Construction Plans and Specifications
for
SAILFISH COVE
LYING IN
SECTION 4, TOWNSHIP 38 S. , RANGE 41 E.
CITY OF STUART, FLORIDA

Project No. 1941 SAILFISH COVE



Location Map

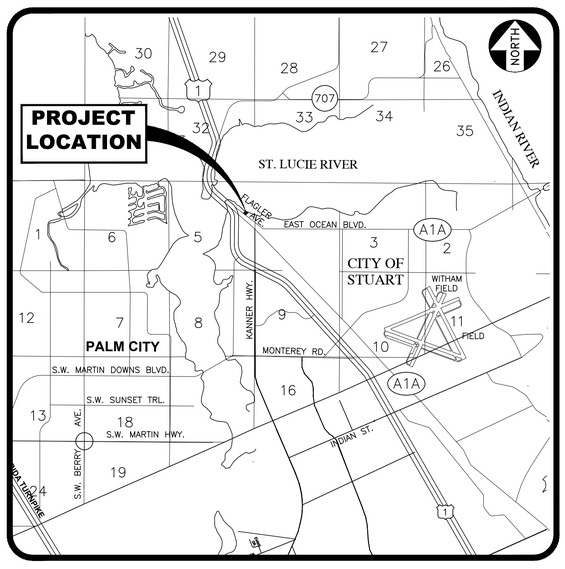
NOTES:
THESE PLANS ARE IN ENGLISH UNITS
ALL ELEVATIONS HEREIN REFERENCE N.A.V.D. 1988 DATUM. ADD 1.48 FEET TO CONVERT TO N.G.V.D. 1929 DATUM. ALL CONSTRUCTION IS TO BE IN ACCORDANCE WITH FLORIDA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.

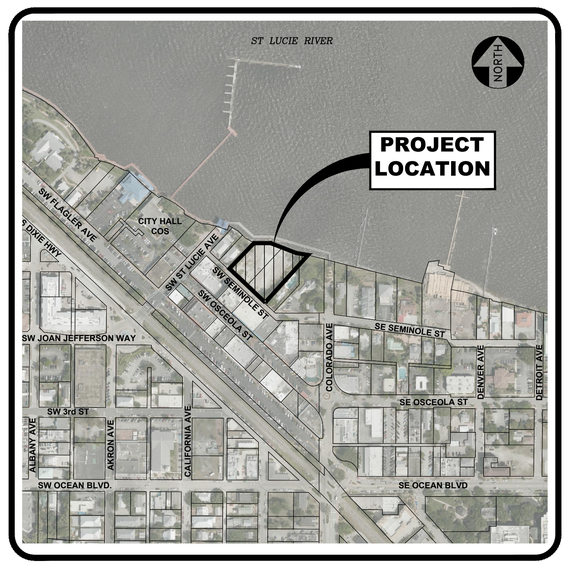
DEVELOPER

SAILFISH COVE STUART, LLC
8180 NW 36th STREET, STE #402
DORAL, FL 33166

ENGINEER

JOSEPH W. CAPRA, P.E. #37638
CAPTEC ENGINEERING, INC.
301 N.W. FLAGLER AVENUE
STUART, FLORIDA 34994
PHONE: (772)-692-4344
FAX: (772)-692-4341





Site Map
N.T.S.

SHEET INDEX

NUMBER - TITLE

1 - COVER
2 - EROSION AND SEDIMENT CONTROL
3 - EROSION CONTROL DETAILS
4 - PAVEMENT MARKING AND LAYOUT
5 - PAVING AND DRAINAGE
6 - CROSS SECTIONS
7 - PAVING AND DRAINAGE DETAILS
8 - UTILITY PLAN
9 - UTILITY DETAILS
10 - UTILITY DETAILS
11 - GENERAL NOTES

PRELIMINARY
5-13-20

CAPTEC Engineering, Inc.
Civil Engineering Professionals
Engineering Business No. EB-0007657

Civil Engineering Professionals

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Stuart, Florida 34994
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Fax: (772) 692-4341

P:\1900\1941 - Sailfish Cove (aka Seminole Bluff)\DWG\1941 Cover.dwg, Cover, 5/15/2020 9:07:34 AM



NOTES:

1. PROPERTY CORNERS SHALL BE LOCATED BY A LICENSED LAND SURVEYOR AND CLEARLY MARKED IN THE FIELD PRIOR TO CONSTRUCTION.
2. AUTHORIZATION TO INSTALL EROSION CONTROL DEVICES AND PRESERVE BARRICADES WILL BE GRANTED AT THE PRE-CONSTRUCTION MEETING.
3. NO LAND CLEARING SHALL BE AUTHORIZED UNTIL THE CITY OF STUART PUBLIC WORKS DEPARTMENT COMPLETES A SATISFACTORY INSPECTION OF REQUIRED EROSION CONTROL STRUCTURES AND BARRICADES.
4. ALL CONSTRUCTION BARRICADES AND SILT FENCES WILL REMAIN IN PLACE AND MONITORED FOR COMPLIANCE BY THE CONTRACTOR DURING CONSTRUCTION ACTIVITIES.
5. SOIL STABILIZATION SHALL BE COMPLETED WITHIN 30 DAYS OF VEGETATION REMOVAL. STABILIZATION TO CONSIST OF PLACEMENT OF SOD OF ALL DISTURBED AREAS.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION AND MAINTENANCE OF EROSION CONTROLS, INCLUDING, BUT NOT LIMITED TO, STABILIZED CONSTRUCTION ENTRANCE, SILT FENCING, FLOATING TURBIDITY BARRIER AND INLET PROTECTION DEVICES AS REQUIRED TO INSURE NO OFFSITE DISCHARGE OF SEDIMENT. STREET SWEEPING WILL ALSO BE PERFORMED BY THE CONTRACTOR.
7. EXISTING WATER VALVE BOXES AND SANITARY SEWER CLEANOUTS NOT UTILIZED SHALL BE ABANDONED.

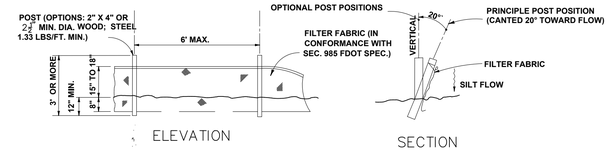
NORTH

10 0 10 20

SCALE: 1" = 20'

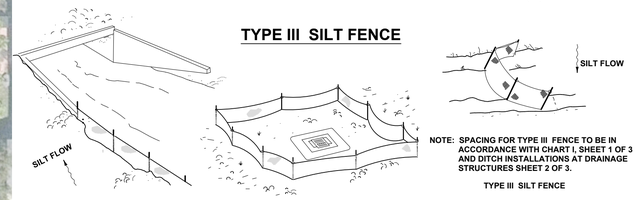
LEGEND

- PROPERTY LINE
- EXIST. EDGE OF PAVEMENT AND CURB
- EXIST. SIDEWALK
- SILT FENCE
- TURBIDITY BARRIER



NOTE: SILT FENCE TO BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR STAKED SILT FENCE (LF).

TYPE III SILT FENCE



TYPE III SILT FENCE

TYPE III SILT FENCE PROTECTION AROUND DITCH BOTTOM INLETS.

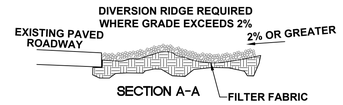
NOTE: SPACING FOR TYPE III FENCE TO BE IN ACCORDANCE WITH CHART I, SHEET 1 OF 3 AND DITCH INSTALLATIONS AT DRAINAGE STRUCTURES SHEET 2 OF 3.

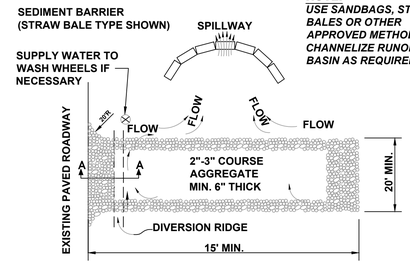
TYPE III SILT FENCE

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

(FDOT INDEX NO. 102, SHT. 3)





NOTE: *USE SANDBAGS, STRAW BALES OR OTHER APPROVED METHODS TO CHANNELIZE RUNOFF TO BASIN AS REQUIRED.*

NOTES:

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

STABILIZED CONSTRUCTION ENTRANCE/EXIT DETAIL

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Engineering Business No. EB-0007657

CAPTEC Engineering, inc.
Civil Engineering Professionals

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DESIGNED BY:	MDB
CHECKED BY:	JWC
PROJECT No.:	1941
HORZ. SCALE:	1" = 20'
VERT. SCALE:	1941.950
CADD FILE:	

NO.	DATE	BY	REVISIONS

SCALE VERIFICATION
0 1
SOLID BAR IS EQUAL TO ONE INCH ON ORIGINAL DRAWING. ADJUST ALL SCALED DIMENSIONS ACCORDINGLY

SAILFISH COVE
CITY OF STUART, FLORIDA
EROSION AND SEDIMENT CONTROL

Joseph W. Capra
301 N.W. Flagler Ave.
Stuart, Florida 34994
P.E. No. 37638

Printed Date:

JOB No.: 1941
SHEET 2 OF 11

P:\1900\1941 - Sailfish Cove (aka Seminole Bluff)\DWG\1941 ero&sep. ero. 5/15/2020 9:07:44 AM

LEGEND

- PROPERTY LINE
- EXIST. EDGE OF PAVEMENT
- EXIST. SIDEWALK
- CLOSED SIDEWALK
- TRUCK ENTRANCE ROCK EROSION CONTROL
- AREA FOR CONSTRUCTION VEHICLES
- GATE OPENING INTO FENCE

NORTH

10 0 10 20

SCALE: 1" = 20'

Tiki BBQ Area

S. COLORADO AVE.

SIDEWALK CLOSED AHEAD CROSS HERE

SIDEWALK CLOSED

EXIST. SIDEWALK (OPEN)

EXISTING BRICK PAVER CROSSWALK

ONE WAY

EXIST. SIDEWALK (CLOSED)

SEMINOLE STREET

EXIST. SIDEWALK

EXISTING HYDRANT

ST. LUCIE AVE.

AREA FOR CONSTRUCTION VEHICLES

TRUCK / EXIT

TRUCK / EXIT GATE OPENING

6' HIGH OPAQUE CHAIN LINK FENCE (ALONG CURB)

TRUCK / ENTRANCE GATE OPENING

TRUCK / ENTRANCE

MAKE ADA ACCESSIBLE

EXISTING HYDRANT

EXISTING DUMPSTER LOCATION

TEMPORARY ACCESS WITH CONES

EXISTING DUMPSTER LOCATION

SIDEWALK CLOSED AHEAD CROSS HERE

EXIST. SIDEWALK (OPEN)

SEMINOLE STREET ONE WAY

EXIST. SIDEWALK

EXISTING CROSSWALK

EXISTING HYDRANT

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Civil Engineering Professionals
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Engineering Business No. EB-0007557

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CADD FILE:	1941 MOT

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SAILFISH COVE

CITY OF STUART, FLORIDA

PEDESTRIAN - MAINTENANCE OF TRAFFIC

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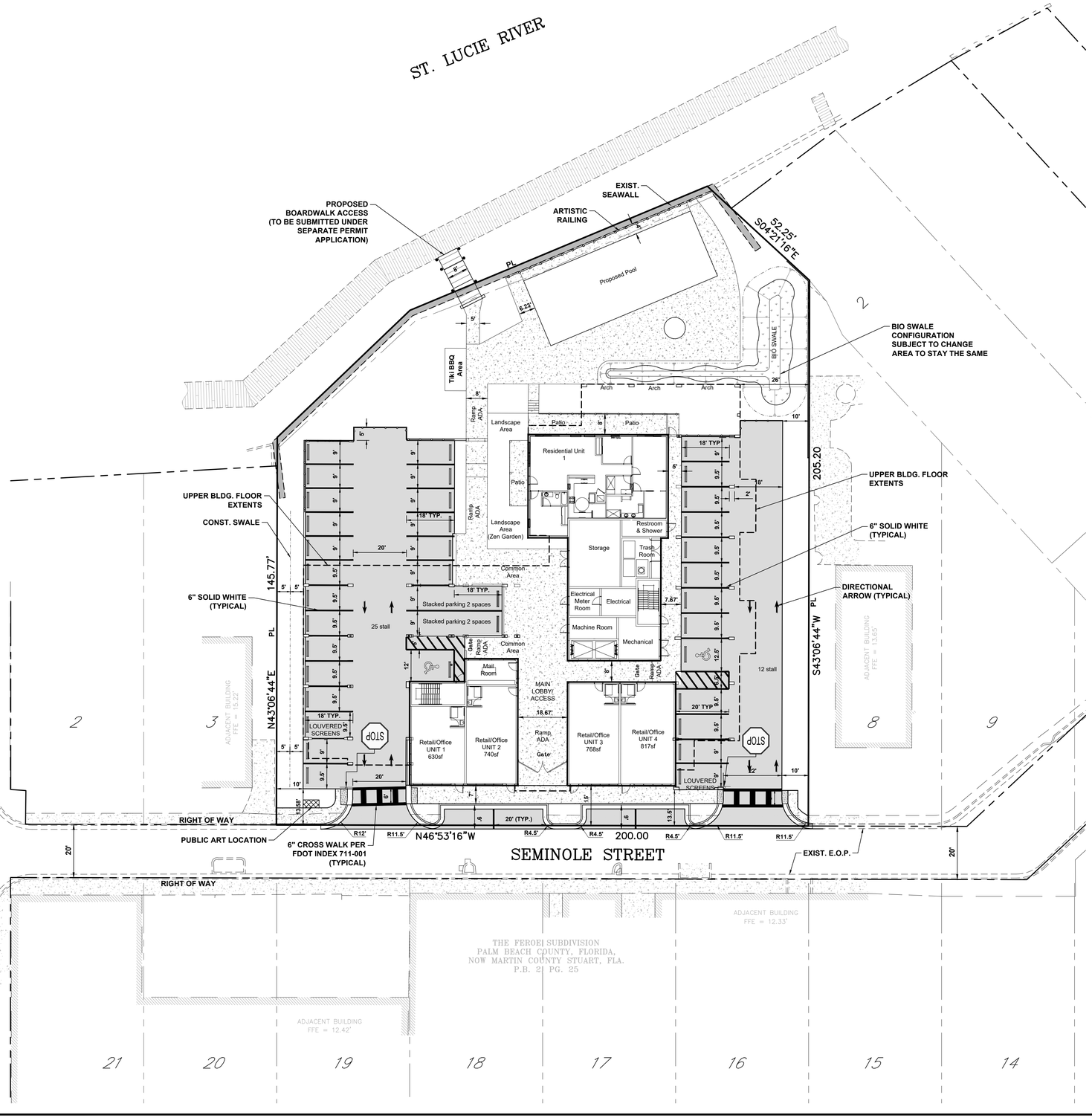
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P:\1900\1941 - Sailfish Cove (aka Seminole Bluff)\ENG\1941 MOT.dwg, HORZ, 5/15/2020 9:07:57 AM



NORTH

10 0 10 20

SCALE: 1" = 20'

SAILFISH COVE

SITE	40,308 SF	0.925 AC	100.0%
BUILDINGS	7,005 SF	0.161 AC	17.4%
PARKING PAVEMENT	13,380 SF	0.307 AC	33.2%
CONCRETE WALK	8,013 SF	0.184 AC	19.9%
POOL	1,579 SF	0.036 AC	3.9%
TOTAL IMPERVIOUS	**29,977** SF	0.688 AC	74.4%
LANDSCAPE AREA ETC	**10,331** SF	0.237 AC	25.6%
TOTAL PERVIOUS	**10,331** SF	0.237 AC	25.6%
PERVIOUS + IMPERVIOUS	**40,308** SF	0.925 AC	100.0%

LEGEND

= CONCRETE PAVEMENT
= CONCRETE WALKS / PATIO
= PROPOSED WHEEL STOP
PL = PROPERTY LINE
= UPPER BUILDING FLOOR EXTENTS

Engineering Business No. EB-0007557

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SAILFISH COVE
CITY OF STUART, FLORIDA
PAVEMENT MARKING AND LAYOUT

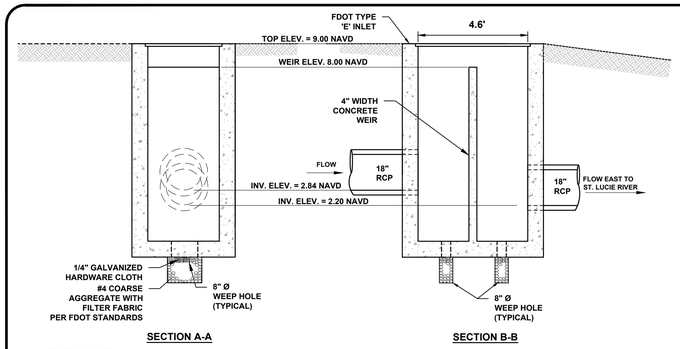
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P.E. No. 37638

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SHEET 4 OF 11

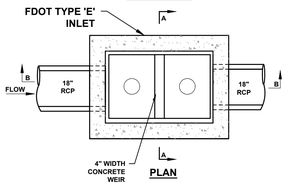
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SECTION A-A

SECTION B-B



PLAN

CS-1
CONTROL STRUCTURE DETAIL



LEGEND

- = CONCRETE PAVEMENT
- = CONCRETE PATIO / WALKS
- = PROPOSED DRAINAGE
- = RAILING ALONG ELEVATION CHANGE

ROOF LEADER & ROOF DRAIN NOTES:

1. INSTALL ROOF LEADERS 3 FT. (MAX.) FROM BUILDING.
2. CONNECT DOWNSPOUTS TO ROOF LEADERS USING ADS N-12 PIPE AND ADS FITTINGS (TEES, ELBOWS, ETC.).
3. DOWNSPOUTS ARE SHOWN FOR INFORMATION PURPOSES - REFER TO ARCHITECTURAL & MEP DRAWINGS FOR EXACT LOCATIONS.
4. ALL ROOF LEADERS SHALL BE INSTALLED WITH 0.5% MIN. SLOPE.
5. ROOF DRAIN CLEAN-OUTS SHALL BE ADS (ADVANCED DRAINAGE SYSTEMS) NYLOPLASTIC 12" GRATE INLINE DRAINS. CONTRACTOR SHALL PROVIDE SHOP DRAWING SUBMITTALS FOR ARCHITECT SELECTIONS.
6. ROOF DRAIN LOCATIONS SHALL BE FIELD ADJUSTED TO ACCOMMODATE SIDEWALKS, PLANTERS, AND LANDSCAPE AREAS PER ARCHITECT'S DIRECTION.
7. ROOF DRAIN SHALL BE LOCATED TO MINIMIZE CONFLICTS AND WITH A MINIMUM 12" CLEARANCE BETWEEN WATER, SEWER AND STORM UTILITIES.
8. CONTRACTOR TO REFER TO THE LATEST ARCHITECTURAL DRAWING FOR ROOF DRAIN DOWN SPOUT LOCATIONS.
9. ALL PROPOSED YARD DRAINS SHALL BE IN-LINE ADS-N-12 WITH 8" ADS-N12 PIPE.

INLETS TABLE	
NAME	DETAILS
CS-1	CONST. CONTROL STRUCTURE WEIR EL. = 8.00 GRATE EL. = 9.00 N INV. 2.20 S INV. 2.84
SD-1	CONST. TYPE C INLET GRATE EL. = 12.15 NE INV. 4.30
SD-2	CONST. TYPE C INLET GRATE EL. = 12.15 NE INV. 4.30 SW INV. 4.30
SD-3	CONST. TYPE C INLET GRATE EL. = 6.50 NW INV. 4.30 SW INV. 4.30 NE INV. 4.30
SD-4	CONST. TYPE C INLET GRATE EL. = 12.28 NE INV. 4.30 SW INV. 4.30
SD-5	CONST. TYPE C INLET GRATE EL. = 12.28 NE INV. 4.30
SD-6	CONST. STORM MH GRATE EL. = 9.05 SE INV. 4.30 SW INV. 4.30 N INV. 2.84 E INV. 4.24 NW INV. 4.13
YD-1	CONST. ADS N-12 YARD DRAIN GRATE EL. = 6.75 SW INV. 4.45
YD-2	CONST. ADS N-12 YARD DRAIN GRATE EL. = 6.00 W INV. 4.30
YD-3	CONST. ADS N-12 YARD DRAIN GRATE EL. = 6.67 SW INV. 4.22 SE INV. 4.22
YD-4	CONST. ADS N-12 YARD DRAIN GRATE EL. = 6.00 NE INV. 4.30

STORM MANHOLES	
NAME	DETAILS
SD-6	CONST. STORM MH RIM EL. = 8.00 GRATE EL. = 9.00 SW INV. 4.30 N INV. 2.84 E INV. 4.24 NW INV. 4.13

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CHECKED BY: JWC
PROJECT No.: 1941
HORZ. SCALE: 1" = 20'
VERT. SCALE:
CADD FILE: PAVING AND DRAINAGE

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SAILFISH COVE
CITY OF STUART, FLORIDA
PAVING AND DRAINAGE

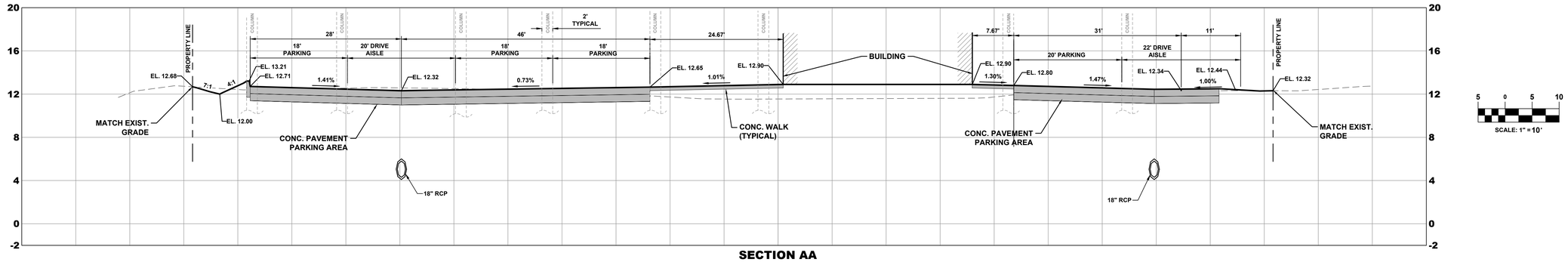
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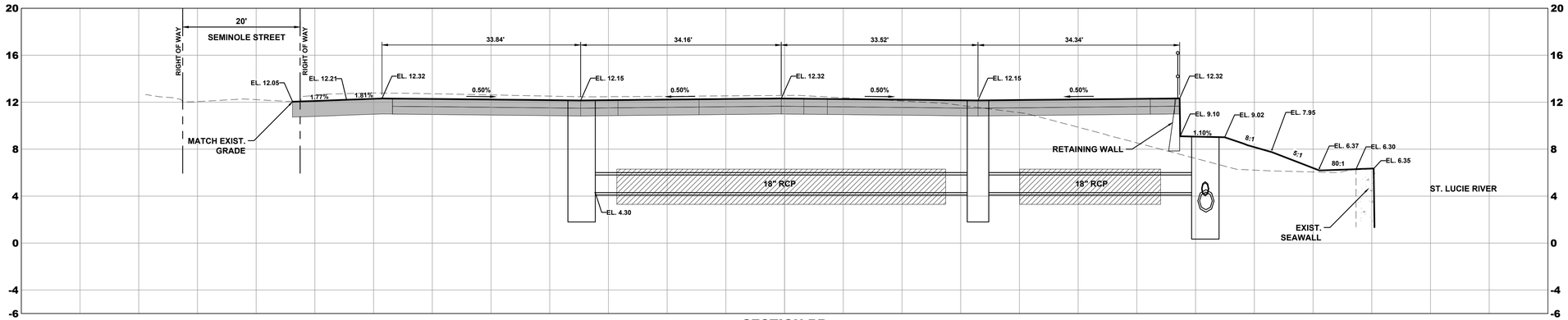
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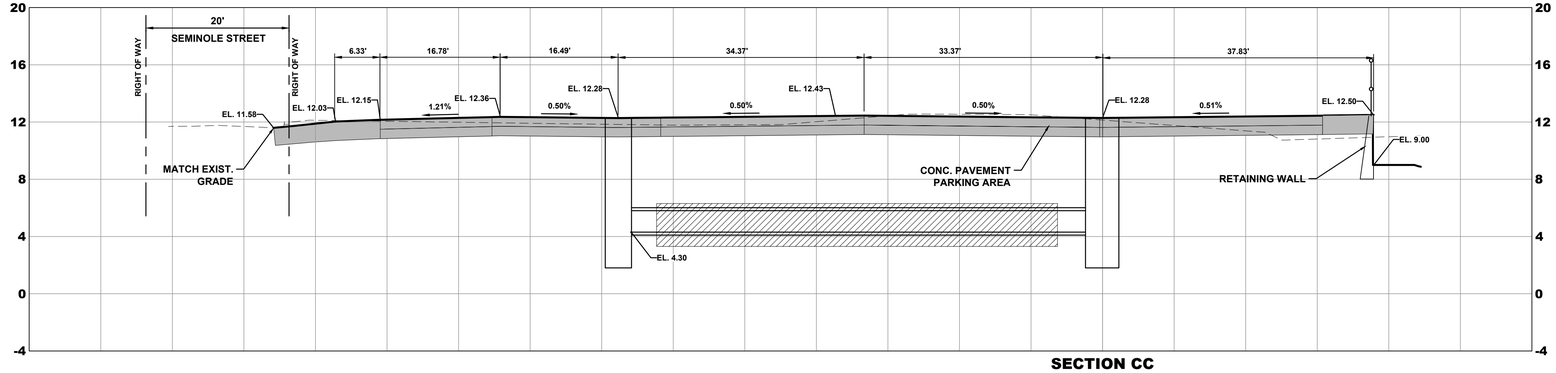
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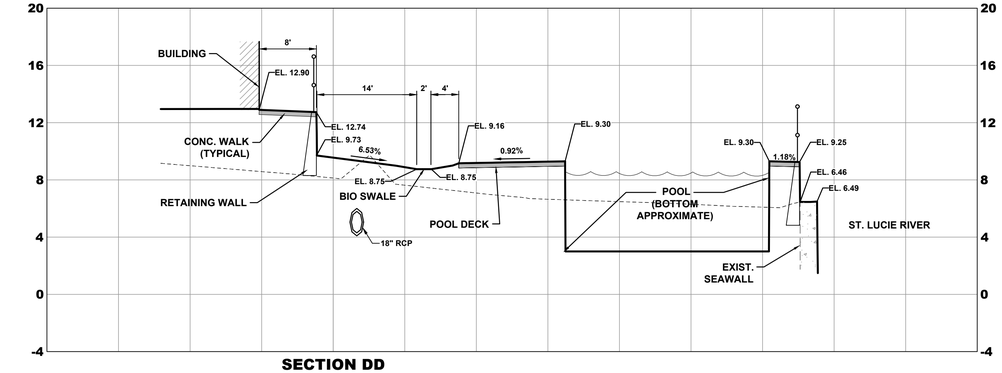
SECTION AA



SECTION BB



SECTION CC



SECTION DD

SCALE:
1" = 10' HORZ
1" = 5' VERT

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SAILFISH COVE
CITY OF STUART, FLORIDA

CROSS SECTIONS

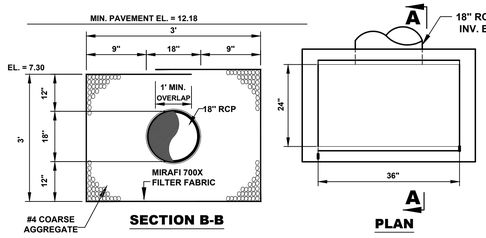
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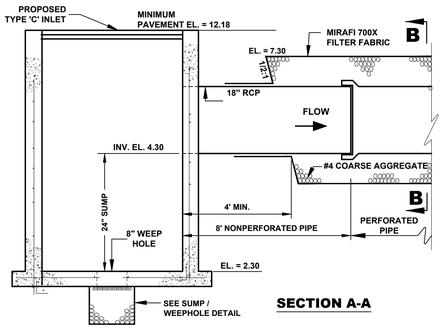
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SHEET 6 OF 11

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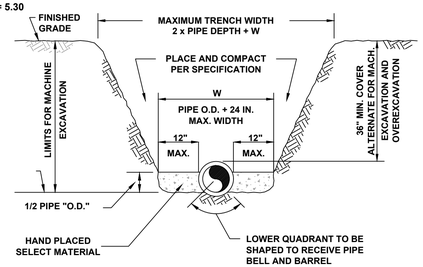


EXFILTRATION TRENCH

NTS

(F.D.O.T. INDEX #285)

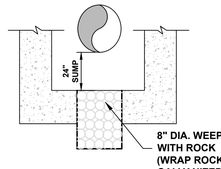
(F.D.O.T. TYPE 'E' INDEX #232)



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 98% OF MAX. DENSITY AS DETERMINED BY AASHTO METHOD T-180.

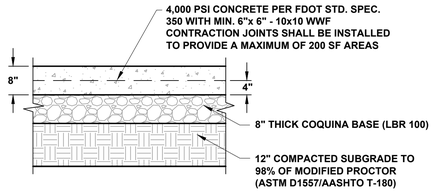
TYPICAL TRENCH DETAIL



NOTE: ALL INLETS (TYPE 'C', TYPE 'E', TYPE P-9, AND TYPE P-9 MODIFIED) SHALL HAVE A MINIMUM 24" SUMP AND 8" WEEPHOLE.

SUMP / WEEPHOLE DETAIL

N.T.S.

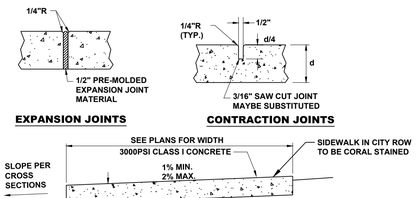


NOTES:

1. CONCRETE PAVEMENT JOINTS SHALL BE INSTALLED PER FDOT INDEX 305. TRANSVERSE JOINTS ARE TO BE SPACED AT A MAXIMUM OF 15'. DOWELS ARE REQUIRED AT ALL TRANSVERSE JOINTS.
2. ALL LONGITUDINAL JOINTS REQUIRE DOWWELS ($4 BARS, 24" LONG ON 30" CENTERS).
3. ALL JOINTS WILL BE REQUIRED TO BE SEALED AS PER THE INDEX. THE INITIAL SAW CUT FOR THE JOINTS SHOULD BE MADE WITHIN 12 HOURS. THE INITIAL CUT WILL BE 1/8" WIDE AND 1/3 THE SLAB THICKNESS OR MINIMUM 2" DEEP. THE SECOND CUT TO ACCEPT THE JOINT SEALANT SHALL BE MADE PRIOR TO SEALING. THE JOINTS SHOULD BE SEALED PRIOR TO PLACING TRAFFIC ON THE PAVEMENT OR WITHIN 72 HOURS OF FINAL SAWING, WEATHER PERMITTING.
4. SEALED JOINT WIDTHS SHALL BE ¼" WIDE X 1" DEEP FOR CONSTRUCTION JOINTS (NEW CONCRETE POURED AGAINST PREVIOUSLY POURED / CURED CONCRETE). ALL OTHER JOINTS, (CONTRACTION, TRANSVERSE, LONGITUDINAL) SHALL BE 3/8" WIDE X 1 ¼" DEEP. JOINTS REQUIRE BACKER ROD AS PER TABLE ON SHEET 2 OF 4 OF INDEX 305.
5. THE CONCRETE SHALL BE CURED IN ACCORDANCE WITH THE SPECIFICATIONS WHICH REQUIRES WHITE CURING COMPOUND SPREAD AT OF 1 GALLON PER 200 SF WITH A MECHANICAL SPRAYER. ANOTHER OPTION FOR CURING IS COVERING THE PAVEMENT WITH BURLAP MATS AND KEEPING MATS MOISTENED FOR THE FULL 72 HOUR CURING PERIOD.
6. ALL FORMWORK AND REINFORCEMENT SHALL BE INSPECTED BY THE ENGINEER PRIOR TO POURING CONCRETE.

TYPICAL CONCRETE SECTION

N.T.S.

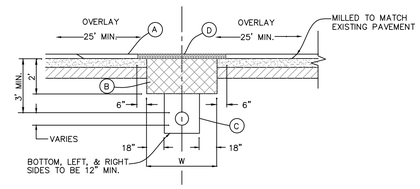


NOTES:

1. PROVIDE EXPANSION JOINTS 120' CENTER TO CENTER, AT PC & PT OF CURVES, JUNCTIONS OF EXISTING & NEW SIDEWALKS, AND WHERE SIDEWALK ABUTS CURBS, DRIVEWAYS & SIMILAR STRUCTURES.
2. PROVIDE CONTRACTION JOINTS 5' CENTER TO CENTER.
3. SOD SHALL BE PLACED BELOW EDGE OF SIDEWALK TO ALLOW DRAINAGE.

TYPICAL SIDEWALK

N.T.S.



A. OVERLAY SHALL EXTEND 25' BEYOND TRENCH WALL ON BOTH SIDES OF ROAD CUT. MINIMUM TYPE S-III ASPHALT OR MATCH EXISTING SURFACE MATERIAL WHEN POSSIBLE

B. CONSTRUCT 2.0' DEEP X WIDTH AND LENGTH OF TRENCH WITH CEMENTED COQUINA OR LIMEROCK. SEE SPECIFICATIONS #2 BELOW FOR COMPACTION REQUIREMENTS.

C. PROVIDE CLEAN BACKFILL. BACKFILL SHALL BE REPLACED IN 6" LAYERS. EACH LAYER SHALL BE MECHANICALLY COMPACTED TO A MINIMUM 98% DENSITY AS DETERMINED BY AASHTO T-180.

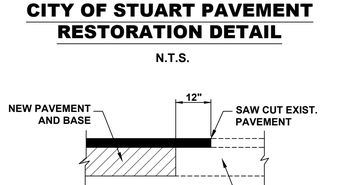
D. DITCH WIDTH (W)+12", MATCH EXISTING TYPE AND THICKNESS OF ASPHALT OR TYPE S-III.

NOTES:

1. REPLACED BASE MATERIAL OVER DITCH SHALL BE AS SHOWN ABOVE.
2. BASE MATERIAL SHALL BE PLACED IN 6" LAYERS OR AS OTHERWISE APPROVED AND EACH LAYER THOROUGHLY MECHANICALLY COMPACTED TO (98%) DENSITY AS DETERMINED BY AASHTO T-180.
3. FINAL ASPHALT CONCRETE PAVEMENT JOINTS SHALL BE MILLED TO MATCH EXISTING ASPHALT.
4. ALL PAVEMENT JOINTS SHALL BE MECHANICALLY SAWED 90 DEGREES.
5. SURFACE MATERIAL WILL BE CONSISTENT WITH EXISTING SURFACE OR AS OTHERWISE DIRECTED (TYPE S-III) AND PLACED IN ACCORDANCE WITH FDOT REQUIREMENTS.
6. A MINIMUM OF TWO DENSITY TESTS SHALL BE TAKEN FOR EACH SIX (6) INCH LIFT OF SUBGRADE AND EACH OPEN CUT CROSSING. WHEN THE SPECIFIED COMPACTED BASE IS GREATER THAN SIX AND ONE-HALF (6-1/2) INCHES THE BASE SHALL BE CONSTRUCTED IN TWO OR MORE COURSES. PROCTORS FOR MATERIALS USED IN BACK-FILLING SHALL BE OBTAINED BY A CERTIFIED LABORATORY. DENSITY TESTS SHALL BE CONDUCTED BY A CERTIFIED LABORATORY OR THE PERMITTEE'S CONSULTANTS. THE PERCENTAGE OF MAXIMUM DENSITY REQUIRED SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS. A COPY OF ALL COMPLETED AND ACCEPTED DENSITY TESTS SHALL BE FURNISHED TO THE COUNTY ENGINEER'S OFFICE PRIOR TO FINAL INSPECTION.

CITY OF STUART PAVEMENT RESTORATION DETAIL

N.T.S.



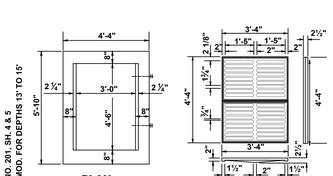
NOTES:

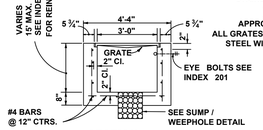
1. SAW CUT CONTRACTION JOINTS ON 10' CENTERS MAX. WITHIN 48 HOURS AFTER POURING CURB.
2. ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH FDOT SPECIFICATIONS SECTION 520 AND FDOT ROADWAY & TRAFFIC DESIGN STANDARDS INDEX NUMBER 300.
3. WHEN USED ON HIGH SIDE OF ROAD, THE CROSS SLOPE OF THE GUTTER SHALL MATCH THE CROSS SLOPE OF THE ADJACENT PAVEMENT AND THE THICKNESS OF THE LIP SHALL BE 6", UNLESS OTHERWISE SHOWN ON PLANS.

FDOT INDEX 300 TYPE F CURB & GUTTER

N.T.S.

SAW-CUT DETAIL



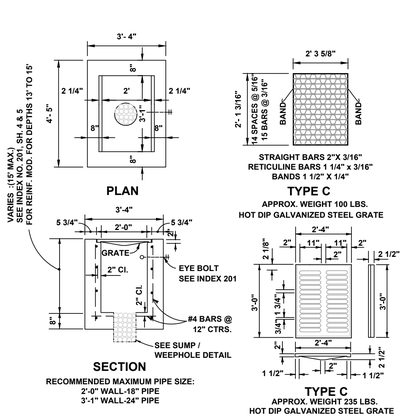


RECOMMENDED MAXIMUM PIPE SIZE:
3'-0" WALL-24" PIPE

NOTE:
HOT DIP GALVANIZED STEEL GRATES ARE REQUIRED ON INLETS WITH TRAVERSABLE SLOTS AND ON INLETS WHERE BICYCLE TRAFFIC IS ANTICIPATED.

TYPE E INLET DETAIL

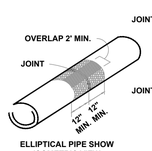
N.T.S. REFER TO FDOT INDEX 232

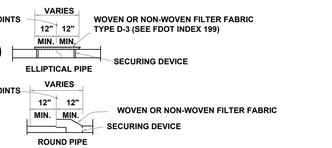


RECOMMENDED MAXIMUM PIPE SIZE:
2'-0" WALL-18" PIPE
3'-1" WALL-24" PIPE

TYPE C INLET DETAIL

N.T.S. REFER TO FDOT INDEX 232





COST OF FILTER FABRIC JACKET TO BE INCLUDED IN COST OF PIPE CULVERTS

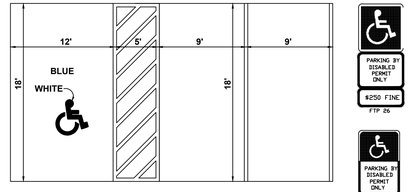
FOR ALL PIPE TYPES - CONCRETE PIPE SHOWN

ALL STORM PIPE JOINTS SHALL BE WRAPPED

STORM PIPE JOINTS SHALL BE WRAPPED ACCORDING TO THIS DETAIL. COMPLETELY WRAP THE OUTSIDE OF EACH JOINT WITH EITHER A WOVEN OR NON-WOVEN FILTER FABRIC WHICH PROVIDES AN AOS OF A NO. 70 TO NO. 100 SIEVE (150 TO 212 um), A MINIMUM OF 24 INCHES (600 mm) IN WIDTH AND A LENGTH TO PROVIDE A MINIMUM OVERLAP OF 24 INCHES (600 mm). SECURE FILTER FABRIC AGAINST THE OUTSIDE OF THE PIPE BY STEEL OR PLASTIC STRAPPING OR BY OTHER METHODS APPROVED BY THE ENGINEER. (REF: F.D.O.T. INDEX 280 FOR DETAILS OF CONSTRUCTION).

FILTER FABRIC JACKET DETAIL

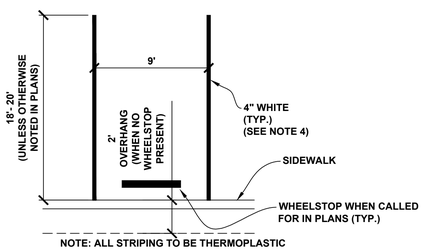
N.T.S.



NOTES:
1. TOP PORTION OF FTP 25 & 26 SHALL HAVE A REFLECTIVE BLUE BACKGROUND WITH WHITE REFLECTIVE SYMBOL AND BORDER.
2. BOTTOM PORTION SHALL HAVE A REFLECTIVE WHITE BACKGROUND WITH BLACK OPAQUE LEGEND AND BORDER.
3. FTP 25 & 26 MAY BE FABRICATED ON ONE PANEL OR TWO.
4. FTP 25 IS FOR USE IN AREAS WHERE SPACE IS LIMITED

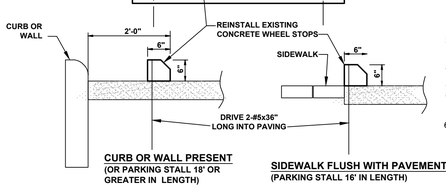
HANDICAP PARKING DETAIL

N.T.S.



TYPICAL PARKING DETAIL

N.T.S.



TYPICAL WHEELSTOP

NTS

Civil Engineering Professionals
CAPTEC Engineering, Inc.
Engineering Business No. EB-0007657
• 301 N.W. Flagler Ave.
Stuart, Florida 34994
Phone: (772) 692-4344
Fax: (772) 692-4341

DATE: 4-21-20
DRAWN BY: MDB
DESIGNED BY: MDB
CHECKED BY: JWC
PROJECT No.: 1941
HORZ. SCALE:
VERT. SCALE:
CADD FILE: 1941STD1&3

NO.	DATE	BY	REVISIONS

SCALE VERIFICATION
0 1
SOLID BAR IS EQUAL TO ONE INCH ON ORIGINAL DRAWING. ADJUST ALL SCALED DIMENSIONS ACCORDINGLY

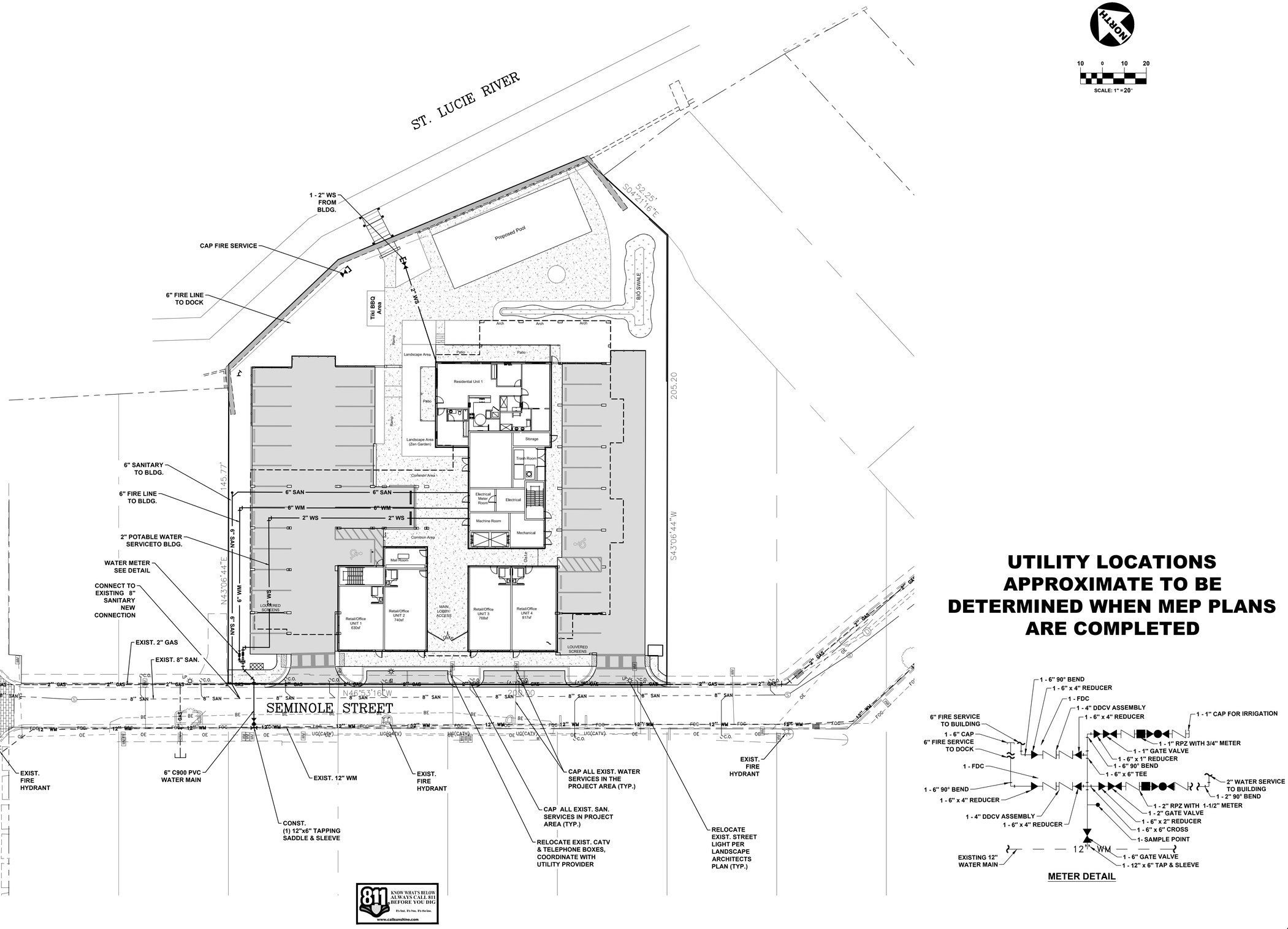
SAILFISH COVE
CITY OF STUART, FLORIDA
PAVING AND DRAINAGE DETAILS

Joseph W. Capra
301 N.W. Flagler Ave.
Stuart, Florida 34994
P.E. No. 37638

Printed Date:

JOB No.: 1941
SHEET 7 OF 11

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UTILITY LOCATIONS APPROXIMATE TO BE DETERMINED WHEN MEP PLANS ARE COMPLETED

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Engineering Business No. EB-0007557
301 N.W. Flagler Ave.
Stuart, Florida 34994
Phone: (772) 692-4344
Fax: (772) 692-4341

DATE:	4-21-20
DRAWN BY:	MDB
DESIGNED BY:	MDB
CHECKED BY:	JWC
PROJECT No.:	1941
HORZ. SCALE:	1" = 20'
VERT. SCALE:	
CADD FILE:	1941UTILITY

NO.	DATE	BY	REVISIONS

SCALE VERIFICATION
0 1
SOLID BAR IS EQUAL TO ONE INCH ON ORIGINAL DRAWING. ADJUST ALL SCALED DIMENSIONS ACCORDINGLY

SAILFISH COVE
CITY OF STUART, FLORIDA

UTILITY PLAN

Joseph W. Capra
301 N.W. Flagler Ave.
Stuart, Florida 34994
P.E. No. 37638

Printed Date:

JOB No.: 1941
SHEET 8 OF 11

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P:\1900\1941 - Sailfish Cove (aka Seminole Bluff)\DWG\1941 UTILITY.dwg, utl, 5/15/2020 9:08:19 AM

CITY OF STUART
WATER DISTRIBUTION NOTES

1. ALL CONSTRUCTION MATERIAL, INSTALLATION AND TESTING SHALL CONFORM TO THE STANDARD SPECIFICATIONS OF THE CITY OF STUART.
2. WATER MAIN WHERE SPECIFIED AS POLYVINYL CHLORIDE (PVC) SHALL CONFORM TO AWWA C-900 OR C-905, PRESSURE CLASS 150 OR 235, DR (18).
3. MIN. CLASS 50 WATER MAIN, WHERE SPECIFIED AS DUCTILE IRON PIPE , SHALL CONFORM TO ANSI/AWWA C-150/A-21.50 OR ANSI/AWWA C-151/A-21.51 AND SHALL BE PRESSURE CLASS 350 (MINIMUM).
4. POLYVINYL CHLORIDE WATER MAIN SHALL BE BLUE IN COLOR. ALL PIPE REQUIRE THHN TRACER WIRE.
5. FITTINGS SHALL BE CAST OR DUCTILE IRON, CONFORMING TO AWWA C-110 AND ANSI A21.11, CLASS 250 MINIMUM, CEMENT LINED, AND SEAL COATED.
6. GATE VALVES SHALL BE RESILIENT WEDGE SEAT, VALVES SHALL CONFORM TO AWWA C-509 AS WELL AS THE CITY OF STUARTS PRODUCT LIST.
7. WATER LINES SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH THE CITY OF STUART'S DESIGN AND CONSTRUCTION STANDARDS. THE CONTRACTOR SHALL SUBMIT CERTIFIED DENSITY TESTS AS REQUIRED BY THE CITY AND THE COUNTY, FDOT. IN CASES WHERE 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 ENGINEER AND CITY/COUNTY/FDOT.
9. THE CONTRACTOR SHALL NOTIFY THE ENGINEER, CITY OF STUART AND COUNTY/FDOT 48 HOURS PRIOR TO COMMENCING CONSTRUCTION.
10. A PRE-CONSTRUCTION CONFERENCE BETWEEN THE ENGINEER, THE CONTRACTOR, THE CITY, COUNTY/FDOT AND ANY OTHER APPLICABLE AGENCIES 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 ENGINEER AND CITY/COUNTY/FDOT.
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-601 FOR DISINFECTION.

STANDARD UTILITY DETAILS
City of Stuart Public Works Department
121 S.W. Flagler Avenue, Stuart, Florida 34994
(772) 288-5300

WATER DISTRIBUTION NOTES

DATE: OCTOBER 2016 | SHEET NUMBER 1
FILE NAME: 2016 COS Std Details.dwg

CITY OF STUART
WATER DISTRIBUTION NOTES
CONTINUED

16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING EXISTING UTILITIES AND DRAINAGE.
17. THE CONTRACTOR SHALL FURNISH RECORD DRAWING INFORMATION TO THE ENGINEER INCLUDING LOCATIONS OF VALVES, FITTINGS, SERVICE CONNECTIONS, BLOWOFFS, AIR RELEASE VALVES, AND ANY OTHER PERTINENT INFORMATION NECESSARY TO LOCATE ITEMS CONSTRUCTED UNDER THIS PROJECT, AS REQUIRED BY THE UTILITIES ENGINEER.
18. THE CONTRACTOR SHALL TAP EXISTING LINES UNDER THE SUPERVISION OF THE CITY OF STUART ONLY AFTER TESTING AND DISINFECTION HAS BEEN COMPLETED AND APPROVED ON THE TAPPING SLEEVE AND VALVE.
19. SAMPLE POINT TAPS SHALL BE PLACED APPROXIMATELY THREE FEET AWAY FROM GATE VALVES, AS SHOWN, FOR TESTING. FOLLOWING TESTING AND STERILIZATION OF WATER LINES, CONTRACTOR SHALL PLACE A BRASS PLUG IN CORPORATION STOPS AND CURB STOPS SHALL BE REMOVED FROM TESTING LOCATIONS.
20. MECHANICAL RESTRAINTS TO BE USED ON ALL FITTINGS AND PLACED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND CITY OF STUART REQUIREMENTS, MORE STRINGENT SHALL APPLY.
21. ALL MAINS SHALL BE TESTED AT A MINIMUM OF 150 PSI. TESTING METHODS SHALL CONFORM TO AWWA C-600.

$$L = \frac{SD(P)^{1/2}}{133,200}$$ OR CURRENT AWWA STANDARD

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

22. PRIOR TO ANY TESTING, ALL MAINS 3" IN DIA. AND LARGER SHALL HAVE A LINE SIZE SWAB PASSED THRU THE ENTIRE LENGTH OF THE LINE. NOTE: SWAB SHOULD BE PLACED IN 1st. JOINT OF NEW LINE. END OF MAIN SHOULD BE "TURNED UP" AT 45% AND EXTENDED SO THAT SWABBING AND A FULL BORE FLUSH CAN BE ACCOMPLISHED. BLOW-OFF ASSY CAN THEN BE PLACED. WHERE LINES BRANCH, SWABS WILL BE PLACED IN BRANCH LINES AND SEQUENTIALLY SWABBED AND FLUSHED.
23. TEN FEET MINIMUM HORIZONTAL AND 12 INCHES MINIMUM VERTICAL SEPARATION SHALL BE MAINTAINED BETWEEN THE WATER MAIN AND ANY WASTWATER LINES. THE DISTANCE SHALL BE MEASURED FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE OR STRUCTURE. WHERE THIS MINIMUM SEPARATION CANNOT BE MAINTAINED, THE CROSSING SHALL BE ARRANGED SO THAT THE WASTEWATER PIPE JOINTS AND THE WATER MAIN PIPE JOINTS ARE EQUIDISTANT FROM THE POINT OF CROSSING, AND THE WATER MAIN SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE (DIP) AT THE CROSSING. SUFFICIENT LENGTHS OF DIP MUST BE USED TO PROVIDE A MINIMUM SEPARATION OF 10 FEET BETWEEN ANY TWO JOINTS. ALL JOINTS ON THE WATER MAIN WITHIN 20 FEET OF THE CROSSING MUST BE MECHANICALLY RESTRAINED. A MINIMUM VERTICAL CLEARANCE OF 6 INCHES MUST BE MAINTAINED AT ALL CROSSINGS.
24. WHERE A WATER MAIN IS TO BE INSTALLED BELOW A STORM DRAIN PIPE, A MINIMUM OF 6 INCHES OF VERTICAL CLEARANCE BETWEEN PIPES SHALL BE CONSTRUCTED OF DIP AT THE CROSSING, AND SHALL BE MECHANICALLY RESTRAINED WITHIN 20 FEET OF THE CROSSING.
25. CONTRACTOR SHALL COMPLY WITH FLORIDA TRENCH SAFETY ACT REQUIREMENTS.

STANDARD UTILITY DETAILS
City of Stuart Public Works Department
121 S.W. Flagler Avenue, Stuart, Florida 34994
(772) 288-5300

WATER DISTRIBUTION NOTES

DATE: OCTOBER 2016 | SHEET NUMBER 2
FILE NAME: 2016 COS Std Details.dwg

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 WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18 INCHES BETWEEN THE INVERT OF THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE WHENEVER POSSIBLE.

   WHERE SANITARY SEWER, FORCE MAINS, STORM SEWERS MUST CROSS A WATER MAIN LESS THAN 18 INCHES VERTICAL DISTANCE, BOTH THE SEWER AND WATER MAIN SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE (DIP) AT 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. A MINIMUM VERTICAL CLEARENCE OF 6 INCHES MUST BE MAINT-AINED AT ALL CROSSINGS.

   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).

   WHERE A NEW PIPE CONFLICTS WITH AN EXISTING PIPE WITH LESS THAN 18 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 10-FOOT HORIZONTAL SEPARATION SHALL BE MAINT-AINED BETWEEN ANY TYPE OF SEWER AND WATER MAIN IN PARALLEL INSTALLATIONS WHENEVER POSSIBLE.

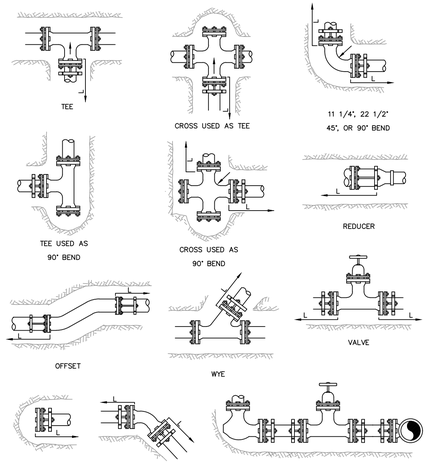
   IN CASES WHERE IT IS NOT POSSIBLE TO MAINTAIN A 10-FOOT HORIZONTAL SEPARATION, THE WATER MAIN MUST BE LAID IN A SEPARATE TRENCH OR ON A UNDISTURBED EARTH SHELF LOCATED ON ONE SIDE OF THE SEWER OR FORCE MAIN AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER.

   WHERE IT IS NOT POSSIBLE TO MAINTAIN A VERTICAL DISTANCE OF 18 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 350 MIN.. ADEQUATE PROTECTIVE MEASURES AGAINST CORROSION SHALL BE USED AS DETERMINED BY THE DESIGN ENGINEER.

STANDARD UTILITY DETAILS
City of Stuart Public Works Department
121 S.W. Flagler Avenue, Stuart, Florida 34994
(772) 288-5300

WATER and SEWER CONFLICT NOTES

DATE: OCTOBER 2016 | SHEET NUMBER 4
FILE NAME: 2016 COS Std Details.dwg

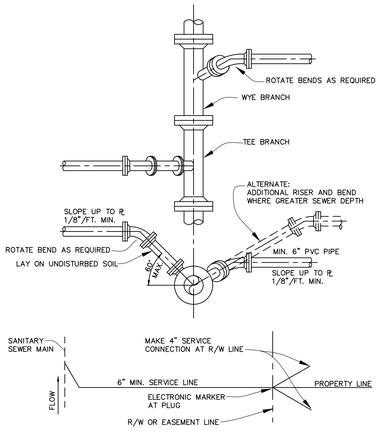


MECHANICAL JOINT ANCHORING REQUIREMENTS

STANDARD UTILITY DETAILS
City of Stuart Public Works Department
121 S.W. Flagler Avenue, Stuart, Florida 34994
(772) 288-5300

MECHANICAL JOINT ANCHORING REQUIREMENTS

DATE: OCTOBER 2016 | SHEET NUMBER 11
FILE NAME: 2016 COS Std Details.dwg



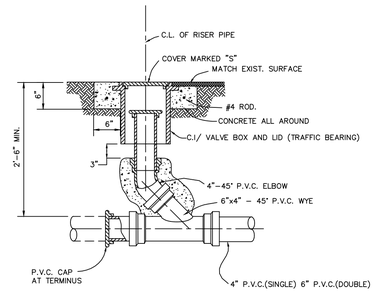
NOTE:
SERVICE LATERALS SHALL TERMINATE AT R AT A DEPTH OF (3)FEET, PLUGGED WATERTIGHT AND MARKED WITH 2"x2" TREATED STAKE AND ELECTRONIC MARKER

SERVICE CONNECTION (LATERAL)

STANDARD UTILITY DETAILS
City of Stuart Public Works Department
121 S.W. Flagler Avenue, Stuart, Florida 34994
(772) 288-5300

SERVICE CONNECTION (LATERAL)

DATE: OCTOBER 2016 | SHEET NUMBER 41
FILE NAME: 2016 COS Std Details.dwg

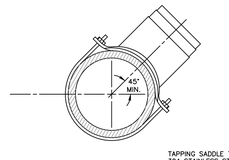


TERMINAL/ SERVICE LATERAL CLEANOUT DETAIL

STANDARD UTILITY DETAILS
City of Stuart Public Works Department
121 S.W. Flagler Avenue, Stuart, Florida 34994
(772) 288-5300

TERMINAL/SERVICE LATERAL CLEANOUT DETAIL

DATE: OCTOBER 2016 | SHEET NUMBER 43
FILE NAME: 2016 COS Std Details.dwg



WASTEWATER SERVICE TAP DETAIL

STANDARD UTILITY DETAILS
City of Stuart Public Works Department
121 S.W. Flagler Avenue, Stuart, Florida 34994
(772) 288-5300

WASTEWATER SERVICE TAP DETAIL

DATE: OCTOBER 2016 | SHEET NUMBER 44
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MIN. LENGTH (IN FEET) OF PIPE TO BE RESTRAINED
(SOURCES: EBAA IRON RESTRAINT LENGTH CALCULATION PROGRAM FOR PVC PIPE, RELEASE 3.1, AND DIPRA THRUST RESTRAINT FOR DUCTILE IRON PIPE, RELEASE 3.2)

FITTING TYPE		PIPE SIZE 4"	6"	8"	10"	12"	16"	20"	24"
90° HORIZ. BEND		14	20	25	30	35	45	54	62
45° HORIZ. BEND		6	8	11	13	15	19	22	26
22.5° HORIZ. BEND		3	4	5	6	7	9	11	12
11.25° HORIZ. BEND		1	2	3	3	4	4	5	6
90° VERT. OFFSET	UPPER BEND	29	41	53	64	74	95	115	134
	LOWER BEND	7	10	13	16	19	25	30	35
45° VERT. OFFSET	UPPER BEND	12	19	24	29	34	39	48	56
	LOWER BEND	3	4	6	7	8	10	12	15
22.5° VERT. OFFSET	UPPER BEND	6	9	12	14	17	19	23	27
	LOWER BEND	1	2	4	4	4	5	6	7
11.25° VERT. OFFSET	UPPER BEND	3	4	6	7	8	9	11	13
	LOWER BEND	1	1	1	2	2	2	3	3
PLUG (DEAD END)		32	45	59	70	83	107	129	151
IN-LINE VALVE		32	45	45	45	45	55	65	80
TEE (BRANCH RESTRAINT)	4"X Ø	23	-	-	-	-	-	-	-
	6"X Ø	21	35	-	-	-	-	-	-
	8"X Ø	18	34	47	-	-	-	-	-
	10"X Ø	16	32	46	58	-	-	-	-
	12"X Ø	13	30	44	57	69	-	-	-
	16"X Ø	7	26	41	55	67	90	-	-
	20"X Ø	1	21	38	52	65	88	109	-
	24"X Ø	1	16	34	49	62	86	108	129
	30"X Ø	1	8	28	44	58	83	106	127
	36"X Ø	1	1	22	39	54	80	103	124
	42"X Ø	1	1	15	33	49	77	100	122
	48"X Ø	1	1	7	27	44	73	97	120
REDUCER (LARGER PIPE RESTRAINT)	6"X Ø	23	-	-	-	-	-	-	-
	8"X Ø	38	25	-	-	-	-	-	-
	10"X Ø	57	43	24	-	-	-	-	-
	12"X Ø	72	60	44	41	-	-	-	-
	16"X Ø	99	90	78	75	45	-	-	-
	20"X Ø	123	116	107	105	81	45	-	-
	24"X Ø	146	140	132	131	111	82	45	-

NOTES :
1. *THE DATA IN THE ABOVE TABLE ARE BASED UPON THE FOLLOWING INSTALLATION CONDITIONS:*
   SOIL TYPE-SAND TEST PRESSURE-150 PSI DEPTH OF BURY-3'
   TRENCH TYPE-3 SAFETY FACTOR- 1.5 VERTICAL OFFSET-3'
   MINIMUM PIPE LENGTH ALONG TEE RUN-5'
2. *THE RESTRAINED PIPE LENGTHS APPLY TO DUCTILE IRON AND PVC PIPE.*
3. *ALL JOINTS BETWEEN UPPER AND LOWER BENDS SHALL BE RESTRAINED.*
4. *RESTRAINED PIPE LENGTHS APPLY TO PIPE ON BOTH SIDES OF VALVES AND FITTINGS.*

STANDARD UTILITY DETAILS
City of Stuart Public Works Department
121 S.W. Flagler Avenue, Stuart, Florida 34994
(772) 288-5300

MECHANICAL JOINT REQUIREMENTS NOTES

DATE: OCTOBER 2016 | SHEET NUMBER 12
FILE NAME: 2016 COS Std Details.dwg

CAPTEC Engineering, Inc.
Civil Engineering Professionals
301 N.W. Flagler Ave.
Stuart, Florida 34994
Phone: (772) 692-4344
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Engineering Business No. EB-0007657

DATE: 4-21-20
DRAWN BY: MDB
DESIGNED BY: MDB
CHECKED BY: JWC
PROJECT No.: 1941
HORZ. SCALE:
VERT. SCALE:
CADD FILE: 1941STDTAIL3

NO.	DATE	BY	REVISIONS

SCALE VERIFICATION
0 1
SOLID BAR IS EQUAL TO ONE INCH ON ORIGINAL DRAWING, ADJUST ALL SCALED DIMENSIONS ACCORDINGLY

SAILFISH COVE
CITY OF STUART, FLORIDA
UTILITY DETAILS

Joseph W. Capra
301 N.W. Flagler Ave.
Stuart, Florida 34994
P.E. No. 37638

Printed Date:

JOB No.: 1941
SHEET 9 OF 11

THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADOPTION BY CAPTEC ENGINEERING, INC. SHALL BE WITHOUT LIABILITY TO CAPTEC ENGINEERING, INC.

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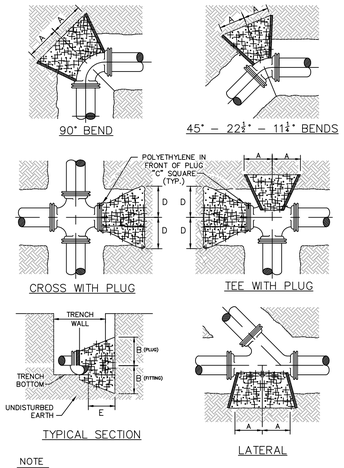
THRUST BLOCK SCHEDULE

PIPE SIZE	HOLD DIMENSIONS		150 P.S.I. TEST PRESSURE								
			90°	45°	22 ½°	11 ¼°	LAT.	TEE	PLUG		
INCHES	E MIN.	B	A	A	A	A	A	A	C	D	E
4	10"	7"	10"	6"	3"	3"	7"	7"	10"	7"	8"
6	16"	10"	15"	8"	4"	4"	10"	10"	12"	10"	8"
8	20"	14"	18"	10"	5"	5"	14"	14"	14"	14"	12"
10	28"	16"	24"	14"	7"	7"	16"	16"	16"	16"	14"
12	30"	20"	26"	16"	8"	8"	20"	20"	18"	20"	20"

NOTES

1. THRUST BLOCKS SHALL BE POURED AGAINST UNDISTURBED MATERIAL, WHERE TRENCH WALL HAS BEEN DISTURBED EXCAVATE ALL LOOSE MATERIAL AND EXTEND THRUST BLOCK TO UNDISTURBED MATERIAL.
2. ON TEES AND BENDS EXTEND THRUST BLOCK THE FULL LENGTH AND PUT WOOD BLOCKING IN FRONT OF ALL PLUGS BEFORE POURING CONCRETE.
3. ALL WOOD UTILIZED FOR FORMS SHALL BE PRESSURE TREATED LUMBER.
4. BACKFILL SHALL CONSIST ENTIRELY OF CLEAN SAND AND SMALL ROCK FRAGMENTS. ANY MUCK FOUND AROUND THE EXCAVATION SHALL BE REPLACED WITH COMPACTED ACCEPTABLE MATERIAL.
5. ALL THRUST BLOCKS SHALL BE CAST IN PLACE WITH 2500 P.S.I. CONCRETE.
6. ALL PIPES GREATER THAN 12" IN DIAMETER SHALL HAVE RESTRAINED JOINTS IN ACCORDANCE WITH RESTRAINED JOINT SPECIFICATION DETAILED IN SECTION 13.
7. PIPES SMALLER THAN 4" SHALL USE THRUST BLOCKS SIZED FOR 4" PIPES.

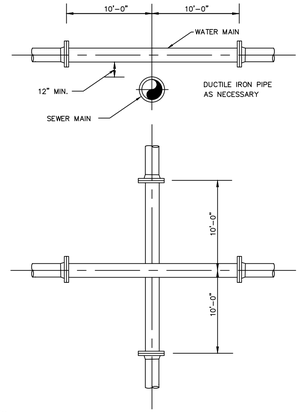
THRUST BLOCK SCHEDULE



NOTE

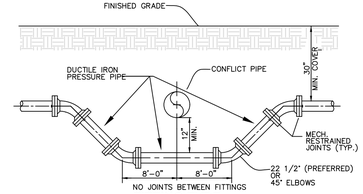
1. POLYETHYLENE (VISQUEEN OR EQUAL) SHALL BE PLACED BETWEEN CONCRETE AND PIPE. (MILLAGE TO BE DETERMINED BY IRCDUS).

THRUST BLOCK DETAILS



NOTES:
WATER MAIN CROSSING EXISTING FORCE MAIN SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18 INCHES BETWEEN THE INVERT OF THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE MUST BE USED TO PROVIDE A MINIMUM SEPARATION OF 10 FEET BETWEEN ANY TWO JOINTS. ALL CROSSINGS SHALL BE ARRANGED SO THAT THE SEWER PIPE JOINTS AND THE WATER MAIN PIPE JOINTS ARE EQUAL DISTANCE FROM THE POINT OF CROSSING (PIPES CENTERED ON THE CROSSING). IN ALL CASES A MIN. 18" VERTICAL SEPERATION SHALL BE REQUIRED.

UTILITY CROSSING DETAIL



FITTING TYPE

NOTES:
1. THESE METHODS ARE TO BE USED WHEN INSUFFICIENT COVER EXISTS TO ALLOW PRESSURE PIPE TO CROSS ABOVE CONFLICT PIPE WITH 6" VERTICAL SEPARATION AND MAINTAIN REQUIRED COVER TO FINISHED GRADE.
2. FITTINGS SHALL BE RESTRAINED WITH RETAINER GLANDS AND OR GRAVITY BLOCKS.

GENERAL POLICY

WHERE COST JUSTIFIED AND OPERATIONALLY FEASIBLE, IT IS THE GENERAL POLICY OF THE CITY 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 CITY.



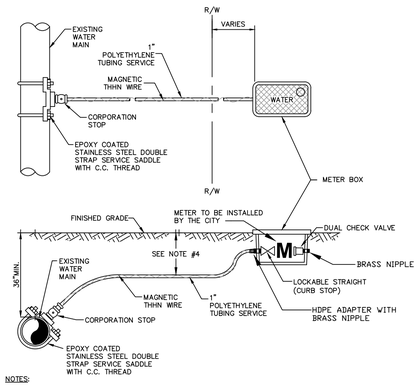
① THE PREFERRED POINT OF CONNECTION TO THE CITY WATER METER, AREA ① SHALL BE LOCATED IN THE CORNER OF THE PROPERTY SELECTED BY THE CITY AS THE BEST LOCATION FOR THE WATER METER. EVERY EFFORT WILL BE MADE TO SELECT THE CORNER WHERE TWO WATER SERVICES AND METERS CAN BE CONNECTED.

② IF PHYSICAL BARRIERS OR OTHER OBSTACLES PREVENT THE CONNECTION OF THE BUILDING SERVICE LINE TO THE CITY WATER SERVICE, WITHIN AREA ① , THE CITY UTILITY 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 10 FEET.
2. ALL METERS WILL BE INSTALLED IN A UNRESTRICTED AREA ALLOWING EASE OF ACCESS AND PROVIDING ADEQUATE PROTECTION.
3. THE CITY SHALL BE RESPONSIBLE FOR THE MAINTENCE AND REPAIR OF THE WATER SERVICE AND METER WITHIN THE EASEMENT OR RIGHT–OF–WAY, UP TO THE POINT OF CON–NECTION.

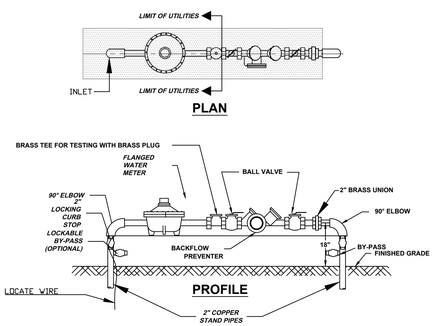
WATER METER REPLACEMENT POLICY



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. 3/4"& 1" METER SIZES SHALL REQUIRE A LOCKABLE CURB STOP.
4. MINIMUM COVER IN UNPAVED AREAS IS 18", IN PAVED AREAS OR PLANNED ROADWAYS OR SWALES MIN. COVER SHALL BE 36".

TYPICAL SINGLE WATER SERVICE CONNECTION



NOTES:

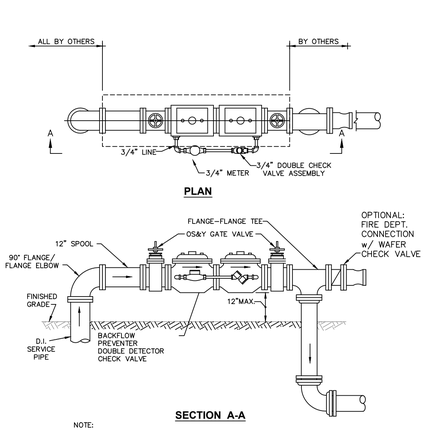
1. LANDSCAPING REQUIRED PER CITY OF STUART ORDINANCE. NO PLANTS OR TREES WITHIN 18" AROUND METER OR BACKFLOW. NO SOLDER JOINTS. MUST BE SCREENED, NO GROW IN PERIOD.

2. ASSEMBLY TO BE 18" FROM FINISH GRADE TO CENTERLINE OF THE 90° BEND.

3. RECLAIMED WATER METER ASSEMBLY MUST BE PAINTED PANTONE PURPLE 522.

4. NO SOLDER JOINTS.

1.5" & 2" POTABLE / RECLAIMED WATER METER & BACKFLOW PREVENTER ASSEMBLY SERVICE (COMMERCIAL)



SECTION A-A

NOTE:
1. LANDSCAPING IS REQUIRED PER CITY OR COUNTY ORDINANCE. PLANTINGS MUST SCREEN AT PLANT HEIGHT,NO GROW IN PERIOD.

DOUBLE CHECK VALVE w/ DETECTOR CHECK ASSEMBLY / FIRE SERVICE

CAPTEC Engineering, inc.
Civil Engineering Professionals
301 N.W. Flagler Ave.
Stuart, Florida 34994
Phone: (772) 692-4344
Fax: (772) 692-4341
Engineering Business No. EB-0007557

DATE: 4-21-20
DRAWN BY: MDB
DESIGNED BY: MDB
CHECKED BY: JWC
PROJECT No.: 1941
HORZ. SCALE:
VERT. SCALE:
CADD FILE: 1941STDETAILS

NO.	DATE	BY	REVISIONS

SCALE VERIFICATION
SOLID BAR IS EQUAL TO 1 INCH ON ORIGINAL DRAWING. ADJUST ALL SCALED DIMENSIONS ACCORDINGLY
0 1

SAILFISH COVE
CITY OF STUART, FLORIDA
UTILITY DETAILS

Joseph W. Capra
301 N.W. Flagler Ave.
Stuart, Florida 34994
P.E. No. 37638

Printed Date:

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SHEET 10 OF 11

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GENERAL NOTES

1. ANY DISCREPANCIES ON THE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE COMMENCING WORK. NO FIELD CHANGE OR DEVIATIONS FROM THE DESIGN ARE TO BE MADE WITHOUT PRIOR APPROVAL OF THE ENGINEER.
2. THE CONTRACTOR SHALL CONTACT ALL CONCERNED UTILITIES AT LEAST FORTY-EIGHT (48) HOURS IN ADVANCE OF CONSTRUCTION OPERATIONS.
3. THE LOCATION AND SIZE OF ALL EXISTING UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE AND ARE BASED ON THE BEST AVAILABLE INFORMATION. ADDITIONAL UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY ALL UTILITIES BY ELECTRONIC METHODS AND BY HAND EXCAVATION IN COORDINATION WITH ALL UTILITY COMPANIES, PRIOR TO BEGINNING ANY CONSTRUCTION OPERATIONS. ANY AND ALL CONFLICTS OF EXISTING UTILITIES WITH PROPOSED IMPROVEMENTS SHALL BE RESOLVED BY THE ENGINEER AND THE OWNER PRIOR TO BEGINNING ANY CONSTRUCTION OPERATIONS. THIS WORK BY THE CONTRACTOR SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.
4. PROJECT SUPERINTENDENT: THE CONTRACTOR SHALL PROVIDE A QUALIFIED SUPERINTENDENT TO REMAIN ON THE JOB SITE AT ALL TIMES WHEN WORK IS BEING PERFORMED. THE SUPERINTENDENT SHALL BE PRESENT AT THE PRE- CONSTRUCTION MEETING. THE CONTRACTOR SHALL NOTIFY THE LOCAL UTILITY COMPANY BY LETTER PRIOR TO THE PRECONSTRUCTION MEETING APPOINTING THE SUPERINTENDENT FOR THIS PROJECT INCLUDING A FORMAL RESUME SHOWING QUALIFICATIONS.
5. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE HIS COMPLETE FAMILIARITY WITH THE PROJECT SITE AND COMPONENTS TO INCLUDE SUBSURFACE CONDITIONS OF SOIL AND GROUNDWATER TABLE. BY SUBMITTAL OF A BID FOR THIS PROJECT, THE CONTRACTOR ACKNOWLEDGES HIS COMPLETE UNDERSTANDING AND RESPONSIBILITIES WITH RESPECT TO THE CONSTRUCTION ACTIVITIES REQUIRED UNDER THE SCOPE OF THIS PROJECT.
6. THE "TRENCH SAFETY ACT" SHALL BE INCORPORATED INTO THIS CONTRACT AS ENCHANCED BY THE LEGISLATURE OF THE STATE OF FLORIDA TO BE IN EFFECT AS OF OCTOBER 1, 1990.
7. AS-BUILT PLANS: THE CONTRACTOR SHALL PROVIDE ONE (1) REPRODUCIBLE MYLAR COPY OR PDF, FIFTEEN (15) BLACK LINE COPIES AND ONE (1) DIGITAL FORMAT OF A CERTIFIED AS-BUILT SURVEY. DRAWINGS SHALL BEAR THE ORIGINAL SIGNATURE AND EMBOSSED SEAL OF THE SURVEYOR AND SHALL BE SUBMITTED AFTER THE COMPLETION OF CONSTRUCTION, BUT PRIOR TO FINAL APPROVAL. THE AS-BUILT SURVEY SHALL BE PREPARED IN PLAN AND PROFILE FORMAT BY A LICENSED PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE OF FLORIDA AND SHALL COMPLY WITH APPLICABLE PROVISIONS OF THE FLORIDA ADMINISTRATIVE CODE AND CHAPTER 472 OF THE FLORIDA STATUES. THE DRAWINGS SHALL BE AT A SCALE COMPARABLE TO THE DESIGN DRAWINGS PREPARED BY THE ENGINEER AND SHALL REFERENCE THE BASE LINE OF SURVEY APPEARING ON THE ENGINEERING DRAWINGS. THE HORIZONTAL AND VERTICAL LOCATION OF THE ROADWAYS, DRAINAGE FACILITIES AND ALL APPURTENANCES SHALL BE ACCURATELY DEPICTED TO SCALE AND SHALL BE IDENTIFIED RELATIVE TO THE BASE LINE AND TO READILY IDENTIFIABLE PERMANENT OR SEMI-PERMANENT REFERENCE POINTS EXISTING AFTER THE COMPLETION OF CONSTRUCTION. LOCATIONS SHALL BE DETERMINED FOR ALL DRAINAGE FACILITIES AT CHANGES IN HORIZONTAL AND VERTICAL DIRECTION, AND AT A MINIMUM OF AN INTERVAL NOT EXCEEDING ONE HUNDRED FEET (100'). THE PROFILE SHALL ACCURATELY REFLECT THE VERTICAL PIPE LOCATION AND THE FINISHED GRADE OVER THE PIPE.
8. THE CONTRACTOR SHALL PREPARE A PLAN SHOWING THE SCHEDULE OF WORK, INCLUDING A HIGHLIGHTED PLAN SHOWING THE ORDER OF CONSTRUCTION WHICH WILL FACILITATE MAINTAINING EXISTING SERVICES DURING CONSTRUCTION. THIS PLAN SHALL BE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION MAINTENANCE OF TRAFFIC AND STAGING PLAN REQUIREMENTS.
9. ALL CONSTRUCTION IS TO BE IN ACCORDANCE WITH FLORIDA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.
10. ALL AT&T, FPL, LOCAL CABLE, AND ALL LOCAL UTILITY COMPANY LOCATIONS SHOWN ARE TAKEN FROM INFORMATION PROVIDED BY THAT UTILITY COMPANY. THESE LOCATIONS HAVE NOT BEEN VERIFIED IN THE FIELD. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL EXPOSE ALL CROSSINGS WITH AT&T, CABLES/CATV, FIBER OPTIC (FO) AND FLORIDA POWER AND LIGHT (FPL) CONDUITS PRIOR TO BEGINNING CONSTRUCTION AND DELIVERY OF PIPE. THE CONTRACTOR IS TO USE EXTREME CAUTION WITHIN THE VICINITY OF PRIVATE UTILITY FACILITIES. THE CONTRACTOR WILL REQUEST A PRIVATE UTILITY REPRESENTATIVES PRESENCE DURING CONSTRUCTION IN THE VICINITY OF THEIR FACILITIES. A PROFILE OF THE PRIVATE UTILITY FACILITIES ARE NOT PROVIDED IN THESE DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE PRIVATE UTILITIES AND OBTAINING THE APPROXIMATE LOCATION OF THESE FACILITIES. FIBER OPTIC CONDUIT PART OF MARTIN HEALTH SYSTEM.
11. ANY NGVD-'29 OR NAVD-'88 MONUMENT WITHIN THE LIMITS OF CONSTRUCTION IS TO BE PROTECTED. IF IN DANGER OF DAMAGE, THE CONTRACTOR SHOULD NOTIFY:

    GEODETIC INFORMATION CENTER
    ATTN: CHARLIE NOVICE
    ATTN: M/CG - 162
    6001 EXECUTIVE BOULEVARD
    ROCKVILLE, MARYLAND 20852
    TELEPHONE: (301) 443-8319
12. BENCH MARK DATA IS NATIONAL GEODETIC VERTICAL DATUM OF 1988 (NAVD) '88.
13. CONTRACTOR TO UTILIZE "APPROVED FOR CONSTRUCTION PLANS" ONLY.
14. ALL WORKERS MUST WEAR HIGH VISIBILITY SAFETY VESTS WHILE ON SITE. ALL WORKERS MUST HAVE THEIR COMPANY LOGO UPON THEIR SAFETY VEST, T-SHIRT OR HARD HAT WHILE ON SITE.

PAVING, GRADING AND DRAINAGE NOTES

1. ALL UNSUITABLE MATERIALS, SUCH AS MUCK, ORGANIC MATERIAL AND OTHER DELETERIOUS MATERIAL AS CLASSIFIED BY AASHTO M 145, FOUND SHALL BE REMOVED DOWN TO ROCK OR SUITABLE MATERIAL, AND REPLACED WITH THE SPECIFIED FILL MATERIAL IN MAXIMUM 12 INCH LIFTS COMPACTED TO NOT LESS THAN 98% MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE IN ACCORDANCE WITH AASHTO T-180. THICKNESS OF LAYERS MAY BE INCREASED, PROVIDED THAT THE EQUIPMENT AND METHODS USED ARE PROVEN BY FIELD DENSITY TESTING AND CAPABLE OF COMPACTING THICK LAYERS TO SPECIFIED DENSITIES.
2. ALL AREAS SHALL BE CLEARED AND GRUBBED PRIOR TO CONSTRUCTION THIS SHALL CONSIST OF THE COMPLETE REMOVAL AND DISPOSAL OF ALL TREES, BRUSH, STUMPS, GRASS, WEEDS, RUBBISH AND ALL OTHER OBSTRUCTIONS RESTING ON, OR PROTRUDING THROUGH THE SURFACE OF THE EXISTING GROUND TO A DEPTH OF ONE (1) FOOT. ITEMS DESIGNATED TO REMAIN, TO BE RELOCATED, OR TO BE ADJUSTED SHALL BE SO DESIGNATED ON THE DRAWINGS.
3. FILL MATERIAL SHALL BE CLASSIFIED AS A-1, A-3, OR A-2-4 IN ACCORDANCE WITH AASHTO M-145 AND SHALL BE FREE FROM VEGETATION AND ORGANIC MATERIAL. NOT MORE THAN 10% BY WEIGHT OF FILL MATERIAL SHALL PASS THE NO. 200 SIEVE AND HAVE AN ORGANIC CONTENT LESS THAN 1%.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING CERTIFIED MATERIAL TEST RESULTS TO THE ENGINEER OF THE RECORD PRIOR TO THE RELEASE OF FINAL CERTIFICATION BY THE ENGINEER. TEST RESULTS MUST INCLUDE, BUT MAY NOT BE LIMITED TO, DENSITIES FOR SUBGRADE AND BASE DENSITIES AT UTILITY CROSSINGS, MANHOLES, INLETS, STRUCTURES. TEST SHALL INCLUDE ASPHALT GRADATION REPORTS, CONCRETE CYLINDERS, ETC. DENSITY TESTS SHALL BE PERFORMED AT THREE (3) LOCATIONS AROUND ANY STRUCTURE. BEGIN TESTING IN THE FIRST FOOT ABOVE THE BOTTOM OF THE STRUCTURE AND THEN EVERY TWO FEET TO WITHIN TWO FEET OF THE FINISH GRADE.
5. ALL INLETS AND PIPE SHALL BE PROTECTED DURING CONSTRUCTION TO PREVENT SILTATION IN THE DRAINAGE SYSTEMS BY WAY OF TEMPORARY PLUGS AND PLYWOOD OR PLASTIC COVERS OVER THE INLETS. THE ENTIRE DRAINAGE SYSTEMS SHALL BE CLEANED OF ALL DEBRIS PRIOR TO FINAL ACCEPTANCE. ALL CONCRETE SHALL BE A MINIMUM 3,000 PSI.
6. ALL PROPOSED ELEVATIONS REFER TO FINISHED GRADES.
7. THE CONTRACTOR MUST OBTAIN A WATER USE PERMIT PRIOR TO CONSTRUCTION DEWATERING UNLESS THE WORK QUALIFIES FOR A GENERAL PERMIT PURSUANT TO SUBSECTION 40E-20.302(4), F.A.C.

SOIL RECOMMENDATION AND REQUIREMENTS

FILL REPLACEMENT:

1. WHERE FILLS TO BE PLACED ON NATURAL GROUND, THE FILL SHOULD BE A UNIFORM FREE DRAINING GRANULAR SOIL (CLEAN SAND) AND BE PLACED IN LAYERS NOT TO EXCEED 12 INCHES LOOSE MEASURE AND COMPACTED AS OUTLINED ABOVE. SUFFICIENT COMPACTIVE EFFORT SHOULD BE APPLIED TO OBTAIN A MINIMUM OF 98% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY AASHTO T-180 (ASTM D-1557).

EXCAVATION AND BACKFILLING:

1. WHERE EXCAVATION AND BACKFILLING ARE REQUIRED, THE SOILS SHOULD BE REMOVED TO THE SPECIFIED DEPTH. SUFFICIENT COMPACTIVE EFFORT MUST THEN BE APPLIED TO THE EXCAVATED SURFACE TO OBTAIN A MINIMUM OF 98% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY AASHTO T-180 (ASTM D-1557).
2. BACKFILL SHALL BE UNIFORM FREE DRAINING GRANULAR SOIL (CLEAN SAND) AND BE PLACED IN LAYERS NOT TO EXCEED 15 INCHES LOOSE MEASURE. SUFFICIENT COMPACTIVE EFFORT SHOULD BE APPLIED TO EACH LAYER TO OBTAIN A MINIMUM OF 98% OF THE MAXIMUM DRY DENSITY FOR THE ENTIRE DEPTH OF THE FILL AS DETERMINED BY AASHTO T-180 (ASTM D-1557). THE EXCAVATED SURFACE AND EACH LAYER OF BACKFILL SHOULD BE COMPACTED WITH A SELF-PROPELLED STEEL DRUM VIBRATORY ROLLER HAVING A MINIMUM TOTAL APPLIED FORCE OF 10 TONS.
3. CONTRACTOR TO OVER EXCAVATE ALL DETENTION / SWALE AREAS TO REMOVE HARD PAN LAYER.
4. IN ORDER TO VERIFY THE CONTRACTOR'S COMPLIANCE WITH THE ABOVE RECOMMENDATIONS, ALL PROOFROLLING AND PLACEMENT OF COMPACTED FILL AND BACKFILL SHOULD BE OBSERVED AND TESTED AS REQUIRED HEREIN.

GROUNDWATER:

1. HEAVY RAINFALL AND/OR A HIGH WATER TABLE MAY OCCUR BEFORE THE EARTHWORK COMMENCES, OR DURING THE EARTHWORK OPERATION. WHEN THESE CONDITIONS OCCUR AND THE SITE PREPARATION CANNOT BE ACHIEVED AS SPECIFIED, AN EXCAVATION OF THE EXISTING CONDITIONS SHOULD BE CONDUCTED AND THE SPECIFICATIONS REVISED ACCORDINGLY. ANY DEWATERING FOR THE SITE MUST REMAIN WITHIN THE DETENTION AREAS AND RECHARGE TRENCHES. NO ADDITIONAL OFFSITE DISCHARGE IS ALLOWED.

COMPACTION:

1. WHERE THERE IS EXISTING STRUCTURES ADJACENT TO THE SITE THAT MAY BE AFFECTED BY THE SELF-PROPELLED STEEL DRUM VIBRATORY EQUIPMENT, DENSIFICATION MUST BE PERFORMED USING EQUIPMENT THAT WILL SATISFY THE REQUIRED DENSIFICATION WITHOUT THE RISK OF DAMAGE TO THE EXISTING STRUCTURE(S). LOADERS AND HEAVY PLATE COMPACTORS ARE TWO TYPES OF EQUIPMENT THAT HAVE BEEN USED SUCCESSFULLY. DENSIFICATION PROCEDURES MUST COMPLY WITH THE CAPABILITY OF THE EQUIPMENT EMPLOYED.
2. WHEN SELF-PROPELLED STEEL DRUM VIBRATORY EQUIPMENT CANNOT BE USED AS SPECIFIED, VIBRATORY PLATE COMPACTORS MAY BE USED. WHEN THIS CONDITION OCCURS, THE OVERALL DENSIFICATION PROCEDURE MUST BE REVISED TO COMPLY WITH THE CAPABILITY OF THE EQUIPMENT EMPLOYED. IN GENERAL, SMALL PLATE COMPACTORS WILL BE EFFECTIVE TO A MAXIMUM DEPTH OF 6 TO 8 INCHES.

STORM SEWER NOTES

1. ALL DISTURBED OUTFALL DRAINAGE AREAS SHALL BE SODDED UPON COMPLETION OF GRADING AFTER AS-BUILT GRADE ELEVATIONS ARE APPROVED BY THE ENGINEER.
2. PRIOR TO FINAL PAYMENT OF RETENTION, DETENTION, AND DRAINAGE DITCH QUANTITIES, ALL SLOPES AND SWALES SHALL BE SODDED TO AVOID EROSION.
3. BACKFILL SHALL BE COMPACTED IN NO GREATER THAN ONE (1) FOOT LIFTS TO THE DENSITY OF THE UNDISTURBED ADJACENT SOILS.
4. THERE IS TO BE NO OFF-SITE HAULING WITHOUT PRIOR APPROVAL AND ALL EXCAVATED MATERIAL SHALL BE USED ON-SITE.
5. THE CONTRACTOR SHALL CONSTRUCT THE STORMWATER MANAGEMENT SYSTEM IN A MANNER SO AS TO MINIMIZE ANY ADVERSE IMPACTS OF THE WORKS ON FISH, WILDLIFE, NATURAL ENVIRONMENTAL VALUES AND WATER QUALITY ON OR OFF-SITE. THE CONTRACTOR SHALL INSTITUTE NECESSARY MEASURES DURING THE CONSTRUCTION PERIOD, INCLUDING FULL COMPACTION OF ANY FILL MATERIAL PLACED AROUND NEWLY INSTALLED STRUCTURES TO REDUCE EROSION, TURBIDITY, NUTRIENT LOADING AND SEDIMENTATION IN THE RECEIVING WATERS.
6. WITHIN THIRTY (30) DAYS AFTER COMPLETION OF CONSTRUCTION OF THE SURFACE WATER MANAGEMENT SYSTEM, THE CONTRACTOR SHALL ASSIST THE DESIGN ENGINEER TO PROVIDE A WRITTEN STATEMENT OF COMPLETION AND CERTIFICATION BY A FLORIDA PROFESSIONAL ENGINEER. THESE STATEMENTS MUST SPECIFY THE ACTUAL DATE OF CONSTRUCTION COMPLETION AND MUST CERTIFY THAT ALL FACILITIES HAVE BEEN CONSTRUCTED IN SUBSTANTIAL CONFORMANCE WITH THE PLANS AND SPECIFICATIONS. THE CONSTRUCTION COMPLETION CERTIFICATION MUST INCLUDE, AT A MINIMUM EXISTING ELEVATIONS, LOCATIONS AND DIMENSIONS OF THE COMPONENTS OF THE SURFACE WATER MANAGEMENT FACILITIES. ADDITIONALLY, IF DEVIATIONS FROM THE APPROVED DRAWINGS ARE DISCOVERED DURING THE CERTIFICATION PROCESS, THE CERTIFICATION MUST BE ACCOMPANIED BY A COPY OF THE APPROVED PERMIT DRAWINGS WITH DEVIATIONS NOTED. SEE AS-BUILT REQUIREMENTS.
7. A STABLE PERMANENT AND ACCESSIBLE ELEVATION REFERENCE SHALL BE ESTABLISHED ON OR WITHIN ONE HUNDRED FEET (100') OF ALL PERMITTED DISCHARGE STRUCTURES NO LATER THAN THE SUBMISSION OF THE CERTIFICATION TO THE WATER MANAGEMENT DISTRICT. THE LOCATION OF THE ELEVATION REFERENCE MUST BE NOTED ON OR WITHIN THE CERTIFICATION REPORT.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CORRECTION OF ANY EROSION OR SHOALING OF THE WATER QUALITY MANAGEMENT SYSTEM.
9. INLETS (425/430): INCLUDES THE LIST OF MATERIALS/INSTALLATION/DEWATERING STABILIZATION/AS BUILT/TESTING. ALL STRUCTURES WILL REQUIRE THREE (3) COMPACTION TESTS AT DIFFERENT LOCATION AROUND STRUCTURES.
10. PIPE CULVERTS AND STORM SEWERS SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH SECTION 430 F.D.O.T. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.
11. HDPE (HIGH DENSITY POLYETHYLENE) CULVERT SHALL BE N-12 INSTALLED PER MANUFACTURERS RECOMMENDATIONS. MANUFACTURER IS ADS (ADVANCED DRAINAGE SYSTEMS, INC.). AIR ENTRENCHED PIPE

BASIS OF PAYMENT

1. THE PRICE AND PAYMENT FOR THIS PROJECT SHALL INCLUDE ALL LABOR, MATERIALS, EXCAVATION, INCIDENTALS, MECHANICAL RESTRAINT, CLEANING & FLUSHING, PIPE BEDDING, SPECIAL BACKFILL, DEWATERING, CLEAN-UP, DISPOSAL OF EXCESS MATERIAL, TESTING, TRENCH SAFETY AND SHORING, MOBILIZATION, MAINTENANCE OF TRAFFIC, CLEARING & GRUBBING, AND ANY OTHER ITEMS OF WORK REQUIRED FOR THE COMPLETED INSTALLATION OF THE PROJECT.

TRAFFIC

1. CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE AND COUNTY RULES AND REGULATIONS GOVERNING THE USE OF STREETS FOR PROTECTION OF THE WORK AND PUBLIC SAFETY. MAINTENANCE OF TRAFFIC SHALL BE PROVIDED BY CONTRACTOR IN ACCORDANCE WITH FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION - LATEST EDITION.

TURBIDITY NOTE

1. THE CONTRACTOR SHALL PLACE TURBIDITY BARRIERS AT ALL OUTFALLS PRIOR TO CONSTRUCTION. ALL CUT/FILL WILL BE RELOCATED WITHIN THE BUILDING PAD AREAS AND THEREFORE HAULING OF MATERIAL WILL NOT BE REQUIRED. THE DEWATERING FOR THE SITE MUST REMAIN WITHIN THE DETENTION AREAS. NO ADDITIONAL DISCHARGE ALLOWED. THERE IS NO DEWATERING PERMIT FOR THIS PROJECT. IF CONTRACTOR REQUIRES A DEWATERING PERMIT, ENGINEER WILL PROVIDE DRAWINGS.

CLEAN-UP

1. THE CONTRACTOR SHALL MAINTAIN THE JOB SITE IN A NEAT CONDITION AT ALL TIMES AND SHALL RESTORE/REPAIR ALL DRIVEWAYS, SIDEWALKS, UTILITIES, LANDSCAPING, IRRIGATION SYSTEMS, ETC., AFFECTED BY CONSTRUCTION ACTIVITIES.
2. THE CONTRACTOR SHALL REMOVE ALL EXCESS MATERIALS, DEBRIS, EQUIPMENT, ETC., FROM THE JOBSITE IMMEDIATELY AFTER COMPLETION OF CONSTRUCTION OPERATIONS.
3. FOR FURTHER SITE MAINTENANCE REQUIREMENTS THE CONTRACTOR IS REFERRED TO THE "AGREEMENT BETWEEN OWNER AND CONTRACTOR.
4. UNLESS OTHERWISE SPECIFIED OR NOTED; ALL DISTURBED AREAS TO BE RESTORED BY CONTRACTOR TO PRE-CONSTRUCTION CONDITION OR BETTER PRIOR TO ACCEPTANCE BY CITY OF STUART / OWNER.

WATER QUALITY NOTES

1. ALL ACTIVITIES SHALL BE IMPLEMENTED AS SET FORTH IN THE PLANS, SPECIFICATIONS, AND PERFORMANCE CRITERIA.
2. THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT AUTHORIZED STAFF, UPON PROPER IDENTIFICATION, MUST BE GRANTED PERMISSION TO ENTER, INSPECT, AND OBSERVE THE SYSTEM TO INSURE CONFORMITY WITH THE PLANS AND SPECIFICATIONS APPROVED BY THE PERMIT.
3. PRIOR TO AND DURING CONSTRUCTION, THE CONTRACTOR SHALL IMPLEMENT AND MAINTAIN ALL EROSION AND SEDIMENT CONTROL MEASURES (BEST MANAGEMENT PRACTICES) REQUIRED TO RETAIN SEDIMENT ON-SITE AND TO PREVENT VIOLATIONS OF STATE WATER QUALITY STANDARDS. ALL PRACTICES MUST BE IN ACCORDANCE WITH THE GUIDELINES AND SPECIFICATIONS IN CHAPTER 6 OF THE FLORIDA LAND DEVELOPMENT MANUAL. A GUIDE TO SOUND LAND AND WATER MANAGEMENT (FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATIONS 1988), WHICH ARE HEREBY INCORPORATED BY REFERENCE, UNLESS A PROJECT SPECIFIC EROSION AND SEDIMENT CONTROL PLAN IS APPROVED AS PART OF THE SFWMD PERMIT, IN WHICH CASE THE PRACTICES MUST BE IN ACCORDANCE WITH THE PLAN. IF SITE SPECIFIC CONDITIONS REQUIRE ADDITIONAL MEASURES DURING ANY PHASE OF CONSTRUCTION OR OPERATION TO PREVENT EROSION OR CONTROL SEDIMENT, BEYOND THOSE SPECIFIED IN THE EROSION AND SEDIMENT CONTROL PLAN, THE CONTRACTOR SHALL IMPLEMENT ADDITIONAL BEST MANAGEMENT PRACTICES AS NECESSARY, IN ACCORDANCE WITH THE SPECIFICATIONS IN CHAPTER 6 OF THE FLORIDA LAND DEVELOPMENT MANUAL: A GUIDE TO SOUND LAND AND WATER MANAGEMENT (FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION 1988). THE CONTRACTOR SHALL CORRECT ANY EROSION OR SHOALING THAT CAUSES ADVERSE IMPACTS TO THE WATER RESOURCES.
4. STABILIZATION MEASURES SHALL BE INITIATED FOR EROSION AND SEDIMENT CONTROL ON DISTURBED AREAS AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN SEVEN (7) DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.
5. THE STORMWATER MANAGEMENT SYSTEM MUST BE COMPLETE IN ACCORDANCE WITH THE PLANS PRIOR TO THE INITIATION OF THE PERMITTED USE OF SITE INFRASTRUCTURE.
6. IF DEWATERING IS TO OCCUR DURING ANY PHASE OF CONSTRUCTION OR THEREAFTER AND THE SURFACE WATER PUMP(S), WELLS, OR FACILITIES ARE CAPABLE OF WITHDRAWING ONE MILLION GALLONS OF WATER PER DAY OR MORE, OR AN AVERAGE OF 100,000 GALLONS PER DAY OR MORE OVER A YEAR, AND ANY DISCHARGE IS TO BE OFF-SITE, THE CONTRACTOR MUST APPLY FOR AND OBTAIN A CONSUMPTIVE USE PERMIT (40C-2) FROM THE DISTRICT IF YOU NEED ADDITIONAL INFORMATION OR APPLICATION MATERIALS. ANY DEWATERING FOR THE SITE MUST REMAIN ONSITE.

SITE PREPARATION AND GRADING :

1. PREPARATION OF THE SITE FOR CONSTRUCTION WILL REQUIRE GRUBBING AND STRIPPING OF VEGETATION AND ROOT SYSTEMS THROUGHOUT AREAS TO BE COVERED BY NEW CONSTRUCTION. TRUNKS AND ROOT BALLS FOR TREES SHOULD BE REMOVED. SITE PREPARATION AT FORMER LOCATIONS OF LARGER SHRUBS AND TREES MAY REQUIRE EXCAVATION TO GREATER DEPTHS.
2. FILL MATERIAL MAY BE REQUIRED. FILL SHOULD BE FREE FROM DEBRIS OR OTHER DELETERIOUS MATTER, AND SHOULD CONSIST OF CLEAN GRANULAR MATERIAL THAT HAS A MAXIMUM PARTICLE SIZE NOT GREATER THAN SIX INCHES. IT SHOULD CONTAIN NOT MORE THAN 10% PASSING THE U.S. STANDARD NUMBER 200 SIEVE, AND HAVE AN ORGANIC CONTENT LESS THAN ONE PERCENT.
3. FILL SHOULD BE PLACED IN ESSENTIALLY HORIZONTAL LIFTS LESS THAN 12 INCHES IN UNCOMPACTED THICKNESS, HAVE A MAXIMUM PARTICLE SIZE NOT GREATER THAN 6 INCHES, BE MOISTURE CONDITIONED AS NECESSARY, AND UNIFORMLY COMPACTED TO AT LEAST 98 PERCENT RELATIVE COMPACTION AS DETERMINED BY THE MODIFIED PROCTOR PROCEDURE (ASTM D1557).
4. AFTER COMPLETION OF THE GENERAL SITE PLAN PREPARATION, WHEN EXCAVATIONS FOR THE CONSTRUCTION OF FOUNDATIONS ARE MADE THROUGH THE COMPACTED NATURAL GROUND, FILL OR BACKFILL, THE BOTTOMS OF THE EXCAVATIONS ARE TO BE TAMPED SO AS TO DENSIFY SOILS LOOSENED DURING OR AFTER THE EXCAVATION PROCESS, OR WASHED OR SLOUGHED INTO THE EXCAVATION PRIOR TO THE PLACEMENT OF FORMS. A PLATE TAMPER CAN BE USED FOR THIS FINAL DENSIFICATION IMMEDIATELY PRIOR TO THE PLACEMENT OF REINFORCING STEEL, WITH PREVIOUSLY DESCRIBED DENSITY REQUIREMENTS TO BE MAINTAINED BELOW THE FOUNDATION LEVEL.
5. AFTER FOUNDATION FORMS ARE REMOVED, BACKFILL AROUND FOUNDATIONS SHOULD BE PLACED IN LIFTS SIX INCHES OR LESS IN THICKNESS, WITH EACH LIFT INDIVIDUALLY COMPACTED WITH A PLATE TAMPER. THE BACKFILL SHOULD BE COMPACTED TO A DRY DENSITY OF AT LEAST 98% OF THE MODIFIED PROCTOR (ASTM D-1557) MAXIMUM DRY DENSITY.

SOIL EROSION PLAN

1. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT A SPECIFIC SOIL EROSION PLAN. IN GENERAL THE SOIL EROSION PLAN SHALL REQUIRE THAT ALL ON-SITE SOILS WILL REMAIN ON-SITE AND WILL NOT ERODE INTO THE ADJACENT ROADSIDE SWALES, ADJACENT PROPERTIES, OR RETENTION DITCHES. ALL EXISTING SWALES SHALL REMAIN SODDED DURING CONSTRUCTION. THE CONTRACTOR SHALL SCARIFY ONLY AS NECESSARY TO CONSTRUCT THE PROJECT. THE CONTRACTOR SHALL SCARIFY AREAS TO PLACE VARIOUS PIPE WORK. AFTER PLACEMENT OF THE PIPE, THESE TRENCHES SHALL BE BACKFILLED AND COMPACTED TO A 98% DENSITY. PRIOR TO DISCHARGE FROM THE SITE, SILTATION BARRIERS AND HAY BALES SHALL BE UTILIZED AS PER FLORIDA DEPARTMENT OF TRANSPORTATION INDEX 102. THE DRAINAGE WHICH OUTFALLS TO THE RETENTION AREAS SHALL BE STABILIZED AND SODDED IMMEDIATELY UPON COMPLETION OF CONSTRUCTION. ANY DEWATERING OR PUMPING OF WATER INTO THE ROADSIDE SWALES, OR RETENTION SWALES SHALL BE STAKED WITH BALED HAY AND SILTATION FENCES AS PER FLORIDA DEPARTMENT OF TRANSPORTATION INDEX 102 TO AVOID FILLING THESE AREAS. UPON COMPLETION OF THE SITE WORK, ALL AREAS SHALL BE SODDED TO AVOID EROSION. CONTRACTOR IS REQUIRED TO COMPLY WITH ALL STATE WATER QUALITY CRITERIA. SPECIFICALLY, NO OFF-SITE DISCHARGES WILL BE ALLOWED WHICH EXCEED THE STATE TURBIDITY CRITERIA.

ADDENDUM NOTES

1. PRIOR TO RELOCATING ANY LIGHT, CONTRACTOR MUST COORDINATE WITH THE CITY OF STUART.
2. ACCESS TO FDC'S AND FIRE HYDRANTS MUST BE MAINTAINED AT ALL TIMES.
3. INLET GRADES WILL HAVE TRANSFERABLE SLOTS FOR PEDESTRIAN / BICYCLE TRAFFIC. INLET GRATES TO BE GALVANIZED STEEL.
4. CONTRACTOR TO NOTE PIPING AND DDCV'S TO BE RESTRAINED AS PER CITY OF STUART STANDARDS - SEE DETAIL SHEETS.
5. LANDSCAPING ITEMS TO INCLUDE: ENVIRONMENTAL MULCH TO BE INSTALLED AND PLANTING SOIL TO BE INSTALLED.

GEOTECHNICAL NOTES

SITE PREPARATION RECOMMENDATIONS

CLEARING: THE IMPROVED AREAS TO BE PAVED SHOULD BE CLEARED, GRUBBED AND STRIPPED OF ALL SURFACE VEGETATION, TRASH, DEBRIS AND TOPSOIL. STUMPS, REMNANTS OF FORMER FOUNDATIONS, UNDERGROUND UTILITIES, SEPTIC SYSTEMS (IF ANY), ETC. SHOULD BE REMOVED ENTIRELY.

COMPACTION PROCEDURES: FOLLOWING CLEARING OF THE SITE, THE PROPOSED PARKING AREAS SHOULD BE PROOFROLLED WITH A 10 TON (MINIMUM) ROLLER; ANY SOFT, YIELDING SOILS DETECTED SHOULD BE EXCAVATED AND REPLACED WITH CLEAN, COMPACTED BACKFILL THAT CONFORMS WITH THE RECOMMENDATIONS BELOW. SUFFICIENT PASSES SHOULD BE MADE DURING THE PROOFROLLING OPERATIONS TO PRODUCE DRY DENSITIES NOT LESS THAN 95 PERCENT OF THE MODIFIED PROCTOR (ASTM D_1557) MAXIMUM DRY DENSITY OF THE COMPACTED MATERIAL TO DEPTHS OF 2 FEET BELOW THE COMPACTED SURFACE. IN ANY CASE, THE PARKING AREAS SHOULD RECEIVE NOT LESS THAN 10 OVERLAPPING PASSES, HALF OF THEM IN EACH OF TWO PERPENDICULAR DIRECTIONS.

THE SITE PREPARATION CONTRACTOR SHALL CLOSELY MONITOR THE VIBRATIONS PRODUCED DURING THE PROOFROLLING OPERATIONS SO THAT THEY DO NOT ADVERSELY AFFECT ANY NEARBY STRUCTURES.

AFTER THE EXPOSED SURFACE HAS BEEN PROOFROLLED AND TESTED TO VERIFY THAT THE DESIRED DRY DENSITY HAS BEEN OBTAINED, THE PAVEMENT AREAS MAY BE FILLED TO THE DESIRED GRADES. ALL FILL MATERIAL SHOULD CONFORM TO THE RECOMMENDATIONS BELOW. IT SHOULD BE PLACED IN UNIFORM LAYERS NOT EXCEEDING 12 INCHES IN LOOSE THICKNESS. EACH LAYER SHOULD BE COMPACTED TO A DRY DENSITY NOT LESS THAN 95 PERCENT OF ITS MODIFIED PROCTOR (ASTM D_1557) MAXIMUM VALUE.

AFTER COMPLETION OF THE GENERAL SITE PREPARATIONS, THE COMPACTED NATURAL GROUND, FILL OR BACKFILL, SHOULD BE COMPACTED SO AS TO DENSIFY SOILS LOOSENED DURING OR AFTER THE EXCAVATION PROCESS, OR WASHED OR SLOUGHED INTO THE EXCAVATION PRIOR TO THE PLACEMENT OF FORMS. A VIBRATORY, WALK-BEHIND PLATE COMPACTOR CAN BE USED FOR THIS FINAL DENSIFICATION IMMEDIATELY PRIOR TO THE PLACEMENT OF REINFORCING STEEL, WITH PREVIOUSLY DESCRIBED DENSITY REQUIREMENTS TO BE MAINTAINED BELOW THE FOUNDATION LEVEL. THE GROUNDWATER MUST BE LOWERED IF NEEDED TO ALLOW MAINTAINING THE REQUIRED DENSITY LEVEL AND A FIRM WORKING SURFACE FOR THE PLACEMENT OF THE FOUNDATIONS.

QUALITY ASSURANCE AND TESTING FREQUENCY: THE CONTRACTOR SHALL