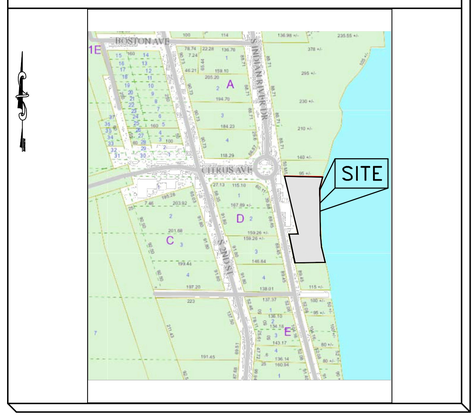
SITE PLAN

FOR

INDIAN RIVER VILLAS

SECTION 10, TOWNSHIP 35 S, RANGE 40 E
CITY OF FT. PIERCE, FLORIDA

LOCATION MAP



DRAWING INDEX

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LEGAL DESCRIPTION

LOTS 1, 2, & 3, BLOCK D, ANDREWS & RICHARDS ADDITION TO FORT PIERCE, ACCORDING TO THE PLAT THEREOF, AS RECORDED IN PLAT BOOK 1, PAGE 191, OF THE PUBLIC RECORDS OF ST. LUCIE COUNTY, FLORIDA; TOGETHER WITH THE EASTERLY 4 FEET OF SOUTH 2ND STREET, BOUNDED ON THE NORTH AND SOUTH BY THE WESTWARD EXTENSIONS OF THE NORTH AND SOUTH LINES OF SAID LOTS 1 & 2, PUBLIC RECORDS OF ST. LUCIE COUNTY, FLORIDA.

TOGETHER WITH A PARCEL OF LAND BEING PART OF LOTS 1 AND 2, BLOCK D, ANDREWS AND RICHARDS RE-SUBDIVISION, AS PER THE PLAT THEREOF, AS RECORDED IN PLAT BOOK 1, PAGE 191, ST. LUCIE COUNTY, FLORIDA, PUBLIC RECORDS BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS;

COMMENCE AT THE NORTHWEST CORNER OF SAID LOT 1, BLOCK D, RUN SOUTH 89°54'45" EAST (BASIS OF BEARINGS) ALONG THE NORTH LINE OF SAID LOT 1, A DISTANCE OF 172.48 FEET; THENCE CONTINUE SOUTH 89°54'45" EAST, A DISTANCE OF 61.38 FEET TO THE POINT OF BEGINNING; THENCE RUN SOUTH 12°04'45"EAST A DISTANCE OF 178.64 FEET TO THE SOUTH LINE OF SAID LOT 2, BLOCK D; THENCE RUN ALONG SAID SOUTH LINE NORTH 89°51'32" WEST, A DISTANCE OF 29.76 FEET TO THE MONUMENTED EAST RIGHT OF WAY LINE OF INDIAN RIVER DRIVE (A VARIABLE WIDTH RIGHT OF WAY); THENCE RUN NORTH 11°43'16" WEST ALONG SAID EAST RIGHT OF WAY LINE, A DISTANCE OF 52.07 FEET; THENCE LEAVING SAID EAST RIGHT OF WAY LINE RUN NORTH 01°27'42" EAST, A DISTANCE OF 123.67 FEET TO THE POINT OF BEGINNING.

AND EXCEPTING FROM ABOVE ALL RIGHTS OF WAY FOR PUBLIC ROADS.

CONTAINING 81,341.77 SQUARE FEET OR 1.86 ACRES, MORE OF LESS.

SITE DATA

OWNER	TA1 (IRD), LLC 266 PARK DRIVE PALATINE, IL 60067-0000
DEVELOPER	FOGLIA CUSTOM HOMES 1505 INDIAN RIVER BLVD, UNIT B141 VERO BEACH, FL 32960
ENGINEER	SCHULKE, BITTLE & STODDARD, L.L.C. JODAH B. BITTLE, P.E. 57396 1717 INDIAN RIVER BLVD. SUITE 201 VERO BEACH, FL 32960 (772) 770-9622
SURVEYOR:	MERIDIAN LAND SURVEYORS CHARLES BLANCHARD, PSM #5755 1717 INDIAN RIVER BLVD., SUITE 201 VERO BEACH, FL 32960 PH. (772) 794-1213
EXISTING USE	UNDEVELOPED
PROPOSED USE	TWENTY THREE (23) MULTI-FAMILY UNITS
PROJECT LOCATION	SOUTHEAST CORNER OF CITRUS AVENUE AND S. INDIAN RIVER DRIVE
SITE ADDRESS	401 S. INDIAN RIVER DRIVE, FT. PIERCE, FL
PARCEL I.D. NUMBER	2410-808-0017-000-7
SECTION-TOWNSHIP-RANGE	SECTION 10, TOWNSHIP 35S, RANGE 40E
EXISTING LAND USE	OP (OFFICES – PROFESSIONAL AND BUSINESS SERVICES)
PROPOSED LAND USE	CBD (CENTRAL BUSINESS DISTRICT)
EXISTING ZONING	C-1 (OFFICE COMMERCIAL)

DEVELOPMENT PARAMETERS :	EXISTING C-1 ZONING	PROPOSED DEVELOPMENT
MINIMUM LOT SIZE:	10,000 SF	41,707 SF
MINIMUM LOT WIDTH	70 FT	262.3 FT
MINIMUM LOT DEPTH	90 FT	139.7 FT
MIN. YARD SETBACKS:		
FRONT (WEST)	25'	36.3'
SIDE (NORTH)	15'	15.0'
SIDE (SOUTH)	15'	15.2'
REAR (EAST)	15'	15.0'
MAX. LOT COVERAGE BY BLDGS	60%	40.4% (16,847 SF)
MIN. OPEN SPACE	25%	35.3%
MAX. IMPERVIOUS AREA	75%	64.7%
MAXIMUM DENSITY	30 UNITS/ACRE	24.0 UNITS/ACRE
MAX. BLDG. HEIGHT	65'	64'-8 1/2"

AREA CALCULATIONS:

SITE AREAS:		PROPOSED		
EXISTING SITE AREA:	41,707 SF	0.957 AC		
TOTAL DEVELOPABLE AREA::	41,707 SF	0.957 AC	100.0%	
IMPERVIOUS AREA:	26,967 SF	0.619 AC	64.7%	
BUILDING AREA: (FIRST FLOOR)	1,761 SF	0.040 AC	4.2%	
DRIVING AISLE:	21,280 SF	0.489 AC	51.0%	
CONCRETE/SIDEWALK AREA:	2,126 SF	0.049 AC	5.1%	
POOL/PATIO AREA:	1,800 SF	0.041 AC	4.3%	
PERVIOUS AREA:	14,740 SF	0.338 AC	35.3%	
GREEN SPACE:	14,740 SF	0.338 AC	35.3%	

NATIVE VEGETATION/PRESERVATION:
N/A. NO PRESERVATION REQUIRED, NO NATIVE HABITAT IS EXISTING

PARKING CALCULATIONS:
REQUIRED: 1.5 SPACE PER UNIT
23 UNITS X 1.5 SPACES/UNIT = 35 SPACES
PROVIDED: 46 PARKING SPACES (2-12' HANDICAP SPACES, 12-9.0' SPACES, 32-9.5' SPACES)

AVERAGE DAILY TRIPS:
PROPOSED USE: PER ITE 9TH EDITION TRIP GENERATION MANUAL, LAND USE 230
23 MULTI-FAMILY UNITS X 7.78 TRIPS/UNIT = 179 TRIPS

CONSTRUCTION SCHEDULE:

DATE OF COMMENCEMENT	DATE OF COMPLETION
4/16	4/17

GENERAL NOTES

1. PROPOSED PUBLIC WATER SUPPLY – FT. PIERCE UTILITY AUTHORITY
2. PROPOSED PUBLIC SEWER – FT. PIERCE UTILITY AUTHORITY
3. GARBAGE IS HANDLED WITH CANS STORED ON-SITE. NO DUMPSTER PROPOSED.
4. THE PARCEL OF LAND SHOWN HEREON APPEARS TO BE IN FLOOD ZONE AE-4', X, C & VE-8 PER FLOOD INSURANCE RATE MAP #12111C0179 J, DATED FEBRUARY 16TH, 2012.
5. ALL CONSTRUCTION ON SITE TO BE DONE PER ALL CITY OF FT. PIERCE STANDARDS AND SPECIFICATIONS.
6. ALL UTILITY CONSTRUCTION ON SITE TO BE DONE PER F.P.U.A. UTILITY STANDARDS AND SPECIFICATIONS, LATEST EDITION.
7. ALL SIGNS AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST VERSIONS OF THE M.U.T.C.D., FLORIDA DEPARTMENT OF TRANSPORTATION DESIGN STANDARDS, AND CITY OF FT PIERCE TYPICAL PAVEMENT MARKINGS AND SIGNING DETAILS. IN ADDITION, ALL PAVEMENT MARKINGS WITHIN THE RIGHT-OF-WAY SHALL BE INSTALLED IN THERMO-PLASTIC.
8. EXISTING DRIVES AND/OR INTERSECTIONS SHOWN ARE WITHIN THE 300' RADIUS REQUIRED FROM THE PROPOSED SITE.
9. THE EXISTING SPEED LIMIT FOR INDIAN RIVER DRIVE DRIVE IS 35 M.P.H.
10. ALL PROPOSED TRAFFIC CONTROL DEVICES SHOWN ON SITE TO BE PER THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
11. THE SITE LIGHTING (SOURCE OF ILLUMINATION) CANNOT BE VISIBLE FROM THE SITE.
12. ANY NUISANCE/EXOTIC PLANTS IN THE DEVELOPED AREA WILL BE REMOVED.
13. AT INTERSECTIONS, WALLS, FENCES, PLANTS OR SIGHT OBSTRUCTIONS OF ANY KIND OVER 18" IN HEIGHT ARE PROHIBITED WITHIN THE SITE DISTANCE TRIANGLE AS REQUIRED BY FDOT INDEX 546, 2014 EDITION.
14. ANY DISTURBED AREAS ON SITE OR IN THE COUNTY RIGHT-OF-WAY TO BE SODDED.
15. RUN-OFF FROM ROOF TO BE DIRECTED TO STORMWATER SYSTEM.
16. ALL LIGHTS MUST MEET THE FOLLOWING CRITERIA:
    - ALL POLES MUST BE BLACK OR BRONZE
    - ALL LIGHTS MUST BE DIRECTED DOWNWARD, WITH A 90 DEG. CUT-OFF
    - LIGHTS MUST NOT CAUSE GLARE ONTO ADJACENT R/W OR PROPERTIES.
17. ALL STOP SIGNS (R1-1) SHALL BE 30"
18. NO DEWATERING BETWEEN 8 PM AND 6 AM WITHOUT CITY OF FT PIERCE APPROVAL.
19. AN ENTRANCE GATE IS PROPOSED FOR THIS SITE.
20. CITY OF FT. PEIRCE OR FDOT MAY HAVE UNDERGROUND CONDUIT FOR TRAFFIC SIGNAL INTERCONNECTIONS IN THIS AREA AS WELL AS OTHER TRAFFIC SIGNAL EQUIPMENT. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO CONTACT SUNSHINE STATE ONE CALL SYSTEM AT 1-800-432-4770 FOR LOCATIONS OF THIS EQUIPMENT AT LEAST 72 HOURS PRIOR TO ANY CONSTRUCTION.
21. ALL SOLID, NON-BREAKAWAY OBJECTS (GATE POSTS/COLUMNS, BOLLARDS, STREET LIGHT POLES, ETC.) ALONGSIDE INTERIOR STREETS AND DRIVING AISLES SHALL BE LOCATED OUTSIDE THE CLEAR ZONE. FOR STREETS AND DRIVING AISLES WITH A DESIGN SPEED OF 25 MPH OR LESS, THE MINIMUM CLEAR ZONE IS 2.5 FEET FROM THE FACE OF THE CURB (TYPE 'D' OR 'F'), OR 6 FEET FROM THE EDGE OF THE TRAVEL LANE. THIS APPLIES TO PUBLIC AND PRIVATE PROPERTY.
22. THE BEARING BASE FOR THIS SURVEY IS A GRID BEARING OF N89°51'35"W ALONG THE NORTH R/W LINE OF DELAWARE AVENUE, PER THE PLAT AND SHOWN THEREON.
23. THE ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988. THE BENCHMARK IS NGS MONUMENT "J 123", ELEVATION 25.57' NAVD 1988. SECONDARY BENCHMARK IS AS SHOWN HEREON. THE CONVERSION TO NGVD'29 IS BY ADDING 1.499 FT.
24. ALL CROSS WALKS SHALL HAVE TRUNCATED DOME WARNING SURFACE SYMBOL ON THE SIDEWALK ADJACENT TO THE PAVED DRIVEWAY PER FDOT INDEX NO. 304.
25. ANY ABANDONED FLOW WELLS FOUND ON SITE SHALL BE PLUGGED PURSUANT TO D.O.H. AND SFWMD REGULATIONS.
26. ALL PAVEMENT MARKINGS IN THE RIGHT-OF-WAY SHALL BE 90 MIL., EXTRUDED TYPE, ALKYD BASE THERMOPLASTIC.
27. ALL HANDICAPPED PARKING SPACES SHALL BE PROPERLY SIGNED AND STRIPED IN ACCORDANCE WITH THE FDOT STANDARD INDEX 17346, 2014 EDITION.
28. ALL STOP SIGNS SHALL BE HIGH INTENSITY RETRO-REFLECTIVETY
29. ALL UTILITIES MUST BE PLACED UNDERGROUND.
30. THE CONTRACTOR SHALL FIELD LOCATE ALL EXISTING UTILITY LINES AND STRUCTURES PRIOR TO CONSTRUCTION.
31. PROPANE TANKS TO BE UNDERGROUND.

SCHULKE, BITTLE & STODDARD, L.L.C.

CIVIL & STRUCTURAL ENGINEERING · LAND PLANNING · ENVIRONMENTAL PERMITTING

CERTIFICATION OF AUTHORIZATION NO.: 00008668

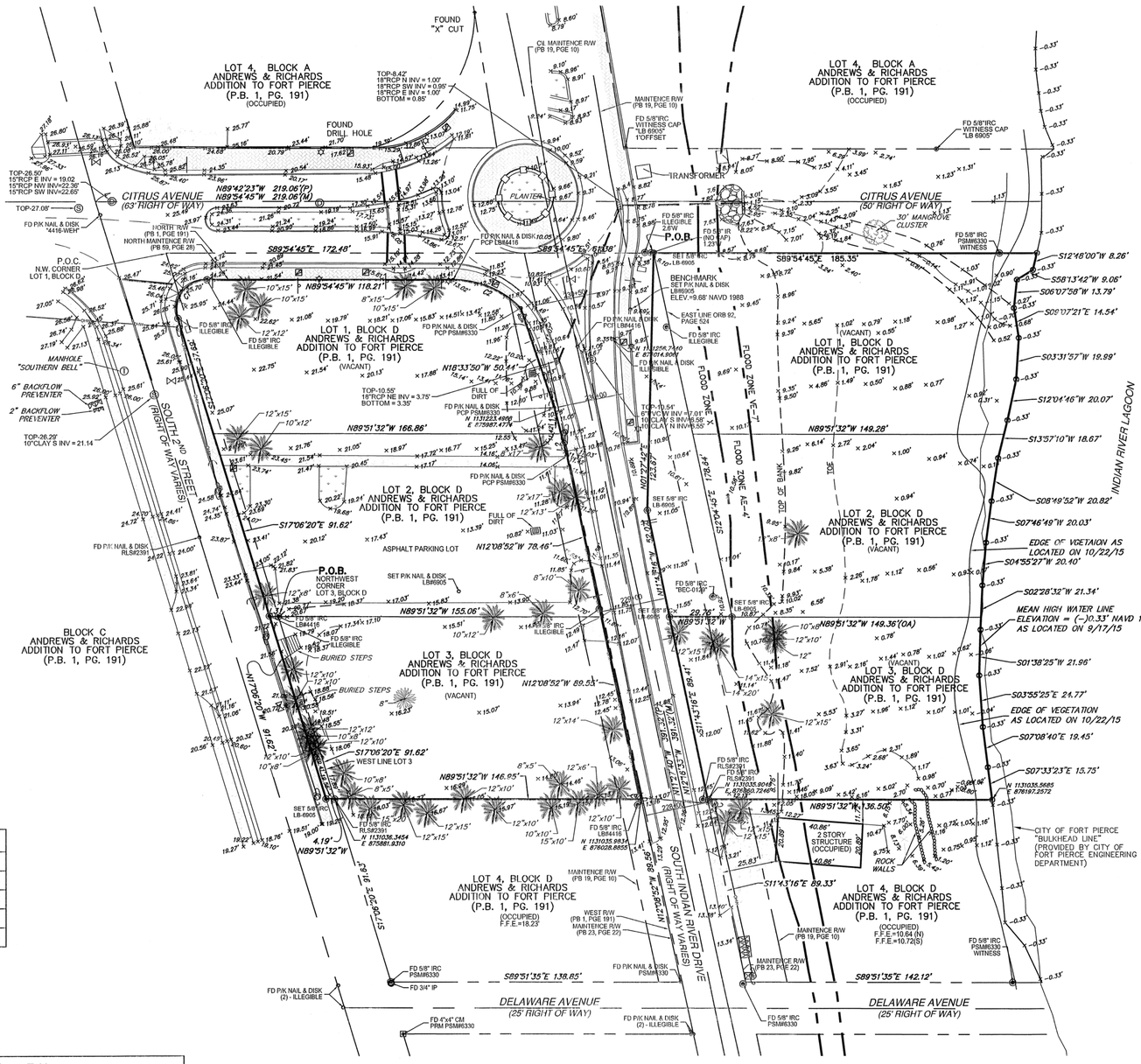
1717 INDIAN RIVER BLVD., SUITE 201 VERO BEACH, FLORIDA 32960
TEL 772 / 770-9622 FAX 772 / 770-9496 EMAIL info@sbsengineers.com

ENGINEER CERTIFICATION:

DATE:

☐ JOSEPH W. SCHULKE, P.E. REG. No 47048
☐ JODAH B. BITTLE, P.E. REG. No 57396
☐ WILLIAM P. STODDARD, Ph.D., P.E. REG. No 57605

NOTE:
THIS SURVEY IS BASED ON A MAP OF SURVEY BY ALEXANDER J. PIAZZA PSM, INC. LB #7280, DATED 02-25-15, PROJECT NUMBER 15-1927.



Report of Survey:

* TYPE OF SURVEY: BOUNDARY & TOPOGRAPHIC
* THIS SURVEY PERFORMED BY:
  HOUSTON, SCHULKE, BITTLE, & STODDARD, INC.
  d/b/a/ MERIDIAN LAND SURVEYORS
  1717 INDIAN RIVER BLVD. Suite 201 VERO BEACH, FLORIDA 32960
* PROFESSIONAL SURVEYOR & MAPPER IN RESPONSIBLE CHARGE:
  CHARLES H. BLANCHARD, P.S.M. #5755
* THE EXPECTED USE OF THE LAND, AS CLASSIFIED IN THE FLORIDA STANDARDS OF PRACTICE (5J-17, FAC) IS COMMERCIAL/HIGH RISK. THE MINIMUM RELATIVE ACCURACY FOR THIS TYPE OF BOUNDARY SURVEY IS 1 FOOT IN 10,000. THE MEASUREMENT AND CALCULATION OF A CLOSED GEOMETRIC FIGURE WAS FOUND TO BE IN EXCESS OF THIS ACCURACY REQUIREMENT.
* THIS SURVEY MEETS ALL APPLICABLE REQUIREMENTS OF THE FLORIDA STANDARDS OF PRACTICE AS CONTAINED IN 5J-17, FLORIDA ADMINISTRATIVE CODE.
* ELEVATIONS AND DIMENSIONS SHOWN HEREON ARE MEASURED IN FEET AND DECIMAL PARTS THEREOF.
* THE LAST DATE OF FIELD WORK WAS: 9/17/15.
* THE BEARING BASE FOR THIS SURVEY IS N 89°51'35"W, ALONG THE NORTH RIGHT-OF-WAY LINE OF DELAWARE AVENUE, PER THE PLAT, AND SHOWN THEREON.
* THIS SURVEY DOES NOT CERTIFY TO THE EXISTENCE OR LOCATION OF ANY UNDERGROUND IMPROVEMENTS: UTILITIES, FOUNDATIONS, OR ENCROACHMENTS, EXCEPT AS SHOWN.
* NO INSTRUMENTS OF RECORD REGARDING EASEMENTS, RIGHT-OF-WAYS, OR OWNERSHIP WERE SUPPLIED TO THIS SURVEYOR, EXCEPT AS SHOWN.
* NO TITLE OPINION OR GUARANTEE IS EXPRESSED OR IMPLIED.
* UNLESS A COMPARISON IS SHOWN, PLAT VALUES AND MEASURED VALUES ARE THE SAME.
* LEGAL DESCRIPTION IS AS PROVIDED BY THE CLIENT.
* THE COORDINATE VALUES SHOWN HEREON ARE BASED ON THE STATE PLANE COORDINATE SYSTEM FOR THE EAST ZONE OF FLORIDA, PER THE NAD 83, (1990) ADJUSTMENT.
* UNLESS OTHERWISE INDICATED, FOUND MONUMENTATION IS UNIDENTIFIED.
* THE ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM (NAVD), OF 1988. THE PRIMARY BENCHMARK IS N.G.S. MONUMENT "J 123." ELEVATION = 25.57' (NAVD 1988). THE SECONDARY BENCHMARK IS AS SHOWN.
* THE PARCEL OF LAND SHOWN HEREON APPEARS TO BE IN FLOOD ZONES: X, AE-4', & VE-7' PER FLOOD INSURANCE RATE MAP # 12111C0179 J, DATED FEB 16th, 2012.

Legal Description:

LOTS 1, 2, & 3, BLOCK D, ANDREWS & RICHARDS ADDITION TO FORT PIERCE, ACCORDING TO THE PLAT THEREOF, AS RECORDED IN PLAT BOOK 1, PAGE 191, OF THE PUBLIC RECORDS OF ST. LUCIE COUNTY, FLORIDA; TOGETHER WITH THE EASTERLY 4 FEET OF SOUTH 2ND STREET, BOUNDED ON THE NORTH AND SOUTH BY THE WESTWARD EXTENSIONS OF THE NORTH AND SOUTH LINES OF SAID LOTS 1 & 2, PUBLIC RECORDS OF ST. LUCIE COUNTY, FLORIDA.

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AND ALSO TOGETHER WITH THE FOLLOWING DESCRIBED PARCEL OF LAND:

BEGINNING AT THE NORTHWEST CORNER OF LOT 3, BLOCK D, ANDREWS AND RICHARDS RE-SUBDIVISION, AS PER THE PLAT THEREOF, AS RECORDED IN PLAT BOOK 1, PAGE 191, ST. LUCIE COUNTY, FLORIDA, RUN SOUTH 17°06'20" EAST (BASIS OF BEARINGS) ALONG THE WEST LINE OF SAID LOT 3, A DISTANCE OF 91.62 FEET; THENCE RUN NORTH 89°51'35" WEST, A DISTANCE OF 4.19 FEET; THENCE RUN NORTH 17°06'20"WEST, A DISTANCE OF 92.62 FEET; THENCE RUN SOUTH 89°51'35" EAST, A DISTANCE OF 4.19 FEET TO THE POINT OF BEGINNING.

AND EXCEPTING FROM ABOVE ALL RIGHTS OF WAY FOR PUBLIC ROADS.

CONTAINING 81,708.39 SQUARE FEET OR 1.87 ACRES, MORE OF LESS.

Line Table		
LINE	LENGTH	BEARING
L1	12.83'	N14°35'01"W
L2	11.21'	N14°35'01"W
L3	4.19'	S89°51'35"E
L4	26.82'	S77°59'10"W

Curve Table					
CURVE	LENGTH	RADIUS	DELTA	CH. BEARING	CH. LENGTH
C1	27.13'	14.50'	107°11'36"	S36°29'27"W	23.34'
C2	36.28'	45.00'	46°11'35"	N66°48'58"W	35.30'

Legend & Abbreviations: (symbols not scaleable for size)

PLS – PROFESSIONAL LAND SURVEYOR
PSM – PROFESSIONAL SURVEYOR & MAPPER
LB – LAND SURVEYING BUSINESS
℄ – CENTERLINE
R – RADIUS
L – LENGTH
Δ – DELTA ANGLE
E/P – EDGE OF PAVEMENT
B/C – BACK OF CURB
B.M. – BENCHMARK
POC – POINT OF COMMENCEMENT
POB – POINT OF BEGINNING
◦ – (PCP) PERMANENT CONTROL POINT
⊞ – (PRM) PERMANENT REFERENCE MONUMENT
○ – (IP) IRON PIPE
● – (IRC) IRON ROD & CAP
⊡ – (CM) CONCRETE MONUMENT
FD – FOUND
(M) – MEASURED
(P) – PLAT
(C) – CALCULATED
(OA) – OVERALL
(ORB) – OFFICAL RECORD BOOK
(R) – RADIAL
(NR) – NON-RADIAL
– MANGROVE TREE W/ DIA.
– EXOTIC TREE W/ DIA.
– PINE TREE W/ DIA.
– GUY WIRE
– WOOD UTILITY POLE
– TELEPHONE SERVICE
– CABLE T.V. BOX
– ELECTRIC BOX
– LIGHT POST
– WELL
– HYDRANT
– GATE VALVE
– IRRIGATION VALVE
– WATER METER
– SANITARY MANHOLE
– SANITARY SERVICE
– SEPTIC TANK
– DRAINAGE MANHOLE
– CURB INLET
– SURFACE INLET
– MITERED END SECTION
– CONCEPTUAL DRAINAGE
– STREET SIGN
NAVD – NORTH AMERICAN VERTICAL DATUM
– TYPICAL ELEVATION
A/C – AIR CONDITIONER
CONC. – CONCRETE
F.F. – FINISH FLOOR
BSB – BUILDING SETBACK LINE
EL./ELEV. – ELEVATION
R/W – RIGHT OF WAY
AB – AS-BUILT
P/K – PARKER-KALON
– PALM TREE W/ DIA.

Certified to:

1. FOGLIA CONTRACTING CORP
2.
3.

MERIDIAN
LAND SURVEYORS
1717 INDIAN RIVER BLVD, SUITE 201
VERO BEACH, FL. 32960 LB#6905
PHONE: 772-794-1213, FAX: 772-794-1096
EMAIL: LB6905@BELLSOUTH.NET

TYPE: Boundary & Topographic Survey		5.			
PROJECT#: 15-055		4.			
DATE: 09/17/15	F.B. 222 PG. 36	3.	11/24/15	REVISE BOUNDARY	CHB
DRAWN BY: SPT		2.	10/21/15	REVISE BOUNDARY	CHB
CHECKED BY: CHB		1.	10/05/15	ADDITIONAL TOPO	CHB
SCALE: 1" = 100'	SHEET: 1 OF 1	NO.	DATE	REVISIONS	BY

PLAT OF SURVEY FOR:

FOGLIA CONTRACTING CORP.

THIS SURVEY IS NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF THE FLORIDA LICENSED SURVEYOR AND MAPPER NAMED BELOW.

STATE OF FLORIDA
CHARLES H. BLANCHARD, L.S. #5755

DRAWING	15086-CON
DESIGNED	J.B.B.
DRAWN	J.B.B.
CHECKED	J.B.B.
SCALE	1:30
DATE	9/28/15

MARK	REVISION	DATE
1	REVISED PER C.O.F.P.	10/30/15

SCHULKE, BITTLE & STODDARD, L.L.C.
CIVIL & STRUCTURAL ENGINEERING · LAND PLANNING · ENVIRONMENTAL PERMITTING
CERTIFICATION OF AUTHORIZATION NO.: 00008668
1717 INDIAN RIVER BLVD., SUITE 201 VERO BEACH, FLORIDA 32960
TEL 772 / 770-9622 FAX 772 / 770-9496 EMAIL info@sbsengineers.com

AERIAL PLAN

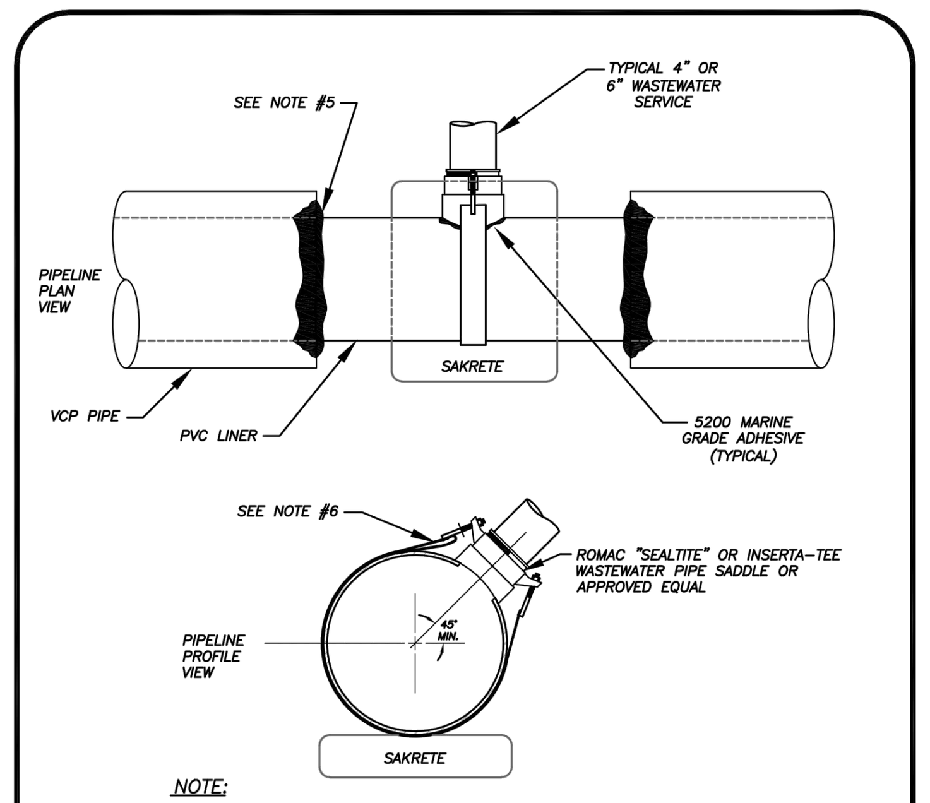
INDIAN RIVER VILLAS

ENGINEER CERTIFICATION
☐ JOSEPH W. SCHULKE FL. REC. NO. 47048
☐ JODAH B. BITTLE FL. REC. NO. 57396
☐ WILLIAM P. STODDARD FL. REG. NO. 57805

DATE:

SHEET
12

PROJECT NO.
15-086

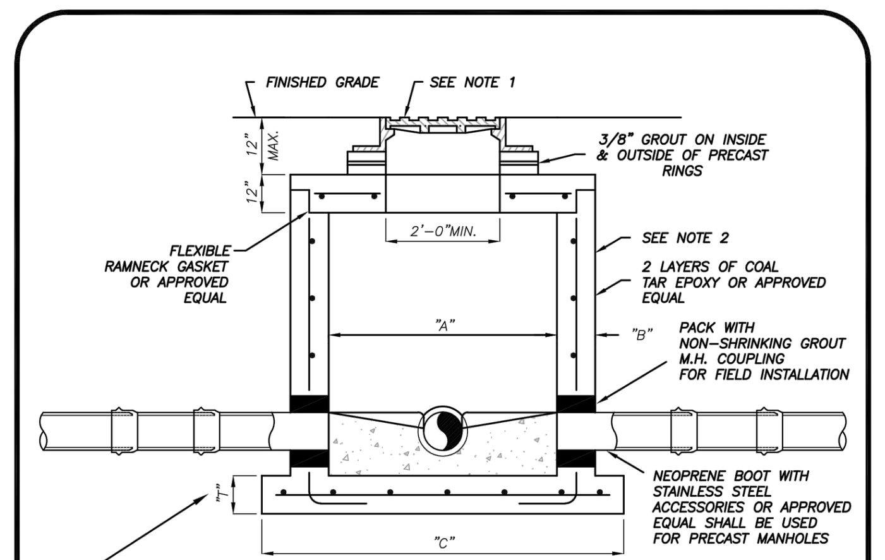


NOTE:

1) INSERTA-TEE'S ARE NOT TO BE USED DURING NEW CONSTRUCTION.
2) INSERTA-TEES ARE ONLY APPROVED FOR INSTALLATION ON 24" AND LARGER SEWER MAINS.
3) ROMAC SADDLE SHALL BE USED AS A TEMPLATE FOR DETERMINING HOLE SIZE AND LOCATION.
4) 5200 MARINE GRADE ADHESIVE SHALL BE USED TO SEAL ROMAC GASKET TO LINER
5) SEAL EXPOSED LINER TO VCP WITH HYDRAULIC CEMENT
6) ENSURE TO FOLD STRAP BACK AGAINST ITSELF PLACING FREE END BETWEEN STRAP AND PIPE. ON SMALL PIPE, IT MAY BE NECESSARY TO FOLD END TWICE.

WASTEWATER SERVICE DETAIL
(FOR LINED SEWER MAIN)
(N.T.S.)

FORT PIERCE UTILITIES AUTHORITY — WASTEWATER SERVICE DETAIL (FOR LINED SEWER MAIN) — S-5
06-2012 | JLC | Dept. — DATE: | REVISION: | BY: | APPD: — WATER/WASTEWATER ENGINEERING
DESIGNED: JLC — COMPUTER FILE # SEWER DETAIL 200602.DWG — DRAWN BY: SLL — SCALE: N.T.S. — APPROVED: JLC — DATE: 2010 — FT. PIERCE UTILITIES AUTHORITY — SHEET 1 OF 1



PIPE DIA.	"A"	"B"	"C"	BOT. SLAB "T"
8"-24"	4'-0"	"8"	76"	8"
30"-36"	5'-0"	"8"	88"	10"
42"-48"	6'-0"	"8"	100"	12"

TYPICAL MANHOLE DIMENSIONS

NOTES:

1) MANHOLE FRAME & COVER WITH THE WORDS " SANITARY SEWER" CAST IN THE COVER. U.S. FOUNDRY 170 OR APPROVED EQUAL.

2) ALL CONCRETE MANHOLES TO BE 4000 P.S.I. TO MEET OR EXCEED ASTM C478 ALL CEMENT TO BE TYPE II ACID RESISTANT. REINFORCING AREA OF 0.02 SQ. IN/FT FOR WALL SECTION MIN. TO MEET OR EXCEED ASTM A 185.

3) A MAXIMUM OF 2 LAYERS OF PRECAST CONCRETE RINGS, IF REQUIRED.

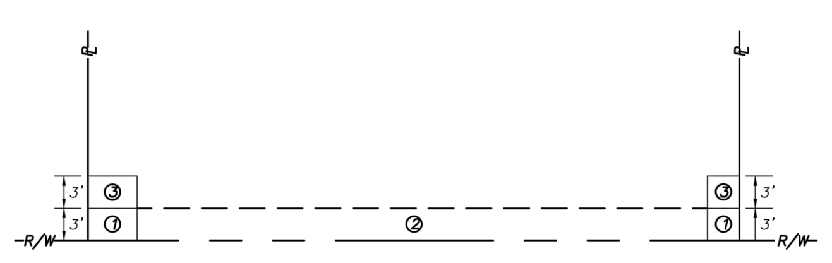
4) RAIN GUARDS SHALL BE INSTALLED IN MANHOLES THAT HAVE GRAVITY MAINS 12" OR LESS.

SHALLOW MANHOLE
DEPTH OF LESS THAN 5'-0"
(N.T.S.)

FORT PIERCE UTILITIES AUTHORITY — PRECAST MANHOLE DEPTH OF LESS THAN 5'- 0" — S-6
02-06 — DATE: | REVISION: | BY: | APPD: — WATER/WASTEWATER ENGINEERING
DESIGNED: JLC — COMPUTER FILE # SEWER DETAIL 200602.DWG — DRAWN BY: SLL — SCALE: N.T.S. — APPROVED: JLC — DATE: 2010 — 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.



① 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.

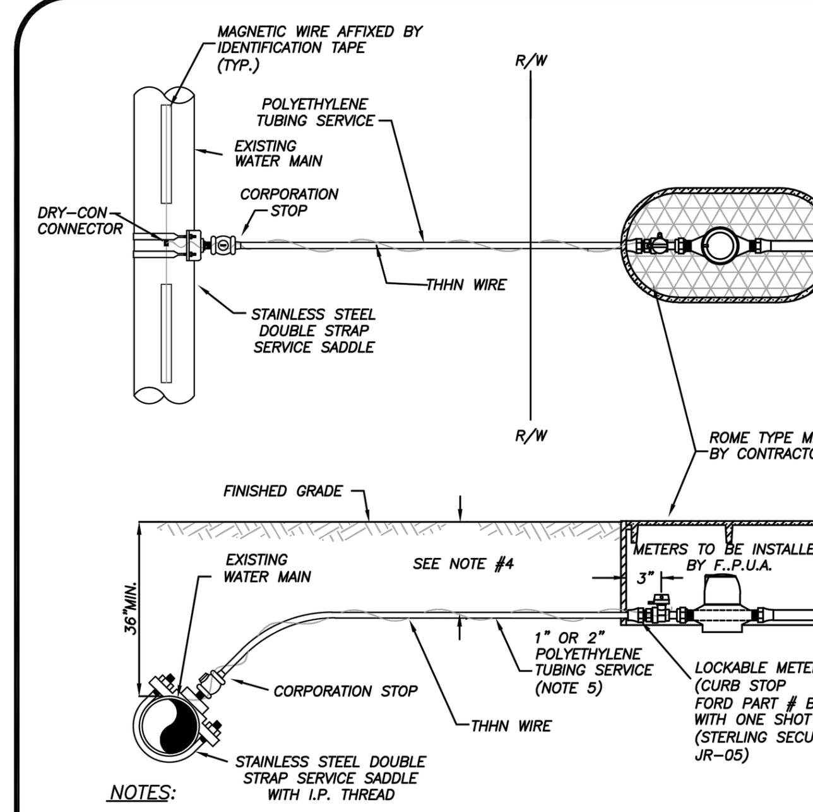
② IF PHYSICAL BARRIERS OR OTHER OBSTACLES PREVENT THE CONNECTION OF THE BUILDING SERVICE LINE TO THE F.P.U.A. WATER SERVICE, WITHIN AREA ① , THE F.P.U.A. ENGINEERING DEPARTMENT MAY AUTHORIZE THE CONNECTION ALONG THE PORTION OF THE R/W LINE MARKED AREA ② , OR ALONG THE PROPERTY LINES MARKED AREA ③.

NOTES:

1. HORIZONTAL SEPARATION OF WATER AND WASTEWATER SERVICES SHOULD BE A MINIMUM OF 6 FEET AND PREFERABLY 10 FEET.
2. ALL METERS SHALL BE INSTALLED IN AN UNRESTRICTED AREA FOLLOWING EASE OF ACCESS AND PROVIDING ADEQUATE PROTECTION.
3. 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.)

FORT PIERCE UTILITIES AUTHORITY — WATER METER PLACEMENT POLICY — W-1
DATE: | REVISION: | BY: | APPD: — WATER/WASTEWATER ENGINEERING
DESIGNED: JLC — COMPUTER FILE # WATER DETAILS 200602.DWG — DRAWN BY: SLL — SCALE: N.T.S. — APPROVED: JLC — DATE: 2010 — FT. PIERCE UTILITIES AUTHORITY — SHEET 1 OF 1

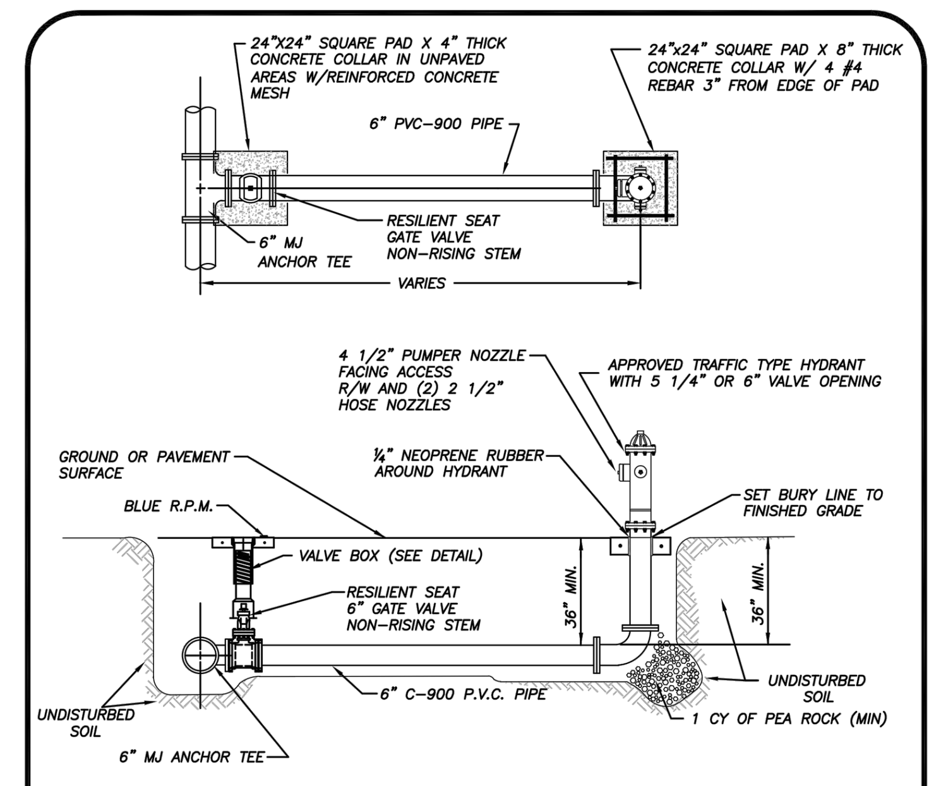


NOTES:

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

TYPICAL SINGLE WATER SERVICE CONNECTION
(N.T.S.)

FORT PIERCE UTILITIES AUTHORITY — TYPICAL SINGLE WATER SERVICE CONNECTION — W-2
03-09 | DESIGN | SLL | JLC — DATE: | REVISION: | BY: | APPD: — WATER/WASTEWATER ENGINEERING
DESIGNED: JLC — COMPUTER FILE # WATER DETAILS 200602.DWG — DRAWN BY: SLL — SCALE: N.T.S. — APPROVED: JLC — DATE: 2010 — FT. PIERCE UTILITIES AUTHORITY — SHEET 1 OF 1

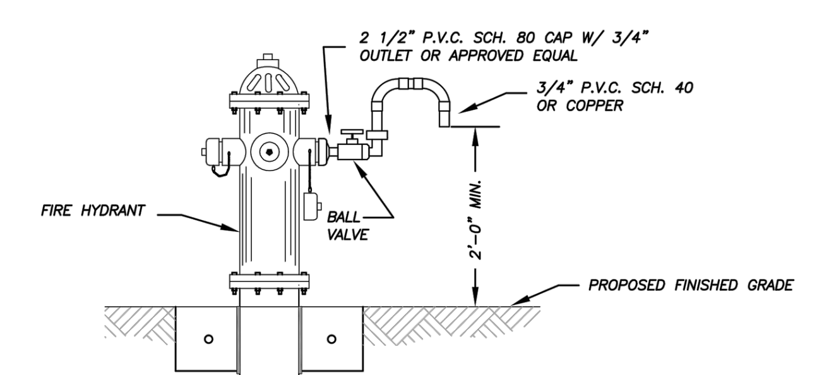


NOTES:

1. HYDRANT SHALL BE INSTALLED PLUMB & TRUE.
2. HYDRANT SHALL BE PAINTED CARNIVAL RED FROM FACTORY.
3. HEEL TO REST IN UNDISTURBED SOIL.
4. THE ONLY HYDRANTS ACCEPTABLE ARE: KENNEDY GUARDIAN, MUELLER CENTURION, & AMERICAN AVK, CLOW OR APPROVED EQUAL.
5. HYDRANT ASSEMBLY MUST BE RESTRAINED TO TEE.
6. ALL FITTINGS SHALL BE MECHANICAL JOINT.
7. ENTIRE ASSEMBLY TO BE MECHANICALLY RESTRAINED.
8. BLUE LOCATOR SHALL BE PLACED IN CENTER OF TRAVEL LANE CLOSEST TO HYDRANT.
9. ALL HYDRANT VALVE BOX COVERS SHALL BE PAINTED CARNIVAL RED.
10. LOCATE WIRE SHALL TERMINATE AT HYDRANT ISOLATION VALVE
11. 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 (7FT-6IN.) 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.

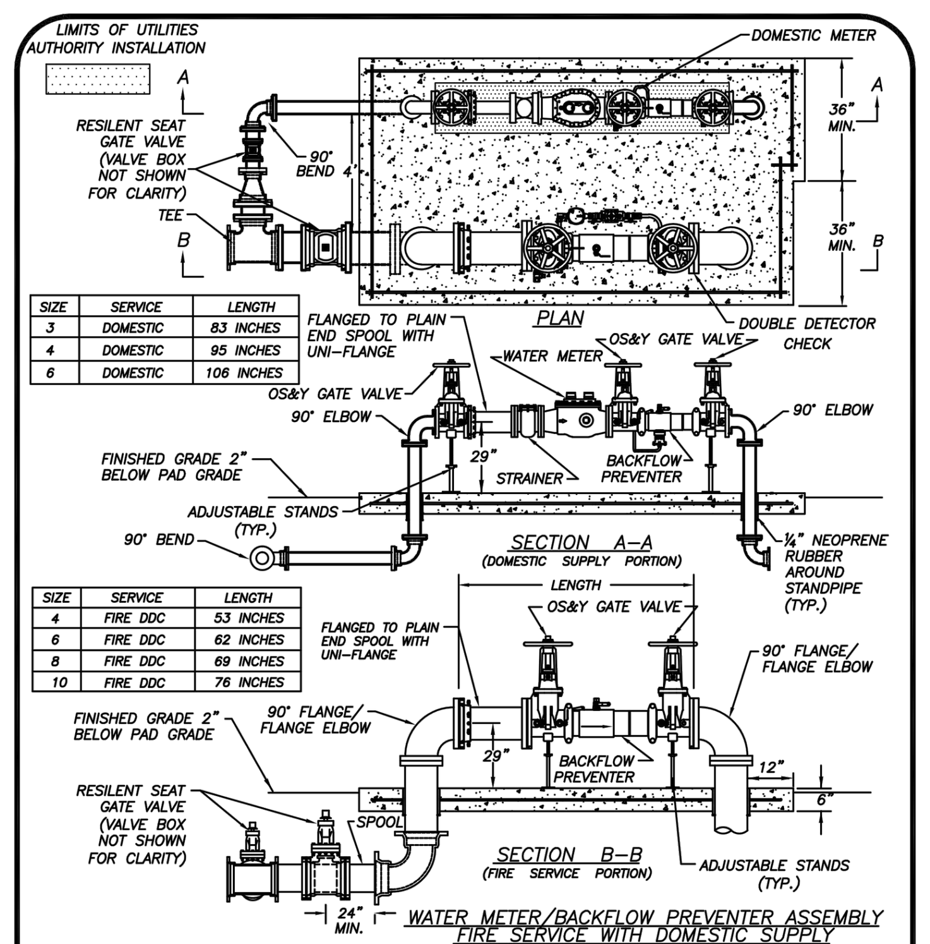
TYPICAL FIRE HYDRANT ASSEMBLY
(N.T.S.)

FORT PIERCE UTILITIES AUTHORITY — TYPICAL FIRE HYDRANT ASSEMBLY — W-5
03-09 | DESIGN | SLL | JLC — DATE: | REVISION: | BY: | APPD: — WATER/WASTEWATER ENGINEERING
DESIGNED: JLC — COMPUTER FILE # WATERDETAIL.DWG — DRAWN BY: SLL — SCALE: N.T.S. — APPROVED: JLC — DATE: 2010 — FT. PIERCE UTILITIES AUTHORITY — SHEET 1 OF 1



BACTERIOLOGICAL SAMPLING POINT @ FIRE HYDRANT
(N.T.S.)

FORT PIERCE UTILITIES AUTHORITY — BATERIOLOGICAL SAMPLING POINT @ FIRE HYDRANT — W-5A
03-09 | DESIGN | SLL | JLC — DATE: | REVISION: | BY: | APPD: — WATER/WASTEWATER ENGINEERING
DESIGNED: JLC — COMPUTER FILE # WATER DETAILS 200602.DWG — DRAWN BY: SLL — SCALE: N.T.S. — APPROVED: JLC — DATE: 2010 — FT. PIERCE UTILITIES AUTHORITY — SHEET 1 OF 1



SIZE	SERVICE	LENGTH
3	DOMESTIC	83 INCHES
4	DOMESTIC	95 INCHES
6	DOMESTIC	106 INCHES

SIZE	SERVICE	LENGTH
4	FIRE DDC	53 INCHES
6	FIRE DDC	62 INCHES
8	FIRE DDC	69 INCHES
10	FIRE DDC	76 INCHES

WATER METER/BACKFLOW PREVENTER ASSEMBLY
FIRE SERVICE WITH DOMESTIC SUPPLY
(N.T.S.)

NOTES:

1. LANDSCAPING IS REQUIRED PER CITY OF FORT PIERCE OR ST. LUCIE COUNTY ORDINANCE. NO PLANTS OR TREES WITHIN 36" AROUND METER TO ALLOW MAINTENANCE WITHOUT DAMAGE TO PLANTS ETC.
2. NO SOLDER JOINTS.
3. ASSEMBLY TO BE 29" FROM FINISH GRADE TO CENTERLINE OF THE FLANGED 90° BEND.
4. DOMESTIC SERVICE 2" OR LESS, USE 2" POLY STUBBED 12" ABOVE GRADE.
5. ALL CONCRETE SHALL HAVE FIBERGLASS MESH REINFORCEMENT WITH #4 REBAR 3" FROM THE OUTER PERIMETER

FORT PIERCE UTILITIES AUTHORITY — WATER METER/BACKFLOW PREVENTER FIRE SERVICE WITH DOMESTIC SUPPLY — W-11
03-09 | CONCRETE PAD | SLL | JLC — DATE: | REVISION: | BY: | APPD: — WATER/WASTEWATER ENGINEERING
DESIGNED: JLC — COMPUTER FILE # WATER DETAILS 200602.DWG — DRAWN BY: SLL — SCALE: N.T.S. — APPROVED: JLC — DATE: 2010 — FT. PIERCE UTILITIES AUTHORITY — SHEET 1 OF 1

MATERIAL UPGRADE NOTES

MATERIAL UPGRADES ARE REQUIRED FOR UTILITY INSTALLATIONS THAT ARE IN CLOSE PROXIMITY TO SALT WATER (FOR EXAMPLE, HUTCHINSON ISLAND, INDIAN RIVER FLOOD PLAIN AND AREAS EAST OF U.S. HIGHWAY 1) AND AS DIRECTED BY FPUA WATER/WASTEWATER ENGINEERING DEPARTMENT.

1) PIPE — ALL DUCTILE IRON PIPE SHALL BE EPOXY COATED (EXTERIOR)

2) FITTINGS — ALL DUCTILE IRON FITTINGS SHALL BE EPOXY COATED (EXTERIOR). PVC FITTINGS CAN ALSO BE USED. HOWEVER, PVC FITTINGS MUST BE EXTRUDED OR FORMED FITTINGS MEETING ALL AWWA REQUIREMENTS. NO FABRICATED FITTINGS WILL BE ALLOWED. ALL NUTS AND BOLTS SHALL BE 316SS ONLY.

3) RESTRAINTS — ALL MECHANICAL JOINT RESTRAINTS SHALL BE EPOXY COATED. ALL HARDWARE (RODS, NUTS, BOLTS, WASHERS) SHALL BE 316SS ONLY.

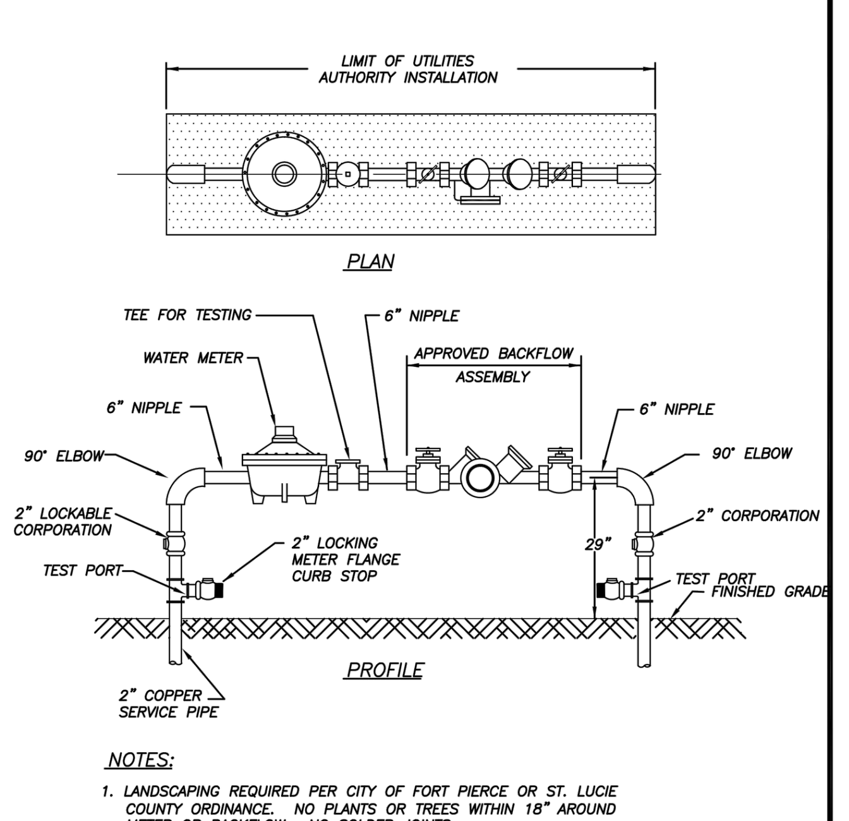
4) FIRE HYDRANTS — ALL NUTS AND BOLTS SHALL BE 316SS ONLY.

5) VALVES — ALL VALVES SHALL BE EPOXY COATED. ALL NUTS AND BOLTS SHALL BE 316SS. VALVE STEM AND 2-INCH OPERATING NUT SHALL BE CAST BRONZE.

6) HARDWARE — 316 SS, A4-70 AND A4-80 ARE ACCEPTABLE NOMENCLATURES SEEN ON FASTENERS

7) ALL OTHER MATERIALS SHALL BE PROVIDED WITH MANUFACTURER'S STANDARD UPGRADES FOR USE IN CORROSIVE ENVIRONMENTS.

FORT PIERCE UTILITIES AUTHORITY — MATERIAL UPGRADE NOTES — M-13
2015 — DATE: | REVISION: | BY: | APPD: — WATER/WASTEWATER ENGINEERING
DESIGNED: JLC — COMPUTER FILE # MISC DETAILS 200602.DWG — DRAWN BY: SLL — SCALE: N.T.S. — APPROVED: JLC — DATE: 2015 — FT. PIERCE UTILITIES AUTHORITY — SHEET 1 OF 1

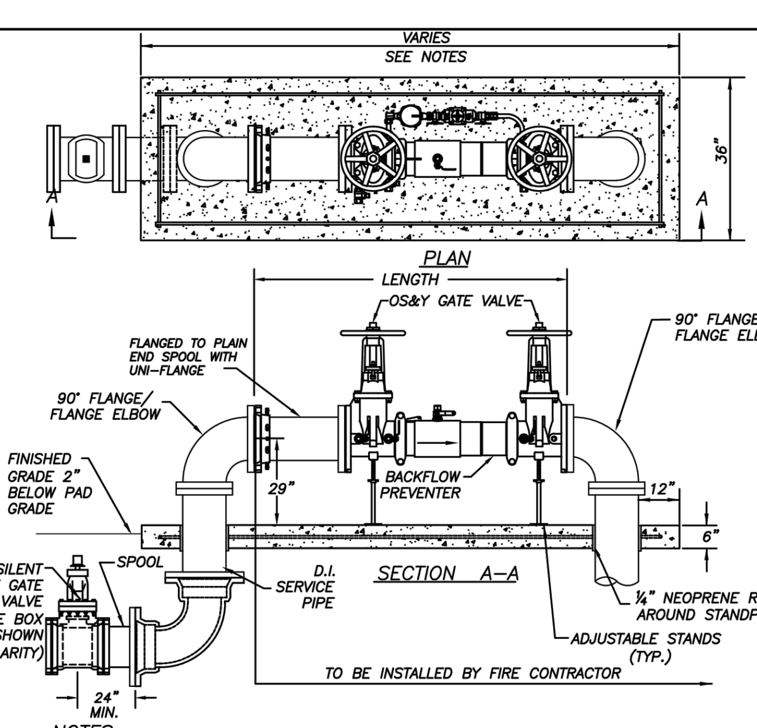


NOTES:

1. 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.
2. 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.)

FORT PIERCE UTILITIES AUTHORITY — WATER METER/BACKFLOW PREVENTER ASSEMBLY-DOMESTIC SERVICES (METER SIZE 2" OR LESS) — W-8
03-09 | DESIGN | SLL | JLC — DATE: | REVISION: | BY: | APPD: — WATER/WASTEWATER ENGINEERING
DESIGNED: JLC — COMPUTER FILE # WATER DETAILS 200602.DWG — DRAWN BY: SLL — SCALE: N.T.S. — APPROVED: JLC — DATE: 2010 — FT. PIERCE UTILITIES AUTHORITY — SHEET 1 OF 1



NOTES:

1. LANDSCAPING IS REQUIRED PER CITY OF FORT PIERCE OR ST. LUCIE COUNTY ORDINANCE.
2. ASSEMBLY TO BE 29" FROM FINISH GRADE TO CENTERLINE OF THE FLANGED 90° BEND.
3. PRIOR TO POURING THE CONCRETE PAD, VERIFY THAT THE STANDPIPES ARE PLUMB, TRUE AND INSTALLED AT THE SAME ELEVATIONSIN THE PRESENCE OF AN FPUA INSPECTOR.
4. ALL CONCRETE SHALL HAVE FIBERGLASS MESH REINFORCEMENT WITH #4 REBAR 3" FROM THE OUTER PERIMETER.

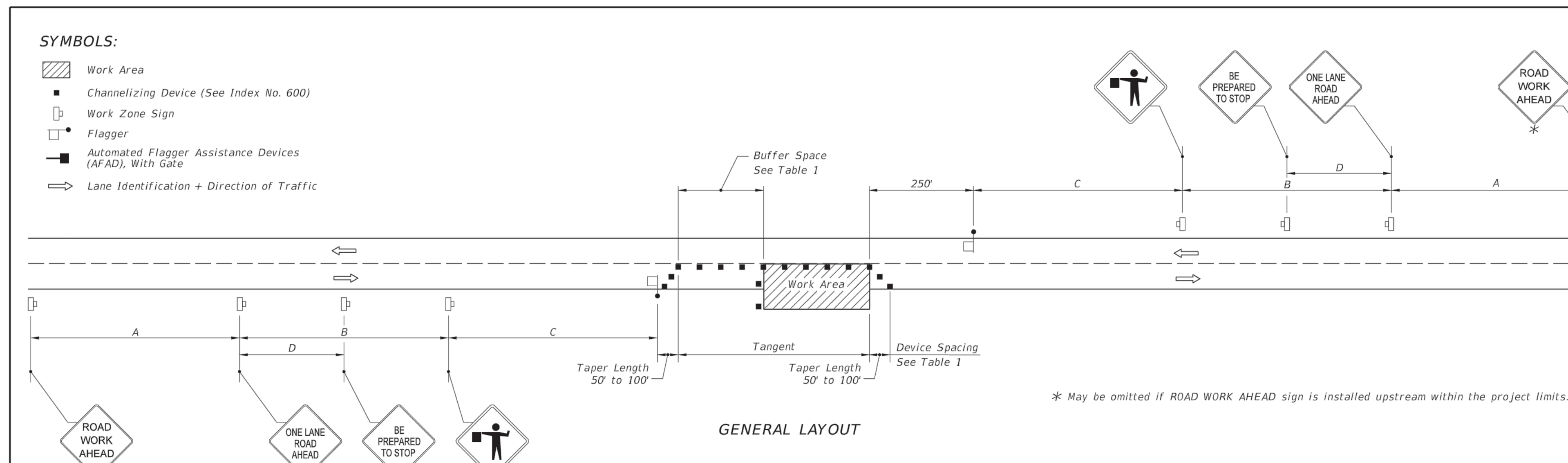
SIZE	SERVICE	LENGTH
4	DOUBLE DETECTOR	53 INCHES
6	DOUBLE DETECTOR	62 INCHES
8	DOUBLE DETECTOR	69 INCHES
10	DOUBLE DETECTOR	76 INCHES

BACKFLOW PREVENTER ASSEMBLY-4"-10" FIRE SERVICE
(N.T.S.)

FORT PIERCE UTILITIES AUTHORITY — BACKFLOW PREVENTER ASSEMBLY 4"-10" FIRE SERVICE — W-10
03-09 | CONCRETE PAD | SLL | JLC — DATE: | REVISION: | BY: | APPD: — WATER/WASTEWATER ENGINEERING
DESIGNED: JLC — COMPUTER FILE # WATER DETAILS 200602.DWG — DRAWN BY: SLL — SCALE: N.T.S. — APPROVED: JLC — DATE: 2010 — FT. PIERCE UTILITIES AUTHORITY — SHEET 1 OF 1

SYMBOLS:

- ▨ Work Area
- ■ Channelizing Device (See Index No. 600)
- Work Zone Sign
- Flagger
- Automated Flagger Assistance Devices (AFAD), With Gate
- ⇨ Lane Identification + Direction of Traffic



GENERAL LAYOUT

* May be omitted if ROAD WORK AHEAD sign is installed upstream within the project limits.

GENERAL NOTES:

1. Special Conditions may be required in accordance with these notes and the following sheets.
2. If the Work Area encroaches on the Centerline, use the Layout for Temporary Lane Shift to Shoulder on Sheet 2 only if the Existing Paved Shoulder width is sufficient to provide for an 11' lane between the Work Area and the Edge of Existing Paved Shoulder. Reduce the posted speed when appropriate.
3. Temporary Raised Rumble Strips:
   a. Use when both of the following conditions are met concurrently:
      i. Existing Posted Speed is 50 mph or greater;
      ii. Work duration is greater than 60 minutes.
   b. Use a consistent Strip color throughout the work zone.
   c. Place each Rumble Strip Set transversely across the lane at locations shown.
   d. Use Option 1 or Option 2 as shown on Sheet 2. Use only one option throughout work zone.
4. Additional one-way control may be provided by the following means:
   a. Flag-carrying vehicle;
   b. Official vehicle;
   c. Pilot vehicles;
   d. Traffic signals.

   When flaggers are the sole means of one-way control, the flaggers must be in sight of each other or in direct communication at all times.
5. When a side road intersects the highway within the TTC zone, place additional TTC devices in accordance with other applicable TCZ Indexes.
6. The two channelizing devices directly in front of the work area may be omitted provided vehicles in the work area have high-intensity rotating, flashing, oscillating, or strobe lights operating.
7. When Buffer Space cannot be attained due to geometric constraints, use the greatest attainable length, not less than 200 ft.
8. Railroad Crossings:
   a. If an active railroad crossing is located closer to the Work Area than the queue length plus 300 feet, extend the Buffer Space as shown on Sheet 2.
   b. If the queuing of vehicles across an active railroad crossing cannot be avoided, provide a uniformed traffic control officer or flagger at the highway-rail grade crossing to prevent vehicles from stopping within the highway-rail grade crossing, even if automatic train warning devices are in place.
9. ROAD WORK AHEAD and the BE PREPARED TO STOP signs may be omitted if all of the following conditions are met:
   a. Work operations are 60 minutes or less.
   b. Speed limit is 45 mph or less.
   c. There are no sight obstructions to vehicles approaching the work area for a distance equal to the Buffer Space shown in Table 1.
   d. Vehicles in the work area have high-intensity, rotating, flashing, oscillating, or strobe lights operating.
   e. Volume and complexity of the roadway has been considered.
   f. If a railroad crossing is present, vehicles will not queue across rail tracks.
   g. AFADs are not in use.
10. See Index 600 for general TCZ requirements and additional information.
11. Automated Flagger Assistance Devices (AFADs) may be used in accordance with the Notes on Sheet 3.

TABLE 1

Posted Speed	DEVICE SPACING				Distance Between Signs				Buffer Space
	Maximum Spacing of Cones or Tubular Markers		Maximum Spacing of Type I or Type II Barricades/Panels/Drums						
	On a Taper	On a Tangent	On a Taper	On a Tangent	A	B	C	D	
25	20'	50'	20'	50'	200'	200'	200'	100'	155'
30	20'	50'	20'	50'	200'	200'	200'	100'	200'
35	20'	50'	20'	50'	200'	200'	200'	100'	250'
40	20'	50'	20'	50'	200'	200'	200'	100'	305'
45	20'	50'	20'	50'	350'	350'	350'	175'	360'
50	20'	50'	20'	100'	500'	500'	500'	250'	425'
55	20'	50'	20'	100'	2640'	1500'	1000'	500'	495'
60	20'	50'	20'	100'	2640'	1500'	1000'	500'	570'
65	20'	50'	20'	100'	2640'	1500'	1000'	500'	645'
70	20'	50'	20'	100'	2640'	1500'	1000'	500'	730'

CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH THE AREA BETWEEN THE CENTERLINE AND A LINE 2' OUTSIDE THE EDGE OF TRAVEL WAY.

6/16/2015 10:46:45 AM

LAST REVISION 07/01/15 | REVISION | DESCRIPTION: | FDOT 2016 DESIGN STANDARDS | TWO-LANE, TWO-WAY, WORK WITHIN THE TRAVEL WAY | INDEX NO. 603 | SHEET NO. 1 of 3

DRAWING	15086-CON	MARK	REVISION	DATE
DESIGNED	J.B.B.	1	REVISED PER C.O.F.P.	10/30/15
DRAWN	J.B.B.			
CHECKED	J.B.B.			
SCALE	NTS			
DATE	9/28/15			

SCHULKE, BITTLE & STODDARD, L.L.C.
CIVIL & STRUCTURAL ENGINEERING · LAND PLANNING · ENVIRONMENTAL PERMITTING
CERTIFICATION OF AUTHORIZATION NO.: 00008668
1717 INDIAN RIVER BLVD., SUITE 201 VERO BEACH, FLORIDA 32960
TEL 772 / 770-9622 FAX 772 / 770-9496 EMAIL info@sbsengineers.com

MISCELLANEOUS DETAILS & SPECIFICATIONS

INDIAN RIVER VILLAS

ENGINEER CERTIFICATION
☐ JOSEPH W. SCHULKE FL. REG. NO. 47048
☐ JODAH B. BITTLE FL. REG. NO. 57396
☐ WILLIAM P. STODDARD FL. REG. NO. 57605

DATE:

SHEET 11

PROJECT NO. 15-086

FORT PIERCE UTILITIES AUTHORITY
WATER DISTRIBUTION NOTES

1. ALL CONSTRUCTION MATERIAL, INSTALLATION AND TESTING SHALL CONFORM TO THE STANDARD SPECIFICATIONS OF THE FORT PIERCE UTILITIES AUTHORITY.
2. 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 PE3408, PIPE CLASS 200, DIMENSION RATIO (DR) 17 FOR DIRECT BURY, (DR) 11 FOR DIRECTIONAL BORING, AND (DR) 9 FOR 2 INCH AND SMALLER PIPELINES.
3. WATER MAIN, WHERE SPECIFIED AS DUCTILE IRON PIPE , SHALL CONFORM TO ANSI/AWWA C151/A21.51 AND SHALL BE PRESSURE CLASS 250 (MINIMUM).
4. 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 THHN WIRE.
5. FITTINGS SHALL BE DUCTILE IRON CONFORMING TO ANSI/AWWA C-110/A21.10, CLASS 250 MIN., CEMENT LINED AND FACTORY COATED
6. GATE VALVES SHALL BE MUELLER RESILIENT SEAT, KENNDY KEN-SEAL, AMERICAN OR APPROVED EQUAL. VALVES SHALL CONFORM TO AWWA C-509.
7. 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.
8. NO FIELD CHANGES OR DEVIATIONS FROM THE DESIGN SHALL BE MADE WITHOUT PRIOR APPROVAL OF THE FPUA ENGINEER AND CITY/COUNTY/FDOT ENGINEER.
9. THE CONTRACTOR SHALL NOTIFY FPUA ENGINEERING AND CITY/COUNTY/FDOT ENGINEERING 48 HOURS PRIOR TO COMMENCING CONSTRUCTION.
10. A PRE-CONSTRUCTION CONFERENCE BETWEEN THE ENGINEER, THE CONTRACTOR, FPUA, AND CITY/ COUNTY/FDOT ENGINEER SHALL BE MANDATORY PRIOR TO COMMENCEMENT OF CONSTRUCTION.
11. TRAFFIC CONTROL, BARRICADES, ETC., SHALL BE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF OF TRANSPORTATION STANDARDS AND APPROVED BY THE CITY ENGINEER.
12. 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.
13. DISTURBED AREAS SHALL BE RESTORED IN CONFORMANCE WITH THE APPLICABLE GOVERNING AGENCY REQUIREMENTS.
14. EXISTING UTILITIES AND DRAINAGE SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION AND PROTECTED BY THE CONTRACTOR.
15. WATER MAINS SHALL BE TESTED AND DISINFECTED IN ACCORDANCE WITH THE APPLICABLE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION AND AWWA C-651 FOR DISINFECTION.

WATER DISTRIBUTION	G-1 NOTES
02-06 · DATE: · REVISION: · BY: · APPD:	WATER/WASTEWATER ENGINEERING
DESIGNED: JJM · COMPUTER FILE # DETAIL NOTES 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: JJM · SCALE: N.T.S.	
APPROVED: JLC · DATE: 2010	SHEET 1 OF 2

FORT PIERCE UTILITIES AUTHORITY WASTEWATER CONSTRUCTION NOTES

1. ALL CONSTRUCTION MATERIAL, INSTALLATION AND TESTING SHALL CONFORM TO THE STANDARD SPECIFICATIONS OF THE FORT PIERCE UTILITIES AUTHORITY.
2. 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.
3. 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.
4. 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 THEN THE MINIMUM REQUIRED BY THE APPROPRIATE RESPONSIBLE AGENCY.
5. A 1% MINIMUM SLOPE SHALL BE MAINTAINED ON ALL SANITARY SERVICE LATERALS.
6. THE CONTRACTOR SHALL FURNISH RECORD DRAWING INFORMATION TO THE ENGINEER CONSISITING OF PIPE SIZES, LOCATION OF SERVICE TEE WYES, DIAMETER OF SERVICES, LOCATION OF ANY FITTINGS, FINAL RIM AND INVERT ELEVATION OF ALL MANHOLES AND ANY OTHER PERTINENT INFORMATION NECESSARY TO LOCATE ITEMS CONSTRUCTED UNDER THIS PROJECT.
7. MAINTAIN SIX FEET AND PREFERABLY 10 FEET HORIZONTAL DISTANCE BETWEEN WATER MAINS AND SEWER MAINS AS A MINIMUM.
8. 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 EQUIDISTANCE 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.
9. A PRE-CONSTRUCTION CONFERENCE BETWEEN THE ENGINEER, THE CONTRACTOR, AND FPUA/CITY COUNTY/FDOT SHALL BE MANDATORY PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
10. NO FIELD CHANGES OR DEVIATIONS FORM THE DESIGN SHALL BE MADE WITHOUT PRIOR APPROVAL FPUA/CITY/COUNTY/FDOT ENGINEER,
11. TRAFFIC CONTROL, BARRICADES, ETC. SHALL BE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARDS.
12. CONTRACTOR SHALL NOTIFY FORT PIERCE UTILITIES AUTHORITY 48 HOURS PRIOR TO COMMMENCING CONSTRUCTION.
13. WASTEWATER FORCE MAIN SHALL BE POLYVINYL CHLORIDE CONFORMING TO AWWA C-900, AND SHALL BE CLASS 150, DR-18.
14. WASTEWATER FORCE MAIN SHALL BE GREEN IN COLOR.
15. FITTINGS SHALL BE DUCTILE IRON, CONFORMING TO ANSI/AWWA C-110/A21.10 CLASS 250 MIN. AND INTERIOR EPOXY COATED.
16. WASTEWATER FORCE MAIN SHALL BE MARKED BY THE USE OF CONTINUOUS 10 GAUGE THHN 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.
17. MINIMUM COVER SHALL BE 36 INCHES, PIPES WITH COVER LESS THAN 30 INCHES SHALL REQUIRE PRIOR APPROVAL OF THE UTILITES ENGINEER AND SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE.
18. EACH SERVICE LATERAL WILL BE MARKED WITH A LOCATOR BALL AS MANUFACTURED BY 3M CORPORATION, OF APPROVED EQUAL AS REQUIRED BY FPUA ENGINEER.
19. ALL MANHOLES SHALL HAVE SEWER RAIN GUARDS INSTALLED AS REQUIRED BY FPUA ENGINEER.
20. THE CONTRACTOR SHALL COMPLY WITH THE FLORIDA TRENCH SAFETY ACT REQUIREMENTS.

WASTEWATER CONSTRUCTION NOTES FPUA REQUIREMENTS	G-2 CONSTRUCTION NOTES
02-06 · DATE: · REVISION: · BY: · APPD:	WATER/WASTEWATER ENGINEERING
DESIGNED: JJM · COMPUTER FILE # DETAIL NOTES 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: JJM · SCALE: N.T.S.	
APPROVED: JLC · DATE: 2010	SHEET 1 OF 1

STANDARD SEPARATION STATEMENT FOR WATER / SEWER CONFLICTS

1. 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.

2. 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 3-FOOT, AND PREFERABLE 10-FOOT HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN VACUUM TYPE SANITARY 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.

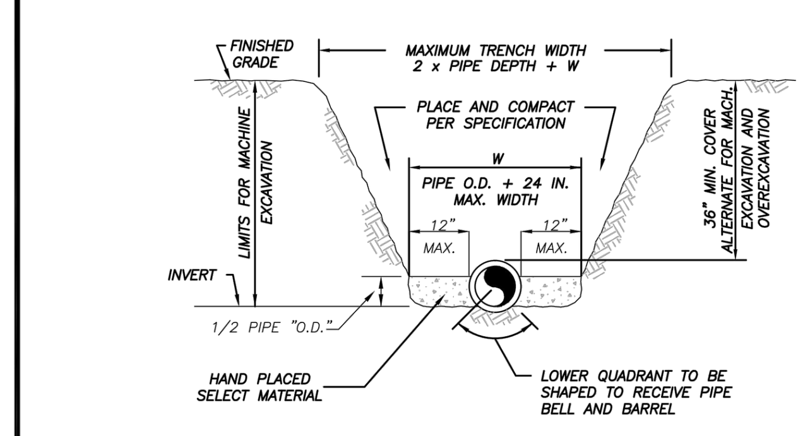
A MINIMUM 6-FOOT, AND PREFERABLE 10-FOOT HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN GRAVITY OR PRESSURE TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER AND WATER MAIN IN PARALLEL INSTALLATIONS WHENEVER POSSIBLE. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND GRAVITY-TYPE SANITARY SEWERS SHALL BE REDUCED TO 3 FOOT 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 THE 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).

3. ALL DIP SHALL BE PRESSURE CLASS 250 MIN.. ADEQUATE PROTECTIVE MEASURES AGAINST CORROSION SHALL BE USED AS DETERMINED BY THE DESIGN ENGINEER.

STANDARD SEPARATION STATEMENT FOR WATER/SEWER CONFLICT	G-3 WATER/SEWER CONFLICT
02-06 · DATE: · REVISION: · BY: · APPD:	WATER/WASTEWATER ENGINEERING
DESIGNED: JJM · COMPUTER FILE # DETAIL NOTES 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: JJM · SCALE: N.T.S.	
APPROVED: JLC · DATE: 2010	SHEET 1 OF 1

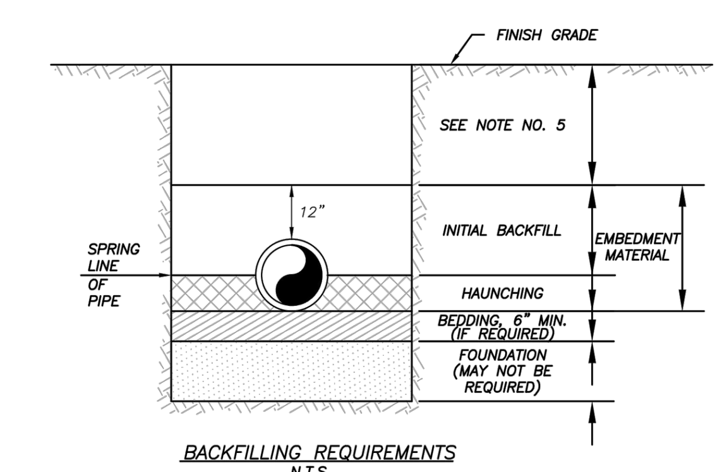


NOTES:

1) THE CONTRACTOR SHALL COMPLY WITH REQUIREMENTS OF THE FLORIDA TRENCH SAFETY ACT.
2) 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 DETAILS	M-1
DATE: · REVISION: · BY: · APPD:	WATER/WASTEWATER ENGINEERING
DESIGNED: JJM · COMPUTER FILE # MISC DETAILS 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: JJM · SCALE: N.T.S.	
APPROVED: JLC · DATE: 2010	SHEET 1 OF 1

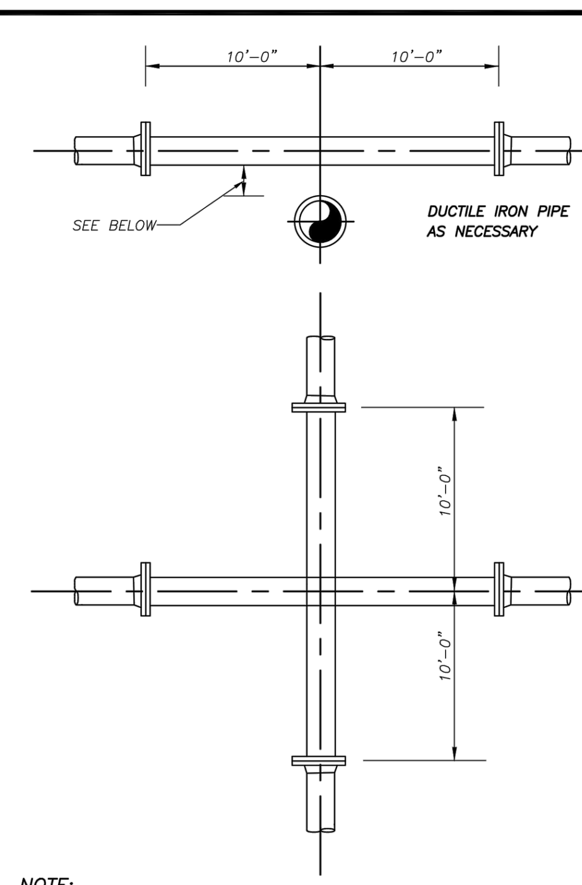


BACKFILLING REQUIREMENTS
N.T.S.

NOTES:

1) IN CERTAIN SOIL CONDITIONS A FOUNDATION MAY BE REQUIRED.
2) 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.
3) 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.
4) 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)
5) 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.
6) DENSITY TEST SHALL BE PERFORMED AT AREAS DETERMINED BY THE UTILITIES ENGINEER OR PERMIT AGENCY HAVING JURISDICTION, AT THE CONTRACTORS EXPENSE.
7) CONTRACTOR TO COMPLY WITH ALL FEDERAL, STATE AND LOCAL TRENCH SAFETY REGULATIONS.

BACKFILLING REQUIREMENTS	M-2
03-09 · NOTES · SLL · JLC · DATE: · REVISION: · BY: · APPD:	WATER/WASTEWATER ENGINEERING
DESIGNED: JJM · COMPUTER FILE # MISC DETAILS 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: JJM · SCALE: N.T.S.	
APPROVED: JLC · DATE: 2010	SHEET 1 OF 1

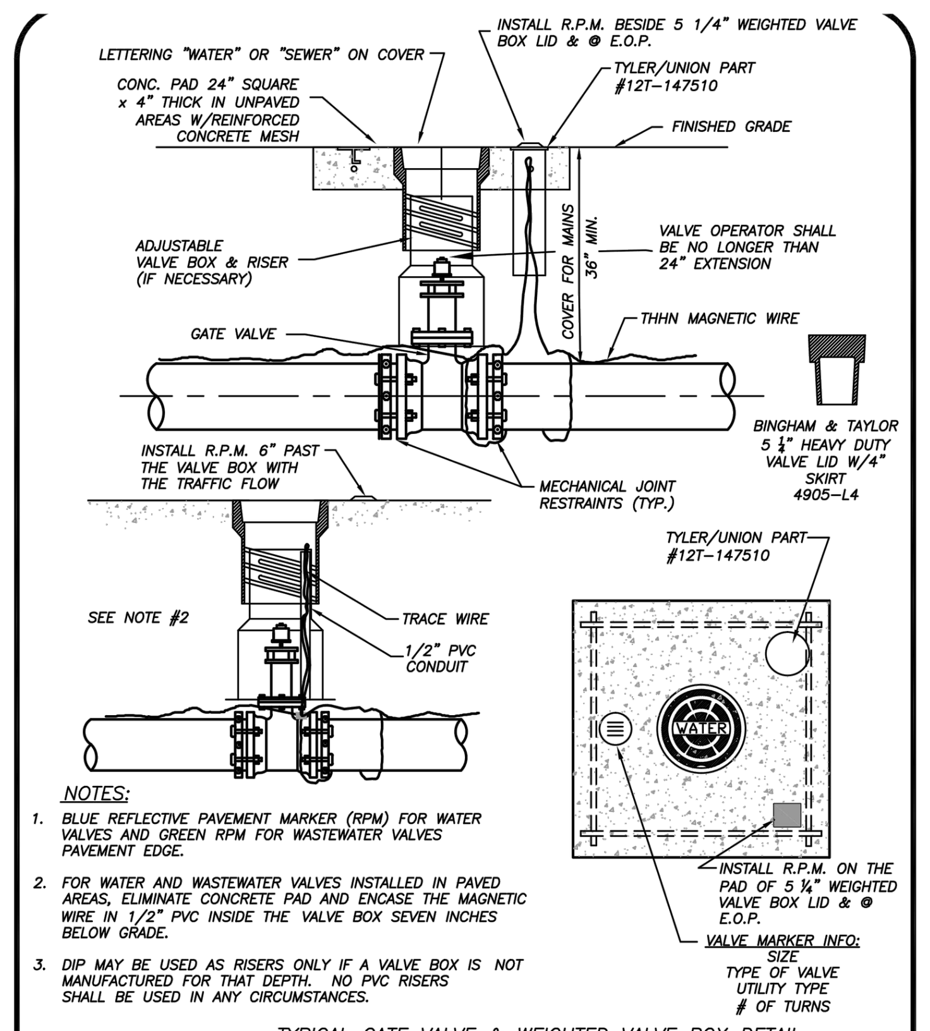


NOTE:

PLEASE REFER TO FORT PIERCE UTILTIES STANDARD SEPARATION STATEMENT FOR WATER / SEWER CONFLICTS.

UTILITY CROSSING DETAIL
N.T.S.

UTILITY CROSSING DETAIL	M-5
DATE: · REVISION: · BY: · APPD:	WATER/WASTEWATER ENGINEERING
DESIGNED: JJM · COMPUTER FILE # MISC DETAILS 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: JJM · SCALE: N.T.S.	
APPROVED: JLC · DATE: 2010	SHEET 1 OF 1

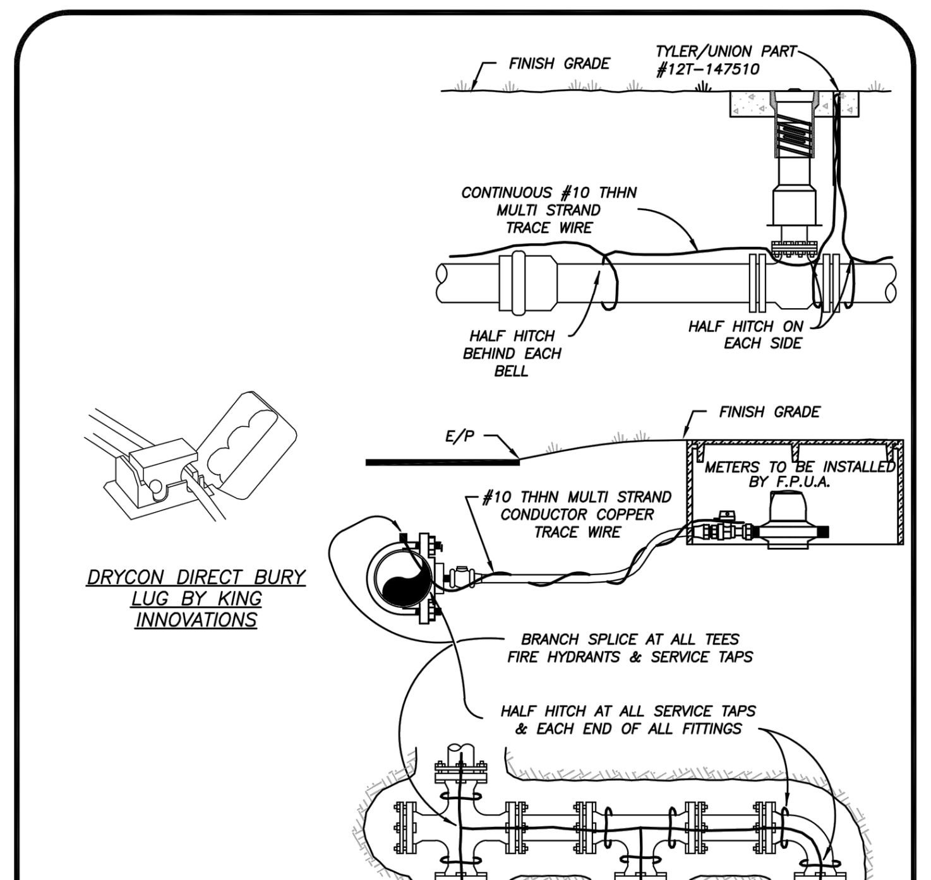


NOTES:

1. BLUE REFLECTIVE PAVEMENT MARKER (RPM) FOR WATER VALVES AND GREEN RPM FOR WASTEWATER VALVES PAVEMENT EDGE.
2. 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.
3. 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 & WEIGHTED VALVE BOX DETAIL
N.T.S.

TYPICAL GATE VALVE & WEIGHTED VALVE BOX DETAIL	M-6
03-09 · RPM PLACEMENT · SLL · JLC · DATE: · REVISION: · BY: · APPD:	WATER/WASTEWATER ENGINEERING
DESIGNED: JJM · COMPUTER FILE # MISC DETAILS 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: JJM · SCALE: N.T.S.	
APPROVED: JLC · DATE: 2010	SHEET 1 OF 1

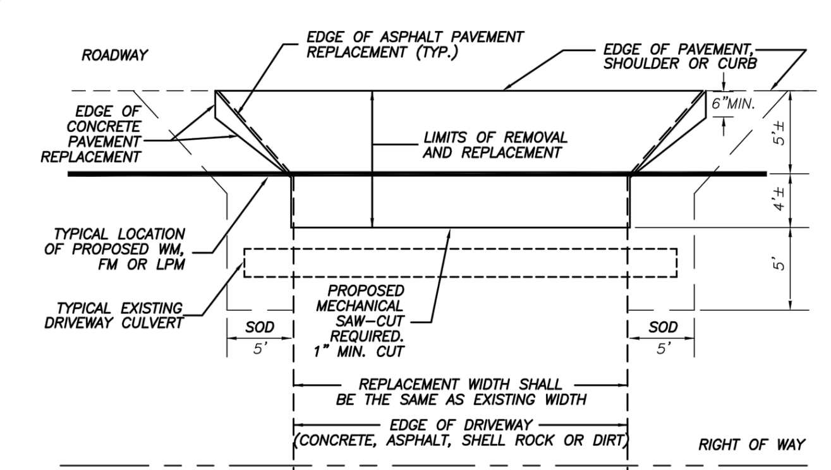


NOTES:

1) TRACE WIRE IS REQUIRED ON ALL PIPE AS NOTED BY UTILITIES ENGINEER AND SHOWN IN STANDARD DETAILS.
2) INCLUDE ALL COST OF MATERIAL & LABOR IN PRICE OF PIPE.
3) CONTRACTOR IS RESPONSIBLE FOR CONTINUITY OF ALL TRACE WIRE.

TRACE WIRE
(N.T.S.)

TRACE WIRE DETAIL	M-11
DATE: · REVISION: · BY: · APPD:	WATER/WASTEWATER ENGINEERING
DESIGNED: JJM · COMPUTER FILE # MISC DETAILS 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: JJM · SCALE: N.T.S.	
APPROVED: JLC · DATE: 2010	SHEET 1 OF 1



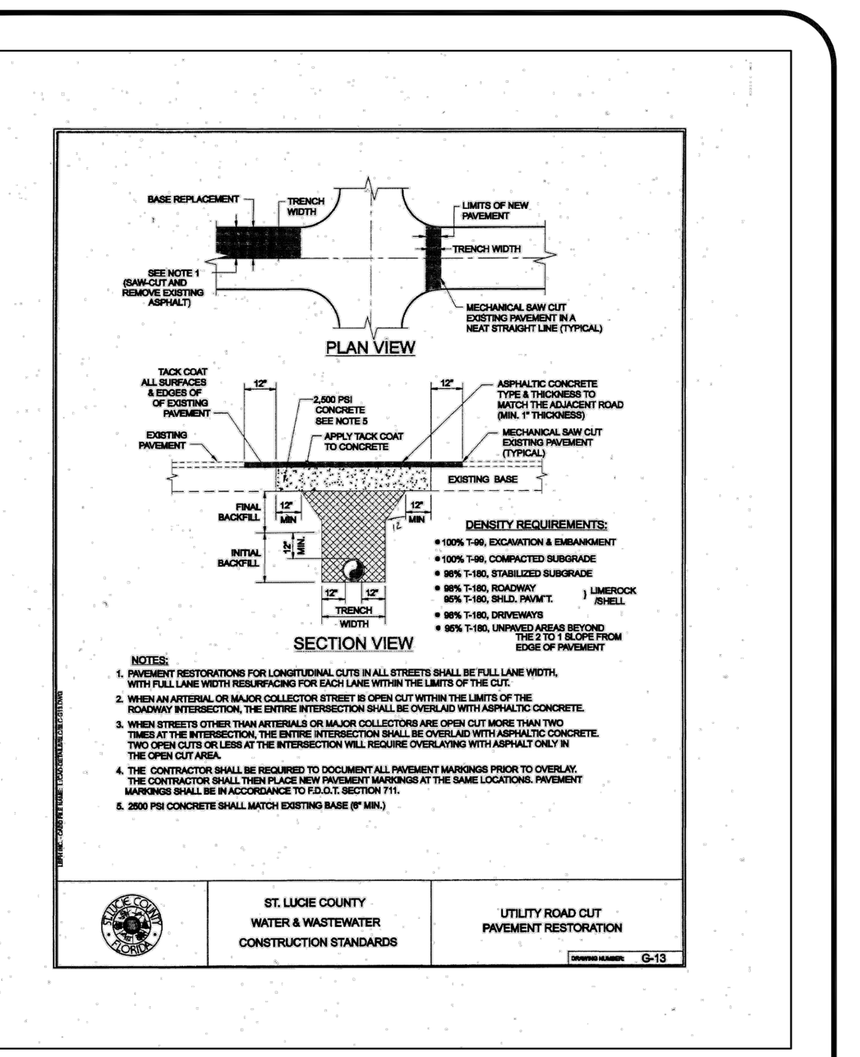
PLAN VIEW

NOTES:

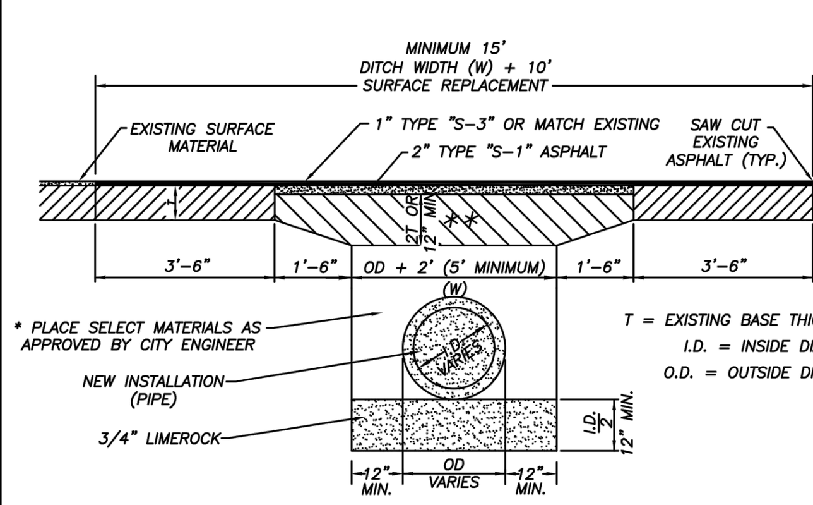
1) ALL DRIVEWAYS SHALL BE REPLACED WITH MATERIAL OF THE SAME TYPE AND COMPOSITION. AS THE MATERIAL REMOVED, TO THE LIMITS OF THE EXISTING DRIVE.
2) ALL CONCRETE DRIVEWAYS SHALL BE 6" THICK, 6"x 6", 10x10 GAGE WIRE MESH, CLASS I 3000 PSI CONCRETE. THE SUB-GRADE FOR THE CONCRETE SHALL BE 6" SAND OR OTHER APPROVED MATERIAL COMPACTED TO 98% AASHTO MAXIMUM DENSITY.
3) ALL ASPHALT DRIVEWAYS SHALL BE 1" TYPE S-1 AND 6" COMPACTED LIMEROCK BASE.
4) SAW-CUT AND REMOVE ALL EXISTING DRIVEWAYS TO LIMITS AND REPLACE TO SAME GRADE AND LINES AS ORIGINAL. CONCRETE DRIVEWAYS SHOULD BE REMOVED TO THE NEAREST EXISTING JOINT.
5) SOD 5' MINIMUM OUTSIDE OF EDGE OF REPLACED DRIVEWAY AND ALL DISTURBED AREAS.
6) ROCK/SHELL AND DIRT DRIVEWAYS SHALL BE COMPACTED TO 98% MAXIMUM DENSITY PER ASSHTO T-99. ROCK/SHELL DEPTH SHALL BE SIX INCHES, COMPACTED DEPTH.
7) CONTRACTOR SHALL REPLACE ALL DRIVEWAYS IN KIND, IN ACCORDANCE WITH THIS DETAIL, THE SPECIFICATIONS OR THE ST. LUICE COUNTY STANDARDS, WHICHEVER IS THE MOST STRINGENT.
8) NEW DRIVEWAYS SHALL BE SLOPED IN A WAY THAT WILL NOT ALLOW PONDING OF STORM WATER.
9) CONTRACTOR SHALL DISPOSE OF ALL REMOVED MATERIAL IN A SUITABLE FASHION IN ACCORDANCE WITH ALL CITY, COUNTY AND STATE REGULATIONS.
10) FOR ASPHALT DRIVEWAYS, THE BASE SHALL EXTEND SIX INCHES BEYOND THE ASPHALT OVERLAY.
11) ALL REPLACEMENT DRIVEWAYS SHALL BE CONSTRUCTED WITH A FOOTING PARALLEL TO THE ROADWAY. FOOTING SHALL BE A MINIMUM 6" DEEP AND 8" WIDE FOR THE ENTIRE LENGTH OF THE DRIVEWAY FRONTAGE.
12) ALL ASPHALT DRIVEWAYS SHALL BE OVERLAYED WITHIN THE LIMITS OF THE RIGHT-OF-WAY.

TYPICAL DRIVEWAY RESTORATION
N.T.S.

DRIVEWAY RESTORATION TYPICAL DRIVEWAY RESTORATION (COUNTY)	R-1
DATE: · REVISION: · BY: · APPD:	WATER/WASTEWATER ENGINEERING
DESIGNED: JJM · COMPUTER FILE # MISC DETAILS 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: JJM · SCALE: N.T.S.	
APPROVED: JLC · DATE: 2010	SHEET 1 OF 1



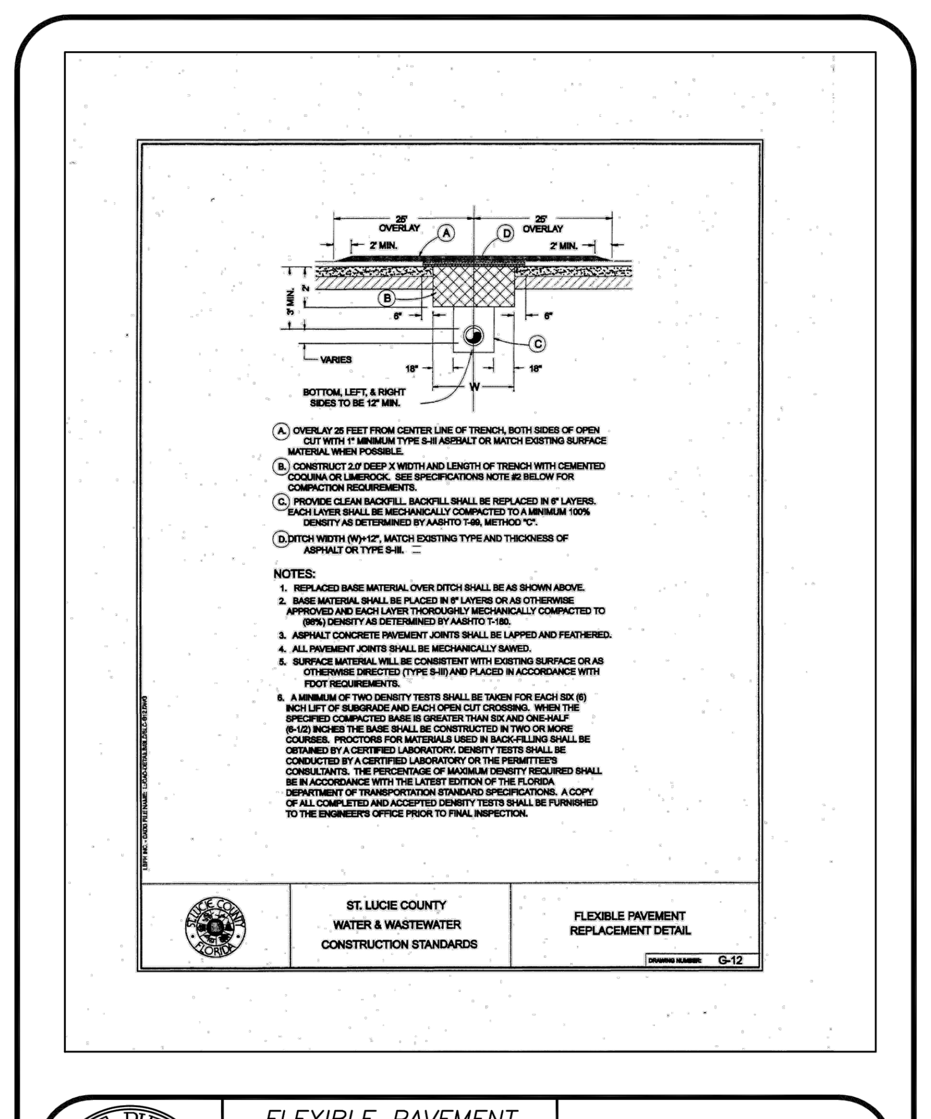
PAVEMENT RESTORATION (COUNTY)	R-2
DATE: · REVISION: · BY: · APPD:	WATER/WASTEWATER ENGINEERING
DESIGNED: JJM · COMPUTER FILE # MISC DETAILS 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: JJM · SCALE: N.T.S.	
APPROVED: JLC · DATE: 2010	SHEET 1 OF 1



* INITIAL BACKFILL SHALL BE PLACED TO 12" ABOVE THE PIPE IN 6" LIFTS. BACFILL SHALL BE MECHANICALLY TAMPED TO A MINIMUM OF 95% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO METHOD T-99. UPPERMOST 12" BE COMPACTED TO 98% OF T-99.

** LIMEROCK OR CRUSHED COQUINA COMPACTED TO 98% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO METHOD T-180

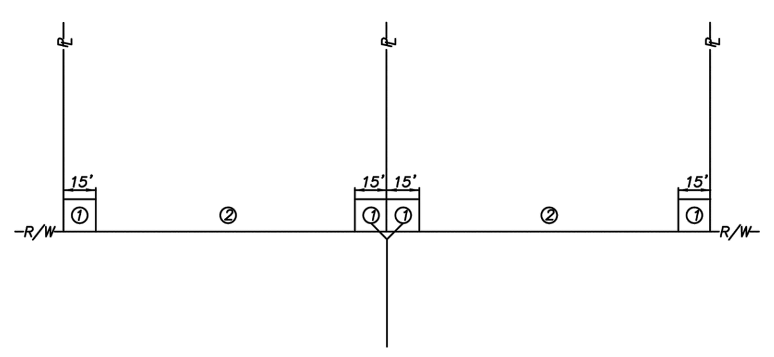
PAVEMENT RESTORATION DETAIL WITH TRENCH CITY REQUIREMENTS	R-3
DATE: · REVISION: · BY: · APPD:	WATER/WASTEWATER ENGINEERING
DESIGNED: JLC · COMPUTER FILE # MISC DETAILS 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: SLL · SCALE: N.T.S.	
APPROVED: JLC · DATE: 2010	SHEET 1 OF 1



FLEXIBLE PAVEMENT REPLACEMENT DETAIL	R-4
DATE: · REVISION: · BY: · APPD:	WATER/WASTEWATER ENGINEERING
DESIGNED: JJM · COMPUTER FILE # MISC DETAILS 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: JJM · SCALE: N.T.S.	
APPROVED: JLC · DATE: 2010	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.



① 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.

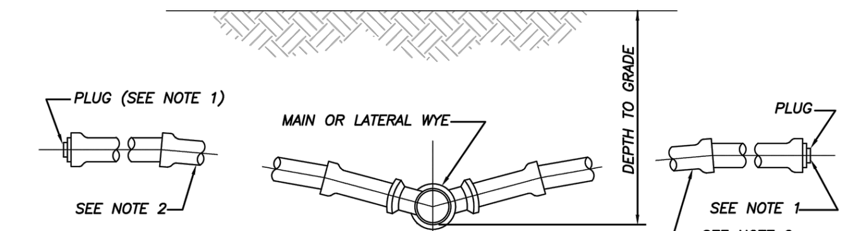
② IF PHYSICAL BARRIERS OR OTHER OBSTACLES PREVENT THE CONNECTION OF THE BUILDING SERVICE LINE TO THE F.P.U.A. SEWER LATERAL, WITHIN AREA ①, THE F.P.U.A. ENGINEERING DEPARTMENT MAY AUTHORIZE THE CONNECTION ALONG THE PORTION OF THE R/W LINE MARKED AREA ②.

NOTES:

1) HORIZONTAL SEPARATION OF WATER AND WASTEWATER SERVICES SHOULD BE A MINIMUM OF SIX FEET AND PREFERABLY 10 FEET.
2) THE WASTEWATER LATERAL SHALL BE LOCATED WITHIN RIGHT-OF-WAY AND TERMINATE AT THE PROPERTY LINE.
3) 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
02-06 · DATE: · REVISION: · BY: · APPD:	WATER/WASTEWATER/GAS ENGINEERING
DESIGNED: JJM · COMPUTER FILE # SEWER DETAIL 200602.DWG	FT. PIERCE UTILITIES AUTHORITY 113 N. 2nd STREET FT. PIERCE, FLORIDA 34948 (772) 466-1600
DRAWN BY: JJM · SCALE: N.T.S.	
APPROVED: JLC · DATE: DECEMBER 2007	SHEET 1 OF 1



NOTES:

1) BALL TYPE WASTEWATER LOCATOR BY 3M CORP. OR APPROVED EQUAL.
2) MINIMUM SLOPE OF 1/8" PER FOOT, USE GREATER SLOPE WHERE POSSIBLE.
3) SERVICE LATERAL SHALL TERMINATE WITH A CLEANOUT.
4) 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
02-06 · DATE: · REVISION: · BY: · APPD:	WATER/WASTEWATER/GAS ENGINEERING
DESIGNED: JJM · COMPUTER FILE # SEWER DETAIL 200602.DWG	FT. PIERCE UTILITIES AUTHORITY 113 N. 2nd STREET FT. PIERCE, FLORIDA 34948 (772) 466-1600
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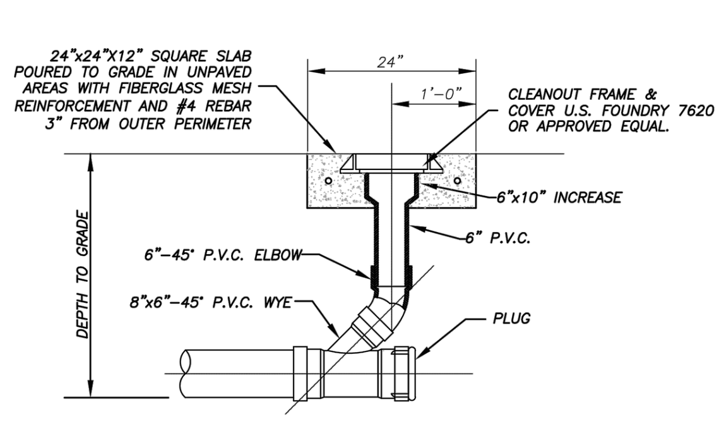
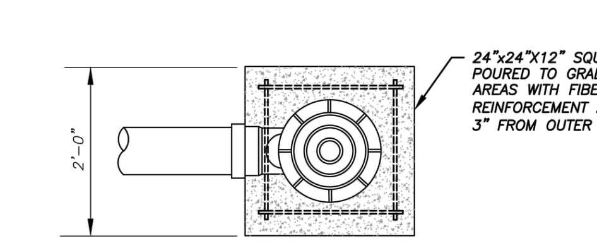
APPROVED: JLC · DATE: DECEMBER 2007	SHEET 1 OF 1



SECTION



PLAN

TERMINAL CLEANOUT DETAIL (COMMERCIAL)
(N.T.S.)

TERMINAL CLEANOUT DETAIL WASTEWATER	S-4B
10-06 · RBE · DATE: · REVISION: · BY: · APPD:	WATER/WASTEWATER ENGINEERING
DESIGNED: JLC · COMPUTER FILE # SEWER DETAIL 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: SLL · SCALE: N.T.S.	
APPROVED: JLC · DATE: 2010	SHEET 2 OF 3

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DESIGNED	J.B.B.
DRAWN	J.B.B.
CHECKED	J.B.B.
SCALE	NTS
DATE	9/28/15

MARK	REVISION	DATE
1	REVISED PER C.O.F.P.	10/30/15

SCHULKE, BITTLE & STODDARD, L.L.C.
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MISCELLANEOUS DETAILS & SPECIFICATIONS

INDIAN RIVER VILLAS

ENGINEER CERTIFICATION
☐ JOSEPH W. SCHULKE FL. REG. NO. 47048
☐ JODAH B. BITTLE FL. REG. NO. 57396
☐ WILLIAM P. STODDARD FL. REG. NO. 57635

DATE:

SHEET 10

PROJECT NO. 15-086

SPECIFICATIONS - CLEARING/GRADING/PAVING/DRAINAGE/UTILITY CONSTRUCTION

GENERAL
IT IS INTENDED THAT THE FLORIDA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", LATEST REVISIONS, BE USED WHERE APPLICABLE FOR VARIOUS WORK, AND THAT WHERE SUCH WORDING THEREIN REFERS TO THE STATE OF FLORIDA AND ITS DEPARTMENT OF TRANSPORTATION AND PERSONNEL, SUCH WORDING IS INTENDED TO BE REPLACED WITH THAT WORDING WHICH WOULD PROVIDE PROPER TERMINOLOGY, THEREBY MAKING SUCH "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AS THE "STANDARD SPECIFICATIONS" FOR THIS PROJECT. IN ADDITION THE CONTRACTOR SHALL REFER TO THE "FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS", LATEST REVISIONS. IF WITHIN THAT PARTICULAR SECTION ANOTHER SECTION, ARTICLE OR PARAGRAPH IS REFERRED TO, IT SHALL BE A PART OF THE STANDARD SPECIFICATIONS, ALSO.
ALL WORK SHALL BE IN A WORKMANLIKE MANNER AND SHALL CONFORM WITH ALL APPLICABLE CITY, COUNTY, STATE, AND FEDERAL REGULATIONS AND/OR CODES. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND LICENSES REQUIRED TO BEGIN WORK.
THE CONTRACTOR SHALL GIVE THE ENGINEER 24 HOURS NOTICE PRIOR TO REQUESTING REQUIRED INSPECTIONS AND SHALL SUPPLY ALL EQUIPMENT NECESSARY TO PROPERLY TEST AND INSPECT THE COMPLETED WORK.
THE CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS FOR A PERIOD OF ONE YEAR FROM THE DATE OF PROJECT ACCEPTANCE, DURING WHICH ALL FAULTY CONSTRUCTION AND/OR MATERIALS SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.

CLEARING/GRUBBING
THE CONTRACTOR SHALL COMPLETELY REMOVE AND DISPOSE OF ALL BUILDING, TIMBER, BRUSH, STUMPS, ROOTS, RUBBISH, DEBRIS, INCLUDING SEPTIC TANK, BUILDING FOUNDATIONS, PIPES, ETC., WITHIN THE LIMITS OF THE ROADWAY CONSTRUCTION, ALL AREAS WHERE STRUCTURES WILL BE CONSTRUCTED INCLUDING PIPE CULVERTS, AND AS OTHERWISE DEPICTED IN THE PLANS, ALL IN ACCORDANCE WITH SECTION 110 OF THE STANDARD SPECIFICATIONS.

GRADING
THE CONTRACTOR SHALL PERFORM ALL GRADING NECESSARY TO ACHIEVE THE PROPOSED PLAN GRADES, FINAL DRESSING SHALL HAVE A TOLERANCE OF 0.1 FT.+- FROM THE PLAN CROSS SECTIONS. GRADING SHALL INCLUDE ALL SHAPING, ROUGH GRADING, AND FINAL DRESSING REQUIRED FOR THE PROPOSED ROADWAY AND ROAD EMBANKMENTS WITHIN THE LIMITS DEPICTED IN THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE FINISHED GRADES UNTIL CONTRACT CLOSE-OUT, AND MUST RE-GRADE AS REQUIRED WHEN EROSION OR OTHER DISTURBANCES OCCUR. SEED/MULCH AND/OR SODDING SHALL BE INCORPORATED TO ASSIST IN THIS REGARD. HOWEVER, ANY LOSS OF SOD OR SEED/MULCH DURING THESE OCCURRENCES SHALL BE REPLACED AT THE CONTRACTORS EXPENSE.

SOD:
SOD SHALL BE ST. AUGUSTINE OR ARGENTINE BAHIA - AS NOTED ON THE LANDSCAPE PLANS OR CONTRACT DOCUMENTS. SOD SHALL BE WELL MATTED WITH ROOTS AND SHALL BE SUFFICIENTLY THICK TO SECURE A DENSE STAND OF LIVE GRASS. THE SOD SHALL BE LIVE, FRESH AND UNINJURED AT THE TIME OF PLANTING AND SHALL BE REASONABLY FREE OF WEEDS AND OTHER GRASSES. THE RECEIVING GROUND SURFACE SHALL BE GRADED TO PROPER ELEVATIONS, FREE OF LARGE VOIDS, ROOTS, WEEDS OR PATCHES OF EXISTING GRASS. UPON LAYING, THE ENTIRE AREA SHALL BE ROLLED THOROUGHLY. ALL SODDED AREAS ARE TO BE WATERED TO KEEP SOD ALIVE UNTIL THE CONTRACTOR IS CLOSED OUT, DEAD SOD SHALL BE REPLACED BY CONTRACTOR.

EMBANKMENT CONSTRUCTION
ROADWAY EMBANKMENT CONSTRUCTION SHALL CONSIST OF ALL THE EMBANKMENT CONSTRUCTION REQUIRED FOR THE PROPOSED ROADWAY AND/OR PARKING LOT, BUILDING PADS, DITCHES AND SWALES IN ACCORDANCE WITH SECTION 120 OF THE STANDARD SPECIFICATIONS. EMBANKMENTS SHALL BE CONSTRUCTED FROM MATERIAL CONTAINING NO MUCK, STUMPS, ROOTS,BRUSH,VEGETABLE MATTER, RUBBISH, OR OTHER DELETERIOUS MATERIALS THAT WILL NOT COMPACT TO A SUITABLE ENDURING ROAD BED. EXISTING EARTH SURFACES SHALL BE COMPACTED/PROOF ROLLED PRIOR TO PLACEMENT OF ANY EMBANKMENT MATERIAL.
MATERIAL: UNLESS OTHERWISE SPECIFIED, MATERIAL SHALL BE "TYPE 2 MATERIAL".
COMPACTION: 12" COMPACTED LIFTS, MINIMUM 98% MAXIMUM DRY DENSITY (A.A.S.H.T.O. T-180).
- MIN. 100% MAX DENSITY ADJACENT TO STRUCTURES WITHIN PAVED AREAS
COMPENSATION: COMPENSATION FOR THE EMBANKMENT CONSTRUCTION SHALL BE MADE FULLY BY THE BID ITEMS FOR BORROW EXCAVATION (PER C.Y.), GRADING (PER L.F. OF ROADWAY OR PER ACRE OF SITE), AND REGULAR EXCAVATION (PER C.Y.) WHEN APPLICABLE.

EMBANKMENT AND BACKFILL MATERIAL:
TYPE 1: WELL GRADED CRUSHED STONE OR CRUSHED GRAVEL (ASTM C33-71A, GRADATION 67) - ¾" TO NO. 4 SIEVE.
TYPE 2: SANDY MATERIAL, AND MAY BE UNCLASSIFIED MATERIAL OBTAINED FROM CONTRACTOR'S EXCAVATIONS AND APPROVED BY THE ENGINEER. THIS MATERIAL SHALL BE FREE FROM WOOD, ROOTS, HUMUS, PEAT, MUCK, AND OTHER ORGANIC MATERIALS, AND SHALL NOT CONTAIN CLODS, STONES, MASONRY, RUBBLE OR THE LIKE GREATER THAN 1½ INCHES IN DIAMETER.
TYPE 3: SELECT GRANULAR SAND MATERIAL, FREE OF ORGANICS WITH LESS THAN 3% FINES PASSING THE NO. 200 SIEVE.

STAKING
CONSTRUCTION STAKING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

STABILIZING
STABILIZED SUBGRADE SHALL BE CONSTRUCTED TO THE FLORIDA BEARING VALUE OR L.B.R. AS PER PLAN FOR THE DEPTH AND LIMITS SHOWN ON THE PLAN, AND IN ACCORDANCE WITH SECTION 160 OF THE STANDARD SPECIFICATIONS, ALL STABILIZED AREAS SHALL BE COMPACTED TO AT LEAST 98% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180. ALL MATERIAL SHALL BE MIXED TO A HOMOGENEOUS MATERIAL.

BASE COURSE
THE BASE SHALL BE CONSTRUCTED OF EITHER LIMEROCK MATERIAL IN ACCORDANCE WITH SECTION 911 OR CEMENTED COQUINA SHELL MATERIAL IN ACCORDANCE WITH SECTION 915 OF THE STANDARD SPECIFICATIONS.
LIMEROCK BASE SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 200 AND CEMENTED COQUINA SHELL BASE SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 250 OF THE STANDARD SPECIFICATIONS. THE CONTRACTOR SHALL PROVIDE ROCK PIT CERTIFICATION FOR CEMENTED COQUINA SHELL MATERIAL. BASE SHALL BE COMPACTED TO AT LEAST 98% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180 AND TO AN L.B.R. VALUE WHEN SPECIFIED ON PLANS. BASE SHALL BE APPROVED PRIOR TO PRIME COAT.

PRIME AND TACK COAT
PRIME AND TACK COATS FOR THE BASE COURSE SHALL BE IN ACCORDANCE WITH SECTION 300 OF THE STANDARD SPECIFICATIONS.

ASPHALT CONCRETE SURFACE COURSE (A.C.S.C.)
TYPE SP 9.5 & TYPE SP 12.5 A.C.S.C. SHALL BE CONSTRUCTED FOR THE DEPTH AND LIMITS SHOWN ON THE PLAN, IN ACCORDANCE WITH SECTIONS 320, 330, AND 334 OF THE STANDARD SPECIFICATIONS.

CEMENT CONCRETE PAVEMENT:
CONSTRUCT PORTLAND CEMENT CONCRETE (TYPE II, CLASS I) PAVEMENT IN ONE COURSE ON A PREPARED STABILIZED SUBGRADE IN ACCORDANCE WITH SECTIONS 346 AND 350. PROVIDE STEEL REINFORCEMENT WHEN SPECIFIED IN THE PLANS.

CURB
ALL CURB CONSTRUCTION SHALL BE IN ACCORDANCE WITH SECTION 520 OF THE STANDARD SPECIFICATIONS, AND IN ACCORDANCE WITH F.D.O.T. INDEX NO. 300. PROVIDE CONTRACTION JOINTS AT 10-FOOT O.C. MAXIMUM. TRANSITION ENDS OF CURB FROM FULL TO ZERO HEIGHTS IN 3-FEET. CURB CUT RAMPS SHALL BE IN ACCORDANCE WITH F.D.O.T. INDEX NO. 304.

TESTING
THE CONTRACTOR SHALL RETAIN THE SERVICES OF AN APPROVED INDEPENDENT TESTING LABORATORY TO CONDUCT ALL REQUIRED TESTS ON EMBANKMENT,SUBGRADE, BASE, PIPE BACKFILL AND SURFACE COURSE MATERIALS. TEST RESULTS MUST BE SUBMITTED PRIOR TO ANY REQUEST FOR PAYMENT ON THE ABOVE ITEMS.

THE SCHEDULE FOR TESTING THE ROAD/PAVEMENT AREAS CONSTRUCTION SHALL BE AS FOLLOWS:
A. EMBANKMENT: DENSITY TESTS SHALL BE TAKEN AT A MAXIMUM OF 5,000 SF. INTERVALS FOR EACH 12" LIFTS CONSTRUCTED, AND AT ALL EXISTING PROOFROLLED EARTH SURFACES.
B. SUBGRADE: (1) F.B.V / L.B.R. (PER PLAN) TEST SHALL BE TAKEN AT INTERVALS OF NOT MORE THAN 5000 SF / 10,000 SF OR CLOSER AS MIGHT BE NECESSARY IN THE EVENT OF VARIATIONS IN SUBSOIL CONDITIONS. (MIN. OF 3 / 1 PER JOB)
(2) DENSITY TESTS SHALL BE TAKEN AT INTERVALS OF NOT MORE THAN 5000 SF OR CLOSER AS MIGHT BE NECESSARY.
C. BASE: (1) F.B.V / L.B.R. (PER PLAN) TEST SHALL BE TAKEN AT INTERVALS OF NOT MORE THAN 5000 SF / 10,000 SF OR CLOSER (MIN. OF 3 / 1 PER JOB)
(2) DENSITY TESTS SHALL BE TAKEN AT INTERVALS OF NOT MORE THAN 5000 SF OR CLOSER AS MIGHT BE NECESSARY.
D. PIPE BACKFILL: DENSITY TESTS SHALL BE TAKEN AT A MAXIMUM OF 50 FT. INTERVALS, 1' ABOVE PIPE, 1' BELOW GRADE, MIN., AND AT PIPE DEPTHS GREATER THAN 5 FT, AN ADDITIONAL TEST SHALL BE TAKEN AT MID DEPTH OF BACKFILL
E. STRUCTURES: A MINIMUM OF 1 DENSITY TEST SHALL BE PERFORMED IN THE STABILIZED SUBGRADE, AND WITHIN THE BACKFILL FOR EACH 12" LIFT, ADJACENT TO EACH STRUCTURE INSTALLED.
F. BUILDING PAD: AS SPECIFIED IN ARCHITECTURAL PLANS.
G. CURB PADS - DENSITY TEST SHALL BE TAKEN AT A MAXIMUM OF 500 FT. INTERVALS.

ALL TESTS SHALL BE PAID FOR BY THE CONTRACTOR.

CLEAN-UP
THE CONTRACTOR MUST PROVIDE CLEAN-UP OF EXCESS CONSTRUCTION MATERIAL UPON COMPLETION OF THE PROJECT. THE SITE MUST BE LEFT IN A NEAT, CLEAN, GRADED CONDITION.

DRAINAGE STRUCTURE SPECIFICATIONS
STORM INLETS AND MANHOLES SHALL BE CONSTRUCTED IN GENERAL ACCORDANCE WITH SECTION 425 OF THE STANDARD SPECIFICATIONS OF THE FLORIDA DEPARTMENT OF TRANSPORTATION. CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4000 PSI. ALL REINFORCING STEEL TO BE ASTM A 615-72 GRADE 40, FY = 40,000 PSI, AND SHALL BE HANDLED AND PLACED IN ACCORDANCE WITH ACI 318-71. PRECAST CONCRETE MANHOLES AND STORM INLETS MAY BE USED UPON THE ENGINEER'S APPROVAL OF THE MANUFACTURER'S SHOP DRAWINGS.

PRECAST INLETS/MANHOLES
ALL STORM INLETS SHALL BE PRECAST REINFORCED CONCRETE IN ACCORDANCE WITH APPLICABLE REFERENCES TO FDOT DRAWINGS IN THE "FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS", LATEST EDITION. TYPE II PORTLAND CEMENT SHALL BE USED IN THE CONCRETE MIX. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH AT 28-DAYS OF 4000 PSI.

CULVERT PIPES
INSTALL PIPE CULVERTS AND STORM SEWERS IN ACCORDANCE WITH SECTION 430 AND RELATED SECTIONS OF THE STANDARD SPECIFICATIONS AT THE LOCATIONS DEPICTED IN THE PLANS. FURNISH AND INSTALL SANDTIGHT (WATERTIGHT TO 2 PSI) PIPE JOINTS AND PIPE/STRUCTURE JOINTS. ALL JOINTS SHALL BE GASKETED. REINFORCED CONCRETE PIPES (R.C.P.) SHALL BE IN ACCORDANCE WITH SECTION 941 OF THE STANDARD SPECIFICATIONS CORRUGATED ALUMINUM PIPE SHALL BE IN ACCORDANCE WITH SECTION 945 OF THE STANDARD SPECIFICATIONS. ADS (CORRUGATED POLYETHYLENE) SHALL BE IN ACCORDANCE WITH SECTION 948-2.3 OF THE STANDARD SPECIFICATIONS.

BACKFILLING OVER PIPE CULVERT AND STORM SEWERS SHALL BE COMPLETED IN MAXIMUM 4" LIFTS TO THE SPRINGLINE MAXIMUM 6" LIFTS, TO A POINT 12" ABOVE THE PIPE, AND IN 12" LIFTS BEYOND, COMPACTED TO A MINIMUM OF 98% OF MAXIMUM DRY DENSITY. TYPE 2 MATERIAL SHALL BE USED FOR ALL BACKFILL, UNLESS OTHERWISE SPECIFIED IN THE PLANS OR BY THE ENGINEER.

FURNISH AND INSTALL FILTER FABRIC JACKET AROUND ALL PIPE JOINTS AND THE JOINT BETWEEN THE PIPE AND THE STRUCTURE IN ACCORDANCE WITH DESIGN STANDARDS INDEX NUMBERS 201 & 280. USE FABRIC MEETING THE PHYSICAL REQUIREMENTS OF TYPE 3 SPECIFIED ON THE DESIGN STANDARDS, INDEX 199. THE FABRIC SHALL EXTEND A MINUMUM OF 12 INCHES (300 MM) BEYOND EACH SIDE OF THE JOINT OR BOTH EDGES OF THE COUPLING BAND, IF A COUPLING BAND IS USED. THE FABRIC SHALL HAVE A MINUMUM WIDTH OF 24 INCHES (600 MM) AND A LENGTH SUFFICIENT TO PROVIDE A MINIMUM OVERLAP OF 24 INCHES (600 MM). SECURE THE FILTER FABRIC JACKET AGAINST THE OUTSIDE OF THE PIPE BY METAL OR PLASTIC STRAPPING OR BY OTHER METHODS APPROVED THE THE ENGINEER.

CONCRETE
UNLESS OTHERWISE SPECIFIED OR INDICATED, ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH AT 28-DAYS OF 3000 PSI. ALL WORK SHALL COMPLY WITH THE CURRENT EDITION OF THE AMERICAN CONCRETE INSTITUTE (ACI) BUILDING CODE AND THE APPLICABLE BUILDING CODES HAVING JURISDICTION IN THE AREA.

RECORD DRAWINGS
CONTRACTOR SHALL KEEP AND MAINTAIN RECORD DRAWINGS ON THE PROJECT SITE AT ALL TIMES WHICH SHALL BE ANNOTATED BY THE CONTRACTOR DEPICTING ANY CHANGES MADE IN THE FIELD WHICH DIFFER FROM THE CONTRACT DRAWINGS. RECORD DRAWINGS SHALL INCLUDE, BUT ARE NOT LIMITED TO, HORIZONTAL LOCATION AND VERTICAL ELEVATION OF INVERT AND TOP OF CULVERTS, SEWER MANHOLES, DRAINAGE STRUCTURES, INLETS, UTILITY MAINS AND AS-BUILTS OF ALL LAKE BANKS, LOT/BLDG., PADS, SWALES, BERMS, CURBS, PAVEMENT, SIDEWALKS- DEPICTING HORIZONTAL LOCATION AND ELEVATIONS. CONTRACTOR SHALL SUBMIT COMPLETE AND FINAL RECORD DRAWINGS TO ENGINEER UPON COMPLETION OF PROJECT AND PRIOR TO FINAL INSPECTION AND FINAL PAYMENT.

THE CONTRACTOR SHALL BE REQUIRED TO HAVE A SURVEYOR PROVIDE CERTIFIED RECORD DRAWINGS/AS-BUILTS. THESE DRAWINGS SHALL BE PROVIDED IN AN ACAD ELECTRONIC FILE AS WELL AS ON SIGNED/SEALED HARD COPIES. THE AS-BUILTS MUST MEET I.R.C. UTILITY DEPT. CRITERIA FOR WATER MAIN AND SEWER AS-BUILTS, INCLUDING TIES TO STATE PLANE COORDINATES.

INSPECTION
MINIMUM CONSTRUCTION INSPECTION CHECKPOINTS
THE ENGINEER SHALL BE NOTIFIED 24 HOURS IN ADVANCE:
A. PRIOR TO ANY MAJOR DEVIATION FROM THE APPROVED PLANS.
B. PRIOR TO BACKFILLING ANY PIPE TRENCHES.
C. UPON COMPLETION OF SUBGRADE AND COMPACTION.
D. PRIOR TO POURING CURBS, SIDEWALKS OR OTHER FLATWORK.
E. UPON BEGINNING OF SPREADING OF ROCK BASE MATERIAL.
F. UPON COMPLETION OF GRADING AND COMPACTION OF BASE MATERIAL AND PRIOR TO PRIMING.
G. IMMEDIATELY PRIOR TO AND UPON APPLICATION OF A.C.S.C.
H. UPON COMPLETION OF CONSTRUCTION.

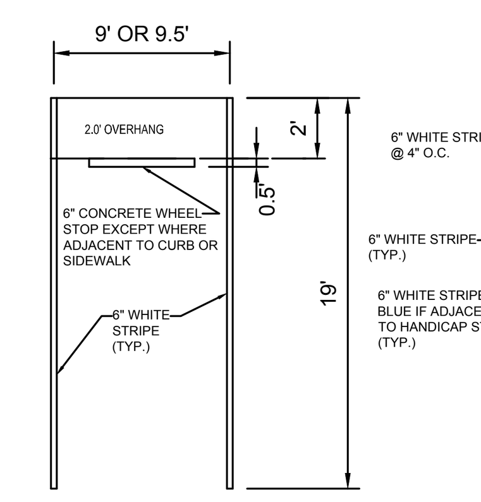
ACCEPTABLE TEST RESULTS MUST BE PROVIDED TO THE ENGINEER PRIOR TO COMMENCING SUCCESSIVE STEPS OF CONSTRUCTION, INCLUDING:
- PIPE BACKFILL AND EMBANKMENT DENSITIES PRIOR TO SUBGRADE PREPARATION.
- SUBGRADE TESTING PRIOR TO BASE PREPARATION, CONCRETE CURB OR SIDEWALK CONSTRUCTION.
- BASE TESTING PRIOR TO APPLICATION OF SURFACE COURSE.

WHERE REFERENCES ARE MADE TO ROADWAY CONSTRUCTION, IT IS INTENDED TO INDICATE CONSTRUCTION FOR ROADWAYS AND/OR PARKING LOTS/DRIVEWAYS.

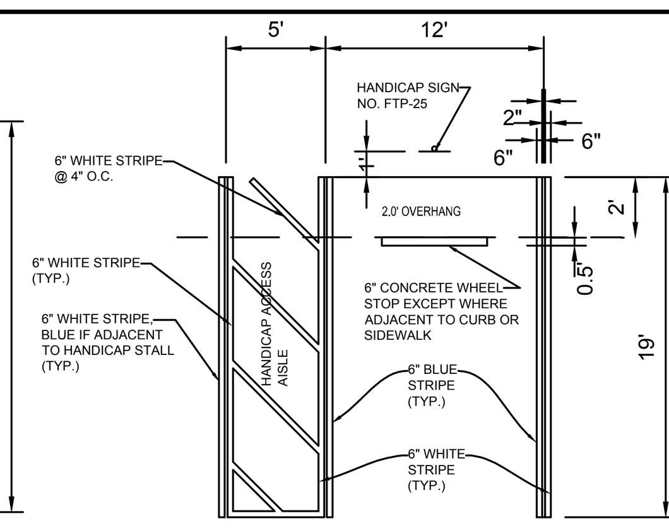
TRAFFIC/PAVEMENT MARKING NOTES:
1. ALL PARKING SPACE MARKINGS AND ROADWAY MARKINGS ON PRIVATE DRIVEWAYS/STREETS WITH THE EXCEPTION TO THE HANDICAPPED PARKING SPACES SHALL BE MARKED IN REFLECTORIZED TRAFFIC PAINT AND BE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2010, SECTION NO. 710.
2. ALL HANDICAPPED PARKING SPACES SHALL BE PROPERLY SIGNED AND MARKED IN ACCORDANCE WITH THE F.D.O.T.'S STANDARD INDEX NO. 173246.
3. TRAFFIC FLOW ARROWS THRU PARKING AREAS ARE FOR DIRECTION AND ARE TO BE PAINTED.
4. STOP BARS SHALL BE 24" WIDE.
5. ALL SIGNS AND PAVEMENT MARKINGS SHALL BE IN WITH F.D.O.T. TRAFFIC DESIGN STANDARDS AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
6. ALL PAVEMENT MARKINGS FOR THE PROPOSED PUBLIC ROADWAYS AND ALL MARKINGS AT INTERSECTIONS OF PRIVATE ROADS/DRIVEWAYS WITH PUBLIC ROADS SHALL BE EXTRUDED TYPE ALKYD BASE THERMOPLASTIC AND SHALL BE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION'S SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, SECTION NO. 711.
7. SPECIAL MARKINGS (CROSS WALK, STOP BARS, ROADWAY CONTINUOUS STRIPING, THRU ARROWS, PAVEMENT MARKINGS FOR TRAFFIC SEPARATORS, ETC. SHALL BE IN ACCORDANCE WITH THE F.D.O.T. INDEX NO. 17346.

SIGNS:
1. ALL SIGNS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
2. ALL SIGNS SHALL BE TYPE 'C' SINGLE COLUMN GROUND SIGNS IN ACCORDANCE WITH F.D.O.T. INDEX NO. 11860, 11863, 11865. WIND LOAD SHALL BE ZONE 3 (80 M.P.H.).
3. ALL SIGNS PLACEMENT SHALL BE IN ACCORDANCE WITH F.D.O.T. INDEX NO. 17302.

ADDITIONAL SPECIFICATIONS FOR WORK WITHIN A PUBLIC R.O.W.:
1. ALL MATERIALS AND CONSTRUCTION WITHIN PUBLIC RIGHT-OF-WAY SHALL CONFORM TO THE FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS (LATEST EDITION). STANDARD SPECIFICATIONS (LATEST EDITION) AND THE SUPPLEMENTS THERETO.
2. THE APPLICANTS ENGINEER RESPONSIBLE FOR CONSTRUCTION INSPECTION SHALL INSURE THAT THE MAINTENANCE OF TRAFFIC PLAN (MOT) FOR THE PROJECT IS IN ACCORDANCE WITH THE APPLICABLE FDOT INDEX NUMBERS (600 SERIES) AND THESE DOCUMENTS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (U.S DEPARTMENT OF TRANSPORTATION, FHWA). THE CONTRACTOR SHALL PROVIDE NECESSARY M.O.T. AS SPECIFIED IN THE PLANS AND PERMITS, AND AS DIRECTED IN THE FIELD BY THE ENGINEER OR PUBLIC WORKS/FDOT REPRESENTATIVE.
3. AT THE END OF EACH WORK PERIOD, ANY DROP-OFF IN THE AREA ADJACENT TO THE TRAVEL WAY OF THE STATE ROAD SHALL BE BACKFILLED IN ACCORDANCE WITH STANDARD INDEX 600 OR SHALL BE OTHERWISE PROTECTED WITH TEMPORARY BARRIER WALL AT THE CONTRACTORS EXPENSE.
4. IF THE PERMITTED WORK IS ON A ROADWAY THAT HAS BEEN SELECTED AS A HURRICANE OR DISASTER EVACUATION ROUTE, THE APPLICANT, AT THE PRE-CONSTRUCTION CONFERENCE IS REQUIRED TO PRESENT, AS PART OF THE WORK PLAN, AN EMERGENCY FUNCTIONAL RESTORATION PLAN TO ADDRESS EVENTUALITIES SUCH AS HURRICANES.
5. THE CONTRACTOR MUST CALL THE APPROPRIATE COUNTY TRAFFIC ENGINEERING DIVISION, HAVING JURISDICTION OVER THE PROJECT AT LEAST 48 HOURS, BEFORE ANY EXCAVATION WITHIN THE FDOT RIGHT-OF-WAY TO DETERMINE THE LOCATION OF THE EXISTING TRAFFIC SIGNAL INTERCONNECT CABLE.
6. THE LOCATION OF EXISTING UTILITIES SHOWN ARE APPROXIMATE ONLY. THE EXACT LOCATION SHALL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION. RELOCATION OF UTILITIES SHALL BE COORDINATED WITH UTILITY COMPANIES AFTER IDENTIFICATION OF CONFLICT BY CONTRACTOR. CONTRACTOR WILL NOTIFY ENGINEER IN ADVANCE BEFORE ANY RELOCATION.
7. BEFORE PERMIT APPROVAL AND CONSTRUCTION OF THIS PROJECT, THE APPLICANT MUST CONTACT THE FLORIDA DEPARTMENT OF TRANSPORTATION LOCAL MAINTENANCE OFFICE TO SCHEDULE A PRE-CONSTRUCTION MEETING. THE TELEPHONE NUMBER IS 561-465-7396 OR 1-800-300-8236.
8. THE APPLICANT AT THE EARLIEST CONVENIENT TIME SHALL NOTIFY IN WRITING ALL RIGHT-OF-WAY USERS AFFECTED BY THE CONSTRUCTION OF THIS PROJECT.
9. ALL CURB CUT RAMPS MUST FACE IN THE DIRECTION OF PEDESTRIAN TRAVEL.
10. AT THE END OF EACH WORK PERIOD, ANY DROP-OFF IN THE AREA ADJACENT TO THE TRAVEL OF THE STATE ROAD SHALL BE BACKFILLED IN ACCORDANCE WITH STANDARD INDEX 600 OR SHALL BE OTHERWISE PROTECTED WITH TEMPORARY BARRIER WALL AT THE CONTRACTORS EXPENSE. IN ACCORDANCE WITH STANDARD INDEX 600 OR SHALL BE OTHERWISE PROTECTED WITH TEMPORARY BARRIER WALL AT THE CONTRACTORS EXPENSE.
11. ALL MOT LANE CLOSURE SIGNS SHALL BE COVERED WHEN LANES ARE NOT CLOSED. NO LANES ARE TO BE CLOSED BEFORE 9:00 AM AND ALL LANES ARE TO OPENED BY 4:00 PM.
12. PAVEMENT SPECIFICATION: MATCH EXISTING TYPE AND DEPTH OF ASPHALT TO 3 1/2" MAXIMUM., INCLUDING FRICTION COURSE.

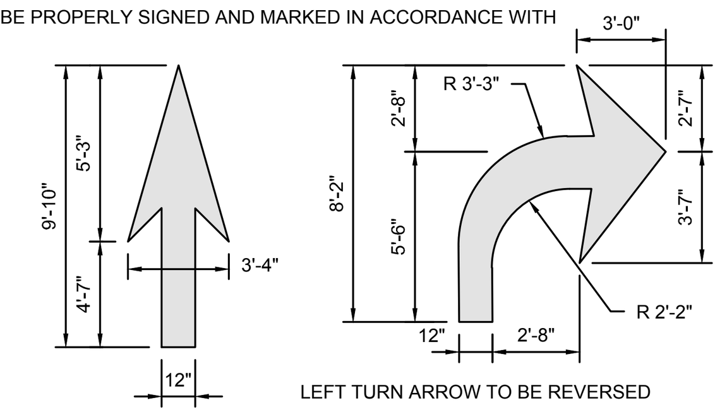


TYPICAL STANDARD PARKING STALL
N.T.S.

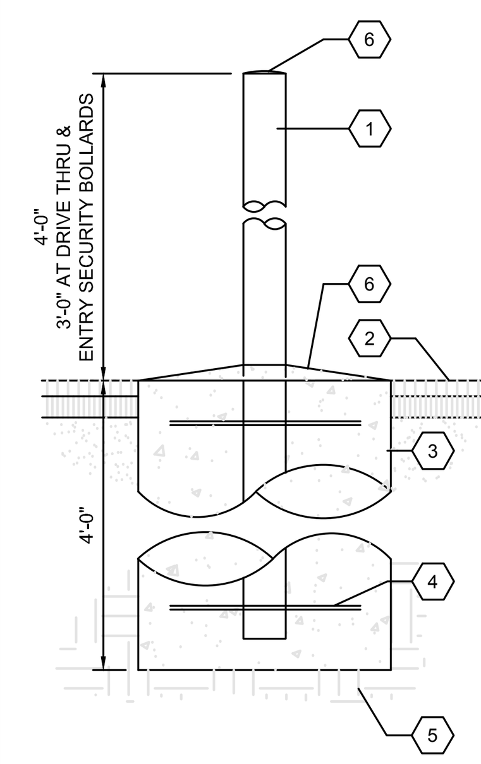


TYPICAL HANDICAP PARKING STALL
N.T.S.

NOTE:
A) ALL PARKING SPACES WITH EXCEPTION OF THE HANDICAPPED PARKING SPACES SHALL BE MARKED IN WHITE, RETRO-REFLECTIVE TRAFFIC PAINT AND BE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) STANDARD SPECIFICATIONS FOR ROAD& BRIDGE CONSTRUCTION, 1996, SECTION 710.
B) ALL HANDICAP PARKING SPACES SHALL BE PROPERLY SIGNED AND MARKED IN ACCORDANCE WITH FDOT STANDARD INDEX 17346.

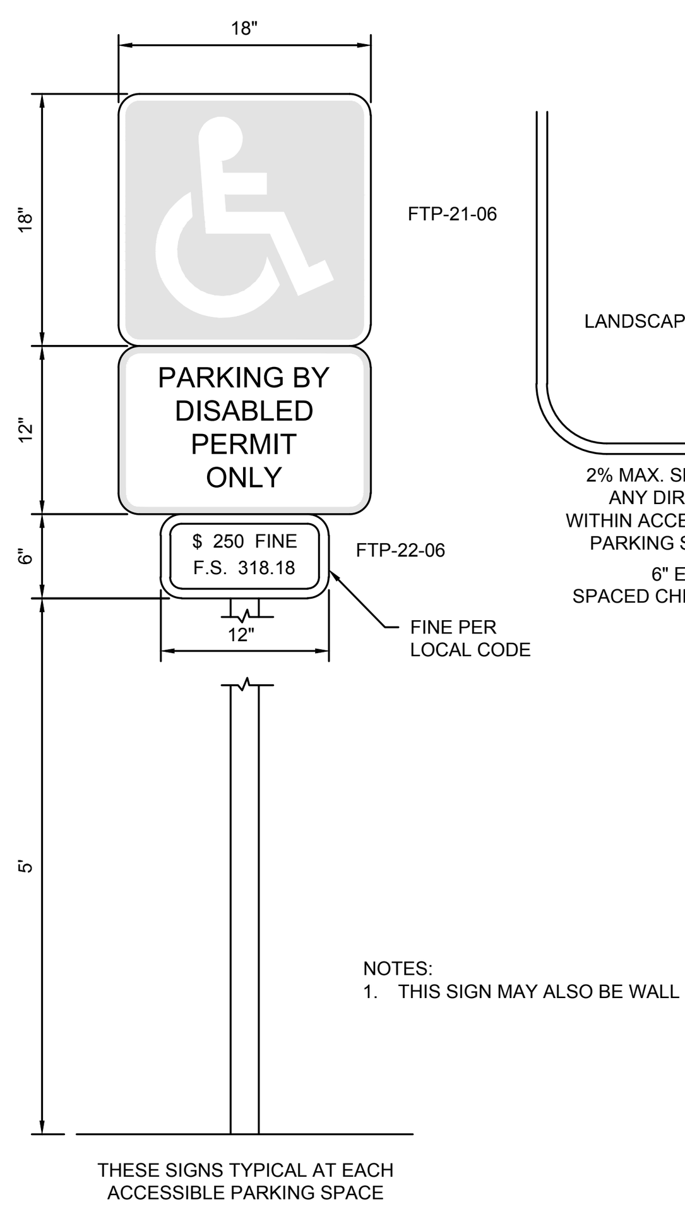


PAVEMENT MARKING ARROWS
N.T.S



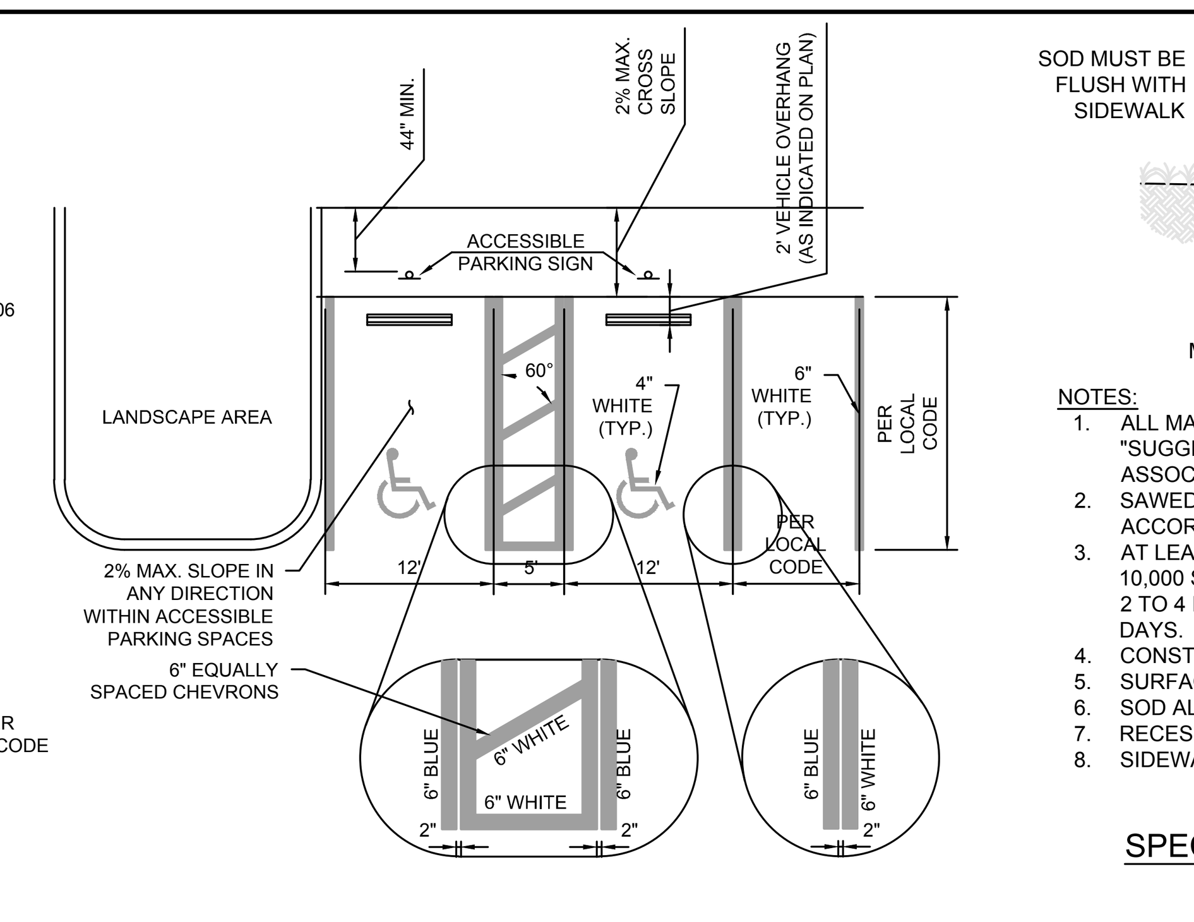
KEYED NOTES:
1. HSS 6"Ø x .28" THICK PIPE, CONCRETE FILLED. PROVIDE 1/4" WELDED CLOSURE PLATE AT BOTTOM. ALL STEEL TO BE RUST FREE AND PRIME COATED. BOLLARDS ON WALK TO RECEIVE GRAY POLYETHYLENE COVER. ALL OTHERS TO RECEIVE A YELLOW COVER (FROM IDEAL SHIELD- 313-842-7290).
2. TOP OF PAVEMENT.
3. 24"Ø CONCRETE FOUNDATION. USE SONOTUBE FORM.
4. 3/8"Ø WELDED HOOPS. 18"Ø TOP, BOTTOM, AND CENTER.
5. SOLID UNDISTURBED SOIL.
6. PROVIDE PITCH, SMOOTH CONCRETE FINISH.

TYPICAL PIPE BOLLARD DETAIL
N.T.S

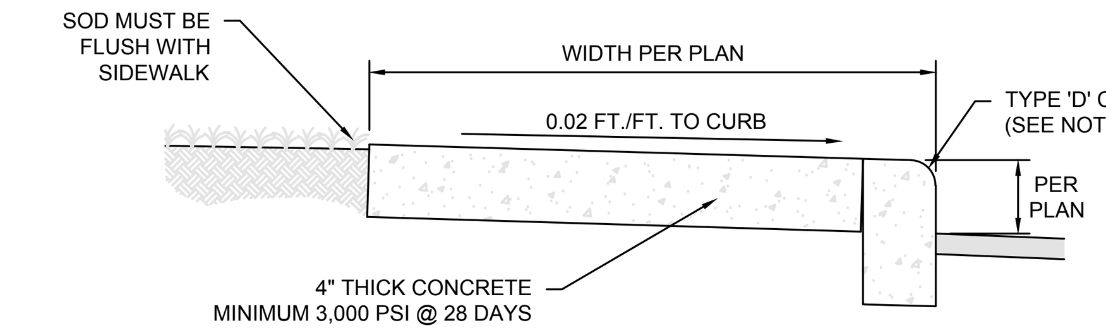


NOTES:
1. THIS SIGN MAY ALSO BE WALL MOUNTED

ACCESSIBLE PARKING SIGN
N.T.S

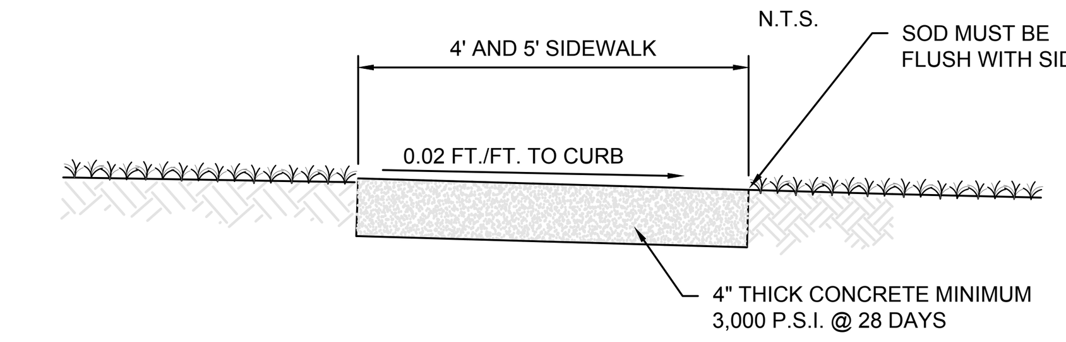


TYPICAL ACCESSIBLE STRIPING
SCALE: N.T.S



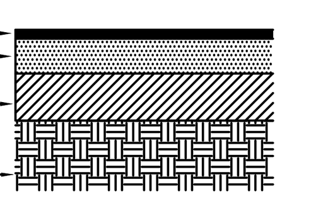
NOTES:
1. ALL MATERIALS AND CONSTRUCTION PROCEDURES SHALL BE IN ACCORDANCE WITH THE "SUGGESTED SPECIFICATIONS FOR CONCRETE AREAS" PREPARED BY THE PORTLAND CEMENT ASSOCIATION AND IN ACCORDANCE WITH FDOT INDEX NO. 310.
2. SAWED JOINTS SHALL BE CONSTRUCTED AT A MAXIMUM OF 5-FEET O.C., AND SHALL BE IN ACCORDANCE W/ FDOT INDEX NO. 310.
3. AT LEAST THREE (3) COMPRESSIVE STRENGTH CYLINDER SAMPLES SHALL BE TAKEN FOR EACH 10,000 SQUARE FEET OF PAVEMENT OR FIVE (5) PER JOB, WHICHEVER IS GREATER. SLUMP SHALL BE 2 TO 4 INCHES (AASHTO T-119). COMPRESSIVE STRENGTH SHALL BE REPORTED AT 7, 14, AND 28 DAYS.
4. CONSTRUCT UPON FIRM, STABILIZED GROUND, COMPACTED TO 98% MAXIMUM DRY DENSITY.
5. SURFACE WITH LIGHT BROOM FINISH.
6. SOD ALL DISTURBED AREAS.
7. RECESS SIDEWALK AS REQUIRED IF BRICK PAVERS CALLED FOR IN PLANS
8. SIDEWALK/CURB MAY BE CONSTRUCTED AS ONE INTEGRAL POUR. PROVIDE MIN. 8"x8" THK'N EDGE.

SIDEWALK DETAIL AND SPECIFICATIONS WHERE ADJACENT TO TYPE 'D' CURB
N.T.S.



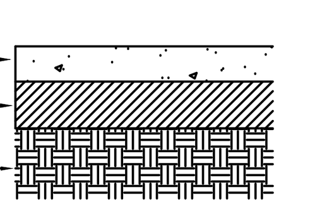
SIDEWALK NOTES:
1. ALL MATERIALS AND CONSTRUCTION PROCEDURES SHALL BE IN ACCORDANCE WITH THE "SUGGESTED SPECIFICATIONS FOR CONCRETE AREAS" PREPARED BY THE PORTLAND CEMENT ASSOCIATION AND IN ACCORDANCE WITH FDOT INDEX NO. 310.
2. SAWED JOINTS SHALL BE CONSTRUCTED AT A MAXIMUM OF 5-FEET O.C., AND SHALL BE IN ACCORDANCE W/ FDOT INDEX NO. 310.
3. AT LEAST THREE (3) COMPRESSIVE STRENGTH CYLINDER SAMPLES SHALL BE TAKEN FOR EACH 10,000 SQUARE FEET OF PAVEMENT OR FIVE (5) PER JOB, WHICHEVER IS GREATER. SLUMP SHALL BE 2 TO 4 INCHES (AASHTO T-119). COMPRESSIVE STRENGTH SHALL BE REPORTED AT 7, 14, AND 28 DAYS.
4. CONSTRUCT UPON FIRM, STABILIZED GROUND, COMPACTED TO 95% MAXIMUM DRY DENSITY.
5. SURFACE WITH LIGHT BROOM FINISH.
6. SOD ALL DISTURBED AREAS.
7. CONST. 6" THICK AT DRIVEWAYS

SIDEWALK DETAIL AND SPECIFICATIONS
SCALE: N.T.S.



SEE SPECIFICATIONS THIS SHEET FOR ADDITIONAL PAVEMENT AND TESTING REQUIREMENTS.

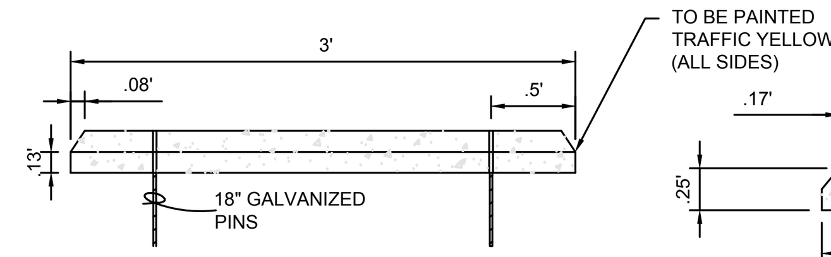
TYPICAL ASPHALTIC CONCRETE PAVING SECTION
N.T.S.



1. MATERIALS AND CONSTRCUTION PROCEDURES SHALL BE IN ACCORDANCE WITH THE SUGGESTED SPECIFICATIONS FOR CONCRETE AREAS" PREPARED BY THE PORTLAND CEMENT ASSOCIATION.
2. CONTROL JOINTS SHALL BE CONSTRUCTED AT A MAX. OF 15 FT. O.C. IN EACH DIRECTION
3. AT LEAST (3) COMPRESSIVE STRENGTH CYLINDER SAMPLES SHALL BE TAKEN FOR EACH 10,000 SF OF PAVEMENT OR (5) PER JOB, WHICHEVER IS GREATER. SLUMP SHALL BE 2 TO 4 INCHES (AASHTO T-119). COMPRESSIVE STRENGTH SHALL BE REPORTED AT 7, 14 AND 28 DAYS.
4. A MIN. OF 2 FBV TESTS SHALL BE PERFORMED ON THE SUB-BASE, AND AT LEAST 1 MOD. PROCTOR (AASHTO T-180) TEST FOR EA. TYPE OF SUB-BASE MATERIAL USED.
5. CONCRETE SHALL BE A MIN. OF 6" THICK WITHIN PUBLIC ROAD RIGHT-OF-WAYS, AND AT ALL LOADING AREAS, DUMPSTER PADS, ABOVE FUEL TANKS, AND OTHER AREAS DEPICTED IN THE PLANS. OTHERWISE, THE CONCRETE SHALL BE A MIN. OF 4.5 INCHES THICK.
6. DO NOT CONSTRUCT W.W.F. WITHIN 5 FT. OF DETECTOR LOOPS FOR MENU / SIGN BOARDS.
7. IF ASPHALT IS USED, THE BASE SHOULD EXTEND A MINIMUM OF 6" BEYOND THE ASPHALT AND THE SUBGRADE SHOULD EXTEND A MINIMUM OF 6" BEYOND THE BASE MATERIAL.

TYPICAL CONCRETE PAVING SECTION
N.T.S.

TYPICAL PAVING SECTIONS



CONCRETE WHEEL STOP
N.T.S.

GENERAL SPECIFICATIONS:

FLAT PLATE, ALCOA # 86054.6063-T6 ALLOY, ETCHED, DEGREASED WITH #1200 ALODINE FINISH WITH #2277 GREEN SCOTCHLITE BACKGROUND OR EQUAL.

DIMENSIONS: 8"H, 24",30" OR 36"L., .08" THICK ALUMINUM.

MULTI-LANE ROADS DIMENSIONS: 12"H, 24",30" OR 36"L., .08" THICK ALUMINUM

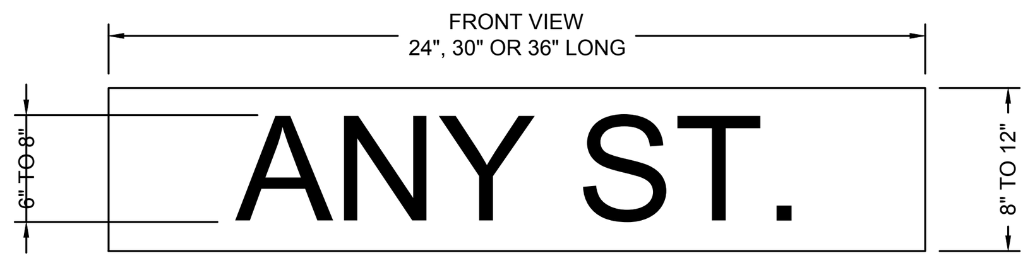
LETTERS: NAME - 6" SERIES "B" #2270, SUFFIX LETTERS - 3". SCOTCHLITE (SILVER) OR EQUAL.

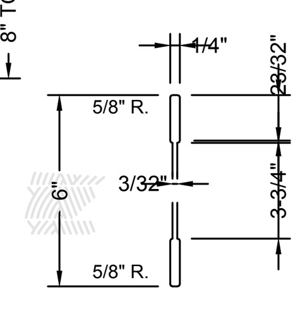
MULTI-LANE ROADS LETTERS: NAME - 8" SERIES "B" #2270, SUFFIX LETTERS - 4". SCOTCHLITE (SILVER) OR EQUAL.

THE STREET NAME MUST BE ON BOTH SIDES OF THE SIGN PLATE.

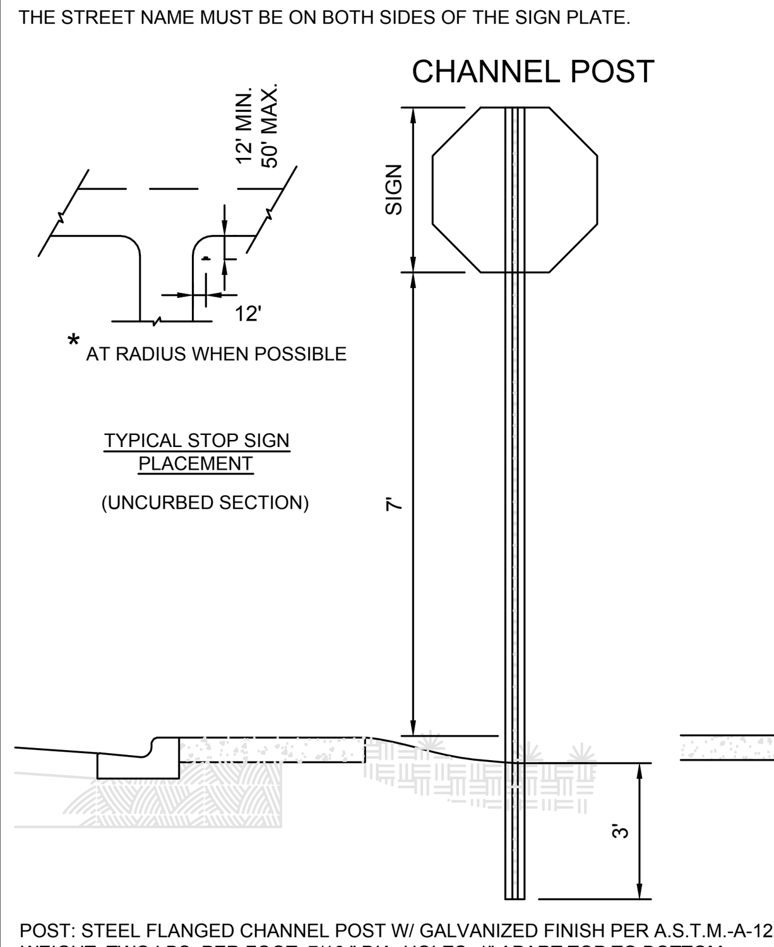
STREET NAME SIGN (SNS) or (D-3)

NOTE:
IN ACCORDANCE WITH SECTION 2D.38 OF THE M.U.T.C.D., WHEN A STREET INTERSECTS WITH A MULTILANE ROADWAY OR THE ADJACENT STREET POSTED SPEED LIMIT IS GREATER THAN OR EQUAL TO 40 MPH, STREET NAME SIGNS ARE REQUIRED TO HAVE A 12" HIGH BLANK WITH 8" HIGH CAPITAL LETTERS OR 6" HIGH LOWER CASE LETTERS. WHEN THE SPEED LIMIT IS LESS THAN 40 MPH, STREET NAME SIGNS ARE REQUIRED TO HAVE AN 8" HIGH BLANK WITH 6" HIGH CAPITAL LETTERS OR 4.5" HIGH LOWER CASE LETTERS.

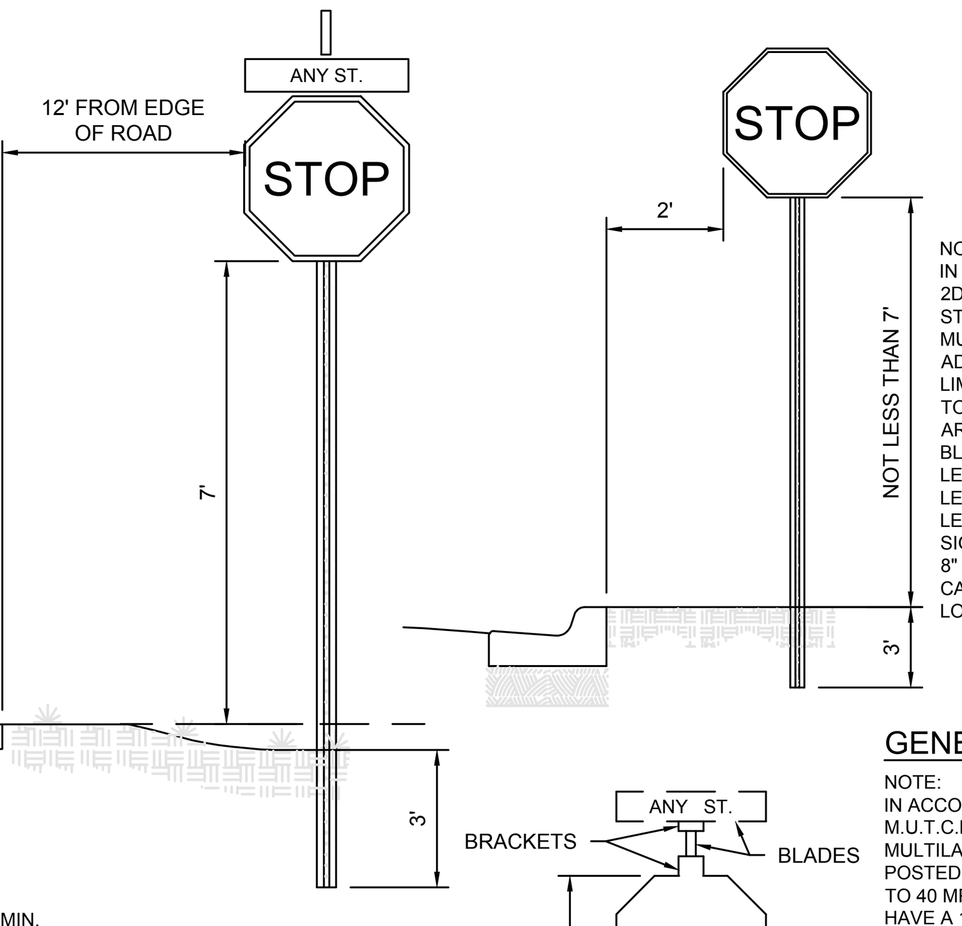




EXTRUDED BLADE SECTION



POST: STEEL FLANGED CHANNEL POST W/ GALVANIZED FINISH PER A.S.T.M.-A-123 ; MIN. WEIGHT: TWO LBS. PER FOOT, 7/16 " DIA. HOLES, 1" APART TOP TO BOTTOM. A CONCRETE FOOTER IS NOT REQUIRED UNLESS IT IS SHOWN ON THE PLAN.



NOTE:
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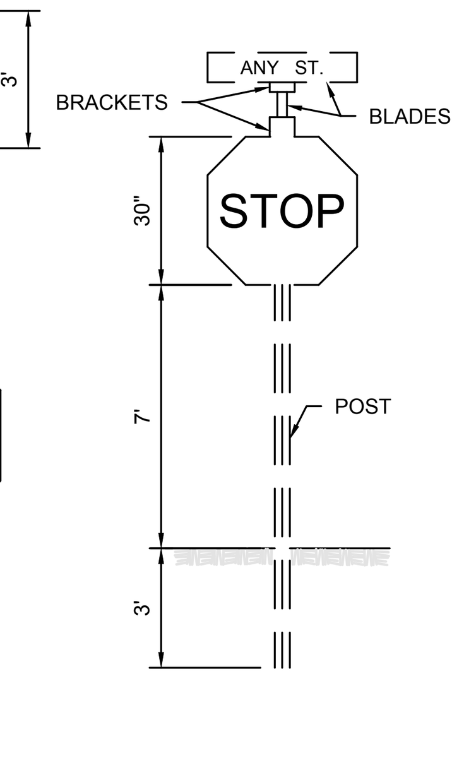
30"x30"

R1-1
WHITE ON RED



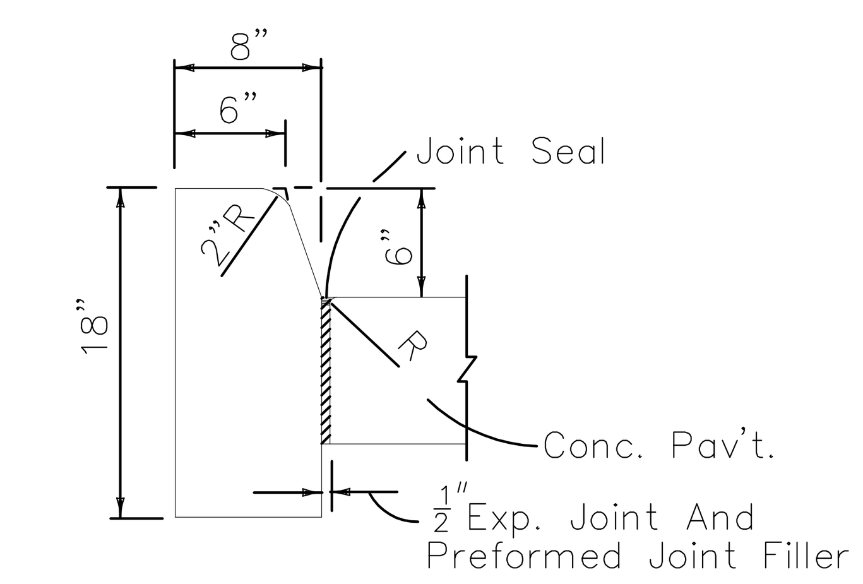
GENERAL SPECIFICATIONS:

NOTE:
IN ACCORDANCE WITH SECTION 2D.38 OF THE M.U.T.C.D., WHEN A STREET INTERSECTS WITH A MULTILANE ROADWAY OR THE ADJACENT STREET POSTED SPEED LIMIT IS GREATER THAN OR EQUAL TO 40 MPH, STREET NAME SIGNS ARE REQUIRED TO HAVE A 12" HIGH BLANK WITH 8" HIGH CAPITAL LETTERS OR 6" HIGH LOWER CASE LETTERS. WHEN THE SPEED LIMIT IS LESS THAN 40 MPH, STREET NAME SIGNS ARE REQUIRED TO HAVE AN 8" HIGH BLANK WITH 6" HIGH CAPITAL LETTERS OR 4.5" HIGH LOWER CASE LETTERS.

POST: 2"X2" 12 GAUGE GALVANIZED SQUARE TUBING SIGN POST WITH OPEN HOLES & GALVANIZED FINISH PER A.S.T.M. -A-123. WITHOUT ANCHOR PLATES. ANCHOR BASES SHALL BE 2.25"X2.25" 12 GAUGE GALVANIZED SQUARE TUBING WITH OPEN HOLES.

SIGN: R1-1 MUTCD - 30" X 30" (DIAMOND GRADE DG3 REFLECTIVE SHEETING MANUFACTURED BY 3M COMPANY OR APPROVED EQUIVALENT).

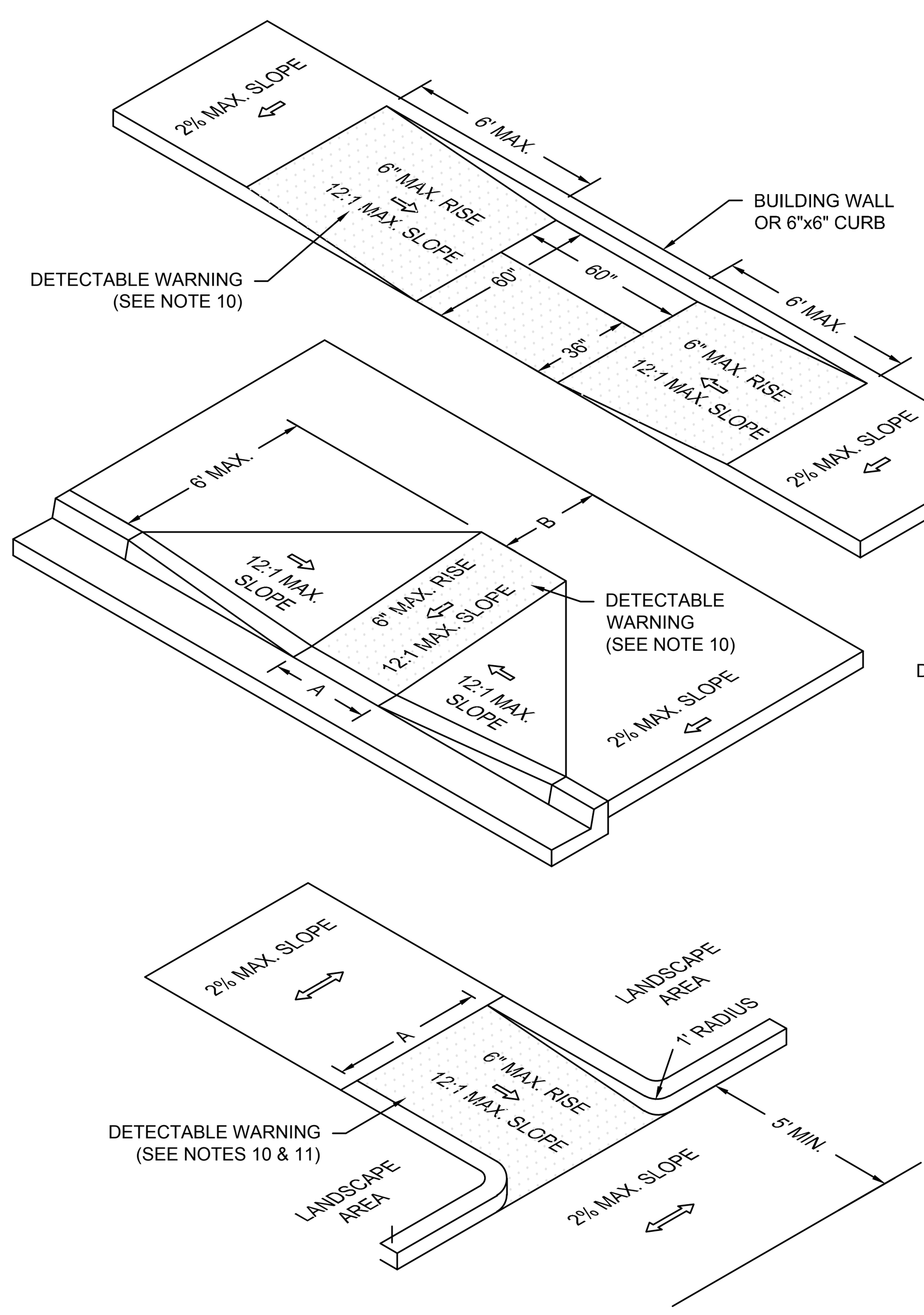
LOCATION: ONE PER INTERSECTION AS INDICATED ON THE PLANS.



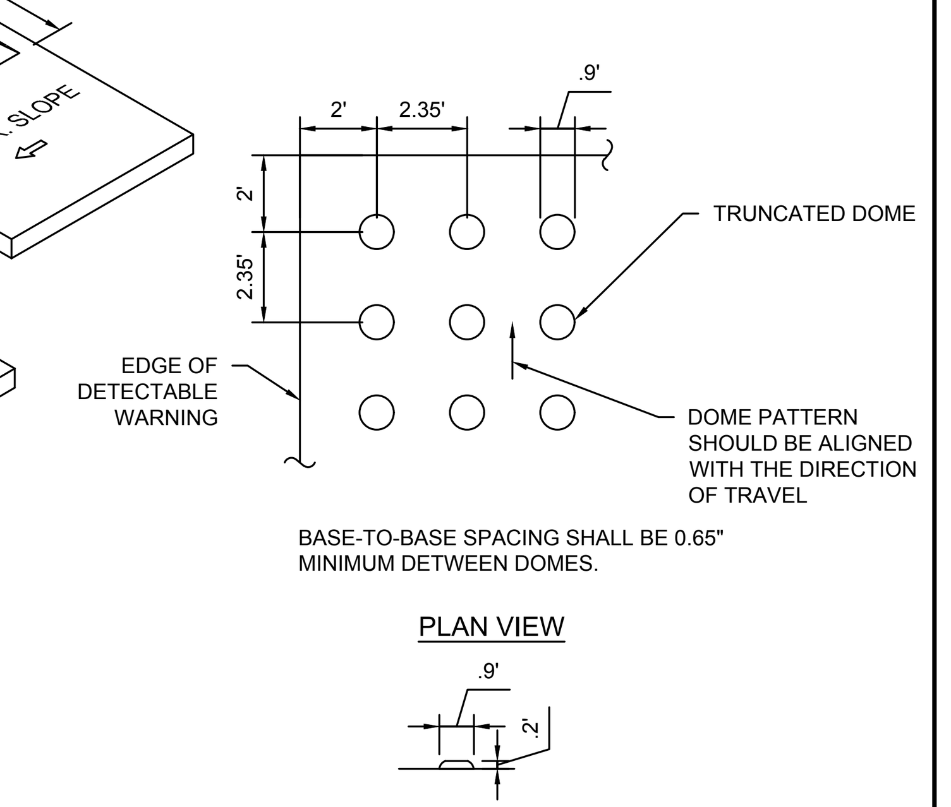
TYPE 'D' CURB

RAMP LOCATION	MINIMUM DIMENSION A	MINIMUM DIMENSION B
AT OUTSWING DOOR	44"	60"
AT INSWING/SLIDING DOOR	44"	48"
NO DOORWAY	36"	36"

NOTES:
1. ALL ACCESSIBLE COMPONENTS CONSTRUCTED AS PART OF THESE PLANS SHALL COMPLY WITH CHAPTER 11 OF THE FLORIDA BUILDING CODE.
2. ACCESSIBLE ROUTE TO ACCESSIBLE SPACES, BUILDING ENTRANCES, AND PUBLIC STREETS SHALL NOT EXCEED 5% RUNNING SLOPE AND 2% CROSS SLOPE.
3. CHANGE IN ELEVATION WITHIN THE ACCESSIBLE ROUTE IS NOT TO EXCEED ½" WITHOUT A CURB RAMP.
4. UNLESS OTHERWISE SHOWN ON THE PLANS, THE MINIMUM CLEAR ROUTE SHALL BE 36" WIDE WITH A 60"x60" PASSING SPACE EVERY 200 FEET.
5. ACCESSIBLE ROUTES THROUGH PLANTERS SHALL BE LEVEL WITH THE SURROUNDING PAVEMENT OR PROVIDE CURB RAMPS AT EACH END WITH A MINIMUM 48" LEVEL LANDING IN BETWEEN.
6. THE ACCESSIBLE ROUTE IN FRONT OF PULL-IN PARKING SHALL BE A MINIMUM OF 44" WIDE AND NOT REDUCED BY VEHICLE OVERHANGS, CURBING, SIGN POSTS, OR OTHER OBSTRUCTIONS.
7. ANY WALK THAT CROSSES OR ADJOINS A VEHICULAR WAY NOT SEPARATED BY CURBS, RAILINGS, OR OTHER ELEMENTS SHALL BE DEFINED BY A CONTINUOUS 36" WIDE DETECTABLE WARNING.
8. SPECIAL RAMP RULES APPLY FOR ANY RISE GREATER THAN 6" INCLUDING BUT NOT LIMITED TO RESTRICTION ON SLOPE, TOTAL RISE BETWEEN LANDINGS, AND USE OF HANDRAILS, PER F.B.C 11-4.8.
9. PUBLIC SIDEWALK CURB RAMPS CONSTRUCTED WITHIN A PUBLIC RIGHT-OF-WAY, IN ABSENCE OF LOCAL ROADWAY GUIDELINES, SHALL MEET THE REQUIREMENTS OF F.D.O.T INDEX 304.
10. CURB RAMPS SHALL HAVE A DETECTABLE WARNING EXTENDING THE FULL WIDTH AND DEPTH OF THE RAMP
11. DETECTABLE WARNINGS SHALL CONSIST OF TRUNCATED DOMES PER LOCAL BUILDING CODE REQUIREMENTS AND FDOT REGULATIONS.

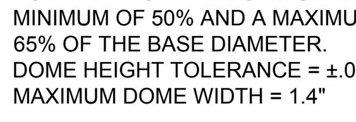


ACCESSIBLE RAMPS
N.T.S



BASE-TO-BASE SPACING SHALL BE 0.65" MINIMUM DETWEEN DOMES.

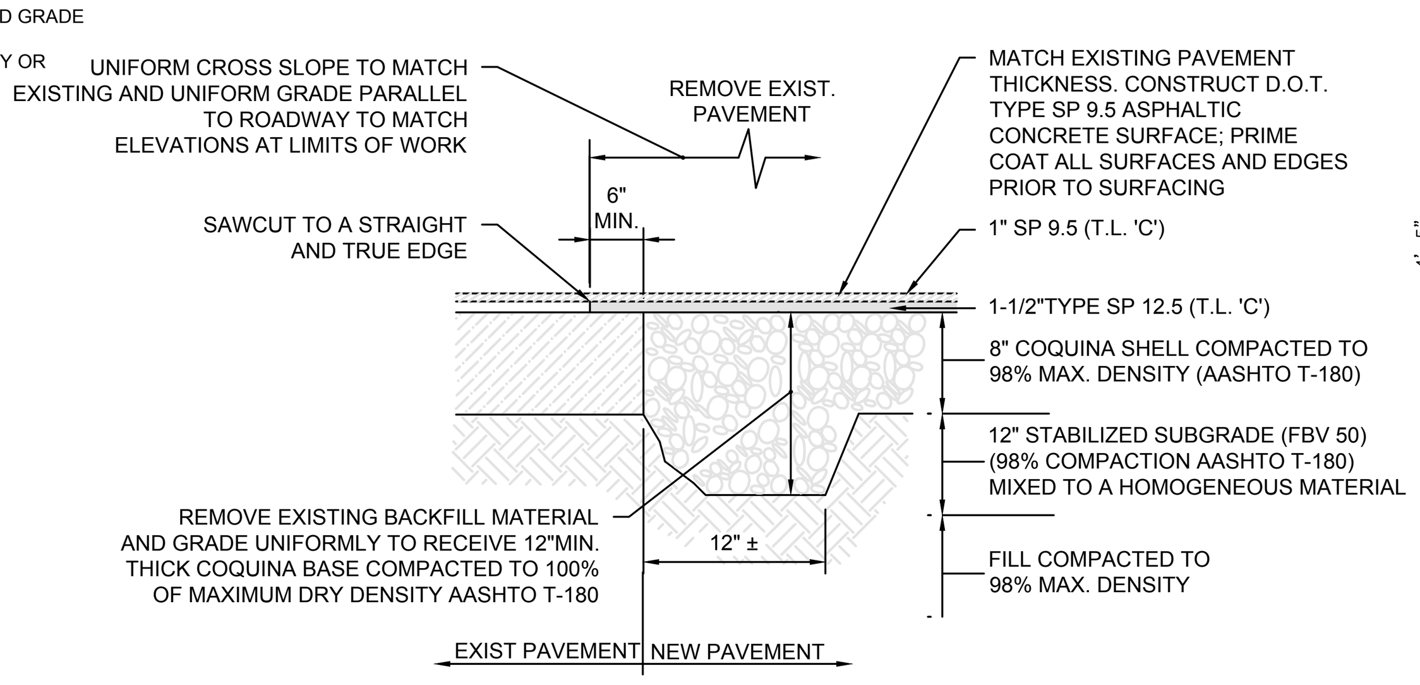
PLAN VIEW



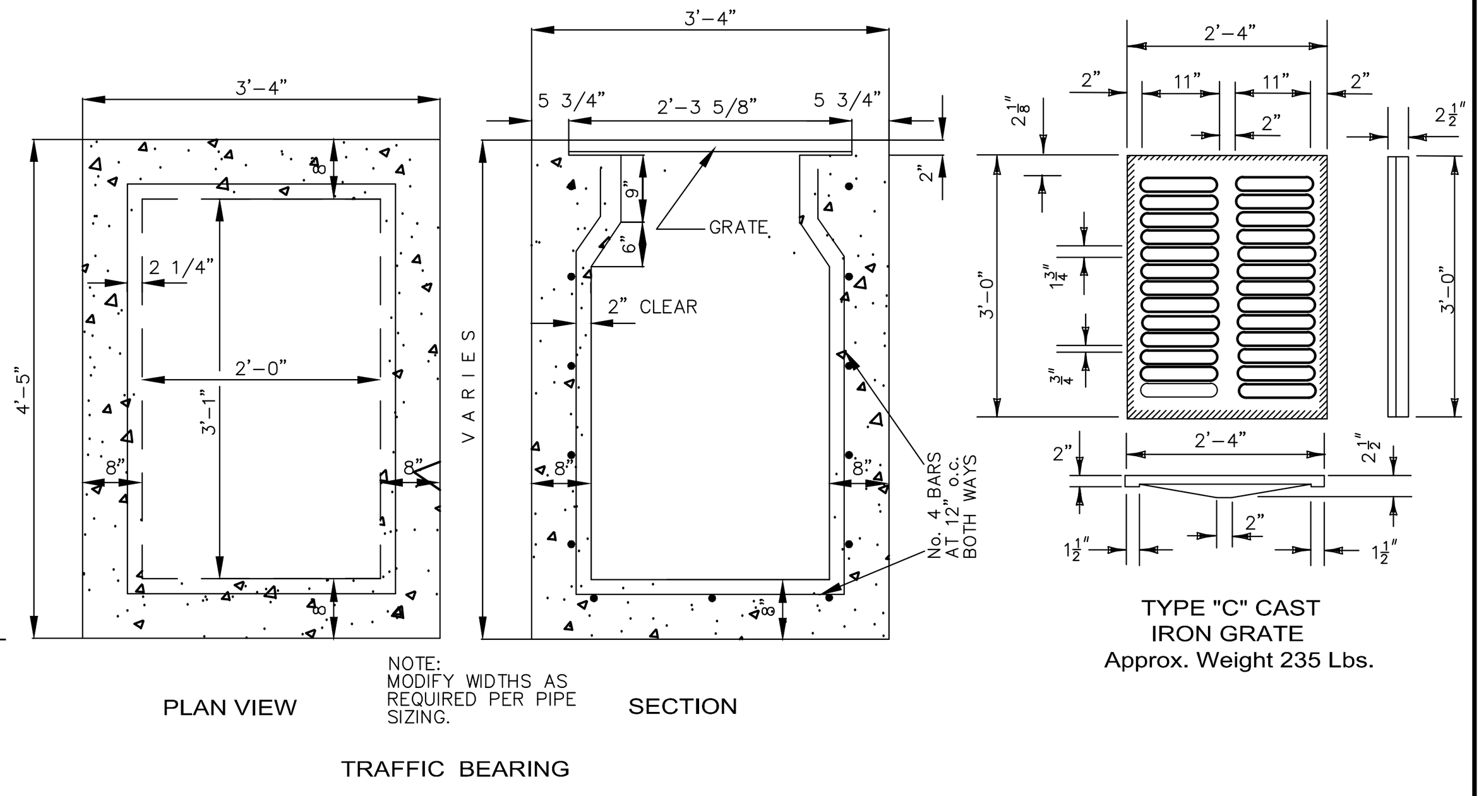
TOP WIDTH OF THE DOME SHALL BE A MINIMUM OF 50% AND A MAXIMUM OF 65% OF THE BASE DIAMETER.
DOME HEIGHT TOLERANCE = ±.02"
MAXIMUM DOME WIDTH = 1.4"

TRUNCATED DOME

TRUNCATED DOMES DETAIL
N.T.S



PAVEMENT BUTT JOINT
N.T.S.



TYPE 'C' INLET DETAIL
N.T.S.

DRAWING	15086-CON
DESIGNED	J.B.B.
DRAWN	J.B.B.
CHECKED	J.B.B.
SCALE	NTS
DATE	9/28/15

MARK	REVISION	DATE
1	REVISED PER C.O.F.P.	10/30/15

SCHULKE, BITTLE & STODDARD, L.L.C.
CIVIL & STRUCTURAL ENGINEERING · LAND PLANNING · ENVIRONMENTAL PERMITTING
CERTIFICATION OF AUTHORIZATION NO.: 00008668
1717 INDIAN RIVER BLVD., SUITE 201 VERO BEACH, FLORIDA 32960
TEL 772 / 770-9622 FAX 772 / 770-9496 EMAIL info@sbsengineers.com

MISCELLANEOUS DETAILS & SPECIFICATIONS

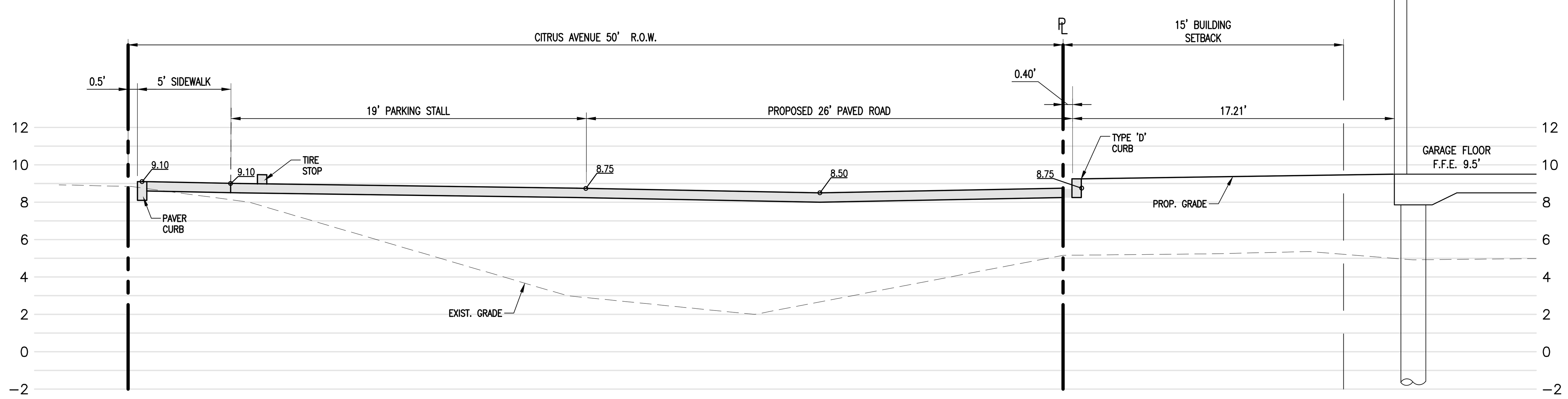
INDIAN RIVER VILLAS

ENGINEER CERTIFICATION
☐ JOSEPH W. SCHULKE FL. REG. NO. 47048
☐ JODAH B. BITTLE FL. REG. NO. 57396
☐ WILLIAM P. STODDARD FL. REG. NO. 57605

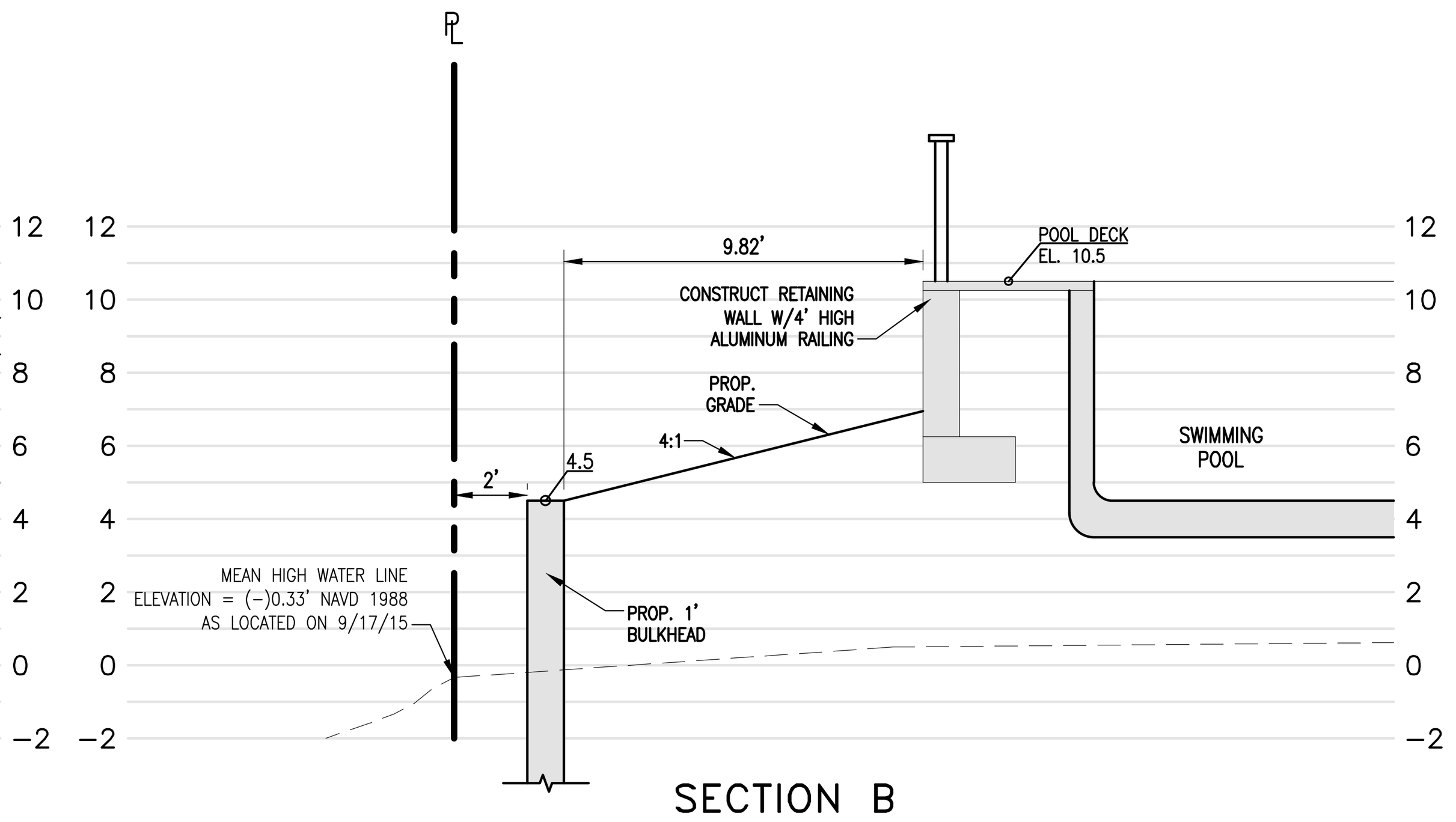
DATE:

SHEET 9

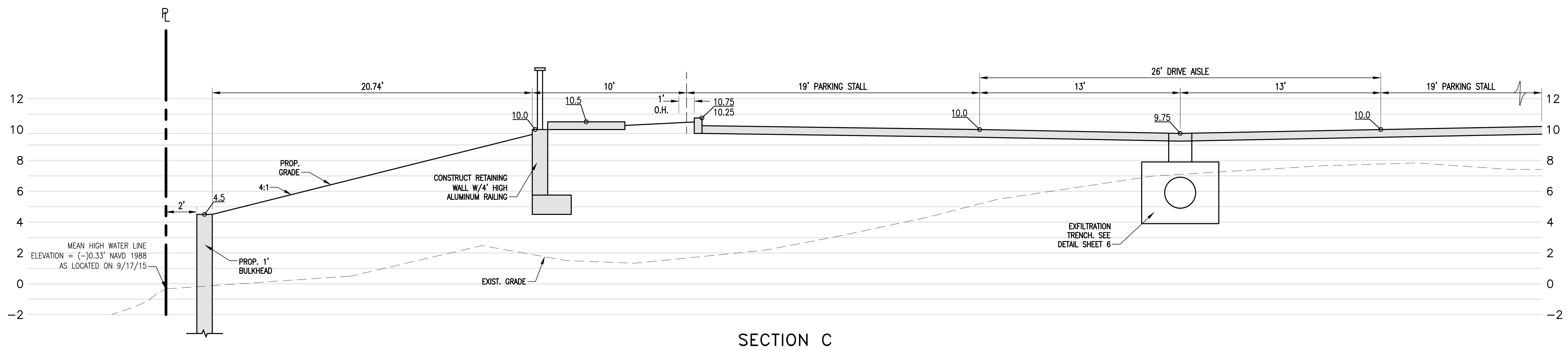
PROJECT NO. 15-086



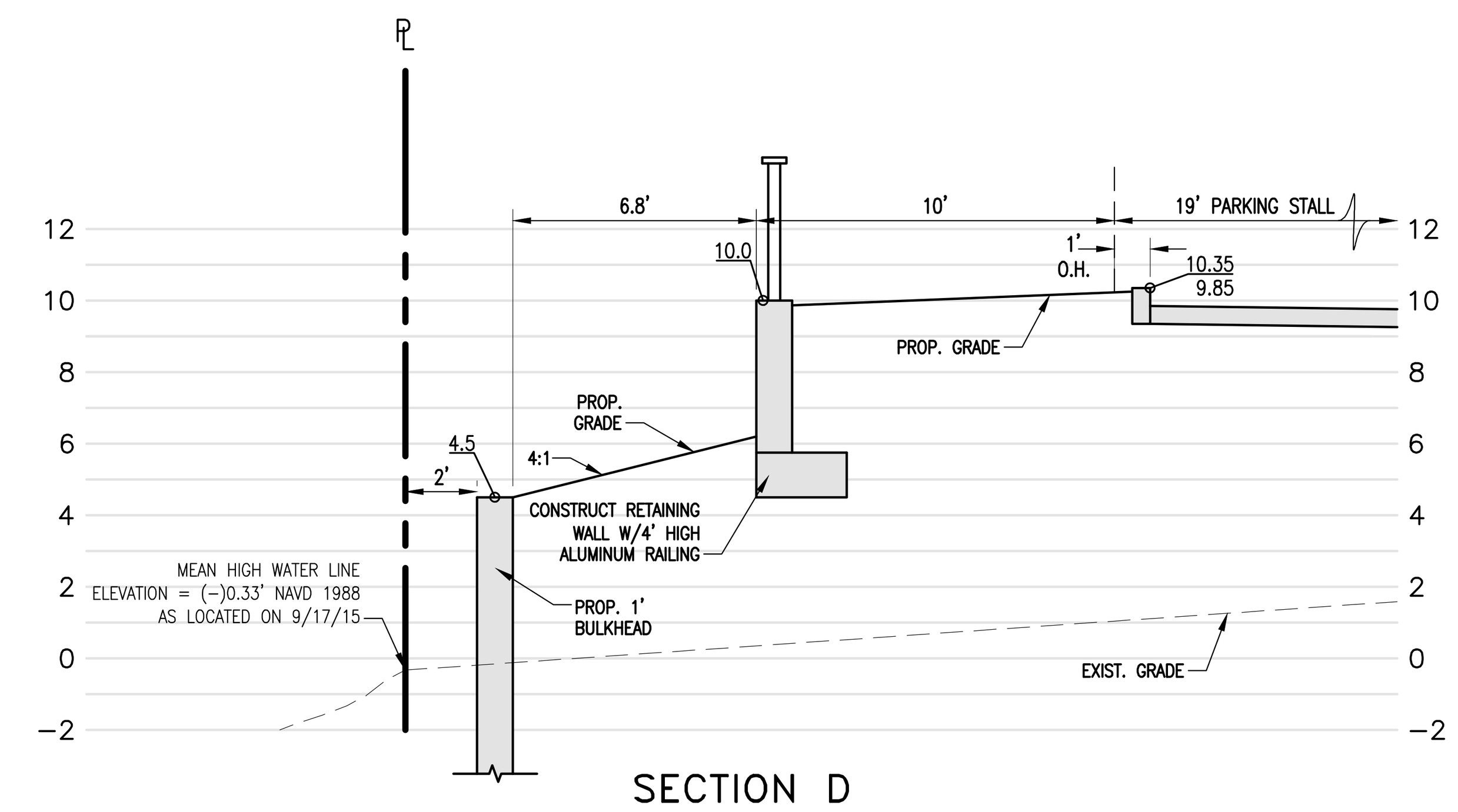
SECTION A



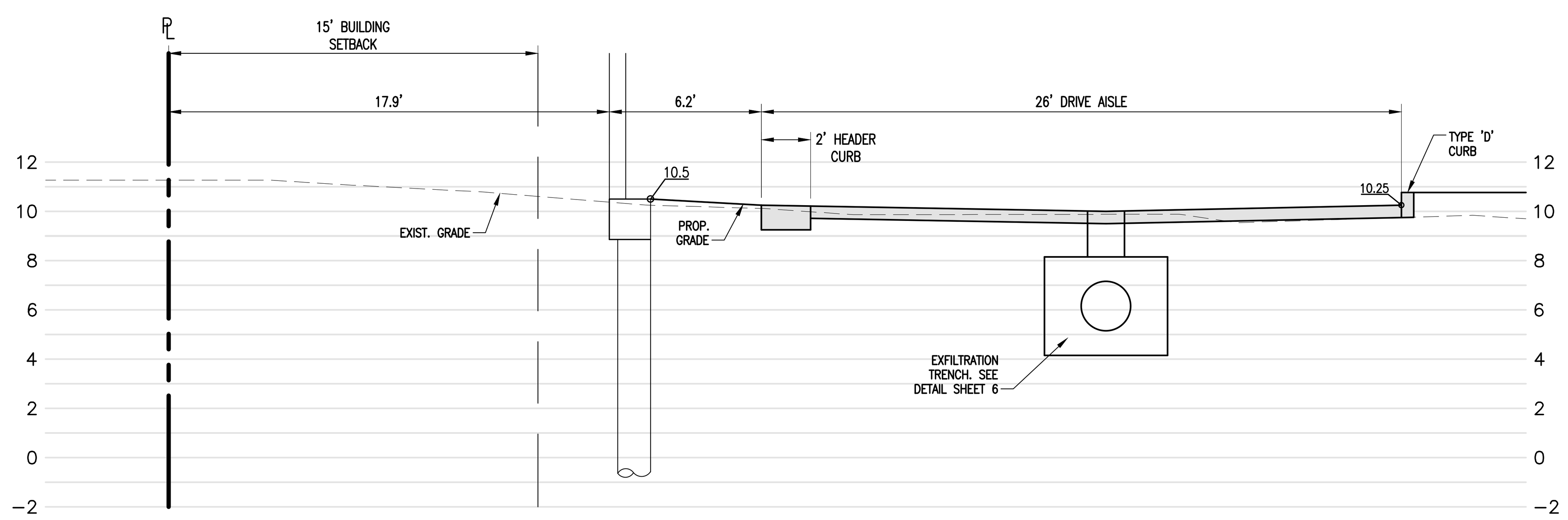
SECTION B


PL
20.74'
10'
1' O.H.
19' PARKING STALL
26' DRIVE AISLE
13'
13'
19' PARKING STALL
10.5
10.0
10.75
10.25
10.0
9.75
10.0
PROP. GRADE
4:1
CONSTRUCT RETAINING WALL W/4' HIGH ALUMINUM RAILING
2'
4.5
MEAN HIGH WATER LINE ELEVATION = (−)0.33' NAVD 1988 AS LOCATED ON 9/17/15
PROP. 1' BULKHEAD
EXIST. GRADE
EXFILTRATION TRENCH. SEE DETAIL SHEET 6

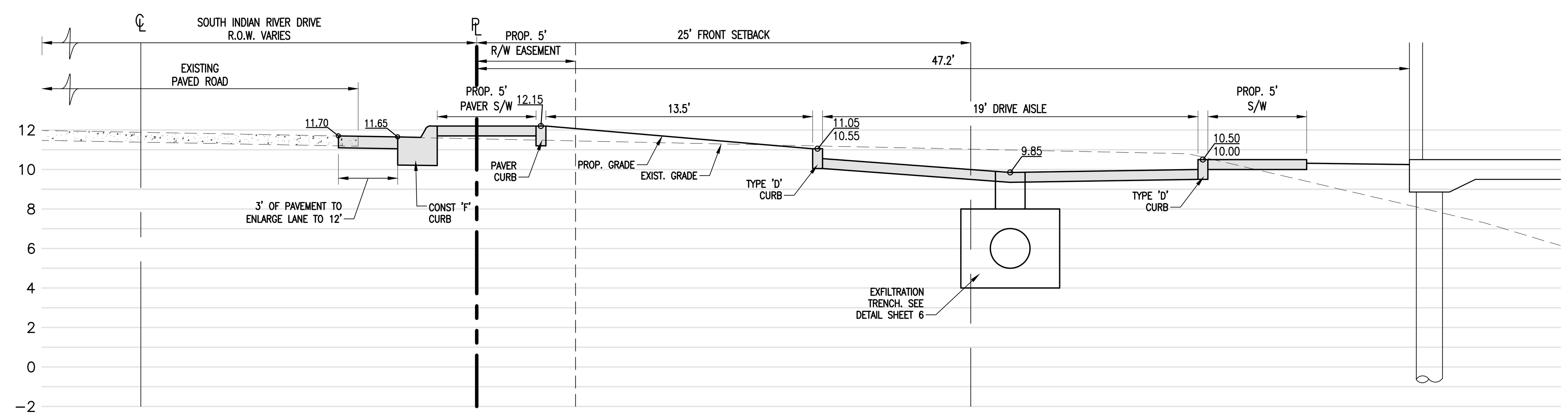
SECTION C



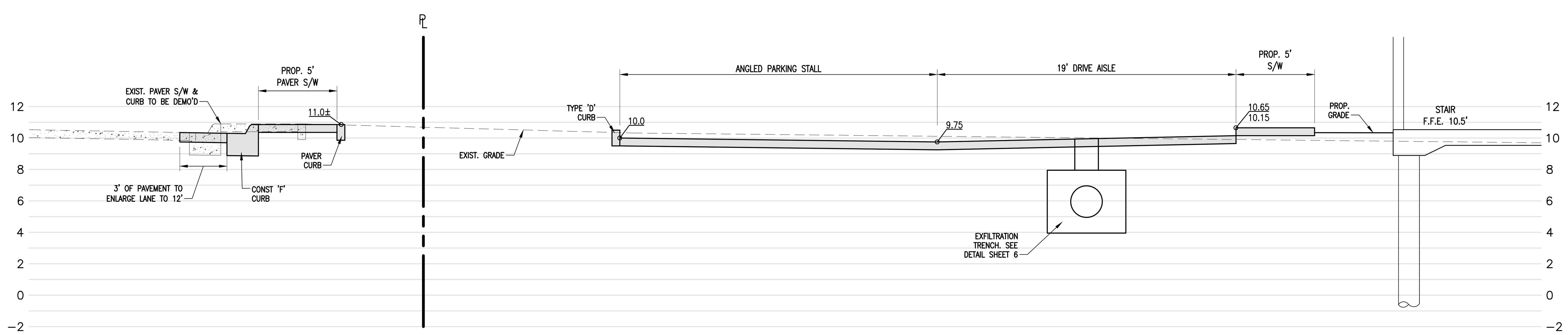
SECTION D



SECTION E


CL
SOUTH INDIAN RIVER DRIVE R.O.W. VARIES
PL
PROP. 5' R/W EASEMENT
25' FRONT SETBACK
EXISTING PAVED ROAD
47.2'
PROP. 5' PAVER S/W
12.15
13.5'
19' DRIVE AISLE
PROP. 5' S/W
11.70
11.65
11.05
10.55
9.85
10.50
10.00
PAVER CURB
PROP. GRADE
EXIST. GRADE
TYPE 'D' CURB
TYPE 'D' CURB
3' OF PAVEMENT TO ENLARGE LANE TO 12'
CONST 'F' CURB
EXFILTRATION TRENCH. SEE DETAIL SHEET 6

SECTION F


PL
EXIST. PAVER S/W & CURB TO BE DEMO'D
PROP. 5' PAVER S/W
11.0±
PAVER CURB
3' OF PAVEMENT TO ENLARGE LANE TO 12'
CONST 'F' CURB
EXIST. GRADE
ANGLED PARKING STALL
19' DRIVE AISLE
PROP. 5' S/W
TYPE 'D' CURB
10.0
9.75
10.65
10.15
PROP. GRADE
STAIR F.F.E. 10.5'
EXFILTRATION TRENCH. SEE DETAIL SHEET 6

SECTION G

MARK	REVISION	DATE
1	REVISED PER C.O.F.P.	10/30/15
2	REVISED PER C.O.F.P.	11/24/15

DRAWING 15086-CON
DESIGNED J.B.B.
DRAWN J.B.B.
CHECKED J.B.B.
SCALE 1"=5'
DATE 9/28/15

SCHULKE, BITTLE & STODDARD, L.L.C.
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CROSS SECTIONS

INDIAN RIVER VILLAS

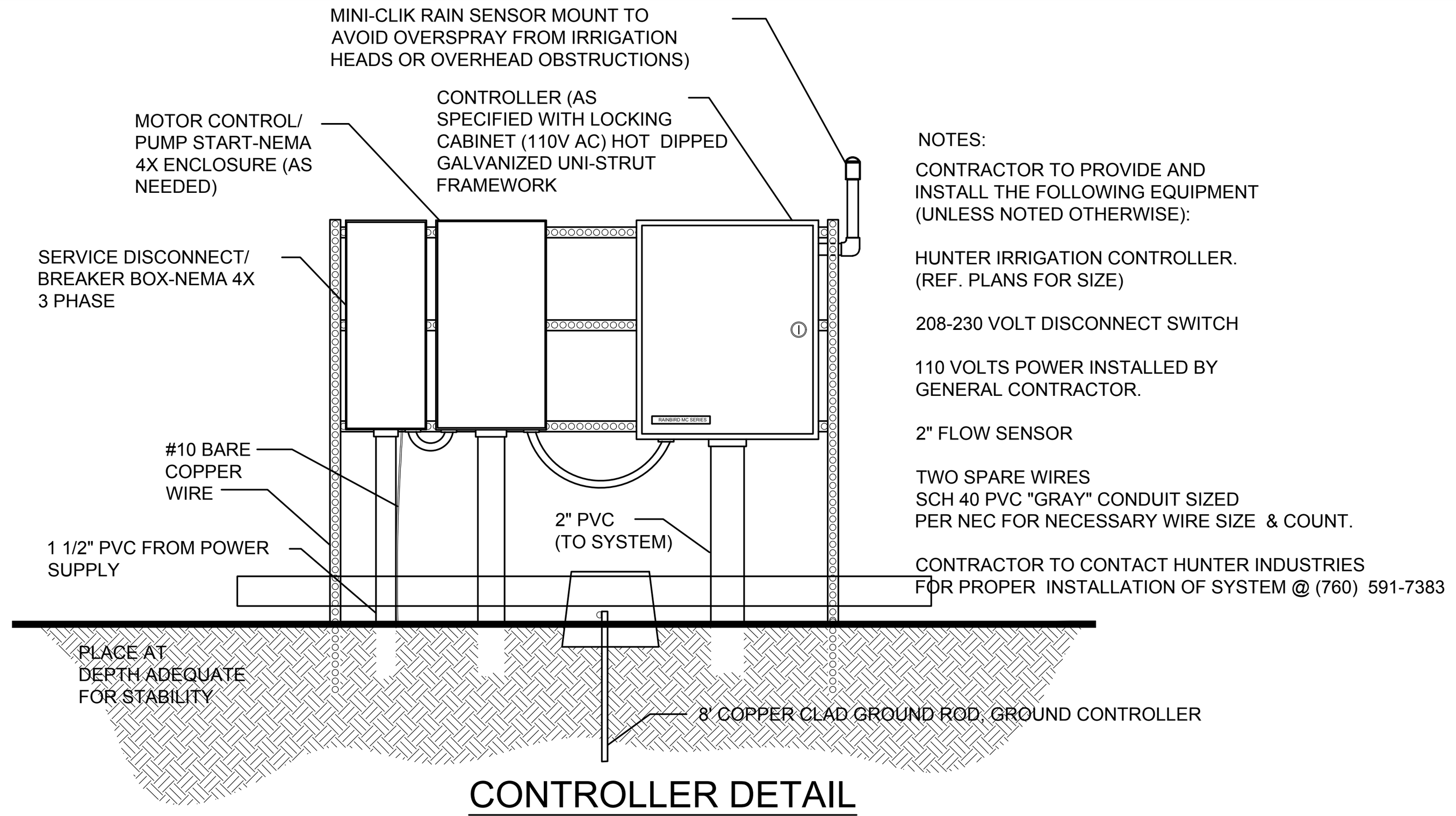
ENGINEER CERTIFICATION
☐ JOSEPH W. SCHULKE FL. REG. NO. 47048
☐ JODAH B. BITTLE FL. REG. NO. 57396
☐ WILLIAM P. STODDARD FL. REG. NO. 57605
DATE:

SHEET 8

PROJECT NO. 15−086

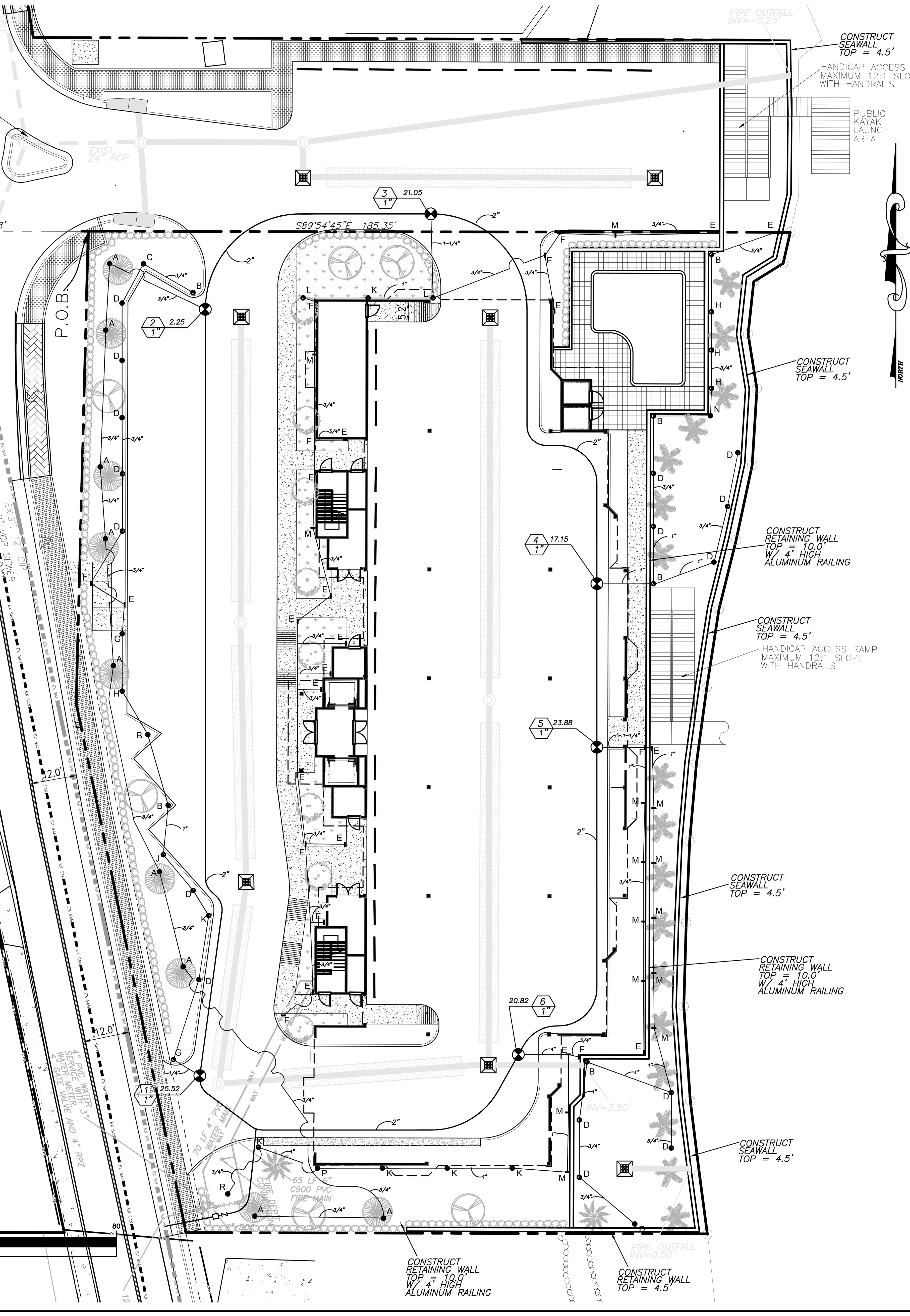
IRRIGATION NOTES

1. DO NOT SCALE PLAN FOR EXACT HEAD LOCATION.
2. SPRINKLER HEADS SHALL BE PLACED ON RISERS IN SHRUB AREAS. RISERS SHALL BE PAINTED FLAT BLACK.
3. THE CONTRACTOR SHALL MAKE ALL ADJUSTMENTS TO THE IRRIGATION SYSTEM TO INSURE 100% COVERAGE.
4. THE CONTRACTOR SHALL RUN 3 ADDITIONAL SETS OF WIRES IN EACH DIRECTION TO EACH END OF THE MAIN FOR FUTURE USE.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HARD WIRING THE ELECTRICAL SERVICE CONNECTIONS.
6. THE FINAL LOCATION OF ALL COMPONENTS SHALL BE SUBJECT TO APPROVAL BY THE OWNER.
7. ALL MAIN LINE SLEEVE LOCATIONS ARE ACCOMPANIED WITH A 2" ELECTRICAL CHASE FOR THE CONTROL WIRING.
8. VELOCITY SHALL NOT EXCEED A FLOW RATE OF 5' PER SECOND.
9. 4" POP-UP HEADS SHALL BE USED IN SODDED AREAS AND 12" POP-UP HEADS SHALL BE USED IN LANDSCAPED AREAS.
10. LOCATION OF IRRIGATION MAIN LINE AND VALVES IS FOR CLARITY ONLY. ACTUAL LOCATION OF MAIN LINE SHALL BE 6" OFF BACK OF CURB WHERE POSSIBLE. ACTUAL LOCATION OF VALVES SHALL BE IN THE NEAREST LANDSCAPE AREA.
11. SPRINKLER HEADS SHALL BE 12" MIN. FROM THE EDGE OF THE SIDEWALKS AND WALKWAYS.
12. IRRIGATION SYSTEM DESIGN PARAMETERS; 30GPM @ 30PSI

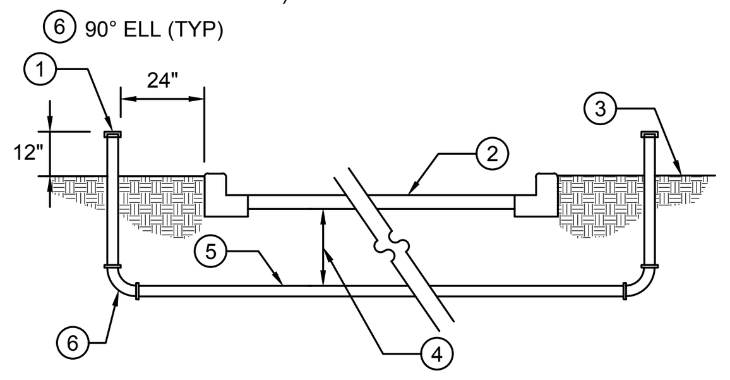


NOTES:
CONTRACTOR TO PROVIDE AND INSTALL THE FOLLOWING EQUIPMENT (UNLESS NOTED OTHERWISE):
HUNTER IRRIGATION CONTROLLER. (REF. PLANS FOR SIZE)
208-230 VOLT DISCONNECT SWITCH
110 VOLTS POWER INSTALLED BY GENERAL CONTRACTOR.
2" FLOW SENSOR
TWO SPARE WIRES SCH 40 PVC "GRAY" CONDUIT SIZED PER NEC FOR NECESSARY WIRE SIZE & COUNT.
CONTRACTOR TO CONTACT HUNTER INDUSTRIES FOR PROPER INSTALLATION OF SYSTEM @ (760) 591-7383

CONTROLLER DETAIL



1. TEMPORARY RISER AND CAP SOLVENT WELD CAP TO RISER
2. PAVEMENT
3. FINISHED GRADE
4. 18" FOR NON-PRESSURIZED LATERAL 24" FOR MAINLINE
5. SLEEVE AS SPECIFIED (PROVIDE SEPARATE 2" CHASE FOR CONTROL WIRING.)
6. 90° ELL (TYP)



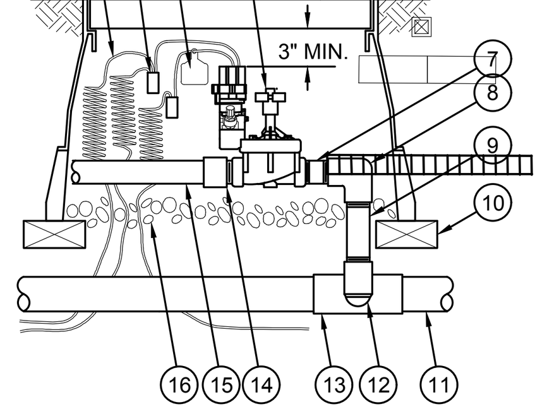
SLEEVE INSTALLATION

GRAPHIC SCALE

(IN FEET)
1 inch = 20 ft.

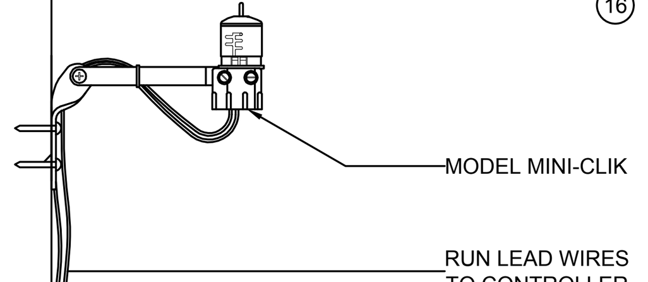
IRRIGATION EQUIPMENT SCHEDULE

SYMBOL	DESCRIPTION	QTY.
A	HUNTER RZWS-10-25-CV 10" ROOT ZONE WATERING SYSTEM WITH CHECK VALVE, 0.25 GPM	9
B	HUNTER PROS-04-CV-15-Q PRO SPRAY 4" POP-UP WITH CHECK VALVE 15' R. 90° PATTERN	7
C	HUNTER PROS-04-CV-15-TQ PRO SPRAY 4" POP-UP WITH CHECK VALVE 15' R. 270° PATTERN	1
D	HUNTER PROS-04-CV-15-H PRO SPRAY 4" POP-UP WITH CHECK VALVE 15' R. 180° PATTERN	17
E	HUNTER PROS-04-CV-RCS-515 PRO SPRAY 4" POP-UP WITH CHECK VALVE RIGHT CORNER STRIP 5'x15' PATTERN	19
F	HUNTER PROS-04-CV-LCS-515 PRO SPRAY 4" POP-UP WITH CHECK VALVE LEFT CORNER STRIP 5'x15' PATTERN	8
G	HUNTER PROS-04-CV-10-Q PRO SPRAY 4" POP-UP WITH CHECK VALVE 10' R. 90° PATTERN	2
H	HUNTER PROS-04-CV-10-H PRO SPRAY 4" POP-UP WITH CHECK VALVE 10' R. 180° PATTERN	3
J	HUNTER PROS-04-CV-12-H PRO SPRAY 4" POP-UP WITH CHECK VALVE 12' R. 180° PATTERN	1
K	HUNTER PROS-04-CV-17-H PRO SPRAY 4" POP-UP WITH CHECK VALVE 17' R. 180° PATTERN	6
L	HUNTER PROS-04-CV-17-Q PRO SPRAY 4" POP-UP WITH CHECK VALVE 17' R. 90° PATTERN	2
M	HUNTER PROS-04-CV-SS-530 PRO SPRAY 4" POP-UP WITH CHECK VALVE SIDE STRIP 5'x30' PATTERN	14
N	HUNTER PROS-04-CV-10-TQ PRO SPRAY 4" POP-UP WITH CHECK VALVE 10' R. 270° PATTERN	1
P	HUNTER PROS-04-CV-17-TQ PRO SPRAY 4" POP-UP WITH CHECK VALVE 17' R. 270° PATTERN	1
R	HUNTER PROS-04-CV-15-F PRO SPRAY 4" POP-UP WITH CHECK VALVE 15' R. 360° PATTERN	1
	HUNTER PGV-100G ELECTRIC REMOTE CONTROL VALVE, 1" PLASTIC GLOBE VALVE	6
C	HUNTER PC-900 ELECTROMECHANICAL CONTROLLER, 9 STATIONS, OUTDOOR MODEL	1
R	HUNTER MINI-CLIK RAIN SENSOR, MOUNT AS NOTED	1
BF	FABCO 785 1" PRESSURE VACUUM BREAKER, INSTALL PER MANUFACTURER'S RECOMMENDATIONS	1
FS	HUNTER FLOW-CLIK-200 FLOW SENSOR WITH INTERFACE PANEL, 2" SCHEDULE 40 SENSOR BODY, 24 VAC, 2 AMP, INSTALL INTERFACE PANEL AS REQUIRED	1
— — — —	IRRIGATION MAIN LINE, PVC SCHEDULE 40	
———	IRRIGATION LATERAL LINE, PVC CLASS 200 SDR 21 ONLY LATERAL TRANSITION PIPE SIZES 1" AND ABOVE AS INDICATED ON THE PLAN, WITH ALL OTHERS BEING ¾" IN SIZE	
========	PIPE SLEEVE, PVC SCHEDULE 40, TYPICAL PIPE SLEEVE FOR IRRIGATION PIPE. PIPE SLEEVE SHALL ALLOW FOR IRRIGATION PIPING AND RELATED COUPLING TO EASILY SLIDE THROUGH SLEEVE. EXTEND SLEEVE 18" BEYOND EDGES OF PAVING OR CONSTRUCTION	



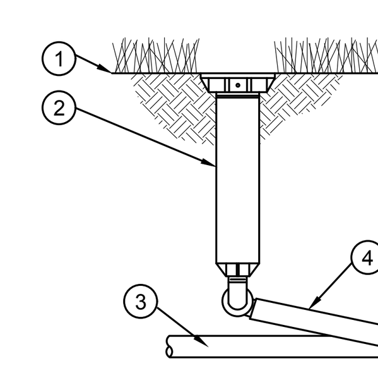
1. 30-INCH LINEAR LENGTH OF WIRE, COILED
2. WATERPROOF CONNECTION RAIN BIRD SPLICE-1 (1 OF 2)
3. ID TAG: RAIN BIRD VID SERIES
4. REMOTE CONTROL VALVE:
5. VALVE BOX WITH COVER:
6. FINISH GRADE/TOP OF MULCH
7. PVC SCH 80 NIPPLE (CLOSE)
8. PVC SCH 40 ELL
9. PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
10. BRICK (1 OF 4)
11. PVC MAINLINE PIPE
12. SCH 80 NIPPLE (2-INCH LENGTH, HIDDEN) AND SCH 40 ELL
13. PVC SCH 40 TEE OR ELL
14. PVC SCH 40 MALE ADAPTER
15. PVC LATERAL PIPE
16. 3.0-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL

HUNTER PGV ZONE VALVE



NOTE:
MOUNT SENSOR ON SURFACE WHERE IT WILL BE EXPOSED TO UNOBSTRUCTED RAINFALL, BUT NOT IN PATH OF SPRINKLER SPRAY.

MINI-CLIK



1. FINISH GRADE/TOP OF MULCH
2. POP-UP SPRAY SPRINKLER:
3. PVC LATERAL PIPE
4. SWING ASSEMBLY:
5. PVC SCH 40 TEE OR ELL

HUNTER PROS-4Z 4" POP-UP

GENERAL IRRIGATION SPECIFICATIONS AND NOTES

A. EXTENT:

INCLUDES FURNISHING ALL LABOR, MATERIALS AND EQUIPMENT FOR THE PROPER INSTALLATION OF THE IRRIGATION SYSTEM. THE WORK INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING: (1) TRENCHING AND BACKFILL, (2) AUTOMATICALLY CONTROLLED IRRIGATION SYSTEM, (3) TEST ALL SYSTEMS AND MAKE OPERATIVE, (4) "AS-BUILT" DRAWINGS.

B. GENERAL:

1. PERMITS AND FEES: OBTAIN ALL PERMITS AND PAY REQUIRED FEES TO ANY GOVERNMENTAL AGENCY HAVING JURISDICTION OVER THE WORK. INSPECTIONS REQUIRED BY LOCAL ORDINANCES DURING THE COURSE OF CONSTRUCTION SHALL BE ARRANGED AS REQUIRED. ON COMPLETION OF THE WORK, SATISFACTORY EVIDENCE SHALL BE FURNISHED TO THE OWNER'S CONSTRUCTION REPRESENTATIVE TO SHOW THAT ALL WORK HAS BEEN INSTALLED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE - PLUMBING / APPENDIX 'F' AND CODE REQUIREMENTS.
2. APPROVAL: WHEREVER THE TERMS "APPROVE" OR "APPROVED" ARE USED IN THE SPECIFICATIONS, THEY SHALL MEAN THE APPROVAL OF THE OWBER'S CONSTRUCTION REPRESENTATIVE IN WRITING.
3. BEFORE ANY WORK IS STARTED, A CONFERENCE SHALL BE HELD BETWEEN THE CONTRACTOR AND THE OWNER'S CONSTRUCTION REPRESENTATIVE CONCERNING THE WORK UNDER THIS CONTRACT.
4. COORDINATION: COORDINATE AND COOPERATE WITH OTHER CONTRACTORS TO ENABLE THE WORK TO PROCEED AS RAPIDLY AND EFFICIENTLY AS POSSIBLE
5. INSPECTION OF SITE:
   A CONTRACTOR SHALL ACQUAINT HIMSELF WITH ALL SITE CONDITIONS. SUBMISSION OF HIS PROPOSAL SHALL BE CONSIDERED EVIDENCE THAT THE EXAMINATION HAS BEEN CONDUCTED. SHOULD UTILITIES NOT SHOWN ON THE PLANS BE FOUND DURING EXCAVATIONS, CONTRACTOR SHALL PROMPTLY NOTIFY THE OWNER'S CONSTRUCTION REPRESENTATIVE FOR INSTRUCTIONS AS TO FURTHER ACTION. FAILURE TO DO SO WILL MAKE CONTRACTOR LIABLE FOR ANY AND ALL DAMAGE THERETO ARISING FROM HIS OPERATIONS SUBSEQUENT TO DISCOVERY OF SUCH UTILITIES NOT SHOWN IN PLANS.
   B CONTRACTOR SHALL MAKE NECESSARY ADJUSTMENTS IN THE LAYOUT AS MAY BE REQUIRED TO CONNECT TO EXISTING STUB-OUTS, SHOULD SUCH STUBS NOT BE LOCATED EXACTLY AS SHOWN, AND AS MAY BE REQUIRED TO WORK AROUND EXISTING WORK AT NO INCREASE IN COST TO THE OWNER'S CONSTRUCTION REPRESENTATIVE.
6. PROTECTION OF EXISTING PLANTS AND SITE CONDITIONS: THE CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT SITE CONDITIONS TO REMAIN. SHOULD DAMAGE BE INCURRED, THE CONTRACTOR SHALL REPAIR THE DAMAGE TO ITS ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
7. THE OWNER RESERVES THE RIGHT TO SUBSTITUTE, ADD, OR DELETE ANY MATERIAL OR WORK AS THE WORK PROGRESSES. ADJUSTMENTS TO THE CONTRACT PRICE SHALL BE NEGOTIATED IF DEEMED NECESSARY BY THE OWNER ON A PER DIEM BASIS.
8. THE OWNER RESERVES THE RIGHT TO REJECT MATERIAL OR WORK WHICH DOES NOT CONFORM TO THE CONTRACT DOCUMENTS. REJECTED WORK SHALL BE REMOVED OR CORRECTED AT THE EARLIEST TIME POSSIBLE.
9. WORK SCHEDULE: WITHIN 10 DAYS AFTER AWARD OF THE CONTRACT, THE CONTRACTOR SHALL SUBMIT TO THE OWNER A WORK SCHEDULE.
10. "AS-BUILT" IRRIGATION DRAWINGS: PREPARE AN "AS-BUILT" DRAWING ON A BLUEPRINT WHICH SHALL SHOW DEVIATIONS FROM THE BID DOCUMENTS MADE DURING CONSTRUCTION AFFECTING THE MAIN LINE PIPE, CONTROLLER LOCATIONS, REMOTE CONTROL VALVES AND QUICK COUPLING VALVES. THE DRAWINGS SHALL ALSO INDICATE AND SHOW APPROVED SUBSTITUTIONS OF SIZE, MATERIAL AND MANUFACTURERS NAME AND CATALOG NAME AND CATALOG NUMBER. THE DRAWINGS SHALL BE DELIVERED TO THE TENANT'S CONSTRUCTION REPRESENTATIVE BEFORE FINAL ACCEPTANCE OF WORK
11. FINAL ACCEPTANCE: FINAL ACCEPTANCE OF THE WORK MAY BE OBTAINED FROM THE OWNER'S CONSTRUCTION REPRESENTATIVE UPON THE SATISFACTORY COMPLETION OF ALL WORK.
12. GUARANTEE: THE CONTRACTOR SHALL PROVIDE ALL WARRANTIES, CERTIFICATIONS, GUARANTIES, AND WARRANTY BONDS AS SPECIFIED IN THE CONTRACT DOCUMENTS AND PERMIT CONDITIONS. ALL WORK SHALL BE GUARANTEED FOR ONE YEAR FROM DATE OF ACCEPTANCE AGAINST ALL DEFECTS IN MATERIAL, EQUIPMENT AND WORKMANSHIP. GUARANTEE SHALL ALSO COVER REPAIR OF DAMAGE TO ANY PART OF THE PREMISES RESULTING FROM LEAKS OR OTHER DEFECTS IN MATERIAL, EQUIPMENT AND WORKMANSHIP TO THE SATISFACTORY OF THE OWNER'S CONSTRUCTION REPRESENTATIVE. REPAIRS, IF REQUIRED, SHALL BE DONE PROMPTLY AT NO COST TO THE OWNER.

C. MATERIALS:

1. GENERAL: ALL MATERIALS THROUGHOUT THE SYSTEM SHALL BE NEW AND IN PERFECT CONDITION.
2. PLASTIC PIPING: ALL MAIN LINES AND LATERAL LINES SHALL BE CLASS 200 O-RING POLYVINYL CHLORIDE (PVC) PIPE AND SHALL COMPLY WITH ONE OF THE FOLLOWING STANDARDS: ASTM D 1785, ASTM D-2241, AWWA C-900, OR AWWA C-905. SDR-PR PIPE SHALL HAVE A MINIMUM WALL THICKNESS AS REQUIRED BY SDR-26. PVC GASKETS FITTINGS SHALL CONFORMING TO ASTM D 3139. GASKETS SHALL CONFORM TO ASTM F 477. SOLVENT-WELD PVC FITTINGS SHALL MEET THE REQUIREMENTS OF SCHEDULE 40 AS SET FORTH IN ASTM D 2466. THREADED PVC PIPE FIRINGS SHALL MEET THE REQUIREMENTS OF SCHEDULE 40 AS SET FORTH IN ASTM D 2464. CONFORMING TO ASTM D-1784 AND D-2241.
3. PLASTIC FITTINGS: ALL SOLVENT-WELD PVC FITTINGS SHALL MEET THE REQUIREMENTS OF SCHEDULE 40 AS SET FORTH IN ASTM D 2466. SCHEDULE 40 SOLVENT-WELD, POLYVINYL CHLORIDE (PVC) STANDARD WEIGHT AS MANUFACTURED BY SLOANE, LASCO, OR APPROVED EQUAL.
4. SOLVENT CEMENT: PVC CEMENT SHALL MEET ASTM D 2564 AND PVC CLEANER-TYPE ALL MEET ASTM F 656.
5. SPRINKLER HEAD RISERS: SCHEDULE 40 PVC FOR RISERS. PIPE SHALL BE CUT WITH A STANDARD PIPE CUTTING TOOL WITH SHARP CUTTERS. REAM ONLY TO FULL DIAMETER OF PIPE AND CLEAN ALL ROUGH EDGES OR BURRS. CUT ALL THREADS ACCURATELY WITH SHARP DIES. NOT MORE THAN THREE(3) FULL THREADS SHALL SHOW BEYOND FITTINGS WHEN PIPE IS MADE UP. ASSEMBLIES SHALL BE AS DETAILED.
6. AUTOMATIC CONTROLLERS: SEE LEGEND
7. REMOTE CONTROL VALVES: SEE LEGEND
8. CONTROL WIRING: 24 VOLT SOLID UL APPROVED FOR DIRECT BURIAL IN GROUND. MINIMUM WIRE SIZE: 14 GAUGE. ALL SPLICES SHALL BE MADE WITHIN VALVE BOX.
9. SLEEVES FOR CONTROL WIRING: UNDER ALL WALKS AND PAVED AREAS AND WHERE INDICATED ON DRAWINGS. MINIMUM PVC 1220-200 PSI PLASTIC PIPE.
10. SPRINKLER HEADS: SEE LEGEND
11. QUICK COUPLING VALVES: SHALL BE NOTED ON DRAWINGS.

D. WORKMANSHIP:

1. LAY OUT WORK AS ACCURATELY AS POSSIBLE TO THE DRAWINGS. THE DRAWINGS, THOUGH CAREFULLY DRAWN, ARE GENERALLY DIAGRAMMATIC TO THE EXTENT THAT SWING JOINTS, OFFSETS, AND ALL FITTINGS ARE NOT SHOWN.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FULL AND COMPLETE COVERAGE OF ALL IRRIGATED AREAS AND SHALL MAKE ANY NECESSARY MINOR ADJUSTMENTS AT NO ADDITIONAL COST TO THE OWNER'S CONSTRUCTION REPRESENTATIVE.
3. ANY MAJOR REVISIONS TO THE IRRIGATION SYSTEM MUST BE SUBMITTED AND ANSWERED IN WRITTEN FORM, ALONG WITH ANY CHANGE IN CONTRACT PRICE.

E. INSTALLATION:

1. EXCAVATION AND TRENCHING:
   A PERFORM ALL EXCAVATIONS AS REQUIRED FOR THE INSTALLATION OF THE WORK INCLUDING UNDER THIS SECTION, INCLUDING SHORING OF EARTH BANKS TO PREVENT CAVE-INS. RESTORE ALL SURFACES, EXISTING UNDERGROUND INSTALLATIONS, ETC., DAMAGED OR CUT AS A RESULT OF THE EXCAVATIONS TO AND IN A MANNER APPROVED BY THE OWNER.
   B TRENCHES SHALL BE MADE WIDE ENOUGH TO ALLOW A MINIMUM OF 6 INCHES BETWEEN PARALLEL PIPE LINES. TRENCHES FOR PIPE LINES SHALL BE MADE OF SUFFICIENT DEPTHS TO PROVIDE THE MINIMUM COVER FROM FINISH GRADE AS FOLLOWS:
   1) 18" MINIMUM COVER OVER IRRIGATION LINES FOR VEHICLE TRAFFIC AREAS.
   2) MINIMUM COVER OVER IRRIGATION LINES TO HEADS EXCEPT VEHICLE TRAFFIC AREAS ARE AS FOLLOWS:
   ½" - 1½" = 6" COVER
   2" - 3" = 12" COVER
   4" - 6" = 18" COVER
   > 6" = 24" COVER
   C MAINTAIN ALL WARNING SIGNS, SHORING, BARRICADES, FLARES AND RED LANTERNS AS REQUIRED BY THE SAFETY ORDERS OF THE DIVISION OF INDUSTRIAL SAFETY AND LOCAL ORDINANCES.
2. PIPE LINE ASSEMBLY:
   A INSTALL REMOTE CONTROL VALVES WHERE SHOWN AND GROUP TOGETHER WHERE PRACTICAL, PLACE NO CLOSER THAN 12 INCHES TO WALK EDGES, BUILDINGS AND WALLS.
   B PLASTIC PIPE AND FITTINGS SHALL BE SOLVENT WELDED USING SOLVENTS AND METHODS RECOMMENDED BY MANUFACTURER OF THE PIPE, EXCEPT WHERE SCREWED CONNECTIONS ARE REQUIRED. PIPE AND FITTINGS SHALL BE THOROUGHLY CLEANED OF DIRT, DUST AND MOISTURE BEFORE APPLYING SOLVENT WITH A NON-SYNTHETIC BRISTLE BRUSH.
   C PIPE MAY BE ASSEMBLED AND WELDED ON THE SURFACE. SNAKE PIPE FROM SIDE TO SIDE OF TRENCH BOTTOM TO ALLOW FOR EXPANSION AND CONTRACTION.
   D MAKE ALL CONNECTIONS BETWEEN PLASTIC PIPE AND METAL VALVES OR STEEL PIPE WITH THREADED FITTINGS USING PLASTIC MALE ADAPTERS.
3. SPRINKLER HEADS:
   A INSTALL ALL SPRINKLERS AS DETAILED ON DRAWINGS.
   B DO NOT SCALE PLANS FOR EXACT HEAD LOCATION.
   C PROVIDE A MINIMUM OF 12" BETWEEN SPRINKLERS AND PAVEMENT AND 12 INCHES BETWEEN SPRINKLERS AND BUILDINGS.
4. CLOSING OF PIPE AND FLUSHING LINES:
   A CAP OR PLUG ALL OPENINGS AS SOON AS LINES HAVE BEEN INSTALLED TO PREVENT THE ENTRANCE OF MATERIALS THAT WOULD OBSTRUCT THE PIPE. LEAVE IN PLACE UNTIL REMOVAL IS NECESSARY FOR COMPLETION OF INSTALLATION.
   B THOROUGHLY FLUSH OUT ALL WATER LINES BEFORE INSTALLING HEADS, VALVES AND OTHER HYDRANTS.
   C TEST IN ACCORDANCE WITH PARAGRAPH ON HYDROSTATIC TESTS.
   D UPON COMPLETION OF THE TESTING, THE CONTRACTOR SHALL COMPLETE ASSEMBLY AND ADJUST SPRINKLER HEADS FOR PROPER DISTRIBUTION.
5. INSPECTIONS:
   A SPRINKLER LAYOUT AND SPACING INSPECTION: VERIFICATION THAT THE IRRIGATION DESIGN IS ACCURATELY INSTALLED IN THE FIELD. IT WILL ALSO PROVIDE FOR ALTERATION OR MODIFICATION OF THE SYSTEM TO MEET FIELD CONDITIONS. SPACING SHOULD BE WITHIN 5% OF THE DESIGN SPACING.
   B PIPE INSTALLATION DEPTH INSPECTION: ALL PIPES IN THE SYSTEM SHALL BE INSTALLED TO DEPTHS AS PREVIOUSLY DESCRIBED IN SECTION 'E' OF THESE SPECIFICATIONS.
   C OPEN TRENCH INSPECTION: THE TRENCH AND ALL JOINTS AND EVERY TRANSITION IN PIPE SIZE, WILL BE OPEN WHERE OPEN TRENCH INSPECTION IS REQUIRED.
   D INSPECTIONS WILL BE PERFORMED THROUGHOUT THE DURATION OF THE INSTALLATION AND WILL BE MADE BY THE GOVERNING AGENCY AND/OR THE OWNER AND ENGINEERS TO ENSURE COMPLIANCE WITH DESIGN INTENT, SPECIFICATIONS, AND THE IRRIGATION CODES.
6. HYDROSTATIC TESTS:
   A REQUEST THE PRESENCE OF THE OWNER AND ENGINEER IN WRITING AT LEAST 48 HOURS IN ADVANCE OF TESTING.
   B TESTING TO BE ACCOMPLISHED AT THE EXPENSE OF THE CONTRACTOR AND IN THE PRESENCE OF THE OWNER AND ENGINEER.
   C CENTER LOAD PIPING WITH SMALL AMOUNT OF BACKFILL TO PREVENT ARCHING OR SLIPPING UNDER PRESSURE.
   D APPLYING A CONTINUOUS AND STATIC WATER PRESSURE OF 125 PSI WHEN WELDED PLASTIC JOINTS HAVE CURED AT LEAST 3 HOURS AND WITH THE RISERS CAPPED AS FOLLOWS:
   1) MAIN LINES AND SUB-MAINS TO BE TESTED FOR 2 HOURS.
   E FOR PVC AND O-RING GASKET PIPE THE ALLOWABLE LEAKAGE SHALL NOT EXCEED THE NUMBER OF GALLONS PER HOUR AS DETERMINED BY THE FOLLOWING FORMULA:

   $$L = \frac{ND(P)}{7400}$$

   IN WHICH: L = ALLOWABLE LEAKAGE, IN GALLONS PER HOUR
   N = NUMBER OF JOINTS
   D = PIPE DIAMETER IN INCHES
   P = AVERAGE TEST PRESSURE IN PSI GAUGE
   F REPAIR LEAKS RESULTING FROM TESTS.
7. AUTOMATIC CONTROLLERS:
   A CONNECT REMOTE CONTROL VALVES TO CONTROLLER IN A CLOCKWISE SEQUENCE TO CORRESPOND WITH STATION SETTING BEGINNING WITH STATIONS 1, 2, 3, ETC.
8. AUTOMATIC CONTROL WIRING:
   A INSTALL CONTROL WIRING, SPRINKLER MAINS AND LATERALS IN COMMON TRENCHES WHEREVER POSSIBLE.
   B INSTALL CONTROL WIRES AT LEAST 18" BELOW FINISH GRADE AND LAY TO THE SIDE AND BELOW THE MAIN LINE. PROVIDE LOOPED SLACK AT VALVES AND SNAKE WIRES IN TRENCH TO ALLOW FOR CONTRACTION OF WIRES TIE WIRES IN BUNDLES AT INTERVALS.
   C CONTROL WIRE SPLICES WILL BE ALLOWED ONLY RUNS OVER 1000 FT. CONNECTIONS SHALL BE AS DETAILED.
   D ALL WIRING PASSING UNDER EXISTING OR FUTURE PAVING, CONSTRUCTION, ETC., SHALL BE ENCASED IN PLASTIC OR GALVANIZED STEEL CONDUIT EXTENDING AT LEAST 12" BEYOND EDGES OF PAVING OR CONSTRUCTION.
9. BACKFILL AND COMPACTING:
   A AFTER SYSTEM IS OPERATING AND REQUIRED TESTS AND INSPECTIONS HAVE BEEN MADE, BACKFILL EXCAVATIONS AND TRENCHES WITH CLEAN SOIL, FREE OF RUBBISH. INITIAL BACKFILL MATERIAL TO 6 INCHES ABOVE THE TOP OF PIPE SHALL BE FREE OF ROCKS OR STONES LARGER THAN ONE INCH IN DIAMETER FINAL BACKFILL MATERIAL SHALL BE FREE OF ROCKS OR STONES LARGER THAN 3 INCHES IN DIAMETER.
   B BACKFILL FOR ALL TRENCHES, REGARDLESS OF THE TYPE OF PIPE COVERED, SHALL BE COMPACTED TO MINIMUM 95% DENSITY.
   C COMPACT TRENCHES IN AREAS TO BE PLANTED BY THOROUGHLY FLOODING THE BACKFILL. JETTING PROCESS MAY BE USED IN THOSE AREAS.
   D DRESS OFF ALL AREAS TO FINISH GRADES.

F. CLEAN-UP:

1. REMOVE FROM THE SITE ALL DEBRIS RESULTING FROM WORK OF THIS SECTION.

G. SUBMITTALS:

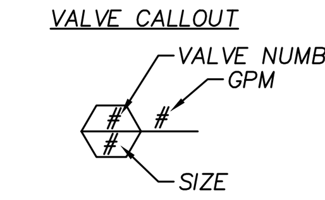
1. FOR ALL SITE WORK CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT PRODUCT DATA IN THE FORM OF MANUFACTURERS' CUT SHEETS AND CATALOG DATA FOR ALL PRODUCTS, MATERIAL AND EQUIPMENT CLEARLY INDICATING THE SPECIFIC PART OR PRODUCT CATALOG NUMBER(S) FOR APPROVAL.
2. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ALL PRODUCTS, MATERIALS AND EQUIPMENT REQUIRED TO BE FABRICATED, OR WHEN STANDARD PUBLISHED PRODUCT DATA IS NOT SUITABLE FOR USE.
3. SUBMIT 6 COPIES OF REQUESTED INFORMATION, NEATLY BOUND AND INDEXED PER CATEGORY FOR THE FOLLOWING:
   IRRIGATION:
   ALL LINES, SYSTEM EQUIPMENT COMPONENTS, MATERIALS INCLUDING PIPES, VALVES, FITTINGS, SPRINKLER HEADS, AND MISCELLANEOUS APPURTENANCES.
4. ALLOW TWO WEEKS FOR THE ENGINEER TO COMPLETE REVIEW AND APPROVAL OF PRODUCT DATA,COORDINATION DRAWINGS AND SHOP DRAWINGS. ENGINEER WILL NOT BE RESPONSIBLE FOR PROJECT DELAYS RELATED TO DELIVERY AND TRANSMISSION OF THE INFORMATION AND DOCUMENTATION ONCE INFORMATION HAS LEFT ENGINEER'S OFFICE. ITEMS REQUIRING A LONG LEAD TIME SHOULD BE SUBMITTED AS SOON AS POSSIBLE.
5. CONTRACTOR SHALL PROVIDE THE OWNER WITH OPERATION AND MAINTENANCE MANUALS FOR ALL OPERABLE EQUIPMENT (PUMP STATIONS AND CONTROLS, AUTOMATIC CONTROLLERS, CONTROL VALVES, AND ALL OTHER IRRIGATION SYSTEM COMPONENTS ETC.).
6. OPERATION AND MAINTENANCE MANUALS SHALL BE SUBMITTED AS A PRE-REQUISITE TO THE PROJECT BEING DEEMED SUBSTANTIALLY COMPLETE.

IRRIGATION SCHEDULE

ZONE	GPM/ZONE	DURATION	DAYLIGHT SAVINGS TIME	EASTERN STANDARD TIME
1	25.52	15 MINUTES	TUESDAY AND FRIDAY	TUESDAY
2	2.25	15 MINUTES	TUESDAY AND FRIDAY	TUESDAY
3	21.05	15 MINUTES	TUESDAY AND FRIDAY	TUESDAY
4	17.15	15 MINUTES	TUESDAY AND FRIDAY	TUESDAY
5	23.88	15 MINUTES	TUESDAY AND FRIDAY	TUESDAY
6	20.82	15 MINUTES	TUESDAY AND FRIDAY	TUESDAY

NOTES:
1. OPTIMUM START TIME FOR THE IRRIGATION SYSTEM IS 4:00 AM.
2. TOTAL RUN TIME FOR THE SYSTEM IS 90 MINUTES (1 HOUR AND 30 MINUTES).
3. WATER WINDOW IS FROM 12:01 AM AND 10:00 AM.

VALVE CALLOUT



SLEEVE SIZE SCHEDULE

PIPE SIZE (CLASS 200)	SLEEVE SIZE (SCHEDULE 40)
3/4"	1-1/2"
1"	2"
1-1/4"	2-1/2"
1-1/2"	3"
2"	4"
2-1/2"	6"

DATE	REVISION	MARK
10/30/15	REVISED PER C.O.F.P.	1

DRAWING 15086-CON
DESIGNED J.B.B.
DRAWN J.B.B.
CHECKED J.B.B.
SCALE 1:20
DATE 9/28/15

SCHULKE, BITTLE & STODDARD, L.L.C.
CIVIL & STRUCTURAL ENGINEERING · LAND PLANNING · ENVIRONMENTAL PERMITTING
CERTIFICATION OF AUTHORIZATION NO.: 00008668
1717 INDIAN RIVER BLVD., SUITE 201 VERO BEACH, FLORIDA 32960
TEL 772 / 770-9622 FAX 772 / 770-9496 EMAIL info@sbsengineers.com

IRRIGATION PLAN

INDIAN RIVER VILLAS

ENGINEER CERTIFICATION
☐ JOSEPH W. SCHULKE FL. REG. NO. 47048
☐ JODAH B. BITTLE FL. REG. NO. 57396
☐ WILLIAM P. STODDARD FL. REG. NO. 57805

DATE:

SHEET 7B

PROJECT NO. 15-086

LEGEND

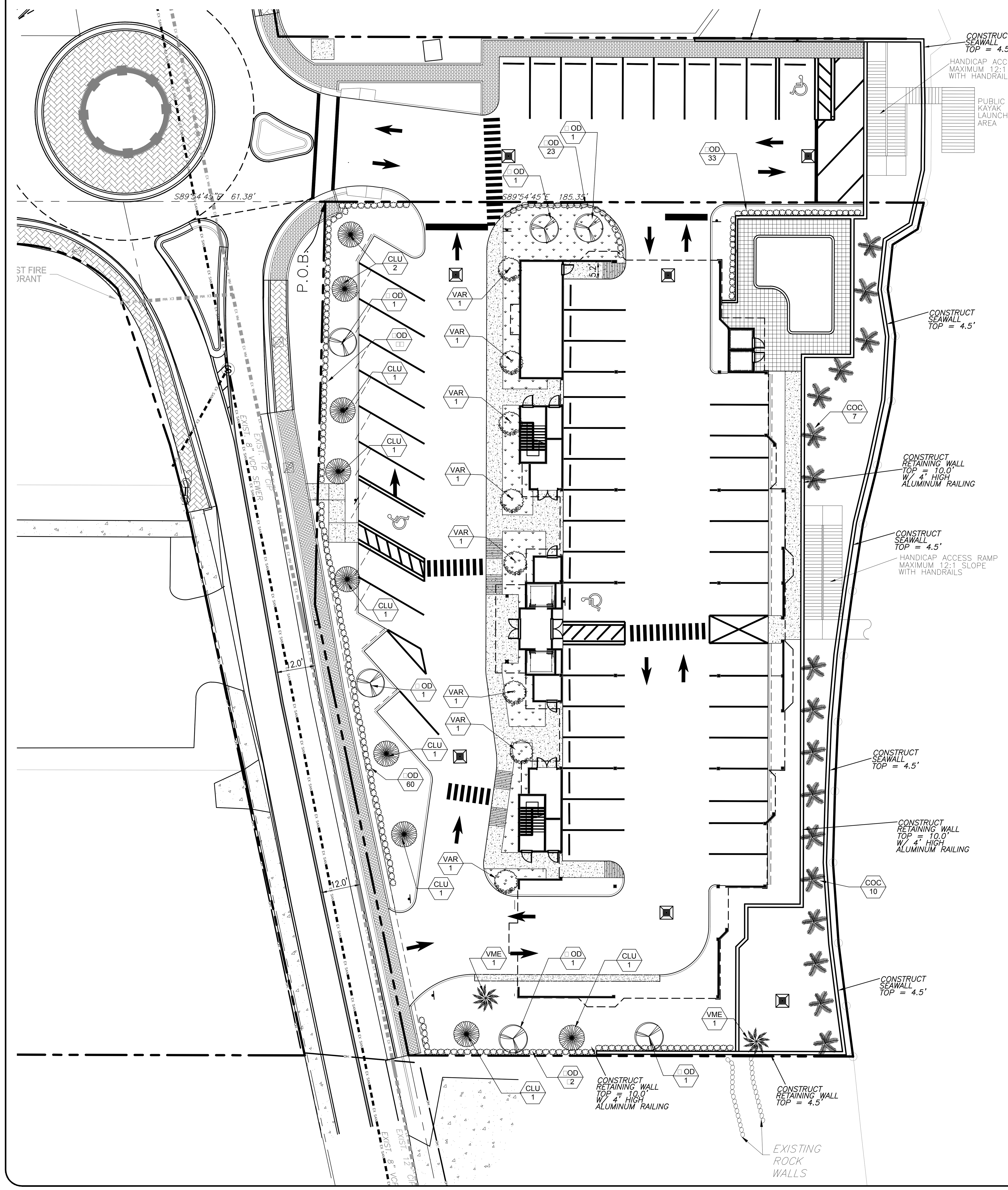
— — EX SAN — —	EXISTING SANITARY SEWERLINE	9.0'R	PROPOSED EOP RADIUS
—— SAN ——	PROPOSED SANITARY SEWERLINE	PROPANE	1,000 GAL UNDERGROUND PROPANE TANK
▬ ▬ ▬	EXISTING DRAINAGE PIPE	⊠	24" ADS YARD DRAIN
▬▬▬	PROPOSED DRAINAGE PIPE		STORMTECH DRAIN
— — EX WM — —	EXISTING WATER MAIN		PROPOSED WALL
—— WAT ——	PROPOSED WATER MAIN		TRENCH DRAIN
—— SF ——	FILTER FENCE/SEDIMENT BARRIER	☼	STREET LIGHT
	EXISTING WOOD FENCE	▣	MODIFIED TYPE 'C' INLET
	PROPOSED FENCE	Ⓓ	JUNCTION MANHOLE
24.45	PROPOSED SPOT ELEVATION AT EOP/SIDEWALK	DS-1	DRAINAGE STRUCTURE LABEL
—— 25.0 ——	PROPOSED GRADE / CONTOUR		FIRE HYDRANT
	PROPOSED DRAINAGE FLOW DIRECTION		PROPOSED SIGN
		Ⓢ	SEWER MANHOLE

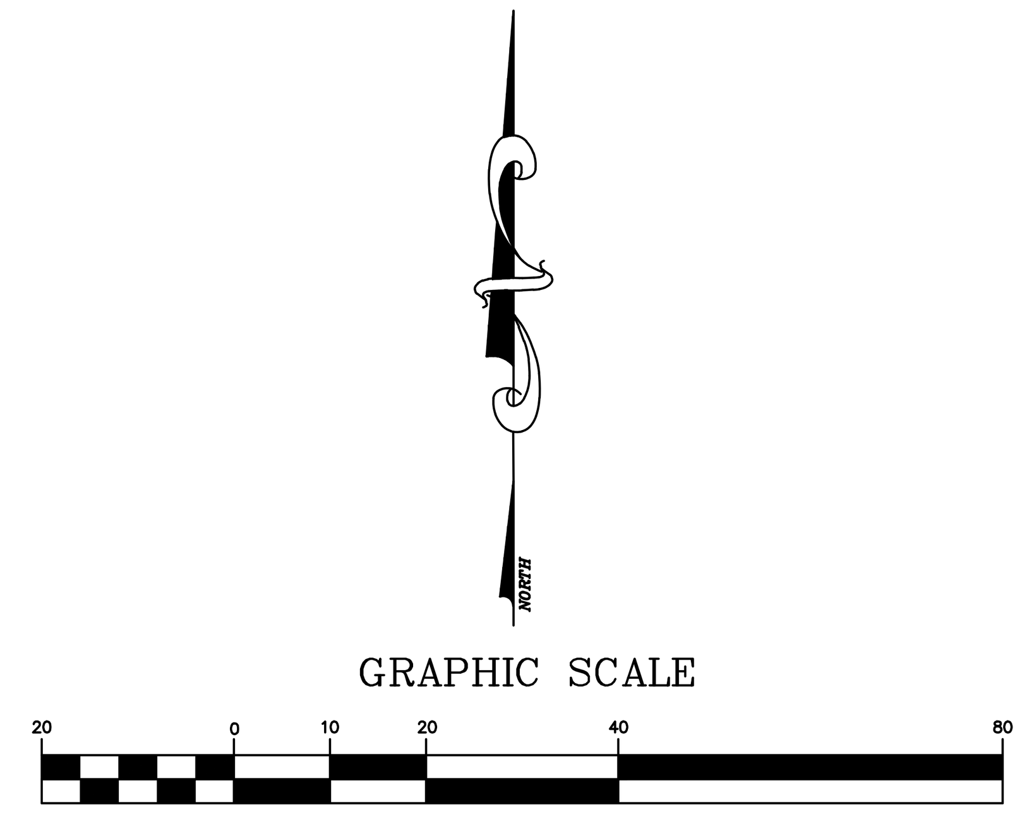
HATCH LEGEND

▨	PROPOSED CONCRETE
■	PROPOSED PAVEMENT

LANDSCAPE MATERIAL SCHEDULE

SYMBOL		AMOUNT	BOTANICAL NAME	COMMON NAME	SIZE	HGT	OTHER	NATIVE
	CLU	9	Clusia rosea	PITCH APPLE	2.5" DIA 4.5' AG	12'	5' SPREAD	YES
	VME	2	Veitchia merrillii	CHRISTMAS TREE PALM	10' CLEAR TRUNK	12'	5' SPREAD	YES
	WOD	6	Wodyetia bifurcata	FOX TAIL PALM	10' CLEAR TRUNK	12'	5' SPREAD	YES
	COC	17	Cocus nucifera	MAYPAN COCONUT	10' CLEAR TRUNK	12'	5' SPREAD	YES
	VAR	8	Veitchia arecina	MONTGOMERY PALM	10' CLEAR TRUNK	12'	5' SPREAD	YES
	POD	223	Podocarpus macrophyllus	PODOCARPUS	–	24"	24" O.C.	NO
	FIC	431	Ficus microcarpa	GREEN ISLAND FICUS	–	12"	24" O.C.	YES





GRAPHIC SCALE

(IN FEET)
1 inch = 20 ft.

SECTION 22-187. GENERAL LANDSCAPE CACLULATIONS
SECTION 22-187 (4) a and b
NORTH PROPERTY LINE: 185.4 MINUS 45 LF (DRIVEWAYS) = 140.4 LF
REQUIRED:
1. LOTS UNDER 10,000 SF REQUIRE A MINIMUM 6' WIDE BUFFER ALONG ROADWAY
2. ONE (1) TREE / 300 SF
3. 36 INCH HIGH CONTINUOUS OPAQUE FEATURE
PROPOSED:
1. 6' WIDE LANDSCAPE BUFFER
2. 140.4 LF X 6 LF X 1 TREE/300 SF = 2.8 OR 3 TREES
3. CONTINUOUS HEDGE PLANTED AT 24" THAT WILL GROW TO 36" IN ONE YEAR AND MAINTAINED AT 6 FT THERAFTER.
140.4 LF X 1 SHRUB / 2 LF = 70.2 OR 71 SHRUBS

WEST PROPERTY LINE: 265.8 MINUS 42 LF (DRIVEWAY) = 223.8 LF
REQUIRED:
1. LOTS UNDER 10,000 SF REQUIRE A MINIMUM 6' WIDE BUFFER ALONG ROADWAY
2. ONE (1) TREE / 300 SF
3. 36 INCH HIGH CONTINUOUS OPAQUE FEATURE
PROPOSED:
1. 6' WIDE LANDSCAPE BUFFER
2. 223.8 LF X 6 LF X 1 TREE/300 SF = 4.5 OR 5 TREES
3. CONTINUOUS HEDGE PLANTED AT 24" THAT WILL GROW TO 36" IN ONE YEAR AND MAINTAINED AT 6 FT THERAFTER.
223.8 LF X 1 SHRUB / 2 LF = 111.9 OR 112 SHRUBS

SECTION 22-187 (6) a and b
SOUTH PROPERTY LINE: 108.2 LF
REQUIRED:
1. 10 FT WIDE BUFFER
2. ONE (1) TREE / 200 SF
3. 6 FT HIGH CONTINUOUS OPAQUE FEATURE
PROPOSED:
1. 10' WIDE LANDSCAPE BUFFER
2. 108.2 LF X 10 LF X 1 TREE/200 SF = 5.4 OR 6 TREES
3. CONTINUOUS HEDGE PLANTED AT 24" THAT WILL GROW TO 36" IN ONE YEAR AND MAINTAINED AT 6 FT THERAFTER..
108.2 LF X 1 SHRUB / 2 LF = 54.1 OR 55 SHRUBS

EAST PROPERTY LINE: NOT APPLICABLE BECAUSE IT BORDERS THE LAGOON

SECTION 22-187 (7) a and b
INTERIOR VEHICLE USE AREAS: N/A – NO LOTS WITH MORE THAN 14,000 SF VEHICULAR USE AREA

TOTAL PLANTINGS REQUIRED:
TOTAL TREES REQUIRED: 3 + 5 + 6 = 14 TREES
TOTAL SHRUBS REQUIRED: 71 + 112 + 55= 238 SHRUBS

Legend & Abbre□i□ions□s□mbo□s no□sc□e□b□e for si□e□

□LS	-	□ROFESSIONAL LAND SURVE□OR
□SM	-	□ROFESSIONAL SURVE□OR & MA□□ER
LB	-	LAND SURVE□IN□ BUSINESS
℄	-	CENTERLINE
R	-	RADIUS
L	-	LEN□TH
△	-	DELTA AN□LE
E/□	-	ED□E OF □AVEMENT
B/C	-	BACK OF CURB
B.M.	-	BENCHMARK
□OC	-	□OINT OF COMMENCEMENT
□OB	-	□OINT OF BE□INNIN□
○	-	□□C□□□ERMANENT CONTROL □OINT
□C□	-	□ERMANENT CONTROL □OINT
⊡	-	□□RM□□ERMANENT REFERENCE MONUMENT
□RM	-	□ERMANENT REFERENCE MONUMENT
○	-	□I□□IRON □I□E
I□	-	IRON □I□E
◉	-	□IRC□IRON ROD & CA□
IRC	-	IRON ROD & CA□
⊡	-	□CM□CONCRETE MONUMENT
CM	-	CONCRETE MONUMENT
FD	-	FOUND
□M□	-	MEASURED
□□□	-	□LAT
□C□	-	CALCULATED
⧄	-	TRAFFIC CONTROL BOX
	-	□U□ □IRE
	-	□ OOD UTILIT□ □OLE
⊠	-	TELE□HONE SERVICE
	-	CABLE T.V. BOX
	-	ELECTRIC BOX
☼	-	LI□HT □OST
Ⓦ	-	□ ELL
	-	H□DRANT
⋈	-	□ATE VALVE
	-	IRRI□ATION VALVE
	-	□ ATER METER
Ⓢ	-	SANITAR□ MANHOLE
	-	SANITAR□ SERVICE
▨	-	SE□TIC TANK
Ⓓ	-	DRAINA□E MANHOLE
	-	CURB INLET
	-	SURFACE INLET
	-	MITERED END SECTION
⟹	-	CONCE□TUAL DRAINA□E
	-	STREET SI□N
23.□	-	□RO□OSED □RADE
NAVD	-	NORTH AMERICAN VERTICAL DATUM
23.□	-	T□□ICAL ELEVATION
A/C	-	AIR CONDITIONER
CONC.	-	CONCRETE
F.F.	-	FINISH FLOOR
BSB	-	BUILDIN□ SETBACK LINE
EL./ELEV.	-	ELEVATION
R□□	-	RI□HT OF □ A□
AB	-	AS-BUILT
		□ARKER-KALON

LANDSCAPE NOTES

SEC. 22-187. – GENERAL LANDSCAPING REQUIREMENTS.

ALL LANDSCAPE PLANS SHALL MEET OR EXCEED THE FOLLOWING GENERAL LANDSCAPING REQUIREMENTS WHICH SHALL BE CONSIDERED COMPLIMENTARY TO THE LANDSCAPING PROVISIONS OF ANY OTHER CITY ORDINANCE. THIS SECTION SHALL NOT APPLY TO LOTS SUBJECT TO SECTION 22-186 ABOVE. A CERTIFICATE OF OCCUPANCY SHALL NOT BE ISSUED ON ANY PERMIT FOR THE USE, CONSTRUCTION, REPAIR OR RENOVATION OF ANY STRUCTURE WITHIN THE CITY, WHETHER RESIDENTIAL, COMMERCIAL, INDUSTRIAL OR ACCESSORY, UNLESS APPLICATION FOR ANY SUCH PERMIT IS ACCOMPANIED BY A DETAILED LANDSCAPE PLAN MEETING ALL REQUIREMENTS OF THIS ARTICLE. THE DEPARTMENT IS NOT AUTHORIZED TO EXEMPT THE PERMIT APPLICATION FROM ANY REQUIREMENT EXCEPT AS EXPRESSLY PROVIDED FOR IN THIS ARTICLE.

(1)REQUIREMENTS FOR PLANT MATERIALS. PLANT MATERIALS USED FOR CONFORMANCE WITH THIS ARTICLE SHALL MEET OR EXCEED THE STANDARDS FOR FLORIDA NO. 1 AS SET OUT IN THE MOST CURRENT EDITION OF "GRADES AND STANDARDS FOR NURSERY PLANTS PART 1 AND PART 2.", STATE OF FLORIDA, DEPARTMENT OF AGRICULTURE, TALLAHASSEE. THE CLERK'S OFFICE SHALL MAINTAIN A STOCK OF THESE MANUALS TO BE GIVEN TO PERMIT APPLICANTS, PARTICULARLY THOUGH NOT EXCLUSIVELY TO HOMEOWNERS, FOR THE APPLICANT'S USE IN SUBMITTING THE REQUIRED LANDSCAPE PLAN. ALL TREES REQUIRED BY THIS ARTICLE (EXCLUDING PALMS THAT ARE EXEMPT FROM THE GRADES AND STANDARDS) SHALL HAVE A FLORIDA NO. 1 OR BETTER "GRADES AND STANDARDS" CERTIFICATION TAG ATTACHED AT TIME OF DELIVERY THROUGH FINAL INSPECTION. GRASS SOD SHALL BE CLEAN AND FREE OF WEEDS, PESTS AND DISEASES.

TREES:

A. TREES USED TO MEET THE REQUIREMENTS OF THIS SECTION SHALL BE SPECIES WHICH WHEN PLANTED HAVE A HEIGHT OF AT LEAST TWELVE (12) FEET AND HAVE TRUNKS WHICH CAN BE MAINTAINED IN A CLEAN CONDITION FOR OVER FIVE (5) FEET OF CLEAR WOOD. AT PLANTING, THE TREES SHALL HAVE A DIAMETER OF AT LEAST TWO AND ONE-HALF (2½) INCHES AT A POINT FOUR AND ONE-HALF (4½) FEET ABOVE GROUND LEVEL AND A SPREAD OF AT LEAST FIVE (5) FEET (EXCEPT FOR PALMS WHICH SHALL HAVE A MINIMUM CLEAR TRUNK OF TEN (10) FEET).

B. TREES USED TO MEET THE REQUIREMENTS OF THIS SECTION SHALL ALSO BE SPECIES WHICH IN THE COUNTY NORMALLY GROW IN A MANNER SUCH THAT AT MATURITY THEY WILL HAVE A MINIMUM CROWN SPREAD OF FIFTEEN (15) FEET AND A MINIMUM HEIGHT OF FIFTEEN (15) FEET. TREES WHICH CAN MEET THE HEIGHT REQUIREMENT AT MATURITY BUT NOT THE CROWN REQUIREMENTS MAY BE GROUPED TO FORM A WIDER CROWN, BUT WILL BE COUNTED AS ONE TREE. THREE PALMS MAY BE SUBSTITUTED FOR ONE TREE PROVIDED THAT FIFTY (50) PER CENT OF REQUIREMENT SHALL BE TREES.

C. FIFTY (50) PER CENT OF THE REQUIRED TREES SHALL BE SPECIES OTHER THAN PALM TREES (PALMACEAE FAMILY) EXCEPT WHEN PLANTED IN ACCORDANCE WITH AN APPROVED PLAN PREPARED BY A FLORIDA REGISTERED LANDSCAPE ARCHITECT.

D. TREES OF SPECIES WHOSE ROOTS ARE KNOWN TO CAUSE DAMAGE TO PUBLIC ROADWAYS OR OTHER PUBLIC WORKS SHALL NOT BE PLANTED CLOSER THAN TWELVE (12) FEET TO SUCH PUBLIC WORKS, UNLESS THE TREE ROOT SYSTEM IS COMPLETELY CONTAINED WITHIN A BARRIER FOR WHICH THE MINIMUM INTERIOR CONTAINING DIMENSIONS SHALL BE THREE (3) FEET TIMES FIVE (5) FEET AND FIVE (5) FEET DEEP, AND FOR WHICH THE CONSTRUCTION REQUIREMENTS SHALL BE SIX-INCH THICK CONCRETE WITH FIBER MESH AND NO WIRE MESH OR BY A ROOT BARRIER PRODUCT APPROVED BY THE CITY ENGINEER.

E. NONE OF THE FOLLOWING TREES SHALL BE PLANTED IN THE CITY AND WHERE THEY PRESENTLY EXIST WHEN PERMIT APPLICATION IS MADE, THEIR REMOVAL SHALL BE A CONDITION OF ANY FINAL DEVELOPMENT ORDER: MELALEUCA, LEUCADENDRON (PUNK TREE), SCHINUS TEREBINTHIFOLIUS (BRAZILIAN PEPPER) AND CASUARINA SBP. (AUSTRALIAN PINE). NOR MAY ANY OF THE FOLLOWING TREES BE PLANTED FOR PURPOSES OF COMPLYING WITH REQUIREMENTS OF THIS ARTICLE: ANY SPECIES DESIGNATED AS CATEGORY I ON THE EXOTIC PLANT PEST COUNCIL'S CURRENT LIST OF "FLORIDA'S MOST INVASIVE SPECIES", CUPANIOPSIS ANACARDIOIDES (CARROTWOOD), DALBERGIA SISSOO (ROSEWOOD), ALBIZZIA LEBBECK (WOMAN'S TONGUE), ARAUCARIA HETEROPHYLIA (NORFOLK ISLAND PINE), GREVILLEA ROBUSTA (SILK OAK), MELIA AZADARACHA (CHINABERRY), FICUS SPP. (NON-NATIVE FICUS), EUCALYPTUS SPP. (EUCALYPTUS).

F. SHRUBS AND HEDGES. SHRUBS USED TO MEET THE REQUIREMENTS OF THIS SECTION SHALL BE A MINIMUM OF TWENTY-FOUR (24) INCHES IN HEIGHT WHEN PLANTED. HEDGES, WHERE REQUIRED, SHALL BE PLANTED AND MAINTAINED SO AS TO FORM A THIRTY-SIX-INCH OR HIGHER CONTINUOUS, UNBROKEN, SOLID, VISUAL SCREEN.

G. GROUND COVERS. GROUND COVERS USED IN LIEU OF GRASS, OR IN PART, TO MEET THE REQUIREMENTS OF THIS SECTION, SHALL BE PLANTED IN SUCH A MANNER AS TO PRESENT A FINISHED APPEARANCE AND REASONABLY COMPLETE COVERAGE WITHIN THREE (12) MONTHS AFTER PLANTING.

H. GRASS. GRASS USED TO MEET THE REQUIREMENTS OF THIS SECTION SHALL BE PLANTED WITH SPECIES NORMALLY GROWN AS PERMANENT LAWNS IN THE COUNTY. GRASS AREAS WILL BE SODDED, EXCEPT THAT PLUGGING, SPRIGGING OR SEEDING OF GRASSY AREAS IS PERMISSIBLE WITH RESPECT TO SINGLE- FAMILY AND TWO-FAMILY RESIDENTIAL LOTS. AS TO ALL LOTS, SOLID SOD SHALL BE USED IN SWALES, DETENTION OR RETENTION AREAS AND OTHER AREAS SUBJECT TO EROSION.

I. EXISTING PLANT MATERIAL. WHEN PLANT MATERIAL EXISTS ON A SITE PRIOR TO THE DATE APPLICATION FOR A PERMIT IS MADE, CREDIT MAY BE ALLOWED FOR SUCH PLANT MATERIAL PROVIDED THAT IT IS PROTECTED DURING CONSTRUCTION AND INCORPORATED INTO THE REQUIRED LANDSCAPING IN A MANNER WHICH SATISFIES THE REQUIREMENTS OF THIS ARTICLE.

(12) INSTALLATION OF LANDSCAPING. ALL LANDSCAPING REQUIRED BY THIS ARTICLE SHALL BE INSTALLED IN COMPLIANCE WITH THESE REQUIREMENTS:

A. LANDSCAPING SHALL BE INSTALLED IN ACCORDANCE WITH THE APPROVED LANDSCAPE PLAN, INCLUDING ALL SPECIFIED CONDITIONS TO A PARTICULAR LANDSCAPE APPROVAL, AND INSPECTED PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY. SUCH INSPECTION SHALL INCLUDE VERIFICATION THAT PLANTING SOIL MEETS SPECIFIED COMPOSITION AND DEPTH REQUIREMENTS. IN THE EVENT THERE ARE ANY CHANGES TO THE APPROVED LANDSCAPE PLAN, SUCH CHANGES MUST BE REVIEWED AND APPROVED BY THE DEPARTMENT AND NOTED ON THE PLAN PRIOR TO NOTIFICATION FOR THE FINAL INSPECTION FOR A CERTIFICATE OF OCCUPANCY.

B. LANDSCAPED AREAS SHALL BE COVERED IN THEIR ENTIRETY WITH SHRUBS, GROUND COVER, TURF, OR THREE (3) INCHES OF BULK ORGANIC MULCH OR OTHER SUITABLE MATERIAL WHICH PERMITS PERCOLATION AND IS APPROVED BY THE DEPARTMENT. WHERE MULCH IS USED, IT MUST BE PROTECTED FROM WASHING OUT OF THE PLANTING BED. INORGANIC MULCH, SUCH AS GRAVEL OR ROCK, SHOULD ONLY BE USED WHERE WASHOUTS OCCUR. THE FINAL INSPECTION PRIOR TO ISSUANCE OF CERTIFICATE OF OCCUPANCY, SHALL INCLUDE VERIFICATION THAT ANY MULCH IS INSTALLED AT THE REQUISITE DEPTH.

C. TREES WHICH ARE BALLED AND BURLAPED MUST HAVE THE BURLAP REMOVED OR FOLDED DOWN AT THE TIME OF THE PLANTING. ALL TWINE OR ROPE MUST BE REMOVED. IF WIRE BASKETS ARE USED, THE UPPER ROWS MUST BE CUT BEFORE PLANTING. REMOVE ALL SOIL FROM ABOVE THE ROOT FLARE AND PLANT THE TREE SO THE TOP OF THE ROOT BALL IS TEN (10) PER CENT ABOVE THE LANDSCAPE SOIL. DO NOT PLACE ANY SOIL OR MULCH OVER THE ROOT BALL. IF STAKES OR GUIDE WIRES ARE USED TO SUPPORT A TREE, THE WIRE MUST BE COVERED WITH PROTECTIVE MATERIAL WHERE IT IS IN CONTACT WITH THE TREE AND THE STAKES OR GUIDE WIRES MUST BE REMOVED AFTER ONE YEAR.

D. ALL LANDSCAPING REQUIRED BY THE CITY MUST BE PROTECTED FROM VEHICULAR AND PEDESTRIAN TRAFFIC BY THE INSTALLATION OF CURBING, WHEEL STOPS OR OTHER PROTECTIVE DEVICES ALONG THE PERIMETER OF ANY LANDSCAPING WHICH ADJOINS VEHICULAR USE AREAS OR SIDEWALKS. THESE PROTECTED DEVICES SHALL HAVE A MINIMUM HEIGHT OF SIX (6) INCHES ABOVE GRADE.

E. NO PARKING, DISPLAY OF VEHICLES OR OUTSIDE STORAGE OR DISPLAY OF MERCHANDISE IS PERMITTED IN OR OVER ANY REQUIRED LANDSCAPE AREA, NOR ARE VEHICLES PERMITTED TO OVERHANG ANY REQUIRED LANDSCAPED AREA.

F. SOIL, EXCEPT FOR PLANTING SOIL, IN WHICH REQUIRED LANDSCAPE IS TO BE INSTALLED MUST BE GENERALLY INDIGENOUS TO THE LOCALE. SOIL MUST BE LOOSE, FRIABLE, AND FREE OF LIMESTONE AND OTHER CONSTRUCTION MATERIALS, ROAD BASE MATERIAL, ROCKS, WEEDS, GRASSES, HARD PAN, CLAY OR OTHER DEBRIS. PH SHALL BE ADJUSTED WHERE NECESSARY TO BE COMPATIBLE WITH THE PLANT SPECIES BEING INSTALLED. SOIL SHALL BE SLIGHTLY SWALED TO RETAIN SURFACE STORMWATER. BACKFILL SOIL MATERIAL SHALL BE THOROUGHLY WATERED IN AND AROUND PLANT ROOT BALLS TO PREVENT ANY AIR POCKETS. THE USE OF AMENDED AND ENRICHED SOILS MAY BE REQUIRED BY THE DEPARTMENT WHERE NECESSARY TO INCREASE THE WATER RETENTION CAPABILITIES OF SOIL IN ORDER TO REDUCE THE AMOUNT OF WATERING NEEDED TO MEET THE LANDSCAPING WATER REQUIREMENT. FINAL INSPECTION OF REQUIRED LANDSCAPE PRIOR TO ISSUANCE OF THE CERTIFICATE OF OCCUPANCY SHALL INCLUDE PH TESTING TO VERIFY COMPATIBILITY WITH PERMITTED PLANTINGS.

G. TO MINIMIZE TRAFFIC HAZARDS AT STREET OR DRIVEWAY INTERSECTIONS, ALL LANDSCAPING INSTALLATIONS MUST PROVIDE UNOBSTRUCTED VIEWS AS REQUIRED IN SECTION 22-53

H. ANY IRRIGATION SYSTEM PLACED ON CITY RIGHT-OF-WAY WILL BE THE RESPONSIBILITY OF THE PROPERTY OWNER WHO SHALL RELOCATE, REPLACE OR REPAIR THE SYSTEM AS APPROPRIATE IN THE EVENT IT IS DAMAGED DUE TO PERMITTED CONSTRUCTION IN THE RIGHT-OF-WAY.

I. PRIOR TO ISSUANCE OF CERTIFICATE OF OCCUPANCY, FINAL LANDSCAPE INSTALLATION SHALL BE CERTIFIED AS COMPLETE AND IN CONFORMANCE TO THE APPROVED LANDSCAPE PLAN BY SUBMISSION OF A CERTIFICATION LETTER BY A LANDSCAPE ARCHITECT.

(13)MAINTENANCE OF LANDSCAPING. PROPERTY OWNERS SHALL MAINTAIN ALL REQUIRED LANDSCAPING SO THAT IT CONTINUES TO PRESENT A HEALTHY, NEAT AND ORDERLY APPEARANCE FREE OF REFUSE AND DEBRIS, IN CONFORMITY WITH THE FOLLOWING REQUIREMENTS:

A. VEGETATION REQUIRED BY THIS ARTICLE SHALL BE REPLACED WITH EQUIVALENT VEGETATION IF IT IS NOT LIVING. ALL TREES FOR WHICH CREDIT IS AWARDED AND WHICH SUBSEQUENTLY DIE SHALL BE REPLACED BY THE SAME NUMBER OF LIVING TREES ACCORDING TO THE STANDARDS ESTABLISHED IN THIS ARTICLE.

B. MAINTENANCE SHALL INCLUDE SUFFICIENT WEEDING, WATERING, FERTILIZING, PRUNING, MOWING, EDGING, MULCHING AND OTHER HORTICULTURAL PRACTICES SO AS TO ASSURE THAT THE LANDSCAPING CONTINUES TO MAINTAIN A HEALTHY, NEAT AND ORDERLY APPEARANCE.

LANDSCAPE CERTIFICATION:

JODAH B. BITTLE DATE
FCLD #DC1 70/HCI 6527

MARK	REVISION	DATE
1	REVISED PER C.O.F.P.	10/30/15
2	REVISED PER C.O.F.P.	11/24/15

DRAWING 15086-CON
DESIGNED J.B.B.
DRAWN J.B.B.
CHECKED J.B.B.
SCALE 1:20
DATE 9/28/15

SCHULKE, BITTLE & STODDARD, L.L.C.
CIVIL & STRUCTURAL ENGINEERING · LAND PLANNING · ENVIRONMENTAL PERMITTING
CERTIFICATION OF AUTHORIZATION NO.: 00008668
1717 INDIAN RIVER BLVD., SUITE 201 VERO BEACH, FLORIDA 32960
TEL 772 / 770-9622 FAX 772 / 770-9496 EMAIL info@sbsengineers.com

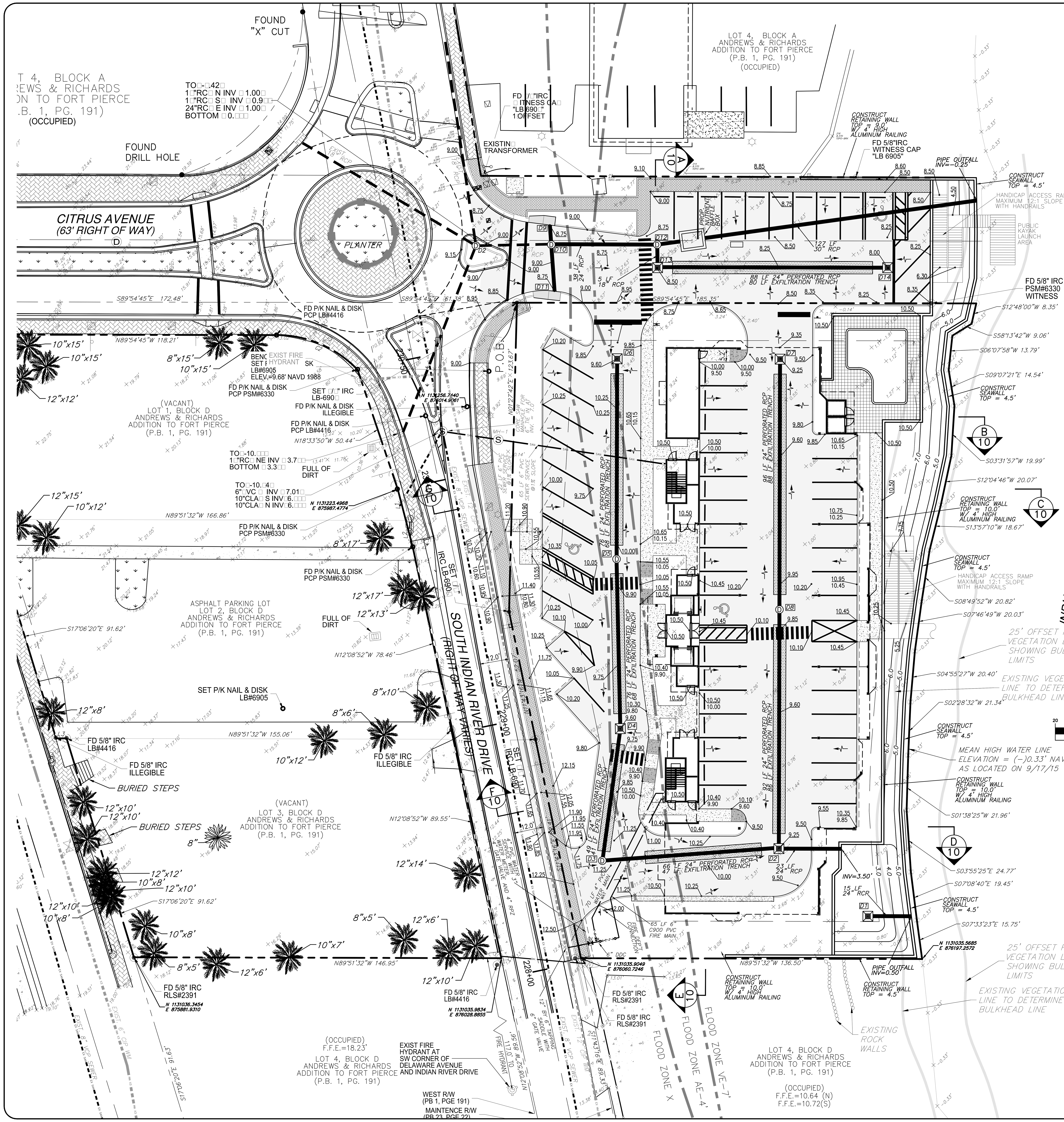
LANDSCAPE PLAN

INDIAN RIVER VILLAS

ENGINEER CERTIFICATION
☐ JOSEPH W. SCHULKE FL. REG. NO. 47048
☐ JODAH B. BITTLE FL. REG. NO. 57396
☐ WILLIAM P. STODDARD FL. REG. NO. 57605
DATE:

SHEET 7A

PROJECT NO. 15-086



PROPOSED DRAINAGE STRUCTURES

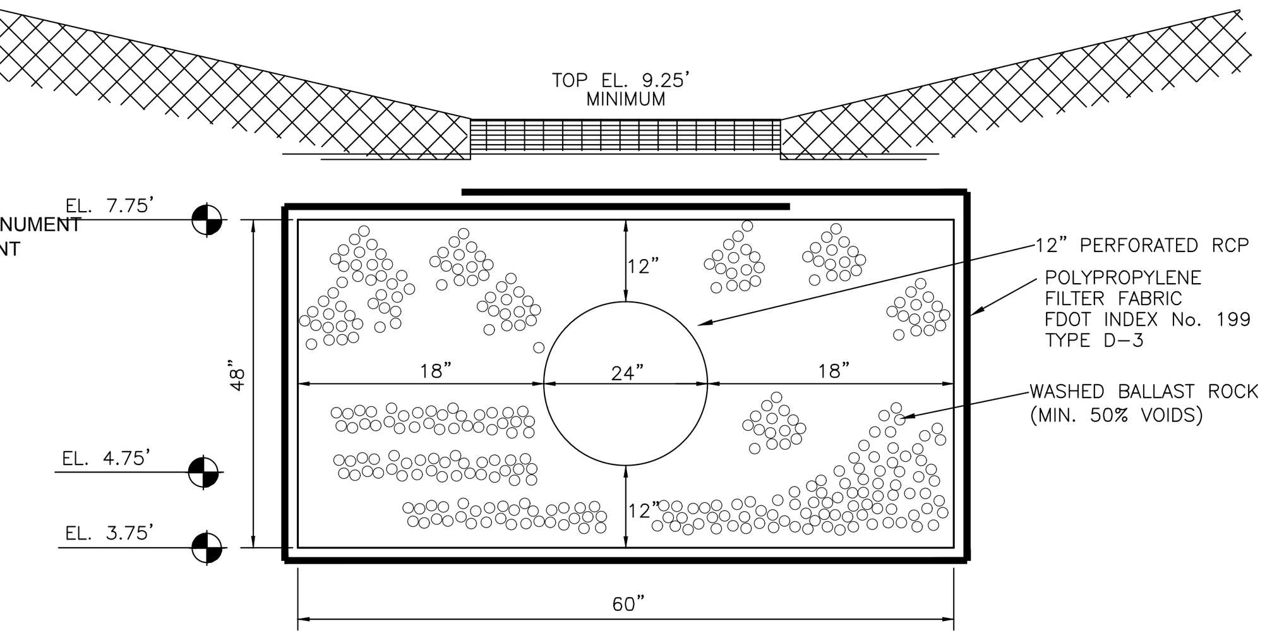
D1	MODIFIED TYPE 'C' INLET TOP = 4.00' E. INV = 1.00'
D2	MODIFIED TYPE 'C' INLET TOP = 9.25' E. INV = 4.75' W. INV = 4.75' N. INV = 4.75'
D3	JUNCTION MANHOLE W/SUMP TOP = 11.30' E. INV = 4.75' N. INV = 4.75'
D4	MODIFIED TYPE 'C' INLET TOP = 9.60' N. INV = 4.75' S. INV = 4.75'
D5	JUNCTION MANHOLE W/SUMP TOP = 9.95' N. INV = 4.75' S. INV = 4.75'
D6	MODIFIED TYPE 'C' INLET TOP = 9.60' S. INV = 4.75'
D7	MODIFIED TYPE 'C' INLET TOP = 9.25' S. INV = 4.75'
D8	JUNCTION MANHOLE W/SUMP TOP = 9.90' N. INV = 4.75' S. INV = 4.75'
D9	FDOT TYPE '6' INLET (FDOT INDEX 211) WITH 'J' BOTTOM (FDOT INDEX 200) CURB LINE = 8.75' S. INV = 4.00'
D10	JUNCTION MANHOLE TOP = 8.30' N. INV = 3.50' S. INV = 3.50' E. INV = 0.50' W. INV = 0.50'
D11	FDOT TYPE '6' INLET (FDOT INDEX 211) WITH 'J' BOTTOM (FDOT INDEX 200) CURB LINE = 8.75' N. INV = 4.00'
D12	JUNCTION MANHOLE TOP = 8.30' S. INV = 3.00' E. INV = 0.25' W. INV = 0.25'
D13	MODIFIED TYPE 'C' INLET TOP = 8.50' E. INV = 3.50' N. INV = 3.50'
D14	MODIFIED TYPE 'C' INLET TOP = 8.00' W. INV = 3.50'

LEGEND

— — EX SAN — —	EXISTING SANITARY SEWERLINE	9.0'R	PROPOSED EOP RADIUS
—— SAN ——	PROPOSED SANITARY SEWERLINE	PROPANE	1,000 GAL UNDERGROUND PROPANE TANK
	EXISTING DRAINAGE PIPE	⊠	24" ADS YARD DRAIN
	PROPOSED DRAINAGE PIPE		STORMTECH DRAIN
— — EX WM — —	EXISTING WATER MAIN		PROPOSED WALL
—— WAT ——	PROPOSED WATER MAIN		TRENCH DRAIN
—— SF —— SF ——	FILTER FENCE/SEDIMENT BARRIER	☼	STREET LIGHT
	EXISTING WOOD FENCE	▣	MODIFIED TYPE 'C' INLET
	PROPOSED FENCE	Ⓓ	JUNCTION MANHOLE
24.45	PROPOSED SPOT ELEVATION AT EOP/SIDEWALK	DS-1	DRAINAGE STRUCTURE LABEL
—— 25.0 ——	PROPOSED GRADE / CONTOUR		FIRE HYDRANT
	PROPOSED DRAINAGE FLOW DIRECTION		PROPOSED SIGN
		Ⓢ	SEWER MANHOLE

Legend & Abbre□i□ions□s□mbo□s no□sc□e□b□e for si□e□

□LS	-	□ROFESSIONAL LAND SURVE□OR
□SM	-	□ROFESSIONAL SURVE□OR & MA□□ER
LB	-	LAND SURVE□IN□ BUSINESS
℄	-	CENTERLINE
R	-	RADIUS
L	-	LEN□TH
△	-	DELTA AN□LE
E/□	-	ED□E OF □AVEMENT
B/C	-	BACK OF CURB
B.M.	-	BENCHMARK
□OC	-	□OINT OF COMMENCEMENT
□OB	-	□OINT OF BE□INNIN□
○	-	□□C□□□ERMANENT CONTROL □OINT
□C□	-	□ERMANENT CONTROL □OINT
◙	-	□□RM□□ERMANENT REFERENCE MONUMENT
□RM	-	□ERMANENT REFERENCE MONUMENT
O	-	I□□IRON □I□E
I□	-	IRON □I□E
◉	-	□IRC□IRON ROD & CA□
IRC	-	IRON ROD & CA□
⊡	-	□CM□CONCRETE MONUMENT
CM	-	CONCRETE MONUMENT
FD	-	FOUND
□M□	-	MEASURED
□□□	-	□LAT
□C□	-	CALCULATED
	-	TRAFFIC CONTROL BOX
	-	□U□ □IRE
	-	□OOD UTILIT□ □OLE
	-	TELE□HONE SERVICE
	-	CABLE T.V. BOX
	-	ELECTRIC BOX
	-	LI□HT □OST
	-	□ELL
	-	H□DRANT
	-	□ATE VALVE
	-	IRRI□ATION VALVE
	-	□ATER METER
	-	SANITAR□ MANHOLE
	-	SANITAR□ SERVICE
	-	SE□TIC TANK
	-	DRAINA□E MANHOLE
	-	CURB INLET
	-	SURFACE INLET
	-	MITERED END SECTION
	-	CONCE□TUAL DRAINA□E
	-	STREET SI□N
23.□	-	□RO□OSED □RADE
NAVD	-	NORTH AMERICAN VERTICAL DATUM
23.□	-	T□□ICAL ELEVATION
A/C	-	AIR CONDITIONER
CONC.	-	CONCRETE
F.F.	-	FINISH FLOOR
BSB	-	BUILDIN□ SETBACK LINE
EL./ELEV.	-	ELEVATION
R□□	-	RI□HT OF □A□
AB	-	AS-BUILT
□/K		□ARKER-KALON



NOTE: A FOUR FOOT SEGMENT OF SOLID PIPE IS REQUIRED ADJACENT TO THE DRAINAGE BASIN

EXFILTRATION TRENCH DETAIL

N.T.S.

DRAINAGE OUTFALL STATEMENT

THE PROJECT CONSISTS OF A COMBINATION OF DRY RETENTION AND EXFILTRATION TRENCH THAT WILL MEET WATER QUALITY AND QUANTITY CRITERIA. THE SITE HAS ONE OUTFALL IN THE SOUTHEAST CORNER (D1). THE OUTFALL DISCHARGES INTO THE INDIAN RIVER LAGOON.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

NOTES

1. ALL DISTURBED AREAS IN THE RIGHT-OF-WAY SHALL BE SODDED. SEED AND MULCH IS NOT ACCEPTABLE.
2. ANY DAMAGE TO THE EXISTING INFRASTRUCTURE, INCLUDING SIDEWALKS, BY THE CONTRACTOR MUST BE REPLACED PRIOR TO FINAL INSPECTION. SIDEWALK PATCHING IS NOT ACCEPTABLE.
3. CURB RAMPS MUST MEET THE REQUIREMENTS OF FDOT STANDARD INDEX 304.
4. ALL STRIPING WITHIN THE RIGHT-OF-WAY SHALL BE THERMOPLASTIC.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE EXISTING PUBLIC ROADWAY, CURBS, GUTTERS, SIDEWALKS, DRAINAGE SYSTEMS AND UTILITIES AS A DIRECT RESULT OF NEW CONSTRUCTION. ROAD IMPROVEMENTS SUCH AS BUT NOT LIMITED TO RESURFACING MAYBE REQUIRED.
6. THE SITE DRAINAGE AND CONSTRUCTION IMPROVEMENTS SHALL NOT ADVERSELY IMPACT ADJOINING PROPERTIES AND/OR ROADWAYS.
7. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO CONTACT SUNSHINE STATE ONE CALL SYSTEM AT 1-800-432-4770 FOR LOCATIONS OF THIS EQUIPMENT AT LEAST 72 HOURS PRIOR TO ANY CONSTRUCTION.
8. ANY CONFLICTS WITH THE PLANS AND EXISTING UTILITIES, DRAINAGE, ETC TO BE REPORTED TO ENGINEER FOR RESOLUTION OF ISSUES.
9. CONTRACTOR TO FIELD VERIFY ALL REPORTED INVERTS AND UTILITIES AND REPORT TO ENGINEER.

HATCH LEGEND

▨ PROPOSED CONCRETE

🟫 PROPOSED PAVEMENT

1. SUBMITTALS

A. □RODUCT DATA AND SHO□ DRA□ IN□S

1. FOR ALL SITE □ ORK CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT □RODUCT DATA IN THE FORM OF MANUFACTURERS□CUT SHEETS AND CATALO□ DATA FOR ALL □RODUCTS, MATERIAL AND E□UI□MENT CLEARL□ INDICATIN□ THE S□ECIFIC □ART OR □RODUCT CATALO□ NUMBER□S□FOR A□□ROVAL.
2. THE CONTRACTOR SHALL SUBMIT SHO□ DRA□ IN□S FOR ALL □RODUCTS, MATERIALS AND E□UI□MENT RE□UIRED TO BE FABRICATED, OR □ HEN STANDARD □UBLISHED □RODUCT DATA IS NOT SUITABLE FOR USE.
3. SUBMIT 6 CO□IES OF RE□UESTED INFORMATION, NEATL□ BOUND AND INDEXED □ER CATE□OR□ FOR THE FOLLO□ IN□□

A. UTILITIES□
ALL □I□E, FITTIN□S, VALVES, OTHER MISCELLANEOUS A□□URTENANCES, CONTROLS, □UM□ STATION E□UI□MENT, COM□ONENTS AND STRUCTURES, AND ALL OTHER UTILIT□ S□STEM □RODUCTS, MATERIALS AND COM□ONENTS AND SIMILAR CONTROLS.

B. DRAINA□E□
ALL □I□E, FITTIN□S, AND COM□ONENTS THEREOF, STRUCTURES, FRAMES, □RATES, LIDS, □ASKETS,FASTENERS, COU□LIN□S AND SIMILAR, AND ALL OTHER DRAINA□E S□STEM □RODUCTS, MATERIALS, AND COM□ONENTS AND SIMILAR CONTROLS.

C. □AVIN□ AND □RADIN□□
FDOT CERTIFICATIONS AND LAB ANAL□SIS/RESULTS FOR □AVEMENT, BASE, SUB□RADE, AND FILL MATERIALS. INCLUDE EVIDENCE □CERTIFICATIONS□THAT THE MATERIALS □RO□OSED TO BE USED MEET OR EXCEED FDOT S□ECIFICATIONS AND THE CONTRACT DOCUMENTS.

D. SI□NIN□ AND □AVEMENT MARKIN□□
SI□N AND □AVEMENT MARKIN□ □RODUCTS AND MATERIALS, AND EVIDENCE THAT THE □RODUCTS AND MATERIALS □RO□OSED TO BE USED MEET OR EXCEED RE□UIREMENTS S□ECIFIED IN THE CONTRACT DOCUMENTS, LOCAL EN□INEERIN□ DE□ARTMENT, MUTCO AND FDOT S□ECIFICATIONS.

E. IRRI□ATION□
ALL □I□E, FITTIN□S, VALVES, OTHER MISCELLANEOUS A□□URTENANCES, CONTROLS, □UM□ STATION E□UI□MENT, COM□ONENTS AND STRUCTURES, AND ALL OTHER UTILIT□ S□STEM □RODUCTS, MATERIALS AND COM□ONENTS AND SIMILAR CONTROLS, □ ELLS, AND/OR OTHER IRRI□ATION SOURCES. THE CONTRACTOR SHALL SUBMIT AN IRRI□ATION COORDINATION DRA□ IN□, INDICATIN□ CONTRACTOR□S □RO□OSED LOCATION OF MAIN LINES, SECONDAR□ LINES, HEAD LOCATIONS, □ ELL, □UM□, CONTROL □ANEL, SENSORS, CONTROL VALVE AND VALVE LOCATIONS. THIS DRA□ IN□ SHOULD CLEARL□ DE□ICT AD□USTMENTS OR CHAN□ES THE CONTRACTOR □RO□OSES. THE DRA□ IN□S SHALL INDICATE ALL □RO□OSED SUBSTITUTIONS OF SI□E, MATERIAL, AND/OR MANUFACTURER.

4. ALLO□ T□ O □ EEKS FOR THE EN□INEER TO COM□LETE REVIE□ OF □RODUCT DATA AND SHO□ DRA□ IN□S. EN□INEER □ ILL NOT BE RES□ONSIBLE FOR □RO□ECT DELA□S RELATED TO DELIVER□ AND TRANSMISSION OF THE DOCUMENTS ONCE INFORMATION HAS LEFT EN□INEER□S OFFICE. ITEMS RE□UIRIN□ A LON□ LEAD TIME SHOULD BE SUBMITTED AS SOON AS □OSSIBLE.
□. THE CONTRACTOR SHALL □ROVIDE A STAM□ INDICATIN□ ITS REVIE□ AND A□□ROVAL, INITIALED OR SI□NED,CERTIF□IN□ TO REVIE□ OF SUBMITTAL, VERIFICATION OF □RODUCTS, FIELD MEASUREMENTS AND FIELD CONSTRUCTION CRITERIA, AND COORDINATION OF THE INFORMATION □ ITHIN THE SUBMITTAL □ ITH RE□UIREMENTS OF THE □ ORK AND OF CONTRACT DOCUMENTS, INCLUDIN□ □LANS AND S□ECIFICATIONS OF OTHER DESI□N □ROFESSIONALS □I.E.□ARCHITECT, MECHANICAL, ELECTRICAL, AND STRUCTURAL EN□INEERS□.

B. TESTIN□

1. □ ATER□□RESSURE □MAIN AND TA□S□, BACTERIOLO□ICAL, BACKFILL DENSITIES, BACKFLO□ □REVENTOR TESTS AND CERTIFICATION□AND AS □ER □RO□ECT S□ECIFICATIONS, LOCAL UTILITIES DE□ARTMENT, AND FDE□ RE□UIREMENTS.
2. SE□ ER□EXFIL, TV, AND BACKFILL DENSITIES. □RESSURE TEST □MAINS AND TA□S□LIFT STATION START-U□, ALL □ER □RO□ECT S□ECIFICATIONS, COVB AND FDE□ RE□UIREMENTS.
3. DRAINA□E□EXFIL, LAM□IN□ □FIELD□, AND BACKFILL DENSITIES □ER □RO□ECT S□ECIFICATIONS AND LOCAL EN□INEERIN□ RE□UIREMENTS.
4. EARTH□ ORK & □AVIN□□DENSITIES, LBR□S AND FBV□S AS □ER □RO□ECT S□ECIFICATIONS AND LOCAL EN□INEERIN□ RE□UIREMENTS.
□. SUBMIT ALL TEST RESULTS FOR EN□INEERIN□ REVIE□ □ ITHIN 3 DA□S OF TESTIN□. FAILURE TO □ROVIDE TEST RESULTS, OR □ROVIDIN□ FAILIN□ TEST RESULTS □ ILL BE □ROUNDS FOR DELA□ AND/OR RE□ECTION OF □A□ RE□UEST A□□LICATIONS.

C. AS-BUILTS

1. □RADIN□□LOCATION AND ELEVATION OF ALL□CONCRETE AND □AVEMENT □VEHICLE USE AND □EDESTRIAN USE IM□ROVEMENTS□AT HI/LO□ □OINTS, ED□E OF □AVEMENT, AND CENTERLINE AT □0□ON CENTER AND AT CHAN□E OF DIRECTION, □RADE BREAKS□□RO□ERT□ LINES □CROSS SECTIONS □0□ON CENTER□□TO□ OF BANK AND T.O.E. OF SLO□E AND/OR CENTERLINE OF S□ ALES AND RETENTION AREAS□CROSS SECTIONS □0□ON CENTER ON STORM□ ATER LAKES FROM TO□ TO BOTTOM□MECHANICAL □ADS AND FINISHED FLOOR ELEVATIONS□DETAILED LOCATION AND TO□O□RA□H□ OF DRIVE□ A□ TURNOUTS.
2. □ ATER AND SE□ ER FORCE MAINS□LOCATION, TO□ ELEVATION AND STATE □LANE COORDINATES AT ALL FITTIN□S, VALVES, CHAN□ES OF DIRECTION AND AT 100□ON CENTER.
3. □RAVIT□ SE□ ER□
- SE□ ER STRUCTURES□DIAMETER OR SI□E, AND LOCATION AND ELEVATION OF STRUCTURES, TO□, BOTTOMS, AND SE□ ER INVERTS.
- MAINS AND LATERALS□LOCATION AND INVERT ELEVATIONS AT CONNECTIONS, FITTIN□S, AND TERMINATION.
- LIFT STATIONS□HORI□ONTAL LA□OUT AND LOCATION OF ALL E□UI□MENT, □ANELS, VAULTS, □ ET □ ELL, VALVES□LOCATION OF CONDUIT RUNS AND □ ATER SERVICE/ HOSE BIBB□LOCATION AND INVERT ELEVATIONS OF □RAVIT□ AND FORCE MAINS TO AND FROM LIFT STATION□□ ET □ ELL DIAMETER, TO□ AND BOTTOM ELEVATIONS□□UM□S□SI□E, T□□E, DISCHAR□E DIAMETER, MANUFACTURER AND MODEL □.
4. DRAINA□E□ALL STRUCTURES DIAMETER OR SI□E, LOCATION, AND ELEVATION OF TO□, BOTTOM, AND INVERT ELEVATIONS. ALL □I□ES, DIAMETER, T□□E/MATERIAL, LOCATION AND INVERT ELEVATION AT CONNECTIONS, FITTIN□S, AND TERMINATION □OINTS.
□. IRRI□ATION□ALL LINES, S□STEM E□UI□MENT COM□ONENTS, MATERIALS INCLUDIN□ □I□ES, VALVES, FITTIN□S, S□RINKLER HEADS, AND MISCELLANEOUS A□□URTENANCES.

D. O□ERATION AND MAINTENANCE MANUALS

1. CONTRACTOR SHALL □ROVIDE THE O□ NER □ ITH O□ERATION AND MAINTENANCE MANUALS FOR ALL O□ERABLE E□UI□MENT □□UM□ STATIONS AND CONTROLS, AUTOMATIC CONTROL VALVES, AND OTHER AUTOMATED E□UI□MENT□CONTROL □ANELS, ETC.□.
2. O□ERATION AND MAINTENANCE MANUALS SHALL BE SUBMITTED AS A □RE-RE□UISITE TO THE □RO□ECT BEIN□ DEEMED SUBSTANTIALL□ COM□LETE.

E. □ ARRANT□

THE CONTRACTOR SHALL □ROVIDE ALL □ ARRANTIES, CERTIFICATIONS, □UARANTIES, AND □ ARRANT□ BONDS AS S□ECIFIED IN THE CONTRACT DOCUMENTS AND □ERMIT CONDITIONS INCLUDIN□□
-UTILIT□ MAINTENANCE BOND - FOR ALL □UBLIC □ ATER AND SE□ ER UTILITIES INFRASTRUCTURE - □2□□ OF CONTRACT VALUE□
-EN□INEERIN□ MAINTENANCE BOND - FOR ALL □AVIN□, □RADIN□, AND DRAINA□E IM□ROVEMENTS AND INFRASTRUCTURE □2□□ OF CONTRACT VALUE□

4. O□ NER TRAININ□
THE CONTRACTOR SHALL INCLUDE 2 HOURS OF O□ NER TRAININ□ □FOR EACH □ ATER, SE□ ER, DRAINA□E, AND IRRI□ATION S□STEMS□FOR ALL O□ERABLE E□UI□MENT AND SHALL INCLUDE THE TIME FOR INITIAL AD□USTMENTS OF E□UI□MENT AND TIME FOR ONE FOLLO□ -U□ VISIT AND AD□USTMENTS OF E□UI□MENT 60 DA□S AFTER END USER HAD O□ERATIONAL TIME □ ITH THE E□UI□MENT.

MARK	REVISION	DATE
1	REVISED PER C.O.F.P.	10/30/15
2	REVISED PER C.O.F.P.	11/24/15

DRAWING 15086-CON
DESIGNED J.B.B.
DRAWN J.B.B.
CHECKED J.B.B.
SCALE 1:20
DATE 9/28/15

SCHULKE, BITTLE & STODDARD, L.L.C.
CIVIL & STRUCTURAL ENGINEERING · LAND PLANNING · ENVIRONMENTAL PERMITTING
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1717 INDIAN RIVER BLVD., SUITE 201 VERO BEACH, FLORIDA 32960
TEL 772 / 770-9622 FAX 772 / 770-9496 EMAIL info@sbsengineers.com

PAVING, GRADING & UTILITY PLAN

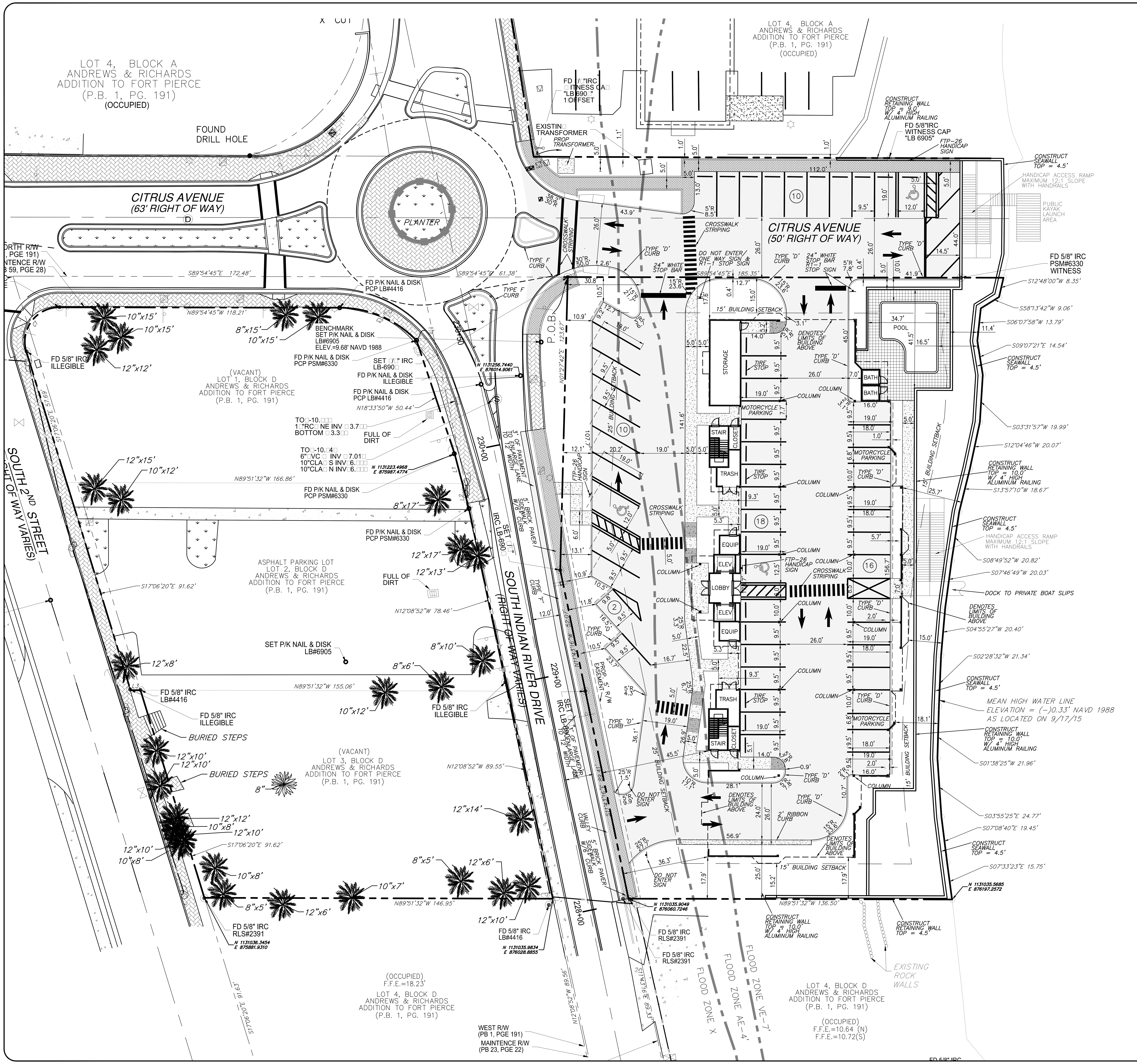
INDIAN RIVER VILLAS

ENGINEER CERTFICATION
☐ JOSEPH W. SCHULKE P.E. REG. NO. 47048
☐ JODAH B. BITTLE P.E. REG. NO. 57396
☐ WILLIAM P. STODDARD P.E. REG. NO. 57605

DATE:

SHEET
6

PROJECT NO.
15-086



LEGEND

EXISTING SANITARY SEWERLINE	PROPOSED EOP RADIUS
PROPOSED SANITARY SEWERLINE	1,000 GAL UNDERGROUND PROPANE TANK
EXISTING DRAINAGE PIPE	24" ADS YARD DRAIN
PROPOSED DRAINAGE PIPE	STORMTECH DRAIN
EXISTING WATER MAIN	PROPOSED WALL
PROPOSED WATER MAIN	TRENCH DRAIN
FILTER FENCE/SEDIMENT BARRIER	STREET LIGHT
EXISTING WOOD FENCE	MODIFIED TYPE 'C' INLET
PROPOSED FENCE	JUNCTION MANHOLE
PROPOSED SPOT ELEVATION AT EOP/SIDEWALK	DRAINAGE STRUCTURE LABEL
PROPOSED GRADE / CONTOUR	FIRE HYDRANT
PROPOSED DRAINAGE FLOW DIRECTION	PROPOSED SIGN
	SEWER MANHOLE

Legend & Abbreviations (symbols not scaleable for size)

PLS - PROFESSIONAL LAND SURVEYOR
PSM - PROFESSIONAL SURVEYOR & MAPPER
LB - LAND SURVEYING BUSINESS
℄ - CENTERLINE
R - RADIUS
L - LENGTH
Δ - DELTA ANGLE
E/P - EDGE OF PAVEMENT
B/C - BACK OF CURB
B.M. - BENCHMARK
POC - POINT OF COMMENCEMENT
POB - POINT OF BEGINNING
PCP - PERMANENT CONTROL POINT
PRM - PERMANENT REFERENCE MONUMENT
IP - IRON PIPE
IRC - IRON ROD & CAP
CM - CONCRETE MONUMENT
FD - FOUND
(M) - MEASURED
(P) - PLAT
(C) - CALCULATED
TRAFFIC CONTROL BOX
GUY WIRE
WOOD UTILITY POLE
TELEPHONE SERVICE
CABLE T.V. BOX
ELECTRIC BOX
LIGHT POST
WELL
HYDRANT
GATE VALVE
IRRIGATION VALVE
WATER METER
SANITARY MANHOLE
SANITARY SERVICE
SEPTIC TANK
DRAINAGE MANHOLE
CURB INLET
SURFACE INLET
MITERED END SECTION
CONCEPTUAL DRAINAGE
STREET SIGN
23. - PROPOSED GRADE
NAVD - NORTH AMERICAN VERTICAL DATUM
23. - TYPICAL ELEVATION
A/C - AIR CONDITIONER
CONC. - CONCRETE
F.F. - FINISH FLOOR
BSB - BUILDING SETBACK LINE
EL./ELEV. - ELEVATION
R/W - RIGHT OF WAY
AB - AS-BUILT
P/K - PARKER-KALON

NOTES

1. ALL DISTURBED AREAS IN THE RIGHT-OF-WAY SHALL BE SODDED. SEED AND MULCH IS NOT ACCEPTABLE.
2. ANY DAMAGE TO THE EXISTING INFRASTRUCTURE, INCLUDING SIDEWALKS, BY THE CONTRACTOR MUST BE REPLACED PRIOR TO FINAL INSPECTION. SIDEWALK PATCHING IS NOT ACCEPTABLE.
3. CURB RAMPS MUST MEET THE REQUIREMENTS OF FDOT STANDARD INDEX 304.
4. ALL STRIPING WITHIN THE RIGHT-OF-WAY SHALL BE THERMOPLASTIC.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE EXISTING PUBLIC ROADWAY, CURBS, GUTTERS, SIDEWALKS, DRAINAGE SYSTEMS AND UTILITIES AS A DIRECT RESULT OF NEW CONSTRUCTION. ROAD IMPROVEMENTS SUCH AS BUT NOT LIMITED TO RESURFACING MAYBE REQUIRED.
6. THE SITE DRAINAGE AND CONSTRUCTION IMPROVEMENTS SHALL NOT ADVERSELY IMPACT ADJOINING PROPERTIES AND/OR ROADWAYS.
7. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO CONTACT SUNSHINE STATE ONE CALL SYSTEM AT 1-800-432-4770 FOR LOCATIONS OF THIS EQUIPMENT AT LEAST 72 HOURS PRIOR TO ANY CONSTRUCTION.
8. ANY CONFLICTS WITH THE PLANS AND EXISTING UTILITIES, DRAINAGE, ETC TO BE REPORTED TO ENGINEER FOR RESOLUTION OF ISSUES.
9. CONTRACTOR TO FIELD VERIFY ALL REPORTED INVERTS AND UTILITIES AND REPORT TO ENGINEER.

NORTH

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

HATCH LEGEND

▨	PROPOSED CONCRETE
▩	PROPOSED PAVEMENT

MARK	REVISION	DATE
1	REVISED PER C.O.F.P.	10/30/15
2	REVISED PER C.O.F.P.	11/24/15

DRAWING 15086-CON
DESIGNED J.B.B.
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SITE PLAN

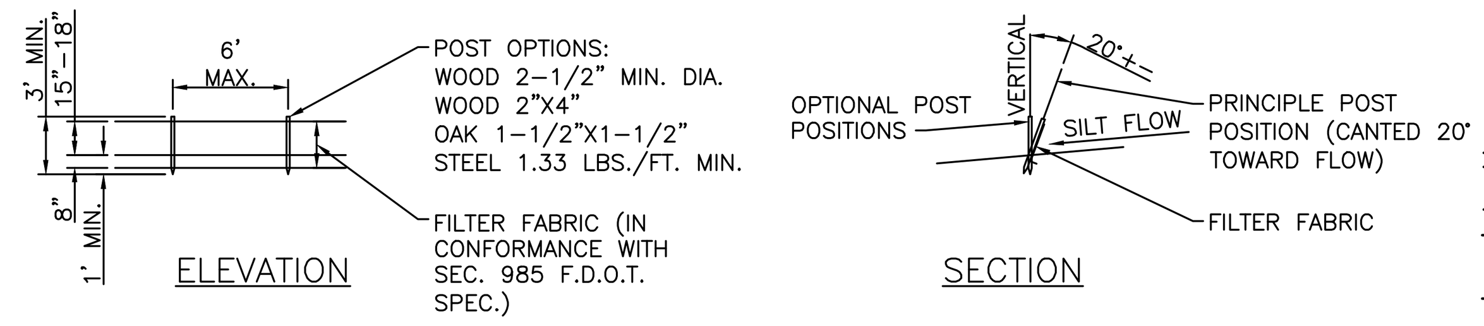
INDIAN RIVER VILLAS

ENGINEER CERTIFICATION
☐ JOSEPH W. SCHULKE FL. REG. NO. 47048
☐ JODAH B. BITTLE FL. REG. NO. 57396
☐ WILLIAM P. STODDARD FL. REG. NO. 57605

DATE:

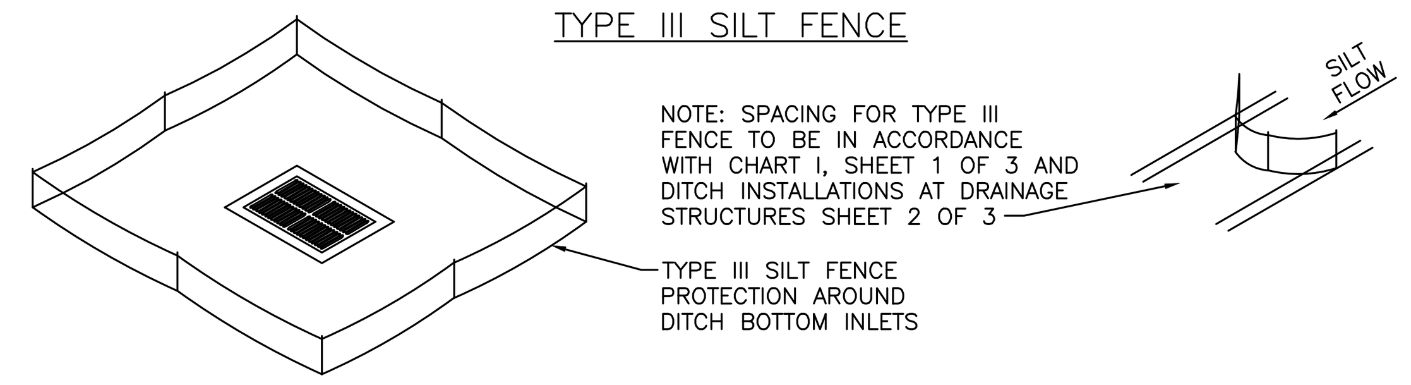
SHEET
5

PROJECT NO.
15-086



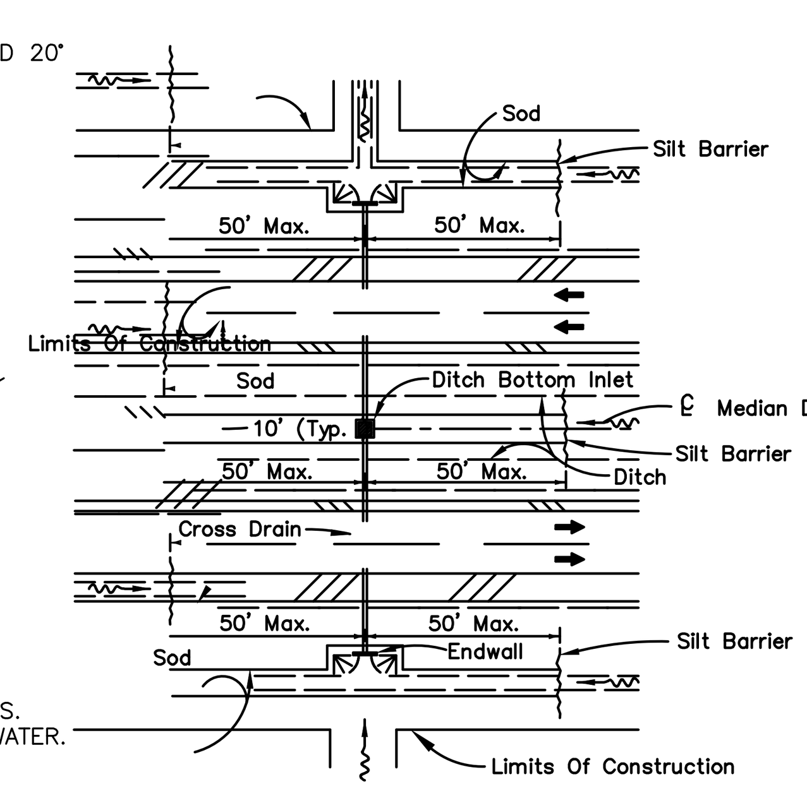
NOTES: SILT FENCE TO BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR STAKED SILT FENCE (L.F.)

TYPE III SILT FENCE

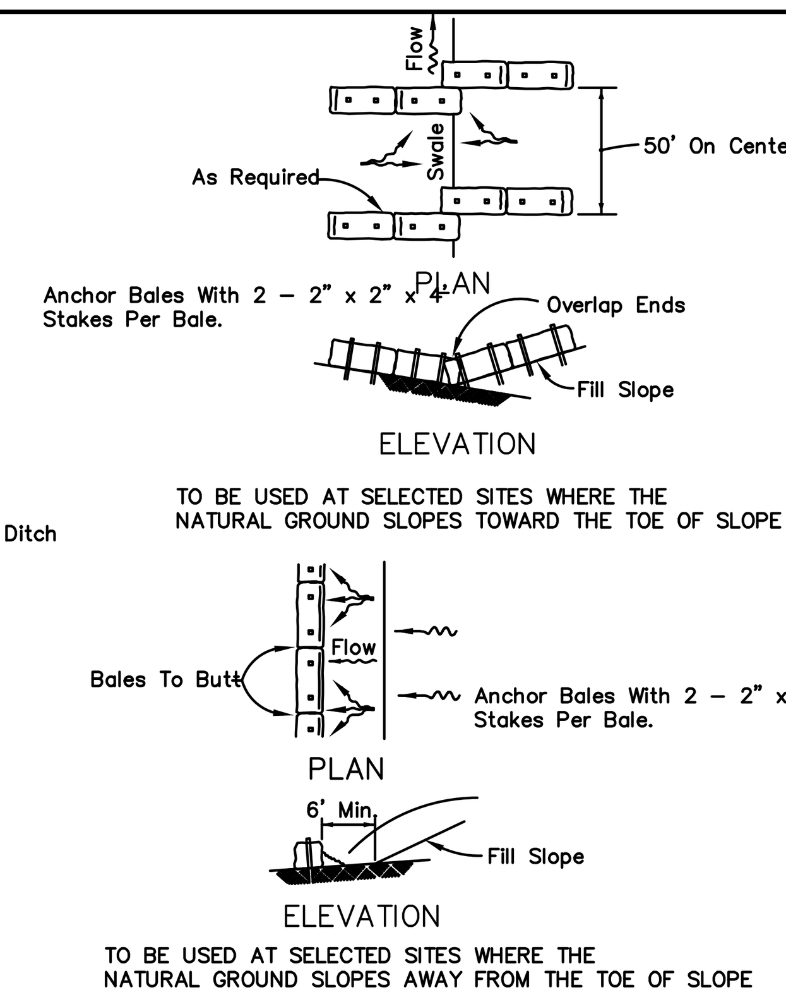


DO NOT DEPLOY IN A MANNER THAT SILT FENCES WILL ACT AS A DAM ACROSS PERMANENT FLOWING WATERCOURSES. SILT FENCES ARE TO BE USED AT UPLAND LOCATIONS AND TURBIDITY BARRIERS USED AT PERMANENT BODIES OF WATER.

SILT FENCE APPLICATIONS–N.T.S.



DITCH INSTALLATIONS AT DRAINAGE STRUCTURES

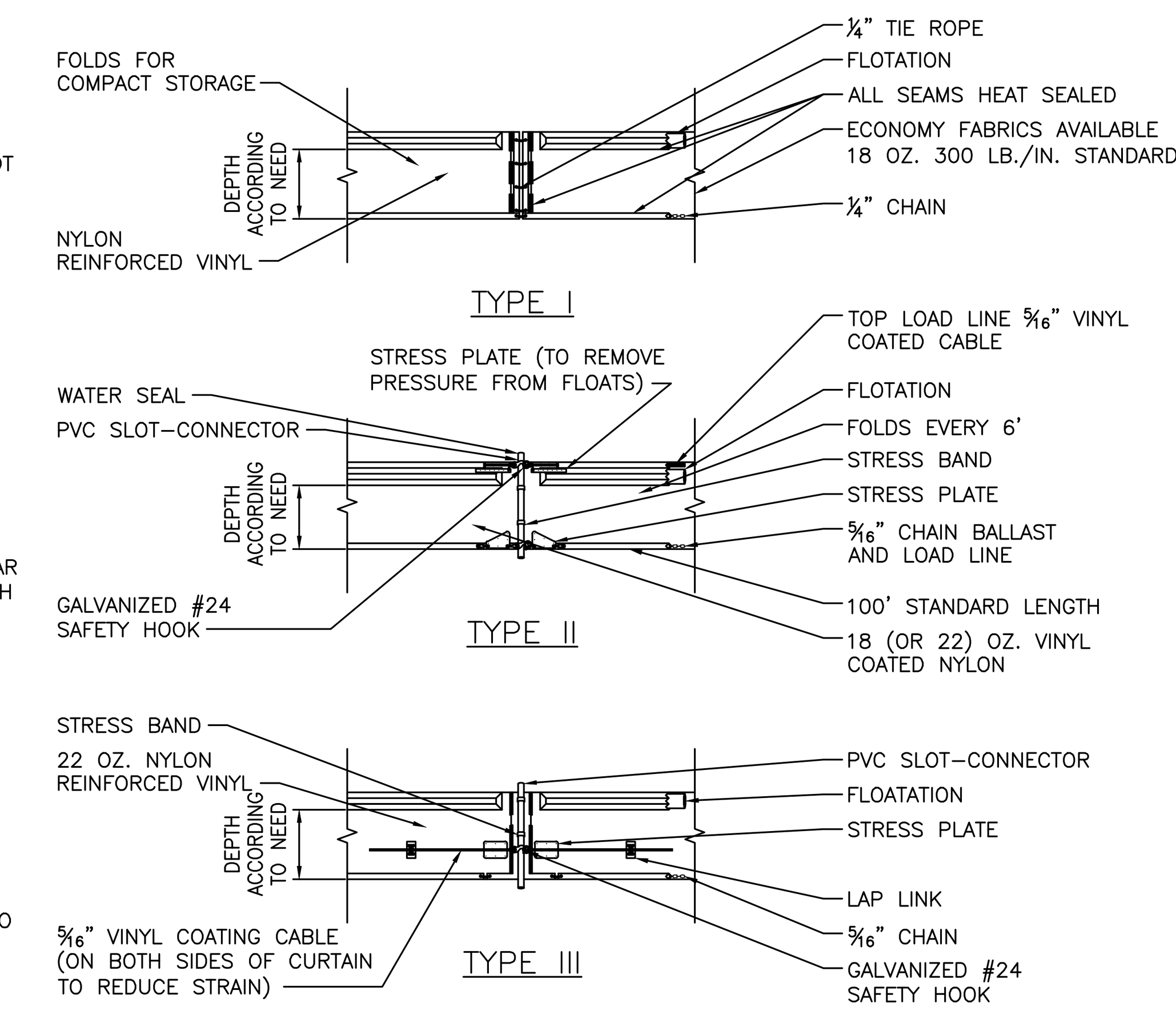


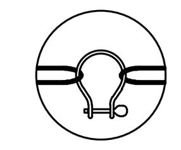
BARRIERS FOR FILL SLOPES

TYPE I. DOT FOR WATERS WITH LOW CURRENTS (NO MORE THAN ONE FOOT PER SECOND) AND LIGHT WINDS: LAKES, PONDS, SMALL STREAMS, MARSHES. FLEXIBLE TOP FLOTATION SECTION WITH ENCAPSULATED EPS FOAM FLOTATION LOGS (6"X6"X4')

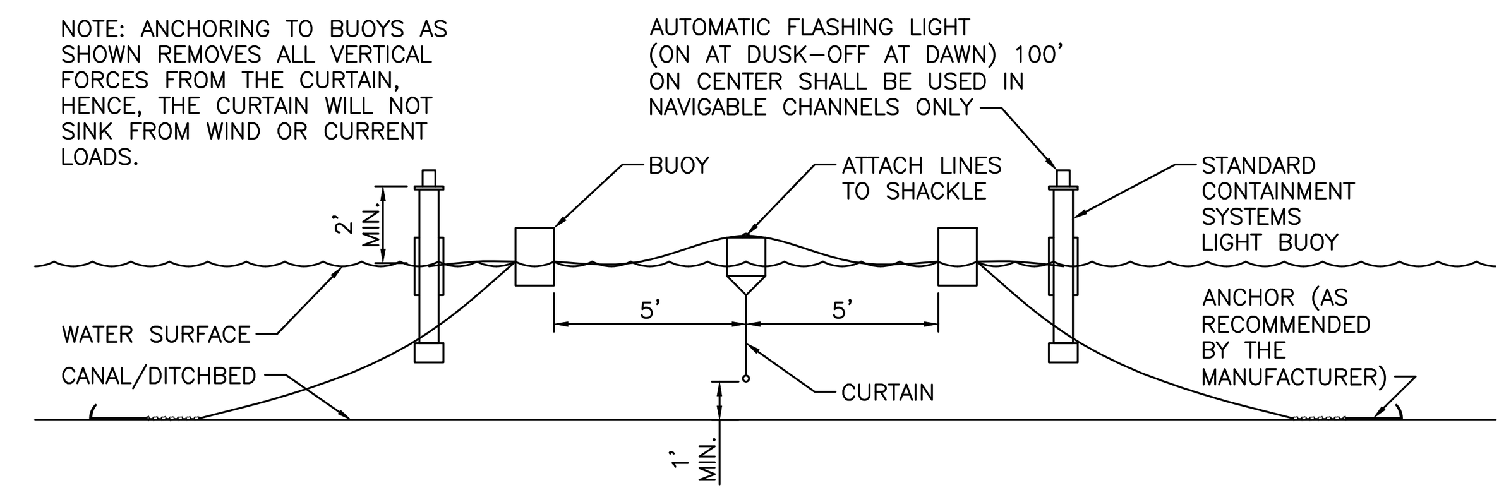
TYPE 2. DOT FOR HIGHER CURRENT WATERS (UP TO FIVE FEET PER SECOND): DEEPER LAKES, STREAMS, INTERCOASTAL AND TIDAL AREAS. INCLUDES AN ENCAPSULATED STEEL LOAD CABLE ALONG TOP OF BARRIER AND 8"X8"X4' FLOTATION LOGS. WEAR STRESS POINTS ARE REINFORCED WITH SHIELDS.

TYPE 3. DOT IS SIMILAR TO TYPE 2. DOT EXCEPT THAT POLYPROPYLENE FILTER FABRIC IS PERMANENTLY INSERTED INTO THE BARRIER SKIRT TO MEET SOME STATE'S SPECIFICATIONS.

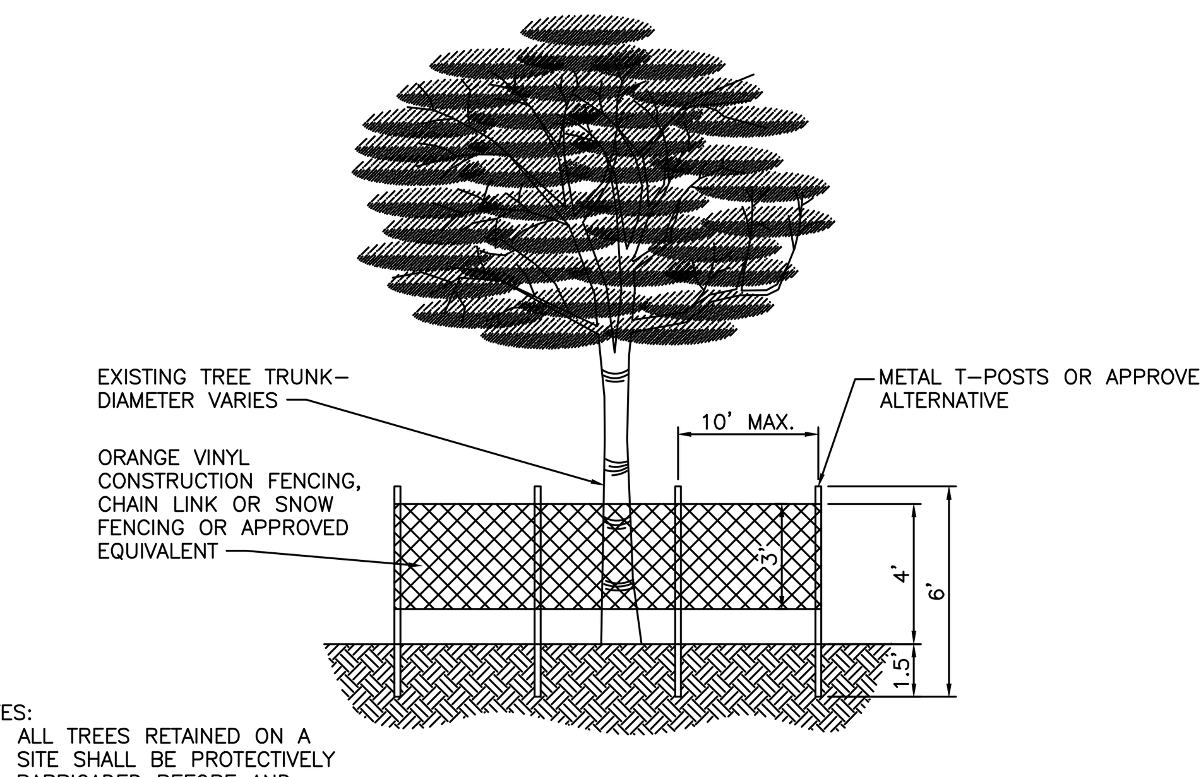




BLOW-UP OF SHACKLE CONNECTION

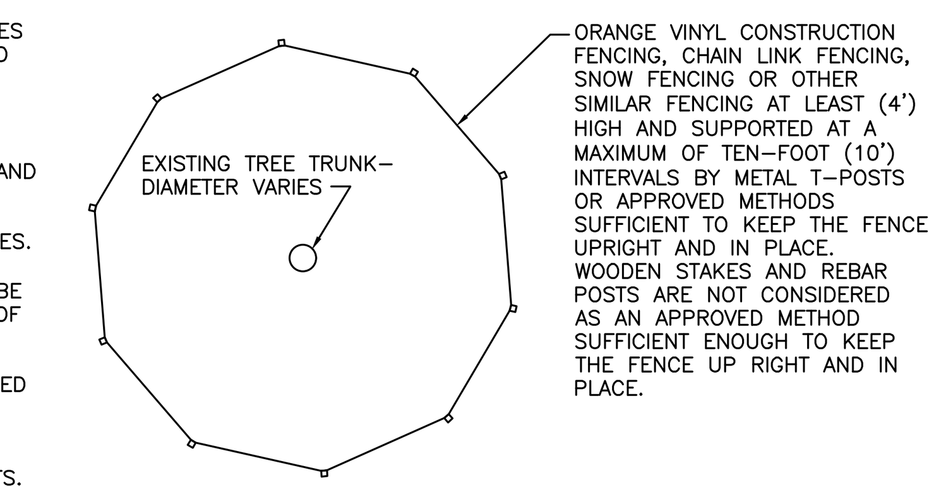


ORIENTATION WHEN INSTALLED (TIDAL SITUATION–TYPE III)–N.T.S.



ELEVATION

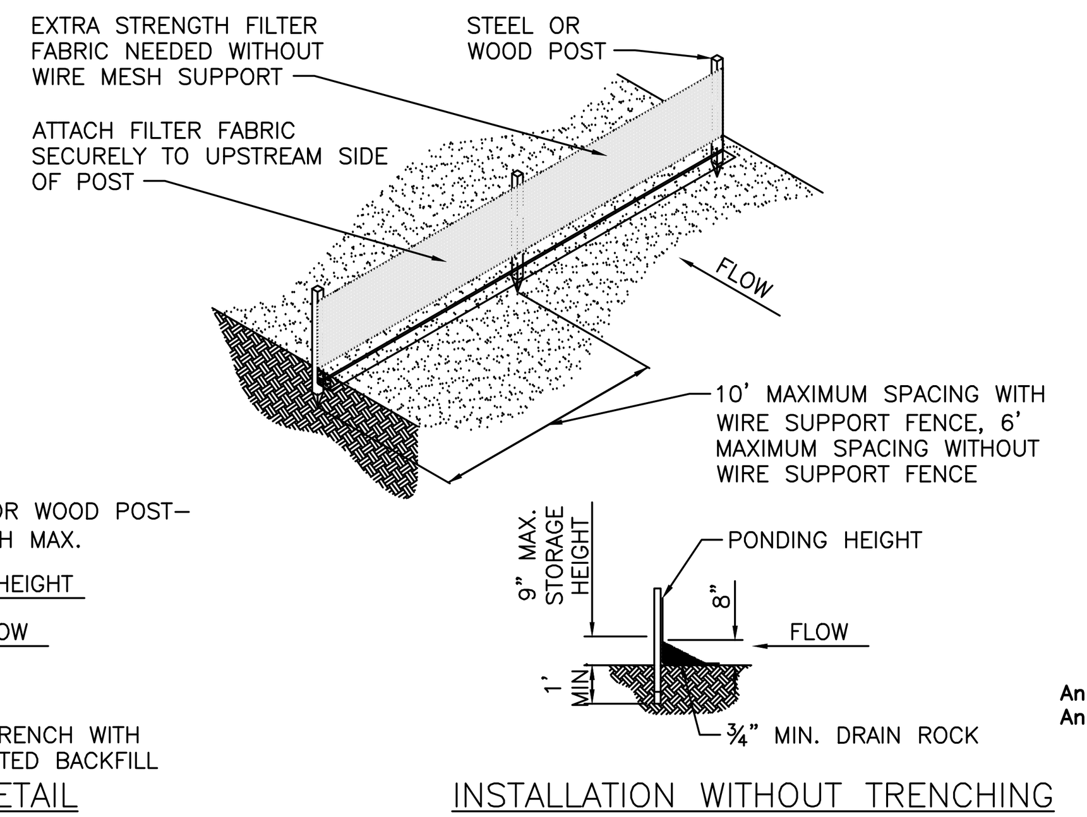
NOTES:
1. ALL TREES RETAINED ON A SITE SHALL BE PROTECTIVELY BARRICADED BEFORE AND DURING CONSTRUCTION ACTIVITIES.
2. UNDERGROUND UTILITY LINES SHALL BE ROUTED AROUND EXISTING TREES TO THE OUTSIDE OF THE DRIPLINE WHERE ABLE.
3. INSTALLATION OF FENCES AND WALLS SHALL TAKE INTO CONSIDERATION THE ROOT SYSTEMS OF EXISTING TREES.
4. FENCE/BARRICADE SHALL BE INSTALLED AT PERIMETER OF ALL TRESS OR GROUP OF TREES TO BE PRESERVED. FENCE SHALL BE MAINTAINED DURING CONSTRUCTION.
5. DO NOT PARK HEAVY EQUIPMENT ON TREE ROOTS. DO NOT ADD FILL 4" TO 6" AROUND TREE. ALL WORK WITHIN THE CRZ MUST BE DONE BY HAND.



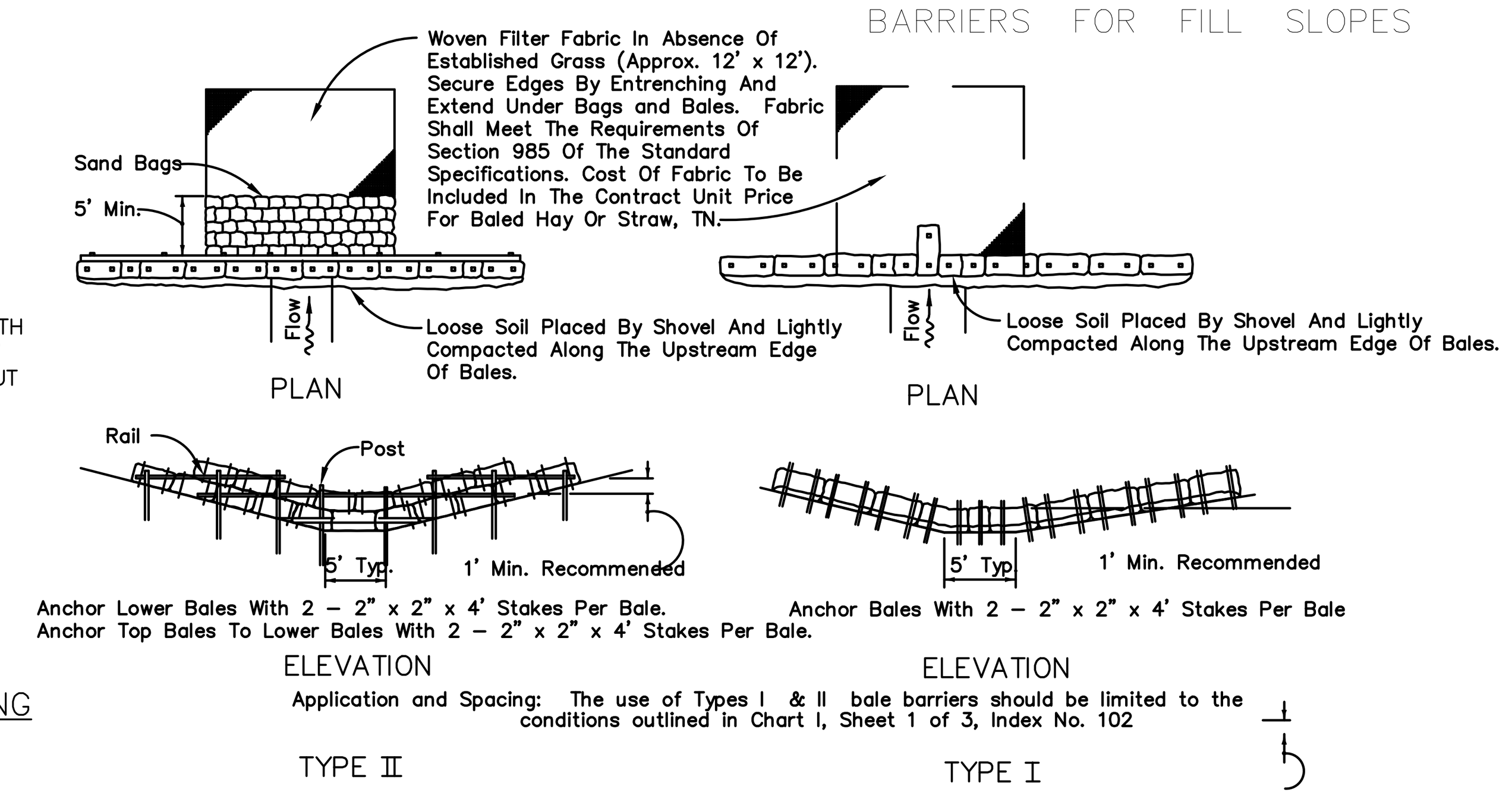
PLAN

PROTECTIVE FENCING FOR TREES–N.T.S.

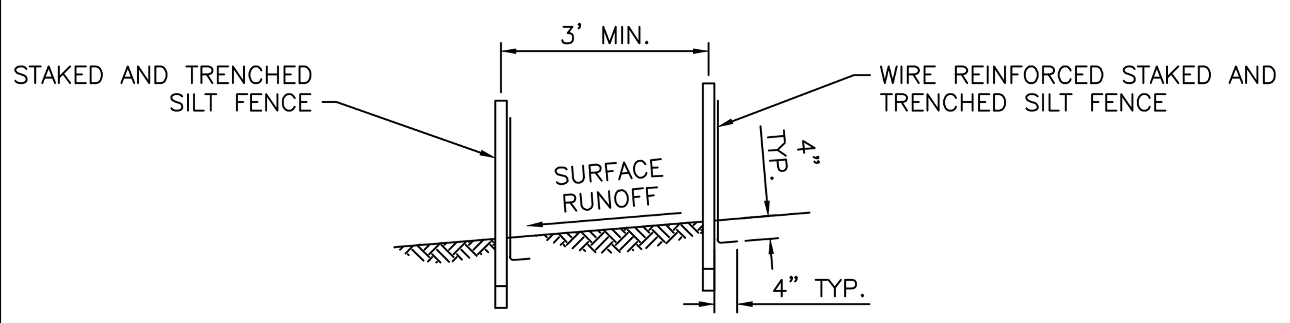
NOTES:
1. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
2. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY. 9" MAXIMUM RECOMMENDED STORAGE HEIGHT.
3. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.



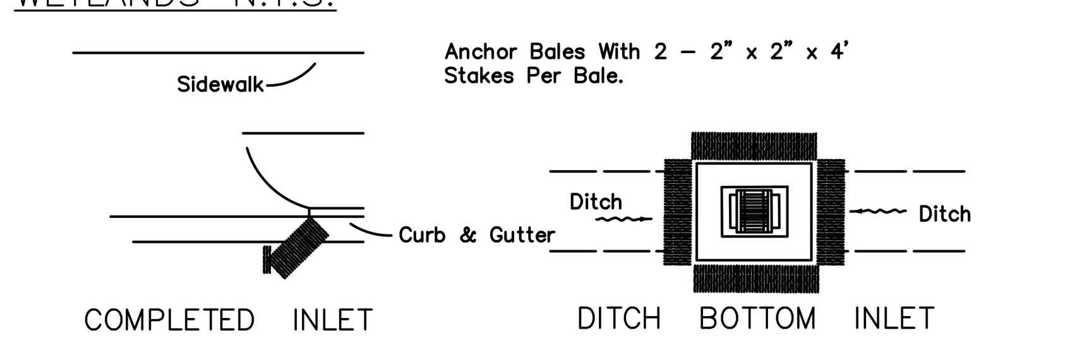
TYPE IV SILT FENCE–N.T.S.



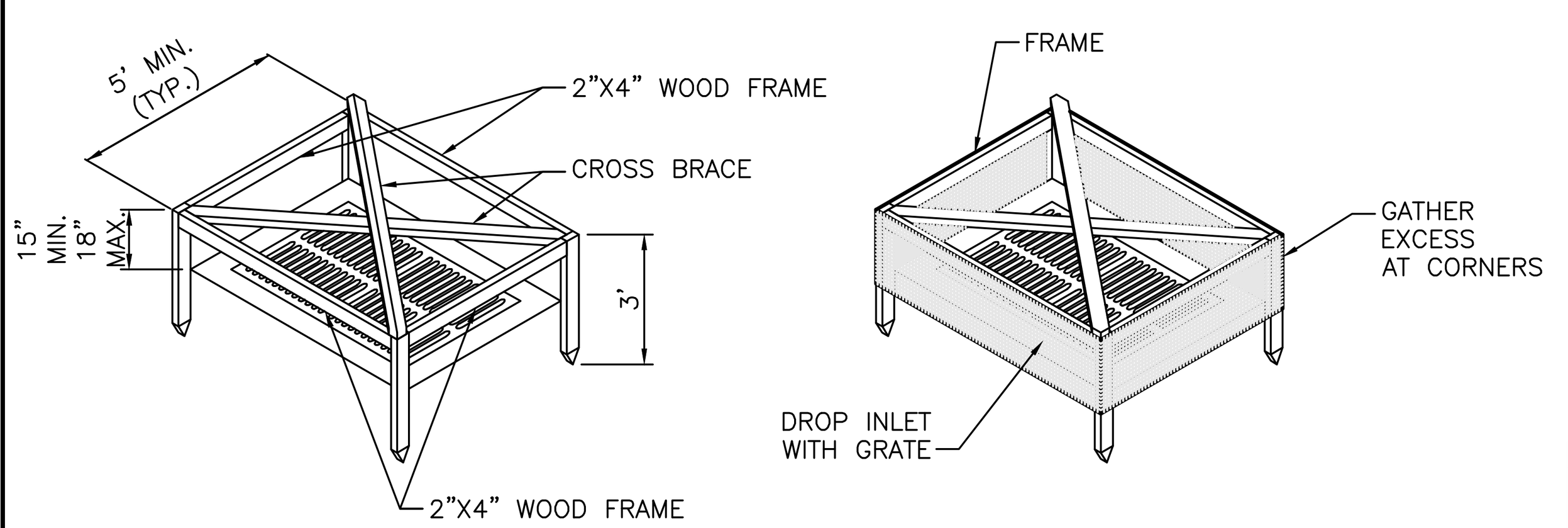
BARRIER FOR UNPAVED DITCHES



DOUBLE ROW STAKED SILT FENCE FOR USE AROUND WETLANDS–N.T.S.

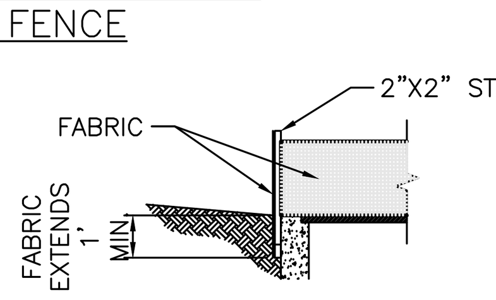


PROTECTION AROUND INLETS OR SIMILAR STRUCTURES

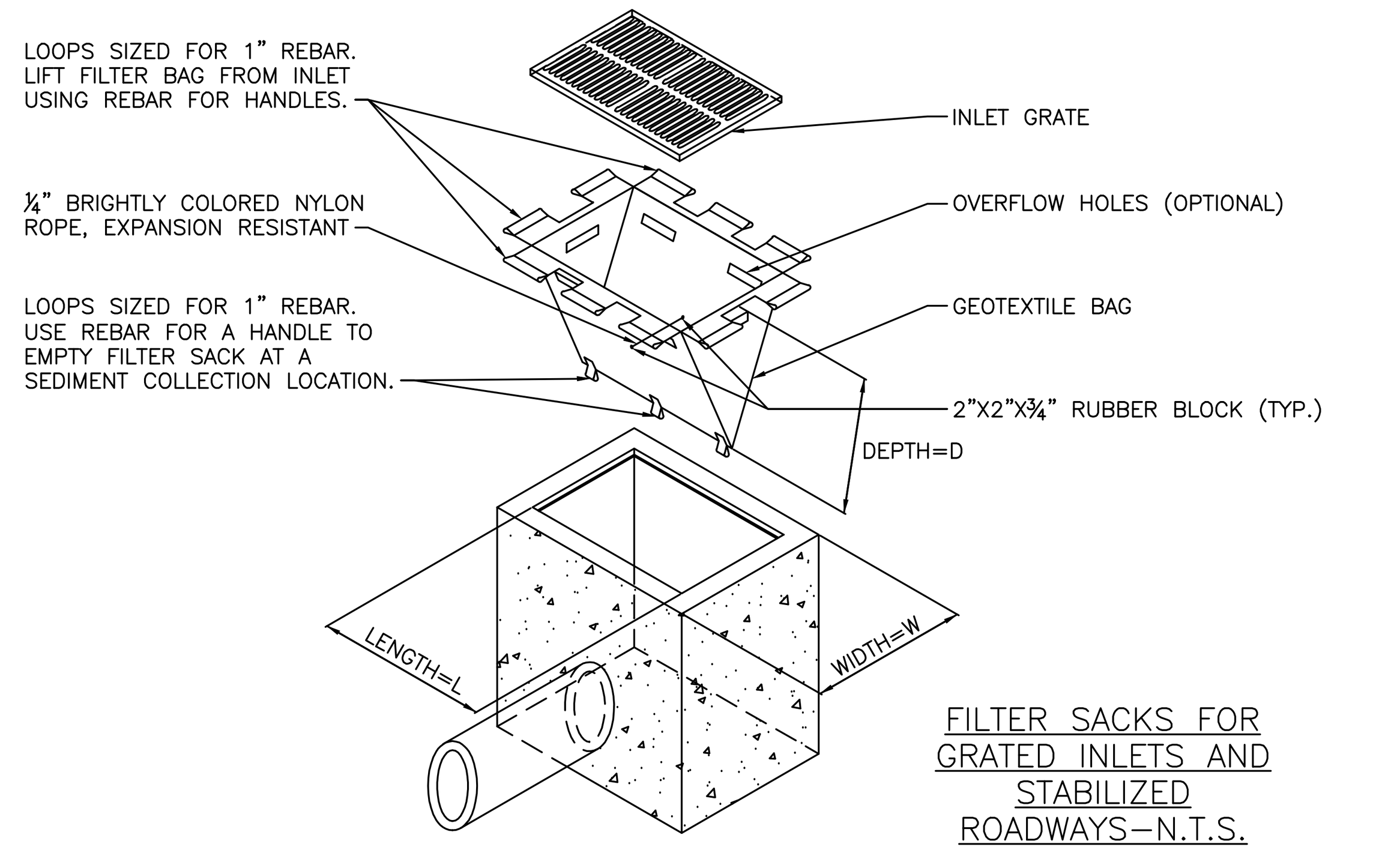


VIEW OF FRAME WITHOUT SILT FENCE

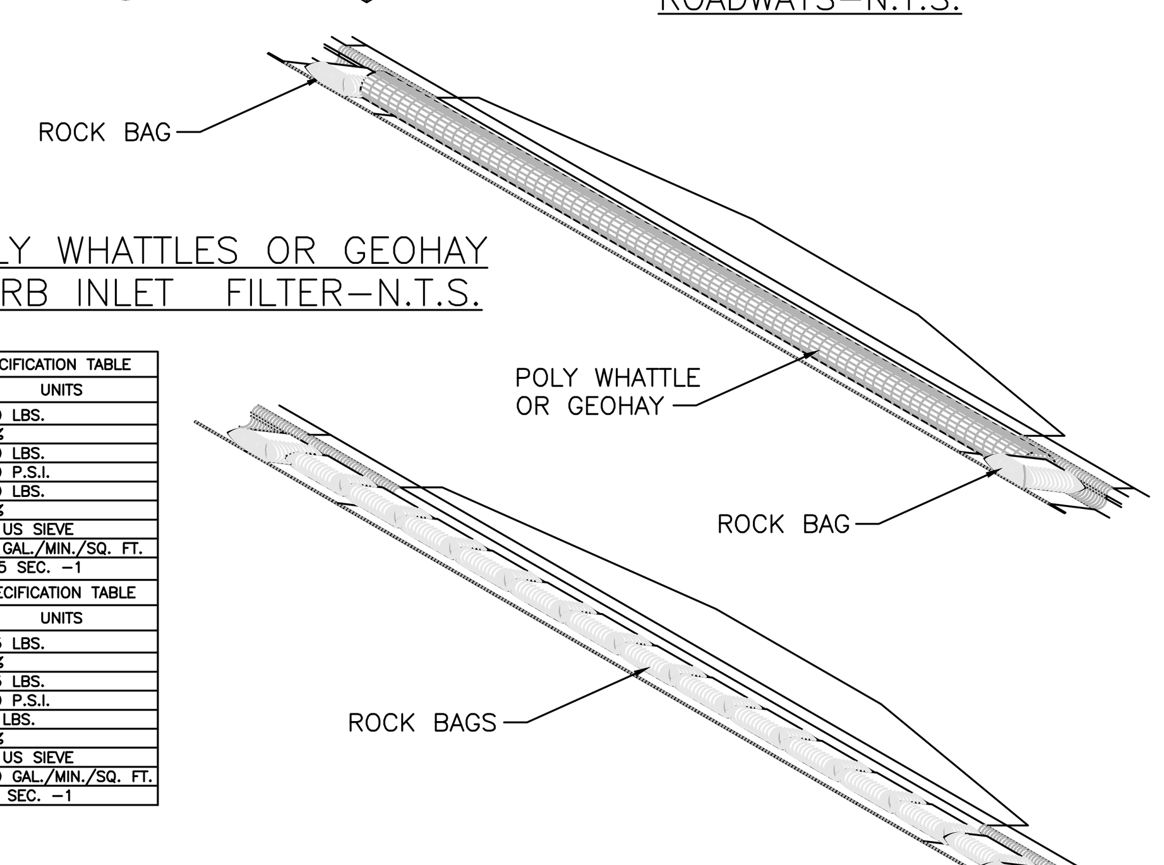
VIEW OF FRAME WITH SILT FENCE



SILT FENCE INLET PROTECTION–N.T.S.



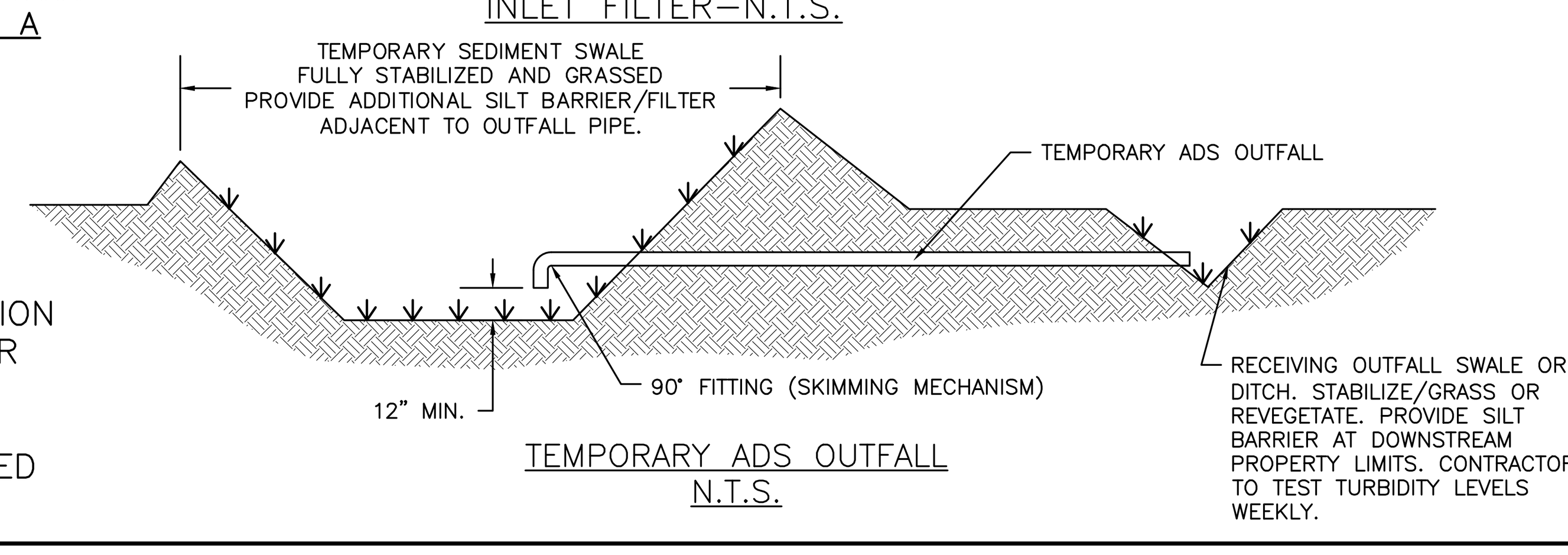
FILTER SACKS FOR GRATED INLETS AND STABILIZED ROADWAYS–N.T.S.



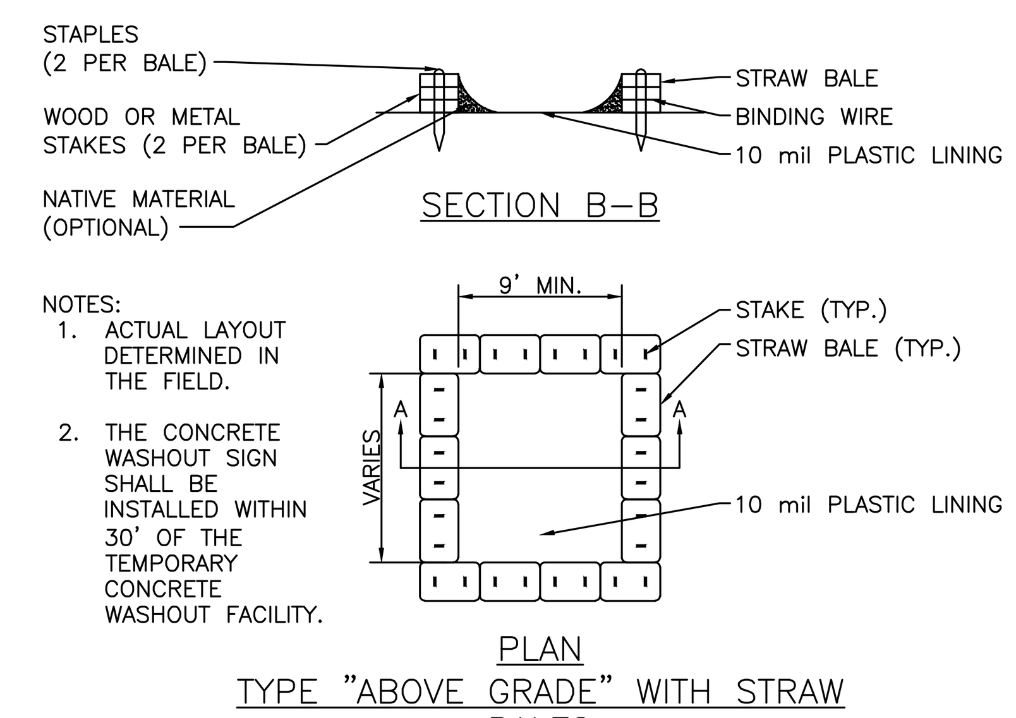
POLY WHATTLES OR GEOHAY CURB INLET FILTER–N.T.S.

LOW TO MODERATE FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE		
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	300 LBS.
GRAB TENSILE ELONGATION	ASTM D-4632	20%
PUNCTURE	ASTM D-4833	120 LBS.
MULLEN BURST	ASTM D-3786	800 P.S.I.
TRAPEZOID TEAR	ASTM D-4533	120 LBS.
UV RESISTANCE	ASTM D-4355	80%
APPARENT OPENING SIZE	ASTM D-4751	40 US SIEVE
FLOW RATE	ASTM D-4491	40 GAL./MIN./SQ. FT.
PERMITTIVITY	ASTM D-4491	0.55 SEC. -1
MODERATE TO HIGH FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE		
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	265 LBS.
GRAB TENSILE ELONGATION	ASTM D-4632	20%
PUNCTURE	ASTM D-4833	135 LBS.
MULLEN BURST	ASTM D-3786	420 P.S.I.
TRAPEZOID TEAR	ASTM D-4533	45 LBS.
UV RESISTANCE	ASTM D-4355	90%
APPARENT OPENING SIZE	ASTM D-4751	20 US SIEVE
FLOW RATE	ASTM D-4491	200 GAL./MIN./SQ. FT.
PERMITTIVITY	ASTM D-4491	1.5 SEC. -1

SOCK-PIPE OR ROCK BAG INLET FILTER–N.T.S.

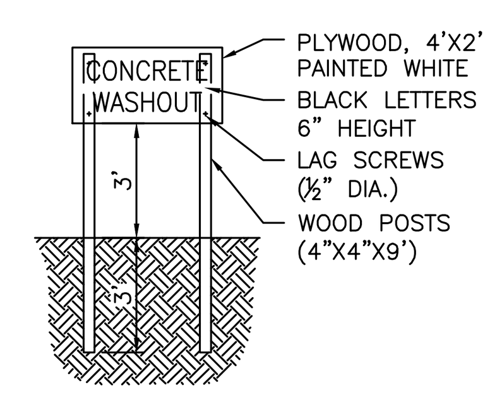


TEMPORARY ADS OUTFALL
N.T.S.

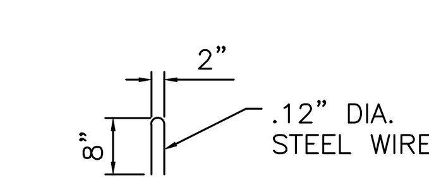


NOTES:
1. ACTUAL LAYOUT DETERMINED IN THE FIELD.
2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

PLAN
TYPE "ABOVE GRADE" WITH STRAW BALES

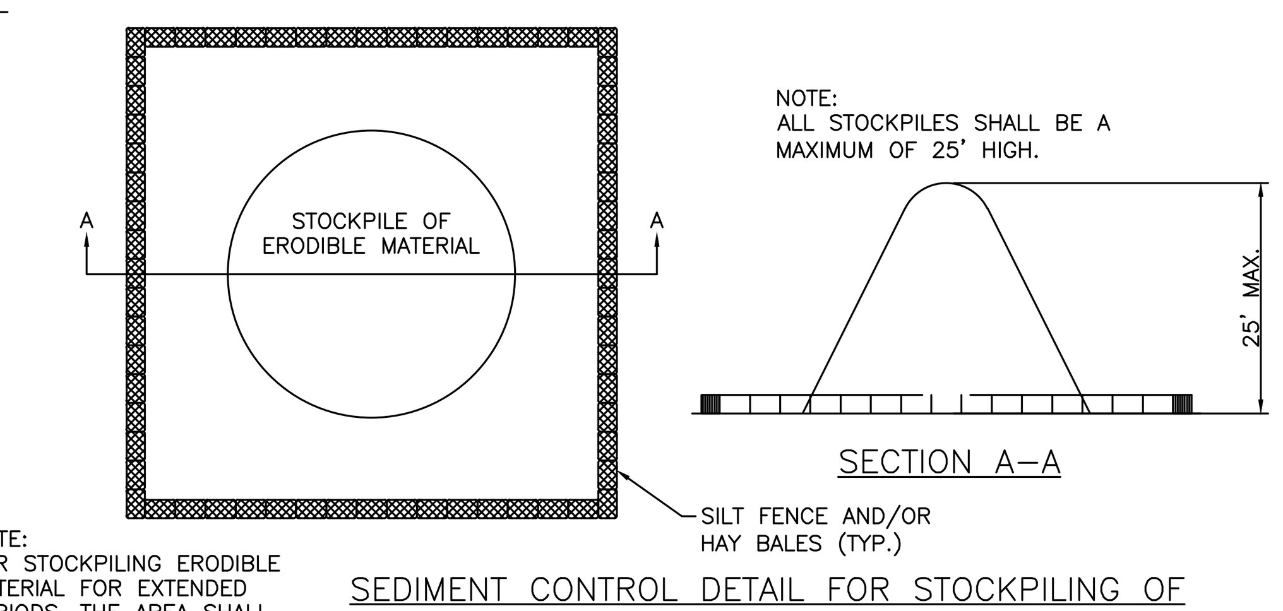


CONCRETE WASHOUT SIGN DETAIL (OR EQUIVALENT)



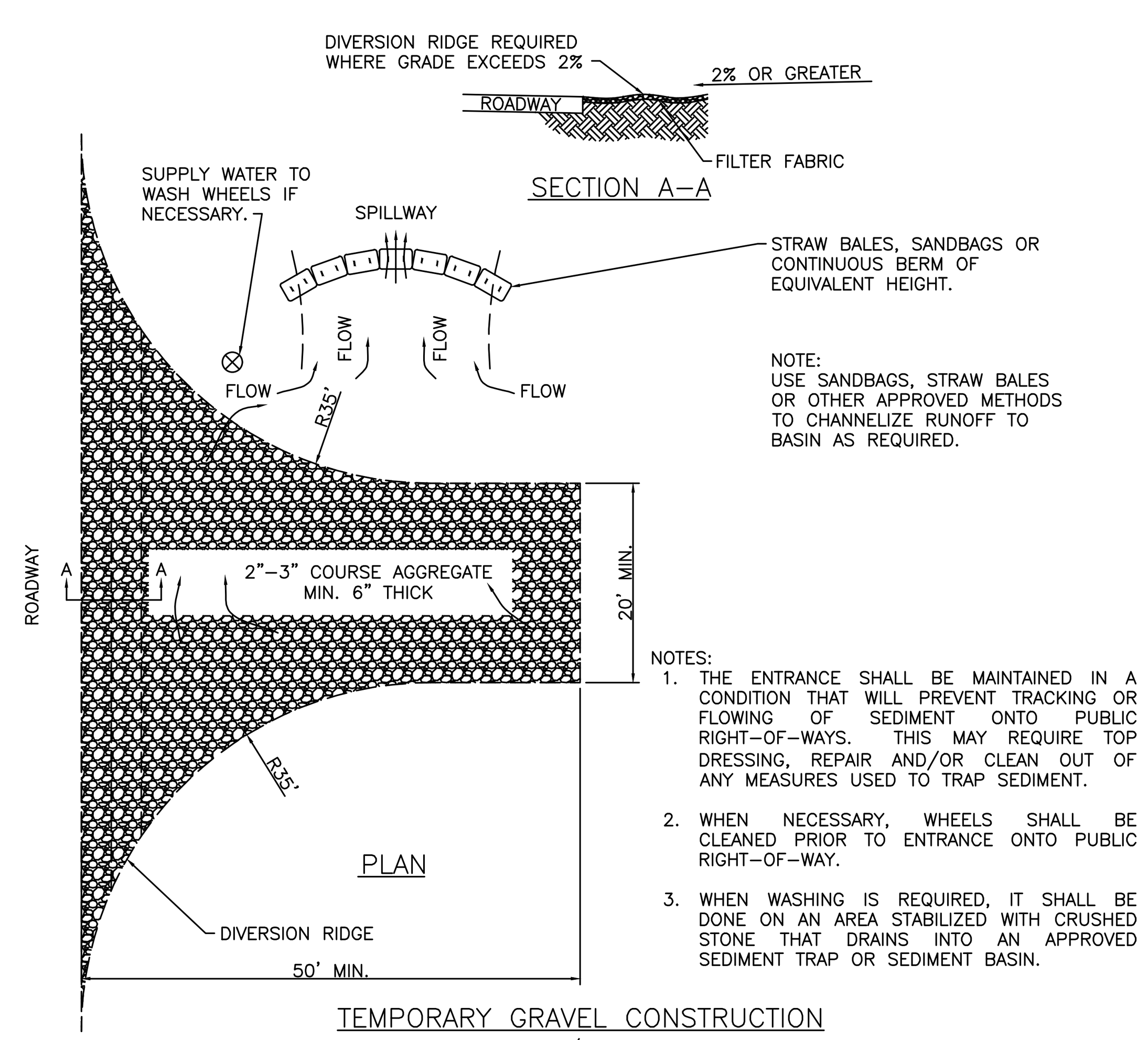
STAPLE DETAIL

CONCRETE & STUCCO WASTE MANAGEMENT–N.T.S.



NOTE:
FOR STOCKPILING ERODIBLE MATERIAL FOR EXTENDED PERIODS, THE AREA SHALL BE SEEDED AND MULCHED.

SEDIMENT CONTROL DETAIL FOR STOCKPILING OF ERODIBLE MATERIAL–N.T.S.



NOTES:
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT–N.T.S.

EROSION CONTROL AND DEWATERING NOTES

1. SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND-DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.
2. ALL SEDIMENT CONTROL MEASURES ARE TO BE ADJUSTED TO MEET FIELD CONDITIONS AT THE TIME OF CONSTRUCTION AND BE CONSTRUCTED PRIOR TO ANY GRADING OR DISTURBANCE OF EXISTING SURFACE MATERIAL ON BALANCE OF SITE. PERIMETER SEDIMENT BARRIERS SHALL BE CONSTRUCTED TO PREVENT SEDIMENT OR TRASH FROM FLOWING OR FLOATING ON TO ADJACENT PROPERTIES.
3. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN UNDISTURBED FOR LONGER THAN 30 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT UNDISTURBED FOR MORE THAN ONE YEAR.
4. DURING CONSTRUCTION OF THE PROJECT, SOIL STOCK PILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.
5. A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED.
6. AFTER ANY SIGNIFICANT RAINFALL, SEDIMENT CONTROL STRUCTURES WILL BE INSPECTED FOR INTEGRITY. ANY DAMAGED DEVICES SHALL BE CORRECTED IMMEDIATELY.
7. CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE.
8. SEDIMENT WILL BE PREVENTED FROM ENTERING ANY STORM DRAIN SYSTEM, DITCH, OR CHANNEL. ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.
9. WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION.
10. PERIODIC INSPECTION AND MAINTENANCE OF ALL SEDIMENT CONTROL STRUCTURES MUST BE PROVIDED TO ENSURE INTENDED PURPOSE IS ACCOMPLISHED. THE CONTRACTOR SHALL BE CONTINUALLY RESPONSIBLE FOR ALL SEDIMENT LEAVING THE PROPERTY. SEDIMENT CONTROL MEASURES SHALL BE IN WORKING CONDITION AT THE END OF EACH WORKING DAY.
11. WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PUBLIC ROAD SURFACE WITH CURBS AND GUTTERS, THE ROAD SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.
12. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED.
13. PROPERTIES AND WATERWAYS DOWNSTREAM FROM CONSTRUCTION SITES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION AND EROSION.
14. EROSION CONTROL DESIGN AND CONSTRUCTION SHALL FOLLOW THE REQUIREMENTS IN INDEX NOS. 101, 102, AND 103 OF FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS, AND THE DETAILS AND NOTES ON THE PLANS.
15. CONTRACTOR RESPONSIBLE FOR ALL SURFACE WATER DISCHARGES – RAINFALL RUN-OFF OR DEWATERING ACTIVITIES.
16. CONTRACTOR MUST INCORPORATE ALL BMP'S NECESSARY TO MEET OR EXCEED STATE WATER QUALITY REQUIREMENTS.
17. THIS POLLUTION PREVENTION PLAN IS A MINIMUM GUIDELINE ONLY. ADDITIONAL BMP'S MAY BE NECESSARY AT CONTRACTORS EXPENSE.
18. NO TURBID DISCHARGE. TURBIDITY READINGS ARE REQUIRED ONCE A WEEK (BY THE CONTRACTOR) AND MUST BE REPORTED TO THE PROJECT ENGINEER. LOCATION SHALL BE DETERMINED BY THE ENGINEER.
19. DEWATERING ACTIVITIES:
   A – DISCHARGE MUST NOT EXCEED STATE WATER QUALITY STANDARDS.
   B – CONTRACTOR MUST HAVE A TRANSFERABLE SJRWMD CONSUMPTIVE USE PERMIT KNOWN AS A "NOTICED GENERAL PERMIT FOR SHORT TERM CONSTRUCTION DE-WATERING", UNLESS DE-WATERING ACTIVITIES WILL RESULT IN LESS THAN 300,000 GPD FOR 30 DAYS OR LESS.
   C – NO HYDRAULIC PUMPS MAY BE USED FOR DE-WATERING UNLESS APPROVED BY THE WATER MANAGEMENT DISTRICT FOR THAT AREA. DEWATERING EXISTING STORMWATER RETENTION AREAS (PONDS/LAKES) MAY BE EXEMPT FROM THIS CONDITION. CONTRACTOR TO CONFIRM WITH SJRWMD.
   D – NO TURBID DISCHARGE. TURBIDITY READINGS ARE REQUIRED ONCE A WEEK AND MUST BE REPORTED TO THE PROJECT ENGINEER.
20. THE CONTRACTOR SHALL OBTAIN GENERIC PERMIT FOR THE DISCHARGE OF PRODUCED GROUND WATER FROM ANY NON-CONTAMINATED SITE ACTIVITY.
   A. BEFORE DISCHARGE OF PRODUCED GROUND WATER CAN OCCUR FROM THE SITE, ANALYTICAL TESTS ON SAMPLES OF THE PROPOSED UNTREATED DISCHARGE WATER SHALL BE PERFORMED TO DETERMINE IF CONTAMINATION EXISTS BY CONTRACTOR). IF NONE EXISTS, THE RESULTS SHALL BE SUBMITTED TO THE FDEP INDUSTRIAL WASTEWATER PERMITTING WITHIN ONE WEEK OF COMMENCEMENT OF DISCHARGE (C.O. ALI KAZI, P.E., 3319 MAGUIRE BLVD. SUITE 232, ORLANDO, FL, 32803), WITH A LETTER NOTIFYING THE AGENCY THAT DEWATERING ACTIVITIES WILL COMMENCE PURSUANT TO 62-621.300(2) F.A.C. AND THE SITE QUALIFIES FOR THE GENERIC PERMIT.
   B. THE FACILITY IS AUTHORIZED TO DISCHARGE PRODUCED GROUND WATER FROM ANY NON-CONTAMINATED SITE ACTIVITY WHICH DISCHARGES BY A POINT SOURCE TO SURFACE WATERS OF THE STATE, AS DEFINED IN CHAPTER62-620, F.A.C., ONLY IF THE REPORTED VALUES FOR THE PARAMETERS LISTED IN TABLE 1 DO NOT EXCEED ANY OF THE LISTED SCREEING VALUES.
   C. MINIMUM REPORTING REQUIREMENTS FOR ALL PRODUCED GROUND WATER DISCHARGERS. THE EFFLUENT SHALL BE SAMPLED (BY CONTRACTOR) BEFORE THE COMMENCEMENT OF DISCHARGE, AGAIN WITHIN THIRTY (30)DAYS AFTER COMMENCEMENT OF DISCHARGE, AND THEN ONCE EVERY SIX (6)MONTHS FOR THE LIFE OF THE PROJECT TO MAINTAIN CONTINUED COVERAGE UNDER THIS GENERIC PERMIT.SAMPLES TAKEN IN COMPLIANCE WITH THE PROVISIONS OF THIS PERMIT SHALL BE TAKEN PRIOR TO ACTUAL DISCHARGE OR MIXING WITH THE RECEIVING WATERS. THE EFFLUENT SHALL BE SAMPLED FOR THE PARAMETERS LISTED ON TABLE 1.

	SCREENING VALUES FOR DISCHARGE INTO:	
Parameter	Fresh Waters	Coastal Waters
Total Organic Carbon (TOC)	10.0 mg/L	10.0 mg/L
pH, standard units	6.0–8.5	6.5–8.5
Total Recoverable Mercury	0.012 μg/L	0.025 μg/L
Total Recoverable Cadmium	9.3 μg/L	9.3 μg/L
Total Recoverable Copper	2.9 μg/L	2.9 μg/L
Total Recoverable Lead	0.03 mg/L	5.6 mg/L
Total Recoverable Zinc	86.0 μg/L	86.0 μg/L
Total Recoverable Chromium (Hex.)	11.0 μg/L	50.0 μg/L
Benzene	1.0 μg/L	1.0 μg/L
Naphthalene	100.0 μg/L	100.0 μg/L

D. IF ANY OF THE ANALYTICAL TEST RESULTS EXCEED THE SCREENING VALUES LISTED IN TABLE 1, EXCEPT TOC, THE DISCHARGE IS NOT AUTHORIZED BY THIS PERMIT. IF T.O.C. IS EXCEEDED BECAUSE OF NATURALLY OCCURING ORGANIC COMPOUNDS, THE RESULT AND EXPLANATION FOR THE HIGH READING MUST BE SUBMITTED TO THE FDEP FOR REVIEW AND ISSUANCE OF AN EXEMPTION.
E. IF ANY SCREENING VALUES (OTHER THAN TOC) EXCEED THE THRESHOLDS, THEN A GENERIC PERMIT CANNNOT BE ISSUED, AND A SEPERATE INDIVIDUAL WASTEWATER PERMIT APPLICATION MUST BE SUBMITTED AT LEAST 90 DAYS PRIOR TO DATE OF DISCHARGE. THE ENGINEER OF RECORD MUST BE NOTIFIED IF THIS OCCURS.

– All turbidity, erosion, and sedimentation controls shall be in accordance with 'Best Management Practices' as described in the Florida Land Development Manual: A Guide to Sound Land and Water Management.
– Reference F.D.O.T. Index #102.

EROSION CONTROL DETAILS

N.T.S.

NOTES:
WETLAND PROTECTION PLAN
a. SILT FENCE MUST BE INSTALLED BY HAND ALONG SURVEYED CONSERVATION EASEMENT BOUNDARIES (AT TOE OF SLOPE–SEE SECTIONS EE,N,O) PRIOR TO CONSTRUCTION.
b. NO TURBID DISCHARGE TO WETLANDS IS PERMITTED.
c. ALL STOCKPILE AND/OR CONSTRUCTION STAGING AREAS MUST BE LOCATED 100 FT. FROM WETLANDS.

MARK	REVISION	DATE
1	REVISED PER C.O.F.P.	10/30/15

DRAWING 15086-CON
DESIGNED J.B.B.
DRAWN J.B.B.
CHECKED J.B.B.
SCALE NTS
DATE 9/28/15

SCHULKE, BITTLE & STODDARD, L.L.C.
CIVIL & STRUCTURAL ENGINEERING · LAND PLANNING · ENVIRONMENTAL PERMITTING
CERTIFICATION OF AUTHORIZATION NO.: 00008668
1717 INDIAN RIVER BLVD., SUITE 201 VERO BEACH, FLORIDA 32960
TEL 772 / 770-9622 FAX 772 / 770-9496 EMAIL info@sbsengineers.com

STORMWATER POLLUTION PREVENTION DETAILS

INDIAN RIVER VILLAS

ENGINEER CERTIFICATION
☐ JOSEPH W. SCHULKE FL. REG. NO. 47048
☐ JODAH B. BITTLE FL. REG. NO. 57396
☐ WILLIAM P. STODDARD FL. REG. NO. 57805

DATE:

SHEET
3

PROJECT NO.
15-086

EROSION CONTROL NOTES

1. SEDIMENT BASINS AND TRA□S, □ERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRA□ SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STE□ IN AN□ LAND DISTURBIN□ ACTIVIT□ AND SHALL BE MADE FUNCTIONAL BEFORE U□-SLO□E LAND DISTURBANCE TAKES □LACE.
2. ALL SEDIMENT CONTROL MEASURES ARE TO BE AD□USTED TO MEET FIELD CONDITIONS AT THE TIME OF CONSTRUCTION AND BE CONSTRUCTED □RIOR TO AN□ □RADIN□ OR DISTURBANCE OF EXISTIN□ SURFACE MATERIAL ON BALANCE OF SITE. □ERIMETER SEDIMENT BARRIERS SHALL BE CONSTRUCTED TO □REVENT SEDIMENT OR TRASH FROM FLO□ IN□ OR FLOATIN□ ON TO AD□ACENT □RO□ERTIES.
3. □ERMANENT OR TEM□ORAR□ SOIL STABILI□ATION SHALL BE A□□LIED TO DENUDED AREAS □ ITHIN SEVEN □7□DA□S AFTER FINAL □RADE IS REACHED ON AN□ □ORTION OF THE SITE. TEM□ORAR□ SOIL STABILI□ATION SHALL BE A□□LIED □ ITHIN SEVEN □7□DA□S TO DENUDED AREAS THAT MA□ NOT BE AT FINAL □RADE BUT □ ILL REMAIN UNDISTURBED FOR LON□ER THAN 30 DA□S. □ERMANENT STABILI□ATION SHALL BE A□□LIED TO AREAS THAT ARE TO BE LEFT UNDISTURBED FOR MORE THAN ONE □EAR.
4. DURIN□ CONSTRUCTION OF THE □RO□ECT, SOIL STOCK □ILES SHALL BE STABILI□ED, COVERED OR CONTAINED □ ITH SEDIMENT TRA□□IN□ MEASURES. THE CONTRACTOR IS RES□ONSIBLE FOR THE TEM□ORAR□ □ROTECTION AND □ERMANENT STABILI□ATION OF ALL SOIL STOCK□ILES ON SITE AS □ ELL AS SOIL INTENTIONALL□ TRANS□ORTED FROM THE □RO□ECT SITE.
□. A □ERMANENT VE□ETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHER□ ISE □ERMANENTL□ STABILI□ED.
6. AFTER AN□ SI□NIFICANT RAINFALL, ½" OR □REATER□SEDIMENT CONTROL STRUCTURES □ ILL BE INS□ECTED FOR INTE□RIT□. AN□ DAMA□ED DEVICES SHALL BE CORRECTED IMMEDIATEL□.
7. CONCENTRATED RUNOFF SHALL NOT FLO□ DO□ N CUT OR FILL SLO□ES UNLESS CONTAINED □ ITHIN AN ADE□UATE TEM□ORAR□ OR □ERMANENT CHANNEL, FLUME, SLO□E DRAIN STRUCTURE OR A□□ROVED CONTROL.
□. SEDIMENT □ ILL BE □REVENTED FROM ENTERIN□ AN□ STORM □ ATER S□STEM, DITCH OR CHANNEL. ALL STORM □ ATER INLETS THAT ARE MADE O□ERABLE DURIN□ CONSTRUCTION SHALL BE □ROTECTED SO THAT SEDIMENT-LADEN □ ATER CANNOT ENTER THE CONVE□ANCE S□STEM □ ITHOUT FIRST BEIN□ FILTERED OR OTHER□ ISE TREATED TO REMOVE SEDIMENT.
9. □ HEN □ ORK IN A LIVE □ ATERCOURSE IS □ERFORMED, □RECAUTIONS SHALL BE TAKEN TO MINIMI□E ENCROACHMENT, CONTROL SEDIMENT TRANS□ORT AND STABILI□E THE □ ORK AREA TO THE □REATEST EXTENT □OSSIBLE DURIN□ CONSTRUCTION.
10. □ERIODIC INS□ECTION AND MAINTENANCE OF ALL SEDIMENT CONTROL STRUCTURES MUST BE □ROVIDED TO ENSURE INTENDED □UR□OSE IS ACCOM□LISHED. THE DEVELO□ER, O□ NER AND/OR CONTRACTOR SHALL BE CONTINUALL□ RES□ONSIBLE FOR ALL SEDIMENT CONTROLS. SEDIMENT CONTROL MEASURES SHALL BE IN □ ORKIN□ CONDITION AT THE END OF EACH □ ORKIN□ DA□.
11. □ HERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT □AVED □UBLIC ROADS,□ROVISIONS SHALL BE MADE TO MINIMI□E THE TRANS□ORT OF SEDIMENT B□ TRACKIN□ ONTO THE □AVED SURFACE. □ HERE SEDIMENT IS TRANS□ORTED ONTO A □UBLIC ROAD SURFACE, THE ROAD SHALL BE CLEANED THOROU□HL□ AT THE END OF EACH DA□. SEDIMENT SHALL BE REMOVED FROM THE ROADS B□ SHOVELIN□ OR S□ EE□IN□ AND TRANS□ORTED TO A SEDIMENT CONTROL DIS□OSAL AREA. STREET □ ASHIN□ SHALL BE ALLO□ ED ONL□ AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS □ROVISION SHALL A□□L□ TO INDIVIDUAL SUBDIVISION LOTS AS □ ELL AS TO LAR□ER LAND-DISTURBIN□ ACTIVITIES.
12. ALL TEM□ORAR□ EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED □ ITHIN 30 DA□S AFTER FINAL SITE STABILI□ATION OR AFTER THE TEM□ORAR□ MEASURES ARE NO LON□ER NEEDED.
13. □RO□ERTIES AND □ ATER□ A□S DO□ NSTREAM FROM CONSTRUCTION SITES SHALL BE □ROTECTED FROM SEDIMENT DE□OSITION AND EROSION.
14. EROSION CONTROL DESI□N AND CONSTRUCTION SHALL FOLLO□ THE RE□UIREMENTS IN INDEX NUMBERS 101, 102 AND 103 OF F.D.O.T. ROAD□ A□ AND TRAFFIC DESI□N STANDARDS, IN ADDITION TO THESE □LANS.
1□. CONTRACTOR IS RES□ONSIBLE FOR ALL SURFACE □ ATER DISCHAR□ES, RAINFALL RUN-OFF OR DE□ ATERIN□ ACTIVITIES.
16. CONTRACTOR MUST INCOR□ORATE ALL BM□S NECESSAR□ TO MEET OR EXCEED STATE □ ATER □UALIT□ RE□UIREMENTS.
17. □OLLUTION □REVENTION □LAN IS A MINIMUM □UIDELINE ONL□. ADDITIONAL BM□S MA□BE NECESSAR□ AT CONTRACTOR□S EX□ENSE. NOI TO BE □OSTED ON SITE.
1□. NO TURBID DISCHAR□E, TURBIDIT□ READIN□S ARE RE□UIRED ONCE A □ EEK AND MUST BE RE□ORTED TO THE □RO□ECT EN□INEER.
19. DE□ ATERIN□ ACTIVITIES□
 A. DISCHAR□E MUST NOT EXCEED STATE □ ATER □UALIT□ STANDARDS.
 B. CONTRACTOR MUST HAVE OR OBTAIN A TRANSFERABLE S□R□ MD CONSUM□TIVE USE □ERMIT KNO□ N AS A "NOTICED □ENERAL □ERMIT FOR SHORT TERM CONSTRUCTION DE-□ ATERIN□". UNLESS DE□ ATERIN□ ACTIVITIES □ ILL RESULT IN LESS THAN 300,000 □□D FOR 30 DA□S OR LESS.
 C. NO H□DRAULIC □UM□S MA□ BE USED FOR DE□ ATERIN□ UNLESS A□□ROVED B□ THE □ ATER MANA□EMENT DISTRICT FOR THAT AREA. DE□ ATERIN□ EXISTIN□ STORM□ ATER RETENTION AREAS □□ONDS/LAKES□MA□ BE EXEM□T FROM THIS CONDITION. CONTRACTOR TO CONFIRM □ ITH S□R□ MD.
 D. NO TURBID DISCHAR□E. TURBIDIT□ READIN□S ARE RE□UIRED ONCE A □ EEK AND MUST BE RE□ORTED TO THE □RO□ECT EN□INEER AND TO CIT□ OF FT. □IERCE.
20. SEE ADDITIONAL DETAILS, S□ECIFICATIONS AND RE□UIREMENTS OF SHEET 4, 11-13.

STORM□ ATER □OLLUTION □REVENTION □LAN

A SITE □LAN MUST BE DEVELO□ED AND MUST CONTAIN, AT A MINIMUM, THE FOLLO□ IN□ INFORMATION□
1. DRAINA□E □ATTERNS,- SEE SURVE□ AND DRAINA□E □LAN SHEET 3 & 7.
2. A□□ROXIMATE SLO□ES AFTER MA□OR □RADIN□ ACTIVITIES - SEE SHEET 7.
3. AREAS OF SOIL DISTURBANCE, - SEE SHEETS 2, AND THIS SHEET.
4. OUTLINE ALL AREAS THAT ARE NOT TO BE DISTURBED - N/A.
□. LOCATION OF ALL MA□OR STRUCTURAL AND NON-STRUCTURAL CONTROLS,-THIS SHEET.
6. THE LOCATION OF EX□ECTED STABILI□ATION □RACTICES, -THIS SHEET.
7. NO □ ETLANDS AND SURFACE □ ATERS .
□. LOCATIONS □ HERE STORM□ ATER MA□ DISCHAR□E TO A SURFACE □ ATER OR MS4. SEE SHEET 7.

DESCRIBE THE NATURE OF THE CONSTRUCTION ACTIVIT□□
DEMOLITION, LAND CLEARIN□, EARTH□ ORK, □AVIN□ AND UTILIT□ □ ORK FOR BUILDIN□, □ARKIN□ AND SITE IM□ROVEMENTS.

DESCRIBE THE INTENDED SE□UENCE OF MA□OR SOIL DISTURBIN□ ACTIVITIES□
1. SITE □RE□ARATION AND STABILI□E CONSTRUCTION ENTRANCE.
2. INSTALL SILT FENCE AROUND □ERIMETER OF SITE. INSTALL TURBIDIT□ BARRIERS AT ALL OUTFALL LOCATIONS. CLEAR LAND. CONSTRUCT BERM ON □ERIMETER AND TEM□ORAR□ S□ ALES AS SHO□ N ON □LANS. BERM SHALL BE CONSTRUCTED USIN□ INITIAL IM□ORTED FILL MATERIAL. THE BERM AND S□ ALE SHALL BE SEEDED.

TOTAL AREA OF THE SITE□ 0.97□ACRES
TOTAL AREA OF THE SITE TO BE DISTURBED□0.97□ACRES

EXISTIN□ DATA DESCRIBIN□ THE SOIL OR □UALIT□ OF AN□ STORM□ ATER DISCHAR□E□
SEE SOIL BORIN□S B□ SHEETS 2. NO DISCHAR□E FROM DISTURBED AREAS IS ANTICI□ATED.

DRAINA□E AREA SI□E FOR EACH DISCHAR□E □OINT□
ENTIRE SITE □0.97□ACRES

LATITUDE AND LON□ITUDE OF THE SITE□
LATITUDE = N 27° 26' 38.6"
LONGITUDE = W 80° 19' 19.0"

BEST MANA□EMENT □RACTICES □BM□S□AND MEASURES THAT □ ILL BE IM□LEMENTED AT THE CONSTRUCTION SITE AND TIME FRAMES IN □ HICH THE CONTROLS □ ILL BE IM□LEMENTED□
THE CONTRACTOR □ ILL USE HA□ BALES, SILT FENCE, FILTER BARRIERS, AND OTHER BM□S. THE TIME FRAMES FOR CLEARIN□, EARTH□ ORK, AND ANTICI□ATED BM□S ARE□

1. INSTALL SILT FENCE AT □ERIMETER OF SITE AND SILT BARRIERS AT DO□ NSTREAM DITCHES/S□ ALES.
2. CLEAR/□RUB AREA NECESSAR□ FOR TEM□ORAR□ □RAVEL DRIVE□ A□ AND AD□ACENT S□ ALE.
3. CONSTRUCT TEM□ORAR□ □RAVEL DRIVE□ A□ □ ITH S□ ALE, AND □RADE/SOD S□ ALE AT ENTRANCE.
4. CLEAR BALANCE OF SITE.
□. CONSTRUCT 12" RC□ AND MITERED END SECTIONS.
6. IM□ORT FILL MATERIAL□
 -CONSTRUCT CONTAINMENT BERMS . SEED/MULCH BERMS.
 -FILL BALANCE OF SITE.
7. MAINTAIN DO□ NSTREAM SILT BARRIERS AND □ERIMETER SILT FENCE, DURIN□ CONSTRUCTION.
□. INCOR□ORATE ADDITIONAL BM□S □ HEN NEEDED DURIN□ THE COURSE OF CONSTRUCTION.
 -□OLL□□ ADDLE/ SILT FENCE/ FILTER SACKS AS INLETS AND □I□ES ARE INSTALLED.
 -□ROVIDE STOCK□ILE □ROTECTION, CONCRETE/ STUCCO □ ASH AREAS, AND OTHER BM□S □ HEN NECESSAR□ TO CONTAIN □RO□OSED □ ORK.

TEM□ORAR□ AND □ERMANENT STABILI□ATION □RACTICES□
-TEM□. HA□ BALES/SLIT FENCES/FLOATIN□ TURBIDIT□ BARRIERS □ER □LAN. FILTER FABRIC SHALL BE □LACED UNDER THE ROCK □RAVEL DRIVE□ A□, AT ALL S□ ALE OUTFALLS, AND RETENTION □OND OUTFALLS.
-□ERM. SEEDED/MULCHED,SOD. CONTROLLED □RADIN□ AND DRAINA□E TO DETENTION BASINS.
-STABILI□E ALL DE-NUDED AREAS IF LEFT UNDISTURBED FOR MORE THAN 7 DA□S - USE R□E □RASS □ER MANUFACTURER□S A□□LICATION RATES, AND MULCHED □ ITH STRA□ AT 4000 LB □ER ACRE.

STRUCTURAL CONTROLS TO BE IM□LEMENTED TO DIVERT STORM□ ATER FLO□ FROM RECEIVIN□ □ ATERS□
-TEM□. □RAVEL ENTRANCE ROAD, □RADED TO DRAIN TO A TEM□ORAR□ SEDIMENT S□ ALE OR RETENTION AREA.
-TEM□. DRAINS TO RETENTION □ONDS
-TEM□. BERMS AT □RO□ECT □ERIMETER - □ER □LAN.
-INLETS/OUTLETS □ ILL BE □ROTECTED □ ITH FILTER FABRIC AND □RO□ERL□ INSTALLED HA□ BALES.
-SILT FENCE SHALL BE □LACED AROUND THE ENTIRE □ERIMETER OF DISTURBED AREAS.
-A DOUBLE RO□ OF SILT FENCE □ ILL BE □ROVIDED AROUND ALL STOCK □ILE AREAS.

□ERMANENT STORM□ ATER MANA□EMENT CONTROLS SUCH AS, DETENTION OR RETENTION S□STEMS OR VE□ETATED S□ ALES.
-□ ET DETENTION S□STEMS INCOR□ORATED AS □ERMANENT BM□ FOR □ ATER □UALIT□ CONTROL.

DESCRIBE IN DETAIL CONTROLS FOR THE FOLLO□ IN□ □OTENTIAL □OLLUTANTS□
□ ASTE DIS□OSAL□
-ON SITE □ ASTE □ ILL BE CONTAINERI□ED, CONTRACTOR IS RES□ONSIBLE FOR REC□CLIN□ ALL □ ASTE MATERIALS, □ ITH A MINIMUM RE□UIREMENT OF 7□□.
-CONCTERE/ STUCCO □ ASH AREA SHALL BE □ROVIDED.
-STOCK□ILE AREAS SHALL BE □ROTECTED □ ITH SILT FENCE AND STABILI□ED/ SEEDED IF LEFT UNATTENDED FOR MORE THAN 7 DA□S.

OFFSITE VEHICLE TRACKIN□□
-□ROVIDE HARD SURFACE AT TEM□. DRIVE□ A□ □ROCK/□RAVEL DRIVE□ A□□
-RE□ULAR MAINTENANCE OF AD□ACENT ROAD RI□HT OF □ A□, INCLUDIN□ STREET S□ EE□IN□, & RUT RE□AIR IN NON-□AVED AREAS.

A□□LICATION RATES OF ALL FERTILI□ERS, HERBICIDES AND □ESTICIDES□
-NONE □RO□OSED.

STORA□E, A□□LICATION, □ENERATION AND MI□RATION OF ALL TOXIC SUBSTANCES□
-NONE □RO□OSED.

DESCRI□TION OF THE MAINTENANCE □LAN FOR ALL STRUCTURAL AND NON-STRUCTURAL CONTROLS.
-CONTRACTOR SHALL HAVE S□ □□□ COM□ONENTS INS□ECTED B□ A FDE□ CERTIFIED INS□ECTOR AND MAINTAIN ALL CONTROLS DAIL□, AND HAVE □ EEKL□ S□ □□□ INS□ECTION RE□ORTS □RE□ARED, AND □ ITHIN 24 HOURS OF THE END OF AN□ RAINFALL EVENT THAT IS ½" OR □REATER.
-EN□INEER SHALL INS□ECT □ERIODICALL□.

NOTES□
1.THIS □LAN □SHEETS 4 AND □□, CO□□ OF FDE□ NOI □STATE OF FLORIDA □ENERIC □ERMIT FOR STORM□ ATER DISCHAR□E FROM LAR□E AND SMALL CONSTRUCTION ACTIVITIES□AND ALL RE□UIRED INS□ECTION RE□ORTS, TESTS, AND ALL OTHER DOCUMENTATION SHALL BE KE□T AT THE □RO□ECT SITE.
2.THE FOLLO□ IN□ CERTIFICATION SHALL BE COM□LETED B□ AL CONTRACTORS/ SUB-CONTRACTORS RES□ONSIBLE FOR AN□ □ORTION OF THE IM□LEMENTATION OF THE S.□ .□.□.□.□

CERTIFICATION□
" I CERTIF□ UNDER THE □ENALT□ OF LA□ THAT I UNDERSTAND AND SHALL COM□L□ □ ITH, THE TERMS AND CONDITIONS OF THE STATE OF FLORIDA □ENERIC □ERMIT FOR STORM□ ATER DISCHAR□E FROM LAR□E AND SMALL CONSTRUCTION ACTIVITIES AND THIS STORM□ ATER □OLLUTION □REVENTION □LAN □RE□ARED THEREUNDER,"

S□ □□□ DESCRI□TION OF □ ORK/ RES□ONSIBILIT□	NAME TITLE	CONTRACTOR OR SUB CONTRACTOR □NAME, ADDRESS, □HONE□	NAME/SI□NATURE TO CERTIFICATION	DATE
			B□□ SI□NATURE	
			B□□ SI□NATURE	
			B□□ SI□NATURE	

□LAN □RE□ARATION□
1. THIS □LAN ORI□INALL□ □RE□ARED B□ THE O□ NER□S EN□INEER. THIS □LAN □ ILL BE MADE AVAILABLE TO CONTRACTOR TO EDIT, CHAN□E, MODIF□, AS IT DEEMS NECESSAR□ FOR COM□LIANCE □ ITH FDE□ RE□ULATIONS, □ERMIT CONDITIONS, AND AS RE□UIRED FOR CONTRACTOR TO SI□N THE CERTIFICATION BELO□ .
2. THE FOLLO□ IN□ CERTIFICATION SHALL BE SI□NED B□ THE ENTIT□ □CONTRACTOR□ RES□ONSIBLE FOR S□ □□ □LAN IM□LEMENTATION□

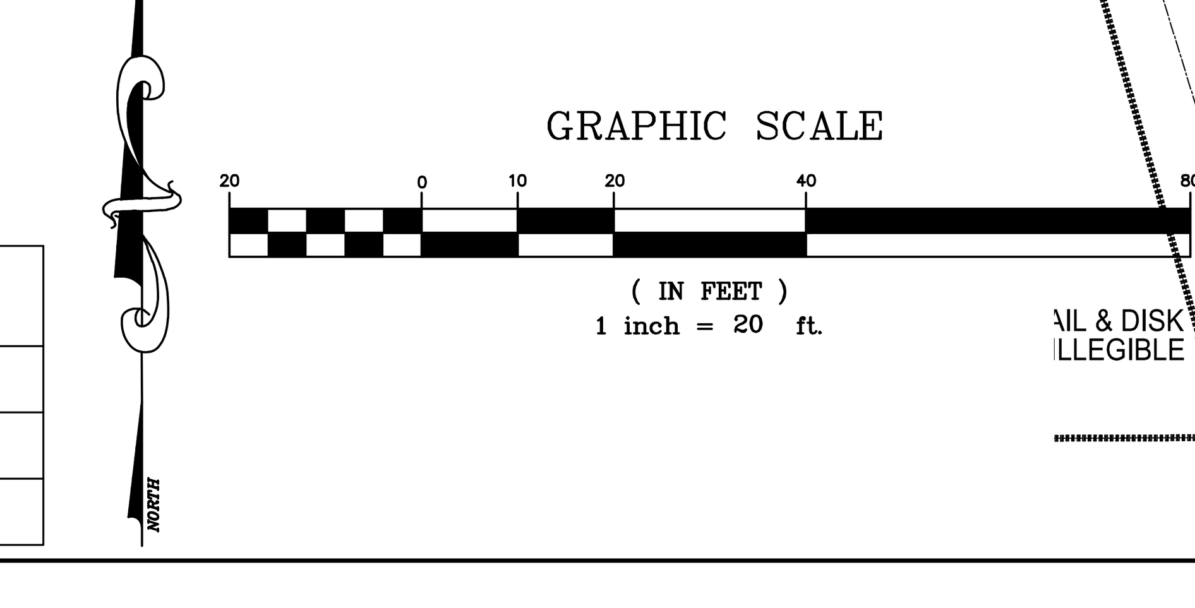
" I CERTIF□ UNDER □ENALT□ OF LA□ THAT THIS DOCUMENT AND ALL ATTACHMENTS □ ERE □RE□ARED UNDER M□ DIRECTION OR SU□ERVISION IN ACCORDANCE □ ITH A S□STEM DESI□NED TO ASSURE THAT □UALIFIED □ERSONNEL □RO□ERL□ □ATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON M□ IN□UIR□ OF THE □ERSON OR □ERSONS □ HO MANA□E THE S□STEM, OR THOSE □ERSONS DIRECTL□ RES□ONSIBLE FOR □ATHERIN□ THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF M□ KNO□ LED□E AND BELIEF TRUE, ACCURATE, AND COM□LETE. I AM A□ ARE THAT THERE ARE SI□NIFICANT □ENALTIES FOR SUBMITTIN□ FALSE INFORMATION, INCLUDIN□ THE □OSSIBILIT□ OF FINE AND IM□RISONMENT FOR KNO□ IN□ VIOLATIONS."

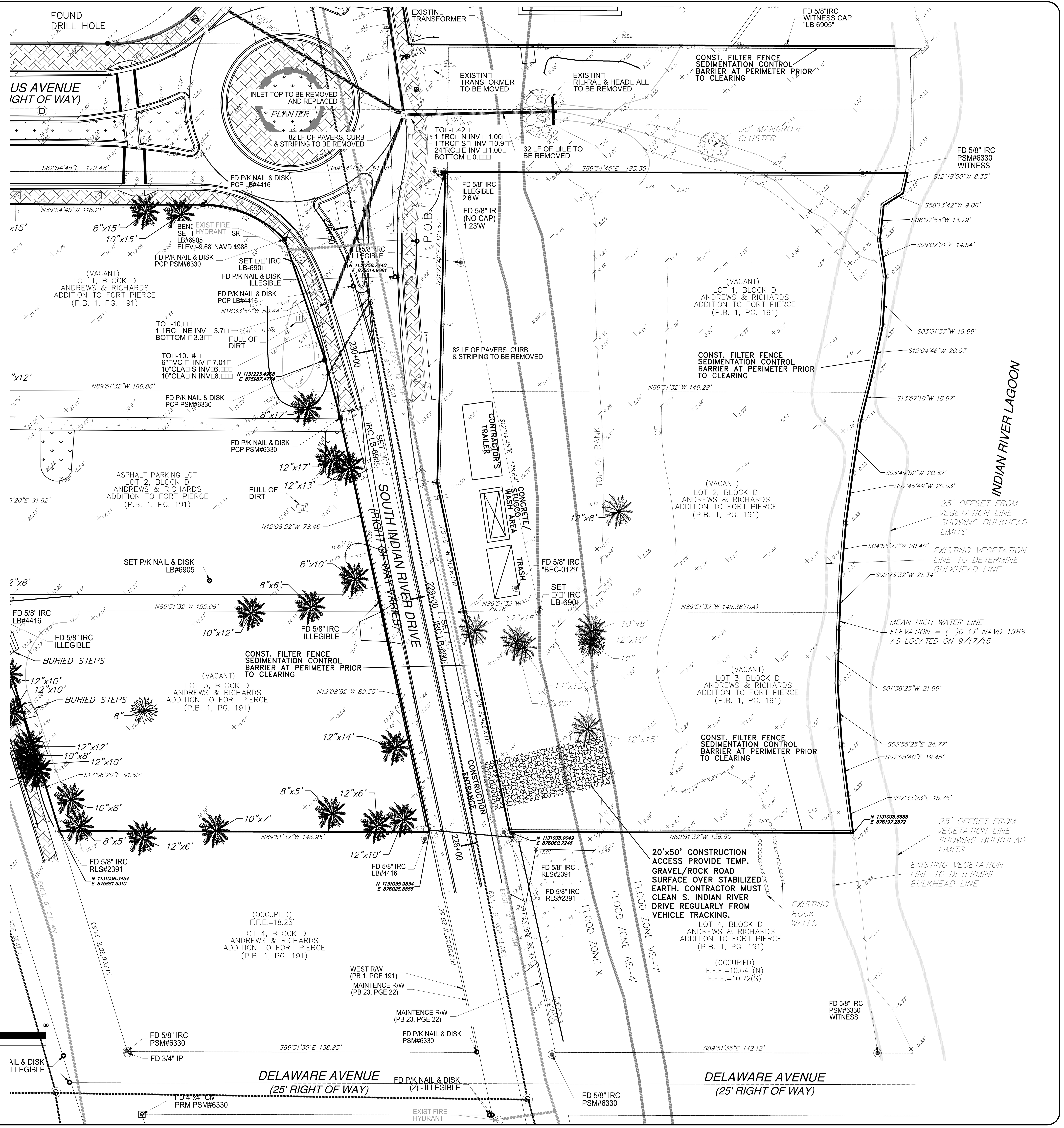
B□□ ______________________ DATE□ ____________.

SI□NATURE ______________________.

ARCHAEOLO□ICAL□
IF □REHISTORIC OR HISTORIC ARTIFACTS, SUCH AS □OTTER□ OR CERAMICS, STONE TOOLS, OR METAL IM□LEMENTS, OR AN□ OTHER □H□SICAL REMAINS THAT COULD BE ASSOCIATED □ ITH THE NATIVE AMERICAN CULTURES, OR EARL□ COLONIAL OR AMERICAN SETTLEMENT ARE ENCOUNTERED AT AN□ TIME □ ITHIN THE □RO□ECT SITE AREA, THE □ERMITTED □RO□ECT SHOULD CEASE ALL ACTIVITIES INVOLVIN□ SUBSURFACE DISTURBANCE IN THE IMMEDIATE VICINIT□ OF SUCH DISCOVERIES. THE □ERMITEE, OR OTHER DESI□NEE, SHOULD CONTACT THE FLORIDA DE□ARTMENT OF STATE, DIVISION OF HISTORICAL RESOURCES, REVIE□ AND COM□LIANCE SECTION AT □□□0□24□-6333 OR □□00□□47-727□, AS □ ELL AS THE A□□RO□RIATE □ERMITTIN□ A□ENC□ OFFICE. □RO□ECT ACTIVITIES SHOULD NOT RESUME □ ITHOUT VERBAL AND/OR □ RITTEN AUTHORI□ATION FROM THE DIVISION OF HISTORICAL RESOURCES. IN THE EVENT THAT UNMARKED HUMAN REMAINS ARE ENCOUNTERED DURIN□ □ERMITTED ACTIVITIES, ALL □ ORK SHALL STO□ IMMEDIATEL□ AND THE □RO□ER AUTHORITIES NOTIFIED IN ACCORDANCE □ ITH SECTION □72.0□, FLORIDA STATUTES.

EROSION AND SEDIMENTATION CONTROL
A. THE LAND DISTURBIN□ ACTIVIT□ SHALL CONFORM TO EXISTIN□ TO□O□RA□H□ AND SOIL T□□E SO AS TO CREATE THE LO□ ES □RACTICAL EROSION □OTENTIAL.
B. LAND DISTURBIN□ ACTIVITIES SHALL BE CONDUCTED IN A MANNER MINIMI□IN□ EROSION.
C. THE DISTURBED AREA AND THE DURATION OF EX□OSURE TO EROSIVE ELEMENTS SHALL BE KE□T TO A □RACTICABLE MINIMUM.
D. EROSION CONTROL MUST BE STRICTL□ MAINTAINED DURIN□ CUT AND FILL O□ERATIONS
E. DISTURBED SOIL SHALL BE STABILI□ED AS □UICKL□ AS □RACTICABLE.
F. □ HENEVER FEASIBLE, NATURAL VE□ETATION OR MULCHIN□ SHALL BE EM□LO□ED TO □ROTECT EX□OSED CRITICAL AREAS DURIN□ DEVELO□MENT.
□. TEM□ORAR□ VE□ETATION OR MULCHIN□ SHALL BE EM□LO□ED TO □ROTECT EX□OSED CRITICAL AREAS DURIN□ DEVELO□MENT.
H. □ERMANENT VE□ETATION AND STRUCTURAL EROSION CONTROL MEASURES SHALL BE INSTALLED AS SOON AS □RACTICABLE.
I. ADE□UATE □ROVISIONS MUST BE □ROVIDED TO MINIMI□E DAMA□E FROM SURFACE □ ATER TO THE CUT FACE OF EXCAVATION OR THE SLO□IN□ SURFACE OF FILLS.
□. TO THE EXTENT NECESSAR□, SEDIMENT IN RUNOFF □ ATER MUST BE TRA□□ED B□ THE USE OF DEBRIS BASINS, SEDIMENT BASINS, SILT TRA□S OR SIMILAR MEASURESUNTIL HE DISTURBED AREA IS STABILI□ED.
K. CUTS AND FILLS MUST BE CONSTRUCTED IN SUCH A MANNER THAT EROSION AND RUNOFF FROM THE SITE DOES NOT ENDAN□ER AD□OININ□ □RO□ERT□.
L. FILLS MA□ NOT ENCROACH U□ON NATURAL □ ATERCOURSES OR CONSTRUCTED CHANNELS IN A MANNER SO AS TO ADVERSEL□ AFFECT OTHER □RO□ERT□ O□ NERS □ ITHOUT ADE□UATE □ROVISIONS FOR AN E□UIVALENT ALTERANTE S□STEM □ ITH A □OSITIVE OUTFALL.
M. ALL R.O.□ .□S, □ ATER□ A□S, STREETS AND SIDE□ ALKS SHALL BE BUFFERED B□ A T□ ENT□ □20□FOOT □ IDE STRI□ OF □RASS OR OTHER SUITABLE MEANS.
N. □RADIN□ E□UI□MENT MUST CROSS FLO□ IN□ STREAMS B□ MEANS OF BRID□ES OR CULVERTS EXCE□T □ HEN SUCH METHODS NOT FEASIBLE AND □ROVIDED IN AN□ CASE, THAT SUCH CROSSIN□S ARE KE□T TO A MINIMUM AND SEDIMENTATION CONTROL DEVICES ARE □ROVIDED.





MARK	REVISION	DATE
1	REVISED PER C.O.F.P.	10/30/15
2	REVISED PER C.O.F.P.	11/24/15

DRAWING 15086-CON
DESIGNED J.B.B.
DRAWN J.B.B.
CHECKED J.B.B.
SCALE 1:20
DATE 9/28/15

SCHULKE, BITTLE & STODDARD, L.L.C.
CIVIL & STRUCTURAL ENGINEERING · LAND PLANNING · ENVIRONMENTAL PERMITTING
CERTIFICATION OF AUTHORIZATION NO.: 00008668
1717 INDIAN RIVER BLVD., SUITE 201 VERO BEACH, FLORIDA 32960
TEL 772 / 770-9622 FAX 772 / 770-9496 EMAIL info@sbsengineers.com

EXISTING CONDITIONS/ DEMOLITION AND POLLUTION PREVENTION PLAN

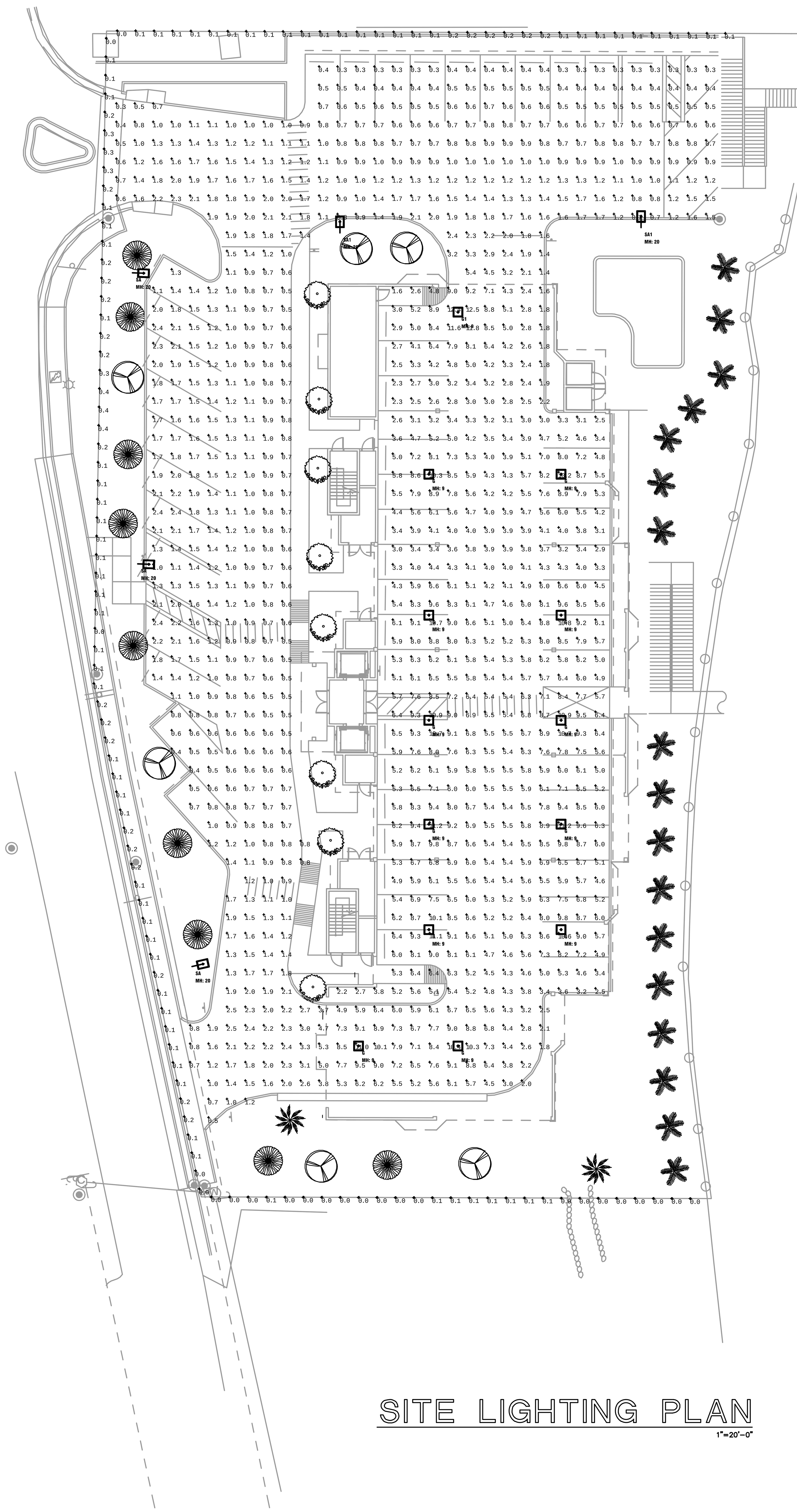
INDIAN RIVER VILLAS

ENGINEER CERTIFICATION
- JOSEPH W. SCHULKE FL. REG. NO. 47048
- JODAH B. BITTLE FL. REG. NO. 57396
- WILLIAM P. STODDARD FL. REG. NO. 57605

DATE:

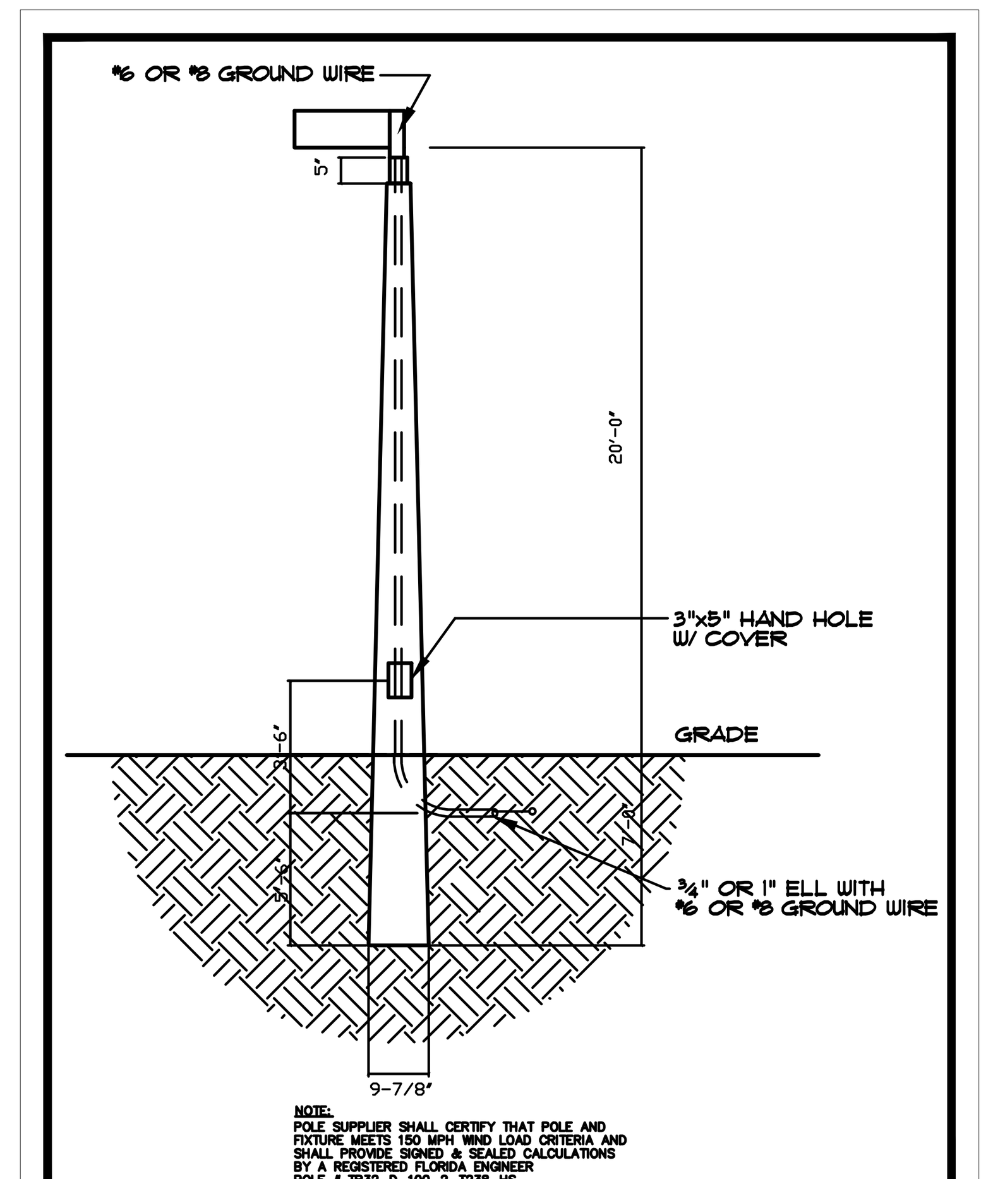
SHEET 2

PROJECT NO. 15-086



SITE LIGHTING PLAN

1"=20'-0"



#6 OR #8 GROUND WIRE
5'
20'-0"
3"x5" HAND HOLE W/ COVER
GRADE
3/4" OR 1" ELL WITH #6 OR #8 GROUND WIRE
9-7/8"
NOTE:
POLE SUPPLIER SHALL CERTIFY THAT POLE AND FIXTURE MEETS 150 MPH WIND LOAD CRITERIA AND SHALL PROVIDE SIGNED & SEALED CALCULATIONS BY A REGISTERED FLORIDA ENGINEER
POLE # TB32-D-100-2-T238-HS

DIRECT BURIAL FIBERGLASS POLE DETAIL

NOT TO SCALE

Luminaire Schedule

Symbol	Qty	Label	Description	Lumens/Lamp	LLD	LDD	BF	LLF	Lum. Watts	Total Watts
⊡	12	G	VISIONAIRE PGA-1-T5W-32LC-7-4K-UNV	N.A.	0.900	0.900	1.000	0.810	71	852
⊡	1	G1	VISIONAIRE PGA-1-T5W-48LC-7-4K-UNV	N.A.	0.900	0.900	1.000	0.810	102.19	102.19
⊡	3	SA	PHILIPS GARDCO ECF-3-75LA-4853-NW-IS POLE MOUNT 20' A.F.G.	N.A.	0.900	0.900	1.000	0.810	77.4	232.2
⊡	2	SA1	PHILIPS GARDCO ECF-3-55LA-3253-NW-IS POLE MOUNT 20' A.F.G.	N.A.	0.900	0.900	1.000	0.810	51.6	103.2

Calculation Summary

Label	Avg	Max	Min	Avg/Min	Max/Min
SPILL, HORIZONTAL	0.11	0.4	0.0	N.A.	N.A.
SPILL, VERTICAL	0.20	0.5	0.0	N.A.	N.A.
GARAGE PARKING	5.92	12.5	1.6	3.70	7.81
OPEN PARKING	1.19	5.4	0.3	3.97	18.00

#	revision	date

KAMM Consulting

project title: INDIAN RIVER VILLAS

sheet title: SITE LIGHTING PLAN

projt. no.:	2015–0969
project manager:	DM
checked by:	BLB
scale:	AS NOTED
date:	11/25/2015