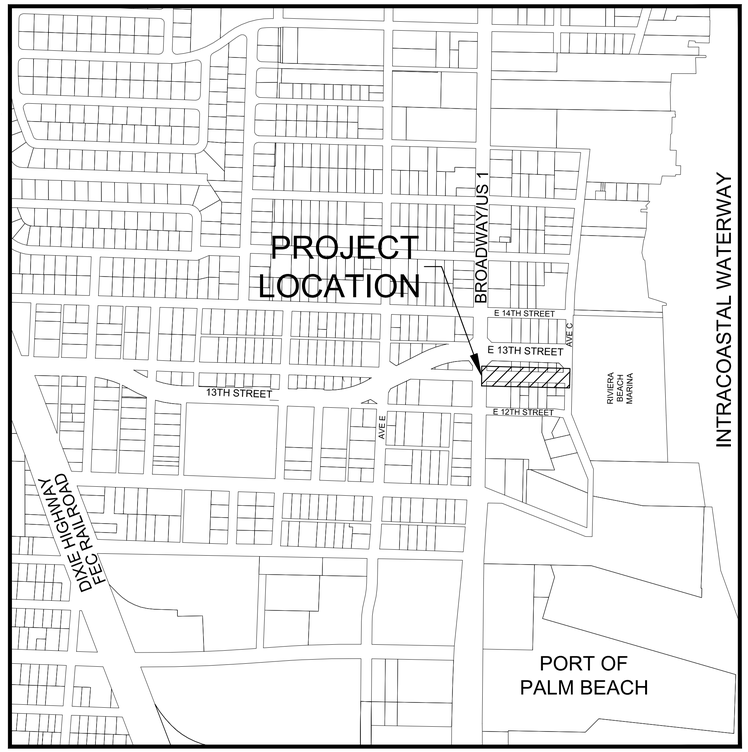
E13TH STREET ABANDONMENT

BROADWAY TO AVENUE C
RIVIERA BEACH, FLORIDA

JULY 2019

INDEX OF PLANS



LOCATION MAP

SCALE: 1" = 400'
CITY OF RIVIERA BEACH, PALM BEACH COUNTY, FLORIDA
SECTION: 33 TOWNSHIP: 42S RANGE: 43E

N

LEGAL DESCRIPTION:

A PORTION OF SECTION 33, TOWNSHIP 42 SOUTH, RANGE 43 EAST, CITY OF RIVIERA BEACH, PALM BEACH COUNTY, FLORIDA

NOTES:

1. RESPONSIBILITY FOR THE USE OF THESE PLANS FOR ANY PURPOSE PRIOR TO SECURING PERMITS FROM ALL AGENCIES HAVING JURISDICTION OVER THIS PROJECT WILL FALL SOLELY UPON THE USER.
2. AN ELECTRONIC CAD FILE WILL BE PROVIDED FOR SURVEY LAYOUT. SURVEYOR IS RESPONSIBLE FOR VERIFICATION OF ALL LOCATIONS IN ELECTRONIC FILE. CONSTRUCTION LAYOUT IS THE SOLE RESPONSIBILITY OF THE SURVEYOR, AND THE ELECTRONIC CAD FILE IS PROVIDED ONLY AS A GENERIC GUIDE.
3. THE PUBLIC ROADWAY(S) INDICATED IN THESE PLANS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE "MANUAL OF UNIFORM MINIMUM STANDARDS FOR DESIGN, CONSTRUCTION AND MAINTENANCE FOR STREETS & HIGHWAYS – STATE OF FLORIDA."
4. THE ELEVATIONS SHOWN ON THE DESIGN/CONSTRUCTION DRAWINGS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM (NAVD) 1988, UNLESS OTHERWISE NOTED.

BENCHMARK:

PALM BEACH ENGINEERING DEPARTMENT "CATERS", EL.=14.291' (NAVD 1988)
PALM BEACH ENGINEERING DEPARTMENT "SR#710-4", EL.=XX.XXX' (NAVD 1988)

PRELIMINARY - NOT FOR CONSTRUCTION

CITY OF RIVIERA BEACH
PALM BEACH COUNTY, FL

CITY OFFICIALS

MAYOR	RONNIE L. FELDER
CHAIR	KASHAMBA L. MILLER-ANDERSON
CHAIR PRO-TEM	JULIA A. BOTEL
COUNCILPERSON	TRADRICK MCCOY
COUNCILPERSON	SHIRLEY D. LANIER
COUNCILPERSON	DOUGLAS A. LAWSON
CITY MANAGER	KAREN L. HOSKINS

PRELIMINARY PLANS

NOT FOR CONSTRUCTION

PERMITTING AGENCIES	DATE SUBMITTED	CGA INITIALS	DATE APPROVED	PERMIT NUMBER
FLORIDA DEPARTMENT OF TRANSPORTATION	04-04-2019	DS	05-07-2019	2019-A-496-00029
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CURRENT REV No.: ---- - ----

PRELIMINARY PLANS

DAVID STAMBAUGH P.E.
STATE OF FLORIDA PROFESSIONAL ENGINEER
LICENSE No. 70757

SHEET: 1 G-1
OF: 7

E 13TH STREET ABANDONMENT
BROADWAY TO AVENUE C
RIVIERA BEACH, FLORIDA

CGA PROJECT No: 179849 | DATE: 07-08-2019

Calvin, Giordano & Associates, Inc.
EXCEPTIONAL SOLUTIONS
580 Village Boulevard • Suite 325 • West Palm Beach, FL 33409
Phone: 561.684.6161 • Fax: 561.684.6360
Certificate of Authorization 514

NO	DATE	REVISION	BY	NO	DATE	REVISION	BY

File Name: Z:\2017\179849 City Of Riviera Beach – 13th St R\179849.2 Viking Developers E 13 ST ROW Evacuation\CADD Files\Drawings\179849-KEYSR001.dwg – (Plotted by: Lee Rowbotham on Tuesday, July 9, 2019 9:20:39 AM)

ABBREVIATION LEGEND

ARV	AIR RELEASE VALVE
BE	BURIED ELECTRIC
BFP	BACK FLOW PREVENTOR
BFV	BUTTERFLY VAVLE
BM	BENCHMARK
BOP	BOTTOM OF PIPE
BSP	BACTERIOLOGICAL SAMPLING POINT
CAP	CORRUGATED ALUMINUM PIPE
CB	CATCH BASIN
CI	CURB INLET
CIP	CAST IRON PIPE
CLF	CHAIN LINK FENCE
CMP	CORRUGATED METAL PIPE
CO	CLEAN OUT
CONC	CONCRETE
DE	DRAINAGE EASEMENT
DIP	DUCTILE IRON PIPE
E	EAST
EL	ELEVATION
EOW	EDGE OF WATER
EX	EXISTING
EXIST	EXISTING
EXFILT	EXFILTRATION
FF EL	FINISHED FLOOR ELEVATION
FH	FIRE HYDRANT
FM	FORCE MAIN
GALV	GALVANIZED
GV	GATE VALVE
HORZ	HORIZONTAL
INV	INVERT
JB	JUNCTION BOX
L.M.E.	LAKE MANAGEMENT EASEMENT
LF	LINEAR FEET
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
MJ	MECHANICAL JOINT
N	NORTH
NTS	NOT TO SCALE
NGVD	NATIONAL GEODETIC VERTICAL DATUM
OE	OVERHEAD ELECTRIC
PCAP	PERFORATED CORRUGATED ALUMINUM PIPE
PGL	PROFILE GRADE LINE
PRB	POLLUTION RETARDANT BAFFLE
PROP	PROPOSED
PSI	POUNDS PER SQUARE INCH
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
RCW	RECLAIMED WATER
RED	REDUCER
ROW	RIGHT-OF-WAY
R/W	RIGHT-OF-WAY
S	SOUTH
SAN	SANITARY
SB	SOIL BORING
STA	STATION
TOB	TOP OF BANK
TOE	TOE OF SLOPE
TOP	TOP OF PIPE
TYP	TYPICAL
UE	UTILITY EASEMENT
VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL
W	WEST
WM	WATER MAIN

LINE TYPE LEGEND

- LOT LINE
- CENTER LINE
- EASEMENT LINE
- RIGHT-OF-WAY LINE
- PROPOSED RIGHT-OF-WAY LINE
- SECTION LINE
- GUARDRAIL
- EXISTING CHAIN LINK FENCE
- EXISTING CHAIN LINK FENCE (TO BE REMOVED)
- PROPOSED CHAIN LINK FENCE
- EXISTING WOOD FENCE
- EXISTING PICKET FENCE
- EXISTING FORCE MAIN
- PROPOSED FORCE MAIN
- EXISTING SANITARY LATERAL
- EXISTING SANITARY SEWER
- SANITARY SEWER TO BE DEMOLISHED
- PROPOSED SANITARY LATERAL
- PROPOSED SANITARY SEWER
- EXISTING STORM SEWER
- STORM PIPE TO BE DEMOLISHED
- PROPOSED STORM SEWER
- EXISTING WATER SERVICE
- PROPOSED WATER SERVICE
- EXISTING WATER MAIN
- WATER MAIN TO BE DEMOLISHED
- PROPOSED WATER MAIN
- EXISTING RECLAIMED WATER
- EXISTING IRRIGATION
- EXISTING FUEL LINE
- EXISTING NATURAL GAS
- EXISTING AERIAL FIBER OPTIC
- EXISTING BURIED FIBER OPTIC
- EXISTING AERIAL AT&T
- EXISTING BURIED AT&T
- EXISTING AERIAL COMCAST
- EXISTING BURIED COMCAST
- EXISTING OVERHEAD ELECTRIC
- EXISTING UNDERGROUND ELECTRIC
- EXISTING AERIAL PBC TRAFFIC CONDUIT
- EXISTING BURIED PBC TRAFFIC CONDUIT
- EXISTING OVERHEAD WIRE

HATCHING LEGEND

- EXISTING DETECTABLE WARNING
- EXISTING BUILDING (TO REMAIN)
- EXISTING ASPHALT TO BE REMOVED
- EXISTING CONCRETE TO BE REMOVED
- EXISTING PAVERS TO BE REMOVED
- EXISTING ASPHALT TO REMAIN
- DETECTABLE WARNING SURFACES
- CONCRETE CURB/CONCRETE CURB AND GUTTER
- 4" THICK CONCRETE SIDEWALK
- 6" THICK CONCRETE SIDEWALK/DRIVEWAY
- FULL-DEPTH RECONSTRUCTION
- MILLING AND RESURFACING
- STAMPED ASPHALT/PAVERS
- PLANTING AREA

PROPOSED SYMBOL LEGEND

- BOLLARD
- AIR RELEASE VALVE
- B.S.P. No. BACTERIOLOGICAL SAMPLE POINT
- WATER METER
- FIRE HYDRANT
- FIRE DEPARTMENT CONNECTION
- SINGLE WATER SERVICE
- DOUBLE WATER SERVICE
- BACKFLOW PREVENTER
- DOUBLE DETECTOR CHECK VALVE
- REDUCER
- GATE VALVE
- 90°, 45°, 22.5° & 11.25° BENDS
- TEE
- CROSS
- PLUG
- BLOWOFF
- VERTICAL BENDS
- SANITARY FLOW DIRECTION
- CLEAN OUT
- SANITARY MANHOLE
- SINGLE SANITARY LATERAL
- DOUBLE SANITARY LATERAL
- CONFLICT ID
- DRAINAGE FLOW
- SPOT GRADE
- SPOT GRADE (TOP OF CURB)
- SIGN
- CATCH BASIN
- STORM MANHOLE
- CLEANOUT
- SLOTTED DRAIN
- STORM YARD DRAIN
- P5 STORM INLET
- P6 STORM INLET
- P9 STORM INLET
- EXFILTRATION TRENCH
- HEADWALL
- MITERED END – RCP
- MITERED END – HDPE
- SYNTHETIC BALES & FILTER FABRIC
- ROCK BAGS W/ SYNTHETIC BALES & FILTER FABRIC
- SILT BARRIER FENCE

EXISTING SYMBOL LEGEND

- SPOT ELEVATION (FT)
- BENCHMARK
- BOLLARD
- AT&T MANHOLE
- AT&T RISER
- AT&T HANDHOLE
- AT&T FIBER OPTIC MARKER
- AT&T FIBER OPTIC VAULT
- CABLE TV MANHOLE
- CABLE TV RISER
- ELECTRIC HANDHOLE
- ELECTRIC METER
- FPL MANHOLE
- FPL TRANSFORMER
- TRAFFIC CONTROL BOX
- TRAFFIC PEDESTAL
- TRAFFIC POLE & MAST ARM
- TRAFFIC PULL BOX
- TRAFFIC SIGNAL
- CONCRETE UTILITY POLE
- GUY ANCHOR
- LUMINAIRE
- POLE-MOUNTED LIGHT
- WOOD UTILITY POLE
- UTILITY POLE ID
- GAS MARKER
- GAS VALVE
- UNDERGROUND PROPANE TANK
- SIGN
- FORCE MAIN AIR RLEASE VALVE
- FORCE MAIN VALVE
- SANITARY CLEANOUT
- SANITARY MANHOLE
- CATCH BASIN
- TYPE P5 INLET
- TYPE P6 INLET
- TYPE P9 INLET
- STORM MANHOLE
- YARD DRAIN
- AIR RELEASE VALVE
- FIRE DEPARTMENT CONNECTION (FDC)
- FIRE HYDRANT
- REDUCER
- WATER VALVE
- WATER VALVE (TRANSMISSION MAIN)
- WATER METER
- BACKFLOW PREVENTOR
- IRRIGATION VALVE
- MONITORING WELL

EXISTING TREE LEGEND

- ARECA PALM
- AUSTRALIAN PINE TREE
- BLACK OLIVE TREE
- CABBAGE PALM TREE
- COCONUT PALM
- FAN PALM
- FICUS TREE
- GUMBO LIMBO TREE
- LIVE OAK TREE
- MAHOGANY
- MANGO TREE
- MELALEUCA
- SCHEFELERA TREE
- SEA GRAPE
- SHRUB
- UNKNOWN TREE

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PRELIMINARY - NOT FOR CONSTRUCTION

NO	DATE	REVISION	BY	NO	DATE	REVISION	BY

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Phone: 561.684.6161 • Fax: 561.684.6360
Certificate of Authorization 514

E 13TH STREET ABANDONMENT
BROADWAY TO AVENUE C
RIVIERA BEACH, FLORIDA

ABBREVIATIONS AND LEGEND

DAVID STAMBAUGH, P.E.
STATE OF FLORIDA PROFESSIONAL ENGINEER
LICENSE No. 70757

DATE: 07-08-2019

SCALE 1" = 20'

PROJECT No 179849

SHEET: 2

G-2

OF: 7

I. APPLICABLE CODES

A. GENERAL:
ALL CONSTRUCTION WITHIN LIMITS OF PUBLIC RIGHTS OF WAY UNDER THE CITY OF RIVIERA BEACH JURISDICTION SHALL CONFORM WITH THE CITY OF RIVIERA BEACH PUBLIC WORKS DEPARTMENT MINIMUM STANDARDS, LATEST EDITION.

B. CONSTRUCTION SAFETY:
ALL CONSTRUCTION SHALL BE DONE IN A SAFE MANNER, SPECIFICALLY, THE RULES AND REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.) SHALL BE STRICTLY OBSERVED.

C. SURVEY DATA:
ALL ELEVATIONS ON THE PLANS OR REFERENCED IN THE SPECIFICATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD).

II. PRECONSTRUCTION RESPONSIBILITY

A. UPON THE RECEIPT OF THE "NOTICE TO PROCEED", THE CONTRACTOR SHALL CONTACT THE ENGINEER OF RECORD AND ARRANGE A PRECONSTRUCTION CONFERENCE TO INCLUDE ALL THE INVOLVED GOVERNMENTAL AGENCIES, UTILITY OWNERS, THE OWNER AND THE ENGINEER OF RECORD.

B. THE CONTRACTOR SHALL OBTAIN A "SUNSHINE ONE CALL" CERTIFICATION NUMBER AT LEAST 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION.

C. CONTRACTOR IS REQUIRED TO OBTAIN A CONSTRUCTION PERMIT FROM THE CITY OF RIVIERA BEACH PRIOR TO START OF CONSTRUCTION.

D. ALL APPLICABLE PERMITS SHALL BE OBTAINED BY THE CONTRACTOR PRIOR TO START OF CONSTRUCTION.

E. PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY THE SIZE, LOCATION, ELEVATION, AND MATERIAL OF ALL EXISTING UTILITIES WITHIN THE AREA OF CONSTRUCTION.

F. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO ANY EXISTING UTILITIES FOR WHICH HE FAILS TO REQUEST LOCATIONS FROM THE CITY OF RIVIERA BEACH UTILITIES DEPARTMENT.

G. IF UPON EXCAVATION, AN EXISTING UTILITY IS FOUND TO BE IN CONFLICT WITH THE PROPOSED CONSTRUCTION OR TO BE OF A SIZE OR MATERIAL DIFFERENT FROM THAT SHOWN ON THE CONTRACTOR'S PLANS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER, WHO WILL IN TURN NOTIFY THE CITY OF RIVIERA BEACH UTILITIES DEPARTMENT.

H. CONTRACTOR SHALL TRANSFER ALL EXISTING WATER AND SEWER SERVICES TO PROPOSED WATER AND SEWER IMPROVEMENTS PRIOR TO ABANDONMENT OF EXISTING INFRASTRUCTURE. THE SHALL NOTIFY THE CITY OF ALL SERVICE CONNECTIONS TO NEW PROPOSED SYSTEM FROM EXISTING SYSTEM OF SERVICES PRIOR TO COMMENCEMENT OF WORK.

I. THE CONTRACTOR SHALL REPAIR ANY UTILITY TO PRECONSTRUCTION CONDITION AT HIS COST SHOULD IT BE DAMAGED AS A RESULT OF CONSTRUCTION ACTIVITIES.

III. INSPECTIONS

THE CONTRACTOR SHALL NOTIFY THE ENGINEERING DEPARTMENT OF THE CITY OF RIVIERA BEACH, AND THE ENGINEER OF RECORD AND ANY OTHER GOVERNMENTAL AGENCIES HAVING JURISDICTION AT LEAST 24 HOURS PRIOR TO BEGINNING CONSTRUCTION AND PRIOR TO THE INSPECTION OF THE FOLLOWING ITEMS, WHERE APPLICABLE.

1. STORM DRAINAGE.
2. SANITARY SEWER.
3. WATER SYSTEM.
4. SUBGRADE; SUBMIT AND HAVE APPROVED DENSITIES PRIOR TO PLACEMENT OF ROCK.
5. LIMEROCK BASE; SUBMIT AND HAVE APPROVED DENSITIES AND AS-BUILTS PRIOR TO THE PLACEMENT OF ANY ASPHALT.
6. ASPHALTIC CONCRETE.
7. CLEARING AND FILLING
8. FINAL.

IV. SHOP DRAWINGS

A. PRIOR TO ISSUANCE OF A CONSTRUCTION PERMIT, SHOP DRAWINGS SHALL BE SUBMITTED TO AND REVIEWED BY THE ENGINEER OF RECORD AND THE CITY OF RIVIERA BEACH FOR SANITARY MANHOLES, HYDRANTS, VALVES, PIPING, LIFT STATIONS AND OTHER ACCESSORIES. CATALOGUE LITERATURE SHALL BE SUBMITTED FOR WATER AND SEWER PIPES, FITTINGS AND APPURTENANCES.

B. INDIVIDUAL SHOP DRAWINGS FOR ALL PRECAST STRUCTURES ARE REQUIRED. CATALOGUE LITERATURE WILL NOT BE ACCEPTED FOR PRECAST STRUCTURES.

C. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ALL OTHER AGENCY APPROVAL IF REQUIRED.

V. TEMPORARY FACILITIES

A. TEMPORARY UTILITIES:
IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE FOR OR SUPPLY TEMPORARY WATER SERVICE, SANITARY FACILITIES AND ELECTRICITY TO HIS EMPLOYEE AND SUBCONTRACTORS FOR THEIR USE DURING CONSTRUCTION.

OBTAIN CONSTRUCTION METER FOR ALL WATER USED ON JOB. ALL WATER USED FOR CLEANING, TESTING, ETC. WILL BE PAID FOR BY THE CONTRACTOR. IF WATER CAN NOT BE METERED THEN IT WILL BE CALCULATED.

B. TRAFFIC REGULATION:
MAINTENANCE OF TRAFFIC IN THE PUBLIC RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH THE M.U.T.C.D. AND F.D.O.T.

ALL OPEN TRENCHES AND HOLES ADJACENT TO ROADWAYS OR WALKWAYS SHALL BE MARKED AND BARRICADED TO ASSURE THE SAFETY OF BOTH VEHICULAR AND PEDESTRIAN TRAFFIC.

NO TRENCHES OR HOLES NEAR WALKWAYS OR IN ROADWAYS OR THEIR SHOULDERS ARE TO BE LEFT OPEN DURING NIGHTTIME HOURS WITHOUT EXPRESS PERMISSION OF THE CITY OF RIVIERA BEACH.

TRENCH SAFETY:
IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE TRENCH SAFETY SYSTEMS, SUCH AS SHEETING AND BRACING IN ACCORDANCE WITH STATE, LOCAL AND OSHA REGULATIONS.

C.

PROJECT CLOSE OUT

VI.

CLEANING UP:

A. 1. DURING CONSTRUCTION, THE PROJECT SITE AND ALL ADJACENT AREAS SHALL BE MAINTAINED IN A NEAT AND CLEAN MANNER. UPON FINAL CLEAN UP, THE PROJECT SITE SHALL BE LEFT CLEAR OF ALL SURPLUS MATERIAL OR TRASH. THE PAVED AREAS SHALL BE SWEPT BROOM CLEAN.

2. THE CONTRACTOR SHALL RESTORE OR REPLACE, WHEN AND AS DIRECTED BY THE ENGINEER OR THE CITY OF RIVIERA BEACH, ANY PUBLIC OR PRIVATE PROPERTY DAMAGED BY HIS WORK, EQUIPMENT, EMPLOYEES OR THOSE OF HIS SUBCONTRACTORS TO A CONDITION AT LEAST EQUAL TO THAT EXISTING IMMEDIATELY PRIOR TO THE BEGINNING OF OPERATIONS. TO THIS END, THE CONTRACTOR SHALL DO AS REQUIRED, ALL NECESSARY HIGHWAY OR DRIVEWAY, SIDEWALK AND LANDSCAPING WORK. SUITABLE MATERIALS AND METHODS SHALL BE USED FOR SUCH RESTORATION.

3. WHERE MATERIAL OR DEBRIS HAS WASHED OR FLOWED INTO OR BEEN PLACED IN WATER COURSES, GRAVITY SEWER, DITCHES, DRAINS, CATCH BASINS, OR ELSEWHERE AS A RESULT OF THE CONTRACTOR'S OPERATIONS, SUCH MATERIAL OR DEBRIS SHALL BE REMOVED AND SATISFACTORILY DISPOSED OF DURING PROGRESS OF THE WORK, AND THE AREA KEPT IN A CLEAN AND NEAT CONDITION.

4. WHEN WORKING IN AND AROUND EXISTING DRAINAGE CANALS, APPROPRIATE SILT BARRIERS SHALL BE INSTALLED AS REQUIRED BY LOCAL DRAINAGE DISTRICT.

B. PROJECT RECORD DOCUMENTS:

1. THE CONTRACTOR SHALL MAINTAIN ACCURATE AND COMPLETE RECORDS OF ALL WORK ITEMS COMPLETED.

2. ALL "AS-BUILT" INFORMATION SUBMITTED TO THE ENGINEER SHALL BE SUFFICIENTLY ACCURATE, CLEAR AND LEGIBLE TO SATISFY THE ENGINEER THAT THE INFORMATION PROVIDED A TRUE REPRESENTATION OF THE IMPROVEMENTS CONSTRUCTED.

3. UPON COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER OF RECORD ONE COMPLETE SET OF "AS-BUILT" CONSTRUCTION DRAWINGS. THESE DRAWINGS SHALL BE MARKED TO SHOW "AS-BUILT" CONSTRUCTION CHANGES AND DIMENSIONED LOCATIONS AND ELEVATIONS OF ALL IMPROVEMENTS AND SHALL BE SIGNED BY THE CONTRACTOR.

4. ALL "AS-BUILT" INFORMATION ON ELEVATIONS OF SANITARY SEWAGE, PAVING, DRAINAGE AND UTILITY EASEMENT SHALL BE CERTIFIED BY A REGISTERED LAND SURVEYOR.

5. "AS-BUILT" INFORMATION ON THE WATER SYSTEM SHALL INCLUDE, BUT IS NOT LIMITED TO LOCATIONS OF ALL VALVES, FITTINGS, FIRE HYDRANTS AND WATER SERVICES AND TOP-OF-PIPE ELEVATION ON 100-FOOT INTERVALS AT A MINIMUM.

6. PRIOR TO A FINAL INSPECTION BY THE CITY OF RIVIERA BEACH, THE ENGINEER SHALL SUBMIT TWO (2) SETS OF BLUEPRINTS OF "AS-BUILT" CONSTRUCTION DRAWINGS.

7. UPON A FINAL INSPECTION BY THE CITY OF RIVIERA BEACH, THE ENGINEER SHALL SUBMIT TO THE CITY ONE (1) COMPLETE SET OF REPRODUCIBLE MYLARS AND THREE (3) SETS OF BLUEPRINTS OF "AS-BUILT" CONSTRUCTION DRAWINGS THAT HAVE BEEN CERTIFIED BY A REGISTERED LAND SURVEYOR AND THE ENGINEER OF RECORD.

C. MONUMENTS:
ALL PROPERTY MONUMENTS OR PERMANENT REFERENCES, REMOVED OR DESTROYED BY THE CONTRACTOR DURING CONSTRUCTION SHALL BE RESTORED BY A STATE OF FLORIDA REGISTERED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

D. UNPAVED SURFACES:
ALL UNPAVED SURFACES SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN THAT WHICH EXISTED BEFORE THE CONSTRUCTION.

VII. EARTHWORK AND COMPACTION

A. GENERAL:

1. NONE OF THE EXISTING MATERIAL IS TO BE INCORPORATED IN THE LIMEROCK BASE.

2. ALL SUBGRADE UNDER PAVED AREAS SHALL HAVE A MINIMUM LBR VALUE OF 40 AND AND SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180.

3. ALL FILL MATERIAL IN AREAS NOT TO BE PAVED SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180.

4. A 2" BLANKET OF TOP SOIL SHALL BE PLACED OVER ALL AREAS TO BE SODDED.

5. SOD SHALL BE ST. AUGUSTINE, BITTER BLUE OR FLORATAM AND SHALL BE PLACED ON THE GRADED TOP SOIL AND WATERED TO INSURE SATISFACTORY CONDITION UPON FINAL ACCEPTANCE OF THE PROJECT.

6. WHEN WORKING IN AND AROUND EXISTING DRAINAGE CANALS OR LAKES, APPROPRIATE SILT BARRIERS SHALL BE INSTALLED.

B. ON-SITE:

1. ALL ORGANIC AND OTHER UNSUITABLE MATERIAL WITHIN THE RIGHT-OF-WAY SHALL BE REMOVED.

2. SUITABLE BACKFILL SHALL BE MINIMUM LBR 40 MATERIAL COMPACTED TO 98% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180 FOR THREE (3) FEET BEYOND THE PERIMETER OF THE PAVING.

VIII. PAVING

A. GENERAL:

1. ALL UNDERGROUND UTILITIES SHALL BE COMPLETED PRIOR TO THE CONSTRUCTION OF OF LIMEROCK BASE AND PRIOR TO PLACEMENT OF THE PAVEMENT.

2. ALL EXISTING PAVEMENT CUT OR DAMAGED BY CONSTRUCTION SHALL BE PROPERLY RESTORED AT THE CONTRACTOR'S EXPENSE.

3. WHERE PROPOSED PAVEMENT IS TO BE CONNECTED TO EXISTING PAVEMENT, THE EXISTING EDGE OF PAVEMENT SHALL BE SAW CUT.

B. MATERIAL:

1. BASE COURSE SHALL BE CRUSHED LIMEROCK MIAMI OOLITE WITH A MINIMUM OF 70% CARBONATES OF CALCIUM AND MAGNESIUM (60% FOR LOCAL STREETS AND PARKING AREAS) AND A MINIMUM LIMEROCK BEARING RATIO 100.

2. PRIME COAT AND TACK COAT SHALL MEET F.D.O.T. STANDARDS.

3. SURFACE COURSE SHALL BE EQUAL TO F.D.O.T. TYPE S-3 ASPHALTIC.

4. REINFORCED CONCRETE SLABS SHALL BE CONSTRUCTED OF CLASS I CONCRETE WITH A MINIMUM STRENGTH OF 3,000 PSI AND SHALL BE REINFORCED WITH A 6" x 6" No. 6 GAUGE WIRE MESH.

C. INSTALLATION:

1. BASE COURSE MATERIAL FOR PAVED AREAS SHALL BE A MINIMUM OF 8 INCHES PLACED ON A SINGLE LAYER FOR STREETS. (6 INCHES FOR DRIVEWAYS, AND DESIGNATED PARKING AREAS.

2. BASE COURSE SHALL BE COMPACTED TO 98% OF THE MAXIMUM DENSITY AS PER AASHTO T-180-74.

3. LIMEROCK BASE MATERIAL SHALL BE PLACED IN MAXIMUM 6" LIFTS. BASES GREATER THAN 6" SHALL BE PLACED IN TWO OR MORE EQUAL LIFTS.

4. ASPHALTIC CONCRETE SHALL BE A MINIMUM OF 1½" THICK AND SHALL BE PLACED TWO 3/4" LIFTS UNLESS OTHERWISE NOTED ON PLANS.

5. PRIME COAT SHALL BE PLACED ON ALL LIMEROCK BASES IN ACCORDANCE WITH F.D.O.T. STANDARDS.

6. TACK COAT SHALL BE PLACED AS REQUIRED IN ACCORDANCE WITH F.D.O.T. STANDARDS.

D. TESTING:
ALL SUBGRADE, LIMEROCK AND ASPHALT TESTS REQUIRED SHALL BE TAKEN AT THE DIRECTION OF THE ENGINEER AND/OR THE CITY OF RIVIERA BEACH.

1. THE FINISHED SURFACE OF THE BASE COURSE AND THAT OF THE WEARING SURFACE SHALL NOT VARY MORE THAN ¼" FROM THE TEMPLATE. ANY IRREGULARITIES EXCEEDING THIS LIMIT SHALL BE CORRECTED.

2. DENSITY TESTS SHALL BE TAKEN BY AN INDEPENDENT TESTING LABORATORY, CERTIFIED BY THE STATE OF FLORIDA, WHERE DIRECTED BY THE ENGINEER.

3. ALL TESTING COSTS (PAVING) SHALL BE PAID FOR BY THE OWNER EXCEPT THOSE TESTS FAILING TO MEET THE SPECIFIED REQUIREMENTS, WHICH ARE TO BE PAID BY THE CONTRACTOR.

IX. WATER DISTRIBUTION AND/OR SEWAGE FORCE MAIN SYSTEM

A. GENERAL:

1. THE CONTRACTOR SHALL NOTIFY THE CITY OF RIVIERA BEACH UTILITIES DEPARTMENT AND THE ENGINEER OF RECORD NO LATER 24 HOUR PRIOR TO MAKING CONNECTIONS TO EXISTING SYSTEMS. A CITY OF RIVIERA BEACH UTILITY DEPT. REPRESENTATIVE AND THE ENGINEER OF RECORD MUST BE PRESENT.

2. SEPARATION OF WATER AND SEWER MAINS:

a. PARALLEL WATER AND SEWER MAINS SHALL HAVE A MINIMUM 10 FEET HORIZONTAL SEPARATION. WHERE THIS IS NOT POSSIBLE, THE SEWER MAIN SHALL BE IN A SEPARATE TRENCH AND BE AT LEAST 18 INCHES BELOW THE WATER MAIN OR BOTH MAINS SHALL BE DUCTILE IRON WITH A MINIMUM 6" CLEARANCE, PER PRESSURE PIPE SPECIFICATIONS.

b. THE SEWER MAIN SHALL CROSS BELOW ALL WATER MAINS WITH A MINIMUM OF 18 INCHES VERTICAL CLEARANCE. WHERE THE CLEARANCE IS LESS THAN 18 INCHES, THE SEWER MAIN AND THE WATER MAIN SHALL BE DUCTILE IRON PIPE, WITH A MINIMUM 6" CLEARANCE, FOR 20 FEET CENTERED ON THE POINT OF CROSSING. ALL JOINTS ON THE WATER MAIN WITHIN 20 FEET OF THE CROSSING SHALL BE MECHANICALLY RESTRAINED.

c. IF A SEWER MAIN MUST CROSS ABOVE A WATER MAIN, REGARDLESS OF VERTICAL CLEARANCE, THE PRECAUTION IN ITEM (b.) ABOVE SHALL BE TAKEN.

3. NO CONNECTIONS TO THE EXISTING LINES SHALL BE MADE UNTIL PRESSURE TESTS FOR THE WATER MAINS AND SEWER FORCE MAINS, AND BACTERIOLOGICAL TESTS HAVE BEEN PERFORMED AND THE SYSTEM IS ACCEPTABLE TO THE CITY OF RIVIERA BEACH AND THE PALM BEACH COUNTY PUBLIC HEALTH UNIT.

4. CLEANING OF NEWLY INSTALLED PIPING SYSTEMS SHALL BE ACCOMPLISHED USING PIPE PIGGING METHODS. OPEN FLUSHING SHALL NOT BE ALLOWED WITHOUT PRIOR APPROVAL OF THE UTILITIES DEPARTMENT. ALL WATER WILL BE ACCOUNTED FOR.

5. ALL EFFORTS SHALL BE MADE SO THAT WATER AND FORCE MAINS CROSS ABOVE DRAINAGE LINES WITH ADEQUATE COVER AND SEPARATION. IF THIS IS NOT POSSIBLE, IT SHALL BE INDICATED ON THE PLANS.

6. A THREE (3) FEET LATERAL SEPARATION SHALL BE MAINTAINED BETWEEN WATER/SEWER LINES AND OBSTRUCTIONS (I.E., CATCH BASINS, CONCRETE POLES, ETC.), FIVE (5) FEET FROM TREES.

7. BEDDING AND INITIAL BACKFILL FOR MAINS SHALL BE SAND WITH NO ROCKS LARGER THAN 1" IN DIAMETER.

8. USE "DETECTOR" TAPE ON ALL P.V.C. MAINS.

9. 3M MARKERS/PEG SHALL BE INSTALLED ON EACH FITTING, SERVICE TAP AND SERVICE END IF METER IS NOT SET. USE BLUE FOR WATER AND GREEN FOR SEWER WITH FREQUENCY DETERMINED BY THE CITY.

B. MATERIAL:

1. PIPE:
THE WATER MAIN AND/OR SEWAGE FORCE MAIN SHALL BE EITHER POLYVINYL CHLORIDE (PVC) OR DUCTILE IRON PIPE (DIP).

a. PVC PIPE SHALL BE ASTM 1120 PRESSURE PIPE WITH IRON O.D., CLASS 150 (DR 18), CONFORMING TO ANSI/AWWA C900-97 OR C905-97 OR LATEST REVISION, AND SHALL HAVE PUSH RUBBER GASKET JOINTS.

b. DIP SHALL BE CLASS 350 WALL THICKNESS (UP TO 12"), CLASS 300 (14"-18"), CLASS 250 (20" OR GREATER) WITH INTERIOR CEMENT LINING AND EXTERIOR COAL TAR COATING CONFORMING TO ANSI/AWWA C151/A21.51-96 LATEST REVISION. SEWAGE PIPE SHALL BE EITHER DOUBLE CEMENT CONFORMING TO ANSI/AWWA C104/A21.4-95 LATEST REVISION, OR POLYETHYLENE LINED CONFORMING TO ANSI/AWWA C105/A21.5-99 LATEST REVISION, OR APPROVED EQUAL. THE PIPE SHALL WITHSTAND A WORKING PRESSURE OF 350 PSI. THE JOINTS SHALL BE BELL AND SPIGOT PUSH ON TYPE, MECHANICAL JOINT OR FLANGED. FLANGED PIPE SHALL CONFORM WITH THE PHYSICAL AND CHEMICAL REQUIREMENTS AS SET FORTH IN THE HANDBOOK OF DUCTILE IRON PIPE OF THE CAST IRON PIPE RESEARCH ASSOCIATION. DIP INSTALLED IN NON PAVED AREAS, SHALL BE CLASS 50, CLASS 52 IN PAVED AREAS.

c. MINIMUM SIZE OF WATER MAIN SHALL BE 6" INCHES.

2. FITTINGS:
FITTINGS SHALL BE DUCTILE IRON COMPACT MECHANICAL JOINT AND SHALL BE CLASS 350 THROUGH 24" CONFORMING TO ANSI/AWWA C153/A21.53-00, OR LATEST REVISION, AND CLASS 250 IN SIZES 24" AND LARGER, CONFORMING TO ANSI/AWWA C110/A21.10 -98, OR LATEST REVISION, COMPLETE WITH GLANDS, GASKETS, BOLTS AND NUTS. ALL FITTINGS SHALL BE CEMENT LINED AND SEAL COATED WITH THE SAME AS PIPE.

3. VALVES:

a. VALVES SHALL BE GATE VALVES FOR WATER LESS THAN 12" AND BUTTERFLY VALVE FOR WATER 12" AND LARGER OR PLUG VALVE FOR FORCE MAIN UNLESS OTHERWISE INDICATED.

I. GATE VALVES 4" AND LARGER SHALL BE IRON BODY, FULLY ENCAPSULATED RESILIENT SEAT, BRONZE MOUNTED NON-RISING STEM, DOUBLE DISC, RATED AT 200 PSI AND CONFORMING TO ANSI/AWWA C509-94 OR LATEST REVISION. EXPOSED VALVES SHALL BE OUTSIDE SCREW AND YOKE TYPE. GATE VALVES SHALL BE AMERICAN DARLING (LINE 80), CLOW F6100 OR APPROVED EQUAL. GATE VALVES 3" OR LESS SHALL BE NIBCO T-133 OR T-136 WITH MALLEABLE HAND WHEELS. NO SUBSTITUTION ALLOWED.

II. BUTTERFLY VALVES AND OPERATORS SHALL CONFORM TO ANSI/AWWA C504-00 STANDARD FOR RUBBER SEATED BUTTERFLY VALVES, OR LATEST REVISIONS. VALVES SHALL BE CLASS 150 A OR B AND SHALL BE MUELLER, PRATT OR APPROVED EQUAL.

III. PLUG VALVES SHALL BE SEMI-STEEL BODY, NON-LUBRICATED, ECCENTRIC TYPE, WITH RESILIENT FACED PLUGS, AND CAPABLE OF DRIP-TIGHT SHUT OFF AT THE RATED PRESSURE IF APPLIED AT EITHER PORT. VALVES ARE TO BE EQUIPPED WITH ACTUATING NUTS, CAST IRON HAND WHEELS OR CHAIN OPERATORS, WITH GALVANIZED STEEL CHAINS AS APPROPRIATE FOR THE INSTALLATION AND TYPE OF OPERATOR, VALVES SHALL BE DEZURIK CORP. SERIES 100, CLOW FUL-FLOW MODEL F5413 OR APPROVED EQUAL.

IV. AIR RELEASE VALVE BODY AND COVER SHALL BE OF CAST IRON CONSTRUCTION, ASTM A126-B, ND ALL INTERNAL WORKING PARTS SHALL BE OF STAINLESS STEEL ASTM A240, TYPE 303 AND 304 AND SHALL MEET OR EXCEED ANSI/AWWA C512-99 OR LATEST REVISION. THE VENTING ORIFICE SHALL BE 2"INCH IN DIAMETER WITH STAINLESS STEEL SEAT. THE INLET OPENING SHALL BE STANDARD 2 INCH NPT SCREWED CONNECTION. THE VALVE SHALL BE FULLY CAPABLE OF OPERATION IN THE SEWAGE FORCE MAIN AND SHALL INCLUDE A BACK-FLUSHING FEATURE FOR PERIODIC CLEANING OF INTERNAL MECHANISM. THE OVERALL HEIGHT OF THE VALVE BODY SHALL NOT EXCEED 13". VALVES SHALL BE MANUFACTURED BY VAL-MATIC CORP. APCO OR APPROVED EQUAL.

b. A REFLECTIVE PAVEMENT MARKER SHALL BE INSTALLED IN THE CENTER OF THE NEAREST LANE OF ROAD PAVEMENT ADJACENT TO ALL VALVE LOCATIONS OUTSIDE THE ROAD PAVEMENT. WATER MARKERS SHALL BE WHITE, SEWER MARKERS SHALL BE GREEN.

4. FIRE HYDRANTS:

a. FIRE HYDRANTS SHALL HAVE A MINIMUM 5¼" VALVE OPENING AND SHALL OPEN AGAINST THE PRESSURE AND CLOSE WITH THE FLOW. HYDRANTS SHALL BE MUELLER CENTURION, MODEL NUMBER A-423, CLOW MEDALLION 2500, AMERICAN DARLING B-84B, KENNEDY GUARDIAN K-81 OR US PIPE METROPOLITAN 250 OR APPROVED EQUAL HYDRANTS SHALL MEET OR EXCEED ANSI/AWWA C502-94, C503-97 OR LATEST REVISION, AND SHALL COMPLY WITH FACTORY MUTUAL RESEARCH CORPORATION AND UNDERWRITERS LABORATORIES UL246 STANDARD. ALL HYDRANTS TO BE INSTALLED WITH ANCHORING TEE AND CONTROL VALVE. PUMPER NOZZLE TO BE 18" FROM FINISH GRADE.

b. A BLUE REFLECTIVE PAVEMENT MARKER SHALL BE PROVIDED IN THE CENTER OF THE NEAREST LANES OF ROAD PAVEMENT ADJACENT TO ALL FIRE HYDRANT LOCATIONS.

5. DETECTOR TAPE FOR PVC MAINS:
DETECTOR TAPE SHALL BE 3" WIDE BLUE TAPE FOR WATER MAIN AND BROWN TAPE FOR FORCE MAIN, WITH A METALLIZED FOIL CORE LAMINATED BETWEEN 2 LAYERS OF PLASTIC FILM. THE WORDS "CAUTION WATER LINE BURIED BELOW" OR "CAUTION FORCE MAIN BURIED BELOW" SHALL BE PRINTED AT 30" INTERVALS ALONG THE TAPE. TAPE SHALL BE PLACED 18" BELOW GRADE ABOVE ALL PVC MAINS AND SERVICES OR AS RECOMMENDED BY MANUFACTURER.

6. SERVICE CONNECTIONS:

a. SERVICE SADDLES SHALL BE DUCTILE IRON EPOXY OR NYLON COATED WITH DOUBLE STAINLESS STEEL STRAPS OR SINGLE WIDE STRAP. SADDLES SHALL CONFORM TO ANSI/AWWA C111/21.11-00 AND ASTM A-588 OR LATEST REVISION.

b. SERVICE LINES SHALL BE BLUE POLYETHYLENE (PE) TUBING AS DESCRIBED IN ANSI/AWWA C901-96 OR LATEST REVISION, WITH A WORKING PRESSURE OF 160 PSI (DR 9) PIPE JOINTS SHALL BE OF THE COMPRESSION TYPE TOTALLY CONFINED GRIP SEAL AND COUPLING NUT. POLYETHYLENE SHALL BE EXTRUDED FROM PE 3408 HIGH MOLECULAR WEIGHT MATERIAL AND MUST CONFORM TO ASTM D-2737. STAINLESS STEEL TUBE STIFFENER INSERTS SHALL BE USED.

c. CORPORATION STOPS SHALL BE MANUFACTURED OF BRASS ALLOY IN ACCORDANCE WITH ASTM B-62 WITH THREADED ENDS AS MANUFACTURED BY FORD.

d. CURB STOPS SHALL BE FORD.

e. METER STOPS SHALL BE THE 90 DEGREE LOCKWING TYPE AND SHALL BE OF BRONZE CONSTRUCTION IN ACCORDANCE WITH ASTM B-62. METER STOPS SHALL BE CLOSED BUTTON DESIGN AND RESILIENT "O" RING SEALED AGAINST EXTERNAL LEAKAGE AT THE TOP. STOPS SHALL BE EQUIPPED WITH A METER COUPLING NUT ON THE OUTLET SIDES. METER STOP SHALL BE MANUFACTURED BY FORD.

f. METER AND METER BOXES 2" OR LESS ARE SUPPLIED BY THE CITY OF RIVIERA BEACH AT THE CITY'S EXPENSE.

7. TAPPING SLEEVES:
TAPPING SLEEVES SHALL BE CAST IRON, MECHANICAL JOINT, CLOW MODEL F5207, MUELLER H615 OR APPROVED EQUAL.

8. VALVE BOXES:

a. VALVE BOXES FOR WATER MAINS AND SEWER FORCE MAINS SHALL BE U.S. FOUNDRY MODEL 7500, MARKED "WATER" OR "SEWER", OR APPROVED EQUAL.

b. VALVE BOXES FOR BLOW-OFF ASSEMBLY SHALL BE U.S. FOUNDRY MODEL 7630, OR APPROVED EQUAL.

9. RETAINER GLANDS:
RETAINER GLANDS SHALL CONFORM TO ANSI/AWWA C111/A21.11-00 OR LATEST REVISION. ALL GLANDS SHALL BE MANUFACTURED FROM DUCTILE IRON AS LISTED BY UNDERWRITERS LABORATORIES FOR 250 PSI MINIMUM WATER PRESSURE RATING. CLOW CORPORATION MODEL F-1058, TYLER, EBAA IRON, OR APPROVED EQUAL. FOR PVC PIPE, GLANDS SHALL BE MEGA LUG SERIES 200

10. DOUBLE CHECK VALVE BACKFLOW PREVENTION ASSEMBLY:
THE ASSEMBLY SHALL CONFORM TO ANSI/AWWA C510-97, OR LATEST REVISION, AND CAPABLE OF WITHSTANDING A WORKING PRESSURE OF AT LEAST 150 PSI WITHOUT DAMAGE TO WORKING PARTS OR IMPAIRMENT OF FUNCTION. IT SHALL CONSIST OF TWO INTERNALLY LOADED, INDEPENDENTLY OPERATING CHECK VALVES, LOCATED BETWEEN TWO TIGHTLY CLOSING RESILIENT-SEATED SHUT OFF VALVES, WITH FOUR PROPERLY PLACED RESILIENT-SEATED TEST COCKS.

C. INSTALLATION:

1. GENERAL:
CONNECTION OF ALL NEW SYSTEMS TO EXISTING MAINS SHALL BE DONE USING ONE OF THE THREE FOLLOWING METHODS:

a. METHOD "A" PER PALM BEACH COUNTY PUBLIC HEALTH UNIT STANDARDS, WHICH INVOLVES A REDUCED SIZE TEMPORARY CONNECTION BETWEEN THE EXISTING MAIN AND THE NEW MAIN.

b. METHOD "B" PER PALM BEACH COUNTY PUBLIC HEALTH UNIT STANDARDS, WHICH INVOLVES A DIRECT CONNECTION BETWEEN THE NEW AND EXISTING MAINS USING TWO GATE VALVES SEPARATED BY A SLEEVE WITH A VENT PIPE.

c. METHOD "C" APPROVED BY THE PALM BEACH COUNTY PUBLIC HEALTH UNIT, WHICH INVOLVES A TAP WITH ONE GATE VALVE REQUIRING DISINFECTION OF THE NEW SYSTEM PRIOR TO CONDUCTING THE PRESSURE TEST.

2. BEDDING:
BEDDING AND INITIAL BACKFILL (12 INCHES ABOVE PIPE) FOR ALL PIPES SHALL BE SAND WITH NO ROCK LARGER THAN 1" IN DIAMETER. PEA ROCK OR 3/4" WASHED ROCK WILL BE USED IN WATER OR WHERE UNSUITABLE BEDDING EXISTS AT THE DISCRETION OF THE CITY OF RIVIERA BEACH. ALL OTHER FILL SHALL NOT HAVE ROCK LARGER THAN 6" IN DIAMETER.

PRELIMINARY - NOT FOR CONSTRUCTION

NO	DATE	REVISION	BY	NO	DATE	REVISION	BY

Calvin, Giordano & Associates, Inc.
EXCEPTIONAL SOLUTIONS
580 Village Boulevard • Suite 325 • West Palm Beach, FL 33409
Phone: 561.684.6161 • Fax: 561.684.6360
Certificate of Authorization 514

E 13TH STREET ABANDONMENT
BROADWAY TO AVENUE C
RIVIERA BEACH, FLORIDA

GENERAL NOTES

DAVID STAMBAUGH, P.E.
STATE OF FLORIDA PROFESSIONAL ENGINEER
LICENSE No. 70757
DATE: 07-08-2019

SCALE N.T.S.
PROJECT No 179849
SHEET: 3 G-3 OF: 7

3. PVC PIPE:
   - a. PVC PIPE SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATION FOR INSTALLATION OF PVC PRESSURE PIPE FOR MUNICIPAL WATER DISTRIBUTION SYSTEMS.
   - b. PVC PIPE SHALL BE INSTALLED WITH A MINIMUM OF 36" COVER.
   - c. DETECTOR TAPE SHALL BE INSTALLED THE FULL LENGTH OF ALL PVC MAINS APPROXIMATELY 18" BELOW GRADE, COLOR SIDE UP.

4. DUCTILE IRON PIPE:
   - a. DIP SHALL BE INSTALLED IN ACCORDANCE WITH ANSI/AWWA C600-99 OR LATEST REVISION.
   - b. DIP SHALL BE INSTALLED WITH A MINIMUM OF 30" COVER.

5. VALVES:
   - a. ALL VALVES SHALL BE INSTALLED WITH ADJUSTABLE CAST IRON VALVE BOXES WITH THE WORD "WATER" OR "SEWER" CAST IN THE COVER.
   - b. MAIN VALVES SHALL BE LOCATED ON AN EXTENSION OF THE RIGHT-OF-WAY LINE UNLESS DIMENSIONED OTHERWISE.
   - c. MAIN VALVES SHALL BE INSTALLED AWAY FROM PARKING AREAS. IF THIS IS UNAVOIDABLE, PROPER MEASURES SHALL BE TAKEN TO AVOID THE PARKING OF VEHICLES OVER THE VALVES. HYDRANT VALVES SHALL BE INSTALLED AS CLOSE TO THE MAIN AS POSSIBLE. VALVES LOCATED IN NON-PAVED AREAS OR IN PARKING STALLS REQUIRE A REFLECTIVE PAVEMENT MARKER ON THE CENTER OF THE NEAREST LANE OF ROAD PAVEMENT. WHITE REFLECTORS FOR WATER MAIN VALVES, GREEN REFLECTORS FOR FORCE MAIN VALVES.
   - d. THE DISTANCE FROM THE TOP OF THE VALVE ACTUATOR NUT TO FINAL GRADE SHALL BE A MINIMUM OF 12 INCHES AND A MAXIMUM OF 18 INCHES.

6. SERVICE:
   - a. COVER OVER SERVICE LINES SHALL BE 18 INCHES MINIMUM, 24 INCHES MAXIMUM BELOW FINISHED GRADE AND 24 INCHES UNDER PAVEMENT.
   - b. POLYETHYLENE SHALL BE BEDDED IN BACKFILL OF SAND WITH NO ROCK GREATER THAN 1 INCH IN DIAMETER.
   - c. METER STOPS SHALL HAVE 8 INCHES TO 10 INCHES COVER OR AS REQUIRED FOR PROPER METER/BOX INSTALLATION.
   - d. WATER SERVICES UNDER PAVEMENT SHALL BE ENCASED IN A SCHEDULE 80 PVC SLEEVE FOR THE FULL LENGTH OF THE PAVEMENT AND FOR 2 FEET BEYOND THE EDGE.
   - e. THE END OF EACH SERVICE CONNECTION SHALL BE MARKED WITH A 2" x 4" TREATED STAKE, PAINTED BLUE, EXTENDING 18 INCHES (MINIMUM) ABOVE GRADE UNLESS INDICATED OTHERWISE.

7. SAMPLING POINTS
   - a. SAMPLING POINTS SHALL BE PROVIDED AT THE LOCATIONS SHOWN ON THE PLANS. IF NOT SPECIFIED, SAMPLING POINTS SHALL BE PROVIDED AT INTERVALS OF 1000 FT. MAXIMUM FOR LINES GREATER THAN 1500 FT. IN LENGTH. PROVIDE A MINIMUM OF TWO SAMPLING POINTS FOR ALL OTHER TEST SEGMENTS.

D. TESTING:

1. THE PHYSICAL CONNECTION OF THE NEW SYSTEM TO THE EXISTING SYSTEM SHALL BE DONE IN ACCORDANCE WITH SECTION "C.-1." (THIS DOCUMENT) WHICH WILL DICTATE THE ORDER OF THE PRESSURE TESTING AND DISINFECTION.
2. THE COMPLETE WATER SYSTEM SHALL BE PRESSURE TESTED AND DISINFECTED. THE PRESSURE TEST SHALL BE FOR TWO HOURS AT 150 PSI MINIMUM TEST PRESSURE IN ACCORDANCE WITH ANSI/AWWA C600-99 OR LATEST REVISION. THE PRESSURE TEST SHALL NOT VARY MORE THAN 5 PSI DURING THE TEST. LEAKAGE ALLOWANCES WILL NOT BE MADE FOR FITTINGS OR VALVES.
3. ALLOWABLE LEAKAGE SHALL NOT EXCEED THE FORMULA OF:

$$L \text{ (GALLONS PER HOUR)} = \frac{S\ D\ (P)^{0.5}}{133{,}200}$$

L = ALLOWABLE LEAKAGE IN GALS/HR (NO ALLOWABLE LEAKAGE FOR VALVES)

S = LENGTH OF PIPE TESTED IN FEET

D = NOMINAL DIAMETER OF PIPE

P = AVERAGE TEST PRESSURE DURING TEST IN LBS/SQ. IN.

4. THE PRESSURE TEST SHALL BE WITNESSED BY A REPRESENTATIVE OF THE CITY OF RIVIERA BEACH UTILITIES DEPARTMENT AND THE ENGINEER OF RECORD.
5. SAMPLING POINTS SHALL BE PROVIDED AT THE LOCATIONS SHOWN ON THE PLANS OR AS DIRECTED BY THE PALM BEACH COUNTY PUBLIC HEALTH UNIT. IF NOT SPECIFIED, SAMPLING POINTS SHALL BE PROVIDED AT INTERVALS OF 1000 FEET MAXIMUM FOR LINES GREATER THAN 1500 FEET IN LENGTH. PROVIDE A MINIMUM OF TWO SAMPLING POINTS FOR ALL OTHER TEST SEGMENTS.
6. BEFORE ACCEPTANCE FOR OPERATION, THE WATER SYSTEM SHALL BE DISINFECTED IN ACCORDANCE WITH ANSI/AWWA C651-98 OR LATEST REVISION WITH APPROVED BACTERIOLOGICAL SAMPLES AND PROPER DOCUMENTATION BY PALM BEACH COUNTY HEALTH DEPARTMENT. COLLECTION OF SAMPLES IS THE CONTRACTOR'S RESPONSIBILITY AND WILL BE WITNESSED BY A CITY OF RIVIERA BEACH REPRESENTATIVE.

X. STANDARD WATER AND SEWER SEPARATION STATEMENT

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

SEWER LATERALS CROSSING WATER MAINS GENERAL NOTES

SEWER SERVICE LATERALS SHALL CROSS UNDER WATER MAINS WITH A MINIMUM VERTICAL SEPARATION OF EIGHTEEN (18) INCHES. IF EIGHTEEN (18) INCHES VERTICAL SEPARATION CANNOT BE MAINTAINED, THE WATER MAIN SHALL BE D.I.P. AND THE SANITARY LATERAL C-900 SDR18 OR BETTER AND THE MINIMUM SEPARATION SHALL BE SIX (6) INCHES.

WHEN IT IS NOT POSSIBLE FOR THE WATER MAIN TO CROSS OVER THE SEWER SERVICE LATERAL A MINIMUM SEPARATION OF AT LEAST SIX (6) INCHES MUST BE MAINTAINED. THE WATER MAIN SHALL BE D.I.P. AND THE SEWER LATERAL SHALL BE C-900 SDR18 OR BETTER.

XI. GENERAL NOTES

1. THE CONTRACTOR SHALL CONFORM TO THE MOST CURRENT AND MOST STRINGENT STANDARDS AND SPECIFICATION REQUIREMENTS FOR THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION AND THE CITY OF RIVIERA BEACH, PERTAINING TO ALL UTILITY PIPE SEPARATIONS AND CLEARANCES.
2. ELEVATIONS FOR EXISTING SANITARY SERVICE MUST BE DETERMINED IN THE FIELD PRIOR TO PIPE BEING LAID.
3. SLOPE OF SANITARY PIPE MUST BE CALCULATED TO PREVENT SEPTIC CONDITIONS. IF CURRENT ELEVATIONS DO NOT PERMIT MAINTENANCE OF PROPER SLOPE, OTHER OPTIONS MUST BE REVIEWED.
4. CALCULATIONS OF REQUIRED SLOPE MUST BE PERFORMED BY AN ENGINEER REGISTERED WITH THE STATE OF FLORIDA. A COPY OF THESE CALCULATIONS MUST BE SIGNED AND SEALED AND SUBMITTED TO THE CITY OF RIVIERA BEACH UTILITIES DEPARTMENT.
5. SLOPE AND MATERIAL FOR SANITARY SYSTEMS MUST BE DEPICTED. IN ADDITION, THE PROPOSED MANHOLES AND SANITARY SYSTEM MUST CONFORM TO CITY STANDARDS. (SEE DETAILS)
6. A SEWER INSTALLATION PERMIT IS REQUIRED, AND ALL CONNECTIONS TO CITY OWNED FACILITIES MUST BE INSPECTED PRIOR TO THE RELEASE OF THE CERTIFICATE OF OCCUPANCY.
7. HEALTH DEPARTMENT PERMITS AND ALL OTHER LEGALLY REQUIRED PERMITS MUST BE OBTAINED PRIOR TO COMMENCING OF WORK.
8. CONTRACTOR SHALL RESTORE ALL EXISTING IMPROVEMENTS INCLUDING, BUT NOT LIMITED TO SIDEWALKS, LANDSCAPE AND UTILITIES, TO PRE-CONSTRUCTION SITE LOCATION CONDITION OR BETTER IF DAMAGED DURING CONSTRUCTION. THIS SHOULD OCCUR AT NO ADDITIONAL COST TO THE OWNER.

XII. EARTHWORK AND PAVING

SUBGRADE – SUBGRADE SHALL BE COMPACTED TO MEET THE DENSITY REQUIREMENTS AS DETERMINED BY AASHTO T-180-86 SPECIFICATIONS. SUBGRADE SHALL EXTEND 12" BEYOND THE PROPOSED EDGE OF PAVEMENT, AND THE TOTAL 12" SHALL BE COMPACTED TO 98% OF MAXIMUM DENSITY.

BASE (LIMEROCK) – APPROVED LOCAL LIMEROCK BASE MATERIAL SHALL BE COMPACTED TO NOT LESS THAN 98% MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180-86 SPECIFICATIONS AND AS CALLED FOR IN THE FDOT SPECIFICATIONS, 2000, SECTION 200.

BASE (SHELLROCK) – APPROVED LOCAL SHELLROCK BASE MATERIAL SHALL BE COMPACTED TO NOT LESS THAN 98% MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180-86 SPECIFICATIONS AND CALLED FOR IN THE FDOT SPECIFICATIONS, 2000, SECTION 250-7. SHELLROCK SHALL BE PLACED AND COMPACTED IN TWO (2) EQUAL LAYERS.

PRIME COAT – BITUMINOUS PRIME COAT SHALL CONFORM WITH THE REQUIREMENTS OF THE FDOT SPECIFICATIONS, 2000, SECTION 300, AND SHALL BE APPLIED AT THE RATE OF 0.25 GALLONS/SQUARE YARD, UNLESS A LOWER RATE IS APPROVED BY THE ENGINEER.

TACK COAT – BITUMINOUS TACK COAT SHALL CONFORM WITH THE REQUIREMENTS OF THE FDOT SPECIFICATIONS, 2000, SECTION 300, AND SHALL BE APPLIED AT THE RATE OF 0.08 GALLONS/SQUARE YARD, UNLESS A VARIATION IN RATE IN APPROVED BY THE ENGINEER.

SURFACE COURSE – TYPE S-1 AND S-3 ASPHALTIC CONCRETE OR TYPE II ASPHALTIC CONCRETE SURFACE COURSE SHALL CONFORM TO THE REQUIREMENTS OF THE FDOT SPECIFICATIONS, 2000, SECTION 331 AND 332 RESPECTIVELY. THE MINIMUM COMPACTED THICKNESS IS TO BE AS NOTED ON THE PLANS.

CONCRETE – ALL NON-STRUCTURAL CONCRETE SHALL DEVELOP 2,500 PSI (MINIMUM) 28-DAY COMPRESSIVE STRENGTH. CLASS I CONCRETE SHALL CONFORM WITH THE FDOT SPECIFICATIONS, 2000, SECTION 345. IF STRUCTURAL CONCRETE, DEVELOPMENT SHALL BE 4,000 PSI (MINIMUM) 28-DAY COMPRESSIVE STRENGTH THIS IS CONSIDERED AS CLASS II CONCRETE. STRUCTURAL AS USED IN THIS PARAGRAPH SHALL MEAN APPURTENANCES SUCH AS FLUSH CONCRETE HEADER CURB, INLETS, MANHOLES, ACCESS BOXES, AND SIMILAR USES.

HEAVY STRUCTURAL CONCRETE – ALL HEAVY STRUCTURAL CONCRETE SHALL DEVELOP 3,400 PSI (MINIMUM) 28-DAY COMPRESSIVE STRENGTH. CLASS III CONCRETE SHALL CONFORM WITH THE FDOT SPECIFICATIONS, 2000, SECTION 345. FOR DETAILS ON CONCRETE TYPE AND REINFORCING, REFER TO THE STRUCTURAL PLANS FOR THE USE AND REQUIREMENTS SPECIFIED.

CONCRETE WALK – ALL CONCRETE WALKS, NEW OR REPLACEMENT, SHALL BE 4" THICK EXCEPT AT VEHICULAR CROSSINGS WHICH SHALL REQUIRE 6" (MINIMUM) THICKNESS REINFORCED WITH 6" X 6" X W1.4 X W1.4 W.W.M, OR FIBER MESH.

CONCRETE CURB – NEW OR REPLACEMENT CONCRETE CURB, CURB AND GUTTER, OR SEPARATORS SHALL BE THE TYPE DESIGNATED ON THE PLANS AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE FDOT, SPECIFICATIONS, 2000, SECTION 520.
SODDING – REPLACEMENT SHALL BE FLORATAM (IN IRRIGATED AREAS) AND ARGENTINE BAHIA (IN NON-IRRIGATED AREAS), AND SHALL CONFORM TO THE REQUIREMENTS OF THE FDOT SPECIFICATIONS, 2000, SECTION 575.

GUARANTY – ALL MATERIAL AND EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY CONTRACTOR UNDER THIS CONTRACT SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE THEREOF, AGAINST DEFECTIVE MATERIALS, DESIGN AND WORKMANSHIP. UPON RECIEPT OF NOTICE FROM THE OWNER OR A FAILURE OF ANY PART OF THE GUARANTEED EQUIPMENT OR MATERIALS DURING THE GUARANTY PERIOD,HE AFFECTED PART, PARTS OR MATERIALS SHALL BE REPLACED PROMPTLY WITH NEW PARTS OR MATERIALS BY THE CONTRACTOR, AT NO EXPENSE TO THE OWNER. IN THE EVENT THE CONTRACTOR FAILS TO MAKE THE NECESSARY REPLACEMENT OR REPAIRS WITHIN SEVEN (7) CALENDAR DAYS AFTER NOTIFICATION BY THE OWNER, THE OWNER MAY ACCOMPLISH THE WORK AT THE EXPENSE OF THE CONTRACTOR.

XIII. STORM DRAINAGE

1. DRAINAGE DESIGN AS SHOWN HEREIN, CONFORMS TO THE CITY'S LAND DEVELOPMENT REGULATIOPNS WITH APPROVED EXCEPTIONS AND SFWMD CRITERIA.
2. CONSTRUCTION PLANS GENERALLY REFLECT THE COMMISSION APPROVED SITE PLAN AND SUBSEQUENT RECTIFIED SITE PLANS AS APPROVED BY THE CITY.

GRAVITY STORMWATER LINE CONSTRUCTION:

A. INSTALLATION: GRAVITY STORMWATER LINES SHALL BE LAID ACCURATELY TO BOTH LINE AND GRADE. THE DIVISION WILL GENERALLY NOT ACCEPT ANY LINE LAID WITH A SLOPE VARYING BY MORE THAN 15% OF ITS DESIGN SLOPE, ESPECIALLY FOR LINES LAID AT MINIMUM GRADIENTS WHERE SCOURING VELOCITY CANNOT BE ACHIEVED. THE DIVISION RESERVES THE RIGHT TO INDEPENDENTLY VERIFY QUESTIONABLE AS-BUILT SURVEY RESULTS. VISIBLE LEAKAGE (UNLESS DESIGNED FOR A PERCOLATION SYSTEM), DEFLECTIONS, HORIZONTAL MISALIGNMENT, VERTICAL JOINT SAGGING SHALL BE GROUNDS FOR REJECTION OF THE STORM LINES.

THE MINIMUM DESIGN DEPTH OF A STORMWATER LINE SHALL BE 4.0 FEET TO INVERT. THE MINIMUM COVER OVER THE STORMWATER LINE SHALL BE 2.2 FEET. PRIOR APPROVAL SHALL BE OBTAINED IF EITHER OF THESE MINIMUMS CANNOT BE MET.

TRENCHES AND EXCAVATIONS SHALL BE KEPT DRY WHILE WORK IS IN PROGRESS. CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT ALL SAFETY REQUIREMENTS ARE MET. UNSUITABLE MATERIAL SUCH AS BOULDERS AND LOGS SHALL BE REMOVED FROM THE SITE. THE PIPE BARREL SHALL BE UNIFORMLY SUPPORTED ALONG ITS ENTIRE LENGTH ON UNDISTURBED SOIL OR BEDDING MATERIAL. PROPER BEDDING SHALL BE SUPPLIED IF THE EXISTING MATERIAL INCLUDES ROCK, ORGANIC MATERIAL OR OTHER SHARP OR UNSUITABLE MATERIAL.

B. INLETS:
INLETS (AND CATCH BASINS) SHALL BE SET ACCORDING TO CONSTRUCTION PLANS AND SHALL BE PRECAST IN ACCORDANCE WITH APPROVED SHOP DRAWINGS AND SPECIFICATION DETAIL DRAWINGS ACCOMPANYING THIS TEXT. THE BOTTOM INVERTS SHALL BE CAREFULLY SHAPED TO CONFORM TO THE PIPE FLOW CHANNEL WHERE POSSIBLE (PROVIDING THAT THE INLET IS NOT THE SUMP TYPE) ON ALL IN-LINE STRUCTURES. WHERE ROADWAY INLETS ARE DESIGN INTO THE STORMWATER MANAGEMENT SYSTEM, THE CONSTRUCTION OF THE STRUCTURES (INCLUDING GRATES AND FRAMES) SHALL BE IN ACCORDANCE WITH THE FDOT STANDARD INDEX DRAWINGS FOR THE DESIGNATED STRUCTURE ON THE PLANS, AND BE CONSTRUCTED IN ACCORDANCE WITH SAID FDOT SPECIFICATIONS, 2006, SECTION 425 AND ASTM C478.

WHEN PERCOLATION INLETS ARE CALLED FOR ON THE PLANS, THEY SHALL BE THE REQUIRED FDOT SPECIFICATIONS TYPE INLET MODIFIED TO ALLOW FOR EITHER HORIZONTAL OR VERTICAL PERFORATED CMP AS SHOWN ON THE INLET DETAIL, BACKFILLED WITH GRANULAR MATERIAL (BALLAST ROCK) TO THE DESIGNATED DEPTH.

C. MANHOLES:
MANHOLES SHALL BE SET ACCORDING TO THE CONSTRUCTION PLANS AND SHALL BE PRECAST REINFORCED CONCRETE STORM SEWER MANHOLES AS INDICATED ON THE PLANS, COMPLYING WITH ASTM C478, AND IN ACCORDANCE WITH APPROVED SHOP DRAWINGS AND SPECIFICATION DETAIL DRAWINGS ACCOMPANYING THIS TEXT. THE MANHOLE INVERT SHALL BE CAREFULLY SHAPED TO CONFORM TO THE PIPE FLOW CHANNEL. FLOW CHANNELS WITH THE MANHOLES INVOLVING CHANGES OF DIRECTION OR SIDE SLOPES SHALL SMOOTHLY DIRECT THE FLOW IN ACCORDANCE WITH DETAIL DRAWINGS.

PRECAST CONCRETE TOP, OF CONCENTRIC CONE, ECCENTRIC CONE, OR FLAT SLAB REINFORCED TOP TYPE, AND INDICATED ON THE PLANS SHALL BE IN ACCORDANCE WITH THE FDOT STANDARD INDEX DETAILS. PRECAST CONCRETE BASE, WITH BASE RISER SECTION AND SEPARATE BASE SLAB, OR BASE RISER SECTION WITH INTEGRAL FLOOR AS SHOWN ON THE PLAN DETAILS AND HAVING SHOP DRAWING APPROVAL SHALL BE THE ONLY STRUCTURE COMPONENT PERMITTED.

ALL CONCRETE IRREGULARITIES SHALL BE PLASTERED WITH CEMENT MORTAR IN SUCH A MANNER AS TO GIVE A NEAT AND WATER-TIGHT PRODUCT. MANHOLES SHALL BE CORE-DRILLED TO PROVIDE A PIPE OPENING WHEN A PRECAST HOLE IS NOT AVAILABLE. RAM-NEK OR EQUIVALENT SHALL BE USED AT ALL RISER JOINTS. STRUCTURES WITH ANY LEAKAGE WILL NOT BE ACCEPTED.

DUCTILE IRON 26" DIAMETER COVER, HEAVY-DUTY, INDENTED TOP DESIGN WITH LETTERING CASTED INTO THE TOP READING "STORM SEWER" SHALL BE REQUIRED, UNLESS AN ALTERNATE DESIGN IS APPROVED BY THE DEPARTMENT DIRECTOR. SUCH ALTERNATE DESIGN COULD BE THE CITY'S LOGO ON MANHOLE COVER IN ADDITION TO THE TOP READING.

D. MATERIALS:

1. REINFORCED CONCRETE PIPE (RCP): THE PIPE SHALL CONFORM WITH THE REQUIREMENTS OF TABLE III OF ASTM C-76-82B, AND WITH THE FDOT SPECIFICATIONS, 2000, SECTION 941. BELL AND SPIGOT WITH ROUND RUBBER GASKET SHALL BE REQUIRED. FITTINGS FOR RCP SHALL BE OF THE SAME STRENGTH AS THE ADJOINING PIPE, TONGUE-AND-GROOVE GASKETED JOINTS SHALL COMPLY WITH ASTM C-443.

   IF SLOTTED CONCRETE PIPE IS USED, THE SLOTS SHALL BE A MAXIMUM OF 3/8" WIDE, SPACED 12" O.C. STAGGERED ON OPPOSITE SIDES OF THE PIPE. THE LENGTH OF THE SLOT IS DEPENDENT ON THE PIPE DIAMETER; REFER TO EXFILTRATION TRENCH DETAIL FOR THIS DIMENSION.

2. CORRUGATED METAL PIPE (CMP): THE PIPE SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-196 WITH BITUMINOUS COATING, AND WITH THE FDOT SPECIFICATIONS, 2000, SECTION 943. IF ALUMINUM PIPE IS USED (ALCMP), THE PIPE SHALL CONFORM WITH THE REQUIREMENTS OF AASHTO M-196 AND TO THE FDOT SPECIFICATIONS, 2000, SECTION 945.

   INSTALLATION OF CORRUGATED METAL PIPE: ALL JOINTS ON STORM SEWER PIPE SHALL BE MADE UP WITH EITHER 1/2" NEOPREME OR 1/4" STRIP SEALANT GASKETED MATERIAL. ALL BANDS SHALL HAVE THE SAME CORRUGATED DESIGN AS THE PIPE. WIDTH OF THE BANDS SHALL BE AS FOLLOWS: 12" UP TO 48" DIAMETER PIPE, 24" OVER 48" DIAMETER PIPE.

3. DUCTILE IRON PIPE (DIP): THIS PIPE SHALL CONFORM TO THE REQUIREMENTS OF ANSI/AWWA C151/A21.51-86 UNLESS OTHERWISE NOTED ON THE PLANS. GLANDS FOR MECHANICAL JOINTS SHALL BE OF DUCTILE IRON OR CAST IRON. FITTINGS SHALL CONFORM TO THE REQUIREMENTS OF ANSI/AWWA C110/A21.10-87. FLANGE FITTINGS ARE NOT PERMITTED ON UNDERGROUND INSTALLATIONS. JOINTS SHALL CONFORM TO THE REQUIREMENTS OF ANSI/AWWA C111/A21.11-85.

4. POLYVINYL CHLORIDE PIPE (PVC): PIPE 12" OR LARGER IN DIAMETER SHALL CONFORM TO THE REQUIREMENTS AS SET FORTH IN AWWA C900-81 WITH DIMENSION RATIO SDR 18 AND ASTM D-3034-85B. THE PIPE SHALL BE MADE OF PVC PLASTIC HAVING A CELL CLASSIFICATION OF 12454-B OR 12454-C OR 13364-B WITH A MINIMUM TENSILE MODULUS OF 3450 M PA

   (500,000 PSI) AS DEFINED IN ASTM D-1784. PROVISIONS MUST BE MADE FOR CONTRACTION AND EXPANSION AT EACH JOINT, OR WITH RUBBER RING AND AN INTEGRAL BELL AS PART OF EACH JOINT, OR BY A RUBBER RING SEALED COUPLING. CLEAN, REWORKED MATERIAL GENERATED THE MANUFACTURERS OWN PIPE PRODUCTION MAY BE USED. FITTINGS SHALL BE CAST OR DUCTILE IRON. PIPE SHALL HAVE CAST IRON PIPE EQUIVALENT OUTSIDE DIMENSIONS.

5. CORRUGATED POLYETHYLENE PIPE (CPEP): PROVIDE HIGH DENSITY CORRUGATED POLYETHYLENE HEAVY DUTY POLYETHYLENE (HDPE) SMOOTH INTERIOR PIPE WITH ANNULAR EXTERIOR CORRUGATIONS. PROVIDE PIPE FITTINGS AND ACCESSORIES OF SAME MATERIAL AND WEIGHT/CLASS AS PIPES, WITH ADJOINING METHOD AS INDICATED. ALL ROOF DRAIN CONNECTIONS SHALL BE MADE WITH PRE-MANUFACTURED WELDED TEE FITTING.

   ALL MATERIALS SHALL COMPLY WITH AASHTO MP-6, ASTM D-2412, AND/OR AASHTO M- 294, TYPE S, OR M-252. ALL PIPE AND FITTINGS SHALL BE "N-12, HC 42 OR 48" HDPE" AS MANUFACTURED BY ADVANCE DRAINAGE SYSTEMS, INC., "HI-Q" AS MANUFACTURED BY HANDOR, INC., OR AS APPROVED BY THE CITY ENGINEER.

E. EXFILTRATION TRENCH: THE EXFILTRATION TRENCH (OR DRAINFIELD) MAY USE EITHER SLOTTED CONCRETE PIPE, PERFORATED PVC, OR CPEP PIPE AS THE DISTRIBUTION CONDUIT WITHIN THE TRENCH.
PIPE SHALL TERMINATE TWELVE (12) INCHES FROM THE END OF THE TRENCH ROCK OR CONNECT TO AN ADDITIONAL INLET AS REQUIRED (SEE PLAN DETAIL FOR CONFIGURATION). COVER PIPE ENDSWITH #10 GALVINIZED OR ALUMINUM SCREEN. THE OPENINGS IN THE END SCREENS SHALL BE NO LARGER THAN 1/2" SQUARE. TRENCH ROCK SHALL BE 3/4" WASHED BALLAST ROCK. THE TRENCH SHALL BE LINED ON ALL SIDES WITH A PLASTIC FILTER BLANKET (GEOTEXTILE FABRICS) AND SHALL COMPLY WITH FDOT SPECIFICATIONS, 2000, SECTIONS 514 AND 985.

F. OUTFALLS:
CONSTRUCT CAST-IN-PLACE OR PRECAST CONCRETE AS INDICATED ON THE PLANS, WITH REINFORCED HEADWALL, APRON, AND TAPERED SIDES. PROVIDE RIP-RAP AS INDICATED TO PREVENT WASHOUT OF OUTFALL DISCHARGE.

G. INSPECTION:
INITIAL PIPING INTERIOR INSPECTION SHALL BE MADE AFTER LINES BETWEEN CATCH BASINS AND MANHOLE, OR MANHOLE LOCATIONS, HAVE BEEN INSTALLED AND APPROXIMATELY TWO (2) FEET OF BACKFILL IS IN PLACE, AND AGAIN AT COMPLETION OF THE INSTALLATION. LAMPING OF THE COMPLETED STORMWATER SYSTEM WILL BE PERFORMED AFTER COMPLETE BACKFILLING, THE PAVING OF THE ROADWAY BASE, AND ACCURATE RECORD DRAWINGS ARE RECEIVED. THE LAMPING WILL DETERMINE THAT THE LINES HAVE BEEN LAID TO ACCURATE LINE AND GRADE. AT THE TIME OF LAMPING, THE LINE SHALL BE CLEAN AND DRY. A FINAL INSPECTION WILL BE HELD AFTER THE ROADWAY IS COMPLETED TO VERIFY THAT THE SYSTEM HAS NOT BEEN DAMAGED. ALL LINES AND APPURTENANCES NOT MEETING SPECIFICATIONS OR REASONABLE STANDARDS SHALL BE REPAIRED OR REPLACED. IF INSPECTION INDICATES POOR ALIGNMENT, DEBRIS, DISPLACED PIPE, INFILTRATION OR OTHER DEFECTS, THE CONTRACTOR SHALL CORRECT SUCH DEFECTS AND A REINSPECTION SHALL BE PERFORMED.

TRENCHING AND RETENTION AREAS:
PERFORM ALL EXCAVATION OF EVERY DESCRIPTION AND OF WHATEVER SUBSTANCES ENCOUNTEREDTO DEPTHS INDICATED ON THE PLANS OR AS SPECIFIED. DURING EXCAVATION, PILE MATERIAL FOR BACKFILLING IN AN ORDERLY MANNER A SUFFICIENT DISTANCE FROM BANKS OF TRENCH TO AVOID OVERLOADING AND TO PREVENT SLIDES OR CAVE-INS.

OSHA TRENCH SAFETY COMPLIANCE:
THE USE OF TRENCH BOX OF OTHER APPROVED MEANS TO COMPLY WITH THE FLORIDA TRENCH SAFETY ACT (FLA. STAT. 553.60 THRU .64), AND OSHA TRENCH SAFETY STANDARDS, SHALL BE USED WHERE EXCAVATION EXCEED FIVE (5) FEET IN DEPTH. REMOVE ALL WASTE AND EXCAVATED MATERIALS NOT REQUIRED OR SUITABLE FOR BACKFILL. DO SUCH GRADING AS MAY BE NECESSARY TO PREVENT SURFACE WATER FROM FLOWING ACCUMULATING THEREIN BY PUMPING INTO TRENCHES OF OTHER EXCAVATIONS, AND ANY WATER OR BY OTHER APPROVED METHODS. DO SUCH SHEETING AND SHORING AS MAY BE NECESSARY FOR PROTECTION OF WORK AND FOR SAFETY OF PERSONNEL. ACQUIRE ALL LOCAL PERMITS NECESSARY FOR DEWATERING OPERATIONS AND DISPOSAL OF WATER.

H. TRENCH EXCAVATION:
PROVIDE TRENCHES OF MINIMUM NECESSARY WIDTH FOR PROPER LAYING OF PIPE. ACCURATELY GRADE BOTTOM OF TRENCHES TO PROVIDE UNIFORM BEARING AND SUPPORT FOR EACH SECTION OF PIPE ON UNDISTURBED SOIL AT EVERY POINT ALONG ITS ENTIRE LENGTH, EXCEPT FOR PORTIONS OF PIPE SECTIONS WHERE IT IS NECESSARY FOR BELL HOLES AND FOPR PROPER SEALING OF PIPE JOINTS.

DIG BELL HOLES AND DEPRESSIONS FOR JOINTS AFTER TRENCH BOTTOM HAS BEEN GRADED AND ONLY OF SUCH LENGTH, DEPTH, AND WIDTH AS REQUIRED FOR PROPERLY MAKING PARTICULAR TYPE OF JOINT, SO THAT PIPE RESTS ON PREPARED BOTTOM FOR AS NEARLY TO ITS FULL LENGTH AS PRACTICAL.

EXCEPT WHERE ROCK IS ENCOUNTERED, TAKE CARE NOT TO EXCAVATE BELOW DEPTHS INDICATED WHERE ROCK EXCAVATION IS REQUIRED, EXCAVATE TO A MINIMUM OVERHEAD OF 8" BELOW TRENCH DEPTHS INDICATED ON DRAWINGS OR SPECIFIED. BACKFILL OVER-DEPTHS IN ROCK EXCAVATION WITH LOOSE, GRANULAR, MOIST EARTH, WHICH SHALL BE THOROUGHLY TAMPED.

WHERE WET OR UNSTABLE SOIL THAT IS INCAPABLE OF PROPERLY SUPPORTING THE PIPE, AS DETERMINED BY THE DIVISION, IS ENCOUNTERED IN BOTTOM OF TRENCH, REMOVE SUCH SOIL TO DEPTH REQUIRED BY THE DIVISION AND BACKFILL TRENCH TO PROPER GRADE WITH APPROPRTIATE MATERIAL, AS SPECIFIED.

DO NOT MAKE WIDTHS OF TRENCHES FOR DRAINAGE PIPE GREATER THAN NECESSARY TO PERMIT SATISFACTORY JOINTING AND THOROUGH TAMPING OF BEDDING MATERIAL AROUND PIPE, PREPARE BEDDING SURFACE TO PROVIDE FIRM FOUNDATION OF UNIFORM DENSITY THROUGHOUT ENTIRE LENGTH OF CULVERT OR STORM SEWER. CAREFULLY SHAPE AND ROUND BOTTOM OF TRENCH TO A SHAPE OF LOWEST ¼ OF THE OUTSIDE CIRCULAR PORTION OF PIPE FOR ITS ENTIRE LENGTH. WHEN OVER-EXCAVATION OCCURS, PLACE A MINIMUM OF 4" OF SAND, STONE OR GRAVEL BELOW THE PIPE, THEN 6" LIFTS OF BACKFILL MATERIAL, HAND PLACED, TO APPROXIMATELY TWO-THIRDS OF THE PIPE DIAMETER AND COMPACT.

I. PROTECTION OR REMOVAL OF UTILITY LINES:
PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL LOCATE AND ADEQUATELY UNCOVER EXISTING UTILITIES (WITHIN THE PATH OF THE PROPOSED WORK), TO DETERMINE POSSIBLE CONFLICTS INFORMATION PROVIDED ON THE PLANS MAY BE USED AS AN APPROXIMATE GUIDE TO ASSIST THE CONTRACTOR, HOWEVER, THE CONTRACTOR SHALL RELY ON ACTUAL FIELD INVESTIGATION TO ASSURE THAT ALL OF THE EXISTING UTILITIES ARE ACCURATELY LOCATED PRIOR TO COMMENCEMENT OF HIS WORK. EXISTING STRUCTURES REFLECT THE BEST AVAILABLE INFORMATION, BUT IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ACQUAINT HIMSELF WITH ALL INFORMATION AND TO AVOID CONFLICT WITH EXISTING CONDITIONS. PROTECT ALL EXISTING UTILITY LINES THAT ARE TO BE RETAINED, OR UTILITY LINES CONSTRUCTED DURING EXCAVATION OPERATIONS, FROM DAMAGE DURING EXCAVATION AND BACK-FILLING; IF DAMAGED, REPAIR SHALL BE AT CONTRACTOR'S EXPENSE.

J. EROSION AND SEDIMENTATION REQUIREMENTS:
1. THE CONTRACTOR SHALL MAKE EVERY EFFORT DURING CONSTRUCTION TO CONTROL WIND AND WATER EROSION OF THE SOIL ON SITE.
2. THE CONTRACTOR SHALL CONTROL EXCESSIVE RUNOFF FROM THE PROJECT BY EXCAVATING THE PROPOSED SWALE AREAS DURING THE PRELIMINARY CLEANING AND GRUBBING OPERATION OF THE PROJECT.
3. SHOULD THE SITE BECOME EXCESSIVELY DRY, AND WIND AND SOIL EROSION BECOMES PREVALENT AND/OR A NUISANCE, THE CONTRACTOR SHALL WATER AND/OR SEED AND MULCH THE AREA, AND/OR PROVIDE EROSION CONTROL FENCING AS NECESSARY.
4. TYPE I BALE BARRIERS SHALL BE PLACED AROUND ALL EXISTING DITCH BOTTOM INLETS IN ACCORDANCE WITH FDOT STANDARD INDEX NO. 102.
5. PRE-CONSTRUCTION CONFERENCE: A PRE-WORK CONFERENCE IS REQUIRED BEFORE THE START OF ANY NEW CONSTRUCTION. REFER TO PREVIOUS REFERENCE FOR PRE-WORK CHECKLIST.

XIII. SIGNING AND MARKING

A. ALL PAVEMENT MARKINGS SHALL BE HOT APPLIED THERMOPLASTIC MANUFACTURED AND APPLIED IN ACCORDANCE WITH F.D.O.T. STANDARD SPECIFICATION'S SECTION 711 AND PALM BEACH COUNTY TRAFFIC ENGINEERING DIVISION STANDARDS AND THE CITY OF RIVIERA BEACH WHERE APPLICABLE.

B. ALL SIGNS SHALL BE MANUFACTURED AND INSTALLED IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AND PALM BEACH COUNTY TRAFFIC ENGINEERING DIVISION STANDARDS.

C. REFLECTIVE PAVEMENT MARKERS SHALL BE CLASS B MARKERS MANUFACTURED IN ACCORDANCE WITH F.D.O.T. STANDARD SPECIFICATIONS 706 AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDED PROCEDURES.

D. PARKING SPACE LINES TO BE TRAFFIC PAINT PER F.D.O.T. STANDARDS.

E. ALL PARKING SPACES CONFIGURATIONS, TRAFFIC SIGNAGE AND REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE ENGINEERING DESIGN CRITERIA HANDBOOK AND CONSTRUCTION STANDARDS FOR THE CITY OF RIVIERA BEACH.

PRELIMINARY - NOT FOR CONSTRUCTION

NO	DATE	REVISION	BY	NO	DATE	REVISION	BY

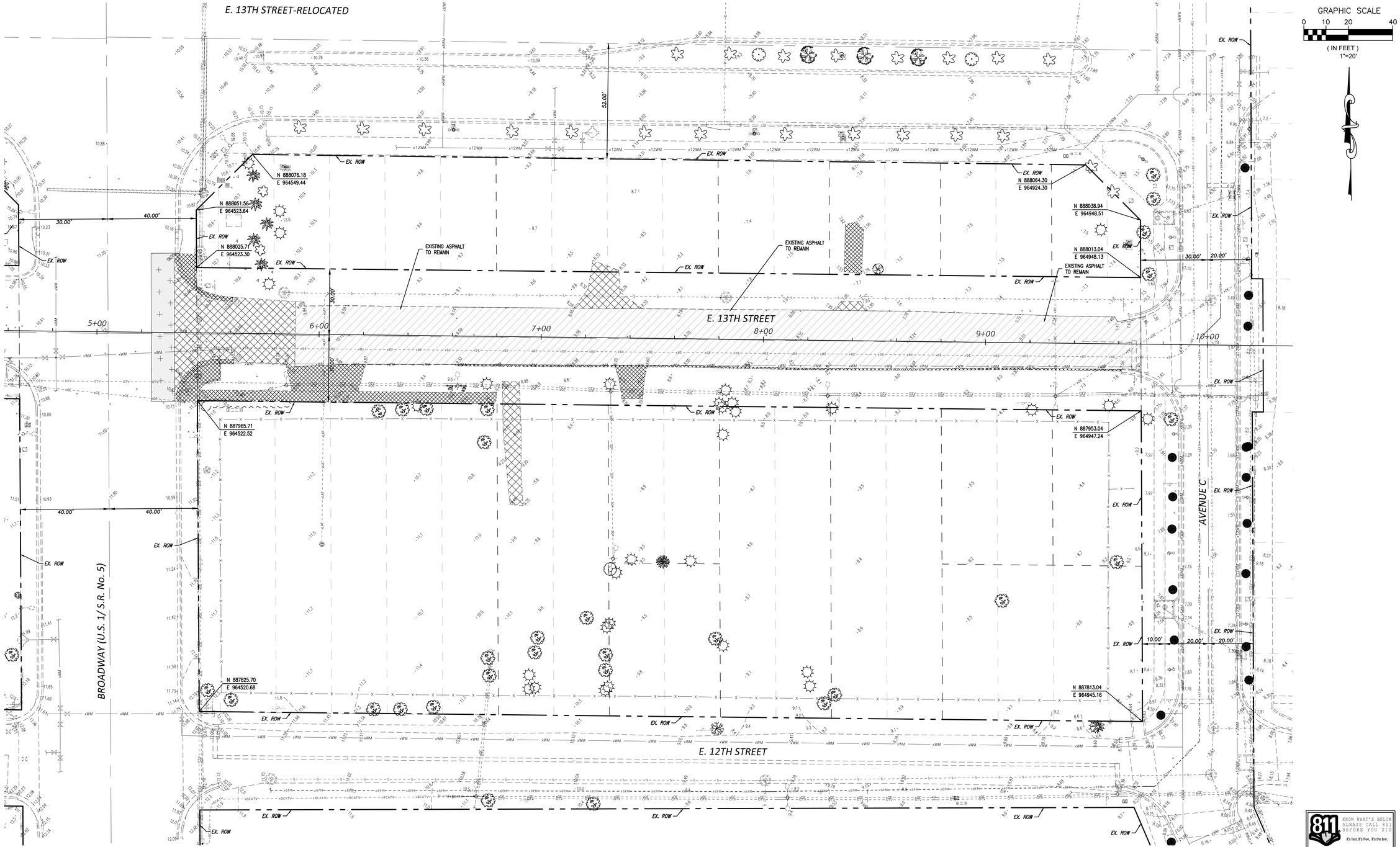
Calvin, Giordano & Associates, Inc.
EXCEPTIONAL SOLUTIONS™
580 Village Boulevard • Suite 325 • West Palm Beach, FL 33409
Phone: 561.684.6161 • Fax: 561.684.6360
Certificate of Authorization 514

E 13TH STREET ABANDONMENT
BROADWAY TO AVENUE C
RIVIERA BEACH, FLORIDA

GENERAL NOTES

DAVID STAMBAUGH, P.E.
STATE OF FLORIDA PROFESSIONAL ENGINEER
LICENSE No. 70757
DATE: 07-08-2019

SCALE: N.T.S.
PROJECT No: 179849
SHEET: 4
G-4
OF: 7



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E 13TH STREET ABANDONMENT
BROADWAY TO AVENUE C
RIVIERA BEACH, FLORIDA

EXISTING CONDITIONS AND DEMOLITION PLAN

DAVID STAMBAUGH, P.E.
STATE OF FLORIDA PROFESSIONAL ENGINEER
LICENSE No. 70757

DATE: 07-08-2019

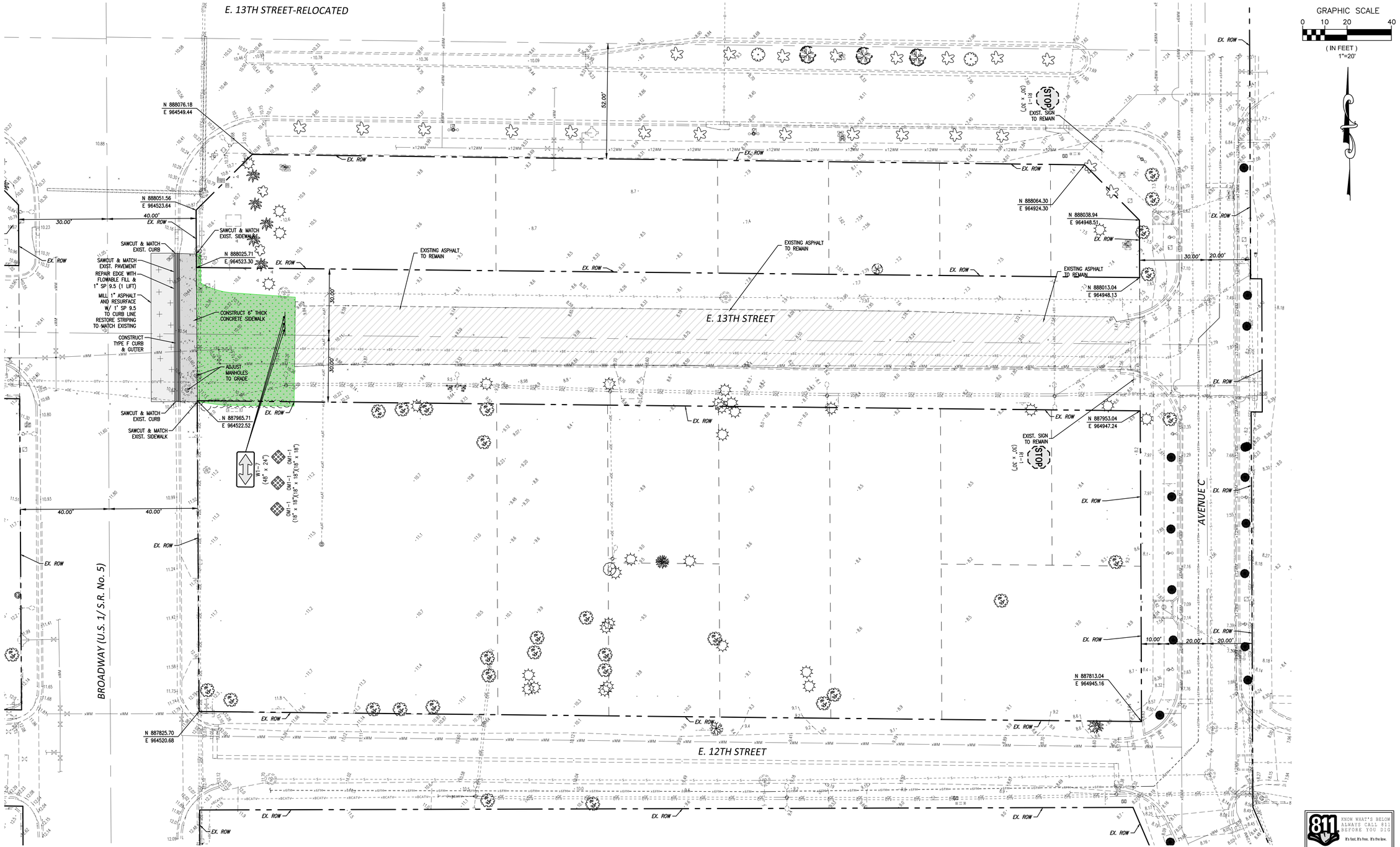
SCALE: 1" = 20'

PROJECT No: 179849

SHEET: 5 OF: 7

D-1

File Name: Z:\2017\179849 City Of Riviera Beach - 13th St R\179849.2 Viking Developers E 13 ST ROW Evacuation\CADD Files\Drawings\179849-DEMORD01.dwg - (Plotted by: Lee Rowbotham on Monday, July 8, 2019 4:36:32 PM)



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E 13TH STREET ABANDONMENT

BROADWAY TO AVENUE C

RIVIERA BEACH, FLORIDA

ENGINEERING PLAN

DAVID STAMBAUGH, P.E.
STATE OF FLORIDA PROFESSIONAL ENGINEER
LICENSE No. 70757

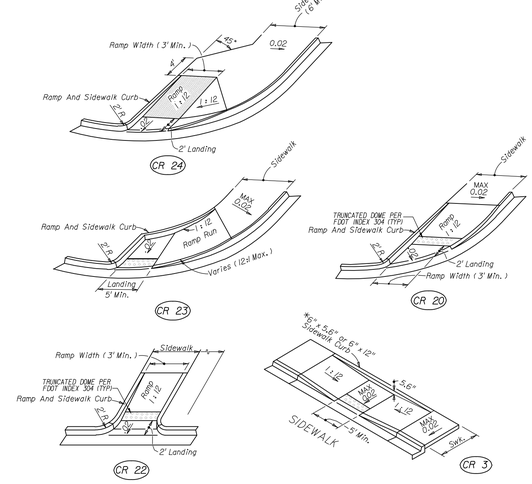
DATE: 07-08-2019

SCALE: 1" = 20'

PROJECT No: 179849

SHEET: 6 OF: 7

C-1



CURB RAMP DETAIL

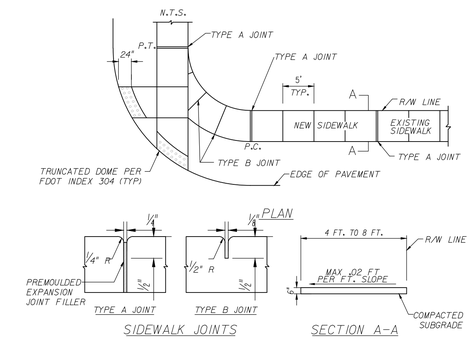
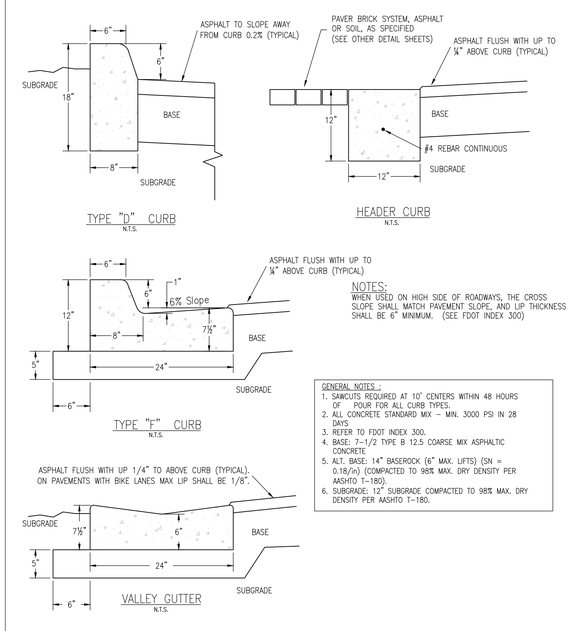


TABLE OF SIDEWALK JOINTS	
	LOCATION
A	P.C. AND P.T. OF CURVES, WHERE SIDEWALK ABUTS DRIVEWAY, JUNCTION OF EXISTING AND NEW SIDEWALK.
B	5'-0" CENTER TO CENTER ON SIDEWALK.

NOTE:
- REFER TO FDOT INDEX 310 FOR JOINT SPACING REQUIREMENTS.
- TYPE A JOINTS SHALL BE PLACED AT A MAXIMUM OF 120' INTERVALS.

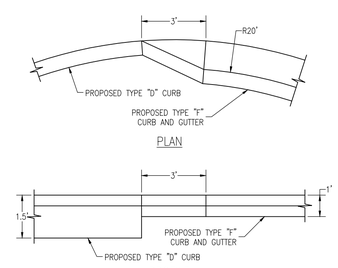
SIDEWALK CONSTRUCTION DETAIL



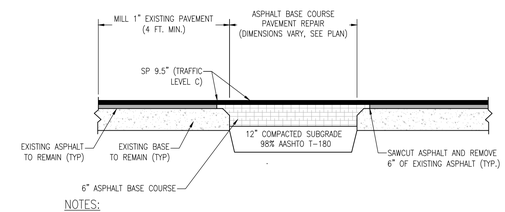
NOTES:
WHEN USED ON HIGH SIDE OF ROADWAYS, THE CROSS SLOPE SHALL MATCH PAVEMENT SLOPE, AND LIP THICKNESS SHALL BE 6" MINIMUM. (SEE FDOT INDEX 300)

GENERAL NOTES
1. SAWCUTS REQUIRED AT 10' CENTERS WITHIN 48 HOURS OF POUR FOR ALL CURB TYPES.
2. ALL CONCRETE STANDARD MIX – MIN. 3000 PSI IN 28 DAYS
3. REFER TO FDOT INDEX 300.
4. BASE: 7-1/2 TYPE B 12.5 COARSE MIX ASPHALTIC CONCRETE
5. ALT. BASE: 14" BASEROCK (6" MAX. LIFTS) (SN = 0.18/in) (COMPACTED TO 98% MAX. DRY DENSITY PER AASHTO T-180).
6. SUBGRADE: 12" SUBGRADE COMPACTED TO 98% MAX. DRY DENSITY PER AASHTO T-180.

106 – TYPICAL CURBING
(N.T.S.)



"F" CURB AND GUTTER TO "D" CURB TRANSITION



NOTES:
1. ASPHALT BASE COURSE (ABC) SHALL BE COMPACTED USING MAXIMUM 3 INCH THICK LAYERS, TWO (2) LAYERS WILL BE REQUIRED.
2. THE INITIAL LAYER OF AN ABC SHALL BE PLACED ON A 12" COMPACTED SOIL SUBGRADE TO 98% OF AASHTO T-180.
3. FOR THE FINAL LAYER OF ABC, MINIMUM DENSITY SHALL BE 94% OF THE LABORATORY DENSITY BASED ON THE MARSHALL TEST.
4. REPAIR SECTIONS SHALL BE A MINIMUM OF 4 FEET IN WIDTH.

121 – PAVEMENT REPAIR

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C-2