# SITE DEVELOPMENT DRAWINGS FOR:

# KIA DELRAY

2255 S. FEDERAL HIGHWAY DELRAY BEACH, FL SECTION 28, TOWNSHIP 46 S, RANGE 43 E

MYERS AUTO GROUP DK, LLC.

FOR

## LEGAL DESCRIPTION

STERLY TO THE SOUTHWEST CORNER OF LOT 18, BLOCK 37, DEL-RATON PARK; THENCE NORTHERLY ALONG THE WESTERLY BOUNDARY OF LOTS 18, 17, 16, 15 AND 14, BLOCK 37, DEL-RATON PARK TO THE POINT OF BEGINNING.

LOTS 12, 13, 34 AND 35 AND 50 FOOT STRIP LYING WEST OF LOTS 12 AND 13, EXTENSION TO HIGHWAY 1, BLOCK 37, DEL-RATON PARK SUBDIVISION, PALM BEACH COUNTY, FLORIDA, RECORDED IN PLAT BOOK 14, PAGE 9, PUBLIC RECORDS

THAT PART OF AVENUE B AS SHOWN ON PLAT OF DEL-RATON PARK AS RECORDED IN PLAT BOOK 14, PAGE 9, PALM BEACH COUNTY, FLORIDA PUBLIC RECORDS, BOUNDED AS FOLLOWS: ON THE EAST BY THE WEST LINE OF LOTS 12 AND 13, BLOCK 37; ON THE NORTH BY THE WESTERLY EXTENSION OF THE NORTH LINE OF LOT 12, BLOCK 37, AND THE SOUTH INE OF BLOCK B; ON THE SOUTH BY THE WESTERLY EXTENSION OF THE SOUTH LINE OF LOT 13, BLOCK 37, AND THE NORTH LINE OF BLOCK 21, AND ON THE WEST BY A LINE PARALLEL TO AND 60 FEET EAST OF THE CENTER LINE OF STATE ROAD 5 AS SHOWN ON ROAD PLAT BOOK 2, PAGE 74, ALL BEING IN THE PLAT OF DEL-RATON PARK, AS RECORDED IN PLAT BOOK 14. PAGE 9. PALM BEACH COUNTY, FLORIDA, PUBLIC RECORDS.

## PARCEL 2

LOTS 1, 2, 45 AND 46, BLOCK 37, DEL-RATON PARK, A SUBDIVISION IN PALM BEACH COUNTY, FLORIDA, ACCORDING TO THE PLAT THEREOF, RECORDED IN THE OFFICE OF THE CLERK OF THE CIRCUIT SOUTH IN AND FOR PALM BEACH COUNTY, FLORIDA IN PLAT BOOK 14, PAGE 9;

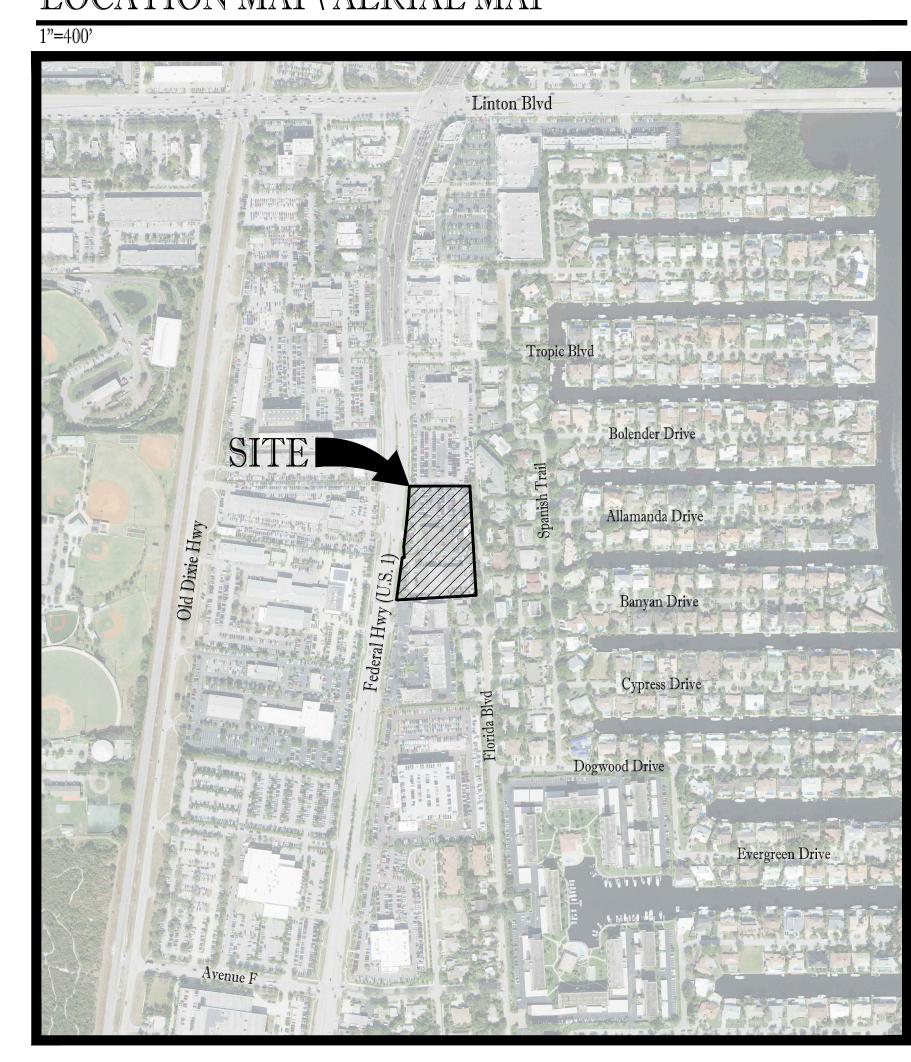
THAT STRIP OF LAND FORMERLY A PART OF FREDERICK BOULEVARD NOW ABANDONED BY THE BOARD OF COMMISSIONERS, PALM BEACH COUNTY, WHICH STRIP IS BOUNDED AS FOLLOWS: ON THE EAST BY THE WEST LINE OF OTS 1 AND 2, BLOCK 37, DEL-RATON PARK; ON THE NORTH BY THE WESTERLY EXTENSION OF THE NORTH LINE OF SAID OT 1; ON THE SOUTH BY THE WESTERLY EXTENSION OF THE SOUTH LINE OF SAID LOT 2; AND ON THE WEST BY A LINE PARALLEL TO AND 60 FEET EAST OF THE CENTER LINE OF STATE ROAD 5 (U.S. HIGHWAY NO. 1) AS SHOWN ON ROAD PLAT BOOK 2, PAGE 74, PALM BEACH COUNTY RECORDS. SAID LANDS SITUATE, LYING AND BEING IN PALM BEACH COUNTY,

OTS 3 TO 11, INCLUSIVE, AND LOTS 36 TO 44, INCLUSIVE, IN BLOCK 37, OF DEL-RATON PARK, ACCORDING TO THE PLAT THEREOF ON FILE IN THE OFFICE OF THE CLERK OF THE CIRCUIT COURT IN AND FOR PALM BEACH COUNTY, FLORIDA, RECORDED IN PLAT BOOK 14, PAGES 9 AND 10;

ALSO THAT PART OF FREDERICK BOULEVARD, 60 FEET WIDE AND 225 FEET LONG (NORTH AND SOUTH) BOUND ON THE WEST BY THE EAST LINE OF BLOCK "B", AND ON THE EAST BY THE WEST LINE OF BLOCK 37, ON THE SOUTH BY A WESTERLY PROLONGATION OF THE SOUTH LINE OF LOT 11, BLOCK 37, AND ON THE NORTH BY THE WESTERLY PROLONGATION OF THE NORTH LINE OF LOT 3, BLOCK 37, AS SHOWN ON SHEET 1 OF 2 SHEETS, ACCORDING TO THE PLAT THEREOF ON FILE IN THE OFFICE OF THE CLERK OF THE CIRCUIT COURT IN AND FOR PALM BEACH COUNTY, FLORIDA, RECORDED IN PLAT BOOK 14, PAGES 9 AND 10.

SAID LANDS SITUATE IN THE CITY OF DELRAY BEACH, PALM BEACH COUNTY, FLORIDA AND CONTAINING 133,740 SQUARE FEET (3.070 ACRES) MORE OR LESS.

## LOCATION MAP\ AERIAL MAP



MYERS AUTO GROUP DK, LLC 915 S. DIXIE HIGHWAY WEST PALM BEACH, FL

CIVIL ENGINEER THOMAS ENGINEERING GROUP, LLC MICHAEL A. TROXELL, P.E. 6300 NW 31st AVENUE FORT LAUDERDALE, FL 33309 (P) 954.202.7000 (F) 954.202.7070

AVIROM & ASSOCIATES, INC. JOHN DOOGAN 50 SW 2ND AVE., STE 102 BOCA RATON, FL 33432 (P) 561.392.2594 (F) 561.394.7125

**ARCHITECT** BYUNG YOO 800 LAMBERT DR., SUITE B ATLANTA, GA 30324 (P) 404.889.7853

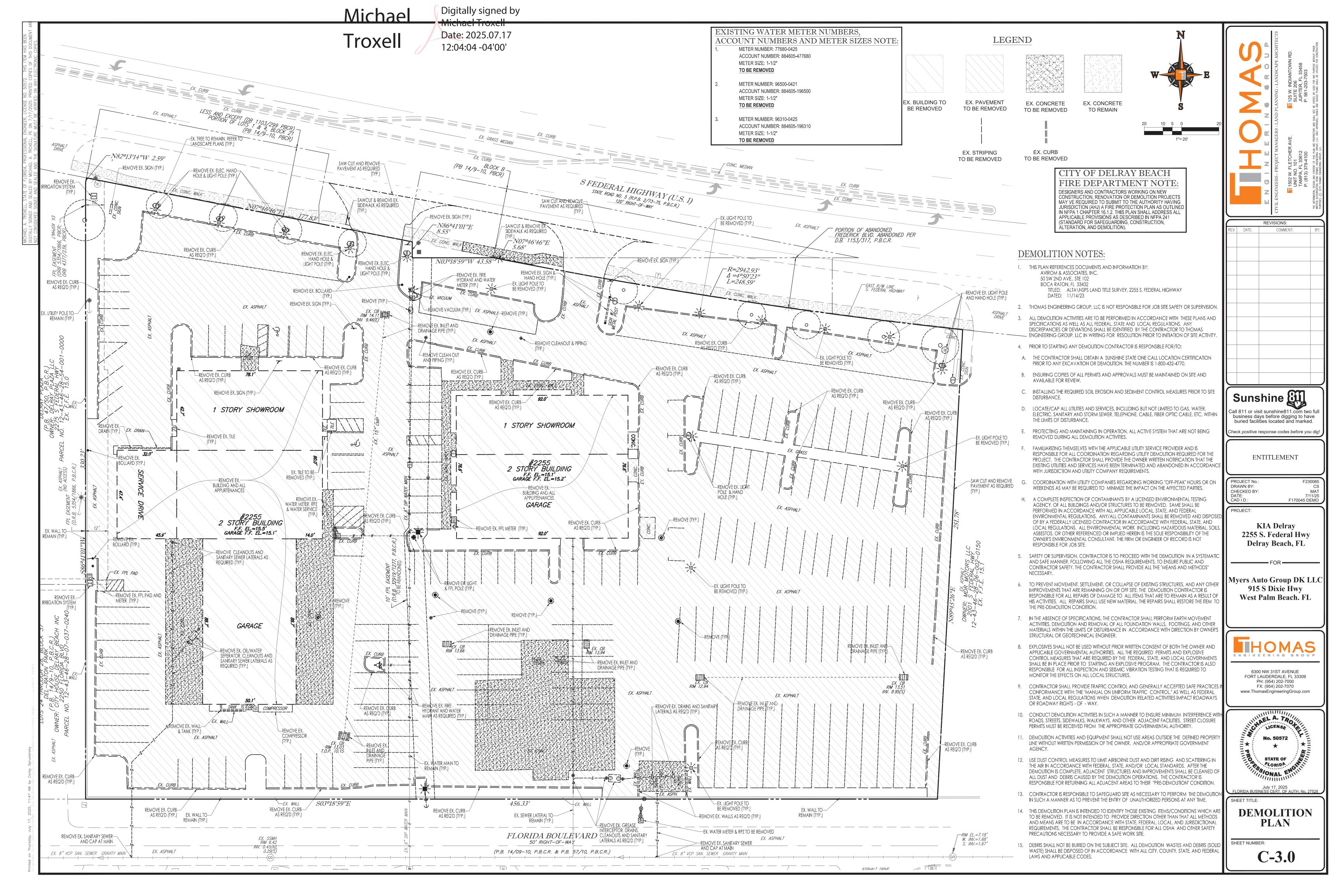
LANDSCAPE ARCHITECT DIXIE LANDSCAPE EMMANUEL HIDALGO P.O. BOX 160328 MIAMI, FL 33116 (P) 305.884.5700

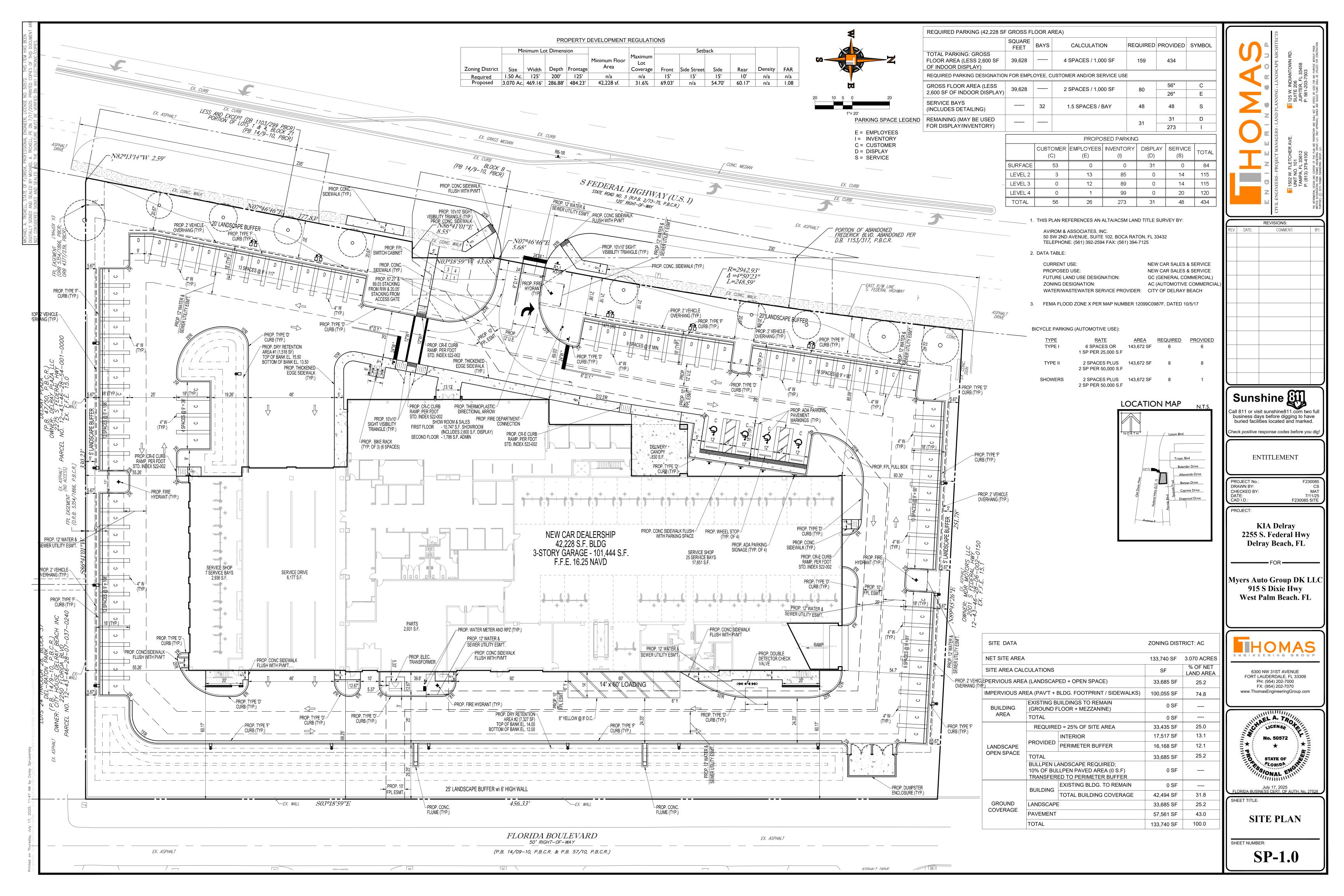
**PHOTOMETRICS** PROMUS BRANDON SHARP, P.E. 4245 LAND ROAD BALL GROUND, GA 30107 (P) 678.246.5166

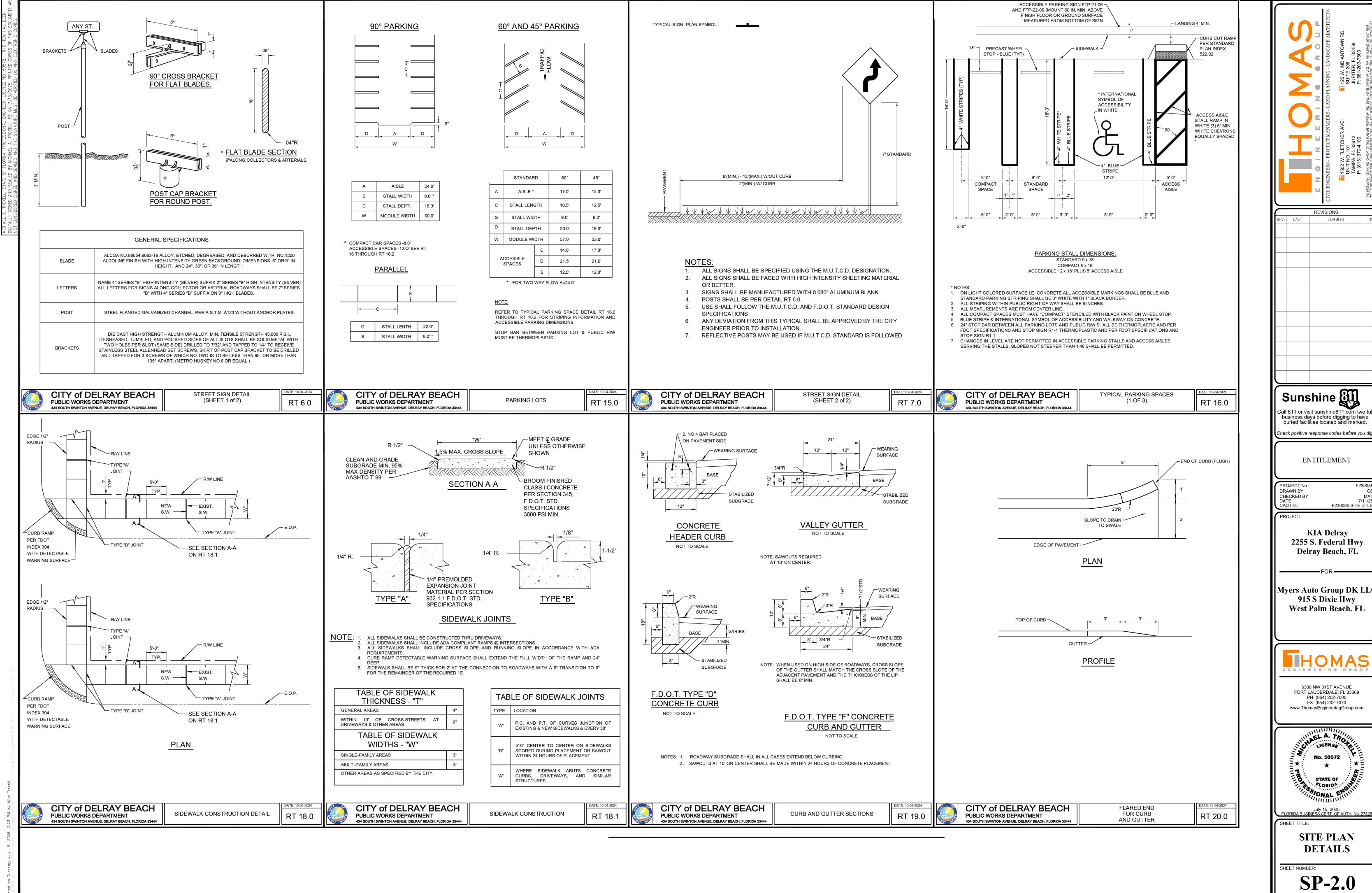
COVER SHEET	C-1.(
BOUNDARY SURVEY	SHT 1 OF 2
BOUNDARY SURVEY	SHT 2 OF 2
DEMOLITION PLAN	C=3.(
SITE PLAN	SP-1.0
SITE DETAILS	SP-2.0
SITE DETAILS	SP-2.
PAVING, GRADING & DRAINAGE PLAN	PD-1.0
PAVING, GRADING & DRAINAGE DETAILS	PD-2.0
PAVING, GRADING & DRAINAGE DETAILS	PD-2.
SECTIONS	PD-3.0
WATER & SEWER UTILITIES PLAN	U-1.0
UTILITY DETAILS	U-2.0
UTILITY DETAILS	U-2.
UTILITY DETAILS	U-2.2
UTILITY DETAILS	U-2.
VISUAL IMPACT ANALYSIS	A=1.0
PROPOSED FLOOR PLAN - LEVEL 1 & 2 - PROJECT DATA	A-2.0
PROPOSED FLOOR PLAN - LEVEL 1	A-4.0
PROPOSED FLOOR PLANS - SHOWROOM - LEVEL 2	A-5.0
PROPOSED FLOOR PLAN - PARKING DECK - LEVEL 2	A-6.0
PROPOSED FLOOR PLAN - PARKING DECK - LEVEL 3	A-7.0
PROPOSED FLOOR PLAN - PARKING DECK - LEVEL 4	A-8.0
PROPOSED ELEVATIONS	A-9.0
PROPOSED ELEVATIONS	A-10.0
EXTERIOR RENDERING	A-11.0
EXTERIOR RENDERING & EXTERIOR MATERIAL SAMPLES	A-11.
EGRESS PLAN & CODE SHEET	G002
TREE DISPOSITION PLAN	TD-
TREE DISPOSITION PLAN	TD=2
LANDSCAPE PLAN	LA-
LANDSCAPE DETAILS	LA-2
SECTIONS	
IRRIGATION PLAN	IR-
IRRIGATION DETAILS	IR-2
SITE PHOTOMETRIC PLAN	E102
SITE PHOTOMETRIC PLAN - DAY	E102A
SITE PHOTOMETRIC PLAN	E1021
SITE PHOTOMETRIC PLAN SITE PHOTOMETRIC PLAN	E10-
PARKING GARAGE PHOTOMETRIC PLAN - 2ND FLOOR	E10-
PARKING GARAGE PHOTOMETRIC PLAN - 2ND PLOOR  PARKING GARAGE PHOTOMETRIC PLAN - 3RD FLOOR	E11;
SITE PHOTOMETRIC PLAN	E122
SITE PHOTOMETRIC PLAN - DAY	E122 <i>F</i>
OPEN SPACE EXHIBIT	EX-1.0
COLORED SURFACE PARKING EXHIBIT	EX-2.0
DELIVERY TRUCK MOVEMENT EXHIBIT	EX-3.0
FIRE TRUCK MOVEMENT EXHIBIT	EX-4.0
CONSTRUCTION STAGING PLAN	EX-5.0

SHEET INDEX









REVISIONS COMMENT:

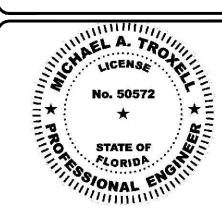
7/11/25 F230085 SITE DTLS

KIA Delray

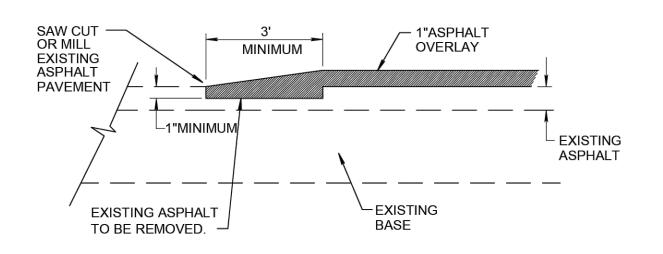
2255 S. Federal Hwy Delray Beach, FL

Myers Auto Group DK LLC 915 S Dixie Hwy West Palm Beach. FL

6300 NW 31ST AVENUE FORT LAUDERDALE, FL 33309 PH: (954) 202-7000 FX: (954) 202-7070 www.ThomasEngineeringGroup.com



SITE PLAN **DETAILS** 

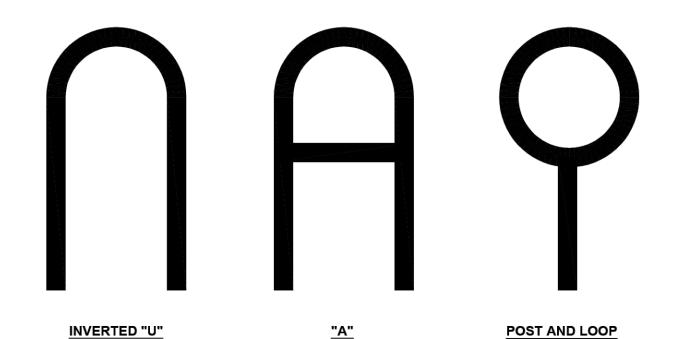


### NEW OVERLAY PAVEMENT JOINT

### NOTE:

THIS METHOD OF PAVEMENT JOINT SHALL BE USED FOR ANY APPLICATION OR CONSTRUCTION WHERE PROPOSED PAVEMENT WILL BE CONNECTED TO EXISTING PAVEMENT.

ONE RACK ELEMENT SUPPORTS TWO BIKES



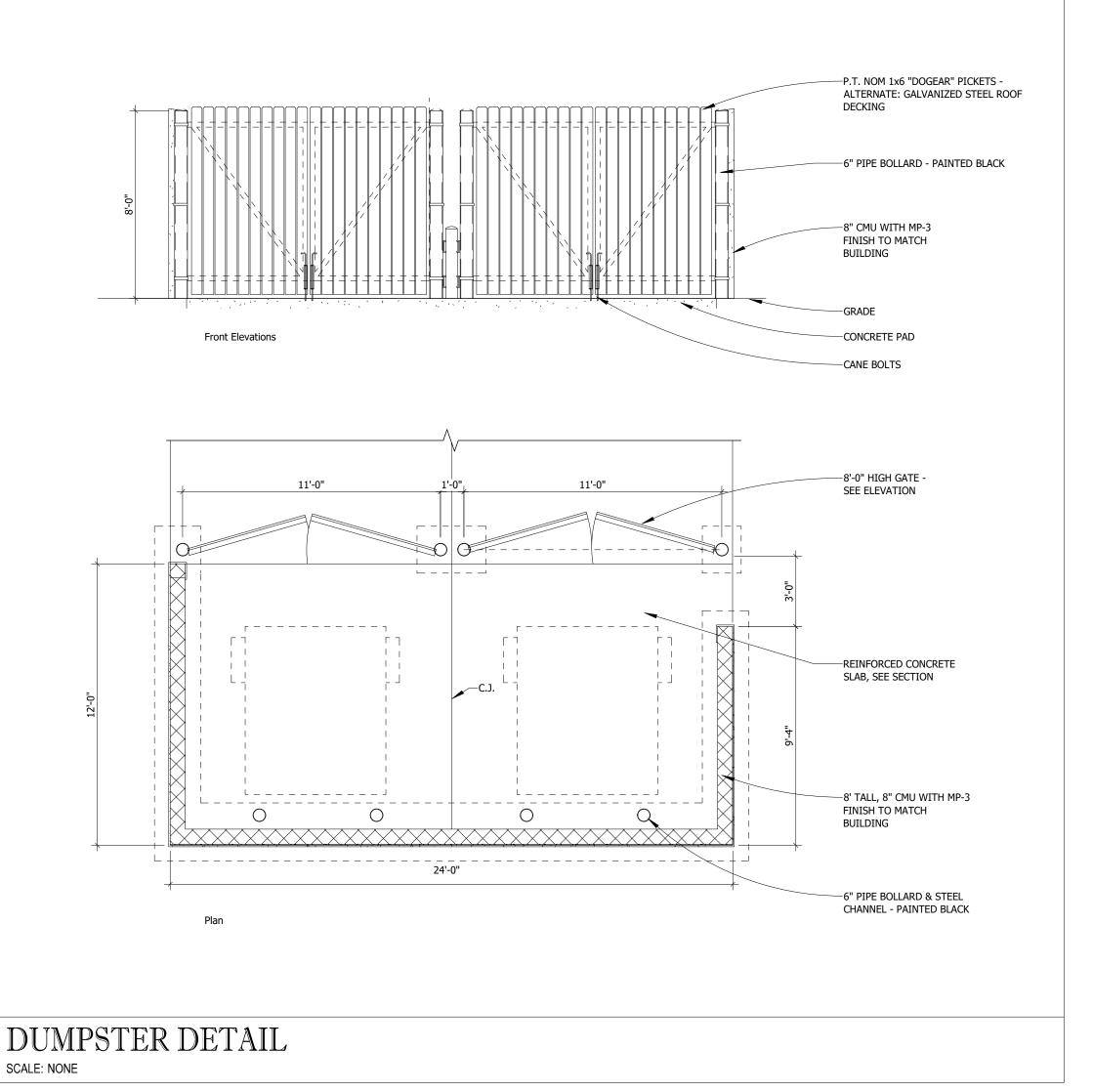
THE LOCATION OF THE BICYCLE RACK SHOULD BE SUCH THAT IT IS VISIBLE AND IS COMPLIANT WITH THE CURRENT VERSION OF THE PROPOSED ACCESSIBILITY, GUIDELINES FOR PEDESTRIAN FACILITIES IN THE PUBLIC RIGHT-OF-WAY (PROWAG) PREFERABLY ON THE APPROACH SIDE OF THE BUILDING OR STRUCTURE PARKING IS EXPECTED, AT LEAST 50% OF THE BICYCLE PARKING SPOTS SHOULD BE COVERED BY AN OVERHANG OR ACTUAL STORAGE FACILITY. UPPER ELEMENTS OF THE BICYCLE RACK SHOULD NOT PROTRUDE, CREATING AN OBSTACLE

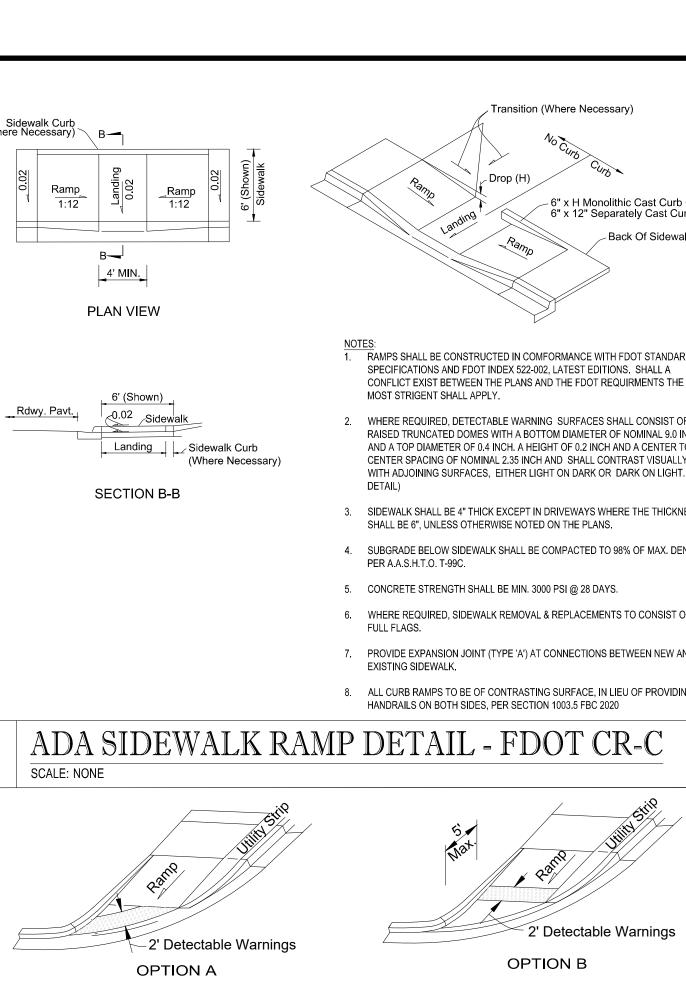
FOR A BLIND TRAVELER. THE COLOR OF THE BICYCLE RACK IS 3275 ENGINEERING GRADE/COLOR BLUE.

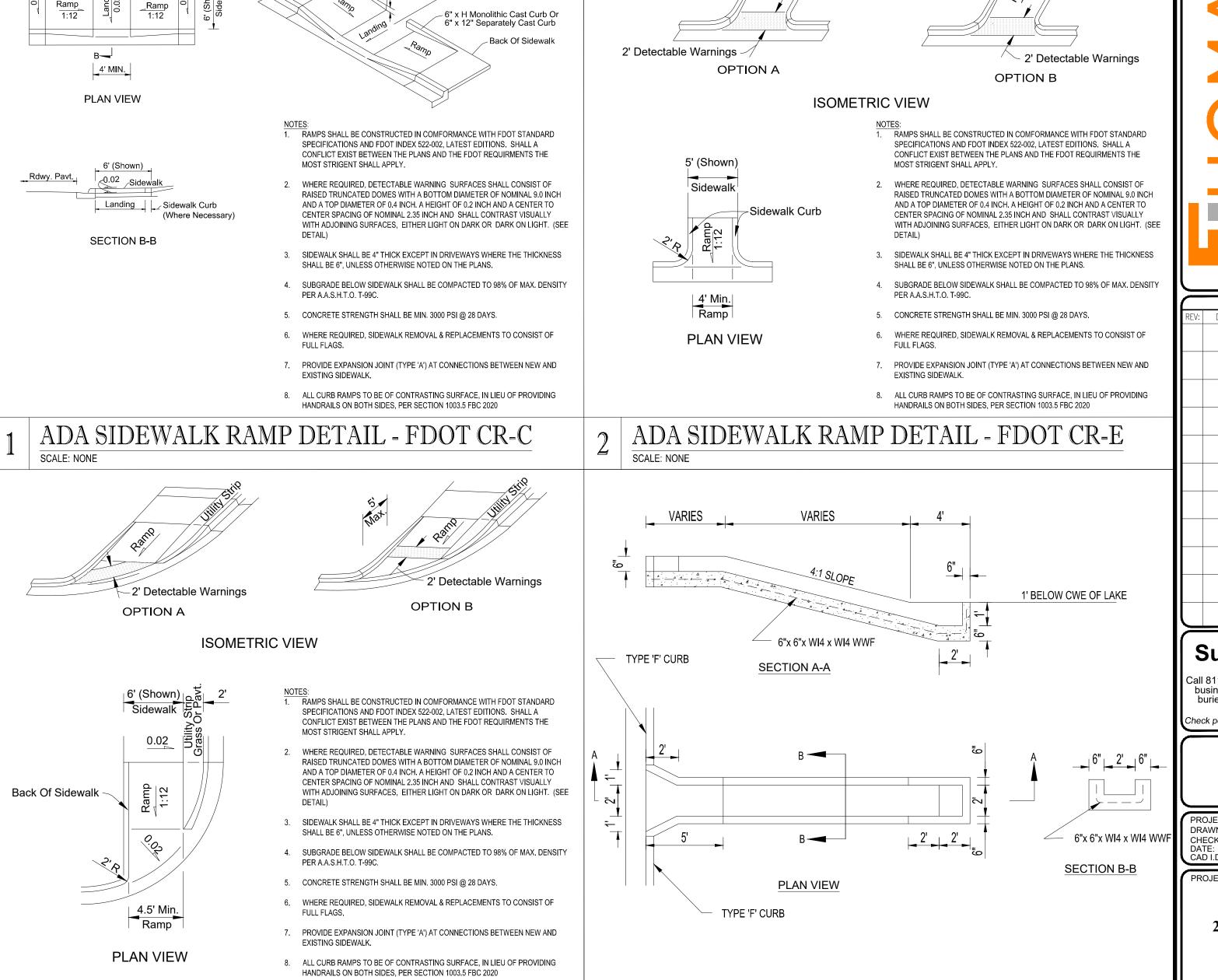
CITY of DELRAY BEACH PAVEMENT JOINT DETAIL PUBLIC WORKS DEPARTMENT RT 21.0 434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

CITY of DELRAY BEACH PUBLIC WORKS DEPARTMENT 434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

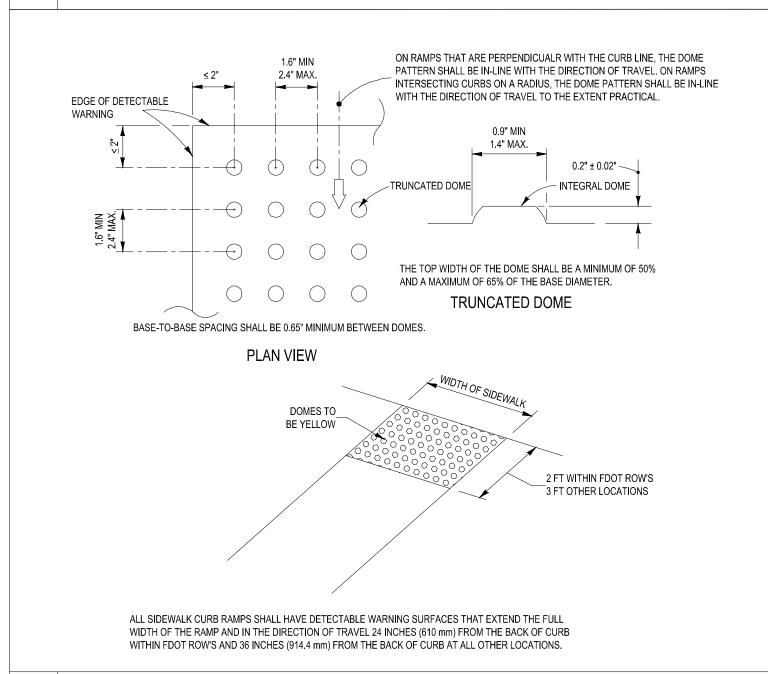
DATE: 10-04-2024 RT 35.0 BICYCLE RACK





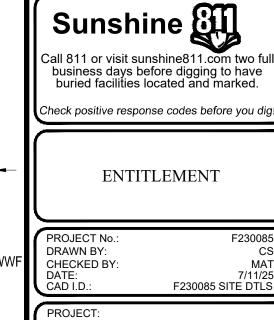






ADA RAMP DETECTABLE WARNING DETAIL

CONCRETE FLUME DETAIL



REVISIONS:

COMMENT:

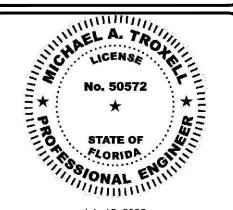
Sidewalk

KIA Delray 2255 S. Federal Hwy Delray Beach, FL

**Myers Auto Group DK LLC** 915 S Dixie Hwy West Palm Beach. FL

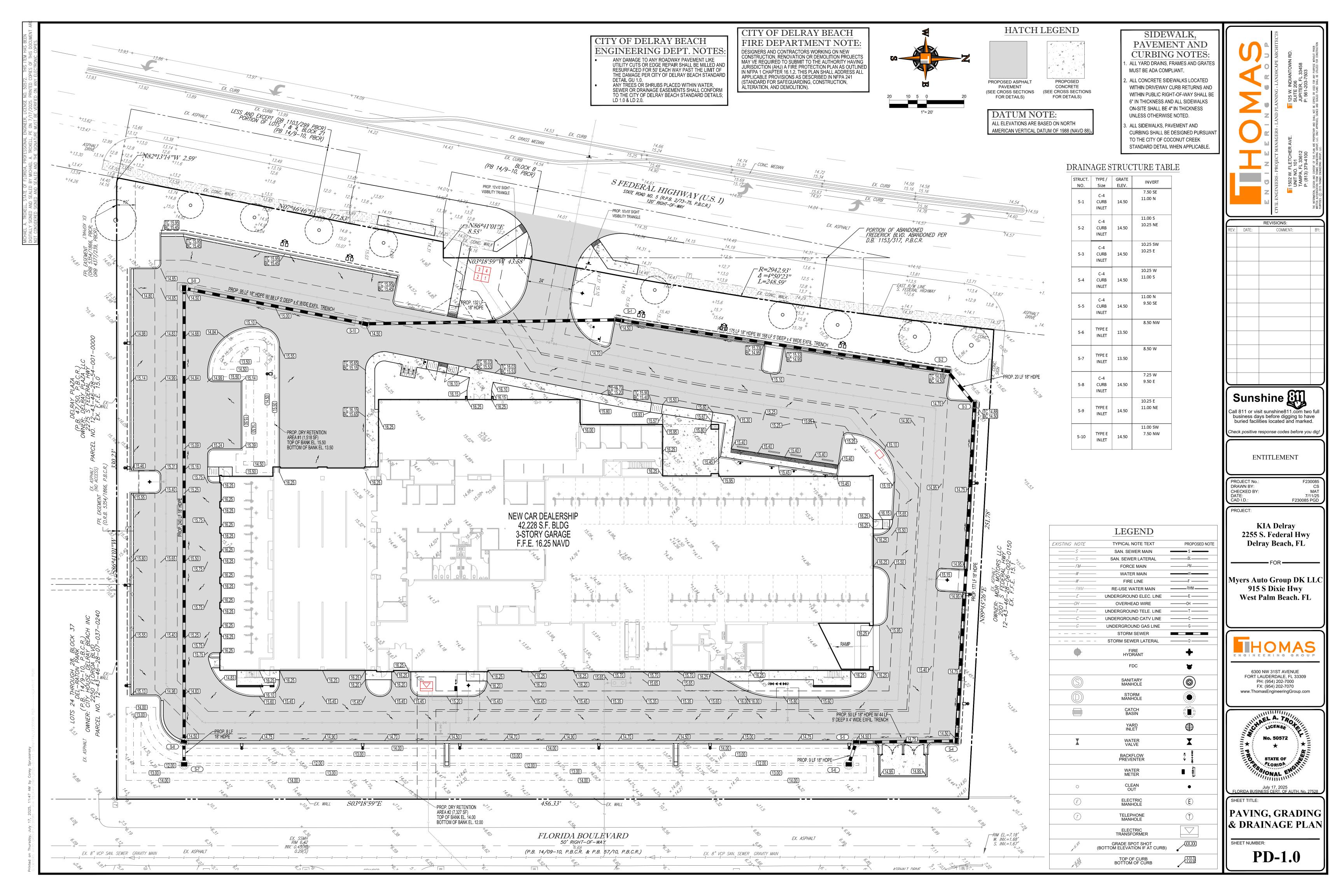


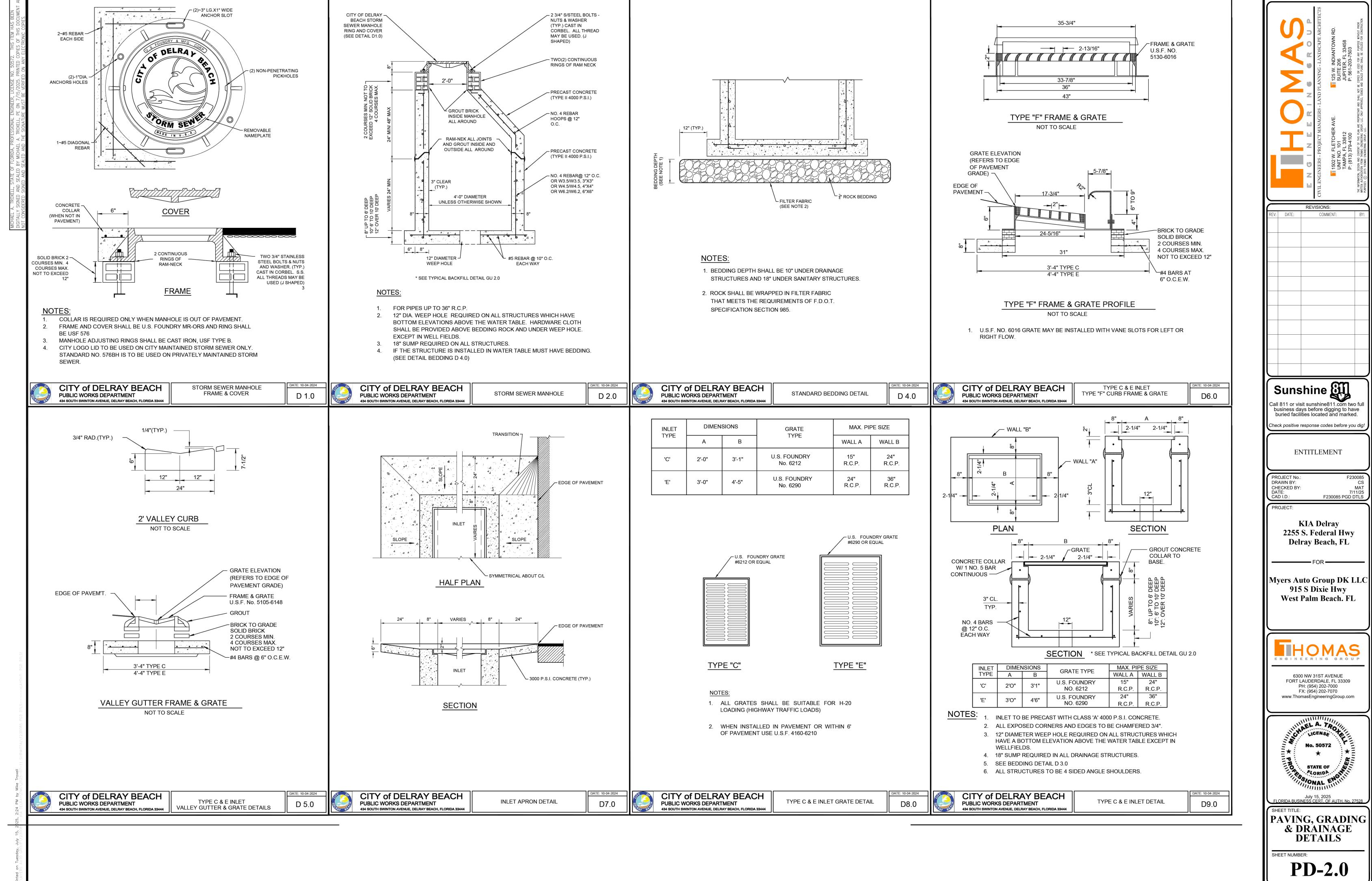
6300 NW 31ST AVENUE FORT LAUDERDALE, FL 33309 PH: (954) 202-7000 FX: (954) 202-7070 www.ThomasEngineeringGroup.com

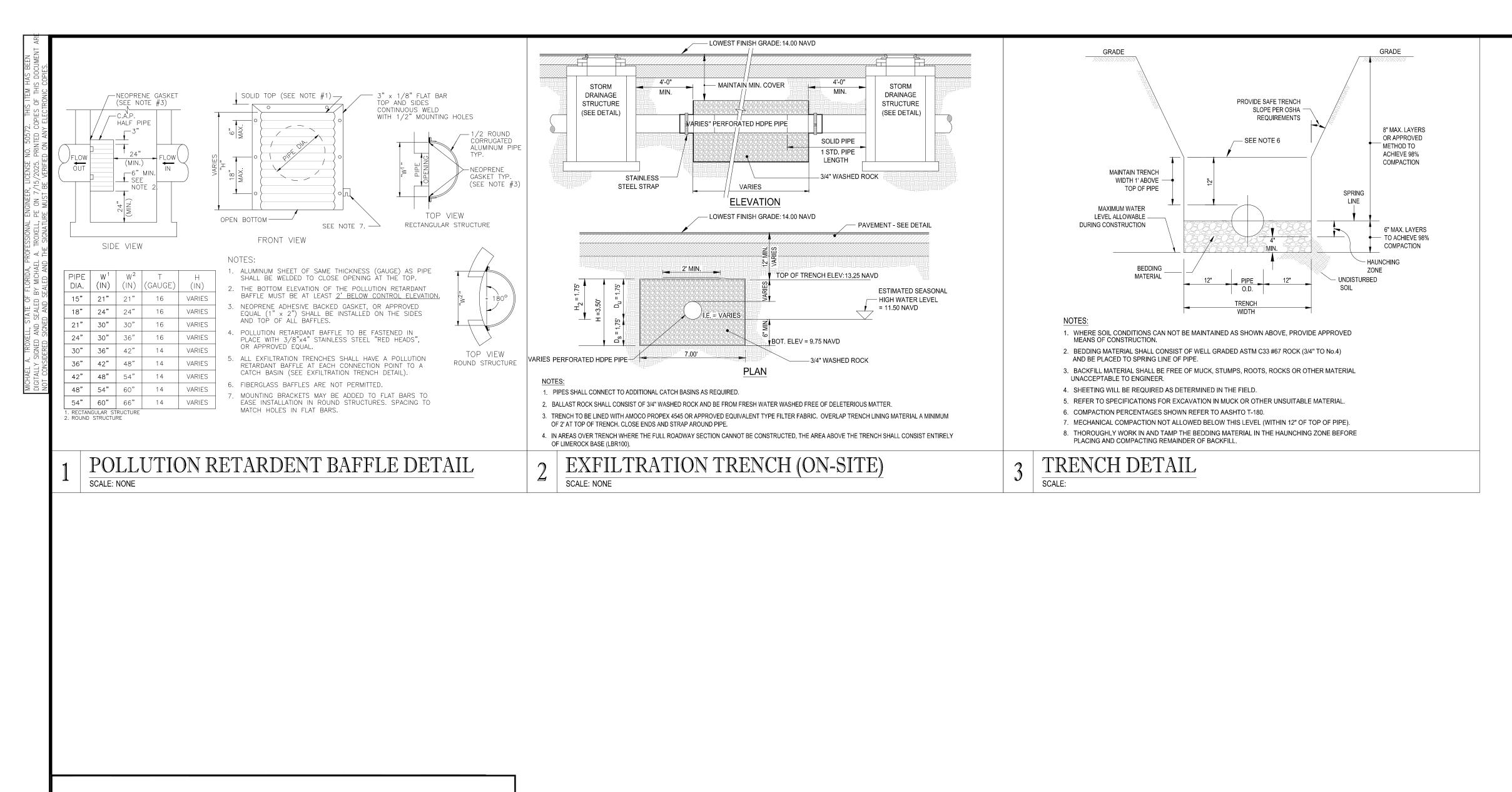


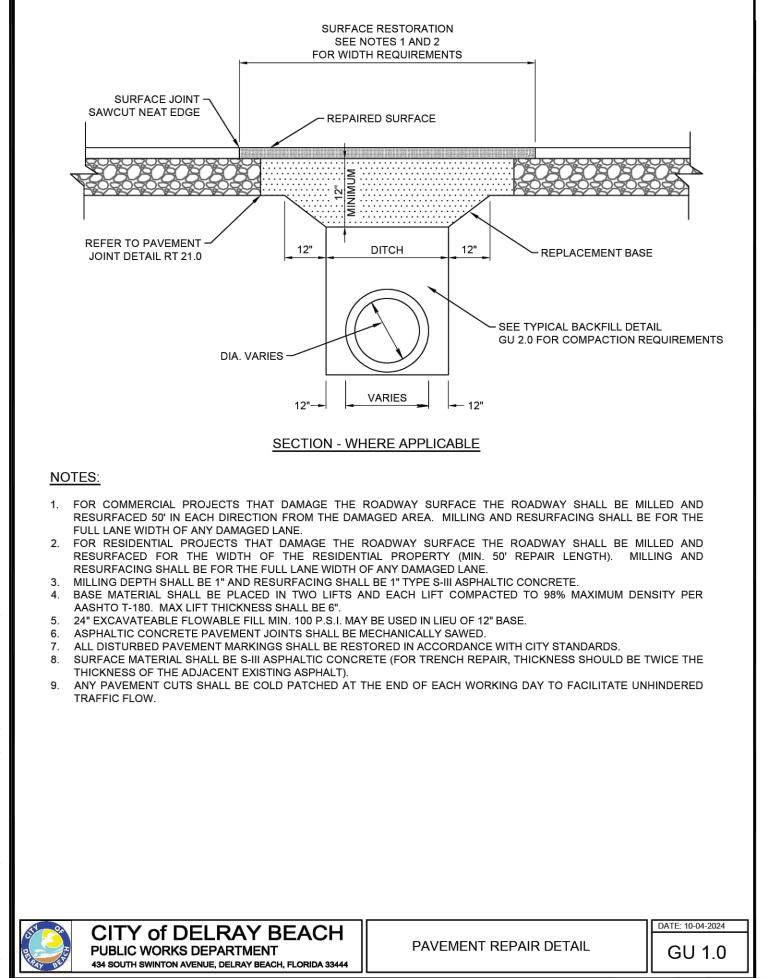
SITE PLAN **DETAILS** 

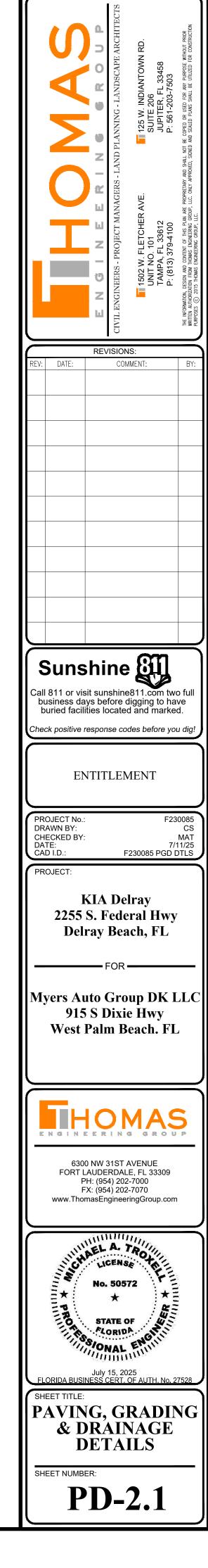
**SP-2.1** 

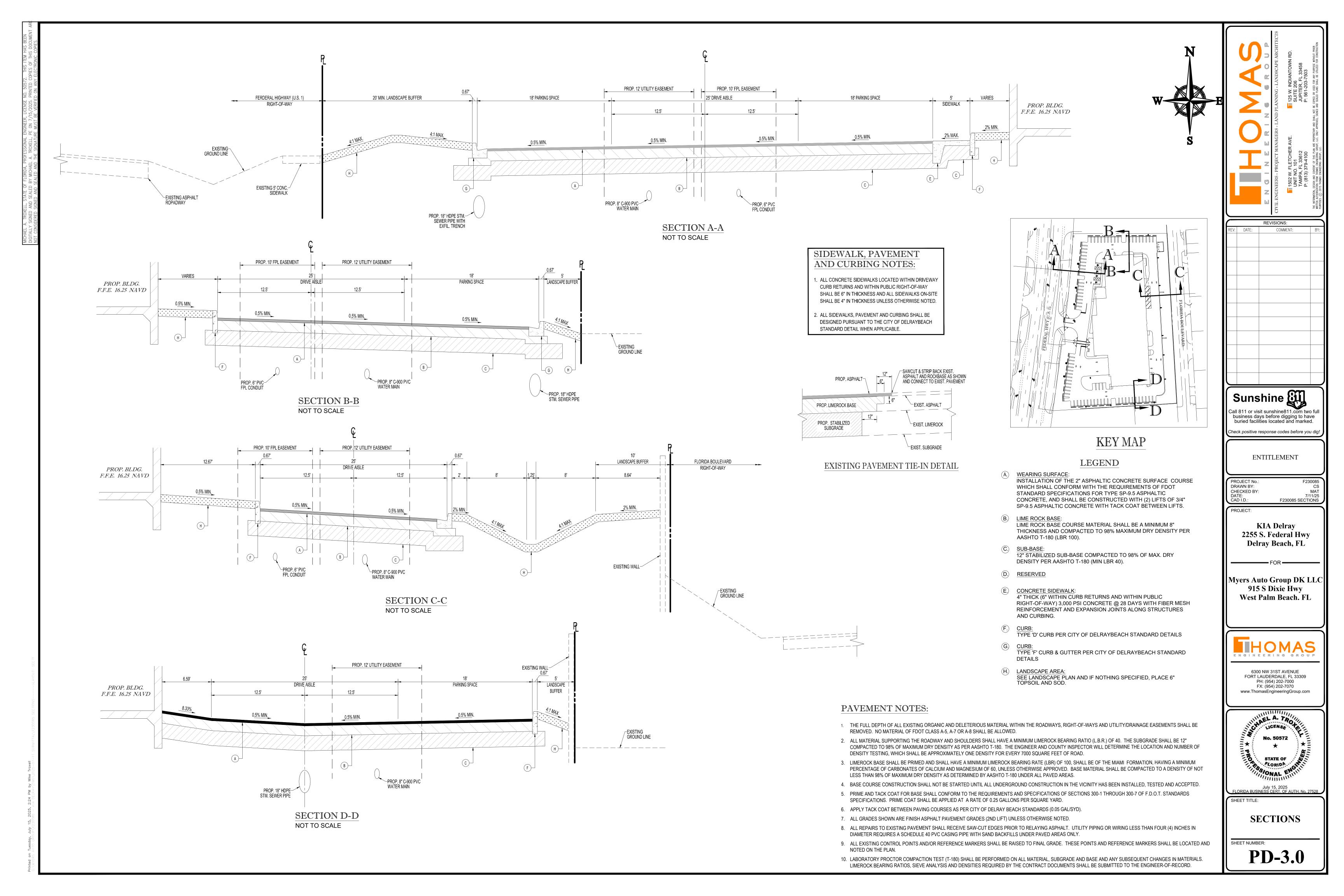


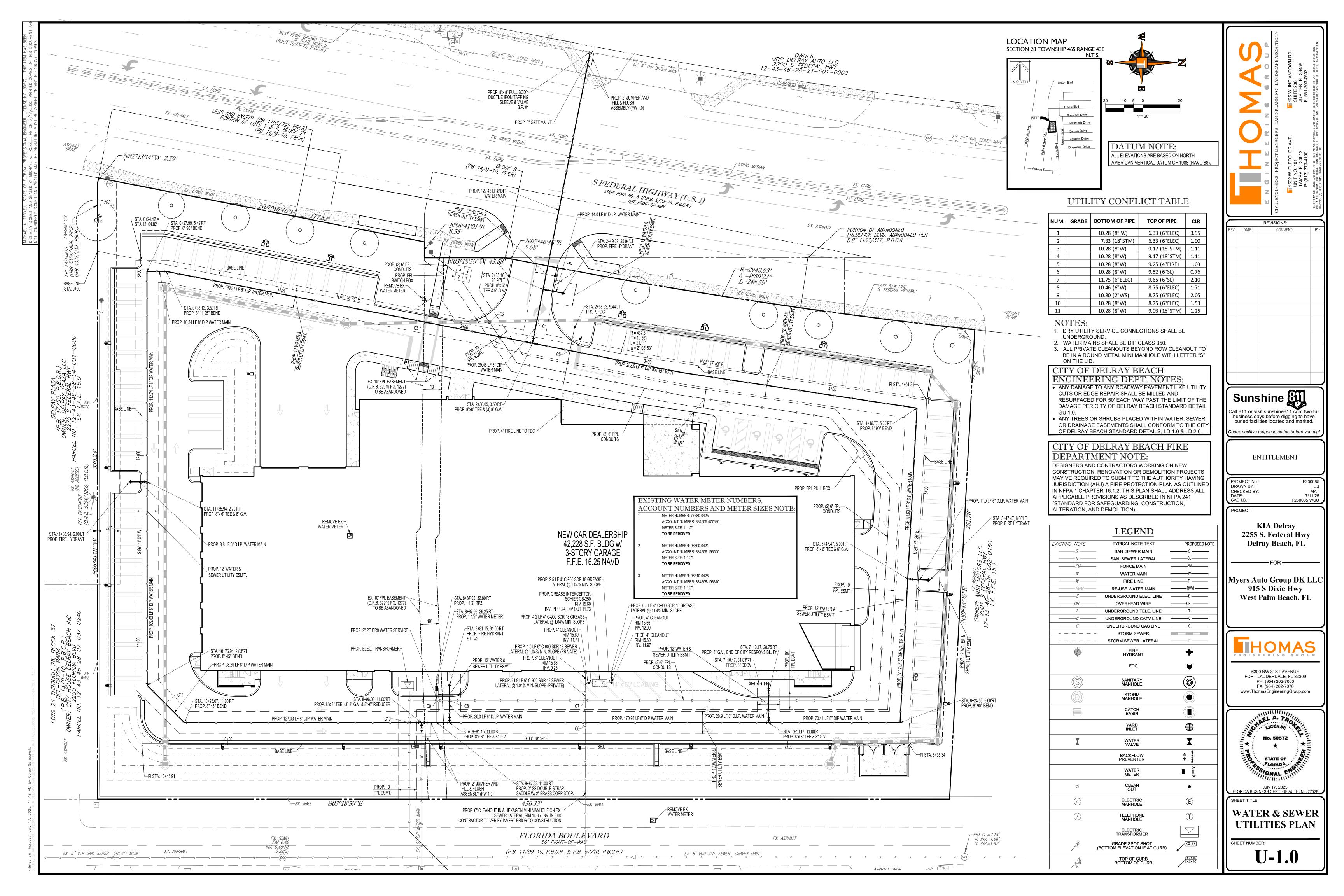












FLOOR DRAINS ARE PRIMARILY USED FOR INSIDE LOCATIONS WHERE THE FLOW RATE INTO THE DRAIN CAN BE ANTICIPATED. DRAINS SHOULD BE SELECTED WITH SUFFICIENT TOP SIZE AND GRATE FREE AREA TO PASS THE ANTICIPATED FLOW. GRATE FREE AREA IS DEFINED AS "THE TOTAL AREA OF THE DRAINAGE OPENINGS IN THE GRATE." THE DRAIN OUTLET SHOULD BE SIZED LARGE ENOUGH SO THAT IT WILL SAFELY PASS THE MAXIMUM FLOW THROUGH THE GRATE, WITHOUT CREATING WATER BUILDUP.

### SIZING AND LOCATION:

THE GRATE FREE AREA SHOULD EQUAL THE TRANSVERSE AREA OF THE CONNECTING PIPE. THE NUMBER AND LOCATIONS OF DRAINS ARE BASED ON THE CONFIGURATION OF THE FLOOR PLAN, TYPE OF OPERATION AND LOCATION OF EQUIPMENT. LOCATION AND NUMBER REQUIRED OF FLOOR DRAINS CAN BE DETERMINED ONLY AFTER CAREFUL REVIEW OF THE PLAN AND ANTICIPATED BUILDING USE.

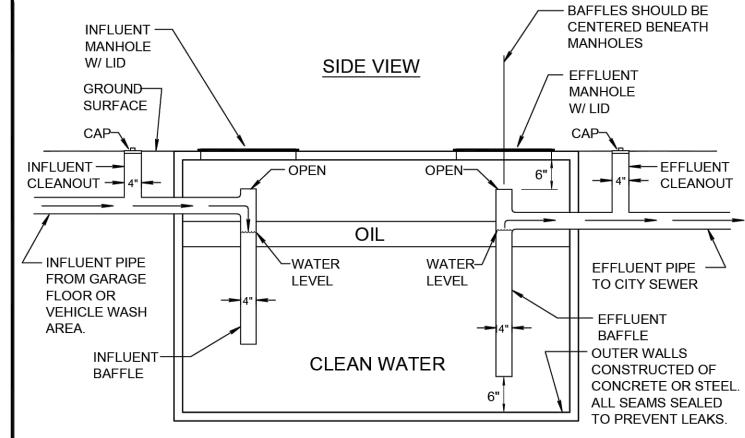
## NOTE:

IN ACCORDANCE WITH THE CITY OF DELRAY BEACH CODE OF ORDINANCES TITLE V, CHAPTER 53.054. MUST BE IMPROVED BY UTILITIES DEPARTMENT (WATER / SEWER MGR) BEFORE

NOMINAL PIPE SIZE, IN.	TRANSVERSE AREA OF PIPE, SQ. IN.	MINIMUM FLOW REQUIREMENTS (INTERIOR AREAS), SQ. IN.
1-1/2" 2 3	2.04 3.14 7.06 12.60	3.06 4.71 10.59 18.90
5 6 8	19.60 28.30 50.25	29.40 42.45 75.38

USE THE FOLLOWING FORMULA TO DETERMINE G.P.M.: G.P.M.= .0104 x R x A G.P.M.= GALLONS PER MINUTE R= INTENSITY (INCHES/HOUR) A= AREA (SQUARE FEET) .0104 = CONVERSION FACTOR

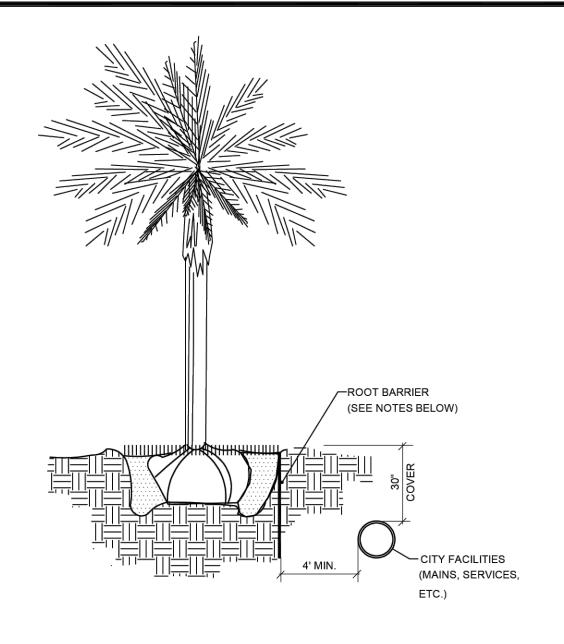
CITY of DELRAY BEACH



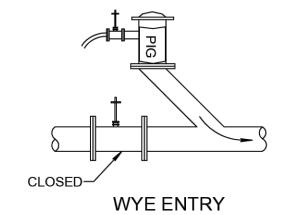
- ALL NEW AND EXISTING BUSINESSES OR INDUSTRIES THAT USE PETROLEUM BASE PRODUCTS IN THEIR DAY TO DAY ACTIVITIES WILL BE REQUIRED TO INSTALL AN OIL/WATER SEPARATOR IF THEY CHOOSE TO OPERATE WITH OPEN FLOOR DRAINS.
- OIL/WATER SEPARATOR MODELS AND WATER RECYCLE UNITS MANUFACTURED BY COMPANIES SUCH AS ZURN, SMITH, LANDA INC. OR RGF ENVIRONMENTAL SYSTEMS INC. AND OTHERS CAN BE SUBSTITUTED FOR THE ABOVE DESIGN WITH THE CITY'S APPROVAL.
- ALL SIDES OF IN-GROUND OIL/WATER SEPARATOR UNITS (EXCEPT ACCESS DOORS AND MANHOLES) ARE REQUIRED TO COMPLY WITH FLORIDA PLUMBING CODE, EFFECTIVE MARCH 1, 2009.
- IF INSTALLED, ACCESS DOOR TO IN-GROUND OIL/WATER SEPARATOR UNITS SHALL BE CONSTRUCTED OF ALUMINUM WITH H-20 LOADING CAPACITY PER SPECIFICATIONS BY U.S. FOUNDRY, CORP. OR EQUIVALENT.
- OIL INTERCEPTORS SHALL BE PUMPED OUT COMPLETELY AT A MINIMUM OF ONCE EVERY NINETY (90) DAYS, OR MORE FREQUENTLY AS NEEDED TO PREVENT CARRY OVER OF OIL OIL INTO COLLECTION SYSTEM. SECTION 53.057 OIL & A GREASE MANAGEMENT.

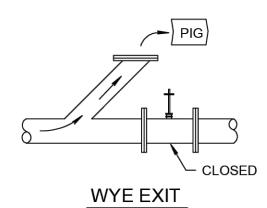
INDUSTRIAL PRETREATMENT

PROGRAM INTERCEPTOR SIZING



- 1. ALL ROOT BARRIERS SHALL BE 4' MINIMUM FROM ALL CITY FACILITIES. 2. THE INSTALLATION OF ROOT BARRIERS SHALL BE COORDINATED WITH CITY AND INSPECTED BY CITY PRIOR TO
- BACKFILLING. ALL ROOT BARRIERS SHALL EXTEND UP TO FINISHED GRADE. ROOT BARRIERS SHALL BE MINIMUM 36" DEEP. APPROVED PRODUCTS INCLUDE "DEEP ROOT" AND "ROOT
- SOLUTIONS". FLEXIBLE BARRIERS SHALL BE 36" PANELS MANUFACTURED BY BIOBARRIER. 4. ALL ROOT BARRIERS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS WRITTEN INSTRUCTIONS.





PIG LAUNCHER DETAIL

PP 6.0

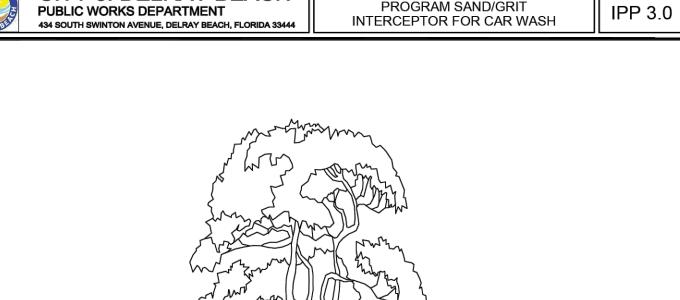
HINGED CLOSURE

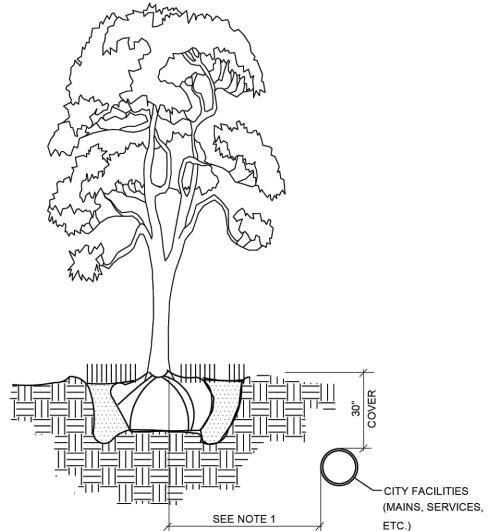
ALL NEWLY INSTALLED PRESSURE PIPE SHALL BE "PIGGED" UNTIL CLEAN AND APPROVED BY ENGINEER DURING THE FILLING AND FLUSHING OPERATION. PIG SIZE SHALL BE PIPE DIAMETER PLUS 2" OR NEXT LARGER DIAMETER.

CITY of DELRAY BEACH

434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 3344

PUBLIC WORKS DEPARTMENT





TYPICAL TREE WITHOUT

ROOT BARRIER

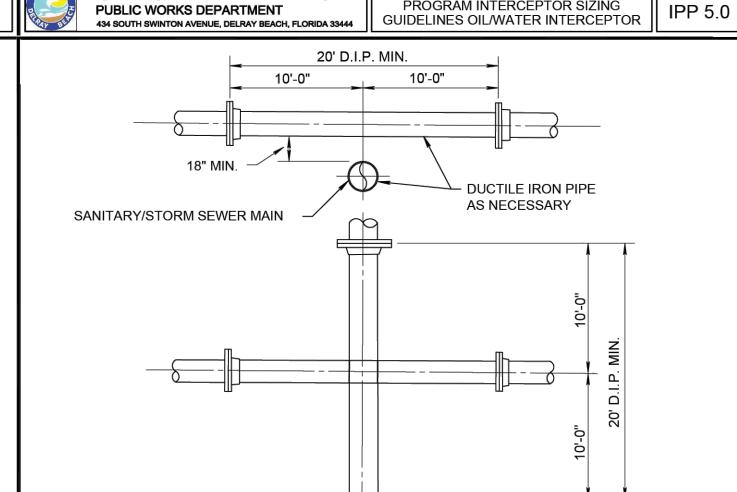
INDUSTRIAL PRETREATMENT

CITY of DELRAY BEACH

434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

PUBLIC WORKS DEPARTMENT

1. THIS DISTANCE SHALL BE 10' MINIMUM FROM ALL CITY FACILITIES IF NO ROOT BARRIER IS USED.



CITY of DELRAY BEACH

## NOTES:

- STORM AND SANITARY SEWERS CROSSING UNDER WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18 INCHES BETWEEN THE INVERT OF THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE. WHERE THIS MINIMUM SEPARATION CANNOT BE MAINTAINED. THE CROSSING SHALL BE ARRANGED SO THAT THE SEWER PIPE JOINTS AND WATER MAIN JOINTS ARE EQUIDISTANT FROM POINT OF CROSSING WITH NO LESS THAN (10) FEET BETWEEN ANY TWO JOINTS AND BOTH PIPES SHALL BE D.I.P., AND THE MINIMUM VERTICAL SEPARATION SHALL BE 6 INCHES. WHERE THERE IS NO ALTERNATIVE TO SEWER PIPES CROSSING OVER A WATER MAIN, THE CRITERIA FOR MINIMUM 18" VERTICAL SEPARATION BETWEEN LINES AND JOINT ARRANGEMENT, AS STARTED ABOVE, SHALL BE REQUIRED AND BOTH PIPES SHALL BE CLASS 350 D.I.P. IRRESPECTIVE OF SEPARATION. D.I.P. IS NOT REQUIRED FOR STORM SEWERS.
- MAINTAIN (10) FEET HORIZONTAL DISTANCE BETWEEN WATER MAIN AND STORM OR SANITARY SEWER MAIN, AS A MINIMUM.
- FORCE MAIN CROSSING WATER MAIN SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18 INCHES BETWEEN THE OUTSIDE OF THE FORCE MAIN AND THE OUTSIDE OF THE WATER MAIN WITH WATER MAIN CROSSING OVER FORCE MAIN.
- SEWER SERVICE LATERALS SHALL CROSS UNDER WATERMAINS WITH A MINIMUM VERTICAL SEPARATION OF EIGHTEEN (18) INCHES. IF EIGHTEEN (18) INCHES VERTICAL SEPARATION CANNOT BE MAINTAINED, THEN THE WATERMAIN SHALL BE D.I.P. AND THE SANITARY LATERAL C-900 SDR18 OR BETTER AND THE MINIMUM SEPARATION SHALL BE SIX (6) INCHES.
- WHEN IT IS NOT POSSIBLE FOR THE WATER MAIN TO CROSS OVER THE SEWER SERVICE LATERAL A MINIMUM VERTICAL SEPARATION OF AT LEAST TWELVE (12) INCHES MUST BE MAINTAINED. THE

1. THE DATA IN THE PREVIOUS TABLE IS BASED UPON THE FOLLOWING INSTALLATION CONDITIONS

TYPICAL TREE WITH

ROOT BARRIER

SOIL TYPE. .150 PSI, 200 PSI FOR PIPES LARGER THAN 24" TEST PRESSURE. DEPTH OF BURY . TRENCH TYPE. SAFETY FACTOR . VERTICAL OFF-SET

CITY of DELRAY BEACH

434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 3344

PUBLIC WORKS DEPARTMENT

MINIMUM PIPE LENGTHS

ALONG TEE RUN ...

- THE RESTRAINED PIPE LENGTHS APPLY TO DUCTILE IRON PIPE AND PVC PIPE.
- 3. ALL JOINTS BETWEEN UPPER AND LOWER BENDS SHALL BE RESTRAINED.
- 4. RESTRAINED PIPE LENGTHS FOR VALVES APPLY TO PIPE ON BOTH SIDES OF VALVES
- 5. THE PREVIOUS TABLE SHALL SERVE AS A GENERAL DESIGN GUIDE ONLY. IT IS THE ENGINEER OF RECORD'S RESPONSIBILITY TO JUSTIFY AND DOCUMENT ANY DEVIATIONS FROM THE PIPE LENGTHS SPECIFIED IN THE PREVIOUS TABLE.
- 6. SOURCES: EBAA IRON RESTRAINT LENGTH CALCULATION PROGRAM FOR PVC PIPE, RELEASE 3.1 (LATEST EDITION) AND DIPRA RESTRAINT FOR DUCTILE IRON PIPE, RELEASE 3.2 (LATEST EDITION).
- 7. RESTRAINED JOINTS SHALL EXTEND ONE JOINT BEYOND MINIMUM LENGTH REQUIRED.

FITTING TYPE			PIPE SIZE							
FILLING LIFE		4"	6"	8"	10"	12"	16"	20"	24"	
90° HORIZ. BEND		14	20	25	30	35	45	54	62	
45° HORIZ. BEND		6	8	11	13	15	19	22	26	
22.5° HORIZ. BEND		3	4	5	6	7	9	11	12	
11.25° HC	ORIZ. BEND	1	2	3	3	4	4	5	6	
90° VERT.	UPPER BEND	55	79	103	125	147	189	228	266	
OFFSET	LOWER BEND	22	38	49	59	69	88	106	123	
45° VERT.	UPPER BEND	22	32	42	51	60	77	93	109	
OFFSET	LOWER BEND	10	14	19	23	28	35	43	50	
22.5° VERT.	UPPER BEND	7	12	17	21	26	34	42	49	
OFFSET	LOWER BEND	2	4	6	8	10	14	17	21	
11.25° VERT.	UPPER BEND	3	4	6	9	11	15	19	22	
OFFSET	LOWER BEND	1	1	1	2	3	5	7	8	
PLUG (DEAD END)		32	45	59	70	83	107	129	151	
INLINE VALVE		32	45	59	70	83	107	129	151	
	4" X Ø"	23								
	6" X Ø"	21	35							
Γ	8" X Ø"	18	34	47						
EE (BRANCH	10" X Ø"	16	32	46	58					
RESTRAINT)	12" X Ø"	13	30	44	57	69				
Γ	16" X Ø"	7	26	41	55	67	90			
	20" X Ø"	1	21	38	52	65	88	109		
	24" X Ø"	1	16	34	49	62	86	108	129	
	6" X Ø"	23								
	8" X Ø"	38	25							
REDUCER	10" X Ø"	57	43	24						
(LARGER PIPE RESTRAINT)	12" X Ø"	72	60	44	41					
	16" X Ø"	99	90	78	75	45				
	20" X Ø"	123	116	107	105	81	45			
	24" X Ø"	146	140	132	131	111	82	45		

MINIMUM LENGTHS OF PIPE (FT) TO BE

KEZIKAIN LILE MUE RELL LAZI WINIWOW DIZIANCE

COMMENT:

Sunshine 🔠

business days before digging to have

buried facilities located and marked.

Check positive response codes before you dig

**ENTITLEMENT** 

KIA Delray

2255 S. Federal Hwy

Delray Beach, FL

**Myers Auto Group DK LLC** 

915 S Dixie Hwy

West Palm Beach. FL

6300 NW 31ST AVENUE FORT LAUDERDALE, FL 33309 PH: (954) 202-7000

FX: (954) 202-7070

www.ThomasEngineeringGroup.com

F230085 WSU DTLS

DRAWN BY:

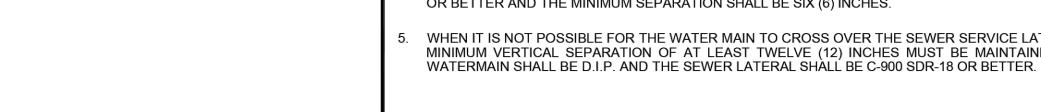
PROJECT

**CHECKED BY** 

SHEET NUMBER:

ATE: 10-04-2024

PP 2.0



LD 2.0

CITY of DELRAY BEACH

434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

PUBLIC WORKS DEPARTMENT

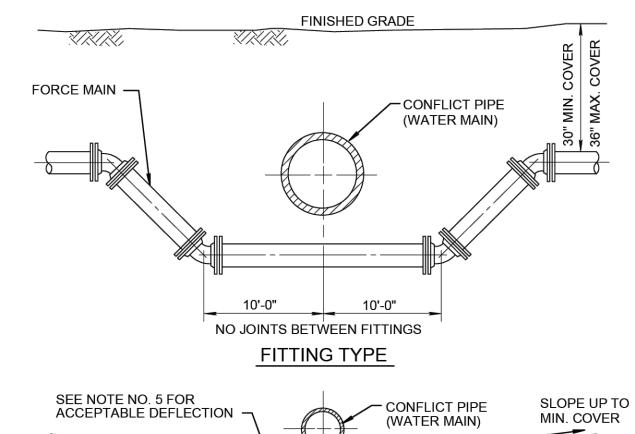
CITY of DELRAY BEACH WATER MAIN & SEWER CONFLICTS PW 2.0 PUBLIC WORKS DEPARTMENT 434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

PIPE RESTRAINT TABLE PRESSURE PIPE PP 2.1 (SHEET 2 OF 2)

CITY of DELRAY BEACH PUBLIC WORKS DEPARTMENT 434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

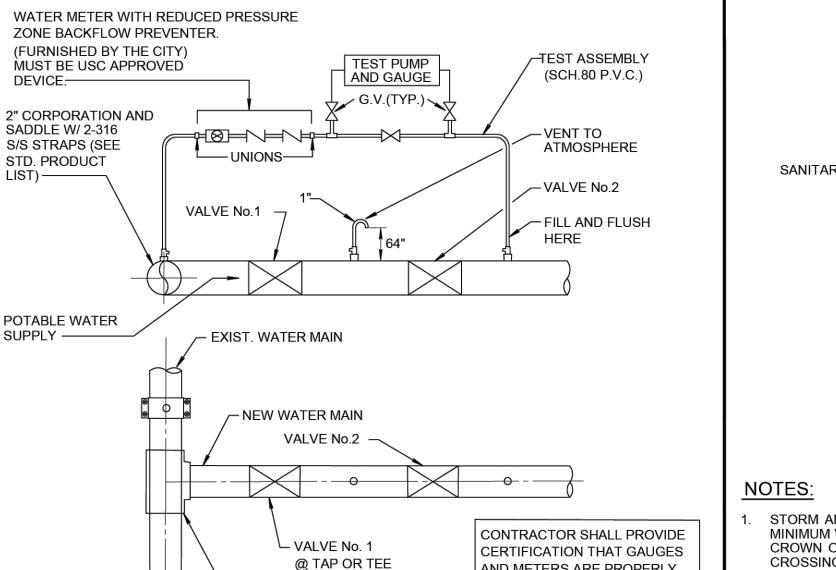
PIPE RESTRAINT TABLE PRESSURE PIPE (SHEET 1 OF 2)

UTILITY DETAILS



## - CENTER A FULL D.I.P. LENGTH OF PIPE AT POINT OF CROSSING DEFLECTION TYPE

- 1. THERE SHALL BE IN ALL CASES A MINIMUM OF 18" VERTICAL SEPARATION BETWEEN WATER MAINS AND FORCE MAINS.
- 2. WHEREVER POSSIBLE WATER MAINS SHALL PASS OVER FORCE MAINS OR STORM SEWERS.
- FITTINGS SHALL BE RESTRAINED WITH MECHANICAL JOINT RESTRAINTS.
- THE DEFLECTION TYPE CROSSING IS PREFERRED.
- 5. DO NOT EXCEED 75% OF MANUFACTURERS RECOMMENDED MAXIMUM JOINT DEFLECTION.
- 6. REFER TO TYPICAL RESTRAINING DETAIL PP 2.0 AND 2.1



AND METERS ARE PROPERLY

CALIBRATED AND ACCURATE.

PW 1.0

- BOTH VALVES SHALL BE KEPT CLOSED UNTIL FILLING, FLUSHING, AND BACTERIOLOGICAL TESTING IS COMPLETED AND APPROVED.
- GAUGE AND RISER TO BE REMOVED AFTER PRESSURE TEST CITY SHALL BE NOTIFIED BEFORE FILLING AND FLUSHING.

- TAPPING SLEEVE OR TEE

- AFTER RELEASE FROM THE HEALTH DEPARTMENT, BOTH VALVES TO BE LEFT OPEN WITH VALVE BOX INSTALLED ON BOTH VALVES.
- PRESSURE TEST PUMP MAY CONNECT TO SERVICE LINE, FIRE HYDRANTS OR BLOWOFF. NO EXTRA TAPS ARE PERMITTED SOLELY FOR TESTING PURPOSES UNLESS PRECEEDING ARE NOT PRESENT IN TEST SECTION.
- TAPPING SADDLE OR SLEEVE (PER CURRENT CITY PRODUCT LIST) IS REQUIRED

FILL & FLUSH DETAIL

- ON EXISTING MAIN. SETUP FOR ALL DOUBLE VALVE CONNECTIONS TO INCLUDE ATMOSPHERE VENTS
- AS SHOWN ABOVE. OUTLET ON VENT TO ATMOSPHERE A MINIMUM 24" ABOVE EXISTING GRADE.

CITY of DELRAY BEACH

434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 3344

PUBLIC WORKS DEPARTMENT

# 20' D.I.P. MIN. 10'-0" 10'-0" 18" MIN. **DUCTILE IRON PIPE** AS NECESSARY SANITARY/STORM SEWER MAIN

- STORM AND SANITARY SEWERS CROSSING UNDER WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18 INCHES BETWEEN THE INVERT OF THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE. WHERE THIS MINIMUM SEPARATION CANNOT BE MAINTAINED. THE CROSSING SHALL BE ARRANGED SO THAT THE SEWER PIPE JOINTS AND WATER MAIN JOINTS ARE EQUIDISTANT FROM POINT OF CROSSING WITH NO LESS THAN (10) FEET BETWEEN ANY TWO JOINTS AND BOTH PIPES SHALL BE D.I.P., AND THE MINIMUM VERTICAL SEPARATION SHALL BE 6 INCHES. WHERE THERE IS NO ALTERNATIVE TO SEWER PIPES CROSSING OVER A WATER MAIN, THE CRITERIA FOR MINIMUM 18" VERTICAL SEPARATION BETWEEN LINES AND JOINT ARRANGEMENT. AS STARTED ABOVE, SHALL BE REQUIRED AND BOTH PIPES SHALL BE CLASS 350 D.I.P. IRRESPECTIVE OF SEPARATION. D.I.P. IS NOT REQUIRED FOR STORM SEWERS.
- 2. MAINTAIN (10) FEET HORIZONTAL DISTANCE BETWEEN WATER MAIN AND STORM OR SANITARY SEWER MAIN, AS A MINIMUM.
- FORCE MAIN CROSSING WATER MAIN SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18 INCHES BETWEEN THE OUTSIDE OF THE FORCE MAIN AND THE OUTSIDE OF THE WATER MAIN WITH WATER MAIN CROSSING OVER FORCE MAIN.
- SEWER SERVICE LATERALS SHALL CROSS UNDER WATERMAINS WITH A MINIMUM VERTICAL SEPARATION OF EIGHTEEN (18) INCHES. IF EIGHTEEN (18) INCHES VERTICAL SEPARATION CANNOT BE MAINTAINED, THEN THE WATERMAIN SHALL BE D.I.P. AND THE SANITARY LATERAL C-900 SDR18 OR BETTER AND THE MINIMUM SEPARATION SHALL BE SIX (6) INCHES.

WATER MAIN & SEWER CONFLICTS

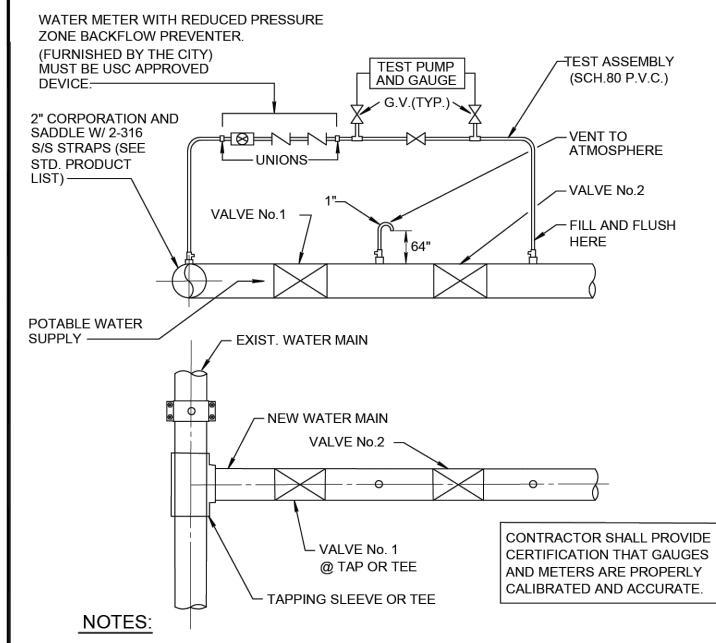
3'MIN.

SOIL

- FINISHED

GRADE

WHEN IT IS NOT POSSIBLE FOR THE WATER MAIN TO CROSS OVER THE SEWER SERVICE LATERAL A MINIMUM VERTICAL SEPARATION OF AT LEAST TWELVE (12) INCHES MUST BE MAINTAINED. THE WATERMAIN SHALL BE D.I.P. AND THE SEWER LATERAL SHALL BE C-900 SDR-18 OR BETTER.



- 1. BOTH VALVES SHALL BE KEPT CLOSED UNTIL FILLING, FLUSHING, AND BACTERIOLOGICAL TESTING IS COMPLETED AND APPROVED.
- GAUGE AND RISER TO BE REMOVED AFTER PRESSURE TEST.
- CITY SHALL BE NOTIFIED BEFORE FILLING AND FLUSHING

CITY of DELRAY BEACH

434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

PUBLIC WORKS DEPARTMENT

6" DIAMETER STD WT. STEEL-

BE OSHA SAFETY YELLOW AND

OF FINISH COAT SHALL

(SHOWN) OR GRASS

CLASS "A" CONCRETE

(3000 PSI MIN. @ 28 DAYS)

REFLECTIVE.

PAVEMENT -

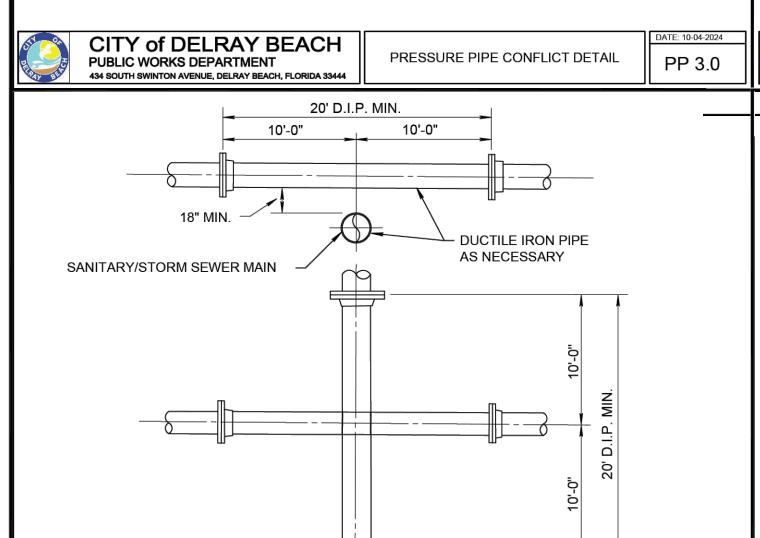
PIPE FILLED WITH CONCRETE. COLOR

- AFTER RELEASE FROM THE HEALTH DEPARTMENT, BOTH VALVES TO BE LEFT OPEN WITH VALVE BOX INSTALLED ON BOTH VALVES.
- PRESSURE TEST PUMP MAY CONNECT TO SERVICE LINE, FIRE HYDRANTS OR BLOWOFF. NO EXTRA TAPS ARE PERMITTED SOLELY FOR TESTING PURPOSES UNLESS PRECEEDING ARE NOT PRESENT IN TEST SECTION.
- TAPPING SADDLE OR SLEEVE (PER CURRENT CITY PRODUCT LIST) IS REQUIRED ON EXISTING MAIN.
- SETUP FOR ALL DOUBLE VALVE CONNECTIONS TO INCLUDE ATMOSPHERE VENTS AS SHOWN ABOVE.

FILL & FLUSH DETAIL

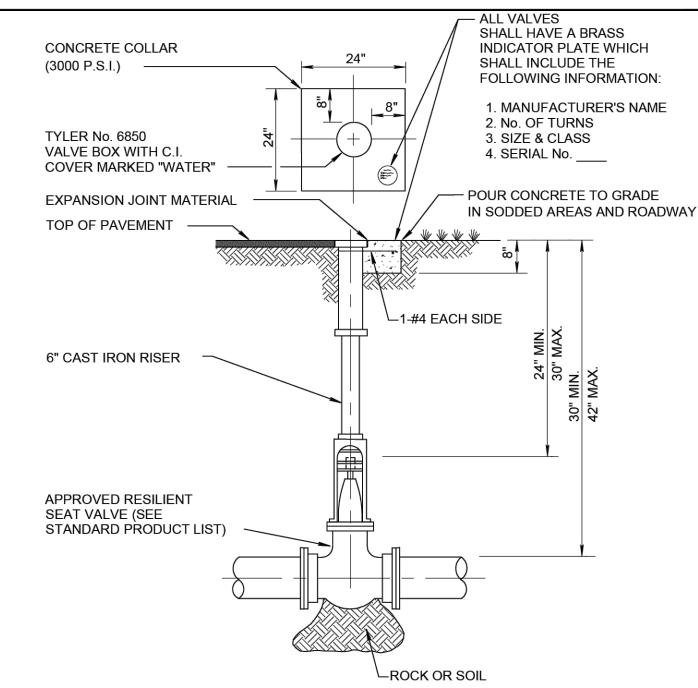
PW 1.0

8. OUTLET ON VENT TO ATMOSPHERE A MINIMUM 24" ABOVE EXISTING GRADE.



## NOTES:

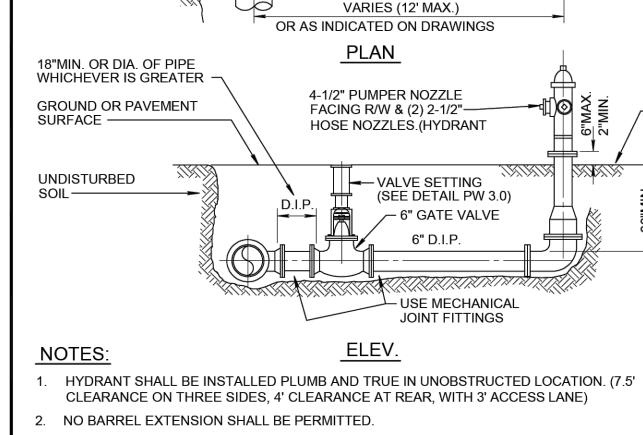
- STORM AND SANITARY SEWERS CROSSING UNDER WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18 INCHES BETWEEN THE INVERT OF THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE. WHERE THIS MINIMUM SEPARATION CANNOT BE MAINTAINED. THE CROSSING SHALL BE ARRANGED SO THAT THE SEWER PIPE JOINTS AND WATER MAIN JOINTS ARE EQUIDISTANT FROM POINT OF CROSSING WITH NO LESS THAN (10) FEET BETWEEN ANY TWO JOINTS AND BOTH PIPES SHALL BE D.I.P., AND THE MINIMUM VERTICAL SEPARATION SHALL BE 6 INCHES. WHERE THERE IS NO ALTERNATIVE TO SEWER PIPES CROSSING OVER A WATER MAIN, THE CRITERIA FOR MINIMUM 18" VERTICAL SEPARATION BETWEEN LINES AND JOINT ARRANGEMENT, AS STARTED ABOVE, SHALL BE REQUIRED AND BOTH PIPES SHALL BE CLASS 350 D.I.P. IRRESPECTIVE OF SEPARATION. D.I.P. IS NOT REQUIRED FOR STORM SEWERS.
- MAINTAIN (10) FEET HORIZONTAL DISTANCE BETWEEN WATER MAIN AND STORM OR SANITARY
- FORCE MAIN CROSSING WATER MAIN SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18 INCHES BETWEEN THE OUTSIDE OF THE FORCE MAIN AND THE OUTSIDE OF THE WATER MAIN WITH WATER MAIN CROSSING OVER FORCE MAIN.
- SEWER SERVICE LATERALS SHALL CROSS UNDER WATERMAINS WITH A MINIMUM VERTICAL SEPARATION OF EIGHTEEN (18) INCHES. IF EIGHTEEN (18) INCHES VERTICAL SEPARATION CANNOT BE MAINTAINED, THEN THE WATERMAIN SHALL BE D.I.P. AND THE SANITARY LATERAL C-900 SDR18 OR BETTER AND THE MINIMUM SEPARATION SHALL BE SIX (6) INCHES.
- WHEN IT IS NOT POSSIBLE FOR THE WATER MAIN TO CROSS OVER THE SEWER SERVICE LATERAL A MINIMUM VERTICAL SEPARATION OF AT LEAST TWELVE (12) INCHES MUST BE MAINTAINED. THE WATERMAIN SHALL BE D.I.P. AND THE SEWER LATERAL SHÀLL BE C-900 SDR-18 OR BETTER.



## NOTES:

NOTES

- 1. WHEN VALVE IS DEEPER THAN 30" AN EXTENSION WITH UNIVERSAL JOINT SHALL BE REQUIRED TO BRING OPERATING NUT 24"-30" BELOW FINISHED GRADE EXTENSION BOLTS & NUTS SHALL BE 316 STAINLESS STEEL. A 316 STAINLESS STEEL CENTERING PLATE SHALL ALSO BE REQUIRED.
- 2. AT DEAD END OR WHERE MAIN LINES CHANGE DIRECTION, VALVES SHALL BE RESTRAINED USING MECHANICAL JOINT RESTRAINTS, TIE RODS, OR OTHER RESTRAINT APPROVED BY UTILITIES DEPARTMENT (NO THRUST BLOCKS ALLOWED).



## VALVE SHALL BE PLACED ADJACENT TO MAIN.

CITY of DELRAY BEACH

434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 3344

 $\bigcirc$ 

**PUBLIC WORKS DEPARTMENT** 

UNDISTURBED

- ANCHOR TEES AND FITTINGS ARE PERMITTED.
- 5. HYDRANT SHALL BE MUELLER SUPER CENTURION, AA423  $5\frac{1}{d}$ " WITH TRAFFIC BREAKAWAY FLANGE AND  $5\frac{1}{4}$ " VALVE.
- 6. HYDRANTS SHALL NOT ENCROACH IN SIDEWALKS, ROADWAYS, OR BIKE PATHS.
- ON RUNS LONGER THAN 20 FEET A SECOND VALVE IS REQUIRED AT THE HYDRANT.
- PREVENTION CODE SEC. 96.05. 9. IN CERTAIN SITUATIONS, PROTECTIVE BOLLARDS MAY BE REQUIRED AS DIRECTED BY THE

8. ALL HYDRANT INSTALLATION SHALL BE IN ACCORDANCE WITH CITY OF DELRAY BEACH FIRE

- 10. FIRE HYDRANTS INSTALLED BUT NOT YET IN SERVICE SHALL BE COVERED WITH A BURLAP, OR
- 11. ALL HYDRANT LEADS GREATER THAN 20-FEET MUST HAVE AUTOMATIC FLUSHER INSTALLED AT HYDRANT END (KUPFERLE #9400-WC STANDARD).
- 12. REMOVE CHAINS FROM HYDRANT AND PAINT. COORDINATE WITH UTILITY STAFF FOR
- CORRECT COLORS.
- 13. NO THRUST BLOCKS SHALL BE PERMITTED.

ENGINEERING DEPT. (SEE BOLLARD DETAIL PW 7.0)

PLASTIC SACK, OR HAVE OUT OF SERVICE RING IN PLACE.

CITY of DELRAY BEACH



CITY of DELRAY BEACH PUBLIC WORKS DEPARTMENT

434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 3344

REVISIONS

Sunshine 8

Call 811 or visit sunshine811.com two fu business days before digging to have

buried facilities located and marked.

heck positive response codes before you dig

**ENTITLEMENT** 

KIA Delray

2255 S. Federal Hwy

Delray Beach, FL

**Myers Auto Group DK LLC** 

915 S Dixie Hwy

West Palm Beach. FL

6300 NW 31ST AVENUE

FORT LAUDERDALE, FL 33309

PH: (954) 202-7000

FX: (954) 202-7070

www.ThomasEngineeringGroup.com

LICENSE

STATE OF

.FLORIDA

F230085 WSU DTLS

DRAWN BY

PROJECT

**CHECKED BY** 

COMMENT:

UTILITY DETAILS

SHEET NUMBER:

CITY of DELRAY BEACH PUBLIC WORKS DEPARTMENT 434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

WATER MAIN & SEWER CONFLICTS

PW 2.0

CITY of DELRAY BEACH PUBLIC WORKS DEPARTMENT 434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

TYPICAL GATE VALVE DETAIL 4" THRU 12"

PW 3.0

PUBLIC WORKS DEPARTMENT 434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

PW 6.0

**BOLLARD DETAIL** 

18"

PW 7.1

## NOTES:

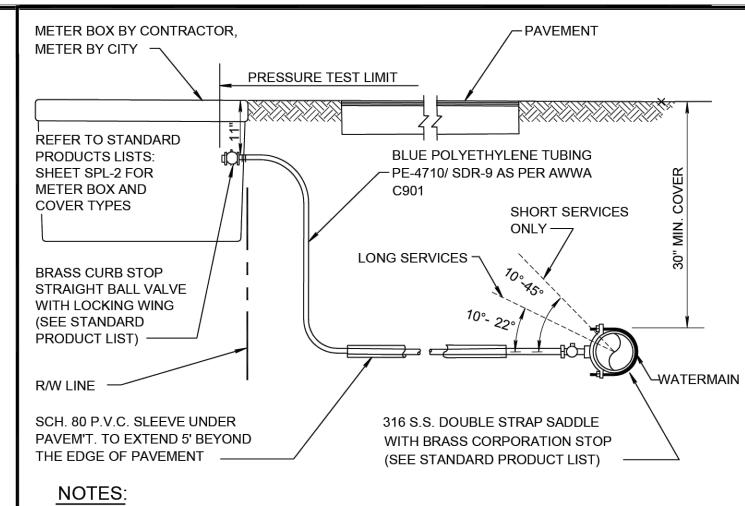
CITY of DELRAY BEACH

434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

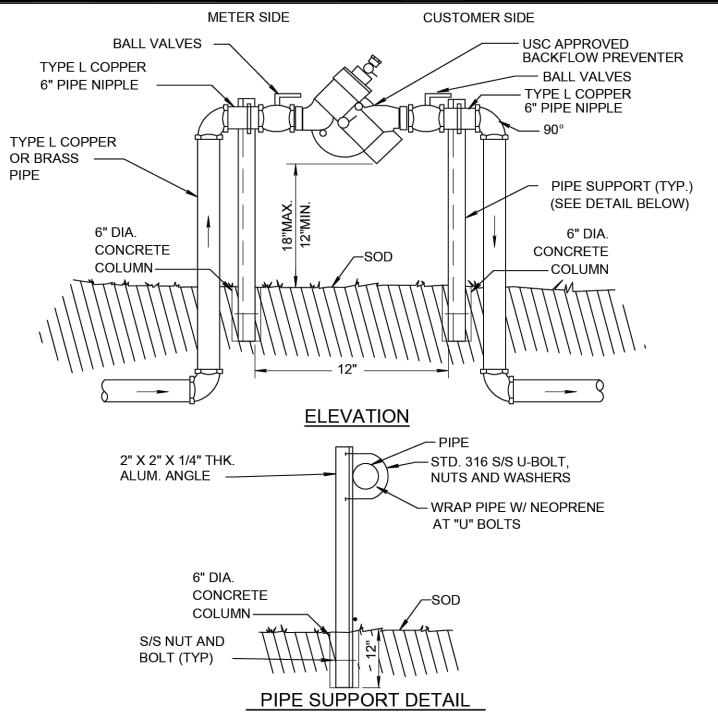
PUBLIC WORKS DEPARTMENT

- 1. SAMPLE POINT SHOULD BE AT SERVICE LINE OR FIRE HYDRANT IF POSSIBLE.
- 2. IF SAMPLE POINT IS NOT AT SERVICE LINE OR FIRE HYDRANT, CORP. STOP SHALL BE SHUT OFF AT MAIN AND ALL TUBING SHALL BE REMOVED, AND CORP. STOP SHALL HAVE A BRASS PLUG OR CAP INSTALLED AFTER RELEASE OF WATER MAIN BY PALM BEACH COUNTY HEALTH DEPARTMENT.
- 3. IF AT ALL POSSIBLE SAMPLE POINT SHALL NOT BE LOCATED IN A TRAFFIC AREA.
- 4. SAMPLE POINTS SHALL KEEP RUNNING UNTIL PALM BEACH COUNTY HEALTH DEPARTMENT RELEASE AND ALL MAIN LINE VALVES ARE OPENED.

TYPICAL SAMPLE POINT

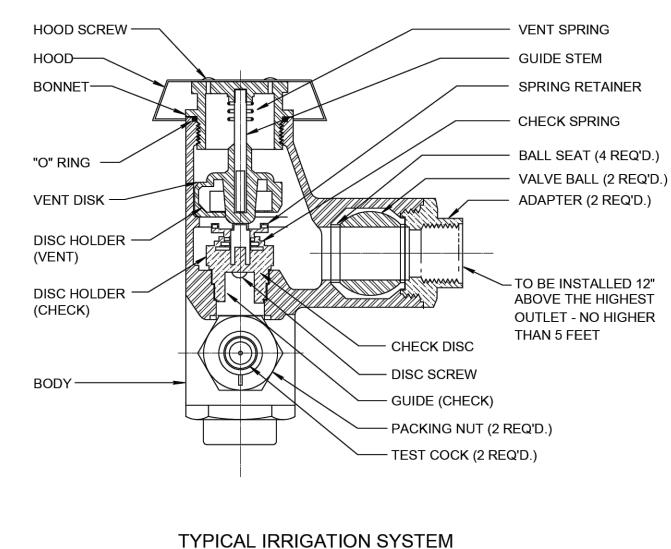


- EXISTING SERVICE IS GALVANIZED, BUILDER/CONTRACTOR/ DEVELOPER SHALL REPLACE WITH POLYETHYLENE PIPING FROM MAIN TO THE METER.
- 13. ALL WATER SERVICE SHALL BE A MINIMUM OF 2".
- 14. WATER METERS SHALL BE LOCATED OUTSIDE ANY DRIVEWAYS BY 2'



## NOTES:

- 1. FOR ALL SERVICES LESS THAN OR EQUAL TO 2" DIA.
- 2. ABOVE GRADE PIPING SHALL BE BRASS OR TYPE "L" COPPER OR BRASS TUBING.
- 3. ALL COPPER JOINTS SHALL BE MADE WITH 95/5 SOLDER.
- 4. USC APPROVED RPZ BACKFLOW PREVENTER IS REQUIRED IN ACCORDANCE WITH CITY OF DELRAY BEACH CODE OF ORDINANCES TITLE V, CHAPTER 52.83.
- 5. USC APPROVED RPZ BACKFLOW PREVENTER IS REQUIRED FOR ALL COMMERCIAL PROPERTIES AND ALL RESIDENTIAL PROPERTIES WITH FIRE SPRINKLER SYSTEMS.



## ANTI-SIPHON PRESSURE TYPE VACUUM BREAKER

### NOTES:

- WATTS REGULATOR COMPANY OR EQUIVALENT.
- 2. VALVE SHALL MEET OR EXCEED THE A.S.S.E., BS&A AND U.S.C.F. REQUIREMENTS.
- SHALL ALSO BE LISTED BY IAPMO (UPC).
- 4. ABOVE GRADE PIPING SHALL BE BRASS OR TYPE "L" COPPER.

CITY of DELRAY BEACH PUBLIC WORKS DEPARTMENT 434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

ANTI-SIPHON PRESSURE TYPE VACUUM BREAKER PW 17.0

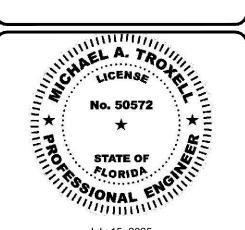
DRAWN BY:

KIA Delray 2255 S. Federal Hwy Delray Beach, FL

Myers Auto Group DK LLC 915 S Dixie Hwy

West Palm Beach. FL

6300 NW 31ST AVENUE FORT LAUDERDALE, FL 33309 PH: (954) 202-7000 FX: (954) 202-7070 www.ThomasEngineeringGroup.com



UTILITY DETAILS

SHEET NUMBER: **U-2.2** 

1. SUCCESSIVE TAPS INTO THE WATER MAIN SHALL BE SPACED A MINIMUM OF 18" ON CENTER. SERVICE LINES SHALL NOT BE PLACED UNDER DRIVEWAYS. ALL METERS REQUIRE A LOCKING BRASS CURB STOP WITH LOCK WING (1"MIN.). NO FITTINGS BETWEEN CORPORATION STOP AND BRANCH ASSEMBLY. MAXIMUM SERVICE LENGTH IS 100' TO METER. CASING PIPE I.D. SHALL BE SERVICE O.D. PLUS 1" MINIMUM. MINIMUM BEND RADIUS ON SERVICES SHALL BE 14" ON ALL SERVICES BEHIND METER. METER SIZE WILL BE DETERMINED BY PUBLIC UTILITIES DEPT. UPON APPLICATION FOR SERVICE. ALL VALVES TO BE BALL VALVES. 10. METER BOX SHALL BE PROVIDED AND INSTALLED BY CONTRACTOR. 11. ALL SERVICES UNDER ROADWAYS ARE TO BE INSTALLED BY TRENCHLESS METHOD, UNLESS OTHERWISE APPROVED. 12. ALL EXISTING SERVICES TO BE FIELD VERIFIED BY BUILDER/CONTRACTOR/ DEVELOPER; IF

CITY of DELRAY BEACH PW 10.0 PUBLIC WORKS DEPARTMENT 434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

TYPICAL URBAN/REDEVELOPMENT AREA SERVICE CONNECTION

PW 12.0

CITY of DELRAY BEACH PUBLIC WORKS DEPARTMENT 434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

REDUCED PRESSURE ZONE BACKFLOW PREVENTER

PW 16.0

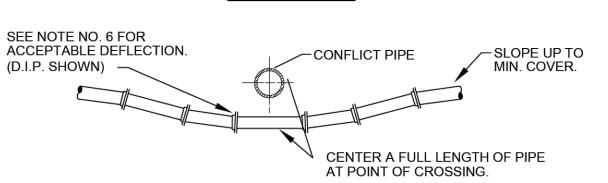
Sunshine 🔠 Call 811 or visit sunshine811.com two ful business days before digging to have buried facilities located and marked. Check positive response codes before you dig **ENTITLEMENT** 7/11/25 F230085 WSU DTLS

REVISIONS:

COMMENT:

- FORCE MAIN CROSSING POTABLE WATER MAIN OR RECLAIMED WATER MAIN SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF EIGHTEEN (18) INCHES BETWEEN THE OUTSIDE OF THE FORCE MAIN AND OUTSIDE OF THE POTABLE WATER MAIN OR RECLAIMED WATER MAIN WITH THE POTABLE WATER MAIN OR RECLAIMED WATER MAIN CROSSING OVER THE FORCE
- DO NOT EXCEED 75% OF MANUFACTURERS RECOMMENDED MAXIMUM JOINT DEFLECTION FOR DUCTILE IRON PIPE. PVC PIPE CURVATURE MAY ONLY BE ACCOMPLISHED BY INSTALLING APPROPRIATE BENDS.
- POTABLE WATER SERVICE LINES SHALL CROSS OVER WASTEWATER MAINS WITH MINIMUM 12" VERTICAL SEPARATION. WHERE THIS MINIMUM SEPARATION CAN NOT BE MAINTAINED, THE WATER SERVICE SHALL BE ENCASED IN A MINIMUM 10' LONG CASING CENTERED OVER THE CROSSING WITH MINIMUM 6" VERTICAL SEPARATION.

## DUCTILE IRON PRESSURE PIPE **MEGALUGS** OR EQUAL REQUIREDA 22 1/2° (PREFERRED) (TYP.) 45° ELBOWS NO JOINTS BETWEEN FITTINGS FITTING TYPE



### **DEFLECTION TYPE**

2. MAINTAIN MINIMUM TEN (10) FEET HORIZONTAL DISTANCE (WALL TO WALL) BETWEEN POTABLE WATER MAIN AND STORM SEWER, WASTEWATER MAIN, OR FORCE MAIN MAINTAIN MINIMUM THREE (3) FEET HORIZONTAL DISTANCE (WALL TO WALL) BETWEEN RECLAIMED WATER MAIN AND

**GENERAL NOTES:** 

CONFLICT DETAIL

(SHEET 1 OF 2)

SEE NOTES FOR TYPICAL TRENCH DETAIL FOR

DENSITY PER AASHTO T-180.

BACKFILL AND BEDDING MATERIAL SPECIFICATIONS.

BASE MATERIAL SHALL BE PLACED IN 6" LAYERS AND

EACH LAYER COMPACTED TO 98% OF MAXIMUM

3. ASPHALT CONCRETE PAVEMENT JOINTS SHALL BE MECHANICALLY SAWED (BUTT JOINTS ONLY).

4. SURFACE MATERIAL WILL BE CONSISTENT WITH THE

RESTORED TO EQUAL OR BETTER CONDITION.

RESPONSIBLE FOR COMPLIANCE REGARDING ANY

PROPERTY OWNER. (FDOT, COUNTY, CITY, ETC.)

7. PAVEMENT OVERLAY ON BOTH SIDES OF THE CUT MAY

6. EXCAVATABLE "FLOWABLE FILL" WITH ULTIMATE

BE REQUIRED PER OWNER SPECIFICATION.

9. THE CONTRACTOR SHALL BE COMPLIANT WITH

FOR INSTALLATION INSTRUCTIONS).

8. MAGNETIC TAPE IS REQUIRED FOR ALL PVC/HDPE

ADDITIONAL SPECIFICATIONS AS REQUIRED BY THE

COMPRESSIVE STRENGTH BETWEEN 50 AND 150 PSI

RECLAIMED WATER MAINS. (SEE TRENCHING DETAIL

APPLICABLE TRENCH SAFETY REGULATIONS (OSHA,

MAY BE USED TO SUBSTITUTE FOR THE BACKFILL AND

5. THE DEVELOPER/CONTRACTOR SHALL BE

EXISTING SURFACE. THE AFFECTED AREA SHALL BE

RW 9.0

## NOTES:

- 3. FORCE MAIN CROSSING POTABLE WATER MAIN OR RECLAIMED WATER MAIN SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF TWELVE (12) INCHES BETWEEN THE OUTSIDE OF THE FORCE MAIN AND OUTSIDE OF THE POTABLE WATER MAIN OR RECLAIMED WATER MAIN WITH THE POTABLE WATER MAIN OR RECLAIMED WATER MAIN CROSSING OVER THE FORCE
- FITTINGS SHALL BE RESTRAINED WITH AN APPROVED RESTRAINT METHOD.
- THE DEFLECTION TYPE CROSSING IS PREFERRED.
- 6. DO NOT EXCEED 75% OF MANUFACTURERS RECOMMENDED MAXIMUM JOINT DEFLECTION FOR DUCTILE IRON PIPE. PVC PIPE CURVATURE MAY ONLY BE ACCOMPLISHED BY INSTALLING APPROPRIATE BENDS.
- 7. ALL EXPOSED TIE STEEL SHALL BE COATED WITH COAL-TAR EPOXY
- 8. POTABLE WATER SERVICE LINES SHALL CROSS OVER WASTEWATER MAINS WITH MINIMUM 12" VERTICAL SEPARATION. WHERE THIS MINIMUM SEPARATION CAN NOT BE MAINTAINED, THE WATER SERVICE SHALL BE ENCASED IN A MINIMUM 10' LONG CASING CENTERED OVER THE CROSSING WITH MINIMUM 6" VERTICAL SEPARATION.

### RÉMÁINING BACKFILL, BASE AND SURFACE MATERIAL TO BE PLACED AND COMPACTED PER APPROPRIATE SPECIFICATIONS OR MINIMUM 95% PER AASHTO-T-180. 6" MAX. SIZE. (MIN. 90% DENSITY IS REQUIRED FOR NON-TRAFFIC AREAS OUTSIDE OF ROAD DEEP RIGHT OF WAYS.) APPROVED > -IDENTIFICATION TAPE ROOT (SEE NOTE 9) BARRIER GRANULAR BACKFILL PLACED AND COMPACTED TO MINIMUM 98% OF MAXIMUM DENSITY. PER AASHTO-T-180. 2" MAX. SIZE. BEDDING MATERIAL MINIMUM 98% COMPACTION.

EXISTING GROUND

IDENTIFICATION PAINT — 4 Z (SEE NOTE #11)

MIN. 42" DEEP APPROVED ROOT BARRIER 15' LONG CENTERED ON TREE

- 1. BEDDING SHALL CONSIST OF IN-SITU GRANULAR MATERIAL OR WASHED AND GRADED LIMEROCK 3/8"- 7/8" SIZING. UNSUITABLE IN-SITU MATERIALS SUCH AS MUCK, DEBRIS AND LARGER ROCKS SHALL BE REMOVED.
- 2. THE PIPE SHALL BE FULLY SUPPORTED FOR ITS ENTIRE LENGTH WITH APPROPRIATE COMPACTION UNDER THE PIPE HAUNCHES.

PER AASHTO-T-180.

THE PIPE SHALL BE PLACED IN A DRY TRENCH.

CITY of DELRAY BEACH

434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 3344

PUBLIC WORKS DEPARTMENT

- 4. BACKFILL SHALL BE FREE OF UNSUITABLE MATERIAL SUCH AS LARGE ROCK, MUCK AND
- 5. DENSITY TESTS ARE REQUIRED IN 1 FOOT LIFTS ABOVE THE PIPE AT INTERVALS OF 400' MAXIMUM, MINIMUM 1 SET OF TESTS FOR EACH WASTEWATER GRAVITY MAIN RUN, OR AS DIRECTED BY THE INSPECTOR AND PAID FOR BY THE CONTRACTOR.
- 6. THE DEVELOPER/CONTRACTOR SHALL BE RESPONSIBLE TO COMPLY WITH ALL TRENCH SAFETY LAWS AND REGULATIONS.
- SEE SEPARATE DETAIL FOR "PIPE INSTALLATION UNDER EXISTING PAVEMENT OPEN CUT."
- 8. THE AFFECTED AREA SHALL BE RESTORED TO EQUAL OR BETTER CONDITION OR AS SPECIFIED IN PERMIT/CONTRACT DOCUMENTS.
- 9. APPROVED MAGNETIC TAPE IS REQUIRED FOR: PVC RECLAIMED WATER MAINS. THE TAPE SHALL BE INSTALLED MAXIMUM 24" BELOW FINISHED GRADE.
- 10. ROOT BARRIER IS REQUIRED FOR APPROVED TREE INSTALLATION CLOSER THAN 10 FEET FROM UTILITY FACILITIES.
- 11. CONTINUOUS 4" WIDE PAINT STRIPING IS REQUIRED FOR RECLAIMED WATER MAINS

TYPICAL TRENCH/

RW 11.0

ROOT BARRIER

INSTALLATION DETAIL

APPROVED EQUAL

## (PURPLE).

18" MAX.

PUBLIC WORKS DEPARTMENT

ALL OPENINGS IN PRECAST MANHOLES SHALL BE CAST AT TIME OF MANUFACTURE. CONNECTIONS T

PRESSURE PIPE

RW 9.1

CONFLICT DETAIL

(SHEET 2 OF 2)

- ALL MANHOLES SHALL BE SET PLUMB TO LINE AND GRADE.
- (DIP) GRAVITY SEWER PIPE SHALL BE CLASS 350, 401 EPOXY LINED OR AS OTHERWISE APPROVED BY
- 6. NO SERVICE CONNECTIONS, WYES, SERVICES OR VALVES WILL BE PERMITTED IN RESIDENTIA
- TRENCHES SHALL BE DE-WATERED TO ENABLE PIPE AND APPURTENANCES TO BE INSTALLED FREE O WATER ON UNDISTURBED SOIL. IF UNSUITABLE SUBSURFACE MATERIAL IS ENCOUNTERED, EXCAVAT
- TITE PVC PIPE INSTALLATION GUIDE OR EQUAL). BACKFILLING OF UTILITY TRENCHES WILL NOT BE ALLOWED UNTIL INSPECTED BY THE ENGINEER.
- BACKFILL MATERIAL FOR SEWER MAIN AND LINES SHALL BE NON-COHESIVE, NON PLASTIC MATERIA FREE OF ALL DEBRIS, LUMPS AND ORGANIC MATTER. BACKFILL MATERIAL PLACED WITHIN ONE ( FOOT OF PIPING AND APPURTENANCES SHALL NOT CONTAIN ANY STONES LARGER THAN TWO ( INCHES IN DIAMETER (1" FOR PVC PIPE) AND NO STONES LARGER THAN SIX (6) INCHES IN DIAMETE
- ALL EXCAVATION IN EXISTING RIGHT OF WAY SHALL BE BACKFILLED AND STABILIZED AT THE END OF EACH DAY TO PERMIT PEDESTRIAN AND VEHICULAR TRAFFIC PRIOR TO THE CONTRACTOR LEAVING
- WHERE SEWER IS NOT WITHIN PUBLIC R/W, IT IS TO BE LOCATED IN A 12' UTILITY EASEMENT. CITY
- EACH LINE SEGMENT SHALL BE LAMPED TO DETERMINE PROPER ROUNDNESS.
- COMPLETE "AS BUILT" INFORMATION RELATIVE TO MANHOLES. VALVES. SERVICES FITTINGS. PIP LENGTHS, INVERTS AND SLOPES SHALL BE ACCURATELY RECORDED & SUBMITTED TO THE ENGINEER
- APPROVED EQUAL APPLIED EXTERNALLY WITHIN A MINIMUM 2-FOOT RADIUS OF OPENING AND THE ENTIRE MANHOLE MUST HAVE SEWPER COAT OR APPROVED EQUAL APPLIED INTERNALLY.
- SEWPER COAT OR APPROVED EQUAL.

CITY of DELRAY BEACH PUBLIC WORKS DEPARTMENT

DATE: 10-04-2024 WW 10.0

UTILITY DETAILS

business days before digging to have buried facilities located and marked.

heck positive response codes before you di

**ENTITLEMENT** 

**KIA Delray** 

2255 S. Federal Hwy

Delray Beach, FL

**Myers Auto Group DK LLC** 

915 S Dixie Hwy

West Palm Beach. FL

6300 NW 31ST AVENUE

FORT LAUDERDALE, FL 33309

PH: (954) 202-7000

FX: (954) 202-7070

www.ThomasEngineeringGroup.com

LICENSE

STATE OF -CORIDA

F230085 WSU DTLS

PROJECT N

DRAWN BY

PROJECT

CHECKED BY

HEET NUMBER:

RW 8.1

- 1. STORM SEWER, GRAVITY WASTEWATER AND RECLAIMED WATER MAIN CROSSING UNDER POTABLE WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF EIGHTEEN (18) INCHES BETWEEN THE INVERT OF THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE. WHERE THIS MINIMUM SEPARATION CANNOT BE MAINTAINED, THE CROSSING SHALL BE ARRANGED SO THAT THE STORM/WASTEWATER/RECLAIMED WATER PIPE JOINTS AND POTABLE WATER MAIN JOINTS ARE EQUIDISTANT FROM THE POINT OF CROSSING WITH NO LESS THAN TEN (10) FEET BETWEEN ANY TWO JOINTS, BOTH PIPES SHALL BE D.I.P., AND THE MINIMUM VERTICAL SEPARATION SHALL BE 6 INCHES. WHERE THERE IS NO ALTERNATIVE TO STORM/WASTEWATER/RECLAIMED WATER PIPES CROSSING OVER A POTABLE WATER MAIN, THE CRITERIA FOR MINIMUM 18" VERTICAL SEPARATION BETWEEN LINES AND JOINT ARRANGEMENT AS STATED ABOVE, SHALL BE REQUIRED, AND BOTH PIPES SHALL BE D.I.P. IRRESPECTIVE OF SEPARATION. D.I.P. IS NOT REQUIRED FOR STORM SEWERS.
- POTABLE WATER MAIN, STORM SEWER, WASTEWATER GRAVITY MAIN OR FORCE MAIN.

CITY of DELRAY BEACH

434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 3344

PUBLIC WORKS DEPARTMENT

**DENSITY PROCEDURES:** 

BY AASHTO T-99.

THE BACKFILL FOR THE FIRST AND

SECOND STAGES SHALL BE PLACED IN

6" LAYERS (COMPACTED THICK- NESS)

OF MAXIMUM DENSITY AS DETERMINED

AND SHALL BE COMPACTED TO 100%

THE CONTRACTOR SHALL PROVIDE

THE HAUNCHES OF THE PIPE, USING

MECHANICAL TAMPS SUITABLE FOR

THIS PURPOSE. THIS COMPACTION

APPLIES TO THE MATERIAL PLACED

BENEATH THE HAUNCHES OF THE PIPE

AND ABOVE ANY BEDDING REQUIRED.

THE CONTRACTOR SHALL OBTAIN A

ALONG THE SIDES OF THE PIPE AND TO

WELL COMPACTED BED AND FILL

A POINT INDICATING THE TOP OF

SUB-GRADE MATERIAL.

ADEQUATE COMPACTED FILL BENEATH

GRAVITY SEWER NOTES MANHOLES SHALL BE INSPECTED BY THE ENGINEER BEFORE PLACEMENT AND SURFACE TREATMENT

- EXISTING MANHOLES SHALL BE CORE ENTRY ONLY.

CITY of DELRAY BEACH

434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 3344

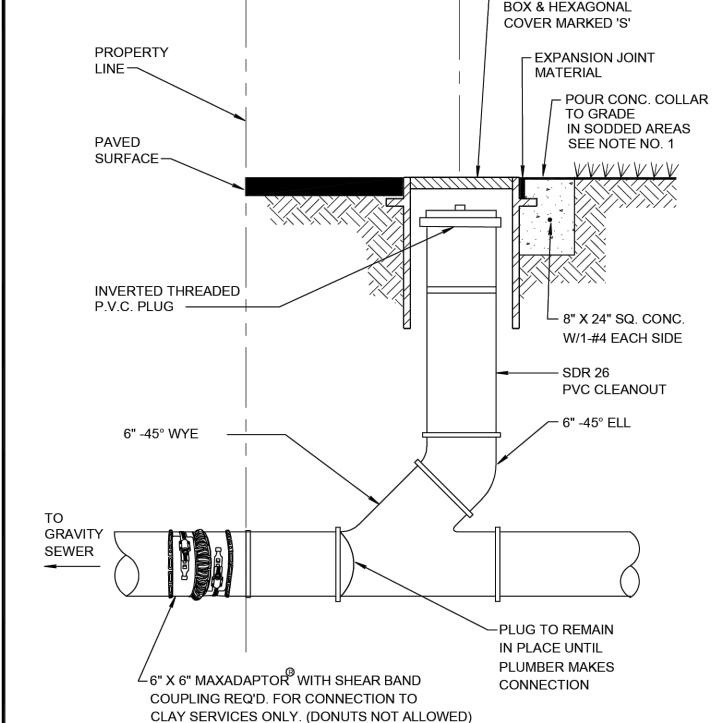
- (PVC) GRAVITY SEWER PIPE SHALL CONFORM TO ASTM D 3034, SDR 26, LATEST REVISIONS, WITH PUS ON RUBBER GASKET JOINTS.
- **UTILITIES DEPARTMENT.**
- MANHOLE FRAMES SHALL BE ATTACHED TO THE PRECAST STRUCTURE WITH A MINIMUM OF TWO 3/4 316 STAINLESS STEEL BOLTS, NUTS AND WASHERS. FRAMES SHALL BE SEALED WITH A MINIMUM OF TWO 1/2" BEADS OF RAM-NEK CAULKING.
- EXTRA 6" AND BACKFILL WITH 3/4" GRAVEL.
- PVC SHALL BE LAID IN STRICT CONFORMANCE TO MANUFACTURER'S SPEC (JOHNS MANVILLE RING
- WILL BE PERMITTED IN ANY BACKFILL.
- MAINTENANCE RESPONSIBILITY IS MANHOLE TO MANHOLE ONLY.
- UPON COMPLETION OF THE WORK AND PRIOR TO PLACEMENT OF ASPHALT A VISUAL INSPECTION BY THE ENGINEER SHALL BE MADE OF THE COMPLETED SYSTEM ALONG WITH A LOW PRESSURE AIF TEST, AFTER ROCK BASE FINISHED & PRIMED, OR 1ST LIFT OF ASPHALT PLACED. AFTER ALL OTHER TESTING HAS BEEN COMPLETED, A CD VIDEO RECORDING SHALL BE MADE BY THE CONTRACTOR AND APPROVED BY THE ENGINEER, BEFORE THE LENGTHS ARE ACCEPTED FOR MAINTENANCE.
- CITY SIGNED AND SEALED BY A REGISTERED LAND SURVEYOR.
- AT THE END OF THE ONE (1) YEAR WARRANTY PERIOD THE DEVELOPER/CONTRACTOR WILL T. INSPECT, AIR TEST EVERY JOINT, AND CHECK MANHOLE JOINTS AND CONNECTIONS TO DETERMINE I REPAIRS ARE NECESSARY BEFORE THE WARRANTY BOND IS RELEASED.
- NO PROPOSED STRUCTURES SHALL BE INSTALLED WITHIN A HORIZONTAL DISTANCE OF 10-FEET FROM ANY EXISTING OR PROPOSED SANITARY SEWER FACILITY.
- ANY PIPE INTRODUCED INTO AN EXISTING MANHOLE MUST HAVE CARBOLINE BITUMASTIC 300M OF
- ANY REHABILITATION TO AN EXISTING MANHOLE MUST BE INTERNALLY STRIPPED AND LINED WIT

# PIPE INSTALLATION UNDER

BASE MATERIALS.

CITY of DELRAY BEACH PUBLIC WORKS DEPARTMENT

**GRAVITY SEWER NOTES** WW 1.0



- 1. ALL SANITARY SEWER LATERALS AND CLEANOUT TO BE MINIMUM 6" DIAMETER IN SIZE UNLESS OTHERWISE PREVIOUSLY APPROVED
- BY THE DEPARTMENT. MINIMUM DEPTH OF SERVICE LATERAL SHALL BE 3 FEET.



434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

TYPICAL CLEANOUT

CITY of DELRAY BEACH PUBLIC WORKS DEPARTMENT 434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

CITY of DELRAY BEACH

MAXIMUM QUANTITY OF WATER (GALLONS PER HOUR) THAT MAY BE SUPPLIED

TO MAINTAIN PRESSURE WITHIN 5 P.S.I. OF THE SPECIFIED TEST PRESSURE.

PIPE DIAMETER (INCHES)

PSI | 2 | 3 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 24 | 30 | 36 | 42 | 48

150 | 0.10 | 0.14 | 0.18 | 0.27 | 0.37 | 0.46 | 0.55 | 0.64 | 0.73 | 0.83 | 0.92 | 1.10 | 1.38 | 1.65 | 1.93 | 2.20

200 | 0.10 | 0.15 | 0.21 | 0.31 | 0.42 | 0.53 | 0.64 | 0.74 | 0.84 | 0.95 | 1.06 | 1.27 | 1.59 | 1.91 | 2.22 | 2.54

TO OBTAIN THE MAXIMUM QUANTITY OF WATER FOR PIPE WITH 20 FT. NOMINAL LENGTHS,

THE QUANTITY PER HOUR AS OBTAINED FROM THE ABOVE TABLE, BY THE DURATION OF THE

TEST IN HOURS, AND BY THE TOTAL LENGTH OF THE LINE BEING TESTED DIVIDED BY 1,000. IF

THE LINE UNDER TEST CONTAINS SECTIONS OF VARIOUS DIAMETERS, THE MAXIMUM

4. THIS STANDARD SHALL REFLECT ANY REVISION OF A.W.W.A. C-600. HOWEVER, THE MAXIMUM

QUANTITY OF WATER ADDED SHALL NOT EXCEED 50% OF THE RECOMMENDED LIMIT PER

2. THE MAXIMUM QUANTITY OF ADDED WATER FOR A PIPELINE IS CALCULATED BY MULTIPLYING

QUANTITY ADDED WILL BE THE SUM OF THE COMPUTED QUANTITIES FOR EACH SIZE.

L = MAXIMUM QUANTITY OF WATER TO BE ADDED (GALLONS PER HOUR)

(MECHANICAL OR PUSH-ON JOINT, 18 FT. NOMINAL LENGTHS, PER 1000 FT.

MULTIPLY THE QUANTITY CALCULATED FROM THE TABLE BY 0.9

MAXIMUM TEST LENGTH = 2,500 FEET PER SECTION.

APPLICABLE AWWA C-600 STANDARD.

6. FORMULA BASIS: L = (S) X (D) X (P) 1/2 X 1/2

S = LENGTH OF PIPE TESTED (FEET)

7. PRESSURE TEST DURATION TO BE MINIMUM 2 HOURS

D = DIAMETER OF PIPE (INCHES)

P = TEST PRESSURE (P.S.I.)

133,200

5. STANDARD TEST PRESSURE = 150 P.S.I.

434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 334

PUBLIC WORKS DEPARTMENT

OF PIPE)

NOTES:

AVG. TEST

PRESSURE TEST CRITERIA

RECLAIMED WATER

PIPE SEPARATION

(SHEET 2 OF 2)

RW 16.0

CITY of DELRAY BEACH PUBLIC WORKS DEPARTMENT 434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

EXISTING PAVEMENT - OPEN CUT

RW 18.0

434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

