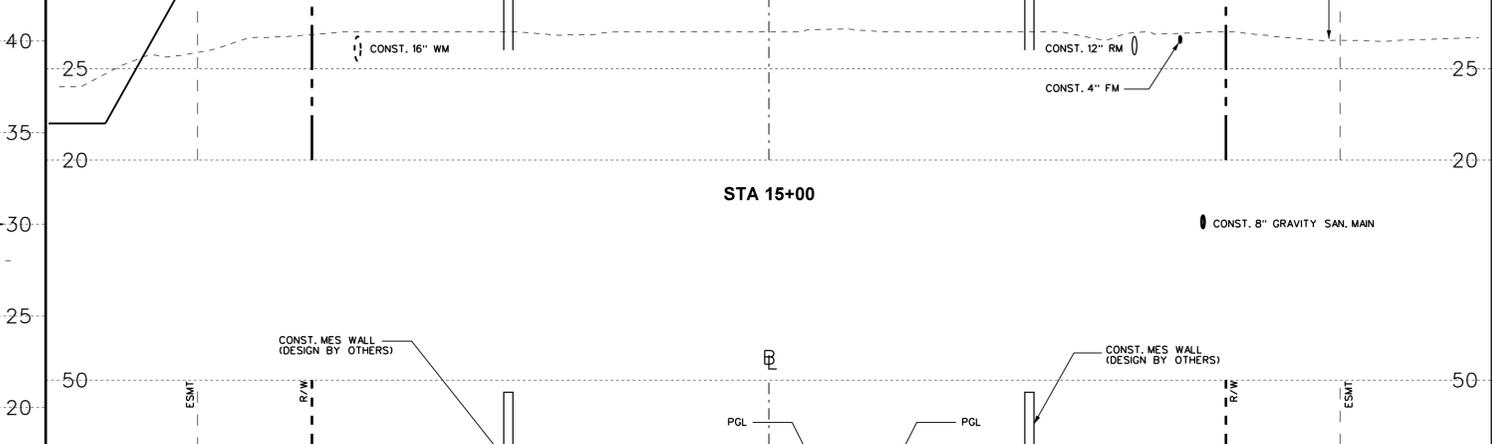
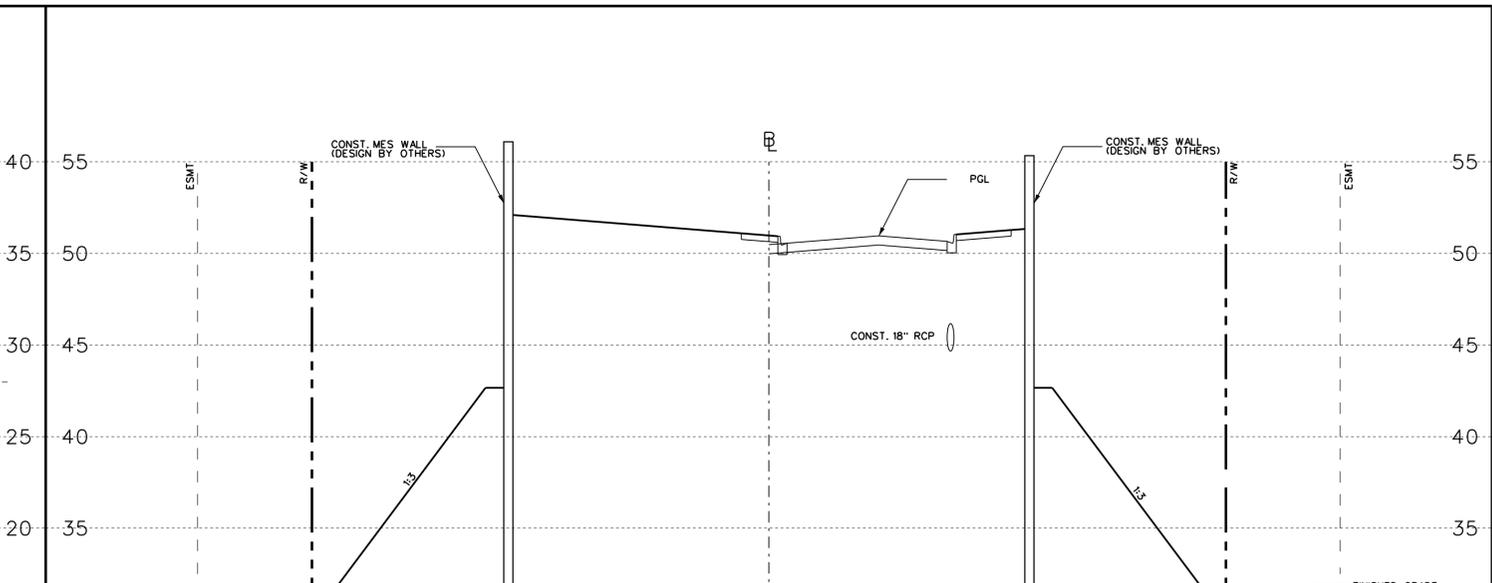


HSCALE: 1" = 20'
VSCALE: 1" = 5'



HSCALE: 1" = 20'
VSCALE: 1" = 5'

Revision	Date	Approved

Designed by: RBG/MXT
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 Vertical Datum: 1988

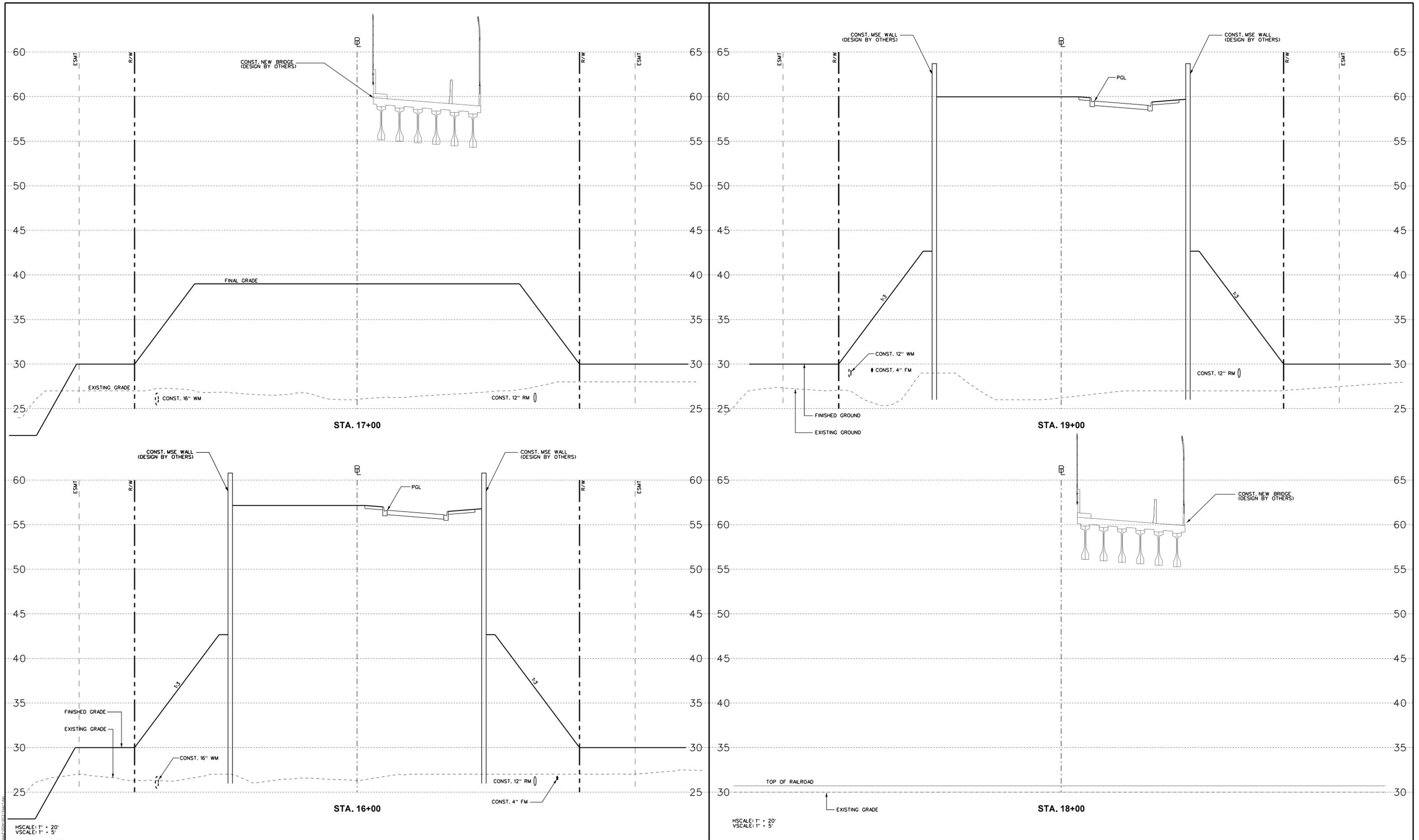
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 STORMWATER MANAGEMENT AND CIVIL ENGINEERING
 11723 Orpington Street, Suite 100
 Orlando, FL 32817
 Ph: (407) 679-3001
 Fax: (407) 679-2691
 DBPR No. 5112

TOMOKA HOLDINGS, LLC

**ORMOND CROSSINGS
 PHASE B**

**CROSS SECTIONS
 ORMOND CROSSINGS BOULEVARD**

SHEET
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 SAI
 JOB No.
 2002-008.10



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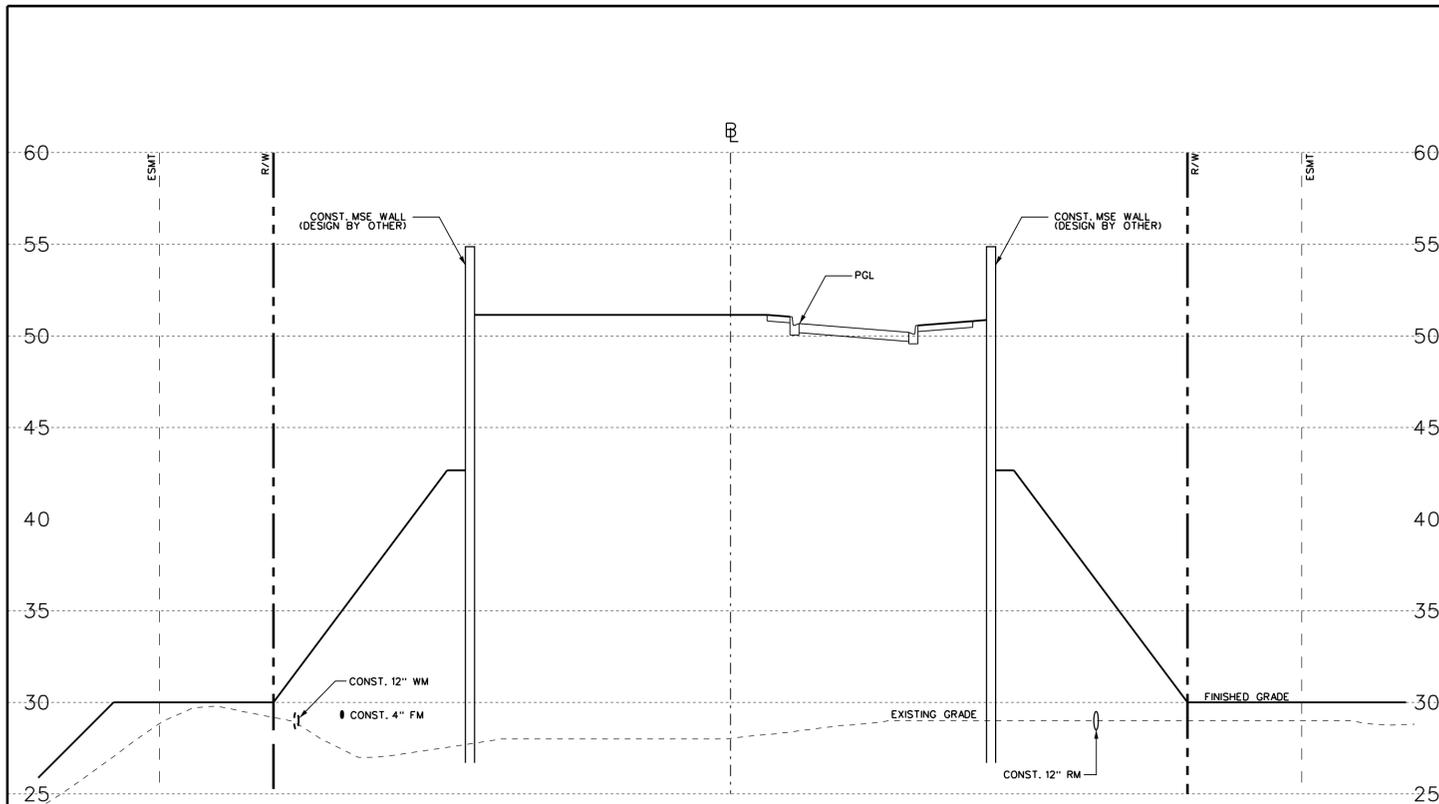
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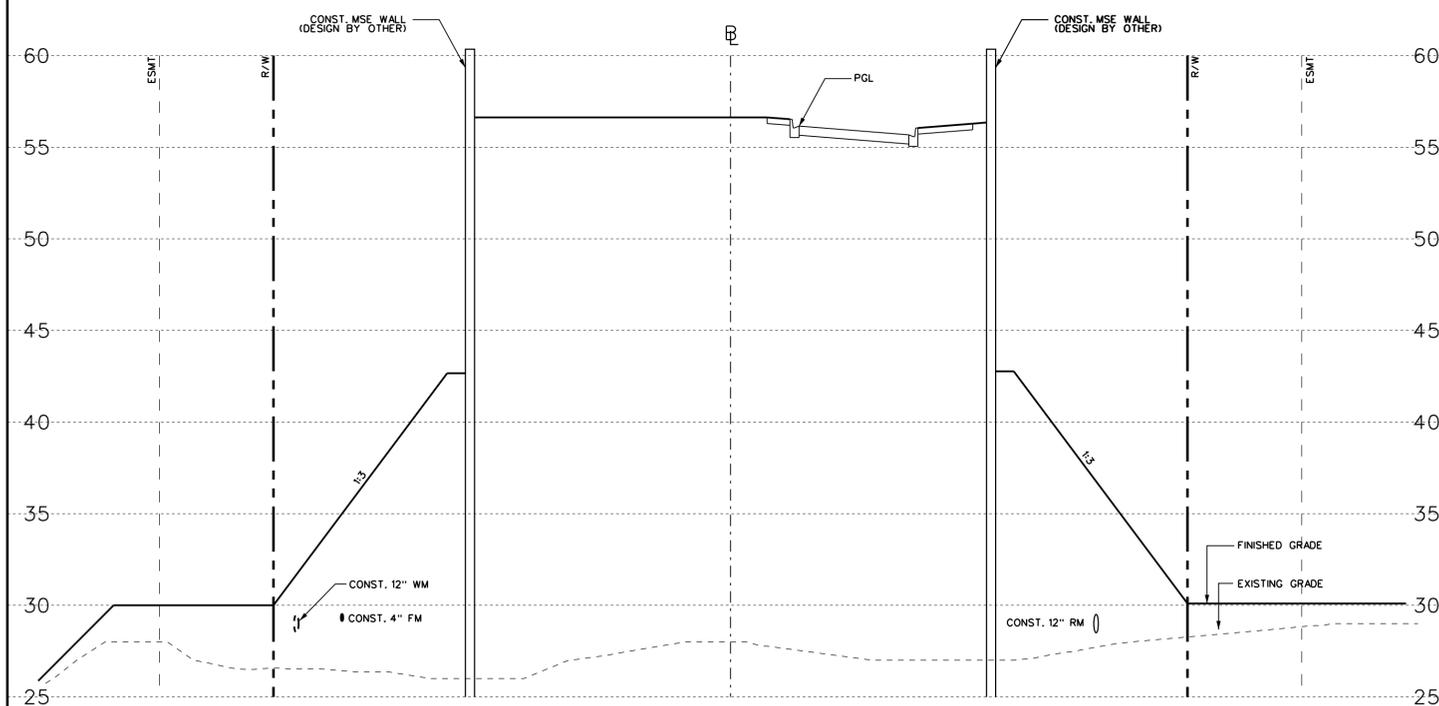
**ORMOND CROSSINGS
 PHASE B**

**CROSS SECTIONS
 ORMOND CROSSINGS BOULEVARD**

SHEET
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 SAI
 JOB No.
 2002-008.10



STA. 21+00



STA. 20+00

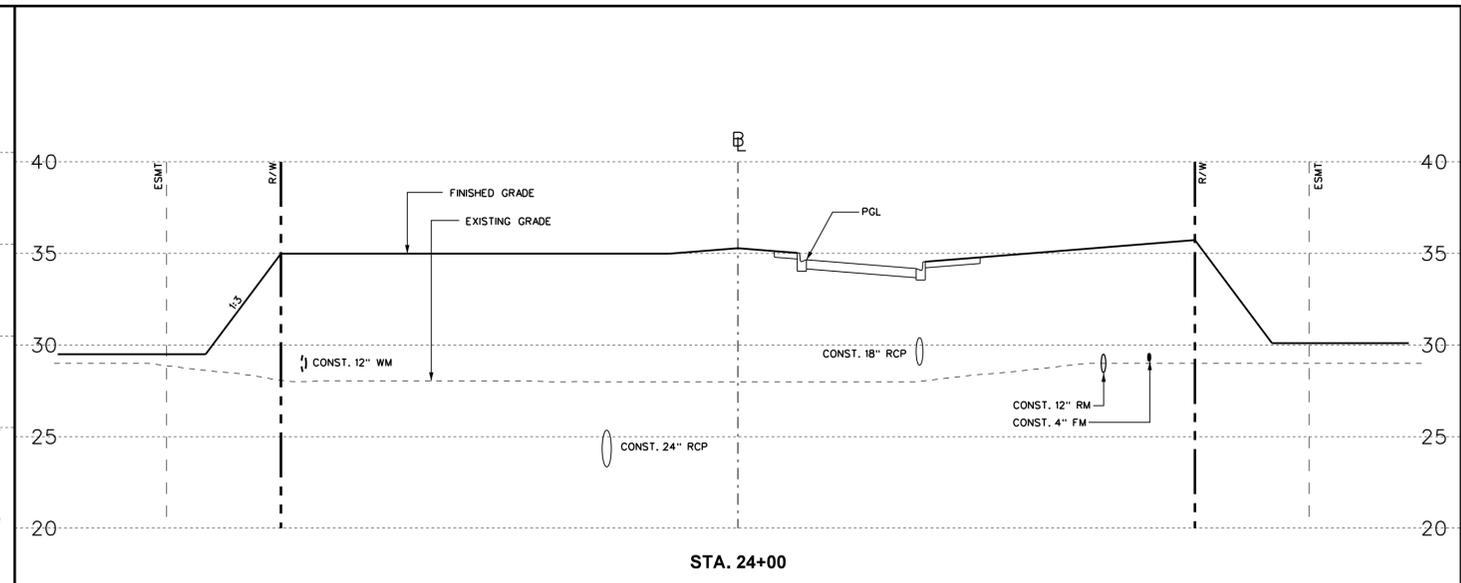
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VSCALE: 1" = 5'

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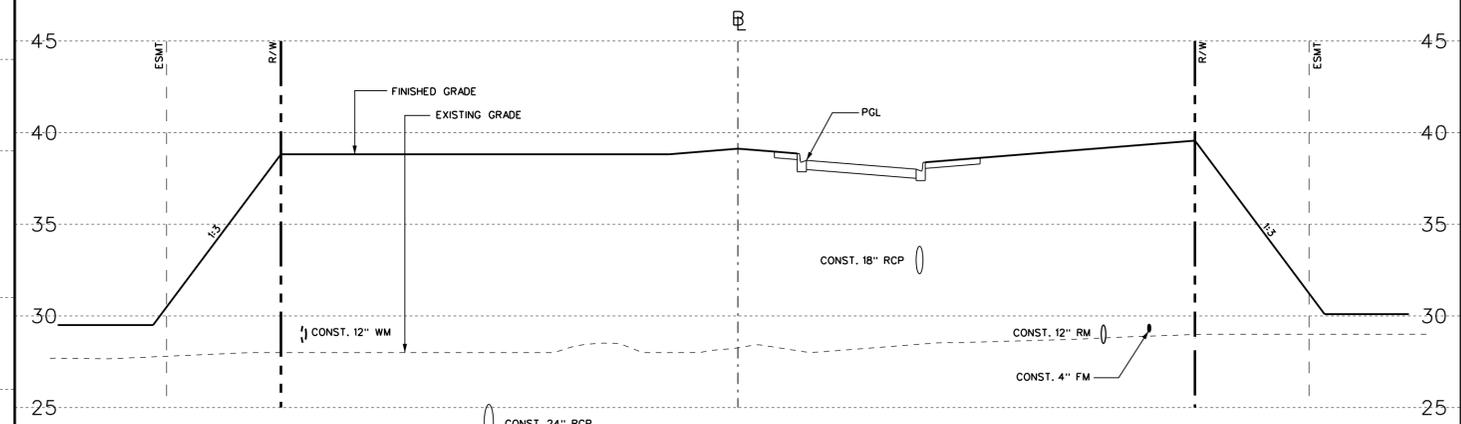
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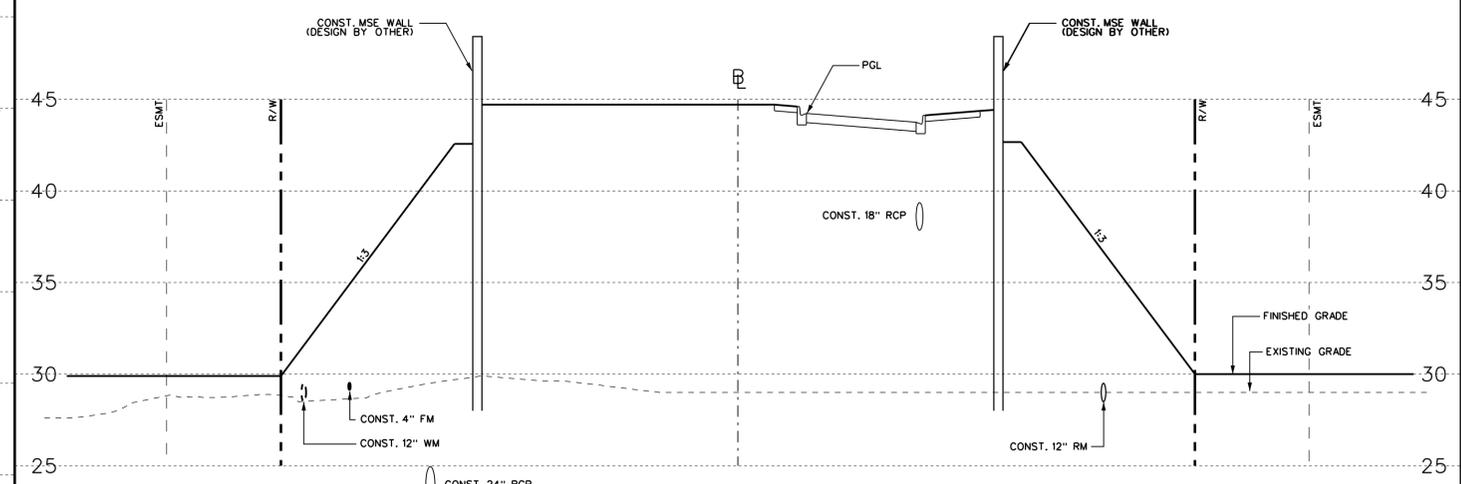
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STA. 24+00



STA. 23+00



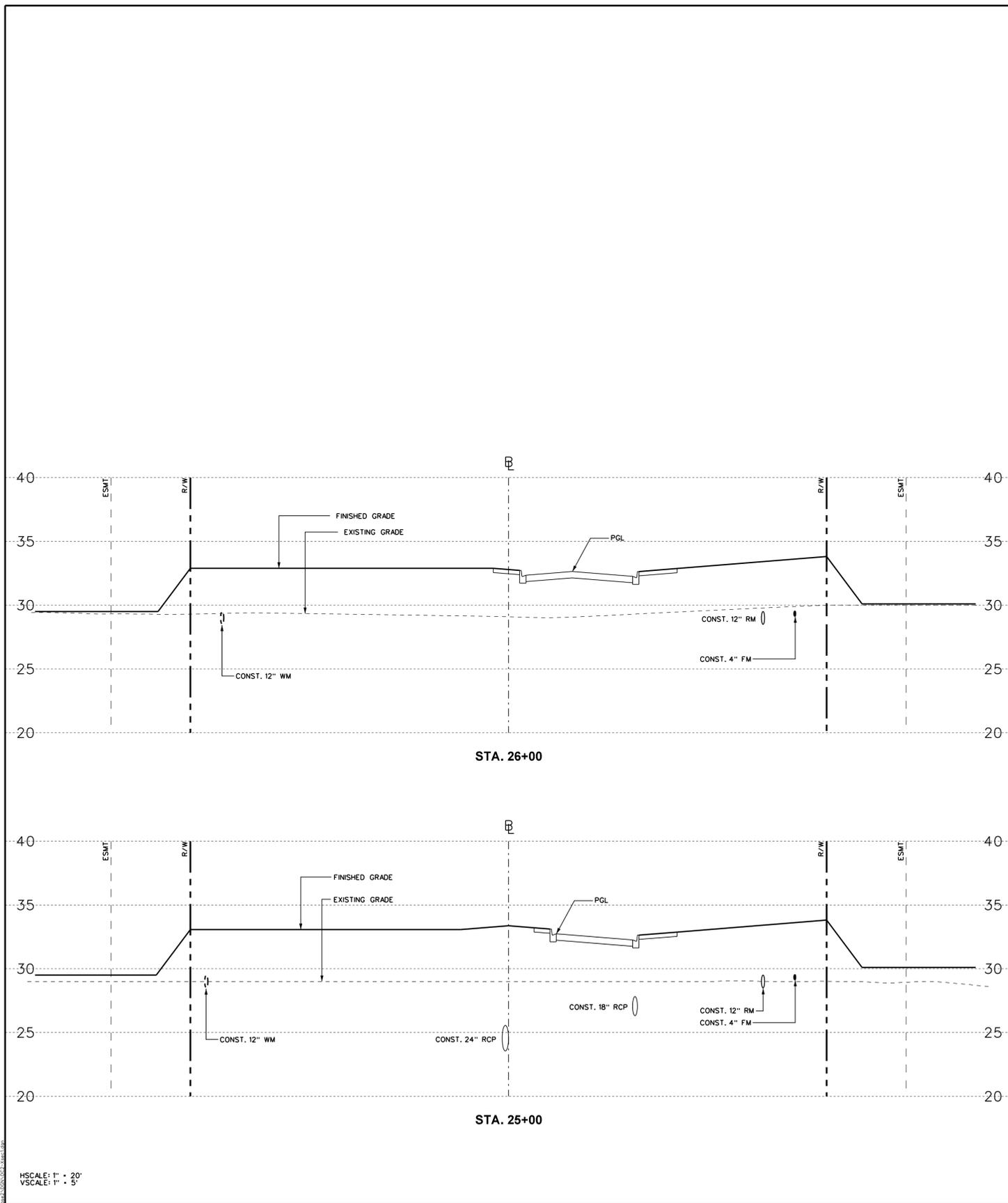
STA. 22+00

HSCALE: 1" = 20'
VSCALE: 1" = 5'

**ORMOND CROSSINGS
PHASE B**

**CROSS SECTIONS
ORMOND CROSSINGS BOULEVARD**

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SAI
JOB No.
2002-008.10



HSCALE: 1" = 20'
VSCALE: 1" = 5'

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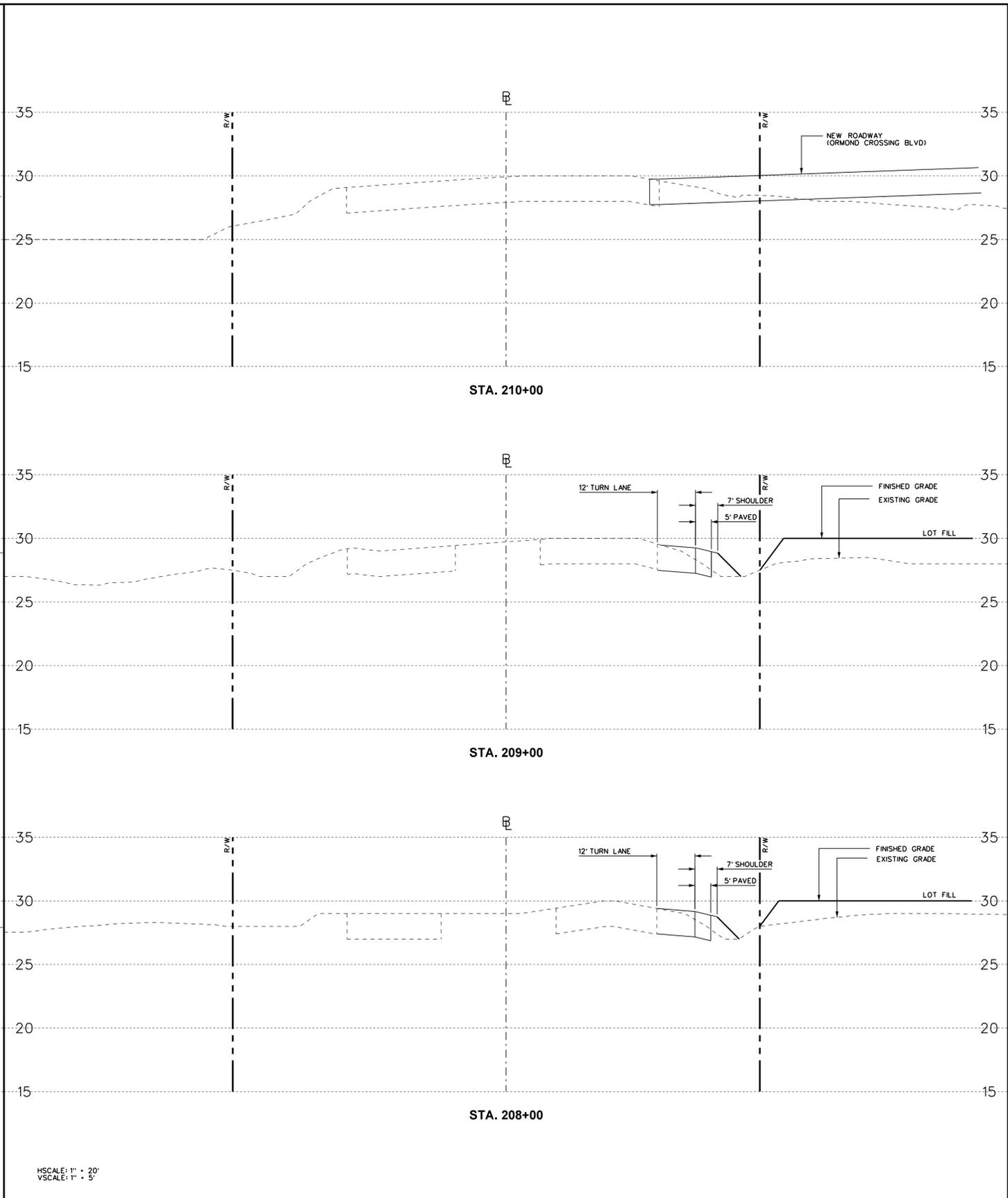
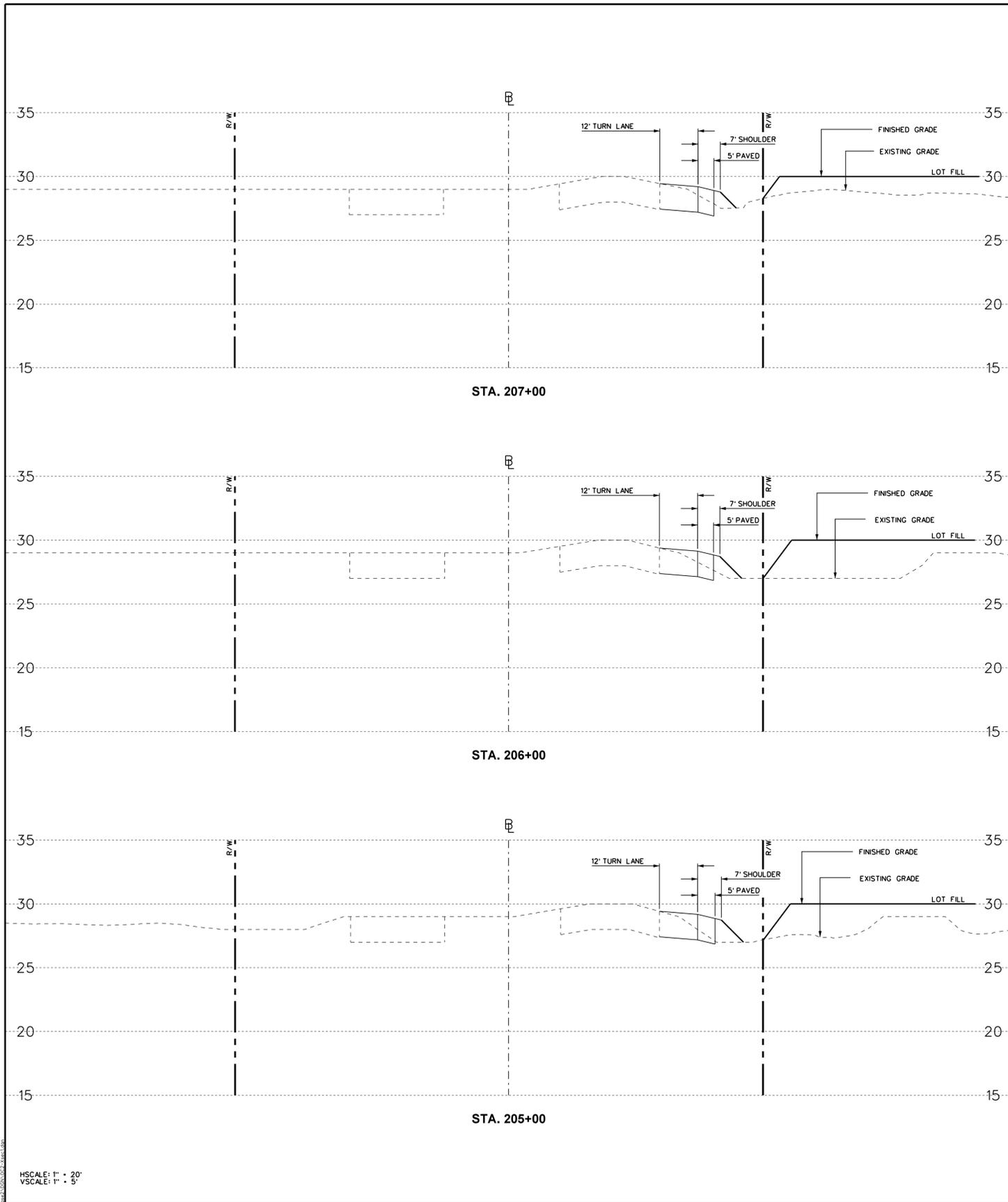
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TOMOKA HOLDINGS, LLC

**ORMOND CROSSINGS
 PHASE B**

**CROSS SECTIONS
 ORMOND CROSSINGS BOULEVARD**

SHEET
23 of 43
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 2002-008.10



HSCALE: 1" = 20'
VSCALE: 1" = 5'

HSCALE: 1" = 20'
VSCALE: 1" = 5'

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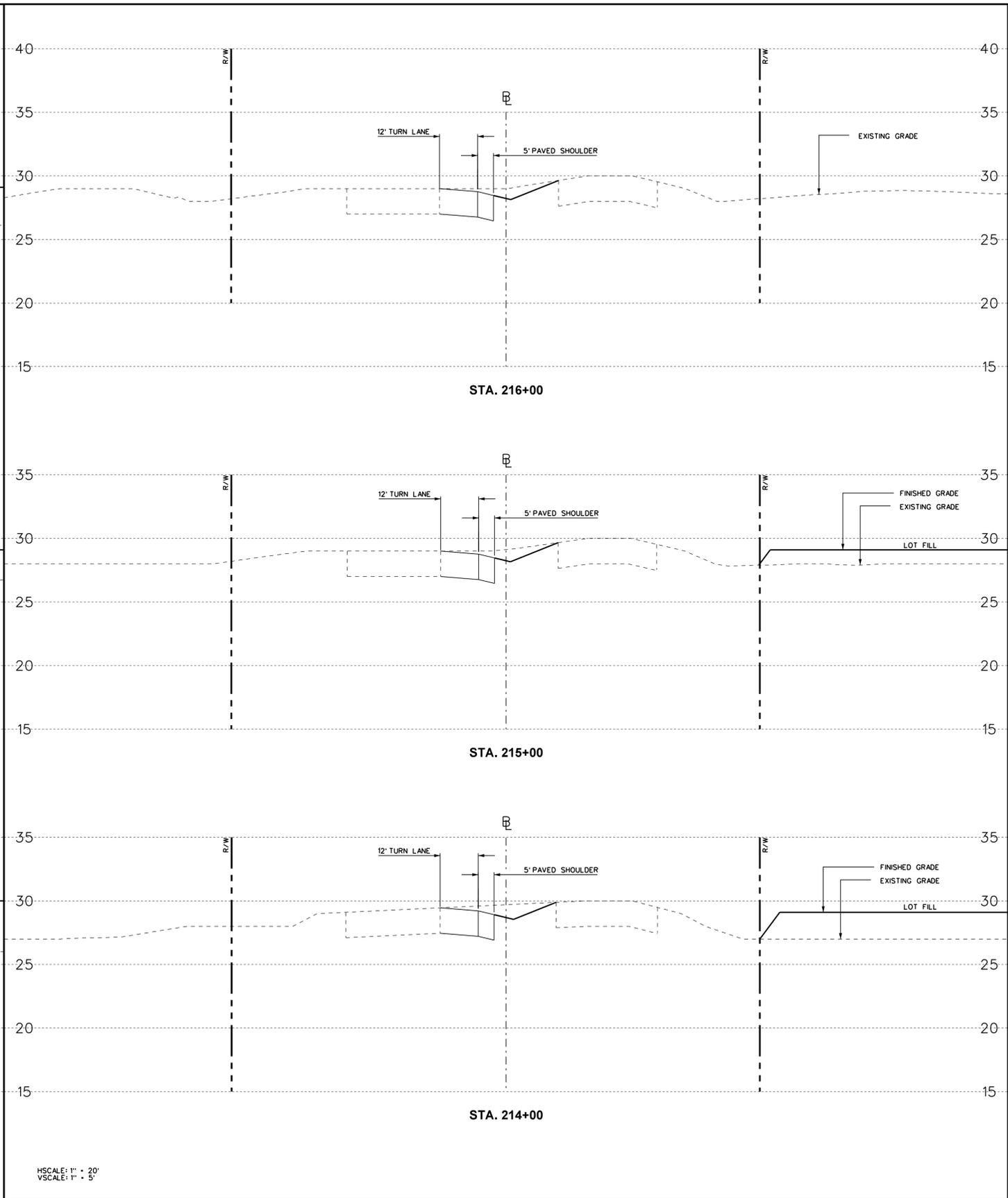
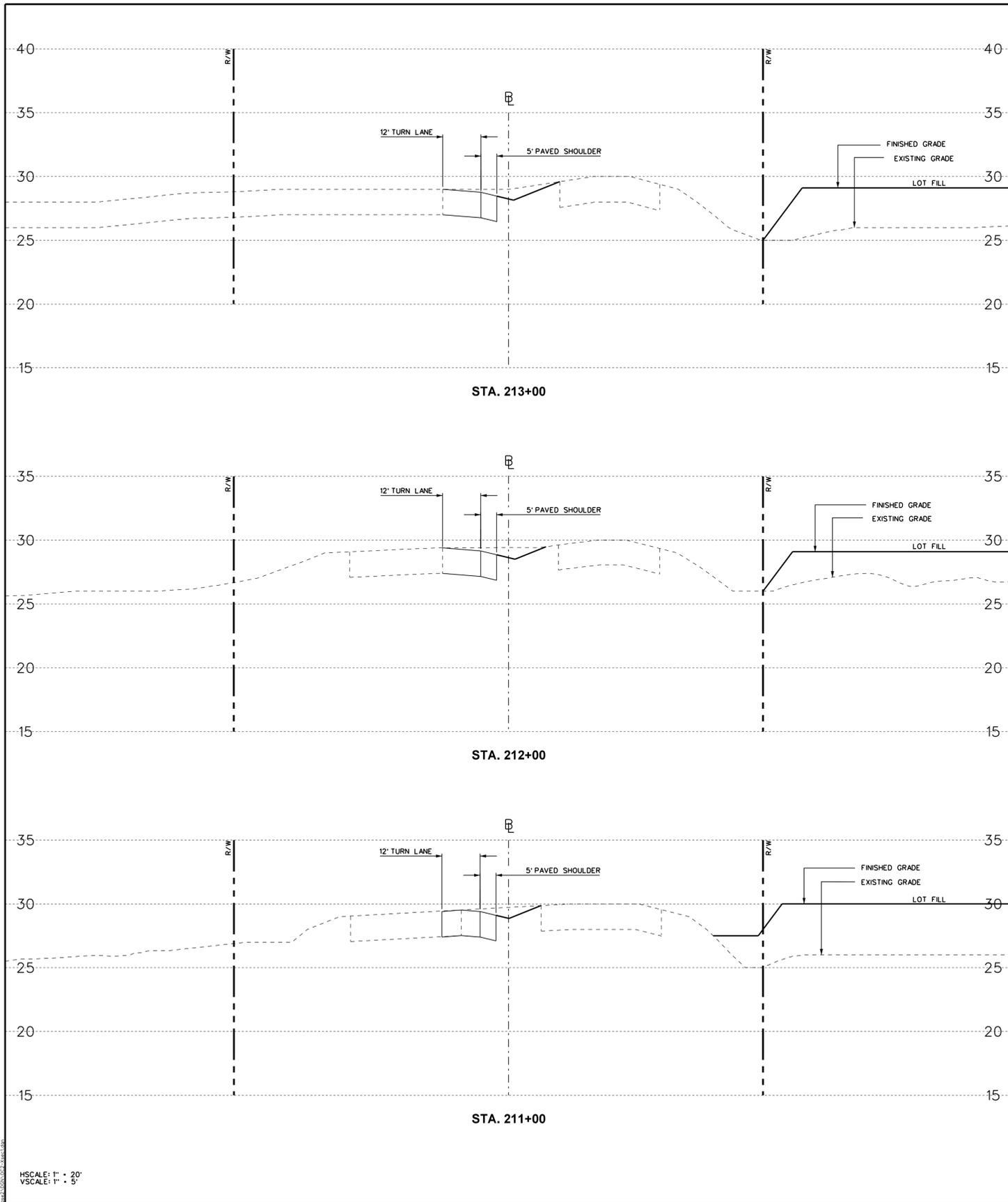
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TOMOKA HOLDINGS, LLC

**ORMOND CROSSINGS
 PHASE B**

**CROSS SECTIONS
 US 1**

SHEET
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 JOB No.
 2002-008.10



HSCALE: 1" = 20'
VSCALE: 1" = 5'

HSCALE: 1" = 20'
VSCALE: 1" = 5'

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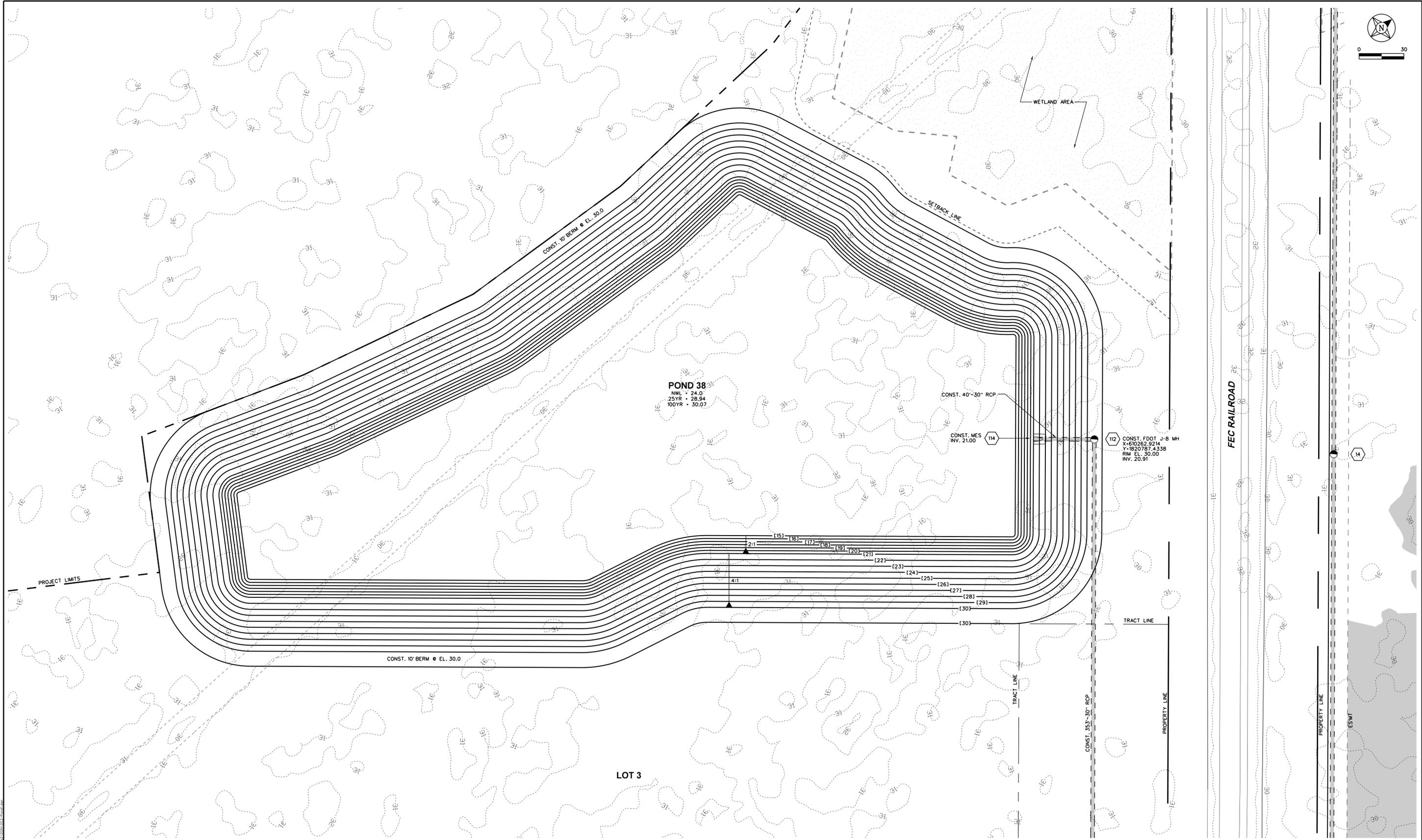
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TOMOKA HOLDINGS, LLC

**ORMOND CROSSINGS
 PHASE B**

**CROSS SECTIONS
 US 1**

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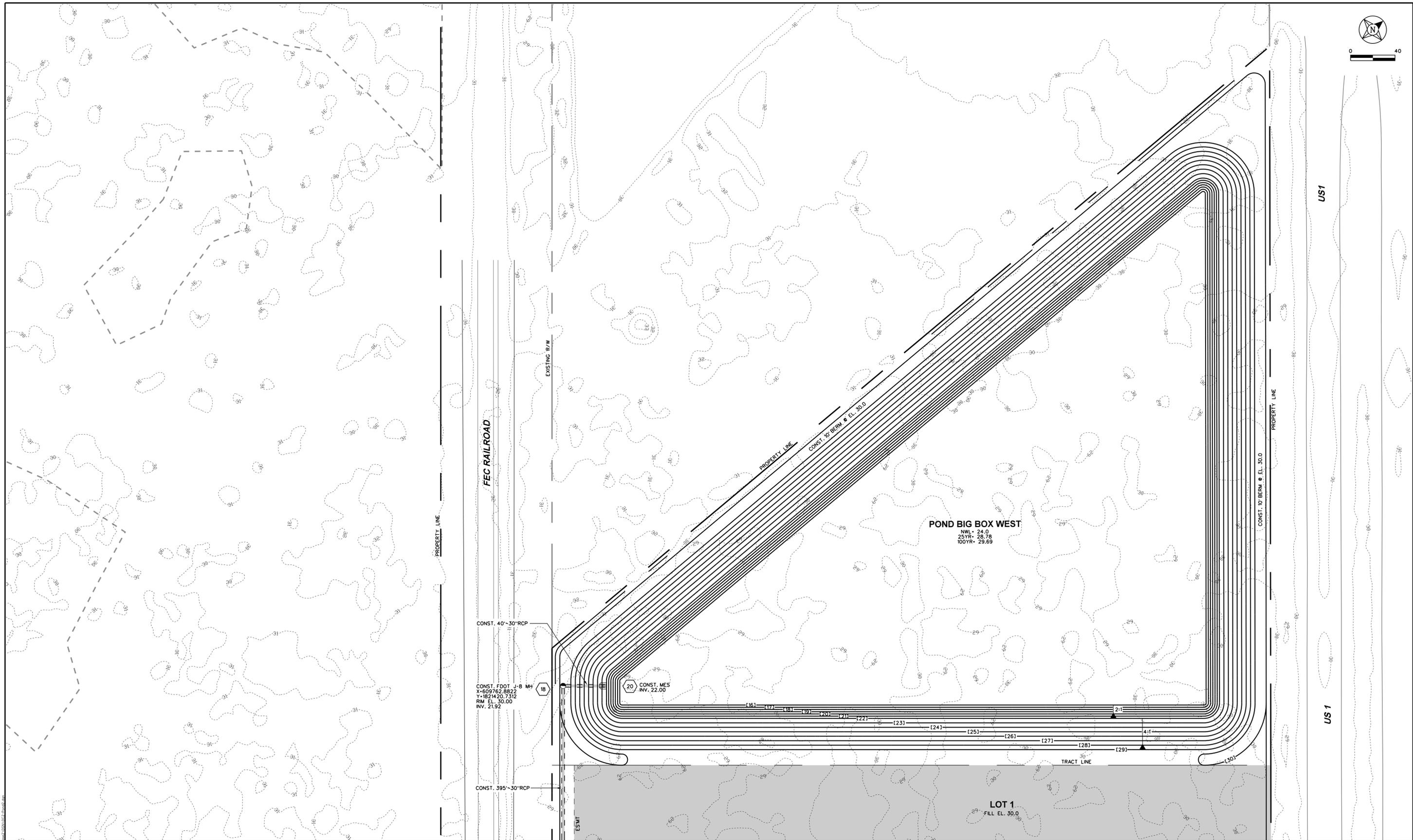
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TOMOKA HOLDINGS, LLC

**ORMOND CROSSINGS
 PHASE B**

**STORMWATER POND 38
 SITE LAYOUT**

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26 of 43
 SAI
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 2002-008.10



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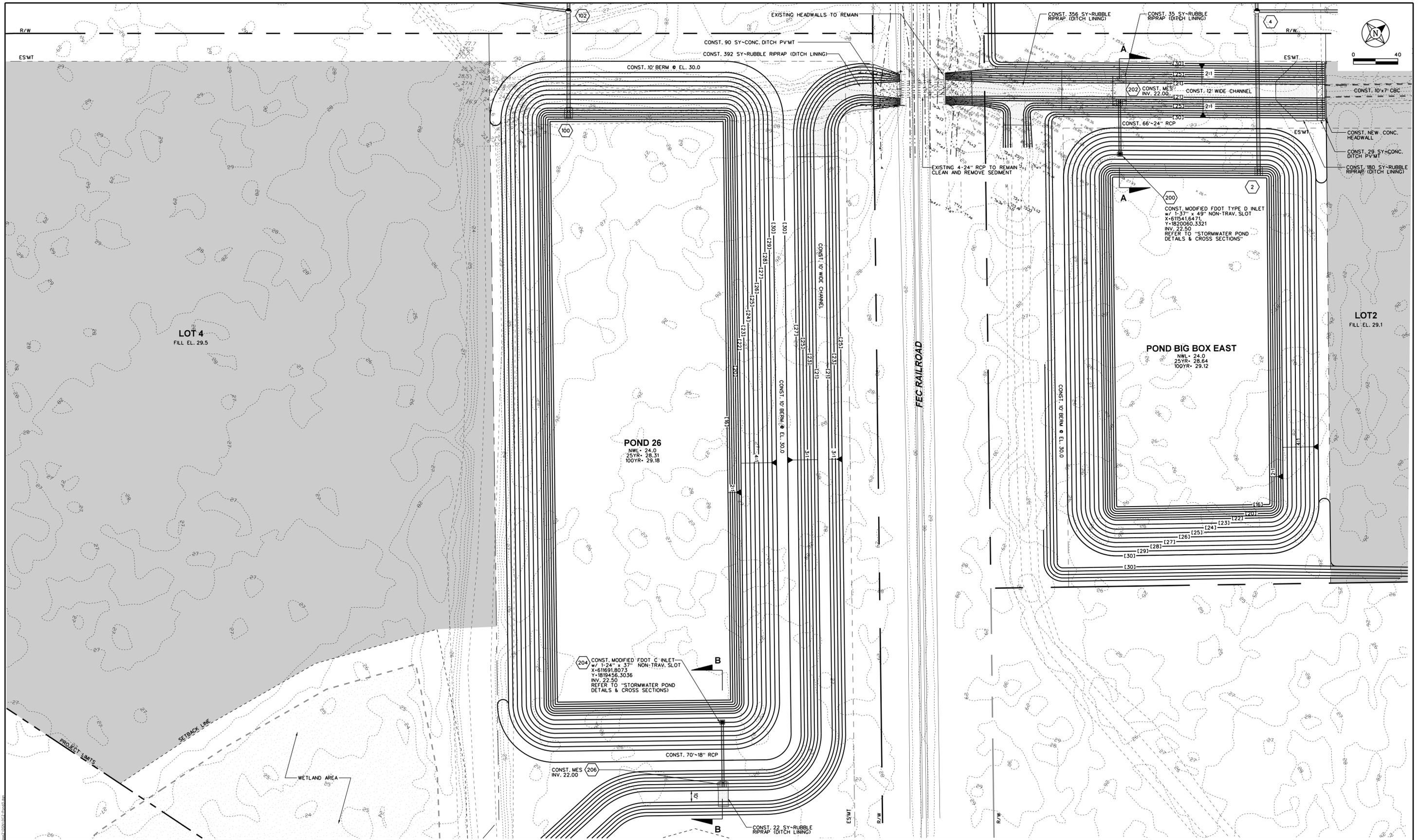
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TOMOKA HOLDINGS, LLC

**ORMOND CROSSINGS
 PHASE B**

**STORMWATER POND BIG BOX WEST
 SITE LAYOUT**

SHEET
27 of 43
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 JOB No.
 2002-008.10



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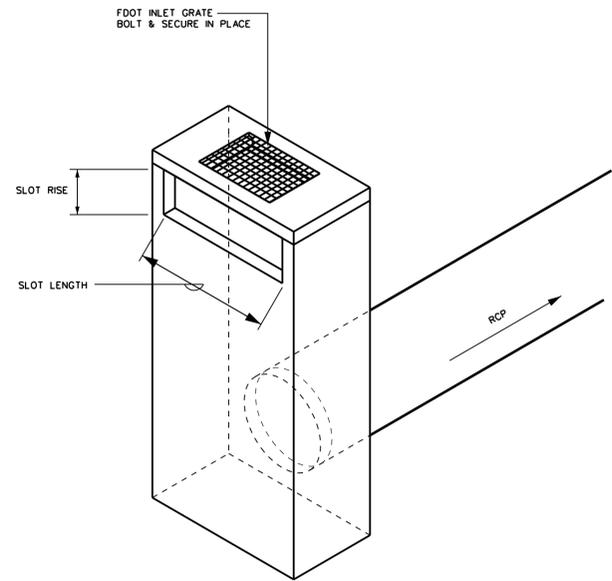
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TOMOKA HOLDINGS, LLC

**ORMOND CROSSINGS
 PHASE B**

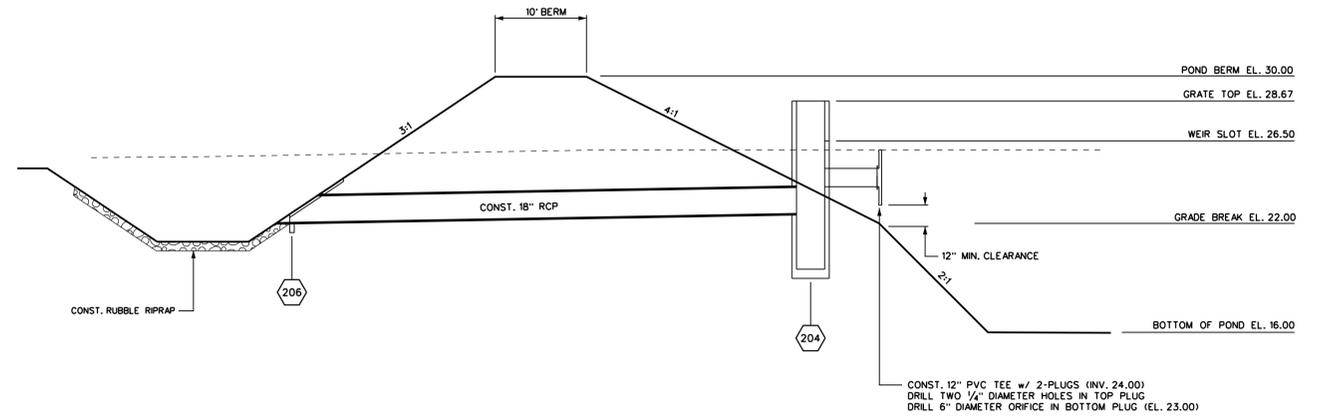
**STORMWATER POND 26
 & POND BIG BOX EAST
 SITE LAYOUT**

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 2002-008.10



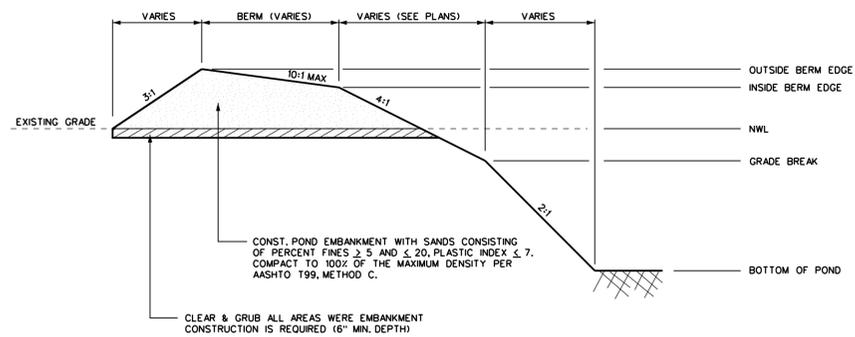
TYPICAL DROP STRUCTURE

NTS



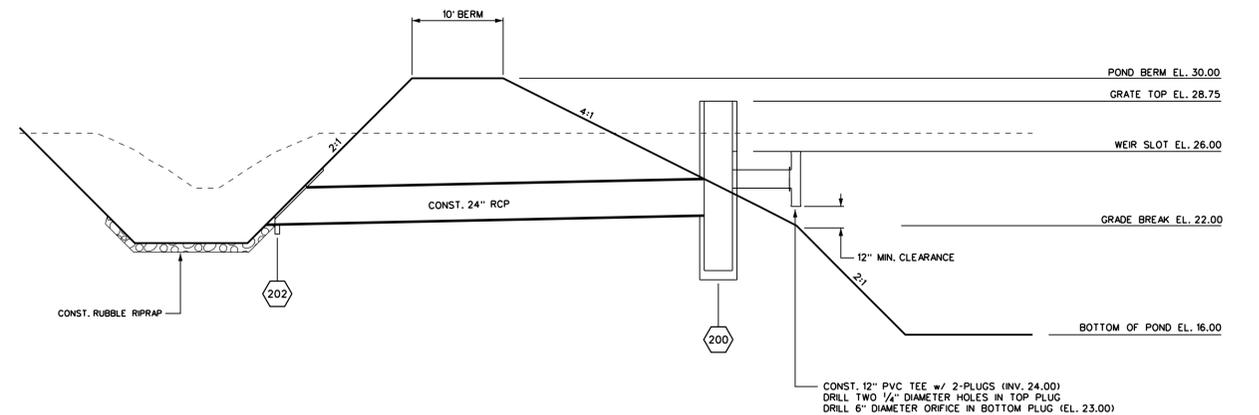
**SECTION B-B
POND 26 OUTFALL STRUCTURE DETAIL**

HSCALE 1" = 10'
VSCALE 1" = 5'



TYPICAL STORMWATER POND CROSS SECTION

HSCALE 1" = 10'
VSCALE 1" = 5'



**SECTION A-A
POND BIG BOX EAST
OUTFALL STRUCTURE DETAIL**

HSCALE 1" = 10'
VSCALE 1" = 5'

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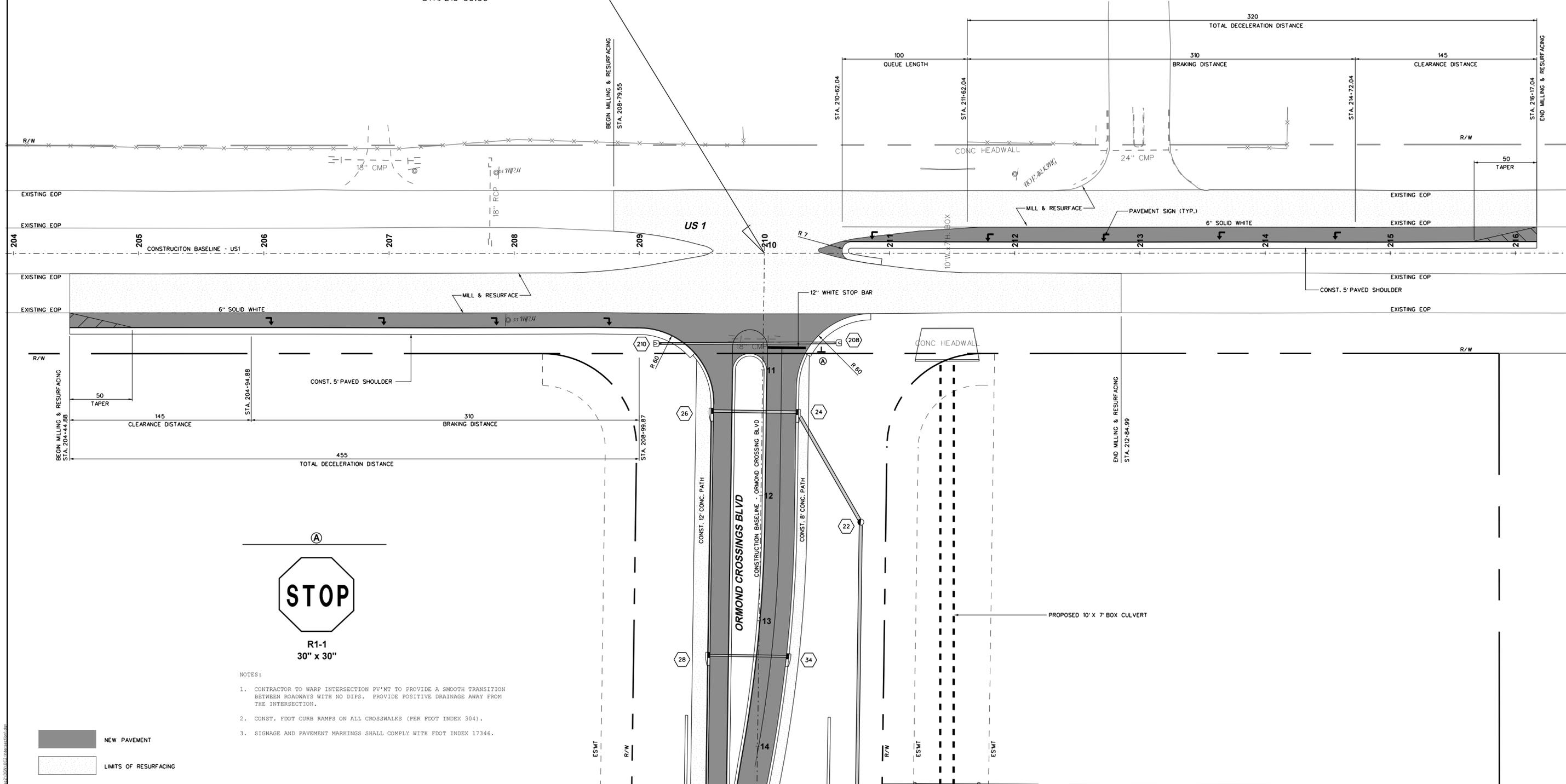
**ORMOND CROSSINGS
PHASE B**

**STORMWATER POND DETAILS
& CROSS SECTIONS**

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 SAI
 JOB No.
 2002-008.10



P.I. ORMOND CROSSINGS BLVD
 STA. 10+06.93
 = US 1
 STA. 210+00.00



- NOTES:
1. CONTRACTOR TO WARP INTERSECTION PV'MT TO PROVIDE A SMOOTH TRANSITION BETWEEN ROADWAYS WITH NO DIPS. PROVIDE POSITIVE DRAINAGE AWAY FROM THE INTERSECTION.
 2. CONST. FDOT CURB RAMPS ON ALL CROSSWALKS (PER FDOT INDEX 304).
 3. SIGNAGE AND PAVEMENT MARKINGS SHALL COMPLY WITH FDOT INDEX 17346.

NEW PAVEMENT
 LIMITS OF RESURFACING

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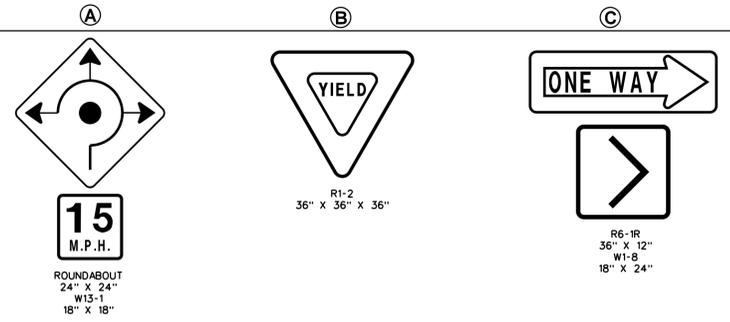
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TOMOKA HOLDINGS, LLC

**ORMOND CROSSINGS
 PHASE B**

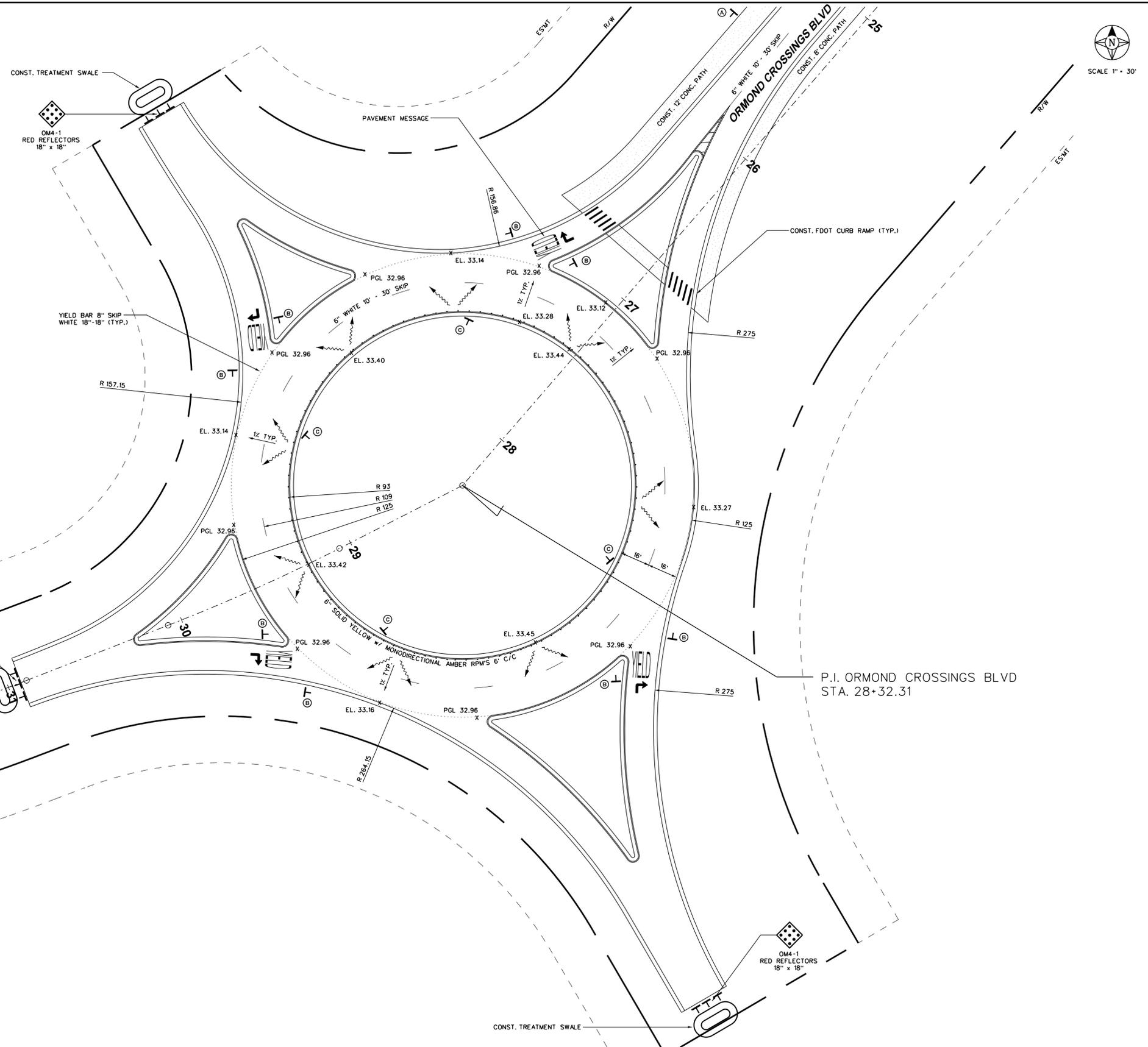
**SPECIAL DETAILS
 INTERSECTION OF US1 &
 ORMOND CROSSINGS BOULEVARD**

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 SAI
 JOB No.
 2002-008.10



NOTES:

1. CONTRACTOR TO WARP INTERSECTION PVTMT TO PROVIDE A SMOOTH TRANSITION BETWEEN ROADWAYS WITH NO DIPS. PROVIDE POSITIVE DRAINAGE AWAY FROM THE INTERSECTION.
2. CONST. FDOT CURB RAMPS ON ALL CROSSWALKS (PER FDOT INDEX 304).
3. SIGNAGE AND PAVEMENT MARKINGS SHALL COMPLY WITH FDOT INDEX 17346.
4. R.P.M.'S SHALL FACE EACH APPROACH (MONO DIRECTIONAL AMBER 6' APART)



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TOMOKA HOLDINGS, LLC

**ORMOND CROSSINGS
 PHASE B**

**SPECIAL DETAILS
 ROUNDABOUT DETAIL**

SHEET
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GENERAL NOTES
WATER SYSTEM CONSTRUCTION

- THE CITY'S PUBLIC UTILITIES DEPARTMENT SHALL BE NOTIFIED PRIOR TO BEGINNING ANY WATER SYSTEM CONSTRUCTION.
- DEWATERING SHALL BE PROVIDED TO KEEP GROUNDWATER ELEVATION A MINIMUM OF 6 INCHES BELOW WATER MAIN BEING LAID.
- ALL WATER MAINS SHALL BE LAID ON A FIRM FOUNDATION WITH ALL UNSUITABLE MATERIAL (MUCK, ROCK, COQUINA, ETC.) REMOVED AND REPLACED WITH CLEAN GRANULAR MATERIAL.
- TRENCHES SHALL BE BACKFILLED WITH CLEAN GRANULAR MATERIAL IN MAX. 1' LISTS WITH A MINIMUM COMPACTION OF 98 PERCENT (AASHTO-T100) IN PAVED AREAS AND 90 PERCENT IN UNPAVED AREAS.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT TRENCH COMPACTION TESTS BE PROVIDED AT POINTS 1 FOOT ABOVE THE PIPE AND AT 1 FOOT VERTICAL INTERVALS TO FINISH GRADE, AT A MINIMUM SPACING OF EVERY 300 FEET, AND TO FURNISH COPIES OF TEST REPORTS PROMPTLY TO THE CITY INSPECTOR.
- METALLIZED PIPE LOCATION TAPE SHALL BE LOCATED 15 INCHES BELOW FINISHED GRADE OR AS SPECIFIED BY MANUFACTURER FOR ALL PVC LINES. MARKER TAPE SHALL BE USED ON ALL DUCTILE IRON PIPE.
- WATER SERVICES (SINGLE 1") SHALL BE POLYETHYLENE TUBING (BLUE IN COLOR); POLYBUTYLENE SHALL NOT BE ALLOWED.
- ALL WATER SERVICE ENDINGS SHALL BE MARKED WITH 4" X 4" LUMBER (PRESSURE TREATED) EXTENDING 4 FEET ABOVE GRADE, WITH WATER SERVICES SECURED 24" ABOVE THE GROUND. WIRE TIES SHALL BE USED TO SECURE THE CURB STOPS TO SUPPORT POSTS.
- WATER VALVES SHALL BE PLACED AT ALL STREET INTERSECTIONS AND AT MAXIMUM SPACING OF 500 FEET.
- AT ALL WATER MAIN TEES AND CROSSES, VALVES SHALL BE INSTALLED ON ALL LEGS EXCEPT ONE.
- APPROVED WATER VALVE TYPES ARE THE FOLLOWING:
 - STANDARD GATE VALVES LESS THAN 48" DIAMETER RESILIENT SEAT GATE VALVES (AWWA C-509 OR C-515).
 - TAPPING VALVES AND MECHANICAL TAPPING SLEEVE SHALL BE STAINLESS STEEL. (AWWA C-509)

GENERAL NOTES
WATER SYSTEM CONSTRUCTION

- ALL WATER VALVE BOXES SHALL BE ADJUSTED TO FINISH GRADE AND THE LIDS PAINTED BLUE TO MAKE THEM PLAINLY VISIBLE.
- WATER VALVES SHALL BE COMPLETELY OPENED BY THE CONTRACTOR UPON FINAL ACCEPTANCE OF NEW WATER SYSTEMS IN THE PRESENCE OF THE CITY'S INSPECTOR.
- HYDRANTS SHALL BE PLACED AT 500 FEET MAXIMUM SPACING IN RESIDENTIAL DEVELOPMENTS AND AT 300 FEET MAXIMUM SPACING IN BUSINESS AND INDUSTRIAL DEVELOPMENTS. ALL WATER MAIN TO WHICH HYDRANTS ARE CONNECTED SHALL BE 8 INCHES MINIMUM.
- ALL FIRE HYDRANTS SHALL BE CONSTRUCTED TO MAKE THEM EASILY ACCESSIBLE TO FIRE PERSONNEL IN CASE OF FIRE. THE MAIN NOZZLE CONNECTION SHOULD ALWAYS FACE THE STREET AND BE 18"-24" ABOVE GRADE.
- AS STANDARD PRACTICE, WATER MAINS SHALL BE INSTALLED 4 FEET OFF THE BACK OF CURB OR AS APPROVED BY THE CITY.
- ALL WATER MAINS SHALL BE NSF-APPROVED FOR POTABLE WATER USE, AND SHALL HAVE A MINIMUM COVER OF 36 INCHES. IN SPECIAL CASES WHERE IT IS IMPOSSIBLE OR INAPPROPRIATE TO PROVIDE ADEQUATE COVER, DUCTILE IRON CLASS 350 OR CONCRETE ENCASMENT MAY BE USED AS APPROVED BY THE CITY.
- ALL PROPOSED WATER MAINS SHALL BE FLUSHED, CLEANED WITH A POLY PIG, DISINFECTED AND BACTERIOLOGICALLY CLEARED FOR SERVICE IN ACCORDANCE WITH LATEST AWWA STANDARDS AND THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION REQUIREMENTS.
- WATER MAINS SHALL BE AWWA C-900 CL 150, OR D.I.P. CLASS 350 STANDARD CEMENT LINED.
- UPON CONSTRUCTION COMPLETION AND ACCEPTANCE OF THE SYSTEM, IT SHALL BE THE DESIGN ENGINEER'S RESPONSIBILITY TO ENSURE THAT THE SYSTEM IS PROPERLY CERTIFIED AND ACCEPTED BY THE HEALTH DEPARTMENT, AND THAT CERTIFIED AS-BUILT DRAWINGS (24"x36") ARE PROVIDED TO THE CITY PRIOR TO PAVING AND ANY USE OF THE SYSTEM. PROVIDE THREE (3) BLUELINE COPIES, ONE (1) MYLAR OF AS-BUILT DRAWINGS AND A DIGITAL COPY.
- MEGALUG OR EQUIVALENT, RESTRAINED JOINT SYSTEM MAY BE USED ON ALL RESTRAINED FITTINGS, VALVES, ETC. MINIMUM DEPTH OF BURY ON PIPES NOT MEETING COVER REQUIREMENTS SHALL FOLLOW THE MOST RECENT DWPRA THRUST RESTRAINT DESIGN GUIDELINES.

GENERAL NOTES
WATER SYSTEM CONSTRUCTION

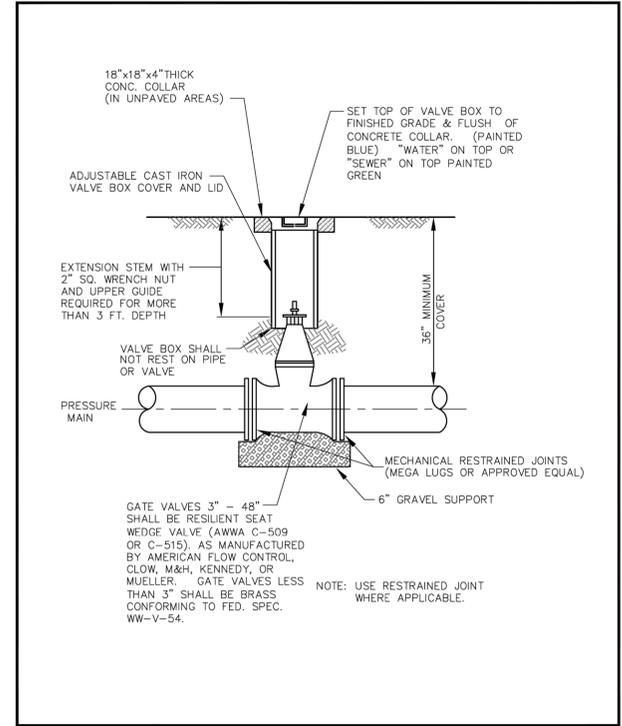
- WATER SYSTEMS SHALL BE PRESSURE TESTED AT 150 PSI STATIC PRESSURE FOR A PERIOD OF 2 HOURS PER AWWA STANDARDS. TESTS SHALL BE CONDUCTED BEFORE FINAL PAVING AND IN THE PRESENCE OF THE CITY'S INSPECTOR.
- ALL WATER SERVICES SHALL BE MARKED WITH A "A" SAW CUT INTO THE CURB OR BY METAL TABS SET INTO THE PAVEMENT.
- ALL WATER VALVES AND BLOW-OFFS SHALL BE MARKED WITH AN "X" SAW CUT INTO THE CURB OR BY METAL TABS SET INTO THE PAVEMENT. LOCATION OF METAL TABS IN INCHES FROM EDGE OF PAVEMENT SHALL EQUAL DISTANCE IN FEET FROM EDGE OF PAVEMENT TO VALVE.
- UNFLANGE 1300 SERIES PIPE RESTRAINTS AS MANUFACTURED BY FORD OR APPROVED EQUAL MAY BE USED AS APPROPRIATE FOR RESTRAINING IN-LINE PRESSURE PIPE EACH SIDE OF PIPE JOINT, AS REQUIRED BY RESTRAINT TABLE.
- TRACING WIRE SHALL BE INSTALLED IN ACCORDANCE WITH UTILITY PIPE LOCATION MATERIALS DETAIL.
- NO GALVANIZED PIPE, FITTINGS, ETC. ARE ACCEPTED.
- ALL WATER METERS SHALL BE INSTALLED AT THE RIGHT OF WAY LINE ONLY REGARDLESS OF SIZE.
- SUBMIT ASSEMBLY CERTIFICATION FOR ALL BACKFLOW PREVENTERS TO THE CITY'S ENGINEERING DEPARTMENT BEFORE FINAL INSPECTION.
- PIPING FOR RAW WATER SHALL BE OLIVE GREEN FOR ABOVE GROUND PIPING, BURIED PVC PIPING SHALL BE BLUE WITH WHITE COLOR BACKGROUND LOCATOR TAPE PLACED DIRECTLY ON TOP OF THE PIPE AND AT 12" TO 18" ABOVE THE PIPE. THE TAPE SHALL CONTINUOUSLY READ "CAUTION - RAW WATER MAIN BURIED BELOW" OR WHITE WITH LOCATOR TAPE PLACED 12" TO 18" ABOVE THE TOP OF THE PIPE.
- SEE CHART BELOW FOR WATER MAIN SIZE AND MATERIALS.

MATERIALS			
DIAMETER	MATERIAL	STANDARD	AWWA
2" - 4"	PVC 1120 / CLASS 150	4850 B 206	
4" - 12"	PVC 1120 / CLASS 150	AWWA C 900	
14" - 18" SCHEDULE PIPE LINE	PVC 1120 / CLASS 150	AWWA C 900	
18" - 30"	PVC 1120	AWWA C 900	
30" - 48"	D.I.P. OR 1"	ASTM F 714	

NOTE: PVC PIPE COLOR SHALL BE BLUE FOR POTABLE WATER MAINS, BLUE WITH WHITE BACKGROUND LOCATOR TAPE OR WHITE WITH WHITE LOCATOR TAPE FOR RAW WATER MAINS.

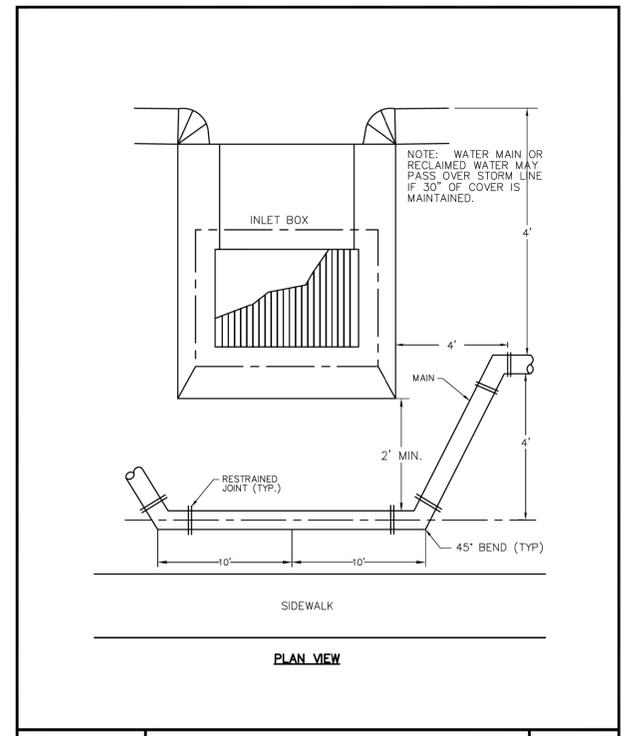
STANDARD CONSTRUCTION DETAIL
GENERAL NOTES
WATER SYSTEM CONSTRUCTION

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W-1C
MARCH 2014



STANDARD CONSTRUCTION DETAIL
GATE VALVE AND VALVE BOX
NTS.

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MARCH 2014



STANDARD CONSTRUCTION DETAIL
WATER MAIN INSTALLATION BETWEEN DRAINAGE INLET AND SIDEWALK
NTS.

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MARCH 2014

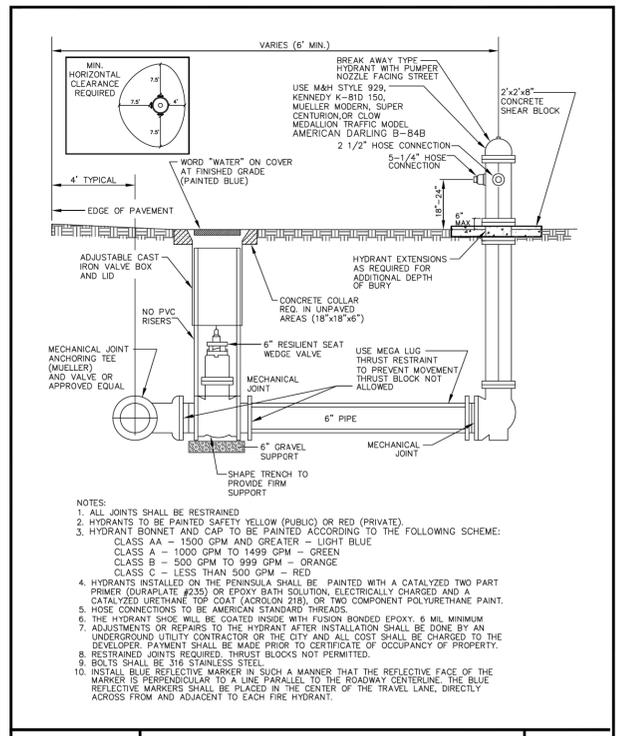
PIPE SIZE (IN.)	THRUST BLOCK			DIMENSION (feet)		
	90° BEND	45° BEND	22.5° BEND	11.25° BEND	DEAD END	TEE/WYE
4	1.5	0.5	1.0	0.5	1.0	0.5
6	2.0	0.5	1.5	0.5	1.0	0.5
8	2.5	0.5	2.0	0.5	1.5	0.5
10	3.0	0.5	2.5	1.0	2.0	0.5
12	4.0	1.0	3.0	1.0	2.0	0.5
14	4.5	1.0	3.0	1.0	2.0	0.5
16	5.0	1.5	4.0	1.0	3.0	1.0
18	5.7	1.7	4.2	1.4	3.1	1.4
24	7.7	1.7	5.6	1.4	4.1	1.4
30	9.5	2.1	7.0	1.7	5.1	1.4
36	11.5	2.4	8.4	1.8	6.0	1.7

REINFORCEMENT STEEL: SEE CHART FOR 10" REINFORCEMENT. 1/2" & UNDER: #3 BAR @ 8" EACH WAY. 1/2" TO 2 1/2": #3 BAR @ 8" EACH WAY.

NOTES:
1. THRUST BLOCKS TO BE SET AGAINST FIRM UNDISTURBED SOIL.
2. FITTINGS TO BE WRAPPED IN MOSQUITO OR POLYETHYLENE ENCASMENT PRIOR TO POURING CONCRETE.
3. CONCRETE STRENGTH f' = 3000 P.S.I.

STANDARD CONSTRUCTION DETAIL
THRUST BLOCK DETAILS
NTS.

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MARCH 2014



STANDARD CONSTRUCTION DETAIL
FIRE HYDRANT ASSEMBLY
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SCHEDULE OF LENGTHS OF RESTRAINED PVC PIPE (FT.)

FITTING	1/4 BEND	1/8 BEND	1/16 BEND	1/32 BEND	TEE OR DEAD END
4"	20	18	18	18	45
6"	28	18	18	18	63
8"	36	18	18	18	82
10"	44	28	18	18	98
12"	51	21	18	18	116
14"	57	24	18	18	132
16"	63	26	18	18	148
18"	69	29	18	18	163
20"	75	31	18	18	179
24"	87	36	18	18	208
30"	102	42	20	18	248

LENGTHS BETWEEN HEAVY LINES INDICATE ONE FULL LENGTH (18' MIN.) OF PIPE TO BE RESTRAINED.
TABLE SHOWS MINIMUM LENGTH OF PIPE EACH WAY FROM FITTING FOR WHICH RESTRAINT IS REQUIRED.

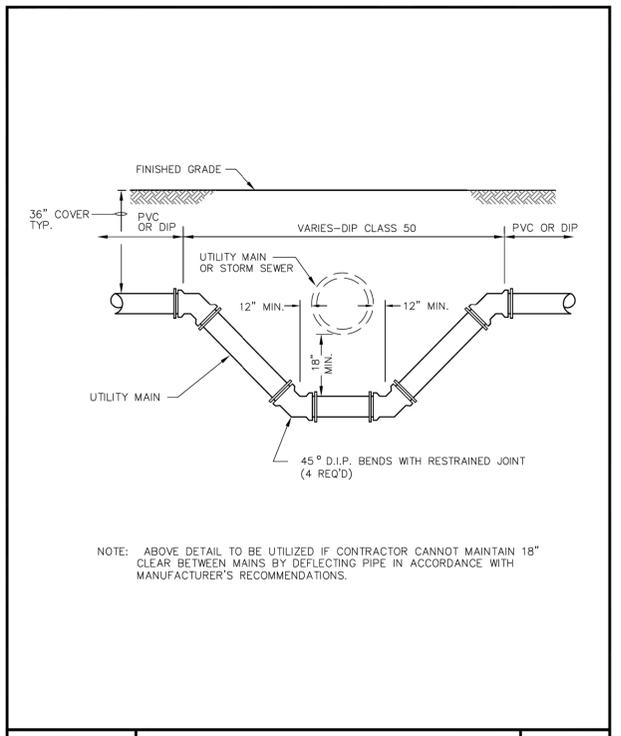
SCHEDULE OF LENGTHS OF RESTRAINED DIP (FT.)

FITTING	1/4 BEND	1/8 BEND	1/16 BEND	1/32 BEND	TEE OR DEAD END
4"	21 (26)	18 (18)	18 (18)	18 (18)	37 (55)
6"	30 (36)	18 (18)	18 (18)	18 (18)	52 (78)
8"	38 (45)	18 (18)	18 (18)	18 (18)	67 (100)
10"	45 (54)	18 (22)	18 (18)	18 (18)	81 (122)
12"	52 (63)	22 (26)	18 (18)	18 (18)	94 (141)
14"	60 (72)	25 (30)	18 (18)	18 (18)	107 (160)
16"	66 (80)	27 (33)	18 (18)	18 (18)	120 (180)
18"	74 (87)	31 (36)	18 (18)	18 (18)	132 (198)
20"	80 (94)	33 (39)	18 (18)	18 (18)	144 (216)
24"	92 (108)	38 (45)	18 (22)	18 (18)	167 (250)
30"	106 (128)	44 (53)	21 (25)	18 (18)	199 (298)
36"	122 (147)	51 (61)	24 (28)	18 (18)	234 (354)
42"	138 (166)	59 (70)	27 (32)	18 (18)	273 (417)
48"	156 (189)	68 (81)	30 (36)	18 (18)	318 (486)

LENGTHS BETWEEN HEAVY LINES INDICATE ONE FULL LENGTH (18' MIN.) OF PIPE TO BE RESTRAINED.
TABLE SHOWS MINIMUM LENGTH OF PIPE EACH WAY FROM FITTING FOR WHICH RESTRAINT IS REQUIRED.
VALUES IN PARENTHESIS ARE FOR PIPE ENCASED IN POLYETHYLENE.

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PVC AND D.I.P. RESTRAINED JOINT TABLE
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PIPE CROSSING
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			Approved by:	BRW
			Vertical Datum:	1988

SINGHOFEN & ASSOCIATES, INC.
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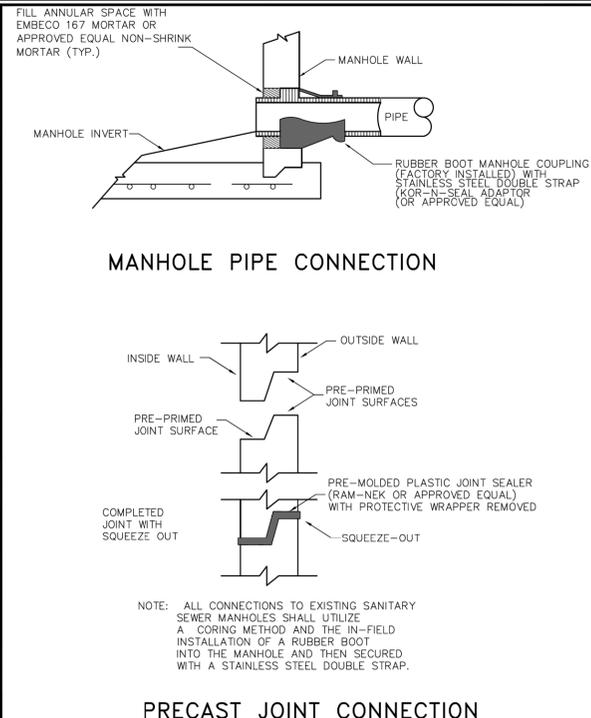
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TOMOKA HOLDINGS, LLC

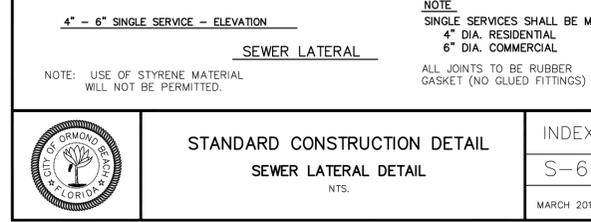
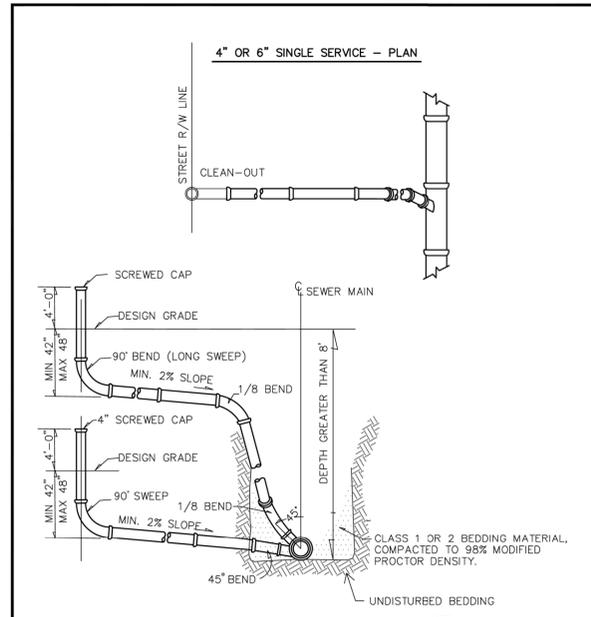
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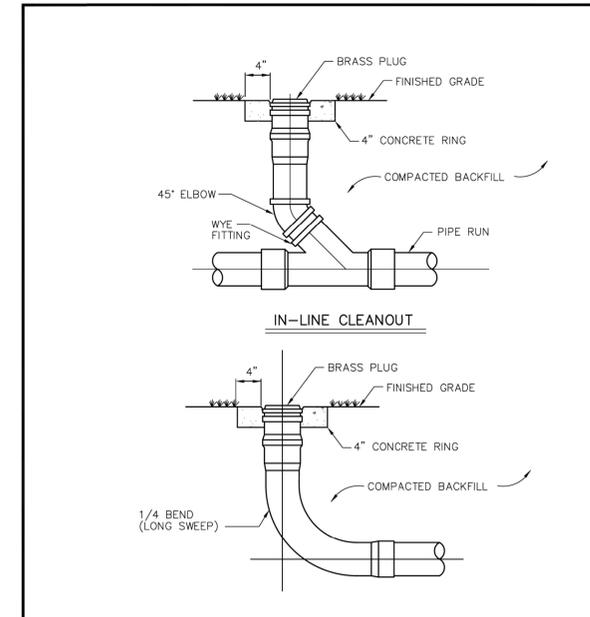
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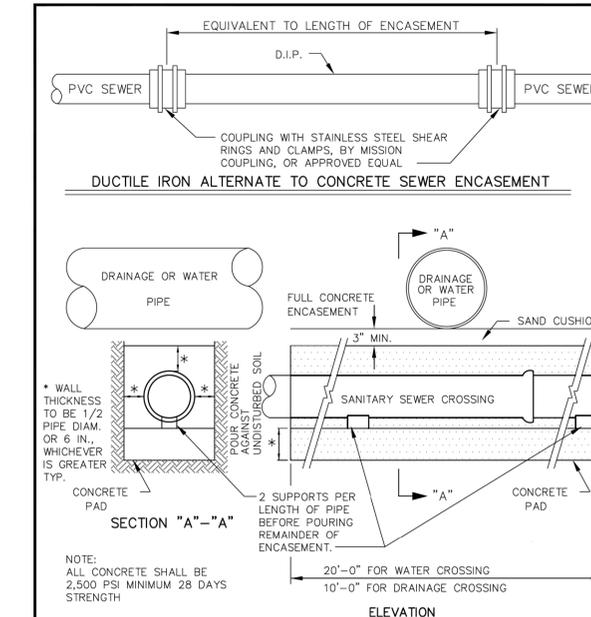
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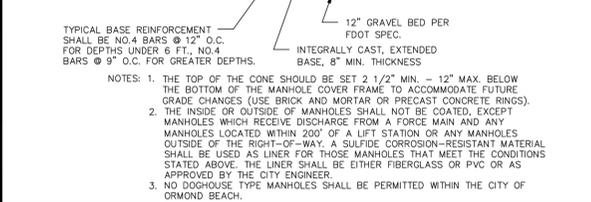
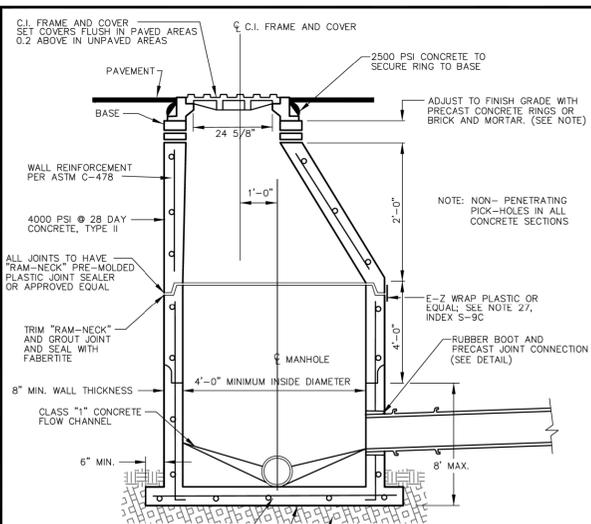
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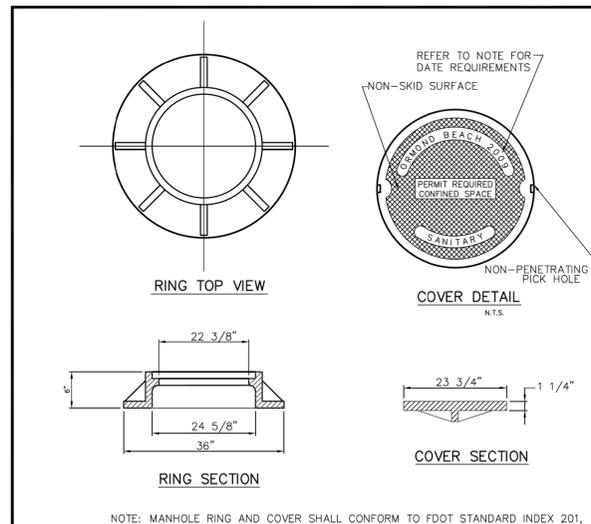
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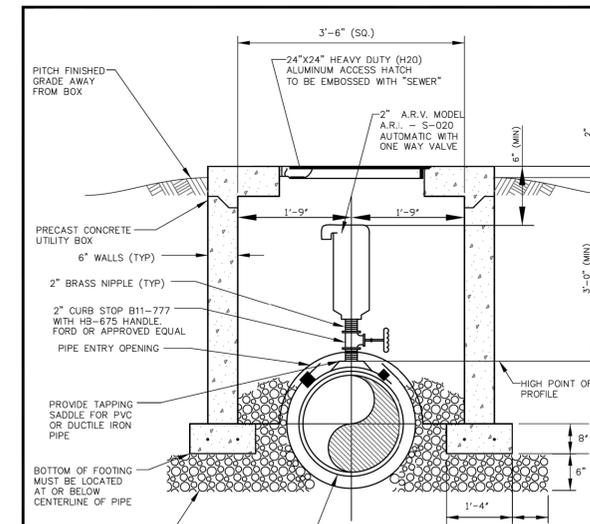
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TOMOKA HOLDINGS, LLC

ORMOND CROSSINGS PHASE B

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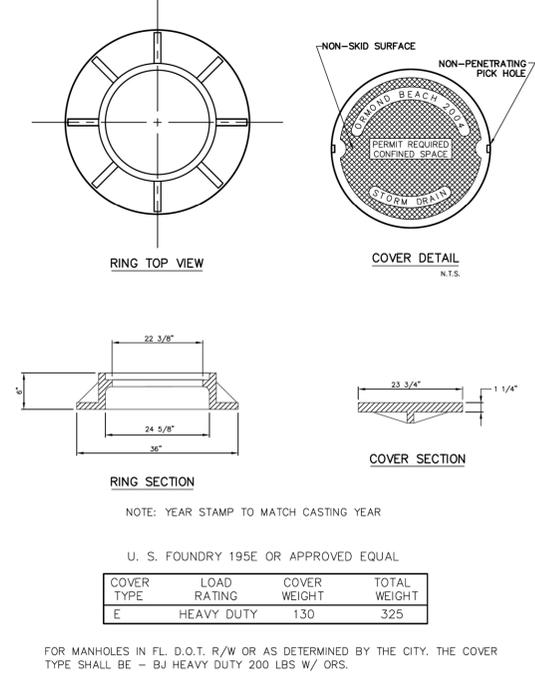
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- CONSTRUCTION STANDARDS FOR ALL DRAINAGE SYSTEM COMPONENTS SHALL CONFORM TO THE LATEST EDITION OF THE "FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AND AS SPECIFIED HEREIN.
- ALL STORM WATER PIPES AND STRUCTURES SHALL BE INSTALLED ON A FIRM FOUNDATION WITH ALL UNSUITABLE MATERIAL (MUCK, ROCK, COQUINA, ETC.) REMOVED AND REPLACED WITH CLEAN GRANULAR MATERIAL.
- DEWATERING SHALL BE PROVIDED TO KEEP GROUNDWATER ELEVATION A MINIMUM OF 6 INCHES BELOW THE COMPONENT BEING INSTALLED.
- ALL PIPES AND STRUCTURES SHALL BE PLACED TRUE TO LINES AND GRADES AS DEPICTED ON THE APPROVED PLANS.
- ALL PIPE JOINTS SHALL BE PROPERLY HONED AND FILTER FABRIC LINED USING A METHOD TO HOLD THE FABRIC IN PLACE DURING BACKFILL.
- BACKFILL AND COMPACT TO THE SPRING-LINE (CENTER OF PIPE) ELEVATION AND REQUEST CITY INSPECTION AND APPROVAL BEFORE CONTINUING.
- ALL WORK COVERED WITHOUT CITY INSPECTION WILL BE REQUIRED TO BE EXCAVATED AND INSPECTED AT THE CONTRACTOR'S EXPENSE.
- TRENCHES SHALL BE BACKFILLED AND COMPACTED WITH CLEAN GRANULAR MATERIAL IN MAX 6" LIFTS WITH A MINIMUM COMPACTION OF 98 PERCENT (AASHTO-T180) IN PAVED AREAS AND 95 PERCENT (AASHTO-T180) IN UNPAVED AREAS.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT TRENCH COMPACTION TESTS AT POINTS 1' ABOVE THE PIPE AND AT A MAX. 1' VERTICAL INTERVALS TO FINISH GRADE, AT A MAXIMUM SPACING OF 100 FEET, AND TO FURNISH COPIES OF TEST REPORTS PROMPTLY TO THE CITY'S INSPECTOR.
- ALL STORM SEWER PIPE SHALL BE REINFORCED CONCRETE (RCP), HIGH DENSITY POLYETHYLENE (HDPE), POLYVINYL CHLORIDE (PVC) OR ALUMINUM CORRUGATED METAL PIPE (ACMP), AS SHOWN ON THE PLANS.
- STORM DRAINAGE PIPES WITHIN PUBLIC RIGHT-OF-WAY SHALL BE A MINIMUM OF FIFTEEN (15) INCH RCP DIAMETER OR EQUIVALENT.
- STORM INLETS, MANHOLES, AND CATCH BASINS SHALL BE EITHER POURED IN PLACE OR PRECAST REINFORCED CONCRETE. STRUCTURES SHALL BE REQUIRED AT EACH CHANGE OF PIPE SIZE OR CHANGE IN PIPE DIRECTION.

- STORM INLETS SHALL BE SPACED IN SUCH A MANNER AS TO ACCEPT ONE HUNDRED (100) PERCENT OF THE DESIGN STORM RUNOFF.
- WET DETENTION PONDS SHALL BE EIGHT (8) FEET MINIMUM TO TWELVE (12) FEET MAXIMUM DEPTH BELOW THE DESIGN LOW OR NORMAL WATER STAGE.
- MAXIMUM DISTANCES BETWEEN INLETS AND/OR JUNCTION BOXES:

PIPES SIZE (INCHES)	LENGTH OF RUN (FEET)
15	150
18	300
24 OR GREATER	400
- ALL SWALES, DITCHES, AND DRY RETENTION POND SIDE SLOPES SHALL BE NO STEEPER THAN 4:1 (H:V) AND SHALL BE SODDED.
- ALL RETENTION POND BACKSLOPES SHALL BE NO STEEPER THAN 3:1 (H:V) AND SHALL BE SODDED.
- NORMAL ROADSIDE SWALES SHALL BE CONSTRUCTED TO A MAXIMUM DEPTH OF 18" BELOW THE OUTSIDE EDGE OF PAVEMENT OR CONCRETE CURB.
- CONCRETE EROSION CONTROL MUST BE PROVIDED WHERE SWALES OR CULVERTS INTERCEPT DRAINAGE DITCHES.
- A MINIMUM ONE FOOT (1') FREEBOARD ABOVE THE DESIGN HIGH WATER ELEVATION IS REQUIRED AT ALL POINTS AROUND WET RETENTION PONDS.
- A MINIMUM SIX INCH (6") FREEBOARD ABOVE THE DESIGN HIGH WATER ELEVATION IS REQUIRED AT ALL POINTS AROUND DRY RETENTION PONDS.
- POND INFLOW SHALL GENERALLY BE CONSTRUCTED WITH REINFORCED CONCRETE AND SHALL BE SUBJECT TO THE APPROVAL OF THE CITY.
- OUTLET STRUCTURES ARE REQUIRED ON ALL PONDS. ALL OUTLET STRUCTURES SHALL BE PERMANENT CONCRETE OVERFLOW WEIRS OR CONCRETE OUTLET CONTROL STRUCTURES. NO SODDED WEIRS OR OTHER NON-PERMANENT OVERFLOW STRUCTURES SHALL BE ALLOWED.
- SOIL EROSION CONTROL MEASURES SATISFACTORY TO THE CITY, SHALL BE EMPLOYED DURING CONSTRUCTION AND UPON COMPLETION OF THE POND.
- THE CITY MAY REQUEST THAT THE DEVELOPER SUBMIT A REPORT BY A QUALIFIED HYDROLOGIST ON THE IMPACT THE POND WILL HAVE ON NEIGHBORING WATER TABLE ELEVATIONS BOTH DURING CONSTRUCTION AND AFTER POND COMPLETION. THE CITY MAY REQUIRE GROUNDWATER MONITORING DURING THE POND EXCAVATION.

- ADEQUATE MAINTENANCE ACCESS AS APPROVED BY THE CITY SHALL BE PROVIDED AROUND THE ENTIRE PERIMETER OF ALL PONDS AND ASSOCIATED OUTFALLS DISCHARGING INTO AND OUT OF PONDS.
- IN GENERAL, ALL RETENTION/DETENTION PONDS MUST BE CONSTRUCTED PRIOR TO ANY ROAD, PARKING LOT, OR BUILDING CONSTRUCTION COMMENCING OR AS CURRENT PERMIT CONDITIONS DICTATE.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN ANY DEWATERING PERMITS THAT MAY BE REQUIRED.
- CULVERTS CROSSING RIGHT-OF-WAYS SHALL EXTEND FROM RIGHT-OF-WAY LINE TO RIGHT-OF-WAY LINE UNDER THE ROADWAY.
- ALL STORM WATER DISCHARGE FROM RETENTION/DETENTION PONDS ARE REQUIRED TO BE CHANNELLED INTO DEFINED DRAINAGE PATHS TO EXISTING WATER BODIES, WETLANDS, DITCHES, ETC.
- THE CITY OF ORMOND BEACH REQUIRES THE DEVELOPER TO TELEVIEW ANY AND ALL STORM SEWER PIPE SYSTEMS IN THE PRESENCE OF THE CITY INSPECTOR BY A REPUTABLE COMPANY THAT ENGAGES IN THIS TYPE OF WORK. THE DVD SHALL BE IN HIGH QUALITY STANDARD RESOLUTION USING A CAMERA WITH SUITABLE LIGHTING TO ALLOW A CLEAR FOCUSED PICTURE OF THE ENTIRE INSIDE PIPE CIRCUMFERENCE. THE DVD SHALL BE NON-STOP WITH AUDIO DESCRIBING WHAT IS BEING VIEWED. COPIES OF DVD SHALL BE SUBMITTED IN DVD FORMAT ACCOMPANIED BY WRITTEN LOGS DESCRIBING THE CONDITION OF THE LINES AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO REQUESTING FINAL INSPECTIONS. ANY DEFECTS NOTED SHALL BE CORRECTED PRIOR TO ACCEPTANCE BY THE CITY OR ISSUANCE OF CERTIFICATE OF OCCUPANCY.

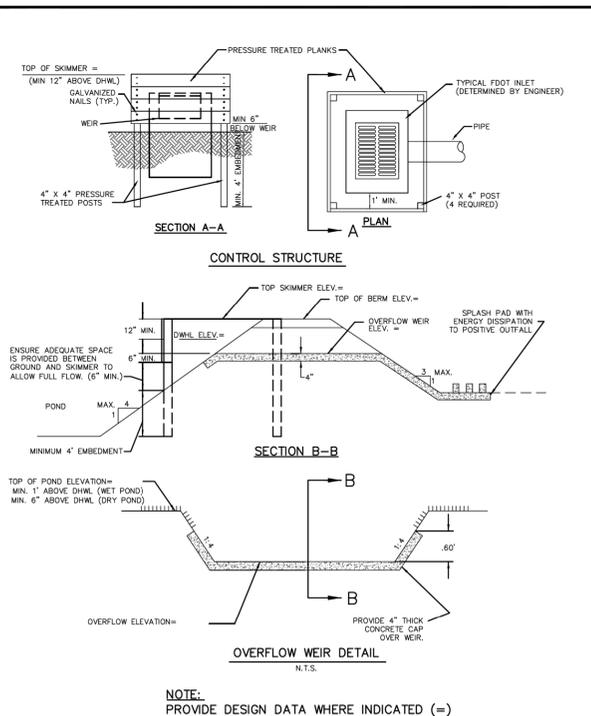


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- IN ORDER TO ENSURE THAT NEW DEVELOPMENTS WITHIN THE CITY ARE CONSTRUCTED SUBSTANTIALLY IN ACCORDANCE WITH CITY REGULATIONS AND THE APPROVED DRAWINGS "AS-BUILT" DRAWINGS ARE REQUIRED:
- THE FOLLOWING INFORMATION IS REQUIRED ON ALL PAVING AND DRAINAGE "AS-BUILT" DRAWINGS:
- PAVEMENT AND CURB WIDTHS SHALL BE VERIFIED AND DIMENSIONED FOR EACH STREET AT EACH BLOCK. ALL RADII AT INTERSECTIONS SHALL BE VERIFIED AND DIMENSIONED. THIS INFORMATION TO CLEARLY INDICATE IT AS BEING "AS-BUILT" INFORMATION.
 - ROADWAY ELEVATIONS SHALL BE RECORDED AT ALL GRADE CHANGES OR OTHER INTERVALS AS NEEDED ALONG ALL STREETS. STREET CENTERLINE AND CURB INVERT ELEVATIONS SHALL BE RECORDED AS NOTED. THE "AS-BUILT" CENTERLINE PROFILE OF ALL STREETS SHALL ALSO BE SHOWN ON THE PLAN AND PROFILE SO IT MAY BE COMPARED TO THE EXISTING AND DESIGNED PROFILE GRADE LINES. ALL STREET CENTERLINES ON "AS-BUILTS" SHALL BE LABELED WITH STREET NAME AND RIGHT-OF-WAY WIDTH ON EVERY PAGE.
 - STORM DRAINAGE STRUCTURES SHALL BE LOCATED AND/OR DIMENSIONED FROM CENTERLINES OR LOT LINES AS APPROPRIATE.
 - STORM DRAINAGE PIPE INVERT AND STRUCTURE TOP AND BOTTOM ELEVATIONS SHALL BE RECORDED AND CLEARLY DENOTED AS "AS-BUILT" INFORMATION. DESIGN ELEVATIONS SHALL BE CROSSED OUT AND "AS-BUILT" INFORMATION WRITTEN NEXT TO IT.
 - STORM DRAINAGE PIPE MATERIAL, LENGTH, AND SIZE SHALL BE MEASURED AND/OR VERIFIED. THIS INFORMATION TO CLEARLY INDICATE IT AS BEING "AS-BUILT" INFORMATION.
 - ALL APPLICABLE TOPOGRAPHIC INFORMATION, PERTINENT TO THE ON SITE DRAINAGE SYSTEM SUCH AS DITCHES, LAKES, CANALS, ETC. THAT ARE DEEMED APPROPRIATE BY THE CITY SHALL BE NOTED. NORMALLY, RECORDING ELEVATIONS EVERY 100 FEET AT THE TOP OF BANK AND TOE OF SLOPE WILL BE REQUIRED. MEASUREMENTS SHALL BE TAKEN AND RECORDED IN ORDER TO ACCURATELY TIE DOWN THESE FEATURES TO THE ROADWAY CENTERLINES AND TO PLAT LINES. WHENEVER POSSIBLE, CONTOUR LINES SHALL BE UTILIZED TO GRAPHICALLY DESCRIBE THESE TOPOGRAPHIC FEATURES.
 - RETENTION AREAS SHALL HAVE THEIR TOP-OF-BANK AND BOTTOM ELEVATIONS RECORDED. ACTUAL MEASUREMENTS SHALL BE TAKEN AND DIMENSIONS RECORDED OF THE SIZE OF ALL RETENTION AREAS. MEASUREMENTS SHALL BE DONE FROM TOP-OF-BANK TO TOP-OF-BANK WITH SIDE SLOPES INDICATED. SEPARATE CALCULATIONS SHALL BE SUBMITTED TO INDICATE REQUIRED AND PROVIDED RETENTION VOLUMES.
 - STORM DRAINAGE SWALE CENTERLINES SHALL BE LOCATED AND ELEVATIONS OF FLOW LINE SHALL BE RECORDED EVERY 100 FEET.
 - ANY SPECIAL FEATURES SUCH AS CONCRETE FLUMES, LAKE BANKS, WALLS, FENCING, ETC., WHICH WERE A PART OF THE APPROVED CONSTRUCTION DRAWINGS SHOULD ALSO BE LOCATED AND DIMENSIONED.
 - ACTUAL MATERIALS USED AND ELEVATIONS AND DIMENSIONS OF OVERFLOW WEIR STRUCTURES AND SKIMMERS SHALL BE NOTED ON THE "AS-BUILT".
- THE FOLLOWING INFORMATION IS REQUIRED ON ALL WATER AND SEWER "AS-BUILT" DRAWINGS:
- SANITARY SEWER MANHOLES SHALL BE VERIFIED AND DIMENSIONED FROM STREET CENTERLINES OR LOT LINES AS APPROPRIATE. ALL R/W AND INVERT ELEVATIONS SHALL BE VERIFIED AND RECORDED. THIS INFORMATION TO CLEARLY INDICATE IT AS BEING "AS-BUILT" INFORMATION.
 - SANITARY SEWER LINE LENGTHS, SIZES, MATERIAL, SLOPE, ETC. SHALL BE VERIFIED AND RECORDED. THIS INFORMATION TO CLEARLY INDICATE IT AS BEING "AS-BUILT" INFORMATION.

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- SEWER LATERALS SHALL BE VERIFIED AND RECORDED AT THEIR CLEAN-OUT LOCATIONS. STATIONING AND OFFSET DISTANCES SHALL BE MEASURED FROM DOWNSTREAM MANHOLES TOWARDS UPSTREAM MANHOLES.
 - LIFT STATIONS AND FORCE MAINS SHALL BE VERIFIED AND DIMENSIONED FROM STREET CENTERLINES OR LOT LINES AS APPROPRIATE. FORCE MAIN DEPTH AND LOCATION INCLUDING VALVES WILL BE PROVIDED AND TIED TO PERMANENT ABOVE GRADE FEATURES EVERY 500 FEET. DIMENSIONAL AND ELEVATION INFORMATION INDICATED ON THE APPROVED PLAN SHALL BE VERIFIED AND RECORDED. THIS INFORMATION TO CLEARLY INDICATE IT AS BEING "AS-BUILT" INFORMATION. BURIED ELECTRICAL SERVICE LINE SHALL BE CLEARLY DIMENSIONED, LOCATED AND LABELED.
 - CURB CUTS OR METAL TABS, USED TO MARK SEWER LATERALS, WATER SERVICES AND WATER VALVES, SHALL BE VERIFIED FOR PRESENCE AND ACCURACY OF LOCATION.
 - WATER MAIN LINES SHALL BE DIMENSIONED OFF THE BACK OF CURB OR EDGE OF PAVEMENT IF NO CURB IS PRESENT. WATER MAIN LINE MATERIAL, SIZE, LENGTH AND DEPTH PLACED SHALL ALSO BE NOTED. THIS INFORMATION TO CLEARLY INDICATE IT AS BEING "AS-BUILT" INFORMATION.
 - WATER VALVES, TEES, ALL SERVICES, BLOW-OFFS AND FIRE HYDRANTS SHALL BE LOCATED BY TYPING THEM TO SANITARY SEWER MANHOLES. STATIONING AND OFFSET DISTANCES SHALL BE MEASURED FROM DOWNSTREAM MANHOLES TO UPSTREAM MANHOLES.
- THE FOLLOWING INFORMATION IS GENERAL REQUIREMENTS OF ALL "AS-BUILT" DRAWINGS:
- FOR PERPENDICULAR CROSSINGS OF STORM WATER, SANITARY SEWER, POTABLE WATER, OR RECLAIMED WATER, THE "AS-BUILT" PLANS SHALL CLEARLY INDICATE WHICH UTILITIES ARE LOCATED OVER OR UNDER OTHER UTILITIES, AS NECESSARY.
 - WHEN STORM WATER, POTABLE WATER, RECLAIMED WATER, OR SANITARY SEWER IMPROVEMENTS ARE LOCATED WITHIN AN EASEMENT, THE "AS-BUILT" SHALL ACCURATELY DEPICT THE LOCATION OF THE EASEMENT ITSELF AS WELL AS THE EXACT LOCATION OF THE IMPROVEMENTS WITHIN THE EASEMENT. THIS IS REQUIRED IN ORDER TO VERIFY THAT THE IMPROVEMENTS HAVE BEEN PROPERLY LOCATED AND TO ENSURE THAT FUTURE SUBSURFACE EXCAVATION TO PERFORM REMEDIAL REPAIR CAN BE ACCOMPLISHED WITHOUT DISTURBANCE BEYOND THE EASEMENT. SUCH DOCUMENTATION AND THE ASSOCIATED PROPOSED EASEMENT DOCUMENT WITH LEGAL DESCRIPTION SHALL BE SUBMITTED FOR CITY REVIEW AND APPROVAL PRIOR TO RECORDING OF SAID EASEMENT. UPON CITY APPROVAL, THE EASEMENT SHALL BE RECORDED VIA A SEPARATE LEGAL INSTRUMENT AND SHALL NOT BE INCLUDED AS PART OF HOMEOWNER COVENANTS AND RESTRICTIONS.
 - SUBMIT CERTIFIED PAPER PRELIMINARY "AS-BUILT" (24"x36") WITH REQUEST FOR FINAL INSPECTION. SUBMIT 3 SETS SHOWING WATER FACILITIES, 3 SETS WITH SEWER FACILITIES, AND 3 SETS WITH PAVING AND DRAINAGE FACILITIES. FOLLOWING FINAL INSPECTION AND COMMENTS, THE CONTRACTOR SHALL REVISE "AS-BUILTS" TO ADDRESS CITY COMMENTS AND SUBMIT 3 SETS CERTIFIED FINAL "AS-BUILTS" ALONG WITH 1 SET CERTIFIED MYLARS AND 1 CD-ROM CONTAINING AUTO-CAD FILES AND PDF VERSIONS SHOWING ALL "AS-BUILT" SHEETS. ALL "AS-BUILT" DRAWINGS SHALL BE CERTIFIED BY A REGISTERED LAND SURVEYOR AND ENGINEER OF RECORD.
 - INDICATE VERTICAL DATUM REFERENCE ON ALL SHEETS.
 - CAD FILE OF "AS-BUILTS" SHALL BE IN STATE PLANE COORDINATES; FILE SHOULD INCLUDE REFERENCE TO PROJECTION. (FLORIDA EAST, NAD83)
 - ALL "AS-BUILT" DRAWINGS SHALL BE PREPARED BY A FLORIDA REGISTERED LAND SURVEYOR USING THE FINAL APPROVED SITE DESIGN PREPARED BY THE ENGINEER OF RECORD. LINE WEIGHTS, LINESYLES, AND ANNOTATION SHALL BE MANAGED IN A MANNER THAT CLEARLY DISTINGUISHES DESIGN INFORMATION FROM "AS-BUILT" INFORMATION.
 - ALL "AS-BUILT" SHEETS SHALL INCLUDE A TITLE BLOCK AND CLEARLY STATE PROJECT NAME, PROJECT SURVEYOR, DATE OF FIELD WORK, AS WELL AS PROJECT CERTIFICATION BLOCK FROM THE ENGINEER OF RECORD.
- NOTE: REFERENCES TO WATER SHALL MEAN BOTH POTABLE AND RECLAIMED WATER.

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TOMOKA HOLDINGS, LLC

ORMOND CROSSINGS PHASE B

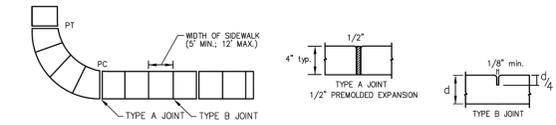
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GENERAL NOTES:

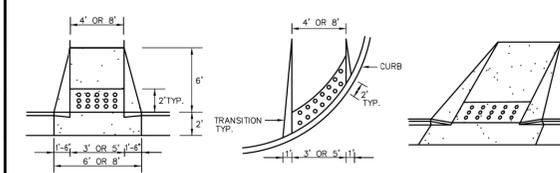
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF ORMOND BEACH'S LAND DEVELOPMENT CODE REQUIREMENTS, AND THE STANDARD CONSTRUCTION DETAILS AND CONSTRUCTION SPECIFICATIONS (SCDCS). AN ENGINEERING PERMIT AND TREE REMOVAL PERMIT IS REQUIRED PRIOR TO STARTING CONSTRUCTION.
- NO LAND SHALL BE CLEARED, EXCAVATED OR FILLED AND NO STRUCTURE SHALL BE ERRECTED, REPAIRED OR DEMOLISHED WITHOUT PROPER PERMIT(S) AS REQUIRED BY THE CITY OF ORMOND BEACH.
- NOTIFY THE CITY OF ORMOND BEACH'S ENGINEERING DIVISION AT 676-3269 48 HOURS PRIOR TO THE START OF CONSTRUCTION.
- ANY CONSTRUCTION CHANGES TO APPROVED PLANS SHALL BE SUBMITTED TO THE CITY OF ORMOND BEACH FOR APPROVAL PRIOR TO PERFORMING THE WORK.
- ROAD CONSTRUCTION AND PIPE INSTALLATION COMPACTION AND DENSITY TESTING SHALL CONFORM TO THE CITY OF ORMOND BEACH'S MINIMUM REQUIREMENTS. CERTIFIED COPIES OF TEST REPORTS SHALL BE SUBMITTED TO THE CITY INSPECTOR AND THE CITY'S ENGINEERING DIVISION.
- A PRE-PAVING UTILITY INSPECTION MUST BE REQUESTED AND COMPLETED PRIOR TO THE PAVING OF ALL ROADS, STREETS, AND PARKING AREAS.
- A FINAL INSPECTION, TO BE CONDUCTED BY THE CITY OF ORMOND BEACH, SHALL BE PERFORMED ON ALL CONSTRUCTION. THE DESIGN ENGINEER SHALL NOTIFY THE CITY OF ORMOND BEACH'S ENGINEERING DIVISION 676-3269 WHEN REQUESTING A FINAL INSPECTION.
- THREE COMPLETE SETS OF AS-BUILT DRAWINGS (5 FOR SUBDIVISIONS) ARE REQUIRED TO BE SUBMITTED TO THE CITY OF ORMOND BEACH PRIOR TO REQUESTING A FINAL INSPECTION.
- THE CITY HAS A CONTRACTOR FOR ROLL OFF SERVICE. NO OTHER CONTRACTOR SHALL BE PERMITTED TO PROVIDE THIS SERVICE. VERIFY COMPANY UNDER CONTRACT WITH THE CITY.
- CONSTRUCTION SITES THAT DISTURB ONE ACRE OR MORE WILL BE REQUIRED TO SEEK COVERAGE UNDER THE GENERIC PERMIT FOR STORM WATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES. IN ACCORDANCE WITH THIS REQUIREMENT, A STORM WATER POLLUTION PREVENTION PLAN (SWPP) MUST BE SUBMITTED TO THE CITY'S ENGINEERING DIVISION PRIOR TO CONSTRUCTION TO BE IN COMPLIANCE WITH THE PERMIT.
- CONTRACTOR WILL FOLLOW REQUIRED WASTE MANAGEMENT PRACTICES
- SEEDING OR SODDING SHALL BE INITIATED FOR EROSION AND SEDIMENT CONTROL ON DISTURBED AREAS AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED.
- ANY FIELD MODIFICATIONS OR DEVIATIONS TO THIS CONSTRUCTION PLAN REQUIRES WRITTEN APPROVAL BY BOTH THE ENGINEER OF RECORD AND THE CITY OF ORMOND BEACH ENGINEERING DIVISION.

	STANDARD CONSTRUCTION DETAIL GENERAL CONSTRUCTION NOTES	INDEX M-2
		MARCH 2014



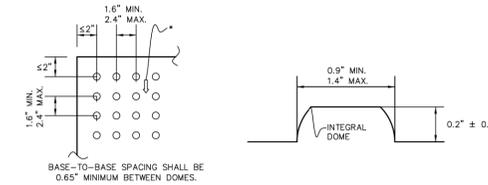
- SIDEWALKS, BIKEPATHS, RAMPS, AND DRIVEWAY APRONS SHALL BE CONSTRUCTED OF PLAIN PORTLAND CEMENT CONCRETE WITH A MAXIMUM SLUMP OF 3 INCHES, A MINIMUM DEVELOPED COMPRESSIVE STRENGTH OF 2500 P.S.I. IN 28 DAYS, AND A MINIMUM UNIFORM THICKNESS OF 4 INCHES WHERE INTENDED SOLELY FOR PEDESTRIAN TRAFFIC, AND 6 INCHES THICK WHERE MOTOR VEHICLES ARE LIKELY TO CROSS. SIDEWALKS SHALL BE 5 FOOT WIDE UNLESS OTHERWISE SHOWN ON PLANS.
- SIDEWALKS AND BIKE PATHS SHALL BE PLACED PARALLEL TO, AND ONE FOOT WITHIN THE RIGHT-OF-WAY LINE EXCEPT THAT THE CITY MAY APPROVE DEVIATIONS TO SAVE SPECIEMEN TREES PROVIDED THAT THE PAVEMENT REMAINS WITHIN THE RIGHT-OF-WAY, IS NOT DIMINISHED IN WIDTH, AND REMAINS AT LEAST 4 FEET FROM THE EDGE OF THE STREET PAVEMENT, UNLESS OTHERWISE APPROVED BY THE CITY.
- THE TOP OF THE CONCRETE SHALL BE AT AN ELEVATION NO LOWER THAN THE CROWN OF THE ADJACENT ROADWAY, AND NO HIGHER THAN 6 INCHES ABOVE THE CROWN UNLESS APPROVED BY THE CITY TO MAKE A MORE NATURAL TRANSITION WITH THE ADJACENT LAND.
- ALL WALKS SHALL HAVE A CROSS SLOPE OF 1/4 INCH PER FOOT AND SHALL NOT EXCEED A LONGITUDINAL SLOPE OF 1:20, EXCEPT AT DESIGNATED RAMPS THAT SHALL NOT EXCEED 1:12. PROVIDE A TACTILE WARNING SURFACE AT ALL RAMPS PER A.D.A. THE CONTRACTOR SHALL INSURE THAT ALL PROVISIONS OF A.D.A. AND FLORIDA ACCESSIBILITY CODE ARE MET.
- ISOLATION JOINTS (TYPE A JOINTS) SHALL BE PROVIDED BETWEEN EXISTING SLABS OR STRUCTURES AND FRESH CONCRETE, TO SEPARATE FRESH PLACEMENT FROM CONCRETE WHICH HAS SET FOR MORE THAN 60 MINUTES, AND NO FARTHER APART THAN 100 FEET IN SIDEWALKS AND BIKEPATHS. JOINT MATERIAL SHALL BE SPECIFIED IN FDOT STANDARDS AND SPECIFICATIONS AND SHALL BE RUBBER, PLASTIC OR OTHER APPROVED NON-BIODEGRADABLE ELASTOMERIC MATERIAL. WOOD IS PROHIBITED.
- CONTROL JOINTS (TYPE B JOINTS) SHALL BE TOOLED INTO THE FRESH CONCRETE TO A DEPTH EQUAL TO 1/4 THE SLAB THICKNESS AND SPACED APART AT A DISTANCE EQUAL TO THE WIDTH OF THE SLAB, AT MINIMUM SPACING OF 5', MAX SPACING OF 12'.
- THE SLAB SURFACE SHALL BE BROOM FINISHED TO BE SLIP RESISTANT, AND SHALL MATCH AS CLOSELY AS POSSIBLE THE FINISH OF THE EXISTING ADJACENT SLABS AND ALL EDGES SHALL BE TOOLED TO ELIMINATE SHARP CORNERS.
- THE BEARING SUBSURFACE SHALL HAVE ALL ORGANIC, LOOSE, AND DELETERIOUS MATTER REMOVED, AND THE REMAINING CLEAN SOIL SHALL BE SMOOTH, SOUND, AND SOLID. ANY FILL MATERIAL SHALL BE COMPACTED WITH A VIBRATOR OR IMPACT COMPACTION MACHINE IN MAXIMUM 12 INCH LIFTS OR COMPACTED WITH A HAND TAMPER IN MAXIMUM 4 INCH LIFTS. THE CITY SHALL REQUIRE A COMPACTION TEST FOR EACH LIFT. IF THE TOP FILL SECTION IS MORE THAN 12 INCHES DEEP OR IF THE SUBSURFACE HAS BEEN DISTURBED MORE THAN 12 INCHES DEEP, WHERE SUCH TEST IS REQUIRED, THE RESULTS SHALL SHOW A MINIMUM PROCTOR FIELD DENSITY OF 95 PERCENT.
- ALL CONCRETE WORK IN THE RIGHT-OF-WAY SHALL BE INSPECTED BY THE CITY AFTER THE SUBSOIL IS PREPARED AND THE FORMS ARE SET, BUT BEFORE THE CONCRETE PLACEMENT BEGINS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING THE FINISHED SLAB FROM ALL DAMAGE AND VANDALISM UNTIL THE CURB IS SET. AFTER WHICH TIME THE OWNER OF THE ADJUTING LAND SHALL BE RESPONSIBLE FOR THE SLAB IN ACCORDANCE WITH THE CITY CODE. ANY SLAB SECTION DAMAGED OR DESTROYED PRIOR TO ACCEPTANCE OR APPROVAL SHALL BE CUT OUT BETWEEN JOINTS AND REPLACED. REPAIRS ARE NOT ACCEPTABLE.
- SIDEWALKS LOCATED WITHIN THE RIGHT-OF-WAY SHALL NOT BE TINTED, STAINED, COLORED, OR COATED.
- ALL FORMS SHALL BE REMOVED PRIOR TO ACCEPTANCE OR APPROVAL AND THE DISTURBED GROUND SHALL BE BACKFILLED, SLOTTED SO THAT THE WEAR SURFACE OF THE CONCRETE IS REASONABLY FLUSH WITH THE ADJACENT GRADE.

	STANDARD CONSTRUCTION DETAIL SIDEWALK, RAMP, AND DRIVEWAY APRON CONSTRUCTION REQUIREMENTS	INDEX M-3
	NTS	MARCH 2014



NOTES:

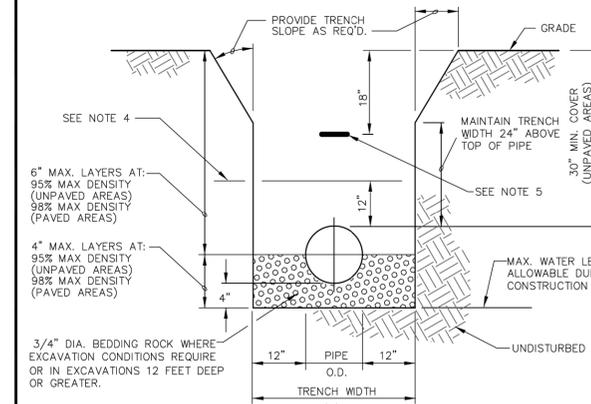
- RAMP LOCATIONS ARE TO BE COORDINATED WITH AND IN CONFORMANCE WITH CROSSWALK MARKING DETAILS SHOWN IN THE PLANS.
- CURBED RAMPS SHALL HAVE FLARED SIDES WITH A MAXIMUM SLOPE OF 12:1.
- RAMPS SHALL HAVE A DETECTABLE WARNING SURFACE AS SHOWN.
- RAMPS ARE TO BE CONSTRUCTED AT ALL LOCATIONS SHOWN IN THE PLANS EVEN WHEN A SIDEWALK IS NOT CONSTRUCTED CONCURRENTLY.
- NO CURB TRANSITION IS NEEDED FOR MIAMI CURBS.
- ALL RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH FDOT INDEX NO. 304 AND HANDICAPPED ACCESSIBILITY REQUIREMENTS IN ACCORDANCE WITH THE AMERICAN DISABILITIES ACT.



NOTES:

- ON RAMPS THAT ARE PERPENDICULAR WITH THE CURB LINE, THE DOME PATTERN SHALL BE IN-LINE WITH THE DIRECTION OF TRAVEL ON RAMPS INTERSECTING CURBS ON A RADIUS, THE DOME PATTERN SHALL BE IN-LINE WITH THE DIRECTION OF TRAVEL TO THE EXTENT PRACTICAL.

	STANDARD CONSTRUCTION DETAIL SIDEWALK AND BIKE PATH RAMP	INDEX M-4
	NTS	MARCH 2014

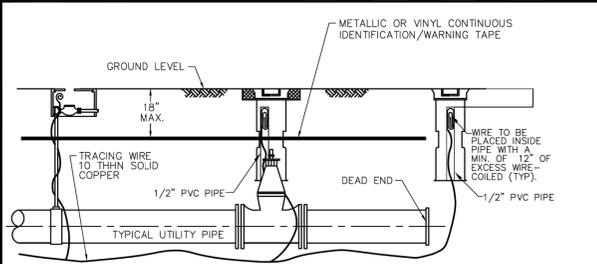


PIPE INSTALLATION DETAIL

NOTES:

- WHERE SOIL CONDITIONS CAN NOT BE MAINTAINED AS SHOWN ABOVE, PROVIDE APPROVED METHOD OF CONSTRUCTION.
- SHEETING WILL BE REQUIRED AS DETERMINED IN THE FIELD.
- COMPACTION PERCENTAGES SHOWN REFER TO A.A.S.H.T.O. T-180. PROVIDE COPIES OF CERTIFIED TEST REPORTS TO CITY INSPECTOR.
- MECHANICAL COMPACTION NOT ALLOWED BELOW THIS LEVEL.
- INSTALL METALLIC TAPE OVER FULL LENGTH OF PIPE.

	STANDARD CONSTRUCTION DETAIL PIPE INSTALLATION	INDEX M-9
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ALL PVC PIPE, OR OTHER CITY APPROVED NONMETALLIC PIPE INSTALLED WITHIN THE CITY'S WATER, SANITARY SEWER, OR RECLAIMED WATER SYSTEMS, SHALL BE INSTALLED WITH 10 THIN SOLID COPPER TRACING WIRE. IF PIPE IS INSTALLED BY DIRECTIONAL BORE, USE (2) 10 THIN SOLID COPPER TRACING WIRE.

THE TRACING WIRE MUST BE INSTALLED DIRECTLY BELOW THE PIPE AND BROUGHT TO THE SURFACE AT 500' MINIMUM INTERVALS. WIRE SHALL EXTEND A MINIMUM OF 12" ABOVE GRADE AT EACH INTERVAL AND BE COILED AND PLACED IN A VALVE BOX, METER BOX, MANHOLE, CLEANOUT OR OTHER APPLICABLE STRUCTURE.

TRACING WIRE BETWEEN INTERVALS SHALL BE INSTALLED SO AS TO PROVIDE CONTINUOUS CURRENT WHEN LINE LOCATION EQUIPMENT IS CONNECTED TO THE TRACING WIRE. WIRE BRANCHING FROM MAIN LINES SHALL BE LINKED BY A CITY APPROVED CONNECTOR SUCH AS KING # 2011 SAFETY SEALED CONNECTORS OR APPROVED EQUAL.

COLOR CODING:

- POTABLE WATER SYSTEM: BLUE
- RECLAIMED WATER SYSTEM: LAVENDER
- SANITARY SEWER FORCE MAIN SYSTEM: GREEN

- POTABLE WATER AND RECLAIMED WATER SYSTEMS: WIRE SHALL BE INSTALLED BELOW ALL MAINS AND SERVICE LINES AND ATTACHED TO VALVES, HYDRANTS AND FITTINGS. WIRE INSTALLED WITH SERVICE LINES SHALL CONNECT TO THE WIRE INSTALLED BELOW THE MAIN AND EXTEND TO THE CURB STOP.
- FIRE SPRINKLER LINES: WIRE SHALL CONNECT TO THE WIRE INSTALLED BELOW THE MAIN AND EXTEND TO THE RISER CONNECTION.
- SANITARY SEWER FORCE MAINS: WIRE SHALL BE INSTALLED BELOW THE FORCE MAIN AND ATTACHED TO ALL VALVES AND FITTINGS AND BROUGHT TO THE SURFACE AND PLACED IN A METAL, CITY APPROVED, VALVE BOX.
- DEAD END MAINS: WIRE SHALL BE PLACED IN A PROPERLY IDENTIFIED METAL VALVE BOX AT THE END OF THE RUN.
- WIRE SHALL NOT BE FASTENED OR COILED TO VALVE OPERATING NUT.

	STANDARD CONSTRUCTION DETAIL UTILITY PIPE LOCATION MATERIALS	INDEX M-10
	NTS	MARCH 2014

ES BMP 1.01

TEMPORARY GRAVEL CONSTRUCTION ENTRANCE

DEFINITION
A STONE STABILIZED PAD LOCATED AT POINTS OF VEHICULAR INGRESS AND EGRESS ON A CONSTRUCTION SITE.

PURPOSE
TO REDUCE THE AMOUNT OF SEDIMENT TRANSPORTED ONTO PUBLIC ROADS BY MOTOR VEHICLES OR RUNOFF.

CONDITIONS WHERE PRACTICE APPLIES
WHenever traffic will be leaving a construction site and moves directly onto a public road or other paved area.

PLANNING CONSIDERATIONS
CONSTRUCTION ENTRANCES PROVIDE AN AREA WHERE MUD CAN BE REMOVED FROM CONSTRUCTION VEHICLES BEFORE THE ENTRY A PUBLIC ROAD. IF THE ACTION OF THE VEHICLE TRAVELING OVER THE GRAVEL PAD IS NOT SUFFICIENT TO REMOVE THE MAJORITY OF THE MUD, THEN THE TIRES MUST BE WASHED BEFORE THE VEHICLE ENTERS A PUBLIC ROAD. IF WASHING IS DEEMED NECESSARY, WASH RACKS MUST INTERCEPT THE WASH WATER AND TRAP THE SEDIMENT BEFORE IT IS CARRIED OFF-SITE. CONSTRUCTION ENTRANCES SHOULD BE USED IN CONJUNCTION WITH THE STABILIZATION OF CONSTRUCTION ROADS TO REDUCE THE AMOUNT OF MUD PICKED UP BY CONSTRUCTION VEHICLES.

DESIGN CRITERIA

AGGREGATE SIZE
AGGREGATE NO. 1 (1.5 - 3.5 INCH STONE) SHOULD BE USED.

ENTRANCE DIMENSIONS
AGGREGATE LAYERS MUST BE AT LEAST 6 INCHES THICK. IT MUST EXTEND THE FULL WIDTH OF THE VEHICULAR INGRESS AND EGRESS AREA. THE LENGTH OF THE ENTRANCE MUST BE AT LEAST 50 FEET. (SEE DETAIL).

WASHING

IF CONDITIONS OF THE SITE ARE SUCH THAT THE MAJORITY OF THE MUD IS NOT REMOVED BY THE VEHICLES TRAVELING OVER THE GRAVEL, THEN THE TIRES OF THE VEHICLES MUST BE WASHED BEFORE ENTERING A PUBLIC ROAD. WASH WATER MUST BE CARRIED AWAY FROM THE ENTRANCE TO A SETTLING AREA TO REMOVE SEDIMENT. A WASH RACK MAY ALSO BE USED TO MAKE WASHING MORE CONVENIENT AND EFFECTIVE. SEE DETAIL.

LOCATION

THE ENTRANCE SHOULD BE LOCATED TO PROVIDE FOR MAXIMUM UTILITY BY ALL CONSTRUCTION VEHICLES.

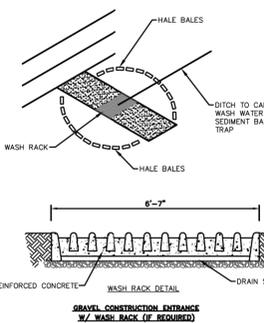
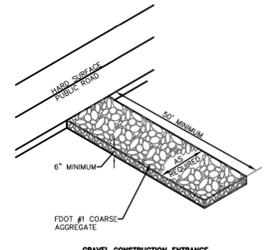
INDICATE PROPOSED LOCATION OF GRAVEL CONSTRUCTION ENTRANCE ON THE GRADING PLAN.

CONSTRUCTION SPECIFICATIONS

THE AREA OF THE ENTRANCE SHOULD BE CLEARED OF ALL VEGETATION, ROOTS AND OTHER OBSTRUCTIONABLE MATERIAL. THE GRAVEL SHALL BE PLACED TO THE SPECIFIED DIMENSIONS. ANY DRAINAGE FACILITIES REQUIRED BECAUSE OF WASHING SHOULD BE CONSTRUCTED ACCORDING TO SPECIFICATIONS. IF WASH RACKS ARE USED, THEY SHOULD BE CONSTRUCTED ACCORDING TO SPECIFICATIONS. IF WASH RACKS ARE TO MANUFACTURER'S SPECIFICATIONS.

MAINTENANCE

THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OF FLOW OF MUD ONTO PUBLIC ROADS OR DRIVEWAYS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH 2-INCH STONE, AS CONDITIONS DEMAND AND REPAIR AND OR CLEANING OF ANY STRUCTURES USED TO TRAP SEDIMENT. ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.



NOTE: COMPLY WITH FDOT REQUIREMENTS FOR SOIL TRACING PREVENTION DEVICE IN FOOT ROADWAY ROW (INDEX NO. 106)

	STANDARD CONSTRUCTION DETAIL TEMPORARY GRAVEL CONSTRUCTION ENTRANCE	INDEX M-13
	NTS	MARCH 2014

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Revision	Date	Approved	Designed by:	RBG/MXT
			Drawn by:	BJG/BRW
			Checked by:	RBG
			Approved by:	BRW
			Vertical Datum:	1988

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TOMOKA HOLDINGS, LLC

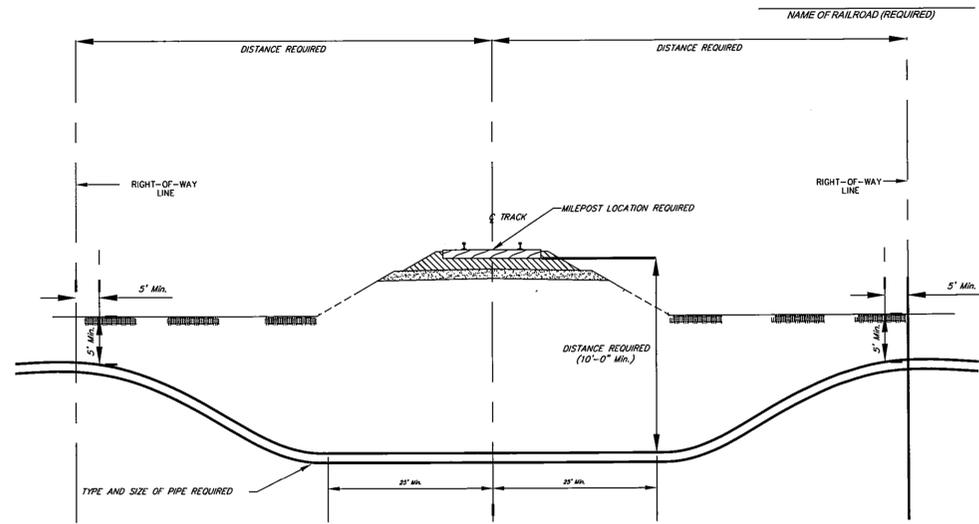
ORMOND CROSSINGS
PHASE B

UTILITY DETAILS 5

SHEET
36 of 43
 SAJ
 JOB No.
 2002-008.10

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FILE
ES8090.4
REVISIONS
07-27-2010 XRL/PLJ



- GENERAL NOTES**
1. DIRECTIONAL BORES, 10' BELOW BOTTOM OF THE MAY BE HDPE SCH. 40 CASING.
 2. CARRIER PIPE MAY BE HDPE. (NO PIC PERMITTED).
 3. JACKING PIT LOCATIONS MUST BE OUTSIDE OF RAILROAD RIGHT-OF-WAY LINES. NO OPEN CUT LATERAL CROSSING WILL BE ALLOWED. THE PIT WILL BE PROTECTED WITH ADEQUATE SHEETING, BULKHEADS AND SIDEWALKS TO PROTECT THE RAILROAD'S ROADBED. PROPER BARRICADES AND LIGHTS, IF NECESSARY, WILL BE SET AROUND THE PIT FOR POSITIVE PROTECTION.
 4. NO WORK WILL BE PERMITTED ON RAILROAD RIGHT-OF-WAY WITHOUT A FLAGMAN.
 5. CARRIER PIPE, UNDER PRESSURE, WILL REQUIRE CASING.

FLORIDA EAST COAST RAILWAY
ENGINEERING SERVICES
STANDARDS REFERENCE MANUAL

Issue Date: 06-29-2009 Revised Date: 07-27-2010
Author/Lead: [Signature]
Director Engineering Services

The material and equipment shown herein must meet or exceed all quality requirements. Any deviation from these standards must be admitted in writing and approved by the Railroad Director of Engineering Services prior to use.

MISCELLANEOUS
SERIES 8000

INFORMATION REQUIRED FOR
TYPICAL DIRECTIONAL BORE

ES8090.4
SH. 1 OF 1

Revision	Date	Approved

Designed by: RBG/MXT
 Drawn by: BJG/BRW
 Checked by: RBG
 Approved by: BRW
 Vertical Datum: 1988

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**ORMOND CROSSINGS
PHASE B**

UTILITY DETAILS 6

SHEET
37 of 43
SAI
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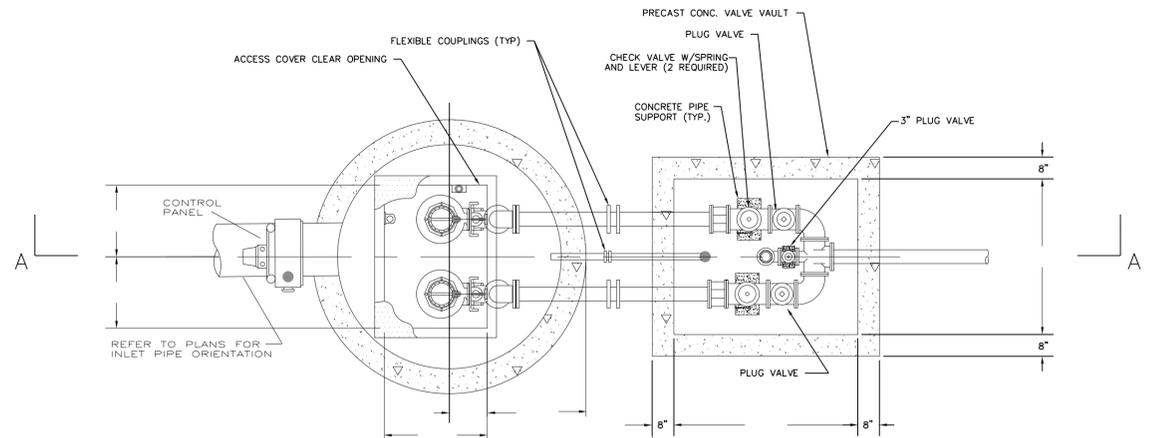
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GENERAL NOTES:

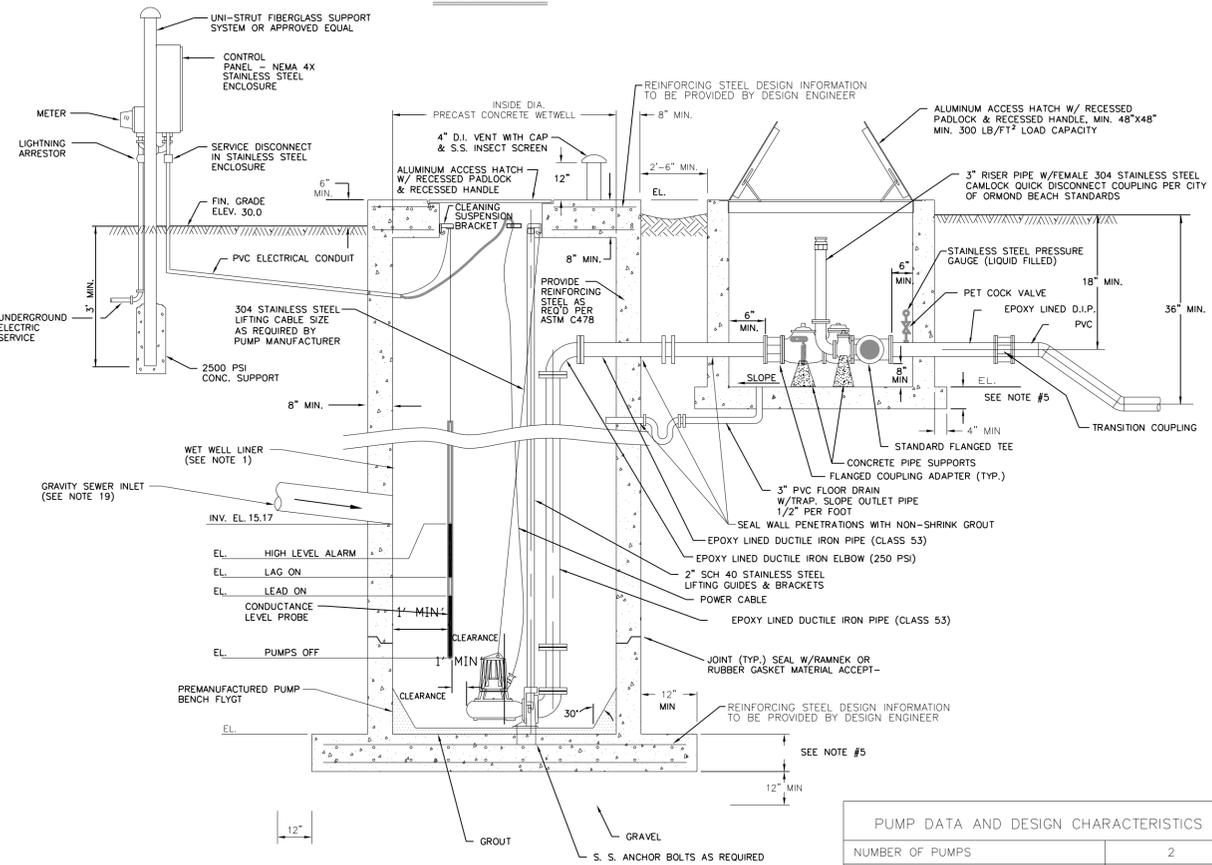
- WET WELL SHALL BE LINED WITH "AGRU SURE GRIP" CONCRETE PROTECTIVE LINER OR APPROVED EQUAL. WET WELL EXTERIOR SHALL BE COATED WITH COAL TAR EPOXY.
- BASE AND FIRST RISER UNIT TO BE CAST MONOLITHIC.
- VALVE VAULT AND ACCESS COVERS SHALL BE SIZED TO PERMIT EASY REMOVAL OF CHECK VALVE.
- VALVE VAULT SHALL HAVE SEALED FLOOR W/ DRAIN TO WET WELL - TRAP REQUIRED.
- ALL LOCATIONS WHERE PIPES ENTER OR LEAVE THE WET WELL OR VALVE VAULT SHALL BE MADE WATERTIGHT WITH WALL SLEEVE OR NON-SHRINK GROUT.
- PUMP LIFTING DEVICE SHALL BE 304 SS LIFTING CABLE.
- THERE SHALL BE NO ELECTRICAL JUNCTION BOXES IN WET WELL OR VALVE VAULT.
- CHECK VALVES SHALL BE OUTSIDE WEIGHT & LEVER.
- WET WELL & VALVE VAULT COVERS SHALL BE ALUMINUM WITH 304S.S HARDWARE, AS RECOMMENDED AND REQUIRED BY PUMP MANUFACTURER (LOADING 300 P.S.F.) AND PROVIDED WITH RECESSED LOCKS.
- CONTROL PANEL SHALL BE AS MANUFACTURED BY THE PUMP SUPPLIER OR APPROVED EQUAL.
- WET WELL DIAMETER SHALL BE 6' NOMINAL.
- ACCESS HATCH DIMENSIONS ARE APPROXIMATE. CONTRACTOR SHALL COORDINATE PUMPING EQUIPMENT, PIPING AND CONCRETE STRUCTURES TO ENSURE ADEQUATE ACCESS OPENINGS FOR INSTALLATION, OPERATION AND MAINTENANCE OF ALL EQUIPMENT.
- FURNISH AND INSTALL GENERATOR RECEPTACLE COMPATIBLE WITH CITY OF ORMOND BEACH EQUIPMENT.
- VALVE VAULT AND WET WELLS SHALL BE PRECAST CONCRETE. SUBMIT SHOP DRAWINGS WITH REINFORCING DETAILS FOR APPROVAL PRIOR TO FABRICATION.
- IF CITY FORCEMAIN IS INSTALLED PRIOR TO LIFT STATION COMPLETION, PROVIDE NECESSARY WET TAP AND ALL MATERIAL AND LABOR FOR CONNECTION IN ACCORDANCE WITH CITY STANDARDS. IF FORCEMAIN HAS NOT BEEN INSTALLED PRIOR TO COMPLETION, CAP FORCEMAIN INSTALLED UNDER THIS PROJECT AT R.O.W. LINE AND PROVIDE 4x4 POST MARKER. ISSUE OWNER CREDIT FOR WET TAP AND CONNECTION.
- PROVIDE LOCKS KEYS TO THE CITY'S MASTER KEY.
- CHAIN LINK FENCE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:
 - POSTS SHALL BE SCHEDULE 40, GALVANIZED STEEL (2" OUTSIDE DIAMETER MIN.), MAXIMUM 10 FOOT SPACING
 - FABRIC FOR FENCING AND GATES SHALL BE 9 GAUGE 2" MESH, CLASS 1, CONFORMING TO A.S.T.M. A-3920, 1.2 OZ. GALVANIZED COATING.
 - POSTS SHALL BE SET IN 2500 PSI CONCRETE IN AN 8" DIAMETER HOLE WITH A DEPTH OF 36 INCHES.
 - FENCING SHALL BE SCREENED WITH PVC SLATS, WINGED-SLATS OR APPROVED EQUAL. COLOR SHALL BE GREEN.
- PUMPS SHALL BE XLEM / FLYGT
- MIX & FLUSH VALVE SHALL BE INSTALLED ON ONE PUMP.

CITY OF ORMOND BEACH LIFT STATION REQUIREMENTS:

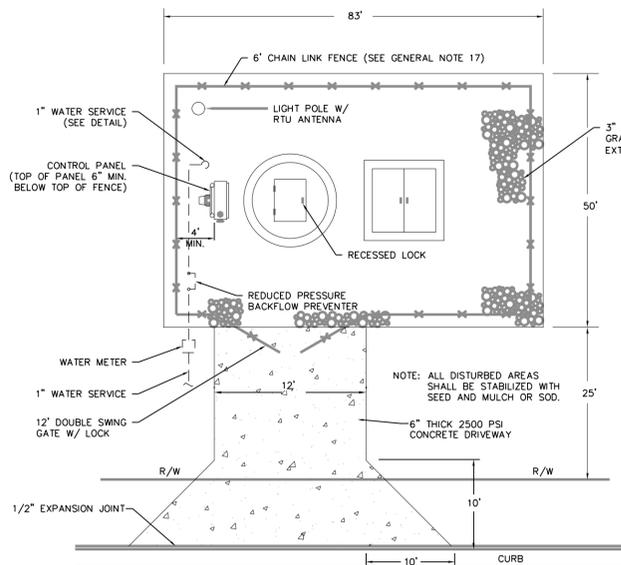
- AUXILIARY POWER CONNECTION:
 - FOR PUMPS < 10HP - RUSSELL & STOLL CAT. NO. FCF 3134-W-72, 100 AMP, 230 VOLT OR APPROVED EQUAL
 - FOR PUMPS ≥ 10HP - RUSSELL & STOLL CAT. NO. FCF 3134-W-72, 200 AMP, 230 VOLT AR2042 - CROUSE-HINDS, OR APPROVED EQUAL
- PUMP STATION MUST HAVE ACCESS AT ALL TIMES FOR CITY MAINTENANCE VEHICLES.
- HAND - (ON-OFF) - AUTOMATIC SWITCHES ON ALL PUMPS.
- MANUAL - (ON-OFF) - SWITCH ON ALL ALTERNATORS.
- ONE ELAPSED TIME METER FOR EACH PUMP.
- 120 VOLT RECEPTACLE INSIDE CONTROL BOX.
- 3 PHASE CURRENT (WILL NOT ACCEPT ADD A PHASE OR CAPACITOR PHASE CHANGERS).
- ALIGNMENT ON GUIDE PIPES (NOT TOUCHING PUMP GUIDE WHEN PUMP IS SEATED).
- POWER CABLE TO PUMPS RUN IN CONDUIT SEPARATE FROM FLOAT SWITCH CONDUIT.
- LIQUID FILLED PRESSURE GAUGE ON FORCE MAIN.
- THE CITY WILL NOT ACCEPT 120 VOLT TO FLOAT SWITCHES, AND MUST BE TRANSFORMER ISOLATED-24 VOLT MAX. ALL CONNECTIONS MUST TERMINATE IN CONTROL PANEL OUTSIDE OF WET WELL.
- AS-BUILTS ON UNDERGROUND POWER SERVICE IF NOT INSTALLED BY F.P.& L.
- MUST HAVE APPROVED LIFT STATION MANUALS, SHOP DRAWINGS, ETC.
- KNIFE SWITCH DISCONNECT BETWEEN F.P.& L. AND LIFT STATION CONTROL PANEL - STAINLESS STEEL.
- FURNISH ORMOND BEACH STANDARD RTU, MOUNTED AND CONNECTED IN CONFORMANCE WITH CITY STANDARDS TYPICAL SCADA WIRING INTERFACE AT LIFT STATION:
 - PUMP STATUS: NORMALLY OPEN DRY CONTACT ON EACH MOTOR STARTER.
 - PHASE ALARM: NORMALLY OPEN DRY CONTACT ON PHASE FAILURE RELAY.
 - HIGH LEVEL ALARM: NORMALLY OPEN DRY CONTACT ON HIGH LEVEL ALARM RELAY.
 - IF AVAILABLE - PROVIDE CURRENT TRANSFORMER AND TRANSMITTER TO PROVIDE 4-20 MA OUTPUT PROPORTIONAL TO THE TOTAL STATION AMPERAGE. (SELECT ONE LEAD OF 3-PHASE POWER).
 - PROVIDE 120 VAC SOURCE - 5 AMPS - FOR RTU POWER.
 - ALL CONNECTIONS BROUGHT TO BARRIER TERMINAL STRIP.
- CONTROL VALVE MICRO 3305 SHALL INCLUDE THE FOLLOWING:
 - HIGH LEVEL ALARM
 - PUMP STATUS ON ALL PUMPS
 - PHASE MONITOR (DIVERSIFIED SL-230-ASA)
 - LOCAL WATER PRESSURE (ROSEMONT XDCR 0-100 PSI)
 - MASTER CONTROL RELAYS (DO) + (DO)
 - LOCAL FORCE MAIN PRESSURE
- SHAKESPEARE FIBERGLASS LIGHT POLE (HEIGHT TO BE DETERMINED BY CITY) CATALOG #B520 OR #B524 OR APPROVED EQUAL.
- RUDD LIGHT 250W #FS3425-M OR APPROVED EQUAL.
- SEAL GRAVITY PIPE AT WETWELL WITH RUBBER BOOT SEAL.
- PUMP CONTROLLERS SHALL BE FLYGT APP521.
- THE ELECTRICAL SUBCONTRACTOR AND/OR THE CONTRACTOR SHALL BE RESPONSIBLE FOR AN RF PATH STUDY BETWEEN THE PROPOSED SITE AND THE ELEVATED TANK AT THE WATER PLANT. THE STUDY IS TO ESTABLISH THE REQUIRED ANTENNAE HEIGHT, AZIMUTH AND ESTIMATED SIGNAL STRENGTH (MINIMUM OF -85DBM).
- THE ELECTRICAL SUBCONTRACTOR SHALL COORDINATE WORK WITH THE CONTRACTOR TO ENSURE THAT ALL RADIO TRANSMISSION SIGNALS ARE PROPERLY TRANSMITTED AND RECEIVED WITHOUT ERRORS. RADIO TRANSMISSION SIGNALS MUST BE A MINIMUM OF -85 DBM.
- BACKUP FLOAT FOR HIGH LEVEL ALARM SHALL BE INSTALLED AND CONNECTED TO THE SCADA SYSTEM.



PLAN VIEW

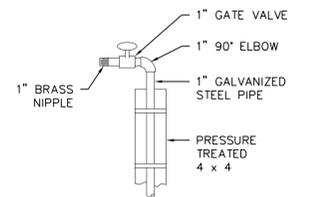


SECTION VIEW A-A



LIFT STATION SITE PLAN

N.T.S.



1\"/>

N.T.S.

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PUMP DATA AND DESIGN CHARACTERISTICS	
NUMBER OF PUMPS	2
DESIGN CAPACITY PER PUMP, G.P.M.	-
TOTAL DYNAMIC HEAD, FT.	-
MIN. EFF. AT DESIGN CAPACITY, %	-
DESIGN SPEED, MAX R.P.M.	-
MAX. HORSEPOWER PER PUMP, H.P.	-
MIN. SHUTOFF HEAD, FT.	-
MIN. SIZE SOLIDS, IN.	-
MIN. DISCHARGE SIZE, IN.	-
SECONDARY CAPACITY PER PUMP, G.P.M.	-
SECONDARY HEAD, FT.	-
PUMP MANUF. & MODEL NUMBER	-
IMPELLER DIAMETER	-
PUMP R.P.M.	-
ELECT. SVC. - VOLTAGE & PHASE	-

Revision	Date	Approved

Designed by:	RBG/MXT
Drawn by:	BJG/BRW
Checked by:	RBG
Approved by:	BRW
Vertical Datum:	1988

SINGHOFEN & ASSOCIATES, INC.
 STORMWATER MANAGEMENT AND CIVIL ENGINEERING

S.A.I.
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 Orlando, FL 32817
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 DBPR No. 5112

TOMOKA HOLDINGS, LLC

**ORMOND CROSSINGS
 PHASE B**

**SANITARY LIFT
 STATION 03 DETAILS**

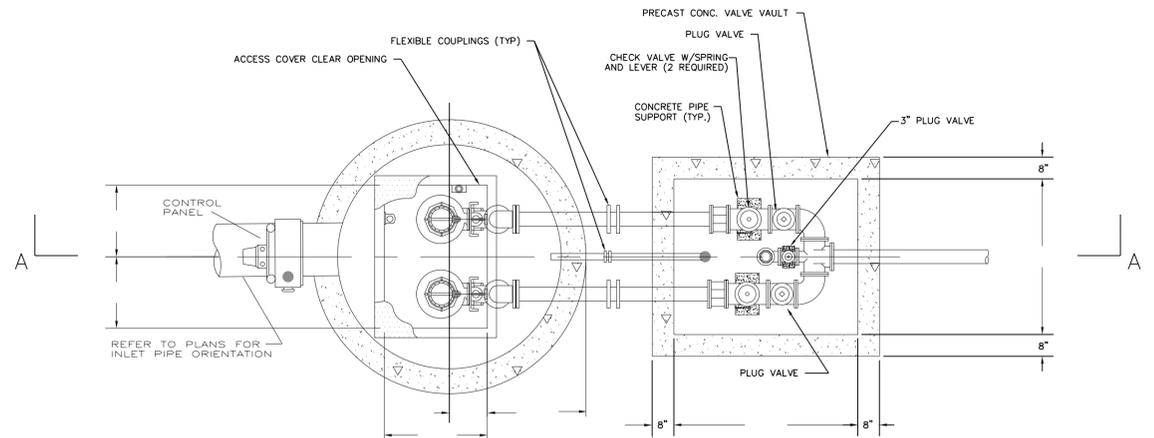
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 JOB No.
 2002-008.10

GENERAL NOTES:

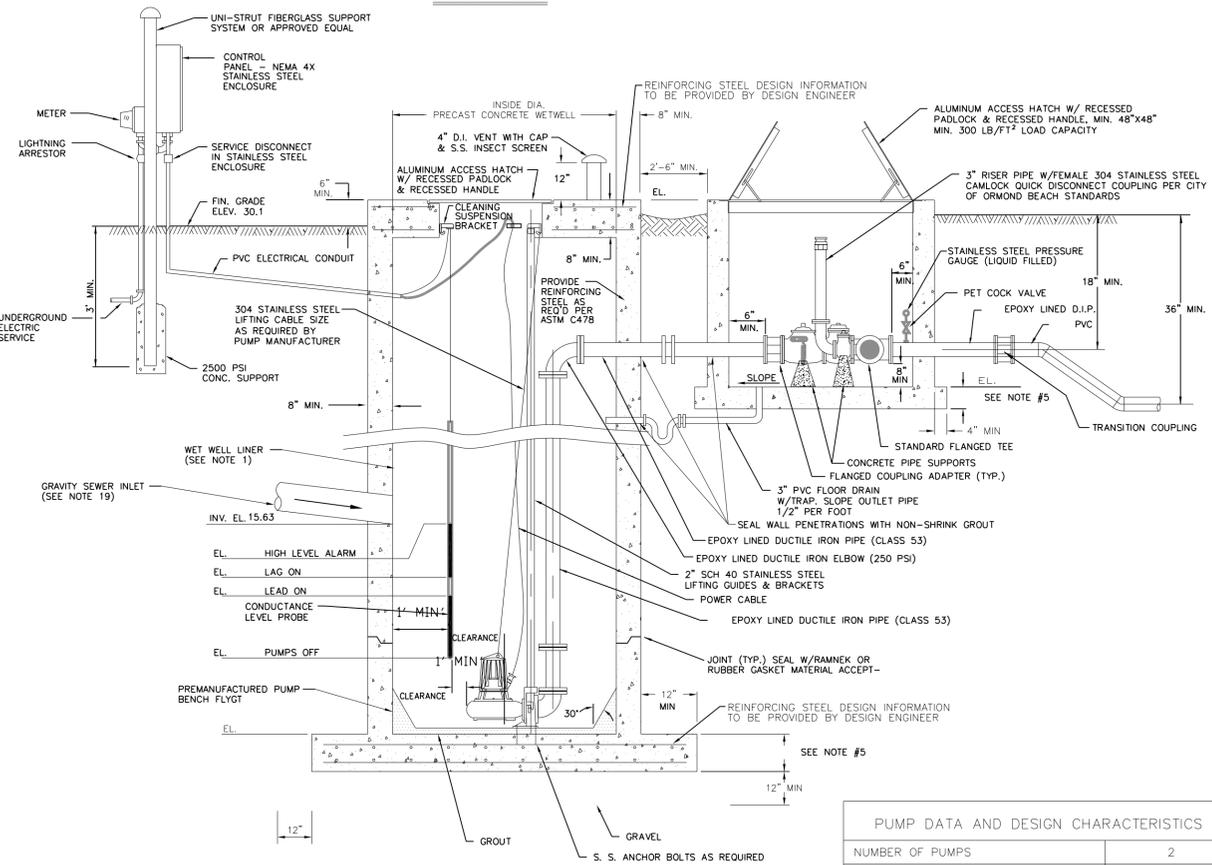
- WET WELL SHALL BE LINED WITH "AGRU SURE GRIP" CONCRETE PROTECTIVE LINER OR APPROVED EQUAL. WET WELL EXTERIOR SHALL BE COATED WITH COAL TAR EPOXY.
- BASE AND FIRST RISER UNIT TO BE CAST MONOLITHIC.
- VALVE VAULT AND ACCESS COVERS SHALL BE SIZED TO PERMIT EASY REMOVAL OF CHECK VALVE.
- VALVE VAULT SHALL HAVE SEALED FLOOR W/DRAIN TO WET WELL - TRAP REQUIRED.
- ALL LOCATIONS WHERE PIPES ENTER OR LEAVE THE WET WELL OR VALVE VAULT SHALL BE MADE WATERTIGHT WITH WALL SLEEVE OR NON-SHRINK GROUT.
- PUMP LIFTING DEVICE SHALL BE 304 SS LIFTING CABLE.
- THERE SHALL BE NO ELECTRICAL JUNCTION BOXES IN WET WELL OR VALVE VAULT.
- CHECK VALVES SHALL BE OUTSIDE WEIGHT & LEVER.
- WET WELL & VALVE VAULT COVERS SHALL BE ALUMINUM WITH 304S.S HARDWARE, AS RECOMMENDED AND REQUIRED BY PUMP MANUFACTURER (LOADING 300 P.S.F.) AND PROVIDED WITH RECESSED LOCKS.
- CONTROL PANEL SHALL BE AS MANUFACTURED BY THE PUMP SUPPLIER OR APPROVED EQUAL.
- WET WELL DIAMETER SHALL BE 6' NOMINAL.
- ACCESS HATCH DIMENSIONS ARE APPROXIMATE. CONTRACTOR SHALL COORDINATE PUMPING EQUIPMENT, PIPING AND CONCRETE STRUCTURES TO ENSURE ADEQUATE ACCESS OPENINGS FOR INSTALLATION, OPERATION AND MAINTENANCE OF ALL EQUIPMENT.
- FURNISH AND INSTALL GENERATOR RECEPTACLE COMPATIBLE WITH CITY OF ORMOND BEACH EQUIPMENT.
- VALVE VAULT AND WET WELLS SHALL BE PRECAST CONCRETE. SUBMIT SHOP DRAWINGS WITH REINFORCING DETAILS FOR APPROVAL PRIOR TO FABRICATION.
- IF CITY FORCEMAIN IS INSTALLED PRIOR TO LIFT STATION COMPLETION, PROVIDE NECESSARY WET TAP AND ALL MATERIAL AND LABOR FOR CONNECTION IN ACCORDANCE WITH CITY STANDARDS. IF FORCEMAIN HAS NOT BEEN INSTALLED PRIOR TO COMPLETION, CAP FORCEMAIN INSTALLED UNDER THIS PROJECT AT R.O.W. LINE AND PROVIDE 4x4 POST MARKER. ISSUE OWNER CREDIT FOR WET TAP AND CONNECTION.
- PROVIDE LOCKS KEyed TO THE CITY'S MASTER KEY.
- CHAIN LINK FENCE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:
 - POSTS SHALL BE SCHEDULE 40, GALVANIZED STEEL (2" OUTSIDE DIAMETER MIN.), MAXIMUM 10 FOOT SPACING
 - FABRIC FOR FENCING AND GATES SHALL BE 9 GAUGE 2" MESH, CLASS 1, CONFORMING TO A.S.T.M. A-3920, 1.2 OZ. GALVANIZED COATING.
 - POSTS SHALL BE SET IN 2500 PSI CONCRETE IN AN 8" DIAMETER HOLE WITH A DEPTH OF 36 INCHES.
 - FENCING SHALL BE SCREENED WITH PVC SLATS, WINGED-SLATS OR APPROVED EQUAL. COLOR SHALL BE GREEN.
- PUMPS SHALL BE XLEM / FLYGT
- MIX & FLUSH VALVE SHALL BE INSTALLED ON ONE PUMP.

CITY OF ORMOND BEACH LIFT STATION REQUIREMENTS:

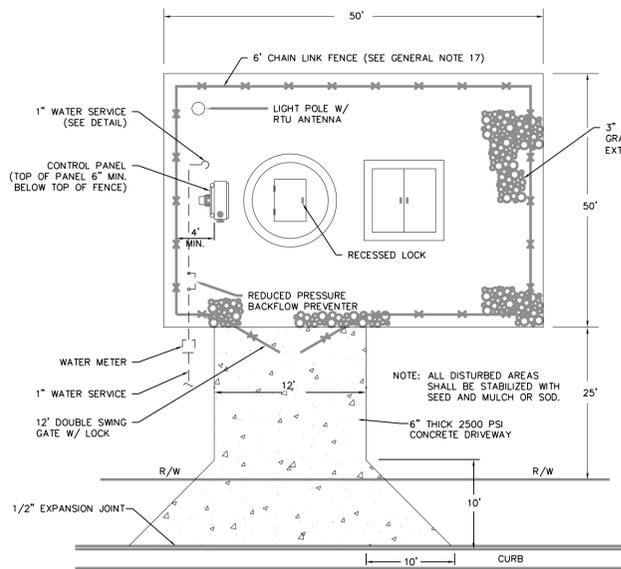
- AUXILIARY POWER CONNECTION:
 - FOR PUMPS < 10HP - RUSSELL & STOLL CAT. NO. FCF 3134-W-72, 100 AMP, 230 VOLT OR APPROVED EQUAL
 - FOR PUMPS ≥ 10HP - RUSSELL & STOLL CAT. NO. FCF 3134-W-72, 200 AMP, 230 VOLT AR2042 - CROUSE-HINDS, OR APPROVED EQUAL
- PUMP STATION MUST HAVE ACCESS AT ALL TIMES FOR CITY MAINTENANCE VEHICLES.
- HAND - (ON-OFF) - AUTOMATIC SWITCHES ON ALL PUMPS.
- MANUAL - (ON-OFF) - SWITCH ON ALL ALTERNATORS.
- ONE ELAPSED TIME METER FOR EACH PUMP.
- 120 VOLT RECEPTACLE INSIDE CONTROL BOX.
- 3 PHASE CURRENT (WILL NOT ACCEPT ADD A PHASE OR CAPACITOR PHASE CHANGERS).
- ALIGNMENT ON GUIDE PIPES (NOT TOUCHING PUMP GUIDE WHEN PUMP IS SEATED).
- POWER CABLE TO PUMPS RUN IN CONDUIT SEPARATE FROM FLOAT SWITCH CONDUIT.
- LIQUID FILLED PRESSURE GAUGE ON FORCE MAIN.
- THE CITY WILL NOT ACCEPT 120 VOLT TO FLOAT SWITCHES, AND MUST BE TRANSFORMER ISOLATED-24 VOLT MAX. ALL CONNECTIONS MUST TERMINATE IN CONTROL PANEL OUTSIDE OF WET WELL.
- AS-BUILTS ON UNDERGROUND POWER SERVICE IF NOT INSTALLED BY F.P.& L.
- MUST HAVE APPROVED LIFT STATION MANUALS, SHOP DRAWINGS, ETC.
- KNIFE SWITCH DISCONNECT BETWEEN F.P.& L. AND LIFT STATION CONTROL PANEL - STAINLESS STEEL.
- FURNISH ORMOND BEACH STANDARD RTU, MOUNTED AND CONNECTED IN CONFORMANCE WITH CITY STANDARDS TYPICAL SCADA WIRING INTERFACE AT LIFT STATION:
 - PUMP STATUS: NORMALLY OPEN DRY CONTACT ON EACH MOTOR STARTER.
 - PHASE ALARM: NORMALLY OPEN DRY CONTACT ON PHASE FAILURE RELAY.
 - HIGH LEVEL ALARM: NORMALLY OPEN DRY CONTACT ON HIGH LEVEL ALARM RELAY.
 - IF AVAILABLE - PROVIDE CURRENT TRANSFORMER AND TRANSMITTER TO PROVIDE 4-20 MA OUTPUT PROPORTIONAL TO THE TOTAL STATION AMPERAGE. (SELECT ONE LEAD OF 3-PHASE POWER).
 - PROVIDE 120 VAC SOURCE - 5 AMPS - FOR RTU POWER.
 - ALL CONNECTIONS BROUGHT TO BARRIER TERMINAL STRIP.
- CONTROL VALVE MICRO 3305 SHALL INCLUDE THE FOLLOWING:
 - HIGH LEVEL ALARM
 - PUMP STATUS ON ALL PUMPS
 - PHASE MONITOR (DIVERSIFIED SL-230-ASA)
 - LOCAL WATER PRESSURE (ROSEMONT XDOR 0-100 PSI)
 - MASTER CONTROL RELAYS (DO) + (DO)
 - LOCAL FORCE MAIN PRESSURE
- SHAKESPEARE FIBERGLASS LIGHT POLE (HEIGHT TO BE DETERMINED BY CITY) CATALOG #B520 OR #B524 OR APPROVED EQUAL.
- RUDD LIGHT 250W #FS3425-M OR APPROVED EQUAL.
- SEAL GRAVITY PIPE AT WETWELL WITH RUBBER BOOT SEAL.
- PUMP CONTROLLERS SHALL BE FLYGT APP521.
- THE ELECTRICAL SUBCONTRACTOR AND/OR THE CONTRACTOR SHALL BE RESPONSIBLE FOR AN RF PATH STUDY BETWEEN THE PROPOSED SITE AND THE ELEVATED TANK AT THE WATER PLANT. THE STUDY IS TO ESTABLISH THE REQUIRED ANTENNAE HEIGHT, AZIMUTH AND ESTIMATED SIGNAL STRENGTH (MINIMUM OF -85DBM).
- THE ELECTRICAL SUBCONTRACTOR SHALL COORDINATE WORK WITH THE CONTRACTOR TO ENSURE THAT ALL RADIO TRANSMISSION SIGNALS ARE PROPERLY TRANSMITTED AND RECEIVED WITHOUT ERRORS. RADIO TRANSMISSION SIGNALS MUST BE A MINIMUM OF -85 DBM.
- BACKUP FLOAT FOR HIGH LEVEL ALARM SHALL BE INSTALLED AND CONNECTED TO THE SCADA SYSTEM.



PLAN VIEW

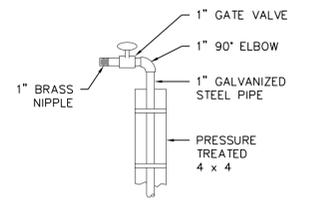


SECTION VIEW A-A



LIFT STATION SITE PLAN

N.T.S.



1\"/>

N.T.S.

PUMP DATA AND DESIGN CHARACTERISTICS	
NUMBER OF PUMPS	2
DESIGN CAPACITY PER PUMP, G.P.M.	-
TOTAL DYNAMIC HEAD, FT.	-
MIN. EFF. AT DESIGN CAPACITY, %	-
DESIGN SPEED, MAX R.P.M.	-
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IMPELLER DIAMETER	-
PUMP R.P.M.	-
ELECT. SVC. - VOLTAGE & PHASE	-

The details shown on this sheet are standard construction details developed and produced by the City of Ormond Beach. The details were not developed and produced by Singhofen & Associates, Inc. (S.A.I.), Singing and the sealing of this sheet by a professional licensed engineer is solely an attestation that the details shown are those specifically provided by and required by the City of Ormond Beach.

Revision	Date	Approved

Designed by: RBG/MXT
 Drawn by: BJG/BRW
 Checked by: RBG
 Approved by: BRW
 Vertical Datum: 1988

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**ORMOND CROSSINGS
PHASE B**

**SANITARY LIFT
STATION 04 DETAILS**

SHEET
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 SAI
 JOB No.
 2002-008.10

The following narrative is the Stormwater Pollution Prevention Plan and contains references to the FDOT Standard Specification for Road and Bridge Construction (2007), FDOT Roadway and Traffic Design Standards (2007), and other sheets of these construction documents. The first sheet of the construction plans located the Index Sheet contains an Index to the other sheets. The complete Stormwater Pollution Prevention Plan includes several items:

- This narrative description.
- The construction documents.
- The documents referenced in this narrative.
- The Contractor's approved Erosion Control Plan required by Section 104 of the FDOT Standard Specifications for Road and Bridge Construction hereinafter referred to as the Section 104, and
- Reports of Inspection made during construction.

1. SITE DESCRIPTION

1.a Nature of Construction Activity

The project is a 235+ acre mixed use development that involves stormwater facilities, excavation, embankment, roadways, and utilities. The subject site is located in Sections 28-29, T 10S, R 30E and Sections 32-33, T10S, R30E in Flagler County, Florida.

1.b Sequence of Major Soil Disturbing Activities

The Contractor shall at a minimum implement the requirements outlined below and those measures shown in the Construction Documents. In addition, the Contractor shall implement additional measures required to maintain compliance with applicable permit conditions and state water quality standards. Depending on the nature of materials and methods of construction the Contractor may be required to add flocculants to the detention system prior to discharge to waters of the State.

The order of activities will be as follows:

1. Install stabilized construction entrance.
2. Select clear and install silt fences and synthetic hay bales as required.
3. Clear and grub for diversion swales/dikes and sediment basin.
4. Construct sedimentation basin.
5. Stock pile top soil if required.
6. Stabilize denuded areas and stockpiles as soon as practicable.
7. Complete grading and install/permanent seeding/sod and planting.
8. Remove accumulated sediment from basins.
9. Flocculate effluent systems, if required, to meet water quality standards.
10. When all construction activity is complete and the site is stabilized, remove any temporary diversion swales/dikes, silt fences, synthetic hay bales and reseed/sod as required.

1.c Area Estimates

Refer to SWPPP Details and the Drainage Report.

1.d Stormwater Data

Refer to the enclosed Drainage Calculations.

1.e Drainage Area Size

Refer to the enclosed Drainage Calculations.

1.f Receiving Waters/Wetland Areas

The proposed improvement drains to Hulet Branch (81 16' 56"W, 29 36' 49"N) and St. Joe Canal (81 16' 55"W, 29 33' 06"N).

1.g Site Map

The construction plans are being used as the site map. The location of the required information is described below. The sheet numbers for the plan sheets referenced are identified on the Index Sheet of these construction plans.

- Drainage Patterns
Refer to the Primary Drainage System Master Plan.
- Approximate Slopes
Refer to construction plans.
- Areas of Soil Disturbance
Refer to the construction plans.
- Areas Not to Be Disturbed
Areas outside the buffer/setback line and conservation areas. Refer to the construction plans.

- Locations of Temporary Controls
The temporary erosion control measures include silt fencing, turbidity barriers, rock bags as needed, and additional measures as indicated in the FDOT Design Indexes 100 to 106, or as required by the Engineer. Also, refer to additional SWPPP details.

The locations and types of environmental control features shown may not adequately prevent erosion or the transportation of eroded materials off-site during each phase of construction. Supplementary sediment and erosion control devices may be required.

- Locations of Permanent Controls
Located at stormwater discharge points and sodding/seeding of all disturbed areas. Refer to the construction plans.

- Areas to Be Stabilized
Temporary stabilization practices are shown in the Contractor's Erosion Control Plan.
Permanent stabilization is as called for in the Construction Plans.

- Discharge Points to Surface Waters
The discharge is shown on the Construction Plan, refer to the Primary Drainage System Master Plan.

2. CONTROLS

2.a Erosion and Sediment Controls

At least ten (10) calendar days prior to the preconstruction conference, the Contractor will submit a tentative base Construction Schedule, Traffic Control Plan, Erosion Control Plan, and Excavation and Dewatering Plan to the Engineer for approval. No work will begin prior to approval of the Construction Schedule, Traffic Control Plan, Erosion Control Plan, and Excavation and Dewatering Plan.

The Construction Schedule shall use the critical path method (CPM) format to describe in detail how the construction is to be phased and to establish start and finish dates for all significant construction activities.

The Excavation and Dewatering Plan (EDP) will address dewatering during excavation for structures, stormwater ponds, lakes, and borrow pits and will identify phasing of the excavation, including for each excavation phase, the limits of excavation, hauloff and disposal of excavated materials, control of on-site and off-site stormwater runoff, and measures to be employed for controlling erosion and the transportation of eroded materials off-site. The Contractor shall obtain all necessary permits for dewatering, including Consumptive Use Permits (if necessary).

The Contractor shall be solely responsible for the prevention, control, and abatement of erosion and water pollution as well as the transportation of eroded materials off site. The Contractor is responsible for maintaining any and all sediment control devices throughout the duration of construction as required by the City, SURMMD, Florida Department of Environmental Protection, and Engineer. At the Preconstruction Conference, the Contractor shall submit an Erosion Control Plan. The Erosion Control Plan shall address the installation and maintenance of all temporary and permanent sediment and erosion control devices to be used during each phase of construction, including tree removal, clearing and grubbing, hauling of excavated materials, and placement of backfill. The plan also shall detail the erosion control measures to be employed at all stockpile and construction staging areas and shall define the maximum limits of all active construction zones and the maximum amount of time each segment of the project will be unprotected against erosion.

It is the Contractor's responsibility to implement the erosion and turbidity controls as shown on the SWPPP. It is also the Contractor's responsibility to ensure these controls are properly installed, maintained and functioning properly to prevent turbid or polluted water from leaving the project site. The Contractor will adjust the erosion and turbidity controls shown on the SWPPP and add additional control measures, as required, to ensure the site meets all federal, state and local erosion and turbidity control requirements. The following best management practices will be implemented by the Contractor as required by the SWPPP and as required to meet the sediment and turbidity requirements imposed on the project site by the regulatory agencies.

Erosion and sediment controls stabilization practices (See the site specific SWPPP for applicability.):

1. Straw bale barrier: Straw bale barriers will be used below disturbed areas subject to sheet and rill erosion with the following limitations:
 - a. Where the maximum slope behind the barrier is 3:1 (horizontal/vertical).
 - b. In minor swales or ditch lines where the maximum contributing drainage area is no greater than 2 acres.
 - c. Where effectiveness is required for less than 3 months.
 - d. Every effort should be made to limit the use of straw bale barriers constructed in live streams or in swales where there is the possibility of a washout. If necessary, measures shall be taken to properly anchor bales to insure against washout.

2. Filter Fabric Barrier: Filter fabric barriers shall be installed landward of upland buffers. Filter fabric barriers will be used below disturbed areas subject to sheet and rill erosion with the following limitations:
 - a. Where the maximum slope behind the barrier is 3:1.
 - b. In minor swales or ditch lines where the maximum contributing drainage area is no greater than 2 acres.

3. Sod with Filter Fabric: In areas with slopes steeper than 3:1, the slope shall be fully sodded. Filter fabric barriers (silt fence) shall be installed at the toe of the slope.

4. Brush Barrier with Filter Fabric: Brush barrier will be used below disturbed areas subject to sheet and rill erosion where enough residue material is available on site.

5. Spreader Swale: A spreader swale will be used where sediment-free storm runoff is intercepted and diverted away from graded areas onto undisturbed stabilized areas. The water shall not be allowed to reconcentrate after release.

6. Stockpiling Material: No excavated material shall be stockpiled in such a manner as to direct stormwater runoff off site into any adjacent water body.

7. Limitation of Exposure of Erodeable Earth: The surface area of open raw erodeable soil exposed by clearing and grubbing operations or excavation and filling operations shall not exceed 17 acres without specific prior approval by the Engineer. This limitation applies separately to clearing and grubbing operations and excavation and filling operations. The Engineer may increase or decrease the amount of surface areas the Contractor may expose at any one time.

8. Inlet Protection: Inlets and catch basins which discharge directly off-site shall be protected from sediment-laden storm runoff.

9. Temporary Seeding: Cleared areas that are not designated for construction activity for more than 45 days shall be seeded.

10. Temporary Seeding and Mulching: Slopes steeper than 6:1 shall receive approximately 2 inches loose measure of mulch material cut into the soil of the seeded area adequate to prevent movement of seed and mulch. Hydroseeding or hydromulching may not be used in place of Seeding and Mulching.

11. Temporary Grassing: The Engineer may designate certain areas of grassing as temporary erosion control features. The Engineer may direct the Contractor to omit permanent type grass seed from grassing.

12. Regrassing: If, after 28 days from seeding, the temporary grassed areas have not attained a minimum of 75 percent good grass cover, the area will be reworked and additional seed applied sufficient to establish the desired vegetative cover.

13. Maintenance: All features of the project designed and constructed to prevent erosion and sediment shall be maintained during the life of the construction so as to function as they were originally designed and constructed.

14. Permanent Seeding: All areas which have been disturbed by construction will, as a minimum, be seeded. Slopes steeper than 4:1 shall be seeded and mulched or sodded. Hydroseeding may not be used in place of Seeding and Mulching.

15. Temporary Diversion Dike: Temporary diversion dikes will be used to divert runoff through a sediment-trapping facility.

16. Temporary Sediment Trap: A sediment trap is usually installed in a drainage way, a storm drain inlet or at other points of discharge from a disturbed area.

17. Sediment Basin: Sediment Basins will be constructed at the common drainage locations that serve an area with 10 or more disturbed acres at one time. All sediment collected in permanent or temporary sediment traps must be removed upon final stabilization.

2.a.1 Stabilization Practices

The erosion and sediment control measures are to be placed prior to, or as the first step in, construction. Sediment control devices will be employed as a perimeter defense against any transportation of silt off the site. Stabilization measures shall be initiated for erosion and sediment control on disturbed areas as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 7 days after the construction activity in the portion of the site has temporarily or permanently ceased.

Temporary

- Artificial coverings in accordance with FDOT Specification Section 104.
- Sod in accordance with FDOT Specification Section 102.

Permanent

- Permanent soil erosion control measures for all slopes or any disturbed land areas shall be completed immediately after final grading. It is not possible to permanently protect a disturbed area immediately after grading operations; temporary erosion control measures shall be installed. All temporary protection shall be maintained until permanent measures are in place and established. The Contractor shall furnish, install, maintain, and subsequently remove, all necessary erosion control.

2.a.2 Structural Practices

Sediment controls shall be in place before disturbing soil upstream of the control. The structural practices shall include at least the following, unless otherwise approved by the County Engineer.

Temporary

- Silt fence in accordance with FDOT Design Standard 102 and FDOT Specification Section 104.
- Sandbags to control erosion and trap silt.
- Inlet protection in accordance with FDOT Design Standard 102.
- Geotextile Filter Fabric in accordance with FDOT Design Standard 102 and Specification Section 104.

Permanent

- Sod

2.b Stormwater Management

Refer to construction plans for conveyance of stormwater runoff.

2.c Other Controls

2.c.1 Waste Disposal

To be developed as part of the Contractor's SWPPP.

All waste material shall be collected and stored in a securely lined metal dumpster. The dumpster will meet all local and state solid waste management regulations. The dumpster will be emptied as needed and the trash will be hauled to a state approved landfill. All personnel will be instructed regarding the correct procedure for waste disposal. The site superintendent or the individual who manages the day-to-day site operations will be responsible for posting notices stating these practices at the construction site and for seeing that these procedures are followed.

All waste materials that are too large for the dumpster shall be stockpiled and hauled to a state approved landfill.

2.c.2 Off-Site Vehicle Tracking and Dust Control

To be developed as part of the Contractor's SWPPP.

Offsite Vehicle Tracking

A stabilized construction entrance will be provided to help reduce vehicle tracking of sediments. The paved street adjacent to the site entrance will be swept as needed or as directed by the Engineer to remove any excess mud, dirt or rock tracked from the site. Dump trucks hauling material from the construction site will be covered with a tarpaulin.

2.c.3 State and Local Regulations for Waste Disposal, Sanitary Sewer, or Septic Tanks

To be developed as part of the Contractor's SWPPP.

2.c.4 Fertilizers and Pesticides

To be developed as part of the Contractor's SWPPP.

Fertilizers

Fertilizers used will be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer will be worked into the soil to limit exposure to stormwater. Storage will be in a covered area. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spillage.

2.c.5 Toxic Substances

When the Contractor encounters a spill, construction will stop and work will not resume until directed by the project engineer.

Disposition of hazardous waste will be made in accordance with any requirements and regulations of any local, state, or federal agency having jurisdiction.

Hazard Waste

All hazardous waste materials will be disposed of in a manner specified by local or state regulation or by the manufacturer. Site personnel will be instructed in these practices and the site superintendent, the individual who manages the day-to-day site operations, will be responsible for seeing that these procedures are followed.

Sanitary Waste

All sanitary waste will be collected from the portable units as needed to prevent possible spillage. The waste will be collected and disposed of in accordance with state and local waste disposal regulations for sanitary sewer or septic systems.

Points

All containers will be tightly sealed and properly stored when not required for use. Excess paint will not be discharged to the storm sewer system but will be properly disposed of according to manufacturer's instructions or state and local regulations.

2.d Approved State and Local Plans and Permits

City of Ormond Beach: pending
St. Johns River Water Management District: pending

3.0 MAINTENANCE

The Contractor shall be responsible for maintaining all pollution prevention controls. Daily inspections shall be made by the Contractor to determine the effectiveness of erosion, sedimentation, turbidity, and pollution control measures. Remedial action shall be performed immediately.

- All turbidity control measures will be maintained in good working order. If a repair is necessary, it will be initiated within 24 hours of report.

- Build up sediment will be removed from silt fence when it has reached one-third the height of the fence.

- Silt fence will be inspected for depth of sediment, posts to see if the fabric is securely attached to the fence posts, and to see that the fence posts are firmly in the ground.

- The sediment basins will be inspected for the depth of sediment. Sediment will be removed when it reaches 20 percent of the design capacity or at the end of the job.

- Diversion dikes/swales show on the plans will be inspected and any breaches promptly repaired.
- Temporary and permanent seeding and planting will be inspected for bare spots, washouts, and healthy growth.

4.0 INSPECTIONS

The Contractor is required to inspect all erosion control features at least once every seven calendar days and within 24 hours of the end of a rain event of 0.50 inches or greater. In addition, maintain all erosion control features as required herein and as specified in State and/or Federal environmental regulatory permits. This includes, but is not limited to, the daily review of the location of silt fences, in areas where construction activities have changed the natural contour and drainage runoff, to ensure that silt fences are properly located for effectiveness. The Contractor will use FDOT form 650-040-03 to report all inspection findings and corrective actions taken as a result of the inspection. The Contractor will sign each inspection report and submit it weekly to the Engineer.

Maintenance and repair of construction machinery and equipment should be confined to areas specifically designated for that purpose. Such areas should be located and designed so that oils, gasoline, grease, solvents, and other potential pollutants cannot be washed directly into receiving streams, stormwater conveyance systems, or existing potential wetlands.

Vehicles such as cement or dump trucks and other construction equipment should not be washed at locations where the runoff will flow directly into a watercourse or stormwater conveyance system.

Sites where chemicals, cements, solvents, paints, or other potential water pollutants are to be stored, and storing these practices at the construction site and for seeing that these procedures are followed.

All construction sites should be provided with adequate sanitary facilities for workers according to applicable health regulations.

The use of calcium chloride, oils, or other chemicals dust control agents on construction roads should be avoided to control dust. Periodic watering is preferred.

The site entrance shall be maintained in a condition that will prevent tracking or flowing of sediment onto public right-of-way. When necessary, wheels shall be cleaned prior to entrance onto public right-of-way.

Silt Tracking Prevention Device:

1. A Silt Tracking Prevention Device (STPD) shall be constructed of locations designated by the engineer for points of egress from unstabilized areas of the project to public roads where offsite track of mud could occur. Traffic from unstabilized areas of the construction project shall be directed thru a STPD.

2. The Contractor may propose an alternative technique to minimize offsite tracking of sediment. The alternative must be reviewed and approved by the Engineer prior to its use.

3. All materials spilled, dropped, or tracked onto public roads (including the STPD aggregate and construction mud) shall be removed daily, or more frequently if so directed by the engineer.

4. Aggregates shall be as described in Section 901 excluding 901-2.3. Aggregates shall be FDOT Size #1. Other sized contain excessive small size aggregate which would track off project and are unsuitable. #2 may be substituted only with approval of the Engineer.

5. The Sediment Pit should provide a retention volume of 3600 cubic feet/acre of surface area draining to the pit. When the STPD is isolated from other drainage areas, the following pit volumes will satisfy this requirement:
 - 15' x 50' = 100 cf
 - 30' x 50' = 200 cf

As an option to the sediment pit the width of the swale bottom can be increased to obtain the volume when the sediment pit or swale volume has been reduced to one half. When a swale is used, bales shall be placed along the entire length.

6. The swale ditch draining the STPD shall have a 0.2% minimum and a 1.0% maximum grade along the STPD and to the sediment pit.

7. Mitered End Sections are not required when the temporary sitedrain pipe satisfy the clear zone requirements of Standard Index 700.

8. The STPD shall be maintained in a condition that will allow it to perform its function. To prevent offsite tracking, the STPD shall be rinsed daily when in use to move accumulated mud downward thru the stone. Additional stabilization of the vehicular route leading to the STPD may be required to limit the mud tracked.

9. The unit price shall constitute full compensation for construction, maintenance, replacement of material, removal, and restoration of the area utilized for the STPD, including but not limited to excavation grading, temporary pipe (including MES when required), filter fabric, aggregate, paved turnout (including asphalt and base construction, ditch stabilization, approach route stabilization, sediment removal and disposal, water, rinsing and cleaning of the STPD and cleaning of public roads, grassing and sod. (Synthetic Hay bales, TN, and silt fence, LF, shall be paid for separately.

10. The STPD shall be paid for under the item Soil Tracking Prevention Device EA. The nominal size of the standard STPD is 15' x 50' unless otherwise shown on the plans. If the volume of entering and existing vehicles warrants a 30' width STPD may be used. When a double width (30') STPD is used, the pay quantity shall be 2 for each location.

Silt Fence

1. Synthetic filter fabric shall be a pervious sheet of polypropylene, nylon, polyester, or polyethylene yarn. Synthetic filter fabric shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of 6 months of expected usable construction life at a temperature range of 0°F to 120°F.
2. Posts for silt fences shall be either 4 inch diameter wood, or 1.33 pounds per linear foot steel with a minimum length of 5 feet. Steel posts shall have projections for fastening wire to them.
3. Stakes for filter barriers shall be 2"x2" wood, or equivalent metal with a minimum length of 3 feet.
4. The height of a filter barrier shall be a minimum of 15 inches and shall not exceed 18 inches.
5. The stakes shall be spaced a maximum of 3 feet apart at the barrier location and driven securely into the ground a minimum of 8 inches.
6. A trench shall be excavated approximately 4 inches wide and 4 inches deep along the line of stakes and upslope from the barrier.
7. The filter material shall be stapled to the wooden stakes, and 8 inches of the fabric shall be extended into the trench. Heavy duty wire staples at least 1/2" inch long, hog rings, or tie wire shall be used.
8. Filter barriers shall be removed when they have served their useful purpose, but not before the upslope area has been permanently stabilized.

Revision	Date	Approved

Designed by:	RBG/MXT
Drawn by:	BJG/BRW
Checked by:	RBG
Approved by:	BRW
Vertical Datum:	1988

SINGHOVEN & ASSOCIATES, INC.
STORMWATER MANAGEMENT AND CIVIL ENGINEERING

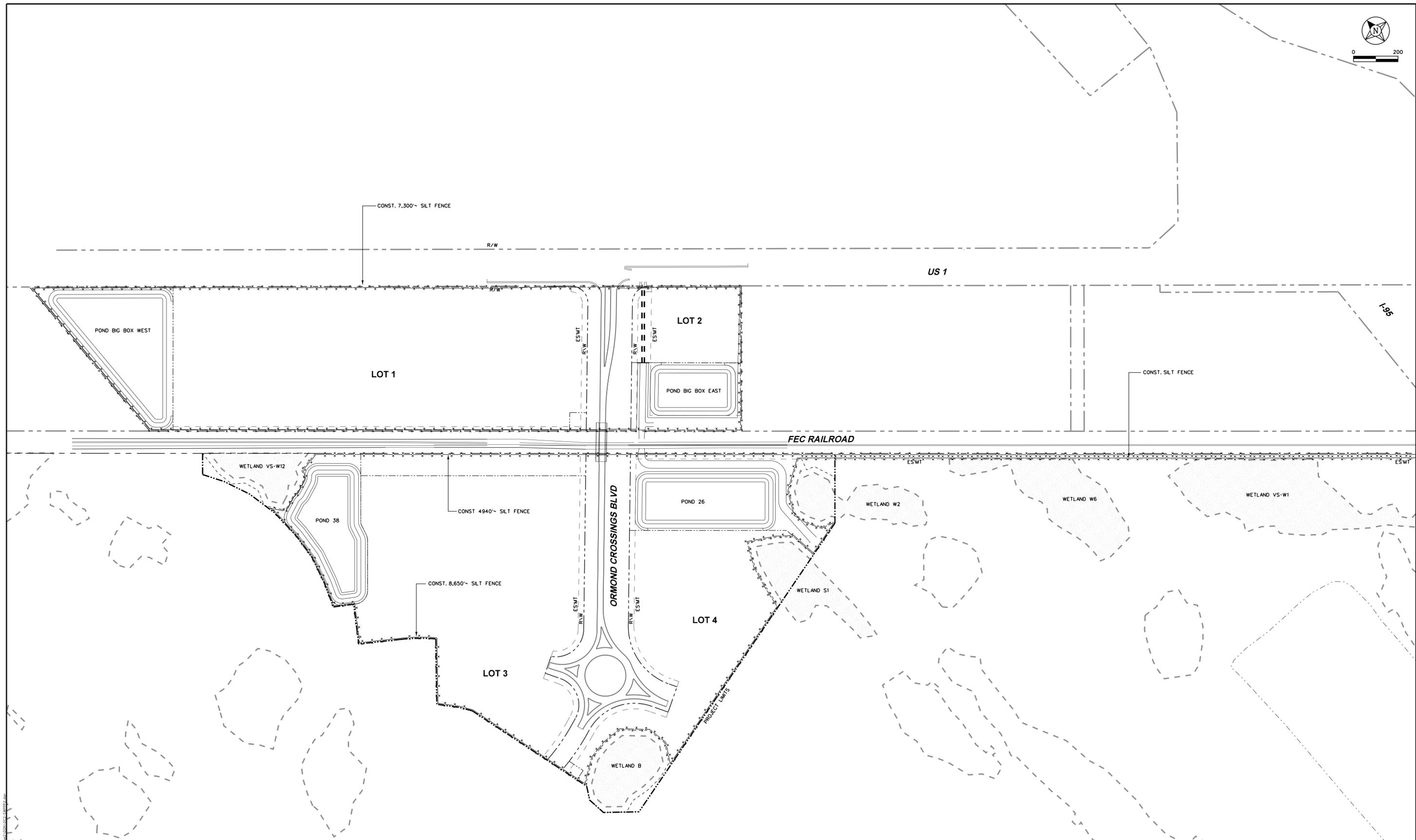
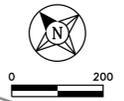
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DPR No. 0112



TOMOKA HOLDINGS, LLC

**ORMOND CROSSINGS
PHASE B**

**STORMWATER POLLUTION
PREVENTION PLAN**



Designed by: RBG/MXT
 Drawn by: BJG/BRW
 Checked by: RBG
 Approved by: BRW
 Vertical Datum: 1988

SINGHOFEN & ASSOCIATES, INC.
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TOMOKA HOLDINGS, LLC

**ORMOND CROSSINGS
PHASE B**

SWPPP EROSION CONTROL PLAN

SHEET
41 of 43
 SAI
 JOB No.
 2002-008.10

NOTES

All stormwater and ground water generated by the site shall be diverted to stormwater pit.

Phase I:

- * Establish and verify local coordinate system.
- * Establish and verify Limits of Construction (LOC).
- * Establish and verify baseline stationing.
- * Install materials for Prevention, Control, and Abatement of Erosion and Water Pollution.
- * Construct Soil Tracking Prevention Device at construction access. All water must discharge to the Temporary Dewatering Ponds.

Phase II:

- * Construct perimeter berm.
- * Construct stormwater pit.
- * Install dewatering pump. Discharge points for pumps must rest on a 5'x5'x6" pad of FDOT No. 357 coarse aggregate.
- * Clear and grub site.

Phase III:

- * Dewater as required by the Geotechnical Engineering Report. Dewatering by sock drains can be discharged directly to the wetlands on a coarse aggregate pad. Dewatering by rim ditch must be pumped to the dewatering pond or previously constructed pit.
- * Direct surface water drainage to pit.

Phase IV:

- * Construct stormwater outfall and bleeddown structures for the Stormwater Pond.
- * Add outfall structures for stormwater pit.
- * Clean all work areas.
- * Stabilize and sod all side slopes.
- * Seed and mulch berm.
- * Remove materials for Prevention, Control, and Abatement of Erosion and Water Pollution.

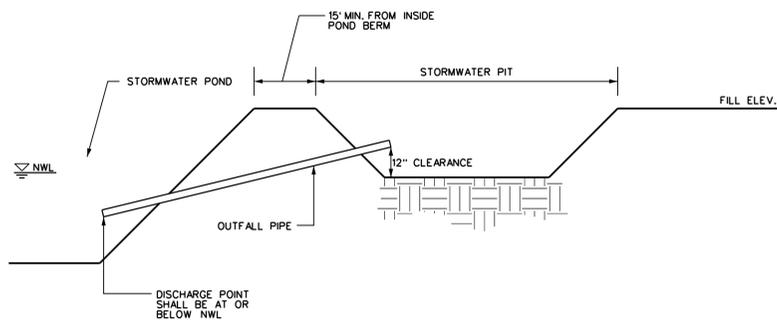
EROSION CONTROL

1. Contractor shall phase work to isolate work zones. Refer to recommendations under Construction Sequence.
2. This plan was prepared for estimating bid quantities and is provided for guidance in preparation of a Sequence of Construction/Erosion Control Plan. The locations and types of environmental control features shown may not adequately prevent erosion or the transportation of eroded materials off-site during each phase of construction. Supplementary sediment and erosion control devices may be required.

STORMWATER PIT TABLE

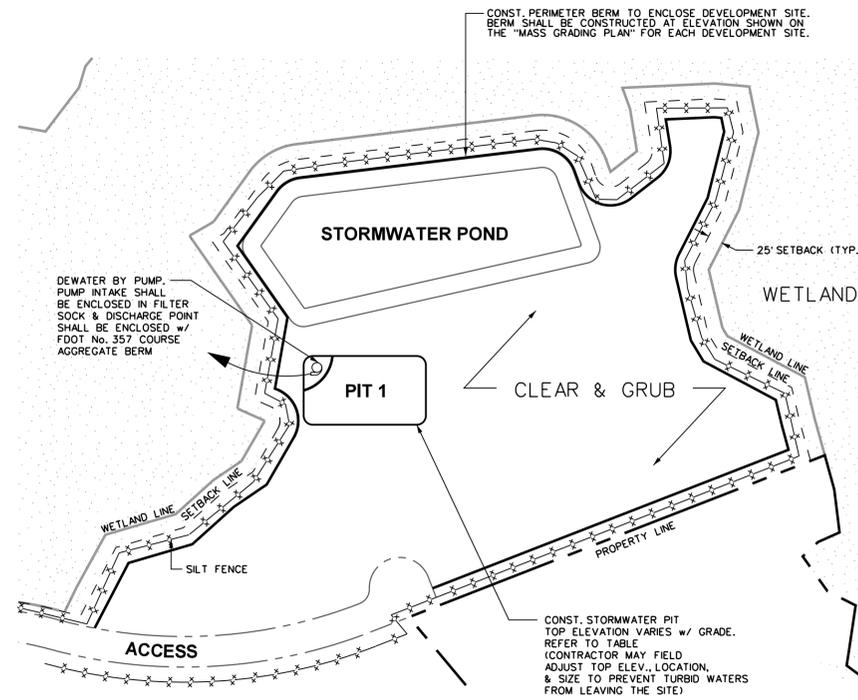
Pond No.	Lot No.	Lot Fill Elev.(ft)	Pit Top Elev. (ft)	Pit Top Area (sf)	Pit Bottom Elev. (ft)	Min. Outfall Pipe Size (in)	Min. Number of Outfall Pipes
Pond 26	3 partial	29.5	29.0	600	24.5	12	4
Pond 38	3 partial	30.1	29.6	600	25.1	12	4
Pond Big Box East	2	29.1	28.7	600	24.2	12	4
Pond Big Box West	1	30.0	29.5	600	25.0	12	4

Notes:
 Stormwater Pits are used to prevent erosion of stormwater pond banks.
 Contractor may adjust the pit size, location, and quantity as necessary to prevent erosion of the stormwater ponds.
 Contractor may increase the number of discharge pipes.
 Stormwater Pits are a temporary until the lots are developed.



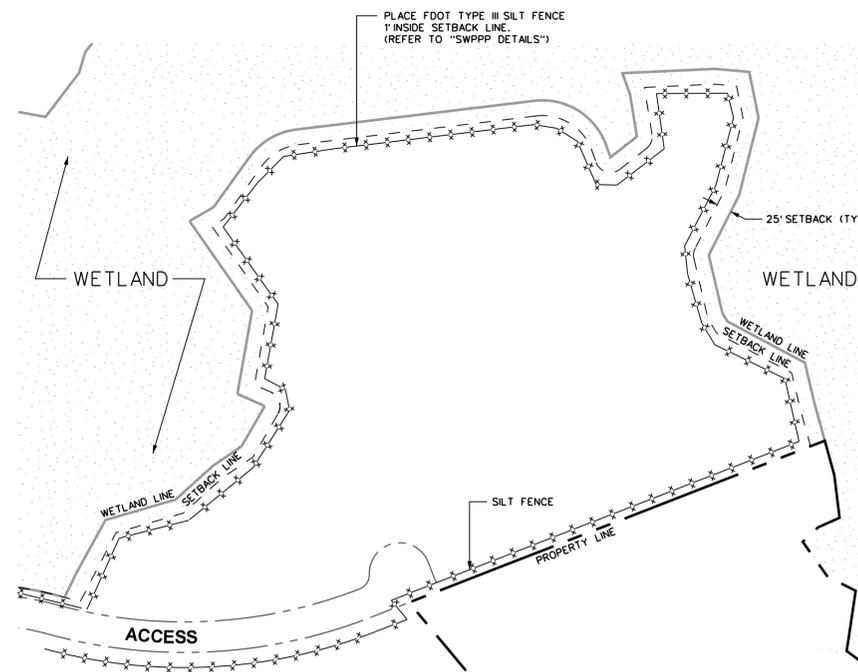
TYPICAL STORMWATER PIT

NTS



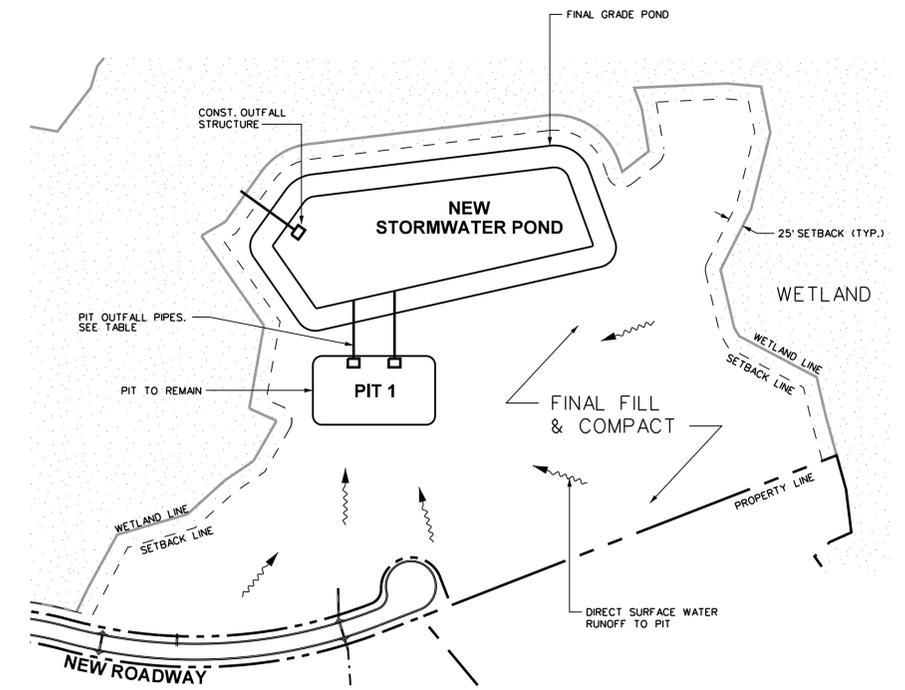
PHASE II

NTS



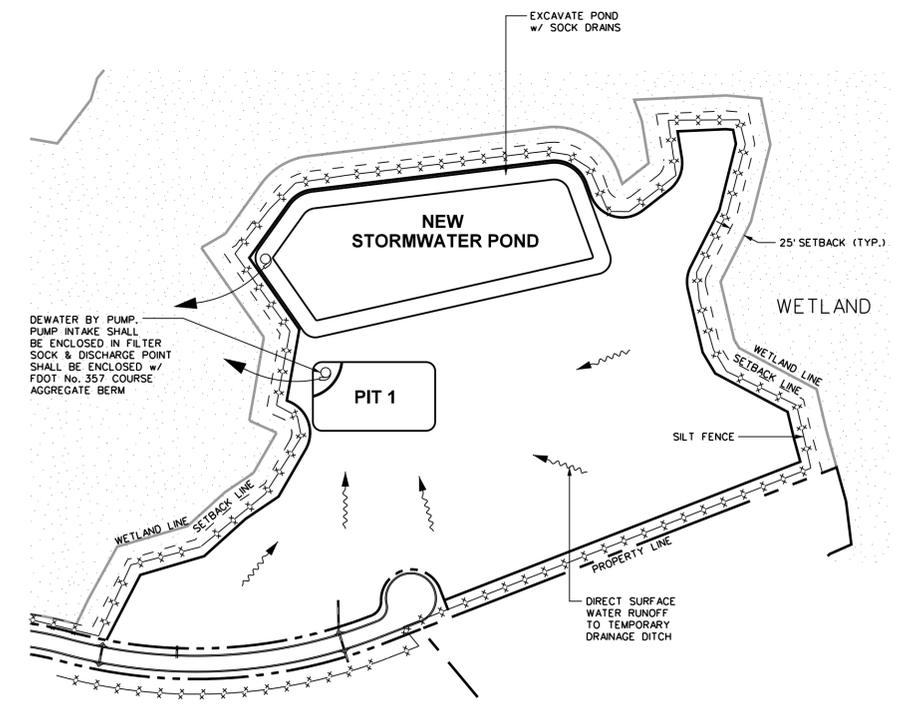
PHASE I

NTS



PHASE IV

NTS



PHASE III

NTS

Revision	Date	Approved

Designed by: RBG/MXT
 Drawn by: BJG/BRW
 Checked by: RBG
 Approved by: BRW
 Vertical Datum: 1988

SINGHOFEN & ASSOCIATES, INC.
 STORMWATER MANAGEMENT AND CIVIL ENGINEERING

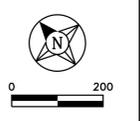
 11723 Orpington Street, Suite 100
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 DBPR No. 5112

TOMOKA HOLDINGS, LLC

**ORMOND CROSSINGS
 PHASE B**

SWPPP DETAILS

SHEET
42 of 43
 SAI
 JOB No.
 2002-008.10



LEGEND

- WETLAND IMPACTS
- PROTECTED WETLAND AREA
- SETBACK / UPLAND BUFFER LINE
- PROPOSED POND
- NEW RIGHT-OF-WAY
- NEW EASEMENT
- EXISTING RIGHT-OF-WAY
- PROPERTY BOUNDARY

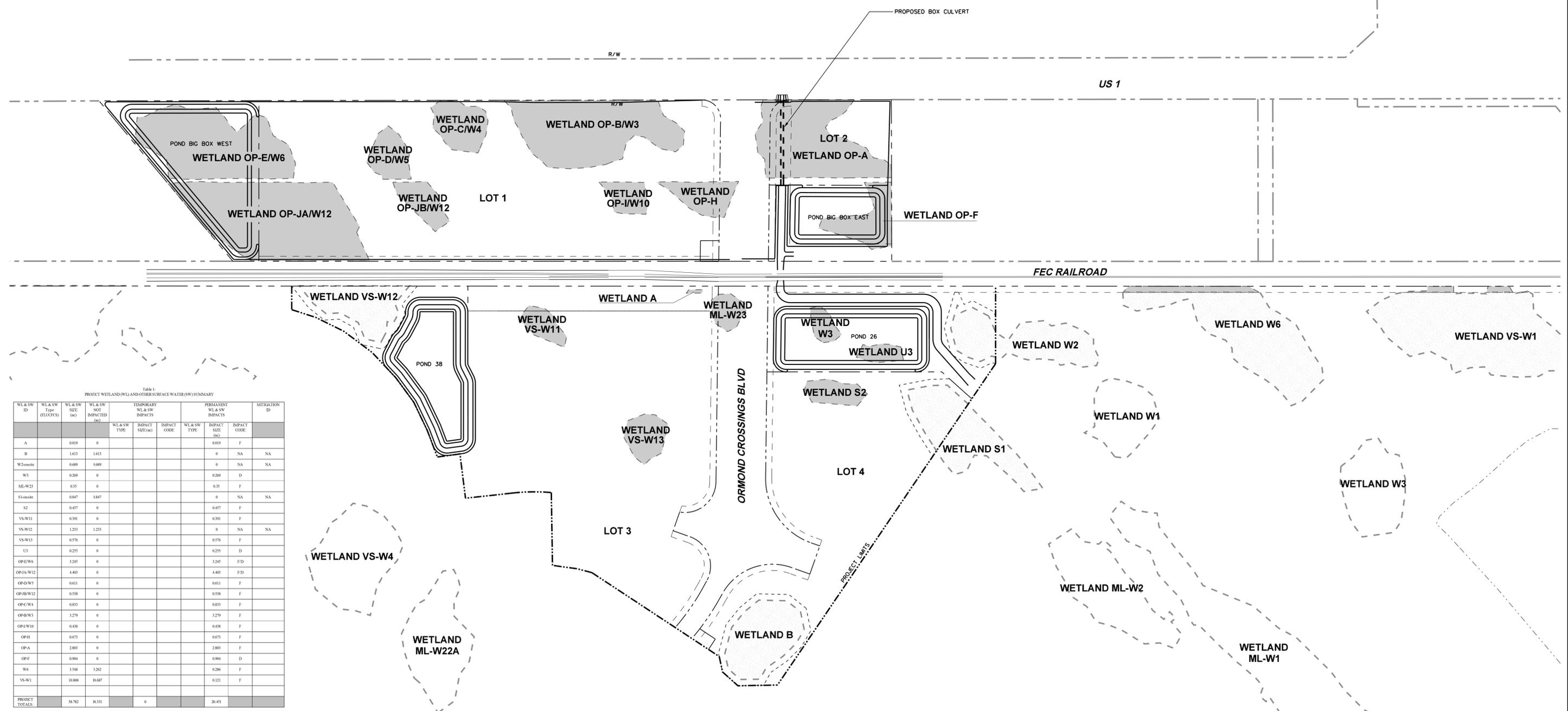


Table 1: PROJECT WETLAND (WL) AND OTHER SURFACE WATER (SW) SUMMARY

WL & SW ID	WL & SW Type (DU/PCS)	WL & SW Size (ac)	WL & SW Impacted (ac)	TEMPORARY WL & SW IMPACTS			PERMANENT WL & SW IMPACTS			MITIGATION ID
				WL & SW Type	IMPACT SIZE (ac)	IMPACT CODE	WL & SW Type	IMPACT SIZE (ac)	IMPACT CODE	
A		0.019	0				0.019	F		
B		1.613	1.613				0	NA	NA	
W2-estate		0.689	0.689				0	NA	NA	
W3		0.269	0				0.269	D		
ML-W23		0.35	0				0.35	F		
S1-estate		0.847	0.847				0	NA	NA	
S2		0.457	0				0.457	F		
VS-W11		0.391	0				0.391	F		
VS-W12		1.233	1.233				0	NA	NA	
VS-W13		0.576	0				0.576	F		
U3		0.255	0				0.255	D		
OP-E/W6		3.245	0				3.245	FD		
OP-A/W12		4.403	0				4.403	FD		
OP-D/W5		0.611	0				0.611	F		
OP-D/W12		0.538	0				0.538	F		
OP-C/W4		0.833	0				0.833	F		
OP-B/W3		3.279	0				3.279	F		
OP-I/W10		0.438	0				0.438	F		
OP-H		0.673	0				0.673	F		
OP-A		2.803	0				2.803	F		
OP-F		0.904	0				0.904	D		
W6		3.548	3.262				0.286	F		
VS-W1		10.808	10.587				0.121	F		
PROJECT TOTALS:		38.782	18.331				20.451			

Revision	Date	Approved

Designed by: RBG/MXT
 Drawn by: BJG/BRW
 Checked by: RBG
 Approved by: BRW
 Vertical Datum: 1988

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 DBPR No. 5112

TOMOKA HOLDINGS, LLC

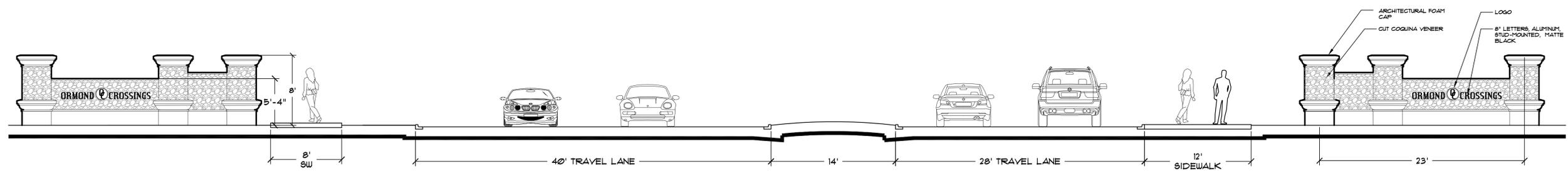
ORMOND CROSSINGS PHASE B

WETLAND ALLOCATION PLAN

SHEET
43 of 43
 SAI
 JOB No.
 2002-008.10

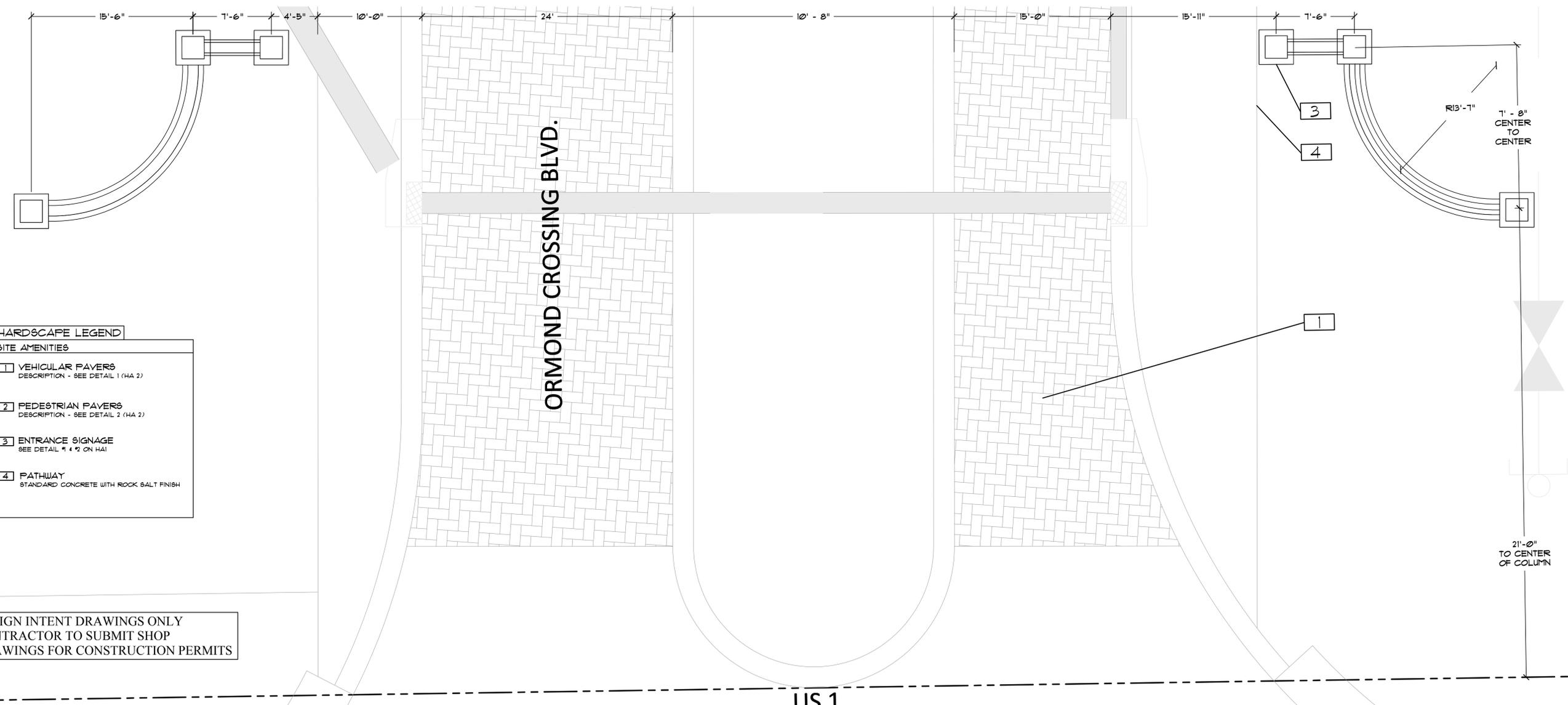


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AMELIA ISLAND
1889 SOUTH 14 ST. STE #2 FERNANDINA BEACH FL 32034
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① MEDIAN ENTRY FEATURE - ELEVATION

SCALE: N.T.S.



HARDSCAPE LEGEND	
SITE AMENITIES	
1	VEHICULAR PAVERS DESCRIPTION - SEE DETAIL 1 (HA 2)
2	PEDESTRIAN PAVERS DESCRIPTION - SEE DETAIL 2 (HA 2)
3	ENTRANCE SIGNAGE SEE DETAIL # 4 & 92 ON HAI
4	PATHWAY STANDARD CONCRETE WITH ROCK SALT FINISH

DESIGN INTENT DRAWINGS ONLY
CONTRACTOR TO SUBMIT SHOP
DRAWINGS FOR CONSTRUCTION PERMITS

② MEDIAN ENTRY FEATURE- LAYOUT PLAN

NO.	DATE	DESCRIPTION

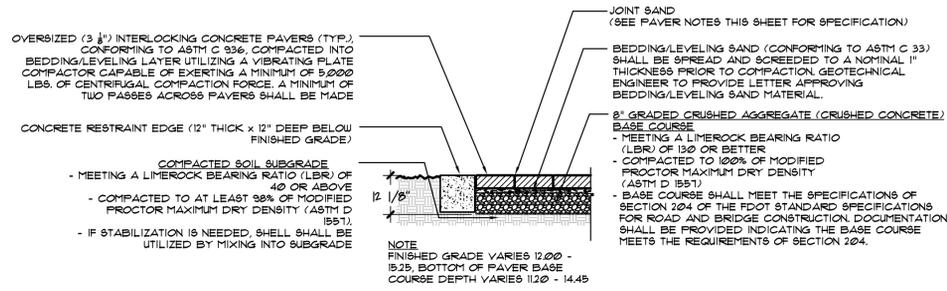
ORMOND CROSSING - PHASE B
FINAL ENGINEERING PLANS
HARDSCAPE PLAN & DETAILS
CITY OF ORMOND BEACH VOLUSIA COUNTY, FLORIDA

ZEV COHEN & ASSOCIATES, INC. CIVIL ENGINEERS • LANDSCAPE ARCHITECTS PLANNERS • TRANSPORTATION • ENVIRONMENTAL	PROJECT NO: 12108	DRAFTED BY: AKS
WWW.ZEVCOHEN.COM	ISSUE DATE: 12/05/14	CHECKED BY: PM
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SHEET HA1 OF 2

SCALE: 1"=5'

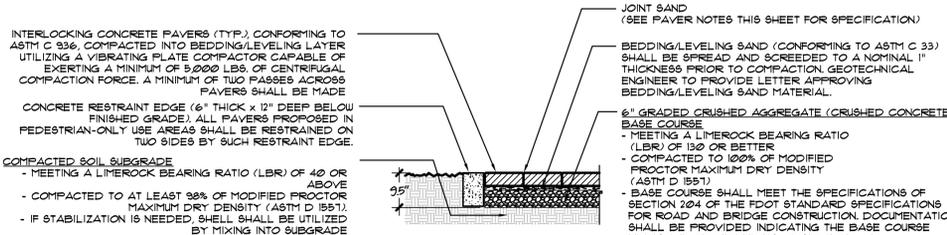
NOTE
THE SOIL SUBGRADE SHALL BE INSPECTED FOR ANY DELETERIOUS MATERIALS INCLUDING, BUT NOT LIMITED TO, ORGANIC MATERIALS, PLASTIC (CLAYEY) SOILS, DEBRIS, LARGE ROCKS, ETC. IF PRESENT, THEY SHALL BE REMOVED AND REPLACED WITH CLEAN, STRUCTURAL BACKFILL. STRUCTURAL BACKFILL SHALL BE DEFINED AS A CLEAN FINE SAND, CLASSIFIED AS #80 IN THE UNIFIED SOIL CLASSIFICATION SYSTEM. CONTRACTOR SHALL RETAIN GEOTECHNICAL ENGINEER FOR QUALITY CONTROL TESTING SERVICES (LBR, DENSITY TESTING, ETC.)



1 VEHICULAR PAVER INSTALLATION DETAIL

N.T.S.

NOTE
THE SOIL SUBGRADE SHALL BE INSPECTED FOR ANY DELETERIOUS MATERIALS INCLUDING, BUT NOT LIMITED TO, ORGANIC MATERIALS, PLASTIC (CLAYEY) SOILS, DEBRIS, LARGE ROCKS, ETC. IF PRESENT, THEY SHALL BE REMOVED AND REPLACED WITH CLEAN, STRUCTURAL BACKFILL. STRUCTURAL BACKFILL SHALL BE DEFINED AS A CLEAN FINE SAND, CLASSIFIED AS #80 IN THE UNIFIED SOIL CLASSIFICATION SYSTEM. CONTRACTOR SHALL RETAIN GEOTECHNICAL ENGINEER FOR QUALITY CONTROL TESTING SERVICES (LBR, DENSITY TESTING, ETC.)



2 PEDESTRIAN PAVER INSTALLATION DETAIL

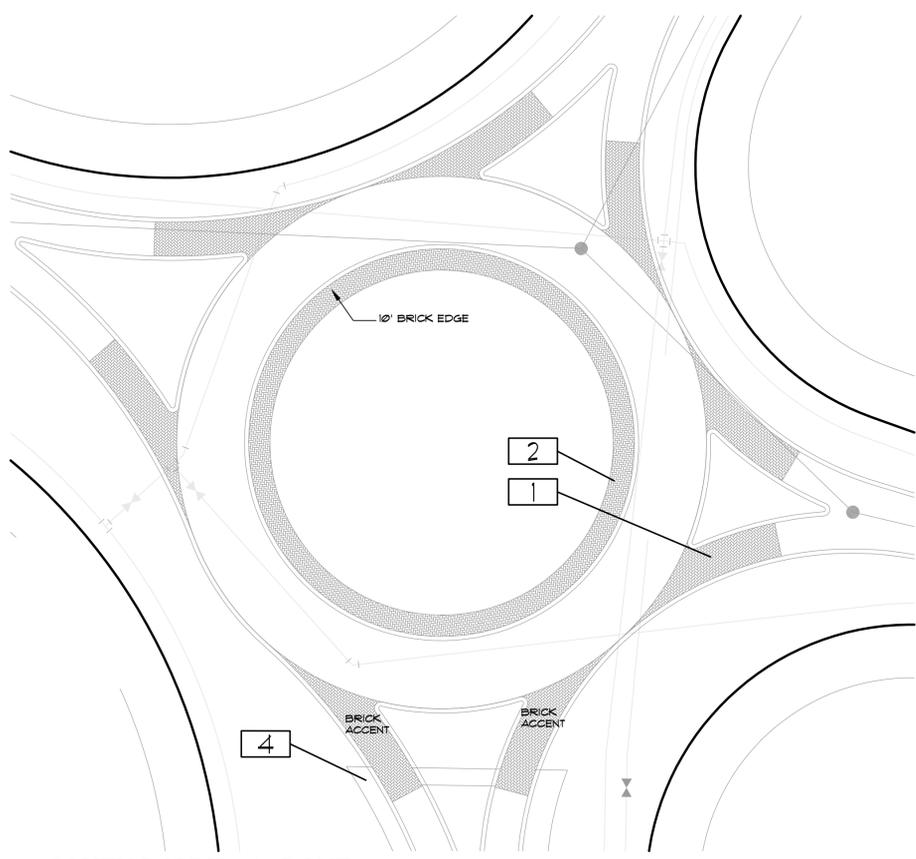
N.T.S.

HARDSCAPE LEGEND	
SITE AMENITIES	
	VEHICULAR PAVERS DESCRIPTION - SEE DETAIL 1 (HA 2)
	PEDESTRIAN PAVERS DESCRIPTION - SEE DETAIL 2 (HA 2)
	ENTRANCE SIGNAGE SEE DETAIL # 4 & 9 ON HA1
	PATHWAY STANDARD CONCRETE WITH ROCK SALT FINISH

DESIGN INTENT DRAWINGS ONLY
CONTRACTOR TO SUBMIT SHOP
DRAWINGS FOR CONSTRUCTION PERMITS

INTERLOCKING CONCRETE PAVER NOTES

- SUBMITTALS:**
- A. CONCRETE PAVERS:**
FOUR (4) REPRESENTATIVE FULL-SIZE SAMPLES OF EACH PAVER TYPE, THICKNESS, COLOR, FINISH THAT INDICATE RANGE OF COLOR VARIATION AND TEXTURE EXPECTED IN THE FINISHED INSTALLATION, COLOR(S) SELECTED BY LANDSCAPE ARCHITECT FROM MANUFACTURER'S AVAILABLE COLORS AND/OR CUSTOM COLORS, ACCEPTED SAMPLES BEFORE THE STANDARD OF ACCEPTANCE FOR THE WORK.
- B. PAVER INSTALLATION SUBCONTRACTOR:**
1. A COPY OF SUBCONTRACTOR'S CURRENT CERTIFICATE FROM THE INTERLOCKING CONCRETE PAVER INSTITUTE (ICPI) CONCRETE PAVER INSTALLER CERTIFICATION PROGRAM.
2. JOB REFERENCES FROM PROJECTS OF SIMILAR SIZE AND COMPLEXITY. PROVIDE OWNER/CLIENT/GENERAL CONTRACTOR NAMES, POSTAL ADDRESS, PHONE, FAX, AND EMAIL ADDRESS.
- QUALITY ASSURANCE:**
- A. PAVING SUBCONTRACTOR QUALIFICATIONS:**
1. UTILIZE AN INSTALLER HAVING SUCCESSFULLY COMPLETED CONCRETE PAVER INSTALLATION SIMILAR IN DESIGN, MATERIAL, AND EXTENT INDICATED ON THIS PROJECT.
2. UTILIZE AN INSTALLER HOLDING A CURRENT CERTIFICATE FROM THE INTERLOCKING CONCRETE PAVEMENT INSTITUTE (ICPI) CONCRETE PAVER INSTALLER CERTIFICATION PROGRAM.
- B. MOCK-UPS:**
1. INSTALL A 1'x1' PAVER AREA.
2. USE THIS AREA TO DETERMINE SURCHARGE OF THE BEDDING SAND LAYER, JOINT SIZES, LINES, LAYING PATTERN(S), COLOR(S), AND TEXTURE OF THE JOB.
3. THIS AREA WILL BE USED AS THE STANDARD BY WHICH THE WORK WILL BE JUDGED UPON FINAL INSPECTION.
4. SUBJECT TO ACCEPTANCE BY OWNER, MOCK-UP MAY BE RETAINED AS PART OF FINISHED WORK.
5. IF MOCK-UP IS NOT RETAINED, REMOVE AND PROPERLY DISPOSE OF MOCK-UP.
- DELIVERY, STORAGE, & HANDLING:**
*COMPLY WITH MANUFACTURER'S ORDERING INSTRUCTIONS AND LEAD-TIME REQUIREMENTS TO AVOID CONSTRUCTION DELAYS.
- A. DELIVERY:**
DELIVER MATERIALS IN MANUFACTURER'S ORIGINAL, UNOPENED, UNDAMAGED CONTAINERS PACKAGING WITH IDENTIFICATION LABELS INTACT.
- B. STORAGE & PROTECTION:**
1. STORE MATERIALS PROTECTED SUCH THAT THEY ARE KEPT FREE FROM MUD, DIRT, AND OTHER FOREIGN MATERIALS. STORE CONCRETE PAVER CLEANERS AND SEALERS PER MANUFACTURER'S SPECIFICATIONS.
2. COVER BEDDING SAND AND JOINT SAND WITH WATERPROOF COVERING IF NEEDED TO PREVENT EXPOSURE TO RAINFALL OR REMOVAL BY WIND. SECURE THE COVERING IN PLACE.
3. AFTER APPLICATION, SURFACE SHOULD BE ALLOWED TO SET FOR 24 HOURS BEFORE DRIVING ON THE SURFACE.
- PRODUCT SUBSTITUTIONS:**
NO SUBSTITUTIONS ARE PERMITTED WITHOUT APPROVAL FROM LANDSCAPE ARCHITECT.
- BEDDING AND JOINT SAND:**
*PROVIDE BEDDING AND JOINT SAND AS FOLLOWS:
1. WASHED, CLEAN, NON-PLASTIC, FREE FROM DELETERIOUS OR FOREIGN MATTER, SYMMETRICALLY SHAPED, NATURAL OR MANUFACTURED FROM CRUSHED ROCK.
 2. DO NOT USE LIMESTONE SCREENINGS, CRUSHED SHELL, STONE DUST, OR SAND FOR THE BEDDING SAND MATERIAL THAT DO NOT CONFORM TO THE GRADING REQUIREMENTS OF ASTM C 33.
 3. DO NOT USE MASON SAND OR SAND CONFORMING TO ASTM C144 FOR THE BEDDING SAND.
 4. WHERE CONCRETE PAVERS ARE SUBJECT TO VEHICULAR TRAFFIC, UTILIZE SANDS THAT ARE AS HARD AS PRACTICALLY AVAILABLE.
 5. SIEVE ACCORDING TO ASTM C 136.
- ACCESSORY TREATMENTS:**
CLEANER AND SEALER LISTED BELOW SHALL BE UTILIZED FOR THIS PROJECT AND SHALL BE BY TECHNISEAL (800-465-1323, TECHNISEAL.COM) UNLESS OTHERWISE APPROVED BY LANDSCAPE ARCHITECT. THE FOLLOWING TECHNISEAL PRODUCTS SHALL BE APPLIED IN THE FOLLOWING ORDER TO MANUFACTURER'S SPECIFICATIONS.
- 1. CONCRETE PAVER CLEANER:**
TECHNISEAL HC HARDSCAPE CLEANER FOR PAVERS AND SLABS
- 2. CONCRETE PAVER SEALER:**
TECHNISEAL WL4 PROTECTOR FOR PAVERS AND SLABS
- *APPLICATION OF PAVER CLEANER AND SEALER SHALL BE APPLIED WITH THE FOLLOWING CONSIDERATIONS BEING MADE PRIOR TO APPLICATION:
1. SURFACES MUST BE CLEAN, DRY (24 HOURS WITHOUT PRECIPITATION), AND WARM TO THE TOUCH.
 2. TEMPERATURES BETWEEN 50 DEGREES AND 85 DEGREES FAHRENHEIT.
 3. AFTER APPLICATION, SURFACE SHOULD BE ALLOWED TO SET FOR 24 HOURS BEFORE DRIVING ON THE SURFACE.



3 SOUTH ROUND- A- BOUT

SCALE: 1"= 40'



ORMOND BEACH
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NO.	DATE	DESCRIPTION

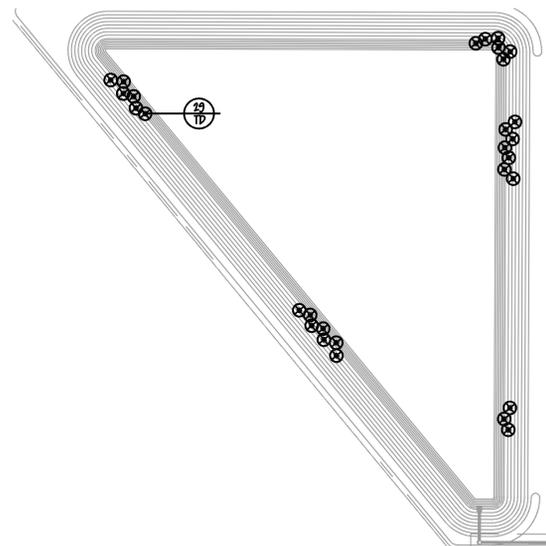
REVISIONS:

ORMOND CROSSING - PHASE B
FINAL ENGINEERING PLANS
HARDSCAPE PLAN & DETAILS
VOLUSIA COUNTY, FLORIDA
CITY OF ORMOND BEACH

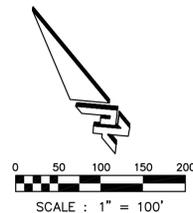
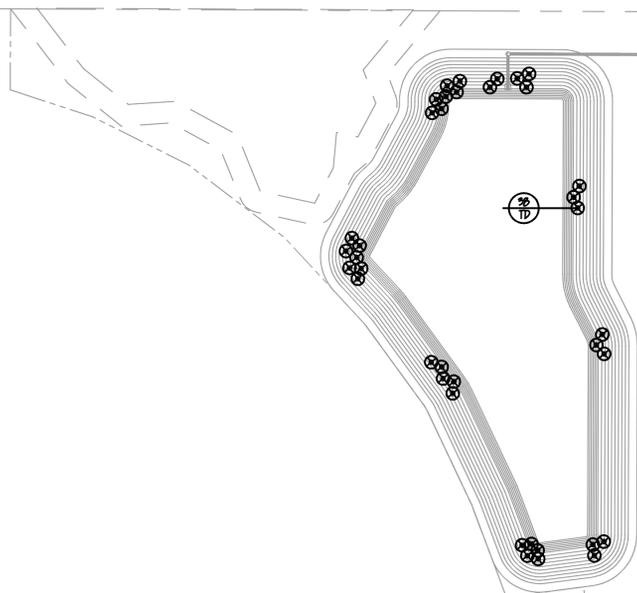
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WWW.ZEVCOHEN.COM
PROJECT NO: 12108
ISSUE DATE: 12/05/14
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XREFS: 12108A15

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SHEET HA2 OF 2

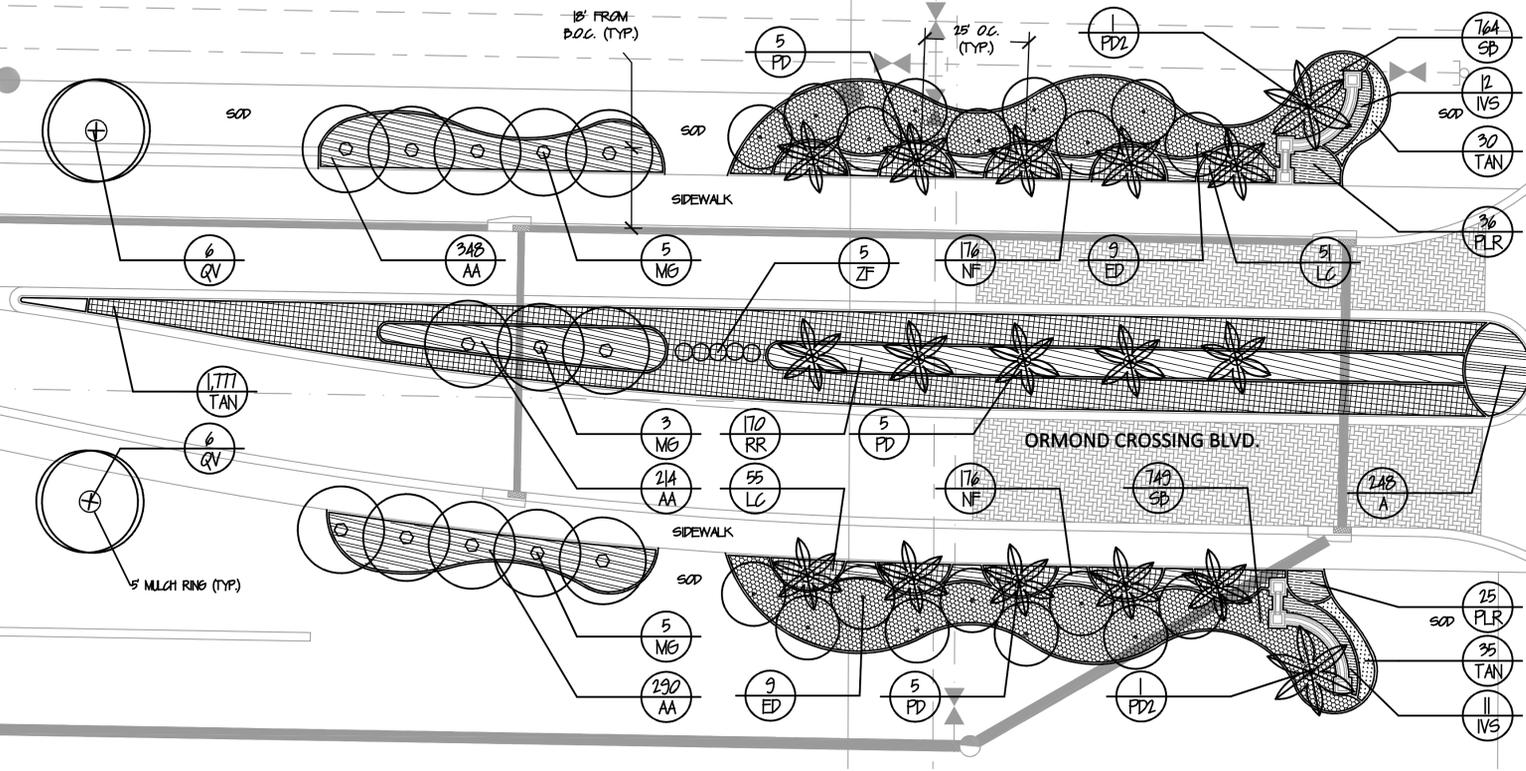
LA 2-A
LA 1-A



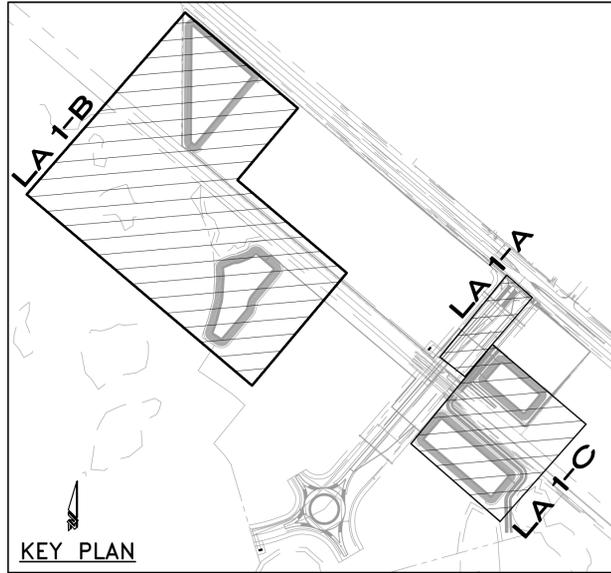
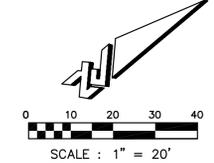
RAILROAD



LA 1-B



LA 1-A



ORMOND BEACH
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(386) 877-2482 FAX (386) 877-2525
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(386) 797-1610 FAX (386) 797-4159
AMELIA ISLAND
188 SOUTH 14
(904) 461-5456 FAX (904) 461-5470

NO.	DATE	DESCRIPTION

REVISIONS:

ORMOND CROSSING - PHASE B
FINAL ENGINEERING PLANS
LANDSCAPE PLAN & DETAILS

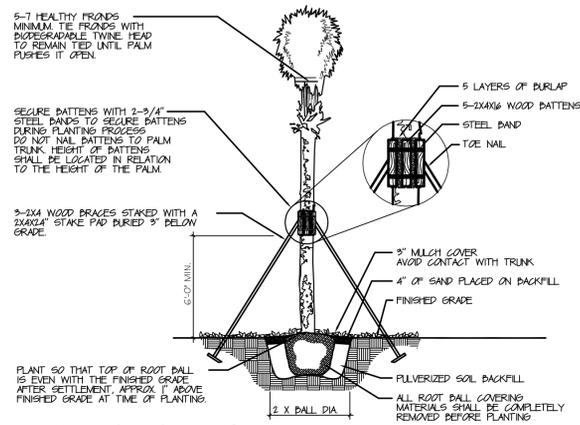
VOLUSIA COUNTY, FLORIDA
CITY OF ORMOND BEACH

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CIVIL ENGINEERS • LANDSCAPE ARCHITECTS
PLANNERS • TRANSPORTATION • ENVIRONMENTAL
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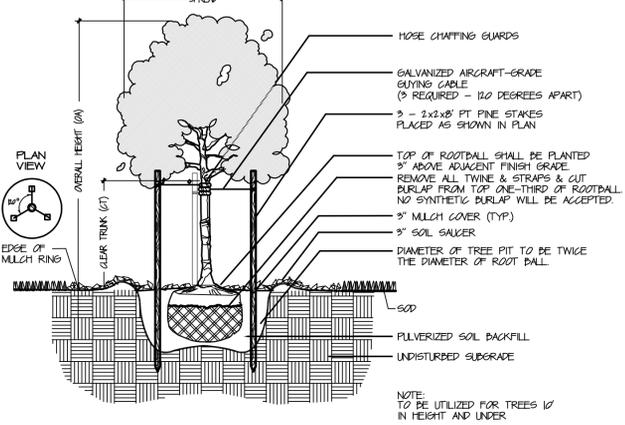
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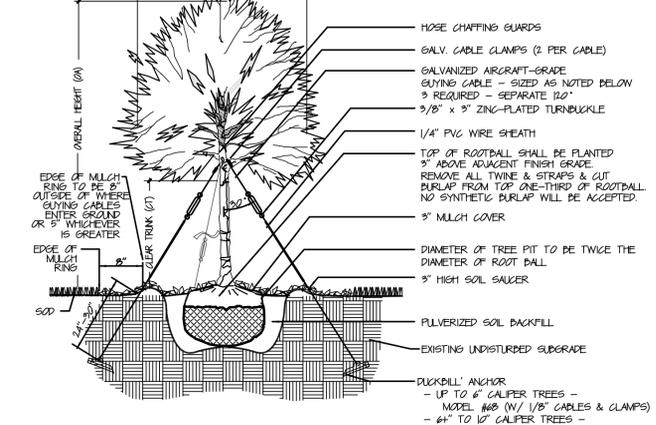
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SCALE:
SHEET LA1 OF 3



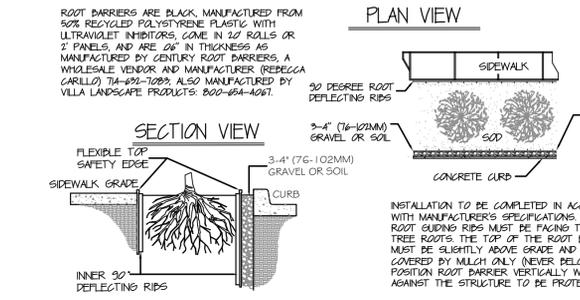
1 PALM PLANTING DETAIL SCALE: N.T.S.



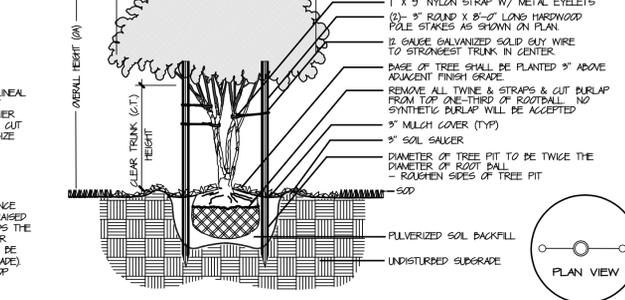
2 SMALL TREE PLANTING DETAIL SCALE: N.T.S.



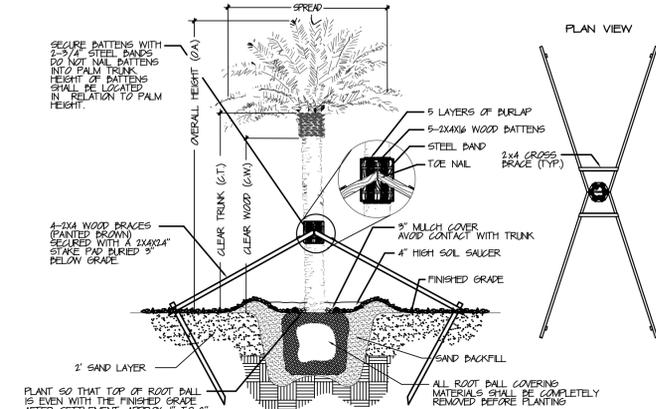
3 TREE PLANTING DETAIL SCALE: N.T.S.



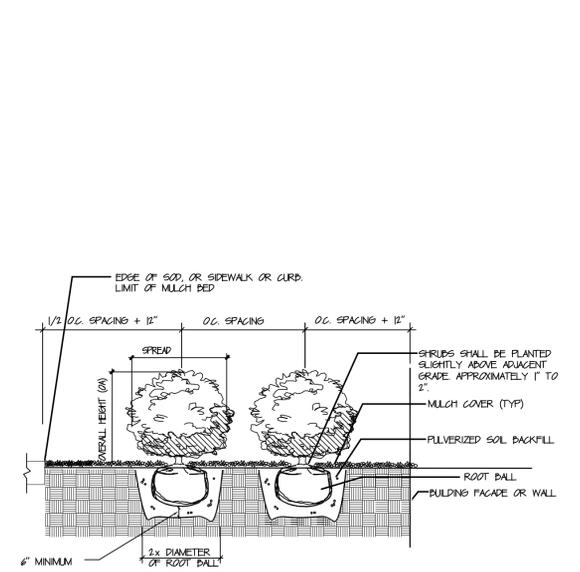
4 ROOT BARRIER DETAIL (LINEAR APPLICATION) SCALE: N.T.S.



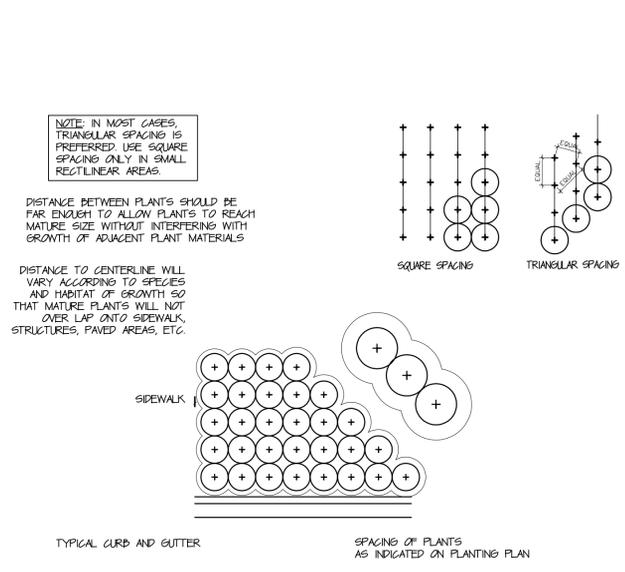
5 MULTI-TRUNK TREE PLANTING DETAIL SCALE: N.T.S.



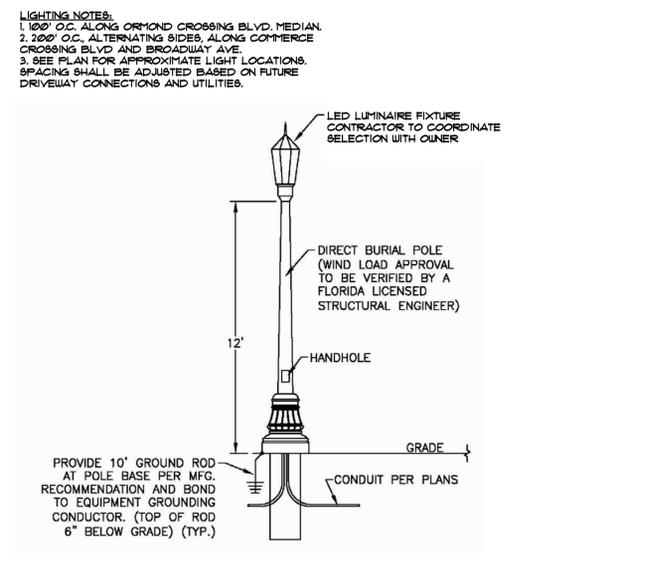
6 DATE PALM TREE PLANTING DETAIL SCALE: N.T.S.



7 SHRUB PLANTING DETAIL SCALE: N.T.S.



8 TYPICAL PLANT SPACING DETAIL SCALE: N.T.S.



9 ROADWAY LIGHTING DETAIL SCALE: N.T.S.

LANDSCAPE NOTES

- FLORIDA #1: ALL PLANT MATERIAL SHALL BE GRADE FLORIDA NO. 1 OR BETTER IN QUALITY AS DESIGNATED IN THE MOST RECENT PUBLICATION OF "GRADES AND STANDARDS FOR NURSERY PLANTS", PUBLISHED BY THE FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES.
- EXISTING PLANTS: IF PROPOSED PLANTINGS SHOWN ON PLAN INTERFERE WITH EXISTING LANDSCAPING, THE EXISTING LANDSCAPING IS TO BE REMOVED IN FAVOR OF THE NEW PLANTINGS.
- MULCH: ALL PLANTING BEDS SHALL BE TOP DRESSED WITH 3" SHREDDED CYPRESS DARK MULCH, GRADE "B" OR BETTER. ALL TREES NOT IN BEDS SHALL HAVE A 5' DIAMETER MULCH RING.
- SOD: SOD SHALL BE ST. AUGUSTINE FLORITAM UNLESS OTHERWISE SPECIFIED ON THE PLANS AS ARGENTINE DAHIA ALL SOD SHALL BE ROLLED. CONTRACTOR TO SOD ARGENTINE DAHIA ALONG ALL STORMWATER PONDS. LIMITS SHALL BE ALL DISTURBED AREAS WITHIN THE SILT FENCE TO TWO FEET BELOW THE NORMAL WATER LEVEL. SEE CIVIL PLANS FOR ADDITIONAL INFO.
- QUANTITIES: IN THE EVENT OF A VARIATION BETWEEN THE QUANTITIES SHOWN ON THE PLANT LISTS AND THE ACTUAL QUANTITY OF PLANTS SHOWN ON THE PLANS, THE PLANS SHALL CONTROL. SOD QUANTITY TAKEOFFS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
- UNFORESEEN CONFLICTS: CONTRACTOR SHALL NOT WILLFULLY INSTALL ANY PORTION OF THE LANDSCAPE PLAN AS SHOWN ON THE DRAWINGS WHEN IT IS OBVIOUS IN THE FIELD THAT UNFORESEEN OBSTRUCTIONS, GRADE DIFFERENCES, STANDING WATER, SOIL CONDITIONS OR OTHER CONFLICTS EXIST. SUCH UNFORESEEN CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE AND THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
- SUBSTITUTIONS: NO SUBSTITUTIONS OR VARIATIONS OF ANY PLANT MATERIAL OR ITS INSTALLED LOCATION WILL BE PERMITTED WITHOUT THE PRIOR WRITTEN CONSENT AND APPROVAL FROM THE LANDSCAPE ARCHITECT.
- CONTAINERS: IF GALLONAGE FOR PLANTS OR TREES IS SHOWN THEY SHALL BE CONTAINER GROWN AND THE SIZE SHOWN SHALL REPRESENT THE MINIMUM ALLOWABLE GALLONAGE ACCEPTED IN ALL CASES THE PLANT SPECIFIED SIZE SHALL GOVERN OVER THE GALLONAGE INDICATED.
- SOIL: CONTRACTOR SHALL VERIFY THAT SOIL CONDITIONS ARE SUITABLE TO THE PLANT SPECIES SPECIFIED. IF SOIL CONDITIONS ARE DEEMED UNSUITABLE FOR PROPER PLANT HEALTH, CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT AND PROPER SUBSTITUTIONS SHALL BE SPECIFIED BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. ADDITIONALLY, IF PRESENT, THE CONTRACTOR SHALL REMOVE LINE ROCK, CONCRETE AND OTHER DELETERIOUS DEBRIS FROM PLANTING BEDS. IF DEBRIS IS INTEGRATED IN THE SOIL, THE SOIL MUST BE EXCAVATED AND REPLACED WITH ACCEPTABLE SOIL. ALL FILL TO BE PLACED IN LANDSCAPE AREAS MUST HAVE A PH RANGE BETWEEN 5.8 AND 7.5, BE ORGANIC IN NATURE, AND BE FREE OF ROCKS AND DEBRIS.
- TOPSOIL: TOPSOIL MATERIAL, IF REQUIRED, SHALL BE FREE FROM ALL HARD CLODS, WEEDS, STONES OVER 1" IN DIAMETER, CLAY, HARD PAN, NOxious PLANTS, SOD, INSECTS, OR OTHER UNDESIRABLE PLANTS, SEEDS, OR MATERIAL WHICH MAY BE HARMFUL FOR GROWTH AND SHALL BE CERTIFIED AS STERILE.
- WEEDS: IF PRESENT, THE CONTRACTOR SHALL BE RESPONSIBLE TO REMOVE ANY WEEDS FROM PLANTING AREAS PRIOR TO THE INSTALLATION OF PROPOSED PLANT MATERIAL AND MULCH COVER. CONTRACTOR SHALL BE RESPONSIBLE TO KEEP BEDS FREE OF WEEDS FOR THE DURATION OF THE 90 DAY MAINTENANCE PERIOD.
- GRADING: UNLESS OTHERWISE STATED ON THESE PLANS, THE LANDSCAPE CONTRACTOR SHALL FINE GRADE ALL AREAS TO BE PLANTED AND SODDED IN ORDER TO ELIMINATE BUMPS AND DEPRESSIONS. FINE GRADING SHALL BE DEFINED AS THE FINAL 2" OF GRADE TO BE ACHIEVED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING AND REGRADING WASHOUT AREAS CAUSED BY EROSION UNTIL FINAL ACCEPTANCE OF THE PROJECT.
- STAKING: ALL TREES, SHRUBS AND GROUND COVERS ARE TO BE PLANTED ACCORDING TO THE DETAILS IN THESE PLANS. IF THE CONTRACTOR PREFERENCES TO USE OTHER STAKING METHODS THAN SHOWN IN THE DETAILS, HE OR SHE MUST SUBMIT PROPOSED STAKING DETAILS TO THE LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION. THE LANDSCAPE CONTRACTOR SHALL STRAIGHTEN, REPAIR AND/OR REPLACE ANY PLANTS DAMAGED BY FAILURE TO PROPERLY STAKE OR GUY ANY TREES IN SITE, AT THEIR OWN EXPENSE.
- CURVILINEAR: CURVILINEAR LANDSCAPE BEDS ARE TO BE EDGED WITH SMOOTH FLOWING CURVES. STRAIGHT-LINE LANDSCAPE BEDS ARE TO BE EDGED IN A STRAIGHT LINE PARALLEL TO PARKING LOTS AND STRUCTURES UNLESS OTHERWISE SPECIFIED.
- FERTILIZER: OSMOCOTE SLOW RELEASE FERTILIZER OR EQUIVALENT SHALL BE APPLIED TO ALL TREE, SHRUB, AND GROUNDCOVER PLANTING AREAS AT THE RATE OF THREE (3) TABLESPOONS PER 2 SF. OF PLANTING AREA.
- DRAINAGE: THE LANDSCAPE CONTRACTOR SHALL ASSURE THAT THIS WORK DOES NOT INTERRUPT EXISTING OR PROPOSED DRAINAGE PATTERNS AND SHALL NOTIFY THE OWNER'S REPRESENTATIVE IMMEDIATELY SHOULD A CONFLICT ARISE.
- SPECIFICATIONS: THE LANDSCAPE ARCHITECT SHALL BE PERMITTED THE RIGHT DURING INSTALLATION, TO REJECT ANY AND ALL PLANT MATERIAL AND WORKMANSHIP WHICH IN HIS OR HER OPINION DOES NOT MEET THE REQUIREMENTS OF THESE SPECIFICATIONS.
- NATURAL AREAS: NATURAL VEGETATION PRESERVATION AREAS SHALL BE CLEANED UP INCLUDING BUT NOT LIMITED TO THE REMOVAL OF ANY DEBRIS OR WEEDS AND PRUNING OF DEAD OR YELLOW BRANCHES AND PALM FRONDS. MULCH EDGE OF NATURAL AREA 3" TO 5" FEET.
- WILDLIFE NOTIFICATION: UNLESS NOTIFIED BY THE CLIENT OR CONTRACTOR IN WRITING, LANDSCAPE ARCHITECT SHALL NOT BE HELD RESPONSIBLE FOR DAMAGES TO PROPOSED PLANT MATERIAL CAUSED BY DEER OR OTHER ANIMALS. UPON NOTIFICATION OF PEST ANIMAL EXISTENCE PROPER PLANT SUBSTITUTIONS SHALL BE PROVIDED BY THE LANDSCAPE ARCHITECT.
- PERCOLATION: PERCOLATION TESTS ARE REQUIRED FOR ALL PLANTING PITS FOR PHOENIX SPP. PALM TREES. AFTER THE PLANTING PIT IS DUG TO THE PROPER DEPTH, FILL PIT WITH WATER AND DOCUMENT THE AMOUNT OF TIME IT TAKES FOR THE WATER TO DRAIN FROM THE PIT COMPLETELY. NOTIFY THE OWNER'S REPRESENTATIVE TO WITNESS THE TEST.
- TURNOVER: CONTRACTOR SHALL CONTACT OWNER'S REPRESENTATIVE FOR A TURNOVER DATE TO INCLUDE A WALK-THROUGH AND ACCEPTANCE OF WORK BY THE LANDSCAPE ARCHITECT. ANY WORK DEEMED UNACCEPTABLE SHALL BE CORRECTED IMMEDIATELY AND REINSPECTED AS SCHEDULED.
- MAINTENANCE: CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE TO BEGIN AFTER EACH PLANT HAS BEEN INSTALLED AND SHALL CONTINUE 90 DAYS AFTER FINAL WRITTEN ACCEPTANCE BY THE OWNER. MAINTENANCE SHALL INCLUDE WATERING, PRUNING, WEEDING, MULCHING, MOWING, REPLACEMENT OF SICK OR DEAD PLANTS, AND ANY OTHER CARE NECESSARY IN ORDER TO MAINTAIN PROPER PLANT HEALTH AND SOIL MOISTURE CONTENT.
- GUARANTEE: CONTRACTOR SHALL GUARANTEE ALL INSTALLED PLANT MATERIAL FOR ONE (1) CALENDAR YEAR STARTING FROM THE TURNOVER DATE. SHOULD WORK BE FOUND ACCEPTABLE ANY CORRECTED WORK SHALL HAVE A PROPORTIONAL EXTENSION OF WARRANTY ONCE APPROVED. ANY SICK OR DEAD MATERIAL SHALL BE REPLACED IMMEDIATELY. THE LANDSCAPE CONTRACTOR SHALL NOT BE RESPONSIBLE TO HONOR ANY WARRANTY FOR THE LOSS OF ANY PLANT MATERIAL CAUSED BY FLOODING, FIRE, FREEZING TEMPERATURES, WINDS OVER 50 MPH, LIGHTNING, ANY OTHER NATURAL DISASTER, OR ANY LOSS/DAMAGE CAUSED BY VANDALISM OR NEGLIGENCE ON THE PART OF THE OWNER.
- ROOT BARRIER: ROOT BARRIER TO BE INSTALLED ALONG SIDEWALK 15' AWAY FROM EACH SIDE OF TREE, WHERE ROOTS MAY POTENTIALLY DISTURB INFRASTRUCTURE. SEE DETAIL#4, SHEET LA6.

IRRIGATION NOTES

- AN AUTOMATIC TIME CONTROLLED IRRIGATION SYSTEM WITH A RAIN SENSOR SHALL BE INSTALLED TO PROVIDE 100% HEAD TO HEAD COVERAGE OF ALL NEW PLANTINGS. IRRIGATION PLAN SHALL BE PROVIDED UPON SUBSTANTIAL SITE PLAN APPROVAL.
- THE IRRIGATION SOURCE SHALL BE AN ONSITE PUMP STATION TIED INTO THE STORMWATER POND SYSTEM. THIS PUMP STATION SHALL CHARGE THE RECLAIMED LINE BEING INSTALLED WITH THE DEVELOPMENT.
- A BACK-UP IRRIGATION WELL SHALL ALSO BE REQUIRED TO PROVIDE EMERGENCY WATER IF SOURCE WATER IS TOO LOW. THIS BACK-UP WELL SHALL BE USED TO FILL THE STORMWATER POND WHICH SUPPLIES THE PUMP STATION.

STREET TREE NOTES:

- STREET TREES INDICATED ON THIS PLAN SHALL BE PLANTED 9'-0" FROM D.O.C. (TYPICAL).
- STREET TREES SHALL BE PLANTED APPROX 50'-0" ON CENTER.
- TREES SHALL BE PLANTED A MINIMUM OF 5'-0" AWAY FROM PROPOSED SIDEWALKS, CURBING, DRIVEWAYS, AND UTILITIES.
- ALL MEDIAN AND STREET TREE PLANTINGS SHALL BE INSTALLED IN ACCORDANCE WITH FDOT STANDARD INDEX 546 SHEETS 1 AND 2 FOR INTERSECTION SIGHT LINES AND CLEAR ZONES.



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NO.	DATE	DESCRIPTION	REVISIONS

ORLOND CROSSING - PHASE B
FINAL ENGINEERING PLANS
LANDSCAPE PLAN & DETAILS
VOLUSIA COUNTY, FLORIDA

ZEV COHEN & ASSOCIATES, INC.
CIVIL ENGINEERS • LANDSCAPE ARCHITECTS
PLANNERS • TRANSPORTATION • ENVIRONMENTAL
WWW.ZEVCOHEN.COM
PROJECT NO: 12105-14
ISSUE DATE: 12/05/14
DESIGNED BY: PM
CHECKED BY: PM
DRAWING FILE: 12105A-0114
SHEETS: 12105AS

FILE LOCATION: -
SUBMITTAL DATE: 12/17/14
SCALE: -
SHEET LA3 OF 3