary Review Report, 7/95	Active Hazardous Waste Management Unit	No Further Action	December 15, 1997

TABLE E-3 *(concluded)*
SWMU STATUS SUMMARY

SWMU NO.	UNIT NAME	EVALUATION DOCUMENT	UNIT STATUS	NYSDEC/EPA RECOMMENDATION	NYSDEC/EPA STATUS LETTER
45	Breach in Laundry Wastewater Line	Solid Waste Management Unit Assessment for SWMU #45 - Breach In Laundry Wastewater Line, 12/03	Active	Further Action	Pending
46	Vitrification Vault and Empty Container Hardstand	Not Presently Evaluated	Active	No Further Action	Pending
47	Remote-Handled Waste Facility	Not Presently Evaluated	Active Hazardous Waste Management Unit	No action at this time	Pending
N/A	Sealed Rooms	Sealed Rooms Paper Characterization Report, WVDP-RFI-016, 5/94	See Table E-4	See Table E-4	See Table E-4

TABLE E-4
SEALED ROOMS SUMMARY

SEALED ROOM	DESCRIPTION	HISTORICAL OPERATIONS	STATUS
Mechanical Process Cell (i.e., Process Mechanical Cell [PMC])	12 ft (3.7 m) by 52 ft (15.9 m) by 25 ft (7.6 m) high; reinforced concrete; stainless-steel-lined floor and walls to 20.7 ft (6.3 m).	Only mechanical processing activities performed (i.e., cutting, shearing, sawing). Generated wastes packaged and transferred for disposal.	No Further Action[1]
Ram Equipment Room (RER)	27.9 ft (8.5 m) by 11.8 ft (3.6 m) by 13.5 ft (4.1 m) high; reinforced concrete; carboline coated walls, floor, and ceiling.	Only mechanical processing activities performed (i.e., sawing). Drummed wastes managed in room awaiting disposal.	No Further Action[2]
General Purpose Cell (GPC)	45.6 ft (13.9 m) by 10.4 ft (3.2 m) by 75 ft (22.9 m) high; reinforced concrete; stainless-steel-lined floor and walls to 16 ft (4.8 m).	Equipped to transfer sheared fuel from the PMC to the CPC and scrap from the PMC and leached cladding from the CPC to the scrap removal room.	No Further Action[1]
Miniature Cell	11 ft (3.4 m) by 13.5 ft (4.1 m) by 18 ft (5.5 m) high; reinforced concrete; stainless-steel-lined floor and sump.	The miniature was not used for fuel reprocessing activities, as it was built for possible use as an experimental, research, or special project area.	No Further Action[1]
Extraction Cell No. 1 (XC-1)	16 ft (4.9 m) by 16.5 ft (5.0 m) by 55 ft (16.8 m) high; reinforced concrete; stainless-steel-lined floor, sump, and walls to 18 in (46 cm). Remainder of walls are coated with carboline.	Uranium and plutonium in the dissolved nuclear fuel was separated from the fission products using a solvent extraction process. A second solvent extraction process separated the uranium from the plutonium.	No Further Action[1]
Extraction Cell No. 2 (XC-2)	20.8 ft (6.3 m) by 21 ft (6.4 m) by 57 ft (17.4 m) high; reinforced concrete; stainless-steel-lined floor, sump, and walls to 18 in (46 cm).	XC-2 contains the solvent extraction columns and feed tanks for the last stage of the partition cycle, the first uranium cycle, and the first plutonium cycle.	No Further Action[1]

TABLE E-4 *(continued)*
SEALED ROOMS SUMMARY

SEALED ROOM	DESCRIPTION	HISTORICAL OPERATIONS	STATUS
Upper Warm Aisle Pump Niches/Solvent Storage Terrace (SST)	16 ft (4.9 m) by 90 ft (27.4 m) by 18.5 ft (5.6 m) high; reinforced concrete; stainless-steel-lined floors and walls of niches.	This cell contains 6 shielded concrete niches that housed pumps and valves that were part of the reprocessing operations in the XCs. Two of the pump niches containing pumps and valves are currently incorporated into the LWTS. Four storage tanks, located within the SST, were used during fuel reprocessing activities. One tank (5,000 gal, 18,925 L) collected recovered nitric acid and three tanks (3,500 gal, 13,250 L each) were used to collect waste solvent (i.e., TBP and n-dodecane). The tanks within the SST have been removed from service.	No Further Action[2]
Liquid Waste Cell (LWC)	North-south leg 46.2 ft (14.1 m) by 17 ft (5.2 m) and east-west leg 19 ft (5.8 m) by 15.8 ft (4.8 m) by 19.5 ft (5.9 m) high; reinforced concrete; stainless-steel-lined floor and walls to 18 in (46 cm). The remainder of the walls are coated with carboline.	Nine waste collection tanks were used to receive radioactive solutions from the XCs, the CPC, and the hot analytical cells. Five of the tanks are currently utilized as part of the LWTS.	No Further Action[1]
Acid Recovery Cell	28.8 ft (8.8 m) by 30.5 ft (9.3 m) by 26.5 ft (8.1 m) high; concrete and/or concrete-filled block; a 1-ft-diameter (0.3-m) sump on east side of cell.	The Acid Recovery Cell was part of the acid recovery system that recovered nitric acid used to dissolve spent nuclear fuel. The acid was principally recovered by evaporation and fractionation of the aqueous waste streams generated in the solvent extraction process.	No Further Action[2]

TABLE E-4 *(continued)*
SEALED ROOMS SUMMARY

SEALED ROOM	DESCRIPTION	HISTORICAL OPERATIONS	STATUS
Acid Recovery Pump Room (ARPR)	16 ft (4.9 m) by 22.8 ft (7 m) by 10 ft (3.1 m) high; reinforced concrete; carboline-coated floors, walls, and ceiling; and floor drain in center of cell.	The Acid Recovery Pump Room contained a weak acid tank and pumps to transfer decontaminated high-activity nitric acid streams from the Acid Recovery Cell to various storage vessels within the Process Building. The Acid Recovery Pump Room is no longer used operationally and decontamination and cleanup of this room was completed in 2001.	No Further Action[2]
Hot Acid Cell	17.3 ft (5.3 m) by 20.5 ft (6.3 m) by 15 ft (4.6 m) high; reinforced concrete floor and walls; corrugated steel roof.	This cell contains two storage tanks, which were used to store radioactive nitric acid produced in the acid recovery cells, and subsequently used to dissolve nuclear fuel in the CPC.	No Further Action[1]
Off-gas Cell	12 ft (3.7 m) by 30.5 ft (9.3 m) by 29 ft (8.8 m) high; reinforced concrete and carboline-coated floors, walls, and ceiling; and two floor sumps equipped with level indicators and high-level alarms.	The Off-Gas Cell housed the equipment for the Process Building's dissolver off-gas system and vessel off-gas system. The dissolver off-gas system has been inoperative since November 1975. The vessel off-gas system is still active. Condensate in the vessel off-gas system collects in tank 6D-3 with the air continuing through the off-gas scrubber (6C-3). The air then passes through HEPA filters before being discharged through the main stack.	No Further Action[2]
Off-gas Blower Room	11.8 ft (3.6 m) by 32.5 ft (9.9 m) by 9.5 ft (2.9 m) high; reinforced concrete floor, walls, and ceiling.	This room contained blowers, filters, and scrubber recirculation pumps for the process building dissolver off-gas and vessel off-gas ventilation systems. Equipment has been decontaminated and replaced, as necessary, for continued use.	No Further Action[1]

TABLE E-4 *(concluded)*
SEALED ROOMS SUMMARY

SEALED ROOM	DESCRIPTION	HISTORICAL OPERATIONS	STATUS
Ventilation Wash Room (VWR)	20 ft (6.1 m) by 25 ft (7.6 m) by 15.5 ft (4.7 m) high; reinforced concrete floor, walls, and ceiling.	This room was designed to scrub particulates from cell exhausts before the air entered the main ventilation exhaust plenum (including laboratory hood exhausts). The air was scrubbed in 2 or 3 stages using recirculated water. This area is not currently used in daily WVDP operations.	No Further Action[2]
Scrap Removal Room (SRR)	12 ft (3.7 m) by 40.3 ft (12.3 m) by 13.5 ft (4.1 m) high; concrete floors, walls, and ceiling; two 4-ft-wide (1.2-m) by 30-ft-wide (9.1-m) stainless-steel strips on floor; carboline coating on remaining floors and walls; and two floor drains in center of cell.	The SRR received 30-gal drums containing wastes such as leached fuel hulls, which were placed into shielded casks for transport to the NDA for burial. The cask, cell, and truck trailer were decontaminated before the trailer left the SRR. The SRR was also used to store a 750-gal (2,840-L) tank that contained material removed from tank 7D-13.	No Further Action[2]
Master Slave Manipulator (MSM)	37 ft (11.3 m) by 42 ft (12.8 m) by 15 ft (4.6 m) high; concrete floors and walls; former floor drain and associated catch tank (i.e., 15D-6); epoxy-coated walls and ceiling; concrete floor removed, disposed, and replaced; stainless-steel-lined floor to a height of 18 inches (46 cm).	See Section E-2AK for historical operations summary.	No Further Action[2]

* Other RCRA hazardous waste characterization may be necessary in these rooms.
[1] - This determination is based on the Agencies' December 12, 1994 letter to DOE.
[2] - This determination is based on the Agencies' January 22, 1998 letter to DOE. (Additional information for these rooms was supplied to the Agencies on 2/1/95.)

APPENDIX E-1

RCRA §3008(H) ADMINISTRATIVE ORDER ON CONSENT

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, NEW YORK 10278

RECEIV
AUG 14 1991
OFFICE OF THE CHIEF COUN

August 12, 1991

Mark Olsen
Brett Bowhan
Counsel
Office of Chief Counsel
U.S. Department of Energy
785 DOE Place
Idaho Falls, Idaho 83402

Hal Brodie
Assistant Counsel
NYS Energy Research and
Development Authority
2 Rockefeller Plaza
Albany, NY 12223

Re: West Valley RCRA 3008(h) Order

Dear Messers. Olsen, Bowhan and Brodie:

Enclosed please find the revised Attachments. I have not QA/QC'd them, so to speak, but am sending them out to you to compare with the Attachments you should already have. Let me know on Wednesday during our conference call if any problems arise or may arise with regard to these Attachments.

Sincerely,

Carl Howard by CRH

Carl R. Howard
Assistant Regional Counsel
Office of Regional Counsel

Enclosure

cc: Deborah Christian, DEC
Victor Franklin, WVNS

ATTACHMENT I

SCOPE OF WORK FOR A RCRA FACILITY INVESTIGATION At WESTERN NEW YORK NUCLEAR SERVICE CENTER

RCRA FACILITY INVESTIGATION

Task I: Description of Current Conditions

Task II: Pre-Investigation Evaluation of Corrective Measure Technologies

Task III: RFI Workplan Requirements

Task IV: Facility Investigation

Task V: Investigation Analysis

Task VI: Laboratory and Bench-Scale Studies

Task VII: Reports

SCOPE OF WORK FOR A RCRA FACILITY INVESTIGATION (RFI) At WESTERN NEW YORK NUCLEAR SERVICE CENTER

PURPOSE

The purpose of this RCRA Facility Investigation is to determine the nature and extent of releases of hazardous waste or hazardous constituents from regulated units, solid waste management units, and other source areas at the Western New York Nuclear Service Center and to gather all necessary data to support the Corrective Measures Study, if one is determined to be necessary. The Respondent (the term Respondent whenever used in this Attachment shall iclude both the New York State Energy Research and Development Authority (EPA ID Number NYD986905545) and the U.S. Department of Energy (EPA ID Number NYD980779540) shall furnish all personnel, materials, and services necessary for, or incidental to, performing this RCRA Facility Investigation.

SCOPE

The RCRA Facility Investigation consists of seven tasks:

Task I: Description of Current Conditions

- A. Facility Background
- B. Nature and Extent of Contamination
- C. Implementation of Interim Measures

Task II: Pre-Investigation Evaluation of Corrective Measure Technologies

Task III: RFI Workplan Requirements

- A. Project Management Plan
- B. Data Collection Quality Assurance Plan
- C. Data Management Plan
- D. Health and Safety Plan
- E. Community Relations Plan

Task IV: Facility Investigation

- A. Environmental Setting
- B. Source Characterization
- C. Contamination Characterization
- D. Potential Receptor Identification

Task V: Investigation Analysis

- A. Data Analysis
- B. Protection Standards

Task VI: Laboratory and Bench-Scale Studies

Task VII: Reports

A. Preliminary and Workplan
B. Progress
C. Draft and Final

TASK I: DESCRIPTION OF CURRENT CONDITIONS

The Respondent shall submit for U.S. EPA approval, a Preliminary Report providing the background information pertinent to the facility, contamination, and interim measures as set forth below. The data gathered during any previous investigations or inspections and other relevant data shall be included.

A. Facility Background

The Respondent's report shall summarize the regional location, pertinent boundary features, general facility physiography, hydrogeology, and historical use of the facility for the treatment, storage or disposal of solid and hazardous waste. The Respondent's report shall include:

1. Map(s) depicting the following:

   a. General geographic location;

   b. Property lines, with the owners of all adjacent property clearly indicated;

   c. Topography and surface drainage (with a contour interval of two (2) feet and a scale of 1 inch = 100 feet) depicting all waterways, wetlands, floodplains, water features, drainage patterns, and surface water containment areas;

   d. All tanks, buildings, utilities, paved areas, easements, rights-of-way, and other features;

   e. All solid or hazardous waste treatment, storage or disposal areas active after November 19, 1980;

   f. All known past solid or hazardous waste treatment, storage or disposal areas regardless of whether they were active on November 19, 1980;

   g. All known past and present product and waste underground tanks or piping;

   h. Surrounding land uses (residential, commercial, agricultural, recreational); and

   i. The location of all production and ground water monitoring wells. These wells shall be clearly labeled and ground elevations and top of casing elevations and construction details included (these elevations and details may be included as an attachment).

All maps shall be consistent with the requirements set forth in 40 C.F.R. § 270.14 and be of sufficient detail and accuracy to locate and report all current and future work performed at the site.

2. A history and description of ownership and operation, solid and hazardous waste generation, treatment, storage and disposal activities at the facility;

3. Approximate dates or periods of past product and waste spills, identification of the materials spilled, the amount spilled, the location where spilled, and a description of the response actions conducted (local, state, or federal response units or private parties), including any inspection reports or technical reports generated as a result of the response; and

4. A summary of past permits requested and/or received, any enforcement actions and their subsequent responses, and a list of documents and studies prepared for the facility.

B. Nature and Extent of Contamination

The Respondent shall prepare and submit for U.S. EPA approval, a Preliminary Report describing the existing information on the nature and extent of contamination.

1. The Respondent's report shall summarize all possible source areas of contamination. This, at a minimum, should include all regulated units, solid waste management units, spill areas, and other suspected source areas of contamination. For each area, the Respondent shall identify the following:

   a. Location of unit/area (which shall be depicted on a facility map);

   b. Quantities of solid and hazardous wastes;

   c. Hazardous waste or constituents, to the extent known; and

   d. Identification of areas where additional information is necessary.

2. The Respondent's Report shall include an assessment and description of the existing degree and extent of contamination. This should include:

a. Available monitoring data and qualitative information on locations and levels of contamination at the facility;

b. All potential migration pathways including information on geology, petrology, hydrogeology, physiography, hydrology, water quality, meteorology, and air quality; and

c. The potential impact(s) on human health and the environment, including demography, ground water and surface water use, and land use.

C. Implementation of Interim Measures

The Respondent's Report shall document interim measures which were or are being undertaken at the facility. This shall include:

1. Objectives of the interim measures: how the measure is mitigating a potential threat to human health and the environment and/or is consistent with and integrated into any long term solution at the facility;

2. Design, construction, operation, and maintenance requirements;

3. Schedules for design, construction and monitoring; and

4. Schedule for progress reports.

TASK II: PRE-INVESTIGATION EVALUATION OF CORRECTIVE MEASURE TECHNOLOGIES

Prior to starting the facility investigation, the Respondent shall submit to EPA a report that identifies the potential corrective measure technologies that may be used on-site or off-site for the containment, treatment, remediation, and/or disposal of contamination. This report shall also identify any field data that needs to be collected in the facility investigation to facilitate the evaluation and selection of the final corrective measure or measures (e.g., compatibility of waste and construction materials, information to evaluate effectiveness, treatability of wastes, etc.).

TASK III: RFI WORKPLAN REQUIREMENTS

The Respondent shall prepare a RCRA Facility Investigation (RFI) Workplan. This RFI Workplan shall include the development of several plans which shall be prepared concurrently. During the RCRA Facility Investigation, it may be necessary to revise the RFI Workplan to increase or decrease the detail of information collected to accommodate the facility-specific situation. The RFI Workplan includes the following:

A. Project Management Plan

The Respondent shall prepare a Project Management Plan which will include a discussion of the technical approach, schedules, budget, and personnel. The Project Management Plan will also include a description of the qualifications of personnel performing or directing the RFI, including contractor personnel. This plan shall also document the overall management approach to the RCRA Facility Investigation.

B. Data Collection Quality Assurance Plan

The Respondent shall prepare a plan to document all monitoring procedures: sampling, field measurements, and sample analysis performed during the investigation to characterize the environmental setting, source, and contamination, so as to ensure that all information, data and resulting decisions are technically sound, statistically valid, and properly documented.

1. Data Collection Strategy

The strategy section of the Data Collection Quality Assurance Plan shall include but not be limited to the following:

a. Description of the intended uses for the data, and the necessary level of precision and accuracy for these intended uses;

b. Description of methods and procedures to be used to assess the precision, accuracy, and completeness of the measurement data;

c. Description of the rationale used to assure that the data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, a process condition, or an environmental condition. Examples of factors which shall be considered and discussed include:

i) Environmental conditions at the time of sampling;

ii) Number of sampling points;

iii) Representativeness of selected media; and

iv) Representativeness of selected analytical parameters.

d. Description of the measures to be taken to assure that the following data sets can be compared to each other:

i) RFI data generated by the Respondent over some time period;

ii) RFI data generated by an outside laboratory or consultant versus data generated by the Respondent;

iii) Data generated by separate consultants or laboratories; and

iv) Data generated by an outside consultant or laboratory over some time period.

e. Details relating to the schedule and information to be provided in quality assurance reports. The reports should include but not be limited to:

i) Periodic assessment of measurement data accuracy, precision,and completeness;

ii) Results of performance audits;

iii) Results of system audits;

iv) Significant quality assurance problems and recommended solutions; and

v) Resolutions of previously stated problems.

2. Sampling

The Sampling section of the Data Collection Quality Assurance Plan shall discuss:

a. Selecting appropriate sampling locations, depths, etc.;

b. Providing a statistically sufficient number of sampling sites;

c. Measuring all necessary ancillary data;

d. Determining conditions under which sampling should be conducted;

e. Determining which media are to be sampled (e.g., ground water, air, soil, sediment, etc.);

f. Determining which parameters are to be measured and where;

g. Selecting the frequency of sampling and length of sampling period;

h. Selecting the types of sample (e.g., composites vs. grabs) and number of samples to be collected;

i. Measures to be taken to prevent contamination of the sampling equipment and cross contamination between sampling points;

j. Documenting field sampling operations and procedures, including;

i) Documentation of procedures for preparation of reagents or supplies which become an integral part of the sample (e.g.,filters, and adsorbing reagents);

ii) Procedures and forms for recording the exact location and specific considerations associated with sample acquisition;

iii) Documentation of specific sample preservation method;

iv) Calibration of field devices;

v) Collection of replicate samples;

vi) Submission of field-biased blanks, where appropriate;

vii) Potential interferences present at the facility;

viii) Construction materials and techniques, associated with monitoring wells and piezometers;

ix) Field equipment listing and sample containers;

x) Sampling order; and

xi) Decontamination procedures.

k. Selecting appropriate sample containers;

l. Sample preservation; and

m. Chain-of-custody, including:

i) Standardized field tracking reporting forms to establish sample custody in the field prior to and during shipment; and

ii) Pre-prepared sample labels containing all information necessary for effective sample tracking.

3. Field Measurements

The Field Measurements section of the Data Collection Quality Assurance Plan shall discuss:

a. Selecting appropriate field measurement locations, depths, etc.;

b. Providing a statistically sufficient number of field measurements;

c. Measuring all necessary ancillary data;

d. Determining conditions under which field measurements should be conducted;

e. Determining which media are to be addressed by appropriate field measurements (e.g., ground water, air, soil, sediment, etc.);

f. Determining which parameters are to be measured and where;

g. Selecting the frequency of field measurement and length of field measurements period; and

h. Documenting field measurement operations and procedures, including:

i) Procedures and forms for recording raw data and the exact location, time, and

facility-specific considerations associated with the data acquisition;

ii) Calibration of field devices;

iii) Collection of replicate measurements;

iv) Submission of field-biased blanks, where appropriate;

v) Potential interferences present at the facility;

vi) Construction materials and techniques associated with monitoring wells and piezometers used to collect field data;

vii) Field equipment listing;

viii) Order in which field measurements were made; and

ix) Decontamination procedures.

4. Sample Analysis

The Sample Analysis section of the Data Collection Quality Assurance Plan shall specify the following:

a. Chain-of-custody procedures, including:

i) Identification of a responsible party to act as sample custodian at the laboratory facility authorized to sign for incoming field samples, obtain documents of shipment, and verify the data entered onto the sample custody records;

ii) Provision for a laboratory sample custody log consisting of serially numbered standard lab-tracking report sheets; and

iii) Specification of laboratory sample custody procedures for sample handling, storage, and dispersement for analysis.

b. Sample storage procedures and storage times;

c. Sample preparation methods;

d. Analytical procedures, including:

i) Scope and application of the procedure;

ii) Sample matrix;

iii) Potential interferences;

iv) Precision and accuracy of the methodology; and

v) Method detection limits.

e. Calibration procedures and frequency;

f. Data reduction, validation and reporting;

g. Internal quality control checks, laboratory performance and systems audits and frequency, including:

i) Method blank(s);

ii) Laboratory control sample(s);

iii) Calibration check sample(s);

iv) Replicate sample(s);

v) Matrix-spiked sample(s);

vi) "Blind" quality control sample(s);

vii) Control charts;

viii) Surrogate samples;

ix) Zero and span gases; and

x) Reagent quality control checks.

h. Preventive maintenance procedures and schedules;

i. Corrective action (for laboratory problems); and

j. Turnaround time.

C. <u>Data Management Plan</u>

The Respondent shall develop and initiate a Data Management Plan to document and track investigation data and results. This plan shall identify and set up data documentation materials and procedures, project file requirements, and project-related progress reporting procedures and documents.

The plan shall also provide the format to be used to present the raw data and conclusions of the investigation.

1. Data Record

   The data record shall include the following:

   a. Unique sample or field measurement code;

   b. Sampling or field measurement location and sample or measurement type;

   c. Sampling or field measurement raw data;

   d. Laboratory analysis ID number;

   e. Property or component measured; and

   f. Result of analysis (e.g., concentration).

2. Tabular Displays

   The following data shall be presented in tabular displays:

   a. Unsorted (raw) data;

   b. Results for each medium, or for each constituent monitored;

   c. Data reduction for statistical analysis;

   d. Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and

   e. Summary data.

3. Graphical Displays

   The following data shall be presented in graphical formats (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transects, three dimensional graphs, etc.):

   a. Display sampling location and sampling grid;

   b. Indicate boundaries of sampling area, and areas where more data are required;

   c. Display levels of contamination at each sampling location;

d. Display geographical extent of contamination;

e. Display contamination levels, averages, and maxima;

f. Illustrate changes in concentration in relation to distance from the source, time, depth or other parameters; and

g. Indicate features affecting intramedia transport and show potential receptors.

D. **Health and Safety Plan**

The Respondent shall prepare a facility Health and Safety Plan.

1. Major elements of the Health and Safety Plan shall include:

a. Facility description, including availability of resources such as roads, water supply, electricity and telephone service;

b. Describe the known hazards and evaluate the risks associated with the incident and with each activity conducted;

c. List key personnel and alternates responsible for site safety, response operations, and for protection of public health;

d. Delineate work areas;

e. Describe levels of protection to be worn by personnel in work areas;

f. Establish procedures to control site access;

g. Describe decontamination procedures for personnel and equipment;

h. Establish site emergency procedures;

i. Address emergency medical care for injuries and toxicological problems;

j. Describe requirements for an environmental surveillance program;

k. Specify any routine and special training required for responders; and

1. Establish procedures for protecting workers from weather-related problems.

2. The Facility Health and Safety Plan shall be consistent with:

   a. NIOSH Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities (1985);

   b. EPA Order 1440.1 - Respiratory Protection;

   c. EPA Order 1440.3 - Health and Safety Requirements for Employees engaged in Field Activities;

   d. Facility Contingency Plan;

   e. EPA Standard Operating Safety Guide (1984);

   f. OSHA regulations particularly in 29 C.F.R. §§ 1910 and 1926;

   g. State, local, and other federal agency (e.g., DOD, DOE) regulations; and

   h. Other EPA guidance as provided.

E. Community Relations Plan

The Respondent shall prepare a plan, for the dissemination of information to the public regarding investigation activities and results.

TASK IV: FACILITY INVESTIGATION

The Respondent shall conduct those investigations necessary to: characterize the facility (Environmental Setting); define the source(s) (Source Characterization); define the degree and extent of contamination (Contamination Characterization); and identify actual or potential receptors (Potential Receptors).

The investigations should result in data of adequate technical quality to support the development and evaluation of the corrective measure alternative or alternatives during the Corrective Measures Study, if one is determined to be necessary.

The site investigation activities shall follow the plans set forth in Task III. All sampling and analyses shall be conducted in accordance with the Data Collection Quality Assurance Plan. All sampling locations shall be documented in a log and identified on a detailed site map.

A. Environmental Setting

The Respondent shall collect information to supplement and verify existing information on the environmental setting at the facility. The Respondent shall characterize the following:

1. Hydrogeology

The Respondent shall conduct a program to evaluate hydrogeologic conditions at the facility. This program shall provide the following information:

a. A description of the regional and facility specific geologic and hydrogeologic characteristics affecting ground water flow beneath the facility, including:

i) Regional and facility specific stratigraphy: description of strata including strike and dip, identification of stratigraphic contacts;

ii) Structural geology: description of local and regional structural features (e.g., folding, faulting, tilting, jointing, etc.);

iii) Depositional history;

iv) Identification and characterization of areas and amounts of recharge and discharge;

v) Regional and facility specific ground water flow patterns; and

vi) Characterize seasonal variations in the ground water flow regime.

b. An analysis of any topographic features that might influence the ground water flow system. (Note: Stereographic analysis of aerial photographs may aid in this analysis.)

c. Based on field data, test, and cores, a representative and accurate classification and description of the hydrogeologic units which may be part of the migration pathways at the facility (i.e., the aquifers and any intervening saturated and unsaturated units), including:

i) Hydraulic conductivity and porosity (total and effective);

ii) Lithology, grain size, sorting, degree of cementation;

iii) An interpretation of hydraulic interconnections between saturated zones; and

iv) The attenuation capacity and mechanisms of the natural earth materials (e.g., ion exchange capacity, organic carbon content, mineral content etc.).

d. Based on field studies and cores, structural geology, and hydrogeologic cross sections showing the extent (depth, thickness, lateral extent) of hydrogeologic units which may be part of the migration pathways identifying:

i) Sand and gravel deposits in unconsolidated deposits;

ii) Zones of fracturing or channeling in consolidated or unconsolidated deposits;

iii) Zones of higher permeability or lower permeability that might direct and restrict the flow of contaminants;

iv) The uppermost aquifer: geologic formation, group of formations, or part of a formation capable of yielding a significant amount of ground water to wells or springs; and

v) Water-bearing zones above the first confining layer that may serve as a pathway for contaminant migration including perched zones of saturation.

e. Based on data obtained from ground water monitoring wells and piezometers installed upgradient and downgradient of the potential contaminant source, a representative description of water level or fluid pressure monitoring including:

i) Water-level contour and/or potentiometric maps;

ii) Hydrologic cross sections showing vertical gradients;

iii) The flow system, including the vertical and horizontal components of flow; and

iv) Any temporal changes in hydraulic gradients, for example, due to tidal or seasonal influences.

f. A description of manmade influences that may affect the hydrogeology of the site, identifying:

i) Active and inactive local water-supply and production wells with an approximate schedule of pumping; and

ii) Manmade hydraulic structures (pipelines, french drains, ditches, unlined ponds, septic tanks, NPDES outfalls, retention areas, etc.).

2. Soils

The Respondent shall conduct a program to characterize the soil and rock units above the water table in the vicinity of the contaminant release(s). Such characterization shall include but not be limited to, the following information:

a. SCS soil classification;

b. Surface soil distribution;

c. Soil profile, including ASTM classification of soils;

d. Transects of soil stratigraphy;

e. Hydraulic conductivity (saturated and unsaturated);

f. Relative permeability;

g. Bulk density;

h. Porosity;

i. Soil sorptive capacity;

j. Cation exchange capacity (CEC);

k. Soil organic content;

l. Soil pH;

m. Particle size distribution;

n. Depth of water table;

o. Moisture content;

p. Effect of stratification on unsaturated flow;

q. Infiltration

r. Evapotranspiration;

s. Storage capacity;

t. Vertical flow rate; and

u. Mineral content.

3. Surface Water and Sediment

The Respondent shall conduct a program to characterize the surface water bodies in the vicinity of the facility. Such characterization shall include, but not be limited to, the following activities and information:

a. Description of the temporal and permanent surface water bodies including:

i) For lakes and estuaries: location, elevation surface area, inflow, outflow, depth, temperature stratification, and volume;

ii) For impoundments: location, elevation, surface area, depth, volume, freeboard, and purpose of impoundment;

iii) For streams, ditches, drains, swamps and channels: location, elevation, flow, velocity, depth, width, seasonal fluctuations, and flooding tendencies (i.e., 100 year event);

iv) Drainage patterns; and

v) Evapotranspiration.

b. Description of the chemistry of the natural surface water and sediments. This includes determining the pH, total dissolved solids, total suspended solids, biological oxygen demand, alkalinity, conductivity, dissolved oxygen profiles, nutrients (NH_3, NO_3^-/NO_2^-, PO_4^{-3}), chemical oxygen demand, total organic carbon, specific contaminant concentrations, etc.

c. Description of sediment characteristics including:

i) Deposition area;

ii) Thickness profile; and

iii) Physical and chemical parameters (e.g., grain size; density, organic carbon content, ion exchange capacity, pH, etc.)

4. Air

The Respondent shall provide information characterizing the climate in the vicinity of the facility. Such information shall include, but not be limited to:

a. A description of the following parameters:

i) Annual and monthly rainfall averages;

ii) Monthly temperature averages and extremes;

iii) Wind speed and direction;

iv) Relative humidity/dew point;

v) Atmospheric pressure;

vi) Evaporation data;

vii) Development of inversions; and

viii) Climate extremes that have been known to occur in the vicinity of the facility, including frequency of occurrence.

b. A description of topographic and manmade features which affect air flow and emission patterns, including:

i) Ridges, hills or mountain areas;

ii) Canyons or valleys;

iii) Surface water bodies (e.g., rivers, lakes, bays, etc.);

iv) Wind breaks and forests; and

v) Buildings.

B. Source Characterization

The Respondent shall collect analytical data to completely characterize the wastes and the areas where wastes have been placed, collected, or removed, including: type; quantity; physical form; disposition (containment or nature of deposits); and facility characteristics affecting release (e.g., facility security, and engineered barriers). This shall include quantification of the following specific characteristics at each source area:

1. Unit/Disposal Area characteristics:

a. Location of unit/disposal area;

b. Type of unit/disposal area;

c. Design features;

d. Operating practices (past and present);

e. Period of operation;

f. Age of unit/disposal area;

g. General physical conditions; and

h. Method used to close the unit/disposal area.

2. Waste Characteristics:

   a. Type of waste placed in the unit;

      i) Hazardous classification (e.g., flammable, reactive, corrosive, oxidizing, or reducing agent);

      ii) Quantity; and

      iii) Chemical composition.

   b. Physical and chemical characteristics;

      i) Physical form (solid, liquid, gas);

      ii) Physical description (e.g., powder, oily sludge);

      iii) Temperature;

      iv) pH;

      v) General chemical class (e.g., acid, base, solvent);

      vi) Molecular weight;

      vii) Density;

      viii) Boiling point;

      ix) Viscosity;

      x) Solubility in water;

      xi) Cohesiveness of the waste;

      xii) Vapor pressure.

      xiii) Flash point

   c. Migration and dispersal characteristics of the waste;

      i) Sorption;

      ii) Biodegradability, bioconcentration, biotransformation;

      iii) Photodegradation rates;

iv) Hydrolysis rates; and

v) Chemical transformations.

The Respondent shall document the procedures used in making the above determinations.

C. Contamination Characterization

The Respondent shall collect analytical data on ground water, soils, surface water, sediment, and subsurface gas contamination in the vicinity of the facility. This data shall be sufficient to define the extent, origin, direction, and rate of movement of contaminant plumes. Data shall include time and location of sampling, media sampled, concentrations found, conditions during sampling, and the identity of the individuals performing the sampling and analysis. The Respondent shall address the following types of contamination at the facility:

1. Ground Water Contamination

The Respondent shall conduct a Ground Water Investigation to characterize any plumes of contamination at the facility. This investigation shall, at a minimum, provide the following information:

a. A description of the horizontal and vertical extent of any immiscible or dissolved plume(s) originating from the facility;

b. The horizontal and vertical direction of contamination movement;

c. The velocity of contaminant movement;

d. The horizontal and vertical concentration profiles of Appendix IX constituents in the plume(s);

e. An evaluation of factors influencing the plume movement; and

f. An extrapolation of future contaminant movement.

The Respondent shall document the procedures used in making the above determinations (e.g., well design, well construction, geophysics, modeling, etc.).

2. Soil Contamination

The Respondent shall conduct an investigation to characterize the contamination of the soil and rock

units above the water table in the vicinity of the contaminant release. The investigation shall include the following information:

a. A description of the vertical and horizontal extent of contamination.

b. A description of contaminant and soil chemical properties within the contaminant source area and plume. This includes contaminant solubility, speciation, adsorption, leachability, exchange capacity, biodegradability, hydrolysis, photolysis, oxidation, and other factors that might affect contaminant migration and transformation.

c. Specific contaminant concentrations.

d. The velocity and direction of contaminant movement.

e. An extrapolation of future contaminant movement.

The Respondent shall document the procedures used in making the above determinations.

3. Surface Water and Sediment Contamination

The Respondent shall conduct a surface water investigation to characterize contamination in surface water bodies resulting from contaminant releases at the facility. The investigation shall include, but not be limited to, the following information:

a. A description of the horizontal and vertical extent of any immiscible or dissolved plume(s) originating from the facility, and the extent of contamination in underlying sediments;

b. The horizontal and vertical direction of contaminant movement;

c. The contaminant velocity;

d. An evaluation of the physical, biological and chemical factors influencing contaminant movement;

e. An extrapolation of future contaminant movement; and

f. A description of the chemistry of the contaminated surface waters and sediments. This includes

determining the pH, total dissolved solids, specific contaminant concentrations, etc.;

The Respondent shall document the procedures used in making the above determinations.

4. Air Contamination

The Respondent shall conduct an investigation to characterize the particulate and gaseous contaminants released into the atmosphere. This investigation shall provide the following information:

a. A description of the horizontal and vertical direction and velocity of contaminant movement;

b. The rate and amount of the release; and

c. The chemical and physical composition of the contaminants(s) released, including horizontal and vertical concentration profiles. The Respondent shall document the procedures used in making the above determinations.

5. Subsurface Gas Contamination

The Respondent shall conduct an investigation to characterize subsurface gases emitted from buried hazardous waste and hazardous constituents in the ground water. This investigation shall include the following information:

a. A description of the horizontal and vertical extent of subsurface gas mitigation;

b. The chemical composition of the gases being emitted;

c. The rate, amount, and density of the gases being emitted; and

d. Horizontal and vertical concentration profiles of the subsurface gases emitted.

The Respondent shall document the procedures used in making the above determinations.

D. Potential Receptors

The Respondent shall collect data describing the human populations and environmental systems that are susceptible to contaminant exposure from the facility. Chemical

analysis of biological samples may be needed. Data on observable effects in ecosystems may also be obtained. The following characteristics shall be identified:

1. Local uses and possible future uses of ground water:

   a. Type of use (e.g., drinking water source: municipal or residential, agricultural, domestic/non-potable, and industrial); and

   b. Location of ground water users including wells and discharge areas.

2. Local uses and possible future uses of surface waters draining the facility:

   a. Domestic and municipal (e.g., potable and lawn/garden watering);

   b. Recreational (e.g., swimming, fishing);

   c. Agricultural;

   d. Industrial; and

   e. Environmental (e.g., fish and wildlife propagation).

3. Human use of or access to the facility and adjacent lands, including but not limited to:

   a. Recreation;

   b. Hunting;

   c. Residential;

   d. Commercial;

   e. Zoning; and

   f. Relationship between population locations and prevailing wind direction.

4. A description of the biota in surface water bodies on, adjacent to, or affected by the facility.

5. A description of the ecology overlying and adjacent to the facility.

6. A demographic profile of the people who use or have access to the facility and adjacent land, including, but not limited to: age, sex, and sensitive subgroups.

7. A description of any endangered or threatened species near the facility.

TASK V: INVESTIGATION ANALYSIS

The Respondent shall prepare an analysis and summary of all facility investigations and their results. The objective of this task shall be to ensure that the investigation data are sufficient in quality (e.g., quality assurance procedures have been followed) and quantity to describe the nature and extent of contamination, potential threat to human health and/or the environment, and to support the Corrective Measures Study, if one is determined to be necessary.

A. Data Analysis

The Respondent shall analyze all facility investigation data outlined in Task IV and prepare a report on the type and extent of contamination at the facility including sources and migration pathways. The report shall describe the extent of contamination (qualitative/quantitative) in relation to background levels indicative for the area.

B. Protection Standards

1. Ground Water Protection Standards

   For regulated units, the Respondent shall provide information to support the Agency's selection/ development of Ground Water Protection Standards for all of the 40 C.F.R. Part 261 Appendix IX constituents found in the ground water during the Facility Investigation (Task IV).

   a. The Ground Water Protection Standards shall consist of:

      i) for any constituents listed in Table 1 of 40 C.F.R. § 264.94, the respective value given in that table (MCL) if the background level of the constituent is below the value given in Table 1; or

      ii) the background level of that constituent in the ground water; or

      iii) a U.S. EPA approved Alternate Concentration Limit (ACL).

   b. Information to support the Agency's subsequent selection of Alternate Concentration Limits (ACLs) shall be developed by the Respondent in accordance with U.S. EPA guidance. For any proposed ACLs, the Respondent shall include a justification based

upon the criteria set forth in 40 C.F.R. § 264.94(b).

c. After receipt and review of any proposed ACLs, the U.S. EPA shall notify the Respondent in writing of approval, disapproval or modifications. The U.S. EPA shall specify, in writing, the reason(s) for any disapproval or modification.

d. Within sixty (60) days of receipt of the U.S. EPA's notification or disapproval of any proposed ACL, the Respondent shall withdraw the application or amend and submit revisions to the U.S. EPA.

2. For all other units or areas of contamination, the Respondent shall propose a ground water protection standard for each Appendix IX constituent found in the ground water and provide adequate information to support this proposal, including a justification based upon the criteria set forth in 40 C.F.R. § 264.94(b)..

a. The proposed ground water protection standard will be reviewed by EPA in accordance with U.S. EPA guidance for ACLs.

b. After receipt and review of any proposed ground water protection standards, the U.S. EPA shall notify the Respondent in writing of approval, disapproval or modifications. The U.S. EPA shall specify in writing the reason(s) for any disapproval or modification.

c. Within sixty (60) days of receipt of the U.S. EPA's notification or disapproval of any proposed ACL, the Respondent shall withdraw the proposal or amend and submit revisions to the U.S. EPA.

3. Other Relevant Protection Standards

The Respondent shall identify all relevant and applicable standards for the protection of human health and the environment (e.g., National Ambient Air Quality Standards, Federally-approved State water quality standards, etc.).

TASK VI: LABORATORY AND BENCH-SCALE STUDIES

The Respondent shall conduct laboratory and/or bench scale studies to determine the applicability of a corrective measure technology or technologies to facility conditions. The Respondent shall analyze the technologies, based on literature review, vendor contracts, and past experience to determine the testing requirements.

The Respondent shall develop a testing plan identifying the types(s) and goal(s) of the study(ies), the level of effort needed, and the procedures to be used for data management and interpretation.

Upon completion of the testing, the Respondent shall evaluate the testing results to assess the technology or technologies with respect to the site-specific questions identified in the test plan.

The Respondent shall prepare a report summarizing the testing program and its results, both positive and negative.

TASK VII: REPORTS

A. Preliminary and Workplan

The Respondent shall submit to the EPA reports on Tasks I and II when it submits the RCRA Facility Investigation Workplan (Task III).

B. Progress

The Respondent shall at a minimum provide the EPA with signed, quarterly progress reports containing:

1. A description and estimate of the percentage of the RFI completed;
2. Summaries of all findings;
3. Summaries of all changes made in the RFI during the reporting period;
4. Summaries of all contacts with representative of the local community, public interest groups or State government during the reporting period;
5. Summaries of all problems or potential problems encountered during the reporting period;
6. Actions being taken to rectify problems;
7. Changes in personnel during the reporting period;
8. Projected work for the next reporting data, etc.

C. Draft and Final

Upon EPA approval, the Respondent shall prepare a RCRA Facility Investigation Report to present Tasks IV-V. The RCRA Facility investigation Report shall be developed in draft form for U.S. EPA review. The RCRA Facility Investigation Report shall be developed in final format incorporating comments received on the Draft RCRA Facility Investigation Report. Task VI shall be submitted as a separate report when the Final RCRA Facility Investigation Report is submitted.

A summary of the information reporting requirements contained in the RCRA Facility Investigation Scope of Work is presented below:

[NOTE: Due dates are calculated from the effective date of this Order, unless otherwise specified.]

Facility Submission	Due Date
Description of Current Situation (Task I)	Sixty (60) days
Pre-Investigation Evaluation of Corrective Measure Technologies (Task II)	Sixty (60) days
RFI Workplan (Task III)	Sixty (60) days
Draft RFI Report (Tasks IV and V)	In accordance with approved schedule
Final RFI Report (Tasks IV and V) (Tasks IV and V)	Sixty (60) days after EPA comment on Draft RFI Report
Laboratory and Bench-Scale Studies (Task VI)	Concurrent with Final RFI Report
Progress Reports on Tasks I through VI	Quarterly

ATTACHMENT II

SCOPE OF WORK FOR CORRECTIVE MEASURES STUDY
At
WESTERN NEW YORK SERVICE CENTER

CORRECTIVE MEASURE STUDY

Task VIII: Identification and Development of the Corrective Measure Alternative or Alternatives

Task IX: Evaluation of the Corrective Measure Alternative or Alternatives

Task X: Justification and Recommendation of the Corrective Measure or Measures

Task XI: Reports

SCOPE OF WORK FOR A CORRECTIVE MEASURE STUDY AT WESTERN NEW YORK NUCLEAR SERVICE CENTER

PURPOSE

The purpose of this Corrective Measure Study (CMS) is to develop and evaluate the corrective action alternative or alternatives and to recommend the corrective measure or measures to be taken at the Western New York Nuclear Service Center. The Respondent (the term Respondent whenever used in this Attachment shall include both the New York State Energy Research and Development Authority (EPA ID Number NYD986905545) and the United States Department of Energy (EPA ID Number NYD980779540) will furnish the personnel, materials, and services necessary to prepare the corrective measure study, except as otherwise specified.

SCOPE

The Corrective Measure Study consists of four tasks:

Task VIII: Identification and Development of the Corrective Measure Alternative or Alternatives

- A. Description of Current Situation
- B. Establishment of Corrective Action Objectives
- C. Screening of Corrective Measures Technologies
- D. Identification of the Corrective Measure Alternative or Alternatives

Task IX: Evaluation of the Corrective Measure Alternative or Alternatives

- A. Technical/Environmental/Human Health/Institutional
- B. Cost Estimate

Task X: Justification and Recommendation of the Corrective Measure or Measures

- A. Technical
- B. Environmental
- C. Human Health

Task XI: Reports

- A. Progress
- B. Draft
- C. Final

TASK VIII: IDENTIFICATION AND DEVELOPMENT OF THE CORRECTIVE ACTION ALTERNATIVE OR ALTERNATIVES

Based on the results of the RCRA Facility Investigation and consideration of the identified Preliminary Corrective Measure Technologies (Task II), the Respondent shall identify, screen, and develop the alternative or alternatives for removal, containment, treatment, and/or other remediation of the contamination based on the objectives established for the corrective action.

A. Description of Current Situation

The Respondent shall submit an update to the information describing the current situation at the combined facility and the known nature and extent of the contamination as documented by the RCRA Facility Investigation Report. The Respondent shall provide an update to information presented in Task I of the RFI to the Agency regarding previous response activities and any interim measures which have or are being implemented at the combined facility. The Respondent shall also make a facility-specific statement of the purpose for the response, based on the results of the RCRA Facility Investigation. The statement of purpose should identify the actual or potential exposure pathways that should be addressed by corrective measures.

B. Establishment of Corrective Action Objectives

The Respondent, in conjunction with the U.S. EPA, shall establish site specific objectives for the corrective action. These objectives shall be based on public health and environmental criteria, information gathered during the RCRA Facility Investigation, EPA guidance, and the requirements of any applicable Federal statutes. At a minimum, all corrective actions concerning ground water releases from regulated units must be consistent with, and as stringent as, those required under 40 CFR § 264.100.

C. Screening of Corrective Measure Technologies

The Respondent shall review the results of the RCRA Facility Investigation and reassess the technologies specified in Task II and identify additional technologies which are applicable at the combined facility. The Respondent shall screen the preliminary corrective measure technologies identified in Task II of the RCRA Facility Investigation and any supplemental technologies to eliminate those that may prove infeasible to implement, that rely on technologies unlikely to perform satisfactorily or reliably, or that do not achieve the corrective measure objective within a

reasonable time period. This screening process focuses on eliminating those technologies which have severe limitations for a given set of waste and site-specific conditions. The screening step may also eliminate technologies based on inherent technology limitations. Site, waste, and technology characteristics which are used to screen inapplicable technologies are described in more detail below:

1. Site Characteristics

   Site data should be reviewed to identify conditions that may limit or promote the use of certain technologies. Technologies whose use is clearly precluded by site characteristics should be eliminated from further consideration;

2. Waste Characteristics

   Identification of waste characteristics that limit the effectiveness or feasibility of technologies is an important part of the screening process. Technologies clearly limited by these waste characteristics should be eliminated from consideration. Waste characteristics particularly affect the feasibility of in-situ methods, direct treatment methods, and land disposal (on/off-site); and

3. Technology Limitations

   During the screening process, the level of technology development, performance record, and inherent construction, operation, and maintenance problems should be identified for each technology considered. Technologies that are unreliable, perform poorly, or are not fully demonstrated may be eliminated in the screening process. For example, certain treatment methods have been developed to a point where they can be implemented in the field without extensive technology transfer or development.

D. <u>Identification of the Corrective Measure Alternative or Alternatives</u>

The Respondent shall develop the Corrective measure alternative or alternatives based on the corrective action objectives and analysis of Preliminary Corrective Measure Technologies, as presented in Task II of the RCRA Facility investigation and as supplemented following the preparation of the RFI Report. The Respondent shall rely on engineering practice to determine which of the previously identified technologies appear most suitable for the site.

Technologies can be combined to form the overall corrective action alternative or alternatives. The alternative or alternatives developed should represent a workable number of option(s) that each appear to adequately address all site problems and corrective actior objectives. Each alternative may consist of an individual technology or a combination of technologies. The Respondent shall document the reasons for excluding technologies, identified in Task II, as supplemented in the development of the alternative or alternatives.

TASK IX: EVALUATION OF THE CORRECTIVE MEASURE ALTERNATIVE OR ALTERNATIVES

The Respondent shall describe each corrective measure alternative that passes through the Initial Screening in Task VIII and evaluate each corrective measure alternative and its components. The evaluation shall be based on technical, environmental, human health, and institutional concerns. The Respondent shall also develop cost estimates of each corrective measure.

A. Technical/Environmental/Human Health/Institutional

The Respondent shall provide a description of each corrective measure alternative which includes, but is not limited to, the following: preliminary process flow sheets; preliminary sizing and type of construction for buildings and structures; and rough quantities of utilities required. The Respondent shall evaluate each alternative in the four following areas:

1. Technical;

   The Respondent shall evaluate each corrective measure alternative based on performance, reliability, implementability and safety.

   a. The Respondent shall evaluate performance based on the effectiveness and useful life of the corrective measure:

      i) Effectiveness shall be evaluated in terms of the ability to perform intended functions, such as containment, diversion, removal, destruction, or treatment. The effectiveness of each corrective measure shall be determined either through design specifications or by performance evaluation. Any specific waste or site characteristics which could potentially impede effectiveness shall be considered. The evaluation should also consider the effectiveness of combinations of technologies; and

      ii) Useful life is defined as the length of time the level of effectiveness can be maintained. Most corrective measure technologies, with the exception of destruction, deteriorate with time. Often, deterioration can be slowed through proper system operation and maintenance, but the technology eventually may require replacement. Each corrective measure shall be evaluated in terms of the

projected service lives of its component technologies. Resource availability in the future life of the technology, as well as appropriateness of the technologies, must be considered in estimating the useful life of the project.

b. The Respondent shall provide information on the reliability of each corrective measure including their operation and maintenance requirements and their demonstrated reliability:

i) Operation and maintenance requirements include the frequency and complexity of necessary operation and maintenance. Technologies requiring frequent or complex operation and maintenance activities should be regarded as less reliable than technologies requiring little or straightforward operation and maintenance. The availability of labor and materials to meet these requirements shall also be considered; and

ii) Demonstrated and expected reliability is a way of measuring the risk and effect of failure. The Respondent should evaluate whether the technologies have been used effectively under analogous conditions; whether the combination of technologies have been used together effectively; whether failure of any one technology has an immediate impact on receptors; and whether the corrective measure has the flexibility to deal with uncontrollable changes at the site.

c. The Respondent shall describe the implementability of each corrective measure including the relative ease of installation (constructability) and the time required to achieve a given level of response:

i) Constructability is determined by conditions both internal and external to the facility conditions and include such items as location of underground utilities, depth to water table, heterogeneity of subsurface materials, and location of the facility (i.e., remote location vs. a congested urban area). The Respondent shall evaluate what measures can be taken to facilitate construction under these conditions. External factors which

affect implementation include the need for special permits or agreements, equipment availability, and the location of suitable off-site treatment or disposal facilities; and

ii) Time has two components that shall be addressed: the time it takes to implement a corrective measure and the time it takes to actually see beneficial results. Beneficial results are defined as the reduction of contaminants to some acceptable, pre-established level.

d. The Respondent shall evaluate each corrective measure alternative with regard to safety. This evaluation shall include threats to the safety of nearby communities and environments as well as those to workers during implementation. Factors to consider are fire, explosion, and exposure to hazardous substances.

2. Environmental;

The Respondent shall perform an Environmental Assessment for each alternative. The Environmental Assessment shall focus on the facility conditions and pathways of contamination actually addressed by each alternative. The Environmental Assessment for each alternative will include, at a minimum, an evaluation of: the short and long term beneficial and adverse effects of the response alternative; any adverse effects on environmentally sensitive areas; and an analysis of measures to mitigate adverse effects.

3. Human Health; and

The Respondent shall assess each alternative in terms of the extent to which it mitigates short and long term potential exposure to any residual contamination and protects human health both during and after implementation the corrective measure. The assessment will describe the levels and characterizations of contaminants on-site, potential exposure routes, and potentially affected populations. Each alternative will be evaluated to determine the level of exposure to contaminants and the reduction over time. For management of mitigation measures, the relative reduction of impact will be determined by comparing residual levels of each alternative with existing criteria, standards, or guidelines acceptable to EPA.

4. Institutional.

The Respondent shall assess relevant institutional needs for each alternative. Specifically, the effects of Federal, State and local environmental and public health standards, regulations, guidance, advisories, ordinances, or community relations on the design, operation, and timing of each alternative.

B. Cost Estimate

The Respondent shall develop an estimate of the cost of each corrective measure alternative (and for each phase or segment of the alternative). The cost estimate shall include both capital and operation and maintenance costs.

1. Capital costs consist of direct (construction) and indirect (non-construction and overhead) costs.

   a. Direct capital costs include:

      i) Construction costs: Costs of materials, labor (including fringe benefits and worker's compensation), and equipment required to install the corrective measure.

      ii) Equipment costs: Costs of treatment, containment, disposal, and/or service equipment necessary to implement the action; these materials remain until the corrective action is complete;

      iii) Land and site-development costs: Expenses associated with purchase of land and development of existing property; and

      iv) Buildings and services costs: Costs of process and non-process buildings, utility connections, purchased services, and disposal costs.

   b. Indirect capital costs include:

      i) Engineering expenses: Costs of administration, design, construction supervision, drafting, and testing of corrective measure alternatives;

      ii) Legal fees and license or permit costs: Administrative and technical costs necessary to obtain licenses and permits for installation and operation;

iii) Start-up and shakedown costs: Costs incurred during corrective measure start-up; and

iv) Contingency allowances: Funds to cover costs resulting from unforeseen circumstances, such as adverse weather conditions, strikes, and inadequate facility characterization.

2. Operation and maintenance costs are post-construction costs necessary to ensure continued effectiveness of a corrective measure. The Respondent shall consider the following operation and maintenance cost components:

a. Operating labor costs: Wages, salaries, training, overhead, and fringe benefits associated with the labor needed for post-construction operations;

b. Maintenance materials and labor costs: Costs for labor, parts, and other resources required for routine maintenance of facilities and equipment;

c. Auxiliary materials and energy: Costs of such items as chemicals and electricity for treatment plant operations, water and sewer service, and fuel;

d. Purchased services: Sampling costs, laboratory fees, and professional fees for which the need can be predicted;

e. Disposal and treatment costs: Costs of transporting, treating, and disposing of waste materials, such as treatment plant residues, generated during operations;

f. Administrative costs: Costs associated with administration of corrective measure operation and maintenance not included under other categories;

g. Insurance, taxes, and licensing costs: Costs of such items as liability and sudden accidental insurance; real estate taxes on purchased land or rights-of-way; licensing fees for certain technologies; and permit renewal and reporting costs;

h. Maintenance reserve and contingency funds: Annual payments into escrow funds to cover (1) costs of anticipated replacement or rebuilding of equipment and (2) any large unanticipated operation and maintenance costs; and

i. Other costs: Items that do not fit any of the above categories.

TASK X: JUSTIFICATION AND RECOMMENDATION OF THE CORRECTIVE MEASURE OR MEASURES

The Respondent shall justify and recommend a corrective measure alternative using technical, human health, and environmental criteria. This recommendation shall include summary tables which allow the alternative or alternatives to be understood easily. Tradeoffs among health risks, environmental effects, and other pertinent factors shall be highlighted. The U.S. EPA will select the corrective measure alternative or alternatives to be implemented based on the results of Tasks IX and X. At a minimum, the following criteria will be used to justify the final corrective measure or measures.

A. **Technical**

1. Performance - corrective measure or measures which are most effective at performing their intended functions and maintaining the performance over extended periods of time will be given preference;

2. Reliability - corrective measure or measures which do not require frequent or complex operation and maintenance activities and that have proven effective under waste and facility conditions similar to those anticipated will be given preference;

3. Implementability - corrective measure or measures which can be constructed and operated to reduce levels of contamination to attain or exceed applicable standards in the shortest period of time will be preferred; and

4. Safety - corrective measure or measures which pose the least threat to the safety of nearby residents and environments as well as workers during implementation will be preferred.

B. **Human Health**

The corrective measure or measures must comply with existing U.S. EPA criteria, standards, or guidelines for the protection of human health. Corrective measures which provide the minimum level of exposure to contaminants and the maximum reduction in exposure with time are preferred.

C. **Environmental**

The corrective measure or measures posing the least adverse impact (or greatest improvement) over the shortest period of time on the environment will be favored.

TASK XI: REPORTS

The Respondent shall prepare a Corrective Measure Study Report presenting the results of Task VIII through X and recommending a corrective measure alternative.

A. Progress

The Respondent shall, at a minimum, provide the U.S. EPA with signed, quarterly progress reports containing:

1. A description and estimate of the percentage of the CMS completed;
2. Summaries of all findings;
3. Summaries of all changes made in the CMS during the reporting period;
4. Summaries of all contacts with representatives of the local community, public interest groups or State government during the reporting period;
5. Summaries of all problems or potential problems encountered during the reporting period;
6. Actions being taken to rectify problems;
7. Changes in personnel during reporting period;
8. Projected work for the next reporting period; and
9. Copies of daily reports, inspection reports, laboratory/monitoring data, etc.

B. Draft

The Report shall at a minimum include:

1. A description of the facility;
   a. Site topographic map & preliminary layouts.
2. A summary of the corrective measure or measures;
   a. Description of the corrective measure or measures and rationale for selection;
   b. Performance expectations;
   c. Preliminary design criteria and rationale;

d. General operation and maintenance requirements; and

e. Long term monitoring requirements.

3. A summary of the RCRA Facility Investigation and impact on the selected corrective measure or measures;

a. Field studies (ground water, surface water, soil, air); and

b. Laboratory studies (bench scale, pick scale).

4. Design and Implementation Precautions;

a. Special technical problems;

b. Additional engineering data required;

c. Permits and regulatory requirements;

d. Access, easements, right-of-way;

e. Health and safety requirements; and

f. Community relations activities.

5. Cost Estimates and Schedules;

a. Capital cost estimate;

b. Operation and maintenance cost estimate; and

c. Project schedule (design, construction, operation).

C. **Final**

The Respondent shall finalize the Corrective Measure Study Report incorporating comments received from EPA on the Draft Corrective Measure Study Report.

A summary of the information reporting requirements contained in the Corrective Measure Study Scope of Work is presented below:

[NOTE: Due dates are calculated from the effective date of this Order, unless otherwise specified.]

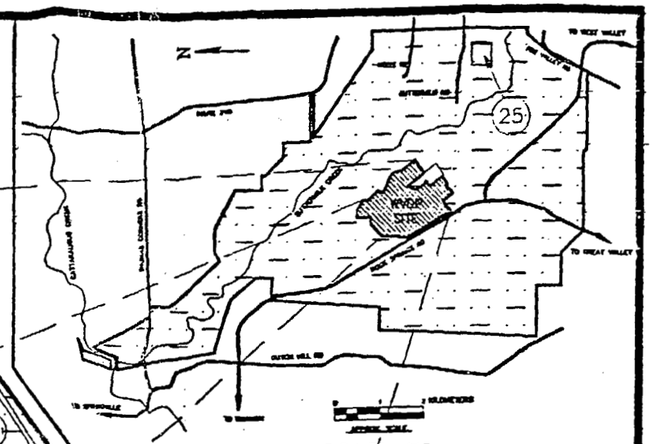
Facility Submission	Due Date
Draft CMS Workplan	Ninety (90) days after EPA Notification
Final CMS Workplan	Sixty (60) days after EPA comments on Draft Workplan
Draft CMS Report (Tasks VIII, IX, and X)	As approved in Workplan
Final CMS Report	Sixty (60) days after Public and EPA comment on the Draft CMS
Progress Reports on Tasks VIII, IX, and X	Quarterly

MAP 3a
WEST VALLEY DEMONSTRATION PROJECT
SOLID WASTE MANAGEMENT UNITS

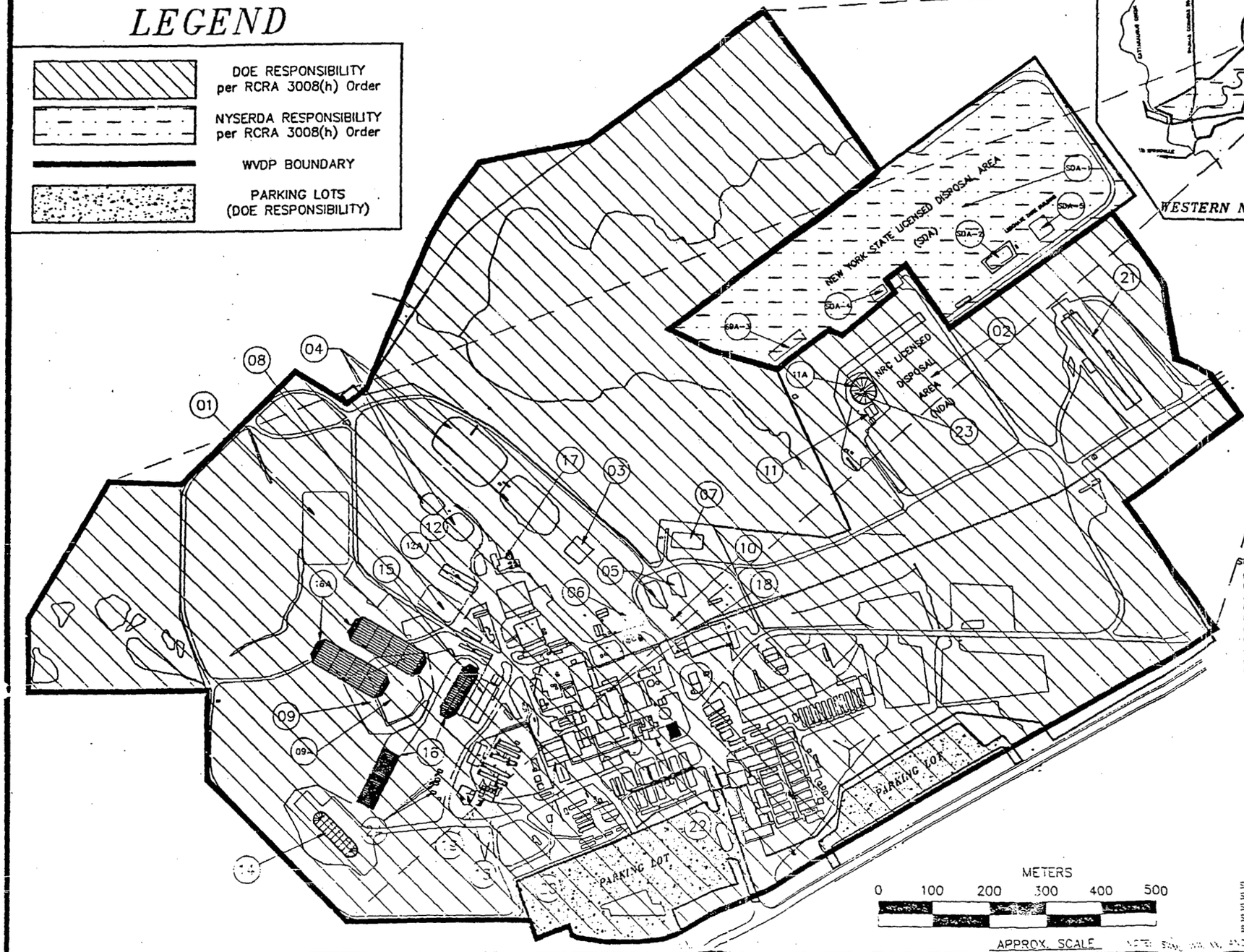
N

LEGEND

- DOE RESPONSIBILITY per RCRA 3008(h) Order
- NYSERDA RESPONSIBILITY per RCRA 3008(h) Order
- WVDP BOUNDARY
- PARKING LOTS (DOE RESPONSIBILITY)



MAP 3b
WESTERN NEW YORK NUCLEAR SERVICE CENTER



SWMU	DESCRIPTION	STATUS
01	CONSTRUCTION & DEMOLITION LANDFILL	NOT ACTIVE
02	NRC LICENSED DISPOSAL AREA	NOT ACTIVE
03	LAGOON #1	NOT ACTIVE
04	LAGOONS #2, #3, #4, #5	ACTIVE
05	SLUDGE PONDS (2)	ACTIVE
06	SOLVENT DIKE	NOT ACTIVE
07	EFFLUENT MIXING BASIN	ACTIVE
08	MAINTENANCE SHOP SANITARY LEACH FIELD	NOT ACTIVE
09	OLD HARDSTAND STORAGE AREA	NOT ACTIVE
09A	NEW HARDSTAND STORAGE AREA	ACTIVE
10	INCINERATOR	NOT ACTIVE
11	NDA CONTAINER STORAGE	ACTIVE
11A	STORAGE TANK USED IN TRENCH SYSTEM	ACTIVE
"	VITRIFICATION FACILITY TEST TANKS	ACTIVE
"	VITRIFICATION FACILITY TEST TANKS	ACTIVE
"	HIGH LEVEL WASTE TANKS	ACTIVE
14	CHEMICAL PROCESS CELL HARDSTAND	ACTIVE
15	LAG STORAGE BUILDING	ACTIVE
16	LAG STORAGE (LSA 1 & 2)	ACTIVE
16A	LAG STORAGE (LSA 3 & 4)	ACTIVE
"	LOW LEVEL WASTE TREATMENT FACILITY	ACTIVE
"	LIQUID WASTE TREATMENT SYSTEM	ACTIVE
"	SUPERNATENT TREATMENT SYSTEM	ACTIVE
"	VITRIFICATION FACILITY	ACTIVE
"	RADWASTE TREATMENT SYSTEM DRUM CELL	ACTIVE
22	CEMENT SOLIDIFICATION SYSTEM	ACTIVE
23	TRENCH INTERCEPTOR PROJECT	ACTIVE
24	HAZARDOUS WASTE STORAGE LOCKERS	ACTIVE
25	BULK STORAGE W.H SCRAP METAL LANDFILL	NOT ACTIVE
SDA-1	14 INACTIVE LLRW DISPOSAL TRENCHES	NOT ACTIVE
SDA-2	INACTIVE LAGOON	NOT ACTIVE
SDA-3	NORTHERN FILLED LAGOON	NOT ACTIVE
SDA-4	SOUTHERN FILLED LAGOON	NOT ACTIVE
SDA-5	TRENCH 14 TREATMENT FACILITY	ACTIVE

NOTE: SWMU 10A, 10B, AND 10C HAVE BEEN RENAMED TO 01, 02, AND 03 RESPECTIVELY.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, NEW YORK 10278

March 9, 1992

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Re: West Valley Order
Docket No. II RCRA-3008(h)-92-0202

Dear Addressees:

Enclosed please find the executed Order in the above-captioned matter. Please note that I have not included Attachments I and II as all parties have these attachments. I have sent you a complete Order to avoid any possible confusion due to the number of previous drafts and inserts circulated earlier.

If you have any questions or concerns please contact me at fts/264-8929.

Sincerely,

Carl R. Howard
Assistant Regional Counsel
Office of Regional Counsel

Enclosure

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II

IN THE MATTER OF: Western New York Nuclear Service Center New York State Energy Research Development Authority, EPA ID Number NYD986905545; U.S. Department of Energy, EPA ID Number NYD 980779540 RESPONDENTS	ADMINISTRATIVE ORDER ON CONSENT DOCKET No. II RCRA-3008(h)-92-0202 Proceeding under Section 3008(h), of the Resource Conservation and Recovery Act, as amended.

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Attachment I

Attachment II

Attachment III - Map of Facility

I. Preliminary Statement

This Administrative Order on Consent ("Order") is being issued on consent to New York State Energy Research and Development Authority ("NYSERDA"), and the United States Department of Energy ("DOE"), (which hereinafter may be collectively referred to as "Respondent" or "Respondents") pursuant to the Resource Conservation and Recovery Act of 1976, ("RCRA") as amended by the Hazardous and Solid Waste Amendments of 1984, ("HSWA") codified at 42 U.S.C. § 6901 et. seq., ("the Act") and the New York State Environmental Conservation Law ("ECL") Article 27, Titles 9 and 13 and §§ 71-2727 and 3-0301.

Section 71-2727 of the ECL authorizes the Commissioner of the New York State Department of Environmental Conservation ("NYSDEC") to issue orders requiring corrective action. Such orders may require corrective action beyond the facility boundary when necessary to protect human health and the environment. Such orders may issue for any and all releases of hazardous waste or hazardous constituents from any solid waste management unit at any treatment, storage or disposal facility which has interim status regardless of the time at which waste was placed in the unit.

Section 3008(h) of the Act, 42 U.S.C. § 6928(h), authorizes the Administrator of the United States Environmental Protection Agency ("EPA") to issue an order requiring corrective action or such other response which he deems necessary to protect human health or the environment, if, on the basis of any information,

he determines that there is or has been a release of hazardous waste or hazardous constituents into the environment from a facility that is or was authorized to operate under Section 3005(e) of the Act, 42 U.S.C. § 6925(e). The authority vested in the Administrator has been delegated to the Regional Administrators by EPA Delegation Number 8-31, dated April 16, 1985. This authority has been further delegated by the Regional Administrator of EPA, Region II, to the Director of the Air and Waste Management Division of EPA, Region II, by Region II Delegation Number 8-32, effective July 1, 1987.

II. Parties Bound

1. This Order, and the responsibilities and obligations it imposes, shall apply to and bind the Respondent, its present and future officers, directors, officials, employees, agents, trustees, receivers, successors, assigns, and all other persons including, but not limited to, firms, corporations, parent companies, contractors, independent contractors, subcontractors, or consultants who act for, are owned by, or are in an agency relationship with the Respondent, and who conduct, monitor or perform any work pursuant to or required by this Order.

2. Regardless of Respondent's employ of, or contractual agreement with, any entity named in paragraph 1 of this section, the Respondent remains ultimately liable for failure to carry out, or comply with, any term or condition imposed by this Order.

3. All contractual agreements entered into by Respondent aimed at satisfying its responsibilities or obligations under

this Order shall strictly comply with the terms and conditions of this Order. In addition, Respondent shall, within one week of the effective date of this order and immediately, upon hiring, provide a copy of this Order, and any relevant attachments, to all contractors, subcontractors, laboratories, consultants, or any entity retained to conduct, monitor or perform any work pursuant to this Order.

4. Respondent shall give notice, and a copy, of this Order to any successor in interest prior to any transfer of ownership or operation of the Facility (as defined in Section IV below) and shall notify EPA's designated contact thirty (30) days prior to any such transfer.

5. No change in the Respondent's organizational form or in the ownership of the Facility, except as specifically provided for by an act of Congress or the New York State Legislature, shall in any way alter or alleviate Respondent's responsibility and obligation to carry out all the terms and conditions of this Order.

III. Statement of Purpose

1. This Order is being issued to protect human health and the environment from releases of hazardous waste and/or hazardous constituents, as defined by Section 1004(5) of the Act, 42 U.S.C. § 6903(5), 40 C.F.R. Part 261.3, ECL § 27-0901(3), and 6 NYCRR Part 371 and 40 C.F.R. Part 261 Appendix VIII, and 6 NYCRR Part 371, Appendix 23, at or from Respondent's Facility.

2. To achieve this purpose, DOE and NYSERDA shall, among other things: (a) perform Interim Measures ("IM") at the Facility to reduce or eliminate any threats to human health or the environment; (b) perform a RCRA Facility Investigation ("RFI") to determine fully the nature and extent of any release(s) of hazardous waste and/or hazardous constituents from the Facility into the environment; and (c) if any releases exceed action limits set by the EPA consistent with applicable law and applicable guidance, or agreed upon by the Parties (including Respondents and EPA) to reduce or eliminate any threats to human health or the environment, perform a Corrective Measures Study ("CMS") to determine the most environmentally beneficial corrective measure(s) for each solid waste management unit.

IV. Findings of Fact

1. History of Site Operations:

a) In 1962, Nuclear Fuel Services, Inc. ("NFS") entered into Agreements with the Atomic Energy Commission and New York State to construct the first commercial reprocessing plant of nuclear fuel in the United States. The NFS reprocessing facility was located on state-owned property known as the Western New York Nuclear Service Center ("Center"). A provisional operating license for the Center was issued to the Center by the Atomic Energy Commission on April 19, 1966.

b) From 1966 to 1972, the Center was the location of the only commercial nuclear fuel reprocessing facility ever operated in the United States. As a result of this operation, nearly 600,000 gallons of high level liquid nuclear waste, a by-product of reprocessing, was produced and a part of which remains in underground storage tanks at the Center as of the date of this Order.

c) In 1972, the NFS Reprocessing plant was shut down for modifications to increase capacity. In 1976 NFS withdrew from the reprocessing business and the plant never reopened.

2. Legislative History:

a) In 1980, Congress passed the West Valley Demonstration Project Act ("WVDP Act"), Public Law 96-368, directing DOE in cooperation with the State of New York to carry out a high level radioactive waste management demonstration project at the Center for the purpose of demonstrating solidification techniques for preparing high level radioactive waste for disposal.

b) Under the WVDP Act, DOE is mandated, in part, to dispose of low-level and transuranic waste produced by WVDP activities, decontaminate

and decommission the tanks in which the high level waste was stored as well as the facilities, hardware and material used in the WVDP.

c) Effective October 1, 1980, DOE, on behalf of the United States of America, and NYSERDA, on behalf of the State of New York, entered into a Cooperative Agreement to establish a framework for the implementation of the WVDP Act by DOE and NYSERDA.

d) On September 30, 1981, the Nuclear Regulatory Commission ("NRC") issued an amendment to the Facility license which permitted transfer of the Facility to DOE for the purpose of carrying out the WVDP (46 Fed. Reg. 49237). In 1982 NYSERDA became the exclusive licensee, but presently lacks authority under the license to possess, use, or operate the Facility on WVDP premises or on the Center. NYSERDA's authority for activities with regard to the State Licensed Disposal (Burial) Area ("SDA") is separate from this license.

3. State Authorization:

a) Section 3006(b) of RCRA, 42 U.S.C. § 6926(b), permits the Administrator of the EPA to authorize a state to operate a hazardous waste program. New York State Department of Environmental Conservation ("NYSDEC") received final authorization to administer the pre-HSWA hazardous waste program as of May 29, 1986 (51 Fed. Reg. 17737 (May 15, 1986)).

b) On September 23, 1988, EPA published a Clarification Notice (53 Fed. Reg. 37045) which stated that "Facilities treating, storing, or disposing of radioactive mixed waste in states that received authorization by September 23, 1988 are not subject to RCRA regulations until the state revises its existing authorized hazardous waste program to include authority to regulate radioactive mixed waste." The State of New York has revised its authorized program as required by the above Notice.

c) In a rule published on March 6, 1990, New York State was authorized to regulate the hazardous waste constituents of radioactive mixed waste, effective May 7, 1990 (55 Fed. Reg. 7896).

4. Owner/Operator:

EPA has determined that Respondent DOE is the operator of the West Valley Demonstration Project ("WVDP") and that Respondent NYSERDA owns the Center and is the operator for all parts of the Center except those parts which are used or are in the possession of DOE as part of the WVDP.

5. Respondent is a "Person":

NYSERDA is a "person" as defined by Section 1004(15) of the Act, 42 U.S.C. § 6905(15) and Title Six (6) New York Codes, Rules and Regulations, Part 370, Section 370.2(b)(102) [6 NYCRR § 370.2(b)]. Pursuant to Section 6001 of the Act, 42 U.S.C. § 6961, DOE is subject to all federal, state, interstate, and local requirements, both substantive and procedural, just as any person is subject to such requirements.

6. Notification:

Pursuant to Section 3010 of the Act, 42 U.S.C. § 6930, on October 17, 1984, Respondent DOE notified EPA of its hazardous waste activity, as that term is defined by Section 1004(5) of the Act, 42 U.S.C. § 6903(5) and requested the issuance of an EPA Hazardous Waste Identification number. On June 5, 1990, Respondent NYSERDA notified EPA of its hazardous waste activity, as that term is defined by Section 1004(5) of the Act, 42 U.S.C. § 6903(5) and requested the issuance of an EPA Hazardous Waste Identification number. In these notifications, Respondent DOE

identified itself as a generator of hazardous waste and an operator of a hazardous waste treatment, storage, and disposal facility; and NYSERDA established itself as the owner of the Center as the term "owner" is used under RCRA. In addition, EPA has determined that NYSERDA is a generator of hazardous waste due to the generation of hazardous waste in the leachate at the SDA.

7. Part A Permit Application:

Pursuant to Section 3005(e) of the Act, 42 U.S.C. § 6925(e), on June 4, 1990, Respondent DOE submitted to EPA and NYSDEC its Part A Hazardous Waste Permit application. Based on Respondent DOE's Part A application, Respondent DOE stores and treats hazardous wastes at its Facility, including storage in containers, storage in tanks, and treatment of the following:

a) D005 (wastes that are EP Toxic for Barium)

b) D006 (wastes that are EP Toxic for Cadmium)

c) D007 (wastes that are EP Toxic for Chromium)

d) D009 (wastes that are EP Toxic for Mercury)

e) D010 (wastes that are EP Toxic for Selenium)

f) D002 (corrosive wastes).

Pursuant to Section 3005(e) of the Act, 42 U.S.C. § 6925(e), on June 5, 1990, Respondent NYSERDA submitted to DEC and EPA its Part A Hazardous Waste Permit application in which NYSERDA asserted that it submitted its application to EPA and NYSDEC as a protective filing. Based on Respondent NYSERDA's Part A application, EPA has determined that Respondent NYSERDA

stores and treats the following hazardous wastes at its Facility:

a) Storage of hazardous wastes (F002, F003, F005, U019, U159, U044, U165, U101, U076, U083, U210, U228, U080, U239, U002, U161, and U188) in tanks;

b) Treatment of hazardous wastes (F002, F003, F005, U019, U159, U044, U165, U101, U076, U083, U210, U228, U080, U239, U002, U161, and U188); and

c) Storage of hazardous wastes in containers.

8. Interim Status:

Pursuant to Section 3005(e) of the Act, 42 U.S.C. and at 40 C.F.R. §§ 270.1(b) and 270.70(a), Respondents DOE and NYSERDA received "interim status" due to timely submission of their:

a) Section 3010 Notification; and

b) Part A of the Permit Application.

Interim status facilities are subject to the regulations promulgated pursuant to Sections 3004 and 3005 of the Act, 42 U.S.C. §§ 6924 and 6925, which are codified in 40 C.F.R. Parts 260 - 265, 268 and 270, and 6 NYCRR Parts 370 - 373.

9. Facility:

a) The Facility subject to this Order includes the Center and consists of approximately

3,300 acres. The Center is owned by NYSERDA and is located in Cattaraugus County, New York State and includes:

(i) the property used for the West Valley Demonstration Project ("WVDP");

(ii) the New York State Low Level Burial (Disposal) Area ("SDA"); and,

(iii) all contiguous land and structures, other appurtenances, and improvements on the land, used for treating, storing, or disposing of hazardous waste.

b) The WVDP, approximately 200 acres in size and located within the Center, includes all land and improvements utilized as part of the WVDP, including, but not necessarily limited to, the Process Plant and project areas within the perimeter of an eight-foot chain link fence, including the NRC Licensed Burial (Disposal) Area ("NDA") and SWMU 21 (the RTS Drum Cell), but excluding the SDA. The WVDP also includes the following SWMUs listed in Table I, below:

TABLE I

LIST OF INDIVIDUAL SOLID WASTE MANAGEMENT UNITS (SWMU)

SWMU#

1. Construction and Demolition Debris Landfill -

2 NRC-Licensed Disposal Area (NDA) -

3. Lagoon 1 -

4. Active LLWTF Lagoons 2, 3, 4, & 5 -

5. Demineralizer Sludge Ponds (2) -

6. Solvent Dike -

7. Effluent Mixing Basin -

8. Maintenance Shop Leach Field -

9. & 9A. Old/New Hardstand Storage Area -

10. Paper Waste Incinerator -

11.& 11a Kerosene Tanks and NDA Container Storage -

12 & 12a Vitrification Facility Test Waste Storage Tanks

13. High-Level Waste Tank Farm -

14. Chemical Process Cell (CPC) Waste Container Storage Area -

15. Containerized Low-Level and Transuranic Waste Storage Area (Lag Storage 1 & 2)

16 & 16a Lag Storage Building, Extension and Addition Areas (3 & 4) -

17. Low-Level Waste Treatment Facility (LLWTF) -

18. Liquid Waste Treatment System (LWTS) -

19. Supernatant Treatment System (STS) -

20. High-Level Waste Vitrification Facility -

21. Radwaste Treatment System Drum Cell -

22. Cement Solidification System (CSS) -

23. Trench Interceptor Project -

24. Hazardous Waste Storage Lockers (New SWMU) -

c) The SDA comprises approximately 15 acres and is located adjacent to the southeastern boundary of the WVDP. The SDA includes the following SWMUs: 14 Inactive LLRW Disposal Trenches; Inactive Lagoon; Northern Filled Lagoon; Southern Filled Lagoon; and Trench 14 Leachate Treatment Facility.

d) NYSERDA is responsible for maintaining the SDA, including SWMUs SDA-1 through SDA-5, and SWMU 25. (These SWMUs are detailed in Table II, below). DOE is responsible for the WVDP. The maps appended to this Order in Attachments 3A and B, depict those areas in which DOE and NYSERDA shall conduct the Interim Measures required pursuant to this Order. DOE asserts that it has no authority under the WVDP Act with respect to those portions of the Facility not used pursuant to the WVDP Act and that it does not generally have authority under the WVDP Act for disposition of facilities beyond the WVDP.

TABLE II

LIST OF NON-WVDP SOLID WASTE MANAGEMENT UNITS (SWMUs)

SWMU#	
SDA-1	14 Inactive LLRW Disposal Trenches
SDA-2	Inactive Lagoon

SDA-3 Northern Filled Lagoon

SDA-4 Southern Filled Lagoon

SDA-5 Trench 14 Leachate Treatment Facility

25 Inactive Scrap Material Landfill Adjacent to Bulk Storage Warehouse

10. Documentation of Release:

a) Information supplied by DOE concerning sampling of groundwater monitoring wells in 1983-1989 in the NDA revealed the presence of a mixed petroleum hydrocarbon solvent (C-10 to C-16) contaminated with radionuclides. A record review indicates that this solvent is either "AMSCO Odorless Mineral Spirits" or "ADAKANE-12," which were used as diluents in the fuel recycling process by Nuclear Fuel Services from 1966-1971. These products contain a small percentage of aromatic components, including the hazardous constituent Naphthalene.

b) Information supplied by DOE and NYSERDA concerning sampling of leachate from Trench #14 in the SDA revealed the presence of certain organic constituents mixed with radionuclides. These organic chemicals include the following twenty-two (22), identifiable organic compounds which are

hazardous constituents and may constitute listed hazardous wastes (the concentration levels at which they have been found is also indicated below:)

Compound (parts per billion)	1984	1989 (Average)
Methylene chloride	390	2850
1,1 Dichloroethane	ND	370
Chloroform	65	443
1,2 Dichloropropane	ND	62
Trichloroethene	ND	25
Benzene	ND	450
2-Hexanone	ND	41
4-Methyl-2-Pentanone	ND	41
Tetrachloroethane	ND	27
Toluene	750	28000
Ethylbenzene	ND	770
2-Butanone	ND	777
Acetone	ND	4825
Vinyl Acetate	ND	370
Xylene	40	725
Phenol	<1	420
Naphtalene	400	140

Benzyl Alcohol	<2	16
4-Methylphenol	<1	425
2,4-Dimethylphenol	<1	37
Benzoic Acid	<10	425
Toxaphene	<18	<1

11. Exposure Pathways:

Hazardous wastes and/or hazardous constituents may migrate from units at the Facility into the environment via the following pathways:

a) Groundwater: either discharges directly or indirectly through surface waters.

(i) Hazardous wastes and/or hazardous constituents have been detected in the groundwater and SDA leachate.

(ii) There is the potential for the movement of hazardous wastes and/or hazardous constituents beyond the Facility's boundaries.

b) Soils: Soils containing hazardous wastes and/or hazardous constituents are contained in some of the SWMUs at the Facility. Hazardous waste in soil may be directly and/or indirectly ingested, leached into groundwater, transported by runoff, or blown by wind.

c) Surface Water and Sediment: Sludges and liquids containing permissible levels of hazardous wastes and/or hazardous constituents have been released directly into the streams and/or drainage channels under a State Pollution Discharge Elimination System ("SPDES") Permit. These stream courses may potentially receive hazardous wastes and/or hazardous constituents as a result of surface runoff from contaminated soils and discharge from contaminated groundwater.

d) Air: Air currents can suspend fine, silt-sized particles along with hazardous wastes and/or hazardous constituents in the air and transport them to areas beyond the Facility's boundaries.

12. Need to Protect Human Health and Environment:

a) The following hazardous wastes and/or hazardous constituents have been detected in groundwater or SDA leachate at the Facility.

i) Benzene

ii) Toluene

iii) Chloroform

iv) Methylene Chloride

v) Naphthalene

vi) Phenol

vii) Tetrachloroethane

b) On December 30, 1988, DOE published a Notice of Intent to prepare an Environmental Impact Statement ("EIS") jointly with NYSERDA for "Completion of the West Valley Demonstration Project Activities and Closure of the Western New York Nuclear Service Center." (53 Fed. Reg. 53052). The EIS is to provide environmental information for consideration in federal and NYSERDA decision-making related to WVDP completion activities by DOE, and the closure of the Center by NYSERDA.

c) DOE and NYSERDA have indicated their desire to coordinate and integrate the requirements of this Order with the development of the EIS.

d) EPA and NYSDEC intend to accommodate the DOE and NYSERDA's efforts to coordinate and integrate the EIS process described above, with the work required under this Order to the extent EPA and NYSDEC deem such coordination and integration to be consistent with applicable regulations and the protection of human health and the environment and such coordination and integration do not unduly delay the

completion of the work required under this Order.

V. Conclusions of Law

Based on the Findings of Fact set out above, and the administrative record, the Director of the Air and Waste Management Division, EPA Region II, has determined, and the Commissioner of NYSDEC has concurred, as a matter of law, that:

1. The Facility (as defined in Section IV, Subsection 9, above) is authorized to operate under Section 3005(e), 42 U.S.C. § 6925(e).

2. Respondent DOE is the operator of the WVDP portion of the Facility. Pursuant to Section 6001, 42 U.S.C. § 6961, DOE is subject to all applicable hazardous waste requirements to the same extent as any "person" as defined in Section 1004(15) of the Act, 42 U.S.C. § 6903(15).

3. Respondent NYSERDA is the owner of the Facility as owner is defined under RCRA.

4 Respondent NYSERDA is the operator of the SDA portion of the Facility.

5. Certain wastes found at the Facility are hazardous wastes and/or hazardous constituents as those terms are defined by Section 1004(5) of the Act, 42 U.S.C. § 6903(5) and 40 C.F.R. Part 261.

6. There is or has been a release of hazardous waste(s) and/or hazardous constituents into the environment from the Facility; and

7. The actions required to be taken pursuant to this Order are deemed to be necessary to protect human health and/or the environment.

VI. Order: Work To Be Performed by DOE AND NYSERDA

1. DOE and NYSERDA shall implement the RCRA Facility Investigation ("RFI") set forth in Attachment I to this Order.

2. The Respondents shall undertake and complete the RFI for the Facility and shall evaluate the potential for releases from 1) all SWMUs identified in Tables I and II, above, and 2) any additional SWMUs discovered during the course of groundwater monitoring, field investigations, environmental audits, or other means. This RFI program shall be implemented in accordance with the Act, its implementing regulations and relevant EPA guidance documents, submitted to Respondents in a timely manner. Schedules contained in this Order establishing work-related deadlines which are expressed in terms of "days," shall refer to calendar days. Deadlines falling on federal holidays or weekends shall be understood to extend to the first subsequent business day.

3. Assessment of Newly Identified SWMUs:

a) The Respondents shall notify the EPA and NYSDEC in writing, of any additional SWMUs discovered during the course of groundwater monitoring, field investigations, environmental audits, or other means within 15 days of discovery.

b) Within sixty (60) days from notification of the EPA and NYSDEC, the Respondents shall prepare a SWMU assessment plan and a proposed schedule of implementation and completion for any additional SWMU which is discovered subsequent to the issuance of this Order and is known or suspected to have releases of hazardous waste or releases of hazardous constituents to the environment. The plan shall include methods and specific actions as necessary to determine whether a prior or continuing release of hazardous waste or hazardous constituents has occurred at each SWMU. The plan must also include, at a minimum, the following information for each unit:

(i) Type of unit;

(ii) Location of each unit on a topographic map of appropriate scale;

(iii) Dimensions and capacities;

(iv) Function of unit;

(v) Dates that the unit was operated;

(vi) Description of the wastes that were placed in the unit; and

(vii) Description of any known releases or spills (to include groundwater data,

soil analyses, and/or surface water data).

4. The Respondents may, at their option, combine two or more units into a common RFI or CMS with concurrent investigations, studies, and remedial actions and a single set of reports. The Respondents may also conduct the RFI in a phased approach (e.g., conducting soils investigation after ground water investigations) provided that the entire investigation is completed in accordance with the schedules contained in this Order and its Attachments.

5. RCRA Facility Investigation ("RFI"):

a) RFI Workplan for known SWMUs.

(i) Within sixty (60) days after the effective date of this Order, the Respondent shall prepare an RFI Workplan for all SWMUs identified in Tables I and II.

(ii) This RFI Workplan shall include schedules of implementation and completion of specific actions necessary to determine the nature and extent of releases and the potential pathways of contaminant releases to the air, land, subsurface gas, surface water, and ground water. The Respondents shall, at a minimum, characterize releases from

those units, to the specific media of concern at each unit.

b) RFI Workplan for New SWMUs.

Within ninety (90) days after completion of the assessment of newly identified SWMUs described above, the Respondents shall prepare and submit to the EPA and NYSDEC, a RFI workplan which includes schedules of implementation and completion of specific actions necessary to determine the nature and extent of releases indicated by the assessment, and the potential pathways of contaminant releases to the environment. The Respondents must provide documentation that a release has not occurred and is not likely to occur if a newly identified SWMU is not included in this RFI workplan.

c) Scope of Work.

(i) General Requirements. The RFI Workplans required above, shall at a minimum, address the requirements of the Scope of Work included as Attachment I to this Order. The RFI shall be conducted in accordance with the approved RFI Workplan. The Respondents shall provide written justification for any omissions

or deviations from the minimum requirements of Attachment I.

d) Approval of Plans and Schedules.. All future plans and schedules not initiated on the effective date of this Order shall be subject to approval of the EPA prior to implementation. The Respondents shall revise all submittals and schedules as specified by the EPA.

e) Submittal of Plans and Reports. The results of all plans and reports shall be submitted in accordance with the approved schedule. Extensions of the due date for submittals may be granted by the EPA Project Coordinator based on the Respondents' demonstration that sufficient justification for the extension exists.

f) Progress Reports. The Respondents shall submit quarterly progress reports to EPA and NYSDEC until termination of this Order. The Respondents shall submit quarterly reports to EPA within forty five (45) days following the end of a quarter. For the purposes of this Order, quarterly reporting periods are defined as follows:

October 1 to December 31- First (1st) Quarter

January 1 to March 31 - Second (2nd) Quarter
April 1 to June 30 - Third (3rd) Quarter
July 1 to September 30 - Fourth (4th) Quarter

g) Imminent Hazard Report. The Respondents shall immediately notify EPA and NYSDEC orally of any imminent or existing hazard to public health or the environment from the present or past release of hazardous constituents. This oral report shall be followed up with a written report within 14 days, summarizing the immediacy and magnitude of the potential threat to human health and the environment.

h) RFI Report. The Respondents shall submit the RFI Report to the EPA in accordance with the schedule contained in the approved RFI Workplan. The RFI Report shall be developed in draft form for EPA and NYSDEC review. The RFI Report shall be developed in final form within sixty (60) days of receipt of the EPA's comments on the draft RFI Report. The RFI Report shall be prepared in accordance with the applicable specifications and schedules contained in the Scope of Work included as Attachment I to this Order.

i) Previously Submitted Information. If any items required by this Order or by the attached Scope of Work have previously been submitted or completed, it shall be so stated in the RFI Workplan. For these items, the RFI Workplan shall include the following information:

(i) A description of the items previously submitted and/or a summary of the previously completed investigations;

(ii) The date(s) of submission and/or completion; and

(iii) Any known changes or new information developed since the previous submission and/or completion.

The EPA will determine the extent to which prior submissions and/or completions satisfy specific items required by this Order and reserves the right to require the resubmittal and modification of any prior submissions.

6. Corrective Measures Study:

(a) Review of Final RFI Report. The EPA shall review the final reports on the RFI and notify the Respondents of the need for further investigative actions.

(b) Corrective Measures Study ("CMS").

(i) Upon determination by EPA that additional corrective action is needed, the Respondents shall submit to the EPA and NYSDEC, a CMS in accordance with the specifications and schedule contained in the Scope of Work included as Attachment II to this Order. The proposed CMS must include an evaluation and recommendation of corrective action alternatives using technical, human health and environmental criteria, and media protection standards set by EPA.

(ii) The Respondents may, subject to EPA approval, conduct CMS activities related to (a) source control and (b) plume control and recovery as separate and distinct requirements and submit workplans, schedules, and CMS reports accordingly.

(c) Scope of Work.

The RCRA CMS shall, at a minimum, address the requirements of the Scope of Work included as Attachment II to this Order. The Respondents shall provide written justification for any omissions or deviations from the minimum requirements of Attachment II.

(d) Previously Submitted Information.

If any items required by this Order or by the attached Scope of Work have previously been submitted or completed, it shall be so stated in the CMS Report. For these items, the CMS Report shall include the following information:

(i) A description of the items previously submitted and/or a summary of the previously completed investigations;

(ii) The date(s) of submission and/or completion; and

(iii) Any known changes or new information developed since the previous submission and/or completion.

The EPA will determine the extent to which prior submissions and/or completions satisfy specific items required by this Order and reserves the right to require the resubmittal and modification of any prior submissions.

7. Interim Measures:

(a) Interim Measures ("IM") must be designed to mitigate environmental problems that pose a threat to human health and/or the environment. IM may also be required by the EPA in order to prevent the movement of

hazardous waste or hazardous constituents beyond the Facility's boundary or to mitigate the effects of releases, if any, that may have already migrated beyond the Facility's boundary. IM should be designed to be consistent with the anticipated final corrective measures for the Facility. The EPA shall decide if and when IM are required in accordance with the requirements of this Order.

(b) The Respondents shall continue to conduct all existing interim remedial measures that may be specified in any part of this Order. The Respondents shall continue to conduct these existing remedial measures until receiving written notice from the EPA that the existing remedial measures are no longer needed or until such time as the EPA approves modification of the interim remedial measures.

(c) In the event that during, or as a result of, the Remedial Investigation, the Respondents or the EPA determines that newly acquired information indicates an imminent threat to human health and/or the environment, the Respondents shall:

(i) Undertake additional IM as directed by the EPA, to be implemented by the Respondents within a timeframe specified by the EPA; and/or

(ii) Submit a proposal for additional IM to be approved and/or modified by the EPA and implemented within an approved timeframe.

d) **Interim Measures in the NRC-Licensed Disposal Area (NDA):**

(i) Description of Events Leading to Interim Measures:

A record review indicates that Tributyl phosphate (TBP) dissolved in either "AMSCO Mineral Spirits" or "ADAKANE-12" were solvents used by NFS in the solvent extraction phase of reprocessing spent nuclear fuel. A record review indicates that a total of twenty two, one thousand gallon tanks containing the solvent/sorbent material was disposed of episodically between 1968 and 1972 in disposal holes designated "special holes" in the NDA.

In November of 1983, solvent was detected in the NDA area. Following the exhumation of certain tanks in 1986, monitoring results remained static until August, 1988, when

again solvent was discovered in the NDA in a monitoring well downgradient from one of the disposal holes.

(ii) Description of Interim Measures: During investigations in 1989, DOE discovered that water had entered all of the disposal holes which contain solvent disposal tanks. The Parties detected lateral migration of the solvent, and radioactively contaminated groundwater beneath it.

Based upon this discovery and the results of prior efforts to address the solvent migration problem, interim maintenance measures to prevent potential migration to nearby surface waters (Erdman Brook) were deemed necessary by DOE. DOE decided that the installation of an eight hundred and two foot interceptor trench between the boundary of the NDA and Erdman Brook to recover potentially contaminated groundwater was the preferred maintenance measure.

Trenching construction was initiated in January of 1990 and completed in December 1990. Non-contaminated liquid pumped from the trench is routed to temporary holding tanks and then routed to State Pollutant

Discharge Elimination System (SPDES) permitted outfall 001 via the Low Level Waste Treatment Facility (LLWTF). A "pretreatment system" to remove any solvent and radioactive Iodine-129, has been designed and is in final stages of construction. Upon the detection of contaminated groundwater in the trench, the liquids will be processed through the pretreatment system. The pretreated liquids will then be processed to remove low-level radioactive contaminants in the existing LLWTF, and then discharged to Erdman Brook via SPDES permitted Outfall 001. As of July 1, 1991, approximately 355,000 gallons of "trench water," consisting of snow melt and rainwater, collected during the trench construction, and non-contaminated groundwater have been transferred to the LLWTF and then discharged through Outfall 001 to Erdman Brook.

(iii) Interim Measures Workplan.

Within ninety days of the effective date of this Order, an IM Workplan and schedule for the NDA trench project shall be submitted by DOE to the EPA and NYSDEC for approval, consistent with this Order and RCRA. The IM

Workplan shall document specific procedures to be implemented in carrying out the activities summarized in section (d)(ii), above.

The IM Workplan and schedule shall include sufficient information to satisfy the following elements: 1) "IM" objectives; 2) a Health and Safety Plan; 3) a Community Relations Plan; 4) a Data Collection Quality Assurance Plan; 5) a Data Management Plan; 6) Design Plans and Specifications; 7) an Operation and Maintenance Plan; 8) a Project Schedule; 9) "IM" Construction Quality Assurance Plan; and 10) Reporting Requirements.

Interim measures that were begun in January 1990 and which are currently proceeding, shall continue until otherwise directed by the EPA.

IM implementation should in no way interfere with the execution or scheduling of the RFI; however, adjustments to this schedule may be sought, if appropriate, pursuant to the modification provisions of this Order.

(e) **Interim Measures in the State Licensed Disposal Area (SDA):**

(i) Description of Events Leading to Interim Measures:

From 1963 to 1975, the SDA was operated by Nuclear Fuels Services, Inc. as a commercial low level radioactive waste disposal facility. Packaged waste was placed in long trenches excavated in highly impermeable, silty till soil native to the site, and covered with four to eight feet of native soil. Due to the character of the soil and the wet climate, water management problems were experienced from the very early years of operation. Water accumulated in the open uncompleted trenches and in covered completed trenches. Water continued to accumulate in several of the original trenches until March 1975 when it crested the original terrain and began to seep through the cover of two trenches. Redesigning and reworking the covers has thus far reduced but not eliminated the problem of water accumulation in the trenches. In its present condition, the SDA will continue to require active maintenance.

In March 1983, responsibility for management of the SDA was transferred to NYSERDA. As

part of its maintenance of the SDA, NYSERDA monitors the water levels within each of the inactive disposal trenches. The accumulated water must be pumped out of the trenches from time to time and treated, prior to discharge. Accumulated water was last treated and discharged from the SDA in 1981.

One of these trenches, Trench #14, experienced large water infiltration rates due to a previously undiscovered adjacent sand and gravel body. The sand and gravel body was removed and maintenance efforts have greatly reduced the water infiltration rates. The water levels in Trench #14, like those of other trenches, continue to rise. Because the level in Trench #14 is near its historically highest point, the water in the trench needs to be pumped out and treated as soon as possible to minimize the possibility of an uncontrolled untreated release.

(ii) Description of Current and Proposed Activities:

The purpose of this interim measure is to install a system to remove, process, and dispose of water from Trench #14 in the SDA. The system is being installed in two parts.

Initially, NYSERDA will be installing storage capacity sufficient to store 50,000 gallons of untreated water while the treatment system is being designed and constructed. To date, NYSERDA has installed an 8,000 gallon vented storage tank on a concrete pad within a weather protection building and, on March 7, 1991, pumped 7,462 gallons of water from Trench #14 into that tank. NYSERDA is in the process of installing two additional storage tanks with a capacity of 21,000 gallons each. Water from Trench #14 will be pumped into these tanks in the event that further reduction of the water level in the Trench becomes necessary prior to completion of the treatment system. When the treatability study currently being conducted by NYSERDA is completed, a treatment system will be designed and constructed to process approximately 60,000 gallons of water for disposal. Although the treatment process has not yet been determined, it is anticipated that it will include a pre-filter for removal of particulates, followed by a biological, evaporative or UV catalyzed oxidation treatment system for the destruction of

hazardous organic constituents and BOD, ion exchange columns for radionuclide removal and activated carbon columns for polishing. The treated water will be stored in tanks and batch released to Erdman Brook via a SPDES permitted outfall.

(iii) Interim Measures Workplan:

Within ninety days of the effective date of this Order, NYSERDA shall submit to the EPA for approval, an IM Workplan and schedule consistent with this Order and RCRA. The IM Workplan shall document specific procedures to be implemented in carrying out the activities summarized in section (e)(ii), above.

The IM Workplan and schedule shall include sufficient information to satisfy the following elements: 1.) "IM" objectives; 2.) a Health and Safety Plan; 3.) a Community Relation Plan; 4.) a Data Collection Quality Assurance Plan; 5.) a Data Management Plan; 6.) Design Plans and Specifications; 7.) an Operation and Maintenance Plan; 8.) a Project Schedule; 9.) an "IM" Construction Quality Assurance Plan; and 10.) Reporting Requirements.

IM implementation should in no way interfere with the implementation or scheduling of the RFI; however, Respondents may, if appropriate, seek a modification of this schedule pursuant to the modification provisions of this Order.

(f) **Interim Measures Related to detection of 1,1,1-Trichloroethane in Groundwater Seep.**

(i) 1,1,1-Trichloroethane Detection.

Measurable levels of 1,1,1-trichloroethane equal to or less than five micrograms per liter to forty-one micrograms per liter were detected by DOE in or about June, 1990, in samples collected from sample point "WNGSEEP," located outside the WVDP Project Premises security fence.

(ii) Subsequent Investigations.

Further investigations will include:

- o Continuation of non-routine groundwater monitoring in the area;
- o Collection of additional samples in the immediate area of WNGSEEP, to determine the lateral extent of contamination; and,

- Continued development of contour maps for use in identifying potential sources of 1,1,1-trichloroethane.

A full investigation report will be provided by DOE to EPA and NYSDEC no later than ninety days following the effective date of this Order. The report will include procedures employed to ensure data quality, all relevant analytical data, pertinent hydrogeological information, maps depicting sample locations and topography of the area, and other information relative to assessing health risks associated with the release.

If the source of the contamination is determined by EPA to be inside the WVDP portion of the facility, as defined in section IV, subsection 9(b), and as illustrated in the map at Attachment 3A as the area shaded with yellow cross-hatching, DOE shall conduct interim measures relating to 1,1,1-Trichlorethane. If the source of the contamination is determined by EPA to be within any other portion of the facility, as that term is defined in section IV, subsection 9(a), and as illustrated in the map at Attachments 3A and B as the area

shaded with green dots and dashes, NYSERDA shall conduct such interim measures. If EPA is unable to determine the source of the contamination, DOE shall conduct those interim measures necessary to be taken inside the WVDP portion of the facility, and NYSERDA shall conduct those interim measures necessary to be taken within any other portion of the facility until EPA is able to determine the source of the contamination. (This allocation is for the purpose of implementing this Order only and does not affect the resolution of related issues between DOE and NYSERDA. Both parties reserve their rights against each other as indicated in section XV of this Order.) EPA's determinations, as described above, are subject to Dispute Resolution under section XIX of this Order.

(iii) Interim Measures Workplan:

After review of the investigative report, if the EPA determines that interim measures are required, an IM Workplan consistent with this Order and RCRA, shall be submitted to the EPA for approval within 180 days of Respondent's receipt of EPA's written determination. (The

IM Workplan shall be submitted by the party conducting the IM relating to 1,1,1-Trichloroethane.) The IM Workplan and schedule shall include sufficient information to satisfy the following elements: 1). "IM" objectives; 2.) a Health and Safety Plan; 3.) a Community relations Plan; 4.) a Data Collection Quality Assurance Plan; 5.) a Data Management Plan; 6.) Design Plans and Specifications; 7.) an Operation and Maintenance Plan; 8.) a Project Schedule; 9.) "IM" Construction Quality Assurance Plan; and 10.) Reporting Requirements.

Upon receipt of written approval from EPA, the IM Workplan and schedule shall be implemented in accordance with the requirements and schedules contained therein. IM implementation should in no way interfere with the execution or scheduling of the RFI; however, an adjustment to this schedule, if appropriate, pursuant to the modification provisions of this Order may be sought.

g) **Unexpected Threats.**

(i) In the event Respondents become aware of existing information or identify new or additional information concerning an

unexpected threat or potential threat to human health or the environment at or near the facility, Respondents shall notify EPA and NYSDEC as described in section X, below. Within thirty (30) calendar days of notifying EPA and NYSDEC, Respondents shall submit to EPA for approval an IM Workplan that identifies the proposed IM which will be taken to prevent or mitigate this threat or potential threat to human health and/or the environment which are consistent with, and can be integrated into, any long term remediation at the Facility.

(ii) The IM Workplan shall be developed in a manner consistent with this Order and the Act. The IM Workplan shall document the procedures to be implemented by the Respondents.

(iii) The IM Workplan shall include: 1) "IM" Objectives; 2) a Health and Safety Plan; 3) a Community Relations Plan; 4) a Data Collection Quality Assurance Plan; 5) a Data Management Plan; 6) Design Plans and Specification; 7) an Operation and

Maintenance Plan; 8) a Project Schedule; 9) an "IM" Construction Quality Assurance Plan; and 10) Reporting Requirements.

(iv) Upon receipt of written approval from EPA, Respondents shall implement the IM Workplan in accordance with the requirements and schedules contained therein. IM implementation should in no way interfere with the implementation or scheduling of the RFI; however, Respondents may, if appropriate, seek a modification of this scheduling pursuant to the modification provisions of this Order.

(v) Environmental emergency situations may arise which require the Respondents to immediately implement necessary actions to mitigate any such emergencies. All emergencies and any situations arising from such emergencies must be dealt with pursuant to Section VIII of this Order.

8. Coordination of Activities:

a) DOE and NYSERDA will jointly conduct the RFI and CMS required under this Order. DOE and

NYSERDA intend to complete these activities as part of the joint EIS process.

b) DOE will conduct interim measures that are required under this Order with respect to sources of contamination on the WVDP portion of the facility, as defined in section IV, subsection 9(b), and as illustrated in the map at Attachment 3. NYSERDA will conduct interim measures that are required under this Order with respect to sources of contamination on any other portion of the Facility, as that term is defined in section IV, subsection 9(a), and as illustrated in the map at Attachment 3.

c) The allocation set forth in subparagraph (b), above, is for the purpose of implementing this Order only and does not affect the resolution of related issues, including financial issues, between DOE and NYSERDA. Both parties reserve their rights against each other as indicated in section XV of this Order.

9. Schedules:

a) The approved RFI Workplan shall be initiated within one hundred and twenty (120) days of the date this Order is executed by EPA, or in

accordance with the schedule approved by EPA if a longer timeframe is justified.

b) If the Respondents determine that any investigations required under this Order cannot be completed within the specified period, a request for an extension period, not to exceed three hundred and sixty five (365) days, must be submitted, in writing, to EPA for approval. This request shall be submitted no later than ninety (90) days prior to the originally scheduled completion date and must be accompanied by a Project Progress Summary Report which details all of the investigative work completed to date, the work which still must be accomplished, the factors which have prevented adherence to the specified schedules, and the duration of the specific extension period requested. EPA will notify the Respondents whether the request has been approved, disapproved, or requires modification.

VII. Additional Work

EPA may determine that work, in addition to that detailed in this Order and Attachments I and II but excluding corrective measures implementation (CMI), is necessary to protect human health and/or the environment. If EPA determines that any such

additional work is necessary, it shall notify the Respondent in writing specifying the basis and reason for EPA's determination and the additional work deemed necessary. Within fifteen (15) days after receipt of any such notice, the Respondent shall be afforded an opportunity to meet with EPA and NYSDEC to discuss the additional work required by EPA. If Respondent disagrees with EPA's determination that additional work is required, it may invoke the dispute resolution procedures as set forth in this Order. Following the conclusion of the dispute resolution procedures set forth in this Order, Respondent shall perform such additional work, if any, including the submission of a workplan, in accordance with the standards, specifications, and schedules deemed necessary and approved by EPA subject to the determinations made in the dispute resolution process. All approved additional work performed by the Respondent pursuant to this paragraph shall be performed subject to, and in a manner consistent with, the terms and conditions of this Order. Any requirements for additional work shall be incorporated into this Order as if fully set forth herein.

VIII. EMERGENCY PROVISION

1. In the event Respondents identify a current or immediate threat to human health or the environment, the NYSERDA or DOE shall immediately notify EPA and NYSDEC orally and shall notify EPA and NYSDEC in writing within fourteen (14) days of such identification, summarizing the immediacy and magnitude of the potential threats to human health or the environment.

Respondents shall submit to EPA and NYSDEC as soon as possible a plan which mitigates this threat. EPA will approve or modify this plan, and Respondents shall implement this plan as approved or modified by EPA.

2. If EPA determines that immediate action is required, then the Director of the Air and Waste Management Division, Region II, may orally authorize Respondents to act prior to making the required written submission to EPA.

3. If EPA determines that activities in compliance or non-compliance with this Order have caused or may cause a release of a hazardous waste, hazardous constituent, pollutant or contaminant or may pose a threat to human health or the environment, EPA may order DOE and NYSERDA to stop further implementation of this Order for such period of time as may be needed to abate any such release or threat and/or to undertake any action which EPA determines is necessary to abate such release or threat.

IX. MINIMUM QUALIFICATIONS FOR PERSONNEL

All work performed by Respondents pursuant to this Order shall be under the direction and supervision of an individual(s) who has demonstrated experience and expertise in hazardous waste investigations and remediations. Before any work is performed, Respondents shall notify EPA in writing giving the name, title and qualifications of the supervisory personnel and contractors or subcontractors and their key personnel to be used in carrying out the terms of this Order. In addition, Respondents shall

ensure that when necessary, it shall use licensed individuals for performing any work required by this Order. Nothing herein shall be interpreted to affect or supersede Respondents' authority over their personnel or contracting actions.

X. Project Coordinator/Information

1. On or before the effective date of this Order, EPA and NYSDEC and each Respondent shall designate a Project Coordinator ("PC") and the name of at least one alternate who may function in the absence of the designated PC. The PCs shall be responsible for overseeing the implementation of this Order. The EPA PC, or his designee, will be EPA's designated representative at the Facility. The NYSDEC PC, or his designee, will be the NYSDEC's designated representative at the facility.

2. All communications between Respondent and the Agencies (EPA and NYSDEC), and all documents, reports, approvals, and other correspondence concerning the activities performed pursuant to the terms and conditions of this Order, shall be directed to and through the respective PCs. Unless otherwise specified, reports, correspondence, approvals, disapprovals, notices, or other submissions relating to or required under this Order shall be in writing and originals or copies shall be sent to:

1 copy: Chief
Hazardous Waste Compliance Branch
U.S. EPA
26 Federal Plaza - Rm. 1009
New York, N.Y. 10278

1 copy: Project Coordinator
Hazardous Waste Compliance Branch
U.S. EPA
26 Federal Plaza - Rm. 1000

New York, N.Y. 10278

1 copy: Permits Administration Branch
U.S. EPA
26 Federal Plaza - Room 505
New York, N.Y. 10278

1 copy: Chief
Hazardous Waste Facilities Branch
U.S. EPA
26 Federal Plaza - Rm. 1043
New York, N.Y. 10278

2 copies: Director
Bureau of Hazardous Waste Facility Permitting
Division of Hazardous Substances Regulation
New York State Department of Environmental Conservation
50 Wolf Road
Albany, New York 12233-4016

1 copy: Regional Director
New York State Department of Environmental Conservation - Regional 9
600 Delaware Avenue
Buffalo, NY 14202

3. Each party shall provide at least five (5) days written notice prior to changing the PC(s) and shall immediately provide written notification once a new PC is selected.

XI. Quality Assurance/Quality Control

1. All sampling, monitoring, analytical, and chain-of-custody plans shall be developed in accordance with the standard and recommended procedures contained in SW-846 - "Test Methods for the Chemical and Physical Analysis of Solid Waste", third edition, as amended, and the EPA Region II Quality Assurance Manual. Any deviations from these two documents must be accompanied by an appropriate justification and a demonstration

of the effectiveness and applicability of the proposed alternative. EPA and NYSDEC must approve the use of such alternatives prior to such use.

2. Respondents shall inform the EPA Project Coordinator in advance which laboratories will be used by Respondent and ensure that EPA personnel and EPA authorized representatives have access to the laboratories and personnel performing any analyses. In the event that EPA or its representatives cannot satisfactorily obtain access to the laboratories for any reason for the purposes of auditing protocols and technical proficiency, then EPA shall so inform the Respondents and the Respondents shall, as soon as practicable thereafter, substitute another certified laboratory which provides access in a manner deemed satisfactory to EPA.

3. Respondents shall consult with EPA in planning for field sampling and laboratory analysis, including a description of the chain of custody procedures to be followed.

XII. EPA Approvals

1. Unless otherwise specified, EPA shall review any plan, report, specification or schedule submitted pursuant to, or required by this Order, and provide its written approval/disapproval, comments and/or modifications to the Respondents. Within fifteen (15) days of Respondents' receipt of EPA's approval/disapproval, comments and/or modifications, Respondents may request a meeting with EPA and NYSDEC to discuss the approval/disapproval, comments and/or modifications. Within thirty (30) days of such meeting, or if no meeting is requested,

within forty-five (45) days of receipt of EPA's approval/disapproval, comments and/or modifications, Respondents shall either: (1) notify EPA of its intention to amend or modify the submission to incorporate all EPA comments and proposed modifications necessary to meet the purposes of this Order and submit the amended submission to EPA and NYSDEC within thirty (30) days thereafter or according to a mutually agreed schedule; or (2) provide EPA and NYSDEC with a written notice of dispute, setting forth Respondents' position, any actions which Respondents considers necessary to resolve the dispute, and the basis for Respondents' position. Any such written notice of dispute shall be subject to the dispute resolution procedures as set forth in Section XIX of this Order.

2. Any reports, plans, specifications or schedules, submitted pursuant to, or required by this Order, are hereby incorporated by reference into this Order on the date EPA's written approval is received by Respondents or the dispute resolution proceeding concerning such submittal, if any, has been concluded with notice to Respondents. Prior to this approval determination or dispute resolution determination, no plan, report, specification or schedule shall be construed as a final approved plan. Oral advice, suggestions, or comments given by EPA and NYSDEC representatives shall not constitute an official approval, nor shall any oral approval or oral assurance of approval be considered binding.

3. Any noncompliance with an approved EPA document or determination under the dispute resolution provision of this Order constitutes noncompliance with this Order.

XIII. ACCESS

1. Until this Order is terminated pursuant to Section XXI, EPA and NYSDEC representatives, authorized designees, employees, agents, contractors, subcontractors, and consultants are hereby authorized to enter and move about the Facility pursuant to Section 3007 of RCRA. Any person entering Respondents' Facility pursuant to this subparagraph shall fully comply with all health and safety plans referenced in this Order. In the event that entry onto the facility is necessary before completion of all required health and safety plans, entrants shall make their best efforts to comply with all applicable OSHA and DOE rules and regulations including applicable WVDP radiological safety and security procedures (WVDP-010, "Radiological Controls Manual," Rev. 4, dated October 24, 1990, and WV-544, "Visitor Control," Rev. 8, dated October 19, 1990).

2. To the extent that work required by this Order must be performed on property not owned or controlled by the Respondents, the Respondents shall use their best efforts to obtain "Site Access Agreements" to perform such work within thirty (30) days of the date Respondents become aware of the need to perform such work. Any such access agreement shall provide for reasonable access by EPA and NYSDEC representatives. A copy of such agreement shall be submitted to the EPA and NYSDEC Project

Coordinators. In the event that Site Access Agreements are not obtained within the thirty (30) day period, the Respondents shall notify EPA and NYSDEC in writing documenting their best efforts to obtain such agreements. Best efforts as used in this paragraph shall include, but is not limited to:

a) a certified letter from the Respondents to the present owner of such property requesting permission to allow the Respondents, EPA and NYSDEC and any of their authorized representative(s) access to such property; and,

b) the property owner's response, if any.

3. Nothing in this section shall be construed to limit or otherwise affect EPA's or NYSDEC's right of access and entry pursuant to any applicable laws and regulations, including, but not necessarily limited to, the Comprehensive Environmental Response Compensation and Liability Act of 1980 ("CERCLA"), as amended by 42 U.S.C. §9601 et. seq., and provisions of the Environmental Conservation Laws of New York.

4. Nothing in this section shall be construed to limit or otherwise affect the Respondents' liability, if any, with respect to off-site contamination from the Facility, notwithstanding the lack of access.

XIV. RECORD PRESERVATION

1. Each Respondent shall preserve, throughout the duration of this Order and for a minimum of six (6) years after its

termination, all data, records and documents in its possession or in the possession of any officer, director, employee, agent, consultant, contractor (including independent and subcontractors), successor, or assign which relates in any way to this Order, to its implementation or to the past and/or current hazardous waste management practice(s) at the Facility. Six (6) years after the termination of this Order, Respondents shall make such records available to both EPA and NYSDEC and shall provide originals or copies of any documents that either EPA or NYSDEC requests. In addition, written notification shall be provided to EPA and to NYSDEC, sixty (60) days before the destruction of any such documents. Such written notification shall reference the effective date, caption and docket number of this Order and shall be addressed to:

Director
Air & Waste Management Division
U.S. Environmental Protection Agency
26 Federal Plaza,
New York, New York 10278

Director
Bureau of Hazardous Waste Facility
Permitting
Division of Hazardous Substances
Regulation
New York State Department of
Environmental Conservation
50 Wolf Road
Albany, New York 12233-4016

2. Each Respondent shall preserve all documents pertaining to this Order which are in its possession, or in the possession of the persons and entities referenced in paragraph one, above,

in a centralized location to afford ease of access by EPA, NYSDEC or its representatives.

XV. RESERVATION OF RIGHTS

1. EPA and NYSDEC expressly reserve, subject only to paragraph 13 of this section, all of their statutory and regulatory powers, authorities, rights, remedies and defenses, both legal and equitable, including, without limitation the right to seek injunctive relief, cost recovery, monetary penalties or punitive damages.

2. This Order and Respondents' consent to its issuance shall not limit or otherwise preclude EPA and NYSDEC from taking any additional legal action against Respondents should EPA and NYSDEC determine that any such additional legal action is necessary or warranted.

3. This Order shall not relieve Respondents of their obligation to obtain and comply with any federal, state, county or local permit nor is this Order intended to be, nor shall it be construed to be, a ruling or determination on, or of, any issue related to any federal, state, county or local permit.

4. EPA and NYSDEC reserve the right to perform any and all work required by this Order including, but not limited to, any additional site characterization, feasibility study, and/or response or corrective action deemed necessary to protect human health or the environment.

5. Notwithstanding compliance with the terms of this Order, Respondents are not released from liability for the costs

of any response actions taken by EPA. EPA and NYSDEC reserve any rights they may have to seek reimbursement from the Respondents for any such costs incurred by the EPA and/or NYSDEC.

6. By entering into this Order, neither DOE nor NYSERDA waives any claim of immunity from payment of fines or penalties, nor does either waive any claim of jurisdiction over matters reserved to DOE under the Atomic Energy Act ("AEA").

7. Respondents do not waive any defenses Respondents may have or wish to pursue in any action beyond the scope of this Order.

8. Nothing in this Order and no determination made or action taken (including any failure to act) pursuant to the Order, including, without limitation, any determination or resolution resulting from Dispute Resolution under Section XIX, shall constitute an admission or evidence of an admission by Respondents or otherwise constitute an adjudication of any fact or conclusion of law, except in an action or proceeding by EPA to enforce the terms of this Order, nor shall anything in this Order release, waive, or otherwise affect or diminish any right, defense, authority, responsibility, immunity or claim for relief which NYSERDA or DOE may have against the other (or any person or entity not a party to this Order) under applicable provisions of law or contract, including, without limitation, NYSERDA and DOE's respective rights, authorities and responsibilities under the WVDP Act or the Cooperative Agreement.

9. The Parties acknowledge the existence of the DOE's Management and Operating Contract, and the Cooperative Agreement between DOE and NYSERDA.

10. In the event that one of the Respondents is alleged to be out of compliance with the Interim Measures provisions of this Order, the noncompliance of that Party shall not affect the compliance status of the other Respondent.

11. DOE and NYSERDA reserve the right to seek judicial review of disputes between them concerning their respective authority and responsibility arising from or related to the WVDP Act or the Cooperative Agreement (including disputes concerning the SDA and the NDA). Nothing in this Subsection will diminish the responsibility of DOE or NYSERDA to proceed with studies, investigations, or interim measures, or to implement the final resolution of any dispute as provided in Section XIX, "Dispute Resolution," in a timely manner as set forth in this Order.

12. Nothing in this section shall diminish, impair, or otherwise adversely affect the authority of EPA or DEC to enforce the provisions of this Order.

13. Based on the facts and circumstances known to EPA and NYSDEC as of the effective date of this Order, and as set forth in this Order, EPA and NYSDEC hereby agree not to initiate any further administrative enforcement action (or to refer a civil judicial enforcement action to the Department of Justice or the State Attorney General), to compel the performance of the corrective action specifically required hereunder for so long as

this Order remains effective and for so long as DOE and NYSERDA are in compliance with the requirements of this Order.

However, in the event that DOE is delayed in fulfilling its obligations as set forth in this Order as a result of insufficient availability of funding, and the Parties are unable to agree to an extension of schedules as provided for in section XXIII, the covenant set forth above shall terminate.

14. Nothing herein shall preclude any actions by EPA or NYSDEC to enforce the terms of this Order, or to address or bring any available legal or equitable claim for: (1) any pre-existing, current or future violations or conditions at the facility not specifically covered by this Order; (2) any emergency conditions or imminent hazard which may exist or arise at the facility; (3) any corrective action pursuant to the Act, not specifically covered by this Order; or (4) any response action pursuant to CERCLA, as amended.

15. Subject to the provisions in XXII of this Order, the Parties recognize that EPA and/or NYSDEC may issue a hazardous waste management permit under the Act or state law to the owner or operator of the Facility which includes corrective action requirements. EPA and DEC reserve the right to enforce the requirements of such permits, including corrective action. EPA and NYSDEC will not take any administrative action (or make any referral for judicial enforcement action to the Department of Justice or the State Attorney General) for a violation of such permits until EPA or NYSDEC (whichever agency has issued the permit) has afforded DOE and NYSERDA the opportunity to present their position to the permit issuing agency.

16. Although this Order is issued under the Act (RCRA), DOE and NYSERDA reserve any right each may have to exercise any other available authority as provided by law (including CERCLA, as amended) to implement the provision of this Order.

17. Except as otherwise provided in Section XXX, "Consent," in the event of any judicial action by EPA or DEC, all Parties reserve all rights, claims, and defenses, available under law.

18. Except as otherwise specifically provided herein, all Parties reserve all other rights they may have under law with respect to any person.

XVI. NON-RELEASE OF OTHER CLAIMS AND PARTIES

1. Nothing in this Order shall constitute, or be construed to constitute, a release from any claim, cause of action or demand in law or equity against any person, firm, partnership or

corporation, not a signatory to this Order, for any liability it may have arising out of, or relating in any way to, the generation, storage, treatment, handling, transportation, release or disposal of any hazardous constituent, hazardous substance, waste, pollutant or contaminant found at, taken to, taken from or emanating from the Facility.

2. Subject to the provisions of Section XXII of this Order, EPA or NYSDEC may issue one or more hazardous waste management permits under RCRA or pursuant to the provisions of the Environmental Conservation Law Article 27, Title 9 which may include corrective action requirements for one or more of the same SWMUs covered by this Order.

XVII. PUBLIC PARTICIPATION

1. EPA will coordinate with NYSDEC, DOE and NYSERDA, as appropriate, in making the RCRA Facility Investigation Final Report, Final Corrective Measures Study, and any EPA summaries of these reports, available for public review and comment.

XVIII. OTHER APPLICABLE LAWS

All actions undertaken pursuant to this Order by Respondents shall be done in accordance with all applicable local, state and federal laws, regulations, ordinances and Executive Orders. Respondents retain the obligation and agree to obtain all permits or approvals necessary to perform the work required by this Order.

XIX. DISPUTE RESOLUTION

All Parties to this Order shall make reasonable efforts to informally resolve all disputes arising under any part of this Order at the Project Coordinator or immediate supervisor level. If resolution cannot be achieved informally, the procedures of this section shall be implemented to resolve a dispute.

1. Within forty-five (45) days of the EPA or NYSDEC action that leads to or generates a dispute, the disputing Party shall submit to the other Parties a written statement of dispute setting forth the nature of the dispute, the work affected by the dispute, the disputing Party's position with respect to the dispute and the information the disputing Party is relying upon to support its position. If the disputing Party does not provide such written statement within this forty-five (45) day period, that Party shall be deemed to be in agreement with EPA.

2. Prior to NYSERDA or DOE's issuance of a written statement of dispute, the disputing Party shall engage the other Parties in informal dispute resolution among the Project Coordinators and/or their immediate supervisors. During this thirty (30) day informal dispute resolution period the Parties shall meet as many times as are necessary to discuss and attempt resolution of the dispute.

3. If agreement cannot be reached on the issue within the thirty (30) day informal dispute resolution period, the disputing Party may, within a fifteen (15) day period following the end of the thirty (30) day informal dispute resolution period, forward

the written statement of dispute to the Dispute Resolution Committee (DRC) thereby elevating the dispute to the DRC for resolution. Alternatively, the Parties may, within the forty-five (45) day period noted above, unanimously decide to escalate the dispute directly to the Senior Executive Committee (SEC).

4. Any party may decide at any level of the disputes process, by written notice to the participating parties, not to participate in dispute resolution concerning any one or more issues. However, any resolution reached by the participating parties shall be binding on all parties to this Order.

5. The DRC will serve as a forum for resolution of disputes for which agreement has not been reached through informal dispute resolution. The Parties shall each designate one individual and an alternate to serve on the DRC. The individuals designated to serve on the DRC shall be employed at the policy level (SES or equivalent) or be delegated the authority to participate on the DRC for the purpose of dispute resolution under this Order. The EPA's representative is the Air and Waste Management Division Director, Region II. The NYSDEC's representative is the Director of the Division of Hazardous Substances Regulation. DOE's representative is the West Valley Project Office Manager. NYSERDA's representative is the Program Director, Radioactive Waste Management. Written notice of any delegation of authority for a Party's designated representative on the DRC shall be provided to all other Parties.

6. Following the receipt of all statements of dispute or the expiration of the escalation time periods noted above, the DRC shall have twenty-one (21) days to unanimously resolve the dispute and issue a written decision. If the DRC is unable to unanimously resolve the dispute within this twenty-one (21) day period the written statement of dispute shall be forwarded by the disputing party to the SEC for resolution. Alternatively, within the twenty-one (21) day period noted above, the parties may unanimously decide to escalate disputes involving nationally significant issues directly to the Administrator of EPA.

7. The SEC will normally serve as the forum for resolution of disputes for which agreement has not been reached by the DRC. The EPA representative is the Regional Administrator of Region II. The NYSDEC's representative is the Commissioner. The DOE's representative is the Idaho Field Office Manager. NYSERDA's representative on the SEC is the President of NYSERDA. Written notice of any delegation of authority for a Party's designated representative on the DRC shall be provided to all other Parties. The SEC members shall, as appropriate, confer, meet and exert their best efforts to resolve the dispute and issue a written decision. If unanimous resolution of the dispute is not reached within twenty-one (21) days, EPA's Regional Administrator shall issue a written position on the dispute. The DOE or NYSERDA may, within twenty-one (21) days of the Regional Administrator's issuance of EPA's position, issue a written notice elevating the dispute to the Administrator of EPA for resolution in accordance

with applicable laws and procedures. In the event that DOE or NYSERDA elects not to elevate the dispute to the Administrator within the designated twenty-one (21) day escalation period, the DOE or NYSERDA shall be deemed to have agreed with the Regional Administrator's written position with respect to the dispute.

8. Upon escalation of a dispute to the Administrator of EPA pursuant to subpart 7, above, the Administrator will review and resolve the dispute as expeditiously as possible. Upon request by the Commissioner of the NYSDEC, the Secretary of the DOE, or the President of NYSERDA, and prior to resolving the dispute, the EPA Administrator shall meet and confer with such person(s), as appropriate, to discuss the issue(s) under dispute. Upon resolution, the Administrator shall provide the DOE or NYSERDA with a written final decision setting forth resolution of the dispute.

9. The pendency of any dispute under this section shall not affect the DOE's or NYSERDA's responsibility for timely performance of the work required by this Order, except that the time period for completion of work affected by such dispute shall be extended for a period of time usually not to exceed the actual time taken to resolve any good faith dispute in accordance with the procedures specified herein. All elements of the work required by this Order which are not affected by the dispute shall continue and be completed in accordance with the applicable schedule. If EPA or NYSDEC determines, pursuant to applicable law and guidance, that an actual or potential emergency exists

and directs Respondent to take appropriate action (in accordance with sections VI, VII, and VIII), timely performance of such action shall not be delayed by the dispute resolution procedures and such direction is subject to the result of these procedures.

10. When dispute resolution is in progress, work affected by the dispute will immediately be discontinued if the Air and Waste Management Division Director for EPA's Region II requests, in writing, that work related to the dispute be stopped because, in EPA's opinion, such work is inadequate or defective, and such inadequacy or defect is likely to yield an adverse effect on human health or the environment, or may have a substantial adverse effect on the remedy selection or implementation process. To the extent possible, EPA shall give DOE or NYSERDA prior notification that a work stoppage request is forthcoming. After stoppage of work, if the DOE or NYSERDA believes that the work stoppage is inappropriate or may have potential significant adverse impacts, DOE or NYSERDA may meet with the EPA Division Director to discuss the work stoppage. Following this meeting, and further consideration of the issues, the Division Director will issue, in writing, a final decision with respect to the work stoppage. The final written decision of the Division Director may immediately be subjected to formal dispute resolution. Such dispute may be brought directly to the either the DRC or the SEC at the discretion of DOE or NYSERDA.

11. Within twenty-one (21) days of resolution of a dispute pursuant to the procedures specified in this Section, DOE and

NYSERDA, as appropriate, shall incorporate the resolution and final determination into the appropriate plan, schedule or procedures and proceed to implement this Order according to the amended plan, schedule or procedures.

12. Resolution of a dispute pursuant to this section of the Order constitutes a final resolution of that dispute arising under this Order. DOE or NYSERDA shall abide by all terms and conditions of any final resolution of dispute obtained pursuant to this section of this Order.

13. Disputes between NYSERDA and DOE concerning their respective authority and responsibilities arising from or related to the WVDP Act or the Cooperative Agreement or any cost share arrangement, shall not affect the timely completion of any work pursuant to this Order. DOE or NYSERDA may request an extension of time to resolve such disputes. Notwithstanding any other provision of this Order, neither such disputes between DOE or NYSERDA, nor any EPA decision with regard to such request for extension of time, shall be subject to Dispute Resolution.

14. The procedures of this section shall also not apply to disputes about: (a) EPA's and/or NYSDEC's designation of project coordinators; (b) EPA's and/or NYSDEC's access to the facility (such access to be subject to section XIII, paragraph 1, and section XV, paragraph 6); and/or (c) EPA and/or NYSDEC enforcement actions (such enforcement actions to be subject to section XV, paragraph 13, and only after notice to EPA's Office of Enforcement).

XX. Availability of Information/Notification

1. To the maximum extent possible, Respondents shall give the EPA and NYSDEC Project Coordinators twenty (20) days advance oral notice of the following activities undertaken pursuant to this Order: all well monitoring activities, drilling, well installation and testing; as well as all on-site and off-site field activities, such as installation or removal of equipment or sampling events, geophysical studies, and soil gas monitoring. At the request of EPA and/or NYSDEC, Respondents shall provide or allow EPA, NYSDEC, and/or their authorized representatives to take split samples of any or all samples collected by the Respondents pursuant to this Order. EPA will, to the extent possible, give Respondents notice of EPA's intentions to take samples and/or allow Respondents to take split or duplicate samples of all samples collected by EPA or NYSDEC under this Order.

2. All data, information, and other nonprivileged records concerning, created for or maintained by the Respondents pursuant to this Order, except attorney-client privilege or work product privileged material, shall be made available to EPA and/or NYSDEC upon request. All employees of the Respondents and all persons, including contractors and subcontractors who engage in activities under this Order, shall be made reasonably available to and cooperate with EPA and/or NYSDEC if information, whether written or oral, is sought.

3. All final reports, plans, studies, records, or other documents submitted or otherwise in the possession of EPA or NYSDEC under the terms of this Order by DOE or NYSDEC shall be made available to the public pursuant to the Freedom of Information Act, 5 U.S.C., 552, et seq., or the New York State Freedom of Information Law, Public Officers Law Article 6, except (a) those identified by DOE which are classified pursuant to Executive Order or Statute, or unclassified controlled nuclear information within the meaning and in conformance with Section 148 of the Atomic Energy Act (AEA); (b) those that are appropriately withheld pursuant to the Freedom of Information Act or Freedom of Information Law; and, (c) those entitled to a business confidentiality claim covering all or part of any information submitted to EPA. Any assertion of confidentiality shall be accompanied by a response to the questions listed at 40 C.F.R. § 2.204(e)(4). Information determined to be confidential by EPA shall be disclosed only to the extent permitted by 40 C.F.R. Part 2. Respondents agree not to assert any confidentiality claim with regard to any physical or analytical data that has been validated or otherwise evaluated using applicable quality assessment/quality control (QA/QC) methods. Nothing in this paragraph shall preclude the use of such information, records, or other documents in administrative proceedings.

4(a) Upon request by EPA or NYSDEC, the DOE or NYSERDA shall make available to EPA and/or NYSDEC for inspection and review at the facility, copies of non-quality assured data or results, nonprivileged records, and other documents, including sampling and monitoring data, which have been received by DOE or NYSERDA, that EPA determines are necessary for oversight activities. Such data or results shall not be duplicated or removed from the facility unless EPA determines that an imminent and substantial hazard exists or may exist. If such records and documents are duplicated or removed from the facility by EPA or NYSDEC, DOE reserves its right to assert a claim of confidentiality with respect to such records or documents. Where EPA or NYSDEC duplicates or removes non-quality assured data, Respondent(s) shall attempt to complete quality assurance within sixty (60) days following the receipt of such data by the DOE or NYSERDA. The sixty day period provided for completing quality assurance is for the purposes of this section only.

b) To the extent the non-quality assured data are made available to, or are reviewed by, EPA or NYSDEC, such data:

(i) shall not form the basis for agency action unless EPA determines that an imminent and substantial hazard exists or may exist; and,

(ii) shall be held in confidence and shall not be disclosed further unless EPA or NYSDEC receives a request for such data under FOIA or FOIL, or unless disclosure is otherwise mandated by law. Upon receipt of such request, and prior to any

mandatory disclosure under this paragraph, EPA or NYSDEC shall endeavor to consult and coordinate with DOE or NYSERDA, including possibly transfering to DOE responsibility for responding to a request for such data, as provided in 40 C.F.R. § 2.111(d)(2).

XXI. Termination and Satisfaction

1. The provisions of this Order shall be deemed satisfied and the obligations of the Respondents under this Order shall terminate upon Respondents' receipt of a written statement from EPA stating that Respondents have completed, to EPA's satisfaction, all the terms and conditions of this Order, including any additional work which EPA may determine to be necessary pursuant to this Order. So long as the Respondents are performing work pursuant to, or required by this Order, this Order shall not be deemed terminated or satisfied.

2. Following the issuance of a final RCRA Part B permit, or upon the satisfactory completion of all required actions and upon written request by DOE or NYSERDA, EPA shall endeavor to send to DOE and NYSERDA (as appropriate) a written notice of satisfaction of the terms of this Order as soon as practicable. The notice shall state that EPA considers DOE or NYSERDA (as appropriate) to have satisfied the terms of this Order. The notice, or lack of notice, may be subject to dispute resolution.

XXII. Survivability/Permit Integration

1. After the effective date of this Order, a RCRA/HSWA Permit may be issued to the Facility (or any portion of the Facility) incorporating the requirements of this Order by

reference into the permit. The requirements of this Order shall not terminate upon the issuance of a permit unless the requirement(s) of this Order are expressly replaced by equivalent or more stringent requirements in the permit and EPA approves such termination.

2. Notwithstanding any other provision of this Order, EPA and NYSDEC agree that in issuing a RCRA/HSWA (including equivalent state law) Permit to Respondent, absent any new information that requires a different approach, EPA and NYSDEC will not include in a draft permit any condition or requirement that directs Respondent to perform or refrain from performing any action that is clearly inconsistent with the requirements of this Order. If it appears that an inconsistent condition may be included in the final permit, EPA and NYSDEC will attempt to confer with DOE and NYSERDA before the final permit is issued. To the extent EPA or NYSDEC includes all or part of the requirments of this Order in such permit, EPA and NYSDEC agree to modify this Order accordingly. Requirements of this Order not incorporated into a permit shall remain an enforceable part of this Order. Requirements of this Order incorporated into a permit shall no longer be enforceable under this Order.

3. The limitations of subsection 2, above, shall not apply to: (a) any interim measure or corrective action that EPA or NYSDEC determine is not within the scope of this Order; (b) any pre-existing, current, or future condition at the Facility not explicitly covered by this Order or which was not known to EPA or

NYSDEC at the time the Order was executed; or, (c) any response action pursuant to CERCLA, as amended.

4. Respondent's good-faith belief that a condition or requirement of this Order is inconsistent with a requirement in any final RCRA/HSWA Permit, shall constitute a dispute to be resolved under the terms of section XIX (Dispute Resolution) of this Order.

XXIII. Modification/Extension

1. This Order may be modified by mutual agreement of EPA and NYSDEC and Respondents. Such modification shall be in writing, shall be signed by the Respondents first, and shall have as its effective date the date on which it is signed by the Director of the Air and Waste Management Division, Region II, EPA, and a signed copy is received by the Respondents. Any such modification is, on its effective date, hereby incorporated into this Order.

2. Notwithstanding the above, the appropriate Project Coordinators may agree to extensions concerning timetables, deadlines, or the scheduling of events. Any such extensions must be requested in writing by the Respondents and be approved in writing by the EPA Project Coordinator.

3. In the event the parties cannot agree on the appropriate extension of timetables, deadlines, or scheduling, such disagreement may be subject to dispute resolution in accordance with section XIX.

4. No informal advice, guidance, suggestions, or comments by EPA and NYSDEC regarding reports, plans, specifications, schedules, and any other writing submitted by the Respondents will be construed as an amendment or modification to this Order.

XXIV. No Final Agency Action

1. Notwithstanding any other provision of this Order, no action or decision by EPA pursuant to this Order, including without limitation, decisions of the Administrator, the Regional Administrator, the Director of the Air and Waste Management Division for Region II, or any authorized representative of EPA, shall constitute final agency action giving rise to any rights of judicial review prior to EPA's initiation of a judicial action for a violation of this Order, including an action for penalties or an action to compel Respondent's compliance with the terms and conditions of this Order.

XXV. Severability

If any provision or authority of this Order or the application of this Order to any party or circumstance is found to be invalid, or is temporarily stayed, the remainder of this Order shall remain in force and shall not be affected thereby.

XXVI. Force Majeure and Excusable Delay

1. Respondent shall perform all the requirements of this Order within the time limits set forth, approved, or established herein, unless the performance is prevented or delayed solely by events which constitute a force majeure. A force majeure is defined as an event arising from causes not reasonably

foreseeable and beyond the control of the Respondents which could not be overcome by due diligence and which delays or prevents performance by a date required by this Order. Such events do not include unanticipated or increased costs or expenses of response actions, whether or not anticipated at the time such performance or response action was initiated. Nor does Force majeure include changed economic circumstances, normal precipitation events, or failure to exercise due diligence in obtaining federal, state, or local permits.

2. Force majeure shall include acts of God; fire; war; insurrection; civil disturbance; explosion; restraint by court order or order of an existing public authority; inability to obtain, after due diligence, any necessary authorizations, approvals, permits or licenses due to action or inaction of any governmental agency or authority other than the DOE or NYSERDA; delays caused by compliance with applicable statutes or regulations governing contracting, procurement or acquisition procedures, despite the exercise of due diligence; any strike or other labor dispute, whether or not within the control of the Parties affected thereby; and insufficient availability of appropriated funds, provided DOE or NYSERDA, as appropriate, made timely request for such funds as part of the budgetary process as set forth in Section XXVIII (Funding) of this Order.

3. The Respondents shall notify the EPA or NYSDEC Project Coordinator within seventy-two (72) hours, if possible, but in no event after forty (40) days, after Respondent(s) first becomes

aware of an event, which it knows or should have known, constitutes a force majeure. Within five (5) business days, if possible, but in no event after thirty (30) business days after Respondent(s) provides such initial notice, the Respondent shall submit to EPA a written report detailing the estimated length of delay, including necessary demobilization and remobilization, its causes, measures taken or to be taken to minimize the delay, and an estimated timetable for implementation of these measures. Respondents must adopt all reasonable measures to avoid and minimize the delay. Failure to comply with the forty (40) day notice provision of this section shall constitute a waiver of Respondents' right to assert a force majeure and shall be grounds for EPA to deny Respondents an extension of time for performance. Such a waiver of a force majeure under this Order shall not be deemed to be a waiver of any other defense the Respondent may have at law with regard to the performance of obligations of contracts that become impossible.

4. If a force majeure has occurred, the time for performance may be extended, upon EPA approval, for a period equal to the delay resulting from such circumstances. This shall be accomplished through written amendment to this Order pursuant to Section XXIII. Such an extension does not alter the schedule for performance or completion of any other tasks required by this Order unless these are also specifically altered by amendment of this Order.

XXVII. ENFORCEMENT

1. DOE and NYSERDA recognize their respective obligations to comply with the applicable federal and state laws and regulations, including RCRA, as set forth in Section 6001 of RCRA, 42 U.S.C. § 6961 and Title 27, Article 9 of the ECL, and Title 6 of the New York Code, Rules and Regulations, and to faithfully discharge the requirements of this Order.

2. The provisions of this Order shall constitute requirements which are enforceable against DOE or NYSERDA pursuant to the citizen suit provision of Section 7002 of RCRA, 42 U.S.C. § 6972. DOE and NYSERDA agree that the State (NYSDEC) constitutes a "person" pursuant to Section 7002(a) of RCRA. Therefore, citizen suits include actions or suits by the State to enforce the terms of this Order.

XXVIII. FUNDING

1. It is the expectation of the Parties to this Agreement that all obligations of DOE or NYSERDA arising under this Agreement will be fully funded. Consistent with Congressional and State Legislative limitations on future funding, NYSERDA and DOE shall take all necessary steps and make best efforts to obtain timely funding to meet their obligations under this Order, including but not limited to the submission of timely budget requests.

2. Any requirement for the payment or obligation of funds by DOE or NYSERDA established by the terms of this Order shall be subject to the availability of appropriated funds and no

provision herein shall be interpreted to require obligation or payment of funds in violation of the Anti-Deficiency Act, 31 U.S.C. § 1341, or New York State Finance Law, Section 41. In cases where payment or obligation of funds would constitute a violation of the Anti-Deficiency Act, or the New York State Finance Law, the dates established requiring the payment or obligation of such funds shall be appropriately adjusted.

3. DOE has prepared an Environmental Restoration and Waste Management Five-Year Plan (the "Five Year Plan") to identify, integrate, and prioritize DOE's compliance and cleanup activities at all DOE nuclear facilities and sites. DOE will update the Five-Year Plan on an annual basis.

4. The terms of the Five-Year Plan shall be consistent with the provisions of this Order, including all requirements and schedules contained herein; it is the intent of DOE that the Five-Year Plan be drafted and updated in a manner that ensures that the provisions of this Order are incorporated into the DOE planning and budget process. Nothing in the 5-Year Plan shall be construed to affect the provisions of this Order.

5. DOE is developing a national prioritization system for inclusion in the Five-Year Plan. DOE's application of its national prioritization system may indicate to DOE that amendment or modification of the provisions and/or milestones established by this Order is appropriate. In that event, DOE may request, in writing, amendment or modification of this Order, including deadlines established herein. EPA may contend that the Five-Year

Plan should accommodate the milestones established by this Order. Where the parties are unable to reach agreement on a requested amendment or modification, the Parties may invoke the dispute resolution provisions of this Order. Pending resolution of any such dispute, the provisions and deadlines in effect pursuant to this Order shall remain in effect and enforceable in accordance with the terms of this Order. Any amendment or modification of this Order will be incorporated, as appropriate, in the annual update to DOE's Five-Year Plan.

6. If appropriated funds are not available to fulfill NYSERDA's or DOE's obligations under this Order, EPA reserves the right to initiate any other action which it deems to be appropriate absent this Order.

7. Nothing herein shall affect NYSERDA's or DOE's authority over, or responsibility for, its budget and funding level submissions.

XXIX. Effective Date

The effective date of this Order shall be ten (10) days after the date on which the Director of the Air and Waste Management Division, Region II, signs this Order.

XXX. Consent

1. Respondents consent to the issuance of this Order, and agree to undertake all actions required by the terms and conditions of this Order, including any portions of the Order incorporated by reference. Respondents consent to the issuance of this Order, as an Order, pursuant to Section 3008(h) of RCRA,

42 U.S.C. § 6928(h), and explicitly waive their right to request a hearing on this matter. In addition, whether brought in an administrative or judicial proceeding, the Respondents consent to and agree not to contest EPA's jurisdiction to enforce or compel compliance with any term of this Order or the validity of this Order and all of its provisions. Subject to the Reservation of Rights in Section XV, the Respondents agree not to contest, and waive any defense concerning, the validity of this Order, or any particular provision contained herein.

2. Each undersigned signatory to this Order certifies that he or she is fully authorized to enter into the terms and conditions of this Order.

IT IS SO AGREED:

Date: 2/27/92

SIGNED: _____
A. A. Pitrolo
Manager
U.S. Department of Energy
Idaho Falls Operation Office

IT IS SO AGREED:

Date: 2/28/92

SIGNED: _____
F. Wm. Valentino
Acting President
New York State Energy Research
and Development Authority

IT IS SO ORDERED:

Date: January 6, 1992

SIGNED: Thomas C Jorling
Thomas Jorling
Commissioner
New York State Department of
Environmental Conservation

IT IS SO ORDERED:

Date: March 5, 1992

SIGNED: _____
CONRAD SIMON, Director
Air and Waste Management Division
U.S Environmental Protection
Agency - Region II

APPENDIX E-2

EPA AND NYDEC SWMU CORRESPONDENCES

New York State Department of Envir
50 Wolf Road, Albany, New York 12233

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To E. MATTHEWS	From T. DIGIULIO
Co. DoE	Co. NYSDEC
Dept. West Valley	Phone #
Fax # (716) 942-4703	Fax #

DW:93:1413-RFI
EAH:191:93-2343:93:07
10-18-93

ng
Commissioner

Mr. Richard Provencher
Environmental, Safety, Health and
Quality Manager
US Department of Energy
West Valley Project Office
PO Box 191
West Valley, NY 14171-0191

Dear Mr. Provencher:

RE: Final Approval of the West Valley Demonstration
RCRA Facility Investigation (RFI) Workplan

The New York State Department of Environmental Conservation (NYSDEC) and the United States Environmental Protection Agency (USEPA) have completed review of the revised 'Project Management Plan Schedule - RFI Work Plan' attached to your September 23, 1993 letter.

Based on this revised schedule, and all previously approved comments, the NYSDEC and USEPA approve the RFI Workplan dated Spring 1993. In accordance with Section XII of the 3008(h) Order on Consent, this approval incorporates the following items into the Order:

- "Revised" Draft RCRA Facilities Investigation (RFI) Work Plan, West Valley Demonstration Project, West Valley, New York, Spring 1993, (WVDP-RFI-014, Rev. 0, Draft B), in conjunction with:
- Comment Response Package on "Revised" Draft RCRA Facilities Investigation (RFI) Work Plan, dated August 6, 1993, in conjunction with:
- Selected Comment Response Package Following August 12, 1993 Meeting on "Revised" Draft RCRA Facilities Investigation (RFI) Work Plan, dated August 23, 1993, in conjunction with:
- The Revised 'Project Management Plan Schedule - RFI Work Plan' attached to your September 23, 1993 letter.

In order to keep the RFI Workplan a 'working document', we request that appropriate replacement pages incorporating the comments and schedule into the RFI Workplan be completed and submitted to both agencies by November 1, 1993.

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If you have any questions regarding this matter, please contact Mr. Timothy I. DiGiulio, P.E., at 518/457-9253 or Mr. Larry D'Andrea at 212/264-9396.

Sincerely,

Paul R. Counterman, P.E.
Chief
Bureau of Western Haz. Waste Programs
Division of Haz. Substances Regulation

for

Andrew A. Bellina, P.E.
Chief
Hazardous Waste Facilities Branch
U.S. Environmental Protection Agency
Region II

cc: L. D'Andrea, EPA Region II
P. Bembia, NYSERDA, W. Valley
F. Shattuck, Region 9
P. Merges, DEC Albany
[redacted], DEC Albany

New York State Department of Environmental Conservation
270 Michigan Avenue, Buffalo, New York 14203-2999
(716) 851-7220

Langdon Mars
Commissioner

October 20, 1994

Ms. Elizabeth Matthews
Manager, Environmental Programs
U.S. Department of Energy
West Valley Project Office
P.O. Box 191
West Valley, New York 14171-0191

Dear Ms. Matthews:

U.S. Department of Energy
RCRA Facility Investigation
Supplemental Solid Waste
Management Units

The New York State Department of Environmental Consevation (NYSDEC) and the United States Environmental Protection Agency (USEPA) have completed review of the Preliminary Reviews (PR) for 12 Solid Waste Management Units (SWMU) submitted with your letter dated June 20, 1994. A determination of no further action (NFA) has been made for five (5) of these SWMUs which are listed below. The determination was based on the review of the PRs, the Visual Site Inspection conducted by the NYSDEC and the additional data collected as part of the ongoing RCRA Facility Investigation (RFI).

1. Cold Hardstand (SWMU #30)

2. Old Sewage Treatment Facility (SWMU #32)

3. Existing Sewage Treatment Plant/Waste Water Treatment Facility (SWMU #33)

4. Well Purge Water Locations (SWMU #34)

5. Concrete Washdown Area (SWMU #35)

The comments regarding the remaining seven SWMU's will be presented in a separate letter.

If you have any questions regarding this letter, please contact Mr. John Krajewski of the NYSDEC at (716)851-7220 or Mr. John Nevius of the USEPA at (212)264-9578.

Sincerely,

Timothy DiGiulio, P.E.
Project Coordinator
Bureau of Western Hazardous Waste Programs
Division of Hazardous Substances Regulation

Andrew Bellina, P.E.
Chief
Hazardous Waste Facilities Branch
USEPA, Region II

cc: Mr. John Krajewski - NYSDEC, Buffalo
Mr. Paul Merges - NYSDEC, Albany
Mr. John Nevius - USEPA, Region II
Ms. Laurene Krieger - West Valley Nuclear Services
Ms. Colleen Gerwitz - New York State Energy and Research Development Authority, West Valley

New York State Department of Environmental Conservation
270 Michigan Avenue, Buffalo, New York 14203-2999
(716) 851-7220

Langdon Marsh
Commissioner

November 21, 1994

Ms. Elizabeth A. Matthews
Manager, Environmental Programs
U.S. Department of Energy
West Valley Project Office
P.O. Box 191
West Valley, New York 14171-0191

Dear Ms. Matthews:

Supplemental SWMUs Preliminary Reviews

The New York State Department of Environmental Conservation (DEC) and the United States Environmental Protection Agency (USEPA) have completed review of the seven remaining Supplemental Solid Waste Management Unit (SWMU) Preliminary Reviews (PRs). These PRs are part of the Department of Energy (DOE) submission dated June 20, 1994. Of the 12 PRs in that submission, 5 of them have already been reviewed, and a response dated October 20, 1994, from the DEC and USEPA was transmitted to the DOE. This letter will respond to the remaining seven.

- SWMU #28 Vitrification Hardstand - The PR indicates that no hazardous wastes or substances have been released to the environment from this location. The Visual Site Inspection (VSI) performed by the DEC supported the PRs statements.

- SWMU #29 Industrial Waste Storage Area (IWSA) - Section C of the PR states that no RCRA hazardous waste was staged at the IWSA. However, Attachment I - Typical Wastes Managed at the IWSA lists sulfuric acid which could be a hazardous waste by characteristic. Pending the review of the pertinent RFI analytical data for surface and sub-surface soil samples, a future determination of no further action (NFA) is likely. A final determination regarding future action can then be made after review of that data.

Please provide documentation substantiating the waste characterization of the sulfuric acid listed in Attachment I.

It will also be necessary to review the RFI analytical results for surface and sub-surface soil samples taken in the vicinity of the IWSA before a final determination regarding future action at this SWMU can be made.

- SWMU #31 NDA Trench Soil Container Area - The data presented in the PR is acceptable, and the VSI conducted by the DEC did not reveal any significant negative impacts on the environment. After the analytical results for the RFI surface and sub-surface soil samples have been reviewed, a final determination on future action at this SWMU can be made.

Editorial Note: In Table 2, the parameter "nitrogen, nitrate" is listed twice.

- SWMU #37 Contact Size Reduction Facility (CSRF) - The operation of the CSRF must be discussed in more detail to determine not only if CSRF operations generated and/or released hazardous waste but also if prior Nuclear Fuel Services (NFS) operations in that area may have released hazardous waste. A final determination on future action at this SWMU cannot be made until that discussion is completed.

- SWMU #40 Satelite Accumulation Areas (SAA) - Based on information in the PR, VSIs of all active SAAs and discussions with RCRA inspection staff, a determination of NFA is made for this SWMU.

- SWMU #41 Designated Roadways - A determination of future action at this SWMU cannot be made until the analytical data for the RFI surface and sub-surface soil samples in this area have been reviewed.

- SWMU #43 Warehouse Extension Waste Management Staging Area (WMSA) - This unit has only been in operation since 1991. As there have been no known releases to the environment and the VSI conducted by the DEC did not reveal evidence of any negative environmental impacts, a determination of NFA is made for this SWMU.

In a related matter, the agencies request an explanation of how these wastes were handled prior to the construction of the WMSA.

It is apparent from the comments listed above that the analytical data from the RFI environmental sampling program must be examined by the DEC and USEPA before a final determination can be made regarding future action at several SWMUs. This data should be provided as soon as it is available.

If you have any questions regarding this letter, contact Mr. John Krajewski of the DEC at (716) 851-7220 or Mr. John G. Nevius of the USEPA at (212) 264-9578. You are requested to notify the DEC and USEPA Region II of your intended response to this letter no later than December 5, 1994.

Sincerely,

Timothy I. DiGiulio, P.E.
Project Coordinator
Bureau of Western Hazardous Waste
Programs

Andrew Bellina, P.E.
Chief
Hazardous Waste Facilities Branch
USEPA, Region II

cc: Mr. John Krajewski - NYSDEC, Region 9
Mr. Paul Merges - NYSDEC, Albany
Mr. John Nevius - USEPA, Region II
Ms. Colleen Gerwitz - NYSERDA, West Valley
Ms. Laurene Krieger - WVNS, West Valley

New York State Department of Environmental Conservation
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518-457-9253 FAX 518-457-9240

Langdon Marsh
Commissioner

DEC 1 2 1994

Ms. Elizabeth A. Matthews
Manager, Environmental Programs
U.S. Department of Energy
West Valley Project Office
P.O. Box 191
West Valley, New York 14171-0191

Dear Ms. Matthews:

RE: Sealed Rooms Paper Investigation Report

The New York State Department of Environmental Conservation (DEC) and the Environmental Protection Agency (EPA) have completed their review of the *Final Sealed Rooms Paper Investigation Report,* dated May 1994. The sealed rooms were defined as Solid Waste Management Units (SWMUs) and assessment to the potential for release of hazardous waste or hazardous constituents from these SWMUs is required pursuant to the RCRA 3008(h) Order on Consent.

On the basis of information in the report, and review of preliminary groundwater sampling data received as part of the RCRA Facility Investigation (RFI), it appears that the sealed rooms do not pose a significant threat from the release of hazardous waste or hazardous constituents into the environment. However, there are certain rooms that have, or had the potential to contain RCRA hazardous constituents, and further information is necessary to determine if there is potential for impact to the environment. Attached is a summary sheet containing a room description, comments or additional requested information. These comments were also discussed in a meeting that was held on November 18, 1994. It is requested that the additional information be submitted to the Agencies no later than February 1, 1995.

If you have any questions regarding this matter, please contact the DEC Project Coordinator at (518) 457-9253 or the EPA Project Coordinator, John Nevius, P.E. at (212) 264-9578.

Sincerely,

Timothy I. DiGiulio, P.E.
Project Coordinator
Bureau of Western Haz. Waste Programs
Division of Haz. Substances Regulation

for Andrew Bellina, P.E.
Chief
Hazardous Waste Facilities Branch
USEPA, Region II

Attachment

cc w/att: C. Gerwitz, NYSERDA W. Valley
J. Nevius, EPA, Reg II
F. Shattuck, DEC Region 9
R. Masse, DEC Albany

SEALED ROOMS
SUMMARY

No.	Room Name	Notes - Room Description	Concerns - Further Information Needed
1	Mechanical Process Cell (elevation 100 ft)	Two windows available for viewing. First stage of re-processing . Physical cutting and dissembling of Fuel Rods took place here.	There is no indication that hazardous constituents were i here. Floor drains located in this room drain to the Gener Purpose Cell sump. What happened to the R-95 oil that originally filled the windows? No Further Action Requi
2	Ram Equipment Room (elevation 100 ft)	Contained a saw table, a hydraulic push out ram, and associated hydraulic pump systems. Presently storage.	Although there is no indication that hazardous constituen were used in this room, leaks from the Ventilation Wash Room contaminated the RER. A floor sump that discharg into the interceptor system exists. Sampling data from th RFI should be evaluated to determine if hazardous constituents could have been released.
3	General Purpose Cell (elevation 75 ft)	Equipped to transfer sheared fuel from the Mechanical to Chemical Process room.	Minimal chance for release with room containing a dead (i.e. no outlets) stainless steel sump with no underground piping. No Further Action Required.
4	Miniature Cell (elevation 76.5 ft)	Not used for any major function during operations. View window located at the north of the cell.	This cell was not used during operation and is not in... No Further Action is Required.
5	Extraction Cell No. 1 (elevation 100 ft)	Uranium and Plutonium was separated from the fission products using a solvent extraction process.	*Uncharacterized sludges in vessels could contain RCRA hazardous wastes. Minimal chance for release with room containing a dead (i.e. no outlets) stainless steel sump with no underground piping. No Further Action Required.
6	Extraction Cell No. 2 (elevation 100 ft)	Contains the solvent extraction columns and feed tanks for the last stage of the partitioning cycle and the first cycle for uranium and plutonium.	Hydrazine is a haz. chemical used in this cell. Residuals may still be present in vessels and on the floor. *Characterizati may be necessary. Minimal chance for release with room containing a dead (i.e. no outlets) stainless steel sump with no underground piping. No Further Action Required.
7	Upper Warm Aisle/ Solvent Storage Terrace (elevation 114.5/131 ft)	Housed the pumps used for the acid extraction process/ housed the tanks for acid and solvent storage.	SST not legible in Fig. Spills and leaks from the SST were conveyed though underground lines to the solvent dike. Sampling data from the RFI should be evaluated to determi if hazardous constituents could have been released.
8	Liquid Waste Cell (elevation 100 ft)	This cell houses liquid waste collection tanks. Concentrated nitric acid was used during past operations to dissolve sheared fuel. Some tanks support current operations.	*Uncharacterized wastes in vessels could contain RCRA Characteristics Hazardous Wastes. Minimal chance release with room containing a dead stainless steel ... with no underground piping. No Further Action Required.

No.	Room Name	Notes - Room Description	Concerns - Further Information Needed
	Acid Recovery Cell (elevation 111.5 ft)	This cell recovered and concentrated nitric acid through evaporation and fractionation for the reuse in the process.	This room is not labeled or illegible in figure 13. Although sump located in this room appears dead, little is known a it or its integrity. Supply additional information on the su if it exists. * Unknown liquid in vessel 7C-5 may need characterization.
10	Acid Pump Rooms (elevation 100 ft)	This cell housed pumps that transferred acid streams from the Acid Recovery Cell to various plant locations.	Waste was discharged to the interceptors via floor drain. Floor and walls in poor condition due to corrosion of acid spills and leaks on the concrete. Provide details on spills, they exist. Sampling data from the RFI should be evaluate determine if hazardous constituents could have been released.
11	Hot Acid Cell (elevation 148 ft)	Contains storage tanks for nitric acid that was used to dissolve nuclear fuel in the Chemical Process Cell.	Floor drain connects to a tank in the Acid Recovery Cell. I 1972 tank contents removed and decontaminated. **No Further Action Required.**
12	Off-gas Cell (elevation 100 ft)	Contains the equipment for venting gases from the dissolver in the Chemical Process Cell and other off-gas vessels.	*Quantities of mercury were used during operations, thus the potential for haz. waste. Floor sump received acid wastes with floor in poor condition. It should be determine if this sump was lined with stainless steel or other protective coating to deter acid corrosion. Supply informat on the poor condition of concrete construction joints.
13	Off-gas Blower Room (elevation 101.25 ft)	Cell contains the blowers, filters, and scrubbers for the off-gas system.	A floor drain connects to the sump in the Off-gas Cell. Pun niches are stainless steel lined. **No Further Action Required.**
14	Ventilation Wash Room (elevation 114.5 ft)	Contains an air washer and duct work that scrubs ventilation air from various cells.	How did the VWR leak into and contaminate the RER?
15	Scrap Removal Room (elevation 100 ft)	Drums and casks were loaded onto truck trailers then de-contaminated prior to NDA disposal.	SRM contains a drain that connects with the interceptor. Sampling data from the RFI should be evaluated to determi if hazardous constituents could have been released. *Uncharacterized wastes in tank could contain RCRA Characteristics Hazardous Wastes.
16	Master Slave Manipulator (elevation 100 ft)	Received, decontaminated, and repaired manipulators used in the hot chemical cell and laboratory.	Sumps drained to underground tank 15D-6 which was sampled and deemed TC non-hazardous. No leak detection for tank but monitoring well in the vicinity. Do the results from sampling indicate a release from the tank? Supply sampling results.

* ...ner RCRA hazardous waste characterization may be necessary in these rooms.

New York State Department of Environmental Conservation
270 Michigan Avenue, Buffalo, New York 14203-2999
(716) 851-7220

Recd.
Rec. Mgmt.
January 17, 1995

RW:95:0004

Langdon Mar
Commissioner

January 12, 1995

Ms. Elizabeth A. Matthews
Manager, Environmental Programs
United States Department of Energy
West Valley Project Office
P.O. Box 191
West Valley, New York 14171-0191

Dear Ms. Matthews:

Subcontractor Maintenance Area
Resource Conservation and Recovery
Act (RCRA)
Facility Assessment Report Revisions

The New York State Department of Environmental Conservation (DEC) and the United States Environmental Protection Agency (EPA) have completed review of your submission dated December 8, 1994. That submission included revised pages to be included in the report referenced above and revised responses to the review comments previously provided by the DEC and EPA.

The revised pages contain the recommended changes and/or clarifications requested and will replace the corresponding pages in the draft report dated August 1994. The revised responses to the agency comments are also satisfactory, and no further clarification is required. Based on this information, a determination of no further action is made, providing new information, such as the RCRA Facility Investigation, does not indicate cause for reconsideration.

If you have any questions regarding this matter, contact Mr. John Krajewski of the DEC at (716)851-7220 or Mr. John Nevius, P.E., of the EPA Region II office at (212)264-9396.

Very truly yours,

John Krajewski FOR

Timothy I. DiGiulio, P.E.
Project Coordinator
Bureau of Western Hazardous Waste Programs

John Krajewski FOR

Andrew Bellina, P.E.
Chief
Hazardous Waste Facilities Branch
USEPA, Region II

cc: Mr. William Tetley - NYSDEC, Albany
Mr. John Nevius - USEPA, Region II
Mr. John Krajewski - NYSDEC, Buffalo
Ms. Colleen Gerwitz - NYSERDA, West Valley
Ms. Laurene Krieger - WVNS, West Valley

New York State Department of Environmental Conservation
270 Michigan Avenue, Buffalo, New York 14203-2999
(716) 851-7220

Langdon Mar
Commissioner

Recd.
Rec. Mgmt.
February 3, 1995

RW:95:0008

February 1, 1995

Ms. Elizabeth Matthews
Manager, Environmental Programs
United States Department of Energy
West Valley Project Office
P.O. Box 191
West Valley, New York 14171-0191

Dear Ms. Matthews:

Resource Conservation and Recovery Act
(RCRA)
Facility Assessment (RFA) - SWMU #36
Old Schoolhouse Septic System

The New York State Department of Environmental Conservation (DEC) and the United States Environmental Protection Agency (EPA) have completed review of your submission dated December 22, 1994.

The RFA indicates there was limited use of hazardous substances at this facility and the analytical results from the distribution box reveal only low ppb levels of four volatile organic compounds in the sediment. Metals were not detected at levels of concern. Radiological results detected levels below background.

The Visual Site Inspection detected no evidence of waste material, stained soil, stressed vegetation, or other release to the environment. During the distribution box sampling, the length of the discharge pipe was exposed from the building to the distribution box and displayed no signs of leakage. Therefore, a determination of no further action is made for Old Schoolhouse Septic System SWMU #36.

Any questions regarding this determination should be directed to Mr. John Krajewski of the DEC Buffalo office (716/851-7220) or Mr. John Nevius, P.E., of EPA Region II office in New York City (212/264-9578).

Very truly yours,

FOR
Timothy I. DiGiulio, P.E.
Project Coordinator
Bureau of Western Hazardous Waste Programs

FOR
Andrew Bellina, P.E.
Chief
Hazardous Waste Facilities Branch
USEPA, Region II

cc: Mr. John Krajewski - NYSDEC, Buffalo
Mr. William Tetley - NYSDEC, Albany
Ms. Colleen Gerwitz - NYSERDA
Ms. Laurene Krieger - West Valley Nuclear Services
Mr. John Nevius - USEPA, Region II

New York State Department of
Environmental Conservation
270 Michigan Avenue, Buffalo, New York
14203-2999

Recd.
Rec. Mgmt.
May 23, 1995

RW:95:0026

May 22, 1995

Ms. Elizabeth Matthews
Manager, Environmental Programs
United States Department of Energy
West Valley Project Office
P.O. Box 191
West Valley, New York 14171-0191

re: Resource Conservation and Recovery Act (RCRA)
Facility Assessment for the Fire Brigade Training
Area Solid Waste Management Unit (SWMU) #27

Dear Ms. Matthews:

The New York State Department of Environmental Conservation (NYSDEC) and the United States Environmental Protection Agency (USEPA) have completed review of the document referenced above. There is no evidence of the release of hazardous wastes or constituents to the environment from this SWMU. Therefore, a determination of no further action is made for the Fire Brigade Training Area - SWMU #27.

Any questions regarding this determination should be directed to Mr. Jack Krajewski of the NYSDEC Buffalo office (716-851-7220) or Mr. John Nevius, P.E. of USEPA Region II office in New York City (212-637-4178).

Very truly yours,

FOR

Timothy I. DiGiulio, P.E.
Project Coordinator
Bureau of Western Hazardous Waste Programs

FOR

Andrew Bellina, P.E.
Chief
Hazardous Waste Facilities Branch
USEPA, Region II

cc: Mr. John Krajewski - NYSDEC, Buffalo
Mr. William Tetley - NYSDEC, Albany
Ms. Colleen Gerwitz - NYSERDA
Ms. Laurene Krieger - West Valley Nuclear Services
Mr. John Nevius - USEPA, Region II

a:SWMU27.RFA

PRINTED ON RECYCLED PAPER

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233-7252
518-457-9253 FAX 518-457-9240

E43

Michael D. Zagata
Commissioner

JAN 24 1996

Ms. Elizabeth A. Matthews
Environmental Programs Manager
U.S. Department of Energy
West Valley Project Office
P.O. Box 191
West Valley, New York 14171-0191

Dear Ms. Matthews:

RE: 3008(h) Order on Consent
Final RCRA Facility Investigation (RFI) Report Review
Nuclear Regulatory Commission-Licensed Disposal Area -Volume 2

The New York State Department of Environmental Conservation and the Environmental Protection Agency (the "Agencies") have evaluated the final ***RCRA Facility Investigation (RFI) Report, Nuclear Regulatory Commission-Licensed Disposal Area -Volume 2***, dated September 1995. The Agencies have made the following determinations and recommendations based on the contents and conclusions of the final report.

1. **The "No Further Action" Recommendation is Acceptable for the Short-term.** Based on the results of the RFI, the Agencies agree that there is no imminent threat to human health or the environment, but continued monitoring, maintenance and operation of the NDA Interceptor Trench is necessary. With this in mind, the 3008(h) Order on Consent indicates that the USEPA and NYSDEC will accommodate the DOE's efforts to coordinate and integrate the EIS process with work that may be required under this Order. Since the Environmental Impact Statement (EIS) will evaluate cleanup and closure criteria, the Agencies will review the sufficiency of the EIS, when available, as well as current monitoring information, to determine if additional activities should be performed under the 3008(h) Order.

2. **The "No Further Action" Recommendation may Not be Acceptable for the Long-term.** As discussed above, for the interim, we are in agreement with the "No Further Action" conclusion, and further monitoring and maintenance of the NDA. However, based on data included in the RFI Report, calculations indicate over 1,000,000 gallons of water may be infiltrating into the NDA on an annual basis. Although the NDA Interceptor Trench is anticipated to intercept releases associated with the weathered till, infiltration creates a continuous driving force for contamination downward into the unweathered till, and expedites migration of contaminants (leachate) towards the interceptor trench in the weathered till. Therefore, the long-term impacts of the current infiltration condition, in conjunction with the present soil cover, on contamination release and groundwater migration is an issue which needs evaluation.

DW: 96:0110
2/14/96

Cross Ref
1607:95:C

3. **Determination that Listed Hazardous Wastes were Disposed of in the NDA.**
During the 1982 and 1983 laboratory disposal campaign, records indicate laboratory chemicals, such as methylene chloride, benzene and nitrobenzene were disposed of in the NDA. All these chemicals are solvents, and thus, considering the fact that these chemicals are used for their solvent purposes, it does not matter whether they were disposed of used or unused. They would still constitute a listed waste.

4. **Schedule for Additional Piezometers to be Installed Near Interceptor Trench.**
The Agencies agree with the need for additional piezometers in the vicinity of the NDA Interceptor Trench to better evaluate its hydraulic impact. Within 60 days, submit a plan and schedule for the installation of the additional piezometers. Develop a plan which includes the protocols for measuring groundwater and sump water elevations so that the hydraulic effect of the NDA Interceptor Trench can be monitored. This may be incorporated into the Long-term Groundwater Monitoring Plan.

5. **Continue Development of Long-term Groundwater Monitoring Plan.**
As was mutually agreed upon, the Groundwater Monitoring Plan would continue to be a working document open to changes as each RFI Report is reviewed. We look forward in continuing to work with DOE to develop this long-term plan.

If you have any questions regarding this matter, please contact the DEC Project Coordinator at (518) 457-9253 or Armand Agasian, the EPA Project Coordinator, at (212) 637-4108.

Sincerely,

Timothy I. DiGiulio, P.E.
Project Coordinator
Bureau of Haz. Compliance & Land Management
Division of Solid & Hazardous Materials

for Andrew Bellina, P.E.
Chief
Hazardous Waste Facilities Branch
USEPA, Region II

cc w/att: C. Gerwitz, NYSERDA W. Valley
A. Agasian, EPA, Reg II
F. Shattuck, DEC Region 9
P. Merges, DEC Albany

New York State Department of Environmental Conservation
Division of Solid & Hazardous Materials
Bureau of Hazardous Waste Facilities
50 Wolf Road, Albany, New York 12233-7252
518-457-9236 FAX 518-457-9240

Michael D. Zagata
Commissioner

July 23, 1996

Ms. Elizabeth A. Matthews
Environmental Team Leader
U.S. Department of Energy
West Valley Project Office
P.O. Box 191
West Valley, NY 14171-0191

JUL 1996
Received
DOE-WV

Dear Ms. Matthews:

RE: 3008(h) Order on Consent
Nuclear Regulatory Commission-Licensed Disposal Area (NDA)

1. **Listed Hazardous Wastes Determination**
2. **Piezometer Installation Plan at the NDA**
3. **Associated NDA SWMUs**

The New York State Department of Environmental Conservation (NYSDEC) and the Environmental Protection Agency (USEPA) have evaluated your March 8, 1996 letter and revisions to the final "*RCRA Facility Investigation (RFI) Report, Nuclear Regulatory Commission-Licensed Disposal Area -Volume 2,*"; reviewed the draft "*NDA Piezometer Installation Plan,*" (attached to your March 20, 1996 letter); and, provided clarification of "*no further action*" for individual Solid Waste Management Units (SWMUs) located at the NDA.

1. **Inconclusive evidence to determine that listed hazardous wastes were disposed of in the NDA.** Based on initial information supplied by the USDOE, the Agencies determined that listed hazardous wastes were disposed of in the NDA. [Letter dated January 24, 1996, T. I. DiGiulio and A. Bellina to E. A. Matthews]. Based upon DOE's March 8, 1996 letter and revised NDA RFI text, we concur that insufficient evidence exists to support a determination that the disposal of listed hazardous wastes occurred at the NDA. Therefore, groundwater contaminated with leachate would not have to be managed as a hazardous waste. However, monitoring for constituents of concern will continue as part of the groundwater monitoring plan.

2. **Schedule and plan for additional piezometers approved.** The Agencies concur with the plan for installing three additional piezometers in the vicinity of the NDA interceptor trench to better evaluate its hydraulic impact. The plan and schedule associated with installation of the piezometers are acceptable.

1607:95:07

3. "No Further Action" is necessary for the SWMUs located within the NDA super SWMU . Based on the results of the RFI, the Agencies agree that no action will be necessary for the following SWMUs:

1. NDA Hardstand
2. Interim Waste Storage Area
3. Lagoon 2 Transfer Line
4. NDA Liquid Pretreat System

If you have any questions regarding this matter, please contact the DEC Project Coordinator at (518) 457-9253 or Mr. James Reidy of the USEPA at (212) 637-4172.

Sincerely,

Timothy I. DiGiulio, P.E.
Project Coordinator
Bureau of Hazardous Waste Facilities
Division of Solid & Hazardous Materials

for Andrew Bellina, P.E.
Chief
Hazardous Waste Facilities Branch
USEPA, Region II

cc: C. Gerwitz, NYSERDA W. Valley
J. Reidy, EPA, Reg II
F. Shattuck, DEC Region 9
P. Merges, DEC Albany

Division of Solid & Hazardous Materials
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Michael D. Zagata
Commissioner

July 30, 1996

Ms. Elizabeth A. Matthews
Environmental Team Leader
U.S. Department of Energy
West Valley Project Office
P.O. Box 191
West Valley, New York 14171-0191

AUG 1996
Received
DOE-WV

Dear Ms. Matthews:

RE: 3008(h) Order on Consent
RCRA Facility Investigation (RFI) - Report Approval
Low-level Waste Storage Area (LLWSA) -Volume 6

The New York State Department of Environmental Conservation (DEC) and the Environmental Protection Agency (EPA) have completed review of the *RCRA Facility Investigation (RFI) Report, Low-level Waste Storage Area (LLWSA) -Volume 6*, dated September 1995. Based on that review, the Agencies concur with the conclusions and recommendations in the report.

Therefore, continued groundwater monitoring required by the RCRA Groundwater Monitoring Plan, in conjunction with the continued management and inspections of storage areas is sufficient. No further action is necessary.

If you have any questions regarding this matter, please contact the DEC Project Coordinator at (518) 457-9253 or Mr. James Reidy of the USEPA at (212) 637-4172.

Sincerely,

Timothy I. DiGiulio, P.E.
Project Coordinator
Bureau of Haz. Waste Facilities
Division of Solid and Haz. Materials

for

Raymond Basso
Chief
RCRA Programs Branch
Environmental Planning & Protection Division
USEPA, Region II

cc w/att: C. Gerwitz, NYSERDA W. Valley
J. Reidy, USEPA, Reg II

0640:95:C

New York State Department of Environmental Conservation
Division of Solid & Hazardous Materials
Bureau of Hazardous Waste Facilities
50 Wolf Road, Albany, New York 12233-7252
518-457-9253 FAX 518-457-9240

Received
AUG

AUG 2 7 1996

Michael D. Zagata
Commissioner

Ms. Elizabeth A. Matthews
Environmental Team Leader
U.S. Department of Energy
West Valley Project Office
P.O. Box 191
West Valley, New York 14171-0191

Dear Ms. Matthews:

RE: 3008(h) Order on Consent
RCRA Facility Investigation (RFI) Report Review and Comments
Construction and Demolition Debris Landfill (CDDL) -Volume 3

The New York State Department of Environmental Conservation (DEC) and the Environmental Protection Agency (EPA) have evaluated the response to comments and text changes dated February 29, 1996 and April 30, 1996. Based on this evaluation, the final *RCRA Facility Investigation (RFI) Report, Construction and Demolition Debris Landfill (CDDL)* -Volume 3, dated April 1996 is acceptable.

Summarized below, are items included in the report's conclusions and recommendations for the continued long-term monitoring and maintenance necessary for this unit:

1. **Two additional rounds for metals in groundwater:** The conclusion indicated that there is no impact from the CDDL for metals (since natural occurring metal at this site vary greatly). However, as additional justification to the conclusion, two additional rounds of groundwater sampling for metals to support statistical evaluation have been collected. By October 30, 1996, submit a statistical analysis of this data to verify that this sampling supports the original conclusion.

2. **Additional sampling location:** To supplement the existing groundwater monitoring network for this unit, it was determined that a groundwater seep would be utilized. A survey of the groundwater seeps in the area has been completed and it was determined that the seep designated as SP-12 will be utilized as part of the groundwater monitoring program. This seep will be sampled in September (4th quarter 1996). A modification to the groundwater monitoring plan, which includes sampling location, constituents and frequencies, should be submitted by September 30, 1996.

3. **SOP Modifications:** Inspections and maintenance are performed at the CDDL in accordance with Standard Operating Procedure (SOP) 40-05, presently being modified to include leachate sampling and analysis, should a leachate outbreak occur. Please modify the groundwater monitoring plan to reference this SOP. Submit the revised SOP and revised pages to the groundwater monitoring plan to the Agencies by September 30, 1996.

If you have any questions regarding this matter, please contact the DEC Project Coordinator at (518) 457-9253 or Mr. Brian Quinn of the USEPA at (212) 637-3909.

Sincerely,

Timothy I. DiGiulio, P.E.
Project Coordinator
Bureau of Haz. Waste Facilities
Division of Solid and Haz. Materials

for Raymond Basso
Chief
RCRA Programs Branch
Environmental Planning & Protection Division
USEPA, Region II

cc: C. Gerwitz, NYSERDA W. Valley
B. Quinn, USEPA, Reg II

New York State Department of Environmental Conservation
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NOV 1996
Received
DOE-WV

Michael D. Zagata
Commissioner

November 4, 1996

Ms. Elizabeth A. Lowes
Environmental Team Leader
U.S. Department of Energy
West Valley Project Office
P.O. Box 191
West Valley, New York 14171-0191

Dear Ms. Lowes:

RE: 3008(h) Order on Consent
RCRA Facility Investigation (RFI) Report Approval
Miscellaneous Small Units (MSU) -Volume 5

The New York State Department of Environmental Conservation (DEC) and the Environmental Protection Agency (EPA) have evaluated the comment and response package attached to your October 1, 1996 letter (comments dated 9/13/96, page revisions Rev. 0, Draft A). Based on this evaluation, the final *RCRA Facility Investigation (RFI) Report, Miscellaneous Small Units (MSU)* - Volume 5, Rev. 0, Draft A, is acceptable.

Based on the results of the RFI, the agencies concur with the conclusions and recommendations of the report. Therefore, continued groundwater monitoring required by the WVDP Groundwater Monitoring Plan is sufficient. No further action is necessary for this unit.

If you have any questions regarding this matter, please contact the DEC Project Coordinator at (518) 457-9253 or Mr. Brian Quinn, EPA Project Coordinator at (212) 637-3909.

Sincerely,

Timothy I. DiGiulio, P.E.
Project Coordinator
Bureau of Haz. Waste Facilities
Division of Solid and Haz. Materials

for Raymond Basso
Chief
RCRA Programs Branch
Environmental Planning & Protection Division
USEPA, Region II

cc: C. Gerwitz, NYSERDA W. Valley
B. Quinn, USEPA, Reg II
J. Krajewski, Region 9

439606
1528:95:

New York State Department of Environmental Conservation
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Michael D. Zagata
Commissioner

Ms. Elizabeth A. Lowes
Environmental Team Leader
U.S. Department of Energy
West Valley Project Office
P.O. Box 191
West Valley, New York 14171-0191

November 22, 1996

Dear Ms. Lowes:

RE: 3008(h) Order on Consent
RCRA Facility Investigation (RFI) - Report Approval
Chemical Process Cell Waste Storage Area - Volume 7

The New York State Department of Environmental Conservation (DEC) and the Environmental Protection Agency (EPA) have completed review of the *RCRA Facility Investigation (RFI) Report, Chemical Process Cell Waste Storage Area -Volume 7*, dated October 1995. Based on that review, the Agencies concur with the conclusions and recommendations in the report.

Therefore, the only further actions necessary for this unit are continued groundwater monitoring required by the WVDP Groundwater Monitoring Plan, in conjunction with the continued management and inspection of the storage area.

If you have any questions regarding this matter, please contact the DEC Project Coordinator at (518) 457-9253 or Mr. Brian Quinn, EPA Project Coordinator at (212) 637-3909.

Sincerely,

Timothy I. DiGiulio, P.E.
Project Coordinator
Bureau of Haz. Waste Facilities
Division of Solid and Haz. Materials

for Raymond Basso
Chief
RCRA Programs Branch
Environmental Planning & Protection Division
USEPA, Region II

cc: C. Gerwitz, NYSERDA W. Valley
B. Quinn, USEPA, Reg II
J. Krajewski, Region 9
R. Steiner, WVNS
P. Merges

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M. Wright	WV-207

Also:

D. Kennedy	WV-AA13
R. Steiner	AOC-09

* w/attachment

Recd. Rec. Mgmt. November 27, 1996

RW:96:0049

New York State Department of Environmental Conservation
Division of Solid & Hazardous Materials
Bureau of Hazardous Waste Facilities
Wolf Road, Albany, New York 12233-7252
457-9253 FAX 518-457-9240

Michael D. Zagata
Commissioner

November 22, 1996

Ms. Elizabeth A. Lowes
Environmental Team Leader
U.S. Department of Energy
West Valley Project Office
P.O. Box 191
West Valley, New York 14171-0191

Dear Ms. Lowes:

RE: 3008(h) Order on Consent
RCRA Facility Investigation (RFI) Report Approval
Low-Level Waste Treatment Facility -Volume 4

The New York State Department of Environmental Conservation (DEC) and the Environmental Protection Agency (EPA) have evaluated the comment and response package attached to your June 20, 1996 letter (comments dated 5/31/96, page revisions Rev. 0). Based on this evaluation, the final *RCRA Facility Investigation (RFI) Report, Low-Level Waste Treatment Facility* -Volume 4, Rev. 0, is acceptable.

Summarized below, are items included in the comment response package and report's conclusions and recommendations for the continued long-term monitoring/investigation necessary for this unit:

1. An investigation into the source of elevated nickel and chromium will be discussed as part of the comment response package prepared to address the Agency comments on the WVDP Groundwater Monitoring Plan.

2. Continued groundwater monitoring for mercury will be conducted at wells 111 and 86-05 as part of the expanded characterization.

3. Continued groundwater monitoring downgradient of Lagoon 1 and 2, which includes wells 8605 and 111 for Appendix 33 VOCs, metals and SVOCs and well 110 for VOCs on an annual basis.

4. Well 103 shall be sampled quarterly for radiological indicator parameters. Expanded parameters may be considered based on observed changes in radiological indicators in that well.

If you have any questions regarding this matter, please contact the DEC Project Coordinator at (518) 457-9253 or Mr. Brian Quinn of the USEPA at (212) 637-3909.

Sincerely,

Timothy I. DiGiulio, P.E.
Project Coordinator
Bureau of Haz. Waste Facilities
Division of Solid and Haz. Materials

for Raymond Basso
Chief
RCRA Programs Branch
Environmental Planning & Protection Division
USEPA, Region II

cc : C. Gerwitz, NYSERDA W. Valley
B. Quinn, USEPA, Reg II
J. Krajewski, Region 9
R. Steiner, WVNS
P. Merges

New York State Department of Environmental Conservation
270 Michigan Avenue, Buffalo, New York 14203-2999
(716) 851-7220

Michael D. Zagata
Commissioner

December 16, 1996

Ms. Elizabeth Lowes
Environmental Team Leader
U.S. Department of Energy
West Valley Project Office
P.O. Box 191
West Valley, NY 14171-0191

DEC 1996
Received
DOE-WV

Dear Ms. Lowes:

RE: RCRA 3008(h) Order on Consent
RCRA Facility Assessment (RFA)
Product Storage Area Solid Waste Management Area (SWMU)

The New York State Department of Environmental Conservation (DEC) and United States Environmental Protection Agency have completed review of the RCRA Facility Assessment for the Product Storage Area (SWMU #42) dated May 1995.

Review of the RFA revealed no existing sources of hazardous substances for release to the environment. No evidence was found of past hazardous substance releases nor any impacts to the environment. Results of the Visual Site Inspection, Sampling Visit and the RCRA Facility Investigation, in particular Volume 5 - Miscellaneous Small Units and Volume 10 - Liquid Waste Treatment System, were also considered in evaluating conditions in the Product Storage Area. Based on this review, a determination of no further action is made for the Product Storage Area. This determination is subject to review if information is discovered in the future indicating conditions contrary to those under which this determination was made.

Any questions regarding this determination should be directed to Mr. John Krajewski of the DEC Buffalo office at 716-851-7220 or Mr. Brian Quinn, EPA Project Coordinator at 212-637-3909.

Sincerely,

for Timothy I. DiGiulio, P.E.
Project Coordinator
Bureau of Hazardous Waste Facilities
Division of Solid & Hazardous Materials

for Raymond Basso
Chief
RCRA Programs Branch
Environmental Planning & Protection Division
USEPA, Region II

44299
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New York State Department of Environmental Conservation
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Bureau of Hazardous Waste Facilities
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John P. Cahill
Acting Commissioner

February 11, 1997

Ms. Elizabeth A. Lowes
Environmental Team Leader
U.S. Department of Energy
West Valley Project Office
P.O. Box 191
West Valley, New York 14171-0191

Dear Ms. Lowes:

RE: 3008(h) Order on Consent
RCRA Facility Investigation (RFI) Report Approval
High-level Waste Storage and Processing Area -Volume 8

The New York State Department of Environmental Conservation (DEC) and the Environmental Protection Agency (EPA) have reviewed the draft *RCRA Facility Investigation (RFI) Report, High-level Waste Storage and Processing Area* -Volume 8 of 10, Rev. 0, Draft C, dated December 1995. Based on this review, the report is acceptable.

Summarized below, are items included in the report's conclusions and recommendations for the continued long-term monitoring and closure necessary for this unit:

1. Continued groundwater monitoring at downgradient monitoring wells 406, 408, 8607 and 8609 for the following parameters:

   a. Radiological indicator parameters on a semi-annual basis.

   b. Appendix 33 VOCs on an annual basis.

2. Perform RCRA closure of the tank system and ancillary equipment pursuant to 6 NYCRR Subpart 373-3 Interim Status Standards.

3. Additional rounds of groundwater sampling and analysis have been performed for RCRA metals. Based on this data, submit a supplemental statistical evaluation to support the conclusion and recommendations.

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If you have any questions regarding this matter, please contact the DEC Project Coordinator at (518) 457-9253 or Mr. Brian Quinn, EPA Project Coordinator at (212) 637-3909.

Sincerely,

Timothy I. DiGiulio, P.E.
Project Coordinator
Bureau of Hazardous Waste Facilities
Division of Solid & Hazardous Materials

for Raymond Basso
Chief
RCRA Programs Branch
Division of Environmental Planning & Protection
USEPA, Region II

cc : C. Gerwitz, NYSERDA W. Valley
R. Steiner, WVNS
B. Quinn, USEPA, Reg II
J. Krajewski, Region 9
P. Merges

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Recd. - Rec. Mgmt.
RW:97:0012
March 12, 1997

John P. Cahill
Acting Commissioner

March 6, 1997

Ms. Elizabeth A. Lowes
Environmental Team Leader
U.S. Department of Energy
West Valley Project Office
P.O. Box 191
West Valley, New York 14171-0191

Dear Ms. Lowes:

RE: 3008(h) Order on Consent
RCRA Facility Investigation (RFI) - Report Approval
Liquid Waste Treatment System - Volume 10

The New York State Department of Environmental Conservation (DEC) and the Environmental Protection Agency (EPA) have completed review of the *RCRA Facility Investigation (RFI) Report, Liquid Waste Treatment System - Volume 10 of 10*, Rev.0, Draft B, dated March 1996. Based on that review, the Agencies concur with the conclusions and recommendations in the report.

Therefore, the only further actions necessary for this unit are continued groundwater monitoring required by the WVDP Groundwater Monitoring Plan. The monitoring requirements are subject to modification pending the results of the field project to evaluate nickel and chromium levels in groundwater.

Since Volume 10 is the last of the RFI reports the groundwater monitoring requirements in each volume should be compared to those listed in the WVDP Groundwater Monitoring Plan, Revision 2 dated 12/5/96. Any deviations should be corrected by revisions in the corresponding RFI volume.

If you have any questions regarding this matter, please contact the DEC Project Coordinator at (518) 457-9253 or Mr. Brian Quinn, EPA Project Coordinator at (212) 637-3909.

Sincerely,

Timothy I. DiGiulio, P.E.
Project Coordinator
Bureau of Hazardous Waste Facilities
Division of Solid & Hazardous Materials

Raymond Basso
Chief
RCRA Programs Branch
Division of Environmental Planning & Protection
USEPA, Region II

cc : C. Gerwitz, NYSERDA W. Valley
B. Quinn, USEPA, Reg II
J. Krajewski, Region 9
R. Steiner, WVNS
P. Merges

R. E. Lawrence	AOC-05
C. L. Repp	AOC-09
R. E. Steiner	AOC-09

New York State Department of Environmental Conservation
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Bureau of Hazardous Waste Facilities
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John P. Cahill
Acting Commissioner

June 16, 1997

Ms. Elizabeth A. Lowes
Environmental Team Leader
U.S. Department of Energy
West Valley Project Office
West Valley, New York 14171-0191

Dear Ms. Lowes:

Re: 3008(h) Order on Consent
RCRA Facility Investigation (RFI) - Report Approval
Maintenance Shop Leach Field - Volume 9

The New York State Department of Environmental Conservation (DEC) and the United States Environmental Protection Agency (EPA) have reviewed the "Comment Response Package" and "Page Changes for the Draft Report" dated May 2, 1997. The response adequately addresses the DEC/EPA joint comments included in the letter dated February 25, 1997. Therefore, the Agencies concur with the conclusions and recommendations of the Report.

As part of that recommendation, the following activities will take place:

1. Contaminated sediment and water will be removed from septic tank #1 and #3 (tank #2 was previously closed) this summer and closed out in accordance with the relevant regulations. Provide the Agencies with a schedule of implementation and details on the closure activities within thirty (30) days from the date of this letter.

2. Continue to monitor wells 501 and 502 as required by the West Valley Demonstration Project Groundwater Monitoring Plan.

If you have any questions regarding this matter, please contact the DEC Project Coordinator at (518) 457-9253 or Mr. Brian Quinn, EPA Project Coordinator at (212) 637-3909.

Sincerely,

Timothy I. DiGiulio, P.E.
Project Coordinator
Bureau of Hazardous Waste Facilities
Division of Solid & Hazardous Materials

for Raymond Basso
Chief
RCRA Programs Branch
USEPA, Region 2

:: C. Gerwitz, NYSERDA
B. Quinn, USEPA, Region 2
R. Steiner, WVNS
J. Krajewski, Region 9
P. Merges

New York State Department of Environmental Conservation
270 Michigan Avenue, Buffalo, New York 14203-2999
(716) 851-7220

John P. Cahill
Commissioner

Recd.- Rec. Mgmt.
RW:97:0031
August 6, 1997

July 31, 1997

Ms. Elizabeth Lowes
Environmental Team Leader
U.S. Department of Energy
West Valley Project Office
PO Box 191
West Valley, NY 14171-0191

Dear Ms. Lowes:

Re: Resource Conservation and Recovery Act 3008(h) *Administrative Order on Consent* [Docket No.II RCRA-3008(h) 92-0202] Supplemental Solid Waste Management Unit (SWMU) #29 - Industrial Waste Storage Area (IWSA)

The New York State Department of Environmental Conservation (DEC) and the United States Environmental Protection Agency (EPA) have completed an evaluation of the documents and data pertaining to SWMU #29 - Industrial Waste Storage Area (IWSA).

No sources of hazardous substances were identified nor was there evidence of any releases of hazardous substances to the environment. It follows that no negative impacts on the environment from the IWSA were identified.

Based on these results, a determination of no further action is made for the Industrial Waste Storage Area SWMU #29. This determination is subject to review should evidence be discovered in the future indicating conditions contrary to those that are now thought to exist.

If you have any questions regarding this letter, please contact Mr. John Krajewski of the NYSDEC at 716-851-7278.

Very truly yours,

John Krajewski for

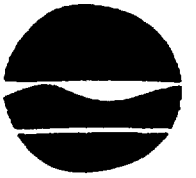
Timothy I. DiGiulio, P.E.
Project Coordinator, Bureau of
Hazardous Waste Facilities Division
Of Solid and Hazardous Materials

John Krajewski for

Raymond Basso, Chief
RCRA Programs Branch
USEPA, Region 2

cc: C. Gerwitz, NYSERDA
B. Quinn, USEPA Region 2
R. Steiner, WVNS
J. Krajewski, DEC Region 9
P. Merges, DEC Albany

New York State Department of Environmental Conservation
270 Michigan Avenue, Buffalo, New York 14203-2999
(716) 851-7220



John P. Cahill
Commissioner

August 26, 1997

Ms. Elizabeth Lowes
Environmental Team Leader
U.S. Department of Energy
West Valley Project Office
P.O. Box 191
West Valley, New York 14171-0191

Dear Ms. Lowes:

Resource Conservation and Recovery Act 3008(h)
Administrative Order on Consent (Docket No. II RCRA-3008(h) 92-0202) Supplemental Solid Waste Management Unit (SWMU) #31- NDA Trench Soil Container Area

The New York State Department of Environmental Conservation (NYSDEC) and the United States Environmental Protection Agency (EPA) have completed an evaluation of the documents and data concerning SWMU #31 - the NDA Trench Soil Container Area. Based on the results of this evaluation the agencies are now prepared to determine further action regarding SWMU #31.

Hazardous substances were not detected in the soils in the roll-offs and in only trace amounts in areas adjacent to the soil source area. Metals were not detected at levels of concern. Radiological test results indicate levels only slightly above background in the soils contained in the roll-offs. No impacts on soils or groundwater were detected in the storage area.

Therefore, a determination of no further action is made for SWMU #31 - NDA Trench Soil Container Area. This determination is subject to review should evidence be discovered indicating conditions contrary to those evaluated by the agencies in making this determination.

Any questions regarding this determination should be directed to Mr. John Krajewski of the NYSDEC, Buffalo office at (716)851-7220.

Very Truly Yours,

Timothy I. DiGiulio
NYSDEC Project Coordinator
Bureau of Hazardous Waste Facilities
Division of Solid/Hazardous Materials

Raymond Basso, Chief
RCRA Programs Branch
USEPA, Region II

JK:ma

cc: J. Krajewski - NYSDEC, Region 9
P. Merges - NYSDEC, Albany
C. Gerwitz - NYSERDA
B. Quinn - USEPA, Region II
R. Steiner - WVNS

New York State Department of Environmental Conservation
270 Michigan Avenue, Buffalo, New York 14203-2999
'16) 851-7220

John P. Cahill
Commissioner

December 15, 1997

Ms. Elizabeth Lowes
Environmental Team Leader
US Department of Energy
West Valley Project Office
PO Box 191
West Valley, New York 14171-0191

Dear Ms. Lowes:

Re: Resource Conservation and Recovery Act 3008 (h) Administrative Order on Consent (Docket No. #11 RCRA - 3008(h) 92-0202) Supplemental Solid Waste Management Unit (SWMU) #44 - Fuel Receiving and Storage Area HIC and Surepak TM Staging Area

The New York State Department of Environmental Conservation (NYSDEC) and the United States Environmental Protection Agency (USEPA) have completed an evaluation of the documents and data pertaining to SWMU #44 - Fuel Receiving and Storage Area HIC and Surepak TM Staging Area. Based on the results of this evaluation the agencies are now prepared to determine further action regarding SWMU #44.

The combined HIC and Surepak TM container provide primary and secondary containment for the hazardous waste in question. There have been no reported releases hazardous waste, nor is there field evidence of any releases from the container. There is no additional hazardous waste being generated for this SWMU and there is a plan for disposition of this waste in the WVDP Federal Facility Compliance Act Site Treatment Plan.

53327

Therefore a determination of no further action is made for SWMU #44 - Fuel Receiving and Storage Area HIC and Surepak TM Staging Area. If any additional actual or suspected hazardous waste is stored in this area the agencies must be notified. They must also be notified, in advance, when the existing hazardous waste will be disposed. The notification should include the details of the disposal plan. This determination is subject to review should evidence be discovered indicating conditions contrary to those evaluated by the agencies in making this determination.

Any questions regarding this determination should be directed to Mr. Jack Krajewski of the NYSDEC, Buffalo office at (716) 851-7220.

Very Truly Yours,

Jack Krajewski for

Timothy I DiGiulio
NYSDEC Project Coordinator

Jack Krajewski for

Raymond Basso, Chief
RCRA Program Branch ,EPA

cc: J. Krajewski - NYSDEC, Region 9
P. Merges - NYSDEC, Albany
C. Gerwitz - NYSERDA, West Valley
R. Steiner, WVNS, West Valley
B. Quinn, USEPA, Region II, NY

New York State Department of Environmental Conservation
Division of Solid & Hazardous Materials
Bureau of Hazardous Waste Facilities
50 Wolf Road, Albany, New York 12233-7252
518-457-9253 FAX 518-457-9240

John P. Cahill
Commissioner

January 22, 1998

Ms. Elizabeth A. Lowes
Environmental Team Leader
U.S. Department of Energy
West Valley Project Office
P.O. Box 191
West Valley, New York 14171-0191

Recd.- Rec. Mgmt.
RW:98:0016
February 10, 1998

Dear Ms. Lowes:

RE: 3008(h) Order on Consent - Sealed Rooms

The New York State Department of Environmental Conservation (DEC) and the U.S. Environmental Protection Agency (EPA) have completed evaluating data associated with the sealed rooms located in the process building. Many of these rooms are restricted from entering due to high radiation levels, thus requiring the Agencies to rely on historical information and data collected as part of the RCRA Facility Investigation to evaluate the potential impacts these units may have.

Review of soil sampling data and routine groundwater monitoring taken in the vicinity of the process building support the conclusion that the sealed rooms do not pose a significant threat from the release of hazardous waste or hazardous constituents. To date, samples taken from groundwater monitoring wells down gradient from the process building have not shown elevated hazardous waste constituents. It is anticipated however, that current evaluation and the present pump and treatment program will continue in this area for elevated levels of gross beta in groundwater, which is not affiliated with this Order on Consent.

Therefore, the only further actions necessary at this time for the Sealed Rooms is continued groundwater monitoring required pursuant to the West Valley Demonstration Project's Groundwater Monitoring Plan.

If you have any questions regarding this matter, please contact the DEC Project Coordinator at (518) 457-9253 or Mr. Brian Quinn, EPA Project Coordinator at (212) 637-3909.

Sincerely,

Timothy I. DiGiulio, P.E.
Project Coordinator

for James Reidy, P.E.
RCRA Programs Branch
Division of Environmental Planning & Protection
USEPA, Region II

cc : C. Gerwitz, NYSERDA W. Valley
B. Quinn, USEPA, Reg II
J. Krajewski, Region 9
R. Steiner, WVNS

New York State Department of Environmental Conservation
270 Michigan Avenue, Buffalo, New York 14203-2999
(716) 851-7220

John P. Cahill
Commissioner

January 29, 1998

Ms. Elizabeth Lowes
Environmental Team Leader
U.S. Department of Energy
West Valley Project Office
P.O. Box 191
West Valley, New York 14171-0191

Dear Ms. Lowes:

Resource Conservation and Recovery Act 3008 (h) Administrative Order on Consent (Docket No. #11 RCRA - 3008 (h) 92-0202) Supplemental Solid Waste Management Unit (SWMU) #37 Contact Size Reduction Facility

The New York State Department of Environmental Conservation (NYSDEC) and the United States Environmental Protection Agency (USEPA) have completed an evaluation of the documents and data pertaining to SWMU #37 Contact Size Reduction Facility (CSRF). Based on the results of this evaluation, the agencies are now prepared to determine further action regarding SWMU #37.

Currently, no hazardous waste is treated, stored or disposed of in the CSRF. The only activity taking place is waste sampling for characterization and re-packing. This activity is required for waste covered under the Federal and State Facilities Compliance Agreement and is scheduled for completion by April 1999. The CSRF also has secondary and tertiary containment

There are no identifiable environmental impacts from activities in the CSRF. This is base on review of information and analytical data generated during the site RCRA Facility Investigatio and Post-RFI ground water monitoring.

Therefore, a determination of no further action is made for SWMU #37 - Contact Size Reduction Facility. This determination is subject to review should evidence be discovered indicating conditions contrary to those evaluated by the agencies in making this determination.

Any questions regarding this determination should be directed to Mr. Jack Krajewski of the NYSDEC, Buffalo office at (716) 851-7220.

Very truly yours,

for Timothy I. DiGiulio
NYSDEC Project Coordinator

for James Reidy, P.E.
RCRA Program Branch, EPA

cc: Mr. Jack Krajewski, NYSDEC, Region 9
Mr. Paul Merges, NYSDEC, Albany
Ms. Colleen Gerwitz, NYSERDA, West Valley
~~Mr. Robert Steiner,~~ WVNS, West Valley
Mr. Brian Quinn, USEPA, Region II, New York

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270 Michigan Avenue, Buffalo, New York 14203-2999
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John P. Cahill
Commissioner

Recd.- Rec. Mgmt.
RW:98:0021
March 10, 1998

March 9, 1998

Ms. Elizabeth Lowes
Environmental Team Leader
U.S. Department of Energy
West Valley Project Office
P.O. Box 191
West Valley, New York 14171-0191

Dear Ms. Lowes:

Resource Conservation and Recovery Act 3008 (h) Administrative Order on Consent (Docket No. #11 RCRA - 3008 (h) 92-0202) Supplemental Solid Waste Management Unit (SWMU) #41 Designated Roadways

The New York State Department of Environmental Conservation (NYSDEC) and the United States Environmental Protection Agency (USEPA) have completed an evaluation of th documents and data pertaining to SWMU #41 Designated Roadways. Based on the results o this evaluation, the agencies are now prepared to determine whether further action is necessa regarding SWMU #41.

There are no identifiable environmental impacts from past activities in the Designated Roadways. This is based on review of information and analytical data generated during the site RCRA Facility Investigation, Post-RFI ground water monitoring and the Preliminary Review.

Therefore, a determination of no further action is made for SWMU #41 - Designated Roadways. This determination is subject to review should evidence be discovered indicating conditions contrary to those evaluated by the agencies in making this determination.

Any questions regarding this determination should be directed to Mr. Jack Krajewski of the NYSDEC, Buffalo office at (716) 851-7220.

Very truly yours,

Jack Krajewski FOR

Timothy I. DiGiulio
NYSDEC Project Coordinator

Jack Krajewski FOR

James Reidy, P.E.
RCRA Program Branch, EPA

cc: Mr. Jack Krajewski, NYSDEC, Region 9
Mr. Paul Merges, NYSDEC, Albany
Ms. Colleen Gerwitz, NYSERDA, West Valley
~~Mr. Robert Steines,~~ WVNS, West Valley
Mr. Brian Quinn, USEPA, Region II, New York

SECTION F

HAZARD PREVENTION PROCEDURES

INTRODUCTION

This section describes the WVDP's compliance with and implementation of site procedures that prevent risks to personnel and the environment from hazardous and mixed waste treatment and storage activities. The following discussion addresses site security procedures, hazardous and mixed waste inspection protocols, preparedness and prevention requirements, structures and equipment supporting preventive procedures, and methods employed to prevent reactions of ignitable, reactive or incompatible wastes.

F-1 SECURITY

F-1A Security Procedures and Equipment

This section provides information concerning security required by 6 NYCRR §373-1.5(a)(2)(iv) for permit applications and demonstrates compliance with the general facility standards in 6 NYCRR §373-2.2(f). The WVDP is a secure facility owned by NYSERDA and operated by the DOE. Security practices at the WVDP are designed to prevent unauthorized and uncontrolled access to the site and to prevent unauthorized human contact with hazardous and mixed wastes and waste management units.

1. 24-Hour Surveillance System

The WVDP premises is under 24-hour surveillance 365 days per year by security officers and television monitors. Surveillance includes frequent random daily patrols of the perimeter fence, guards at access gates, and roving interior plant patrols. Additionally, these facilities are under camera surveillance. Patrol officers check locks on buildings used to manage hazardous and/or mixed wastes.

2. Barriers

To comply with 6 NYCRR §§373-2.2(f)(1) and (2)(ii), a 7-foot-high, galvanized chain-link fence topped with three strands of barbed wire surrounds the approximately 164-acre (66-hectare) project area of the WVDP and prevents accidental and unauthorized access. Only two gates are used for routine access, and both are controlled-entry points accessible only by those either having card access or under escort by authorized personnel. Access cards are photo badges issued only to site employees, contractors, or other authorized persons. Both gates are under 24-hour surveillance by armed security personnel. Other gates in the fence are locked except when in use. Use of these gates requires permission of the Security Manager. Gates are checked several times daily to ensure that they are closed and locked.

The perimeter fence is inspected weekly in the event that the fence is damaged, Security notifies maintenance of the need for repairs. WVDP procedures require that repairs to the perimeter fence are to be made immediately as a top priority.

Access during normal business hours to the container storage areas listed below is by permission of the waste management operations and/or container storage area manager (i.e., A&PC Laboratory manager), as appropriate:

- CPC-WSA
- CSRF
- HIC Storage Area
- HWSLs #1, #2, #3, and #4
- IWSF
- LSB
- LSA #1
- LSA #2 Hardstand
- LSA #3
- LSA #4
- Vitrification Cell, HLWIS Facility, and A&PC Hot Cells (i.e., Vitrification Facility)

Access to these storage units after business hours is limited by locked doors, as appropriate, and/or warning signs indicating that entry is restricted. Unescorted access to these areas requires the area owner's approval, specialized training, and personal protective equipment appropriate to the area (e.g., dosimetry).

Access to the following mixed waste tank systems requires authorization from the facility manager as well as specialized training, dosimetry, and personal protective equipment:

- LWTS
- CSS
- HLW Tank Farm, including tanks 8D-1, 8D-2, 8D-3, and 8D-4, and the STS

The tanks in these tank treatment and storage systems are individually identified and discussed in Section D. Tanks 8D-1 and 8D-2 have been isolated and the STS has been deactivated pending hazardous waste partial unit closure plan approval.

The RHWF, a mixed waste containment building, may be operated 24 hours per day, 7 days per week. Access during operating hours requires authorization by the RHWF manager. After-hours access is restricted to authorized personnel by locked doors and an intrusion alarm. Security of RHWF doors is routinely checked by security patrols.

The Vitrification Facility and the vitrification treatment system is shutdown and being dismantled. Access restrictions for this unit are discussed in the Vitrification Facility closure plan (WVDP-153) presented in Section I.

3. Warning Signs

Warning signs pursuant to 6 NYCRR §373-2.2(f)(3) are posted at 150-ft (45.8-m) or shorter intervals along the entire WVDP perimeter fence. The signs are clearly visible from 25 ft (7.5 m). Each sign states:

NO TRESPASSING
By Order of the United States Department of Energy

and contains text explaining the laws and penalties for unauthorized entry. These signs are inspected on a quarterly basis.

Each hazardous/mixed waste storage unit is also marked with yellow signs indicating that hazardous and/or radioactive wastes are stored at the WVDP, as follows:

DANGER
Unauthorized Personnel Keep Out

or

Hazardous Waste Operations Exclusion Zone

or

Hazardous Waste Operations
Training Required for Entry

The facilities listed above, with the current exception of the HWSLs, handle, treat, and/or store mixed wastes and are therefore controlled-access radiological areas. The HWSLs currently store only hazardous wastes. In addition to the signage referenced in the previous paragraph, these facilities are marked by orange radiological control signs that clearly show the magenta trefoil symbol for radiation and state:

Caution Radiation Area
Dosimetry Badge Required for Entry

and

Caution
Radioactive Materials

Access to radiological areas requires additional training and personnel must wear dosimetry badges.

F-1B Waiver

No waiver of security requirements pursuant to 6 NYCRR §373-2.2(f)(1) is requested.

F-2 INSPECTION SCHEDULE

The WVDP recognizes that inspections play a critical role in preparedness for and prevention of releases of hazardous and mixed wastes. The inspection process and schedule outlined below is designed to prevent the release of hazardous wastes to the environment and threats to human health by detecting malfunctions, deterioration, operator errors, or discharges from containers, tanks and piping, and secondary containment systems.

The following container storage units are to be inspected upon initial receipt of hazardous and/or mixed waste according to the schedule provided in Table F-1 and for the criteria listed in Section F-2B(1):

- CPC-WSA
- CSRF
- HIC Storage Area
- HWSLs #1, #2, #3, and #4
- IWSF
- LSA #1
- LSA #2 Hardstand

- LSA #3
- LSA #4
- LSB
- Vitrification Cell, HLWIS Facility, and A&PC Hot Cells

The unit-specific inspections, once initially performed upon receipt of hazardous and/or mixed waste, will continue until the unit is closed in accordance with its approved unit-specific closure plan and certification of closure is approved by the NYSDEC.

The following tank systems are inspected according to the schedule provided in Table F-2 and for the criteria listed in Section F-2B(2):

- LWTS
- CSS
- HLW Tank Farm including tanks 8D-1, 8D-2, 8D-3, and 8D-4, and the STS.

Inaccessible tanks cannot be viewed or approached by personnel due to the high level of radioactivity within the tank.

The RHWF containment building is inspected according to the schedule provided in Table F-3 and for the criteria listed in Section F-2B(6). This may include monitoring of the accumulation tank in the Wash Down Collection Tank Room of the RHWF as a 90-day tank accumulation area as determined by analytical data.

Backup generators providing emergency power are periodically tested in two modes. On a monthly frequency, the diesel engines of the generators are started and run for 30 minutes while critical engine performance data is collected and recorded. On a quarterly frequency, a power outage test is performed during which the generators are engaged under operational conditions for 30 minutes before utility power is restored.

All inspections shall be carried out by the cognizant hazardous waste management unit manager or designee according to the schedule provided in Tables F-1 through F-3 and the unit-specific operating procedures. Inspection records shall be documented and maintained as specified in ECS-322, *RCRA Operating Records*.

F-2A General Inspection Requirements

All facilities will be inspected, as appropriate, for the general categories of concern discussed in the following paragraphs. Specific inspection requirements for each hazardous and mixed waste storage unit are given in Section F-2B.

Container storage units are visually inspected for container condition, integrity, and evidence of leakage; integrity of secondary containment, where appropriate; condition of the structure (if applicable), including walls, floors, and roof, electrical systems, and mechanical systems; aisle space and emergency access; container labels; warning signs; locks and barriers; availability of spill response equipment, fire control, safety, and communications equipment; and for evidence of operator errors. Specific inspection requirements for each facility are given in Section F-2B(1). These requirements apply equally to the PCB-contaminated waste storage areas in the IWSF, the LSB, and to occasional waste PCB storage in the HWSL. Container storage in the CPC-WSA is inspected remotely using a video camera. Container storage areas that are not storing mixed or hazardous wastes (i.e., have not been and are not now used for storage to date, such as LSA #1, A&PC Hot Cells, and CSRF) are not inspected.

Accessible tanks and tank systems are inspected visually for evidence of leakage from tanks, pipes, valves, and pumps; integrity of secondary containment, contents of sumps, and valves closed on sump discharges; structural integrity of tanks, tanks supports, pipes, valves, and pumps; labels and warning signs; locks and barriers, availability of spill response, fire control, safety, and communications equipment; and for evidence of operator errors. Additionally, accessible tank systems are monitored two times per day by remote level, pressure, flow, and temperature instruments during WVDP operating hours. This ensures proper operation and provides early indication of potential problems. Specific inspection requirements for each tank or tank system are given in Section F-2B(2).

Several tank systems discussed in Section D-2 are not accessible for visual inspection because of high radiation levels. These tanks are monitored remotely with level detectors, liquid level in sumps, and pressure sensors. These tank systems are also monitored two times per day by personnel during WVDP operating hours. Areas outside inaccessible tank vaults are inspected for labels and warning signs, structural integrity, lighting, and housekeeping.

The RHWF is designed to manage radioactive and mixed wastes for remote-handled inspection, size reduction, decontamination, segregation, and repackaging pending disposal. As such, the only waste-handling areas at the RHWF that are accessible for direct visual inspections are the receiving and load-out truck docks. Inspections in the waste-handling areas will be carried out by video cameras. The RHWF has been designed to provide full video coverage of inaccessible work areas.

The RHWF receiving and load-out truck docks will be inspected visually for evidence of waste release. Interior work areas not accessible due to high radioactivity will be inspected through viewing windows and by remote-controlled video cameras for evidence of leakage; integrity of secondary containment; condition of the structure, including walls and floors; mechanical systems (cranes and manipulators); warning signs; locks and barriers; and for evidence of operator errors. Accessible portions of the building, such as mechanical rooms, electrical panels, roof, doors, fire control systems, and communications and warning systems, will be visually inspected. Specific inspection requirements for the RHWF are given in Section F-2B(6).

1. Types of Problems

   a. Container Storage Facilities

      Releases from spilled or degraded containers are the primary concern at container storage facilities. Because of the relatively small size of individual containers, spills tend to be localized and fully contained within the storage unit.

      Due to high radioactivity levels, weekly inspections and monthly video documentation are used to monitor for potential releases in the CPC-WSA.

   b. Tanks and Tank Systems

      Tank systems pose the greatest hazard for large waste releases and therefore must be carefully inspected to ensure that potential problems are identified and

corrected to prevent releases. Potential problems that can occur in tank systems include corrosion of tank walls, supports, covers, and pipes; loss of seal integrity at pipe and tank flanges, in valves, and in pumps; and mechanical damage caused by outside forces, such as freezing weather or mobile equipment.

Overfilling and/or releases from improperly operated valves are also potential risks. This is particularly true for those tanks that are to be used for elementary neutralization of wastes. Inoperative or inaccurate flow controls, level controls, and level alarms are therefore potential problem areas. Operator training and familiarity with tank systems is important in minimizing operator error in system operation.

Secondary containment systems are critical elements in release control and mitigation because tank failure can result in large-volume releases. Failures of secondary containment systems, floors, dikes and berms, sumps and sump valves, expansion joint seals, and surface sealants to contain releases are potential concerns that can be addressed with adequate inspections.

c. Remote-Handled Waste Facility (Containment Building)

The primary concern for the RHWF is releases resulting from waste repackaging, size reduction, and decontamination operations. Repackaging will occur in containment rooms constructed of concrete and lined with welded stainless steel and impervious coatings. Floor drains are piped to wash water tanks in a vault beneath the floor and will contain any free liquids for proper treatment and disposition. The floor and walls of the Wash Down Collection Tank Room are lined with stainless steel to a height of 18 inches (46 cm). The remaining portions of the walls are coated with epoxy. Releases to the environment are therefore improbable. Releases will be cleaned up using remote manipulators, and any wash water will be drained to the subfloor tanks. Wash water is treated through the WVDP Liquid Waste Treatment System.

Another concern in the RHWF is the potential for spills during transfers of waste containers at loading docks associated with the Receiving Area and/or Load Out/Truck Bay. Loading docks are designed to contain the contents of a spilled container and to enable rapid cleanup and repackaging. Truck docks are covered to reduce the impact of weather, and therefore, the mingling of precipitation with wastes. Truck docks are fully accessible and inspectable.

2. Frequency of Inspection

The inspection schedules have been designed to meet the requirements of 6 NYCRR §373-2.2 with due consideration of the likelihood and rapidity of release. Inspection frequencies are presented in Tables F-1, F-2, and F-3.

Inspection schedules for various fire-suppression systems and/or barriers are implemented as outlined in WVDP-408, *Fire Protection Systems Performance Manual*.

F-2B Specific Process Inspection Requirements

1. Containers and Container Storage Facilities

Table F-1 lists the specific inspection requirements for container storage units at the WVDP. Inspection procedures for WVDP container storage units are found in the SOPs listed below, which are maintained as controlled documents and are readily accessible in electronic and hard-copy format. SOPs are evaluated annually and revised as needed to address any potential problem areas and improve the inspection process. Since the A&PC Hot Cells and CSRF have not been used for mixed waste storage, an SOP for their inspections has not been prepared. However, should mixed waste be identified for storage in either unit, an SOP for inspections will be prepared and submitted for inclusion in this permit application.

SOP NUMBER	TITLE	APPLICATION	APPENDIX
SOP 09-24	*Chemical Process Cell Waste Storage Area and LAG Storage Inspection*	CPC-WSA, HIC Storage Area, LSB, LSA #1, LSA #2 Hardstand, LSA #3, and LSA #4 Inspections	F-1
SOP 09-24	*Chemical Process Cell Waste Storage Area and LAG Storage Inspection*	HLWIS Facility	F-1
SOP 00-29	*Main Plant Surveillance Data Sheet Control*	Vitrification Cell	F-2
SOP 300-06	*Hazardous Waste Storage Facility Operations*	HWSL Inspections	F-3
SOP 300-09	*Interim Waste Storage Facility Operation*	IWSF Inspections	F-4

2. Tanks and Tank Systems Inspection

Table F-2 lists the specific inspection requirements for hazardous and mixed waste tank systems at the WVDP. Inspection procedures for WVDP tanks and tank systems are found in the SOPs listed below. SOPs are maintained as controlled documents and are readily available in electronic and hard-copy format. The SOPs are reviewed annually and updated as needed to improve tank inspection activities.

SOP SERIES	TITLE	APPLICATION	APPENDIX
SOP 00-29	*Main Plant Surveillance Data Sheet Control*	Tanks 8D-1, 8D-2, 8D-3, and 8D-4 monitoring and inspection	F-2
SOP 00-29	*Main Plant Surveillance Data Sheet Control*	CSS monitoring and inspections	F-2
SOP 00-29	*Main Plant Surveillance Data Sheet Control*	LWTS monitoring and inspections	F-2

Inaccessible tanks are sealed within concrete containment vaults that have, at a minimum, a stainless-steel pan liner and sumps with liquid detectors and liquid level indicators. Additional leak detection includes pressure monitors on some tanks. It is therefore concluded that the liquid detection and level monitoring equipment used on RCRA mixed waste tanks at WVDP is adequate to determine if a leak has occurred and if the leak is ongoing. These systems therefore comply with the tank assessment and leak detection and containment requirements of 6 NYCRR §§373-2.10(b)(2)(v)('a') and 373-2.10(d).

The inaccessible tank systems cannot be visually inspected due to the health hazards posed by high levels of radioactivity. Construction, monitoring, and inspections are therefore designed to achieve levels of protectiveness through remote monitoring equipment and sensors equivalent to those required in 6 NYCRR §373-2.10(b), (d), and (f) without exposing personnel to unacceptable levels of radioactivity.

3. Process Vents

These requirements are not applicable to WVDP hazardous or mixed waste management operations since the LWTS evaporator ("distillation operation") is subject to the 40 CFR Part 61 Clean Air Act regulations.

4. Process Equipment Emissions

These requirements are not applicable to WVDP hazardous or mixed waste management operations.

5. Tank and Container Air Emissions

WVDP mixed waste container and tank systems are exempt from air emissions requirements because they handle only radioactive and radioactive mixed wastes (see 6 NYCRR §373-2.29[a][2]).

Hazardous waste management units that do not contain radioactive materials are subject to air emissions requirements. Containers stored in the HWSLs meet air emissions requirements because they attain the Level 1 requirements by being either DOT-approved containers (e.g., DOT 17E or 17H drums; see 6 NYCRR §373-2.29[g][3][i]['a']) or because they are equipped with covers and closure devices that prevent exposure to the atmosphere pursuant to 6 NYCRR §373-2.29(g)(3)(i)('b').

6. Containment Building Inspection

Table F-3 lists the specific inspection requirements for the RHWF. SOPs are maintained as controlled documents and are readily available in electronic and hard-copy format. The SOPs are reviewed annually and updated as needed to improve inspection activities. Inspections of remote-handling work areas will be carried out by viewing windows and video cameras. Visual inspections of the receiving and load-out areas will be carried out by facility personnel. These inspection procedures are documented in SOP 313-08, *Remote-Handled Waste Facility Condition Inspections* (Appendix F-5).

F-2C Remedial Action

Corrective actions for any deficiencies noted during inspections are handled to mitigate the release of wastes to the environment and prevent harm to human health. An actual release, should one occur, will be abated and cleaned up immediately in accordance with Section G. Less immediate threats, such as the need for repairs or maintenance, are noted on inspection logs and reported to the shift supervisor. Problem items will be prioritized for maintenance and corrected on the basis of actual and potential risks, including material state (liquid, gas, or solid), material and contaminant type, contaminant toxicity, hazard type (acute or chronic), and condition of secondary containment. For mixed wastes, the risk evaluation will consider both hazardous and radioactive contaminants in the waste. Items requiring corrective actions noted on inspection logs and round sheets are tracked and documented when mitigative measures are completed. Any problems that could directly lead to a release will prompt a temporary shut down of the affected operation while the malfunctioning or degraded part is replaced. Malfunctioning parts will be replaced rather than repaired, to facilitate quick and complete return to full operations.

F-2D Inspection Logs

All routinely conducted inspections will be documented on the logs and round sheets as specified in the relevant procedure(s). Logs will be prepared and filed as specified in ECS-322, *RCRA Operating Records* and WV-733, *Management, Storage, and Retrieval of RCRA Operating Records*. Logs will be maintained in the RCRA operating record files for a minimum of three years from the date of inspection. Logs relating to release or safety incidents will be retained indefinitely. The RCRA operating record will also maintain files of corrective actions that have been taken to mitigate deficiencies noted during inspections.

F-3 PREPAREDNESS AND PREVENTION REQUIREMENTS

F-3A Equipment Requirements

1. Internal Communications

The WVDP has a sitewide alarm and public announcement system for notifying employees and visitors in the event of an emergency. The alarms and announcements are audible throughout all structures and open areas of the active portion of the facility and fully meet the requirements of 6 NYCRR §373-2.3(c)(1).

All employees and visitors undergo required training so that they can recognize the various alarm signals and respond appropriately in the event of an emergency. Furthermore, all visitors are under escort by a trained WVDP employee at all times.

All security patrol officers are equipped with two-way radios, and field and maintenance personnel may be equipped with two-way radios for use in both routine and emergency communications.

2. External Communications

WVDP offices and work areas are equipped with land-line telephones that are capable of reaching outside emergency response agencies, such as the Cattaraugus County Sheriff's Office (CCSO) and Emergency Services Department, HazMat Team, or the West Valley Volunteer Hose Company (WVVHC), in the event of an emergency. The WVDP is covered by the "911" emergency calling system. In addition, security officers and guard stations are equipped with two-way radios that can reach outside emergency response agencies.

3. Emergency Equipment

Each mixed waste treatment and storage unit at the WVDP is equipped with or has ready access to emergency response equipment such as facility-specific spill response kits and appropriate PPE (see also Section G).

In addition, the WVDP maintains a relationship, based on an MOU, with the CCSO, and a Deputy Sheriff is routinely assigned to assist the WVDP Security Department by patrolling the facility. The MOU covers response to emergency situations at WVDP.

In addition, the WVDP maintains MOU and Letters of Agreement (LOA) with the following local and regional agencies for assistance in the event of emergencies:

- Cattaraugus County Emergency Services Department, including HazMat response team,
- WVVHC
- Springville Fire Department

The WVDP also maintains agreements with several local hospitals for assistance in the event that injuries occur during an emergency. Section G presents the details of the cooperative arrangements with local hospitals and emergency response agencies.

4. Water for Fire Control

The WVDP Main Plant area has a sufficient number of fire hydrants with adequate water pressure to provide sufficient water for fire suppression. Additionally, plant areas are equipped with standpipe systems, smoke detectors, fire alarm pull stations, and portable fire extinguishers. Sprinkler systems are provided in all plant facilities with the exception of the Process Building. In the Process Building,

specific fire hazards are protected by special hazard suppression systems.

F-3B Aisle Space Requirements

Adequate aisle space is maintained at all container storage units for inspections and access to individual containers. A minimum of 30 inches (76 cm) is required for aisle space at the LSB, LSA #3, and LSA #4. A minimum of 24-inch (61-cm) aisle space is required for the IWSF, HWSLs, and other container storage units.

All accessible tanks have adequate clearance around the circumference of the tanks to allow for inspections, maintenance, and emergency response.

F-4 PREVENTION PROCEDURES, STRUCTURES, AND EQUIPMENT

F-4A Loading and Unloading Operations

All loading and unloading operations are performed, directed, and supervised by trained waste management personnel. Loading and unloading of containers is performed in areas using specialized drum-loading equipment and forklifts. Access to spill control equipment, such as overpack containers, absorbent materials, shovels, brooms, PPE, is provided during all loading and unloading operations. Additional information about container-handling practices is included in Section D-1D.

F-4B Runoff Management

Runoff from most hazardous and mixed waste management units is avoided because structures prevent precipitation from contact with waste containers. Frequent inspections assure that containers and/or overpacks exposed to the elements are sound, thus preventing contamination of runoff from the area. Loading and unloading is typically performed in areas with containment berms to prevent the release of runoff before it can be collected, sampled, and properly dispositioned.

F-4C Protection of Water Supplies

There are two potable water supply reservoirs in the vicinity of the WVDP. No hazardous or mixed waste management activities are performed near or upgradient of this water supply system.

F-4D Equipment and Power Failure

Backup equipment and systems are available for critical hazardous and mixed waste management activities. The WVDP is equipped with backup power supplied by on-site generators in the event of a power failure. This equipment includes four large diesel-powered generators which collectively can provide nearly all the stand-by power requirements for the critical facilities on the WVDP.

F-4E Personal Protective Equipment

The following PPE is available for hazardous waste workers:

- Hardhats
- Goggles and face shields

- Hearing protection
- Coveralls
- Anti-contamination clothing
- Respirators
- Dosimetry
- Steel-toed shoes/boots and shoe covers
- Gloves
- Radiation monitors
- Organic and mercury vapor sensors

The use of PPE is fully discussed in Section G. Appropriate PPE requirements are established during the job hazard analysis and are documented in the industrial and radiation work permits; these requirements are strictly enforced.

F-5 PREVENTION OF REACTION OF IGNITABLE, REACTIVE, AND INCOMPATIBLE WASTES

F-5A Precautions to Prevent Ignition or Reaction of Ignitable and Reactive Wastes

Ignitable wastes are protected from sources of ignition, including open flames, cutting and welding operations, hot surfaces, friction, electrical sparks, and radiant heat. Ignitable wastes are only stored in DOT-approved containers and containers are kept closed except when adding or removing wastes. Reactive wastes are segregated by their unique characteristics to ensure that they are not stored with other reactive wastes that may cause them to react.

Smoking is not permitted at any hazardous or mixed waste management units. "No smoking" signs are posted at entrances and around the perimeter of hazardous and mixed waste management areas.

F-5B Management of Incompatible Wastes in Containers

Precautions to prevent ignition or reaction of incompatible wastes include physical separation of incompatible wastes inside sealed containers in separate secondary containment systems. To provide for proper categorization of waste compatibility groups, wastes are evaluated at the point of generation and assigned a compatibility code (color). Waste compatibility groups are proceduralized in the inspection procedures referenced in Appendices F-1 through F-5. Compatibility groups are derived from Appendix V of 40 CFR Part 264. Trained waste characterization engineers evaluate and verify the waste compatibility group established for every hazardous and mixed waste container at the WVDP.

F-5C Management of Ignitable or Reactive Wastes in Containers

Figures B-2 and B-4 in Section B demonstrate that all WVDP-permitted hazardous and mixed waste management units are located more than 50 ft (15 m) from the WVDP perimeter fence.

F-5D Management of Incompatible Wastes in Containers

Precautions to prevent the mixing of incompatible wastes in previously-used containers is addressed in SOP 09-34, *Emptied Waste Container Management* (Appendix F-6).

F-5E Management of Ignitable or Reactive Wastes in Tanks

These requirements are not applicable to the WVDP since ignitable or reactive wastes are not managed in tanks.

F-5F Management of Incompatible Wastes in Tanks

These requirements are not applicable to the WVDP since incompatible wastes are not managed in tanks.

SECTION F TABLES

TABLE F-1
SPECIFIC INSPECTION CRITERIA FOR WVDP CONTAINER3 STORAGE UNITS

Inspection Criteria	90-Day Storage	CPC-WSA	HIC Storage Area	HLWIS Facility	HWSLs	IWSF	LSA #1	LSA #2 Hardstand	LSA #3	LSA #4	LSB	Vitrification Cell	CSRF
Condition of Waste Containers													
Evidence of leakage	W	W	W	W	W	W	W	W	W	W	W	W	W
Container and floor condition	W	W	W	W	W	W	W	W	W	W	W	W	W
Container closure	W	W	W	W	W	W	W	W	W	W	W	W	W
Container labels	W	W	W	W	W	W	W	W	W	W	W	W	W
Condition of Structure													
Building floors	M	M	M	M	M	M	M	M	M	M	M	M	M
PCB liquids in storage area	N/A	N/A	N/A	N/A	W	W	N/A	W	N/A	N/A	W	N/A	W
Secondary containment	W	N/A	W	W	W	W	N/A	N/A	W	W	W	W	W
Gravel hardstand condition	N/A	S	S	N/A	N/A	N/A	N/A	S	N/A	N/A	N/A	N/A	N/A
Sump free of liquid	N/A	N/A	N/A	W	W	W	N/A	N/A	N/A	N/A	N/A	W	W
Lighting	M	M	N/A	M	M	M	M	N/A	M	M	M	M	M
systems	M	M	N/A	M	M	M	M	N/A	M	M	M	M	M
Locks	W	W	N/A	W	M	W	M	N/A	W	W	W	W	W
Communications Systems													
Communications systems	M	N/A	N/A	M	M	M	M	N/A	M	M	M	M	M
Alarm systems	M	N/A	N/A	M	M	M	M	N/A	M	M	M	M	M
Surveillance equipment	M	M	N/A	M	M	M	M	N/A	M	M	M	M	M
Emergency Response Equipment													
Fire barriers	Q	Q	Q	Q	Q	Q	Q	N/A	Q	Q	Q	Q	Q
Fire suppression systems	Q	N/A	N/A	Q	Q	Q	Q	N/A	Q	Q	Q	Q	Q
Fire extinguishers	M	M	N/A	M	M	M	M	N/A	M	M	M	M	M
Smoke detectors	A	N/A	N/A	A	A	A	A	N/A	A	A	A	A	A
Spill kits available/accessible/sealed	M	M	M	M	M	M	M	N/A	M	M	M	M	M
													-
Safety equipment is accessible	Q	Q	Q	Q	M	M	Q	Q	Q	Q	Q	Q	Q
													-
Housekeeping													
No debris in storage area	W	W	W	W	M	M	W	W	W	W	W	W	W
Warning signs posted/visible	M	M	M	M	M	M	M	M	M	M	M	M	M
Aisle space is adequate	W	M	M	M	W	W	M	M	M	M	M	W	W
Container stacking is correct	W	W	N/A	W	W	M	W	W	W	W	W	W	W
Material compatibility/criticality	W	W	W	W	W	W	W	W	W	W	W	W	W

Key: D = Daily; M = Monthly; N/A = Not applicable; Q = Quarterly; S = Semiannually; W = Weekly inspections; A = Annual inspections

NOTE 1 *The Vitrification Cell is not currently used for container storage. If this unit is activated, inspections will be initiated per the above schedule.*

NOTE 2 *Additional inspections will be conducted in accordance with National Fire Protection Agency (NFPA)-10 requirements.*

TABLE F-2
SPECIFIC INSPECTION CRITERIA FOR WVDP TANK TREATMENT AND STORAGE UNITS

INSPECTION CRITERIA	TANK 8D-1[1]	TANK 8D-2	TANKS 8D-3 AND 8D-4	LWTS	CSS
Evidence of leakage (liquid level sensors and monitors)	D	D	D	D	D
Tank condition	N/A[2]	N/A[2]	N/A[2]	N/A[2]	N/A[2]
Piping and pumps (for leaks and deterioration)	D[3]	D[3]	D[3]	D[3]	D[3]
Valves (for leaks and deterioration)	D[3]	D[3]	D[3]	D[3]	D[3]
Tanks labeled as to contents	W	W	W	W	W
Building or vault walls, floors, roof, entryways	Q[3]	Q[3]	Q[3]	Q[3]	Q[3]
Secondary containment[3]	D	D	D	D	D
Sumps/sump pumps/moisture monitors	D	D	D	D	D
Lighting/power systems	Q	Q	Q	Q	Q
Ventilators/mechanical systems (vessel off-gas system)	Q	Q	Q	Q	Q
Flow indicators	D	D	D	D	D
Pressure Indicators	D	D	D	D	D
Overfill alarms	D	D	D	D	D
Door locks	W	W	W	W	W
Communications systems	Q	Q	Q	Q	Q
Alarm systems	Q	Q	Q	Q	Q
Surveillance equipment (e.g., monitors, chart recorders, etc.)	Q	Q	Q	Q	Q
Fire barriers	Q	Q	Q	Q	Q
Fire suppression systems (maintained per NFPA requirements)	M	M	M	M	M
Fire extinguishers (maintained per NFPA requirements)	M	M	M	M	M
Smoke detectors	N/A	N/A	N/A	N/A	N/A
Calibration check (alarms, transmitters, level indicators, data recorders, etc.)	A	A	A	A	A

Key: A = Annually; D = Daily; N/A = Not applicable; Q = Quarterly; W = Weekly inspections.

1 The STS tank treatment system is located inside tank 8D-1; therefore, inspection of this tank unit will also satisfy the isolated STS.
2 In-ground or otherwise inaccessible, high-radiation tank/vault system
3 Accessible above-ground systems only
4 Secondary containment inspections are performed during daily operations where radiation levels allow for inspection by personnel.

TABLE F-3
SPECIFIC INSPECTION CRITERIA FOR THE REMOTE-HANDLED WASTE FACILITY

Containment Building Inspection Criteria	Receiving Area	Buffer Cell	Contact Maintenance	Work Cell	Waste Packaging	Load Out/ Truck Bay
Condition of Work Areas						
Evidence of release	W	W	W	W	W	W
Container and floor condition	W	W	W	W	W	W
Container closure	W	W	W	W	W	W
Container labels	W	W	W	W	W	W
Material compatibility	W	W	W	W	W	W
Condition of Structure						
Building walls, floors, roof, entries[1]	Q	Q	Q	Q	Q	Q
Lighting/power systems	Q	Q	Q	Q	Q	Q
Ventilators/mechanical systems	Q	Q	Q	Q	Q	Q
Door locks	Q	Q	Q	Q	Q	Q
Communications Systems						
Communications systems	Q	Q	Q	Q	Q	Q
Alarm systems	Q	Q	Q	Q	Q	Q
Surveillance equipment	Q	Q	Q	Q	Q	Q
Emergency Response Equipment						
Fire barriers	Q	Q	Q	Q	Q	Q
Fire suppression systems	Q	Q	Q	Q	Q	Q
Fire extinguishers	M	N/A	N/A	N/A	N/A	M
Smoke detectors	N/A	N/A	N/A	N/A	N/A	N/A
Spill kits available	Q	N/A	N/A	N/A	N/A	Q
Spill kit contents	Q	N/A	N/A	N/A	N/A	Q
Safety equipment is accessible	Q	N/A	N/A	N/A	N/A	Q
PPE available	Q	N/A	N/A	N/A	N/A	Q
First aid kits/equipment	Q	N/A	N/A	N/A	N/A	Q
Housekeeping						
Uncontainerized accumulated liquids are minimized on the primary containment barrier (floor)	D	D	D	D	D	D
Warning signs posted/visible	Q	N/A	N/A	N/A	N/A	Q

[1] Quarterly inspections are based on operations schedules and an evaluation of potential for deterioration and threat to human health and the environment.

[2] Additional inspections will be conducted in accordance with National Fire Protection Agency (NFPA)-10 requirements.

APPENDIX F-1

SOP 09-24, *CHEMICAL PROCESS CELL WASTE STORAGE AREA AND LAG STORAGE INSPECTION*

Required only for copies.
Copy valid for 24 hours from verification time/date.

Date _____ Time _____ Verified By _____
Date _____ Time _____ Verified By _____
Date _____ Time _____ Verified By _____
Date _____ Time _____ Verified By _____
Date _____ Time _____ Verified By _____
Date _____ Time _____ Verified By _____
Date _____ Time _____ Verified By _____
Date _____ Time _____ Verified By _____
Date _____ Time _____ Verified By _____

Revision Number 11

Revision Date 08/05/04

SOP 09-24

Chemical Process Cell Waste Storage Area and Lag Storage Inspection

Cognizant Engineer: T. E. Schalberg

Cognizant Manager: S. M. Westcott

Facility Manager: K. E. Sanders

HLW:

YES	NO	NA
	X	

QUALITY LEVEL: C

SAFETY CLASS: C

PROCEDURE USE CLASSIFICATION		MULTIPLE USE BY SECTION
X	CRITICAL USE	5.2[k] & [l] 5.2[4] Appendices B-1, B-3, B-4, B-7
	REFERENCE USE	remainder

ALARA PLANNING

[X] The work described in this procedure does not require ALARA planning.

[ ] The work described in this procedure may require ALARA planning.

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CHEMICAL PROCESS CELL WASTE STORAGE AREA AND LAG STORAGE INSPECTION

1.0 INTRODUCTION

1.1 Purpose

This procedure provides instructions for the inspection of mixed and radioactive waste storage areas and containers. It addresses weekly mixed waste inspections, monthly low-level/Transuranic (TRU)/Fissile Material (> 1 gram of fissile material) waste container and flammable/combustible inspections, monthly and semi-annual facility/area inspections, and quarterly engineering evaluations.

1.2 Applicability

This procedure applies to inspections of the materials/containers stored within the Chemical Process Cell Waste Storage Area (CPC/WSA) and Lag Storage Facilities, including these facilities' structures, as required by federal and state rules and regulations and applicable Department of Energy (DOE) orders.

This procedure also includes inspections of the storage hardstands and the High Integrity Container (HIC) Storage Area (Fuel Receiving and Storage Area (FRS) North Yard) and High Level Waste Interim Storage Facility (HLWISF).

The activities in this procedure are performed by D&D/Waste Management Operations (DDWO) personnel.

RCRA This SOP is included with other documents in the 6 NYCRR 373-2 Hazardous Waste Operating Permit (i.e. RCRA Part B Permit) application. Proposed revisions to this document need to be reviewed by the Environmental Affairs Department of the West Valley Nuclear Services Company (WVNSCO) to determine the potential effect on the permit application, and subsequently approve or disapprove the revisions to this document.

2.0 GENERAL INFORMATION

[1] Dense pack storage is defined as placing containers into storage as close as possible so that lower dose containers can be placed around higher dose containers to provide shielding and/or to maximize storage space. A dense pack array is made up of all of the containers in a dense pack storage configuration. Inspection aisles are not necessary for dense pack arrays and inspections consist of visually observing, as best as possible, the containers in the dense pack array. Dense pack storage is not utilized for mixed waste.

RCRA

[2] Mixed waste containers shall be marked with the words, "Mixed Hazardous Waste," and a description of contents. For Radioactive Mixed Waste containers that are highly radioactive, labels will be placed in a conspicuous area near the container storage area identifying the containers that are hazardous mixed waste and also the contents..

[3] A record of Polychlorinated Biphenyls (PCBs) added or removed from storage containers is provided through the use of the Integrated Waste Tracking System (IWTS) per SOP 09-33, "Integrated Waste Tracking System," and is required for the PCB Annual Document Log prepared by Environmental Affairs (EA).

[4] In the CPC/WSA, in addition to the SUREPAKs that contain mixed wastes, the following boxes also contain mixed waste and are included in the weekly inspection and quarterly engineering evaluation:

Box #s J-1, J-2, J-3, J-4, J-5, J-6, J-7, J-8, J-9, J-10, J-11, J-12, JC-5, 3E-1, 7E-8, and TC-193.

[5] Containers in storage shall be labeled in accordance with SOP 09-07, "Labeling/Color-Coding of Waste Containers," as practical with consideration of As Low As Reasonably Achievable (ALARA) principles.

[6] The following are considered as Resource Conservation and Recovery Act (RCRA) Interim Status facilities/areas. Facilities/areas must meet the RCRA inspection requirements whenever mixed hazardous wastes are managed in these facilities.

[a] Lag Storage Building

[b] Lag Storage Area (LSA)-1

[c] LSA-3

[d] LSA-4 (including Container Sorting & Packaging Facility (CSPF))

[e] Chemical Process Cell Waste Storage Area (CPC/WSA)

[f] HIC Storage Area (FRS North Yard)

[g] LSA 2 Hardstand

[h] Contact Size Reduction Facility (CSRF)

[i] High Level Waste Interim Storage Facility (HLWISF)

3.0 PRECAUTIONS AND LIMITATIONS

[1] If breach of package integrity has occurred, the smearable contamination on the exterior of waste packages may be greater than 20 dpm alpha/100 cm^2 and 200 dpm beta-gamma/100 cm^2. Care should be taken if this is encountered to minimize the spread of contamination and potential release of waste or hazardous contaminants to the environment.

[2] Dose rates at the surface of waste packages in the Lag Storage Facilities shall be <200 mRem/hr on contact.

RCRA **[3]** Liquid PCB wastes are <u>not</u> permitted for storage in the Lag Storage Building. The storage requirements of 40 CFR 761.65, which includes an exemption for interim status for containment in 40 CFR 264.175 for radioactive non-liquid PCB waste, are met by not permitting the storage of liquid PCB wastes in the Lag Storage Building.

[4] Criticality Control Zones should be established for waste that contains > 1 gram Fissile Material.

SR **[5]** APPROVED CONTAINERS that are used for TRU Waste containing >1 gram Fissile Material shall be periodically inspected for leaks, lid installment, structural defects such as severe rusting/corrosion, punctures, swelling, dents and compliance with criticality control storage configuration.

4.0 PREREQUISITES

4.1 Material/Special Tools and Equipment

[1] Tools and equipment include, but are not limited to the following:

- [a] Inspection Mirror
- [b] Flashlight
- [c] Ladder - Platform
- [d] Cart with handle
- [e] Power Strip
- [f] Counter Weights
- [g] Video Camera
- [h] Camera Controller
- [i] Valve Control Box
- [j] Compressed Air Lubricator
- [k] Video Cassette Recorder (VCR) and Blank VHS Format Tape for Quarterly Engineering Evaluations
- [l] Boom
- [m] (2) 25 ft. Extension Cords
- [n] Tag Lines
- [o] Monitor
- [p] Pneumatic Activated Mast
- [q] Compressor
- [r] Portable Generator
- [s] Smear and Particulate Sampling Equipment for Quarterly Engineering Evaluations

4.2 Training

RCRA [1] Personnel involved with directing mixed and radioactive waste handling activities shall be trained in this procedure, 29 CFR 1910.120 (HAZWOPER), and at least Radiological Worker I training.

[2] Personnel involved with performing mixed or Radwaste handling activities shall be trained in this procedure, 29CFR 1910.120, and Rad Worker II trained and qualified.

[3] Nuclear Criticality Safety Training is required for persons entering Lag Storage Areas posted as Criticality Control Zones.

4.3 Radiological Controls

[1] The following are Radiation Protection (RP) requirements for entries into the CPC/WSA, Lag Storage Facilities, and HIC Storage Area (FRS North Yard):

[a] An Radiation Work Permit (RWP) is **NOT** required to perform mixed waste inspections under this procedure.

[b] If area radiological contamination levels exceed WVDP-010 Table 2-2 levels,(i.e., 20 dpm/100 cm^2 alpha and 200 dpm/100 cm^2 beta-gamma), or if radiation levels exceed 100 mrem/hr, an RWP will be required.

[c] Personnel must review the radiological postings prior to entry.

[d] Entries by RP personnel are governed by RP procedures.

[e] To enter areas behind or above the SUREPAKs in the CPC/WSA, an RWP is required and personnel shall have Rad Worker II training.

[f] A Thermoluminescent Dosimetry (TLD) badge shall be worn by all personnel entering the CPC/WSA, Lag Storage Facilities, and HIC Storage Area (FRS North Yard).

[g] Personnel issued a permanent direct reading dosimeter (DRD) shall wear the DRD and TLD badge simultaneously.

[h] With prior approval, individuals (e.g., visitors) that do NOT have Radiological Worker I or II training shall be escorted by an individual with current Radiological Worker I or II training.

[2] In addition to the requirements in 4.3[1] and [2] above, the following are required for personnel obtaining samples in the CPC/WSA for quarterly engineering evaluations:

[a] Rad Worker II qualification is required for entry into the Contamination Area.

[b] Protective clothing requirements, at a minimum, shall include anti-C gloves, disposable gloves, shoes covers, and a paper suit.

[c] Instructions for proper donning and doffing of protective clothing from SOP 15-14, "Entry Into and Exit From Contaminated Areas," are posted in the work area for reference as needed.

[d] Review the radiological posting prior to entry.

[e] Immediately upon exiting the Contamination Area, personnel shall perform a hand and foot frisk then proceed to the Personnel Contamination Monitor (PCM) at the lower Supernatant Treatment System (STS).

[f] Prior to removing items from the Contamination Area, a complete survey is required of the items by RP personnel.

[g] Entries by RP are governed by Radiological Control Procedure RC-ADM-6, "Radiation Work Permits," for surveys, instrument checks, and inspections.

[h] RP provides continuous coverage during sampling operations.

5.0 PERFORMANCE

NOTE *Only one facility/area inspection shall be documented on each inspection sheet. Use multiple forms as required.*

RCRA **5.1 Weekly Mixed Waste Inspections**

NOTE *Steps 5.1[2], 5.1[3], 5.1[4], 5.1[5], and 5.1[7] may be performed in parallel.*

Perform weekly inspection on mixed waste containers as follows:

[1] Obtain the latest available version of the mixed waste inventories from the DDWO Supervisor.

RCRA [2] Inspect containers or overpacks in the Lag Storage Building, LSA-3, LSA-4, HIC Storage Area (FRS North Yard), LSA-2 Hardstand, CSRF, CPC/WSA, and HLWISF for the following, as applicable, on Appendices A-1 through A-8.

[a] No leaks.

[b] No significant rusting/corrosion.

[c] No punctures/holes.

[d] No significant cracks in the concrete.

[e] Container is closed.

[f] No swelling caused by pressure build up.

[g] No significant peeling of paint.

[h] No significant dents.

[i] Legible labeling (e.g., lables not faded).

[j] CPC/WSA - postings clearly visible on the four corners of the array.

[k] No PCB liquids in Lag Storage Building.

[l] Incompatible containers are separated by a berm, dike, wall, or other device (e.g., double contained within a single package) if applicable. (Lag Storage Building, LSA-3, LSA-4, and LSA-2 Hardstand only)

[m] Containers in storage match the corresponding facility/area inventories.

[3] Inspect the following SUREPAKS containing mixed waste in the HIC Storage Area (FRS North Yard) and CPC/WSA during the weekly inspections. All other SUREPAKs are inspected on a monthly basis.

[a] HIC Storage Area (FRS North Yard): SUPERPAK # SP-077.

[b] CPC/WSA: SUPERPAK #s 3, 6, 8, 10, 28, 32, 35, 37and 38. See Appendix E-3 for location.

[4] In addition to the applicable conditions listed in Step 5.1[2], inspect the mixed waste SUREPAKs for the following:

[a] Cement degradation of SUREPAK or other containers on the outside of the array.

NOTE *Fine cracks occur in the cement of SUREPAKs during the curing process. Based on the manufacturer's analysis, these cracks should NOT be noted during these inspections.*

[b] Significant cracking of concrete SUREPAK or damage to other containers on the outside of the array.

[5] Notify the DDWO Supervisor for further instructions when any of the conditions listed in Step 5.1[2] are found to be unsatisfactory.

[6] **IF** leakage is discovered,
THEN notify the Plant Operations Shift Supervisor (PSOSS) in accordance with WV-915, "Spill/Release Notification and Reporting."

[7] When needed and appropriate, perform repairs to the paint or markings on the containers in accordance with SOP 09-21, "Lag Storage Operations."

[8] Perform labeling or color coding as necessary in accordance with SOP 09-07, "Labeling/Color-Coding of Waste Containers."

RCRA **NOTE** *All conditions marked as unsatisfactory shall have the corresponding "Container ID# and/or Location" and "Condition Description & Corrective Action" Sections completed including the date corrective actions were completed.*

+] **[9]** Complete Appendix A-1 through Appendix A-8 by indicating each condition as satisfactory (SAT) or unsatisfactory (UNSAT).

+] **[10]** DDWO Supervisor shall review and sign-off Appendix A-1 through Appendix A-8 sheets upon completion.

[11] If UNSAT conditions identified cannot be corrected immediately on the date of the inspection, then the cognizant Facility Manager (FM)/supervisor shall initiate an Issue Report (IR) in accordance with WVDP-357, "WVDP Issues Reporting Program Manual." Once an IR is written, an additional IR is not necessary after future inspections for issues that can not be immediately resolved.

| **[12]** After the DDWO Supervisor sign-off, submit the original inspection sheets to the WSD Records Coordinator to be filed.

5.2 Monthly Low Level/TRU/Fissile Material Waste Container and Flammable/Combustible Inspection

NOTE1 *The CSPF and Scale areas are exempt from the combustible material requirements of this inspection however the areas must be maintained in an organized manner.*

NOTE2 *Steps 5.2[1], 5.2[2], 5.2[3], 5.2[4], 5.2[5], and 5.2[6] may be performed in parallel.*

Perform Low-Level Waste (LLW), Transuranic (TRU) Waste and Fissile Material (FM) Containers Inspections as follows:

[1] Inspect the containers for the following, as applicable, on Appendices B-1 through B-8.

[a] No leaks.

[b] No significant rusting/corrosion.

[c] No punctures/holes.

[d] No swelling caused by pressure build up.

[e] No significant peeling of paint.

[f] No significant dents.

[g] Container is closed.

[h] Legible Labeling.

[i] Signs of structural defects do not exist.

[j] TRU waste containers stacked no more than 4 tiers.

PSR-6 **[k]** Containers with >1 gram fissile material (PSR-6 waste), stacked no more than four tiers, or 12 feet, whichever is greater.

If found to be out of specification, proceed IMMEDIATELY to 5.2[4].

PSR-18 **[l]** Fissile Material Storage Drums/Containers containing waste from the Head End Cells (HEC) that contain >1 gram fissile material (PSR-18 waste), stacked no more than three tiers.

If found to be out of specification, proceed IMMEDIATELY to 5.2[4].

[m] PSR-6 and PSR-18 waste as described in 5.2[1][k] and 5.2[1][l] are stored in separate Criticality Control Zones.

[n] Containers are covered with tarpaulin, as necessary, and tarpaulin is in good condition (i.e., no tears).

[2] Inspect facility/area for flammable/combustible materials as follows:

[a] Inspect structures monthly for flammable and combustible materials (e.g., wooden pallets, poly liners, poly overpacks, paint cans, tarps, etc.).

[b] If any such materials are found, they shall be RP released if necessary from the area and stored in a more appropriate area.

[3] Inspect dense pack arrays and SUREPAKs for the following, as applicable, in Appendices B-1 through B-8.

[a] Cement degradation of SUREPAK or other containers on the outside of the array.

NOTE *Fine cracks occur in the cement of SUREPAKs during the curing process. Based on the manufacturer's analysis, these known cracks should NOT be noted during these inspections.*

[b] Cracking of concrete SUREPAK or damage to other containers on the outside of the array.

PSR-6

PSR-18 **[4]** If containers do not meet the requirements of 5.2[1][k] or 5.2[1][l], perform the following:

[a] IMMEDIATELY notify the FM and the Nuclear Criticality Safety Manager.

[b] STOP all fissile material activities in the facility until written permission to resume is obtained from the Nuclear Criticality Safety Manager.

[5] Notify the DDWO Supervisor for further instructions when any other unsatisfactory conditions are found.

[6] **IF** leakage is discovered,
THEN notify the DDWO Supervisor who shall then notify the PSO SS.

[7] Perform repairs to the paint or markings on the containers per SOP 09-21.

[8] Perform labeling or color coding as necessary per SOP 09-07.

NOTE1 *All conditions marked as unsatisfactory shall have the corresponding "Container ID#s and/or Location" and "Condition Description and Corrective Action" sections completed including the date corrective actions were completed.*

+] **[9]** Complete Appendix B-1 through B-8 by indicating each condition as SAT or UNSAT.

[+] **[10]** DDWO Supervisor review and sign-off Appendix B sheets upon completion.

[11] If UNSAT conditions identified cannot be immediately corrected on the date of the inspection, then the cognizant facility manager/supervisor shall initiate an IR in accordance with WVDP-357. Once an IR is written, an additional IR is not necessary after future inspections for issues that can not be immediately resolved.

[12] After DDWO Supervisor sign-off, submit the original inspection sheets to the Waste Shipping and Disposal (WSD) Records Coordinator to be filed.

RCRA 5.3 Monthly Structural Deficiencies Inspection

[1] Perform structural inspection by inspecting the following, as applicable, on Appendix A-5 and Appendices C-1 through C-5.

[a] Floor possesses no cracks which could adversely impact daily operations or be a safety concern.

[b] Insulation/Fabric do not exhibit rips or tears.

[c] Cables are not frayed.

[d] Lights are operable.

[e] Electrical/Mechanical equipment is functioning properly.

[f] Circuit breakers are not tripped.

[g] Aisle space is a minimum of 30".

[h] Fire extinguishers are present, charged and inspected.

[i] Spill kits are available for use.

[j] Weather cover tarps in place and in good condition.

[k] No erosion in base pad.

[l] Rad postings in place. (If rad postings are not in place or require repair notify RP).

NOTE *All conditions marked as unsatisfactory shall have the corresponding "Containers ID#s and/or Location" and "Condition Description & Corrective Action" sections completed including the date corrective actions were completed.*

+] **[2]** Complete Appendix A-5 and Appendix C-1 through C-5 by indicating each condition as SAT or UNSAT.

[3] Notify the DDWO Supervisor for further instructions when any unsatisfactory condition is found.

+] **[4]** DDWO Supervisor shall review and sign-off Appendix A-5 and Appendix C-1 through C-5 sheets upon completion.

[5] If Unsat conditions identified cannot be immediately corrected on the date of the inspection, then the cognizant facility manager/supervisor shall initiate an IR in accordance with WVDP-357. Once an IR is written, an additional IR is not necessary after future inspections for issues that can not be immediately resolved.

NOTE *Two copies of Appendix A-5 will be required. One copy is filed in the weekly inspection file and one copy is filed in the monthly inspection file.*

[6] After the DDWO Supervisor sign-off, submit the original inspection sheets to the WSD Records Coordinator to be filed.

RCRA **5.4 Semi-Annual Structural Deficiencies Inspection**

NOTE *The following inspections shall be conducted each April and each October.*

[1] Inspect the HIC Storage Area (FRS North Yard), LSA-2 Hardstand, and CPC/WSA for the condition of the gravel subsidence (e.g., natural depressions).

[+] **[2]** Complete the Semi-Annual Structural Deficiencies Inspection Form (Appendix D-1 through D-3), and date/sign.

[3] Notify the DDWO Supervisor for further instructions when any condition found in Step 5.4[1] is found to be "UNSAT".

[+] **[4]** DDWO Supervisor shall review and sign-off Appendix D-1 through D-3 sheets upon completion.

[5] If UNSAT conditions identified cannot be immediately corrected on the date of the inspection, then the cognizant facility manager/supervisor shall initiate an IR in accordance with WVDP-357.

[6] After the DDWO Supervisor sign-off, submit the original inspection sheets to the WSD Records Coordinator to be filed.

5.5 Quarterly Engineering Evaluations

NOTE *The CPC/WSA quarterly engineering evaluation is performed in a manner identical to the weekly mixed waste inspection with the following exception: the quarterly evaluation must be recorded on a video tape and smears and particulate sample(s) is(are) collected and analyzed.*

RCRA **[1]** Record the inspection on a video tape as described in Section 5.7.

[2] Obtain smears and particulate sample(s), at the locations designated by the Cognizant Engineer (CE), as follows:

[a] Insert the sampling equipment beyond the SUREPAKs to collect smear and/or particulate sample(s).

[b] Wipe off the sampling equipment as it is being withdrawn from the SUREPAKs.

[c] RP shall perform surveys of the wipes and sample media.

[d] **IF** the wipes or sample media are greater than 100 cpm/probe area (beta-gamma) or 5 cpm/probe area (alpha),

THEN stop all operations and notify the DDWO Supervisor.

[e] Place the smears and/or particulate samples into containers provided by the CE.

[f] **IF** there is more than one sample location,
THEN repeat Steps 5.5[2][a] through 5.5[2][e].

[3] Dispose of generated waste per SOP 300-07, "Waste Generation, Packaging, and On-Site Transportation."

[4] RP shall analyze the samples and provide the results to the CE.

RCRA [5] Store video tape in a fire proof cabinet as a RCRA operating record.

5.6 Record Verification

[1] Perform a periodic verification on computer printouts as directed by DDWO Supervisor.

[2] Verify container map against location of containers in storage as applicable.

5.7 Equipment Operation in the CPC/WSA

NOTE1 *See Appendix E-1 for instructions on the raising and lowering of the mast and boom, Appendix E-2 for camera operation, and Appendix E-4 for a layout of the CPC/WSA Building and locations of containers.*

NOTE2 *VHS format Videotapes are required for the quarterly engineering evaluation report.*

WARNING

Do NOT linger in the vicinity of the generator while it is operating as exposure to noise, exhaust fumes, and hot surfaces near the exhaust may cause personnel injury and/or illness.

[1] **WHEN** the CPC/WSA structure is in its normal configuration (assembled),
THEN hook up the portable electric generator to the CPC/WSA Building as shown in Appendix E-5.

CAUTION

Use caution while moving the generator from one location to another to avoid spilling fuel to the surrounding environment.

[2] **WHEN** the CPC/WSA is disassembled or if the generator CANNOT be used as shown in Appendix E-5 for any other reason,
THEN wheel the generator to the desired location to supply power to the compressor and camera components.

[3] Operate camera as shown in Appendix E-2. Position camera assembly cart adjacent to SUREPAK, closest to containers to be inspected. Videotape inspection of the mixed waste will be performed once per quarter. This inspection will be performed by a job card.

[4] Ensure camera assembly is level. Leveling is achieved by placing supports under wheels.

[5] Plug extension cord to nearest receptacle.

[6] Ensure counter-weights, camera and boom anchor points are secure. Secure as necessary.

[7] Turn air compressor on.

CAUTION

When raising mast, ensure that camera cord cannot get snagged on equipment.

[8] Raise boom to an elevation adequate for swinging camera into position beyond the SUREPAK.

CAUTION

When rotating boom, watch for obstructions in the path of both the camera and counter-weights.

[9] Rotate boom to position camera beyond the SUREPAK, utilizing both tag lines. See Appendix E-4 for sketch of equipment positioning.

[10] Ensure compressor is no longer cycling before proceeding to the next step.

CAUTION

Operate camera with lights positioned over the lens.

[11] Turn on the video monitor camera controller and VCR if applicable.

[12] Maneuver camera to enable visual inspection of waste container(s).

[13] **IF** recording the inspection on a video tape,
THEN push the INPUT button on the remote control until "Line 1" appears on the monitor. (The VCR unit itself does NOT have the ability to change inputs to the VCR.)

[a] Ensure the VCR and camera are in "Standard Play" mode, NOT "Extended Play" mode, before recording.

[14] Perform inspection in accordance with Section 5.1.

[15] Turn off video monitor, camera controller, and VCR if applicable.

[16] Rotate boom to position camera and counter-weights parallel with the CPC/WSA aisle-way using the tag lines.

[17] Lower the mast to the lowest position.

[18] Repeat Steps 5.7[1] - 5.7[16] as necessary to complete the inspection.

[19] Unplug camera assembly extension cord from the CPC/WSA receptacle.

[20] Shut off the air compressor.

[21] Open the pressure relief pin on the air compressor until the sound of air dissipates.

+] **[22]** Sign, date, and time on the inspection log.

[23] Remove the camera controller, VCR, if used, and monitor from the CPC/WSA Building and store in the appropriate location.

[24] Shut off the portable electric generator.

[25] Disconnect the portable electric generator.

[26] Store the equipment.

6.0 RECORDS

The following forms, data sheets, logs, reports, or any other form of documentation considered to be a record and generated in response to this procedure shall be prepared, maintained, and transferred to the MRC in accordance with WVDP-262, "WVNSCO Manual for Records Management and Storage." Refer to Records Inventory and Disposition Schedule (RIDS) for further information.

RCRA

[1] Appendices A-1 through A-7, Appendices C-1, C-3, and C-4, Appendices D-1 and D-2, and the videotape from Section 5.5 (CPC/WSA inspection) are identified as RCRA records per WV-733.

[2] Appendices B-1 through B-8, C-2, C-5, and D-3.

7.0 SOURCE REQUIREMENTS

[1] 40 CFR 265, "Interim Status Standards for Owners and Operators of Hazardous Waste"

[2] 40 CFR 264, "Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities"

[3] 40 CFR 761, "Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions"

[4] 6NYCRR 373-3, "Interim Status Standards for Owners and Operators of Hazardous Waste"

[5] Process Safety Requirements (PSR)-6, "Fissile Material Packaging and Storage Requirements," LCO 3, SR3

[6] PSR-18, "Collection, Processing, and Storage Requirements for Fissile Material From the Head End Cells", LCO 6

[7] WVDP-146, "WVDP Technical Safety Requirements"

8.0 REFERENCES

[1] WV-733, "Management, Storage and Retrieval of RCRA Operating Records"

[2] WV-915, "Spill/Release Notification and Reporting"

[3] WVDP-010, "WVDP Radiological Controls Manual"

[4] WVDP-262, "WVNS Manual for Records Management and Storage"

[5] SOP 00-43, "Access Control of High and Very High Radiation Areas"

[6] SOP 09-07, "Labeling/Color Coding of Waste Containers"

[7] SOP 09-21, "Lag Storage Operations"

[8] SOP 15-14, "Entry Into and Exit From Radiologically Contaminated Areas"

[9] SOP 300-07, "Waste Generation, Packaging, and On-Site Transportation"

[10] EN:99:0026, "Evaluation of Cracks in SUREPAK SP-077, Located in FRS North Yard"

[11] WVDP-357, "WVDP Issues Reporting Program Manual"

9.0 APPENDICES

[1] APPENDIX A-1, WEEKLY MIXED WASTE CONTAINER INSPECTION LOG LAG STORAGE

[2] APPENDIX A-2, WEEKLY MIXED WASTE CONTAINER INSPECTION LOG LSA-3

[3] APPENDIX A-3, WEEKLY MIXED WASTE CONTAINER INSPECTION LOG LSA-4 (INCLUDING CSPF)

[4] APPENDIX A-4, WEEKLY MIXED WASTE CONTAINER INSPECTION LOG HIC STORAGE AREA (FRS NORTH YARD)

[5] APPENDIX A-4A, SEMI-ANNUAL STRUCTURAL DEFICIENCIES INSPECTION FORM HIC STORAGE AREA (FRS NORTH YARD)

[6] APPENDIX A-5, WEEKLY MIXED WASTE CONTAINER INSPECTION and MONTHLY STRUCTURE INSPECTION LOG SHEET

[7] APPENDIX A-6, WEEKLY MIXED WASTE CONTAINER INSPECTION LOG LSA-2 HARDSTAND

[8] APPENDIX A-6A, SEMI-ANNUAL STRUCTURAL DEFICIENCIES INSPECTION FORM LSA-2 Hardstand

[9] APPENDIX A-7, WEEKLY MIXED WASTE CONTAINER INSPECTION LOG CSRF

[10] APPENDIX A-8 - WEEKLY MIXED WASTE CONTAINER INSPECTION LOG HLWISF

[11] APPENDIX B-1, MONTHLY LOW-LEVEL/TRU/FISSILE MATERIAL WASTE CONTAINER AND FLAMMABLE/COMBUSTIBLE INSPECTION LOG SHEET LAG STORAGE

[12] APPENDIX B-2, MONTHLY LOW-LEVEL/TRU/FISSILE MATERIAL WASTE CONTAINER AND FLAMMABLE/COMBUSTIBLE INSPECTION LOG SHEET LSA-1

[13] APPENDIX B-3, MONTHLY LOW-LEVEL/TRU/FISSILE MATERIAL WASTE CONTAINER AND FLAMMABLE/COMBUSTIBLE INSPECTION LOG SHEET LSA-3

[14] APPENDIX B-4, MONTHLY LOW-LEVEL/TRU/FISSILE MATERIAL WASTE CONTAINER AND FLAMMABLE/COMBUSTIBLE INSPECTION LOG SHEET LSA-4

[15] APPENDIX B-5, MONTHLY LOW-LEVEL/TRU/FISSILE MATERIAL WASTE CONTAINER AND FLAMMABLE/COMBUSTIBLE INSPECTION LOG SHEET LAG HARDSTAND

[16] APPENDIX B-6, MONTHLY LOW-LEVEL/TRU/FISSILE MATERIAL WASTE CONTAINER AND FLAMMABLE/COMBUSTIBLE INSPECTION LOG SHEET CPC-WSA HARDSTAND

[17] APPENDIX B-6A, SEMI-ANNUAL STRUCTURAL DEFICIENCIES INSPECTION FORM CPC/WSA

[18] APPENDIX B-7, MONTHLY LOW-LEVEL/TRU/FISSILE MATERIAL WASTE CONTAINER AND FLAMMABLE/COMBUSTIBLE INSPECTION LOG SHEET CPC/WSA

[19] APPENDIX B-8, MONTHLY LOW-LEVEL/TRU/FISSILE MATERIAL WASTE CONTAINER AND FLAMMABLE/COMBUSTIBLE INSPECTION LOG SHEET LSA-2 HARDSTAND

[20] APPENDIX C-1, MONTHLY STRUCTURE INSPECTION LOG SHEET LAG STORAGE

[21] APPENDIX C-2, MONTHLY STRUCTURE INSPECTION LOG SHEET LSA 1

[22] APPENDIX C-3, MONTHLY STRUCTURE INSPECTION LOG SHEET LSA 3

[23] APPENDIX C-4, MONTHLY STRUCTURE INSPECTION LOG SHEET LSA 4

[24] APPENDIX C-5, MONTHLY STRUCTURE INSPECTION LOG SHEET PUMP STORAGE VAULT

[25] APPENDIX E-1, RAISING/LOWERING OF BOOM

[26] APPENDIX E-2, CAMERA OPERATION

[27] APPENDIX E-2A, CAMERA OPERATION

[28] APPENDIX E-3, CPC/WSA LAYOUT

[29] APPENDIX E-4, CAMERA EQUIPMENT POSITIONING

[30] APPENDIX E-5, GENERATOR HOOK-UP

APPENDIX A-1
WEEKLY MIXED WASTE CONTAINER INSPECTION LOG
LAG STORAGE
(Page 1 of 1)

SATISFACTORY CONDITION	SAT	UNSAT	UNSATISFACTORY CONDITION	
			CONTAINER ID#(S) AND/OR LOCATION	CONDITION DESCRIPTION & CORRECTIVE ACTIONS
Containers Exhibit:				
No Leaks				
No Severe Rusting/Corrosion.				
No Punctures				
No Swelling				
No Excessive Peeling of Paint				
No Severe Dents				
Container is closed				
Legible Labeling				
No PCB liquids in storage				
Incompatible Containers are Separated by a Berm, Dike, Wall, or Other Device				
Containers in Storage Match Facility Inventories.				

NOTE: *Notify the DDWO Supervisor for unsatisfactory conditions. DDWO Supervisor shall verify resolution of unsatisfactory condition by signature below and indicating resolution on this form.*

Inspection Performed By: _____ Date _____ Time _____
(DDWO Personnel) Signature/Print Name

Inspection Reviewed By: _____ Date _____
(DDWO Supervisor) Signature/Print Name

Unsatisfactory Conditions Addressed: _____ Date _____
(DDWO Supervisor) Signature/Print Name

☐ ✔ if Lag Storage contains mixed waste making this a RCRA inspection.
☐ ✔ if Lag Storage DOES NOT contain mixed waste.

APPENDIX A-2
WEEKLY MIXED WASTE CONTAINER INSPECTION LOG
LSA-3
(Page 1 of 1)

SATISFACTORY CONDITION	SAT	UNSAT	UNSATISFACTORY CONDITION	
			CONTAINER ID#(S) AND/OR LOCATION	CONDITION DESCRIPTION & CORRECTIVE ACTIONS
Containers Exhibit:				
No Leaks				
No Severe Rusting/Corrosion.				
No Punctures				
No Swelling				
No Excessive Peeling of Paint				
No Severe Dents				
Container is closed				
Legible Labeling				
Incompatible Containers are Separated by a Berm, Dike, Wall, or Other Device				
Containers in Storage Match Facility Inventories				

NOTE: *Notify the DDWO Supervisor for unsatisfactory conditions. DDWO Supervisor shall verify resolution of unsatisfactory condition by signature below and indicating resolution on this form.*

Inspection Performed By: _____ Date _____ Time_____
(DDWO Personnel) Signature/Print Name

Inspection Reviewed By: _____ Date _____
(DDWO Supervisor) Signature/Print Name

Unsatisfactory Conditions Addressed: _____ Date _____
(DDWO Supervisor) Signature/Print Name

☐ ✔ if LSA-3 contains mixed waste making this a RCRA inspection.
☐ ✔ if LSA-3 DOES NOT contain mixed waste.

APPENDIX A-3
WEEKLY MIXED WASTE CONTAINER INSPECTION LOG
LSA-4 (including CSPF)
(Page 1 of 1)

SATISFACTORY CONDITION	SAT	UNSAT	UNSATISFACTORY CONDITION	
			CONTAINER ID#(S) AND/OR LOCATION	CONDITION DESCRIPTION & CORRECTIVE ACTIONS
Containers Exhibit:				
No Leaks				
No Severe Rusting/Corrosion.				
No Punctures				
No Swelling				
No Excessive Peeling of Paint				
No Severe Dents				
Container is closed				
Legible Labeling				
Incompatible Containers are Separated by a Berm, Dike, Wall, or Other Device				
Containers in Storage Match Facility Inventories.				

NOTE: *Notify the DDWO Supervisor for unsatisfactory conditions. DDWO Supervisor shall verify resolution of unsatisfactory condition by signature below and indicating resolution on this form.*

Inspection Performed By: _____ Date _____ Time_____
(DDWO Personnel) Signature/Print Name

Inspection Reviewed By: _____ Date _____
(DDWO Supervisor) Signature/Print Name

Unsatisfactory Conditions Addressed: _____ Date _____
(DDWO Supervisor) Signature/Print Name

☐ ✔ if LSA-4 contains mixed waste making this a RCRA inspection.

☐ ✔ if LSA-4 DOES NOT contain mixed waste.

APPENDIX A-4
WEEKLY MIXED WASTE CONTAINER INSPECTION LOG
HIC STORAGE AREA (FRS NORTH YARD)
(Page 1 of 1)

SATISFACTORY CONDITION	SAT	UNSAT	UNSATISFACTORY CONDITION	
			CONTAINER ID#(S) AND/OR LOCATION	CONDITION DESCRIPTION & CORRECTIVE ACTIONS
Containers Exhibit:				
No Leaks				
No Punctures/holes				
No Cracks in concrete				
Cover is closed				
Legible Labeling				

NOTE: *Notify the DDWO Supervisor for unsatisfactory conditions. DDWO Supervisor shall verify resolution of unsatisfactory condition by signature below and indicating resolution on this form.*

Inspection Performed By: _____ Date _____ Time _____
(DDWO Personnel) Signature/Print Name

Inspection Reviewed By: _____ Date _____
(DDWO Supervisor) Signature/Print Name

Unsatisfactory Conditions Addressed: _____ Date _____
(DDWO Supervisor) Signature/Print Name

☐ ✔ if the FRS North Yard contains mixed waste making this a RCRA inspection.
☐ ✔ if the FRS North Yard DOES NOT contain mixed waste.

APPENDIX A-4A
SEMI-ANNUAL STRUCTURAL DEFICIENCIES INSPECTION FORM FRS NORTH YARD
(Page 1 of 1)

Compliant Condition	HIC Storage Area (FRS North Yard)	
Gravel Subsidence - (e.g., natural depressions)	SAT	UNSAT

Signature: _____

Print Name: _____

Date: _____

Time: _____

Comments: _____

_____

_____

Corrective Actions: (if any)

Action _____

Initial _____

Date _____

Time _____

Inspection Review By: (DDWO Supervisor) _____ Date _____
Signature/Print Name

Unsatisfactory Conditions Addressed: (DDWO Supervisor) _____ Date _____
Signature/Print Name

APPENDIX A-5
WEEKLY MIXED WASTE CONTAINER INSPECTION and MONTHLY STRUCTURE INSPECTION LOG SHEET
CPC/WSA
(Page 1 of 1)

CONDITIONS	SAT	UNSAT	UNSATISFACTORY CONDITION	
			CONTAINER ID#(s) AND/OR LOCATION	CONDITION DESCRIPTION & CORRECTIVE ACTIONS
Containers exhibit:				(Write the number of the condition, an explanation of the discrepancy, and corrective actions taken in this space.)
1. No leaks.				
2. No significant rusting/corrosion.				
3. No punctures.				
4. No swelling.				
5. No significant peeling of paint.				
6. No significant dents.				
7. Containers are closed.				
8. Labeling is legible.				
9. Containers in storage match facility inventories.				
10. Posting on the four corners of the Surpack array are clearly visible to anyone entering the facility.				
The following are performed monthly only:				
11. Bolts are NOT loose/broken.				
12. Electrical wires are NOT exposed.				
13. Lights are operable.				
14. Electrical/mechanical equipment is functioning properly.				
15. Circuit Breakers are NOT tripped.				
16. Spill kits are available for use.				
				☐ ✔ If a Video Was Made During this Inspection.

NOTE *Notify the DDWO Supervisor of unsatisfactory conditions. DDWO Supervisor shall verify resolution of unsatisfactory condition by signature below and indicating resolution on this form.*

Inspection Performed By: _____ Date _____ Time _____
(DDWO Personnel) Signature/Print Name

Inspection Reviewed By: _____ Date _____
(DDWO Supervisor) Signature/Print Name

Unsatisfactory Conditions Addressed: _____ Date _____
(DDWO Supervisor) Signature/Print Name

THIS IS A RCRA INSPECTION RECORD

APPENDIX A-6
WEEKLY MIXED WASTE CONTAINER INSPECTION LOG
LSA-2 HARDSTAND
(Page 1 of 1)

SATISFACTORY CONDITION	SAT	UNSAT	UNSATISFACTORY CONDITION	
			CONTAINER ID#(S) AND/OR LOCATION	CONDITION DESCRIPTION & CORRECTIVE ACTIONS
Containers Exhibit:				
No Leaks				
No Severe Rusting/Corrosion				
No Punctures				
No Swelling				
No Excessive Peeling of Paint				
No Severe Dents				
No Cracks in concrete				
Cover is closed				
Legible Labeling				
No PCB liquids in storage				
Incompatible Containers are Separated by a Berm, Dike, Wall or Other Device				
Containers in Storage Match Facility Inventories				

NOTE: *Notify the DDWO Supervisor for unsatisfactory conditions. DDWO Supervisor shall verify resolution of unsatisfactory condition by signature below and indicating resolution on this form.*

Inspection Performed By: _____ Date _____ Time_____
(DDWO Personnel) Signature/Print Name

Inspection Reviewed By: _____ Date _____
(DDWO Supervisor) Signature/Print Name

Unsatisfactory Conditions Addressed: _____ Date _____
(DDWO Supervisor) Signature/Print Name

☐ ✔ if the LSA-2 Hardstand contains mixed waste making this a RCRA inspection.

☐ ✔ if the LSA-2 Hardstand IS NOT contain mixed waste.

APPENDIX A-6A
SEMI-ANNUAL STRUCTURAL DEFICIENCIES INSPECTION FORM LSA-2 HARDSTAND
(Page 1 of 1)

Compliant Condition	LSA-2 Hardstand	
Gravel Subsidence - (e.g., natural depressions)	SAT	UNSAT

Signature: _____

Print Name: _____

Date: _____

Time: _____

Comments: _____

_____

_____

Corrective Actions: Action _____

Initial _____

Date _____

Time _____

Inspection Review By: _____ Date _____
(DDWO Supervisor) Signature/Print Name

Unsatisfactory Conditions Addressed: _____ Date _____
(DDWO Supervisor) Signature/Print Name

APPENDIX A-7
WEEKLY MIXED WASTE CONTAINER INSPECTION LOG
CSRF
(Page 1 of 1)

SATISFACTORY CONDITION	SAT	UNSAT	UNSATISFACTORY CONDITION	
			CONTAINER ID#(S) AND/OR LOCATION	CONDITION DESCRIPTION & CORRECTIVE ACTIONS
Containers Exhibit:				
No Leaks				
No Severe Rusting/Corrosion.				
No Punctures				
No Swelling				
No Excessive Peeling of Paint				
No Severe Dents				
Container is closed				
Legible Labeling				
No PCB liquids in storage				
Incompatible Containers are Separated by a Berm, Dike, Wall, or Other Device				
Containers in Storage Match Facility Inventories.				

NOTE: *Notify the DDWO Supervisor for unsatisfactory conditions. DDWO Supervisor shall verify resolution of unsatisfactory condition by signature below and indicating resolution on this form.*

Inspection Performed By: _____ Date _____ Time_____
(DDWO Personnel) Signature/Print Name

Inspection Reviewed By: _____ Date _____
(DDWO Supervisor) Signature/Print Name

Unsatisfactory Conditions Addressed: _____ Date _____
(DDWO Supervisor) Signature/Print Name

☐ ✔ if CSRF contains mixed waste making this a RCRA inspection.
☐ ✔ if CSRF DOES contain mixed waste.

APPENDIX A-8
WEEKLY MIXED WASTE CONTAINER INSPECTION LOG
HLWISF
(Page 1 of 1)

SATISFACTORY CONDITION	SAT	UNSAT	UNSATISFACTORY CONDITION	
			CONTAINER ID#(S) AND/OR LOCATION	CONDITION DESCRIPTION & CORRECTIVE ACTIONS
Containers Exhibit:				
No signs of leaks or deteriorating containers in sump area, at base of containers, or on other visible floor areas				
Mixed waste containers are identified on mixed waste label on status board outside HLWISF				

NOTE: *Notify the DDWO Supervisor for unsatisfactory conditions. DDWO Supervisor shall verify resolution of unsatisfactory condition by signature below and indicating resolution on this form.*

Inspection Performed By: _____ Date _____ Time _____
(DDWO Personnel) Signature/Print Name

Inspection Reviewed By: _____ Date _____
(DDWO Supervisor) Signature/Print Name

Unsatisfactory Conditions Addressed: _____ Date _____
(DDWO Supervisor) Signature/Print Name

☐ ✔ if HLWISF contains mixed waste making this a RCRA inspection.
☐ ✔ if HLWISF DOES NOT contain mixed waste.

APPENDIX B-1
MONTHLY LOW LEVEL/TRU/FISSILE MATERIAL WASTE
CONTAINER AND FLAMMABLE/COMBUSTIBLE INSPECTION LOG SHEET
LAG STORAGE
(Page 1 of 1)

	SATISFACTORY CONDITION	SAT	UNSAT	UNSATISFACTORY CONDITION	
				CONTAINER ID#(S) AND/OR LOCATION	CONDITION DESCRIPTION & CORRECTIVE ACTIONS
	Containers Exhibit:				
	No Leaks				
	No Severe Rusting/Corrosion				
	No Punctures				
	No Swelling				
	No Excessive Peeling of Paint				
	No Severe Dents				
	Container is closed				
	Legible Labeling				
	Signs of Structural Defects Do Not Exist.				
	TRU waste containers stacked no more than four tiers				
PSR-6	Containers with >1 gram fissile material stacked no more than four tiers, or 12 feet, whichever is greater.				
PSR-18	Fissile Material Storage Drums/Containers with >1 gram fissile material from the Head End Cells stacked no more than three tiers.				
	PSR-6 and PSR-18 waste stored in separate Criticality Control Zones.				
	Visible Containers in Dense Pack Array are in Good Physical condition with no Leaks Evident.				
	Combustible/Flammable Articles are Not Adrift				

NOTE: *If any non-compliance conditions exist, DDWO Personnel shall indicate corrective action. Contact DDWO Supervision for unsatisfactory conditions. DDWO Supervisor shall verify resolution of unsatisfactory condition by signature below and indicating resolution on this form.*

Inspection Performed By: _____ Date _____ Time _____
(DDWO Personnel) Signature/Print Name

Inspection Reviewed By: _____ Date _____
(DDWO Supervisor) Signature/Print Name

Unsatisfactory Conditions Addressed: _____ _____ Date _____
(DDWO (rvisor) Signature/Print Name ((

APPENDIX B-2
MONTHLY LOW LEVEL/TRU/FISSILE MATERIAL WASTE
CONTAINER AND FLAMMABLE/COMBUSTIBLE INSPECTION LOG SHEET
LSA-1
(Page 1 of 1)

SATISFACTORY CONDITION	SAT	UNSAT	UNSATISFACTORY CONDITION	
			CONTAINER ID#(S) AND/OR LOCATION	CONDITION DESCRIPTION & CORRECTIVE ACTIONS
Containers Exhibit:				
No Leaks				
No Severe Rusting/Corrosion				
No Punctures				
No Swelling				
No Excessive Peeling of Paint				
No Severe Dents				
Container is closed				
Legible Labeling				
Signs of Structural Defects Do Not Exist.				
Visible Containers in Dense Pack Array are in Good Physical condition with no Leaks Evident.				
Combustible/Flammable Articles are Not Adrift				

NOTE: *If any non-compliance conditions exist, DDWO Personnel shall indicate corrective action. Contact DDWO Supervision for unsatisfactory conditions. DDWO Supervisor shall verify resolution of unsatisfactory condition by signature below and indicating resolution on this form.*

Inspection Performed By: _____ Date _____ Time _____
(DDWO Personnel) Signature/Print Name

Inspection Reviewed By: _____ Date _____
(DDWO Supervisor) Signature/Print Name

Unsatisfactory Conditions Addressed: _____ Date _____
(DDWO Supervisor) Signature/Print Name

APPENDIX B-3
MONTHLY LOW LEVEL/TRU/FISSILE MATERIAL WASTE
CONTAINER AND FLAMMABLE/COMBUSTIBLE INSPECTION LOG SHEET
LSA-3
(Page 1 of 1)

	SATISFACTORY CONDITION	SAT	UNSAT	UNSATISFACTORY CONDITION	
				CONTAINER ID#(S) AND/OR LOCATION	CONDITION DESCRIPTION & CORRECTIVE ACTIONS
	Containers Exhibit:				
	No Leaks				
	No Severe Rusting/Corrosion				
	No Punctures				
	No Swelling				
	No Excessive Peeling of Paint				
	No Severe Dents				
	Container is closed				
	Legible Labeling				
	Signs of Structural Defects Do Not Exist.				
	TRU waste containers stacked no more than four tiers				
PSR-6	Containers with >1 gram fissile material stacked no more than four tiers, or 12 feet, whichever is greater.				
PSR-18	Fissile Material Storage Drums/Containers with >1 gram fissile material from the Head End Cells stacked no more than three tiers.				
	PSR-6 and PSR-18 waste stored in separate Criticality Control Zones.				
	Visible Containers in Dense Pack Array are in Good Physical condition with no Leaks Evident.				
	Combustible/Flammable Articles are Not Adrift				

NOTE: *If any non-compliance conditions exist, DDWO Personnel shall indicate corrective action. Contact DDWO Supervision for unsatisfactory conditions. DDWO Supervisor shall verify resolution of unsatisfactory condition by signature below and indicating resolution on this form.*

Inspection Performed By: _____ Date _____ Time _____
(DDWO Personnel) Signature/Print Name

Inspection Reviewed By: _____ Date _____
(DDWO Supervisor) Signature/Print Name

Unsatisfactory Conditions Addressed: _____ _____ Date _____
(DDWO Supervisor) Signature/Print Name

APPENDIX B-4
MONTHLY LOW LEVEL/TRU/FISSILE MATERIAL WASTE
CONTAINER AND FLAMMABLE/COMBUSTIBLE INSPECTION LOG SHEET
LSA-4
(Page 1 of 1)

	SATISFACTORY CONDITION	SAT	UNSAT	UNSATISFACTORY CONDITION	
				CONTAINER ID#(S) AND/OR LOCATION	CONDITION DESCRIPTION & CORRECTIVE ACTIONS
	Containers Exhibit:				
	No Leaks				
	No Severe Rusting/Corrosion				
	No Punctures				
	No Swelling				
	No Excessive Peeling of Paint				
	No Severe Dents				
	Container is closed				
	Legible Labeling				
	Signs of Structural Defects Do Not Exist.				
	TRU waste containers stacked no more than four tiers				
PSR-6	Containers with >1 gram fissile material stacked no more than four tiers, or 12 feet, whichever is greater.				
PSR-18	Fissile Material Storage Drums/Containers with >1 gram fissile material from the Head End Cells stacked no more than three tiers.				
	PSR-6 and PSR-18 waste stored in separate Criticality Control Zones.				
	Visible Containers in Dense Pack Array are in Good Physical condition with no Leaks Evident.				
	Combustible/Flammable Articles are Not Adrift				

NOTE: *If any non-compliance conditions exist, DDWO Personnel shall indicate corrective action. Contact DDWO Supervision for unsatisfactory conditions. DDWO Supervisor shall verify resolution of unsatisfactory condition by signature below and indicating resolution on this form.*

Inspection Performed By: _____ Date _____ Time _____
(DDWO Personnel) Signature/Print Name

Inspection Reviewed By: _____ Date _____
(DDWO Supervisor) Signature/Print Name

Unsatisfactory Conditions Addressed: _____ Date _____
(DDWO Supervisor) Signature/Print Name

APPENDIX B-5
MONTHLY LOW LEVEL/TRU/FISSILE MATERIAL WASTE
CONTAINER AND FLAMMABLE/COMBUSTIBLE INSPECTION LOG SHEET
LAG HARDSTAND
(Page 1 of 1)

SATISFACTORY CONDITION	SAT	UNSAT	UNSATISFACTORY CONDITION	
			CONTAINER ID#(S) AND/OR LOCATION	CONDITION DESCRIPTION & CORRECTIVE ACTIONS
Containers Exhibit:				
No Leaks				
No Severe Rusting/Corrosion				
No Punctures				
No Swelling				
No Excessive Peeling of Paint				
No Severe Dents				
Container is closed				
Legible Labeling				
Signs of Structural Defects Do Not Exist.				
Tarpaulin is in good condition				
Visible Containers in Dense Pack Array are in Good Physical condition with no Leaks Evident.				
Combustible/Flammable Articles are Not Adrift				

NOTE: *If any non-compliance conditions exist, DDWO Personnel shall indicate corrective action. Contact DDWO Supervision for unsatisfactory conditions. DDWO Supervisor shall verify resolution of unsatisfactory condition by signature below and indicating resolution on this form.*

Inspection Performed By: _____ Date _____ Time _____
(DDWO Personnel) Signature/Print Name

Inspection Reviewed By: _____ Date _____
(DDWO Supervisor) Signature/Print Name

Unsatisfactory Conditions Addressed: _____ Date _____
(DDWO ervisor) Signature/Print Name

APPENDIX B-6
MONTHLY LOW LEVEL/TRU/FISSILE MATERIAL WASTE
CONTAINER AND FLAMMABLE/COMBUSTIBLE INSPECTION LOG SHEET
WSA HARDSTAND
(Page 1 of 1)

SATISFACTORY CONDITION	SAT	UNSAT	UNSATISFACTORY CONDITION	
			CONTAINER ID#(S) AND/OR LOCATION	CONDITION DESCRIPTION & CORRECTIVE ACTIONS
Containers Exhibit:				
No Leaks				
No Severe Rusting/Corrosion				
No Punctures				
No Swelling				
No Excessive Peeling of Paint				
No Severe Dents				
Container is closed				
Legible Labeling				
Signs of Structural Defects Do Not Exist.				
Tarpaulin is in good condition				
Visible Containers in Dense Pack Array are in Good Physical condition with no Leaks Evident.				
Combustible/Flammable Articles are Not Adrift				

NOTE: *If any non-compliance conditions exist, DDWO Personnel shall indicate corrective action. Contact DDWO Supervision for unsatisfactory conditions. DDWO Supervisor shall verify resolution of unsatisfactory condition by signature below and indicating resolution on this form.*

Inspection Performed By: _____ Date _____ Time _____
(DDWO Personnel) Signature/Print Name

Inspection Reviewed By: _____ Date _____
(DDWO Supervisor) Signature/Print Name

Unsatisfactory Conditions Addressed: _____ Date _____
(DDWO Supervisor) Signature/Print Name

APPENDIX B-6A
SEMI-ANNUAL STRUCTURAL DEFICIENCIES INSPECTION FORM CPC WSA
(Page 1 of 1)

Compliant Condition	CPC/WSA	
Gravel Subsidence - (e.g., natural depressions)	SAT	UNSAT

Signature: _____

Print Name: _____

Date: _____

Time: _____

Comments: _____

_____

_____

Corrective Actions: (if any)

Action _____

Initial _____

Date _____

Time _____

Inspection Review By: _____ Date _____
(DDWO Supervisor) Signature/Print Name

Unsatisfactory Conditions Addressed: _____ Date _____
(DDWO Supervisor) Signature/Print Name

APPENDIX B-7
MONTHLY LOW LEVEL/TRU/FISSILE MATERIAL WASTE
CONTAINER AND FLAMMABLE/COMBUSTIBLE INSPECTION LOG SHEET
CPC/WSA
(Page 1 of 1)

	SATISFACTORY CONDITION	SAT	UNSAT	UNSATISFACTORY CONDITION	
				CONTAINER ID#(S) AND/OR LOCATION	CONDITION DESCRIPTION & CORRECTIVE ACTIONS
	Containers Exhibit:				(Write the number of the condition, an explanation of the discrepancy, and corrective actions taken in this space.)
	No Leaks				
	No Severe Rusting/Corrosion				
	No Punctures				
	No Swelling				
	No Excessive Peeling of Paint				
	No Severe Dents				
	Container is closed				
	Legible Labeling				
	Signs of Structural Defects Do Not Exist.				
	TRU waste containers stacked no more than four tiers.				
PSR-6	Containers with >1 gram fissile material stacked no more than four tiers, or 12 feet, whichever is greater.				
PSR-18	Fissile Material Storage Drums/Containers with >1 gram fissile material from the Head End Cells stacked no more than three tiers.				
	PSR-6 and PSR-18 waste stored in separate Criticality Control Zones.				
	Visible Containers in Dense Pack Array are in Good Physical condition with no Leaks Evident.				
	Combustible/Flammable Articles are Not Adrift				
	SUREPAKs Do Not Exhibit:	N/A	N/A	N/A	
	Concrete Degradation				
	Cracking				

NOTE: *If any non-compliance conditions exist, DDWO Personnel shall indicate corrective action. Contact DDWO Supervision for unsatisfactory conditions. DDWO Supervisor shall verify resolution of unsatisfactory condition by signature below and indicating resolution on this form.*

Inspection Performed By: _____ Date _____ Time _____
(DDWO Personnel) Signature/Print Name

Inspection Reviewed By: _____ Date _____
(DDWO Supervisor) Signature/Print Name

Unsatisfactory Conditions Addressed: _____ Date _____
(DDWO Supervisor) Signature/Print Name

APPENDIX B-8
MONTHLY LOW LEVEL/TRU/FISSILE MATERIAL WASTE
CONTAINER AND FLAMMABLE/COMBUSTIBLE INSPECTION LOG SHEET
LSA-2 HARDSTAND
(Page 1 of 1)

SATISFACTORY CONDITION	SAT	UNSAT	UNSATISFACTORY CONDITION	
			CONTAINER ID#(S) AND/OR LOCATION	CONDITION DESCRIPTION & CORRECTIVE ACTIONS
Containers Exhibit:				
No Leaks				
No Severe Rusting/Corrosion				
No Punctures				
No Swelling				
No Excessive Peeling of Paint				
No Severe Dents				
Container is closed				
Legible Labeling				
Signs of Structural Defects Do Not Exist.				
Tarpaulin is in good condition				
Visible Containers in Dense Pack Array are in Good Physical condition with no Leaks Evident.				
Combustible/Flammable Articles are Not Adrift				

NOTE: *If any non-compliance conditions exist, DDWO Personnel shall indicate corrective action. Contact DDWO Supervision for unsatisfactory conditions. DDWO Supervisor shall verify resolution of unsatisfactory condition by signature below and indicating resolution on this form.*

Inspection Performed By: _____ Date _____ Time _____
(DDWO Personnel) Signature/Print Name

Inspection Reviewed By: _____ Date _____
(DDWO Supervisor) Signature/Print Name

Unsatisfactory Conditions Addressed: _____ Date _____
(DDWO Supervisor) Signature/Print Name

APPENDIX C-1
MONTHLY STRUCTURE INSPECTION LOG SHEET
LAG STORAGE
(Page 1 of 1)

SATISFACTORY CONDITION	SAT	UNSAT	UNSATISFACTORY CONDITION & CORRECTIVE ACTIONS	
			CONTAINER ID#(S) AND/OR LOCATION	CONDITION DESCRIPTION & CORRECTIVE ACTION
Floor Possesses No Cracks Which Could Adversely Impact Daily Operations or be a Safety Concern.				
Insulation/Fabric do Not Exhibit Rips or Tears.				
Cables are not Frayed				
Bolts are Not Loose/Broken				
Electrical Wires are Not Exposed				
Lights are Operable				
Electrical/Mechanical Equipment is Functioning Properly				
Circuit Breakers are Not Tripped				
Aisle Space is a Minimum of 30"				
Fire Extinguishers are Present and Charged.				
Spill Kits are Available for Use				

NOTE: *Notify the DDWO Supervisor for unsatisfactory conditions. DDWO Supervisor shall verify resolution of unsatisfactory condition by signature below and indicating resolution on this form.*

Inspection Performed By: _____ Date _____ Time _____
(DDWO Personnel) Signature/Print Name

Inspection Reviewed By: _____ Date _____
(DDWO Supervisor) Signature/Print Name

Unsatisfactory Conditions Addressed: _____ Date _____
(DDWO Supervisor) Signature/Print Name

☐ ✔ if Lag Storage contains mixed waste making this a RCRA inspection.
☐ ✔ if Lag Storage DOES NOT contain mixed waste.

APPENDIX C-2
MONTHLY STRUCTURE INSPECTION LOG SHEET
LSA 1
(Page 1 of 1)

SATISFACTORY CONDITION	SAT	UNSAT	UNSATISFACTORY CONDITION & CORRECTIVE ACTIONS	
			CONTAINER ID#(S) AND/OR LOCATION	CONDITION DESCRIPTION & CORRECTIVE ACTION
Insulation/Fabric do Not Exhibit Rips or Tears.				
Cables are not Frayed				
Bolts are Not Loose/Broken				
Electrical Wires are Not Exposed				
Mechanical Equipment is Functioning Properly				
Aisle Space is a Minimum of 30"				
Fire Extinguishers are Present and Charged.				
Spill Kits are Available for Use				

NOTE: *Notify the DDWO Supervisor for unsatisfactory conditions. DDWO Supervisor shall verify resolution of unsatisfactory condition by signature below and indicating resolution on this form.*

Inspection Performed By: (DDWO Personnel) _____ Signature/Print Name Date _____ Time _____

Inspection Reviewed By: (DDWO Supervisor) _____ Signature/Print Name Date _____

Unsatisfactory Conditions Addressed: (DDWO Supervisor) _____ Signature/Print Name Date _____

☐ ✔ if LSA-1 contains mixed waste making this a RCRA inspection.
☐ ✔ if LSA-1 DOES NOT contain mixed waste.

APPENDIX C-3
MONTHLY STRUCTURE INSPECTION LOG SHEET
LSA 3
(Page 1 of 1)

SATISFACTORY CONDITION	SAT	UNSAT	UNSATISFACTORY CONDITION & CORRECTIVE ACTIONS	
			CONTAINER ID#(S) AND/OR LOCATION	CONDITION DESCRIPTION & CORRECTIVE ACTION
Floor Possesses No Cracks Which Could Adversely Impact Daily Operations or be a Safety Concern.				
Insulation/Fabric do Not Exhibit Rips or Tears.				
Cables are not Frayed				
Bolts are Not Loose/Broken				
Electrical Wires are Not Exposed				
Lights are Operable				
Electrical/Mechanical Equipment is Functioning Properly				
Circuit Breakers are Not Tripped				
Aisle Space is a Minimum of 30"				
Fire Extinguishers are Present and Charged.				
Spill Kits are Available for Use				

NOTE: *Notify the DDWO Supervisor for unsatisfactory conditions. DDWO Supervisor shall verify resolution of unsatisfactory condition by signature below and indicating resolution on this form.*

Inspection Performed By: _____ Date _____ Time _____
(DDWO Personnel) Signature/Print Name

Inspection Reviewed By: _____ Date _____
(DDWO Supervisor) Signature/Print Name

Unsatisfactory Conditions Addressed: _____ Date _____
(DDWO Supervisor) Signature/Print Name

☐ ✔ if LSA-3 contains mixed waste making this a RCRA inspection.
☐ ✔ if LSA-3 DOES NOT contain mixed waste.

APPENDIX C-4
MONTHLY STRUCTURE INSPECTION LOG SHEET
LSA 4
(Page 1 of 1)

SATISFACTORY CONDITION	SAT	UNSAT	UNSATISFACTORY CONDITION & CORRECTIVE ACTIONS	
			CONTAINER ID#(S) AND/OR LOCATION	CONDITION DESCRIPTION & CORRECTIVE ACTION
Floor Possesses No Cracks Which Could Adversely Impact Daily Operations or be a *Safety Concern.*				
Insulation/Fabric do Not Exhibit Rips or Tears.				
Cables are not Frayed				
Bolts are Not Loose/Broken				
Electrical Wires are Not Exposed				
Lights are Operable				
Electrical/Mechanical Equipment is Functioning Properly				
Circuit Breakers are Not Tripped				
Aisle Space is a Minimum of 30"				
Fire Extinguishers are Present and Charged.				
Spill Kits are Available for Use				

NOTE: *Notify the DDWO Supervisor for unsatisfactory conditions. DDWO Supervisor shall verify resolution of unsatisfactory condition by signature below and indicating resolution on this form.*

Inspection Performed By: _____ Date _____ Time _____
(DDWO Personnel) Signature/Print Name

Inspection Reviewed By: _____ Date _____
(DDWO Supervisor) Signature/Print Name

Unsatisfactory Conditions Addressed: _____ Date _____
(DDWO Supervisor) Signature/Print Name

☐ ✔ if LSA-4 contains mixed waste making this a RCRA inspection.
☐ ✔ if LSA-4 DOES NOT contain mixed waste.

APPENDIX C-5
MONTHLY STRUCTURE INSPECTION LOG SHEET
PUMP STORAGE VAULT
(Page 1 of 1)

SATISFACTORY CONDITION	SAT	UNSAT	UNSATISFACTORY CONDITION & CORRECTIVE ACTIONS	
			CONTAINER ID#(S) AND/OR LOCATION	CONDITION DESCRIPTION & CORRECTIVE ACTION
Weather cover tarps are in place and in good condition				
No erosion in base pad				
Rad postings in place				

NOTE: *If any non-compliance conditions exist, DDWO Personnel shall indicate corrective action. Contact DDWO Supervision for unsatisfactory conditions. DDWO Supervisor shall verify resolution of unsatisfactory condition by signature below and indicating resolution on this form.*

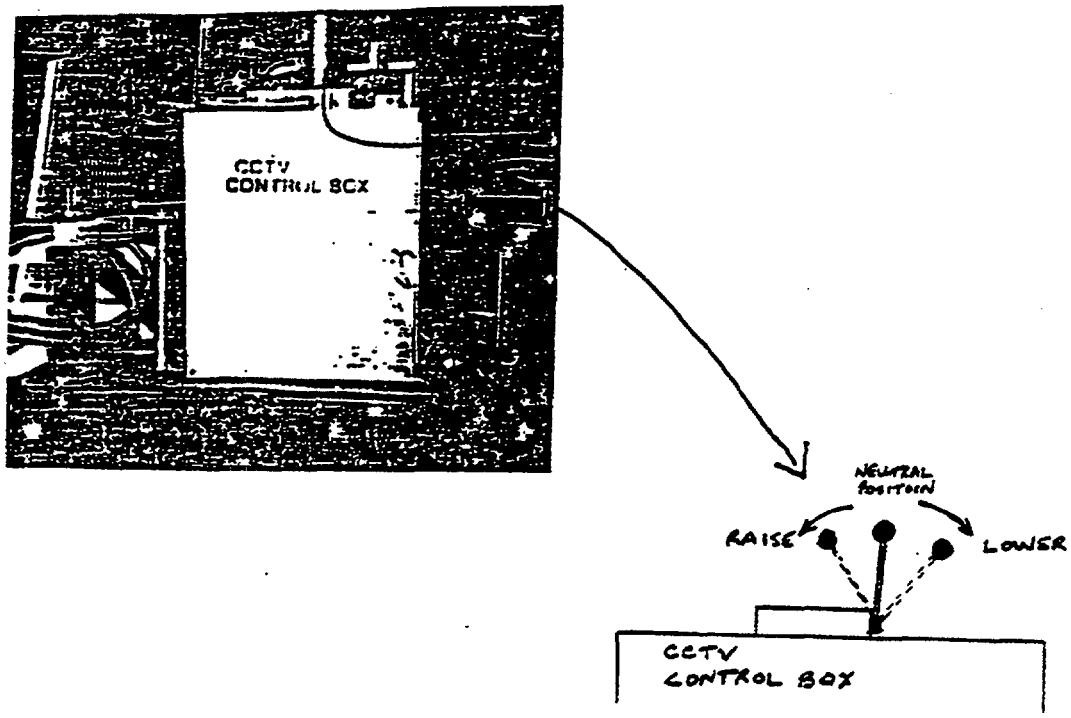
Inspection Performed By: _____ Date _____ Time _____
(DDWO Personnel) Signature/Print Name

Inspection Reviewed By: _____ Date _____
(DDWO Supervisor) Signature/Print Name

Unsatisfactory Conditions Addressed: _____ Date _____
(DDWO Supervisor) Signature/Print Name

APPENDIX E-1
RAISING/LOWERING OF BOOM
(Page 1 of 1)

SKETCH SK-DGF-093099-01	REV.A
ORIGINATOR	INDEPENDENT REVIEW
Dennis Feldman	E.A. Carabello
QA CONCURRENCE: Amy L Brown	



A1.0 Ensure Air Compressor is operating.

NOTE *The valve lever, located on top of the CCTV Control Box, has three positions. Left, Center, and Right with the center being the rest position. The valve lever is shown in the schematic.*

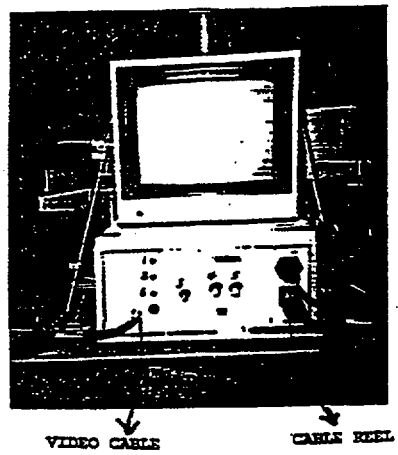
A2.0 For raising the mast, move the valve lever to its left position.

A3.0 For holding the current elevation, allow the lever to return to its center position.

A4.0 For lowering the mast, move the valve lever to its right position.

APPENDIX E-2
CAMERA OPERATION
(Page 1 of 2)

SKETCH SK-DGF-093099-02	REV.A
ORIGINATOR	INDEPENDENT REVIEW
Dennis Feldman	[illegible]
QA CONCURRENCE: Amy L. Brown	



NOTE *The remote camera is operated by using the Camera Controller shown above and viewing it on the monitor. The camera has the following functions: floodlight, spot light, focus, zoom and position controls for Up, Down, Left, and Right. See page 2 for wiring layout.*

B1.0 Ensure both the controller and monitor are turned on.

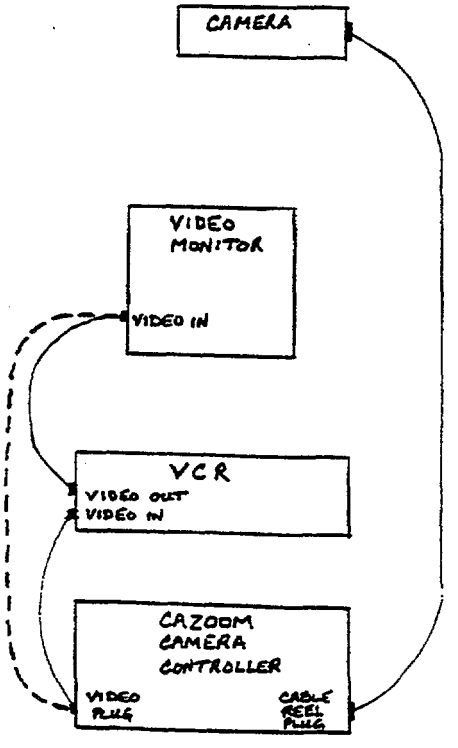
B2.0 Utilize the following table to locate and operate each controller function.

Control Functions

Ref. #	Function	Switch Description
1	Zoom	Toggle Left (Wide) and Right (Telephoto)
2	Focus	Toggle Left (Near) and Right (Far)
3	Position Controls	Toggle Positions (Up, Down, Left, Right) correspond to camera
4	Left Light	Dial Switch
5	Right Light	Dial Switch
6	Auto Focus	Push Button
7	Power	Rocker

APPENDIX E-2A
CAMERA OPERATION

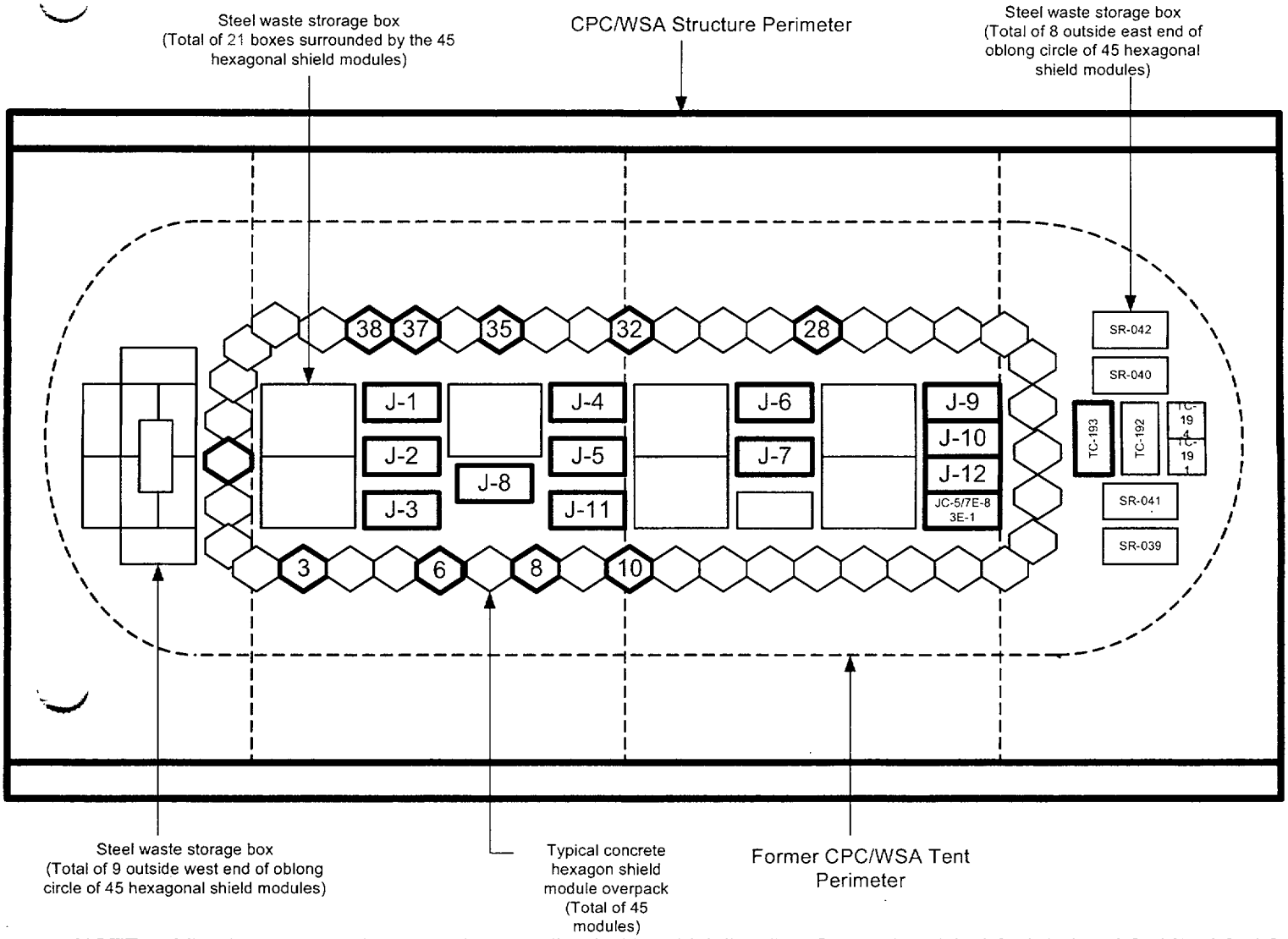
SKETCH SK-DGF-093099-03	REV.A
ORIGINATOR	INDEPENDENT REVIEW
Dennis Feldmeier	[signature]
QA CONCURRENCE:	[signature]



NOTE1 *Use solid line connections if VCR is to be used.*
If VCR is NOT to be used, connect camera cable to CAZOOM Camera Controller and by-pass VCR hook-up by using dotted line connection.

NOTE2 *Video monitor CAZOOM Camera Controller and VCR (if used) require 110V power source.*

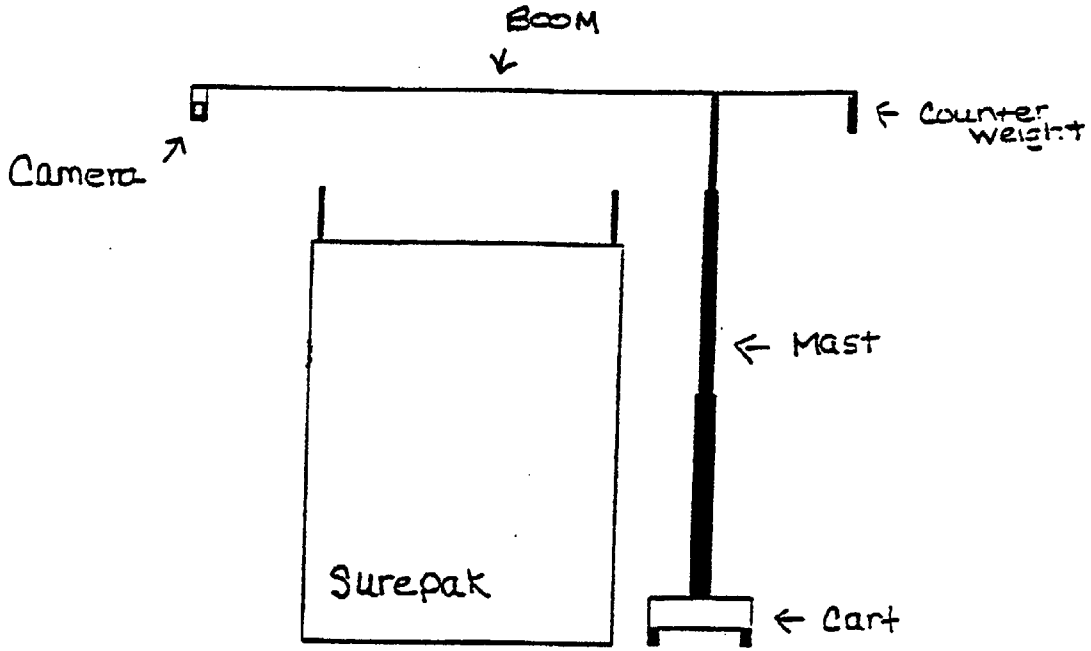
APPENDIX E-3
CPC/WSA LAYOUT
(Page 1 of 1)



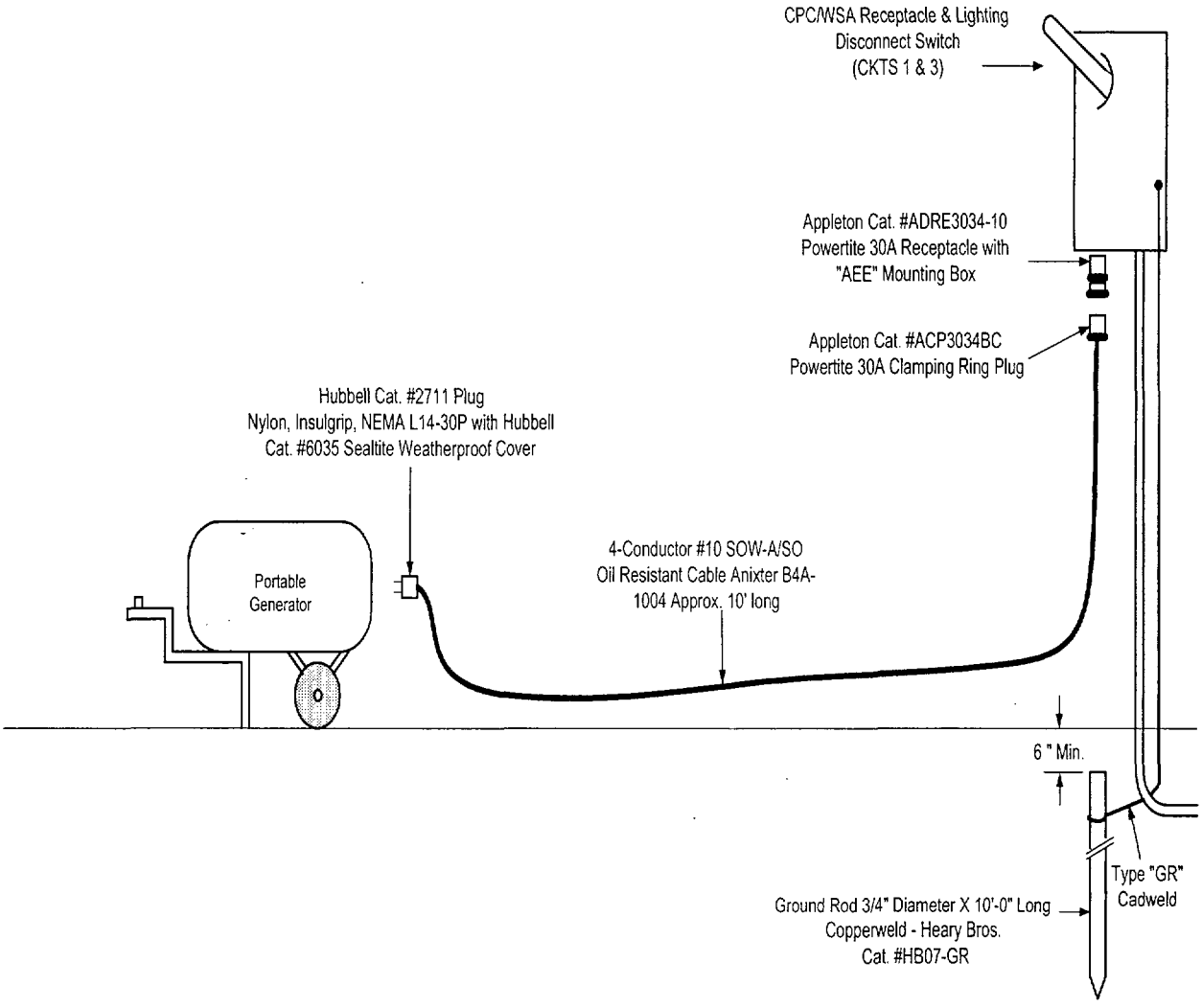
NOTE *Mixed waste containers are those outlined with a thick line (i.e., Boxes J-1, J-2, J-3, J-4, J-5, J-6, J-7, J-8, J-9, J-10, J-11, J-12, JC-5/7E-8/3E-1 and TC-193; and Superpaks 3, 6, 8, 10, 28, 32, 35, 37, 38).*

APPENDIX E-4
CAMERA EQUIPMENT POSITIONING
(Page 1 of 1)

SKETCH SK-DGF-093099-05	REV.A
ORIGINATOR	INDEPENDENT REVIEW
Dennis Feldman	
QA CONCURRENCE:	



APPENDIX E-5
GENERATOR HOOK-UP
(Page 1 of 1)



WARNING
Follow sequence indicated below to prevent the potential for electrical shock.

1. Hook portable generator to the CPC/WSA Receptacle & Lighting Disconnect Switch. (Located outside CPC/WSA on southwest side)
2. Turn on generator.
3. Supply power to CPC/WSA Building by turning on the disconnect switch.

WVNSCO RECORD OF REVISION

Rev. No.	Description of Changes	Revision On Page(s)	Dated
0	Original Issue	All	05/93
FC1	5.2.4 Delete one WVNS-SAR-009 statement. 6.1.1 B Reword statement. 6.2.1 B Reword statement. Attachment B Change inspection items for storage shed.	4 6 B-3	07/93
FC2	6.1.1 - Reword to include overpacks Attachment A and Attachment C - modify attachment to reflect new requirements.	I, 5 A-1 & C-1	08/93
FC3	Revise Attachment A Completely revise format of Attachment B	A-1 & B-1	11/93
1	General Revision	All	03/95
FC1	6.1 [2] Add new step: "Obtain, from WCS, the latest version of the LAG, LSAH, and CPC-WSA." Renumber remaining steps. 6.1 [3] [I] Add new step: "Mixed waste containers in storage match the LAG, LSA 4, and CPC-WSA Mixed Waste Inventories and corresponding facility maps." Appendix A - Update table. Add new row: "CONTAINERS IN STORAGE MATCH FACILITY INVENTORIES AND MAPS". Delete "Yes" and "No" columns for LSA 1 and LSA 3.	8 8 13	03/13/96
FC2	2.0 - Delete 2.1 & 2.1.1. Add PSR-6. 5.2.1[1] - Delete OSR/TR-GP-6 & WVNS-SAR-009. 5.2.5 - Delete 5.2.5. 6.2[2][g] - Add instructions for inspecting container stacking. Appendix B - Add inspection of TRU containers per PSR-6. Appendix E - Delete OSR/GP-6 and WVNS-SAR-009. Add PSR-6.	5 6 7 9 14 17	07/08/96
FC3	3.2 - Revise department name for procedure responsibility. 5.2.8 - Add new section to define dense pack array. 6.1[2],6.2[2] - Order inspection criteria to match appendices. 6.1[4] - Add new section to provide instruction for dense pack array inspection.	5 7 10, 11 9	08/12/96

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC3 (Cont.)	6.1[8], 6.3[4], 6.4[4] - Route completed appendices to WM Supervisor for review.	10, 12, 13	
	Appendix A, B, & C - Add sign-off for WM Supervisor review.	15, 16, 17	
FC4	6.1 [1] Delete "or CPC WSA overpacks".	9	11/06/96
	6.1 [2] Delete "LAG, LSA 4, and CPC-WSA".	9	
	6.1 [3] [k] Delete "LAG, LSA 4, and...and".	10	
	6.2 [3] Move old step 6.1 [4] [a] - [c] to 6.2 [3] [a] - [c].	12	
	6.4 Delete NOTE2 before step 6.4.	14	
	Appendix A - Delete CPC/WASA column. Delete rows: "CONCRETE DEGRADATION OF SUREPAK" and "CRACKING OF CONCRETE SUREPAK".	16	
	Appendix B - Add rows: "CONCRETE DEGRADATION OF SUREPAK", "CRACKING OF CONCRETE SUREPAK", and "OVERVIEW OF ARRAY FOR DENSE PAC".	17	
	Appendix C - Delete "N/A" under inspection item CPC/WSA for various compliant conditions and add N/A for first three items. Delete "EXTERIOR" from column heading.	18	
	Repaginated to allow for field change.	All	
FC5	Table of Contents - Add Section 6.5; add Appendix F and G	TOC	03/20/97
	1.0 - add FRS North Yard to Scope	7	
	6.0 - add Note 1	10	
	6.1 - add Note 3	10	
	6.1[5] - add FRS North Yard	11	
	6.5 - add new Section 6.5	15	
	7.1.1, 7.1.2 - Added WCS responsibility for maintaining records.	16	
	8.0 - add Appendix F & G	17	
	Appendix A - Modify to be used for one facility only	18-19	
	Appendix B - Modify to be used for one facility only	20-28	
	Appendix C - Modify to be used for one facility only	29-34	
	Appendix F - Add	37	
	Appendix G - Add	38-40	
	Repaginated to allow for field change.	All	
FC6	6.1[3] Updated to reflect updated tables	7	10/15/97
	6.1[3][a-e],[g-l],[k] Updated to reflect updated tables	7-8	
	6.1[4] Updated to reflect updated tables	8	
	6.1[5] Updated to reflect updated tables	8	
	6.2[2] Updated to reflect updated tables	9	

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC6 (Cont.)	6.2[2][a-b],[d-e],[g-j] Updated to reflect updated tables	9	
	6.2[3] Updated to reflect updated tables	10	
	6.2[4][a],[b] Updated to reflect updated tables	10	
	6.2[5]-[9] Updated to reflect updated tables	10-11	
	6.3[1][a]-[l] Updated to reflect updated tables	11-12	
	8.0 Updated List of Appendixes	14	
	APPENDIX A-1 Changed to better clarify inspection requirements	16	
	APPENDIX A-2 Added new table	17	
	APPENDIX A-3 Changed existing A-2 to A-3	18	
	APPENDIX B-1 Changed to better clarify inspection requirements	19	
	APPENDIX B-2 Changed to better clarify inspection requirements	20	
	APPENDIX B-3 Changed to better clarify inspection requirements	21	
	APPENDIX B-4 Changed to better clarify inspection requirements	22	
	APPENDIX B-5 Changed to better clarify inspection requirements	23	
	APPENDIX B-6 Changed to better clarify inspection requirements	24	
	APPENDIX B-7 Changed to better clarify inspection requirements	25	
	APPENDIX B-8 Deleted	26	
	APPENDIX B-9 Changed to better clarify inspection requirements	27	
	APPENDIX C-1 Changed to better clarify inspection requirements	28	
	APPENDIX C-2 Changed to better clarify inspection requirements	29	
	APPENDIX C-3 Changed to better clarify inspection requirements	30	
	APPENDIX C-4 Changed to better clarify inspection requirements	31	
	APPENDIX C-5 Deleted	32	
	APPENDIX C-6 Changed to better clarify inspection requirements	33	
2	General Revision	All	12/30/97
FC1	5.3 [1] - Changed "C-5" to "C-6"	10	06/02/98
	5.3 [1] [j], [k], [l] - Added steps	10	
	Appendix C-6, Added	30	
3	Major Change Revision	All	09/09/98

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC1	Appendix B-1 thru B-8 - Under the Satisfactory Condition column - Revised as "Signs of Structural Defects Do Not Exist" and "TRU waste containers stacked no more than four tiers."	24-31	11/05/98
	Appendix B-2 thru B-6 and B-8 - Deleted "TRU waste containers stacked no more than four tiers" row.	25-29,31	
FC2	5.6 [1] [a] thru [d] - Deleted the need to obtain a weekly RWP and placed the proper RWP requirements into the procedure.	13,14	01/15/99
FC3	Deleted "Tarpaulin is in good condition" row from Appendix B-7.	30	02/22/99
FC4	Section 5.0 - Deleted NOTE Step 5.2[1][j] - Added "PSR-6" to margin Section 7.0 - Added "Process Safety Requirements (PSR)-6"	6 10 18	06/21/99
FC5	Reworded step so that Rad Worker II training is required if going behind the SUREPAKS.	14	09/20/99
4	General Revision	All	09/30/99
FC1	Steps 5.2.1[6], 5.3[3], 5.4[3], 5.6[13] - Changed referenced step from 6.0[1][c] to 7.1.3.	12,14,15,17	11/17/99
FC2	Changed title page Use Classification Corrected step number in 5.1 NOTE Corrected step number in 5.1.1[3] Corrected reference in 5.1.1[4] Clarified wording in 5.1.1[11] Corrected step numbers in 5.2 NOTES2 Added 5.6 NOTE 4 Clarified wording & corrected references in 7.1.3. Revised Appendix B-7; Deleted lines, added instructions for documenting conditions, and added Blue lock installation / verification.	1 8 9 9 11 11 16 19 33	01/17/00

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC3	Cover sheet - Removed step from critical use.	1	03/29/00
	2.4 Removed "all standard" from statement and added "as practical with consideration for ALARA principles."	6	
	5.1.1.[2][f], 5.2.1[1][d] Removed ambiguous language and added "caused by pressure build up" to swelling condition.	10,12	
	5.1.1[11]-[13], 5.2.1[12]-[14], 5.3[5]-[7], 5.4[5]-[7],5.6[26]-[28] Multiple action steps were previously in one step.	12,14-17,20	
	10.0 Assigned format numbers to list of appendices.	22	
	Appendices A-1, A-2, A-3, A-5, B-1 through B-8 Removed "excessive" or "significant" from swelling inspection.	25-27, 29-37	
	Appendix B-1 through B-5 Removed inspection of tarpaulin from sheets for areas not applicable.	30-33	
FC4	5.6[1] NOTE4 deleted. Pertained to critical use steps removed in previous field change.	18	04/10/00
FC5	1.2 - Added quarterly engineering evaluation to the Scope.	4	07/18/00
	2.3 - Added quarterly engineering evaluation.	5	
	4.1[1] - Added blank tape and smear and particulate sampling equipment.	6, 7	
	4.1.[3](e) - Added RWP.	7	
	4.1[4] and [5] - Deleted reference to blue locks.	7	
	4.1[6] - Added additional RP requirements.	8	
	5.1.1[1] - Changed WCS to WMO Supervisor	9	
	5.1.1[8] - Deleted blue lock requirements.	11	
	5.1.1[11] - Incorporated 5.1.1[12]	11	
	5.1.1[12],[13] - Deleted	11	
	5.2.1[9] - Deleted blue lock requirements.	13	
	5.2.1[12] - Incorporated 5.2.1[13]	14	
	5.2.1[13],[14] - Deleted	14	
	5.3[5] - Incorporated 5.3[6]	15	
	5.3[6],[7] - Deleted	15	
	5.4[5] - Incorporated 5.4[6]	16	
	5.4[6],[7] - Deleted	16	
	5.5 - Added new section to perform the	16,17	
	5.7[24-[28] - Deleted quarterly engineering evaluation.	20	
	9.2, 9.7 and 9.8 - Added references WVDP-010, SOP 15-14, and SOP 300-07.	22	
	Appendices A-5 and B-7 - Deleted sign-offs for blue locks.	29,36	
	Appendix A-5 - Changed "RCRA" designation.	29	

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
5	**NEW TYPE REVISION** to incorporate Field Changes	ALL	07/25/00
FC1	Cover Page - Changed the Cog Engineer from E. Ciancone to R. Gill	Cover	08/02/00
	DANGER prior to Step 5.7[1] - Added warnings of exposure to noise, exhaust fumes, and hot surfaces near generator.	18	
	Step 5.7[1] - Reworded step.	18	
	CAUTION prior to Step 5.7[2] - Added caution to avoid spilling fuel while moving generator.	18	
	Step 5.7[2] - New step that allows moving the generator while the CPC/WSA is disassembled.	18	
	NOTE prior to Step 5.7[13] - Added information that the remote control must be used to select "Line 1" on the monitor.	20	
	5.7[13] - New step to use the INPUT button on the remote control to select "Line 1" on the monitor.	20	
FC2	2.3 Added statement regarding record of PCBs added or removed from storage containers is maintained in IWTS and required for EA to prepare the Annual Document Log.	5	01/22/01
	3.3 Added limitation for the storage of radioactive PCB wastes.	6	
	4.1[2] Added "(HAZWOPER)"	7	
	5.1.1[2][j] Added "No PCB liquids in Lag Storage Building" to weekly mixed waste container inspection step.	9	
	7.1.1 Added WV-733 for RCRA records generated.	21	
	7.1.3, 9.9 Updated referenced procedure # from WM-WMO-01 to WM-130 and new title.	21,23	
	7.4 Updated Records and Information Department name.	22	
	8.2, 8.3 Added source requirements.	22	
	Appendices A-1 Added "No PCB liquids in storage" to weekly mixed waste container inspection sheet for Lag Storage Building.	26	
	4.1 [4] [5], 5.1.1 [8], [12], [13], 5.2.1 [9], [13], [14], 5.3 [6], [7], 5.4 [6], [7], NOTE4	8,11,14 15,16,18	
	5.7 [26]-[27] - Removed the word DELETED and renumbered the steps accordingly.	21	
	Repaginated to accommodate the Field Change	ALL	
FC3	Cover Sheet - inserted new cover sheet and updated the Cognizant Engineer and Manager.	1	07/20/01
	1.3 Changed department name from WMS to WMO.	4	
	4.1[4][b] Reworded reference for consistency.	7	
	NOTE preceding 5.1.1 Added step.	8	
	5.1.1[1] WMO previously spelled out.	8	
	NOTE preceding 5.1.1[2] Deleted and included in step 5.1.1[2].	8	

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC3 (Cont.)	5.1.1[2][k] Added "Storage Building" to Lag.	9	
	5.1.1[2][l] Moved step from after SUREPAK inspections.	9	
	NOTE preceding 5.1.1[3] Changed to step 5.1.1[3], [a], and [b].	9	
	5.1.1[4], [a], and [b] Changed paragraph numbering.	9	
	5.1.1[12] Reworded and updated title for Records Coordinator.	10	
	5.2.1[1] Changed "where applicable, as specified" to "as applicable."	11	
	5.2.1[3] Changed "where applicable, as specified" to "as applicable."	11	
	5.2.1[11] Reworded and updated title for Records Coordinator.	12	
	5.3[1] Changed "where applicable, as specified" to "as applicable."	13	
	5.3[4] Identified specific Appendices.	13	
	5.3[5] Reworded and updated title for Records Coordinator.	14	
	5.4[4] Identified specific Appendices.	14	
	5.4[5] Reworded and updated title for Records Coordinator.	14	
	5.7 [1],[2], and [3] Reworded for clarity.	16	
	NOTE preceding 5.7[13] Deleted; incorporated into step [13].	17	
	5.7[13][a] Added step to ensure correct mode is used for the camera and VCR during recording.	17	
	5.7[21] Reworded for clarity.	18	
	7.1.3 Changed WM to Waste Management.	19	
	7.2 Changed WMS to Waste Management's.	19	
FC4	Cover Sheet updated per EP-5-002.	1	01/14/02
	3.1 Deleted "allowable limits."	6	
	3.2 Added "on contact."	6	
	4.2 Added title to subsection.	7	
	4.3 Added title to subsection.	7	
	4.3[2][b] Changed contamination levels from "100 times the limits of WVDP-010 ... Table 2-2" to "exceed WVDP-010 ... Table 2-2 levels (i.e., 20 dpm/100 cm^2 alpha and 200 dpm/100 cm^2 beta-gamma)"	8	
	4.3[2][c] Removed Anti-C coveralls, cloth cap, pair of booties, and pair of rubber shoes from the suit-up requirements.	8	
	5.1.1[3][b] Added "See Appendix E-3 for location."	9	
	5.1.1[4][b] NOTE preceding step: deleted "known" cracks.	10	
	5.1.1[7] Reworded to make notifications of leaks per WV-915.	10	
	5.3[1][f] Changed "blown" to "tripped."	13	
	5.4[1] Reworded for clarification.	14	
	5.5[2][c] Deleted "G-M" preceding surveys.	15	

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC4 (Cont.)	5.5[2][d] Changed 3,200 to 100 cpm/probe area (beta-gamma) and changed 200 to 5 cpm/probe area (alpha).	15	
	5.5[3] Updated title of SOP 300-07.	15	
	5.7[1] NOTE2 was deleted.	16	
	5.7[14] Clarified when to document inspection.	18	
	5.7[21] Added step to shut off compressor.	18	
	5.7[27] Added step to store the equipment.	18	
	7.1.1 Deleted info. addressed on RIDS.	19	
	7.1.2 Added appendices and deleted info. addressed on RIDS.	19	
	7.1.3 Reworded and updated title of WM-130.	19	
	7.3 Deleted.	19	
	7.4 Added WV-733.	19	
	8.5 Added "LCO 3."	20	
	9.1 Added WV-733.	20	
	9.2 Added WV-915.	20	
	9.9 Updated title of SOP 300-07.	20	
	9.10 Updated title of WM-130.	20	
	Appendix E-3 - Created legible map and updated the layout of containers.	47	
	Appendix E-5 - Created legible figure for the generator hook-up.	49	
	These changes were needed to lower the protection level of PPE needed for obtaining samples during the quarterly engineering evaluations based on the history of the levels encountered. Other changes were improvements identified during review of the procedure. WMO and RP are affected by these changes.		
FC5	Procedure was updated to reflect the changes made to PSR-6 and to incorporate the requirements of the new PSR-18.		06/12/02
	Detailed changes are as follows:		
	Cover sheet updated. Procedure classification changed to Critical Use due to PSR implementation steps.	1	
	Table of Contents updated.	2-3	
	1.2 - Fissile Material (> 1gram of fissile mat).	4	
	2.5 - added Fissile Material.	5	
	3.4 - added CCZs required for FM waste.	6	
	4.2[2] - added Crit training.	7	
	5.2 - added Fissile Material.	11	
	5.2.1 - added Fissile Material.	11	
	5.2.1[1][j] - deleted PSR-6.	12	
	5.2.1[1][k] - added to reflect new PSR-6 requirements.	12	

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC5 (Cont.)	5.2.1[1][l] - added to reflect new PSR-18 requirements.	12	
	5.2.1[1][m] - added requirement to verify TM waste in separate CCZs.	12	
	5.2.1[4] - added. Remaining steps renumbered.	13	
	5.2.1[5] - added "other".	13	
	8.5 - added SR 3.	21	
	8.6 - added PSR-18 to Source Requirements.	21	
	9.6 - Updated to new title for SOP 09-07.	21	
	10.6 - 10.12 - added Fissile Material.	22	
	10.12 - Corrected title to be for CPC-WSA.	22	
	10.13 - added.	22	
	Appendix B-1: added Fissile Material to title. Added stacking requirements to reflect changes to PSR-6 and new PSR-18. Added CCZ verification.	29	
	Appendix B-2: added Fissile Material to title.	30	
	Appendix B-3: added Fissile Material to title. Added stacking requirements to reflect changes to PSR-6 and new PSR-18. Added CCZ verification.	31	
	Appendix B-4: added Fissile Material to title. Added stacking requirements to reflect changes to PSR-6 and new PSR-18. Added CCZ verification.	32	
	Appendix B-5: added Fissile Material to title.	33	
	Appendix B-6: added Fissile Material to title.	34	
	Appendix B-7: added Fissile Material to title. Added stacking requirements to reflect changes to PSR-6 and new PSR-18. Added CCZ verification.	35	
	Appendix B-8: added Fissile Material to title.	36	
	This change affects Waste Management Operations and the Nuclear Criticality Safety Manager.		
6	**NEW-TYPE REVISION INCORPORATION OF FIELD CHANGES**	**ALL**	**06/18/02**
FC1	3.2 - Changed "unshielded" to "waste" and "less than 100 mrem/hr" to "<200 mRem/hr".	6	10/28/02
	7.4 - Changed "Records and Information" to "Records & Configuration/Document Control".	20	
	This change affects Waste Management Services, Waste Management Operations and Radiation Protection.		

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
7	General Revision. Added Appendix A-6 for weekly mixed waste inspection of the LSA-2 hardstand added Appendix A-7 for CSRF. Procedure titles updated, department titles updated, and other editorial changes Were made. Identified step 5.5[1] as RCRA and added the CPC-WSA to the list of RCRA records in step 6.0[1]. Procedure was also updated to meet the requirements of DCIP-100. This change affects DDWO.	All	05/05/03
8	General Revision. Added steps to report unsat conditions in accordance with WVDP-357. This revision closes Open Items Tracking System Numbers 0321191-I/DCIR and 0330167-E/SURV. This change affects DDWO.	All	12/16/03
9	5.2 - changed "TRY" to "TRU" - spelling correction 5.7[14] - step deleted and remaining steps renumbered 5.7[14] - step reworded Appendix E-3 - Changed "22" to "21" - steel waste storage boxes Revision was made to correction typical errors. This change affects DDWO.	11 19 19 49	01/21/04
10	3.0, added [5], "APPROVED CONTAINERS..." 5.2[1][j] changed "TRY" to "TRU" 7.0 added [7] "WVDP-146" This change affects DDWO.	6 12 21	04/13/04
11	General Revision Changes were to add inspection of the High Level Waste Interim Storage Facility, and general administration changes also were made. This change affects DDWO	All	08/05/04

APPENDIX F-2

SOP 00-29, *MAIN PLANT SURVEILLANCE DATA SHEET CONTROL*

Required only for copies.
Copy valid for 24 hours from verification time/date.

Date _____ Time _____ Verified By _____
Date _____ Time _____ Verified By _____
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Date _____ Time _____ Verified By _____
Date _____ Time _____ Verified By _____

Revision Number 21

Revision Date 08/09/04

SOP 00-29

Main Plant Surveillance Data Sheet Control

Cognizant Author: C. E. Hodge

Cognizant Manager: W. J. Potts

Facility Manager: J. P. Curcio

HLW:

YES	NO	NA
X		

QUALITY LEVEL: B

SAFETY CLASS: C

PROCEDURE USE CLASSIFICATION		MULTIPLE USE BY SECTION
X	CRITICAL USE	ALL APPENDICES
	REFERENCE USE	ALL OTHERS

ALARA PLANNING

[X] The work described in this procedure does not require ALARA planning.

[ ] The work described in this procedure may require ALARA planning.

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MAIN PLANT SURVEILLANCE DATA SHEET CONTROL

1.0 INTRODUCTION

1.1 Purpose

This procedure provides instructions for recording routine readings and documenting equipment operation. Surveillance Requirements from WVDP Process Safety Requirements (PSRs). Are contained in this procedure.

The following activity described in this procedure is designated HLW: Temperature monitoring of the HLWIS during the time CWFs are stored. This activity provides required documentation for HLW Storage Records. The related WQR specification is 1.4.

1.2 Applicability

Plant Systems Operations completes the data sheets in this procedure.

2.0 GENERAL INFORMATION

None.

3.0 PRECAUTIONS AND LIMITING CONDITIONS

3.1 Precautions

None.

3.2 Limitations

[1] Main Plant facility leaks must be identified, monitored, and controlled until repairs can be made to stop those leaks. Refer to Appendix A-14.

[2] Leaks from unknown sources or originating from a contamination area should be considered potentially contaminated. Contact the PSO SS and Rad Protection upon discovery of these kinds of leaks.

[3] A hard hat is required in designated areas of the WTF.

4.0 PREREQUISITES

4.1 Reference Documents

[1] The following SOPs should be readily available as applicable:

SOP 30-08	STS/PVS Standby Generator Operation
SOP 31-09	Operation of Boilers 31F-002A and 31F-002B
SOP 32-01	Plant Water System
SOP 32-04	Potable Water System Operation
SOP 32-06	Cooling Water System
SOP 32-09	Procedures for the Analysis of Utility Room Water Samples

[2] WVDP-218 Process Safety Requirements

4.2 Suit-up Requirements

[1] For readings that require entry into Contamination areas obtain an RWP.

4.3 Materials, Special Tools, and Equipment

[1] Binoculars to view in-cell components through viewing windows.

[2] Two-way radio, as necessary.

4.4 Field Preparations

[1] Notify the PSO SS prior to taking readings.

[2] Obtain an RWP for any work other than routine surveillance inspections performed in the WTF.

[3] Blank surveillance data sheets may be reproduced on legal size paper.

5.0 SOURCE REQUIREMENTS

5.1 The following are the source requirements associated with this procedure. These documents must be reviewed for impact when this procedure is revised.

[1] SOP 00-29 implements the following Process Safety Requirements (PSR):

[a] PSR-3, "Building and Vessel Ventilation System Requirements" Surveillance Requirement 1.2.b, 1.2.c, 1.3.b, 1.3.c, 1.5.b, 1.6.b, and 5.2.

[b] PSR-5, "Standby and Backup Power Requirements" Surveillance Requirement 1 and 2.

[c] PSR-8, "Fire Protection Systems Requirements" Surveillance Requirement 1.

[d] PSR-10, "High-Level Waste Tank Leak Detection System Requirements", Surveillance Requirement 1a.

[e] PSR-12, "Vitrification Facility Ventilation and Off-Gas System Requirements", Surveillance Requirements 2b, 4b, and 5b.

[f] PSR-13, "Vitrification Facility Standby Power Requirements" Surveillance Requirements 1 (operability), 2a, 3 (operability), and 4 (operability).

[2] 6NYCRR Part 373-3.2 and 373-3.10, New York State Hazardous Waste Tank Requirements.

[3] 6NYCRR Part 598-598.7 Handling and Storage of Hazardous Substances.

[4] 6NYCRR Part 613.5(b)(3)

[5] NYCRR Title 10 Subpart 5-1, Public Water Supplies

[6] ECS-322, RCRA Operating Record.

[7] WVDP-186, Waste Form Qualification Report, WQR 1.4, Specification for Phase Stability.

[8] WVDP-183, West Valley Demonstration Project Freeze Protection Plan.

[a] Vitrification Facility freeze protection surveillance requirements are satisfied by this procedure.

6.0 PERFORMANCE

6.1 General

[1] Responsible supervisor notify, at a minimum, those operators assuming shift responsibilities of any status change to equipment and systems, including maintenance work and calibrations.

[2] Record walk down observations/deficiencies not specifically part of the surveillance data sheet on the narrative section of the log sheet. Examples are instruments with past-due calibration dates, improper labeling, inoperative lights, and housekeeping problems. Document major evolutions, causes of abnormal conditions, and corrective actions taken in the comment section on the appropriate rounds sheet.

[3] Circle all parameters outside of the specified maximum or minimum ranges in red and note any OOS condition on the appropriate round sheet in the comments section. Number circled readings and explain the cause of the condition and the corrective action taken in the corresponding comments section on the same page. Include the corrective action implementing document number when applicable.

[4] Promptly report parameters unexpectedly exceeding the specified maximum or minimum values to the control area supervisor. IF a PSR reading is out of range, THEN immediately notify the supervisor.

[5] When monitoring strip chart recorders during the second shift rounds each day, mark the chart with initials, time and date. When significant events or unusual trends in parameters occur strip chart recorders should be marked with the event as directed by the PSOSS.

[6] Adjust instrument recorder charts for the correct time during the second shift rounds each day. Record the time, date, and operator initials once per day.

[7] Replace recorder chart paper when red line appears.

[a] Record time, date, initials and recorder number on new chart, old chart and in the applicable Chart Recorder Logbook.

[b] Store used charts in a fireproof cabinet until sent to the Records and Configuration/Document Control Department.

NOTE *For a secured system the appropriate response is "sec." This response is not considered out of specification. A secured system is one that is shut down or off line and not required for normal operation. A redundant filter train meets this definition. A pump in standby does not. A tank level reading is never secured unless locked out. If the reading is 0.0", that should be recorded.*

[8] Record data, in the units requested, date, time and initials or name, in the appropriate space on the round sheets. If an item is not required, or is off-line, write N/A in that space. OOS (Out of Service) may be entered if an instrument is removed from service (i.e., for calibration or repair) or has failed and is awaiting repair.

[9] Update control room alarm logbooks to reflect active alarms.

[10] Test area control panels once per shift to ensure lights and audible alarms are functioning.

[11] Inspect areas for deficiencies such as leaks, hazards, fumes, radiological concerns, housekeeping problems, equipment malfunction, construction work, or building deficiencies and document unacceptable conditions in the comments section of the associated rounds sheet.

NOTE *Include the previous week's completed sheets for supervisor approval for a minimum of the first shift for trending purposes.*

[12] Submit completed round sheets to the PSO SS for review early in the shift.

[13] SS review and approve the rounds each shift to identify trends or abnormal readings, and to verify that data has been properly recorded, initialed, and circled readings have been explained.

[a] The SS responsible for the crew performing the last set of readings shall review the transcribed data for errors.

[14] SS initiate corrective actions for any deficiency noted on the rounds and notify Facility Manager of reportable deficiencies.

6.2 Appendix A - Main Plant Data Sheets

[1] Record all data required on the data sheets at the specified surveillance interval.

6.3 Appendix B - LWTS Data Sheets

NOTE *The following step shall be performed from October 1 through April 30.*

[1] Record all data on the CSS/LWTS Freeze Protection Rounds (Appendix B-2) once per shift from October 1 through April 30.

[2] Test area control panels once per shift to ensure lights and audible alarm are functioning.

6.4 Appendix C - Vessel Off-Gas System Data Sheets

;R-3[+] **[1]** Record the required data on the Vessel Off-Gas Shift Readings sheet (Appendix C-1).

6.5 Appendix D - Waste Tank Farm Data Sheets

[1] Complete the following rounds at the intervals prescribed below:

[a] Complete the WTF, PVS and STS Control Room rounds every 12 hours per Appendices D-1 through D-3.

[b] Perform the WTF Freeze Protection Rounds from October 1 through April 31 per Appendix D-4.

6.6 Appendix E - Vitrification System Data Sheets

[1] Flow Indicating Controllers (FICs) will be monitored during normal rounds. FICs will be adjusted as necessary to the distinguished mark indicating proper flow.

R-12
R-13
R-1.4

6.6.1 Record all data required in Appendix E as follows:

[1] Appendices E-1, E-2, E-3, E-4, and E-6 will be recorded once per shift.

[2] Appendix E-5 is used for freeze protection monitoring. It will be performed once per shift from October 1 through April 30.

[3] Appendix E-6 fulfills RCRA operating inspection requirements and must be performed as follows:

[a] Perform this inspection separately and distinctly from other round sheets.

[b] Any unsat condition must be noted on the appendix and brought to the PSOSS. The PSOSS is to ensure plant deficiencies are corrected.

[c] Sign Appendix E-6 using full name, not initials.

[4] Refer to Appendix F for Vitrification Area Designators.

6.7 Appendix F - RHWF Equipment Surveillance and Rounds Data Sheets

[1] Record all data required on the data sheets once per shift unless otherwise identified.

[2] Perform RHWF Freeze Protection/Heat Trace system rounds and record data on Appendix F-2, RHWF Freeze Protection Round Sheets from October 1 through April 30.

[3] Appendix F-3 fulfills RCRA operating inspection requirements and must be performed as follows:

[a] Perform this inspection separately and distinctly from other round sheets.

[b] Any unsat condition must be noted on the appendix and brought to the PSOSS. The PSOSS is to ensure plant deficiencies are corrected.

[c] Sign Appendix F-3 using full name, not initials.

7.0 POST COMPLETION CONFIGURATION

[1] Store completed round sheets in a fireproof cabinet until transmitted to the Records & Configuration/Document Department.

[2] Complete appropriate data sheet transmittal forms and transfer the original surveillance data sheets for storage.

8.0 RECORDS

iR-12

iR-13

8.1 The following forms, data sheets, logs, reports, or any other form of documentation considered to be a record and generated in response to this procedure shall be prepared, maintained, and transferred to the MRC in accordance with WVDP-262. Refer to RIDS for further information.

[1] Appendixes A through E, F-2 and F-3.

QR 1.4

8.2 Data Sheets Appendix A-4, Page 2 of 4 and Appendix E-3 Page 1 of 9 shall be completed and forwarded to the Production Records Custodian - MRC, using form WV-1076, "WVDP Records Transmittal Form," on a monthly basis.

8.3 The following data sheets must also have a copy sent to the site RCRA File Custodian. Contact the Environmental Affairs department for further information.

[1]	Appendix B-1	LWTS Tank Readings
[2]	Appendix D-1	STS Building Round Sheets
[3]	Appendix D-2	WTF Round Sheets
[4]	Appendix D-3	PVS Round Sheets
[5]	Appendix E-6	Chemical Bulk Storage Facility Inspection
[6]	Appendix F-3	RHWF RCRA Waste Processing Inspection Sheet

9.0 APPENDICES

9.1 Appendix A Main Plant Data Sheets

[1]	Appendix A-1	Main Plant Process Ventilation and Tank Levels
[2]	Appendix A-2	Outside Readings Sheet
[3]	Appendix A-3	FRS Water Treatment Data Sheet
[4]	Appendix A-4	Head End Ventilation Data Sheet
[5]	Appendix A-5	Utility Room Status Sheet
[6]	Appendix A-6	Utility Room Sample Analysis Data Sheet
[7]	Appendix A-7	Expanded Environmental Lab HVAC Data Sheet
[8]	Appendix A-8	Steam and Heat Trace Checklist - Utility Room Area
[9]	Appendix A-9	LLW2 Heat Trace Checklist
[10]	Appendix A-10	Steam and Heat Trace Checklist - MPO Site/Plant Area
[11]	Appendix A-11	PSO Shift Supervisor Shift Turnover Checklist
[12]	Appendix A-12	Utility Room Oil Level Status Report
[13]	Appendix A-13	UR and URE Equipment Data Sheet
[14]	Appendix A-14	Main Plant Leak Checks
[15]	Appendix A-15	UR CLarifier Chemical and Settling Data
[16]	Appendix A-16	Main Plant Cell Pressures and Sump Level
[17]	Appendix A-17	UR SDG 30P-1 Standby Condition Report
[18]	Appendix A-18	UR SDG 30-P-2 Standby Condition Report
[19]	Appendix A-19	Main Plant HVAC Data Sheet - 100 & 50 Ton Chiller
[20]	Appendix A-20	SST PVUs
[21]	Appendix A-21	Main Plant Tent Snow Accumulations

9.2 Appendix B LWTS Data Sheets

[1]	Appendix B-1	LWTS Tank Readings
[2]	Appendix B-2	CSS/LWTS Freeze Protection Rounds

9.3 Appendix C Vessel Off-Gas System Data Sheets

[1]	Appendix C-1	Vessel Off-Gas Shift Readings

9.4 Appendix D Waste Tank Farm Data Sheets

[1]	Appendix D-1	STS Building Round Sheets
[2]	Appendix D-2	WTF Round Sheets
[3]	Appendix D-3	PVS Round Sheets
[4]	Appendix D-4	Freeze Protection Rounds - WTF

9.5 Appendix E Vitrification System Data Sheets

- **[1]** Appendix E-1 Cold Chemical Building Surveillance Data Sheet
- **[2]** Appendix E-2 Outside Routine Surveillance Data Sheet
- **[3]** Appendix E-3 Vitrification Building Surveillance Data Sheet
- **[4]** Appendix E-4 01/14 Building Surveillance Data Sheet
- **[5]** Appendix E-5 Vitrification Heat Trace Surveillance Data Sheet
- **[6]** Appendix E-6 Chemical Bulk Storage Facility Inspection

9.6 Appendix F Remote Handled Waste Facility Data Sheets

- **[1]** Appendix F-1 RHWF Equipment Round Sheets
- **[2]** Appendix F-2 RHWF Freeze Protection Round Sheets
- **[3]** Appendix F-3 RHWF RCRA Waste Processing Inspection Sheet

APPENDIX A

MAIN PLANT DATA SHEETS

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Appendix A-1
Main Plant Process Ventilation and Tank Levels
(Sheet 1 of 1)

	DATE																	
	TIME																	
	Description	Instrument #	Range	I	II	I	II	I	II	I	II	I	II	I	II	I	II	
	TANK LEVELS																	
	13D-8 Level	71-LR-2015	0-80%															
	7D-14 Level	71-LR-10R	0-80%															
	7D-2 Level	71-LR-2009	10-70%															
	7D-8 Level	7-LR-3R	20-80%															
	3D-2 Level	3-LR-5	0-50%															
	MAIN VENTILATION																	
	Main Plant Control Rm Lights		OK															
	Main Plant Control Rm Alarms		OK															
	Plenum Press	15PRC-4 (85-1)	>5.0"															
PSR-3	Final Abs 15T-49	15PDR-11(83-2)	<7.5"															
PSR-3	Final Abs 15T-49A	15PDR-6 (83-2)	<7.5"															
PSR-3	Filter Train	15PDR-10/5 (85-2)	<7.5															
PSR-5	15K-10A Operable	CS-15K-10A Light	ON															
	15K-10 Vib.	15VI-2	<40.0%															
	15K-10A Vib.	15VI-1	<40.0%															
	1K-1	FRS Blower	ON/OFF															
	15-V-015	Hankison Breathing Air Purifier Light	ON/OFF															
	Operator's Initials																	
	Supervisor Initials																	

Comments _____

Appendix A-2
Outside Readings Sheet
(Sheet 1 of 1)

DATE															
TIME															
Item	Range	I	II	I	II	I	II	I	II	I	II	I	II	I	II
Old Interceptor Level	4-5.5 ft from top														
Interceptor Neut. Pit pH 15-AIC-1	As Read														
Interceptor Level (N)(S)/Level	≤21K														
Interceptor Alarm Panel Test	OK														
Fuel Oil Yard Tank 31D-2	>8000 gallons (>64")														
Operator's Initials															
Supervisor Initials															

PSR-5

Comments _____

_____

_____

_____

Appendix A-3
FRS Water Treatment Data Sheet
(Sheet 1 of 1)

DATE															
TIME															
Item	Range	I	II	I	II	I	II	I	II	I	II	I	II	I	II
Sump Level 1-LI-0003	24" Max														
North Blower 17-K-004	ON/OFF														
South Blower 17-K-005	ON/OFF														
Plenum Neg 17G-2	0.5 TO 7.5"														
Filter DP 17G-1	0.4 TO 7.5"														
Operator's Initials															
Supervisor Initials															

Comments _____

Appendix A-4
Head End Ventilation Data Sheet
(Sheet 1 of 4)

DATE																
TIME																
Description	Instrument #	Normal Range	I	II	I	II	I	II	I	II	I	II	I	II	I	II
EMOA Alarm panel check	15K-20, 20A, 21-AP Head End Vent (HEV) Alarm Panel	Operational (yes/no)														
15D-6 Level	15-LR-20	12" - 84"														
Filter Train	N/A	North/South														
Pre-filter 15T-70/15T-70A	15PDIAH-33 15PDIAH-33A	0" - 3.0"														
Rough. Filter 15T-71/15T-71A	15PDI-134 15PDI-136	0" - 3.0"														
1st Abs. Bank 15T-72/15T-72A	15PDI-135 15PDI-137	0" - 7.5"														
PSR-3 Final Absolute Filter Bank	15PDR-45 15PDR-45A	<7.5"														
PSR-3 Filter Train	15PDR-44 15PDR-44A	<7.5"														
Nitrogen Bottle	N/A	>1000 psi														
Plenum Pres.	15PR-46	>8.0"														
HEV Filter Train	15T-SW	Auto/OFF														
MSM Supply Fan	15K-22	ON/OFF														
CSRF Vent System	80-Y-012	ON/OFF														
Switch 15T-SW position	"SWITCH NOT IN AUTO" light	Operational (yes/no)														
Operator's Initials																
PSO Shift Supervisor																

Comments _____

Appendix A-4
Head End Ventilation Data Sheet
(Sheet 2 of 4)

DATE																		
TIME																		
	Instrument #	Normal Range	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II
GCR Sump Level	15-LI-7	9.0-20.25"																
EDR Loadin Fac.	15-PT-0601	0.65"-1.20"																
MC	15PG-70	>0.20"																
GPC	15PG-71	>0.50"																
GCR	15PDICL-37	>0.25"																
MRR Airlock	15PDICL-35	>0.25"																
MRR Magnehelic	15-PG-38	>0.30"																
Scrap Removal	15PG-82	>0.20"																
PMC	15PG-87	>0.20"																
PMCR	15PDICL-39	>0.25"																
PMCR Airlock	15PDICL-36	>0.25"																
PMCR Kiosk	15PDICL-0001	>0.25"																
GPC Enclosure	15PDICL-0003	>0.20"																
GPC Airlock	15PDICL-0004	>0.25"																
EDR	15PG-83	0.65" - 1.20"																
WQR 1.4 CVA Window 3M-1-BCVA	68-TI-451	60-120°F																
WQR 1.4 CVA Window 3M-1-CCVA	68-TI-452	60-120°F																
35104 PUMP PANEL	71LS-013A	GREEN																
35104 PUMP PANEL	ALARM TEST	(Y,N)																
Operator Initials																		
Supervisor Initials																		

Transmit this original page to the Production Records Custodian, MRC, using Form WV-1076.

Comments _____

Appendix A-4
Head End Ventilation Data Sheet
(Sheet 3 of 4)

DATE																
TIME																
	Instrument#	Range	I	II	I	II	I	II	I	II	I	II	I	II	I	II
SRR Airlock	15PDICL-0006	0.10" - 0.50"														
CPC North Sump	15-LI-3	0-22.0" Level														
CPC South Sump	15-LI-5	0-22.0" Level														
CPC	15PG-86	>0.20"														
CCR	15PDICL-41	>0.25"														
CCR Airlock	15PDICL-40	>0.25"														
15K-21 Status	Indicating lights on 15KM-21MS	Standby Ready/ Running														
	Indicating lights on 15KM-21CP	Standby Ready/ Running														
15K-21 Auto Switches	15KM-21-SW1 on 15KM-21MS	Hand/Off/ Auto														
	15KM-SW2 on 15KM-21CP	Hand/Off/ Auto														
Operator Initials																
Supervisor Initials																

Comments_____
_____

Appendix A-4
Head End Ventilation Data Sheet
(Sheet 4 of 4)

DATE																
TIME																
	Instrument#	Normal Range	I	II	I	II	I	II	I	II	I	II	I	II	I	II
North Blower Outboard Bearing Temperature	15TI-101	<160°F														
North Blower Inboard Bearing Temperature	15TI-102	<160°F														
South Blower Outboard Bearing Temperature	15TI-103	<160°F														
South Blower Inboard Bearing Temperature	15TI-104	<160°F														
Standby Blower Outboard Bearing Temperature	15TI-105	<160°F														
Standby Blower Inboard Bearing Temperature	15TI-106	<160°F														
15K-20A Vibration	15VI-4	<40.0%														
15K-21 Vibration	15VI-5	<40.0%														
15K-20 Vibration	15VI-3	<40.0%														
Operator Initials																
Supervisor Initials																

Comments _____

Appendix A-5
Utility Room Status Sheet
(Sheet 1 of 2)

COMPRESSOR STATUS			
Status	31K-3	31K-5	31K-6
On/Off/Stby			

BOILER STATUS		
Status	31F-002A	31F-002B
On/Off		

PUMP STATUS

Pump	On/Off/ Stby	Pump	On/Off/ Stby	Pump	On/Off/ Stby	Pump	On/Off/ Stby	
31G-17A		31G-18A		32G-2B		32-GM-20C		
31G-17B		31G-18B		32G-5A		32G-8A		
31G-17C		31G-18C		32G-5B		32G-8B		
32G-003		31G-20		32-GM-20A		33G-1		PSR-8
[redacted]		32G-2A		32-GM-20B		33G-2		PSR-8

EQUIPMENT STATUS

Equip #	Status	Equip #	Status	Equip #	Status	Equip #	Status
31D-005		30P-1		West CT Fan Hi/Lo		48046	
32V-7A		30P-2		Air Dryer		[redacted]	
32V-7B		East CT Fan Hi/Lo		25# Steam		[redacted]	

URE Alarm Panel Checks	Rad Monitor Readings	Utility Air CO Monitor
Lights/Alarms Operational	CWR: cpm	Reading: ppm
Yes No	Cond Return: cpm	Alarm: On Off

WATER RESULTS	
Raw Water pH + NTU	
Reactivator pH + NTU	
Sand Filter Eff. NTU	
Potable Water Cl_2 .8 - 1.3 ppm	
Potable Water pH + NTU	
CW Supply Temp <85°F	
Header Pressure >60 psi	
Bromine 1-2 ppm	
Basin Screens Cleaned	
Side Stream Filter Flow	

UTILITY USAGE	
Raw Water Flow:	gallons
Fuel Oil Used:	gallons
Total Gas:	Ft^3
Total Steam:	Lbs.

UPS Station Status (SGR)	
Lights Green/Normal	Yes/No

TANK LEVELS		
32D-1(min level >26'):	Ft.	PSR-8
32D-2:	Ft.	
UR Clarifier Tube/Cone Levels: UT: LT: UC: LC:		
Clarifier Sludge Level: In.		

Date _____

Time _____

Operator _____

PSO Shift Supervisor _____

Appendix A-5
Utility Room Status Sheet
(Sheet 2 of 2)

Malfunctions or equipment down for repair _____

Operational treatment changes from previous shift _____

Comments _____

Date _____

Time _____

Shift _____

Operator _____

PSO Shift Supervisor _____

Ap ‹ A-6

Utility Room Sam, Analysis Data Sheet

(Sheet 1 of 2)

Clarifier Operation SOP 32-01 Date _____

Time	Recirc Setting	Desludge Interval	Backflush Timer	Blowdown Timer	Raw Flow Rate GPM	Sludge Level	UT	LT	UC	LC	Time	Settle Rate @ 5 min
2400											2400	
0800											1200	
1600											XXXX	XXXXXXXXX

Raw Water SOP 32-09, Appendix A and B						Clarified Water SOP 32-09, Appendix A and B	
Shift	Fe	CaH	M	pH	NTU	pH	NTU
II							
I	XXXX	XXXXXX	XXXX				

Filter Operation SOP 32-01							Cooling Water SOP 32-06		
Shift	32T-1A E. Bkwsh	32T-1A W. Bkwsh	32T-1B E. Bkwsh	32T-1B W. Bkwsh	NTU	SiO_2 6-8	pH	UV 2.0-2.5	Br_2 1-2
II									
I							XXXXX	XXXXXXX	

NYCRR Title 10 — Potable Water, SOP 32-04 Point of Entry Control Ranges and Drinking Water Standards: 1. Chlorine (Cl_2): Control range is 0.8 to 1.3 ppm never less than 0.2 ppm (minimum) or greater than 4 ppm (maximum). Contact PSOSS immediately if Cl_2 is ≤ 0.2 ppm or ≥4 ppm; PSOSS to immediately contact cog. Engineer and EA. 2. Turbidity (NTU): Control ranges is less tha 0.3 NTU and never greater than 1 NTU. Drinking water standards are 1 NTU (maximum) and 0.3 NTU (treatment standard based on 95% of samples). Report NTU immediately to PSOSS if NTU is greater than 0.34; PSOSS immediately report NTU to cog engineer if greater than 0.34 NTU. PSOSS to immediately report NTU to EA if NTU > 1.

Time	Dist. Sys. Cl_2 ppm	POE Cl_2 ppm*	POE NTU*	pH	Temp. C	Iron	SiO_2 6-8	CaH	M	Cond.
2000										
2400	XXXXXXXXXXXXXXX					XXXXXX	XXXXXXX	XXXXXX	XXXXXX	XXXXXX
0400	XXXXXXXXXXXXXXX					XXXXXX	XXXXXXX	XXXXXX	XXXXXX	XXXXXX
0800	XXXXXXXXXXXXXXX					XXXXX		XXXXX	XXXXX	XXXXX
1200	XXXXXXXXXXXXXXX					XXXXXX	XXXXXXX	XXXXXX	XXXXXX	XXXXXX
1600	XXXXXXXXXXXXXXX					XXXXXX	XXXXXXX	XXXXXX	XXXXXX	XXXXXX

*Samples must be taken every 4 hours in accordance with NYS Department of Health regulations.

1900 - 0700 Operator PSO 33

Appendix A-6
Utility Room Sample Analysis Data Sheet
(Sheet 2 of 2)

Date _____

Boiler Water Analyses (see SOP 32-09, Appendixes A & B)				
	31F-002A		31F-002B	
	1900-0700	0700-1900	1900-0700	0700-1900
Boiler Conductivity 3000-3500				
NA701 pH 8-8.5		XXXXXXXX		XXXXXXXX
SO_2 20-40 mg/L		XXXXXXXX		XXXXXXXX
P-Alk 200-1500 mg/L		XXXXXXXX		XXXXXXXX
SW Hardness <0.4 mg/L				
Condensate Conductivity		XXXXXXXX		XXXXXXXX
Condensate Fe		XXXXXXXX		XXXXXXXX
Continuous Blowdown				
Bottom Blowdown				

2400 hours: 24 Hour Steam Usage _____ lbs (reset totalizer after reading)

0100 hours gas meter readings:

East Meter Today _____ Yesterday _____ Total _____

West Meter Today _____ Yesterday _____ Total _____ East/West Total____

SOP 32-01, 32FIT-021: Today _____ Yesterday _____ Total _____ gallons

SOP 32-06, Cooling Water Makeup Badger Meter Reading: (gallons)

Today _____ Yesterday _____ Makeup Total _____

Cooling Tower Checked for Ice: Times _____

SOP 32-04, 32D-7 Level: Today _____ Yesterday _____ Gallons Used _____

FI-001: Today _____ Yesterday _____ Gallons Total _____

SOP 32-02, Demin Badger Meter: Today _____ Yesterday _____ Total _____

SOP 31-04, 32V-7A Meter Reading: Today _____ Yesterday _____ Total _____

32V-7B Meter Reading: Today _____ Yesterday _____ Total _____

Chemical Usage										
Shift	Poly cups/ time	Clay #s/time	Salt #s/time	SiO_2 cups/ time	AT220 cups/ time	OX103 #s/time	NA701 cups/ time	362 cups/ time	66 cups/ time	15% Hypo gallons/ time
II										
I										

1900-0700 Operator: _____ Supervisor: _____

0700-1900 Operator: _____ Supervisor: _____

Comments _____

Appendix A-7
Expanded Environmental Lab HVAC Data Sheet
(Sheet 1 of 1)

DATE															
TIME															
Item/Equipment	**Range**	I	II	I	II	I	II	I	II	I	II	I	II	I	II
Visible leaks on floor	Yes/No														
Sump Level below inlet pipe	>6" below pipe														
Air Handler	On/Off														
Alarm Status	Clear/Alarm														
Cold Deck Temperature, TG-4	>40°F														
Hot Deck Temperature, TG-5	60-120°F														
Pre-Heat Temperature, TG-6	45-100°F														
Boiler #1 Switch Position	On/Off														
Boiler #2 Switch Position	On/Off														
Chilled Water Expansion Tank,LG-1	≥1/4														
Hot Glycol Expansion Tank, LG-2	≥1/4														
Boiler Water Expansion Tank, LG-3	≥1/4														
Glycol Pumps 1 and 2 Status	Hand/Off/Auto														
Hot Water Pumps 1 and 2 Status	Hand/Off/Auto														
Boiler Pumps 1 and 2 Status	Hand/Off/Auto														
Chiller Pump	On/Off														
Operator Initials															
Supervisor Initials															

Comments _____

Appendix A-8
Steam and Heat Trace Checklist
Utility Room Area
(Sheet 1 of 2)

NOTE: This data sheet is to be used from October 1 - April 30. Notify the PSO SS if a trap or heat trace is not functioning properly.

DATE														
TIME														
ITEM	I	II	I	II	I	II	I	II	I	II	I	II	I	II
Clearwell Temp Controller UR Graver Panel 32TIC-022 >40 °F														
32D-1 Steam Supply 32TIC-7 >40 °F														
32D-2 Steam Supply 32TIC-5 >40 °F														
Condensate Blowdown Pit North of FPH 32LP-AA, CB#9, 11														
Condensate Blowdown Pit at FPH, Level														
Condensate Blowdown Pit at FPH, 8 Traps														
32D-2, 3 Traps in Pit														
UR South Wall, 4 Traps														
Operator Initials														
Supervisor Initials														

Comments _____

Appendix A-8
Steam and Heat Trace Checklist
Utility Room Area
(Sheet 2 of 2)

DATE														
TIME														
Item	I	II	I	II	I	II	I	II	I	II	I	II	I	II
Clarifier Drain Pit, 5 Traps														
Clearwell Heater Supply (OPEN) NW Heater 32-SL-GT-396 SW Heater 32-SL-GT-399 SE Heater 32-SCL-GT-398 NE Heater 32-SL-GT-397														
Clarifier South Trap														
Heat Trace Alarm Panel UR South Wall (Outside), Clear														
Old Cooling Tower Risers Heat Traces JB-R-1														
Cooling Tower Fire Riser Shed Heater														
New Flow Augmentation Line (Yard Area) Heat Trace LP-U, CB #33, 35														
New Cooling Tower North Side Heat Traces CB #1														
New Cooling Tower East Side Heat Trace CB #2														
Pipe Bridge HTC in URE 30-HTC-001 >50°F 30-HTC-002 power on/no alarms 30-HTC-003 >50°F 30-HTC-004 >50°F														
Operator Initials														
Supervisor Initials														

Comments _____

Appendix A-9
LLW2 Heat Trace Checklist
(Sheet 1 of 1)

NOTE: This data sheet is to be used from October 1 - April 30. Notify the PSO SS if heat trace is not functioning properly.

DATE														
TIME														
Item	I	II	I	II	I	II	I	II	I	II	I	II	I	II
Lagoon 2 Suction Line Lagoon Pump House														
Utility Air and Soft Water to Lagoon 2 Pump House 02-HTC-103 (power on and heater on)														
LLW2 Return to Lagoon 2/Lagoon Pump Discharge to LLW2 02-HTC-102 (power on and heater on)														
LLW2 to North Plateau (lights on)														
LLW2 to Lagoons 4/5 (lights on)														
Lagoon 4/5 Soft Water														
Lagoon 4/5 Air														
Operator Initials														
Supervisor Initials														

Comments _____

Appendix A-10
Steam and Heat Trace Checklist
PSO Site/Plant Area
(Sheet 1 of 1)

This data sheet is to be used from October 1 - April 30. Verify that sprinkler riser enclosures are adequately heated and maintaining a temperature of greater than 40°F. Notify the PSO SS if a trap or heat trace is not functioning properly.

DATE														
TIME														
ITEM	I	II	I	II	I	II	I	II	I	II	I	II	I	II
HEV Instrument Shed Heater, 1 Trap														
15KM-21 Room Heater 1 Trap														
Fire Sprinkler Riser, 33-FP-OSY-0046, Outside Office Trailer 41 (Annex)														
Fire Sprinkler Riser, 33-FP-OSY-0137, Cafeteria Passageway (Trailer City)														
FRS Vent. Building 25# Steam, 1 Trap														
FRS Vent. Building Area Heater, 1 Trap														
Interceptor Heat Trace 15-TC-001														
FRS Vent. System After-Heater, 1 Trap														
Operator Initials														
Supervisor Initials														

Comments _____

Appendix A-11
PSO Shift Supervisor Shift Turnover Checklist
(Sheet 1 of 1)

Offgoing SS completes at end of shift and reviews with oncoming SS

___ PSO essential equipment status board reviewed
___ PSO systems status reviewed
___ Safety Equipment Release Forms status
___ PSO Shift Supervisor's logbook reviewed
___ PSO instruction log reviewed
___ Lock and tag book reviewed
___ Confined space and breathing air entries in progress reviewed
___ Utility lines OOS reviewed
___ Work in progress reviewed (including Subcontractors, Maintenance, other Operational organizations)
___ Changes in radiological or hazardous material conditions reviewed
___ Abnormal facility conditions reviewed
___ Required reading reviewed
___ New or additional training, including system changes requiring operator briefings
___ Personnel status reviewed (late, absent, training, etc.)
___ Time sheets completed (if necessary)

Narrative Section (Optional):

Offgoing SS: Date/Time: Shift:

Incoming SS: Date/Time: Shift:

Appendix A-12
Utility Room Oil Level Status Report
(Sheet 1 of 1)

DATE															
TIME															
Equipment: ✓ - If OK F - If Needs Oil		I	II	I	II	I	II	I	II	I	II	I	II	I	II
31K-3	Air Compressor - Electric														
30P-1	Standby Diesel Generator														
31G-1	Fuel Oil Pump														
32G-2A	Plant Water Pump														
32G-2B	Plant Water Pump														
32G-5A	Demin. Water Pump														
32G-5B	Demin. Water Pump														
32G-8A	Clarified Water Pump														
32G-8B	Clarified Water Pump														
32G-9	Clay Pump														
32G-10	Poly Pump														
32G-20A	Cooling Water Pump														
32G-20B	Cooling Water Pump														
32G-20C	Cooling Water Pump														
33G-2	Diesel Fire Pump														
31K-5	Air Compressor - Electric														
31K-6	Air Compressor - Electric														
30-P-2	Standby Diesel Generator														
Operator Initials															
Supervisor Initials															

Comments _____

Appendix A-13
UR and URE Equipment Data Sheet
(Sheet 1 of 4)

Date _____

Boiler 31F-002A		✓ If Offline						
READING	**INST. #**	**RANGE**	**0900**	**1300**	**1700**	**2100**	**0100**	**0500**
Economizer Temp In	31-TI-300	200-235 °F						
Economizer Temp Out	31-TI-300A	235-300 °F						
Economizer Pres In	31-PI-300A	180-270 PSI						
Economizer Pres Out	31-PI-300B	185-275 PSI						
Accumulator Press	31-PI-309B	20-25 PSI						
Steam Pressure	31-PI-0305	144-152 PSI						
Steam Flow	31-FT-0301	<18K lb/hr						
Feedwater Flow	31-FT-0300	<40 gpm						
Stack Temp	31-TT-0303	<400 °F						
Sight Glass Level	XXXXXXXXX	3 - 6"						
Gas Flow	31-FT-0500	<22K CFH						
H_2O Col Blowdown	SOP 31-09	once/shift						

Boiler 31F-002B		✓ If Offline						
READING	**INST. #**	**RANGE**	**0900**	**1300**	**1700**	**2100**	**0100**	**0500**
Economizer Temp In	31-TI-400	200-235 °F						
Economizer Temp Out	31-TI-400A	235-300 °F						
Economizer Pres In	31-PI-400A	180-270 PSI						
Economizer Pres Out	31-PI-400B	185-275 PSI						
Accumulator Press	31-PI-409B	20-25 PSI						
Steam Pressure	31-PI-0405	144-152 PSI						
Steam Flow	31-FT-0401	<18K lb/hr						
Feedwater Flow	31-FT-0400	<40 gpm						
Stack Temp	31-TT-0403	<400 °F						
Sight Glass Level	XXXXXXXXX	3 - 6"						
Gas Flow	31-FT-0500	<22K CFH						
H_2O Col Blowdown	SOP 31-09	once/shift						

Shift I: Oper_____ PSOSS_____ Shift II: Oper_____ PSOSS_____
Comments _____

Appendix A-13
UR and URE Equipment Data Sheet
(Sheet 2 of 4)

Date _____

Equipment	Inst. #	Range	Time					
			0900	1300	1700	2100	0100	0500
31G-17A	31PI-0506	195-270 psi						
31G-17B	31PI-0508	195-270 psi						
31G-17C	31PI-0510	195-270 psi						
31G-18A	31-PI-0517	17-42 psi						
31G-18B	31-PI-0519	17-42 psi						
31G-18C	31-PI-0521	17-42 psi						
32G-2A	32PG-9	110-130 psi						
32G-2B	32PG-10	110-130 psi						
32G-5A	32PG-17	65-75 psi						
32G-5B	32PG-18	65-75 psi						
32G-8A	32PG-3	50-70 psi						
32G-8B	32PG-4	50-70 psi						
32-GM-20A	32-PI-105	55-90 psi						
32-GM-20B	32-PI-106	55-90 psi						
32-GM-20C	32-PI-107	55-90 psi						
Inst Air Pres	31-PG-17	50-58 psi						
Dew Point-31V-3	XXXXXXXX	< -32 °F						
32D-2 Level	32-LI-13	> 17 ft						
48046	XXXXXXXX	On/Off						
31D-005	31LI-515A	10-70%						
CW Supply	32TF-117 Computer	71-79 °F						
CW Return	32TT-118 Computer	75-90 °F						
Side Stream	SOP 32-06	OK						

Shift I 0700-1900: Operator _____ PSO SS _____

Shift II 1900-0700: Operator _____ PSO SS _____

Comments _____

Appendix A-13
UR and URE Equipment Data Sheet
(Sheet 3 of 4)

Date_____

31K-5 Air Compressor

✓ If Auto Standby	Reading	Water Temp ΔT	Package Disch Pres	Discharge Air Temp	1st Stage Disch Pres	1st Stage Disch Temp	2nd Stage Inlet Temp	2nd Stage Disch Temp	Bearing Oil Pres	Bearing Oil Temp	Oil Filter ΔP
	Ranges	6-14 °F	96-110 psig	Ambient + 20 °F	26-30 psig	285-335°F	Ambient + 20 °F	285-335°F	37-47 psig	120-140°F	1-5 psi
	0900										
	1300										
	1700										
	2100										
	0100										
	0500										

31K-5 Manual condensate drains blown down by _____

31K-6 Air Compressor

✓ If Auto Standby	Reading	Water Temp ΔT	Package Disch Pres	Discharge Air Temp	1st Stage Disch Pres	1st Stage Disch Temp	2nd Stage Inlet Temp	2nd Stage Disch Temp	Bearing Oil Pres	Bearing Oil Temp	Oil Filter ΔP
	Ranges	6-14 °F	96-110 psig	Ambient + 20 °F	26-30 psig	285-335°F	Ambient + 20 °F	285-335°F	37-47 psig	120-140°F	1-5 psi
	0900										
	1300										
	1700										
	2100										
	0100										
	0500										

31K-6 Manual condensate drains blown down by _____

Shift I: Operator _____ PSOSS _____ Shift II: Operator _____ PSOSS _____

Comments _____

_____

_____

Appendix A-13
UR and URE Equipment Data Sheet
(Sheet 4 of 4)

Date _____

Compressor 31K-3 Readings

Reading	Range	Time					
		0900	1300	1700	2100	0100	0500
CW Supply Temperature	71-79 °F						
CW Return Temperature	78-99 °F						
ΔT (CWR - CWS)	7-20 °F						
System Pressure	100-115 psig						
Motor Current	100-473 Amps						
Oil Pressure	24-28 psig						
Vibration Stage 1	0.1-0.2 mils						
Vibration Stage 2	< 0.28 mils						
Oil Temperature	105-115 °F						
Stage 1 Air Temp	71-94°F						
Disch Air Temp	71-99°F						
ΔP Stage 1 Filter	0-4" WC						
ΔP Stage 2 Filter	0-6" WC						
Check Condensate Traps (3)	OK						
Drain 31V-6 Filters/31K-4 Accumulator of water	OK						

Shift I: Operator _____ PSOSS _____ Shift II: Operator _____ PSOSS _____

Comments _____

Appendix A-14
Main Plant Leak Checks
(Sheet 1 of 1)

All new and existing leaks in the Main Plant facility need to be identified for repairs and prevention of spills into operating areas. All new leaks identified for repair should be listed when found. All existing leaks should be carried over until they are repaired.

Check at Least Once per Shift - Empty Buckets and Mop Floors as Needed (OK, M = Mopped, EB = Emptied Bucket)															
Leak/Area	I	II	I	II	I	II	I	II	I	II	I	II	I	II	Repairs/Comments
Date															
Time															
Operator Initials															
Supervisor initials															

Comments _____

_____

Appendix A-15
UR Clarifier Chemical and Settling Data
(Sheet 1 of 1)

Date _____

Poly and clay rate checks are to be done on depletion of full tank.

SOP 32-01 28.3 gph average of 3 rate checks
Poly tank 10.3 gallons per inch

Poly	Level Start	Time Start	Level End	Time End	Level Diff.	Time Diff.	Total Gallons	Gallons per hour

SOP 32-01 37.5 gph average of 3 rate checks
Clay Tank 12.2 gallons per inch

Clay	Level Start	Time Start	Level End	Time End	Level Diff.	Time Diff.	Total Gallons	Gallons per Hour

SOP 32-01

SSV	Elapsed Time	Clear Water Depth (inches)	gpm/ft^2 @ 5 min
2400 hours	1 minute		
	3 minutes		
	5 minutes		
	10 minutes		
1200 hours	1 minute		
	3 minutes		
	5 minutes		
	10 minutes		

1900-0700 Operator: _____ Supervisor: _____

0700-1900 Operator: _____ Supervisor: _____

Comments _____

Appendix A-16
Main Plant Cell Pressures and Sump Levels
(Sheet 1 of 1)

DATE																
TIME																
			I	II	I	II	I	II	I	II	I	II	I	II	I	II
CELL PRESSURES																
LWC	15PG-81	>1.0"														
XC-1	15PG-80	>1.0"														
XC-2	15PG-79	>0.4"														
XC-3	15PG-78	>1.0"														
PPC	15PG-77	>0.4"														
UPC	15PG-128	>1.0"														
VWR	15PG-88	>0.5"														
HAC	15PG-96	>1.0"														
OGC	15PG-84	>0.5"														
SSC	15PG-95	>1.0"														
ARC	15PG-85	>0.5"														
SUMP LEVELS																
LWC Sump Level	15-LI-4	0-14.0"														
XC-1 Sump Level	15-LI-12	0-7.8"														
XC-2 Sump Level	15-LI-13	0-11.75"														
XC-3 Sump Level	15-LI-14	0-9.0"														
PPC Sump Level	15-LI-11	0-11.0"														
UPC Sump Level	15-LI-19	0-16.0"														
ARC Sump Level	15-LI-6	0-4.1"														
OGC Sump Level	15-LI-18	0-7.8"														
14D-7/14D-18 PANEL	AUD/LIGHTS	(Y,N)														
Operator Initials																
Supervisor Initials																

Comments _____

Appendix A-17
UR SDG 30P-1 Standby Condition Report
(Sheet 1 of 1)

PSR-5 *Complete once per day.*

Item	Required Condition	Observed Condition						
Manual Engine Control, TEST-NORMAL Switch in NORMAL	Normal							
Selector Switch in AUTO Position	Auto							
Emergency Stop Switch in RUN(Up)	Run							
Battery Charger ON-OFF Switch	On							
Battery Charger Output D.C. Amps	0-10 Amps							
D.C. Volts	26 Volt min							
Light Test #1	OK							
Light Test #2	OK							
PSR-5 31-LIC-20, Diesel Day Tank Level 31-D-103 (URF)	225Gal ≥75%							
FO Supply from Day Tank to 30P-1 15-FO-H-1158	Open							
FO Return from 30P-1 to Day Tank 15-FO-H-1159	Open							
Starter Disconnect Switch N. Side of 30P-1	On							
30-VM-5 Battery Charger volts for 27X Relay Batteries (SGR)	24-29 volts							
30-AM-5 Battery Charger amps for 27X Relay Batteries (SGR)	0.7-1.0 amps							
Generator Breaker Position (SGR)	Open							
Date								
Time								
Operator Initials								
Supervisor Initials								

Comments

Appendix A-18
UR SDG 30-P-2 Standby Condition Report
(Sheet 1 of 1)

PSR-5 Complete once per day.

	Item	Required Condition	Observed Condition						
	RUN-STOP-REMOTE Switch in REMOTE	Yes							
	Low Engine Temp. Alarm	No							
	Water Jacket	Warm							
PSR-5	31D-102, Diesel Day Tank Level	≥75%,300 gal							
	Push Generator Reset	Yes							
	Retransfer Switch, Sequence Relay Panel	Normal							
	Sequence Relay Panel Light Test	On							
	43 Device Auto-Manual Switch	Auto							
	Annunciator Panel 30-P-2/AP Test	OK							
	Battery Charger On-Off Switch	On							
	Battery Charger Output D.C. Amps	3-10 Amps							
	D.C. Volts	26 Volt min							
	30-P-2 Battery Main Disc. Switches	Close							
	31-FO-GT-541, FO Supply to 31-D-102	Open							
	31-FO-MC-532, FO Supply to 31-D-102	Open							
	31-FO-MC-534, FO Supply to 30-P-2	Open							
	31-FO-MC-533, FO Return to 31-D-102	Open							
	31-FO-H-535, FO Return to 31-D-102	Open							
	31-FO-H-536, FO Supply to 30-P-2	Open							
	Date								
	Time								
	Operator Initials								
	Supervisor Initials								

Appendix A-19
Main Plant HVAC Data Sheet - 100 & 50 Ton Chiller
(Sheet 1 of 1)

Equipment/Item	Range	I	II	I	II	I	II	I	II	I	II	I	II	I	II
100 Ton Chiller (VSR)															
Chilled Water Pump 15-G-100	On/Off														
15-G-100 Suction Pressure	6-30#														
15-G-100 Discharge Pressure	30-75#														
Booster Pump 15-G-101	On/Off														
15-G-101 Suction Pressure	30-80#														
15-G-101 Discharge Pressure	50-100#														
100 Ton Chiller Compressor #1	On/Off														
Compressor #1 Discharge Pressure	160-240#														
Compressor #1 Suction Pressure	50-75#														
Compressor #1 Oil Pressure	30# min.														
100 Ton Chiller Compressor #2	On/Off														
Compressor #2 Discharge Pressure	160-240#														
Compressor #2 Suction Pressure	50-75#														
Compressor #2 Oil Pressure	30# min														
15-E-100 Inlet Temp. 15-TI-5*	45-60°F														
15-E-100 Outlet Temp. 15-TI-8*	40-65°F														
Compression Tank 15-D-7 Level	½-3/4														
15K-8 Supply Fan	Hand/Off/ Auto														
50 TON CHILLER (PCR)															
Make-up Air Handler 15-K-107	On/Off														
Make-up Air Handler Disch Temp	55-80°F														
50 Ton Chiller 15-E-120	On/Off														
CWS Temp. to AMU 15-TI-4*	<55°F														
CWR Temp. to AMU 15-TI-10*	45-55°F														
CWS Pressure to AMU 15-PI-17	5-35 psi														
CWR Pressure from AMU 15-PI-1	0-10 psi														
50 Ton Chiller Inlet Temp.	45-55°F														
50 Ton Chiller Discharge Temp.	40-50°F														
Date															
Time															
Operator Initials															
Supervisor Initials															

Comments _____

*Summer mode only - N/A winter mode.

Appendix A-20
SST PVU's
(Sheet 1 of 1)

Date																
Time																
15V-026	On/Off/Auto		Shift													
Item	Inst#	Range	I	II	I	II	I	II	I	II	I	II	I	II	I	II
Roughing	15 PDI-0014	<7.0"														
A -Pre	15 PDI-0015	<3.0"														
A - HEPA **	15 PDI-0016	<7.0"														
B - Pre	15 PDI-0023	<3.0"														
B - HEPA **	15 PDI-0024	<7.0"														
Sample pump(on/off)/ Hour meter rdg																
15V-027	On/Off/Auto		Shift													
Item	Inst#	Range	I	II	I	II	I	II	I	II	I	II	I	II	I	II
Roughing	15 PDI-0017	<7.0"														
A -Pre	15 PDI-0018	<3.0"														
A - HEPA **	15 PDI-0019	<7.0"														
B - Pre	15 PDI-0025	<3.0"														
B - HEPA **	15 PDI-0026	<7.0"														
Sample pump(on/off)/ Hour meter rdg																
15V-029	On/Off/Auto		Shift													
Item	Inst#	Range	I	II	I	II	I	II	I	II	I	II	I	II	I	II
Roughing	15 PDI-0020	<7.0"														
A -Pre	15 PDI-0021	<3.0"														
A - HEPA **	15 PDI-0022	<7.0"														
B - Pre	15 PDI-0027	<3.0"														
B - HEPA **	15 PDI-0028	<7.0"														
Sample pump(on/off)/ Hour meter rdg																
Operator Initials																
Supervisor Initials																

Comments:_____

_____

** Notify Cog Engineer if dp reading on HEPA filter drops >2" over one day (2 consecutive readings). Switch to alternate PVU if dp reading on HEPA filter drops >3" over one day (2 consecutive readings).

Appendix A-21
Main Plant Tent Snow Accumulations
(Page 1 of 1)

All identified tents must be checked each shift for snow accumulation between October 1st and April 30th.

Check at least once per shift. Removal of excess snow should occur immediately upon discovery if possible. Notification of the PSOSS is required if greater than 4" of snow is present.																
Date																
Time																
		Shift	I	II	I	II	I	II	I	II	I	II	I	II	I	II
Tent Use	Location	Range														
Furniture Storage	AA-Hardstand	<4"														
Haz-Mat Trailer Storage	South of Expanded Lab	<4"														
Warehouse Tent	Warehouse Hardstand	<4"														
Chemical Truck Bay	North of STS	<4"														
Waste Management Tent	North of Lag Bldg	<4"														
LSA-1	LSA-1	<4"														
Empty Container Hardstand Tent	North of Mobilization Pump Storage Vault	<4"														
Operator Initials																
Supervisor Initials																

Comments _____

APPENDIX B

LWTS DATA SHEETS

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APPENDIX B-1
LWTS READINGS
(Page 1 of 1)

DATE																
TIME																
DESCRIPTION	INDICATION	RANGE	I	II	I	II	I	II	I	II	I	II	I	II	I	II
LWTS ALARM PANEL	AUD/LIGHTS	(Y,N)														
71D-005(S) LEVEL	71-LI-043	0-80%														
71D-005 (R)LEVEL	71-LI-041	0-80%														
5D-15A1 LEVEL	71-LR-111A	0-80%														
5D-15A2 LEVEL	71-LR-111B	0-80%														
5D-15B LEVEL	71-LR-105	0-80%														
31017 LEVEL	71-LR-024	8-57%														
35104 LEVEL	LR-008	O-50%														
7D-13 LEVEL	LR-014	0% - 3%														
WDC SOUTH SUMP	70-LI-2090	<20%														
WDC NORTH SUMP	70-LI-2091	<20%														
PROCESS CELL SUMP	70-II-2092	<20%														
WASTE DISPENSING VESSEL	70-LI-2001	0-6.5"														
WDC Negative	47-PIC-8125	-2.5" to -6.0"														
01 Cell Negative	47-PIC-8115	-.9" to -2.0"														
115 B's	70-PDR-1A	.5 - 6" WC														
116 B's	70-PDR-2A	.5 - 6" WC														
113 A&B	70-PDR-3A	.5 - 6" WC														
115 A's	70-PDR-4A	.5 - 6" WC														
116 A's	70-PDR-5A	.5 - 6" WC														
114 A&B	70-PDR-6A	.5 - 6" WC														
Blower common suction duct neg pressure	70-PDR-7A	-9" to -14" WC														
Operator Initials																
Supervisor Initials																

Comments _____

_____

Send completed original forms to the Records and Configuration/Document Control Department and a copy to the site RCRA file custodian

APPENDIX B-2
CSS/LWTS FREEZE PROTECTION ROUNDS
(Page 1 of 1)

DATE																
TIME																
DESCRIPTION	INDICATION	RANGE	I	II	I	II	I	II	I	II	I	II	I	II	I	II
PIPE CHASE HEAT TRACE CONTROL PANEL	LWTS CR PP-B	CB #10, 12, 14, & 16														
SPRINKLER HEAT TRACE	PP-B LWTS CR	CB #32 & #8 ON														
CSS CHANGE ROOM	CSS CR	WARM														
35104 PIT	MP FIRST FLOOR	TEMP														
POWER TO 10 KVA PANEL	CSS MCC #1	4 BR ON														
CSS Drum Loadout Room Space Heaters	CSS MCC #1	4 BL ON														
HEAT TRACE FOR 6-71-1 ½-006 & POWER FOR CVA AIR DRYER	CSS MCC ROOM 10 KVA PANEL	CB #1, 3, 5 ON														
15-HTC-001 MoniTrace	CSS MCC ROOM	0 - 25 AMPS														
01-UW16-2A MoniTrace	CSS MCC ROOM	0 - 25 AMPS														
PIPE CHASE HEAT TRACE	LWTS CR	CKT #1 0-15 AMPS														
PIPE CHASE HEAT TRACE	LWTS CR	CKT #2 0-15 AMPS														
PIPE CHASE HEAT TRACE	LWTS CR	CKT #3 0-15 AMPS														
PIPE CHASE HEAT TRACE	LWTS CR	CKT #4 0-15 AMPS														
Utility Water Heat Trace	CSS CLEAN DRUM ROOM	LP-A #25 Check Lights														
01UW16-2A	CSS MCC #1	10 kVA Panel #6														
LWTS CR Heat trace Transformer	CSS MCC #1	Bkr 7C														
71-TI-0001	WRPA	>40◦F														
Operator Initials																
Supervisor Initials																

Comments _____

APPENDIX C

VESSEL OFF-GAS SYSTEM DATA SHEETS

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APPENDIX C-1

VESSEL OFF-GAS SHIFT READINGS

(Page 1 of 1)

	SHIFT			I	II	I	II	I	II	I	II	I	II	I	II	I	II
	DATE																
	TIME																
	Equip. No.		Design Rdg.	----	----	----	----	----	----	----	----	----	----	----	----	----	----
PSR-3	6T-2	6-PDR-14	<7.5" or NA														
PSR-3	6T-2A	6-PDR-13	<7.5" or NA														
PSR-3	6T-3	6-PDR-17	<7.5" or NA														
PSR-3	6T-3A	6-PDR-17	<7.5" or NA														
	6E-3	6-TIC-4	<100°F														
	6E-4	6-TIC-5	>130°F														
	6G-2	6G-2	Amp. Rdge.														
	6C-3	6-LI-3	10 - 70%														
	6C-3	6-DI-2	NA														
	n/a	6-PRC-1	-2.9"to-3.6"														
	n/a	6-PIC-16	-2.6"to-3.3"														
	6C-3	6-PDR-11	NA														
	6V-1	6-PDR-15	NA														
	6D-3	6LR-2R	< 80%														
	Audio/visual checks VOG alarm panel																
	Operator's Initials																
	Supervisor's Initials																

Comments _____

_____

APPENDIX D

WASTE TANK FARM DATA SHEETS

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APPENDIX D-1
STS BUILDING ROUND SHEETS
Page (1 of 2)

		DATE														
		TIME														
	DESCRIPTION	INDICATION	RANGE	I	II	I	II	I	II	I	II	I	II	I	II	I	II
STS CONTROL ROOM																
	ALARM PANELS TEST	(Y/N)	SAT													
	50-D-001 LEVEL	50-LI-016A	20-80%													
	50-D-004 LEVEL	50-LI-044	10-80%													
	CON ED SUMP LEVEL	8LI-12	0-50%													
	8D-3 LEVEL	8LI-023	12-80%													
	8D-3 TANK PRESS.	8PI-8	(-.3)-(-6)"													
	8D-4 LEVEL	8LI-11	12-80%													
	8D-4 TANK PRESS.	8PI-9	(-.3)-(-6)"													
	56-CP-003 Test	(Y/N)	STATUS													
Operator Initials																
Supervisor Initials																

Comments _____

_____

Send completed original forms to the Records and Configuration/Document Control Department and a copy to the site RCRA file custodian.

APPENDIX D-1
STS BUILDING ROUND SHEETS
(Page 2 of 2)

			DATE															
			TIME															
	DESCRIPTION	INDICATION	RANGE	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II
STS BUILDING VENTILATION READINGS																		
	F-09 107' TO 92'	56-PDI-038	.1-2.0"															
	HVAC ROUGHING	56-PDI-037	.1-2.5"															
	F-10 107' TO 92'	56-PDI-039	.1-2.0"															
	C.R./BATCHING	56-PDIS-021	0-1.0"															
	BATCHING/O.A.	56-PDIS-022	.5-1.5"															
	W. O.A./PIPEWAY	56-PDI-031	.1-2"															
	W. O.A./V.A.	56-PDI-032	.1-2"															
	E. O.A./V.A.	56-PDI-033	.1-2"															
	E. O.A./PIPEWAY	56-PDI-034	.1-2"															
	V.A./O.A.	56-PDIS-023	1-2.5"															
	PIPEWAY/O.A.	56-PDIS-024	1-3"															
	PIPEWAY/ATMOS	56-PDIS-025	1-3"															
	PIPEWAY/8D-1	56-PDIS-026	.1-2"															
NITROGEN TANK																		
	8C-2 PRESS	8-PG-44	60-140 psig															
	8C-2 LEVEL	8-PG-43	75-195"															
Operator Initials																		
Supervisor Initials																		

Comments _____

_____

Send completed original forms to the Records and Configuration/Document Control Department and a copy to the site RCRA file custodian.

APPENDIX D-2
WTF ROUND SHEETS
Page (1 of 1)

			DATE														
			TIME														
	DESCRIPTION	INDICATION	RANGE	I	II	I	II	I	II	I	II	I	II	I	II	I	II
WTF YARD																	
PSR-10	8D-1 PAN	8LR-1	0-4"														
8D-1 PAN INST	CHECKS (N/A IF ≥1")	8LR-1	YES/NO/N/A														
	8D-1 VAULT	8LR-14	1-15"														
PSR-10	8D-2 PAN	8LR-5	0-4"														
	8D-2 VAULT	8LR-15	3-6.5"														
	DEWATERING WELL	8LIC-9	2.5-5.1 psi														
	8D-2 NITGN FLOW	8-FQIT-0042	16-19 SCFM														
	8D-2 NITGN PRES	8-PG-35	<10 psig														
	8D-1 NITGN FLOW	8-FQIT-0041	0 SCFM														
	8D-1 NITGN PRES	8-PG-28	<10 psig														
WTF SHELTER																	
	8C-1 LEVEL	8LI-13	<10%														
	8D-6 LEVEL	8LR-8	<12"														
	8D-1 PRESSURE	8PR-1	(-1.5)-(-4)"														
	8D-2 PRESSURE	8PR-4	(-1.5)-(-4)"														
	8D-1 LEVEL	8LI-2	0-7"														
	8D-2 LEVEL	8LI-6	0-2.0"														
	8D-7 LEVEL	8-PG-401	8"-42"														
	UTILITY AIR	8PG-4	50-125 psi														
	INSTRUMENT AIR	8PG-5	30-100 psi														
	ALARM PANEL TEST	(Y/N)	SAT														
Operator Initials																	
Supervisor Initials																	

6NYCRR 373-3.2

SS Signature/Date

SS Printed Name

Initials	Operator/SS Printed Name	Initials	Operator/SS Printed Name

Comments _____

Send completed original forms to the Records and Configuration/Document Control Department and a copy to the site RCRA file custodian.

APPENDIX D-3
PVS ROUND SHEETS
Page (1 of 3)

			DATE																
			TIME																
	DESCRIPTION	INDICATION	RANGE	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II
50-P-01 DAILY INSPECTION (PVS MCC ROOM)																			
PSR-5	Test Switch	NORMAL	(Y,N)																
PSR-5	Interlock Bypass Switch	NORMAL	(Y,N)																
PSR-5	Circuit Breaker Control Switch	RED Flag	(Y,N)																
PSR-5	GENERATOR BREAKER OPEN	GREEN Light ON	(Y,N)																
PSR-5	FEEDER BREAKER CLOSED	RED Light ON	(Y,N)																
PSR-5	Battery Charger	ON	(Y,N)																
PSR-5	Battery Charger	DC Voltmeter	25.5 - 26.5																
PVS MCC ROOM																			
	BACK-UP AIR	PRESS. REG.	>1000 psi																
PVS CONTROL ROOM																			
PSR-3	BLOWER	SOUTH/NORTH	LIST ON-LINE																
PSR-3	FILTER TRAIN	SOUTH/NORTH	LIST ON-LINE																
	MODE	AUTO/MAN	STATUS																
	PANEL LIGHT ✔	(Y/N)	STATUS																
	STACK FLOW	56-AI-225/226	1.5K-2.8K																
	AIR TEMPERATURE	56-TI-207/208	40-90° F																
	STS PIPEWAY FLOW	56-VI-201	0-4500 SFPM																
	8D-1 & 8D-2 FLOW	56-VI-202	0-1700 SFPM																
	PREFILTER TEMP.	56-TT-301/302	40-90° F																
	INCOM. AIR TEMP.	56-TT-300	40-80° F																
Operator Initials																			
Supervisor Initials																			

Send completed original forms to the Records and Configuration/Document Control Department, AOC-21, and a copy to the site RCRA file custodian.

APPENDIX D-3
PVS ROUND SHEETS
Page (2 of 3)

			DATE														
			TIME														
	DESCRIPTION	INDICATION	RANGE	I	II	I	II	I	II	I	II	I	II	I	II	I	II
	HUMIDITY	56-AI-209/210	10-60% RH														
	HEATER MODE	RH/TEMP.	STATUS														
	HEATER OPERATION	1/2/OFF	STATUS														
PSR-3	FINAL ABSOLUTE	56-PDR-229/230	0.3-1.2" H_2O														
PSR-3	TOTAL TRAIN	56-PDR-231/232	0.5-5" H_2O														
	8Q-1 PRESSURE	55-PI-103	-0.5 to -4" H_2O														
	8Q-2 PRESSURE	55-PI-104	-0.5 to -4" H_2O														
	8Q-4 PRESSURE	55-PI-105	-0.5 to -4" H_2O														
	8Q-5 PRESSURE	55-PI-106	-0.5 to -4" H_2O														
	8Q-5 TEMPERATURE	55-TI-134	>32°F														
	8Q-4 RAD MONITOR	55-RAH-151	NEEDLE MOVEMENT														
	8Q-1 RAD MONITOR	55-RAH-154	NEEDLE MOVEMENT														
	8Q-2 RAD MONITOR	55-RAH-157	NEEDLE MOVEMENT														
	8Q-5 RAD MONITOR	55-RAH-164	NEEDLE MOVEMENT														
PVS BLOWER ROOM																	
	MOISTURE SEPAR.	56-PDIS-205/06	.05-1" H_2O														
	PREFILTER	56-PDIS-211	0.3-1" H_2O														
	PREFILTER	56-PDIS-212	0.3-1" H_2O														
	FIRST ABSOLUTE	56-PDIS-213/14	0.4-1.2" H_2O														
	BLOWER ΔP	56-PDIS-219/20	10-15" H_2O														
PVS COMPRESSOR ROOM																	
	50-PG-912	RECV. PRESS.	85-120 psi														
50-P-01 DAILY INSPECTION																	
PSR-5	RUN/STOP/REMOTE Switch	REMOTE	(Y,N)														
PSR-5	Exciter Circuit Breaker	ON	(Y,N)														
PSR-5	Reset button pushed	Push button	(Y,N)														
Operator Initials																	
Supervisor Initials																	

Send completed original forms to the Records and Configuration/Document Control Department, AOC-21, and a copy to the site RCRA file custodian.

APPENDIX D-3
PVS ROUND SHEETS
Page (3 of 3)

			DATE																
			TIME																
	DESCRIPTION	INDICATION	RANGE	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II
PSR-5	Alarm indicators	OFF	(Y,N)																
PSR-5	Water Jacket Heater	WARM	(Y,N)																
6NYCRR Part 613.5(b)(3)	50-LI-0056 Monitor/ Alarm Panel	Red "ALARM" LED is not illuminated	(Y,N)																
PSR-5	AUTO/OFF/PUMP RUN	AUTO	(Y,N)																
PSR-5	Power Available Light	ON	(Y,N)																
	Battery Disconnect Switch	Closed/Closed	Closed/Closed																
PSR-5	Day Tank (50-D-009A) Fuel Level	3/4-Full 75-100 gallons	(Y,N)																
PSR-5	50-D-009 Level	50-LI-056	>200 gallons																
WTF YARD																			
	PUMP PIT BLADDER	50-PI-711	>20 psi																
	SMS NORTH TRENCH	IN ALARM	YES/NO																
	SMS SOUTH TRENCH	IN ALARM	YES/NO																
Operator Initials																			
Supervisor Initials																			

Send completed original forms to the Records and Configuration/Document Control Department, AOC-21, and a copy to the site RCRA file custodian.

APPENDIX D-4
FREEZE PROTECTION ROUNDS
WTF
Page (1 of 2)

		DATE														
		TIME														
DESCRIPTION	LOCATION	INDICATION	I	II	I	II	I	II	I	II	I	II	I	II	I	II
8D-1 PAN/VAULT INST HEATER	8D-1 TRUSS	AREA WARM														
55-HTC-MAS 8D-1 M-7 INSTRUMENT AIR HEAT TAPE	8D-1 TRUSS	0–8 AMPS														
8D-1 M-7 FREEZE PROTECTION ALARM PANEL #55-CP-009	OUTSIDE 8D-1 M-7 ENCLOSURE	AMBER LIGHTS OFF														
8D-1 M-7 FREEZE PROTECTION ALARM PANEL #55-CP-009	8D-1 M-7 ENCLOSURE	POWER ON														
NITROGEN HEAT TRACE 8D-1 VENT	S. TRENCH	LIGHT ON														
NITROGEN HEAT TRACE 8D-2 VENT	S. TRENCH	LIGHT ON														
NITROGEN HEAT TRACE 8D-1 VENT	S. TRENCH	>.5 AMPS														
NITROGEN HEAT TRACE 8D-2 VENT	S. TRENCH	>.5 AMPS														
WATER INJECTION HEATER	INJ.CAB.	AREA WARM														
8D-2 PAN/VAULT INST. HEATER	8D-2	AREA WARM														
WASTE WATER PANEL-EHT-1	UNDER TRUSS	0-15 AMPS														
WASTE WATER PANEL-EHT-2	UNDER TRUSS	0-15 AMPS														
WASTE WATER PANEL-EHT-3	UNDER TRUSS	0-25 AMPS														
WASTE WATER PANEL-EHT-4	UNDER TRUSS	0-25 AMPS														
WASTE WATER PANEL-EHT-5	UNDER TRUSS	0-25 AMPS														
8D-2 M-4 & M-1 INST. AIR 55-HTC-IA-3294A	UNDER TRUSS	>40°F/Heater LED ON = SAT														
8D-2 M-7 FREEZE PROTECTION ALARM PANEL 55-CP-010	8D-2 M-7 ENCLOSURE	AMBER LIGHTS OFF														
8D-2 M-7 FREEZE PROTECTION ALARM PANEL 55-CP-010	8D-2 M-7 ENCLOSURE	POWER ON														
ROTOMETER SHED HEATER	ROTOM.SHED	AREA WARM														
EAST GATE FRISKER BUILDING	EAST GATE	AREA WARM														
Operator Initials																
Supervisor Initials																

Comments _____

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APPENDIX D-4
FREEZE PROTECTION ROUNDS
WTF
Page (2 of 2)

		DATE														
		TIME														
DESCRIPTION	LOCATION	INDICATION	I	II	I	II	I	II	I	II	I	II	I	II	I	II
8E-1 STEAM HEATER	8E-1	0-60 psi														
SGN HEAT TRACE 69B-HTC-300	8Q-5 P-10	>40°F/LED ON = SAT														
HEAT TRACES FOR SGN PP-31	STS 107'	PP-31: CB#8, 10,12,13,15 ON														
SGN DIVERTER HEAT TRACE	STS 107'	.2-5.0 AMPS														
UTILITY WATER HEAT TRACE	STS 107'	.2-5.0 AMPS														
STS GUTTER HEAT TRACE	STS 107'	GREEN LIGHT ON														
STACK MONITORING LINE #1	PVS SKID SHED	38-115°F														
STACK SAMPLING LINE #2	PVS SKID SHED	38-115°F														
STACK RETURN LINE #3	PVS SKID SHED	38-140°F														
PVS MCC ROOM HEATER	PVS MCC	AREA WARM														
PVS CONTROL ROOM	PVS CR	AREA WARM														
PVS BLOWER ROOM	PVS BR	AREA WARM														
PVS ROOF HEAT TRACE	N.W. PVS	>40°F/Heater LED ON = SAT														
PVS GUTTER HEAT TRACE	N.W. PVS	>40°F/Heater LED ON = SAT														
PVS GENERATOR ROOM	PVS GEN RM	AREA WARM														
SMS UTILITY HEAT TRACES-CKT#1	PVS GEN RM	LIGHT ON														
SMS UTILITY HEAT TRACES-CKT#2	PVS GEN RM	LIGHT ON														
SMS UTILITY HEAT TRACES-CKT#3	PVS GEN RM	LIGHT ON														
SMS UTILITY HEAT TRACES-CKT#4	PVS GEN RM	LIGHT ON														
DIESEL FUEL LINE HEAT TRACE	W.PVS	RED LIGHT ON														
CON-ED HEATER	CON ED	AREA WARM														
Operator Initials																
Supervisor Initials																

APPENDIX E

VITRIFICATION SYSTEM DATA SHEETS

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APPENDIX E-1
COLD CHEMICAL BUILDING SURVEILLANCE DATA SHEET
(Page 1 of 1)

DATE																
TIME																
DESCRIPTION	INDICATION	RANGE	I	II	I	II	I	II	I	II	I	II	I	II	I	II
65-D-10 PRESS	65-PIS-308	5-10" H^20														
65-D-10 TEMP	65-TI-312	60-90F														
Scrubber Pump Discharge Press	65-PI-315	> 45 PSI														
65-D-01 LVL	65-LCS-2 CH 5	0-129.8"														
65-CP-01 ALARM TEST	WHITE IND LIGHTS	ALL LIGHTS LITE														
FILL SCRUBBER TANK	65-HS-0326	AUTO														
Operator Initials																
Supervisor Initials																

Comments _____

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APPENDIX E-2
OUTSIDE ROUTINE SURVEILLANCE DATA SHEET
(Page 1 of 1)

DATE																		
TIME																		
DESCRIPTION	INDICATION	RANGE	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II
DIESEL FUEL OIL BUILDING																		
SUMP	67-LIS-704	DRY																
ROOF EXIT FAN	LP-8 BKR 10	ON																
DIESEL FUEL OIL HTR ELEMENT SAFETY CIRCUIT	HTR ELEMENT 63-FO-E-721 SAFETY CIR ENABLED	ON																
LIQUID WASTE TRANSFER LINE FROM RHWF BRK #18 @ 63-LP-008		ON																
DIESEL FUEL OIL BUILDING																		
PSR13 **FO-D-11 LEVEL**	**67-LIT-703**	**25-50%**																
PSR13 **6-FO-H-702 FUSABLE LINK**	**VALVE HELD OPEN**	**VALVE HELD OPEN**																
Operator Initials																		
Supervisor Initials																		

Comments _____

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APPENDIX E-3
VITRIFICATION BUILDING SURVEILLANCE DATA SHEET
(Page 1 of 8)

DATE																
TIME																
DESCRIPTION	INDICATION	RANGE	I	II	I	II	I	II	I	II	I	II	I	II	I	II
VPCR DCS EX-CELL OFF-GAS BLOWER SCREEN																
COOLING TOWER WATER SUPPLY	63-FI-02	600-1200 GPM														
VIT UTILITY AIR DRYER PRE FILTER	63-PDI-6051	0-5 PSID														
VIT UTILITY AIR DRYER 63-V-125	SIGHT GLASS 63-MI-6055	BLUE														
VIT UTILITY AIR DRYER AFTER FILTER	63-PDI-6052	0-5 PSID														
CC-V015B	ON/OFF SWITCH	ON/OFF														
CC-V015D	67-HS-016	A/B/C														
CC-V015D	67-HS-016A	ON/OFF														
CC-V015A	ON/OFF SWITCH	ON/OFF														
CC-G-001A INLET PRESS	PI-251A	8-15 PSI														
CC-G-001A STRAINER OUTLET PRESS	PI-252A	> 8 PSI														
CC-G-001A DISCHARGE PRESS	PI-253A	40-70 PSI														
CC-G-001B INLET PRESS	PI-251B	8-15 PSI														
Operator Initials																
Supervisor Initials																

Comments _____

APPENDIX E-3
VITRIFICATION BUILDING SURVEILLANCE DATA SHEET
(Page 2 of 8)

DATE																
TIME																
DESCRIPTION	INDICATION	RANGE	I	II	I	II	I	II	I	II	I	II	I	II	I	II
CC-G-001B STRAINER OUTLET PRESS	PI-252B	> 8 PSI														
CC-G-001B DISCHARGE PRESS	PI-253B	40-70 PSI														
CC-G-001C INLET PRESS	PI-251C	8-15 PSI														
CC-G-001C STRAINER OUTLET PRESS	PI-252C	> 8 PSI														
CC-G-001C DISCHARGE PRESS	PI-253C	40-70 PSI														
EXPANSION TANK LEVEL	LG-222	½-3/4 FULL														
VIT STEAM HIGH	63-PI-01	135-165 PSI														
VIT STEAM HIGH	63-PI-02	90-110 PSI														
CFMT 63-V-001	VISUAL FOR DAMAGE, CORROSION, LEAKAGE	NONE														
MFHT 63-V-011	VISUAL FOR DAMAGE CORROSION, LEAKAGE	NONE														
SBS 63-V-031	VISUAL FOR DAMAGE, CORROSION, LEAKAGE	NONE														
Operator Initials																
Supervisor Initials																

Comments _____

APPENDIX E-3
VITRIFICATION BUILDING SURVEILLANCE DATA SHEET
(Page 3 of 8)

	DESCRIPTION	INDICATION	RANGE	I	II	I	II	I	II	I	II	I	II	I	II	I	II
	DATE																
	TIME																
	MELTER 63-V-020 AND SUPPORT STRUCTURE	VISUAL FOR DAMAGE, CORROSION, LEAKAGE	NONE														
	IN-CELL PIT AREA	VISUAL FOR LEAKAGE	NONE														
	Transfer cart on shoes and charging	Cart At Shoes and Charging LED on pendent	On (Not Flashing)														
	VO19 CONTROL PANEL																
PSR12	67-T-001A	67-PDR-056A	.75-7.0 INH_20														
PSR12	67-T-001B	67-PDR-056B	.75-7.0 INH_20 *														
PSR12	67-T-001C	67-PDR-056C	.75-7.0 INH_20 *														
PSR12	67-T-002A MODULE A	67-PDR-063A	.75-7.0 INH_20 *														
PSR12	67-T-002A MODULE B	67-PDR-063B	.75-7.0 INH_20 *														
PSR12	67-T-002A MODULE C	67-PDR-063C	.75-7.0 INH_20 *														
PSR12	67-T-002B MODULE D	67-PDR-081	.75-7.0 INH_20														
	Operator Initials																
	Supervisor Initials																

* All PSR 12 readings MUST be taken directly from digital chart recorders.

Comments _____

APPENDIX E-3
VITRIFICATION BUILDING SURVEILLANCE DATA SHEET
(Page 4 of 8)

	DATE																
	TIME																
	DESCRIPTION	INDICATION	RANGE	I	II	I	II	I	II	I	II	I	II	I	II	I	II
PSR12	67-T-002B MODULE E	67-PDR-082	.75-7.0 INH_20 *														
PSR12	67-T-002B MODULE F	67-PDR-083	.75-7.0 INH_20 *														
PSR12	67-T-002B MODULE G	67-PDR-084	.75-7.0 INH_20 *														
PSR12	67-T-002B MODULE H	67-PDR-085	.75-7.0 INH_20 *														
PSR12	67-T-002B MODULE I	67-PDR-086	.75-7.0 INH_20 *														
PSR12	67-T-002B MODULE J	67-PDR-087	.75-7.0 INH_20														
PSR12	67-T-002B MODULE K	67-PDR-088	.75-7.0 INH_20 *														
PSR12	67-T-002B MODULE L	67-PDR-089	.75-7.0 INH_20 *														
	67-UPS-1																
PSR13	ON INVERTER	GREEN LIGHT	ON														
PSR13	FAULT INDICATORS	ALL RED LIGHTS	ALL OFF														
PSR13	SELECTOR SWITCH	SWITCH POSITION	NORMAL														
PSR13	ALARM SILENCE SWITCH	SWITCH POSITION	NORMAL														
PSR13	D.G. LOAD	LIL-01	GREEN														
	Operator Initials																
	Supervisor Initials																

* All PSR 12 readings MUST be taken directly from digital chart recorders.

Comments _____

APPENDIX E-3
VITRIFICATION BUILDING SURVEILLANCE DATA SHEET
(Page 5 of 8)

	DATE																	
	TIME																	
	DESCRIPTION	INDICATION	RANGE	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II
PSR13	RIL-A12B BKR CLOSED	RED LIGHT	ON															
PSR13	SIL-A12C BKR OPEN	GREEN LIGHT	ON															
PSR13	RIL-A22B BKR CLOSED	RED LIGHT	ON															
PSR13	SIL-A22C BKR OPEN	GREEN LIGHT	ON															
PSR13	RIL-K-001A FAN ON	RED LIGHT (RUN LIGHT)	ON or OFF															
PSR13	RIL-K001B FAN ON	RED LIGHT (RUN LIGHT)	ON or OFF															
PSR13	K001A/K001B EXHAUST FAN CONTROL	SS-001	K001A or K001B															
	DIESEL GENERATOR ROOM																	
PSR13	DG COOLING SYS	TEMPERATURE	WARM TO TOUCH															
PSR13	FO-D-12 LVL	67-LI-706	85%-FULL															
PSR13	DG FO LEVEL CONTROL LAMP TEST	TEST BUTTON	ALL LIGHT[1]															
PSR13	DG BATT CHGR FAULTS	3 RED LIGHTS	OFF															
PSR13	DG BATT CHGR PWR ON	1 GREEN LIGHT	ON															
	Operator Initials																	
	Supervisor Initials																	

[1] Diesel fuel oil transfer pump switch 67-HS-0702 must be **taken to OFF** during reading, then returned to AUTO.

Comments _____

APPENDIX E-3
VITRIFICATION BUILDING SURVEILLANCE DATA SHEET
(Page 6 of 8)

	DATE																
	TIME																
	DESCRIPTION	INDICATION	RANGE	I	II	I	II	I	II	I	II	I	II	I	II	I	II
PSR13	6-FO-H-730 FUSABLE LINK	VALVE HELD OPEN	VALVE HELD OPEN														
PSR13	6-FO-H-736 FUSABLE LINK	VALVE HELD OPEN	VALVE HELD OPEN														
PSR13	6-FO-H-737 FUSABLE LINK	VALVE HELD OPEN	VALVE HELD OPEN														
PSR13	DG FIELD BKR	PUSH BUTTON	DEPRESSED														
	DG LOCAL CONTROL PANEL LAMP TEST	PRESS RESET LAMP TEST	ALL LIGHT														
PSR13	DG RUN/STOP/REMOTE	SWITCH POSITION	REMOTE														
PSR13	DGR SUMP	67-LIS-705	DRY														
PSR13	BATTERY DISCONNECT SWITCH 63-BDS-01	CLOSED/OPEN	CLOSED														
	Operator Initials																
	Supervisor Initials																

Comments _____

APPENDIX E-3
VITRIFICATION BUILDING SURVEILLANCE DATA SHEET
(Page 7 of 8)

DATE																
TIME																
DESCRIPTION	INDICATION	RANGE	I	II	I	II	I	II	I	II	I	II	I	II	I	II
67-K-001-A	OUTBOARD BEARING TEMP	≤ 210°F														
67-K-001-A	INBOARD BEARING TEMP	≤ 210°F														
67-K-001-B	OUTBOARD BEARING TEMP	≤ 240°F														
67-K-001-B	INBOARD BEARING TEMP	≤ 210°F														
OFF-GAS TRENCH COND PUMP LVL SW ENCL	64-EL-007 AWR IND FOR 64-LS-007	AMBER LIGHT ON														
OFF-GAS TRENCH COND PUMP LVL SW ENCL	64-LLH-007 HIGH LVL COND PIT	RED LIGHT OFF														
OFF-GAS TRENCH COND PUMP PIT TEMP.	64-TI-007	5-50°C														
HVAC HPA BOTTLE 6-HPA-V-001	67-PI-0004	>550 psi														
63-UPS-3	SELECTOR SWITCH	NORMAL														
Operator Initials																
Supervisor Initials																

Comments _____

APPENDIX E-3
VITRIFICATION BUILDING SURVEILLANCE DATA SHEET
(Page 8 of 8)

DATE																
TIME																
DESCRIPTION	INDICATION	RANGE	I	II	I	II	I	II	I	II	I	II	I	II	I	II
63-UPS-3	ON INVERTER GREEN LIGHT	ON														
63-UPS-3	FAULT INDICATION ALL RED LIGHTS	OFF														
63-UPS-3	ALARM SILENCE SWITCH	NORMAL														
63-UPS-2	SELECTOR SWITCH	NORMAL														
63-UPS-2	ON INVERTER GREEN LIGHT	ON														
63-UPS-2	FAULT INDICATION ALL RED LIGHTS	OFF														
63-UPS-2	ALARM SILENCE SWITCH	NORMAL														
Operator Initials																
Supervisor Initials																

Comments _____

APPENDIX E-4
01/14 BUILDING SURVEILLANCE DATA SHEET
(Page 1 of 2)

	DATE																
	TIME																
	DESCRIPTION	INDICATION	RANGE	I	II	I	II	I	II	I	II	I	II	I	II	I	II
	GENERAL ALARM SILENCE RESET	SS-1	OFF														
	01-14 BUILDING ALARM SYS ARMED	RED LIGHT	ON														
	01 CELL AIRLOCK AMBIENT TEMP	47-TC-8001	>40F														
	ΔP VENT SUPPLY FILTERS	70-PDI-8176	0-2.5"														
	01/14 BUILDING INSTRUMENT ROOM																
PSR12	64-T-009A1 (O.O.S)	64-PDR-6305	0.3-7.5 INH_20 [2]														
PSR12	64-T-009A2 (O.O.S)	64-PDR-6308	0.3-7.5 INH_20 •														
PSR12	64-T-009B1 (O.O.S)	64-PDR-6405	0.3-7.5 INH_20 •														
PSR12	64-T-009B2 (O.O.S)	64-PDR-6408	0.3-7.5 INH_20 •														
	UPS 64-B-010																
PSR13	ON INVERTER	GREEN LIGHT	ON														
PSR13	FAULT INDICATORS	RED LIGHTS	ALL OFF														
PSR13	SELECTOR SWITCH	SWITCH POSITION	NORMAL														
PSR13	ALARM SILENCE SWITCH	SWITCH POSITION	NORMAL														
	FILTER RADIATION MONITOR	RAD MONITOR	<100 MR/H														
	114A	70 PDI-4/A	.5-6" H_20														
	Operator Initials																
	Supervisor Initials																

[2] All PSR12 readings MUST be taken directly from strip chart recorder.

Comments _____

APPENDIX E-4
01/14 BUILDING SURVEILLANCE DATA SHEET
(Page 2 of 2)

DATE																
TIME																
DESCRIPTION	INDICATION	RANGE	I	II	I	II	I	II	I	II	I	II	I	II	I	II
114B	70 PDI-4/B	.5-6" H_20														
113A	70 PDI-3/A	.5-2" H_20														
113B	70 PDI-3/B	.5-2" H_20														
116A-1	70 PDI-2A/1	.5-6" H_20														
116A-2	70 PDI-2A/2	.5-6" H_20														
116A-3	70 PDI-2A/3	.5-6" H_20														
116B-1	70 PDI-2B/1	.5-6" H_20														
116B-2	70 PDI-2B/2	.5-6" H_20														
116B-3	70 PDI-2B/3	.5-6" H_20														
115A-1	70 PDI-1A/1	.5-6" H_20														
115A-2	70 PDI-1A/2	.5-6" H_20														
115A-3	70 PDI-1A/3	.5-6" H_20														
115B-1	70 PDI-1B/1	.5-6" H_20														
115B-2	70 PDI-1B/2	.5-6" H_20														
115B-3	70 PDI-1B/3	.5-6" H_20														
Operator Initials																
Supervisor Initials																

Comments _____

APPENDIX E-5
VITRIFICATION HEAT TRACE SURVEILLANCE
DATA SHEET
(Page 1 of 4)

DATE																
TIME																
HEAT TRACE	LOCATION	POWER SUPPLY	I	II	I	II	I	II	I	II	I	II	I	II	I	II
———	———	———	Required Reading is "ON"													
WASTE WATER HEAT TRACE	MEOA	PP-12 #18														
ROOF DRAINS HEAT TRACE PANEL #1	MEOA	PP-12 #11, 13														
ROOF DRAINS HEAT TRACE PANEL #2	MEOA	PP-12 #15, 17														
ROOF DRAINS HEAT TRACE PANEL #7	MEOA	PP-12 #19, 21														
ROOF DRAINS CONTROL RELAY PANEL #1, 2, 7, T-STAT	MEOA	PP-12, #14														
ROOF DRAINS HEAT TRACE PANELS 8, 8A, 8B	MEOA	PP-12, #25, 27														
VIT STACK MONITORS SUPPLY LINE HEAT TRACE	MWOA	PP-5 #23														
VIT STACK MONITORS RETURN LINE HEAT TRACE	MWOA	PP-5 #25														
UTILITY WATER HEAT TRACE	LEOA	PP-1 #26														
POTABLE WATER HEAT TRACE	LEOA	PP-1 #21														
COOLING WATER RETURN HEAT TRACE	LEOA	PP-1 #14														
COOLING WATER SUPPLY HEAT TRACE	LEOA	PP-1 #18														
CONDENSATE RETURN HEAT TRACE	LEOA	PP-1 #24														
UTILITY AIR HEAT TRACE	LEOA	PP-1 #16														
DEMINERALIZED WATER HEAT TRACE	LEOA	PP-1 #20														
INSTRUMENT AIR HEAT TRACE	LEOA	PP-1 #28														
Operator Initials																
Supervisor Initials																

Comments _____

APPENDIX E-5
VITRIFICATION HEAT TRACE SURVEILLANCE
DATA SHEET
(Page 2 of 4)

DATE																
TIME																
HEAT TRACE	LOCATION	POWER SUPPLY	I	II	I	II	I	II	I	II	I	II	I	II	I	II
-------	-----	-----	Required Reading is "ON"													
DF F/OIL & VIT RESTROOM HEAT TRACE	RMR VIT MEN'S RESTROOM	PP-9 #11														
ROOF DRAIN CONTROL RELAY PANEL #3, 4, 5, 6, T-STAT	CCOS	LP-7 #28														
ROOF DRAINS HEAT TRACE PANEL #3	CCOS	LP-7 #32, 34														
ROOF DRAINS HEAT TRACE PANEL #4	CCOS	LP-7 #33, 35														
ROOF DRAINS HEAT TRACE PANEL #5	CCOS	LP-7 #36, 38														
ROOF DRAINS HEAT TRACE PANEL #6	CCOS	LP-7, #40, 42														
DEMIN WATER, UTILITY WATER, UTILITY AIR, HEAT TRACE	LOAD IN/OUT BUILDING	PP-16 #17														
UTILITY AIR HEAT TRACE	LOAD IN/OUT BUILDING	PP-16 #28														
UTILITY WATER HEAT TRACE	LOAD IN/OUT BUILDING	PP-16 #30														
EDR CHANGE RM GUTTER	LOAD IN/OUT BUILDING	PP-16 #32														
VIT GUTTER 118-110' LEVEL	LOAD IN/OUT BUILDING	PP-16 #34														
NORTH ROOF DRAIN HEAT TRACE	LOAD IN/OUT BUILDING	PP-16 #35														
Operator Initials																
Supervisor Initials																

Comments _____

APPENDIX E-5
VITRIFICATION HEAT TRACE SURVEILLANCE
DATA SHEET
(Page 3 of 4)

DATE																
TIME																
HEAT TRACE	LOCATION	POWER SUPPLY	I	II	I	II	I	II	I	II	I	II	I	II	I	II
------	----	----	Required Reading is "ON"													
01-14 STACK MONITOR HEAT TRACE	01-14 STACK MONITOR ROOM	64-B-017 #6														
UTILITY WATER HEAT TRACE	NOx INST ROOM	64-UPS-PP1 #12														
UA HEAT TRACE FOR OFF GAS BLOWERS	NOx INST ROOM	64-LP-1 #22														
01-14 ROOF DRAINS HT TRACE PNL	NOx INST ROOM	64-LP-1 #31, 33, 35														
EYEWASH SHOWER STATION HEAT TRACE	NOx INST ROOM	64-UPS-PP1 #18														
6K TANK UPPER	VTF	62-PP-5, #1														
61-D-07 (SOUTH)	VTF	62-PP-5, #2														
OFF-GAS LINE	VTF	62-PP-5, #3														
61-D-07 (NORTH)	VTF	62-PP-5, #4														
6K TANK LOWER	VTF	62-PP-5, #11														
HEAT TRACE SOUTH	VTF	62-PP-2, #39, 41														
NORTH WALL HEATERS	VTF	62-PP-2, #21														
SOUTH WALL HEATERS	VTF	62-PP-2, #22														
Operator Initials																
Supervisor Initials																

Comments _____

APPENDIX E-5
VITRIFICATION HEAT TRACE SURVEILLANCE
DATA SHEET
(Page 4 of 4)

DATE																
TIME																
HEAT TRACE	LOCATION	POWER SUPPLY	I	II	I	II	I	II	I	II	I	II	I	II	I	II
------	----	-----	Required Reading is "ON"													
DIESEL F/O TANK HTR	DFOB	PP-14 #4														
DIESEL F/O HEAT TRACE	DFOB	LP-8 #7														
NORTH WALL HEATER 67-V-030	DFOB	LP-8 #12, #14, #16														
SOUTH WALL HEATER 67-V-029	DFOB	LP-8 #11, #13, #15														
Operator Initials																
Supervisor Initials																

Comments _____

APPENDIX E-6
CHEMICAL BULK STORAGE
FACILITY INSPECTION
(Page 1 of 1)

An inspection of all tanks listed below is required once per shift. The inspection must include associated piping, valves, berms, leak detection equipment, and housekeeping issues. Any Unsat condition must be detailed in the narrative section of this log and brought to the attention of the PSOSS. Examples of Unsat conditions include leaks, drips, improper spill cleanup, excessive storage in berms, out of calibration instrumentation, etc.

Tank	Description	DATE														
		TIME														
		SHIFT	I	II	I	II	I	II	I	II	I	II	I	II	I	II
63-V-048	Nitric Acid Hold Tank		Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat
63-D-063	Cerium (IV) Charge Tank		Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat
67-D-001	Chilled Water Expansion Tank		Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat
67-D-002	Chilled Water Air Separator		Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat
66-E-10	CLCW Heat Exchanger		Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat
66-D-10	CLCW Hold Tank		Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat
FO-D-12	Diesel Fuel Oil Day Tank		Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat
FO-D-11	Diesel Fuel Oil Storage Tank		Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat
65-D-01	Drain Tank		Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat
65-D-02	Slurry Hold Tank		Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat
65-D-03	Main Mix Tank		Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat
65-D-04	Shim Mix Tank		Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat
65-D-07	Decon Tank Demin Water Service		Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat
65-D-08	Decon Tank Nitric Acid Service		Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat
65-D-09	Decon Tank General Purpose Service		Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat
65-D-10	Scrub Solution Tank		Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat
Operator Initials																
Supervisor Initials																
EA (required only when unsat condition is identified)																

Initials	Printed Name	Initials	Printed Name	Initials	Printed Name	Initials	Printed Name

NOTE: Send original form to the Records and Configuration/Document Control Department.

Comments _____

APPENDIX F

REMOTE HANDLED WASTE FACILITY DATA SHEETS

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APPENDIX F-1
RHWF EQUIPMENT ROUND SHEETS
(Page 1 of 1)

Record information once per day. The following readings are for information only and may be recorded from the PSO Shift Office. This is NOT a record. When complete, forward to Cognizant System Engineer.

INSTRUMENT / DESCRIPTION	DATE							
	TIME							
Air Cleaning Unit								
313-PDIT-0001A, ACU Filter T-006A Downstream Filter DP								
313-PDIT-0001B, ACU Filter T-006B Downstream Filter DP								
313-PDIT-0002A, ACU Filter T-006A Upstream Filter DP								
313-PDIT-0002B, ACU Filter T-006B Upstream Filter DP								
313-PDIT-0026, In-Cell Filter T-007 DP								
313-PDIT-0027, In-Cell Filter T-008 DP								
313-PDIT-0028, In-Cell Filter T-009 DP								
313-PDIT-0029, In-Cell Filter T-010 DP								
313-PDIT-0005B, Main A/C Supply Y-005 Hepa Filter DP								
313-PDIT-0005C, Main A/C Supply Unit Y-005 Pre-Filter DP								
313-PDIT-0003B, 313-Y-003 HEPA Filter DP								
313-PDIT-0003C, 313-Y-003 Pre-Filter DP								
313-PDIT-0004B, 313-Y-004 HEPA Filter DP								
313-PDIT-0004C, 313-Y-004 Pre-Filter DP								

Comments: _____

APPENDIX F-2
RHWF FREEZE PROTECTION ROUND SHEETS
(Page 1 of 1)

This data sheet is to be used from October 1st through April 30th.

	DATE														
	TIME														
EQUIPMENT / DESCRIPTION	**RANGE**	I	II	I	II	I	II	I	II	I	II	I	II	I	II
Freeze Protection															
Stack Eff Sampling Line Freeze Protection Bkr #27 @ PP 2	ON														
Stack Eff Sampling Line	0.2 to 5.0 amps														
Demin Water Line 6-50-2-015 Freeze Protection @ Caustic Addition Panel Bkr #8 55DW301	ON/OFF														
Operator Initials															
Supervisor Initials															

Comments: _____

APPENDIX F-3
RHWF RCRA WASTE PROCESSING INSPECTION SHEET

The inspections listed below are required once per shift. The inspections must include associated piping, valves, berms, leak detection equipment, and housekeeping issues. Any Unsat condition must be detailed in the narrative section of this log and brought to the attention of the PSOSS. Examples of Unsat conditions include leaks, drips, improper spill cleanup, excessive storage in berms, out of calibration instrumentation, etc.

Page 1 of 1	DATE														
	TIME														
DESCRIPTION	**SHIFT**	**I**	**II**	**I**	**II**	**I**	**II**	**I**	**II**	**I**	**II**	**I**	**II**	**I**	**II**
Evidence of Release															
Receiving Area [1]		Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat
Buffer Cell [1]		Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat
Work Cell [2]		Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat
Contact Maintenance Area [1]		Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat
Waste Packaging [1]		Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat
Load Out / Truck Dock [1]		Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat
Liquid Accumulation															
Receiving Area		Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat
Load Out / Truck Dock		Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat	Sat / Unsat
Operator Initials															
Supervisor Initials															
EA (required only when unsat condition is identified)															

6NYCRR 373-3.2

SS Signature/Date

SS Printed Name

Operator/SS Initials	Operator/SS Printed Name	Operator/SS Initials	Operator/SS Printed Name

Comments:

NOTE: Send original form to the Records and Configuration/Document Control Department and a copy to "Site RCRA File Coordinator".

1 Breach of waste container constitutes evidence of release in these areas.
2 Breach of Work Cell Containment constitutes evidence of release in this area.

WVNSCO RECORD OF REVISION

Rev. No.	Description of Changes	Revision On Page(s)	Dated
0	Original Issue	All	Month/Year
2	General Revision	All	03/95
FC1	Add CaH, M, Cond. and Temp °C data columns to Potable Water Section	3, 16	03/95
FC2	Add Appendix Q - UR Clarifier Chemical and Settling Data Added Records Maintenance Section	3,4,7, & 30 7	04/95
FC3	Change Appendix A, B, D titles Add Appendix R Update Appendix A: Change VWR Instrument # to 15PG-88 Change HAC Instrument # to 15PG-96 Change OGC Instrument # to 15PG-84 Add 15K-10 Vibration Indicator 15VI-2 Add 15K-10A Vibration Indicator 15VI-1 Replace Appendix B, "Head End Data Sheet", with new Appendix B, "FRS and Outside Readings Sheet." The new Appendix B is a combination of the old Appendix B and Appendix C, "FRS Data Sheet", page 1 of 2. Change Interceptor pH range from 10.5 - 11.5 to "as read" Change title on Appendix C to "FRS Water Treatment Data Sheet. Delete redundant heading: "Water Treatment Data Sheet". Update Appendix D with parts of the defunct Appendix B. Delete "Tank 15D-6, 15LR-29" readings. Delete GPC sump level, 15LI-15 reading. Change MRR Magnehelic to MRR Photohelic, 15PDCL-38. Change cooling water Temp In from 40° to 70° in Appendix E. Add a column in Appendix F (page 1 of 2) for Potable Water Conductivity reading at 0800 row. Close opening at 2400 row. Open a space for 31F-1A feedwater hardness, 1900-0700 column in Appendix F (page 2 of 2)	TOC, 9 10 11 12 13 15 16 17	05/95

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC3 (Cont.)	Delete "TEMP. CLARIFIER BUILDING HEATERS" and "TEMP. CLARIFIER LINES HEAT TRACES 32LP-AA CB#14, 16, 18" columns in Appendix H, (Sheet 2 of 2)	21	
	Change 31K-1A to 31K-1. Add "(TURBINE)" after "31K-1 AIR COMPRESSOR", and "(ELECTRIC)" after "31K-1A AIR COMPRESSOR" in Appendix N (Sheet 2 of 2)	28	
	Add new Appendix R - LWTS Tank and Main Plant Cell Sump Levels	32	
FC4	Add surveillance checks to tank #35157 (H_2SO_4 Storage) and tank #33154 ($HN0_3$ Storage) to Appendix B	11	08/95
	Revised boiler UPS Status Checks	14	
FC5	Appendix C - Delete: 1-C-35 outlet conductivity + pH	12	08/95
	Pool pH and conductivity Add: 1G-2 status (ON/Off) 0-100 mR/hr range for filter radiation monitors. Appendix E - Change CT East Draft Fan to 32-GM-015	15	
	CT Cell 1 Fan Speed Low/High Changed CT West Draft Fan to 32-K-016 Cell 2 Fan Speed Low/High Changed 32G-4A, B, C, to 32-GM-20A, B, C, Changed 70 to N/A on each Changed Temp In to CW supply <85°F Changed Temp Out to CW Return Changed header pressure to 60 Deleted Langlier Index Appendix F - Added °C to Temp. Columns	16	
	Added $Si0_2$ analysis at 0700-1900 on Filter Deleted Lang. Index columns Added SiO_2 at 0800 on Potable Water Deleted Cond. at 2400 on Potable Water Added Feedwater Hardness at 1900-0700 for 31F-1A Appendix N - Changed 32G-4A, B, C to 32-GM-20A, B, C	28	
	Changed CW In to CW Supply <85°F and CW Out to CW Return Appendix R - Changed UPC and ARC sump Min Range from 1.0" to 0"	32	

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC6	Appendix F, Sheet 1 - Replace with reformatted revised sheet.	16	02/23/96
	Appendix H - Add to checklist: Utility Room Area	21	
FC7	Appendix L, added "The following ... sections 5.1, 5.2, 5.3.	25	03/01/96
	Appendix Q, complete revision on sheet.	31	
FC8	Reference PSR-3 & PSR-5.	8,10,11,13	03/15/96
	Add Appendix S & T.	9, 33, & 34	
FC9	Appendix S - Change "3 Position Toggle Switch" to "2 Position Selector Switch"; Delete water jacket check-off; include a range for the diesel day tank; delete "generator exciter switch."	33	03/25/96
	Appendix T - Include a range for the diesel day tank.	34	
FC10	Appendix A-Delete all * OSR reference.	10	04/09/96
	Appendix B-Delete URE Day Tank Reading. Delete all * OSR reference. Insert "Interceptor Alarm Panel Test" row.	11	
	Appendix D-Delete all * OSR reference.	13	
	Appendix E-Delete Interceptor Alarm Checks.	14	
	Appendix T - 31-D-102, Change the range to ≥75% (300 gal). Reference PSR-5 at 31-D-102 reading.	34	
FC11	Appendix F - Deleted filter Cl_2. Deleted cooling water LI. Changed Raw Water Integrator Reading to SOP 32-01, 32-FIT-021. Added FI-001 Today _____ Yesterday _____ Gallons _____ Deleted 48046 regenerated.... Changed 2005 to 2039.	16&17	*09/11/96*
	Appendix L - Deleted columns "Gal . . . Raw Water" and "Cl Residual ppm". Changed 1% to 0.5%.	25	

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
3	Complete revision, all field changes incorporated	All	11/08/96
FC1	Append. A - Change 15PDR-10 to 15PDR-11. Change 15PDR-5 to 15PDR-6. Add readings for 15PDR-10 and 15PDR-5. Append. C - Add readings for Skimmer 1-T-37 and Skimmer 1-F1-37. Append. E - Update to include compressors 31K-5/6. Append. K - Add oil level readings for 31K-5 and 31K-6. Add Sheet 3 - 31K-5/-6 readings. Add Sheet 4 - 31K-3 readings.	11 13 15 24 27	01/02/97
FC2	Append. A - Added alarm locations for 15PDR-11, -6, -10, & -5. Append. E - Added readings for tank levels.	11 15	01/10/97
FC3	Append. H, - Change Sheet 1 of 2 to Sheet 1 of 3. Change Sheet 2 of 2 to Sheet 2 of 3. Add Sheet 3 - Steam and Heat Trace Checklist - LLWTF Area.	21 22 23	01/22/97
FC4	Appendix N (Sheet 3) - For both compressors 31K-5 and 31K-6; change the bearing oil pressure range to 37-47 psig, change the bearing oil temp low point range to 120°F. Appendix N (Sheet 4) - Change the ΔT water temp range to 7-21°F. Delete column "ΔT Air Temp Discharge - Stage 1." Add columns: "ΔT Air Temp - Stage 1 - Inlet Water Temp" Range 0-15°F, "ΔT Discharge Air Temp - Inlet Water Temp" Range 0-19°F.	31 32	03/05/97
FC5	Appendix A - Added a range of <40.0 for the VOG blower vibration sensors (15VI-1 and 15VI-2). Appendix D - Added a range of <40.0 for the HEV blower vibration sensors (15VI-3, 15V-4, and 15VI-5). Appendix N (Sheet 3) - Referenced PSR-5 on the 31K-5/-6 Data Sheet. Appendix N (Sheet 4) - Added a check for the new (3rd) condensate trap.	12 15 31&32	06/18/97

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC6	Appendix F - Clarifier Operation table - Deleted times and reset times for table at 2400, 0800, 1600.	18	07/17/97
	Appendix Q - Added statement "Poly and clay... of full tank." Removed times from rate check table.	35	
	Appendix A,B,D,&N - Move PSR reference to further left hand column.	12,13,15,&31	
FC7	TOC - Delete Appendix L 7.1.1 - Delete L. 9.0 - Deleted Appendix L. Appendix L - Deleted.	2 6 7 23	08/18/97
FC8	Append. A - Add operability checks for 15K-10A. Append. F. - Remove XXX's from 200, 0400, and 1200 times in Pt. of Entry $C1_2$ ppm column.	8 14	08/29/97
FC9	Append. F-Added units of chemical measurement to chemical usage section.	15	09/08/97
	Append. H-Deleted Sullair Block Heater Plugged-In	18	
FC10	5.2, 5.3.2 - Added "two pair". Deleted "the following...anti-C gloves, rubbers" and added "contact Rad Protection for survey and to obtain a RWP."	5	10/01/97
4	General Revision. Complete revision with all field changes incorporated. Data sheets updated to show actual field changes concerning new boilers in the Utility Room.	All	12/04/97
FC1	4.0 - Added step 3.	5	02/05/98
	Appendix E - Added PSR 8 Flag on equipment status next to 33G-2, 32D-1	11	
FC2	Appendix A - Added a reading for the SSC.	7	04/15/98

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
5	Major Change Revision. Trouble Record # CF-9801460.	All	07/08/98
FC1	Cover Sheet Updated	1	10/23/98
	Appendix B - Added LLWTF readings.	8	
	Appendix D - Added MRR Photohelic reading.	11	
	Appendix F - Changed "GPM" to "GPH".	14	
	Appendix F - Changed "Cond." to "Boiler Conductivity". Changed range on the P-Alk reading. Added Condensate Conductivity reading.	15	
	Appendix H - Added location of clearwell temp controller. Changed CB 11 to CB 13. Changed "11 traps" to "10 traps".	17	
	Sheet 2 - Changed "2 traps" to "5 traps". Added valve numbers for clearwell heater. Added "outside".	18	
	Appendix J - Deleted steam checks at 31D-2 and interceptors. Added Pipe Bridge HTCs.	20	
	Appendix L - Deleted 31G-20 oil check.	22	
	Appendix M - Changed econ. pres range.	23	
	Sheet 3 - re-ordered readings.	25	
	Appendix Q - Changed XC-3 range to 9.0".	30	
	Appendix T - Changed max pres for 15-G-101 to 80#.	33	
FC2	4.2 Deleted "the following protective..." added, "obtain an RWP".	4	03/25/99
	Deleted PDDR-2 Reading from Appendix B	8	
	Changed "1-T-1" Range from "80" to "85" to App C	9	
	Deleted "Filter Radiation Zone" Readings To Appendix C.	9	
	Added EDR reading. Changed ranges to 1.05"-1.20". on Appendix D	11	
	Appendix H, Changed "250psi" to "270psi"	18	
	Appendix J, Added "Lagoon 2 Suction Line..."	20	
	Appendix M, Sheet 1; changed ranges on Economizer Pressure	23	
	Appendix M, Sheet 2; Changed ranges on 31G-17A, B, C.	24	
	Changed Appendix Q; min. sump level to 0"	30	
	Change/Addition to Appendix R	31	
	Change/Addition to Appendix S	32	
	Changed "15-PI-17" Range from "20" to "30" To Appendix T.	33	

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC3	Updated Table of Contents Appendix D - Updated heading to reflect that the table has three pages Appendix D - Added blower bearing temperatures Repaginated to allow for Field Change	2 10, 11 12 All	04/01/99
FC4	Appendix L - Corrected equipment numbers Appendix R & S - Corrected/added equipment numbers. Added quantities & corrected page layout.	23 32,33	09/07/99
6	General Revision - All Appendices affected except G, J, K, N, O, P, R and S. Moved some tank levels to Appendix A and D from Appendix Q. Removed LLWTF Vent Alarm Panel Test from Appendix B. Removed readings for Pump 1G-2 in Appendix C. Moved 15D-6 Level to Appendix D. Added HEV filter train status and revised 15K-21 status in Appendix D. Moved CPC, GCR, GPC Sump levels to Appendix D from Q. Moved cell pressures from Appendix A to Appendix Q. Moved HEV vibration readings to sheet 3 in Appendix D. Deleted redundant EDR pressure reading from Appendix D. Deleted readings for old BFW pump 41036 from Appendix E, L, and M. Added reading from new panel for demin water produced in Appendix F. Added new steam and heat trace to Appendix H (new sheet 3). Add 31G-20 Fuel oil pump to Appendix L. Changed lower economizer temperature limit to 180 on Appendix M. Changed 7D-14 upper limit to 80% on Appendix Q. Changed upper 15-G-100 discharge pressure limit from 70 to 75, upper 15-E-100 Inlet and Outlet temperatures from 55/50 to 60/55. Changed 31K-3 readings from delta temperatures to Stage 1 air and Discharge air temperature in Appendix M. Expanded table of contents to include appendices. Added new Appendix I for LLW2 Heat Traces. Removed references to procedure sections from Appendix F. Change to 7D-14 level affects HLWO.	All	10/18/99

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC1	Added EDR damper reading back into Appendix D.	11	12/07/99
	Added item to drain 31V-6 filters and 31K-4 Accumulator of water to Appendix M.	28	
	Revised 31K-5/K-6 air compressor first and Second stage discharge temperature ranges.	27	
	Deleted heat trace data sheet for utilities to 01-14 building.	20	
	Added pressure readings for boiler gas accumulators.	25	
	Appendix L- Added Cooling Water Pumps 32G-20A, 32G-20B, 32G-20C, Fire Pumps 33G-1, 33G-2 and Deleted Fuel Oil Pump 31G-20.	24	
FC2	Update Cover Sheet		02/09/00
	9.0 added "Lifetime Quality Assurance"	6	
	Appendix J, revised	22	
FC3	Added 31-005 to Appendix E.	13	03/03/00
	Added 31G-18A, 31G-18B, 31G-18C to Appendix E.	13	
	Deleted second daily iron sample from Appendix F.	16	
	Deleted "when running" from condensate samples In Appendix F.	16	
	Changed condensate blowdown pit north of FPH From breaker 13 to breaker 11 in Appendix H.	18	
	Changed 30-HTC-002 from >50°F to power on/no Alarms in Appendix H.	19	
	Revised MPO Shift Supervisor Turnover checklist In Appendix K.	23	
	Added 31G-18A, 31G-18B,31G-18C, 31D-005 pressure /level indicators to Appendix M.	26	
	Added fuel oil supply and return valve numbers To Appendix R.	33	
	Added SiO_2 and Br_2 ranges to Appendix F.	15	
	Reformatted gas meter readings.	16	
	Deleted electric fire pump oil level check.	24	
	Added details on poly and clay rate checks.	31	
	Revised range of VWR cell pressure.	32	
	Added sequence relay panel light check.	34	

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC4	Deleted INC. from cover sheet. Changed Reference use to other sections. Changed date to MAY 2000.	1	05/05/00
	Changed filter flow 1-FI-34 upper range from 300 gpm to 330 gpm. Changed ON/OFF to ON/OFFLINE for demineralizer, filter 1-T-34 and Skimmer. Changed "MPO Shift Supervisor" to "Shift Supervisor". Changed 1-FT-1 to 1-FIQ-1. Added column for yesterdays readings. Changed skimmer flow upper range to 380 gpm.	9	
	Added photohelics 15PDICL-0001 (PMCR kiosk).	11	
	Changed "2005 pH" to "NA701 pH".	16	
	Clarified Demin Water Produced (OMEGA).		
	Deleted 2039 from chemical usage.	16	
	Deleted 31D-4A and 4B steam and condensate Blowdown readings.	18	
	Created new Appendix J sheet 2 for FRS heat Trace.	23	
	Deleted 31G-6A and 6B oil level checks.	25	
	Changed gas accumulator pressure ranges from 22-25 PSI to 20-25 PSI.	26	
	Changed condensate receiver level range from 10-40% to 10-70%.	27	
	Added VSR compression tank level.	36	
FC5	Updated 9.0 [1] Records Section	6	08/01/00
	Changed old interceptor level range to 4-5.5 ft.	8	
	Added PMCR Enclosure photohelic. Changed GCR photohelic to 15PDCL-37. Changed some photohelic ranges to >0.35" from >0.20".	11	
	Deleted 3 FRS heat trace steam traps from Appendix J sheet 1 of 2.	22	
	Added Battery charger amps and volts for 27X Relay Batteries to Appendix R.	34	
7	**NEW TYPE REVISION** to incorporate Field Changes	All	08/10/00
FC1	Deleted readings for old condensate tank levels and old condensate pump discharge pressures.	27	08/29/00
	Deleted 31K-1 compressure pressure reading.	27	
	Added item to blowdown manual condensate drains on 31K-5 and 31K-6 once per shift.	28	
	Changed Radiation level 1-RI-35 range to 0-12 R/hr.	9	

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC2	Deleted column for yesterday's data in Appendix C.	9	09/14/00
	Changed PMCR Enclosure photohelic in Appendix D to 15PDICL-0002.	11	
	Changed cooling water pump discharge pressure ranges in Appendix M to 55-90 psi.	27	
FC3	Added SFS Operations Supervisor to 1.3, 3.2[2], 4.1[1], 6.0[1] and 6.0[5].	3,4,6	09/29/00
	Deleted records classification from 9.0[2] and 9.0[3].	6	
	App. C - added rad. levels for filters.	9	
FC4	Added Appendix R to the Implementing Procedure Section for PSR-5 implementation table. 5	10/06/00	
	Revised the Appendix R, Diesel Day Tank 31-D-103 required condition to a level of >75%, 225 gal to match PSR-5 requirement.	34	
FC5	Appendix B: Added interceptor heat trace.	8	10/27/00
	Appendix C: Changed FRS North and South Blower Designations to 17-K-004 and 17-K-005.	9	
	Utility Room Status Sheet: Deleted 31G-6A and 31G-6B from pump status table. Added 32G-003 to pump status table. Deleted 31D-4A and 31D-4B from equipment status table. Added clarifier tube/cone levels and sludge level to tank levels table. Addresses DCIR 0022826.	13	
	Appendix F: Deleted Demin Water Produced (Omega) readings.	16	
	Appendix H sheet 1: Changed from 10 to 8 traps at FPH.	18	
	Appendix L: Deleted 31K-1 and 31KT-1 from oil level status report.	25	

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
8	NEW-TYPE REVISION INCORPORATION OF FIELD CHANGES	ALL	11/07/00
FC1	Appendix C - Changed normal range for 1-RI-34-1, 1-RI-34-2, 1-RI-34-3, 1-RI-34-4 to 0-200 mr/hr.	9	11/30/00
	Appendix D - Added GPC Enclosure & Airlock.	11	
	Appendix M - Added date.	29	
FC2	Appendix D - Deleted PMCR Enclosure 15PDICL-0002.	11	01/24/01
	Appendix D - Changed Normal Range value for EDR Loadin Facility (sheet 2 of 3).	11	
	Appendix D - Changed Normal Range value for EDR (sheet 2 of 3).	11	
	Appendix E - Changed "UR Alarm Panel Checks" to "URE Alarm Panel Checks" on sheet 1 of 2 (per OH/WVDP FR Surveillance S01-002E).	13	
	Appendix M - Changed Economizer Pres Out reading range on UR and URE Equipment Data Sheet (sheet 1 of 4) from "205-275 PSI" to "190-275 PSI" for boilers 31F-002A and 31F-002B.	26	
	Appendix M - Changed UR and URE Equipment Data Sheet (sheet 2 of 4) from "210-270 PSI" to "195-270 PSI" for 31G-17A (31PI-0506), 31G-17B (31PI-0508), and 31G-17C (31PI-0510).	27	
	Appendix P - Added "@ 5 min" to UR Clarifier Chemical and Settling Data	32	
	Appendix Q - Added ARC ΔP to Clarifier Flow Reading	33	
FC3	Deleted footer SOP:0000153.RM.	All	03/27/2001
	Appendix D - Added comments section to bottom Of sheets 1 and 2.	10-11	
	Appendix D - Added fourth sheet and moved GCR And GPC sump levels from sheet 1 To sheet 2. Moved CPC and CCR readings from sheet 2 to sheet 3. Moved bearing and vibration readings from sheet 3 to sheet 4.	10-13	
	Appendix D - Changed EDR pressure ranges to 0.80 -1.20". Changed GCR, MRR, PMCR, and GPC enclosure pressure ranges to >0.25". Changed GPC enclosure Pressure range to >0.20".	11	

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC3 (Cont.)	Appendix D - Moved CPC pressure reading After CPC sump readings. Changed CCR pressure ranges to >0.25".	12	
	Appendix D - Rearranged 15K-20A, -21, and -20 Vibration readings to reflect field Alignment.	13	
	Appendix I - Changed required status for the two Heat traces in the Lagoon 2 pump-House to power on and heater on.	22	
	Appendix M - Changed upper range for 32G-8A and 8B discharge pressure from 60 to 70 Psi.	28	
	Appendix Q - Changed ARC and OGC pressure ranges To >0.5".	34	
	Appendix S - Changed Generator Breaker Position Test- Auto to 43 Device Auto-Manual Switch.	36	
	Appendix T - Changed the order of the 100 Ton Chiller compressor suction and Discharge pressures to reflect field Alignment. Changed 50 ton chiller CWS pressure range to 5-35 psi.	37	
	Addresses issues from MPOSS DCIR dated 2/26/01.		
FC4	Updated cover sheet to latest requirements of EP-5-002.	1	06/25/01
	9.0[3] - updated department title.	6	
	Appendix A - added units for 15K-10 and 10A vibration measurments. Corrected tank level instrument numbers.	7	
	Appendix D - page 1 of 4: Added EMOA Alarm Panel number, changed normal range for 15PDIAH 33 &33A to 0" - 3.0", added Switch 15T-SW position light.	10	
	page 2 of 4: Changed 15PDCH-37 to 15PDICL-37, changed 15PDCL-35, -38, -39 & -36 to 15PDICL-35, -38, -39 & -36.	11	
	page 3 of 4: 15K-21 Status changed to reflect actual field indicators, 15K-21 Auto Switches changed to reflect actual field indicators, Changed 15PDCL-40 & -41 to 15PDICL-40 & 41.	12	
	Page 4 or 4: added units for 15K-21A, 15K-21 & 15K-20 vibration measurments.	13	

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC4 (Cont.)	Appendix E - page 1 of 2: Added Date/Time & Operator and SS Signatures.	14	
	Appendix F - page 1 of 2: Added Date/Time & Operator and SS Signatures.	16	
	Page 2 of 2 - changed 653 to 362.	17	
	Appendix M - page 1 of 4: Changed 31-PI-300B & 31-PI-400B ranges to 185-275.	27	
	page 4 of 4: Changed Vibration Stage 2 range to < 0.28 mils.	30	
	Appendix Q - corrected LWC Sump Level instrument number.	34	
FC5	Updated Cover Sheet per EP-5-002 and updated Cognizant Author and Cognizant Manager.	1	02/12/02
	Appendix C - changed indicator number and deleted pool temperature	9	
	Appendix D - changed 150-6 range units	10	
	Appendix H - deleted temp requirement from note	19	
	Appendix J - deleted temp requirement from note	23-24	
	The Operations Group are affected by these changes.		
9	**NEW-TYPE REVISION INCORPORATION OF FIELD CHANGES**	**ALL**	**02/18/02**
FC1	Procedure was modified to make more user-friendly and to delete the BFW Hardness from Appendix F.		03/12/02
	Detailed changes are as follows:		
	Appendix D, page 2 & 3 - combined date blocks for shifts I & II.	11,12	
	Appendix E, page 1 of 2 - shaded unused blocks.	14	
	Appendix E, page 2 of 2 - changed location of date/time/shift/operator/and MPOSS blocks.	15	
	Appendix F, page 1 of 2 - moved date to top of page, changed signatures so that both shifts must sign.	16	
	Appendix F, page 2 of 2 - deleted BFW Hardness.	17	
	This change affects MPO.		

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
10	Minor Revision. Editorial changes were made such as resetting tabs to comply with WVDP-257 and removing lines, rows or pages that were deleted by a previous field change. Section 7.0, "Final Conditions," and Section 8.0, "Post Completion Configuration," were deleted as these Sections are no longer required by EP-5-002 and contained no information. This change has no direct affect on any organization.	All	03/15/02
FC1	Appendix C - Changed Pool Level Normal Range from 507" ± 3" to 498" -1" +4" The purpose of maintaining the water at this level is to provide sufficient seal for the PMC ventilation. These changes affect Operations.	9	06/07/02
FC2	This change was made per ECN 13403. Detailed changes include: Updated Cover Sheet - Cognizant Author, and Facility Manager. Appendix D - Added SRR Airlock 15-PDICL-0006. Updated department titles. This change affects SO.	 1 11 All	08/08/02
FC3	Major Field Change Appendix C, changed Normal Range for Pool Level 1-LI-2 from 498" -1" +4" to "As Read". Pool is to be drained per FRS 71514. Changed Normal Range for Sump Level 1-LI-003 from "45" to "24". Deleted readings for Demineralizer, Radiation Levels, Filter and Skimmer from Appendix C. These are no longer needed since pool will be drained and operation of the demineralizer will be per Work Order FRS 71514. Also, the skimmer and filter are to be removed from the pool. Appendix D, changed instrument # "15PDICL-38" to "15-PG-38" and also changed it to an MRR "Magnehelic" and the range to ">0.30". This is to reflect actual field conditions. Appendix G, deleted "*" in front of Alarm Status and also deleted "*Alarms require Electrical Supervisor notification". This is not required per Electrical Supervisor. These changes affect MPO Operations and the Electrical Supervisor.	 9 11 18	08/23/02

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC4	Change based on Periodic Review. Department titles updated throughout. This change is administrative in nature and has no direct affect on any organization.	All	11/04/02
FC5	This change was made to satisfy DCIR-0221808. Detailed changes include: *Appendix D Deleted reading for GPC sump.* Appendix D Lowered minimum range for EDR Loadin Facility and EDR. Appendix I Added note. Appendix Q Lowered readings at PPC & XC-2. Appendix T Added "*" and note for summer mode only to 15-E-100 temp. and CWS temp to AMU readings. This change affects PSO and DDWO.	 11 11 21 33 36	02/18/03
11	**NEW-TYPE REVISION INCORPORATION OF FIELD CHANGES**	**ALL**	**02/26/03**
12	General Revision. Changes to this SOP include incorporating all PSO round sheets and instructions from other round sheet SOPs (SOP 06-02, 08-26, 63-37, and 71-15), adding a round sheet for the SST PVUs, deleting unnecessary readings, and reformatting the procedure per DCIP-100. This change affects PSO.	All	07/17/03
13	This change was made to correct the Records section, add Appendix A-21, and delete heat trace readings from Appendix D-4 for heat trace which has been removed in the WTF. This change affects PSO.	10,11,18 43,56,57, 62	07/30/03
14	This change was made to add LSA-1 and the Rad Protection Tent to Appendix A-21. This change affects PSO.	43	09/04/03
15	General Revision. This change was made to add data sheets for RHWF. Also added steps for completing the RHWF data sheets, updated Appendix D-2 to correct alarm points and change equipment numbers which have been replaced in the field per ECN 25724. Repaginated and renumerated to allow for revision. This change affects PSO.	All	12/15/03

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
16	This change is made to add the data sheet for RCRA waste surveillances and associated instructions. Also minor updates to reflect field conditions. This change affects PSO.	10,12,43, 83,84	01/22/04
17	General Revision. This change is made to change references from MPO to PSO, change ranges for 7D-13 level and Waste Dispensing Vessel on Appendix B-1, delete Stack Monitoring Shed readings from Appendix D-3, delete STS chiller readings from Appendix D-4, delete Appendix D-5, add operator and SS sign off blocks on Appendix E-5, add Tier I and Tier II notification requirements to Appendix A-6, and other minor editorial changes. This change affects PSO.	All	03/10/04
18	Appendix E-6, changed Tank from "66-E-11" to "66-E-10". This change is made to change the ranges on Appendix F-1. This change affects PSO.	76 81	04/13/04
19	This change is made to delete the Rad Protection Tent for Snow Accumulation checks on Appendix A-21, update 8D-1 and 8D-2 air flow range on Appendix D-3, and change 8D-1 and 8D-2 nitrogen flow rates on Appendix D-2. This change affects PSO.	46,56,57	
20	This change is made to add a chemical amount conversion table, add a note to Appendix A-6 sheet 1 for samples to be taken in accordance with NYSDOH, changed from Cups to pounds for chemical usage reporting, added EA signature to Appendices E-6 an F-3, and changed DP ranges for RHWF filter equipment on Appendix F-1. This change affects PSO.	9,24,25,76,78 79,80,81,83	05/25/04
21	This change is made to add Appendix F-3 RCRA instructions, delete unnecessary readings for RHWF and add information only readings to RHWF data sheets. This change affects PSO	10, 78, 79	08/09/04

APPENDIX F-3

SOP 300-06, *HAZARDOUS WASTE STORAGE FACILITY OPERATIONS*

VERIFY HARD COPY AGAINST WEB SITE IMMEDIATELY PRIOR TO EACH USE

Required only for copies.
Copy valid for 24 hours from verification time/date.

Date _____ Time _____ Verified By _____
Date _____ Time _____ Verified By _____
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Date _____ Time _____ Verified By _____

Revision Number 11

Revision Date 08/12/04

SOP 300-06

Hazardous Waste Storage Facility Operations

Cognizant Author: T. E. Schalberg

Cognizant Manager: S. M. Westcott

Facility Manager: K. E. Sanders

HLW:

YES	NO	NA
		X

QUALITY LEVEL: C

SAFETY CLASS: C

PROCEDURE USE CLASSIFICATION		MULTIPLE USE BY SECTION
	CRITICAL USE	
X	REFERENCE USE	ALL

ALARA PLANNING

[X] The work described in this procedure does not require ALARA planning.

[ ] The work described in this procedure may require ALARA planning.

WEST VALLEY NUCLEAR SERVICES CO.

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Hazardous Waste Storage Facility Operations

1.0 INTRODUCTION

1.1 Purpose

To provide instructions for the receipt and movement of waste at the Hazardous Waste Storage Facility (HWSF) as well as inspection and documentation requirements.

This procedure addresses the actions to be implemented for operation of the HWSF. The HWSF consists of four lockers designated for on-site storage of non-radioactive hazardous wastes prior to disposition. This procedure addresses the specific actions necessary to receive and move waste containers at the HWSF. Facility and equipment inspections are addressed as well as documentation requirements for this facility.

1.2 Applicability

This procedure applies to the handling of hazardous wastes, facility inspections, and documentation requirements associated with operation of the HWSF.

D&D/Waste Management Operations (DDWO) and Waste Shipping and Disposal (WSD) personnel are responsible for performing the actions as specified in this procedure.

2.0 GENERAL INFORMATION

[1] All container movements to and from the HWSF are controlled by SOP 300-07, "Waste Generation, Packaging, and On-Site Transportation."

[2] All waste must be characterized per WSD departmental procedure prior to being stored in the HWSF.

RCRA **[3]** Primary hazardous waste containers shall be securely closed at all times, except when it is necessary to add or remove waste.

[4] SOP 09-33, "Integrated Waste Tracking System Operation," provides instruction on IWTS data entry.

RCRA [5] By design, each of the four HWSF lockers meet the requirements for containment of PCB waste in accordance with 40 CFR 761.65 which includes an exemption for interim status for such storage pursuant to 40 CFR 264.175. The HWSF locker #2 has been designated for the storage of PCB waste and shall be marked per Appendix D.

3.0 PRECAUTIONS/LIMITATIONS

[1] Strong oxidizers, strong alkalies, and magnesium stored in the HWSF shall be overpacked per WSD direction.

[2] The maximum volume of liquid waste that may be stored in any one Hazardous Waste Storage Locker (HWSL) is 2,550 gallons.

[3] Wastes with auto-ignition temperatures less than or equal to 536 °F shall not be opened inside the HWSF.

[4] DO NOT move containers that exhibit signs of bulging, pressure build up, or any other indications that appear suspicious. STOP work and contact DDWO supervision for directions.

[5] If a material or item is discovered in a container that does NOT coincide with information on the data sheet and /or container labeling, STOP work and contact DDWO supervision for directions.

4.0 PREREQUISITES

4.1 Material/Special Tools and Equipment

[1] Tools and equipment including, but not limited to the following are required:

[a] DOT specification containers

[b] Container labels

[c] Spill response equipment (e.g. absorbent material, spill pads, oil booms).

[d] Tool (e.g., wire bent to form a hook) to activate the HWSL sump alarms.

[e] Calibrated scale for weighing containers of waste.

4.2 Field Preparations

The following are to be in place and maintained at all times:

CRA [1] Signs indicating that: **(40 CFR 265 and 761)**

[a] The facility contains hazardous wastes.

[b] Access is restricted to authorized personnel only.

[c] The facility is a HAZWOPER Exclusion Zone.

[d] Smoking is NOT permitted.

[e] Caution Dry Chemical Fire Extinguishing System

[f] Caution Contains PCBs **(HWSL#2 only)**

[g] Radio communications are not permitted in HWSF Office only (i.e., "Do not key two way radios in this area").

CRA [2] Emergency communications equipment (e.g. telephone, intercom) available for use and located in the immediate vicinity of the HWSF, such as the HWSF Office, when entries to lockers are being made. **(40 CFR 265)**

4.3 Performance Documents

RCRA [1] A list of emergency response actions in the HWSF Office. **(40 CFR 265)**

RCRA [2] The current and previous week's completed inspection sheets. **(40 CFR 265)**

[3] A record of PCBs added or removed from storage containers is provided through the use of the Integrated Waste Tracking System (IWTS) per SOP 09-33 and is required for the PCB Annual Document Log prepared by Environmental Affairs.

[4] Applicable copies of Material Safety Data Sheets (MSDSs), or equivalent, in the HWSF Office.

4.4 Training

Personnel entering any HWSLs must have current Hazardous Waste Operations (HAZWOPER) training.

5.0 PERFORMANCE

5.1 Hazardous Waste Storage Locker Entries

When entering any HWSL, perform the following:

WARNING

DO NOT enter an HWSL if the amber light is out, the red light is lighted, or any audible alarm is alarming without first receiving directions from the DDWO Supervisor. Inhalation or physical contact with some hazardous materials may cause injury or illness.

[1] **IF** the red light is lighted, or an audible alarm is alarming, **THEN** DO NOT enter and immediately notify the DDWO Supervisor, **THEN** the DDWO Supervisor shall provide guidance for further actions.

[2] **IF** the amber light is lighted, the red light is out, and the audible alarms are NOT alarming,
THEN perform the following steps for entering the HWSL:

[a] Prior to opening a HWSL, energize and operate the fan for at least 15 seconds to allow a complete air exchange within the locker.

[b] If desired, the fan may be shut off after the 15 seconds of operation.

[c] **IF** the fan is NOT working,
BUT the amber light is lighted,
THEN DO NOT enter and immediately notify the DDWO Supervisor,
THEN the DDWO Supervisor shall provide guidance for further actions.

5.2 Container Movement

NOTE *Refer to Section 5.1 for storage locker entries.*

5.2.1 Receiving Containers into the HWSF

Perform the following when receiving containers into the HWSF:

[1] Ensure all of the necessary information is documented on Appendix C, "Non-Radioactive Waste Container Data Sheet," and Appendix F, "On-Site Waste Transportation Sheet," from SOP 300-07.

[2] Ensure an MSDS, or equivalent, for each hazardous material is available in hard copy prior to moving containers.

[3] Check containers for structural soundness (e.g. no extensive rust, bulging, holes, dents) and that the closing mechanism is secured.

NOTE *The remaining steps in this Section 5.2.1, may be performed in any order and/or in parallel.*

[4] Label or verify the labeling of the container per Appendix F, "On-Site Transportation Sheet," from SOP 300-07 that shall, as a minimum, contain the following:

[a] Hazardous Waste Label.

[b] Container Content (ensure the description on the label is identical to the Profile Name on the data sheet).

[c] Compatibility Code as assigned by WSD.

[d] Container ID number.

[e] Other markings/labeling when specified by WSD.

[5] PCB waste containers shall be marked per Appendix D.

NOTE *The "net weight" is the weight of the primary container and the waste/material. The "gross weight" consists of the waste/material and all containers.*

[6] Weigh the containers with the waste/material.

[7] Subtract the secondary container's weight to obtain the net weight.

[+] **[8]** Record the net and gross weights, in pounds, and the scale's Equipment ID# on the "On-Site Waste Transportation Sheet," (Appendix F of SOP 300-07).

[9] Ensure the compatibility of containers by comparing the compatibility codes on the new containers to those they will be placed near using Appendix C, "Compatibility Chart."

[10] Contact DDWO supervision for any concern with container compatibilities.

[11] Place containers in the locker while ensuring a minimum of 24" aisle space for accessibility during routine operations and emergencies.

[12] Place PCB waste containers in HWSF locker #2, unless directed otherwise by DDWO Supervisor and the alternate storage area is marked per Appendix D.

[+] **[13]** Write the location of the stored containers on maps, inventory sheets, and on Appendix F, "On-Site Waste Transportation Sheet," from SOP 300-07.

5.2.2 Moving Container Within the HWSF

NOTE *The two steps in this section may be performed in any order.*

[+] **[1]** Complete the "Waste Container Data Change Sheet for DDWO," Appendix G from SOP 300-07.

[+] **[2]** Update the HWSF map and inventory.

5.3 Waste/Container/Facility Inspections

NOTE *As stated in WV-915, "Spill/Release Notification and Reporting," an individual discovering a spill resulting in an emergency or potential emergency situation notifies the Plant Systems Operations Shift Supervisor (PSO SS) immediately. For spills that are not an emergency, the discoverer notifies the area supervisor who then notifies the PSO SS.*

[1] Notify the appropriate supervisor (i.e., DDWO Supervisor or PSO SS) immediately in the event a leak or spill is discovered during an inspection.

NOTE *The remaining steps in this Section 5.3 may be performed in any order and/or in parallel.*

[2] Notify WSD to resolve discrepancies between maps, inventories, and the actual conditions found during inspections.

5.3.1 Weekly Inspections

[1] Refer to Section 5.1 for locker entries.

RCRA

[+] **[2]** Perform weekly inspections of outer containers and document using a separate Appendix A, "HWSF Weekly Waste Inspection Log," for each locker. **(40 CFR 265)**

[3] Inspect the containers for:

[a] Leaks/spills.

[b] Severe corrosion.

[c] Dents/bulges.

NOTE *Some secondary containers may NOT be closed containers (e.g., open buckets, bins, berm areas).*

[d] Containers closed.

[e] Labels legible, accurate, and complete as compared to the inventory.

RCRA **[4]** Compare the map information to the actual location of containers in storage. **(40 CFR 265)**

[a] Verify locations of containers in storage.

[b] Adequate aisle space is maintained. Minimum of 24" needed for container inspections, movements, and emergencies.

[+] **[c]** Make necessary changes to the map for container locations.

[+] **[d]** Initial and date the map for changes made.

RCRA [5] Compare the inventory to the actual status of containers in storage. **(40 CFR 265)**

[a] Ensure the compatibility codes on the printed inventory match the compatibility labels on the containers.

[b] Ensure the date hazardous on the printed inventory matches the date hazardous on the container labels.

[+] **[c]** **IF** actual container status does not match inventory,
THEN identify unsatisfactory conditions on HWSF Weekly Inspection Log,
AND attach marked up inventory including the number of pages to the inspection sheet.

[+] **[6]** Verify sump is free of liquid.

[7] Ensure there is a hard copy on file in the HWSF Office for each container in storage.

[+] **[8]** Document any deficiencies on the inspection sheet.

[+] **[9]** The individual performing the inspection shall sign/print name, including the date and time of inspection, on the HWSF Weekly Waste Inspection Log.

[+] **[10]** The DDWO Supervisor shall sign/print name and date upon review of the HWSF Weekly Waste Inspection Log.

[11] **IF** unsatisfactory conditions are discovered from the inspection,
THEN the DDWO Supervisor or designee shall:

[+] **[a]** Document the unsatisfactory condition on Appendix A, "HWSF Weekly Waste Inspection Log."

[b] Verify resolution of unsatisfactory conditions.

[+] **[c]** Document the resolution in Appendix A, "HWSF Weekly Waste Inspection Log."

[12] Distribute originals and copies of the maps, inventories, and inspection sheets as follows:

[a] One copy is placed in the HWSF Office.

RCRA **[b]** Give the original marked up maps, updated inventories, and weekly inspection sheets to the DDWO Supervisor for the RCRA file. **(40 CFR 265)**

[13] Obtain new revised maps and inventory sheets from the DDWO Supervisor.

[14] Verify information on revised maps and inventory sheets is accurate.

[15] Place the new maps and inventory sheets in the HWSF Office.

[16] Discard old copy of map.

5.3.2 Monthly Inspections

NOTE *Refer to Section 5.1 for storage locker entries.*

RCRA
[+] **[1]** Perform monthly inspections of each storage locker and document on a separate Appendix B, "HWSF Monthly Facility Inspection Log," for each locker. **(40 CFR 265)**

[2] Inspect each storage locker for:

[a] Physical condition of the storage locker (e.g., sound and no damage is evident).

[b] Perform fire, power, and sump alarm tests per Section 5.4.

[c] Ensure security devices are in place and in good working order.

[d] Ensure the spill response equipment is available and the seals for the spill response kit are intact.

[e] **IF** a seal is broken or missing from the spill response kit, **THEN** ensure the following minimum inventories are in place:

- 12 ➡ 3"x48" socks.
- 10 ➡ 3"x10' socks.
- 60 ➡ 16.5"x20" mats (double weight).
- 8 ➡ pillows.

AND reseal the spill response kit.

[3] Ensure the area is clean and safety equipment is accessible.

[4] Ensure all signs required in Section 4.2[1] are in place.

[5] Document additional information in the comments section that others should be made aware of.

[+] **[6]** The individual performing the inspection shall sign/print name and include the date and time of inspection, on Appendix B, "HWSF Monthly Facility Inspection Log."

[+] **[7]** The DDWO Supervisor shall sign/print name and date upon review of the HWSF Monthly Facility Inspection Log.

[8] **IF** unsatisfactory conditions are discovered from the inspection, **THEN** the DDWO Supervisor or designee shall:

[+] **[a]** Document the unsatisfactory condition on Appendix B, "HWSF Monthly Facility Inspection Log."

[b] Verify resolution of unsatisfactory conditions.

[+] **[c]** Document the resolution in Appendix B, "HWSF Weekly Waste Inspection Log."

[9] Maintain copies of completed monthly inspection sheets for a two month period in the HWSF Office.

[10] Transmit the original monthly inspection sheet to the DDWO Supervisor, with a copy for the HWSF Office.

5.4 Monthly Testing of HWSF Alarms

[+] **5.4.1** Perform the fire alarm tests, as described below, on a monthly basis and document the test results on Appendix B.

NOTE *Refer to Section 5.1 for storage locker entries.*

[1] Notify the PSO SS of the inspection and remind him/her to notify Security that the Keltron Code 101 Alarm will be received.

NOTE *Two Operators are needed to conduct this test: one DDWO operator is in the HWSF Office (speed space) and one DDWO operator is in the HWSL.*

[2] For each HWSL, simultaneously push down the two black switches labeled "A" and "B" for the fire alarm to be received at the Fire Alarm Control Panel (FACP), HWSL, and Security.

[3] Verify that the audible alarm at the HWSL sounds and the strobe and alarm on the outside of the HWSF Office activates and sounds.

[4] Press the Alarm Silence push pad and ensure the audible alarm and strobe at the HWSF Office deactivates.

[5] Return the "A" and "B" switches to the original position to deactivate the locker alarms.

[6] At the completion of the test:

[a] Reset the alarm at the FACP and ensure the green "AC Power" light is in the steady lighted condition.

[b] Notify the PSO SS that the test is complete.

[c] Notify the PSO SS and cognizant system engineer of any discrepancies.

NOTE *Two Operators are needed to conduct this test: one DDWO operator is outside the HWSL and one DDWO operator is inside the HWSL.*

[+] **5.4.2** Perform the power and sump alarm tests, as described below, on a monthly basis and document the test results on Appendix B.

NOTE *Refer to Section 5.1 for storage locker entries.*

[1] For each HWSL, verify the amber light is on, indicating power to the locker.

[2] For each HWSL, activate the sump alarm and red light by pulling up on the sump level indicators.

5.5 Responses for Activation of HWSF Alarm Systems

NOTE1 *During alarm conditions, DDWO operators may take any action necessary to place and maintain the facility in a safe condition. EMPLOYEE SAFETY TAKES PRECEDENCE over facility and environmental safety.*

NOTE2 *The red light AND audible signal indicates that a spill condition may exist within the storage locker. An audible signal from the fire alarm bell or buzzer indicates a fire or temperature inside the storage locker is in excess of 165°F and the fire suppression system has been activated.*

5.5.1 **IF** the red light is activated at a storage locker,
THEN ensure the locker door is not ajar before notifying DDWO Supervisor.

5.5.2 **IF** the red light
AND audible signal are activated at a storage locker,
THEN immediately notify PSO SS.

5.5.3 **IF** the audible signal from the fire alarm bell or buzzer are activated at a storage locker,
THEN immediately notify PSO SS.

6.0 RECORDS

The following forms, data sheets, logs, reports, or any other form of documentation considered to be a record and generated in response to this procedure shall be prepared, maintained, and transferred to the MRC in accordance with WVDP-262. Refer to RIDS for further information.

6.1 Appendix A - HWSF Weekly Waste Inspection Log

6.2 Appendix B - HWSF Monthly Facility Inspection Log

7.0 SOURCE REQUIREMENTS

7.1 40 CFR 264, "Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities"

7.2 40 CFR 265, "Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities"

7.3 40 CFR 761, "Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions"

7.4 6 NYCRR 373-3, "Interim Status Standards for Owners and Operators of Hazardous Waste Facilities"

8.0 REFERENCES

[1] WVDP-262, "WVNS Manual for Records Management and Storage"

[2] WV-733, "RCRA Operating Record"

[3] SOP 09-34, "Emptied Waste Container Management"

[4] SOP 300-07, "Waste Generation, Packaging, and On-Site Transportation"

[5] SOP 09-33, "Integrated Waste Tracking System Operation"

9.0 APPENDICES

[1] Appendix A - HWSF Weekly Waste Inspection Log

[2] Appendix B - HWSF Monthly Facility Inspection Log

[3] Appendix C - Compatibility Chart

[4] Appendix D - PCB Waste Container and Storage Area Requirements

APPENDIX A
HWSF WEEKLY WASTE INSPECTION LOG
(Page 1 of 1)
HAZARDOUS WASTE STORAGE LOCKER # _____

THIS IS A RCRA RECORD

COMPLIANCE CONDITIONS	YES	NO	COMMENTS (Write the number of the condition and an explanation of the discrepancy)
1. Leak or spill.			
2. Corrosion (severe or in excess of 20%).			
3. Physical condition satisfactory (no severe dents or bulges).			
4. Containers tightly closed.			
5. All containers are labeled and labels are legible, accurate and complete as compared to inventory.			
6. Adequate aisle space. A minimum of 24" for container inspection and movement.			
7. Updated and verified inventory and map are available.			
8. Sump free of liquid.			
9. Waste is compatible with other wastes in storage.			
☐ ✓ if inventory is attached. Inventory consists of _____ pages.			

NOTE *If unsatisfactory conditions exist, contact the DDWO Supervisor. The DDWO Supervisor shall verify resolution of unsatisfactory conditions by signature below.*

Inspection Performed By: _____ Date _____ Time _____
(DDWO Inspector) Signature/Print Name

Inspection Reviewed By: _____ Date _____
(DDWO Supervisor) Signature/Print Name

Unsatisfactory Conditions Resolved: _____ Date _____ ☐ N/A
(DDWO Supervisor) Signature/Print Name

APPENDIX B
HWSF MONTHLY FACILITY INSPECTION LOG
(Page 1 of 1)
HAZARDOUS WASTE STORAGE LOCKER # _____

THIS IS A RCRA RECORD

COMPLIANCE CONDITIONS	YES	NO	COMMENTS (Write the number of the condition and an explanation of the discrepancy)
1. Facility is sound and no damage is evident.			
2. Alarms have been tested and are in good working order.			
3. Security devices (e.g. locks) are in place and are in good working order.			
4. Spill response equipment available and seal intact.			
5. Deleted			
6. Area is clean and safety equipment is accessible.			
7. All of the required signs are in place.			
8. Make additions/deletions to achieve consistent information between the inventories, maps, and containers and the actual conditions.			Required Additions/Deletions:

NOTE *If unsatisfactory conditions exist, contact the DDWO Supervisor. The DDWO Supervisor shall verify resolution of unsatisfactory conditions by signature below.*

Inspection Performed By: _____ Date _____ Time _____
(DDWO Inspector) Signature/Print Name

Inspection Reviewed By: _____ Date _____
(DDWO Supervisor) Signature/Print Name

Unsatisfactory Conditions Resolved: _____ Date _____ ☐ N/A
(DDWO Supervisor) Signature/Print Name

APPENDIX C
COMPATIBILITY CHART
(Page 1 of 1)

COMPATIBILITY CODE	MATERIAL PROPERTIES	COLOR CODE	NOT COMPATIBLE WITH:				
AA	Alkaline/Caustic	BLUE	BB	CC	DD	FF	GG
BB	Reactive Metals	GREY	AA	DD	FF	GG	
CC	Alcohols/Water	BROWN	AA	FF	GG	HH	II
DD	Solvents/Hydrocarbons	BLACK	AA	BB	FF	GG	HH
EE	Cyanide/Sulfide	PURPLE	GG				
FF	Oxidizers	WHITE	AA	BB	CC	DD	II
GG	Acids	RED	AA	BB	CC	DD	EE
HH	Water Reactive	ORANGE	CC	DD			
II	Flammables/Combustibles	YELLOW	CC	FF			
ZZ[1]	Materials with no incompatibilities	GREEN					

NOTE *This chart is NOT intended to be the sole source for identifying the compatibility relationship between materials and SHOULD NOT be used for consolidation determination.*

(1) Materials that are compatible with all other materials (due to the material's inherent properties) are designated with a "ZZ" compatibility code. When AA through II materials are contained in secondary containers, in addition to being in a safer configuration, they are assigned the compatibility codes "ZA," "ZB," "ZC," "ZD," "ZE," "ZF," "ZG," "ZH," and "ZI." With a "Z_" compatibility code, a material may be stored adjacent to other materials that would otherwise require segregation.

Reference 40 CFR, Part 265, Appendix V

APPENDIX D
PCB WASTE CONTAINER AND STORAGE AREA REQUIREMENTS
(Page 1 of 1)

A. PCB waste containers and storage areas shall be marked in accordance with the Toxic Substance Control Act (TSCA) requirements. All marks must be placed in position so that the marks can be easily read by any person inspecting the containers or storage area.

B. PCBs greater than or equal to 50 ppm are also regulated as hazardous waste in New York State. Therefore, the containers must be marked with a label stating "Hazardous Waste" and other words which identify the contents.

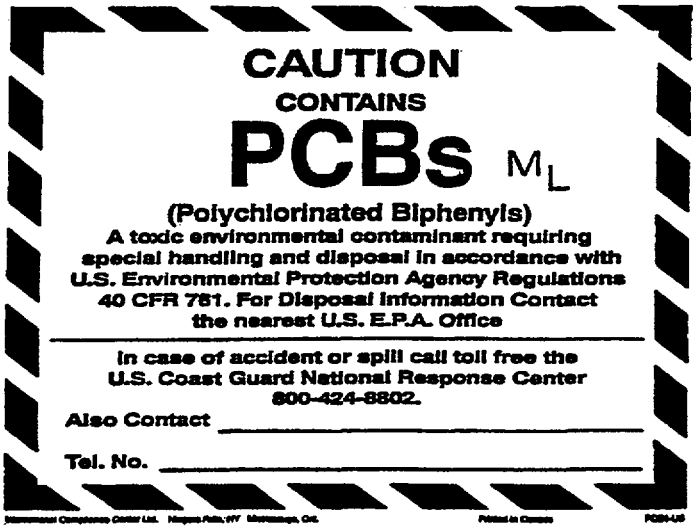
C. The following marking format shall be used (40 CFR 761.45) on containers and storage areas:

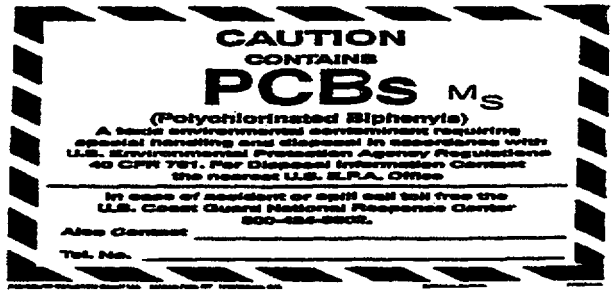
1.) Large PCB Mark $\mathbf{M_L}$. Shall have dark letters and striping on a white or yellow background and shall be sufficiently durable to equal or exceed the life (including storage for disposal) of the PCB container. The size of the mark shall be at least six inches on each side. If the container is too small to accommodate this size, the mark may be reduced in size proportionately down to a minimum of two inches on each side. See example below.

D. The following marking format shall be used (40 CFR 761.45(b)) if the large mark is too large even after reduction.

1.) Small PCB Mark $\mathbf{M_S}$. Shall have dark letters and striping on a white or yellow background and shall be sufficiently durable to equal or exceed the life (including storage for disposal) of the PCB Article or PCB Equipment. The mark shall be a rectangle one inch by two inches. If the PCB Article or Equipment is too small to accommodate this size, the mark may be reduced in size proportionately down to a minimum of 0.4 inches by 0.8 inches. See example below.

E. The WVDP emergency contact and telephone number to be placed on the label is the Plant Systems Operations Shift Supervisor (PSO SS) at extension 4239.





WVNSCO RECORD OF REVISION

Rev. No.	Description of Changes	Revision On Page(s)	Dated
0	Initial document		
1	Procedure Revision	All	10/90
2	Procedure Revision	All	12/93
FC1	Deleted "and request...sheets."	7	07/94
	Deleted step 5.5.5	12	
	Changed "the copies of completed" to "the previous weeks"	12	
	Changed "Placards" to "The compatibility code"; Deleted "the chemical hazard(s) of"	12	
	Deleted "the fluorescent bulb" and "and 6.5"	13	
	Added step 5.5.12	13	
	Changed "WCS" to "HWO"; Deleted "generator... SOP 300-07"	14	
	Added "and the compatibility code label"	14	
	Added NOTE	16	
	Added step 6.2.5	16	
	Added (Per Appendix B)	17	
	Deleted step 6.5, 6.5.1, 6.5.2, 6.5.3, 6.5.4, 6.5.5, NOTE, 6.5.6, 6.5.7	18, 19	
	Added "Compatibility Code"	22	
	Added "Compatibility Code"	23	
	Added "Time", Added "(severe...20%)"; Added "(i.e.,...code)"; Changed "met" to 28" minimum"; Added step 9	24	
	Change Location of "Operator (signature) Changed wording on NOTE		
	Added "Time"; Changed "tidy" to aisle way... accessible."	25	
	Reformat Appendix E Change Wording on NOTE		
	Added "Compatibility Code"	27	
	Added Appendix H	28	
	Document repaginated to allow for field change	All	
FC2	Added section 5.5.13	13	09/94
3	General Revision	All	03/95
4	General Revision	All	04/02/96
FC1	Step 6.0 CAUTION1 - Add "In the event ... the facility"	9	08/28/96
FC2	Step 6.3 - Add NOTE to allow movement of containers outside of the hazardous waste lockers only under certain conditions.	12	12/11/96
	Step 6.3 [5] - Delete.	12	

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC3	Add section 6.7 to Table of Contents on movement of fluorescent light bulbs at the HWSF	4	03/13/97
	Add language to indicate movement of fluorescent light bulbs to the HWSF is not covered under SOP 8-19.	7	
	Add note indicating the movement of fluorescent light bulbs to the HWSF is described in Section 6.7	10	
	Add new Section 6.7	18	
FC4	2.3, Deleted Fire System Inspections	7	05/23/97
	2.6, Added Site Engineering Responsibilities	7	
	3.2, Changed IH&S to Site Engineering	7	
	6.4[2][c], Added "Fire"	15	
	6.4[2][f], Deleted IH&S	16	
	6.5, Added "Fire"	16	
	6.5[b], Revised Step	17	
	6.5[c], Revised Step	17	
	6.5[d][1], Changed "PVS" to "FACP"	17	
	6.5[e], Revised Step	17	
	6.5[f], Added Step	18	
	Appendix B, Changed IH&S to Site Engineering	24	
	Appendix D, Added WVDP-177	26	
FC5	Add Appendix G	5	06/12/97
	Add Maintenance responsibilities	7	
	Modify requirements for closure of containers	8	
	Add steps to be performed for transport of bulbs to HWSF	19	
	Modify WM requirements	20	
	Add Appendix G to list of Appendices	22	
	Add Appendix G	29	
FC6	Modify Appendix G to include the requirement for additional information	29	10/03/97
	Repaginated to allow for field change	All	
5	General Revision	All	01/09/98
FC1	6.2 [9] - Added new step. Renumbered remaining steps.	9	01/30/98

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC2	Step 2.6, Removed second sentence	4	07/02/98
	Step 3.2 Change Site engineering to IH&S	4	
	Step 6.4[1][m], Reworded to include signature of WM Supervisor on form to verify resolution of non-compliant conditions	13	
	Step 6.4[2][k],[f], Added statement for retention of inspection data sheets. Reworded sentence	14	
	Step 6.5[3][c]-[e], Reorganized steps	15	
	Para 6.7 Reorganized steps	19	
	Step 6.8 [3] Change WCS to WSO Supervisor	20	
	Step 7.0[5][b], Reworded to include signature of WM Supervisor on form to verify resolution of non-compliant conditions	22	
	Step 7.0[7],[8], Replace WV-730 with WVDP-262	22	
	Step 5.1,7.0[3] Reworded sentence	5,21	
	Appendix A and B, Added WM Supervisor signature for non-compliant resolution	24,25	
	Appendix B Change Site Engineering to IH&S	25	
FC3	Cover sheet updated	1	12/23/98
	Table of Contents - 6.7 extraneous of words	2	
	6.7 - extraneous of words	19	
	Appendix A, Added #10 to table, "Earliest date on Appendix G or H in Locker"	24	
FC4	4.5 and 4.6, Added new section	5	03/31/99
	5.2, Add words "or SOP 300-23 as appropriate"	5	
	6.2 [2], Add words "except for wastes transferred to the HWSF under SOP 300-23	8	
	6.2 [5], Add words "or SOP 300-23 as appropriate"	8	
	6.2 [9], Add words " or the Waste Profile from SOP 300-23	9	
	6.2 [10], Add words "as appropriate"	9	
	6.2 [11], Add words "or the Waste Profile from SOP 300-23	9	
	6.2 [13], Add words "or SOP 300-23, as appropriate"	10	
	6.2 [14], Add words "as appropriate"	10	
	Caution, deleted	11	
	Caution, deleted	15	
FC5	Added Caution to Step 6.3.7	11	04/14/99
6	New-Type Revision	All	04/29/99
FC1	Updated Cover Sheet	1	05/19/99
	Section 2.0 - DELETED Section	3	
	Section 3.0 - Changed Department Acronyms throughout procedure WM to WMO and WO to RWS	4	
	Section 4.7 - Add precaution regarding cautions handling of light bulbs.	5	
	Sections 6.7 and 6.8 - Clarify departmental responsibilities.	19, 20 ,21	
	Repaginated to accommodate Field Change.		

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
7	General Revision to incorporate RCRA inspection criteria and to streamline the inspections.	All	12/10/99
FC1	Added 2.4 and 9.6 to reference new SOP 09-33, "Integrated Waste Tracking System Operation", for instructions on ITS data entry. Updated Procedure Use Classification table to indicate Reference Use only, in accordance with EP-5-002, Rev. 7, Page Change 1. Repaginated procedure.	1,4,18	01/12/00
FC2	2.1 Removed reference to section for light bulbs.	3	03/30/00
	3.1 Deleted statement for non-routine work.	4	
	3.7 Removed precautionary statement for handling light bulbs.	4	
	4.1.1[4] Added tool for activation of sump alarm to equipment list.	5	
	4.2.1 Changed 40 CFR 264 to 40 CFR 265 and added reference to 40 CFR 761.	5	
	4.2.1[5],[6] Added two CAUTION signs required to be posted.	5	
	4.2.1[7] Added sign for use of two way radios.	5	
	4.2.2-4.2.4, 5.5.3[2],[4],[5],[13], 5.5.4[2] Changed 40 CFR 264 to 40 CFR 265.	5,11-14	
	5.2 NOTE deleted for light bulbs.	7	
	5.2.2[6] Corrected typo.	8	
	5.2.2[11] Reworded statement.	8	
	5.3 Section removed from this SOP and put into SOP 300-17.	8	
	5.4 Added Lab Pack to section.	9	
	5.4.1, 5.4.11, Appendix E - Added Lab Pack to title of data sheet.	9,10,24	
	5.4.9 Revised reference for empty containers.	9	
	5.4.10[2] Deleted step covered in 5.4.9	10	
	5.4.10[3] Reworded statement.	10	
	5.4.12 Added instructions for data sheet for Lab Packs.	10	
	5.5.3[4][b] Corrected typo.	12	
	5.5.3[7] Deleted step pertaining to light bulbs.	12	
	5.5.3[13],[14] Reworded steps for distributing originals and copies of maps, inventories and inspection sheets.	13	
	5.5.3[15] Added verification step.	13	
	5.5.4[12] Reworded distribution of originals.	15	
	5.5.5[2] Corrected typo.	15	
	5.6.1[3] Reworded NOTE.	16	
	5.6.1[4] Added sounding of alarm outside of HSWF.	16	
	5.6.2 Added NOTE.	17	
	5.6.2 Added instructions for testing of the sump and power alarms.	17	
	5.7.1 Added action when red light is activated.	17	
	5.7.2 Restructured conditional statement.	17	
	7.1.3 Appendix D deleted.	18	

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC2 (Cont.)	8.1, 8.2, 8.3 Corrected source requirement references.	18,19	
	9.3 Revised reference for emptied containers.	19	
	10.4 Deleted Appendix D.	19	
	Appendix A - Removed light bulb generation date from inspection sheet. Moved statement for providing comments into heading.	20	
	Appendices A and B- Revised wording for resolution of unsatisfactory conditions.	20,21	
	Appendix B - Removed listing of specific signs required from inspection sheet. Moved statement for providing comments into heading.	21	
	Appendix D - Deleted.	23	
FC3	2.1, 5.2.2[1],[4],[7],[11], 5.2.3[1] 5.4.10[1], 9.2, and 9.4 - Revised reference to data sheets previously in SOP 08-19;	3, 7, 8 9, 17	07/18/00
	2.2 - Revised referenced procedure.	3	
FC4	3.4 Added restriction for opening wastes with auto-ignition temperatures $\leq$ 536°F.	4	08/07/00
FC5	Cover Sheet - updated the Cognizant Engineer and Cognizant Manager.	1	01/19/01
	2.5 Added general information regarding the storage of PCB waste in the HWSF.	4	
	4.1.1[5] Added calibrated scale to equipment list.	5	
	4.2.5 Added recording of PCBs added or removed from storage containers using IWTS and is required for EA to prepare the Annual Document Log.	5	
	5.2.2[5] Added step to mark PCB waste containers per Appendix D.	7	
	5.2.2[8] Added to record the scale's Equipment ID# on the data sheet.	8	
	5.2.2[12] Added step to place PCB wastes in HWSF locker #2 unless directed otherwise.	8	
	5.4.3[11][a], 5.5.4[10][a] Updated referenced procedure from WM-WMO-01 to WM-130.	12,14	
	7.3, 7.4 Updated the Records and Information department name and added WV-733.	17	
	8.1 Added source requirement.	17	
	9.2 Added WV-733 to list.	18	
	10.4 Changed previously deleted Appendix D to appendix for PCBs.	18	
	Appendix D - provided the "PCB Waste Container and Storage Area Requirements."	22	
	Removed previously DELETED steps and renumbered appropriately.	4,7,8, 9,12,17	

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
8	NEW-TYPE REVISION INCORPORATION OF FIELD CHANGES	ALL	01/30/01
FC1	Cover Sheet - Updated the Cognizant Manager.	1	05/31/01
	1.1 Deleted "...repackaging, consolidation..." from the purpose of this procedure.	3	
	1.2 Deleted "...repackage, consolidate,..." from the scope of this procedure.	3	
	1.3 Deleted "Services" and "WMS" from cognizant engineer title.	3	
	2.3 Reworded the exception to keeping containers closed.	3	
	3.4 Changed "open" to "move."	4	
	5.2.2[4][c] and [e] Deleted "WMS" preceding "CE."	7	
	5.3 Deleted section for container consolidation, repackaging, and lab packs. These activities are performed using SOP 300-29, "Opening Containers for Storage, Pre-Sampling, or Pre-Shipment."	8	
	5.4.2 Deleted "WMS" preceding "CE."	9	
	5.4.4[4] Changed "IH&S" to "IS&EM."	12	
	5.4.5 Deleted steps for container content inspections. These activities are performed using SOP 300-29.	13	
	7.1.3 Deleted Appendix E - Container Consolidation/Repackaging Sheet.	15	
	7.2 Changed "WMS" to "Waste Management's."	15	
	7.3 Deleted step for records management per SOP 00-01.	16	
	9.5 Deleted SOP 00-01 from list.	16	
	10.5 Deleted Appendix E from list.	17	
	Appendix B - Changed "IH&S" to "IS&EM."	19	
	Appendix E - Deleted.	22	
	Repaginated to accommodate field change.	All	
FC2	Cover Sheet updated	1	02/28/02
	5.4.3 [11][a] Updated title of WM-130.	11	
	5.4.3 [11][a] change in to on.	11	
	5.4.3 [12][b] Deleted.	11	
	5.4.4 [4] Changed IS&EM to IH&S.	12	
	5.4.4 [10][a] Updated title of WM-130.	13	
	5.4.4 [10][a] Change in to on.	13	
	9.4 Updated title to SOP 300-07.	16	
	Appendix B - Changed IS&EM to IH&S.	19	
	Changes made to update department names and procedure titles. Deleted step to discontinue providing copy to WMO Supervisor. WMO affected by this field change.		

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC3	This change was made to delete the requirement for IH&S to verify the fire suppression system has been checked. Formatting changes were also made for compliance with WVDP-257 and the title of SOP 300-07 was updated. Detailed changes are as follows: Table of Contents updated to reflect FC. 2.1[1] - updated title of SOP 300-07. 5.4.4[4] - deleted. Appendix B, step 5 - deleted. Reset tabs and margins, and corrected line spacing to comply with WVDP-257. Repaginated as necessary. This change affects WMO & IH&S.	2 3 12 19 All All	07/15/02
9	Minor Revision. Editorial changes made to meet the latest requirements of WVDP-257 and SOP 00-02 (e.g., margins reset, paragraph numbering corrected). Department titles were also updated and references to WM-130 were deleted as this procedure is being canceled. This change is administrative in nature and has no affect on any organization.	All	03/28/03
10	Cover Page - changed Facility Manager 1.2 - deleted, "Scope of Work," and renumbered steps 1.2 - changed, "Waste Management Services (WMS)," to, "Waste Shipping and Disposal (WSD)" 2.0 - changed "WMS" to "WSD" 3.0 - changed "WMS" to "WSD" 5.2.1 [4] - Appendix F - title change 5.2.1 [4][c] - changed "WMS" to "WSD" 5.2.1 [4][e] - changed "WMS" to "WSD" 5.3 [2] - changed "WMS" to "WSD" 6.0 - Updated Records Section per DCIP-101. This change is administrative in nature and has no affect on any organization.	Cover Page 3 3 3 4 8 8 8 9 16	02/09/04
11	5.4.1[1] Changed keltron 020 to keltron 101 This change affects DDWO	14	08/12/04

APPENDIX F-4

SOP 300-09, *INTERIM WASTE STORAGE FACILITY OPERATION*

VERIFY HARD COPY AGAINST WEB SITE IMMEDIATELY PRIOR TO EACH USE

Required only for copies.
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Date _____ Time _____ Verified By _____

Revision Number 10

Revision Date 10/27/2004

SOP 300-09

Interim Waste Storage Facility Operation

Cognizant Author: D. G. Feldman

Cognizant Manager: S. M. Westcott

Facility Manager: K. E. Sanders

HLW:

YES	NO	NA
	X	

QUALITY LEVEL: C

SAFETY CLASS: C

PROCEDURE USE CLASSIFICATION		MULTIPLE USE BY SECTION
X	CRITICAL USE	3.5 5.1.1 [11] 5.3.3 ATTACHMENT B
	REFERENCE USE	All Others

ALARA PLANNING

[X] The work described in this procedure does not require ALARA planning.

[ ] The work described in this procedure may require ALARA planning.

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INTERIM WASTE STORAGE FACILITY OPERATION

1.0 INTRODUCTION

1.1 Purpose

This procedure provides instructions for the receipt and intrafacility movement of sample and waste material at the Interim Waste Storage Facility (IWSF), including inspections and supporting documentation requirements.

This procedure addresses the operation of the IWSF. This facility is designated for on-site storage of known radioactive and mixed wastes, and radioactive and nonradioactive wastes which have yet to be characterized/ classified. This procedure addresses the specific actions necessary to receive and move samples and waste materials in the IWSF. Waste, container, and facility inspections are addressed as well.

1.2 Applicability

This procedure applies to the samples and waste material handling, inspection, and documentation requirements associated with the IWSF. D&D/Waste Management Operations (DDWO) personnel and / or Cognizant Engineers (CE) perform all steps of this procedure unless specified otherwise.

2.0 GENERAL INFORMATION

2.1 Samples and waste containing > 1 gram of fissile material CANNOT be placed in the IWSF.

2.2 Waste Shipping & Disposal (WSD) evaluates the waste-to-container compatibility and requests repackaging when required using SOP 300-29, "Opening Containers for Storage, Pre-Sampling, or Pre-Shipment."

RCRA 2.3 DDWO determines the correct storage location within the IWSF for waste containers based upon the waste description and compatibility code, as designated by CE, as well as available storage space (see Attachment D, "Compatibility Chart"). **(40 CFR 265)**

2.4 All container movements to and from the IWSF are addressed in SOP 300-07, "Waste Generation, Packaging, and On-Site Transportation."

2.5 SOP 09-33, "Integrated Waste Tracking System Operation," provides instructions on IWTS data entry.

3.0 PRECAUTIONS/LIMITATIONS

3.1 DO NOT move containers that exhibit signs of bulging, pressure build up, or any other indications that appear suspicious. STOP work and contact DDWO supervision for directions.

3.2 If a material or item is discovered that is NOT on the data sheet and/or container labeling, STOP work and contact DDWO supervision for directions.

RCRA 3.3 Primary containers shall remain closed at all times except when adding or removing waste. **(40 CFR 265)**

3.4 Gloves shall be worn when handling waste material.

3.5 When vented primary containers are placed inside secondary containers, ensure the outer containers are vented as directed by WSD CE or DDWO supervision.

3.6 When moving radioactive material/waste containers within the IWSF that have a surface dose rate greater than or equal to 5 mrem/hr, the area dose rate may increase. RP must be notified to determine if the area needs to be re-posted from a "Radioactive Materials Storage Area" to a "Radiation Area."

3.7 TRU/TRU suspect waste or waste containing >1 gram of fissile material is NOT permitted to be stored in the IWSF.

4.0 PREREQUISITES

4.1 Material/Special Tools and Equipment

4.1.1 Tools and equipment including, but NOT limited to the following are required:

[1] DOT specification containers.
[2] Container labels.
[3] Spill response equipment.
[4] Drum handling equipment.
[5] Calibrated scale for weighing containers of waste.

4.2 The following are to be in place and maintained at all times:

RCRA 4.2.1 When applicable, signs at the IWSF indicating that: **(40 CFR 265 and 761)**

[1] the facility contains mixed waste.
[2] Caution Contains PCBs.
[3] access is restricted to authorized personnel.
[4] the facility is a HAZWOPER Exclusion Zone.
[5] smoking is NOT permitted in the facility.
[6] the facility is a radioactive materials storage area.

RCRA 4.2.2 Emergency communications equipment (e.g., phone, intercom, etc.) is available for use and located in the immediate vicinity of the IWSF. **(40 CFR 265)**

RCRA 4.2.3 A list of emergency response actions available at the emergency communications equipment in the IWSF or in the office. **(40 CFR 265)**

4.2.4 Radiological survey results in the individual container files for all containers located in the IWSF.

RCRA 4.2.5 The current and previous weeks' completed inspection sheets. **(40 CFR 265)**

4.2.6 A record of PCBs added or removed from storage containers is provided through the use of the Integrated Waste Tracking System (IWTS) per SOP 09-33 and is required for the PCB Annual Document Log prepared by Environmental Affairs.

4.2.7 MSDS, or equivalent, in the IWSF Office for every container containing hazardous material.

RCRA **4.2.8** Waste containers are labeled with container contents, compatibility codes, ID #s, radiation labels/tags, and mixed waste labels when applicable. **(40 CFR 265)**

5.0 PERFORMANCE

5.1 Container Movement

5.1.1 Perform the following when receiving containers into the IWSF:

[1] Ensure all of the necessary information is documented on the applicable data sheet from SOP 300-07 (i.e., Non-Radioactive Waste Container Data Sheet or Radioactive Waste Package Data Sheet).

[2] Ensure an MSDS, or equivalent, for each hazardous material is available in hard copy prior to moving containers.

[3] Check containers for structural soundness (e.g. no extensive rust, bulging, holes, dents) and that the closing mechanism is secured.

NOTE *The remaining steps in this Section 5.1.1, may be performed in any order and/or in parallel.*

[4] Label or verify the labeling of the container per the "On-Site Waste Transportation Sheet" from SOP 300-07 that shall, as a minimum, contain the following:

RCRA **[a]** Mixed Waste Label, when applicable. **(40 CFR 265)**

[b] Container Content (ensure the description on the label is identical to the Profile Name).

[c] Compatibility Code, as assigned by WSD.

[d] Container ID #.

[e] Other markings/labeling when specified by WSD.

[5] PCB waste containers shall be marked per ATTACHMENT E.

NOTE *The "net weight" is the weight of the primary container and waste/material. The "gross weight" consists of the waste/material and all containers.*

[6] Weigh the containers with the waste/material.

[7] Subtract the secondary containers' weight to obtain the net weight.

[+] **[8]** Record the net and gross weights, in pounds, and the scale's Equipment ID# on the On-Site Waste Transportation Sheet from SOP 300-07.

[9] Ensure the compatibility of containers by comparing the compatibility codes on the new containers to those they will be placed near (refer to ATTACHMENT D).

[10] Contact DDWO supervision for any concern with container compatibilities.

[11] Place containers in the selected storage location while ensuring a minimum of 24" aisle space for accessibility during routine operations and emergencies.

TSCA **[a]** Place PCB waste containers in a berm pallet designated for PCBs and ensure the area is marked per ATTACHMENT E.

[+] **[12]** Write the location of the stored containers on the On-Site Waste Transportation Sheet, the maps, and the inventory sheets.

NOTE *Containers moved within the IWSF do NOT require RP surveys, except as stated in Section 3.6.*

5.1.2 When moving containers within the IWSF:

NOTE *The two steps in this section may be performed in any order.*

[+] **[1]** Complete the Waste Container Data Change Sheet for DDWO, ATTACHMENT F from SOP 300-07.

[+] **[2]** Update the IWSF map and inventory when containers are added or removed from the IWSF.

5.2 Waste/Container/Facility Inspections

NOTE *As stated in WV-915, "Spill/Release Notification and Reporting," an individual discovering a spill resulting in an emergency or potential emergency situation notifies the Plant Systems Operations Shift Supervisor (PSOSS) immediately. For spills that are not an emergency, the discoverer notifies the area supervisor who then notifies the PSOSS.*

5.2.1 Notify the appropriate supervisor (i.e., DDWO Supervisor or PSOSS) immediately in the event a leak or spill is discovered during an inspection.

NOTE *The remaining steps in this Section 5.2, may be performed in any sequence and / or in parallel.*

5.2.2 Notify DDWO Supervisor to resolve discrepancies between maps, inventories, and the actual conditions found during inspections.

5.2.3 Weekly Inspections

RCRA

[+] **[1]** Perform weekly inspections of outer containers and document using ATTACHMENT A, "IWSF Weekly Waste Inspection Log." **(40 CFR 265)**

[2] Inspect the containers for:

[a] Leaks / spills.

[b] Severe corrosion.

[c] Dents / bulges.

NOTE *Some secondary containments may NOT be closed containers (e.g. open buckets, bins, berm areas).*

[d] Containers closed.

[e] Labels legible, accurate, and complete as compared to the inventory.

RCRA [3] Compare the map information to the actual location of containers in storage as follows: **(40 CFR 265)**

[a] Verify locations of containers in storage.

[b] Verify adequate aisle space is maintained. (Minimum of 24" needed for container inspections, movements, and emergencies.)

[+] **[c]** Make necessary changes to the map for container locations.

[+] **[d]** Initial and date the map for changes made.

RCRA **[4]** Compare the inventory to the actual status of containers in storage. **(40 CFR 265)**

[a] **IF** the actual container status does NOT match the inventory,
[+] **THEN** identify unsatisfactory conditions on the Weekly Waste Inspection Log,
AND attach the marked up inventory,
[+] **AND** check the box on the log and document the number of pages of the inventory that are attached.

[+] **[5]** Verify the sump is free of liquid.

[6] Verify waste is compatible with other waste in storage.

[+] **[7]** Verify containment system for PCB waste storage is sound and free of structural damage.

[8] Ensure there is a hard copy on file in the IWSF Office for each container in storage.

[+] **[9]** Document any deficiencies on the inspection sheet including any corrective actions that were taken.

[+] **[10]** The individual performing the inspection shall sign/print name and include the date and time of inspection on the IWSF Weekly Waste Inspection Log.

[+] **[11]** The DDWO Supervisor shall sign/print name and date upon review of the IWSF Weekly Waste Inspection Log.

[12] **IF** unsatisfactory conditions are discovered from the inspection, **THEN** the DDWO Supervisor or designee shall:

[+] **[a]** Verify resolution of unsatisfactory conditions.

[+] **[b]** Document the resolution in the IWSF Weekly Waste Inspection Log.

[13] Distribute originals and copies of the maps, inventories, and inspection sheets as follows:

[a] One copy is placed in the IWSF.

RCRA **[b]** Give the original marked up maps, updated inventories, and weekly inspection sheets to the DDWO Supervisor for the RCRA file. **(40 CFR 265)**

[14] Obtain new revised maps and inventory sheets from the DDWO Supervisor.

[15] Verify information on revised maps and inventory sheets is accurate.

[16] Place the new maps and inventory sheets in IWSF.

[17] Discard the old copy of the map.

5.2.4 Monthly Inspections

RCRA

[+] **[1]** Perform monthly inspections and document on ATTACHMENT B, "IWSF Monthly Facility Inspection Log." **(40 CFR 265)**

[2] Inspect the IWSF for:

[a] Physical condition of the facility (e.g., sound, no damage is evident). No cracks in berm area of floor designated for PCB waste storage.

[b] Ensure security devices are in place and in good working order.

[c] Ensure the spill response equipment is available and the seals for the spill response kit are intact.

[d] **IF** a seal is broken or missing from the spill response kit, **THEN** ensure the following minimum inventories are in place:

- 12 ➡ 3"x48" socks
- 10 ➡ 3"x10' socks
- 60 ➡ 16.5"x20" mats (double weight)
- 8 ➡ pillows

AND reseal the spill response kit.

[e] Verify the fire extinguisher inspection.

[f] Ensure the area is clean and safety equipment is accessible.

[g] Ensure all signs required in Section 4.2.1 are in place.

[+] **[3]** Document additional information in the comments section that others should be made aware of.

[+] **[4]** The individual performing the inspection shall sign/print name and include the date and time of inspection on the IWSF Monthly Facility Inspection Log.

[5] The DDWO Supervisor shall sign/print name and date upon review of the IWSF Monthly Facility Inspection Log.

[6] **IF** unsatisfactory conditions are discovered from the inspection, **THEN** the DDWO Supervisor or designee shall:

[+] **[a]** Verify resolution of unsatisfactory conditions.

[+] **[b]** Document the resolution in the IWSF Weekly Waste Inspection Log.

[7] Maintain copies of completed monthly inspection sheets for a two month period in the IWSF Office.

[8] Transmit the original monthly inspection sheets to the DDWO Supervisor.

5.3 Sample Control/Tracking

5.3.1 As appropriate, place samples obtained per SOP 300-08 or other work instruction on shelves.

5.3.2 Ensure the chain of custody accompanies samples, when applicable.

[+] **5.3.3** Mark the addition of samples on ATTACHMENT C, "Sample Inventory" data sheet, kept at the IWSF.

[+] **5.3.4** Document the location of the sample on the map.

5.3.5 Transmit a copy of the Sample Inventory Sheet to CE when requested.

6.0 POST COMPLETION CONFIGURATION

Not Applicable

7.0 RECORDS

The following forms, data sheets, logs, reports, or any other form of documentation considered to be a record and generated in response to this procedure shall be prepared, maintained, and transferred to the MRC in accordance with WVDP-262 and WV-733. Refer to RIDS for further information.

7.1 ATTACHMENT A, "IWSF Weekly Waste Inspection Log"

7.2 ATTACHMENT B, "IWSF Monthly Facility Inspection Log"

7.3 ATTACHMENT C, "Sample Inventory"

8.0 SOURCE REQUIREMENTS

8.1 40 CFR Part 264, "Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities"

8.2 40 CFR Part 265, "Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities"

8.3 40 CFR Part 761, "Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions"

8.4 PSR-6, "Fissile Material Packaging and Storage Requirements", LCO 3, SR 3

9.0 REFERENCES

9.1 WV-915, "Spill/Release Notification and Reporting"

9.2 WV-733, "Management, Storage, and Retrieval of RCRA Operating Record"

9.3 DOE Order 435.1, "Radioactive Waste Management"

9.4 SOP 09-34, "Emptied Waste Container Management"

9.5 SOP 09-33, "Integrated Waste Tracking System Operation"

9.6 SOP 300-07, "Waste Generation, Packaging, and On-Site Transportation"

9.7 SOP 300-08, "Container Sampling".

9.8 SOP 300-29, "Opening Containers for Storage, Pre-Sampling, or Pre-Shipment"

10.0 ATTACHMENTS

10.1 ATTACHMENT A, "IWSF Weekly Inspection Log"

10.2 ATTACHMENT B, "IWSF Monthly Inspection Log"

10.3 ATTACHMENT C, "Sample Inventory"

10.4 ATTACHMENT D, "Compatibility Chart"

10.5 ATTACHMENT E, "PCB Waste Container and Storage Area Requirements"

ATTACHMENT A
IWSF WEEKLY WASTE INSPECTION LOG
(Page 1 of 1)

THIS IS A RCRA RECORD

COMPLIANCE CONDITIONS	YES	NO	COMMENTS (Write the number of the condition and an explanation of the discrepancy)
1. Leak or spill.			
2. Corrosion (severe or in excess of 20%).			
3. Physical condition satisfactory (no severe dents or bulges).			
4. Containers closed.(1)			
5. All containers are labeled and labels are legible, accurate, and complete as compared to inventory.			
6. Adequate aisle space. A minimum of 24" for container inspection and movement.			
7. Updated and verified inventory and map are available.			
8. Sump free of liquid.			
9. Waste is compatible with other wastes in storage.			
10. Containment system for PCB waste storage is sound and free of structural damage.			
☐ ✔ if inventory is attached. Inventory consists of _____ pages.			

(1) Some secondary containments may NOT be closed (e.g., open buckets, bins, berm areas).

NOTE *If unsatisfactory conditions exist, contact the DDWO Supervisor. The DDWO Supervisor shall verify resolution of unsatisfactory conditions by signature below.*

Inspection Performed By: _____ Date _____ Time _____
(DDWO Inspector) Signature/Print Name

Inspection Reviewed By: _____ Date _____
(DDWO Supervisor) Signature/Print Name

Unsatisfactory
Conditions Resolved: _____ Date _____ ☐ N/A
(DDWO Supervisor) Signature/Print Name

ATTACHMENT B
IWSF MONTHLY FACILITY INSPECTION LOG
(Page 1 of 1)

THIS IS A RCRA RECORD

COMPLIANCE CONDITIONS	YES	NO	COMMENTS (Write the number of the condition and an explanation of the discrepancy)
1. Facility is sound and no damage is evident. No cracks in floor of berm area for PCB wastes.			
2. Security devices (e.g., locks) are in place and are in good working order.			
3. Spill response equipment available and seal intact.			
4. Fire extinguisher inspection verification.			
5. Area is clean and safety equipment is accessible.			
6. When applicable, all of the following signs are in place: • Mixed Waste • No Smoking • Restricted Access to Authorized Personnel • Hazardous Waste Exclusion Zone • Caution Contains PCBs • Radioactive Materials to Storage Area			
8. Make additions/deletions to achieve consistent information between the inventories, maps, containers and the actual conditions.			Required Additions/Deletions:

NOTE *If unsatisfactory conditions exist, contact the DDWO Supervisor. The DDWO Supervisor shall verify resolution of unsatisfactory conditions by signature below.*

Inspection Performed By: _____ Date _____ Time _____
(DDWO Inspector) Signature/Print Name

Inspection Reviewed By: _____ Date _____
(DDWO Supervisor) Signature/Print Name

Unsatisfactory Conditions Resolved: _____ Date _____ ☐ N/A
(DDWO Supervisor) Signature/Print Name

ATTACHMENT C
SAMPLE INVENTORY
(Page 1 of 1)

Sample ID #	Container Size	Sample Volume	Date In	Date Out/ Operator Initials

NOTE *DDWO shall transmit a completed copy of this form to CE as requested.*

ATTACHMENT D
COMPATIBILITY CHART
(Page 1 of 1)

COMPATIBILITY CODE	MATERIAL PROPERTIES	COLOR CODE	NOT COMPATIBLE WITH:				
AA	Alkaline/Caustic	BLUE	BB	CC	DD	FF	GG
BB	Reactive Metals	GREY	AA	DD	FF	GG	
CC	Alcohols/Water	BROWN	AA	FF	GG	HH	II
DD	Solvents/Hydrocarbons	BLACK	AA	BB	FF	GG	HH
EE	Cyanide/Sulfide	PURPLE	GG				
FF	Oxidizers	WHITE	AA	BB	CC	DD	II
GG	Acids	RED	AA	BB	CC	DD	EE
HH	Water Reactive	ORANGE	CC	DD			
II	Flammables/Combustibles	YELLOW	CC	FF			
ZZ[1]	Materials with no incompatibilities	GREEN					

NOTE *This chart is NOT intended to be the sole source for identifying the compatibility relationship between materials and SHOULD NOT be used for consolidation determination.*

(1) Materials that are compatible with all other materials (due to the material's inherent properties) are designated with a "ZZ" compatibility code. When AA through II materials are contained in secondary containers, in addition to being in a safer configuration, they are assigned the compatibility codes "ZA," "ZB," "ZC," "ZD," "ZE," "ZF," "ZG," "ZH," and "ZI." With a "Z_" compatibility code, a material may be stored adjacent to other materials that would otherwise require segregation.

Reference 40 CFR, Part 265, APPENDIX V

ATTACHMENT E
PCB WASTE CONTAINER AND STORAGE AREA REQUIREMENTS
(Page 1 of 1)

A. PCB waste containers and storage areas shall be marked in accordance with the Toxic Substance Control Act (TSCA) requirements. All marks must be placed in position so that the marks can be easily read by any person inspecting the containers or storage area.

B. PCBs greater than or equal to 50 ppm are also regulated as hazardous waste in New York State. Therefore, the containers must be marked with a label stating "Hazardous Waste" and other words which identify the contents.

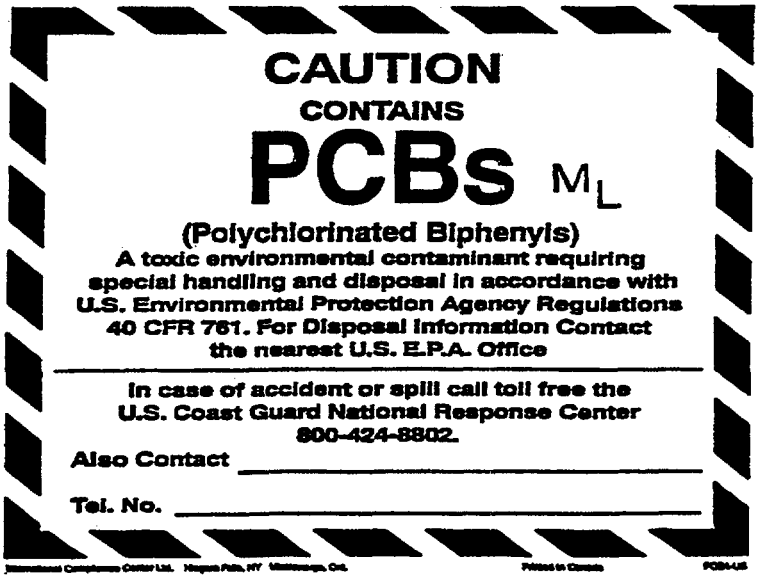
C. The following marking format shall be used (40 CFR 761.45) on containers and storage areas:

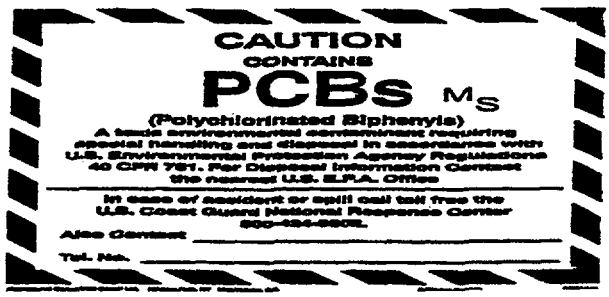
1.) Large PCB Mark **M_L**. Shall have dark letters and striping on a white or yellow background and shall be sufficiently durable to equal or exceed the life (including storage for disposal) of the PCB container. The size of the mark shall be at least six inches on each side. If the container is too small to accommodate this size, the mark may be reduced in size proportionately down to a minimum of two inches on each side. See example below.

D. The following marking format shall be used (40 CFR 761.45(b)) if the large mark is too large even after reduction:

1.) Small PCB Mark **M_S**. Shall have dark letters and striping on a white or yellow background and shall be sufficiently durable to equal or exceed the life (including storage for disposal) of the PCB Article or PCB Equipment. The mark shall be a rectangle one inch by two inches. If the PCB Article or Equipment is too small to accommodate this size, the mark may be reduced in size proportionately down to a minimum of 0.4 inches by 0.8 inches. See example below.

E. The WVDP emergency contact and telephone number to be placed on the label is the Plant System Operations Shift Supervisor (PSOSS) at extension 4239.





WVNSCO RECORD OF REVISION

Rev. No.	Description of Changes	Revision On Page(s)	Dated
0	Original Issue	All	
1	Initial document	All	10/90
2	General Revision	All	12/93
FC1	Deleted "Ensures that...segregated."	7	07/94
	Deleted "and request...sheets."	8	
	Change "Completed weekly and monthly" to "The previous week's completed"	13	
	Deleted "shall be kept...and" and "Waste Engineering"	13	
	Changed "RC" to "WMO"	13	
	Changed "WCS" to "HWO"; Changed "generator information...SOP 300-07." to "labels and compatibility...WCS"; Added "See Appendix J"	14	
	Added "and compatibility code"	15	
	Added "Verify labeling is correct."	16	
	Added NOTE	17	
	Added step 6.4.5	18	
	Added NOTE	19	
	Added Appendix J	20	
	Added "Compatibility Code"; Added "Initial and Date"	22	
	Added "Compatibility Code"	23	
	Changed approval	24	
	Added "Time"; Added "(severe...20%); Added "(no severe...bulges)"; Added "i.e.,...code."; Changed "adequate" to "requirements 28" minimum"; Added step 9.	25	
	Added "to structure or diking"	26	
	Added "Compatibility Code"	29	
	Added Appendix J	30	
	Document repaginated to allow for field change	All	
3	General Revision	All	03/95
FC1	Change Compliance Condition #5 Appendix A	18	06/95
	Added word mixed	11	
4	General Revision	All	04/02/96
FC1	Section 5.7 [8] Deleted	8	04/17/96
FC2	Section 6.3 [4] Renumbered to 6.3 [5]	11	01/31/97
	Section 6.3 [5] Renumbered to 6.3 [4]	11	
FC3	6.2 [9] - Added new step. Renumbered remaining steps.	8	01/30/98
	6.2 [11] - Change "exiting" to "existing".	8	

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC4	2.1 Reworded Section	3	06/05/98
	5.7 [5], Reworded Section	6	
	6.2 [1], Typo	7	
	6.2 [10], Replace "containers" with "waste"	8	
	6.2 [12], Reworded sentence	9	
	6.4 [1][j], Added sentence for reference to non-compliant conditions	11	
	6.4 [1][k] & 6.4 [2][h] Added sentence	11,12	
	6.4 [2][g], Added sentence for reference to non-compliant conditions	12	
	6.4.3 [a], Added new [a]	12	
	6.4.3 [a], Changed to [b]		
	6.4.3 [b], Changed to [c]		
	6.5 [1], Reworded		
	7.0 [3], Deleted "Additional"	13	
	7.0 [5][b], Reworded, added WM Supervisor	14	
	Appendix A, Revised form, added WM Supervisor for non-compliant resolution	15	
	Appendix B, Revised form, added WM Supervisor for non-compliant resolution	16	
	Appendix C, Reworded NOTE	17	
FC5	New Cover Page	1	03/31/99
	Moved information from CAUTIONs to the Precautions/Limitations Section.	5	
	Added information about finding materials/ items in containers that were not listed on the data sheets.	5	
	Deleted CAUTIONs.	9, 12	
5	New Type Revision	ALL	04/09/99
FC1	Section 1.2 - Added TRU and suspect TRU samples to the Scope.	3	06/02/99
	Section 2.0 - Deleted Responsibilities.	3	
	Section 4.3 - Reworded paragraph	4	
	Section 4.4 - Added precautionary statement to not change Section 4.5 without concurrence of SA&I Department.	4	
	Section 4.5 - Added criteria for storing TRU and suspect TRU samples in the IWSF.	4,5	
	Section 4.6 - Precautionary statement to separate TRU/suspect TRU samples to prevent breakage.	5	
	Section 4.7 States that white TRU drums may be opened and closed to add/remove samples.	5	
	Section 4.8 - Added requirement of wearing gloves when handling TRU and suspect TRU samples.	5	
	Section 5.4 - Added information that permits the opening of containers when performing inspections.	6	
	Section 5.7[8] - Included requirement of fissile content to be on sample labels for TRU and suspect TRU samples.	6	

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC1 (Cont.)	Step 6.2[15] - This step was in the Records Management Section.	9	
	Step 6.3[12] - This step was in the Records Management Section.	10	
	Step 6.4.1 - This step was a NOTE, and MPO, RC, and RP were deleted.	10	
	Step 6.5[1] - Deleted yellow bags for radioactive samples.	13	
	Steps 6.5[2], [a], and [b] - New steps to ensure TRU and suspect TRU samples are properly labeled and logged.	13	
	Steps 7.1[1] and [3] - Deleted.	13,14	
	Step 7.1[2] - Added "TRU/Suspect TRU Sample Inventory Sheets (Appendix D)"	13	
	Appendix D - New appendix to maintain inventory of TRU and suspect TRU samples.	19	
	Appendices E, F, G, and H - Assigned new letters due to inserting new Appendix D.	20,21,22,13	
	Throughout SOP department abbreviations were changed to reflect current structure.	All	
FC2	Paragraph 4.5.7 - Reworded paragraph to clarify that the outermost container is the container that must meet the minimum dimensions.	5	06/16/99
FC3	Appendix E - Same information, but in a more user friendly format.	20	10/28/99
6	General Revision throughout the procedure. The changes are primarily to identify steps that implement RCRA requirements and to coordinate applicable sections with SOPs 300-06 and 300-17.	All	12/10/99
FC1	Added 2.5 and 9.6 to reference new SOP 09-33, "Integrated Waste Tracking System Operation," for instructions on IWTS data entry. Updated the Procedure Use Classification table to indicate scope of Critical Use and Reference Use, in accordance with EP-5-002, Rev. 7, Page Change 1. Repaginated procedure.	1,4,15	01/13/00
FC2	Cover Sheet - Corrected Cognizant Engineer and changed critical steps to include 3.5.1.	1	03/31/00
	2.3, 3.3, 4.4.1-4.4.3, 4.4.5, 4.4.7, 5.1.1[4][a], 5.3.3[1],[3],[4],[11][c], 5.3.4[1] Corrected source requirement reference to 40 CFR 265.	4,7,8 11-13	
	2.6 Added reference to SOP 33-04 for inspections of the fire protection system in the IWSF.	4	
	3.10 Added precautionary statement for movement of radioactive material/waste $\geq$5 mrem/hr.	6	
	4.4.2 Corrected typo.	7	
	5.1.1[5] Deleted symbol "[+]" for action step.	8	
	5.1.2 NOTE, added reference to precautionary statement for movement of containers.	9	

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC2 (Cont.)	5.1.2[2] Clarified statement.	9	
	5.2 Added Lab Packs to title of section.	9	
	5.2.1 Added Lab Pack to title of data sheet and reworded steps.	9	
	5.2.9 Revised reference to new SOP 09-34 for emptied waste containers.	10	
	5.2.10[2] Deleted step covered in 5.2.9.	10	
	5.2.11, 5.2.11[2] Added Lab Pack to title of data sheet.	10,11	
	5.2.12 Added instructions for data sheet for Lab Packs.	11	
	5.3.3[5] Added symbol "[+]" for data recording.	12	
	5.3.3[11]-[15] Reworded steps for distributing originals and copies of maps, inventories and inspection sheets.	13	
	5.3.4[11] Changed to WMO Supervisor instead of RCRA Coordinator.	14	
	5.4.4 Included Appendix C in statement.	15	
	8.1 Deleted incorrect source requirement.	16	
	8.3 Added PSR-6 to source requirement section.	16	
	9.7 Added SOP 33-04 to reference section.	17	
	Appendixes A and B - Moved instructions for providing comment to heading. Revised wording for resolution of unsatisfactory conditions.	18,19	
	Appendix F - Added Lab Pack to title of data sheet.	23	
FC3	2.4, 5.1.1[1],[4],[7],][11], 5.1.2[1], 5.2.10[1] Revised referenced data previously from SOP 08-19.	4,7-10	07/18/00
	9.2, 9.3, 9.4, 9.8 Updated reference list.	16	
FC4	Cover sheet - updated the Cognizant Manager.	1	01/19/01
	4.1.1[5] Added calibrated scale to equipment list.	6	
	4.4.1 Added 40 CFR 761 reference.	6	
	4.4.1[2] Added sign - Caution Contains PCBs.	6	
	4.4.6 Added record of PBCs added or removed from storage is maintained by IWTS and required for EA to prepare Annual Document Log.	7	
	5.1.1[5] Added step to mark containers with PCBs per Appendix G.	8	
	5.1.1[8] Added to record the scale's Equipment ID# on the data sheet.	8	
	5.1.1[12] Added step to place containers of PCB waste in designated berm pallet and ensure area is marked per Appendix G.	8	
	5.3.3[6] Added step to verify the containment system for PCB waste storage is sound and free of structural damage.	12	
	5.3.3[11][a], 5.3.4[9][a] Updated referenced procedure from WM-WMO-01 to WM-130.	12,14	
	5.3.4[2][a] Added inspection for no cracks in berm area of floor for PCBs.	13	
	7.3, 7.4 Updated Records and Information Department name.	16	

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC4 (Cont.)	8.1, 8.3 Added source requirements for PCBs.	16	
	9.2 Added WV-733, "RCRA Operating Record"	16	
	9.5, 9.9 Updated references.	16,17	
	10.7 Added Appendix G.	17	
	Appendix A - Added inspection of containment system for PCBs.	18	
	Appendix B - Added to inspect floor for cracks where PCBs are stored. Added Caution Contains PCBs sign.	19	
	Appendix G - New appendix to provide the "PCB Waste Container and Storage Area Requirements."	24	
FC5	Cover Sheet - Updated the Cognizant Manager.	1	05/31/01
	1.1 Deleted "...repackaging and consolidation..." from the purpose of this procedure.	3	
	1.2 Deleted "...repackage, consolidate..." from the scope of this procedure.	3	
	1.3 Updated department name.	3	
	2.1 Deleted spelled out department names provided in previous section.	3	
	2.2 Reworded and added use of SOP 300-29 for repackaging requests.	3	
	2.3 Deleted "WMS" preceding "CE."	4	
	3.1 Deleted "... or open..."	4	
	3.2 Deleted "...after opening a container..."	4	
	3.3 Deleted "... and while performing inspections."	4	
	3.9 Deleted "WMS" preceding "CE."	6	
	4.3 Changed "repackaging" to "handling."	6	
	5.1.1[4][c] and [e] Deleted "WMS" preceding "CE."	8	
	5.2 Deleted section for Container Consolidation, Repackaging, and Lab Packs.	9	
	5.3.2 Deleted "WMS" preceding "CE."	9	
	5.3.5 Deleted steps for Container content inspections.	12	
	5.4.6 Deleted "WMS" preceding "CE."	13	
	7.1.5 Deleted Appendix F from list of records.	13	
	7.2 Changed "WMS" to "Waste Management's."	14	
	7.3 Deleted step for records management using SOP 00-01.	14	
	9.10 Added SOP 300-29 to reference list.	15	
	10.6 Appendix F deleted from list.	15	
	Appendix C - Deleted "WMS" preceding "CE."	18	
	Appendix D - Deleted "WMS" preceding "CE."	19	
	Appendix F -Deleted Container Consolidation/ Repackaging/Lab Pack Sheet.	21	
	Repaginated to accommodate field change.	All	
7	**NEW-TYPE REVISION INCORPORATION OF FIELD CHANGES**	**ALL**	**06/06/01**

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC1	Procedure was updated to reflect the changes made to PSR-6. Procedure was also updated to reflect recent organizational changes and to reflect the latest requirements of WVDP-257 and EP-5-002. Detailed changes are as follows: Cover sheet updated. Critical Use sections revised, cog author and FM updated. Table of Contents updated. 1.1, 1.2, 1.3 - changed to refer to both samples and waste material. 1.2 - added FM waste and samples > 1gram. 2.1 - Deleted existing text. CE no longer maintains inventory. Added no PSR-18 waste allowed. 2.2 - Changed CE to WMS. 2.4 - updated SOP 300-07 title. 3.4 - updated department title. 3.5, 3.5.1 - changed to refer to both samples and waste material. 3.5 - added Fissile Material samples & waste > 1gram. 3.5.2 - Deleted existing text, added no PSR-18 waste. 3.5.3 - deleted. 3.5.4 - deleted. 3.5.5 - added "samples or waste material". Deleted .."in storage...samples may be"... 3.5.6 - Deleted. 3.5.7 - deleted existing text. No longer PSR requirement. Added new PSR-6 requirement.. 3.6 - added waste material. 3.7 - added waste material & reference to SOP 300-29. 3.8 - added waste material. 3.11 - added words from Appendix D. 3.12 - added. 4.2 - Deleted. 4.3 - Deleted. 4.4 - added crit training. 4.5.1[7] - added Crit. Control Zone. 4.5.3 - deleted "either" and "adjacent". 4.5.8 - changed to refer to both samples and waste material. Also added Fissile Material. 4.5 9 - added CCZ requirements. 5.1.1[4][c] & [e]- Changed CE to WMS. 5.1.1[4][f] - added. 5.1.1[11][a] - changed step [12] to [11][a]. 5.1.1[11][b] - added PSR stacking requirement. 5.3.2 - Changed CE to WMO Supervisor.	1 2 3 3 3 3 4 4 4 4 5 5 5 5 5 5 5 5 6 6 6 6 7 7 8 8 9 9 10	06/12/02

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC1 (Cont.)	5.3.3[11][a] - updated title of WM-130.	11	
	5.3.3[12][b] - deleted.	11	
	5.3.4[2][e] - added PSR requirement.	13	
	5.3.4[3] - [5] renumbered as 5.3.4.2[f] - [h]. Remaining steps in section renumbered accordingly.	13	
	5.3.4[6][a] - updated title of WM-130.	13	
	5.4.2 - changed to refer to both samples and waste material and samples & waste with > 1gram of Fissile Material, added the cog eng... container".	14	
	5.4.2[1] - Deleted. Included in 5.4.2.	14	
	5.4.2[2] - Deleted.	14	
	5.4.3 - added.	14	
	5.4.4 - added "of samples".	14	
	7.1.4 -Added Fissile Material.	15	
	7.4 - deleted "other than data sheets".	15	
	8.4 - added LCO 3 and SR 3.	16	
	9.3 - added DOE Order 435.1.	16	
	9.5 - updated title of WM-130.	16	
	9.8 - updated title of SOP 300-07.	16	
	10.4 - Added Fissile Material.	16	
	Appendix B - added PSR-6 inspection requirement. Added Criticality Control Zone sign.	18	
	Appendix D - Added"Fissile Material Inventory" to title. Changed "Sample ID" to "Container ID", Changed "Sample Volume" to "Container Volume", changed .."number of samples" to .."number of Fissile Containers".	20	
	Appendix D, NOTE 1 - changed TRU and suspect TRU to Fissile material, added "and waste".	20	
	Tabs reset, procedure repaginated.	All	
	This change affects Waste Management Services and Waste Management Operations.		
8	Revision	ALL	05/05/03
	Updated Facility Manager on Cover Sheet 1.2 - "WMO" to "D&D/Waste Management Operations" (DDWO) 2.2 - added "WMS" 3.1 - "WMO" to "DDWO" 3.2 - "WMO" to "DDWO" 3.5.2 - New sentence wording. 3.9 - added "WMS" and "WMO" to "DDWO" 4.3.4 - Sentence re-worded for clarification 5.1.1. [5] - Change "ATTACHMENT G" to "ATTACHMENT F" 5.1.1. [10] - "WMO" to "DDWO" 5.1.1. [11][a] - Change "ATTACHMENT G" to "ATTACHMENT F" 5.1.2 [1] - "WMO" to "DDWO" and Change "ATTACHMENT G" to "ATTACHMENT F" 5.2 - Note - Department Title Changeand changed "MPOSS" to "PSOSS" 5.2.1. - Change "WMO" to "DDWO" and "MPOSS" to "PSOSS" 5.2.2 - "WMO" to "DDWO" 5.2.3 [6] - new section - the rest of the 5.2.3 renumbered		

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
8(Cont.)	5.2.3 [11] - "WMO" to "DDWO" 5.2.3 [12] - "WMO" to "DDWO" 5.2.3 [13][b] - "WMO" to "DDWO" 5.2.3 [14] - "WMO" to "DDWO" 5.2.4 [5] - "WMO" to "DDWO" 5.2.4 [6] - "WMO" to "DDWO" 5.2.4 [8] - "WMO" to "DDWO" 5.3.3 - "WMO" to "DDWO" 7.0 - Records - added statement and renumber steps 7.3 - Department Title Change 9.2 - WV-733, Procedure Title Change 9.4 - Deleted WM-130 and renumbered the rest of the Reference Section ATTACHMENT A - "WMO" to "DDWO" ATTACHMENT B - Section 6 - add "to Authorized Personnel" ATTACHMENT B - Section 6 - add "Radioactive Material Storage Area" ATTACHMENT C - "WMO" to "DDWO" ATTACHMENT D - "WMO" to "DDWO" ATTACHMENT F - Original ATTACHMENT F - deleted - ATTACHMENT G renumbered. Changed MPOSS to PSOSS. Replaced "APPENDIX" with "ATTACHMENT" throughout the document. This change affects WMS and DDWO.		
9	Revision	All	01/21/04
	Cover - Changed Cognizant Author,		
	1.2 - added and/or	3	
	2.2 - department name change	3	
	2.6 - step deleted	4	
	3.8 - changed WSS to WSD	5	
	3.12 - step deleted	5	
	4.3.1 - added, "When applicable,"	6	
	5.1.1 [2] - added "hazardous material"	7	
	5.1.1 [4][c] - changed WSS to WSD	8	
	5.1.1 [4][e] - changed WSS to WSD	8	
	5.1.1 [11][a] - add "TSCA"	9	
	5.2.3 [12][a] - original step deleted - steps renumbered	11	
	5.2.3 [12][b] - sentence reworded	11	
	5.2.4 [6][a] - original step deleted - steps renumbered	13	
	5.2.4 [6][b] - sentence reworded	14	
	Attachment B - [6] - added, "When applicable,"	18	
	This change affects WSD and DDWO.		
10	General Revision	All	10/27/04
	Removing reference of TRU waste being stored in the IWSF.		
	This change affects WSD and DDWO.		

APPENDIX F-5

SOP 313-08, *REMOTE-HANDLED WASTE FACILITY CONDITION INSPECTIONS*

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Date _____ Time _____ Verified By _____
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Date _____ Time _____ Verified By _____
Date _____ Time _____ Verified By _____

Revision Number 3

Revision Date 06/02/04

SOP 313-08

REMOTE HANDLED WASTE FACILITY CONDITION INSPECTIONS

Cognizant Author: R. G. Myers

Cognizant Manager: J. Paul

Facility Manager: W. L. Zuppinger

HLW:

YES	NO	NA
		X

QUALITY LEVEL: C

SAFETY CLASS: C

PROCEDURE USE CLASSIFICATION		MULTIPLE USE BY SECTION
	CRITICAL USE	
X	REFERENCE USE	ALL

ALARA PLANNING

[X] The work described in this procedure does not require ALARA planning.

[ ] The work described in this procedure may require ALARA planning.

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8.0 REFERENCES . . . 10

9.0 ATTACHMENTS . . . 11
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Attachment B RHWF WEEKLY MIXED WASTE CONTAINER INSPECTION LOG SHEET . . . 16

REMOTE HANDLED WASTE FACILITY CONDITION INSPECTIONS

1.0 INTRODUCTION

1.1 Purpose

This procedure provides instructions for performing inspections for the Remote Handled Waste Facility (RHWF) when RCRA hazardous/mixed waste processing commences as required by federal and state rules, regulations, and applicable DOE Orders. Instructions are provided for periodic inspections and evaluations of the facility, systems, protective equipment, emergency equipment, and mixed waste containers.

1.2 Applicability

The activities in this procedure are performed by D&D/Waste Management Operations (DDWO) personnel.

The mixed/hazardous waste RCRA inspections identified are applicable to the Remote Handled Waste Facility building, systems, and safety equipment and shall be required when the RHWF commences processing of RCRA classified waste streams.

The weekly mixed waste container inspections are required only when there are mixed waste containers present in the Remote Handled Waste Facility.

2.0 GENERAL INFORMATION

2.1 General

RCRA

[1] Containers with mixed waste shall be marked with the words "Mixed Hazardous Waste" AND a description of the content.

[2] Remote Handled Waste Facility RCRA inspections for containment buildings are not applicable until the RHWF commences RCRA classified waste processing.

[3] Containers shall be labeled in accordance with SOP 09-07, "Labeling/Color-Coding of Waste Containers," as practical with consideration of ALARA principles.

[4] Facility inspections will be conducted on a quarterly basis in accordance with Job Card TC-3808.

2.2 List of Acronyms

[1] RHWF - Remote Handled Waste Facility

[2] RCRA - Resource Conservation and Recovery Act

[3] RC - Receiving Area

[4] BC - Buffer Cell

[5] CMA - Contact Maintenance Area

[6] WC - Work Cell

[7] WPA - Waste Packaging Area

[8] LOTB - Load Out Truck Bay

3.0 PRECAUTIONS AND LIMITATIONS

[1] The Tank Vault area of the Contact Maintenance Area is covered and has no remote means for performing inspections. Therefore, inspection of the Tank Vault area is not covered by this procedure.

4.0 PREREQUISITES

[1] RCRA hazardous/mixed waste processing has commenced or is about to commence.

5.0 PERFORMANCE SECTIONS

RCRA **5.1 RHWF RCRA Waste Processing Facility Inspections**

NOTE *Performance of the RHWF RCRA Waste Processing inspections for containment buildings is not applicable until the RHWF commences RCRA waste processing.*

+] **[1]** Inspect the facility structure for cracks and/or, deterioration which could adversely impact daily operations or is a possible safety concern and record results on Attachment A-1.

+] **[2]** Inspect the lighting and power systems and record results on Attachment A-1 for the following:

[a] All installed lights are operable.

[b] All normally occupied areas are illuminated.

[c] No evidence of electrical cable frayed, worn insulation, or evidence of electrical problems.

[d] No breakers tripped.

NOTE1 *DDWO inspections are limited to DDWO operated systems. PSO operated systems are inspected each shift and recorded on the PSO Daily Operating Round Sheets.*

NOTE2 *Systems are not required to be operating to perform the following inspection. Items may be verified by watchstander report based on when the system was last in operation.*

+] **[3]** Inspect mechanical systems and record results on Attachment A-1 for the following:

[a] Mechanical systems are operable.

[b] Systems are functioning properly.

[c] No evidence of physical degradation of system components.

NOTE *Doors are not required to be operated to perform the following inspection. Items may be verified by watchstander report based on when the doors were last in operation.*

[+] **[4]** Inspect facility doors and record results on Attachment A-1 for the following:

[a] All doors operate without binding and latch securely where appropriate.

[b] Airlocks are closed and secured in a manner to prevent unauthorized entry.

NOTE *The communication systems are not required to be operating to perform the following inspection. Items may be verified by watchstander report based on when the system was last in operation.*

[+] **[5]** Inspect communication systems and record results on Attachment A-2 for the following:

[a] Systems are operable.

[b] All stations are accessible.

[c] Audible levels are sufficient for operating conditions.

NOTE *Alarm Systems are not required to be cycled through an "Alarm" condition to perform the following inspection. Items may be verified by watchstander report based on when the system was last in operation.*

[+] **[6]** Inspect alarm systems and record results on Attachment A-2 for the following:

[a] Systems are operable.

[b] All stations are accessible.

[c] Audible levels are sufficient for operating conditions.

[+] **[7]** Inspect surveillance equipment and record results on Attachment A-2 for the following:

[a] Systems are operable.

[b] Equipment requiring calibration or functional testing are current.

NOTE *Fire System and barrier functional and condition inspections performed by NFPA and Fire Engineers.*

[+] **[8]** Inspect fire barriers and record results on Attachment A-3 for the following:

[a] No visual signs of obvious damage to fire barrier components.

[b] Fire doors are closed and not obstructed.

[+] **[9]** Inspect installed fire suppression systems and record results on Attachment A-3 for the following:

[a] No visual signs of obvious damage to fire suppression systems.

[b] All stations are accessible and not obstructed.

[+] **[10]** Inspect fire extinguishers and record results on Attachment A-3 for the following:

[a] All required stations are equipped with a fire extinguisher.

[b] All fire extinguishers have current inspections.

[+] **[11]** Inspect spill kits and record results on Attachment A-3 for the following:

[a] Spill kits are available at the proper locations and accessibility is not obstructed.

[b] Spill kit contents have been inventoried and all required contents are present.

[+] **[12]** Inspect staged safety equipment and record results on Attachment A-3 for the following:

[a] Safety equipment is available at the designated locations and accessibility is not obstructed.

[b] Safety equipment requiring inspections have current inspections.

[c] Safety equipment requiring tamper seals are properly sealed.

[d] Safety equipment is in good condition and working order.

[+] **[13]** Inspect staged PPE and record results on Attachment A-3 for the following:

[a] PPE is available at the designated locations and accessibility is not obstructed.

[b] PPE requiring inspections have current inspections.

[c] PPE is in good condition and working order.

[+] **[14]** Inspect Defibrillator and record results on Attachment A-3 as follows:

[a] Defibrillator is available at the proper location and accessibility is not obstructed.

[b] Defibrillator inspection is current.

[+] **[15]** Inspect warning signs and posting and record results on Attachment A-3 for the following:

[a] All signs/postings are legible and unobstructed view.

[b] All emergency lights and exit signs are in proper working order.

[+] **[16]** RHWF Shift Supervisor shall review and sign off Attachment A-1 through A-3 inspection log sheets upon completion.

[17] If any unsatisfactory conditions are identified, Notify the RHWF Shift Supervisor and Environmental Affairs (EA) for further instructions.

[18] If leakage is detected, Notify the PSOSS in accordance with WV-915, "Spill/Release Notification and Reporting."

[+] **[19]** If any Unsat conditions identified can not be immediately corrected on the date of the inspection, then the cognizant facility manager/supervisor shall initiate an Issue Report (IR) in accordance with WVDP-357.

[+] **[a]** Record the container ID number, if applicable, and/or location along with a condition description and corrective action on the associated Attachment.

[20] After the RHWF Shift Supervisor sign-off, submit the original inspection log sheet to the RHWF Records Contact to be filed.

5.2 Weekly Mixed Waste Container Inspections

[+] **[1]** Inspect all mixed waste containers located in the RHWF weekly for the following conditions. Document inspection on Attachment B.

[a] No leaks.

[b] No significant rusting/corrosion.

[c] No punctures/holes.

[d] Container is closed.

[e] No swelling caused by pressure build up.

[f] No significant peeling of paint.

[g] No significant dents.

[h] Legible labeling (e.g., labels not faded).

[i] Incompatible containers are separated by a berm, dike, wall or other device (e.g., double contained within a single package).

[2] Notify the RHWF Supervisor and Environmental Affairs (EA) of any unsatisfactory conditions.

[3] If leakage is discovered, notify the Plant Operations Shift Supervisor (PSO SS) in accordance with WV-915, "Spill/Release Notification and Reporting."

[+] **[4]** For all unsatisfactory conditions, complete the "Container ID# and/or Location" section and the "Condition Description and Corrective Action" section of Attachment B, including the date corrective actions were completed.

[+] **[5]** When complete, RHWF Supervisor review and sign-off Attachment B.

[+] **[6]** If Unsat conditions identified cannot be immediately corrected on the date of the inspection, then the cognizant facility manager shall initiate an Issue Report (IR) in accordance with WV-357.

[7] After the RHWF Supervisor review/sign-off, submit the original sheets to the RHWF Records Contact to be filed.

6.0 RECORDS

The following forms, data sheets, logs, reports, or any other form of documentation considered to be a record and generated in response to this procedure shall be prepared, maintained, and transferred to the RHWF Records Contact as a RCRA Record and in accordance with WVDP-262. Refer to RIDS for further information. A copy of all completed attachments must be sent to the RCRA Operating Record.

[1] Attachment A-1 through Attachment A-3

[2] Attachment B

7.0 SOURCE REQUIREMENTS

None

8.0 REFERENCES

[1] 6 NYCRR Subpart 373-3, Interim Status Standards For Owners and Operators of Hazardous Waste Facilities. Section 373.3-30, Containment Buildings

9.0 ATTACHMENTS

[1] Attachment A-1, RHWF QUARTERLY RCRA FACILITY INSPECTION LOG SHEET, FACILITY CONDITIONS

[2] Attachment A-2, RHWF QUARTERLY RCRA FACILITY INSPECTION LOG SHEET, COMMUNICATIONS EQUIPMENT

[3] Attachment A-3, RHWF QUARTERLY RCRA FACILITY INSPECTION LOG SHEET, EMERGENCY RESPONSE EQUIPMENT

[4] Attachment B, RHWF WEEKLY MIXED WASTE CONTAINER INSPECTION LOG SHEET

Attachment A-1
RHWF QUARTERLY RCRA FACILITY INSPECTION LOG SHEET
FACILITY CONDITIONS
(Page 1 of 1)

INSPECTION CRITERIA		AREA						CONDITION DESCRIPTION & CORRECTIVE ACTIONS
Step	**Description**	**RA**	**BC**	**CMA**	**WC**	**WPA**	**LOTB**	
5.1 [1]	Building Structure	sat / unsat	sat / unsat	sat / unsat	sat / unsat	sat / unsat	sat / unsat	
5.1 [2]	Lighting / Power Systems	sat / unsat	sat / unsat	sat / unsat	sat / unsat	sat / unsat	sat / unsat	
5.1 [3]	Mechanical Systems	sat / unsat	sat / unsat	sat / unsat	sat / unsat	sat / unsat	sat / unsat	
5.1 [4]	Door Locks	sat / unsat	sat / unsat	sat / unsat	sat / unsat	sat / unsat	sat / unsat	

NOTE *Notify the RHWF Shift Supervisor and Environmental Affairs (EA) of unsatisfactory conditions. The RHWF Shift Supervisor shall verify resolution of unsatisfactory condition by signature below and indicating resolution on this form.*

Comments: _____

_____

_____

_____

_____

Inspection Performed By: _____ Date: _____ Time: _____
(DDWO Personnel) Signature / Print Name

Inspection Reviewed By: _____ Date: _____
(RHWF Supervisor) Signature / Print Name

Unsatisfactory Conditions Addressed: _____ Date: _____
(RHWF Supervisor) Signature / Print Name

Attachment A-2
RHWF QUARTERLY RCRA FACILITY INSPECTION LOG SHEET
COMMUNICATIONS EQUIPMENT
(Page 1 of 1)

INSPECTION CRITERIA		AREA						CONDITION DESCRIPTION & CORRECTIVE ACTIONS
Step	Description	RA	BC	CMA	WC	WPA	LOTB	
5.1 [5]	Communication Systems	sat / unsat	sat / unsat	sat / unsat	sat / unsat	sat / unsat	sat / unsat	
5.1 [6]	Alarm Systems	sat / unsat	sat / unsat	sat / unsat	sat / unsat	sat / unsat	sat / unsat	
5.1 [7]	Surveillance Equipment	sat / unsat	sat / unsat	sat / unsat	sat / unsat	sat / unsat	sat / unsat	

NOTE *Notify the RHWF Shift Supervisor and Environmental Affairs (EA) of unsatisfactory conditions. The RHWF Shift Supervisor shall verify resolution of unsatisfactory condition by signature below and indicating resolution on this form.*

Comments: _____

_____

_____

_____

_____

Inspection Performed By: _____ Date: _____ Time: _____
(DDWO Personnel) Signature / Print Name

Inspection Reviewed By: _____ Date: _____
(RHWF Shift Supervisor) Signature / Print Name

Unsatisfactory Conditions Addressed: _____ Date: _____
(RHWF Shift Supervisor) Signature / Print Name

RCRA OPERATING RECORD

Attachment A-3
RHWF QUARTERLY RCRA FACILITY INSPECTION LOG SHEET
EMERGENCY RESPONSE EQUIPMENT
(Page 1 of 2)

INSPECTION CRITERIA		AREA						CONDITION DESCRIPTION & CORRECTIVE ACTIONS
Step	**Description**	**RA**	**BC**	**CMA**	**WC**	**WPA**	**LOTB**	
5.1 [8]	Fire Barriers	sat / unsat	sat / unsat	sat / unsat	sat / unsat	sat / unsat	sat / unsat	
5.1 [9]	Fire Suppression Systems	sat / unsat	sat / unsat	sat / unsat	sat / unsat	sat / unsat	sat / unsat	
5.1 [10]	Fire Extinguishers	sat / unsat	N/A	N/A	N/A	N/A	sat / unsat	
5.1 [11]	Spill kits available / Contents	sat / unsat	N/A	N/A	N/A	N/A	sat / unsat	

NOTE *Notify the RHWF Shift Supervisor and Environmental Affairs (EA) of unsatisfactory conditions. The RHWF Shift Supervisor shall verify resolution of unsatisfactory condition by signature below and indicating resolution on this form.*

Comments: _____

_____

_____

_____

_____

Inspection Performed By: _____ Date: _____ Time: _____
(DDWO Personnel) Signature / Print Name

Inspection Reviewed By: _____ Date: _____
(RHWF Shift Supervisor) Signature / Print Name

Unsatisfactory Conditions Addressed: _____ Date: _____
(RHWF Shift Supervisor) Signature / Print Name

Attachment A-3
RHWF QUARTERLY RCRA FACILITY INSPECTION LOG SHEET
EMERGENCY RESPONSE EQUIPMENT
(Page 2 of 2)

INSPECTION CRITERIA		AREA						CONDITION DESCRIPTION & CORRECTIVE ACTIONS
Step	Description	RA	BC	CMA	WC	WPA	LOTB	
5.1 [12]	Safety Equipment	sat / unsat	N/A	N/A	N/A	N/A	sat / unsat	
5.1 [13]	PPE	sat / unsat	N/A	N/A	N/A	N/A	sat / unsat	
5.1 [14]	Defibrillator	sat / unsat	N/A	N/A	N/A	N/A	sat / unsat	
5.1 [15]	Warning Signs / Postings Visible	sat / unsat	N/A	N/A	N/A	N/A	sat / unsat	

NOTE *Notify the RHWF Shift Supervisor and Environmental Affairs (EA) of unsatisfactory conditions. The RHWF Shift Supervisor shall verify resolution of unsatisfactory condition by signature below and indicating resolution on this form.*

Comments: _____

_____

_____

_____

_____

Inspection Performed By: _____ Date: _____ Time: _____
(DDWO Personnel) Signature / Print Name

Inspection Reviewed By: _____ Date: _____
(RHWF Shift Supervisor) Signature / Print Name

Unsatisfactory Conditions Addressed: _____ Date: _____
(RHWF Shift Supervisor) Signature / Print Name

Attachment B
RHWF WEEKLY MIXED WASTE CONTAINER INSPECTION LOG SHEET
(page 1 of 1)

SATISFACTORY CONDITION	SAT	UNSAT	UNSATISFACTORY CONDITION	
			CONTAINER ID#(S) AND/OR LOCATION	CONDITION DESCRIPTION AND CORRECTIVE ACTION
Containers Exhibit:				
No Leaks				
No Severe Rusting/Corrosion				
No Punctures				
No Swelling				
No Excessive Peeling of Paint				
No Severe Dents				
Container is Closed				
Legible Labeling				
Incompatible Containers are separated by a Berm, Dike, Wall or Other Device				

NOTE *Notify the RHWF Shift Supervisor and Environmental Affairs (EA) of unsatisfactory conditions. The RHWF Shift Supervisor shall verify resolution of unsatisfactory condition by signature below and indicating resolution on this form.*

Inspection Performed By: (DDWO Personnel) _____ Signature / Print Name Date: _____ Time: _____

Inspection Reviewed By: (RHWF Shift Supervisor) _____ Signature / Print Name Date: _____

Unsatisfactory Conditions Addressed: (RHWF Shift Supervisor) _____ Signature / Print Name Date: _____

WVNSCO RECORD OF REVISION

Rev. No.	Description of Changes	Revision On Page(s)	Dated
0	Original Issue This procedure provides instructions for performing RCRA required inspections for the Remote Handled Waste Facility DDWO personnel are affected by these changes.	All	03/25/04
1	Canceled. PSO and EA are affected by this cancellation.	All	03/26/04
2	General Revision. Changed Cog. Author. Changed DDWO Supervisor to RHWF Shift Supervisor throughout. Added "[+]" as needed. Other minor editorial changes made. This procedure affects DDWO.	All 1	05/03/04
3	Added Section 5.2 and Attachment B for performing mixed waste container inspections. Updated remainder of procedure to recognize new requirements. Corrected spelling errors in 5.1[14] and Attachment A-3. Added EA notification to 5.1[17] for consistency with Attachments. Added requirement to send copies of all attachments to the RCRA Operating Record. Changed "Appendix" to "Attachment" throughout for consistency with other RHWF SOPs. This change affects DDWO and EA.	All 8,15 8 10 All	06/02/04

APPENDIX F-6

SOP 09-34, *EMPTIED WASTE CONTAINER MANAGEMENT*

Required only for copies.
Copy valid for 24 hours from verification time/date.

Date _____ Time _____ Verified By _____
Date _____ Time _____ Verified By _____
Date _____ Time _____ Verified By _____
Date _____ Time _____ Verified By _____
Date _____ Time _____ Verified By _____
Date _____ Time _____ Verified By _____
Date _____ Time _____ Verified By _____
Date _____ Time _____ Verified By _____
Date _____ Time _____ Verified By _____

Revision Number 2

Revision Date 06/29/04

SOP 09-34

Emptied Waste Container Management

Cognizant Author: T. E. Schalberg

Cognizant Manager: S. M. Westcott

Facility Manager: K. E. Sanders

HLW:

YES	NO	NA
		X

QUALITY LEVEL: C

SAFETY CLASS: C

PROCEDURE USE CLASSIFICATION		MULTIPLE USE BY SECTION
	CRITICAL USE	
X	REFERENCE USE	All

ALARA PLANNING

[X] The work described in this procedure does not require ALARA planning.

[ ] The work described in this procedure may require ALARA planning.

WEST VALLEY NUCLEAR SERVICES CO.

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Emptied Waste Container Management

1.0 INTRODUCTION

1.1 Purpose

This procedure provides guidance to properly manage emptied waste containers and container liners. It also provides the documentation required (Appendix A & B) to ensure the status of containers and liners is current and accurate. Activities include container disposition, movement of containers to approved storage areas, radiological surveys, and required documentation of these activities.

1.2 Applicability

This procedure applies to waste containers that are emptied by D&D/Waste Management Operations (DDWO). It also applies to the disposition of container liners removed from emptied waste containers.

This procedure is not required for containers emptied by other approved site procedures.

This procedure does NOT apply to new containers or small containers that are NOT assigned a Container ID Number. It also excludes containers with "X-###" designations.

2.0 GENERAL INFORMATION

[1] This procedure standardizes the steps required to track and document the status of containers and the disposition of container liners.

[2] SOP 09-33, "Integrated Waste Tracking System (IWTS)," provides instruction initiating, revising, and canceling waste/container information..

3.0 PRECAUTIONS AND LIMITING CONDITIONS

3.1 Requirements for Re-use of Containers and Liners

[1] Containers and liners that will be re-used in non-radiological areas shall have removable contamination levels less than 20 dpm/100 cm^2 alpha and 200 dpm/100 cm^2 beta-gamma, and shall NOT have been stored or used in a radiologically controlled area.

[2] Containers and liners that will be re-used in Radiological Buffer Areas (RBAs) shall have removable contamination levels less than 20 dpm/100 cm^2 alpha and 200 dpm/100 cm^2 beta-gamma.

[3] Containers may be re-used with removable contamination levels greater than or equal to 20 dpm/100 cm^2 alpha and 200 dpm/100 cm^2 beta-gamma providing ALL of the following criteria are met:

[a] Approvals are obtained from the DDWO Supervisor AND RP Supervisor, AND

[b] The contamination levels in the generation area are greater than or equal to the contamination levels of the re-used container, AND

[c] The contamination levels of the material that will be placed into the re-used container are greater than or equal to the contamination levels of the re-used container.

[4] Containers and liners that previously contained hazardous materials may be re-used when evaluated and approved by the DDWO Supervisor, Waste Shipping & Disposal (WSD), and Industrial Hygiene & Safety (IH&S).

4.0 PREREQUISITES

None

5.0 PERFORMANCE

5.1 Emptied Containers

[+] **[1]** Complete Section I of Appendix A, "Emptied Waste Container Tracking Sheet," of this procedure when a waste container and/or container liner is emptied as a result of processing.

[+] **[a]** Check all blocks that apply to the container and/or container liner.

[+] **[b]** Check or write in the location where the container and/or container liner was emptied.

[+] **[c]** Sign and print name on the designated line.

[+] **[2]** **IF** a radiation survey of the container(s) is NOT required,
THEN check the "Not Required" block and obtain the signature of a Radiation Protection (RP) supervisor in Section II.

[3] **IF** a radiation survey of the container(s) is required,
THEN contact RP to survey the emptied container and container liner before moving the container and/or container liner.

[+] **[a]** RP shall complete Section II of Appendix A, "Emptied Waste Container Tracking Sheet," of this procedure to document the radiological status of subject containers and liners.

[+] **[b]** RP shall complete and attach a radioactive material tag to both the container and container liner, when applicable.

[+] **[c]** RP shall sign and print name and date on Appendix A, "Emptied Waste Container Tracking Sheet."

[d] RP shall return Appendix A, "Emptied Waste Container Tracking Sheet," of this procedure to the DDWO operator.

5.2 Requirements for Re-use of Containers

[1] Verify the following conditions do NOT prevent container and container liner re-use:

[a] No significant corrosion (e.g. small amounts of surface rust are OK).

[b] Physical integrity, (e.g. no holes; no large dents; top and bungs seal properly).

[c] Radiological contamination levels.

[d] Previous use.

+] **[2]** **IF** the container will be re-used on site,
THEN increase the Container ID Number by one letter on the container and on Appendix A, "Emptied Waste Container Tracking Sheet."

[3] Remove or deface all labels of previous contents, except Container ID Number.

[4] **IF** the container will NOT be re-used on site,
THEN dispose of the container as follows:

+] **[a]** Check the "scrap" block on Appendix A, "Emptied Waste Container Tracking Sheet," and DO NOT change the Container ID Number on the container or Appendix A, "Emptied Waste Container Tracking Sheet."

NOTE *Containers that were used in radiologically controlled areas and have been released as clean scrap need to be placed in the "Moratorium Waste" container on the AA-hardstand after all appropriate documentation is completed.*

[b] Place radiologically clean metal containers into the scrap metal dumpster.

[c] Follow DDWO supervision instructions for disposal of radiologically or chemically contaminated plastic or steel containers.

[5] **IF** a contaminated container will be re-used on site,
THEN move it to a designated LAG storage facility area for future re-issue.

[6] **IF** a container LINER is radioactively contaminated,
THEN keep it with its container until DDWO Supervisor instructs Operations to discard the contaminated liners.

RCRA **NOTE 1** *ACUTE HAZARDOUS WASTES are hazardous wastes which in small amounts may cause severe health effects per 40 CFR 261.31, 261.32 & 261.33. Contact DDWO Supervisor and Waste Shipping & disposal prior to handling containers or liners that have container ACUTE HAZARDOUS WASTE.*

RCRA **NOTE 2** *A container/inner liner with a capacity of **110 gallons or less** is RCRA empty if all wastes have been removed that can be removed using the practices commonly employed to remove materials from that type of container (e.g., pouring, pumping, and aspirating) and no more than one inch (or 3% by weight) of residue remain on the bottom the container/inner liner. (40CFR 261.7)*

RCRA **NOTE 3** *A container/liner with a capacity **greater than 110 gallons** is RCRA empty if all wastes have been removed that can be removed using the practices commonly employed to remove materials from that type of container (e.g., pouring pumping, and aspirating) and no more than one inch (0.3% by weight) of residue remain on the bottom of the container/inner liner. (40CFR 261.7)*

RCRA [7] **IF** a hazardous waste container or container liner is "RCRA empty" and will be re-used on site, (40 CFR 261)
THEN it shall be moved to the clean empty container hardstand storage area for future re-issue.

[8] **IF** an empty non-contaminated, nonhazardous waste container and/or liner will be re-used on site,
THEN move it to the empty container hardstand storage area for future re-issue.

5.3 Documentation

[+] [1] The DDWO Supervisor AND RP Supervisor shall sign and date **Limitation 3.1.4 Approvals** on Appendix B, "Emptied Waste Container Re-use Approval Sheet," to authorize re-use of containers and liners when applicable.

[2] Attach Appendix B, "Emptied Waste Container Re-use Approval Sheet," to Appendix A, "Emptied Waste Container Tracking Sheet," of the subject container.

[3] The DDWO Supervisor, Waste Shipping & Disposal (WSD), AND Industrial Hygiene & Safety (IH&S) shall sign and date **Limitation 3.1.5 Approvals** on Appendix B, "Emptied Waste Container Re-use Approval Sheet," to authorize re-use of containers and liners that previously contained hazardous materials.

[4] Attach Appendix B, "Emptied Waste Container Re-use Approval Sheet," to Appendix A, "Emptied Waste Container Tracking Sheet," of the subject container.

[5] Forward Appendix A, "Emptied Waste Container Tracking Sheet," and Appendix B, "Emptied Waste Container Re-use Approval Sheet," if applicable, to the DDWO Supervisor.

[6] The DDWO Supervisor reviews and then forwards Appendix A, and Appendix B, if applicable, to DDWO data entry personnel.

[7] DDWO data entry personnel shall sign and date Appendix A, "Emptied Waste Container Tracking Sheet," and update the database.

[8] DDWO data entry personnel place a copy of Appendix A in file in LAG office.

[9] DDWO data entry personnel forwards Appendix A, "Emptied Waste Container Tracking Sheet," and Appendix B, "Emptied Waste Container Re-use Approval Sheet," if applicable, to WSD.

6.0 RECORDS

The following forms, data sheets, logs, reports, or any other form of documentation considered to be a record and generated in response to this procedure shall be prepared, maintained, and transferred to the MRC in accordance with WVDP-262. Refer to RIDS for further information.

[1] Appendix A, "Emptied Waste Container Tracking Sheet"

[2] Appendix B, "Emptied Waste Container Re-use Approval Sheet"

7.0 SOURCE REQUIREMENTS

40 CFR 261, "Identification and Listing of Hazardous Wastes"

8.0 REFERENCES

SOP 09-33, "Integrated Waste Tracking System Operation"

9.0 APPENDICES

[1] Appendix A, "Emptied Waste Container Tracking Sheet"

[2] Appendix B, "Emptied Waste Container Re-use Approval Sheet"

Appendix A
Emptied Waste Container Tracking Sheet

SECTION I (Completed by DDWO Operator)

Container ID #: (when emptied):_____ Container lined? [ ] Yes [ ] No Date emptied:_____
Container type: [ ] drum [ ] box [ ] other:_____
Container size: [ ] 30 gal. [ ] 55 gal. [ ] B-25 [ ] S70 [ ] other:_____
Container Material: [ ] carbon steel [ ] stainless steel [ ] plastic
Waste type (check all that apply):
[ ] rad [ ] haz [ ] mixed [ ] other:_____
[ ] liquid [ ] solid [ ] sludge [ ] other:_____
Location where waste was emptied:
[ ] Interceptor [ ] CSPF [ ] WRPA Compactor [ ] other:_____

Emptied by: _____/_____
Sign Print

Current emptied container status (check all that apply): Liner removed? [ ] Yes [ ] No [ ] N/A
[ ] clean [ ] rad [ ] haz [ ] mixed [ ] residue, explain: _____ [ ] other _____
[ ] re-issue* [ ] scrap [ ] other: _____
***NOTE: Increase the Container ID # by one letter as applicable.**

Verification container ID # increased by one letter:_____/_____ [ ] on container [ ] RP has changed rad survey tag
(Initial/Date)
Emptied container storage location:_____ new Container ID #: _____

SECTION II (Completed by Rad Protection)

Radiological Survey [ ] Not Required (RP supervision signature required below)

Type of Survey		Container Activity	Liner Activity
Internal contamination (alpha)	dpm/100 cm^2		
Internal contamination (beta/gamma)	dpm/100 cm^2		
External Contamination (alpha)	dpm/100 cm^2		
External Contamination (beta/gamma)	dpm/100 cm^2		
Direct Check (alpha)*	cpm/probe		
Direct Check (beta/gamma)*	cpm/probe		
Dose Rate	mr/hr		
* Required for non-radioactive materials from radiologically controlled area			

_____/_____/_____
RP - Sign Print Date

SECTION III (Completed by DDWO data entry personnel)

_____/_____
Data Entry Completed by: Initial/Date

Appendix B
Emptied Waste Container Re-use Approval Sheet

Attach Appendix B to Appendix A when required.

Container ID #: (when emptied):_____ Date emptied:_____

Limitation 3.1.3 Approvals: The following signatures signify approval to re-use this container with removable contamination levels greater than or equal to 20 dpm/100 cm^2 alpha and 200 dpm/100 cm^2 beta-gamma, AND the contamination levels in the generation area are greater than or equal to the contamination levels of the re-used container, AND the contamination levels on the material that will be placed into the re-used container are greater than or equal to the contamination levels of the re-used container.

(Both signatures required)

DDWO Supervisor _____/_____/_____

RP Supervisor _____/_____/_____

Sign Print Date

Limitation 3.1.4 Approvals: The following signatures signify approval that this container that previously contained hazardous materials may be re-used when approvals are obtained from the DDWO Supervisor, Waste Shipping and Disposal (WSD), AND Industrial Hygiene & Safety (IH&S).

(All three signatures required)

DDWO Supervisor _____/_____/_____

WSD _____/_____/_____

IH&S _____/_____/_____

Sign Print Date

WVNSCO RECORD OF REVISION

Rev. No.	Description of Changes	Revision On Page(s)	Dated
0	Original Issue	All	03/02/00
FC1	3.1.1 Deleted "both fixed and"	4	03/15/00
	3.1.2 Deleted last sentence	4	
	3.1.3 Deleted	4	
	3.1.4 Deleted "ONLY FOR NON-ROUTINE CIRCUMSTANCES"	4	
	3.1.5 Deleted "ONLY FOR NON-ROUTINE CIRCUMSTANCES" ; added (i.e. the container that touched the material)	4	
	5.1.1 [3] Deleted	5	
	5.2.2 Deleted	6	
	5.2.4 Added words for clarity	6	
	5.2.5 Deleted	6	
	5.3.1 Deleted	7	
	5.3.2 Deleted	7	
	5.3.7 Deleted "for hazardous or mixed waste containers"	8	
	5.3.8 Changed who enters data	8	
	5.3.9 Deleted (combined with 5.3.8)	8	
	5.3.10 Changed who enters data	8	
	5.3.11 Added new section for filing instructions	8	
	Appendix A - Changed order of entering data on form	10	
	Appendix B - Deleted sign-off for 3.1.3 limitation approvals	11	
FC2	Added dose rate to Appendix A to alleviate the need to resurvey upon deterioration of labels. Also added step to require a copy of Appendix A to be maintained in LAG office files. Procedure was also updated to reflect latest requirements of WVDP-257 and EP-5-002 and to reflect latest organizational changes.		10/02/02
	Detailed changes are as follows:		
	Cover page updated. New Cog. Author, Manager and FM assigned.	1	
	Table of Contents updated to reflect FC.	2	
	3.1.5 - updated department title.	4	
	5.2.6[2] NOTE - added note.	6	
	5.3.5 - updated department title.	8	
	5.3.11 - added step.	8	
	5.3.12 - updated department title.	8	
	6.0 and 6.1 - Deleted section as is no longer required.	8	
	7.3 - updated department title, changed reference to SOP 00-01 to WVDP-262, and changed "WVNS" to "WVNSCO."	9	
	7.4 - deleted.	9	
	Appendix A - added dose rate to Section II.	10	

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Revision On Page(s)	Dated
FC2 (Cont.)	Changed data entry signoff to initials. Added "/probe" to direct check alpha & beta/gamma. Appendix B - updated department title. This change affects WMO and RP.	11	
1	General Revision. Cognizant Author was changed, information from 40CFR 261.7 was updated, Appendix A was modified to delete 5 gallon container size and to add container material as separate line item in Section 1, department titles were updated, the procedure was modified to reflect the requirements of DCIP-100 , and other editorial changes were made. This change affects DDWO.	All	04/14/03
2	General Revision This revision change was administrative in nature only and has no effect on any one specific department.	All	06/29/04