

SITE PLANS

FOR

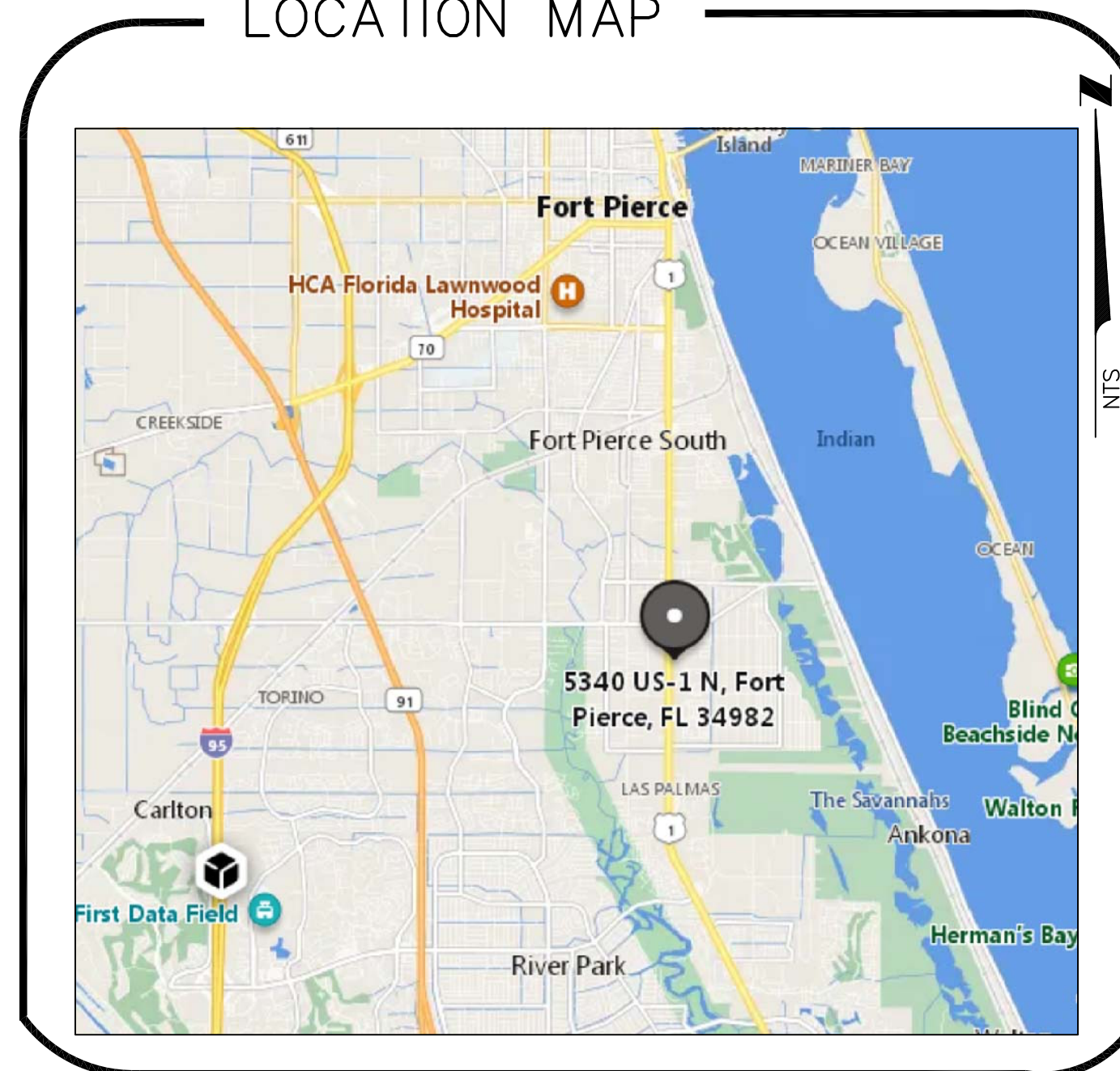
TWIN'S CARWASH -FT. PIERCE

SECTIONS 03, TOWNSHIP 36 S., RANGE 40 E. CITY OF FT. PIERCE, FLORIDA

LEGAL DESCRIPTION

THE SOUTH 175 FEET OF THE NORTH 357 FEET OF THE SOUTHWEST $\frac{1}{4}$ OF THE SOUTHWEST $\frac{1}{4}$ OF THE SOUTHEAST $\frac{1}{4}$ OF SECTION 3, TOWNSHIP 36 SOUTH, RANGE 40 EAST, LESS AND EXCEPT THE EAST 30 FEET THEREOF AND THE RIGHT OF WAY FOR HIGHWAY U.S. NO.1, ST. LUCIE COUNTY, FLORIDA

LOCATION MAP



INDEX OF SHEETS

SHEET NO.	DESCRIPTION:
C-1	COVER SHEET
C-2	BEST MANAGEMENT PRACTICES FOR EROSION CONTROL
C-3	EXISTING CONDITIONS
C-4	SITE GEOMETRY PLAN
C-5	PAVING, GRADING, DRAINAGE AND CONSTRUCTION SURFACE WATER MANAGEMENT PLAN
C-6	UTILITY PLAN
C-7	AIR/VAC/CHASE PIPE PLAN
C-8	LANDSCAPE PLAN
C-9 TO C-13	SITE DETAILS
C-14	LIFT STATION DETAILS

DEVELOPMENT INFORMATION

DEVELOPER - TWINS CAR WASH LLC
500 SE 18th Court
FORT LAUDERDALE, FL 33316
PHONE: 813-649-9581 E-MAIL: rcrito@creativeconvenience.com

ENGINEER - RAVI ALUR, PE
ASPIRE ENGINEERING INC.
1023 PROFESSIONAL PARK DRIVE
BRANDON, FL 33511
PHONE: 813-571-2850
E-MAIL: aspireeng@yahoo.com

SURVEYOR - ALEX THOMPSON, P.L.S.
EXTREME SURVEYING OF FLORIDA, INC.
29340 WHODIN ROAD
WESLEY CHAPEL, FL 33545
PHONE: 813-973-2092
E-MAIL: alex@extreme-surveying.com

UTILITY PROVIDERS

SANITARY SEWER WATER AND ELECTRIC SERVICE - FT. PIERCE UTILITY AUTHORITY
1701 S 37TH STREET
FORT PIERCE, FL 34984
PHONE: 772-466-1600
FAX: 772-468-2414

FIRE SERVICE - ST LUCIE COUNTY FIRE DISTRICT
5160 NW Milner Drive
Port St. Lucie, FL 34983
Phone: 772-621-3400
E-Mail: info@slcfd.org

TELEPHONE SERVICE - Charter Spectrum
2251 Town Center Ave Suite 117,
Melbourne, FL 32940
PHONE: 1-888-508-9082

SITE DATA TABLE

PARCEL ID: 3403-433-0008-000-2

LATITUDE: 27 22' 5"; LONGITUDE: 80 19' 31"

FLOOD_ZONE: ZONE X
COMMUNITY PANEL NO. 12111C0277K
MAP REVISED: 02/19/2020

PROJECT SUMMARY & SITE DATA:	PROPOSED
TOTAL BUILDING AREA	= 4,930 SF (5.0%)
TOTAL ASPHALT/CONCRETE AREA	= 48,270 SF (49.3%)
TOTAL IMPERVIOUS AREA	= 53,200 SF (54.3%)
TOTAL GREEN AREA	= 44,823 SF (45.7%)
TOTAL SITE AREA	= 98,023 SF (2.25 ACRES)

FARL: 4,930/98,023 = 0.05

ZONING: C-3 FUTURE LAND USE: GC PROPOSED USE: AUTOMATED CARWASH WITH VACUUMS

SETBACK:	REQUIRED	PROPOSED
FRONT (S US HWY 1)	25.0 FT	91.2 FT
SIDE (NORTH)	15.0 FT	16.5 FT
SIDE (SOUTH)	0 FT	122.9 FT
REAR (EAST)	0 FT	320.7 FT

MAXIMUM BUILDING HEIGHTS PROPOSED: 30 FEET (1-STORY)

PARKING CALCULATIONS:
PARKING REQUIRED = 2 PER BAY = 2 SPACES
PARKING PROVIDED = 4 SPACES (INCLUDING 1 H/C SPACE)

DUMPSTERS NOTES: 1. DUMPSTER WILL BE IN ACCORDANCE WITH CITY OF FT. PIERCE LDC.
2. ALL DUMPSTERS WILL BE SCREENED FROM VIEW BY AN ENCLOSURE CONSTRUCTED OF MATERIALS COMPATIBLE WITH THE FRONT OF THE PRIMARY BUILDING.

DEVELOPER

TWINS CAR WASH, LLC
500 SE 18th Court
FORT LAUDERDALE, FL 33316

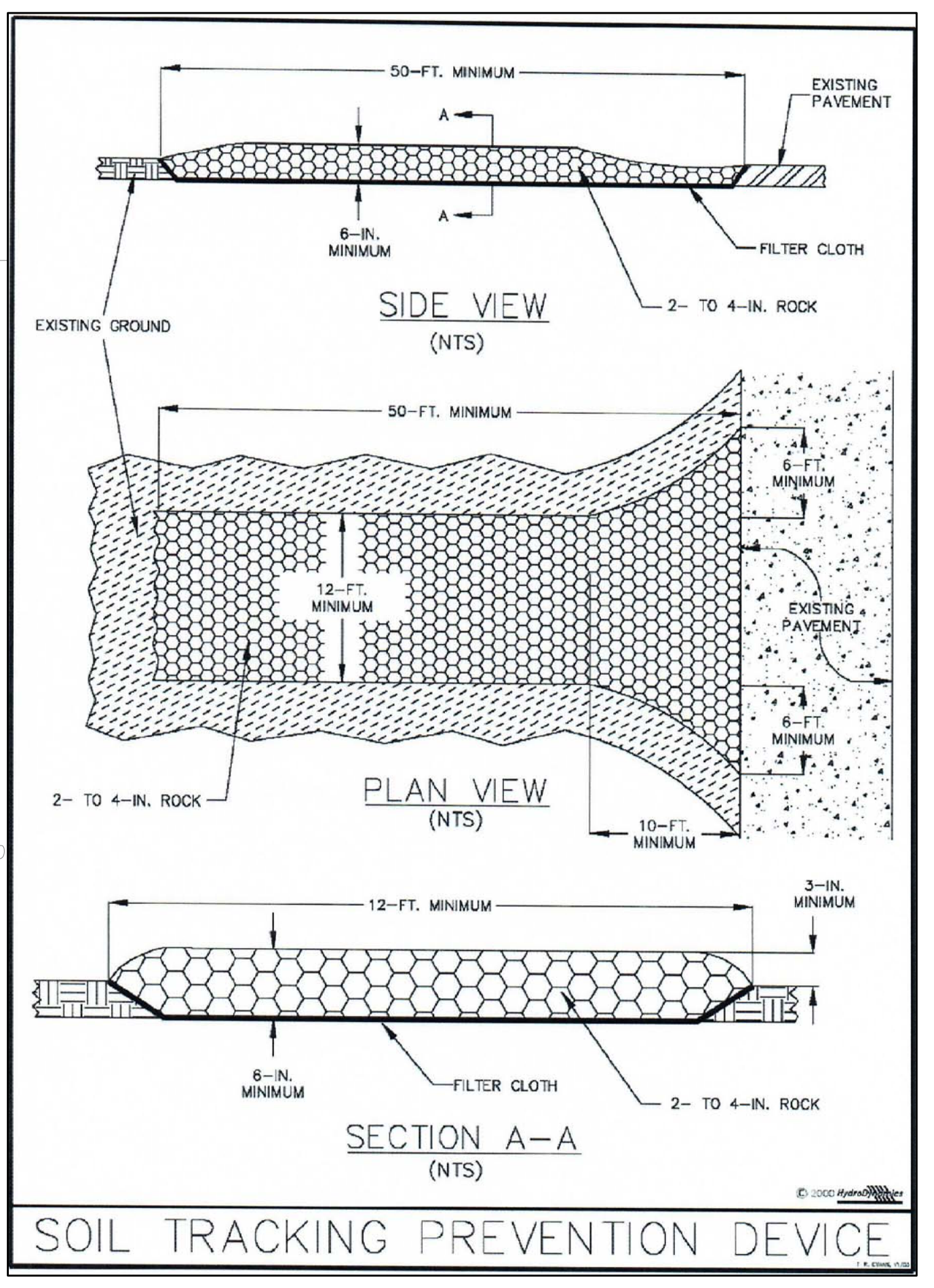
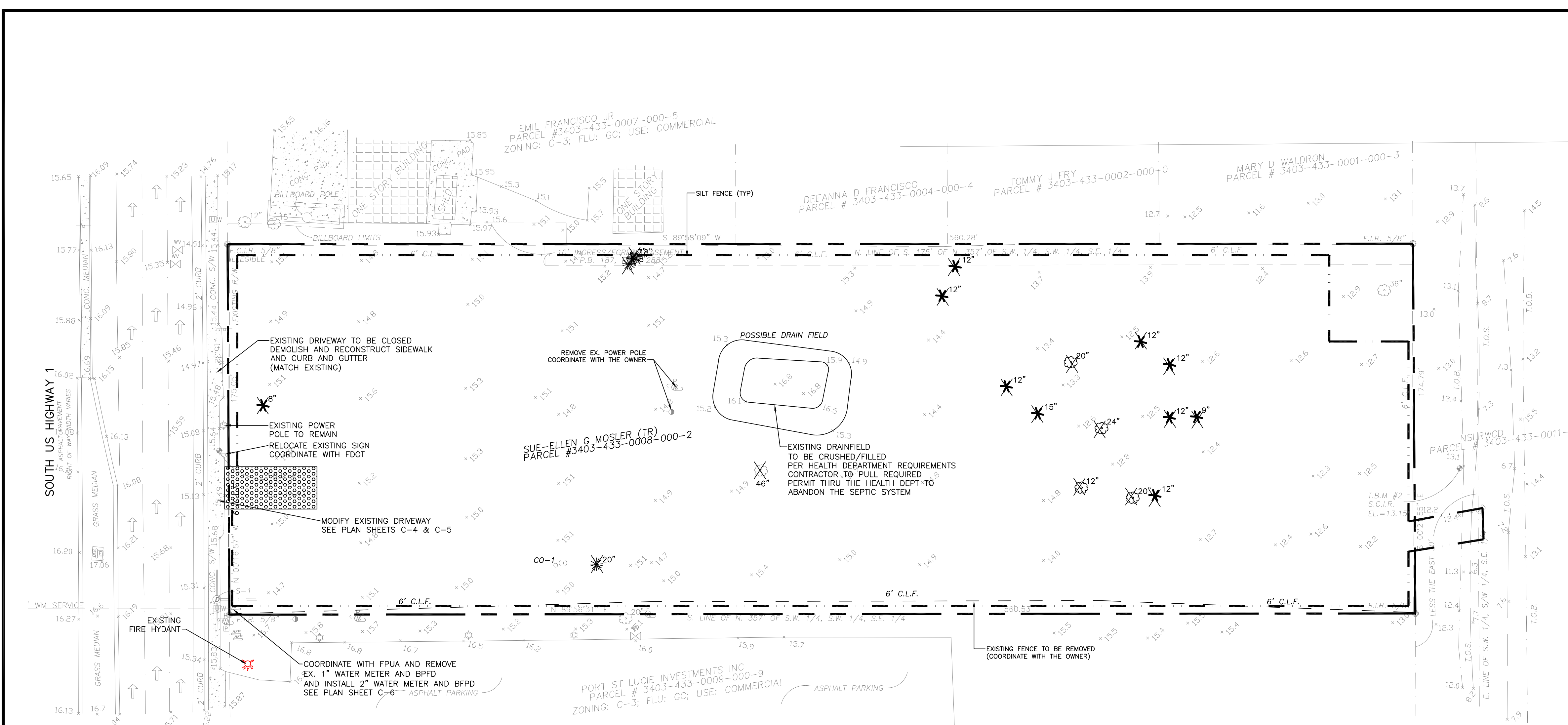
NOTE

DIMENSION INFORMATION SHOULD NOT BE OBTAINED BY SCALING THE PLANS. DIMENSION INFORMATION NOT PROVIDED HEREIN CAN BE OBTAINED BY CONTACTING ASPIRE ENGINEERING, INC. AT (813)571-2850

"INVESTIGATE BEFORE YOU EXCAVATE"



CALL SUNSHINE @ 1-800-432-4770
FL. STATUTE 553.851 (1979) REQUIRES A MIN. OF 2 DAYS AND MAX. OF 5 DAYS NOTICE BEFORE YOU EXCAVATE.



LEGEND (SEE APPLICABLE)

- PROPOSED PARKING SPACE COUNT
- EXISTING ELEVATION
- PROPOSED DRAIN
- PROPOSED SURFACE DRAINAGE FLOW ARROW
- PROPOSED HIGH POINT IN PAVEMENT
- EXISTING
- SILT SCREENING (EROSION CONTROL)
- EX. TREE
- PROPOSED STABILIZED CONSTRUCTION ENTRANCE SEE SHEET C-3 FOR DETAILS
- SOIL BORING LOCATION
- TOP OF WALK
- REMOVE EXISTING TREE
- FLOOD ZONE LINE

EX. STORM TABLE

S-1 (STORM MANHOLE)
TOP ELEV = 15.82'
36" S. RCP INV. EL. = 9.10'
36" N. RCP INV. EL. = 9.10'
12" E. RCP INV. EL. = 9.15'

EX. SANITARY TABLE

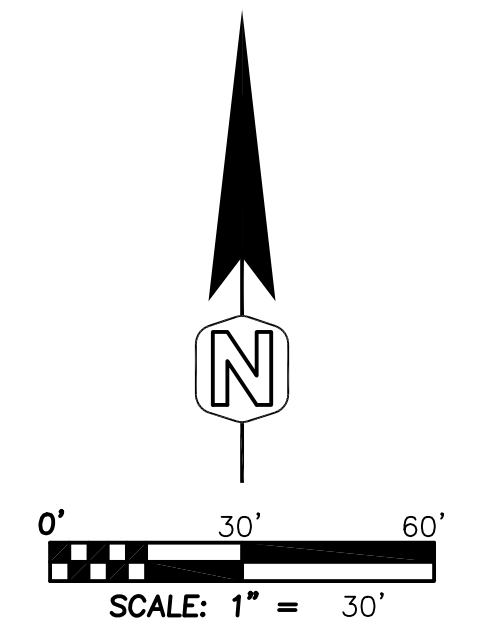
CO-1 (SANITARY CLEANOUT)
TOP ELEV = 15.34'
8" INV. ELEV. = 12.35'

EX. TREE LEGEND

12" OAK TREE AND SIZE
6" MISCELLANEOUS TREE AND SIZE
12" PALM TREE AND SIZE
PINE TREE AND SIZE

EX. LEGEND & ABBREVIATIONS

(C) CALCULATED MEASUREMENT	UGS UNDERGROUND SANITARY	UC UNDERGROUND CABLE MARKER
(R/W) RIGHT OF WAY MEASUREMENT	TM TELEPHONE MANHOLE	SM SANITARY MANHOLE
CONC. CONCRETE	UP UNDERGROUND PHONE	WM WATER METER
EP EDGE OF PAVEMENT	MES MITERED END SECTION	WV WATER VALVE
MULT. MULTIPLE	STMH STORM MANHOLE	F.C.I.R. FOUND CAPPED IRON ROD
CI CURB INLET	UGFM UNDERGROUND FORCE MAIN	F.N./D. FOUND NAIL & DISK
GI GRATE INLET	UGE UNDERGROUND ELECTRIC	F.C.M. FOUND CONCRETE MONUMENT
SMH SANITARY MANHOLE	UGW UNDERGROUND WATER	(P) PLAT MEASUREMENT
STMH STORM MANHOLE	OHW OVERHEAD WIRES	(F) FIELD MEASUREMENT
FLAG POLE	UGG UNDERGROUND GAS	N.C.F. NO CORNER FOUND
G GREASE TRAP MANHOLE	T.O.S. TOE OF SLOPE	P.O.B. POINT OF BEGINNING
HYDRANT	WDF WOOD FENCE	P.O.C. POINT OF COMMENCEMENT
PV PREVENTER VALVES	PVCY PLASTIC PRIVACY FENCE	P.U.E. PUBLIC UTILITY EASEMENT
METAL LIGHTPOLE	UG UNDERGROUND	D.E. DRAINAGE EASEMENT
P.B. PLAT BOOK	E.O.W. EDGE OF WATER	M MAILBOX
CONCRETE LIGHT POLE	LB LICENSED BUSINESS	UG UNDERGROUND GAS MARKER
WOOD LIGHT POLE	OHW OVERHEAD WIRE	EB ELECTRIC BOX
WOOD POWER POLE	SV SEWER VALVE	TB TRAFFIC BOX
CONC POWER POLE	WV WATER VALVE	UP UNDERGROUND PHONE MARKER
RAILROAD X-ING GATE	MONITOR WELL	RL RAILROAD LIGHT
WELL	SS SIGNAL SUPPORT POLE	TR TRANSFORMER PAD
GUY WIRE	ICV IRRIGATION CONTROL VALVE	TYP. TYPICAL
SIGN	RWV IRRIGATION VALVE (RECLAIM)	T.O.B. TOP OF BANK
PHONE BOX	FD FIRE DEPARTMENT CONNECTION	CW CROSS WALK SIGNAL
CABLE BOX	UE UNDERGROUND ELECTRIC	CO CLEANOUT
	UW UNDERGROUND WATER MARKER	SMH STORM MANHOLE
	E ELECTRIC MANHOLE	X GAS VALVE



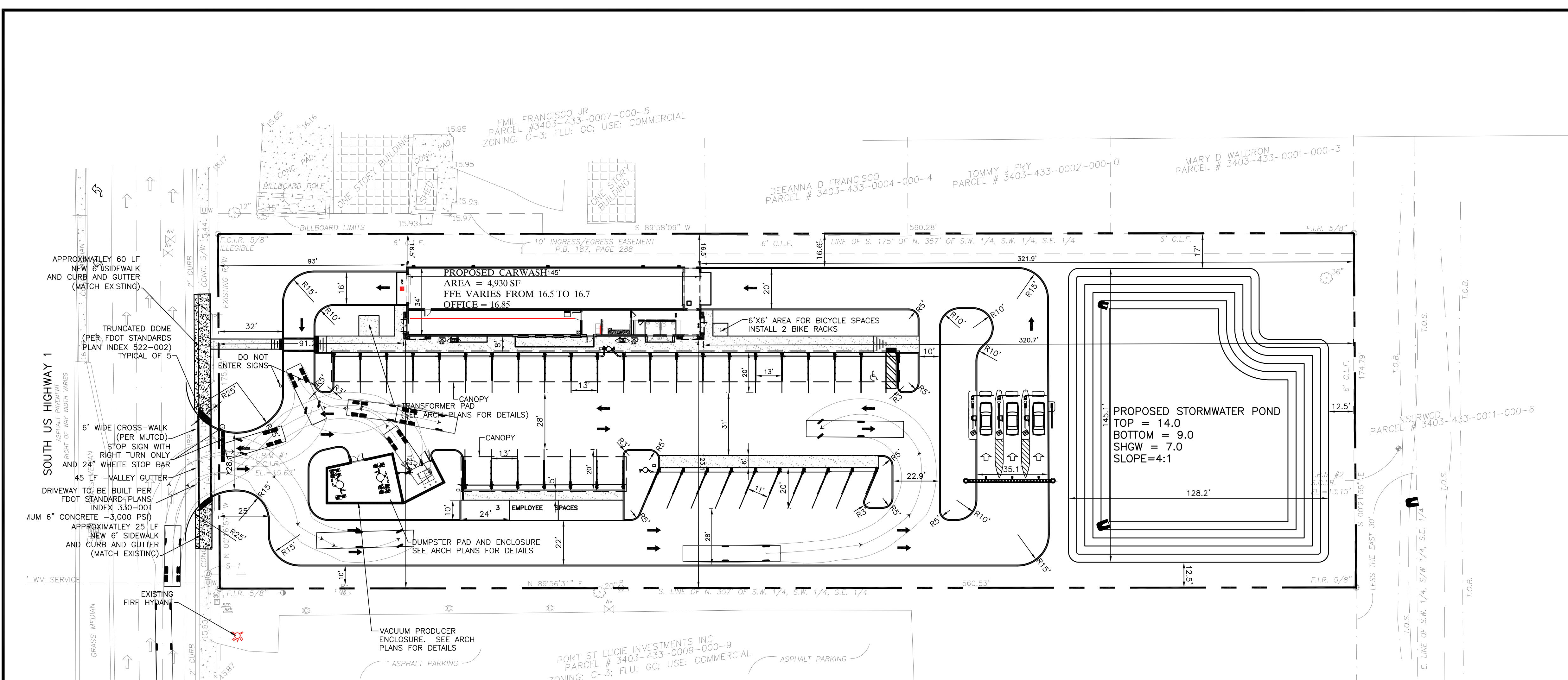
ASPIRE ENGINEERING, INC.
CONSULTING ENGINEERS & PLANNERS
1025 PROFESSIONAL PARK DR., BRANDON, FL 33511
TEL: (813)571-2850, FAX: (813)571-1753; E-mail: aspireeng@ahoo.com

TWIN'S CARWASH
-FT. PIERCE
SECTION 03, TOWNSHIP 36 S., RANGE 43 E.
CITY OF FT. PIERCE, FLORIDA

DATE: 08/25/2022
DESIGNED BY: RA
DRAWN BY: RA
CHECKED BY: RA
FILE NAME: 22017SITE
PROJECT #: 22-017
SHEET: C-3

NO. REVISIONS
1. SUBMIT TO CORP. FOOT. SPAMD. NSLRWCD & EPLJA 9/6/22

DATE: _____
RAV S.V. ALUR P.E. #05853
DATE: _____



- SITE PLAN NOTES:**
- All utility construction shall comply with the FPUA Standards for Design and Construction of Water and Wastewater Facilities Specifications, latest edition.
 - All on-site water and sewer facilities shall be owned and maintained by the owner-developer.
 - Installation of fuel storage tanks requires review and approval by the Fire Marshal and the issuance of a separate building permit. Approval of the site plan does not constitute approval of the location of the fuel tanks.
 - All proposed signs must be applied for, approved, and permitted on an individual basis apart from any ultimately approved site plan. Approval of this site plan does not constitute approval of any signage.
 - Handicap parking spaces will be properly signed and striped in accordance with Florida Statute 316, the Manual on Uniform Traffic Control Devices, or other applicable standards.
 - The architect/engineer certifies that the site has been designed in accordance with the Americans with Disabilities Act.
 - All on-site parking spaces will be striped and signed in accordance with the Manual on Uniform Traffic Control Devices, latest edition. Parking spaces, directional arrows, and stop bars shall be striped in WHITE. It shall be the owner/developer's responsibility to properly sign and stripe in accordance with applicable standards.
 - The owner/developer acknowledges that this approval does not include any work in the County right-of-way. All right-of-way work shall be a function of an approved FDOT Right-of-way Use Permit.
 - All clear-site areas shall be kept free of any signage plantings, trees, etc. in excess of three-and-a-half (3-1/2) feet in height.
 - No irrigation system or landscaping shall be installed in any County or State right-of-way without issuance of appropriate Right-of-Way Use Permit.
 - The owner/developer acknowledges that the site and its subsequent building permits shall comply with all rezoning/MPUD/PUD and Conditional use Permit conditions.
 - All structures, including buffer walls, retaining walls, signage, etc. require building permits.
 - All ramps outside the building foot print shall require construction of "CAST IN PLACE" Detectable warnings.

- CONSTRUCTION NOTES:**
- If during construction activities any evidence of historic resources, including but not limited to aboriginal or historic pottery, prehistoric stone tools, bone or shell tools, historic trash pits, or historic building foundation, are discovered, work shall come to an immediate stop and the Florida Department of Historic Resources (State Historic Preservation Officer) and City of FT. PIERCE shall be notified within two working days of the resources found on the site.
 - If during construction activities any evidence of the presence of State and Federally protected plant and/or animal species is discovered, work shall come to an immediate stop and City of FT. PIERCE shall be notified within two working days of the plant and/or animal species found on the site.

- CONSTRUCTION NOTES:**
- SHOULD ANY NOTICEABLE SOIL SLUMPING OR SINKHOLE FORMATION BECOME EVIDENT DURING CONSTRUCTION ACT VIT ES, STOP ALL WORK (EXCEPT FOR MITIGATION ACTIVITIES) IN THE AFFECTED AREA AND REMAIN STOPPED UNTIL THE COUNTY AND SFWM APPROVE RESUMING CONSTRUCTION ACTIVITIES.
- IF THE SLUMPING OR SINKHOLE FORMATION BECOMES EVIDENT BEFORE OR DURING CONSTRUCTION ACT VIT ES, STOP ALL WORK (EXCEPT FOR MITIGATION ACTIVITIES) IN THE AFFECTED AREA AND REMAIN STOPPED UNTIL THE COUNTY AND SFWM APPROVE RESUMING CONSTRUCTION ACTIVITIES.
 - TAKE IMMEDIATE MEASURES TO ENSURE NO SURFACE WATER DRAINS INTO THE AFFECTED AREAS.
 - VISUALLY INSPECT THE AFFECTED AREA.
 - EXCAVATE AND BACKFILL OR GROUT AS REQUIRED FILLING THE AFFECTED AREA AND PREVENTING FURTHER SUBS DENCE.
 - USE SOIL REINFORCEMENT MATER A S IN THE BACKFILLING OPERATION WHEN APPROPRIATE.
 - IF THE AFFECTED AREA IS IN THE VICINITY OF A WATER-RETENTION AREA, MAINTAIN A MINIMUM DISTANCE OF TWO FEET FROM THE BOTTOM OF THE RETENTION POND TO THE SURFACE OF THE IME-ROCK OR KARST CONNECTION.
 - IF THE AFFECTED AREA IS IN THE VICINITY OF A WATER-RETENTION AREA AND THE ABOVE METHODS DO NOT STAB IZE THE COLLAPSE, RELOCATE THE RETENT ON AREA.
 - DISCHARGE OF STORM-WATER INTO DEPRESSIONS WITH DIRECT OR DEMONSTRATED HYDROLOGIC CONNECTION TO THE FLORIDAN AQUIFER SHALL BE PROH BITED.

- TRAFFIC CONTROL AND MARKINGS NOTES:**
- ALL TRAFFIC CONTROL AND MARKINGS SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND FLORIDA DEPARTMENT OF TRANSPORTATION STANDARDS.

- LIGHTING NOTES:**
- ANY LIGHTING USED TO ILLUMINATE ANY PARKING AREA SHALL BE SO ARRANGED AS TO DIRECT AND/OR SHIELD LIGHT AWAY FROM ADJOINING RESIDENTIAL PREMISES AND RIGHT-OF-WAY.

LEGEND (SEE APPLICABLE)

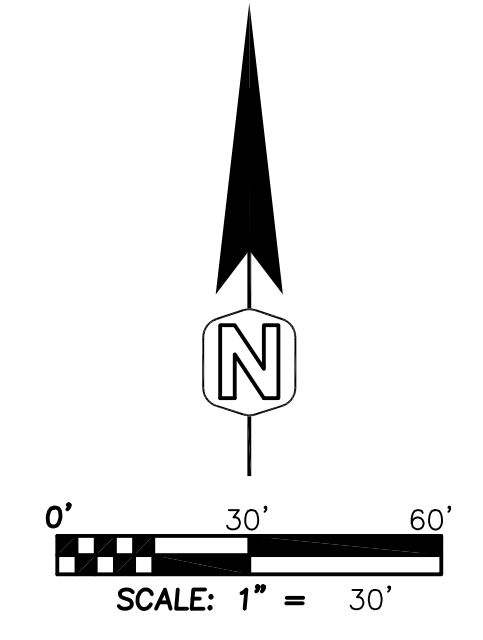
PROPOSED PARKING SPACE COUNT	EX. STORM TABLE
EXISTING ELEVATION	5-1 (STORM MANHOLE)
PROPOSED DRIVE	TOP ELEV = 15.82'
PROPOSED SURFACE DRAINAGE FLOW ARROW	36" S. RCP INV. EL = 9.10'
PROPOSED HIGH POINT IN PAVEMENT	36" N. RCP INV. EL = 9.10'
SLT SCREENING (EROSION CONTROL)	12" E. RCP INV. EL = 9.15'
EX. TREE	EX. SANITARY TABLE
PROPOSED STABILIZED CONSTRUCTION ENTRANCE	00-1 (SANITARY CLEANDOUT)
SOIL BORING LOCATION	TOP ELEV = 15.34'
TOP OF WALK	8" INV. ELEV. = 12.35'
REMOVE EXISTING TREE	EX. TREE LEGEND
FLOOD ZONE LINE	OAK TREE AND SIZE
	MISCELLANEOUS TREE AND SIZE
	PALM TREE AND SIZE
	PINE TREE AND SIZE

EX. LEGEND & ABBREVIATIONS

(C) CALCULATED MEASUREMENT	UGS UNDERGROUND SANITARY	UC UNDERGROUND CABLE MARKER
(R/W) RIGHT OF WAY MEASUREMENT	UP TELEPHONE MANHOLE	SM SANITARY MANHOLE
CONC. CONCRETE	UWP UNDERGROUND PHONE	WM WATER METER
EP EDGE OF PAVEMENT	MES MITERED END SECTION	WV WATER VALVE
MULT. MULTIPLE	STMH STORM MANHOLE	F.C.I.R. FOUND CAPPED IRON ROD
CI CURB INLET	UGFM UNDERGROUND FORCE MAIN	F.N./D. FOUND NAIL & DISK
SI GRATE INLET	UGE UNDERGROUND ELECTRIC	F.C.M. FOUND CONCRETE MONUMENT
SMH SANITARY MANHOLE	UGW UNDERGROUND WATER	(P) PLAT MEASUREMENT
STMH STORM MANHOLE	OHW OVERHEAD WIRES	(F) FIELD MEASUREMENT
FLAG POLE	UGG UNDERGROUND GAS	N.C.F. NO CORNER FOUND
GREASE TRAP MANHOLE	T.O.S. TOE OF SLOPE	P.B.B. POINT OF BEGINNING
HYDRANT	WDF WOOD FENCE	P.O.C. POINT OF COMMENCEMENT
PREVENTER VALVES	PVCY PLASTIC PRIVACY FENCE	P.U.E. PUBLIC UTILITY EASEMENT
METAL LIGHTPOLE	UG UNDERGROUND	D.E. DRAINAGE EASEMENT
P.B. PLAT BOOK	E.O.W. EDGE OF WATER	MAILBOX
CONCRETE LIGHT POLE	LB LICENSED BUSINESS	SV SEWER VALVE
WOOD LIGHT POLE	OHW OVERHEAD WIRE	UG UNDERGROUND GAS MARKER
WOOD POWER POLE	P.B. PLAT BOOK	EB ELECTRIC BOX
CONC POWER POLE	CONCRETE LIGHT POLE	TRB TRAFFIC BOX
RAILROAD X-ING GATE	WOOD LIGHT POLE	UP UNDERGROUND PHONE MARKER
WELL	WOOD POWER POLE	RL RAILROAD LIGHT
GUY WIRE	CONC POWER POLE	TRP TRANSFORMER PAD
SIGN	RAILROAD X-ING GATE	TYP. TYPICAL
PHONE BOX	WELL	T.O.B. TOP OF BANK
CABLE BOX	GUY WIRE	CS CROSS WALK SIGNAL
	SIGN	CO CLEANOUT
	PHONE BOX	UM UNDERGROUND WATER MARKER
	CABLE BOX	DM DUMPSTER
		SM STORM MANHOLE
		GV GAS VALVE

BICYCLE RACK REQUIREMENTS:

(a) All standard bicycle racks shall comply with the following performance standards: (1) Bicycle racks shall be an inverted "U"/hoop rack, post and ring rack, or similar device that accommodates two (2) bicycle parking spaces per rack and enables users to lock the frame and both wheels. (2) Bicycle racks shall have a minimum tube diameter of 1.9 inches and be powder coated, galvanized, or coated with another weather-proof surface as may be approved by the zoning manager. (3) Bicycle racks shall be a maximum height of three (3) feet, a minimum of three (3) feet on center between horizontal rows, and a minimum of three (3) feet from any parallel building wall and four (4) feet from any perpendicular building wall. They shall be anchored to a common base or mounting surface of concrete or pavement large enough to support bicycles locked to the rack. If more than one (1) row of bicycle racks is installed to create the required bike parking area, the installation shall provide a minimum of five (5) feet in an aisle in each row, assuming additional spacing for parked bicycles.



NO.	REVISIONS	DATE:
	SUBMIT TO CORP. FDOT, SFWM, NSURWCD & FPLUA	9/16/22
ASPIRE ENGINEERING, INC. CONSULTING ENGINEERS & PLANNERS 1023 PROFESSIONAL PARK DR., BRANDON, FL 33511 TEL: (813)571-2850, FAX: (813)571-1753; E-mail: aspireeng@ahoo.com		
TWIN'S CARWASH -FT. PIERCE SECTION 03, TOWNSHIP 36 S., RANGE 43 E. CITY OF FT. PIERCE, FLORIDA		
SITE GEOMETRY PLAN		
DATE:	08/25/2022	
DESIGNED BY:	RA	
DRAWN BY:	RA	
CHECKED BY:	RA	
FILE NAME:	22017SITE	
PROJECT #:	22-017	
SHEET:	C-4	

RAVI ALUR, P.E.
 AUTHORIZED AGENT
 ASPIRE ENGINEERING, INC.
 1023 PROFESSIONAL PARK DR.
 BRANDON, FL 33511
 PHONE: 813-571-2850

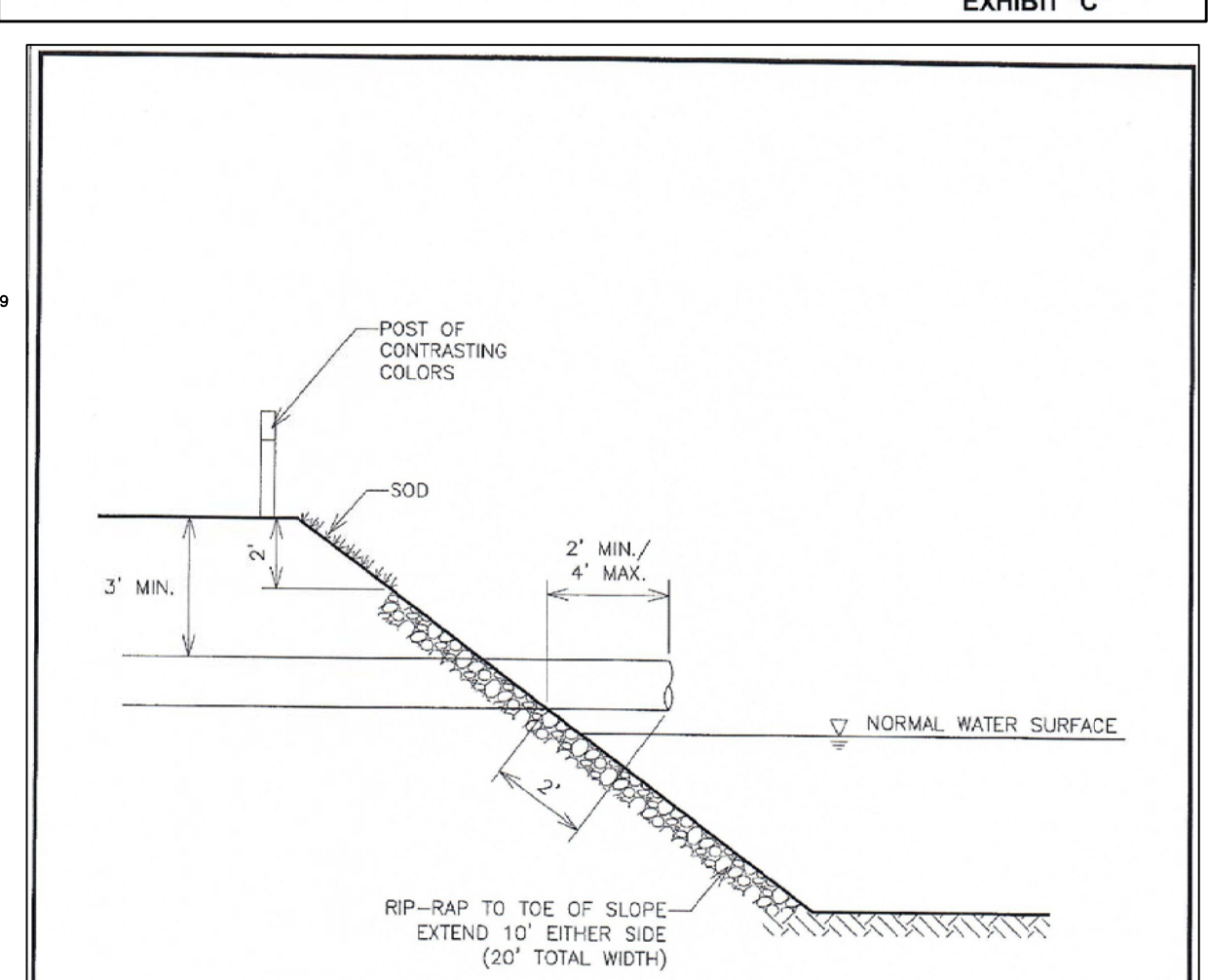
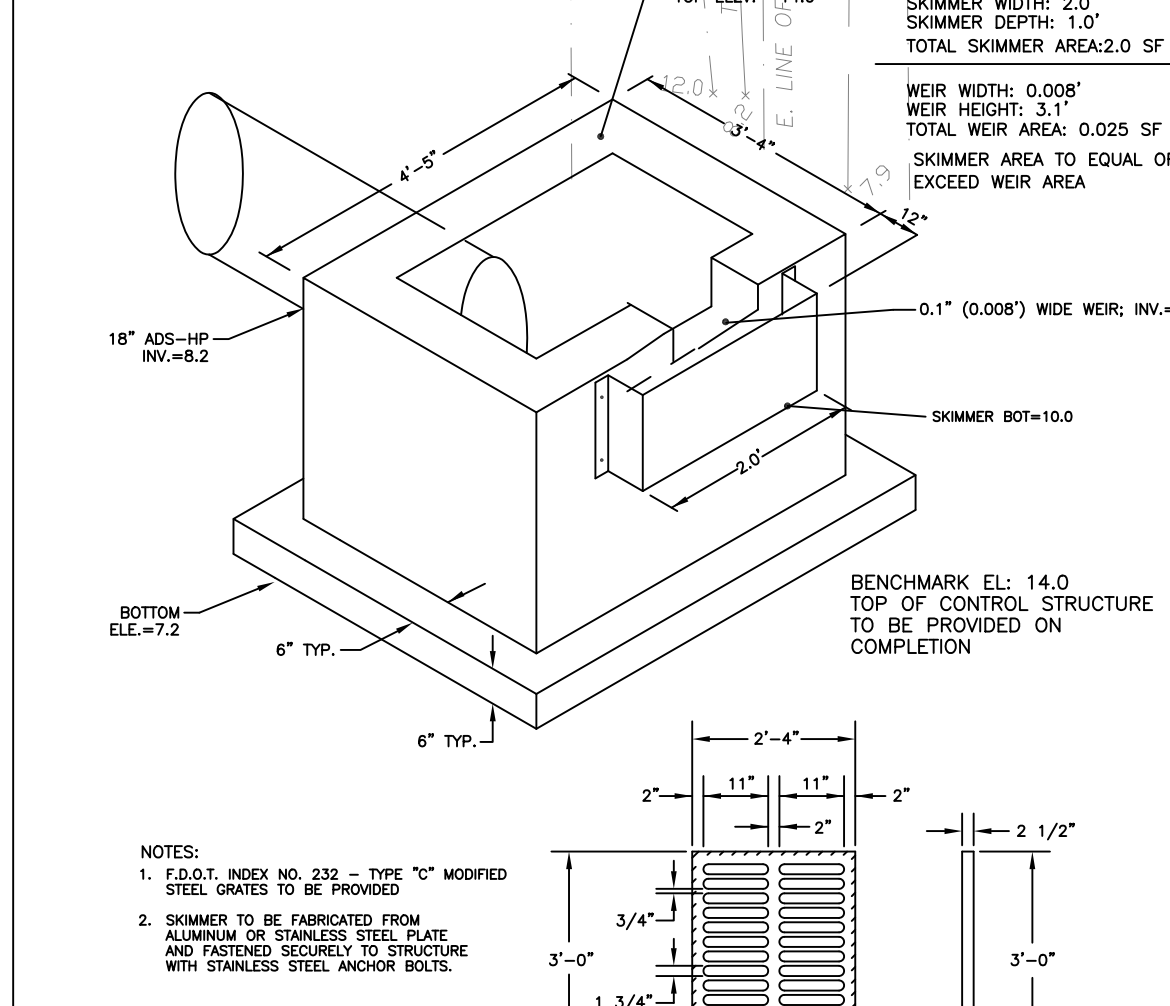
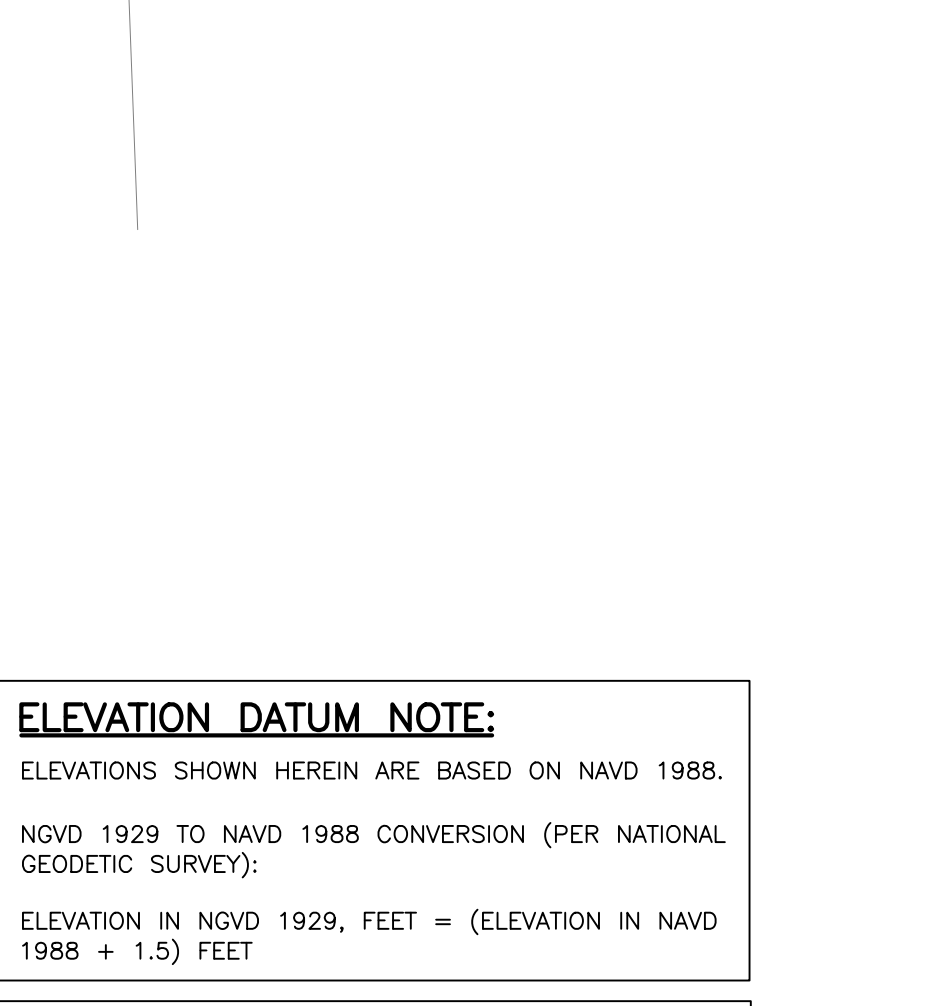
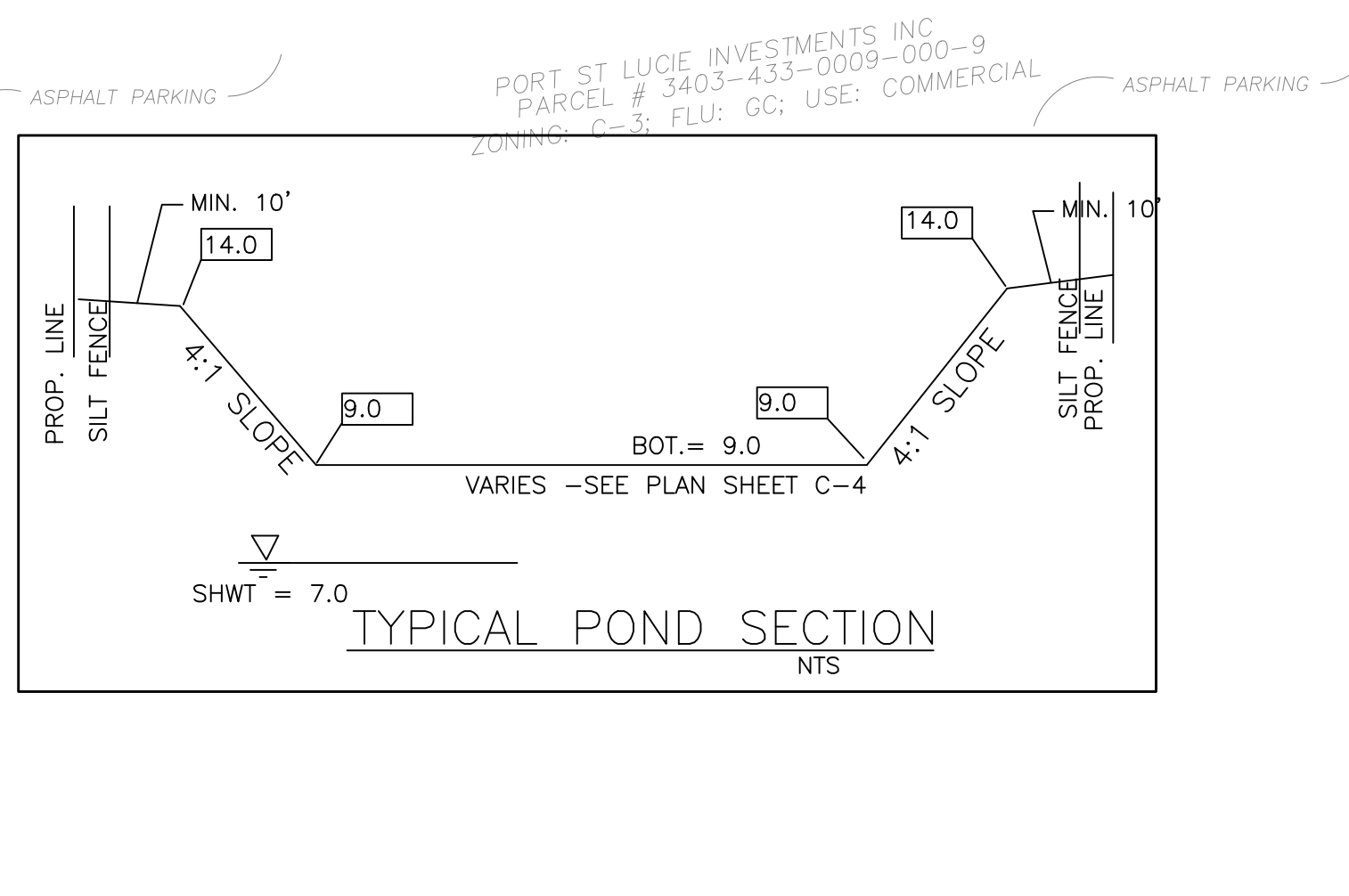
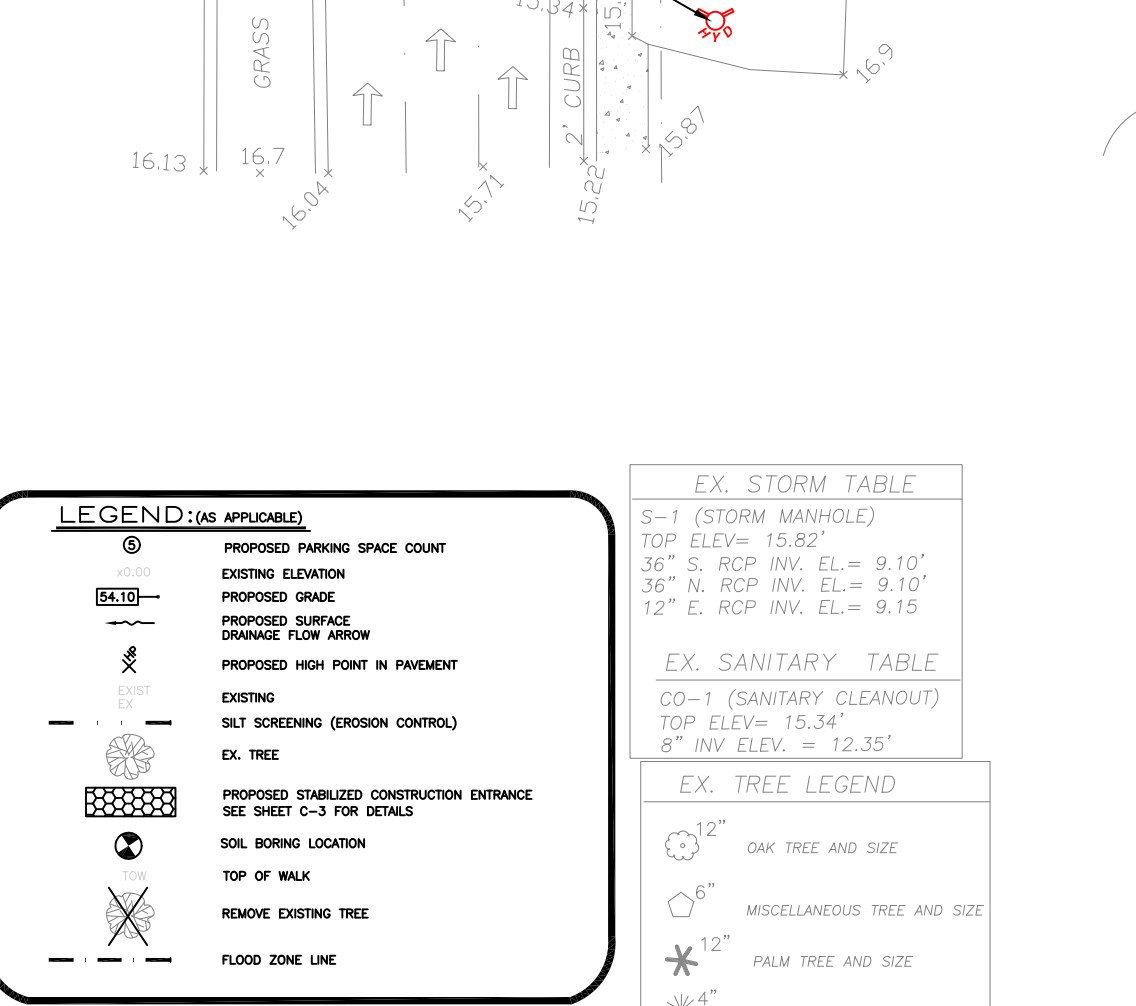
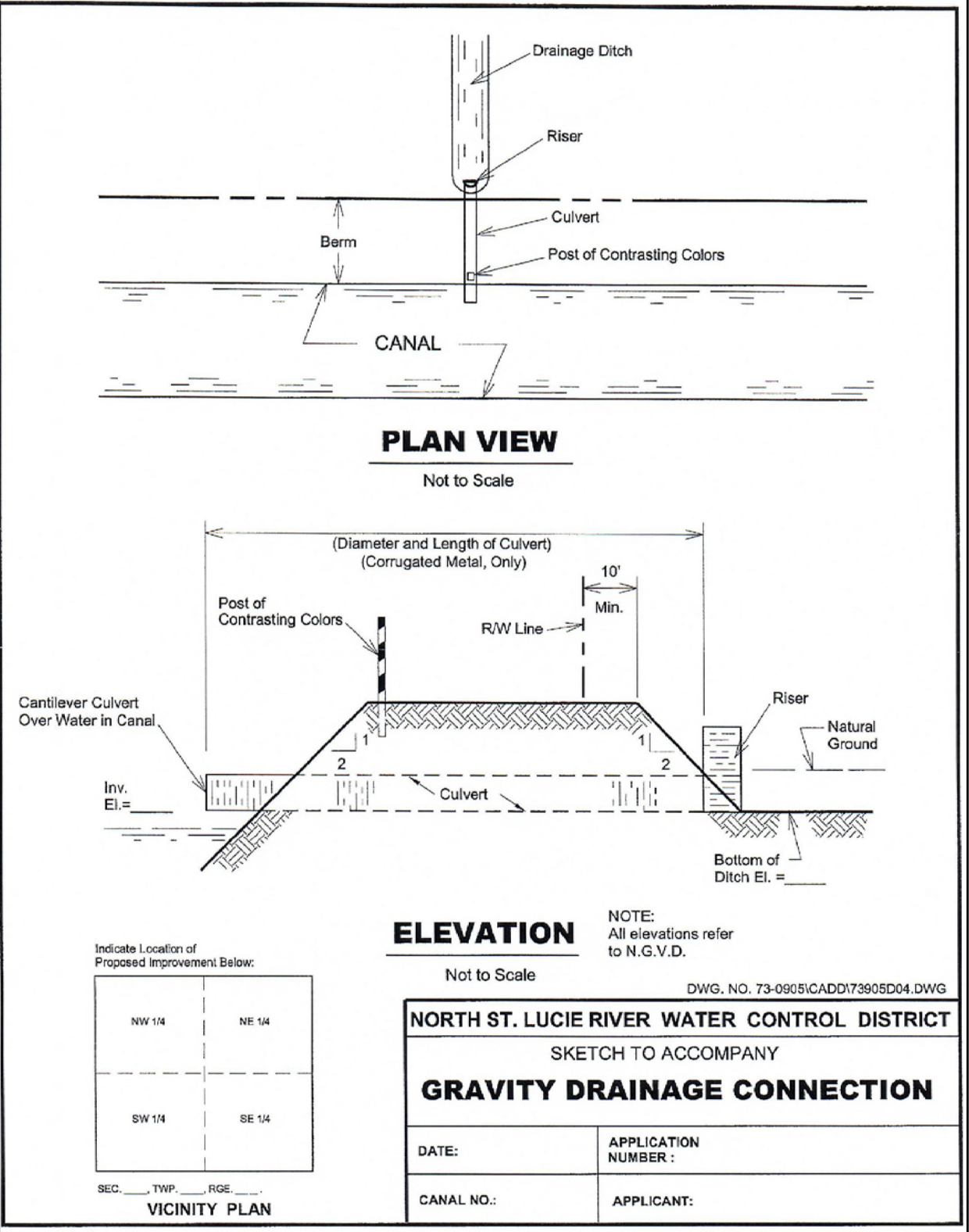
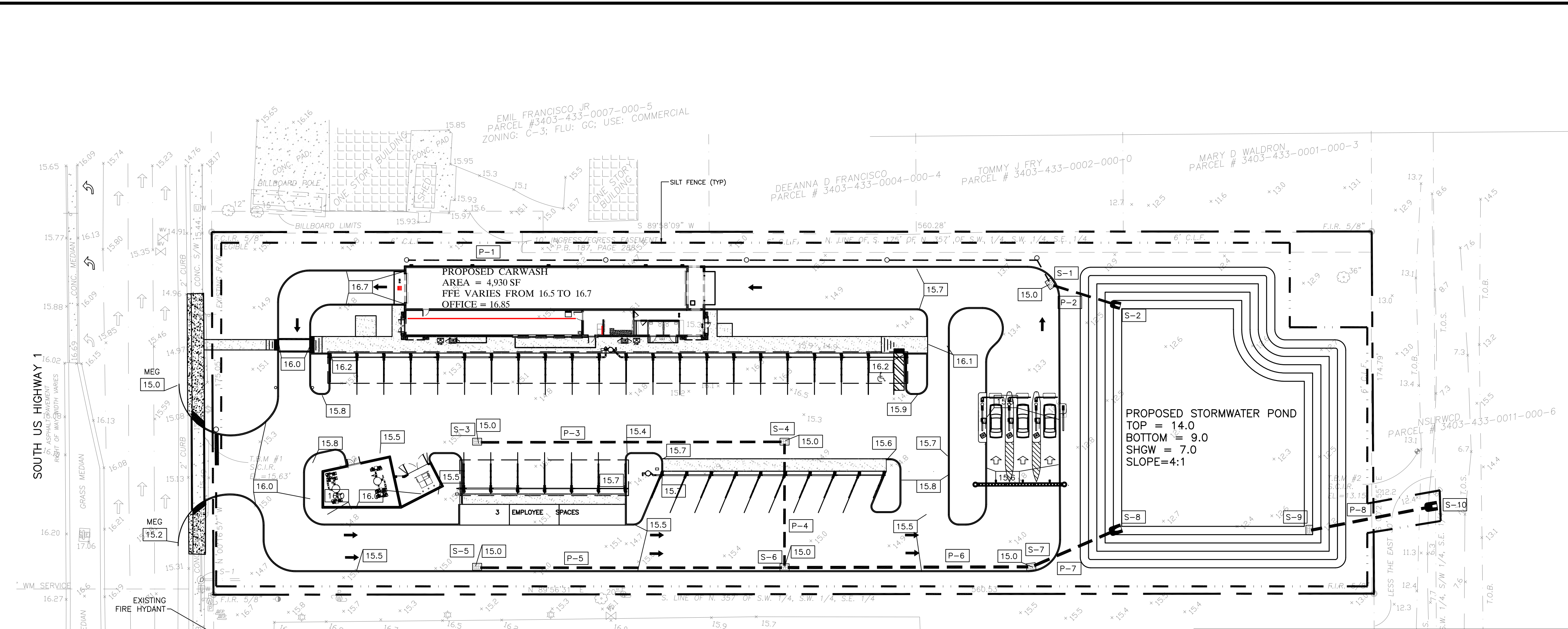
NO. REVISIONS
 DATE: 9/6/22
 SUBMIT TO CORP. FOOT. SFMWD, NSLRWCD & EPA

ASPIRE ENGINEERING, INC.
 CONSULTING ENGINEERS & PLANNERS
 1023 PROFESSIONAL PARK DR., BRANDON, FL 33511
 TEL: (813)571-2850, FAX: (813)571-1783, E-mail: aspireeng@ahoo.com

TWIN'S CARWASH
 -FT. PIERCE
 SECTION 03, TOWNSHIP 36 S., RANGE 43 E.
 CITY OF FT. PIERCE, FLORIDA

PAVING, GRADING,
 DRAINAGE AND
 CONSTRUCTION SURFACE
 WATER MANAGEMENT PLAN

DATE: 08/25/2022
 DESIGNED BY: RA
 DRAWN BY: RA
 CHECKED BY: RA
 FILE NAME: 22017SITE
 PROJECT #: 22-017
 SHEET: C-5



EX. LEGEND & ABBREVIATIONS

(C) CALCULATED MEASUREMENT	UGS UNDERGROUND SANITARY	UC UNDERGROUND CABLE MARKER
(R/W) RIGHT OF WAY MEASUREMENT	UT TELEPHONE MANHOLE	US UNDERGROUND PHONE MARKER
CONC. CONCRETE	UW UNDERGROUND WATER	UL UNDERGROUND LIGHT
EP EDGE OF PAVEMENT	MEP MITERED END SECTION	UTP UNDERGROUND TRANSFORMER PAD
MULT. MULTIPLE	STMH STORM MANHOLE	TYP. TYPICAL
CI CURB INLET	UGFM UNDERGROUND FORCE MAIN	T.O.B. TOP OF BANK
GI GRATE INLET	UGE UNDERGROUND ELECTRIC	CHX CROSS WALK SIGNAL
SMH SANITARY MANHOLE	UGW UNDERGROUND WATER	CO CLEANOUT
STMH STORM MANHOLE	OHW OVERHEAD WIRES	UM UNDERGROUND WATER MARKER
FLAG POLE	UGG UNDERGROUND GAS	E ELECTRIC MANHOLE
GREASE TRAP MANHOLE	T.O.S. TOE OF SLOPE	
HYDRANT	WOF WOOD FENCE	
PREVENTER VALVES	PVCY PLASTIC PRIVACY FENCE	
METAL LIGHTPOLE	UG UNDERGROUND	
P.B. PLAT BOOK	OHV OVERHEAD WIRES	
CONCRETE LIGHT POLE	SW SEWER WIRE	
WOOD LIGHT POLE	M MONITOR WELL	
WOOD POWER POLE	SS SIGNAL SUPPORT POLE	
CONC. POWER POLE	ICV IRRIGATION CONTROL VALVE	
RAILROAD X-ING GATE	RWV IRRIGATION VALVE(RECLAIM)	
WELL	FD FIRE DEPARTMENT CONNECTION	
GUY WIRE	UE UNDERGROUND ELECTRIC	
PHONE BOX	UM UNDERGROUND WATER MARKER	
CABLE BOX	E ELECTRIC MANHOLE	

EX. STORM TABLE
 S-1 (STORM MANHOLE)
 TOP ELEV= 15.82'
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EX. SANITARY TABLE
 CO-1 (SANITARY CLEANOUT)
 TOP ELEV= 15.34'
 8" INV. ELEV. = 12.35'

EX. TREE LEGEND
 OAK TREE AND SIZE
 MISCELLANEOUS TREE AND SIZE
 PALM TREE AND SIZE
 PINE TREE AND SIZE

MAINTENANCE & OPERATION INSTRUCTIONS:
 1. ALL ON-SITE PORTION OF THE STORMWATER SYSTEM SHALL BE MAINTAINED BY THE OWNER OF THE PROPERTY.
 2. WHERE VEGETATION, OR DEBRIS OR SEDIMENT HAS ACCUMULATED IN SUCH A MANNER AS TO INTERFERE WITH THE FREE FLOW OF WATER OR ADEQUATE FUNCTIONING OF DRAINAGE FACILITIES, THE OWNER SHALL REMOVE THE DEBRIS OR OBSTRUCTION SO AS TO ALLOW THE DRAINAGE SYSTEM TO FUNCTION AS PERMITTED.

EROSION & SEDIMENT CONTROL
 (1) EXCAVATION OF RETENTION AREAS AND FLOOD PLAN COMPENSATION AREAS PRIOR TO CONSTRUCTION TO BE REGRADED AFTER CONSTRUCTION.
 (2) RETENTION AREA AND FLOOD PLAN COMPENSATION AREA SIDE SLOPES SHALL BE SODDED. ALL OTHER EXCAVATIONS OR GRADING WORK SHALL BE GRASSED AS SOON AS POSSIBLE AFTER FINAL GRADING.
 (3) ALL POSSIBLE EFFORTS SHALL BE MADE TO CONTROL EROSION AND SEDIMENT TRANSPORT BOTH ON AND OFFSITE.
 (4) STAKED HAYBALES OF FILTER FABRIC SILT FENCE SHALL BE CONSTRUCTED (PER DETAIL) AT SPECIFIED LOCATIONS PRIOR TO EXCAVATING OR GRADING TO REMAIN UNTIL VEGETATION ESTABLISHES.
 (5) EXCAVATE THE RETENTION AREAS IN TWO (2) PHASES. PHASE ONE EXCAVATE TO 6" OF ITS FINAL DEPTH PRIOR TO CONSTRUCTION. PHASE TWO, EXCAVATE TO ITS FINAL DEPTH AFTER CONSTRUCTION.
 (6) PLACE HAYBALES OR FILTER FABRIC AROUND THE PERIMETER OF ALL NEW AND EXISTING INLETS, PIPES AND DRAINAGE STRUCTURES; TO REMAIN UNTIL VEGETATION ESTABLISHES.

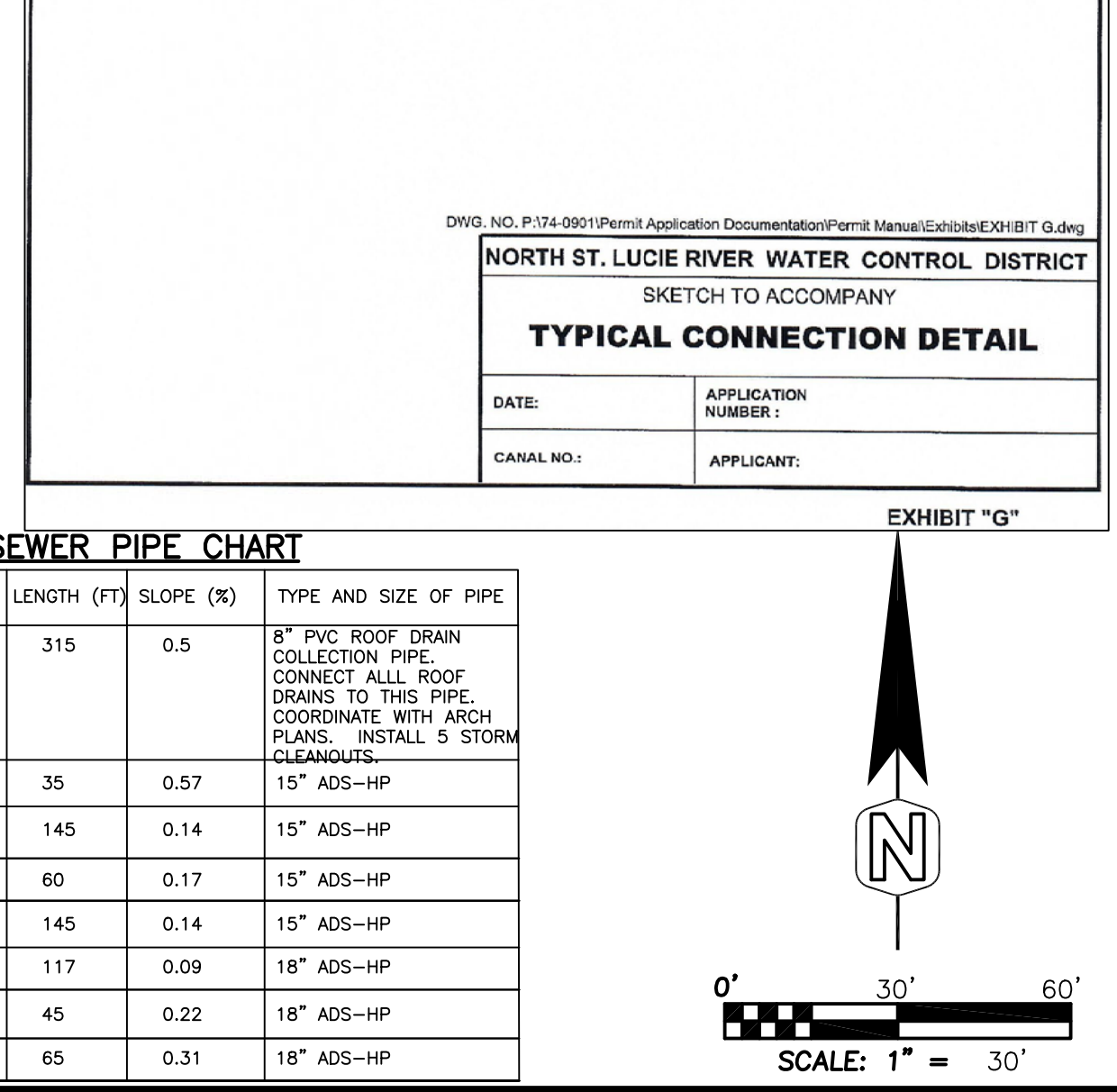
LAKE/POND EXCAVATION NOTE:
 NO EXCAVATION SHALL EXCEED BELOW THE PERMITTED DESIGN DEPTHS/ELEVATIONS SHOWN ON THE DRAWINGS, UNLESS ADDITIONAL TESTING SUPPORTS OTHERWISE; AND NO SEMI-CONFINING UNIT CLAYEY SOIL MATERIAL AND/OR NO LIMESTONE MATERIALS SHALL BE EXCAVATED, REGARDLESS IF THESE MATERIALS ARE ENCOUNTERED WITHIN THE PERMITTED EXCAVATION DEPTHS/ELEVATIONS. IF ANY LOWER SEMI-CONFINING UNIT CLAYEY SOIL MATERIALS OR LIMESTONE MATERIALS ARE ENCOUNTERED ABOVE THE PERMITTED DEPTHS/ELEVATIONS, THEN EXCAVATION OPERATIONS SHALL CEASE IN THE GENERAL AREA. EPC MUST BE CONTACTED PRIOR TO ANY EXCAVATION OF CLAYS, IN THE ABSENCE OF A CONFINING LAYER, 5 FEET OF UNDISTURBED SOIL MUST BE LEFT ABOVE THE LIMESTONE.

STORM SEWER STRUCTURE CHART

STRUCTURE #	TOP ELE.	INVERT ELE.	TYPE
S-1	15.0	9.2	TYPE D INLET W/ TRAFFIC BEARING GRATE (FDOT STANDARD PLANS INDEX 425-052)
S-2	15.0	9.0	MES PER FDOT INDEX 430-021 RIP RAP -D50 ROCK, 1 CY W/ FILTER FABRIC
S-3	15.0	9.5	TYPE D INLET W/ TRAFFIC BEARING GRATE (FDOT STANDARD PLANS INDEX 425-052)
S-4	15.0	9.3	TYPE D INLET W/ TRAFFIC BEARING GRATE (FDOT STANDARD PLANS INDEX 425-052)
S-5	15.0	9.4	TYPE D INLET W/ TRAFFIC BEARING GRATE (FDOT STANDARD PLANS INDEX 425-052)
S-6	15.0	9.2	TYPE D INLET W/ TRAFFIC BEARING GRATE (FDOT STANDARD PLANS INDEX 425-052)
S-7	15.0	9.1	TYPE D INLET W/ TRAFFIC BEARING GRATE (FDOT STANDARD PLANS INDEX 425-052)
S-8	15.0	9.0	MES PER FDOT INDEX 430-021 RIP RAP -D50 ROCK, 1 CY W/ FILTER FABRIC
S-9	15.0	9.0	TYPE D INLET W/ TRAFFIC BEARING GRATE (FDOT STANDARD PLANS INDEX 425-052)
S-10	15.0	8.0	MES PER FDOT INDEX 430-021 RIP RAP -D50 ROCK, 1 CY W/ FILTER FABRIC

STORM SEWER PIPE CHART

PIPE #	LENGTH (FT)	SLOPE (%)	TYPE AND SIZE OF PIPE
P-1	315	0.5	8" PVC ROOF DRAIN COLLECTION PIPE. CONNECT ALL ROOF DRAINS TO THIS PIPE. COORDINATE WITH ARCH PLANS. INSTALL S STORM CLEANOUTS.
P-2	35	0.57	15" ADS-HP
P-3	145	0.14	15" ADS-HP
P-4	60	0.17	15" ADS-HP
P-5	145	0.14	15" ADS-HP
P-6	117	0.09	18" ADS-HP
P-7	45	0.22	18" ADS-HP
P-8	65	0.31	18" ADS-HP

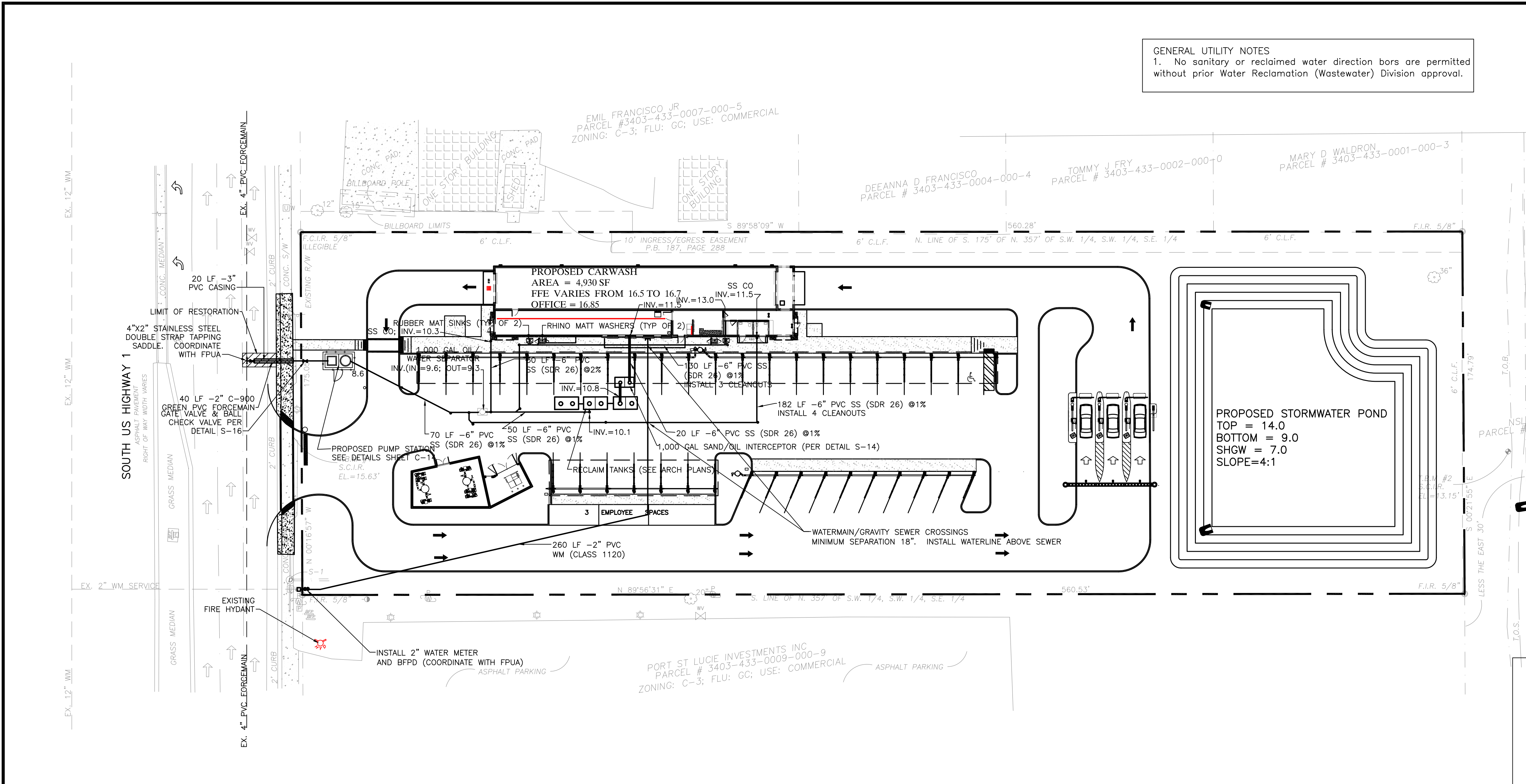


GENERAL UTILITY NOTES
 1. No sanitary or reclaimed water direction bors are permitted without prior Water Reclamation (Wastewater) Division approval.

WATER METER CALCULATIONS:

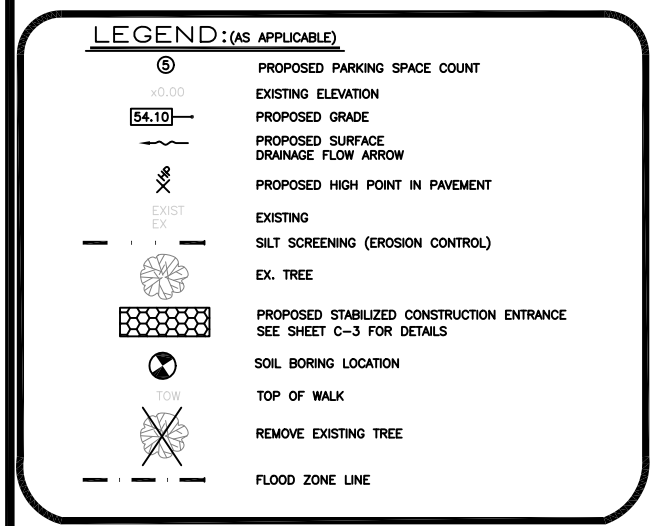
NO.	FIXTURE TYPE	FIXTURE VALUE/UNIT	FIXTURE VALUE
2	WATER CLOSET (TOILET)	3	6
2	SERVICE SINK	3	6
2	HOSE CONNECTION	6	12
1	CARWASH		100
TOTAL FIXTURE =			124 (54 GPM)
WATER METER PROPOSED =			2"

PROPOSED WATER AND SEWER FLOWS
 PROPOSED WATER USAGE FOR CARWASH AND REST ROOMS = 27.88 GALLONS/VEHICLE (WITH WATER RECOVERY) * 130 VEHICLES/DAY + (2 REST ROOMS*250 GPD/REST ROOM) = 4,124.4 GPD
 PROPOSED WASTEWATER FLOW FROM CARWASH AND REST ROOMS = 21.88 GALLONS/VEHICLE (WITH WATER RECOVERY) * 130 VEHICLES/DAY + (2 REST ROOMS*250 GPD/REST ROOM) = 3,344.4 GPD
 1. NO FIRELINE CONNECTION IS BEING PROPOSED.
 2. FLOW AVAILABLE IN THE EXISTING FIRE HYDRANT = 1,370 GPM REQUIRED = 1,000 GPM



General notes
 1. A minimum 1' clear distance between all sides of existing inlet structures and proposed underground utility is required. Underground utilities shall not be placed under inlet structures.
 2. Public right-of-way shall be restored to its original or better condition. Any sidewalks or curbing disturbed by the work shall be restored to the condition of the original structure. Sidewalk panels shall be restored to full panel widths and lengths (defined by edges of the sidewalk and the nearest control joints or expansion joints). Partial patching of sidewalks shall not be acceptable. Pavement finishes, thicknesses, and grades shall match the existing sidewalk.
 3. If sidewalk is to be removed and replaced, the sidewalk shall be constructed in Class 1 concrete, 3,000 psi, 4 in. thick and match the width of the existing sidewalk. Sidewalk located at the apron shall be constructed in Class 1 concrete, 3,000 psi, 6 in. thick and match the width of the existing sidewalk. Requirements are per ESM detail sheet 2. Rebar is not allowed.
 4. Trenching shall not take place within the root zone of trees with a trunk diameter of 6 inches or larger. Underground utilities must be bored rather than trenched in the root zones of existing trees (excluding palms).
 5. Locate all utilities/facilities prior to start of construction.
 6. The contractor must locate and protect all the utilities and repair any damage caused by the work at no cost to the City.
 7. All utility locate markings must be completely cleaned around the area of the permitted project at the contractor's expense.
 8. Current A.D.A standards shall be upheld at all times.
 9. All casings (HDPE)/directional bores shall extend a minimum of six feet (6') beyond each edge of pavement. (Commercial driveways, sidewalks included)
 10. Casing will be required for underground utilities crossing under existing pavement with the exception of gas lines.
 11. Utility poles and guy wires for anchoring utility poles may not be placed within the pedestrian path/sidewalk.
 12. The Contractor shall abide by the FDOT's Guidelines for Erosion and Sedimentation Control for Construction Sites sheet. A copy of this sheet shall be reviewed/forwarded by said Contractor and can be obtained by going to <https://beta.FDOT.gov/files/sharedassets/public/departments/permitting-services-division/trade/erosion-sedimentation-control-blue-sheet.pdf>

Installation Requirements
 1. All restoration work shall be done in accordance with the city's Engineering Standards Manual, and any other applicable standards, guidelines, or City Code provisions.
 Underground Work
 1. Crossings (underground) shall be at a minimum vertical clearance thirty-six (36) inches below top of roadway pavement or top of ground, whichever is lower, including ditch grade.
 2. Crossings (aerial) shall be in accordance with the National Electrical Safety Code, and the point of maximum design sag of the lowest attachment shall be a minimum of eighteen (18) feet over roadways and driveway crossings and shall not interfere with existing or planned signal installation.
 3. Subterranean crossings may be made by boring, jacking, pushing, pulling, driving or some combination of these having a positive horizontal and vertical control. Jetting, except for hydraulic compaction or tunneling is prohibited within City and/or FDOT right-of-way.
 4. Pits required for underground crossings must be constructed no closer than six feet from the edge of the traveled way.
 5. All pipe must be jacked with the end open or bored-and-jacked and extended a minimum of six feet beyond the edge of the traveled way or as directed by the City Engineer.
 6. Casings will be required for underground utilities crossing under existing pavement. Missile bore is not allowed when crossing under roadways. Missile bore is allowed for longitudinal placement under existing sidewalks and driveways.
 7. Crossings (aerial) shall be in accordance with the National Electrical Safety Code, and the point of maximum design sag of the lowest attachment shall be a minimum of eighteen (18) feet over roadways and driveway crossings and shall not interfere with existing or planned signal installation.



EX. STORM TABLE

S-1 (STORM MANHOLE)	TOP ELEV. = 15.82'
36" S. RCP INV. EL. = 9.10'	
36" N. RCP INV. EL. = 9.10'	
12" E. RCP INV. EL. = 9.15'	

EX. SANITARY TABLE

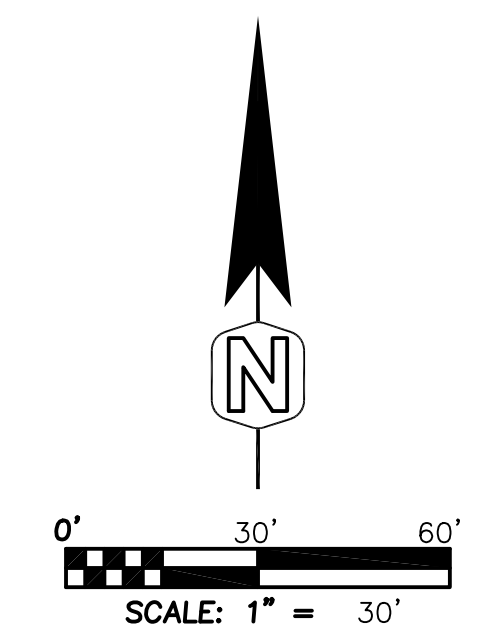
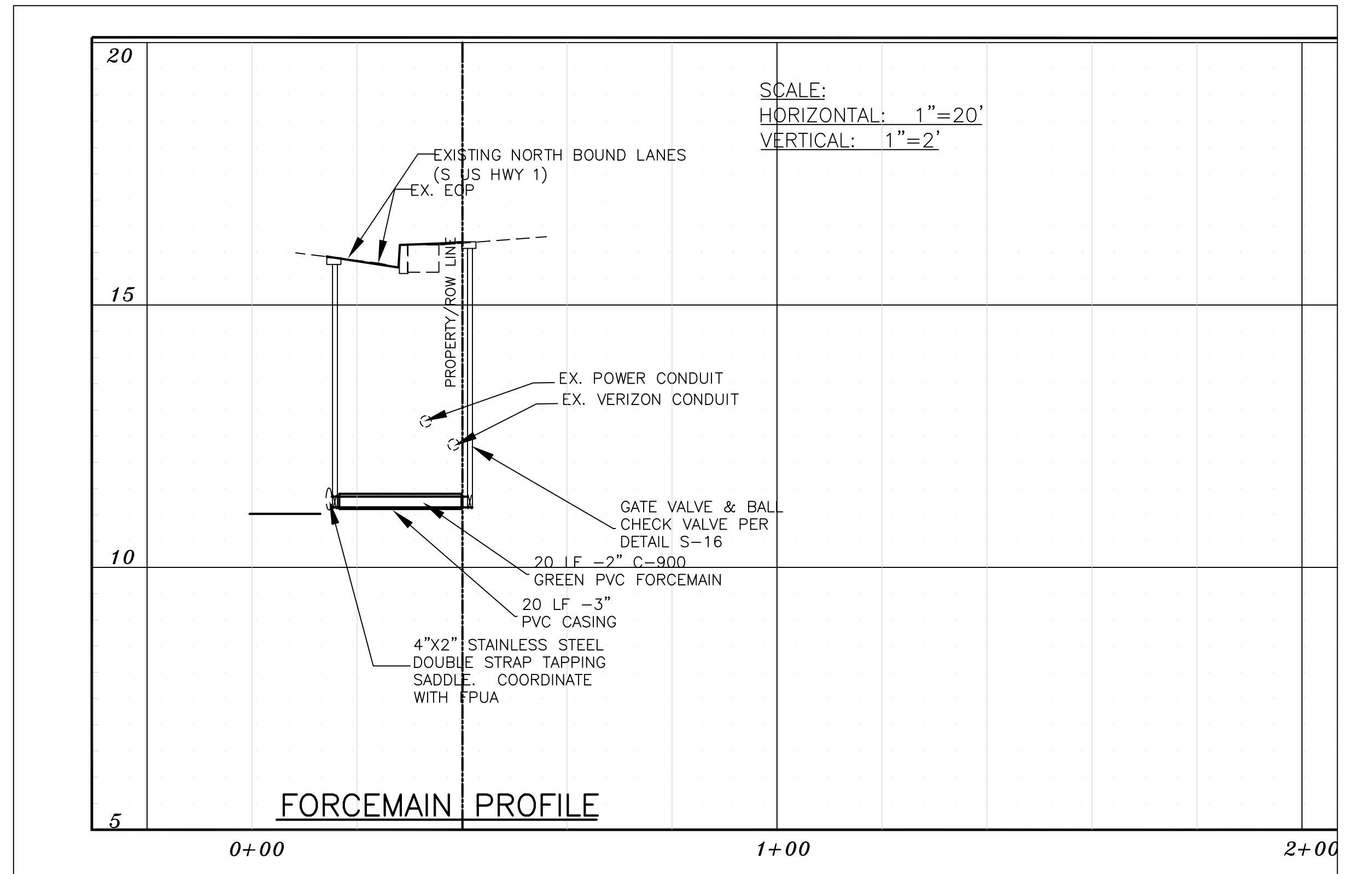
GO-1 (SANITARY CLEANOUT)	TOP ELEV. = 15.34'
8" INV. ELEV. = 12.35'	

EX. TREE LEGEND

12"	OAK TREE AND SIZE
6"	MISCELLANEOUS TREE AND SIZE
12"	PALM TREE AND SIZE
6"	PINE TREE AND SIZE

EX. LEGEND & ABBREVIATIONS

(C) CALCULATED MEASUREMENT	UGS UNDERGROUND SANITARY	UC UNDERGROUND CABLE MARKER
(R/W) RIGHT OF WAY MEASUREMENT	TM TELEPHONE MANHOLE	SM SANITARY MANHOLE
CONC. CONCRETE	UP UNDERGROUND PHONE	WM WATER METER
EP EDGE OF PAVEMENT	MES MITERED END SECTION	WV WATER VALVE
MULT. MULTIPLE	STMH STORM MANHOLE	F.C.I.R. FOUND CAPPED IRON ROD
CI CURB INLET	UGFM UNDERGROUND FORCE MAIN	F.N./D. FOUND NAIL & DISK
GI GRATE INLET	UGE UNDERGROUND ELECTRIC	F.C.M. FOUND CONCRETE MONUMENT
SMH SANITARY MANHOLE	UGW UNDERGROUND WATER	(P) PLAT MEASUREMENT
STMH STORM MANHOLE	OHW OVERHEAD WIRES	(F) FIELD MEASUREMENT
UGG UNDERGROUND GAS	T.O.S. TOE OF SLOPE	N.C.F. NO CORNER FOUND
WDF WOOD FENCE	P.O.B. POINT OF BEGINNING	P.O.C. POINT OF COMMENCEMENT
PVCY PLASTIC PRIVACY FENCE	P.U.E. PUBLIC UTILITY EASEMENT	D.E. DRAINAGE EASEMENT
HYDRANT	D.B. LICENSED BUSINESS	OHV OVERHEAD WIRE
PREVENTER VALVES	SV SEWER VALVE	MAILBOX
METAL LIGHTPOLE	UG UNDERGROUND GAS MARKER	EB ELECTRIC BOX
P.B. PLAT BOOK	EM MONITOR WELL	TB TRAFFIC BOX
CONCRETE LIGHT POLE	SP SIGNAL SUPPORT POLE	UP UNDERGROUND PHONE MARKER
WOOD LIGHT POLE	ICV IRRIGATION CONTROL VALVE	RL RAILROAD LIGHT
WOOD POWER POLE	IRV IRRIGATION VALVE(RECLAIM)	TR TRANSFORMER PAD
CONC POWER POLE	FD FIRE DEPARTMENT CONNECTION	TYP TYPICAL
RAILROAD X-ING GATE	UE UNDERGROUND ELECTRIC	T.O.B. TOP OF BANK
WELL	UC CLEANOUT	CS CROSS WALK SIGNAL
GUY WIRE	UM UNDERGROUND WATER MARKER	CO CLEANOUT
SIGN	US UNDERGROUND WATER	SM STORM MANHOLE
PHONE BOX	EM ELECTRIC MANHOLE	GV GAS VALVE
CABLE BOX		



DATE: 08/25/2022

DESIGNED BY: RA

DRAWN BY: RA

CHECKED BY: RA

FILE NAME: 22017SITE

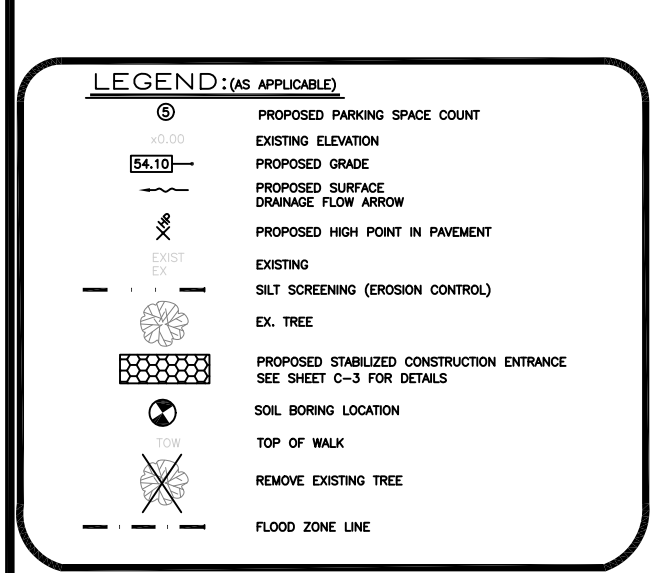
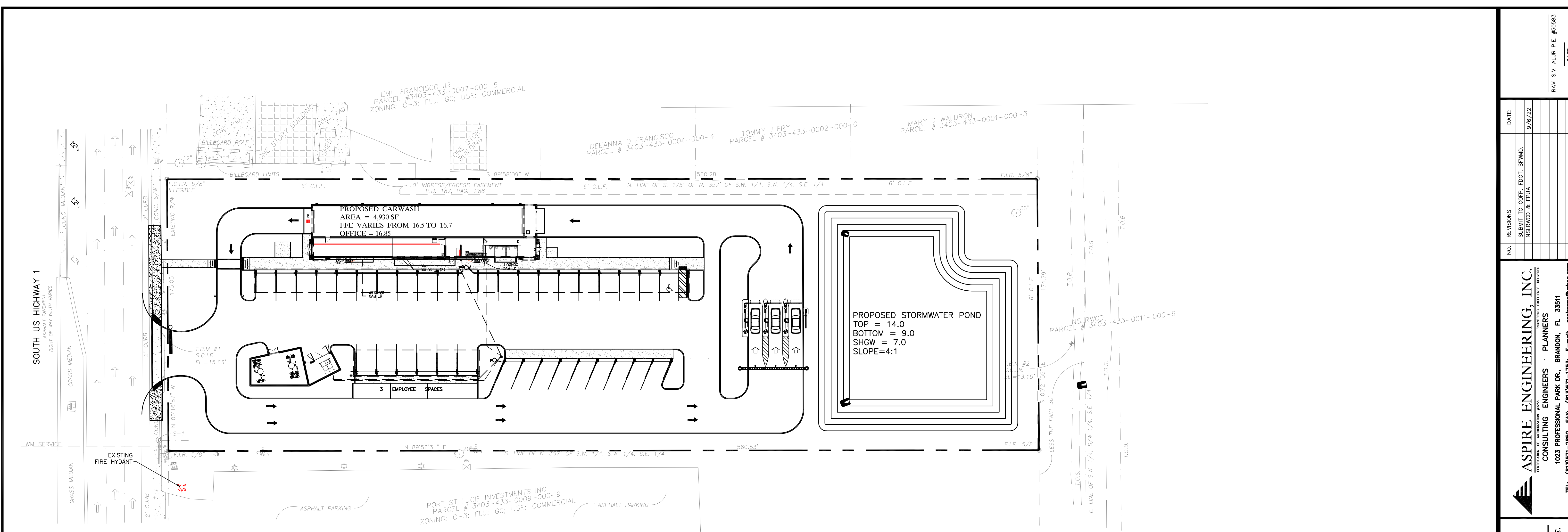
PROJECT #: 22-017

SHEET: C-6

ASPIRE ENGINEERING, INC.
 CONSULTING ENGINEERS & PLANNERS
 1023 PROFESSIONAL PARK DR., BRANDON, FL 33511
 TEL: (813)571-2850, FAX: (813)571-1753; E-mail: aspreng@aspiro.com

TWIN'S CARWASH
 -FT. PIERCE
 SECTION 03, TOWNSHIP 36 S., RANGE 43 E.
 CITY OF FT. PIERCE, FLORIDA

UTILITY PLAN



EX. STORM TABLE

S-1 (STORM MANHOLE)
 TOP ELEV = 15.82'
 36" S. RCP INV. EL. = 9.10'
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EX. SANITARY TABLE

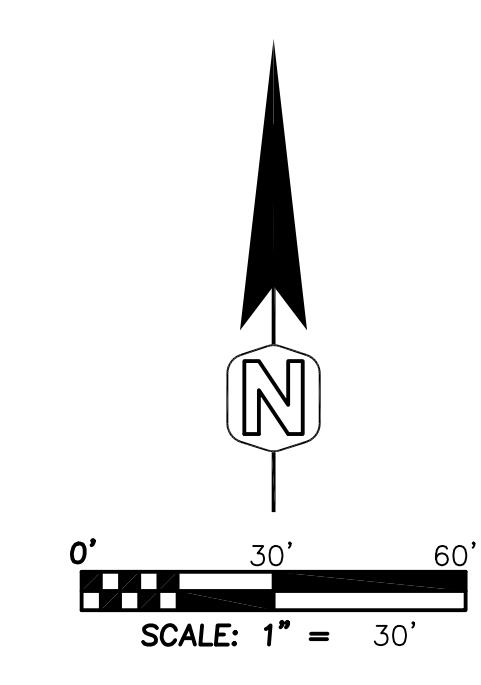
CS-1 (SANITARY CLEANOUT)
 TOP ELEV = 15.34'
 8" INV. ELEV. = 12.35'

EX. TREE LEGEND

12" OAK TREE AND SIZE
 6" MISCELLANEOUS TREE AND SIZE
 12" PALM TREE AND SIZE
 4" PINE TREE AND SIZE

EX. LEGEND & ABBREVIATIONS

(C) CALCULATED MEASUREMENT	UGS UNDERGROUND SANITARY	UC UNDERGROUND CABLE MARKER
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EP EDGE OF PAVEMENT	MES MITERED END SECTION	WV WATER VALVE
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GREASE TRAP MANHOLE	T.O.S. TOE OF SLOPE	P.O.B. POINT OF BEGINNING
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CONC POWER POLE	MONITOR WELL	UP UNDERGROUND PHONE MARKER
RAILROAD X-ING GATE	SS SIGNAL SUPPORT POLE	RL RAILROAD LIGHT
WELL	ICV IRRIGATION CONTROL VALVE	TR TRANSFORMER PAD
GUY WIRE	RWV IRRIGATION VALVE (RECLAIM)	TYP. TYPICAL
SIGN	FIRE DEPARTMENT CONNECTION	T.O.B. TOP OF BANK
PHONE BOX	UE UNDERGROUND ELECTRIC	CW CROSS WALK SIGNAL
CABLE BOX	UW UNDERGROUND WATER MARKER	CO CLEANOUT
	E ELECTRIC MANHOLE	SMH STORM MANHOLE
		GV GAS VALVE



DATE: 08/25/2022

DESIGNED BY: RA

DRAWN BY: RA

CHECKED BY: RA

FILE NAME: 22017SITE

PROJECT #: 22-017

SHEET: C-7

NO. REVISIONS

SUBMIT TO CORP. FOOT. SF/MD. NSLRWCD & EPLIA

DATE: 9/16/22

ASPIRE ENGINEERING, INC.
 CONSULTING ENGINEERS & PLANNERS
 1023 PROFESSIONAL PARK DR., BRANDON, FL 33511
 TEL: (813)571-2850, FAX: (813)571-1753; E-mail: aspireeng@ahoo.com

TWIN'S CARWASH
-FT. PIERCE
 SECTION 03, TOWNSHIP 36 S., RANGE 43 E.
 CITY OF FT. PIERCE, FLORIDA

AIR/VAC/CHASE
PIPE PLAN

DATE: 08/25/2022

DESIGNED BY: RA

DRAWN BY: RA

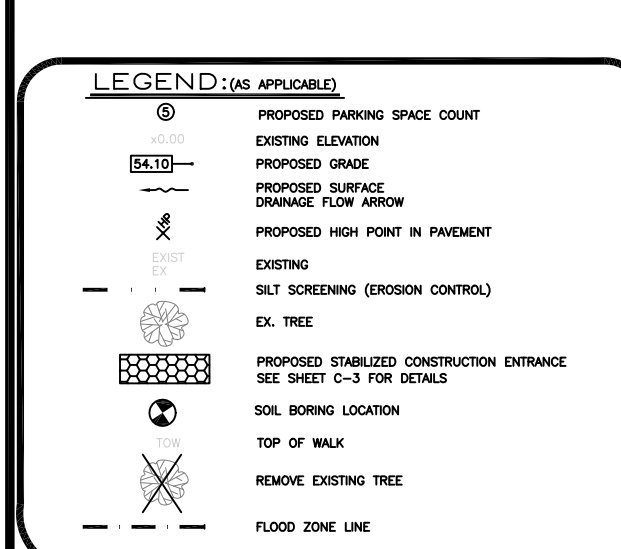
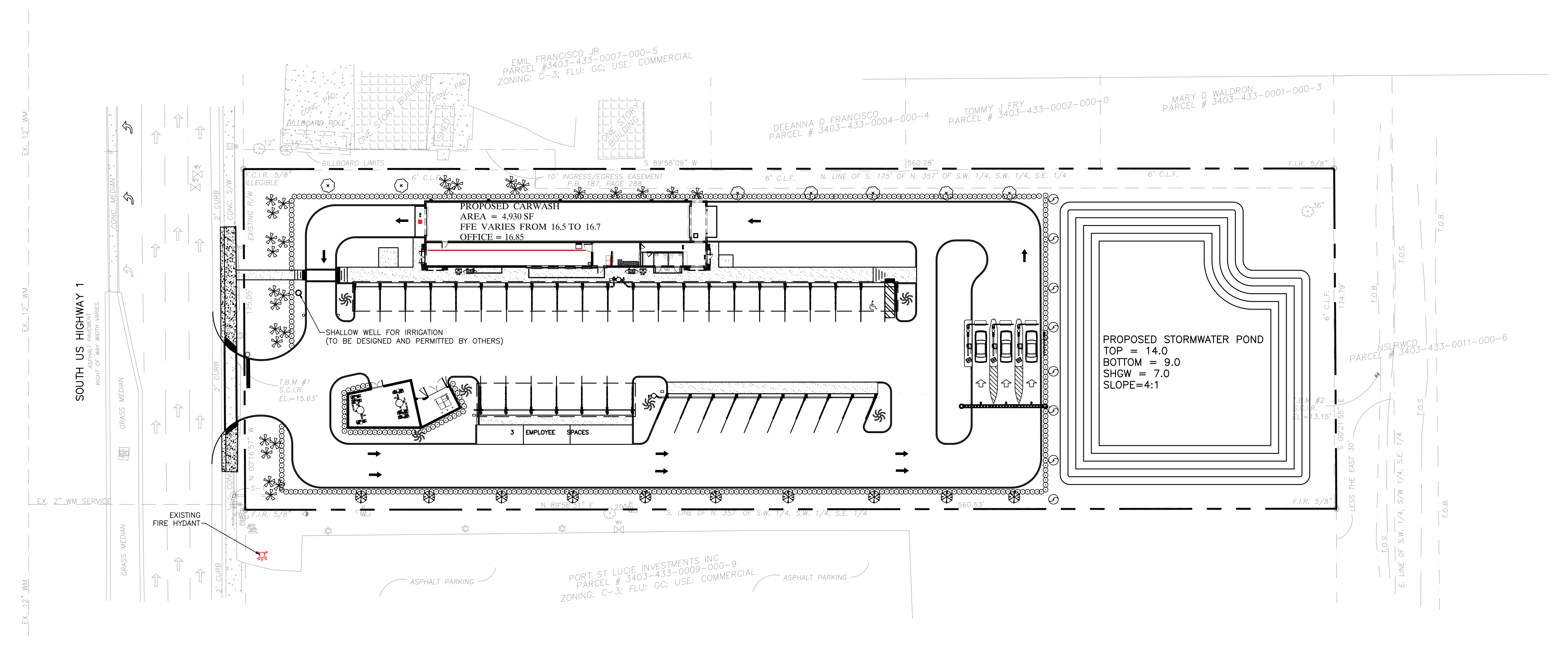
CHECKED BY: RA

FILE NAME: 22017SITE

PROJECT #: 22-017

SHEET: C-7

RAV S.V. ALUR P.E. #50563
 DATE:



EX. STORM TABLE

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12" OAK TREE AND SIZE
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EX. LEGEND & ABBREVIATIONS

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PHONE BOX	ELECTRIC MANHOLE	CROSS WALK SIGNAL
CABLE BOX		CLEANOUT
		STORM MANHOLE
		GAS VALVE

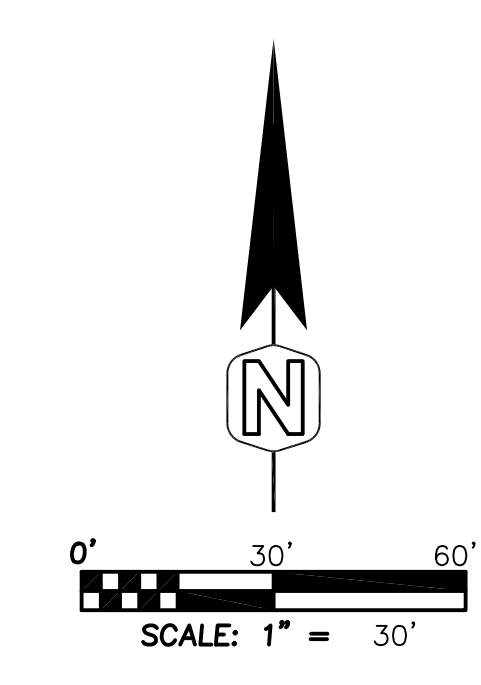
PLANT & MATERIAL LIST:

SYMBOL	KEY	BOTANICAL NAME	COMMON NAME	QTY.	SIZE	NATIVE FLORIDA	DROUGHT TOLERANT	REMARKS
TREES								
LS	LS	Liquidambar styraciflua	SWEETGUM	8	3" DBH	YES	YES	MIN. 12' HIGH
BN	BN	Betula nigra	RIVER BIRCH	6	3" DBH	YES	YES	MIN. 12' HIGH
MG	MG	Magnolia grandiflora	SOUTHERN MAGNOLA	10	3" DBH	YES	YES	MIN. 12' HIGH
QV	QV	Quercus virginiana	LIVE OAK	7	3" DBH	YES	YES	MIN. 12' HIGH
SP	SP	Sabal palmetto	SABAL PALM	29		YES	YES	MINIMUM CLEAR TRUNK OF 10'
SHRUBS								
VO	VO	Viburnum obovatum	WALTER VIBURNUM	400	3-7 GAL	YES	YES	MIN. 36", 3 FT O/C

1. ALL PLANT MATERIALS SHALL BE FLORIDA GRADE 1.

LANDSCAPE NOTES:

- Represents existing trees to be barricaded and saved. Barricades shall consist of new or used chain link fence (min. 5' high) located at the tree drip line.
- All plants must be healthy, vigorous material, free of pests and disease.
- All plants shall be Florida Grade No. 1 or better.
- All plants must be container-grown or balled and burlap as indicated in the plant list.
- All plants shall be triangulately spaced.
- Prior to construction the landscape contractor shall be responsible for locating all underground utilities and shall avoid damage to all utilities during the course of the work. The landscape contractor is responsible for repairing any and all damage to utilities, structures, site appearances, etc.; which occurs as a result of the landscape contractor.
- All trees must be guyed and staked as shown in the details.
- The landscape contractor is responsible for verifying all quantities shown on these plans, before pricing the work.
- All planting shall be done in accordance with acceptable Horticultural practices. This is to include proper planting mix, plant bed and tree pit preparation, pruning, staking or guying, wrapping, spraying, fertilization, planting and adequate maintenance until acceptance by the owner.
- The landscape contractor is responsible for fully maintaining all planting (including but not limited to: watering, spraying, mulching, fertilizing, etc.) or planting areas and lawns until the work is accepted in total by the landscape architect and the owner. The Owner of the property will be responsible from then on.
- All plants shall be guaranteed for 90 days from final inspection and acceptance. All trees shall be guaranteed an additional 180 days.
- All plants are subject to approval by the owner or owner's representative. Prior to planting, all trees must be approved by the owner or owner's representative.
- All plants and planting areas must be completely mulched as specified with three (3) inches of Cypress Mulch.
- Standards set forth in "American Standards for Nursery Stock" represent guideline specifications only and shall constitute MINIMUM quality requirements for plant material.
- All landscaped areas shall be provided with an irrigation system that supplies 100 percent coverage to all required landscaping plant material. The irrigation system may consist of an automatic or manual underground system, drip system, quick coupling valves, or hose bibs within 50 feet of all required landscaping plant material.
- The irrigation system shall be designed to minimize root disturbance to existing trees and other vegetation to be retained. No irrigation is required within these areas.
- All EXISTING shrubs shall be of sufficient height so that they are a minimum of 24" above the finished pavement elevation of the parking area adjacent to said shrub.
- All tree roots existing within approved improvement areas and originating from a protected tree shall be severed clear of the limits of the preserved area. Pruning shall be done using a "DOSKO" Root Pruner or approved equal. An inspection of pruning activities shall be arranged with the CITY OF FT PIERCE Department of Natural Resources.
- All trees to remain must be protected by tree protection barricades meeting the minimum standards shown on the attached diagram (i.e. Site Fence). Protective barricades shall remain in place until land alteration and construction activities are complete.
- Any tree not designated for removal from the site and is removed by the contractor will result in the contractor having to either compensate the owner for similar replacement of tree(s) destroyed, or, replacement of identical size and species of tree removed. Further, any additional requirements by regulatory agencies having jurisdiction over such matters will be incurred by the contractor. Compensatory damages against the contractor are not limited in this situation.
- A MAXIMUM OF 50% OF THE PLANT MATERIALS USED, OTHER THAN TREES, MAY BE NON-DRAUGHT TOLERANT.
- Stabilization shall be done by using vegetative ground cover.
- ALL NEWLY DEVELOPED AND REDEVELOPED ABOVE GROUND UTILITY APPURTENANCES VISIBLE FROM THE PUBLIC RIGHT-OF-WAY, INCLUDING PEDESTALS, UTILITY METERS, TRANSFORMERS, BACK-FLOW PREVENTION DEVICES ETC., SHALL BE SCREENED PER CITY OF FT PIERCE LDC.



TWIN'S CARWASH
-FT. PIERCE

SECTION 03, TOWNSHIP 36 S., RANGE 43 E.
CITY OF FT. PIERCE, FLORIDA

LANDSCAPE PLAN

DATE: 08/25/2022

DESIGNED BY: RA

DRAWN BY: RA

CHECKED BY: RA

FILE NAME: 22017SITE

PROJECT #: 22-017

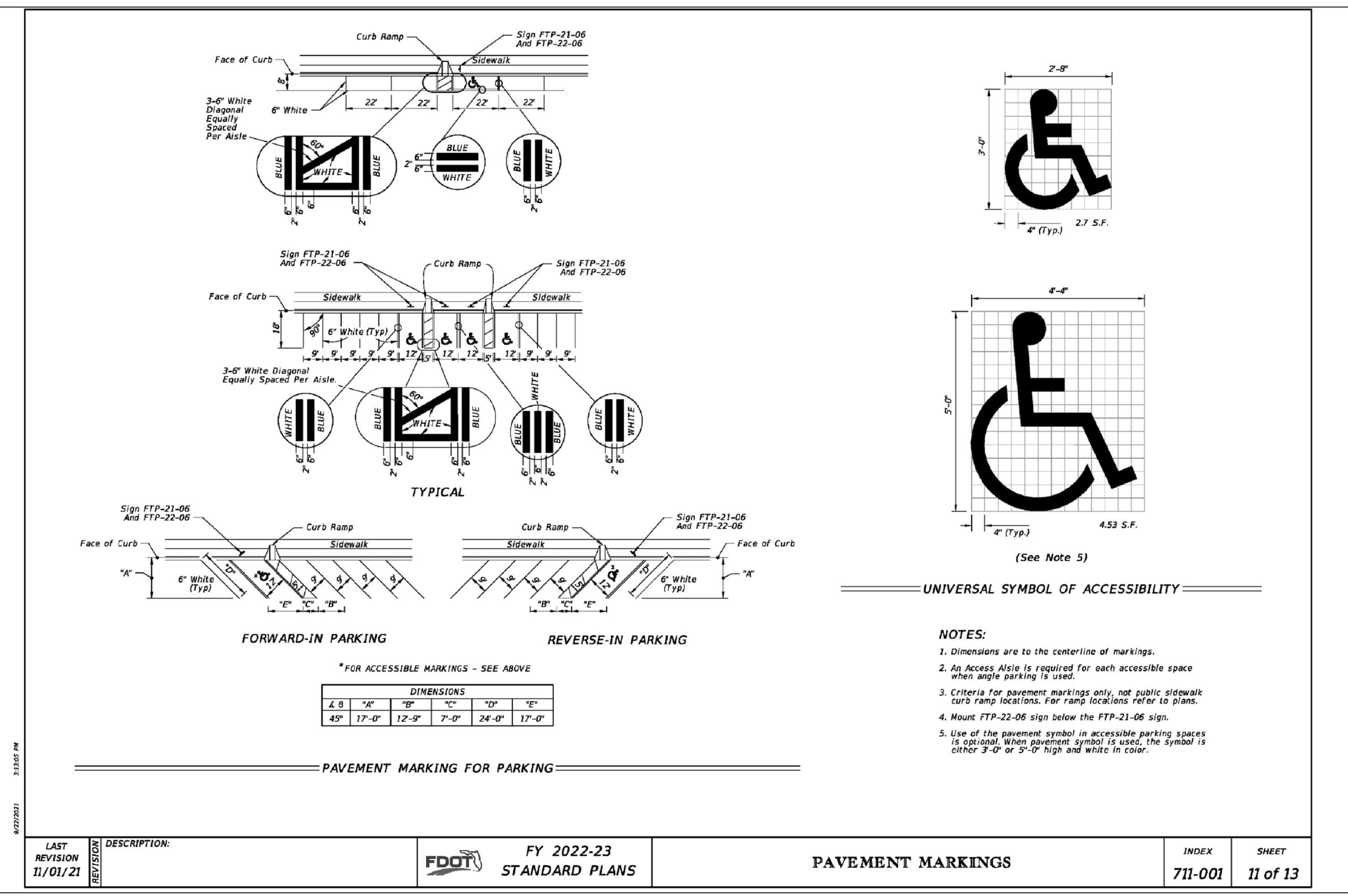
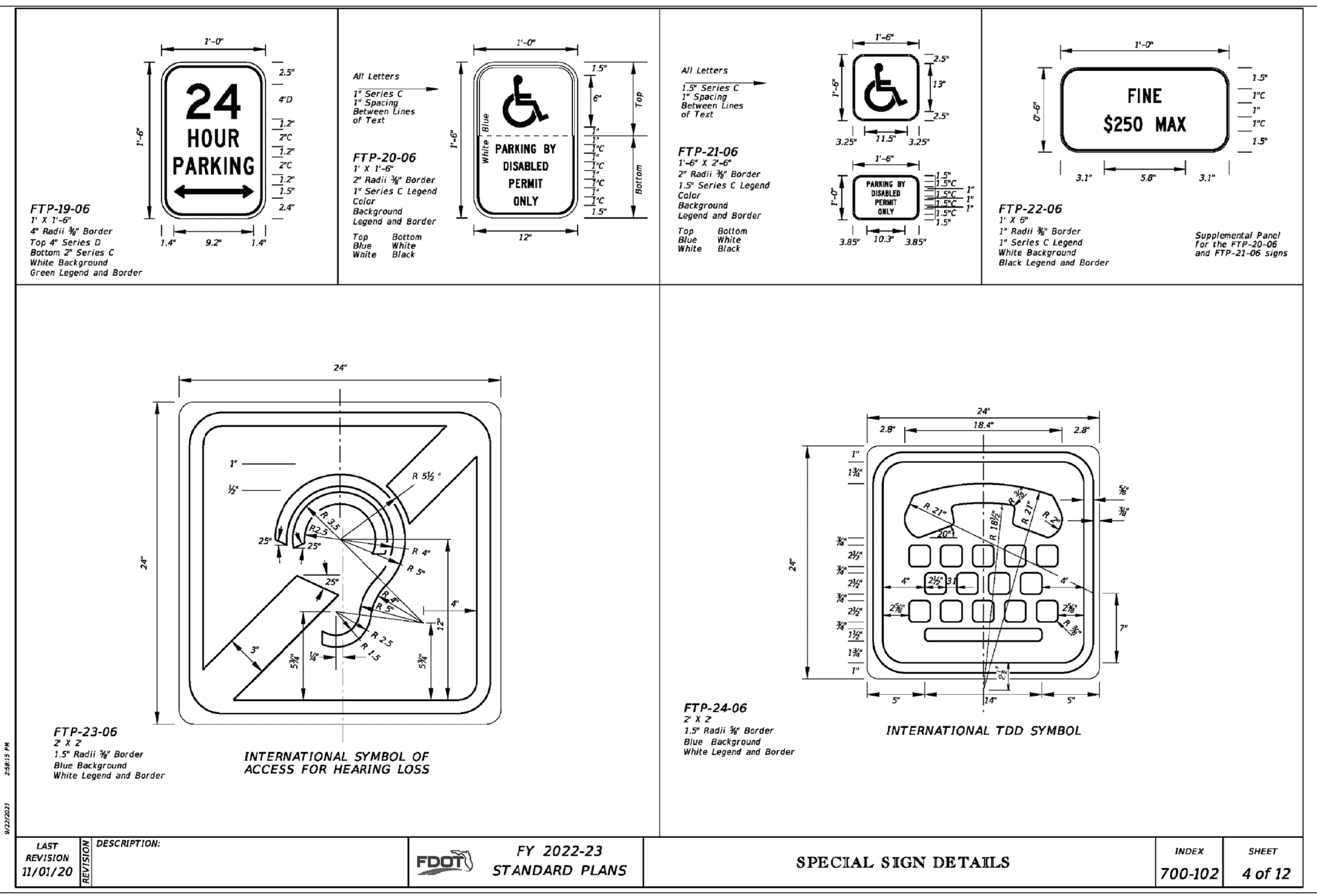
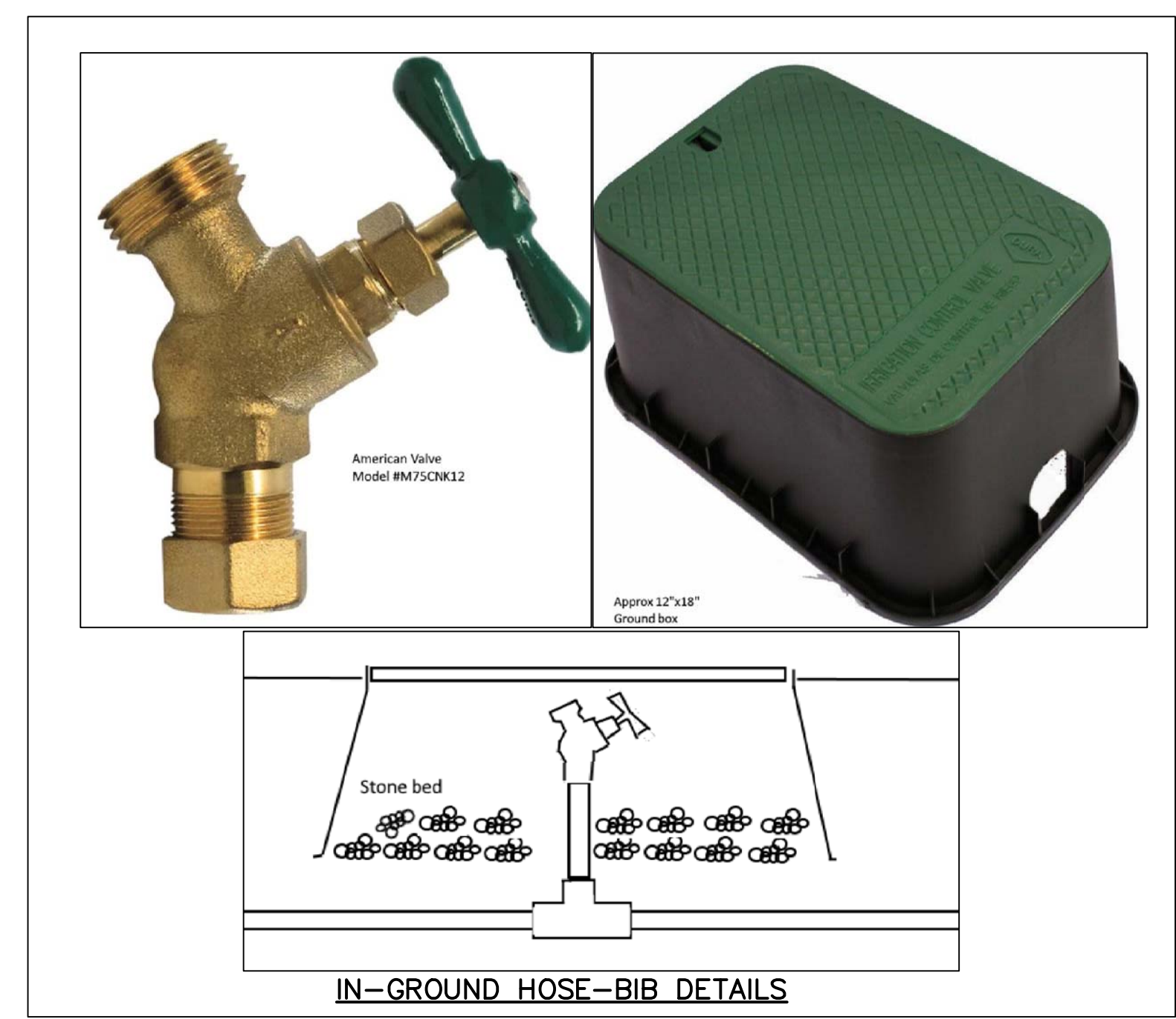
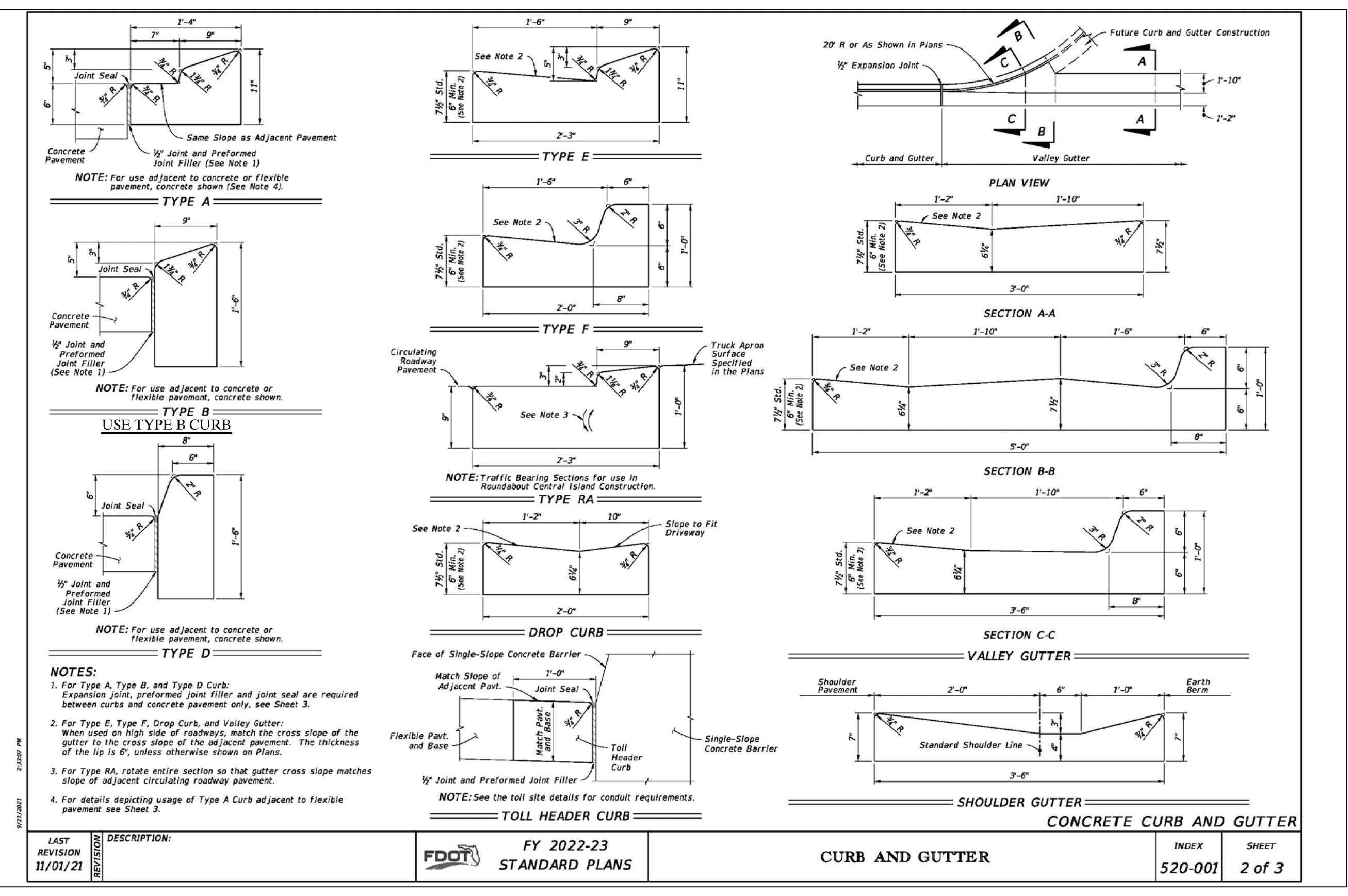
SHEET: C-8

NO. REVISIONS
SUBMIT TO CORP. FOOT. SF/MD.
NSLRWCD & EPLIA
9/6/22

DATE: 9/6/22

ASPIRE ENGINEERING, INC.
CONSULTING ENGINEERS & PLANNERS
1023 PROFESSIONAL PARK DR., BRANDON, FL 33511
TEL: (813)571-2850, FAX: (813)571-1753; E-mail: aspireeng@ahoo.com

RAVI S.V. ALUR P.E. #050563
DATE:



DATE: 08/25/2022

DESIGNED BY: RA

DRAWN BY: RA

CHECKED BY: RA

FILE NAME: 22017SITE

PROJECT #: 22-017

SHEET: C-10

NO. REVISIONS
SUBMIT TO: COFF. FOOT, SFMD, NISLRWD & EPLIA
DATE: 9/16/22

ASPIRE ENGINEERING, INC.
CONSULTING ENGINEERS - PLANNERS
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TWIN'S CARWASH
-FT. PIERCE
SECTION 03, TOWNSHIP 06 S., RANGE 43 E.
CITY OF FT. PIERCE, FLORIDA

SITE DETAILS

RAY S.V. ALUR P.E. #05053
DATE:

**FORT PIERCE UTILITIES AUTHORITY
WATER DISTRIBUTION NOTES**

- ALL CONSTRUCTION MATERIAL, INSTALLATION AND TESTING SHALL CONFORM TO THE STANDARD SPECIFICATIONS OF THE FORT PIERCE UTILITIES AUTHORITY.
- WATER MAINS WHERE SPECIFIED AS POLYVINYL CHLORIDE (PVC) SHALL CONFORM TO AWWA C-900 OR C-905, PRESSURE CLASS 150, DR (18). WATER MAINS WHERE SPECIFIED AS POLYETHYLENE (PE) SHALL CONFORM TO AWWA C-901 OR C-906, STANDARD CODE DESIGNATION PE340B, PIPE CLASS 200, DIMENSION RATIO (DR) 17 FOR DIRECT BURY, (DR) 11 FOR DIRECTIONAL BORING, AND (DR) 9 FOR 2 INCH AND SMALLER PIPELINES.
- WATER MAIN, WHERE SPECIFIED AS DUCTILE IRON PIPE, SHALL CONFORM TO ANSI/AWWA C151/A21.51 AND SHALL BE PRESSURE CLASS 250 (MINIMUM).
- POLYVINYL CHLORIDE WATER MAIN SHALL BE BLUE IN COLOR OR WHITE IN COLOR WITH BLUE STRIPES. THE USE OF IDENTIFICATION TAPE ATTACHED TO THE TOP OF THE PIPE MAY BE USED IN LIEU OF MARKING ON THE PIPE. ALSO DIP PIPE SHALL REQUIRE THE USE OF IDENTIFICATION TAPE AND THIN WIRE.
- FITTINGS SHALL BE DUCTILE IRON CONFORMING TO ANSI/AWWA C-110/A21.10, CLASS 250 MIN., CEMENT LINED AND FACTORY COATED.
- GATE VALVES SHALL BE MUELLER RESILIENT SEAT, KENNEDY KEN-SEAL, AMERICAN OR APPROVED EQUAL VALVES SHALL CONFORM TO AWWA C-509.
- WATER LINES SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH FPUA DESIGN AND CONSTRUCTION STANDARDS. THE CONTRACTOR SHALL SUBMIT CERTIFIED DENSITY TESTS AS REQUIRED BY FPUA ENGINEERING AND THE CITY, COUNTY, FDOT, IN CASES WHERE PAVED AREAS FALL WITHIN THE JURISDICTION OF LOCAL OR STATE AGENCIES, THE COMPACTION REQUIREMENTS SHALL NOT BE LESS THAN THE MINIMUM REQUIRED BY THE APPROPRIATE RESPONSIBLE AGENCY.
- NO FIELD CHANGES OR DEVIATIONS FROM THE DESIGN SHALL BE MADE WITHOUT PRIOR APPROVAL OF THE FPUA ENGINEER AND CITY/COUNTY/FDOT ENGINEER.
- THE CONTRACTOR SHALL NOTIFY FPUA ENGINEERING AND CITY/COUNTY/FDOT ENGINEERING 48 HOURS PRIOR TO COMMENCING CONSTRUCTION.
- A PRE-CONSTRUCTION CONFERENCE BETWEEN THE ENGINEER, THE CONTRACTOR, FPUA, AND CITY/COUNTY/FDOT ENGINEER SHALL BE MANDATORY PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- TRAFFIC CONTROL, BARRICADES, ETC., SHALL BE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARDS AND APPROVED BY THE CITY ENGINEER.
- MINIMUM COVER SHALL BE 36 INCHES EXCEPT AS APPROVED BY THE UTILITIES ENGINEER AND CITY/COUNTY/FDOT ENGINEER. PIPES WITH COVER LESS THAN 30 INCHES SHALL BE CONSTRUCTED OF DUCTILE IRON OR IN PVC CASING.
- DISTURBED AREAS SHALL BE RESTORED IN CONFORMANCE WITH THE APPLICABLE GOVERNING AGENCY REQUIREMENTS.
- EXISTING UTILITIES AND DRAINAGE SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION AND PROTECTED BY THE CONTRACTOR.
- WATER MAINS SHALL BE TESTED AND DISINFECTED IN ACCORDANCE WITH THE APPLICABLE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION AND AWWA C-651 FOR DISINFECTION.

**FORT PIERCE UTILITIES AUTHORITY
WATER DISTRIBUTION NOTES
CONTINUED**

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING EXISTING UTILITIES AND DRAINAGE.
 - THE CONTRACTOR SHALL FURNISH RECORD DRAWING INFORMATION TO THE ENGINEER INCLUDING LOCATIONS OF VALVES, FITTINGS, SERVICE CONNECTIONS, BLOWOFFS, AIR RELEASE VALVES, AND ANY OTHER PERTINENT INFORMATION NECESSARY TO LOCATE ITEMS CONSTRUCTED UNDER THIS PROJECT, AS REQUIRED BY THE UTILITIES ENGINEER.
 - THE CONTRACTOR SHALL TAP EXISTING LINES UNDER THE SUPERVISION OF THE FORT PIERCE UTILITIES AUTHORITY ONLY AFTER TESTING AND DISINFECTION HAS BEEN COMPLETED AND APPROVED ON THE TAPPING VALVE AND SLEEVE.
 - WATER MAIN SHALL BE MARKED BY THE USE OF CONTINUOUS 10 GAUGE THIN MULTI STRANDED WIRE (BLUE IN COLOR) AND IDENTIFICATION TAPE WITH "WATER" MARKED ON TAPE, PERMANENTLY ATTACHED TO THE TOP OF THE WATER MAIN IN ACCORDANCE WITH THE FORT PIERCE UTILITIES AUTHORITY SPECIFICATIONS.
 - SERVICE TAPS SHALL BE PLACED APPROXIMATELY TEN FEET AWAY FROM GATE VALVES, AS SHOWN, FOR TESTING. FOLLOWING TESTING AND STERILIZATION OF WATER LINE, CONTRACTOR SHALL PLACE A BRASS PLUG IN CORPORATION STOPS AND CURB STOPS SHALL BE REMOVED FROM TESTING LOCATIONS.
 - MECHANICAL RESTRAINTS TO BE USED ON ALL FITTINGS AND PLACED IN ACCORDANCE WITH MANUFACTURER'S OR ENGINEER'S RECOMMENDATIONS (WHICHEVER IS MORE STRINGENT) AND FPUA REQUIREMENTS.
 - ALL MAINS SHALL BE TESTED AT A MINIMUM OF 150 PSI. TESTING METHODS SHALL CONFORM TO AWWA C-600 - 2 HR MINIMUM TEST
- $$L = \frac{SD(P)}{148,000}$$
- L = LEAKAGE IN GPH
S = LENGTH OF PIPE IN FEET
D = PIPE DIAMETER IN INCHES
P = TESTING PRESSURE IN PSI
- PRIOR TO ANY TESTING, ALL MAINS 8" IN DIA. AND LARGER SHALL HAVE A SWAB PASSED THRU THE ENTIRE LENGTH OF THE LINE. NOTE: SWABS SHOULD BE PLACED IN 1st JOINT OF NEW LINE. END OF MAIN SHOULD BE "TURNED UP" AT 45% AND EXTENDED SO THAT SWABBING AND A FULL BORE FLUSH CAN BE ACCOMPLISHED. BLOW-OFF ASSY CAN THEN BE PLACED. WHERE LINES BRANCH, SWABS WILL BE PLACED IN BRANCH LINES AND SEQUENTIALLY SWABBED AND FLUSHED.
 - A MINIMUM SIX FEET AND PREFERABLY TEN FEET HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN THE WATER MAIN AND ANY WASTEWATER LINES. 6 INCHES MINIMUM VERTICAL SEPARATION IF WATER MAIN IS OVER WASTEWATER AND 12 INCHES IF WATER MAIN IS UNDER. DISTANCE SHALL BE MAINTAINED BETWEEN THE WATER MAIN AND ANY WASTEWATER LINES. THE DISTANCE SHALL BE MEASURED FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE OR STRUCTURE. WHERE THIS MINIMUM SEPARATION CANNOT BE MAINTAINED, THE CROSSING SHALL BE ARRANGED SO THAT THE WASTEWATER PIPE JOINTS AND THE WATER MAIN PIPE JOINTS ARE EQUIDISTANT FROM THE POINT OF CROSSING, AND THE WATER MAIN SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE (DIP) AT THE CROSSING. SUFFICIENT LENGTHS OF DIP MUST BE USED TO PROVIDE A MINIMUM SEPARATION OF 10 FEET BETWEEN ANY TWO JOINTS. ALL JOINTS ON THE WATER MAIN WITHIN 20 FEET OF THE CROSSING MUST BE MECHANICALLY RESTRAINED. A MINIMUM VERTICAL CLEARANCE OF 6 INCHES MUST BE MAINTAINED AT ALL CROSSINGS.
 - WHERE A WATER MAIN IS TO BE INSTALLED BELOW A DRAIN PIPE, A MINIMUM OF 6 INCHES OF VERTICAL CLEARANCE BETWEEN PIPES SHALL BE CONSTRUCTED OF DIP AT THE CROSSING, AND SHALL BE MECHANICALLY RESTRAINED WITHIN 20 FEET OF THE CROSSING.
 - CONTRACTOR SHALL COMPLY WITH FLORIDA TRENCH SAFETY ACT REQUIREMENTS.

$$L = \frac{SD(P)}{148,000}$$

L = LEAKAGE IN GPH
S = LENGTH OF PIPE IN FEET
D = PIPE DIAMETER IN INCHES
P = TESTING PRESSURE IN PSI

FORT PIERCE UTILITIES AUTHORITY WASTEWATER CONSTRUCTION NOTES

- ALL CONSTRUCTION MATERIAL, INSTALLATION AND TESTING SHALL CONFORM TO THE STANDARD SPECIFICATIONS OF THE FORT PIERCE UTILITIES AUTHORITY.
- GRAVITY SEWER MAIN SHALL BE POLYVINYL CHLORIDE SDR-26, GREEN OR WHITE IN COLOR. GRAVITY SEWER MAIN SHALL HAVE LOCATOR TAPE WITH "SEWER" MARKED ON TAPE AND SHALL CONFORM TO ASTM D-3034.
- THE MANHOLE BASE SHALL BE SET ON A FIRM, DRY AND STABLE OR COMPACTED BASE FOUNDATION. IF NECESSARY, THE CONTRACTOR SHALL UTILIZE ROCK TO PROVIDE A FIRM AND SUITABLE MANHOLE BASE FOUNDATION.
- WASTEWATER LINES SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH FPUA DESIGN AND CONSTRUCTION STANDARDS. THE CONTRACTOR SHALL SUBMIT CERTIFIED DENSITY TESTS AS REQUIRED BY FPUA ENGINEERING AND THE CITY ENGINEERING DEPARTMENT. IN CASES WHERE PAVED AREAS FALL WITHIN THE JURISDICTION OF LOCAL OR STATE AGENCIES, THE COMPACTION REQUIREMENTS SHALL NOT BE LESS THAN THE MINIMUM REQUIRED BY THE APPROPRIATE RESPONSIBLE AGENCY.
- A 1% MINIMUM SLOPE SHALL BE MAINTAINED ON ALL SANITARY SERVICE LATERALS.
- THE CONTRACTOR SHALL FURNISH RECORD DRAWING INFORMATION TO THE ENGINEER CONSISTING OF PIPE SIZES, LOCATION OF SERVICE TEE WYES, DIAMETER OF SERVICES, LOCATION OF ANY FITTINGS, FINAL RM AND INVERT ELEVATION OF ALL MANHOLES AND ANY OTHER PERTINENT INFORMATION NECESSARY TO LOCATE ITEMS CONSTRUCTED UNDER THIS PROJECT.
- MAINTAIN SIX FEET AND PREFERABLY 10 FEET HORIZONTAL DISTANCE BETWEEN WATER MAINS AND SEWER MAINS AS A MINIMUM.
- WASTEWATER FORCE MAINS, WASTEWATER COLLECTION LINES, AND STORM SEWERS SHOULD CROSS UNDER WATER MAINS WHENEVER POSSIBLE. A MINIMUM VERTICAL DISTANCE OF 12 INCHES BETWEEN THE INVERT OF THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE SHALL BE PROVIDED WHENEVER POSSIBLE. WHERE THIS MINIMUM SEPARATION CANNOT BE MAINTAINED, THE CROSSING SHALL BE ARRANGED SO THAT THE WASTEWATER PIPE JOINTS AND THE WATER PIPE JOINTS ARE EQUIDISTANT FROM THE POINT OF CROSSING, AND THE WATER MAIN SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE (DIP) AT THE CROSSING. SUFFICIENT LENGTHS OF DIP MUST BE USED TO PROVIDE A MINIMUM SEPARATION OF 10 FEET BETWEEN ANY TWO JOINTS. ALL JOINTS ON THE WATER MAIN WITHIN 20 FEET OF THE CROSSING MUST BE MECHANICALLY RESTRAINED. A MINIMUM VERTICAL CLEARANCE OF 6 INCHES MUST BE MAINTAINED AT ALL CROSSINGS.
- A PRE-CONSTRUCTION CONFERENCE BETWEEN THE ENGINEER, THE CONTRACTOR, AND FPUA/CITY COUNTY/FDOT SHALL BE MANDATORY PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
- NO FIELD CHANGES OR DEVIATIONS FROM THE DESIGN SHALL BE MADE WITHOUT PRIOR APPROVAL FPUA/CITY/COUNTY/FDOT ENGINEER.
- TRAFFIC CONTROL, BARRICADES, ETC. SHALL BE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARDS.
- CONTRACTOR SHALL NOTIFY FORT PIERCE UTILITIES AUTHORITY 48 HOURS PRIOR TO COMMENCING CONSTRUCTION.
- WASTEWATER FORCE MAIN SHALL BE POLYVINYL CHLORIDE CONFORMING TO AWWA C-900, AND SHALL BE CLASS 150, DR-18.
- WASTEWATER FORCE MAIN SHALL BE GREEN IN COLOR.
- FITTINGS SHALL BE DUCTILE IRON, CONFORMING TO ANSI/AWWA C-110/A21.10 CLASS 250 MIN. AND INTERIOR EPOXY COATED.
- WASTEWATER FORCE MAIN SHALL BE MARKED BY THE USE OF CONTINUOUS 10 GAUGE THIN WIRE (GREEN IN COLOR) PERMANENTLY ATTACHED TO THE TOP OF THE FORCE MAIN WITH LOCATOR TAPE MARKED "SEWER" ON TAPE IN ACCORDANCE WITH FPUA SPECIFICATIONS.
- MINIMUM COVER SHALL BE 36 INCHES. PIPES WITH COVER LESS THAN 30 INCHES SHALL REQUIRE PRIOR APPROVAL OF THE UTILITIES ENGINEER AND SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE.
- EACH SERVICE LATERAL WILL BE MARKED WITH A LOCATOR BALL AS MANUFACTURED BY JM CORPORATION, OR APPROVED EQUAL AS REQUIRED BY FPUA ENGINEER.
- ALL MANHOLES SHALL HAVE SEWER RAIN GUARDS INSTALLED AS REQUIRED BY FPUA ENGINEER.
- THE CONTRACTOR SHALL COMPLY WITH THE FLORIDA TRENCH SAFETY ACT REQUIREMENTS.

**STANDARD SEPARATION STATEMENT FOR
WATER / SEWER CONFLICTS**

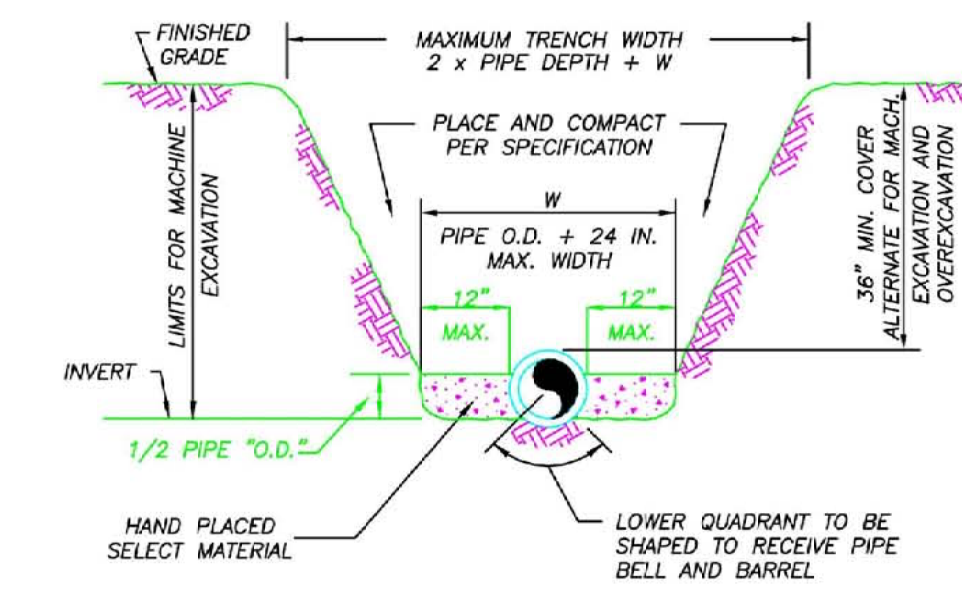
- SANITARY SEWER, FORCE MAINS, AND STORM SEWERS SHOULD CROSS UNDER WATER MAINS WHENEVER POSSIBLE. SANITARY SEWERS, FORCE MAINS AND STORM SEWERS CROSSING UNDER WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 6 INCHES, PREFERABLY 12 INCHES BETWEEN THE INVERT OF THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE WHEN ABOVE, AND AT LEAST 12 INCHES OF SEPARATION WHEN THE WATER MAIN IS BELOW.
- WHERE SANITARY SEWER, FORCE MAINS, STORM SEWERS MUST CROSS A WATER MAIN WITH LESS THAN 6 INCHES VERTICAL SEPARATION, BOTH THE SEWER AND WATER MAIN SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE (DIP) CENTERED ON THE CROSSING. (DIP IS NOT REQUIRED FOR STORM SEWERS.) SUFFICIENT LENGTHS OF DIP MUST BE USED TO PROVIDE A MINIMUM SEPARATION OF 10 FEET BETWEEN TWO JOINTS. ALL JOINTS ON THE WATER MAIN WITHIN 20 FEET OF THE CROSSING MUST BE MECHANICALLY RESTRAINED.
- ALL CROSSINGS SHALL BE ARRANGED SO THAT THE SEWER PIPE JOINTS AND WATER MAIN PIPE JOINTS ARE EQUIDISTANT FROM THE POINT OF CROSSING (PIPES CENTERED ON THE CROSSING). AT SUCH CROSSINGS PIPES SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, STORM SEWERS, STORMWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C., AND AT LEAST SIX FEET FROM ALL JOINTS IN GRAVITY OR PRESSURE TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.
- WHERE A NEW PIPE CONFLICTS WITH AN EXISTING PIPE WITH LESS THAN 6 INCHES VERTICAL CLEARANCE, THE NEW PIPE SHALL BE CONSTRUCTED OF DIP (EXCEPT STORM SEWERS) AND NEW PIPES SHALL BE ARRANGED TO MEET THE CROSSING REQUIREMENTS ABOVE.
- A MINIMUM 3-FOOT HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN ANY TYPE OF STORM SEWER AND WATER MAIN IN PARALLEL INSTALLATIONS WHENEVER POSSIBLE.
- A MINIMUM 10-FOOT HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN "ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEM" AND WATER MAIN IN PARALLEL INSTALLATIONS WHENEVER POSSIBLE.
- A MINIMUM 6-FOOT, AND PREFERABLY 10-FOOT HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN GRAVITY OR PRESSURE TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER AND WATER MAIN IN PARALLEL INSTALLATIONS WHENEVER POSSIBLE. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND GRAVITY-TYPE SANITARY SEWERS SHALL BE REDUCED TO 3 FEET WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER.
- IN CASES WHERE IT IS NOT POSSIBLE TO MAINTAIN A 10-FOOT HORIZONTAL SEPARATION, THE WATER MAIN MUST BE LAID IN A SEPARATE TRENCH OR ON A UNDISTURBED EARTH SHELF LOCATED ON ONE SIDE OF THE SEWER OR FORCE MAIN AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 6 INCHES ABOVE THE TOP OF THE SEWER.
- WHERE IT IS NOT POSSIBLE TO MAINTAIN A VERTICAL DISTANCE OF 6 INCHES IN PARALLEL INSTALLATIONS, THE WATER MAIN SHALL BE CONSTRUCTED OF DIP AND THE SEWER OR FORCE MAIN SHALL BE CONSTRUCTED OF DIP (EXCEPT STORM SEWER) WITH A MINIMUM VERTICAL DISTANCE OF 6 INCHES. THE WATER MAIN SHOULD ALWAYS BE ABOVE THE SEWER. JOINTS ON THE WATER MAIN SHALL BE LOCATED AS FAR APART AS POSSIBLE FROM JOINTS ON THE SEWER OR FORCE MAIN (STAGGERED JOINTS).
- ALL DIP SHALL BE PRESSURE CLASS 250 MIN. ADEQUATE PROTECTIVE MEASURES AGAINST CORROSION SHALL BE USED AS DETERMINED BY THE DESIGN ENGINEER.

	WATER DISTRIBUTION		G-1 NOTES	
	DESIGNED BY: JLM	DATE: 2010	COMPUTER FILE #	SCALE: N.T.S.
DRAWN BY: JLM		DATE: 2010		SCALE: N.T.S.
APPROVED BY: JLC		DATE: 2010		SCALE: N.T.S.
SHEET 1 OF 2		FT. PIERCE UTILITIES AUTHORITY		

	WATER DISTRIBUTION		G-1 NOTES	
	DESIGNED BY: JLM	DATE: 2010	COMPUTER FILE #	SCALE: N.T.S.
DRAWN BY: JLM		DATE: 2010		SCALE: N.T.S.
APPROVED BY: JLC		DATE: 2010		SCALE: N.T.S.
SHEET 2 OF 2		FT. PIERCE UTILITIES AUTHORITY		

	WASTEWATER CONSTRUCTION NOTES		G-2 CONSTRUCTION NOTES	
	DESIGNED BY: JLM	DATE: 2010	COMPUTER FILE #	SCALE: N.T.S.
DRAWN BY: JLM		DATE: 2010		SCALE: N.T.S.
APPROVED BY: JLC		DATE: 2010		SCALE: N.T.S.
SHEET 1 OF 1		FT. PIERCE UTILITIES AUTHORITY		

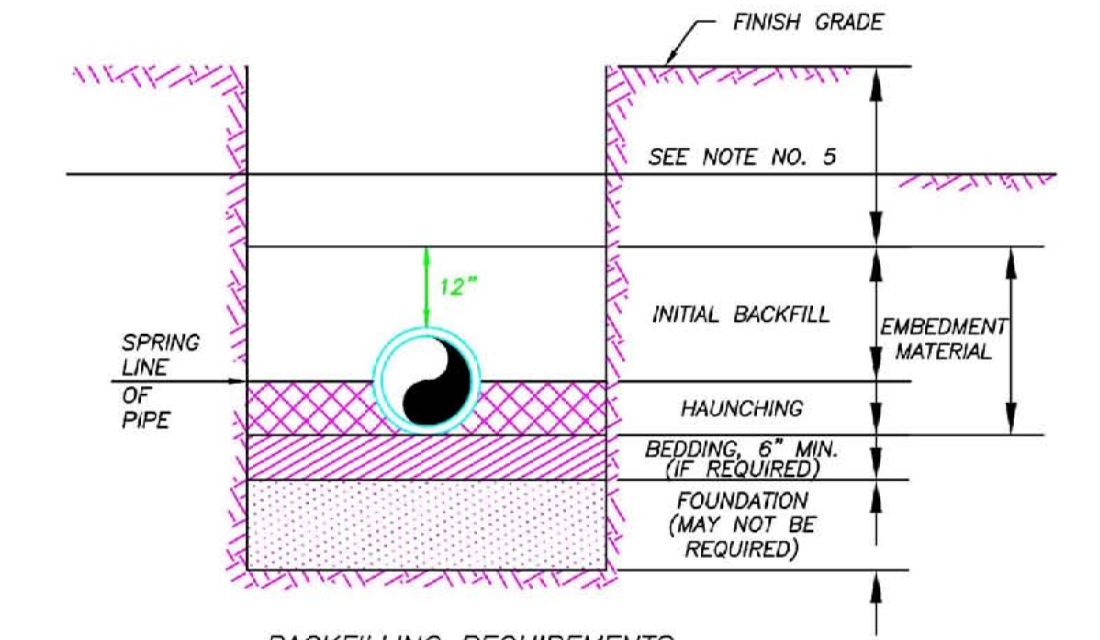
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	DESIGNED BY: JLM	DATE: 2010	COMPUTER FILE #	SCALE: N.T.S.
DRAWN BY: JLM		DATE: 2010		SCALE: N.T.S.
APPROVED BY: JLC		DATE: 2010		SCALE: N.T.S.
SHEET 1 OF 1		FT. PIERCE UTILITIES AUTHORITY		



- NOTES:**
- THE CONTRACTOR SHALL COMPLY WITH REQUIREMENTS OF THE FLORIDA TRENCH SAFETY ACT.
 - INITIAL BACKFILL SHALL BE HAND PLACED TO 12" ABOVE THE PIPE. BACKFILL SHALL BE MECHANICALLY TAMPED TO A MINIMUM OF 100% OF MAX. DENSITY AS DETERMINED BY AASHTO METHOD T-99.

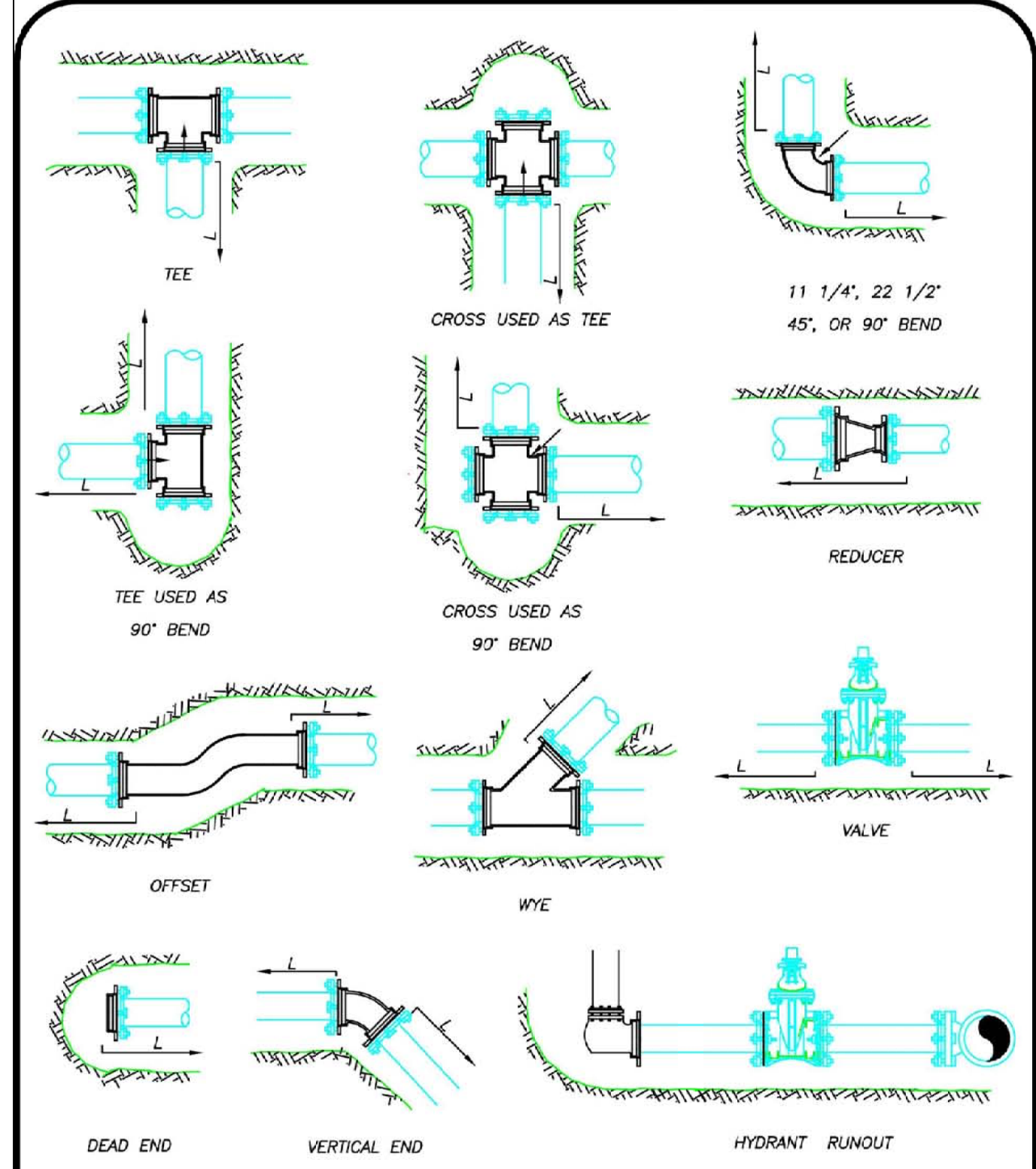
TYPICAL TRENCH DETAIL
N.T.S.

	TYPICAL TRENCH DETAIL		M-1	
	DESIGNED BY: JLM	DATE: 2010	COMPUTER FILE #	SCALE: N.T.S.
DRAWN BY: JLM		DATE: 2010		SCALE: N.T.S.
APPROVED BY: JLC		DATE: 2010		SCALE: N.T.S.
SHEET 1 OF 1		FT. PIERCE UTILITIES AUTHORITY		



- NOTES:**
- IN CERTAIN SOIL CONDITIONS A FOUNDATION MAY BE REQUIRED.
 - BEDDING IS REQUIRED PRIMARILY TO BRING THE TRENCH BOTTOM UP TO GRADE. BEDDING MATERIALS SHALL PROVIDE A UNIFORM AND ADEQUATE LONGITUDINAL SUPPORT UNDER THE PIPE.
 - HAUNCHING MATERIAL SHALL BE HAND PLACED TO THE SPRINGLINE OF THE PIPE. MATERIAL SHALL BE CONSOLIDATED UNDER THE PIPE AND HAND TAMPED TO PROVIDE ADEQUATE SIDE SUPPORT.
 - INITIAL BACKFILL MATERIAL SHALL BE HAND PLACED TO 12" ABOVE THE TOP OF PIPE. THE SOIL SHALL BE COMPACTED TO 100% MAX. DENSITY (AASHTO T-99).
 - BACKFILL SHALL BE COMPACTED TO 100% OF MAX. DENSITY AS PER AASHTO T-99, TO A POINT 30" BELOW PROPOSED PROFILE GRADE OR EXISTING GRADE. THE FINAL 30" OF BACKFILL SHALL BE COMPACTED TO 98% OF MAX. DENSITY AS PER AASHTO T-180.
 - DENSITY TEST SHALL BE PERFORMED AT AREAS DETERMINED BY THE UTILITIES ENGINEER OR PERMIT AGENCY HAVING JURISDICTION, AT THE CONTRACTORS EXPENSE.
 - CONTRACTOR TO COMPLY WITH ALL FEDERAL, STATE AND LOCAL TRENCH SAFETY REGULATIONS.

	BACKFILLING REQUIREMENTS		M-2	
	DESIGNED BY: JLM	DATE: 2010	COMPUTER FILE #	SCALE: N.T.S.
DRAWN BY: JLM		DATE: 2010		SCALE: N.T.S.
APPROVED BY: JLC		DATE: 2010		SCALE: N.T.S.
SHEET 1 OF 1		FT. PIERCE UTILITIES AUTHORITY		



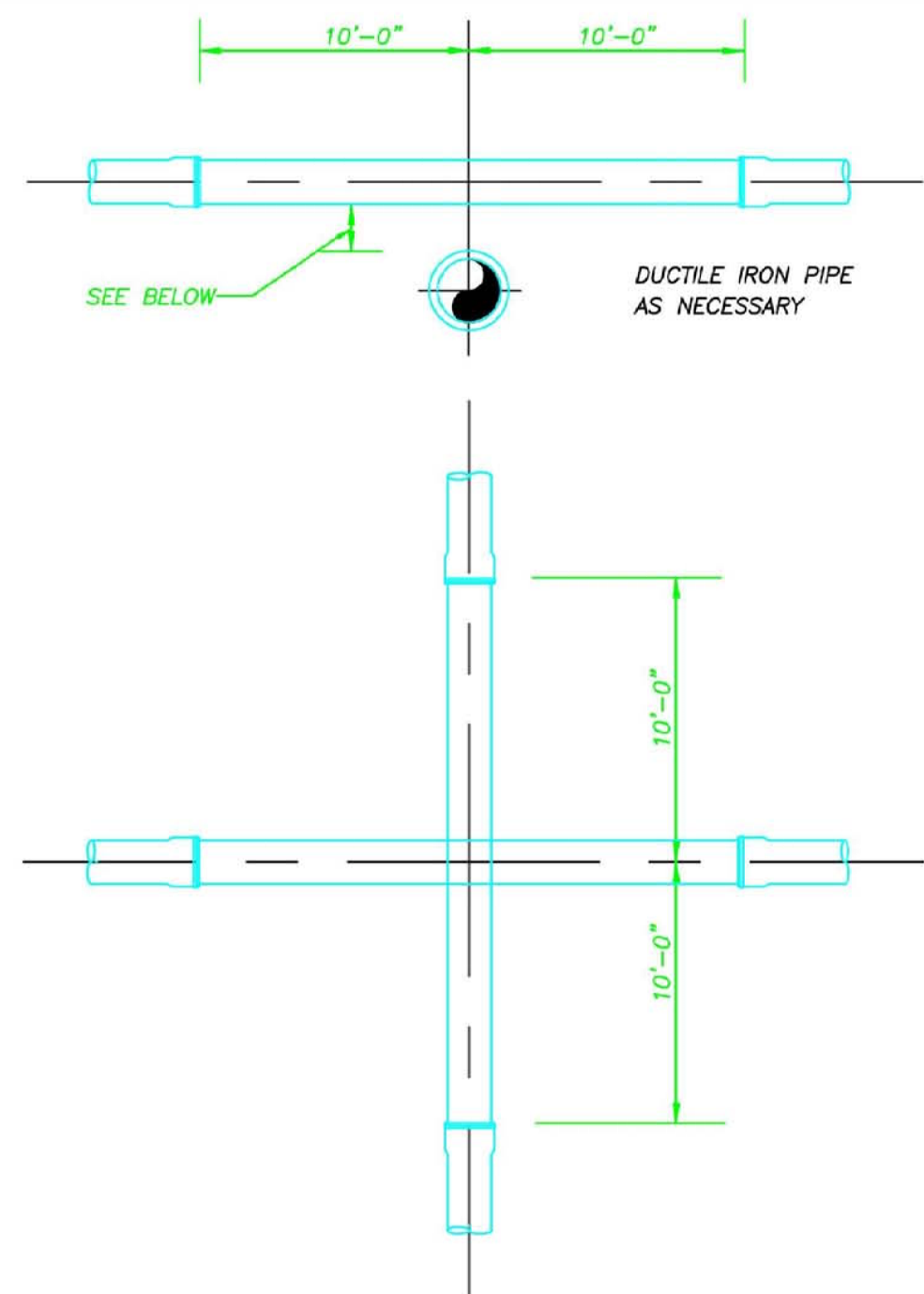
	MECHANICAL JOINT ANCHORING REQUIREMENTS		M-3	
	DESIGNED BY: JLM	DATE: 2010	COMPUTER FILE #	SCALE: N.T.S.
DRAWN BY: JLM		DATE: 2010		SCALE: N.T.S.
APPROVED BY: JLC		DATE: 2010		SCALE: N.T.S.
SHEET 1 OF 1		FT. PIERCE UTILITIES AUTHORITY		

MECHANICAL JOINT RESTRAINT NOTES

- NOTES:**
- THE ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING THE REQUIRED LENGTH TO BE RESTRAINED BASED UPON THE PROJECT AREA SOIL TYPE, PROPOSED TRENCH CONDITIONS AND DEPTH, PRESSURE OF 150 PSI, AND A SAFETY FACTOR OF TWO (2). A DRAWING OF EVERY TYPICAL FITTING ASSEMBLY WITHIN THE PROJECT SHALL BE SUBMITTED WHICH REFLECTS THE RESTRAINT DETAIL PROPOSED FOR USE, INCLUDING LENGTH OF PIPE RESTRAINT.
 - REQUIRED RESTRAINED LENGTH CALCULATIONS SHALL ALSO CONSIDER THE CONDITIONS OF OTHER BENDS OR FITTINGS THAT WILL BE LOCATED WITHIN THE CALCULATED RESTRAINED LENGTH (L) OF THE BEND OR FITTING IN QUESTION.
 - EVERY JOINT OR FITTING MUST BE RESTRAINED ON BOTH SIDES OF THE BEND AND FOR TEES ALONG THE BEND ALSO.

	MECHANICAL JOINT RESTRAINT NOTES		M-4	
	DESIGNED BY: JLM	DATE: 2010	COMPUTER FILE #	SCALE: N.T.S.
DRAWN BY: JLM		DATE: 2010		SCALE: N.T.S.
APPROVED BY: JLC		DATE: 2010		SCALE: N.T.S.
SHEET 1 OF 1		FT. PIERCE UTILITIES AUTHORITY		

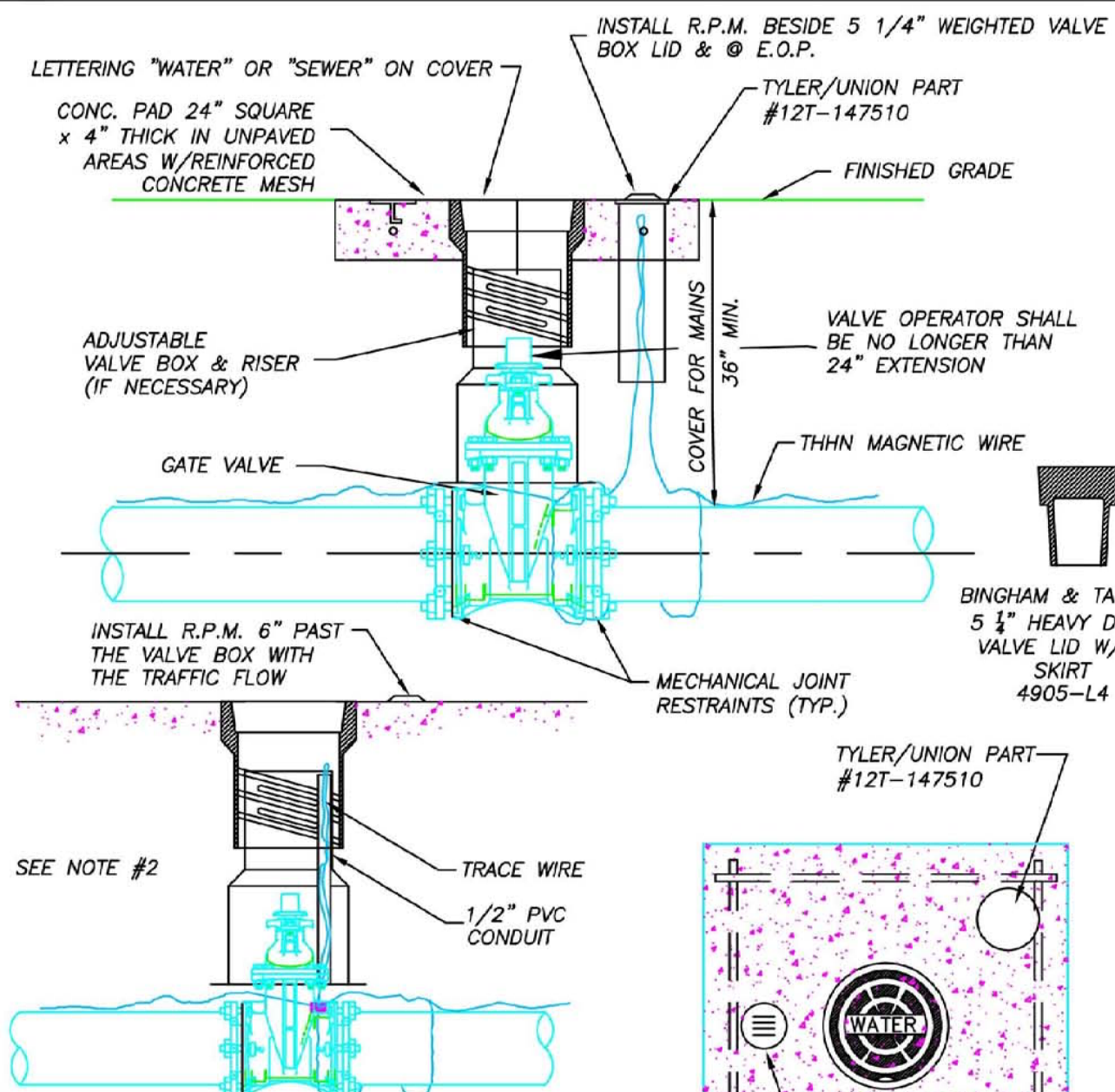
DATE: 08/25/2022	
DESIGNED BY: RA	PROJECT #: 22-017
DRAWN BY: RA	SHEET: C-11
CHECKED BY: RA	
FILE NAME: 22017SITE	
<p>TWIN'S CARWASH -FT. PIERCE</p> <p>SECTION 03, TOWNSHIP 36 S., RANGE 43 E. CITY OF FT. PIERCE, FLORIDA</p>	
<p>ASPIRE ENGINEERING, INC. CONSULTING ENGINEERS & PLANNERS</p> <p>1025 PROFESSIONAL PARK DR., BRANDON, FL 33511 TEL: (813)571-2850, FAX: (813)571-1783, E-mail: aspireeng@bellsouth.com</p>	



NOTE:
PLEASE REFER TO FORT PIERCE UTILITIES STANDARD SEPARATION STATEMENT FOR WATER / SEWER CONFLICTS.

UTILITY CROSSING DETAIL
N.T.S.

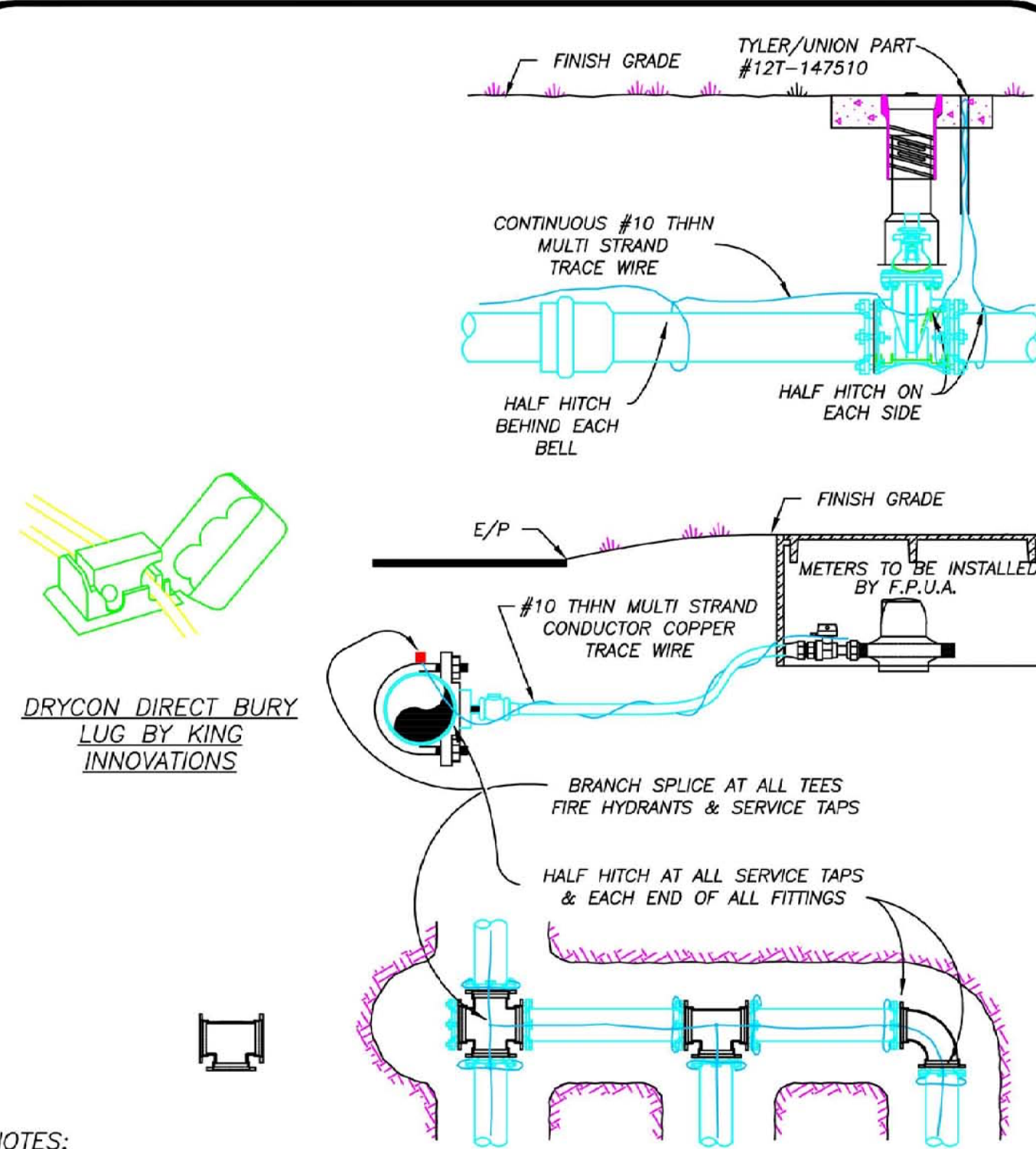
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DESIGNED BY: JLC	REVISION: 1	COMPUTER FILE #	APPROVED: JLC	DESIGNED BY: JLC	REVISION: 1	COMPUTER FILE #	APPROVED: JLC
DRAWN BY: JLC	SCALE: MISC DETAILS 200802.DWG			DRAWN BY: JLC	SCALE: MISC DETAILS 200802.DWG		
DATE: 2015				DATE: 2015			
FT. PIERCE UTILITIES AUTHORITY				FT. PIERCE UTILITIES AUTHORITY			
WATER/WASTEWATER ENGINEERING				WATER/WASTEWATER ENGINEERING			
SHEET 1 OF 1				SHEET 1 OF 1			



- NOTES:**
- BLUE REFLECTIVE PAVEMENT MARKER (RPM) FOR WATER VALVES AND GREEN RPM FOR WASTEWATER VALVES PAVEMENT EDGE.
 - FOR WATER AND WASTEWATER VALVES INSTALLED IN PAVED AREAS, ELIMINATE CONCRETE PAD AND ENCASE THE MAGNETIC WIRE IN 1/2" PVC INSIDE THE VALVE BOX SEVEN INCHES BELOW GRADE.
 - DIP MAY BE USED AS RISERS ONLY IF A VALVE BOX IS NOT MANUFACTURED FOR THAT DEPTH. NO PVC RISERS SHALL BE USED IN ANY CIRCUMSTANCES.

TYPICAL GATE VALVE & VALVE BOX DETAIL
N.T.S.

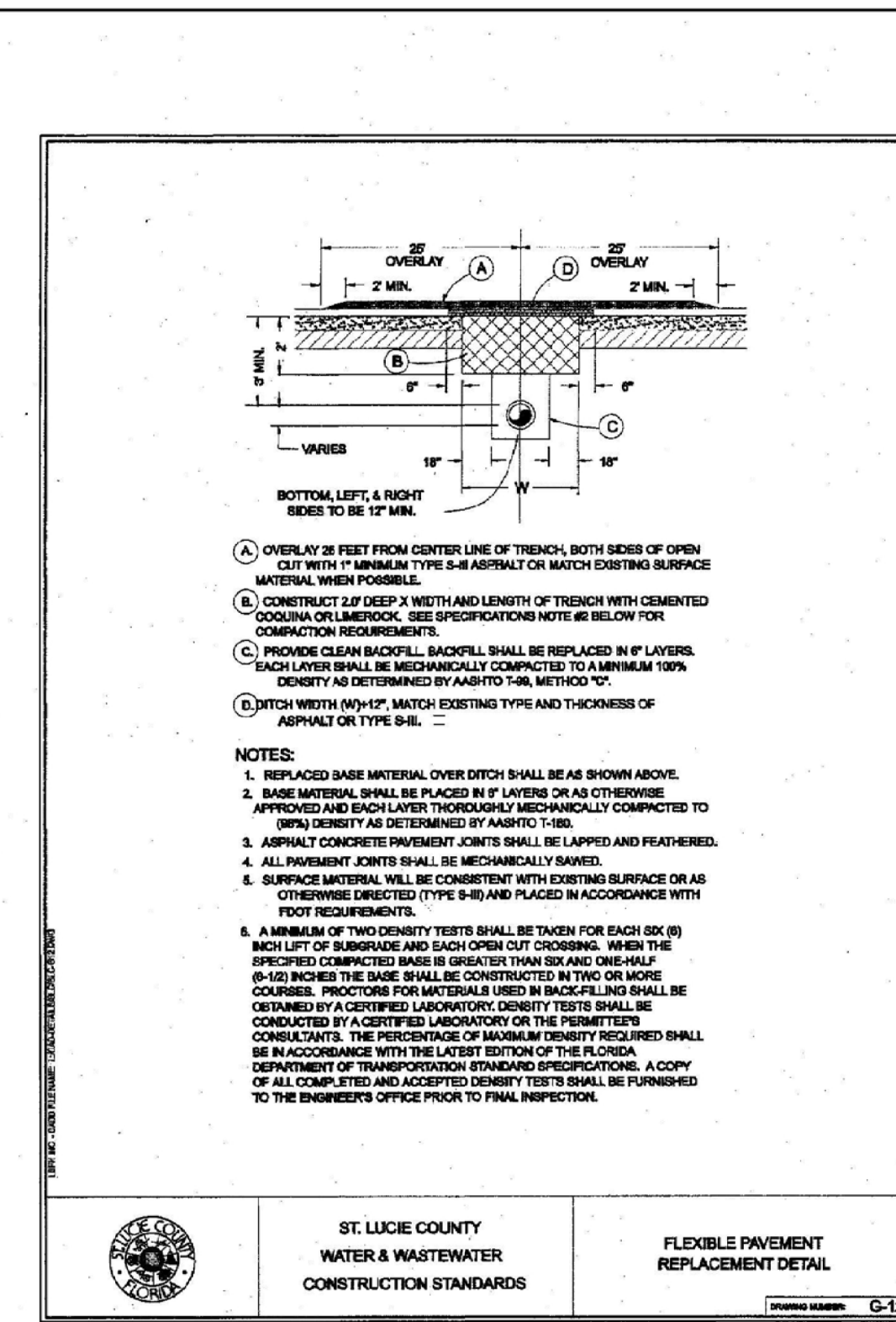
TYPICAL GATE VALVE & VALVE BOX DETAIL				M-6			
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DATE: 2015				DATE: 2015			
FT. PIERCE UTILITIES AUTHORITY				FT. PIERCE UTILITIES AUTHORITY			
WATER/WASTEWATER ENGINEERING				WATER/WASTEWATER ENGINEERING			
SHEET 1 OF 1				SHEET 1 OF 1			



- NOTES:**
- TRACE WIRE IS REQUIRED ON ALL PIPE AS NOTED BY UTILITIES ENGINEER AND SHOWN IN STANDARD DETAILS.
 - INCLUDE ALL COST OF MATERIAL & LABOR IN PRICE OF PIPE.
 - CONTRACTOR IS RESPONSIBLE FOR CONTINUITY OF ALL TRACE WIRE.

TRACE WIRE DETAIL
N.T.S.

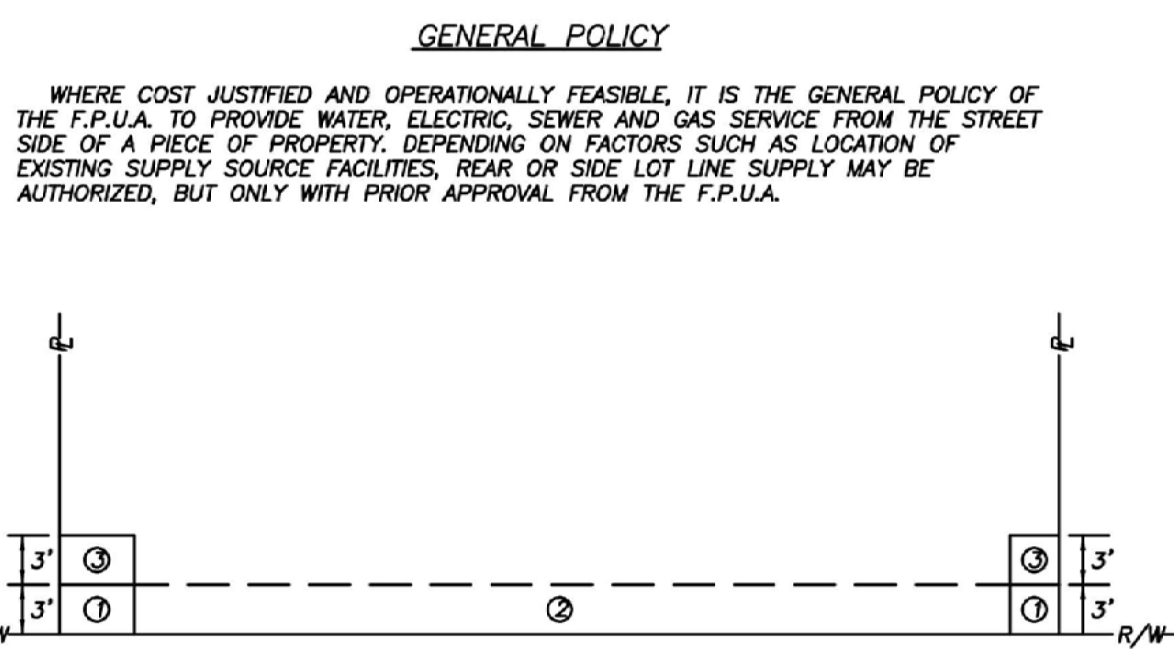
TRACE WIRE DETAIL				M-11			
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DATE: 2015				DATE: 2015			
FT. PIERCE UTILITIES AUTHORITY				FT. PIERCE UTILITIES AUTHORITY			
WATER/WASTEWATER ENGINEERING				WATER/WASTEWATER ENGINEERING			
SHEET 1 OF 1				SHEET 1 OF 1			



- NOTES:**
- OVERLAY IS SET FROM CENTER LINE OF TRENCH, BOTH SIDES OF OPEN CUT WITH 1" MINIMUM TYPE 4 ASPHALT OR MATCH EXISTING SURFACE MATERIAL WHEN POSSIBLE.
 - CONSTRUCT 2" DEEP 1" WIDTH AND LENGTH OF TRENCH WITH CEMENTED COAGULA OR LIMEPOCK. SEE SPECIFICATIONS NOTE # BELOW FOR CONSTRUCTION REQUIREMENTS.
 - PROVIDE CLEAN BACKFILL. BACKFILL SHALL BE REPLACED IN 4" LAYERS. EACH LAYER SHALL BE MECHANICALLY COMPACTED TO A MINIMUM TIGHTNESS AS DETERMINED BY ASTM D 1557, METHOD 10.
 - DITCH WIDTH (WHY?) MATCH EXISTING TRENCH AND THICKNESS OF ASPHALT OR TYPE 4B.
- NOTES:**
- REPLACED BASE MATERIAL OVER DITCH SHALL BE AS SHOWN ABOVE.
 - BASE MATERIAL SHALL BE PLACED IN 4" LAYERS OR AS CITY ENGINEER APPROVED AND EACH LAYER THOROUGHLY MECHANICALLY COMPACTED TO DENSITY AS DETERMINED BY ASTM D 1557.
 - ASPHALT CONCRETE FINISH SURFACE SHALL BE LAPPEL AND FEATHERED.
 - ALL PAVEMENT JOINTS SHALL BE MECHANICALLY SAWED.
 - SURFACE MATERIAL SHALL BE CONSISTENT WITH EXISTING SURFACE OR AS CITY ENGINEER DIRECTED (TYPE 4B AND PLACED IN ACCORDANCE WITH CITY REQUIREMENTS).
 - A MINIMUM OF TWO DENSITY TESTS SHALL BE TAKEN FOR EACH (60) INCH LIFT OF SUBGRADE AND EACH OPEN CUT CROSSING. WHEN THE SPECIFIED CONSTRUCTION IS GREATER THAN 12" AND ONLY ONE (60) INCH LIFT OF SUBGRADE IS SHOWN, THE TEST SHALL BE TAKEN ON MORE THAN ONE (60) INCH LIFT OF SUBGRADE. THE TESTS SHALL BE OBTAINED BY A CERTIFIED LABORATORY. DENSITY TESTS SHALL BE CONSIDERED A CERTIFIED LABORATORY OR THE PERMITS ENGINEER'S CONSULTANTS. THE PERCENTAGE OF MOISTURE DENSITY REQUIRED SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE OFFICIAL DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS. A COPY OF ALL COMP TESTS AND ACCEPTED DENSITY TESTS SHALL BE FURNISHED TO THE ENGINEER'S OFFICE PRIOR TO FINAL INSPECTION.

FLEXIBLE PAVEMENT REPLACEMENT DETAIL
N.T.S.

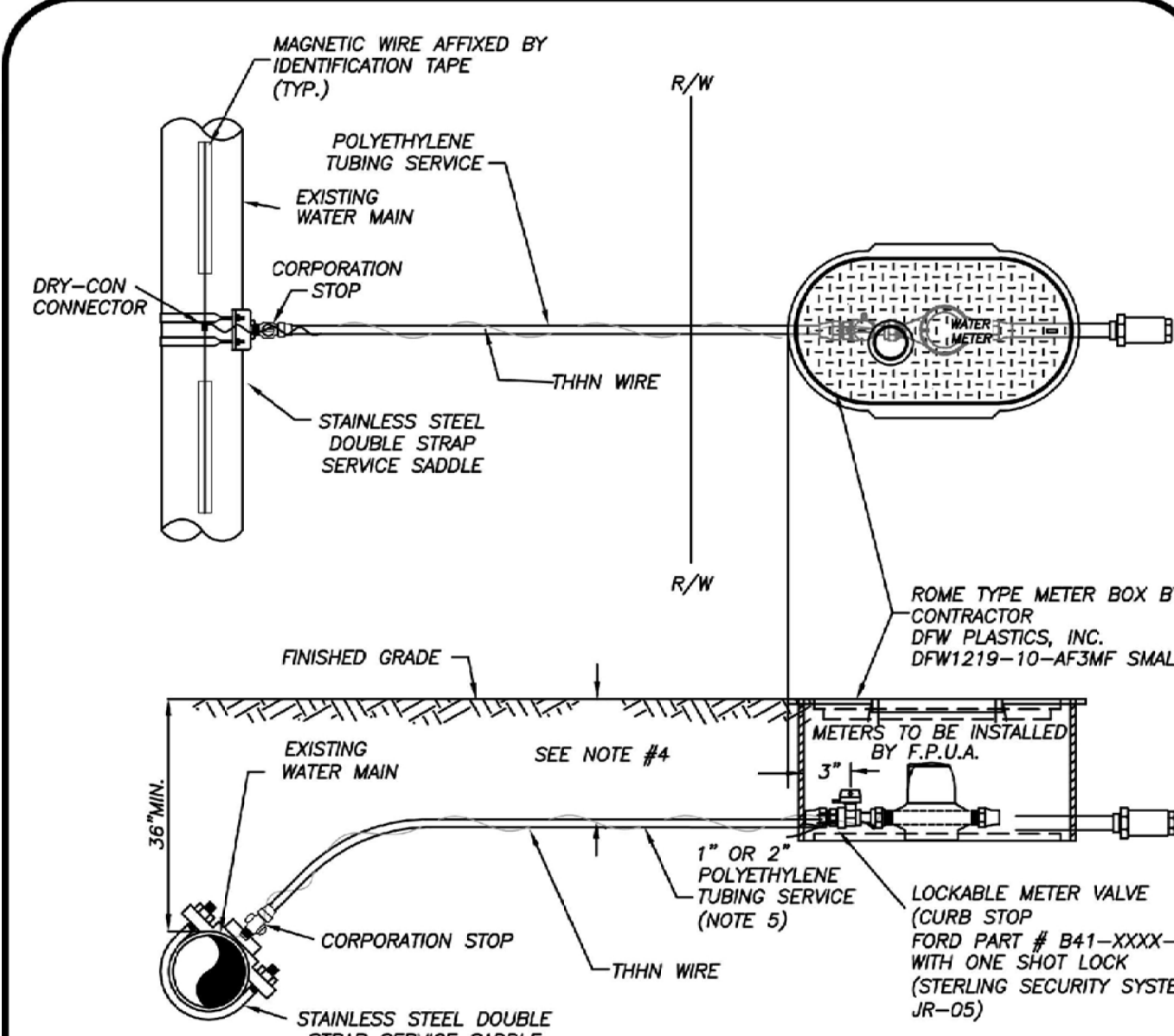
FLEXIBLE PAVEMENT REPLACEMENT DETAIL				R-4			
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DRAWN BY: JLC	SCALE: MISC DETAILS 200802.DWG			DRAWN BY: JLC	SCALE: MISC DETAILS 200802.DWG		
DATE: 2010				DATE: 2010			
FT. PIERCE UTILITIES AUTHORITY				FT. PIERCE UTILITIES AUTHORITY			
WATER/WASTEWATER ENGINEERING				WATER/WASTEWATER ENGINEERING			
SHEET 1 OF 1				SHEET 1 OF 1			



- GENERAL POLICY**
- WHERE COST JUSTIFIED AND OPERATIONALLY FEASIBLE, IT IS THE GENERAL POLICY OF THE F.P.U.A. TO PROVIDE WATER, ELECTRIC, SEWER AND GAS SERVICE FROM THE STREET SIDE OF A PIECE OF PROPERTY, DEPENDING ON FACTORS SUCH AS LOCATION OF EXISTING SUPPLY SOURCE FACILITIES, REAR OR SIDE LOT LINE SUPPLY MAY BE AUTHORIZED, BUT ONLY WITH PRIOR APPROVAL FROM THE F.P.U.A.
- NOTES:**
- THE PREFERRED POINT OF CONNECTION TO THE F.P.U.A. WATER METER, AREA ① SHALL BE LOCATED IN THE CORNER OF THE PROPERTY SELECTED BY THE F.P.U.A. AS THE BEST LOCATION FOR THE WATER METER. EVERY EFFORT WILL BE MADE TO SELECT THE CORNER WHERE TWO WATER SERVICES AND METERS CAN BE CONNECTED.
 - IF PHYSICAL BARRIERS OR OTHER OBSTACLES PREVENT THE CONNECTION OF THE BUILDING SERVICE LINE TO THE F.P.U.A. WATER SERVICE, WITHIN AREA ①, THE F.P.U.A. ENGINEERING DEPARTMENT MAY AUTHORIZE THE CONNECTION ALONG THE PORTION OF THE R/W LINE MARKED AREA ②, OR ALONG THE PROPERTY LINES MARKED AREA ③.
 - HORIZONTAL SEPARATION OF WATER AND WASTEWATER SERVICES SHOULD BE A MINIMUM OF 6 FEET AND PREFERABLY 10 FEET.
 - ALL METERS SHALL BE INSTALLED IN AN UNRESTRICTED AREA FOLLOWING EASE OF ACCESS AND PROVIDING ADEQUATE PROTECTION.
 - THE F.P.U.A. SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND REPAIR OF THE WATER LATERAL, WITHIN THE EASEMENT OR RIGHT-OF-WAY, UP TO THE POINT OF CONNECTION.

WATER METER PLACEMENT
N.T.S.

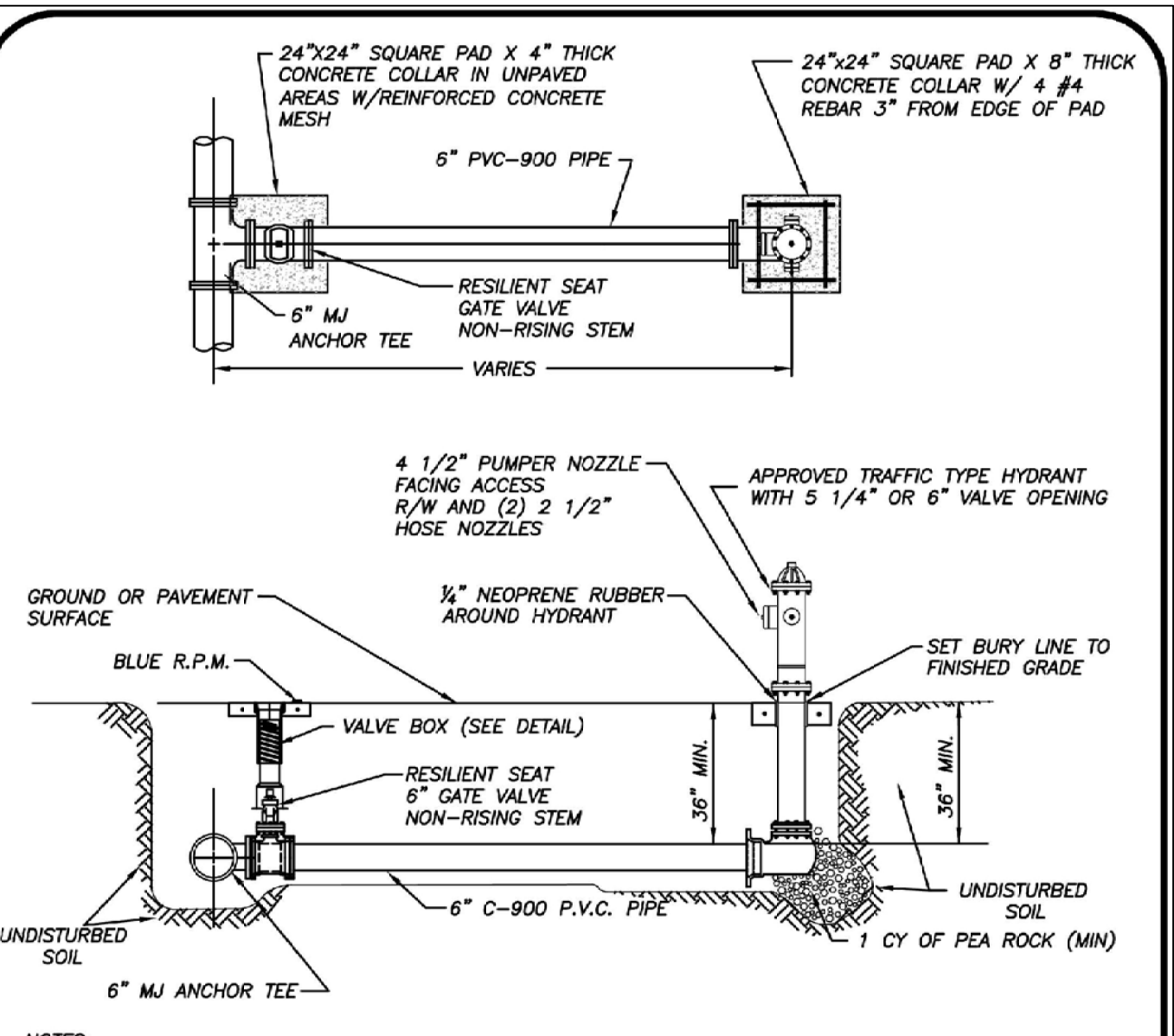
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DATE: 2010				DATE: 2010			
FT. PIERCE UTILITIES AUTHORITY				FT. PIERCE UTILITIES AUTHORITY			
WATER/WASTEWATER ENGINEERING				WATER/WASTEWATER ENGINEERING			
SHEET 1 OF 1				SHEET 1 OF 1			



- NOTES:**
- BLUE 10 GAUGE THIN WIRE SHALL BE ATTACHED TO THE SERVICE LINE.
 - WHERE SERVICES UNDER PAVEMENT ARE REQUIRED, THE POLYETHYLENE TUBING SHALL BE INSTALLED WITHIN SCHEDULE 40 PVC CASING PIPE.
 - 1" & 3/4" METER SIZES SHALL REQUIRE A LOCKABLE METER VALVE. (CURB STOP)
 - MINIMUM COVER IN UNPAVED AREAS SHALL BE 30", IN PAVED AREAS OR PLANNED ROADWAYS OR SWALES MIN. COVER SHALL BE 36".
 - FOR 2" COMMERCIAL SERVICE INSTALLATIONS, FPUA WILL INSTALL ABOVE GROUND METER PER DETAIL W-8.

TYPICAL SINGLE WATER SERVICE CONNECTION
N.T.S.

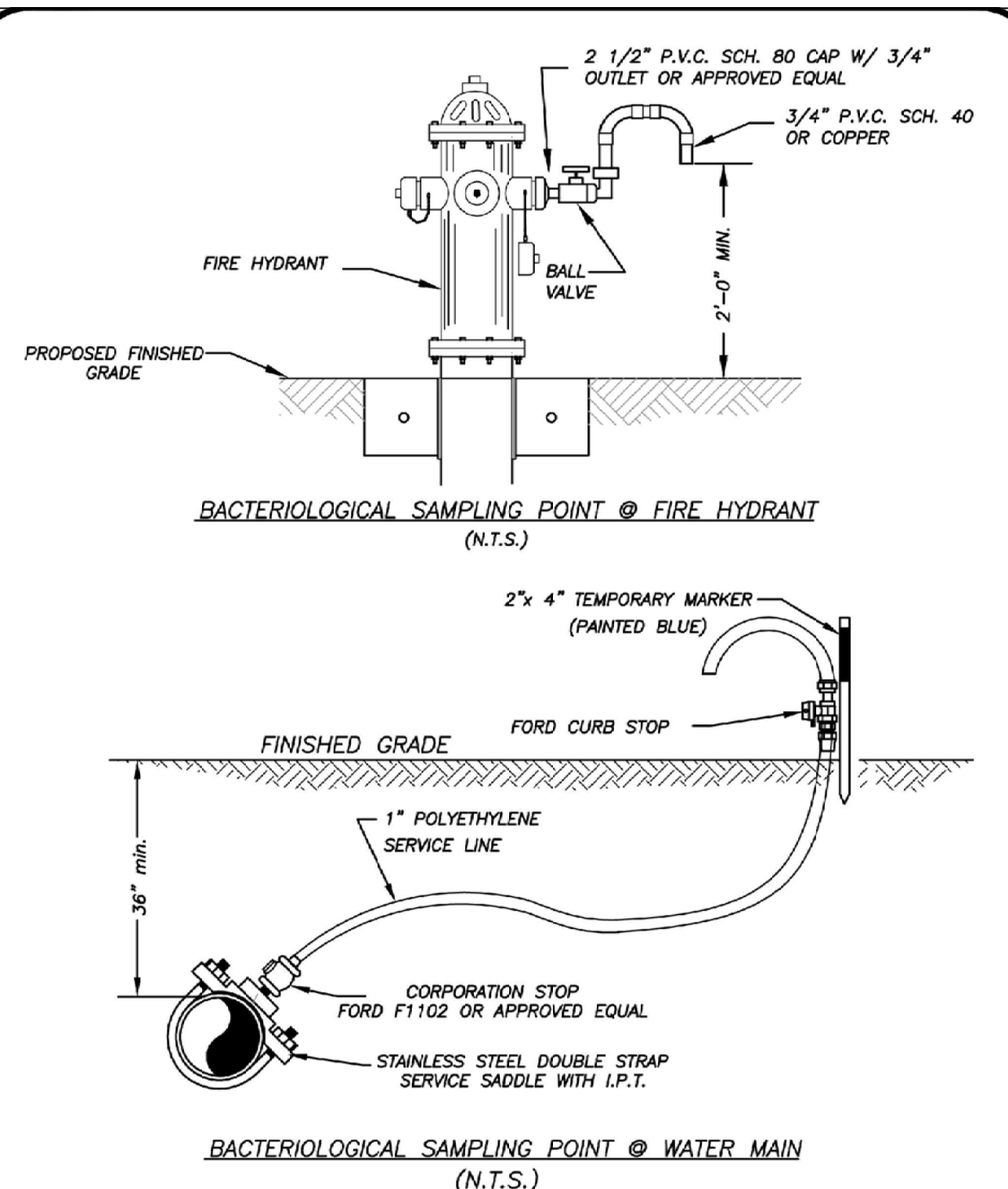
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FT. PIERCE UTILITIES AUTHORITY				FT. PIERCE UTILITIES AUTHORITY			
WATER/WASTEWATER ENGINEERING				WATER/WASTEWATER ENGINEERING			
SHEET 1 OF 1				SHEET 1 OF 1			



- NOTES:**
- HYDRANT SHALL BE INSTALLED PLUMB & TRUE.
 - HYDRANT SHALL BE PAINTED CARNIVAL RED FROM FACTORY.
 - HEEL TO REST IN UNDISTURBED SOIL.
 - THE ONLY HYDRANTS ACCEPTABLE ARE: MUELLER SUPER CENTURION 250 OR AMERICAN DARLING B-84-B-5.
 - HYDRANT ASSEMBLY MUST BE RESTRAINED TO TEE.
 - ALL FITTINGS SHALL BE MECHANICAL JOINT.
 - ENTIRE ASSEMBLY TO BE MECHANICALLY RESTRAINED.
 - BLUE LOCATOR SHALL BE PLACED IN CENTER OF TRAVEL LANE CLOSEST TO HYDRANT.
 - ALL HYDRANT VALVE BOX COVERS SHALL BE PAINTED CARNIVAL RED.
 - LOCATE WIRE SHALL TERMINATE AT HYDRANT ISOLATION VALVE.
 - HYDRANTS SHALL BE NO MORE THAN FIFTEEN FEET (15 FT.) FROM THE CURB OF ROADWAYS OR FROM THE EDGE OF PAVEMENT. CLEARANCES OF SEVEN AND ONE HALF FEET (7'-6") IN FRONT OF AND TO THE SIDES OF THE FIRE HYDRANTS WITH FOUR FOOT (4 FT.) CLEARANCE TO THE REAR OF HYDRANTS SHALL BE MAINTAINED.

TYPICAL FIRE HYDRANT ASSEMBLY
N.T.S.

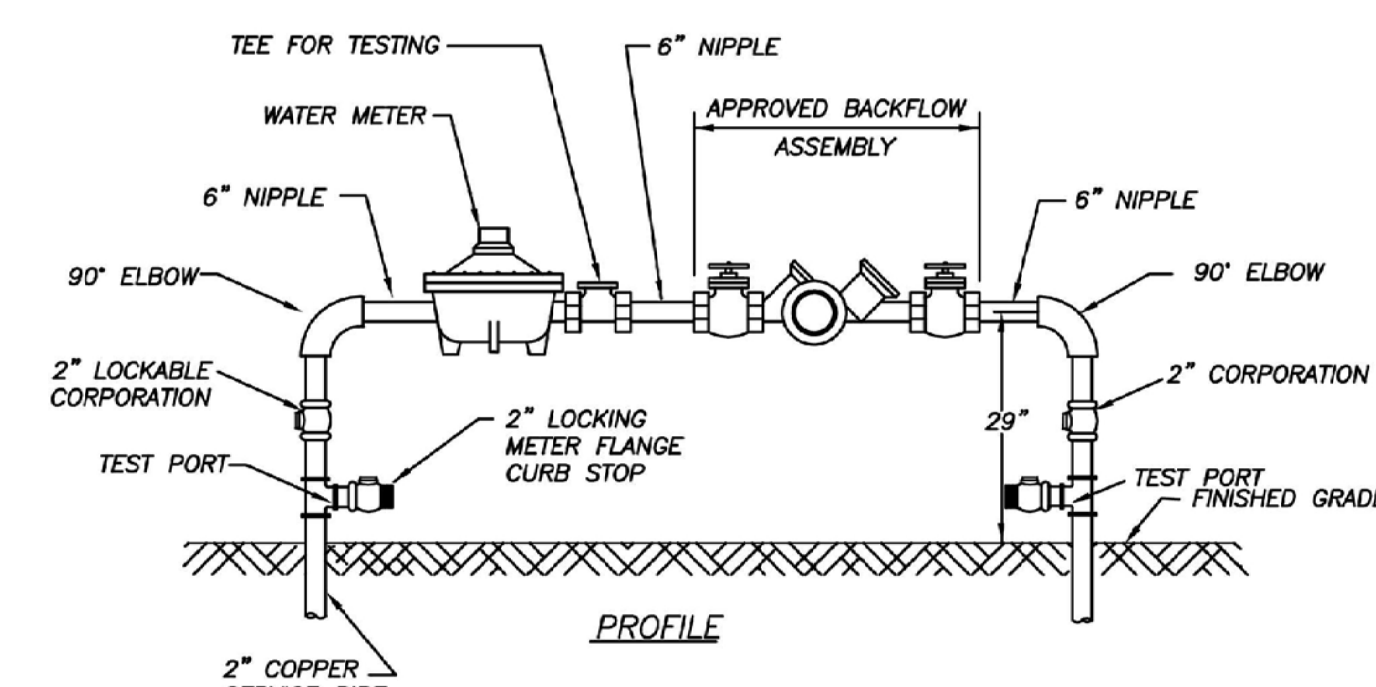
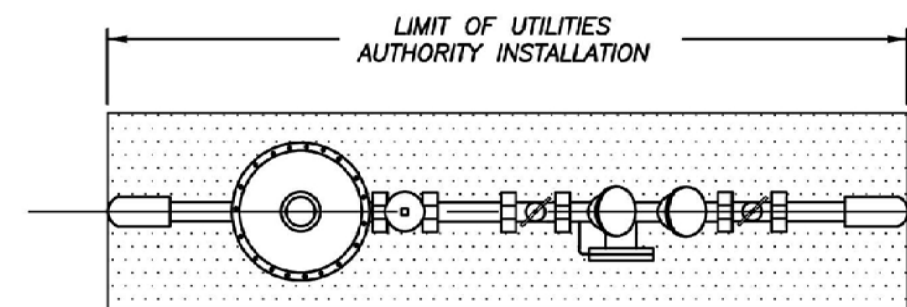
TYPICAL FIRE HYDRANT ASSEMBLY				W-5			
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DESIGNED BY: JLC	REVISION: 1	COMPUTER FILE #	APPROVED: JLC	DESIGNED BY: JLC	REVISION: 1	COMPUTER FILE #	APPROVED: JLC
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DATE: 2010				DATE: 2010			
FT. PIERCE UTILITIES AUTHORITY				FT. PIERCE UTILITIES AUTHORITY			
WATER/WASTEWATER ENGINEERING				WATER/WASTEWATER ENGINEERING			
SHEET 1 OF 1				SHEET 1 OF 1			



- NOTE:**
AFTER TESTING REMOVE 1" P.E. LINE AND CAP WITH BRASS PLUG AT CORPORATION STOP.

BACTERIOLOGICAL SAMPLING POINT @ WATER MAIN
N.T.S.

BACTERIOLOGICAL SAMPLING POINT DETAIL				W-6			
DATE: 03-09	DESIGN: CONCRETE SLAB	SCALE: 1/8" = 1'-0"	APPROVED: JLC	DATE: 03-09	DESIGN: CONCRETE SLAB	SCALE: 1/8" = 1'-0"	APPROVED: JLC
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DATE: 2010				DATE: 2010			
FT. PIERCE UTILITIES AUTHORITY				FT. PIERCE UTILITIES AUTHORITY			
WATER/WASTEWATER ENGINEERING				WATER/WASTEWATER ENGINEERING			
SHEET 1 OF 1				SHEET 1 OF 1			



NOTES:

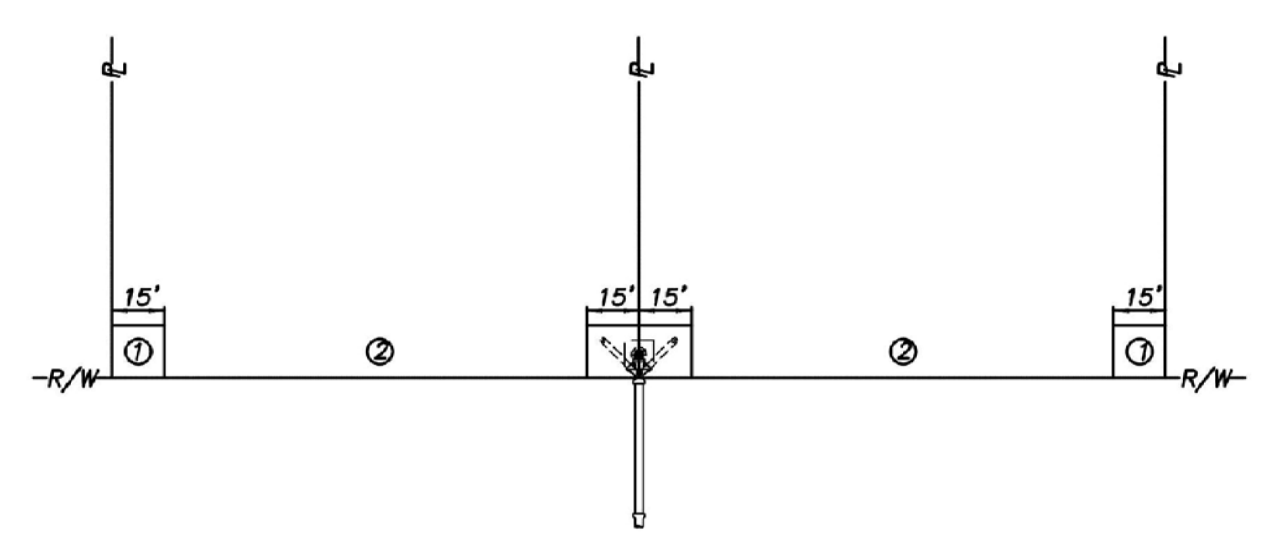
- LANDSCAPING REQUIRED PER CITY OF FORT PIERCE OR ST. LUCIE COUNTY ORDINANCE. NO PLANTS OR TREES WITHIN 18" AROUND METER OR BACKFLOW. NO SOLDER JOINTS.
- ASSEMBLY TO BE 29" FROM FINISH GRADE TO CENTERLINE OF THE FLANGED 90° BEND.

WATER METER/BACKFLOW PREVENTER ASSEMBLY DOMESTIC SERVICE (COMMERCIAL) (N.T.S.)

	WATER METER/BACKFLOW PREVENTER ASSEMBLY DOMESTIC SERVICES (WATER SIZE 2" OR LESS)				W-8
	DATE: 02-09	DESIGN: JLC	REVISION:	SCALE: 1/8" = 1'-0"	
DESIGNED BY: JLC DRAWN BY: JLC CHECKED BY: JLC APPROVED BY: JLC		COMPUTER FILE # SHEET DETAIL 200802.DWG SCALE: N.T.S. DATE: 2010		WATER/WASTEWATER ENGINEERING FT. PIERCE UTILITIES AUTHORITY SHEET 1 OF 1	

GENERAL POLICY

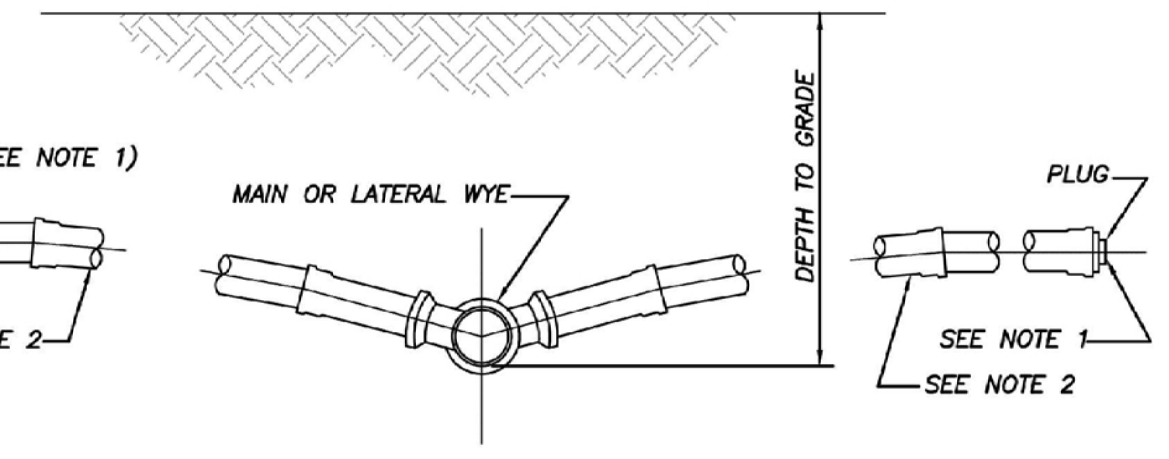
WHERE COST JUSTIFIED AND OPERATIONALLY FEASIBLE, IT IS THE GENERAL POLICY OF THE F.P.U.A. TO PROVIDE WATER, ELECTRIC, SEWER AND GAS SERVICE FROM THE STREET SIDE OF A PIECE OF PROPERTY, DEPENDING ON FACTORS SUCH AS LOCATION OF EXISTING SUPPLY SOURCE FACILITIES, REAR OR SIDE LOT LINE SUPPLY MAY BE AUTHORIZED, BUT ONLY WITH PRIOR APPROVAL FROM THE F.P.U.A.



- NOTES:**
- THE PREFERRED POINT OF CONNECTION TO THE F.P.U.A. SEWER LATERAL, AREA ①, SHALL BE LOCATED IN THE CORNER OF THE PROPERTY SELECTED BY THE F.P.U.A. AS THE BEST LOCATION FOR THE LATERAL. EVERY EFFORT WILL BE MADE TO SELECT THE CORNER WHERE TWO LATERALS CAN BE CONNECTED IN A "Y" CONFIGURATION AS SHOWN.
 - IF PHYSICAL BARRIERS OR OTHER OBSTACLES PREVENT THE CONNECTION OF THE BUILDING SERVICE LINE TO THE F.P.U.A. SEWER LATERAL, WITHIN AREA ①, THE F.P.U.A. ENGINEERING DEPARTMENT MAY AUTHORIZE THE CONNECTION ALONG THE PORTION OF THE R/W LINE MARKED AREA ②.
 - HORIZONTAL SEPARATION OF WATER AND WASTEWATER SERVICES SHOULD BE A MINIMUM OF SIX FEET AND PREFERABLY 10 FEET.
 - THE WASTEWATER LATERAL SHALL BE LOCATED WITHIN RIGHT-OF-WAY AND TERMINATE AT THE PROPERTY LINE.
 - THE F.P.U.A. SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND REPAIR OF THE WASTEWATER LATERAL WITHIN THE EASEMENT OR RIGHT-OF-WAY, UP TO THE POINT OF CONNECTION.

WASTEWATER SERVICE PLACEMENT (N.T.S.)

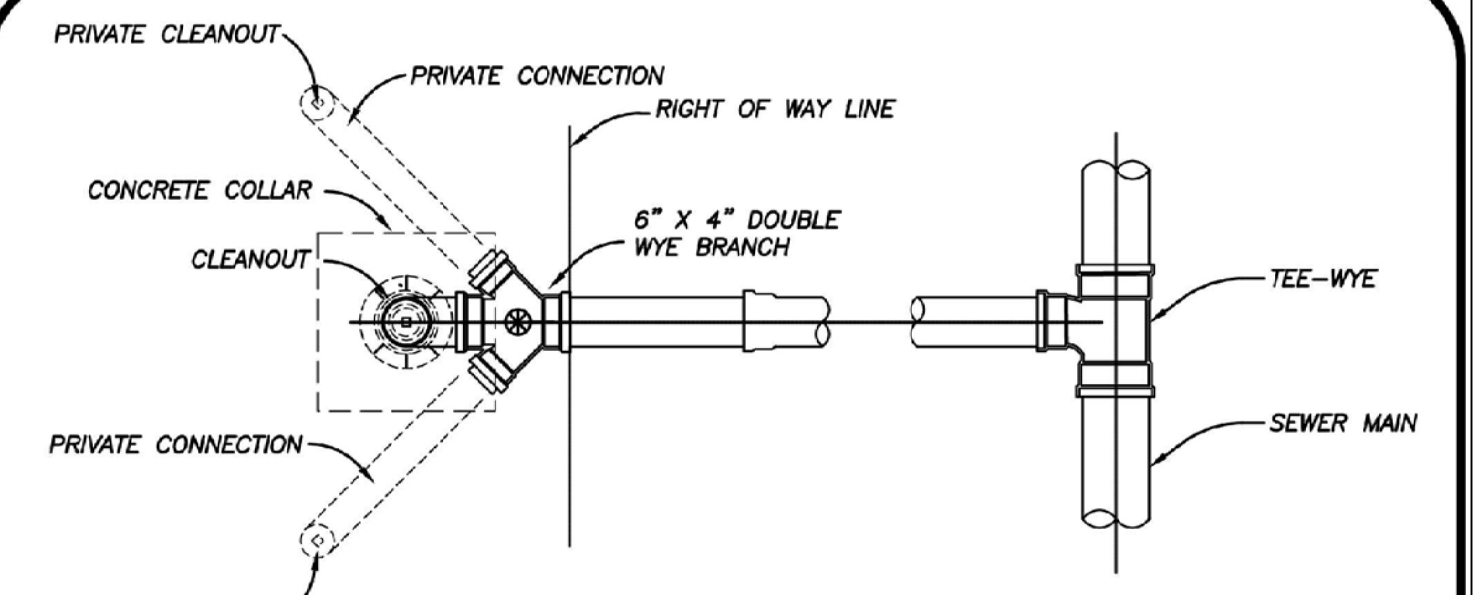
	WASTEWATER SERVICE PLACEMENT POLICY				S-1
	DATE: 02-08	DESIGN: JLC	REVISION:	SCALE: 1/8" = 1'-0"	
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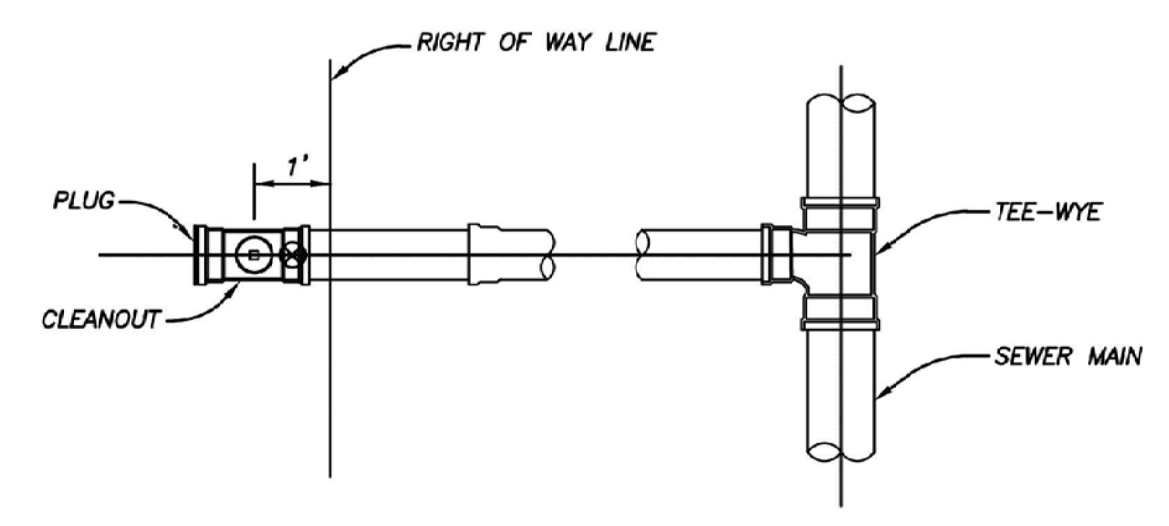
- NOTES:**
- BALL TYPE WASTEWATER LOCATOR BY 3M CORP. OR APPROVED EQUAL.
 - MINIMUM SLOPE OF 1/8" PER FOOT, USE GREATER SLOPE WHERE POSSIBLE.
 - SERVICE LATERAL SHALL TERMINATE WITH A CLEANOUT.
 - INSTALL CLEANOUT AT THE PROPERTY LINE. REFER TO DETAIL S-1 FOR SPECIFIC PROPERTY LAYOUT.

SERVICE CONNECTION (N.T.S.)

	SERVICE CONNECTION WASTEWATER				S-2
	DATE: 02-08	DESIGN: JLC	REVISION:	SCALE: 1/8" = 1'-0"	
DESIGNED BY: JLC DRAWN BY: JLC CHECKED BY: JLC APPROVED BY: JLC		COMPUTER FILE # SHEET DETAIL 200802.DWG SCALE: N.T.S. DATE: 2010		WATER/WASTEWATER ENGINEERING FT. PIERCE UTILITIES AUTHORITY SHEET 1 OF 1	



DOUBLE LATERAL SERVICE CONNECTION AT PROPERTY LINE

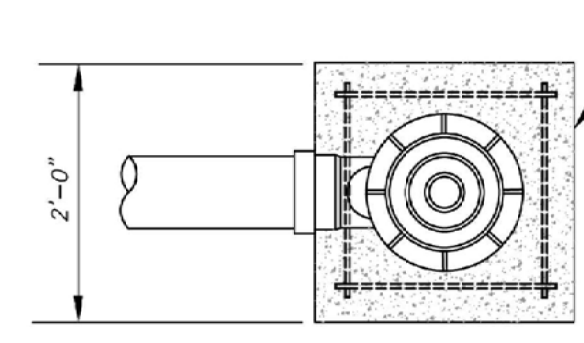
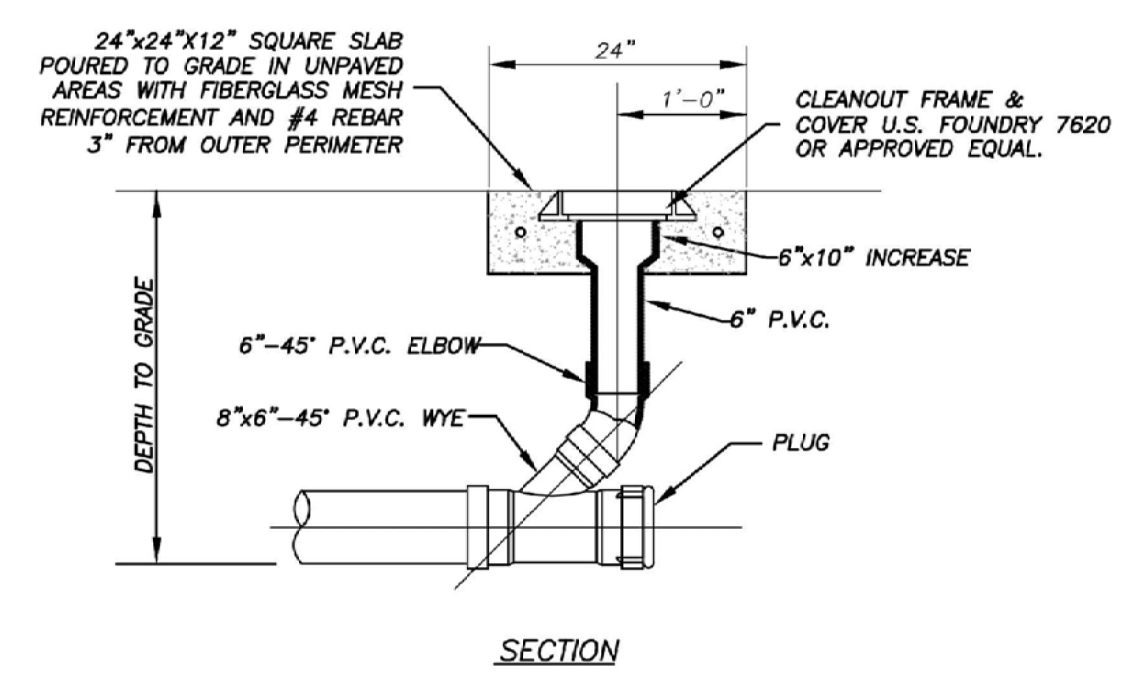


SINGLE SERVICE LATERAL CONNECTION

● = BALL TYPE WASTEWATER LOCATOR INSTALLED ABOVE THIS POINT BALL BY 3M CORP. OR APPROVED EQUAL SERVICE LATERAL SHALL TERMINATE WITH A CLEANOUT

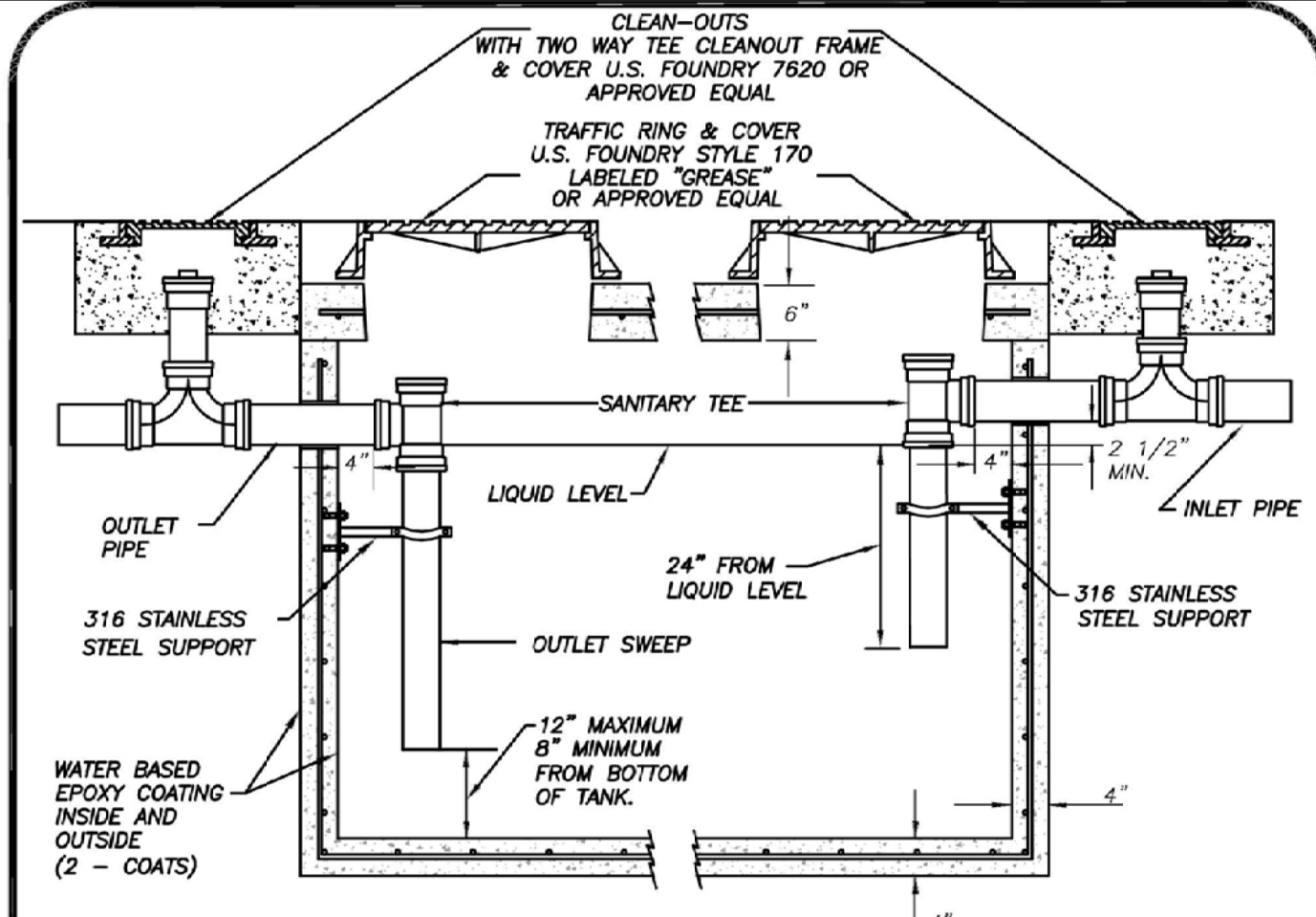
SERVICE CONNECTION (N.T.S.)

	SERVICE CONNECTION WASTEWATER				S-3
	DATE: 02-08	DESIGN: JLC	REVISION:	SCALE: 1/8" = 1'-0"	
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TERMINAL CLEANOUT DETAIL (COMMERCIAL) (N.T.S.)

	TERMINAL CLEANOUT DETAIL WASTEWATER				S-4B
	DATE: 10-06	DESIGN: JLC	REVISION:	SCALE: 1/8" = 1'-0"	
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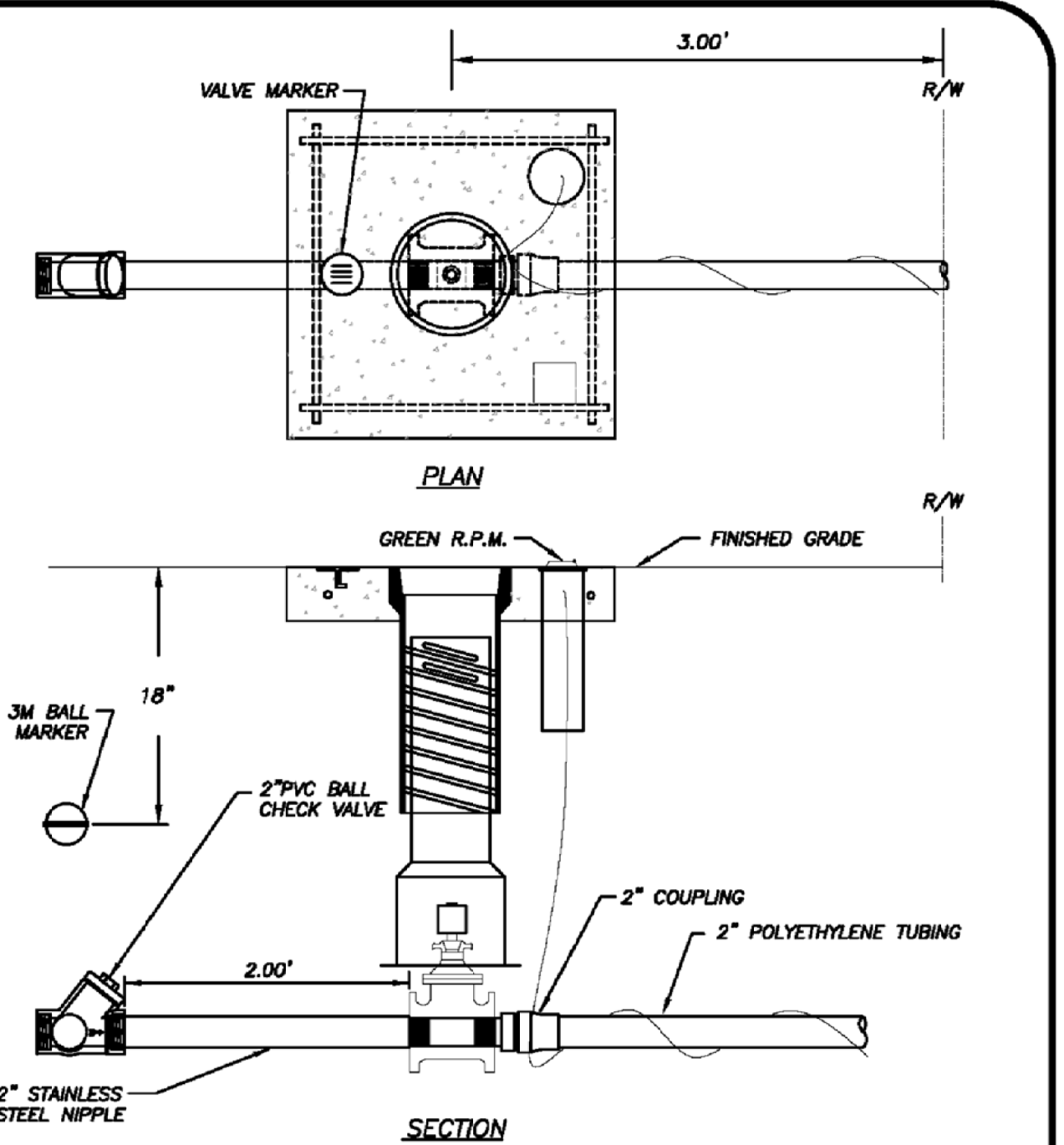


- NOTES:**
- ALL PIPING SHALL BE A MINIMUM OF 4".
 - PIPING SHALL BE INSTALLED USING PRESSED-IN BOOTS OR CONCRETE MANHOLE ADAPTERS (ONLY).
 - INLET AND OUTLET TEES MUST BE INSTALLED A MINIMUM OF 4" FROM INSIDE THE STRUCTURE WALLS. ACTUAL DIMENSION SHOULD BE ADJUSTED TO ENSURE THAT AN UNOBSTRUCTED VERTICAL VIEW OF THE TEES CAN BE SEEN THROUGH THE GREASE INTERCEPTOR'S ACCESS OPENINGS.
 - FPUA'S SEWER USE ORDINANCE WILL DICTATE GREASE INTERCEPTOR(S) SIZE. ALL INTERCEPTORS SHALL BE A MINIMUM OF 1,000 GALLONS AND A MAXIMUM OF 1,250 GALLONS.
 - TANK MUST BE TRAFFIC BEARING (SHALL MEET H-20 LOADING REQUIREMENTS).
 - TANK WALLS AND BOTTOM SLAB MUST BE A MINIMUM 4" THICK AND THE TOP SLAB A MINIMUM 6" THICK; ALL WITH #4 REBAR REINFORCEMENT.
 - TANK SEAMS SHALL BE JOINED AND SEALED WITH MINIMUM 1-3/4" "RAM-NEK" SEALER OR EQUIVALENT TO FORM A WATER TIGHT SEAL.
 - ALL INTERNAL AND EXTERNAL CONCRETE SURFACES SHALL RECEIVE 2 COATS OF A WATER BASED EPOXY COATING.
 - GREASE INTERCEPTORS MUST BE INSTALLED ON DRY, STABLE AND UNDISTURBED SOIL. IF THESE CONDITIONS CAN NOT BE MET, EXCAVATION SHALL BE EXTENDED TO SIX INCHES BELOW THE STRUCTURE AND A CUSHION OF 3/4" STONE SHALL BE PROVIDED.
 - PRECAST CONCRETE RINGS SHALL BE UTILIZED FOR RING & COVER ADJUSTMENTS.

SPECIAL NOTE: IF INTERCEPTOR IS REPLACING AN EXISTING INTERCEPTOR THAT WILL BE ABANDONED IN PLACE, PERFORM THE FOLLOWING: (1) STRUCTURE MUST BE PRESSURE WASHED TO ENSURE ALL GREASE AND FOREIGN MATERIAL IS REMOVED, (2) REMOVE PORTION OF STRUCTURE WITHIN 3 FEET OF FINISH GRADE AND (3) INSTALL A MINIMUM 6 INCH DIAMETER HOLE IN THE BOTTOM SLAB OF THE STRUCTURE.

STANDARD DETAIL FOR GREASE, OIL, AND SAND INTERCEPTORS (N.T.S.)

	STANDARD DETAIL FOR GREASE, OIL, AND SAND INTERCEPTORS				S-14
	DATE: 2010	DESIGN: JLC	REVISION:	SCALE: 1/8" = 1'-0"	
DESIGNED BY: JLC DRAWN BY: JLC CHECKED BY: JLC APPROVED BY: JLC		COMPUTER FILE # SHEET DETAIL 200802.DWG SCALE: N.T.S. DATE: 2010		WATER/WASTEWATER ENGINEERING FT. PIERCE UTILITIES AUTHORITY SHEET 1 OF 1	



- NOTES:**
- FORCE MAIN CONNECTION SHALL CONSIST OF A 2" TAPPING SADDLE, 2" STAINLESS STEEL NIPPLE AND 2" THREADED RESILIENT SEAT GATE VALVE.
 - GREEN 10 GAUGE THIN WIRE SHALL BE ATTACHED TO THE SERVICE LINE.
 - WHERE SERVICES UNDER PAVEMENT ARE REQUIRED, THE POLYETHYLENE TUBING SHALL BE INSTALLED WITHIN SCHEDULE 40 PVC CASING PIPE.
 - MINIMUM COVER IN UNPAVED AREAS SHALL BE 30"; IN PAVED AREAS OR PLANNED ROADWAYS OR SWALES MIN. COVER SHALL BE 36".

	GRINDER STATION CONNECTION				S-16
	DATE: 02-09	DESIGN: JLC	REVISION:	SCALE: 1/8" = 1'-0"	
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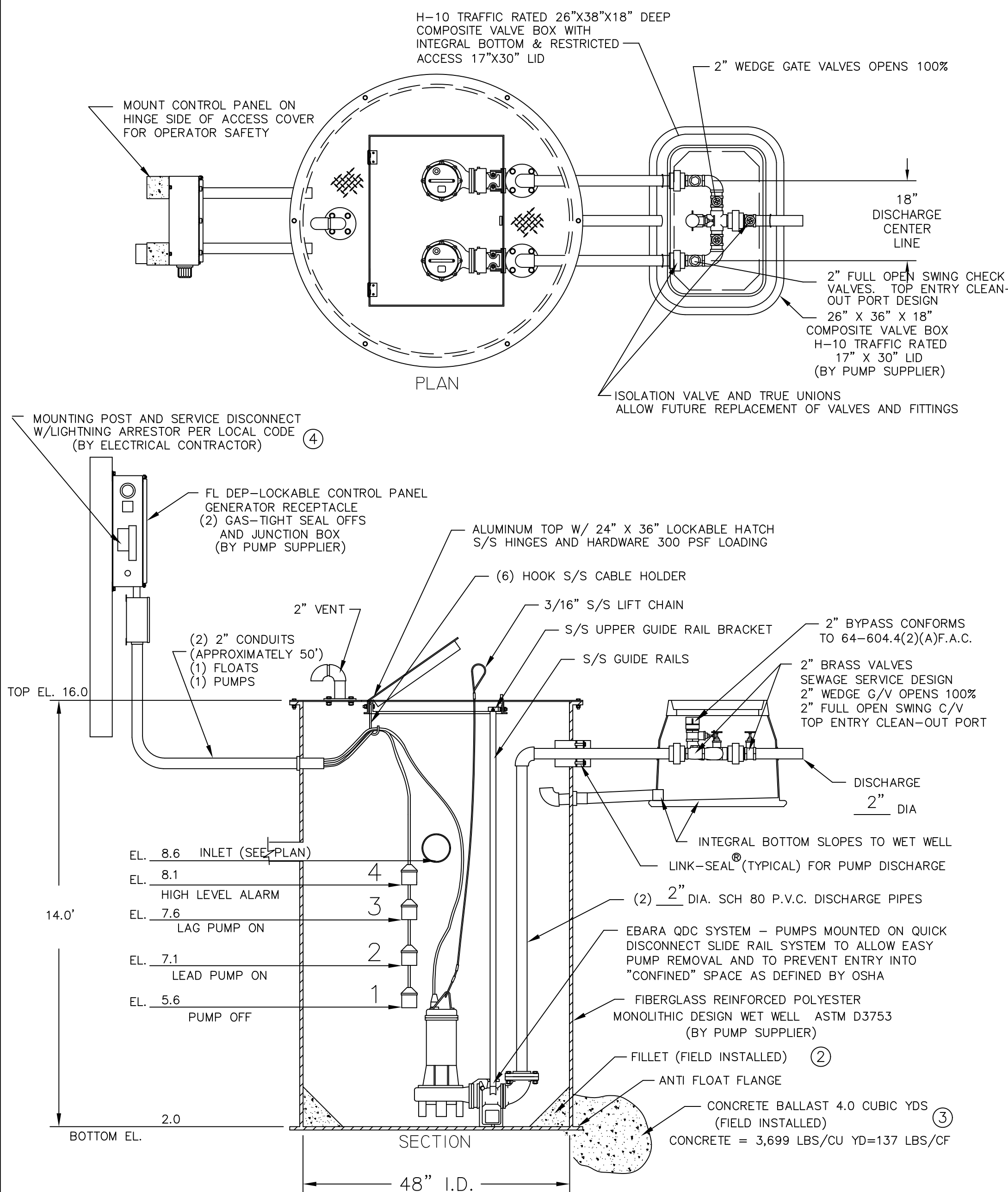
NO. REVISIONS
 1. SUBMIT TO CORP. FOOT. SPAMD. NLSRWCD & FPUA 9/16/22

ASPIRE ENGINEERING, INC.
 CONSULTING ENGINEERS & PLANNERS
 1025 PROFESSIONAL PARK DR., BRANDON, FL 33511
 TEL: (813)571-2850, FAX: (813)571-1753; E-mail: aspireeng@sho.com

TWIN'S CARWASH - FT. PIERCE
 SECTION 03, TOWNSHIP 36 S., RANGE 43 E.
 CITY OF FT. PIERCE, FLORIDA

SITE DETAILS

DATE: 08/25/2022
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 CHECKED BY: RA
 FILE NAME: 22017SITE
 PROJECT #: 22-017
 SHEET: C-13



48" DUPLEX STATION - 2" PIPING WITH SLIDE RAIL SYSTEM, V.B. AND F.D.E.P. PANEL

4. MOUNTING POST, SERVICE DISCONNECT AND LIGHTING ARRESTOR PER LOCAL CODE
3. CONCRETE BALLAST AS REQUIRED
2. GROUT FILLET (1 TO 1 SLOPE TO "HOPPER" BOTTOM)

FIELD INSTALL BY CONTRACTOR

GENERAL NOTES

FURNISH AND INSTALL EBARA SUBMERSIBLE GRINDER PUMPS:

DESIGN CONDITION:

MODEL	EBARA 50 DGF	5	HP
GPM	91 GPM @ 87 FT &	94 GPM @ 45 FT	FT/TDH
VOLTAGE	480	THREE	PHASE
DISCHARGE	2"	162 MM	IMPELLER

1. RATED FOR TWENTY (20) STARTS PER HOUR.
2. AIR FILLED MOTOR DESIGNED FOR SEWAGE APPLICATION WITH CLASS F INSULATION.
3. DUAL MECHANICAL SHAFT SEALS (SILICON CARBIDE / SILICON CARBIDE) LOCATED OUT OF THE PUMPAGE, IN A SEPARATE OIL FILLED CHAMBER.
4. HIGH TEMPERATURE BALL BEARINGS B-10 RATING OF 60,000 HOURS. UPPER BEARING - SINGLE ROW AND LOWER BEARINGS - DOUBLE ROW TYPE.
5. PUMP SHAFT HORSEPOWER (BHP) SHALL NOT EXCEED MOTOR RATED HORSEPOWER THROUGHOUT THE ENTIRE OPERATING RANGE OF THE PUMP PERFORMANCE CURVE.
6. SINGLE PHASE MOTORS SHALL BE DUAL WOUND, CAPACITOR START-RUN AND CAPABLE OF OPERATING ON 208/230 VOLT WITH A 10% TOLERANCE VOLTAGE (190 TO 260). THREE PHASE MOTORS SHALL BE DUAL WOUND AND CAPABLE OF OPERATING ON 208/230 VOLT WITH A 10% TOLERANCE VOLTAGE (190 TO 260) OR OPERATE ON 460 VOLT BY CHANGING THE MOTOR LEADS INSIDE THE PUMP.

FIBERGLASS WET WELL: SHALL BE A ONE PIECE UNIT WITH INTEGRAL BOTTOM, WALL AND UPPER FLANGE. THE ENTIRE FIBERGLASS WET WELL SHALL HAVE A DYNAMIC LOAD RATING OF 16,000 FT/LBS. EACH UNIT MUST BE SERIAL NUMBERED TO IDENTIFY THE TEST PROCEDURE. ASTM D 3753 SPECIFICATIONS SHALL BE REQUIRED AS MINIMUM.

ALUMINUM HATCH: TSC MODEL-54R (54") ROUND WITH 24" X 36" LOCKABLE HATCH, REINFORCED FOR LOAD RATING OF 300 LBS/FT WITH HOLD OPEN SAFETY ARM, LOCKING DEVICE FOR HASP TYPE PADLOCK AND STAINLESS STEEL HARDWARE.

VALVE BOX: FIBERGLASS COMPOSITE (H-10 TRAFFIC RATED) WITH INTEGRAL BOTTOM. (FOR 1 1/4" AND 2" DISCHARGE PIPING SXS HEADER SYSTEM) SHALL BE 26" X 36" X 18" WITH 17" X 30" LIMITED ACCESS LID

ACCESSORIES: #304 S/S - GUIDE RAILS, UPPER GUIDE RAIL BRACKETS, CABLE HOLDER, ANCHOR BOLTS AND PUMP LIFTING CHAINS.

VALVES: SHALL BE SEWAGE SERVICE DESIGN BRASS SWING CHECK VALVES WITH TOP ENTRY CLEAN-OUT PORT AND BRASS WEDGE GATE VALVES OPEN 100%.

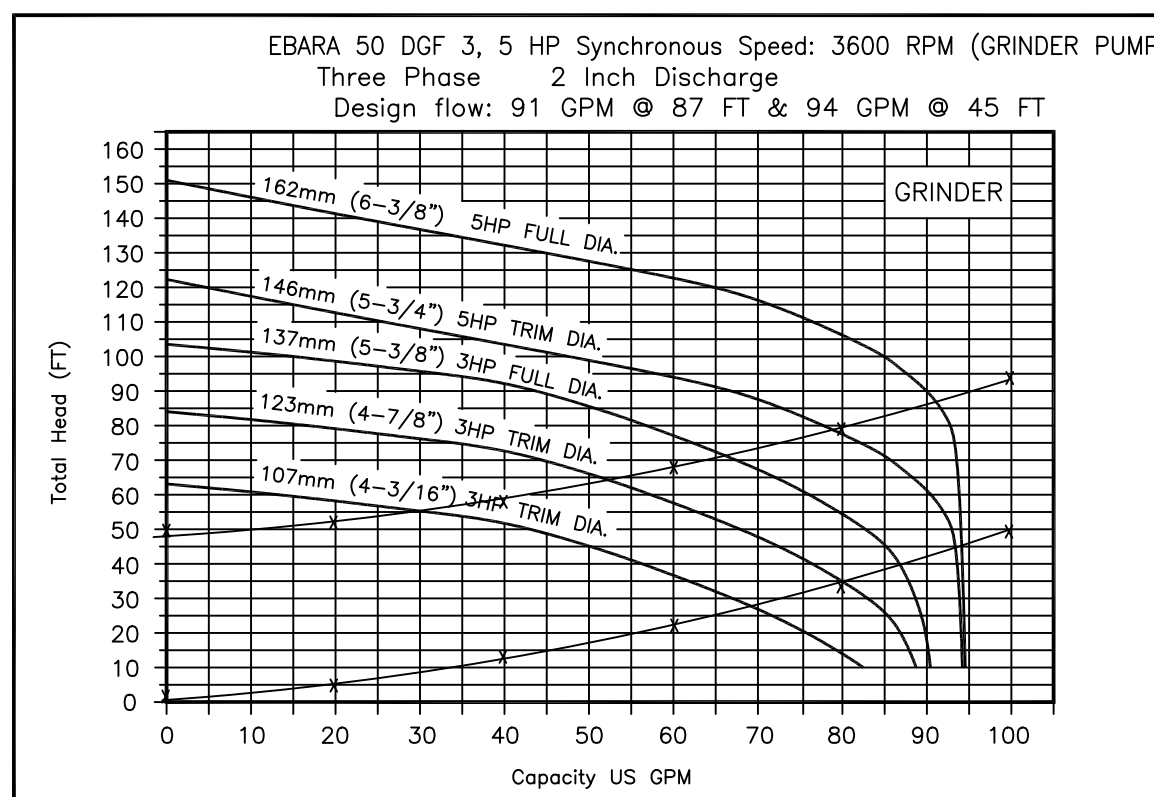
PIPING: 2" SCHEDULE 80 PVC.

FLOAT SWITCHES: UL LISTED SJ ELECTRO MODEL (SJ 30 SWENO).

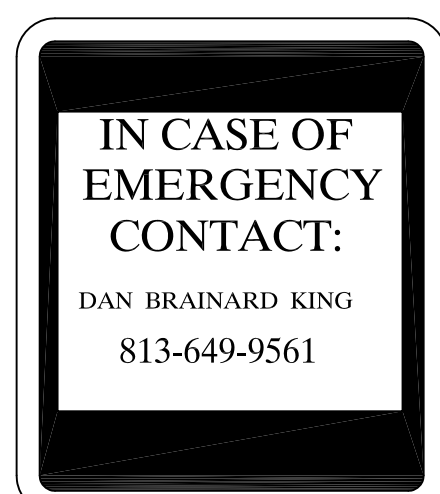
PUMP SUPPLIER SHALL PROVIDE SUBMERSIBLE PUMPS, SLIDE RAIL ASSEMBLIES, CONTROL PANEL, JUNCTION BOX, FLOAT SWITCHES, ALUMINUM HATCH AND ACCESSORIES TO INSURE PROPER OPERATION AND WARRANTY.

THE COMPLETE PACKAGE PUMPING STATION SHALL HAVE PUMP BASES, SLIDE RAIL ASSEMBLIES AND DISCHARGE PIPING ASSEMBLED BY TECHNICAL SALES CORPORATION READY TO SHIP FOR FIELD INSTALLATION.

THE STOCKING DISTRIBUTOR FOR EBARA SUBMERSIBLE PUMPS: TECHNICAL SALES CORPORATION, 4621 N. HALE AVE TAMPA, FL 33614 (813)876-9256



PUMP PERFORMANCE CURVE



SIGN DETAILS

SIGN NOTES:
MIN. LETTER SIZE: 2"

CONTROL PANEL -SHALL CONFORM TO FL DEP 64-604.42(A)

CONTROL PANEL SHALL BE TSC MODEL # 38-D IN NEMA 4X FIBERGLASS ENCLOSURE. THE PANEL SHALL MEET STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP), ENVIRONMENTAL PROTECTION COMMISSION (EPC) AND LOCAL CODE REQUIREMENTS GOVERNING PRIVATE LIFT STATIONS.

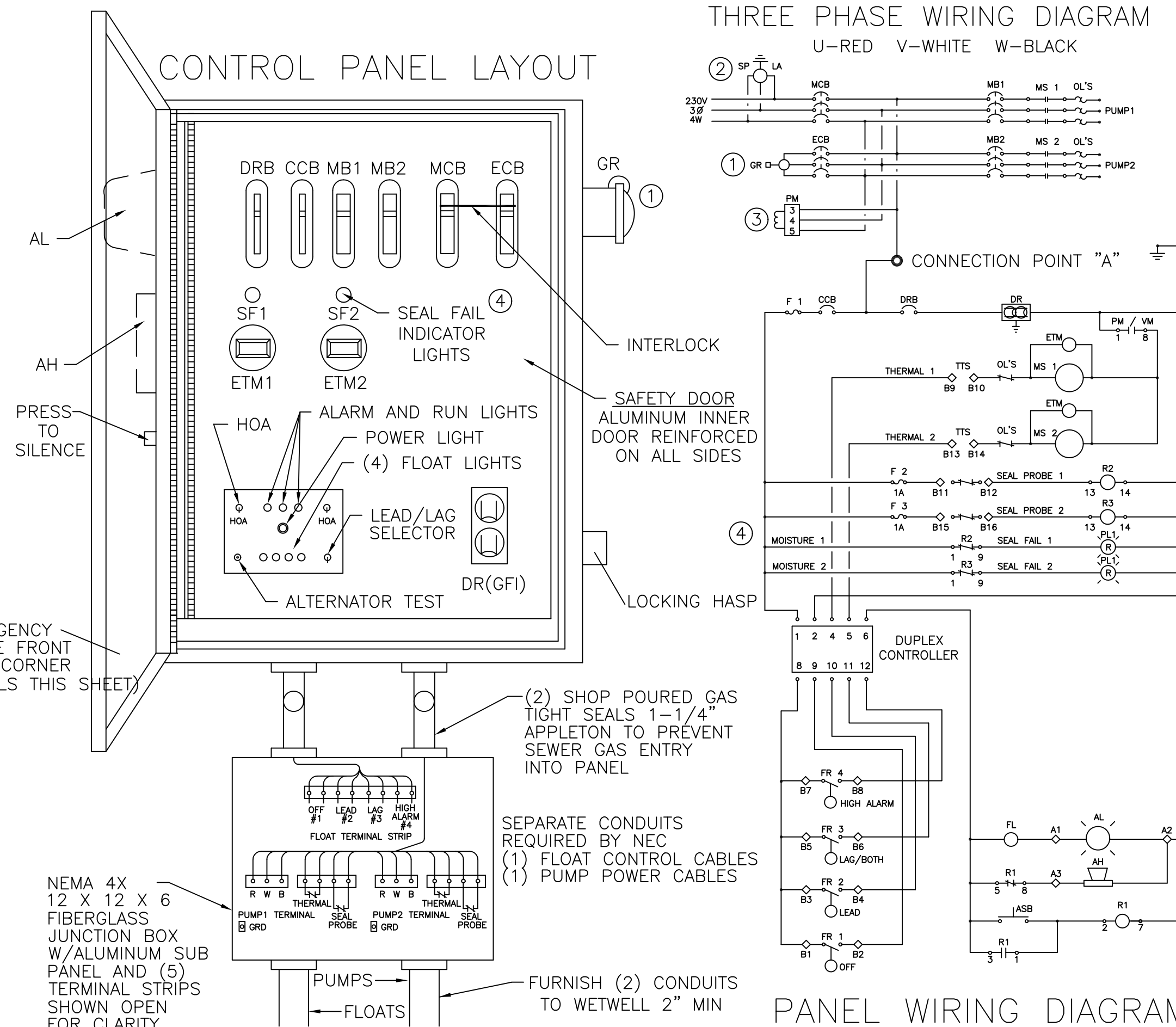
FLOAT SWITCHES AND CONTROL SYSTEM SHALL BE UL LISTED AND INTRINSICALLY SAFE. ALL COMPONENTS SHALL BE UL LISTED.

A JUNCTION BOX IS REQUIRED, WITH SHOP POURED SEALS BETWEEN BOX AND CONTROL PANEL TO PREVENT SEWER GAS ENTRY INTO CONTROL PANEL.

ELECTRICAL CONTRACTOR TO PROVIDE SERVICE DISCONNECT WITH LIGHTNING ARRESTOR MOUNTED PER LOCAL CODES.

THE CONTROL PANEL SHALL BE SUITABLY INSTALLED TO PREVENT SETTLING OR TIPPING.

CONTROL PANEL LAYOUT



LEGEND

- AH ALARM HORN
- AL ALARM LIGHT
- ASB ALARM SILENCE BUTTON
- ATS ALTERNATOR TEST SWITCH
- CCB CONTROL CIRCUIT BREAKER
- DR DUPLEX RECEPTACLE
- DRB DUPLEX RECEPTACLE BREAKER
- ECB EMERGENCY CIRCUIT BREAKER
- ETM ELAPSED TIME METER
- F FUSE
- FL FLASHER
- FS FLOAT SWITCH (REGULATOR)
- GR GENERATOR RECEPTACLE
- GRD GROUND
- HOA HAND-OFF-AUTOMATIC SELECTOR
- LA LIGHTNING ARRESTOR
- MB MOTOR BREAKER
- MCB MAIN CIRCUIT BREAKER
- MS MOTOR STARTER
- N NEUTRAL
- OL'S OVERLOAD HEATERS
- PM PHASE MONITOR
- PTS PUMP TERMINAL STRIP
- R RELAY
- RC RUN CAPACITOR
- RD DISCHARGE RESISTOR
- RL PUMP RUN INDICATORS
- RTS REGULATOR TERMINAL STRIP
- SC START CAPACITOR
- SF SEAL FAIL
- SR START RELAY
- SP SURGE PROTECTOR
- TTS THERMAL TERMINAL STRIP

PANELS SHALL CONFORM TO FLORIDA DEP 64-604.400

- 1 GENERATOR RECEPTACLE FOR EMERGENCY POWER CONNECTION WITH INTERLOCK
- 2 SURGE PROTECTION AND LIGHTNING PROTECTION ON ALL INCOMING LEGS
- 3 PHASE PROTECTION SHALL BE PROVIDED
- 4 SEAL FAIL DETECTING

PANEL MANUFACTURER SHALL BE A "UL" LISTED SHOP.

EBARA DUPLEX GRINDER PUMP STATION
FIBERGLASS WET WELL

TECHNICAL SALES CORPORATION
CORPORATION
TSC PRE-FAB PUMP SOLUTIONS®
WATERWORKS & WASTEWATER SPECIALTIES

Representing Innovative Manufacturers
MODEL TSC2-40.1®

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NO. REVISIONS
DATE: 08/25/2022
SUBMIT TO: COFF. FOOT. SF/MD. NLS/RED & EPLA 9/16/22

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TWIN'S CARWASH -FT. PIERCE
SECTION 03, TOWNSHIP 36 S., RANGE 43 E.
CITY OF FT. PIERCE, FLORIDA

LIFT STATION DETAILS

DATE: 08/25/2022
DESIGNED BY: RA
DRAWN BY: RA
CHECKED BY: RA
FILE NAME: 22017SITE
PROJECT #: 22-017
SHEET: C-14