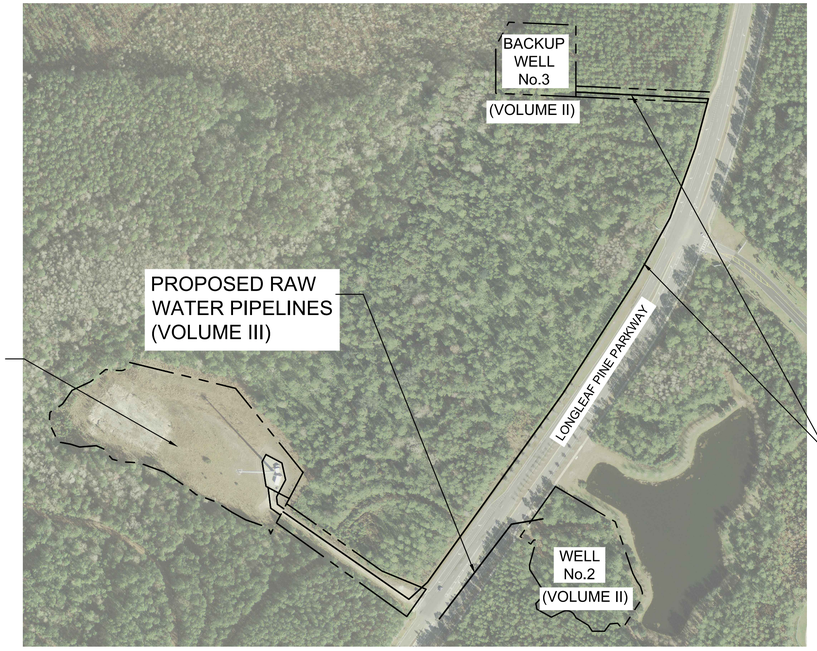
PART 2 PACKAGE

CONSTRUCTION DRAWINGS
FOR
RIVERTOWN WATER TREATMENT PLANT

VOLUME III - (RAW WATER PIPELINES)

JEA PROJ NO.: 8003981



VICINITY MAP
NOT TO SCALE

PREPARED BY:

CDM Smith
4651 Salisbury Road, Suite 420
Jacksonville, FL 32256
Tel: (904) 731-7109
FL COA No. EB-0000020
PROJECT NO. 6103-229758

JEA sm
Building Community sm

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

ISSUED FOR BID
DECEMBER 2020

SURVEY AND LOCATE DATA:

NOT APPLICABLE	APPLICABLE	
☐	☒	1. ALL ELEVATIONS ARE BASED ON U.S.C.&G.S. DATUM AND SHOWN IN FEET.
☐	☒	2. ELEVATIONS ARE BASED ON N.A.V.D. 1988.
☐	☒	3. LOCATION OF EXISTING UTILITIES OBTAINED BY SOFT DIG LOCATES WHERE SHOWN ON PLANS, OR INCLUDED WITH BID SPECS.
☐	☒	4. EXISTING WATER AND SEWER LINES ARE SHOWN AS PER FIELD LOCATES AND SUBDIVISION AS-BUILT PLANS.
☐	☒	5. UNDERGROUND UTILITIES WERE LOCATED UTILIZING GROUND PENETRATING RADAR (GPR) AND A DIGITAL LOCATOR. CONTRACTOR SHALL BE AWARE THAT IN SOME CASES UTILITIES HAVE BEEN LOCATED, AND SURVEY HAS BEEN COMPLETED ONLY ON ONE SIDE OF THE ROAD.
☐	☒	6. ALL PIPE LENGTHS SHOWN ON PLAN AND PROFILES ARE FROM CENTER TO CENTER OF MANHOLES, CATCH BASINS, INLETS ETC. OR ALONG THE CENTER LINE OF FORCE MAINS AND WATER MAINS.
☐	☒	7. INVERT ELEVATIONS SHOWN ON DRAWINGS REFER TO THE CENTERLINE OF MANHOLES, UNLESS OTHERWISE INDICATED.
☐	☒	8. THE LOCATION OF ALL EXISTING SEWER AND WATER SERVICE LINES MAY NOT BE INDICATED ON THESE PLANS. THE LOCATION OF NEW SERVICES SHALL BE VERIFIED IN THE FIELD.
☐	☒	9. BENCHMARK DATA: REFERENCE BENCHMARK FOR THIS PROJECT IS AN X-CUT ON BACK OF CURB AND GUTTER, 30 FEET WEST FROM THE CENTERLINE OF SOUTHBOUND LANES OF LONGLEAF PINE PARKWAY, 10.6 FEET NORTH OF A CURB INLET AND GRATE, 0.2 MILES SOUTH FROM THE ENTRANCE TO BARTRAM HIGH SCHOOL. ST. JOHNS COUNTY SURVEY BENCHMARK, POINT ID 1334, ELEVATION 32.62 NAVD 1988.

PERMIT REQUIREMENTS (NOT ALL INCLUSIVE):

☐	☒	1. CONTRACTOR TO OBTAIN ALL REQUIRED RIGHT-OF-WAY PERMITS.
☐	☒	2. CONTRACTOR SHALL NOT OPEN CUT STREETS IN THE PROJECT AREA UNLESS SPECIFICALLY SHOWN ON PLANS
☐	☒	3. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL APPROPRIATE PERMITS THROUGH THE ST. JOHNS WATER MANAGEMENT DISTRICT AND FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION SHOULD DEWATERING ACTIVITIES BE REQUIRED.
☐	☒	4. THE DEPARTMENT OF TRANSPORTATION, RAILROAD COMPANIES AND ST. JOHNS COUNTY ARE TO BE NOTIFIED IN ADVANCE OF CONSTRUCTION PER THEIR RESPECTIVE PERMIT CONDITIONS.
☐	☒	5. ALL WORK SHALL BE IN ACCORDANCE WITH BID DOCUMENTS, JEA WATER AND WASTEWATER STANDARDS, DETAILS AND MATERIALS MANUAL, REV. JANUARY 2020 (OR LATEST EDITION AT TIME OF BID) AND ST. JOHNS COUNTY STANDARD SPECIFICATIONS AND DETAILS AND ALL APPLICABLE STATE AND LOCAL REGULATIONS.
☐	☒	6. IF SOLVENT CONTAMINATION IS FOUND IN THE PIPE TRENCH, WORK SHALL BE STOPPED AND THE PROPER AUTHORITIES NOTIFIED. WITH APPROVAL OF THE PERMITTING AGENCY, DUCTILE IRON PIPE, FITTINGS AND SOLVENT RESISTANT GASKET MATERIAL SHALL BE USED IN THE CONTAMINATED AREA. THE DUCTILE IRON PIPE SHALL EXTEND AT LEAST 100 FEET BEYOND ANY SOLVENT NOTED.
☐	☒	7. THE CONTRACTOR SHALL NOTIFY APPLICABLE UTILITY CONTACT PERSONNEL NOT LESS THAN ONE WEEK PRIOR TO CONSTRUCTION OF FACILITIES IN THEIR RESPECTIVE AREAS.
☐	☒	8. TREE PROTECTION SHALL BE IN ACCORDANCE WITH ST. JOHNS COUNTY ORDINANCE CODE REQUIREMENTS AND/OR AS DETAILED ON SPECIFIC PLAN SHEETS AND DETAILS. NO TRIMMING OF OVERHANGING TREE LIMBS WILL BE ALLOWED. USE SMALLER EQUIPMENT IF NECESSARY.
☐	☒	9. THE CONTRACTOR SHALL LOCATE THE DRAINAGE INLET STRUCTURES IN THE PROJECT AREA AND ERECT SEDIMENTATION CONTROL DEVICES
☐	☒	10. CONTRACTOR TO COORDINATE WORK WITH OTHER UTILITIES DURING CONSTRUCTION.

EXISTING UTILITY PROTECTION:

1. IN ORDER TO REDUCE THE DISRUPTION AND COST OF UTILITY DAMAGES OCCURRING IN THE ST. JOHNS COUNTY RIGHT-OF-WAY AND EASEMENTS, THE CONTRACTOR SHALL PREVENT DAMAGES TO EXISTING UTILITIES CAUSED BY HIS WORK THROUGH FIELD VERIFICATION OF THE LOCATION OF THE EXISTING UTILITIES. IN THE CASE OF OPEN EXCAVATION, VERIFICATION MAY BE PERFORMED DURING THE CONTRACTORS WORK. IN THE CASE OF DIRECTIONAL DRILLING, VERIFICATION SHALL TAKE PLACE PRIOR TO MOBILIZATION OF THE DRILLING EQUIPMENT.
2. THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING UTILITIES AS NEEDED TO AVOID CONTACT. EXISTING UTILITIES SHALL BE EXPOSED USING DETECTION EQUIPMENT OR OTHER ACCEPTABLE MEANS. SUCH METHODS MAY INCLUDE BUT SHALL NOT BE LIMITED TO "SOFT DIG" EQUIPMENT AND GROUND PENETRATING RADAR (GPR). THE EXCAVATOR SHALL BE HELD LIABLE FOR DAMAGES CAUSED TO THE COUNTY/JEA INFRASTRUCTURE AND THE EXISTING FACILITIES OF OTHER UTILITY COMPANIES.
3. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE AND AVOID ALL UTILITIES, OTHER STRUCTURES AND OBSTRUCTIONS BOTH ABOVE AND BELOW GROUND SURFACE. ALL DAMAGE RESULTING FROM THE CONTRACTOR'S FAILURE TO COMPLY WITH THIS REQUIREMENT SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

UTILITY CONTACTS:

A. AT&T ~ GENERAL NUMBER	904-519-2529
B. AT&T ~ ADAM DUGAN ~ NORTH DISTRICT	904-781-0741
C. AT&T ~ BILL LAKE ~ SOUTH DISTRICT	904-303-8754
D. CITY OF JACKSONVILLE ~ PUBLIC WORKS DEPT.	904-255-8762
E. CITY OF JACKSONVILLE ~ TRAFFIC OPERATIONS	904-387-8861
F. FLORIDA DEPT. OF TRANSPORTATION	904-825-5036
G. JEA ~ WATER COLLECTION & DISTRIBUTION ~ RANDY ELLIS	904-665-7133
H. JEA ~ SEWER COLLECTION & DISTRIBUTION ~ NATHANIAL ROUSE	904-665-8183
I. JEA ~ GENERAL INFORMATION	904-665-6000
J. JEA ~ PROJECT OUTREACH	904-665-7500
K. JEA ~ POWER OUTAGES	904-665-6000
L. JEA ~ SEWER PROBLEMS	904-665-4802
M. JEA ~ WATER PROBLEMS	904-665-4801
N. JEA ~ WATER & SEWER LOCATES	904-665-8410
O. COMCAST ~ EMERGENCY HOTLINE	904-380-6274
P. JACKSONVILLE TRANSIT AUTHORITY (JTA) ~ IVAN MITCHELL	904-633-8523
Q. TECO/PEOPLES GAS ~ BEN MOBLEY	904-545-8958
R. SUNSHINE ONE CALL	811
S. FDOT - ITS - FOC ~ JOSH REICHERT	904-360-5642
T. JEA ENVIRONMENTAL GROUP	904 665-4517
U. COJ TRAFFIC MOT ~ RONNIE THIGPEN	904-255-8704
V. COJ TRAFFIC SIGNALS ~ MASON BOYD	904-255-7549
W. FLORIDA GAS TRANSMISSION ~ JACOB WALLACE	325-494-0028
X. ST JOHNS COUNTY ROW DIVISION CONTACTS -	
RICK MAULDIN ROW UTILITY MGR	904-209-0134
FRANK HENLEY, INSPECTOR	904-209-0119
JIM SMITH, INSPECTOR	904-669-1051

INSTALLATION NOTES:

NOT APPLICABLE	APPLICABLE	
☒	☐	1. CONTRACTOR TO REHABILITATE ALL MANHOLES ON PIPE BURST SEWERS VIA COATING/LINING PER JEA SPECIFICATION 446-2, UNLESS OTHERWISE NOTED ON THE PLANS.
☒	☐	2. CONTRACTOR TO RENEW, REHABILITATE, REPLACE OR REINSTALL AS APPLICABLE ALL SERVICE LATERALS TO R.O.W. LINE.
☒	☐	3. CONTRACTOR TO INSTALL SEWER SERVICE PIPING A MINIMUM OF 60 INCHES BELOW GRADE. WHERE NEW SANITARY SEWER MAIN IS LESS THAN 5 FEET DEEP, THE SEWER SERVICE PIPE SHALL BE INSTALLED AS DEEP AS POSSIBLE.
☐	☒	4. WHEN THE DISTANCE BETWEEN A POWER POLE AND THE TRENCH IS LESS THAN THE TRENCH DEPTH, THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH FPL ELECTRICAL PERSONNEL TO SECURE POWER POLES.
☒	☐	5. ALL NEW STORM DRAIN PIPE JOINTS SHALL BE WRAPPED WITH FILTER FABRIC.
☒	☐	6. THE DESIGN FOR THE PROJECT IS BASED UPON THE "OPEN-CUT" METHOD OF CONSTRUCTION. IF USING ALTERNATIVE MEANS OR METHODS, THE CONTRACTOR SHALL FOLLOW ALL APPLICABLE STANDARDS FOR THAT MEANS OR METHOD.
☐	☒	7. THE CONTRACTOR SHALL MINIMIZE SERVICE INTERRUPTIONS AT SERVICE CONNECTIONS. THE MEANS AND METHODS SHALL BE LEFT TO THE DISCRETION OF THE CONTRACTOR, SUBJECT TO THE REQUIREMENTS OF THE CONTRACT SPECIFICATIONS. NO EXISTING ACTIVE SERVICE SHALL BE LEFT INTERRUPTED AT THE END OF THE WORK DAY.
☐	☒	8. CONTRACTOR SHALL PROVIDE ADDITIONAL CORPORATION STOPS FOR FILLING AND DRAINING PURPOSES DURING CONSTRUCTION AS NEEDED. CORPORATION STOPS ARE TO BE PLUGGED AND LEFT IN PLACE. INDICATE CORPORATION STOP LOCATIONS ON RECORD DRAWINGS (AS-BUILTS).
☒	☐	9. WATER AND SEWER SERVICES SHALL BE TRANSFERRED TO THE NEW MAIN UPON COMPLETION AND F.D.E.P./J.E.A. CERTIFICATION, AND PRIOR TO THE EXISTING MAINS BEING ABANDONED.
☒	☐	10. IF EXISTING VALVES ARE IN UNPAVED AREAS AND ARE TO BE TAKEN OUT OF SERVICE, THEY SHALL BE CLOSED AND THE VALVE BOX AND COVER SHALL BE REMOVED. IF THE VALVES ARE UNDER PAVED AREAS, THEY SHALL BE CLOSED, THE VALVE BOX GROUT FILLED AND THE COVER REMOVED.
☐	☒	11. CONTRACTOR SHALL REPLACE EXISTING WATER METER BOXES WHEN DEEMED NECESSARY BY THE JEA INSPECTOR.
☐	☒	12. CONTRACTOR TO PROVIDE ADDITIONAL DEPTH OF BURY VIA PIPE JOINT DEFLECTION TO ACCOMMODATE VALVE SELECTION PER JEA STANDARDS.
☐	☒	13. WATER METERS MAY REQUIRE RELOCATION FOR CONSTRUCTION, CONTRACTOR SHALL CONTACT JEA METER DEPARTMENT AND RELOCATE WATER METERS AS NECESSARY.
☐	☒	14. PRIOR TO COMMENCING ANY EXCAVATION OR GRADING, THE CONTRACTOR SHALL OBTAIN ALL GEOTECHNICAL AND TOPOGRAPHIC SURVEY DATA AND LOCATIONS OF ABOVE GROUND AND UNDERGROUND UTILITIES. SHOULD THE CONTRACTOR DISCOVER ANY INACCURACIES, ERRORS OR OMISSIONS IN THE SURVEY DATA, HE SHALL IMMEDIATELY NOTIFY THE DESIGN ENGINEER IN ORDER THAT PROPER ADJUSTMENTS CAN BE ANTICIPATED AND ORDERED.
☐	☒	15. SHEET PILING WILL BE REQUIRED ON ALL EXCAVATIONS DEEPER THAN 16 FEET.

GENERAL NOTES

1. THE CONTRACTOR SHALL STRICTLY FOLLOW DESIGN STANDARDS AS GIVEN IN "WATER AND WASTEWATER STANDARDS MANUAL" BY JEA, JANUARY 2020 (OR LATEST EDITION AT TIME OF BID SUBMITTAL) FOR ALL UTILITY INSTALLATION EXCEPT AS OTHERWISE NOTED.
2. THE INFORMATION PROVIDED IN THESE PLANS IS SOLELY TO ASSIST THE CONTRACTOR IN ASSESSING THE NATURE AND EXTENT OF CONDITIONS WHICH WILL BE ENCOUNTERED DURING THE COURSE OF THE WORK. THE CONTRACTORS ARE DIRECTED, PRIOR TO BIDDING, TO CONDUCT WHATEVER INVESTIGATIONS THEY DEEM NECESSARY TO ARRIVE AT THEIR OWN CONCLUSION REGARDING THE ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED, AND UPON WHICH THEIR BIDS WILL BE BASED.
3. SUBMITTAL OF AS-BUILT SITE SURVEY, INCLUDING BENCHMARKS, IS REQUIRED PRIOR TO SCHEDULING FINAL INSPECTION. AS-BUILT SURVEY SHALL BE SIGNED AND SEALED BY A REGISTERED LAND SURVEYOR IN THE STATE OF FLORIDA AND SHALL INCLUDE COORDINATES OF ALL NEW STRUCTURES, ALL PIPE FITTINGS AND VALVES 2-INCH AND LARGER AND ELEVATIONS OF ALL NEW STRUCTURES.
4. TOPOGRAPHIC SURVEY WAS PERFORMED BY:
   R.E. HOLLAND & ASSOCIATES, INC.
   9770 BAY MEADOWS ROAD
   SUITE 105 JACKSONVILLE, FL 32256
   TEL: (904) 260-6300
5. LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS, BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT. BY SUBMITTING A BID, THE CONTRACTOR SHALL AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE FEATURES AFFECTING HIS WORK.
6. PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL PHYSICALLY VERIFY LOCATION OF ALL UTILITIES, ABOVE AND BELOW GROUND AND NOTIFY JEA 72 HOURS PRIOR TO DIGGING IN ANY PORTION OF THE SITE.
7. THE CONTRACTOR SHALL CONTACT THE ENGINEER'S OFFICE IMMEDIATELY UPON FINDING ANY CONFLICTS DURING CONSTRUCTION ON ANY IMPROVEMENTS SHOWN ON THE DRAWINGS.
8. THE CONTRACTOR SHALL NOTE ALL EXISTING UTILITIES ENCOUNTERED DURING EXCAVATION AND INCLUDE ON AS-BUILT DRAWINGS.
9. THE CONTRACTOR SHALL, BY REPAIR OR REPLACEMENT, RETURN TO EQUAL OR BETTER CONDITION ALL PAVEMENT, SIDEWALK, LAWNS, UTILITIES AND OTHER ITEMS DAMAGED BY THE CONSTRUCTION ACTIVITY.
10. MEASURES SHALL BE TAKEN BY THE CONTRACTOR TO ENSURE THAT ADEQUATE EROSION AND SEDIMENTATION CONTROL ARE MAINTAINED AT ALL TIMES DURING THE PROJECT.
11. ALL BRUSH, STRIPPING OR UNSUITABLE MATERIAL SHALL BE DISPOSED OF OFF-SITE AT THE CONTRACTOR'S EXPENSE. HOWEVER, NONE OF THE WASTE MATERIAL SHALL BE REMOVED FROM THE SITE WITHOUT PERMISSION OF THE OWNER.
12. NO REPRESENTATION IS MADE REGARDING BALANCED EARTHWORK. ANY EXCESS MATERIAL, OR MATERIAL NOT SUITABLE FOR USE AS BACKFILL, SHALL BE HAULED AWAY TO AN APPROVED DISPOSAL SITE AT THE CONTRACTOR'S EXPENSE, AND WHERE NECESSARY, SUITABLE FILL AND BACKFILL SHALL BE PROVIDED AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.
13. CONTRACTOR SHALL PERFORM IN THE PRESENCE OF JEA AND THE ENGINEER A PRE-CONSTRUCTION VIDEO DOCUMENTING EXISTING CONDITIONS.

RESTORATION NOTES:

1. THE CONTRACTOR SHALL EMPLOY A LAND SURVEYOR, REGISTERED IN THE STATE OF FLORIDA, TO REFERENCE AND RESTORE PROPERTY CORNERS AND LANDMARKS WHICH MAY BE DISTURBED BY CONSTRUCTION, KNOWN CORNER LOCATIONS ARE AVAILABLE FROM ST. JOHNS COUNTY ENGINEERING DIVISION.
2. THE CONTRACTOR SHALL RESTORE/REPLACE ALL CULVERTS, HEADWALLS AND STORM DRAIN INLETS REMOVED OR DISTURBED BY THE CONSTRUCTION OPERATION.
3. TRAFFIC SIGNS AND PAVEMENT MARKINGS SHALL BE RESTORED TO THEIR PRE-CONSTRUCTION CONDITION IN ACCORDANCE WITH ST. JOHNS COUNTY/FDOT STANDARD SPECIFICATIONS.
4. SIDEWALKS, DRIVEWAYS AND CURBING DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE REPLACED IN ACCORDANCE WITH ST. JOHNS COUNTY STANDARD SPECIFICATIONS. SIDEWALKS REMOVED AND REPLACED IN CURB AND GUTTER AREAS AT INTERSECTIONS SHALL HAVE HANDICAP RAMPS INSTALLED. DRIVEWAYS AND SIDEWALKS SHALL BE SAWCUT ALONG THE RIGHT-OF-WAY LINE OR NEAREST JOINT AND REMOVED AND REPLACED TO THE EDGE OF STREET.
5. GRASS SOD SHALL BE FURNISHED AND PLACED IN THE AREAS DISTURBED OR DAMAGED BY THE CONSTRUCTION OPERATION.
6. ALL PAVEMENT REPAIR SHALL BE IN ACCORDANCE WITH THE ST. JOHNS COUNTY/FDOT STANDARD DETAILS AND SPECIFICATIONS LATEST EDITION.
7. UNLESS OTHERWISE NOTED, REMOVE AND REPLACE EXISTING PAVEMENT AS PER ST. JOHNS COUNTY PAVEMENT REPLACEMENT DETAIL.
8. CONTRACTOR MUST MAINTAIN AND PRESERVE NEWLY GRADED AREAS AND REPAIR AREAS WHERE SETTLING AND EROSION HAVE OCCURRED.

INDEX OF DRAWINGS:

ANGELA B. BRYAN LICENSE No. 56730 STATE OF FLORIDA PROFESSIONAL ENGINEER

DATE:
ANGELA BRYAN
PE NO. 56730

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: ABB
DRAWN BY: SLD
SHEET CHK'D BY: ABB
CROSS CHK'D BY: I POLEMATIDIS
APPROVED BY: D PRAH
DATE: DECEMBER 2020

CDM Smith
4651 Salisbury Road, Suite 420
Jacksonville, FL 32256
Tel: (904) 731-7109
FL COA No. EB-0000020

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

JEA

RIVERTOWN WATER TREATMENT PLANT PROJECT

RAW WATER MAIN
GENERAL NOTES AND DRAWING INDEX

PROJECT NO. 6103-237938
FILE NAME: C001STPP

SHEET NO.
G-1

ISSUED FOR BID

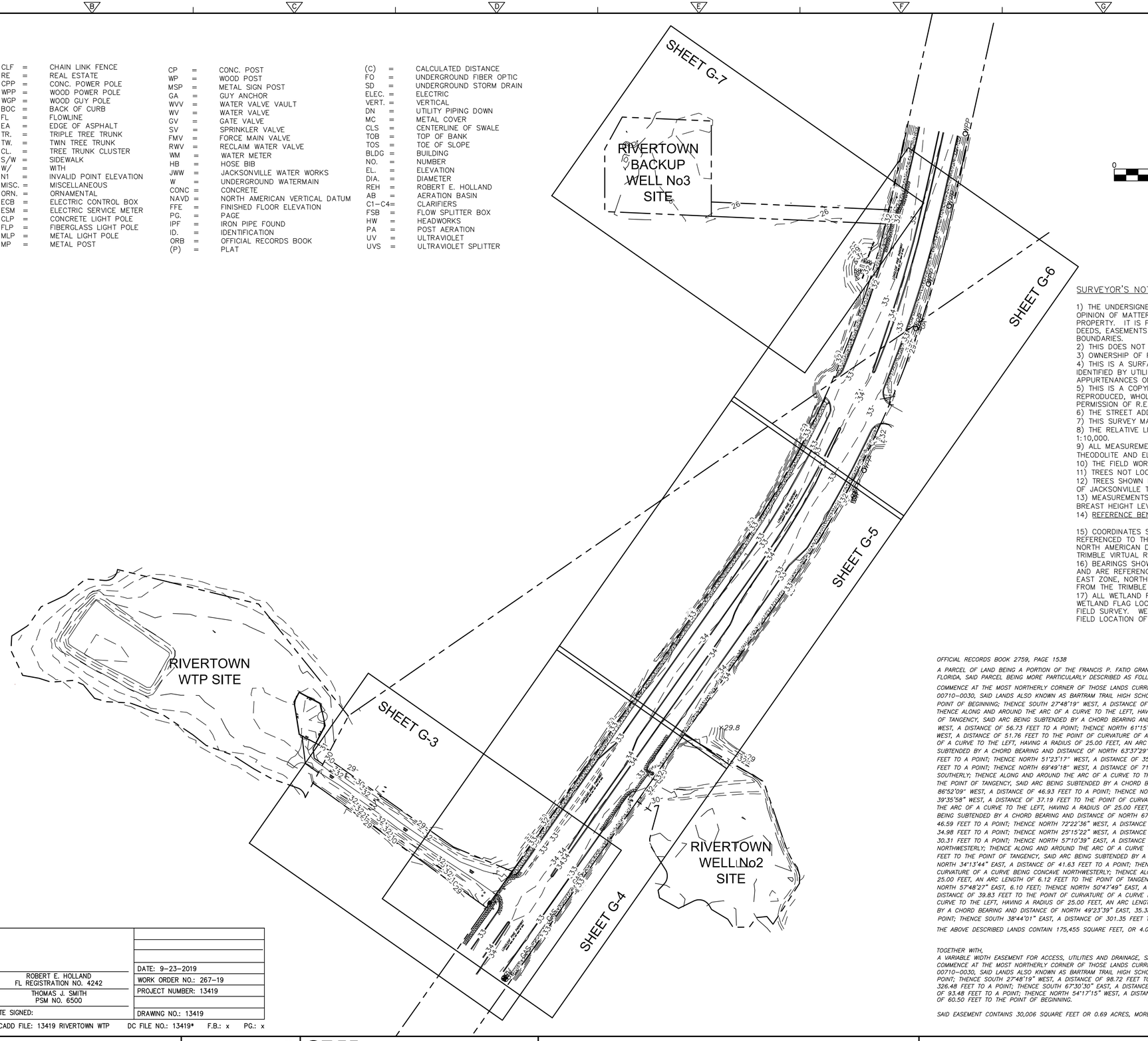
LEGEND

Ⓔ =	ELECTRIC MANHOLE	
Ⓓ =	DRAINAGE MANHOLE	
Ⓢ =	SANITARY MANHOLE	
⊕ =	SIGN	
⟋ =	GUY ANCHOR	
⋈ =	WATER VALVE	
Ⓦ =	WELL	
SS =	UNDERGROUND SANITARY	
W =	UNDERGROUND WATER	
UGT =	UNDERGROUND TELEPHONE	
OHU =	OVERHEAD UTILITY	
UGE =	UNDERGROUND ELECTRIC	
UNK =	UNDERGROUND UNKNOWN	
TH =	TEST HOLE	
TBM =	TEMPORARY BENCHMARK	
RCP =	REINFORCED CONC. PIPE	
CI =	CAST IRON	
PVC =	POLYVINYL CHLORIDE	
VCP =	VITRIFIED CLAY PIPE	
TCP =	TERRA COTTA PIPE	
ELEV =	ELEVATION	
INV =	INVERT	

CLF =	CHAIN LINK FENCE	
RE =	REAL ESTATE	
CPP =	CONC. POWER POLE	
WPP =	WOOD POWER POLE	
WGP =	WOOD GUY POLE	
BOC =	BACK OF CURB	
FL =	FLOWLINE	
EA =	EDGE OF ASPHALT	
TR. =	TRIPLE TREE TRUNK	
TW. =	TWIN TREE TRUNK	
CL. =	TREE TRUNK CLUSTER	
S/W =	SIDEWALK	
W/ =	WITH	
N1 =	INVALID POINT ELEVATION	
MISC. =	MISCELLANEOUS	
ORN. =	ORNAMENTAL	
ECB =	ELECTRIC CONTROL BOX	
ESM =	ELECTRIC SERVICE METER	
CLP =	CONCRETE LIGHT POLE	
FLP =	FIBERGLASS LIGHT POLE	
MLP =	METAL LIGHT POLE	
MP =	METAL POST	

CP =	CONC. POST	
WP =	WOOD POST	
MSP =	METAL SIGN POST	
GA =	GUY ANCHOR	
WVV =	WATER VALVE VAULT	
WV =	WATER VALVE	
GV =	GATE VALVE	
SV =	SPRINKLER VALVE	
FMV =	FORCE MAIN VALVE	
RWV =	RECLAIM WATER VALVE	
WM =	WATER METER	
HB =	HOSE BIB	
JWW =	JACKSONVILLE WATER WORKS	
W =	UNDERGROUND WATERMAIN	
CONC =	CONCRETE	
NAVD =	NORTH AMERICAN VERTICAL DATUM	
FFE =	FINISHED FLOOR ELEVATION	
PG. =	PAGE	
IPF =	IRON PIPE FOUND	
ID. =	IDENTIFICATION	
ORB =	OFFICIAL RECORDS BOOK	
(P) =	PLAT	

(C) =	CALCULATED DISTANCE	
FO =	UNDERGROUND FIBER OPTIC	
SD =	UNDERGROUND STORM DRAIN	
ELEC. =	ELECTRIC	
VERT. =	VERTICAL	
DN =	UTILITY PIPING DOWN	
MC =	METAL COVER	
CLS =	CENTERLINE OF SWALE	
TOB =	TOP OF BANK	
TOS =	TOE OF SLOPE	
BLDG =	BUILDING	
NO. =	NUMBER	
EL. =	ELEVATION	
DIA. =	DIAMETER	
REH =	ROBERT E. HOLLAND	
AB =	AERATION BASIN	
C1-C4=	CLARIFIERS	
FSB =	FLOW SPLITTER BOX	
HW =	HEADWORKS	
PA =	POST AERATION	
UV =	ULTRAVIOLET	
UVS =	ULTRAVIOLET SPLITTER	



SURVEYOR'S NOTES:

1) THE UNDERSIGNED SURVEYOR HAS NOT BEEN PROVIDED A CURRENT TITLE OPINION OF MATTERS AFFECTING THE TITLE TO OR BOUNDARY OF THE SUBJECT PROPERTY. IT IS POSSIBLE THAT THERE ARE DEEDS OF RECORD, UNRECORDED DEEDS, EASEMENTS OR OTHER INSTRUMENTS WHICH COULD AFFECT THE BOUNDARIES.
2) THIS DOES NOT PURPORT TO BE A BOUNDARY SURVEY.
3) OWNERSHIP OF FENCES, IF ANY, IS UNDETERMINED.
4) THIS IS A SURFACE LOCATION SURVEY ONLY; UNDERGROUND UTILITIES WERE IDENTIFIED BY UTILITY MARKINGS PERFORMED BY OTHERS AND ABOVE GROUND APPURTENANCES ONLY.
5) THIS IS A COPYRIGHTED DOCUMENT; NO PORTION OF IT MAY BE REPRODUCED, WHOLLY OR IN PART, WITHOUT THE EXPRESSED WRITTEN PERMISSION OF R.E. HOLLAND & ASSOCIATES, INC.
6) THE STREET ADDRESS, IF SHOWN, IS AS FIELD POSTED ON DATE OF SURVEY.
7) THIS SURVEY MAP DOES NOT REFLECT OR DETERMINE OWNERSHIP.
8) THE RELATIVE LINEAR DISTANCE ACCURACY FOR THIS SURVEY EXCEEDS 1:10,000.
9) ALL MEASUREMENTS ARE IN U.S. STANDARD FEET AND WERE MADE WITH A THEODOLITE AND ELECTRONIC DISTANCE MEASURING DEVICE AND/OR STEEL TAPE.
10) THE FIELD WORK WAS COMPLETED ON 9-16-2019.
11) TREES NOT LOCATED EXCEPT AS SHOWN HEREON.
12) TREES SHOWN HEREON WERE LOCATED IN ACCORDANCE WITH CURRENT CITY OF JACKSONVILLE TREE ORDINANCE.
13) MEASUREMENTS SHOWN ON TREES REFER TO DIAMETER DIMENSIONS AT BREAST HEIGHT LEVEL. (DBH)
14) REFERENCE BENCHMARK FOR THIS PROJECT

15) COORDINATES SHOWN HEREON ARE IN US SURVEY FEET AND ARE REFERENCED TO THE FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE, NORTH AMERICAN DATUM OF 1983, 2011 ADJUSTMENT, AS DERIVED FROM THE TRIMBLE VIRTUAL REFERENCE STATION NETWORK.
16) BEARINGS SHOWN HEREON WERE CALCULATED FROM FOUND MONUMENTATION AND ARE REFERENCED TO THE FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE, NORTH AMERICAN DATUM OF 1983, 2011 ADJUSTMENT, AS DERIVED FROM THE TRIMBLE VIRTUAL REFERENCE STATION NETWORK.
17) ALL WETLAND FLAGGING SHOWN HEREON WAS PERFORMED BY OTHERS. WETLAND FLAG LOCATIONS WERE DETERMINED BY FIELD LOCATION ON DATE OF FIELD SURVEY. WETLAND JURISDICTION LINES WERE DETERMINED BASED ON FIELD LOCATION OF WETLAND FLAGGING.

OFFICIAL RECORDS BOOK 2759, PAGE 1538

A PARCEL OF LAND BEING A PORTION OF THE FRANCIS P. FATIO GRANT, SECTION 39, TOWNSHIP 5 SOUTH, RANGE 27 EAST, ST JOHNS COUNTY, FLORIDA, SAID PARCEL BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE MOST NORTHERLY CORNER OF THOSE LANDS CURRENTLY OWNED BY ST. JOHNS COUNTY SCHOOL BOARD, REAL ESTATE NUMBER 00710-0030, SAID LANDS ALSO KNOWN AS BARTRAM TRAIL HIGH SCHOOL; THENCE SOUTH 55°23'05" WEST, A DISTANCE OF 1788.14 FEET TO THE POINT OF BEGINNING; THENCE SOUTH 27°48'19" WEST, A DISTANCE OF 194.04 FEET TO A POINT ON A CURVE BEING CONCAVE SOUTHWESTERLY; THENCE ALONG AND AROUND THE ARC OF A CURVE TO THE LEFT, HAVING A RADIUS OF 25.00 FEET, AN ARC LENGTH OF 27.65 FEET TO THE POINT OF TANGENCY, SAID ARC BEING SUBTENDED BY A CHORD BEARING AND DISTANCE OF NORTH 38°49'30" WEST, 26.26 FEET; THENCE NORTH 70°30'33" WEST, A DISTANCE OF 56.73 FEET TO A POINT; THENCE NORTH 61°15'44" WEST, A DISTANCE OF 43.50 FEET TO A POINT; THENCE NORTH 57°17'55" WEST, A DISTANCE OF 51.76 FEET TO THE POINT OF CURVATURE OF A CURVE BEING CONCAVE SOUTHERLY; THENCE ALONG AND AROUND THE ARC OF A CURVE TO THE LEFT, HAVING A RADIUS OF 25.00 FEET, AN ARC LENGTH OF 5.52 FEET TO THE POINT OF TANGENCY, SAID ARC BEING SUBTENDED BY A CHORD BEARING AND DISTANCE OF NORTH 63°37'29" WEST, 5.51 FEET; THENCE NORTH 69°57'02" WEST, A DISTANCE OF 54.94 FEET TO A POINT; THENCE NORTH 51°23'17" WEST, A DISTANCE OF 35.35 FEET TO A POINT; THENCE NORTH 56°05'38" WEST, A DISTANCE OF 73.67 FEET TO A POINT; THENCE NORTH 69°49'18" WEST, A DISTANCE OF 71.43 FEET TO THE POINT OF CURVATURE OF A CURVE BEING CONCAVE SOUTHERLY; THENCE ALONG AND AROUND THE ARC OF A CURVE TO THE LEFT, HAVING A RADIUS OF 25.00 FEET, AN ARC LENGTH OF 7.44 FEET TO THE POINT OF TANGENCY, SAID ARC BEING SUBTENDED BY A CHORD BEARING AND DISTANCE OF NORTH 78°20'43" WEST, 7.41 FEET; THENCE NORTH 86°52'09" WEST, A DISTANCE OF 46.93 FEET TO A POINT; THENCE NORTH 73°59'32" WEST, A DISTANCE OF 25.51 FEET TO A POINT; THENCE NORTH 39°35'58" WEST, A DISTANCE OF 37.19 FEET TO THE POINT OF CURVATURE OF A CURVE BEING CONCAVE SOUTHERLY; THENCE ALONG AND AROUND THE ARC OF A CURVE TO THE LEFT, HAVING A RADIUS OF 25.00 FEET, AN ARC LENGTH OF 23.92 FEET TO THE POINT OF TANGENCY, SAID ARC BEING SUBTENDED BY A CHORD BEARING AND DISTANCE OF NORTH 67°00'52" WEST, 23.02 FEET; THENCE SOUTH 85°34'15" WEST, A DISTANCE OF 46.59 FEET TO A POINT; THENCE NORTH 72°22'36" WEST, A DISTANCE OF 26.69 FEET TO A POINT; THENCE NORTH 79°43'00" WEST, A DISTANCE OF 34.98 FEET TO A POINT; THENCE NORTH 25°15'22" WEST, A DISTANCE OF 57.81 FEET TO A POINT; THENCE NORTH 03°21'05" EAST, A DISTANCE OF 30.31 FEET TO A POINT; THENCE NORTH 57°10'39" EAST, A DISTANCE OF 36.95 FEET TO THE POINT OF CURVATURE OF A CURVE BEING CONCAVE NORTHWESTERLY; THENCE ALONG AND AROUND THE ARC OF A CURVE TO THE LEFT, HAVING A RADIUS OF 25.00 FEET, AN ARC LENGTH OF 10.01 FEET TO THE POINT OF TANGENCY, SAID ARC BEING SUBTENDED BY A CHORD BEARING AND DISTANCE OF NORTH 45°42'12" EAST, 9.95 FEET; THENCE NORTH 34°13'44" EAST, A DISTANCE OF 41.63 FEET TO A POINT; THENCE NORTH 64°49'05" EAST, A DISTANCE OF 54.86 FEET TO THE POINT OF CURVATURE OF A CURVE BEING CONCAVE NORTHWESTERLY; THENCE ALONG AND AROUND THE ARC OF A CURVE TO THE LEFT, HAVING A RADIUS OF 25.00 FEET, AN ARC LENGTH OF 6.12 FEET TO THE POINT OF TANGENCY, SAID ARC BEING SUBTENDED BY A CHORD BEARING AND DISTANCE OF NORTH 57°48'27" EAST, 6.10 FEET; THENCE NORTH 50°47'49" EAST, A DISTANCE OF 50.46 FEET TO A POINT; THENCE SOUTH 85°33'49" EAST, A DISTANCE OF 39.83 FEET TO THE POINT OF CURVATURE OF A CURVE BEING CONCAVE NORTHWESTERLY; THENCE ALONG AND AROUND THE ARC OF A CURVE TO THE LEFT, HAVING A RADIUS OF 25.00 FEET, AN ARC LENGTH OF 39.31 FEET TO A POINT ON SAID CURVE; SAID ARC BEING SUBTENDED BY A CHORD BEARING AND DISTANCE OF NORTH 49°23'39" EAST, 35.38 FEET; THENCE SOUTH 76°16'12" EAST, A DISTANCE OF 305.34 FEET TO A POINT; THENCE SOUTH 38°44'01" EAST, A DISTANCE OF 301.35 FEET TO THE POINT OF BEGINNING.

THE ABOVE DESCRIBED LANDS CONTAIN 175,455 SQUARE FEET, OR 4.00 ACRES, MORE OR LESS, IN AREA.

TOGETHER WITH,
A VARIABLE WIDTH EASEMENT FOR ACCESS, UTILITIES AND DRAINAGE, SAID EASEMENT BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:
COMMENCE AT THE MOST NORTHERLY CORNER OF THOSE LANDS CURRENTLY OWNED BY ST. JOHNS COUNTY SCHOOL BOARD, REAL ESTATE NUMBER 00710-0030, SAID LANDS ALSO KNOWN AS BARTRAM TRAIL HIGH SCHOOL; THENCE SOUTH 55°23'05" WEST, A DISTANCE OF 1788.14 FEET TO A POINT; THENCE SOUTH 27°48'19" WEST, A DISTANCE OF 98.72 FEET TO THE POINT OF BEGINNING; THENCE SOUTH 54°49'39" EAST, A DISTANCE OF 326.48 FEET TO A POINT; THENCE SOUTH 67°30'30" EAST, A DISTANCE OF 133.25 FEET TO A POINT; THENCE SOUTH 35°10'21" WEST, A DISTANCE OF 93.48 FEET TO A POINT; THENCE NORTH 54°17'15" WEST, A DISTANCE OF 448.74 FEET TO A POINT; THENCE NORTH 27°48'19" EAST, A DISTANCE OF 60.50 FEET TO THE POINT OF BEGINNING.

SAID EASEMENT CONTAINS 30,006 SQUARE FEET OR 0.69 ACRES, MORE OR LESS, IN AREA.

Professional Surveyors & Mappers
R. E. Holland & Associates, Inc.
9770 BAYMEADOWS ROAD, SUITE 125 PH# (904)260-6300
JACKSONVILLE, FLORIDA 32256 FAX (904)646-3272
FLORIDA CERTIFICATE OF AUTHORIZATION NO. LB 6755

ROBERT E. HOLLAND
FL REGISTRATION NO. 4242

THOMAS J. SMITH
PSM NO. 6500

DATE SIGNED:

DATE: 9-23-2019
WORK ORDER NO.: 267-19
PROJECT NUMBER: 13419
DRAWING NO.: 13419

COMPUTED BY: DTS CADD TECH: DTS/ABP CADD FILE: 13419 RIVERTOWN WTP DC FILE NO.: 13419* F.B.: x PG.: x

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: ABB
DRAWN BY: SLD
SHEET CHK'D BY: ABB
CROSS CHK'D BY: I POLEMATIDIS
APPROVED BY: D PRAH
DATE: DECEMBER 2020

CDM Smith
4651 Salisbury Road, Suite 420
Jacksonville, FL 32256
Tel: (904) 731-7109
FL COA No. EB-0000020

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

JEA

RIVERTOWN WATER TREATMENT PLANT PROJECT

RAW WATER MAIN
EXISTING CONDITIONS - KEY MAP

PROJECT NO. 6103-237938
FILE NAME: C001STPP
SHEET NO. G-2

ISSUED FOR BID


TH#10
FPL ELECTRIC & ATT FOC
(3) 2" PVC ELECTRIC
DEPTH OF COVER 3.12'
(3) 2" PVC FOC COMM
DEPTH OF COVER 4.06'
TH#12
JEA WATER MAIN
20" PVC (BLUE)
DEPTH OF COVER 8.60'
TH#11
JEA WATER MAIN
20" PVC (BLUE)
DEPTH OF COVER 8.50'
UNITI FIBER 2" CONDUIT
WITH FIBER OPTIC
TH#6
UNITI-FIBER FOC
2" PVC CONDUIT
(ORANGE)
DEPTH OF COVER 2.70'
TH#7
FPL
UNKNOWN ELECTRIC
DEPTH OF COVER
7.80'
TH#9
JEA WATER MAIN
20" PVC (BLUE)
DEPTH OF COVER
8.57'
TH#8
JEA WATER MAIN
20" PVC (BLUE)
DEPTH OF COVER
8.57'
TH#3
JEA REUSE MAIN
20" PVC (PURPLE)
DEPTH OF COVER
5.63'
TH#2
JEA SEWER FORCEMAIN
16" PVC (GREEN)
DEPTH OF COVER 5.70'
TH#4
JEA REUSE MAIN
20" PVC (PURPLE)
DEPTH OF COVER
7.98'
TH#5
JEA REUSE MAIN
20" PVC (PURPLE)
DEPTH OF COVER
7.35'
TH#1
UNITI-FIBER TELEPHONE
FOC
2" PVC CONDUIT (ORANGE)
DEPTH OF COVER 2.70'
NW/SE DIRECTION
SOIL BORING B-12
N:2076439.38
E:461245.85
ELEV.:33.48
SOIL BORING B-16
N:2076355.35
E:461380.57
ELEV.:29.22
WATER VALVE
COVER ELEV.: 30.79
NUT ELEV.: 28.46
WATER VALVE
COVER ELEV.: 31.05
NUT ELEV.: 29.05
RECLAIM WATER VALVE
COVER ELEV.: 32.23
NUT ELEV.: 30.94
UNDERGROUND WATER LINE
UNDERGROUND VAULT (CENTURY)
VARIABLE WIDTH EASEMENT FOR ACCESS, UTILITIES AND DRAINAGE
GRAVEL ROAD
SANITARY ARV MANHOLE
N. RIM ELEV.: 33.19
UNDERGROUND AT&T VAULT
UNDERGROUND COMCAST VAULT
FIBER OPTIC MARKER POST
UNDERGROUND FIBER OPTIC VAULT (UNITED)
2" FIBER OPTIC CONDUIT
16" FORCEMAIN LINE
2" UGE CONDUIT (FPL)
7.3' X 7.3' CONC. TRANSFORMER PAD
BM SET NAIL & DISK
ELEV.:33.11 NAVD 88
RECLAIM WATER VALVE
COVER ELEV.: 33.39
NUT ELEV.: 30.83
RECLAIM WATER VALVE
COVER ELEV.: 33.42
NUT ELEV.: 31.59
20" RECLAIM WATER MAIN
RECLAIM WATER VALVE
COVER ELEV.: 33.44
NUT ELEV.: 31.50
(2) IRRIGATION CONTROL VALVE
FORCE MAIN VALVE
COVER ELEV.: 33.53
NUT ELEV.: 30.83
UNDERGROUND FIBER OPTIC VAULT (TOWER CLOUD)
(3) FIBER OPTIC MARKER POST
WATER VALVE
COVER ELEV.: 33.86
NUT ELEV.: 31.96
WATER VALVE
COVER ELEV.: 33.90
NUT ELEV.: 32.09
WATER VALVE
COVER ELEV.: 33.82
NUT ELEV.: 33.52
UNDERGROUND TELECOM LINE
UNDERGROUND ELECTRIC LINE
(2) 6" AND
(1) 2" UGE CONDUITS (FPL)
ELECTRIC LINE
MTL POST
GAS LINE MARKER
UNDERGROUND WATER MAIN
LONGLEAF PINE PARKWAY
(COUNTY ROAD 244 130' RIGHT OF WAY)
TOP GRATE ELEV.:33.00
FULL OF WATER
SIZE/TYPE UNK NE INV.:25.01
SIZE/TYPE UNK SW INV.:25.01
BOTTOM ELEV.:24.97
IPF 1/2" A&J
NAIL & DISK FOUND

ANGELA B. BRYAN
LICENSE
No. 56730
STATE OF FLORIDA
PROFESSIONAL ENGINEER

DATE:
ANGELA BRYAN
PE NO. 56730

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:	ABB
DRAWN BY:	SLD
SHEET CHK'D BY:	ABB
CROSS CHK'D BY:	I POLEMATIDIS
APPROVED BY:	D PRAH
DATE:	DECEMBER 2020

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904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

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RIVERTOWN WATER TREATMENT PLANT PROJECT

RAW WATER MAIN
EXISTING CONDITIONS

PROJECT NO. 6103-237938
FILE NAME: C001STPP
SHEET NO.
G-3

ISSUED FOR BID

SOIL BORING B-12
N:2076439.38
E:461245.85
ELEV.:33.48

(3) 1-1/4" DUCTS WITH FIBER OPTIC (UNITI FIBER) LOCATED ON WEST SIDE OF LONGLEAF PINE PARKWAY. DEPTH VARIES BETWEEN 4 FT AND 20 FT. EXACT LOCATION AND DEPTH UNKNOWN.

TOP GRATE ELEV.:32.11
18"RCP SE INV.:29.56
BOTTOM ELEV.:29.46

BM SET X-CUT
ELEV.:32.63 NAVD 88

LONGLEAF PINE PARKWAY
(COUNTY ROAD 244 130' RIGHT OF WAY)

TH#13
TECO PEOPLES GAS
GAS MAIN
4" WRAP STEEL (YELLOW)
DEPTH OF COVER 2.76
IRRIGATION
2" PVC
DEPTH OF COVER 1.63'

TH#14
AT&T TELEPHONE
0.5" DB CABLE
(ORANGE)
DEPTH OF COVER 2.35'

TH#15
FPL ELECTRIC
6" HDPE (RED)
DEPTH OF COVER 1.65'

SOIL BORING B-16
N:2076355.35
E:461380.57
ELEV.:29.22

TOP GRATE ELEV.:33.00
FULL OF WATER
SIZE/TYPE UNK NE INV.:25.01
SIZE/TYPE UNK SW INV.:25.01
BOTTOM ELEV.:24.97

MES 36"RCP W INV.:28.75

TECO 4" STEEL GAS (300 PSIG)

(2) 6" AND
(1) 2" UGE CONDUITS (FPL)

SOIL BORING B-17
N:2076623.68
E:461563.22
ELEV.:33.33

BM SET IN TOP OF IPF
ELEV.:32.78 NAVD 88

TOP GRATE ELEV.:32.45
18"RCP W INV.:28.79
BOTTOM ELEV.:23.89

TOP GRATE ELEV.:32.8
FULL OF WATER
SIZE/TYPE UNK SW INV.:23.98
SIZE/TYPE UNK SW INV.:24.01

RIVERTOWN WELL SITE No2

ANGELA B. BRYAN
LICENSE
No. 56730
STATE OF FLORIDA
PROFESSIONAL ENGINEER

DATE:
ANGELA BRYAN
PE NO. 56730

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: ABB
DRAWN BY: SLD
SHEET CHK'D BY: ABB
CROSS CHK'D BY: I POLEMATIDIS
APPROVED BY: D PRAH
DATE: DECEMBER 2020

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RIVERTOWN WATER TREATMENT PLANT PROJECT

RAW WATER MAIN
EXISTING CONDITIONS

PROJECT NO. 6103-237938
FILE NAME: C001STPP

SHEET NO.
G-4

ISSUED FOR BID

A B C D E F G H

0 20 40

(3) 1-1/4" DUCTS WITH FIBER OPTIC (UNITI FIBER) LOCATED ON WEST SIDE OF LONGLEAF PINE PARKWAY. DEPTH VARIES BETWEEN 4 FT AND 20 FT. EXACT LOCATION AND DEPTH UNKNOWN.

TOP GRATE ELEV.:33.47
FULL OF WATER
SIZE/TYPE UNK E INV.:19.05

SANITARY ARV MANHOLE
N. RIM ELEV.: 34.22

SOIL BORING B-13
N:2076935.79
E:461599.45
ELEV.:29.93

TOP GRATE ELEV.:32.89
FULL OF WATER
SIZE/TYPE UNK N INV.:22.49
SIZE/TYPE UNK E INV.:22.07
BOTTOM ELEV.:22.33

FORCEMAIN WIRE BOX

CONCRETE MONUMENT FOUND

TOP GRATE ELEV.:32.13
FULL OF WATER
UNK RCP N INV.:22.25
15"RCP E INV.:26.78
UNK RCP S INV.:22.25
BOTTOM ELEV.:22.25

FIBER OPTIC MARKER

SOIL BOR
N:20
E:4
EL

LONGLEAF PINE PARKWAY
(COUNTY ROAD 244 130' RIGHT OF WAY)

RCP INV:22.25
RCP INV:22.25
RCP INV:26.78

SCHOOL ENTRANCE SIGN

TRAFFIC SIGNAL VAULT

FIRE HYDRANT

NAIL SET

TOP GRATE ELEV.:31.81
FULL OF WATER
BOTTOM ELEV.:27.47

UNDERGROUND GAS LINE

UNDERGROUND TELECOM LINE

UNDERGROUND WATER MAIN

UNDERGROUND GAS LINE

ELECTRIC BOX

TELECOM BOX

UNDERGROUND ELECTRIC VAULT

TOP GRATE ELEV.:33.14
FULL OF WATER
BOTTOM ELEV.:23.54

UNDERGROUND WATER MAIN

MTL POST GAS LINE MARKER

TOP GRATE ELEV.:33.21
FULL OF WATER
BOTTOM ELEV.:21.87

AT&T VAULT
TOP GRATE ELEV.:32.90
FULL OF WATER
SIZE/TYPE UNK S INV.:21.51
SIZE/TYPE UNK W INV.:21.58
BOTTOM ELEV.:21.94

WATER VALVE
COVER ELEV.: 33.72
NUT ELEV.: 30.56

(2) 6" AND
(1) 2" UGE CONDUITS (FPL)

CONCRETE MONUMENT FOUND

UNDERGROUND TELECOM LINE

EOW EL:28.20

EOW EL:28.18

EOW EL:28.9

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: ABB
DRAWN BY: SLD
SHEET CHK'D BY: ABB
CROSS CHK'D BY: I POLEMATIDIS
APPROVED BY: D PRAH
DATE: DECEMBER 2020

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RIVERTOWN WATER TREATMENT PLANT PROJECT

RAW WATER MAIN
EXISTING CONDITIONS

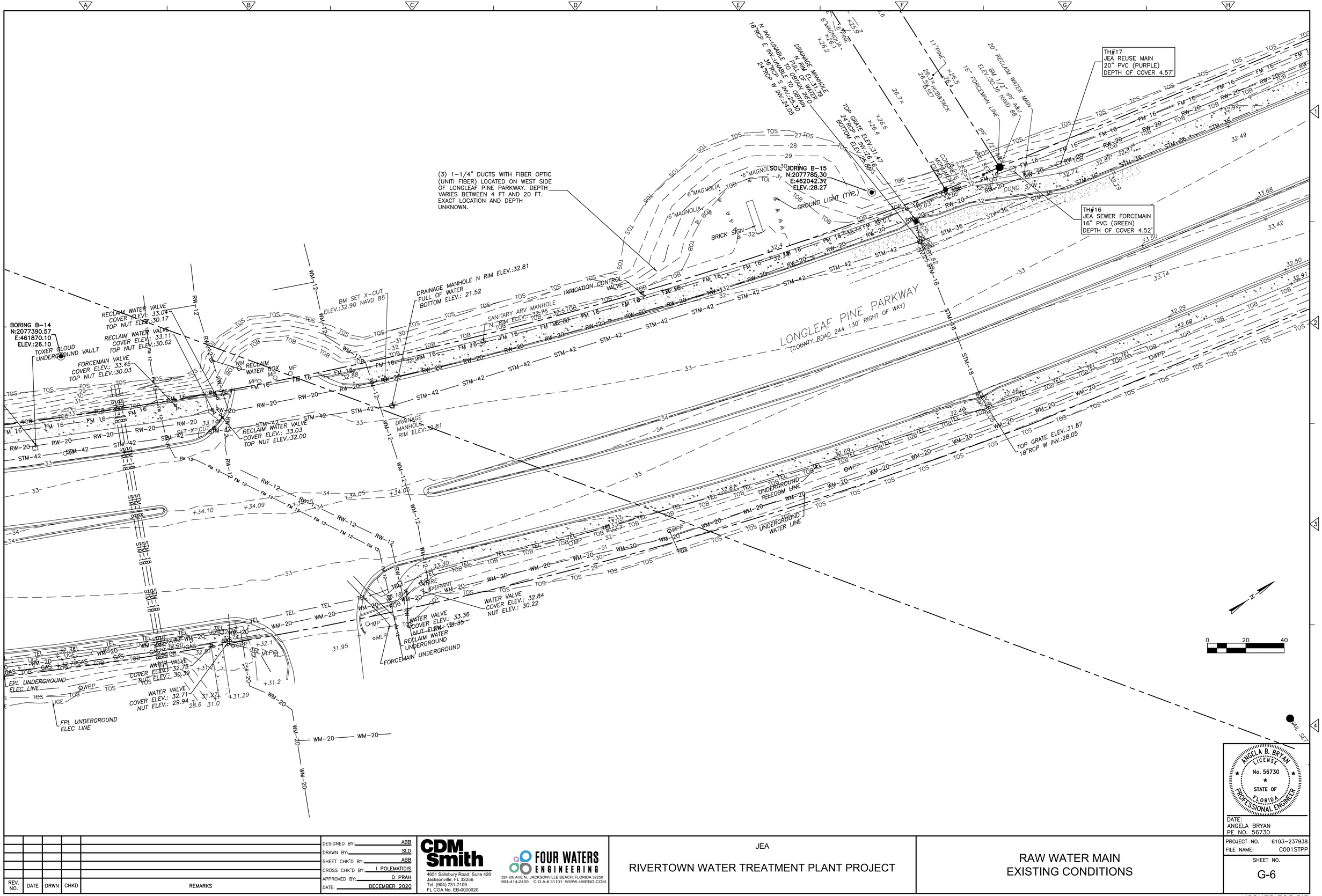
ANGELA B. BRYAN
LICENSE
No. 56730
STATE OF FLORIDA
PROFESSIONAL ENGINEER

DATE:
ANGELA BRYAN
PE NO. 56730

PROJECT NO. 6103-237938
FILE NAME: C001STPP

SHEET NO.
G-5

ISSUED FOR BID



REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: ABB
DRAWN BY: SLD
SHEET CHK'D BY: ABB
CROSS CHK'D BY: I POLEMATIDIS
APPROVED BY: D PRAH
DATE: DECEMBER 2020

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904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

JEA

RIVERTOWN WATER TREATMENT PLANT PROJECT

RAW WATER MAIN
EXISTING CONDITIONS

ANGELA B. BRYAN LICENSE No. 56730 STATE OF FLORIDA PROFESSIONAL ENGINEER

DATE:
ANGELA BRYAN
PE NO. 56730

PROJECT NO. 6103-237938
FILE NAME: C001STPP

SHEET NO.
G-6

ISSUED FOR BID

RIVERTOWN BACKUP WELL SITE No.3

TAX PARCEL NUMBER 001330 0050
OFFICIAL RECORDS BOOK 4736, PAGE 1427

SOIL BORING B-19
N:2077881.26
E:461514.36
ELEV.:24.45

SOIL BORING B-15
N:2077785.30
E:462042.37
ELEV.:28.27

BM 5/8" IRS LB6755
ELEV.:24.93 NAVD 88

BM 1/2" IPF A&J
ELEV.:30.36 NAVD 88

BM SET X-CUT
ELEV.:32.90 NAVD 88

20" RECLAIM WATER MAIN
16" FORCEMAIN LINE

DRAINAGE MANHOLE
N RIM EL.:31.79
FULL OF WATER
N INV.-UNABLE TO OBTAIN
18"RCP E INV.:UNABLE TO OBTAIN
36"RCP S INV.:25.30
24"RCP W INV.:24.05

TOP GRATE ELEV.:31.47
24"RCP E INV.:26.16
BOTTOM ELEV.:25.80

DRAINAGE MANHOLE N RIM ELEV.:32.81
FULL OF WATER
BOTTOM ELEV.:: 21.52

LONGLEAF PINE PARKWAY
(COUNTY ROAD 244 130' RIGHT OF WAY)

0 20 40

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: ABB
DRAWN BY: SLD
SHEET CHK'D BY: ABB
CROSS CHK'D BY: I POLEMATIDIS
APPROVED BY: D PRAH
DATE: DECEMBER 2020

CDM Smith
4651 Salisbury Road, Suite 420
Jacksonville, FL 32256
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JEA

RIVERTOWN WATER TREATMENT PLANT PROJECT

RAW WATER MAIN
EXISTING CONDITIONS

ANGELA B. BRYAN LICENSE No. 56730 STATE OF FLORIDA PROFESSIONAL ENGINEER

DATE:
ANGELA BRYAN
PE NO. 56730

PROJECT NO. 6103-237938
FILE NAME: C001STPP

SHEET NO.
G-7

ISSUED FOR BID

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: ABB
DRAWN BY: SLD
SHEET CHK'D BY: ABB
CROSS CHK'D BY: I POLEMATIDIS
APPROVED BY: D PRAH
DATE: DECEMBER 2020

CDM Smith
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JEA

RIVERTOWN WATER TREATMENT PLANT PROJECT

RAW WATER MAIN
PROPOSED PROJECT VICINITY PLAN AND KEY MAP

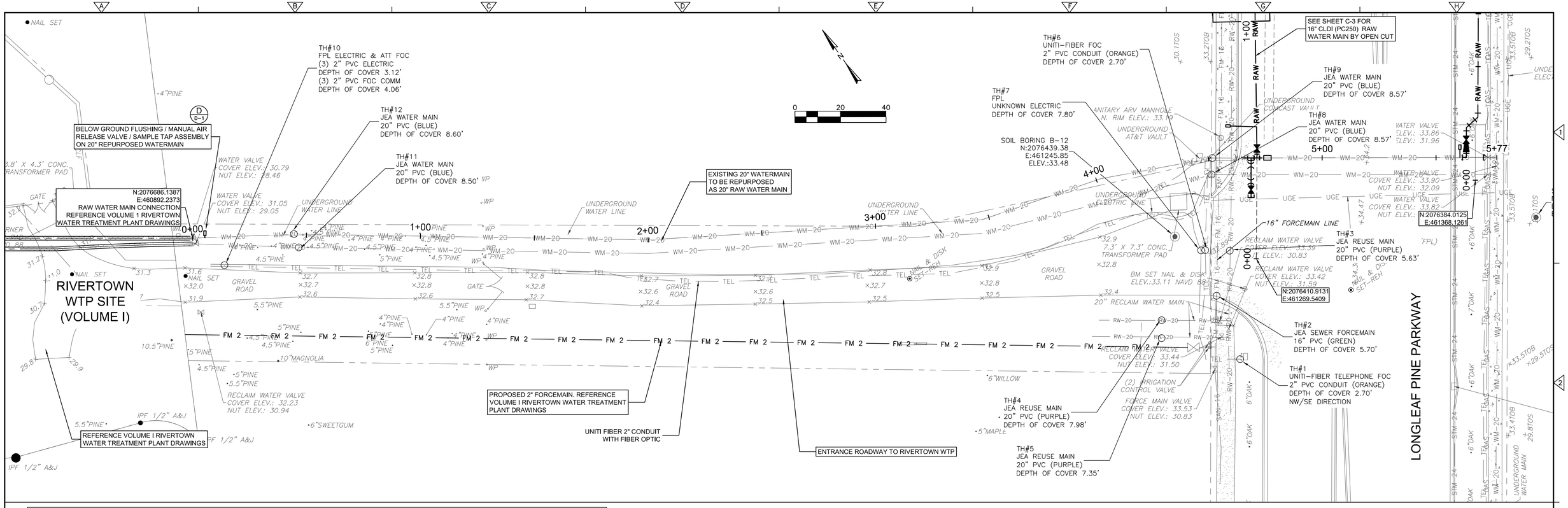
ANGELA B. BRYAN
LICENSE
No. 56730
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

DATE:
ANGELA BRYAN
PE NO. 56730

PROJECT NO. 6103–237938
FILE NAME: C–1STPP

SHEET NO.
C-1

ISSUED FOR BID



GENERAL NOTES

1. THE CONTRACTOR SHALL, BY REPAIR OR REPLACEMENT, RETURN TO EQUAL OR BETTER CONDITION ALL PAVEMENT, SIDEWALK, CURB AND GUTTER, DRIVEWAYS, LAWNS, UTILITIES AND OTHER ITEMS DAMAGED BY THE CONSTRUCTION ACTIVITY. MAXIMUM LIMITS OF DISTURBANCE FOR SOD RESTORATION TO BE PAID BY JEA ARE 15 FEET WIDE ALONG ANY OPEN CUT PIPE INSTALLATION AND 5 FEET BEYOND THE LIMITS OF ANY IDENTIFIED HDD WORK AREAS. ALL OTHER DISTURBANCE REQUIRING SOD RESTORATION WILL BE PROVIDED BY CONTRACTOR AT NO ADDITIONAL COST TO JEA.
2. PER CSI GEO, INC. GEOTECHNICAL EXPLORATION AND EVALUATION REPORT PHASE 2, RIVERTOWN WATER TREATMENT PLANT, JUNE, 2, 2020, SOIL CONDITIONS AT THE SITE ARE HIGHLY ERRATIC IN NATURE AND CONTAIN UNSUITABLE MATERIALS CONSISTING OF ORGANIC AND HIGHLY ORGANIC SOILS AND CLAYS THAT ARE VARIABLE IN THICKNESS AND DEPTH. SUCH UNSUITABLE SOILS SHALL BE OVEREXCAVATED. SUITABLE MATERIALS PROVIDED AND BACKFILLED AND COMPACTED AS RECOMMENDED. ALL BRUSH, STRIPPING, OR UNSUITABLE MATERIAL AND WASTES SHALL BE DISPOSED OF OFF-SITE AT THE CONTRACTOR'S EXPENSE IN COMPLIANCE WITH APPLICABLE REGULATIONS.
3. MEASURES SHALL BE TAKEN BY THE CONTRACTOR TO ENSURE THAT ADEQUATE EROSION AND SEDIMENTATION CONTROL ARE MAINTAINED AT ALL TIMES.
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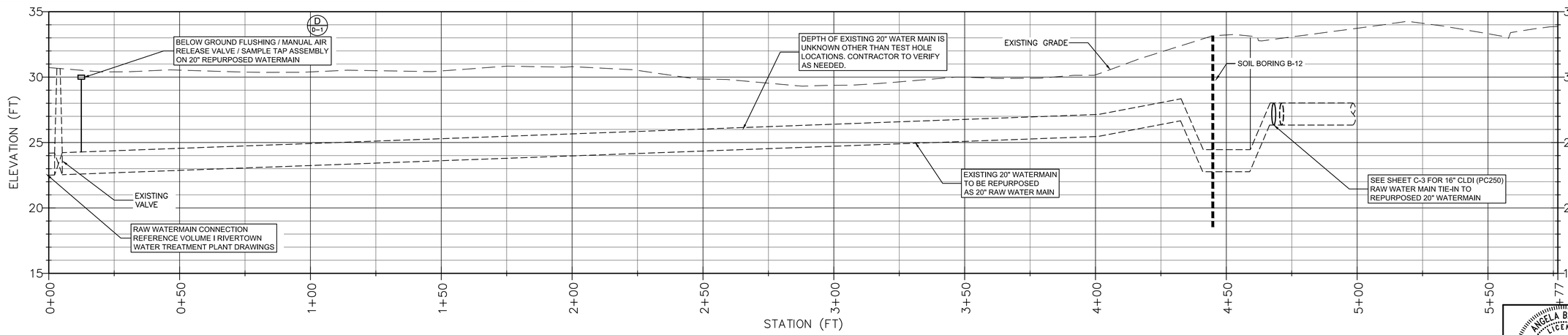
RIVERTOWN WTP ENTRANCE ROADWAY PROFILE FROM 0+00.00 TO 5+76.71



REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: ABB
DRAWN BY: SLD
SHEET CHK'D BY: ABB
CROSS CHK'D BY: I POLEMATIDIS
APPROVED BY: D PRAH
DATE: DECEMBER 2020

CDM Smith
4651 Salisbury Road, Suite 420
Jacksonville, FL 32256
Tel: (904) 731-7109
FL COA No. EB-0000020

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

JEA

RIVERTOWN WATER TREATMENT PLANT PROJECT

RAW WATER MAIN
PROPOSED PLAN AND PROFILE

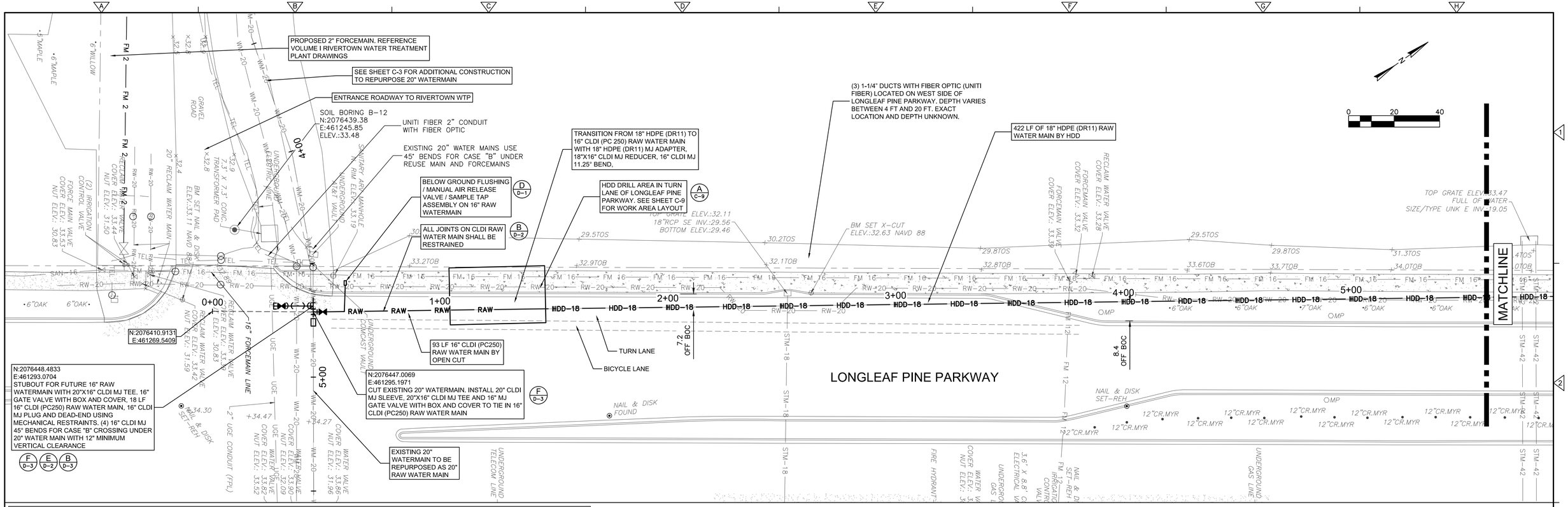
ANGELA B. BRYAN LICENSE No. 56730 STATE OF FLORIDA PROFESSIONAL ENGINEER

DATE:
ANGELA BRYAN
PE NO. 56730

PROJECT NO. 6103–237938
FILE NAME: C–1STPP

SHEET NO.
C-2

ISSUED FOR BID



GENERAL NOTES

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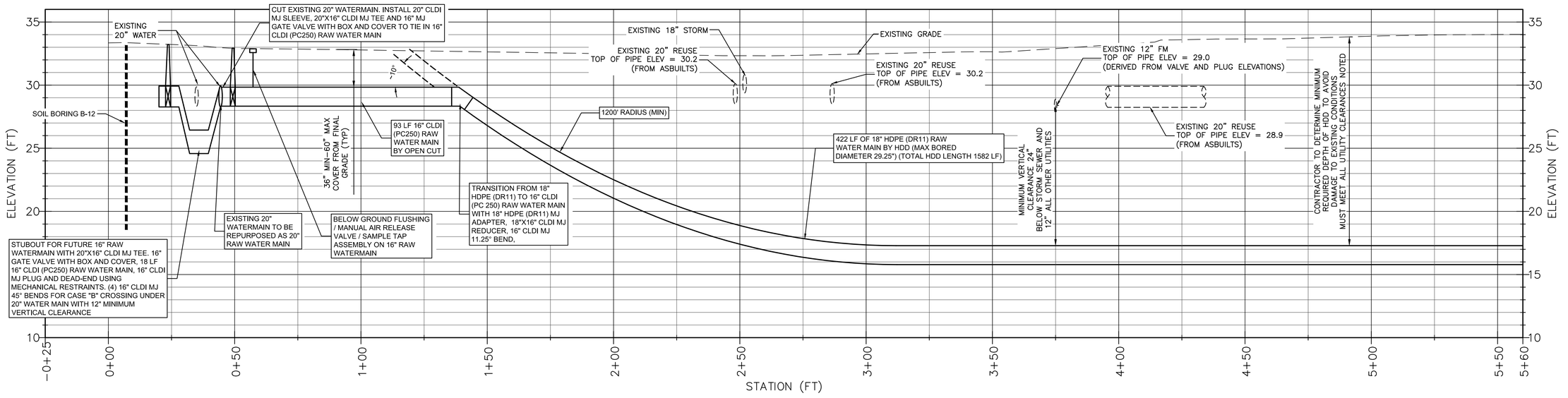
LONGLEAF PINE PARKWAY (WEST) PROFILE FROM -0+25.00 TO 5+60.00



ANGELA B. BRYAN LICENSE No. 56730 STATE OF FLORIDA PROFESSIONAL ENGINEER

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JEA

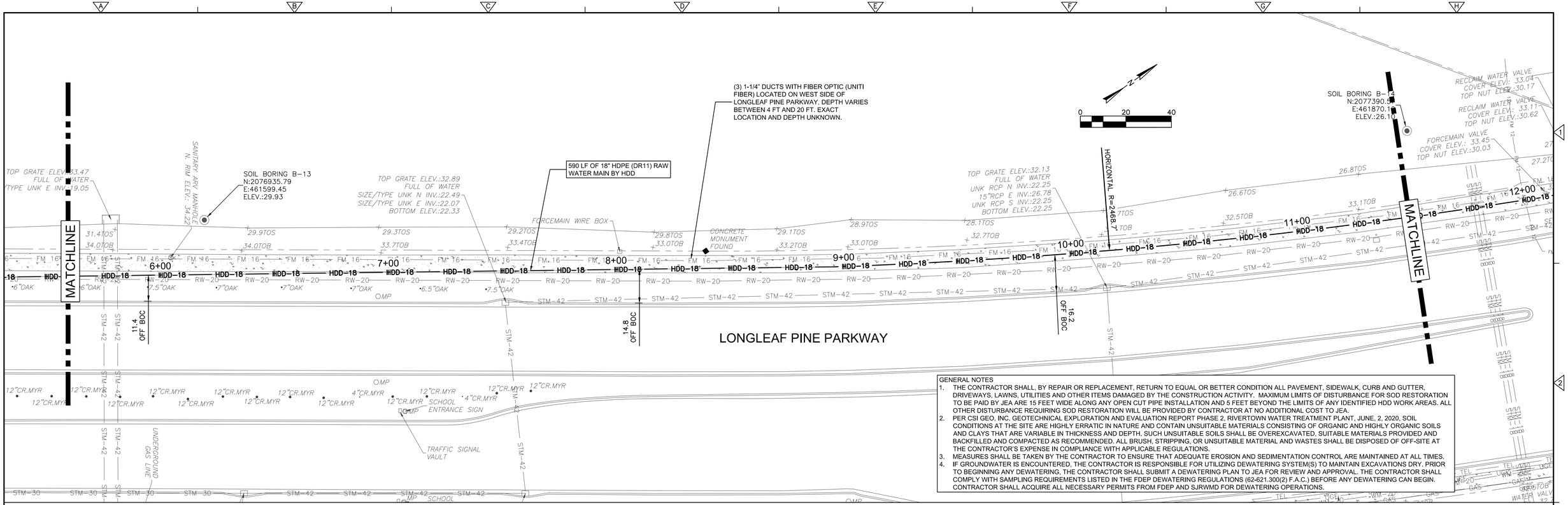
RIVERTOWN WATER TREATMENT PLANT PROJECT

RAW WATER MAIN
PROPOSED PLAN AND PROFILE

PROJECT NO. 6103-237938
FILE NAME: C-1STPP

SHEET NO.
C-3

ISSUED FOR BID



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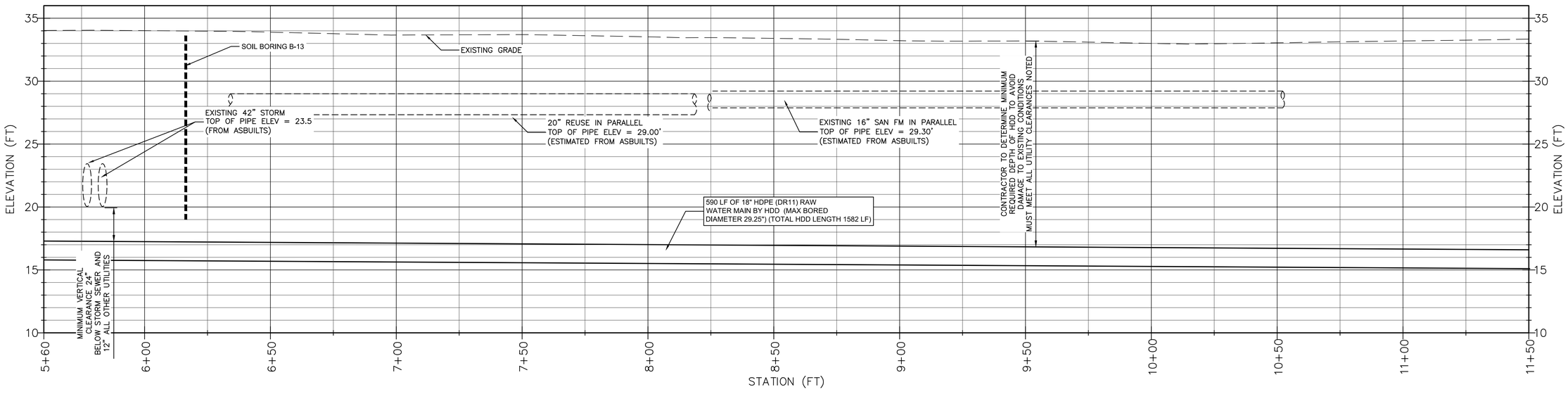
LONGLEAF PINE PARKWAY (WEST) PROFILE FROM 5+60.00 TO 11+50.00



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JEA

RIVERTOWN WATER TREATMENT PLANT PROJECT

RAW WATER MAIN
PROPOSED PLAN AND PROFILE

PROJECT NO. 6103–237938
FILE NAME: C–1STPP

SHEET NO.
C-4

ISSUED FOR BID

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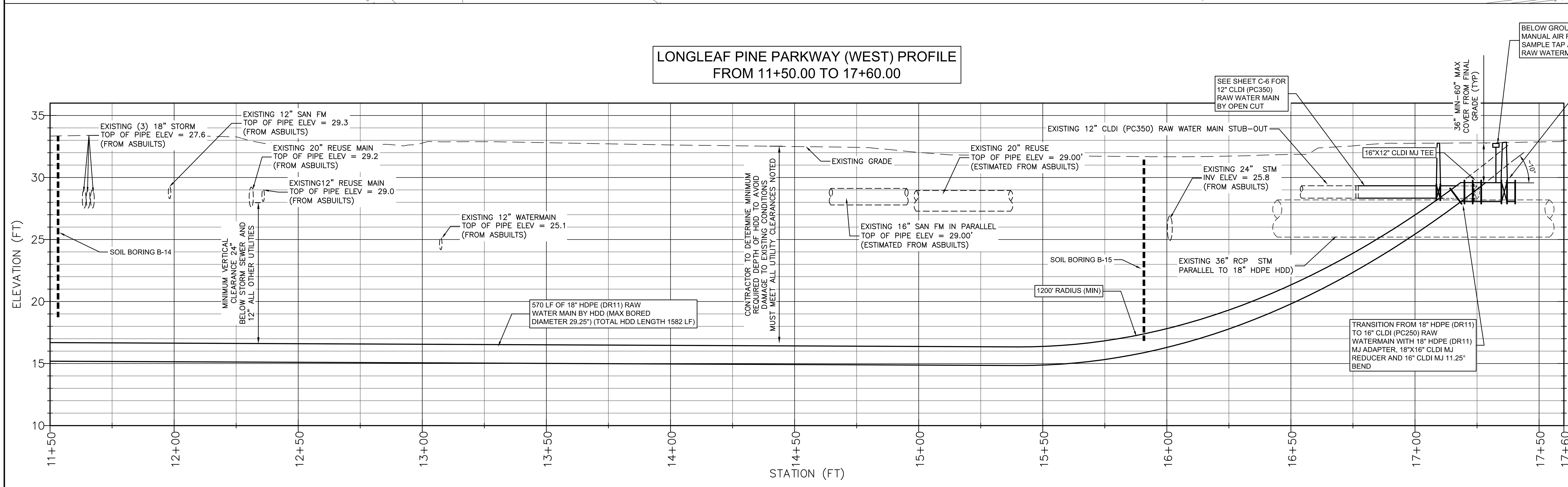

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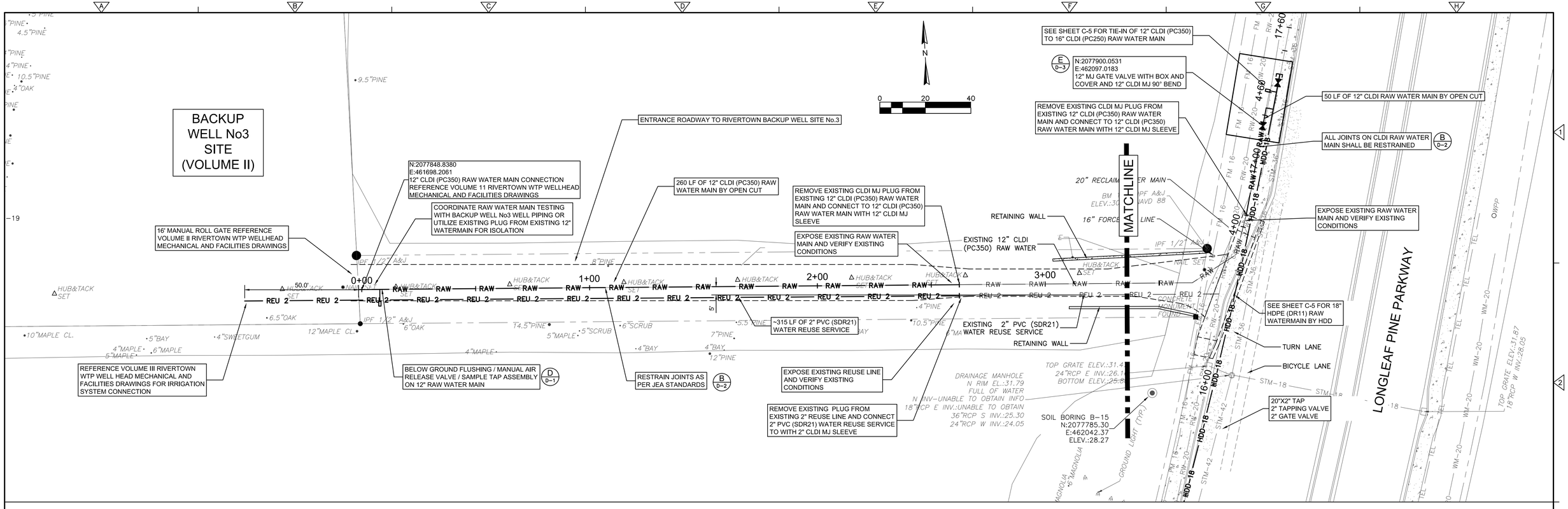
JEA

RIVERTOWN WATER TREATMENT PLANT PROJECT

RAW WATER MAIN
PROPOSED PLAN AND PROFILE

PROJECT NO. 6103-237938
FILE NAME: C-1STPP
SHEET NO.
C-5

ISSUED FOR BID



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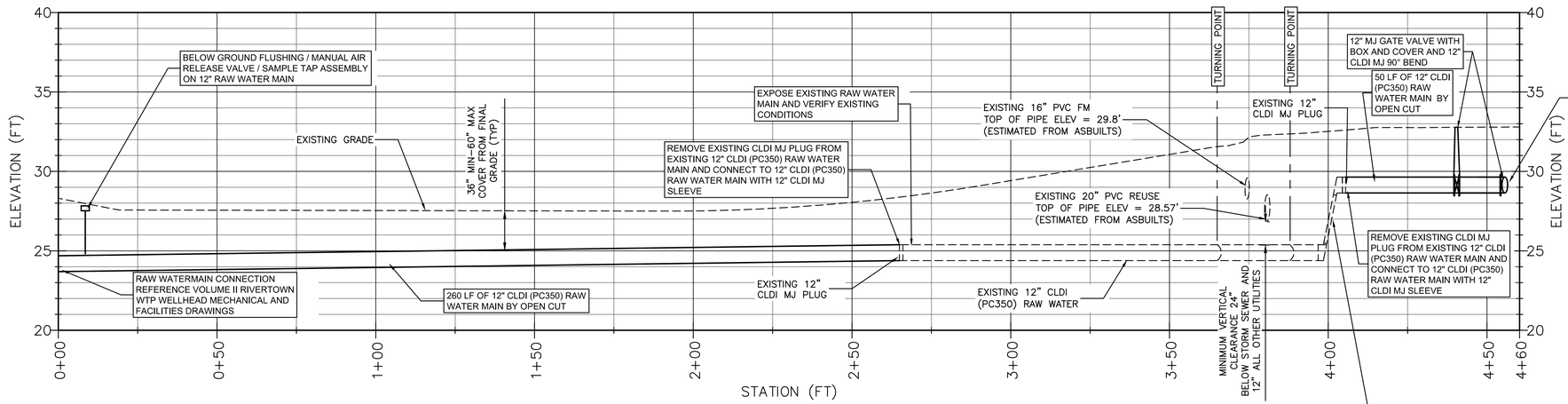
BACKUP WELL 3 ACCESS ROADWAY PROFILE FROM 0+00.00 TO 4+60.27



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RIVERTOWN WATER TREATMENT PLANT PROJECT

RAW WATER MAIN
PROPOSED PLAN AND PROFILE

ANGELA B. BRYAN LICENSE No. 56730 STATE OF FLORIDA PROFESSIONAL ENGINEER

DATE:
ANGELA BRYAN
PE NO. 56730

PROJECT NO. 6103–237938
FILE NAME: C–1STPP

SHEET NO.
C-6

ISSUED FOR BID

ENTRANCE ROADWAY TO RIVERTOWN WTP

LONGLEAF PINE PARKWAY

N:2076410.9131
E:461269.5409

EXISTING 20" WATERMAIN TO BE REPURPOSED AS 20" RAW WATER MAIN

TURN LANE

BICYCLE LANE

SEE SHEET C-3 FOR 18" HDPE (DR11) RAW WATER MAIN BY HDD

BELOW GROUND FLUSHING / MANUAL AIR RELEASE VALVE / SAMPLE TAP ASSEMBLY ON 20" RAW WATER MAIN

N:2076394.7515
E:461370.8394
TIE-IN TO EXISTING 20" WATERMAIN WITH 20" CLDI MJ SLEEVE, 20" CLDI MJ 90° BEND, 20" X12" CLDI MJ REDUCER AND 12" GATE VALVE WITH BOX AND COVER

(2) 12" CLDI MJ 45° BENDS FOR HORIZONTAL ALIGNMENT

TECO 4" STEEL GAS (300 PSIG)

325 LF OF 12" CLDI (PC350) RAW WATER MAIN BY OPEN CUT

3' MIN (TYP)

N:2076384.0125
E:461368.1261

REMOVE SEGMENT OF EXISTING 20" WATERMAIN AS NECESSARY FOR TIE-IN OF 12" CLDI (PC350) RAW WATER MAIN

N:2076390.0957
E:461376.4606
CONFIRM EXISTING VALVE IS CLOSED. CUT EXISTING 20" WATERMAIN NEAR VALVE. INSTALL 20" CLDI MJ PLUG AND DEAD-END USING MECHANICAL RESTRAINTS

SOIL BORING B-16
N:2076355.35
E:461380.57
ELEV.:29.22

REMOVE (4) 6" OAK TREES ALONG PROPOSED RAW WATER MAIN ROUTE

RESTRAIN JOINTS AS PER JEA STANDARDS

TH#13
TECO PEOPLES GAS
GAS MAIN
4" WRAP STEEL (YELLOW)
DEPTH OF COVER 2.76
IRRIGATION
2" PVC
DEPTH OF COVER 1.63'

TH#14
AT&T TELEPHONE
0.5" DB CABLE (ORANGE)
DEPTH OF COVER 2.35'

TH#15
FPL ELECTRIC
6" HDPE (RED)
DEPTH OF COVER 1.65'

(4) 12" CLDI MJ 45° BENDS FOR CASE "B" CROSSING UNDER EXISTING UTILITIES

N:2076608.4521
E:461527.7960

N:2076624.6412
E:461559.2513

SOIL BORING B-17
N:2076623.68
E:461563.22
ELEV.:33.33

BELOW GROUND FLUSHING / MANUAL AIR RELEASE VALVE / SAMPLE TAP ASSEMBLY ON 12" RAW WATER MAIN

N:2076611.6178
E:461578.5787
12" CLDI (PC350) RAW WATER MAIN CONNECTION. REFERENCE VOLUME II RIVERTOWN WTP WELLHEAD MECHANICAL AND FACILITIES DRAWINGS

COORDINATE RAW WATER MAIN TESTING WITH WELL No2 WELL PIPING OR UTILIZE EXISTING PLUG FROM BACKUP WELL No3 ACCESS ROAD RAW WATER MAIN FOR ISOLATION

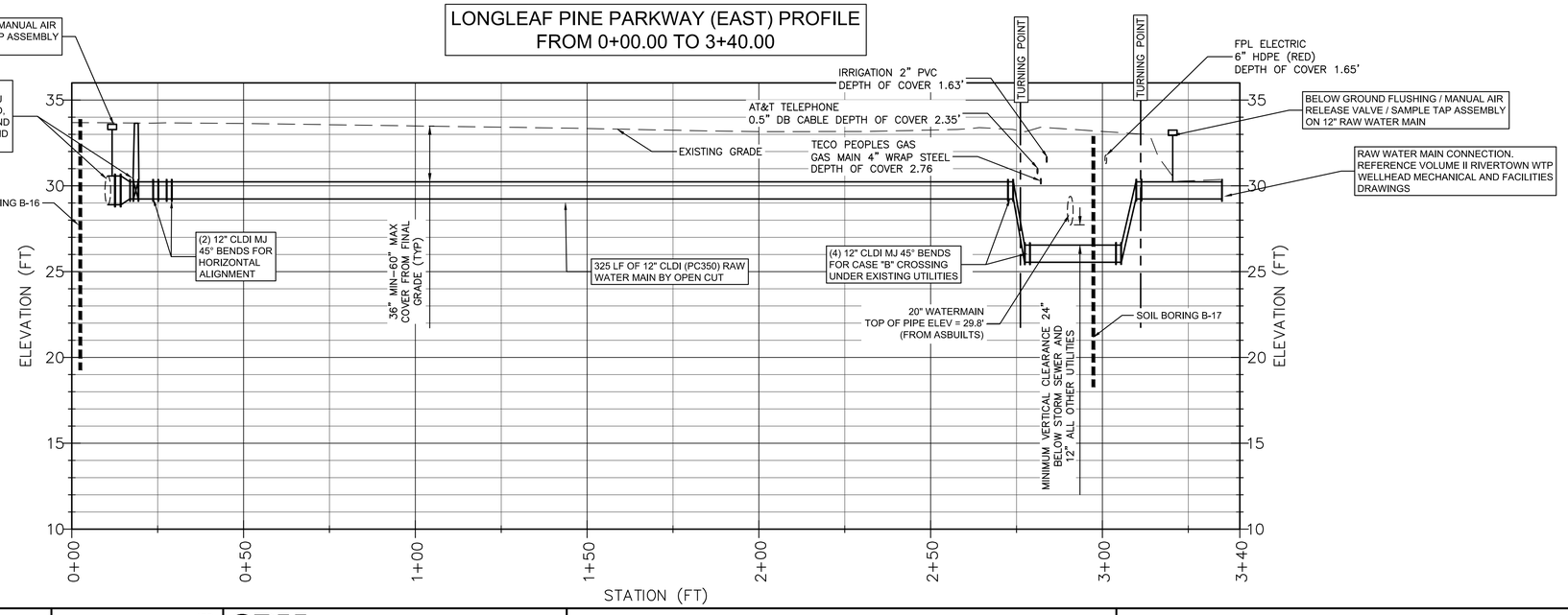
WELL SITE No.2
(VOLUME II)

APPROXIMATE LIMITS OF CLEARING WELL No.2 SITE

NOTE:
CONTRACTOR PROHIBITED FROM CLEARING OR DISTURBING SITE OUTSIDE OF DEFINED LIMITS OF CLEARING WITHIN WELL No.2 SITE. ANY CLEARING OR DISTURBANCE THAT OCCURS OUTSIDE OF DEFINED LIMITS SHALL BE RE-PLANTED AND RESTORED TO MATCH EXISTING UNDISTURBED CONDITION

0 20 40

LONGLEAF PINE PARKWAY (EAST) PROFILE FROM 0+00.00 TO 3+40.00



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RAW WATER MAIN
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PE NO. 56730

PROJECT NO. 6103-237938
FILE NAME: C-1STPP

SHEET NO.
C-7

ISSUED FOR BID

NOTE:
ALL MAINTENANCE OF TRAFFIC OPERATIONS SHALL ADHERE TO THE REQUIREMENTS OF ST JOHNS COUNTY AND PROJECT PERMITS

~1600 LF OF 18" HDPE (DR11) PIPE STRING STAGING AND FUSING OPERATIONS. SINGLE PIPE SEGMENT IN LONGLEAF PINE PARKWAY ROW BEHIND BACK OF CURB.

MAINTENANCE OF TRAFFIC IN PIPE STRING STAGING AREA SHALL ADHERE TO FDOT INDEX 102-612 (MULTILANE, WORK ON SHOULDER) SHEET D-8

BACKUP WELL SITE No.3 (VOLUME II)

ENTRANCE ROADWAY TO BACKUP WELL SITE No.3

LONGLEAF PINE PKWY

MAINTENANCE OF TRAFFIC IN HDD PULLBACK AREA SHALL ADHERE TO FDOT INDEX 102-613 (MULTILANE, WORK WITHIN TRAVEL WAY MEDIAN OR OUTSIDE LANE) SHEETS D-9 AND D-10

RIVERTOWN WTP SITE (VOLUME I)

~1600 LF OF 18" HDPE (DR11) RAW WATER MAIN BY HDD

HDD PULL AREA ON SIDEWALK AREA OF LONGLEAF PINE PARKWAY. SEE SHEET C-9 FOR WORK AREA LAYOUT

B C-9

PULL

PEDESTRIAN CONTROL FOR CLOSURE OF SIDEWALKS SHALL ADHERE TO FDOT INDEX 102-660, SHEET D-12 IN ALL PROJECT AREAS

ENTRANCE ROADWAY TO RIVERTOWN WTP

MAINTENANCE OF TRAFFIC IN HDD DRILL WORK AREA SHALL ADHERE TO FDOT INDEX 102-613 (MULTILANE, WORK WITHIN TRAVEL WAY MEDIAN OR OUTSIDE LANE) SHEETS D-9 AND D-10

PEDESTRIAN CONTROL FOR CLOSURE OF SIDEWALKS SHALL ADHERE TO FDOT INDEX 102-660, SHEET D-12 IN ALL PROJECT AREAS

WELL SITENo.2 (VOLUME II)

BARTRAM TRAIL HIGH SCHOOL

MAINTENANCE OF TRAFFIC FOR ROW WATER MAIN CONSTRUCTION FROM WELL No2 SHALL ADHERE TO FDOT INDEX 102-613 (MULTILANE, WORK WITHIN TRAVEL WAY MEDIAN OR OUTSIDE LANE) SHEETS D-9 AND D-10

A C-9

HDD DRILL AREA IN TURN LANE OF LONGLEAF PINE PARKWAY SEE SHEET C-9 FOR WORK AREA LAYOUT

0 100 200

ANGELA B. BRYAN LICENSE No. 56730 STATE OF FLORIDA PROFESSIONAL ENGINEER

DATE:
ANGELA BRYAN
PE NO. 56730

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: ABB
DRAWN BY: SLD
SHEET CHK'D BY: ABB
CROSS CHK'D BY: I POLEMATIDIS
APPROVED BY: D PRAH
DATE: DECEMBER 2020

CDM Smith
4651 Salisbury Road, Suite 420
Jacksonville, FL 32256
Tel: (904) 731-7109
FL COA No. EB-0000020

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

JEA

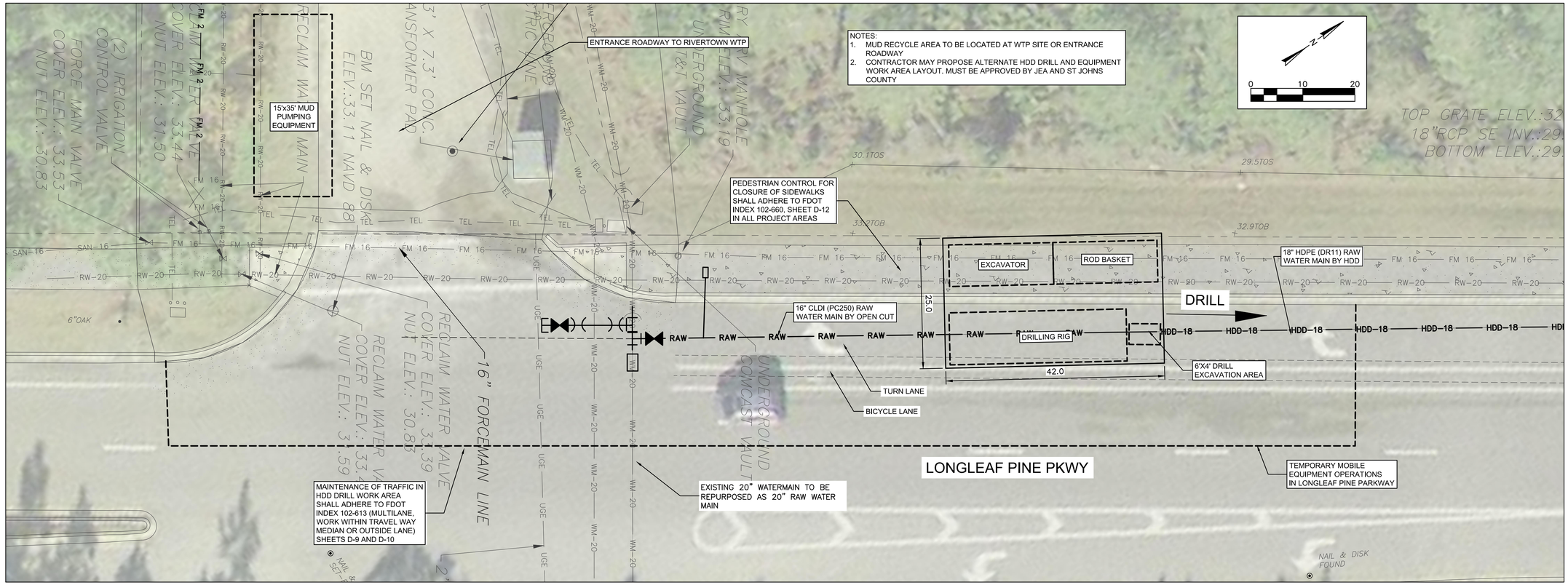
RIVERTOWN WATER TREATMENT PLANT PROJECT

RAW WATER MAIN
PROPOSED PIPE STRING PLAN - 18" HDD
AND MAINTENANCE OF TRAFFIC

PROJECT NO. 6103-237938
FILE NAME: C001STPP

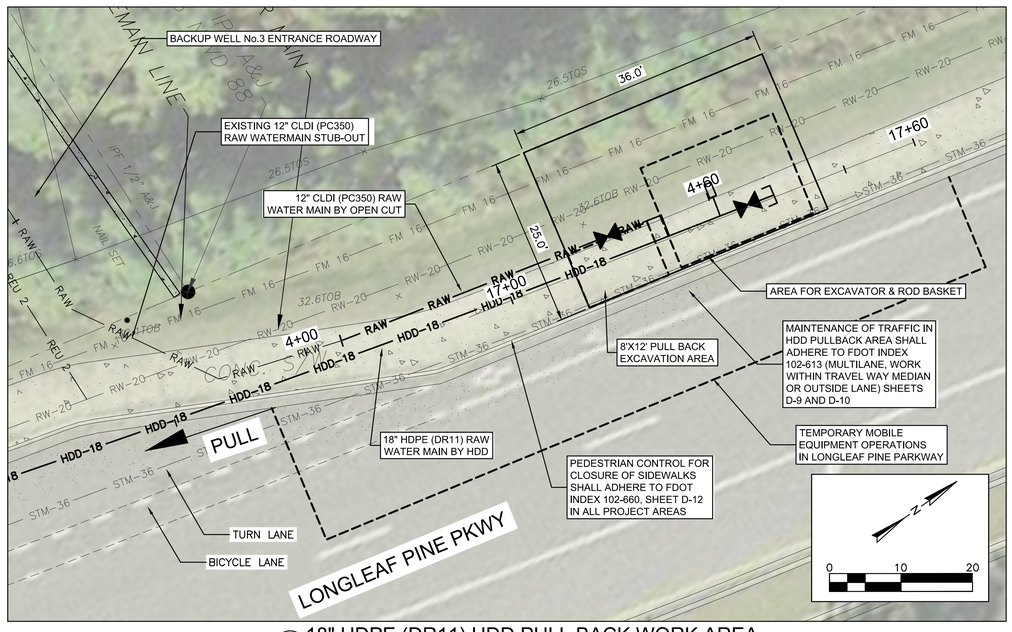
SHEET NO.
C-8

ISSUED FOR BID



A 18" HDPE (DR11) HDD DRILL WORK AREA

NOTE:
ALL MAINTENANCE OF TRAFFIC OPERATIONS SHALL ADHERE TO THE REQUIREMENTS OF ST JOHNS COUNTY AND PROJECT PERMITS



B 18" HDPE (DR11) HDD PULL BACK WORK AREA

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: ABB
DRAWN BY: SLD
SHEET CHK'D BY: ABB
CROSS CHK'D BY: I POLEMATIDIS
APPROVED BY: D PRAH
DATE: DECEMBER 2020

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JEA

RIVERTOWN WATER TREATMENT PLANT PROJECT

RAW WATER MAIN
PROPOSED HDD WORK AREAS

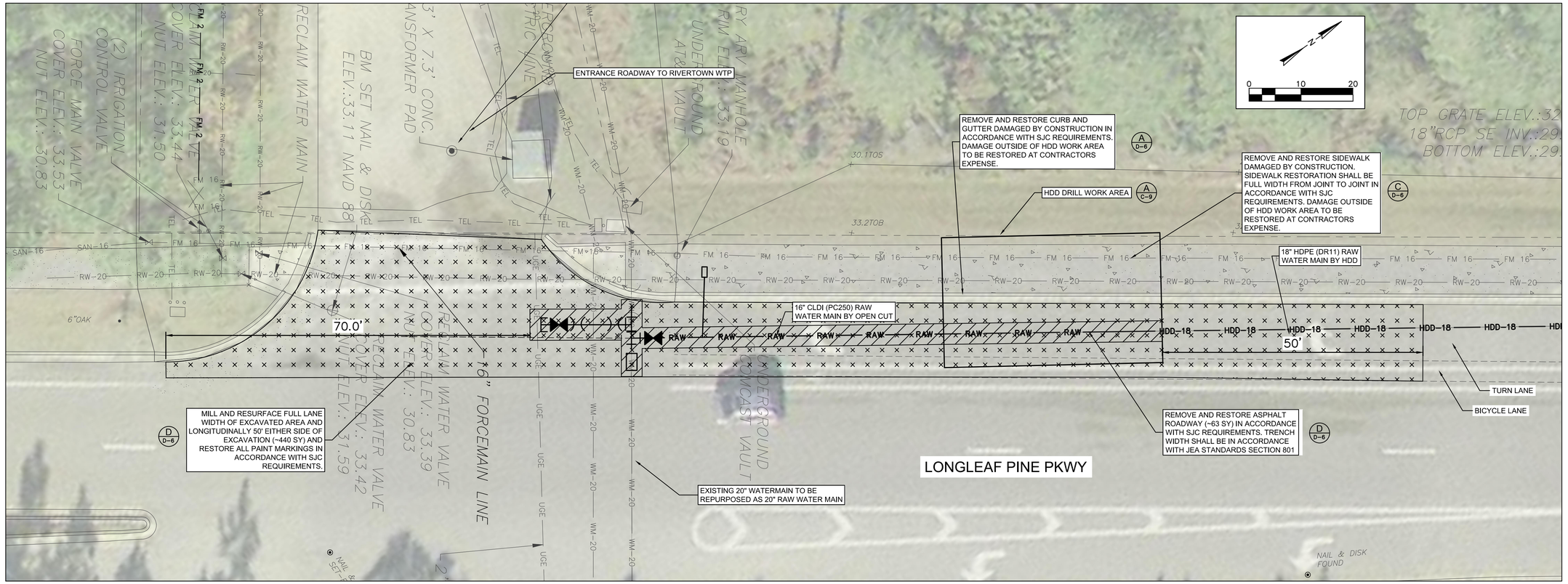
ANGELA B. BRYAN LICENSE No. 56730 STATE OF FLORIDA PROFESSIONAL ENGINEER

DATE:
ANGELA BRYAN
PE NO. 56730

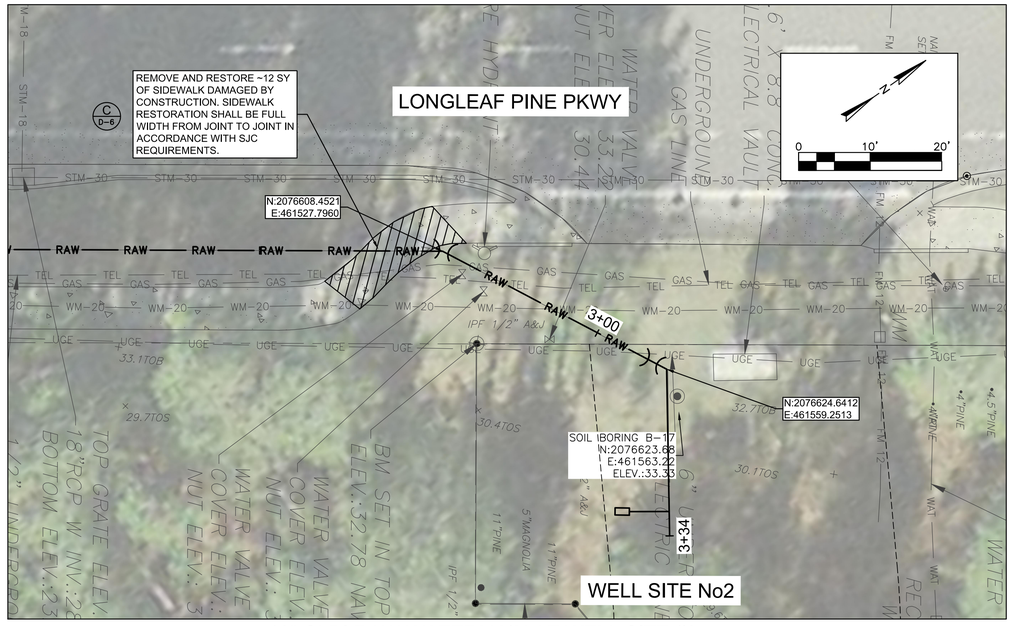
PROJECT NO. 6103-237938
FILE NAME: C-1STPP

SHEET NO.
C-9

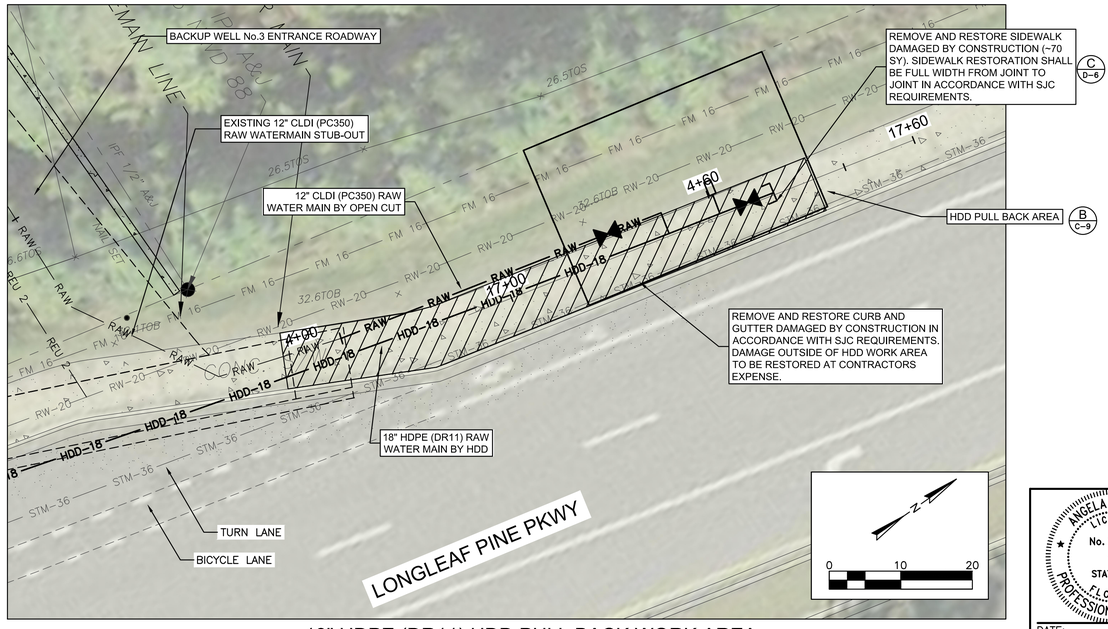
ISSUED FOR BID



18" HDPE (DR11) HDD DRILL WORK AREA



12" CLDI RAW WATERMAIN AT WELL SITE #2



18" HDPE (DR11) HDD PULL BACK WORK AREA

ANGELA B. BRYAN LICENSE No. 56730 STATE OF FLORIDA PROFESSIONAL ENGINEER

DATE:
ANGELA BRYAN
PE NO. 56730

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: ABB
DRAWN BY: SLD
SHEET CHK'D BY: ABB
CROSS CHK'D BY: I POLEMATIDIS
APPROVED BY: D PRAH
DATE: DECEMBER 2020

CDM Smith
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904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

JEA

RIVERTOWN WATER TREATMENT PLANT PROJECT

RAW WATER MAIN
PAVEMENT RESTORATION

PROJECT NO. 6103-237938
FILE NAME: C-1STPP

SHEET NO.
C-10

ISSUED FOR BID

HORIZONTAL & VERTICAL SEPARATION REQUIREMENTS

PROPOSED UTILITY

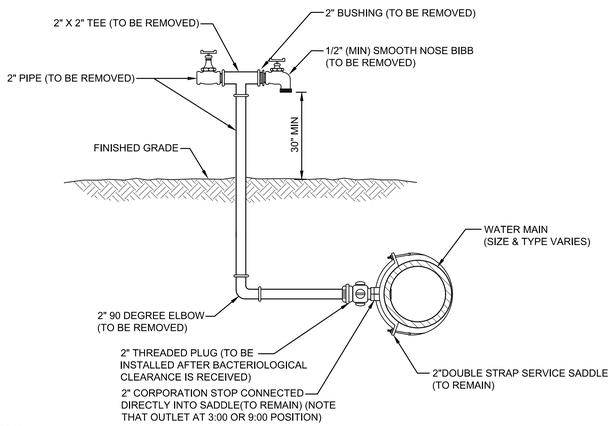
CONFLICTING UTILITY	POTABLE WATER			WASTEWATER GRAVITY AND FORCE MAIN			RECLAIMED WATER			VACUUM SEWERS		
	HORIZ.	VERT.	JOINT SPACING*	HORIZ.	VERT.	JOINT SPACING*	HORIZ.	VERT.	JOINT SPACING*	HORIZ.	VERT.	JOINT SPACING*
POTABLE WATER	3' NOTE 1	12"	3' NOTE 2	6' to 10'	12" NOTE 5	6' NOTE 2	3'	12"	6' NOTE 2	3' to 10'	12"	3' NOTE 2
RECLAIMED WATER	3'	12"	6' NOTE 2	3' NOTE 1	12"	3' NOTE 2	3'	12"	6' NOTE 2	3' NOTE 1	12"	3' NOTE 2
WASTEWATER (GRAVITY AND FORCE MAIN)	6' to 10'	12"	6' NOTE 2	3' NOTE 1	12"	6"	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2
VACUUM SEWERS	3' to 10'	12"	3' NOTE 2	3' NOTE 1	12"	6"	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2
RIGHT OF WAYS	3' NOTE 1	N/A	N/A	3' NOTE 1	N/A	N/A	3' NOTE 1	N/A	N/A	3' NOTE 1	N/A	N/A
PERMANENT STRUCTURES (SIGNS, POLES, ETC.)	3' NOTE 1	N/A	N/A	3' NOTE 1	N/A	N/A	3' NOTE 1	N/A	N/A	3' NOTE 1	N/A	N/A
STORM SEWERS	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2
GAS	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2
TREES	3'-6' NOTE 6	N/A	N/A	3'-6' NOTE 6	N/A	N/A	3'-6' NOTE 6	N/A	N/A	3'-6' NOTE 6	N/A	N/A
ALL OTHER UTILITIES	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2

NOTES:

1. THIS SEPARATION REQUIREMENT IS TO PROVIDE ACCESSIBILITY FOR CONSTRUCTION AND MAINTENANCE. THREE FEET OF HORIZONTAL SEPARATION IS THE MINIMUM FOR PIPES WITH THREE FEET OF COVER. FOR PIPES INSTALLED AT GREATER DEPTH, PROVIDE AN ADDITIONAL FOOT OF SEPARATION FOR EACH ADDITIONAL FOOT OF DEPTH.
2. THE MINIMUM JOINT SPACING REQUIRED FROM CROSSING FROM OTHER UTILITIES WHILE STILL MAINTAINING MINIMUM VERTICAL SEPARATION.
3. DISTANCES GIVEN ARE FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE.
4. NO WATER PIPE SHALL PASS THROUGH OR COME INTO CONTACT WITH ANY PART OF SANITARY OR STORM WATER MANHOLE OR STRUCTURES.
5. WATER MAIN SHOULD CROSS ABOVE OTHER PIPES WHENEVER POSSIBLE. WHEN WATER MAIN MUST BE BELOW OTHER UTILITY PIPING, THE MINIMUM SEPARATION SHALL BE 12 INCHES.
6. REFER TO POTABLE WATER PIPING- SECTION 350, III.4.11.

SEPARATION REQUIREMENTS FOR WATER, WASTEWATER AND RECLAIMED WATER MAINS

A — JANUARY 2020 — PLATE W-10



NOTES:

1. LOCATION OF SAMPLE POINT BIBB SHALL NOT BE WITHIN THE ROADWAY BUT ROUTED TO THE ROADWAY SHOULDERS (NON-TRAFFIC AREAS).
2. ALL PIPE & FITTING SHALL BE GALVANIZED MATERIAL OR PVC (S-40).
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL TEMPORARY PIPING & FITTING (AS NOTED) AFTER BACTERIOLOGICAL CLEARANCE IS RECEIVED
4. THE CONTRACTOR SHALL COMPLY WITH ALL JEA RULES AND POLICES AS OUTLINED BY THE JEA'S ENVIRONMENTAL RESPONSE COORDINATOR (ERC) AND OTHER ASSOCIATED JEA STANDARDS.

2" TEMPORARY SAMPLE TAP FOR STUB OUT

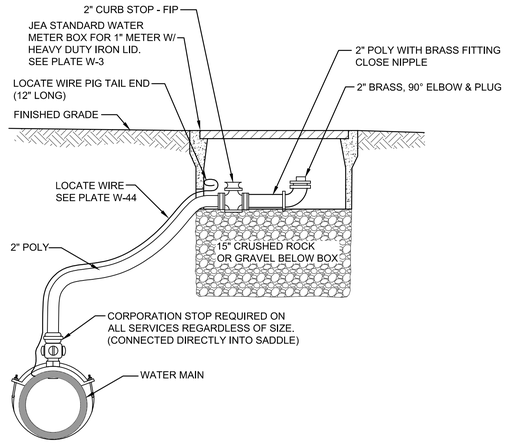
C — JANUARY 2020 — PLATE W-26

WATER MAIN AND NON-WATER MAIN SEPARATION REQUIREMENTS - NOTES

1. IT IS REQUIRED THAT "WATER MAINS" BE INSTALLED, CLEANED, DISINFECTED AND HAVE A SATISFACTORY BACTERIOLOGICAL SURVEY PERFORMED IN ACCORDANCE WITH THE LATEST APPLICABLE AWWA STANDARDS, CHAPTER 62-555, F.A.C, AND LATEST JEA WATER AND SEWER STANDARDS. FOR THE PURPOSE OF THIS SECTION, THE PHRASE "WATER MAINS" SHALL MEAN MAINS, INCLUDING TREATMENT PLANT PROCESS PIPING, CONVEYING EITHER RAW, PARTIALLY TREATED, OR FINISHED DRINKING WATER; FIRE HYDRANT LEADS; AND SERVICE LINES THAT HAVE AN INSIDE DIAMETER OF THREE (3) INCHES OR GREATER. IN ADDITION, THE PHRASE "RECLAIMED WATER" REFERS TO THE WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.
2. NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE (3) FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER.
3. NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST SIX (6) FEET, AND PREFERABLY TEN (10) FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND GRAVITY-TYPE SANITARY SEWERS MAY BE REDUCED TO THREE (3) FEET WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST SIX (6) INCHES ABOVE THE TOP OF THE SEWER (SPECIAL CASE).
4. NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED GRAVITY OR VACUUM-TYPE SANITARY SEWER OR STORM SEWER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX (6) INCHES, AND PREFERABLE TWELVE (12) INCHES, ABOVE OR AT LEAST TWELVE (12) INCHES BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.
5. NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER OR STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS A LEAST TWELVE (12) INCHES ABOVE OR BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.
6. AT THE UTILITY CROSSINGS DESCRIBED IN NOTES 4 AND 5 ABOVE, ONE FULL LENGTH OF WATER MAIN PIPE SHALL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE. ALTERNATIVELY, AT SUCH CROSSINGS, THE PIPES SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE (3) FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, STORM SEWERS, STORMWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER, AND AT LEAST SIX (6) FEET FROM ALL JOINTS IN GRAVITY OR PRESSURE-TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINE CONVEYING RECLAIMED WATER.
7. NEW OR RELOCATED FIRE HYDRANTS SHALL BE LOCATED SO THAT THE HYDRANTS ARE AT LEAST THREE (3) FEET FROM ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER; AT LEAST THREE (3) FEET, AND PREFERABLY TEN (10) FEET, FROM ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER; AT LEAST SIX (6) FEET, AND PREFERABLY TEN (10) FEET, FROM ANY EXISTING OR PROPOSED GRAVITY OR PRESSURE-TYPE SANITARY SEWER OR WASTEWATER FORCE MAIN.
8. WHERE AN UNDERGROUND WATER MAIN IS BEING LAID LESS THAN THE REQUIRED MINIMUM HORIZONTAL DISTANCE FROM ANOTHER PIPELINE AND WHERE AN UNDERGROUND WATER MAIN IS CROSSING ANOTHER PIPELINE AND JOINTS IN THE WATER MAIN ARE BEING LOCATED LESS THAN THE REQUIRED MINIMUM DISTANCE FROM JOINTS IN THE OTHER PIPELINE, THE CONTRACTOR SHALL CONSULT THE DESIGN ENGINEER TO OBTAIN APPROVAL OF ANY ALTERNATIVE CONSTRUCTION METHODS, PRIOR TO CONSTRUCTION.

NOTES ON UTILITY SEPARATION REQUIREMENTS

B — JANUARY 2020 — PLATE W-11

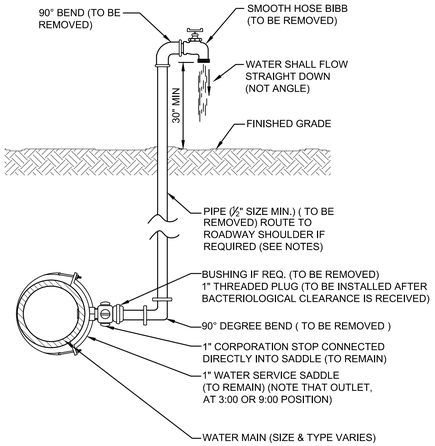


NOTES:

1. THE ASSEMBLY BOX SHALL BE LOCATED OUTSIDE OF THE ROADWAY PAVEMENT AREA (I.E. LOCATED IN NON-TRAFFIC AREAS). IF OFFSET PIPING IS REQUIRED, THE PIPING SHALL BE 2-INCH MIN. (SAME SIZE AS AIR VALVE INLET). ALL PIPING SHALL BE POLYETHYLENE. FITTINGS SHALL BE BRASS.
2. THE 2" CURB STOP SHALL BE ALL BRONZE. FITTINGS SHALL BE BRASS.
3. LOCATE WIRE REQUIRED. LOCATE WIRE FOR MAIN CAN BE INCORPORATED WITH ASSEMBLY, SEE PLATE W-44 FOR DETAILS.
4. FOR DEAD-END MAINS ASSEMBLY TO BE LOCATED 2 FEET PAST LAST WATER MAIN SERVICE CONNECTION.
5. A REMOVABLE VERTICAL PIPE STANCHION SHALL BE CONNECTED TO THE DISCHARGE ELBOW PRIOR TO OPENING OF THE CURB STOP TO AVOID FLOODING OF THE BOX.

BELOW GROUND FLUSHING/MANUAL AIR RELEASE VALVE/SAMPLE TAP ASSEMBLY DETAIL

D — NTS

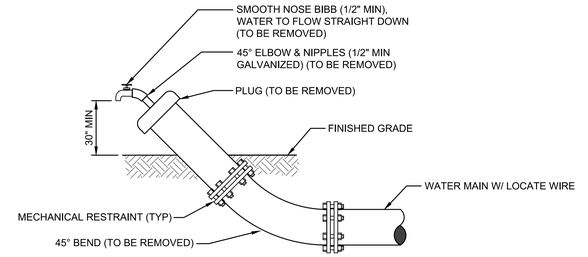


NOTES:

1. LOCATION OF SAMPLE POINT BIBB SHALL NOT BE WITHIN THE ROADWAY BUT ROUTED TO THE ROADWAY SHOULDERS (NON-TRAFFIC AREAS).
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL TEMPORARY PIPING & FITTINGS (AS NOTED), AFTER BACTERIOLOGICAL CLEARANCE IS RECEIVED.
3. PIPE AND FITTINGS SHALL BE PVC (SCH. 40) OR GALV. MATERIAL.
4. THE USE OF THE ABOVE CONSTRUCTION FOR A TEMPORARY SAMPLE POINT SHALL BE LIMITED TO AREAS WHERE A SAMPLE TAP BY ALTERNATIVE METHODS (SEE W-24) IS NOT FEASIBLE OR IF DIRECTED OTHERWISE BY JEA.
5. THE CONTRACTOR SHALL COMPLY WITH ALL JEA RULES AND POLICIES AS AS OUTLINED BY JEA'S ENVIRONMENTAL RESPONSE COORDINATOR (ERC) AND OTHER ASSOCIATED JEA STANDARDS.

TEMPORARY SAMPLE TAP

E — JANUARY 2020 — PLATE W-25



TEMPORARY SAMPLE TAP UTILIZING PLUG AT FLUSHING LOCATION

NOTES:

1. LOCATION OF SAMPLE POINT BIBB SHALL NOT BE WITHIN THE ROADWAY BUT ROUTED TO THE ROAD SHOULDERS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL TEMPORARY PIPING & FITTINGS (AS NOTED) AFTER BACTERIOLOGICAL CLEARANCE IS RECEIVED.
3. THE CONTRACTOR SHALL UTILIZE THE ABOVE ALTERNATIVE METHODS FOR CONSTRUCTION OF TEMPORARY SAMPLE POINTS IN ALL AREAS, WHERE POSSIBLE.
4. THE CONTRACTOR SHALL COMPLY WITH ALL JEA RULES AND POLICIES AS OUTLINED BY THE JEA'S ENVIRONMENTAL RESPONSE COORDINATOR (ERC) AND OTHER ASSOCIATED JEA STANDARDS.

TEMPORARY SAMPLE TAP ALTERNATIVE METHOD B

F — JANUARY 2020 — PLATE W-24A

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: ABB
DRAWN BY: SLD
SHEET CHK'D BY: ABB
CROSS CHK'D BY: I POLEMATIDIS
APPROVED BY: D PRAH
DATE: DECEMBER 2020

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JEA

RIVERTOWN WATER TREATMENT PLANT PROJECT

RAW WATER MAIN CONSTRUCTION DETAILS

ANGELA B. BRYAN LICENSE No. 56730 STATE OF FLORIDA PROFESSIONAL ENGINEER

DATE:
ANGELA BRYAN
PE NO. 56730

PROJECT NO. 6103-237938
FILE NAME: C001STPP

SHEET NO.
D-1

ISSUED FOR BID

PVC PIPE RESTRAINT NOTES:

1. THIS SCHEDULE SHALL BE UTILIZED ON ALL WATER, SEWER FORCE MAIN OR RECLAIMED WATER SYSTEMS. ALL FITTINGS SHALL BE RESTRAINED TO LENGTHS INDICATED ON THE ABOVE SCHEDULE, AT A MINIMUM.
2. ASSUMPTIONS: PVC PIPE, SAFETY FACTOR=1.5, TEST PRESSURE=150PSI, SOIL=GM OR SM, TRENCH TYPE 3, DEPTH OF COVER=30 INCHES FOR 20" AND SMALLER PIPE SIZE OR 36 INCHES FOR 24" AND LARGER PIPE SIZE.
3. BENDS AND VALVES: SHALL BE RESTRAINED ON EACH SIDE OF FITTING.
4. VERTICAL OFFSETS: ARE APPROX. 3 FEET COVER ON TOP AND APPROX. 8 FEET COVER ON BOTTOM. PER THE DETAILS, Lu IS THE RESTRAINED LENGTH FOR THE UPPER (TOP) LEVEL. Li IS THE RESTRAINED LENGTH FOR THE LOWER (DEEPER) LEVEL. ASSUME 45 DEGREE BENDS.
5. TEES: TOTAL LENGTH BETWEEN FIRST JOINTS OR RESTRAINED LENGTH ON EITHER SIDE OF TEE (RUN) SHALL BE A TOTAL DISTANCE OF 30 FEET (MIN). SEE SCHEDULE ABOVE FOR RESTRAINT LENGTH ON TEE "BRANCH" LINE.
6. HDPE TO PVC TRANSITIONS: THE PVC PIPE SIDE SHALL BE RESTRAINED 35 FT (MIN).
7. THE INSTALLATION OF BELL HARNESS RESTRAINTS AT PVC JOINTS (DR-18 & 25 PIPE) SHALL BE COMPLETED PER THE MANUFACTURERS RECOMMENDATION, WHICH INCLUDES NOT OVER TIGHTENING THE PARALLEL RODS/NUTS. THESE NUTS SHOULD ONLY BE SNUG TIGHT. THE HOME MARKS ON THE PIPE SHOULD ALWAYS BE VISIBLE AFTER THE RESTRAINT IS INSTALLED. OVERHOMING THE JOINT MAY CAUSE A FAILURE AT THE BELL RESULTING IN A SERVICE OUTAGE.

LENGTH (L) TO BE RESTRAINED (SEE PLATE Nos. 38C & 38D FOR ADDITIONAL DETAILS)

NOMINAL PIPE SIZE (IN.)	HORIZONTAL BENDS 90° BENDS L (FT.)	45° BENDS L (FT.)	22.5° BENDS L (FT.)	11.25° BENDS L (FT.)	VERTICAL OFFSETS 45° BENDS (SEE NOTE 4) UPPER L (FT.)	LOWER L (FT.)	VALVES OR DEAD ENDS L (FT.)
4	21	9	5	3	17	3	47
6	30	13	6	3	23	4	66
8	38	16	8	4	30	6	86
10	45	19	9	5	36	7	103
12	53	22	11	6	43	8	121
14	61	26	13	6	50	9	140
16	66	28	14	7	55	10	154
18	73	30	15	8	60	11	170
20	79	33	16	8	66	12	186
24	79	33	16	8	77	15	185
30	93	39	19	10	97	17	222
36	106	39	21	11	107	20	257
42	117	49	24	12	120	24	289
48	144	53	26	13	133	26	321

REDUCERS

SIZE (IN.)	L (FT.)
6x4	34
8x6	36
8x4	62
10x8	35
10x6	63
12x10	36
12x8	64
16x12	66
16x10	92
20x18	35
20x16	66
20x12	117
24x20	56
24x18	80
24x16	101
30x24	78
30x20	121
36x30	78
36x24	141
42x36	75
42x30	140
48x42	75
48x36	139

TEES SEE NOTE 5

RUN SIZE (IN.)	BRANCH SIZE (IN.)	L (FT.)
4	4	F.O.
4	6	10
	4 < LESS	F.O.
8	8	29
	6 < LESS	F.O.
10	10	45
	8	13
	6 < LESS	F.O.
12	12	62
	10	32
	8 < LESS	F.O.
16	16	94
	12	39
	10	5
	10 < LESS	F.O.
20	20	125
	16	76
	12	14
	10 < LESS	F.O.
24	24	124
	20	84
	16	36
	12 < LESS	F.O.
30	30	159
	24	104
	20	60
	16	5
	16 < LESS	F.O.
36	36	192
	30	142
	24	83
	20	33
	16 < LESS	F.O.
42	42	223
	36	178
	30	124
	24	59
	20	5
	16 < LESS	F.O.
48	48	253
	42	209
	36	162
	30	104
	24	34
	20 < LESS	F.O.

F.O. = FITTING ONLY

A PVC PIPE RESTRAINT JOINT SCHEDULE

JANUARY 2020 PLATE W-31A

DUCTILE IRON PIPE RESTRAINT NOTES:

1. THIS SCHEDULE SHALL BE UTILIZED ON ALL WATER, SEWER FORCE MAIN OR RECLAIMED WATER SYSTEMS. ALL FITTINGS SHALL BE RESTRAINED TO LENGTHS INDICATED ON THE ABOVE SCHEDULE, AT A MINIMUM.
2. ASSUMPTIONS: DUCTILE IRON PIPE (WITHOUT POLY WRAP), SAFETY FACTOR=1.5, TEST PRESSURE=150PSI, SOIL=GM OR SM, TRENCH TYPE 3, DEPTH OF COVER=30 INCHES FOR 20" AND SMALLER PIPE SIZE OR 36 INCHES FOR 24" AND LARGER PIPE SIZE. FOR D.I.P. W/POLY WRAP, USE RESTRAINT JOINT SCHEDULE FOR PVC PIPE.
3. BENDS AND VALVES: SHALL BE RESTRAINED ON EACH SIDE OF FITTING.
4. VERTICAL OFFSETS: ARE APPROX. 3 FEET COVER ON TOP AND APPROX. 8 FEET COVER ON BOTTOM. PER THE DETAILS, Lu IS THE RESTRAINED LENGTH FOR THE UPPER (TOP) LEVEL. Li IS THE RESTRAINED LENGTH FOR THE LOWER (DEEPER) LEVEL. ASSUME 45 DEGREE BENDS.
5. TEES: TOTAL LENGTH BETWEEN FIRST JOINTS OR RESTRAINED LENGTH ON EITHER SIDE OF TEE (RUN) SHALL BE A TOTAL DISTANCE OF 30 FEET (MIN). SEE SCHEDULE ABOVE FOR RESTRAINT LENGTH ON TEE "BRANCH" LINE.
6. HDPE TO D.I.P. TRANSITIONS: THE D.I.P. PIPE SIDE SHALL BE RESTRAINED 35 FT (MIN).

LENGTH (L) TO BE RESTRAINED (SEE PLATE Nos. 38C & 38D FOR ADDITIONAL DETAILS)

NOMINAL PIPE SIZE (IN.)	HORIZONTAL BENDS 90° BENDS L (FT.)	45° BENDS L (FT.)	22.5° BENDS L (FT.)	11.25° BENDS L (FT.)	VERTICAL OFFSETS 45° BENDS (SEE NOTE 4) UPPER L (FT.)	LOWER L (FT.)	VALVES OR DEAD ENDS L (FT.)
4	17	7	4	2	11	3	30
6	24	15	5	3	15	4	42
8	31	13	6	3	20	5	55
10	36	15	8	4	23	6	65
12	42	18	9	5	27	7	77
14	48	20	10	5	31	7	87
16	53	22	11	6	35	8	97
18	58	24	12	6	39	9	107
20	63	27	13	6	42	10	118
24	63	27	13	7	49	12	118
30	75	31	15	8	59	14	141
36	86	36	17	9	68	17	163
42	95	40	19	10	76	19	183
48	117	43	21	11	84	21	203

REDUCERS

SIZE (IN.)	L (FT.)
6x4	22
8x6	23
8x4	39
10x8	22
10x6	40
12x10	23
12x8	41
16x12	42
16x10	58
20x18	22
20x16	42
20x12	74
24x20	36
24x18	51
24x16	64
30x24	50
30x20	77
36x30	50
36x24	89
42x36	48
42x30	89
48x42	48
48x36	88

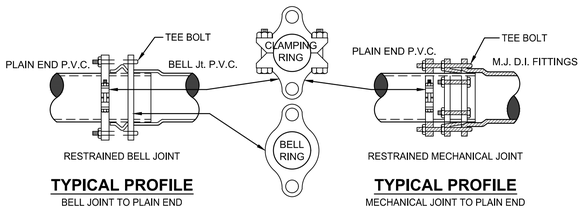
TEE SEE NOTE 5

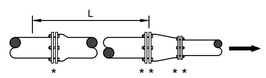
RUN SIZE (IN.)	BRANCH SIZE (IN.)	L (FT.)
4	4	F.O.
4	6	6
	4 < LESS	F.O.
8	8	19
	6 < LESS	F.O.
10	10	29
	8	9
	6 < LESS	F.O.
12	12	40
	10	21
	8 < LESS	F.O.
16	16	60
	12	25
	10	3
	8 < LESS	F.O.
20	20	79
	16	48
	12	9
	10 < LESS	F.O.
24	24	79
	20	54
	16	23
	12 < LESS	F.O.
30	30	101
	24	66
	20	38
	16	4
	12 < LESS	F.O.
36	36	122
	30	90
	24	53
	20	21
	16	1
	12 < LESS	F.O.
42	42	141
	36	113
	30	79
	24	38
	20	3
	16	1
	12 < LESS	F.O.
48	48	160
	42	133
	36	103
	30	66
	24	22
	20 < LESS	F.O.

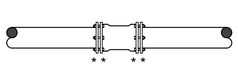
F.O. = FITTING ONLY

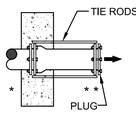
B DUCTILE IRON PIPE RESTRAINT JOINT SCHEDULE

JANUARY 2020 PLATE W -31B







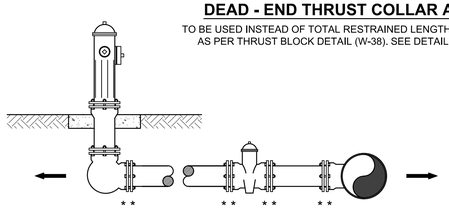


NO. OF TIE RODS REQUIRED

3" - 8"	DIAMETER MAIN - 2 TIE RODS REQUIRED PER JOINT (3/4" ROD)
10" - 12"	DIAMETER MAIN - 4 TIE RODS REQUIRED PER JOINT (3/4" ROD)
14" - 16"	DIAMETER MAIN - 6 TIE RODS REQUIRED PER JOINT (3/4" ROD)
18" - 20"	DIAMETER MAIN - 8 TIE RODS REQUIRED PER JOINT (3/4" ROD)
24"	DIAMETER MAIN - 12 TIE RODS REQUIRED PER JOINT (3/4" ROD)
30" - 36"	DIAMETER MAIN - 14 TIE RODS REQUIRED PER JOINT (1" ROD)
42" - 48"	DIAMETER MAIN - 16 TIE RODS REQUIRED PER JOINT (1 1/4" ROD)
54"	DIAMETER MAIN - 18 TIE RODS REQUIRED PER JOINT (1 1/4" ROD)

DEAD - END THRUST COLLAR ANCHOR

TO BE USED INSTEAD OF TOTAL RESTRAINED LENGTH (OPTIONAL) SIZE AS PER THRUST BLOCK DETAIL (W-38). SEE DETAILS W-36 & W-37.

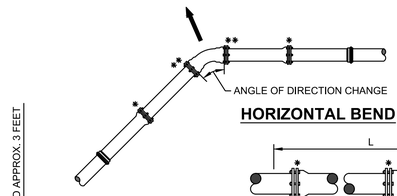


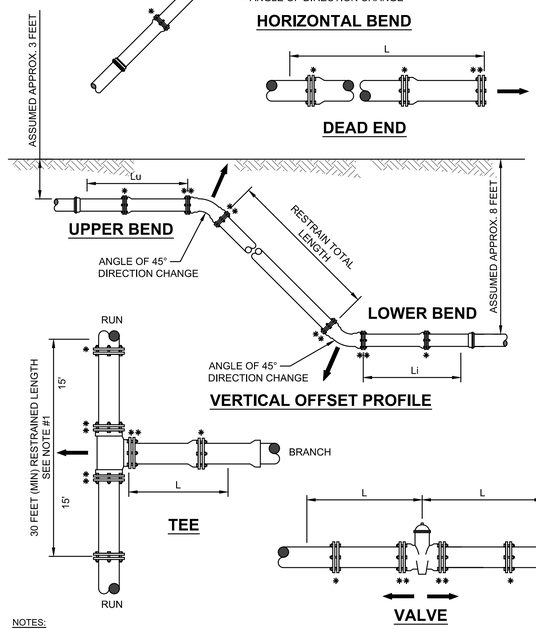
GENERAL NOTE:

1. PAY ITEM " * " DENOTES A RESTRAINT WHICH IS PAID FOR ON A PER EACH BASIS.
2. PAY ITEM " ** " DENOTES A RESTRAINT WHICH IS INCLUDED IN THE UNIT PRICE BID FOR FITTING OR VALVE.
3. ⟶ INDICATES DIRECTION OF THRUST FORCE.

C MECHANICAL RESTRAINT DETAILS - I

JANUARY 2020 PLATE W-31C



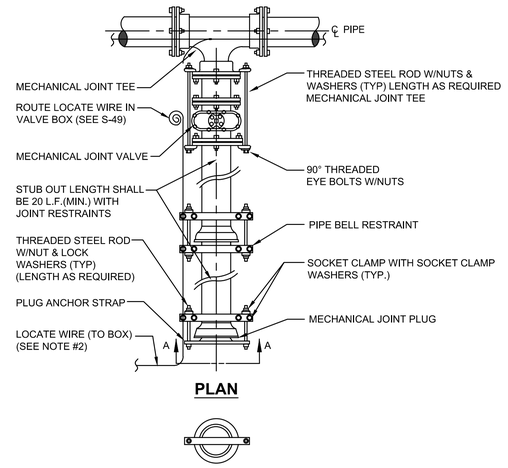


NOTES:

1. TOTAL LENGTH BETWEEN FIRST JOINTS OR RESTRAINED LENGTH ON EITHER SIDE OF TEE (RUN) SHALL BE A TOTAL DISTANCE OF 30 FEET (MIN.).
2. PAY ITEM "*" DENOTES A RESTRAINT WHICH IS PAID FOR ON A PER EACH BASIC.
3. PAY ITEM "**" DENOTES A RESTRAINT WHICH IS INCLUDED IN THE UNIT PRICE BID FOR FITTING OR VALVE.

D MECHANICAL RESTRAINT DETAILS - II

JANUARY 2020 PLATE W-31D



NOTES:

1. IN LIEU OF BELL/ROD RESTRAINTS, MECHANICAL JOINT RESTRAINTS MAY BE USED.
2. LOCATING WIRE REQUIRED, UTILIZING A LOCATE WIRE BOX INSTALLED AT PLUG LOCATION.
3. NUMBER OF TIE RODS REQUIRED IS AS FOLLOWS:

3" - 8"	DIAMETER MAIN - 2 TIE RODS REQUIRED PER JOINT (3/4" ROD)
10" - 12"	DIAMETER MAIN - 4 TIE RODS REQUIRED PER JOINT (3/4" ROD)
14" - 16"	DIAMETER MAIN - 6 TIE RODS REQUIRED PER JOINT (3/4" ROD)
18" - 20"	DIAMETER MAIN - 8 TIE RODS REQUIRED PER JOINT (3/4" ROD)
24"	DIAMETER MAIN -12 TIE RODS REQUIRED PER JOINT (3/4" ROD)
30" - 36"	DIAMETER MAIN -14 TIE RODS REQUIRED PER JOINT (1" ROD)
42" - 48"	DIAMETER MAIN -16 TIE RODS REQUIRED PER JOINT (1 1/4" ROD)
54"	DIAMETER MAIN -18 TIE RODS REQUIRED PER JOINT (1 1/4" ROD)

4. THE LOCATION OF THE DEAD END PLUG SHALL NOT BE UNDER PAVEMENT, IF POSSIBLE. THE STUB OUT SHALL EXTEND BEYOND THE INTERSECTION AREAS OR ROAD CROSSING BY 10 FEET (MIN.) WHERE POSSIBLE.

E PLUGGED DEAD END USING MECHANICAL RESTRAINTS

JANUARY 2020 PLATE W-37

ANGELA B. BRYAN LICENSE No. 56730 STATE OF FLORIDA PROFESSIONAL ENGINEER

DATE:
ANGELA BRYAN
PE NO. 56730

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: ABB
DRAWN BY: SLD
SHEET CHK'D BY: ABB
CROSS CHK'D BY: I POLEMATIDIS
APPROVED BY: D PRAH
DATE: DECEMBER 2020

CDM Smith
4651 Salisbury Road, Suite 420
Jacksonville, FL 32256
Tel: (904) 731-7109
FL COA No. EB-0000020

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

JEA

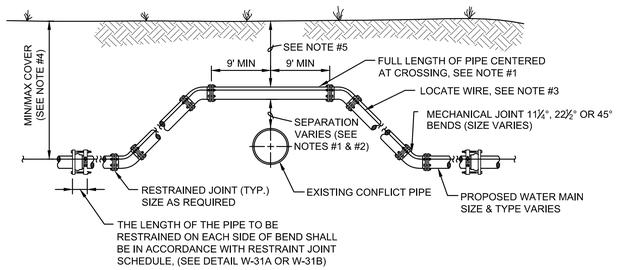
RIVERTOWN WATER TREATMENT PLANT PROJECT

RAW WATER MAIN CONSTRUCTION DETAILS

PROJECT NO. 6103-237938
FILE NAME: C001STPP

SHEET NO.
D-2

ISSUED FOR BID



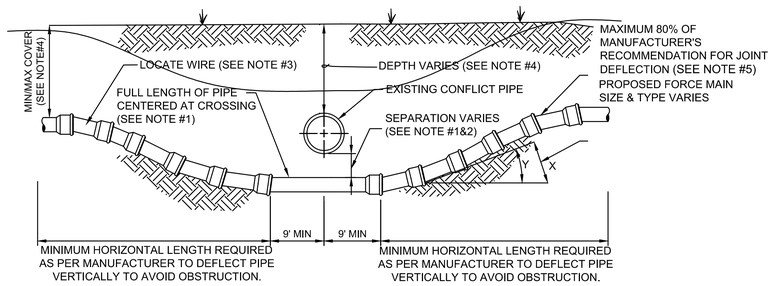
CASE "A" CROSSING

NOTES:

1. THE SOILS BETWEEN THE NEW MAIN AND THE CONFLICT PIPE SHALL BE COMPACTED TO 98% OF THE MAXIMUM DENSITY AS DETERMINED BY THE LABORATORY MODIFIED PROCTOR TEST, ASTM D 1557.
2. FOR MINIMUM VERTICAL SEPARATION REQUIREMENTS SEE DETAIL (W-10 AND W-11).
3. LOCATING WIRE REQUIRED: SEE DETAIL W-44.
4. THE COVER FOR PIPING LESS THAN 24" SIZE SHALL BE 30" (MIN) IN UNPAVED AREAS, 36" (MIN) IN PAVED AREAS AND A MAXIMUM COVER OF 60", UNLESS APPROVED BY JEA, THE COVER FOR PIPING 24" SIZE AND LARGER SHALL BE 36" (MIN) IN PAVED AND UNPAVED AREAS AND A MAXIMUM COVER OF 84", UNLESS APPROVED BY JEA.
5. IF UTILITY CONFLICT IS LOCATED IN A NON-TRAFFIC AREA (NO TRAFFIC LOADS) AND THE NEW PIPE IS D.I.P., THEN THE MINIMUM COVER MAY BE REDUCED TO 24 INCHES (ONLY IN THE AREA OF THE CONFLICT).

ADJUSTMENT OVER EXISTING UTILITIES MECHANICAL RESTRAINTS

A JANUARY 2020 PLATE W-32



CASE "B" CROSSING

NOTES:

1. IF EXISTING CONFLICT PIPE IS A WATER MAIN, 12-INCHES OF SEPARATION IS REQUIRED. A FULL LENGTH OF PIPE SHALL BE CENTERED OVER EXISTING UTILITY MAIN TO PROVIDE MAXIMUM JOINT SPACING FOR ALL CROSSING.
2. FOR OTHER LOCATION LIMITATIONS SEE DETAIL (W-10 & W-11).
3. LOCATING WIRE REQUIRED: SEE DETAIL W-44.
4. THE COVER OVER ALL PIPING LESS THAN 24" SIZE SHALL BE A MINIMUM OF 30" IN UNPAVED AREAS AND 36" IN PAVED AREAS WITH A MAXIMUM COVER OF 60" UNLESS APPROVED OTHERWISE BY JEA. COVER FOR PIPING 24" SIZE AND LARGER SHALL BE MINIMUM OF 36" (PAVED AND UNPAVED) AND MAXIMUM OF 84" UNLESS APPROVED OTHERWISE BY JEA. THE SOILS BETWEEN THE NEW MAIN AND THE CONFLICT PIPE SHALL BE COMPACTED TO 98% OF THE MAXIMUM DENSITY AS DETERMINED BY THE LABORATORY MODIFIED PROCTOR TEST ASTM D 1557.
5. JEA ONLY ALLOWS 80% OF THE PIPE MANUFACTURER'S RECOMMENDATION FOR JOINT DEFLECTION. BENDING THE PIPE BARREL IS NOT ALLOWED. UNLESS OTHERWISE APPROVED BY JEA, THE MAXIMUM ARE LISTED IN TABLE BELOW. ONLY MANUAL FORCE CAN BE UTILIZED TO OBTAIN THESE JOINT DEFLECTION. ALL OFFSETS ARE BASED ON MINIMUM 20LF PIPE LENGTH.

MAXIMUM ALLOWED OFFSET FOR PIPE BY JOINT DEFLECTION

PVC PIPE

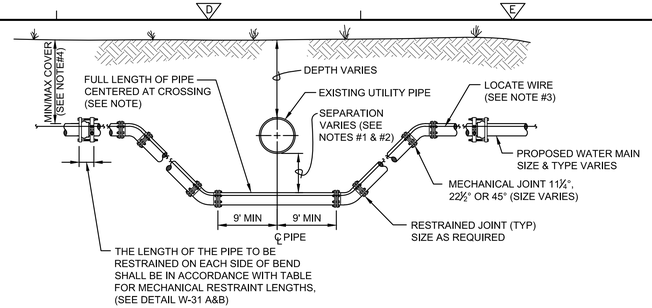
PIPE SIZE (IN.)	(X) MAX. OFFSET (IN.)	(Y) ANGLE AT ONE BELL	RESULTING RADIUS OF CURVE WITH 20FT. LENGTHS
2	30	7°	158 FT
4	10	2.4°	480 FT
6	10	2.4°	480 FT
8	10	2.4°	480 FT
10	10	2.4°	480 FT
12	8.5	2°	564 FT
14 - 24	5	1.2°	960 FT
30 - 48	3.25	0.8°	1477 FT

DUCTILE IRON PIPE (Mechanical Joint)

PIPE SIZE (IN.)	(X) MAX. OFFSET (IN.)	(Y) ANGLE AT ONE BELL	RESULTING RADIUS OF CURVE WITH 20FT. LENGTHS
-	-	-	-
4	27	6.5°	177 FT
6	24	5.7°	200 FT
8 - 12	17.5	4.2°	273 FT
14 - 16	12	2.9°	400 FT
18 - 20	10	2.4°	477 FT
24 - 30	8	1.9°	600 FT
36	7	1.7°	687 FT
42 - 48	6.7	1.6°	716 FT

ADJUSTMENT UNDER EXISTING UTILITIES PIPE JOINT DEFLECTION

D JANUARY 2020 PLATE W-40



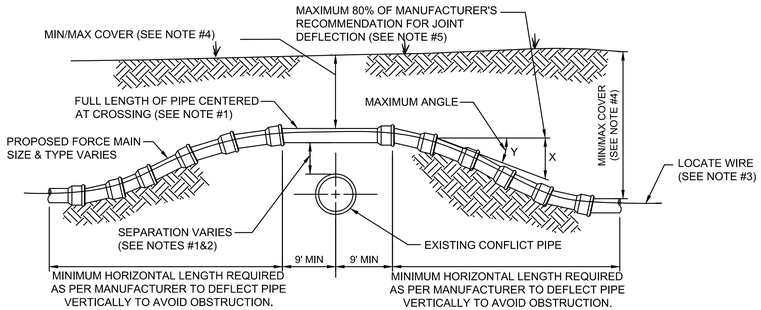
CASE "B" CROSSING

NOTES:

1. THE SOILS BETWEEN THE NEW MAIN AND THE CONFLICT PIPE SHALL BE COMPACTED TO 98% OF THE MAXIMUM DENSITY AS DETERMINED BY THE LABORATORY MODIFIED PROCTOR TEST, ASTM D 1557
2. FOR MINIMUM VERTICAL SEPARATION REQUIREMENTS SEE DETAILS (W-10 AND W-11)
3. LOCATING WIRE REQUIRED: SEE DETAIL W-44.
4. THE COVER FOR PIPING LESS THAN 24" SIZE SHALL BE 30" (MIN) IN UNPAVED AREA, 36" (MIN) IN PAVED AREAS AND A MAXIMUM COVER OF 60", UNLESS APPROVED BY JEA, THE COVER FOR PIPING 24" SIZE AND LARGER SHALL BE 36" (MIN) IN PAVED AND UNPAVED AREAS AND A MAXIMUM COVER OF 84", UNLESS APPROVED BY JEA.

ADJUSTMENT UNDER EXISTING UTILITIES MECHANICAL RESTRAINTS

B JANUARY 2020 PLATE W-34



CASE "A" CROSSING

NOTES:

1. IF EXISTING CONFLICT PIPE IS A WATER MAIN, 12-INCHES OF SEPARATION IS REQUIRED. A FULL LENGTH OF PIPE SHALL BE CENTERED OVER EXISTING UTILITY MAIN TO PROVIDE MAXIMUM JOINT SPACING FOR ALL CROSSING.
2. FOR OTHER LOCATION LIMITATIONS SEE DETAIL (S-10 & W-11).
3. LOCATING WIRE REQUIRED: SEE DETAIL W-44.
4. THE COVER OVER ALL PIPING LESS THAN 24" SIZE SHALL BE A MINIMUM OF 30" IN UNPAVED AREAS AND 36" IN PAVED AREAS WITH A MAXIMUM COVER OF 60" UNLESS APPROVED OTHERWISE BY JEA. COVER FOR PIPING 24" SIZE AND LARGER SHALL BE MINIMUM OF 36" (PAVED AND UNPAVED) AND MAXIMUM OF 84" UNLESS APPROVED OTHERWISE BY JEA. THE SOILS BETWEEN THE NEW MAIN AND THE CONFLICT PIPE SHALL BE COMPACTED TO 98% OF THE MAXIMUM DENSITY AS DETERMINED BY THE LABORATORY MODIFIED PROCTOR TEST ASTM D 1557.
5. JEA ONLY ALLOWS 80% OF THE PIPE MANUFACTURER'S RECOMMENDATION FOR JOINT DEFLECTION. BENDING THE PIPE BARREL IS NOT ALLOWED. UNLESS OTHERWISE APPROVED BY JEA, THE MAXIMUM ARE LISTED IN TABLE BELOW. ONLY MANUAL FORCE CAN BE UTILIZED TO OBTAIN THESE JOINT DEFLECTION. ALL OFFSETS ARE BASED ON MINIMUM 20LF PIPE LENGTH.

MAXIMUM ALLOWED OFFSET FOR PIPE BY JOINT DEFLECTION

PVC PIPE

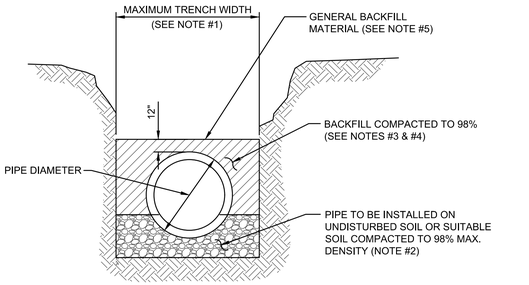
PIPE SIZE (IN.)	(X) MAX. OFFSET (IN.)	(Y) ANGLE AT ONE BELL	RESULTING RADIUS OF CURVE WITH 20FT. LENGTHS
2	30	7°	158 FT
4	10	2.4°	480 FT
6	10	2.4°	480 FT
8	10	2.4°	480 FT
10	10	2.4°	480 FT
12	8.5	2°	564 FT
14 - 24	5	1.2°	960 FT
30 - 48	3.25	0.8°	1477 FT

DUCTILE IRON PIPE (Mechanical Joint)

PIPE SIZE (IN.)	(X) MAX. OFFSET (IN.)	(Y) ANGLE AT ONE BELL	RESULTING RADIUS OF CURVE WITH 20FT. LENGTHS
-	-	-	-
4	27	6.5°	177 FT
6	24	5.7°	200 FT
8 - 12	17.5	4.2°	273 FT
14 - 16	12	2.9°	400 FT
18 - 20	10	2.4°	477 FT
24 - 30	8	1.9°	600 FT
36	7	1.7°	687 FT
42 - 48	6.7	1.6°	716 FT

ADJUSTMENT OVER EXISTING UTILITIES PIPE JOINT DEFLECTION

E JANUARY 2020 PLATE W-41



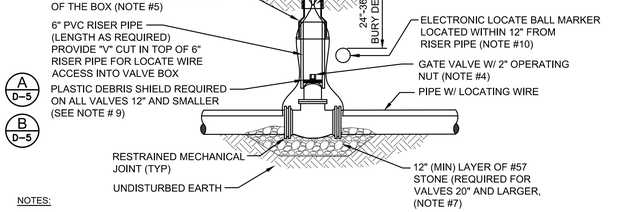
TYPICAL TRENCH

NOTES:

1. TRENCH SIDES SHALL BE APPROXIMATELY VERTICAL BETWEEN AN ELEVATION OF 1 FOOT ABOVE THE TOP OF THE PIPE AND THE CENTER LINE OF THE PIPE; OTHERWISE, TRENCH SIDES SHALL BE AS VERTICAL AS POSSIBLE OR AS REQUIRED BY OSHA STANDARDS. REFER TO THE MEASUREMENT AND PAYMENT SECTION (SECTION #801, PARAGRAPH #4)) TO DETERMINE MAXIMUM PAYLINE WIDTHS.
2. BELL HOLE SHALL BE DUG TO PERMIT THE ENTIRE STRAIGHT BARREL OF THE PIPE TO REST ON THE UNDISTURBED TRENCH BOTTOM. BOULDERS OR LOOSE ROCKS LARGER THAN 3/4 INCH IN SIZE WILL NOT BE PERMITTED IN BACKFILL UP TO 1 FOOT ABOVE THE TOP OF THE PIPE.
3. BACK FILL MATERIAL UP TO A LEVEL OF 1 FOOT OVER THE PIPE SHALL CONSIST OF AASHTO CLASS A-3 SOIL (SUITABLE SOIL) AND SHALL EXCLUDE CLAY MATERIALS AND LOOSE ROCKS LARGER THAN 3/4 INCH SIZE.
4. BACKFILL MATERIAL UP TO A LEVEL 1 FOOT OVER THE TOP OF PIPE OR BOTTOM OF STRUCTURES SHALL BE PLACED IN 6 INCH COMPACTED THICKNESS LAYERS AND SHALL BE COMPACTED TO 98% OF IT'S MAXIMUM DENSITY AS DETERMINED BY THE LABORATORY MODIFIED PROCTOR TEST, ASTM D1557.
5. SEE " EXCAVATION AND EARTHWORK", SECTION 408 FOR ADDITIONAL REQUIREMENTS INCLUDING REMOVAL AND REPLACEMENT OF UNSUITABLE SOILS, DEWATERING, COMPACTION REQUIREMENTS AND DENSITY TESTING OF COMPACTED SOILS.

OPEN CUT TRENCH FOR PRESSURE PIPE

C JANUARY 2020 IN CITY RIGHT OF WAY PLATE W-42



NOTES:

1. FOR UNPAVED LOCATIONS, A PRECAST CONCRETE VALVE PAD SHALL BE PROVIDED AND INSTALLED FLUSH WITH GRADE. CONCRETE PAD IS NOT REQUIRED FOR VALVE LOCATED IN THE ROADWAY, UNLESS SHOWN OR NOTED OTHERWISE.
2. LOCATING WIRE IS REQUIRED ON ALL PRESSURE PIPING (SEE DETAILW-44).
3. A "V" CUT SHALL BE CARVED IN THE CURB CLOSEST/ADJACENT/(ASPHALT IF NO CURB) TO ALL BELOW GRADE VALVES. THE "V" CUT IS TO BE PAINTED BLUE WATER/PURPLE RECLAIMED.
4. IN PAVED AREAS, INSTALL VALVE AT A DEPTH TO ALLOW A 12" MIN. DISTANCE BETWEEN THE VALVE COVER PLATE AND THE TOP OF THE VALVE OPERATING NUT, OUTSIDE OF PAVED AREAS (GRASS), INSTALL VALVE AT A DEPTH TO ALLOW A 6" MINIMUM DISTANCE BETWEEN THE VALVE COVER AND THE TOP OF THE VALVE OPERATING NUT, OPERATING NUT/STEM EXTENSION SHALL BE PROVIDED (WHERE APPLICABLE) SO THAT THE OPERATING NUT WILL BE NO MORE THAN 30 INCHES BELOW FINISHED GRADE.
5. FOR NEW CONSTRUCTION, THE VALVE BOX SHALL BE ADJUSTED TO MIDRANGE TO ALLOW FOR FUTURE BOX ADJUSTMENTS. ROUTE LOCATE WIRES THRU A "V" CUT IN THE TOP OF THE 6" PVC RISER PIPE FOR LOCATE WIRE ACCESS INTO VALVE BOX. THE LOCATE WIRES WITH A 24" LONG PIG-TAIL AT THE TOP SHALL BE CONNECTED TOGETHER WITH A WIRE NUT.
6. BRASS IDENTIFICATION TAG INDICATING "WATER", VALVE SIZE, DIRECTION AND TURNS TO OPEN & VALVE TYPE, PROVIDE A ¼" HOLE IN BRASS TAG AND ATTACH TAG (TWIST WIRE AROUND TAG) TO THE END OF THE LOCATE WIRE. TAGS ARE NOT REQUIRED ON VALVES INSTALLED ON FIRE HYDRANT BRANCH LINES.
7. IN LIEU OF PRECAST CONCRETE PAD, A 6" THICK X 24" (ROUND OR SQUARE) POURED CONCRETE PAD W/2 - #4 REBAR AROUND PERIMETER, MAY BE USED.
8. GRAVEL SHALL BE PROVIDED UNDER ALL VALVES 20" AND LARGER. THE MINIMUM VERTICAL LIMIT OF GRAVEL IS 12" UNDER THE VALVE UP TO ½ THE OVERALL HEIGHT OF THE VALVE.
9. FOR VALVES 12 INCH AND SMALLER, PROVIDE A WHITE OR BLACK PLASTIC DEBRIS SHIELD WHICH INSTALLS BELOW THE OPERATING NUT. THIS SHIELD SHALL CENTER THE RISER PIPE BOX OVER THE OPERATING NUT AND MINIMIZE INFILTRATION. SHIELD SHALL BE BY AFC, BOXLOK OR APPROVED EQUAL.
10. ALL VALVES SHALL BE INSTALLED WITH AN ELECTRIC LOCATE MARKER. MARKER SHALL BE 4" DIA. COLOR CODED BALL MARKER (3M-1403XR FOR WATER AND 1408XR FOR RECLAIMED WATER).

WATER VALVE INSTALLATION DETAIL

F JANUARY 2020 PLATE W-18

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: ABB
DRAWN BY: SLD
SHEET CHK'D BY: ABB
CROSS CHK'D BY: I POLEMATIDIS
APPROVED BY: D PRAH
DATE: DECEMBER 2020

CDM Smith
4651 Salisbury Road, Suite 420
Jacksonville, FL 32256
Tel: (904) 731-7109
FL COA No, EB-0000020

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

JEA

RIVERTOWN WATER TREATMENT PLANT PROJECT

RAW WATER MAIN CONSTRUCTION DETAILS

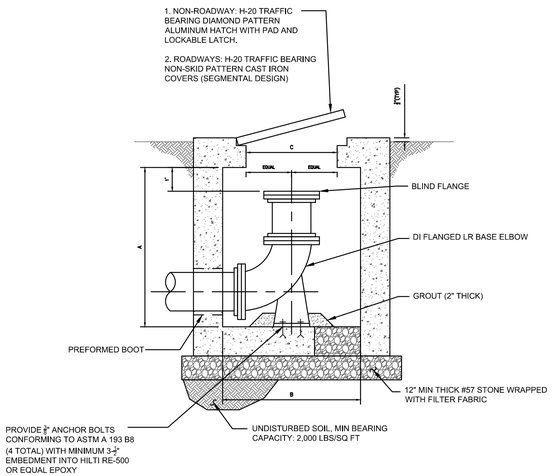
ANGELA B. BRYAN LICENSE No. 56730 STATE OF FLORIDA PROFESSIONAL ENGINEER

DATE:
ANGELA BRYAN
PE NO. 56730

PROJECT NO. 6103–237938
FILE NAME: C001STPP

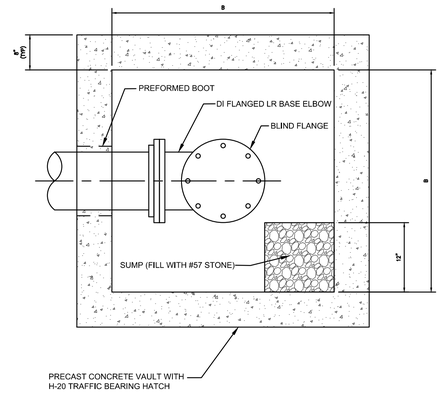
SHEET NO.
D-3

ISSUED FOR BID



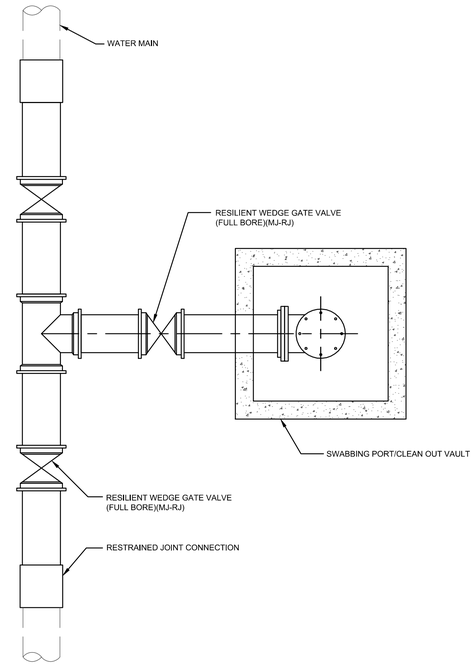
SWABBING PORT AND CLEAN OUT VAULT DETAIL - SECTION

A JANUARY 2020 PLATE W-45



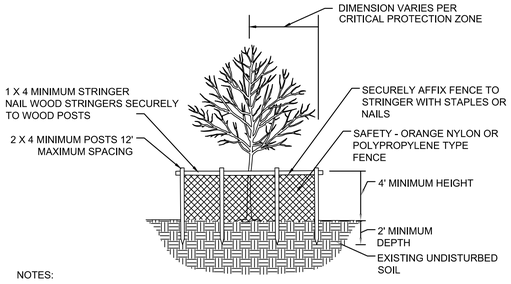
SWABBING PORT AND CLEAN OUT VAULT DETAIL - - PLAN

B JANUARY 2020 PLATE W-45A



SWABBING LAUNCHING STATION DETAIL FOR NEW WATER MAIN UP TO 24"

C JANUARY 2020 PLATE W-45B



NOTES:

1. CRITICAL PROTECTION ZONE: THE AREA SURROUNDING A TREE WITHIN A CIRCLE DESCRIBED BY A RADIUS OF ONE FOOT FOR EACH INCH OF THE TREE TRUNK DIAMETER AT 54" ABOVE FINISHED GRADE. FOR GROUPS OF TREES, PLACE BARRICADES BETWEEN TREES AND CONSTRUCTION ACTIVITY.
2. TREE PROTECTION BARRICADES SHALL BE LOCATED TO PROTECT A MINIMUM OF 75% OF THE CRITICAL PROTECTION ZONE.
3. FOR GROUPS OF TREES, PLACE BARRICADES BETWEEN TREES AND CONSTRUCTION ACTIVITY
4. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL TREES AND LANDSCAPING ON ADJACENT PROPERTIES, AND WILL BE SOLELY LIABLE FOR DAMAGE TO VEGETATION ON PROPERTIES ADJACENT TO CONSTRUCTION WORK ZONES. ALL TREES WITHIN THE LIMITS OF CONSTRUCTION ARE TO BE PROTECTED UNLESS SPECIFICALLY IDENTIFIED ON THE PLANS TO BE REMOVED. ALL TREES OUTSIDE THE CONSTRUCTION WORK ZONE ARE TO BE PROTECTED TO THE MAXIMUM EXTENT PRACTICABLE. TREE BARRICADES WILL BE INSTALLED AND MAINTAINED AROUND ALL TREES TO BE PROTECTED OR AS DIRECTED BY THE ENGINEER/JEA APPOINTED CONSTRUCTION INSPECTOR. THE CONTRACTOR SHALL EMPLOY A CERTIFIED ARBORIST TO MITIGATE IMPACTS TO TREES AS A RESULT OF CONSTRUCTION ACTIVITIES AND SHALL COORDINATE THESE TREE-RELATED ISSUES WITH THE JEA APPOINTED CONSTRUCTION INSPECTOR. NO TRENCHING OR EXCAVATION SHALL BE ALLOWED WITHIN THE CRITICAL PROTECTION ZONE OF ANY PROTECTED TREE, EXCEPT WHERE DEBITS HAVE BEEN NOTED ON THE PLANS OR MITIGATION HAS BEEN PERFORMED. ANY TREE-RELATED DAMAGE DUE TO CONSTRUCTION SHALL BE PAID BY THE CONTRACTOR.

TREE PROTECTION DETAIL

D NOT TO SCALE

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: ABB
DRAWN BY: SLD
SHEET CHK'D BY: ABB
CROSS CHK'D BY: I POLEMATIDIS
APPROVED BY: D PRAH
DATE: DECEMBER 2020

CDM Smith
4651 Salisbury Road, Suite 420
Jacksonville, FL 32256
Tel: (904) 731-7109
FL COA No. EB-0000020

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

JEA

RIVERTOWN WATER TREATMENT PLANT PROJECT

RAW WATER MAIN CONSTRUCTION DETAILS

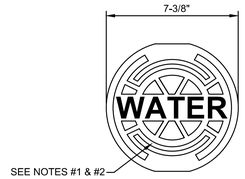
ANGELA B. BRYAN LICENSE No. 56730 STATE OF FLORIDA PROFESSIONAL ENGINEER

DATE:
ANGELA BRYAN
PE NO. 56730

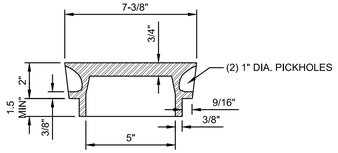
PROJECT NO. 6103-237938
FILE NAME: C001STPP

SHEET NO.
D-4

ISSUED FOR BID



HEAVY DUTY RATING

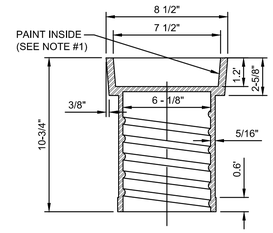


NOTES:

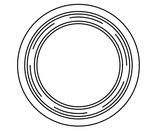
1. PAINT TOP OF THE COVER WITH ENAMEL PAINT (BLUE COLOR) FOR WATER.
2. FOR "REUSE" PAINT TOP PANTONE PURPLE.
3. LID WEIGHT: APPROX. 12 LBS.

WATER SYSTEM VALVE BOX COVER

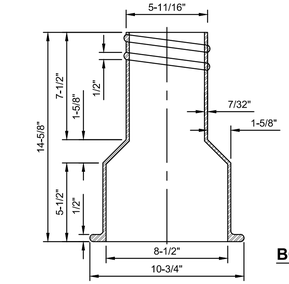
A JANUARY 2020 PLATE W-16

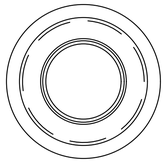


HEAVY DUTY RATING



TOP SECTION VIEW
(23 LBS. APPROX.)





BOTTOM SECTION VIEW
(26 LBS. APPROX.)

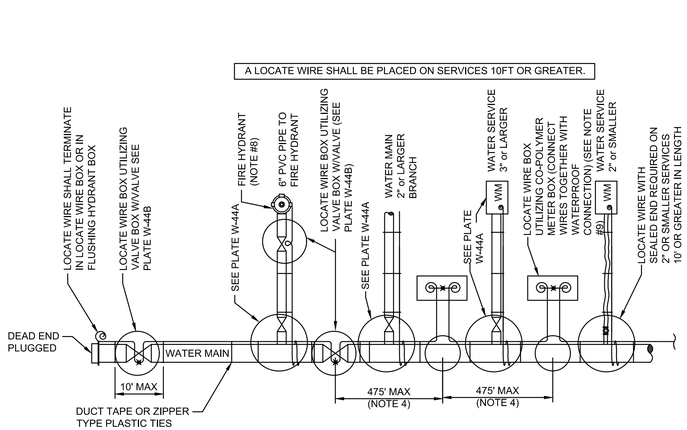
NOTES:

1. PAINT THE INSIDE OF THE TOP SECTION OF THE BOX WITH APPLICABLE COLOR (BLUE OR PURPLE)
2. HEAVY DUTY RATING (TOTAL WEIGHT APPROX. 50 LBS.).
3. REFERENCE SECTION 351, PARAGRAPH X.2.

WATER SYSTEM VALVE BOX

B JANUARY 2020 PLATE W-17

A LOCATE WIRE SHALL BE PLACED ON SERVICES 10FT OR GREATER.



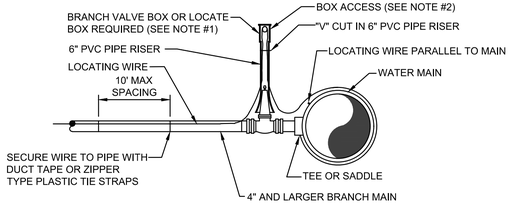
LOCATE WIRE SYSTEM

NOTES:

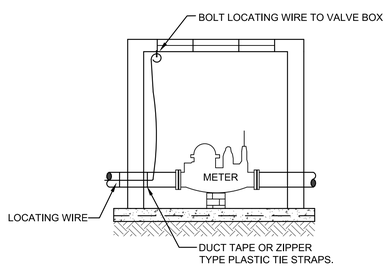
1. LOCATING WIRE TO BE INSTALLED IN EITHER THE ONE OR ELEVEN O'CLOCK POSITION ON ALL DUCTILE IRON OR PVC (PRESSURE MAINS). LOCATE WIRE SHALL ALSO BE INSTALLED ON ALL (HDPE) POLY MAIN PIPING (1:00 OR 11:00 POSITION, IF POSSIBLE).
2. SECURE LOCATING WIRE TO PVC & D.I.P. WATER MAIN BY USE OF DUCT TAPE OR ZIPPER TYPE PLASTIC TIE STRAPS SPACED AT A MAXIMUM DISTANCE OF TEN (10') AND AT EACH SIDE OF BELL JOINT OR FITTING.
3. THE ENTIRE LOCATING SYSTEM SHALL BE SUBJECTED TO TESTING TO DETERMINE ITS RELIABILITY. WHERE INSTALLED UNDER PAVEMENT AREAS, TESTING SHALL BE DONE PRIOR TO THE PLACEMENT OF PAVEMENT, UNLESS APPROVED OTHERWISE BY JEA.
4. LOCATING WIRE SHALL TERMINATE WITHIN AN ACTIVE VALVE BOX (WITH A VALVE) OR A METER BOX (IF NO VALVE) AT 475' INTERVALS. SEE DETAIL PLATE W-44B. WIRE CONNECTIONS BELOW GROUND (OUTSIDE OF A BOX) SHALL BE AVOIDED.
5. REFER TO SECTION 350 FOR LOCATE WIRE SPECIFICATIONS.
6. "✕" INDICATES THAT THE WIRES ARE CONNECTED TOGETHER WITH A WATERPROOF CONNECTION. (SEE DETAIL W-44B)
7. "◎" INDICATES A WIRE PIG-TAIL (4' LONG)
8. FOR FIRE HYDRANT LOCATE WIRE REQUIREMENTS AND EXCLUSIONS, SEE PLATES W-12,13 AND 14.
9. AN "LW" CUT SHALL BE CARVED IN THE CONCRETE CURB AND PAINTED AT ALL LOCATE WIRE BOXES.
10. FOUR LANES OF TRAFFIC (HAVING TWO LANES OF TRAFFIC IN EACH DIRECTION) OR GREATER THE LOCATE WIRE AND VALVE BOX SHALL BE OFF-SET TO THE RIGHT-OF-WAY.

LOCATE WIRE CONSTRUCTION FOR WATER MAINS

C JANUARY 2020 PLATE W-44



BRANCH FORCE MAIN
(2" AND LARGER WATER MAIN OR 3" AND LARGER WATER SERVICE PIPE)



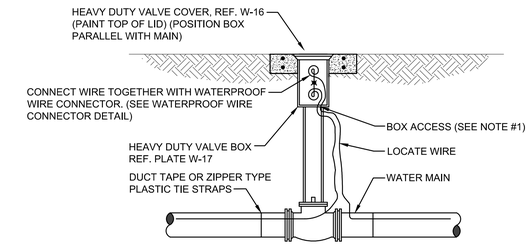
CONNECTION AT LARGE METER BOX
(3" OR LARGER SERVICE)

NOTES:

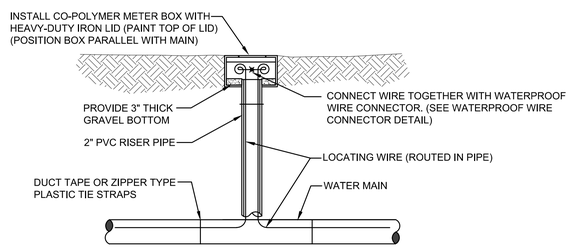
1. NOTE THAT THE BRANCH WIRE IS NOT CONNECTED TO THE MAIN WIRE.
2. LOCATE WIRE SHALL ENTER THE VALVE BOX THROUGH A "V" CUT IN THE 6" PVC RISER PIPE SECTION (SEE W-18).
3. LOCATE WIRE SHALL HAVE ENOUGH SLACK TO REACH 4' ABOVE FINAL GRADE AND LOCATE POINTS.

LOCATE WIRE FOR BRANCH MAIN

D JANUARY 2020 PLATE W-44A



LOCATE WIRE BOX UTILIZING VALVE BOX



LOCATE WIRE BOX UTILIZING METER BOX

LOCATE WIRE BOX

E JANUARY 2020 PLATE W-44B

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: ABB
DRAWN BY: SLD
SHEET CHK'D BY: ABB
CROSS CHK'D BY: I POLEMATIDIS
APPROVED BY: D PRAH
DATE: DECEMBER 2020

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JEA

RIVERTOWN WATER TREATMENT PLANT PROJECT

RAW WATER MAIN
CONSTRUCTION DETAILS

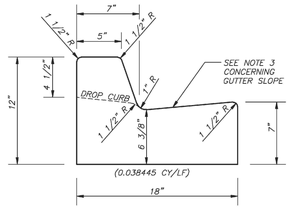
ANGELA B. BRYAN LICENSE No. 56730 STATE OF FLORIDA PROFESSIONAL ENGINEER

DATE:
ANGELA BRYAN
PE NO. 56730

PROJECT NO. 6103-237938
FILE NAME: C001STPP

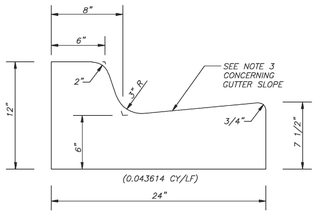
SHEET NO.
D-5

ISSUED FOR BID



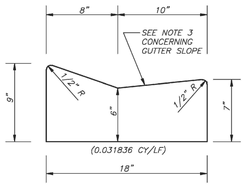
18" CURB & GUTTER

SPECIFIC USE: LOCAL ROAD AND MINOR COLLECTOR ROADWAY CLASSES



F.D.O.T. STANDARD TYPE "F" CURB AND GUTTER

SPECIFIC USE: MAJOR COLLECTOR ROADWAY CLASSES

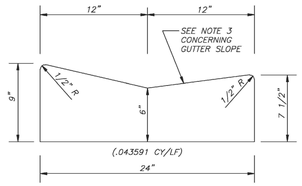


18" LOW PROFILE CURB & GUTTER

SPECIFIC USE: LOCAL ROAD AND MINOR COLLECTOR ROADWAY CLASSES

GENERAL NOTES:

1. MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
2. CONCRETE SHALL BE CLASS I CONCRETE WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI.
3. WHEN USED ON THE HIGH SIDE OF ROADWAY SECTIONS, THE CROSS SLOPE OF THE GUTTER SHALL MATCH THE CROSS SLOPE OF THE ADJACENT PAVEMENT. WHERE THIS CONDITION IS ENCOUNTERED, THE FRONT FACE VERTICAL DIMENSION SHALL REMAIN AS SHOWN FOR NORMAL SECTIONS SHOWN HEREON.



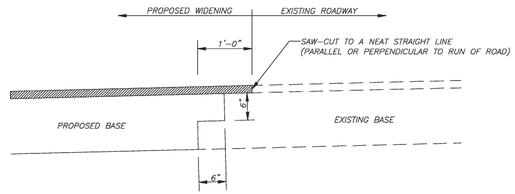
24" LOW PROFILE CURB AND GUTTER

SPECIFIC USE: MAJOR COLLECTOR ROADWAY CLASSES

(A)

ST JOHNS COUNTY PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION 2740 Industry Center Road ST AUGUSTINE, FLORIDA 32084 Phone (904) 209-0110 • Fax. (904) 209-0140	REVISION 10/09	DESIGN DETAIL CURB AND CURB & GUTTER TYPICAL CONSTRUCTION DETAILS	EFFECTIVE DATE: DETAIL NO. 115 APPROVED: H.P. TOMPKINS, JR., P.E. COUNTY ENGINEER

FILE NAME: D115.DWG



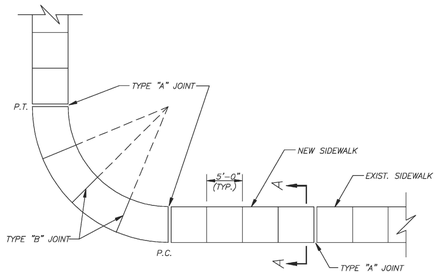
(B)

ST JOHNS COUNTY PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION 2740 Industry Center Road ST AUGUSTINE, FLORIDA 32084 Phone (904) 209-0110 • Fax. (904) 209-0140	REVISION 10/09	DESIGN DETAIL SAW-CUT DETAIL	EFFECTIVE DATE: DETAIL NO. 117 APPROVED: H.P. TOMPKINS, JR., P.E. COUNTY ENGINEER

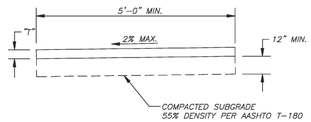
FILE NAME: D117.DWG

NOTES:

1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF ST. JOHNS COUNTY TRANSPORTATION DEVELOPMENT DIVISION, THE ST. JOHNS COUNTY ENGINEERING DIVISION, THE ST. JOHNS COUNTY STANDARDS AND DETAILS, AND THESE SPECIFICATIONS AND DRAWINGS, AND THE PROJECT PERMITS.
2. ALL MATERIALS, EQUIPMENT AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION BY THE ST. JOHNS COUNTY ROAD & BRIDGE DEPARTMENT.
3. ALL ST. JOHNS COUNT RIGHTS-OF-WAYS SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION, IN ACCORDANCE WITH THE ST. JOHNS COUNTY SPECIFICATIONS AND IN A MANNER SATISFACTORY TO THE ENGINEERING OPERATIONS, PUBLIC WORKS DIVISION AND/OR DEVELOPMENT SERVICES DIVISION.
4. ALL MATERIALS USED FOR PAVEMENT RESTORATION SHALL MEET THE REQUIREMENTS OF:
   a. THE ST. JOHNS COUNTY STANDARDS AND DETAILS,
   b. MATERIAL SPECIFICATIONS AND CONSTRUCTION PROCEDURES SHALL COMPLY TO THE FDOT "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION",
   c. AND THESE DRAWINGS.
5. FLOWABLE FILL SHALL BE REQUIRED FOR ALL OPEN ROAD CUTS. FLOWABLE FILL MATERIAL SHALL BE PROPORTIONED TO PRODUCE A 28 DAY COMPRESSIVE STRENGTH OF 2500 POUNDS PER SQUARE INCH (PSI). FLOWABLE FILL SHALL BE PLACED FROM THE TOP OF THE PIPE BEDDING TO THE TOP OF THE EXISTING ROADWAY LIMEROCK BASE COURSE.
6. ASPHALTIC CONCRETE SHALL BE 9.5 SP OR 12.5 SP, CONSISTENT WITH THE EXISTING SURFACE COURSE AND THICKNESS, BUT NO LESS THAN 1.5 INCHES, WHICHEVER IS GREATER, AND SHALL MATCH THE EXISTING ROADWAY CROSS SLOPE.
7. AN OVERLAY OF 50 FT IN EACH DIRECTION (MINIMUM), FOR THE FULL WIDTH OF THE CUT LANE, SHALL BE REQUIRED AS A MINIMUM ON ALL OPEN ROAD CUTS.



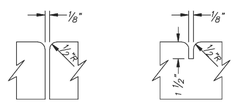
PLAN



SECTION A-A

CONCRETE TO BE CLASS I, 3000 psi

TABLE OF SIDEWALK THICKNESS-"T"	
LOCATION	"T"
RESIDENTIAL AREAS	4"
AT DRIVEWAYS AND OTHER AREAS	6"



TYPE "A" TYPE "B"

SIDEWALK JOINTS

TABLE OF SIDEWALK JOINTS	
TYPE	LOCATION
"A"	P.C. AND P.T. OF CURVES
"B"	5'-0" CENTER TO CENTER ON SIDEWALKS

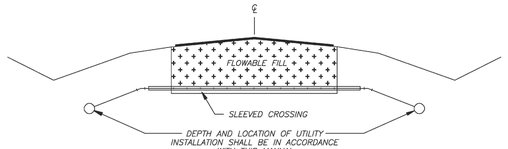
(C)

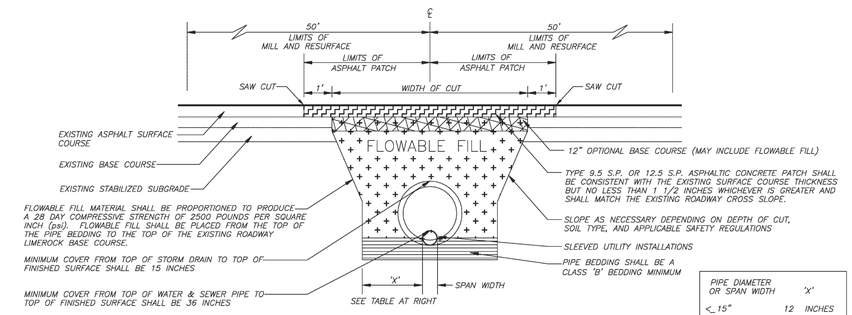
ST JOHNS COUNTY PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION 2740 Industry Center Road ST AUGUSTINE, FLORIDA 32084 Phone (904) 209-0110 • Fax. (904) 209-0140	REVISION 10/09	DESIGN DETAIL SIDEWALK DETAILS	EFFECTIVE DATE: DETAIL NO. 118 APPROVED: H.P. TOMPKINS, JR., P.E. COUNTY ENGINEER

FILE NAME: D118.DWG

NOTES:

1. OPEN ROAD CUTS ARE GENERALLY NOT AN ACCEPTABLE MEANS OF CONSTRUCTION UNLESS APPROVED IN ADVANCE BY THE ENGINEERING RIGHT OF WAY DIVISION. SEE NOTE #3.
2. MATERIALS, MIX PROPORTIONS, PRODUCTION, PLACING, CONSTRUCTION REQUIREMENTS, AND ACCEPTANCE OF FLOWABLE FILL SHALL BE IN ACCORDANCE WITH THIS MANUAL.
3. ALL OPEN CUTS SHALL REQUIRE A PERMIT AND 48 HOUR ADVANCE NOTICE TO THE INSPECTION STAFF PRIOR TO COMMENCEMENT OF CONSTRUCTION. A REPRESENTATIVE FROM THE ENGINEERING R.O.W. STAFF MUST BE PRESENT AT THE TIME OF INSTALLATION OF THE UTILITY.
4. PUBLIC SAFETY SHALL BE MAINTAINED DURING CONSTRUCTION IN ACCORDANCE WITH THE PROVISIONS OF PART 6, WORK ZONE TRAFFIC CONTROL, OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
5. THE CONTRACTOR SHALL PROVIDE TO THE INSPECTOR CERTIFICATION OF THE MIX DESIGN FROM THE SUPPLIER AT THE TIME OF CONSTRUCTION.
6. AN OVERLAY OF 50' IN EACH DIRECTION IS REQUIRED AS A MINIMUM ON ALL OPEN ROAD CUTS AND WILL BE DETERMINED AT TIME OF PERMIT APPLICATION REVIEW UNLESS MODIFIED BY COUNTY ENGINEER.
7. WHEN PIPE AND FLOWABLE FILL ARE USED IN A MILL AND RESURFACE PROJECT CONTACT THE COUNTY ENGINEER FOR RECOMMENDATION.





PIPE DIAMETER OR SPAN WIDTH	'x'
< 15"	12 INCHES
≤ 24"	16 INCHES
≤ 30"	24 INCHES
> 30"	36 INCHES

NOTE:
ALL OPEN ROAD CUTS SHALL BE APPROVED BY THE COUNTY ENGINEER.

(D)

ST JOHNS COUNTY PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION 2740 Industry Center Road ST AUGUSTINE, FLORIDA 32084 Phone (904) 209-0110 • Fax. (904) 209-0140	REVISION 10/09	DESIGN DETAIL OPEN ROAD CUTS/FLOWABLE FILL	EFFECTIVE DATE: DETAIL NO. 200 APPROVED: H.P. TOMPKINS, JR., P.E. COUNTY ENGINEER

FILE NAME: D200.DWG

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: ABB
DRAWN BY: SLD
SHEET CHK'D BY: ABB
CROSS CHK'D BY: I POLEMATIDIS
APPROVED BY: D PRAH
DATE: DECEMBER 2020

CDM Smith
4651 Salisbury Road, Suite 420
Jacksonville, FL 32256
Tel: (904) 731-7109
FL COA No. EB-0000020

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

JEA

RIVERTOWN WATER TREATMENT PLANT PROJECT

RAW WATER MAIN CONSTRUCTION DETAILS

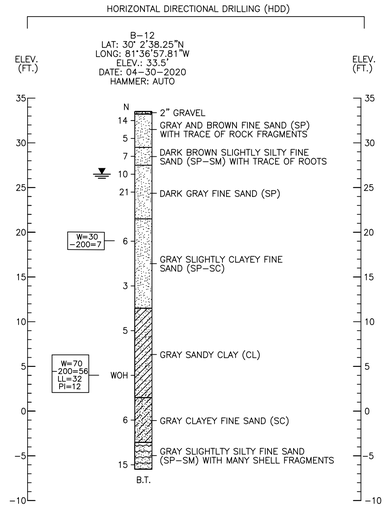
ANGELA B. BRYAN LICENSE No. 56730 STATE OF FLORIDA PROFESSIONAL ENGINEER

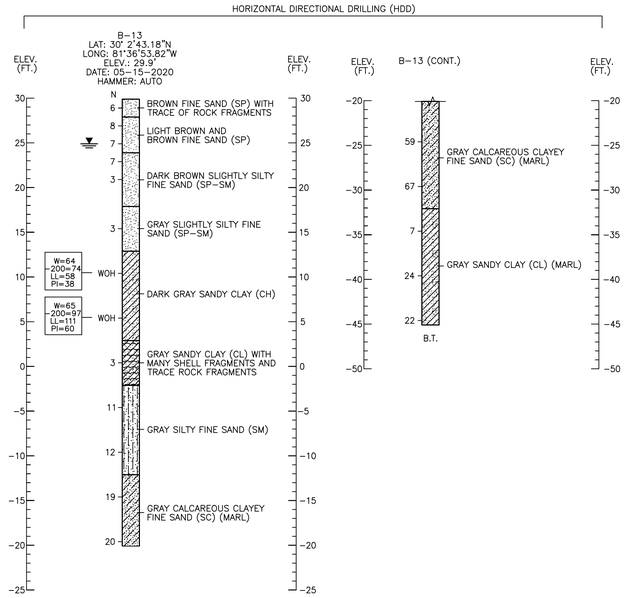
DATE:
ANGELA BRYAN
PE NO. 56730

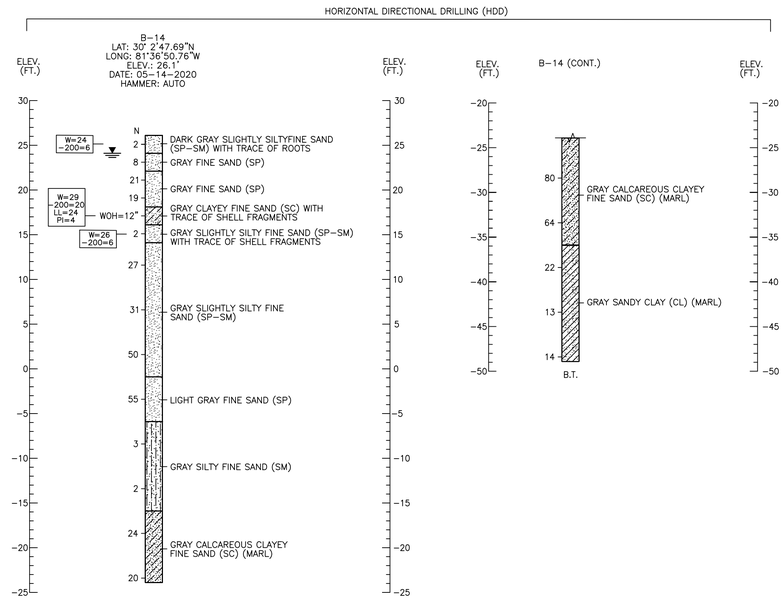
PROJECT NO. 6103-237938
FILE NAME: C001STPP

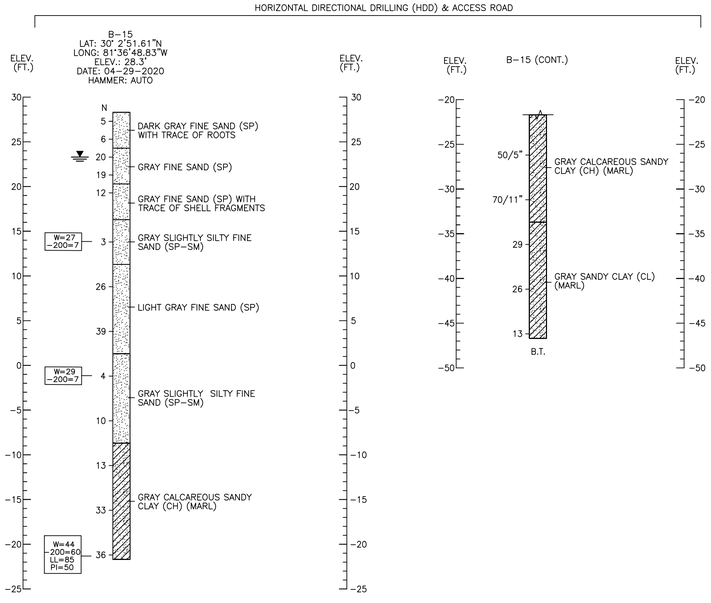
SHEET NO.
D-6

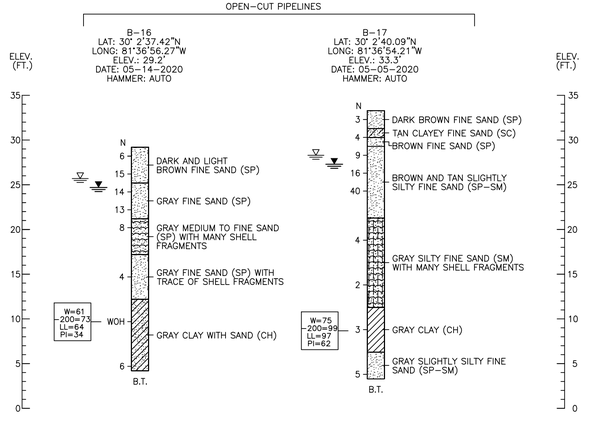
ISSUED FOR BID

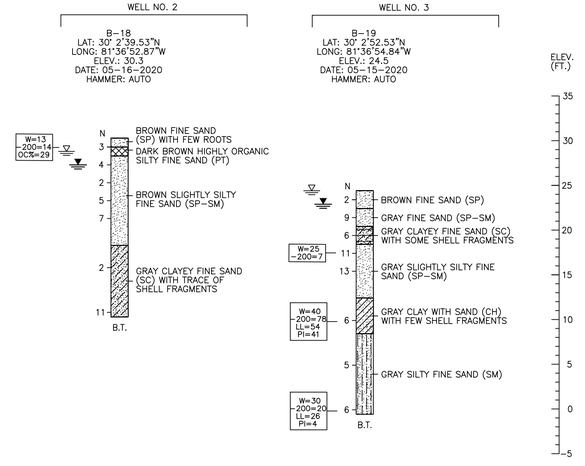












BORING INFORMATION FROM CSI GEO, INC. GEOTECHNICAL EXPLORATION AND EVALUATION REPORT PHASE 2, RIVERTOWN WATER TREATMENT PLANT, JUNE 2, 2020

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: ABB
DRAWN BY: SLD
SHEET CHK'D BY: ABB
CROSS CHK'D BY: I POLEMATIDIS
APPROVED BY: D PRAH
DATE: DECEMBER 2020

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JEA

RIVERTOWN WATER TREATMENT PLANT PROJECT

RAW WATER MAIN
SOIL BORINGS

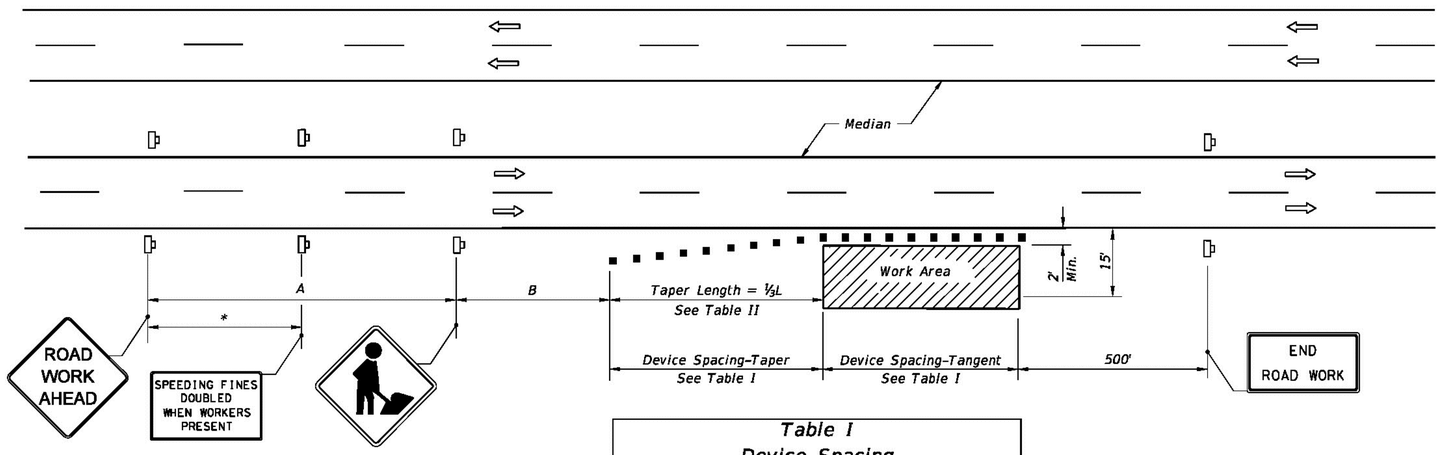
ANGELA B. BRYAN LICENSE No. 56730 STATE OF FLORIDA PROFESSIONAL ENGINEER

DATE:
ANGELA BRYAN
PE NO. 56730

PROJECT NO. 6103-237938
FILE NAME: C001STPP

SHEET NO.
D-7

ISSUED FOR BID



DISTANCE BETWEEN SIGNS		
Speed	Spacing (ft.)	
	A	B
40 mph or less	200	200
45 mph	350	350
50 mph or greater	500	500

*250' beyond the ROAD WORK AHEAD sign or midway between signs whichever is less.

Table I
Device Spacing

Speed (mph)	Max. Distance Between Devices (ft.)			
	Cones or Tubular Markers		Type I or Type II Barricades or Vertical Panels or Drums	
	Taper	Tangent	Taper	Tangent
25	25	50	25	50
30 to 45	25	50	30	50
50 to 70	25	50	50	100

Table II
Taper Length - Shoulder

Speed (mph)	½L (ft.)			Notes
	8' Shldr.	10' Shldr.	12' Shldr.	
25	28	35	42	$L=\frac{WS^2}{60}$
30	40	50	60	
35	55	68	82	
40	72	90	107	
45	120	150	180	L=WS
50	133	167	200	
55	147	183	220	
60	160	200	240	
65	173	217	260	
70	187	233	280	

8' minimum shoulder width.

½L = Length of shoulder taper in feet

W = Width of total shoulder in feet (combined paved and unpaved width)

S = Posted speed limit (mph)

SYMBOLS

- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Lane Identification + Direction of Traffic

GENERAL NOTES

1. When a high volume of work vehicles are entering and leaving the Work Area at speeds slower than 10 MPH below the posted speed, place an MOT-5-06 sign in the ROAD WORK AHEAD sign location and shift the ROAD WORK AHEAD sign upstream 500 ft.
2. This TCZ plan also applies to work performed in the median more than 2' but less than 15' from the edge of travelway.
3. When work is being performed on a multilane undivided roadway the signs normally mounted in the median (as shown) shall be omitted.
4. WORKERS signs to be removed or fully covered when no work is being performed.
5. SHOULDER WORK sign may be used as an alternate to the WORKER symbol sign.
6. When a side road intersects the highway within the TTC zone, additional TTC devices shall be placed in accordance with other applicable TCZ Indexes.
7. For general TCZ requirements and additional information, refer to Index 102-600.

DURATION NOTES

1. Signs and channelizing devices may be omitted if all of the following conditions are met:
   a. Work operations are 60 minutes or less.
   b. Vehicles in the work area have high-intensity, rotating, flashing, oscillating, or strobe lights operating.

CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH THE AREA CLOSER THAN 15' BUT NOT CLOSER THAN 2' TO THE EDGE OF TRAVEL WAY.

2/26/2020 12:33:42 PM

LAST REVISION	REVISION	DESCRIPTION:
11/01/17		

FDOT FY 2020-21 STANDARD PLANS

MULTILANE, WORK ON SHOULDER

INDEX 102-612

SHEET 1 of 1

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: ABB
DRAWN BY: SLD
SHEET CHK'D BY: ABB
CROSS CHK'D BY: I POLEMATIDIS
APPROVED BY: D PRAH
DATE: DECEMBER 2020

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JEA

RIVERTOWN WATER TREATMENT PLANT PROJECT

RAW WATER MAIN
TEMPORARY TRAFFIC CONTROL DETAILS

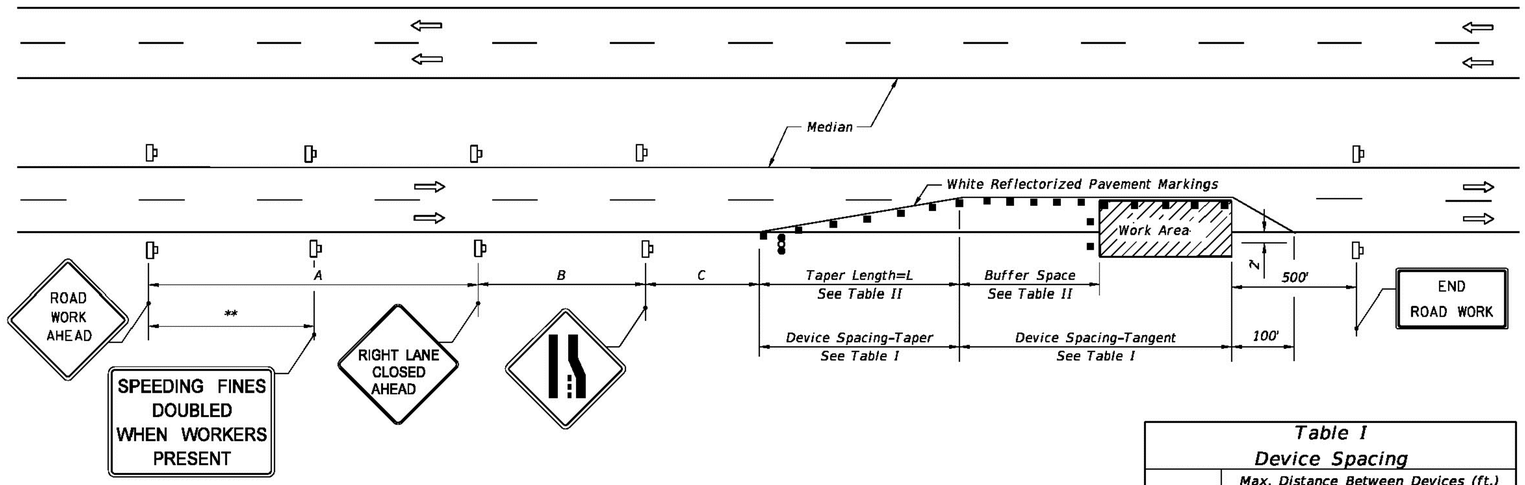
ANGELA B. BRYAN LICENSE No. 56730 STATE OF FLORIDA PROFESSIONAL ENGINEER

DATE:
ANGELA BRYAN
PE NO. 56730

PROJECT NO. 6103-237938
FILE NAME: C001STPP

SHEET NO. D-8

ISSUED FOR BID



DISTANCE BETWEEN SIGNS			
Speed	Spacing (ft.)		
	A	B	C
40 mph or less	200	200	200
45 mph	350	350	350
50 mph	500	500	500
*55 mph or greater	2640	1640	1000

* The ROAD WORK 1 MILE sign may be used as an alternate to the ROAD WORK AHEAD sign and the RIGHT LANE CLOSED ½ MILE sign may be used as an alternate to the RIGHT LANE CLOSED AHEAD sign.

** 500' beyond the ROAD WORK AHEAD sign or midway between signs whichever is less.

SYMBOLS

- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Advance Warning Arrow Board

GENERAL NOTES

1. Work operations shall be confined to one traffic lane, leaving the adjacent lane open to traffic.
2. On undivided highways the median signs as shown are to be omitted.
3. When work is performed in the median lane on divided highways, the channelizing device plan is inverted and left lane closed and lane ends signs substituted for the right lane closed and lane end signs.

   The same applies to undivided highways with the following exceptions:
   a. Work shall be confined within one median lane.
   b. Additional barricades, cones, or drums shall be placed along the centerline abutting the work area and across the trailing end of the work area.

   When work on undivided highways occurs across the centerline so as to encroach on both median lanes, the inverted plan is applied to the approach of both roadways.
4. Signs and traffic control devices are to be modified in accordance with INTERMITTENT WORK STOPPAGE details (sheet 2 of 2) when no work is being performed and the highway is open to traffic.
5. The two channelizing devices directly in front of the work area may be omitted provided vehicles in the work area have high-intensity rotating, flashing, oscillating, or strobe lights operating.
6. When paved shoulders having a width of 8 ft. or more are closed, channelizing devices shall be used to close the shoulder in advance of the merging taper to direct vehicular traffic to remain within the travel way. See Index 102-612 for shoulder taper formulas.
7. When a side road intersects the highway within the TTC zone, additional TTC devices shall be placed in accordance with other applicable TCZ Indexes.
8. This TCZ plan does not apply when work is being performed in the middle lane(s) of a six or more lane highway. See Index 102-614.
9. For general TCZ requirements and additional information, refer to Index 102-600.

Table I Device Spacing				
Speed (mph)	Max. Distance Between Devices (ft.)			
	Cones or Tubular Markers		Type I or Type II Barricades or Vertical Panels or Drums	
	Taper	Tangent	Taper	Tangent
25	25	50	25	50
30 to 45	25	50	30	50
50 to 70	25	50	50	100

Table II Buffer Space and Taper Length			
Speed (mph)	Buffer Space	Taper Length (12' Lateral Transition)	
	Dist. (ft.)	L (ft.)	Notes (Merge)
25	155	125	$L = \frac{WS^2}{60}$
30	200	180	
35	250	245	
40	305	320	
45	360	540	L = WS
50	425	600	
55	495	660	
60	570	720	
65	645	780	
70	730	840	

When Buffer Space cannot be attained due to geometric constraints, the greatest attainable length shall be used, but not less than 200 ft.

For lateral transitions other than 12', use formula for L shown in notes column.
Where:

L = Length of taper in feet
W = Width of lateral transition in feet
S = Posted speed limit (mph)

DURATION NOTES

1. Temporary white edgeline may be omitted for work operations less than 3 consecutive calendar days.
2. For work operations up to approximately 15 minutes, signs, channelizing devices, arrow board, and buffer space may be omitted if all of the following conditions are met:
   a. Speed limit is 45 mph or less.
   b. No sight obstructions to vehicles approaching the work area for a distance equal to the buffer space and the taper length combined.
   c. Volume and complexity of the roadway has been considered.
   d. The closed lane is occupied by a class 5 or larger, medium duty truck(s) with a minimum gross weight vehicle rating (GWVR) of 16,001 lb with high-intensity, rotating, flashing, oscillating, or strobe lights mounted above the cab height and operating.
3. For work operations up to 60 minutes, arrow board and buffer space may be omitted if conditions a, b, and c in DURATION NOTE 2 are met, and vehicles in the work area have high-intensity, rotating, flashing, oscillating, or strobe lights operating.

CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH ON THE LANE ADJACENT TO EITHER SHOULDER AND THE AREA 2' OUTSIDE THE EDGE OF TRAVEL WAY.

2/26/2020 12:34:10 PM

LAST REVISION	REVISION	DESCRIPTION:
11/01/17		

FDOT FY 2020-21 STANDARD PLANS

MULTILANE, WORK WITHIN TRAVEL WAY MEDIAN OR OUTSIDE LANE

INDEX 102-613 | SHEET 1 of 2

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: ABB
DRAWN BY: SLD
SHEET CHK'D BY: ABB
CROSS CHK'D BY: I POLEMATIDIS
APPROVED BY: D PRAH
DATE: DECEMBER 2020

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JEA

RIVERTOWN WATER TREATMENT PLANT PROJECT

RAW WATER MAIN
TEMPORARY TRAFFIC CONTROL DETAILS

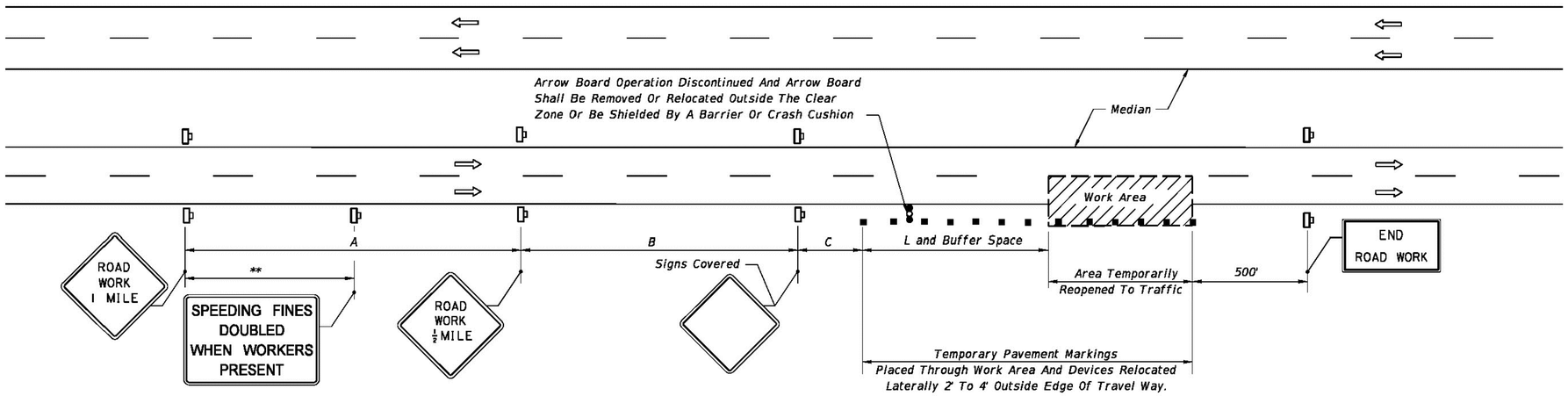
ANGELA B. BRYAN LICENSE No. 56730 STATE OF FLORIDA PROFESSIONAL ENGINEER

DATE:
ANGELA BRYAN
PE NO. 56730

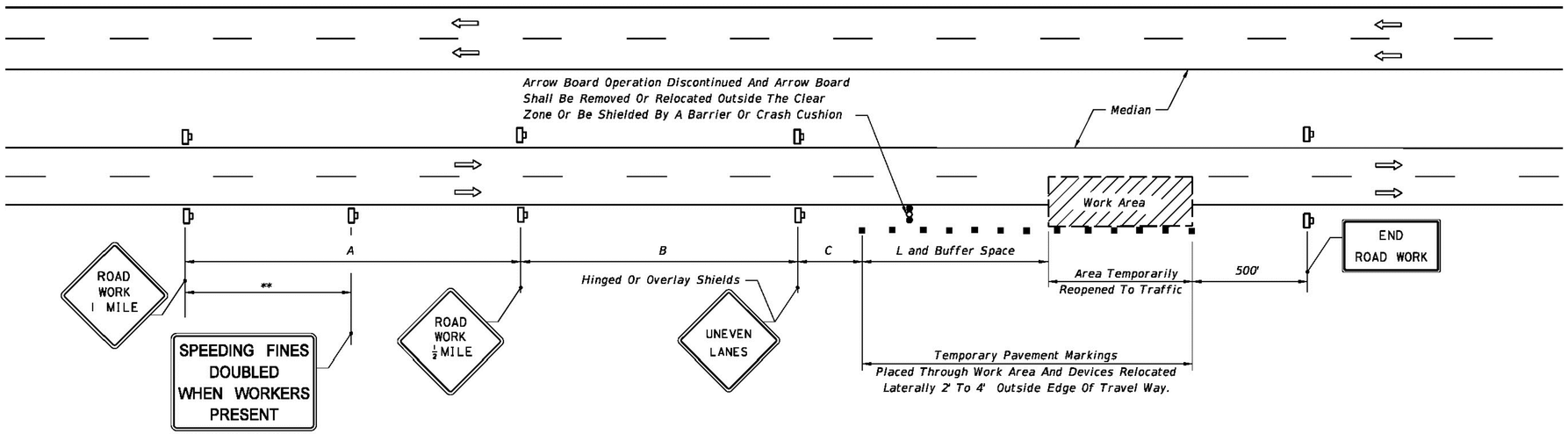
PROJECT NO. 6103-237938
FILE NAME: C001STPP

SHEET NO. D-9

ISSUED FOR BID



EVEN PAVEMENT



UNEVEN PAVEMENT

INTERMITTENT WORK STOPPAGE - LANE REOPENED TO TRAFFIC

2/26/2020 12:34:11 PM

LAST REVISION	REVISION	DESCRIPTION:	FDOT	INDEX	SHEET
11/01/17			FY 2020-21 STANDARD PLANS	102-613	2 of 2

MULTILANE, WORK WITHIN TRAVEL WAY
MEDIAN OR OUTSIDE LANE

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: ABB
DRAWN BY: SLD
SHEET CHK'D BY: ABB
CROSS CHK'D BY: I POLEMATIDIS
APPROVED BY: D PRAH
DATE: DECEMBER 2020

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JEA

RIVERTOWN WATER TREATMENT PLANT PROJECT

RAW WATER MAIN
TEMPORARY TRAFFIC CONTROL DETAILS

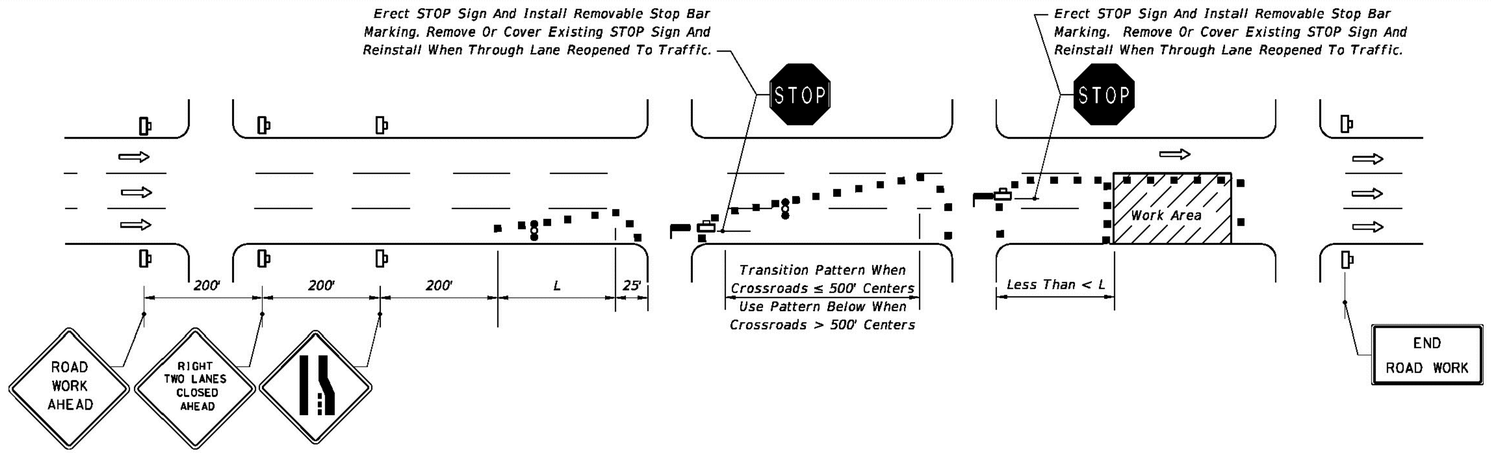
ANGELA B. BRYAN LICENSE No. 56730 STATE OF FLORIDA PROFESSIONAL ENGINEER

DATE:
ANGELA BRYAN
PE NO. 56730

PROJECT NO. 6103-237938
FILE NAME: C001STPP

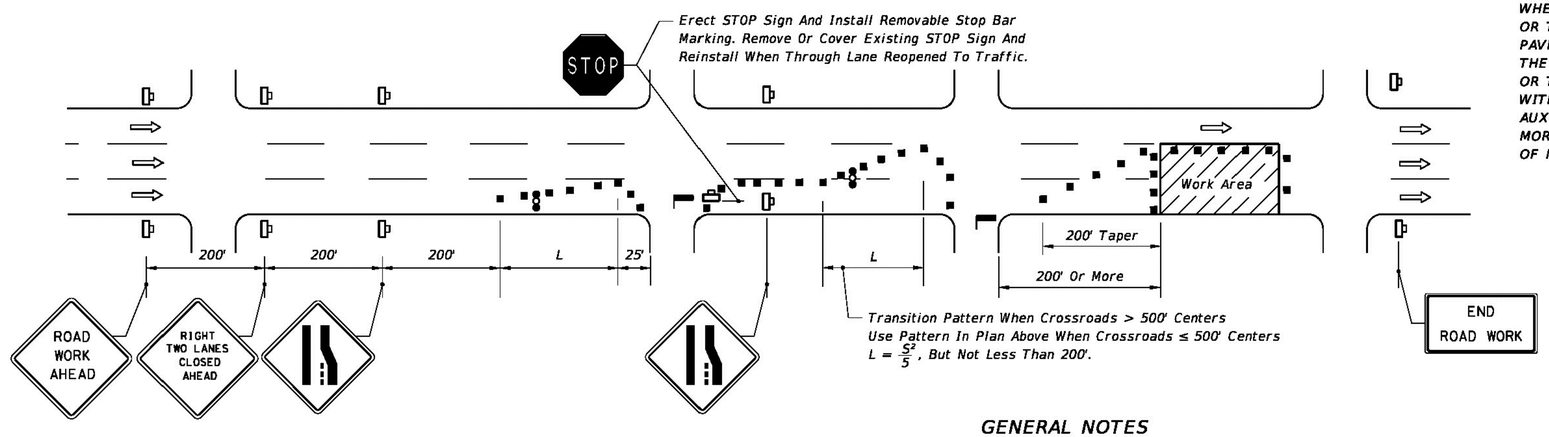
SHEET NO.
D-10

ISSUED FOR BID



CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH ON THE PAVEMENT REQUIRING THE CLOSURE OF EITHER THE OUTSIDE AND CENTER TRAVEL LANES OR THE MEDIAN AND CENTER TRAVEL LANES, WITH OR WITHOUT CLOSURE OF ADJOINING AUXILIARY LANES, FOR WORK AREA LESS THAN 200' FROM INTERSECTION, FOR A PERIOD OF MORE THAN 60 MINUTES.



CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH ON THE PAVEMENT REQUIRING THE CLOSURE OF EITHER THE OUTSIDE AND CENTER TRAVEL LANES OR THE MEDIAN AND CENTER TRAVEL LANES, WITH OR WITHOUT CLOSURE OF ADJOINING AUXILIARY LANES, FOR WORK AREA 200' OR MORE FROM INTERSECTION, FOR A PERIOD OF MORE THAN 60 MINUTES.

Table II
Taper Length - Merge (12' Lateral Transition)

Speed (mph)	L (ft.)	Notes (Merge)
25	125	$L = \frac{WS^2}{60}$
30	180	
35	245	
40	320	
45	540	L = WS

For lateral transitions other than 12', use formula for L shown in the notes column. Where:
L = Length of taper in feet
W = Width of lateral transition in feet
S = Posted speed limit (mph)

SYMBOLS

- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Advance Warning Arrow Board
- Stop Bar
- Lane Identification + Direction of Traffic

GENERAL NOTES

1. If the work space extends across a crosswalk, the crosswalk should be closed using the information in Index 102-660.
2. Signs are required on the median side for divided highways.
3. The two channelizing devices directly in front and directly at the end of the work area may be omitted provided vehicles in the work area have high-intensity rotating, flashing, oscillating, or strobe lights operating.
4. Within the lateral transitions, the maximum spacing between cones and tubular markers shall be 25'. Maximum spacing between Type I or Type II barricades or vertical panels or drums shall be based on the speed limit as follows: 15' up to 25 MPH; 30' for 30-40 MPH; 50' for 45 MPH.

   Spacing for devices parallel to the travel lanes shall be 25' centers for cones or tubular markers and 50' centers for Type I or Type II barricades or vertical panels or drums for 250', thereafter, cones or tubular markers at 50' centers and Type I or Type II barricades or vertical panels or drums at 100' centers.
5. For general TCZ requirements and additional information, refer to Index 102-600.

2/26/2020 12:36:22 PM

LAST REVISION	REVISION	DESCRIPTION:
11/01/17		

FDOT FY 2020-21 STANDARD PLANS

MULTILANE, WORK IN INTERSECTION TWO LANES CLOSED - 45 MPH OR LESS

INDEX 102-618 | SHEET 1 of 1

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: ABB
DRAWN BY: SLD
SHEET CHK'D BY: ABB
CROSS CHK'D BY: I POLEMATIDIS
APPROVED BY: D PRAH
DATE: DECEMBER 2020

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JEA

RIVERTOWN WATER TREATMENT PLANT PROJECT

RAW WATER MAIN
TEMPORARY TRAFFIC CONTROL DETAILS

ANGELA B. BRYAN LICENSE No. 56730 STATE OF FLORIDA PROFESSIONAL ENGINEER
DATE:
ANGELA BRYAN
PE NO. 56730

PROJECT NO. 6103-237938
FILE NAME: C001STPP
SHEET NO. D-11

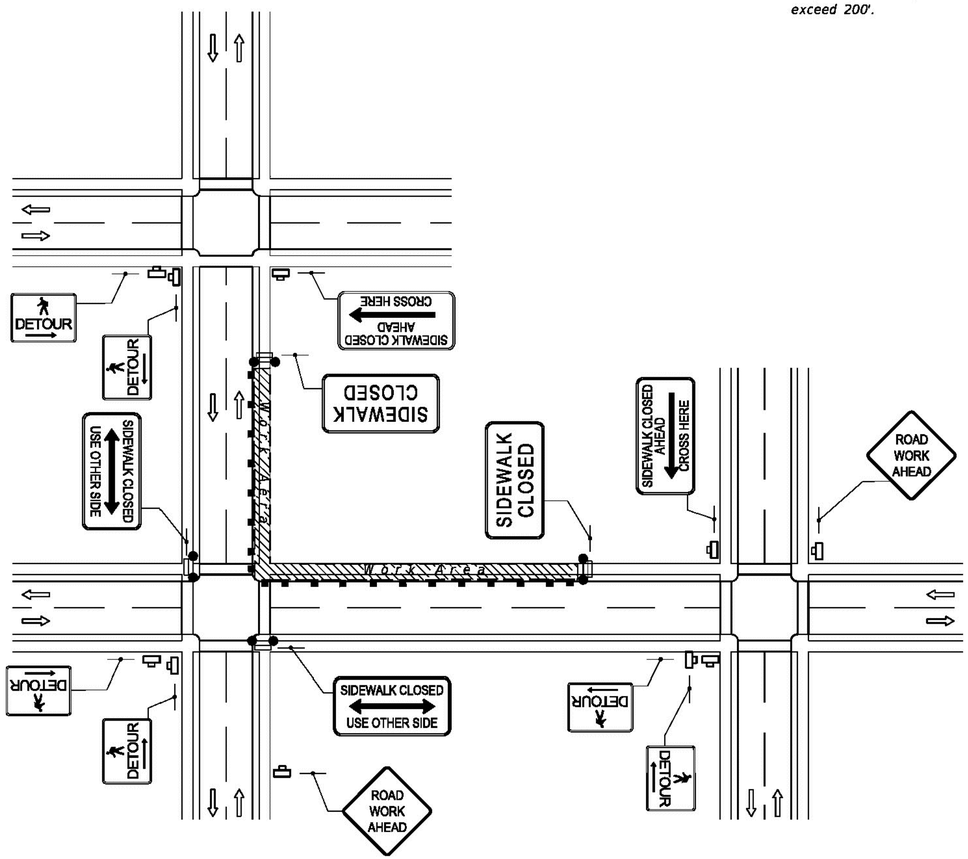
ISSUED FOR BID

SYMBOLS

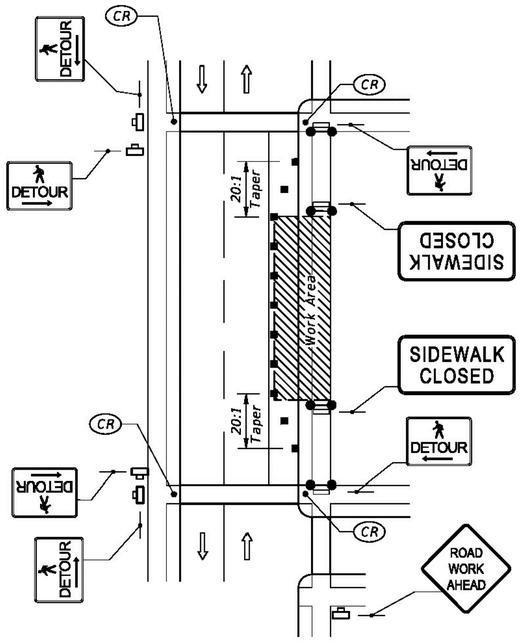
- Work Area
- Channelizing Device
- Work Zone Sign
- (CR) Required Locations For Either Temporary Or Permanent Curb Ramps.
- Lane Identification + Direction of Traffic
- Pedestrian Longitudinal Channelizing Device (LCD) with Mounted Work Zone Sign or separate Work Zone Sign
- Pedestrian Longitudinal Channelizing Device (LCD)
- Temporary Sidewalk

GENERAL NOTES:

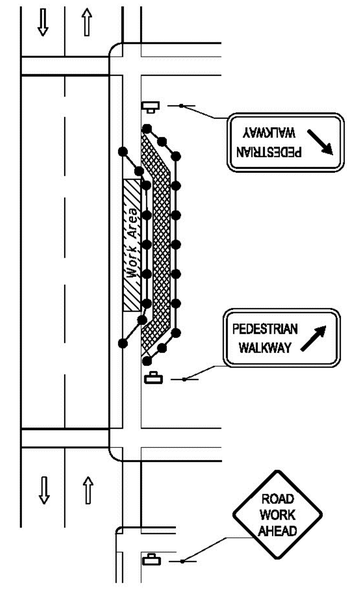
1. When encroaching work requires a sidewalk closure for 60 minutes or greater, provide an alternate pedestrian route.
2. For spacing of vehicular Channelizing Devices, see applicable vehicular temporary traffic control Indexes.
3. Cover or deactivate pedestrian traffic signal display(s) controlling closed crosswalks.
4. For post mounted signs located near or adjacent to a sidewalk, maintain a minimum 7' clearance from the bottom of the sign panel to the surface of the sidewalk.
5. Provide a 5' wide temporary walkway, except where space restrictions warrant a minimum width of 4'. Provide a 5' x 5' passing space for temporary walkways less than 5' in width at intervals not to exceed 200'.
6. Provide a cross-slope with a maximum value of 0.02 for all temporary walkways.
7. Maintain temporary walkway surfaces and ramps that are stable, firm, slip-resistant, and free of any obstructions or hazards such as holes, debris, mud, construction equipment, and stored material.
8. Remove temporary walkways immediately after reopening of the sidewalk, unless otherwise noted in the plans.
9. Meet the requirements of Index 522-002 for temporary curb ramps.
10. Place pedestrian longitudinal channelizing device(s) across the full width of the closed sidewalk. For temporary walkways, similar to the Sidewalk Diversion, place LCDs to delineate both sides of the temporary walkway.
11. For sidewalk diversions, ensure that there is sufficient R/W for placement of temporary sidewalk and pedestrian longitudinal channelizing devices.



CROSSWALK CLOSURE AND PEDESTRIAN DETOUR



SIDEWALK DETOUR



SIDEWALK DIVERSION

2/26/2020 12:43:24 PM

LAST REVISION	REVISION	DESCRIPTION:
11/01/17		

FDOT FY 2020-21 STANDARD PLANS

PEDESTRIAN CONTROL FOR CLOSURE OF SIDEWALKS

INDEX 102-660 | SHEET 1 of 1

ANGELA B. BRYAN LICENSE No. 56730 STATE OF FLORIDA PROFESSIONAL ENGINEER

DATE:
ANGELA BRYAN
PE NO. 56730

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: ABB
DRAWN BY: SLD
SHEET CHK'D BY: ABB
CROSS CHK'D BY: I POLEMATIDIS
APPROVED BY: D PRAH
DATE: DECEMBER 2020

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JEA

RIVERTOWN WATER TREATMENT PLANT PROJECT

RAW WATER MAIN
TEMPORARY TRAFFIC CONTROL DETAILS

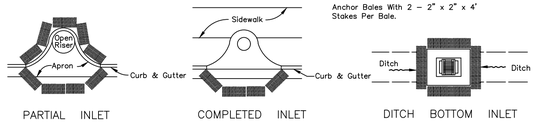
PROJECT NO. 6103-237938
FILE NAME: C001STPP

SHEET NO. D-12

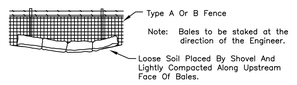
ISSUED FOR BID

EROSION AND SEDIMENT CONTROL NOTES

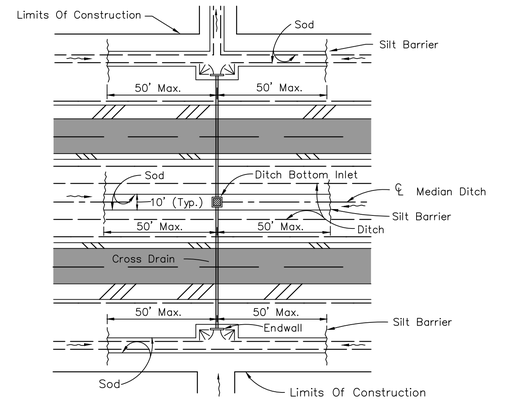
1. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING SILT FROM SITE IF NOT REUSABLE ON-SITE AND ASSURING PLAN ALIGNMENT AND GRADE IN ALL DITCHES AND SWALES AT COMPLETION OF CONSTRUCTION.
2. THE SITE CONTRACTOR IS RESPONSIBLE FOR REMOVING THE TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES AFTER COMPLETION OF CONSTRUCTION AND ONLY WHEN AREAS HAVE BEEN STABILIZED.
3. ADDITIONAL PROTECTION – ON-SITE PROTECTION IN ADDITION TO THE ABOVE MUST BE PROVIDED THAT WILL NOT PERMIT SILT TO LEAVE THE PROJECT CONFINES DUE TO UNSEEN CONDITIONS OR ACCIDENTS.
4. CONTRACTOR SHALL INSURE THAT ALL DRAINAGE STRUCTURES, PIPES, ETC. ARE CLEANED OUT AND WORKING PROPERLY AT TIME OF ACCEPTANCE.
5. WIRE MESH SHALL BE LAID OVER THE DROP INLET SO THAT THE WIRE EXTENDS A MINIMUM OF 1 FOOT BEYOND EACH SIDE OF THE INLET STRUCTURE. HARDWARE CLOTH OR COMPARABLE WIRE MESH WITH 1/2-INCH OPENINGS SHALL BE USED. IF MORE THAN ONE STRIP OF MESH IS NECESSARY, THE STRIPS SHALL BE OVERLAPPED.
6. FDOT NO. 1 COARSE AGGREGATE SHALL BE PLACED OVER THE WIRE MESH AS INDICATED IN D-903. THE DEPTH OF STONE SHALL BE AT LEAST 12 INCHES OVER THE ENTIRE INLET OPENING. THE STONE SHALL EXTEND BEYOND THE INLET OPENING AT LEAST 18 INCHES ON ALL SIDES.
7. IF THE STONE FILTER BECOMES CLOGGED WITH SEDIMENT SO THAT IT NO LONGER ADEQUATELY PERFORMS ITS FUNCTION, THE STONES MUST BE PULLED AWAY FROM THE INLET, CLEANED AND REPLACED.
8. BALES SHALL BE EITHER WIRE-BOUND OR STRING-TIED WITH THE BINDINGS ORIENTED AROUND THE SIDES RATHER THAN OVER AND UNDER THE BALES.
9. BALES SHALL BE PLACED LENGTHWISE IN A SINGLE ROW SURROUNDING THE INLET, WITH THE ENDS OF ADJACENT BALES PRESSED TOGETHER.
10. THE FILTER BARRIER SHALL BE ENTRENCHED AND BACKFILLED. A TRENCH SHALL BE EXCAVATED TO A MINIMUM DEPTH OF 8 INCHES. AFTER THE BALES ARE STAKED, THE EXCAVATED SOIL SHALL BE BACKFILLED AND COMPACTED AGAINST THE FILTER BARRIER.
11. EACH BALE SHALL BE SECURELY ANCHORED AND HELD IN PLACE BY AT LEAST TWO STAKES OR REBARS DRIVEN THROUGH THE BALE.
12. LOOSE STRAW SHOULD BE WEDGED BETWEEN BALES TO PREVENT WATER FROM ENTERING BETWEEN BALES.
13. STRAW BALE BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.
14. CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED BALES, END RUNS AND UNDERCUTTING BENEATH BALES.
15. NECESSARY REPAIRS TO BARRIERS OR REPLACEMENT OF BALES SHALL BE ACCOMPLISHED PROMPTLY.
16. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE STRAW BALE BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.
17. SILT FENCES AND FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
18. SHOULD THE FABRIC ON A SILT FENCE OR FILTER BARRIER DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL BE NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
19. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-THIRD THE HEIGHT OF THE BARRIER.
20. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND SEEDED.
21. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED.
22. SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/3 THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
23. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING THE BEST EROSION AND SEDIMENT CONTROL PRACTICES AS OUTLINED IN THE PLANS, SPECIFICATIONS AND ST. JOHNS RIVER WATER MANAGEMENT DISTRICT SPECIFICATIONS AND CRITERIA.
24. FOR ADDITIONAL INFORMATION ON SEDIMENT AND EROSION CONTROL REFER TO "THE FLORIDA DEVELOPMENT MANUAL – A GUIDE TO SOUND LAND AND WATER MANAGEMENT" FROM THE STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION (F.D.E.R.) CHAPTER 6.
25. EROSION AND SEDIMENT CONTROL BARRIERS SHALL BE PLACED ADJACENT TO ALL WETLAND AREAS WHERE THERE IS POTENTIAL FOR DOWNSTREAM WATER QUALITY DEGRADATION. SEE DETAIL SHEET FOR TYPICAL CONSTRUCTION.
26. ALL DISTURBED AREAS SHALL BE GRASSED, FERTILIZED, MULCHED AND MAINTAINED UNTIL A PERMANENT VEGETATIVE COVER IS ESTABLISHED.
27. SOD SHALL BE PLACED IN AREAS WHICH MAY REQUIRE IMMEDIATE EROSION PROTECTION TO ENSURE WATER QUALITY STANDARDS ARE MAINTAINED.
28. ANY DISCHARGE FROM DEWATERING ACTIVITY SHALL BE FILTERED AND CONVEYED TO THE OUTFALL IN A MANNER WHICH PREVENTS EROSION AND TRANSPORTATION OF SUSPENDED SOLIDS TO THE RECEIVING OUTFALL.
29. DEWATERING PUMPS SHALL NOT EXCEED THE CAPACITY OF THAT WHICH REQUIRES A CONSUMPTIVE USE PERMIT FROM THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT.
30. ALL DISTURBED AREAS TO BE STABILIZED THROUGH COMPACTION, SILT SCREENS, HAY BALES, AND GRASSING. ALL FILL SLOPES 3:1 OR STEEPER TO RECEIVE STAKED SOLID SOD.
31. ALL DEWATERING, EROSION, AND SEDIMENT CONTROL TO REMAIN IN PLACE AFTER COMPLETION OF CONSTRUCTION AND REMOVED ONLY WHEN AREAS HAVE STABILIZED.
32. THIS PLAN INDICATES THE MINIMUM EROSION AND SEDIMENT MEASURES REQUIRED FOR THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR MEETING ALL APPLICABLE RULES, REGULATIONS AND WATER QUALITY GUIDELINES AND MAY NEED TO INSTALL ADDITIONAL CONTROLS.
33. THE CONTRACTOR SHALL BE REQUIRED TO RESPOND TO ALL WATER MANAGEMENT DISTRICT INQUIRIES, RELATIVE TO COMPLIANCE OF SJRWMD FOR EROSION AND SEDIMENTATION CONTROL. THE COST OF THIS COMPLIANCE SHALL BE PART OF THE CONTRACT.



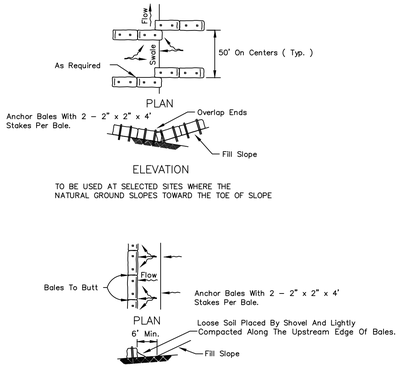
PROTECTION AROUND INLETS OR SIMILAR STRUCTURES



BALES BACKED BY FENCE



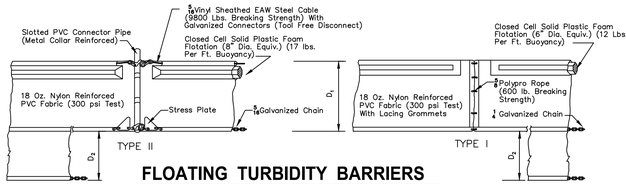
DITCH INSTALLATIONS AT DRAINAGE STRUCTURES



BARRIERS FOR FILL SLOPES

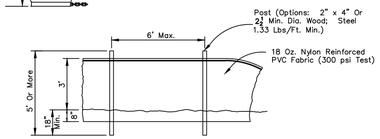
HAY BALE LOCATION

(D-901)
N.T.S.

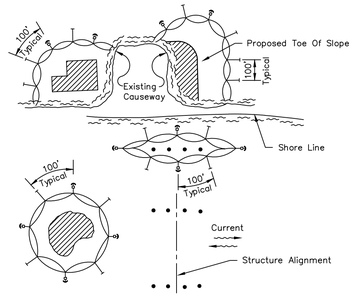


FLOATING TURBIDITY BARRIERS

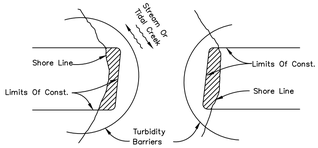
NOTICE:
COMPONENTS OF TYPES I & TYPE II MAY BE SIMILAR OR IDENTICAL TO PROPRIETARY DESIGNS. ANY INFRINGEMENT ON THE PROPRIETARY RIGHTS OF THE DESIGNER SHALL BE THE SOLE RESPONSIBILITY OF THE USER. SUBSTITUTIONS FOR TYPES I AND II SHALL BE AS APPROVED BY THE ENGINEER.



STAKED TURBIDITY BARRIER



LEGEND
- Pile Locations
- Dredge Or Fill Area
- Mooring Buoy w/Anchor
- Anchor
- Barrier Movement Due To Current Action



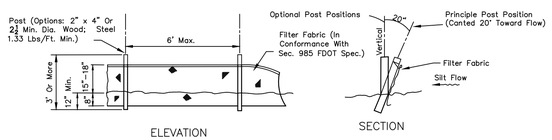
Note:
Turbidity barriers for flowing streams and tidal creeks may be either floating, or staked types or any combinations of types that will suit site conditions and meet erosion control and water quality requirements. The barrier type(s) will be at the Contractors option unless otherwise specified in the plans, however payment will be under the contract lump sum price established in the bid proposal for Erosion & Sediment Control Posts in staked turbidity barriers to be installed in vertical position unless otherwise directed by the Engineer.

NOTES:
1. Turbidity barriers are to be used in all permanent bodies of water regardless of water depth.
2. Number and spacing of anchors dependent on current velocities.
3. Deployment of barrier around pile locations may vary to accommodate construction operations.
4. Navigation may require segmenting barrier during construction operations.
5. For additional information see Section 104 of the FDOT Standard Specifications.

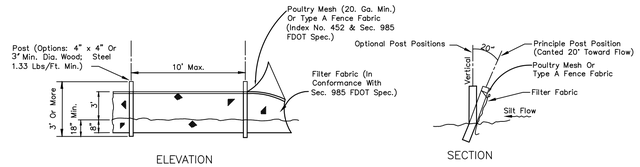
TURBIDITY BARRIER APPLICATIONS

TURBIDITY BARRIERS

(D-907)
N.T.S.

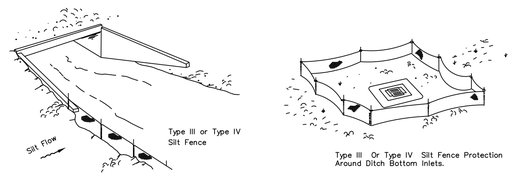


TYPE III SILT FENCE

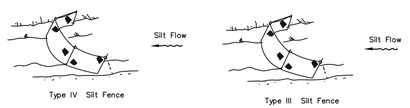


Note: Silt Fence to be paid for under the contract lump sum price for Erosion and Sediment Control.

TYPE IV 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.

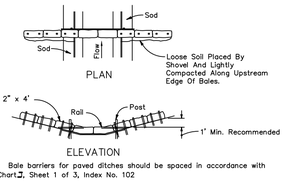


Note: Spacing for Type III & TYPE IV Fence to be in accordance with Chart 1, Sheet 1 of 3, FDOT Index No. 102 and ditch installations at drainage structures Sheet 2 of 3, FDOT Index No. 102.

SILT FENCE APPLICATIONS

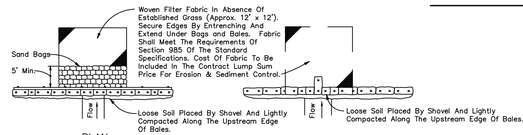
SILT FENCE TYPE III & IV

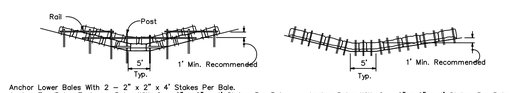
(D-908)
N.T.S.



Spacing: Bale barriers for paved ditches should be spaced in accordance with Chart 2, Sheet 1 of 3, Index No. 102

BARRIER FOR PAVED DITCH





Application and Spacing: The use of Types I & II bale barriers should be limited to the conditions outlined in Chart 1, Sheet 1 of 3, Index No. 102

TYPE II TYPE I

BARRIER FOR UNPAVED DITCHES

WHERE FDOT SPECS AND INDEX ARE REFERENCED, PLEASE REFER TO FDOT ROADWAY & TRAFFIC DESIGN STANDARDS, AND FDOT STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION.

HAY BALE BARRIERS TYPE I & II

(D-912)
N.T.S.

NOTE:

ANGELA B. BRYAN LICENSE No. 56730 STATE OF FLORIDA PROFESSIONAL ENGINEER

DATE:
ANGELA BRYAN
PE NO. 56730

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: ABB
DRAWN BY: SLD
SHEET CHK'D BY: ABB
CROSS CHK'D BY: I POLEMATIDIS
APPROVED BY: D PRAH
DATE: DECEMBER 2020

CDM Smith
4651 Salisbury Road, Suite 420
Jacksonville, FL 32256
Tel: (904) 731-7109
FL COA No. EB-0000020

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

JEA

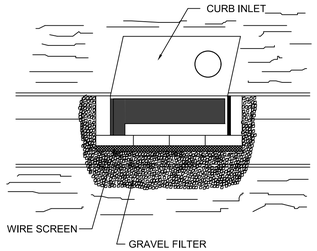
RIVERTOWN WATER TREATMENT PLANT PROJECT

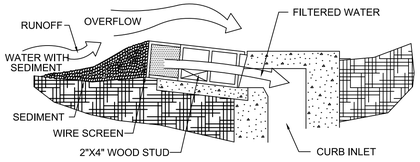
RAW WATER MAIN
EROSION & SEDIMENT CONTROL DETAILS

PROJECT NO. 6103-237938
FILE NAME: C001STPP

SHEET NO.
D-13

ISSUED FOR BID



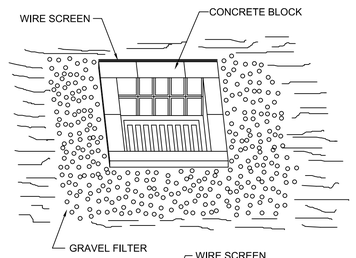


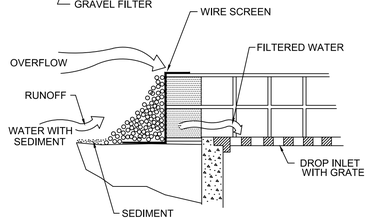
SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE AN OVERFLOW CAPABILITY IS NECESSARY TO PREVENT EXCESSIVE PONDING IN FRONT OF THE STRUCTURE.

BLOCK & GRAVEL CURB INLET SEDIMENT FILTER

(D-902)
N.T.S.





SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY FLOWS ARE EXPECTED AND WHERE AN OVERFLOW CAPACITY IS NECESSARY TO PREVENT EXCESSIVE PONDING AROUND THE STRUCTURE.

BLOCK & GRAVEL DROP INLET SEDIMENT FILTER

(D-904)
N.T.S.

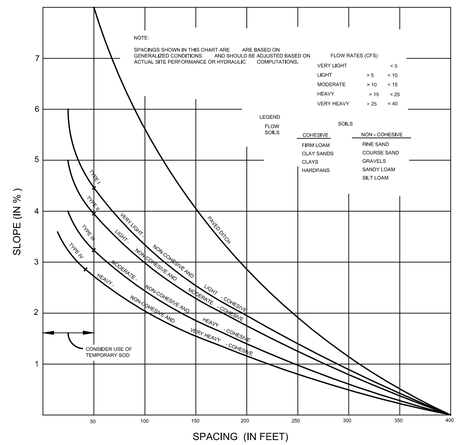
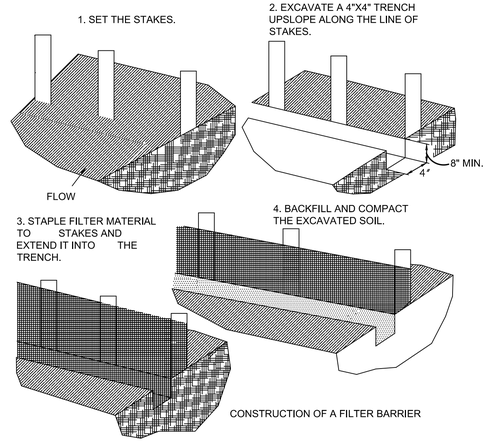


CHART I

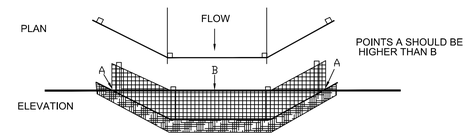
RECOMMENDED SPACING FOR TYPE I AND TYPE II HAY BALE BARRIERS, AND TYPE III AND TYPE IV SILT FENCES AND PAVED DITCH HAY BALE BARRIERS

SPACING RECOMMENDATION FOR SILT FENCES & HAY BALES

(D-906)
N.T.S.



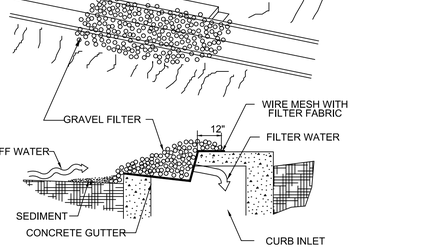
CONSTRUCTION OF A FILTER BARRIER



PROPER PLACEMENT OF A FILTER BARRIER IN A DRAINAGE WAY

FILTER BARRIER CONSTRUCTION DETAIL

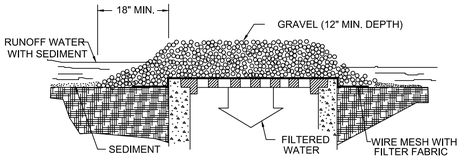
(D-910)
N.T.S.



GRAVEL CURB INLET SEDIMENT FILTER

SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE PONDING IN FRONT OF THE STRUCTURE IS NOT LIKELY TO CAUSE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.



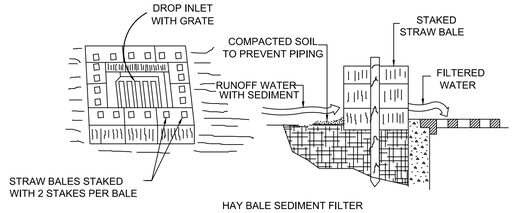
GRAVEL AND WIRE MESH DROP INLET SEDIMENT FILTER

SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY CONCEN- TRATED FLOWS ARE EXPECTED, BUT NOT WHERE PONDING AROUND THE STRUCTURE MIGHT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

GRAVEL INLET SEDIMENT TRAP

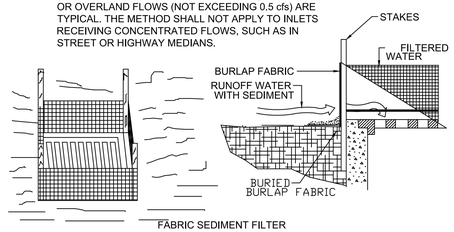
(D-903)
N.T.S.



HAY BALE SEDIMENT FILTER

SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPES NO GREATER THAN 5 PERCENT) WHERE SHEET OR OVERLAND FLOWS (NOT EXCEEDING 0.5 cfs) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS, SUCH AS IN STREET OR HIGHWAY MEDIANS.



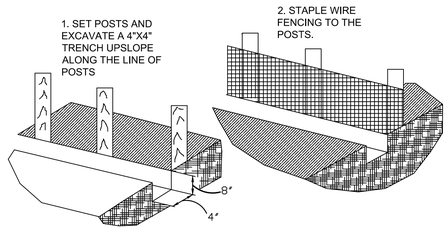
FABRIC SEDIMENT FILTER

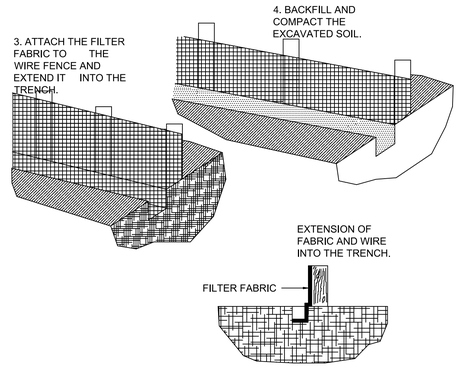
SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPES NO GREATER THAN 5 PERCENT) WHERE SHEET OR OVERLAND FLOWS (NOT EXCEEDING 0.5 cfs) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS. SUCH AS IN STREET OR HIGHWAY MEDIANS.

DROP INLET SEDIMENT TRAP

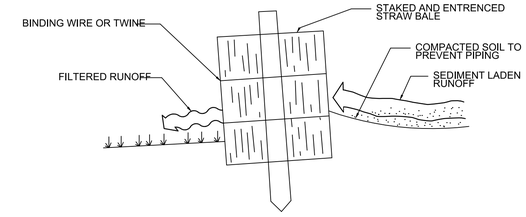
(D-905)
N.T.S.





CONSTRUCTION DETAILS FOR SILT FENCES

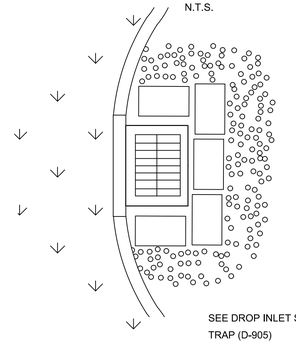
(D-909)
N.T.S.



CROSS-SECTION OF A PROPERLY INSTALLED STRAW BALE

STAKED HAY BALE

(D-911)
N.T.S.



SEE DROP INLET SEDIMENT TRAP (D-905)

ERECT SEDIMENT BARRIERS AT CATCH BASINS (TYPICAL)

N.T.S.

ANGELA B. BRYAN LICENSE No. 56730 STATE OF FLORIDA PROFESSIONAL ENGINEER

DATE:
ANGELA BRYAN
PE NO. 56730

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: ABB
DRAWN BY: SLD
SHEET CHK'D BY: ABB
CROSS CHK'D BY: I POLEMATIDIS
APPROVED BY: D PRAH
DATE: DECEMBER 2020

CDM Smith
4651 Salisbury Road, Suite 420
Jacksonville, FL 32256
Tel: (904) 731-7109
FL COA No. EB-0000020

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

JEA

RIVERTOWN WATER TREATMENT PLANT PROJECT

RAW WATER MAIN
EROSION & SEDIMENT CONTROL DETAILS

PROJECT NO. 6103-237938
FILE NAME: C001STPP

SHEET NO.
D-14

ISSUED FOR BID