EXHIBIT B

Hallandale Beach
PROGRESS. INNOVATION. OPPORTUNITY.

THREE ISLAND REUSE IRRIGATION PROJECT
100% PHASE SUBMITTAL PLANS

PREPARED BY:
CITY OF HALLANDALE BEACH
PUBLIC WORKS DEPARTMENT
EAC CONSULTING, INC.
AND PROCUREMENT DEPARTMENT

CITY OF HALLANDALE BEACH
DEPARTMENT OF PUBLIC WORKS

630 NW 2ND STREET, HALLANDALE BEACH, FL 33009

100% PHASE SUBMITTAL
JANUARY 11, 2016

THREE ISLAND REUSE IRRIGATION PROJECT

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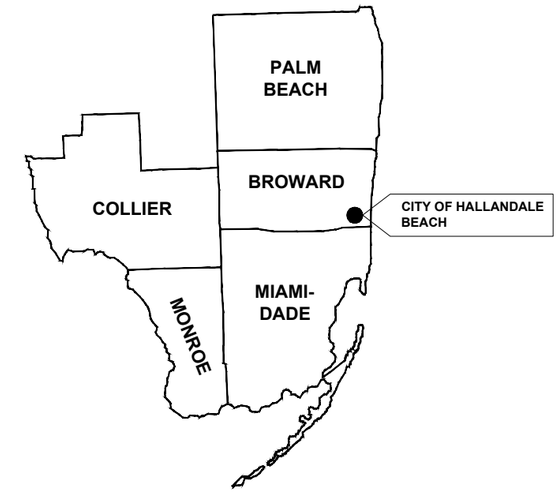
PROJECT LOCATION MAP
1" = 300'



Vicinity Map
NTS

CITY OF HALLANDALE BEACH COMMISSION

MAYOR:	JOY COOPER
VICE MAYOR:	WILLIAM JULIAN (SEAT 3)
COMMISSIONERS:	ANTHONY SANDERS (SEAT 1)
	KEITH LONDON (SEAT 2)
	MICHELE LAZAROW (SEAT 4)
CITY MANAGER:	DANIEL ROSEMOND
PUBLIC WORKS DIRECTOR:	STEVEN PARKINSON, P.E.

PLANS PREPARED BY:

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CA # 7011
EAC PROJECT No. 14045.SD01-01

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PERMIT SET
MUST BE ON JOB SITE AT ALL TIMES DURING CONSTRUCTION.

SAFETY
IS PARAMOUNT FOR ALL CONSTRUCTION ACTIVITIES. APPLICABLE JURISDICTIONAL SAFETY REQUIREMENTS MUST BE ADHERED TO ALWAYS.

NOTE
INSPECTIONS REQUIRED

24 HOURS PRIOR TO COMMENCING WORK IN PUBLIC RIGHT OF WAY CONTACT APPLICABLE RIGHT OF WAY JURISDICTION FOR INSPECTION.

NOTE
APPROVAL OF THESE PLANS DOES NOT CONSTITUTE A PERMIT FOR CONSTRUCTION. A PERMIT FOR CONSTRUCTION MUST BE OBTAINED FROM JURIDICTIONAL AUTHORITIES.

SHARI J. RAMIREZ, P.E.
FL LICENSE No. 73078

L:\Project\14project\14045.SD01-00 Hallandale Beach\14045.SD01-01- Three Island Reuse Irrigation\civil\C-0.0 COVER.dwg [COVER SHEET] Jan 12, 2016 12:33pm RGOENAGA

ENGINEER'S CONSTRUCTION NOTES

1. ALL ELEVATIONS ON THE PLAN AND PROFILE SHEETS REFER TO THE NORTH AMERICAN VERTICAL DATUM OF 1988. BENCHMARK USED ARE THOSE IDENTIFIED ON THE TOPOGRAPHIC BOUNDARY SURVEY.

2. THE TOPOGRAPHY SURVEY WAS PREPARED BY GIBBS LAND SURVEYORS (LIC #7018) DATED OCTOBER, 2012, AND PROVIDED BY CITY OF HALLANDALE BEACH.

3. ADDITIONAL SURVEY WAS PREPARED BY CRAVEN THOMPSON AND ASSOCIATES, INC. DATED NOVEMBER, 2015, AND PROVIDED BY CITY OF HALLADALE BEACH.

4. SURVEY MONUMENTS WITHIN THE LIMITS OF THE PROJECT ARE TO BE PROTECTED.

5. ALL CONSTRUCTION ASSOCIATED WITH THIS PROJECT MUST BE IN ACCORDANCE WITH APPLICABLE CODES AND AUTHORITIES HAVING JURISDICTION, ANY DISCREPANCY MUST BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE CITY AND (EOR).

6. CONTRACTOR IS TO VERIFY THE EXACT LOCATION OF ALL EXISTING TREES, STRUCTURES, AND UTILITIES WHICH MAY OR MAY NOT BE SHOWN ON THE PLANS. ANY EXISTING STRUCTURE, PAVEMENT, TREES OR OTHER EXISTING UTILITIES NOT SPECIFIED FOR REMOVAL WHICH IS DAMAGED, EXPOSED OR IN ANY WAY DISTURBED BY CONSTRUCTION PERFORMED UNDER THIS CONTRACT, SHALL BE REPAIRED, PATCHED OR REPLACED AT NO ADDITIONAL COST TO THE CITY OF HALLANDALE BEACH.

7. THE LOCATION AND SIZE OF ALL EXISTING UTILITIES SHOWN ON THESE DRAWINGS ARE APPROXIMATE AND ADDITIONAL UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THESE DRAWINGS. THE CONTRACTOR SHALL VERIFY ALL UTILITIES BY ELECTRONIC METHODS AND BY HAND EXCAVATION IN COORDINATION WITH ALL UTILITY COMPANIES PRIOR TO BEGINNING ANY CONSTRUCTION OPERATION. ALL CONFLICTS OF EXISTING UTILITIES WITH PROPOSED IMPROVEMENTS MUST BE RESOLVED BY THE CONTRACTOR IN COORDINATION WITH UTILITY OWNER. THIS WORK BY THE CONTRACTOR SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.

8. CONTRACTOR SHALL CONTACT SUNSHINE STATE ONE CALL 811 AT LEAST 48 HOURS PRIOR TO PERFORMING ANY EXCAVATION/DIGGING TO VERIFY THE EXACT LOCATION OF EXISTING UTILITIES.

9. CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH CURRENT SITE CONDITIONS AND SHALL REPORT ANY DISCREPANCIES TO THE CITY AND ENGINEER PRIOR TO STARTING WORK.

10. THE CONTRACTOR SHALL PREPARE AND SUBMIT SHOP DRAWINGS FOR ALL ITEMS LISTED IN PROJECT SPECIFICATIONS OR THE SPECIFICATIONS TO WHICH THIS PROJECT IS IN CONFORMANCE WITH.

11. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR LEAVE EXCAVATED TRENCHES OPEN, UNCOVERED OR EXPOSED AT THE END OF THE WORKING DAY, WEEKENDS, HOLIDAYS OR OTHER TIMES WHEN THE CONTRACTOR IS NOT WORKING.

12. ALL WORK WITHIN THE PIPE AND FITTINGS SHALL BE PERFORMED WITH CARE TO PREVENT DAMAGE TO THE INTERIOR WALL OR LINING OF THE PIPE. ANY PIPE SECTION WITH DAMAGED INTERIOR WALLS OR LININGS MUST BE REPLACED AT NO ADDITIONAL EXPENSE TO THE CITY OF HALLANDALE BEACH.

13. ANY MATERIAL REMOVED FROM THIS PROJECT SHALL BE DISPOSED OF PROPERLY BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE CITY OF HALLANDALE BEACH.

14. AREAS THAT ARE DISTURBED THAT ARE NOT PART OF CONSTRUCTION SHALL BE RESTORED AT CONTRACTOR'S EXPENSE.

15. EXCAVATED OR OTHER MATERIAL STORED ADJACENT TO OR PARTIALLY UPON A ROADWAY PAVEMENT SHALL BE ADEQUATELY MARKED FOR TRAFFIC SAFETY AT ALL TIMES.

16. ANY DEWATERING OPERATIONS REQUIRED FOR CONSTRUCTION MUST BE APPROVED BY BROWARD COUNTY ENVIRONMENTAL PROTECTION AND GROWTH MANAGEMENT DEPARTMENT, SOUTH FLORIDA WATER MANAGER DISTRICT AND THE CITY OF HALLANDALE BEACH.

17. IN THE EVENT CONTAMINATED MATERIALS ARE ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY ADVISE THE CITY OF HALLANDALE BEACH, EOR AND THE BROWARD COUNTY ENVIRONMENTAL PROTECTION AND GROWTH MANAGEMENT DEPARTMENT.

18. THE CONTRACTOR MUST ENSURE THAT PRECISE RECORDS ARE TAKEN PRIOR TO BACKFILLING OVER UTILITY TRENCHES. AS-BUILTS MUST CONFORM TO APPLICABLE STANDARDS AND REQUIREMENTS STIPULATED BY CITY OF HALLANDALE BEACH PUBLIC UTILITIES DEPARTMENT AND CONTRACT SPECIFICATIONS.

19. THE CONTRACTOR IS TO PROVIDE MECHANICAL JOINT RESTRAINTS AT ALL REACTION POINTS ALONG THE PIPELINE INSTALLATION AS PER BROWARD COUNTY STANDARD DETAIL (FIGURE 109).

20. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO TAKE ADEQUATE MEASURES TO ENSURE SAFETY WHEN WORKING WITHIN THE VICINITY OF OVERHEAD POWER, ELECTRICAL & TELEPHONE LINES. PROPER COORDINATION WITH JURISDICTIONAL AUTHORITIES MUST BE UNDERTAKEN AS APPLICABLE.

21. FIELD VERIFICATION OF UTILITY MAINS SHOWN ON PLANS AND PROFILE VIEW IS REQUIRED. CONSTRUCTION OF PROPOSED WORK MUST NOT PROCEED WITHOUT VERIFICATION PROCESS.

22. IT IS THE CONTRACTORS RESPONSIBILITY TO FAMILIARIZE HIMSELF/HERSELF WITH PROJECT SITE AND TO DETERMINE TOPOGRAPHIC OR UNDERGROUND FEATURES THAT WILL BE IMPACTED DUE TO HIS/HER PROPOSED METHOD OF CONSTRUCTION. THE CONTRACTOR MUST INCLUDE IN HIS/HER BID PRICE, THE COST OF RELOCATING OR REPLACING IN KIND ANY FEATURES THAT WILL BE IMPACTED DUE TO HIS/HER PROPOSED METHOD OF CONSTRUCTION INCLUDING BUT NOT LIMITED TO EXISTING TREES, UTILITY BOXES, SIGNS, FIRE HYDRANTS, GUARDRAILS, UTILITY POLES, VALVES, ETC. NO ADDITIONAL COMPENSATION WILL BE CONSIDERED BY THE CITY IN THE EVENT THE CONTRACTOR NEGLECTS TO ACCOUNT FOR THIS WORK IN HIS BID PRICE.

23. CONTRACTOR IS FULLY RESPONSIBLE TO RESTORE ALL EXISTING TRAFFIC LOOPS AND ALL OTHER EXISTING TRAFFIC RELATED INFRASTRUCTURE DAMAGED DURING THE INSTALLATION OF THE WATERMAIN. THE CONTRACTOR MUST COORDINATE WITH BROWARD COUNTY'S TRAFFIC ENGINEERING DIVISION PRIOR TO CONSTRUCTION. THE LATEST COMMUNICATIONS INFRASTRUCTURE CAN BE FOUND AT HTTP://WWW.BROWARD.ORG/TRAFFIC

24. THE MAINTENANCE OF TRAFFIC (MOT) PLANS OF THE PROJECT WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR MUST PRODUCE HIS/HER OWN MOT PLANS AND MUST HAVE SAID PLANS APPROVED BY THE CITY OF HALLANDALE BEACH AND PRIOR TO CONSTRUCTION. THE COST ASSOCIATED WITH THIS EFFORT MUST BE REFLECTED IN THE BID. NO ADDITIONAL COMPENSATION WILL BE GRANTED BY THE CITY FOR MOT COSTS ASSOCIATED WITH THIS PROJECT AFTER PROJECT AWARD. MOT PLANS SHALL INCLUDE BUT NOT LIMITED TO MESSAGE BOARDS TO INFORM DRIVERS OF CONSTRUCTION ON ROADWAY, ADDRESSING SCHOOL ZONES, MAINTAINING CROSSING ACCESS, AND PROVIDE ACCESS TO RESIDENCES & BUSINESSES AT ALL TIMES. CONTRACTOR IS ALSO RESPONSIBLE FOR NOTIFYING ALL SCHOOLS WITHIN THE VICINITY OF THE PROJECT LIMITS ABOUT THE CONSTRUCTION SCHEDULE.

25. CONTRACTOR IS TO ADHERE TO THE CITY OF HALLANDALE BEACH NOISE ORDINANCE (CHAPTER 100) WHICH PROHIBITS.EXCAVATION AND CONSTRUCTION BEFORE 8:00 AM AND AFTER 6:00 PM, MONDAY TO SATURDAY AND ALL DAY SUNDAY.

26. CONTRACTOR IS REQUIRED TO OBTAIN AN NPDES NOI PERMIT FROM SFWMD AND ANY OTHER PERMIT ASSOCIATED WITH SUCH PERMIT. IN ADDITION TO PERMITS FROM CITY OF HOLLYWOOD, BROWARD COUNTY ENVIRONMENTAL LICENSING AND BUILDING PERMITTING DIVISION, AND FROM CITY OF HALLANDALE BEACH. PERMIT FEES WILL BE REFUNDED AT EXACT COST TO THE CONTRACTOR.

27. THE CONTRACTOR MUST COMPLY WITH ALL HORIZONTAL AND VERTICAL SEPARATION REQUIREMENTS AS STATED IN THE FLORIDA ADMINISTRATIVE CODE (F.A.C.) RULE 62-555.314 .

28. THE CONTRACTOR MUST INCLUDE AS PART OF HIS/HER BID THE COST OF RESTORING A FULL LANE OR LANES OF ROADWAY THAT ARE AFFECTED BY CONSTRUCTION. THIS SHOULD INCLUDE ALL TRENCH RESTORATION, RESURFACING AS WELL AS STRIPING TO ENSURE THAT THE ROADWAY IS FULLY RESTORED TO EQUAL OR BETTER CONDITION.

29. THE CONTRACTOR IS FULLY RESPONSIBLE FOR RESTORING ALL PAVEMENT MARKINGS WITH NEW STRIPING IN THEIR PRE-CONSTRUCTION LOCATIONS UNLESS OTHERWISE SHOWN ON PLANS. THE CONTRACTOR MUST THEREFORE SURVEY THE LOCATIONS, DIMENSIONS, COLOR, AND OTHER RELEVANT CHARACTERISTICS OF THE EXISTING PAVEMENT STRIPING PRIOR TO EXCAVATION. FINAL PAVEMENT STRIPING MUST BE THERMOPLASTIC IN ACCORDANCE WITH FDOT STANDARDS. ALL CONSTRUCTION WORK EFFORT ASSOCIATED WITH THIS ITEM MUST BE INCLUDED IN THE BID PRICE. IN THE EVENT THAT THE CONTRACTOR NEGLECTS TO INCLUDE THIS COST IN HIS/HER BID PRICE, THEN THE CONTRACTOR WILL COMPLETE THE RE-STRIPING WORK AT HIS/HER OWN EXPENSE.

30. IN THE EVENT THAT THERE IS ANY EXISTING STRIPING THAT DOES NOT CONFORM TO THE CURRENT CODES OR STANDARDS, THE CONTRACTOR MUST NOTIFY THE ENGINEER, AND THE CITY OF HALLANDALE BEACH IN THIS REGARD PRIOR TO RE-STRIPING.

31. SPECIAL PAVEMENT DRIVEWAYS SHALL BE PROTECTED FROM DAMAGE. IF DAMAGE BY CONTRACTOR MEANS AND METHOD, IT SHALL BE RESTORE AT NO COST TO THE CITY OF HALLANDALE BEACH.

GEOTECHNICAL NOTES

THE GEOTECHNICAL INVESTIGATIONS WERE PERFORMED BY PROFESSIONAL SERVICES INDUSTRIES (PSI), INC. THE GEOTECHNICAL REPORT IS DATED MAY 29, 2015. A COPY OF THE GEOTECHNICAL REPORT WILL BE INCLUDED WITH THE PROJECT SPECIFICATIONS. A TOTAL OF 4 STANDARD PENETRATION TEST (SPT) BORINGS WERE SAMPLED ON THE PROJECT TO A DEPTH RANGING FROM 15 TO 40 FEET BELOW GRADE.

PIPE BEDDING:

1. CONTRACTOR SHALL EXCAVATE A MINIMUM DEPTH OF 6 INCHES BELOW THE PROPOSED PIPE INVERT. THE PIPE BEDDING MATERIAL SHOULD CONSIST OF CRUSHED STONE (PEA GRAVEL) OR NO. 7 AGGREGATE WITH NOT LESS THAN 95% PASSING THE ½ INCH AND NOT LESS THAN 95% RETAINED ON A U.S. STANDARD NO. 4 SIEVE. THE BEDDING MATERIAL SHOULD BE STABILIZED SO IT IS FIRM AND UNYIELDING PRIOR TO PLACEMENT OF THE PIPE.

2. CONTRACTOR SHALL PLACE A GEOTEXTILE WRAP ENVELOPING THE PIPE AND BEDDING MATERIAL. THE GEOTEXTILE UTILIZED SHALL BE CONTECH C-60NW OR APPROVED EQUAL.

PUMP STATION AND TANK SITE PREPARATION:

1. CONTRACTOR SHALL EXCAVATE ALL ENCOUNTERED SANDY SILTS SOILS TO ITS FULL DEPTH AND TO A HORIZONTAL DISTANCE OF 5 FEET BEYOND THE EDGES OF THE PUMP STATION. THE LAYER OF SANDY SILTS SOILS ARE COMPRESSIBLE/SOFT SOILS UNSUITABLE FOR STRUCTURAL SUPPORT AND DIFFICULT TO COMPACT.

2. THE EXCAVATION/FILLING ACTIVITIES SHALL BE DONE IN THE WET.

3. THE FILL MATERIAL USE SHALL BE COMPOSED OF EITHER CLEAN SANDS OR LIMEROCK. THE FILL SHALL CONSIST OF AN INORGANIC, NON-PLASTIC MATERIAL, FREE OF ANY MAN-MADE DEBRIS AND LIMEROCK WITH A THREE INCH MAXIMUM PARTICLE SIZE. PROPER CONTROL OF THE PLACEMENT AND COMPACTION OF NEW FILLS FOR THE PROJECT SHOULD BE EXERCISED BY A REPRESENTATIVE OF PSI, INC. THE FILL MATERIALS SHALL BE PLACED IN LIFTS NOT EXCEEDING 12 INCHES IN LOOSE THICKNESS. EACH LIFT SHOULD BE COMPACTED TO AT LEAST 95% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY NEAR THE OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D-1557. FILL TO BE COMPACTED WITH A VIBRATORY PLATE TAMPER OR A SMALL WALK BEHIND VIBRATORY ROLLER SHOULD BE PLACED IN LIFTS NOT EXCEEDING SIX INCHES IN LOOSE THICKNESS. THE FILL MATERIAL USED BOTH BELOW THE WATER TABLE AND TO A HEIGHT OF ONE FOOT ABOVE IT SHALL BE AS FOLLOWS:

   A. THE STRUCTURAL FILL TO BE USED ABOVE THE WATER TABLE SHOULD HAVE A UNIFIED SOIL CLASSIFICATION SYSTEM DESIGNATION OF GP, GW, SP, SW, GP-GM, GW-GM, SW-SM, OR SP-SM CONTAINING LESS THAN 12 PERCENT MATERIAL PASSING THE NO. 200 SIEVE.

   B. THE STRUCTURAL FILL OR BACKFILL TO BE PLACED BELOW THE WATER TABLE AND TO A HEIGHT OF ONE FOOT ABOVE IT SHOULD CONSIST OF A COMBINATION OF FDOT 57 STONE AND STRUCTURAL FILL MATERIAL MIXED IN AN APPROXIMATE 50% PROPORTION BY VOLUME. DENSITY TESTING WILL NOT BE REQUIRED WITHIN THIS LAYER, HOWEVER THE SUBGRADE PREPARATION WORK SHOULD BE OBSERVED BY A REPRESENTATIVE OF PSI, INC. TO CONFIRM THAT THE MATERIAL IS IN A STABLE AND UNYIELDING CONDITION.

GROUNDWATER CONTROL:

1. THE GROUNDWATER WAS OBSERVED IN THE BORINGS AT DEPTHS RANGING FROM 1.8 TO 4.3 FEET BELOW EXISTING GRADE.

2. THE CONTRACTOR SHALL MAINTAINED THE LEVEL OF GROUNDWATER AS FOLLOWS:

   A. AT LEAST ONE FOOT BELOW THE BOTTOM OF ANY EXCAVATION MADE DURING CONSTRUCTION OPERATIONS.

   B. AT LEAST TWO FEET BELOW THE SURFACE OF ANY COMPACTION OPERATIONS.

PAVEMENT RESTORATION:

1. THE TRENCH RESTORATION SHALL BE IN ACCORDANCE WITH THE DETAIL PROVIDED WITH THE CONSTRUCTION SET OF PLANS.

2. THE TRENCH RESTORATION SHALL CONSIST OF 3 INCH ASPHALT PAVEMENT (SP 9.5), 12 INCH BASE COURSE AND 12 INCH SUBGRADE WITHIN THE TRENCH WIDTH. CONTRACTOR IS TO MILL AND RESURFACE AN ADDITIONAL 1 INCH OF ASPHALT PAVEMENT (SP 9.5) OVER THE ENTIRE LANE WIDTH. ASPHALT IS TO BE INSTALLED IN 1 INCH LIFT MIN.

3. THE BASE COURSE MATERIALS IN THE PAVEMENTS SHOULD CONSIST OF CRUSHED LIMEROCK HAVING A MINIMUM LIMEROCK BEARING RATIO (LBR) OF 100. BASE MATERIALS SHOULD MEET THE REQUIREMENTS PRESENTED IN THE LATEST REVISIONS OF THE FLORIDA DEPARTMENT OF TRANSPORTATION "SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", SECTION 911 (LIMESTONE). THE BASE COURSE SHOULD BE COMPACTED TO AT LEAST 98% MAXIMUM DRY DENSITY (AASHTO T-180).

4. THE SUBGRADE SHOULD BE STABILIZED TO A DEPTH OF 12 INCHES TO ACHIEVE A MINIMUM LBR OF 40. THIS CAN BE OBTAINED BY BLENDING BASE MATERIAL (LIMEROCK) WITH THE EXISTING SUBGRADE SOILS. THE REQUIRED MIXING RATIO SHOULD BE DETERMINED BY LABORATORY TESTING. THE STABILIZED SUBGRADE SHOULD BE COMPACTED TO AT LEAST 95% OF THE AASHTO 180 MAXIMUM DRY DENSITY.

ENGINEER'S PRE-TRENCHING NOTES

1. UTILITIES SHOWN ON THESE PLANS SHEETS ARE APPROXIMATE & ADDITIONAL UTILITIES MAY EXIST IN THE FIELD THAT IS NOT SHOWN ON THE PLANS. THE CONTRACTOR MUST INCLUDE AS PART OF HIS/HER BID, AN ITEM FOR PRE-TRENCHING TO ENSURE THAT NO PORTION OF THE PROPOSED WORK CONFLICTS WITH ANY UTILITIES, PRIOR TO CONSTRUCTION. IF POTENTIAL CONFLICTS ARE FOUND, THEN THE CONTRACTOR MUST NOTIFY THE OWNER, ENGINEER & UTILITY OWNER AT LEAST SEVEN (7) DAYS ADVANCED NOTICE PRIOR TO CONSTRUCTION. THIS NOTIFICATION SHALL INCLUDE SURVEY INFORMATION ABOUT THE CONFLICTING UTILITY'S HORIZONTAL & VERTICAL ALIGNMENT. FAILURE ON THE CONTRACTOR'S PART TO PRE-TRENCH PRIOR TO CONSTRUCTION IS AT HIS/HER OWN RISK & BY SO DOING RELIEVES THE OWNER & THE ENGINEER OF ANY & ALL LIABILITIES & COSTS ASSOCIATED WITH RESOLVING UTILITY CONFLICTS. IN ADDITION, NO ADDITIONAL COMPENSATION WILL BE GRANTED FOR ANY COSTS INCURRED AS A RESULT OF FAILURE ON THE CONTRACTOR'S PART TO PRE-TRENCH.

2. EXTREME CAUTION MUST BE USED DURING ANY EXCAVATION. ALL EXCAVATIONS MUST BE SHORED, SHEETED, BRACED OR OTHERWISE SUPPORTED AS INDICATED IN THE GEOTECHNICAL REPORT'S RECOMMENDATIONS.

3. CONTRACTOR MUST UTILIZE SUBSURFACE UTILITY ENGINEERING METHODS & CORING TO DISCLOSE THE PRESENCE OF ROCK, UTILITIES & OTHER SUBSURFACE ELEMENTS NOT INDICATED ON TOPOGRAPHY SURVEY.

4. CONTRACTOR MUST ENGAGE IN CONSULTATIONS WITH IDENTIFIED UTILITY OWNERS.

5. PRE-TRENCHING DIRECTIONS TO CONTRACTOR:
   A. CONTRACTOR MUST UTILIZE A SUPPORT SYSTEM STURDY ENOUGH TO WITHSTAND THE PRESSURE OF THE SOIL.
   B. CONTRACTOR MUST UTILIZE A SUPPORT SYSTEM STURDY ENOUGH TO WITHSTAND THE STRESS WHICH MAY BE EXERTED BY WATER, VIBRATION, OR HEAVY LOADS.
   C. CONTRACTOR MUST PROPERLY SUPPORT ANY UNDERGROUND INSTALLATIONS THAT ARE UNCOVERED.
   D. CONFORM TO FLORIDA'S TRENCH SAFETY ACT & OSHA REQUIREMENTS.

6. BEFORE TRENCHING OR EXCAVATION, CONTRACTOR MUST CHECK THE FOLLOWING:

   A. SOIL CONDITIONS OR OTHER MATERIAL TO BE DUE.
   B. PROXIMITY TO UTILITIES, BUILDINGS & SOURCES OF VIBRATIONS.
   C. OWNERS OF UTILITIES, SERVICE, OR TRANSMISSION PIPING, ETC. & ARRANGE FOR SHUTDOWN OR RELOCATION OF FACILITIES, IF NECESSARY.
   D. FOR PREVIOUSLY DISTRIBUTED GROUND.
   E. FOR TREES, BOULDERS, OR OTHER HAZARDS.
   F. ADEQUACY & AVAILABILITY OF ALL EQUIPMENT, INCLUDING PERSONAL PROTECTIVE GEAR, SHORING MATERIALS, SIGNS, BARRICADES & MACHINERY.

7. DURING TRENCHING OR EXCAVATION, CONTRACTOR MUST REGULARLY CHECK FOR THE FOLLOWING:

   A. CHANGING GROUND CONDITIONS PARTICULARLY AFTER RAINFALL.
   B. POSSIBLE OXYGEN DEFICIENCY OR GASEOUS CONDITIONS.
   C. ADEQUACY OF SHORING AND/OR SLOPING AS WORK PROGRESSES.
   D. MAINTENANCE OF ENTRANCE & EXIT FACILITIES.
   E. ALL SHEETING, BRACING, SHORING & UNDERPINNING.
   F. CHANGES IN VEHICULAR & MACHINERY OPERATIONAL PATTERNS

8. AFTER TRENCHING OR EXCAVATION, THE CONTRACTOR MUST CHECK FOR:

   A. DEPTH OF TRENCHING OR EXCAVATION, ITS SLOPING & SHORING.
   B. SLOPING OF BANKS, SIDES & WALLS IN RELATION TO DEPTH OF CUT, WATER CONTENT OF SOIL, VIBRATIONS.
   C. ENTRANCE & EXIT FACILITIES.
   D. LOCATION OF HEAVY EQUIPMENT - POWER SHOVELS, DERRICK, TRUCKS.
   E. EXCAVATION MATERIAL IS TWO FEET OR MORE FROM EDGE OF OPENING.
   F. PORTABLE TRENCH BOXES OR TRENCH SHIELDS ARE ADEQUATE, IF USED.
   G. CROSS BRACES OR TRENCH JACKS ARE CORRECTLY POSITIONED TO PREVENT SLIDING, FALLING OR KICKOUTS.

9. PRE-TRENCHING REQUIREMENTS CHECKLIST:

   A. PRIOR TO EXCAVATION, THE CONTRACTOR MUST UNDERTAKE EFFORTS TO DETERMINE UNDERGROUND INSTALLATIONS SUCH AS SEWER, TELEPHONE, WATER, GAS, ELECTRIC LINES, ETC. ARE PRESENT & WHERE THEY ARE ACTUALLY LOCATED.

   B. THE WALLS & FACES OF ALL EXCAVATIONS IN WHICH EMPLOYEES ARE EXPOSED TO DANGER FROM MOVING GROUND SHALL BE GUARDED BY A SHORING SYSTEM, SLOPING OF THE GROUND OR SOME OTHER EQUIVALENT MEANS.

   C. THE DETERMINATION OF THE ANGLE OF REPOSE & DESIGN OF THE SUPPORTING SYSTEM SHALL BE BASED ON CAREFUL EVALUATION OF PERTINENT FACTORS SUCH AS: DEPTH OF CUT, POSSIBLE VARIATION IN THE WATER CONTENT OF THE MATERIALS FROM EXPOSURE TO AIR, SUN AND/OR WATER.

   D. ALL SLOPES SHALL BE EXCAVATED TO AT LEAST THE ANGLE OF REPOSE EXCEPT IN AREAS WHERE SOLID ROCK ALLOWS FOR LINE DRILLING OR PRE SPLITTING.

   E. IN EXCAVATIONS WHICH EMPLOYEES MAY BE REQUIRED TO ENTER, EXCAVATED OR OTHER MATERIALS SHALL BE EFFECTIVELY STORED & RETAINED AT LEAST 2 FT OR MORE FROM THE EDGE OF THE EXCAVATION.

LEGEND

	RIGHT OF WAY
	TOPOGRAPHY SURVEY
BE	EXIST BURIED ELECTRICAL LINE
BT	EXIST BURIED TELEPHONE LINE
OU	EXIST OVERHEAD UTILITY
IRR	EXIST IRRIGATION MAIN
W	EXIST WATER MAIN
SS	EXIST STORM DRAIN
SS	EXIST SANITARY SEWER LINE
G	EXIST GAS LINE
UG	EXIST UNDERGROUND CABLE TV LINE
BT	EXIST OVERHEAD CABLE TV LINE
OT	EXIST OVERHEAD TELEPHONE LINE
BT	EXIST UNDERGROUND TELEPHONE LINE
BCTED	EXIST BCTEDCO LINE

ABBREVIATIONS

ABD	ABANDONED	LT	LEFT
AC	ASBESTOS CEMENT	MAX	MAXIMUM
ADA	AMERICAN WITH DISABILITIES ACT	MHW	MEAN HIGH WATER
ADJ	ADJUST	MIN	MINIMUM
APPROX	APPROXIMATELY	MISC	MISCELLANEOUS
ASPH	ASPHALT	MM	MILLIMETER
AVE	AVENUE	MOT	MAINTENANCE OF TRAFFIC
BE	BURIED ELECTRIC	MPH	MILES PER HOUR
℄	BASE LINE	MUTCD	MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
BLDG	BUILDING	N	NORTH
BLVD	BOULEVARD	NAVD	NATIONAL AMERICAN VERTICAL DATUM
BM	BENCH MARK	NGVD	NATIONAL GEODETIC VERTICAL DATUM
BOS	BOTTOM OF STRUCTURE	NO	NUMBER
BOT	BOTTOM	NTS	NOT TO SCALE
BT	BURIED TELEPHONE	OC	ON CENTER
C&G	CURB & GUTTER	OFF	OFFSET
C.L.F.	CHAIN LINK FENCE	OT	OVERHEAD TELEPHONE
CB	CATCH BASIN	OU	OVERHEAD UTILITY
CF	CUBIC FOOT	PE	PROFESSIONAL ENGINEER
CFS	CUBIT FEET PER SECOND	⅊	PROPERTY LINE
CI	CAST IRON	PLA	PLASTIC
CIP	CAST IRON PIPE	PP	POWER POLE
℄	CENTER LINE	PRB	POLLUTION RETARDANT BAFFLE
CMP	CORRUGATED METAL PIPE	PROP	PROPOSED
CO	CLEAN OUT	PVC	POLYVINYL CHLORIDE
C/O	CARE OF	PVMT	PAVEMENT
CONC	CONCRETE	R	RADIUS
CONST	CONSTRUCTION	RCP	REINFORCED CONCRETE PIPE
CY	CUBIC YARD	RD	ROAD
DBL	DOUBLE	REF	REFERENCE
DEPT	DEPARTMENT	REQ	REQUIRE
DIA	DIAMETER	REST	RESTORATION
DIP	DUCTILE IRON PIPE	ROW, R/W	RIGHT OF WAY
DRWY	DRIVEWAY	RPM	RAISED REFLECTIVE PAVEMENT MARKER
DWG(S)	DRAWING(S)	RT	RIGHT
E	EAST	S	SOUTH
EA	EACH	S/W	SIDEWALK
EL	ELEVATION	SD	STORM DRAIN
EOP	EDGE OF PAVEMENT	SP	SAMPLING POINT
EOR	ENGINEER OF RECORD	SPEC	SPECIFICATION
EXIST	EXISTING	SS	SANITARY SEWER
F&I	FURNISH & INSTALL	ST	STREET
F.A.C.	FLORIDA ADMINISTRATIVE CODE	STA	STATION
F.F.E.	FINISH FLOOR ELEVATION	STD	STANDARD
FD	FRENCH DRAIN	SYMB	SYMBOL
FH	FIRE HYDRANT	TAP SL	TAPPING SLEEVE
FM	FORCE MAIN	TAP V	TAPPING VALVE
FOC	FIBER OPTICS CABLE	TB	TEST BORING
FT	FEET	TERR	TERRACE
FVO	FLUSHING VALVE OUTLET	TH	TEST HOLE
G	GAS	TOC	TOP OF CURB
GALV	GALVANIZED	TOS	TOP OF SIDEWALK
GB	GRADE BREAK	TYP	TYPICAL
GM	GAS MAIN	UG	UNDERGROUND
GP	GRADE POINT	UNK	UNKNOWN
GRD	GROUND	VERT	VERTICAL
GV	GATE VALVE	W	WEST, WATER
HC	HORIZONTAL CLEARANCE	W/	WITH
HH	HAND HOLE	W/O	WITHOUT
HORIZ	HORIZONTAL	W/STL	WRAP STEEL
IN	INCHES	WL	WATER LINE
INV	INVERT	WM	WATER MAIN
L	LENGTH		
LBR	LIME ROCK BEARING RATIO		
LF	LINEAR FOOT		
LP	LIGHT POLE		

SYMBOLS LEGEND

	FLAG POLE		BUSH
CBL	CABLE TV RISER		PALM
TEL	TELEPHONE RISER		
EB	ELECTRIC BOX		BORING HOLE
	BACKFLOW PREVENTOR		
	SIAMESE CONNECTION		PROP GATE VALVE
	BOLLARD		PROP 11.25° HORIZ BEND
	METAL LIGHT POLE		PROP 22.5° HORIZ BEND
	GATE VALVE		PROP 45° HORIZ BEND
	WATER METER		PROP 90° HORIZ BEND
	FIRE HYDRANT ASSEMBLY		PROP TEE
	MANHOLE - SEE SURVEY		EXIST IRRIGATION VALVE
S	SANITARY SEWER MANHOLE - SEE SURVEY		EXIST IRRIGATION SPRINKLER
D	STORM DRAINAGE MANHOLE -SEE SURVEY	M	PROP METER
	CB		EXIST TRAFFIC CONTROLLER CABINET
	WOOD POWER POLE		
	CONCRETE POWER POLE		
	ANCHOR/GUY WIRE		
	CONCRETE LIGHT POLE		
	TRAFFIC SIGN POST		
	CLEANOUT		
MBX	MAIL BOX		
	TREE		
	HEDGE		

APPLICABLE CODES AND STANDARD SPECIFICATIONS

1. CITY OF HALLANDALE BEACH CODE OF ORDINANCE
2. FLORIDA ADMINISTRATIVE CODE (FAC)
3. FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT))
4. MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)
5. FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
6. BROWARD COUNTY PUBLIC WORKS AND TRANSPORTATION DEPT. MINIMUM STANDARDS
7. AMERICANS WITH DISABILITIES ACT AND ACCESSIBILITY GUIDELINES (ADA).
8. BROWARD COUNTY ENVIRONMENTAL PROTECTION AND GROWTH MANAGEMENT DEPARTMENT
9. CITY OF HOLLYWOOD CODE OF ORDINANCE.
10. SOUTH FLORIDA WATER MANAGER DISTRICT (SFWMD)

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CA # 7011
EAC PROJECT No. 14045.SD01-01

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PROJECT:

THREE ISLAND REUSE IRRIGATION PROJECT

KEY MAP:

REVISIONS:

NO.	DESCRIPTION	DATE	BY

DATE ISSUED: JANUARY 11, 2016
DESIGNED BY: SR
DRAWN BY: DG
REVIEWED BY: SS

SEAL:

SHARI J. RAMIREZ, P.E.
FL LICENSE No. 73078

SHEET TITLE:

GENERAL NOTES (1 OF 2)

SHEET NO.
G-1.0
SHEET 2 OF 27

100% PHASE SUBMITTAL

L:\Project\4project\14045.SD01-00 Hallandale Beach\14045.SD01-01- Three Island Reuse Irrigation\civil\G-1.0 GENERAL NOTES.dwg [GENERAL NOTES] Jan 19, 2016 11:10am SRAMIREZ

HORIZONTAL DIRECTIONAL DRILLING NOTES

A. GENERAL HANDLING PRECAUTIONS

1. STAY CLEAR OF TRUCKS BEING UNLOADED- ONLY PERSONS DIRECTLY NEEDED TO UNLOAD PIPE, SUCH AS THE EQUIPMENT OPERATOR, SHOULD BE ALLOWED IN THE VICINITY OF A TRUCK BEING UNLOADED. ALL OTHERS MUST STAY WELL CLEAR OF THE UNLOADING AREA.
2. SLIPPERY WHEN WET- POLYETHYLENE PIPE IS EXTREMELY SLIPPERY WHEN WET. USE CAUTION AT ALL TIMES, ESPECIALLY IN RAINY WEATHER.
3. HOT WHEN STORED OUTSIDE- BLACK PIPE EXPOSED TO SUNLIGHT MAY BE HOT! ALWAYS USE CAUTION BEFORE HANDLING PIPE THAT HAS BEEN EXPOSED TO DIRECT SUNLIGHT.

B. HORIZONTAL DIRECTIONAL DRILLING NOTES

CONTRACTOR SHALL EVALUATE SPECIFIED CROSSING ROUTE PRIOR TO DRILLING AND SHALL REPORT ANY CONCERNS TO EOR AND CITY OF HALLANDALE BEACH PRIOR TO UNDERTAKING WORK.

1. CONTRACTOR SHALL LOCATE ALL BURIED STRUCTURES AND UTILITIES WITHIN 10-FEET OF DRILLING PATH.
2. CONTRACTOR SHALL BE CAUTIOUS OF ABOVE GROUND STRUCTURES, SUCH AS CABLE, TELEPHONE AND POWER LINES, WHICH MIGHT CREATE AN ADVERSE IMPACT TO OPERATIONS.
3. CONTRACTOR SHALL MAINTAIN ADEQUATE SPACE OR ROOM TO FACILITATE FUSING AND JOINING OF HDPE PIPING.
4. CONTRACTOR SHALL PREPARE AND CERTIFY AS-BUILT DRAWINGS BASED ON FINAL COURSE FOLLOWED BY THE REAMER AND THE INSTALLED PIPE.
5. EXIT AND ENTRANCE PITS SHOULD BE OF SUFFICIENT SIZE TO CONTAIN DRILLING MUD AND SPOILS.
6. CONTRACTOR IS RESPONSIBLE FOR DISPOSAL OF EXCESS DRILLING FLUID. SPOILS AND DRILLING FLUID ARE NOT PERMITTED TO BE DISPOSED INTO STREAMS, LAKES, CANALS OR STORM SEWER DRAIN SYSTEMS.
7. PIPE INSTALLED VIA HDD SHALL BE ALLOWED TO RECOVER OVERNIGHT PRIOR TO MAKING CONNECTIONS OFF AND TO OTHER PIPE.
8. PIPE INSTALLED VIA HDD SHALL BE PIGGED AND PRESSURE TESTED ONCE AS A SEPARATE UNIT AFTER INSTALLATION AND AGAIN AS PART OF OTHER CONNECTING INSTALLATION.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION OF ANY SUBSURFACE UTILITIES DAMAGED DURING HDD INSTALLATION OPERATIONS.
10. IF A DRILL HOLE MUST BE ABANDONED, THE HOLE SHALL BE GROUT FILLED OR CEMENT FILLED BY CONTRACTOR TO PREVENT FUTURE SUBSIDENCE.
11. DETERGENTS ARE NOT ALLOWED TO BE UTILIZED TO LUBRICATE THE PIPE DURING PULLBACK.
12. PIPE ROLLERS, SKATES, OR OTHER PROTECTIVE DEVICES SHALL BE USED TO PREVENT DAMAGE TO THE PIPE FROM THE EDGES OF THE PIT OR SUB-STRUCTURES DURING PULL-IN. ROLLERS SHALL BE USED UNDER PIPE TO PROTECT THE PIPE FROM GOUGES, ELIMINATE, GROUND DRAG, AND REDUCE THE PULL-IN FORCE.
13. INSTALLATION OF HDD INSTALLATION SHALL BE PROPERLY PLANNED BY CONTRACTOR TO ENSURE THAT BOTH THE FINAL BACK REAM AND THE PULL BACK CAN BE COMPLETED WITHIN THE SAME DAY OR WORK PERIOD.
14. A LINEAGE OF HDPE PIPE AS SPECIFIED ON DRAWINGS SHALL BE PULLED OUT AND INSPECTED FOR SIGNS OF STRESS OR DAMAGE.
15. HDPE SHALL BE A TYPE III, CLASS C, CATEGORY 5, GRADE P 34; PE 3408; AS DEFINED IN ASTM D1248. MINIMUM CELL CLASSIFICATION, AS GIVEN BY ASTM 3350, SHALL BE PE 335434C. PIPE SHALL MEET THE STANDARDS OF ASTM F714, AS MODIFIED HEREIN, INCLUDING THE "GOVERNMENTAL/MILITARY PROCUREMENT" SECTIONS. MINIMUM HYDROSTATIC DESIGN BASIS SHALL BE 1600 PSI. IN ALL CASES, HYDROSTATIC DESIGN BASIS AND PRESSURE RATING SHALL BE AS DETERMINED USING THE METHODS OF ASTM F714. PIPE OF THIS TYPE SHALL BE BUTT-FUSION WELDED AT JOINTS.
16. PIPE SHALL BE WITHOUT ANY DIMENSIONAL OR SURFACE DEFORMITIES AND SHALL BE FREE OF CRACKS, HOLES, FOREIGN MATERIAL, BLISTERS OR OTHER DELETERIOUS DEFECTS.
17. CONTRACTOR SHALL UTILIZE THE PIPE MANUFACTURERS SPECIFICATIONS FOR DETERMINING THE ALLOWABLE PULLING FORCE BASED ON THE PIPE SIZE, WALL THICKNESS, FIELD CONDITIONS, PULL DISTANCE, SUBSURFACE INTEGRITY, BEARING CAPACITY OF SOILS, ADJACENT INFRASTRUCTURE, RELATED EQUIPMENT, CABLE STRENGTH AND ALL RELATED CONSIDERATIONS.
18. THE CONTRACTOR SHALL INSTALL A TRACE WIRE ON THE PIPE AND DEPICT THE LOCATION OF THE TRACE WIRE ON ALL AS-BUILT DOCUMENTATION PREPARED FOR THE PIPELINE CONSTRUCTION.
19. THE CONTRACTOR SHALL INSPECT AND CLEAN THE ENDS OF THE HDPE PIPING ARE THAT THE ENDS ARE FREE OF DEBRIS PRIOR TO JOINING THE PIPES BY MEANS OF THERMAL BUTT FUSION.
20. THE PIPING INSTALLATION SHALL BE PERFORMED IN A MANNER THAT DOES NOT OBSTRUCT ADJACENT ROADWAYS OR PUBLIC ACTIVITIES. TEMPORARY FENCING SHALL BE INSTALLED AROUND THE ENTRY AND EXIT PIPE STAGING AREAS AT NO ADDITIONAL COST TO THE CITY OF HALLANDALE BEACH.
21. PIPE PULL BACK RATE SHALL NOT EXCEED TWO FEET PER MINUTE.
22. THE PIPE SHALL BE SEALED AT BOTH ENDS, WITH A CAP OR PLUG TO PREVENT WATER, DRILLING FLUIDS AND OTHER FOREIGN MATERIALS FROM GAINING ENTRANCE INTO THE PIPE.
23. CONTRACTOR SHALL MAKE PROVISION DURING CONSTRUCTION THAT CONTINUOUS MONITORING AND PLOTTING OF PILOT DRILL PROGRESSES SHALL BE UNDERTAKEN TO ENSURE COMPLIANCE WITH PROPOSED INSTALLATION ALIGNMENT AND ALLOW FOR TIMELY AND APPROPRIATE COURSE CORRECTIONS TO BE UNDERTAKEN.
24. DIGITAL PHOTOGRAPHS AND RECORDS OF PAVEMENT CONDITION SHALL BE UNDERTAKEN PRIOR TO AND AFTER PIPE INSTALLATION. ALL INSTALLATIONS SHALL STOP IMMEDIATELY WHENEVER MONITORED POINTS INDICATE VERTICAL CHANGE IN ELEVATION OF 12 MM OR MORE.
25. AN AREA OF CONTAMINATED GROUND IS ENCOUNTERED, CONTRACTOR SHALL STOP ALL OPERATIONS AND SHALL NOT PROCEED UNTIL DIRECTED BY ENGINEER OF RECORD OR OWNER. ANY SLURRY TESTED FOR CONTAMINANTS SHALL BE DISPOSED OF BY THE CONTRACTOR IN A MANNER COMPLYING WITH LOCAL ENVIRONMENTAL JURISDICTIONS.
26. ACCESS PITS AND EXCAVATIONS SHALL BE BACKFILLED WITH SUITABLE MATERIAL, AND IN A METHOD APPROVED BY ENGINEER OF RECORD AND THE CITY OF HALLANDALE BEACH.
27. THE DISTURBED GRASS SURFACE SHALL BE TOP SOILED, MULCHED AND ANCHORED ACCORDING TO PREVAILING PROJECT SPECIFICATIONS.
28. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL EXCESS MATERIALS AND EQUIPMENT FROM THE WORK SITE.

BROWARD COUNTY TRAFFIC ENGINEERING DIVISION COMMUNICATION NOTES (10/13/15)

1. THE AGENCY RESPONSIBLE FOR MAINTENANCE OF THE TRAFFIC SIGNALS AND RELATED EQUIPMENT IS BROWARD COUNTY TRAFFIC ENGINEERING DIVISION (BCTED). ALL SYSTEM COMMUNICATIONS EQUIPMENT, CABLING AND RELATED MATERIAL SHALL COMPLY WITH BROWARD COUNTY'S LATEST EDITION OF THE MINIMUM STANDARDS AS EXPRESSED IN THE "STANDARDS AND SPECIFICATIONS - COMMUNICATION INFRASTRUCTURE" DOCUMENT. PLEASE REFER TO (BCTED'S) COMMUNICATIONS POLICIES AND PROCEDURES FOR ADDITIONAL INFORMATION. BROWARD COUNTY TRAFFIC ENGINEERING DIVISION WILL NOT ACCEPT ANY PROJECTS THAT DO NOT MEET THESE STANDARDS AND SPECIFICATIONS. IF FIBER OPTIC PULL BOXES ALREADY EXIST AT AN INTERSECTION, NO ADDITIONAL FIBER OPTIC PULL BOXES WILL NEED TO BE INSTALLED. FOR A COPY OF THESE STANDARDS REFER TO THE BROWARD COUNTY WEB SITE AT WWW.BROWARD.ORG/TRAFFIC UNDER PUBLICATIONS.
2. **IF THERE ARE COPPER INTERCONNECT CABLE/S WITHIN YOUR PROJECT LIMITS OR WITHIN 1500 FEET OF YOUR PROJECT LIMITS, CONTACT THE COMMUNICATIONS MANAGER AT TECOMMUNICATIONS@BROWARD.ORG OR 954-847-2745.**
3. **IF THERE ARE FIBER OPTIC CABLE/S WITHIN YOUR PROJECT LIMITS OR WITHIN 1500 FEET OF YOUR PROJECT LIMITS CONTACT THE COMMUNICATIONS MANAGER AT TECOMMUNICATIONS@BROWARD.ORG OR 954-847-2745.**
4. **IF THERE ARE CELLULAR COMMUNICATIONS WITHIN YOUR PROJECT LIMITS, CONTACT THE COMMUNICATIONS MANAGER AT TECOMMUNICATIONS@BROWARD.ORG OR 954-847-2745.**
5. ALL BCTED COMMUNICATIONS CABLES/CONDUIT SHALL BE LOCATED A MINIMUM OF 48 HOURS IN ADVANCE.

BROWARD COUNTY TRAFFIC ENGINEERING DIVISION PROCEDURE FOR NOTIFICATION OF COMMUNICATION DISRUPTION (10/13/15)

1. COPPER INTERCONNECT CABLE NOTIFICATION CONTACT PERSON

WHEN COMMUNICATIONS TO AN INTERSECTION MUST BE DISRUPTED BY A CONTRACTOR TO PERFORM WORK, THE CONTRACTOR SHALL PROVIDE TWO DAY ADVANCE NOTICE IN WRITING TO THE BROWARD COUNTY TRAFFIC ENGINEERING DIVISION. THIS NOTIFICATION SHALL BE CONVEYED VIA ELECTRONIC MAIL (EMAIL) TO THE TRAFFIC SIGNAL TECHNICIAN III AT TECOMMUNICATIONS@BROWARD.ORG. NOTIFICATION SHALL INCLUDE CONTACT PERSON, TELEPHONE NUMBER, PURPOSE, LOCATION AND DURATION. THE DISRUPTION SHALL LAST FOR NO MORE THAN 3 CONSECUTIVE BUSINESS DAYS. WHERE POSSIBLE, THE DISRUPTION SHALL BE DURING OFF PEAK HOURS BEGINNING AT 9:00AM AND ENDING AT 3:00PM.

2. FIBER OPTIC CABLE & CELLULAR NOTIFICATION CONTACT PERSON

WHEN COMMUNICATIONS TO AN INTERSECTION MUST BE DISRUPTED BY A CONTRACTOR TO PERFORM WORK, THE CONTRACTOR SHALL PROVIDE TWO DAY ADVANCE NOTICE IN WRITING TO THE BROWARD COUNTY TRAFFIC ENGINEERING DIVISION. THIS NOTIFICATION SHALL BE CONVEYED VIA ELECTRONIC MAIL (EMAIL) TO THE COMMUNICATIONS MANAGER AT TECOMMUNICATIONS@BROWARD.ORG. NOTIFICATION SHALL INCLUDE CONTACT PERSON, TELEPHONE NUMBER, PURPOSE, LOCATION AND DURATION. THE DISRUPTION SHALL LAST FOR NO MORE THAN 3 CONSECUTIVE BUSINESS DAYS. WHERE POSSIBLE, THE DISRUPTION SHALL BE DURING OFF PEAK HOURS BEGINNING AT 9:00AM AND ENDING AT 3:00PM.

CONTACTS			
UTILITY	NAME	DEPARTMENT	PHONE NUMBER
INTERCONNECT COMMUNICATIONS CABLES	ROBERT BLOUNT	BROWARD COUNTY TRAFFIC ENGINEERING DIVISION (BCTED)	(954) 847-2745

TRAFFIC NOTES

1. ALL EXISTING SIGNALIZATION EQUIPMENT TO REMAIN IS ASSUMED TO BE IN GOOD WORKING ORDER UNLESS BCTED IS NOTIFIED IN WRITING PRIOR TO THE START OF CONSTRUCTION. ANY SUBSEQUENT DAMAGE TO THE SIGNAL EQUIPMENT SHALL BE REPAIRED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
2. ALL DISTURBED AREAS, INCLUDING PAVEMENT MARKINGS, SHALL BE RESTORED AT THE CONTRACTOR'S EXPENSE, TO ORIGINAL CONDITION OR BETTER AS STATED IN THE BROWARD COUNTY MINIMUM STANDARDS.

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CA # 7011
EAC PROJECT No. 14045.SD01-01

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PROJECT:

THREE ISLAND REUSE IRRIGATION PROJECT

KEY MAP:

REVISIONS:

NO.	DESCRIPTION	DATE	BY

DATE ISSUED: JANUARY 11, 2016
DESIGNED BY: SR
DRAWN BY: DG
REVIEWED BY: SS

SEAL:

SHARI J. RAMIREZ, P.E.
FL LICENSE No. 73078

SHEET TITLE:

GENERAL NOTES (2 OF 2)

SHEET NO.

G-1.1

SHEET 3 OF 27

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STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NOTES

1. PERMANENT OR TEMPORARY EROSION & SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AT THE EARLIEST PRACTICABLE TIME CONSISTENT WITH GOOD CONSTRUCTION PRACTICE. ONE OF THE FIRST CONSTRUCTION ACTIVITIES SHALL BE THE PLACEMENT OF TEMPORARY EROSION & SEDIMENT CONTROL MEASURES AROUND THE PERIMETER OF THE PROJECT, THE INITIAL WORK AREA, & OTHER AFFECTED AREAS TO PREVENT STORM WATER POLLUTION.

2. CONFORMANCE WITH SWPPP DOES NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITIES TO PROTECT ADJACENT PROPERTIES, FEATURES & NATURAL ENVIRONMENT FROM THE POSSIBLE DAMAGE IMPACT THAT MAY ARISE AS A RESULT OF THE CONSTRUCTION .

3. CONTRACTOR SHALL INSTALL PERIMETER POLLUTION PREVENTION CONTROLS AFTER CLEARING & GRUBBING BUT BEFORE BEGINNING OTHER CONSTRUCTION PHASES. CONTRACTOR SHALL REMOVE PERIMETER CONTROLS ONLY AFTER ALL AREAS HAVE BEEN STABILIZED.

4. MODIFICATIONS OR CHANGES TO THE INFORMATION DEPICTED ON THE STORMWATER POLLUTION PREVENTION PLAN MUST BE SUBMITTED TO FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) FOR APPROVAL.

5. IF ADDITIONAL EROSION & SEDIMENT CONTROL BMP'S ARE REQUESTED BY ANY REGULATORY AGENCY, THE CONTRACTOR SHALL PROMPTLY IMPLEMENT SAID MEASURES AFTER APPROVAL OF EOR/JURISDICTIONS.

6. MAINTENANCE REQUIREMENTS:

   A. THE PLAN SHALL INCLUDE A DESCRIPTION OF PROCEDURES THAT WILL BE FOLLOWED TO ENSURE THE TIMELY MAINTENANCE OF VEGETATION, EROSION AND SEDIMENT CONTROLS, STORMWATER MANAGEMENT PRACTICES, AND OTHER PROTECTIVE MEASURES AND BMPS SO THEY WILL REMAIN IN GOOD AND EFFECTIVE OPERATING CONDITION.

   B. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE & REPAIRS OF EROSION & SEDIMENT CONTROL/SWPPP DEVICES PER THE FDOT STANDARD SPECIFICATION FOR ROAD & BRIDGE CONSTRUCTION (CURRENT EDITION). THE MAINTENANCE OF THESE DEVICES SHALL OCCUR UNTIL BCAD'S REPRESENTATIVE ESTABLISHES AREAS AS PERMANENTLY STABILIZED. THE CONTRACTOR SHALL REMOVE ALL TEMPORARY EROSION AFTER COMPLETION OF THE PROJECT.

   C. EROSION & SEDIMENT CONTROL MEASURES SHALL BE ADEQUATELY MAINTAINED BY THE CONTRATOR TO PERFORM THE INTENDED FUNCTION DURING CONSTRUCTION OF THE PROJECT.

   D. CONTRACTOR SHALL VERIFY THAT ALL DRAINAGE STRUCTURES, WITHIN THE PROJECT LIMITS WHETHER INDICATED ON THE PLANS OR NOT ARE PROTECTED IN ACCORDANCE WITH THE ESTABLISHED METHODS AS NOTED ABOVE.

   E. DUST, RESULTING FROM PROPOSED DEMOLITION ACTIVITIES, MUST BE PREVENTED FROM INTRUSION INTO THE STORMWATER CONVEYANCE SYSTEM. APPROPRIATE DUST CONTROL TECHNIQUES (WATER OR SLURRY) MUST BE RETAINED ON SITE. CALCIUM CHLORIDE, OILS OR OTHER CHEMICAL DUST CONTROL AGENTS SHALL NOT BE UTILIZED.

   F. THE EXISTING DRAINAGE FLOW PATTERNS SHALL BE MAINTAINED DURING CONSTRUCTION.

   G. THE CONTRACTOR SHALL MONITOR ALL POLLUTION CONTROL DEVICES TO ENSURE SUFFICIENT CONVEYANCE OF STORMWATER RUNOFF & TO ELIMINATE SOIL EROSION DURING CONSTRUCTION.

   H. CONTRACTOR SHALL COVER LOADED TRUCKS WITH TARPAULINS.

   I. CONTRACTOR SHALL REMOVE EXCESS DIRT FROM WORK SITE ON A DAILY BASIS.

   J. BUILT-UP SEDIMENT WILL BE REMOVED FROM THE STAKED SILT FENCE WHEN IT REACHES ONE-THIRD OF THE FENCE BARRIER OR WHENEVER FLOW IS IMPEDED.

   K. AT NO TIME SHOULD SEDIMENTS BE ALLOWED TO ACCUMULATE WITHIN DRAINAGE STRUCTURE & CONVEYANCE PIPELINES. STRUCTURES & PIPELINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATIONS SHALL NOT FLUSH SEDIMENT-LADEN WATER INTO THE DOWNSTREAM SYSTEM.

   L. STOCKPILE OF EARTH & OTHER CONSTRUCTION RELATED MATERIAL SHALL BE PROTECTED AGAINST ACCIDENTAL TRANSPORTATION FROM PROJECT SITE BY WIND & WATER FLOW.

   M. ALL STORM DRAINAGE SYSTEMS MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT WATER CANNOT GAIN ENTRY INTO THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHER WISE TREATED TO REMOVE SEDIMENTS.

9. THE FOLLOWING NON-STORMWATER DISCHARGES ARE PROHIBITED:

   A. WASTEWATER FROM WASHOUT OF CONCRETE.

   B. WASTEWATER FROM WASHOUT AND CLEANOUTS OF STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS AND OTHER CONSTRUCTION MATERIALS.

   C. FUELS, OILS, OR OTHER POLLUTANTS ASSOCIATED WITH VEHICLE AND EQUIPMENT OPERATION AND MAINTENANCE.

   D. SOAPS OR SOLVENTS USED IN VEHICLE OR EQUIPMENT WASHING OR CLEANING.

10. POLLUTION PREVENTION CONTROLS. THE CONTRACTOR SHALL PROVIDE FOR THE DESIGN, INSTALLATION, IMPLEMENTATION, AND MAINTENANCE OF EFFECTIVE POLLUTION PREVENTION MEASURES TO ACCOMPLISH ALL OF THE FOLLOWING:

    A. MINIMIZE THE DISCHARGE OF POLLUTANTS FROM EQUIPMENT AND VEHICLE WASHING, WHEEL WASH WATER, AND OTHER WASH WATERS. TREAT WASH WATERS USING A TREATMENT SYSTEM SO THAT THEY DO NOT CAUSE OR CONTRIBUTE TO VIOLATIONS OF WATER QUALITY STANDARDS.

    B. MINIMIZE THE EXPOSURE OF BUILDING MATERIALS, BUILDING PRODUCTS, CONSTRUCTION WASTES, TRASH, LANDSCAPE MATERIALS, FERTILIZERS, PESTICIDES, HERBICIDES, DETERGENTS, SANITARY WASTE, AND OTHER MATERIALS PRESENT ON THE SITE TO PRECIPITATION AND TO STORMWATER.

    C. MINIMIZE THE DISCHARGE OF POLLUTANTS FROM SPILLS AND LEAKS; AND IMPLEMENT CHEMICAL SPILL AND LEAK PREVENTION AND RESPONSE PROCEDURES.

    D. CONTROL WASTES, SUCH AS DISCARDED BUILDING MATERIALS, CHEMICALS, LITTER, AND SANITARY WASTE, IN ACCORDANCE WITH ALL APPLICABLE STATE, LOCAL, AND FEDERAL REGULATIONS.

    E. FOLLOW ALL APPLICABLE STATE AND LOCAL WASTE DISPOSAL, SANITARY SEWER, AND SEPTIC SYSTEM REGULATIONS.

    F. USE PROPER APPLICATION RATES AND METHODS FOR FERTILIZERS, HERBICIDES, AND PESTICIDES, SET FORTH HOW THESE PROCEDURES WILL BE IMPLEMENTED AND ENFORCED. APPLY NUTRIENTS ONLY AT RATES NECESSARY TO ESTABLISH AND MAINTAIN VEGETATION AND CONSISTENT WITH ALL LABELING REQUIREMENTS.

    G. LIMIT THE APPLICATION, GENERATION, AND MIGRATION OF TOXIC SUBSTANCES; AND PROPERLY STORE AND DISPOSE OF TOXIC MATERIALS.

11. EROSION AND SEDIMENT CONTROLS. THE CONTRACTOR SHALL PROVIDE FOR THE DESIGN, INSTALLATION, IMPLEMENTATION, AND MAINTENANCE OF APPROPRIATE EROSION AND SEDIMENT CONTROLS TO ACCOMPLISH ALL OF THE FOLLOWING:

    A. CONTROL STORMWATER VOLUME AND VELOCITY WITHIN THE SITE TO MINIMIZE SOIL EROSION.

    B. CONTROL STORMWATER PEAK DISCHARGE RATES AND VOLUME TO MINIMIZE EROSION AT DISCHARGE OUTFALLS AND TO MINIMIZE DOWNSTREAM CHANNEL AND STREAMBANK EROSION.

    C. MINIMIZE THE AMOUNT OF SOIL EXPOSED DURING THE CONSTRUCTION ACTIVITY.

    D. MINIMIZE THE DISTURBANCE OF STEEP SLOPES.

    E. MINIMIZE SEDIMENT DISCHARGES FROM THE SITE. THE DESIGN, INSTALLATION, AND MAINTENANCE OF EROSION AND SEDIMENT CONTROLS SHALL ADDRESS FACTORS SUCH AS THE AMOUNT, FREQUENCY, INTENSITY, AND DURATION OF PRECIPITATION; THE NATURE OF THE RESULTING STORMWATER; AND SOIL CHARACTERISTICS, INCLUDING THE RANGE OF SOIL PARTICLE SIZES EXPECTED TO BE PRESENT ON THE SITE.

    F. MINIMIZE OFF-SITE VEHICLE TRACKING OF SEDIMENTS ONTO PAVED SURFACES AND THE GENERATION OF DUST. IF SEDIMENT ESCAPES THE CONSTRUCTION SITE, OFF-SITE ACCUMULATIONS OF SEDIMENT MUST BE REMOVED AT A FREQUENCY SUFFICIENT TO MINIMIZE OFF-SITE IMPACTS.

    G. WHERE FEASIBLE, DIRECT STORMWATER TO VEGETATED AREAS TO INCREASE SEDIMENT REMOVAL AND MAXIMIZE STORMWATER INFILTRATION AND TO PROVIDE AND MAINTAIN NATURAL BUFFERS ADJACENT TO SURFACE WATERS OF THE STATE.

    H. MINIMIZE SOIL COMPACTION AND PRESERVE TOPSOIL.

12. INSPECTIONS. AN INSPECTOR QUALIFIED IN ACCORDANCE WITH PART II.12. OF DEP DOCUMENT NO. 62-621.300(4)(A), EFFECTIVE FEBRUARY 17, 2009, INCORPORATED BY REFERENCE IN PARAGRAPH 62-621.300(4)(A), F.A.C., (PROVIDED BY THE OWNER OR OPERATOR) SHALL PERFORM ALL REQUIRED SITE INSPECTIONS. SITE INSPECTIONS MUST INCLUDE ALL POINTS OF DISCHARGE INTO SURFACE WATERS OR AN MS4; DISTURBED AREAS OF THE CONSTRUCTION SITE THAT HAVE NOT BEEN FINALLY STABILIZED; AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION; STRUCTURAL CONTROLS; AND LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE. SITE INSPECTIONS SHALL BE CONDUCTED AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.50 INCHES OR GREATER. INSPECTIONS SHALL INCLUDE:

    A. DISTURBED AREAS AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION SHALL BE INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE STORMWATER SYSTEM. THE STORMWATER MANAGEMENT SYSTEM AND EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. DISCHARGE LOCATIONS OR POINTS SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION AND SEDIMENT CONTROL AND STORMWATER TREATMENT MEASURES ARE EFFECTIVE IN PREVENTING OR MINIMIZING THE DISCHARGE OF POLLUTANTS, INCLUDING RETAINING SEDIMENT ONSITE PURSUANT TO RULE 62-40.432, F.A.C. LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE SHALL BE INSPECTED FOR EVIDENCE OF OFFSITE SEDIMENT TRACKING.

    B. BASED ON THE RESULTS OF THE INSPECTION, ALL MAINTENANCE OPERATIONS NEEDED TO ASSURE PROPER OPERATION OF ALL CONTROLS, BMPS, PRACTICES, OR MEASURES IDENTIFIED IN THE STORMWATER POLLUTION PREVENTION PLAN SHALL BE DONE IN A TIMELY MANNER, BUT IN NO CASE LATER THAN 7 CALENDAR DAYS FOLLOWING THE INSPECTION. IF NEEDED, POLLUTION PREVENTION CONTROLS, BMPS, AND MEASURES IDENTIFIED IN THE PLAN SHALL BE REVISED AS NECESSARY TO ASSURE PROPER OPERATION OF ALL CONTROLS, BMPS, PRACTICES, OR MEASURES IDENTIFIED IN THE STORMWATER POLLUTION PREVENTION PLAN. SUCH REVISIONS SHALL PROVIDE FOR TIMELY IMPLEMENTATION OF ANY CHANGES TO THE PLAN WITHIN 7 CALENDAR DAYS FOLLOWING THE INSPECTION.

    C. A REPORT SUMMARIZING THE SCOPE OF THE INSPECTION; NAME(S) AND QUALIFICATIONS OF PERSONNEL MAKING THE INSPECTION; THE DATE(S) OF THE INSPECTION; RAINFALL DATA; MAJOR OBSERVATIONS RELATING TO THE IMPLEMENTATION OF THE STORMWATER POLLUTION PREVENTION PLAN; AND ACTIONS TAKEN IN ACCORDANCE WITH THE REQUIREMENTS OF THIS PERMIT, SHALL BE MADE AND RETAINED AS PART OF THE STORMWATER POLLUTION PREVENTION PLAN. SUCH REPORTS SHALL IDENTIFY ANY INCIDENTS OF NON-COMPLIANCE. WHERE A REPORT DOES NOT IDENTIFY ANY INCIDENTS OF NON-COMPLIANCE, THE REPORT SHALL CONTAIN A CERTIFICATION THAT THE FACILITY IS IN COMPLIANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN AND THE GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES.

14. CONTRACTOR SHALL KEEP RUNOFF VELOCITIES LOW AND RETAIN RUNOFF ON SITE.

15. CONTRACTOR IS RESPONSIBLE FOR OBTAINING AN NPDES STORMWATER PERMIT COVERAGE BY SUBMITTING THE FOLLOWING TO THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP).

    A. PREPARE AND SUBMIT A CGP NOTICE OF INTENT (NOI) (DEP FORM 62-621.300(4)(B)

    B. DEVELOP AND SUBMIT A STORMWATER POLLUTION PREVENTION PLAN (SWPPP). IN PART, THE PLAN MUST INCLUDE THE FOLLOWING:

    - A SITE EVALUATION OF HOW AND WHERE POLLUTANTS MAY BE MOBILIZED BY STORMWATER.
    - A SITE PLAN FOR MANAGING STORMWATER RUNOFF.
    - IDENTIFICATION OF APPROPRIATE EROSION AND SEDIMENT CONTROLS AND STORMWATER BEST MANAGEMENT PRACTICES (BMPs) TO REDUCE EROSION, SEDIMENTATION, AND STORMWATER POLLUTION.
    - A MAINTENANCE AND INSPECTION SCHEDULE.
    - A RECORD KEEPING PROCESS.
    - IDENTIFICATION OF STORMWATER EXIT AREAS.

    C. PREPARE AND SUBMIT A NOTICE OF TERMINATION (NOT) (DEP FORM 62-621.300(6) IN ORDER TO DISCONTINUE PERMIT COVERAGE. ALSO AN NOT MAY BE SUBMITTED ONLY WHEN THE SITE MEETS THE ELIGIBILITY REQUIREMENTS FOR TERMINATION SPECIFIED IN THE CGP.

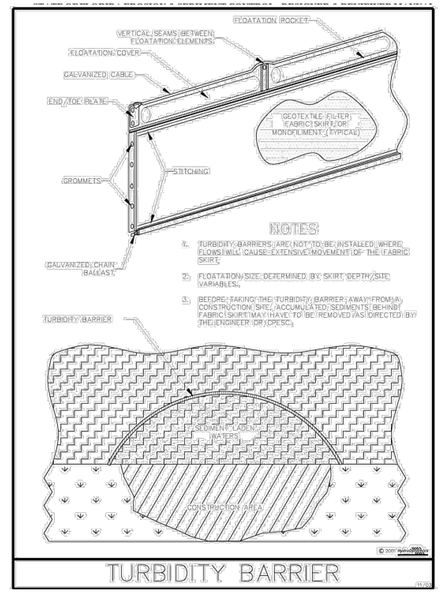

Figure V-44: Illustration of a Turbidity Barrier Curtain

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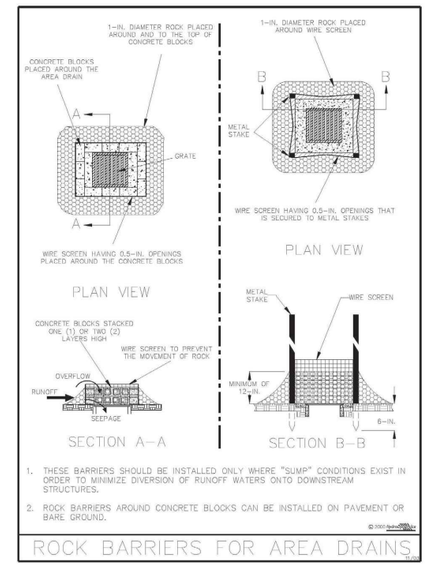

Figure V-46: Illustration of Rock Barriers around Area Drains

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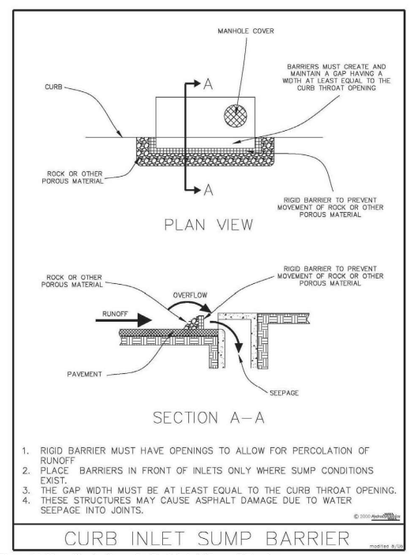

Figure V-48: Illustration of a Curb Inlet "Sump" Barrier

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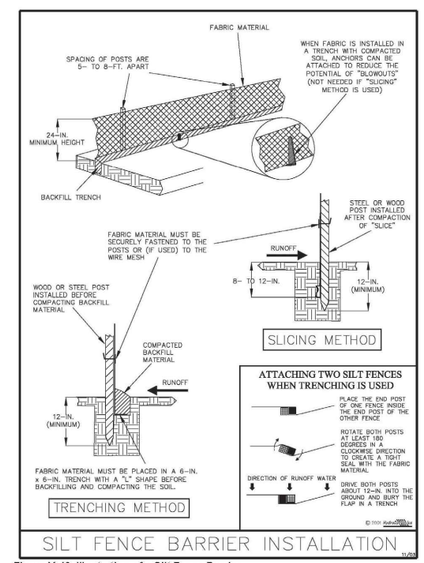

Figure V-40: Illustration of a Silt Fence Barrier

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NO.	DESCRIPTION	DATE	BY

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DESIGNED BY: SR
DRAWN BY: DG
REVIEWED BY: SS

SEAL:

SHARI J. RAMIREZ, P.E.
FL LICENSE No. 73078

SHEET TITLE:

SWPP NOTES & DETAILS

SHEET NO.
G-2.0
SHEET 4 OF 27

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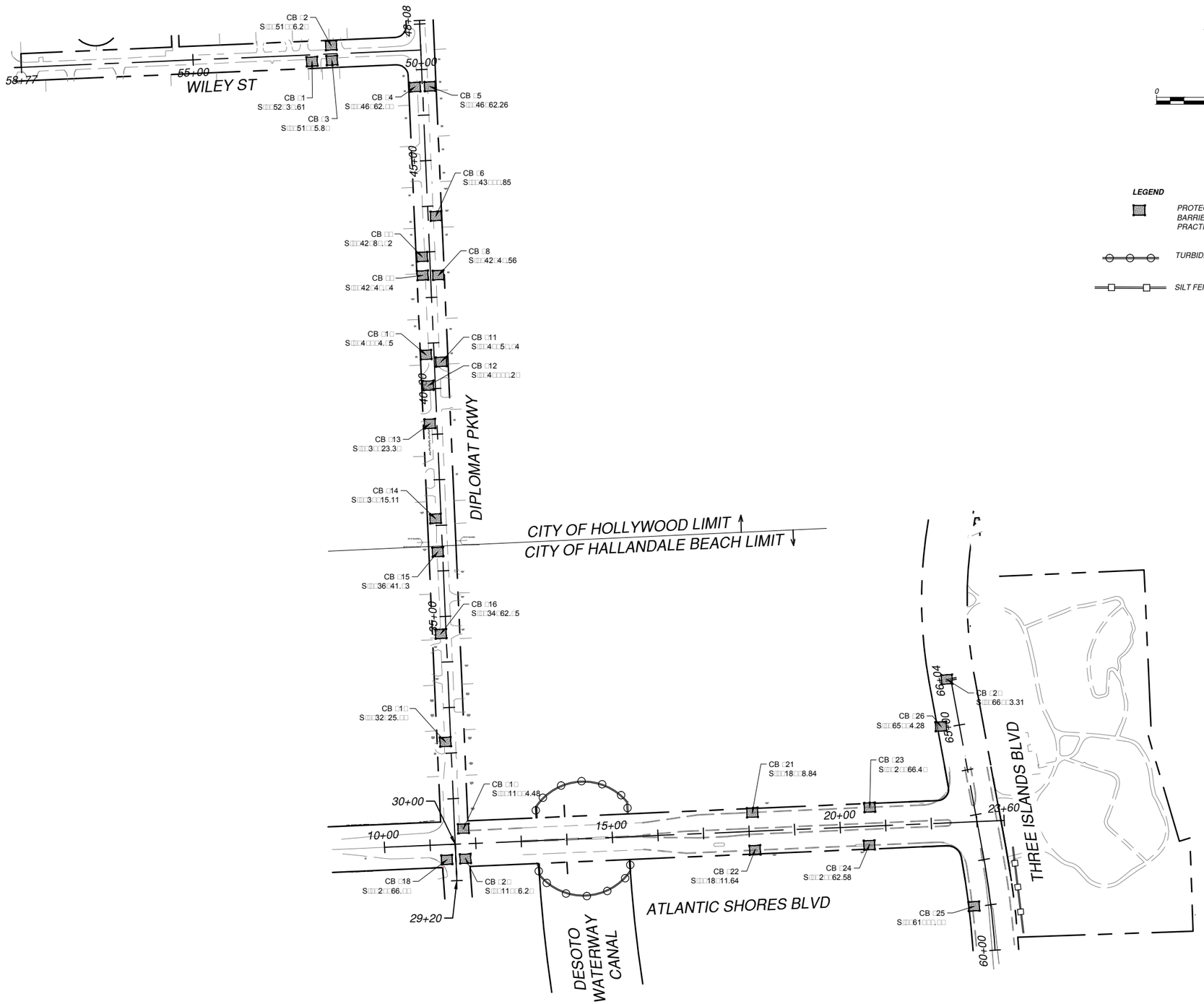

LEGEND

- PROTECT DRAINAGE INLET STRUCTURE WITH ROCK BARRIERS OR APPROVED BEST MANAGEMENT PRACTICE (BMP) EQUAL
- TURBIDITY BARRIER
- SILT FENCE

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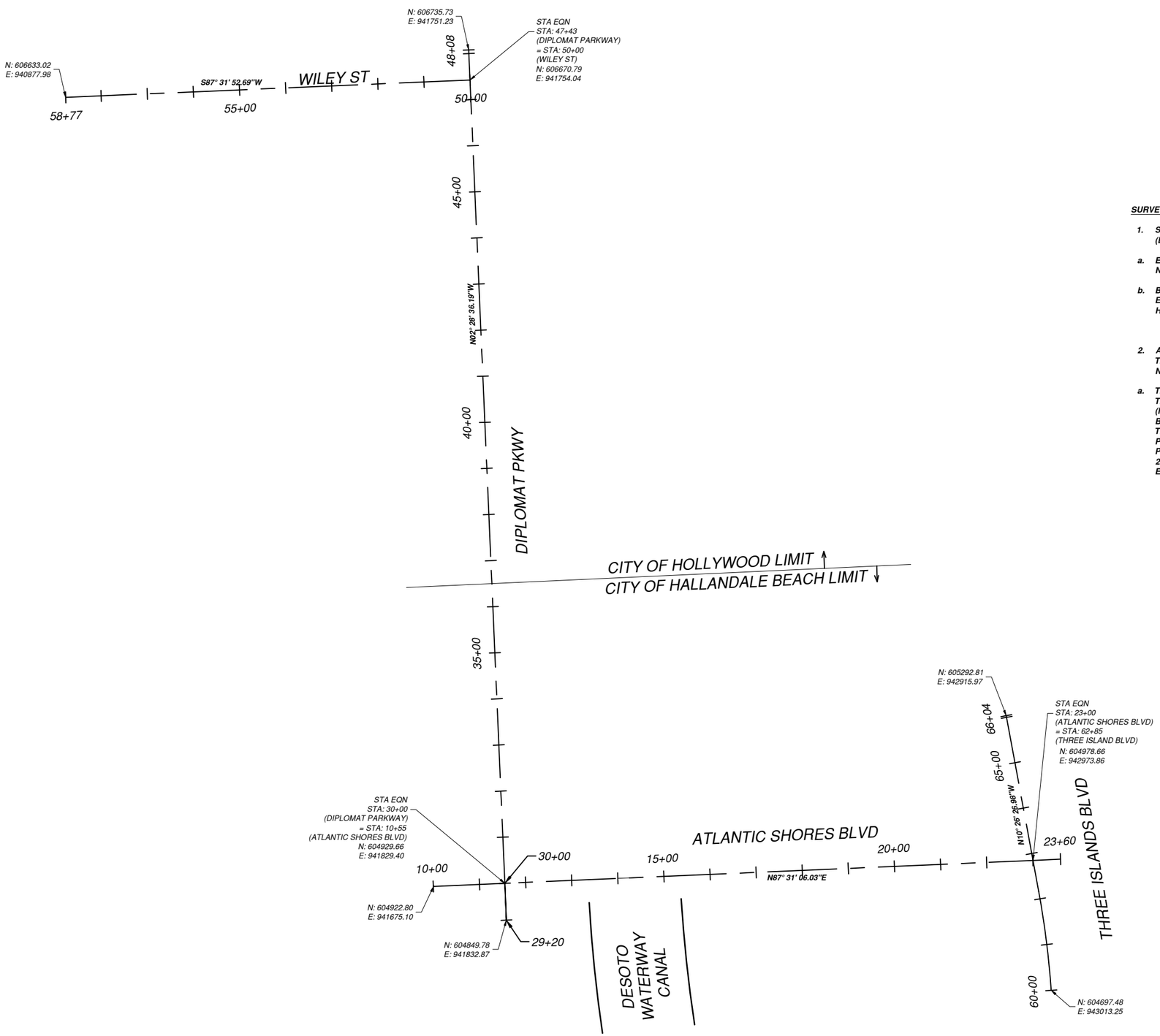

SURVEY NOTES

1. ***SURVEY PREPARED BY GIBBS LAND SURVEYORS (DATED OCTOBER 2012) AND PROVIDED BY THE CITY.***

a. ***ELEVATIONS SHOWN ON PLANS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988.***

b. ***BENCHMARK NGS MONUMENT PID AD2430, ELEVATION=1.68, NAVD88 AT NORTHEAST CORNER OF HOLLYWOOD BOULEVARD AND N. 9TH AVENUE.***

2. ***ADDITIONAL SURVEY PREPARED BY CRAVEN THOMPSON AND ASSOCIATES, INC. (DATED NOVEMBER 2015) AND PROVIDED BY THE CITY.***

a. ***THE ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAV 88) AND REFERENCED TO THE FOLLOWING BENCHMARK, STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION BENCHMARK HDM1 SHOWN ON PROJECT NETWORK CONTROL PLAN, FINANCIAL PROJECT NO. 228034-52-14, DATED SEPTEMBER 26 2002. AN FDOT DISK STAMPED B-01, 5-86-97, ELEVATION = 1.328 (METRIC) 4.357 (CONVERTED)***

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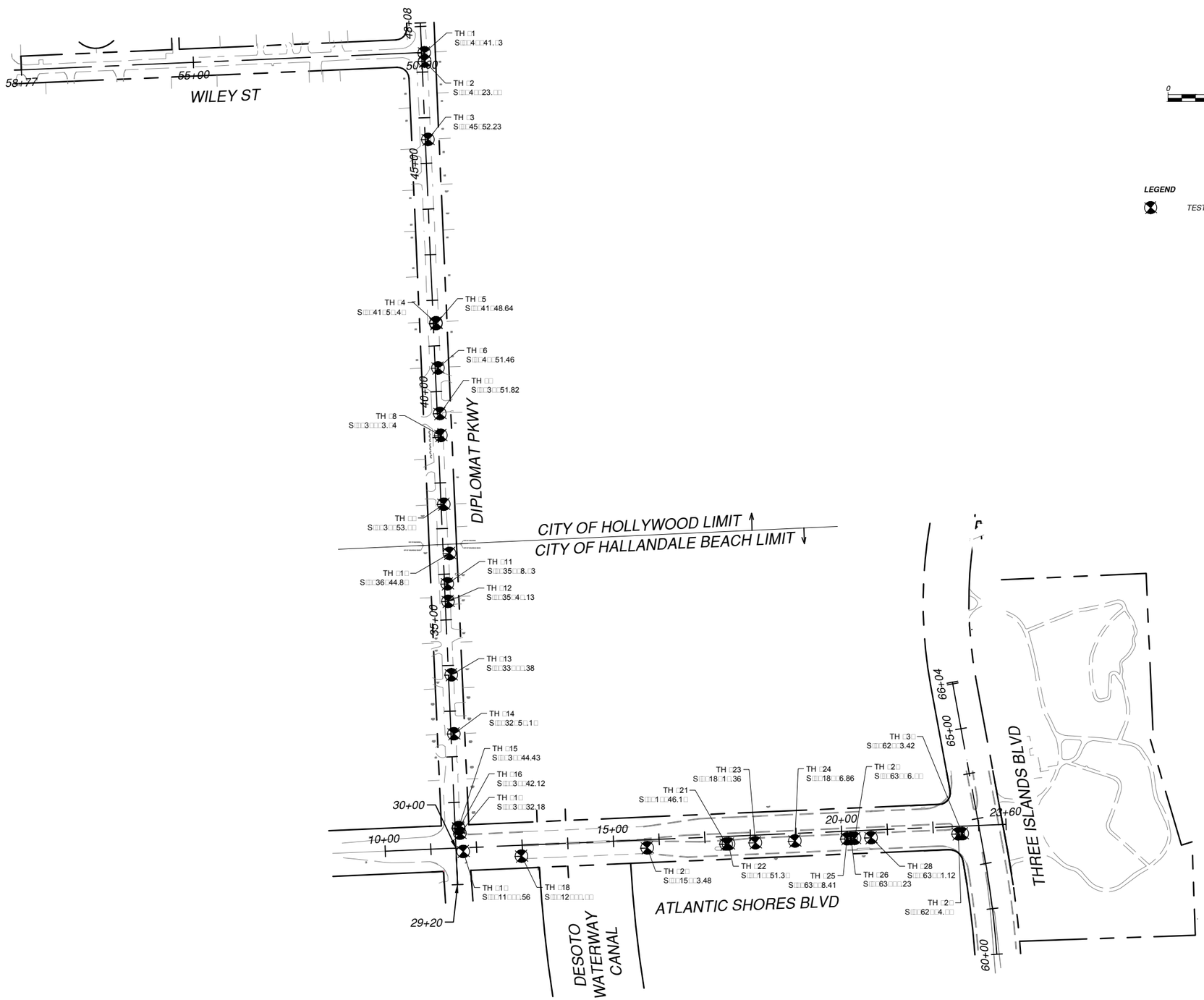

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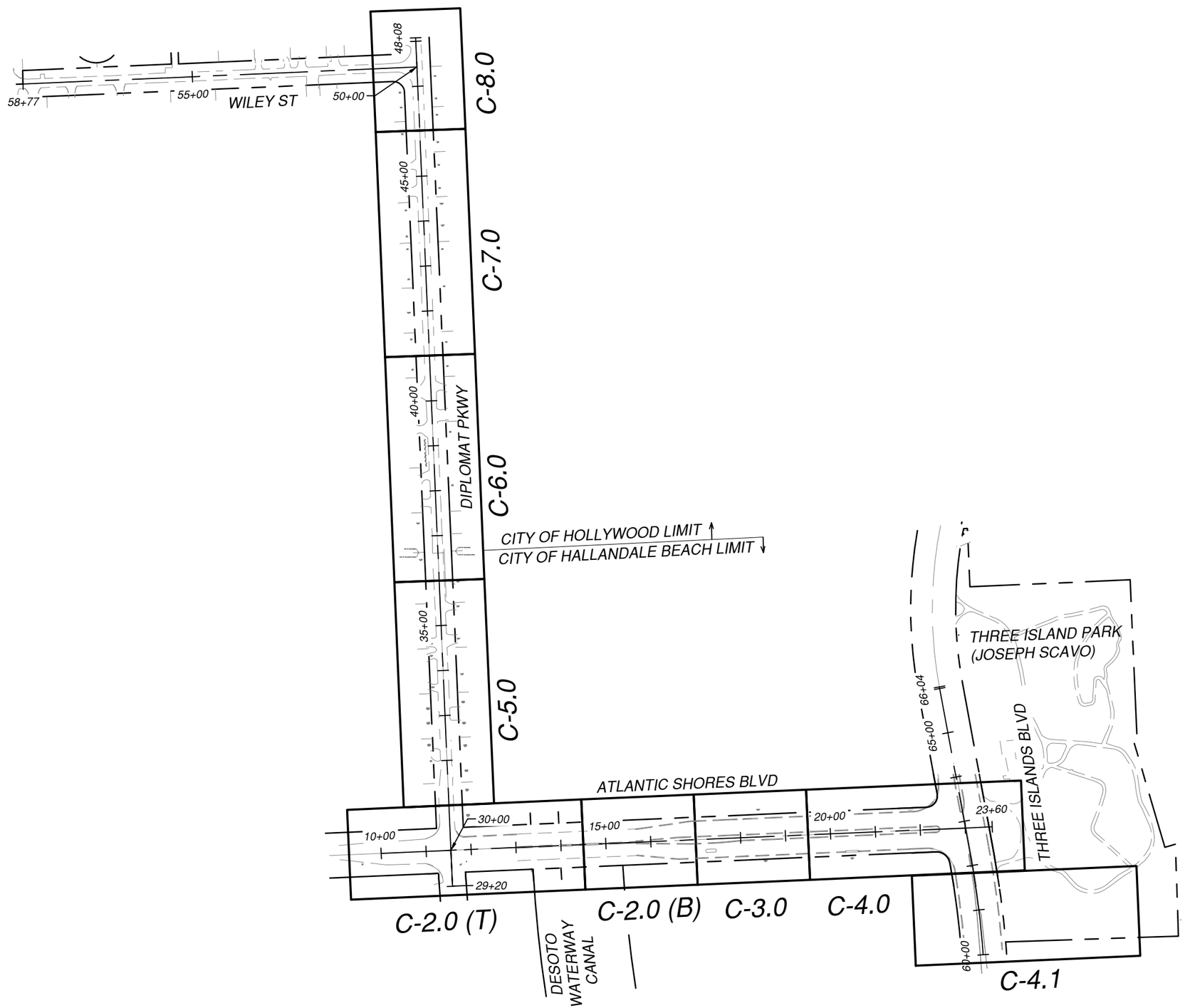

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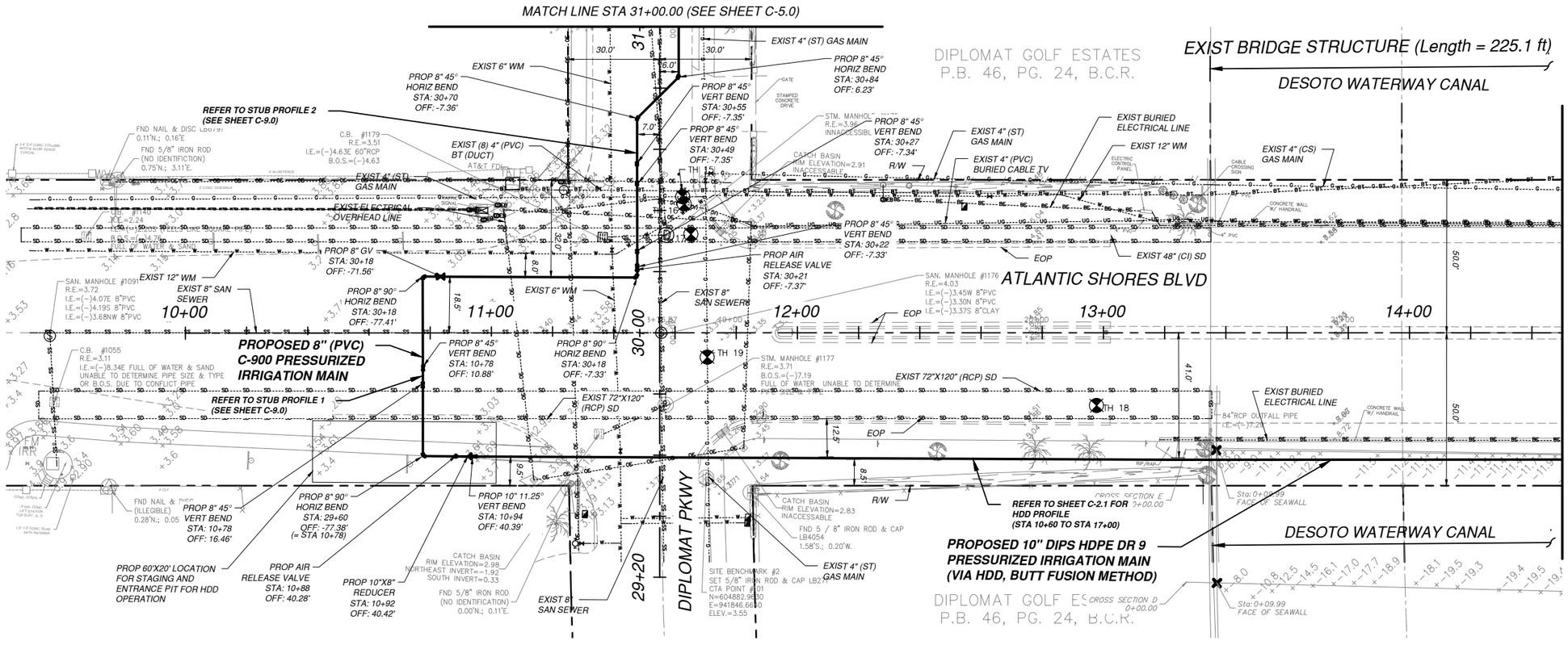

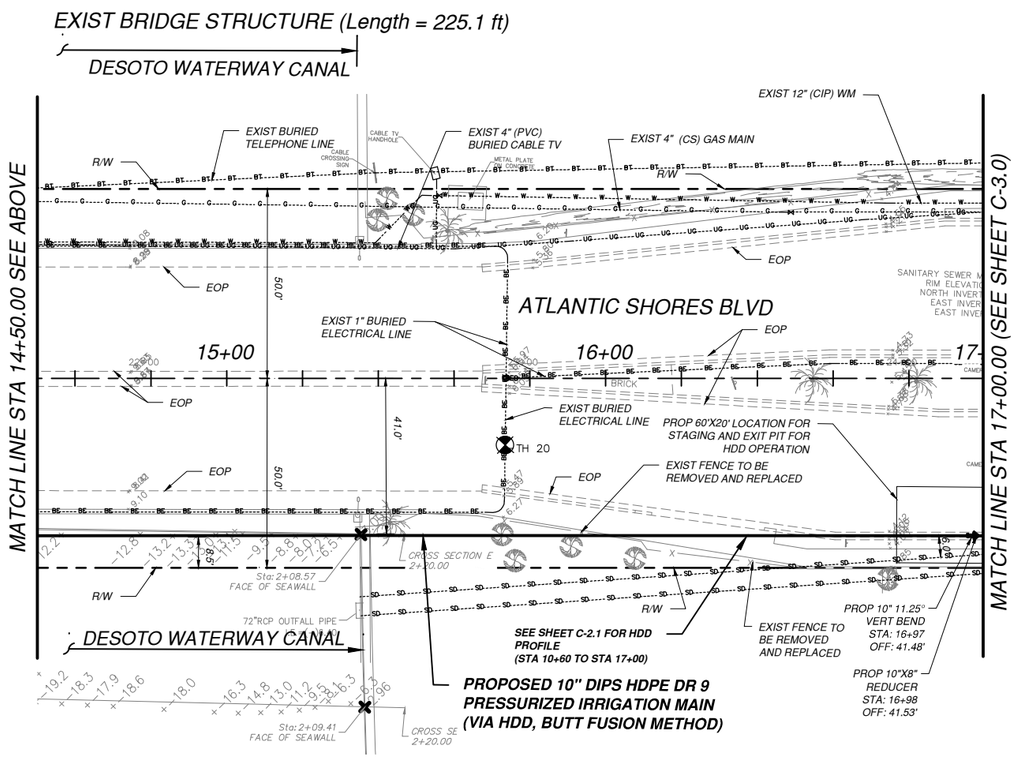

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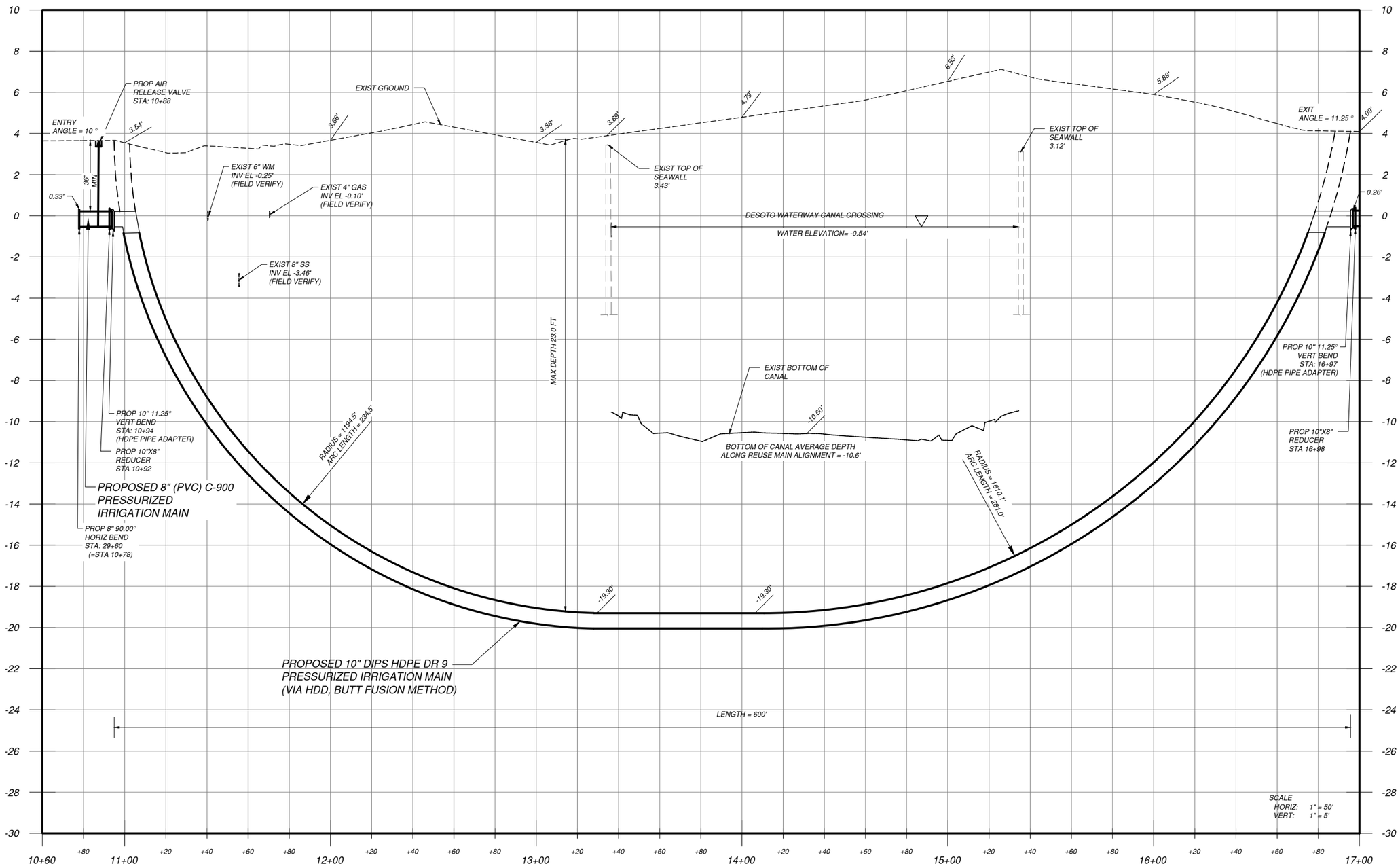
NOTE:
HORIZONTAL DIRECTIONAL DRILLING PROFILE FROM STA 10+60 TO STA 17+00. REFER TO SHEET C-2.0 FOR PLAN VIEW.



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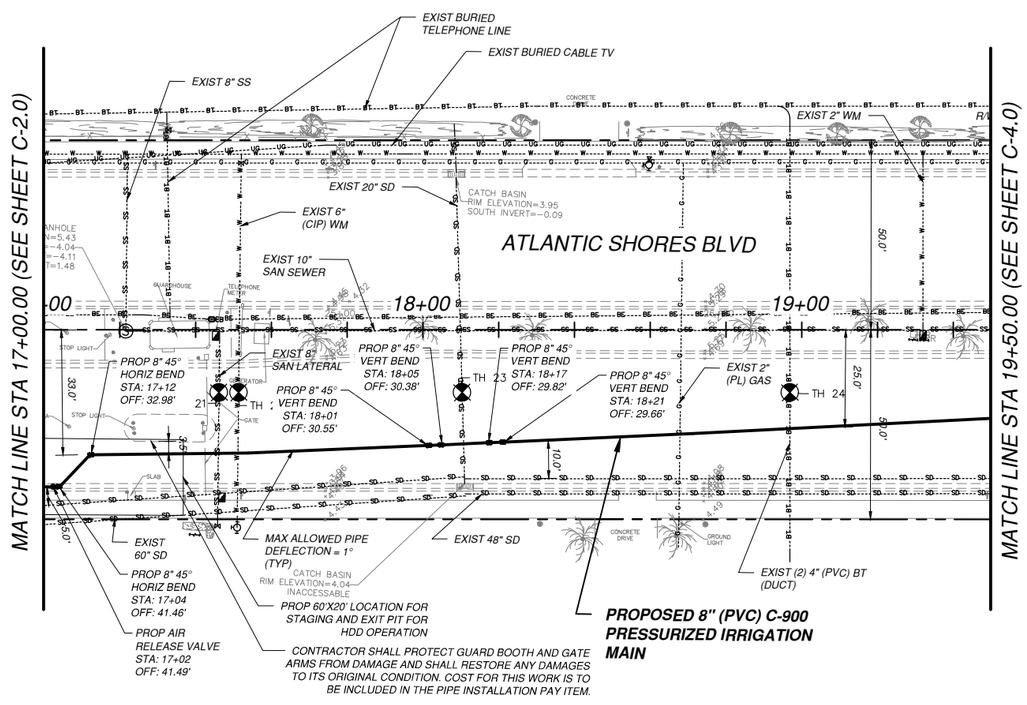

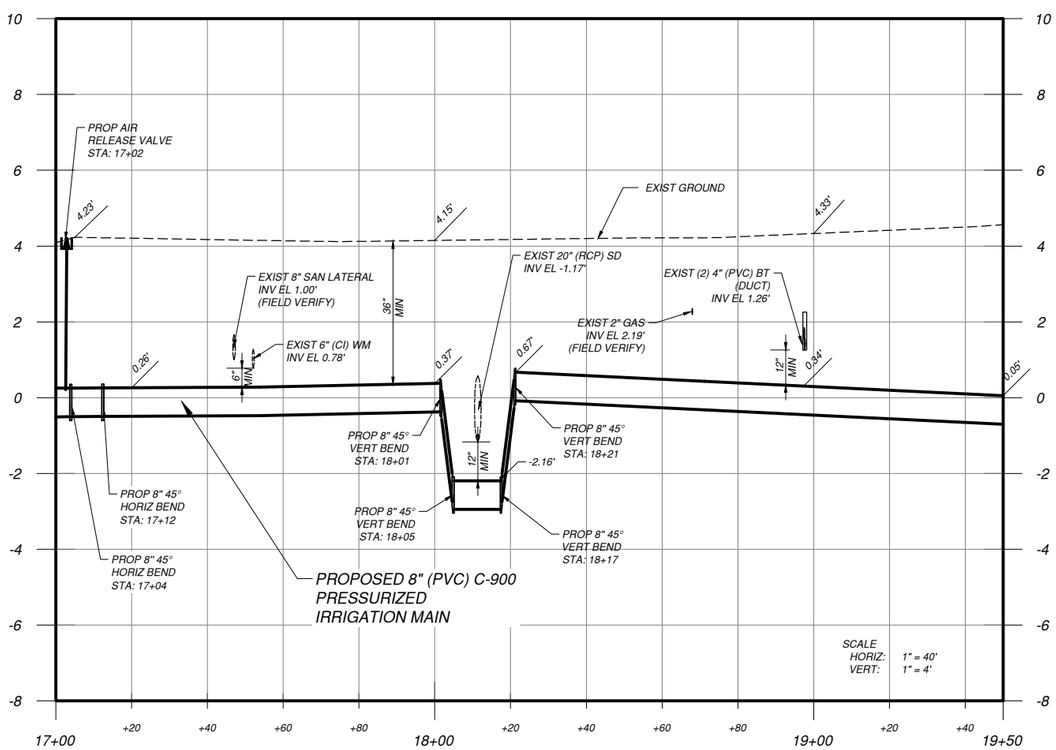

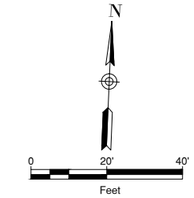

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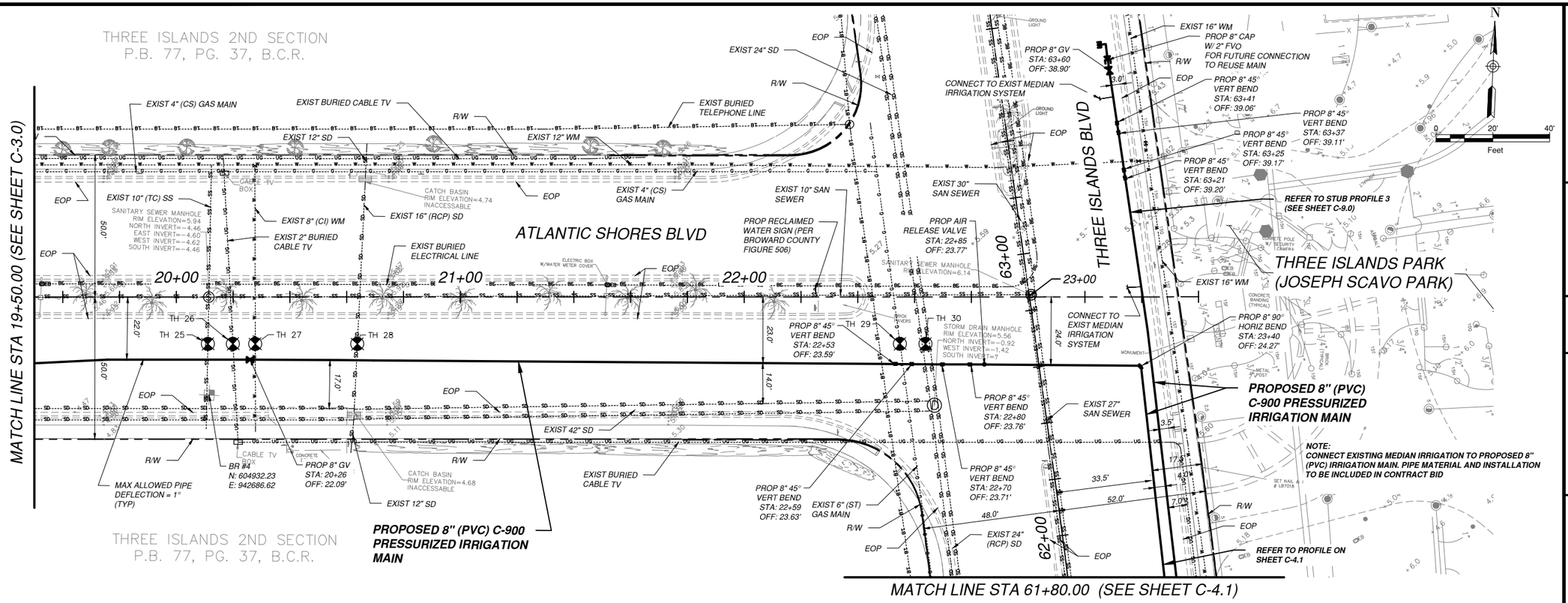

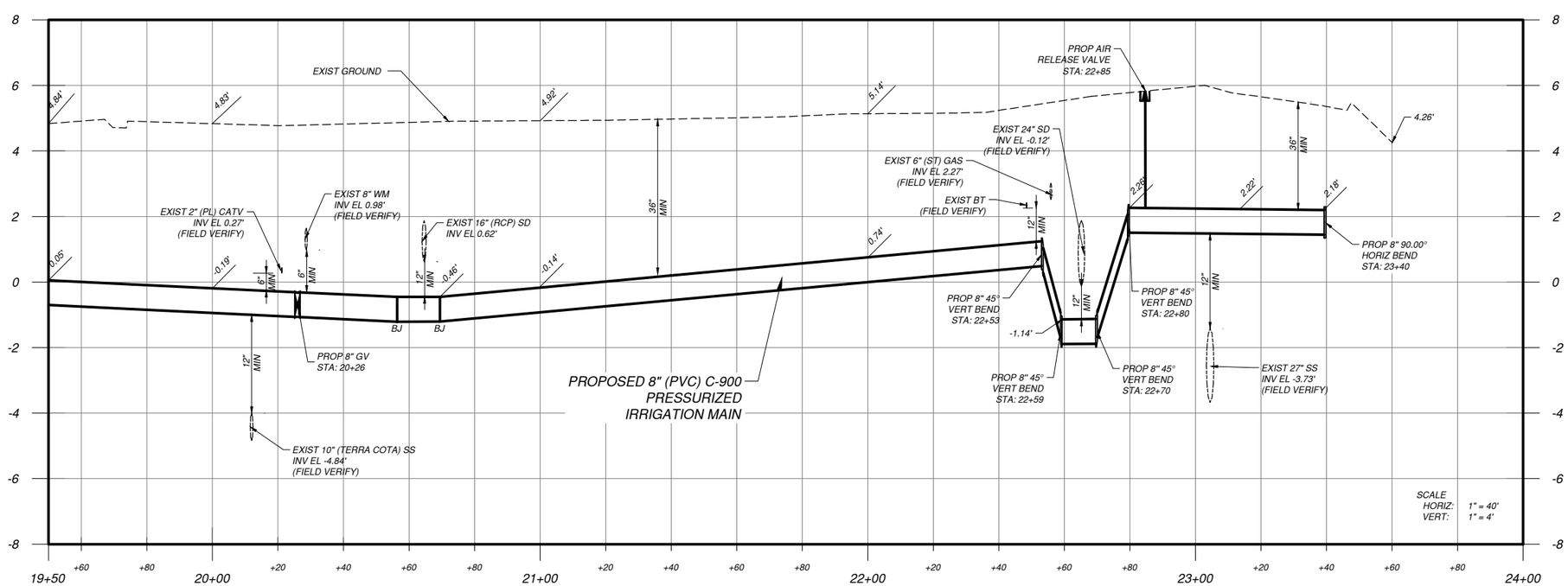

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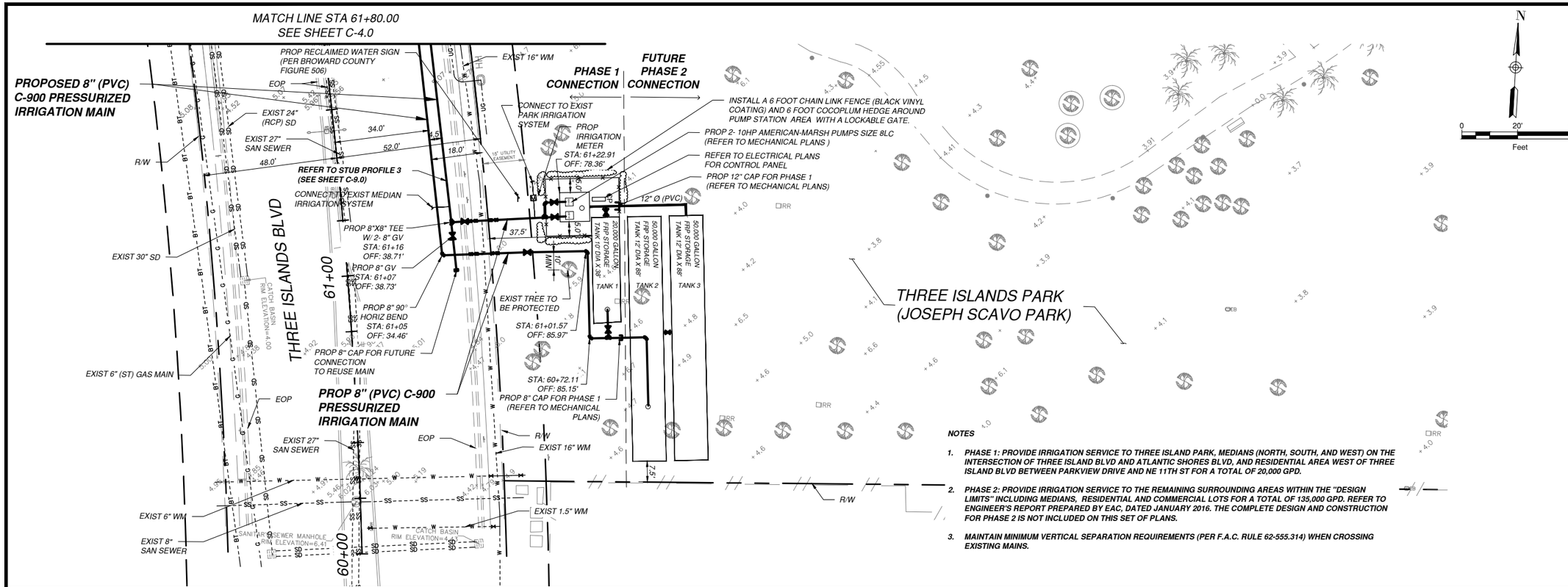
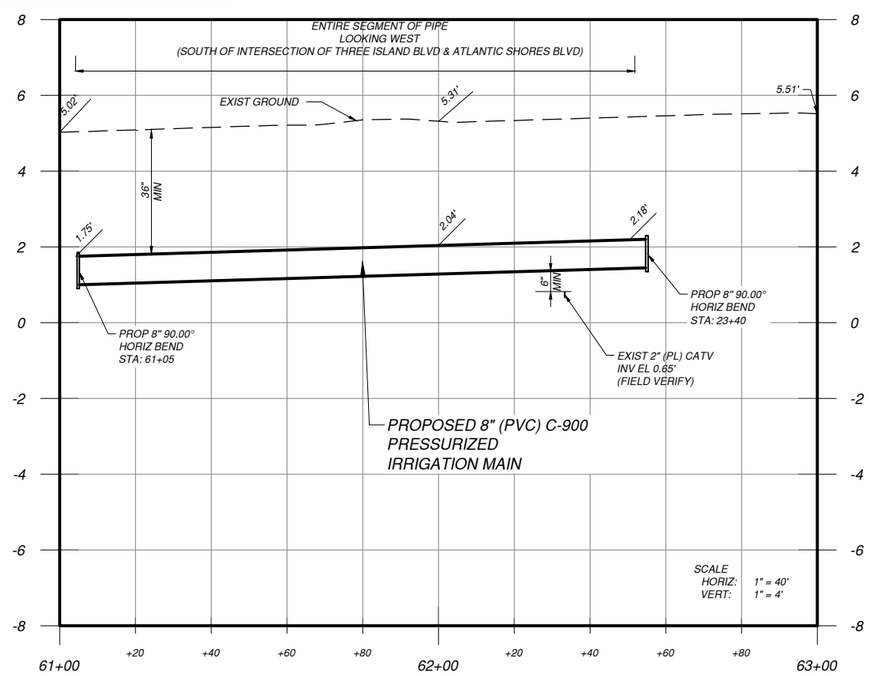


NOTES

1. **PHASE 1: PROVIDE IRRIGATION SERVICE TO THREE ISLAND PARK, MEDIANS (NORTH, SOUTH, AND WEST) ON THE INTERSECTION OF THREE ISLAND BLVD AND ATLANTIC SHORES BLVD, AND RESIDENTIAL AREA WEST OF THREE ISLAND BLVD BETWEEN PARKVIEW DRIVE AND NE 11TH ST FOR A TOTAL OF 20,000 GPD.**
2. **PHASE 2: PROVIDE IRRIGATION SERVICE TO THE REMAINING SURROUNDING AREAS WITHIN THE "DESIGN LIMITS" INCLUDING MEDIANS. RESIDENTIAL AND COMMERCIAL LOTS FOR A TOTAL OF 135,000 GPD. REFER TO ENGINEER'S REPORT PREPARED BY EAC, DATED JANUARY 2016. THE COMPLETE DESIGN AND CONSTRUCTION FOR PHASE 2 IS NOT INCLUDED ON THIS SET OF PLANS.**
3. **MAINTAIN MINIMUM VERTICAL SEPARATION REQUIREMENTS (PER F.A.C. RULE 62-555.314) WHEN CROSSING EXISTING MAINS.**



NOTES

1. **CONTRACTOR SHALL COORDINATE REMOVAL AND RECONNECTION OF EXISTING IRRIGATION SYSTEM W/ CITY OF HALLANDALE BEACH. THE DESIGN, PERMITTING, AND COST OF INSTALLATION AND MATERIAL SHALL BE INCLUDED ON BID PRICE OF IRRIGATION SERVICE LINE PAY ITEM.**
2. **THE FIBERGLAS-REINFORCED PLASTIC (FRP) UNDERGROUND STORAGE TANK SHALL BE IN ACCORDANCE WITH CONTAINMENT SOLUTIONS, INC. SPECIFICATIONS OR APPROVED EQUAL.**
3. **THE CONNECTION TO THE MEDIAN AND RESIDENTIAL AREAS FROM THE PRESSURIZED IRRIGATION MAIN NEEDS TO BE METERED AS PER CITY OF HALLANDALE BEACH REQUIREMENTS. LOCATION OF THE METER TO BE PROVIDED BY THE CITY. COST OF INSTALLATION AND MATERIAL OF THESE IMPROVEMENTS TO BE INCLUDED IN CONTRACT BID OF IRRIGATION SERVICE LINE PAY ITEM.**

Hallandale Beach
PROGRESS. INNOVATION. OPPORTUNITY.
DEPARTMENT OF PUBLIC WORKS
630 NW 2nd STREET
HALLANDALE BEACH, FL 33009
PH: 954-457-1600
FAX: 954-457-1624

CONSULTANT:
EAC Consulting, Inc.
5100 NW 33rd AVE, SUITE 243
FORT LAUDERDALE, FL 33309
PH: 954-714-2000 FAX: 954-733-8604
CA # 7011
EAC PROJECT No. 14045.SD01-01

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PROJECT:

THREE ISLAND REUSE IRRIGATION PROJECT

KEY MAP:

REVISIONS:

NO.	DESCRIPTION	DATE	BY

DATE ISSUED: JANUARY 11, 2016
DESIGNED BY: SR
DRAWN BY: DG
REVIEWED BY: SS

SEAL:

SHARI J. RAMIREZ, P.E.
FL LICENSE No. 73078

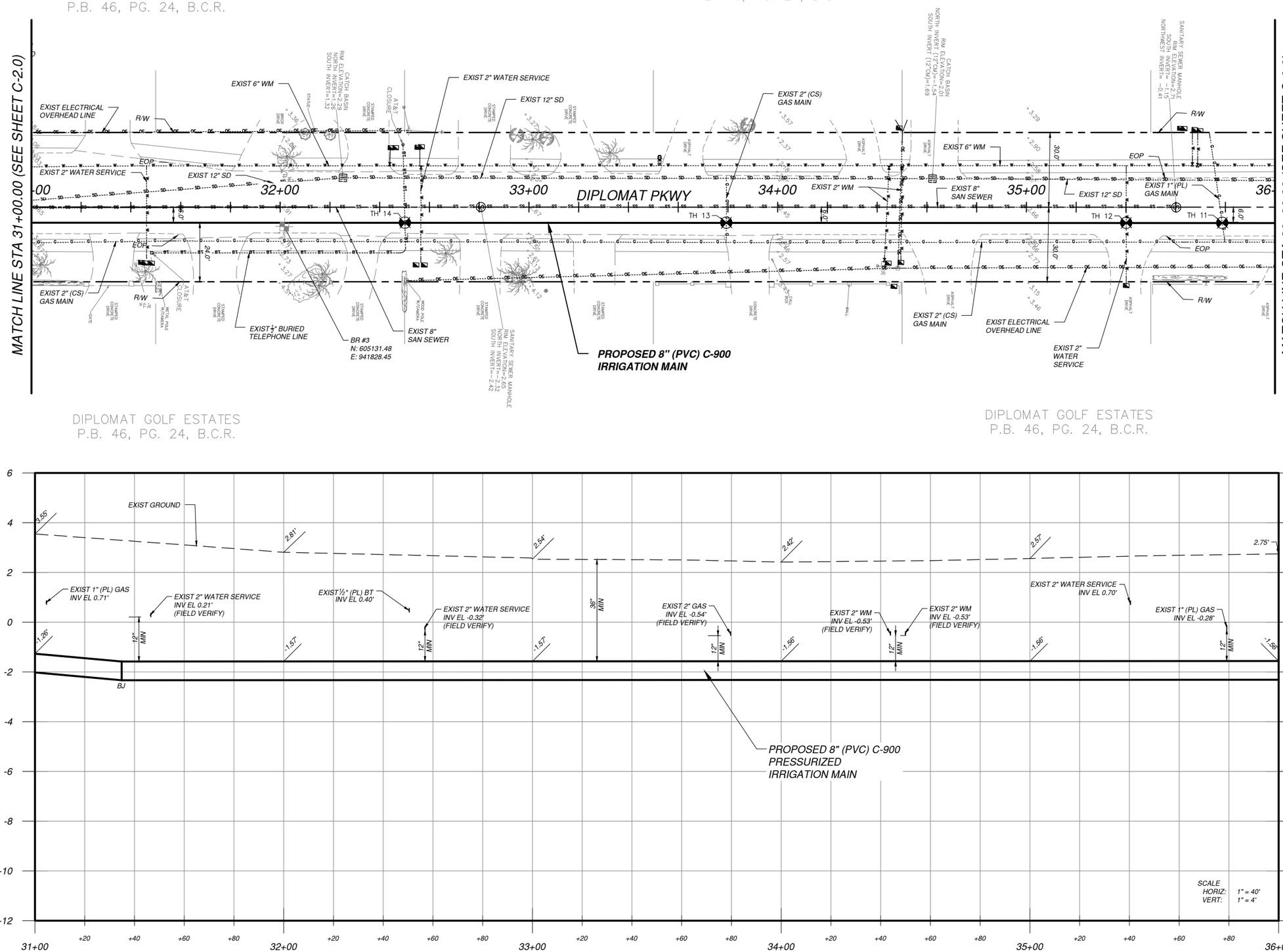
SHEET TITLE:

PROP 8 INCH REUSE IRRIGATION MAIN PLAN & PROFILE

SHEET NO.
C-4.1
SHEET 13 OF 27

100% PHASE SUBMITTAL

L:\Project\14project\14045.SD01-00 Hallandale Beach\14045.SD01-01 - Three Island Reuse Irrigation\civil\C-SHEETS N-S - (4).dwg [8 INCH REUSE IRRIGATION MAIN PLAN & PROFILE] Jan 11, 2016 10:57pm RGOENAGA



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PROJECT:

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SHARI J. RAMIREZ, P.E.
FL LICENSE No. 73078

SHEET TITLE:
PROP 8 INCH REUSE IRRIGATION MAIN PLAN & PROFILE

SHEET NO.
C-5.0
SHEET 14 OF 27

100% PHASE SUBMITTAL

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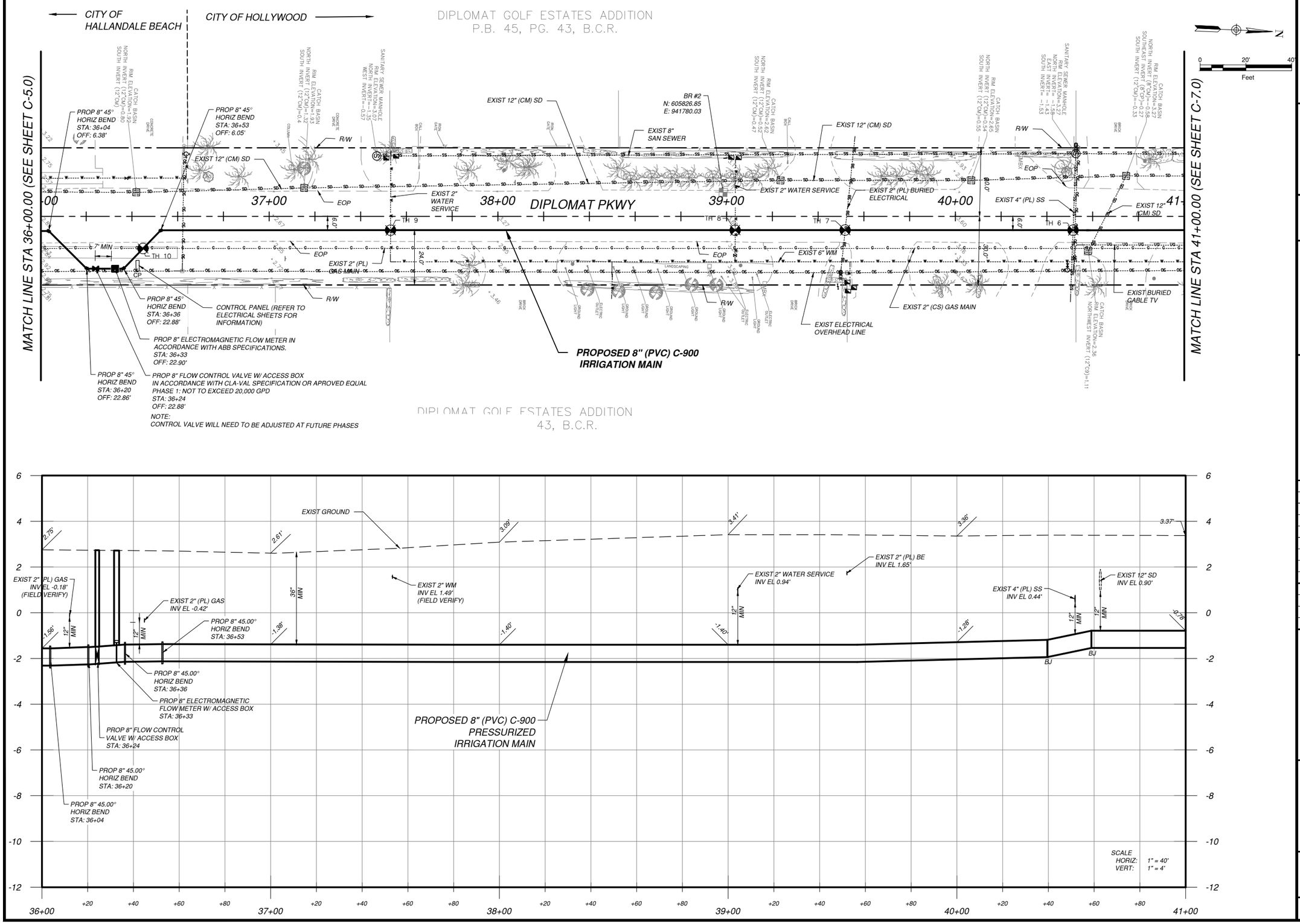

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PROP 8 INCH REUSE IRRIGATION MAIN PLAN & PROFILE

SHEET NO. **C-6.0**

SHEET 15 OF 27

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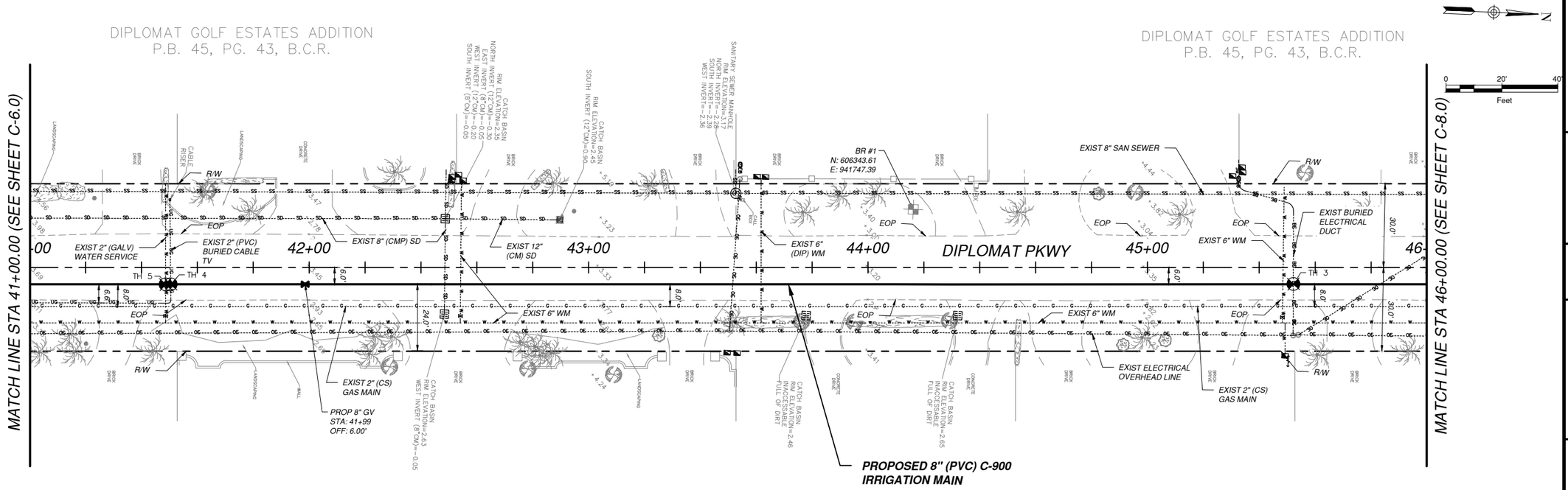

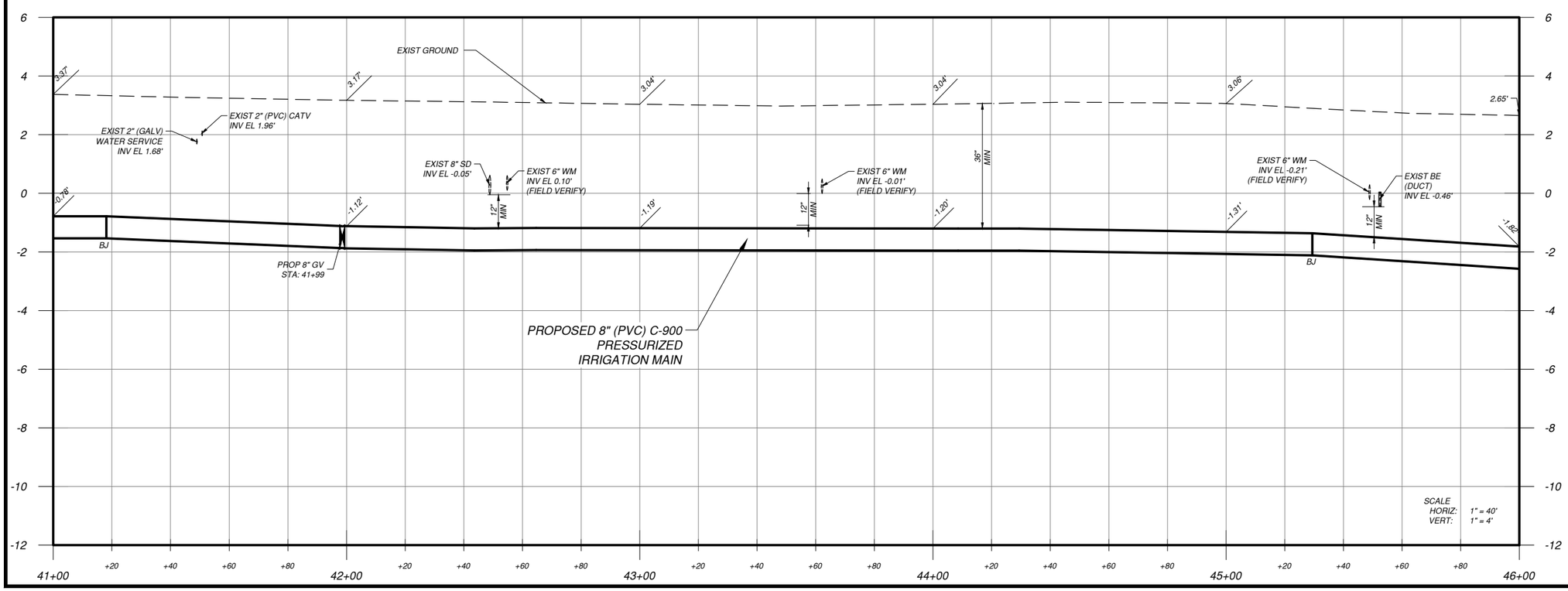

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DATE ISSUED: JANUARY 11, 2016
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FL LICENSE No. 73078

SHEET TITLE:

PROP 8 INCH REUSE IRRIGATION MAIN PLAN & PROFILE

SHEET NO.
C-7.0
SHEET 16 OF 27

100% PHASE SUBMITTAL

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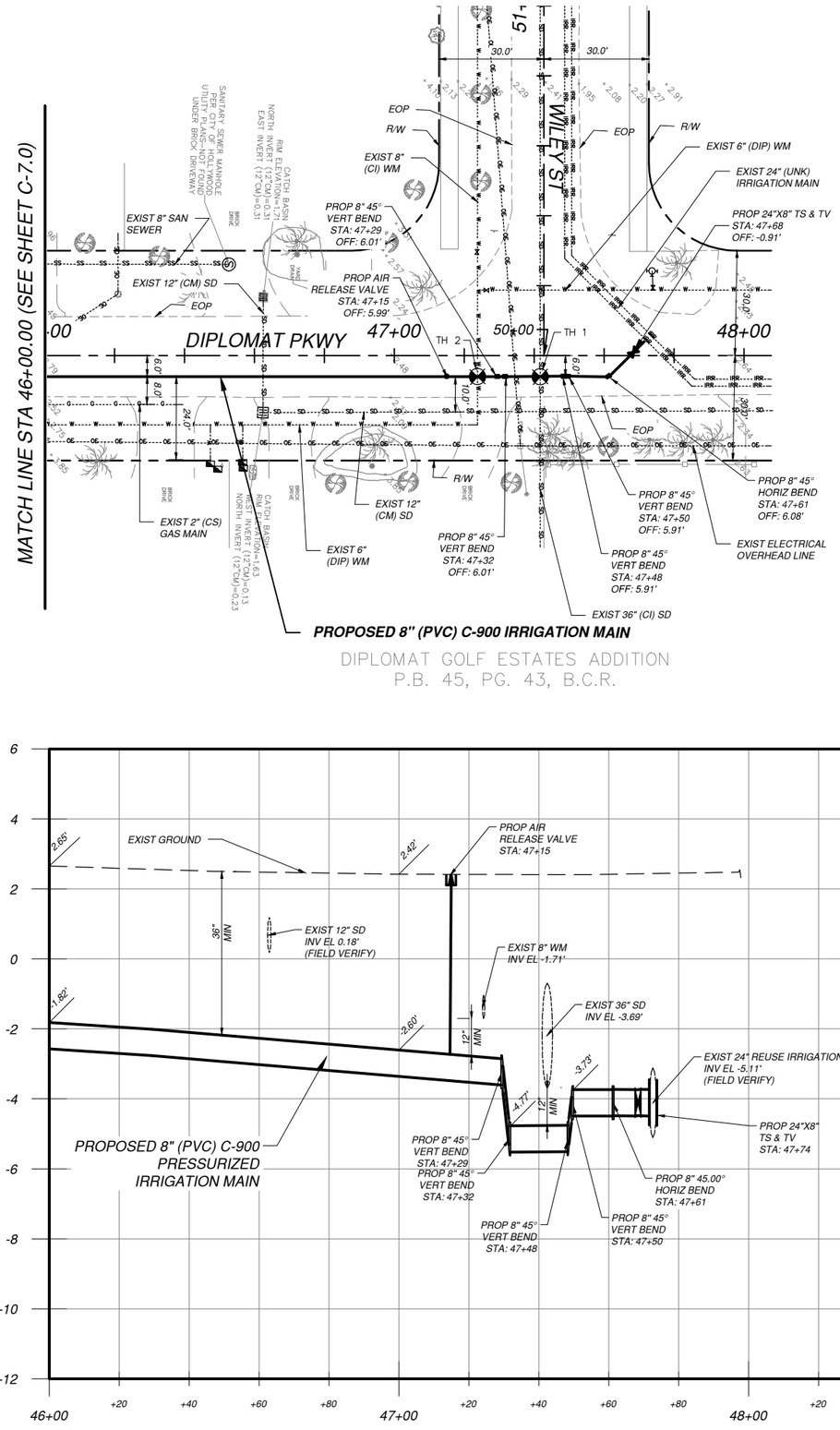

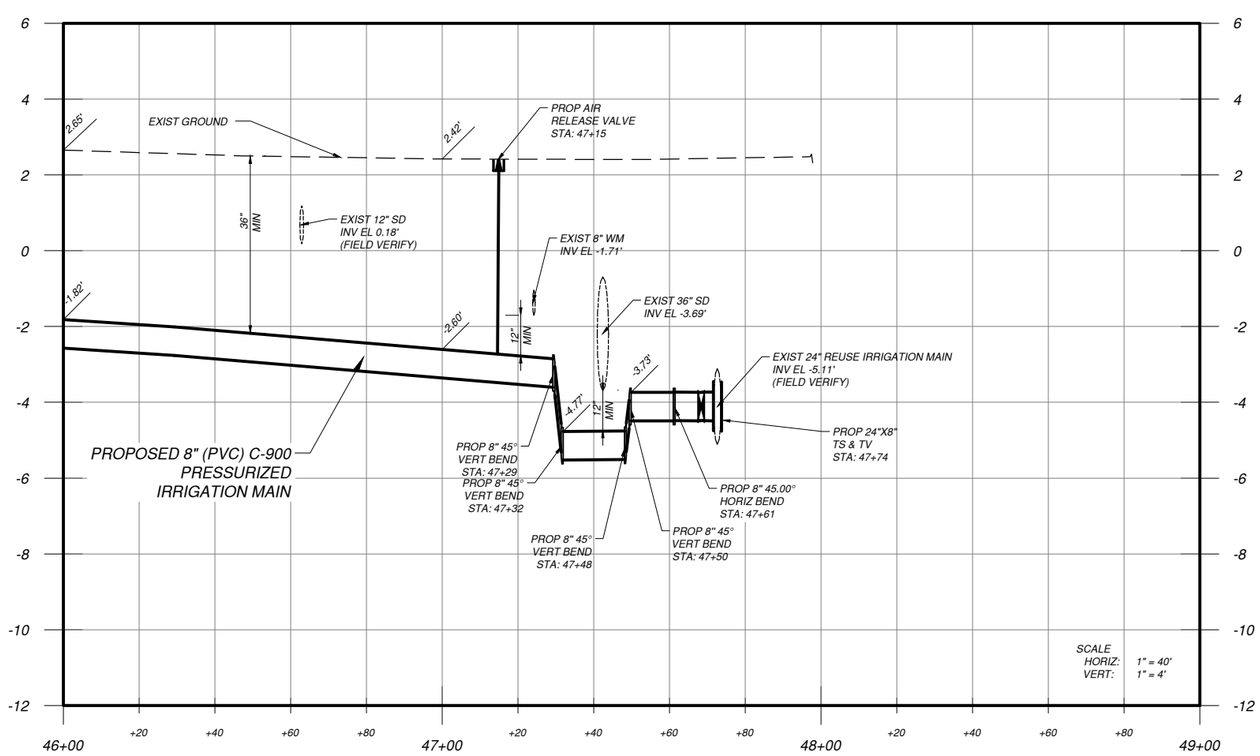

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FL LICENSE No. 73078

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PROP 8 INCH REUSE IRRIGATION MAIN PLAN & PROFILE

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C-8.0
SHEET 17 OF 27

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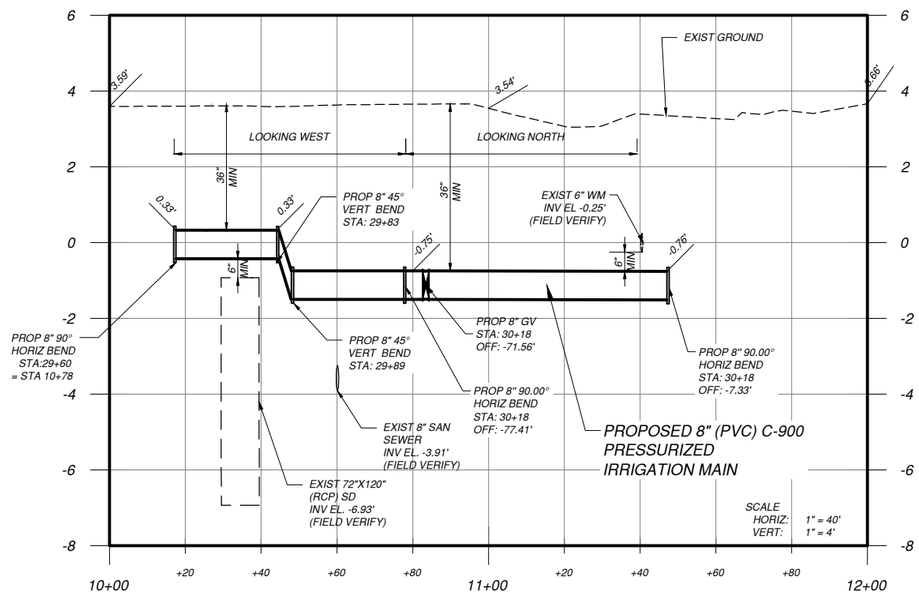
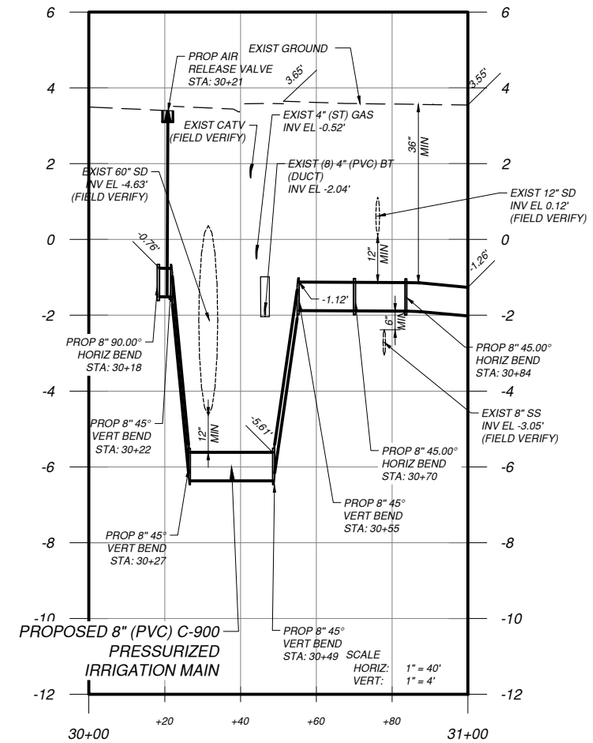
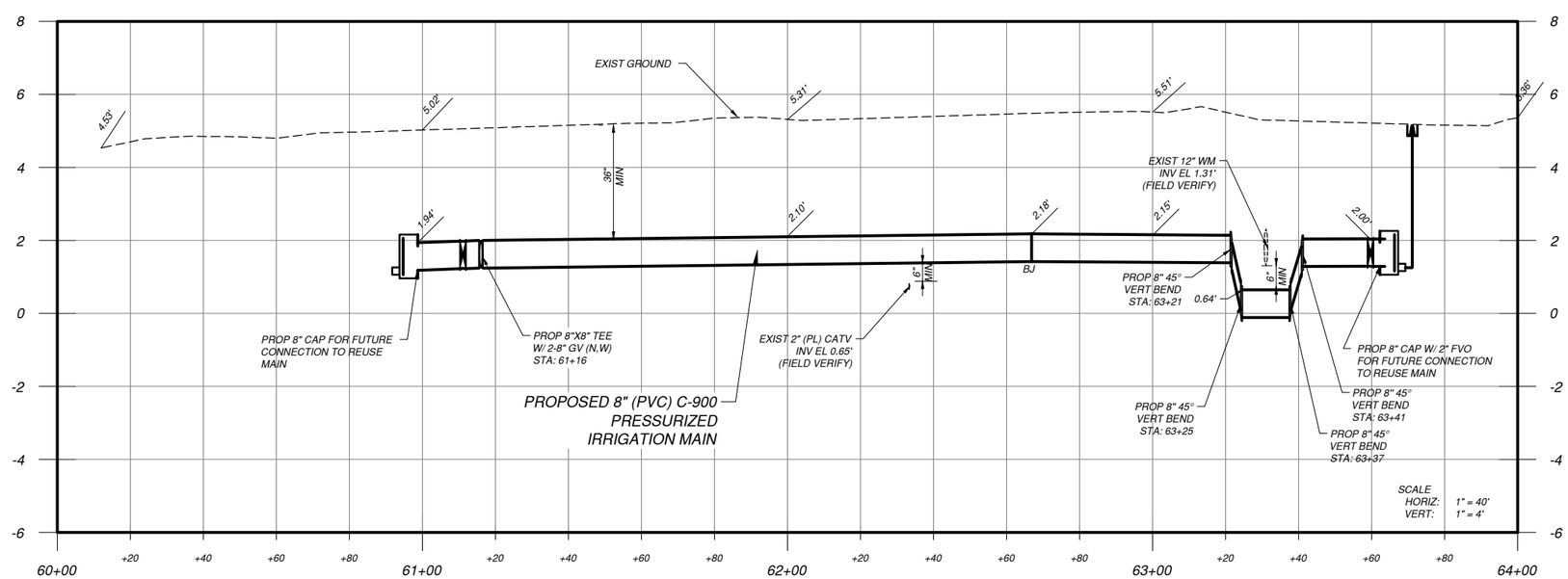


STUB PROFILE 1
FROM STA. 10+00 TO STA. 12+00



STUB PROFILE 2
FROM STA. 30+00 TO STA. 31+00



STUB PROFILE 3
FROM STA. 60+00 TO STA. 64+00

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STUB PROFILES

SHEET NO. **C-9.0**

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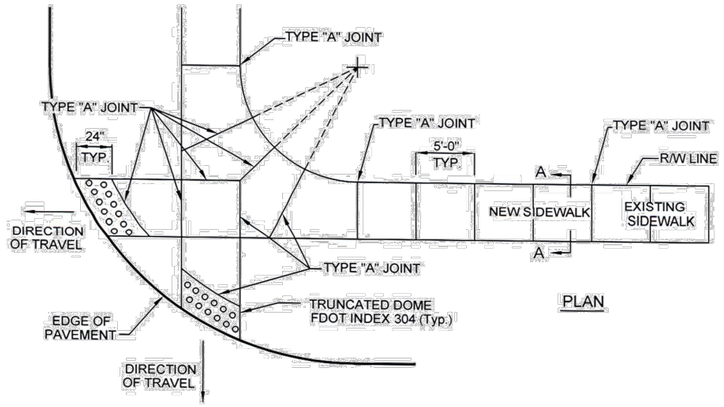
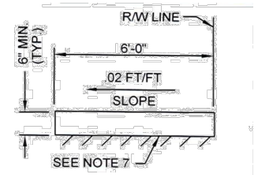
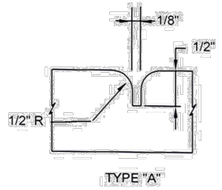


PLAN



SECTION A-A



SIDEWALK JOINT

NOTES:

1. CONCRETE TO BE CLASS 1, 3000 P.S.I.
2. THE USE OF REINFORCEMENT IS NOT PERMITTED.
3. SIDEWALK SLOPES SHALL MEET THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT.
4. RAMPS SHALL BE PROVIDED AT ALL INTERSECTIONS IN ACCORDANCE WITH FDOT INDEX 304.
5. THE VERTICAL DEVIATION FOR A NEW SIDEWALK SHALL NOT BE MORE THAN 1/2".
6. THE VERTICAL DEVIATION FOR A NEW MAINTENANCE ACCESS STRUCTURE COVER SHALL NOT BE MORE THAN 1/4".
7. SUBGRADE MATERIAL SHALL BE COMPACTED TO 100% OF MAXIMUM DENSITY, PER AASHTO T-99.
8. STAMPED CONCRETE IS NOT ALLOWED IN LIEU OF TRUNCATED DOMES.
9. SEE HIGHWAY CONSTRUCTION AND ENGINEERING DIVISION APPROVED PRODUCT LIST FOR ACCEPTABLE MATERIALS FOR TRUNCATED DOMES.

TABLE OF SIDEWALK JOINTS

TYPE	LOCATION
"A"	5'-0" CENTER TO CENTER ON SIDEWALKS.

BROWARD COUNTY
HIGHWAY CONSTRUCTION
AND ENGINEERING DIVISION

SIDEWALK
TYPICAL DETAILS

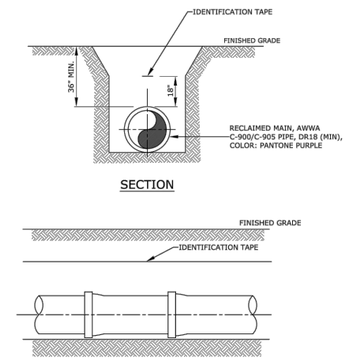
Approved by: C. RUSSELL
Revised: 12/06/13 JIP
DWG. NO. 14

BROWARD COUNTY
PUBLIC WORKS DEPARTMENT

WATER & WASTEWATER SERVICES
ENGINEERING DIVISION
2555 WEST COPANS ROAD
POMPANO BEACH, FL 33069

PHONE NO. 954-831-0745
FAX: 954-831-0928

STANDARD DETAIL



1. DETECTABLE IDENTIFICATION TAPE SHALL BE INSTALLED DIRECTLY OVER CENTERLINE OF THE PIPE AT 18-INCHES ABOVE THE PIPE.
2. METALIZED DETECTOR TAPE SHALL BE ONE LAYER OF METALIZED FOIL LAMINATED BETWEEN TWO LAYERS OF INERT PLASTIC FILM (MINIMUM 5.5 MILS THICKNESS). TAPE SHALL BE PURPLE CONTINUOUSLY MARKED "CAUTION, RECLAIMED LINE BURIED BELOW".

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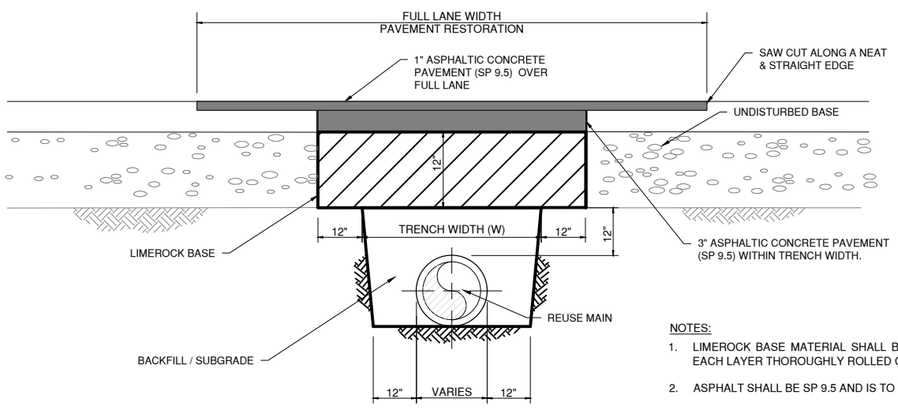
REVISED 2/23/2011

RECLAIMED MAIN INSTALLATION

FIGURE 510



TRENCH RESTORATION DETAIL
NTS

NOTES:

1. LIMEROCK BASE MATERIAL SHALL BE PLACED IN 6" MAXIMUM (LOOSE MEASUREMENT) LAYERS AND EACH LAYER THOROUGHLY ROLLED OR TAMPED TO 98% OF MAXIMUM DENSITY, PER AASHTO T-180.
2. ASPHALT SHALL BE SP 9.5 AND IS TO BE INSTALLED IN 1" LIFT MIN.
3. ASPHALT CONCRETE PAVEMENT JOINTS SHALL BE MECHANICALLY SAWED.
4. SURFACE TREATED PAVEMENT JOINTS SHALL BE LAPPED AND FEATHERED.
5. BASE MATERIAL SHALL HAVE A MINIMUM LBR OF 100 AND A MINIMUM CARBONATE CONTENT OF 70%.
6. BACKFILL SHALL BE IN ACCORDANCE WITH DETAIL OF TYPICAL TRENCH BACKFILL (C-11.0).
7. CONTRACTOR SHALL NOT DISTURB/DAMAGE EXIST DRIVEWAY WITH SPECIAL PAVEMENT.
8. SPECIAL PAVEMENT CONSISTS OF CONCRETE, BRICKS, PAVER BLOCKS, STAMPED/DECORATIVE CONCRETE, ETC.
9. THE 3" ASPHALT PAVEMENT WITHIN THE TRENCH WIDTH IS TO BE INSTALLED 1" BELOW FINISH GRADE
10. CONTRACTOR IS TO MILL 1" AND RESURFACE 1" OVER ENTIRE LANE WIDTH
11. AFTER THE TRENCH IS RESTORED, CONTRACTOR IS TO APPLY PRIME AND TACK COATS AS INDICATED ON SPECIFICATIONS

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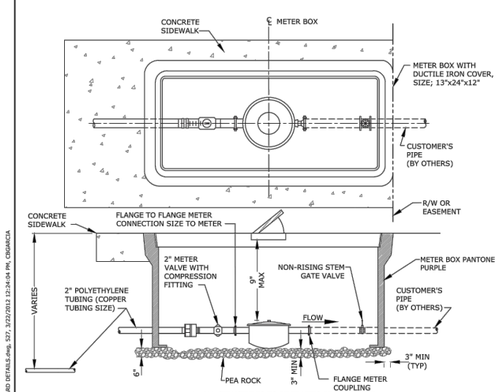
PUBLIC WORKS DEPARTMENT

WATER & WASTEWATER SERVICES
ENGINEERING DIVISION
2555 WEST COPANS ROAD
POMPANO BEACH, FL 33069

PHONE NO. 954-831-0745
FAX: 954-831-0928

STANDARD DETAIL



METER SIZE	LAYING LENGTH (IN)	HEIGHT (IN)
1 ½"	13	6 ⅞ "
2"	17	7 17/32"

1. ALL STRUCTURES TO BE TRAFFIC BEARING TYPE.
2. R/W LINE OR EASEMENT LINE IS THE CUSTOMER'S SIDE OF METER BOX.
3. WWS RESPONSIBILITY ENDS AT THE CUSTOMER'S SIDE OF METER.
4. CURVE IN SERVICE LINE SHALL BE AS CLOSE TO METER BOX AS PRACTICAL, WITH A MINIMUM RADIUS OF 21" FOR 2" TUBING.
5. ALL METERS WILL BE SUPPLIED AND INSTALLED BY WWS.
6. WHEN SIDEWALKS ARE PRESENT, OR PLANNED FOR IN THE R/W, THE BACK EDGE OF THE METER BOX SHALL LINE UP WITH THE BACK EDGE OF THE SIDEWALK.
7. METER SHALL BE CENTERED IN BOX DIRECTLY UNDER THE ACCESS LID.
8. WHEN THERE ARE NO SIDEWALKS, CONSTRUCT 6" WIDE x 6" THICK CONCRETE COLLAR AT GRADE.

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REVISED 2/23/2011

RECLAIMED METER BOX FOR 1 ½" OR 2" METER

FIGURE 527

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PH: 954-714-2000 FAX: 954-733-8604
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EAC PROJECT No. 14045.SD01-01

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PROJECT:

THREE ISLAND REUSE IRRIGATION PROJECT

KEY MAP:

REVISIONS:

NO.	DESCRIPTION	DATE	BY

DATE ISSUED: JANUARY 11, 2016
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SEAL:

SHARI J. RAMIREZ, P.E.
FL LICENSE No. 73078

SHEET TITLE:

DETAILS (1 OF 2)

SHEET NO. **C-10**

SHEET 19 OF 27

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BROWARD COUNTY
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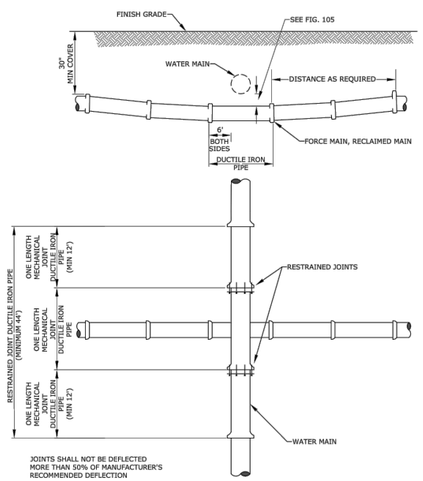
WATER & WASTEWATER SERVICES
ENGINEERING DIVISION
2555 WEST COPANS ROAD
POMPANO BEACH, FL 33069

PHONE NO. 954-831-0745
FAX: 954-831-0928

STANDARD DETAIL



REPLACES FORMER DWG NO.16B	STANDARD UTILITY CROSSING	FIGURE 106
REVISED 2/23/2011		

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ENGINEERING DIVISION
2555 WEST COPANS ROAD
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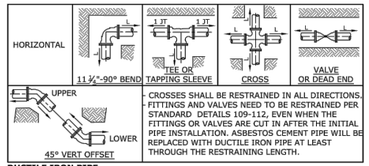

- CROSSES SHALL BE RESTRAINED IN ALL DIRECTIONS.
- FITTINGS AND VALVES NEED TO BE RESTRAINED PER STANDARD DETAILS 109-112, EVEN WHEN THE FITTINGS OR VALVES ARE CUT IN AFTER THE INITIAL PIPE INSTALLATION. ASBESTOS CEMENT PIPE WILL BE REPLACED WITH DUCTILE IRON PIPE AT LEAST THROUGH THE RESTRAINING LENGTH.

DUCTILE IRON PIPE

	HORIZONTAL, L (FEET)						45° VERTICAL OFFSET (FEET)	
Diameter	11 ¼°	22 ½°	45°	90°	Tee or Cross	Valves and Dead End	UPPER	LOWER
4	1	2	4	10	3	20	9	3
6	2	3	6	14	11	28	12	4
8	2	4	8	17	20	37	16	5
10	2	5	19	21	27	44	19	6
12	3	5	10	24	34	52	22	6

PVC PIPE

	HORIZONTAL, L (FEET)						45° VERTICAL OFFSET (FEET)	
Diameter	11 ¼°	22 ½°	45°	90°	Tee or Cross	Valves and Dead End	UPPER	LOWER
4	2	3	5	12	5	32	14	3
6	2	4	7	16	18	45	19	5
8	3	5	9	21	31	59	25	6
10	3	5	11	25	43	71	30	7
12	3	6	12	29	55	83	35	7

THE NOTED REQUIREMENTS WERE CALCULATED IN ACCORDANCE WITH THRUST RESTRAINT CALCULATOR V6.1 BY EBAA IRON WITH THE FOLLOWING ASSUMPTIONS:
SOIL CONDITIONS: SAND (SW, SP, GW)
LAYING CONDITION: 4, SAND BEDDING, BACKFILL COMPACTED > 80%
MINIMUM COVER: 3.0 FT SAFETY FACTOR: 1.5 BARE PIPE
IF FIELD CONDITIONS DIFFER FROM THE ABOVE, CONTRACTOR SHALL NOTIFY WWS.
FOR PIPE LARGER THAN INCLUDED IN THE ABOVE TABLES, ENGINEER OF RECORD SHALL SUBMIT CALCULATIONS FOR EACH JOINT REQUIRING RESTRAINT.

SINGLE FITTING RESTRAINED JOINT
150 PSI TEST PRESSURE

REPLACES FORMER DWG NO.109	RESTRAINED JOINT REQUIREMENTS SINGLE FITTING	FIGURE 109
REVISED 2/23/2011		

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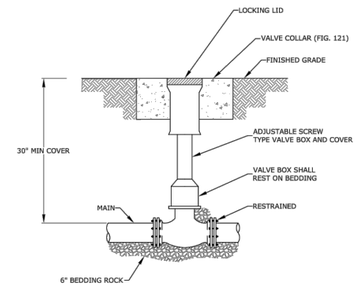
STANDARD DETAIL



1. WHEN VALVE IS NOT LOCATED IN PAVEMENT, PLACE A WHITE PAVEMENT REFLECTOR MARKER IN THE DRIVE LANE, ADJACENT TO THE VALVE.
2. OPERATOR EXTENSION SHAFT SHALL BE PROVIDED WHEN OPERATING NUT IS MORE THAN 24" BELOW TOP OF VALVE BOX.
3. PVC PIPE OR DUCTILE IRON PIPE IS NOT ACCEPTABLE FOR VALVE BOX RISER.

REPLACES FORMER DWG NO.123	VALVE BOX DETAIL	FIGURE 123
REVISED 9/5/2012		

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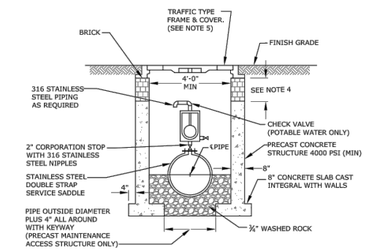

1. LIFT HOLES ARE TO BE SEALED WITH MORTAR INSIDE AND OUTSIDE AFTER INSTALLATION.
2. MAINTENANCE ACCESS STRUCTURE WALLS TO BE COATED INSIDE AND OUTSIDE WITH 16 MIL. THICKNESS COAL TAR EPOXY.
3. ALL OPENINGS SHALL BE SEALED WITH A WATERPROOF, EXPANDING GROUT.
   ACTUAL LOCATION AND MAINTENANCE ACCESS STRUCTURE FRAME ELEVATION SHALL BE DETERMINED BY ENGINEER BASED ON AS-BUILT SURVEY DATA.
4. THE CHIMNEY AREA SHALL BE A MINIMUM OF 4" AND A MAXIMUM OF 12" IN HEIGHT. A MINIMUM OF 3 COURSES OF BRICK SHALL BE INSTALLED.
5. SET MAINTENANCE ACCESS STRUCTURE FRAME ON A BED OF PORTLAND CEMENT AND SILICA SAND. BRING MORTAR UP OVER FRAME.

REPLACES FORMER DWG NO.11	AIR RELEASE VALVE WITH MAINTENANCE ACCESS STRUCTURE	FIGURE 127
REVISED 3/9/2012		

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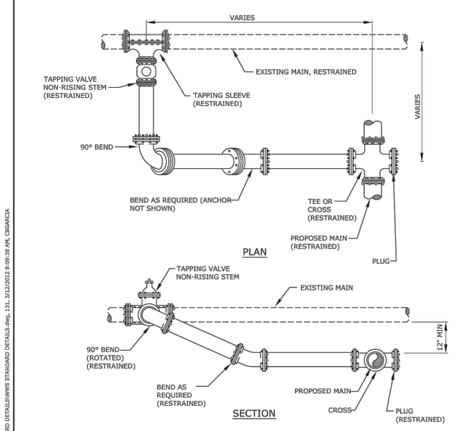

ALL JOINTS TO BE RESTRAINED BY APPROVED METHODS.

REPLACES FORMER DWG NO.131	TYPICAL CONNECTION TO EXISTING MAIN	FIGURE 131
REVISED 2/23/2011		

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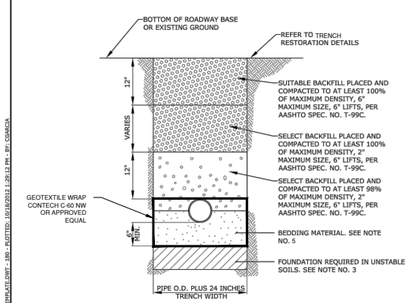

~~1. UNLESS OTHERWISE SPECIFIED, BEDDING MATERIAL SHALL CONSIST OF SELECT BACKFILL MATERIAL 2" MAX. SIZE, COMPACTED TO AT LEAST 100% OF MAX. DENSITY, 6" LIFTS, PER AASHTO SPEC. NO. T-99C.~~

2. WHERE REQUIRED, SHEETING AND SHORING SHALL BE IN ACCORDANCE WITH OSHA REQUIREMENTS.
3. WHERE UNSTABLE SOILS ARE ENCOUNTERED, INCLUDING PEAT, MUCK OR OTHER ORGANIC SOILS, ELASTIC SILT AND CLAYS, A FOUNDATION IS REQUIRED AS DETERMINED BY THE ENGINEER OF RECORD.
4. REFER TO GEOTECHNICAL NOTES ON SHEET G-1.0.
5. BEDDING MATERIAL SHOULD CONSIST OF CRUSHED STONE :PEA GRAVEL: OR NO. ..AGGREGATE WITH NO LESS THAN :5: PASSING THE 1 2 " AND NOT LESS THAN :5: RETAINED ON A U.S. STANDARD NO. 4 SIEVE. ALTERNATIVELY, THE USE OF FDOT 5 :STONE MAY ALSO BE ACCEPTABLE.

REPLACES FORMER DWG NO.180	TYPICAL TRENCH BACKFILL	FIGURE 180
REVISED 2/23/2011		

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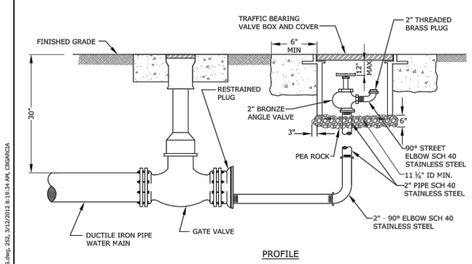

1. 2" TAP IN BOTTOM OF PLUG.
2. USE RESTRAINED JOINT PIPE.
3. IN GRASS AREA USE CONCRETE COLLARS, 6" THICK.

REPLACES FORMER DWG NO.5A	MANUAL BLOW OFF	FIGURE 252
REVISED 2/23/2011		

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STANDARD DETAIL

1. FOR COMMERCIAL PROPERTIES THE WORD "NEIGHBORHOOD" SHALL BE REPLACED WITH "AREA".
2. THIS SIGN SHALL BE POSTED AT THE ENTRANCE(S) TO SUBDIVISIONS AND COMMERCIAL PROPERTIES WHERE RECLAIMED WATER IS INSTALLED.
3. SIGN SHALL BE 0.080 GAUGE ALUMINUM WITH ENGINEERING GRADE REFLECTIVE PANTONE PURPLE BACK, AND WHITE TEXT AND GRAPHICS.
4. SIGN SHALL BE ANCHORED WITH A 2" SQUARE SHAPED GALVANIZED POST.
5. MOUNTING HARDWARE SHALL BE STAINLESS STEEL.
6. HEIGHT OF SIGN WILL DEPEND ON LOCATION AND SURROUNDING LANDSCAPE PLANT TYPES. IN ALL CASES, THE SIGN SHALL BE VISIBLE TO THE PUBLIC.
7. SIGNS SHALL BE PLACED BY THE CONTRACTOR IN ACCORDANCE WITH FAC CHAPTER 62-610 "ACCESS CONTROL AND ADVISORY SIGNS", THE COUNTY APPROVED ENGINEERING PLANS AND/OR AS APPROVED BY WWS.

REVISED 2/23/2011	TYPE 2 RECLAIMED WATER SIGN	FIGURE 506

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EAC Consulting, Inc.
5100 NW 33rd AVE, SUITE 243
FORT LAUDERDALE, FL 33309
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PROJECT:

THREE ISLAND REUSE IRRIGATION PROJECT

KEY MAP:

REVISIONS:

NO.	DESCRIPTION	DATE	BY

DATE ISSUED: JANUARY 11, 2016
DESIGNED BY: SR
DRAWN BY: DG
REVIEWED BY: SS
SEAL:

SHARI J. RAMIREZ, P.E.
FL LICENSE No. 73078

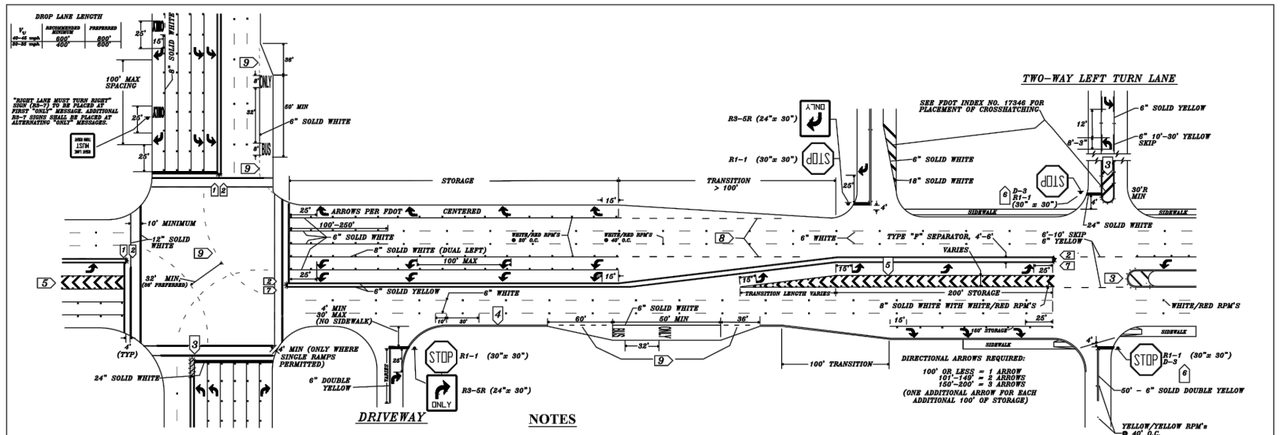
SHEET TITLE:

DETAILS (2 OF 2)

SHEET NO. **C-11**
SHEET 20 OF 27

100% PHASE SUBMITTAL

L:\Project\14project\14045.SD01-00 Hallandale Beach\14045.SD01-01- Three Island Reuse Irrigation\cir\C-SHEETS DETAIL 2.dwg [DETAILS] Jan 11, 2016 11:03pm RGODENAGA



NOTES

(a) ALL PAVEMENT MARKINGS SHALL BE ALKYD BASED THERMOPLASTIC AND FULLY RETROREFLECTORIZED.

(b) ALL PAVEMENT MARKINGS ON PAVER SYSTEMS SHALL BE 3M 5730/31 TAPE AND APPLIED WITH AN E44 CONTACT CEMENT AS PER MANUFACTURER'S SPECIFICATIONS.

(c) ALL PAVEMENT MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST EDITION.

(d) SEE FDOT INDEX NO. 17352 FOR PLACEMENT OF RPM's. (FOR BULLNOSE RPM TREATMENT, SEE LEGEND NO. 1)

(e) RPM's SHALL BE CLASS "B" 911 OR EQUIVALENT, APPLIED WITH EPOXY OR BITUMINOUS ADHESIVE.

(f) FDOT APPROVED SEALER SHALL BE USED WHEN APPLYING MARKINGS ON CONCRETE.

(g) FOR BIKE LANE DETAILS SEE FDOT INDEX NO. 17346, SHEET 9 OF 13.

(h) MARKINGS IN AND ADJACENT TO BIKE LANES SHALL BE THERMOPLASTIC WITH A MIXTURE OF 50% GLASS SPHERES AND 50% SHARP SILICA SAND APPLIED AT A RATE OF 0.2 LBS. PER SQUARE FOOT.

(i) EXISTING MARKINGS SHALL BE REMOVED BY WATER BLASTING OR SANDBLASTING ONLY.

(j) ALL STOP BARS TO BE 4' BEHIND CROSSWALK OR SIDEWALK.

(k) PAVEMENT MARKING REFLECTIVITY SHALL BE 250 MILLICANDELLAS FOR WHITE AND 175 MILLICANDELLAS FOR YELLOW.

LEGEND

1 YELLOW/YELLOW RPM DETAILS

2 MEDIAN NOSE PAINT DETAILS

3 PAINTED MEDIAN DETAILS

4 EDGE LINE DETAILS

5 CHEVRON DETAILS

(SEE DOT INDEX NO. 17346 FOR SPACING OF CHEVRONS)

6 STREET NAME BLADE DETAILS

D-3's SHALL HAVE 6" BLADES WITH A 3/8" WHITE BORDER AND 4" SERIES "C" HIGHWAY GOTHIC LETTERS EXCEPT ON COLLECTOR/LOCAL STREETS WHERE COLLECTOR IS 40 MPH OR GREATER, BLADE SHALL BE 2" WITH A 1/2" WHITE BORDER FOR THE LOCAL ROAD AND 6" SERIES "C" HIGHWAY GOTHIC LETTERS.

7 TYPE IV SEPARATOR DETAILS

8 6'-10' SKIP DETAILS

6' – 10' SKIPS 6" WHITE SHALL BE USED FOR THE FOLLOWING CONDITIONS:

- HORIZONTAL CURVE SECTIONS
- CHANGES IN HORIZONTAL ALIGNMENT
- TRANSITIONS GREATER THAN 100'

9 2'-4' SKIP DETAILS

2' – 4' SKIPS 6" WHITE SHALL BE USED FOR THE FOLLOWING CONDITIONS:

- RADIUS GUIDE LINES BETWEEN DUAL LEFT TURN MOVEMENTS (90' RADIUS PREFERRED OR AS NOTED ON PLANS)
- BUS BAY TRANSITIONS

REVISION	BY	DATE
MISC CORRECTIONS	KS	1/04
RPM REVISIONS	KS	1/00

NAMES	DATES
DESIGNED BY KS	3/99
DRAWN BY KS	3/99
CHECKED BY GWR	6/02

SCALE: N – T – S

PLANNING & DESIGN ENGINEER: GEORGE ROBERTSON, P.E.

DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

DRAWING NO. PVMTMARK.DWG
REV DATE: 7/8/08

SHEET NO. 1 OF 1

PAVEMENT MARKINGS AND SIGNS DETAIL SHEET

Cocoplum Hedge (Chrysobalanus icaco)

NOTE:

1. HEDGE TO BE INSTALLED AND MAINTAINED AT 6 FOOT HEIGHT.

Footnotes:

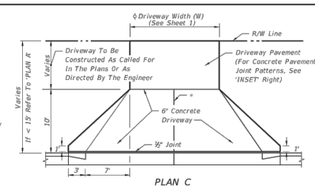
All ½" joints shall be constructed with preformed joint filler.

* ¼" Open joints placed at equal (20' max.) intervals for driveways over 20' wide. Joints in curb and gutter to match joints in driveways.

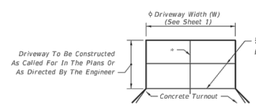
△ When connecting to side road curb and gutter sections, the no drop curb limits should extend back to the side road radius point. With or without curb and gutter, no driveway should encroach on the corner radius.

◊ Driveways (6" concrete) shall be of a uniform width (W) to the right of way line.

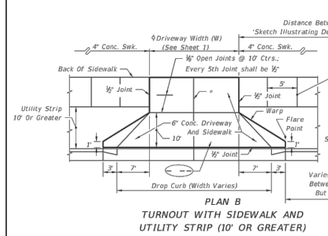
(— —) Alpha-numeric identification of a flared driveway type specifically called for in the plans, see sheets 3 and 4.



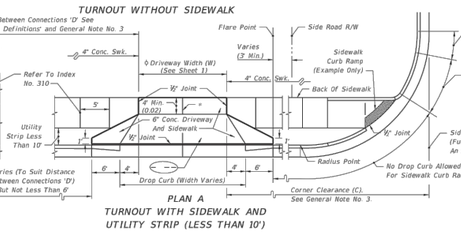
PLAN C
TURNOUT WITHOUT SIDEWALK



JOINT PATTERN WHEN CONCRETE DRIVE CONSTRUCTED INSET



PLAN B
TURNOUT WITH SIDEWALK AND UTILITY STRIP (10' OR GREATER)



PLAN A
TURNOUT WITH SIDEWALK AND UTILITY STRIP (LESS THAN 10')

SPECIAL NOTES FOR URBAN FLARED TURNOUTS

1. Drop curb, concrete sidewalks (6" thick) and driveways (6" thick) shall meet Specification Sections 520 and 522. The driveway foundation shall meet the requirements of Subarticle 522-4.
2. For details of drop curb and sidewalk curb ramps refer to Indexes Nos. 300 and 304 respectively.
3. Where turnouts are constructed within existing curb and gutter, the existing curb and gutter shall be removed either to the nearest joint beyond the flare point or to the extent that no remaining section is less than 5' long; and, drop curb constructed in accordance with Notes Nos. 1 and 2.
4. For turnouts with radial returns see the requirements under the "Summary Of Geometric Requirements For Turnouts", the "General Notes", the details of "Rural Turnout Construction" and the detail of "Limits Of Clearing & Grubbing, Stabilization And Base At Intersections".
5. Maintenance of pavement shall extend out to the right of way or 2' beyond the back of sidewalk, whichever distance is less.
6. The maintenance and operation of highway lighting, traffic signals, associated equipment, and other necessary devices shall be the responsibility of a public agency.
7. All pavement markings on the State highways, including acceleration and deceleration lane markings, and signing installed for the operation of the State highway shall be maintained by the Department.
8. All signing and marking installed for the operation of the connection (such as stop bars and stop signs for the connection) shall be the responsibility of the permittee.
9. All sidewalk surfaces crossing driveways with a cross slope shown in this Index to be 0.02 shall be 0.02 Maximum.

DESIGN NOTES FOR URBAN FLARED TURNOUTS

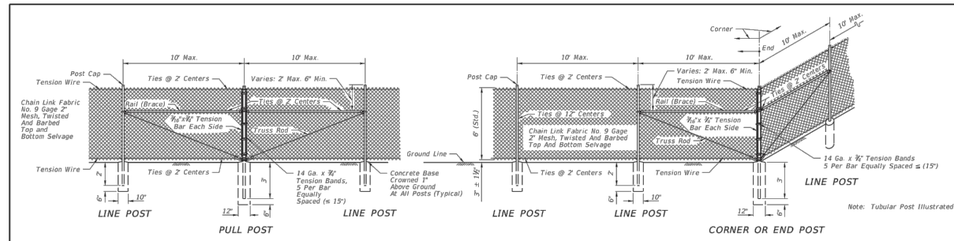
1. Driveways indicated as 'Adverse Applications' are those with slopes that can cause overhang drag for representative standard passenger vehicles under fully loaded conditions; or, those with slopes that can cause drivers who are leaving the roadway to slow or pause to the extent that traffic demand volumes will be impeded.

   Driveways indicated as 'Marginal Applications' are those with slopes that can cause overhang drag for representative standard passenger vehicles under fully loaded conditions when the driveway is located on the low side of fully superelevated roadways.

   Driveways indicated as 'General Applications' are those with slopes that can readily accommodate representative standard passenger vehicles and those that can accommodate representative standard trucks, vans, buses and recreational vehicles operating under normal crown and superelevation conditions.
2. The standard flared Driveways on this index may not accommodate vehicles with low beds, low undercarriage or low appendage features. Where such vehicles are design vehicles, driveways shall have site specific flare designs or Category III designs.
3. When specific flare type driveways shall be constructed, the type shall be designated in the plans using the assigned alpha-numeric designation.

URBAN FLARED TURNOUTS

LAST REVISION	REVISION DESCRIPTION:	FDOT 2015 DESIGN STANDARDS	TURNOUTS	INDEX NO.	SHEET NO.
07/01/13				515	2 of 7



GENERAL NOTES

1. This fence to be used generally in urban areas.
2. For supplemental information refer to Section 550 of FDOT Standard Specifications.
3. Chain link fabric, post, truss rods, tension wires, tie wires, stretcher bars, gates and all miscellaneous fittings and hardware shall meet the requirements of AASHTO and ASTM signify current reference.
4. Fence Component Options:
   A. Line post options:
      (1) Galvanized steel pipe, Schedule 40- 1½" nominal dia. zinc galvanized at the rate of 1.8 oz./ft².- ASTM A53 Table 2 (Grade A or B), ASTM F1083, and AASHTO M111.
      (2) Aluminum coated steel pipe: ASTM A53, Table 2 (Grade A or B); Schedule 40- 1½" nominal dia., 1.90" OD; coated at the rate 0.40 oz./ft.; AASHTO M111.
      (3) Aluminum alloy pipe- 2" nominal dia.: ASTM B241 or B221, Alloy 6063, T6.
      (4) Steel H-Beam- 1¾"x 1¾": Zinc Galv. 1.8 oz./ft.: AASHTO M111 and Detail.
      (5) Aluminum alloy H-Beam- 1¾"x 1¾" Detail.
      (6) Steel C- 1¾"x 1¾": Galv.: 1.8 oz/ft. zinc: AASHTO M111; OR , 0.9 oz./ft². zinc-5% aluminum-mischmetal: ASTM F1043 and Detail.
      (7) Resistance welded steel pipe; 50,000 psi min. yield strength ASTM A569/A569M, A653/A653M or undepleted stock of discontinued A446/A446M base materials; ASTM F669 Group IV (Alternative Design). fence industry 2" OD, 1½" NPS, 1.900" dec. equiv., 0.120" min. wall thick. and min. wt. 2.28 lb./ft.; with ASTM F1043 metric equivalent internal coating Types A, B, C or D and external coating Types A, B, or C; the chromate conversion coating of external Type B shall have a thickness of 15µg/in². min. and the polymer film topcoat shall have a thickness of 0.0003" min.; internal and external coatings are not restricted to the combinations of Table 2, ASTM F1043.
   B. Corner, end, and pull post options:
      (1) Galvanized steel pipe, Schedule 40- 2" nominal dia. zinc galvanized at the rate of 1.8 oz./ft².- ASTM A53 Table X 2, ASTM F1083, and AASHTO M111.
      (2) Aluminum coated steel pipe: ASTM A53 steel, X 2 Tables: Schedule 40; 2" nominal dia., 2.375" OD; coated at the rate 0.40 oz./ft.: AASHTO M111.
      (3) Aluminum alloy pipe- 2½" nominal dia.: ASTM B241 or B221, Alloy 6063,T6.
      (4) Resistance welded steel pipe; 50,000 psi min. yield strength ASTM A569/A569M, A653/A653M or undepleted stock of discontinued A446/A446M base materials; ASTM F669 Group IV (Alternative Design); fence industry 2½" OD, 2" NPS, 2.375" dec. equiv., 0.130"min. wall thick. and min. wt. 3.117 lb./ft.; with ASTM F1043 metric equivalent internal coating Types A, B, C or D and external coating Types A, B, or C; the chromate conversion coating of external Type B shall have a thickness of 15µg/in². min. and the polymer film topcoat shall have a thickness of 0.0003" min.; internal and external coatings are not restricted to the combinations of Table 2, ASTM F1043.
   C. Rail options:
      (1) Galvanized steel pipe, Schedule 40- 1½" nominal dia. zinc galvanized at the rate of 1.8 oz./ft².- ASTM A53 Table X 2, ASTM F1083, and AASHTO M111.
      (2) Aluminum coated steel pipe: ASTM A53 steel, X 2 Tables Schedule 40; 1½" nominal dia., 1.660" OD; coated at the rate 0.40 oz./ft.: AASHTO M111.
      (3) Aluminum alloy pipe- 1½" nominal dia.: ASTM B241 or B221, Alloy 6063, T6.
      (4) Resistance welded steel pipe; 50,000 psi min. yeild strength ASTM A569/A569M, A653/A653M or undepleted stock of discontinued A446/A446M base materials; ASTM F669 Group IV (Alternative Design); fence industry 1½" OD, 1½" NPS, 1.660" dec. equiv., 0.111" min. wall thick. and min. wt. 1.836 lb./ft.; with ASTM F1043 metric equivalent internal coating Types A, B, C or D and external coating Types A, B, or C; the chromate conversion coating of external Type B shall have a thickness of 15µg/in². min. and the polymer film topcoat shall have a thickness of 0.0003" min.; internal and external coatings are not restricted to the combinations of Table 2, ASTM F1043.
   D. Chain link fabric options (2" mesh with twisted and barbed selvage top and bottom for all options except as described in Note No. 10):
      (1) AASHTO M181 Type I – Zinc Coated Steel, No. 9 gage (coated wire diameter), coated at the rate of 1.8 oz./ft². (M181 Class D 2.0 oz./ft². modified to 1.8 oz./ft².),
      (2) AASHTO M181 Type II –Aluminum Coated Steel, No. 9 gage (coated wire diameter), coated at the rate of 0.40 oz./ft².
      (3) AASHTO M181 Type IV- Polyvinyl Chloride (PVC) Coated Steel, No. 9 guage (coated core wire diameter), core wire-zinc coated steel. PVC coating: M181 Class A (either extruded or extruded and bonded) or Class B (bonded). See table right. Unless the plans call for M181 standard colors medium green, dark green or black the coating color shall be soft gray matching that of No. 36622 of Federal Standard 595a.
   E. Tension wire options:
      (1) Steel wire No. 7 gage zinc galvanized at the rate of 1.2 oz./ft².: AASHTO M181.
      (2) Aluminum alloy wire with a diameter of 0.1875" or larger conforming to the requirements of ASTM B211, Alloy 5056 Temper H38, or, Alclad Alloy 5056 Temper H192.
      (3) Aluminum coated steel wire No.7 gage coated at the rate of 0.040 oz./ft².: AASHTO M181.
   F. Tie wire and hog ring options:
      (1) Steel wire No.9 gage zinc galvanized at the rate of 1.2 oz./ft².
      (2) Aluminum alloy wire with a diameter of 0.1443" or larger conforming to the requirements of ASTM B211, Alloy 5056 Temper H38, or, Alclad Alloy 5056 Temper H192.
      (3) Aluminum coated steel wire No. 7 gage coated at the rate of 0.040 oz./ft².

LAST REVISION	REVISION DESCRIPTION:	FDOT 2015 DESIGN STANDARDS	FENCE TYPE B	INDEX NO.	SHEET NO.
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PH: 954-714-2000 FAX: 954-733-8604
CA # 7011
EAC PROJECT No. 14045.SD01-01

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PROJECT:

THREE ISLAND REUSE IRRIGATION PROJECT

KEY MAP:

REVISIONS:

NO.	DESCRIPTION	DATE	BY

DATE ISSUED: JANUARY 11, 2016
DESIGNED BY: SR
DRAWN BY: DG
REVIEWED BY: SS
SEAL:

SHARI J. RAMIREZ, P.E.
FL LICENSE No. 73078

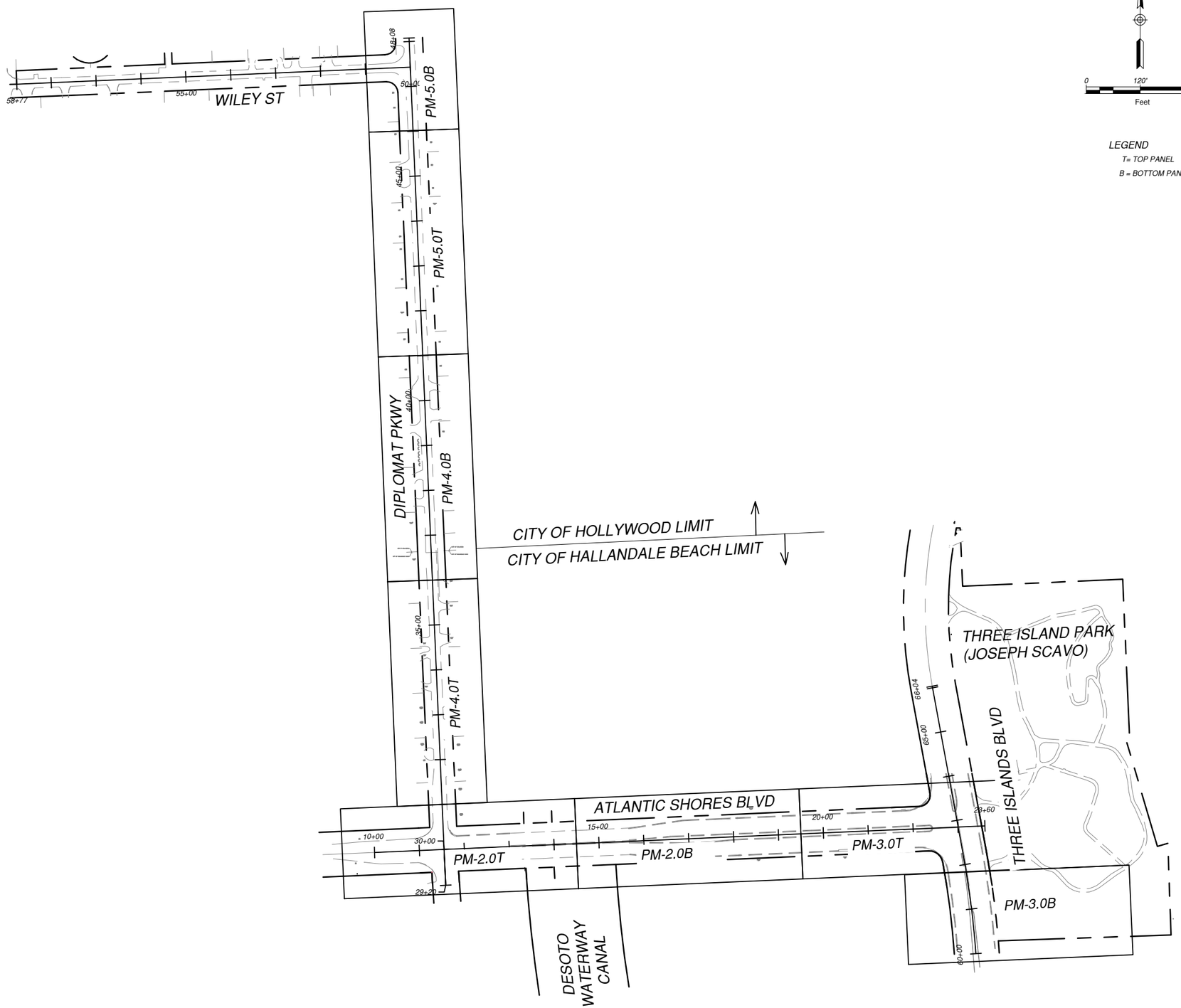
SHEET TITLE:

DETAILS (3 OF 3)

SHEET NO.
C-12.0
SHEET 21 OF 27

100% PHASE SUBMITTAL

L:\Project\14project\14045.SD01-00 Hallandale Beach\14045.SD01-01 - Three Island Reuse Irrigation\civil\C-SHEETS DETAIL 2.dwg [C-12] Jan 11, 2016 11:04pm ROCENAGA



N

0 120' 240'
Feet

LEGEND

T= TOP PANEL

B = BOTTOM PANEL

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PROJECT:

THREE ISLAND REUSE IRRIGATION PROJECT

KEY MAP:

REVISIONS:

NO.	DESCRIPTION	DATE	BY

DATE ISSUED: JANUARY 11, 2016
DESIGNED BY: SR
DRAWN BY: DG
REVIEWED BY: SS

SEAL:

SHARI J. RAMIREZ, P.E.
FL LICENSE No. 73078

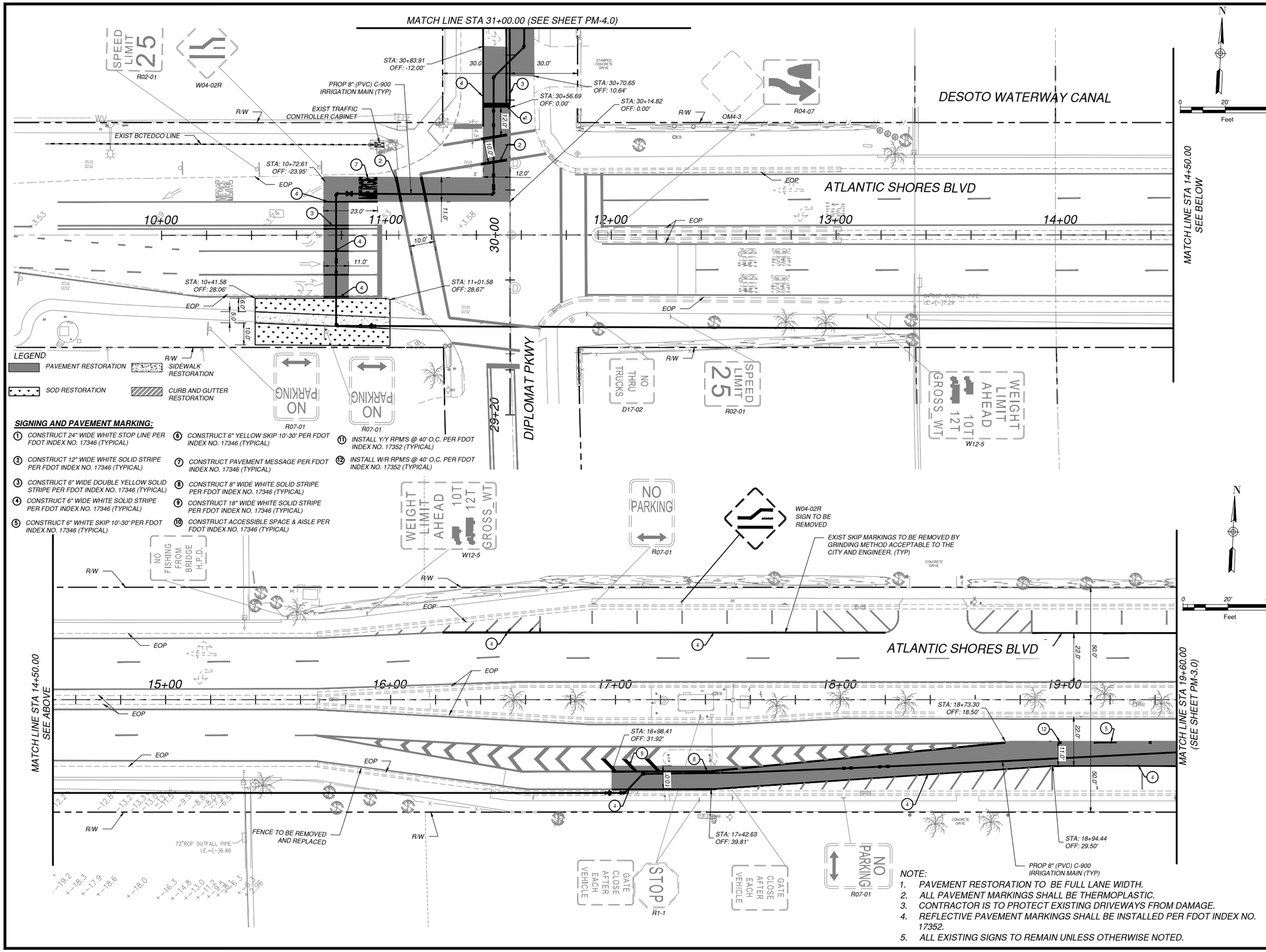
SHEET TITLE:

PAVEMENT RESTORATION AND MARKING KEY MAP

SHEET NO.
PM-1.0
SHEET 22 OF 27

100% PHASE SUBMITTAL

L:\Project\14project\14045.SD01-00 Hallandale Beach\14045.SD01-01- Three Island Reuse Irrigation\cad\PM-1.0 PAVEMENT RESTORATION AND MARKING KEY MAP.dwg [PM-1.0], Jan 11, 2016 11:04pm RSCENIGA



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PROJECT:

THREE ISLAND REUSE IRRIGATION PROJECT

KEY MAP:

REVISIONS:

NO.	DESCRIPTION	DATE	BY

DATE ISSUED: JANUARY 11, 2016
DESIGNED BY: SR
DRAWN BY: DG
REVIEWED BY: SS

SEAL:

SHARI J. RAMIREZ, P.E.
FL LICENSE No. 73078

SHEET TITLE:

PAVEMENT RESTORATION AND MARKING PLANS

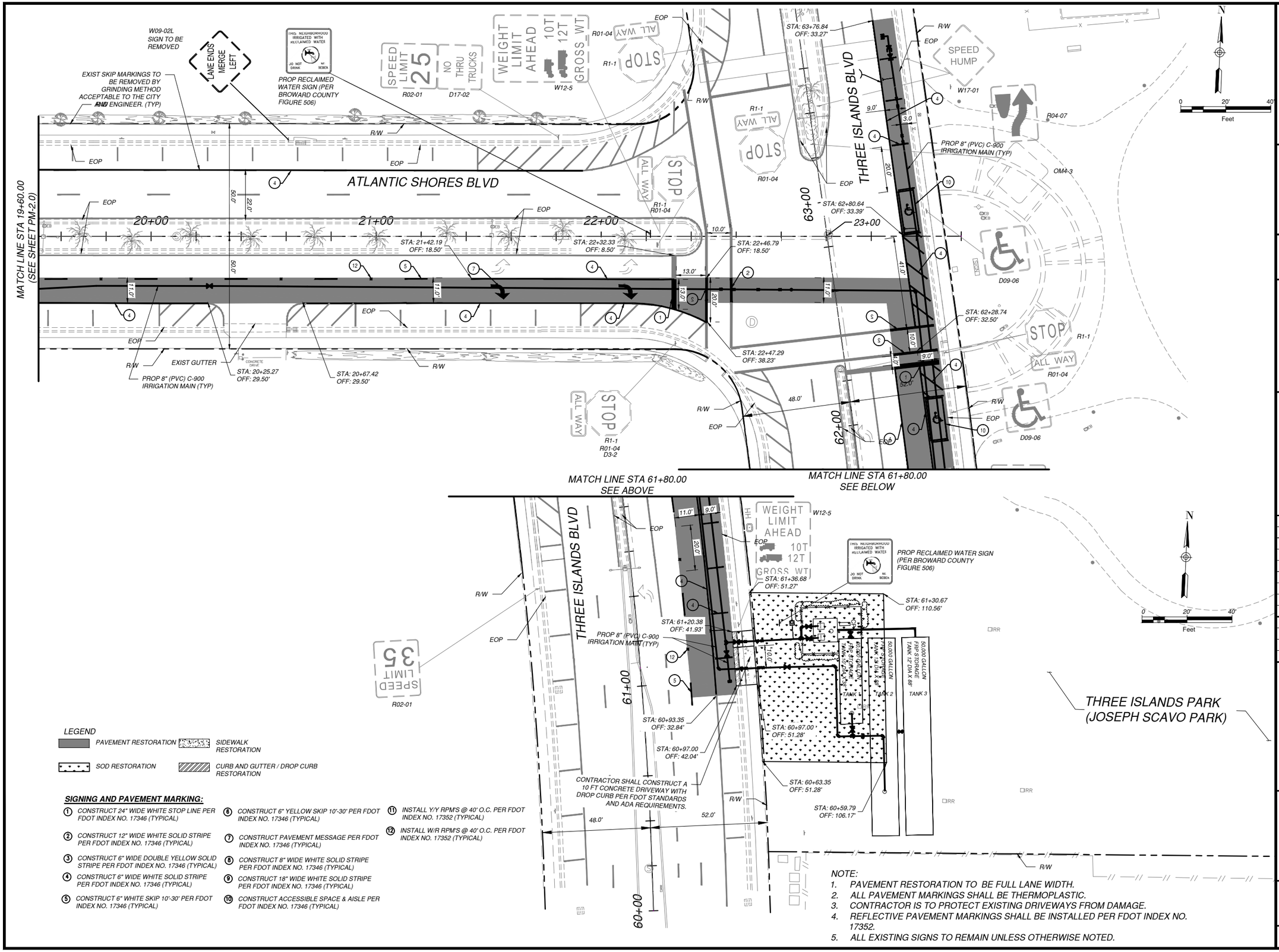
SHEET NO. **PM-2.0**

SHEET 23 OF 27

100% PHASE SUBMITTAL

NOTE:
1. PAVEMENT RESTORATION TO BE FULL LANE WIDTH.
2. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC.
3. CONTRACTOR IS TO PROTECT EXISTING DRIVEWAYS FROM DAMAGE.
4. REFLECTIVE PAVEMENT MARKINGS SHALL BE INSTALLED PER FDOT INDEX NO. 17352.
5. ALL EXISTING SIGNS TO REMAIN UNLESS OTHERWISE NOTED.

\\mia-fileprint\Project\Project\14045.SD01-00 Hallandale Beach\14045.SD01-01- Three Island Reuse Irrigation\civil\PM-2.0.dwg [PM-2.0] Jan 12, 2016 11:32am RICIEMAGA



LEGEND

- PAVEMENT RESTORATION
- SIDEWALK RESTORATION
- SOD RESTORATION
- CURB AND GUTTER / DROP CURB RESTORATION

SIGNING AND PAVEMENT MARKING:

1. CONSTRUCT 24" WIDE WHITE STOP LINE PER FDOT INDEX NO. 17346 (TYPICAL)
2. CONSTRUCT 12" WIDE WHITE SOLID STRIPE PER FDOT INDEX NO. 17346 (TYPICAL)
3. CONSTRUCT 6" WIDE DOUBLE YELLOW SOLID STRIPE PER FDOT INDEX NO. 17346 (TYPICAL)
4. CONSTRUCT 6" WIDE WHITE SOLID STRIPE PER FDOT INDEX NO. 17346 (TYPICAL)
5. CONSTRUCT 6" WHITE SKIP 10'-30' PER FDOT INDEX NO. 17346 (TYPICAL)
6. CONSTRUCT 6" YELLOW SKIP 10'-30' PER FDOT INDEX NO. 17346 (TYPICAL)
7. CONSTRUCT PAVEMENT MESSAGE PER FDOT INDEX NO. 17346 (TYPICAL)
8. CONSTRUCT 8" WIDE WHITE SOLID STRIPE PER FDOT INDEX NO. 17346 (TYPICAL)
9. CONSTRUCT 18" WIDE WHITE SOLID STRIPE PER FDOT INDEX NO. 17346 (TYPICAL)
10. CONSTRUCT ACCESSIBLE SPACE & AISLE PER FDOT INDEX NO. 17346 (TYPICAL)
11. INSTALL Y/Y RPM'S @ 40' O.C. PER FDOT INDEX NO. 17352 (TYPICAL)
12. INSTALL W/R RPM'S @ 40' O.C. PER FDOT INDEX NO. 17352 (TYPICAL)

NOTE:
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2. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC.
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PROJECT:

THREE ISLAND REUSE IRRIGATION PROJECT

KEY MAP:

REVISIONS:

NO.	DESCRIPTION	DATE	BY

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DESIGNED BY: SR
DRAWN BY: DG
REVIEWED BY: SS
SEAL:

SHARI J. RAMIREZ, P.E.
FL LICENSE No. 73078

SHEET TITLE:

PAVEMENT RESTORATION AND MARKING PLANS

SHEET NO. **PM-3.0**
SHEET 24 OF 27

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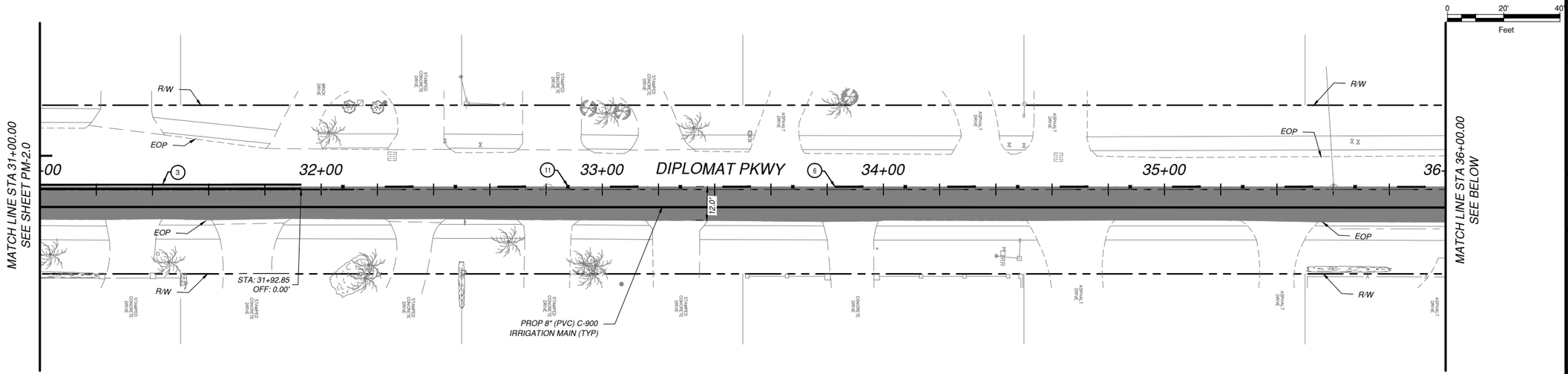

LEGEND

- PAVEMENT RESTORATION
- SIDEWALK RESTORATION
- SOD RESTORATION
- CURB AND GUTTER RESTORATION

SIGNING AND PAVEMENT MARKING:

1. CONSTRUCT 24" WIDE WHITE STOP LINE PER FDOT INDEX NO. 17346 (TYPICAL)
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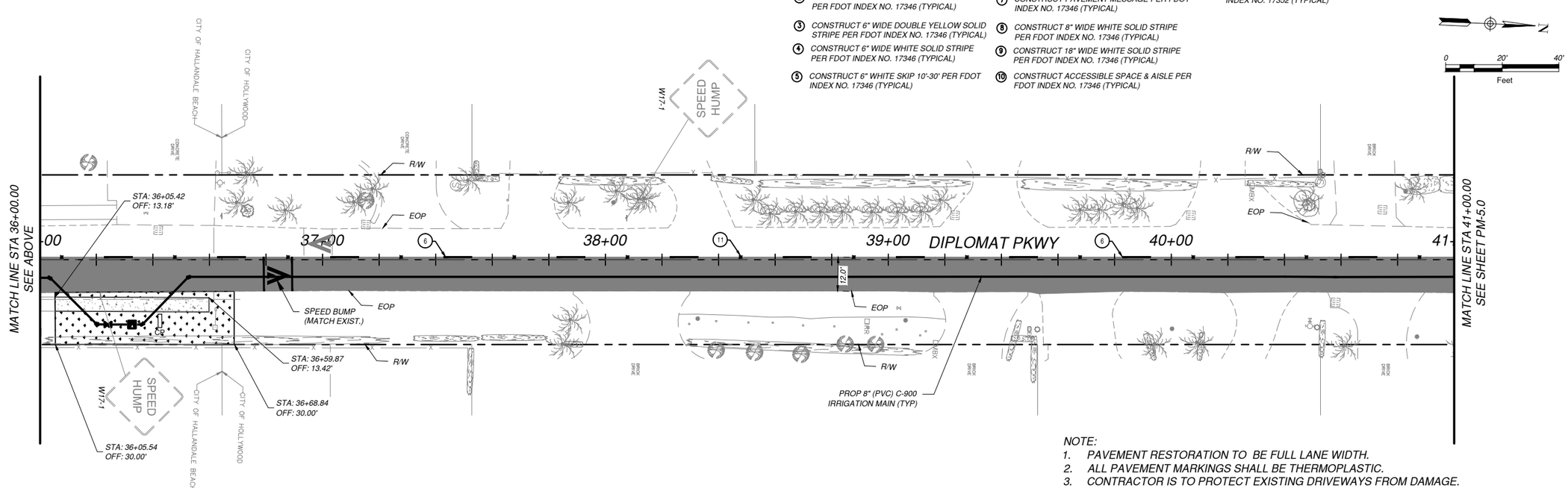
12. INSTALL W/R RPM'S @ 40' O.C. PER FDOT INDEX NO. 17352 (TYPICAL)



NOTE:

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PROJECT:

THREE ISLAND REUSE IRRIGATION PROJECT

KEY MAP:

REVISIONS:

NO.	DESCRIPTION	DATE	BY

DATE ISSUED: JANUARY 11, 2016
DESIGNED BY: SR
DRAWN BY: DG
REVIEWED BY: SS
SEAL:

SHARI J. RAMIREZ, P.E.
FL LICENSE No. 73078

SHEET TITLE:

PAVEMENT RESTORATION AND MARKING PLANS

SHEET NO. **PM-4.0**

SHEET 25 OF 27

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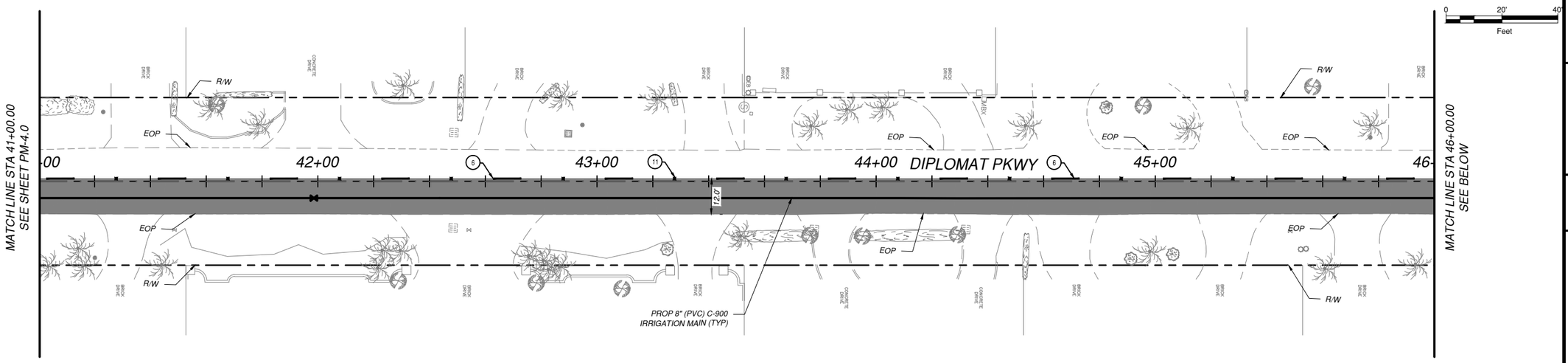

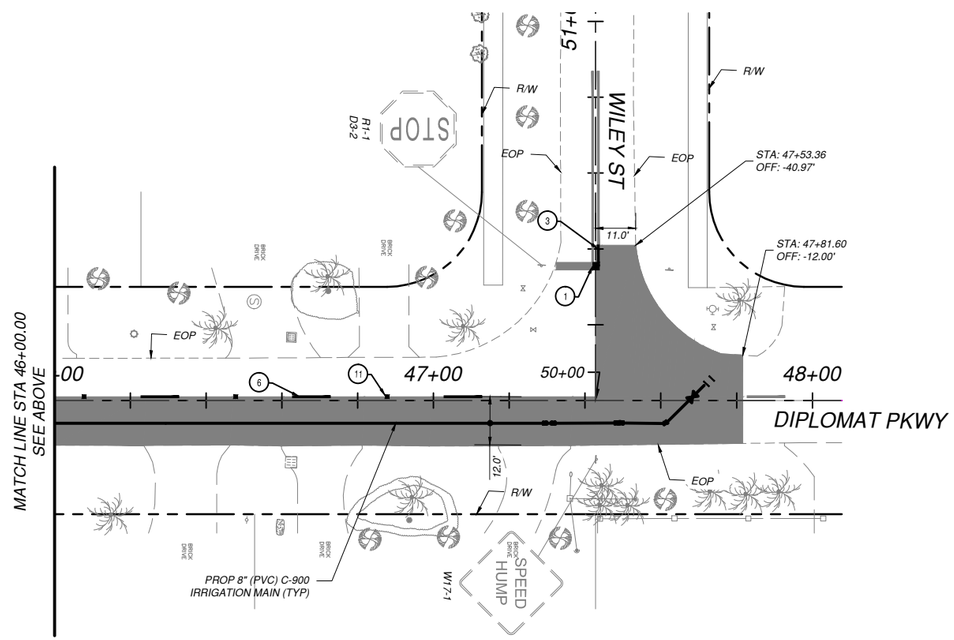

LEGEND

- PAVEMENT RESTORATION
- SIDEWALK RESTORATION
- SOD RESTORATION
- CURB AND GUTTER RESTORATION

SIGNING AND PAVEMENT MARKING:

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NOTE:

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CA # 7011
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PROJECT:

THREE ISLAND REUSE IRRIGATION PROJECT

KEY MAP:

REVISIONS:

NO.	DESCRIPTION	DATE	BY

DATE ISSUED: JANUARY 11, 2016
DESIGNED BY: SR
DRAWN BY: DG
REVIEWED BY: SS

SEAL:

SHARI J. RAMIREZ, P.E.
FL LICENSE No. 73078

SHEET TITLE:

PAVEMENT RESTORATION AND MARKING PLANS

SHEET NO. **PM-5.0**

SHEET 26 OF 27

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NO.	Description	Designation	Location	Sheet Number	Comments
1	No Parking	R7-1	Eastbound on Atlantic Shores Blvd	PM-2.0	Suitable Condition
2	No Parking	R7-1	Eastbound on Atlantic Shores Blvd	PM-2.0	Suitable Condition
3	Speed Limit 25 mph	R2-1	Westbound on Atlantic Shores Blvd	PM-2.0	Suitable Condition
4	Right Lane Ends	W4-2R	Westbound on Atlantic Shores Blvd	PM-2.0	Suitable Condition
5	Keep Right	R4-7, OM4-3	Eastbound on Atlantic Shores Blvd	PM-2.0	Suitable Condition
6	No Thru Trucks	D17-2	Eastbound on Atlantic Shores Blvd	PM-2.0	Suitable Condition
7	Speed Limit 25 mph	R2-1	Eastbound on Atlantic Shores Blvd	PM-2.0	Suitable Condition
8	Weight Limit Ahead	W12-5	Eastbound on Atlantic Shores Blvd	PM-2.0	Suitable Condition
9	Stop Sign, Gate Close After Each Vehicle	R1-1	Eastbound on Atlantic Shores Blvd	PM-2.0	Suitable Condition
10	Gate Close After Each Vehicle	N/A	Eastbound on Atlantic Shores Blvd	PM-2.0	Suitable Condition
11	Stop Sign, Gate Close After Each Vehicle	R1-1	Eastbound on Atlantic Shores Blvd	PM-2.0	Suitable Condition
12	No Parking	R7-1	Eastbound on Atlantic Shores Blvd	PM-2.0	Suitable Condition
13	No Fishing From Bridge H.P.D	N/A	Westbound on Atlantic Shores Blvd	PM-2.0	Suitable Condition
14	Weight Limit Ahead	W12-5	Westbound on Atlantic Shores Blvd	PM-2.0	Suitable Condition
15	No Parking	R7-1	Westbound on Atlantic Shores Blvd	PM-2.0	Suitable Condition
16	Right Lane Ends	W4-2R	Westbound on Atlantic Shores Blvd	PM-2.0	Suitable Condition
17	Stop Sign, All Way, Streed ID	R1-1, R1-4, D3-2	Eastbound on Atlantic Shores Blvd	PM-3.0	Suitable Condition
18	Stop Sign, All Way	R1-1, R1-4	Eastbound on Atlantic Shores Blvd	PM-3.0	Suitable Condition
19	Lane Ends Merge Left	W9-2L	Westbound on Atlantic Shores Blvd	PM-3.0	Suitable Condition
20	Speed Limit 25 mph, No Thru Trucks	R2-1, D17-2	Westbound on Atlantic Shores Blvd	PM-3.0	Suitable Condition
21	Weight Limit Ahead	W12-5	Westbound on Atlantic Shores Blvd	PM-3.0	Suitable Condition
22	Stop Sign, All Way	R1-1, R1-4	Southbound on Three Island Blvd	PM-3.0	Suitable Condition
23	Stop Sign, All Way	R1-1, R1-4	Southbound on Three Island Blvd	PM-3.0	Suitable Condition
24	Keep Right	R4-7, OM4-3	Northbound on Three Island Blvd	PM-3.0	Suitable Condition
25	Speed Hump	W17-1	Northbound on Three Island Blvd	PM-3.0	Suitable Condition
26	Speed Hump	W17-1	Northbound on Three Island Blvd	PM-3.0	Suitable Condition
27	Handicapped	D9-6	Northbound on Three Island Blvd	PM-3.0	Suitable Condition
28	Stop Sign, All Way	R1-1, R1-4	Northbound on Three Island Blvd	PM-3.0	Suitable Condition
29	Handicapped	D9-6	Northbound on Three Island Blvd	PM-3.0	Suitable Condition
30	Stop Sign, All Way	R1-1, R1-4	Northbound on Three Island Blvd	PM-3.0	Suitable Condition
31	Weight Limit Ahead	W12-5	Northbound on Three Island Blvd	PM-3.0	Suitable Condition
32	Speed Limit 35 mph	R2-1	Southbound on Three Island Blvd	PM-3.0	Suitable Condition
33	Speed Hump	W17-1	Northbound on Diplomat Parkway	PM-4.0	Suitable Condition
34	Speed Hump	W17-1	Southbound on Diplomat Parkway	PM-4.0	Suitable Condition
35	Speed Hump	W17-1	Northbound on Diplomat Parkway	PM-4.0	Suitable Condition
36	Stop Sign, Streed ID	R1-1, D3-2	Eastbound on Wiley Street	PM-4.0	Suitable Condition

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CA # 7011
EAC PROJECT No. 14045.SD01-01

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PROJECT:

THREE ISLAND REUSE IRRIGATION PROJECT

KEY MAP:

REVISIONS:

NO.	DESCRIPTION	DATE	BY

DATE ISSUED: JANUARY 11, 2016
DESIGNED BY: SR
DRAWN BY: DG
REVIEWED BY: SS

SEAL:

SHARI J. RAMIREZ, P.E.
FL LICENSE No. 73078

SHEET TITLE:

EXIST TRAFFIC SIGN INVENTORY

SHEET NO. **PM-6.0**

SHEET 27 OF 27

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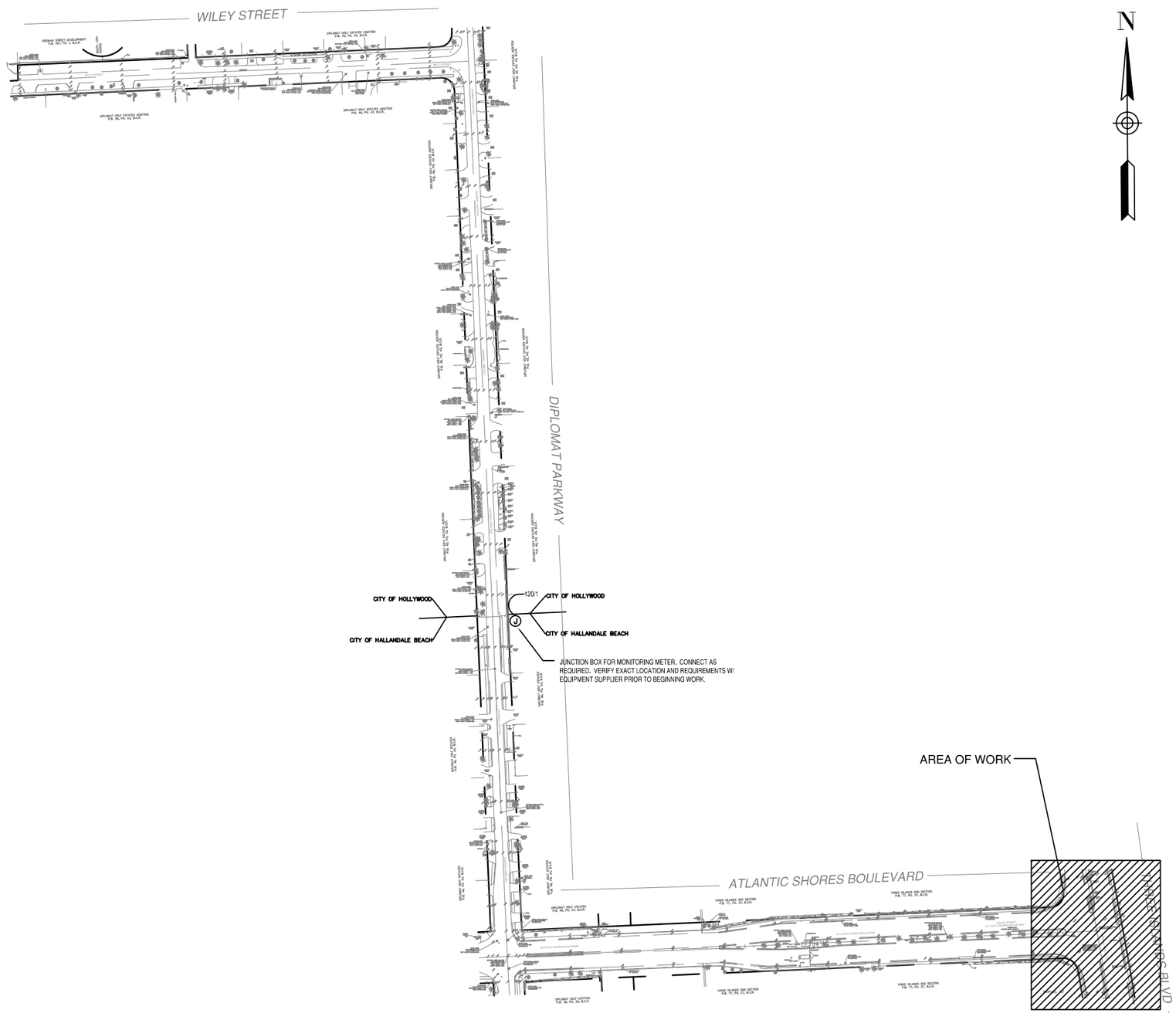

1 / E-0 OVERALL SITE KEY PLAN
SCALE: NTS

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UTILITIES & ENGINEERING
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PROJECT:

THREE ISLAND REUSE IRRIGATION PROJECT

project CAINE ENGINEERING INCORPORATED
RESPONSIVE ENGINEERING
MECHANICAL ELECTRICAL PLUMBING/FIRE PROTECTION
1044 EAST SUNRISE BLVD.SUITE #1
FORT LAUDERDALE, FLORIDA 33304
PHONE: (954) 563-9199 FAX: (954) 563-9224
WWW.PROJECTCAINE.COM
#0000085580 CA#3887

REVISIONS:

NO	DESCRIPTION	DATE	BY

DATE ISSUED: JANUARY 11, 2016
DESIGNED BY:
DRAWN BY:
REVIEWED BY:
SEAL:

ROBERT B. CAINE, P.E.
FL LICENSE No. 37637

SHEET TITLE:

ELECTRICAL OVERALL SITE KEY PLAN

SHEET NO.
E-0
SHEET 1 OF 5

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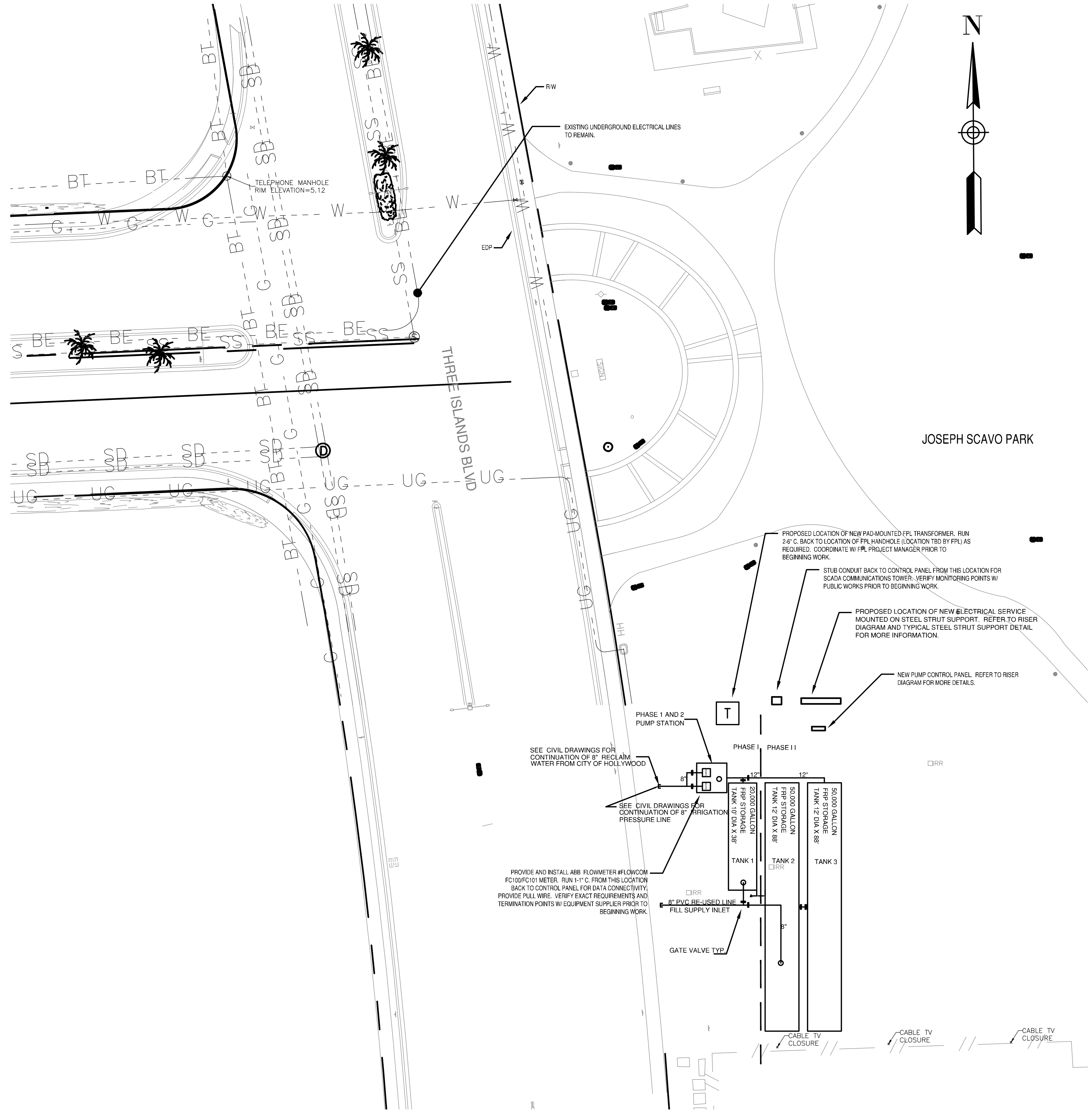
ELECTRICAL DRAWING NOTES

1. ALL WORK PERFORMED SHALL BE DONE BY A LICENSED ELECTRICAL CONTRACTOR AND IN A FIRST CLASS WORKMANLIKE MANNER. SAID CONTRACTOR SHALL MEET ALL REQUIREMENTS SET FORTH BY ANY LOCAL ORDINANCE AND/OR GOVERNING AUTHORITIES.
2. ENTIRE INSTALLATION SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, LATEST EDITION NEC AND THE LATEST EDITIONS OF ALL LOCAL CODES, RULES, AND ORDINANCES HAVING JURISDICTION.
3. IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO PROVIDE ALL LABOR, MATERIALS, AND SUPERVISION NECESSARY TO ACCOMPLISH THE WORK SHOWN AND/OR NOTED ON THE DRAWINGS AND SPECIFICATIONS.
4. ALL REQUIRED INSURANCE SHALL BE PROVIDED FOR PROTECTION AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE FOR THE DURATION OF THE WORK.
5. ELECTRICAL CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO BID AND VERIFY ALL CONDITIONS, LOCATIONS, DIMENSIONS AND COUNTS AS SHOWN AND/OR NOTED ON THE DRAWINGS. THIS SHALL INCLUDE ANY AND ALL FABRICATIONS REQUIRED PRIOR TO INSTALLATION.
6. IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR FOR THE ADVANCED ORDERING OF LONG LEAD ITEMS SO AS NOT TO INTERFERE WITH THE PRODUCTION OF OTHER TRADES RESULTING IN ANY DOWN OR LAG TIME.
7. CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FREE FROM DEFECTS FOR A PERIOD OF NOT LESS THAN (1) YEAR FROM DATE OF ACCEPTANCE, UNLESS INDICATED OR SPECIFIED OTHERWISE.
8. CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ADDITIONAL CHARGE AND SHALL INCLUDE REPLACEMENT OR REPAIR OF ANY OTHER PHASE OF THE INSTALLATION WHICH MAY HAVE BEEN DAMAGED THEREBY.
9. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO REPAIR TO ORIGINAL CONDITIONS ANY AND ALL DAMAGES TO BUILDING SURFACES, EQUIPMENT AND FURNISHINGS CAUSED DURING PERFORMANCE OF WORK.
10. ELECTRICAL CONTRACTOR SHALL NOT SCALE DRAWINGS. CONTRACTOR SHALL REFER TO CIVIL PLANS AND ELEVATIONS FOR EXACT LOCATIONS OF ALL EQUIPMENT UNLESS NOTED OTHERWISE.
11. ALL ELECTRICAL EQUIPMENT, DEVICES, WIRE, ETC., SHALL BE LISTED FOR THE INTENDED USE, WITH UNDERWRITER'S LABORATORIES, INC. (UL) WHERE STANDARDS HAVE BEEN ESTABLISHED BY UL. AS A MINIMUM, ALL EQUIPMENT SHALL MEET APPLICABLE STANDARDS FOR THE TYPE OF EQUIPMENT AND INTENDED USE OF THE FOLLOWING:

    A. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI).
    B. ILLUMINATING ENGINEERS SOCIETY (IES).
    C. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM).
    D. NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION (NEMA).

    NOTE:
    THESE STANDARDS ARE SUBORDINATE TO CODES AND STANDARDS SET BY UL.
12. IT IS NOT THE INTENT OF THESE PLANS AND/OR SPECIFICATIONS TO SHOW EVERY DETAIL OF CONSTRUCTION. THE ELECTRICAL CONTRACTOR SHALL BE EXPECTED TO PROVIDE ALL ITEMS AND EQUIPMENT NECESSARY FOR A COMPLETE AND FULLY FUNCTIONAL ELECTRICAL SYSTEM.
13. ALL CONDUIT RUNS ARE SHOWN DIAGRAMMATICALLY. EXACT ROUTING SHALL BE DETERMINED IN THE FIELD, UNLESS OTHERWISE NOTED. THE ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL THE PROPER NUMBER OF CONDUCTORS IN ALL RACEWAYS AS REQUIRED TO ACCOMPLISH THE PROPER FUNCTIONING OF THE DEVICE OR EQUIPMENT AS SHOWN.
14. THE ELECTRICAL CONTRACTOR SHALL KEEP ALL AREAS IN WHICH WORK IS BEING PERFORMED, FREE FROM DEBRIS AT ALL TIMES AND SAID AREAS SHALL BE LEFT BROOM CLEAN AT THE END OF EACH WORKING DAY.
15. CONTRACTOR SHALL PAY FOR ALL PERMITS, FEES, INSPECTIONS, AND TESTING.
16. ENGINEERING EXPENSES THAT ARE INCURRED DUE TO REVISIONS OR SUBSTITUTIONS REQUESTED BY THE CONTRACTOR SHALL BE PAID FOR BY THAT CONTRACTOR.
17. COORDINATE ALL ELECTRICAL SITE WORK WITH GENERAL CONTRACTOR PRIOR TO INSTALLATION.
18. ALL CONDUCTORS SHALL BE IN CONDUITS. ALL CONDUITS SHALL BE INTERMEDIATE (IMC) OR RIGID GALVANIZED STEEL (RGS) EXCEPT THAT: (a) POLYVINYL CHLORIDE (PVC) CONDUITS MAY BE USED IN CONCRETE SLABS AND UNDERGROUND PROVIDED ELBOWS AND RISERS ARE RGS: (b) ELECTRICAL METALLIC TUBING (EMT) MAY BE USED IN OR ON WALLS OR CEILING WHERE NOT SUBJECT TO MECHANICAL DAMAGE, DAMP CONDITIONS OR CORROSIVE CONDITIONS; (c) LIQUID-TIGHT FLEXIBLE CONDUIT WHERE REQUIRED; (d) FLEXIBLE METALLIC CONDUIT WHERE REQUIRED IN DRY LOCATIONS; (e) THE USE OF AC OR MC CABLES SHALL BE PROHIBITED. ALL CONDUITS IN HAZARDOUS AREAS (PER NEC) SHALL MEET THE REQUIREMENTS OF NEC CHAPTER 5.
19. FOR UNDERGROUND ELECTRICAL CONDUITS, PROVIDE PULL BOXES, SUCH THAT NO SINGLE CONDUIT RUN HAS BENDS IN EXCESS OF 360. PULL BOXES SHALL BE SUITABLE AND APPROVED FOR THE INTENDED USE. WHERE CONDUITS PASS UNDERNEATH PAVED AREAS THEY SHALL BE RGS. WHERE UNDERGROUND CONDUITS ARE NOT EXPOSED TO MECHANICAL DAMAGE OR ARE NOT UNDER PAVED AREAS, THEY MAY BE SCHEDULE 40 PVC, BUT ALL CONDUIT RISERS SHALL BE RGS. RGS CONDUITS SHALL EXTEND A MINIMUM OF 18" BELOW GRADE.
20. APPLY BITUMASTIC COATING TO ALL METALLIC CONDUITS IN SLABS OR UNDERGROUND.
21. ALL CONDUCTORS SHALL BE COPPER U.O.N., TYPE THHN OR THWN INSULATION, RATED 75°C WET/DRY EXCEPT WHERE OTHERWISE REQUIRED BY U.L. OR CODES UNLESS OTHERWISE NOTED. MINIMUM WIRE SIZE SHALL BE #12 AWG EXCLUDING CONTROL WIRING.
22. WIRE WAYS SHALL BE SIZED AS REQUIRED, PER NEC, UNLESS OTHERWISE NOTED.
23. ALL ELECTRICAL EQUIPMENT SHALL BE RAINTIGHT WHERE EXPOSED TO THE WEATHER. ALL FLEX CONDUITS CONNECTED TO SUCH EQUIPMENT SHALL BE LIQUID-TIGHT.
24. CIRCUIT BREAKERS SHALL BE BOLT-ON U.O.I., INVERSE TIME-TYPE (THERMAL-MAGNETIC). TWO AND THREE-POLE CIRCUIT BREAKERS SHALL HAVE COMMON TRIP. ALL PANELBOARDS SHALL HAVE COPPER BUS.
25. WHERE CORE DRILLING OF FLOOR/WALLS IS REQUIRED, CONTRACTOR SHALL SEAL OPENINGS WATERTIGHT AFTER UTILITIES HAVE BEEN INSTALLED. LOCATION OF CORED HOLES SHALL BE COORDINATED WITH LOCATION OF EQUIPMENT IN A MANNER TO BE CLEAN AND FUNCTIONAL. THE CONTRACTOR SHALL INSTALL ONLY ONE CONDUIT PER HOLE AND SEAL THE OPENING AROUND THE CONDUIT AS SPECIFIED.
26. PROVIDE FIRE RETARDANT U.L. APPROVED SEALANT ON ALL PENETRATIONS OF FIRE RATED PARTITIONS, WALLS AND STRUCTURAL SLABS. IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO VERIFY, PRIOR TO SUBMITTING BID, LOCATIONS OF ALL SUCH FIRE RATED PARTITIONS, WALLS, AND STRUCTURAL SLABS.
27. BALLASTS SHALL HAVE MIN. POWER FACTOR OF 0.90. BALLASTS FOR METAL HALIDE AND HIGH PRESSURE SODIUM FIXTURES SHALL BE CONSTANT WATTAGE TYPE WITH 5% LAMP WATTS FOR 10% NOMINAL LINE VOLTAGE VARIATION.
28. THE EQUIPMENT GROUNDING TERMINAL BARS OF THE NORMAL AND EMERGENCY ELECTRICAL SYSTEM PANELBOARDS SERVING THE SAME BUILDING SHALL BE BONDED TOGETHER WITH AN INSULATED, CONTINUOUS, COPPER CONDUCTOR NOT SMALLER THAN NUMBER 6.
29. PROVIDE LAMPS WITH FIXTURES, SEE LUMINAIRE SCHEDULE FOR LAMP TYPE.
30. ALL CONNECTIONS TO GROUND RODS & BUILDING STEEL SHALL BE MADE WITH UL APPROVED WELDED CONNECTIONS, UNLESS OTHERWISE NOTED.
31. PROVIDE A FUSE HOLDER AND FUSE IN THE PRIMARY SIDE OF EACH UNGROUNDED CONDUCTOR FOR EACH BALLAST (BUSSMAN HEB AND FNQ OR EQUAL), AT THE HAND HOLE OF EACH EXTERIOR POLE MOUNTED LIGHTING FIXTURE OR J-BOX FOR WALL OR GROUND MOUNTED EXTERIOR FIXTURES.
32. PROVIDE TEMPORARY ELECTRICAL SERVICE FOR USE BY ALL TRADES DURING CONSTRUCTION AND REMOVE SAME AT COMPLETION OF PROJECT,
33. THE ELECTRICAL CONTRACTOR SHALL FURNISH A COMPLETE SET OF AS-BUILT DRAWINGS, SHOWING ALL CHANGES AND DEVIATIONS TO THE ENGINEER PRIOR TO COMPLETION OF THE PROJECT.
34. PREPARE AND AFFIX A TYPEWRITTEN DIRECTORY TO THE INSIDE COVER OF EACH PANELBOARD INDICATING LOADS SERVED BY EACH CIRCUIT.



1 E-1 PARTIAL SITE PLAN – ELECTRICAL
SCALE: 1/20" = 1'-0"

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REVISIONS:

NO.	DESCRIPTION	DATE	BY

DATE ISSUED: JANUARY 11, 2016
DESIGNED BY:
DRAWN BY:
REVIEWED BY:
SEAL:

ROBERT B. CAINE, P.E.
FL LICENSE No. 37637

SHEET TITLE:
ELECTRICAL SITE PLAN

SHEET NO.
E-1
SHEET 2 OF 5

100% PHASE SUBMITTAL

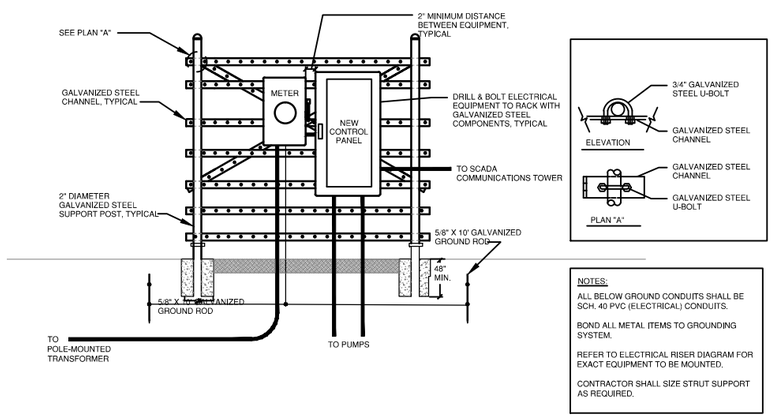
SCOPE NOTE:

IT IS NOTED THAT DURING PHASE 1 OF THE PROJECT, ONLY A 480V, 10HP PUMP WILL BE INSTALLED AND IN-USE. AS PART OF THIS PHASE, THE FEEDER CONDUIT HAS BEEN SIZED FOR FUTURE PUMP UPGRADES AND WILL BE INSTALLED. WIRE SIZE CALCULATIONS HAVE BEEN PROVIDED FOR REFERENCE DURING FUTURE RENOVATIONS TO THIS PUMP STATION WHEN NEW PUMPS WILL BE INSTALLED IN PLACE OF THOSE PROVIDED AS PART OF THIS SCOPE OF WORK.

PHASED WORK SCHEDULE

PROJECT PHASE	PUMP SIZE (H.P.)	WIRE SIZE	GROUND SIZE	DISC. SIZE/ FUSE SIZE
1	10	#10	#10	30/30
2	60	#1/0	#6	200/150

NOTE: ALL ELECTRICAL DATA SHOWN IS AT 480V, 3Ø



NOTES:

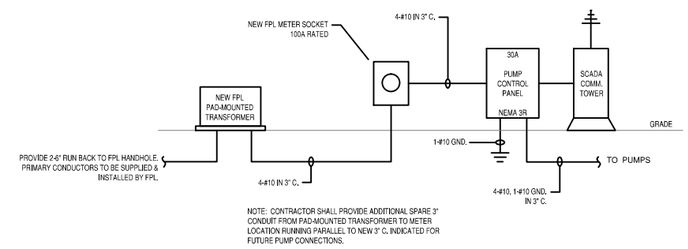
ALL BELOW GROUND CONDUITS SHALL BE SCH. 40 PVC (ELECTRICAL) CONDUITS.

BOND ALL METAL ITEMS TO GROUNDING SYSTEM.

REFER TO ELECTRICAL RISER DIAGRAM FOR EXACT EQUIPMENT TO BE MOUNTED.

CONTRACTOR SHALL SIZE STRUT SUPPORT AS REQUIRED.

1 / E-2 TYPICAL STRUT SUPPORT DETAIL
SCALE: NTS



NOTE: CONTRACTOR SHALL PROVIDE ADDITIONAL SPARE 3" CONDUIT FROM PAD-MOUNTED TRANSFORMER TO METER LOCATION RUNNING PARALLEL TO NEW 3" C. INDICATED FOR FUTURE PUMP CONNECTIONS.

2 / E-2 ELECTRICAL RISER DIAGRAM
SCALE: NTS

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NO.	DESCRIPTION	DATE	BY

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DRAWN BY:
REVIEWED BY:
SEAL:

ROBERT B. CAINE, P.E.
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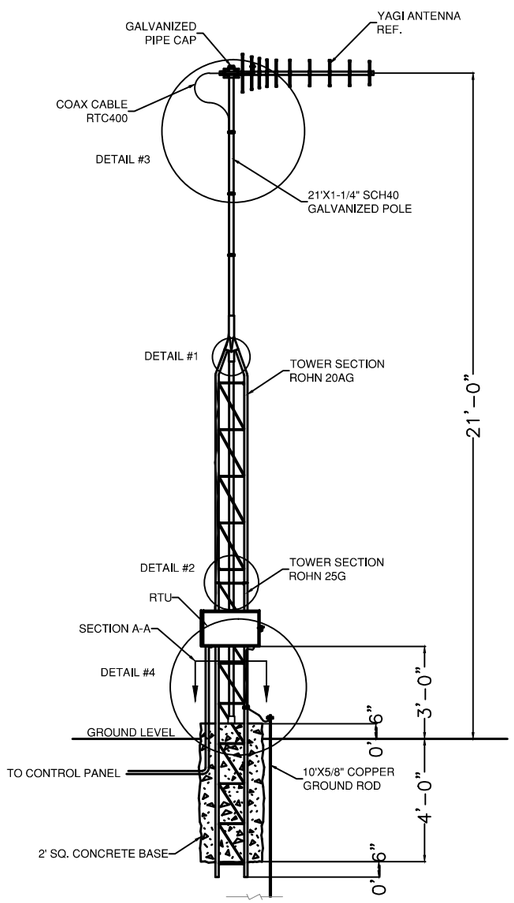
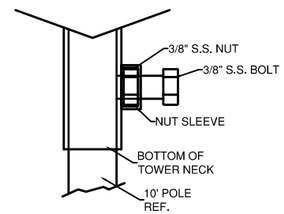
SHEET TITLE:

ELECTRICAL DETAILS

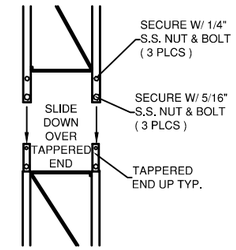
SHEET NO.
E-2
SHEET 3 OF 5

100% PHASE SUBMITTAL

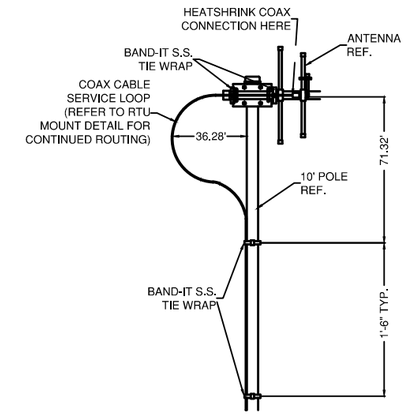




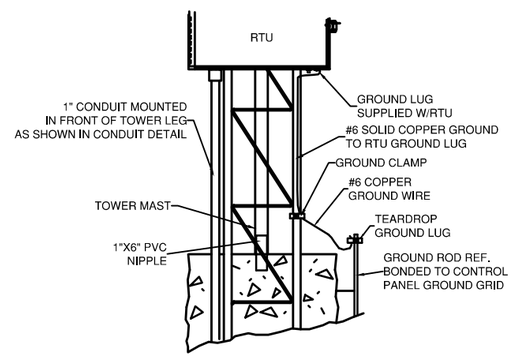
DETAIL #1
POLE SWIVEL BOLT SIDE VIEW



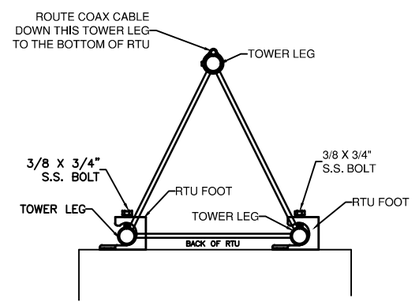
DETAIL #2
TOWER CONNECTING



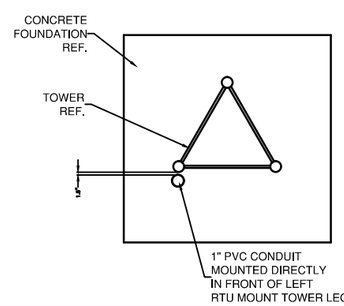
DETAIL #3
COAX MOUNTING & ROUTING



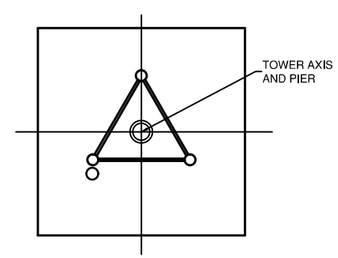
DETAIL #3
GROUNDING DETAIL



RTU MOUNTING DETAIL
TOP VIEW



CONDUIT DETAIL
TOP VIEW



SECTION
A-A

NOTES:

1. ANTENNA HEIGHT SHALL CONFORM TO F.C.C. AND TELEMETRY MANUFACTURERS REQUIREMENTS AND SPECIFICATIONS.
2. TELEMTRY ANTENNA AND RELATED EQUIPMENT SHALL BE COMPATIBLE WITH EXISTING CITY OF HALLANDALE BEACH PUBLIC WORKS DEPARTMENT TELEMETRY SYSTEM AS WELL AS THE CITY OF HOLLYWOOD PUBLIC WORKS DEPARTMENT TELEMTRY SYSTEM.
3. GROUND WIRE SHALL BE CONTINUOUS FROM FIRST GROUND ROD TO SERVICE DISCONNECT, TO CONTROL PANEL, TO ANTENNA BASE, TO SECOND GROUND ROD 6' TO 8' FROM FIRST GROUND ROD.
4. SUPPORT SLAB FOR ANTENNA SHALL BE DESIGNED TO MEET FLORIDA BUILDING CODE, LATEST EDITION, REQUIREMENTS FOR STRUCTURES AND WIND LOADS.
5. LOCATION OF ANTENNA TO BE LOCATED MEET ALL APPLICABLE CODES AND SITE CONDITIONS.

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NO.	DESCRIPTION	DATE	BY

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DESIGNED BY:
DRAWN BY:
REVIEWED BY:
SEAL:

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FL LICENSE No. 37637

SHEET TITLE:

ELECTRICAL DETAILS

SHEET NO.
E-3
SHEET 4 OF 5

100% PHASE SUBMITTAL

ELECTRICAL GENERAL NOTES

ELECTRICAL NOTES

1. CONTROL PANEL SHALL BE MANUFACTURERED BY CHAMPION CONTROLS, POMPANO BEACH FLORIDA OR APPROVED EQUAL.
2. CONTROL PANEL ELECTRICAL SYSTEM SHALL BE COMPLETELY AND EFFECTIVELY GROUNDED AS REQUIRED BY NEC.
3. ALL ELECTRICAL INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE NEC AND SHALL COMPLY WITH ALL NATIONAL AND LOCAL RULES, ORDINANCES, AND CODES AT TIME OF INSTALLATION.
4. ALL SERVICE CONDUCTORS SHALL BE STRANDED COPPER TYPE THWN.
5. ALL ENCLOSURES SHALL BE 316 STAINLESS STEEL WATERTIGHT NEMA 3R RIGHT SIDE OPENING. ALL MOUNTING HARDWARE MUST BE 316 SS.
6. USE T & B CORROSION RESISTANT-LIQUIDTIGHT-STRAIN RELIEF THERMO-PLASTIC FLEXIBLE CORD & CABLE CONNECTOR ON THE INSIDE OF THE TOP CONNECTION PANEL TO FIT APPROPRIATE CABLE SIZE. TRANSFER SWICH MAY BE MOUNTED ON EITHER END BUT GENERATOR RECEPTACLE MUST BE ON OUTSIDE. (STATE LEFT OR RIGHT SIDE GEN. RECPT. WHEN ORDERING.)
7. ALL PUMP MOTORS SHALL BE 3 PHASE.
8. ALL CONTROL CIRCUIT WIRES SHALL BE TERMINATED WITH FORK TYPE CRIMP-ON CONNECTORS AND SHALL HAVE AN ADJACENT HEAT SHRINK NUMBER, CORRESPONDING EACH CONNECTOR WITH NUMBERS AS INDICATED ON THE SCHEMATIC. NO CONCEALED WIRING SHALL BE PERMITTED BEHIND THE SUB PANEL.
9. EACH DEVICE IN THE CONTROL CIRCUIT SHALL BE IDENTIFIED WITH THE PROPER CONTROL CIRCUIT ABBREVIATION AS SHOWN IN THE TABLE AND ON THE SCHEMATIC.
10. FROM THE REAR SIDE OF THE DEAD FRONT HINGED PANEL, ALL WIRES SHALL BE NEATLY LACED TOGETHER INTO A HARNESS AND TERMINATED INTO A TERMINAL STRIP.
11. DRIVEN GROUND ROD WHICH DOES NOT HAVE A RESISTANCE TO GROUND OF 10 OHMS OR LESS SHALL BE AUGMENTED UNTIL THE RESISTANCE TO GROUND IS 10 OHMS OR LESS. LIGHTENING ARRESTER LEADS TO BE ATTACHED TO THE MCB AS PER MOST RECENT NEC ARTICLE # 280.
12. ALL BRANCH CIRCUITS SHALL HAVE PROPER SIZE WIRING.
13. WHEN CONNECTIONS ARE COMPLETE IN THE CONNECTION BOX, COAT THE TERMINAL BLOCKS AND WIRE ENDS WITH PROTECTIVE COMPOUND, NO-OXIDE OR EQUAL, TO PREVENT CORROSION.
14. SCHEMATIC DRAWINGS TO BE PLACED IN STATION ARE TO BE ENCASED BETWEEN TWO PIECES OF 3/16" PLEXIGLASS.
15. ELECTRICAL SERVICE SHALL BE A MINIMUM OF 100 AMPS OF # 1 THWN STRANDED COPPER WIRE IN RIGID ALUMINUM CONDUIT-MINIMUM SIZE = 1 1/2". INTERMEDIATE METAL CONDUIT UNACCEPTABLE.
16. UNDERGROUND SERVICE PULL BOXES ARE TO BE INSTALLED AT EACH 250 FEET OF SERVICE PULL. VOLTAGE DROP TO BE LIMITED TO A MAXIMUM OF 3 PERCENT DROP.
17. PROVIDE BLUE RIBBON MODEL #01 LEVEL TRANSMITTER WITH 40' POWER CABLE, 10 PSI OR 23 FT RANGE, 40' OF FLEX SS POWER CORD GUARD, #BD200 PUMP CONTROLLER, #BCJP4000 JUNCTION BOX, #BCP3000 SURGE PROTECTOR. PRODUCTS TO COME WITH LIFETIME WARRANTY DUE TO LIGHTING OR VOLTAGE SURGES.
18. COLOR CODING:

    A. SINGLE PHASE 120/240V-BLACK, WHITE, AND RED.

    B. THREE PHASE 120/240V 4 WIRE-HI LEG CENTER AND ORANGE, WHENEVER NEUTRAL IS PRESENT IN THE ABSENCE OF NEUTRAL, THEY WILL BE MARKED BLACK, RED, AND BLUE AND/OR A-B-C WILL CONSTITUTE CLOCKWISE ROTATION OF ALL 3-PHASE MOTORS. THIS IS TO ASSURE PHASE RELATION THROUGHOUT THE SYSTEM.

    C. 120/208V, 4 WIRE, THREE PHASE SHALL BE BLACK, WHITE, RED, AND BLUE WHERE THE NEUTRAL IS PRESENT. IF THE NEUTRAL IS ABSENT, BLACK, RED, AND BLUE AND/OR A-B-C WILL CONSTITUTE CLOCKWISE ROTATION OF ALL THREE PHASE MOTORS, THIS IS TO ASSURE PHASE RELATION THROUGHOUT THE SYSTEM.

    D. 277/480V, 4-WIRE-BROWN, ORANGE, YELLOW AND WHITE WHEN THE NEUTRAL IS PRESENT. IF THE NEUTRAL IS ABSENT, A-B-C WILL CONSTITUTE CLOCKWISE ROTATION OF ALL THREE PHASE MOTORS. THIS IS TO ASSURE PHASE RELATION THROUGHOUT THE SYSTEM.
19. PAINT PVC PIPES, CONDUITS AND ANY PARTS NOT STAINLESS OR ALUMINUM WITH TWO (2) COATS OF ALUMINUM PAINT.
20. TEST PUMPS AS FOLLOWS:

    A. TECHNICIAN MUST BE PRESENT TO CONDUCT TESTS.

    B. MEGGER MOTORS, MOTORS SHALL BE 20 MEGOHMS OR MORE TO GROUND, DO NOT MEGGER LOW VOLTAGE CONTROLS.

    C. CHECK VOLTAGE, CHECK PUMP ROTATION, RECORD VOLTAGE AND AMPS UNDER LOAD.

    D. DEMONSTRATE PROPER OPERATION OF ALL CONTROLS.

    E. CONDUCT DRAWDOWN TESTS AS REQUIRED.

    F. CHECK OPERATION WITH OWNER'S PORTABLE GENERATOR AND CHANGE WIRE CONNECTIONS IN THE PANEL TO GIVE CORRECT ROTATION.
21. A NEW DATA FLOW TCU UNIT WITH RIO 032 EXPANSION SHALL BE INSTALLED IN THE CONTROL PANEL TO MONITOR THE FOLLOWING POINTS:

ADDRESS	NAME	VALUE
81A1	ALARM BELL	OFF
81A2	ALARM LIGHT	OFF
81A3	FLOAT SEQUENCE	NORMAL
81A4	STARTER #1	NORMAL
81A5	STARTER #2	NORMAL
81A7	PUMP #1	OFF
81A8	PUMP #2	OFF
81A10	LOW WELL	NORMAL
81A11	HIGH WELL	NORMAL
81B1	PUMP #1 CONTROL	AUTO
81B2	PUMP #2 CONTROL	AUTO
81B4	ALARM BELL	AUTO
81B5	STATION CONTROL	AUTO
81B9	PHASE MONITOR	BYPASSED
81B10	CONTROL LEVEL	NORMAL
81B12	H.O.A. SWITCH	AUTO
81C1	COMPRESSOR	NORMAL
81C2	RTU INTRUSION	CLOSED
81C3	PANEL INTRUSION	CLOSED
81R12	RTU POWER	NORMAL

22. A SPARE PARTS LIST SHALL BE PURCHASED TO INCLUDE A COMPLETE DATAFLOW TCU UNIT, BLUE RIBBON LEVEL TRANSDUCER PUMP CONTROL, 12HP SEWAGE PUMP EQUIVALENT TO SPECIFIED PUMP. THESE ITEMS SHALL BE DELIVERED TO THE OWNER PRIOR TO THE END OF CONSTRUCTION.
23. PROVIDE SENSODINE SENCE ALERT M2 SERIES 7013183-2 COMBUSTIBLE GAS DETECTOR IN COMPLIANCE WITH NFPA 820. CONNECT TO TCU SYSTEM AS REQUIRED.
24. PROVIDE WIKA #S10, 0-100 PSI #8643652 POTABLE WATER TRASNDUCER ON WATER SERVICE TO LIFT STATION. CONNECT TO TCU SYSTEM AS REQUIRED.

I. GENERAL REQUIREMENTS

A. DRAWINGS.
THE DRAWINGS ARE TO BE CONSIDERED DIAGRAMMATIC, NOT NECESSARILY SHOWING IN DETAIL OR TO SCALE ALL OF THE MINOR ITEMS. UNLESS SPECIFIC DIMENSIONS ARE SHOWN, THE STRUCTURAL, CIVIL, AND SITE CONDITIONS SHALL GOVERN THE EXACT LOCATIONS. CONTRACTOR SHALL FOLLOW DRAWINGS IN LAYING OUT WORK, CHECK DRAWINGS OF ALL TRADES TO VERIFY SPACES IN WHICH WORK WILL BE INSTALLED. WHERE HEADROOM OR SPACE CONDITIONS APPEAR INADEQUATE, CONTRACTOR SHALL, WITHOUT EXTRA CHARGE, MAKE FIELD MODIFICATION IN LAYOUT AS NEEDED TO PREVENT CONFLICT WITH WORK OF VARIOUS TRADES OR FOR PROPER EXECUTION OF THE WORK. SITE CONDITIONS SHALL GOVERN THE EXACT LOCATION OF ALL ELECTRICAL EQUIPMENT, DEVICES, WIRING, CONDUIT, ETC.

ONE COMPLETE SET OF DRAWINGS AND SPECIFICATIONS SHALL BE KEPT ON FILE AT THE SITE FOR THE SOLE USE OF MARKING AS-BUILT DATA. ALL CHANGES SHALL BE MARKED IN RED ON THESE PRINTS AS WORK PROGRESSES.

PRIOR TO EACH REQUISITION FOR PAYMENT, AS-BUILT PRINTS SHALL BE BROUGHT UP TO DATE FOR ACCEPTANCE BY OWNER'S REPRESENTATIVE.

THE COMPLETED SET OF AS-BUILT PRINTS SHALL BE DELIVERED TO THE ENGINEER PRIOR TO FINAL PAYMENT FOR INCORPORATION ONTO ORIGINALS.

RISERS ARE DIAGRAMMATIC AND DON'T INTEND TO SHOW EVERY BEND REQUIRED FOR THE INSTALLATION.

B. COORDINATION.
CONTRACTOR WILL BE REQUIRED TO FURNISH, INSTALL AND/OR CONNECT WITH APPROPRIATE SERVICES ALL ELECTRICAL ITEMS SHOWN ON ANY OF THE MECHANICAL DRAWINGS WITHOUT ADDITIONAL EXPENSE TO THE CITY. IF DISCREPANCIES, CONFLICTS, INTERFERENCES OR OMISSIONS OCCUR BETWEEN DRAWINGS, NOTIFY IN WRITING THE ARCHITECT/ENGINEER IN AMPLE TIME TO PERMIT REVISIONS BEFORE THE BIDS ARE SUBMITTED.

ELECTRICAL CONTRACTOR SHALL COORDINATE THE REQUIREMENTS OF PLUG AND CHORD TYPE EQUIPMENT WITH MANUFACTURER AND IS REQUIRED TO PROVIDE ELECTRICAL OUTLETS THAT WILL ACCEPT MANUFACTURER'S SUPPLIED PLUGS.

SEE MECHANICAL DRAWINGS FOR ELECTRICAL REQUIREMENTS AND LOCATION OF MECHANICAL EQUIPMENT THE CONTRACTOR SHALL PROVIDE ALL BRANCH CIRCUIT AND CONTROL WIRING AS INDICATED OR REQUIRED AND IN CONFORMANCE WITH N.E.C. ARTICLE 440 AND MANUFACTURER'S RECOMMENDATIONS. ALL PENETRATIONS SHALL BE MADE WEATHERPROOF DURING CONSTRUCTION AND AFTER FINAL INSTALLATION. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL WIRING, AND OVERCURRENT PROTECTION REQUIREMENTS IF EQUIPMENT USED IS DIFFERENT FROM THAT SPECIFIED. CONTRACTOR SHALL MAKE THESE CHANGES AT NO ADDITIONAL COST TO THE CITY

C. TEMPORARY SERVICE.
TEMPORARY ELECTRICAL POWER AND LIGHTING SHALL BE FURNISHED, INSTALLED AND MAINTAINED FOR ALL TRADES REQUIRING SAME. SYSTEM SHALL CONSIST OF DISTRIBUTION SYSTEM, PANELBOARDS, GROUNDING, BRANCH CIRCUITS, SWITCHES, RECEPTACLES, OUTLETS.

D. PERMITS.
THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, STATE SALES TAX, FEDERAL EXCISE TAX, ROYALTIES AND OTHER TAXES OR FEES AS REQUIRED FOR INSTALLATION OF A COMPLETE SYSTEM AS OUTLINED HEREIN AND AS SHOWN ON THE PLANS. THE CONTRACTOR SHALL SECURE ALL NECESSARY LICENSES AND INSURANCE.

E. BASIS FOR BIDS.
EQUIPMENT SPECIFIED SHALL BE ADHERED TO. HOWEVER, THE CITY HAS FINAL DECISION ON THE TYPE AND QUALITY OF EQUIPMENT TO BE SUPPLIED.

WITHIN 30-DAYS AFTER THE CONTRACT HAS BEEN EXECUTED, A FORMAL REQUEST FOR THE SUBSTITUTION OF PRODUCTS IN PLACE OF THOSE SPECIFIED WILL BE CONSIDERED, UNDER THE FOLLOWING CONDITIONS:

THE REQUEST IS ACCOMPANIED BY COMPLETE DATA ON THE PROPOSED SUBSTITUTION SUBSTANTIATING COMPLIANCE WITH THE CONTRACT DOCUMENTS INCLUDING PRODUCT IDENTIFICATION AND DESCRIPTION, PERFORMANCE AND TEST DATA, REFERENCES AND SAMPLES WHERE APPLICABLE, AND AN ITEMIZED COMPARISON OF THE PROPOSED SUBSTITUTION WITH THE PRODUCTS SPECIFIED, WITH DATA RELATING TO CONTRACT TIME SCHEDULE, DESIGN AND AESTHETIC EFFECT WHERE APPLICABLE.

THE REQUEST IS ACCOMPANIED BY ACCURATE COST DATA ON THE PROPOSED SUBSTITUTION IN COMPARISON WITH THE PRODUCT SPECIFIED, WHETHER OR NOT MODIFICATION OF THE CONTRACT SUM IS TO BE A CONSIDERATION. IF REDESIGN BY THE ARCHITECT OR HIS CONSULTANTS IS REQUIRED TO ACCOMMODATE AN ALTERNATE PRODUCT OR SYSTEM, ALL COSTS OF THIS REDESIGN SHALL BE BORNE BY THE CONTRACTOR REQUESTING THE CHANGE. IF ADDITIONAL WORK IS REQUIRED BY OTHER CONTRACTORS TO ACCOMMODATE AN ALTERNATE PRODUCT OR SYSTEM, ALL ADDITIONAL COSTS OF THIS WORK SHALL BE BORNE BY THE CONTRACTOR REQUESTING THE CHANGE.

THE REQUEST SHALL BE ACCEPTED OR REJECTED SOLELY AT THE DISCRETION OF THE OWNER WITH ARCHITECT'S OR ENGINEER'S WRITTEN APPROVAL.

F. CODES & STANDARDS.
THE WORK PERFORMED AS SPECIFIED ON THESE PLANS SHALL COMPLY WITH THE LATEST EDITION AND REQUIREMENTS OF THE FOLLOWING:
APPLICABLE LOCAL CODES AND ORDINANCES, NATIONAL ELECTRICAL CODE, AS AMENDED BY LOCAL CODE, ALL APPLICABLE FEDERAL AND STATE CODES, REGULATIONS AND STATUTES, APPLICABLE ENERGY CODE, OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA), NATIONAL FIRE PROTECTION ASSOCIATION (NFPA), NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA), UNDERWRITERS LABORATORIES, INC. (UL), AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI), AMERICANS WITH DISABILITIES ACT (ADA).

G. MATERIALS & EQUIPMENT.
MATERIAL AND EQUIPMENT SHALL BE NEW, STANDARD, CURRENT PRODUCTS OF MANUFACTURERS REGULARLY ENGAGED IN THE PRODUCTION OF SUCH EQUIPMENT, AND SHALL BE THE MANUFACTURER'S LATEST DESIGN.

ALL MATERIALS SHALL BEAR THE LABEL OF THE UNDERWRITERS LABORATORY FOR THE INTENDED USE OR SHALL BE MATERIALS APPROVED BY THE CODE ENFORCING AUTHORITIES

FOLLOW THE INSTALLATION DIRECTIONS AND RECOMMENDATIONS OF MATERIAL AND EQUIPMENT MANUFACTURERS.

ALL WORK SHALL BE PERFORMED BY WORKERS SKILLED IN THEIR RESPECTIVE TRADES AND ALL MATERIALS AND EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ALL WORK SHALL BE EXECUTED IN A NEAT AND WORKMANLIKE MANNER.

INSTALL EQUIPMENT, INCLUDING SWITCHES, CONTROLLERS, FIXTURES AND TRANSFORMERS SUCH THAT REMOVAL OR REPLACEMENT MAY BE READILY ACCOMPLISHED WITHOUT DAMAGE TO EQUIPMENT OR FASTENERS.

IDENTIFY ALL EQUIPMENT, INCLUDING SAFETY SWITCHES, STARTERS, TRANSFORMERS, PANELS, TERMINAL BOXES, MOTORS, SPECIAL OUTLETS, RELAYS. IDENTIFICATION SHALL CORRESPOND TO THE TERMINOLOGY ON THE CONTRACT DOCUMENTS.

EXAMPLES:
1. AHU #1 STARTER
2. TRANSFORMER T-4
3. EMERGENCY STOP STATION
4. PANEL LP

H. SUPPORTING DEVICES
DEVICES, INCLUDING ANCHORS, FASTENERS, HANGERS AND SUPPORTS, SHALL BE OF A TYPE DESIGNED OR FABRICATED FOR THE PURPOSE, AND SHALL ADEQUATELY AND SAFELY SECURE THE MATERIAL AND EQUIPMENT AND PRESENT A NEAT APPEARANCE. USE DEVICES WITH CORROSION RESISTANT CHARACTERISTICS FOR THE ATMOSPHERIC CONDITIONS IN WHICH THEY ARE INSTALLED.

J. RACEWAYS & BOXES.
ROUTING OF RACEWAYS, INTERCONNECTING OUTLETS AND HOME-RUNS IS UP TO THE ELECTRICAL CONTRACTOR, BUT AFTER COMPLETION OF THE INSTALLATION, HE SHALL SUBMIT TO THE ENGINEER AS-BUILT DRAWINGS OF HIS WORK FOR FUTURE RECORD. DEVICE BOXES SHALL BE INSTALLED FLUSH, CONDUIT SHALL BE CONCEALED UNLESS OTHERWISE INDICATED. ALL CONDUCTORS SHALL BE IN CONDUIT. FOR UNDERGROUND/IN-SLAB LOCATIONS USE GALVANIZED RIGID STEEL (GRS) CONDUIT OR SCHEDULE 40 PVC CONDUIT WITH GROUND WIRE SIZED AS INDICATED OR REQUIRED BY N.E.C., STUB-UPS FROM UNDERGROUND/IN-SLAB PVC CONDUIT SHALL BE GRS. UNDERGROUND GRS SHALL BE COATED WITH TWO COATS OF ASPHALTUM BASE PAINT APPLIED WITHOUT THINNING. ALL SECTIONS OF METALLIC CONDUIT SYSTEM SHALL BE GROUNDED AND ELECTRICALLY CONTINUOUS. USE ELECTRICAL METALLIC TUBING (EMT) FOR INTERIOR CONCEALED WIRING AND ELSEWHERE AS PERMITTED BY THE N.E.C. USE LIQUID TITE FOR FLEXIBLE CONNECTIONS IN ALL DAMP AND WET LOCATIONS. INSTALL A NYLON PULL-CORD IN ALL EMPTY RACEWAYS FOR FUTURE USE. SIZE ALL GUTTERS AND PULL-BOXES PER NEC 370 AND 374. ALL PULL AND JUNCTION BOXES SHALL REMAIN ACCESSIBLE AT ALL TIMES.

ROUTE RACEWAYS TO AVOID CONFLICTS WITH THE WORK OF OTHER TRADES.

ALUMINUM CONDUIT WILL NOT BE PERMITTED.

MINIMUM SIZE OUTLET BOX SHALL BE 4" SQUARE BY 1-1/2" DEEP UNLESS APPROVED OR INDICATED OTHERWISE.

USE CAST METAL OUTLET BOXES WITH GASKETED COVERS FOR ALL EXTERIOR AND FOR ALL DAMP LOCATIONS.

K. CONDUCTORS.
UNLESS OTHERWISE INDICATED, ALL CONDUCTORS ARE #12 IN 1/2" CONDUIT. ALL CONDUCTORS SHALL BE COPPER. ACCEPTABLE INSULATION TYPES ARE TW, THW, THHN, THWN, AND XHHW, WITH USES AS RESTRICTED BY THE NEC. AMPACITIES OF CONDUCTORS IS TO BE BASED ON ARTICLE 310 OF THE NEC WITH UL LIMITATIONS: 60 DEG. RATING FOR SIZES #14 THROUGH #1; 75 DEG. FOR #1/0 AND LARGER. CABLES 3/0 AND LARGER SHALL BE TERMINATED WITH PRESSURE CRIMP CONNECTORS.

FOR 20 AMP BRANCH CIRCUITS GREATER THAN 100 FT. IN LENGTH, ONE WAY, UP TO 200 FT. USE #10 WIRE; OVER 200 FT., USE #8 WIRE.
INCREASE CONDUIT SIZE AS REQUIRED FOR THE LARGER CONDUCTORS. THIS SUPERSEDES WIRE SIZES CALLED FOR ON THE DRAWINGS.

CONDUCTORS SIZE #10 AND SMALLER SHALL HAVE INSULATION COLORED FOR PHASES A, B, C, AND N RESPECTIVELY AS FOLLOWS FOR 3 PHASE SYSTEM:

120/240 VOLTS: BLACK, RED, BLUE AND WHITE

ALL CONDUCTORS OF THE SAME PHASE IN PARALLELED FEEDERS OR SERVICES SHALL BE SOLIDLY CONNECTED TOGETHER AT THEIR TERMINATION IN A WIREWAY OR SPLICE BOX. MAKE CONDUCTOR LENGTH FOR PARALLEL FEEDERS IDENTICAL.

THE PHASE DESIGNATION OF ALL SECONDARY CONDUCTORS SHALL BE THE SAME AND SHALL BE INDICATED IN OR ON ALL 3 PHASE OUTLETS, TRANSFORMERS, PANELBOARDS, AND DISCONNECT SWITCHES, AND THEY SHALL BE CONNECTED WITH UNIFORM PHASE SEQUENCE.

MAINTAIN A, B, C PHASE RELATION LEFT TO RIGHT WHEN VIEWED FROM THE FRONT.

TAG ALL FEEDER CONDUCTORS AND IDENTIFY MAJOR CONDUITS IN OR AT WIREWAYS, PANELS, PULL BOXES, SWITCHBOARDS, MOTOR CONTROLLERS, CABINETS AND SIMILAR ITEMS TO ASSIST IN FUTURE CIRCUIT TRACING. CONDUCTOR TAGS SHALL BE NONCONDUCTIVE. IDENTIFICATION SHALL CORRESPOND TO THE CONTRACT DOCUMENTS.

L. GROUNDING.

GROUNDING CONTACTS OF RECEPTACLES SHALL BE CONNECTED TO A SOLIDLY GROUNDED CONDUIT SYSTEM OR TO A SYSTEM GROUNDING CONDUCTOR (NOT THE SYSTEM NEUTRAL) BY A STRANDED COPPER WIRE NOT SMALLER THAN #12 AWG OR SHALL BE GROUNDED IN SOME OTHER APPROVED MANNER; THE RESISTANCE BETWEEN THE CONTACTS AND SERVICE GROUND SHALL NOT EXCEED 25 OHMS.

ALL CIRCUITS SHALL HAVE AN EQUIPMENT GROUNDING CONDUCTOR.

M. SAFETY SWITCHES/CIRCUIT BREAKER DISCONNECTS.
SAFETY SWITCHES
SHALL BE HEAVY DUTY TYPE KD, FUSIBLE, OR NON-FUSIBLE, WITH POLES, AMPERE, VOLTAGE AND HORSEPOWER RATINGS INDICATED AND SHALL HAVE SOLID NEUTRALS. LUGS SHALL BE U.L. LISTED FOR COPPER-ALUMINUM.

ENCLOSURES FOR SAFETY SWITCHES SHALL BE NEMA-1, GENERAL PURPOSE, EXCEPT THAT SWITCHES INDICATED (WP) WEATHERPROOF, SHALL BE NEMA-3R ENCLOSURES WITH SUITABLE GASKETS AND BONDING MEANS.

SWITCHES AND DISCONNECT SHALL BE AS MANUFACTURED BY SQUARE "D", OR APPROVED EQUAL.

CIRCUIT BREAKER DISCONNECTS MAY BE USED IN LIEU OF SAFETY SWITCHES PROVIDING THEY COMPLY WITH THE SAFETY SWITCH REQUIREMENTS AND ARE SUPPLIED WITHIN THEIR RATINGS AND A SCHEDULE IS SUBMITTED FOR APPROVAL.

O. FUSES.
FUSES SHALL CONFORM TO NEMA AND U.L. AND SHALL BE OF THE VOLTAGE, CLASS AND AMPERE RATING INDICATED.

FUSES FOR MAIN DISCONNECT DEVICES SHALL BE HIGH INTERRUPTING CAPACITY, TIME DELAY, OR TYPE SUITABLE FOR DEVICE. PROVIDE ONE SPARE SET MOUNTED INSIDE THE CUBICLE, FOR EACH MAIN DEVICE.

FUSES FOR MOTORS AND ENCLOSED SWITCHES, NEMA CLASS K-5, UNLESS INDICATED OTHERWISE, DUAL ELEMENT, TIME DELAY. BUSSMAN - FUSETRON, FRN AND FRS, OR EQUAL. PROVIDE ONE SPARE SET MOUNTED INSIDE THE CUBICLE, FOR EACH MAIN DEVICE.

OTHER FUSES SHALL BE AS INDICATED.

P. WIRING DEVICES.

DEVICES SHALL BE AS SPECIFIED IN CONTRACT DOCUMENTS.

ALL DEDICATED DATA EQUIPMENT BRANCH CIRCUITS SHALL FEED THIS TYPE OF EQUIPMENT ONLY AND SHALL CARRY A DEDICATED GROUNDING CONDUCTOR TO THE PANEL TO BE CONNECTED TO THE GROUNDING SYSTEM.

R. TELEPHONE/DATA SYSTEM.
THIS SECTION INCLUDES PROVIDING A COMPLETE EMPTY CONDUIT SYSTEM, INCLUDING CABINETS, BACKBOARDS, OUTLETS AND PLATES. WIRING AND INSTRUMENTS WILL BE BY THE TELEPHONE/DATA COMPANY SELECTED BY THE MINIMUM SIZE OUTLET BOX SHALL BE 4 INCHES SQUARE BY 1-1/2 INCH DEEP.

PROVIDE BUSHINGS ON THE ENDS OF CONDUITS.

CONFORM TO TELEPHONE COMPANY REQUIREMENTS.

PROVIDE A #6 GROUND TO ALL BACKBOARDS FROM NEAREST COLD WATER PIPES.

PROVIDE PULL WIRES #14 TW OR JET LINE #232 POLYOLFIN 200 LB. TEST CORD IN ALL EMPTY CONDUITS.

CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE OWNER'S TELEPHONE/DATA COMPANY OF REQUIRED SERVICE DATE AT LEAST FIVE WEEKS IN ADVANCE, AND SHALL HAVE ALL TELEPHONE FACILITIES COMPLETE BY THAT TIME.

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DRAWN BY:
REVIEWED BY:
SEAL:

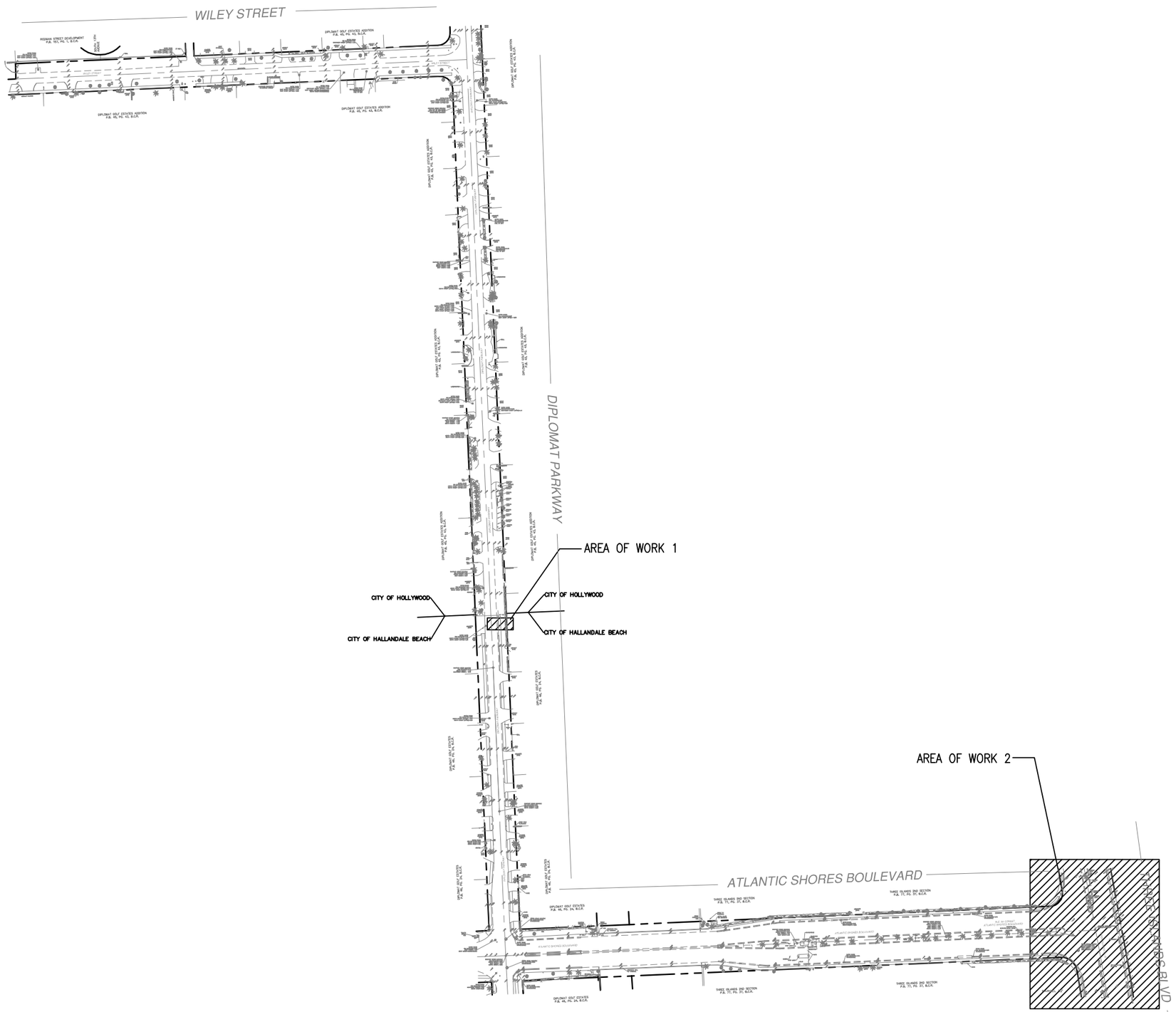
ROBERT B. CAINE, P.E.
FL LICENSE No. 37637

SHEET TITLE:

ELECTRICAL SPECIFICATIONS

SHEET NO. E-4

100% PHASE SUBMITTAL



1 M-0 OVERALL SITE KEY PLAN
SCALE: NTS

N

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SHEET TITLE:

MECHANICAL SITE KEY PLAN

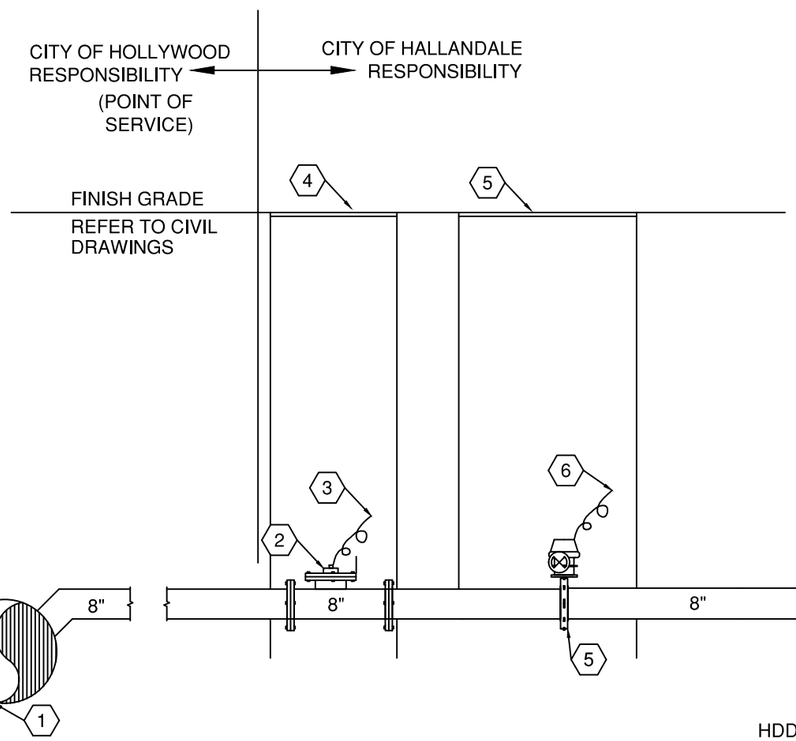
SHEET NO.

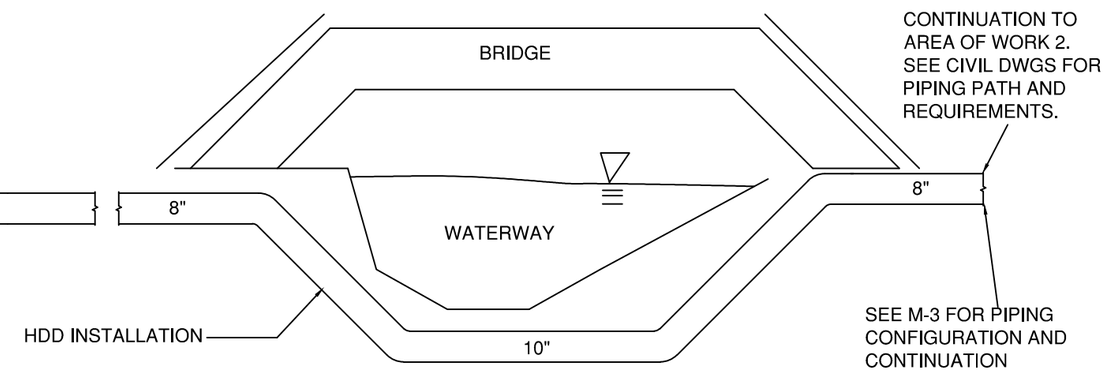
M-0

SHEET 1 OF 10

100% PHASE SUBMITTAL

PHASE 1

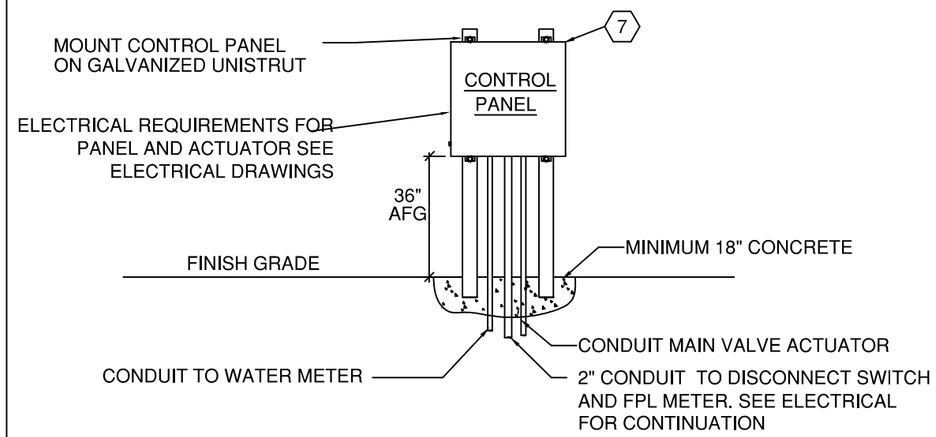




ELECTRICAL CONTROL PANEL

CONTROL PANEL TO INCLUDE THE FOLLOWING FEATURES (MINIMUM):

NEMA 4 STAINLESS STEEL ENCLOSURE
120//60 CONTROL CIRCUIT BREAKERS
U.L. APPROVED AND LABELED PER SECTION 508A



ELECTRICAL CONTROL PANEL TO BE INSTALLED MAXIMUM 75' FROM FLOWMETER

SYMBOLS LEGEND: ABBREVIATIONS

AFG ABOVE FINISHED GRADE

#	DESCRIPTION
1	24" RECLAIM WATER LINE FROM THE CITY OF HOLLYWOOD AT WILEY STREET.
2	ABB ELECTRO-MAGNETIC FLOW METER W/ REMOTE MOUNTING DIGITAL KIT. PROVIDE 4-20MA, PULSE & CONTACT CLOSURE OPTIONS.
3	ABB REMOTE MOUNTING KIT W/ ARMORED CABLE CONNECTED TO SIEMENS CONTROL PANEL MAX DISTANCE 75'.
4	GAGE PLATE ACCESS PANEL ONE FOR ACTUATOR, VALVE AND METER.
5	ASAHI/AMERICA SERIES 10 ELECTRIC ACTUATOR ON TYPE 57 BUTTERFLY VALVE CONNECT TO SIEMENS PANEL.
6	ACTUATOR CONNECT TO SIEMENS PANEL TO OPEN AND CLOSE BASED UPON 20,000 GALLON LIMIT PER DAY FOR PHASE 1.
	AND TO BE ADJUSTED ON FUTURE PHASE 2
7	UNITRONICS V130-33-TR20 ON BOARD I/O LOGIC CONTROLLER IN A NEMA 4 STAINLESS STEEL PANEL.

SYSTEM INLET CONTROL – AREA OF WORK 1

N.T.S

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SHEET TITLE:

MECHANICAL AREA OF WORK 1

SHEET NO.

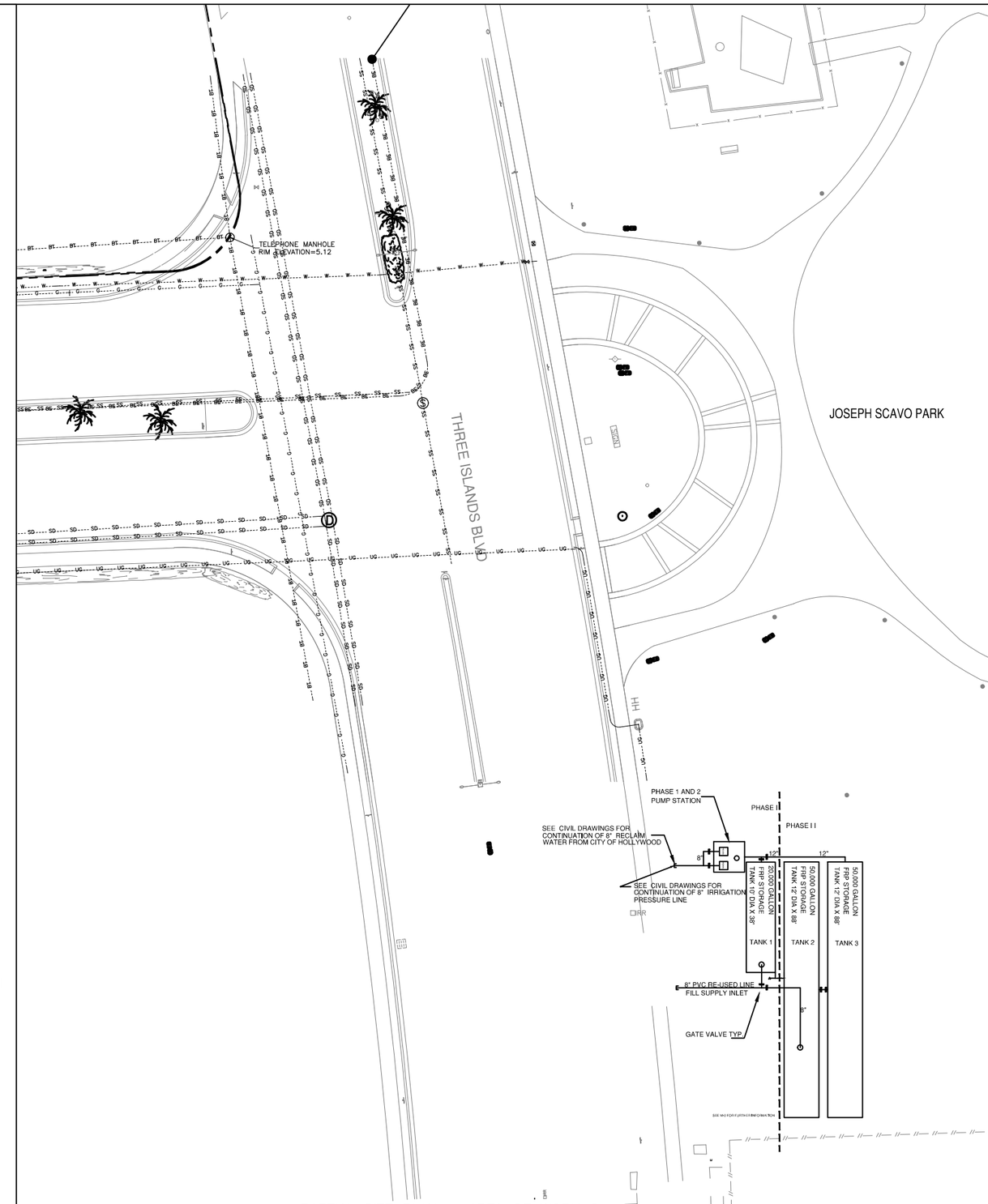
M-1

SHEET 2 OF 10

100% PHASE SUBMITTAL

MECHANICAL NOTES AND SPECIFICATION:

1. ALL WORKMANSHIP AND MATERIAL SHALL BE IN STRICT ACCORDANCE WITH APPLICABLE LOCAL CODES, RULES AND ORDINANCES.
2. CONTRACTOR SHALL VISIT THE JOB SITE AND THOROUGHLY FAMILIARIZE HIMSELF WITH ALL EXISTING CONDITIONS.
3. ALL MATERIAL SHALL BE NEW.
4. ALL WORK SHALL BE PERFORMED BY A LICENSED PLUMBING CONTRACTOR IN A FIRST CLASS WORKMANLIKE MANNER. THE COMPLETED SYSTEM SHALL BE FULLY OPERATIVE.
5. ALL EXCAVATION AND BACKFILL AS REQUIRED FOR THIS PHASE OF CONSTRUCTION SHALL BE A PART OF THIS CONTRACT.
6. REQUIRED INSURANCE SHALL BE PROVIDED BY THE CONTRACTOR FOR PROTECTION AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE FOR THE DURATION OF WORK.
7. CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, FEES, INSPECTION AND TESTS.
8. DRAWINGS ARE DIAGRAMMATIC. DO NOT SCALE FOR THE EXACT LOCATION OF FIXTURES, PIPING, EQUIPMENT, ETC.
9. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID INTERFERENCE WITH THE PROGRESS OF CONSTRUCTION. REPORT ANY DISCREPANCY TO ENGINEER/ARCHITECT PRIOR TO BEGINING CONSTRUCTION.
10. VERIFY LOCATION, SIZE, INVERTS OF ALL EXISTING UTILITIES PRIOR TO BEGINING CONSTRUCTION. ADVICE ENGINEER OF ANY DISCREPANCIES.
11. RECLAIM WATER UNDERGROUND PIPING SHALL BE PVC AND BE PURPLE IN COLOR. RECLAIM ABOVE GROUND SHALL BE PVC PIPE AND BE PURPLE IN COLOR.
12. CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FREE FROM DEFECTS FOR A PERIOD OF NOT LESS THAN ONE (1) YEAR FROM DATE OF ACCEPTANCE BU OWNER. CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ADDITIONAL CHARGE AND SHALL INCLUDE REPLACEMENT OR REPAIR OF ANY OTHER PHASE OF THE INSTALLATION WHICH MAY HAVE BEEN DAMAGED.
13. All UNDERGROUND VALVES SHALL BE PROVIDED WITH ACCESSIBLE OPENING.
14. CONTRACTOR SHALL KEEP A SET OF AS BUILTS DWG. ON THE JOB SITE AT ALL TIMES AND DELIVER A SET OF UP TO DATE AS-BUILTS TO THE ENGINEER AND OWNER AT THE COMPLETION OF THE PROJECT.
15. CONTRACTOR TO PROVIDE FLEX CONNECTIONS BETWEEN ALL FIBERGLASS AND PVC CONNECTIONS.
16. ACCESS FOR ALL GATES VALVES TO BE PROVIDED TO ALLOW FOR ISOLATION OF TANKS FOR MAINTENANCE OR REPAIR. GATE VALVES TO BE INSTALLED WITHIN CLOSE PROXIMITY OF EACH OTHER.
17. 10HP PUMPS USED IN PHASE ONE WILL BE REMOVED AND UTILIZING THE EXISTING OPENINGS WILL BE REPLACED WITH THE 60HP PUMPS UNDER PHASE 2.
18. HIGH WATER ALARMS ARE TO PLACE AT 95% OF TANK. IF ALARM IS ACTIVATED AN AUDIBLE ALARM WITH A LIGHT WILL ENUNCIATE/ILLUMINATE AND CONTROL VALVE WILL BE SIGNALED TO CLOSE. A LOW LEVEL ALARM IS TO BE PLACED AT 15% 0F TANK. IF THE ALARM IS ACTIVATED THE AUDIBLE AND ILLUMINATED ALARM WILL ENGAGE AND A SIGNAL WILL BE SENT TO OPEN THE CONTROL VALVE.
19. FOR PIPE LAYOUT AND SYSTEM CONTROL VALVES REFER TO CIVIL DRAWINGS.
20. SHEET M-3 DEPICTS GATE VALVES THAT WILL BE INSTALLED DURING PHASE 2 ON THE PHASE 1 SIDE, THEY WILL BE CAPPED FOR PHASE 1. SEE NOTE CAPPED FOR PHASE 1.
20. 8" INLET PIPE FOR TANKS ARE TO BE INSTALLED 2/3 DISTANCE FROM TANK EDGE OR AS PER MANUFACTURER'S RECOMMENDATIONS.
21. UNSTABLE SOIL CONSISTS OF ANY OF THE FOLLOWING: MUCK, BOG, PEAT, SWAMP, QUICK SAND, FLOWING WATER, LANDFILL TYPE AREAS OR ANY OTHER SITUATIONS WHERE THE SOIL IS INHERENTLY UNSTABLE.
21. HEADER OUTLET PIPE TO BE SLOPED AT 1/8" PER FOOT. USING PUMP STATION INVERT AS A DATUM CONTRACTOR TO CALCULATE TANK PIPE OUT LET HEIGHT. PHASE 2 HEADER CONTINUATION IS TO MAINTAIN THE 1/8" PER FOOT SLOPE. PHASE 2 ELEVATION. TRANSFER PIPE (BETWEEN TANK 2 AND 3) INVERT IS TO MATCH PHASE 2, TANK 3, OUTLET INVERT HEIGHT.



PARTIAL SITE PLAN – AREA OF WORK 2

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DATE ISSUED: JANUARY 11, 2016
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REVIEWED BY:
SEAL:

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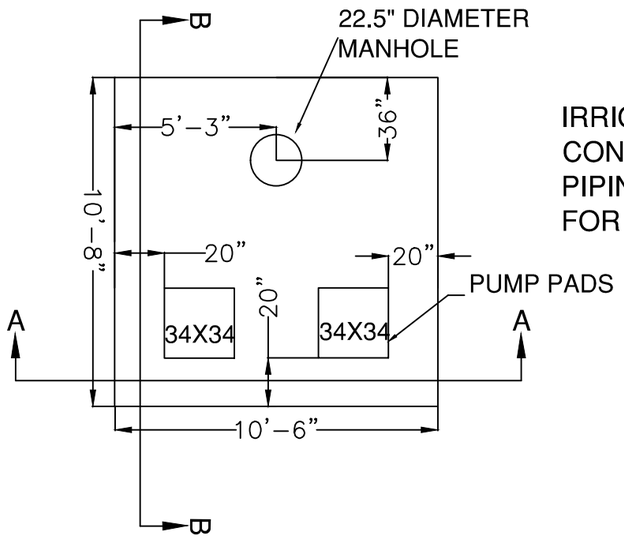
FL LICENSE No. 37637

SHEET TITLE:

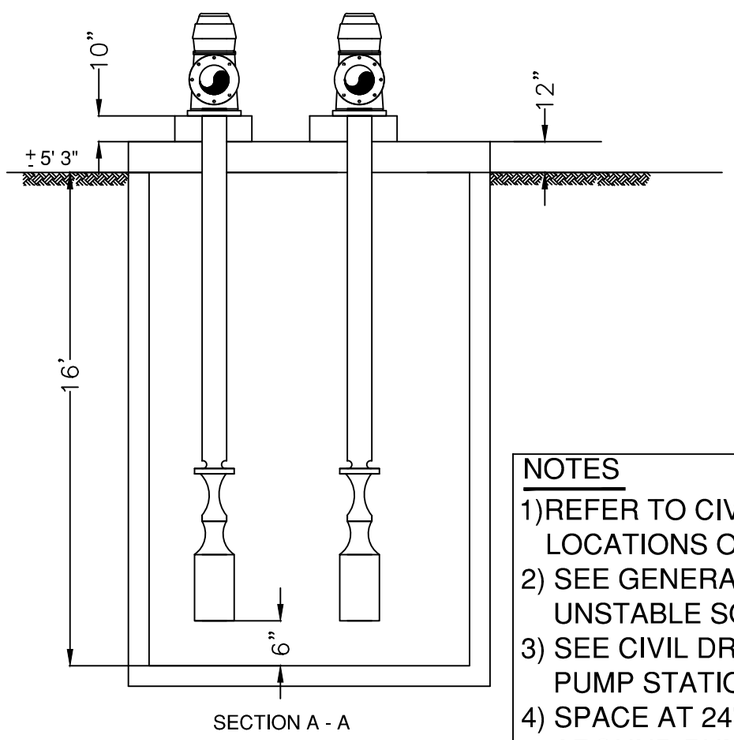
MECHANICAL
AREA OF
WORK 2
AND NOTES

SHEET NO.
M-2
SHEET 3 OF 10

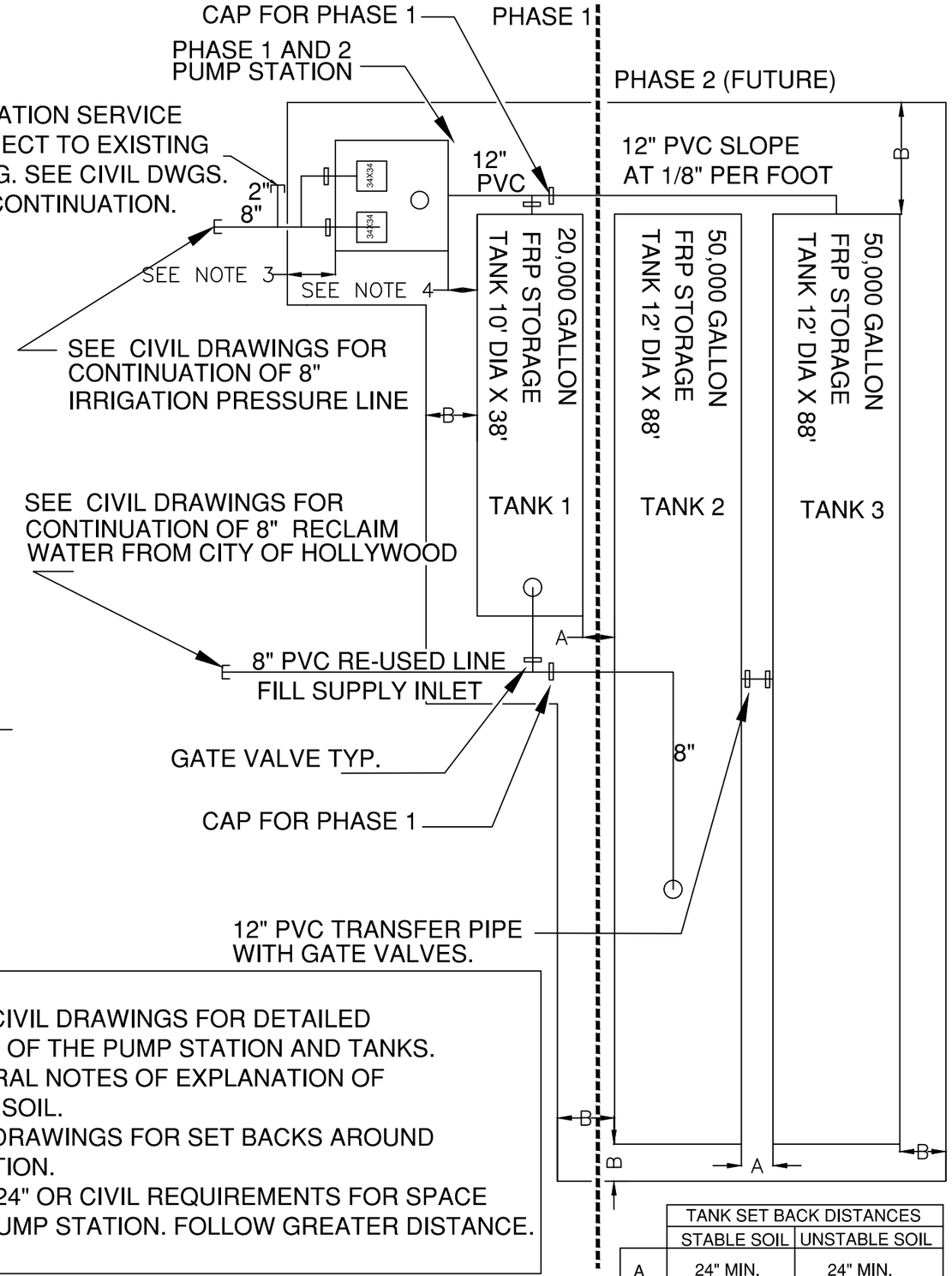
100% PHASE SUBMITTAL



PUMP STATION – OVERVIEW
N.T.S



PUMP STATION – SECTION A–A
N.T.S



PUMP STATION – OVERVIEW AND PIPE LAYOUT
N.T.S

NOTES

1) REFER TO CIVIL DRAWINGS FOR DETAILED LOCATIONS OF THE PUMP STATION AND TANKS.
2) SEE GENERAL NOTES OF EXPLANATION OF UNSTABLE SOIL.
3) SEE CIVIL DRAWINGS FOR SET BACKS AROUND PUMP STATION.
4) SPACE AT 24" OR CIVIL REQUIREMENTS FOR SPACE AROUND PUMP STATION. FOLLOW GREATER DISTANCE.

	TANK SET BACK DISTANCES	
	STABLE SOIL	UNSTABLE SOIL
A	24" MIN.	24" MIN.
B	24" MIN.	1/2 TANK DIA. MIN

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REVISIONS:

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DESIGNED BY:
DRAWN BY:
REVIEWED BY:
SEAL:

ROBERT B. CAINE, P.E.
FL LICENSE No. 37637

SHEET TITLE:
MECHANICAL
AREA OF
WORK 2
ENLARGED

SHEET NO.
M-3
SHEET 4 OF 10

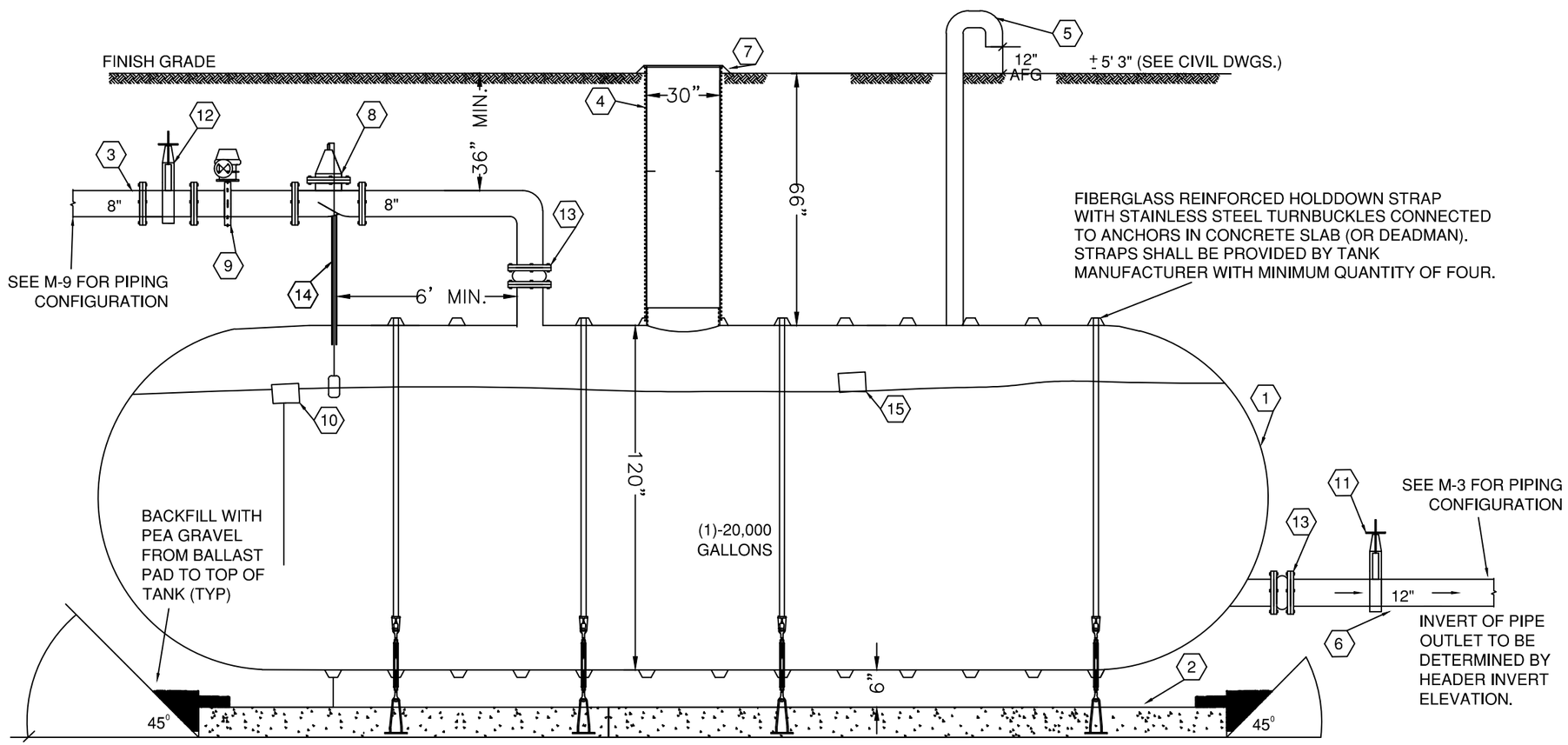
100% PHASE SUBMITTAL

PHASE 1

#	DESCRIPTION
1	FLOWTITE 10'-0" ROUND X 38'-0" LONG 20,000 GALLON SINGLE WALL FRP TANK.
2	PROVIDE CONCRETE PAD AS PER MANUFACTURER'S RECOMMENDATIONS.
3	8" C900 PVC INLET PIPE. SEE SHEET M-3 FOR PIPE CONFIGURATION.
4	30" FRP OPENING W/ GAUGE PLATES.
5	4" VENT W/ GAUGE PLATE AND STAINLESS STEEL INSECT SCREEN.
6	12" FULL BOTTOM DRAIN TO PUMP HEADER.
7	30" RIBBED PVC RISER W/ FRP LID (WATER TIGHT).
8	CLV-VAL 8" FLOAT VALVE MODEL 124-01.
9	ASAHI/AMERICA 8" SERIES 10 ELECTRIC ACTUATOR ON TYPE 57 BUTTERFLY VALVE CONNECTED TO WATER SENSOR.
10	WATER LEVEL SENSOR TIED TO BUTTERFLY VALVE (SEE NOTE 9).
11	12" GATE VALVE INSTALLED FOR ISOLATION. INSTALL BEFORE PUMP HEADER. ACCESS TO BE PROVIDED.
12	8" GATE VALVE. ACCESS TO BE PROVIDED. SEE M-9. SEE SHEET M-3 FOR LOCATIONS.
13	FLEX CONNECTOR FOR FIBERGLASS TO PVC CONNECTION.
14	SLEEVING TO PROTECT FLOAT ROD.
15	DIGITAL HIGH WATER LEVEL SENSOR WIRE TO PUMP CONTROL PANEL . AMETEK 6013-W6 SUSPENSION ELECTRODE.

SYMBOLS LEGEND: ABBREVIATIONS

FRP	FIBERGLASS-REINFORCED PLASTIC
AFG	ABOVE FINISHED GRADE
PSI	POUND PER SQUARE INCH
OC	ON CENTER



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FL LICENSE No. 37637

SHEET TITLE:

MECHANICAL PHASE 1 FIBERGLASS TANK DETAIL

SHEET NO.
M-4
SHEET 5 OF 10

100% PHASE SUBMITTAL

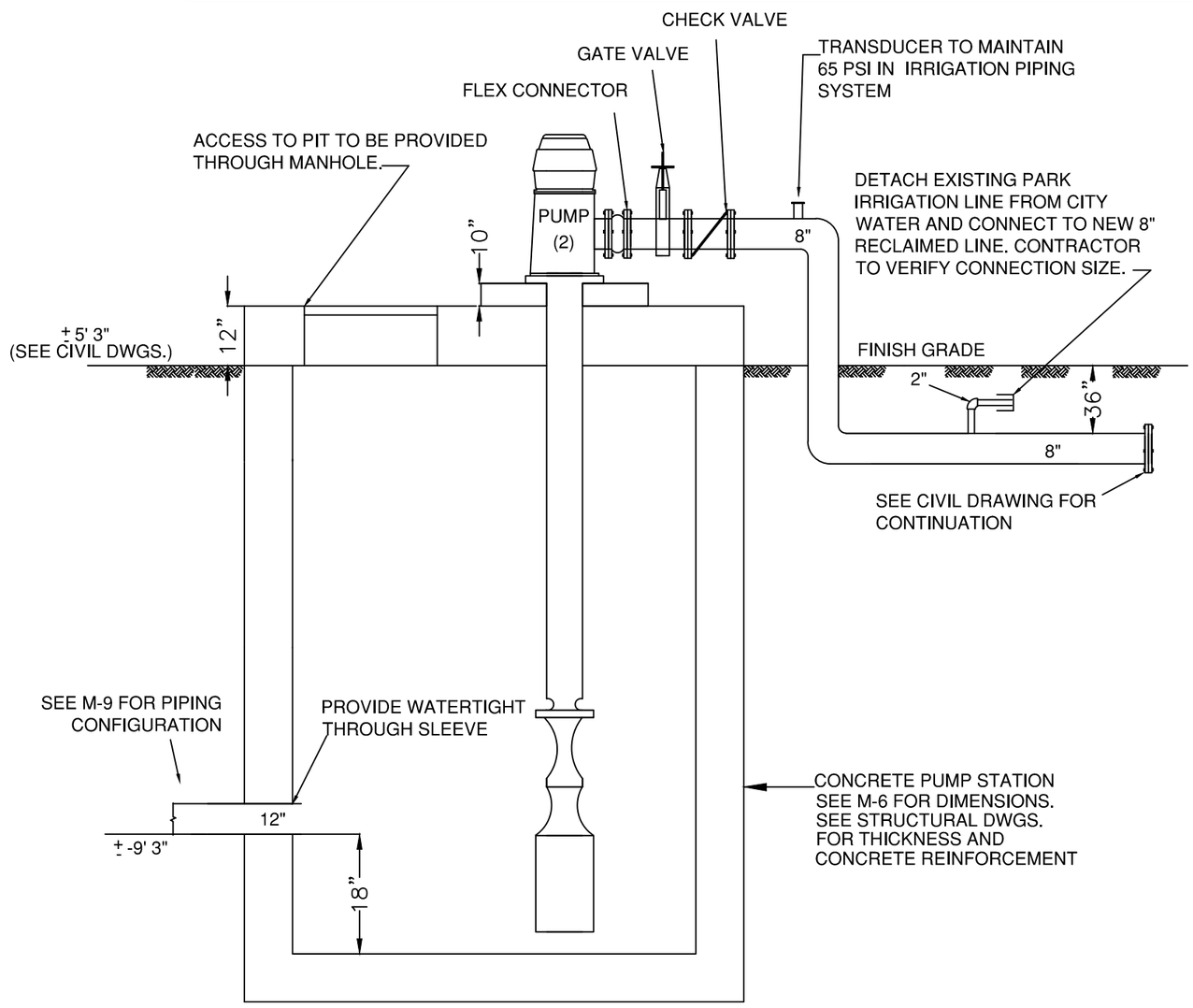
PHASE 1&2

PUMP SCHEDULE

	MANUFACTURER	SIZE	HP	VOLTAGE	FLOW GPM	PRESSURE PSI	NUMBER OF PUMP
PHASE 1	AMERICAN-MARSH PUMPS	8LC	10	460/3/60	144	65	2
PHASE 2	AMERICAN-MARSH PUMPS	13MC	60	460/3/60	1,300	65	2

SYMBOLS LEGEND: ABBREVIATIONS

FRP	FIBERGLASS-REINFORCED PLASTIC
AFG	ABOVE FINISHED GRADE
PSI	POUND PER SQUARE INCH
	ON CENTER

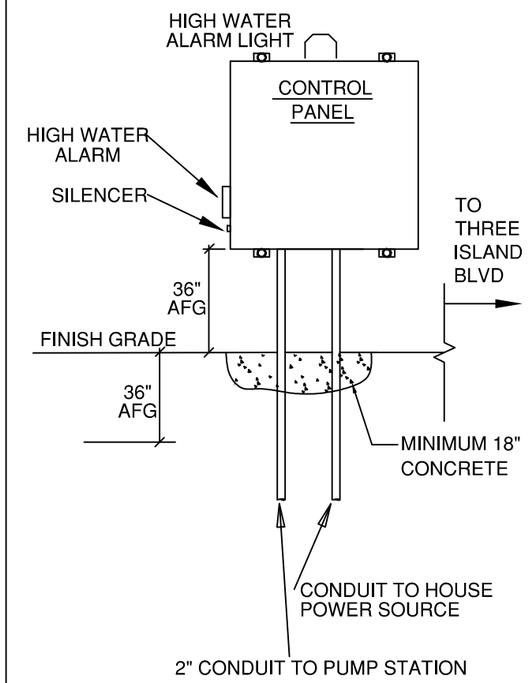


PUMP STATION – SECTION B–B
N.T.S

ELECTRICAL CONTROL PANEL

CONTROL PANEL MINIMUM FEATURES:

NEMA 4 STAINLESS STEEL ENCLOSURE
480/3/60 MOTOR & CONTROL CIRCUIT BREAKERS
PUMP H-O-A CONTROLS
HIGH WATER ALARM LIGHT, BUZZER, SILENCER
ELAPSED TIME METER
U.L. APPROVED AND LABELED PER SECTION 508A
REUSE 2 VFD'S FROM PHASE 1 PUMPS
FOR PHASE 2. SIZE VFD FOR RANGE OF 5 AND 65HP



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FL LICENSE No. 37637

SHEET TITLE:

MECHANICAL PUMP STATION DETAIL

SHEET NO. M-5

SHEET 6 OF 10

100% PHASE SUBMITTAL

FUTURE PHASE 2

#	DESCRIPTION
1	FLOWTITE 12'-0" ROUND X 88'-0" LONG 50,000 GALLON SINGLE WALL FRP TANK.
2	PROVIDE CONCRETE PAD AS PER MANUFACTURER'S RECOMMENDATIONS.
3	8" C900 PVC INLET PIPE. INSTALL ON TANK 2 ONLY. SEE M-3 FOR CONFIGURATION.
4	30" FRP OPENING W/ GAUGE PLATES.
5	4" VENT W/ GAUGE PLATE AND STAINLESS STEEL INSECT SCREEN.
6	12" FULL BOTTOM DRAIN TO PUMP HEADER. INSTALL ON TANK 3 ONLY. SEE M-3.
7	30" RIBBED PVC RISER W/ FRP LID (WATER TIGHT).
8	CLV-VAL 8" FLOAT VALVE MODEL 124-01.
9	ASAHI/AMERICA 8" SERIES 10 ELECTRIC ACTUATOR ON TYPE 57 BUTTERFLY VALVE CONNECTED TO WATER SENSOR.
10	WATER LEVEL SENSOR TIED TO BUTTERFLY VALVE (SEE NOTE 9).
11	12" GATE VALVE INSTALLED FOR ISOLATION. INSTALL BEFORE PUMP HEADER. ACCESS TO BE PROVIDED.
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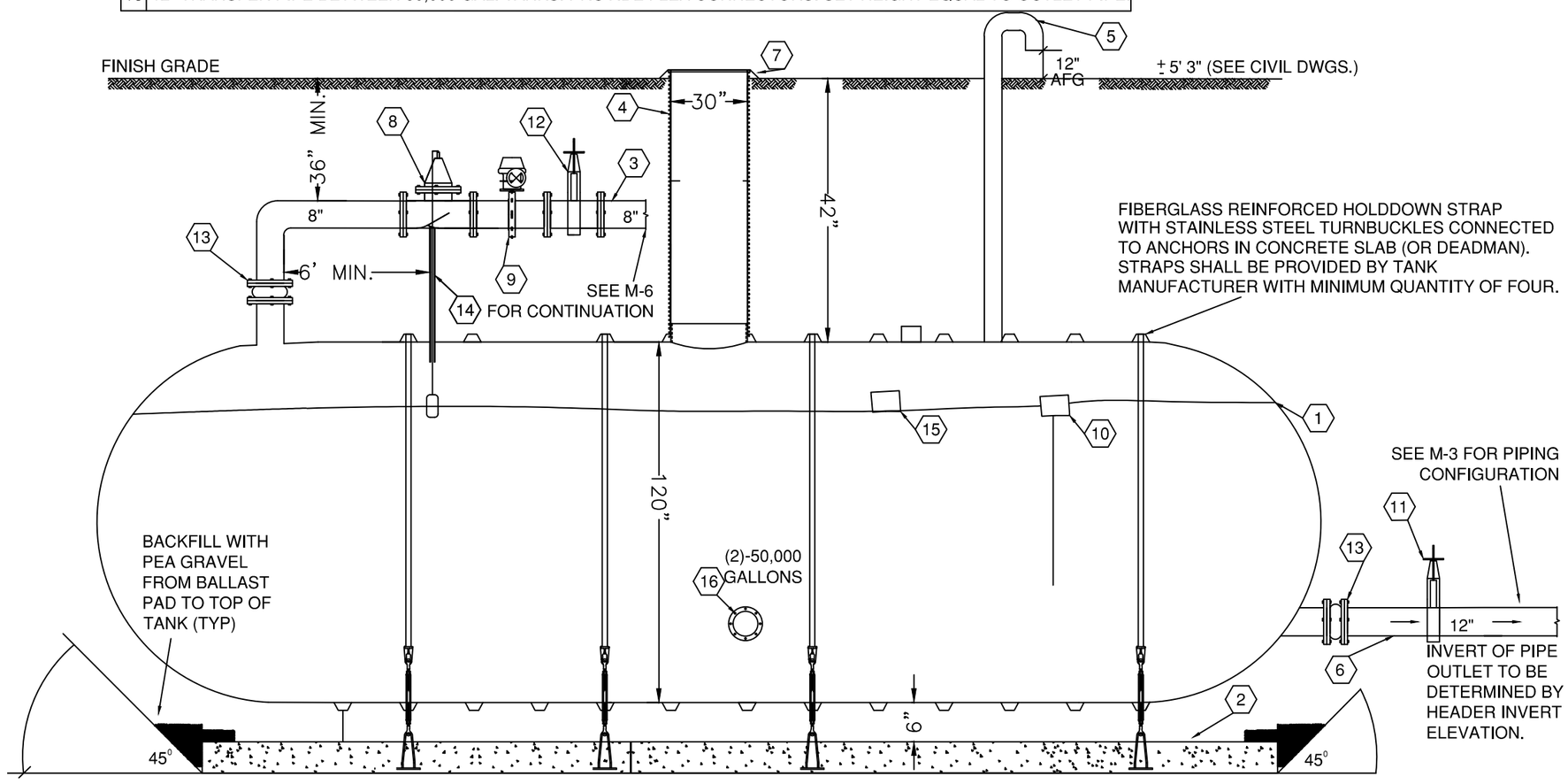
14	SLEEVING TO PROTECT FLOAT ROD.
15	DIGITAL HIGH WATER LEVEL SENSOR WIRE TO PUMP CONTROL PANEL . AMETEK 6013-W6 SUSPENSION ELECTRODE.
16	12" TRANSFER PIPE BETWEEN 50,000 GAL. TANKS. PROVIDE FLEX CONNECTORS. SET HEIGHT EQUAL TO OUTLET PIPE.

SYMBOLS LEGEND: ABBREVIATIONS

FRP	FIBERGLASS-REINFORCED PLASTIC
AFG	ABOVE FINISHED GRADE
PSI	POUND PER SQUARE INCH
OC	ON CENTER



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SHEET TITLE:
MECHANICAL PHASE 2 FIBERGLASS TANK DETAIL

SHEET NO.
M-6
SHEET 7 OF 10

100% PHASE SUBMITTAL

TABLE 1: WATER METER FLOW RATE

METER SIZES	ESTIMATED FLOW
3/4"	15 GPM
1"	28 GPM
1-1/4"	40 GPM
1-1/2"	60 GPM
2"	100 GPM

WATER METER MAXIMUM FLOW BASE
ON MAXIMUM VELOCITY OF 8 FEET/SEC

TABLE 2: PHASE 1 WATER DEMAND

	PARCEL COUNT	SIZES	#METER (1)	DEMAND FLOW (2) #METERS X GPM X DIVERSITY
SCAVO PARK	2	1-1/2"	2	2X60X0.50 60 GPM
APT./CONDO	8	1-1/2"	6	6X60X0.50 180 GPM
MEDIAN	3	1-1/4"	120 GPM	3X40X0.50 60 GPM
TOTAL				300 GPM

(1) BASED UPON 75% RESIDENCE AND 100% CITY PARTICIPATION

(2) BASED UPON 50% DIVERSITY OF SPRINKLER RUNNING AT SAME TIME.

TABLE 3: PHASE 1 WATER DEMAND

	PARCEL COUNT	SIZES	#METER (1)	DEMAND FLOW (2) #METERS X GPM X DIVERSITY
OFFICE BUILDING	3	1-1/4"	2	2X40X0.65= 80 GPM
APT./CONDO	60	1-1/2"	45	45X60X0.65= 1,755 GPM
MEDIAN	20	1-1/4"	20	20X40X0.65= 520 GPM
TOTAL				2,327 GPM

(1) BASED UPON 75% RESIDENCE AND 100% CITY PARTICIPATION

(2) BASE ON 65% DIVERSITY OF SPRINKLER RUNNING AT SAME TIME.

TABLE 4: PUMP SELECTION

PHASE	FLOW	PRESSURE
I	300 GPM	65 PSI
II	2,600 GPM	65 PSI

PUMPS DEMAND FLOW SIZING ASSUMPTION

PUMP DEMAND FLOW WAS DETERMINED BY
THE ASSUMED CRITERIA LISTED BELLOW:

1. EACH WATER METER HAVE THE MAXIMUM FLOW LISTED ON TABLE 1.
2. THE TOTAL PARCEL IN THE CITY AS LISTED ON TABLE 2 FOR PHASE 1 AND TABLE 3 FOR PHASE 2. THIS PARCEL ARE DIVIDED INTO PARK, MEDIAN, OFFICE BUILDING, AND APARTMENT/CONDOMINUM
3. 75% OF THE PRIVATE PARCEL AND 100% OF THE CITY PARCEL WILL PARTICIPATE IN THE RECLAIM WATER PROGRAM.
4. IT IS ASSUMED THAT EACH PARCEL WILL REQUIRE A METER SIZED BASE ON ITS USAGE.
   PARK 1-1/2" METER SIZE
   MEDIAN 1-1/4" METER SIZE
   APARMENT/CONDO 1-1/2" METER SIZE
   OFFICE BUILDING 1-1/4" METER SIZE
5. MIXIMUM OF THE 50% PARTICIPANT SPRINKLER SYSTEM WILL ACTIVATE AT THE SAME TIME.

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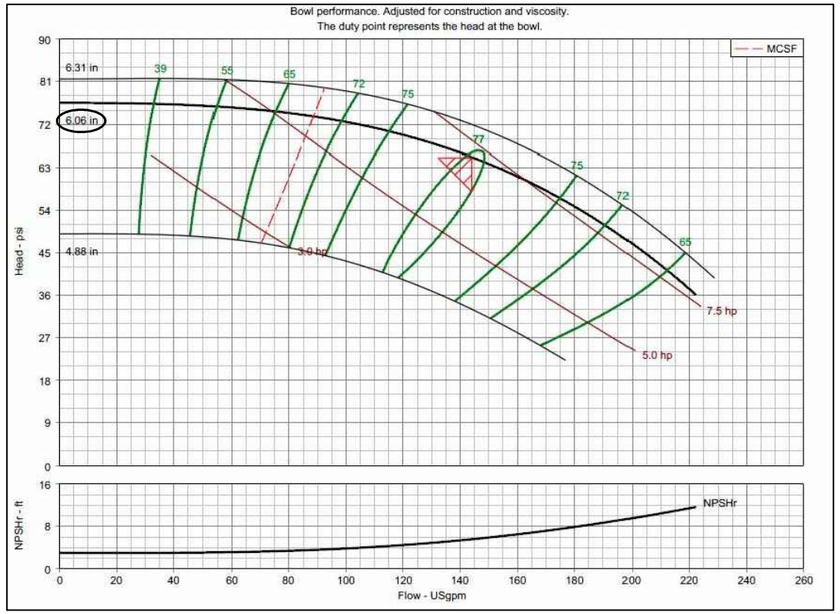
SHEET TITLE:

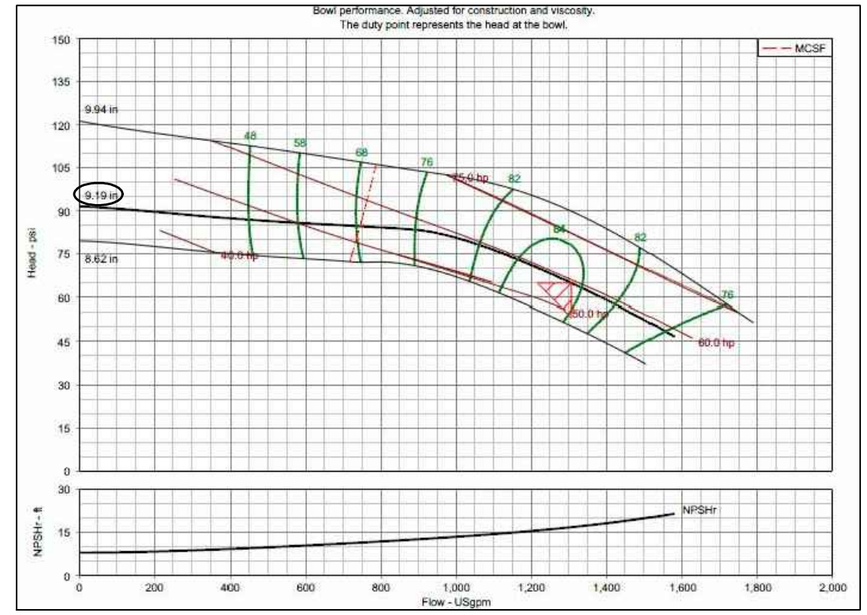
MECHANICAL
CALCULATION

SHEET NO.
M-7
SHEET 8 OF 10

100% PHASE SUBMITTAL



PHASE 1 PUMP CURVE



PHASE 2 PUMP CURVE

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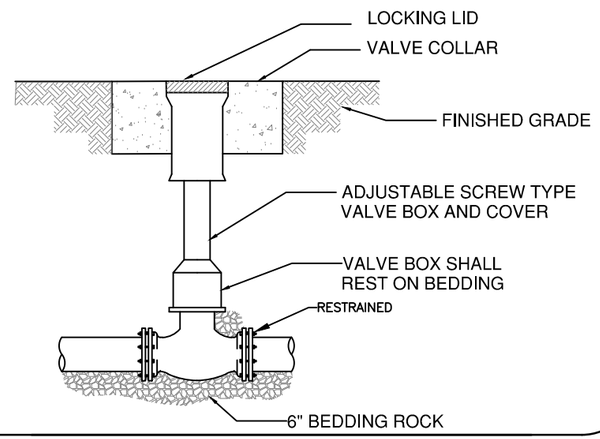
SHEET TITLE:

MECHANICAL
PUMP CURVES

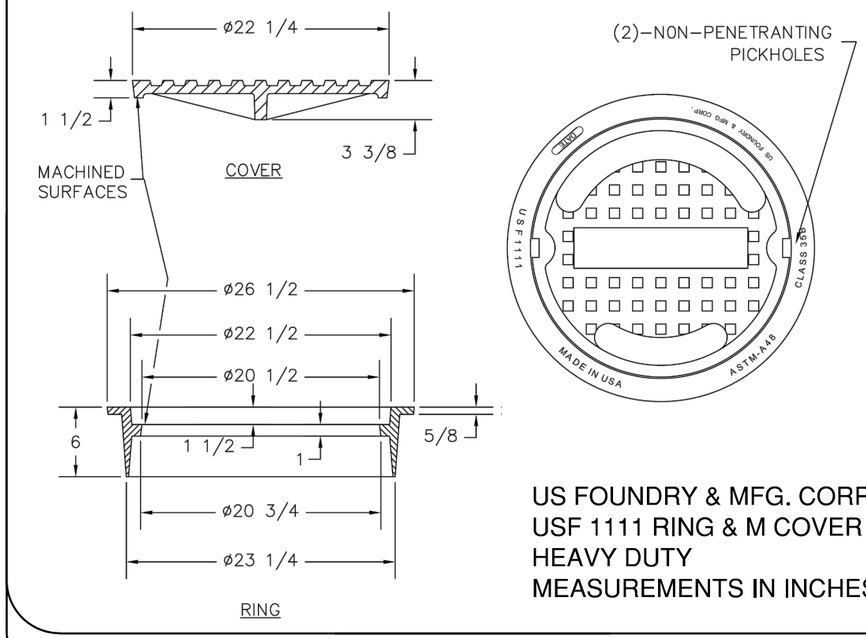
SHEET NO.
M-8
SHEET 9 OF 10

100% PHASE SUBMITTAL



TYPICAL VALVE ACCESS COVER DETAIL

N.T.S



US FOUNDRY & MFG. CORP.
USF 1111 RING & M COVER
HEAVY DUTY
MEASUREMENTS IN INCHES

MANHOLE DETAIL WITH COVER

N.T.S

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SHEET TITLE:

MECHANICAL
DETAILS

SHEET NO.

M-9

SHEET 10 OF 10

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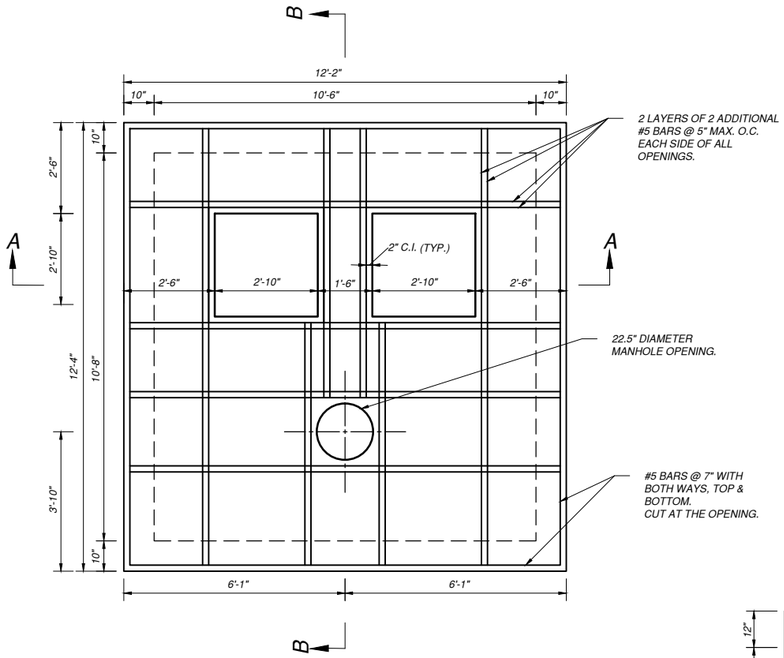
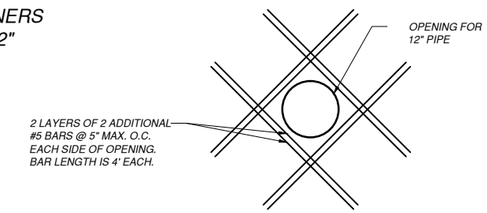


TOP SLAB PLAN
NTS

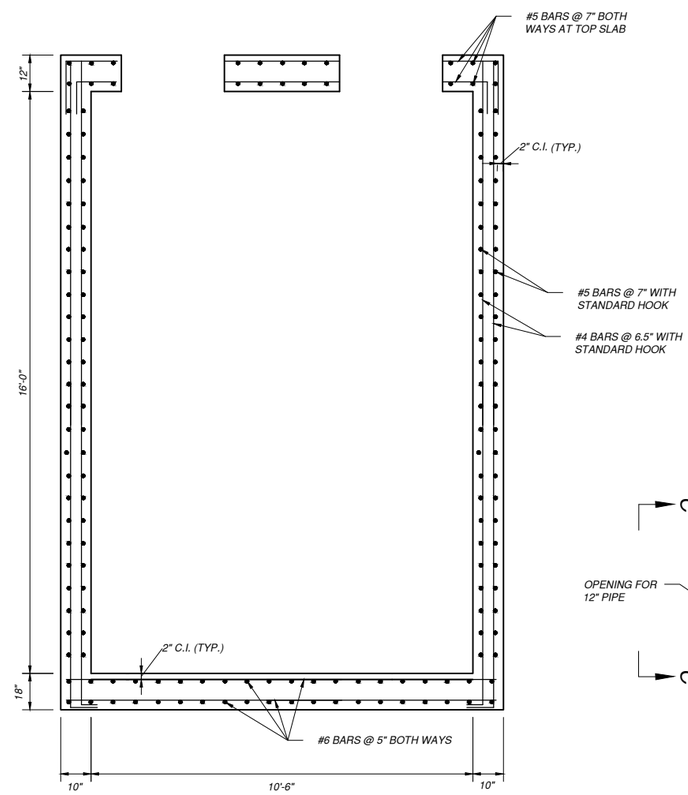
NOTES:

1. ALL CONCRETE SHALL BE OF CLASS II CONCRETE.
2. ALL REINFORCEMENT IS GRADE 60 STEEL, DEFORMED BAR.
3. ALL REINFORCEMENT MUST HAVE 2" MINIMUM COVER.
4. WALL REINFORCING STEEL SHOULD LAP SPLICE AT CORNERS WITH STANDARD 90° HOOKS. (8" FOR #4'S, 10" FOR #5'S, 12" FOR #6'S.)



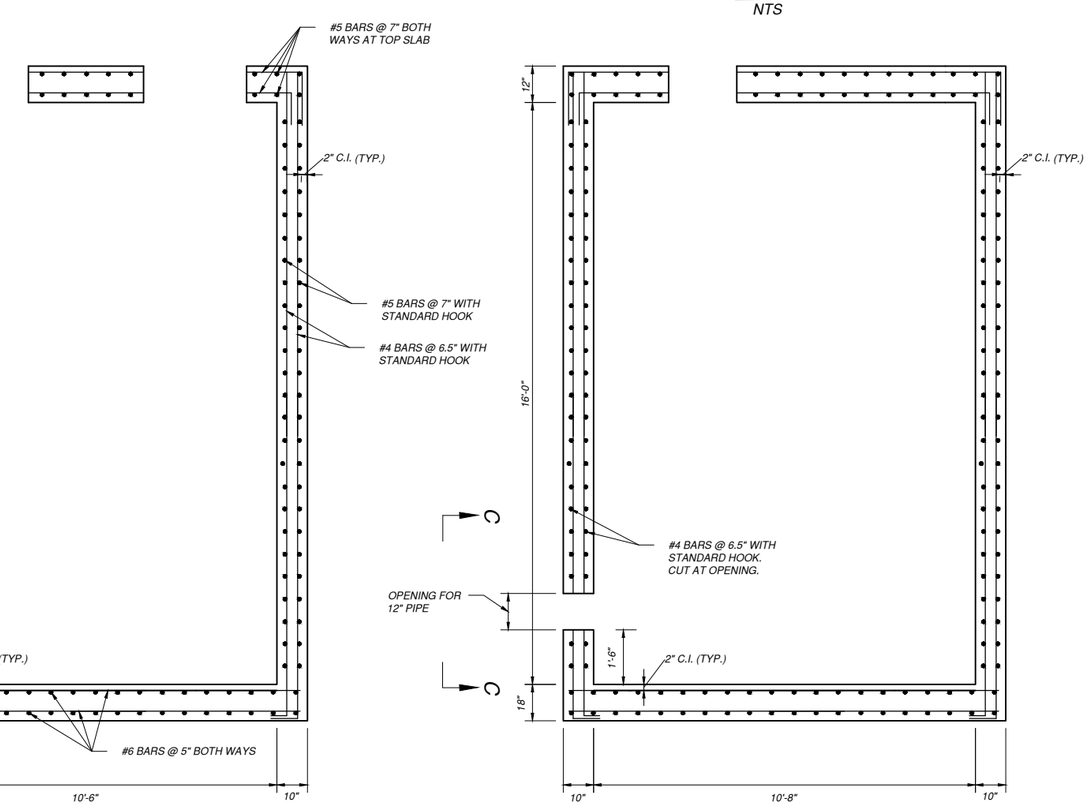
VIEW C - C

PIPE OPENING DETAIL
NTS



SECTION A - A

PUMP STATION STRUCTURAL DETAIL
NTS



SECTION B - B

PUMP STATION STRUCTURAL DETAIL
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KEY MAP:

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REVIEWED BY: SS

SEAL:

CHUN LI, P.E.
FL LICENSE No. 63052

SHEET TITLE:

PUMP STATION STRUCTURAL DETAILS & NOTES

SHEET NO. **S-1.0**

SHEET 1 OF 1

100% PHASE SUBMITTAL

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