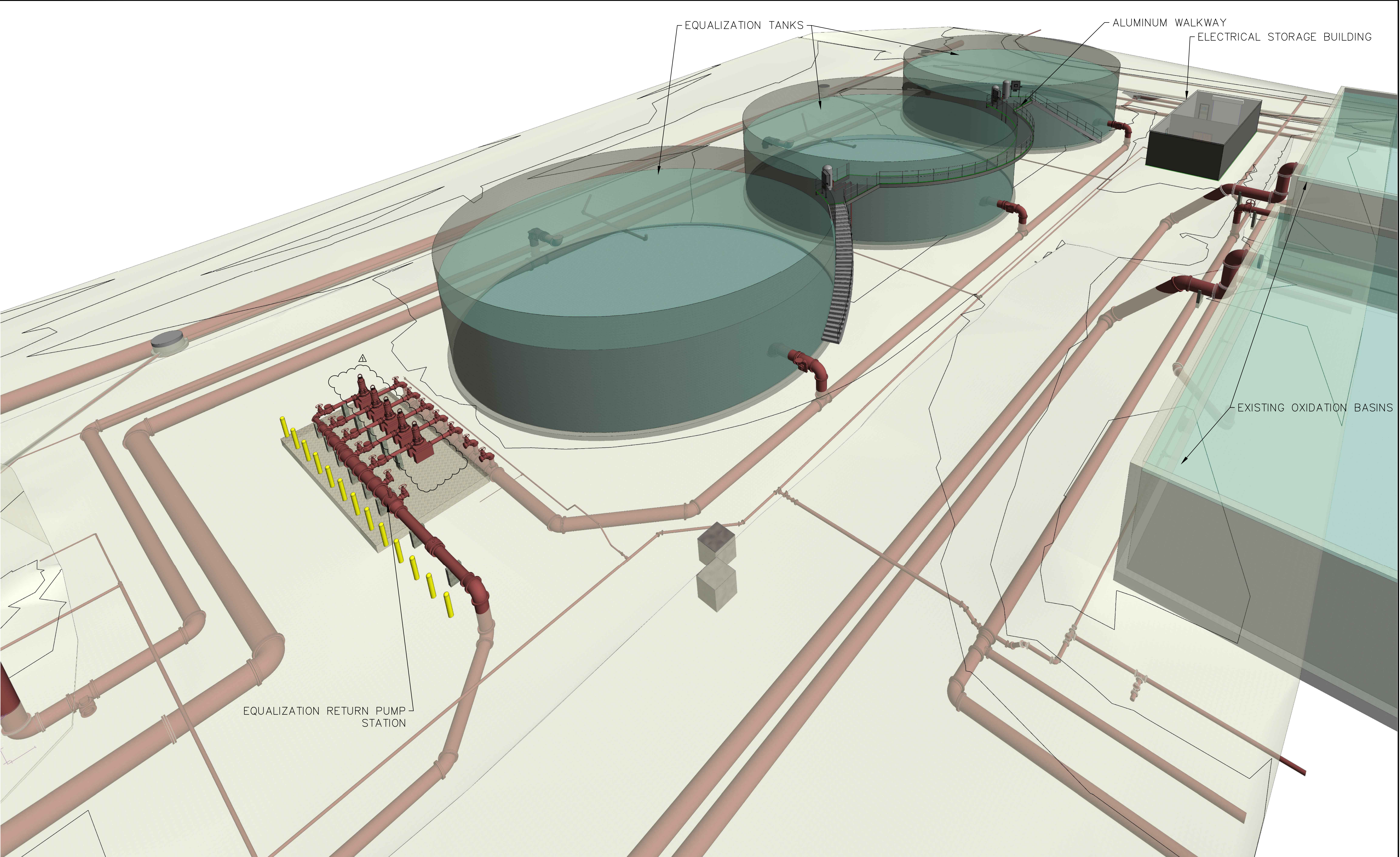


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KHA PROJECT
148400013

DATE
1/24/2017

SCALE AS SHOWN

DESIGNED BY WWW

DRAWN BY JWW

CHECKED BY WEW



**NORTH WRF
EQUALIZATION TANK**

MANATEE COUNTY

LICENSED PROFESSIONAL

W. WADE WOOD, P.E.

FL LICENSE NUMBER
69051

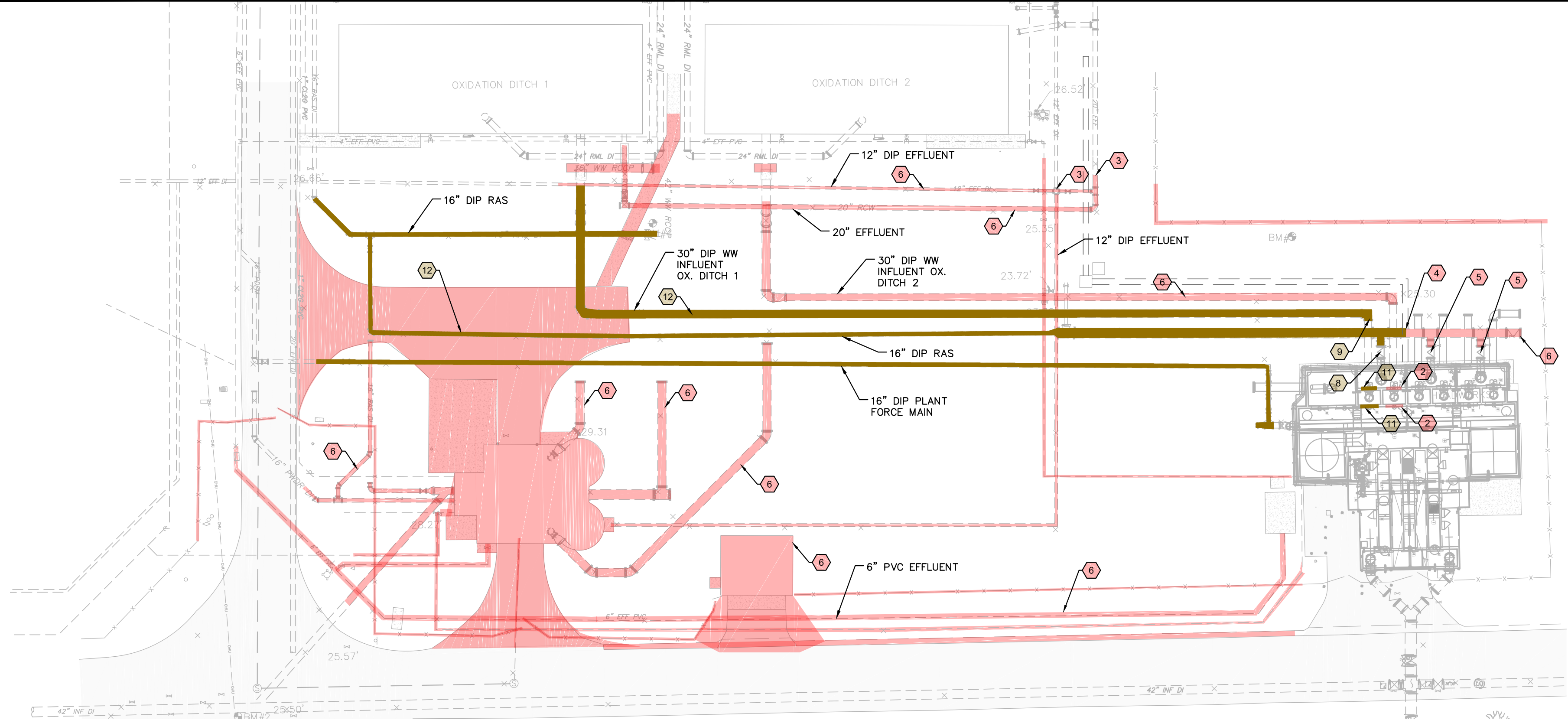
FL DATE:

**PROPOSED IMPROVEMENTS
VIEW**

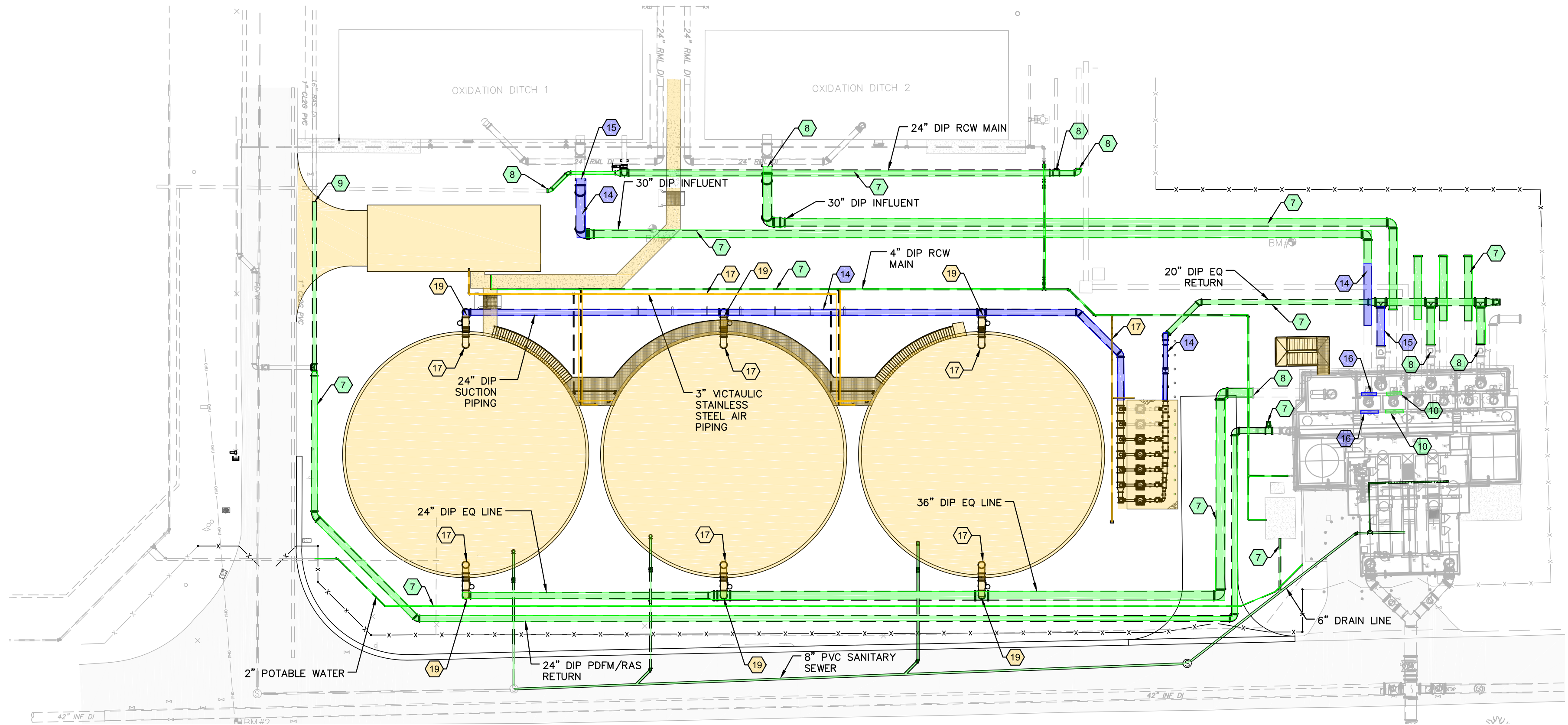
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G-4

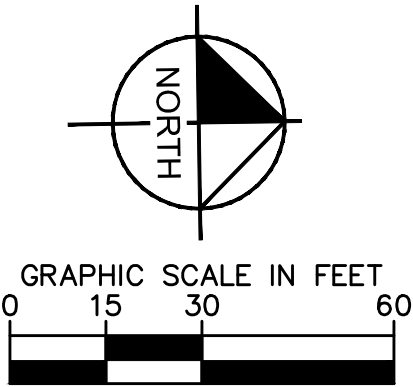
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DEMOLITION



CONSTRUCTION



CONSTRUCTION SEQUENCING:

PHASE 1 DEMOLITION

- 1 CONSTRUCT SILT FENCE
- 2 COORDINATE WITH COUNTY STAFF TO CLOSE WEIRS TRANSFERRING ALL FLOWS TO OXIDATION DITCH 1
- 3 COORDINATE WITH COUNTY STAFF TO SHUT DOWN RECLAIMED WATER SYSTEM AND TEMPORARILY CAP RECLAIMED WATER MAINS
- 4 COORDINATE WITH COUNTY TO TEMPORARILY SHUT DOWN RAS PUMP STATION TO INSTALL A TEMPORARY 30-INCH CAP
- 5 CLOSE EXISTING VALVES
- 6 PHASE 1 DEMOLITION

PHASE 1 CONSTRUCTION

- 7 PERFORM PHASE 1 CONSTRUCTION AND TEST PIPING
(REMOVE EXISTING PIPING AS NECESSARY FOR CONNECTION)
- 8 PERFORM CONNECTIONS AND COORDINATE WITH COUNTY TO OPEN APPROPRIATE VALVES
- 9 COORDINATE WITH COUNTY TO TEMPORARILY SHUT RAS PUMP STATION AND MAKE CONNECTION
- 10 COORDINATE WITH COUNTY TO OPEN WEIRS TO TRANSFER FLOW TO OXIDATION DITCH 2

PHASE 2 DEMOLITION

- 11 COORDINATE WITH COUNTY TO CLOSE WEIRS TRANSFERRING FLOWS TO OXIDATION DITCH 1
- 12 PHASE 2 DEMOLITION

PHASE 2 CONSTRUCTION

- 13 PERFORM CONNECTIONS AND COORDINATE WITH COUNTY TO TURN MAIN PLANT PUMP STATION ON
- 14 PHASE 2 CONSTRUCTION AND TEST PIPING
- 15 PERFORM CONNECTIONS AND COORDINATE WITH COUNTY TO OPEN VALVES
- 16 COORDINATE WITH COUNTY TO OPEN WEIRS SENDING FLOWS TO OXIDATION DITCH 1

PHASE 3 CONSTRUCTION

- 17 CONSTRUCT TANKS, PIPING, AND PAVEMENT/WALKWAYS
- 18 FILL AND TEST TANKS. SURCHARGE FOR A MINIMUM OF 14 DAYS PRIOR TO MAKING CONNECTIONS BETWEEN TANKS AND PIPING
- 19 PERFORM CONNECTIONS AFTER SURCHARGING

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FL DATE:

CONSTRUCTION PHASING
PLAN

SHEET NUMBER

G-5

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DATE 1/24/2017	
SCALE AS SHOWN	
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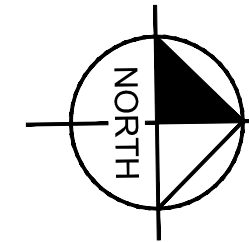
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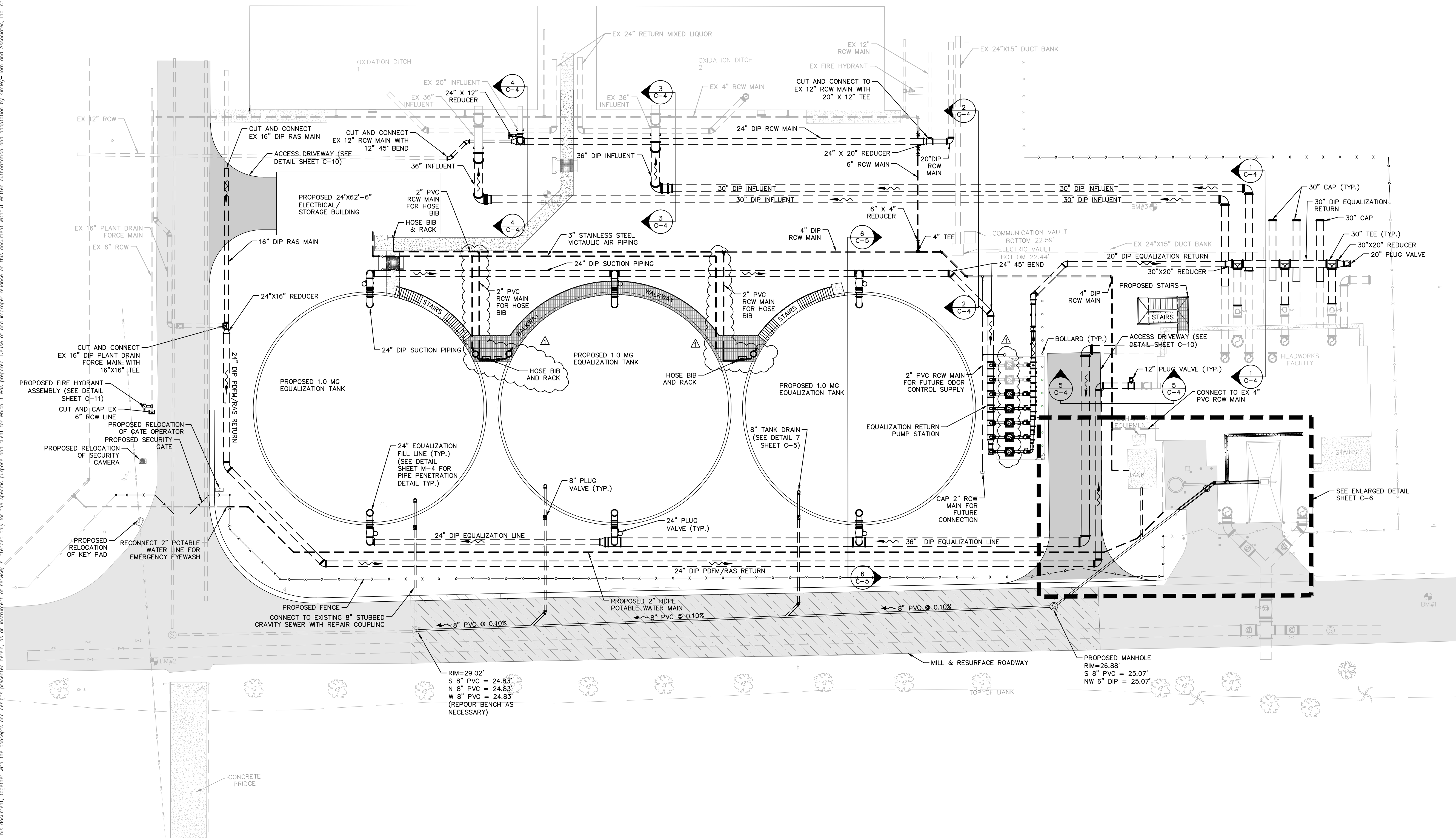
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C-1

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GRAPHIC SCALE IN FEET
0 10 20 40



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**Manatee
County
FLORIDA**

**NORTH WRF
EQUALIZATION TANK**

MANATEE COUNTY

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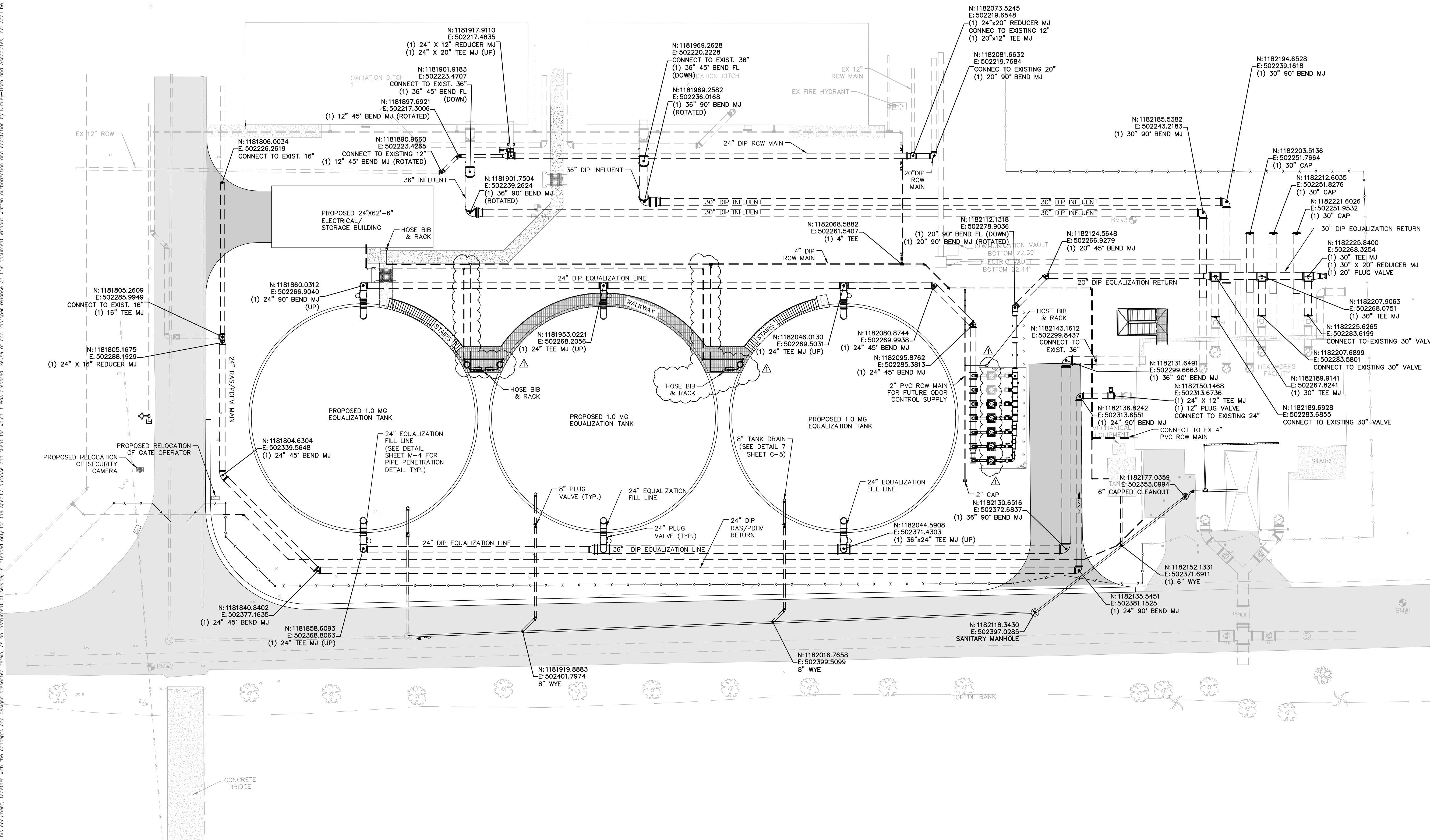
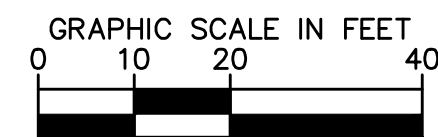
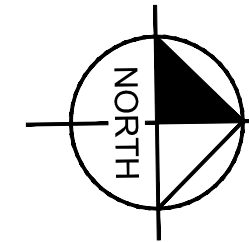
FL DATE:

SITE PIPING PLAN


SHEET NUMBER

C-2

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MANATEE COUNTY

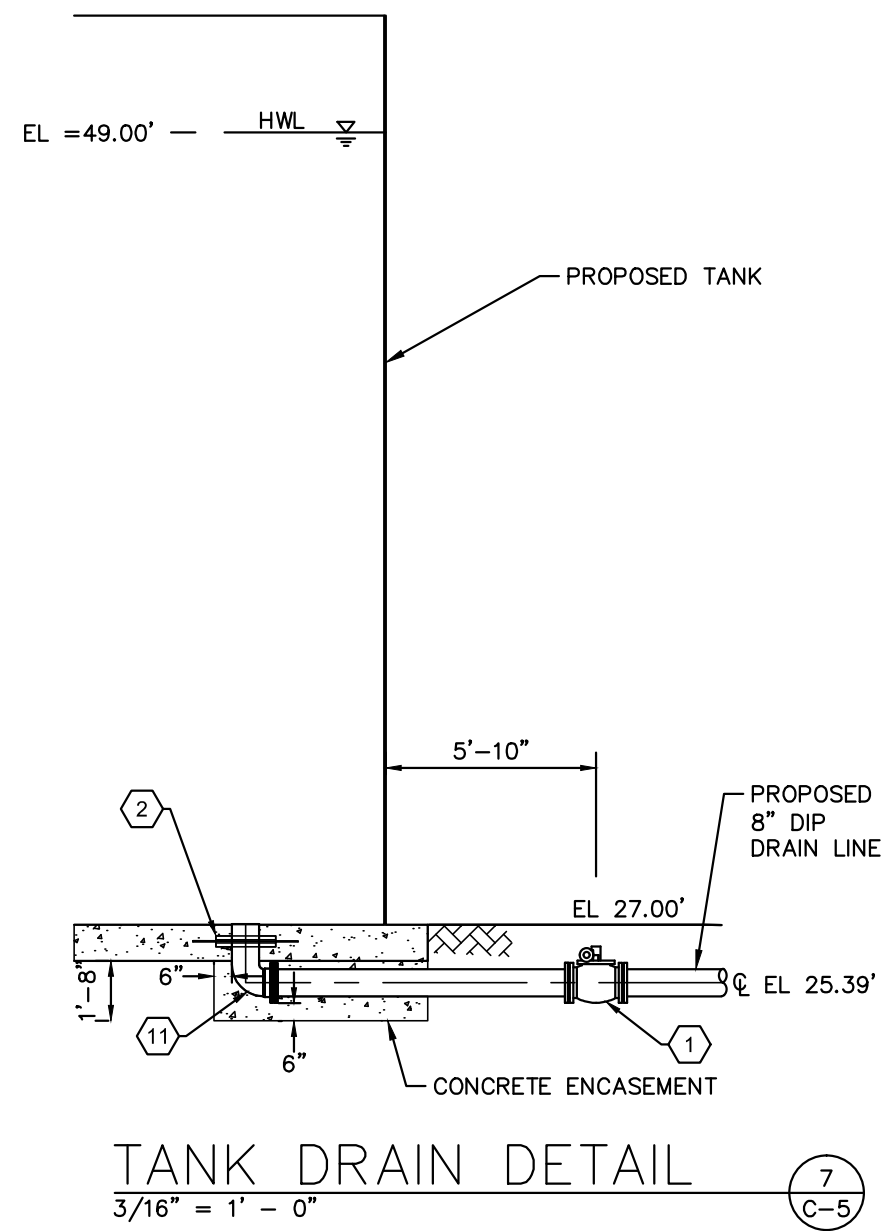
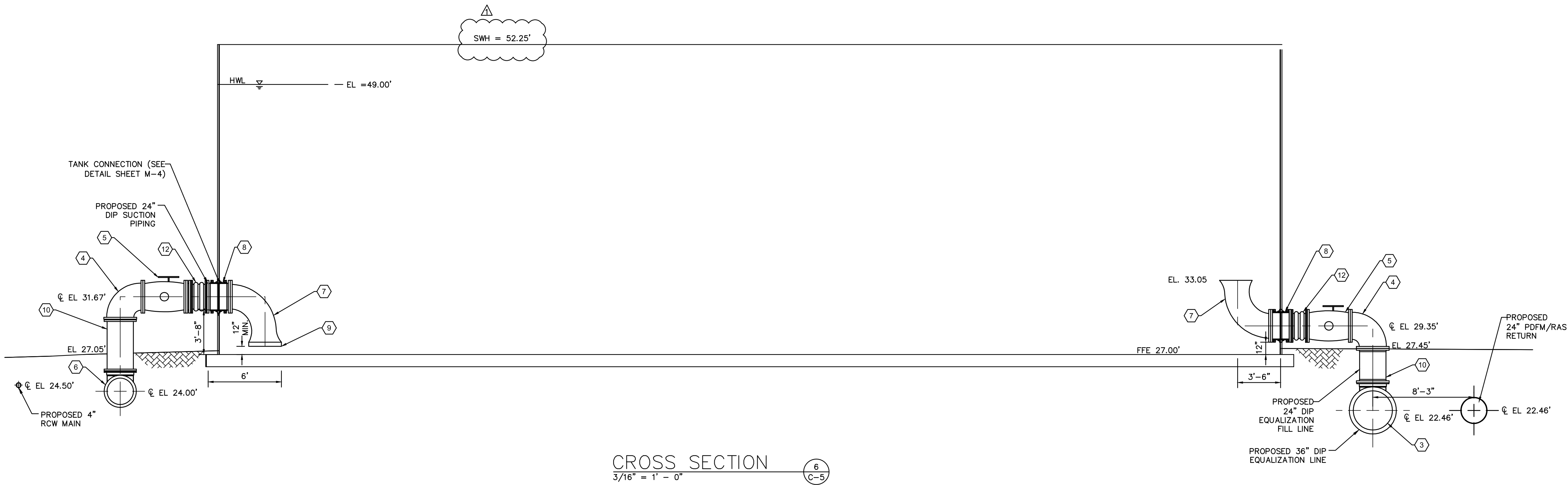
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SITE PIPING LAYOUT PLAN

FL DATE:

SHEET NUMBER
C-3

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KEY NOTES

- 1 8" ECCENTRIC PLUG VALVE, MJ
- 2 FOUNDATION PENETRATION (SEE DETAIL SHEET M-3)
- 3 36" X 24" D.I. TEE, MJ
- 4 24" D.I. 90° BEND, FL
- 5 24" ECCENTRIC PLUG VALVE, FL
- 6 24" D.I. TEE, MJ
- 7 24" D.I. LONG RADIUS 90° BEND W/ FLARED END, FL
- 8 24" D.I. SPOOL PIECE, FL
- 9 4" BAFFLE
- 10 24" D.I. SPOOL PIECE, FL X PE
- 11 8" D.I. 90° BEND, MJ X PE
- 12 24" FLEXIBLE EXPANSION JOINT (DOUBLE)

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MANATEE COUNTY

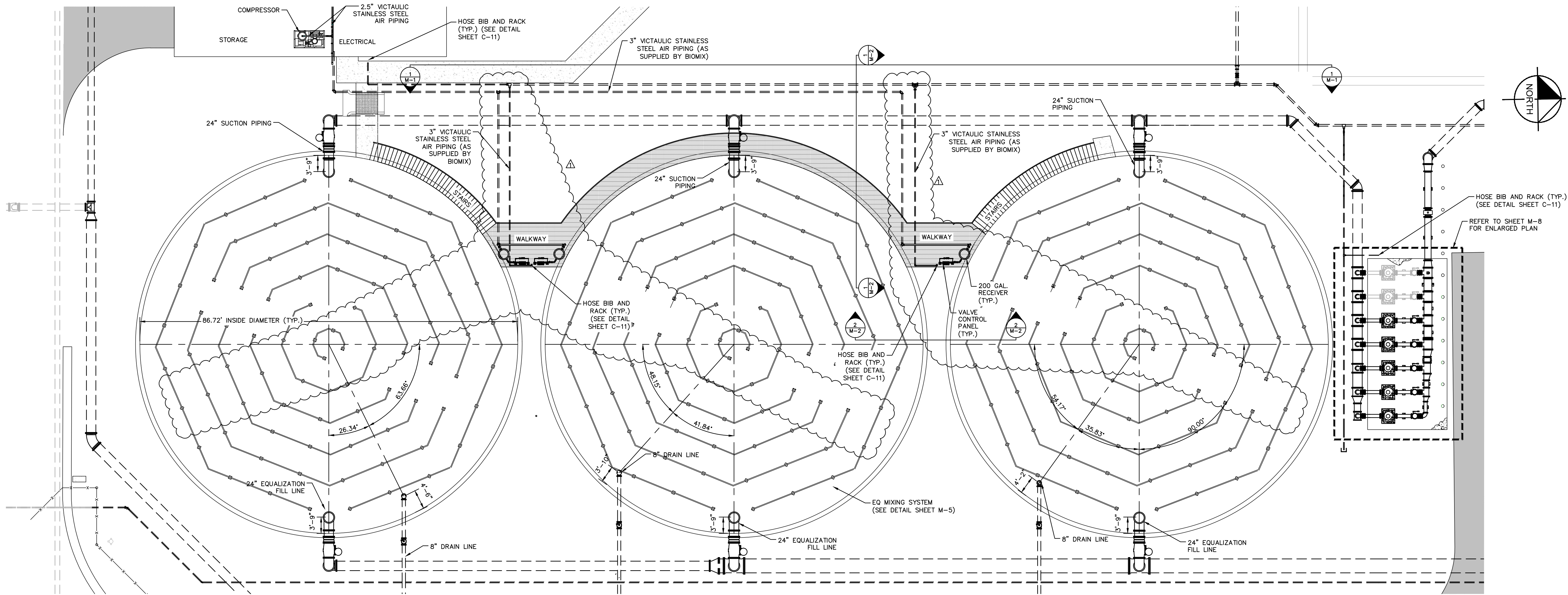
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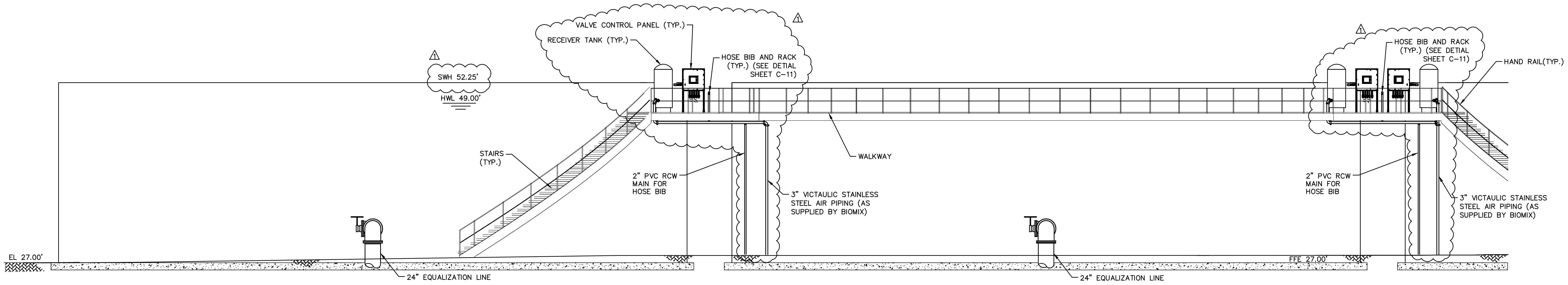
YARD PIPING SECTIONS

SHEET NUMBER
C-5

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EQ TANK PLAN VIEW
1\"/>



EQUALIZATION TANK - ELEVATION
1\"/>

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Manatee County
FLORIDA

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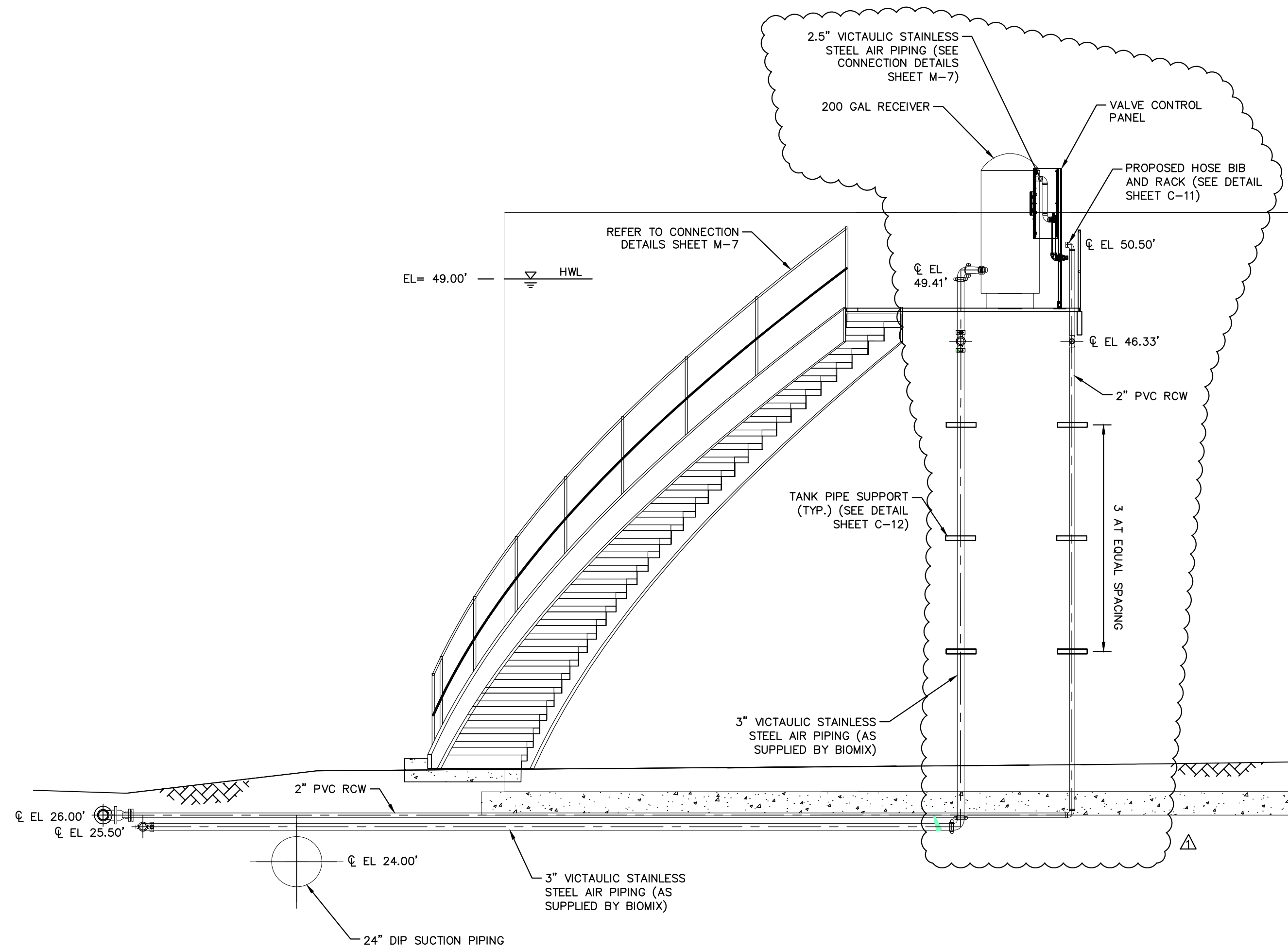
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FL LICENSE NUMBER 69051
FL DATE:

**EQUALIZATION TANK PLAN &
ELEVATION**

SHEET NUMBER
M-1

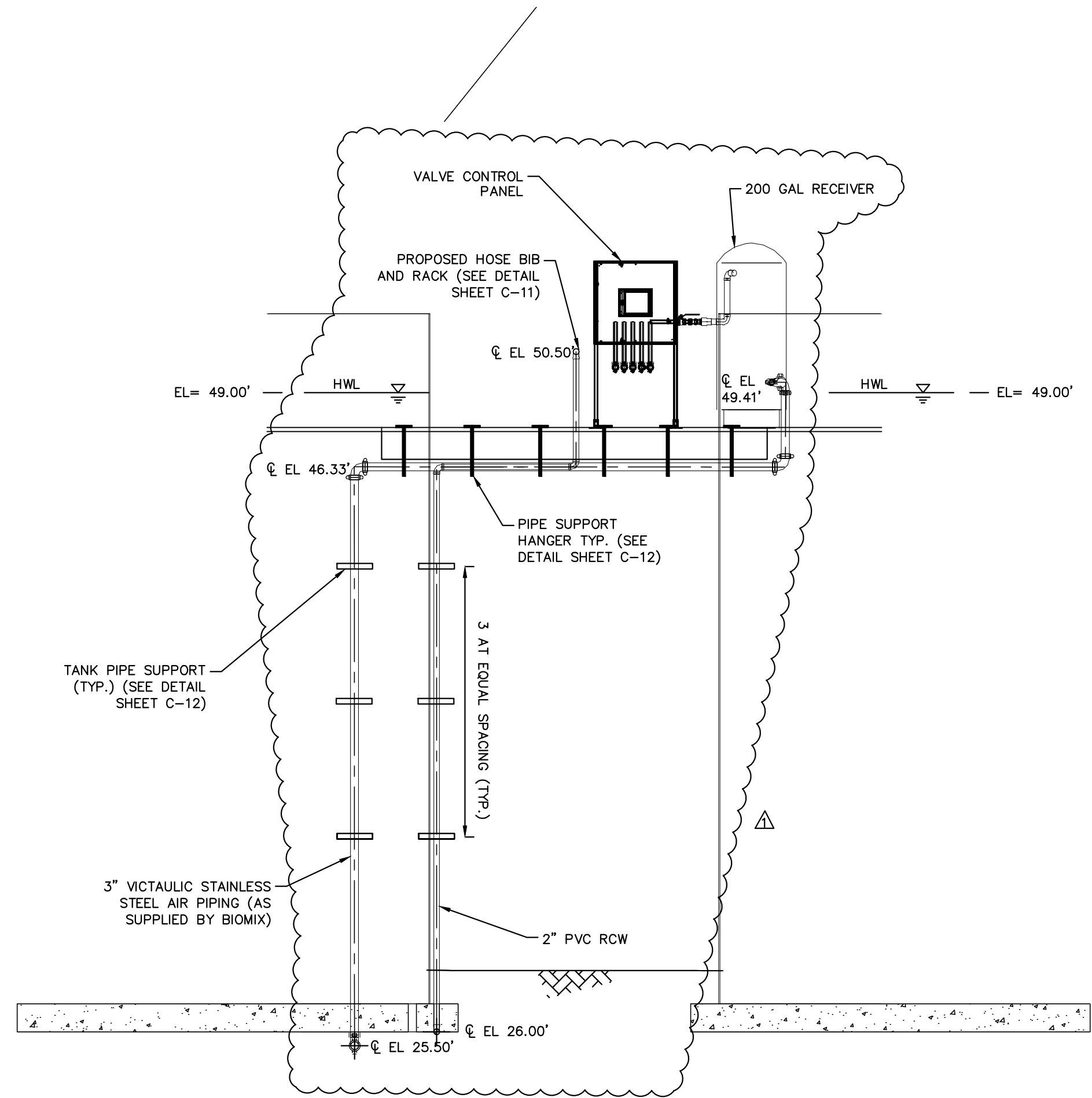
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SECTION
1/4" = 1' - 0"

1
M-2

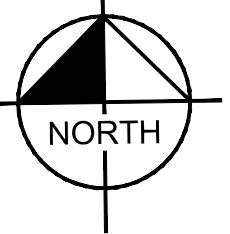
NOTE: HANDRAILS AND STRUCTURAL
MEMBERS REMOVED FOR CLARITY



SECTION
1/4" = 1' - 0"

2
M-2

NOTE: HANDRAILS AND STRUCTURAL
MEMBERS REMOVED FOR CLARITY




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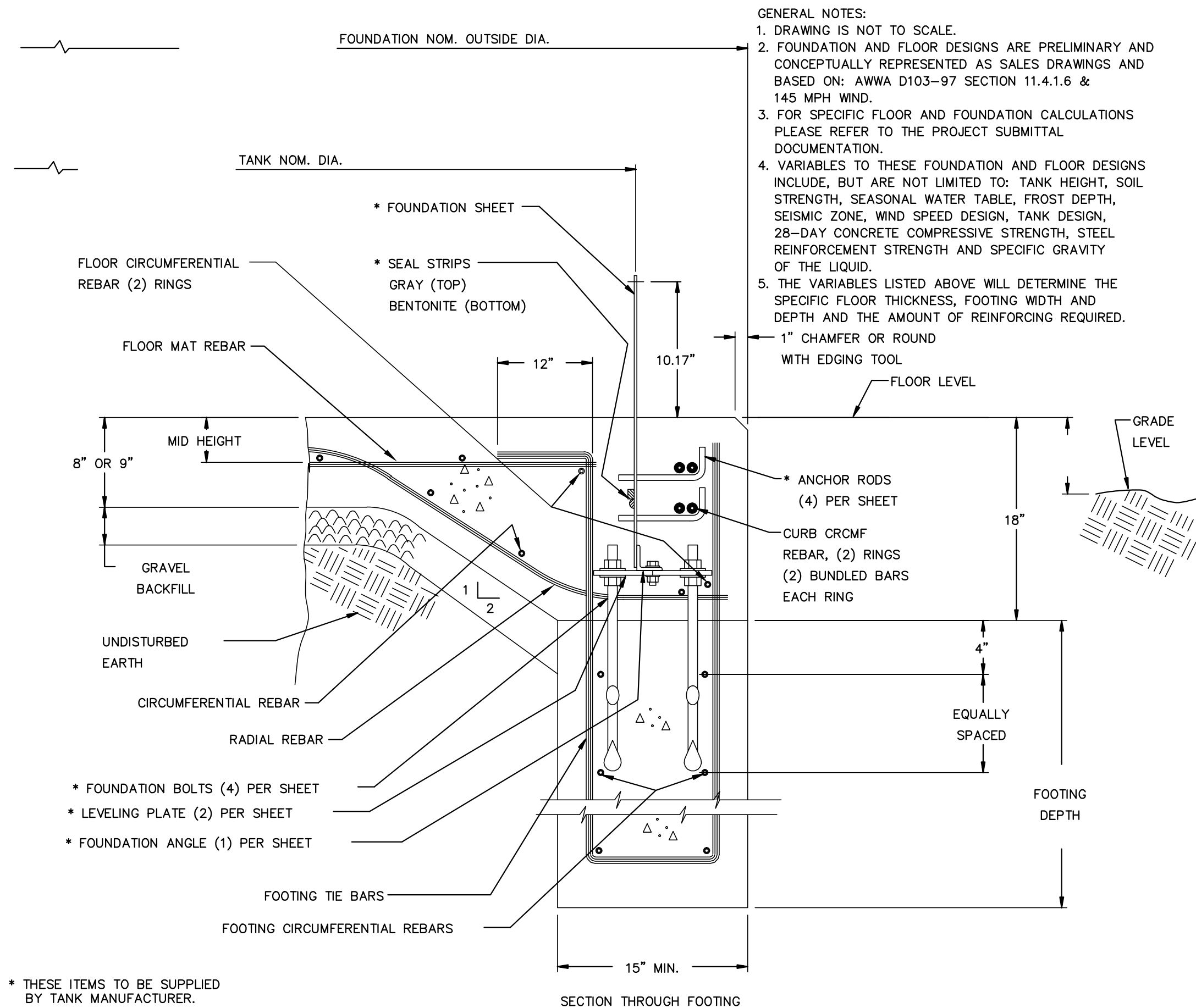
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FL DATE:

AIR MIXING PIPE SECTION

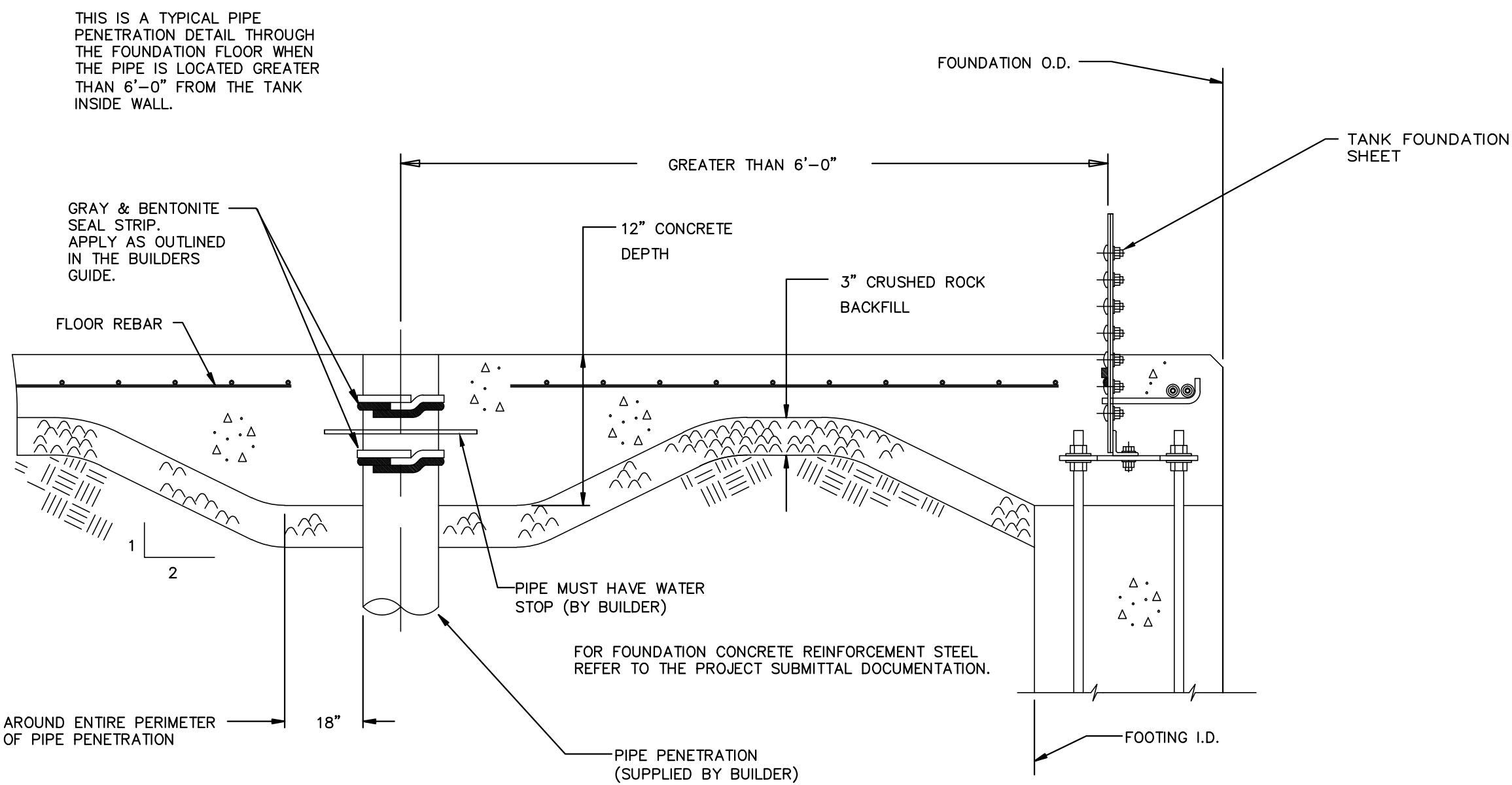
SHEET NUMBER
M-2

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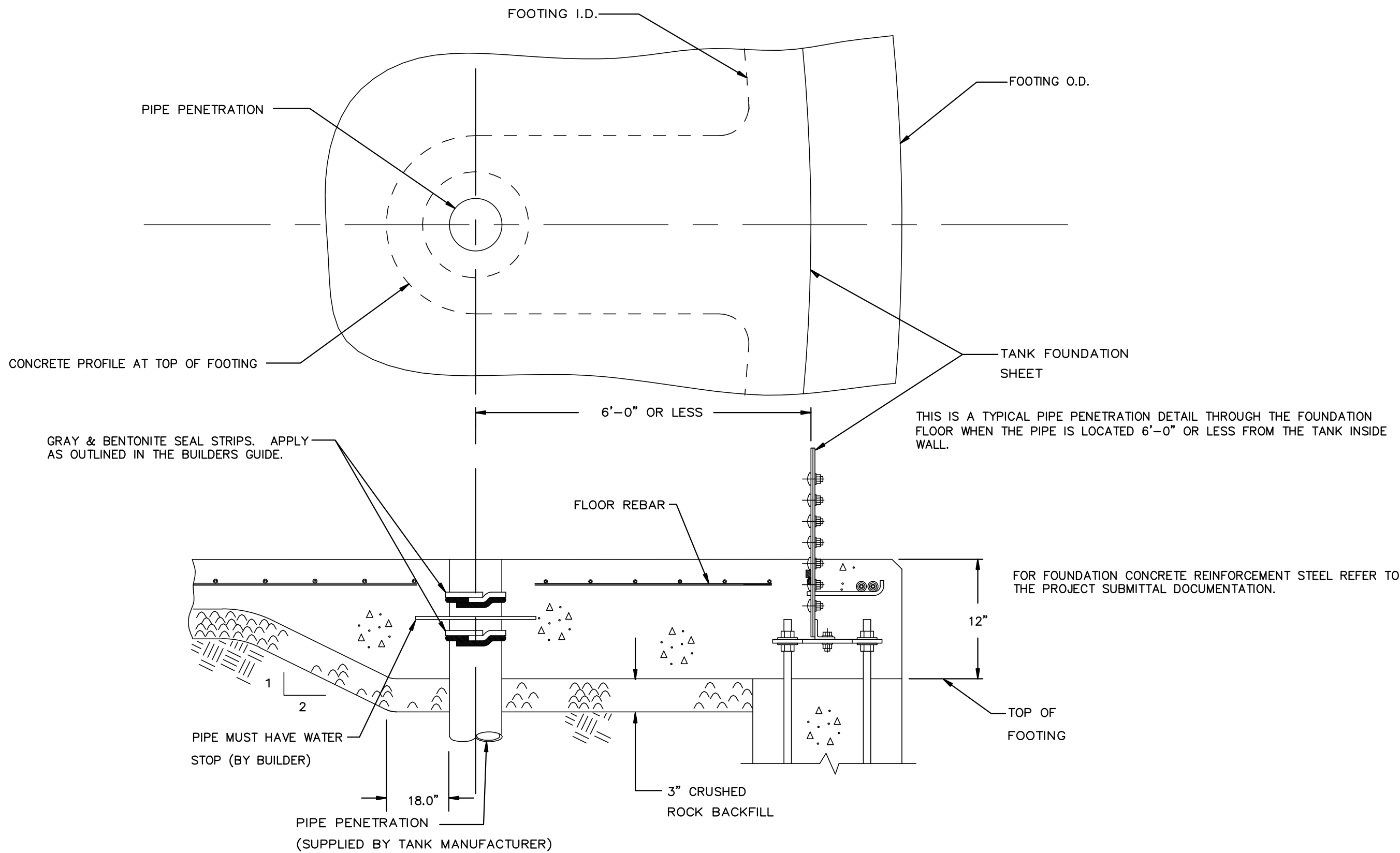
STARTER RING DETAIL

1
M-3



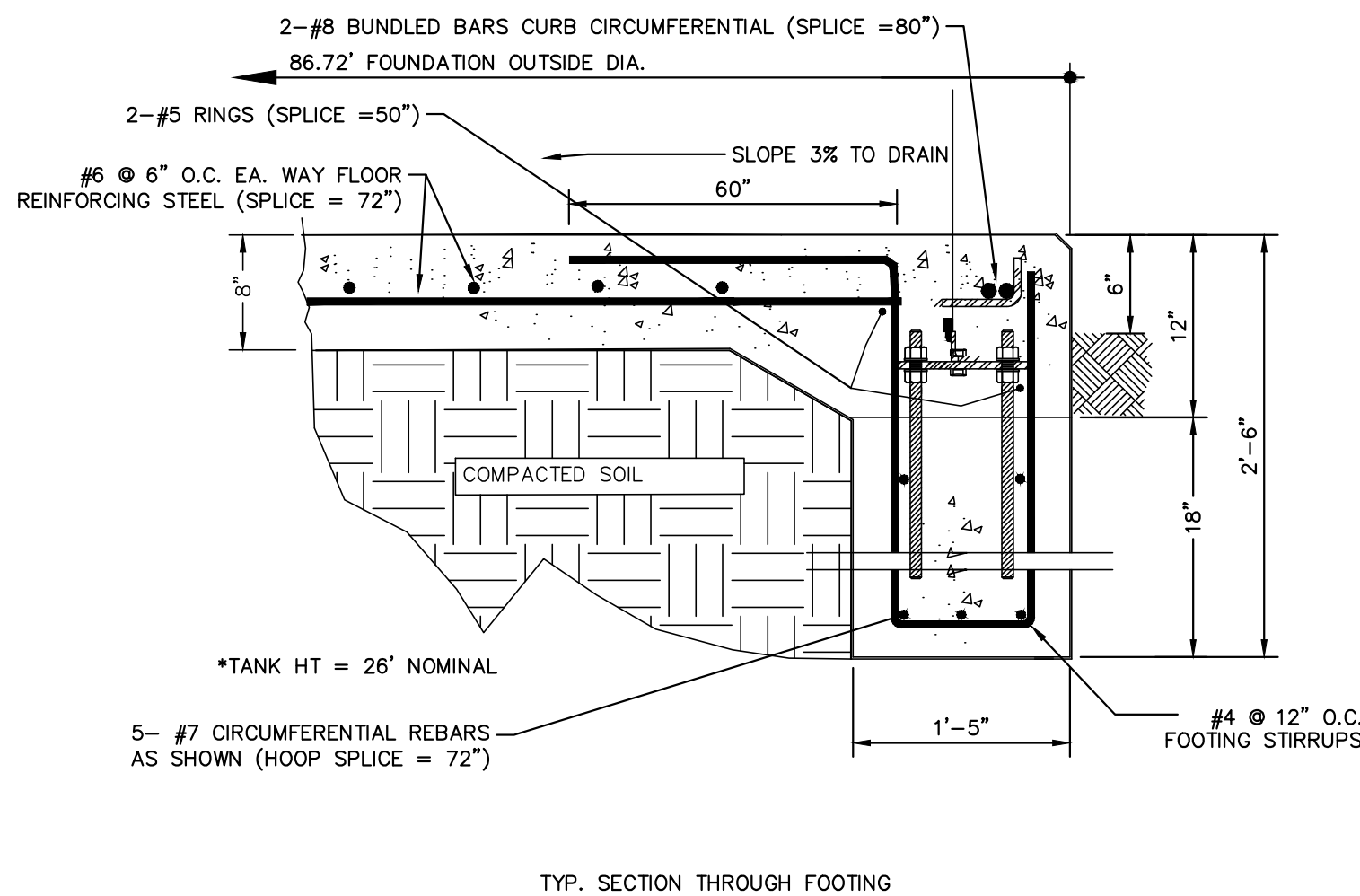
PIPE PENETRATION DETAIL > 6'

3
M-3



PIPE PENETRATION DETAIL

2
M-3



TANK FOUNDATION DETAIL

4
M-3

- NOTES
1. ALL DESIGN AND CONSTRUCTION IN ACCORDANCE WITH THE 2014 FLORIDA BUILDING CODE.
 2. ASCE 7-10, RISK CATEGORY IV, ULTIMATE DESIGN WIND SPEED: 150 MPH (3 SECOND GUST), EXPOSURE C.
 3. POLYETHYLENE (6 MIL) SHEETS SHALL BE PLACED CONTINUOUSLY UNDER PROPOSED CONCRETE SLABS ON GRADE. ALL JOINTS SHALL BE LAPPED 12" MINIMUM.
 4. CONTRACTOR SHALL COMPACT THE EXISTING SUBGRADE TO 98% ASTM D1557 MODIFIED PROCTOR MAXIMUM DENSITY. CONTRACTOR SHALL PROVIDE SOIL TREATMENT PER THE FLORIDA BUILDING CODE.
 5. CONTRACTOR SHALL PROVIDE DENSITY TESTS TO THE OWNER PRIOR TO PLACEMENT OF THE PROPOSED SLAB, AS APPLICABLE.
 6. CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,000 PSI, AND WATER/CEMENT RATIO SHALL NOT EXCEED 0.50.
 7. MINIMUM CONCRETE COVER SHALL BE: SLAB: 3/4"; BEAMS AND COLUMNS: 1-1/2"; TIE COLUMNS: 3/4"; EXPOSED UNPROTECTED CONCRETE: 1-1/2"; FORMED CONCRETE BELOW GRADE: 2"; UNFORMED CONCRETE BELOW GRADE: 3".
 8. CONCRETE WORK, INCLUDING FORM WORK AND TESTING SHALL BE IN ACCORDANCE WITH ACI STANDARDS, LATEST EDITION.
 9. CONCRETE TESTING:
 10. AN INDEPENDENT TESTING LAB SHALL PERFORM THE FOLLOWING TESTS ON CAST IN PLACE CONCRETE:
 11. ASTM C143 'STANDARD TEST METHOD FOR SLUMP OF PORTLAND CEMENT CONCRETE'
 12. ASTM C39 'STANDARD TEST METHOD FOR COMPRESSIVE STRENGTH OF CYLINDRICAL CONCRETE SPECIMENS'. A SEPARATE TEST SHALL BE CONDUCTED FOR EACH CLASS FOR EVERY 50 CUBIC YARDS PLACED PER DAY. REQUIRED CYLINDER QUANTITIES AND TEST AGE AS FOLLOWS: 1 AT 3 DAYS, 1 AT 7 DAYS, 2 AT 28 DAYS.
 13. REINFORCING BARS SHALL BE PLACED IN ACCORDANCE WITH CRSI MANUAL OF STANDARD PRACTICE, LATEST EDITION.
 14. REINFORCING BARS SHALL BE ASTM A615 STEEL AND SHALL BE FREE OF RUST AND OTHER DEBRIS.
 15. DOWELS SHALL BE L-HOOKED AT BOTTOM AND SHALL BE LAPPED 48 BAR DIAMETERS WITH THE WALL OR COLUMN REINFORCING ABOVE.
 16. WHERE APPLICABLE, REINFORCING BAR HOOKS SHALL BE AS FOLLOWS: #3=6", #4=8", #5=10", #6=12", #7=14", #8=16", #9=19", #10=22", #11=24", #14=31", AND #18=41".
 17. FOUNDATIONS ARE DESIGNED FOR A MINIMUM SOIL BEARING VALUE OF 1,825 PSF BASED ON THE SOILS REPORT BY ARDAMAN AND ASSOCIATES, DATED FEBRUARY 25TH, 2016. IT SHALL BE THE OWNER'S RESPONSIBILITY AND CONTRACTOR'S RESPONSIBILITY TO VERIFY EXISTING SOIL CONDITIONS EXCEED THIS REQUIREMENT, AND, IF IT IS LESS, TO MAKE SUCH PROVISION AS THE ACTUAL CONDITIONS MAY REQUIRE.
 18. CONTRACTOR SHALL "PRE-LOAD" THE SOIL FOOTPRINT BENEATH THE PROPOSED FOUNDATION BY FILLING THE TANK WITH WATER FOR A PERIOD OF 14 DAYS. REFER TO PAGE 8 OF THE REVISED MAY 20, 2016 GEOTECH REPORT.

DETAILS PRESENTED ON THIS SHEET ARE SPECIFIC TO THE TANK MANUFACTURER AND THEREFORE HAVE BEEN DESIGNED BY OTHERS.

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DATE
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SCALE AS SHOWN
DESIGNED BY WWW
DRAWN BY JWW
CHECKED BY WEW

MANATEE COUNTY



NORTH WRF
EQUALIZATION TANK

FL DATE:

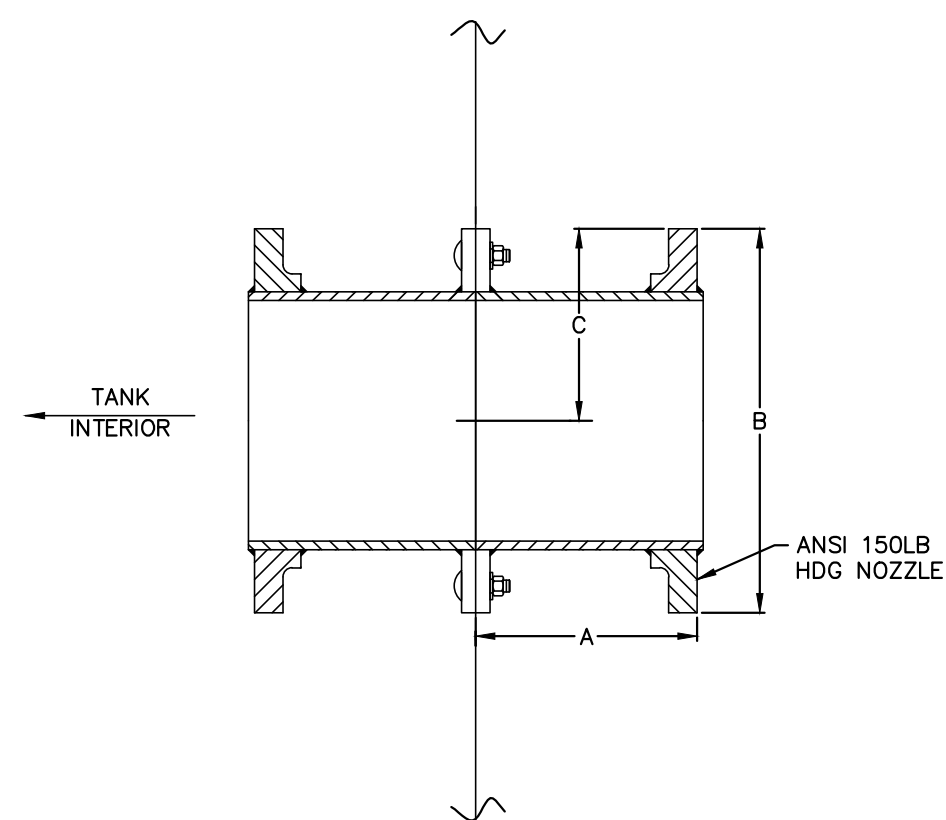
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EQUALIZATION TANK DETAILS

SHEET NUMBER

M-3

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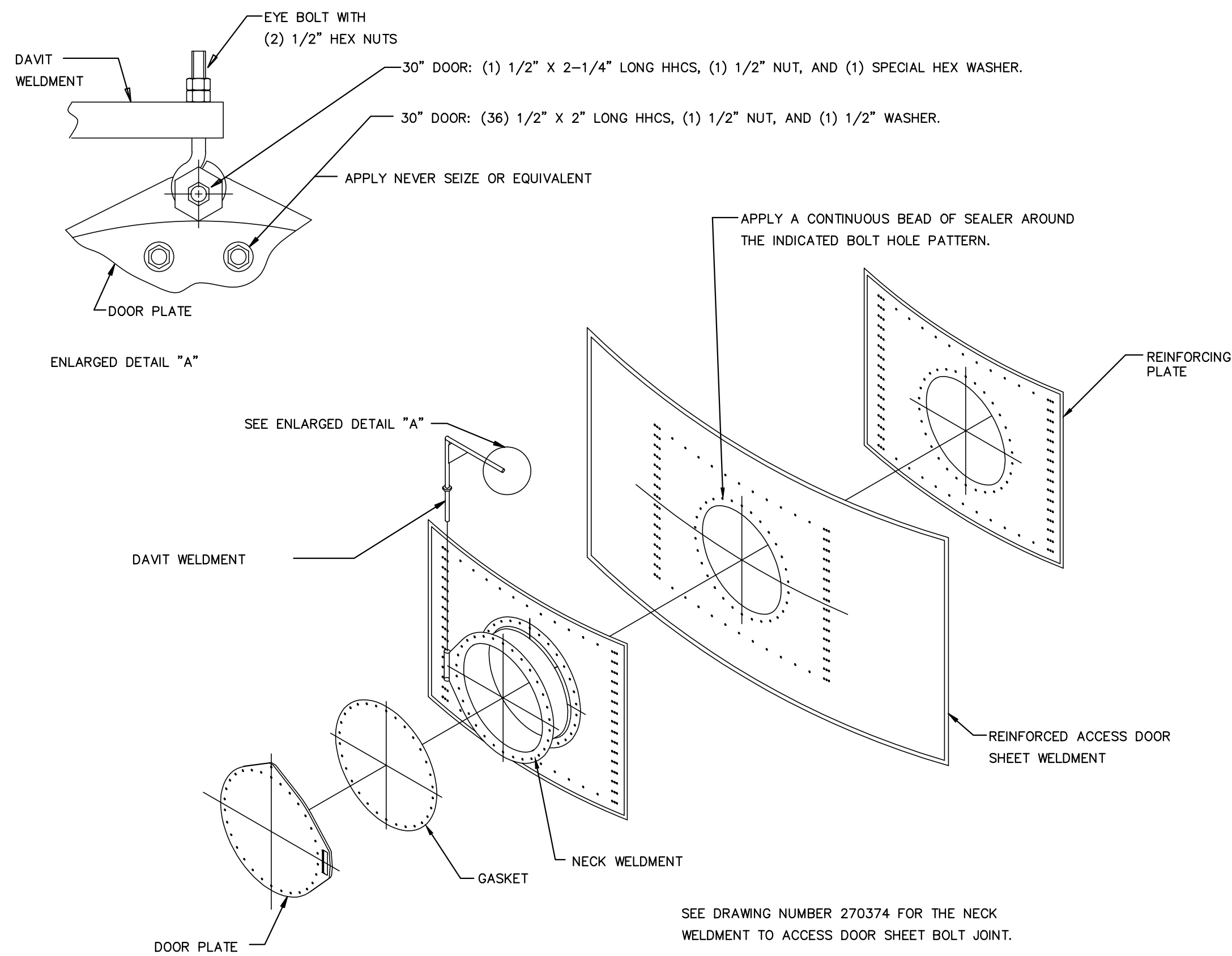


36" HDG	
A	7.625"
B	46"
C	23"
30" HDG	
A	7.625"
B	38"
C	19"
24" HDG	
A	7.625"
B	32"
C	16"
20" HDG	
A	7.625"
B	27.5"
C	13.75"
18" HDG	
A	7.625"
B	25"
C	12.5"
16" HDG	
A	7.625"
B	23.5"
C	11.75"
10" HDG	
A	7.625"
B	16"
C	13.75"
6" HDG	
A	7.625"
B	11"
C	5.5"

DOUBLE NOZZLE DETAIL

N.T.S.

1
M-4

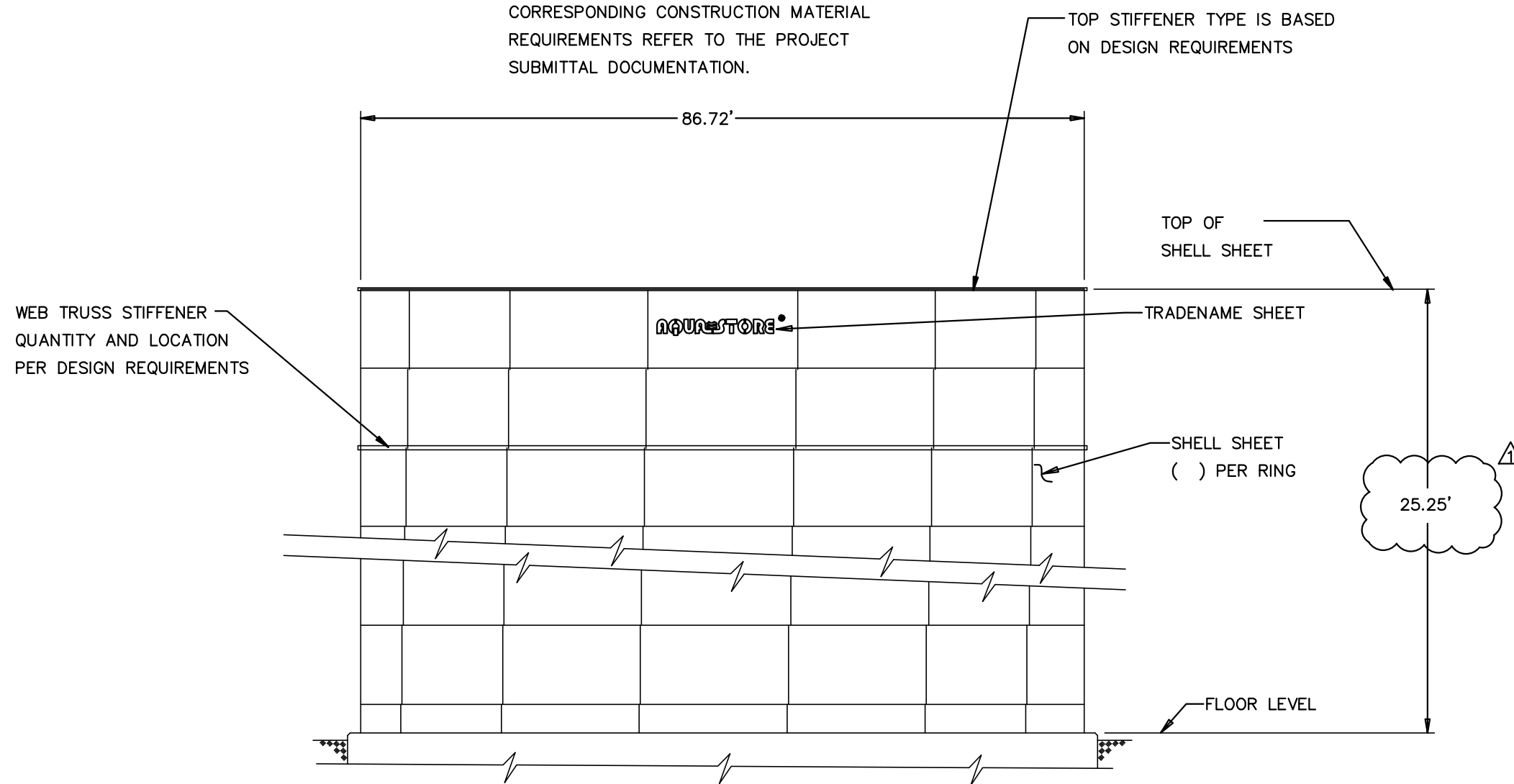


30" ROUND ACCESS DOORS DETAIL

NOTE: CONTRACTOR SHALL COORDINATE WITH TANK MANUFACTURER TO PLACE THE CENTERLINE OF THE MANWAY 3-FT ABOVE FINISHED GRADE.

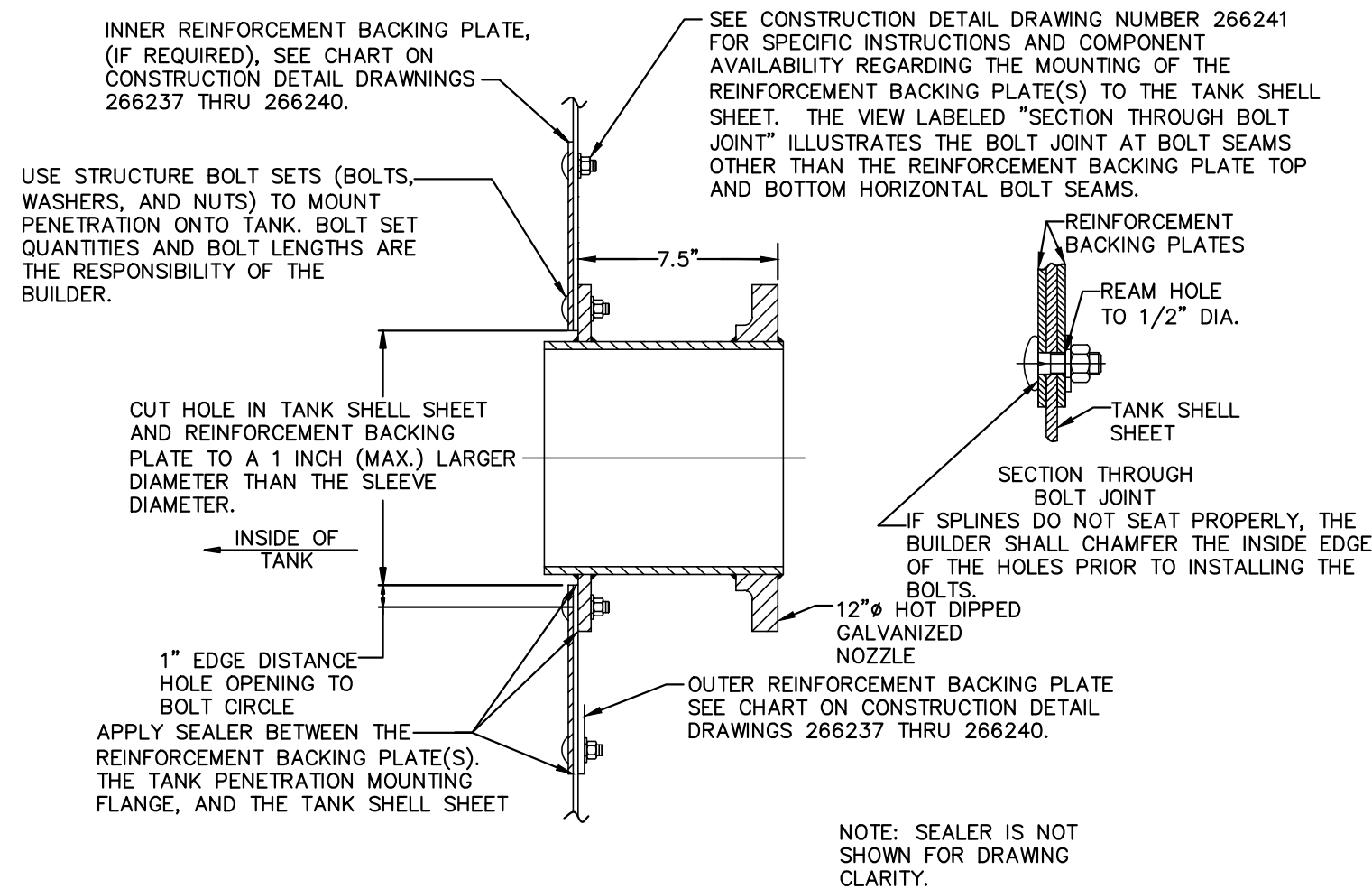
GENERAL NOTES:

1. FOR TANK DIMENSIONAL VALUES SEE
"WATER & TREATMENT TANK GENERAL
DIMENSIONS" DRAWING NO. 261375.
2. FOR FOUNDATION CONFIGURATIONS AND
CORRESPONDING CONSTRUCTION MATERIAL
REQUIREMENTS REFER TO THE PROJECT
SUBMITTAL DOCUMENTATION.



TREATMENT TANK WITH
CONCRETE FOUNDATION DETAIL


N.T.S. 2
M-4



TANK PENETRATION DETAIL

N.T.S.

4
M-4

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NORTH WRF
EQUALIZATION TANK

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EQUALIZATION TANK DETAILS

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STRUCTURAL NOTES

1. GENERAL:

- (A) PROTECT EXISTING FACILITIES, STRUCTURES AND UTILITY LINES FROM ALL DAMAGE. CONTRACTOR SHALL PROTECT THE WORK, ADJACENT PROPERTY, AND THE PUBLIC. CONTRACTOR IS SOLELY RESPONSIBLE FOR DAMAGE OR INJURY DUE TO HIS ACT OR NEGLIGENCE.
- (B) THE CONTRACTOR IS SOLELY RESPONSIBLE FOR JOB SAFETY AND CONSTRUCTION PROCEDURES.
- (C) PRIOR TO CONSTRUCTION, FIELD VERIFY ALL DIMENSIONS IN THE DRAWINGS AND DETAILS AND REPORT ANY DISCREPANCIES IMMEDIATELY TO THE ENGINEER.
- (D) REFER TO THE ENGINEER FOR INSTRUCTION FOR ANY DIMENSION NOT GIVEN ON DRAWINGS. SCALING OF DRAWINGS SHALL NOT BE USED TO OBTAIN OR VERIFY ANY DIMENSION SHOWN ON THE DRAWINGS.

2. CONCRETE:

- (A) ALL CONCRETE MATERIALS, PLACING AND HANDLING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF ACI 318 AND ACI 301.
- (B) ALL STRUCTURAL CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4000 PSI (UNLESS OTHERWISE NOTED).
- (C) PROVIDE 3" CONCRETE COVER OVER REINFORCING BARS EXCEPT AS OTHERWISE NOTED.
- (D) FORM TIES AND REINFORCING BAR SUPPORTS SHALL BE OF NON-CORROSIVE MATERIAL INCLUDING, BUT NOT LIMITED TO, FIBERGLASS, PLASTIC, AND/OR PRECAST CONCRETE MEETING THESE SPECIFICATIONS.
- (E) CONCRETE FINISHES:
1. FORMED SURFACE-SMOOTH FORM FINISH PER ACI 301.
2. BROOM FINISH FOR SLAB ON GRADE SUCH AS ODOR CONTROL TANK SLAB, PUMP PAD SLAB, AND STAIR LANDINGS.
- (F) ALL GROUT SHALL BE NON-SHRINK, NON-METALLIC.
- (G) CONCRETE SHALL BE CURED IMMEDIATELY AFTER FINISHING OPERATIONS IN ACCORDANCE WITH ONE OF THE FOLLOWING METHODS:
1. APPLY A LIQUID MEMBRANE CHEMICAL CURING COMPOUND IN ACCORDANCE WITH ASTM C-309.
2. WET CURE IN ACCORDANCE WITH ACI 301.
- (H) ALL CONCRETE CONSTRUCTION SHALL BE DONE IN THE DRY.
- (I) PROVIDE 3/4" CHAMFER ON ALL EXPOSED EDGES UNLESS OTHERWISE NOTED.
- (J) CONCRETE SHALL BE IN ACCORDANCE WITH ASTM C94:
1. TYPE II PORTLAND CEMENT – ASTM C150
2. AGGREGATES (3/4" MAX.) – ASTM C33
3. USE OF CALCIUM CHLORIDE IS NOT PERMITTED
4. AIR ENTRAINING (4% MAX.) – ASTM C260
5. WATER REDUCING – ASTM C494
6. WATER – CLEAN AND POTABLE
7. MAXIMUM WATER CEMENT RATIO FOR 4,000 PSI, 28-DAY COMPRESSIVE STRENGTH = 0.45
- (K) REQUIRED SLUMP: 2" TO 4"
- (L) CONTRACTOR IS RESPONSIBLE FOR THE PROPER DESIGN AND CONSTRUCTION OF ALL FORMWORK AND SHORING. DESIGN SHALL BE PERFORMED BY A LICENSED FLORIDA PROFESSIONAL ENGINEER.

- (M) A QUALIFIED TESTING LABORATORY SHALL BE RETAINED TO PERFORM THE FOLLOWING CONCRETE TESTS:
1. CYLINDER STRENGTH TESTS – ASTM C39. ONE SET OF FIVE CYLINDERS FOR EACH 50 CUBIC YARDS OR FRACTION THEREOF PLACED. TEST ONE AT 3 DAYS, ONE AT 7 DAYS, TWO AT 28 DAYS, AND HOLD ONE.
2. SLUMP TESTS – ASTM C143

- (N) ONE COPY OF ALL TEST REPORTS SHALL BE SENT DIRECTLY TO OWNER, ENGINEER, AND CONTRACTOR.

- (P) CONCRETE SHALL BE PLACED WITHIN 90 MINUTES OF BATCH TIME

- (Q) ALL CONCRETE SHALL BE CONSOLIDATED IN PLACE USING INTERNAL VIBRATORS

- (R) SUBMITTALS:
1. SUBMIT PROPOSED CONCRETE MIX DESIGN PRIOR TO CONSTRUCTION
2. SUBMIT DETAILED SHOP DRAWINGS OF REINFORCING BARS SHOWING NUMBER, SIZE, AND LOCATION. INCLUDE BAR LISTS AND BEND DIAGRAMs.

3. REINFORCEMENT:

- (A) REINFORCING STEEL SHALL BE A.S.T.M. A-615 WITH SUPPLEMENT, GRADE 60: MINIMUM WORKING STRESS – 24,000 PSI.
- (B) ALL REINFORCEMENT SHALL BE UNCOATED (BLACK).
- (C) ALL DIMENSIONS PERTAINING TO LOCATION OF REINFORCING BARS ARE TO CENTERLINE OF BARS EXCEPT WHERE THE CLEAR DIMENSION IS SHOWN TO FACE OF CONCRETE.
- (D) ACI STANDARD HOOKS SHALL BE USED UNLESS OTHERWISE NOTED.
- (E) ALL LAP AND SPLICE LENGTHS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF ACI 318 AND CRSI STANDARD PRACTICES, EXCEPT AS OTHERWISE NOTED.

4. FOUNDATIONS:

- (A) A GEOTECHNICAL REPORT OF SUBSURFACE CONDITIONS HAS BEEN PREPARED BY ARDAMAN & ASSOCIATES, INC. (DATED FEBRUARY 25, 2016, FILE # 15-7337). ANY ADDITIONAL GEOTECHNICAL WORK WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- (B) NOTIFY THE ENGINEER IMMEDIATELY OF ANY EXISTING FOUNDATION CONDITIONS OR DETAILS THAT ARE IN CONFLICT WITH THOSE INDICATED AND SHOWN IN THE DRAWINGS.
- (C) ADHERE TO THE RECOMMENDATIONS MADE IN THE SOIL PREPARATION SECTION OF THE GEOTECHNICAL REPORT.
- (D) ALL FILL AND COMPACTION SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS IN THE GEOTECHNICAL REPORT.


- (E) ASSUMED SOIL BEARING PRESSURE = 1,825 PSF. CONTRACTOR'S TESTING LABORATORY SHALL CONFIRM SOIL PREPARATION PROCEDURES AND SPECIFY COMPACTION REQUIREMENTS NECESSARY TO OBTAIN THE DESIGN SOIL BEARING PRESSURE.

5. STRUCTURAL ALUMINUM:

- (A) STRUCTURAL ALUMINUM SHALL BE 6061-T6 ALLOY, UNLESS OTHERWISE NOTED.
- (B) ALUMINUM WORK SHALL BE IN ACCORDANCE WITH THE ALUMINUM ASSOCIATION'S SPECIFICATIONS FOR ALUMINUM STRUCTURES, LATEST EDITION.
- (C) FASTENERS: UNLESS NOTED OTHERWISE, ALL FASTENERS SHALL BE 316 STAINLESS STEEL MEETING THE REQUIREMENTS OF ASTM A193.
- (D) ALL WELDING SHALL CONFORMS WITH AWS D1.2, LATEST STRUCTURAL WELDING CODE – ALUMINUM.
- (E) ALL FILLET WELDS SHALL HAVE A MINIMUM SIZE OF 1/4" WITH 5356 FILLER ALLOY UNLESS OTHERWISE NOTED.
- (F) PROVIDE NON-SLIP ALUMINUM STAIR TREADS WITH A MINIMUM LIVE LOAD CAPACITY OF 100 PSF.
- (G) PROVIDE SHOP DRAWINGS FOR ALUMINUM FRAMING PRIOR TO FABRICATION AND INSTALLATION.
- (H) WHERE THE CONTACT OF DISSIMILAR MATERIALS MAY CAUSE ELECTROLYSIS OR WHERE ALUMINUM WILL COME IN CONTACT WITH CONCRETE, MORTAR, GROUT, OR PLASTER, THE CONTACT SURFACE OF THE ALUMINUM SHALL BE COATED WITH ONE HEAVY COAT OF BITUMINOUS PAINT.

DESIGN CRITERIA:

CODE:	2014 FLORIDA BUILDING CODE WITH SUPPLEMENTS
DEAD LOAD (GRATING):	5 PSF
LIVE LOADS:	
A. WALKWAY	60 PSF
B. STAIRS	100 PSF
WIND LOAD:	
BASIC WIND SPEED	145 MPH
EXPOSURE	C
RISK CATEGORY	II

	ADDENDUM 6	1/9/2017	WWW
No.	REVISIONS	DATE	BY


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KHA PROJECT 148400013
DATE 1/24/2017
SCALE AS SHOWN
DESIGNED BY SMT
DRAWN BY SMT
CHECKED BY SES

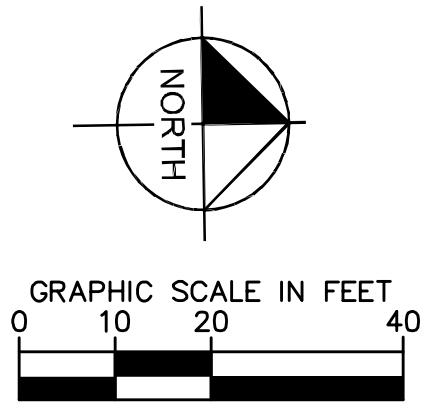
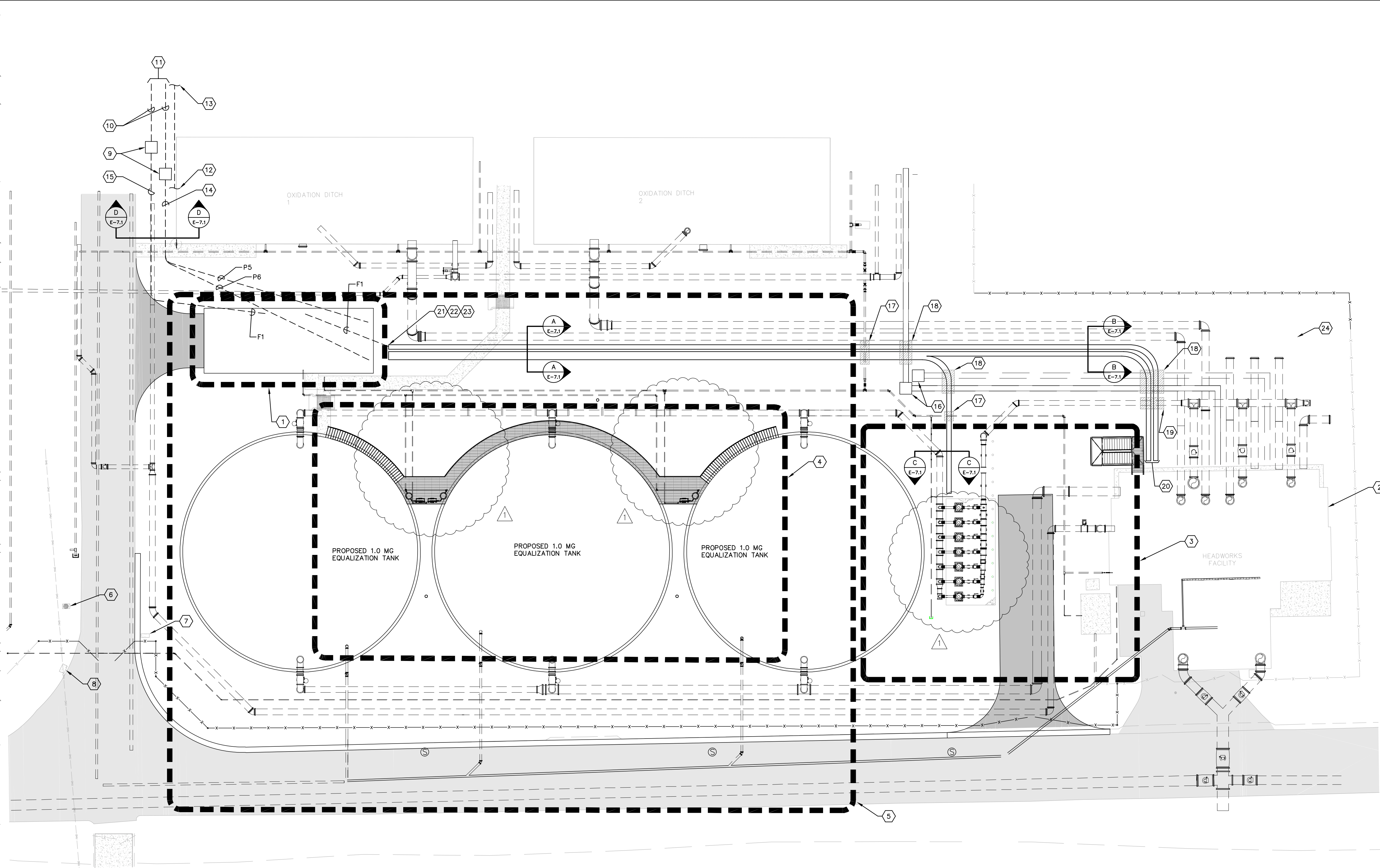

NORTH WRF EQUALIZATION TANK
MANATEE COUNTY
FL

LICENSED PROFESSIONAL
SETH E. SCHMID, P.E.
FL LICENSE NUMBER 54640
DATE:

STRUCTURAL NOTES

SHEET NUMBER
S-1

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TRICON
ENGINEERING

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Certificate of Authorization No. 00031029

- KEY NOTES:**
- 1 PROPOSED ELECTRICAL AND STORAGE BUILDING. REFER TO SHEET E-1.1 FOR DETAILS.
 - 2 FOR WORK REQUIRED IN THE EXISTING HEADWORKS AREA (HEADWORKS TO REMAIN) REFER TO SHEET E-3.1.
 - 3 FOR WORK REQUIRED IN THE RETURN PUMP PAD AREA REFER TO SHEET E-0.6.
 - 4 FOR WORK REQUIRED AT THE EQUALIZATION TANK WALKWAY AREA REFER TO SHEET E-4.1.
 - 5 FOR TANK AND PLATFORM GROUNDING REFER TO SHEET E-0.5.
 - 6 RELOCATED SECURITY CAMERA AT ENTRY GATE. REFER TO SHEET E-0.3 FOR WORK REQUIRED.
 - 7 RELOCATED GATE OPERATOR. REFER TO SHEET E-0.3 FOR WORK REQUIRED.
 - 8 RELOCATED KEY PAD AT ENTRY GATE. REFER TO SHEET E-0.3 FOR WORK REQUIRED.
 - 9 CONTRACTOR TO INTERCEPT EXISTING DUCTBANKS TO HEADWORKS AND INSTALL NEW HANDHOLES (PHH #5 AND CHH #5 RESPECTIVELY) FOR NEW POWER AND COMMUNICATIONS DUCTBANKS TO NEW ELECTRICAL/STORAGE BUILDING. EXACT LOCATION OF EXISTING DUCTBANKS IS UNKNOWN. CONTRACTOR TO FIELD VERIFY. CONTRACTOR SHALL INTERCEPT EXISTING DUCTBANKS AT THE MOST CONVENIENT LOCATION BASED ON FIELD CONDITIONS. REFER ALSO TO SHEETS E-0.2 AND E-1.1 FOR WORK REQUIRED. REFER TO SHEET E-7.1 FOR DUCTBANK SECTIONS AND SHEET E-9.3 FOR NEW HANDHOLE DETAILS.
 - 10 EXISTING POWER AND COMMUNICATION DUCTBANKS TO REMAIN.
 - 11 FOR CONTINUATION REFER TO SHEET E-0.2.
 - 12 EXISTING BASIN LIGHTING CIRCUITS FROM BASIN JUNCTION BOX (REFER TO SHEET E-0.2) TO EXISTING HEADWORKS FACILITY TO BE DEMOLISHED. EXACT LOCATION AND ROUTING OF CIRCUITS IS UNKNOWN. CONTRACTOR TO FIELD VERIFY. CONTRACTOR TO INTERCEPT EXISTING CIRCUITS AT THE MOST CONVENIENT LOCATION BASED ON EXISTING FIELD CONDITIONS. CONTRACTOR SHALL PROVIDE AND INSTALL NEW BASIN LIGHTING CIRCUITS FROM NEW LIGHTING CONTROL CABINET IN NEW ELECTRICAL AND STORAGE BUILDING.
 - 13 CONTINUES TO BASIN JUNCTION BOX. REFER TO SHEET E-0.2 FOR LOCATION.
 - 14 NEW DUCTBANK FOR ELECTRICAL AND STORAGE BUILDING POWER FEEDERS.
 - 15 NEW DUCTBANK FOR ELECTRICAL AND STORAGE BUILDING FIBER COMMUNICATIONS CABLE.
 - 16 EXISTING POWER HANDHOLE PHH #1 AND COMMUNICATIONS HANDHOLE CHH #1.
 - 17 NEW DUCTBANKS TO BE INSTALLED BENEATH NEW 6" RECLAIMED WATER MAIN. BOTTOM OF WATER MAIN TO BE APPROXIMATELY 3'-0" BELOW GRADE. COORDINATE WITH CIVIL DRAWINGS. CONTRACTOR SHALL HANG DIG IN THE AREA.
 - 18 NEW DUCTBANKS TO BE INSTALLED BENEATH EXISTING POWER AND COMMUNICATIONS DUCTBANKS. RECORD DRAWINGS INDICATE BOTTOM OF EXISTING DUCTBANKS ARE INSTALLED APPROXIMATELY 3'-0" BELOW GRADE. CONTRACTOR TO FIELD VERIFY. CONTRACTOR SHALL HANG DIG IN THE AREA.
 - 19 NEW DUCTBANKS TO BE INSTALLED BENEATH NEW 20" DIP EQUALIZATION RETURN. BOTTOM OF 20" DIP EQUALIZATION RETURN TO BE APPROXIMATELY 52" BELOW GRADE. COORDINATE WITH CIVIL DRAWINGS. CONTRACTOR SHALL HANG DIG IN THE AREA.
 - 20 FOR TRANSITION FROM DUCTBANK TO JUNCTION BOXES REFER TO HEADWORKS ELECTRICAL DRAWINGS ON SHEET E-3.1 AND DETAILS ON SHEET E-9.4.
 - 21 PROVIDE AND INSTALL TWO (2) - 2" SPARE CONDUITS FROM MCC-1B, NORTH TO 10' BEYOND FUTURE HEADWORK PIPING. REFER ALSO TO DUCTBANK SECTIONS ON SHEET E-7.1 AND NOTE # 24 ON THIS SHEET. INSTALL MULE TAPE, CAP, AND MARK FOR FUTURE INJECTION/MONITORING WELL USE.
 - 22 PROVIDE AND INSTALL TWO (2) - 2" SPARE CONDUITS FROM MCC-2B, NORTH TO 10' BEYOND FUTURE HEADWORK PIPING. REFER ALSO TO DUCTBANK SECTIONS ON SHEET E-7.1 AND NOTE # 24 ON THIS SHEET. INSTALL MULE TAPE, CAP, AND MARK FOR FUTURE INJECTION/MONITORING WELL USE.
 - 23 PROVIDE AND INSTALL ONE (1) - 2" SPARE CONDUIT FROM PLC CABINET, NORTH TO 10' BEYOND FUTURE HEADWORK PIPING. REFER ALSO TO DUCTBANK SECTIONS ON SHEET E-7.1 AND NOTE # 24 ON THIS SHEET. INSTALL MULE TAPE, CAP, AND MARK FOR FUTURE INJECTION/MONITORING WELL USE.
 - 24 TERMINATE FIVE (5) - 2" SPARE CONDUITS 10' BEYOND FUTURE HEADWORK PIPING. REFER ALSO TO DUCTBANK SECTIONS ON SHEET E-7.1. INSTALL MULE TAPE, CAP, AND MARK FOR FUTURE INJECTION/MONITORING WELL USE.

- GENERAL NOTES:**
- 1. DUCTBANK ROUTING SHOWN DIAGRAMMATICALLY FOR CLARITY. CONTRACTOR SHALL FIELD ROUTE BASED ON EXISTING FIELD CONDITIONS. COORDINATE WITH ALL UTILITIES.
 - 2. DUCTBANK TRANSITIONS TO NEW PUMP PAD, NEW ELECTRICAL AND STORAGE BUILDING, ETC. NOT DETAILED FOR CLARITY. CONTRACTOR SHALL BEGIN/END DUCTBANK AS REQUIRED TO ACCOMMODATE THE REQUIRED CONDUIT TRANSITIONS FROM THE NEW PUMP PAD MOTORS, NEW MOTOR CONTROL CENTERS, ETC.

No.	ADDENDUM 6		1-9-2017	TDI
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KHA PROJECT	148400013
DATE	8-8-16
SCALE	AS SHOWN
DESIGNED BY	TDI
DRAWN BY	JLW
CHECKED BY	GHW

Manatee County
FLORIDA

**NORTH WRF
EQUALIZATION TANK**

FL MANATEE COUNTY

LICENSED PROFESSIONAL

TIMOTHY THOMAS, P.E.

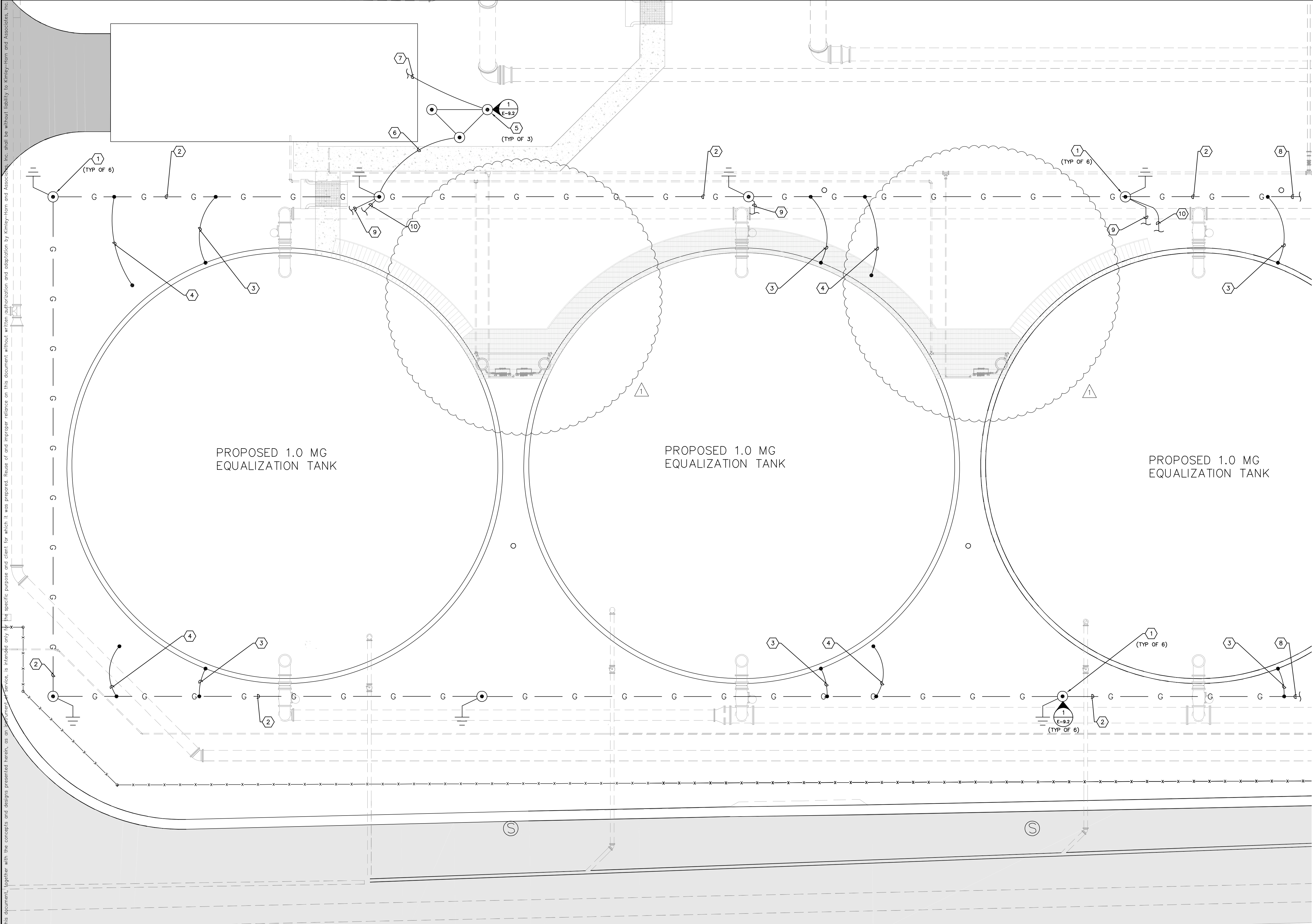
FL LICENSE NUMBER
47079

FL DATE:

**PROPOSED EQUALIZATION
TANKS SITE PLAN**

SHEET NUMBER

E-0.4



- KEY NOTES:**
- CONTRACTOR SHALL PROVIDE AND INSTALL NEW HANDHOLE WITH 3/4" X 20'-0" COPPER-CLAD GROUND ROD FOR GROUNDING GRID CONDUCTORS. PROVIDE EXOTHERMIC WELD(S). TYPICAL OF 6. REFER ALSO TO DETAIL ON SHEET E-9.2.
 - CONTRACTOR TO PROVIDE AND INSTALL NEW 4/0 AWG BARE COPPER GROUNDING GRID CONDUCTOR BETWEEN ASSOCIATED GROUND RODS.
 - CONTRACTOR TO PROVIDE AND INSTALL NEW 4/0 AWG BARE COPPER BONDING CONDUCTOR BETWEEN GROUND GRID CONDUCTOR AND TANK SHELL. PROVIDE EXOTHERMIC WELD TO GROUND GRID CONDUCTOR. PROVIDE BONDING LUG ON TANK SHELL BOLT TO BOND TANK. CONTRACTOR SHALL COORDINATE BOND LUG INSTALLATION WITH TANK INSTALLER.
 - CONTRACTOR TO PROVIDE AND INSTALL NEW 4/0 AWG BARE COPPER BONDING CONDUCTOR BETWEEN GROUND GRID CONDUCTOR AND TANK FOUNDATION REBAR. PROVIDE EXOTHERMIC WELD TO GROUND GRID CONDUCTOR. PROVIDE MECHANICAL CONNECTION TO FOUNDATION REBAR. CONTRACTOR SHALL COORDINATE BOND CONDUCTOR INSTALLATION TO REBAR WITH TANK INSTALLER.
 - CONTRACTOR SHALL PROVIDE AND INSTALL NEW HANDHOLE WITH 3/4" X 20'-0" COPPER-CLAD GROUND ROD FOR ELECTRICAL AND STORAGE BUILDING ELECTRICAL SERVICE. PROVIDE EXOTHERMIC WELD(S). TYPICAL OF 3. ELECTRICAL SYSTEM GROUND RODS SHALL BE SPACED A MINIMUM OF 8'-0" APART. REFER ALSO TO DETAIL ON SHEET E-9.2. COORDINATE INSTALLATION LOCATION WITH NEW DUCTBANK TO BE INSTALLED FROM ELECTRICAL AND STORAGE BUILDING.
 - CONTRACTOR TO PROVIDE AND INSTALL NEW 4/0 AWG BARE COPPER BONDING CONDUCTOR BETWEEN GROUND GRID CONDUCTOR AND ELECTRICAL AND STORAGE BUILDING ELECTRICAL SERVICE GROUND RING. PROVIDE EXOTHERMIC WELDS FOR ALL CONNECTIONS.
 - CONTRACTOR TO PROVIDE AND INSTALL NEW 4/0 AWG BARE COPPER BONDING CONDUCTOR BETWEEN ELECTRICAL AND STORAGE BUILDING ELECTRICAL SERVICE GROUND RING AND ELECTRICAL AND STORAGE BUILDING GROUNDING BUS BAR. REFER TO SHEET E-1.3 FOR GROUNDING BUS BAR LOCATION.
 - FOR CONTINUATION REFER TO SHEET E-0.6.
 - FOR CONTINUATION TO AIR TERMINAL REFER TO SHEET E-4.2.
 - FOR CONTINUATION TO STAIRWELL GROUNDING REFER TO SHEET E-4.2.

- GENERAL NOTES:**
- ALL GROUNDING AND BONDING CONDUCTOR ROUTING SHOWN DIAGRAMMATICALLY FOR CLARITY. COORDINATE ROUTING WITH FIELD CONDITIONS.
 - ALL GROUND ROD/HANDHOLE LOCATIONS SHOWN ARE INTENDED TO SHOW GENERAL LOCATION. COORDINATE EXACT LOCATION WITH NEW AND EXISTING PIPING, PROPOSED FOUNDATION LOCATIONS AND FIELD CONDITIONS.
 - REFER TO SHEET E-4.2 FOR AIR TERMINAL DOWN CONDUCTORS AND STAIR BONDING CONDUCTORS WHICH CONTINUE TO TANK PLATFORM. REFER TO KEY NOTES 9 AND 10 ON THIS SHEET.



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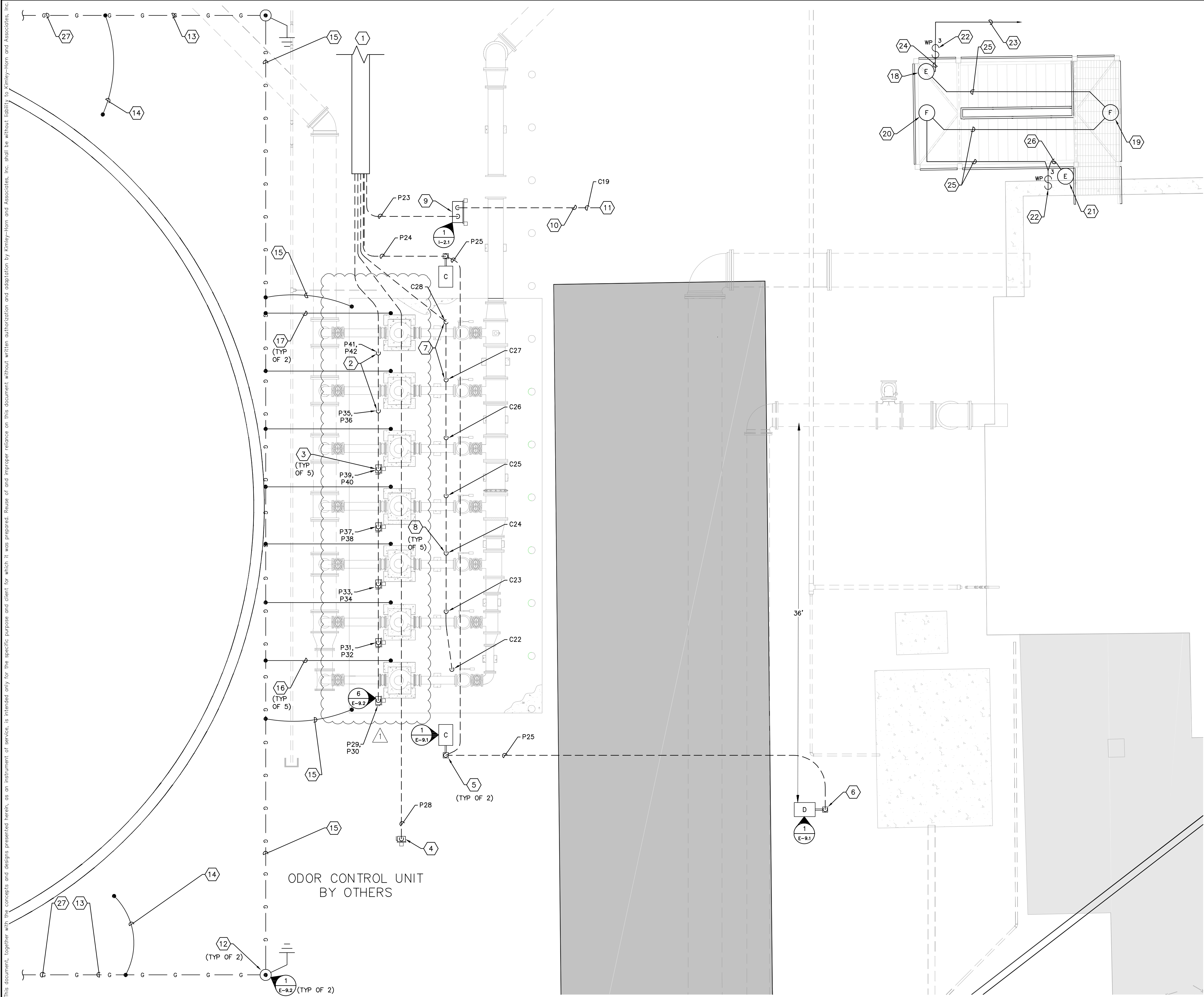
Manatee County
NORTH WRF
EQUALIZATION TANK

MANATEE COUNTY

LICENSED PROFESSIONAL
TIMOTHY THOMAS, P.E.
FL LICENSE NUMBER
47079
DATE:

PROPOSED EQUALIZATION TANK
GROUNDING PLAN

SHEET NUMBER
E-0.5



- KEY NOTES:**
- 1 FOR CONTINUATION OF DUCTBANK REFER TO SHEET E-0.4.
 - 2 PROVIDE AND INSTALL SPARE CONDUIT (TO MATCH THOSE TO BE INSTALLED) FOR FUTURE EQUALIZATION RETURN PUMP. EXTEND CONDUITS 4" ABOVE GRADE AND CAP. PROVIDE AND INSTALL PULL STRING.
 - 3 PROVIDE AND INSTALL NEW 60A, 3-POLE, 600V HEAVY DUTY DISCONNECT IN NEMA 4X STAINLESS STEEL ENCLOSURE FOR EQUALIZATION RETURN PUMP. TYPICAL OF 5. REFER TO DETAIL 6 ON SHEET E-9.2.
 - 4 PROVIDE AND INSTALL NEW 60A, 3-POLE, 600V HEAVY DUTY DISCONNECT IN NEMA 4X STAINLESS STEEL ENCLOSURE ON 4" SQUARE CONCRETE POST FOR ODOR CONTROL UNIT. ODOR CONTROL UNIT TO BE PROVIDED BY OTHERS. COORDINATE EXACT LOCATION WITH ODOR CONTROL UNIT SUPPLIER.
 - 5 PROVIDE AND INSTALL NEW AREA LIGHT FOR RETURN PUMP PAD. INSTALL FIXTURE AND POLE 4 FEET OFF OF CENTER OF RETURN PUMP PAD. (TYPICAL OF 2).
 - 6 PROVIDE AND INSTALL NEW STREET LIGHT 5 FEET OFF OF STREET AND 36 FEET FROM PIPE AS SHOWN. REFER TO SHEET E-9.1 FOR TYPICAL POLE MOUNTED LIGHTING FIXTURE DETAIL.
 - 7 PROVIDE AND INSTALL SPARE CONDUIT (TO MATCH THOSE TO BE INSTALLED) FOR LIMIT SWITCH INSTALLATION. EXTEND CONDUITS 4" ABOVE GRADE AND CAP. PROVIDE AND INSTALL PULL STRING.
 - 8 PROVIDE AND INSTALL NEW CONDUIT FOR CHECK VALVE LIMIT SWITCH SIGNAL. TYPICAL OF 5 PLACES. PROVIDE WEATHERPROOF, FLEXIBLE CONNECTION TO LIMIT SWITCH.
 - 9 PROVIDE AND INSTALL NEW FLOW METER FOR EQUALIZATION RETURN PUMPS. REFER TO DETAIL ON SHEET I-2.1.
 - 10 CONTRACTOR TO PROVIDE AND INSTALL 3/4"C. WITH 2/C-#16 SHIELDED CABLE (BELDEN 8719) FROM EQUALIZATION RETURN PUMP FLOW METER TO NEW SCADA JUNCTION BOX AT HEADWORKS.
 - 11 FOR CONTINUATION REFER TO SHEET E-3.1.
 - 12 CONTRACTOR SHALL PROVIDE AND INSTALL NEW HANDHOLE WITH 3/4" X 20'-0" COPPER-CLAD GROUND ROD FOR GROUNDING GRID CONDUCTORS. PROVIDE EXOTHERMIC WELD(S). TYPICAL OF 2. REFER ALSO TO DETAIL ON SHEET E-9.2.
 - 13 CONTRACTOR TO PROVIDE AND INSTALL NEW 4/0 AWG BARE COPPER GROUNDING GRID CONDUCTOR BETWEEN ASSOCIATED GROUND RODS.
 - 14 CONTRACTOR TO PROVIDE AND INSTALL NEW 4/0 AWG BARE COPPER BONDING CONDUCTOR BETWEEN GROUND GRID CONDUCTOR AND TANK FOUNDATION REBAR. PROVIDE EXOTHERMIC WELD TO GROUND GRID CONDUCTOR. PROVIDE MECHANICAL CONNECTION TO FOUNDATION REBAR. CONTRACTOR.
 - 15 CONTRACTOR TO PROVIDE AND INSTALL NEW 4/0 AWG BARE COPPER BONDING CONDUCTOR BETWEEN GROUND GRID CONDUCTOR AND PUMP PAD FOUNDATION REBAR. PROVIDE EXOTHERMIC WELD TO GROUND GRID CONDUCTOR. PROVIDE MECHANICAL CONNECTION TO FOUNDATION REBAR.
 - 16 CONTRACTOR TO PROVIDE AND INSTALL NEW #3 AWG BARE COPPER BONDING CONDUCTOR BETWEEN GROUND GRID CONDUCTOR AND PUMP FRAME. PROVIDE EXOTHERMIC WELD TO GROUND GRID CONDUCTOR. PROTECT BONDING CONDUCTOR WITH 1" PVC CONDUIT THROUGH AND ABOVE SLAB. TYPICAL FOR ALL NEW PUMPS TO BE INSTALLED.
 - 17 CONTRACTOR TO PROVIDE AND INSTALL NEW #3 AWG BARE COPPER BONDING CONDUCTOR BETWEEN GROUND GRID CONDUCTOR AND FUTURE PUMP FRAME. PROVIDE EXOTHERMIC WELD TO GROUND GRID CONDUCTOR. PROTECT BONDING CONDUCTOR WITH 1" PVC CONDUIT THROUGH AND ABOVE SLAB. COIL EXCESS CONDUCTOR FOR FUTURE USE. TYPICAL FOR ALL FUTURE PUMP LOCATIONS.
 - 18 CONTRACTOR TO PROVIDE AND INSTALL NEW STANCHION MOUNTED LED LIGHT FIXTURE. REFER ALSO TO DETAIL 4 ON SHEET E-9.2. FIXTURE SHOWN TO BE LOCATED AT BASE OF PLATFORM STAIRS.
 - 19 CONTRACTOR TO PROVIDE AND INSTALL NEW STANCHION MOUNTED LED LIGHT FIXTURE. REFER ALSO TO DETAIL 3 ON SHEET E-9.2. FIXTURE SHOWN TO BE LOCATED ON STAIR LANDING 1.
 - 20 CONTRACTOR TO PROVIDE AND INSTALL NEW STANCHION MOUNTED LED LIGHT FIXTURE. REFER ALSO TO DETAIL 3 ON SHEET E-9.2. FIXTURE SHOWN TO BE LOCATED ON STAIR LANDING 2.
 - 21 CONTRACTOR TO PROVIDE AND INSTALL NEW STANCHION MOUNTED LED LIGHT FIXTURE. REFER ALSO TO DETAIL 3 ON SHEET E-9.2. FIXTURE SHOWN TO BE LOCATED ON UPPER LEVEL OF PLATFORM.
 - 22 CONTRACTOR TO PROVIDE AND INSTALL NEW 120/277V, THREE-WAY, 20A SWITCH IN WEATHERPROOF OUTLET BOX. RIGIDLY MOUNT OUTLET BOX TO PLATFORM STRUCTURE.
 - 23 CONTRACTOR TO PROVIDE AND INSTALL 2-#12 + 1-#12 GND IN 3/4"C. TO EXISTING PANELBOARD 'HWL' IN HEADWORKS ELECTRICAL ROOM. REFER TO SHEET E-3.2 FOR PANELBOARD 'HWL' LOCATION.
 - 24 CONTRACTOR TO PROVIDE AND INSTALL 3-#12 + 1-#12 GND IN 3/4"C. FOR STAIR LIGHTING CIRCUIT.
 - 25 CONTRACTOR TO PROVIDE AND INSTALL 4-#12 + 1-#12 GND IN 3/4"C. FOR STAIR LIGHTING CIRCUIT.
 - 26 CONTRACTOR TO PROVIDE AND INSTALL 4-#12 + 1-#12 GND IN 3/4"C. FOR STAIR LIGHTING CIRCUIT.
 - 27 FOR CONTINUATION REFER TO SHEET E-0.5.

GENERAL NOTES:

1. FOR FIXTURE SCHEDULE REFER TO SHEET E-1.2.



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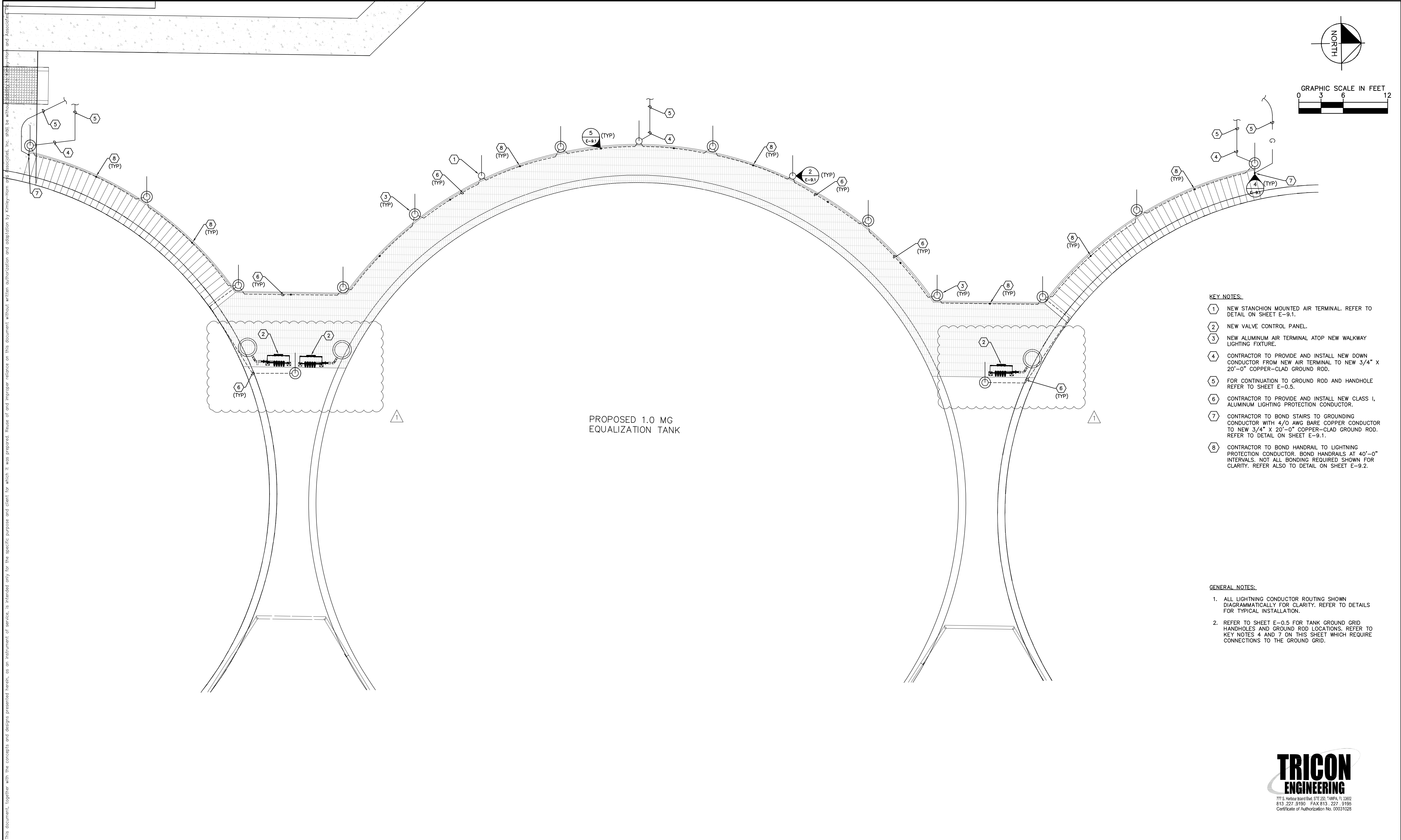
KHA PROJECT	148400013
DATE	8-8-16
SCALE	AS SHOWN
DESIGNED BY	TDT
DRAWN BY	JLW
CHECKED BY	GHW


**NORTH WRF
EQUALIZATION TANK**

LICENSED PROFESSIONAL
TIMOTHY THOMAS, P.E.
FL LICENSE NUMBER 47079

PROPOSED RETURN PUMP PAD PLAN

SHEET NUMBER
E-0.6



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No.	REVISIONS		DATE	BY	MANATEE COUNTY		FL	DATE:			