



ENTERED



Environmental Protection Division
Los Alamos National Laboratory
PO Box 1663, K490
Los Alamos, New Mexico 87545
(505) 667-2211

National Nuclear Security Administration
Los Alamos Field Office
3747 West Jemez Road, A316
Los Alamos, New Mexico, 87545
(505) 667-5105/Fax (505) 667-5948

Date: JUL 11 2017

Symbol: EPC-DO: 17-268

LA-UR: 17-25313

Locates Action No.: N/A

Ms. Michelle Hunter, Chief
Ground Water Quality Bureau
New Mexico Environment Department
Harold Runnels Building, Room N2261
1190 St. Francis Drive
P.O. Box 26110
Santa Fe, NM 87502

Mr. Robert Italiano, District II Manager
New Mexico Environment Department
2540 Camino Edward Ortiz
Santa Fe, NM 87507

Subject: 60% Design Plans and Specifications for Two New Domestic Wastewater Holding Tanks at Los Alamos National Laboratory

Dear Ms. Hunter and Mr. Italiano:

Pursuant to 20.7.3.307 NMAC, the U.S Department of Energy and Los Alamos National Security, LLC (DOE/LANS) seek approval from the New Mexico Environment Department to install two new domestic wastewater holding tanks at Los Alamos National Laboratory. The holding tanks—located at Technical Areas (TA) 40 and 11—will be installed at two remote test facilities that are not permanently occupied. All waste streams discharging to the proposed holding tanks are domestic in nature. Septage from both tanks will be discharge to the TA-46 Sanitary Wastewater Systems (SWWS) Plant pursuant to NMED-issued Discharge Permit DP-857. Enclosure 1 provides the 60% design plans for your review and approval. Additional supporting information is provided below and in Enclosures 2 and 3.

TA-11-0075 Domestic Wastewater Holding Tank

DOE/LANS propose to install a 1000-gallon domestic wastewater holding tank to receive domestic wastewater from a single building—TA-11-0075— with a kitchen sink, lavatory, and water closet. The building has no permanent occupants. The design flow rate is 60-100 gallons per day based upon an occupancy of 3-5 workers. Pumping and discharge to the TA-46 SWWS Plant is expected to occur bi-weekly. The holding tank will be equipped with a visible and audible high-level alarm; the level sensor will be set at 80% full. Enclosure 2 provides Los Alamos National Laboratory's holding tank specifications. Enclosure 3 provides the tank manufacturer's product sheet.



TA-40-0015 Domestic Wastewater Holding Tank

DOE/LANS propose to install a 1000-gallon domestic wastewater holding tank to receive domestic wastewater from a single building—TA-40-0015— with a break-room sink, lavatory, water closet, and janitor's sink. The building has no permanent occupants. The design flow rate is 60-100 gallons per day based upon an occupancy of 3-5 workers. Pumping and discharge to the TA-46 SWWS Plant is expected to occur bi-weekly. The holding tank will be equipped with a visible and audible high-level alarm; the level sensor will be set at 80% full. Enclosure 2 provides Los Alamos National Laboratory's holding tank specifications. Enclosure 3 provides the tank manufacturer's product sheet.

Please contact Karen E. Armijo by telephone at (505) 665-7314 or by email at Karen.Armijo@nnsa.doe.gov, or Robert S. Beers by telephone at (505) 667-7969 or by email at bbeers@lanl.gov if you have questions regarding this request.

Sincerely,



Anthony R. Grieggs
Group Leader

Sincerely,



Karen E. Armijo
Permitting and Compliance Program Manager

AMD/GET/MTS/RSB: am

Enclosure(s): (1) 60% design drawings, domestic wastewater holding tanks at TA-11 and TA-40
(2) LANL Specifications for manholes and holding tank structures
(3) Albuquerque Vault Company, product sheet, 1,000 gal septic tank

Copy: Shelly Lemon, NMED/SWQB, Santa Fe, NM, (E-File)
John E. Kieling, NMED/HWB, Santa Fe, NM, (E-File)
Stephen M. Yanicak, NMED/DOE/OB, (E-File)
Jody M. Pugh, NA-LA, (E-File)
Karen E. Armijo, NA-LA, (E-File)
Cassandra A. Begay, NA-LA, (E-File)
Ken Worthington, NA-LA/Ops, (E-File)
Craig S. Leasure, PADOPS, (E-File)
William R. Mairson, PADOPS, (E-File)
Michael T. Brandt, ADESH, (E-File)
Craig M. Keller, ES-EPD, (E-File)
Lawrence V. Chavez, UI-OPS, (E-File)
Randy E. Vigil, UI-OPS, (E-File)
Pablo F. C De Vaca, UI-OPS, (E-File)
Lawrence A. Valdez, LOG-SUP, (E-File)
Michael T. Saladen, EPC-CP, (E-File)
Robert S. Beers, EPC-CP, (E-File)
Ellena I. Martinez, EPC-CP, (E-File)
lasomailbox@nnsa.doe.gov, (E-File)
locatesteam@lanl.gov, (E-File)
epc-correspondence@lanl.gov, (E-File)

JUL 11 2017

BUREAU

**COPY**

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TA-11-0075 Domestic Wastewater Holding Tank

DOE/LANS propose to install a 1000-gallon domestic wastewater holding tank to receive domestic wastewater from a single building—TA-11-0075—with a kitchen sink, lavatory, and water closet. The building has no permanent occupants. The design flow rate is 60-100 gallons per day based upon an occupancy of 3-5 workers. Pumping and discharge to the TA-46 SWWS Plant is expected to occur bi-weekly. The holding tank will be equipped with a visible and audible high-level alarm; the level sensor will be set at 80% full. Enclosure 2 provides Los Alamos National Laboratory's holding tank specifications. Enclosure 3 provides the tank manufacturer's product sheet.

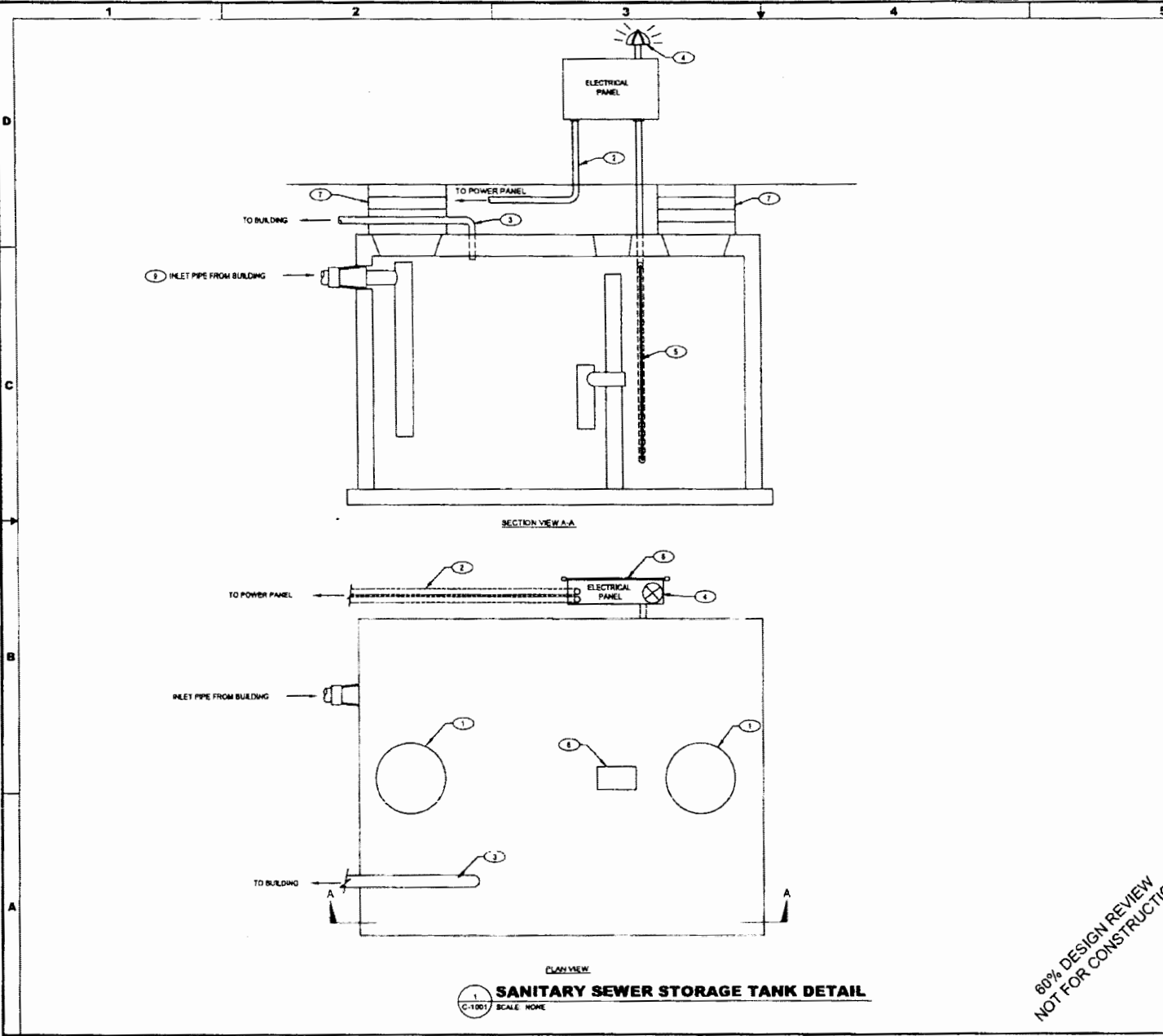
ENCLOSURE 1

60% design drawings, domestic wastewater
holding tanks at TA-11 and TA-40

EPC-DO: 17-268

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Date: JUL 11 2017

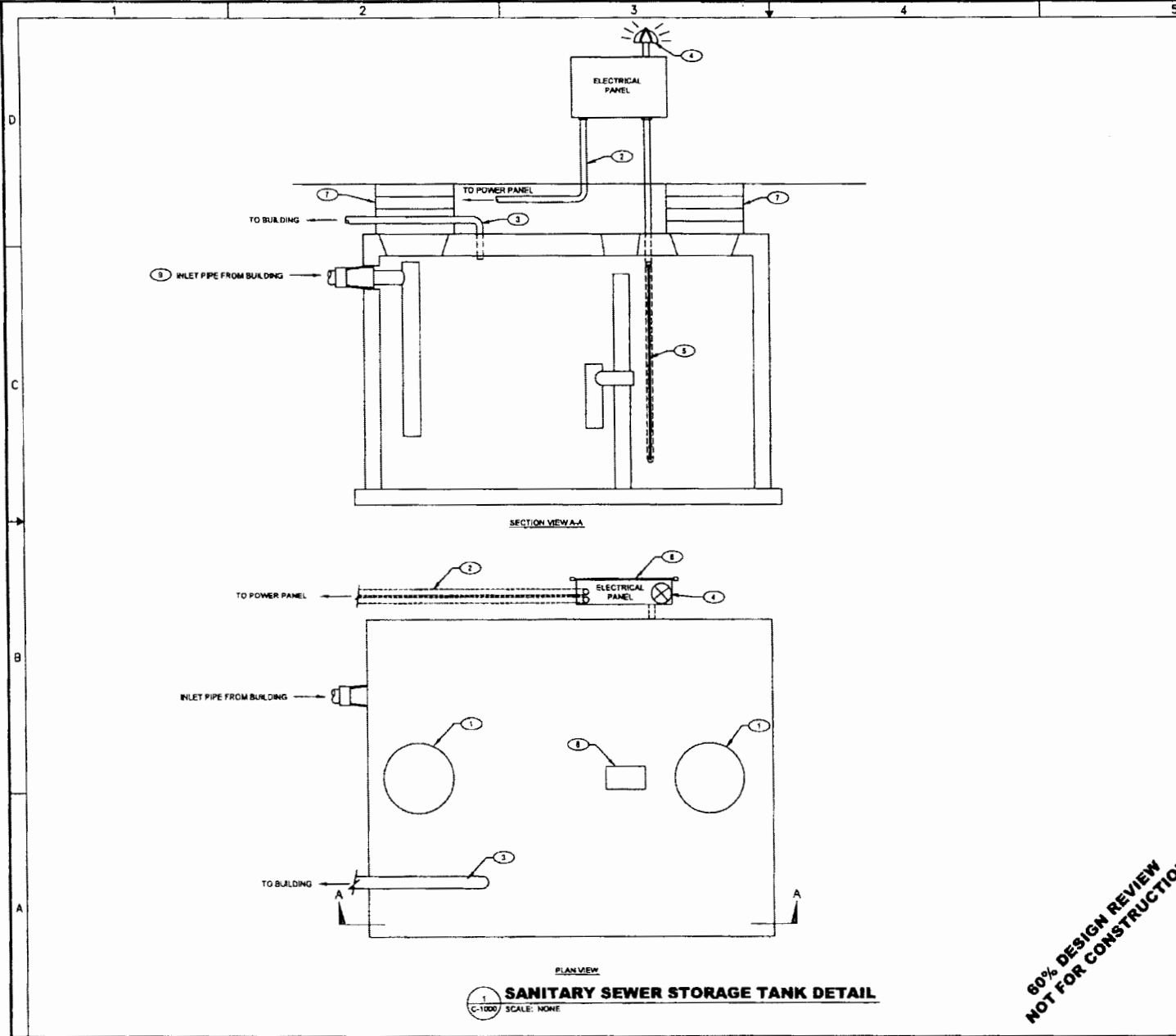


- GENERAL NOTES:**
1. FIELD VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION
 2. IF THIS SHEET IS NOT 24"X36", USE GRAPHIC SCALE ACCORDINGLY.
 3. EXISTING UTILITY LOCATIONS ARE APPROXIMATE ONLY AND SHALL BE FIELD LOCATED PRIOR TO CONSTRUCTION.
 4. 1000 GALLON PRE-CAST CONCRETE SANITARY SEWER TANK BY ALBUQUERQUE VAULT COMPANY (ST-1000 HQS) OR APPROVED EQUAL.
 5. TANK SHALL BE PROVIDED WITH AND ALL WEATHER SIGN IDENTIFYING MANUFACTURER'S NAME, NEW MEXICO REGISTRATION NUMBER, YEAR OF CONSTRUCTION AND TANK CAPACITY FOR PERMANENT DISPLAY NEAR THE TANK.
- KEYED NOTES:**
- 1 75-20 TRAFFIC RATED MANHOLE LID
 - 2 2" CONDUITS FOR COMMUNICATION AND SIGNAL TO TANK
 - 3 2" PVC VENT PIPE, ROUTE TO BUILDING FACE THEN UP TO & ABOVE THE ROOF LINE.
 - 4 VISIBLE HIGH LEVEL BEACON WITH AUDIBLE ALARM.
 - 5 LEVEL SENSOR ALARM AT 80% FULL.
 - 6 UNISTRUT FRAME FOR MOUNTING ELECTRICAL PANEL.
 - 7 PROVIDE RISERS TO GRADE, JOINTS SHALL BE SEALED FOR WATER TIGHTNESS.
 - 8 8" x 12" INSPECTION HOLE LOCATED ABOVE BAFFLE WALL.
- 8 REFER TO PLAN AND PROFILE SHEET C-1008 FOR ELEVATION INFORMATION.

1 SANITARY SEWER STORAGE TANK DETAIL
 C-1001 SCALE NONE

80% DESIGN REVIEW
 NOT FOR CONSTRUCTION

NO	DATE	CLASS	REV	DESCRIPTION	BY	CHKD	APP
Cross Connection inc. WILSON & COMPANY Thornton Tomasetti General & Mechanical Contractor							
K-SITE CONTROL FACILITY							
SANITARY SEWER STORAGE TANK DETAIL SHEET							
T.A. 11				BLDG 0075			
SUBMITTED				APPROVED FOR RELEASE			
(NAME), (TITLE)				(FACILITY NAME)			
Los Alamos NATIONAL SECURITY				PG 504-1003 LOS ALAMOS, New Mexico 87545			
PROJECT ID 103190				DRAWING NO C57456-DWG-11-0075-C-5000			
D.C. UNCLASSIFIED				REVIEWER COMB1			
DATE 04/09/17				REV 0B			



- GENERAL NOTES:**
1. FIELD VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION.
 2. IF THIS SHEET IS NOT 24"x36", USE GRAPHIC SCALE ACCORDINGLY.
 3. EXISTING UTILITY LOCATIONS ARE APPROXIMATE ONLY AND SHALL BE FIELD LOCATED PRIOR TO CONSTRUCTION.
 4. 1000 GALLON PRE-CAST CONCRETE SANITARY SEWER TANK BY ALBUQUERQUE VAULT COMPANY (ST-1000 H2O) OR APPROVED EQUAL.
 5. TANK SHALL BE PROVIDED WITH AND ALL WEATHER SIGN IDENTIFYING MANUFACTURER'S NAME, NEW MEXICO REGISTRATION NUMBER, YEAR OF CONSTRUCTION AND TANK CAPACITY FOR PERMANENT DISPLAY NEAR THE TANK.

- KEYED NOTES:**
- 1 HS-20 TRAFFIC RATED MANHOLE LID.
 - 2 2-1" CONDUITS FOR COMMUNICATION AND SIGNAL TO TANK.
 - 3 2" PVC VENT PIPE, ROUTE TO BUILDING FACE THEN UP TO 7' ABOVE THE ROOF LINE.
 - 4 VISIBLE HIGH LEVEL BEACON WITH AUDIBLE ALARM.
 - 5 LEVEL SENSOR ALARM AT 80% FULL.
 - 6 UNSTRUT FRAME FOR MOUNTING ELECTRICAL PANEL.
 - 7 PROVIDE RISERS TO GRADE, JOINTS SHALL BE SEALED FOR WATER TIGHTNESS.
 - 8 8" x 10" INSPECTION HOLE LOCATED ABOVE BAFFLE WALL.
 - 9 REFER TO PLAN AND PROFILE SHEET C-1000 FOR INVERT ELEVATION INFORMATION.

**60% DESIGN REVIEW
NOT FOR CONSTRUCTION**

NO	DATE	CLASS	REV	DC	DESCRIPTION	DRWN	CHKD	APP
INITIAL ISSUE FOR O&M/ISSUE/ISSUE/ISSUE								
CROSS CONNECTION INC. WILSON THORNTON TOMASETTI & COMPANY								
CHAMBER 15 ADDITION						DESIGN	E. GORDON	
SANITARY SEWER STORAGE TANK DETAIL						DRAWN	JL. TAYLOR	
TA-40 BLDG. 0015						CHECKED	E. GORDON	
DATE: 06/29/17						SHEET: C-5004		
SUBMITTED: []						APPROVED FOR RELEASE: []		
PG BOX 1663 LOS ALAMOS, NEW MEXICO 87545						XX OF XX DATE: 06/29/17		
PROJECT ID: 103462						DRAWING NO: C57462-DWG-40-0015-C-5004		

ENCLOSURE 2

LANL Specifications for manholes
and holding tank structures

EPC-DO: 17-268

LA-UR-17-25313

Date: JUL 11 2017

**SECTION 33 0513
MANHOLES AND STRUCTURES**

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Precast concrete holding tank sections, access frames and covers, and monitoring systems for use in sanitary sewer systems.

1.2 RELATED REQUIREMENTS

- A. Section 31 2000, Earth Moving
- B. Section 33 3000, Sanitary Sewerage Utilities

1.3 LANL PERFORMED WORK

- A. LANL Subcontract Technical Representative (STR) will coordinate required inspections and tie-ins.
- B. LANL STR will coordinate through LANL Water Quality Group (ENV-RCRA) for inspection of septic tank and holding tank for compliance by New Mexico Environmental Department (NMED).
- C. Application for holding tank construction permit to NMED through LANL ENV-RCRA.

1.4 ACTION SUBMITTALS

- A. Submit the following:
 - 1. Certifications: Furnish copies of materials certificates certifying that each material item complies with, or exceeds, specified requirements.
 - 2. NMED approved septic tank list certification number.
Level alarm system product data and installation instructions for holding tank.

PART 2 PRODUCTS

2.1 SUBSTITUTION LIMITATIONS

- A. Alternate products may be accepted; follow Section 01 2500, Substitution Procedures.

2.2 MATERIALS

- A. Holding Tank Access Ports: Install three foot diameter corrugated metal pipe riser over tank inspection/access port. CMP shall extend one foot above finish grade. Provide 3/16 inch steel plate cover 2 inches larger in diameter than CMP, with brackets to fit CMP and two handles welded to plate. Provide a 6 inch by 6 inch hinged opening, with handle, in the steel top plate cover for access to pump the tank without having to remove entire cover.
- B. Pipe Waterstop: Provide waterstop grouting ring for watertight connection between manhole wall and pipe, resilient rubber with stainless steel bands. Conform to physical property requirements of ASTM C 923 and ASTM C 1478. Manufacturer: Trelleborg – NPC – Waterstop Grouting Ring with NPC – Corrugated Pipe Adapter as applicable.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Compact soil foundations for manhole base or tanks to a density of 95 percent of the maximum density per ASTM D 1557. Compaction shall be minimum 1 foot beyond perimeter of concrete base and shall be a minimum of 1 foot in depth.
- B. Invert elevation of pipes entering or exiting manhole or tanks and interior inverts shall not vary more than 0.05 foot from the elevations shown on the Drawings.
- C. Use concrete per Section 03 3053 for formed-in-place foundations or bases, concrete shelves, and pipe supports.
- D. Depending on size of pipe, make connections to existing and new manholes by either core drilling through manhole wall (perform for new precast units), or carefully chipping wall segment. Take care to avoid unnecessary damage to manhole surfaces or walls.
- E. Install waterstop grout ring before placing high strength, non-shrink grout around piping in concrete manhole or tank wall. Coat interior surface of concrete manhole or tank to provide watertight seal, exclude storm drain manhole.
- F. Piping connecting to a polyethylene/fiberglass tank shall be of the same or compatible material as the tank. Connections shall be water proof and per tank manufacturer's instructions.
- G. Set the manhole and septic/holding tank level and plumb. Tanks shall have an anti-flotation device installed as shown on the Drawings and per manufacturers suggested installation.

3.2 HOLDING TANKS

- A. Install precast concrete tank sections with sealing gasket to seal joints between sections. Clean joints prior to installation. Entire width of joint shall receive a layer of sealing gasket.
- B. Cut and install CMP riser to provide a flush and vertical fit with tank. Use mastic and/or grout around and between CMP and top of tank to provide watertight seal.
- C. Provide and install conduits from the building to the holding tank (only) for power and monitoring wiring for a high level alarm system. High level alarm, monitors,

floats, and controls shall be supplied and installed per Section 33 3200, Wastewater Utility Pumping Stations.

- D. Provide communications link between the holding tank monitoring/controls and the TA-46 Wastewater Plant PLC system. System shall be installed and available for testing during the Acceptance Inspection.
- E. Furnish and install all power connections and communication links to and from the control box in accordance with provisions of Division 26.

3.3 GRADE RINGS

- A. Use mastic and/or grout to lay grade rings to provide watertight seal and for the prevention of displacement of rings.
- B. Grade rings shall remain plumb and vertically aligned during backfilling and paving operations.

3.4 MANHOLE FRAME AND COVER

- A. Provide ductile iron castings as shown on the Drawings and as specified herein. The castings shall include manhole frames and covers.
- B. Seal between grade ring and frame with mastic and/or grout to provide watertight seal and for the prevention of displacement of rings and frame.

3.5 TESTING OF HOLDING TANKS

- A. Test sanitary sewer holding tanks for leakage by a water exfiltration test. Furnish all materials and equipment necessary to perform test and conduct test in the presence of the LANL Inspector. Perform test prior to backfilling around tank and prior to placement of access ports and covers. Properly plug inlet and outlet lines and fill and seal holes and joints as specified. There shall be no allowable leakage. If septic or holding tank fails two exfiltration tests, the container shall be spraylined to specifications.

END OF SECTION

FOR LANL USE ONLY

This project specification is based on LANL Master Specification 33 0513 Rev. 6 dated August 27, 2012.

ENCLOSURE 3

Albuquerque Vault Company,
product sheet, 1,000 gal septic tank

EPC-DO: 17-268

LA-UR-17-25313

Date: JUL 11 2017



ALBUQUERQUE VAULT COMPANY

PRE-CAST
CONCRETE
PRODUCTS

300 Airport Dr., NW * Albuquerque, NM 87121 * Phone: 505-836-4404 / Fax: 505-836-5663

Detail # ST-1000-H20

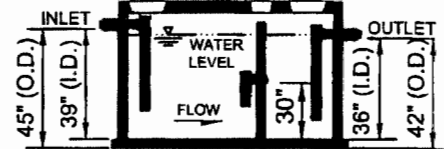
Not To Scale

Aug 3, 2014

1,000 GALLON SEPTIC TANK H-20

GENERAL NOTES:

- Design specifications conform to latest ASTM C1227 specifications for "Precast Concrete Water and Wastewater Structures."
- Concrete compressive strength 4,000 psi minimum.
- Steel reinforcing design to conform to the requirements of ASTM C890 specifications for "Structural Design Loading for Water and Wastewater Structures" and shall utilize grade 60 rebars conforming to the requirements of ASTM A615 or WWF conforming to the requirements of ASTM A185 or both.
- Additional reinforcing at all openings.
- Casting / Top provided and installed by contractor / customer per job requirements. 2", 3", 4" & 6" grade rings can be supplied by Albuquerque Vault Co. or field adjusted, using approved methods by contractor.
- Pipe penetration locations per job requirements. Pipe inlet and outlet locations to have cast-in-place boots. Pipe to be installed by contractor.
- Joints to be sealed with 1" diameter butyl rubber joint sealant conforming to the requirements of latest AASHTO specifications M-198 and meets federal specification SS-S-0021(210-A).
- Method of manufacture is wet cast.
- Sections are monolithic. Weights:
Top Section 5,740 ± lbs.
Bottom Section 9,600 ± lbs.
- Clean-out assembly for grease / sand traps detail required at outlet!
- Excavation hole bottom shall be 2' wider & 2' longer than total outside dimensions.
- Designed for H-20 loading.



ELEVATION

Cert# NM-ALV-024-15-4512

