

**City of Portland, Maine - Building or Use Permit**

389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

<b>Permit No:</b> 07-0276	<b>Date Applied For:</b> 03/20/2007	<b>CBL:</b> 034 C010001
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<b>Location of Construction:</b> 171 Kennebec St	<b>Owner Name:</b> Atlantic Bayside Holdings	<b>Owner Address:</b> 50 Portland Pier	<b>Phone:</b>
<b>Business Name:</b>	<b>Contractor Name:</b> Les Wilson & Sons	<b>Contractor Address:</b> P.O. Box 1028 Westbrook	<b>Phone</b> (207) 854-4583
<b>Lessee/Buyer's Name</b>	<b>Phone:</b>	<b>Permit Type:</b> Tanks - Commercial	

<b>Proposed Use:</b> Commercial / Postal Maintenance Facility; Remove 1 15000 gal tank & replace with a 15000 gal tank	<b>Proposed Project Description:</b> Remove 1- 15,000 gal tank and & replace with a 15,000 gal tank
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**Dept:** Zoning      **Status:** Approved      **Reviewer:** Marge Schmuckal      **Approval Date:** 03/20/2007  
**Note:** **Ok to Issue:**

**Dept:** Building      **Status:** Approved with Conditions      **Reviewer:** Tom Markley      **Approval Date:** 04/27/2007  
**Note:** **Ok to Issue:**

- 1) Application approval based upon information provided by applicant. Any deviation from approved plans requires separate review and approval prior to work.
- 2) Installation shall comply with 2003 International Mechanical Code and State of Maine Oil and Solid Fuel Board Laws and Rules

**Dept:** Fire      **Status:** Approved with Conditions      **Reviewer:** Cptn Greg Cass      **Approval Date:** 03/22/2007  
**Note:** **Ok to Issue:**

- 1) Install shall comply with NFPA 30. Compliance letter requested.
- 2) Application requires State Fire Marshal approval.
- 3) Requires DEP approval

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REMOVAL AND INSTALLATION  
GASOLINE UNDERGROUND STORAGE T.

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UNITED STATES POSTAL SERVICE  
VEHICLE MAINTENANCE FACILITY  
PORTLAND, MAINE  
FINAL DESIGN

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PREPARED FOR

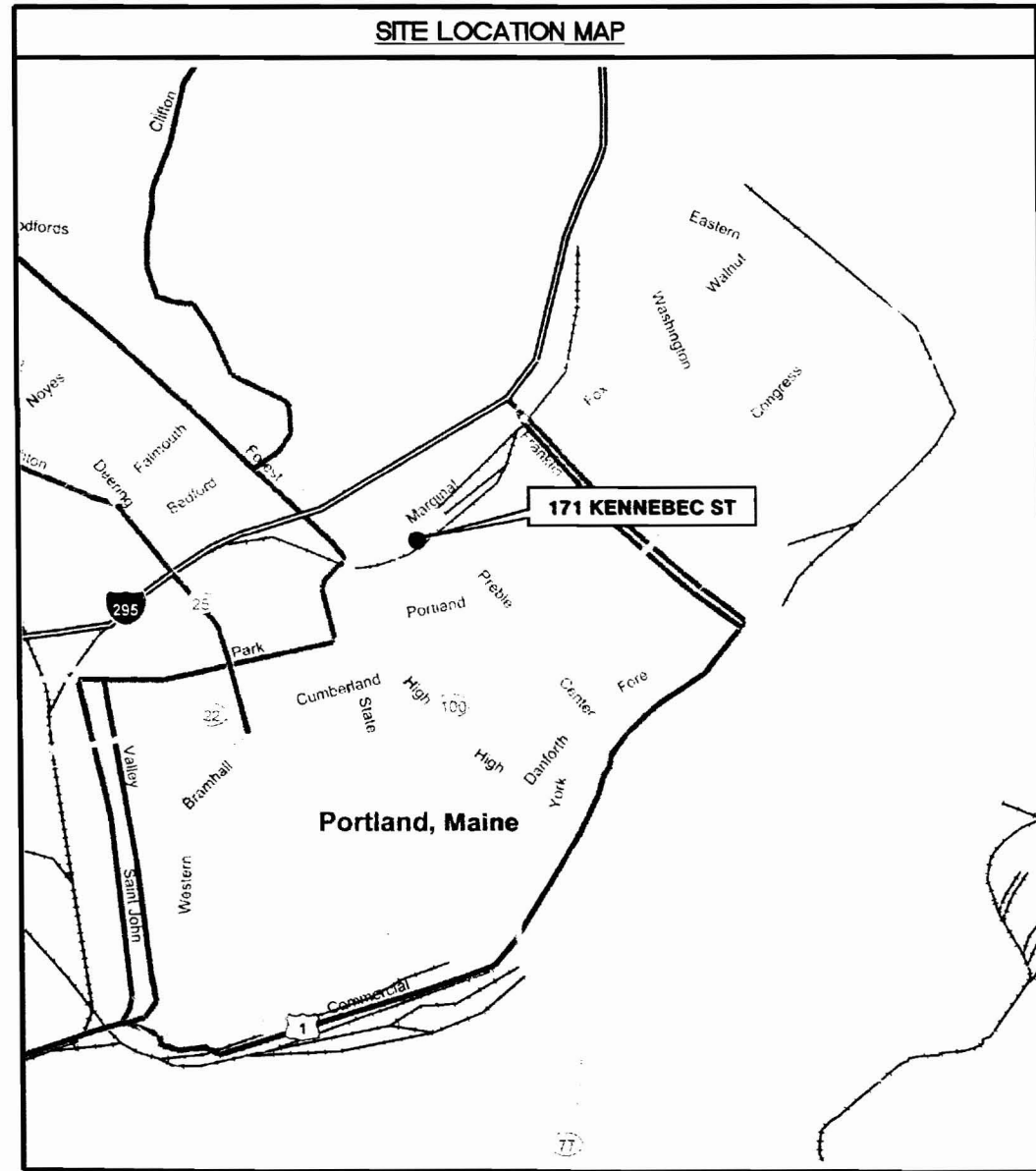


FOR APPROVAL  
NOVEMBER 1, 2006

**URS** Corporation

477 Congress St  
9th Floor  
Portland, ME 04101  
Tel: 207.879.7686  
Fax: 207.879.7685  
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INDEX OF DRAWINGS	
DWG. NO.	DESCRIPTION
	TITLE SHEET
1	ABBREVIATIONS, LEGEND, INDEX OF DRAWINGS, AND SITE LOCATION MAP
2	GENERAL NOTES
3	FUEL SYSTEM NOTES
4	VEHICLE MAINTENANCE FACILITY SITE DEMOLITION AND REPLACEMENT PLAN
5	NEW GASOLINE FUEL TANK SYSTEM VEHICLE MAINTENANCE FACILITY CROSS SECTIONS AND DETAILS
6	CONCRETE REINFORCING DETAILS



**LEGEND - GENERAL**

- EXISTING FENCE
- EXISTING UNDERGROUND STORAGE TANK
- EXISTING BUILDING
- BUILDING WALL
- EXISTING WATER VALVE
- EXISTING LIGHT POLE
- EXISTING HYDRANT
- EXISTING DRAIN INLET/CATCH BASIN
- EXISTING MANHOLE
- EXISTING TREE PLANTER
- UNDERGROUND PIPELINE
- ABOVEGROUND PIPELINE
- NATURAL GAS LINE
- ELECTRIC LINE
- SANITARY SEWER
- STORM SEWER
- TELEPHONE LINE
- WATER LINE
- PROPERTY LINE
- EXISTING MONITORING WELL
- SOIL BORING/SAMPLE LOCATION
- SECTION
- SHEET ON WHICH SECTION IS LOCATED
- SHEET ON WHICH SECTION IS FIRST CUT
- DETAIL
- SHEET ON WHICH DETAIL IS LOCATED
- SHEET ON WHICH DETAIL IS FIRST CUT

**LEGEND - ELECTRICAL**

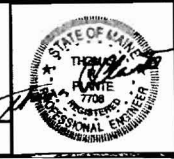
- SIGNAL CONDUIT
- TELEPHONE CONDUIT
- POWER CONDUIT
- UTILITY POLE

NO.	MADE BY	APPROVED BY	DATE	DESCRIPTION
REVISIONS				

DESIGNED BY: GBV  
 DRAWN BY: PAL  
 CHECKED BY: RC  
 PROJ. ENGR: FAD

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JOB NO. 39742414



**GENERAL NOTES:**

- THE CONTRACTOR SHALL COMPLY WITH THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION RULES FOR UNDERGROUND OIL STORAGE FACILITIES, UNITED STATES POSTAL SERVICE (USPS) UNDERGROUND STORAGE TANKS STANDARD DESIGN CRITERIA, SEPTEMBER 2005, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (U.S.E.P.A.) UNDERGROUND STORAGE TANK REGULATIONS (40 CFR PART 280), AND OIL POLLUTION PREVENTION REGULATIONS (40 CFR PART 112), NATIONAL FIRE PROTECTION AGENCY (N.F.P.A.) CODES (NFPA 30), MAINE BUILDING CODES, FIRE PREVENTION CODE, AND ALL APPLICABLE LOCAL REGULATIONS, BUILDING CODES, AND FIRE CODES THAT APPLY TO AUTOMOTIVE SERVICE STATION AND PRIVATE FILLING STATIONS.
- NEW UNDERGROUND TANKS AND NEW CONCRETE BOTTOM SLABS, IF INSTALLED, SHALL BE LOCATED WITH RESPECT TO EXISTING BUILDING FOUNDATIONS AND SUPPORTS SO THAT THE LOAD CARRIED BY THE BUILDING FOUNDATIONS CANNOT BE TRANSMITTED TO THE TANKS.
- NEW UNDERGROUND TANKS SHALL BE DOUBLE WALL FIBERGLASS. THE TANKS SHALL BE LISTED FOR THE STORAGE OF METHANOL, DIESEL AND GASOLINE PRODUCTS. THE TANKS SHALL BE AS MANUFACTURED BY XERXES OF MINNEAPOLIS, MINNESOTA, OR APPROVED EQUAL.
- ALL STORAGE TANKS SHALL BEAR A LABEL AT THE TIME OF INSTALLATION, WHICH SHALL INDICATE, AT A MINIMUM, THE NAME OF THE TANK MANUFACTURER, THE CAPACITY OF THE TANK, AND THE STANDARDS TO WHICH THE TANK WAS CONSTRUCTED. TANKS SHALL BE THOROUGHLY CLEANED.
- ALL PORTIONS OF EXISTING SITE, OR ADJACENT SITES, WHICH ARE TO BE PROTECTED OR ARE NOT INCLUDED IN THIS WORK, WHICH ARE DAMAGED, DISTURBED, OR REMOVED DURING THE COURSE OF THIS WORK, SHALL BE RESTORED BY THE CONTRACTOR TO A CONDITION EQUAL TO OR BETTER THAN THAT WHICH EXISTED PRIOR TO COMMENCEMENT OF THIS WORK, AT NO ADDITIONAL COST TO THE OWNER.
- THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE DRAWINGS ARE APPROXIMATE. THE CONTRACTOR SHALL LOCATE AND MARK OUT ALL UTILITIES AND SANITARY SEWER AND STORM DRAIN PIPING PRIOR TO THE START OF CONSTRUCTION.
- THE CONTRACTOR SHALL RELOCATE ALL UTILITIES, AS NECESSARY AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR SHALL PROTECT ALL CATCH BASINS AND STORM DRAINAGE SYSTEMS. THE CONTRACTOR SHALL MAINTAIN ALL CATCH BASINS AND STORM DRAINAGE SYSTEMS IN AN OPERATIONAL CONDITION, AS REQUIRED BY THE ENGINEER. THE CONTRACTOR SHALL PROTECT ALL CATCH BASINS AND STORM DRAINAGE SYSTEMS FROM CONTAMINATION DURING EXCAVATION AND DEWATERING.
- SITE DRAWINGS ARE BASED ON EXISTING FACILITY DRAWINGS, FIELD OBSERVATIONS, AND/OR FIELD MEASUREMENTS, AND NOT ON A SURVEY BY A PROFESSIONAL LAND SURVEYOR. LOCATIONS OF EXISTING FEATURES AND PROPOSED WORK ARE APPROXIMATE, AND SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR. UPON COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT RECORD DRAWINGS TO THE ENGINEER, IN ACCORDANCE WITH SECTION 0120 OF THE CONTRACT SPECIFICATIONS ("CONTRACT CLOSEOUT"). SURVEY REQUIREMENTS, UNLESS MODIFIED BY THE ENGINEER IN WRITING PURSUANT TO INSTRUCTIONS ISSUED DURING THE PRE-BID MEETING, SHALL BE AS SPECIFIED IN SECTION 0105 OF THE CONTRACT SPECIFICATIONS ("SURVEY REQUIREMENTS").

**EXCAVATION NOTES:**

- THE FOLLOWING INFORMATION IS TO BE USED AS A GUIDE ONLY. IN THE EVENT OF A CONFLICT BETWEEN THIS INFORMATION AND OSHA OR OTHER LOCAL REGULATIONS, THE MOST RESTRICTIVE REGULATIONS AND REQUIREMENTS SHALL GOVERN ALL EXCAVATION WORK.
- THE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF OSHA SUBSECTION 'P' - EXCAVATIONS, TRENCHING, SHORING - SECTIONS 1926.50 THROUGH 1926.653.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER WHEN EXCAVATIONS ARE ADJACENT TO PROPERTY LINES, ROADS, SIDEWALKS, ETC. PARTICULARLY WHERE BUILDINGS OR ADJUTING PROPERTY ARE NEAR THE PROPERTY LINE.
- THE PRESENCE OF GROUNDWATER REQUIRES SPECIAL TREATMENT. REFER TO THE SPECIFICATIONS FOR DEWATERING REQUIREMENTS, AND MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION OF TANKS BELOW THE EXISTING WATER TABLE.
- THE CONTRACTOR MUST PROVIDE SHORING DESIGN FOR EXCAVATION ASSUMING THE ENTIRE AREA WILL BE DEWATERED FOR THE REMOVAL OF TANKS AND INSTALLATION OF NEW TANKS. THE SHORING DESIGN CALCULATIONS AND DRAWINGS SHALL HAVE THE SIGNATURE OF A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF MAINE.
- PRIOR TO THE START OF EXCAVATION THE CONTRACTOR MUST TAKE ALL NECESSARY PRECAUTIONS TO LOCATE ALL EXISTING UTILITIES AND APPURTENANCES TO REMAIN IN PLACE. ANY BURIED UTILITIES ENCOUNTERED WHICH ARE NOT IDENTIFIED BEFORE THE START OF EXCAVATION SHALL BE REPORTED TO THE ENGINEER.
- ALL EXCAVATED SOIL MUST BE REPLACED WITH APPROVED BACKFILL PER SPECIFICATIONS. BACKFILL MATERIALS MAY NOT BE PLACED WITHOUT WRITTEN APPROVAL FROM THE ENGINEER.
- ALL EXCAVATIONS GREATER THAN 5'-0" IN DEPTH MUST BE SHORED OR SLOPED AS PER FEDERAL OSHA REQUIREMENTS UNLESS IN ROCK, SHALE OR CEMENTED SAND AND GRAVELS.

**STRUCTURAL NOTES:**

**A. GENERAL**

- ALL DIMENSIONS AND CONDITIONS OF EXISTING STRUCTURES ARE TO BE USED TO PREPARE SHOP DRAWINGS.
- THE PEA GRAVEL SURROUNDING THE TANKS SHALL BE COMPACTED BEFORE PLACEMENT OF CONCRETE TOP SLAB.
- THE LOCATION OF TRENCH AND COVER SLAB MAY BE VARIED BY THE ENGINEER AS REQUIRED IN THE FIELD.

**B. CONCRETE**

- ALLOWABLE STRESSES IN CONCRETE: CONCRETE DESIGN SHALL CONFORM TO "ACI STANDARD BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", ACI 318-89.
- CONCRETE SHALL BE AS DESCRIBED IN THE SPECIFICATIONS. CONCRETE COMPRESSIVE STRENGTH SHALL NOT BE LESS THAN 4,000 P.S.I. WHEN TESTED AT TWENTY-EIGHT (28) DAYS UNLESS OTHERWISE NOTED.
- STEEL REINFORCEMENT RODS AND BARS SHALL CONFORM TO ASTM DESIGNATION A615, GRADE 60. STEEL DOWELS SHALL CONFORM TO ASTM A108. WELDED WIRE FABRIC REINFORCEMENT SHALL CONFORM TO ASTM A185.
- ALL CONCRETE SHALL HAVE 3% TO 8% ENTRAINED AIR.
- PRIOR TO PLACEMENT OF NEW CONCRETE AGAINST AN EXISTING CONCRETE STRUCTURE, THE CONTRACTOR SHALL CLEAN THE EXISTING STRUCTURE TO BARE CONCRETE AND ALL FOREIGN MATERIAL SHALL BE REMOVED.
- THE CONTRACTOR SHALL APPLY CONCRETE BONDING AGENT TO EXISTING CONCRETE SURFACE BEFORE POURING NEW CONCRETE WHICH ADJUTS EXISTING CONCRETE SURFACE.
- THE CONTRACTOR SHALL SUBMIT DRAWINGS SHOWING LOCATION OF CONSTRUCTION JOINTS AND KEYS FOR REVIEW AND APPROVAL OF THE ENGINEER, PRIOR TO THE PLACEMENT OF CONCRETE.
- MINIMUM COVER FOR REINFORCEMENT SHALL BE THREE (3) INCHES WHEN CONCRETE IS POURED AGAINST SOIL OR BACKFILL, AND TWO (2) INCHES IN ALL OTHER CASES.
- ALL REINFORCING BARS SHALL BE EPOXY COATED.
- THE CONTRACTOR SHALL VERIFY THAT THE OPENINGS IN EACH UNDERGROUND STORAGE TANK TOP SLAB ARE LOCATED TO ACCOMMODATE THE UNDERGROUND STORAGE TANK APPURTENANCES PRIOR TO PLACEMENT OF CONCRETE.
- ALL CONCRETE TOP SLABS SHALL BE INSTALLED SUCH THAT, IF THERE IS DIFFERENTIAL SETTLEMENT, NO LOAD IS TRANSFERRED TO THE TANK OR ANY TANK APPURTENANCES.
- CONCRETE PAVEMENT IS TO HAVE A BROOM FINISH.




**C. SPECIAL CONSTRUCTION CONSIDERATIONS**

- THE CONTRACTOR SHALL MAINTAIN, PROTECT, AND RELOCATE (IF NECESSARY) LIGHTING AND POWER CONDUITS, AIR PIPES, WIRES, AND SIGNAL/COMMUNICATION CABLES/EQUIPMENT DURING CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER. THE CONTRACTOR SHALL GROUND ALL CONSTRUCTION EQUIPMENT TO AVOID ACCIDENTAL ELECTROCUTION.
- THE CONTRACTOR SHALL PROTECT AND MAINTAIN EXISTING UTILITIES DURING CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED BY THE CONTRACTOR 48 HOURS IN ADVANCE OF ANY WORK ON OR IN THE VICINITY OF THE UTILITIES. FOR ANY WORK DONE IN THE VICINITY OF THE UTILITIES, HAND EXCAVATION SHALL BE USED TO DETERMINE THEIR EXACT LOCATION.
- THE CONTRACTOR SHALL DESIGN TEMPORARY SHEETING AND BRACING SYSTEMS, WHERE NECESSARY. IT SHALL BE INSTALLED WITHOUT ANY INTERFERENCE WITH OR ENCROACHMENT ON CLEARANCES REQUIRED FOR OPERATIONS. THE CONTRACTOR SHALL SUBMIT PROCEDURE, DESIGN CALCULATIONS AND DETAILED DRAWINGS FOR THE PROPOSED TEMPORARY SHEETING AND BRACING SYSTEM TO THE ENGINEER.

**MECHANICAL NOTES:**

- DRAWINGS INDICATE GENERAL ARRANGEMENT ONLY AND ARE SUBJECT TO FIELD CONDITIONS, AS APPROVED BY THE ENGINEER.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD BEFORE COMMENCING WORK.
- ALL PIPING, CONDUITS AND OTHER EQUIPMENT SHALL BE SUPPORTED IN ACCORDANCE WITH THE SPECIFICATIONS. DETAILS OF ALL SUPPORTS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY CUTTING, CHASING, PATCH WORK, AND REPAIR.
- ALL EQUIPMENT AND APPURTENANCES ARE TO BE INSTALLED SO AS TO AVOID INTERFERENCE WITH OTHER PIPING, ELECTRICAL FIXTURES, AND APPURTENANCES.
- ALL EQUIPMENT AND APPURTENANCES SHALL BE INSTALLED AND SUPPORTED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- ALL OVERHEAD CONDUITS AND PIPING SHALL RUN AS CLOSE TO WALLS AS POSSIBLE AND BE FASTENED TO AND SUPPORTED BY WALLS.
- FINAL PIPING ARRANGEMENT AND INSTALLATION SHALL PERMIT ACCESS TO ALL EQUIPMENT TO THE SATISFACTION OF THE ENGINEER.
- THE CONTRACTOR SHALL INSTALL FITTINGS IN THE PIPE RUNS TO PROVIDE ACCESS TO ALL EQUIPMENT AND VALVES, AS DIRECTED BY THE ENGINEER.
- THE CONTRACTOR SHALL PROVIDE APPROVED EXPANSION DEVICES AS APPROVED BY THE ENGINEER.
- THE CONTRACTOR SHALL PROVIDE APPROVED SLEEVES AND WASTE PIPES PASSING THROUGH WALLS, FLOORS, AND ROOFS.
- FIRE STOPPING WILL BE REQUIRED AT ALL PENETRATIONS OF FIRE SLABS RELATED TO THE WORK IN THIS CONTRACT.
- THE CONTRACTOR SHALL PROVIDE EQUIPMENT AND PIPING WITH IDENTIFICATION LABELS AS PER SPECIFICATIONS OR AS DIRECTED BY THE ENGINEER. EACH IDENTIFICATION LABEL SHALL BE INSTALLED UNDER THIS AN APPROVED IDENTIFICATION LABEL AND/OR NAMEPLATE.
- CERTAIN PIPING AND/OR APPURTENANCES HAVE NOT BEEN SHOWN ON DRAWINGS FOR REASONS OF CLARITY. THE CONTRACTOR SHALL IDENTIFY ALL SUCH PIPING AND/OR APPURTENANCES WHEN COMPLETING THE INSTALLATION.
- ALL NOTES AND LEGENDS ON ANY ONE DRAWING APPLY TO ALL DRAWINGS.
- TYPICAL PIPE TERMINOLOGY - 2" X 3" PIPE MEANS DOUBLE WALL FIBERGLASS PRIMARY CARRIER PIPE SURROUNDED BY A 3-INCH CONTAINMENT PIPE.
- ALL UNDERGROUND FILL, SUCTION, VENT, AND RETURN PIPING SHALL BE INSTALLED AT A MINIMUM 1 INCH PER 8 FEET OF PIPE. ALL ABOVE GROUND VENT, AND RETURN PIPING SHALL BE SLOPED BACK TO THE TANK AT A MINIMUM 1/4 INCH PER 10 FEET OF PIPE. PIPING SHALL BE SLOPED BACK TO THE TANK TO PERMIT LEAK DETECTION IN CONTAINMENT SLEEVES. ALL PIPING SHALL BE INSTALLED WITHOUT ANY SAGS OR LOW POINTS IN PIPING RUNS. A DOWNWARD SLOPE SHALL BE MAINTAINED THROUGH ALL FLEX CONNECTORS.
- THERE SHALL BE A MINIMUM OF 18 INCHES OF PEA GRAVEL BETWEEN THE TANK SHEETING OR TANK TOP SLAB. THERE SHALL BE A MINIMUM OF 18 INCHES OF PEA GRAVEL FROM THE EDGE OF ONE TANK TO THE EDGE OF ANOTHER TANK.
- THE TRANSITION FROM FIBERGLASS TO STEEL PIPE SHALL BE SUCH THAT LOADS ARE NOT TRANSMITTED TO THE FIBERGLASS. THE CONTRACTOR SHALL SUBMIT DETAILS FOR APPROVAL BY THE ENGINEER.
- VALVES AND ALL OTHER APPURTENANCES INSTALLED IN PIPING SHALL BE INSTALLED SO AS NOT TO IMPOSE STRESSES ON FIBERGLASS PIPE.
- MANHOLE COVERS AND FRAMES SHALL BE PERMANENTLY IMPREGNATED WITH COLORS AND SYMBOLS IN ACCORDANCE WITH THE CODE OF THE AMERICAN PETROLEUM INSTITUTE. IF NOT AVAILABLE, MANHOLE COVERS AND FRAMES IN ACCORDANCE WITH THE CODE OF THE AMERICAN PETROLEUM INSTITUTE.
- FUEL FILLS SHALL BE IDENTIFIED IN ACCORDANCE WITH THE CODE OF THE AMERICAN PETROLEUM INSTITUTE.
- UNUSED TANK OPENINGS SHALL BE PERMANENTLY SEALED AT THE MANUFACTURER AND/OR STATE AND LOCAL APPLICABLE REGULATIONS.




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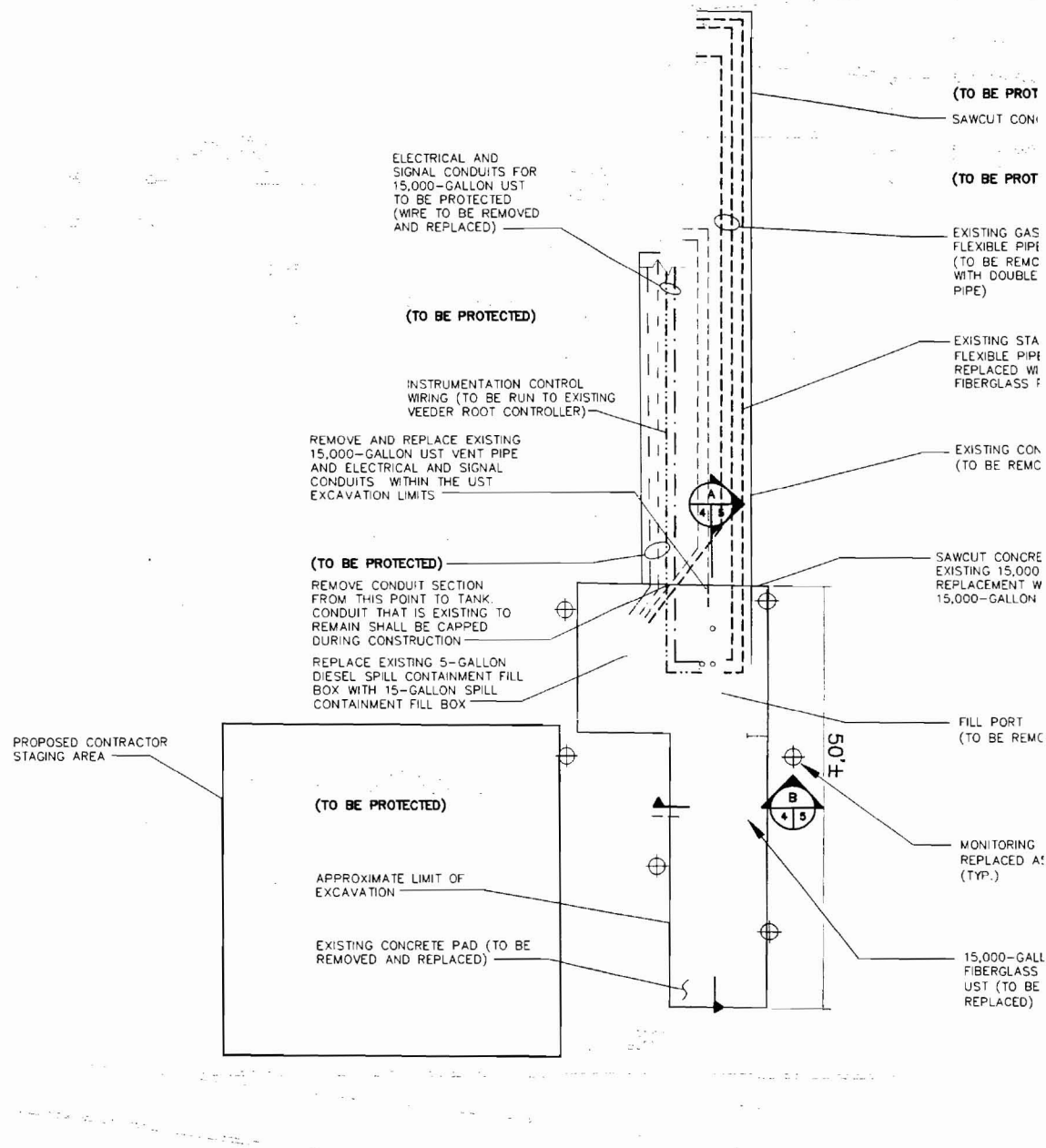
				DESIGNED BY: <u>GBV</u>	 <p>477 Congress St, 9th Floor Portland, ME 04101 Tel: 207.879.7686 Fax: 207.879.7685 www.urscorp.com</p>		 <p><b>UNITED STATES POSTAL SERVICE</b></p> <p>VEHICLE MAINTENANCE FAC PORTLAND, MAINE</p>								
				DRAWN BY: <u>PAL</u>											
				CHECKED BY: <u>RC</u>											
				PROJ. ENGR. <u>FAO</u>											
<table border="1"> <thead> <tr> <th>NO.</th> <th>MADE BY</th> <th>APPROVED BY</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td colspan="5" style="text-align: center;">REVISIONS</td> </tr> </tbody> </table>				NO.	MADE BY	APPROVED BY	DATE	DESCRIPTION	REVISIONS					JOB NO. 39742414	
NO.	MADE BY	APPROVED BY	DATE	DESCRIPTION											
REVISIONS															

**FUEL SYSTEMS NOTES:**

1. THE CLOSURE, REMOVAL, AND INSTALLATION OF TANKS SHALL BE IN ACCORDANCE WITH MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION RULES FOR UNDERGROUND STORAGE FACILITIES. (CHAPTER 691) UNITED STATES POSTAL SERVICE (USPS) UNDERGROUND STORAGE TANKS STANDARD DESIGN CRITERIA, SEPTEMBER 2005, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (USEPA) UNDERGROUND STORAGE TANK REGULATIONS (40 CFR PART 280), AND OIL POLLUTION PREVENTION REGULATIONS (40 CFR PART 112), NATIONAL FIRE PROTECTION AGENCY (NFPA) CODES (NFPA 30), AND ALL APPLICABLE LOCAL REGULATIONS, BUILDING CODES, AND FIRE CODES.
2. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND TURNING OVER TO THE ENGINEER ALL NECESSARY APPROVALS AND PERMITS FROM THE PORTLAND FIRE DEPARTMENT, MAINE DEP AND ANY LOCAL BUILDING DEPARTMENT, FIRE OFFICIAL, OR OTHER GOVERNING ENTITIES WITH APPLICABLE REQUIREMENTS FOR THE INSTALLATION, CLOSURE, REMOVAL AND OPERATION OF UNDERGROUND STORAGE SYSTEM.
3. UNDERGROUND TANKS FOR THE STORAGE OF GASOLINE FUEL SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL CODES AND REGULATIONS, ALL ACCEPTABLE INSTALLATION AND TESTING STANDARDS AND SHALL BE ACCEPTABLE TO THE PORTLAND FIRE DEPARTMENT. THESE STANDARDS SHALL INCLUDE BUT NOT BE LIMITED TO NFPA 30, ASTM D4021-86, STANDARD SPECIFICATION FOR GLASS-FIBER-REINFORCED POLYESTER UNDERGROUND PETROLEUM STORAGE TANKS, AND API RP-2015. UNDERGROUND STORAGE TANKS SHALL BE DOUBLE WALL FIBERGLASS TANKS AS MANUFACTURED BY XERXES OF MINNEAPOLIS, MINNESOTA, OR APPROVED EQUAL.
4. EXCAVATION FOR STORAGE TANKS SHALL BE MADE WITH DUE CARE TO AVOID UNDERMINING FOUNDATIONS OF EXISTING STRUCTURES.
5. ALL FILL PORTS SHALL BE CLEARLY LABELED AS TO THE PRODUCT BEING STORED.
6. EACH TANK SHALL BE EQUIPPED WITH A SEPARATE VENT PIPE. VENT PIPES SHALL RUN FROM THE TANK TO THE OUTSIDE AMBIENT AIR, TERMINATE 12 FEET ABOVE THE GROUND SURFACE. A VENT PIPE SHALL NOT BE OBSTRUCTED BY DEVICES THAT WILL REDUCE ITS CAPACITY AND THUS CAUSE EXCESSIVE BACK PRESSURE, EXCEPT AS APPROVED BY THE FIRE COMMISSIONER OF PORTLAND MAINE.
7. STORAGE TANKS AND ASSOCIATED SECONDARY CONTAINMENT SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF ALL FEDERAL, STATE, AND LOCAL CODES.
8. ALL WORK IS SUBJECT TO RULES AND REGULATIONS OF ALL FEDERAL, STATE, AND LOCAL AGENCIES HAVING JURISDICTION AT THE FACILITY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY AND OBTAIN ALL NECESSARY APPROVALS AND PERMITS FROM THESE AGENCIES PRIOR TO COMMENCING ANY WORK. THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY ALL DIMENSIONS AND CONDITIONS. ANY DISCREPANCIES ARE TO BE REPORTED TO THE ENGINEER FOR RESOLUTION BEFORE STARTING WORK.
9. WHERE A STORAGE SYSTEM FOR FLAMMABLE LIQUIDS AND A STORAGE SYSTEM FOR FUEL OIL ARE TO BE USED ON THE SAME PREMISES, THE TERMINAL OF THE FUEL OIL FILL PIPE SHALL BE PROVIDED WITH A LEFT HANDED THREAD AND THE FILL PIPE FITTING SHALL BE OF A DIFFERENT SIZE THAN THAT REQUIRED FOR THE FILL PIPE TO TANKS CONTAINING FLAMMABLE LIQUIDS.
10. REQUIREMENTS FOR XERXES OR APPROVED EQUAL FIBERGLASS DOUBLE WALL TANKS FOR UNDERGROUND GASOLINE FUEL STORAGE:
  - A) REGULATORY APPROVAL OR INDEPENDENT TESTING LABORATORY LISTING, TOGETHER WITH OTHER INFORMATION REQUIRED BY CODE AND REGULATIONS, MUST BE ON A PERMANENTLY AFFIXED LABEL AT THE TOP OF THE TANK. THE LABEL MUST ALSO INCLUDE THE MAXIMUM INTERNAL AND EXTERNAL PRESSURE THE TANK IS DESIGNED FOR, AND MUST INDICATE THAT IT IS BUILT TO RESIST ALCOHOL MIXTURES OF GASOLINE.
  - B) A PERMANENT FILL PORT LABEL SHALL BE INSTALLED AT ALL UNDERGROUND TANK FILL PORTS INDICATING THE TANK NUMBER, DATE OF INSTALLATION, TANK CAPACITY AND DIMENSIONS, NAME OF THE MANUFACTURER, THE STANDARD OF DESIGN, AND THE MAXIMUM DESIGN PRESSURE OF THE TANK.
  - C) ALL FILL PORTS MUST BE PERMANENTLY MARKED TO IDENTIFY THE PRODUCT INSIDE THE TANK, THESE MARKINGS MUST BE CONSISTENT WITH THE COLOR AND SYMBOL CODE OF THE AMERICAN PETROLEUM INSTITUTE.
  - D) ALL FIBERGLASS TANKS INSTALLED SHALL CONFORM TO APPLICABLE FEDERAL AND MAINE REGULATIONS. THE TANKS SHALL BE COMPATIBLE WITH THE PRODUCT STORED.
  - E) TANK SHALL BE TESTED WITH 5 PSIG ON INNER TANK (FOR A MINIMUM OF ONE HOUR) AFTER VERIFYING THE INTEGRITY OF THE TANK. MAINTAIN THE INNER TANK PRESSURE AND TEST OUTER TANK WITH A MINIMUM OF 2 PSIG PRESSURE WHILE SOAPING THE SKIN OF THE TANK.
- G) THE INNER TANK SHALL BE HYDROSTATICALLY TESTED PER THE MANUFACTURER'S INSTRUCTIONS.
- H) AN APPROVED TANK LEAK DETECTION AND INVENTORY CONTROL SYSTEM MUST CONTINUALLY CHECK THE ANNULAR SPACE AND PIPING MANWAY FOR LEAKS. THE LEAK DETECTION SYSTEM SHALL COMPLY WITH ALL REGULATIONS AND REQUIREMENTS APPLICABLE TO THESE SYSTEMS.
- I) ALL INNER TANKS SHALL HAVE BOTTOM REINFORCING PLATES OF SUFFICIENT SIZE BELOW OPENINGS IN THE TOP OF THE TANK TO PROTECT THE BOTTOM OF THE TANK FROM PUNCTURE. THESE SHALL BE MADE OF STEEL PLATES LAMINATED WITH FIBERGLASS RESIN.
- J) INSTALLATION IS TO BE DONE ONLY BY LICENSED INSTALLERS FOR ALL UNDERGROUND SYSTEMS, AND BE CERTIFIED BY THE TANK MANUFACTURER AS BEING SPECIFICALLY TRAINED IN FIBERGLASS TANK INSTALLATION.
- K) THE TANK MANUFACTURER SHALL PROVIDE TRAINING TO ALL WORKERS INVOLVED IN THE INSTALLATION OF FIBERGLASS TANKS.
- L) TANKS MUST BE ATTACHED TO EXISTING 12" x 12" DEADMEN. IN ADDITION, THE TANK SHALL BE SURROUNDED BY PEA GRAVEL. THE SIZE OF THE PEA GRAVEL SHALL NOT DIFFER FROM THE MANUFACTURER'S SPECIFICATIONS. PEA GRAVEL SHALL ALSO BE USED FROM THE TOP OF THE TANK TO THE BOTTOM OF THE APPROVED CONCRETE COVER SLAB.
- M) INSTALLATION OF ALL TANKS SHALL BE IN ACCORDANCE WITH AN APPROVED PROCEDURE, DESIGNED TO AVOID DAMAGE TO THE TANK DURING UNLOADING, HANDLING, PLACEMENT, BURIAL, AND SURROUNDING AND COVERING TANKS WITH APPROVED MATERIALS.
- N) AFTER CAREFUL PLACEMENT OF THE TANK ON THE PEA GRAVEL, THE TANK SHALL BE PROPERLY ANCHORED TO THE DEADMEN AS SPECIFIED BY THE TANK MANUFACTURER.
- O) ALL TANKS SHALL HAVE APPROVED AND PRE-TESTED LIFTING LUGS, AND SHALL BE PLACED IN EXCAVATION BY USING APPROVED LUGS.
11. REQUIREMENTS FOR THE USE OF THE 'TITEFLEX' FLEXIBLE CONNECTORS FOR UNDERGROUND PETROLEUM STORAGE TANK INSTALLATIONS SHALL BE AS FOLLOWS:
  - A) FLEXIBLE CONNECTORS SHALL BE FIRESAFE MODEL 1115040-24-L, 1115040-32-L, 1115046-24-L, 1115046-32-L, 111504A-24-L, 111504A-32-L, 111504C-24-L, 111504C-32-L, OR APPROVED EQUAL.
  - B) THE FLEXIBLE CONNECTORS SHALL BE LISTED BY UNDERWRITERS LABORATORY, OR FACTORY MUTUAL.
  - C) FLEXIBLE CONNECTORS SHALL BE 100% CONTAINED IN A NON-PERMEABLE, NONMETALLIC CONTAINMENT, DESIGNED TO CONTAIN ANY LEAKAGE, AND CHANNEL SUCH LEAKAGE TO A LOCATION EQUIPPED WITH AN APPROVED, CONTINUOUSLY MONITORED, AUTOMATIC LEAK DETECTION DEVICE.
  - D) WHEN USED AT TANK SUMPS, FLEXIBLE CONNECTORS SHALL BE LOCATED INSIDE OF SUMPS, AND SHALL BE FIRESAFE MODELS.
  - E) THE LENGTH OF THE FLEXIBLE CONNECTORS SHALL BE ADEQUATE TO RELIEVE STRESSES DUE TO EACH MOVEMENT, SETTLEMENT, AND SHIFTING OF THE TANK AND PIPING, OR DUE TO VIBRATION, TRAFFIC ETC., AND SHALL BE INSTALLED SO AS NOT TO HAVE LESS THAN THE MINIMUM BENDING RADIUS OF THE CONNECTORS AS RECOMMENDED BY THE MANUFACTURER. IT SHALL NOT TRANSMIT EXCESS STRESS TO THE THREADS OF THE ASSOCIATED FIBERGLASS PIPING. WHEN THE CONNECTOR IS BENT, IT SHALL NOT BE DISTORTED OUT OF SHAPE, AND ITS DIAMETER SHALL NOT BE CONSTRICTED OR OBSTRUCTED.
12. REQUIREMENTS FOR 'AMERON' FIBERGLASS PIPING FOR UNINSTALLATIONS (DUALOY 3000/L) SHALL BE AS FOLLOWS:
  - A) FIBERGLASS PIPING, FITTINGS, AND ADHESIVES SHALL UNDERWRITERS LABORATORY, OR FACTORY MUTUAL CERTIFICATION DOCUMENTS SHOWING THAT ALL FIBERGLASS ADHESIVES ARE ACCEPTED FOR USE WITH GASOLINE, MIXTURES OF GASOLINE, AND ARE COMPATIBLE WITH TANKS AND COMPLY WITH U.L. 871 AND 567, OR EQUIVALENT ACCEPTABLE TO THE PORTLAND FIRE DEPARTMENT.
  - B) THE OUTER PIPING SHALL BE A NON-PERMEABLE SLEEVE LEAKAGE, AND TO CHANNEL SUCH LEAKAGE AS APPROVED EQUIPPED WITH A CONTINUOUSLY MONITORED, FIRE RESISTANT LEAK DETECTION SYSTEM. THE SLEEVE SHALL BE CONTAINED IN THE PIPING, INCLUDING THE FLEXIBLE ANNULAR SPACE OF THE DOUBLE-WALL PIPING CANNULATED LOCATION. THE CONTRACTOR SHALL INSTALL ADDITIONAL EQUIPPED WITH LEAK DETECTION SO THAT THE ENTIRE PIPING IS MONITORED CONTINUOUSLY BY AN AUTOMATIC LEAK DETECTION SYSTEM. THE CONTRACTOR SHALL BE SUPERVISED BY A LICENSED INSTALLER CERTIFIED BY THE MANUFACTURER, OR INSTALLED UNDER THE MANUFACTURER'S SUPERVISION. INSTALLATION SHALL BE IN FULL COMPLIANCE WITH ALL RECOMMENDATIONS. THE CONTRACTOR SHALL TEST THE INSTALLATION OF THE LEAK DETECTION SYSTEM PRIOR TO, AND AFTER, THE POURING OF THE CONCRETE. THE CONTRACTOR SHALL SUBMIT DETAILED INSTALLATION PROCEDURES TO THE ENGINEER FOR REVIEW.
  - C) THE INSTALLATION OF DOUBLE-WALL PIPING SHALL BE BY A LICENSED INSTALLER FOR UNDERGROUND SYSTEMS, WHO SHALL BE A MEMBER OF A CODE OF PRACTICE DEVELOPED BY A RECOGNIZED ASSOCIATION, OR INDEPENDENT TESTING ORGANIZATION WITH THE MANUFACTURER'S INSTRUCTIONS SUBMITTED TO THE ENGINEER FOR REVIEW.
  - D) UNDERGROUND FIBERGLASS PIPING SHALL BE PROVIDED WITH ADEQUATE STRENGTH AND SIZE, POSITIONED NO MORE THAN 6 INCHES BELOW THE FINISHED GRADE. A WARNING TAPE BURIED 6 INCHES BELOW THE FIBERGLASS PIPING, WARNING THAT FIBERGLASS PIPING OR MOTOR VEHICLE FUEL PIPING IS LOCATED BELOW.
  - E) UNDERGROUND PRIMARY PIPING SHALL BE AIR TESTED TO ANTICIPATED PRESSURE OF THE SYSTEM, BUT NOT LESS THAN 1.5 TIMES THE OPERATING PRESSURE. UNDERGROUND SECONDARY PIPING MUST BE TIGHTENED TO ANTICIPATED PRESSURE OF THE SYSTEM, BUT NOT LESS THAN 1.5 TIMES THE OPERATING PRESSURE, BUT NOT LESS THAN 50 PSIG.
13. TEST PROCEDURES SHALL BE AS FOLLOWS:
  - A) ALL REQUIRED TESTS SHALL BE DONE ON SITE AFTER EXCAVATION AND PLACEMENT IN THE EXCAVATION. THERE SHALL BE A FINAL TEST AFTER BACKFILLING, AND A FINAL TEST AFTER PEAS ARE PLACED. ALL TESTS SHALL BE WITNESSED BY THE INSPECTOR.

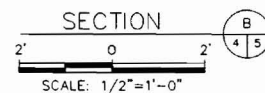
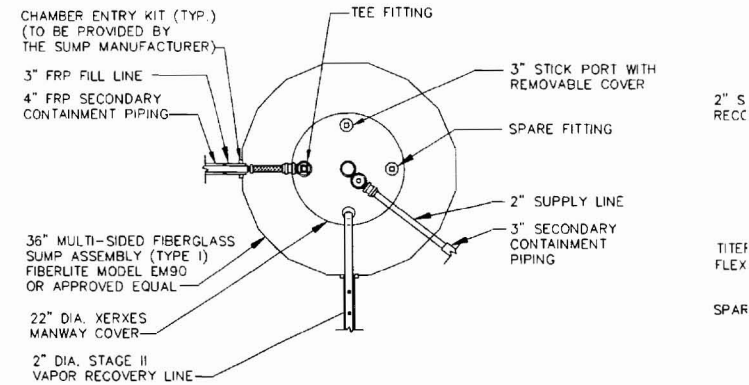
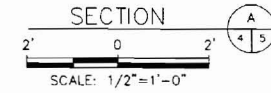
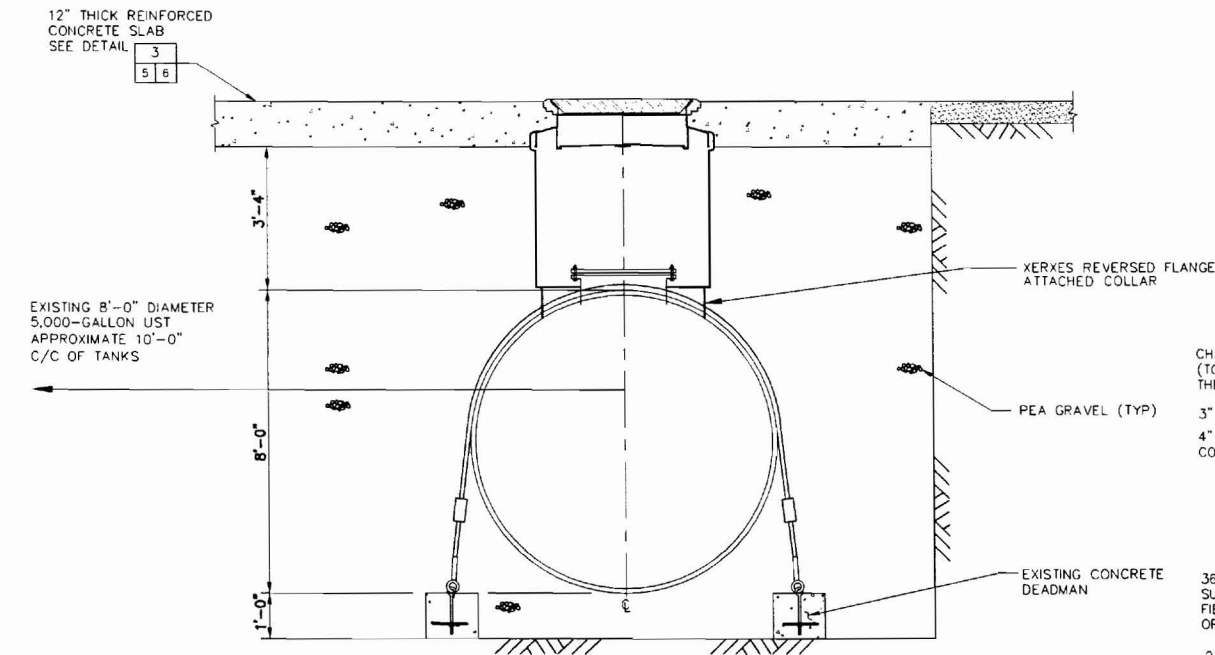
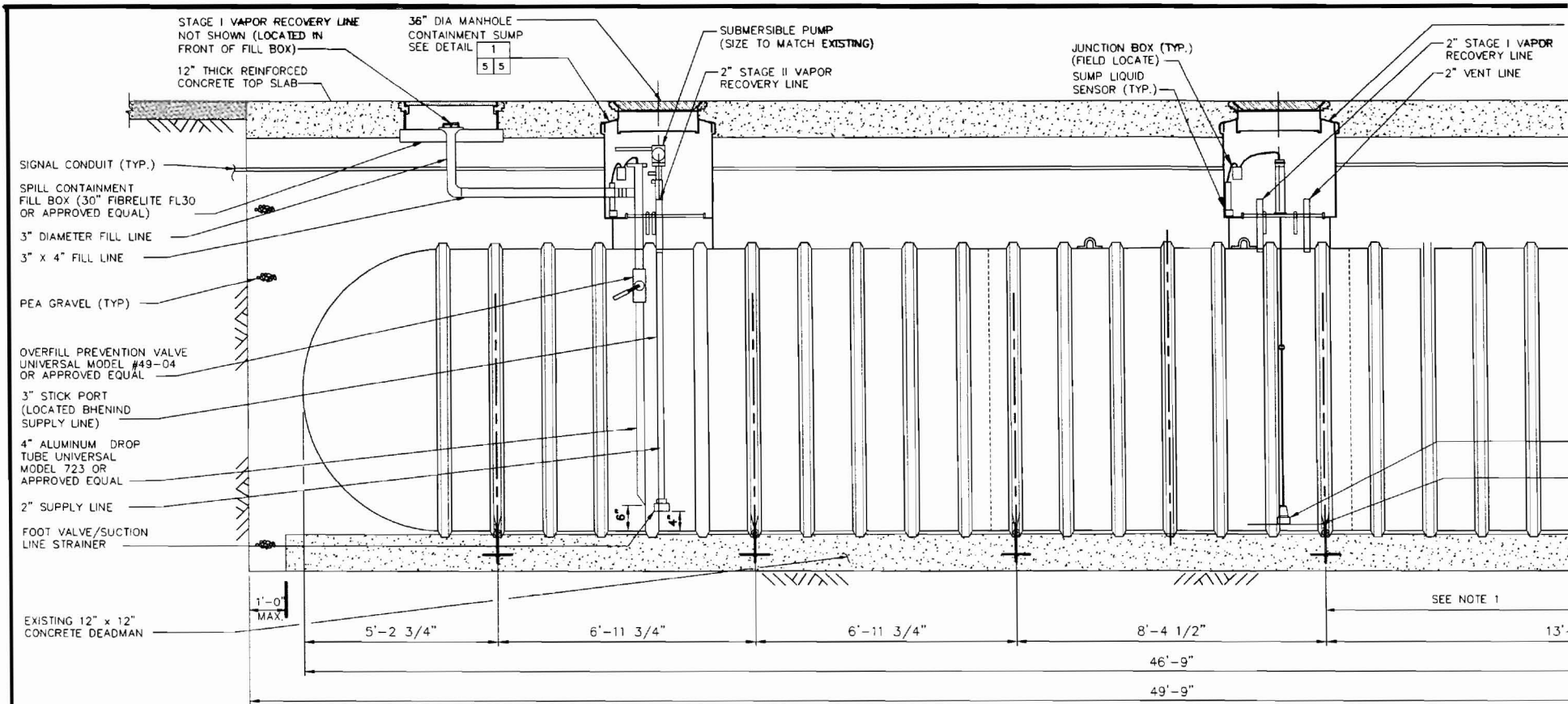
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				PROJ. ENGR. <u>FAO</u>										
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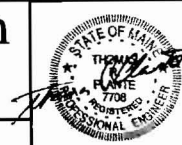
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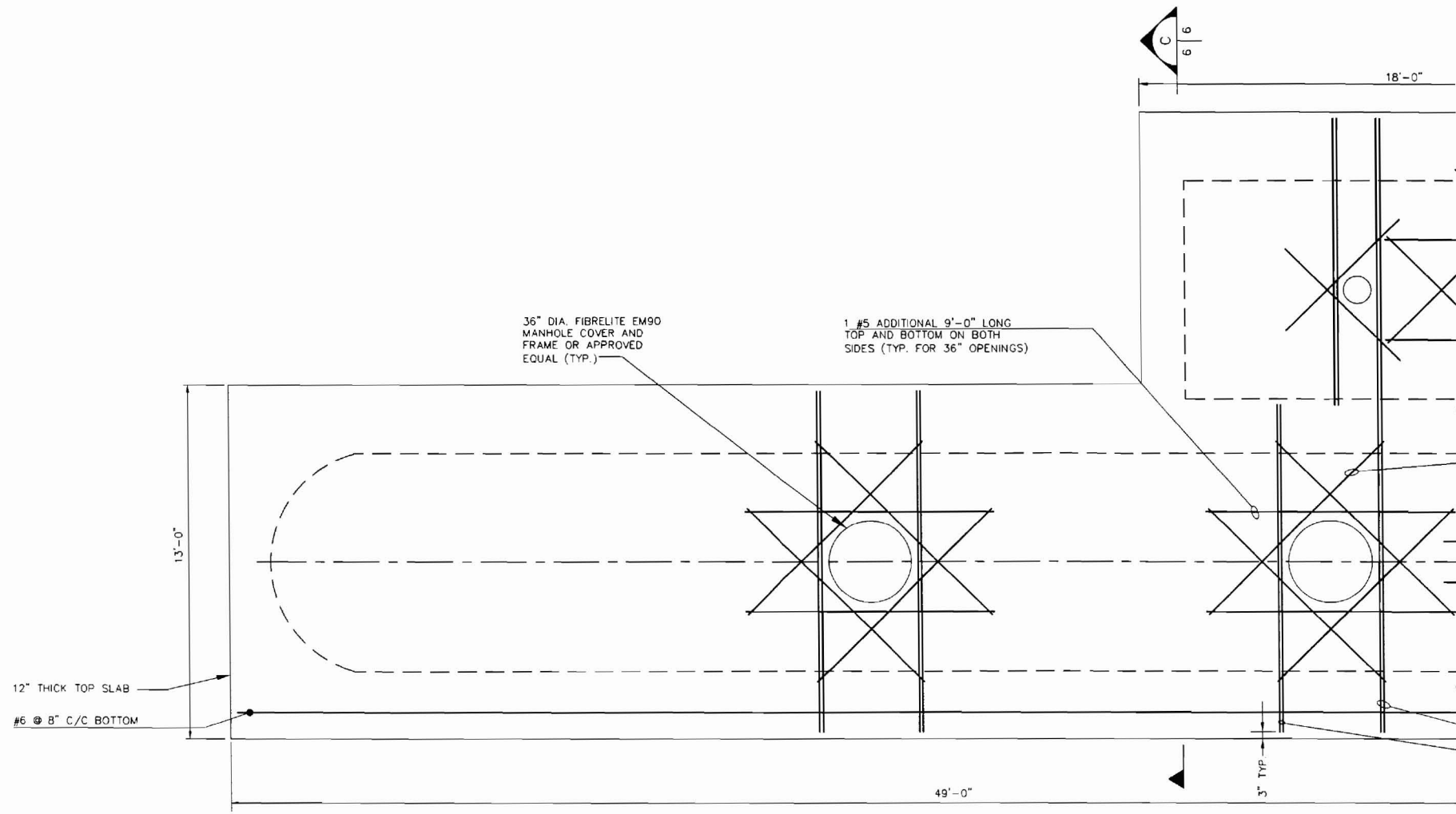
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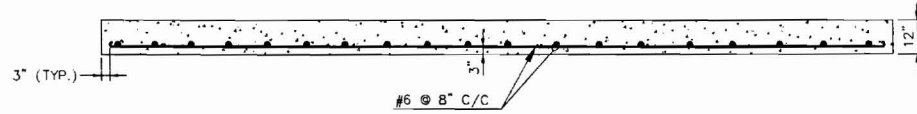
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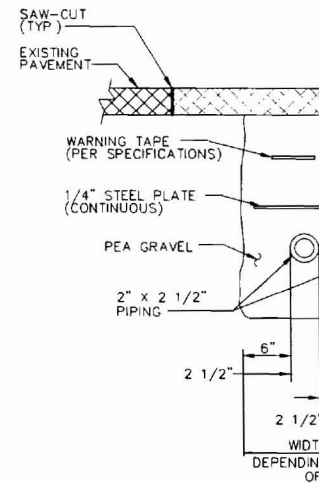




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SECTION C  
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