

GENERAL NOTES

A. GENERAL CONSTRUCTION NOTES

- Elevations are referenced to City of Jacksonville Benchmark with an elevation of 9.027 N.G.V.D. and described as follows: x-cut on top of wall at west end of bridge at DEER CREEK on Talleyrand Avenue.
- The existing industrial, wastewater pretreatment plant and other utility services shall be maintained during the construction of the new facilities.
- The Contractor shall employ a land surveyor, registered in the State of Florida to reference and restore property corners and land markers which may be disturbed by construction.
- The Contractor shall be responsible for establishing project temporary bench marks, elevation, lines and grades for construction.

B. GENERAL STRUCTURAL NOTES

- DESIGN CRITERIA (All Design per latest edition of the Standard Building Code.)

Live Loads (Minimum)	
Roofs & Canopies	20 psf
Public Spaces	150 psf
Equipment Areas	300 psf

- Winds Loads:
In accordance with SBCCI SBC for 90 mph in a coastal zone.
- The design of all structural concrete conforms to "A.C.I. 318 Building Code Requirements For Reinforced Concrete."
- All structural concrete shall have a min. compressive strength of 4000 psi after 28 days unless otherwise noted, designed in accordance with Chapter 3 of A.C.I. 318 Building Code Requirements For Reinforced Concrete."

- All reinforcing steel shall conform to ASTM A615 Grade 60, except bars to be welded shall conform to ASTM A706.
- For size and location of embedded items and openings, the Contractor must refer to mechanical, structural, piping and vendors drawings.
- Equipment anchor bolts shall be set from templates made to fit holes in equipment according to approved manufacturers shop drawings.
- Contractor shall verify all dimensions and existing conditions at the site before proceeding with construction.
- Unless otherwise shown on drawings, min. cover for reinforcing steel shall be as follows:
Concrete Cast Against Earth - 3"
Slabs on Grade - Centered
All Other - 2"
Note: 6 Mil High Density Polyethylene Membrane required under all base slabs.

- All reinforcing shall be fabricated and held securely in position with standard accessories in accordance with ACI 315-80 "Manual of Standard Practice for Detailing Reinforced Concrete Structures"
- Splices in reinforcing, where permitted, shall be as noted, or as follows:
Welded Wire Mesh - One Mesh + 2" (Min.)
Temperature Reinforcing - 12" Min.
All Other Bars - Class "C" Lap.
Splices in Top Reinforcing Shall Be Made at Midspan, Bottom Reinforcing At Support, Or As Noted On Drawings.

- Location of construction joints, proposed by the Contractor, shall be submitted to the Engineer for approval prior to initiating any construction or fabrication which could be affected by the location. All construction joints shall incorporate a properly designed and fabricated PVC waterstop.

- Provide 3/4" chamfer on all exposed edges of concrete.
- All structural openings around, affected by or framing to support mechanical, electrical or plumbing equipment shall be verified with equipment furnished before proceeding with structural work affected.

- COMPACTION
Unless otherwise noted the required percentage of maximum compaction shall be as follows: (Per modified proctor max. dry density)
Under Structures and Slabs - 95%
Under Paved Areas (Subgrade) - 98%
Under Paved Areas (Below 12") - 98%
Landscaped Areas and Other - 90%
Adjacent to Walls and Above Footing - 92%

- STRUCTURAL STEEL
All structural steel and miscellaneous metals work shall be in accordance with the AISC "Manual of Steel Construction." Connections not detailed shall be capable of carrying 100 percent of the maximum web shear as indicated in the beam tables of Part 2 of the AISC Manual. Connection details shall be in accordance with the standard framed beam connections indicated in Part 4 of the AISC Manual.

- Materials shall comply with the following standard specifications:
- Steel Plate, Sections, Angles, Etc. - ASTM A36
 - Bolts - ASTM A325-X High Strength Bolts
 - Anchor Bolts - Type 304 Stainless Steel
 - Welds - AWS A5.1 Or A5.5, E70XX Electrodes

C. COATINGS:

- Apply asphalt paint coating between dissimilar metals and between metals and concrete.
- Exposed concrete surfaces shall be primed and coated with a two component, tar modified, self leveling, polyurethane sealant meeting U.S. Federal Specification SS-S-200D, Type H. Primer shall be compatible with sealant. Concrete surface coatings shall be installed in strict conformance to manufacturer's recommendations. Acceptable Manufacturers: Mameco International, Vulkem 202; Euclid; Thoro Products.

- Non-submerged metal surfaces shall be sandblasted to meet SSPC-SP6 Commercial Blast Cleaning primed and coated with two coats of Epoxy/High Build Urethane Paint equal to TNAMEC System No. 74-1 as follows:

Shop Coat:	66-1211 Epoxoline Primer	Dry Film Mils
2nd Coat:	66-Color H. Build Epoxoline	3.0-4.0
3rd Coat:	74-Endura-Shield	3.0-5.0
	Total Dry Film Thickness	10.0-15.0

- Submerged metal surfaces shall be sandblasted to meet SSPC-SP10 Near White Blast and coated with two coats of Coal Tar Epoxy to a minimum thickness of 8 to 10 mils each. Finish coat must be applied within 96 hours of first coat at 75 F.

D. GENERAL MECHANICAL NOTES

- Steel storage tanks shall be built in accordance with the following standards:

API 650-1988, Welded Steel Tanks For Oil Storage
ANSI/NFPA 30-1990, Flammable And Combustible Liquids Code
UL 142-1987, Steel Above Ground Tanks For Flammable And Combustible Liquids

Tanks shall be supplied with the required openings and connection fittings at the location and size indicated on the drawings. Ladders and platforms shall be supplied meeting or exceeding OSHA Safety Standards. Tanks shall be factory coated in accordance with C.I. of these specifications and shall require field touch up following installation and substantial completion of the project.

- Tank vents shall meet the requirements of the following standards:

API 2000-1982, Venting Atmospheric And Low-Pressure Storage Tanks
UL 142-1987, Steel Above Ground Tanks For Flammable And Combustible Liquids

- Conservation vents shall be a pressure and vacuum relief vent with Viton seating diaphragms capable of adjustable pressure settings of 0.5 oz./sq. in. gauge to 15 psig and vacuum settings of 0.5 oz./sq. in. gauge to 12 psig, non steam jacketed. Body and pallet shall be Type 304 SS. Acceptable Manufacturer: Growth Model 1220 or equal.

- Flame arrester shall be Factory Mutual approved to 10 psig and utilize a spiral wound, crimped ribbon constructed flame elements body and fasteners shall be Type 304 SS. Acceptable Manufacturer: Growth Model 7618 vertical or equal.

- All piping shall be welded seamless schedule 40 standard weight carbon steel pipe meeting the specifications of ASTM A 53 unless otherwise noted.

- Flanges shall be 150 lb welding flanges; screw on or unflanges are not acceptable. All welds shall be full fillet welds, at least 1/8 inch radius.

- Gate valves shall conform to AWWA 509. Valve shall be iron body, non-rising bronze stem, resilient seated type manufactured to equal or exceed all applicable AWWA Standards. Valves shall have a working water pressure rating of 150 psi or better, shall open left and be provided with 2" square wrench nuts, end connections furnished with all necessary joint materials. Valve shall have a full opening flow way of equal diameter of the nominal size of connecting pipe. Valve body, bonnet, stuffing box and disc castings shall be manufactured of ASTM A 126 Class B Gray Iron. All internal ferrous metal surfaces shall be fully coated with an epoxy coating to resist corrosion or tuberculation buildup. The sealing mechanism shall provide zero leakage at working water pressures up through 150 psi with flow in either direction. Approved: Mueller Company; American Darling; or equal.

- Swing check valves shall be cast iron, bronze mounted and conform to AWWA C508-82. Ends shall be flanged joint. Valves shall be furnished with all jointing accessories. Lever and weight, or spring shall be provided where required. All check valves shall be from a single manufacturer. Acceptable manufacturers: American Darling, Clow, Mueller or equal.

- True Union Ball Valves, smaller than three inches, shall conform to ASTM D17894. Ball Valves shall be manually operated and constructed of PVC Type 1, Grade 1, having VITON "O" rings, Teflon seats and high-impact ABS handle. Approved: Plastic Piping Systems, Inc.; Hayward Manufacturing Company, Inc., or equal.

- Air Operated Butterfly Valve shall be a resilient valve with cast iron lug style body, NBR (Acrylonitrile - Butadiene) shaft seal and resilient seat material. Type 316 SS disc and shaft. Cylinder actuator shall be a rotary diaphragm type accepting a 45 psig supply air pressure sized for maximum shut-off pressure differential of 175 psig. Positioner shall accept 3-15 psig signal and open valve on increasing signal and spring close (fail closed). Acceptable manufacturer DeZurik or equal.

- Basket Strainers shall be high capacity, heavy duty baskets with 1/2 lb flange end connections. Basket housing and mesh linings shall be Type 304 SS. Provide adjustable-height leg stand type 304 SS. Acceptable Manufacturer: Rosedale Model 8-30 or equal.

- End Suction Centrifugal Pumps (Pump 1 and Pump 6) shall be horizontal self-priming type. Pump casing shall be cast of Grey Iron No. 30 for maximum operating pressure of 85 psig. Impeller shall be 2-vane, open-type, non-clog, 60-40-18 ductile iron. Shaft shall be 4140 alloy steel and sealed against leakage by a balanced mechanical seal of tungsten-titanium carbide alloy. Mechanical seal shall be immersed in separate oil filled reservoir equipped with electrode sensing device to indicate presence of water in reservoir and seal failure. Upon sensing water in oil reservoir, a signal shall be sent to the control panel to de-energize the pump motor and activate the alarm. Acceptable Manufacturer: Gorman Rupp Model T3A-B or equal.

Operating Conditions:

	Pump 1	Pump 6
a. Discharge Size	3" FL	3" FL
b. Suction Size	3" FL	3" FL
c. Pump Speed	1050 rpm	750 rpm
d. Guarantee Point	150gpm @ 22" TDH	150gpm @ 11" TDH
e. Efficiency + Guarantee Point	45%	47%
f. Impeller Diameter	8-1/2"	8-1/2"
g. Min. Motor Size	3 BHP	1.5 BHP

Pump Motors shall be horizontal, solid shaft, squirrel cage, high efficient-type, explosion proof, induction type with normal starting torque and low starting current characteristics, suitable for 3 phase, 60 hertz, 230-460 volts AC electrical current. Motor shall be equipped with corrosion resistant hardware.

- Air Operated Diaphragm Pump shall be a double diaphragm, seal-less type of cast iron construction with integral ball check valves and Viton elastomer. Acceptable Manufacturer: ITT Marlow Model 2A0D-C or equal.

Operating Characteristics:

	Pump 2	Pump 3
a. Air Supply Volume	60 scfm	20 scfm
b. Air Supply Pressure	45 psig	24 psig
c. Pump Capacity	100gpm @ 50" TDH	40gpm @ 40" TDH
d. Model	2A0D-C	1-1/2 A0D-C

- Submersible Effluent Pump and Sump Pump shall be constructed of grey cast iron. All exposed fasteners in contact with the effluent shall be 316 stainless steel. Pump exterior shall be sprayed with PVC epoxy primer and shall have a chloric rubber paint finish. All mating surfaces requiring water tight sealing shall be machined and fitted with nitrile rubber o-rings. Cable shall enter the pump through a water tight seal and junction chamber shall be sealed from the motor. Each pump shall be provided with mechanical shaft seals which operate in an oil bath. Seal faces shall be self-aligning and positively driven. Each seal shall be held in place by separate springs. The pump shaft shall be stainless steel and shall rotate on two oil lubricated bearings. The pump impeller shall be nodular or ductile iron, statically and dynamically balanced.

Pumps shall be submersible non-clog sewage pumps as manufactured by Davis EMU or approved equal meeting the following conditions:

	Pump 4	Pump 5
a. Model	3" FA 101 195	3" FA 82-150
b. Pump Speed	1740 rpm	1740 rpm
c. Capacity	150 gpm @ 53' TDH	41 gpm @ 31' TDH
d. Motor Size	10 BHP	2 BHP
e. Efficiency	49%	40%

Pump motor shall be Class F insulated, NEMA B design squirrel cage induction type housed in a watertight chamber with normal starting torque and low starting current characteristics, suitable for 3 phase, 60 hertz, 230-460 volts AC electrical current. Motor shall be equipped with corrosion resistant hardware. Thermal and moisture sensing shall be provided.

- Float Switches: Level control shall be magnetically operated and include cast iron float chamber with bolted inspection plate. Float shall be removable for cleaning without disconnecting piping. Contacts shall be hermetically sealed mercury switch type. Unit shall be Mercoird Corp. Model 102 WT-4815 or approved equal.

- Control panel and components shall be suitable for outdoor use in Class 1 Division 1 environment. A single control panel shall be provided with circuit breakers and control features for the six pumps and flow metering equipment. Cabinet shall be completely factory wired, assembled and tested, and clearly show the Underwriter's Laboratory label. All wiring shall be in accordance with the National Electric Code. Run all wiring external to the cabinet in rigid conduit.

- Carbon Adsorption units shall be modular, deep bed refillable units with integral vapor distributors and low pressure drop not exceed 8 inches of water column per 100 cfm of air flow. Units shall be provided with rainshield and condensate drain. Vessel shall be D.O.T. 58 steel drums with Type 304 SS air distributor. Interior shall be double lined with epoxy/phenolic coating. Provide one saturation indicator. Acceptable Manufacturer: NIXTOX-N50 distributed by the TIGG Corp. or equal.

- Orifice Plate shall conform to applicable portions of ASME "Fluid Meters" (Sixth Edition) and AGA Report 3 (1969), adopted as ANSI/API 2530. Plate shall be constructed of 316 SS with concentric square inlet edge. The plate shall be labeled to indicate flow direction and shall be suitable for use with ANSI Class 150 lb. flanges. Orifice Plate shall be Series 120 as manufactured by The Foxboro Company or approved equal. The orifice plate shall be equipped with a pneumatic d/p Cell Transmitter to measure differential pressure and transmit a proportional pneumatic output signal. Output signal shall be 3 to 15 psi with a supply pressure of 20 psi. Pneumatic transmitter shall have an accuracy of $\pm 0.5\%$ and shall be Series 15A as manufactured by the Foxboro Company or approved equal.

- Compound gauges shall be installed on all tank bridges and on the suction and discharge of all pumps and flow metering devices. Case and face ring shall be 304 SS, bourdon tube and movement shall be 304 SS, dials shall be 4-1/2 inch diameter with black lettering on white background. Dial gauge shall be 30 inches mercury vacuum to 60 psi pressure. All gauges shall be glycerin filled and equipped with 1/4 inch brass threaded fittings. Acceptable manufacturers: McDaniel Safety Gauge, Heksler, Ashcraft or equal.

- Thermometer shall have a 5-inch head size with adjustable angle capability. Case and face ring shall be type 304 SS; socket and stem shall be type 304 SS. Provide thermometer well (type 304 SS). Temperature range 0 to 250 degrees F. Acceptable manufacturers: Foxboro, or approved equal.

- Temperature transmitter shall be either resistance temperature detector (rtd) or thermocouple type, fully adjustable over entire range and span to limits specified herein. Transmitter shall transmit signal to sound alarm at control cabinet at upper and lower limits of specified temperature range. Provide all ac/dc conversion, control wiring, conduits, fasteners and appurtenances for complete installation ready for operation. Acceptable manufacturer: Foxboro or equal.

- Pressure transmitter shall connect to tank bridle and shall monitor internal tank pressure. Unit shall be an electronic gauge transmitter and shall be fully adjustable over entire span d and range of limits specified herein. Transmitter shall transmit signal to sound alarm at control cabinet at upper and lower limits of specified temperature range. Provide all ac/dc conversion, control wiring, conduits, fasteners and appurtenances for complete installation ready for operation. Acceptable manufacturer: Foxboro or equal.

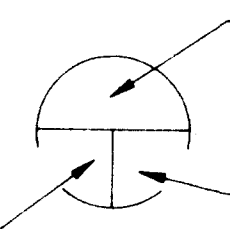
DRAWING INDEX

SHEET NO.

SHEET TITLE

- | | |
|-----|------------------------------------|
| C-1 | GENERAL NOTES & DRAWING INDEX |
| C-2 | PROCESS & STORAGE AREA - PLAN |
| C-3 | PROCESS & STORAGE AREA - SECTIONS |
| C-4 | PROCESS & STORAGE AREA - SECTIONS |
| C-5 | STRUCTURAL - SITE PLAN & SECTIONS |
| C-6 | STRUCTURAL - TANK PLANS & SECTIONS |
| C-7 | PIPING SCHEMATIC |

SHEET NUMBER
WHERE TAKEN



NUMBER OR LETTER
DESIGNATION

SHEET NUMBER
WHERE SHOWN

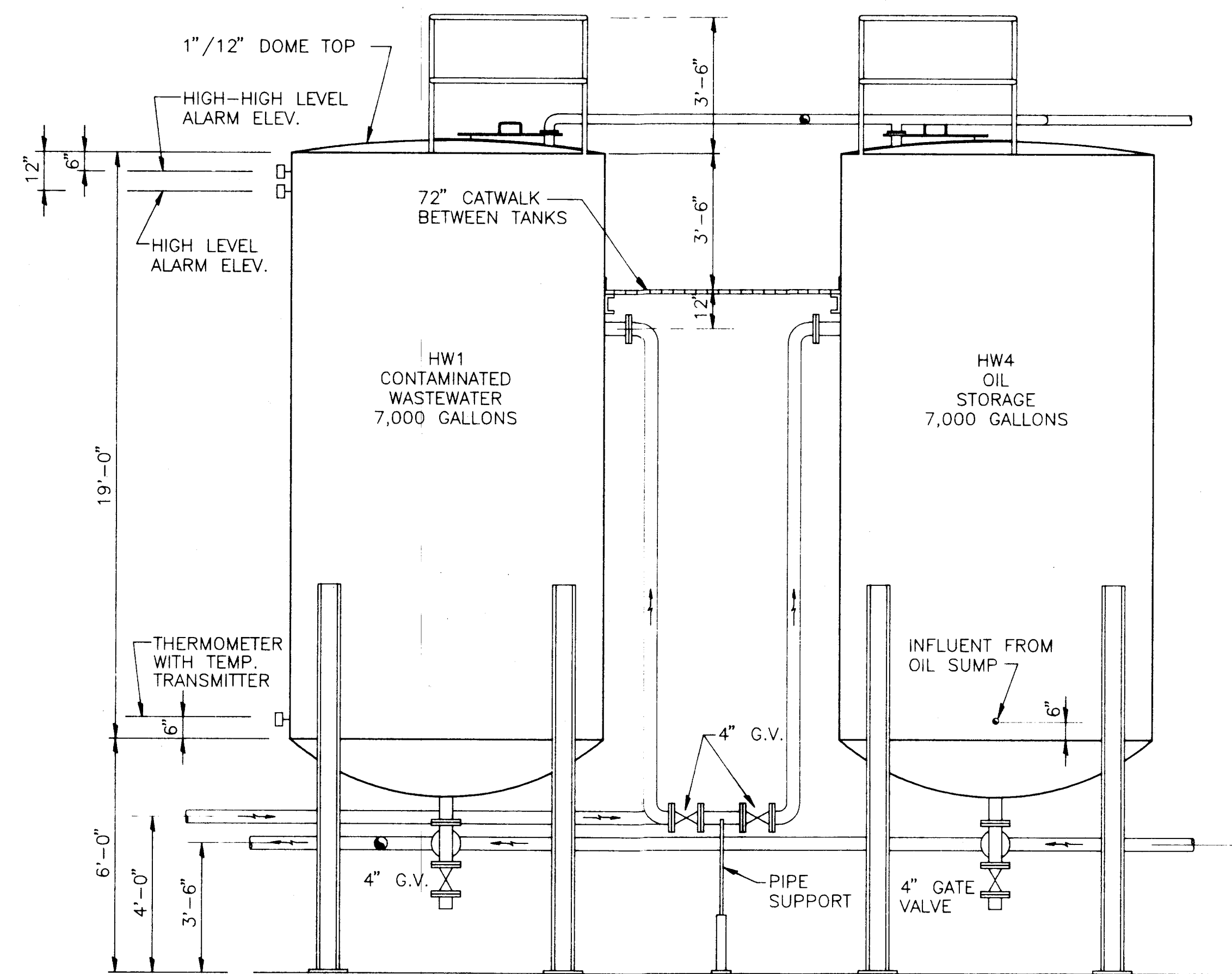
DETAIL/SECTION KEY

MITTAUER/FITZPATRICK, INC.
CONSULTING ENGINEERS
ORANGE PARK, FLORIDA (904) 276-5236

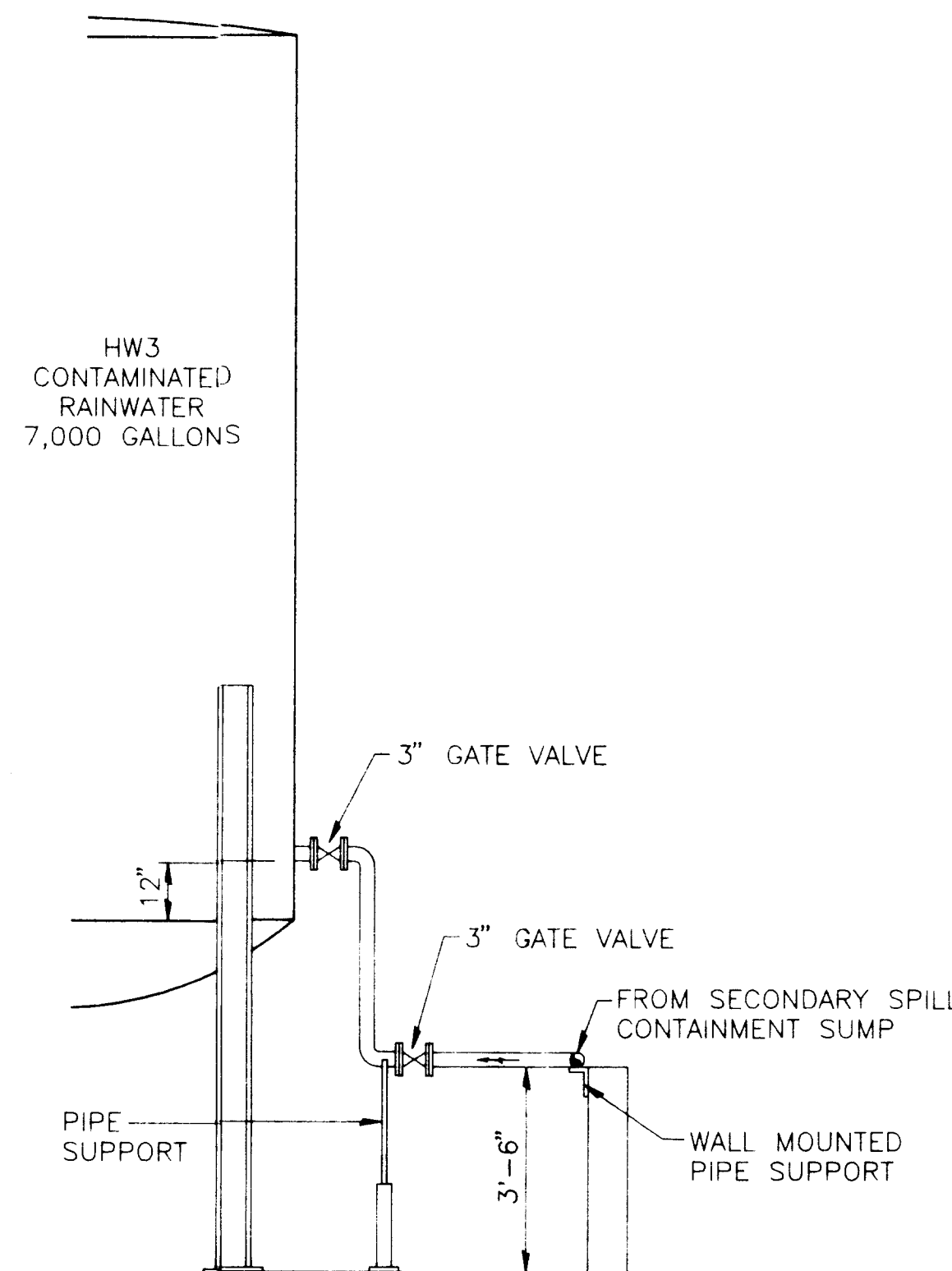
INDUSTRIAL WATER SERVICES, INC.
Hazardous Waste Management Facility
General Notes & Drawing Index
Jacksonville, Florida

JOB NO.
9122-02-1
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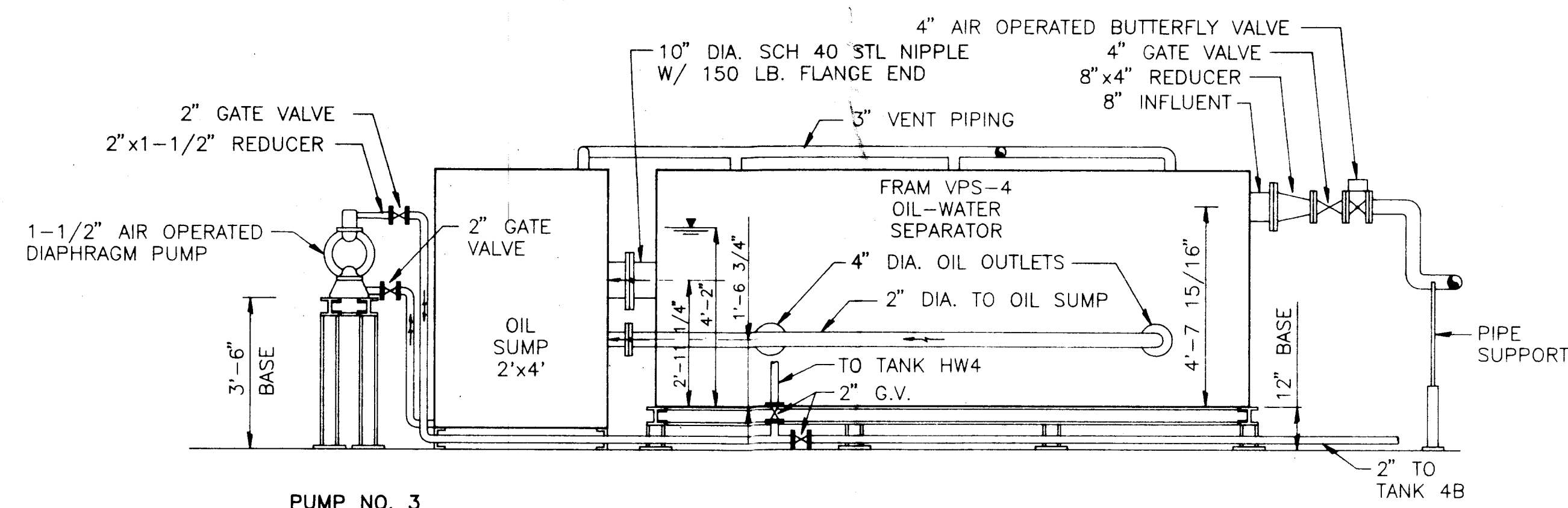
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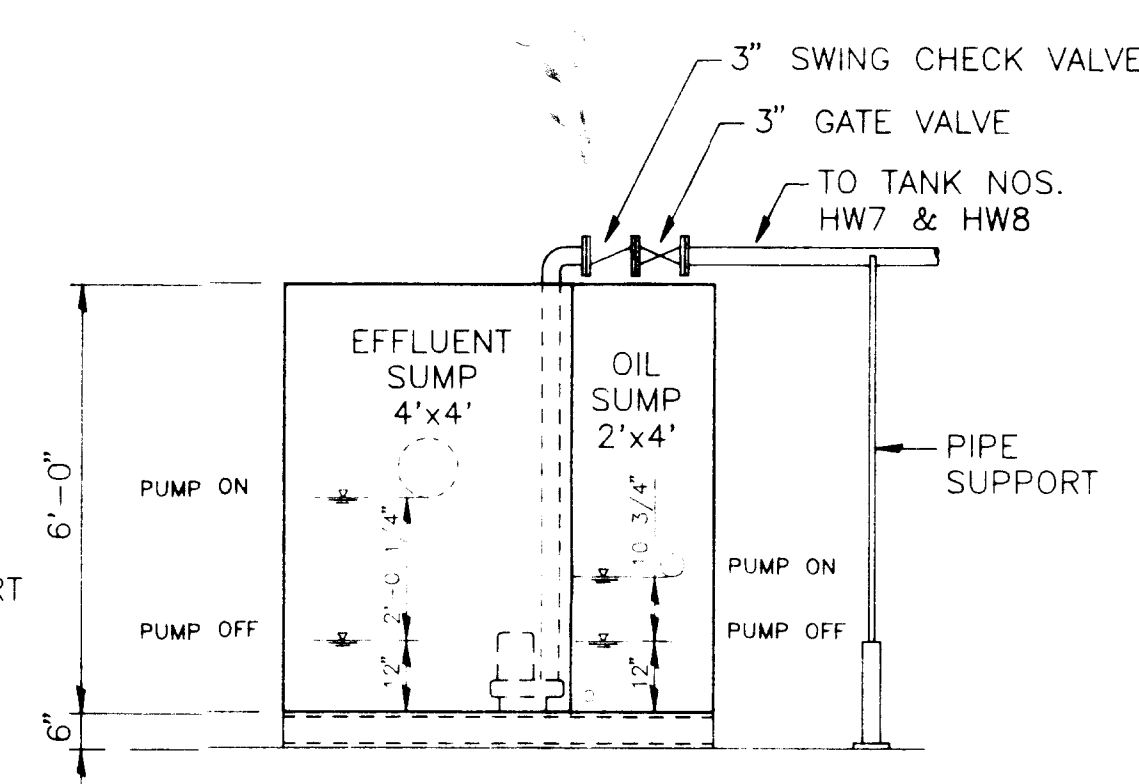
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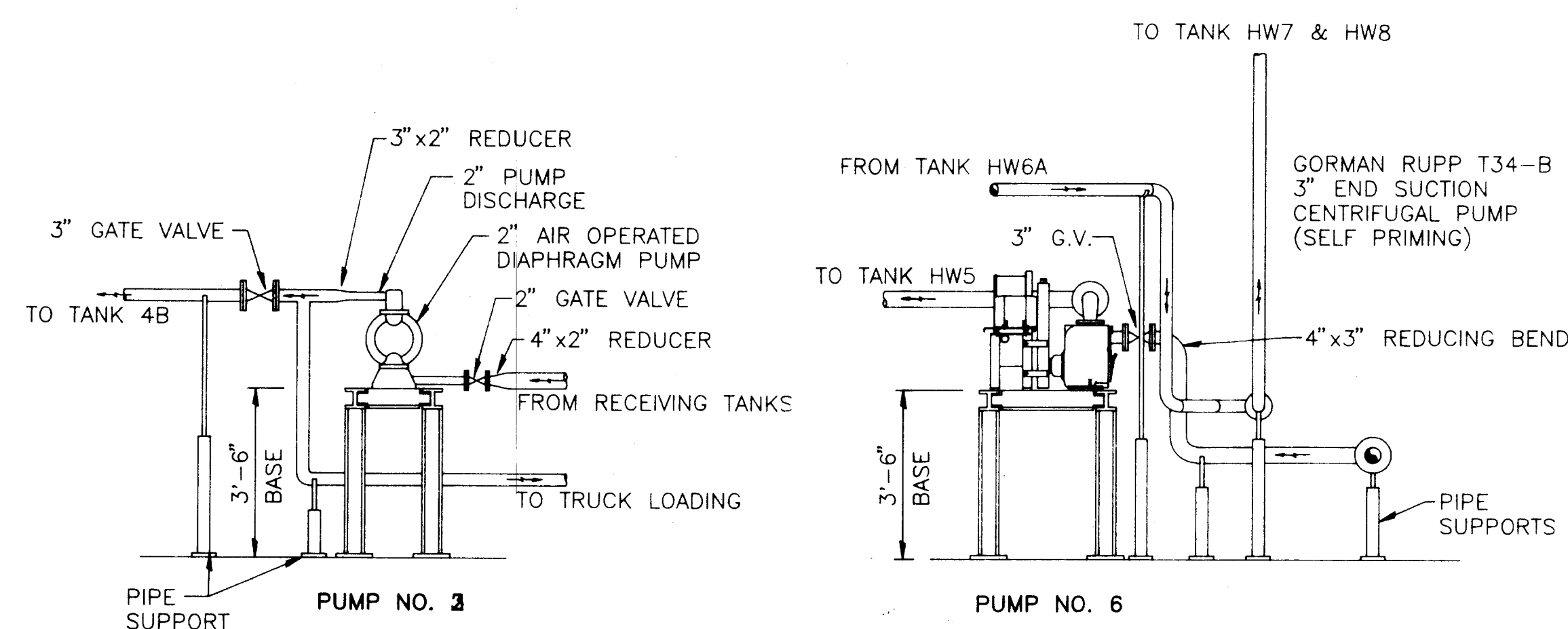
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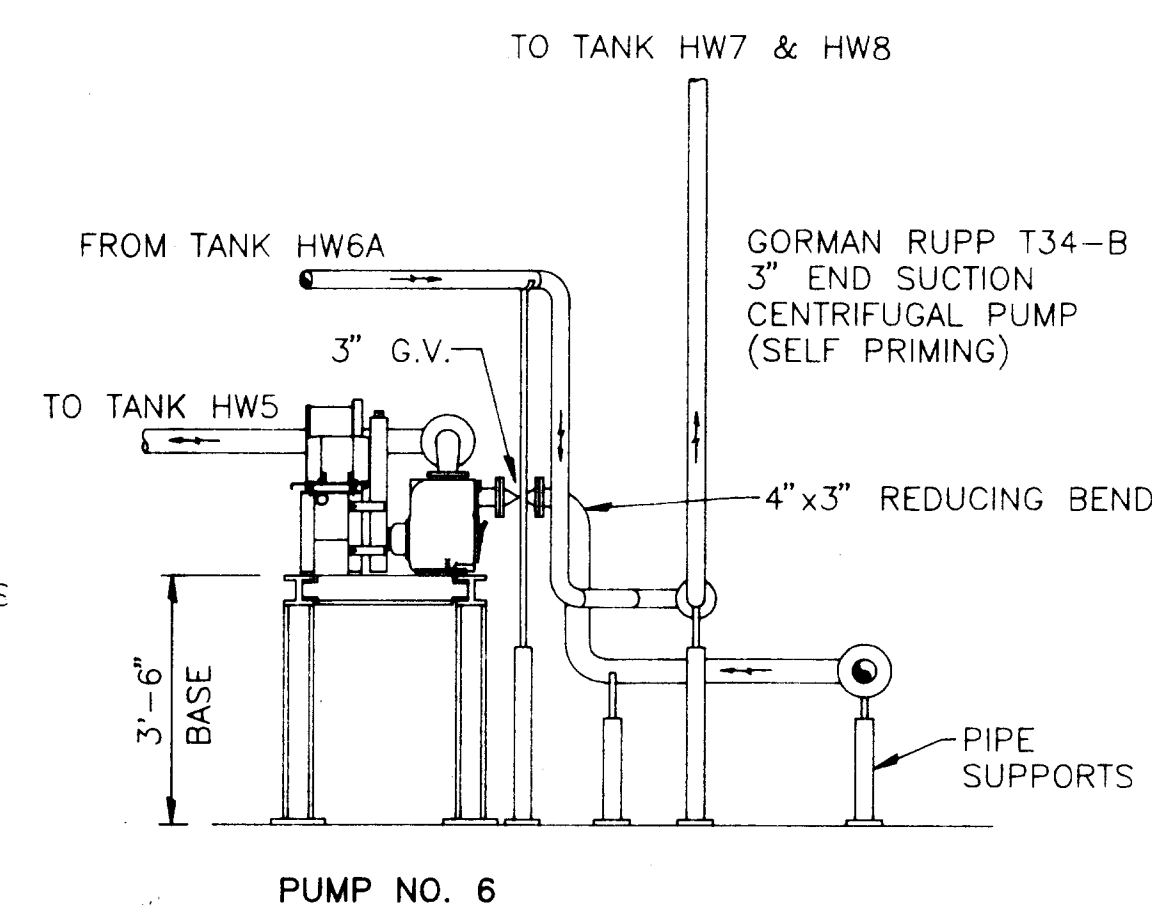
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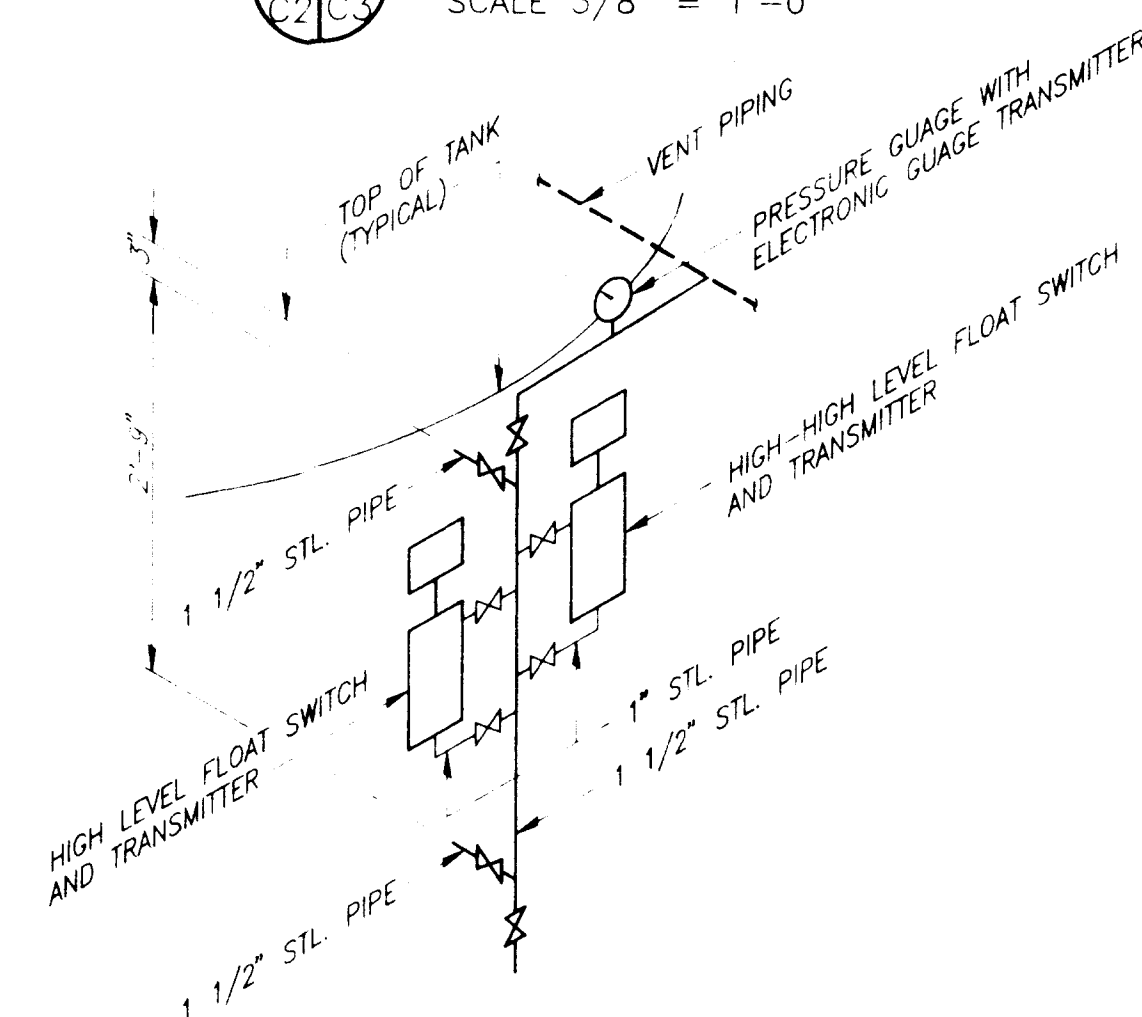
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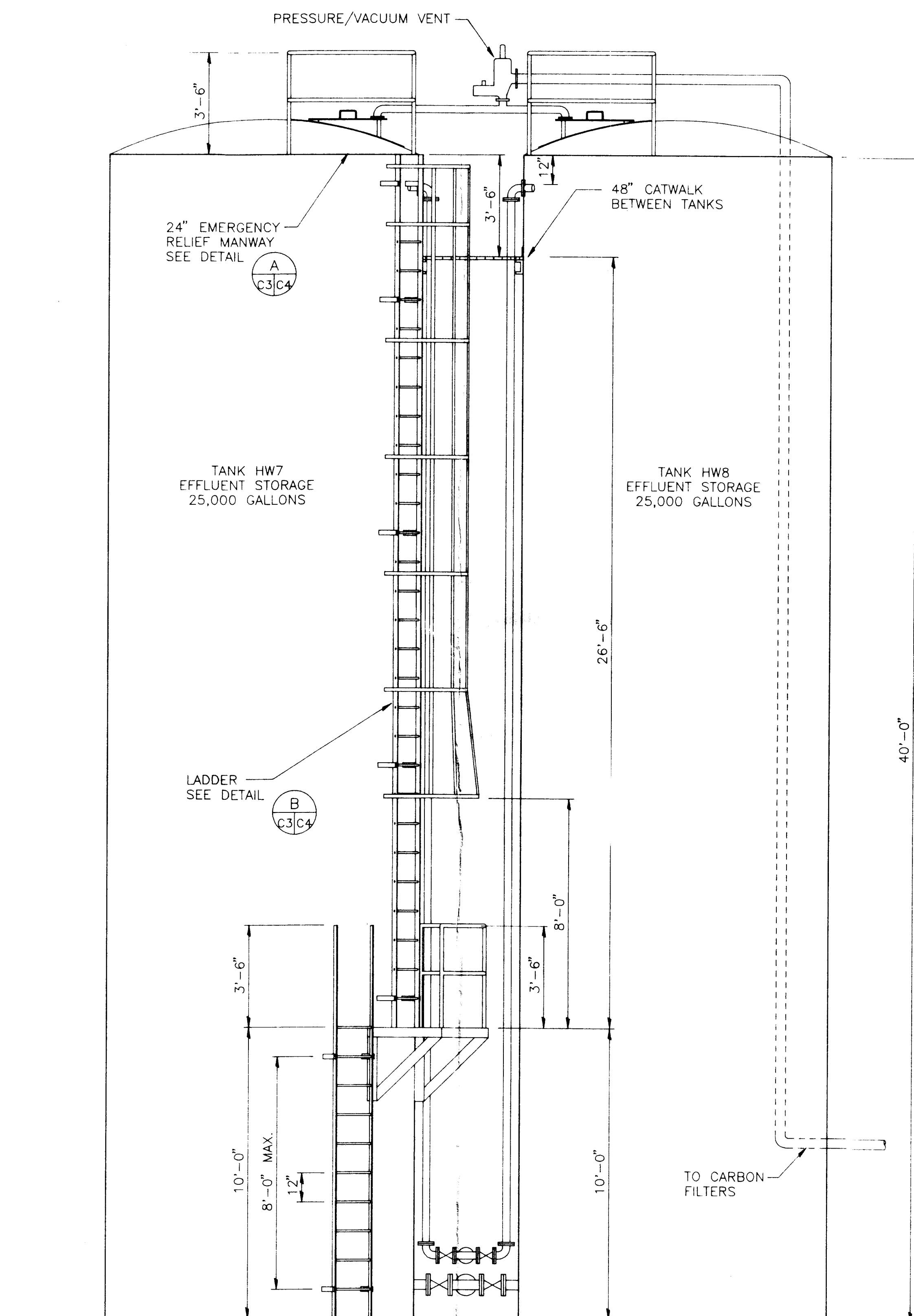
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6 SECTION
C2/C3 SCALE 3/8" = 1'-0"



A TANK BRIDLE DETAIL
C2/C3 SCALE 3/4" = 1'-0"



7 SECTION
C2/C3 SCALE 3/8" = 1'-0"



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INDUSTRIAL WATER SERVICES, INC.
Hazardous Waste Management Facility
Process & Storage Area - Sections
Jacksonville, Florida

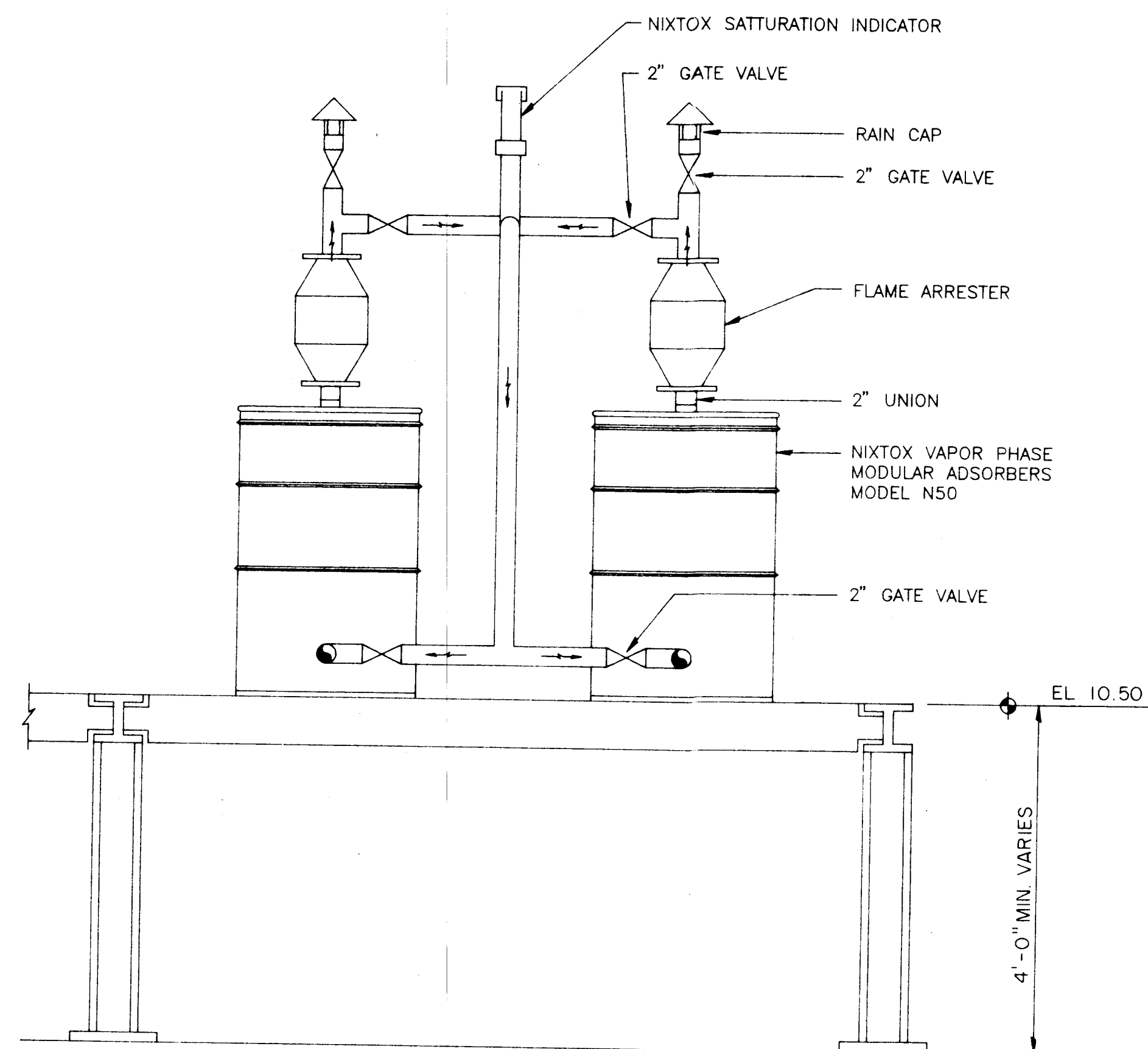
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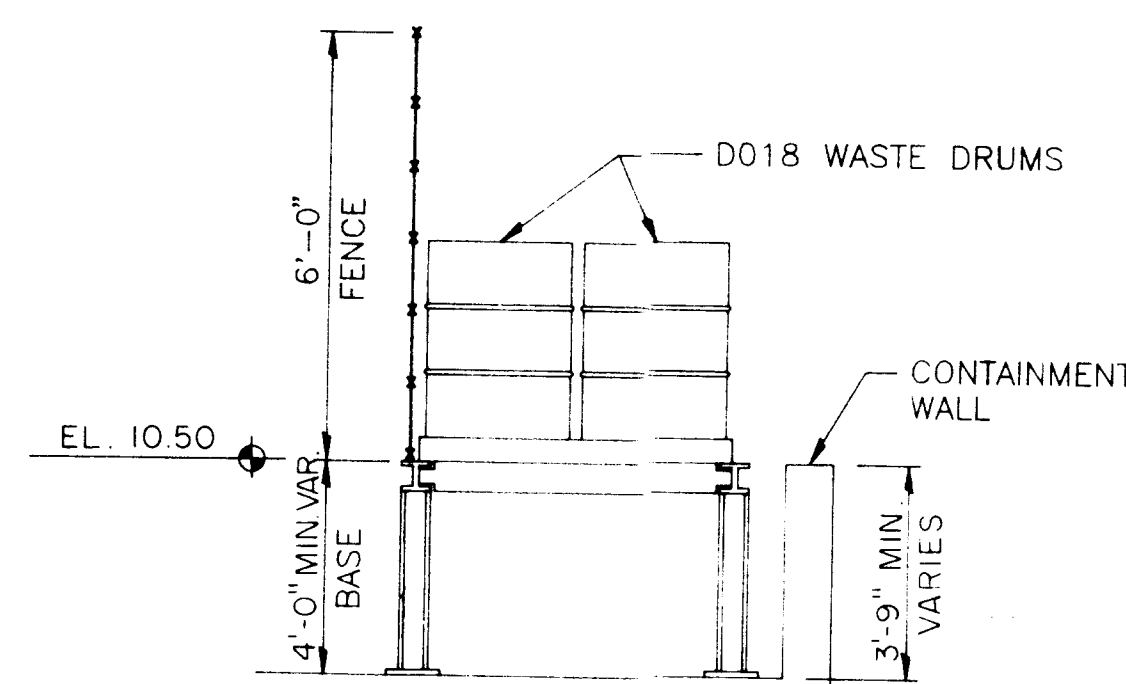
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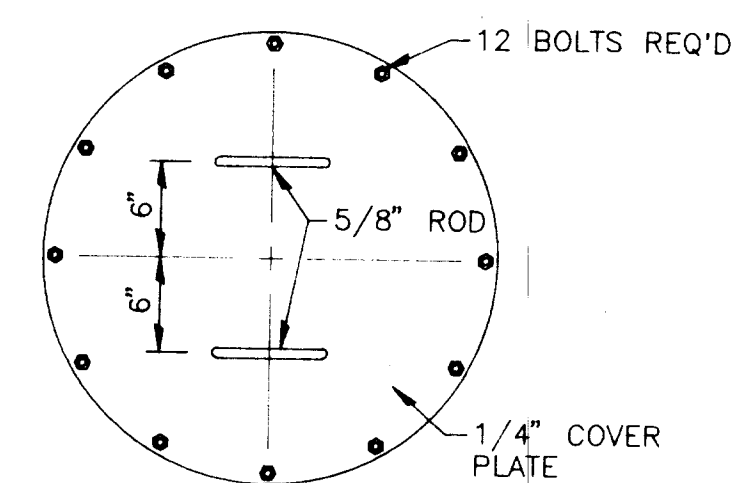
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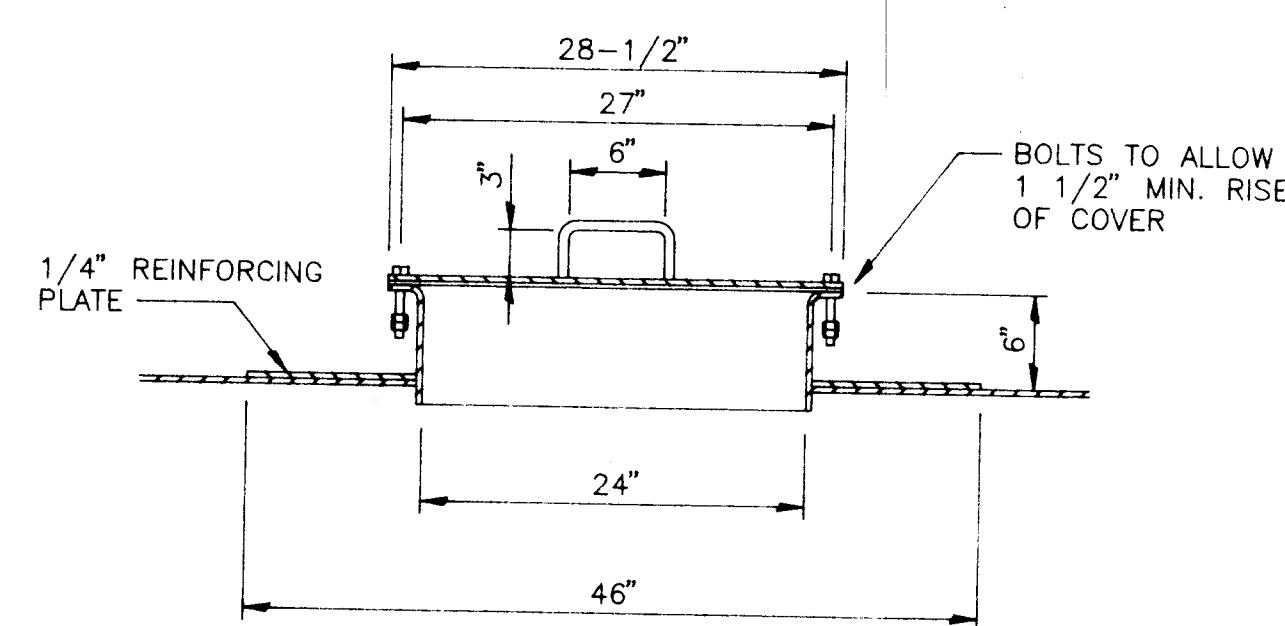
8 CARBON FILTERS
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9 SECTION
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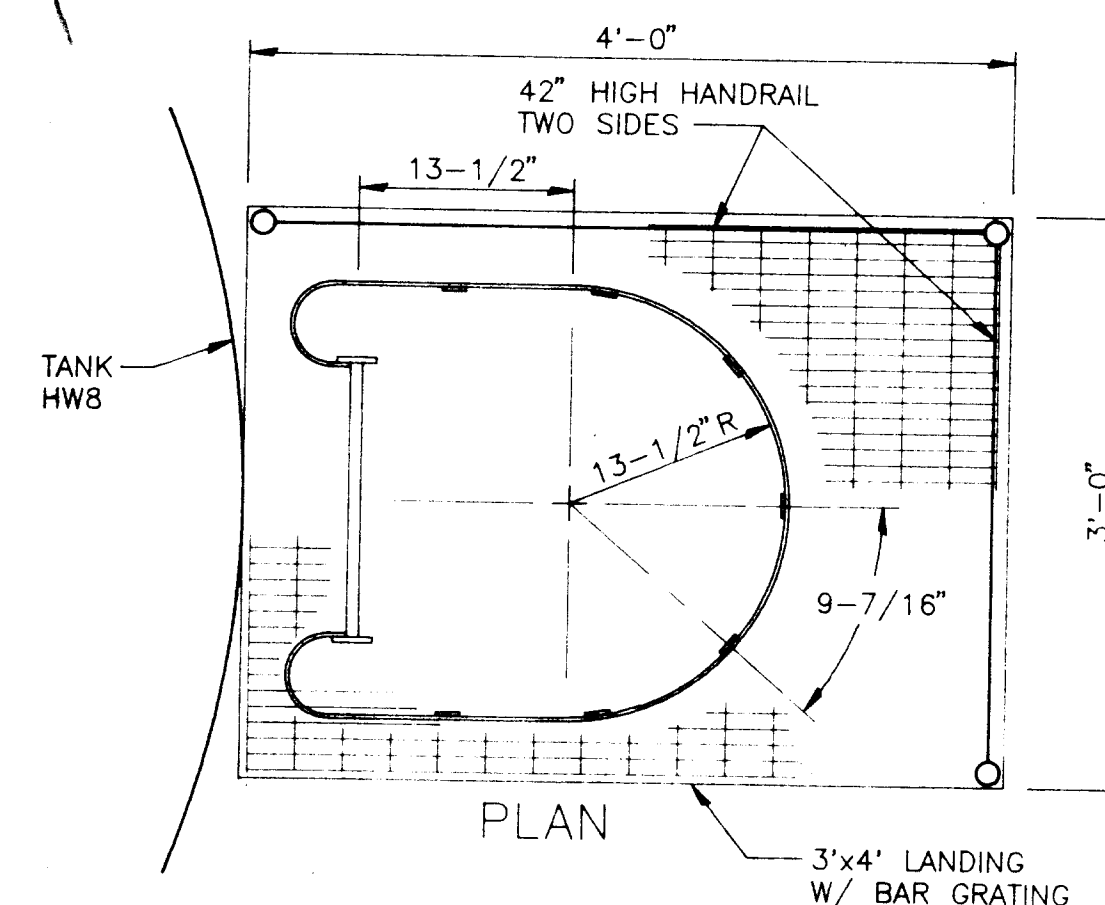


PLAN

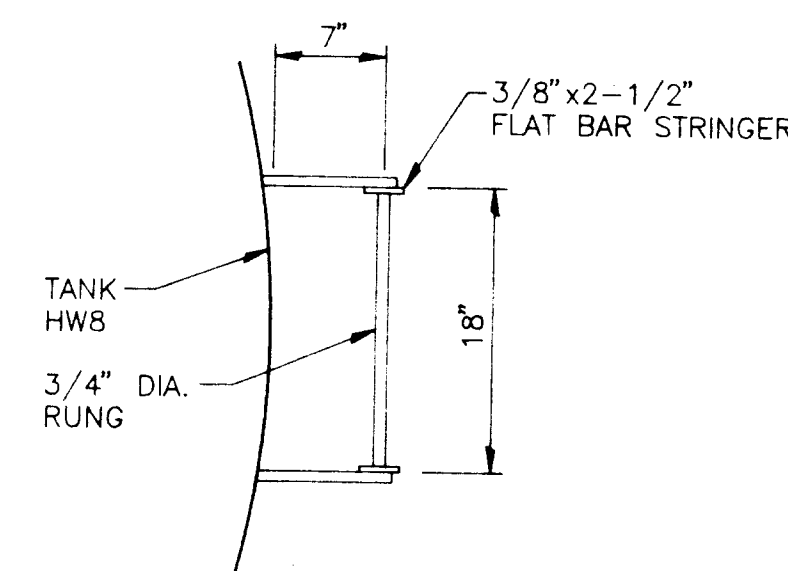


SECTION

A TANK MANWAY DETAIL
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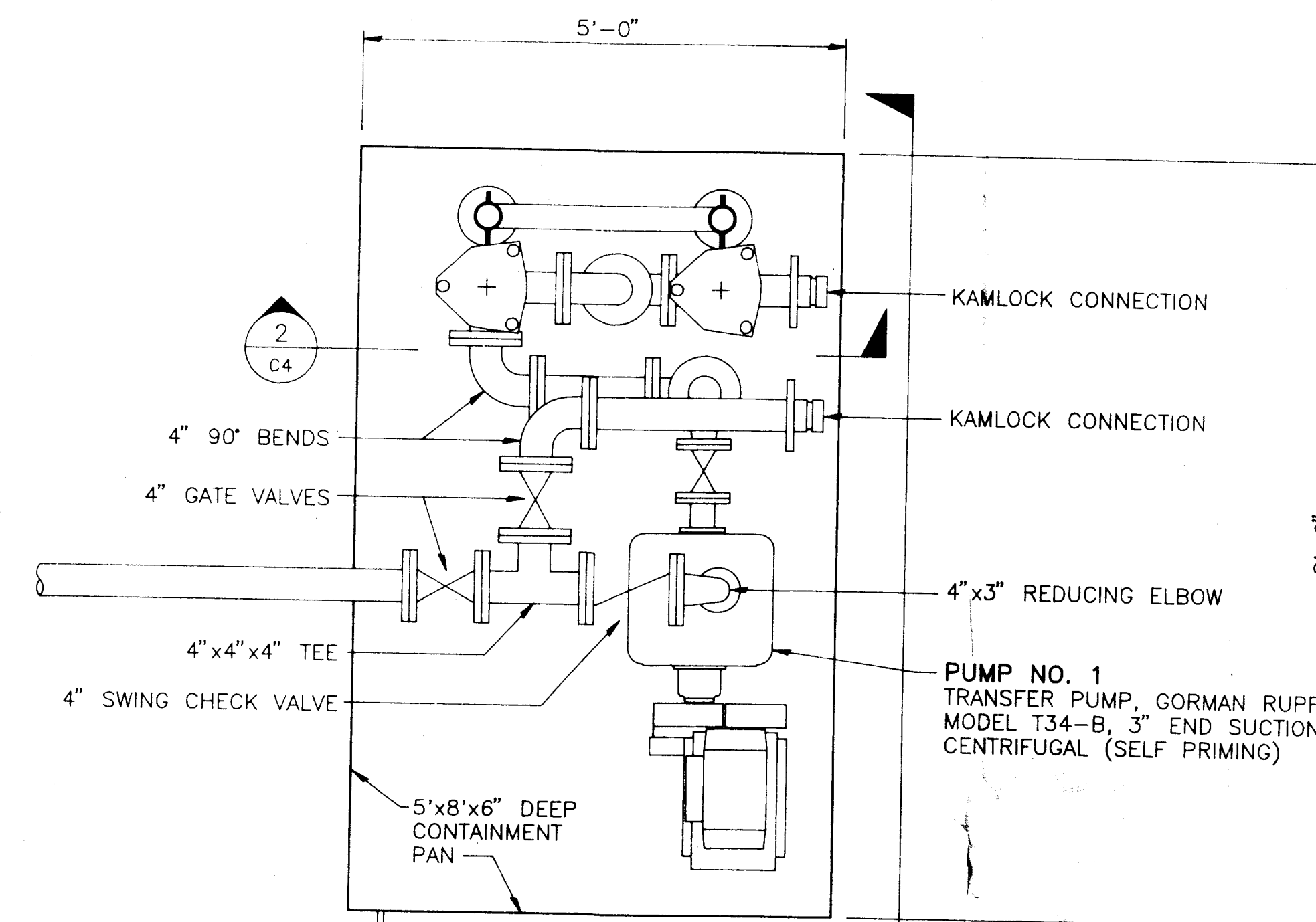


PLAN



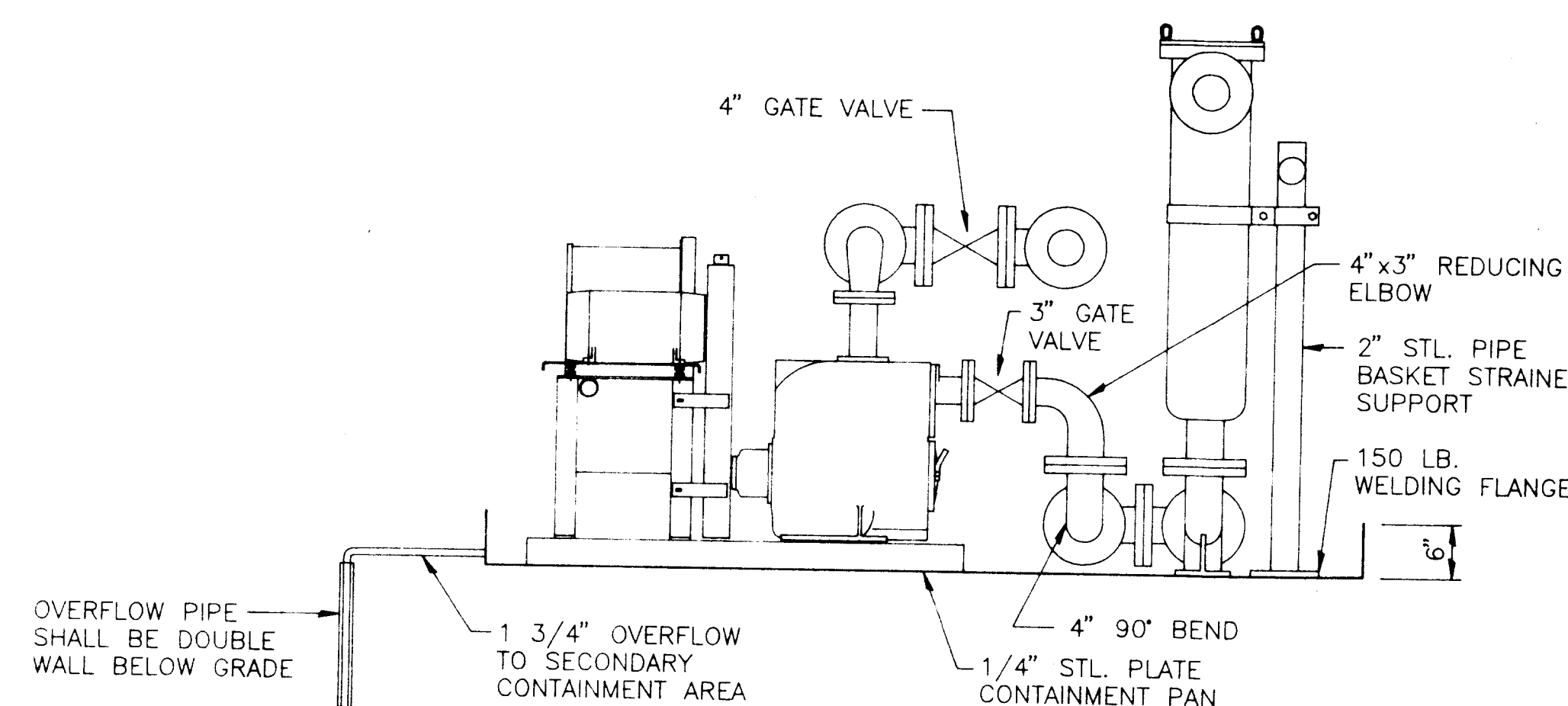
PLAN

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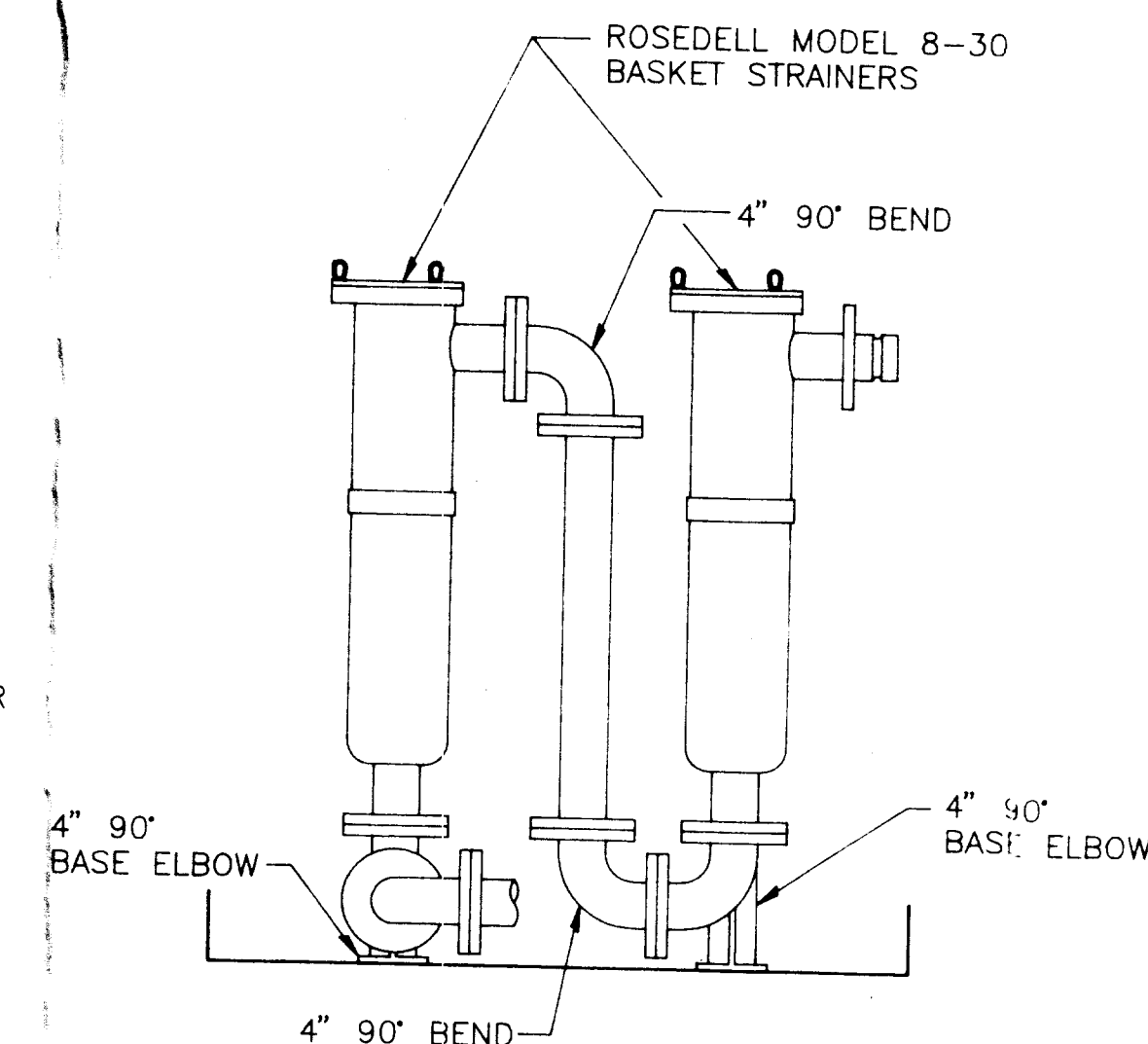


PLAN
SCALE 3/4" = 1'-0"

NOTE: ALL FITTINGS TO BE WITHIN CONTAINMENT AREA



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



2 SECTION
SCALE 3/4" = 1'-0"

OFF-LOADING PUMP & FILTERS DETAILS
SCALE 3/4" = 1'-0"

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INDUSTRIAL WATER SERVICES, INC.
Hazardous Waste Management Facility
Process & Storage Area Plan & Sections
Jacksonville, Florida

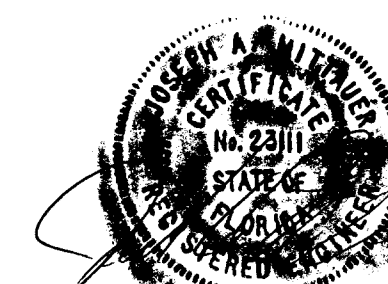
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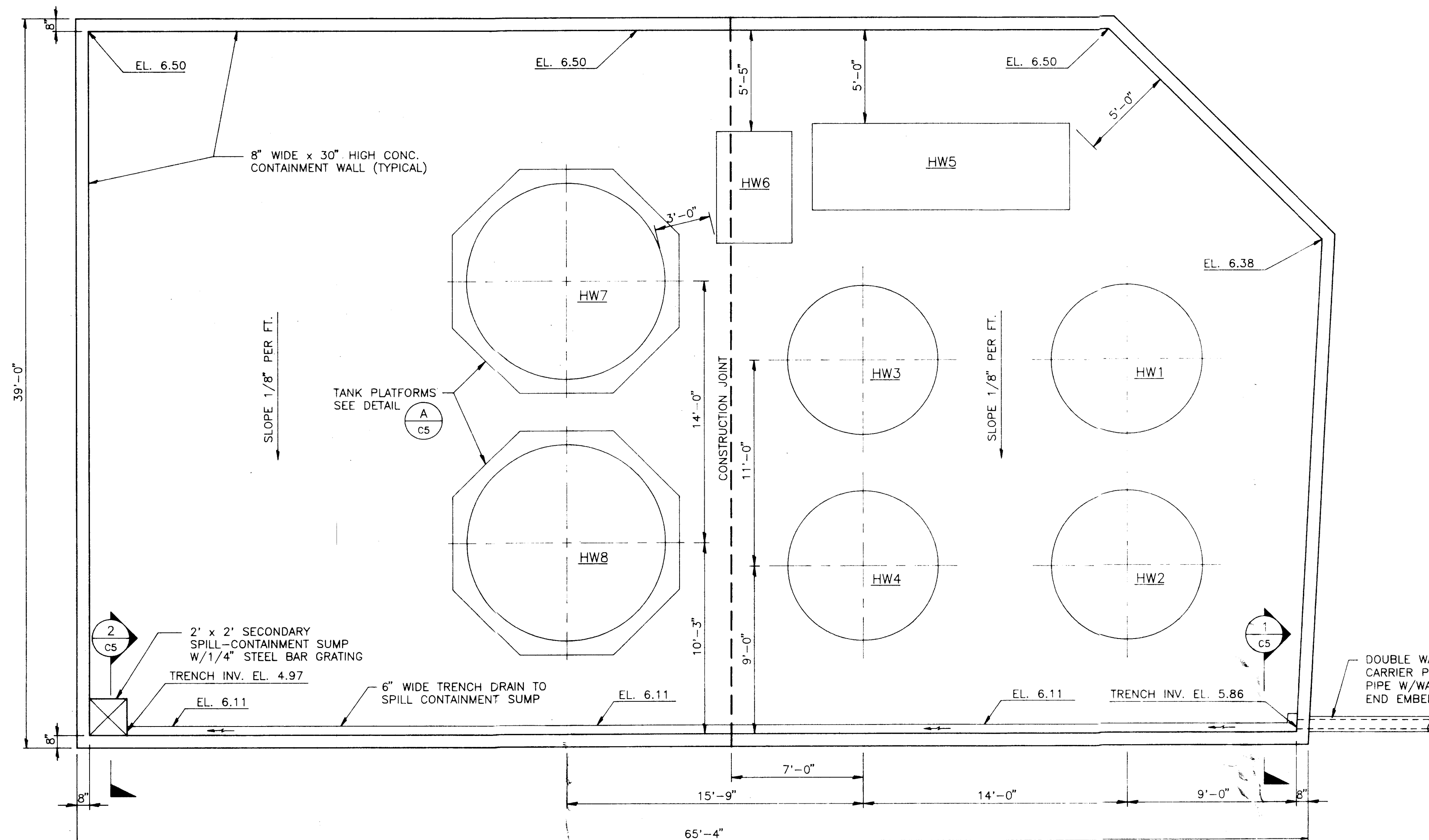
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REVISION DESCRIPTION

NO DATE BY

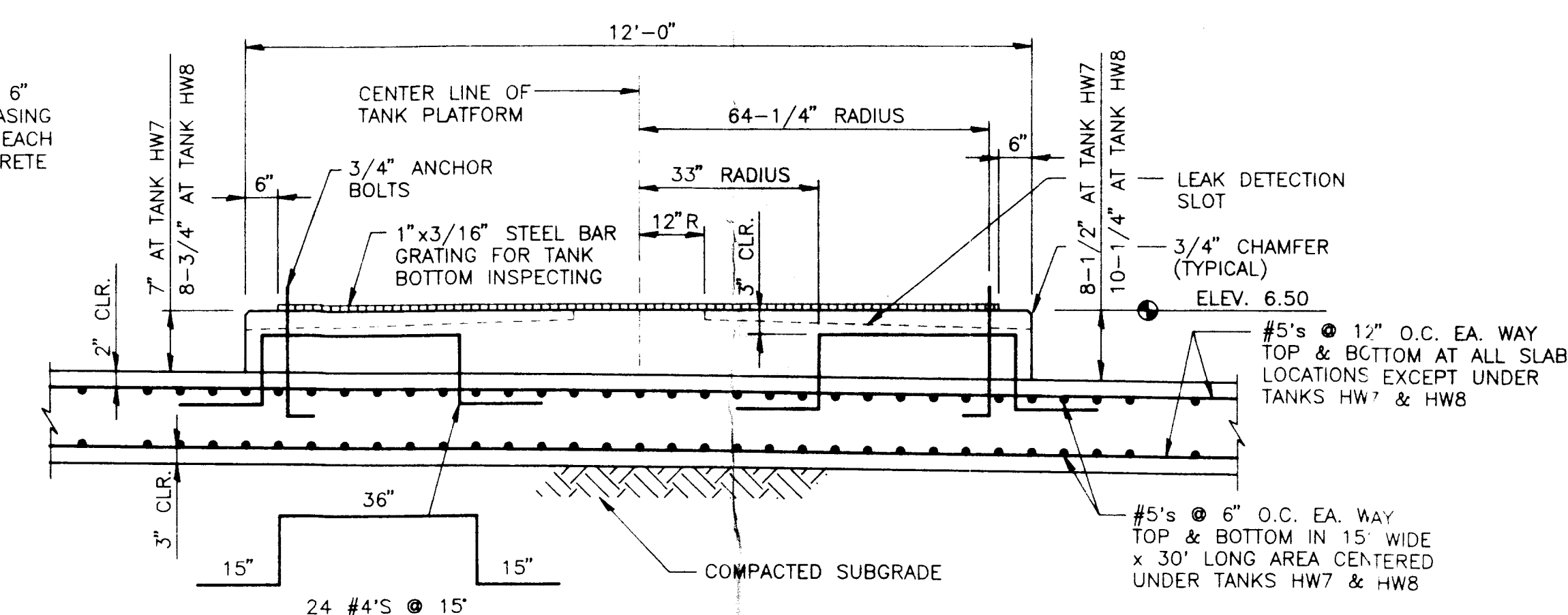
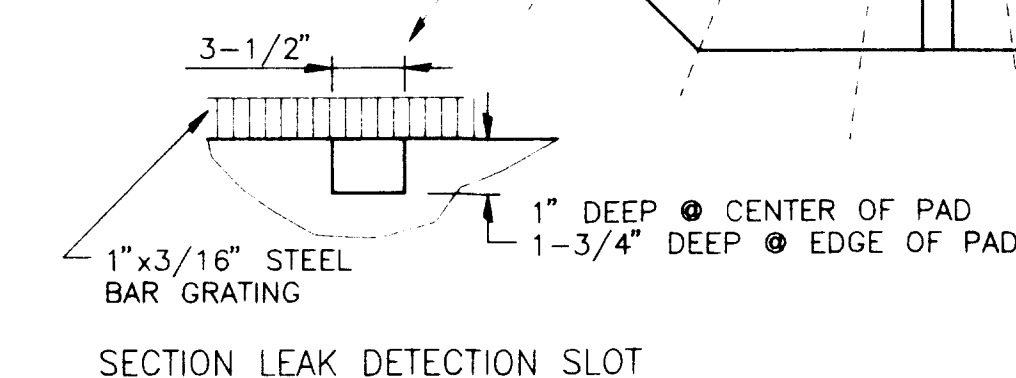
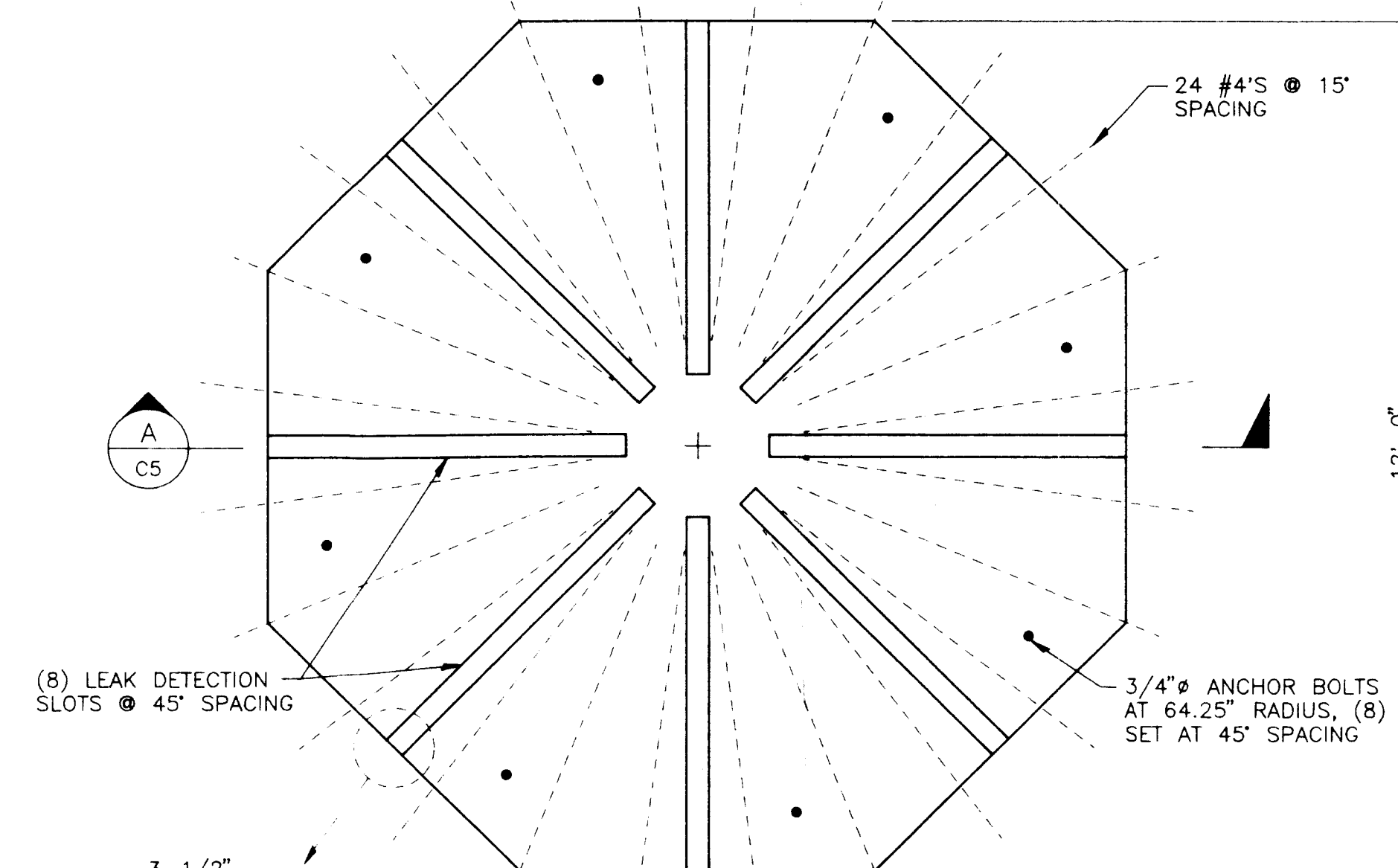
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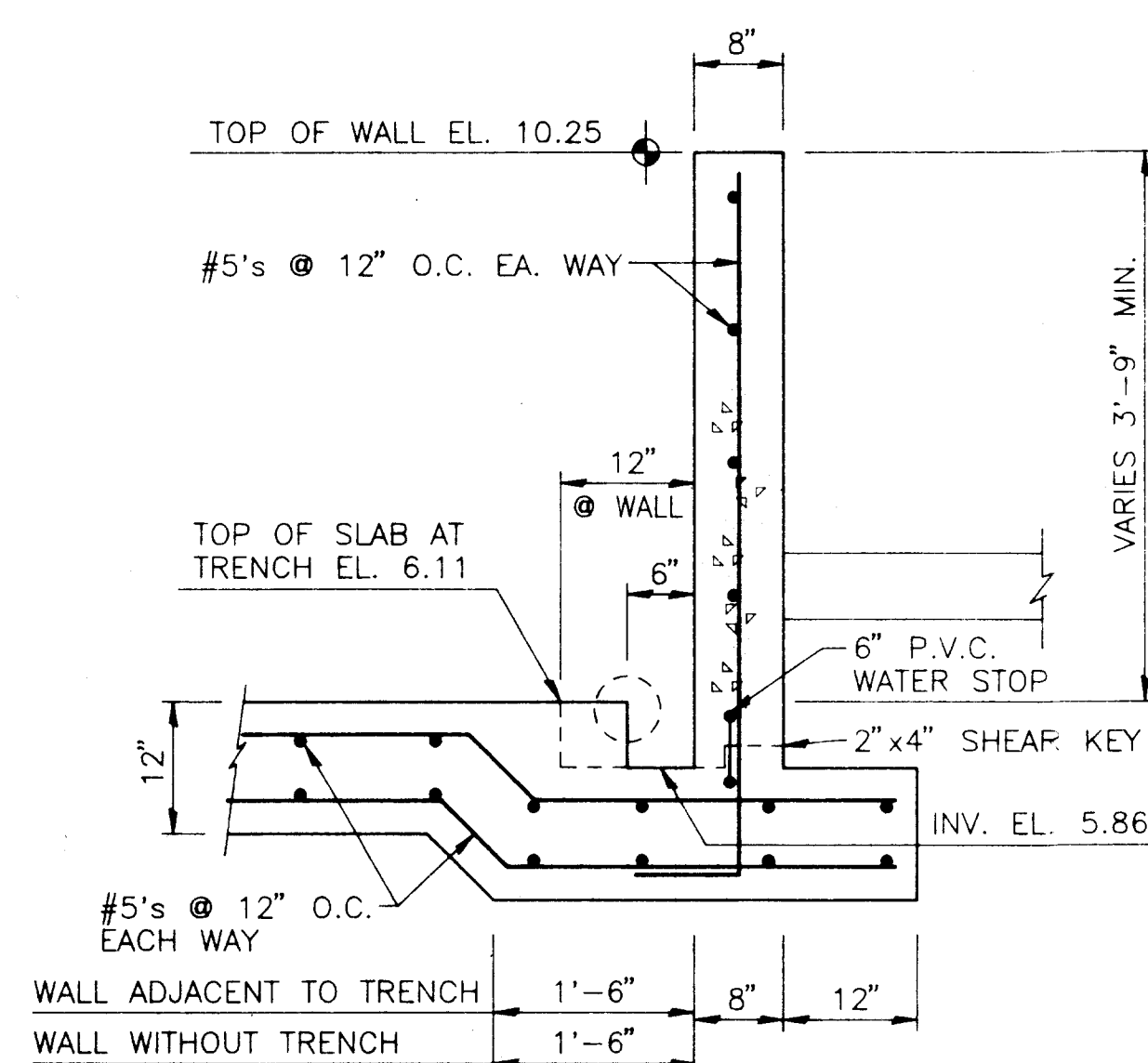
PROCESS & STORAGE AREA - PLAN

SCALE 1/4" = 1'-0"



TANK PAD DETAILS - HW7 & HW8

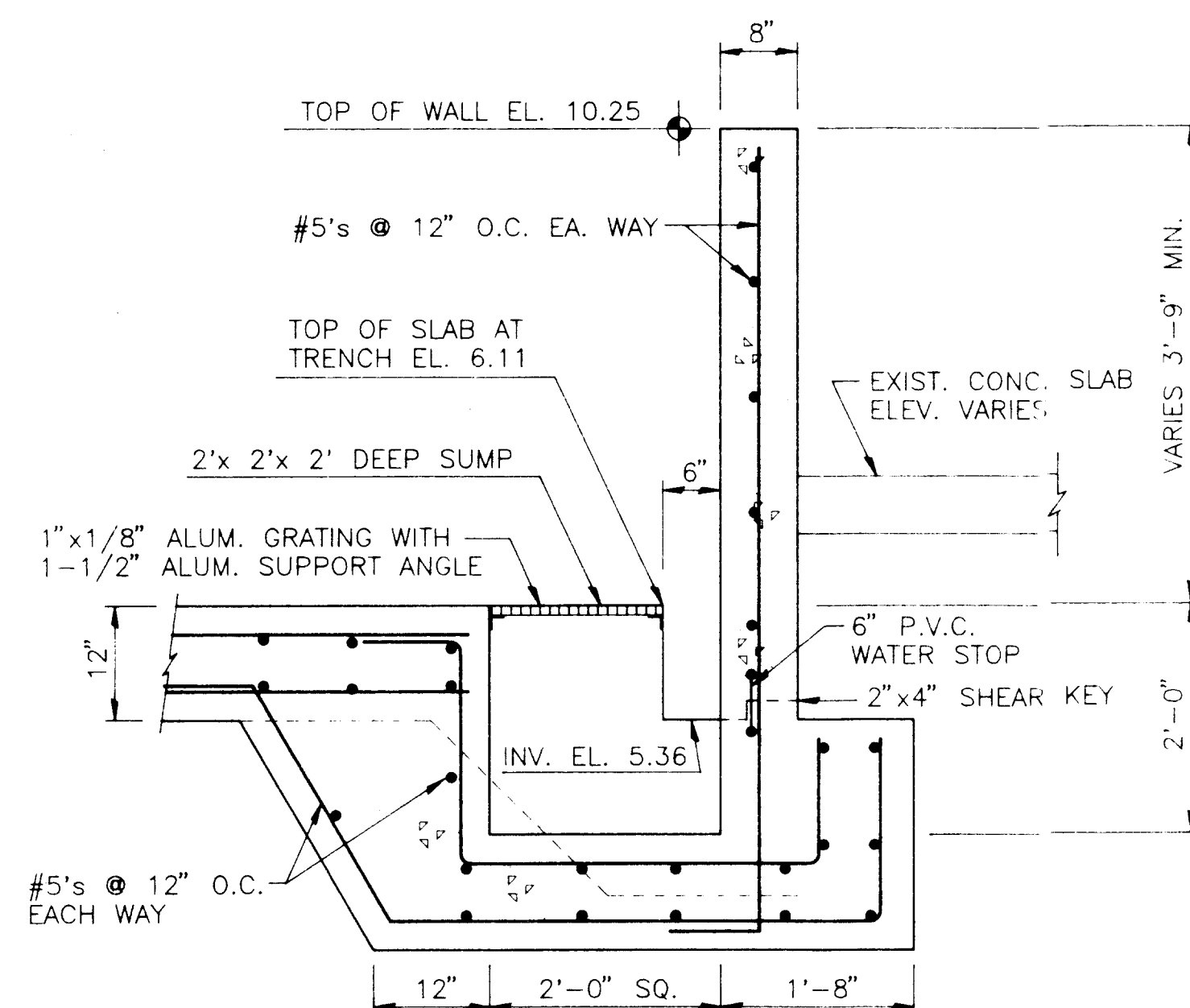
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SECTION

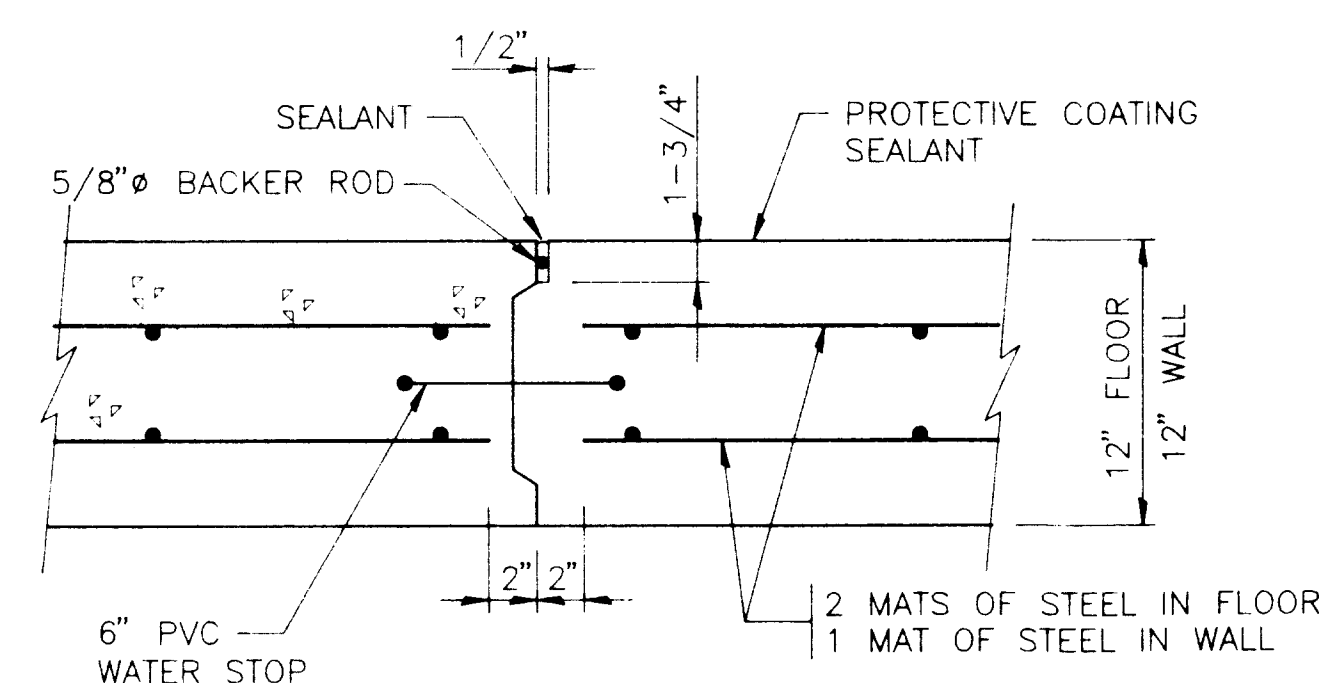
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C5

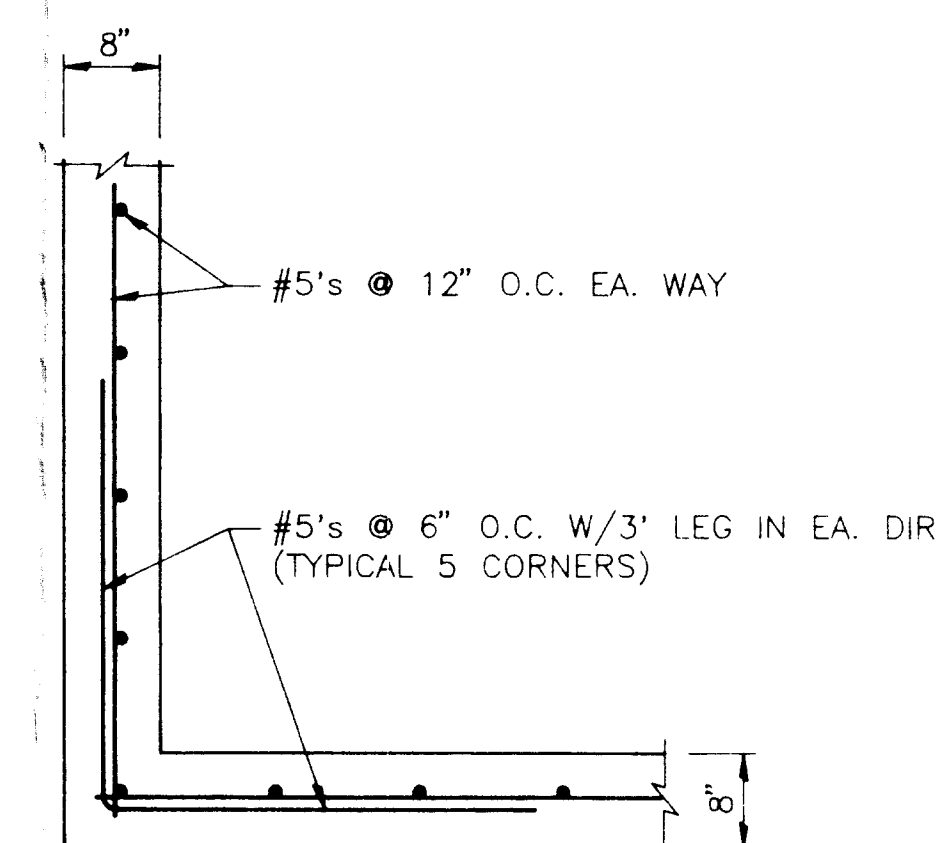
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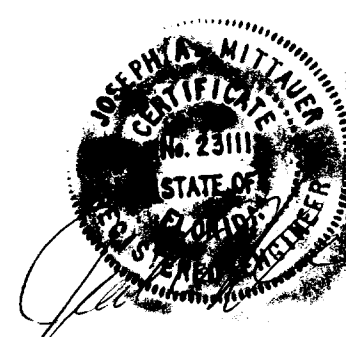
CONSTRUCTION JOINT - FLOOR OR WALL

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



WALL CORNER DETAIL

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



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ORANGE PARK, FLORIDA (904) 276-5236

INDUSTRIAL WATER SERVICES, INC.
Hazardous Waste Management Facility
Structural - Site Plan & Sections
Jacksonville, Florida

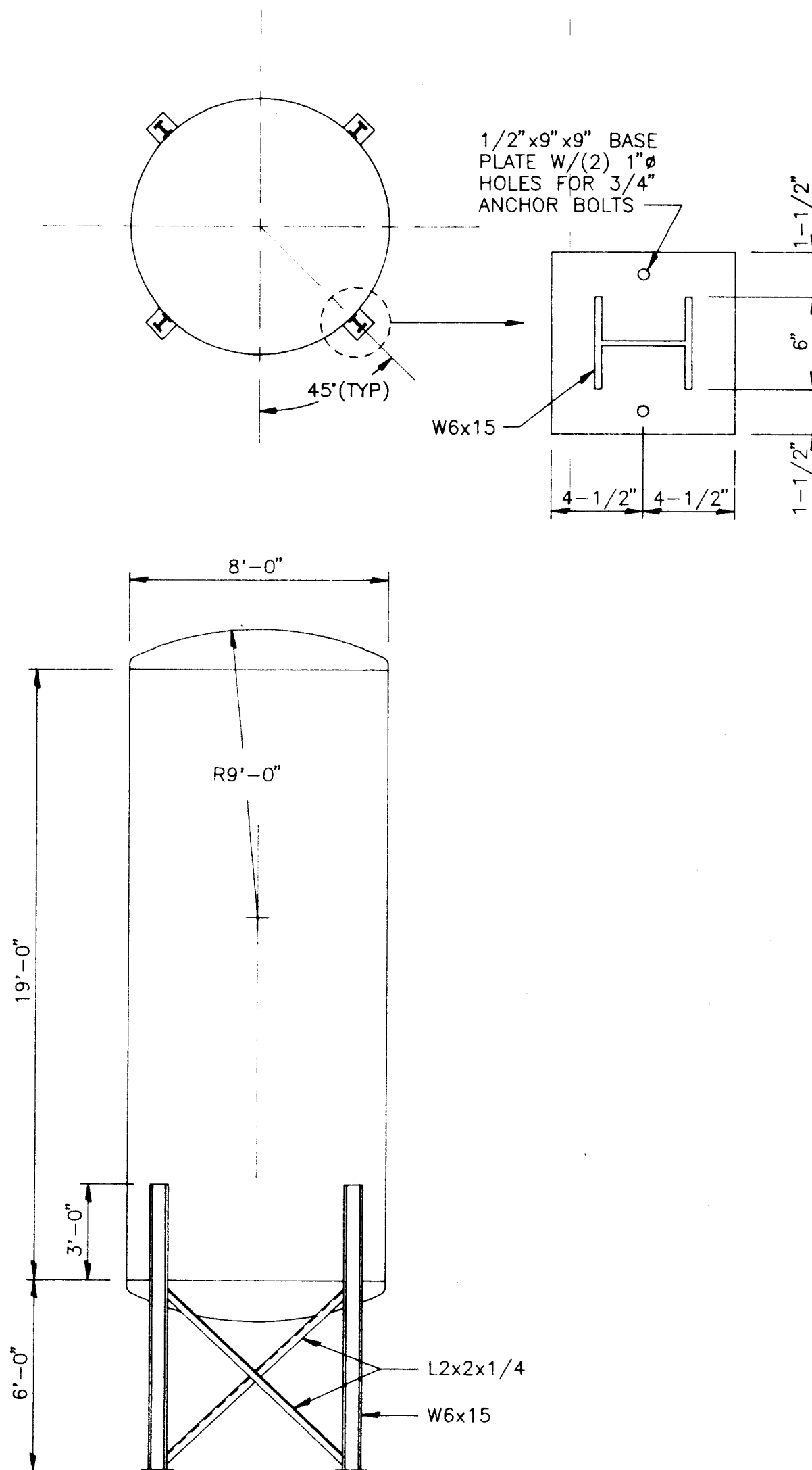
JOB NO.
9122-02-1
SHEET

C-5
OF

DESIGN DATA TANKS 1-4

SIZE: 8'-0" DIA. x 19'-0" HT.
 CAPACITY: 7,000 GALLONS, NOMINAL
 MIN. THICKNESS TOP DISHED HEAD: 3/16"
 MIN. THICKNESS SHELL PLATES: 3/16"
 MIN. THICKNESS BOTTOM DISHED PLATE: 1/4"
 LIQUID HEIGHT: FULL HEIGHT
 OPER. TEMP.: AMBIENT
 OPER. PRESSURE: ATMOSPHERIC
 FLUID: D018 OILY WASTEWATER
 SP. GR.: 1.0
 TANK MAT'L.: A36 STEEL PLATE & SHAPES
 CORROSION ALLOWANCE: NONE
 DESIGN CODE: API STANDARD 650 (SHELL & DOME)
 AISC (TANK SUPPORTS)

ALL FLANGED NOZZLES TO HAVE 6" PROJECTION
 FROM SHELL TO FACE ON FLANGE (UNLESS NOTED OTHERWISE)



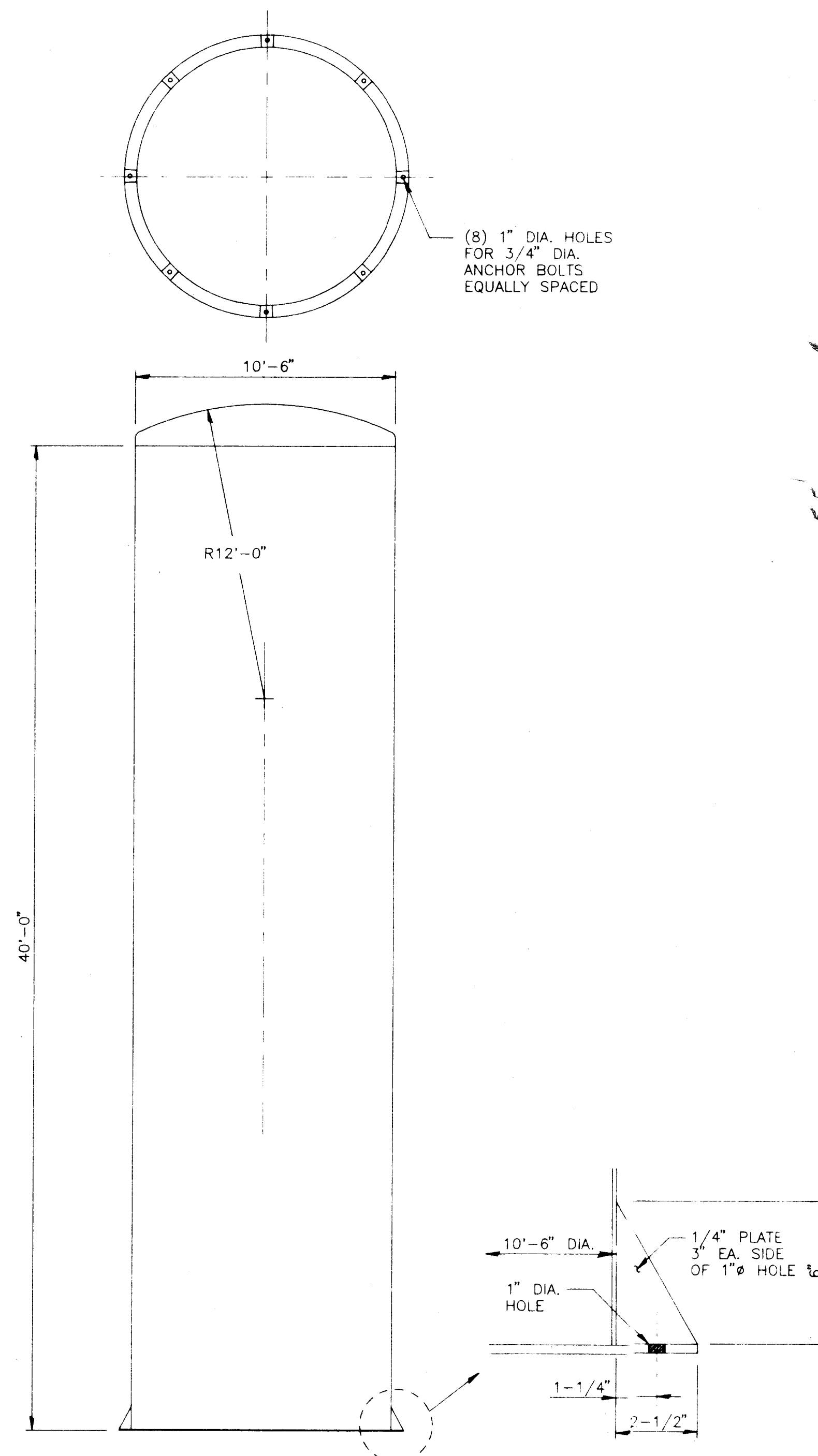
STRUCTURAL DETAIL TANKS 1-4

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

DESIGN DATA TANKS 7 & 8

SIZE: 10'-6" DIA. x 40'-0" HT.
 CAPACITY: 25,000 GALLONS, NOMINAL
 MIN. THICKNESS TOP DISHED HEAD: 3/16"
 MIN. THICKNESS SHELL PLATES: 3/16"
 MIN. THICKNESS BOTTOM PLATE: 1/4"
 LIQUID HEIGHT: FULL HEIGHT
 OPER. TEMP.: AMBIENT
 OPER. PRESSURE: ATMOSPHERIC
 FLUID: TREATED D018 OILY WASTEWATER
 SP. GR.: 1.0
 TANK MAT'L.: A36 STEEL PLATE & SHAPES
 CORROSION ALLOWANCE: NONE
 DESIGN CODE: API STANDARD 650

ALL FLANGED NOZZLES TO HAVE PROJECTION
 FROM SHELL TO FACE ON FLANGE (UNLESS NOTED OTHERWISE)

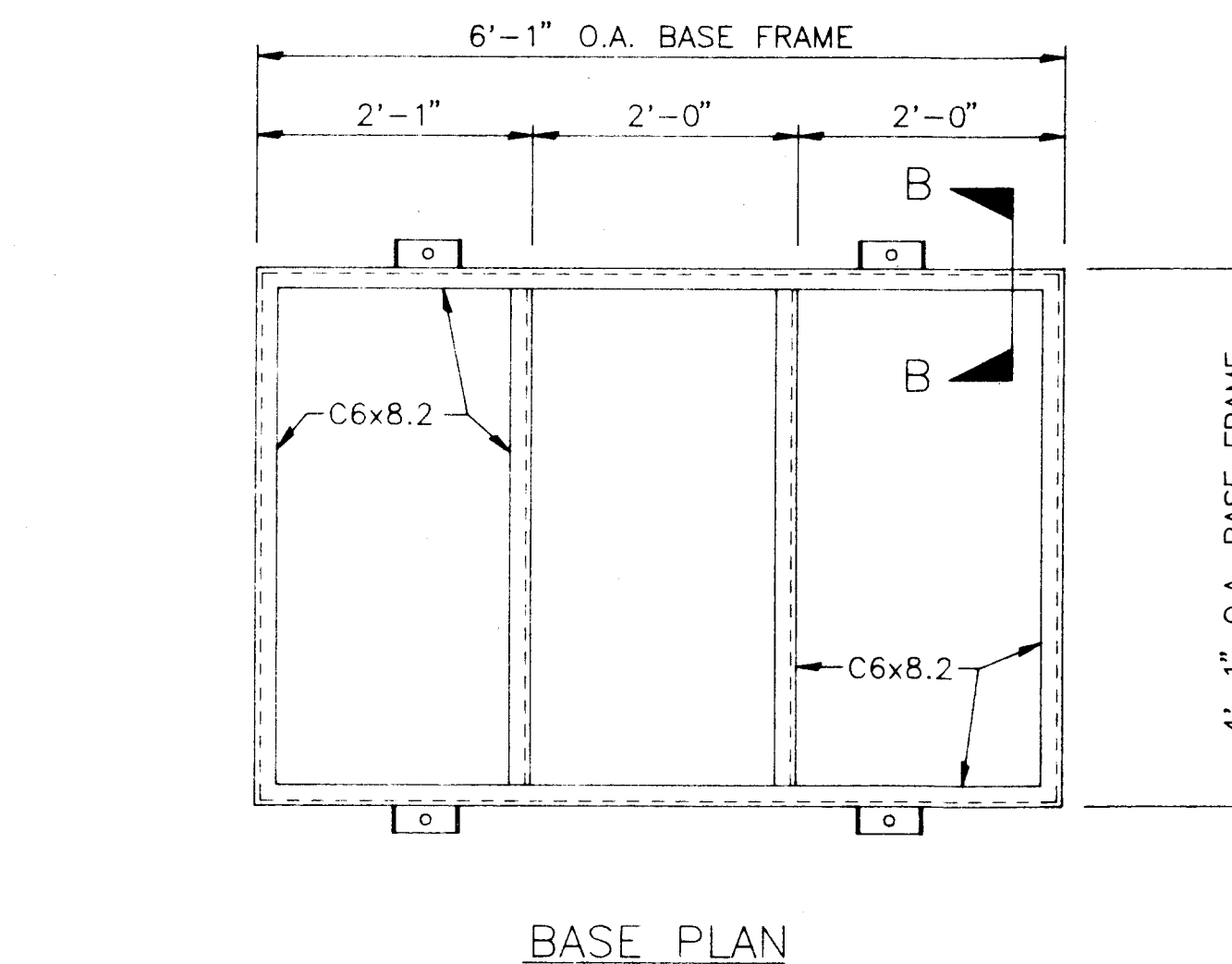
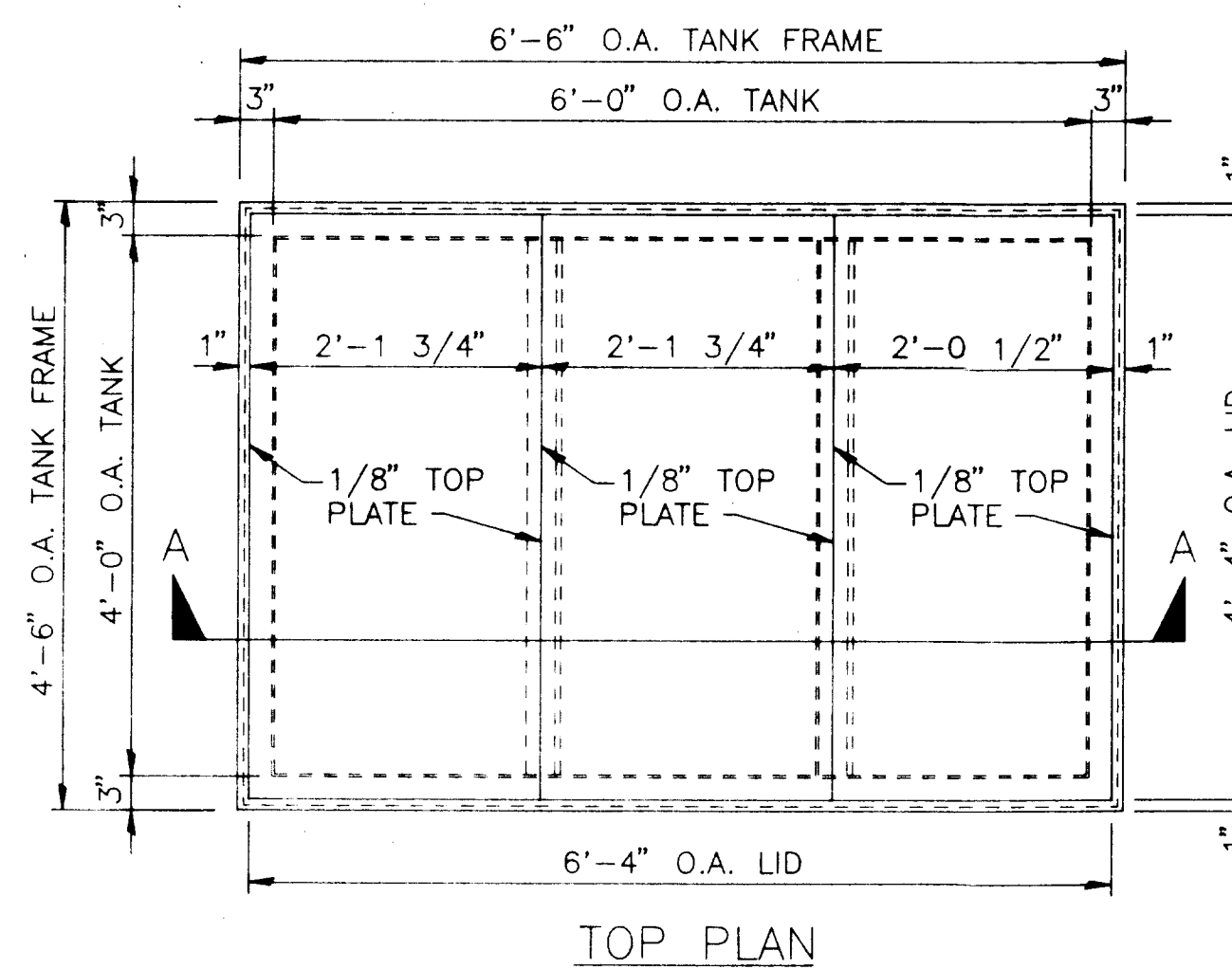
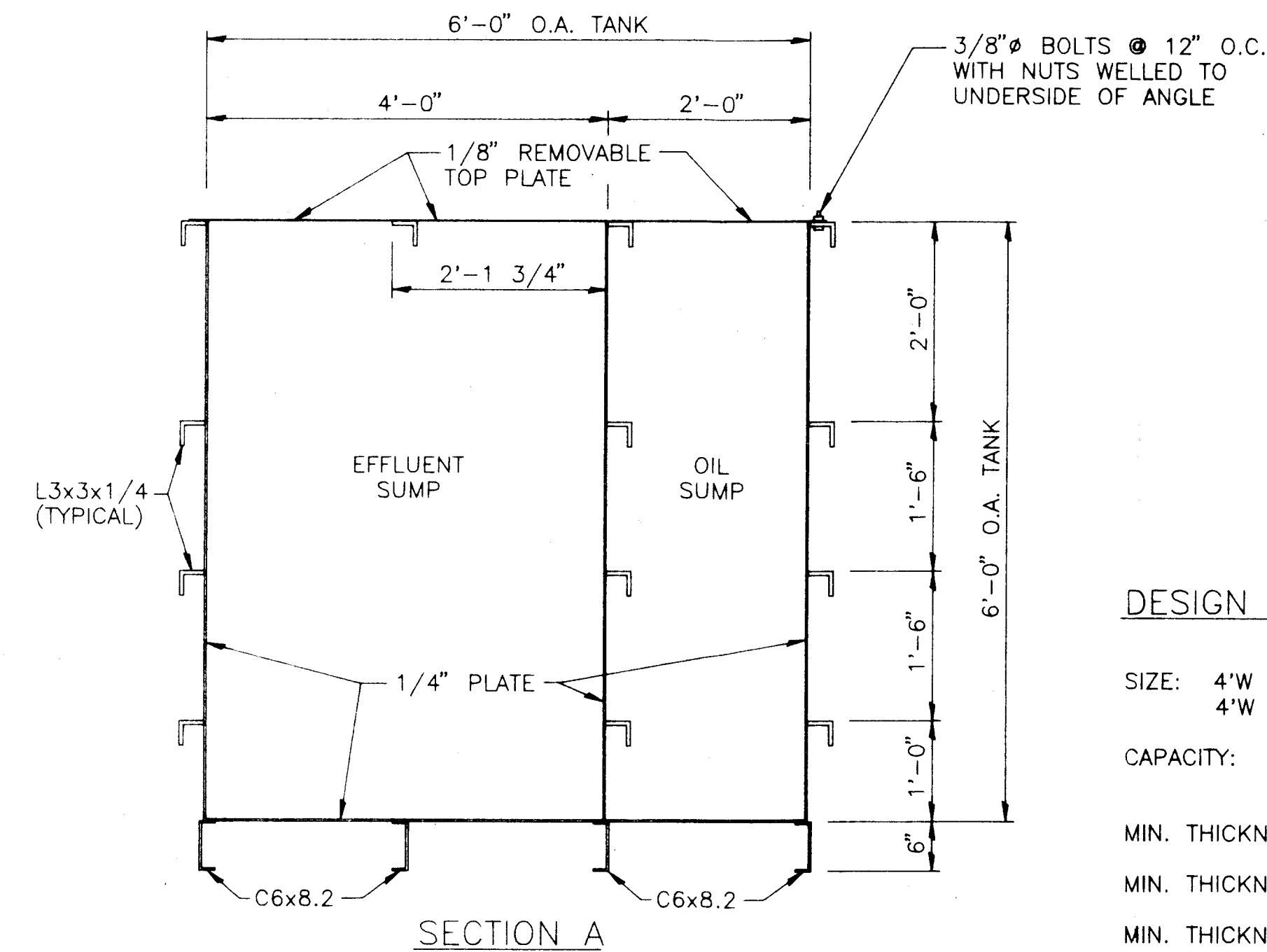


STRUCTURAL DETAIL TANKS 7 & 8

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

NOTE:

PIPE NOZZLES, HATCHES, ECT. HAVE NOT BEEN SHOWN
 FOR CLARITY. TANK FABRICATOR SHALL FURNISH SHOP
 DRAWINGS FOR APPROVAL PRIOR TO FABRICATION.



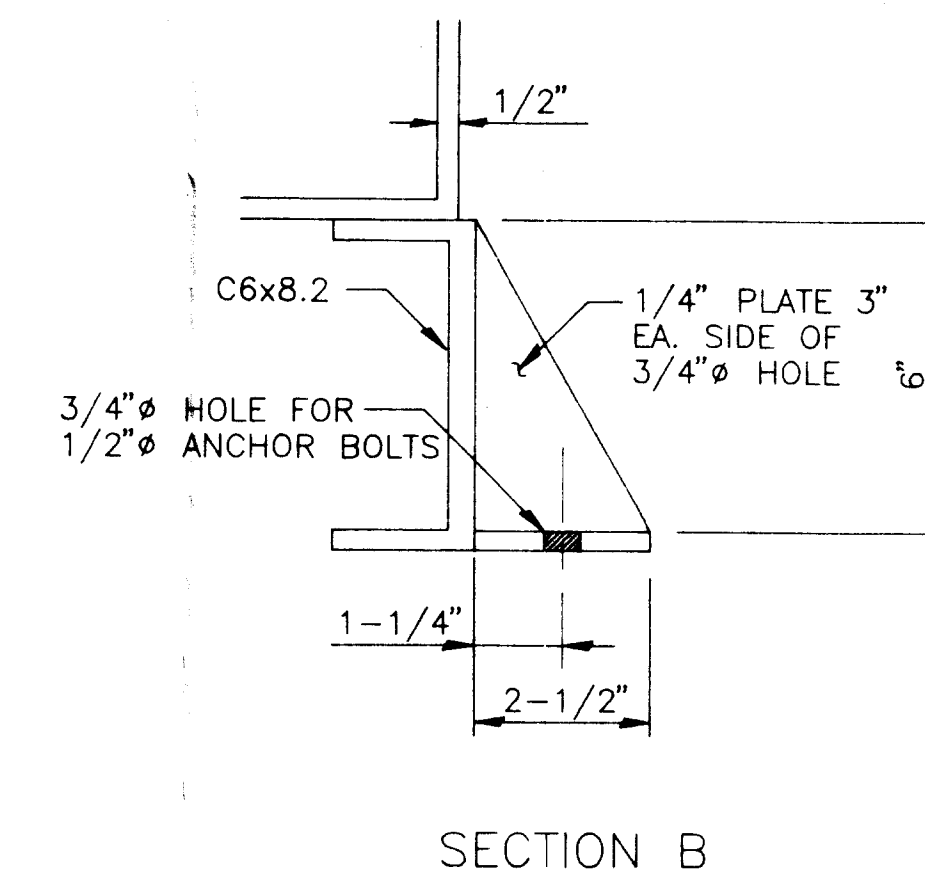
STRUCTURAL DETAIL TANK 6

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

DESIGN DATA TANK 6

SIZE: 4'W x 4'D x 6'H (EFFLUENT SUMP)
 4'W x 2'D x 6'H (OIL SUMP)
 CAPACITY: 650 GALLONS (EFFLUENT SUMP)
 325 GALLONS (OIL SUMP)
 MIN. THICKNESS TOP PLATE: 1/8"
 MIN. THICKNESS SHELL PLATES: 1/4"
 MIN. THICKNESS BOTTOM PLATE: 1/4"
 LIQUID HEIGHT: FULL HEIGHT
 OPER. TEMP.: AMBIENT
 OPER. PRESSURE: ATMOSPHERIC
 FLUID: TREATED D018 OILY WASTEWATER (EFFLUENT SUMP)
 RECOVERED OIL (OIL SUMP)
 SP. GR.: 1.0
 TANK MAT'L.: A36 STEEL PLATE & SHAPES
 CORROSION ALLOWANCE: NONE
 DESIGN CODE: AISC

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SECTION B

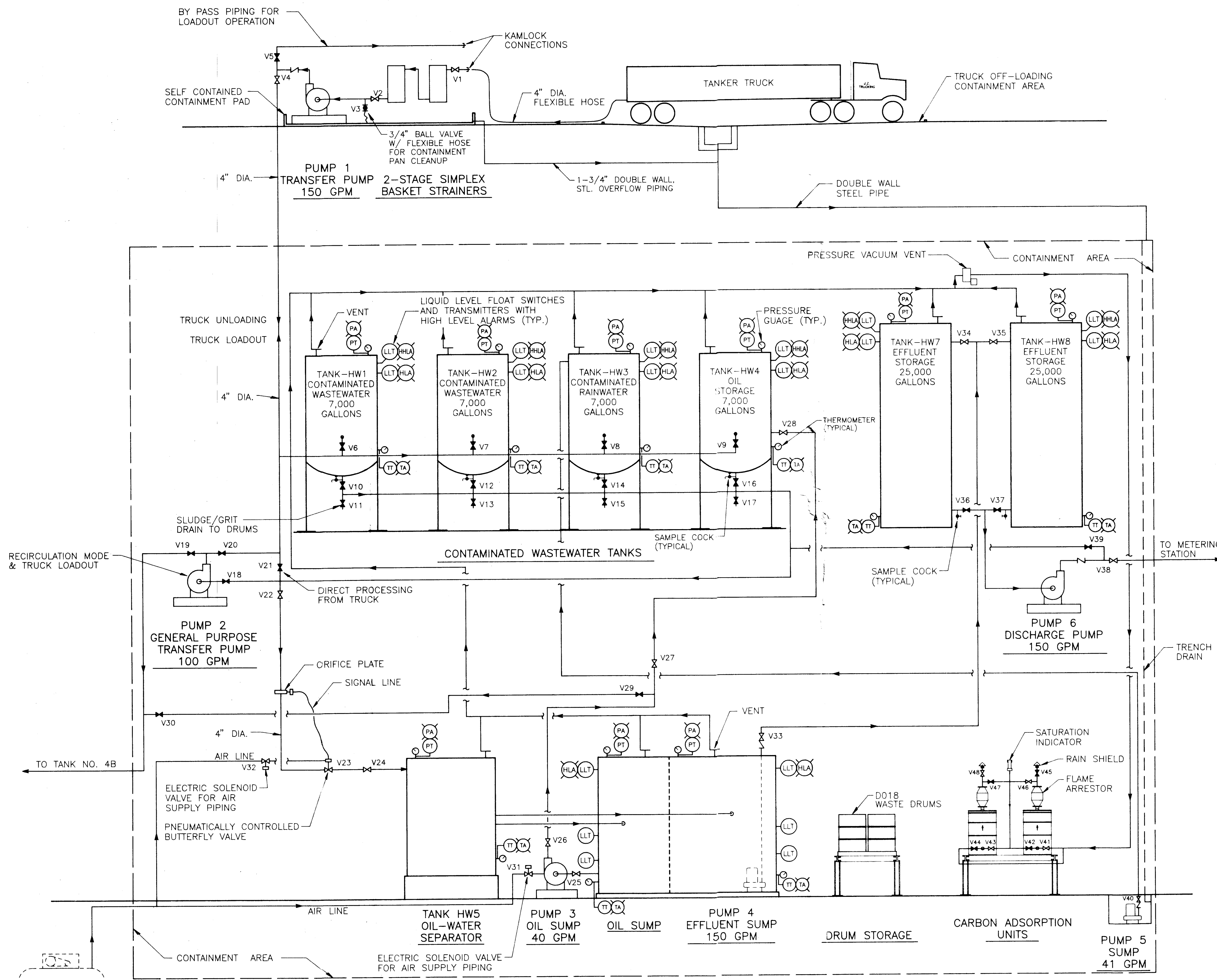
MITTAUER/FITZPATRICK, INC.
 CONSULTING ENGINEERS
 ORANGE PARK, FLORIDA (904) 276-5236

INDUSTRIAL WATER SERVICES, INC.
 Hazardous Waste Management Facility
 Structural - Tank Plans & Details
 Jacksonville, Florida

JOB NO. 9122-02-1
 SHEET

C-6
 OF





LEGEND

- | | | | |
|------|-------------------------|-------|--------------------------|
| (TT) | TEMPERATURE TRANSMITTER | (LLT) | LIQUID LEVEL TRANSMITTER |
| (TA) | TEMPERATURE ALARM | (HLA) | HIGH HIGH LEVEL ALARM |
| (PT) | PRESSURE TRANSMITTER | (HLA) | HIGH LEVEL ALARM |
| (PA) | PRESSURE ALARM | (LLA) | LOW LEVEL ALARM |
| | | (V) | VALVE NORMALLY OPEN |
| | | (V) | VALVE NORMALLY CLOSED |

OPERATION SEQUENCE

- TANK TRUCK UNLOADING**
 - Position tanker truck within containment area.
 - Connect and secure flexible fuel hoses with kamlocks.
 - Position selector switch in Control Panel on Tank HW 1, 2, 3 or 4 for fill and open Valve V6, V7, V8 or V9.
 - Start Pump 1 and fill tank to High Level Alarm.

Note: High High Level Alarm will automatically stop and lock out Pump 1.

- Stop pump, close tank valve and disconnect tanker truck.

2. PROCESS WATER TREATMENT

- Open Valve V10, V12, V14 or V16 selected for tank draw.
- Orifice plate and pneumatically controlled butterfly valve will automatically regulate flow rate at 150 GPM to Oil/Water Separator. Fail safe butterfly valve is spring controlled to close upon loss of pneumatic signal.
- Floating oil collected by skimmers flows to an oil sump. Oil sump pump (Pump 3) operation is automatically controlled by float switches. High oil level float switch signals visual and audible alarm @ control panel and signals closure of pneumatic butterfly valve.
- Treated effluent from Oil/Water Separator flows to an effluent sump and is subsequently pumped to Tank HW 7 or 8. Effluent sump pump (Pump 4) operation is automatically controlled by float switches. High water level float switch signals visual and audible alarm @ control panel and signals closure of the pneumatic butterfly valve.

3. EFFLUENT STORAGE AND DISCHARGE TO POTW

- Pump 4 pumps treated effluent to Tank HW 7 or 8. Tanks are gauged and operator monitors tank level. Overfill protection includes audible alarm at high level to signal operator to close valve at Tank HW 1, 2, 3 or 4 which stops flow to Oil/Water Separator. If Tank HW 7 or 8 liquid level reaches High High Level, a transmitter signals Pump 4 to stop and closes pneumatic butterfly valve.
- Tank contents are sampled and monitored in I.W.S. Inc. laboratory prior to discharge. Samples are analyzed in accordance with I.W.S.'s Industrial User Permit.
- Tank HW 7 or 8 contents acceptable for discharge are pumped to City sewer through I.W.S. Metering Station located adjacent to the TSD Facility. Unacceptable Water is returned to Tank HW 1, 2, 3, or 4 for further treatment.

4. TEMPORARY RECYCLABLE HYDROCARBONS STORAGE AND PROCESSING

- Recyclable Hydrocarbons from the Oil/Water Separator will normally be pumped from the oil sump to Tank HW 4 which is located within the TSD Facility. Recyclable Hydrocarbons pumped to Tank HW 4 are no longer a hazardous waste and will be exported to the IWS Used Oil Facility.
- Recyclable Hydrocarbons will be pumped to Tank 4B for temporary storage or treatment prior to pumping to tanker truck for re-sale. Pump 2 is a general purpose air operated diaphragm pump used for tanker truck loading and transfer.

5. TANK VENT SYSTEM

- Each tank has a vent which is connected to a vent manifold. The vent manifold has an adjustable vacuum and pressure relief mechanism to protect the tank.
- The piping manifold consists of seamless welded schedule 40 steel pipe.
- The vent manifold piping terminates in a double carbon adsorption unit for odor control and VOC removal.

6. TEMPERATURE AND PRESSURE MONITORING

- Each tank will be equipped with a temperature and pressure transmitter to signal an alarm should the temperature or pressure exceed specified ranges.
- The normal storage tank operating ranges for temperature and pressure are as follows:

	Range	Average
Temperature:	50 F to 80 F	68 F
Pressure:	-1.0 to 1.0 psig	0.0 psig

- The alarm will be an integrated portion of the control cabinet

EXIST. PLANT AIR COMPRESSOR

PIPING & INSTRUMENTATION DIAGRAM
N.T.S.

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INDUSTRIAL WATER SERVICES, INC.
Hazardous Waste Management Facility
Piping Schematic
Jacksonville, Florida

JOB NO.
9122-02-1
SHEET

OF 7