

MIAMI BEACH

PUBLIC WORKS DEPARTMENT

CITY OF MIAMI BEACH, MIAMI-DADE COUNTY, FLORIDA
SECTION 27 - TOWNSHIP 53 SOUTH - RANGE 42 EAST
STORM WATER PUMP STATION 24 WATER QUALITY UPGRADE
W 23RD STREET AND NORTH BAY RD
AUGUST 2023

CITY OF MIAMI BEACH

MAYOR: DAN GELBER

COMMISSIONERS: KRISTEN ROSEN GONZALEZ
LAURA DOMINGUEZ
ALEX J. FERNANDEZ
RICKY ARRIOLA
STEVEN MEINER
DAVID RICHARDSON

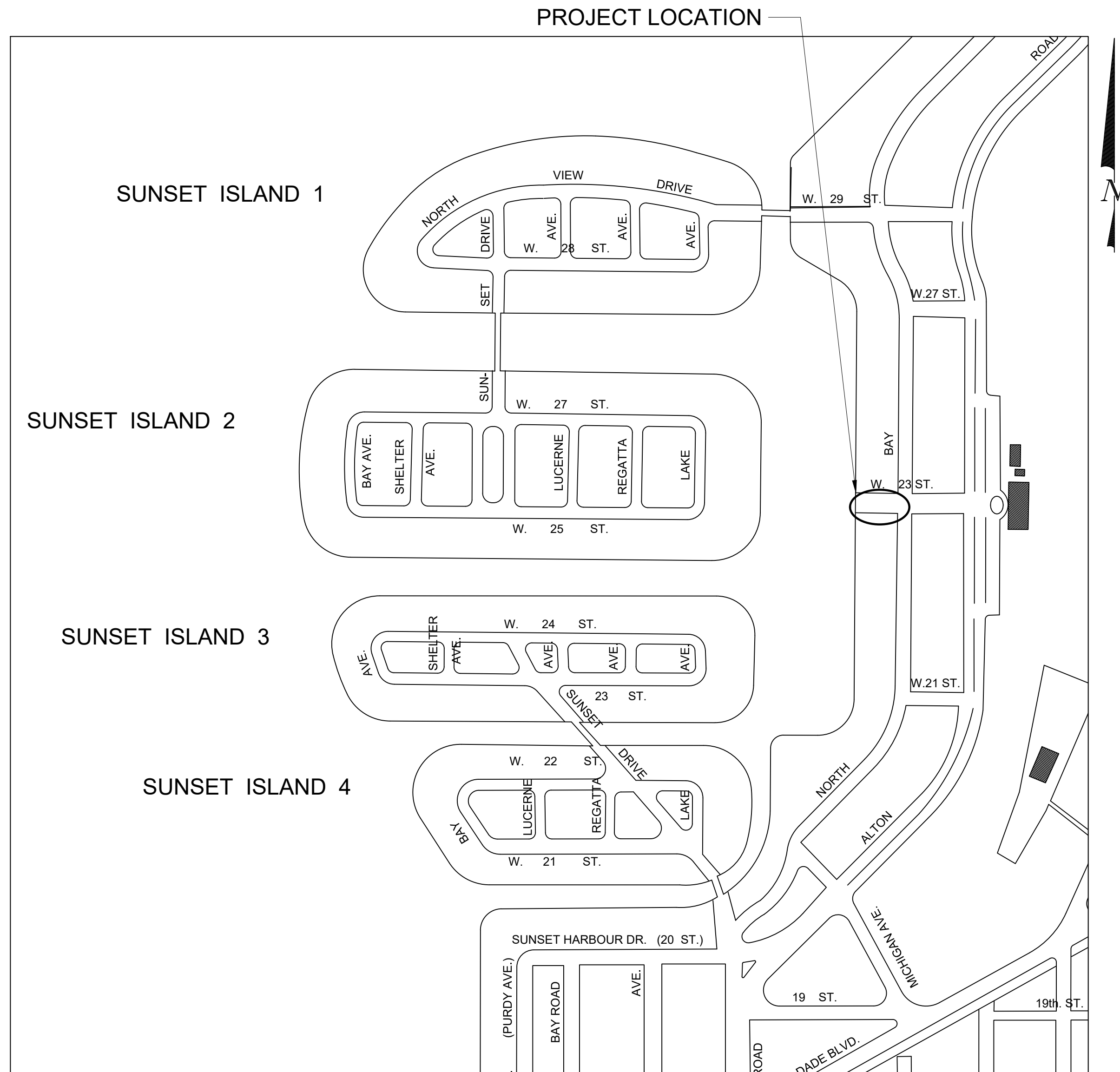
CITY MANAGER: ALINA T. HUDAK

CITY ATTORNEY: RAFAEL A. PAZ

PUBLIC WORKS DIRECTOR: JOE L. GÓMEZ, PE, F. FES

CITY ENGINEER: CRISTINA ORTEGA CASTINEIRAS, P.E.

Always call 811 two full business days before you dig to have underground utilities located and marked.



LOCATION MAP



10486 NW 31st Terrace,
Miami, Florida, 33172
Florida Certification No. 7256

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ENGINEER OF RECORD:

STEVEN EAGLE, P.E.
STATE OF FLORIDA
LICENSE NO. 43684

Work Order 20231358-00 Sheet 1 of 38 Drawing G-01

ABBREVIATIONS / ACRONYMS

DESCRIPTION	ABBREVIATIONS / ACRONYMS	DESCRIPTION	ABBREVIATIONS / ACRONYMS	DESCRIPTION	ABBREVIATIONS / ACRONYMS	DESCRIPTION	ABBREVIATIONS / ACRONYMS	DESCRIPTION	ABBREVIATIONS / ACRONYMS
ABUTTING	ABUT.	DEGREE	DEG. or °	IRON PIPE	IP	REINFORCED CONCRETE PIPE	RCP	WATER SERVICE	W.SERV.
ACRES	AC	DIAMETER	DIA. or Ø	ISLAND	ISL.	REVISED	REV.	WEST	W.
ADDITION	ADD.	DIMENSION	DIM.	LANE	LN.	RIGHT	RT.	WEST LINE	W/L
ADJACENT OR ADJOINING	ADJ.	DISTANCE	DIST.	LATERAL	LAT.	RIGHT ANGLES	R/A	WITH	W/
ALONG	ALG.	DOWN	DN.	LEFT	LT.	RIGHT OF WAY	ROW or RW	WITHOUT	W/O
ALSO KNOWN AS	AKA	DRAWING	DWG.	LINE	LN	RIGHT OF WAY LINE	RW/L	WYE CONNECTION	YC
APPROACH	APR.	DRILL HOLE	DH	LIGHT	LT	RIM ELEVATION	RIM	REINFORCED CONCRETE PIPE	RCP
APPROACH SLAB	APR.SL.	DRIVE	DR.	LYING	LYG.	RIPARIAN RIGHTS	RIP. RTS.		
APPROXIMATE	APPROX. or ≈	DRIVEWAY	DRWY.	MANHOLE	MH	ROAD	RD		
ARC LENGTH	L.	DUCTILE IRON	DI	MAXIMUM	MAX.	SANITARY	SN or SAN.		
ASPHALT	ASPH.	DUCTILE IRON PIPE	DIP	MEANDERING	MEAND.	SANITARY LINE	SNLN		
AVENUE	AVE or AV	EASEMENT	EASMT.	MECHANICAL JOINT	MJ	SANITARY MANHOLE	SNMH		
BACK OF CURB	BC	EAST	E.	MINIMUM	MIN.	SECTION	SECT.		
BACK OF SIDEWALK	BSW	EAST LINE	E/L	MINUTES	MINT	SERVICE	SERV.		
BASE LINE	BL or B/L	EDGE OF PAVEMENT	EOP	MORE OR LESS	M/L	SANITARY SEWER	SS		
BEGINNING	BEG.	ELECTRICAL	ELECT.	NAIL & DISC	N&D	SIDEWALK	SWK.		
BELL SOUTH TELECOMMUNICATIONS	BELLS	ELECTRICAL MANHOLE	ELECTMH	NAIL & WASHER	N&W	SLAB	SL.		
BENCH MARK	BM	ELECTRICAL PULL BOX	ELECTPB	NON REINFORCED CONCRETE PIPE	NRCP	SOUTH	S.		
BETWEEN	BETW.	ELEVATION	ELEVATION	NON RISING STEM	NRS	SOUTH LINE	S/L		
BISCAYNE	BISC.	ENCROACHMENT	ENC.	NORTH	N.	SOUTHERN BELL TELEPHONE	SBT		
BLACK STEEL ENAMEL	BSE	EXISTING	EXIST.	NORTH LINE	N/L	STATE ROAD	SR		
BLOCK	BLK.	EXPRESSWAY	EXPWY.	NOW ASSESSED WITH	N/A/W	STATION	STA.		
BOUNDARY	BDRY.	EXTENDED	EXTD.	OUTSIDE DIAMETER	OD	STORM	ST		
BOUNDED	BDED.	EXTENDING	EXTG.	PARALLEL	PAR.	STORMWATER SEWER	STS		
BRIDGE	BR.	EXTENSION	EXTN.	PARK	PK	STORMWATER LINE	STLN		
BUILDING	BLDG.	FEDERAL	FED.	PARKWAY	PKWY.	STORMWATER MANHOLE	STMH		
BULKHEAD	BLKHD.	FEET	FT or '	PAVEMENT	PAVT.	STREET	ST.		
BUTTERFLY VALVE	BV	FIRE HYDRANT	FH	PLAIN END	PLE	STREET LIGHT	ST.LT.		
CABLE TELEVISION	CATV	FLORIDA EAST COAST RAILROAD	FEC.RR.	POINT	PT	SUBAQUEOUS	SUBAQ.		
CANAL	CAN.	FLORIDA POWER & LIGHT	FPL	POINT OF BEGINNING	POB	SUBDIVISION	SUBD.		
CAST IRON	CI	FLOW LINE	FL	POINT OF COMMENCE	POC	TELEPHONE	TEL.		
CAST IRON PIPE	CIP	FORCE MAIN	FM	POINT OF COMPUND CURVATURE	PCC	TELEPHONE MANHOLE	TELMH		
CATCH BASIN	CB	FORMERLY KNOWN AS	FKA	POINT OF CURVATURE	PC	TELEPHONE PULL BOX	TELPB		
CENTER	CTR.	FOUND	FD.	POINT OF INSERTION	PI	TEMPORARY	TEMP.		
CENTER LINE	CL or C/L	FOUND IRON PIPE	FD. IP	POINT OF REVERSE CURVATURE	PRC	TEMPORARY BENCH MARK	TBM		
CHAIN LINK FENCE	CLF	GARDEN	GDN.	POINT OF TANGENGY	PT	TERRACE	TER. or TR		
CLEARANCE	CL.	GAS LINE	GASLN	POLYVINYL CHLORIDE	PVC	TERRACOTA	TC		
CONCRETE	CONC.	GATE VALVE	GV	PORTION	PORT.	TOP OF CURB	TOC		
CONCRETE BLOCK STRUCTURE	CBS	GOVERNMENT	GOVT.	POWER POLE	PP	TOP OF PIPE	TOP		
CONCRETE MONUMENT	CM	HIGH DENSITY POLYETHYLENE PIPE	HDPE	PROPERTY LINE	PL or P/L	TRACT	TRT		
CONTIGUOUS	CONTIG.	HIGH WATER LINE	HWL	PROPOSED	PROP.	TR-FLEX	TR-FLEX		
CONTINUE	CONT.	HIGHWAY	HWY.	PULL BOX	PB	TYPICAL	TYP.		
CORNER	COR.	HOMEOUSE CONNECTION	HC	RADIUS	R.	VERTICAL	VERT.		
COUNTY	CTY.	HORIZONTAL	HORIZ.	RAILROAD	R.R.	WATER	W.		
COURT	CT	INTEREST	INT.	REDUCER	RED.	WATER MAIN	WM		
CURB AND GUTTER	C&G	INVERT	INV.	REFERENCE	REF.	WATER METER	W/M		

LEGEND

LINE TYPES			HATCHES			SECTION AND DETAIL IDENTIFICATION			LABELING								
D D D G G G E E E W W W OHW OHW OHW C C C S S S X X X DRAIN GAS POWER UNDERGROUND WATER POWER OVERHEAD COMMUNICATIONS SEWER EXISTING FENCE NEW FENCE			AREA OF NEW PAVEMENT AREA OF MILLING AND RESURFACING PAVEMENT AREA OF SOD TO BE RESTORED AREA OF NEW CONCRETE AREA OF NEW PAVEMENT SECTION WORK ZONE HATCH COVER			SECTION KEY SECTION CALLOUT: SECTION LETTER* A' XX-XX DRAWING NUMBER SECTION IS LOCATED SECTION VIEW: SECTION LETTER A XX-XX SCALE: 1"=X' 1ST DRAWING SECTION CUT IS SHOWN NOTE: SECTIONS SHALL ALWAYS BE IDENTIFIED AS LETTERS DETAIL KEY DETAIL CALLOUT: DETAIL NUMBER 1 ---- DRAWING NUMBER DETAIL IS LOCATED DETAIL VIEW: DETAIL NAME DETAIL 1 ---- SCALE: 1"=X' DRAWING NUMBER* NOTE: IF DETAIL IS REFERENCED MULTIPLE TIMES SHOW ----			GRADING GX-X GENERAL GRADING SX-X TOP OF SLAB ELEVATION MEG MATCH EXISTING GRADE PAVING CX CURB RETURN MISCELLANEOUS X KEY NOTES P.E. SEAL: Steven S. Eagle, P.E. Civil Engineer State of Florida – License No. 43684								
MIAMI BEACH PUBLIC WORKS DEPARTMENT 1700 CONVENTION CENTER DRIVE, MIAMI BEACH, FL 33139			CITY MANAGER: ALINA T. HUDAK DIRECTOR: JOSE GOMEZ, P.E., F.FES CITY ENGINEER: CRISTINA ORTEGA CASTINEIRAS, P.E.			5 4 3 2 1 NO. DATE REVISION APP'D. BY Nova Consulting 10486 NW 31st Terrace, Doral, FL 33172			ENGINEER OF RECORD: STEVEN EAGLE, P.E. P.E. NO. PE43684 ENGINEER OF RECORD: SE DESIGN ENGINEER: BDM DRAWN BY: RL CHECKER: LLB SCALE: NOT TO SCALE			NEIGHBORHOOD: PUMP STATION 24 AT LOWER N BAY RD TITLE: ABBREVIATIONS			File Name: G-02-ABBREV.dwg Survey Reference: Field Book: 961 Page: 19-25 Work Order: WO3154 Date: JAN 2024 Sheet: 2 of 38 Drawing: G-02		

GENERAL NOTES:

1. ALL APPLICABLE PERMITS MUST BE OBTAINED PRIOR TO COMMENCEMENT OF CONSTRUCTION.
2. CONTRACTOR MUST CALL CITY OF MIAMI BEACH, PUBLIC WORKS DEPARTMENT TO OBTAIN A RIGHT OF WAY PERMIT AND ARRANGE A PRE-CONSTRUCTION MEETING 48 HOURS PRIOR TO START OF CONSTRUCTION.
3. ALL MATERIALS AND CONSTRUCTION UNDER THIS PROJECT SHALL BE IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS AND THE CITY OF MIAMI BEACH PUBLIC WORKS MANUAL.
4. THE CONTRACTOR SHALL MAINTAIN A CURRENT APPROVED SET OF CONSTRUCTION PLANS ON SITE. THE PLANS ARE TO BE MADE AVAILABLE TO THE ENGINEERING INSPECTOR OF THE CITY OF MIAMI BEACH OR HIS DESIGNEE UPON REQUEST.
5. NO DEVIATION FROM APPROVED PLANS SHALL BE PERMITTED WITHOUT THE WRITTEN CONSENT OF THE CITY OF MIAMI BEACH DEPARTMENT OF PUBLIC WORKS OR ENGINEER OF RECORD.
6. ELEVATIONS REFER TO NAVD 88, BASED ON THE FOLLOWING DESCRIBED BENCHMARK(S):
BENCHMARK: D-131 ELEVATION: 7.18' (N.A.V.D. 88)

LOCATED AT:
CHASE AVE. AT 56' NORTH OF CENTER LINE.
ALTON ROAD AT 3' WEST OF WEST EDGE OF PAVEMENT.
17' NW OF A STORM SEWER MANHOLE.
7. EXISTING BENCHMARKS LOCATED WITHIN THE LIMITS OF CONSTRUCTION SHALL NOT BE DISTURBED. IN THE EVENT THAT THE BENCHMARKS ARE DISTURBED OR DESTROYED, THEY SHALL BE REPLACED UPON COMPLETION OF THE PROJECT.
8. THE CONTRACTOR SHALL PROVIDE ACCESS AND ASSISTANCE TO CITY OF MIAMI BEACH INSPECTORS, ENGINEER OF RECORD, OR HIS DESIGNEE TO MAKE INSPECTIONS AS NECESSARY DURING CONSTRUCTION.
9. ENGINEERING PERSONNEL WILL INSPECT ALL FACILITIES IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS. ALL PERMITTING REQUIREMENTS SHALL BE IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF THE AGENCIES HAVING JURISDICTION.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING NECESSARY MEASURES TO PROTECT THE HEALTH, SAFETY, AND WELFARE OF THOSE PERSONS HAVING ACCESS TO THE WORK SITE.
11. INFORMATION SHOWN ON THE DRAWINGS AS TO THEIR LOCATION AND CHARACTER HAS BEEN PREPARED FROM THE MOST RELIABLE DATA AVAILABLE TO THE ENGINEER, THE ACCURACY OF THIS INFORMATION IS NOT GUARANTEED. THE ENGINEER IS NOT LIABLE FOR ANY UTILITY CONFLICTS AND UNKNOWNNS THAT ARE DISCOVERED DURING CONSTRUCTION.
12. THE CONTRACTOR SHALL CONTACT SUNSHINE STATE ONE CALL OF FLORIDA, INC. DBA SUNSHINE 811 TWO (2) BUSINESS DAYS PRIOR TO ANY EXCAVATION TO DETERMINE UNDERGROUND UTILITY LOCATIONS AND THE LOCATIONS OF RECENT ADDITIONS TO THE SYSTEMS NOT SHOWN.
13. EXTREME CAUTION SHALL BE EXERCISED BY THE CONTRACTOR TO ELIMINATE ANY POSSIBILITY OF DAMAGE TO UTILITIES DURING CONSTRUCTION. THE LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES AS SHOWN ON THE APPROVED PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR. THE CONTRACTOR SHALL NOTIFY THE CITY OF MIAMI BEACH PUBLIC WORKS DEPARTMENT OF ANY DISCREPANCY OR VARIATION FROM THE APPROVED DRAWINGS OR POTENTIAL CONFLICT THAT MIGHT OCCUR SO THE ENGINEER OF RECORD OR HIS DESIGNEE SHALL CAN MAKE THE APPROPRIATE DESIGN CHANGES.
14. THE CONTRACTOR SHALL BE RESPONSIBLE AT ALL TIMES THROUGHOUT THE DURATION OF CONSTRUCTION FOR THE PROTECTION OF EXISTING AND NEWLY INSTALLED UTILITIES AND PROVIDE PROTECTION FROM DAMAGE, DISRUPTION OF SERVICE, OR DESTRUCTION.
15. ANY DAMAGED PUBLIC OR PRIVATE PROPERTY BY THE CONTRACTOR SHALL BE RESTORED TO PRE-EXISTING CONDITIONS OR BETTER AT NO EXPENSE TO THE PRIVATE PROPERTY OWNER OR THE CITY.
16. ALL EXISTING GRASSED AREAS DAMAGED AS A RESULT OF CONSTRUCTION ACTIVITIES SHALL BE SODDED COMPLETELY TO RESTORE TO PRE-EXISTING CONDITIONS OR BETTER AND SHALL BE APPROVED BY THE CONSTRUCTION MANAGER AT NO ADDITIONAL COST TO THE OWNER OR THE CITY.
17. WHERE PAVEMENT DEMOLITION IS REQUIRED, THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION TO PROTECT AND PREVENT DAMAGE TO ADJACENT STRUCTURES AND PAVEMENTS TO REMAIN. LIMITS OF PAVEMENT DEMOLITION SHALL BE PERFORMED IN A NEAT, STRAIGHT LINE BY SAW CUTTING.
18. ALL EXISTING UTILITIES, MANHOLE COVERS, ELECTRICAL BOXES, VALVE BOXES, METER BOXES, DRAINAGE STRUCTURES, ETC. WITHIN PROPOSED AREAS OF IMPROVEMENTS SHALL BE ADJUSTED TO GRADE ELEVATION, UNLESS OTHERWISE NOTED.
19. CONTRACTOR SHALL REPLACE ALL UTILITY BOXES/COVERS DAMAGED DURING CONSTRUCTION. CONTRACTOR SHALL NOTE THE CONDITION OF WATER METER BOXES BEFORE STARTING WORK. CONTRACTOR SHALL CONTACT THE CITY OF MIAMI BEACH PUBLIC WORKS DEPARTMENT TO INSPECT METERS AND BOXES AHEAD OF CONSTRUCTION TO DETERMINE WHETHER REPLACEMENT IS NECESSARY. ALL WATER METER BOXES DAMAGED DURING CONSTRUCTION SHALL BE REPLACED WITH CITY ISSUED WATER METER BOXES AND PAID FOR BY CONTRACTOR.
20. CONTRACTOR SHALL EXERCISE CARE WHEN WORKING NEAR EXISTING CLAY PIPING.
21. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL COMPLY WITH FLORIDA STATUTE 553.851 FOR THE PROTECTION OF UNDERGROUND GAS LINES.
22. CONTRACTOR SHALL USE AN APPROVED STREET SWEEPER AND WATER TRUCK OR OTHER APPROVED EQUIPMENT CAPABLE OF CONTROLLING AND REMOVING DUST.
23. CONTRACTOR SHALL PROTECT MATERIALS AND EQUIPMENT ON SITE FROM WEATHER, DUST, AND DEBRIS AT ALL TIMES, AND AVOID THE CREATION OF NUISANCE OR HAZARD IN THE SURROUNDING AREA.
24. ALL CONSTRUCTION DEBRIS SHALL BE PROPERLY DISPOSED OF OFFSITE AT THE CONTRACTOR'S EXPENSE.
25. ADJUSTMENT AND CLEANING: CLEAN DEBRIS FROM AREAS OF DEMOLITION LEAVING AREA SUITABLE FOR WORK.
26. MATERIALS RESULTING FROM DEMOLITION WORK SHALL BECOME THE PROPERTY OF THE CONTRACTOR. REMOVE FROM SITE AND DISPOSE OF THESE MATERIALS IN A MANNER AND LOCATION APPROVED BY CITY AND MIAMI-DADE COUNTY REGULATIONS.
27. ALL DEFECTIVE WORK NOT ACCEPTED BY THE CITY OF MIAMI BEACH OR BY ANY GOVERNMENT PERMITTING AGENCY SHALL BE IMMEDIATELY REPAIRED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
28. WORK PERFORMED UNDER THIS PROJECT WILL NOT BE CONSIDERED COMPLETE UNTIL ALL REQUIRED CLOSEOUT DOCUMENTATION HAS BEEN SUBMITTED AS REQUIRED BY THE CONTRACT DOCUMENTS AND CITY OF MIAMI BEACH PUBLIC WORKS DEPARTMENT. AS PART OF CLOSEOUT, AS-BUILT DRAWINGS IN ACCORDANCE WITH CITY OF MIAMI BEACH PUBLIC WORKS MANUAL SECTION 8 SHALL BE PROVIDED.
29. ERECTION OR INSTALLATION OF APPROPRIATE SAFETY AND WARNING DEVICES SHALL BE REQUIRED DURING THE COURSE OF CONSTRUCTION. CONTRACTOR SHALL PROVIDE MAINTENANCE OF TRAFFIC DURING CONSTRUCTION IN ACCORDANCE WITH ALL CITY, COUNTY, AND STATE, REQUIREMENTS.
30. MAINTENANCE OF TRAFFIC SHALL BE IN ACCORDANCE WITH CURRENT FDOT STANDARD INDEXES (600 SERIES), THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS," AND ALL OTHER CITY, COUNTY, AND STATE REQUIREMENTS.
31. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING TURBIDITY BARRIER AT ALL OUTFALLS SUBJECT TO POTENTIAL DISCHARGE DURING CONSTRUCTION. SEE FDOT INDEX No 104. CONTRACTOR SHALL BE RESPONSIBLE FOR FULL KNOWLEDGE OF ALL APPLICABLE REGULATORY REQUIREMENTS AND CORRECT ANY SILTATION OR OTHER DAMAGE TO THE DRAINAGE SYSTEM.
32. NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) BEST MANAGEMENT PRACTICES (BMP) FOR SEDIMENTATION AND EROSION WORK MUST BE STRICTLY FOLLOWED DURING AND AFTER CONSTRUCTION.
33. TRENCH EXCAVATIONS IN EXCESS OF 5 FEET DEEP SHALL COMPLY WITH THE TRENCH SAFETY ACT AS PER O.S.H.A. STANDARD 29 CFR S.926.650 SUBPART P IN STATUTES. THE TRENCHES AND DITCHES SHALL BE PROTECTED IN ACCORDANCE WITH RULE 38c 43.02 FAC AND 6A-1,095(2).
34. DUE TO SOIL CONDITIONS, HIGH WATER TABLE AND PROTECTION OF ROADWAY, UTILITIES AND EXISTING LANDSCAPING, SHORING MAY BE REQUIRED FOR TRENCH AND STRUCTURE CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE A SHORING SUBMITTAL WITH SIGNED AND SEALED CALCULATIONS FROM A FLORIDA LICENSED PROFESSIONAL ENGINEER TO THE CITY FOR REVIEW AND COMMENT AT THE PRECONSTRUCTION MEETING. THE COST OF SHORING WILL BE INCLUDED IN THE OVERALL PROJECT COST. DEWATERING MAY BE REQUIRED AND SHALL BE INCLUDED IN THE OVERALL PROJECT COST.
35. WHEN POWER POLES ARE ADJACENT TO ANY PROPOSED UTILITY, THE CONTRACTOR SHALL PROVIDE PROPER SHORING OR OTHER SUITABLE SUPPORT DURING CONSTRUCTION. THE SHORING AND SUPPORT METHODS SHALL BE APPROVED BY THE UTILITY COMPANY ENGINEERING DEPARTMENT. THE COST OF SHORING WILL BE INCLUDED IN THE OVERALL PROJECT COST.
36. PLANS AND SPECIFICATIONS REQUIRE THAT COMPACTED BACKFILL BE PLACED ALONGSIDE OF AND OVER ALL UTILITIES. THE CITY REQUIRES THAT COMPACTION TESTS BE TAKEN TO VERIFY BACKFILL COMPACTION. THE COST OF SUCH COMPACTION TESTS WILL BE BORNE BY THE CITY. IF RESULTS OF TESTS TAKEN DURING THE PROGRESS OF THE WORK INDICATE COMPACTED MATERIALS DO NOT MEET SPECIFIED REQUIREMENTS, SUCH DEFECTIVE WORK WILL BE REMOVED, REPLACED, AND RE-TESTED AS DIRECTED BY THE ENGINEER AND AT THE CONTRACTOR'S SOLE EXPENSE.
37. ALL DUCTILE IRON PIPE SHALL CONFORM TO THE MINIMUM THICKNESS CLASS SPECIFIED IN THE CITY OF MIAMI BEACH PUBLIC WORKS MANUAL AND SHALL BE ZINC COATED POLYWRAPPED IN ACCORDANCE WITH AWWA C105 AND THE CITY OF MIAMI BEACH PUBLIC WORKS MANUAL STANDARD DETAILS.
38. ALL PIPES SHALL BE INSTALLED IN ACCORDANCE WITH CITY OF MIAMI BEACH PUBLIC WORKS MANUAL SPECIFICATION REQUIREMENTS.
39. A CONCRETE SLAB SHALL BE INSTALLED OVER ANY PIPE INSTALLED WITH LESS THAN 30" OF COVER AS PER CITY OF MIAMI BEACH PUBLIC WORKS MANUAL STANDARD DETAILS.
40. PROVIDE PIPING AND RESTRAINTS IN ACCORDANCE WITH CITY OF MIAMI BEACH PUBLIC WORKS MANUAL SPECIFICATION REQUIREMENTS.
41. THRUST BLOCK NOT ALLOWED UNLESS SPECIFICALLY APPROVED BY THE CITY OF MIAMI BEACH PUBLIC WORKS DEPARTMENT IN WRITING. USE MEGALUGS OR CLASS 316 STAINLESS STEEL RESTRAINING RODS.
42. ALL RELATED HARDWARE FOR RESTRAINING RODS TO BE CLASS 316STAINLESS STEEL.
43. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING UNINTERRUPTED WATER SERVICE DURING THE CONSTRUCTION OF THE TIE-IN CONNECTION OF ALL PROPOSED WATER SYSTEMS TO ANY EXISTING WATER SERVICE LINES. ABANDONMENT SHALL NOT OCCUR UNTIL THE PROPOSED WORK HAS BEEN APPROVED AND ACCEPTED FOR OPERATION BY THE ENGINEER OF RECORD AND THE CITY OF MIAMI BEACH PUBLIC WORKS DEPARTMENT, INFRASTRUCTURE DIVISION. CONTRACTOR SHALL REQUEST FROM CITY OF MIAMI BEACH 48 HOURS PRIOR FOR WATER MAIN SHUTDOWN.
44. PRIOR TO THE SHUTDOWN FOR TIE IN OF ANY WATER, FIRE, SEWER, OR STORMWATER MAINS, THE CITY SHALL PERFORM AN ONSITE INSPECTION TO VERIFY: 1) SIZE OF PIPE AND 2) MATERIALS ONSITE. IF THIS INSPECTION DOES NOT OCCUR OR PARTS ARE MISSING, THE SHUTDOWN WILL BE CANCELED. THE CITY CAN, AT ANY TIME, CANCEL SCHEDULED SHUTDOWNS DUE TO INCLEMENT WEATHER EVENTS AND/OR SPECIAL EVENTS.
45. FOR WATER OR FIRE MAINS, TAPPING SLEEVE VALVE TO BE PRESSURE TESTED AT 150 PSI FOR TWO (2) HOURS BEFORE TAPPING. FOR SEWER OR STORMWATER MAINS, TAPPING SLEEVE VALVE TO BE PRESSURE TESTED AT 100 PSI FOR TWO (2) HOURS BEFORE TAPPING.
46. ALL TAPS MUST BE WITNESSED BY THE CITY. SIZE-ON-SIZE TAPS ARE NOT ALLOWED UNLESS APPROVED BY THE CITY OF MIAMI BEACH PUBLIC WORKS DEPARTMENT IN WRITING.
49. CITY TO OPERATE ALL EXISTING VALVES. VALVES BETWEEN EXISTING AND NEW WORK SHALL BE OPERATED BY CITY PERSONNEL. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR'S PERSONNEL OPERATE ANY SUCH VALVE.
50. CONTRACTOR WILL BE RESPONSIBLE TO COORDINATE WITH THE FLORIDA DEPARTMENT OF HEALTH (FD0H) FOR THE WATER SAMPLING AND BACTERIOLOGICAL TESTS AND FINAL CERTIFICATION FROM FDOH.
51. EXISTING FIRE HYDRANTS SHALL REMAIN IN SERVICE UNTIL THE NEW MAIN IS PLACED IN SERVICE. ONCE THE NEW MAIN IS IN SERVICE, THE OLD HYDRANT SHALL BE COVERED AND TAGGED WITH A SIGN INDICATING "OUT OF SERVICE" UNTIL IT IS REMOVED BY THE CONTRACTOR.
52. THE CONTRACTOR SHALL BE GOVERNED BY THE LATEST APPLICABLE PORTIONS OF THE F.D.O.T. DESIGN STANDARDS, AND THE F.D.O.T. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND SUPPLEMENTS THERE TO IF NOTED IN THE SPECIAL PROVISIONS FOR THIS PROJECT.
53. FOR THE COLOR OF THE DETECTABLE WARNINGS ON CONCRETE OF COLORS OTHER THAN MIAMI BEACH RED, COORDINATE WITH THE PUBLIC WORKS DEPARTMENT FOR APPROPRIATE COLOR AND CONTRAST.
54. ALL SIGNING AND PAVEMENT MARKINGS INSTALLED AS PART OF THESE PLANS SHALL CONFORM TO THE LATEST EDITION OF THE FEDERAL HIGHWAY ADMINISTRATION (FHWA) MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS. FLORIDA DEPARTMENT OF TRANSPORTATION DESIGN STANDARDS. ALL SIGN PANELS SHALL BE FABRICATED TO COMPLY WITH THE LATEST EDITION OF THE FEDERAL HIGHWAY AND ADMINISTRATION STANDARD HIGHWAY SIGNS.
55. MATCH EXISTING PAVEMENT MARKINGS AT THE BEGINNING AND THE END OF THE PROJECT WITHOUT JOGS OR OFFSETS.
56. INCORRECTLY PLACED (THERMOPLASTIC OR) PAINT MARKINGS OVER ASPHALT PAVEMENT WILL BE REMOVED BY MILLING AND REPLACING THE ASPHALT PAVEMENT A MINIMUM WIDTH 18 INCHES AT THE CONTRACTOR'S EXPENSE. THE ENGINEER MAY APPROVE AN ALTERNATE METHOD IF IT CAN BE DEMONSTRATED TO COMPLETELY REMOVE THE MARKINGS WITHOUT DAMAGING THE ASPHALT.
57. PRESSURIZED PIPE SHALL HAVE AUTOMATIC AIR RELEASE VALVES ON ALL HIGH POINTS.

RER-DERM WATER-SEWER GENERAL NOTES:

1. A HORIZONTAL DISTANCE OF AT LEAST 6 FEET, AND PREFERABLY 10 FEET (OUTSIDE TO OUTSIDE), SHALL BE MAINTAINED BETWEEN GRAVITY OR PRESSURE SEWER PIPES AND WATER PIPES. THE MINIMUM HORIZONTAL SEPARATION CAN BE REDUCED TO 3 FEET FOR VACUUM-TYPE SEWERS OR FOR GRAVITY SEWERS WHERE THE TOP OF THE SEWER PIPE IS AT LEAST 6 INCHES BELOW THE BOTTOM OF THE WATER PIPE. WHEN THE ABOVE SPECIFIED HORIZONTAL DISTANCE CRITERIA CANNOT BE MET DUE TO AN EXISTING UNDERGROUND FACILITY CONFLICT, SMALLER SEPARATIONS ARE ALLOWED IF ONE OF THE FOLLOWING IS MET:
a) THE SEWER PIPES ARE DESIGNED AND CONSTRUCTED EQUAL TO THE WATER PIPE AND PRESSURE TESTED AT 150 PSI.
b) THE SEWER IS ENCASED IN A WATERTIGHT CARRIER PIPE OR CONCRETE.
c) THE TOP OF THE SEWER IS AT LEAST 18 INCHES BELOW THE BOTTOM OF THE WATER PIPE.
2. A VERTICAL DISTANCE OF AT LEAST 12 INCHES (OUTSIDE TO OUTSIDE) SHALL BE MAINTAINED BETWEEN ANY WATER AND SEWER MAINS WITH SEWER PIPES PREFERABLY CROSSING UNDER WATER MAINS. THE MINIMUM VERTICAL SEPARATION CAN BE REDUCED TO 6 INCHES FOR VACUUM-TYPE SEWERS OR FOR GRAVITY SEWERS WHERE THE SEWER PIPE IS BELOW THE WATER MAIN. THE CROSSING SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST 6 FEET FROM ALL JOINTS IN GRAVITY AND PRESSURE SEWER PIPES. THIS DISTANCE CAN BE REDUCED TO 3 FEET FOR VACUUM-TYPE SEWERS. WHEN THE ABOVE SPECIFIED VERTICAL DISTANCE CRITERIA CANNOT BE MET DUE TO AN EXISTING UNDERGROUND FACILITY CONFLICT, SMALLER SEPARATIONS ARE ALLOWED IF ONE OF THE FOLLOWING IS MET:
a) THE SEWER PIPES ARE DESIGNED AND CONSTRUCTED EQUAL TO THE WATER PIPE AND PRESSURE TESTED AT 150 PSI.
b) THE SEWER IS ENCASED IN A WATERTIGHT CARRIER PIPE OR CONCRETE.
3. AIR RELEASE VALVES SHALL BE PROVIDED AT HIGH POINTS OF NEW FORCE MAIN SANITARY SEWERS.
4. GRAVITY SANITARY SEWERS CONSTRUCTED WITHIN A PUBLIC WELLFIELD PROTECTION AREA SHALL BE C-900 PVC OR DUCTILE IRON PIPE. THE MAXIMUM ALLOWABLE EXFILTRATION RATE OF GRAVITY SANITARY SEWERS CONSTRUCTED IN A PUBLIC WELLFIELD PROTECTION AREA SHALL BE:
a) RESIDENTIAL LAND USES. FIFTY (50) GALLONS PER INCH PIPE DIAMETER PER MILE PER DAY, BASED ON A MINIMUM TWO (2) HOUR TEST HAVING A MINIMUM OF TWO (2) FEET OF POSITIVE HEAD ABOVE THE CROWN OF THE PIPE.
b) NON-RESIDENTIAL LAND USES. TWENTY (20) GALLONS PER INCH PIPE DIAMETER PER MILE PER DAY, BASED ON A MINIMUM TWO (2) HOUR TEST HAVING A MINIMUM OF TWO (2) FEET OF POSITIVE HEAD ABOVE THE CROWN OF THE PIPE.
c) ANY OBSERVED LEAKS OR ANY OBVIOUSLY DEFECTIVE JOINTS OR PIPES SHALL BE REPLACED EVEN WHEN THE TOTAL LEAKAGE IS BELOW THAT ALLOWED.
5. THE MAXIMUM ALLOWABLE EXFILTRATION RATE OF GRAVITY SANITARY SEWERS CONSTRUCTED OUTSIDE A PUBLIC WELLFIELD PROTECTION AREA SHALL BE ONE HUNDRED (100) GALLONS PER INCH PIPE DIAMETER PER MILE PER DAY, BASED ON A MINIMUM TWO (2) HOUR TEST HAVING A MINIMUM OF TWO (2) FEET OF POSITIVE HEAD ABOVE THE CROWN OF THE PIPE. ANY OBSERVED LEAKS OR ANY OBVIOUSLY DEFECTIVE JOINTS OR PIPES SHALL BE REPLACED EVEN WHEN THE TOTAL LEAKAGE IS BELOW THAT ALLOWED.
6. FORCEMAIN SANITARY SEWERS CONSTRUCTED WITHIN A PUBLIC WELLFIELD PROTECTION AREA SHALL BE DUCTILE IRON, C-900 PVC, HDPE OR REINFORCED CONCRETE PRESSURE SEWER PIPES.
7. THE MAXIMUM ALLOWABLE EXFILTRATION/LEAKAGE RATE OF FORCEMAIN SANITARY SEWERS SHALL BE:
a) DUCTILE IRON, C-900 PVC, HDPE AND PVC PIPE. THE ALLOWABLE LEAKAGE RATE SPECIFIED IN AMERICAN WATER WORKS ASSOCIATION STANDARD (AWWAS) C600-82 AT A TEST PRESSURE OF 100 PSI FOR A DURATION OF NOT LESS THAN TWO (2) HOURS.
b) REINFORCED CONCRETE PRESSURE PIPE. HALF (1/2) THE ALLOWABLE LEAKAGE RATE SPECIFIED IN AWWA C600-82 AT A TEST PRESSURE OF 100 PSI FOR A DURATION OF NOT LESS THAN TWO (2) HOURS.
c) ANY OBSERVED LEAKS OR ANY OBVIOUSLY DEFECTIVE JOINTS OR PIPES SHALL BE REPLACED EVEN WHEN THE TOTAL LEAKAGE IS BELOW THAT ALLOWED.
8. THE CONTRACTOR SHALL VERIFY NATURE, DEPTH, AND CHARACTER OF EXISTING UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
9. IN NO CASE SHALL A CONTRACTOR INSTALL UTILITY PIPES, CONDUITS, CABLES, ETC. IN THE SAME TRENCH ABOVE AN EXISTING WATER OR SEWER PIPE EXCEPT WHERE THEY CROSS.
10. IF ANY AREA OF THE WORK SITE IS FOUND TO CONTAIN BURIED SOLID WASTE AND/OR GROUND OR GROUND WATER CONTAMINATION, THE FOLLOWING SHALL APPLY:
a) ALL WORK IN THE AREA SHALL FOLLOW ALL APPLICABLE SAFETY REQUIREMENTS (E.G., OSHA, ETC.) AND NOTIFICATION MUST BE PROVIDED TO THE APPROPRIATE AGENCIES.
b) IMMEDIATELY NOTIFY THE ENVIRONMENTAL MONITORING AND RESTORATION DIVISION (EMRD). THE EMRD CAN BE CONTACTED AT (305) 372-6700.
c) IF CONTAMINATED SOILS AND/OR BURIED SOLID WASTE MATERIAL IS EXCAVATED DURING CONSTRUCTION, THEN THEY REQUIRE PROPER HANDLING AND DISPOSAL IN ACCORDANCE WITH THE LOCAL, STATE AND FEDERAL REGULATIONS. BE ADVISED THAT THE LANDFILL OWNER/OPERATOR IS THE FINAL AUTHORITY ON DISPOSAL AND MAY HAVE REQUIREMENTS BEYOND THOSE PROVIDED BY HEREIN. IF DISPOSAL WITHIN A MIAMI-DADE COUNTY OWNED LANDFILL (CLASS I LANDFILL) IS APPROPRIATE AND SELECTED, PLEASE CONTACT THE MIAMI-DADE COUNTY DEPARTMENT OF SOLID WASTE MANAGEMENT AT (305) 594-6666 FOR INFORMATION.
d) THE REUSE OF CONTAMINATED SOILS THAT ARE NOT RETURNED TO THE ORIGINAL EXCAVATION REQUIRES PRIOR APPROVAL OF A SOIL MANAGEMENT PLAN FROM THE ENVIRONMENTAL MONITORING AND RESTORATION DIVISION. THE EMRD CAN BE CONTACTED AT (305) 372-6700.
11. PUMPS MUST COMPLY WITH THE NATIONAL ELECTRICAL CODE (NEC) REQUIREMENTS FOR CLASS I, GROUP D, DIVISION 1 LOCATIONS (EXPLOSION PROOF).
12. THE CONTRACTOR IS ADVISED THAT A TREE REMOVAL/RELOCATION PERMIT MAY BE REQUIRED PRIOR TO THE REMOVAL AND/OR RELOCATION OF TREE RESOURCES. PRIOR TO REMOVING OR RELOCATING ANY TREES, THE CONTRACTOR SHALL NOTIFY THE TREE AND FOREST RESOURCES SECTION OF DERM AT (305) 372-6574 OR VIA E-MAIL AT: TFRS@MIAMIDADE.GOV, OR CONTACT THE MUNICIPALITY WITH TREE ORDINANCE JURISDICTION TO OBTAIN ANY REQUIRED PERMITS. THOSE TREES NOT INTERFERING WITH THE CONSTRUCTION SHALL BE PROTECTED IN PLACE IN ACCORDANCE WITH THE PROVISIONS OF SECTION 24-49.5 OF THE MIAMI-DADE CODE.
13. PLEASE NOTE THAT THE DEMOLITION, REMOVAL, AND/OR DISTURBANCE OF EXISTING UNDERGROUND UTILITIES THAT CONTAIN ASBESTOS- CEMENT PIPES (ACP) ARE SUBJECT TO THE PROVISIONS OF 40 CFR-61 SUBPART M. THEREFORE, PURSUANT TO THE PROVISIONS OF 40 CFR-61-145, A NOTICE OF DEMOLITION OR ASBESTOS RENOVATION FORM MUST BE FILED WITH THE AIR QUALITY MANAGEMENT DIVISION (AQMD) OF DERM, AT LEAST TEN (10) WORKING DAYS PRIOR TO STARTING OF ANY WORK. NOTE THAT THE BACKFILLING AND BURIAL OF CRUSHED ACP WOULD CAUSE THESE LOCATIONS TO BE CONSIDERED ACTIVE DISPOSAL SITES AND SUBJECT TO 40 CFR-61.154, AND 40 CFR-61.151 A YEAR AFTER PROJECT COMPLETION. EXISTING STANDARD OPERATING PROCEDURES, AS WELL AS APPLICABLE FEDERAL, STATE AND LOCAL REGULATORY CRITERIA, MUST BE FOLLOWED AND IMPLEMENTED TO MINIMIZE ANY POTENTIAL RELEASE OF FUGITIVE EMISSIONS, ESPECIALLY DURING PROJECT CONSTRUCTION ACTIVITIES. THE AQMD CAN BE CONTACTED VIA EMAIL AT ASBESTOS@MIAMIDADE.GOV OR 305-372-6925.

P.E. SEAL:

Steven S. Eagle, P.E.
Civil Engineer
State of Florida – License No. 43684



PUBLIC WORKS DEPARTMENT
1700 CONVENTION CENTER DRIVE, MIAMI BEACH, FL 33139

CITY MANAGER: ALINA T. HUDAK
DIRECTOR: JOSE GOMEZ, P.E., F.FES

CITY ENGINEER: CRISTINA ORTEGA
CASTINEIRAS, P.E.

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NO	DATE	REVISION	APP'D. BY



Nova Consulting, Inc
10486 NW 31st Terrace, Doral, FL 33172

ENGINEER OF RECORD:

STEVEN EAGLE, P.E.
P.E. NO. PE43684

ENGINEER OF RECORD: SE

DESIGN ENGINEER: BDM

DRAWN BY: RL

CHECKER: LLB

SCALE: NOT TO SCALE

NEIGHBORHOOD:

PUMP STATION 24 AT LOWER N BAY RD

TITLE:

GENERAL NOTES

File Name: G-03-GRAL NOTES.dwg

Survey Reference:

Field Book: 961

Page: 19-25

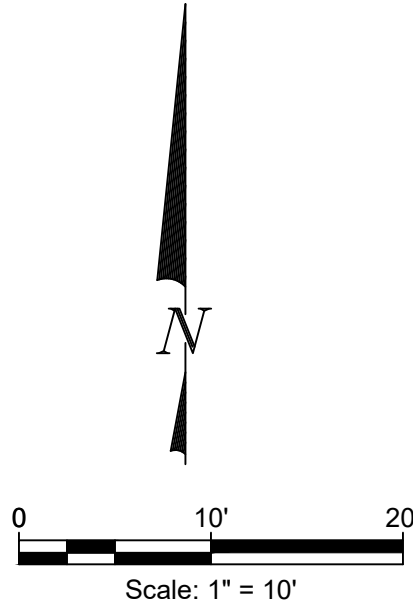
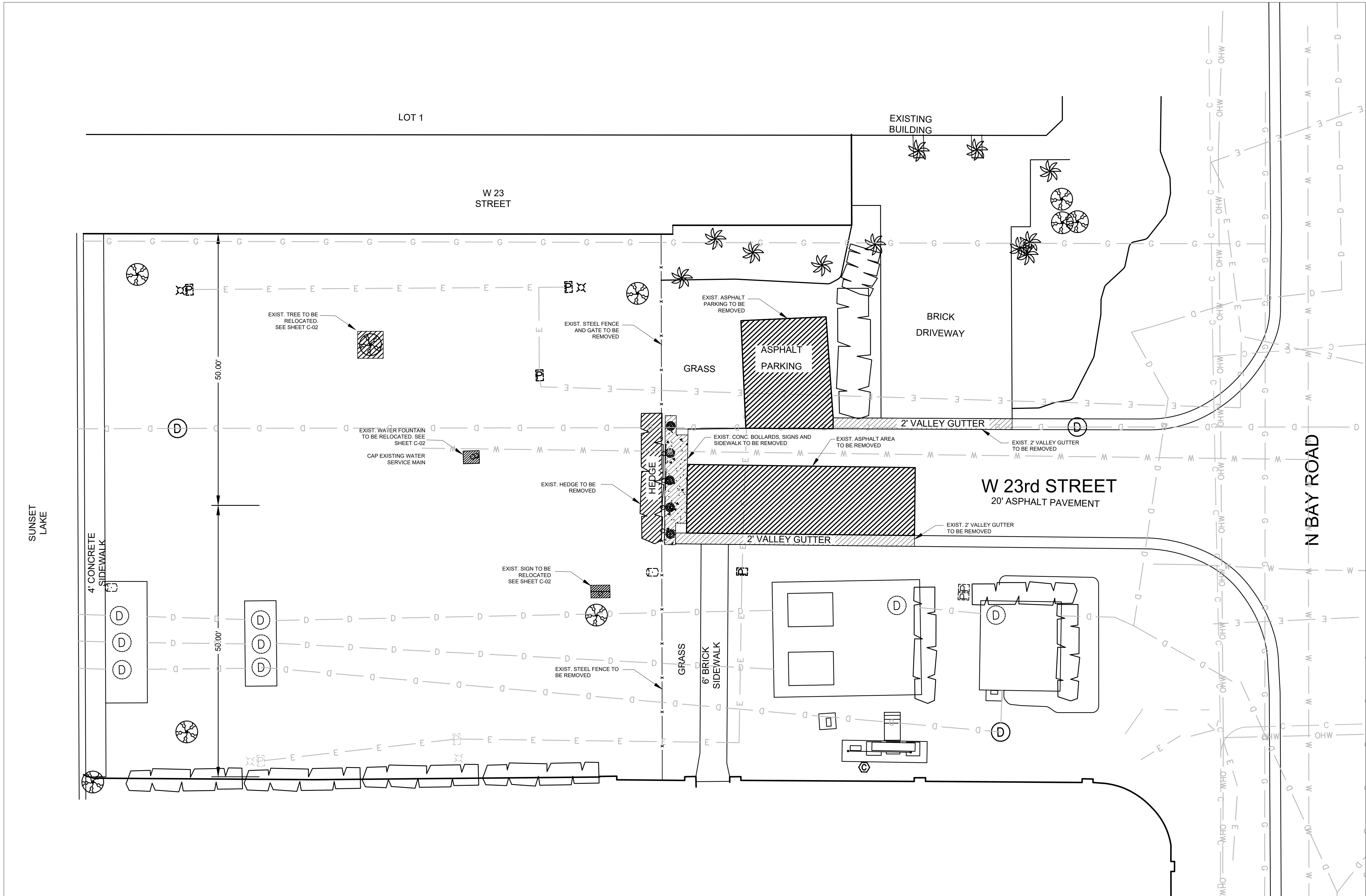
Work Order: WO3154

Date: JAN 2024

Sheet: 3

of 38

Drawing: G-03



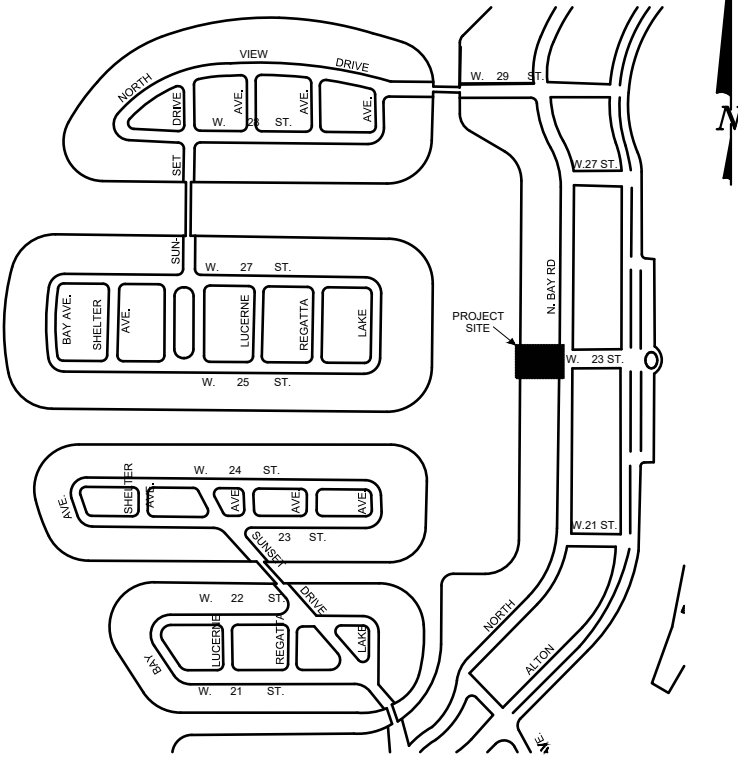
GENERAL NOTES:

1. CONTRACTOR SHALL PERFORM ALL WORK WITHIN EXISTING RIGHT OF WAY, AND SHALL NOT DISTURB ADJACENT PROPERTY
2. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES IN THE AREA BEFORE BEGINNING CONSTRUCTION.
3. ALL EXISTING UTILITIES SHALL BE MAINTAINED IN SERVICE DURING CONSTRUCTION UNLESS OTHERWISE APPROVED IN WRITING BY THE UTILITY OWNER.
4. THE LOCATION OF ALL EXISTING FACILITIES HAS BEEN PREPARED FROM THE MOST RELIABLE INFORMATION AVAILABLE TO THE ENGINEER. CONTRACTOR SHALL VERIFY THE LOCATION OF ALL FACILITIES AND UTILITIES WITHIN THE PROJECT LIMITS.
5. CONTRACTOR SHALL INCLUDE NECESSARY CUTTING, PATCHING AND RESTORATION OF ALL EXISTING SURFACES TO MATCH SURROUNDING AREAS.
6. FIELD VERIFY ALL ELEVATIONS PRIOR TO COMMENCING THE WORK AND IMMEDIATELY INFORM THE CITY & EOR OF ANY DIFFERENCES.
7. CARE SHOULD BE TAKEN TO AVOID DISTURBING EXISTING ELECTRICAL SERVICE IN THE AREA UNDER CONSTRUCTION.
8. CONTRACTOR TO COORDINATE THE RELOCATION OF UTILITIES IN CONFLICT WITH THE WORK WITH THE RESPECTIVE UTILITY COMPANY.
9. CONTRACTOR SHALL COMPLY WITH THE LOCAL APPROVED SWPP PLAN FOR THIS AREA. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST FEDERAL, STATE AND LOCAL AGENCY'S REGULATION AND STANDARDS.
10. CONTRACTOR SHALL MAINTAIN 10 FEET CLEARANCE FROM FPL OVERHEAD LINES FOR ANY CRANE OPERATED WORK

DEMOLITION SCOPE OF WORK:

1. REMOVAL OF EXISTING ASPHALT PAVEMENT PARKING
2. DEMOLITION OF EXISTING CONCRETE BOLLARDS AND SIGNS
3. SAW CUT AND REMOVAL OF EXISTING SIDEWALK
4. REMOVAL OF EXISTING STEEL FENCE AND GATE
5. REMOVAL OF EXISTING HEDGES
6. RELOCATION OF EXISTING WATER FOUNTAIN
7. EXISTING TREE TO BE RELOCATED
8. REMOVAL OF EXISTING VALLEY GUTTER (APPROX. 80-LF)
9. DEMOLITION OF EXISTING ASPHALT PAVEMENT (APPROX. 525 SQ FT)

KEY PLAN (NOT TO SCALE):



P.E. SEAL:

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Civil Engineer
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DEMOLITION SITE PLAN

SCALE: 1"=10' 22X34 SCALE
1"=20' 11X17 SCALE

MIAMI BEACH

PUBLIC WORKS DEPARTMENT
1700 CONVENTION CENTER DRIVE, MIAMI BEACH, FL 33139

CITY MANAGER: ALINA T. HUDAK
DIRECTOR: JOSE GOMEZ, P.E., F.FES
CITY ENGINEER: CRISTINA ORTEGA CASTINEIRAS, P.E.

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NO.	DATE	REVISION	APP'D. BY



Nova Consulting, Inc
10486 NW 31st Terrace, Doral, FL 33172

ENGINEER OF RECORD:
STEVEN EAGLE, P.E.
P.E. NO. PE43684

ENGINEER OF RECORD: SE
DESIGN ENGINEER: BDM
DRAWN BY: RL
CHECKER: LLB
SCALE: 1"=10'

NEIGHBORHOOD: PUMP STATION 24 AT LOWER N BAY ROAD
TITLE: DEMOLITION SITE PLAN

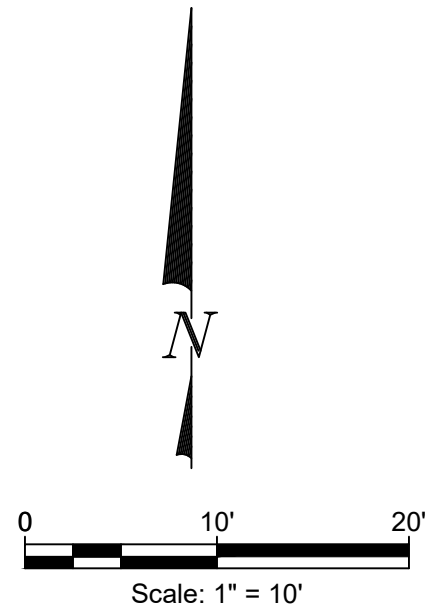
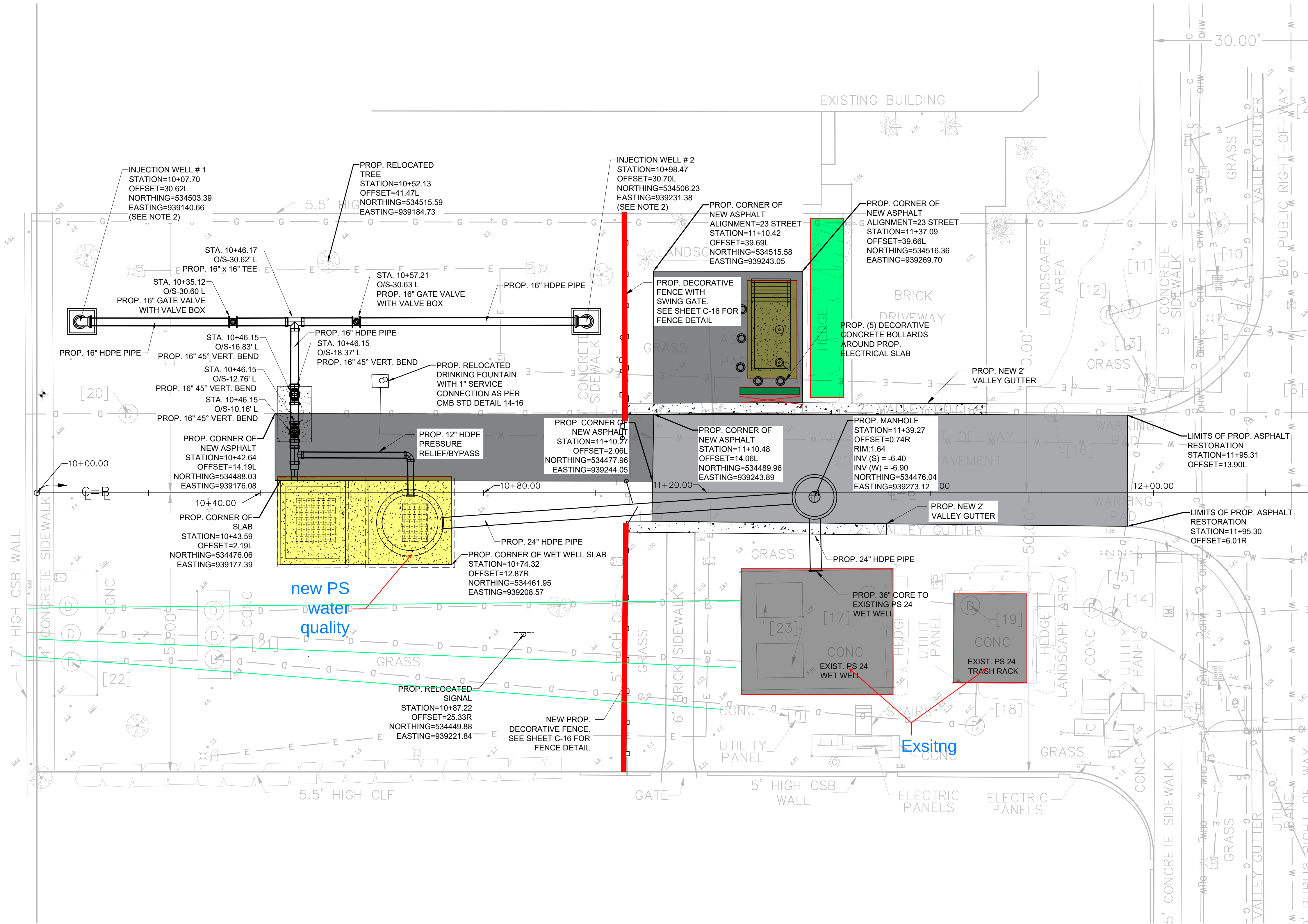
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Survey Reference:

Field Book: 961 Page: 19-25 Work Order: WO3154

Date: JAN 2024 Sheet: 4 of 38 Drawing: C-01

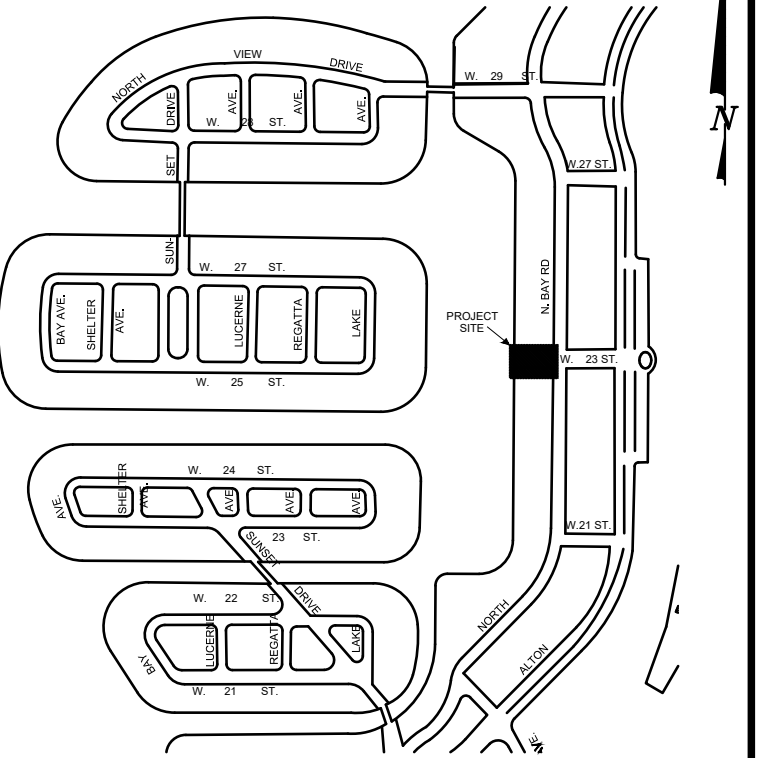
SUNSET LAKE



PROPOSED SCOPE OF WORK:

- INSTALL:
- TWO (2) NEW STORM WATER WELLS, TOP SLAB STRUCTURE WITH NEW MANHOLE COVERS, AND NEW CLASS V INJECTION WELLS WITH 24" D.I. CASING AND ASSOCIATED FITTINGS.
 - DEEP WELL SHALL BE A MINIMUM OF 100 FEET LONG, WITH A MINIMUM 65 FEET ENCASED AND MINIMUM 45 FEET OPEN HOLE. MINIMUM DISCHARGE CAPACITY MUST BE 600 GPM/FT OF HEAD
 - NEW 16" HDPE PRESSURIZED PIPE DISCHARGE STORM MAIN (APPROXIMATELY 94 LF) AND ASSOCIATED FITTINGS AND CONNECTIONS.
 - NEW 12" HDPE PRESSURIZED PIPE BYPASS DISCHARGE (APPROXIMATELY 25 LF) AND ASSOCIATED FITTINGS, CONNECTIONS, AND ORIFICE PLATE.
 - NEW 8" THICK PROTECTIVE CONCRETE SLAB (APPROXIMATELY 60 SF)
 - ONE (1) NEW VALVE VAULT AND TOP SLAB STRUCTURE WITH NEW HATCHES, NEW 12" D.I. INTERNAL PIPING, FITTINGS, AND HARDWARE.
 - ONE (1) NEW WET WELL AND TOP SLAB STRUCTURE WITH NEW HATCHES
 - TWO (2) NEW SUBMERSIBLE PUMPS WITH ASSOCIATED PIPING, HARDWARE, AND CONTROLS.
 - ONE (1) NEW 6" STORM MANHOLE #1
 - NEW 24" HDPE STORM PIPE CONNECTION FROM PROPOSED WET WELL TO PROPOSED STORM MANHOLE #1 (APPROXIMATELY 68 LF)
 - MODIFY EX. PS24 WET WELL VIA CORE DRILL TO ACCOMMODATE THE NEW 24" HDPE STORM PIPE CONNECTION.
 - NEW 24" HDPE STORM PIPE CONNECTION FROM EXISTING PS24 WET WELL TO PROPOSED MANHOLE #1. (APPROXIMATELY 13 LF)
 - NEW 1" WATER SERVICE LINE TO RELOCATED DRINKING FOUNTAIN.
 - NEW DECORATIVE FENCE WITH ASSOCIATED 8-FT DOUBLE LEAF SWING GATES (DOG PARK ACCESS) AND 12-FT SLIDE GATE (PUMP STATION ACCESS)
 - NEW ACCESS/MAINTENANCE DRIVEWAY (APPROXIMATELY 812 SF)
 - NEW ACCESS PARKING SPACE (APPROXIMATELY 630 SF)
 - RESTORATION OF ASPHALT PAVEMENT (APPROXIMATELY 525 SF)
 - MILLING AND RESURFACING (APPROXIMATELY 1,150) OF ASPHALT PAVEMENT, INCLUDING RESTORATION OF EXISTING PAVEMENT MARKINGS.
 - NEW 2-FT CURB AND GUTTER (APPROXIMATELY 115-LF)
 - RESTORATION OF PARK SIGN REMOVED DURING CONSTRUCTION.
 - FIVE (5) NEW CONCRETE BOLLARDS AROUND ELECTRICAL SLAB
 - INSTALLATION OF CLEAN FILL TO ELEVATED EXISTING PARK GRADES. SEE SHEET C-10 FOR FINAL ELEVATIONS

KEY PLAN (NOT TO SCALE):



P.E. SEAL:

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Civil Engineer
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MIAMI BEACH

PUBLIC WORKS DEPARTMENT
1700 CONVENTION CENTER DRIVE, MIAMI BEACH, FL 33139

CITY MANAGER: ALINA T. HUDAK
DIRECTOR: JOSE GOMEZ, P.E., F.FES
CITY ENGINEER: CRISTINA ORTEGA CASTINEIRAS, P.E.

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Nova Consulting, Inc
10486 NW 31st Terrace, Doral, FL 33172

ENGINEER OF RECORD:
STEVEN EAGLE, P.E.
P.E. NO. PE43684

ENGINEER OF RECORD: SE
DESIGN ENGINEER: BDM
DRAWN BY: RL
CHECKER: LLB
SCALE: 1"=10'

NEIGHBORHOOD:

PUMP STATION 24 AT LOWER BAY ROAD

TITLE:

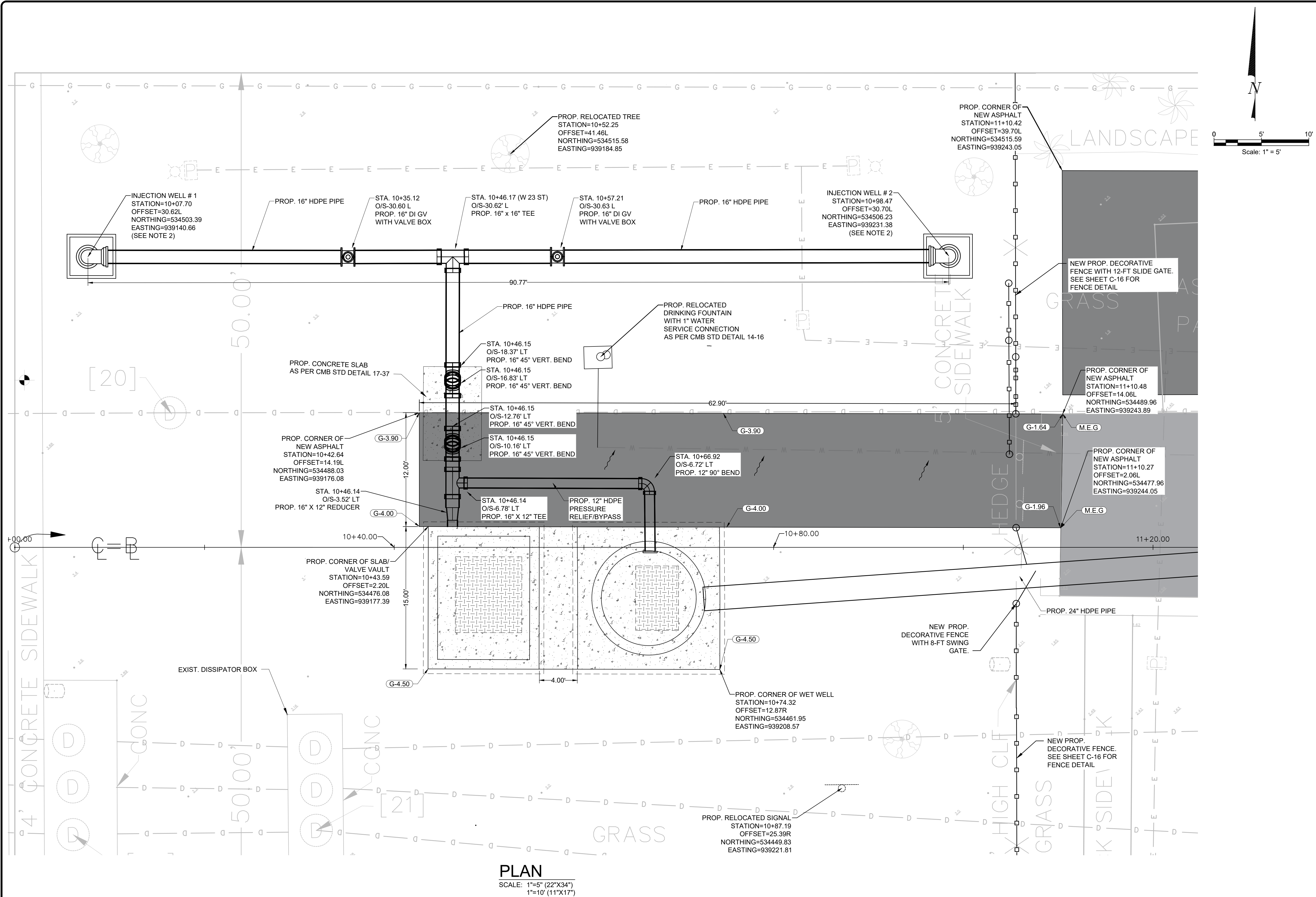
PROPOSED SITE PLAN

File Name: C-02.dwg

Survey Reference:

Field Book: 961 Page: 19-25 Work Order: WO3154

Date: JAN 2024 Sheet: 5 of 38 Drawing: C-02

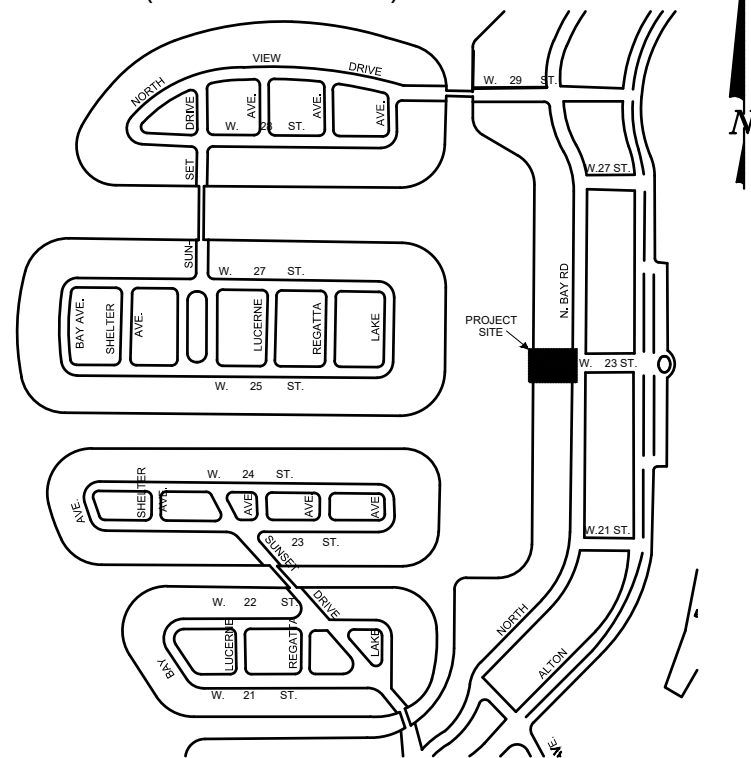


PLAN
SCALE: 1"=5" (22'X34")
1"=10' (11'X17")

PROPOSED SCOPE OF WORK:

- INSTALL:
- TWO (2) NEW STORM WATER WELLS, TOP SLAB STRUCTURE WITH NEW MANHOLE COVERS, AND NEW CLASS V INJECTION WELLS WITH 24" D.I. CASING AND ASSOCIATED FITTINGS.
 - DEEP WELL SHALL BE A MINIMUM OF 100 FEET LONG, WITH A MINIMUM 65 FEET ENCASED AND MINIMUM 45 FEET OPEN HOLE. MINIMUM DISCHARGE CAPACITY MUST BE 600 GPM/FT OF HEAD
 - NEW 16" HDPE PRESSURIZED PIPE DISCHARGE STORM MAIN (APPROXIMATELY 94 LF) AND ASSOCIATED FITTINGS AND CONNECTIONS.
 - NEW 12" HDPE PRESSURIZED PIPE BYPASS DISCHARGE (APPROXIMATELY 25 LF) AND ASSOCIATED FITTINGS, CONNECTIONS, AND ORIFICE PLATE.
 - NEW 8" THICK PROTECTIVE CONCRETE SLAB (APPROXIMATELY 60 SF)
 - ONE (1) NEW VALVE VAULT AND TOP SLAB STRUCTURE WITH NEW HATCHES, NEW 12" D.I. INTERNAL PIPING, FITTINGS, AND HARDWARE.
 - ONE (1) NEW WET WELL AND TOP SLAB STRUCTURE WITH NEW HATCHES
 - TWO (2) NEW SUBMERSIBLE PUMPS WITH ASSOCIATED PIPING, HARDWARE, AND CONTROLS.
 - ONE (1) NEW 6" STORM MANHOLE #1
 - NEW 24" HDPE STORM PIPE CONNECTION FROM PROPOSED WET WELL TO PROPOSED STORM MANHOLE #1 (APPROXIMATELY 68 LF)
 - MODIFY EX. PS24 WET WELL VIA CORE DRILL TO ACCOMMODATE THE NEW 24" HDPE STORM PIPE CONNECTION.
 - NEW 24" HDPE STORM PIPE CONNECTION FROM EXISTING PS24 WET WELL TO PROPOSED MANHOLE #1. (APPROXIMATELY 13 LF)
 - NEW 1" WATER SERVICE LINE TO RELOCATED DRINKING FOUNTAIN.
 - NEW DECORATIVE FENCE WITH ASSOCIATED 8-FT DOUBLE LEAF SWING GATES (DOG PARK ACCESS) AND 12-FT SLIDE GATE (PUMP STATION ACCESS)
 - NEW ACCESS/MAINTENANCE DRIVEWAY (APPROXIMATELY 812 SF)
 - NEW ACCESS PARKING SPACE (APPROXIMATELY 630 SF)
 - RESTORATION OF ASPHALT PAVEMENT (APPROXIMATELY 525 SF)
 - MILLING AND RESURFACING (APPROXIMATELY 1,150) OF ASPHALT PAVEMENT, INCLUDING RESTORATION OF EXISTING PAVEMENT MARKINGS.
 - NEW 2-FT CURB AND GUTTER (APPROXIMATELY 115-LF)
 - RESTORATION OF PARK SIGN REMOVED DURING CONSTRUCTION.
 - FIVE (5) NEW CONCRETE BOLLARDS AROUND ELECTRICAL SLAB
 - INSTALLATION OF CLEAN FILL TO ELEVATED EXISTING PARK GRADES. SEE SHEET C-10 FOR FINAL ELEVATIONS

KEY PLAN (NOT TO SCALE):



P.E. SEAL:

Steven S. Eagle, P.E.
Civil Engineer
State of Florida - License No. 43684

MIAMI BEACH
PUBLIC WORKS DEPARTMENT
1700 CONVENTION CENTER DRIVE, MIAMI BEACH, FL 33139

CITY MANAGER: ALINA T. HUDAK
DIRECTOR: JOSE GOMEZ, P.E., F.FES
CITY ENGINEER: CRISTINA ORTEGA CASTINEIRAS, P.E.

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NO.	DATE	REVISION	APP'D. BY



Nova Consulting, Inc
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ENGINEER OF RECORD:
STEVEN EAGLE, P.E.
P.E. NO. PE43684

ENGINEER OF RECORD: SE
DESIGN ENGINEER: BDM
DRAWN BY: RL
CHECKER: LLB
SCALE: AS SHOWN

NEIGHBORHOOD:

PUMP STATION 24 AT LOWER N BAY ROAD

TITLE:

PROPOSED PUMP STATION SITE PLAN

File Name: C-03.dwg

Survey Reference:

Field Book: 961

Page: 19-25

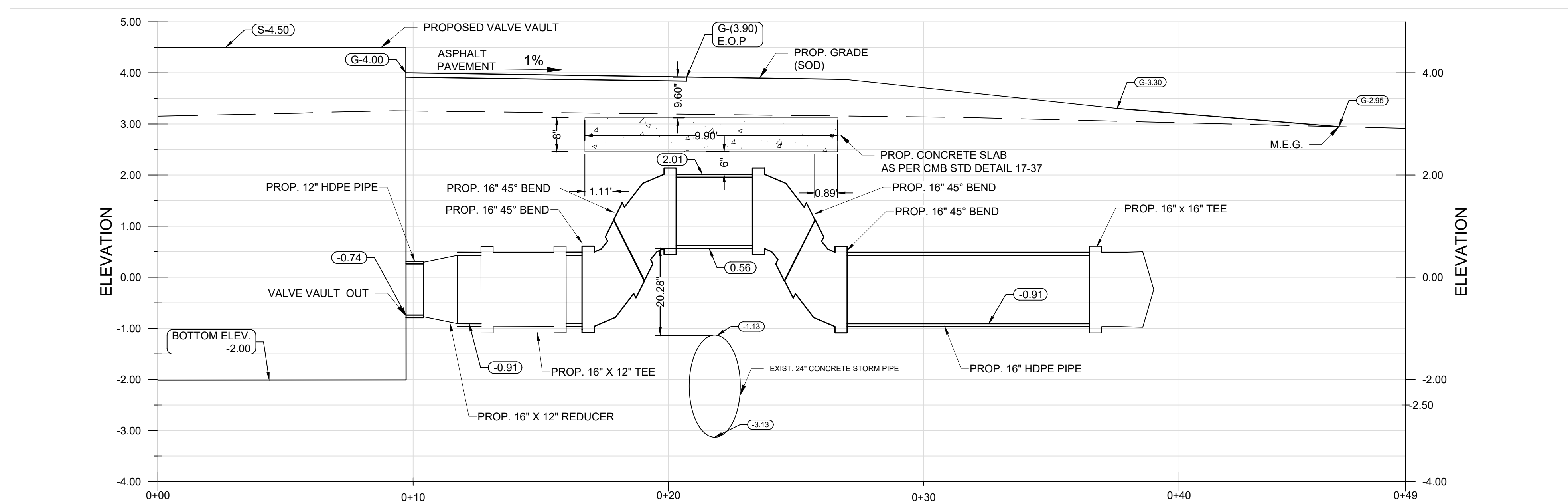
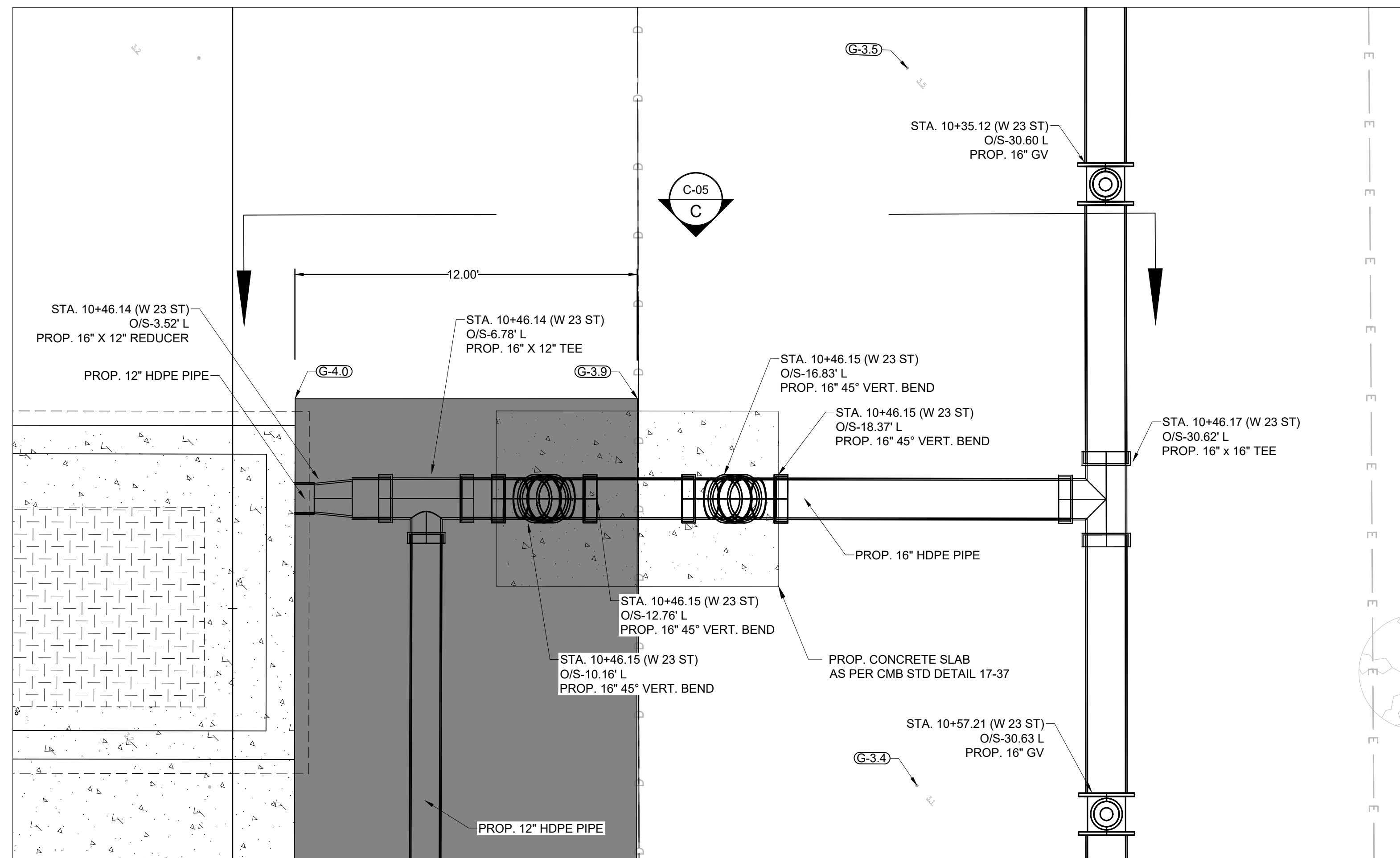
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Date: JAN 2024

Sheet: 6

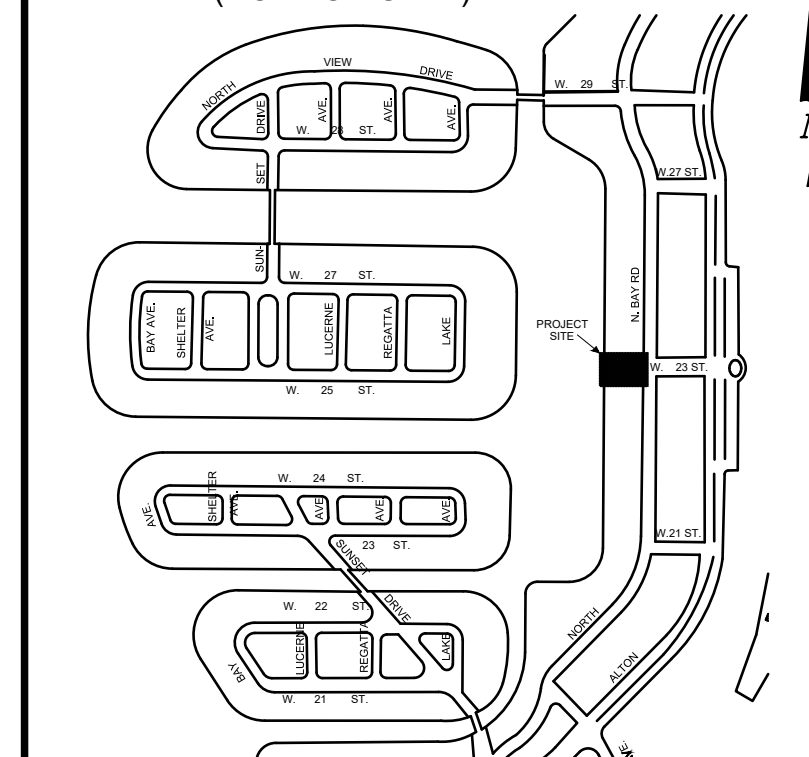
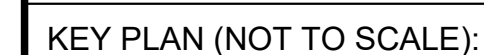
of 38

Drawing: C-03



GENERAL NOTES:

1. CONTRACTOR SHALL VERIFY EXISTING UNDERGROUND UTILITIES IN APPLICATIONS, ELEVATIONS, AND QUALITIES PRIOR TO CONSTRUCTION.
2. THE EXISTING WET WELL STRUCTURE SHALL BE CORED AND DRILLED TO ACCOMMODATE THE NEW 24" HDPE STORM PIPE.
3. ALL CORE DRILL PENETRATIONS MUST CONSIST OF AN APPROVED MANHOLE COUPLING GROUTED INTO THE STRUCTURE WALL AND PROVIDE A CONTINUOUS WATERTIGHT NON-SHRINK GASKET SEAL BETWEEN THE COUPLING AND THE PROPOSED PIPE.
4. THE COUPLING SHALL HAVE AN INCREASING TAPERED INTERIOR FROM THE GASKET GROOVE TO ALLOW FLEXIBILITY FOR THE PIPE IN THE EVENT OF FUTURE SETTLEMENT OF THE STRUCTURE OR PIPELINE
5. THE FIRST LENGTH OF HDPE PIPE INTO OR OUT OF THE STRUCTURE SHALL BE 2-FT. LONG, MAXIMUM, AND SHALL BE PLAIN-END BY PLAIN-END OR PLAIN-END BY BELL.



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File Name: C-05.dwg

Survey Reference:

Field Book: 961 Page: 19-25 Work Order: WO3154

Date: JAN 2024 Sheet: 8 of 38 Drawing: C-05

MIAMI BEACH

PUBLIC WORKS DEPARTMENT
1700 CONVENTION CENTER DRIVE, MIAMI BEACH, FL.33139

CITY MANAGER: ALINA T. HUDAK
DIRECTOR: JOSE GOMEZ, P.E., F.FES
CITY ENGINEER: CRISTINA ORTEGA
CASTINEIRAS, P.E.

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Nova Consulting, Inc
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ENGINEER OF RECORD:

STEVEN EAGLE, P.E.
P.E. NO. PE43684

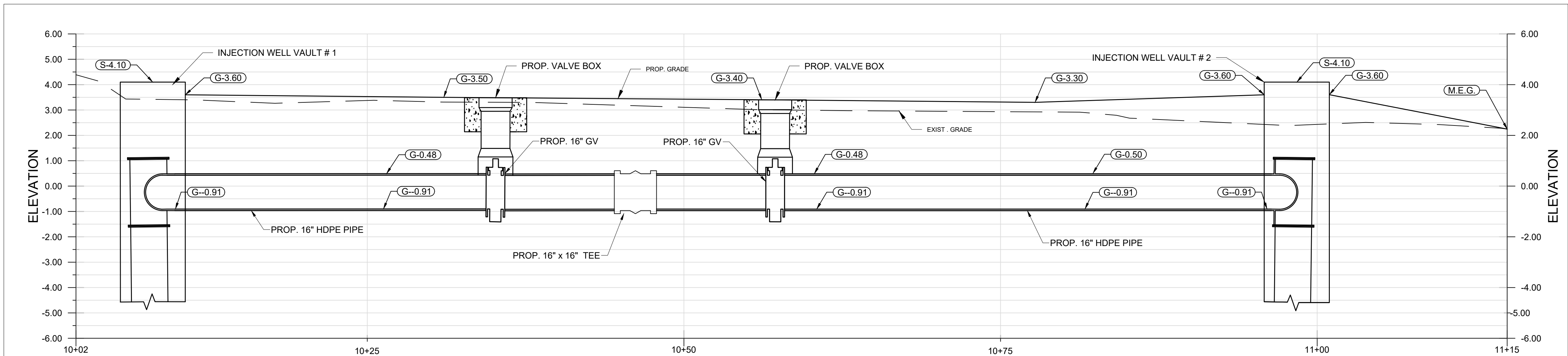
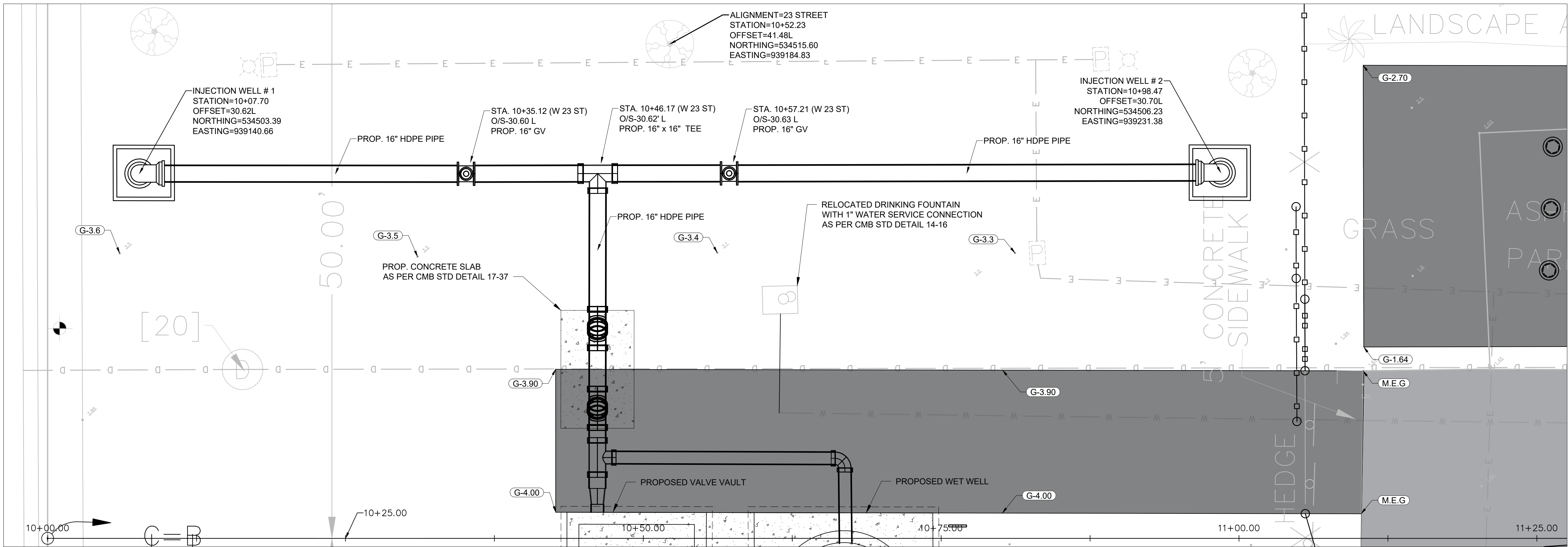
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DESIGN ENGINEER: BDM
DRAWN BY: LZ
CHECKER: LLB
SCALE: AS SHOWN

NEIGHBORHOOD: PUMP STATION 24 AT LOWER N BAY ROAD

TITLE: PLAN AND PROFILE SHEET II

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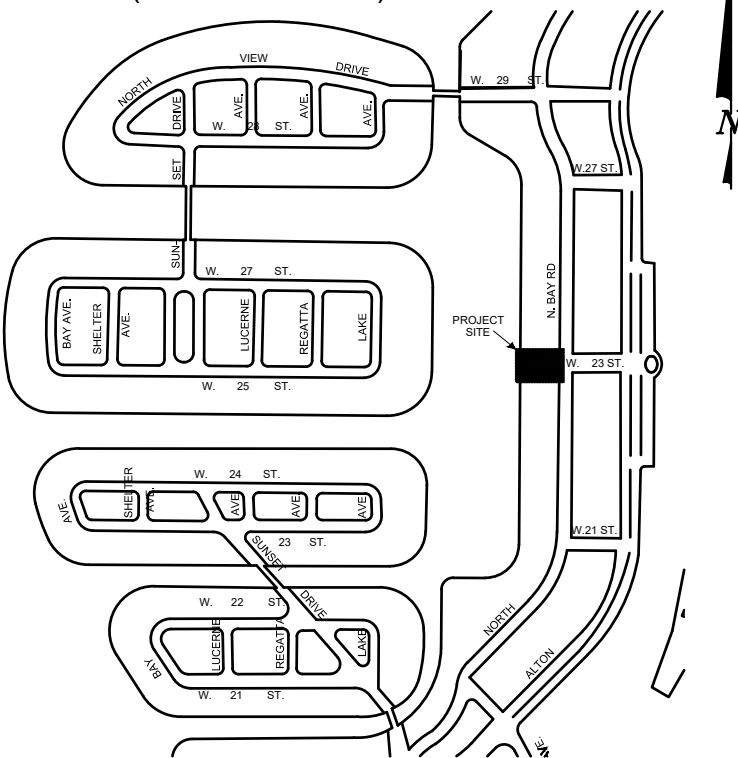
90% DRAFT PROGRESS SUBMITTAL



GENERAL NOTES:

1. CONTRACTOR SHALL VERIFY EXISTING UNDERGROUND UTILITIES IN APPLICATIONS, ELEVATIONS, AND QUALITIES PRIOR TO CONSTRUCTION.
2. THE EXISTING WET WELL STRUCTURE SHALL BE CORED AND DRILLED TO ACCOMMODATE THE NEW 24" HDPE STORM PIPE.
3. ALL CORE DRILL PENETRATIONS MUST CONSIST OF AN APPROVED MANHOLE COUPLING GROUTED INTO THE STRUCTURE WALL AND PROVIDE A CONTINUOUS WATERTIGHT NON-SHRINK GASKET SEAL BETWEEN THE COUPLING AND THE PROPOSED PIPE.
4. THE COUPLING SHALL HAVE AN INCREASING TAPERED INTERIOR FROM THE GASKET GROOVE TO ALLOW FLEXIBILITY FOR THE PIPE IN THE EVENT OF FUTURE SETTLEMENT OF THE STRUCTURE OR PIPELINE
5. THE FIRST LENGTH OF HDPE PIPE INTO OR OUT OF THE STRUCTURE SHALL BE 2-FT LONG, MAXIMUM, AND SHALL BE PLAIN-END BY PLAIN-END OR PLAIN-END BY BELL.

KEY PLAN (NOT TO SCALE):



P.E. SEAL:

Steven S. Eagle, P.E.
Civil Engineer
State of Florida - License No. 43684

MIAMI BEACH

PUBLIC WORKS DEPARTMENT
1700 CONVENTION CENTER DRIVE, MIAMI BEACH, FL 33139

CITY MANAGER: ALINA T. HUDAK
DIRECTOR: JOSE GOMEZ, P.E., F.F.S.
CITY ENGINEER: CRISTINA ORTEGA CASTINEIRAS, P.E.

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NO.	DATE	REVISION	APP'D. BY



Nova Consulting, Inc
10486 NW 31st Terrace, Doral, FL 33172

ENGINEER OF RECORD:
STEVEN EAGLE, P.E.
P.E. NO. PE43684

ENGINEER OF RECORD: SE
DESIGN ENGINEER: BDM
DRAWN BY: RL
CHECKER: LLB
SCALE: AS SHOWN

NEIGHBORHOOD: PUMP STATION 24 AT LOWER N BAY ROAD

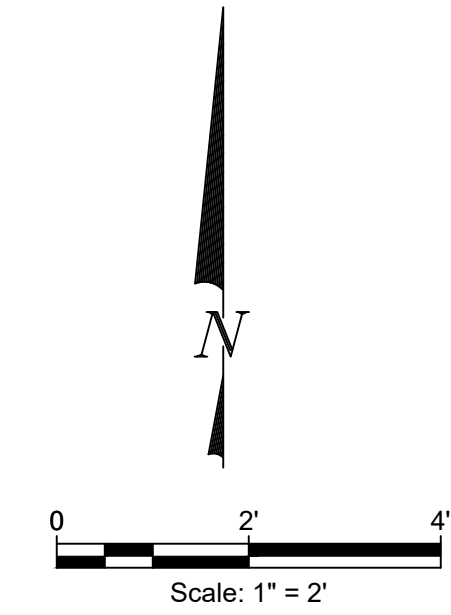
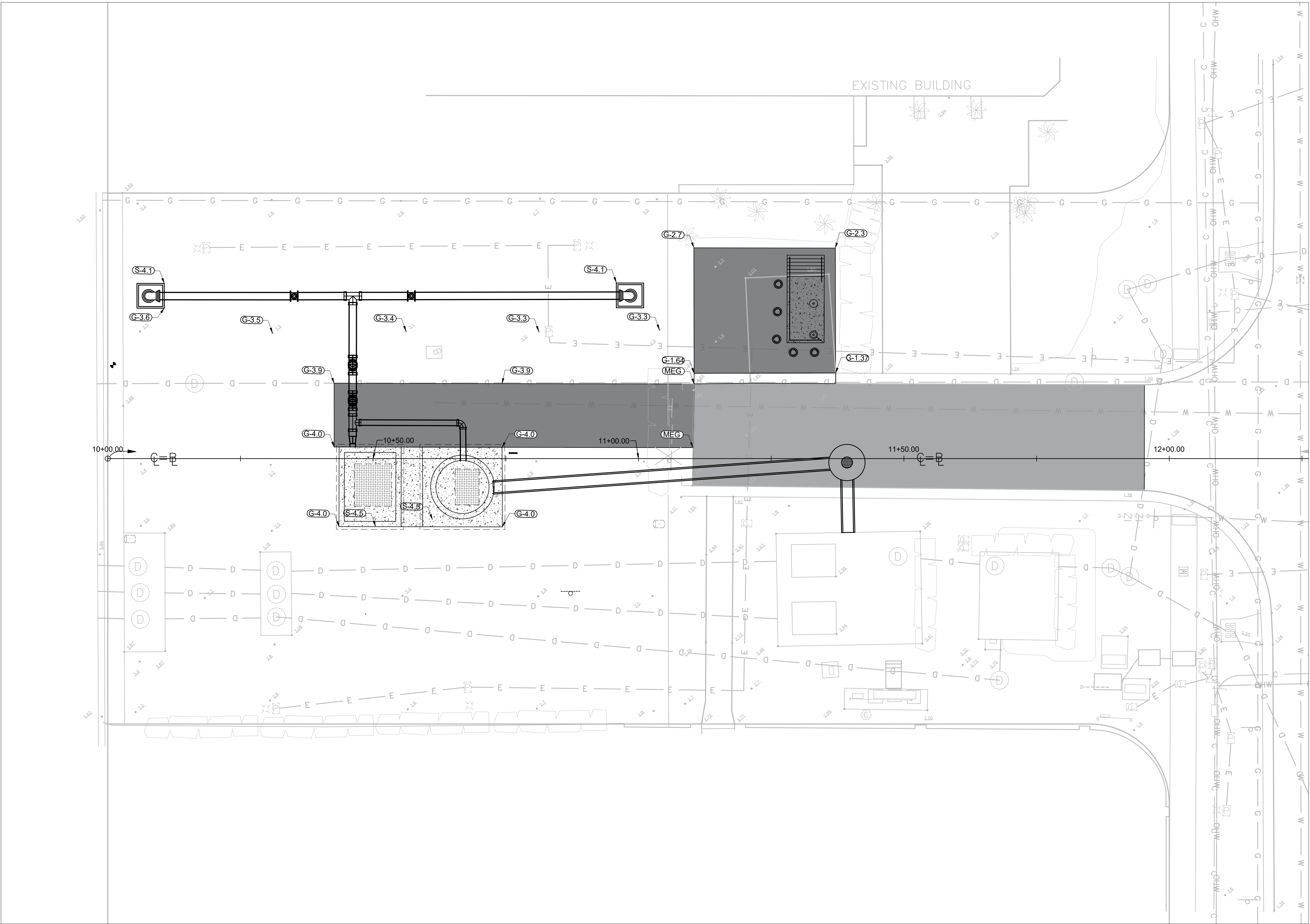
TITLE: PLAN AND PROFILE SHEET III

File Name: C-06.dwg

Survey Reference:

Field Book: 961 Page: 19-25 Work Order: WO3154

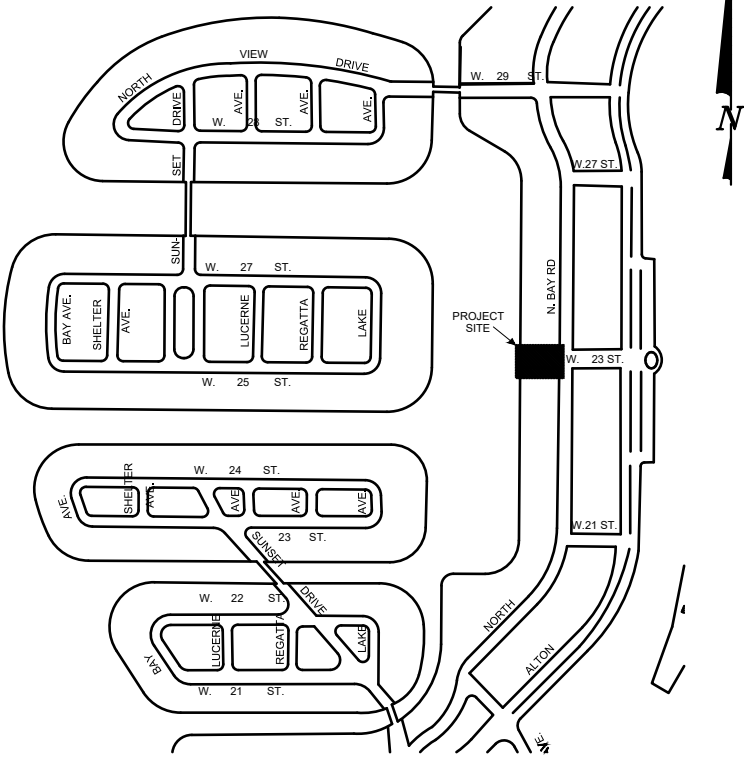
Date: JAN 2024 Sheet: 9 of 38 Drawing: C-06



GENERAL NOTES:

1. CONTRACTOR SHALL VERIFY EXISTING UNDERGROUND UTILITIES IN APPLICATIONS, ELEVATIONS, AND QUALITIES PRIOR TO CONSTRUCTION.
2. THE CONTRACTOR SHALL MAKE THEIR OWN ESTIMATE ON THE VOLUME OF CLEAN FILL REQUIRED TO OBTAIN THE GRADES AS SHOWN ON THE PLANS.
3. ALL DISTURBED AREAS SHALL BE RESTORED TO EXISTING CONDITIONS OR BETTER.

KEY PLAN (NOT TO SCALE):



P.E. SEAL:

Steven S. Eagle, P.E.
Civil Engineer
State of Florida - License No. 43684

PLAN

SCALE: 1"=10' (22"X34")
1"=20' (11"X17")

MIAMI BEACH

PUBLIC WORKS DEPARTMENT
1700 CONVENTION CENTER DRIVE, MIAMI BEACH, FL 33139

CITY MANAGER: ALINA T. HUDAK
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CITY ENGINEER: CRISTINA ORTEGA
CASTINEIRAS, P.E.

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Nova Consulting, Inc
10486 NW 31st Terrace, Doral, FL 33172

ENGINEER OF RECORD:
STEVEN EAGLE, P.E.
P.E. NO. PE43684

ENGINEER OF RECORD: SE
DESIGN ENGINEER: BDM
DRAWN BY: RL
CHECKER: LLB
SCALE: AS SHOWN

NEIGHBORHOOD:

PUMP STATION 24 AT LOWER N BAY ROAD

TITLE:

PROPOSED PUMP STATION GRADING PLAN

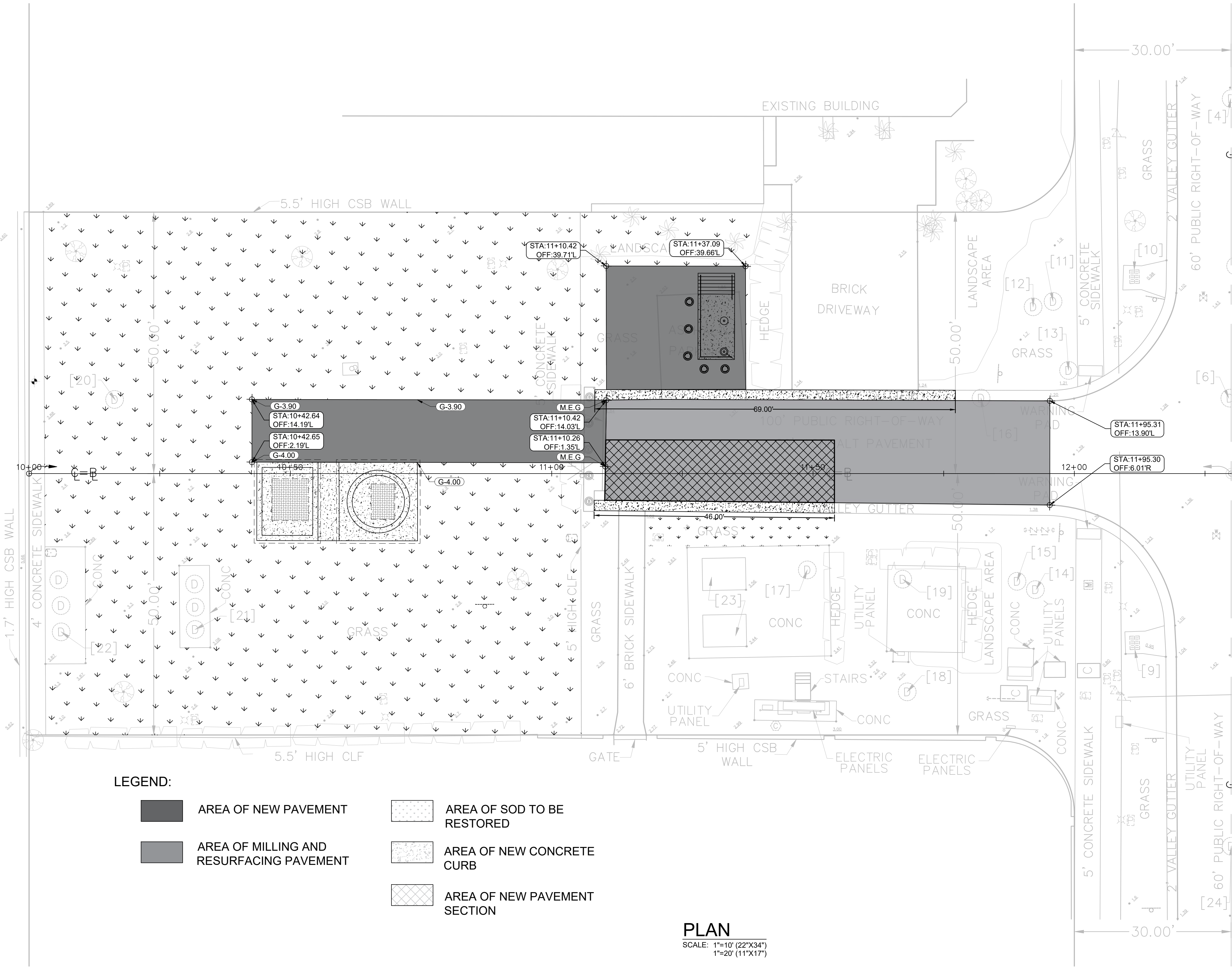
File Name: C-07.dwg

Survey Reference:

Field Book: 961 Page: 19-25 Work Order: WO3154

Date: JAN 2024 Sheet: 10 of 38 Drawing: C-07

SUNSET LAKE



LEGEND:



AREA OF NEW PAVEMENT



AREA OF MILLING AND RESURFACING PAVEMENT



AREA OF SOD TO BE RESTORED



AREA OF NEW CONCRETE CURB



AREA OF NEW PAVEMENT SECTION

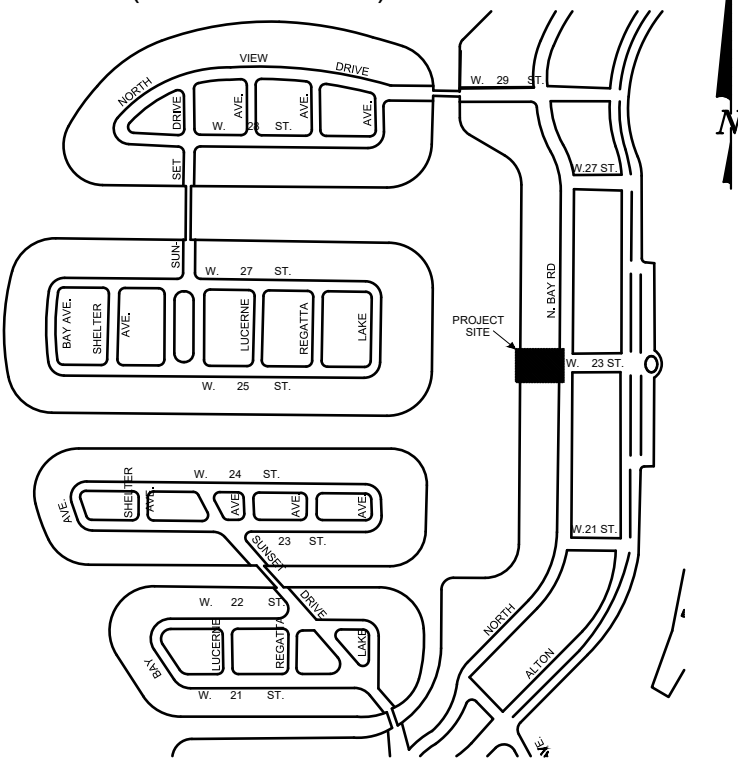
PLAN

SCALE: 1"=10' (22"X34")
1"=20' (11"X17")

GENERAL NOTES:

1. CONTRACTOR SHALL VERIFY EXISTING UNDERGROUND UTILITIES IN APPLICATIONS, ELEVATIONS, AND QUALITIES PRIOR TO CONSTRUCTION.
2. ALL DISTURBED AREAS SHALL BE RESTORED TO EXISTING CONDITIONS OR BETTER.
3. PAVEMENT AND DRIVEWAY RESTORATION ARE TO MATCH EXISTING GRADE UNLESS OTHERWISE NOTED.

KEY PLAN (NOT TO SCALE):



P.E. SEAL:

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Civil Engineer
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MIAMI BEACH

PUBLIC WORKS DEPARTMENT
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CITY ENGINEER: CRISTINA ORTEGA
CASTINEIRAS, P.E.

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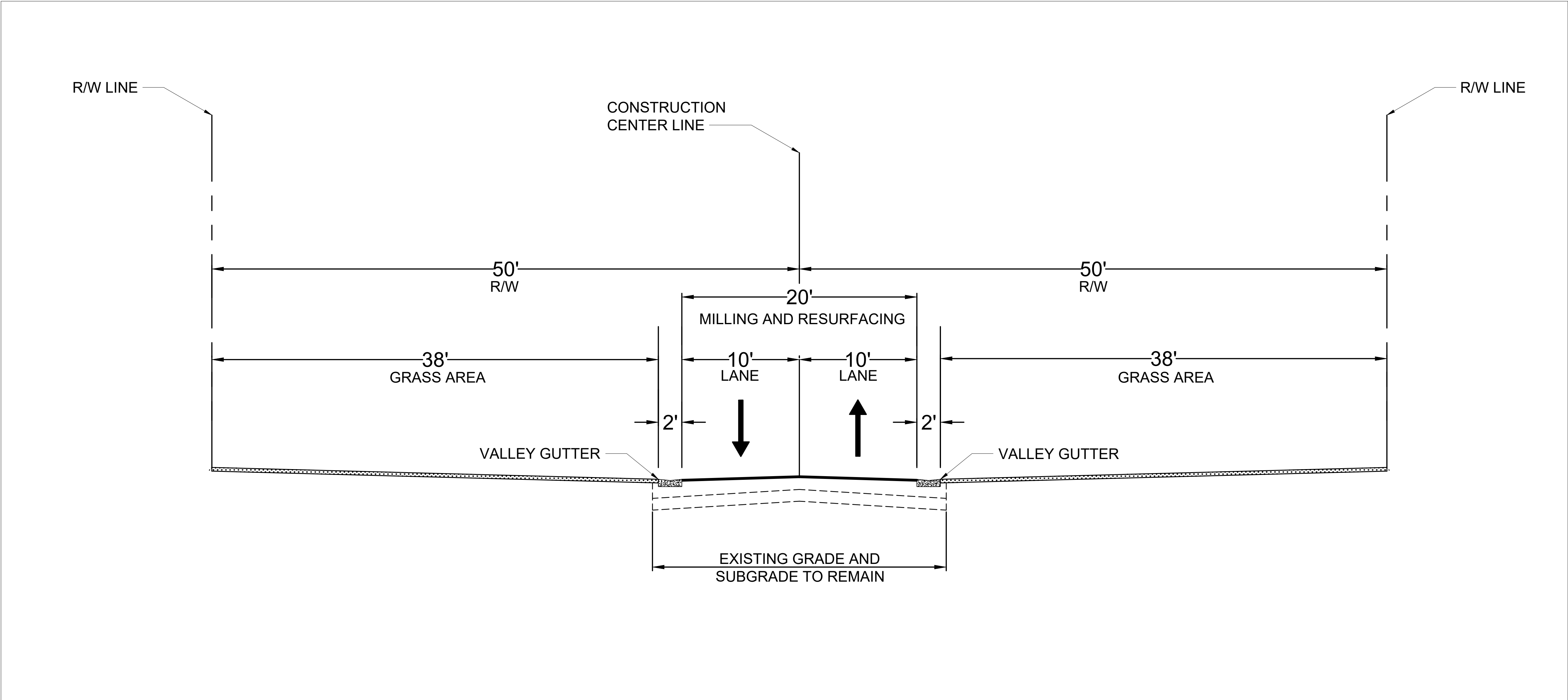
ENGINEER OF RECORD:
STEVEN EAGLE, P.E.
P.E. NO. PE43684

ENGINEER OF RECORD: SE
DESIGN ENGINEER: BDM
DRAWN BY: RL
CHECKER: LLB
SCALE: 1"=10'

NEIGHBORHOOD: PUMP STATION 24 AT LOWER N BAY ROAD
TITLE: RESTORATION SHEET

File Name: C-08.dwg
Survey Reference:
Field Book: 961 Page: 19-25 Work Order: WO3154
Date: JAN 2024 Sheet: 11 of 38 Drawing: C-08

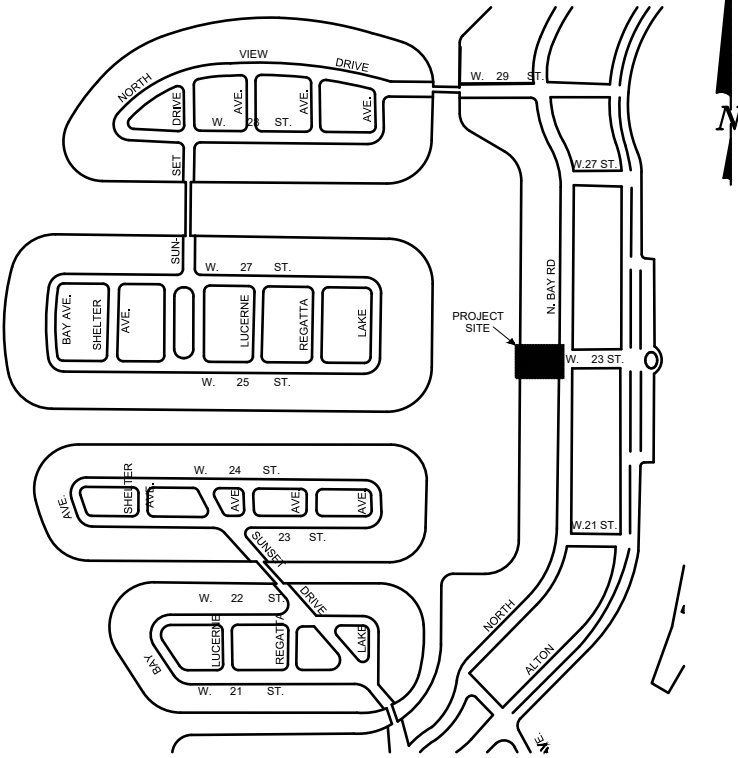
- GENERAL NOTES:
- MILL EXISTING ASPHALT PAVEMENT (2" AVG. DEPTH). SEE TYPICAL DETAIL 10-1
 - EXISTING VALLEY GUTTER WITHIN PROJECT LIMITS TO BE REPLACED. SEE TYPICAL DETAIL 10-8
 - RESURFACING TO MATCH EXISTING CROSS SLOPES



WEST 23RD STREET TYPICAL SECTION

SCALE: NTS

KEY PLAN (NOT TO SCALE):



P.E. SEAL:

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Civil Engineer
State of Florida - License No. 43684

MIAMI BEACH

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P.E. NO. PE43684

ENGINEER OF RECORD: SE
DESIGN ENGINEER: BDM
DRAWN BY: RL
CHECKER: LLB
SCALE: NOT TO SCALE

NEIGHBORHOOD: PUMP STATION 24 AT LOWER N BAY ROAD
TITLE: TYPICAL PAVEMENT SECTION

File Name: C-09.dwg		
Survey Reference:		
Field Book: 961	Page: 19-25	Work Order: WO3154
Date: JAN 2024	Sheet: 12 of 38	Drawing: C-09

MAINTENANCE OF TRAFFIC NOTES:

1. TRAFFIC CONTROLS SHALL BE IN ACCORDANCE WITH THE PROJECT PLANS. THE CURRENT EDITION OF THE FLORIDA D.O.T. DESIGN STANDARDS (600 SERIES) AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AS MINIMUM CRITERIA.
2. THE TRAFFIC AND TRAVEL WAYS SHALL NOT BE ALTERED BY THE CONTRACTOR TO CREATE A WORK ZONE UNTIL ALL LABOR AND MATERIAL ARE AVAILABLE FOR THE CONSTRUCTION IN THAT AREA
3. CONSTRUCTION SHALL ONLY OCCUR DURING THE FOLLOWING HOURS:
8:00 AM TO 4:30 PM - WEEKDAYS
4. REGULATORY SPEED ESTABLISHED WITHIN THE WORK ZONE TRAVEL WAYS SHALL BE 25 M.P.H.
5. THE CONTRACTOR SHALL NOT PROPOSE AN ALTERNATIVE TRAFFIC CONTROL PLAN THAT REDUCES THE NUMBER OF TRAVEL LANES SHOWN ON THE CONTRACT TRAFFIC CONTROL PLANS.
6. NO LANE CLOSURES ARE PERMITTED ON ALTON ROAD.
7. ARROWS ON THE TCP DENOTE THE DIRECTION OF TRAFFIC ONLY AND DO NOT REFLECT PAVEMENT MARKINGS UNLESS SPECIFICALLY NOTED.
8. ONE(1) PROJECT IDENTIFICATION SIGN IS REQUIRED FOR THIS PROJECT. PLACE SIGN IN ADVANCE OF CONSTRUCTION PER SPECIFICATIONS.
9. CONTRACTOR SHALL COORDINATE TRAFFIC CONTROL WITH PAVING AND GRADING CONSTRUCTION.

DROP OFFS

1. FOR DROP OFFS, THE CONTRACTORS ATTENTION IS DIRECTED TO STANDARD INDEX NO. 600. THE CONTRACTOR SHALL USE SHOULDER TREATMENT DETAIL WHEN NO BARRIERS ARE REQUIRED IN THE PLANS.

MARKINGS

1. THE CONTRACTOR SHALL REMOVE ANY EXISTING OR TEMPORARY PAVEMENT MARKINGS THAT CONFLICT WITH THE TRAFFIC CONTROL PLANS. GRINDING OR MILLING WITHOUT ASPHALT OVERLAY SHALL ONLY BE PERMITTED IN NON-TRAFFIC AREAS AS DESIGNATED BY THE ENGINEER. PAVEMENT MARKINGS SHALL BE REPLACED AT THE TIME TRAFFIC CONTROL PLANS ARE NO LONGER AFFECTED BY THEIR PLACEMENT. USE OF BLACK PAINT TO COVER EXISTING AND/OR TEMPORARY PAVEMENT MARKINGS IS PROHIBITED.
2. COST OF REMOVAL OF WORK ZONE PAVEMENT MARKINGS (INCLUDING PAINT, REMOVABLE TAPE, AND MARKERS), REGARDLESS OF METHOD, TO BE INCLUDED IN THE MAINTENANCE OF TRAFFIC. COST OF REMOVAL OF PAVEMENT MARKINGS AND MARKERS, EXISTING PRIOR TO CONSTRUCTION, TO BE INCLUDED IN MAINTENANCE OF TRAFFIC.
3. TEMPORARY LANE TRANSITIONS, SHIFTS, AND CROSSOVERS SHALL HAVE SOLID LANE AND EDGE LINES FOR THE LENGTH OF THE TRANSITION, SHIFT OR CROSSOVER. IN ADDITION, SOLID LANE AND EDGE LINES SHALL EXTEND 100-FT ON TANGENT BEYOND EACH END OF THE TRANSITION, SHIFT, OR CROSSOVER. EXCEPTION SHALL BE THROUGH INTERSECTIONS WHERE 2-4 FT SKIP LINES WILL BE PLACED.
4. ALL TEMPORARY STRIPES AND MARKINGS SHALL BE PAINT ONLY, UNLESS OTHERWISE SPECIFIED ON THE PLANS OR APPROVED BY THE ENGINEER.

SIGNALS

1. THE CONTRACTOR SHALL NOTIFY MIAMI DADE COUNTY SIGNS AND SIGNALS DIVISION LOCATED AT 7000 N.W. 36TH STREET MIAMI, FLORIDA 33166 AND PHONE NO. (305) 592-3470, 48 HOURS PRIOR TO ANY MODIFICATION OF AN EXISTING TRAFFIC SIGNAL SYSTEM. THE CONTRACTOR SHALL HAVE FULL RESPONSIBILITY FOR THE DESIGN AND CONSTRUCTION OF TEMPORARY SIGNALIZATION, FOR MAINTENANCE OF THE EXISTING AND/OR TEMPORARY TRAFFIC SIGNAL(S) WITHIN THE PROJECT LIMITS. COST OF DESIGNING TEMPORARY SIGNALIZATION, PROVIDING AND REMOVING TEMPORARY POLES, RELOCATING TRAFFIC SIGNAL HEADS, AND MAINTAINING THE EXISTING AND/OR TEMPORARY TRAFFIC SIGNALS SHALL BE INCLUDED IN MAINTENANCE OF TRAFFIC COST.
2. THE CONTRACTOR SHALL MAINTAIN ONLINE COMMUNICATION OF EXISTING OR TEMPORARY SIGNALIZATION VIA INTERCONNECT OR PHONE LINE DURING CONSTRUCTION. CONTRACTOR MUST PROVIDE TEMPORARY LINES AND CONNECTIONS IF NECESSARY. COST OF MAINTAINING COMMUNICATION, INCLUDING TEMPORARY LINES AND CONNECTIONS SHALL BE INCLUDED IN MAINTENANCE OF TRAFFIC COST.

WORK ZONE LIMITS

1. THE LENGTH OF THE WORK ZONE SHALL NOT EXCEED THE LENGTHS SHOWN IN THE PLANS. PROPERTY ACCESS SHALL BE MAINTAINED AT ALL TIMES.

PEDESTRIANS, BYCYCLES AND WHEELCHAIRS

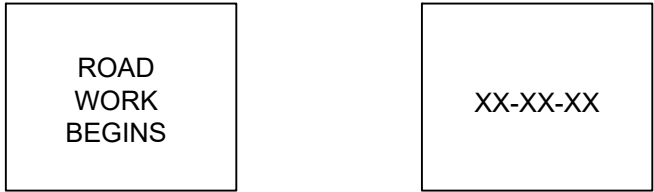
1. AT THE END OF EACH WORK DAY OR WHENEVER THE WORK ZONE BECOMES INACTIVE, ANY DROP OFF GREATER THAN 6 IN ADJACENT TO THE PEDESTRIAN, BICYCLE, AND WHEELCHAIR TRAVEL PATHS SHALL BE BACKFILLED FLUSH WITH THE SAID PATHS OR PROTECTED WITH TEMPORARY FENCE, CONCRETE BARRIER WALL, OR APPROVED HANDRAIL. COST SHALL BE INCLUDED IN MAINTENANCE OF TRAFFIC.
2. CONSTRUCTION ACTIVITIES THAT INVOLVE SIDEWALKS ON BOTH SIDES OF THE STREET ARE NOT ALLOWED UNLESS APPROVED BY THE ENGINEER

DETOURS AND ROAD CLOSURES

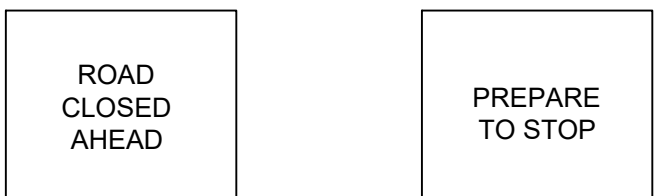
1. PLACE TEMPORARY ROUTE SIGNS A MINIMUM OF FIVE (5) DAYS PRIOR TO ROAD CLOSURE AND REMOVE OR COVER THE TEMPORARY ROUTE SIGNS WITH AN OPAQUE CANVAS BAG A MAXIMUM OF ONE HOUR AFTER THE ROAD IS OPEN TO TRAFFIC. ALL DETOUR SIGNS WILL BE COVERED WHEN NOT IN USE.
2. SIGN ASSEMBLY LOCATIONS SHOWN ON THE PLANS WHICH ARE IN CONFLICT WITH LIGHTING, UTILITIES, DRIVEWAYS, WHEELCHAIR RAMPS, OR OTHER PHYSICAL BARRIERS MAY BE ADJUSTED SLIGHTLY AS DIRECTED BY THE ENGINEER.
3. MAINTAIN ACCESS TO PROPERTIES LOCATED WITHIN THE WORK ZONE BY ALLOWING SAFE PASSAGE OF LOCAL TRAFFIC.
4. PLACE PORTABLE CHANGEABLE MESSAGE SIGNS AS SHOWN IN THE DETOUR PLANS TO ALERT DRIVERS OF IMPENDING DETOURS AND CLOSURES. PLACE PCMS BOARD 7 DAYS PRIOR TO ESTABLISHING THE DETOUR

PCMS

1. MESSAGE TO BE PLACED 1 FULL WEEK PRIOR TO THE BEGINNING OF CONSTRUCTION



2. MESSAGE TO BE PLACED DURING CONSTRUCTION



MIAMI BEACH

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CITY ENGINEER: CRISTINA ORTEGA CASTINEIRAS, P.E.

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NO.	DATE	REVISION	APP'D. BY

Nova Consulting

Nova Consulting, Inc
10486 NW 31st Terrace, Doral, FL 33172

ENGINEER OF RECORD:
STEVEN EAGLE, P.E.
P.E. NO. PE43684

ENGINEER OF RECORD: SE
DESIGN ENGINEER: BDM
DRAWN BY: RL
CHECKER: LLB
SCALE: NOT TO SCALE

NEIGHBORHOOD:
PUMP STATION 24 AT LOWER N BAY RD

TITLE:
TRAFFIC CONTROL NOTES

File Name: C-10.dwg
Survey Reference:
Field Book: 961
Date: JAN 2024

Page: 19-25
Sheet: 13 of 38

Work Order: WO3154
Drawing: C-10

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EROSION AND SEDIMENT CONTROL NOTES:

1.

THE TEMPORARY EROSION AND SILTATION CONTROL ITEMS SHOWN ON THE EROSION AND SEDIMENT CONTROL SECTION FOR THIS PROJECT ARE INTENDED TO PROVIDE A GENERAL PLAN TO CONTROL EROSION AND SEDIMENTS WITHIN THE PROJECT LIMITS. THE ESC PLAN IS BASED ON FIELD CONDITIONS AT THE TIME OF PLAN DEVELOPMENT AND AN ASSUMED SEQUENCE OF CONSTRUCTION FOR THE PROJECT. THE CONTRACTOR, IN CONJUNCTION WITH THE PROJECT ENGINEER AND/OR ENVIRONMENTAL MONITOR, SHALL ADJUST THE LOCATION QUANTITY AND TYPE OF SEDIMENT CONTROL ITEMS REQUIRED BASED ON THE ACTUAL FIELD CONDITIONS ENCOUNTERED AT THE TIME OF CONSTRUCTION AND THE ACTUAL SCHEDULING AND SEQUENCING OF THE CONSTRUCTION ACTIVITIES. SIGNIFICANT CHANGES TO THE PROPOSED ESC PLAN (E.G. THOSE THAT REQUIRE AN EMERGENCY ANALYSIS) SHALL BE SUBMITTED TO THE APPLICABLE COUNTY ENGINEER FOR REVIEW AND APPROVAL. ANY CHANGES TO THE PROPOSED ESC PLAN SHALL BE RECORDED ON A DESIGNATED PLAN SET (RECORD SET) WHICH SHALL BE RETAINED ON THE PROJECT SITE AND MADE AVAILABLE UPON REQUEST.

2.

TEMPORARY EROSION AND SEDIMENT CONTROL SHALL BE IMPLEMENTED PRIOR TO AND DURING CONSTRUCTION AND, PERMANENT CONTROL MEASURES SHALL BE COMPLETED SHALL BE COMPLETED WITHIN 7 DAYS OF ANY CONSTRUCTION ACTIVITY.

3.

TURBIDITY BARRIERS AND/OR BALED HAY OR STRAW BARRIERS SHALL BE INSTALLED AND MAINTAINED AT ALL LOCATIONS AND SHALL REMAIN IN PLACE IN ALL LOCATIONS UNTIL CONSTRUCTION IS COMPLETED AND SOILS ARE STABILIZED, AND VEGETATION HAS BEEN ESTABLISHED.

4.

ADJACENT BALES SHALL BE BUTTED TOGETHER. UNAVOIDABLE GAPS SHALL BE PLUGGED WITH HAY OR STRAW TO AVOID SILT FROM PASSING.

5.

HAY BALES AND FILTER FABRIC SHALL BE INSTALLED IN ALL EXISTING INLETS LOCATED ALONG THE WORK AREA.

6.

THE FABRIC MATERIAL AND THE WIRE MESH SHALL NOT EXTEND MORE THAN 36” ABOVE THE ORIGINAL GROUND SURFACE.

7.

SILT FENCES AND FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND REMOVE SEDIMENT WHEN NECESSARY.

8.

SEDIMENT SHALL BE REMOVED, AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/3 THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.

9.

THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING THE BEST EROSION AND SEDIMENT CONTROL PRACTICES AS OUTLINED IN THE PLANS, SPECIFICATIONS AND SOUTH FLORIDA WATER MANAGEMENT DISTRICT SPECIFICATIONS AND CRITERIA.

10.

FOR ADDITIONAL INFORMATION ON SEDIMENT AND EROSION CONTROL REFER TO "THE FLORIDA DEVELOPMENT MANUAL - A GUIDE TO SOUND LAND AND WATER MANAGEMENT" FROM THE STATE OF FLORIDA SPECIFICATIONS AND CRITERIA.

11.

EROSION AND SEDIMENT CONTROL BARRIERS SHALL BE PLACED ADJACENT TO ALL WETLAND AREAS WHERE THERE IS POTENTIAL FOR DOWNSTREAM WATER QUALITY DEGRADATION. SEE DETAIL SHEET FOR TYPICAL CONSTRUCTION.

12.

ALL DISTURBED AREAS SHALL BE GRASSED, FERTILIZED, MULCHED AND MAINTAINED UNTIL A PERMANENT VEGETATIVE COVER IS ESTABLISHED.

13.

SOD SHALL BE PLACED IN AREAS WHICH MAY REQUIRE IMMEDIATE EROSION PROTECTION TO ENSURE WATER QUALITY STANDARDS ARE MAINTAINED.

14.

ANY DISCHARGE FROM DEWATERING ACTIVITY SHALL BE FILTERED AND CONVEYED TO THE OUTFALL IN A MANNER WHICH PREVENTS EROSION AND TRANSPORTATION OF SUSPENDED SOLIDS TO THE RECEIVING OUTFALL.

15.

DEWATERING PUMPS SHALL NOT EXCEED THE CAPACITY OF THAT WHICH REQUIRES A CONSUMPTIVE USE PERMIT FROM THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT.

16.

ALL DISTURBED AREAS TO BE STABILIZED THROUGH COMPACTION, SILT SCREENS, HAY BALES, AND GRASSING. ALL FILL SLOPES 3:1 OR STEEPER TO RECEIVE STAKED SOLID SOD.

17.

ALL DEWATERING, EROSION, AND SEDIMENT CONTROL TO REMAIN IN PLACE AFTER COMPLETION OF CONSTRUCTION AND REMOVED ONLY WHEN AREAS HAVE STABILIZED.

18.

THIS PLAN INDICATES THE MINIMUM EROSION AND SEDIMENT MEASURES REQUIRED FOR THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR MEETING ALL APPLICABLE RULES, REGULATIONS AND WATER QUALITY GUIDELINES AND MAY NEED TO INSTALL ADDITIONAL CONTROLS.

19.

THE CONTRACTOR SHALL BE REQUIRED TO RESPOND TO ALL WATER MANAGEMENT DISTRICT INQUIRIES, RELATIVE TO COMPLIANCE OF SFWMD FOR EROSION AND SEDIMENTATION CONTROL. THE COST OF THIS COMPLIANCE SHALL BE PART OF THE CONTRACT.

20.

THESE PLANS INCLUDING THE POLLUTION PREVENTION PLAN INDICATE THE MINIMUM EROSION & SEDIMENT CONTROL MEASURES REQUIRED FOR THIS PROJECT. FOR ADDITIONAL INFORMATION ON SEDIMENT AND EROSION CONTROL REFER TO "THE FLORIDA DEVELOPMENT MANUAL - A GUIDE TO SOUND LAND AND WATER MANAGEMENT" FROM THE STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (F.D.E.P.) CHAPTER 6. CONTRACTOR SHALL PROVIDE EROSION PROTECTION AND TURBIDITY CONTROL AS REQUIRED TO INSURE CONFORMANCE TO STATE AND FEDERAL WATER QUALITY STANDARDS AND MAY NEED TO INSTALL ADDITIONAL CONTROLS TO CONFORM TO AGENCIES REQUIREMENTS. IF A WATER QUALITY VIOLATION OCCURS. THE CONTRACTOR SHALL BE WHOLLY RESPONSIBLE FOR ALL DAMAGE AND ALL COSTS WHICH MAY RESULT INCLUDING LEGAL FEES, CONSULTANT FEES, CONSTRUCTION COSTS, AND FINES.

21.

48 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR WILL SUBMIT A "NOTICE OF INTENT" TO THE EPA IN ACCORDANCE WITH NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM RULES AND REGULATIONS. (FOR ANY CONSTRUCTION NOT COVERED BY THE OWNER'S "NOTICE OF INTENT" PERMIT).

22.

CONTRACTOR TO "WATER" GROUND REGULARLY TO PREVENT DUST AND OTHER DEBRIS.

KEY PLAN (NOT TO SCALE):

BLOCK 12
AMENDED PLAT OF
SUNSET LAKE SUBDIVISION
(PLAT BOOK 8, PAGE 52)

LOT 1

EXISTING BUILDING

SUNSET LAKE
(PLAT BOOK 8, PAGE 52)

N

SUNSET LAKE

5.5' HIGH CSB WALL

PROP. TREE PROTECTION FENCE

PROP. TREE PROTECTION FENCE

LANDSCAPE AREA

BRICK DRIVEWAY

LANDSCAPE AREA

GRASS

2" VALLEY GUTTER

5' CONCRETE SIDEWALK

60' PUBLIC RIGHT-OF-WAY

20' ASPHALT PAVEMENT

5' CONCRETE SIDEWALK

PROP. CONSTRUCTION ENTRANCE (50-FT MIN. LENGTH)

PROP. SILT FENCE

5' CONCRETE SIDEWALK

GRASS

ASPHALT PARKING

5' CONCRETE SIDEWALK

2" VALLEY GUTTER

100' PUBLIC RIGHT-OF-WAY

20' ASPHALT PAVEMENT

PROP. SILT FENCE

WARNING PAD

5' CONCRETE SIDEWALK

PROP. SILT FENCE

50.00'

5.5' HIGH CSB WALL

5' CONCRETE SIDEWALK

GRASS

2" VALLEY GUTTER

50.00'

100' PUBLIC RIGHT-OF-WAY

20' ASPHALT PAVEMENT

WARNING PAD

5' CONCRETE SIDEWALK

60' PUBLIC RIGHT-OF-WAY

20' ASPHALT PAVEMENT

PROP. TREE PROTECTION FENCE

50.00'

5.5' HIGH CSB WALL

5' CONCRETE SIDEWALK

GRASS

2" VALLEY GUTTER

50.00'

100' PUBLIC RIGHT-OF-WAY

20' ASPHALT PAVEMENT

WARNING PAD

5' CONCRETE SIDEWALK

60' PUBLIC RIGHT-OF-WAY

20' ASPHALT PAVEMENT

PROP. TREE PROTECTION FENCE

50.00'

5.5' HIGH CSB WALL

5' CONCRETE SIDEWALK

GRASS

2" VALLEY GUTTER

50.00'

100' PUBLIC RIGHT-OF-WAY

20' ASPHALT PAVEMENT

WARNING PAD

5' CONCRETE SIDEWALK

60' PUBLIC RIGHT-OF-WAY

20' ASPHALT PAVEMENT

PROP. TREE PROTECTION FENCE

50.00'

5.5' HIGH CSB WALL

5' CONCRETE SIDEWALK

GRASS

2" VALLEY GUTTER

50.00'

100' PUBLIC RIGHT-OF-WAY

20' ASPHALT PAVEMENT

WARNING PAD

5' CONCRETE SIDEWALK

60' PUBLIC RIGHT-OF-WAY

20' ASPHALT PAVEMENT

PROP. TURBIDITY BARRIER TO EXTEND 10-FT PASS EXISTING RIPRAP PER CMB REQUIREMENTS. SEE DETAIL 9-1 AND DETAIL 9-2 ON SHEET C-17

50.00'

5.5' HIGH CSB WALL

5' CONCRETE SIDEWALK

GRASS

2" VALLEY GUTTER

50.00'

100' PUBLIC RIGHT-OF-WAY

20' ASPHALT PAVEMENT

WARNING PAD

5' CONCRETE SIDEWALK

60' PUBLIC RIGHT-OF-WAY

20' ASPHALT PAVEMENT

PROP. TURBIDITY BARRIER TO EXTEND 10-FT PASS EXISTING RIPRAP PER CMB REQUIREMENTS. SEE DETAIL 9-1 AND DETAIL 9-2 ON SHEET C-17

50.00'

5.5' HIGH CSB WALL

5' CONCRETE SIDEWALK

GRASS

2" VALLEY GUTTER

50.00'

100' PUBLIC RIGHT-OF-WAY

20' ASPHALT PAVEMENT

WARNING PAD

5' CONCRETE SIDEWALK

60' PUBLIC RIGHT-OF-WAY

20' ASPHALT PAVEMENT

PROP. TURBIDITY BARRIER TO EXTEND 10-FT PASS EXISTING RIPRAP PER CMB REQUIREMENTS. SEE DETAIL 9-1 AND DETAIL 9-2 ON SHEET C-17

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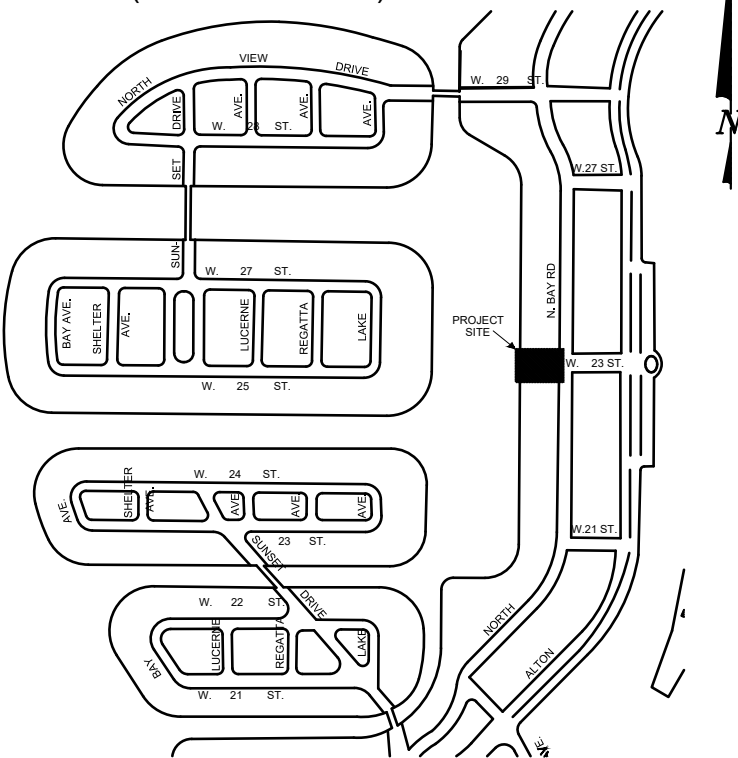
PLAN

SCALE: NOT TO SCALE

NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF BMP'S TO MAKE SURE THEY ARE FUNCTIONING AS DESIGNED AT ALL TIMES.
2. ALL INSTALLATIONS AND MAINTENANCE SHALL BE CONDUCTED IN ACCORDANCE WITH THE SPECIFICATION AND ALL LOCAL, STATE, AND FEDERAL REGULATIONS. IN THE EVENT OF A DISCREPANCY, THE MORE STRINGENT REQUIREMENT WILL TAKE PRECEDENCE.
3. THE BMP STRUCTURES SHALL BE INSPECTED AFTER EACH RAINFALL AND REPAIRS MUST BE MADE AS NEEDED.
4. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH RAINFALL. SEDIMENT MUST BE REMOVED WHEN THE LEVEL OF DEPOSITION REACHES APPROXIMATELY ONE-HALF THE HEIGHT, OR ONE-HALF THE STORAGE VOLUME, OF THE BARRIER.
5. TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT MUST BE LOCATED AT POINTS WHERE WORK VEHICLES ENTER AND LEAVE A CONSTRUCTION SITE.
6. TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT SHALL BE CONSTRUCTED WITH A MINIMUM 6-INCH LAYER OF FDOT NO. 1 COARSE AGGREGATE, 1-1/2" TO 3-1/2" AND MUST EXTEND THE FULL WIDTH OF THE VEHICULAR INGRESS AND EGRESS AREA.
7. TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT SHALL BE AT LEAST 50-FEET IN LENGTH.
8. THE EXIT SHALL WIDEN AT ITS CONNECTION TO THE ROADWAY TO ACCOMMODATE THE TURNING RADIUS OF LARGE TRUCKS.

KEY PLAN (NOT TO SCALE):



P.E. SEAL:

Steven S. Eagle, P.E.
Civil Engineer
State of Florida - License No. 43684

MIAMI BEACH

PUBLIC WORKS DEPARTMENT
1700 CONVENTION CENTER DRIVE, MIAMI BEACH, FL 33139

CITY MANAGER: ALINA T. HUDAK
DIRECTOR: JOSE GOMEZ, P.E., F.FES
CITY ENGINEER: CRISTINA ORTEGA CASTINEIRAS, P.E.

5				
4				
3				
2				
1				
NO.	DATE	REVISION	APP'D. BY	



Nova Consulting, Inc.
10486 NW 31st Terrace, Doral, FL 33172

ENGINEER OF RECORD:
STEVEN EAGLE, P.E.
P.E. NO. PE43684

ENGINEER OF RECORD: SE
DESIGN ENGINEER: BDM
DRAWN BY: RL
CHECKER: LLB
SCALE: NOT TO SCALE

NEIGHBORHOOD:

PUMP STATION 24 AT LOWER N BAY RD

TITLE:

EROSION AND SEDIMENT CONTROL PLAN

File Name: C-13.dwg

Survey Reference:

Field Book: 961 Page: 19-25 Work Order: WO3154

Date: JAN 2024 Sheet: 16 of 38 Drawing: C-13

 MIAMI BEACH PUBLIC WORKS DEPARTMENT 1700 CONVENTION CENTER DRIVE, MIAMI BEACH, FL 33108	APPROVED	REVISED	TITLE:	DETAIL
	_____	<u>06/20/20</u> <u>06/20/20</u> _____	FILTER FABRIC JACKET	17-32

 MIAMI BEACH PUBLIC WORKS DEPARTMENT 1300 CONVENTION CENTER DRIVE, MIAMI BEACH, FL 33130	APPROVED	REVISED	TITLE	DETAIL
				VERTICAL SEPARATION AND JOINT SPACING AT CROSSING

 MIAMI BEACH PUBLIC WORKS DEPARTMENT 1700 CONVENT CENTER DRIVE, MIAMI BEACH, FL 33139	APPROVED	REVISED	TITLE	DETAIL
	_____	<u>09/20/20</u> <u>09/20/20</u> _____ _____	HORIZONTAL SEPARATION FOR PARALLEL MAINS	17-34

 MIAMI BEACH PUBLIC WORKS DEPARTMENT 1700 CONVENT CENTER DRIVE, MIAMI BEACH, FL 33139	APPROVED	REVISED	TITLE:	DETAIL
		06/20/20	EXCEPTIONS TO MINIMUM SPACING REQUIREMENTS	17-35

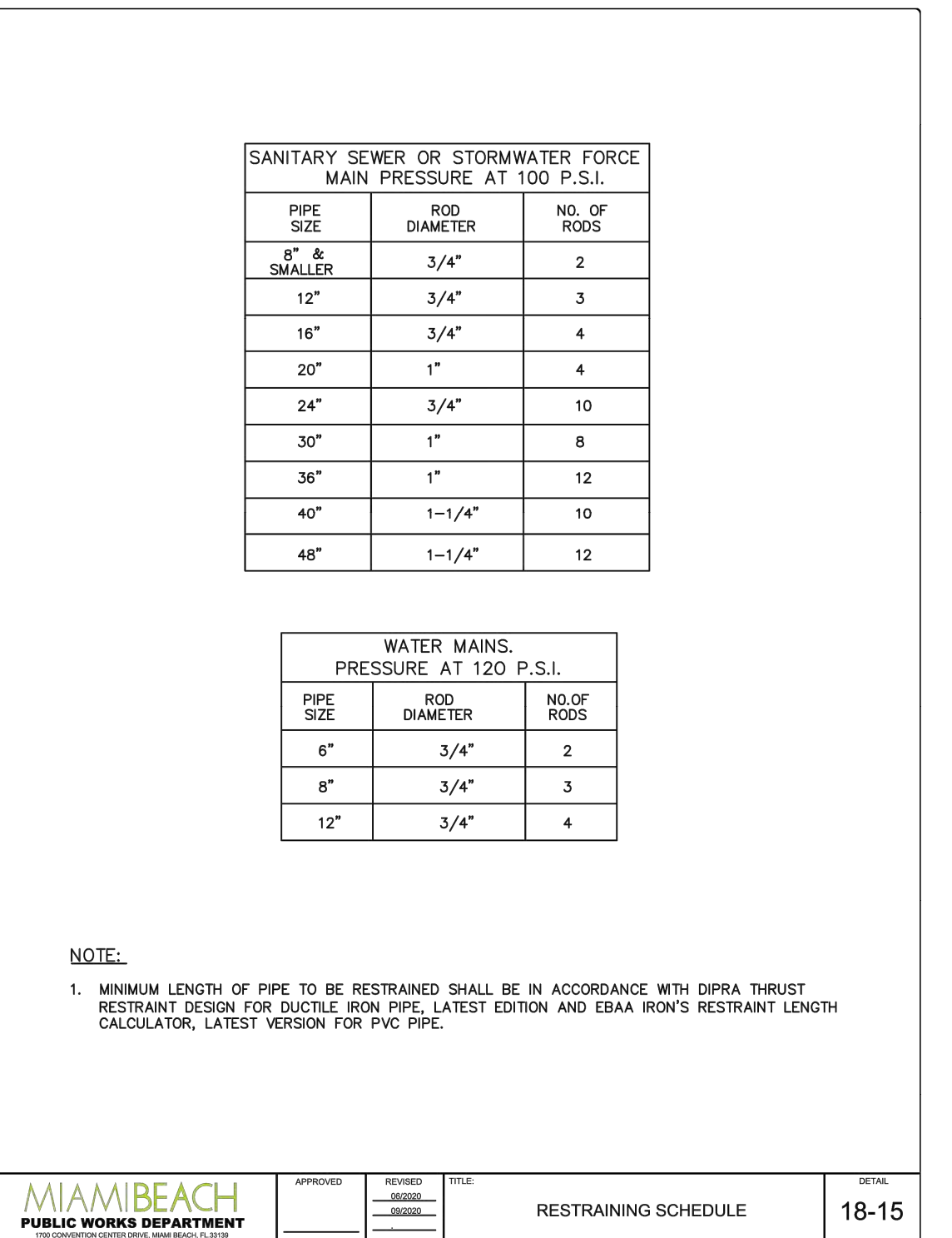
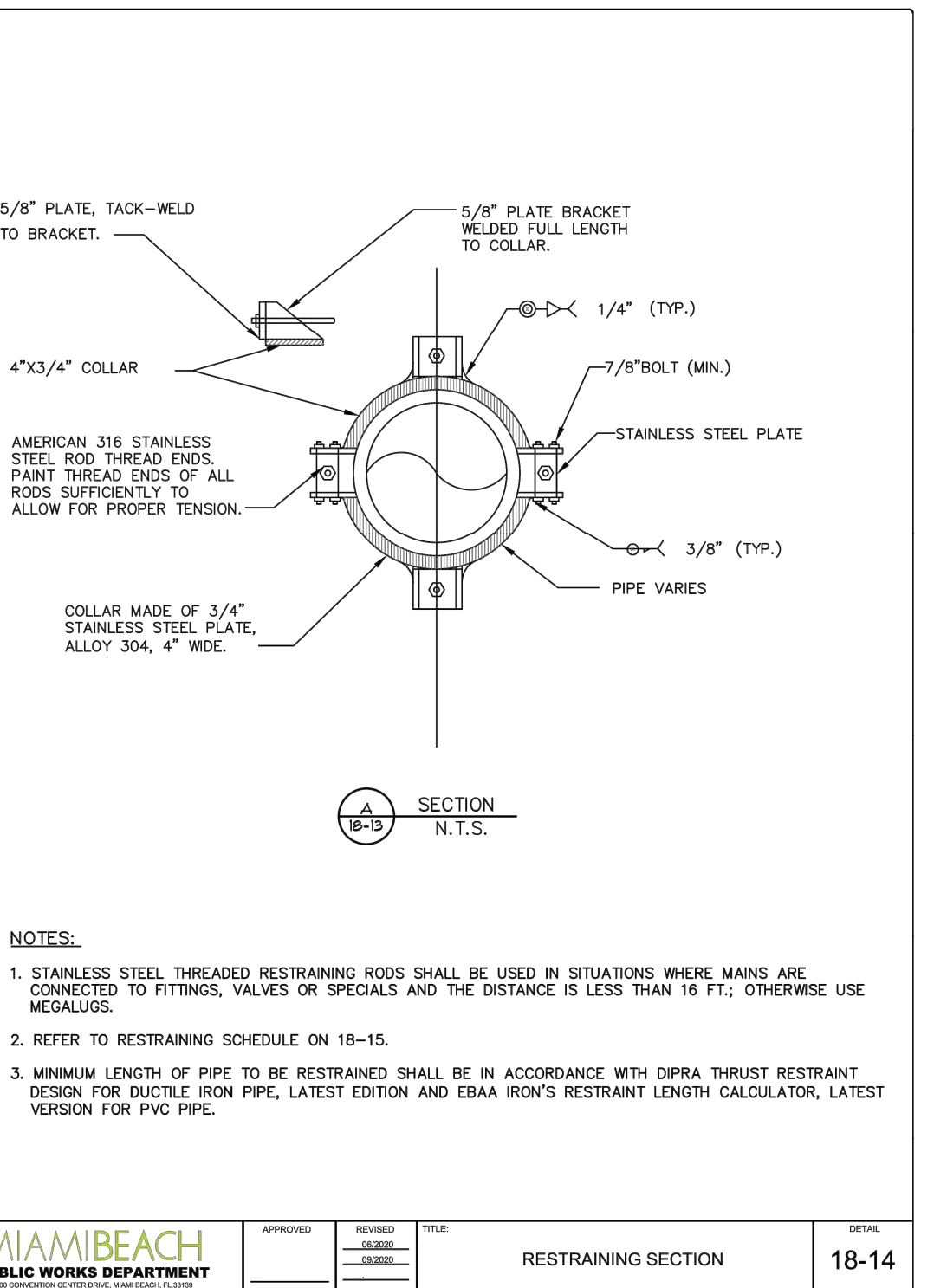
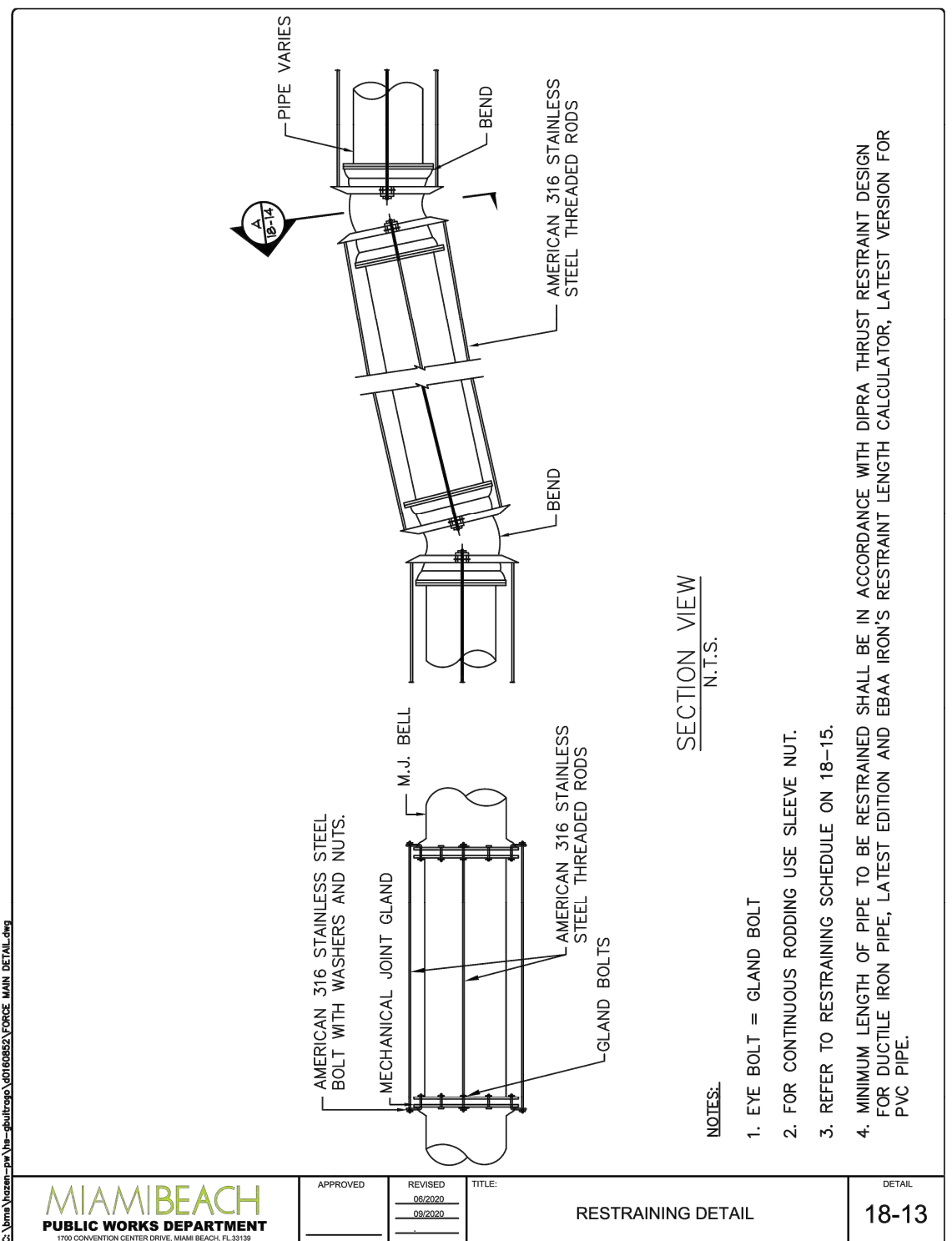
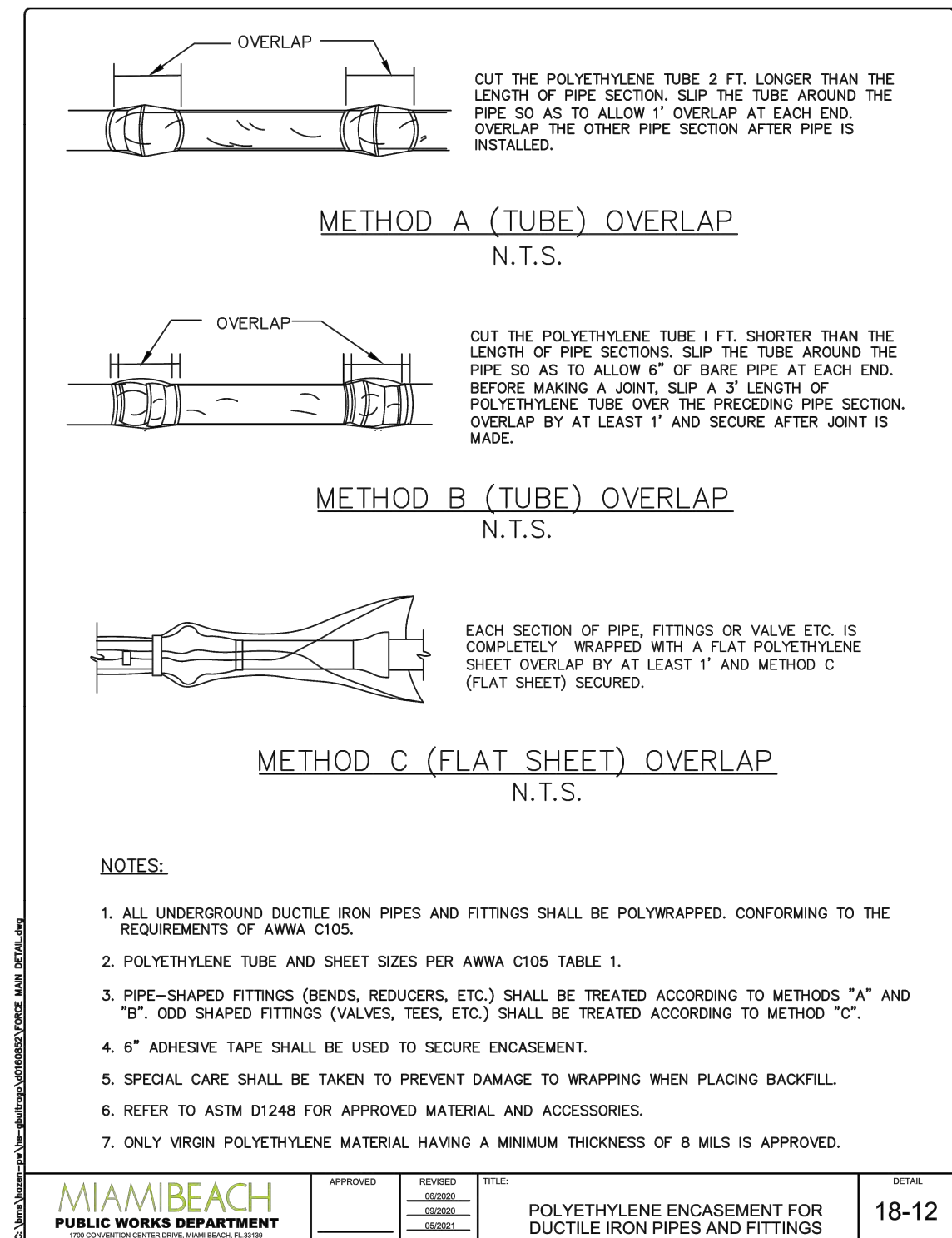
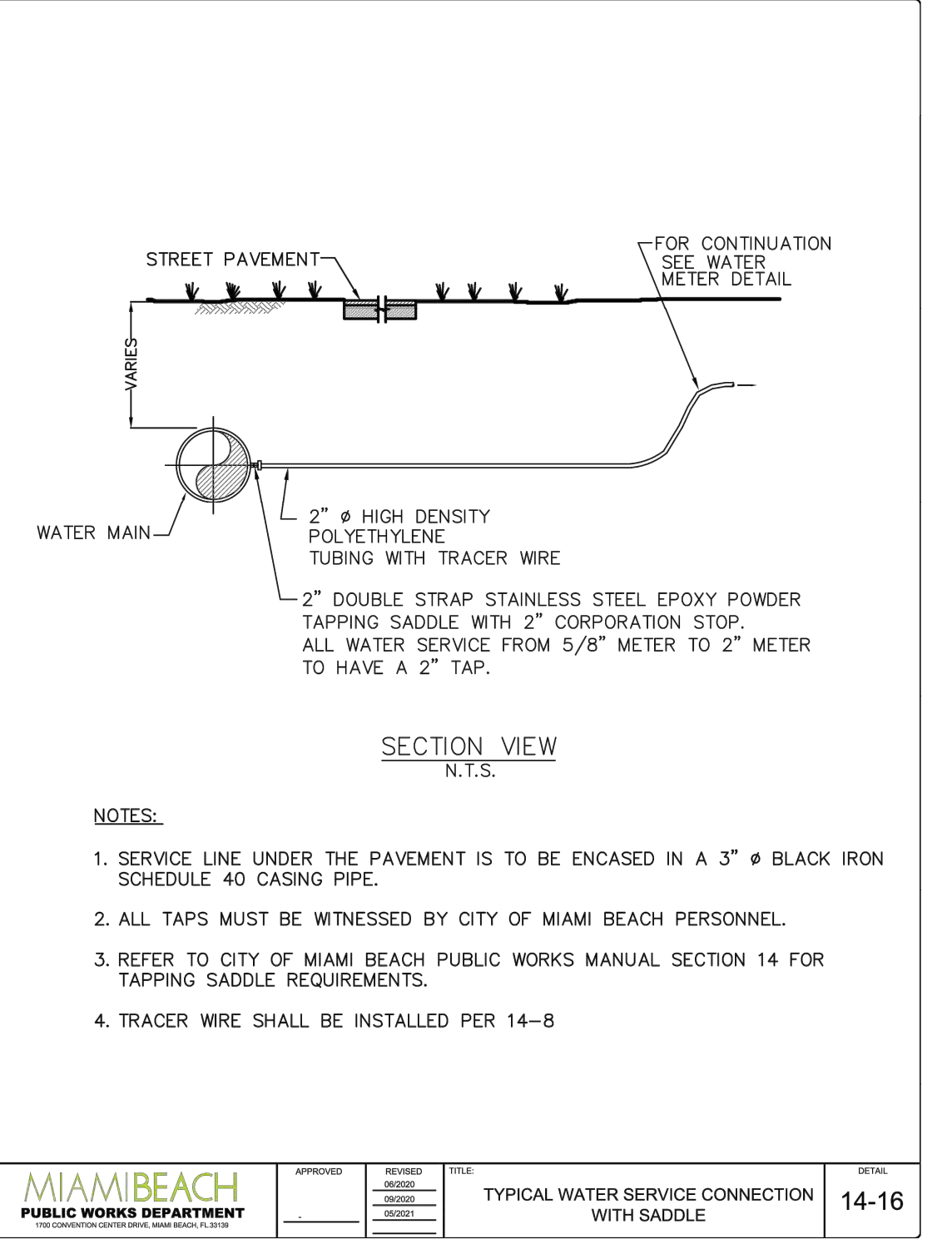
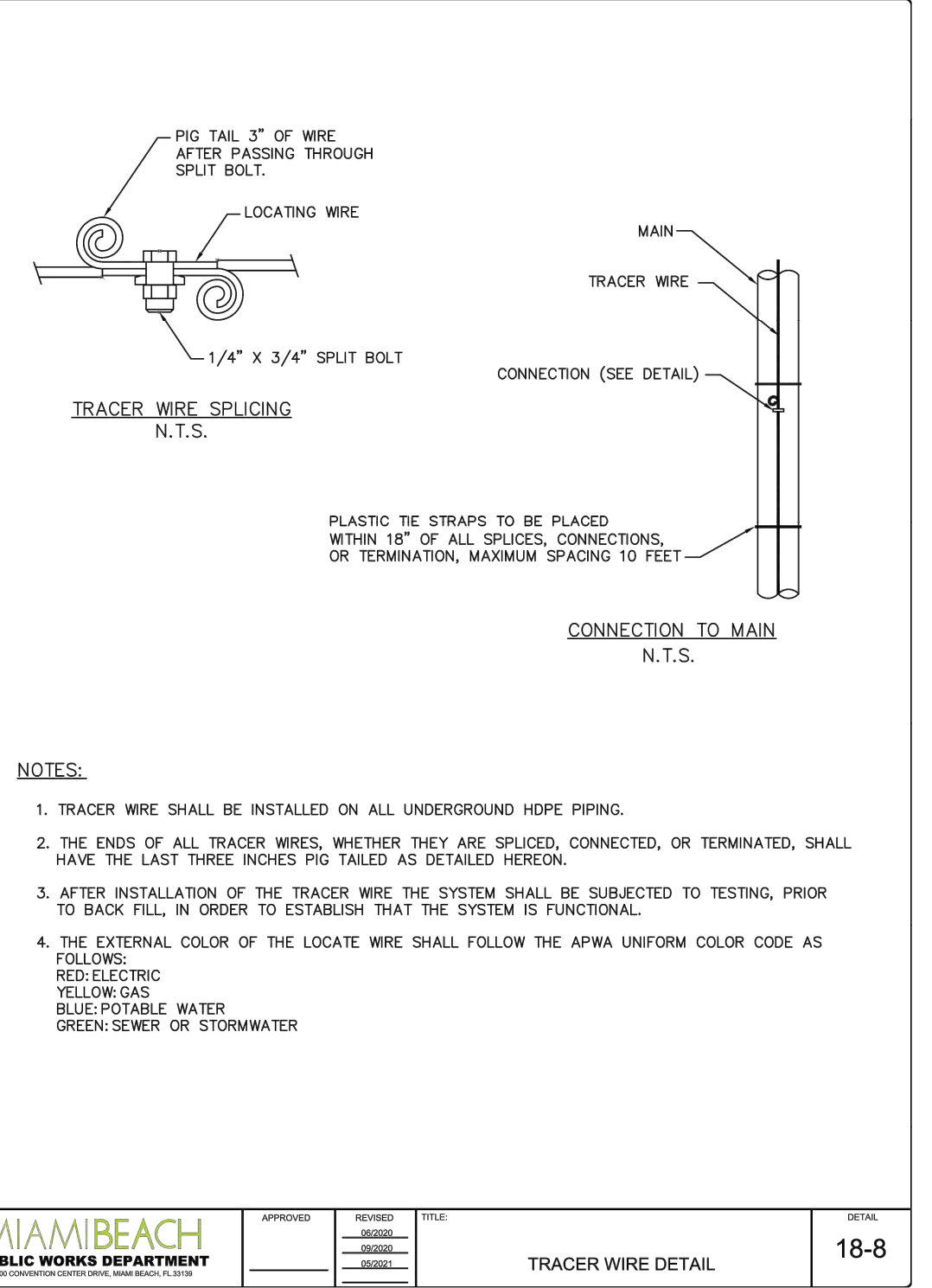
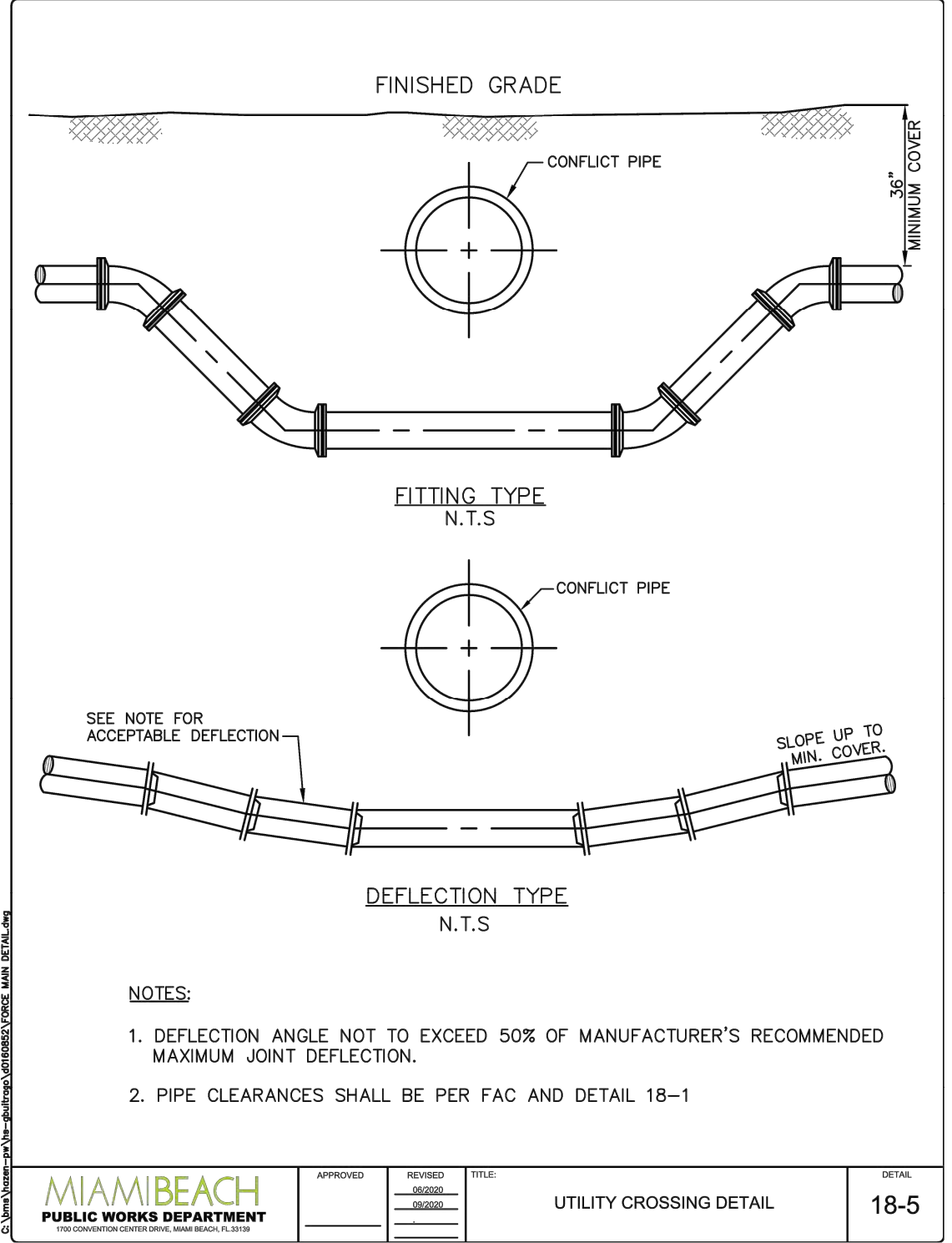
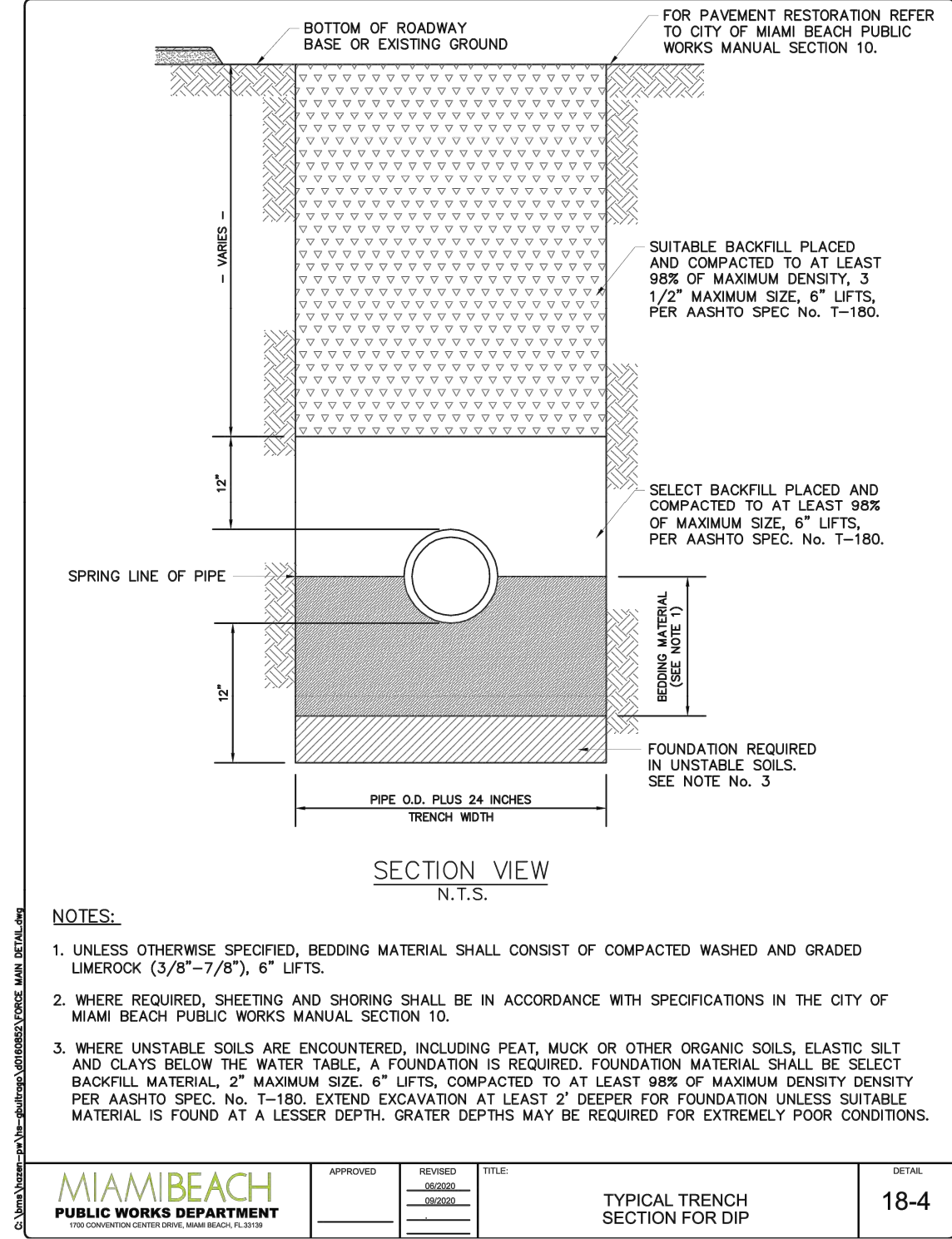
 MIAMI BEACH PUBLIC WORKS DEPARTMENT 2700-1000 CENTER DRIVE • MIAMI BEACH, FL 33135	APPROVED	REVISED	TITLE	DETAIL
		06/22/20	TYPICAL TRENCH SECTION FOR PVC PIPE	17-36

	APPROVED	REVISED	TITLE:	DETAIL
		09/20/20	REINFORCING CONCRETE SLAB FOR GROUND COVER LESS THAN 30 INCHES	17-37

	APPROVED	REVISED <u>08/2022</u> <u>08/2022</u>	TITLE:	DETAIL
			VALVE COLLAR DETAIL	18-9

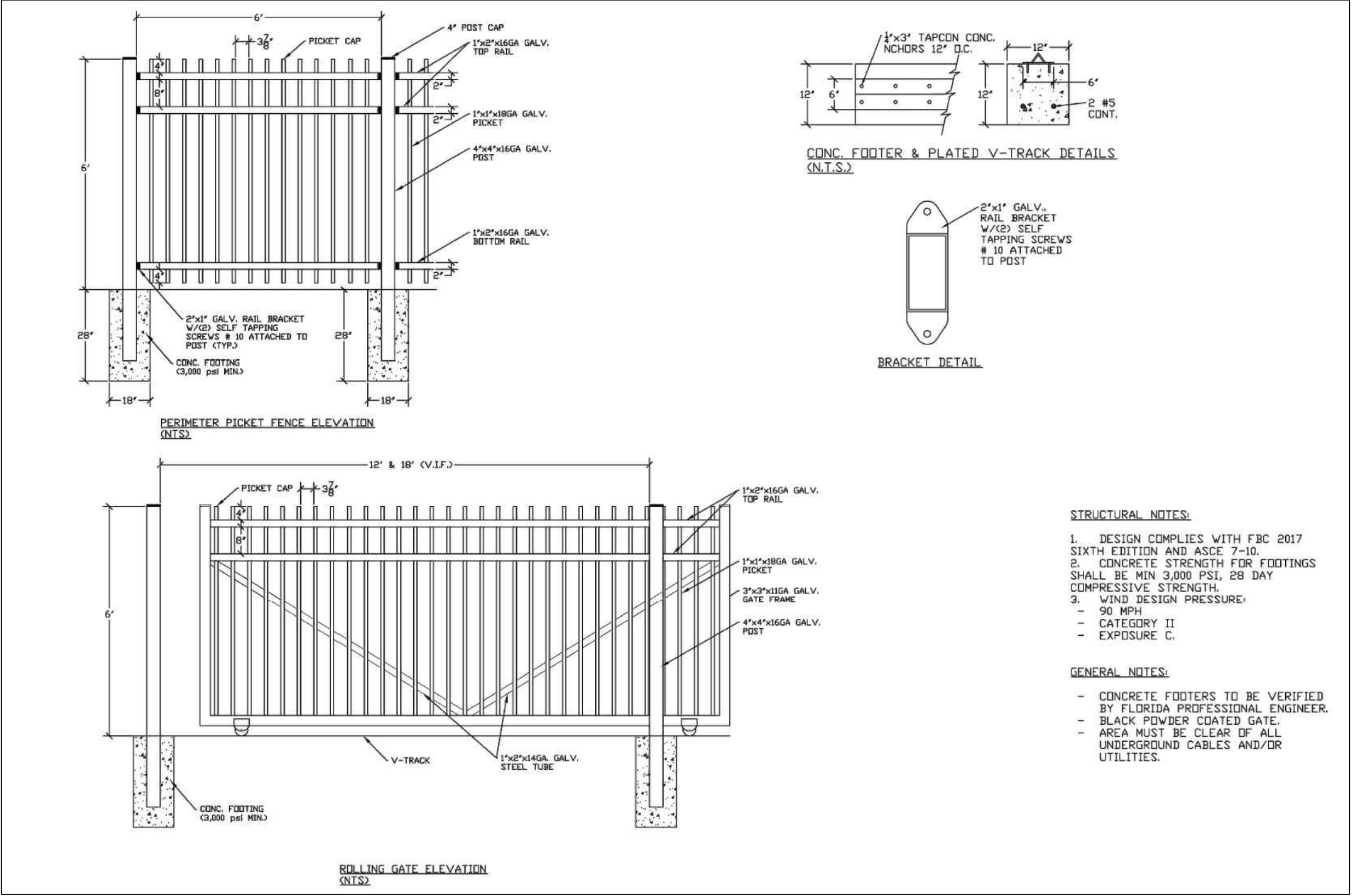
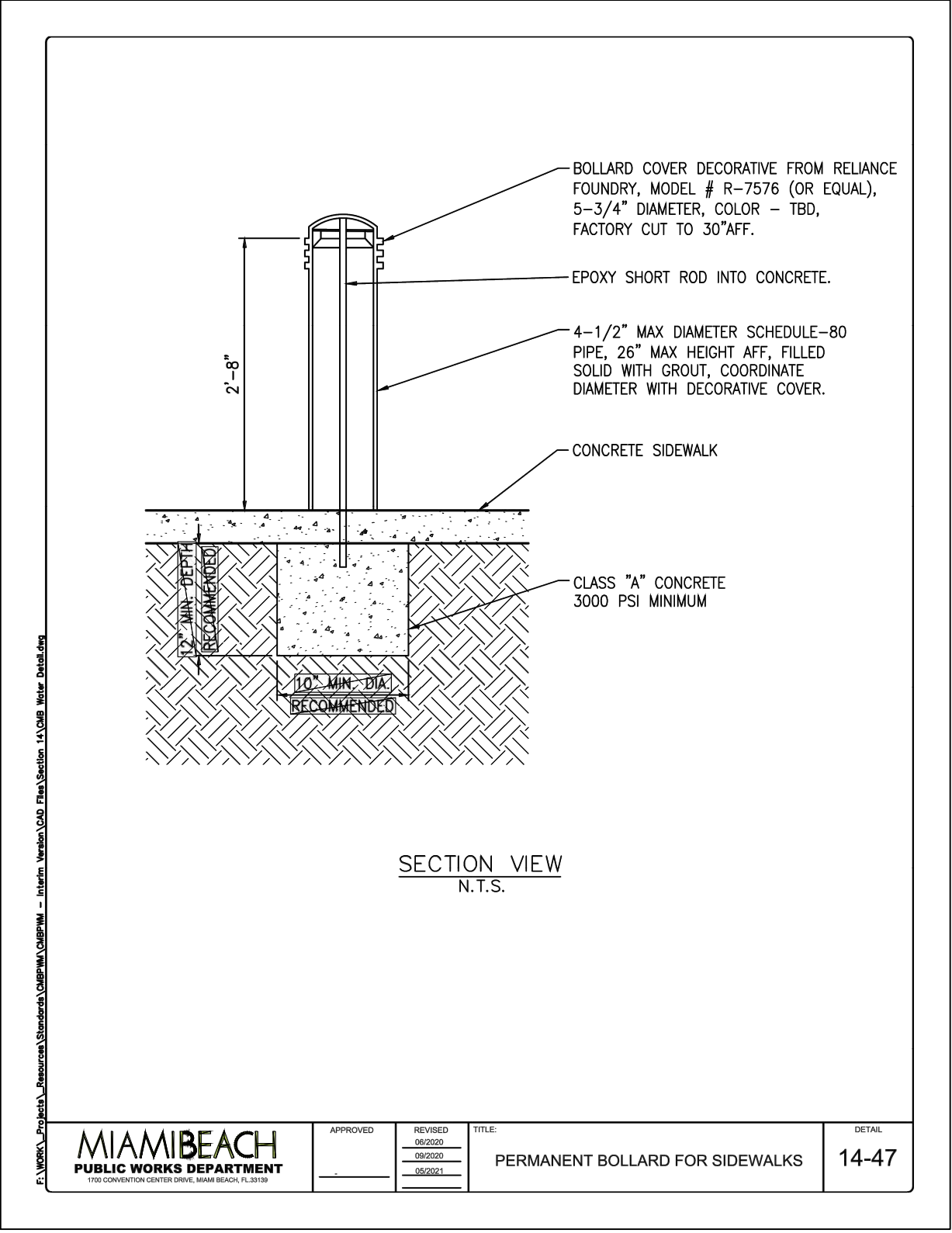
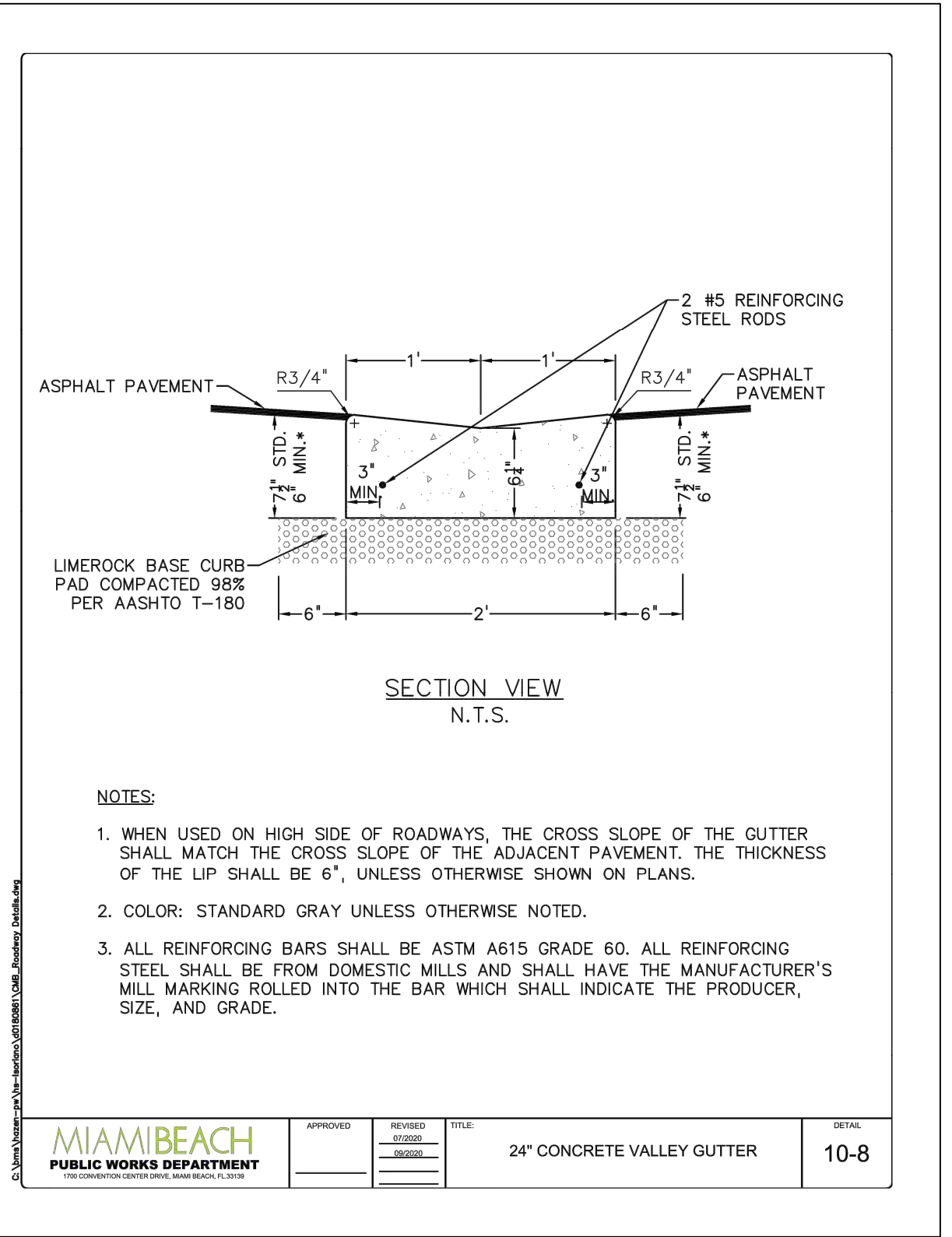
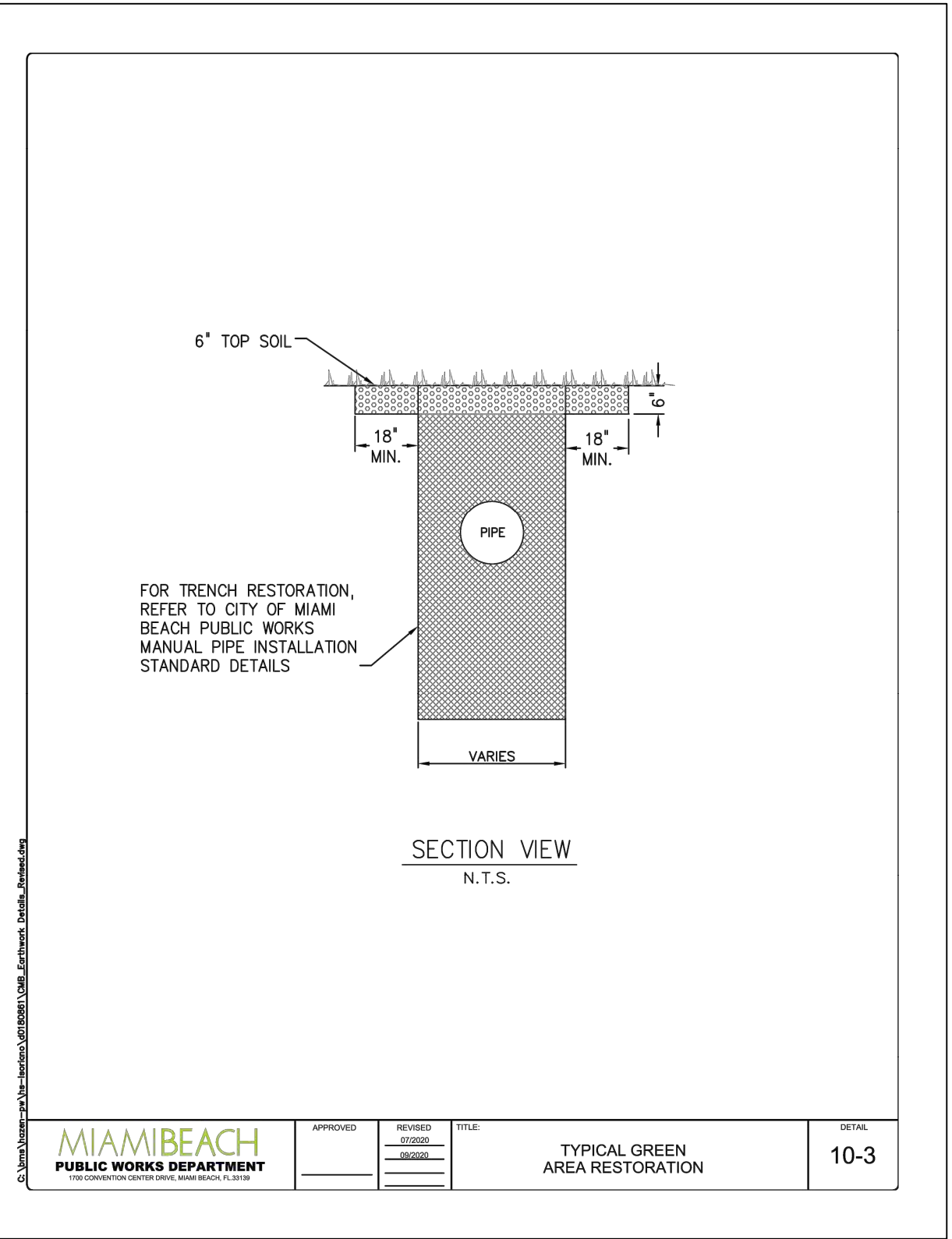
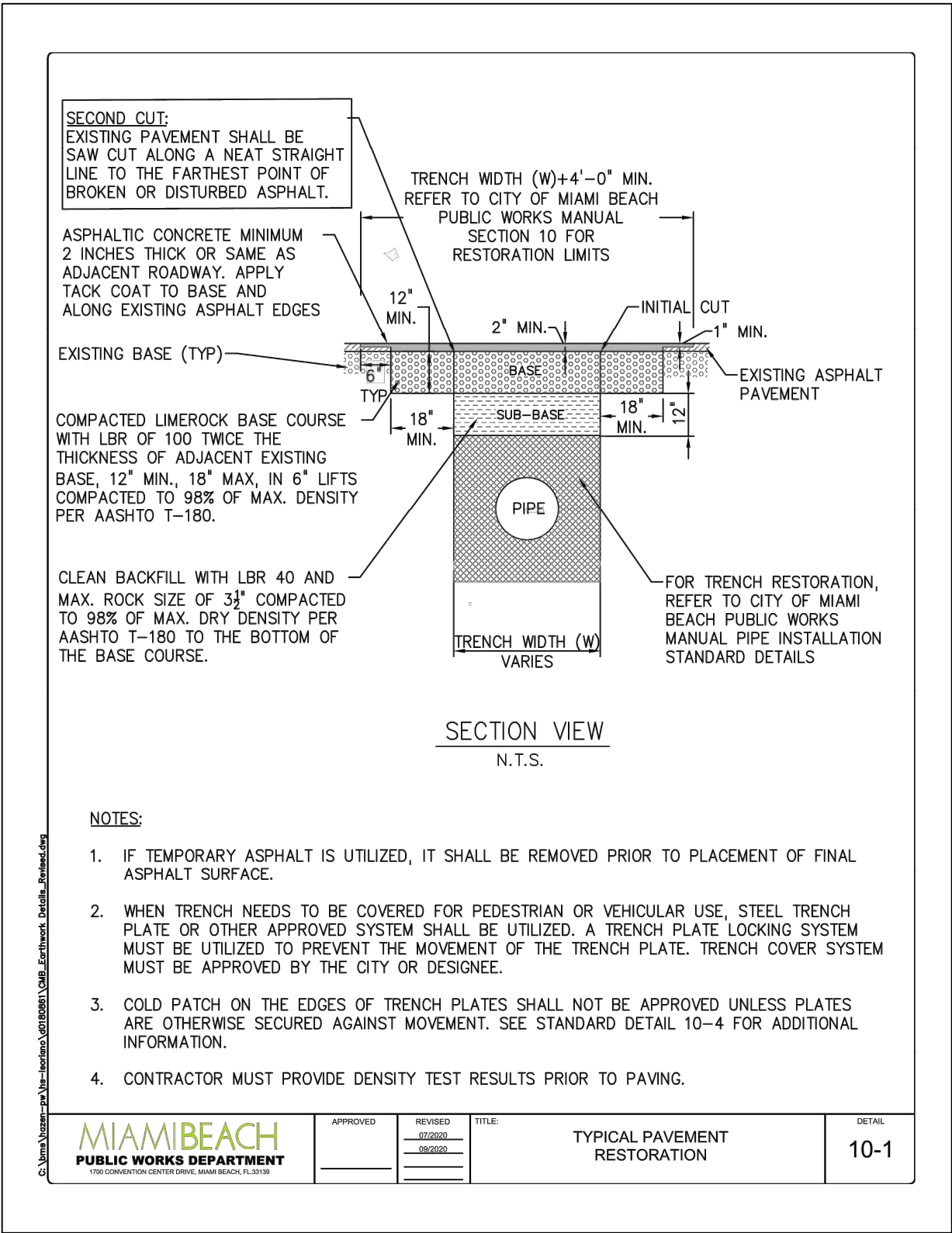
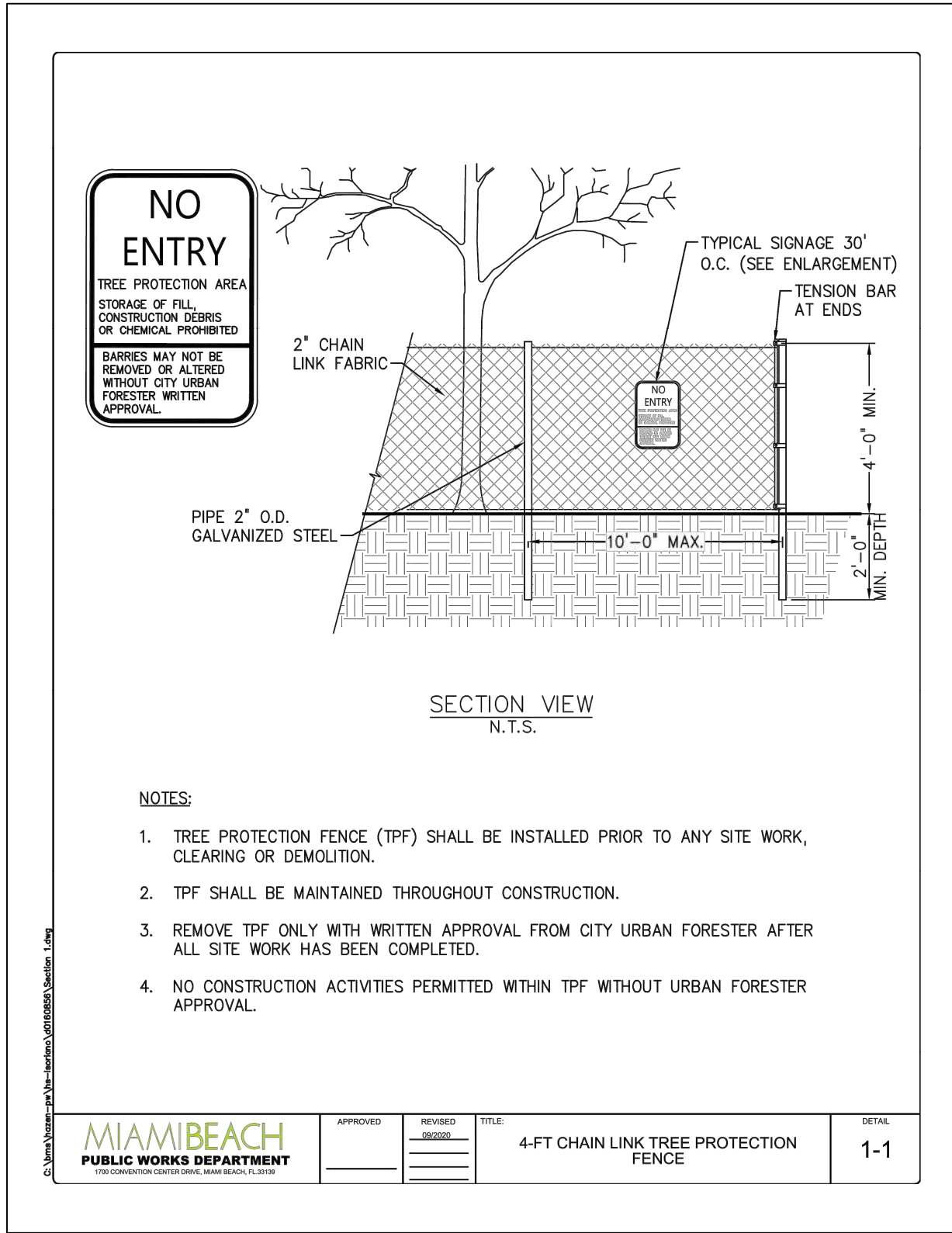
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		06/2020 06/2020		18-1

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Nova Consulting

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ENGINEER OF RECORD:
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PUMP STATION 24 AT LOWER N BAY RD

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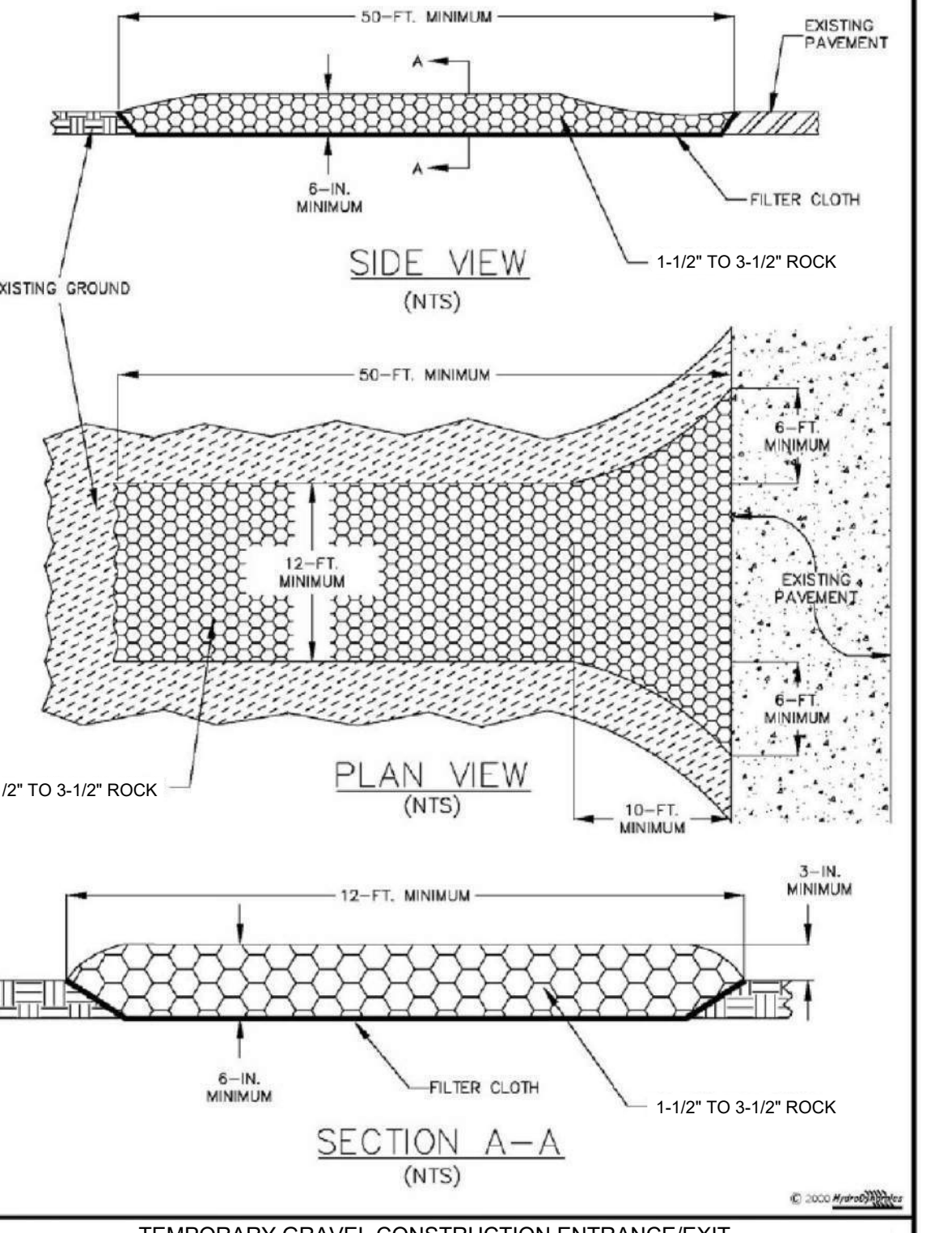
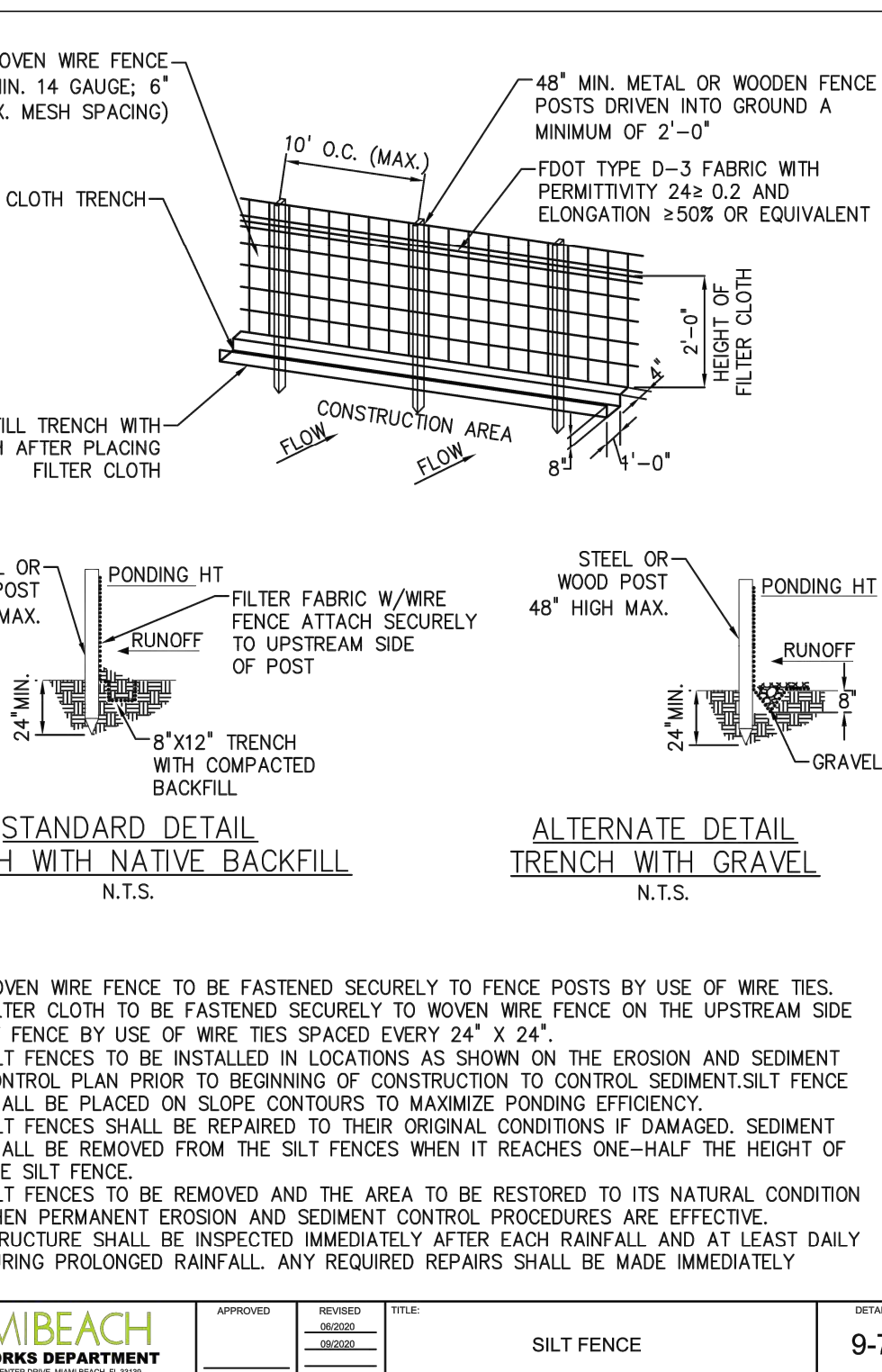
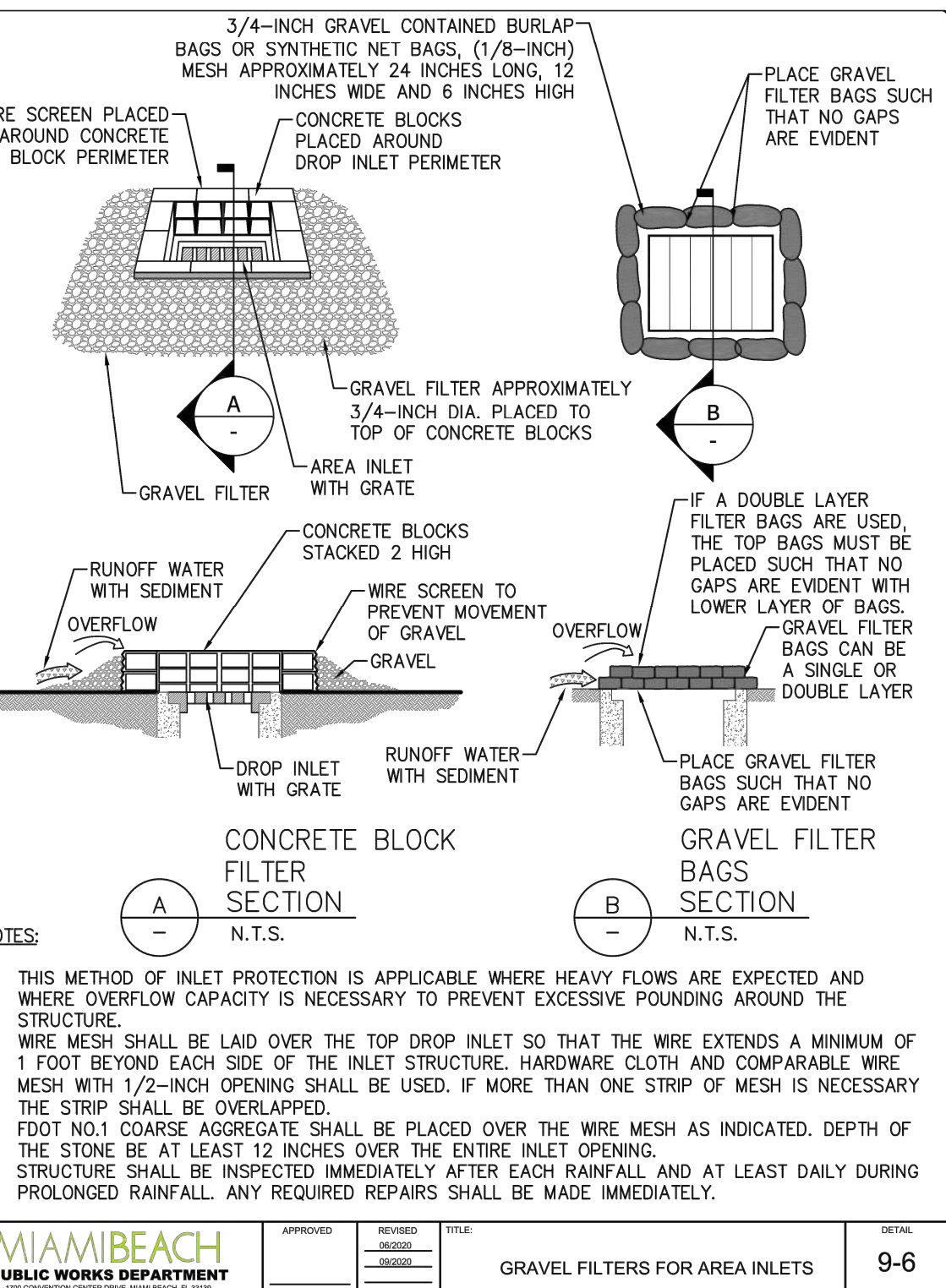
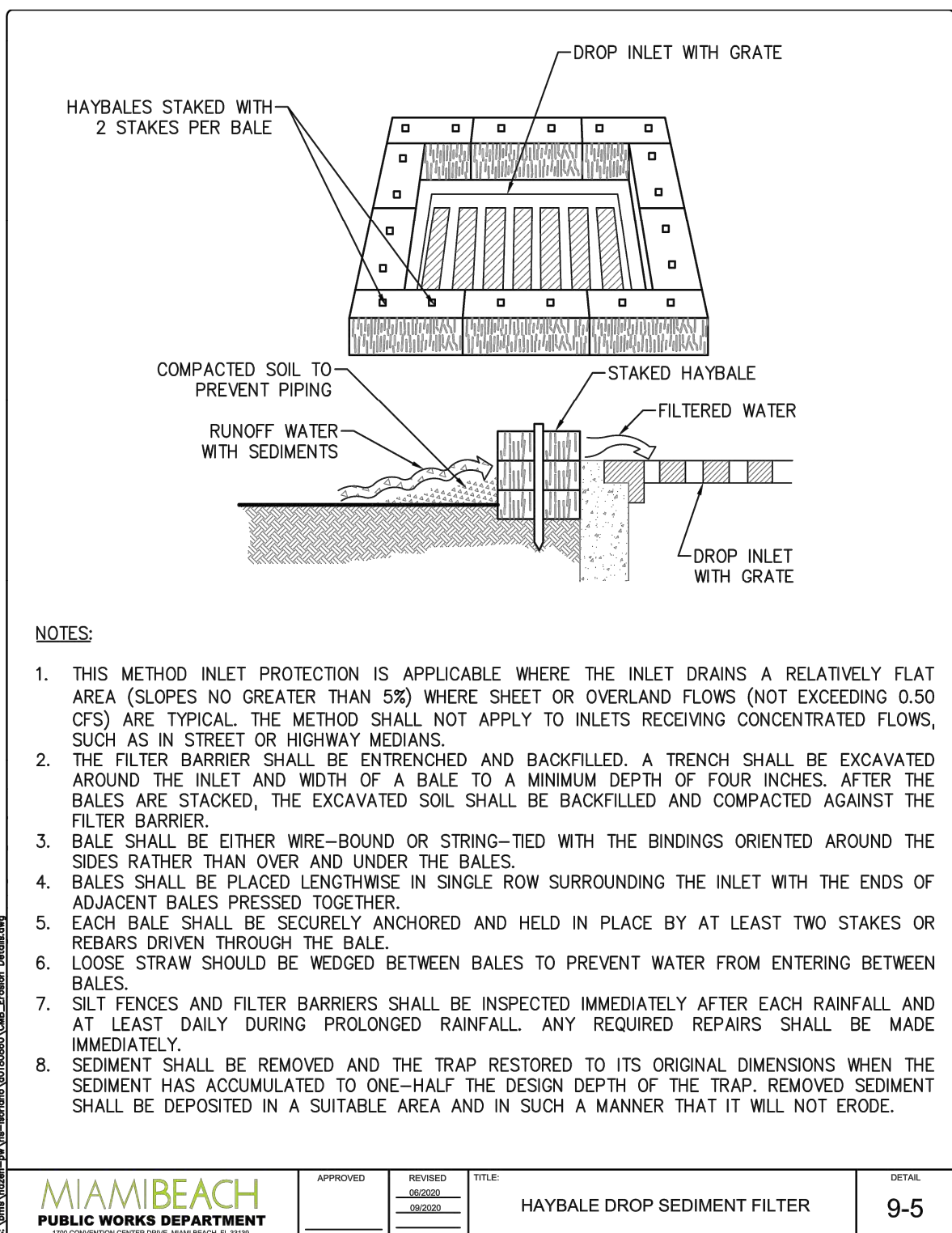
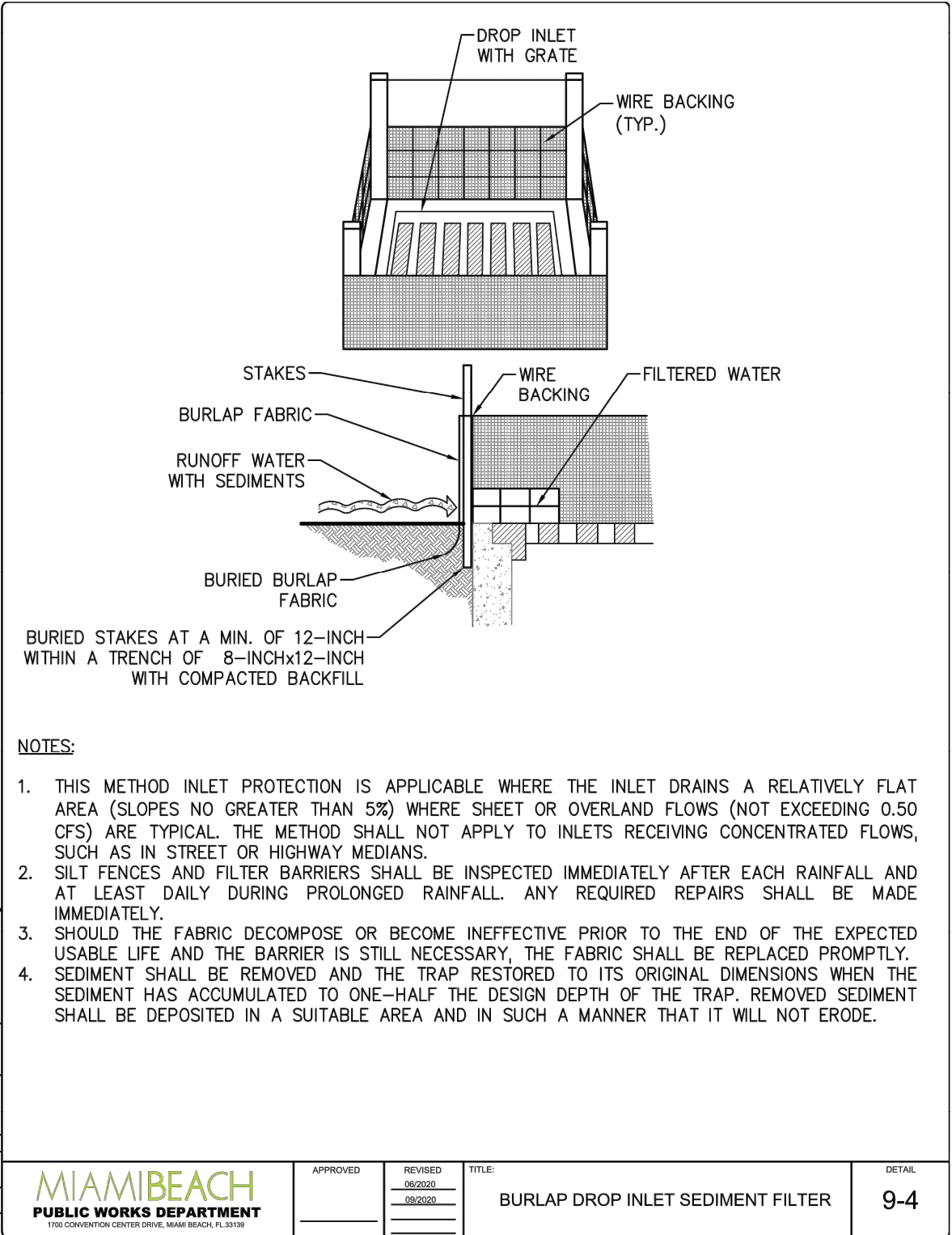
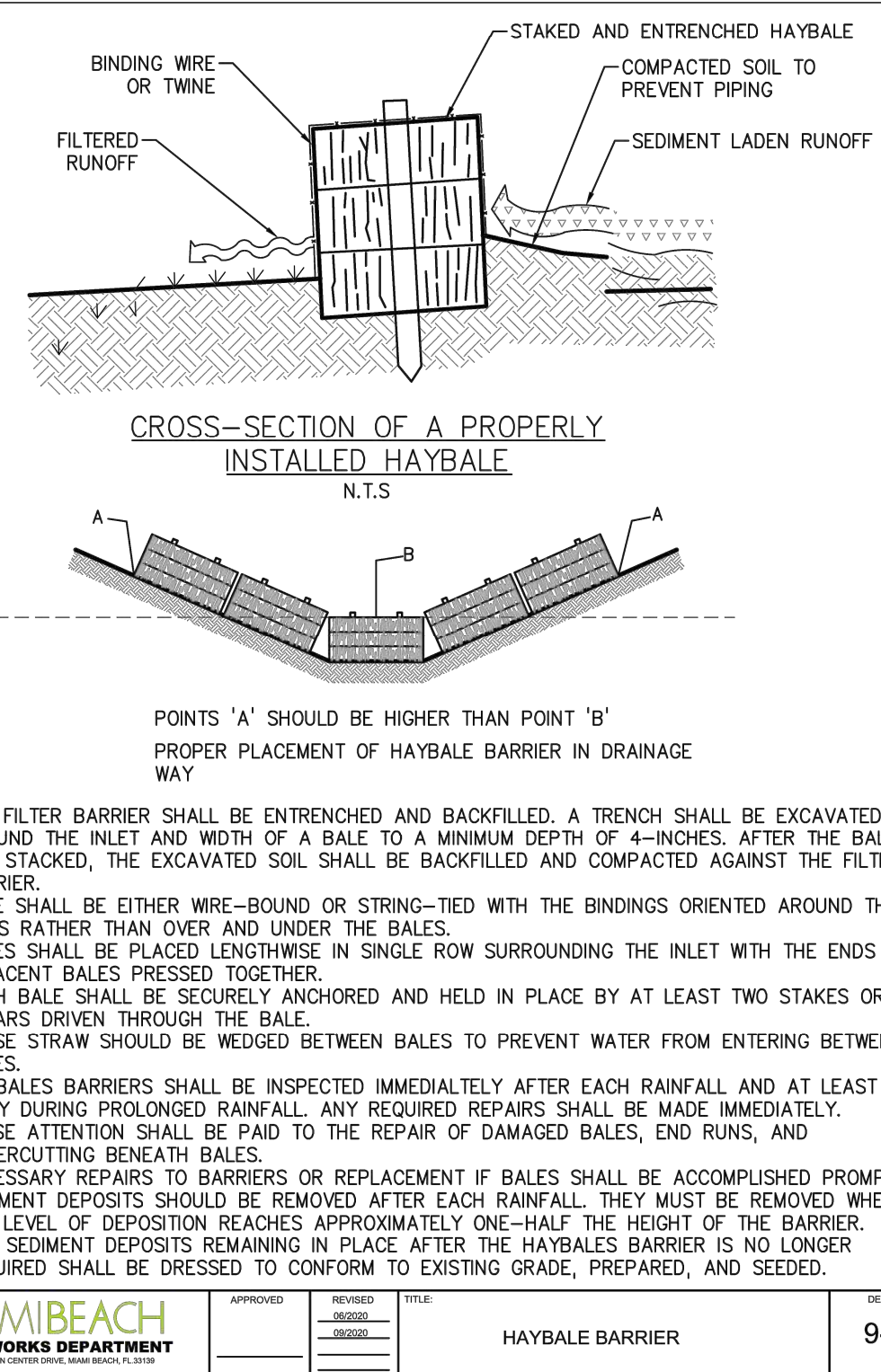
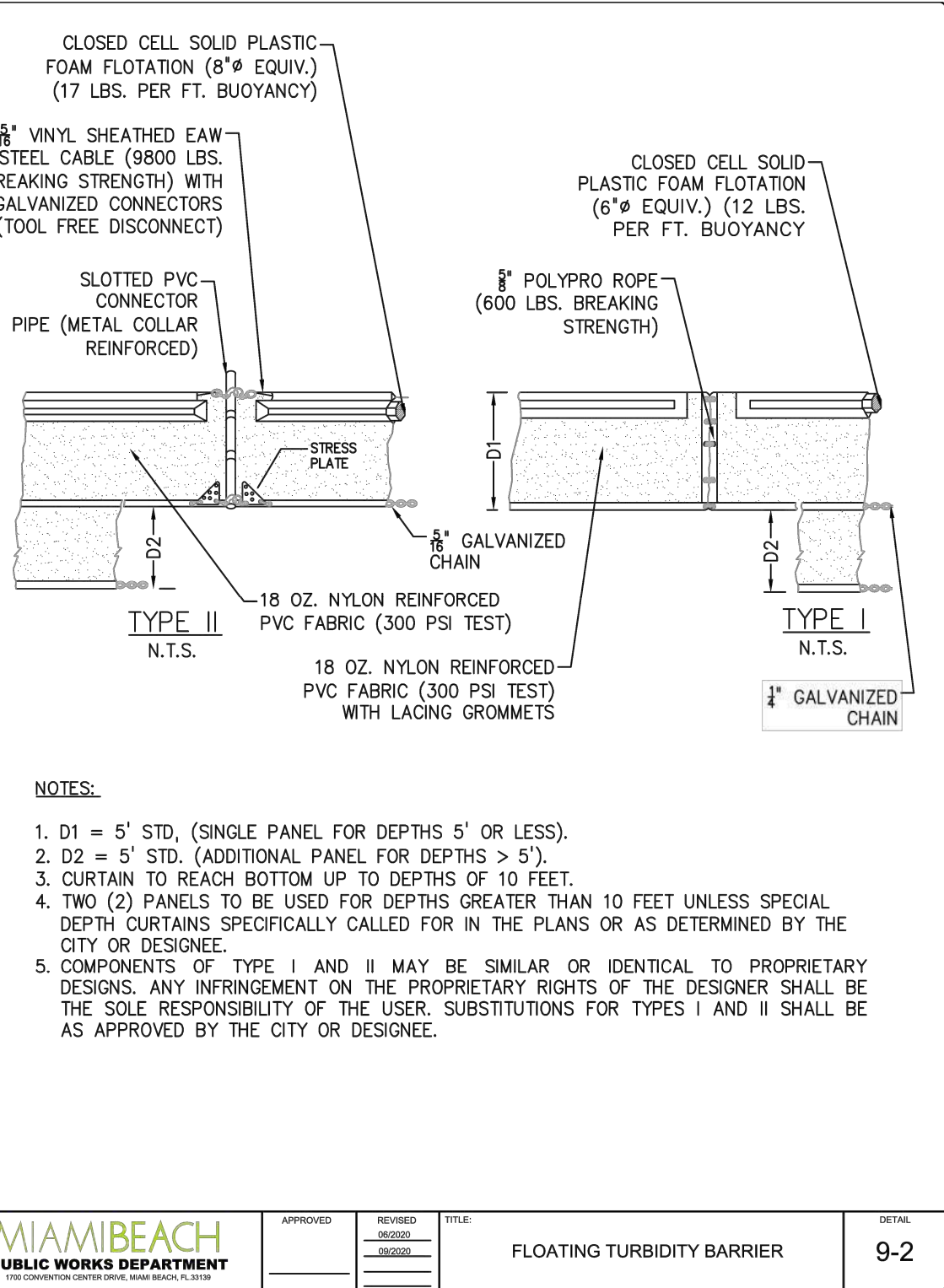
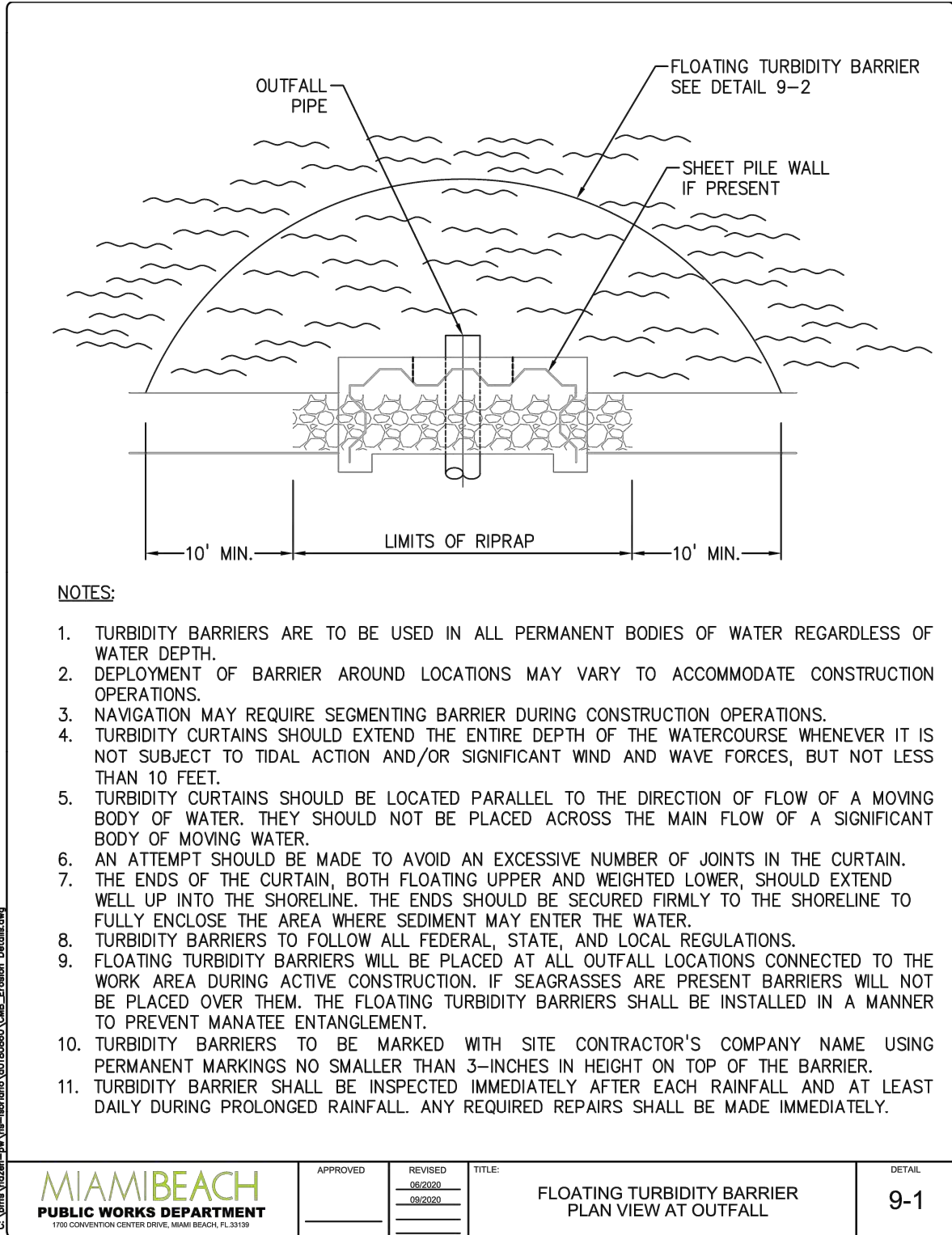
STANDARD DETAILS SHEET 3

File Name: C-16.dwg

Survey Reference:

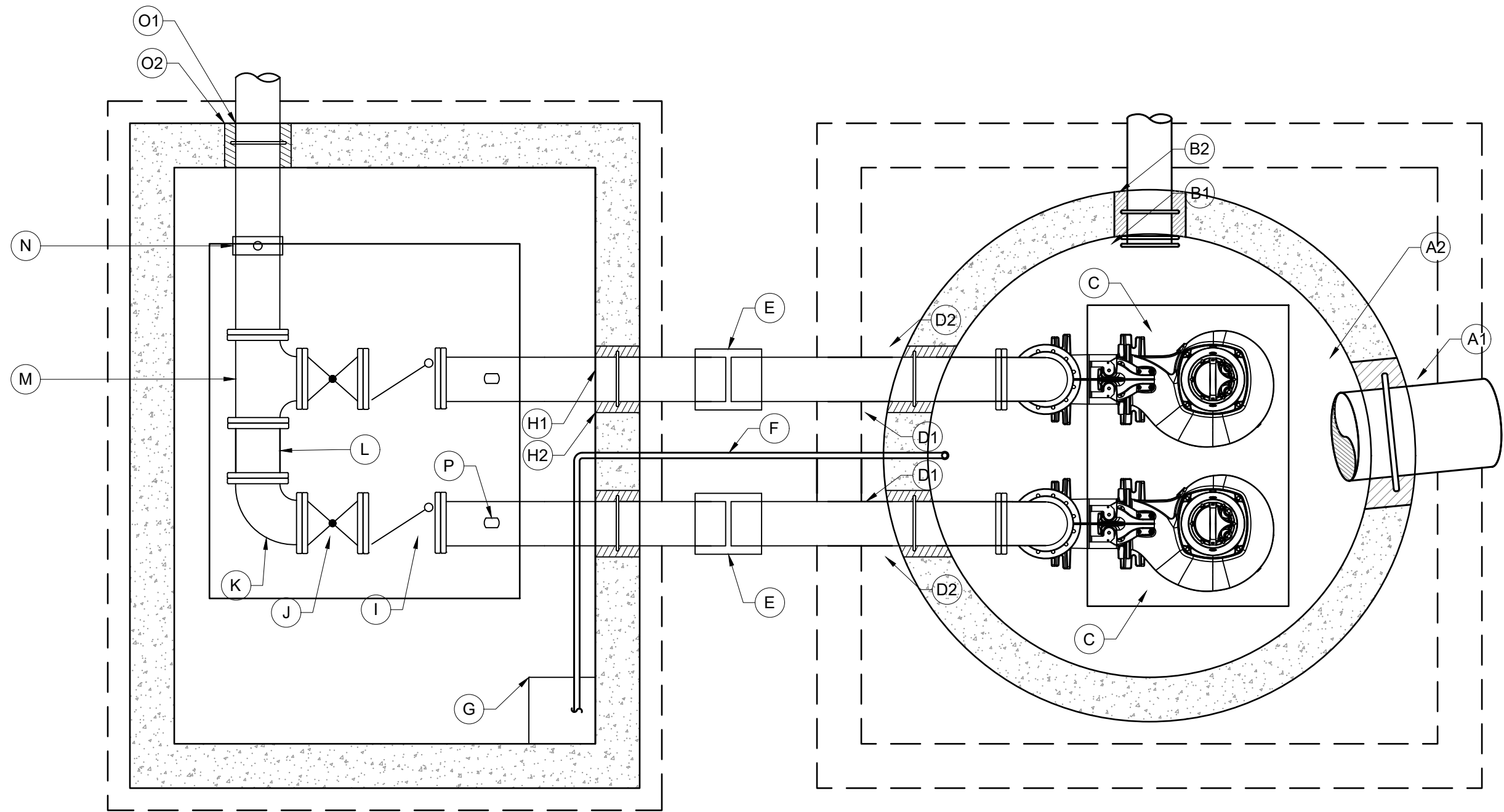
Field Book: 961 Page: 19-25 Work Order: WO3154

Date: JAN 2024 Sheet: 19 of 38 Drawing: C-16



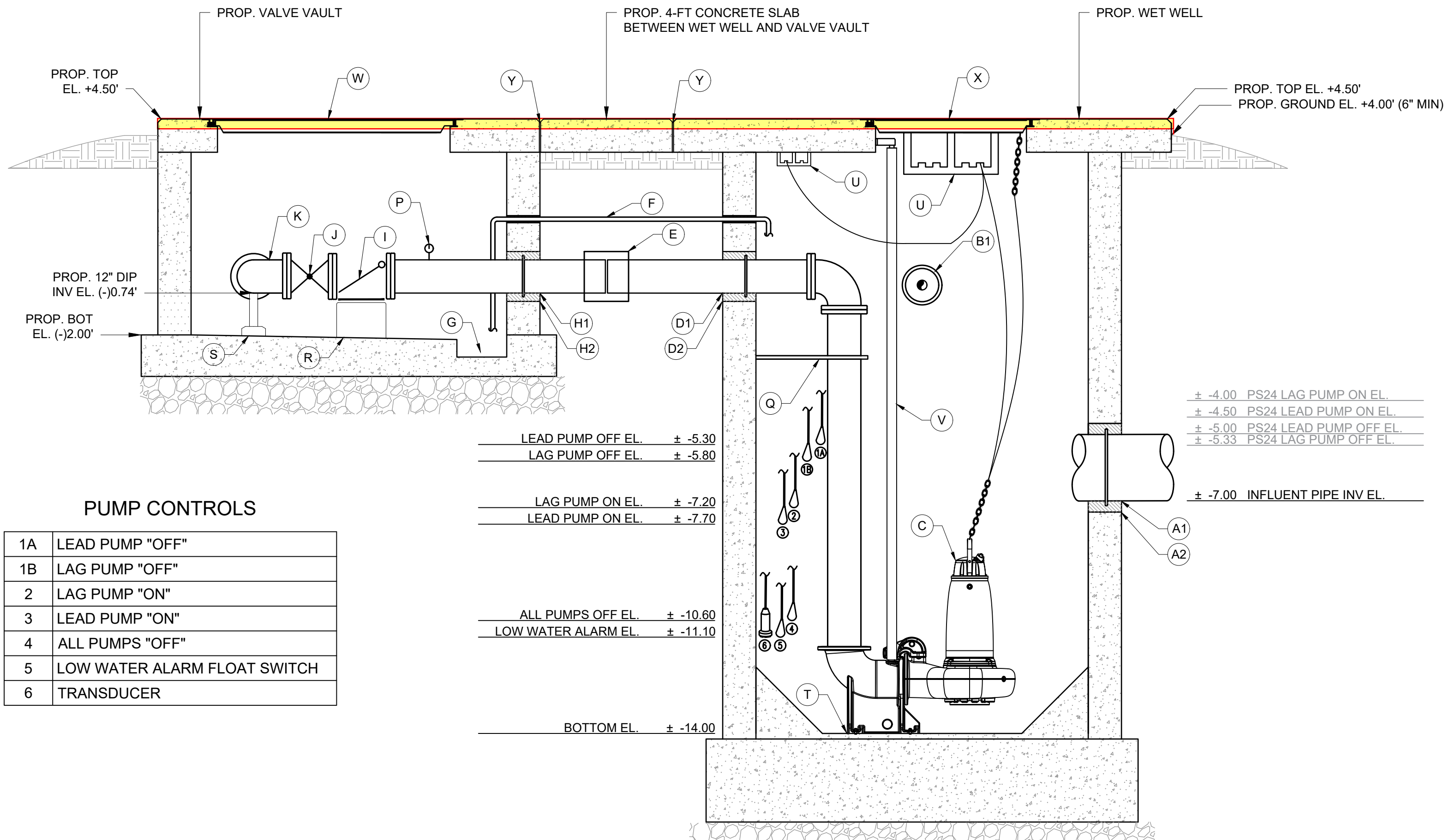
P.E. SEAL:

Steven S. Eagle, P.E.
Civil Engineer
State of Florida - License No. 43684



WET WELL AND VALVE VAULT PLAN

SCALE: N.T.S.



WET WELL AND VALVE VAULT SECTION

SCALE: N.T.S.

PUMP DATA

FLUID		STORM WATER
INSTALLATION LOCATION		NORTH BAY ROAD AND W 23 STREET, CITY OF MIAMI BEACH, 33140
PUMP TYPE	SUBMERSIBLE	
RATED POINT	CAPACITY, GPM	4336
	TDH, FEET	18.3
SHUTOFF HEAD, FT		46.7
PUMP CONSTRUCTION	CASING	CAST IRON - ASTM-A-48-No.35B
	IMPELLER	CAST IRON - ASTM-A-48-No.35B
	SHAFT	STAINLESS STEEL - ASTM 329
PUMP CONNECTIONS	SUCTION, INCHES	N/A
	DISCHARGES, INCHES	12 INCHES
ELECTRIC MOTOR	RATED HP	34 HP
	RPM	1185
	VOLTS/PHASE/HZ/SF	480/3/60/1
	INSULATION CLASS	H
	MOTOR RATED HP NOT OVERLOADED AT ANY POINT IN THE OPERATING RANGE	
MANUFACTURER & MODELS	PUMPS	FLYGT NP 3202 LT3~ 619
	MOTORS	FLYGT N3202.820 30-29-6IE-W IE3 34 HP

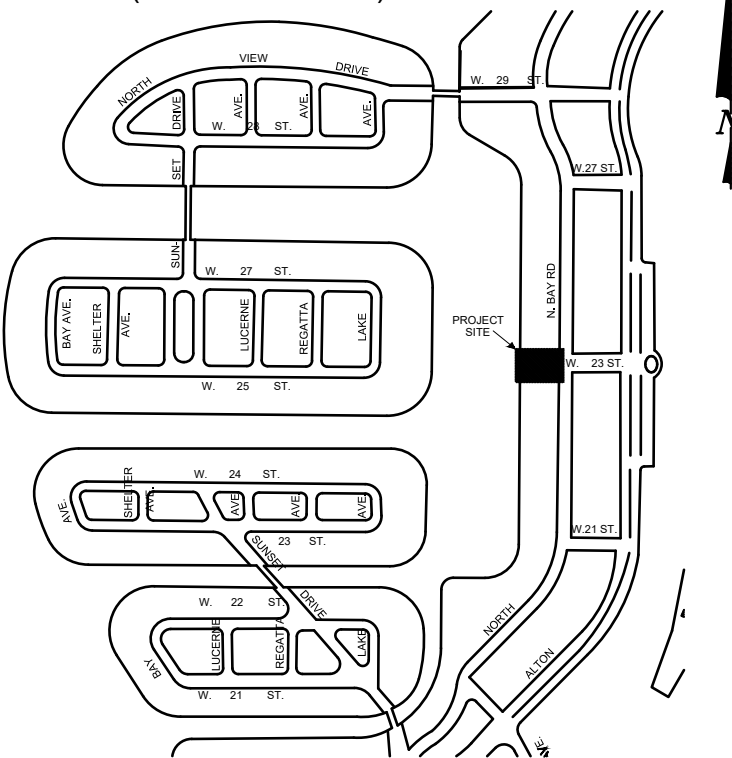
PROPOSED MATERIAL LIST

ID	DESCRIPTION
A1	24" HDPE STORM WATER INFLUENT LINE (INV. EL: -7.00)
A2	32"Ø CORE OPENING, SEAL W/ NON-SHRINK EPOXY GROUT AFTER PIPING INSTALLATION
B1	12" PVC PUMP DISCHARGE BYPASS WITH ORIFICE PLATE
B2	18"Ø CORE OPENING, SEAL W/ NON-SHRINK EPOXY GROUT AFTER PIPING INSTALLATION (TYP)
C	34-HP PUMP (SEE PUMP DATA)
D1	12" D.I.P. FLG X T/C X P.E. WALL PIECE (LENGTH AS REQUIRED) TYP.
D2	18"Ø CORE OPENING, SEAL W/ NON-SHRINK EPOXY GROUT AFTER PIPING INSTALLATION
E	12" M.J. SOLID SLEEVE (LONG PATTERN) WITH MEGALUG (TYP)
F	1-1/2" PVC SUMP PUMP DISCHARGE (SEE SPECS FOR SUMP PUMP INFO.)
G	18" (H) X 18" (W) X 8" (D) SUMP
H1	12" D.I.P. FLG X T/C X P.E. WALL PIECE (LENGTH AS REQUIRED) TYP.
H2	18"Ø CORE OPENING, SEAL W/ NON-SHRINK EPOXY GROUT AFTER PIPING INSTALLATION
I	12" FLG. CHECK VALVE
J	12" FLG. PLUG VALVE
K	12" FLG. 90°BEND
L	12" FLG. SHORT PIPE
M	12" FLG. TEE
N	BRONZE TAPPING SADDLE W/ 1" NPT AND PLUG FOR SCADA
O1	12" D.I.P. FLG X T/C X P.E. WALL PIECE (LENGTH AS REQUIRED) TYP.
O2	18"Ø CORE OPENING, SEAL W/ NON-SHRINK EPOXY GROUT AFTER PIPING INSTALLATION
P	PRESSURE GAGE (TYP)
Q	PUMP VERTICAL PIPE SUPPORT (TYP.) PER MANUFACTURE SPECIFICATIONS
R	CONCRETE SUPPORT W/ 4 LAYERS OF 40% ROOF FELT. (SEE DETAIL 3 ON SHEET M-4)
S	STAINLESS STEEL PIPE SUPPORT (TYP.) (SEE DETAIL 4 AND DETAIL 5 ON SHEET M-4)
T	PUMP BRACKET PER PUMP MANUFACTURER SPECIFICATIONS. (SEE DETAIL 6 ON SHEET M-4)
U	STAINLESS STEEL CABLE HOLDERS (TYP.)
V	3"Ø 316 S.S. GUIDE BARS (TYP.) AS PER PUMP MANUFACTURER'S SPECIFICATIONS
W	84" X 96" (CLEAR OPENING) WATERTIGHT ALUMINUM ACCESS HATCH AHD (H-20) U.S.F. FABRICATION TYPE OR APPROVED EQUAL. SIZE AND LOCATION AS REQUIRED FOR PROPER VALVES MAINTENACE.
X	CONCRETE TOP SLAB CAST WITH AN WATERTIGHT ALUMINUM ACCESS HATCH 54.5" X 81.5" (CLEAR OPENING) TYPE AHD (H-20), AS PER U.S.F. FABRICATION OR APPROVED EQUAL. SIZE AND LOCATION AS REQUIRED FOR PROPER PUMP MAINTENANCE
Y	½" EXPANSION JOINT

NOTES:

- CONTRACTOR SHALL VERIFY EXISTING UNDERGROUND UTILITIES IN APPLICATIONS, ELEVATIONS, AND QUALITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL VERIFY EXISTING PIPING TO REMAIN BEFORE ORDERING NEW PIPE AND FITTINGS FOR CONNECTIONS. THE CONTRACTOR SHALL VERIFY ALL SITE CONDITIONS, DIMENSIONS, ELEVATIONS ETC. AND COORDINATE WITH IT'S SUBCONTRACTORS PRIOR TO CONSTRUCTION. WORK SHALL BE SCHEDULED ACCORDING TO SPECIFIED CONSTRUCTION SEQUENCE.
- ALL PIPING WITHIN WET WELL AND VALVE VAULT, UNLESS SPECIFIED, TO USE DUCTILE IRON. FITTINGS AND CONNECTIONS UNDERGROUND TO USE RESTRAINED MECHANICAL JOINTS; FITTINGS ABOVE GROUND OR IN VAULT TO USE FLANGE JOINT.
- PROTECT ALL UNDERGROUND FITTING WITH BOLT CONNECTIONS IN DIRECT CONTACT WITH SOIL WITH TWO COATS OF BITUMASTIC MATERIAL OR APPROVED EQUAL. PROVIDE DIELECTRIC FITTINGS BETWEEN TWO DIFFERENT PIPING MATERIALS.
- THIS JOB REQUIRES A VERY THOUGH COORDINATION BETWEEN ALL TRADES AND THE CONTRACTOR SHALL PROVIDE IT.
- CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE THAT ALL WORK SHALL BE FREE FROM DEFECTS OF MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE.
- CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS AND INSPECTIONS.
- PIPE SUPPORTS SHALL BE STAINLESS STEEL OR CONCRETE, EXCEPT WHEN NOTED.
- ALL PUMP CONTROLS SHALL BE SET AS PER DESIGN REQUIREMENTS.
- ALL CORE DRILL PENETRATIONS MUST CONSIST OF AN APPROVED MANHOLE COUPLING GROUTED INTO THE STRUCTURE WALL AND PROVIDE A CONTINUOUS WATERTIGHT NON-SHRINK GASKET SEAL BETWEEN THE COUPLING AND THE PROPOSED PIPE.
- THE COUPLING SHALL HAVE AN INCREASING TAPERED INTERIOR FROM THE GASKET GROOVE TO ALLOW FLEXIBILITY FOR THE PIPE IN THE EVENT OF FUTURE SETTLEMENT OF THE STRUCTURE OR PIPELINE
- PROVIDE SPARK-PROOF CONTACT BETWEEN PUMPS AND GUIDE RAIL SYSTEM
- ALL PUMP CONTROLS SHALL BE SET AS PER DESIGN REQUIREMENTS

KEY PLAN (NOT TO SCALE):

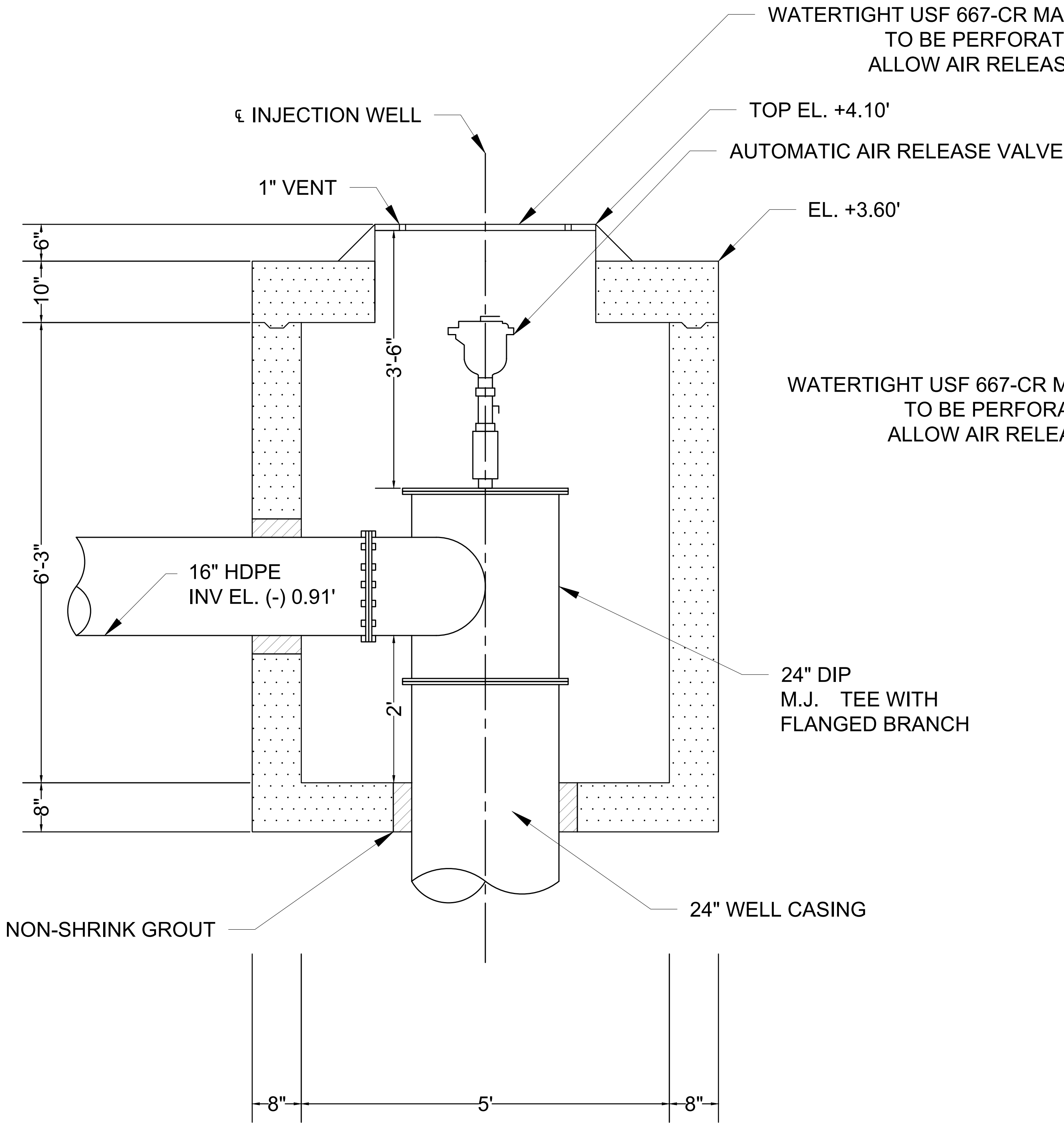


INJECTION WELL GENERAL NOTES:

- 1) THE DRAINAGE WELLS SHOWN MUST BE CASED TO THE DEPTH NECESSARY TO DEVELOP THE REQUIRED DISCHARGE AND SUFFICIENT TO ACHIEVE A MINIMUM OF 10,000 PPM OF TOTAL DISSOLVED SOLIDS. AN OPEN HOLE MUST BE DEVELOPED BELOW CASING AS REQUIRED TO ACHIEVE THE REQUIRED MINIMUM CAPACITY OF 600 GPM PER FOOT OF HEAD.
- 2) WELLS ARE TO BE AS PLUMB AND TRUE TO LINE.
- 3) EACH COMPLETED WELL MUST MEET OR EXCEED THE REQUIREMENTS OF THE FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATIONS.
- 4) THE CONTRACTOR SHALL PROVIDE ALL THE NECESSARY EQUIPMENT FOR CONDUCTING WELL TEST AND PROPERLY DISPOSING OF THE WATER PUMPED FROM THE WELL. THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE AND THE ENGINEER OF RECORD A MINIMUM OF 48-HOURS PRIOR TO THE INITIATION OF SUCH TESTING.
- 5) THE CONTRACTOR IS RESPONSIBLE TO SECURE ALL NECESSARY PERMITS AND TO COMPLY WITH THE PROVISIONS THEREOF.
- 6) TEMPORARY SOLID LIDS SHALL BE WELDED ON THE TOP OF EACH COMPLETED WELL TO PREVENT FOREIGN MATERIALS AND/OR CONSTRUCTION WASTE FROM ENTERING THE WELL. THESE LIDS SHALL BE REMOVED AFTER THE INSTALLATION OF THE MANHOLE STRUCTURE.
- 7) ONCE THE WELL IS CERTIFIED AND ACCEPTED BY FDEP THE CONTRACTOR MUST TEST EACH WELL BY PUMPING WATER AT A RATE OF 2,000 G.P.M. THE CONTRACTOR MUST PROVIDE ALL OF THE EQUIPMENT REQUIRED FOR SAID TEST INCLUDING FLOW METER DEVICE, PUMPS AND HOSES. THE WATER SOURCE MUST ALSO BE PROVIDED BY THE CONTRACTOR.
- 8) ALL PIPE PENETRATIONS IN AND OUT OF THE WELL BOXES MUST BE WATERTIGHT TO THE STATIC PRESSURE INDUCED BY THE WATER LEVEL REACHING THE RIM ELEVATION OF THE WELL BOXES.

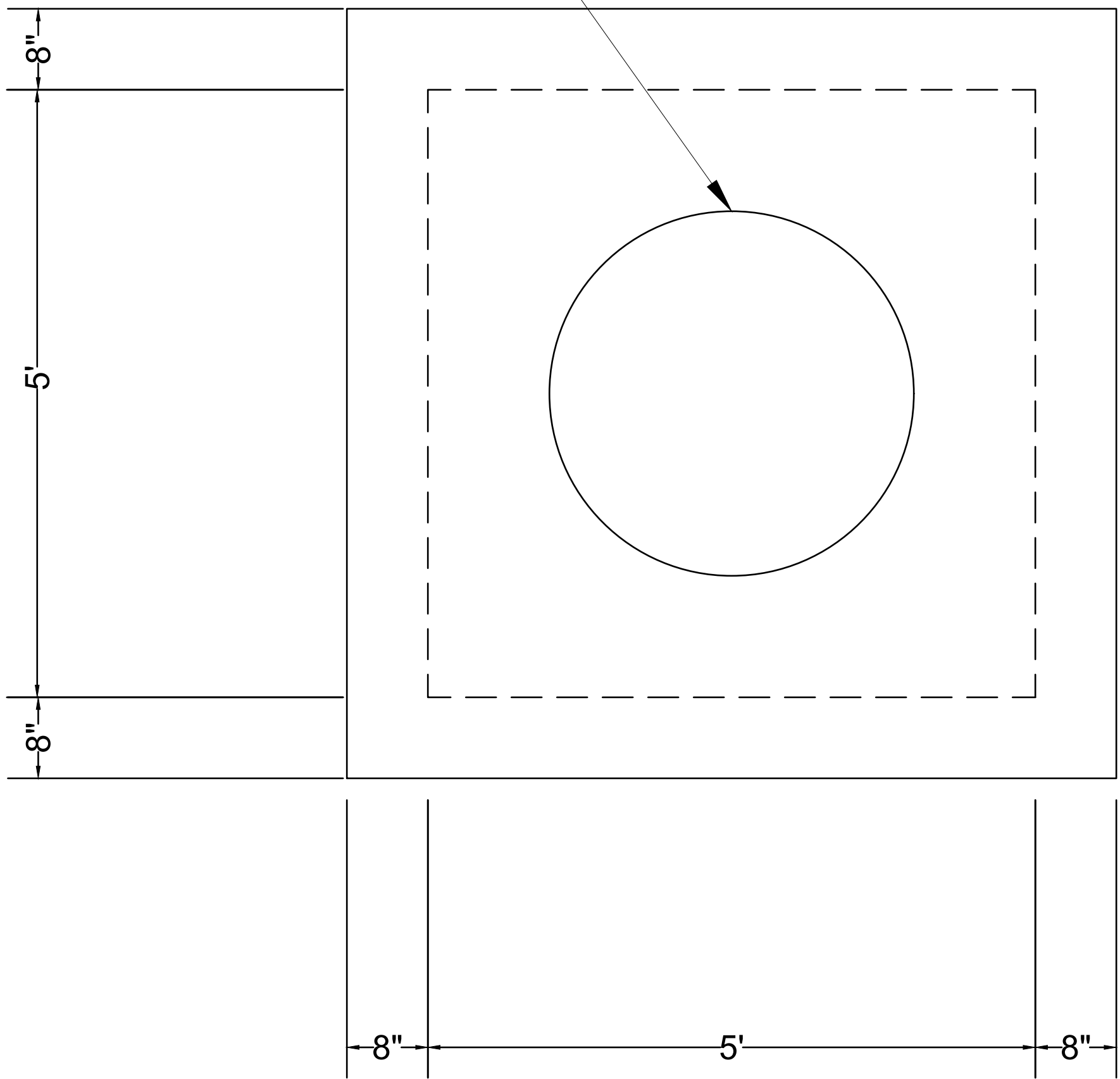
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3. PROTECT ALL UNDERGROUND FITTING WITH BOLT CONNECTIONS IN DIRECT CONTACT WITH SOIL WITH TWO COATS OF BITUMASTIC MATERIAL OR APPROVED EQUAL. PROVIDE DIELECTRIC FITTINGS BETWEEN TWO DIFFERENT PIPING MATERIALS.
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7. ALL CORE DRILL PENETRATIONS MUST CONSIST OF AN APPROVED MANHOLE COUPLING GROUTED INTO THE STRUCTURE WALL AND PROVIDE A CONTINUOUS WATERTIGHT NON-SHRINK GASKET SEAL BETWEEN THE COUPLING AND THE PROPOSED PIPE.
8. THE COUPLING SHALL HAVE AN INCREASING TAPERED INTERIOR FROM THE GASKET GROOVE TO ALLOW FLEXIBILITY FOR THE PIPE IN THE EVENT OF FUTURE SETTLEMENT OF THE STRUCTURE OR PIPELINE
9. DEEP WELL SHALL BE A MINIMUM OF 100 FEET LONG, WITH A MINIMUM 65 FEET ENCASED AND MINIMUM 45 FEET OPEN HOLE. MINIMUM DISCHARGE CAPACITY MUST BE 600 GPM/FT OF HEAD
10. PROTECTIVE CONCRETE COATING SHALL BE APPLIED TO INTERIOR OF DRAINAGE WELL STRUCTURE



INJECTION WELL TYPICAL SECTION

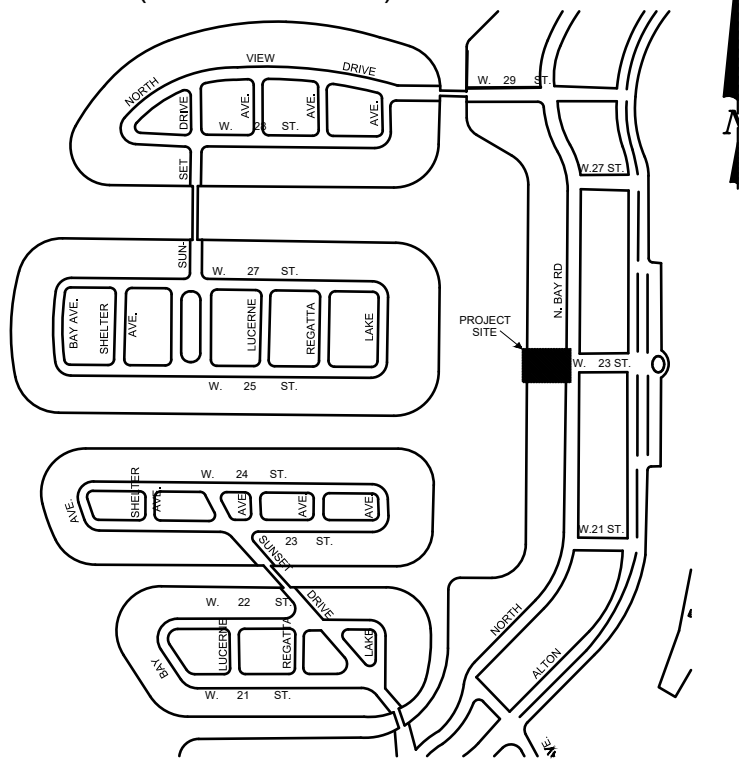
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INJECTION WELL TYPICAL SECTION

SCALE: N.T.S.

KEY PLAN (NOT TO SCALE):



P.E. SEAL:

Steven S. Eagle, P.E.
Civil Engineer
State of Florida – License No. 43684

MIAMI BEACH
PUBLIC WORKS DEPARTMENT
1700 CONVENTION CENTER DRIVE, MIAMI BEACH, FL 33139

CITY MANAGER: ALINA T. HUDAK
DIRECTOR: JOSE GOMEZ, P.E., F.FES
CITY ENGINEER: CRISTINA ORTEGA
CASTINEIRAS, P.E.

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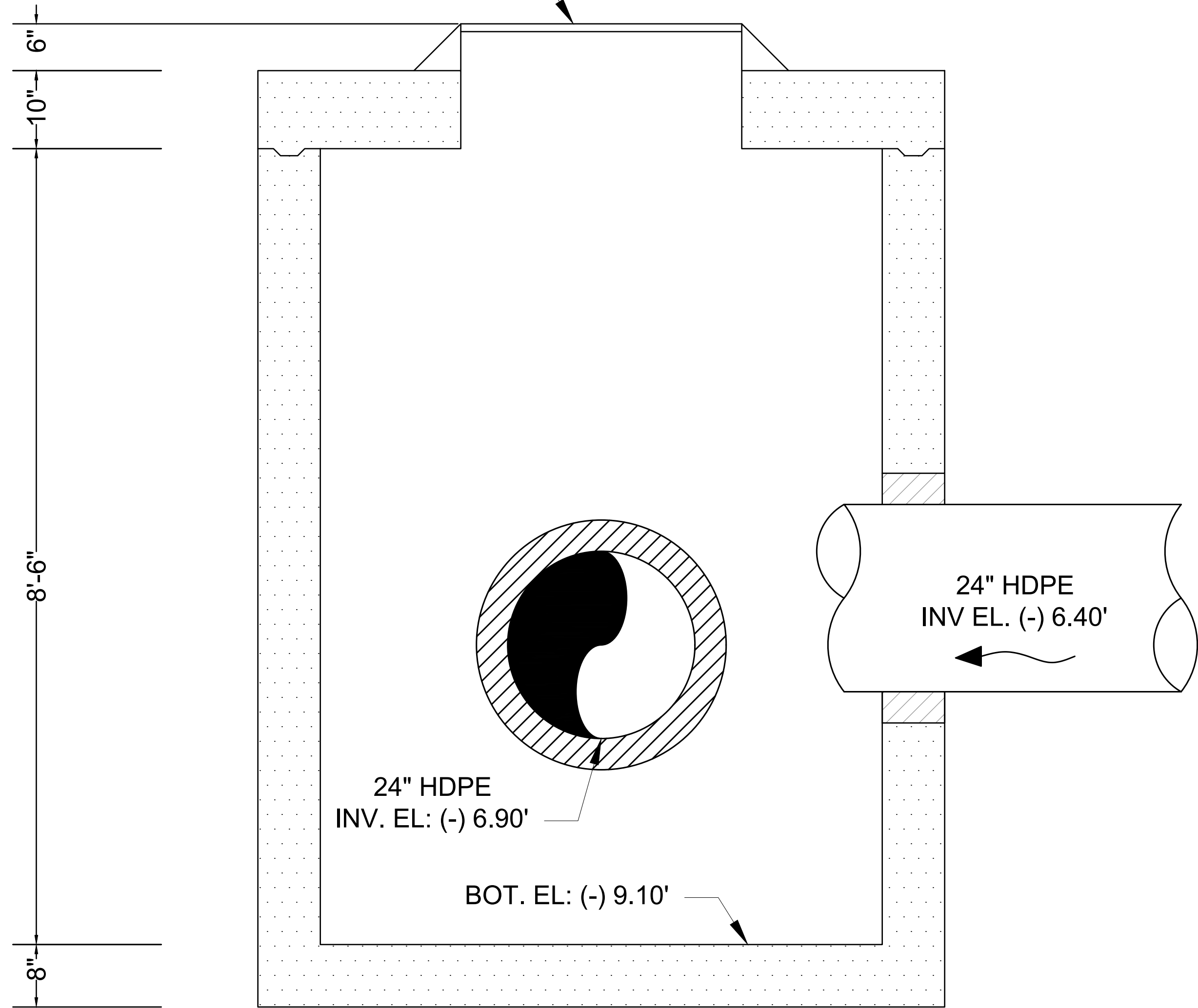
ENGINEER OF RECORD:
STEVEN EAGLE, P.E.
P.E. NO. PE43684

ENGINEER OF RECORD: SE
DESIGN ENGINEER: BDM
DRAWN BY: RL
CHECKER: LLB
SCALE: NOT TO SCALE

NEIGHBORHOOD: PUMP STATION 24 AT LOWER N BAY RD
TITLE: TYPICAL INJECTION WELLS PLAN AND SECTION

File Name: M-02.dwg
Survey Reference:
Field Book: 961 Page: 19-25 Work Order: WO3154
Date: JAN 2024 Sheet: 22 of 38 Drawing: M-02

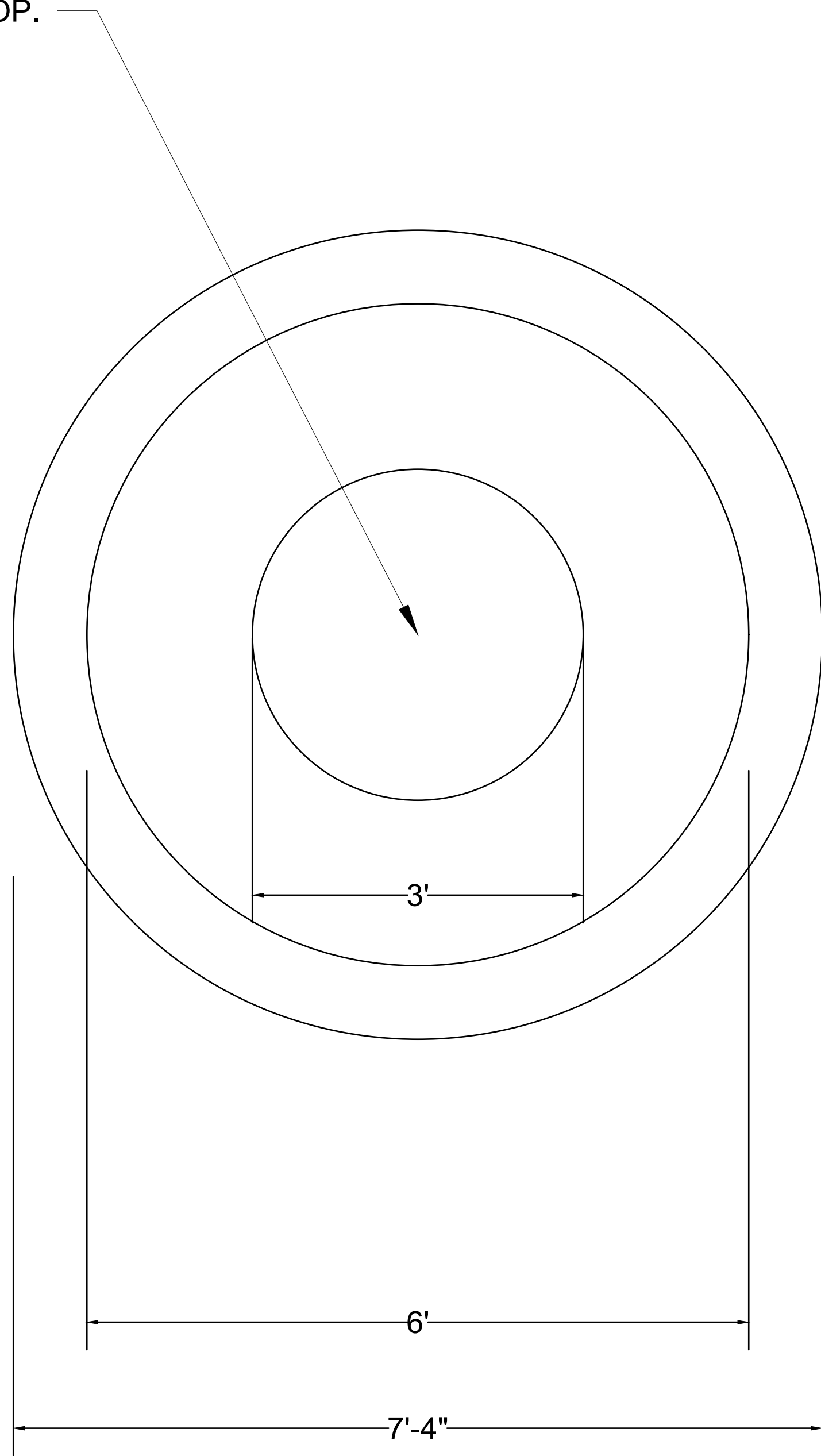
WATERTIGHT USF 667-CR MANHOLE TOP.
TO MATCH EXISTING GRADE
TOP ELEV: (+) 1.40



MANHOLE TYPICAL SECTION

SCALE: N.T.S.

WATERTIGHT USF 667-CR MANHOLE TOP.



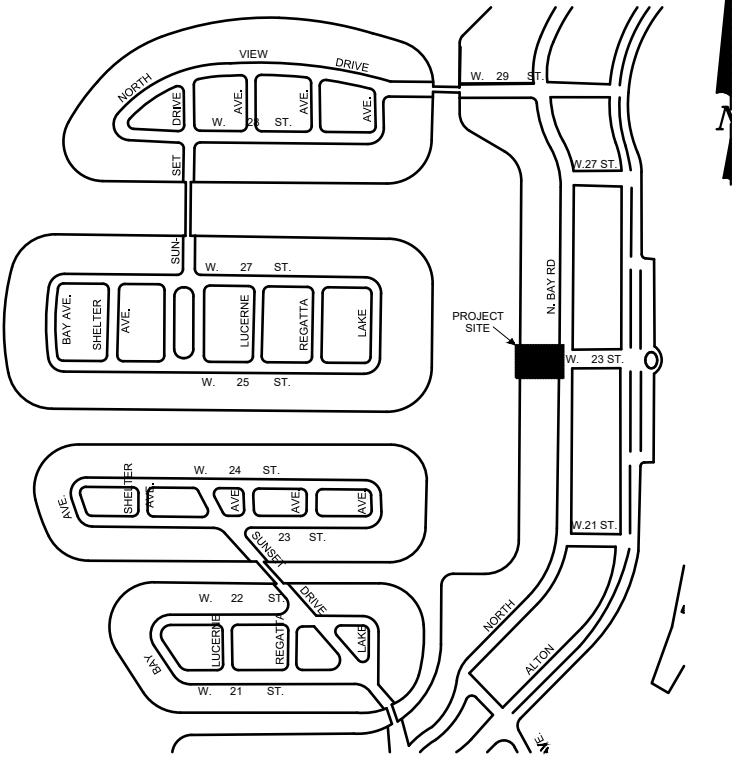
MANHOLE PLAN VIEW

SCALE: N.T.S.

NOTES:

1. CONTRACTOR SHALL VERIFY EXISTING UNDERGROUND UTILITIES IN APPLICATIONS, ELEVATIONS, AND QUALITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL VERIFY EXISTING PIPING TO REMAIN BEFORE ORDERING NEW PIPE AND FITTINGS FOR CONNECTIONS. THE CONTRACTOR SHALL VERIFY ALL SITE CONDITIONS, DIMENSIONS, ELEVATIONS ETC. AND COORDINATE WITH IT'S SUBCONTRACTORS PRIOR TO CONSTRUCTION. WORK SHALL BE SCHEDULED ACCORDING TO SPECIFIED CONSTRUCTION SEQUENCE.
2. THIS JOB REQUIRES A VERY THOUGH COORDINATION BETWEEN ALL TRADES AND THE CONTRACTOR SHALL PROVIDE IT.
3. CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE THAT ALL WORK SHALL BE FREE FROM DEFECTS OF MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE.
4. CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS AND INSPECTIONS.
5. ALL CORE DRILL PENETRATIONS MUST CONSIST OF AN APPROVED MANHOLE COUPLING GROUTED INTO THE STRUCTURE WALL AND PROVIDE A CONTINUOUS WATERTIGHT NON-SHRINK GASKET SEAL BETWEEN THE COUPLING AND THE PROPOSED PIPE.
6. THE COUPLING SHALL HAVE AN INCREASING TAPERED INTERIOR FROM THE GASKET GROOVE TO ALLOW FLEXIBILITY FOR THE PIPE IN THE EVENT OF FUTURE SETTLEMENT OF THE STRUCTURE OR PIPELINE
7. CONCRETE STRUCTURE SHALL BE WATERTIGHT.
8. FIELD APPLY MINIMUM TWO (2) COATS (10 MIL THICKNESS, EACH) OF BITUMASTIC MATERIAL TO EXTERIOR SURFACE OF NEW MANHOLE.
9. PRECAST CONCRETE MANHOLES SHALL CONFORM TO ASTM C478, USING CEMENT TYPE II AND A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS.

KEY PLAN (NOT TO SCALE):



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DESIGN ENGINEER: BDM
DRAWN BY: RL
CHECKER: LLB
SCALE: NOT TO SCALE

NEIGHBORHOOD:

PUMP STATION 24 AT LOWER N BAY RD

TITLE:

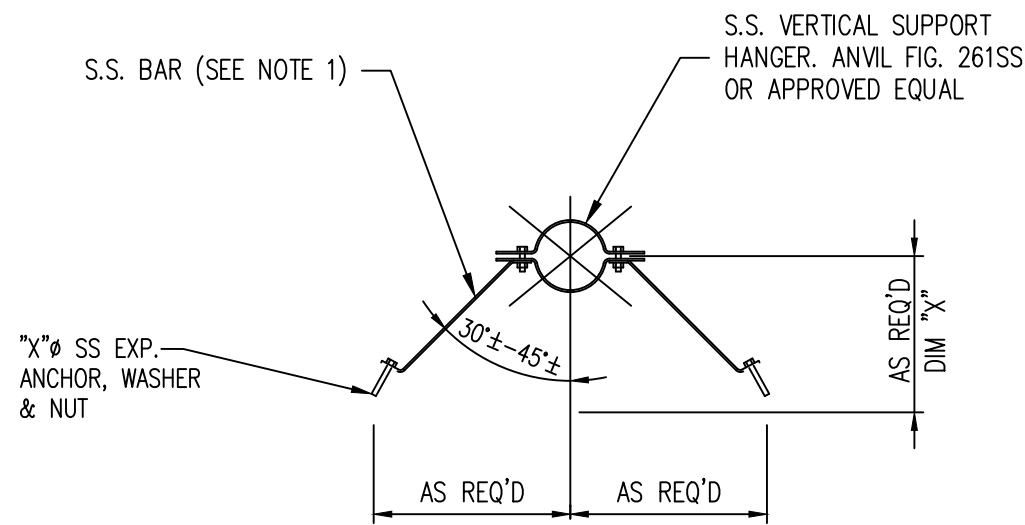
TYPICAL MANHOLE PLAN AND SECTION

File Name: M-03.dwg

Survey Reference:

Field Book: 961 Page: 19-25 Work Order: WO3154

Date: JAN 2024 Sheet: 23 of 38 Drawing: M-03



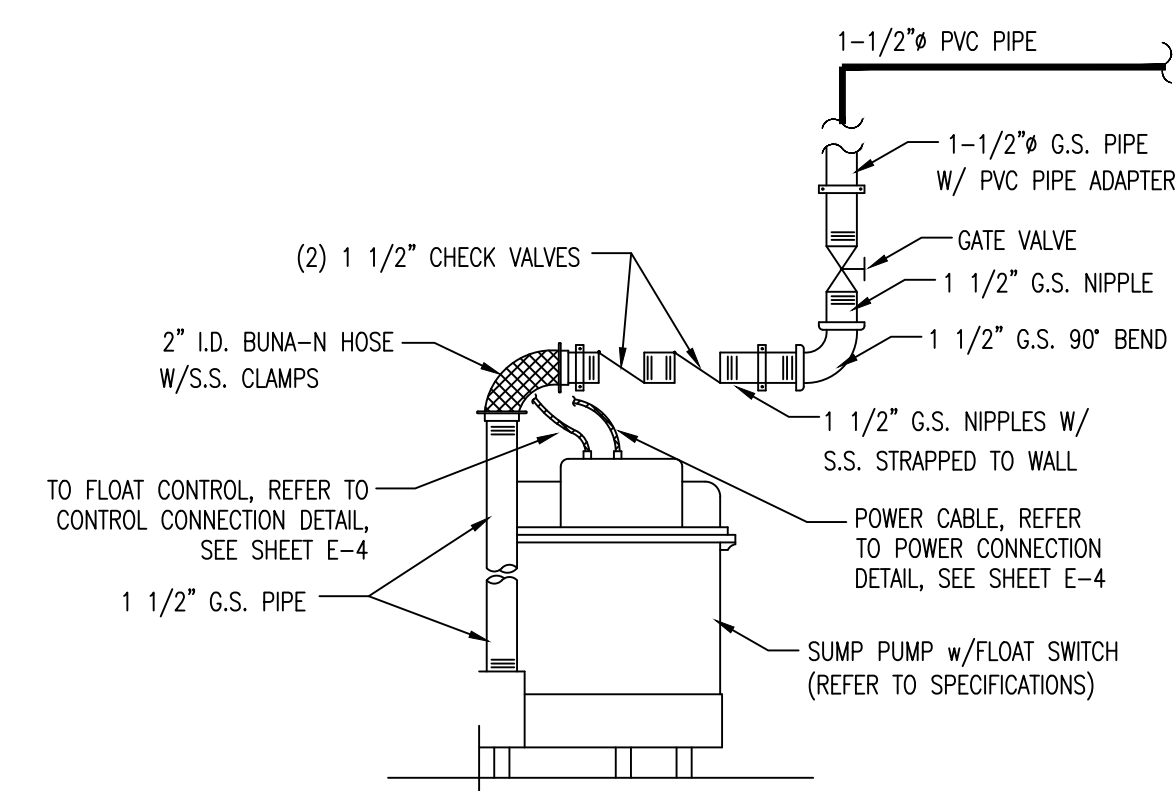
NOTES:

1. STAINLESS STEEL TO AS 2837-1986: WROUGHT ALLOY STEELS-STAINLESS STEEL BARS AND SEMI-FINISHED PRODUCT GRADE 316 (316 IF WELDED) UNLESS OTHERWISE NOTED.
2. DIM "X" TO BE MEASURED AND CONFIRMED ON SITE

VERTICAL PIPE SUPPORT DETAIL

N.T.S.

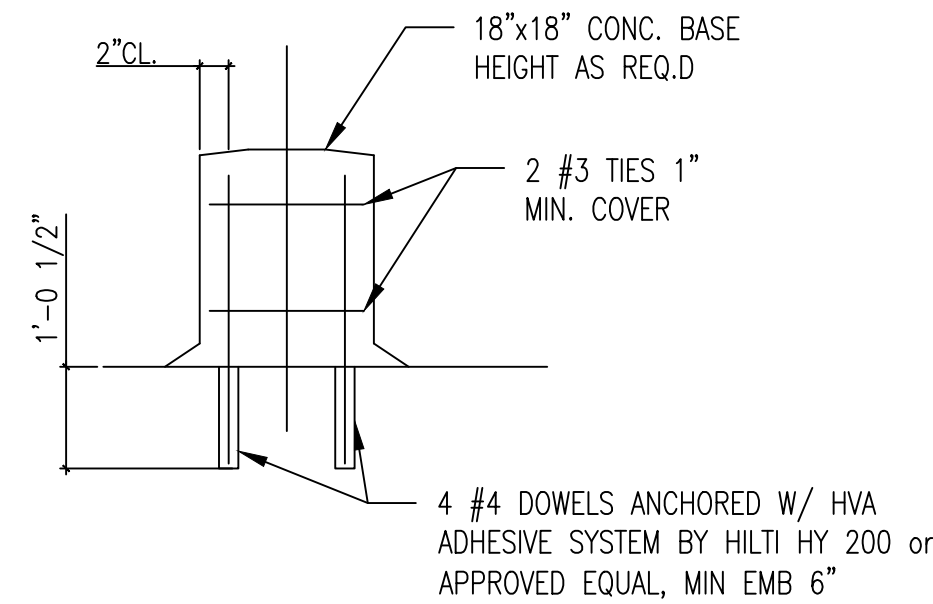
DETAIL 1
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SUMP PUMP AND PIPING DETAIL

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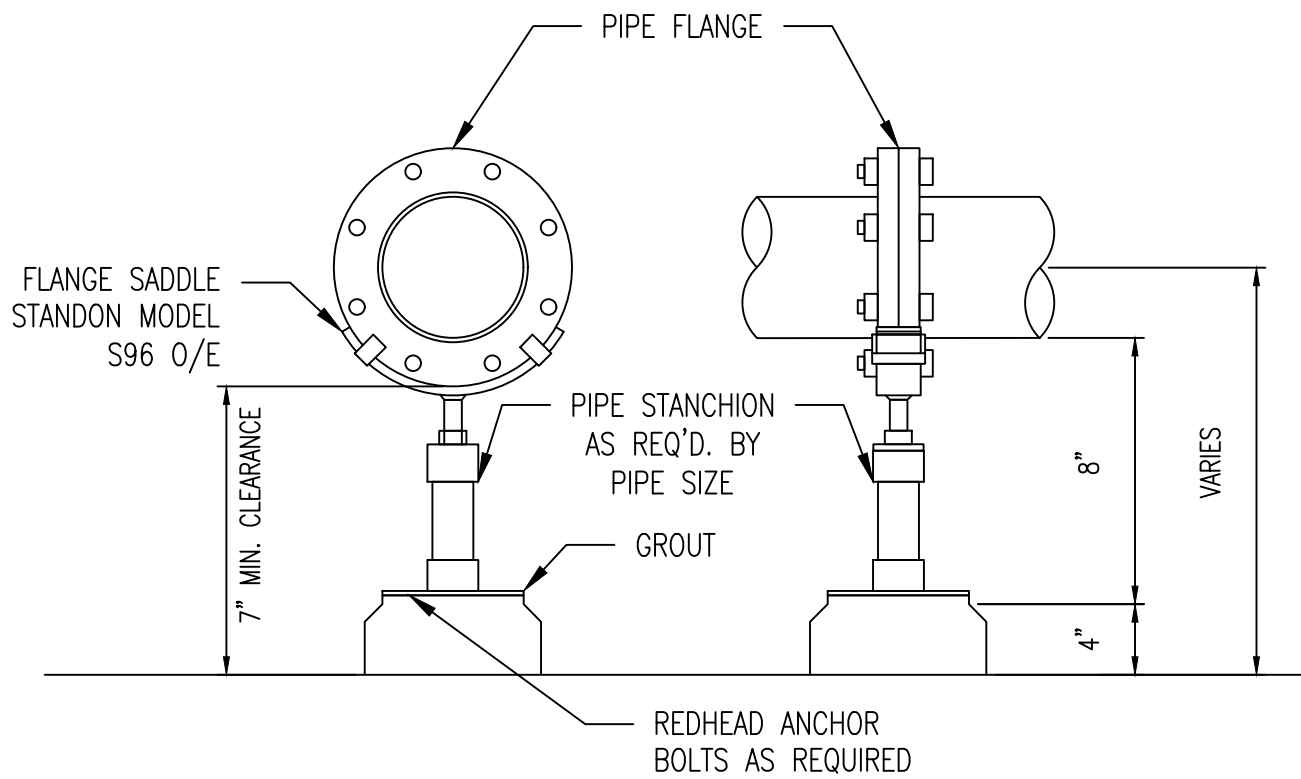
DETAIL 2
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CONCRETE PIPE SUPPORT DETAIL

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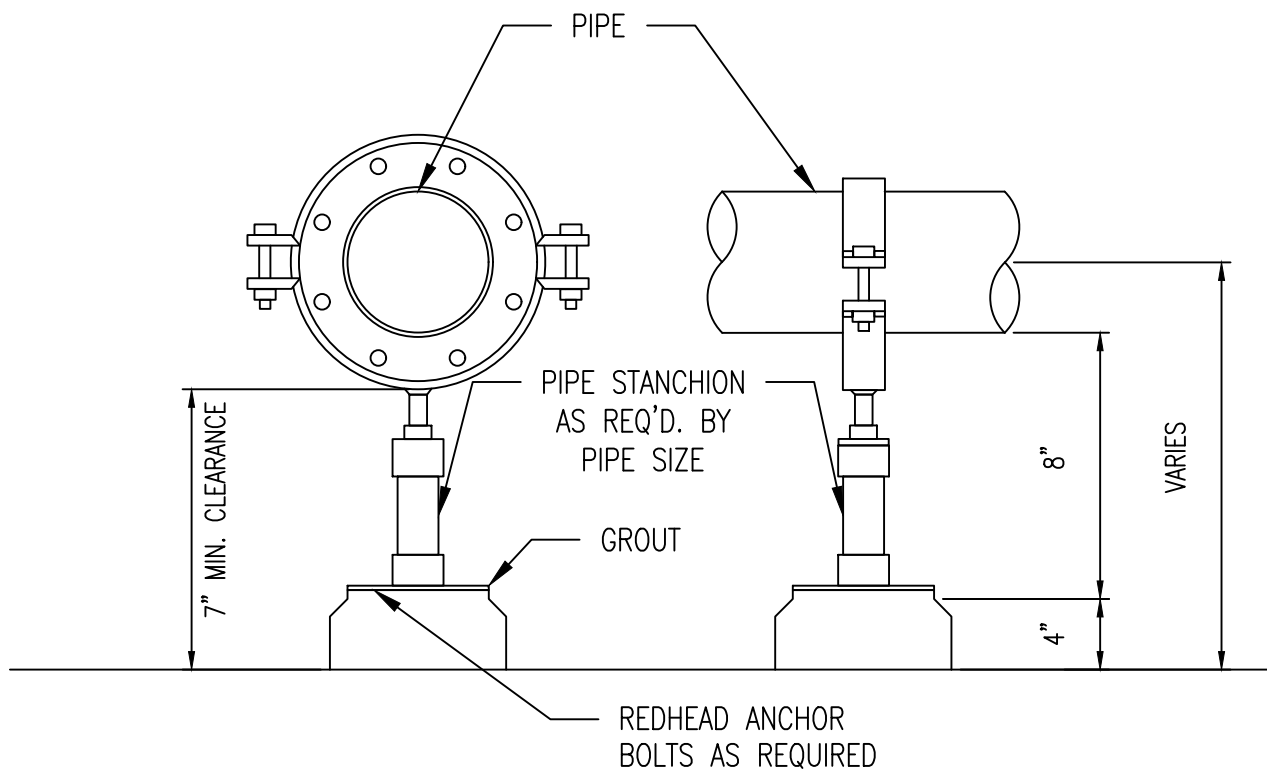
DETAIL 3
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ADJUSTABLE FLANGE SADDLE PIPE SUPPORT

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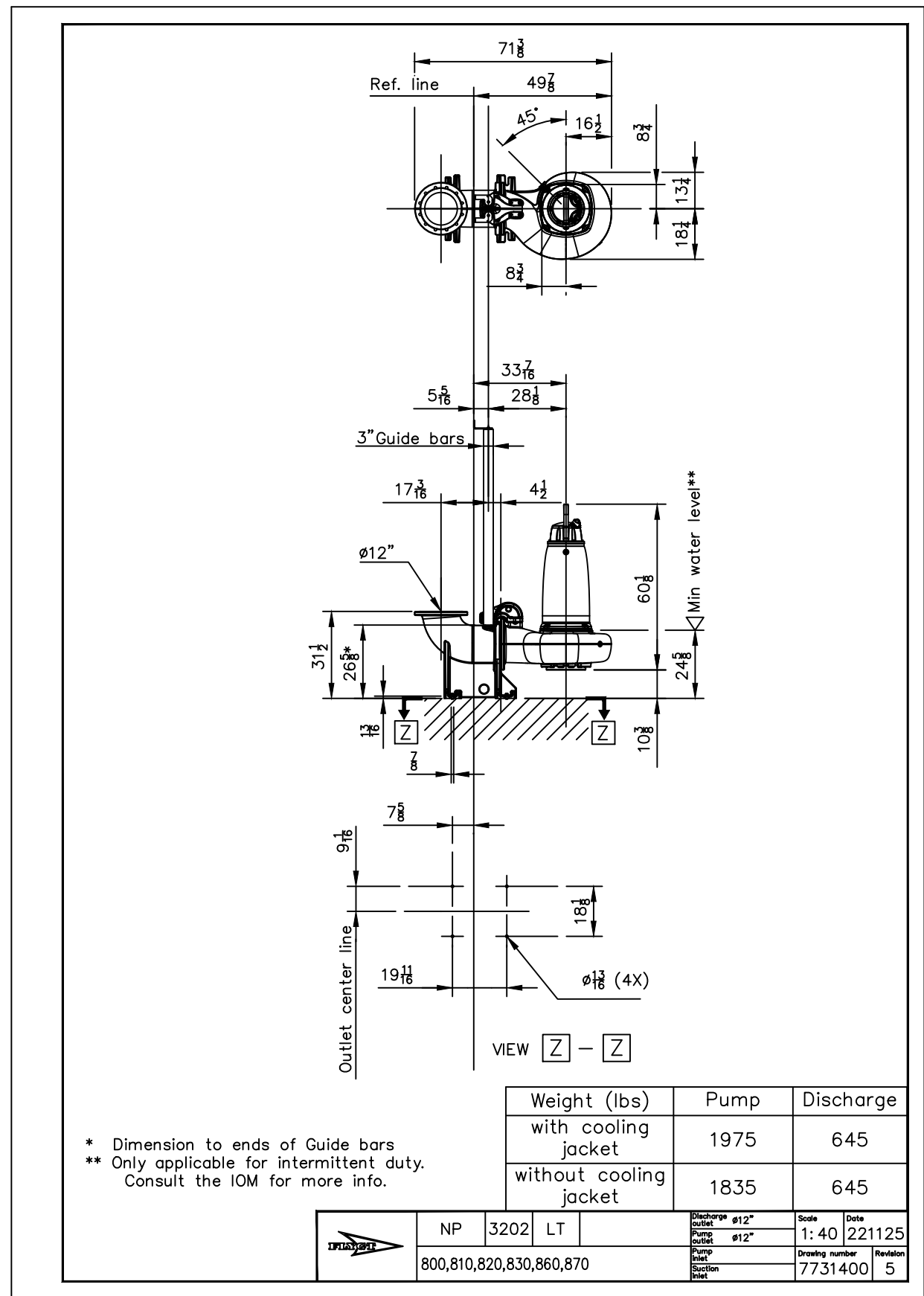
DETAIL 4
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FULL CIRCLE PIPE SUPPORT

N.T.S.

DETAIL 5
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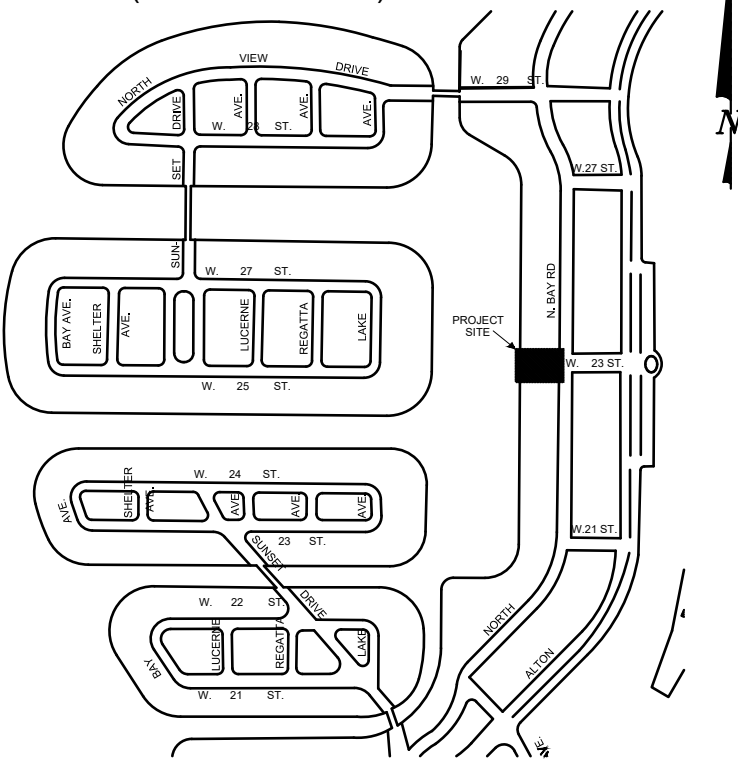


PUMP DETAIL & BASE PLATE

N.T.S.

DETAIL 6
N.T.S.

KEY PLAN (NOT TO SCALE):



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Steven S. Eagle, P.E.
Civil Engineer
State of Florida - License No. 43684

MIAMI BEACH

PUBLIC WORKS DEPARTMENT
1700 CONVENTION CENTER DRIVE, MIAMI BEACH, FL 33139

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ENGINEER OF RECORD:
STEVEN EAGLE, P.E.
P.E. NO. PE43684

ENGINEER OF RECORD: SE
DESIGN ENGINEER: BDM
DRAWN BY: RL
CHECKER: LLB
SCALE: NOT TO SCALE

NEIGHBORHOOD:

PUMP STATION 24 AT LOWER N BAY RD

TITLE:

MECHANICAL STANDARD DETAILS

File Name: M-04.dwg

Survey Reference:

Field Book: 961 Page: 19-25 Work Order: WO3154

Date: JAN 2024 Sheet: 24 of 38 Drawing: M-04

1.0 BASIC ELECTRICAL REQUIREMENTS

- 1.1 SCOPE OF WORK
- A. FOR PURPOSE OF LEGIBILITY, DRAWINGS ARE DIAGRAMMATIC AND ALTHOUGH LOCATION OF EQUIPMENT IS SHOWN TO SCALE, THE CONTRACTOR SHALL VERIFY ALL INFORMATION AT THE SITE BEFORE BIDDING THE JOB.
- B. WHEN DRAWINGS, NOTES AND THESE REQUIREMENTS ARE IN CONFLICT, THE MOST STRINGENT CONDITION SHALL APPLY UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- C. THE WORK CONSISTS OF ALL SUPERVISION, LABOR, MATERIALS, EQUIPMENT AND INSTALLATION REQUIRED FOR THE COMPLETE ELECTRICAL SYSTEMS AS SHOWN ON THE DRAWINGS OR CALLED FOR IN THESE REQUIREMENTS.
- D. FURNISH, INSTALL AND MAINTAIN TEMPORARY ELECTRICAL POWER AND LIGHTING REQUIRED FOR ALL TRADES.
- E. CONNECT ELECTRICAL EQUIPMENT FURNISHED BY OTHER TRADES EVEN IF NOT SHOWN ON ELECTRICAL DRAWINGS.
- 1.2 CODES AND STANDARDS
- PERFORM WORK AND FURNISH EQUIPMENT COMPLYING WITH THE LATEST APPLICABLE EDITION OF THE FOLLOWING CODES:
- 1) NATIONAL ELECTRICAL CODE (NEC)
 - 2) NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
 - 3) UNDERWRITERS' LABORATORIES (UL)
 - 4) NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)
 - 5) AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
 - 6) INSULATED POWER CABLE ENGINEERS ASSOCIATION (IPCEA)
 - 7) FLORIDA BUILDING CODE (FBC)
 - 8) INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE)
- 1.3 SHOP DRAWINGS
- WITHIN 30 DAYS AFTER THE DATE OF THE AWARD OF THE CONTRACT, AND BEFORE ANY MATERIAL OR EQUIPMENT IS PURCHASED, SUBMIT TO THE ENGINEER FOR APPROVAL, A COMPLETE LIST IN QUINTUPPLICATE OF ELECTRICAL MATERIALS, AND EQUIPMENT TO BE INCORPORATED IN THE WORK. INCLUDE CATALOG NUMBER, DIMENSIONS, INTERCONNECTION DIAGRAMS AND INSTALLATION INSTRUCTIONS.
- 1.4 OPERATION AND MAINTENANCE MANUALS
- O & M MAINTENANCE MANUALS MUST CONTAIN BUT NOT LIMITED TO THE FOLLOWING:
- 1) SYSTEM DESCRIPTION, AND OPERATING AND MAINTENANCE INSTRUCTIONS.
 - 2) MANUFACTURER'S NAME AND MODEL NUMBER OF ALL COMPONENTS.
 - 3) CONTROL AND WIRING DIAGRAMS WITH SEQUENCE OF OPERATION.
 - 4) LIST OF RECOMMENDED SPARE PARTS.
- 1.5 AS BUILT DRAWINGS
- AFTER FINAL INSPECTION, FURNISH A SET OF REPRODUCIBLE "AS BUILT DRAWINGS" SHOWING DEPTHS AND ROUTING OF CONCEALED ELECTRICAL BELOW GRADE INSTALLATIONS AND ALL VARIATIONS BETWEEN THE ACTUAL WORK AND AS IT WAS SHOWN ON THE CONTRACT DRAWINGS. REFER TO SECTION 01 78 40 (01725) OF THE SPECIFICATIONS.
- 1.6 MATERIALS
- A. FURNISH EQUIPMENT AND MATERIALS THAT ARE NEW AND LATEST DESIGN OF STANDARD PRODUCTS OF MANUFACTURERS REGULARLY ENGAGED IN THE PRODUCTION OF SUCH EQUIPMENT.
- B. ALL MATERIALS SHALL BEAR THE LABEL OF UNDERWRITER'S LABORATORY FOR THE INTENDED USE.
- C. EQUIPMENT ENCLOSURES SHALL BE NEMA 12 FOR INDOOR USE, AND NEMA 4X (STAINLESS STEEL) OR 3R AS SHOWN ON DRAWINGS FOR OUTDOOR USE.
- D. FURNISH LIGHTING FIXTURES WITH LAMPS AND 10 PERCENT (TWO MINIMUM) SPARE LAMPS OF EACH TYPE.
- E. FURNISH FUSIBLE EQUIPMENT WITH FUSES AND 10 PERCENT (THREE MINIMUM) OF SPARE FUSES OF EACH TYPE.
- 1.7 INSTALLATION
- A. INSTALL EQUIPMENT AT THE LOCATIONS SHOWN ON THE DRAWINGS FOLLOWING THE MANUFACTURER'S RECOMMENDATIONS.
- B. COORDINATE INSTALLATION OF UNDERGROUND DUCTS AND CONDUITS WITH EXISTING UNDERGROUND UTILITIES. FIELD VERIFY ROUTING AND BURIAL DEPTH. DRAIN DUCTS AWAY FROM BUILDINGS TOWARD MANHOLES. LOW POINTS IN DUCT BANK RUNS ARE NOT ACCEPTABLE.
- C. INSTALL FLOOR MOUNTED SELF SUPPORTED EQUIPMENT ON CONCRETE PADS WITH STEEL REINFORCING AS INDICATED IN THE DRAWINGS. USE REQUIRED BOLTS, ANCHORS, INSERTS AND CONDUIT SLEEVES.
- D. MAKE OPENINGS THROUGH WALLS, CEILINGS, ROADWAYS, FLOOR SLABS, ETC. REQUIRED FOR THE INSTALLATION OF ELECTRICAL EQUIPMENT, BUT CUTTING, WELDING, OR OTHER WEAKENING OF BUILDING STRUCTURE TO SIMPLIFY ELECTRICAL EQUIPMENT AND MATERIALS' INSTALLATION ARE NOT PERMITTED. WHERE EXISTING WALLS, CEILINGS OR FLOOR SLABS HAVE TO BE CUT, THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER BEFORE MAKING SUCH CUTS. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY DAMAGE DONE WHILE PROVIDING SUCH OPENINGS AND SHALL PATCH THE SURFACE TO MATCH ADJACENT MATERIALS AND FINISHES.
- E. NO CONDUITS, SLEEVES, PIPES OR ANY OTHER ITEM SHALL BE EMBEDDED IN CONCRETE ALONG OR THROUGH ANY BEAM, COLUMN, FOOTING, GRADE BEAM, SLAB, WALL OR ANY OTHER STRUCTURAL MEMBER WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.
- F. COORDINATE SHIPPING LENGTHS OF SWITCH GEARS AND MOTOR CONTROL CENTERS. THOSE ITEMS SHALL BE ABLE TO BE REMOVED AND REPLACED IN THE FUTURE THROUGH THE PERMANENT ACCESS PROVIDED IN THE STRUCTURE.
- G. PROVIDE 36- INCHES WIDE, 3/16- INCHES THICK RUBBER MATS IN THE FRONT AND REAR OF SWITCH GEARS, MOTOR CONTROL CENTERS AND SWITCHBOARDS. MATS TO COMPLY WITH FEDERAL SPECS ZZ-F-416A.
- 1.8 TESTING
- UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL ENERGIZE, START-UP AND TEST OPERATE ALL THE SYSTEMS AND EQUIPMENT IN THE PRESENCE OF THE ENGINEER. INSULATION RESISTANCE TESTS SHALL BE MADE ON EACH 480 AND 240 VOLT FEEDER WITH A 500 VOLT DC MEGGER. DEFECTS FOUND SHALL BE CORRECTED.

2.0 RACEWAYS

- 2.1 RIGID CONDUIT
- A. STEEL: HOT DIPPED ZINC COATED, GALVANIZED, THREADED RIGID STEEL CONFORMING TO ANSI C80, AND FED. SPEC WW-C-581. USE THREADED GALVANIZED STEEL FITTINGS.
- B. ALUMINUM: CONTAINING LESS THAN 0.1 PERCENT COPPER AND CONFORMING TO FEDERAL SPECIFICATION WW-C-540C. USE THREADED ALUMINUM FITTINGS.
- C. PLASTIC: RIGID, SCHEDULE 40, 90 DEGREES C, UL RATED, PVC PLASTIC CONFORMING TO UL 651, FED. SPEC. W-C-1094 AND NEMA TC-2. FITTINGS TO CONFORM WITH UL3 514 AND NEMA TC-3.
- 2.2 FLEXIBLE METAL CONDUIT
- A. LIQUID-TIGHT, FLEXIBLE ZINC COATED CONFORMING TO UL 1 TYPE WITH LIQUID-TIGHT FLEXIBLE PLASTIC SHEATH, CONFORMING TO UL 360 STANDARD.
- B. FITTINGS, PER FED. SPEC. W-R-406B AND UL 514.

- 2.3 LOCATION AND USE OF EACH TYPE OF CONDUIT
- A. USE RIGID ALUMINUM CONDUIT FOR ABOVE GROUND EXPOSED INSTALLATIONS EXCEPT IN CORROSIVE AREAS WHERE PVC COATED RIGID GALVANIZED STEEL SHALL BE USED.
- B. USE GALVANIZED THREADED RIGID STEEL CONDUIT AS FOLLOWS:
- 1) WHEREVER SPECIFICALLY CALLED FOR ON DRAWINGS.
 - 2) WHERE RACEWAY ELBOWS FROM DUCT BANKS STUB-UP.
 - 3) FOR UNDERGROUND WORK BEYOND BUILDINGS WHERE CONCRETE ENCASED PLASTIC CONDUITS HAVE NOT BEEN SPECIFIED. COAT BURIED GALVANIZED STEEL CONDUITS AND FITTINGS WITH TWO COATS OF CARBOLINE'S BITUMASTIC NO. 50 OR EQUAL.
- C. USE PLASTIC CONDUIT AS FOLLOWS:
- 1) WHEN INSTALLED IN POURED CONCRETE SLABS OR WALLS.
 - 2) FOR UNDERGROUND WORK UNDER SLABS.
 - 3) IN DUCT BANKS OR, IF SPECIFICALLY CALLED FOR, IN TRENCHES. BACK-FILL TRENCHES WITH STRUCTURAL FILL 90 % COMPACTED (PROCTOR DENSITY) AND RESOD TO ORIGINAL CONDITION.
- D. USE FLEXIBLE METAL CONDUIT (24 TO 60 INCHES LONG) FOR CONNECTIONS TO ROTATING OR VIBRATING EQUIPMENT.

- 2.4 INSTALLATION
- A. DRAWINGS ARE DIAGRAMMATIC AND DO NOT SHOW ALL BENDS, FITTINGS, BOXES, AND SPECIALITIES WHICH MAY BE REQUIRED OR THE EXACT LOCATION OF CONDUITS. EXAMINE THE STRUCTURAL AND FINISH CONDITIONS AFFECTING ALL OF THE WORK AND PLAN IT ACCORDINGLY. FURNISHING SUCH FITTINGS AS MAY BE REQUIRED TO MEET SUCH CONDITIONS. ARRANGE CONDUIT RUNS TO CLEAR BEAMS, PIPES AND OTHER OBSTRUCTIONS AND AVOID INTERFERENCES WITH OTHER TRADES WORK. ANY CHANGES FROM LOCATIONS SHOWN ON THE DRAWINGS MUST BE APPROVED BY THE ENGINEER.
- B. INSTALL RACEWAYS PARALLEL OR PERPENDICULAR TO WALLS, STRUCTURAL MEMBERS, OR INTERSECTIONS OF VERTICAL PLANES AND CEILINGS. INSTALL HORIZONTAL RACEWAYS CLOSE TO CEILING OR CEILING BEAMS, AND ABOVE PIPES AND DUCTS.
- C. SIZE RACEWAY ACCORDING TO NEC, BUT IN NO CASE SHALL BE LESS THAN INDICATED ON DRAWINGS. MINIMUM SIZE SHALL BE 3/4-INCH, EXCEPT FLEXIBLE CONDUITS TO LIGHT FIXTURES CAN BE 3/8" BUT NOT EXCEEDING SIX FEET LONG.
- D. INSTALL CONDUITS PASSING THROUGH WALLS AND SLABS IN PVC SLEEVES. EXTEND SLEEVES THROUGH FULL CONCRETE THICKNESS AND PROVIDE 1/2- INCH CLEARANCE AROUND CONDUITS TO FACILITATE SEALING.
- E. SEAL ANY OPENING MADE IN SLABS OR WALLS TO PREVENT SMOKE OR FIRE SPREAD AND THE PASSAGE OF WATER. USE SEALING COMPOUND APPROVED FOR THE PURPOSE.
- F. USE EXPANSION FITTINGS WHEN CONDUITS CROSS STRUCTURAL EXPANSION JOINTS.
- G. EXCEPT WHERE BOXES, PANELS AND OTHER EQUIPMENT HAVE THREADED OPENINGS, MAKE CONDUIT CONNECTIONS AS FOLLOWS:
- 1) DOUBLE LOCKNUTS, ONE INSIDE AND ONE OUTSIDE.
 - 2) PROVIDE MALLEABLE, IRON OR STEEL BUSHING WITH BAKELITE LINER MOLDED AND BONDED INTO THE BUSHING.
 - 3) PLACE GROUNDING BUSHING ON END OF CONDUIT IN ADDITION TO LOCKNUTS.

- 2.5 SUPPORT OF RACEWAY
- A. INSTALL WALL MOUNTED ELECTRICAL EQUIPMENT, WIRING TROUGHS, JUNCTION BOXES AND GROUPS OF TWO OR MORE CONDUITS ON A SYSTEM OF EXTRUDED, GAUGE 12, 1-5/8 INCHES WIDE, ALUMINUM CHANNELS. ATTACH CHANNELS TO WALL WITH STAINLESS STEEL MACHINE BOLTS AND EXPANSION SHIELDS. CHANNELS TO BE SERIES P-1000 WITH COMPATIBLE HARDWARE AND FITTINGS AS MANUFACTURED BY UNISTRUT MFG. CO. OR EQUAL.
- B. FASTEN VERTICAL AND HORIZONTAL RUNS OF RACEWAYS AT INTERVALS OF NOT MORE THAN 8 FEET AND WITHIN 3 FEET OF BENDS, OUTLETS AND JUNCTION BOXES.
- C. SUPPORT SINGLE CONDUITS NOT LARGER THAN 1-1/2 INCHES IN DIAMETER BY MEANS OF TWO-HOLE PIPE STRAPS OR INDIVIDUAL PIPE HANGERS. FOR CONDUITS LARGER THAN 1-1/2 INCHES IN DIAMETER USE INDIVIDUAL PIPE HANGERS.
- D. SPACE CONDUITS INSTALLED AGAINST CONCRETE SURFACES NOT LESS THAN 1/4 INCH AWAY FROM THE SURFACES BY CLAMP BACKS OR OTHER APPROVED MEANS.
- E. FURNISH HANGER RODS MADE OF GALVANIZED STEEL OF NOT LESS THAN 1/4 INCH IN DIAMETER. WHEN CONCEALED ABOVE A SUSPENDED CEILING, GALVANIZED PERFORATED STEEL STRAPPING IS ACCEPTABLE.
- F. SUPPORT BRANCH CIRCUIT RACEWAYS INSTALLED ABOVE SUSPENDED CEILING INDEPENDENTLY OF THE CEILING SUPPORT SYSTEM. WHEREVER POSSIBLE, THEY SHALL BE FASTENED TO THE UNDERSIDE OF THE SLAB ABOVE.

- 2.6 METAL FRAMING (CONTINUOUS SLOT METAL CHANNEL SYSTEM)
- A. CONFIGURATION. SINGLE CHANNEL OR TWO SINGLE CHANNELS WELDED TOGETHER, WITH CONTINUOUS 7/8-INCH SLOT AND TO ACCEPT SPRING-HELD STEEL NUTS.
- B. DIMENSIONS: FOR SINGLE CHANNEL, 1-5/8 INCHES BY 1-5/8 INCHES. FOR DOUBLE CHANNEL, 1-5/8 INCHES BY 3-1/4 INCHES BOTH 12-GAUGE. FITTINGS TO BE 1-5/8 INCHES WIDE BY 1/4 INCH-THICK MINIMUM.
- C. FINISHING OF CHANNELS, PIPE CLAMPS AND FITTINGS TO BE HOT DIP GALVANIZED AFTER FABRICATION CONFORMING TO ASTM A123 OR A153, AS APPLICABLE MINIMUM WEIGHT OF COATING. 2.0 OUNCES PER SQUARE FOOT. NUTS, BOLTS AND SCREW TO BE ELECTRO GALVANIZED.

3.0 CONDUCTORS (600 VOLTS)

- 3.1 MATERIAL
- A. FURNISH CONDUCTORS OF 98 % ANNEALED COPPER, 600 VOLT CLASS B, HEAT AND MOISTURE RESISTANT, THERMOPLASTIC TYPE THHN/THHW (SIZED BY THW RATING), WITH A POLYVINYL CHLORIDE INSULATION RESISTANT TO OIL, GASOLINE AND WEATHER. INSULATION SHALL MEET UL STANDARD 83.
- B. CONDUCTORS TO BE STRANDED; #8 THROUGH #2 SHALL BE 7 STRAND; #1 THROUGH 4/0, 19 STRAND AND 250 MCM THROUGH 500 MCM, 37 STRAND.
- 3.2 IDENTIFICATION
- A. COLOR CODE POWER CONDUCTORS AS FOLLOWS:
- 1) 120/240 VOLT SYSTEM: WHITE-NEUTRAL, BLACK-PHASE A, RED-PHASE B, BLUE-PHASE C.
 - 2) 277/480 VOLT SYSTEM: GRAY-NEUTRAL, BROWN-PHASE A, ORANGE-PHASE B, YELLOW-PHASE C.
- B. BONDING CONDUCTOR GREEN.
- C. IDENTIFY FEEDERS, BRANCH CIRCUITS AND INSTRUMENTATION AND CONTROL WIRES AT TERMINATIONS, JUNCTION AND PULL BOXES.
- 3.3 INSTALLATION
- A. DO NOT USE CONDUCTORS SMALLER THAN AWG #12 FOR POWER AND #14 FOR CONTROL UNLESS SPECIFICALLY INDICATED ON DRAWINGS.
- B. DO NOT PULL CONDUCTORS INTO CONDUITS UNTIL THE MECHANICAL WORK HAS BEEN COMPLETED.
- C. GROUP AND TIE CONDUCTORS IN PANEL BOARDS, JUNCTION BOXES, PULL BOXES, ETC., FOR A NEAT AND ORDERLY APPEARANCE.
- D. USE CONNECTORS, TERMINALS AND SPLICES THAT ARE DESIGNED AND APPROVED FOR THE SPECIFIC TYPE AND SIZE OF THE CONDUCTORS BEING CONNECTED.
- E. FIREPROOF FEEDERS WHERE NOT PROTECTED BY CONDUITS LIKE IN MANHOLES, SWITCH GEARS, ETC.

4.0 OUTLET, PULL AND JUNCTION BOXES

1. OUTLET BOXES IN INDOOR FINISHED WALLS TO BE GALVANIZED STEEL, 4" X 4" X 1-1/2" CONFORMING TO FEDERAL SPECIFICATIONS WC-583 AND ANSI-C33.65.
2. EXTERIOR OUTLET BOXES, BOXES AND FITTINGS EMBEDDED IN CONCRETE, AND BOXES FOR EXPOSED CONDUIT RUNS SHALL BE CAST OF RUST RESISTING METAL, WITH FULL THREADED HUBS, AND SCREW TYPE RUBBER GASKET COVERS.
3. INSTALL BOXES FOR LIGHT SWITCHES LOCATED NEAR DOORS ON THE LOCK SIDE, EVEN WHERE THE SYMBOLS ARE INDICATED ON THE HINGE SIDES.
4. PULL AND JUNCTION BOXES SHALL BE OF 12 GAUGE WELDED ALUMINUM WITH HINGED COVER. NEMA 12 FOR INDOOR USE AND NEMA 4X FOR OUTDOOR USE. MINIMUM DIMENSIONS SHALL BE 12" X 12" X 6".
5. IN CORROSIVE AREAS OR WHERE CALLED FOR ON DRAWINGS, FURNISH PULL AND JUNCTION BOXES OF 14 GAUGE STAINLESS STEEL.
6. WHEN SPLICING CONDUIT CONDUCTORS IN BOXES USE SCREW TYPE TERMINAL STRIP BLOCKS CLASS 9080 (G) AS MANUFACTURED BY SQUARE D OR EQUAL. IDENTIFY EVERY WIRE AT BOTH SIDES AND PROVIDE SPADE TYPE LUGS FOR TERMINATION.
7. PROVIDE PULL AND JUNCTION BOXES WHERE REQUIRED TO REDUCE LENGTH OF CABLE PULL OR REDUCE NUMBER OF ELBOWS BETWEEN OUTLETS.

5.0 SWITCHES AND RECEPTACLES

1. FURNISH WALL SWITCHES OF THE QUIET AND TOTALLY ENCLOSED TUMBLER TYPE, WITH BODIES OF PHENOLIC COMPOUND. WIRING TERMINALS SHALL BE OF THE SCREW TYPE. NO MORE THAN ONE SWITCH SHALL BE INSTALLED IN A SINGLE-GANG POSITION. SWITCHES SHALL CONFORM TO FEDERAL SPECIFICATIONS WS-5896E, HUBBEL 1221 AND 1223, OR APPROVED EQUAL.
2. USE 20A, 125 V, DUPLEX, U-SLOTTED, GROUNDING TYPE RECEPTACLES THAT CONFORM TO FEDERAL SPECIFICATIONS WC-596D, HUBBEL 5362, OR EQUAL.
3. AMOUNT DUPLEX RECEPTACLES VERTICALLY. BOXES MOUNTED BACK TO BACK ARE NOT PERMITTED. GANGED RECEPTACLES AND SWITCHES SHALL HAVE SINGLE MULTI-GANG COVER PLATE.
4. FURNISH HOSPITAL GRADE GROUND FAULT INTERRUPTER WITH DIFFERENTIAL CURRENT TRANSFORMER, SOLID STATE SENSING CIRCUITRY AND CIRCUIT INTERRUPTER. SENSITIVITY TO BE 5 MA, TRIPPING TIME 1/30TH OF A SECOND.
5. WHEN INSTALLING RECEPTACLES IN OUTDOOR LOCATIONS USE CAST-METAL OUTLET BOXES WITH GASKET WEATHERPROOF CAST-METAL COVER PLATES AND SPRING-FLAP CAP OVER EACH RECEPTACLE.
6. USE STAINLESS STEEL COVER PLATES FOR SWITCHES AND RECEPTACLES EXCEPT IN NON-INDUSTRIAL AREAS SUCH AS OFFICES, REST ROOMS, LABORATORIES, ETC.

6.0 MOTOR DISCONNECT SWITCHES & STARTERS

1. PROVIDE EACH MOTOR WITH A DISCONNECTING MEANS MEETING THE REQUIREMENTS OF N.E.C. ARTICLE 430. SWITCHES SHALL BE HEAVY DUTY, HORSE POWER RATED, SUITABLE TO BE PADLOCKED IN "OFF" POSITION AND CONFORM TO FEDERAL SPECS W-S-865, NEMA K51 AND ANSI C33.64. IF FUSES ARE REQUIRED, THEY SHALL BE CURRENT LIMITING TYPE.
2. SIZE DISCONNECTS AND STARTERS FOR THE FULL LOAD OF THE CONTROLLED MOTOR. THE HORSEPOWER RATINGS INDICATED ON THE DRAWINGS ARE SHOWN FOR THE BENEFIT OF THE CONTRACTOR AND DO NOT LIMIT EQUIPMENT SIZE.
3. FOR SINGLE-PHASE FRACTIONAL HORSEPOWER MOTORS, A SINGLE OR DOUBLE-POLE TOGGLE SWITCH WILL BE ACCEPTABLE PROVIDED THE AMPERE RATING OF THE SWITCH IS AT LEAST 125 PERCENT OF MOTOR RATING.
4. SWITCHES SHALL BE THE QUICK-BREAK TYPE AND DISCONNECT ALL UNGROUNDED CONDUCTORS.
5. FOR MOTORS LARGER THAN 1/4 HORSEPOWER, FURNISH STARTERS SPECIFICALLY DESIGNED FOR THE PURPOSE AND HAVING A HORSEPOWER RATING EQUAL TO THE MOTOR CONTROLLED.
6. PROVIDE MOTORS OF 1/8 HORSEPOWER OR LARGER WITH THERMAL-OVERLOAD PROTECTION. THE OVERLOAD PROTECTION DEVICE, OF THE MANUAL RESET TYPE AND WITH CONTACTS ON EACH PHASE, SHALL BE PART OF THE STARTER. SIZE THE OVERLOAD HEATER ELEMENTS ACCORDING TO THE MOTOR MANUFACTURER'S RECOMMENDATIONS AND BASED ON THE ACTUAL MOTOR NAMEPLATE FULL-LOAD CURRENT.
7. PROVIDE EACH MOTOR WITH A SUITABLE CONTROLLER OR DEVICE TO MAKE IT PERFORM AS REQUIRED. AUTOMATIC CONTROL DEVICES SUCH AS THERMOSTATS, FLOAT OR PRESSURE SWITCHES MAY DIRECTLY CONTROL THE START-STOP OF MOTORS UP TO 1/4 HORSEPOWER, PROVIDED THE DEVICES USED ARE DESIGNED FOR THE PURPOSE AND HAVE AN ADEQUATE HORSEPOWER RATING. WHEN THE AUTOMATIC-CONTROL DEVICE DOES NOT HAVE SUCH A RATING, A MAGNETIC STARTER SHALL BE USED WITH THE AUTOMATIC CONTROL DEVICE ACTIVATING THE COIL OF THE CONTACTOR.
8. PROVIDE 3 POSITION MANUAL-OFF-AUTO SWITCH WHEN MANUAL AND AUTOMATIC CONTROL IS REQUIRED. CONNECT THE SELECTOR SWITCH SO THAT ONLY THE AUTOMATIC DEVICES ARE BY-PASSED WHEN THE SWITCH IS IN THE "MANUAL" POSITION. ALL SAFETY DEVICES SUCH AS PRESSURE AND TEMPERATURE SWITCHES, MOTOR OVERLOAD AND SAFETY SWITCHES SHALL BE ACTIVE IN "MANUAL" AND "AUTOMATIC" POSITIONS.
9. MOTOR CONTROL CIRCUITS SHALL OPERATE AT 120V GROUNDED, OBTAINED FROM THE LOAD SIDE OF THE MOTOR-DISCONNECT MEANS. IF THE MOTOR CIRCUIT IS MORE THAN 120V TO GROUND, FURNISH A CONTROL TRANSFORMER WITH FUSED PRIMARY AND SECONDARY CIRCUITS. STARTERS FOR MOTORS WITH SPACE HEATERS SHALL HAVE CONTROL TRANSFORMERS SIZED FOR THE ADDITIONAL LOAD.
10. FURNISH COMBINATION MOTOR STARTERS OF THE MOLDED CASE, MOTOR CIRCUIT PROTECTOR, CIRCUIT BREAKER TYPE, THREE PHASE, OF THE VOLTAGE AND SIZE AS SHOWN ON THE DRAWINGS BUT NOT SMALLER THAN THE SIZE REQUIRED BY THE CONTROLLED MOTOR, 120 VOLT CONTROL CIRCUIT, 3 THERMAL INTERCHANGEABLE OVERLOAD RELAYS, "HAND-OFF-AUTO" OR "ON-OFF" SWITCH AS REQUIRED BY THE APPLICATION, RED AND GREEN PILOT LIGHTS AND FOUR NORMALLY CLOSED AND NORMALLY OPEN INTERLOCK CONTACTS.
11. THE STARTER DISCONNECT SHALL BE OPERABLE BY AN EXTERNAL "ON-OFF" LABELED HANDLE, INTERLOCKED TO PREVENT OPENING THE ENCLOSURE DOOR WHILE THE DISCONNECT IS IN THE "ON" POSITION EXCEPT WHEN CONSCIOUSLY OPERATING A PERMISSIVE RELEASE DEVICE.
12. FURNISH STARTERS MANUFACTURED BY SQUARE D, CLASS 8536, ALLEN BRADLEY BULLETIN NO. 509, OR APPROVED EQUAL.

7.0 PANEL BOARDS

1. PROVIDE DEAD FRONT CIRCUIT BREAKER TYPE PANEL BOARDS WITH COPPER BUS AND AS SCHEDULED ON DRAWINGS. EACH PANEL BOARD SHALL BE PROVIDED WITH A SEPARATE GROUND BUS IN ADDITION TO THE NEUTRAL BUS. CIRCUIT BREAKERS SHALL BE BOLT-ON AND HAVE A MINIMUM INTERRUPTING RATING OF 10,000 AMPERES AT 120 VOLTS, AND 14,000 AMPERES AT 277 VOLTS.
2. A TYPEWRITTEN DIRECTORY SHALL CLEARLY IDENTIFY THE LOAD SERVED BY EACH CIRCUIT AND SHALL BE MOUNTED INSIDE THE DOOR IN A METAL FRAME WITH PLASTIC COVER. CIRCUIT NUMBERS SHALL BE PERMANENTLY INDICATED ADJACENT TO EACH CIRCUIT BREAKER.

8.0 GROUNDING

1. INSTALL GROUNDING AS SHOWN ON DRAWINGS. WHERE NOT INDICATED, INSTALL IN COMPLIANCE WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE. DO NOT USE CONDUCTORS SMALLER THAN SIZE AWG #12.
2. INACCESSIBLE CONNECTIONS SHALL BE MADE WITH THE EXOTHERMIC WELDING PROCESS USING EQUIPMENT MANUFACTURED BY BURUNDY OR ERICO PRODUCTS OR APPROVED EQUAL.
3. ACCESSIBLE CONNECTIONS SHALL BE MADE WITH BURUNDY, MULTIPLE BOLT CONNECTORS SPECIFICALLY APPROVED FOR THE APPLICATION.
4. TO ASSURE ELECTRICAL CONTINUITY, INSTALL JUMPERS ACROSS METAL PARTS SEPARATED BY NON-CONDUCTING MATERIALS OR ATTACHED TOGETHER BY HIGH RESISTANCE JOINTS.
5. DO NOT EMBED GROUNDING CABLES DIRECTLY IN CONCRETE. USE SLEEVES WHEN PASSING CABLES THROUGH CONCRETE. BARE COPPER CABLES BURIED IN EARTH SHALL BE TINNED.
6. FURNISH GROUND RODS OF COPPER CLAD STEEL, 3/4 INCH IN DIAMETER, 10 FEET LONG, DRIVEN FULL LENGTH INTO THE EARTH. MAXIMUM RESISTANCE TO GROUND IS LIMITED TO 25 OHMS. ADDITIONAL GROUND RODS SHALL BE DRIVEN IF REQUIRED TO MAINTAIN THIS LEVEL.
7. PARTS TO BE GROUNDED: SWITCH GEAR AND PANEL BOARD FRAMES, FIXTURES AND DEVICES, CABLE SHEATHS, NEUTRAL OF TRANSFORMERS, BOXES AND RACEWAYS, MOTOR FRAMES, STREET LIGHTS, NON-CURRENT CARRYING PARTS OF APPLIANCES AND DEVICES, AND ALL OTHER PARTS AND EQUIPMENT AS REQUIRED BY NEC. NEVER USE A NEUTRAL WIRE AS GROUNDING MEANS.
8. BOND EQUIPMENT WITH CONDUCTORS INSTALLED IN SAME CIRCUIT RACEWAY AND SIZED AS FOLLOWS:
 - 1) EQUIPMENT RATED 50 AMPERES OR UNDER WITH ONE AWG #8.
 - 2) EQUIPMENT RATED 50 TO 125 AMPERES WITH ONE AWG #6.
 - 3) EQUIPMENT RATED OVER 125 AMPERES WITH ONE AWG #6 AND ONE# 1/0 IN 3/4 INCH CONDUIT TO BUILDING GROUND LOOP OR GROUND ROD.
9. PROVIDE POWER AND LIGHTING CIRCUIT AND 120 VOLT GROUNDING RECEPTACLE WITH A GREEN GROUNDING CONDUCTOR OF THE SAME SIZE AND TYPE AS THE PHASE CONDUCTOR AND RUNNING IN THE SAME CONDUIT.
10. MAKE BONDING TO EQUIPMENT WITH APPROVED SOLDERLESS CONNECTOR. CONTACT SURFACE SHALL BE UNPAINTED AND THOROUGHLY CLEANED BEFORE CONNECTION IS MADE TO INSURE A GOOD METAL CONTACT.

9.0 TRANSFORMERS

1. FURNISH DRY TYPE, THREE OR SINGLE PHASE TRANSFORMERS OF THE SIZE AND VOLTAGE INDICATED ON THE DRAWINGS, WITH FOUR (TWO ABOVE AND TWO BELOW) 2-1/2" PROOF ENCLOSURE WITH FRONT ACCESSIBLE WIRING COMPARTMENT AND CONFORMING TO THE APPLICABLE REQUIREMENTS OF ANSI, IEEE, AND NEMA STANDARDS.
2. CORE AND COIL ASSEMBLY TO BE VACUUM IMPREGNATED WITH CLASS H INSULATION. TEMPERATURE RISE NOT TO EXCEED 115 DEGREE C.
3. TRANSFORMERS SOUND LEVEL NOT TO EXCEED FOLLOWING VALUES: 0 TO 9 KVA, 36 DB; 10 TO 45 KVA , 42 DB; 50 TO 100 KVA, 45 DB.
4. BOLT FLOOR MOUNTED TRANSFORMERS TO FLOOR. WHEN WALL MOUNTED, PROVIDE STEEL BRACKET ANGLES AND BOLT TRANSFORMER TO BRACKET. USE NEOPRENE ISOLATION PADS TO ISOLATE VIBRATIONS.
5. ADJUST PRIMARY TAPS TO PROVIDE A SECONDARY VOLTAGE WITHIN +5 OF NOMINAL VOLTAGE.

10.0 DUCT BANKS

1. DUCT BANKS OF THE SIZE INDICATED ON DRAWINGS, SHALL CONSIST OF A NUMBER OF INDIVIDUAL PVC DUCTS AS INDICATED, ENCASED IN A REINFORCED CONCRETE ENVELOPE.
2. USE PVC SCHEDULE 40 CONDUITS WITH MOLDED INTERLOCKING SPACERS. CONCRETE TO BE CLASS C, 2500 POUNDS PSI. PROVIDE #12 AWG PULL WIRE IN ALL EMPTY CONDUITS.
3. SLOPE DUCTS A MINIMUM OF 3 INCHES PER 100 FEET. SLOPE TO BE AWAY FROM BUILDINGS, FROM ONE MANHOLE TO THE NEXT OR BOTH WAYS FROM A HIGH POINT BETWEEN MANHOLES. KEEP THE HIGHEST POINT NOT LESS THAN 24 INCHES BELOW THE FINISHED GRADE.

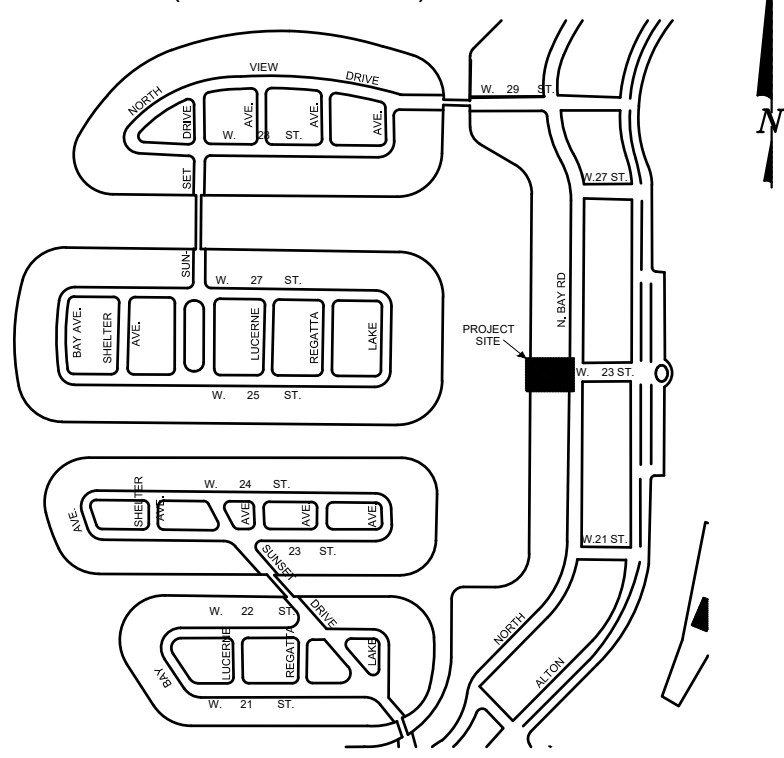
SYMBOL-LEGEND:

	UNDERGROUND POWER CONDUIT		TEMPERATURE ACTUATED SWITCH
	ELECTRICAL CIRCUIT RUN		RELAY CONTACT NORMALLY OPEN, CLOSSES ON ENERGIZATION, OPENS ON
	EXPOSED FUSED SAFETY SWITCH - NUMBER		RELAY CONTACT NORMALLY CLOSED, OPENS ON ENERGIZATION, CLOSSES ON DE-ENERGIZATION
	INDICATES POLES, TRIP AND FRAME - SIZE "10" FOR TRIP INDICATES A NON-FUSED SWITCH		TRANSFORMER
	HORN		PWR, XFMR, 3PH. { Δ DELTA CONNECTION { WYE GROUNDED, NEUTRAL CONNECTION
	BELL		POTENTIAL XFMR, MEDIUM DRAWOUT PRIMARY FUSED NUMERAL INDICATES QUANTITY.
	TRAFFIC RATED PULL BOX		CONTROL POWER XFMR.
	MOTOR		CURRENT LIMITING FUSE
	DUPLEX CONVENIENCE OUTLET		SURGE CAPACITOR & LIGHTNING ARRESTER
	GROUND FAULT INTERRUPTER RECEPTACLE		FLOW SWITCH
	JUNCTION BOX		FLOAT SWITCH
	TOGGLE SWITCH ON-OFF TYPE		PRESSURE SWITCH
	PUSH BUTTON		TIME DELAY RELAY CONTACT
	PUSH BUTTON, ON-OFF TYPE, MAINTAINED POSITION.		
	LIMIT SWITCH		
	OVERLOAD		

NOTES:

1. ALL CIRCUITS TO CARRY A FULL GROUND WIRE PER N.E.C. ARTICLE 250.
2. ELECTRICAL SERVICE TO WITHSTAND UTILITY AVAILABLE FAULT CURRENT AND BUILT PER FPL STANDARD. CONTACT F.P.L. REPRESENTATIVE.
3. SEE MECHANICAL & STRUCTURAL SHEETS FOR INSTALLATION DETAILS.
4. FINISHED FLOOR ELEVATIONS (FFE) AND TOP OF SLABS MUST BE THE GREATER OF ONE (2) FEET ABOVE BASE FLOOR ELEVATION AS ESTABLISHED BY THE AREA'S FEMA FIRM MAP/PANEL TWO (FEET) ABOVE THE CROWN OF ROAD OR ABOVE DESIGN FLOOD ELEVATION.
5. THE SHORT CIRCUIT CURRENT RATING (SCCR) OF THE ELECTRICAL PANEL SHALL BE ADEQUATE TO WITHSTAND THE MAXIMUM SHORT CIRCUIT CURRENT AT THE EQUIPMENT TERMINALS. MIN. 22 KVA. RATED. METER CAN AND MAIN DISCONNECT TO BE MOUNTED ON THE BACK OR SIDE OF CABINET IN A SEPARATE STRUCTURE.
7. MOTOR C.B. TO BE CAPABLE OF BEING PADLOCKED IN THE OPEN POSITION AND NOT OBSTRUCT CLOSING OR OPENING OF DEAD FRONT.
8. "M" PANEL IS FACTORY FURNISHED AS AN INTEGRAL PART OF THE CONTROL PANEL.
9. MOTOR CIRCUIT PROTECTOR INDICATED IS AN ADJUSTABLE INSTANTANEOUS-TRIP MAGNETIC ONLY CIRCUIT BREAKERS FOR SINGLE MOTOR CIRCUIT PROTECTION AND ARE INTENDED FOR USE IN COMBINATION WITH MOTOR STARTERS WITH OVERLOAD RELAYS FOR THE PROTECTION OF MOTOR CIRCUITS FROM SHORT CIRCUITS AND OVERLOADS.
10. FOR 480 APPLICATIONS, CONNECT PANEL "M" TO A 10 KVA TX AS SHOWN IN ONE LINE DIAGRAM (E-3). THE TX SHALL BE NEMA 3 STAINLESS STEEL UNLESS OTHERWISE APPROVED FOR AN SPECIFIC LOCATION AND MOUNTED OUTSIDE THE CONTROL PANEL WITH ADEQUATE SUPPORT.
11. ALL CABLES SHALL BE LISTED BY A NATIONALLY RECOGNIZED TESTING LABORATORY. MOTOR WIRES SHOWN ARE MOTOR POWER AND GROUND ONLY. SUBMERSIBLE PUMP CABLES MULTICONDUCTOR TO BE FURNISHED BY THE MANUFACTURER AS AN INTEGRAL PART OF THE MOTOR. IF THE PUMP IS FURNISHED WITH SEPARATED POWER AND CONTROL CABLES, CONTRACTOR SHALL INCREASE THE SIZE OF THE CONDUITS AS REQUIRED.
12. PUMP CONTROL PANEL SHALL BE MANUFACTURED AND LABELED PER UL 688A AND SUITABLE FOR SERVICE ENTRANCE USE.
13. MAIN CONTROLLER TCU800 (MIAMI BEACH STANDARD).
14. WET WELL IS A CLASS 1 DIVISION 1 AND VALVE BOX IS A CLASS 1 DIVISION 2 HAZARDOUS LOCATION AS PER NFPA 820. SEAL OFF SHALL COMPLY WITH NEC 501.
15. PRESSURE TRANSDUCER AND FLOAT SWITCHES TO BE ADEQUATE FOR CLASS 1 DIVISION 1 LOCATION. ELECTRICAL EQUIPMENT IN VALVE VAULT TO BE ADEQUATE FOR CLASS 1 DIVISION 2 LOCATION.
16. MAIN DISCONNECT SWITCH SIZED TO MATCH MAIN CIRCUIT BREAKER AND IN A PAD LOCKABLE SERVICE RATED, 22 kA MIN. NEMA 4X STAINLESS STEEL ENCLOSURE.
17. PANEL SHALL INCORPORATE TAMPER/INTRUSION SWITCH(ES) THAT ACTIVATES AN ALARM TO THE RTU WHENEVER THE PANEL IS OPENED. THE SWITCH SHALL BE LOCATED ON EACH PANEL DOOR WHERE A DOOR HANDLE IS PROVIDED.
18. THE TEMPERATURE RATING ASSOCIATED WITH THE AMPACITY OF A CONDUCTOR AND ALL ELECTRICAL AND APPURTENANCES SHALL COMPLY WITH NEC 110.
19. LIGHTNING ARRESTER AND SURGE CAPACITOR SHALL BE INSTALLED IN PANEL AND CONNECTED TO A MULTI-WIRE LUG IN MAIN CIRCUIT BREAKER BY CONTROL PANEL MANUFACTURER.
20. GROUNDING AND NEUTRAL CONDUCTORS SHALL BE BONDED AT ENTRANCE POINT ONLY.
21. PROVIDE PANELS SPARE PARTS FOR TWO YEAR.
22. THE CONTRACTOR SHALL FURNISH FOR ALL APPLICABLE EQUIPMENT THE FOLLOWING: ELECTRICAL STUDIES IN ACCORDANCE WITH SECTION 260733 OF THE SPECIFICATIONS:
 - A. SHORT-CIRCUIT AND PROTECTIVE DEVICE COORDINATION STUDIES AS PREPARED BY THE ELECTRICAL EQUIPMENT MANUFACTURER OR AN APPROVED ENGINEERING FIRM.
 - B. ARC-FLASH HAZARD ANALYSIS PER THE REQUIREMENTS SET FORTH IN NFPA 70E - STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE, AND NEC 110. THE ARC-FLASH ANALYSIS SHALL BE PERFORMED ACCORDING TO THE IEEE 1584 EQUATIONS THAT ARE PRESENTED IN THE LATEST CURRENT EDITION OF NFPA 70E.
 - C. ARC-FLASH HAZARD ANALYSIS PROVIDING WARNING LABEL INDICATING SEVERITY OF POTENTIAL EXPOSURE AND LEVEL OF PERSONAL PROTECTIVE EQUIPMENT (PPE) REQUIRED. LABEL SHALL BE AS PER DETAIL ON SHEET E-3.
26. AS PER NEC ARTICLE 408.110 REQUIREMENTS, THE CONTROL PANEL SHALL BE MARKED WITH A SHORT CIRCUIT RATING THAT IS DETERMINED BY BEING A LISTED AND LABELED ASSEMBLY OR BY ANOTHER APPROVED METHOD.
27. SEE CIVIL DRAWINGS FOR SITE RESTORATION DETAILS.

KEY PLAN (NOT TO SCALE):



P.E. SEAL:

DIOCLES TORRALBAS
No 96030
STATE OF FLORIDA
PROFESSIONAL ENGINEER

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MIAMI BEACH PUBLIC WORKS DEPARTMENT 1700 CONVENTION CENTER DRIVE, MIAMI BEACH, FL.33139	CITY MANAGER: ALINA T. HUDAK	5				 ENGINEER OF RECORD: DIOCLES TORRALBAS., P.E. FLORIDA P.E. No. 96030 GREEN DADE, INC. 7220 SW 12TH ST, MIAMI, FL 33144	ENGINEER OF RECORD: <u>DT</u>	NEIGHBORHOOD:	PUMP STATION 24 AT LOWER N BAY RD	File Name: E-1.0.dwg		
	DIRECTOR: JOSE GOMEZ, P.E., F.FES	4					DESIGN ENGINEER: <u>DT</u>			Survey Reference:		
	CITY ENGINEER: CRISTINA ORTEGA CASTINEIRAS, P.E.	3					DRAWN BY: <u>DT</u>			Field Book: <u>N/A</u>	Page: <u>N/A</u>	Work Order: <u>N/A</u>
		2					CHECKER: <u>ER</u>					
		1					SCALE: <u>AS SHOWN</u>					
		NO.	DATE	REVISION	APPD. BY							
									TITLE:	ELECTRICAL NOTES	Date: <u>1/12/2024</u>	Sheet: <u>25</u> of <u>38</u>

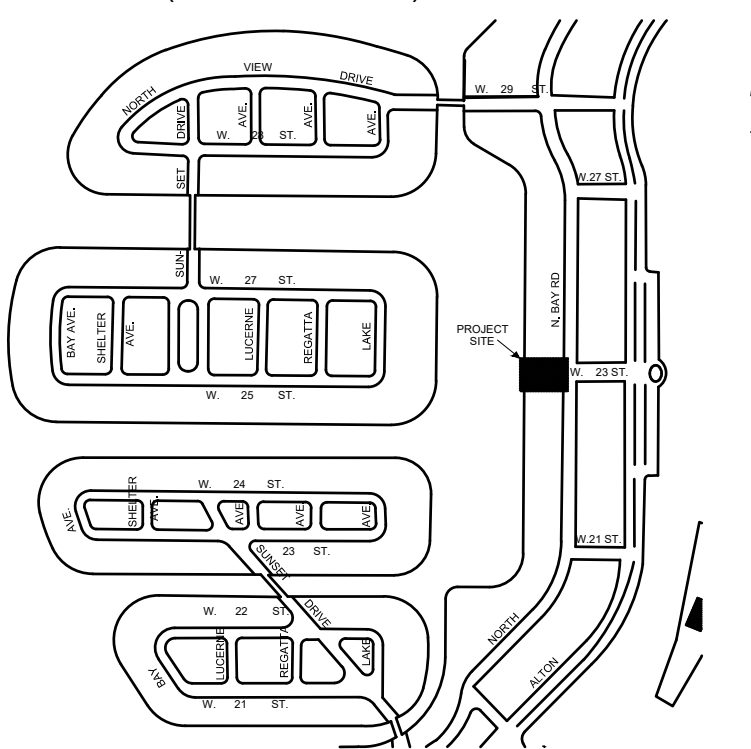
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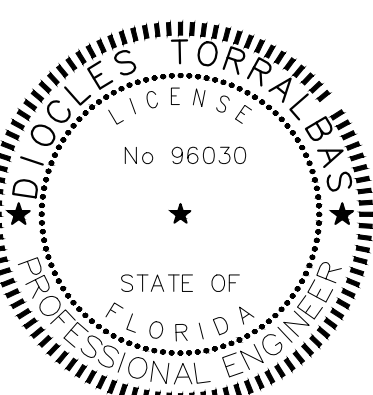
ELECTRICAL SCOPE OF WORK

- COORDINATE THE ELECTRICAL SERVICE AND WORK WITH FPL PROJECT MANAGER PATRICIA NISTAL (305) 338-0093 AND WITH CITY OF MIAMI BEACH (CMB) CONSTRUCTION MANAGEMENT PERSONNEL.
- NEW ELECTRICAL SERVICE AT THE STATION 480/277V, 3PH, 4W. CONTRACTOR TO INSTALL NEW UNDERGROUND STATION SERVICE TO TRANSFORMER TO BE CONNECTED BY FPL.
- INSTALL ALL REQUIRED UNDERGROUND CONDUITS INCLUDING NEW GROUNDING SYSTEM, NEW ELECTRICAL SERVICE, NEW CONDUITS TO CONTROL PANEL, WET WELL AND VALVE PIT
- CONTRACTOR TO INSTALL NEW GROUNDING SYSTEM. SEE E-5 AND E-6 FOR DETAILS.
- PROVIDE NEW CONCRETE PAD AS SHOWN ON PROPOSED SITE PLAN. PROVIDE NEW METER SOCKET, NEW MAIN DISCONNECT, AND NEW CONTROL PANEL.
- THE INFORMATION PROVIDED IN THESE PLANS IS TO ASSIST THE CONTRACTOR IN ASSESSING THE NATURE AND EXTENT OF THE CONDITIONS WHICH MAY BE ENCOUNTERED DURING THE COURSE OF THE WORK. ALL CONTRACTORS ARE DIRECTED, PRIOR TO BIDDING, TO CONDUCT ANY INVESTIGATIONS THEY DEEM NECESSARY TO ARRIVE AT THEIR OWN CONCLUSIONS REGARDING THE ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED.
- CONTRACTOR SHALL PERFORM ALL WORK WITHIN CMB PROPERTY AND EASEMENT, AND SHALL NOT DISTURB ADJACENT PRIVATE PROPERTY.
- CONTRACTOR SHALL TAKE NECESSARY MEASURES TO PROTECT EXISTING TRANSFORMERS AND ELECTRICAL EQUIPMENT TO REMAIN INCLUDING EXISTING PS-24 TO REMAIN.
- CONTRACTOR SHALL VERIFY EXISTING BURIED UTILITIES AND RELOCATE AS NEEDED.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY WHEN CONFLICTS BETWEEN DRAWINGS AND ACTUAL CONDITIONS ARE DISCOVERED.
- THE CONTRACTOR SHALL MAINTAIN A SET OF PLANS WITH CURRENT FIELD CHANGES MARKED THEREON AND SHALL DELIVER THESE PLANS TO THE ENGINEER UPON COMPLETION OF CONSTRUCTION. PROVIDE COMPLETE AS-BUILT DATA AT THE PROJECT'S COMPLETION.
- SEE GENERAL NOTES ON SHEET E-1, DETAIL ON THIS SHEET, AND DETAILS ON SHEET E-6 FOR AREA CLASSIFICATIONS AND THEIR BOUNDARIES.
- SEE DETAILS FOR EQUIPMENT MOUNTING.
- CONTRACTOR SHALL FIELD ROUTE NEW CONDUITS, PROVIDE ALL CONDUIT AND CABLE AS SHOWN ON THE POWER/CONTROL DIAGRAMS AND DETAILS SHEET, AND ELECTRICAL CONTROL PANEL AND DETAILS. PROVIDE ALL REQUIRED RACEWAYS AND CONDUCTORS FOR A COMPLETE POWER AND CONTROL SYSTEM.
- PROVIDE NEW MOTOR CONNECTION BOX. SEE DETAILS ON E-6.
- CONNECT LOADS AS SHOWN IN THE SINGLE LINE DIAGRAM. PROVIDE ALL REQUIRED RACEWAYS AND CONDUCTORS FOR A COMPLETE POWER AND CONTROL SYSTEM.
- NFPA BOUNDARY IS SHOWN ON SHEET E-2. NOTE THAT THE WET WELL, VALVE PIT, AND RECEIVING MANHOLES ARE ALL CLASSIFIED AREAS.
- CONTRACTOR SHALL COORDINATE WITH THE CMB LOW VOLTAGE SUBCONTRACTOR DATA FLOW SYSTEMS (DFS) THE CONTROL PANEL REQUIREMENTS. FOR INSTALLATIONS OF TCU800 (PUMP CONTROLLER/SCADA RTU) TO ENSURE A FULLY FUNCTIONAL SYSTEM. ALL COST FOR DFS INVOLVEMENT SHALL BE INCLUDED IN THE BID.

KEY PLAN (NOT TO SCALE):



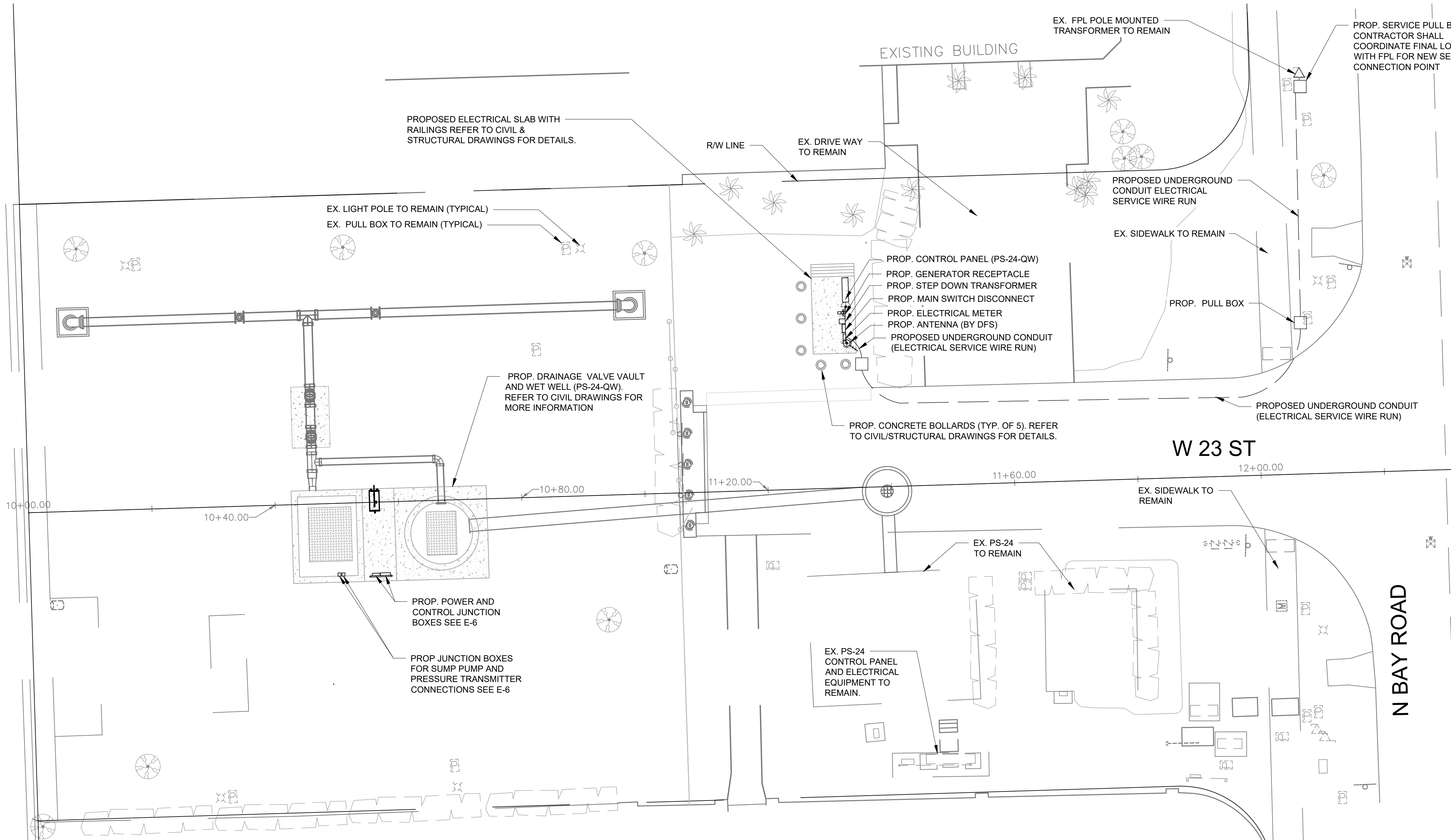
P.E. SEAL:



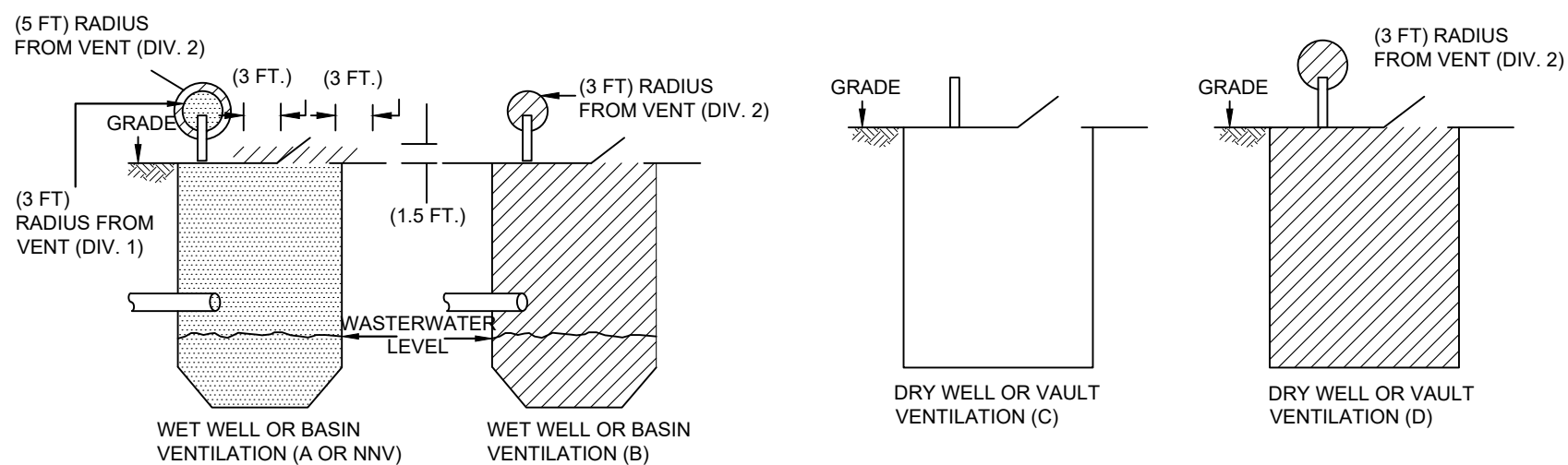
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PROPOSED ELECTRICAL SITE PLAN



- LEGEND:
- A: NO VENTILATION OR VENTILATED LESS THAN 12 AIR CHANGES/HOUR
 - B: CONTINUOUSLY VENTILATED AT 12 AIR CHANGES/HOUR
 - C: CONTINUOUSLY VENTILATED AT 6 AIR CHANGES/HOUR
 - D: NO VENTILATION OR VENTILATED LESS THAN 6 AIR CHANGES/HOUR
 - NNV: NOT NORMALLY VENTILATED

DIVISION 1 DIVISION 2 UNCLASSIFIED

NFPA BOUNDARY CLASSIFICATION

N.T.S.

MIAMI BEACH

PUBLIC WORKS DEPARTMENT
1700 CONVENTION CENTER DRIVE, MIAMI BEACH, FL 33139

CITY MANAGER: ALINA T. HUDAK
DIRECTOR: JOSE GOMEZ, P.E., F.FES
CITY ENGINEER: CRISTINA ORTEGA CASTINEIRAS, P.E.

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1			
NO.	DATE	REVISION	APP'D. BY



ENGINEER OF RECORD:
DIOCLES TORRALBAS, P.E.
FLORIDA P.E. No. 96030
GREEN DADE, INC.
7220 SW 12TH ST, MIAMI,
FL 33144

ENGINEER OF RECORD: DT
DESIGN ENGINEER: DT
DRAWN BY: DT
CHECKER: ER
SCALE: AS SHOWN

NEIGHBORHOOD:

PUMP STATION 24 AT LOWER N BAY RD

TITLE:

ELECTRICAL SITE PLAN

File Name: E-02.dwg

Survey Reference:

Field Book: N/A

Page: N/A

Work Order: N/A

Date: 1/12/2024

Sheet: 26 of 38

Drawing: E-2

ORIGINAL SHEET SIZE 22" X 34"

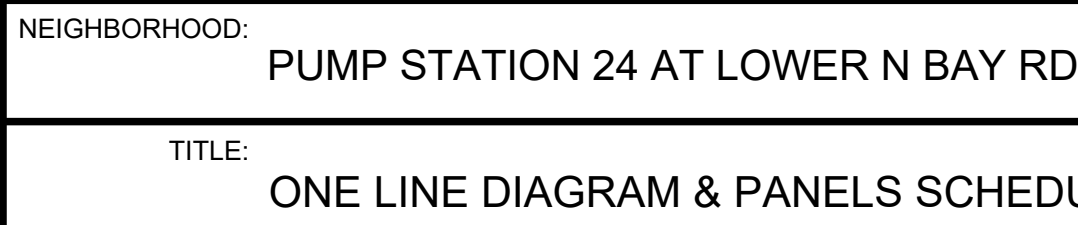


BREAKERS, WIRING AND CONDUIT SCHEDULE						
VOLTS & PHASE	MOTOR HP	6P MOTOR AMP	MOTOR CIRCUIT PROTECT. AMPS	MOTOR WIRE THWN CU. SEE NOTE 11 ON E-1	SIZED FOR ONE PUMP STATION	
					MAIN & STAND-BY BREAKERS	SERVICE
						GROUNDING
480-3φ	34	41	100	3#4 & 1#6G. IN 2" C	200	#4 4#3/0, IN 2" C

SCHEDULES AND CALCULATIONS

FPL FAULT CURRENT LETTER

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NO.	DATE	REVISION	APP'D. BY

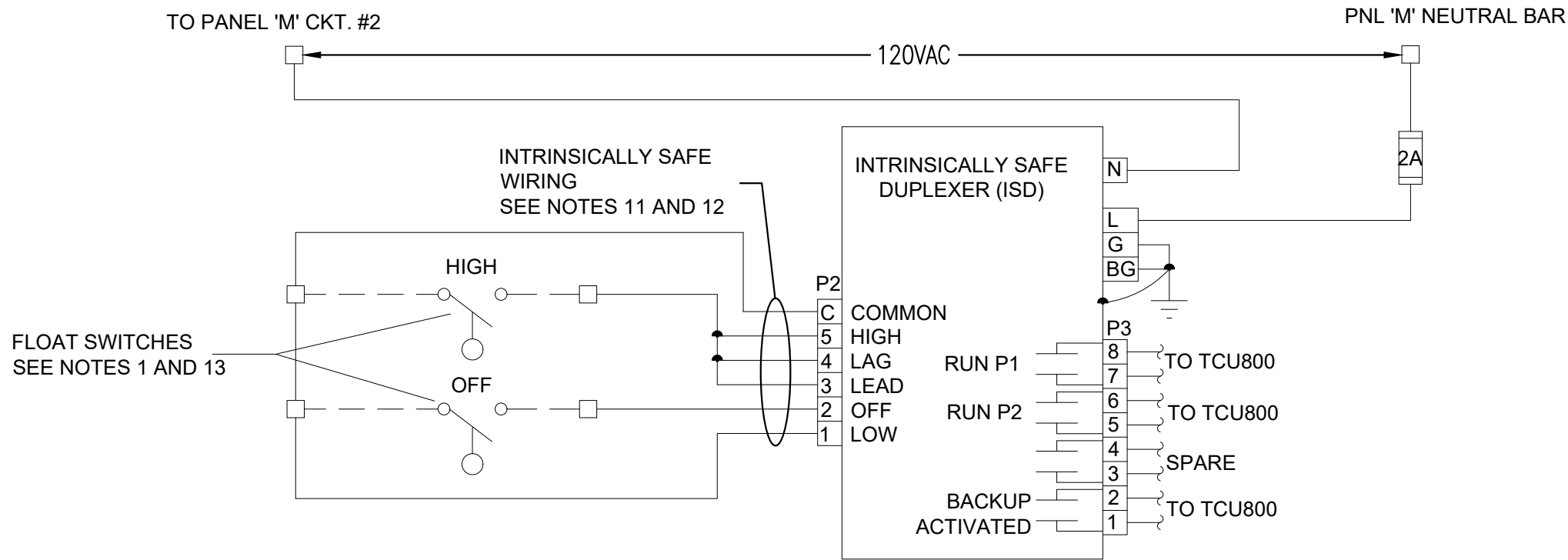


Survey Reference:
 Field Book: N/A Page: N/A Work Order: N/A
 Date: 1/12/2024 Sheet: 27 of 38 Drawing: E-3

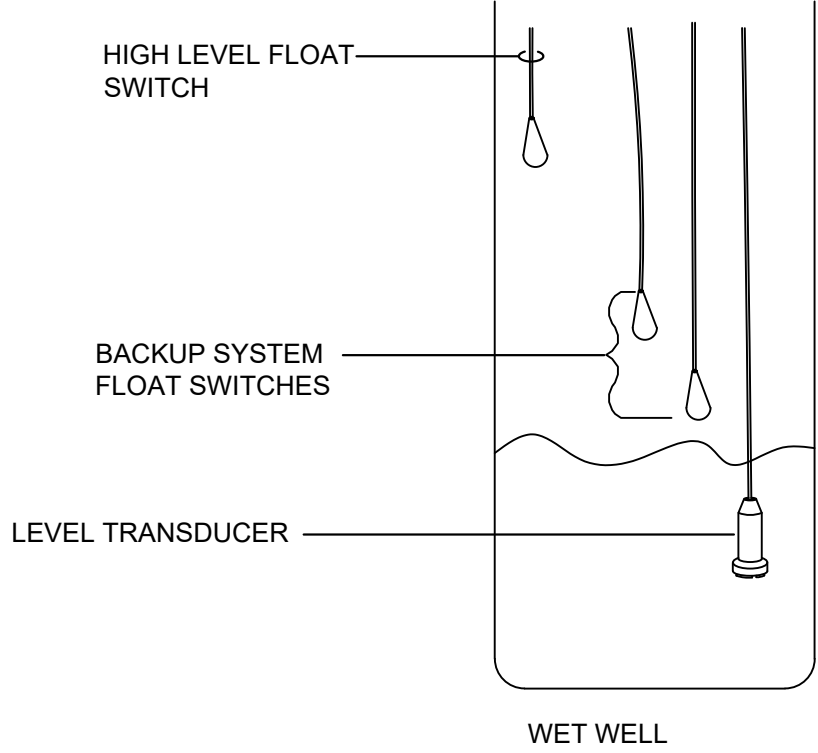
ORIGINAL SHEET SIZE 22" X 34"

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90% SUBMITALL



INTRINSICALLY SAFE DUPLEXER FOR FLOAT SWITCH CONTACTS IN CLASS I, DIVISION 1, GROUP D HAZARDOUS LOCATIONS



LEVEL SENSOR PLACEMENT IN WET WELL

N.T.S.

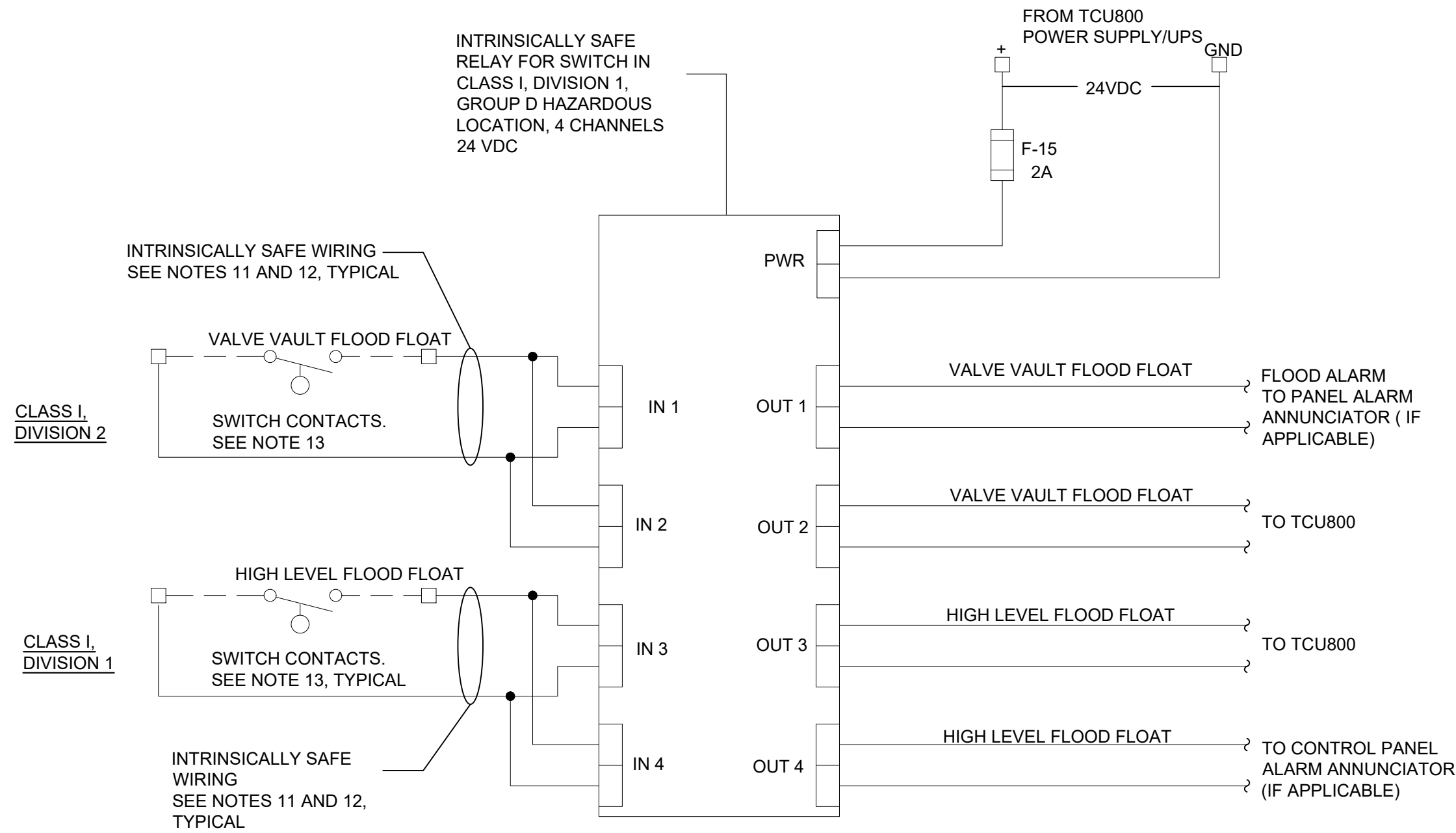
NOTES:

1. BACKUP SYSTEM FLOAT SWITCHES SHOULD BE PLACED ABOVE NORMAL CONTROL RANGE OF THE LEVEL TRANSDUCER.
2. MAXIMUM DISTANCE BETWEEN INTRINSICALLY SAFE DUPLEXER (ISD) / INTRINSICALLY SAFE RELAYS (ISR) AND FLOAT SWITCHES IS 1000 FEET. FLOAT SWITCHES SHALL BE MERCURY FREE, INTERNALLY WEIGHTED WITH GOLD PLATED SWITCH CONTACTS AND SUITABLE FOR INTRINSICALLY SAFE APPLICATIONS SIMILAR TO ECO-FLOAT MODEL GSI_NONC-GOLD BY ANCHOR SCIENTIFIC OR APPROVED EQUAL. UNITS SHALL BE PROVIDED BY PANEL MANUFACTURER.

FLOAT SWITCHES TO BE IDENTIFIED BY MEANS OF PERMANENT MARKING METHODS AS FOLLOWS:

- BLACK - BACK-UP OFF
- ORANGE - BACK-UP ON
- RED - HIGH FLOAT LEVEL (TCU800/SCADA)

3. TO PROTECT AGAINST TRANSIENTS CONNECT ALL GROUND CONDUCTORS TOGETHER AND RUN ONE WIRE TO CONTROL PANEL 'M' GROUND BAR.
4. PRESSURE TRANSDUCER MODEL NUMBER: SLX 130-MIS-10-##-B BY CONTEGRA OR APPROVED EQUAL. PRESSURE TRANSDUCER TO BE FURNISHED BY PANEL MANUFACTURER AND INSTALLED BY THE CONTRACTOR.
5. SIGNAL ISOLATOR VOLTAGE DROP AT INPUT TERMINALS SHALL NOT BE HIGHER THAN 5.5 VDC. ISOLATOR BY PHOENIX CONTACT OR APPROVED EQUAL. PROVIDE A POWERED SIGNAL ISOLATOR IN CASE RTU ASSEMBLY IS FAR FROM CONTROL PANEL.
6. BATTERY 12V, 7.0Ah RECHARGEABLE BATTERY PART #DFS-00363-008-01 OR APPROVED EQUAL. LOCATE AWAY FROM HEAT SOURCES AND PANEL WALLS. PROPOSED POWER SUPPLY INRUSH CURRENT WHEN COLD IS 20 A SELECTED PROTECTIVE FUSE SHALL WITHSTAND SUCH CURRENT. PROVIDE 7 A/H MINIMUM BATTERY CAPACITY.
7. PROVIDE FUSES WITH RATED FUSE HOLDERS.
8. USE SHIELDED WIRE BELDEN CABLE 9341 FOR ALL ANALOG WIRING. TO AVOID GROUND LOOPS GROUND SHIELD AT SOURCE END ONLY.
9. FOR MORE INFORMATION REGARDING PUMP CONTROLLER & SCADA SYSTEM CONSULT TCU800, MULTITRODE-MTR RELAYS, AND CONTEGRA SLX PRODUCT MANUALS.
10. ALL INTRINSICALLY SAFE WIRING SHALL BE SEPARATED FROM NON-INTRINSICALLY SAFE WIRING. REFER TO ARTICLE 504 OF THE NATIONAL ELECTRIC CODE (ANSI/NFPA 70), FOR INSTALLATION OF INTRINSICALLY SAFE WIRING.
11. MAXIMUM DISTANCE BETWEEN UNIT AND SWITCH CONTACTS IS 1000 FEET.
12. SWITCH CONTACT SHALL BE ANY NON-ENERGY STORING OR GENERATING SWITCH TYPE DEVICE CONTAINING NO CAPACITANCE OR INDUCTANCE.
13. CURRENT TRANSFORMER OUTPUT SHALL BE 0-5A. WIRE WITH THE CORRECT POLARITY AND MAKE SURE THAT THE CURRENT PHASE CORRESPONDS TO THE VOLTAGE PHASE. DO NOT GROUND CURRENT TRANSFORMERS.
15. USE SHIELDED WIRE FOR ALL DISCRETE INPUT WIRING. GROUND SHIELD AT SOURCE END.



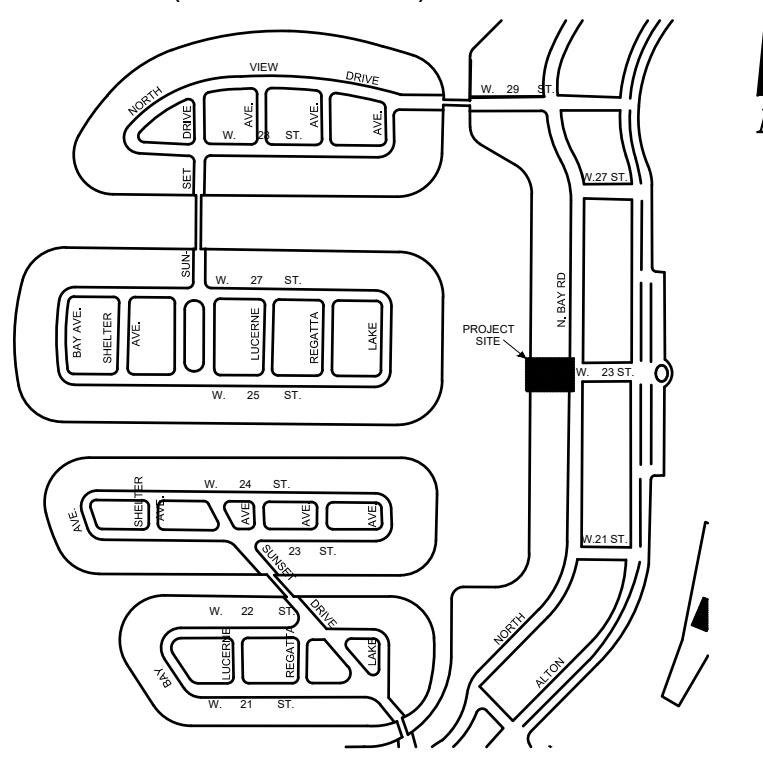
INTRINSICALLY SAFE RELAY FOR "VALVE VAULT FLOOD" AND "HIGH LEVEL FLOOD" SWITCH CONTACT IN GROUP D HAZARDOUS LOCATION

SLX 130-MIS-10-40-B

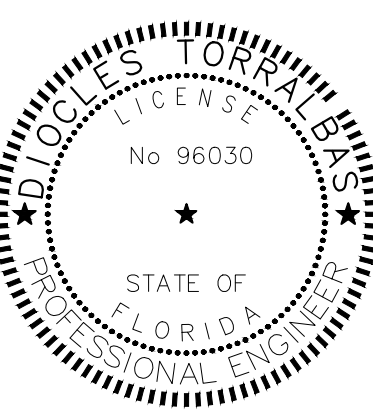
- SLX130: MODEL.
MIS: 4-20mADC. INTRINSICALLY SAFE
10: PRESSURE
5 FOR 0-11.5 FT.
10 FOR 0-23.1 FT.
15 FOR 0-34.6 FT.
30 FOR 0-69.3 FT.
40: FEET OF CABLE 10 FT INCREMENT
BREATHER SYSTEM ONLY

LEVEL TRANSDUCER MODEL NUMBER EXAMPLE (ORDERING INFORMATION)

KEY PLAN (NOT TO SCALE):



P.E. SEAL:



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MIAMI BEACH

PUBLIC WORKS DEPARTMENT
1700 CONVENTION CENTER DRIVE, MIAMI BEACH, FL 33139

CITY MANAGER: ALINA T. HUDAK
DIRECTOR: JOSE GOMEZ, P.E., F.FES
CITY ENGINEER: CRISTINA ORTEGA CASTINEIRAS, P.E.

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NO.	DATE	REVISION	APP'D. BY



ENGINEER OF RECORD:
DIOCLES TORRALBAS, P.E.
FLORIDA P.E. No. 96030
GREEN DADE, INC.
7220 SW 12TH ST, MIAMI,
FL 33144

ENGINEER OF RECORD: DT
DESIGN ENGINEER: DT
DRAWN BY: DT
CHECKER: ER
SCALE: AS SHOWN

NEIGHBORHOOD:

PUMP STATION 24 AT LOWER N BAY RD

TITLE: CONTROL DIAGRAM

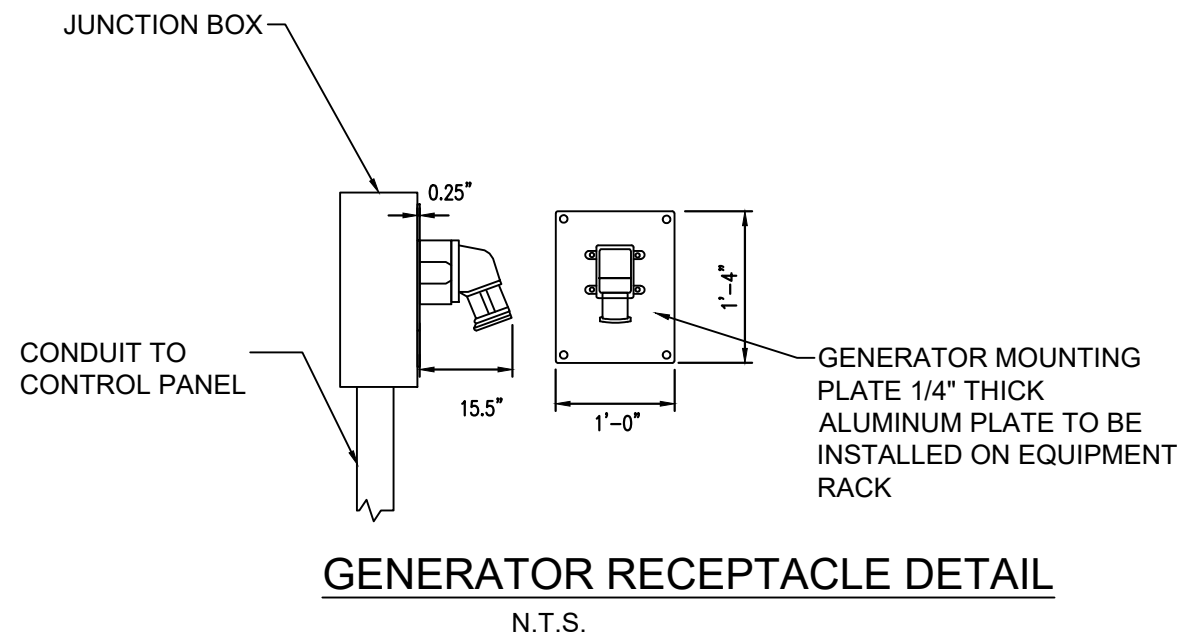
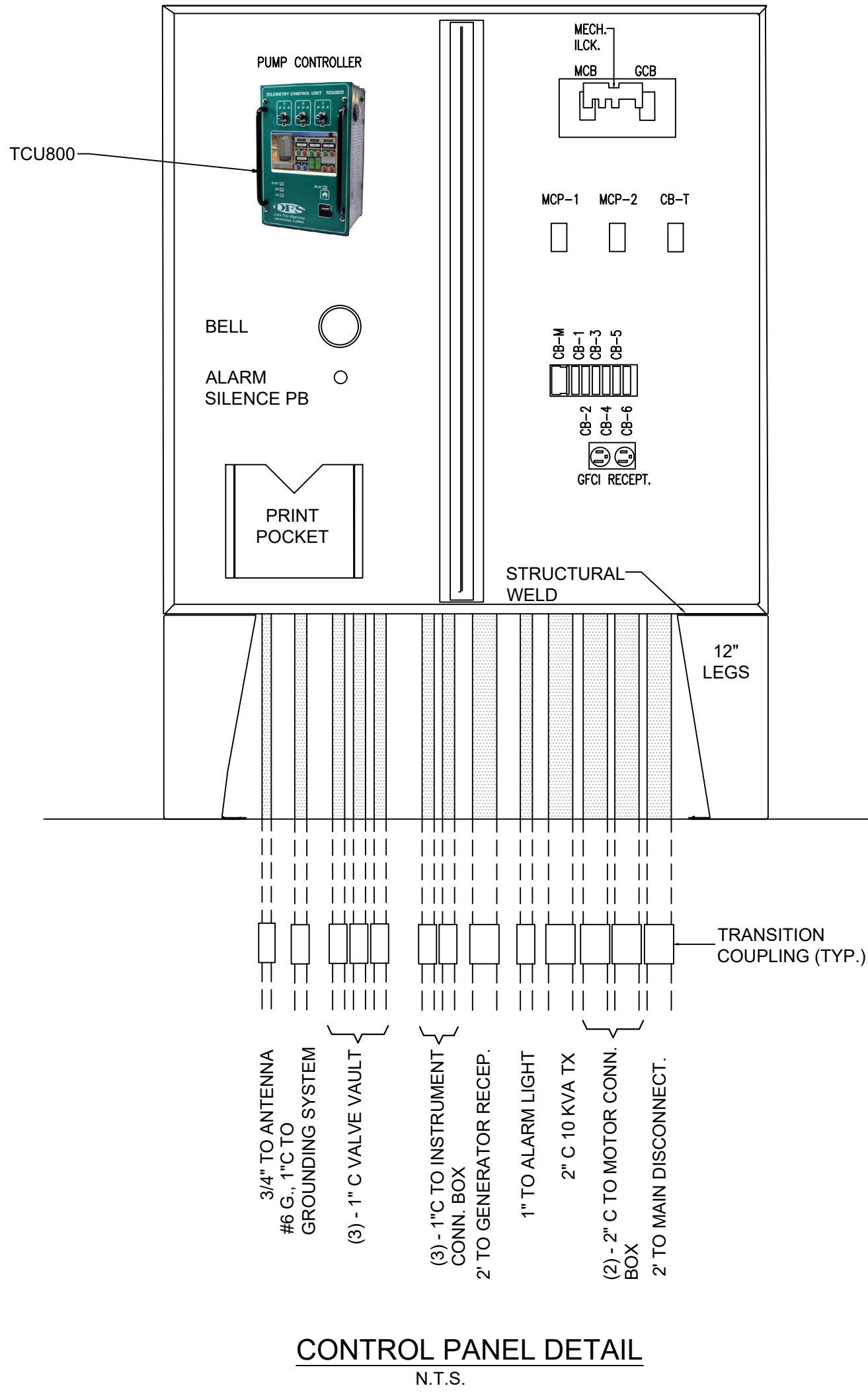
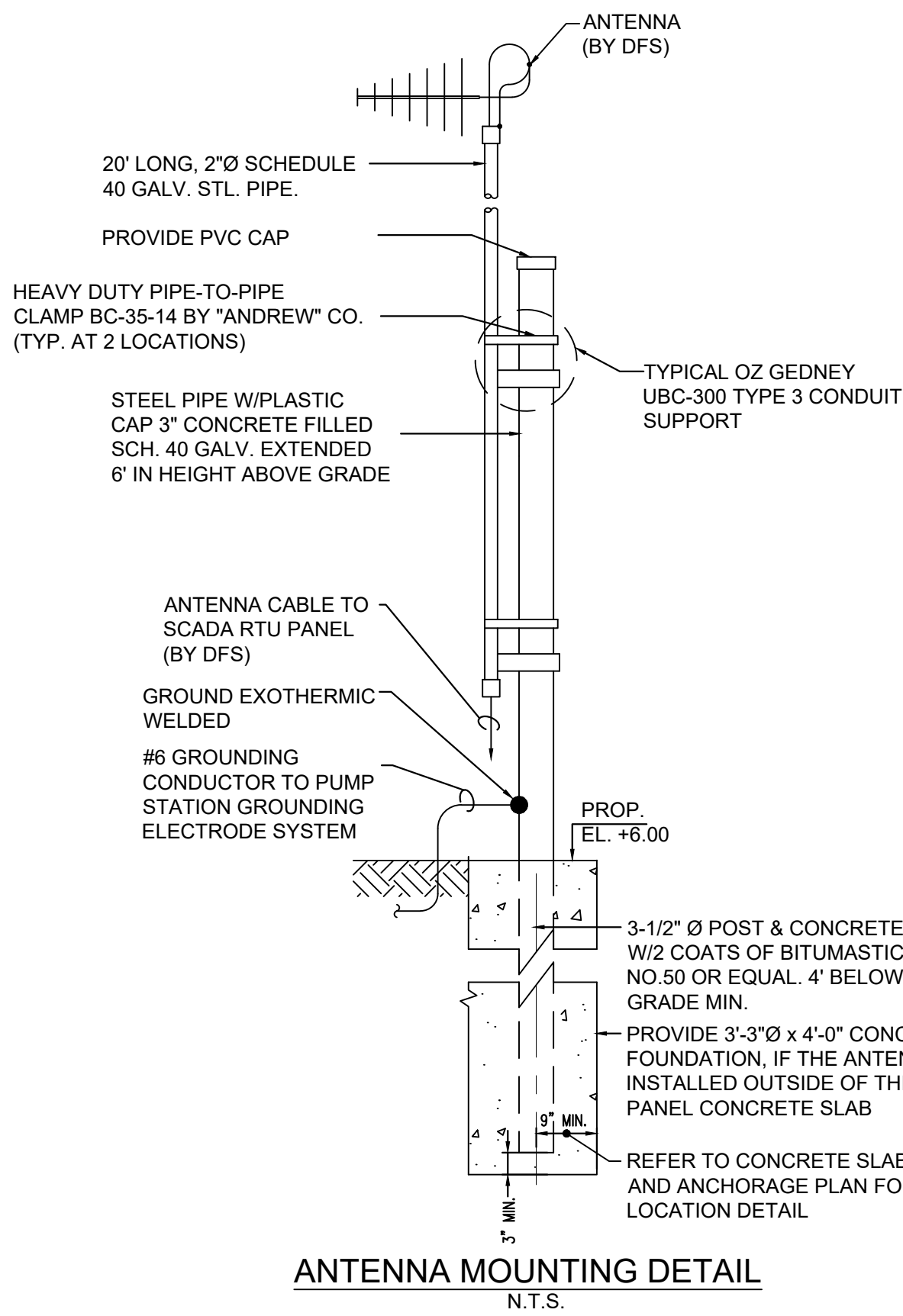
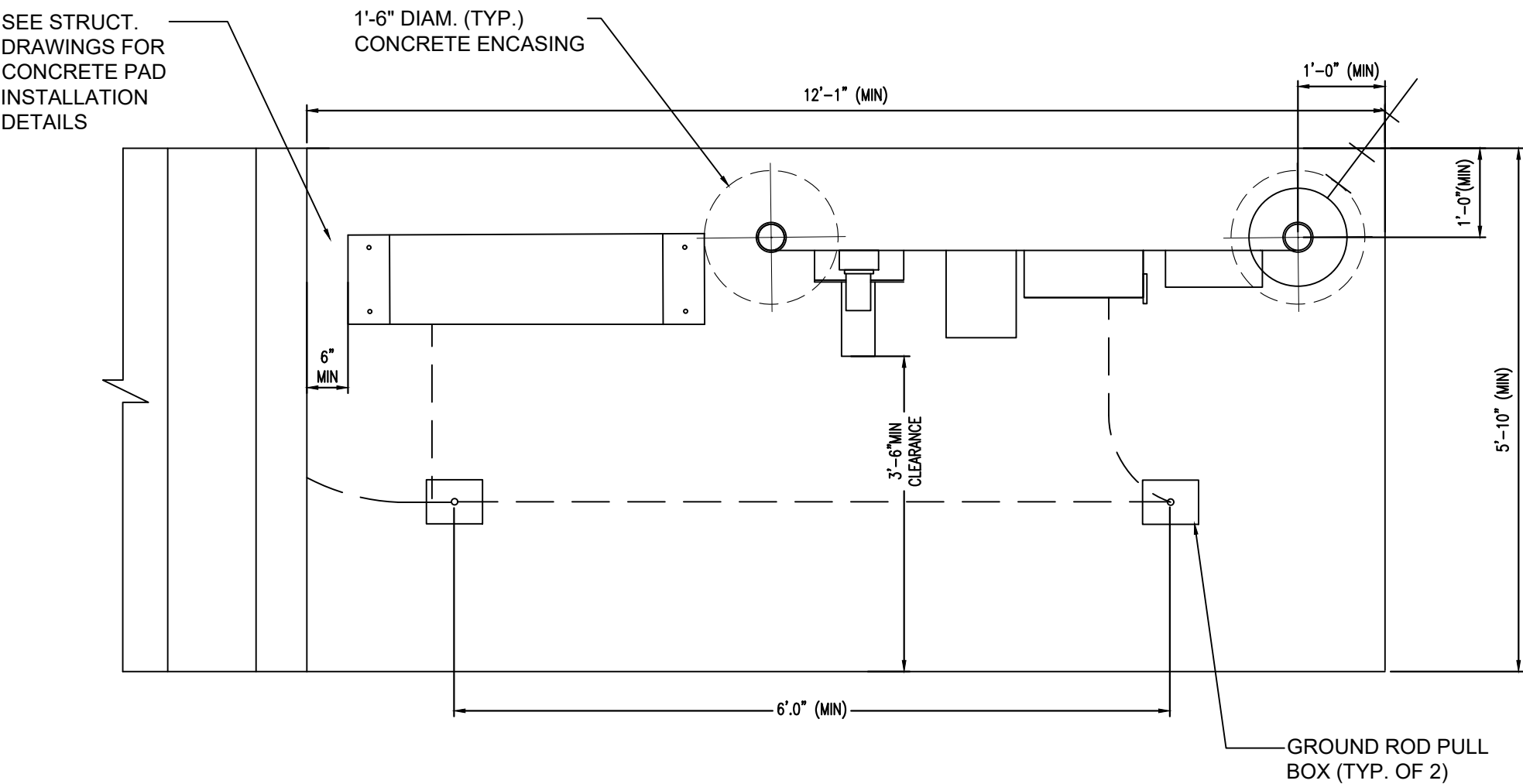
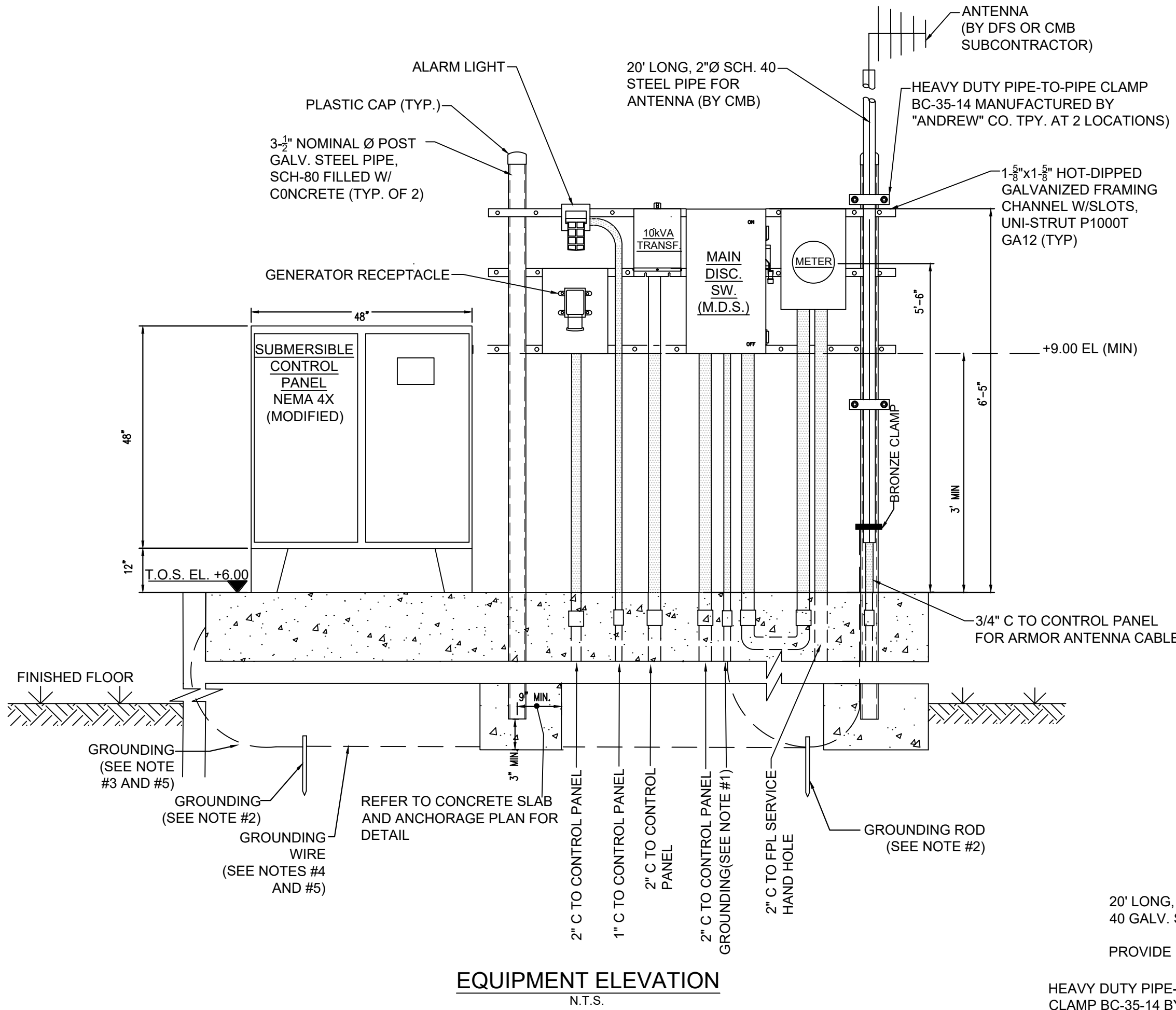
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Survey Reference:

Field Book: N/A Page: N/A Work Order: N/A

Date: 1/12/2024 Sheet: 29 of 38 Drawing: E-5

ORIGINAL SHEET SIZE 22" X 34"

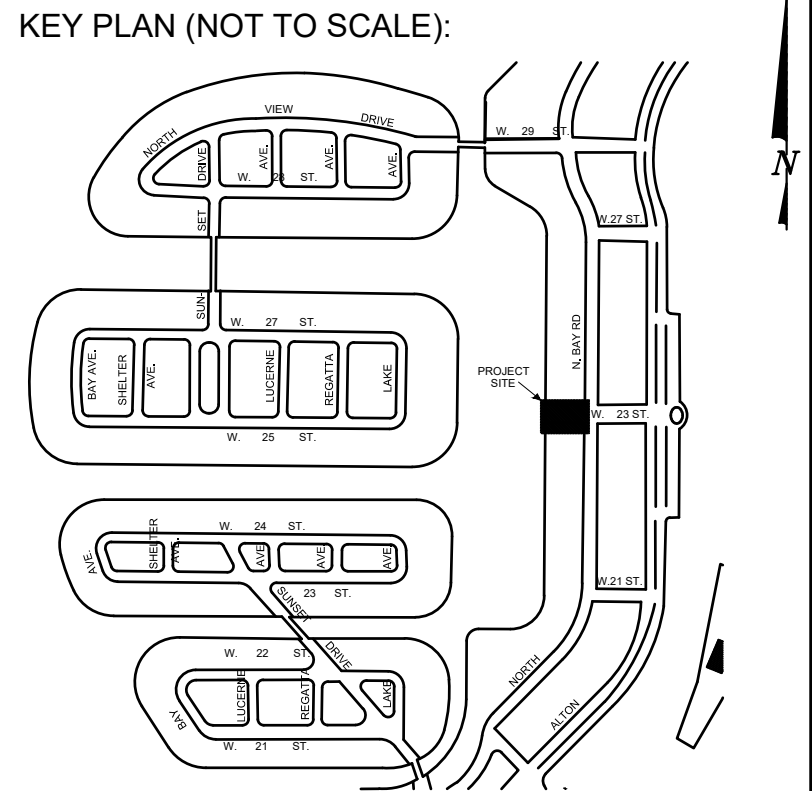


- GROUNDING NOTES:**
- GROUNDING ELECTRODE CONDUCTOR SIZED PER TABLE IN SHEET E-3, IN 3/4" C. INSTALL BETWEEN SERVICE DISCONNECTING MEANS AND GROUNDING ELECTRODE SYSTEM.
 - 3/4" Ø X 10' DEEP COPPER CLAD GROUND RODS AT LEAST 6' APART.
 - #4 AWG STRANDED BARE SOFT DRAWN COPPER WIRE BONDED TO REINFORCING STEEL IN CONCRETE PAD.
 - STRANDED BARE SOFT DRAWN COPPER GROUND WIRE SIZED PER TABLE IN SHEET E-3. INSTALL 30" DEEP.
 - ALL CABLE-TO-ROD, CABLE-TO-STRUCTURAL REBAR, AND CABLE-TO-CABLE CONNECTIONS SHALL BE MADE USING EXOTHERMIC WELDING (CADWELD) PROCESS.

- GENERATOR NOTES:**
- GENERATOR RECEPTACLE SHALL BE MOUNTED ON UNISTRUD.
 - CONTRACTOR TO PROVIDE JUNCTION BOX, CONDUIT AND WIRES TO CONTROL CABINET.
 - CONTRACTOR SHALL SEAL THE GENERATOR RECEPTACLE JUNCTION BOX WITH APPROVED SEALANT TO PROVIDE WATER TIGHT INTEGRITY.

- ANTENNA NOTES:**
- RUN ANTENNA WIRE FROM CONTROL PANEL TO ANTENNA THROUGH 2" POST.
 - CONTRACTOR SHALL COORDINATE WITH THE CITY OF MIAMI BEACH (CMB) AND DATA FLOW SYSTEMS TO PROVIDE ANTENNA.

- CONTROL PANEL NOTES:**
- OUTER DOORS REMOVED TO SHOW DEADFRONT
 - PROVIDE INNER AND OUTER DOOR STOP KITS
 - CONTROL CABINET DEPTH SHALL NOT EXCEED 12 IN.
 - SUPPORTS SHALL MEET LATEST WIND LOAD REQUIREMENTS OF THE LATEST FLORIDA BUILDING CODE
 - PUMP CONTROLLER SHALL BE CMB STANDARD TCU800 BY DATA FLOW SYSTEMS (DFS)
 - CONTRACTOR SHALL COORDINATE WITH THE CITY OF MIAMI BEACH (CMB) AND DATA FLOW SYSTEMS TO CONTROL PANEL WITH THE SPECIFICATIONS NEEDED FOR THIS PROJECT.



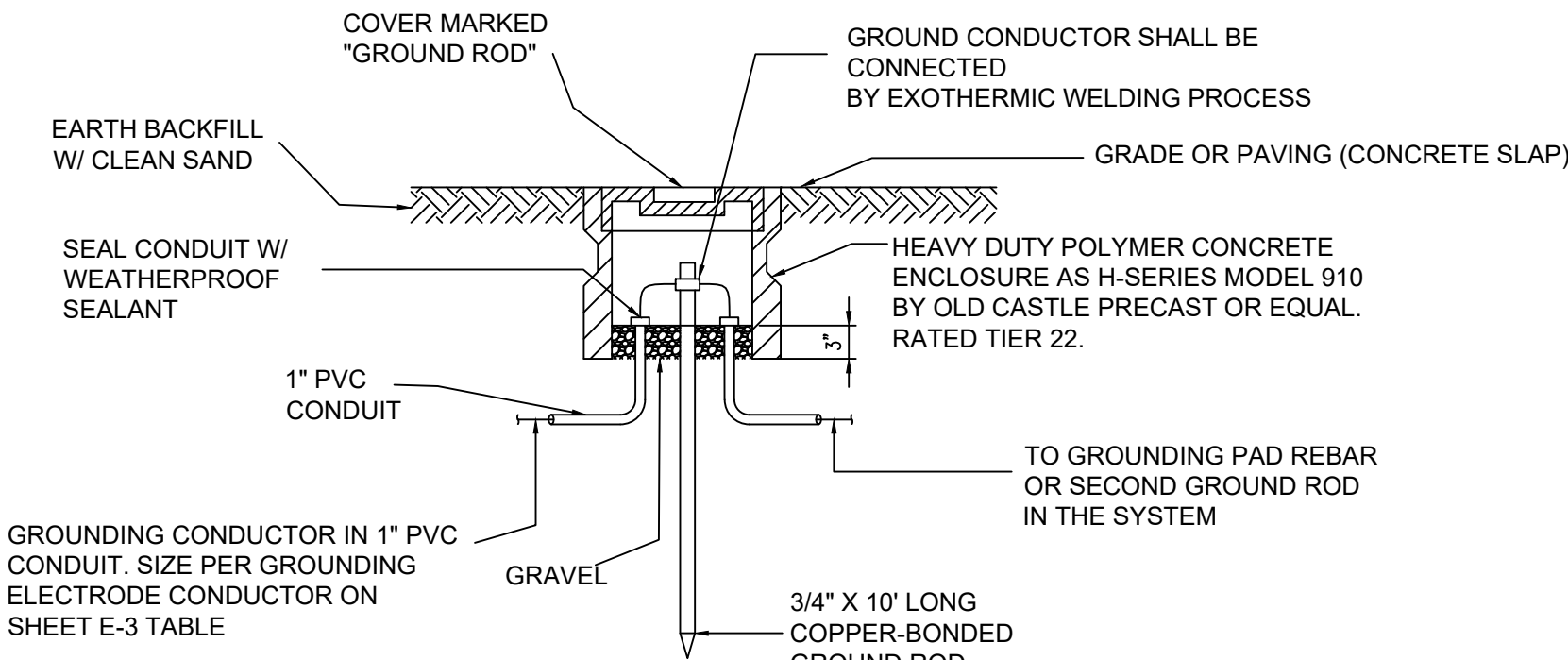
P.E. SEAL:

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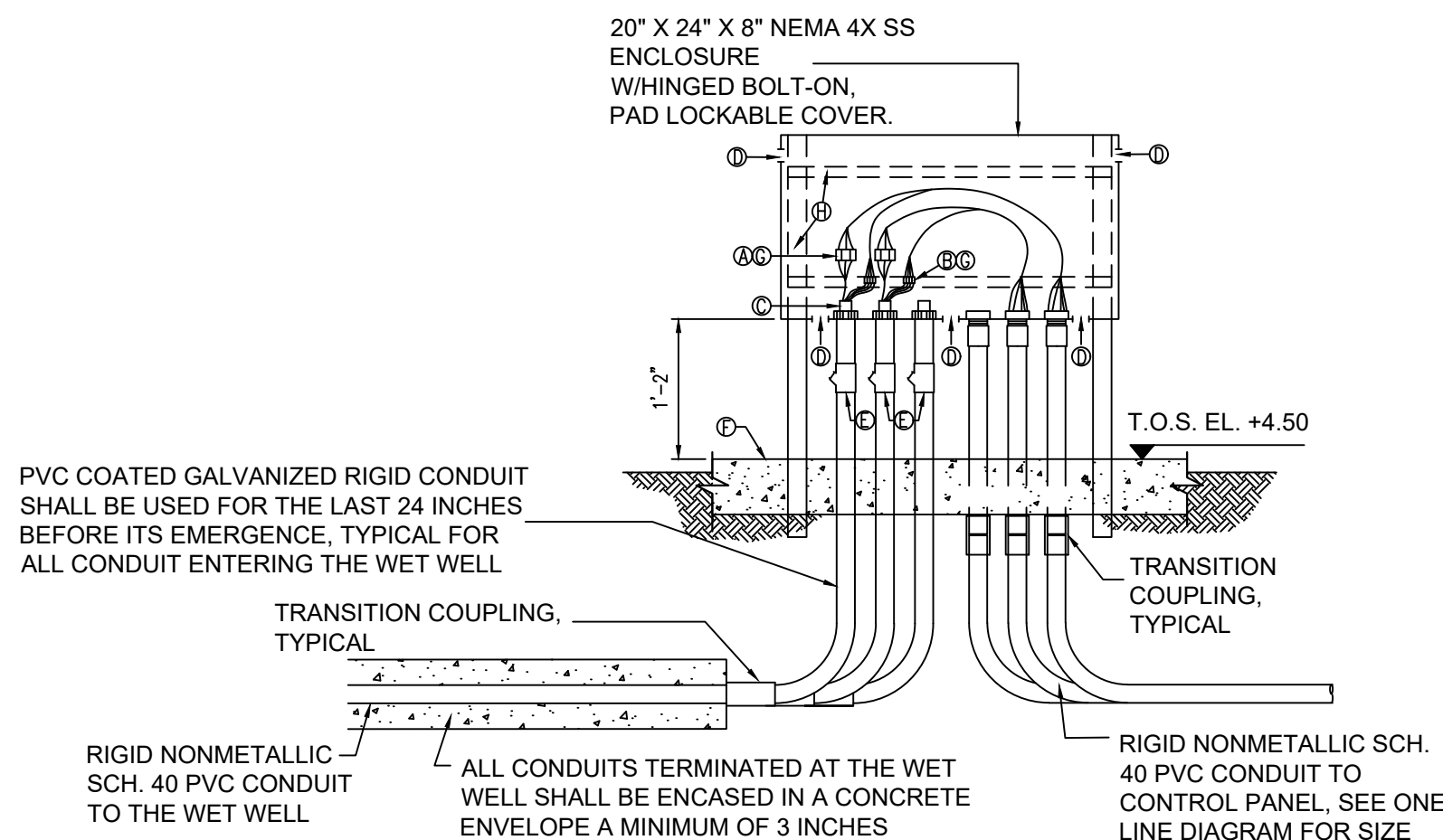
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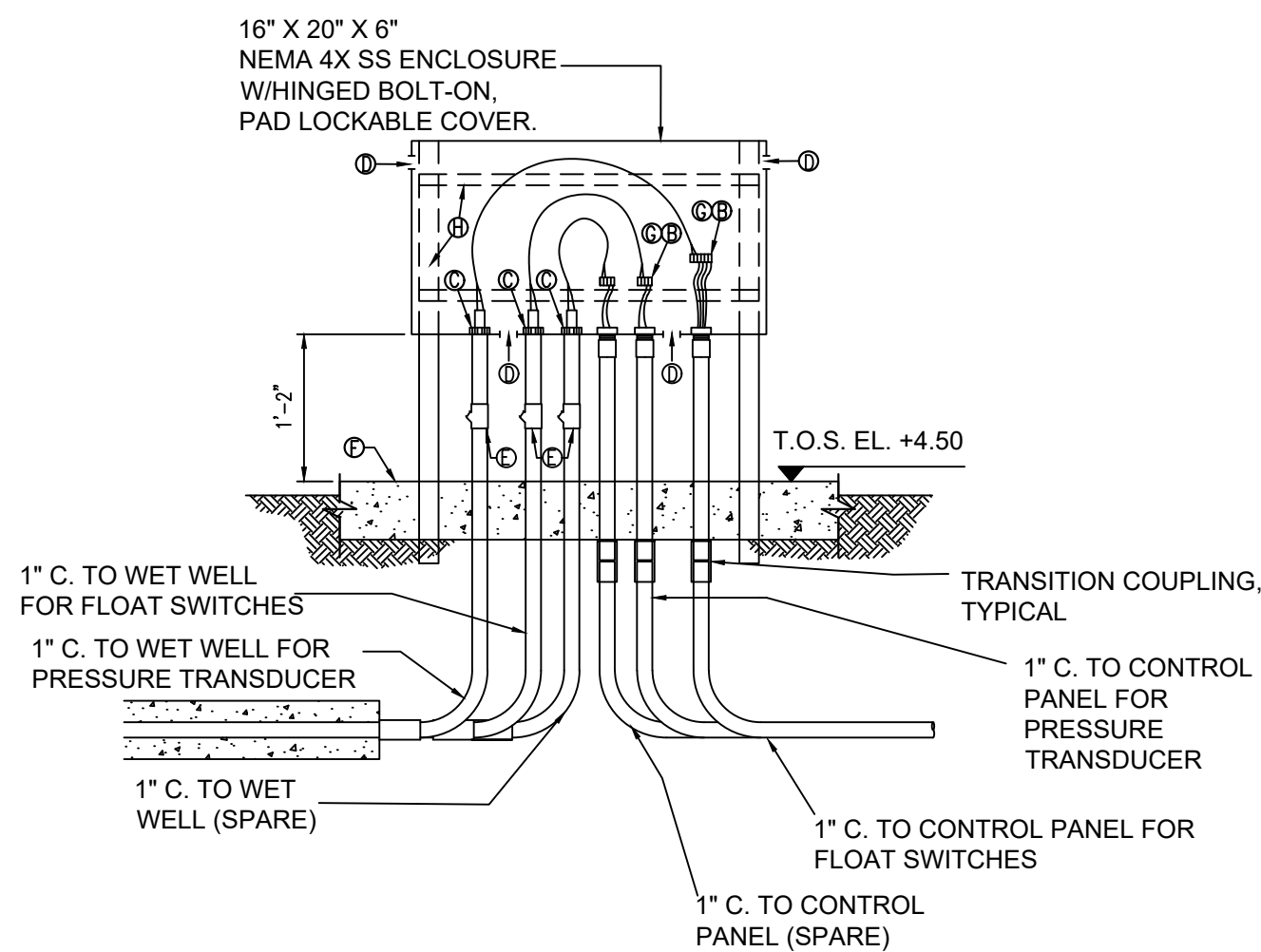
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NO.	DATE	REVISION	APP'D. BY



TYPICAL GROUND ROD INSTALLATION DETAIL
N.T.S.

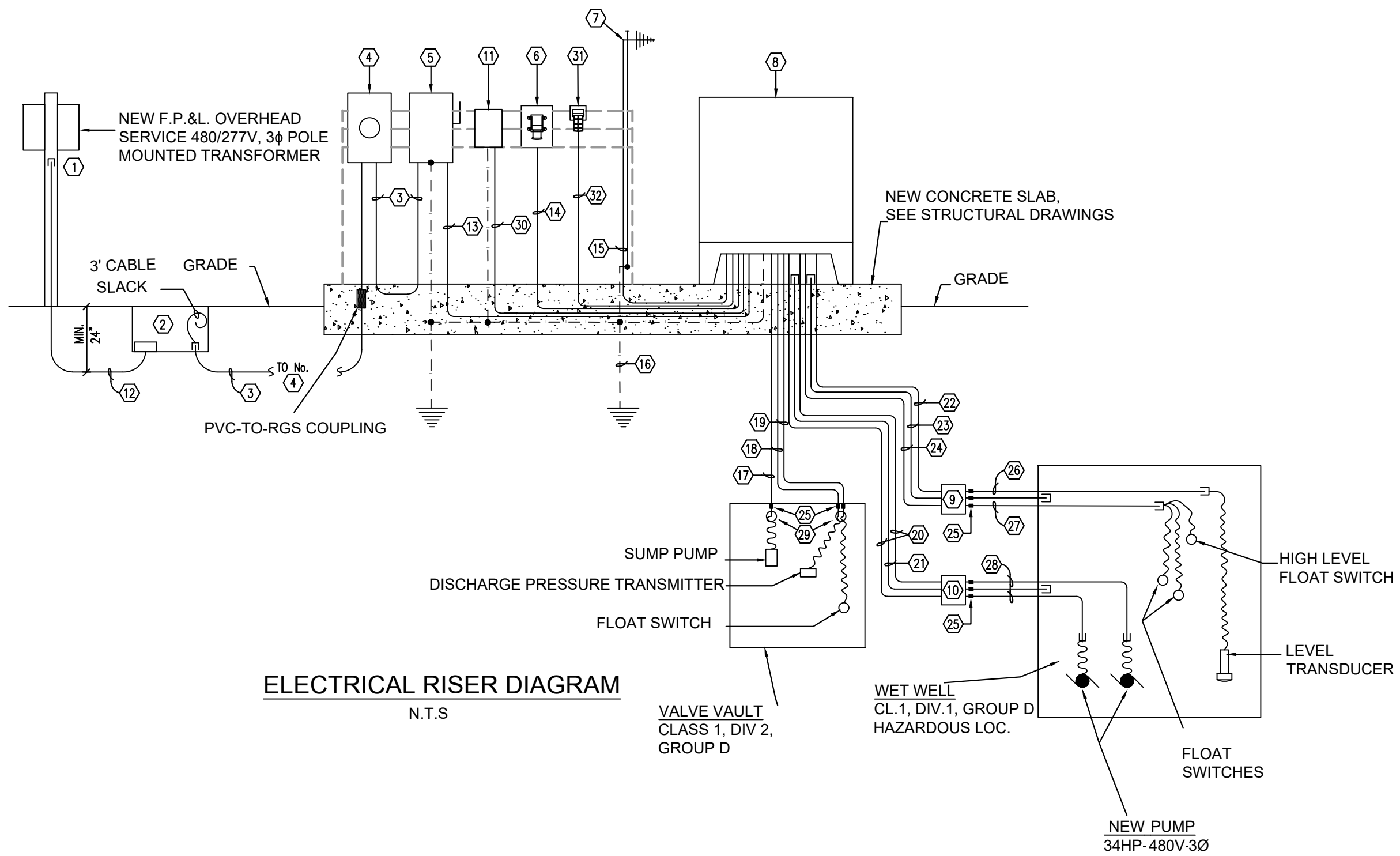


MOTOR CONNECTION BOX DETAIL
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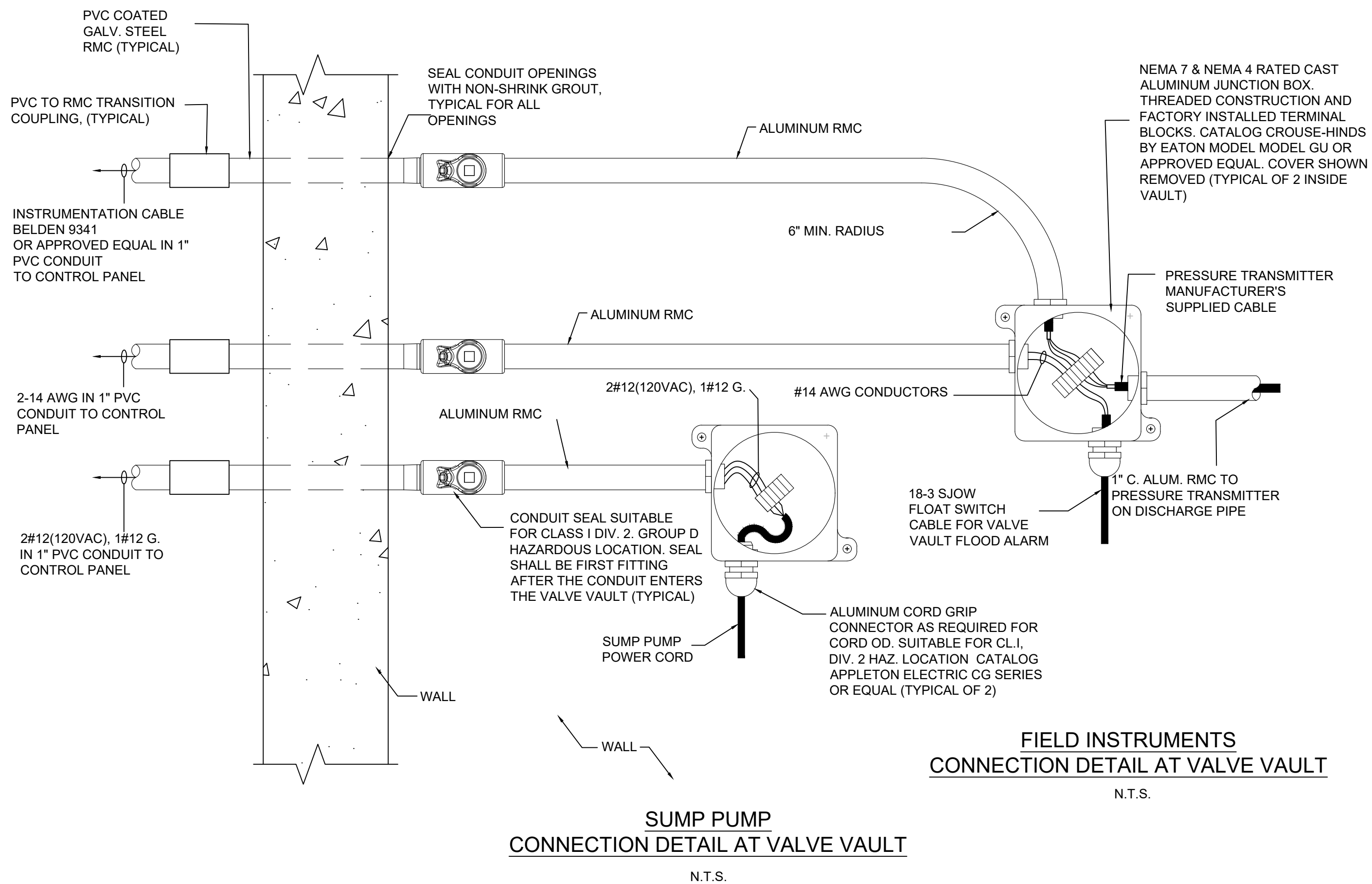


CONTROL CONNECTION BOX DETAIL
N.T.S.

- A. 6-POLE POWER INSULATED TERM BLOCK
PANEL MOUNT ALLEN BRADLEY BULLETIN 1492
SIZED AS REQUIRED.
- B. 6-CIRCUIT CONTROL INSULATED TERM BLOCK
PANEL MOUNT ALLEN BRADLEY BULLETIN 1492
SIZED AS REQUIRED.
- C. CABLE CORD FITTING WITH GLAND NUT &
NEOPRENE BUSHING EQUAL TO CROUSE
HINDS CGFP SIZE OR AS REQUIRED FOR
CABLE O.D.
- D. 1/8" DRAIN AND VENTILATION HOLES
E. CONDUIT SEAL SUITABLE FOR CLASS I, DIV. 1,
GROUP D HAZ. LOCATION
- F. 12" CONCRETE SLAB. SEE SHEET S-3 ON
STRUCTURAL DRAWINGS.
- G. COAT WITH CLEAR URETHANE SEAL
ELECTRICAL-ELECTRONIC INSULATOR AS CRC
'U' 02049
- H. 2" Ø POST GALV. STL. PIPE SCH. 40 FILLED
WITH CONCRETE AND 1-5/8" X 1-5/8" SS
UNISTRUT CHANNELS FOR SUPPORT



ELECTRICAL RISER DIAGRAM
N.T.S.



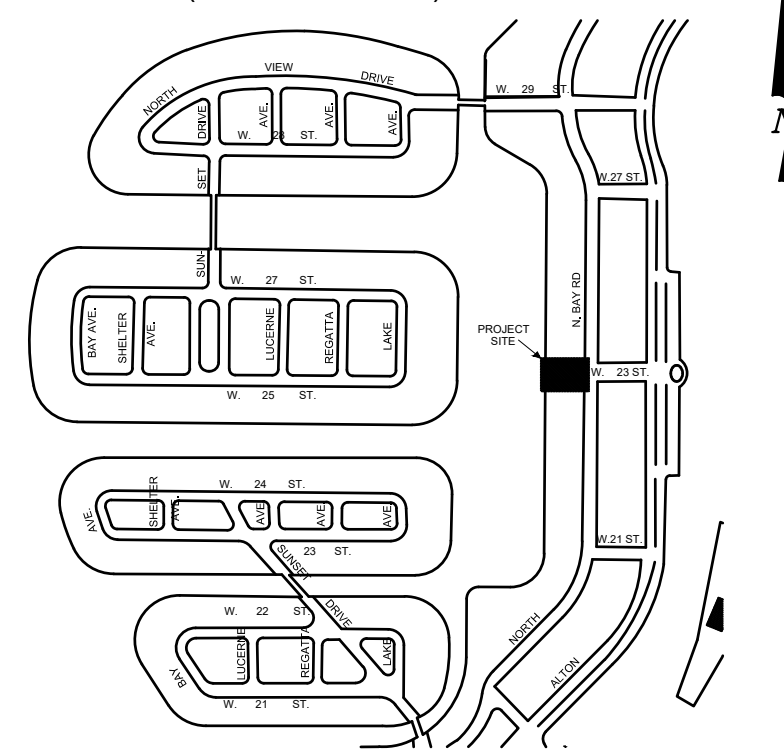
FIELD INSTRUMENTS
CONNECTION DETAIL AT VALVE VAULT
N.T.S.

SUMP PUMP
CONNECTION DETAIL AT VALVE VAULT
N.T.S.

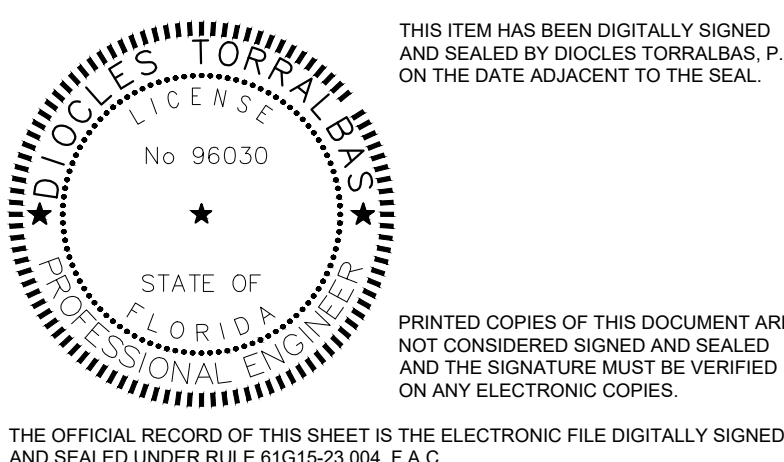
EQUIPMENT AND WIRING SCHEDULE

1. NEW F.P.&L. OVERHEAD SERVICE 480/277V, 3Ø POLE MOUNTED TRANSFORMER BY FPL.
2. NEW PULL BOX WITH FP&L CONNECTION POINT.
3. NEW SERVICE: 3Ø3/0 AWG & 1Ø3/0 AWG(N) IN 2".
4. NEW 200A-480V-3Ø-4W METER.
5. NEW 3-POLE, 200A FUSED DISCONNECT SWITCH WITH RK1 FUSES AND SOLID NEUTRAL IN NEMA 4X STAINLESS STEEL ENCLOSURE UL LISTED FOR SERVICE ENTRANCE.
6. GENERATOR RECEPTACLE
7. SCADA ANTENNA
8. NEW SUMERSIBLE PUMP CONTROL PANEL NEMA 4X WITH NEMA MOTOR STARTERS.
9. CONTROL JUNCTION BOX
10. 24"W x 20"H x 8"D NEMA 4X STAINLESS STEEL PUMP MOTOR CONNECTION BOX WITH INSULATED TERMINAL BLOCKS AND HINGED COVER.
11. 10 kVA TRANSFORMER RATED 480V-120/240V-1Ø, PROVIDED BY CONTROL PANEL VENDOR FOR FIELD INSTALLATION BY CONTRACTOR. NEMA 3R STAINLESS STEEL.
12. NEW FP&L SERVICE CONDUCTORS, COORDINATE SIZE REQUIREMENTS WITH FP&L.
13. 3Ø3/0AWG, 1Ø3/0AWG(N) & 1Ø4AWG(G) - 2".
14. 3Ø3/0 AWG & 1Ø3/0 AWG(N) IN 2".
15. 3/4"C WITH ANTENNA CABLE.
16. NEW SERVICE GROUND: 1Ø4 AWG CU TO GROUND ROD AND CONCRETE BASE RE-BARS.
17. 2#12 & 1#12G-3/4"C (120V POWER)
18. 1"C. FOR VALVE PIT FLOOD FLOAT.
19. 1"C FOR PRESSURE TRANSMITTER W/ MFG. CABLE.
20. 3#6AWG & 1#8AWG G. IN 2".
21. 2" SPARE CONDUIT TO WET WELL.
22. 18 AWG TWISTED SHIELDED PAIR (BELDEN CABLE 9341) IN 1" CONDUIT TO INST. CONNECTION BOX.
23. 1" SPARE CONDUIT TO WET WELL.
24. 6#14 AWG IN 1"C TO INSTRUMENTATION CONNECTION BOX.
25. EYS TYPE SEALING FITTING.
26. 1"C. W/ MANUFACTURER SUPPLIED CABLE FOR LEVEL TRANSDUCER.
27. 1"C. W/ (3) MANUFACTURER SUPPLIED CABLES FOR FLOATS SWITCHES.
28. 2"C. WITH MANUFACTURER SUPPLIED MOTOR CABLE.
29. NEMA 7 AND NEMA 4 CONDUIT OUTLET BOXES FOR SUMP PUMP AND INSTRUMENTATION CONNECTION.
30. 2"C. W/ TRANSFORMER PRIMARY: 2#10 & 1#10(G). & TRANS. SECONDARY: 2#8, 1#8(N) & 1#10(G).
31. ALARM LIGHT.
32. 2 #8, 1 # 6 IN 1" C.

KEY PLAN (NOT TO SCALE):



P.E. SEAL:



MIAMI BEACH

PUBLIC WORKS DEPARTMENT
1700 CONVENTION CENTER DRIVE, MIAMI BEACH, FL 33139

CITY MANAGER: ALINA T. HUDAK
DIRECTOR: JOSE GOMEZ, P.E., F.FES
CITY ENGINEER: CRISTINA ORTEGA
CASTINEIRAS, P.E.

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NO.	DATE	REVISION	APP'D. BY



ENGINEER OF RECORD:
DIOCLES TORRALBAS, P.E.
FLORIDA P.E. No. 96030
GREEN DADE, INC.
7220 SW 12TH ST, MIAMI,
FL 33144

ENGINEER OF RECORD: DT
DESIGN ENGINEER: DT
DRAWN BY: DT
CHECKER: ER
SCALE: AS SHOWN

NEIGHBORHOOD:

PUMP STATION 24 AT LOWER N BAY RD

TITLE:

ELECTRICAL RISER AND DETAILS

File Name: E-7.0.dwg

Survey Reference:

Field Book: N/A

Page: N/A

Work Order: N/A

Date: 1/12/2024

Sheet: 31 of 38

Drawing: E-7

ORIGINAL SHEET SIZE 22" X 34"

STRUCTURAL NOTES

A. GENERAL NOTES

- THE STRUCTURAL DRAWINGS COMPLY WITH THE APPLICABLE REQUIREMENTS OF THE FLORIDA BUILDING CODE, EIGHT EDITION (2023) AND ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES, STANDARD, REGULATIONS AND LAWS.
- THE CONTRACTOR SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF THE FLORIDA BUILDING CODE, EIGHT EDITION (2023) AND ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES, STANDARD, REGULATIONS AND LAWS.
- SAFETY AND COMPLIANCE WITH OSHA AND LABOR LAWS IS THE ABSOLUTE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND THOSE CONSULTANTS HE HIRES TO ADDRESS THESE MATTERS.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS BEFORE STARTING CONSTRUCTION.
- THE CONTRACTOR SHALL COMPLY WITH THE DRAWINGS. ANY DEVIATIONS MUST BE SUBMITTED IN WRITING TO THE ENGINEER FOR APPROVAL.
- THE CONTRACTOR SHALL PROTECT EXISTING FACILITIES, STRUCTURES, AND UTILITY LINES FROM ALL DAMAGE.
- STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH CIVIL MECHANICAL & ELECTRICAL DRAWINGS. CONTRACTOR TO COORDINATE ALL PIPE AND CONDUIT LOCATIONS THRU CONCRETE. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
- THE STRUCTURES SHOWN ON THESE DRAWINGS ARE STRUCTURALLY SOUND ONLY IN ITS COMPLETED FORM. THE CONTRACTOR SHALL TEMPORARILY BRACE ALL EARTH, FORMS, CONCRETE, STEEL, WOOD MASONRY, TO RESIST GRAVITY, EARTH, WIND AND CONSTRUCTION LOADS DURING CONSTRUCTION.
- CONTRACTOR SHALL SUBMIT FOR APPROVAL SHOP DRAWINGS FOR THE WET WELL AND ASSOCIATED DRAINAGE STRUCTURES, SIGNED AND SEAL BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF FLORIDA.
- NOTED AND COMPUTED DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS.
- GRATING, HATCHES, LADDERS, BRACKETS AND MOUNTINGS SHALL MEET THE FLORIDA BUILDING CODE AND OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) LOADING REQUIREMENTS.
- CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT FLOTATION OF STRUCTURES UNTIL CONSTRUCTED AND ALL BACKFILL IS IN PLACE AND COMPACTED.
- IF CONCRETE BOXES ARE PRECAST, PRECAST JOINT SHALL BE WATERTIGHT. ALIGN PROPERLY WITH CONNECTING SECTIONS AND PREVENT MOVEMENT. JOINTS SHALL BE DETAILED ON SHOP DRAWINGS.

B. CONCRETE

- ALL NON-REINFORCED CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS.
- ALL CONCRETE WORK SHALL CONFORM TO ACI 318 AND FLORIDA BUILDING CODE REQUIREMENTS.
- ALL REINFORCED CONCRETE SHALL HAVE A MINIMUM DESIGN COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS.
- ALL STRUCTURAL CONCRETE MUST BE AIR ENTRAINED. PROVIDE AN AIR CONTENT OF 4 TO 6% BY VOLUME. AIR ENTRAINING ADMIXTURE SHALL CONFORM TO A.S.T.M. C-260.
- CALCIUM CHLORIDE OR ADMIXTURES CONTAINING CHLORIDE SALTS ARE NOT PERMITTED IN CONCRETE.
- CONCRETE SHALL HAVE A MAXIMUM SLUMP OF 4-INCH AND ALL CONCRETE SHALL BE PROPERLY MOIST CURED IMMEDIATELY AFTER FINISHING.
- CHAMFER ALL EXPOSED CONCRETE EDGES 3/4 INCH.
- TEST REPORT FOR COMPRESSIVE STRENGTH REQUIRED AS PER FLORIDA BUILDING CODE REQUIREMENTS.

C. SOIL

- FOUNDATIONS ARE DESIGNED TO BEAR ON WELL COMPACTED FILL OR UNDISTURBED SOIL WITH AN ALLOWABLE BEARING CAPACITY OF 2000 P.S.F. FOR SITEWORK INCLUDING SURFACE STRIPPING, EXCAVATION, COMPACTION, PAVING, ETC., SEE SPECIFICATIONS. NOTIFY ENGINEER OF ANY DISCREPANCY IN SOIL BEARING CAPACITY BEFORE PROCEEDING WITH THE WORK.
- BACKFILL AROUND BOXES SHALL BE PLACED IN 6" MAX. LIFTS UNIFORMLY AROUND THE STRUCTURE, COMPACTED TO 95% WITH HAND MECHANICAL COMPACTORS AND THEN WATER SETTLED. THE SITE SHALL CONTINUE TO BE DEWATERED UNTIL BACKFILLING IS COMPLETE.

D. SLABS

- ALL CONCRETE SLABS ON GRADE TO BE IN ACCORDANCE WITH "GUIDE FOR CONCRETE FLOOR AND SLAB CONSTRUCTION" (ACI 302.1R).

E. REINFORCING

- REINFORCING STEEL SHALL CONFORM TO ASTM A-615, GRADE 60 MINIMUM LAP 40 BAR DIAMETERS, UNLESS NOTED OTHERWISE (U.N.O.).
- ALL BAR BENDS AND HOOKS SHALL COMPLY WITH TO THE AMERICAN CONCRETE INSTITUTE, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE ACI-318.
- PLACING OF REINFORCEMENT SHALL COMPLY WITH THE AMERICAN CONCRETE INSTITUTE, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE ACI-318.
- THE REINFORCING STEEL SHALL TERMINATE TWO INCHES FROM THE CONCRETE SURFACES UNLESS OTHERWISE SHOWN ON THE STRUCTURAL DETAILS.
- REINFORCEMENT COVER SHALL BE AS FOLLOWS U.N.O.:
 - CONCRETE CAST AGAINST THE GROUND: 3"
 - FORMED CONCRETE IN CONTACT WITH GROUND: 2"
 - SLABS ON GROUND (BOTTOM): 2"

F. STRUCTURAL STEEL

- CONFORM TO AISC MANUAL OF STEEL CONSTRUCTION, FIFTEENTH EDITION.
- MATERIALS:
 - ASTM A36, FY=36 KSI FOR STRUCTURAL STEEL.
 - ASTM A325 TYPE 1, FOR UNFINISHED BOLTS AND NUTS.
 - ASTM A307 GRADE A, FOR ANCHOR BOLTS.
 - ASTM A108 AND A.W.S D1.1 FOR SHEAR STUDS.
- STAINLESS STEEL WHEN SPECIFIED SHALL BE TYPE 316.
- ALL STEEL TO BE HOT DIP GALVANIZED AS PER ASTM A-123
- STRUCTURAL STEEL, NUTS AND WASHERS SHALL BE HOT DIP GALVANIZED AFTER FABRICATION AS PER ASTM A-153.

G. WELDING

- ALL STRUCTURAL STEEL WELDING SHALL CONFORM TO AMERICAN WELDING SOCIETY STANDARD D1.1, LATEST EDITION.
- ALL STRUCTURAL STEEL WELDING ELECTRODES SHALL CONFORM TO AWS A5.1 OR A5.5 E-70XX.
- PAINT ALL WELDS WITH RUST INHIBITIVE PAINT.
- ALL WELDING SHALL BE PERFORMED BY A CERTIFIED WELDER. CURRENT WELDING CERTIFICATES MUST BE PRESENT AT JOB SITE AT ALL TIME.

H. ALUMINUM

- ALUMINUM EMBEDDED IN CONCRETE MUST BE PAINTED WITH ONE SHOP COAT OF ZINC CHROMATE FOLLOWED BY ONE HEAVY COAT OF ALUMINUM PIGMENTED ASPHALT PAINT.
- ALUMINUM SHAPES IN CONTACT WITH CONCRETE MUST BE SEPARATED BY A 1/32" NEOPRENE GASKET IN ANY CASE WHERE TWO DIFFERENT METALS ARE TO BE IN CONTACT A NEOPRENE GASKET MUST BE PROVIDED.

I. PAINT

- AFTER FABRICATION STRUCTURAL STEEL SHALL BE PREPARED WITH SSPC-SP6 PREPARATION AND SHALL RECEIVE ONE SHOP COAT OF RUST INHIBITIVE PRIMER.

J. CONSTRUCTION JOINTS

- CONSTRUCTION JOINTS WILL BE PERMITTED ONLY AT LOCATIONS INDICATED ON PLANS. ADDITIONAL CONSTRUCTION JOINTS OR ALTERATION TO THOSE SHOWN SHALL REQUIRE APPROVAL OF THE ENGINEER.

K. CRITERIA AND LOADING REFERENCES

- DESIGN CRITERIA AND LOADING REFERENCES:
 - ACI 350 R ENVIRONMENTAL ENGINEERING CONCRETE, STRUCTURES.
 - ACI 318 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
 - FLORIDA BUILDING CODE.

P.E. SEAL:



PUBLIC WORKS DEPARTMENT
1700 CONVENTION CENTER DRIVE, MIAMI BEACH, FL. 33139

CITY MANAGER: ALINA T. HUDAK
DIRECTOR: JOE GOMEZ, P.E.

CITY ENGINEER: CRISTINA ORTEGA
CASTINEIRAS, P.E.

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NO.	DATE	REVISION	APP'D. BY



1500 NW 89th COURT - SUITE 111-B
DORAL, FLORIDA 33172
(786)473-5326

ENGINEER OF RECORD:

MARIANO ONAT VALLE
P.E. NO. 48223

ENGINEER OF RECORD: MOV

DESIGN ENGINEER: MOV

DRAWN BY: AR

CHECKER: MOV

SCALE: NOT TO SCALE

NEIGHBORHOOD:

PUMP STATION 24 AT LOWER N BAY ROAD

TITLE:

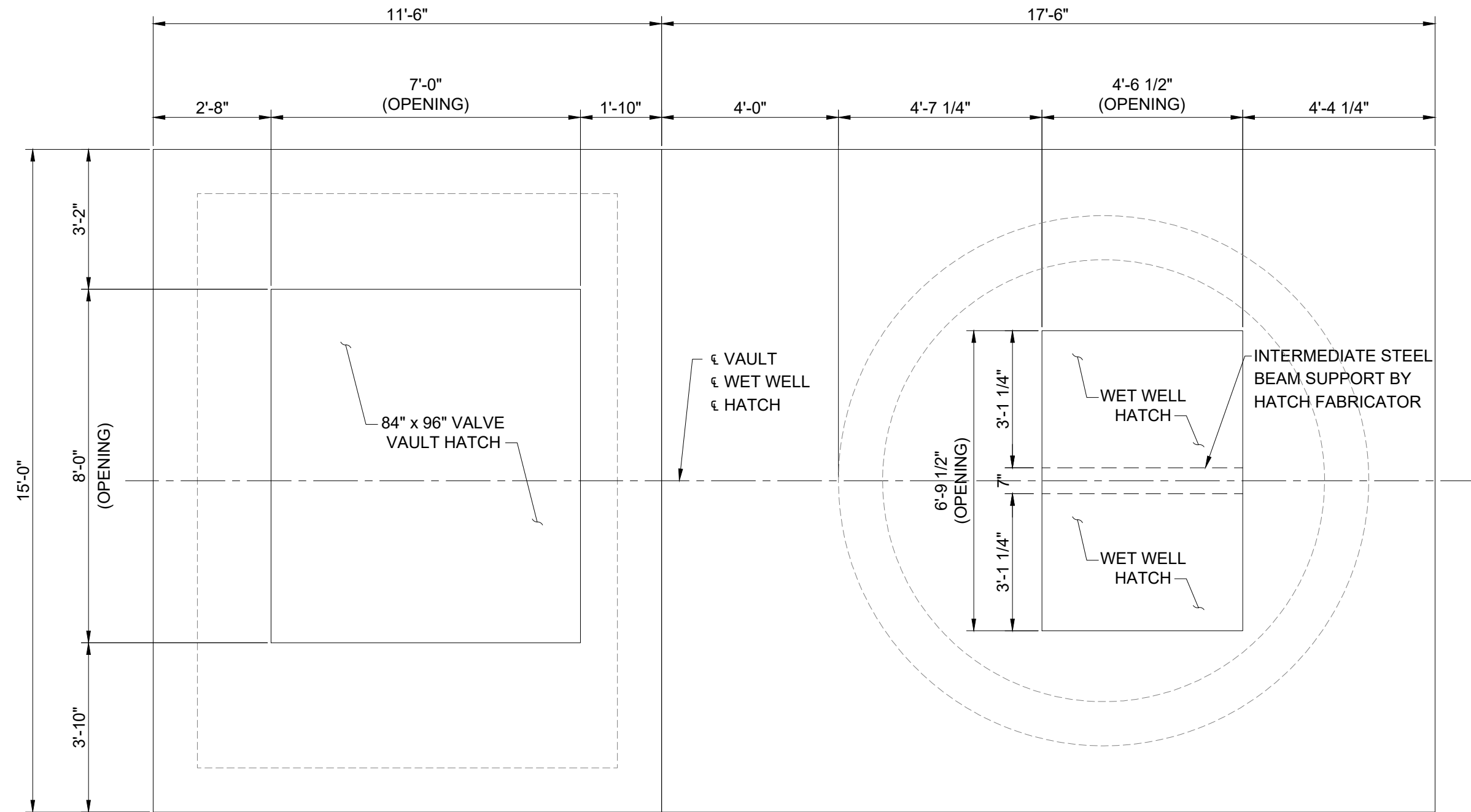
STRUCTURAL NOTES

File Name: S0-01.dwg

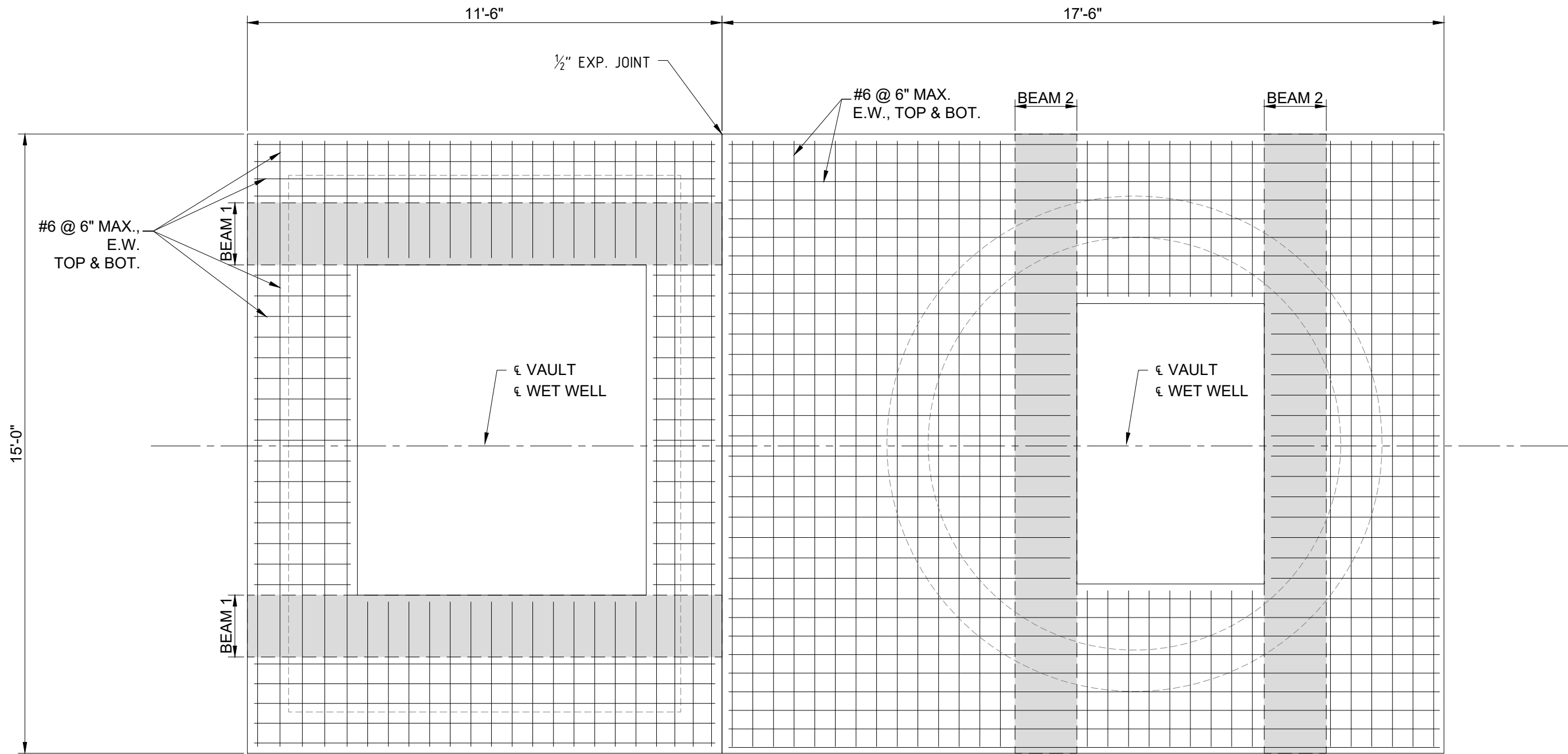
Survey Reference:

Field Book: N/A Page: N/A Work Order: N/A

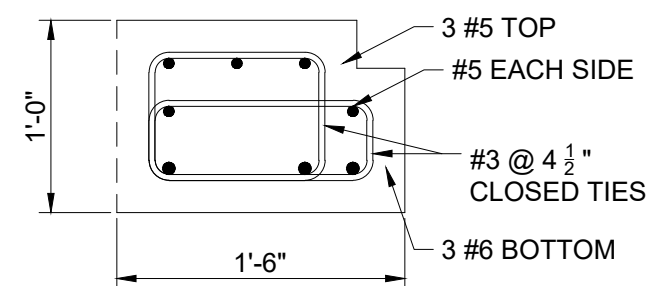
Date: JAN 2024 Sheet: 32 of 38 Drawing: S0-01



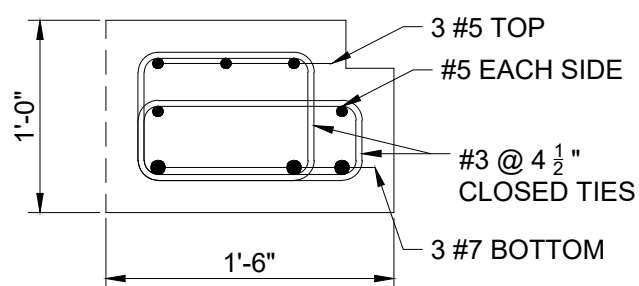
VALVE VAULT AND WET WELL PLAN
N.T.S.



VALVE VAULT AND WET WELL TOP SLAB REINFORCING PLAN
N.T.S.



BEAM 1
N.T.S.



BEAM 2
N.T.S.

P.E. SEAL:

MIAMI BEACH

PUBLIC WORKS DEPARTMENT
1700 CONVENTION CENTER DRIVE, MIAMI BEACH, FL. 33139

CITY MANAGER: ALINA T. HUDAK

DIRECTOR: JOE GOMEZ, P.E.

CITY ENGINEER: CRISTINA ORTEGA
CASTINEIRAS, P.E.

5			
4			
3			
2			
1			
NO.	DATE	REVISION	APP'D. BY



1500 NW 89th COURT - SUITE 111-B
DORAL, FLORIDA 33172
(786)473-5326

ENGINEER OF RECORD:

MARIANO ONAT VALLE
P.E. NO. 48223

ENGINEER OF RECORD: MOV

DESIGN ENGINEER: MOV

DRAWN BY: AR

CHECKER: MOV

SCALE: NOT TO SCALE

NEIGHBORHOOD:

PUMP STATION 24 AT LOWER N BAY ROAD

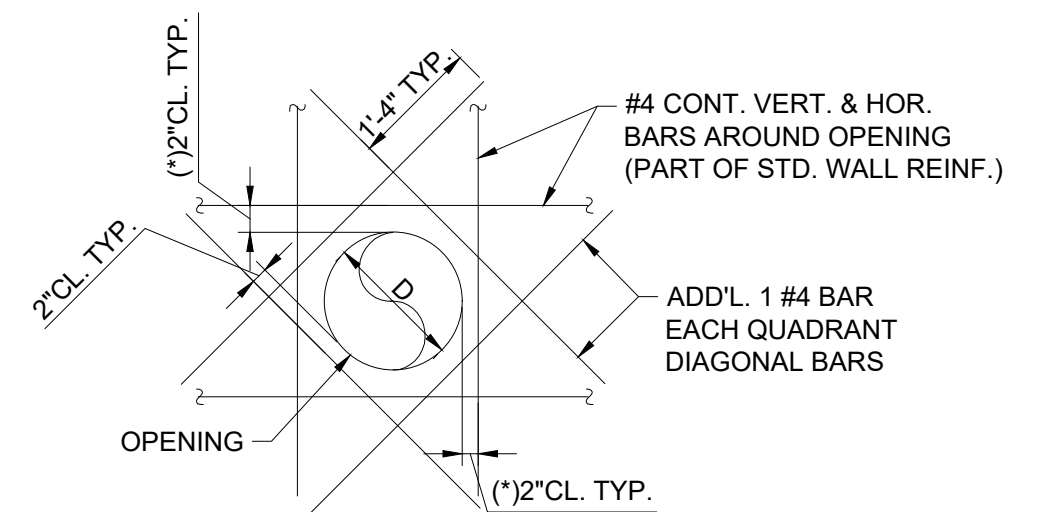
TITLE: STRUCTURAL PLAN, SECTIONS AND
DETAILS

File Name: S0-02.dwg

Survey Reference:

Field Book: N/A Page: N/A Work Order: N/A

Date: JAN 2024 Sheet: 33 of 38 Drawing: S-02



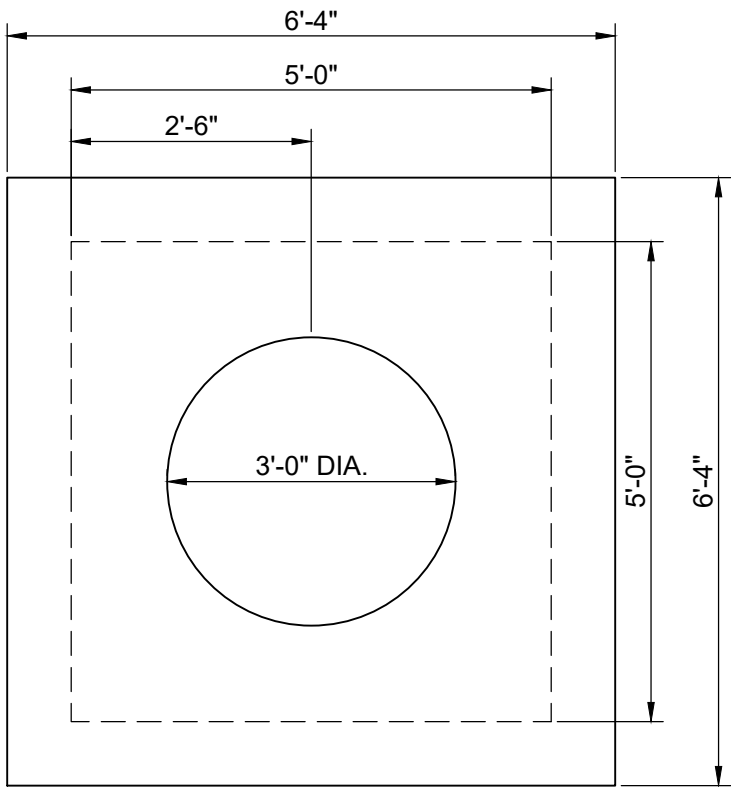
N.T.S.
TYPICAL ADDITIONAL WALL REINFORCING AROUND HOLE
OPENINGS (ROUND OR SQUARE).
(*) ANY VERTICAL OR HORIZONTAL BAR AT MORE THAN 3" AWAY
FROM EDGE OF OPENING SHALL HAVE ADDITIONAL 1 #4 BAR WITH
LENGTH=(D+36"), PLACED AT 2" CLEAR FROM OPENING.

N.T.S.
*CLEARANCE BETWEEN REINFORCING STEEL AND
WATER STOP NOT LESS THAN TWICE THE MAXIMUM
AGGREGATE SIZE.

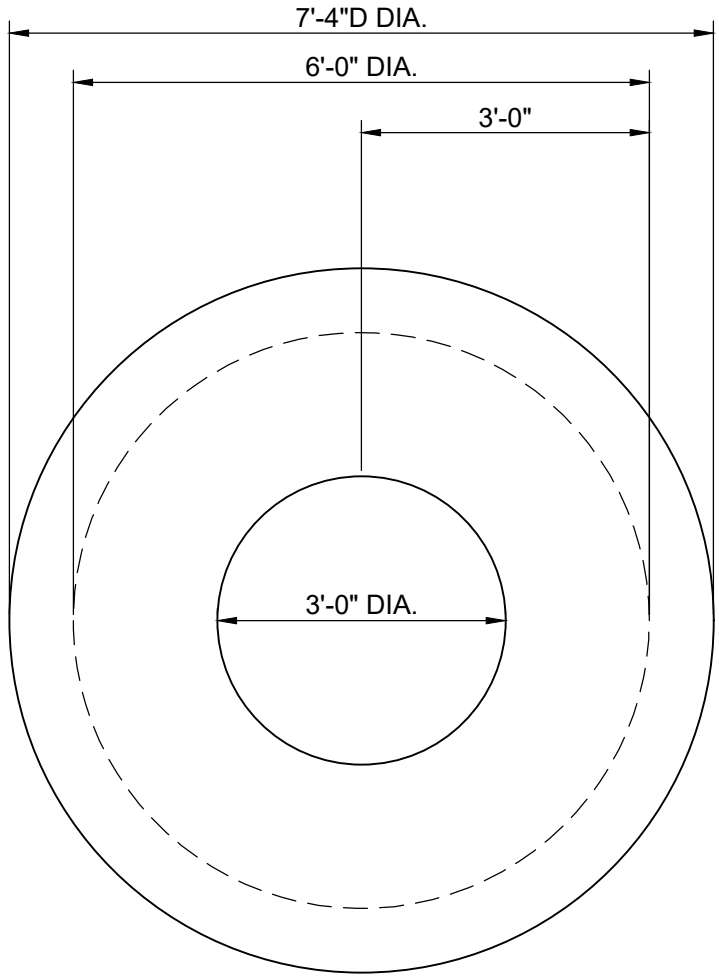
NOTE: THE ENTIRE REINFORCED CONCRETE STRUCTURE FOR THE WET WELL SHALL BE WATERTIGHT. PREFERABLY NO CONSTRUCTION JOINTS UNDER GROUND WATER LEVEL. MINIMUM DISTANCE BETWEEN WALL JOINTS WITH PVC WATER STOP SHALL BE 8 FT.

0-13.dwg

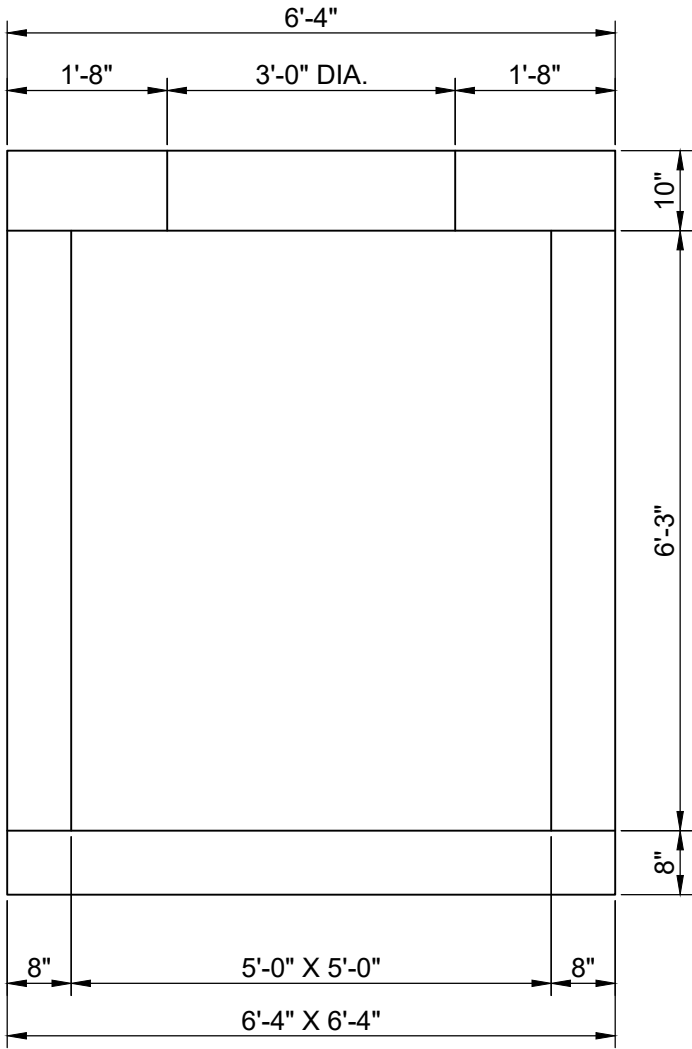
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Survey Reference:		
Field Book: <u>N/A</u>	Page: <u>N/A</u>	Work Order: <u>N/A</u>
Date: <u>JAN 2024</u>	Sheet: <u>34</u> of <u>38</u>	Drawing: <u>S0-03</u>



INJECTION WELL - PLAN
N.T.S.



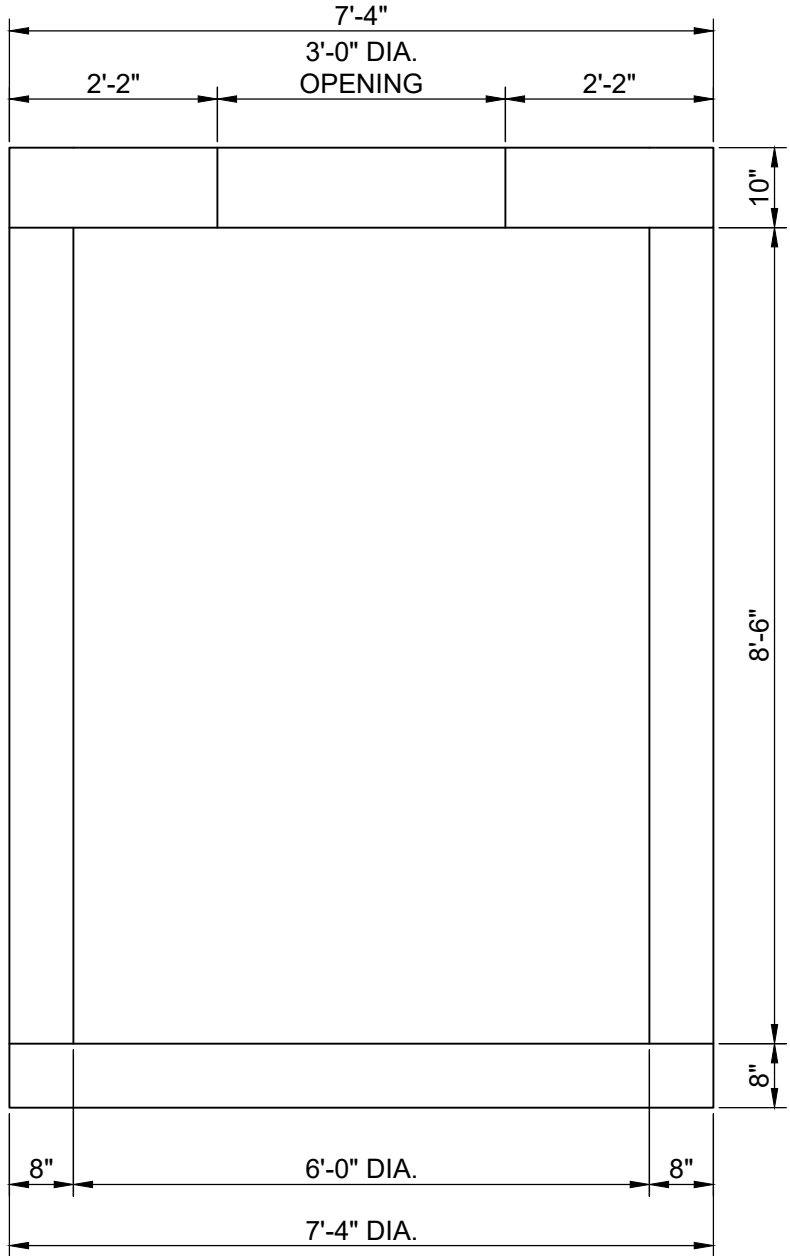
MANHOLE - PLAN
N.T.S.



INJECTION WELL - SECTION
N.T.S.

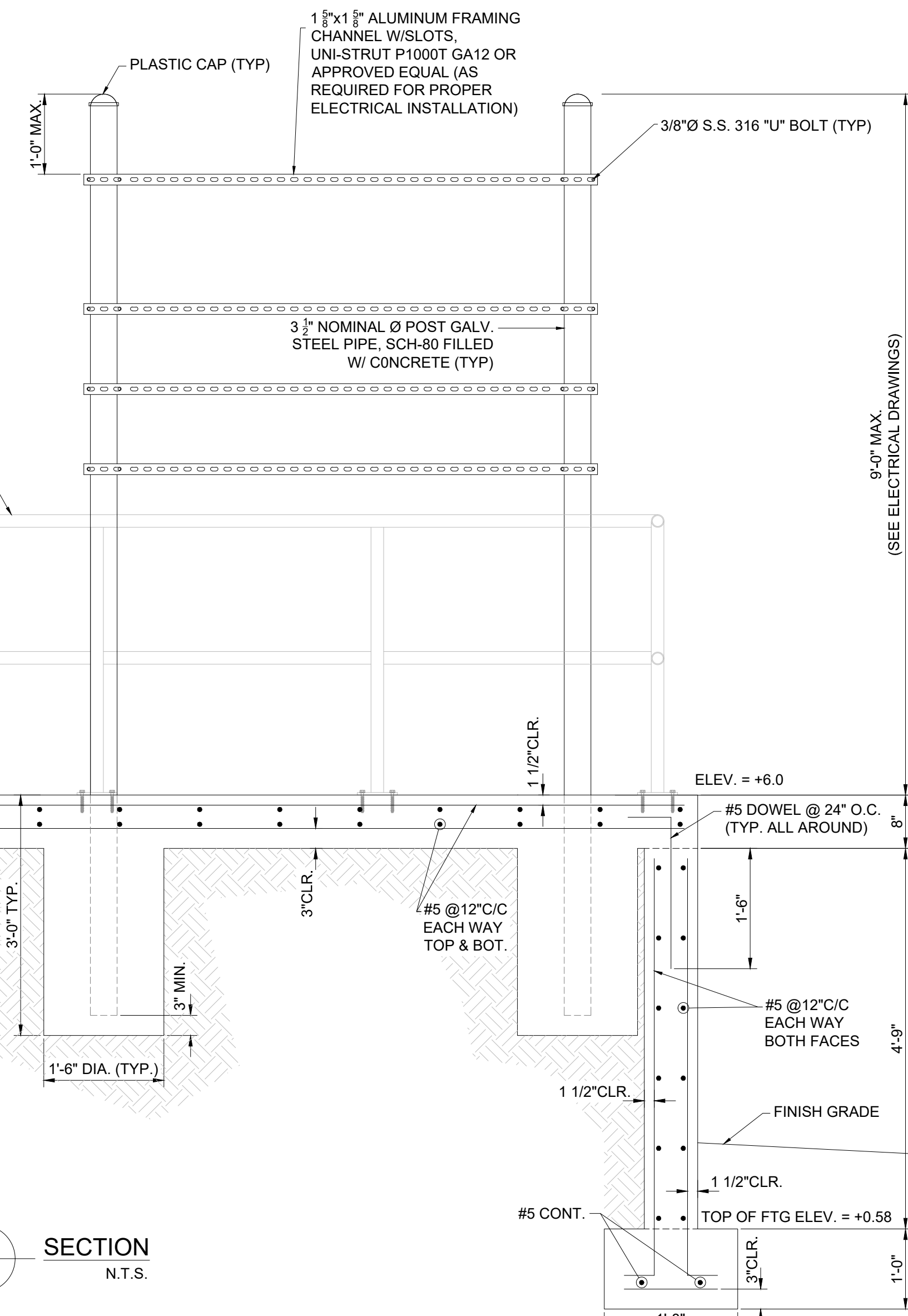
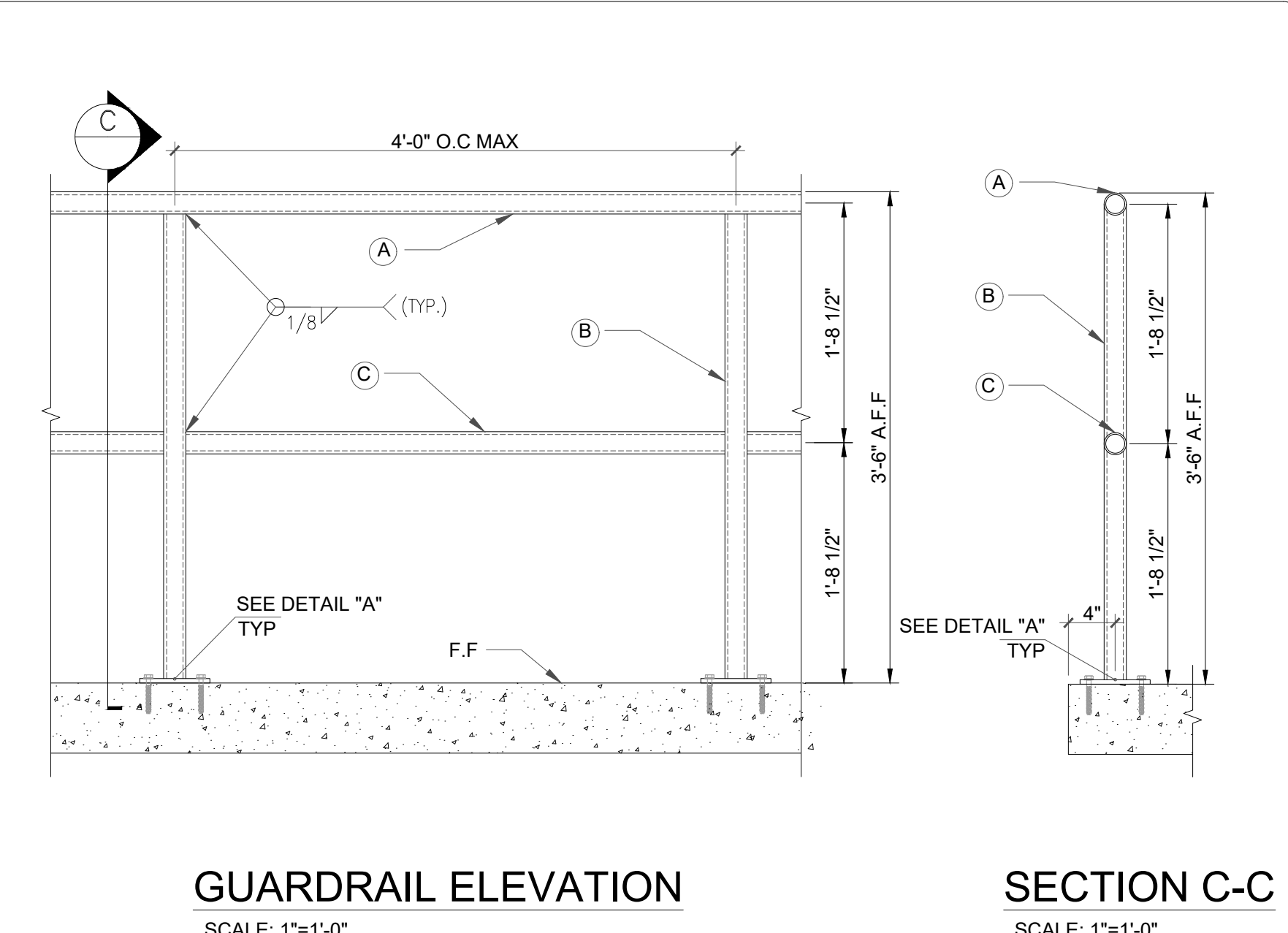
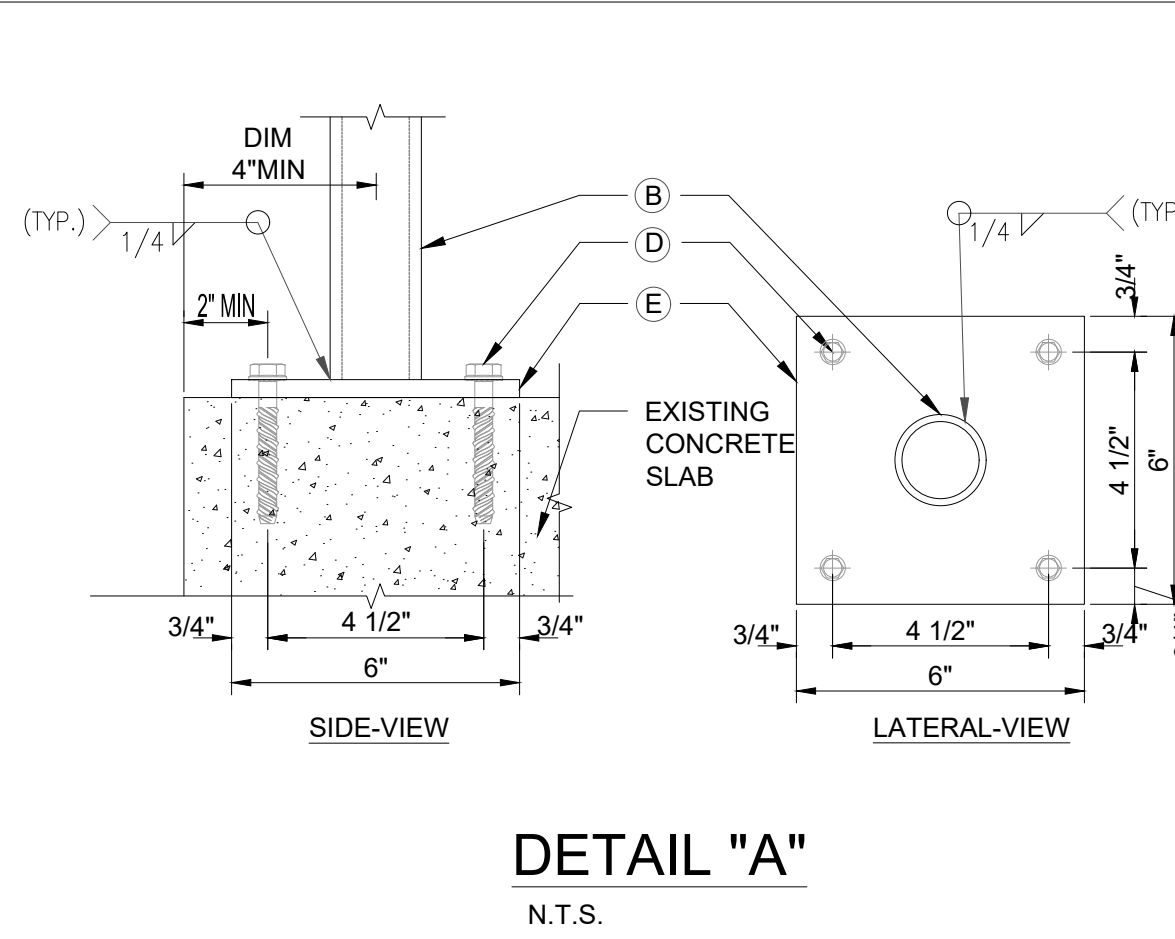
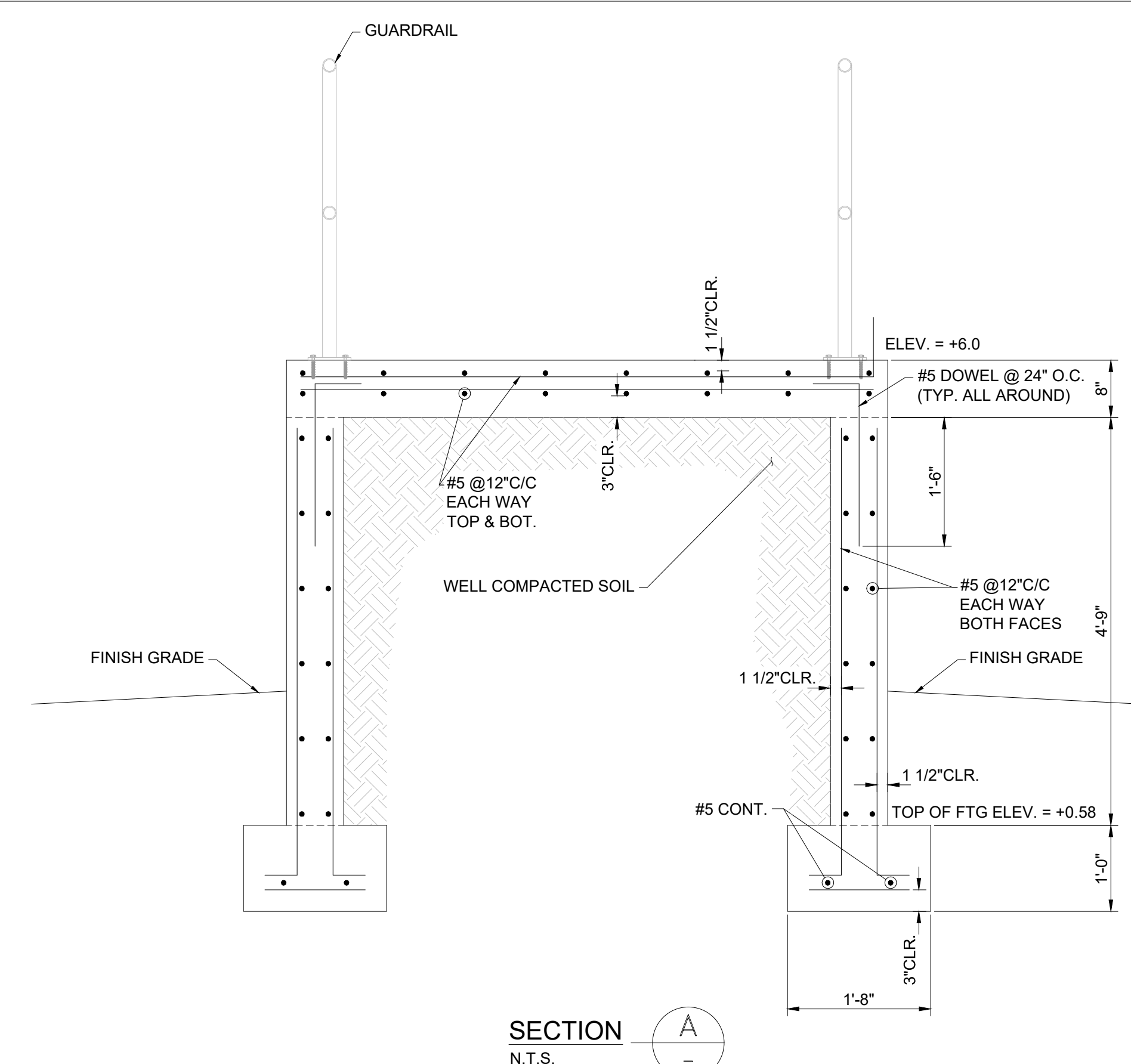
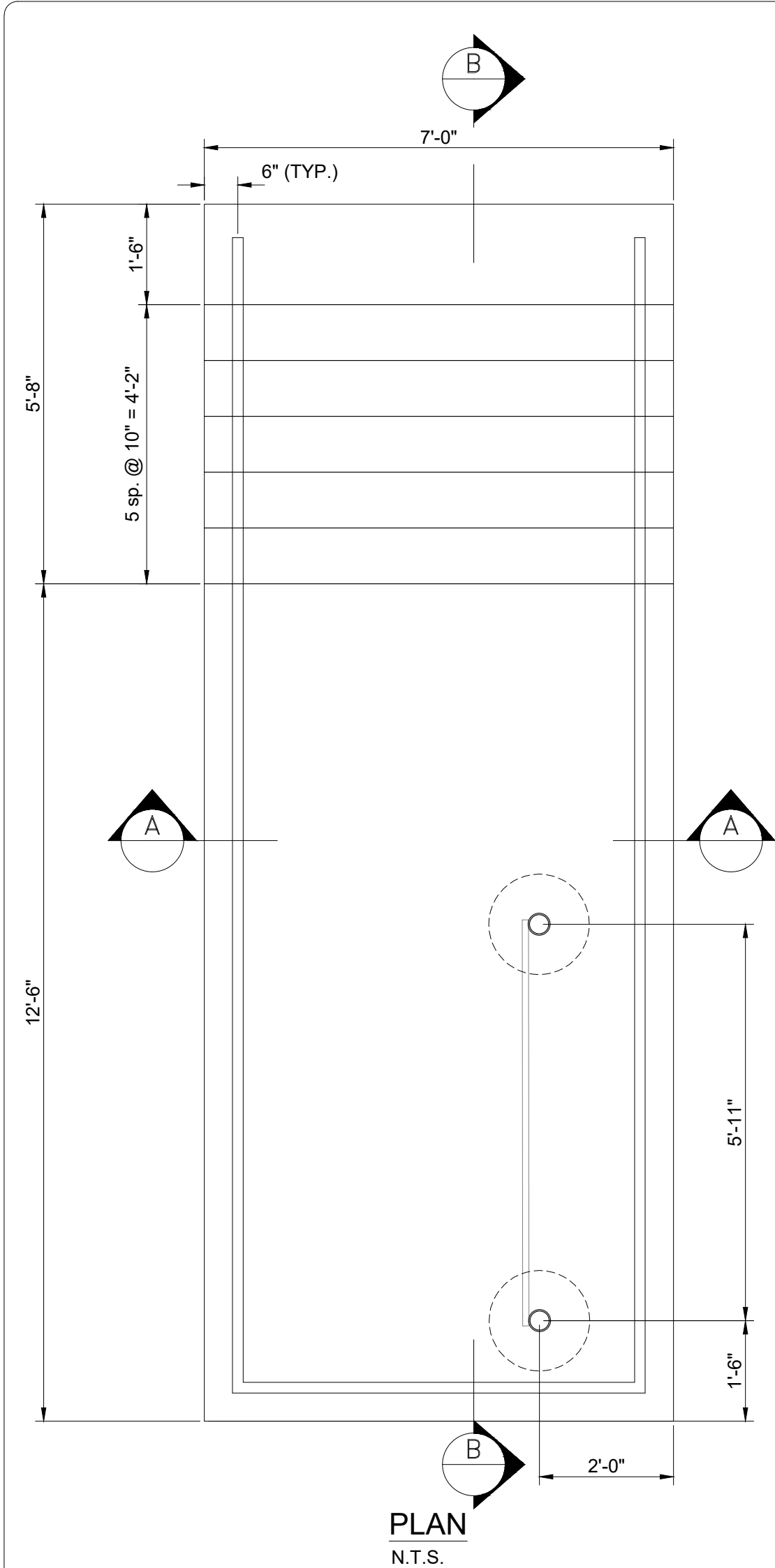
NOTES:

- COORDINATE THESE DETAILS WITH THE MECHANICAL DRAWINGS.
- INJECTION WELL: FDOT MANHOLE TYPE J (MODIFIED) - 5'-0" X 5'-0" - INDEX 425-001 AND 425-010.
- MANHOLE: FDOT MANHOLE TYPE J (MODIFIED) - 6'-0" DIAMETER - INDEX 425-001 AND 425-010.



MANHOLE - SECTION
N.T.S.

P.E. SEAL:



LEGEND:

(A) 1 1/2" SCH 40 STEEL PIPE CONTINUOUS TOP RAIL, Fy=35 KSI

(B) 1 1/2" SCH 40 STEEL PIPE POST @ 4'-0" O.C. MAX, Fy=35 KSI

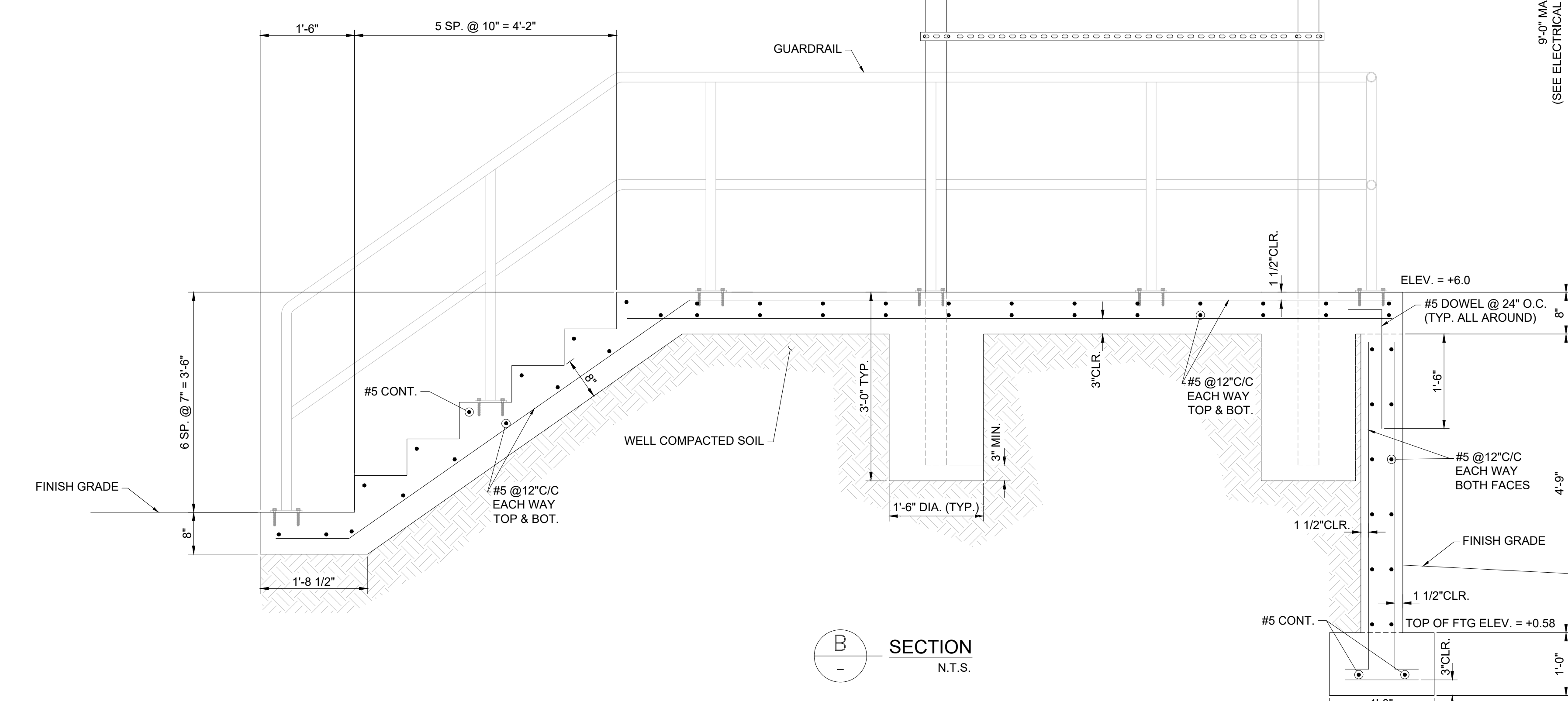
(C) 1 1/2" SCH 40 STEEL PIPE INTERMEDIATE RAIL, Fy=35 KSI

(D) 3/8" WEDGE BOLT+ W/ 2 1/2" EMBEDMENT, 4 1/2" MIN SPACING AND 4 1/2" MIN EDGE DISTANCE

(E) 6" x 6" x 3/8" STEEL PLATE, Fy=36 KSI

NOTE: RAILINGS ENGINEERING CALCULATIONS AND SHOP DRAWINGS SIGNED AND SEALED BY A P.E. MUST BE SUBMITTED TO EOR FOR APPROVAL.

- NOTES:
- CONCRETE SHALL HAVE A 28-DAY STRENGTH OF 4,000 PSI MINIMUM.
 - REINFORCING BARS SHALL BE DEFORMED, GRADE 60 AS PER ASTM A-615.
 - PLATFORM FOUNDATION SHALL BE SUPPORTED ON WELL-COMPACTED FILL, WITH MINIMUM COMPACTION OF 95% OF MAXIMUM DRY DENSITY FOR LAYERS AS VERIFIED BY FIELD DENSITY TESTS AS PER ASTM D1557.
 - ELECTRICAL CABINET BASE SUPPORTS AND ANCHOR CONNECTIONS TO BASE SLAB SHALL MEET WIND LOAD DESIGN REQUIREMENTS AS PER ASCE 7-2016.
 - STEEL PIPES SHALL BE MANUFACTURED AS PER ASTM A501 OR ASTM A53, TYPE E OR S, GRADE B.
 - PROVIDE (3) 1/2" Ø WEEP-HOLES ON STEEL PIPES, LOCATED AT 1'-0" FROM TOP & BOTTOM ENDS AND AT MID-HEIGHT.
 - ALL WELDING TO BE IN ACCORDANCE WITH AWS CURRENT STRUCTURAL WELDING CODE. WELD ELECTRODE SHALL BE E70XX. RUSTPROOF ALL FIELD WELDS AND SURROUNDING AREA WITH 2 COATS OF ZINC BASED PAINT.
 - STEEL PIPES AND BOTTOM COVER PLATES SHALL BE HOT-DIP GALVANIZED.
 - THE DESIGN OF THE STEEL AND UNI-STRUT CHANNELS POSTS COMPLIES WITH THE REQUIREMENTS OF THE ASCE 7-16 CODE.
 - THE UNI-STRUT FRAMING CHANNELS SHALL BE ATTACHED WITH FITTINGS AND FASTENING STUDS/BOLTS, AND/OR SCREWS AS SUPPLIED BY UNI-STRUT CORP.



P.E. SEAL:

SECTION 27 - TOWNSHIP 53 SOUTH - RANGE 42 EAST
LYING AND BEING IN THE CITY OF MIAMI BEACH, MIAMI-DADE COUNTY, FLORIDA

SURVEYOR'S REPORT:

DATE OF FIELD SURVEY:

The date of completion of field Survey was on March 28, 2022.

SURVEY LIMITS:

A portion of West 23th Street Public Right-of-Way; from Sunset Lake shore line to North Bay Road. Including 50' along the center line, of, of the streets that creates intersections with the baseline of the project. Lying and being in City of Miami Beach, Miami-Dade County, Florida.

ACCURACY:

The accuracy obtained by field measurement methods and office calculations of closed geometric figures meets and exceeds the Minimum Technical Standards requirement for Suburban Area (Linear: 1 foot in 7,500 feet) as defined in Rule 5J-17.051, Florida Administrative Code.

Elevations of well identified features as depicted on the Survey Map were measured to an estimated vertical position accuracy of 1/100' of a foot on hard surfaces and 1/10' of a foot on ground surfaces.

Well identified features as depicted on the Survey Map were measured to an estimated horizontal position accuracy of 1/10' of a foot.

This Map of Survey is intended to be displayed at a scale of One inch equals Twenty feet or smaller.

PERTINENT INFORMATION USED FOR SURVEY:

For Horizontal Control:

Bearings and Coordinates are relative to and based on the State Plane Coordinate System, Florida East Zone (0901), North American Datum (N.A.D.) of 1983, adjustment of 2011 (NAD 83 / 2011) Epoch 2010.0000; with a bearing of N88°15'35"E, as observed by occupation via GPS/GNSS being established for the centerline of West 23th Street, said line to be considered a well established and monumented line. Thusly, Thence used as the basis of bearings for this project.

Global Positioning System (G.P.S.) measurements were conducted in the field to acquire said coordinate values, which are based on the following Horizontal Control Stations:

Name: Miami Beach Code: FLMB Geographic Coordinates: Latitude: 25° 46' 57.83799" N Longitude: 80° 08' 14.16808" W State Plane Coordinates: Northing: 160,829.40 US Feet Easting: 286,529.89 US Feet Ellipsoid Height (Meters): -15.504	Name: North Dade Code: FLND Geographic Coordinates: Latitude: 25° 57' 56.76788" N Longitude: 80° 10' 02.22322" W State Plane Coordinates: Northing: 594119.57 US Feet Easting: 929757.56 US Feet Ellipsoid Height (Meters): -17.378	Name: District 6 Code: FLD6 Geographic Coordinates: Latitude: 25° 46' 49.67362" N Longitude: 80° 22' 35.34913" W State Plane Coordinates: Northing: 526,386.02 US Feet Easting: 861,341.77 US Feet Ellipsoid Height (Meters): -15.092
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All referenced Stations are part of the Florida Permanent Reference Network (FPRN - www.dot.state.fl.us/surveyingandmapping/fprn.shtm)

All measurements are in U.S. Survey feet.

For Vertical Control:

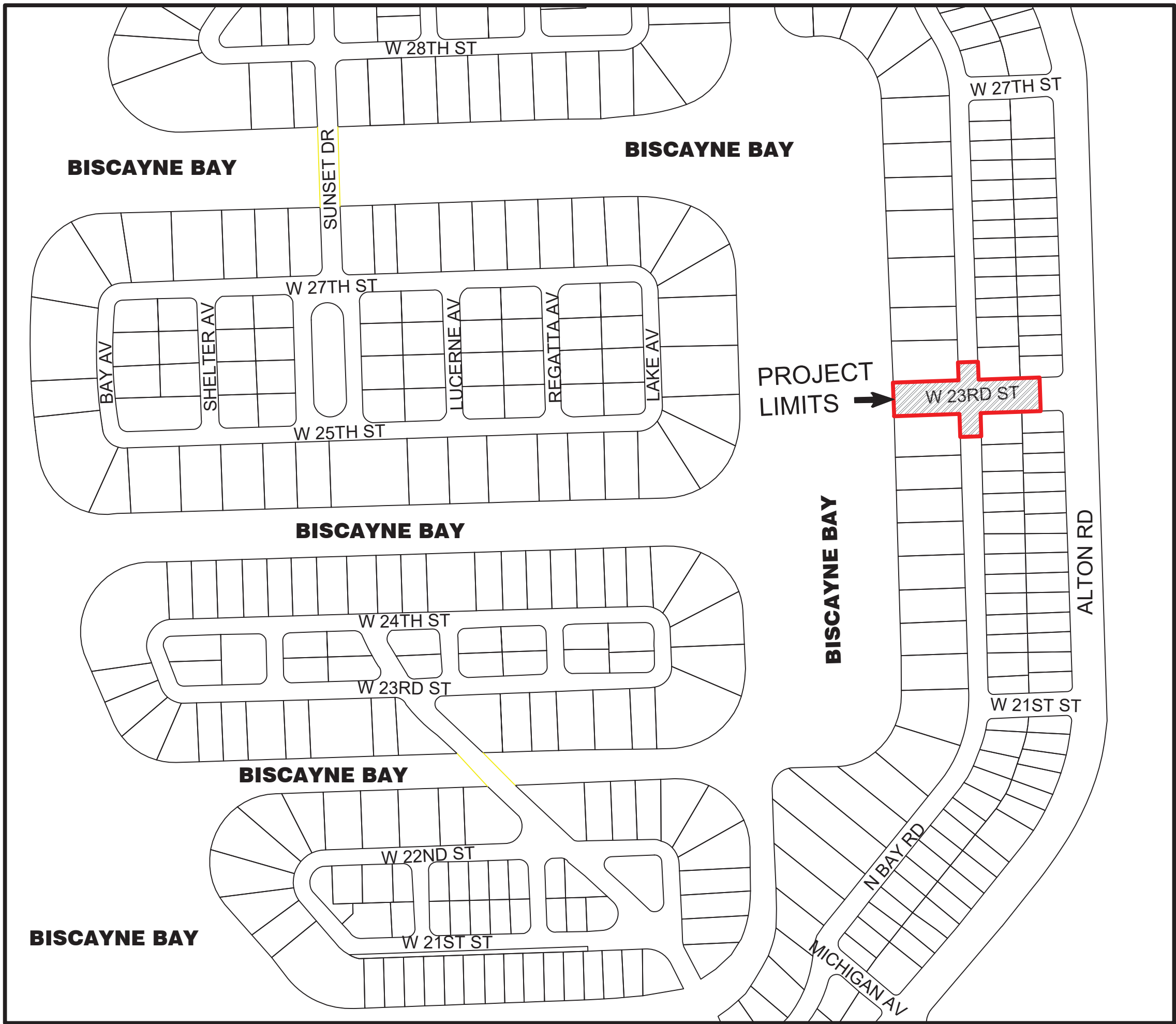
The elevations as shown here on are based on a closed level loop to the benchmark noted below and meets or exceed a closure in feet of plus or minus 0.05 feet times the square root of the distance in miles, a commonly accepted value in the Construction and Surveying Industry. Elevations shown refer to North American Vertical Datum (NAVD88), based on the following Vertical Control Point (Benchmarks) obtained from the Department of Public Works of Miami Dade County website: <https://mdc.maps.arcgis.com/>

Benchmark: D-131 Elevation: 7.18' (N.A.V.D. 88)

Located at:
- Chase Ave. at 56' North of Center Line.
- Alton Road at 3' West of West edge of pavement.
- 17' NW of a storm sewer manhole.

According to FEMA's website, This project area appears to be located in a Flood Zone "AE" with the Base Flood Elevation being 8.0, as per Federal Emergency Management Agency (FEMA) Community-Panel Number 120651 (City of Miami), Map No. 12086C0317, Suffix L, Map Revised Date: September 11, 2009.

Plat of "Amended Plat of Subset Lake Subdivision" recorded in Plat Book 8 at Page 52 of the Public Records of Miami-Dade County, Florida.



LOCATION MAP (NOT TO SCALE)

LEGEND & ABBREVIATIONS:

ASPH.	ASPHALT	EM	EXISTING ELECTRIC METER	EW	EXISTING WATER METER BOX
BM	BENCH MARK	EO	EXISTING ELECTRIC OUTLET	EV	EXISTING WATER VALVE
BW	BACK OF SIDEWALK	EX	EXISTING GAS MAIN VALVE BOX	FW	EXISTING WIRING PULL BOX
CB	CATCH BASIN	GM	EXISTING GAS MANHOLE	L	ARC LENGTH
CBS	CONCRETE BLOCK STRUCTURE	GW	EXISTING GUY WIRE AND ANCHOR	MH	MANHOLE
C&G	CURB AND GUTTER	LP	EXISTING LIGHT POLE LOW LEVEL	PAV.	PAVEMENT
CL	CLEARANCE	LS	EXISTING LANDSCAPE SHRUBS	PCC	POINT OF COMPOUND CURVATURE
CLF	CHAIN LINK FENCE	OP	EXISTING ORNAMENTAL PLANT	PL	PROPERTY LINE
CM	CONCRETE MONUMENT	OW	EXISTING OVERHEAD WIRES	POB	POINT OF BEGINNING
CONC.	CONCRETE	PM	EXISTING PALM	POC	POINT OF COMMENCE
DH	DRILL HOLE	PP	EXISTING PARKING METER	PP	POWER POLE
EL.	ELEVATION	PRC	EXISTING POWER POLE	PT	POINT OF REVERSE CURVE
ENC.	ENCROACHMENT	PT	EXISTING POWER POLE	PT	POINT OF TANGENCY
FD IP	FOUND IRON PIPE	R	EXISTING SEWER MANHOLE	R	RADIUS
FL	FLOW LINE	R/W	EXISTING SIGN	R/W	RIGHT-OF-WAY
IP	IRON PIPE	T.B.M.	EXISTING STORM DRAINAGE MANHOLE	T.B.M.	TEMPORARY BENCH MARK
STA	STATION	TC	EXISTING TELEPHONE BOX	TC	TOP OF CURB
PC	POINT OF CURVATURE	W.M.	EXISTING TELEPHONE MANHOLE	W.M.	WATER METER
Ø	DIAMETER	Δ		Δ	CENTRAL ANGLE
CB	EXISTING CATCH BASIN	xxx		xxx	DENOTES EXISTING ELEVATION
EM	EXISTING ELECTRICAL MANHOLE	xxx		xxx	DENOTES PROPOSED ELEVATION

THIS SURVEY HAS BEEN DIGITALLY SIGNED AND SEALED BY
EDDIE A. MARTINEZ, PSM ON 04/07/2022 UNDER THE RULES &
PROVISIONS SET FOURTH IN CHAPTER 5J-17 ANS 472 F.A.C. OF
THE STATE OF FLORIDA BOOARD OF PROFESSIONAL
SURVEYORS AND MAPPERS.

RESTRICTIONS:

Since no other information were furnished other than that is cited under pertinent information, the Client is hereby advised that there may be legal restrictions on the Subject Property that are not shown on the Survey Map that may be found in the Public Records of Miami-Dade County, Florida.

The Surveyor makes no representation as to ownership or possession of the Subject Property by any entity or individual who may appear of Public Records of this County.

No excavation or determination was made as to how the Subject Property is served by utilities.

All drainage manholes were full of muddy water. Inverts, materials and diameter of pipes were collected by tactile inspection with a rod and should be used as reference only. Precision may have been affected by poor conditions

No improvements were located, other than those shown. No underground foundations, improvements and/or utilities were located or shown hereon.

Right of Way locations as shown hereon are based on recovered monumentation along the corridors and the best fit alignment of plat geometry.

This survey is not intended to reflect any recorded instruments or Right-of-Way other than shown on the recorded plats used as reference and listed under the Source of Data as it appears on this drawing. Easements if any is shown, are only based on recorded plats.

There may exist additional easements, rights of way and/or other encumbrances affecting the subject properties not disclosed hereon, that a title report would evidence.

A comparison between measured (M), plat (P), and calculated (C) dimensions may be found in this Survey. Measured dimensions (M) are based on direct and indirect measurement of recovered monumentation. Plated dimensions (P) are based on the Plats used as reference and listed under the Source of Data. Calculated dimensions (C) are a protraction based on direct and indirect measurement of the recovered monumentation, the geometry of recorded plats and the deeds listed under the Source of Data.

PURPOSE OF SURVEY:

The purpose of this survey is for design.

CLIENT INFORMATION:

This TOPOGRAPHIC SURVEY was prepared at the insistence of and certified to:

NOVA CONSULTING

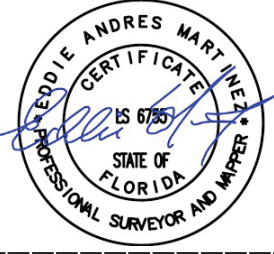
SURVEYOR'S CERTIFICATE:

I hereby certify that this "Topographic Survey" and the Survey Map resulting therefrom were performed under my direction and are true and correct to the best of my knowledge and belief and further, that said "Topographic Survey" meets the intent of the applicable provisions of the Standards of Practice, adopted by the Board of Professional Surveyors and Mappers, pursuant to Rule 5J-17.051 through 5J-17.052 of the Florida Administrative Code and its implementing law, Chapter 472.027 of the Florida Statutes.

FR-Aleman, a Florida Limited Liability Corporation
Florida Certificate of Authorization Number LB.6785

By: _____ Date: _____

Eddie A. Martinez, PSM
Professional Surveyor and Mapper No. LS.6755
Director, Surveying & Mapping Department



NOTICE: Not valid without the signature and original raised seal of a Florida Licensed Surveyor and Mapper.
Additions or deletions to Survey Maps by other than the signing party are prohibited without the written consent of the signing party.



GRAPHIC SCALE



(IN FEET)
1 inch = 20 ft.

UNDERGROUND STRUCTURES

[1] DRAINAGE MANHOLE
RIM ELEV.:0.98'
FULL OF WATER
W INV.: -3.37' RCP 24"
E INV.: -2.86' RCP 24"
BOTTOM ELEV.: -3.52'

[2] SANITARY SEWER
MANHOLE
RIM ELEV.:1.47'
W INV.: -2.71' RCP 24"
E INV.: -2.39' RCP 24"

[3] SANITARY SEWER
MANHOLE
RIM ELEV.:1.62'
N INV.: -2.70' CLAY 8"
S INV.: -2.68' CLAY 8"

[4] DRAINAGE MANHOLE
RIM ELEV.:1.48'
FULL OF WATER
N INV.: -6.80' RCP 45"
S INV.: -5.70' RCP 45"
BOTTOM ELEV.: -8.71'

[5] DRAINAGE MANHOLE
RIM ELEV.:1.45'
FULL OF WATER
N INV.: -5.41' RCP 45"
W INV.: -7.75' RCP 45"
BOTTOM ELEV.: -9.64'

[6] DRAINAGE MANHOLE
RIM ELEV.:1.48'
FULL OF WATER
E INV.: -2.97' RCP 24"
W INV.: -3.39' RCP 24"

N TO E CROSSING PIPE
TOP OF PIPE: -1.72'
BOTTOM ELEV.: -3.39'

[7] CATCH BASIN
RIM ELEV.:0.88'
FULL OF WATER
S INV.: -5.22' MAT. N/A 20"
BOTTOM ELEV.: -7.08'

[8] CATCH BASIN
RIM ELEV.:1.06'
FULL OF WATER
N INV.: -5.10' RCP 20"
S INV.: -6.44' RCP 24"
BOTTOM ELEV.: -8.38'

[9] CATCH BASIN
RIM ELEV.:0.74'
NW INV.: -6.56' RCP 36"
E INV.: -6.79' RCP 36"
BOTTOM ELEV.: -8.78'

[10] CATCH BASIN
RIM ELEV.:0.86'
W INV.: -6.64' RCP 48"
E INV.: -7.85' RCP 45"
BOTTOM ELEV.: -9.54'

[11]&[12] DRAINAGE MANHOLE
FULL OF WATER
RIM ELEV.:2.19'
S INV.: -6.84' RCP 36"
E INV.:NOT MEASURABLE
BOTTOM ELEV.: -15.81'

[13] DRAINAGE MANHOLE
RIM ELEV.:1.32'
FULL OF WATER
N INV.: -6.67' RCP 48"
SW INV.: -9.02' RCP 48"

[14]&[15] DRAINAGE
MANHOLE
RIM ELEV.:2.14'
FULL OF WATER
NO ACCESS TO INVERTS
BOTTOM ELEV.: -15.86'

[16] DRAINAGE MANHOLE
RIM ELEV.:1.22'
FULL OF WATER
E INV.: -3.25' RCP 24"
W INV.: -3.04' RCP 24"
BOTTOM ELEV.: -3.31'

[17] DUPLEX WET WELL
RIM ELEV.:3.50'
FULL OF WATER
BOTTOM ELEV.: -9.44'

[18] DRAINAGE MANHOLE
RIM ELEV.:2.46'
W INV.: -5.80' RCP 36"
N INV.:NOT MEASURABLE
BOTTOM ELEV.: -7.69'

[19] TRASH RACK
RIM ELEV.:3.20'
FULL OF WATER
BOTTOM ELEV.: -10.20'

[20] DRAINAGE MANHOLE
RIM ELEV.:3.24'
FULL OF WATER
E INV.: -3.28' RCP 24"
W INV.: -3.40' RCP 24"
BOTTOM ELEV.: -3.61'

[21] DISSIPATOR BOX
RIM ELEV.:3.13'
FULL OF WATER
BOTTOM ELEV.: -6.32'

[22] OUTFALL BOX
RIM ELEV.:3.88'
FULL OF WATER
BOTTOM ELEV.: -5.67'

[23] PUMP WELL
RIM ELEV.:3.60'
FULL OF WATER
BOTTOM ELEV.: -9.00'

[24] DRAINAGE MANHOLE
RIM ELEV.:1.57'
FULL OF WATER
NW INV.:NOT MEASURABLE
NE INV.:NOT MEASURABLE
S INV.: -7.26' MAT. N/A 36"
BOTTOM ELEV.: -9.44'

TBM#1
SET MAG NAIL & WASHER
(LB 6785)
ELEV.=3.93'
STA=10+01.00
OFFSET=17.62' L
N=534,490.1913'
E=939,134.3506'

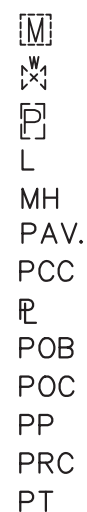
BEGINNING OF PROJECT
SET MAG NAIL & WASHER
(LB 6785)
STA=10+00
N=534,472.5535'
E=939,133.8853'

LEGEND & ABBREVIATIONS:

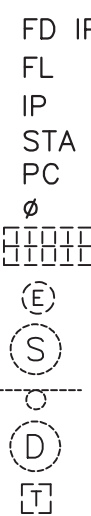
ASPH. ASPHALT
BM BENCH MARK
BW BACK OF SIDEWALK
CB CATCH BASIN
CBS CONCRETE BLOCK STRUCTURE
C&G CURB AND GUTTER
CL CENTERLINE
CL. CLEARANCE
CLF CHAIN LINK FENCE
CM CONCRETE MONUMENT
CONC. CONCRETE
DH DRILL HOLE
EL. ELEVATION



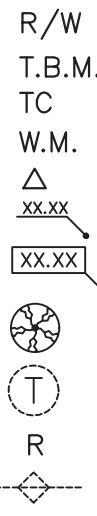
EXISTING ELECTRIC METER
EXISTING ELECTRIC OUTLET
EXISTING GAS MAIN VALVE BOX
EXISTING GAS MANHOLE
EXISTING LIGHT POLE LOW LEVEL
EXISTING LANDSCAPE SHRUBS
EXISTING ORNAMENTAL PLANT
EXISTING OVERHEAD WIRES
EXISTING PALM
EXISTING PARKING METER



EXISTING WATER METER BOX
EXISTING WATER VALVE
EXISTING WIRING PULL BOX
ARC LENGTH
MANHOLE
PROPERTY LINE
POINT OF BEGINNING
POINT OF COMMENCE
POWER POLE
POINT OF REVERSE CURVE
POINT OF TANGENCY



FOUND IRON PIPE
FLOW LINE
IRON PIPE
STATION
POINT OF CURVATURE
DIAMETER
EXISTING CATCH BASIN
EXISTING ELECTRICAL MANHOLE
EXISTING SEWER MANHOLE
EXISTING SIGN
EXISTING STORM DRAINAGE MANHOLE
EXISTING TELEPHONE BOX



RIGHT-OF-WAY
TEMPORARY BENCH MARK
TOP OF CURB
WATER METER
CENTRAL ANGLE
DENOTES EXISTING ELEVATION
DENOTES PROPOSED ELEVATION
EXISTING TREE
EXISTING TELEPHONE MANHOLE
RADIUS
EXISTING POWER POLE