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Rev/Plot by: JAY MILLER
Rev on: 2/23/2021 10:18 AM
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CONSTRUCTION DRAWINGS
FOR THE
MORRIS BRIDGE EAST
GROUND STORAGE TANK IMPROVEMENTS

MORRIS BRIDGE SECTION 23 TOWNSHIP 27 RANGE 19
TAMPA, HILLSBOROUGH COUNTY, FLORIDA

PREPARED FOR
CITY OF TAMPA WATER DEPARTMENT

City of Tampa Water Department
306 E. Jackson Street, 5N
Tampa, FL 33602



ISSUED FOR BID

FEBRUARY 2021

REI Project No. 0818



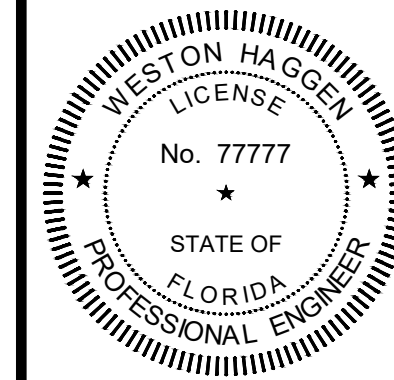
PROJECT TEAM



REISS ENGINEERING, INC.
CONSULTING ENGINEERS

1016 SPRING VILLAS POINT
WINTER SPRINGS, FL 32708
TEL: (407) 679-5358
FAX: (407) 679-5003

CERTIFICATE OF AUTHORIZATION #8181



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THE DATE ADJACENT TO THE SEAL.

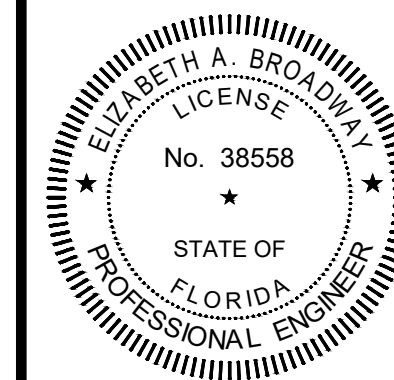
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THE FOLLOWING SHEETS IN ACCORDANCE WITH THE PROVISIONS OF SECTION
471.025, F.S., AND RULE 61G15-23, F.A.C.

GENERAL
G01, G02, G03, G04
CIVIL
C01, C02
DETAILS
C03

B BROADWAY ENGINEERING, P.A.
CIVIL, MECHANICAL, STRUCTURAL AND BUILDING DESIGN
See Us At www.Broadway-Eng.Com

1335 W. Cass Street
Tampa, Florida 33606 813-251-9244
Fax 813-251-9330 Bus. Email: Info@Broadway-Eng.Com
Cadd. Email: DGorr@Broadway-Eng.Com
BE-5230 Certificate of Authorization No. 4599



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STRUCTURAL
S01, S02, S03, S04

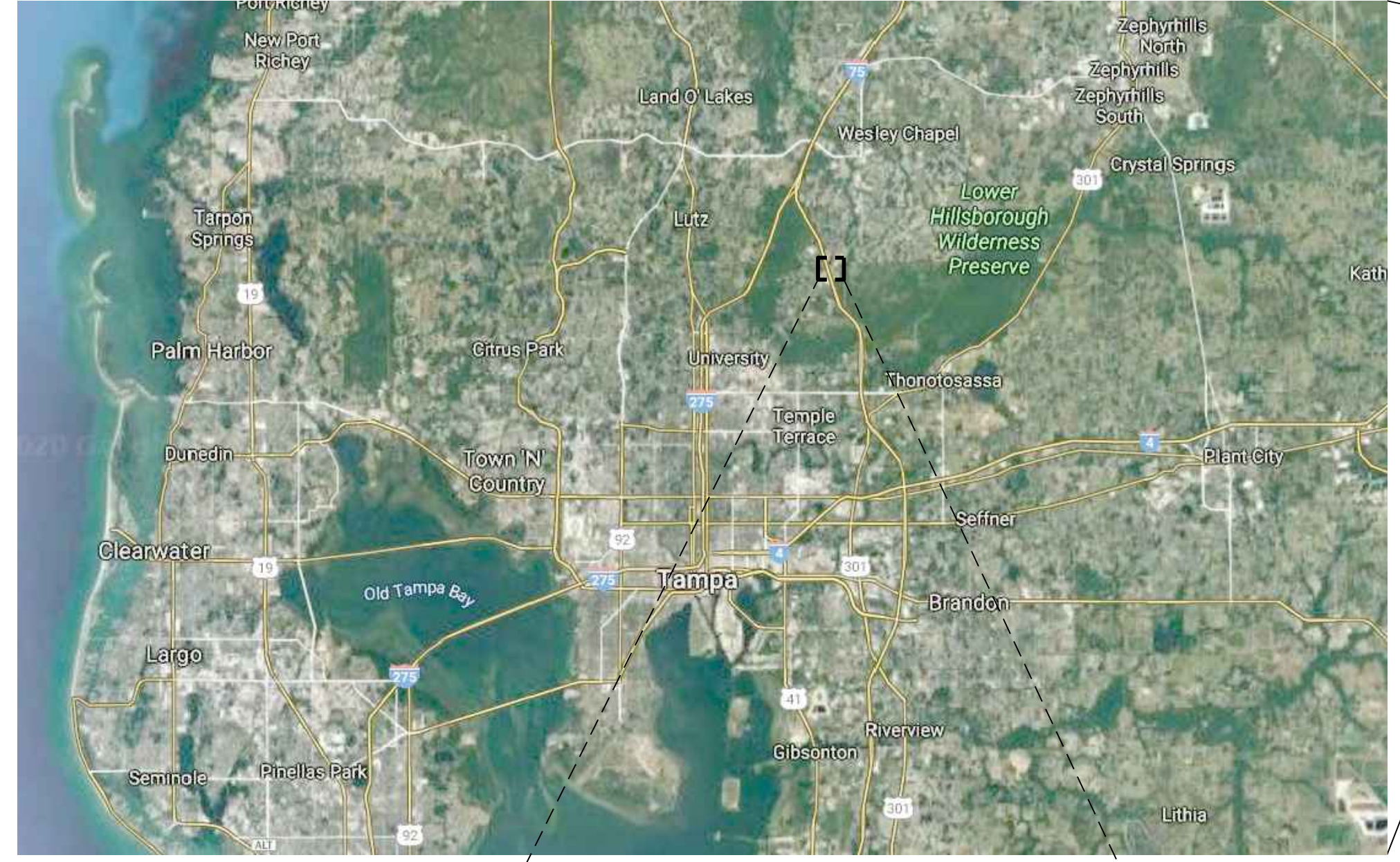
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C	02/2021	ISSUED FOR BID	AJM
B	01/2021	100% DRAWINGS	AJM
A	09/2020	60% DRAWINGS	AJM

GENERAL NOTES

1. LOCATION, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES ARE SHOWN IN ACCORDANCE WITH THE BEST INFORMATION AVAILABLE AT TIME OF THE PREPARATION OF THESE PLANS, BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT.
2. THE CONTRACTOR SHALL VERIFY THE LOCATION, ELEVATION AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES AFFECTING HIS WORK AND SHALL COMPLY WITH ALL STATE, AND LOCAL ORDINANCES AND OBTAIN ANY NECESSARY WORK PERMITS THAT MAY BE REQUIRED PRIOR TO CONSTRUCTION.
3. CONTRACTOR'S OPERATIONS, INCLUDING STAGING, PARKING, STORAGE OF MATERIALS, ETC, SHALL BE CONFINED TO THE PROJECT SITE. THE PROVISION OF ADDITIONAL SPACE FOR SUCH USE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. THE CONTRACTOR SHALL ENDEAVOR TO PROTECT PRIVATE PROPERTY. ANY DAMAGE CAUSED BY THE CONTRACTOR IN THE PERFORMANCE OF HIS WORK SHALL BE CORRECTED TO THE SATISFACTION OF THE OWNER AT THE CONTRACTOR'S EXPENSE. PAYMENT SHALL NOT BE MADE FOR THIS WORK.
5. ANY DISTURBANCE CAUSED BY CONTRACTOR'S OPERATIONS TO ROADS, SIDEWALKS, GUTTERS OR OTHER STRUCTURES SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE OWNER. NO PAYMENT SHALL BE MADE FOR SUCH WORK.
6. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY WHEN CONFLICTS BETWEEN DRAWINGS AND ACTUAL CONDITIONS ARE DISCOVERED.
7. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW PRIOR TO ORDERING EQUIPMENT OR MATERIALS. ALL SUBMITTALS SHALL BE STAMPED AND SIGNED BY THE CONTRACTOR TO INDICATE CONFORMANCE WITH THE DRAWINGS AND SPECIFICATIONS. SUBMITTALS THAT ARE NOT STAMPED AND SIGNED WILL BE RETURNED WITHOUT REVIEW. PROCUREMENT OF ANY EQUIPMENT OR MATERIALS PRIOR TO ENGINEER'S REVIEW AND ACCEPTANCE OF SHOP DRAWINGS SHALL BE AT CONTRACTOR'S OWN RISK.
8. "SCREENED" (LIGHT) DELINEATION INDICATED ON THE DRAWINGS DENOTES EXISTING FACILITIES. "SCREENED" INFORMATION WAS TAKEN FROM EXISTING CONSTRUCTION DRAWINGS AND DATA, IS FOR REFERENCE ONLY, AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO THE ORDERING OF MATERIALS AND BEGINNING OF CONSTRUCTION. "BOLD" DELINEATION IS NEW WORK TO BE CONSTRUCTED UNDER THIS CONTRACT.
9. THE CONTRACTOR'S OPERATIONS SHALL CONFORM TO THE RULES AND REGULATIONS OF THE STATE CONSTRUCTION SAFETY ORDERS PERTAINING TO EXCAVATION AND TRENCHING.
10. THE DRAWINGS INDICATE TYPES OF PIPE SUPPORT SYSTEMS AT VARIOUS LOCATIONS. HOWEVER, ALL PIPE SUPPORTS, HANGERS, BRACKETS, INSERTS OR BRACES ARE NOT SHOWN. CONTRACTOR SHALL REFER TO THE SPECIFICATIONS AND PROVIDE A COMPLETE SUPPORT SYSTEM AS REQUIRED.
11. PRIOR TO COMMENCING WITH WORK ASSOCIATED WITH CONNECTIONS TO EXISTING INFRASTRUCTURE, CONTRACTOR SHALL FIELD VERIFY PRECISE LOCATION, ELEVATION, AND REQUIRED ARRANGEMENT OF CONNECTIONS. THIS SHALL INCLUDE EXPOSING EXISTING INFRASTRUCTURE TO THE EXTENT NECESSARY TO CONDUCT THESE INVESTIGATIONS. CONTRACTOR SHALL PROVIDE ALL FITTINGS, ADAPTERS, CLOSURE ASSEMBLIES, OFFSETS (TO ACCOUNT FOR DIFFERING CENTERLINE ELEVATIONS), ETC REQUIRED TO SUCCESSFULLY MAKE THE SUBJECT CONNECTION AS PER THE DESIGN INTENT.
12. ALL WORK ON THE CITY OF TAMPA'S POTABLE WATER INFRASTRUCTURE SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT'S TECHNICAL SPECIFICATIONS, CONSTRUCTION DETAILS, AND THE TAMPA WATER DEPARTMENT TECHNICAL MANUAL (LATEST EDITION). IN THE EVENT OF A DISCREPANCY, THE MOST STRINGENT CRITERIA SHALL APPLY.
13. NORMAL WORKING HOURS SHALL BE WEEKDAYS FROM 7:30 AM TO 4:00 PM UNLESS OTHERWISE APPROVED BY THE ENGINEER/INSPECTOR.
14. CONSTRUCTION OF POTABLE WATER INFRASTRUCTURE SHALL BE COORDINATED WITH THE WATER DEPARTMENT PRIOR TO THE START OF THE CONSTRUCTION. CONTRACTOR TO CONTACT CITY OF TAMPA CONTRACT ADMINISTRATION DEPARTMENT @ 813-635-3432 TO COORDINATE/SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE CITY FOR REVIEW OF INSTALLATION TECHNIQUES AND PROCEDURES A MINIMUM OF 10 WORKING DAYS PRIOR TO THE PLANNED CONSTRUCTION.
15. VALVES ON EXISTING PUBLIC WATER MAINS TO BE OPERATED BY CITY PERSONNEL ONLY.
16. THE CONTRACTOR WILL BE RESPONSIBLE FOR SALVAGING EXISTING INFRASTRUCTURE TO THE CITY IF REQUESTED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISPOSAL OF ALL MATERIAL NOT RETURNED TO THE CITY.
17. CONTRACTOR SHALL CONFORM TO 2017 FLORIDA BUILDING CODE, SIXTH EDITION.



HILLSBOROUGH COUNTY



MORRIS BRIDGE EAST GST
17010 DONA MICHELLE DR
TAMPA, FL 33647

LOCATION MAP
SCALE: N.T.S.

DRAWING INDEX

SHEET	DRAWING	DESCRIPTION
GENERAL		
01	G01	COVER
02	G02	LOCATION MAP, GENERAL NOTES, AND DRAWING INDEX
03	G03	ABBREVIATIONS
04	G04	SYMBOLS AND LEGENDS
CIVIL		
05	C01	EXISTING SITE
06	C02	MORRIS BRIDGE EAST GST STORAGE TANK COATING PLAN AND SECTION
DETAILS		
07	C03	DETAILS
STRUCTURAL		
09	S01	STORAGE TANK STRUCTURAL REPAIR PLAN
10	S02	STORAGE TANK STRUCTURAL PLAN & ELEVATIONS
11	S03	STORAGE TANK STRUCTURAL DETAILS
12	S04	STORAGE TANK STRUCTURAL GENERAL NOTES

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 Drawn PFH
 Checked WTH
 Reviewed GWD
 Approved WTH

CITY OF TAMPA WATER DEPARTMENT
 GROUND STORAGE TANKS IMPROVEMENTS
 GENERAL
 LOCATION MAP, GENERAL NOTES, AND DRAWING INDEX

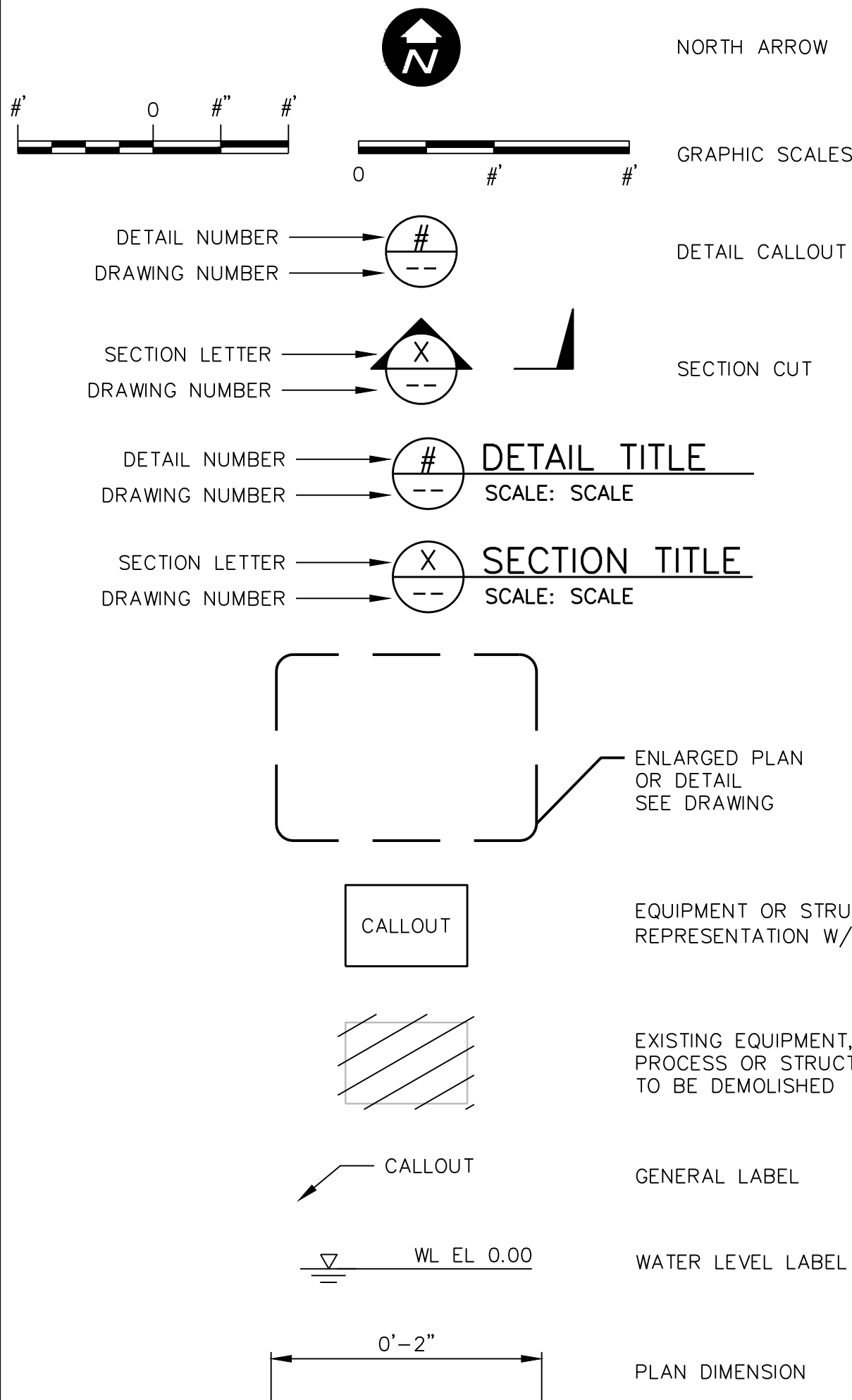
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SCALE: NOTED	REVISION: C
DRAWING NO. G02	SHEET NO.: 02 OF 11



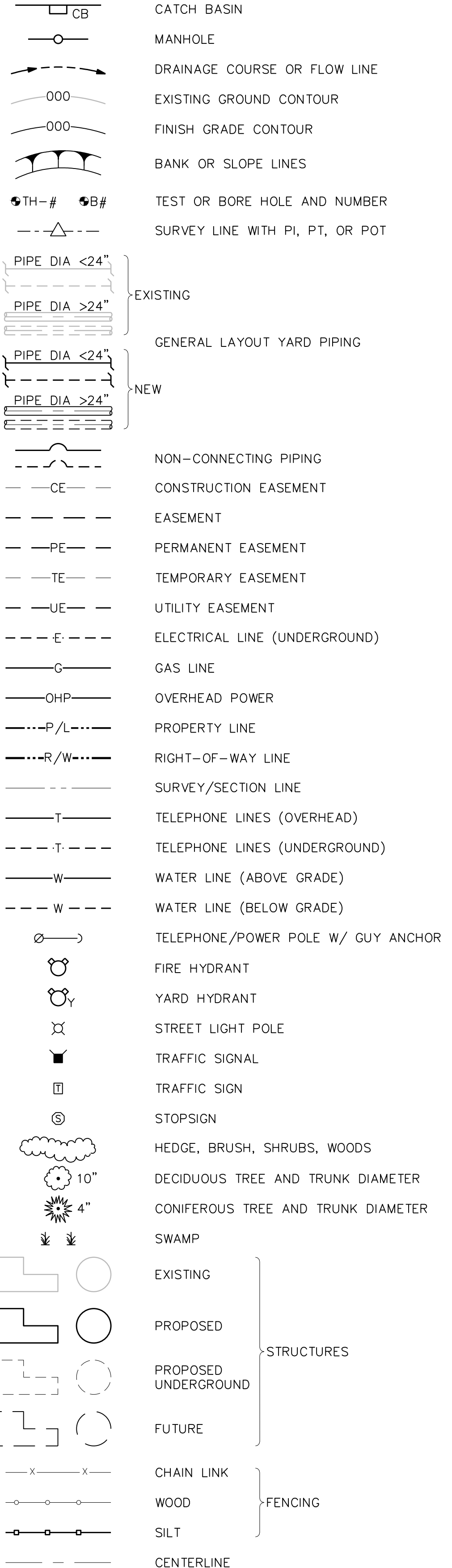
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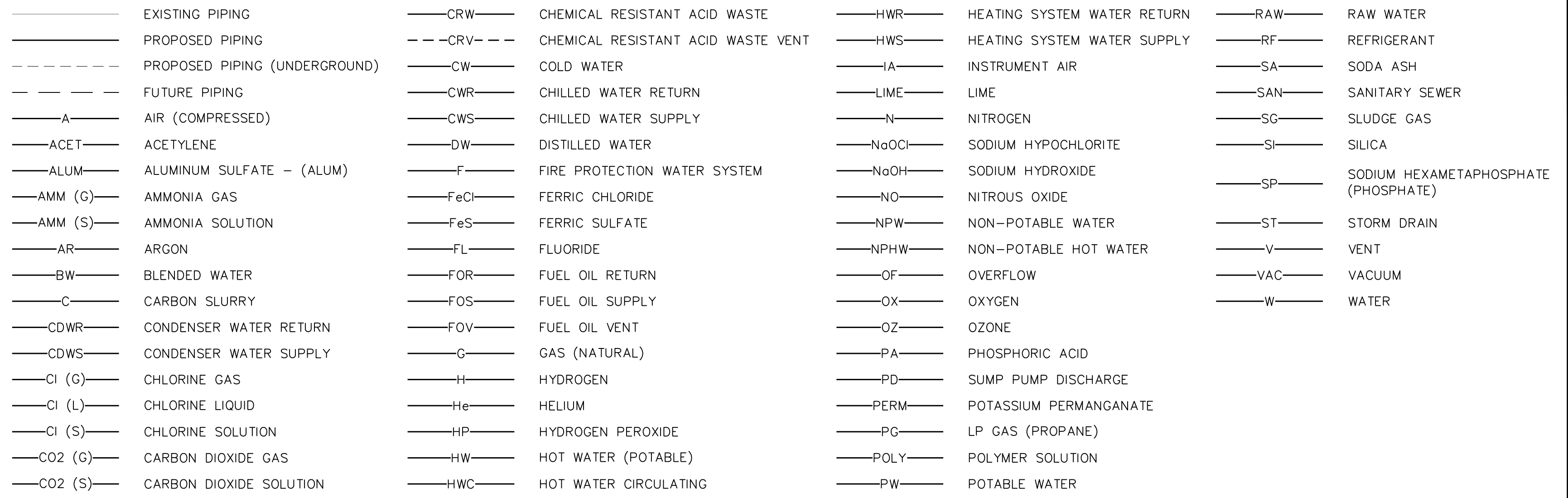
GENERAL DRAFTING LEGEND



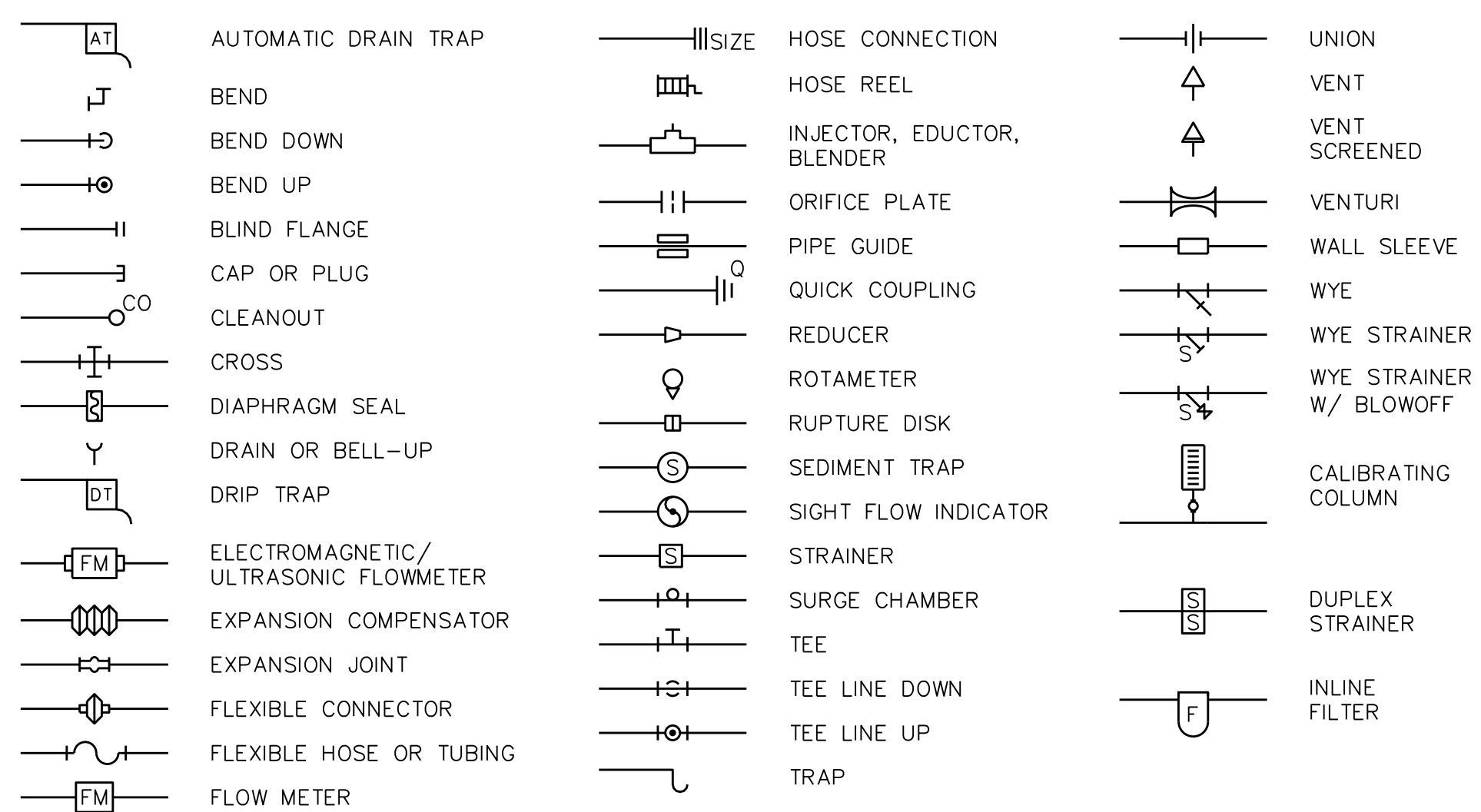
CIVIL LEGEND



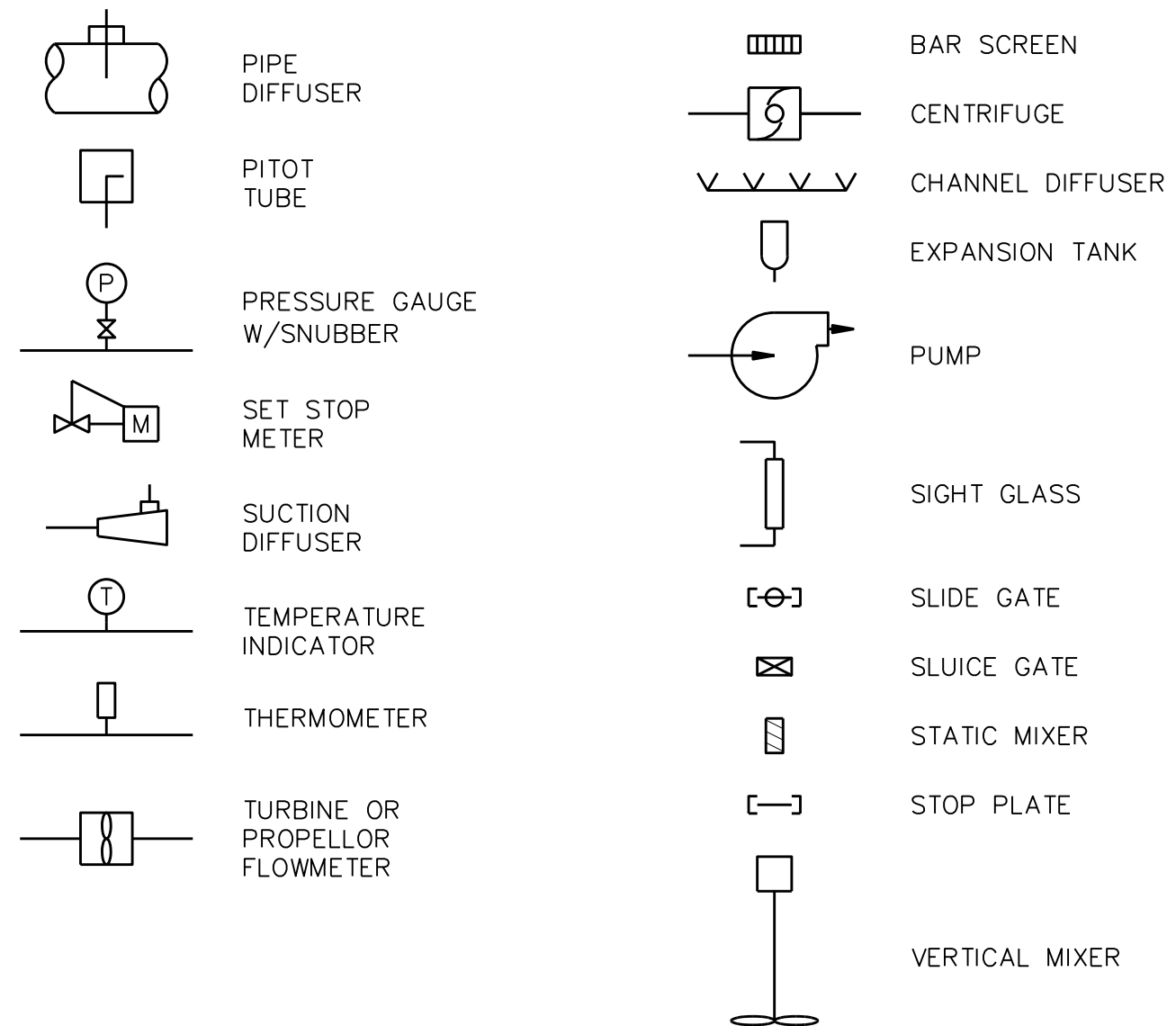
PIPING SYSTEMS LEGEND



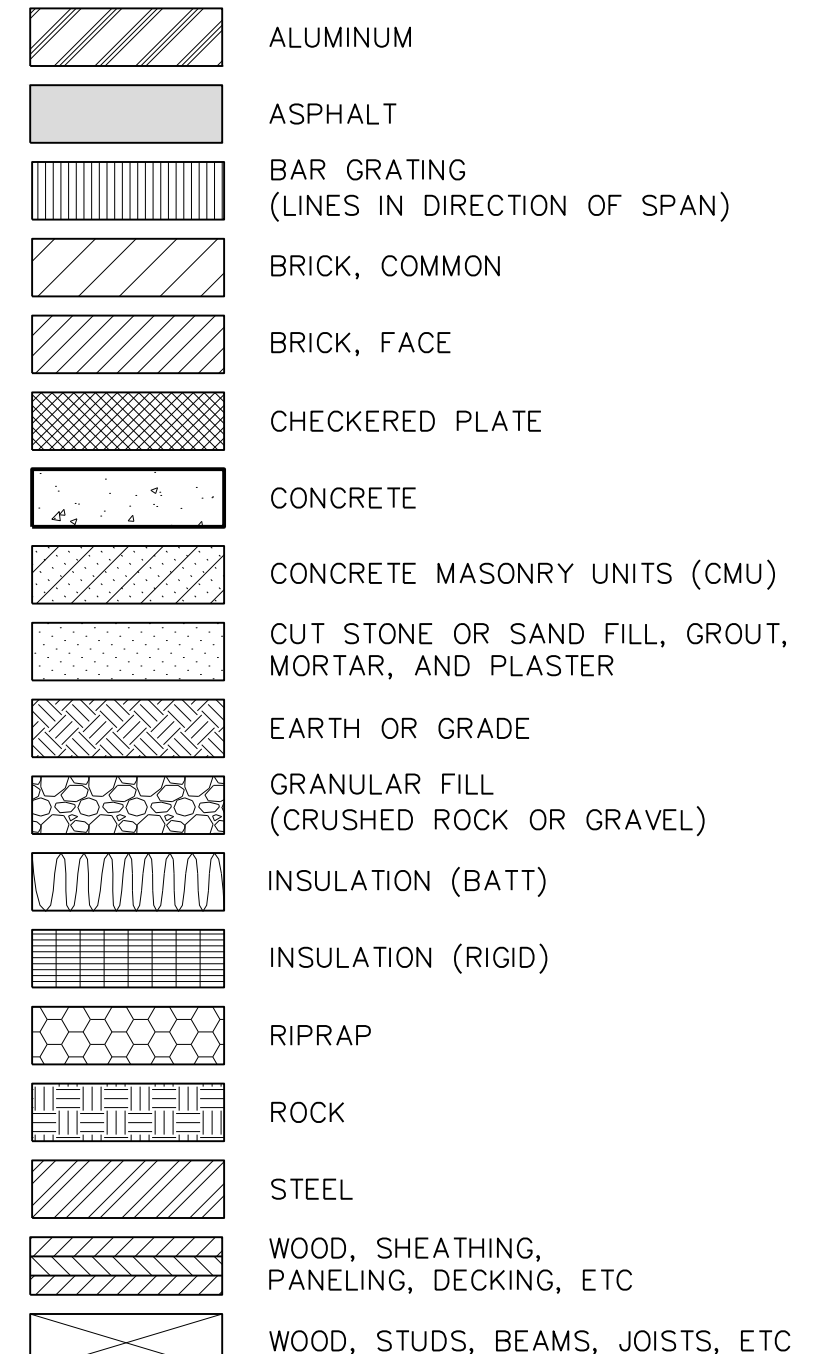
PIPING ACCESSORIES LEGEND



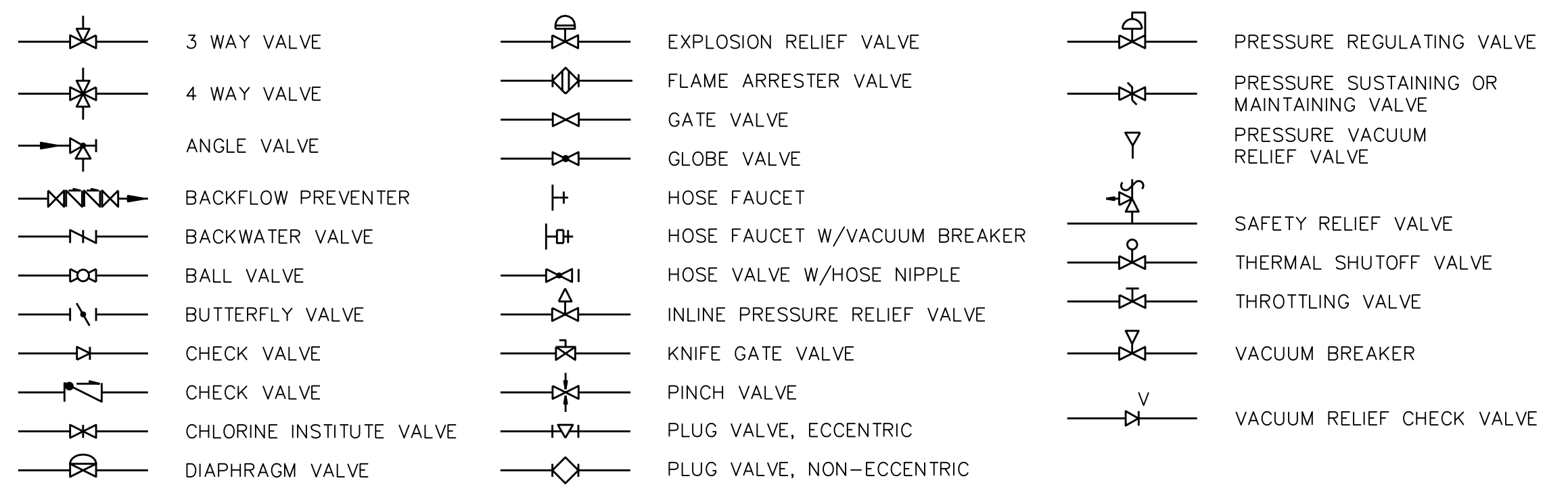
MISCELLANEOUS EQUIPMENT LEGEND



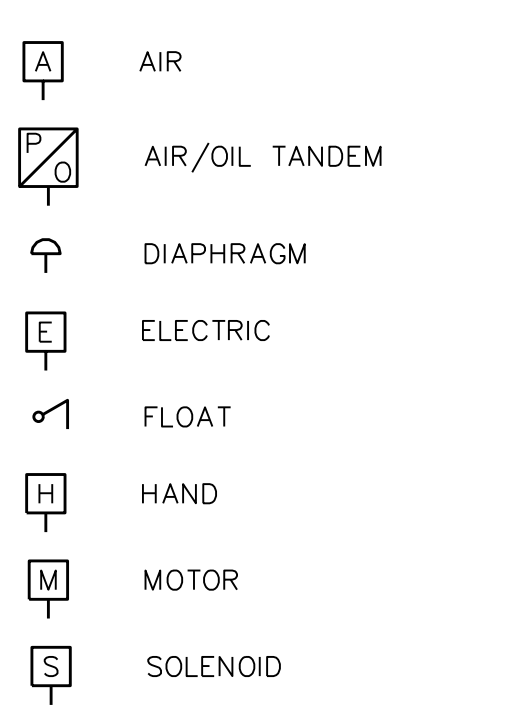
MATERIALS LEGEND



VALVE LEGEND



ACTUATOR LEGEND

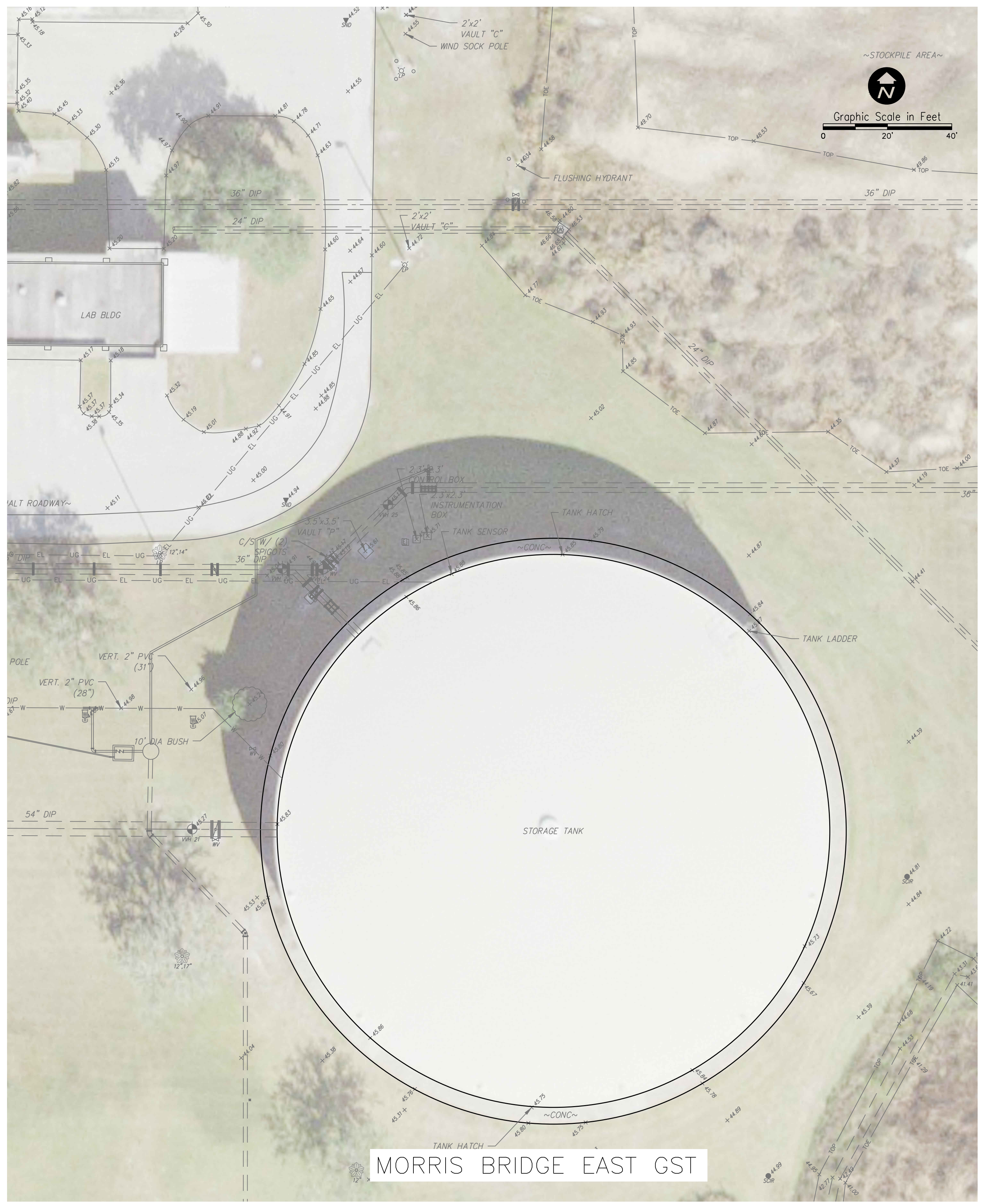


NOTE: THIS LEGEND IS FOR GENERAL REFERENCE. NOT ALL SYMBOLS, PROCESSES, MATERIALS, OR FITTINGS MAY BE USED IN THIS DESIGN, NOR IS THIS LEGEND COMPREHENSIVE. REFER TO INDIVIDUAL DRAWING LEGEND(S), IF SYMBOLS ARE NOT LISTED. INDIVIDUAL DISCIPLINE STANDARD LEGENDS SUPERCEDE THIS GENERAL LEGEND, IF PROVIDED.

						Designed <u>ESW</u> Drawn <u>PFH</u> Checked <u>WTH</u> Reviewed <u>GWD</u> Approved <u>WTH</u>	CITY OF TAMPA WATER DEPARTMENT GROUND STORAGE TANKS IMPROVEMENTS GENERAL SYBMBOLS AND LEGENDS	PROJECT NO.:	0818	 REISS ENGINEERING, INC. 3507 EAST FRONTAGE ROAD SUITE 180 TAMPA, FL 33607 (813) 549-0919 CERTIFICATE OF AUTH. 8181
								SCALE:	REVISION:	
								NOTED	C	
								DRAWING NO.:	SHEET NO.:	
							G04	04 OF 11		

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MORRIS BRIDGE EAST GST



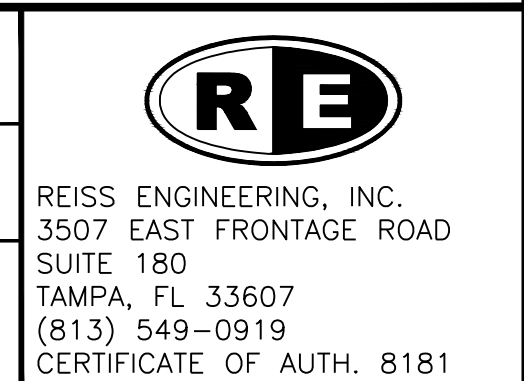
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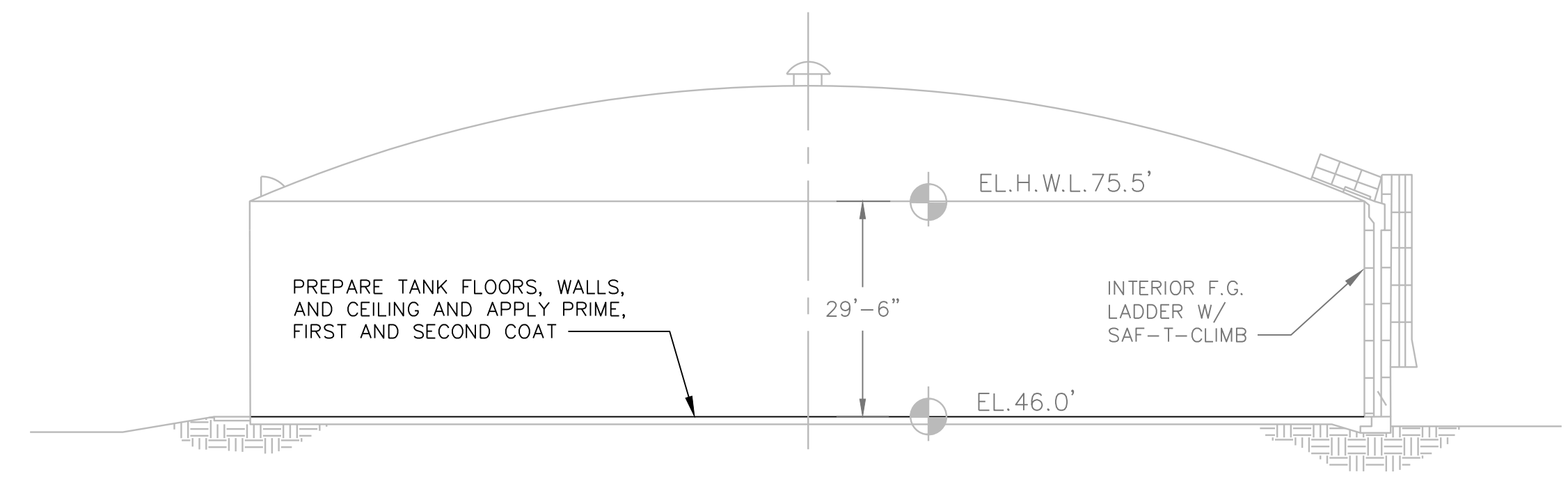
CITY OF TAMPA WATER DEPARTMENT
 GROUND STORAGE TANKS IMPROVEMENTS
 CIVIL
 EXISTING SITE

PROJECT NO.:	0818
SCALE:	NOTED
REVISION:	C
DRAWING NO.:	C01
SHEET NO.:	05 OF 11

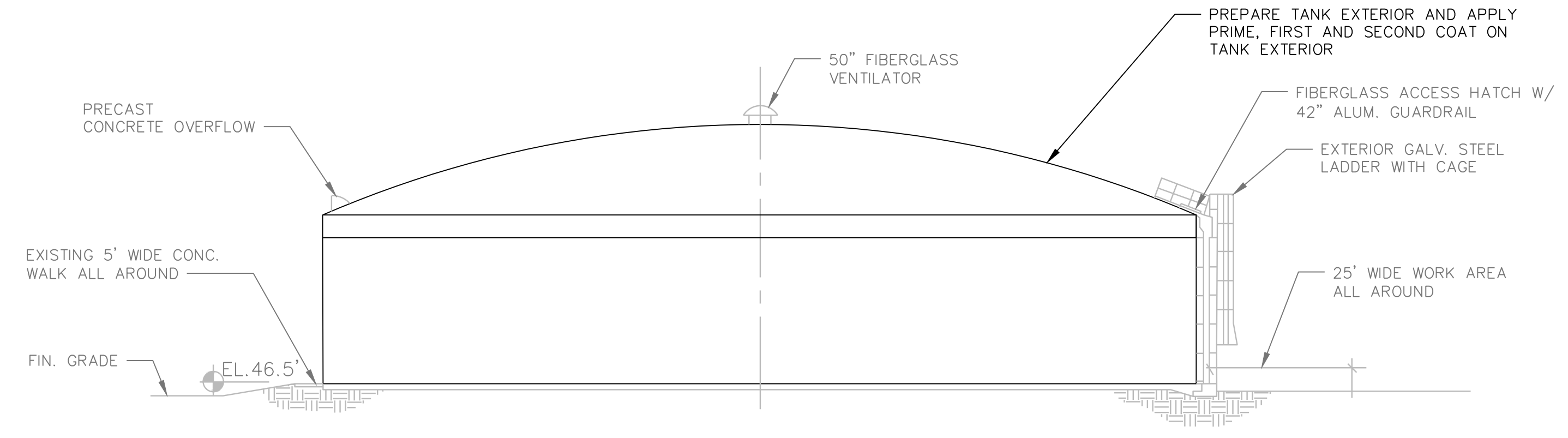


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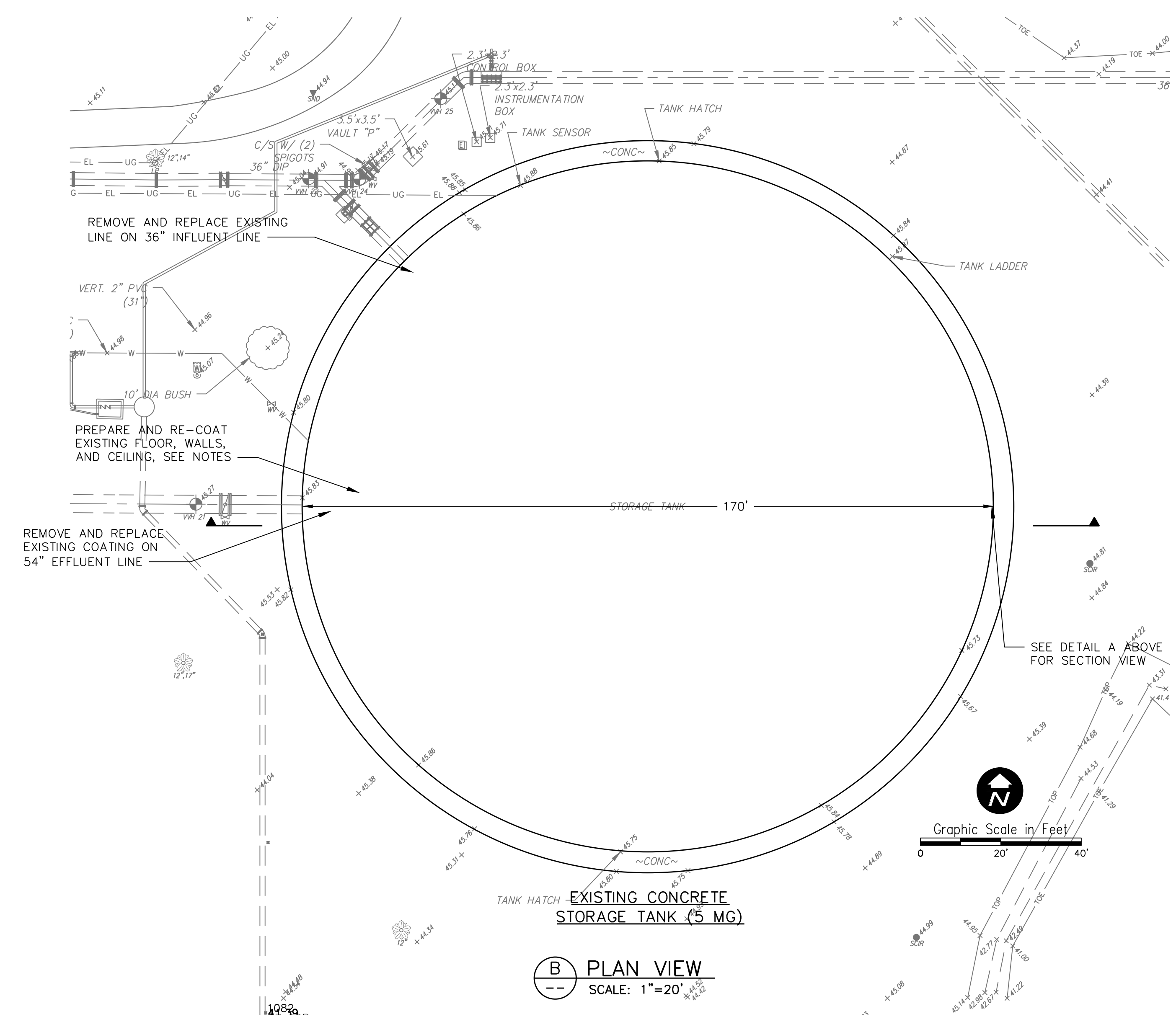
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TYPICAL INTERIOR SECTION



TYPICAL EXTERIOR SECTION



(B) PLAN VIEW
SCALE: 1"=20'

1. NOTES ARE INTENDED TO COMPLEMENT THE EXTERIOR AND INTERIOR COATING SPECIFICATIONS AND ARE FURNISHED IN THE DRAWINGS FOR CONVENIENCE. THE CONTRACTOR SHALL REFER TO THE TECHNICAL SPECIFICATIONS.
2. ALL WORK PERFORMED SHALL BE IN ACCORDANCE WITH OSHA REQUIREMENTS.
3. THE CONTRACTOR SHALL PERFORM OR OBTAIN AN ASBESTOS SURVEY PER NESHAP REGULATIONS PRIOR TO MOBILIZING.
4. THE CONTRACTOR SHALL PERFORM LEAD BASED PAINT SURVEY PER NLLAP REQUIREMENTS PRIOR TO MOBILIZING.
5. THE CONTRACTOR SHALL PROVIDE A DETAILED PROJECT SUMMARY TO INCLUDE BUT NOT BE LIMITED TO THE PROVISION OF ALL SAFETY LOGS SHOWING NAMES OF PERSONS WHO ENTERED THE WORKSPACE INCLUDING DATE AND TIMES OF ENTRY AND EXIT. RECORDS OF ANY EMERGENCIES, SAFETY, OR HEALTH INCIDENTS, WASTE MANIFESTS, ETC.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPERLY PROTECTING AREAS NOT TO BE COATED DURING ALL PHASES OF HTE PROJECT INCLUDING REPAIR, WASHING, BLASTING, AND PAINTING. ITEMS NOT TO BE COATED SHALL BE RELOCATED IF POSSIBLE OR PROTECTED AS REQUIRED. ANY DAMAGE CAUSED BY NOT PROPERLY PROTECTING SHALL BE REPAIRED AT HTE CONTRACTOR'S EXPENSE.
7. SURFACES TO BE COATED SHALL BE CLEANED AND PREPARED IN ACCORDANCE WITH SSPC REQUIREMENTS BEFORE APPLYING COATING OR SURFACE TREATMENTS. ANY OIL, GREASE, RUST, LOOSE MILL SCALE, OLD WEATHERING COATING, AND ALL OTHER FOREIGN SUBSTANCES SHALL BE REMOVED EXCEPT AS SPECIFIED.
8. INTERIOR COATING:
 - a) ALL MOLD, MILDEW, CHALK, LOOSE PAINT, ORGANIC DEPOSITS, OR OTHER SURFACE CONTAMINATION FROM THE ENTIRE WET AREA SHALL BE REMOVED USING LOW PRESSURE WASHER CLEANING (MIN 4000 PSI) PRIOR TO ABRASIVE CLEANING.
 - b) ALL SPECIFIED INTERIOR SURFACES SHALL BE PRESSURE WASHED, PREPARED, AND COATED IN ACCORDANCE WITH THE SPECIFICATIONS.
 - c) ALL PIPING AND DRAINS SHALL BE SUFFICIENTLY COVERED TO KEEP BLAST MATERIAL FROM ENTERING THE PIPING.
9. EXTERIOR COATING:
 - a) ALL SPECIFIED EXTERIOR SURFACES SHALL BE PRESSURE WASHED, PREPARED, AND COATED IN ACCORDANCE WITH THE SPECIFICATIONS.
10. REFER TO SPECIFICATIONS FOR ADDITIONAL DETAIL AND INFORMATION FOR RESULTS OF METALS TESTING.



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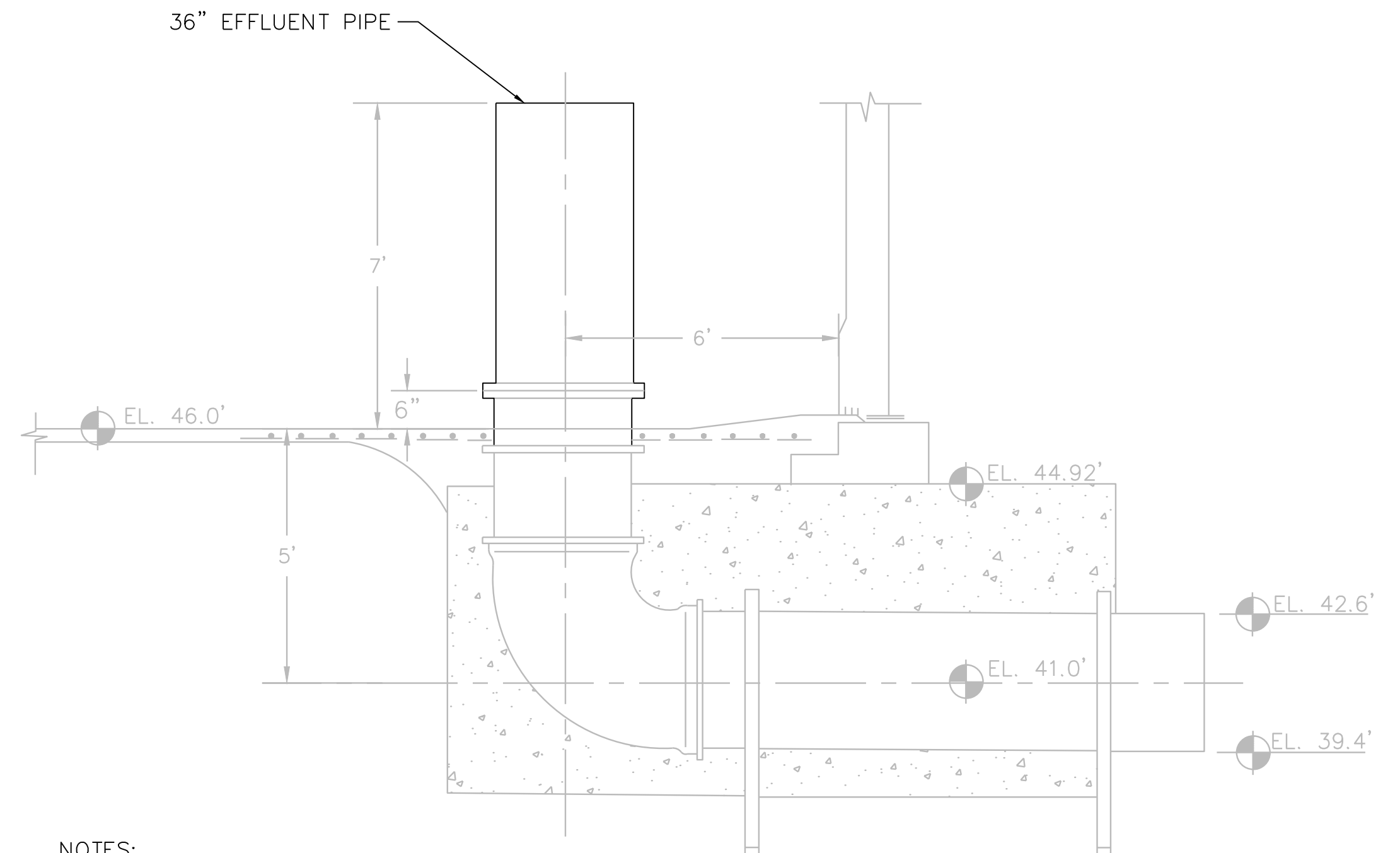
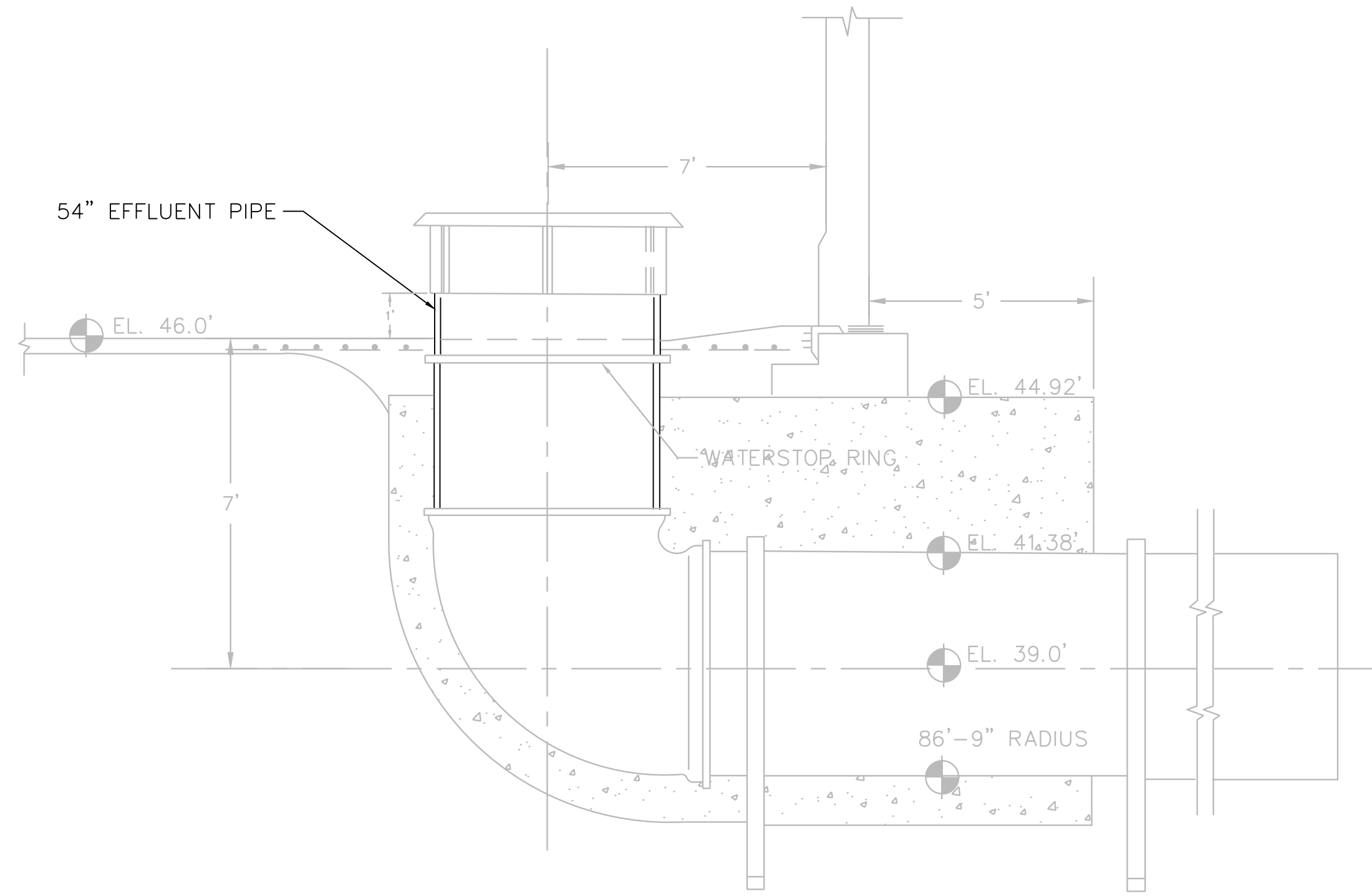
CITY OF TAMPA WATER DEPARTMENT
 GROUND STORAGE TANKS IMPROVEMENTS
 CIVIL
 MORRIS BRIDGE EAST GST STORAGE
 TANK COATING PLAN AND SECTION

PROJECT NO.:	0818
SCALE:	NOTED
REVISION:	C
DRAWING NO.:	C02
SHEET NO.:	06 OF 11



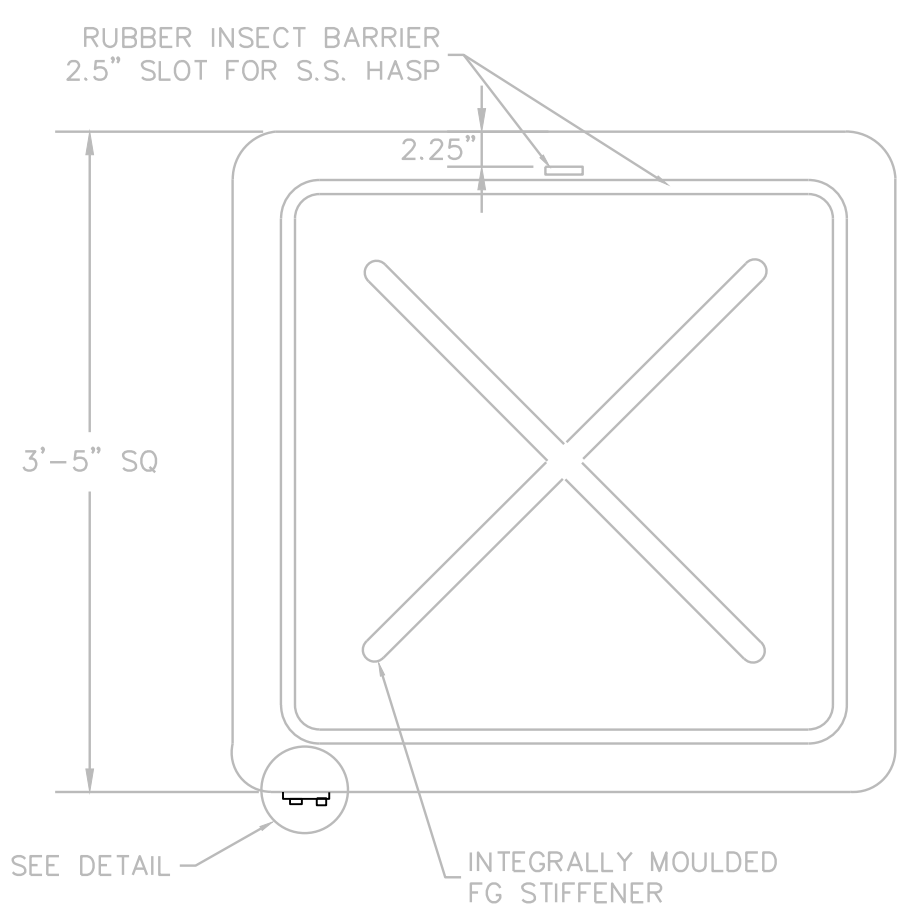
REISS ENGINEERING, INC.
 3507 EAST FRONTAGE ROAD
 SUITE 180
 TAMPA, FL 33607
 (813) 549-0919
 CERTIFICATE OF AUTH. 8181

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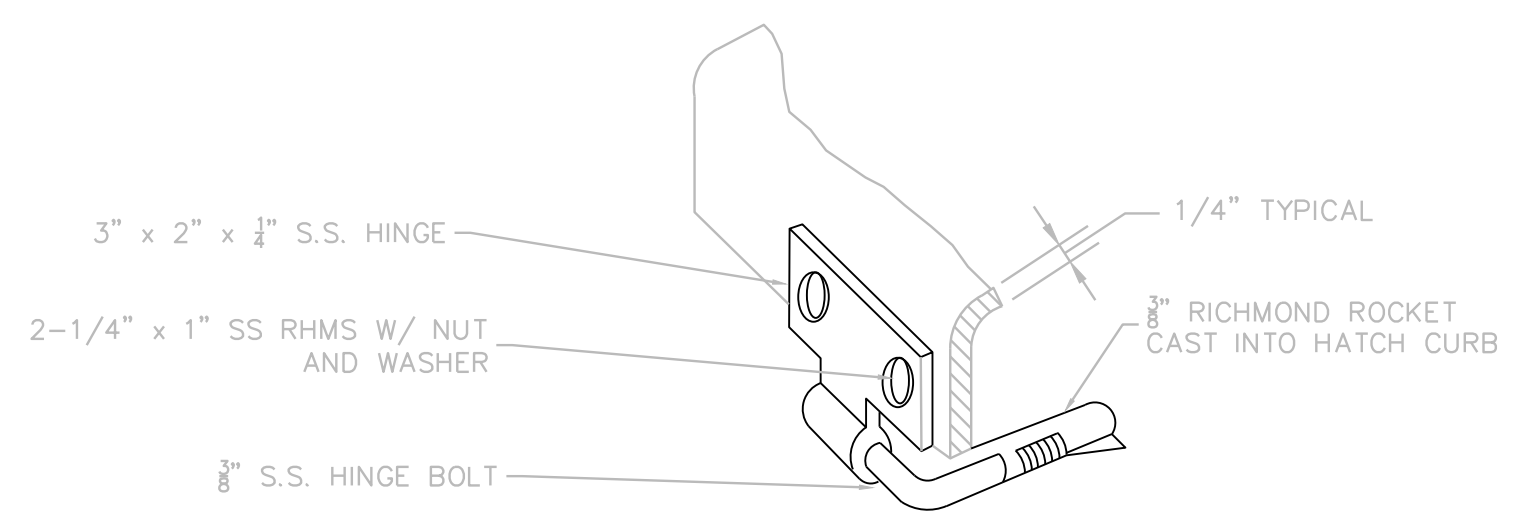


- NOTES:**
1. Prepare interior ductile iron surfaces in accordance with NAPF 500-03 Surface Preparation Standard or Ductile Iron Pipe and Fittings in Exposed Locations Receiving Special External Coatings and/or Special Internal Linings.
 2. Prepare interior carbon steel surfaces for painting in accordance with SSPC SP-1 Solvent Cleaning and SSPC-SP-10 Near White Abrasive Blast Cleaning.
 3. Apply three coats of an NSF/ANSI 61 approved epoxy coating system to all metal surfaces per specifications. Each coat should be of a contrasting color and applied in accordance with the coating manufacturer's published recommendations.
 4. Following application of the epoxy coating system apply an approved, flexible caulk compatible with the coating and concrete at seams, crevices caulk edges. The caulk shall be one approved product recommended by the coating manufacturer.

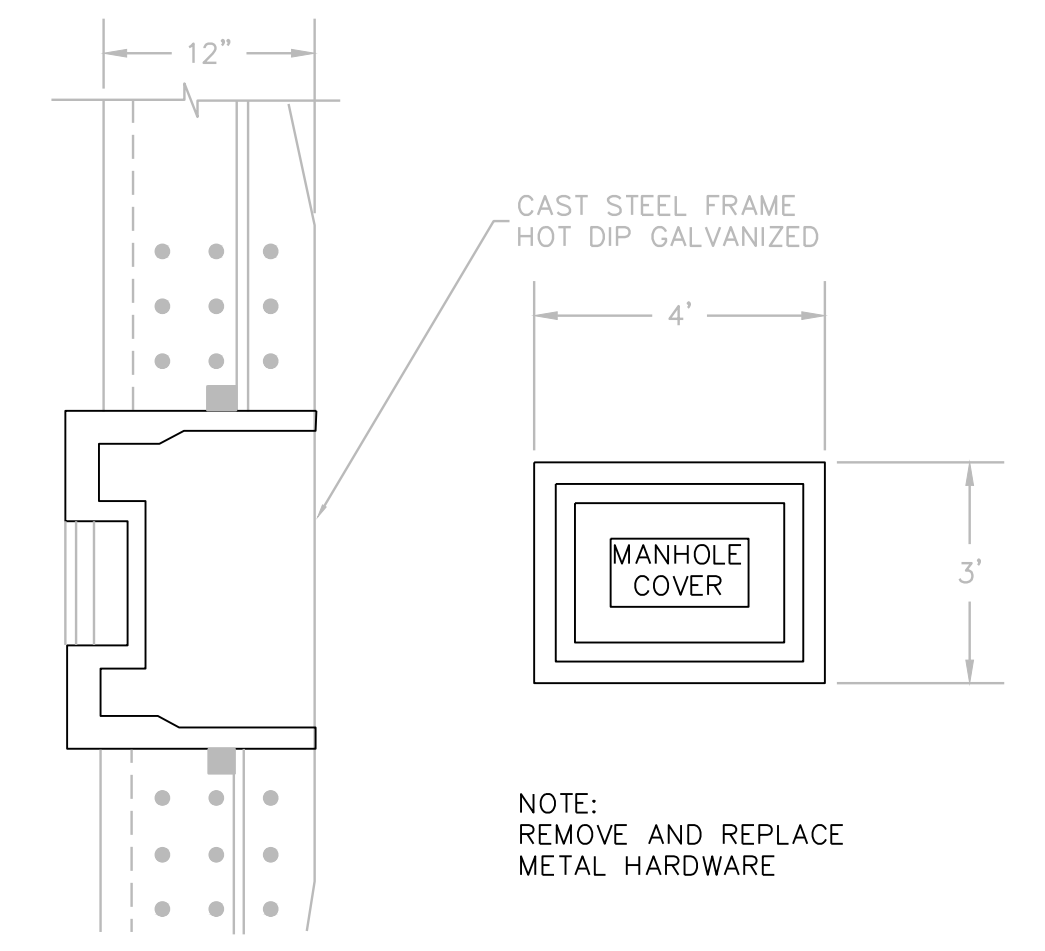
1 DISCHARGE AND INFLUENT PIPE COATING DETAIL
 -- SCALE: N.T.S.



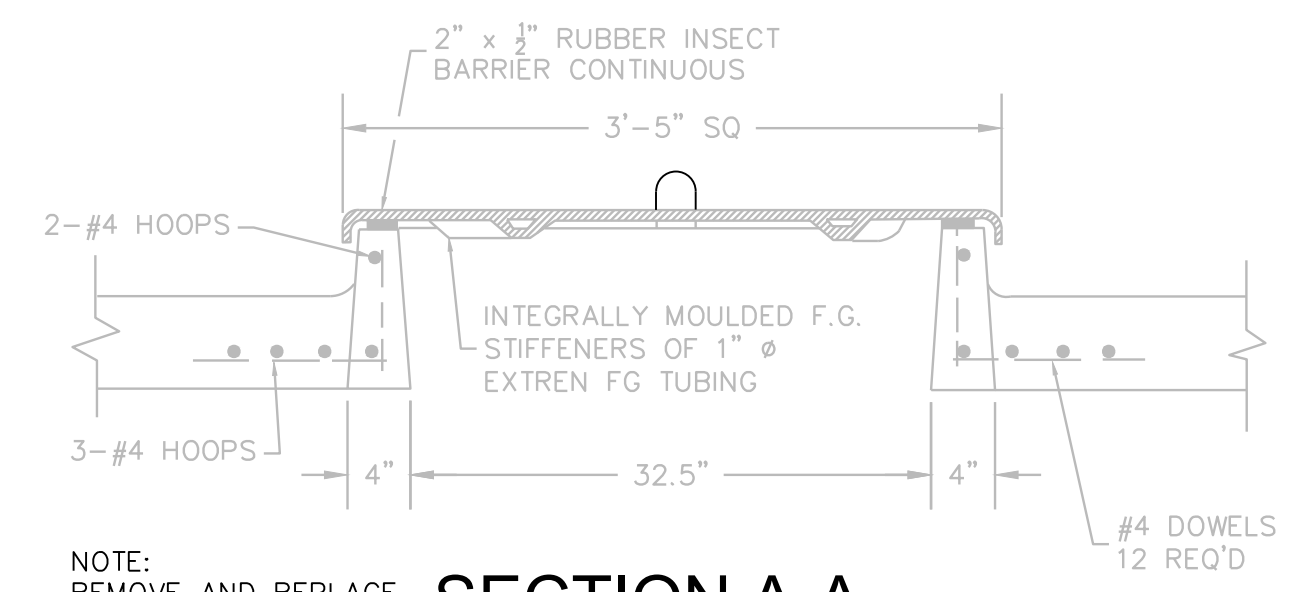
PLAN



HINGE DETAIL



MANHOLE COVER



SECTION A-A

- NOTES:**
1. Prepare interior ductile iron surfaces in accordance with NAPF 500-03 Surface Preparation Standard or Ductile Iron Pipe and Fittings in Exposed Locations Receiving Special External Coatings and/or Special Internal Linings.
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2 FIBERGLASS HATCH AND CURB DETAILS
 -- SCALE: N.T.S.

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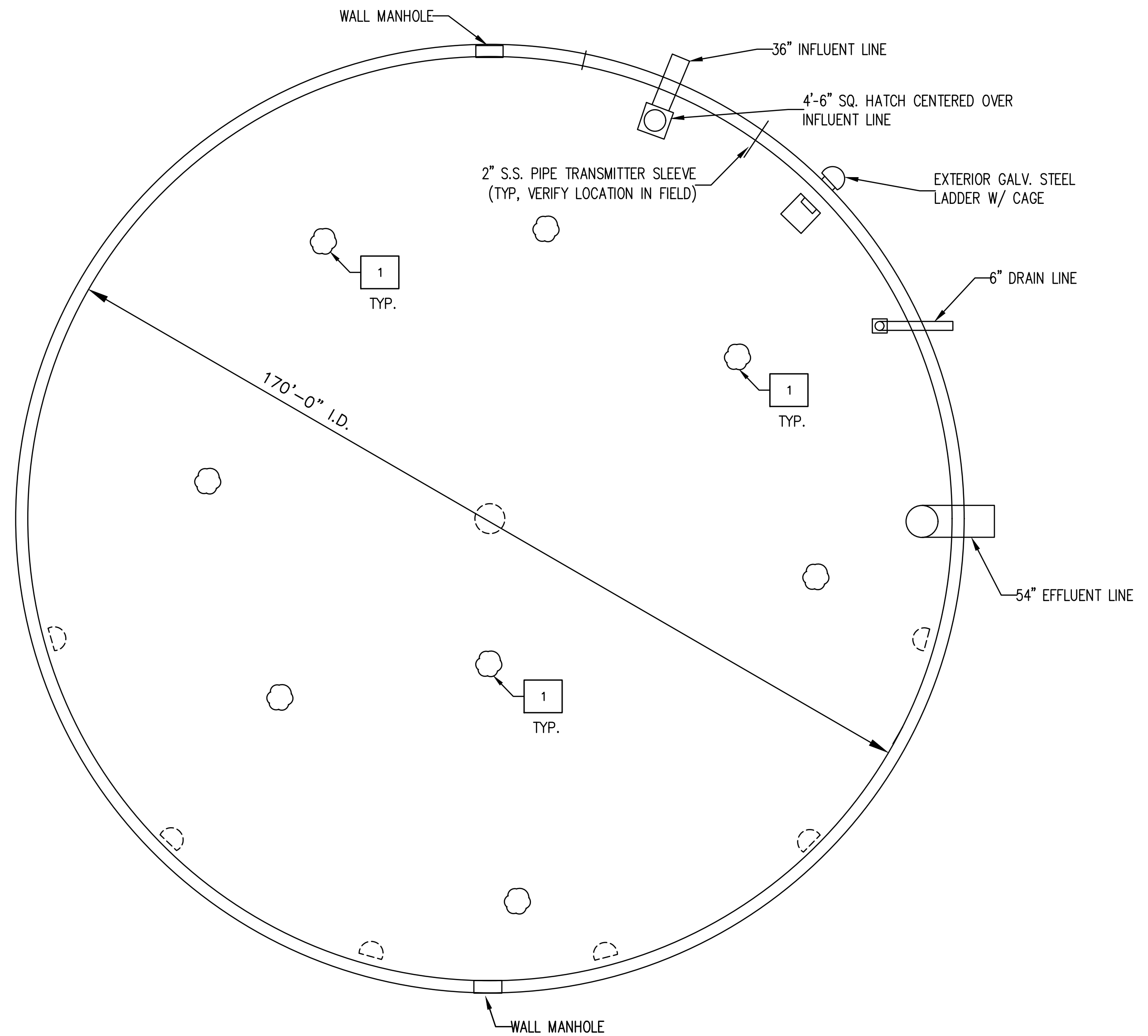
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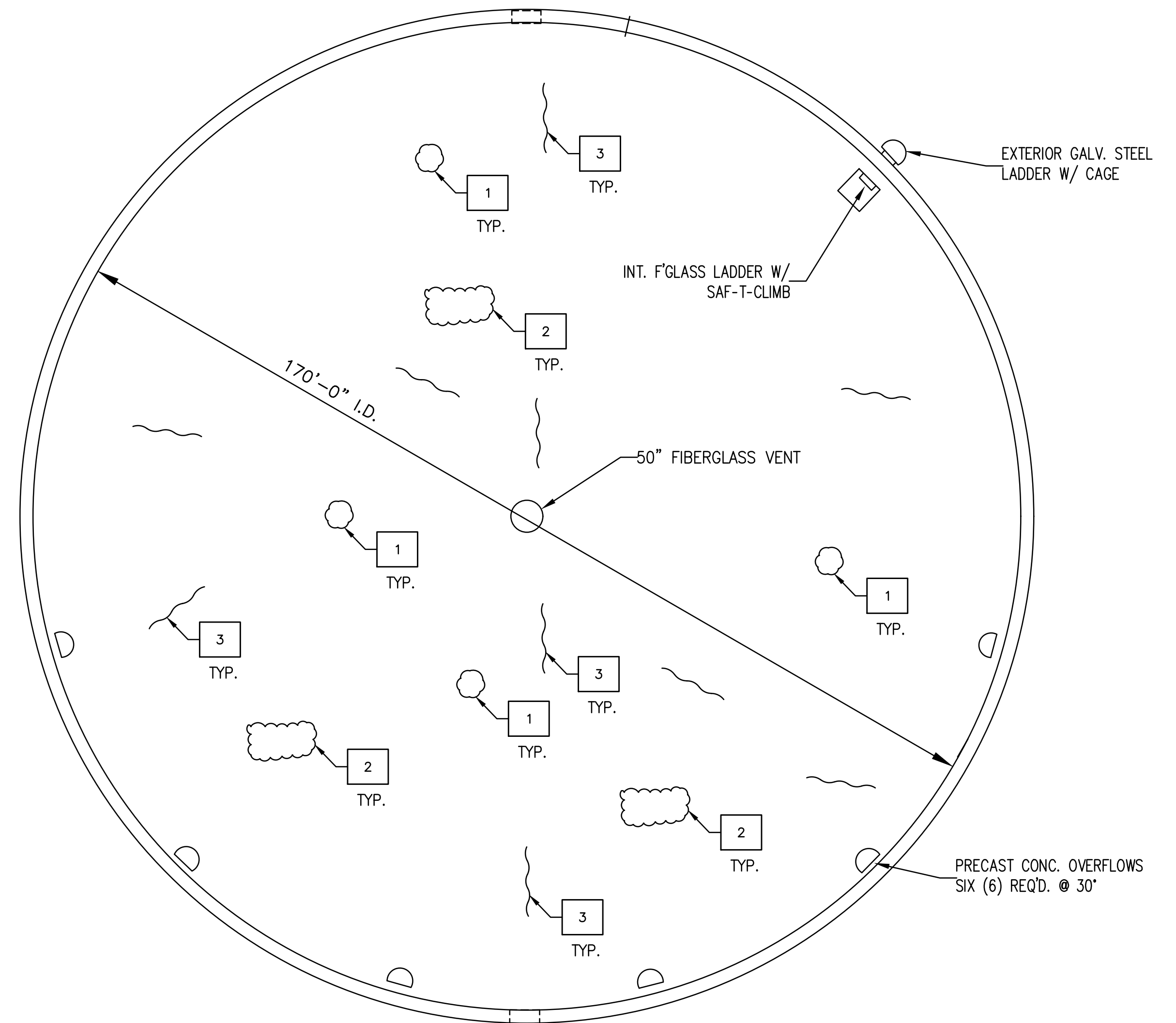
CITY OF TAMPA WATER DEPARTMENT
GROUND STORAGE TANKS IMPROVEMENTS
 DETAILS
DETAILS

PROJECT NO.: 0818	
SCALE: NOTED	REVISION: C
DRAWING NO. C03	SHEET NO.: 07 OF 11

REISS ENGINEERING, INC.
 3507 EAST FRONTAGE ROAD
 SUITE 180
 TAMPA, FL 33607
 (813) 549-0919
 CERTIFICATE OF AUTH. 8181



1 GROUND STORAGE TANK – INTERIOR CONCRETE FLOOR PLAN
 S01 SCALE: 1/16" = 1'-0"



2 GROUND STORAGE TANK – INTERIOR REFLECTED DOME PLAN
 S01 SCALE: 1/16" = 1'-0"

KEY NOTES

- 1 AREAS REQUIRING PATCHING – SEE CONCRETE PATCHING NOTES
- 2 AREAS REQUIRING RESTORATION – SEE CONCRETE RESTORATION NOTES
- 3 CRACKS REQUIRING REPAIR – SEE CRACK REPAIR NOTES
- 4 AREAS REQUIRING GROUT – SEE GROUT NOTES

NOTES:

1. REPAIR AREAS SHOWN ARE FOR REFERENCE ONLY AND DO NOT REPRESENT ACTUAL LOCATIONS AND QUANTITIES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING ALL TYPES OF REPAIRS, LOCATIONS AND QUANTITIES.

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 Fax 813-251-9330 Bus. Email: Info@Broadway-Eng.Com
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 BE-5230 Certificate of Authorization No. 4599

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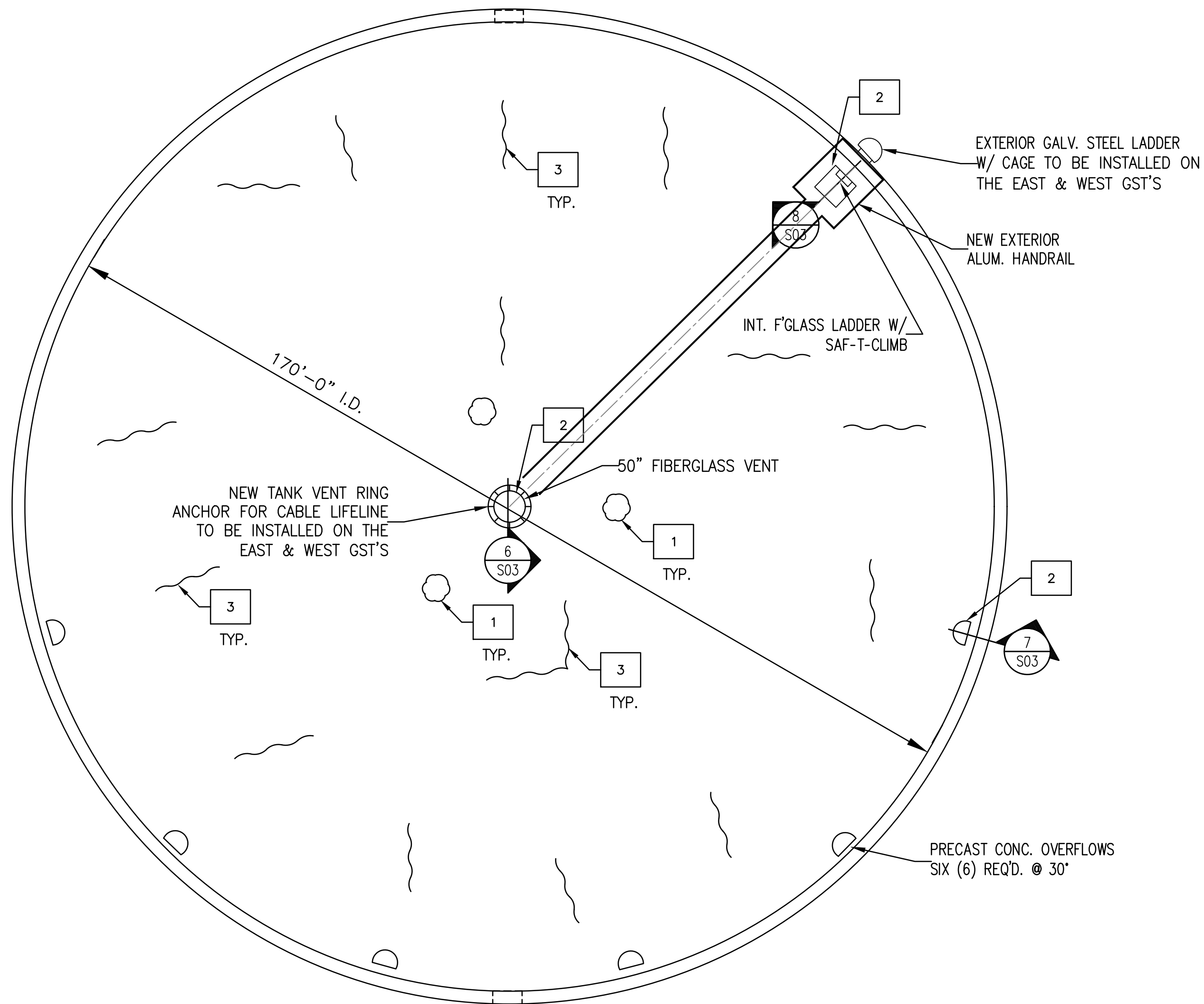
CITY OF TAMPA WATER DEPARTMENT
 GROUND STORAGE TANKS IMPROVEMENTS
 STRUCTURAL
 STORAGE TANK STRUCTURAL REPAIR PLAN

PROJECT NO.: 0818
 SCALE: NOTED
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 DRAWING NO. S01
 SHEET NO.: 08 OF 11

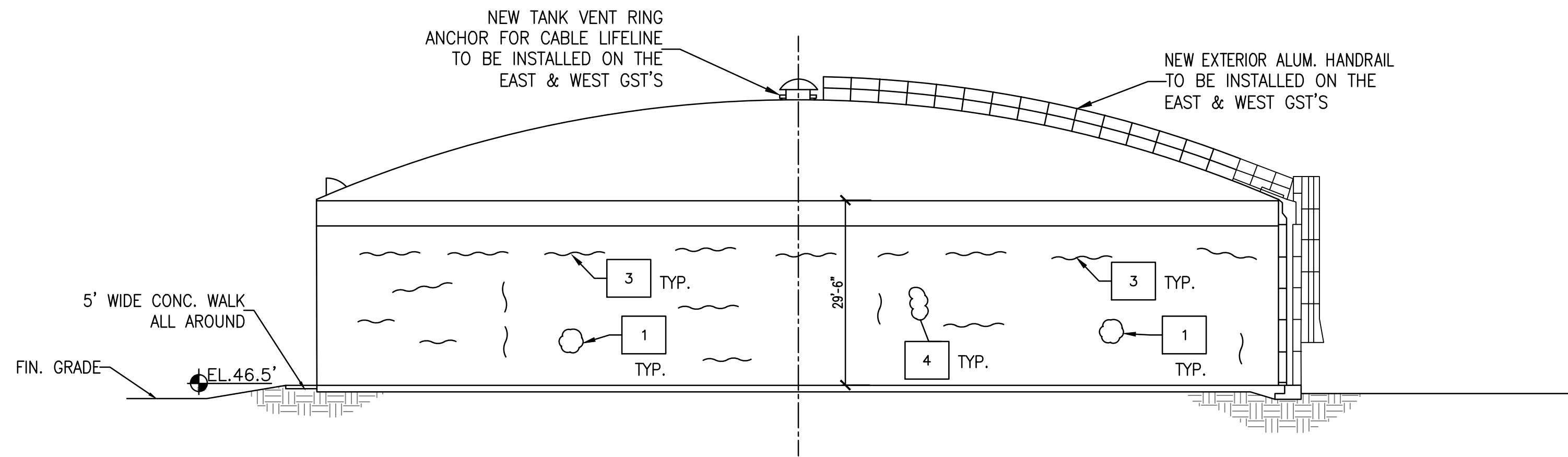
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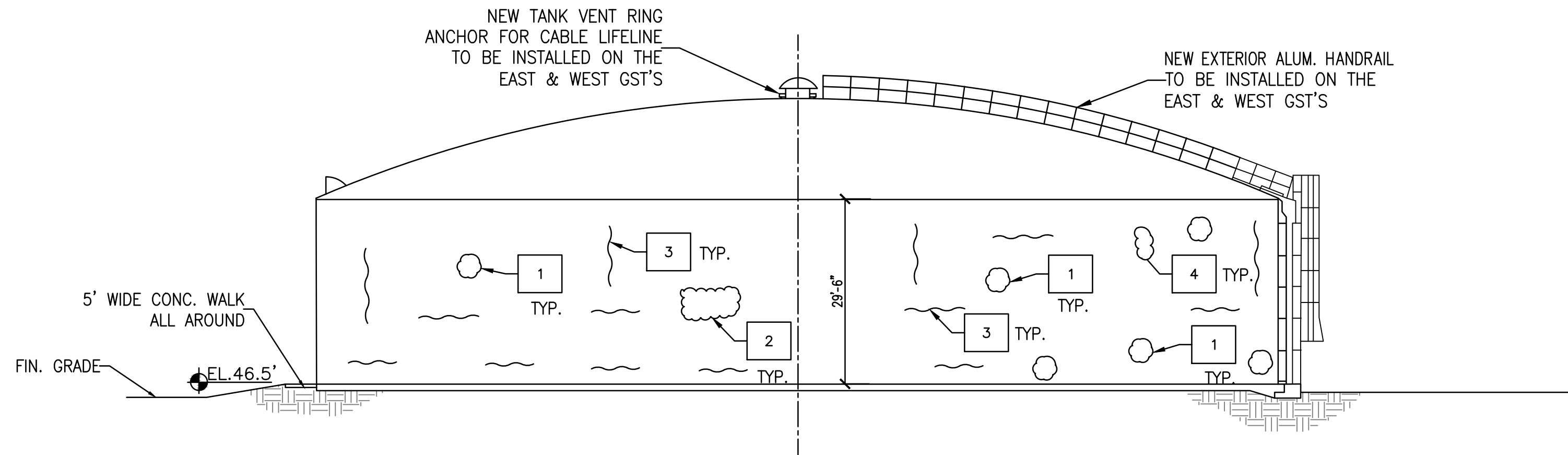




3 GROUND STORAGE TANK - EXTERIOR DOME PLAN
S02 SCALE: 1/16" = 1'-0"



4 GROUND STORAGE TANK - TYPICAL EXTERIOR SIDE ELEVATION
S02 SCALE: 1/16" = 1'-0"



5 GROUND STORAGE TANK - TYPICAL INTERIOR ELEVATION
S02 SCALE: 1/16" = 1'-0"

KEY NOTES

- 1 AREAS REQUIRING PATCHING - SEE CONCRETE PATCHING NOTES
- 2 AREAS REQUIRING RESTORATION - SEE CONCRETE RESTORATION NOTES
- 3 CRACKS REQUIRING REPAIR - SEE CRACK REPAIR NOTES
- 4 AREAS REQUIRING GROUT - SEE GROUT NOTES

NOTES:

1. REPAIR AREAS SHOWN ARE FOR REFERENCE ONLY AND DO NOT REPRESENT ACTUAL LOCATIONS AND QUANTITIES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING ALL TYPES OF REPAIRS, LOCATIONS AND QUANTITIES.

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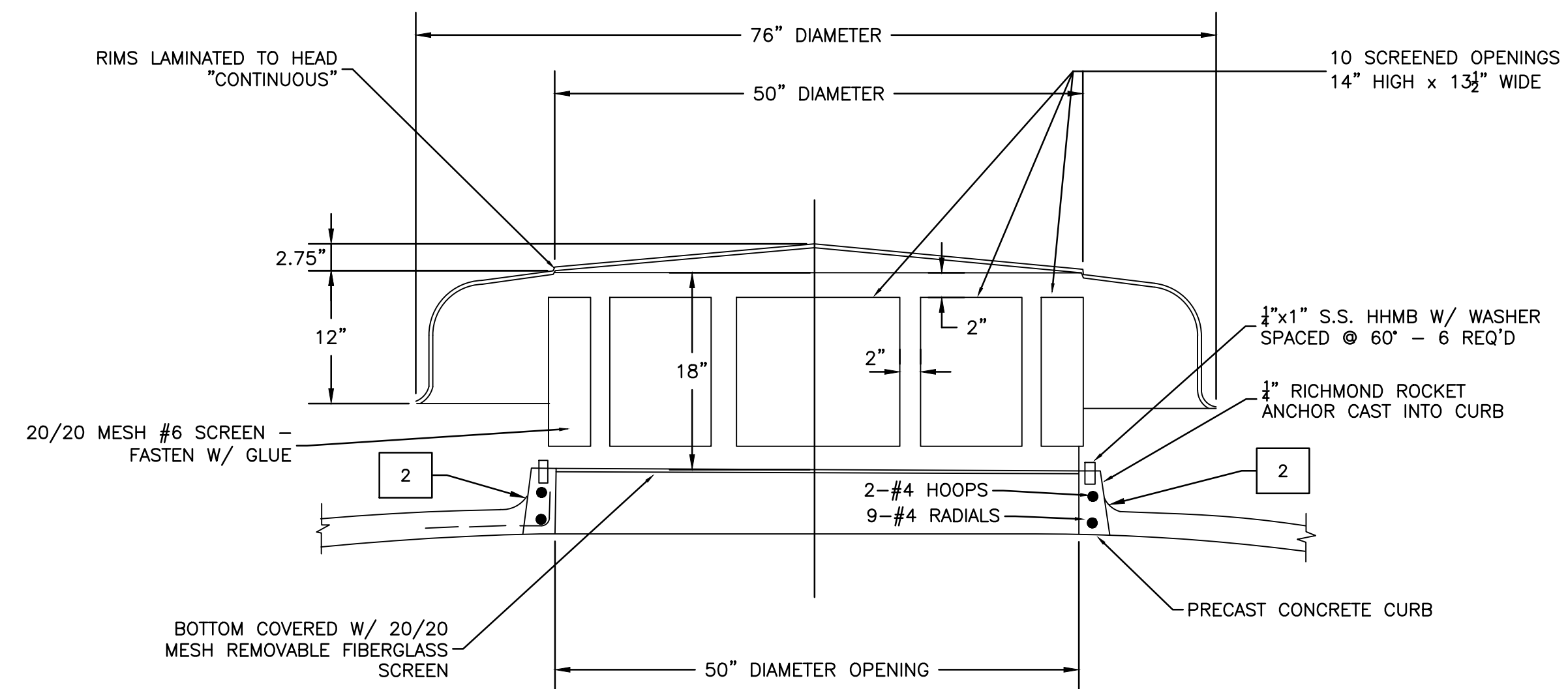
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 GROUND STORAGE TANKS IMPROVEMENTS

STRUCTURAL
 STORAGE TANK STRUCTURAL PLAN & ELEVATIONS

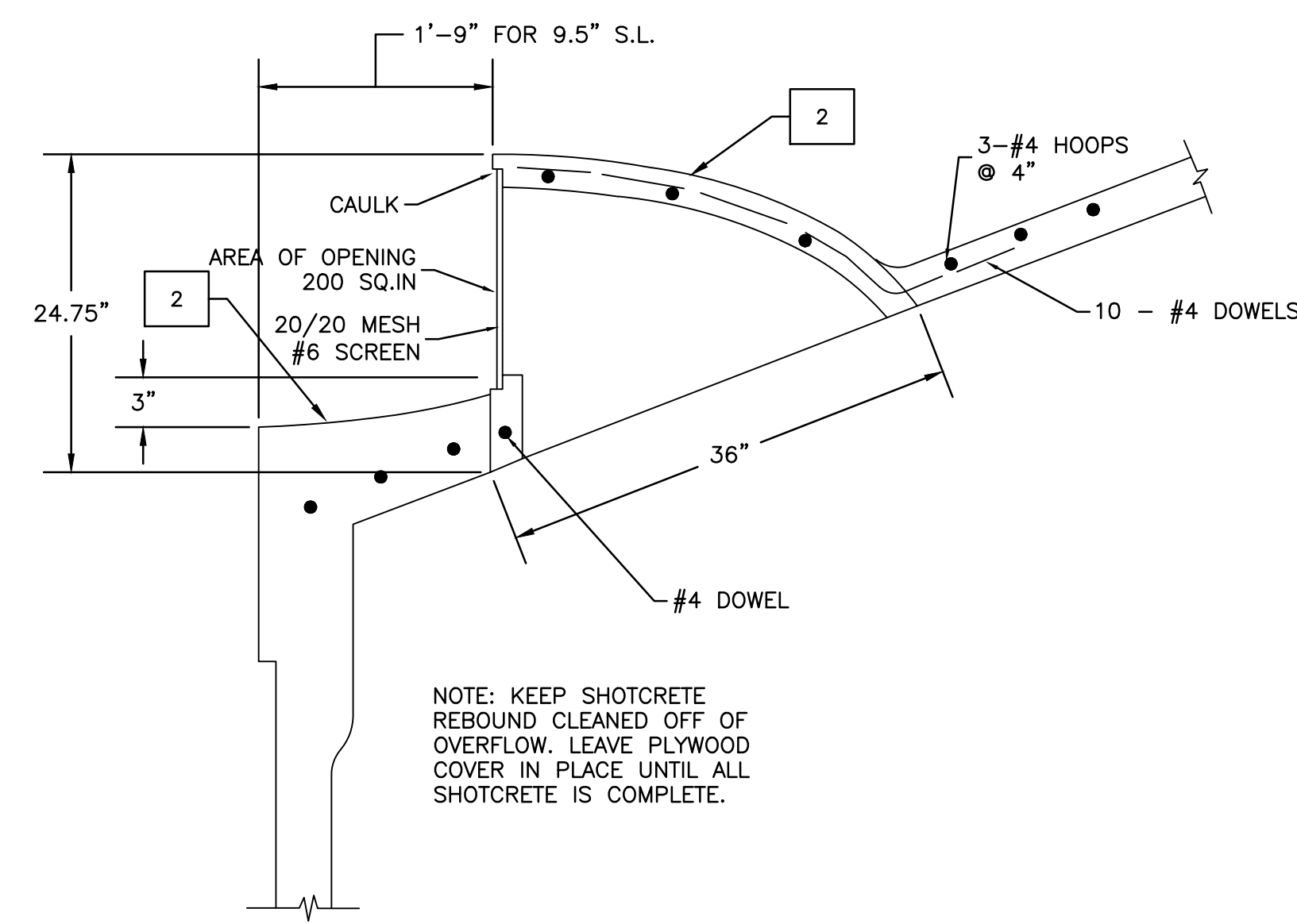
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6 CENTER VENT DETAIL
S03 SCALE: N.T.S.

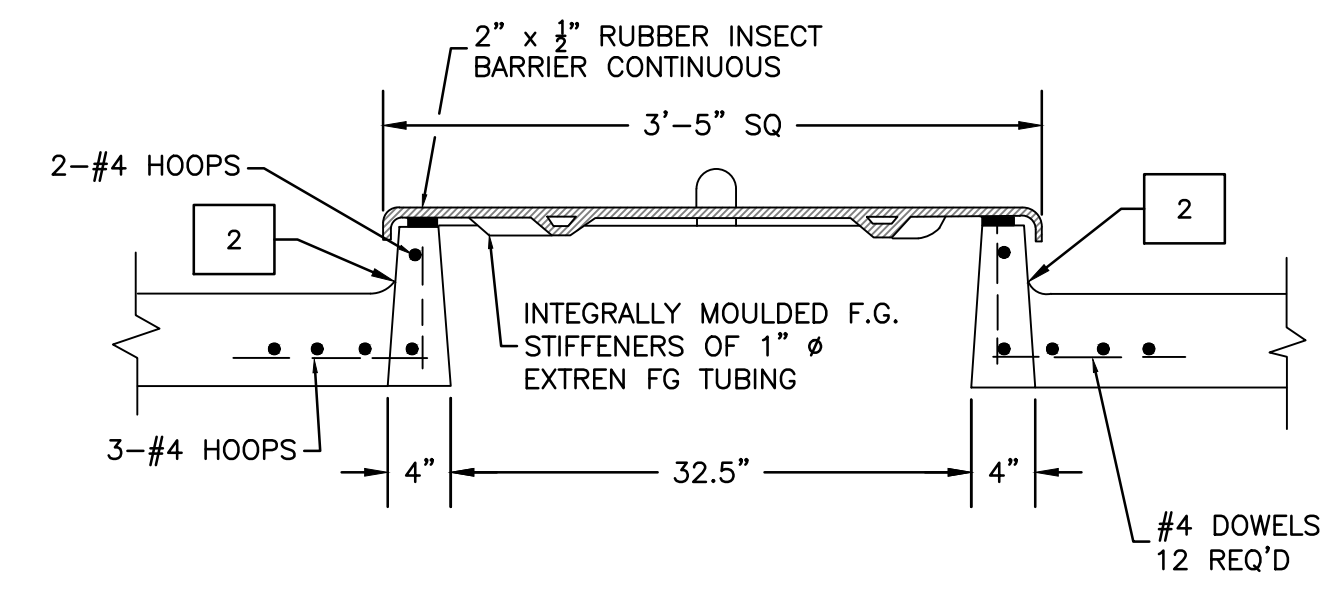


7 OVERFLOW DETAIL
S03 SCALE: N.T.S.

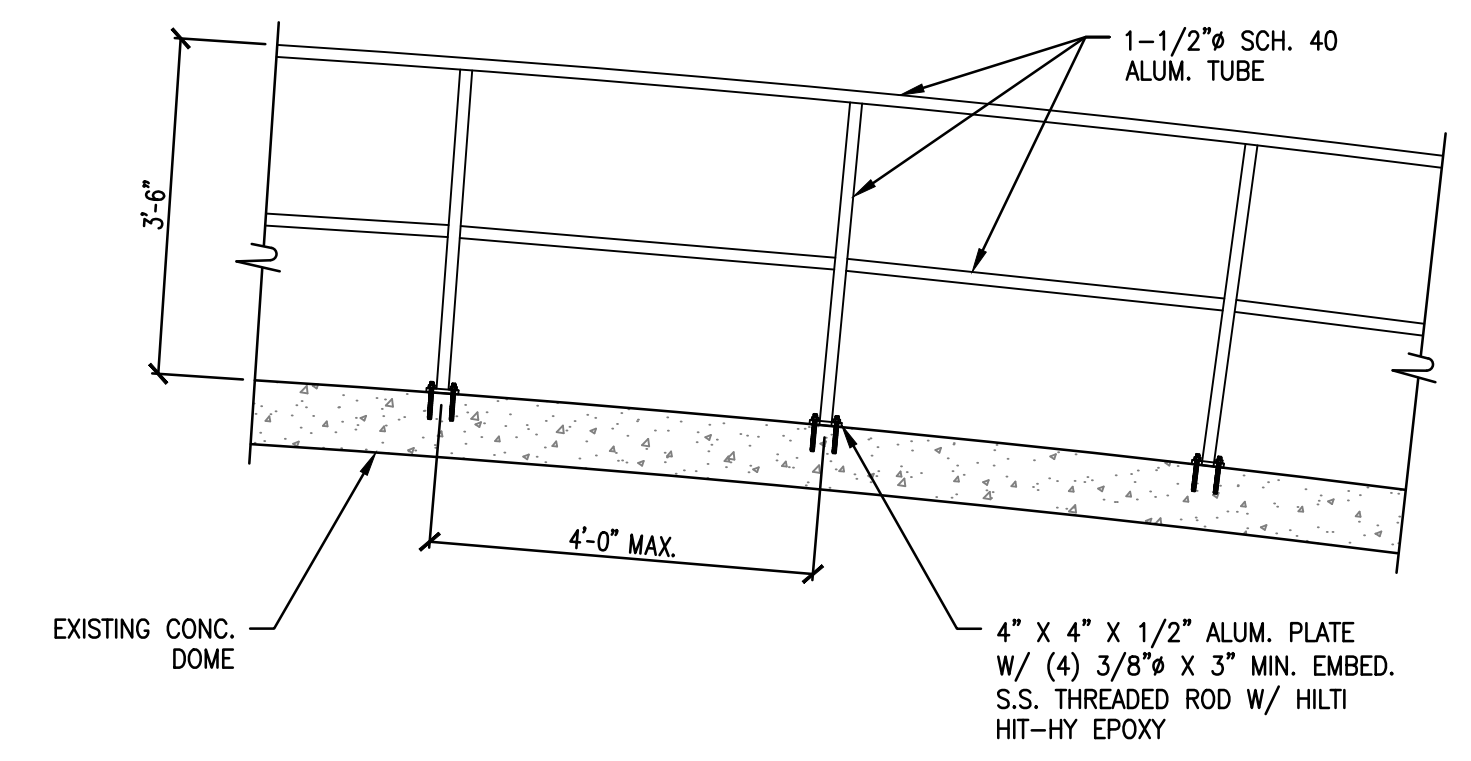
NOTE: KEEP SHOTCRETE REBOUND CLEANED OFF OF OVERFLOW. LEAVE PLYWOOD COVER IN PLACE UNTIL ALL SHOTCRETE IS COMPLETE.

- KEY NOTES**
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 - 2 AREAS REQUIRING RESTORATION - SEE CONCRETE RESTORATION NOTES
 - 3 CRACKS REQUIRING REPAIR - SEE CRACK REPAIR NOTES
 - 4 AREAS REQUIRING GROUT - SEE GROUT NOTES

- NOTES:**
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8 ACCESS HATCH DETAIL
S03 SCALE: N.T.S.



9 HANDRAIL DETAIL
S03 SCALE: 1/2" = 1'-0"

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CITY OF TAMPA WATER DEPARTMENT
GROUND STORAGE TANKS IMPROVEMENTS
STRUCTURAL
STORAGE TANK STRUCTURAL DETAILS

PROJECT NO.: 0818
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SHEET NO.: 10 OF 11

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GENERAL NOTES

GENERAL

- 1.- ALL DRAWINGS SHALL BE USED IN CONJUNCTION WITH EACH OTHER TO COORDINATE WITH MECHANICAL, ELECTRICAL, PLUMBING AND SITE PLANS.
- 2.- CHECK ALL SHOP DRAWINGS FOR SLEEVES, DEPRESSIONS, AND PLUMBING DETAILS NOT SHOWN ON THESE DRAWINGS.
- 3.- AS A MINIMUM, CONSTRUCTION SHALL COMPLY WITH CITY OF TAMPA, THE 2017 (6TH ED.) FLORIDA BUILDING CODE, AND LATEST ACI SPECIFICATIONS.
- 4.- ALL DETAILS AND SECTIONS SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL BE CONSTRUED TO APPLY TO ANY SIMILAR SITUATION ELSEWHERE ON THE PROJECT, EXCEPT WHERE A DIFFERENT DETAIL IS SHOWN.
- 5.- ALL DIMENSIONS AND CONDITIONS MUST BE VERIFIED IN THE FIELD. DO NOT SCALE THE DRAWINGS. FOLLOW WRITTEN DIMENSIONS ONLY. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO PROCEEDING WITH THE AFFECTED PART OF THE WORK.
- 6.- ALL EXISTING STRUCTURES NOT DESIGNED BY BROADWAY ENGINEERING ARE ASSUMED TO BE ADEQUATE AND NOT THE RESPONSIBILITY OF BROADWAY ENGINEERING.
- 7.- CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO MINIMIZE DAMAGE TO EXISTING STRUCTURES. ANY DAMAGE CAUSED BY CONTRACTOR SHALL BE REPAIRED AT NO EXTRA COST TO OWNER.
- 8.- MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, AND SAFETY PRECAUTIONS ARE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.
- 9.- FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, SIZE, VOLTAGE, AND LOCATION OF UTILITIES PRIOR TO NEW OR REMODELING WORK.
- 10.- DEVIATIONS FROM DRAWINGS SHALL BE APPROVED BY THE ENGINEER.
- 11.- INFORM ENGINEER OF CONSTRUCTION CONFLICTS FOUND AMONG TRADES FOR ANY REQUIRED CHANGES FROM THESE DRAWINGS.
- 12.- REFER TO "TANK INSPECTION REPORT" PREPARED BY CROM ENGINEERING & CONSTRUCTION SERVICES, DATED MAY 13, 2016, FOR ADDITIONAL INFORMATION.

SHOP DRAWING REVIEW

- 1.- SHOP DRAWINGS SHALL BE REVIEWED FOR GENERAL COMPLIANCE WITH THE DESIGN INTENT OF THE CONTRACT DOCUMENTS ONLY.
- 2.- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY COMPLIANCE WITH THE CONTRACT DOCUMENTS AS TO QUANTITY, LENGTH, ELEVATIONS, DIMENSIONS, ETC.
- 3.- IN ALL INSTANCES, THE CONTRACT DOCUMENTS SHALL GOVERN THE SHOP DRAWINGS UNLESS OTHERWISE SPECIFIED IN WRITING BY THE ENGINEER.

FORMWORK (IF REQUIRED)

- 1.- FORMWORK, SHORING, AND BRACING FOR ALL CONCRETE BEAMS, SLABS, COLUMNS, AND WALLS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH ACI 347, "RECOMMENDED PRACTICE FOR CONCRETE FORMWORK".

REINFORCING STEEL (IF REQUIRED)

- 1.- REBAR SHALL BE ASTM A615 GRADE 60 DEFORMED BARS, FREE FROM OIL, SCALE, AND RUST.
- 2.- REINFORCING BARS SHALL BE PLACED IN ACCORDANCE WITH THE TYPICAL BENDING DIAGRAM AND PLACING DETAILS OF THE ACI STANDARDS AND SPECIFICATIONS.
- 3.- HORIZONTAL AND VERTICAL BARS SHALL LAP A MINIMUM OF 5 X BAR NO. = INCHES, (40 BAR DIAMETERS) UNLESS OTHERWISE NOTED.

WELDED WIRE MESH FIBERS (IF REQUIRED)

- 1.- WELDED WIRE MESH IF USED, SHALL BE ASTM A185, GRADE 65, FREE FROM OIL, SCALE, AND RUST.
- 2.- WIRE MESH SHALL BE PLACED IN ACCORDANCE WITH ACI DETAILS.
- 3.- MINIMUM WIRE MESH LAP SHALL BE ONE WIRE SPACE PLUS TWO INCHES.

CONCRETE PATCHING

- 1.- CONCRETE PATCHING SHALL BE PERFORMED AT LOCATIONS THAT ARE DEFINED AS AREAS OF CONCRETE ON THE FLOOR, WALLS, OR DOME, INTERIOR OR EXTERIOR, THAT ARE CHIPPED OR SPALLED WITHOUT EXPOSED REBAR OR WIRE MESH.
- 2.- CONCRETE RESTORATION PRODUCT SHALL BE MASTEREMACO N424 AS MANUFACTURED BY BASF OR APPROVED EQUAL.
- 3.- BONDING AGENT FOR CONCRETE SHALL BE LIQUID EPOXY SUCH AS MASTEREMACO ADH 326 AS MANUFACTURED BY BASF OR APPROVED EQUAL.
- 4.- SURFACES TO BE REPAIRED SHALL BE PREPARED IN ACCORDANCE WITH CONCRETE RESTORATION PRODUCT MANUFACTURER'S RECOMMENDATIONS AND SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:
 - A. SAW CUT THE PERIMETER OF THE AREA BEING REPAIRED INTO A SQUARE OR RECTANGLE WITH A MINIMUM DEPTH OF 1/4".
 - B. THE SURFACE MUST BE CLEAN AND FREE OF ALL DUST, DIRT, OR GREASE.
- 5.- BONDING AGENT SHALL BE APPLIED TO CONCRETE PRIOR TO PATCHING IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
- 6.- CONCRETE RESTORATION PRODUCT SHALL BE MIXED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
- 7.- CONCRETE RESTORATION PRODUCT SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
- 8.- CONCRETE RESTORATION PRODUCT SHALL BE APPLIED WITHIN THE TEMPERATURE RANGE RECOMMENDED BY THE MANUFACTURER. FOLLOW ACI 305 AND 306 IF PRODUCT WILL BE APPLIED OUTSIDE OF THE MANUFACTURER'S RECOMMENDED TEMPERATURE RANGE.
- 9.- ALLOW CONCRETE RESTORATION PRODUCT TO CURE IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS PRIOR TO SANDING, COATING, OR PAINTING.

CONCRETE RESTORATION

- 1.- CONCRETE RESTORATION SHALL BE PERFORMED AT LOCATIONS THAT ARE DEFINED AS AREAS OF CONCRETE ON THE FLOOR, WALLS, OR DOME, INTERIOR OR EXTERIOR, THAT ARE CHIPPED OR SPALLED AND HAVE EXPOSED REBAR OR WIRE MESH.
- 2.- CONCRETE RESTORATION PRODUCT SHALL BE MASTEREMACO N424 AS MANUFACTURED BY BASF OR APPROVED EQUAL.
- 3.- PRIMER FOR STEEL REINFORCEMENT SHALL BE ONE-COMPONENT ZINC-RICH EPOXY SUCH AS MASTERPROTECT P8100AP AS MANUFACTURED BY BASF OR APPROVED EQUAL.
- 4.- BONDING AGENT FOR CONCRETE SHALL BE LIQUID EPOXY SUCH AS MASTEREMACO ADH 326 AS MANUFACTURED BY BASF OR APPROVED EQUAL.
- 5.- SURFACES TO BE REPAIRED SHALL BE PREPARED IN ACCORDANCE WITH CONCRETE RESTORATION PRODUCT AND PRIMER MANUFACTURER'S RECOMMENDATIONS AND SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:
 - A. SAW CUT THE PERIMETER OF THE AREA BEING REPAIRED INTO A SQUARE OR RECTANGLE WITH A MINIMUM DEPTH OF 1/4".
 - B. FULLY EXPOSE ANY CORRODED STEEL IN THE REPAIR AREA.
 - C. REMOVE ALL LOOSE SCALE AND CORROSION DEPOSITS, PAYING PARTICULAR ATTENTION TO THE BACK OF EXPOSED STEEL.
 - D. MECHANICALLY ABRABE ALL EXPOSED STEEL TO REMOVE CORROSION FROM PITS AND IMPERFECTIONS WITHIN THE SURFACE.
 - E. THE SURFACE MUST BE CLEAN AND FREE OF ALL DUST, DIRT, RUST, OR GREASE.
- 6.- PRIMER SHALL BE MIXED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
- 7.- PRIMER SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
- 8.- PRIMER SHALL BE ALLOWED TO COMPLETELY DRY PRIOR TO APPLYING CONCRETE RESTORATION PRODUCT.
- 9.- CONCRETE RESTORATION PRODUCT SHALL BE APPLIED TO EXPOSED STEEL WITHIN 7 DAYS OF THE PRIMER APPLICATION.
- 10.- BONDING AGENT SHALL BE APPLIED TO CONCRETE PRIOR TO PATCHING IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
- 11.- CONCRETE RESTORATION PRODUCT SHALL BE MIXED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

- 12.- CONCRETE RESTORATION PRODUCT SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
- 13.- CONCRETE RESTORATION PRODUCT SHALL BE APPLIED WITHIN THE TEMPERATURE RANGE RECOMMENDED BY THE MANUFACTURER. FOLLOW ACI 305 AND 306 IF PRODUCT WILL BE APPLIED OUTSIDE OF THE MANUFACTURER'S RECOMMENDED TEMPERATURE RANGE.
- 14.- ALLOW CONCRETE RESTORATION PRODUCT TO CURE IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS PRIOR TO SANDING, COATING, OR PAINTING.

CRACK REPAIR

- 1.- CRACK REPAIR SHALL BE PERFORMED AT LOCATIONS THAT ARE DEFINED AS AREAS OF CONCRETE ON THE FLOOR, WALLS, OR DOME, INTERIOR OR EXTERIOR, THAT ARE CRACKED LESS THAN 1/4" WIDE WITHOUT EXPOSED REBAR OR WIRE MESH.
- 2.- EPOXY CAULK SHALL BE SIKADUR AS MANUFACTURED BY SIKA OR APPROVED EQUAL.
- 3.- SURFACES TO BE REPAIRED SHALL BE PREPARED IN ACCORDANCE WITH CAULK MANUFACTURER'S RECOMMENDATIONS AND SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:
 - A. ROUT ALL CRACKS TO A SMOOTH EVEN FINISH.
 - B. THE SURFACE MUST BE CLEAN AND FREE OF ALL DUST, DIRT, OR GREASE.
- 4.- CAULK SHALL BE MIXED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
- 5.- CAULK SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
- 6.- ALLOW CAULK TO CURE IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS PRIOR TO COATING OR PAINTING.

GROUT

- 1.- GROUTING SHALL BE PERFORMED AT LOCATIONS THAT ARE DEFINED AS AREAS OF CONCRETE ON THE WALLS THAT HAVE VOIDS WHERE THE SHOTCRETE HAS DELAMINATED.
- 2.- EPOXY GROUT SHALL BE MASTERFLOW 647 AS MANUFACTURED BY BASF OR APPROVED EQUAL.
- 3.- SURFACES TO BE REPAIRED SHALL BE PREPARED IN ACCORDANCE WITH GROUT MANUFACTURER'S RECOMMENDATIONS AND SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:
 - A. THE CONCRETE MUST BE AS CLEAN, SOUND, AND AS OIL- AND WATER-FREE AS POSSIBLE.
- 4.- GROUT SHALL BE MIXED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
- 5.- GROUT SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
- 6.- CONCRETE RESTORATION PRODUCT SHALL BE APPLIED WITHIN THE TEMPERATURE RANGE RECOMMENDED BY THE MANUFACTURER.
- 7.- ALLOW GROUT TO CURE IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

ALUMINUM HANDRAIL

- 1.- THE MATERIAL, FABRICATION, AND ERECTION OF STRUCTURAL ALUMINUM SHALL COMPLY WITH THE ALUMINUM DESIGN MANUAL BY THE ALUMINUM ASSOCIATION.
- 2.- STRUCTURAL ALUMINUM PIPE SHALL BE MIN. ASTM B529, 6063-T5 ALLOY, Fty = 16 KSI.
- 3.- THREADED ROD ANCHOR BOLTS SHALL BE AISI 316 STAINLESS STEEL.
- 4.- WELDING SHALL BE DONE BY AWS CERTIFIED WELDERS USING THE MOST RECENT AWS APPROVED TECHNIQUES.
- 5.- HANDRAIL DESIGN SHALL COMPLY WITH THE REQUIREMENTS OF 2017 (6TH ED.) FLORIDA BUILDING CODE, CHAPTER 16, TO RESIST A LINEAR LOAD OF 50 PLF AND A CONCENTRATED LOAD OF 200 LB. HANDRAIL SHALL ALSO COMPLY WITH ALL APPLICABLE OSHA REQUIREMENTS.

CONCRETE

- 1.- CONCRETE SHALL ACHIEVE MINIMUM 28 DAY COMPRESSIVE STRENGTHS AS LISTED BELOW:
 - 4000 PSI FOR SLABS ON GRADE, AND FOOTINGS.
- 2.- CONCRETE SLUMP SHALL NOT EXCEED 4±1" (EXCEPT FOR GROUTS).
- 3.- CONCRETE SHALL COMPLY WITH ALL THE REQUIREMENTS OF ACI 301 AND ASTM C94 FOR MEASURING, MIXING, TRANSPORTING, ETC.
- 4.- CONCRETE TICKETS SHALL BE STAMPED WHEN CONCRETE IS BATCHED.
- 5.- THE MAXIMUM TIME ALLOWED FROM THE TIME THE WATER IS ADDED TO CONCRETE UNTIL IT IS DEPOSITED IN ITS FINAL POSITION SHALL NOT EXCEED ONE AND ONE-HALF (1-1/2) HOURS.
- 6.- IF FOR ANY REASON THERE IS A LONGER DELAY THAN THAT STATED ABOVE, THE CONCRETE SHALL BE DISCARDED.
- 7.- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR'S RETAINED TESTING LAB TO NOTIFY THE OWNER'S REPRESENTATIVE AND THE ENGINEER OF ANY NONCOMPLIANCE WITH THE ABOVE.
- 8.- ALL CONCRETE SHALL BE CURED USING CURING COMPOUND MEETING ASTM STANDARD C309 TYPE 1 AND SHALL HAVE A FUGITIVE DYE.
- 9.- THE CURING COMPOUND SHALL BE PLACED AS SOON AS THE FINISHING IS COMPLETED OR AS SOON AS THE VISIBLE WATER HAS LEFT THE UNFINISHED CONCRETE.
- 10.- ALL SCUFFED OR BROKEN AREAS IN THE CURING MEMBRANE SHALL BE RECOATED DAILY.
- 11.- CALCIUM CHLORIDES SHALL NOT BE UTILIZED; OTHER ADMIXTURES MAY BE USED ONLY WITH THE APPROVAL OF THE ENGINEER.
- 12.- REQUIRED CONCRETE COVERAGE OVER REBAR SHALL BE AS FOLLOWS:
 - A: 3" FOR CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH.
 - B: FOR CONCRETE EXPOSED TO EARTH AND/OR WEATHER:
 - 1-1/2" FOR #5 AND SMALLER
 - 2" FOR #6 AND LARGER
 - C: FOR CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
 - 3/4" FOR SLABS, WALLS, AND JOISTS
 - 1-1/2" FOR BEAM AND COLUMN PRIMARY REINF., TIES, AND STIRRUPS.

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CITY OF TAMPA WATER DEPARTMENT
 GROUND STORAGE TANKS IMPROVEMENTS

STRUCTURAL

STORAGE TANK STRUCTURAL GENERAL NOTES

PROJECT NO.: 0818

SCALE: NOTED

DRAWING NO. S04

REVISION: C

SHEET NO.: 11 OF 11

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