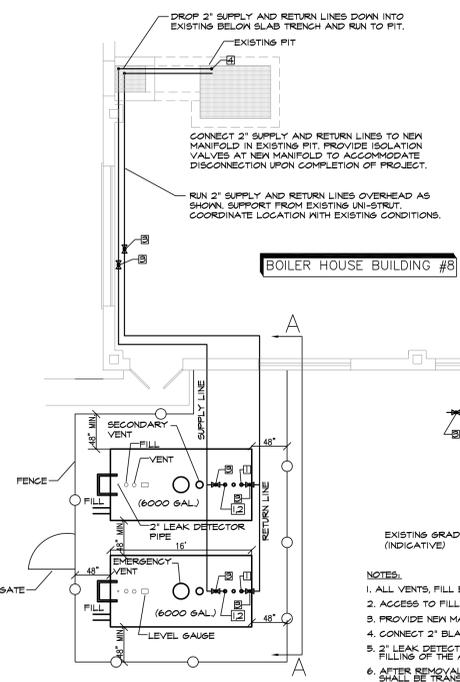
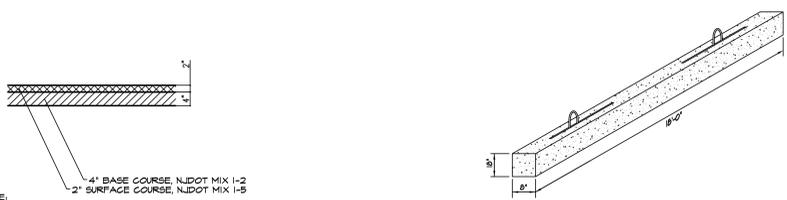


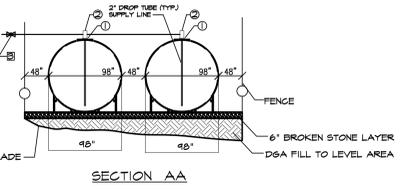
three eighths inch = one foot
 one quarter inch = one foot
 one eighth inch = one foot
 one half inch = one foot
 one inch = one foot
 one and one half inches = one foot
 two inches = one foot
 three inches = one foot
 four inches = one foot
 five inches = one foot
 six inches = one foot
 seven inches = one foot
 eight inches = one foot
 nine inches = one foot
 ten inches = one foot
 eleven inches = one foot
 twelve inches = one foot
 thirteen inches = one foot
 fourteen inches = one foot
 fifteen inches = one foot
 sixteen inches = one foot
 seventeen inches = one foot
 eighteen inches = one foot
 nineteen inches = one foot
 twenty inches = one foot
 twenty one inches = one foot
 twenty two inches = one foot
 twenty three inches = one foot
 twenty four inches = one foot
 twenty five inches = one foot
 twenty six inches = one foot
 twenty seven inches = one foot
 twenty eight inches = one foot
 twenty nine inches = one foot
 thirty inches = one foot
 thirty one inches = one foot
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 thirty three inches = one foot
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 thirty eight inches = one foot
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 forty eight inches = one foot
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 eighty five inches = one foot
 eighty six inches = one foot
 eighty seven inches = one foot
 eighty eight inches = one foot
 eighty nine inches = one foot
 ninety inches = one foot
 ninety one inches = one foot
 ninety two inches = one foot
 ninety three inches = one foot
 ninety four inches = one foot
 ninety five inches = one foot
 ninety six inches = one foot
 ninety seven inches = one foot
 ninety eight inches = one foot
 ninety nine inches = one foot
 one hundred inches = one foot



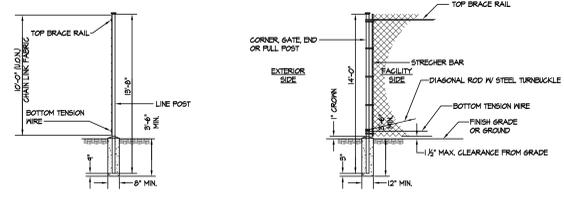
1 MIOI NOT TO SCALE
TEMPORARY ABOVE GRADE STORAGE TANK INSTALLATION DETAILS



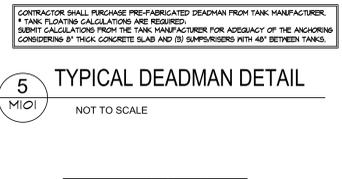
4 MIOI NOT TO SCALE
BITUMINOUS PAVEMENT DETAIL



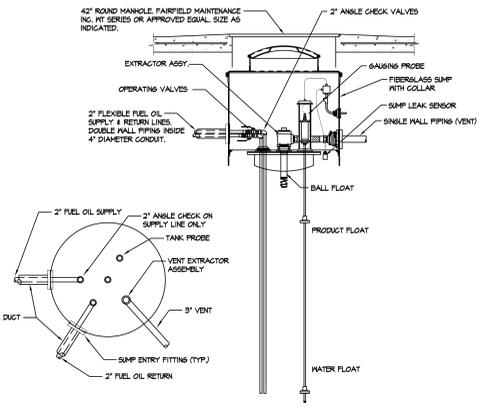
2 MIOI NOT TO SCALE
TEMPORARY ABOVE GRADE STORAGE TANK DETAIL



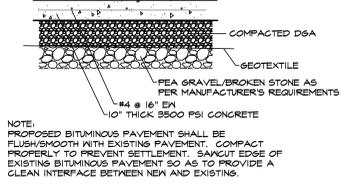
6 MIOI NOT TO SCALE
TYPICAL WORK FENCING DETAILS



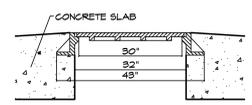
5 MIOI NOT TO SCALE
TYPICAL DEADMAN DETAIL



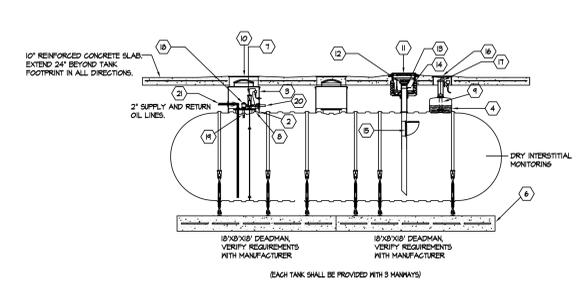
8 MIOI NOT TO SCALE
TYPICAL OIL TANK SUMP DETAIL



7 MIOI NOT TO SCALE
HEAVY DUTY PAVEMENT DETAIL



9 MIOI NOT TO SCALE
EXAMPLE MANHOLE COVER ACCESS

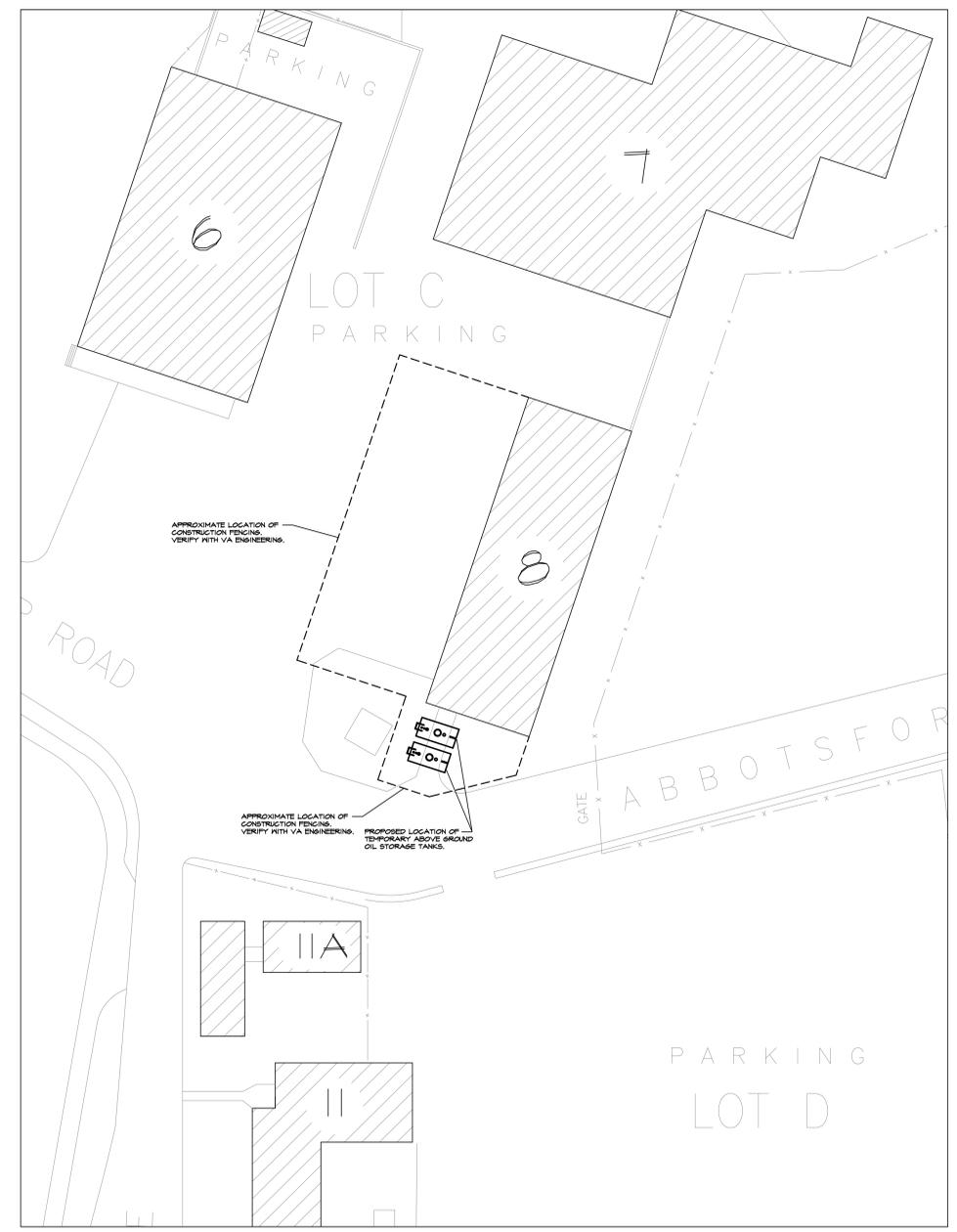


3 MIOI NOT TO SCALE
UNDERGROUND TANK DETAILS

PARTS LIST	
NO.	DESCRIPTION
1	DOUBLE WALL FIBERGLASS STORAGE TANK
2	42" FIBERGLASS ATTACHED COLLAR
3	42" FIBERGLASS FIBERGLASS ATTACHED COLLAR RISER
4	HYDROSTATIC MONITORING SYSTEM
5	FIBERGLASS HOLD DOWN STRAP W/ TURNBUCKLE ASSY.
6	PRECAST DEADMAN - BY TANK MFG.
7	LEVEL PROBE
8	DISTINGUISHING LEAK SENSOR
9	HYDROSTATIC MONITORING SENSOR
10	42" LARGE ROUND MANHOLE
11	FIFTEEN GALLON SPILL FILL HANDBLE W/ LEVER TYPE HANDLE
12	FILL CAP
13	FILL ADAPTER
14	PRODUCT LABEL MARKER
15	OVERFILL PREVENTION VALVE
16	MONITORING MANHOLE
17	4" SENSOR CAP
18	EXTRACTOR ASSEMBLY
19	BALL FLOAT
20	SINGLE WALL VENT PIPING
21	2" DIA. FLEX PRODUCT PIPING

THE PROJECT SCOPE OF WORK SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:

- SCOPE OF WORK WILL INCLUDE PROVISION OF TWO 6000 GALLON CAPACITY STANDBY FUEL OIL STORAGE TANKS FOR THE DURATION OF THE PROJECT, REMOVAL OF (6) 25000 GALLON SINGLE WALLED STEEL TANKS WHICH ARE LOCATED WITHIN A BELOW-GRADE CONCRETE VAULT, AND INSTALLATION OF AN UNDERGROUND STORAGE TANK (UST) SYSTEM COMPRISING OF (4) NEW 20,000 GALLON FIBERGLASS FUEL OIL STORAGE TANKS.
- PROVISION OF TEMPORARY TANKS FOR STANDBY FUEL SUPPLY UP TO 12,000-GALLONS TO THE EXISTING BOILERS FOR A PERIOD OF FIVE MONTHS. THIS ITEM WILL INCLUDE:
1. FILLING AND LEVELING THE LOCATION DESIGNATED FOR TEMPORARY FUEL STORAGE TO DIMENSIONS REQUIRED TO FIT THE TANKS, FENCING AND ACCESS STAIRS. THIS AREA IS LOCATED IN THE EXTERIOR AREA ON THE SOUTHWESTERN SIDE OF THE BOILER HOUSE.
 2. TRANSPORTATION TO SITE AND INSTALLATION OF TWO DOUBLE-WALLED OR DIKED TEMPORARY TANKS OF 6,000-GALLON CAPACITY.
 3. INSTALLATION OF PIPING INCLUDING INTERCONNECTION TO THE EXISTING FUEL PIPING TO THE EXISTING BOILERS AT THE DESIGNATED LOCATION.
 4. COMMISSIONING OF THE STANDBY FUEL OIL SUPPLY SYSTEM BY TRANSFERRING FUEL OIL FROM THE EXISTING TANKS WITHIN THE CONCRETE VAULT AFTER THE TEMPORARY FUEL OIL SUPPLY SYSTEM IS COMMISSIONED.
 5. THE SYSTEM IS TO REMAIN OPERATIONAL FOR A PERIOD OF FIVE MONTHS UNTIL THE NEW TANKS ARE OPERATIONAL.
 6. DISMANTLING OF THE STANDBY ARRANGEMENTS ONCE THE NEW UST SYSTEM IS FULLY COMMISSIONED INCLUDING RESTORATION OF THE ASPHALT DRIVEWAYS AND CURBING.
- REMOVAL OF SIX 25,000-GALLON SINGLE-WALLED STEEL TANKS WHICH ARE LOCATED WITHIN A CONCRETE VAULT LOCATED IN THE EXTERIOR AREA ON THE NORTHWESTERN SIDE OF THE BOILER HOUSE. THIS ITEM WILL INCLUDE:
1. DISCONNECTING ALL UTILITIES INCLUDING ELECTRICAL POWER SUPPLY WITHIN THE UNDERGROUND VAULT.
 2. ALL WORK INSIDE THE CONCRETE VAULT SHALL BE CONSIDERED CONFINED SPACE ENTRY UNTIL THE TOP SLAB IS REMOVED.
 3. PUMPING OUT THE RESIDUAL PRODUCT FROM THE EXISTING TANKS.
 4. REMOVAL OF ASPHALT FROM THE CONCRETE ROOF SLAB.
 5. REMOVE CONCRETE ROOF SLAB OF THE VAULT TO EXPOSE THE EXISTING TANKS, THE SIDEWALLS AND BOTTOM SLAB OF THE CONCRETE VAULT TO REMAIN.
 6. CLEAN OUT, REMOVE AND DISPOSE THE TANKS OFF-SITE.
 7. DEMOLISH THE VERTICAL STEEL SUPPORT BEAMS, COLUMNS, COLUMN FOUNDATIONS AND TANK SADDLES IN THE AREA WHERE THE REPLACEMENT USTs ARE TO BE INSTALLED.
- INSTALLATION OF AN UNDERGROUND STORAGE TANK SYSTEM COMPRISING OF FOUR 20,000-GALLON DOUBLE WALL FIBERGLASS TANKS. THIS ITEM WILL INCLUDE:
1. INSTALLATION OF PRECAST CONCRETE DEAD-MEN AS SPECIFIED BY TANK MANUFACTURER.
 2. BACKFILLING WITHIN THE VAULT WITH CLEAN STONE TO FORM THE BEDDING FOR THE NEW TANKS AS SPECIFIED BY THE TANK MANUFACTURER.
 3. INSTALLATION OF FOUR 20,000-GALLON TANKS AS SPECIFIED AND APPROVED BY THE ENGINEER.
 4. INSTALLATION OF 2" DIAMETER OPV/AFT DOUBLE WALL PIPING WITHIN 4" DUCTING AS SPECIFIED AND APPROVED BY THE ENGINEER.
 5. PROVISION OF THE TANK MONITORING PROBES AND SENSORS AS SPECIFIED AND APPROVED BY THE ENGINEER. THE TANKS AND PROBE WIRING WILL TERMINATE AT THE EXISTING INCON CONSOLE LOCATED WITHIN THE BOILER HOUSE.
 6. COMMISSIONING OF THE SYSTEM ALONG WITH TRAINING FOR OPERATING PERSONNEL.



10 MIOI SCALE: 1" = 30'
PARTIAL SITE PLAN - TEMPORARY OIL TANK LOCATION

100% FINAL SUBMISSION

CONSULTANTS:	
100% Final Submission	5-23-12
100% Design Review Submission	5-15-12
95% Design Review Submission	4-26-12
65% Design Review Submission	3-30-12
Revisions:	Date

ARCHITECT/ENGINEERS:	
 LJM ENGINEERING GROUP 439 Route 46 East Rockaway, New Jersey 07866 Phone: (973) 586-3004 Fax: (973) 586-3009 E-Mail: office@ljmengineering.com	
 LAWRENCE J. MUSE, P.E. N.J. LICENSE GE28246	

Drawing Title	
NOTES AND DETAILS	
Approved: Project Director	

Project Title	
BOILER PLANT STORAGE TANK REPLACEMENT 385 TREMONT AVENUE EAST ORANGE, NJ 07018	
Location East Orange Campus	
Date May 15, 2012	Checked LJM
Drawn CLM	

Project Number	
561-10-139	
Building Number 8	
Drawing Number M101	
Dwg. 2 of 4	

Office of
Construction
and Facilities
Management

Department of
Veterans Affairs