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TRAVIS FIELD WATER RECLAMATION FACILITY FORCE MAIN

PREPARED FOR:

MAYOR AND ALDERMAN OF THE CITY OF SAVANNAH

MAYOR

VAN R. JOHNSON, II

ALDERMEN

KESHA GIBSON-CARTER — ALICIA MILLER BLAKELY
BERNETTA B. LANIER — DETRIC LEGGETT
LINDA WILDER-BRYAN — NICK PALUMBO
DR. ESTELLA EDWARDS SHABAZZ — KURTIS PURTEE

CITY MANAGER

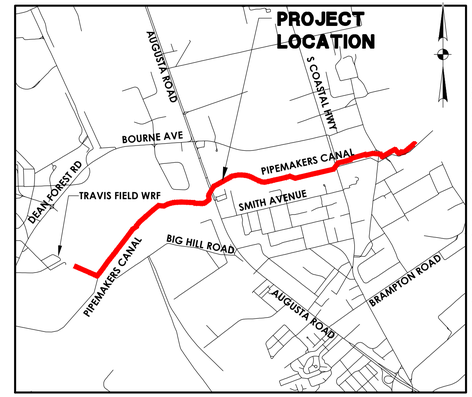
PAT MONAHAN

ISSUED FOR BIDS
NOVEMBER 2020

J-27788.0000

PREPARED BY:

THOMAS & HUTTON



VICINITY MAP
SCALE: 1" = 3000'

TRAVIS FIELD WATER RECLAMATION FACILITY FORCE MAIN
J-27788.0000
10-2-19

GEORGIA REGISTERED No. 26741 PROFESSIONAL ENGINEER FRED SORORIAN

BID SET - NOT FOR CONSTRUCTION

REVISION HISTORY

REV. NO.	REVISION	BY	DATE
0	ISSUED FOR BIDS	CDR	11-2020

SUBMITTAL HISTORY

SUBMITTED TO	DATE

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GENERAL NOTES:

1. MAPPING AND TOPOGRAPHY SHOWN HEREIN INFORMATION BASED UPON INFORMATION PREPARED BY THOMAS & HUTTON, GDOT AND SUBCONTRACTORS TO GDOT, INCLUDING THE LOCATION OF SUBSURFACE UTILITIES.
2. ALL ELEVATIONS REFER TO NAVD 88.
3. SUPPLEMENTAL TOPOGRAPHIC INFORMATION PROVIDED BY THOMAS & HUTTON ENGINEERING COMPANY, PROJECT NO. 27788.0000.
4. THE CONTRACTOR SHALL NOT BEGIN CONSTRUCTION UNTIL THE PROPER PERMITS HAVE BEEN ISSUED.
5. ALL WORK SHALL CONFORM TO APPLICABLE STATE, COUNTY, AND MUNICIPAL REQUIREMENTS AND CODES.
6. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES BEFORE WORK COMMENCES, VERIFY THE SIZE AND LOCATIONS OF ALL UTILITIES WITHIN THE PROJECT LIMITS, AND NOTIFY THE ENGINEER OF CONFLICTS OR VARIANCES TO THE PLANS PRIOR TO BEGINNING WORK OR PURCHASE OF MATERIALS.
7. CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH LOCAL UTILITY COMPANIES. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION AND ANY NECESSARY REPAIRS TO EXISTING UTILITY LINES.
8. THE CONTRACTOR SHALL IMMEDIATELY REPAIR ANY DAMAGE TO EXISTING UTILITIES AT THE SOLE EXPENSE OF THE CONTRACTOR.
9. CONTACT THE ONE CALL LOCATE LINE AT 1-800-282-7411 A MINIMUM OF SEVENTY-TWO (72) HOURS PRIOR TO COMMENCING OF CONSTRUCTION ACTIVITIES FOR LOCATION OF CITY WATER AND SEWER LINES, AND OTHER UTILITIES.
10. ALL UTILITY POLES ADJACENT TO PROPOSED CONSTRUCTION MUST BE SECURED PRIOR TO ANY ADJACENT DISTURBANCE AND THE CONSTRUCTION PROCEDURE MUST BE APPROVED BY THE UTILITY COMPANY.
11. ALL SIGNS, MAIL BOXES, SHRUBBERY, FENCES, LANDSCAPING OR EXISTING STRUCTURES INTERFERING WITH CONSTRUCTING SHALL BE REMOVED AND REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
12. CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY BRACING, SHEETING AND DEWATERING TO COMPLETE THE PROJECT, PROTECT THE CONSTRUCTION WORKERS AND ALL ADJACENT STRUCTURES, TREES, LANDSCAPING, AND IS RESPONSIBLE FOR ALL REPAIR AND COST TO RETURN AREA TO ORIGINAL CONDITION.
13. THE CONTRACTOR SHALL PROTECT AND SAVE ALL SPECIMEN TREES, AND/OR ANY TREE DESIGNATED ON THE PLANS OR BY THE OWNER. CONTRACTOR TO PROTECT AND SAVE TREES BY INSTALLING 4-FOOT-HIGH TEMPORARY CHAIN LINK FENCE AROUND THE TREE. FENCING SHALL CONFORM TO CITY OF SAVANNAH TREE PROTECTION DETAIL.
14. TREE PROTECTION BARRICADES, IF REQUIRED, SHALL BE INSTALLED PRIOR TO ANY CLEARING ACTIVITY AND MAINTAINED UNTIL INSTRUCTED BY THE OWNER OR ENGINEER TO REMOVE THEM.
15. IT IS THE OBLIGATION OF THE CONTRACTOR TO MAKE THEIR OWN INTERPRETATION OF ALL SURFACE AND SUBSURFACE DATA AVAILABLE AS TO THE NATURE AND EXTENT OF THE MATERIALS TO BE EXCAVATED, WASTED, GRADED, AND COMPACTED. THE INFORMATION SHOWN ON THESE PLANS IN NO WAY GUARANTEES THE AMOUNT OR NATURE OF THE MATERIAL TO BE ENCOUNTERED.
16. THE CONTRACTOR WILL NOTIFY THE ENGINEER IF UNSUITABLE MATERIAL IS DISCOVERED PRIOR TO BEGINNING ANY REMOVAL OPERATION.
17. ALL SUITABLE MATERIAL EXCAVATED DURING UTILITY CONSTRUCTION SHALL BE USED ON SITE. ANY EXCESS MATERIAL SUITABLE OR UNSUITABLE SHALL BE DISPOSED OF OFF-SITE AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISPOSAL OF ALL CONSTRUCTION DEBRIS.
18. THE CONTRACTOR SHALL GRASS ALL AREAS DISTURBED BY CONSTRUCTION IMMEDIATELY AFTER THE DISTURBANCE.
19. CONTROL OF STORMWATER THROUGHOUT THE CONSTRUCTION PERIOD, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE EXISTING DRAINAGE CONVEYANCES SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. ALL PENALTIES, CLAIMS AND FEES IMPOSED ON THE OWNER AS A RESULT OF DAMAGE CAUSED BY ACTIONS OF THE CONTRACTOR, THEIR EMPLOYEES OR SUBCONTRACTORS SHALL BE BORNE IN FULL BY THE CONTRACTOR.
20. THE CONTRACTOR SHALL COORDINATE DEMOLITION AND IMPAIRMENTS TO MINIMIZE TRAFFIC INTERFERENCE AND OPERATIONS OF FACILITIES.
21. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL DEVICES AND MEASURES AS NECESSARY TO MEET THE REQUIREMENTS OF THE GEORGIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (GAMUTCD). CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN TO OWNER FOR REVIEW AND ACCEPTANCE PRIOR TO STARTING CONSTRUCTION.
22. "AS-BUILT" DRAWINGS SHALL BE PROVIDED BY THE CONTRACTOR AND MUST BE SIGNED BY A REGISTERED LAND SURVEYOR. THE CONTRACTOR SHALL PROVIDE A SET OF "MARKED UP" AS BUILT DRAWINGS AS WELL AS A CD/DVD CONTAINING THE AS BUILT INFORMATION IN ELECTRONIC FORM. AT A MINIMUM THE AS BUILT INFORMATION SHALL INCLUDE MANHOLE LOCATIONS, FRAME AND INVERT ELEVATIONS, DIAMETER, THE LOCATIONS OF SEWER PIPE, STEEL CASING, RIP-RAP, SLEEVES, PAVING AND GRAVEL REPLACEMENT, STORM SEWER REPLACEMENT AND ALL OTHER CONSTRUCTION INSTALLATIONS. ALL OF THIS SHALL BE VERIFIED BY A LAND SURVEYOR REGISTERED IN THE STATE OF GEORGIA.

SEWER COLLECTION/FORCE MAIN NOTES:

THE FOLLOWING NOTES ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR. THEY ARE BASED UPON THE CITY OF SAVANNAH WATER AND SEWER PLANNING AND ENGINEERING (WSPE) DEPARTMENT STANDARD SPECIFICATIONS AND DETAILS AS PROVIDED ON THE CITY'S WEBSITE http://www.savannahga.gov/513/Water-Sewer-Planning-Engineering. THE CONTRACTOR SHALL REVIEW THESE STANDARDS AND DETAILS ALONG WITH THE SPECIFICATION AND DETAILS PROVIDED AS PART OF THESE CONTRACT DOCUMENTS BEFORE INITIATING THE WORK OF THIS CONTRACT. ALL CONSTRUCTION SHALL BE IN STRICT ACCORDANCE WITH CURRENT CITY OF SAVANNAH SPECIFICATIONS AND REQUIREMENTS. **REFER TO CITY'S STANDARD SPECIFICATION SECTION 02554 WASTEWATER COLLECTION SYSTEM**.

1. THE CONTRACTOR SHALL COORDINATE THE RELOCATION, RECONNECTION, AND THE ABANDONMENT OF ALL SEWER UTILITIES WITH THE CITY OF SAVANNAH SEWER CONVEYANCE AND WATER DISTRIBUTION DEPARTMENT A MINIMUM OF 72 HOURS PRIOR TO CONNECTION ACTIVITIES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL RECONNECTION ACTIVITIES WITH THE CITY OF SAVANNAH, CHATHAM COUNTY, GDOT, ENGINEER, AND AFFECTED PROPERTY OWNERS.
3. ALL SEWER LATERALS NOT BEING USED SHALL BE IDENTIFIED AND CAPPED AT THE MAIN WHERE POSSIBLE.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING PROTECTIVE COATING PER CITY'S STANDARD SPECIFICATION SECTION 02555 PROTECTIVE COATING FOR EXISTING AND NEW CONCRETE AND MASONRY SANITARY SEWER STRUCTURES.
5. THE WORK SHALL BE CONDUCTED IN SUCH A MANNER TO PREVENT ANY INTERRUPTION IN SERVICE. THE EXISTING SEWER COLLECTION AND FORCE MAIN SYSTEMS IN SERVICE SHALL BE KEPT IN SERVICE UNTIL THE NEW SYSTEMS HAS BEEN CONSTRUCTED, TESTED, AND ACCEPTED BY THE CITY OF SAVANNAH WATER RESOURCES SEPARTMENT .
6. PVC PIPE FOR GRAVITY SEWER SHALL BE SDR 26 POLYVINYL CHLORIDE PLASTIC AND SHALL MEET ALL REQUIREMENTS OF THE ASTM D-3034 FOR DIAMETERS 4" THROUGH 15", LATEST REVISION OR ASTM F679 FOR DIAMETERS 18" THROUGH 48", LATEST REVISION. PVC PIPE SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D-2321, LATEST REVISION. ALL PIPES SHALL BE SUITABLE FOR USE AS A GRAVITY SEWER CONDUIT AND SHALL BE GREEN IN COLOR. PROVISIONS MUST BE MADE FOR CONTRACTION AND EXPANSION AT EACH JOINT WITH A RUBBER RING. STANDARD LAYING LENGTHS SHALL BE FOURTEEN (14) FEET OR TWENTY (20) FEET, + 1-INCH, FOR ALL SIZES. FITTINGS SHALL MEET THE SAME SPECIFICATION REQUIREMENTS AS THE PIPE.
7. PVC PIPE FOR FORCE MAIN SHALL BE PVC SDR 18, C-900, DUCTILE IRON PIPE SHALL BE D.I. PRESSURE CLASS 350. ALL PIPE SHALL CONFORM TO ASTM D-2241 AND BE INSTALLED IN ACCORDANCE WITH ASTM D-2321. PVC PIPE FOR FORCE MAINS SHALL BE GREEN IN COLOR AND SHALL BE FURNISHED IN NOMINAL 18 TO 20 FOOT LAYING LENGTHS UNLESS OTHERWISE NOTED.
8. ALL PIPE, FITTINGS, VALVES, AND OTHER APPURTENANCES SHALL BE EXAMINED CAREFULLY FOR DAMAGE AND OTHER DEFECTS IMMEDIATELY BEFORE INSTALLATION. DAMAGED OR DEFECTIVE MATERIALS WILL NOT BE ACCEPTED OR INSTALLED.
9. RESTRAINED JOINTS, WHERE SHOWN OR NOTED, FOR PIPE, VALVES AND FITTINGS SHALL BE MECHANICAL JOINTS WITH DUCTILE IRON RETAINER GLANDS EQUIVALENT TO "MEGALUG" OR PUSH-ON TYPE JOINTS EQUIVALENT TO "LOCK-RING," "TR FLEX", OR "SUPER LOCK" AND SHALL HAVE A MINIMUM RATED WORKING PRESSURE OF 350 PSI. MECHANICAL JOINT RETAINER GLANDS SHALL COMPLY WITH THE MANUFACTURER'S SPECIFICATIONS FOR THE PIPE MATERIAL (DUCTILE IRON VS. PVC). THE JOINTS SHALL BE IN ACCORDANCE WITH THE APPLICABLE PORTIONS OF ANSI/AWWA C111/A21.11.
10. TRACER WIRE SHALL BE INSTALLED ON ALL FORCE MAINS, WITH DIRECT BURIAL CONNECTORS, AND PROVIDE CONTINUOUS ELECTRIFIED CONDUCTIVITY. AREA MARKERS SHALL BE AT LEAST EVERY 500 FEET WITH TRACER WIRE ATTACHED, UNLESS A MANHOLE IS AVAILABLE. A SIX (6) FOOT LEAD ATTACHED TO THE INSIDE OF THE RING AND COVER SHALL BE PROVIDED AT MANHOLES. ON LATERALS, THE TRACER WIRE SHALL CONNECT THE CLEAN-OUT TO THE GRAVITY SEWER.
11. ALL FORCE MAINS SHALL HAVE OMNI-BALLS OR EQUAL INSTALLED AT ALL FITTINGS AND BENDS. OMNI-BALLS SHALL BE PLACED ALONG ALL STRAIGHT RUNS AT MAXIMUM 400 LINEAL FOOT (LF) INTERVALS. THE MAXIMUM DEPTH OF OMNI-BALLS SHALL BE 24-INCHES BELOW THE FINISHED GRADE.
12. PRIOR TO MANDREL TESTS, TELEVISING, AND BEFORE ACCEPTANCE OF THE GRAVITY SEWER SYSTEMS AS WELL AS THE FORCE MAINS, ALL SEWER LINES SHALL BE CLEANED TO THE SATISFACTION OF THE ENGINEER. WHERE ANY OBSTRUCTION OCCURS, THE CONTRACTOR WILL BE REQUIRED TO CLEAN THE SEWERS BY FLUSHING AND BY MEANS OF ROD AND SWABS OR OTHER INSTRUMENTS. CLEANING OF NEW SEWERS IS TO BE COMPLETED WITHOUT IMPACTING THE EXISTING SEWER SYSTEM; DEBRIS/FOREIGN MATERIAL FROM THE NEW LINE (I.E. DIRT, SAND, AND TRASH) SHALL NOT BE DISCHARGED INTO THE EXISTING SYSTEM.
13. ALL SEWER PIPES SHALL BE TESTED PER PART 2.16 CITY'S STANDARD SPECIFICATION SECTION 02554 WASTEWATER COLLECTION SYSTEM.
14. WHEN THE WORK OR PIPE LAYING IS SUSPENDED, EITHER FOR THE NIGHT OR AT OTHER TIMES, THE END OF THE GRAVITY SEWER OR FORCE MAIN PIPE MUST BE CLOSED WITH A WATER TIGHT COVER. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR KEEPING THE GRAVITY SEWER OR FORCE MAIN FREE FROM OBSTRUCTION. PLUGS SHALL REMAIN IN PIPE ENDS UNTIL ALL WATER IS REMOVED FROM THE TRENCH.
15. ALL MANHOLE TOPS ARE APPROXIMATE. THE CONTRACTOR SHALL DETERMINE AND SET MANHOLE TOPS RELATIVE TO FINISHED GRADES AS SHOWN ON THE DETAIL.

CASING PIPE MATERIALS AND INSTALLATION

1. CASING SHALL BE STEEL PIPE CONFORMING TO THE REQUIREMENTS OF ASTM DESIGNATION A–139. THE MINIMUM CASING PIPE SIZE AND WALL THICKNESS SHALL BE AS SHOWN HEREIN. FOR SIZES NOT INCLUDED, OR FOR SPECIAL DESIGN CONSIDERATIONS, APPROVAL SHALL BE OBTAINED FROM THE ENGINEER OF RECORD.
2. FOR CROSSING OF STATE ROADS, CASING MATERIALS AND INSTALLATION SHALL CONFORM TO GADOT STANDARDS, LATEST EDITION, OR AS MINIMUM SHALL COMPLY WITH THE FOLLOWING TABLES:

Minimum Steel Pipe Casing Dimensions for Ductile Iron Pipe

Carrier Pipe	Steel Casing Pipe Size		Highway & DOT Bores < 200 L.F.		Highway & DOT Bores > 200 L.F.		Railroad Bores		
							Minimum Wall Thickness (in)		
I.D. (Nom.)	Pressure System	Gravity System	Minimum Wall Thickness (in)	Weight Class	Minimum Wall Thickness (in)	Weight Class	Pressure	Gravity	Weight Class
4	12	16	0.375	STD	0.500	XS	0.500	0.500	XS
6	16	20	0.375	STD	0.500	XS	0.500	0.500	XS
8	18	24	0.375	STD	0.500	XS	0.500	0.500	XS
10	20	24	0.375	STD	0.500	XS	0.500	0.500	XS
12	24	30	0.375	STD	0.500	XS	0.500	0.500	XS
16	30	36	0.375	STD	0.500	XS	0.500	0.532	XS
18	36	48	0.375	STD	0.500	XS	0.532	0.688	XS
24	38	48	0.375	STD	0.500	XS	0.532	0.688	XS
30	48	54	0.375	STD	0.500	XS	0.688	0.781	XS
36	54	60	0.375	STD	0.500	XS	0.781	0.844	XS

Minimum Steel Pipe Casing Dimensions for Plastic Pipe

Carrier Pipe	Steel Casing Pipe Size		Highway & DOT Bores < 200 L.F.		Highway & DOT Bores > 200 L.F.		Railroad Bores		
							Minimum Wall Thickness (in)		
I.D. (Nom.)	Pressure System	Gravity System	Minimum Wall Thickness (in)	Weight Class	Minimum Wall Thickness (in)	Weight Class	Pressure	Gravity	Weight Class
4	8	16	0.375	STD	0.500	XS	0.500	0.500	XS
6	10	20	0.375	STD	0.500	XS	0.500	0.500	XS
8	12	24	0.375	STD	0.500	XS	0.500	0.500	XS
10	16	24	0.375	STD	0.500	XS	0.500	0.500	XS
12	16	30	0.375	STD	0.500	XS	0.500	0.500	XS
16	20	36	0.375	STD	0.500	XS	0.500	0.532	XS
18	24	48	0.375	STD	0.500	XS	0.532	0.688	XS
24	30	48	0.375	STD	0.500	XS	0.532	0.688	XS
30	36	54	0.375	STD	0.500	XS	0.688	0.781	XS
36	42	60	0.375	STD	0.500	XS	0.781	0.844	XS

3. WASTEWATER AND WATER CARRIER PIPES TO BE INSTALLED WITHIN THE SPECIFIED CASINGS SHALL BE EQUIPPED WITH RESTRAINED JOINT CONNECTIONS. PIPE AND FITTINGS SHALL COMPLY WITH THE APPLICABLE PROVISIONS OF THESE STANDARDS, WITH MINIMUM DUCTILE IRON PIPE CLASS 350.
4. NON–CORROSIVE CASING INSULATORS SHALL BE USED. THE CASING RUNNER HEIGHT SHALL BE LARGE ENOUGH SO THAT IT DOES NOT INTERFERE WITH THE PIPE–RESTRAINED JOINTS. STAINLESS STEEL NUTS AND BOLTS SHALL BE USED. INSTALLATION AND SPACING OF CASING INSULATORS SHALL BE AS REQUIRED BY THE MANUFACTURER.
5. FOR SIZES OUTSIDE OF THESE RANGES, CONTACT ENGINEER OF RECORD.

SURVEY NOTES:

1. FIELD EQUIPMENT USED FOR THIS SURVEY: GEOMAX ZOOM90 R2
2. THE FIELD DATA UPON WHICH THIS MAP OR PLAT IS BASED HAS A CLOSURE RATIO OF 1 FOOT IN 63,292 FEET, AN ANGULAR ERROR OF 0.39" PER ANGLE POINT, AND WAS ADJUSTED USING THE COMPASS RULE METHOD.
3. ELEVATIONS ARE BASED ON NAVD88, UNLESS OTHERWISE NOTED.
4. COORDINATES AND DIRECTIONS ARE BASED ON GEORGIA STATE PLANE COORDINATE SYSTEM (NAD83), EAST ZONE.
5. ACCORDING TO F.I.R.M. MAP NO. 13051C, PANEL 0135H, REVISED AUGUST 16, 2018, MAP NO. 13051C, PANEL 0132G, REVISED AUGUST 16, 2018, AND MAP NO. 13051C, PANEL 0045G, REVISED AUGUST 16, 2018 THE PROPERTY SHOWN ON THIS PLAT LIES IN ZONE AE (BFE 9, 10 & 11) AND X SHADED.
6. WETLANDS THAT MAY EXIST ON THE PROPERTY ARE UNDER THE JURISDICTION OF THE CORPS OF ENGINEERS AND/OR THE DEPARTMENT OF NATURAL RESOURCES. LOT OWNERS AND THE DEVELOPER ARE SUBJECT TO PENALTY BY LAW FOR DISTURBANCE TO THESE PROTECTED AREAS WITHOUT PROPER PERMIT AND APPROVAL.
7. THE POSITION OF UNDERGROUND UTILITIES SHOWN ON THIS DRAWING IS BASED UPON THE LOCATION OF SURFACE APPURTENANCES AND/OR SURFACE MARKINGS AND SHOULD BE CONSIDERED APPROXIMATE. THE EXACT LOCATION, SIZE, TYPE AND DEPTH OF UNDERGROUND UTILITIES SHOWN HEREON OR ANY OTHER UTILITIES THAT MAY EXIST, CAN ONLY BE DETERMINED VIA AN EXCAVATION OF THE UTILITY.
8. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE SEARCH AND IS SUBJECT TO ANY EASEMENTS AND RESTRICTIONS OF RECORD.
9. THE CERTIFICATION, AS SHOWN HEREON, IS PURELY A STATEMENT OF PROFESSIONAL OPINION BASED ON KNOWLEDGE, INFORMATION AND BELIEF, AND BASED ON EXISTING FIELD EVIDENCE AND DOCUMENTARY EVIDENCE AVAILABLE. THE CERTIFICATION IS NOT AN EXPRESSED OR IMPLIED WARRANTY OR GUARANTEE. WHERE A CONFLICT EXISTS BETWEEN THE RULES OF THE GEORGIA BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND LAND SURVEYORS AND O.C.G.A. 15–6–67, THE REQUIREMENTS OF LAW PREVAIL.

LEGEND

- AIR RELEASE MANHOLE
- BENCHMARK
- CONC. MONUMENT FOUND
- CONTROL POINT
- UNDERGROUND UTILITY LINE MARKER
- POST
- SIGN
- SANITARY MANHOLE
- GRATE INLET
- LIGHT POLE
- POWER POLE
- TELEPHONE MANHOLE

LINE–TYPE LEGEND (BOUNDARIES)

- ADJOINER PROPERTY LINE
- FLOOD ZONE LIMITS
- INTERIOR PARCEL/LOT LINE
- RIGHT OF WAY LINE
- FRESHWATER WETLAND EDGE
- TOP BANK
- BOTTOM BANK
- TOP OF BANK

LINETYPE LEGEND (PLANIMETRICS)

- WOODS LINE
- RAIL ROAD TRACKS
- GUARD RAIL
- DITCH/CREEK CENTER–LINE
- CHAIN LINK/WOODEN FENCE
- ROAD CENTER–LINE

LINE–TYPE LEGEND (UTILITIES)

- UNDERGROUND TELEPHONE LINE
- UNDERGROUND NATURAL GAS LINE
- OVERHEAD POWER LINE
- UNDERGROUND POWER LINE
- SANITARY SEWER FORCE MAIN
- STORM DRAINAGE LINE
- WATER DISTRIBUTION LINE
- GRAVITY SEWER LINE

HATCH PATTERN LEGEND

- RIP–RAP
- CONCRETE PAVEMENT
- FRESHWATER WETLAND (NON–JURISDICTIONAL)
- GRAVEL/EARTH DRIVE

SURVEY REFERENCES:

1. PLAN AND PROFILE SHEET, STATION 163+50 TO 149+00 PIPEMAKERS CANAL WIDENING – PH 2 – SECTION 1, SAVANNAH, CHATHAM COUNTY, GEORGIA, PREPARED FOR CHATHAM COUNTY, GEORGIA BY EMC ENGINEERING SERVICES, INC, DATED JANUARY 2013, PROJECT NO. 10–0107, SHEET 8 OF 27.
2. PLAN AND PROFILE SHEET, STATION 178+50 TO 163+50 PIPEMAKERS CANAL WIDENING – PH 2 – SECTION 1, SAVANNAH, CHATHAM COUNTY, GEORGIA, PREPARED FOR CHATHAM COUNTY, GEORGIA BY EMC ENGINEERING SERVICES, INC, DATED JANUARY 2013, PROJECT NO. 10–0107, SHEET 7 OF 27.
3. RECORD DRAWINGS PIPEMAKER'S CANAL WIDENING PROJECT, PREPARED FOR CHATHAM COUNTY, GEORGIA, PROJECT NO. RFP–96–4–1 FEBRUARY 2003, PREPARED BY EMC ENGINEERING SERVICES, INC, DATED SEPTEMBER 1999.
4. RECORD DRAWINGS PIPEMAKERS CANAL WIDENING PROJECT, PHASE 2 – SECTION 1, EMC PROJECT NO. 10–0107, APRIL 2013PREPARED FOR CHATHAM COUNTY, GEORGIA, PREPARED BY EMC ENGINEERING SERVICES, INC, DATED JANUARY 2013.
5. PLAT SHOWING PROPOSED EASEMENT ACROSS THE PROPERTY OF (NOW OR FORMERLY) SOUTHERN INDUSTRIAL REALTY COMPANY BEING A PART OF A SECTION IN THE S/E PT. TRAVIS FIELD, CHATHAM COUNTY, GEORGIA, PREPARED BY THOMAS & HUTTON ENGINEERING, DATED MAY , 1987.
6. PLAT OF PROPOSED 2.08 ACRE PERMANENT EASEMENT ACROSS THE PROPERTY OF THE GARDEN CITY TERMINAL OF THE GEORGIA PORTS AUTHORITY, PREPARED BY THOMAS & HUTTON ENGINEERING, DATED MAY 6, 1987, RECORDED IN PLAT BOOK 9–P, PAGE 136, CHATHAM COUNTY RECORDS.
7. PLAT OF PROPERTY ACQUISITION FOR PIPEMAKERS CANAL R/W, THROUGH THE LANDS OF THE GEORGIA PORTS AUTHORITY, PREPARED BY EMC ENGINEERING SERVICES, INC, DATED SEPTEMBER 20, 2000.
8. AS BUILT AUGUST, 1972 OF SANITARY SEWAGE TREATMENT IMPROVEMENTS, TRAVIS FIELD, PREPARED BY ERRETT F. GUNN CONSULTING ENGINEERS, INC, DATED MARCH 1970.
9. PIPEMAKERS RELOCATED EASEMENT (PROPOSED), PREPARED BY MOFFATT & NICHOL.
10. CITY OF SAVANNAH, GEORGIA PIPE MAKER'S CANAL EFFLUENT PUMPING AND TRANSMISSION PROJECT, C.I.P. S–803–86, EP GRANT NO. C 130 378–12, PREPARED BY THOMAS & HUTTON ENGINEERING, CO., DATED MARCH 1987.

BID SET - NOT FOR CONSTRUCTION

NO.	ISSUED FOR BIDS / REVISIONS	BY	DATE
0		CDR	11–2020

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50 Park of Commerce Way
Savannah, GA 31405 • 912.234.5300
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TRAVIS FIELD WATER RECLAMATION FACILITY FORCE MAIN

GENERAL NOTES

JOB NO:	J–27788.0000
DATE:	10–2–19
DRAWN:	CDR
DESIGNED:	CDR
REVIEWED:	FS
APPROVED:	FS
SCALE:	1" = 1'

G1.1

GEORGIA REGISTERED PROFESSIONAL ENGINEER
FRED SOROKOPUD

BID SET - NOT FOR CONSTRUCTION

NO.	DESCRIPTION	BY	DATE
0	ISSUED FOR BIDS	CDR	11-2020

THOMAS & HUTTON

50 Park of Commerce Way
Savannah, GA 31405 • 912.234.5300
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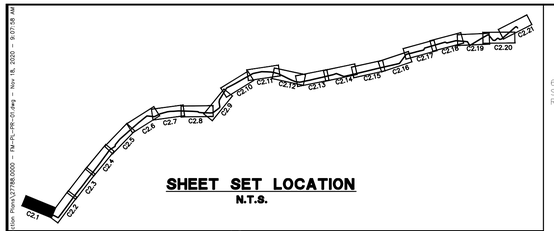
TRAVIS FIELD WATER RECLAMATION FACILITY FORCE MAIN

OVERALL SITE LAYOUT

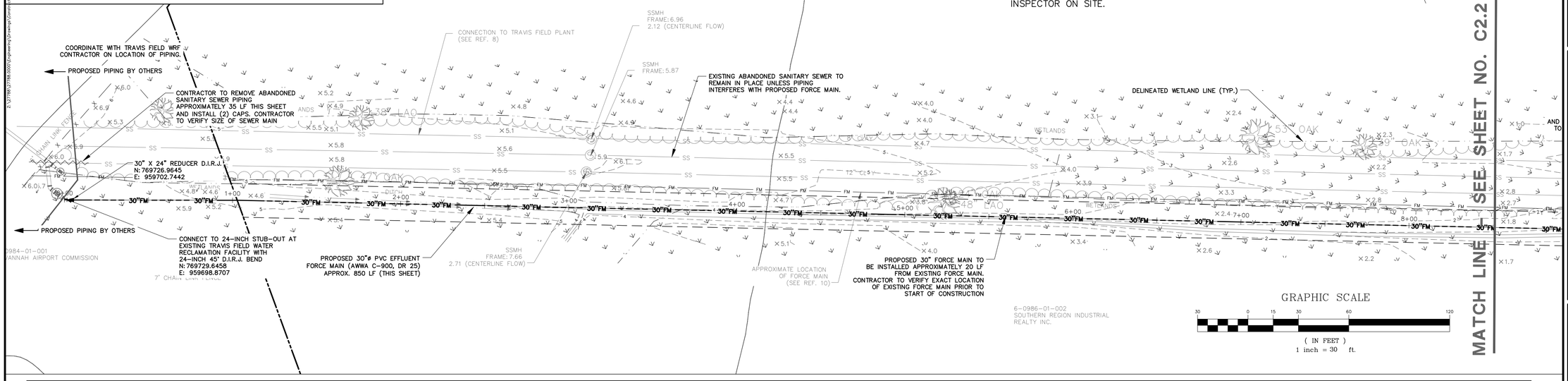
JOB NO:	J-27788.0000
DATE:	10-2-19
DRAWN:	CDR
DESIGNED:	CDR
REVIEWED:	FS
APPROVED:	FS
SCALE:	1" = 500'

C1.1

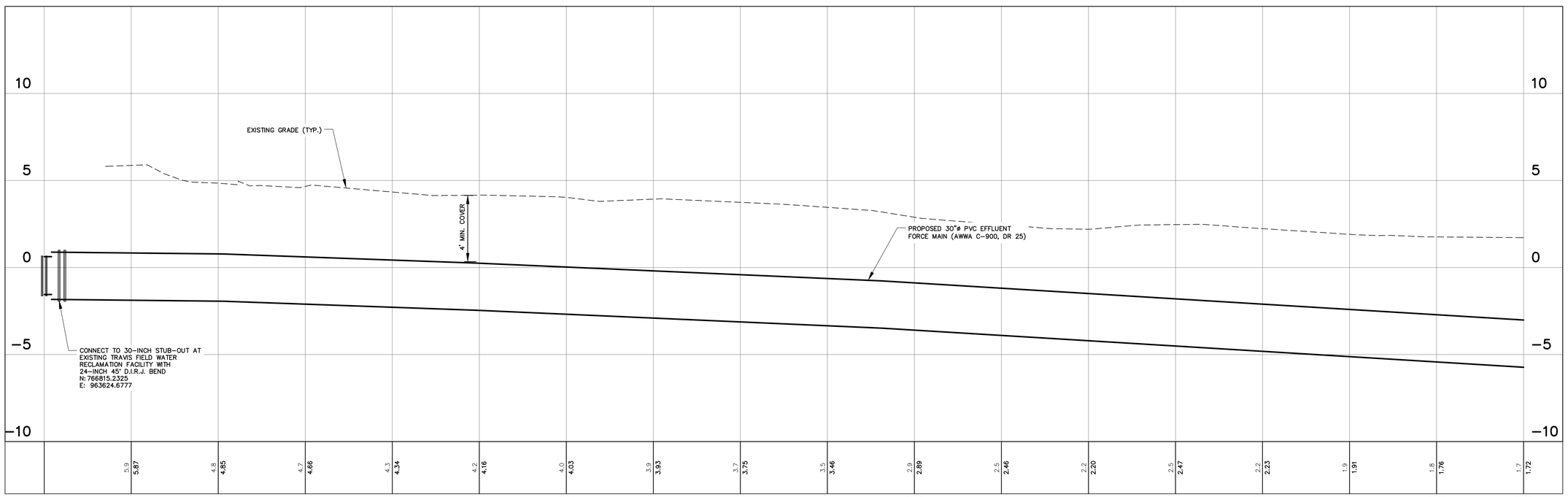


SHEET SET LOCATION
N.T.S.

NOTE:
1. CONTRACTOR TO REMOVE & DISPOSE OF EXISTING GRAVITY OUTFALL LINE INCLUDING PIPING, MANHOLES, AND ANY OTHER STRUCTURE WHICH IS INTERFERING WITH PROPOSED 30–INCH FORCE MAIN AND BACKFILL TO EXISTING GRADE.
2. THE FORCE MAIN SHALL BE PVC (AWWA DR–25) AND SHALL BE GREEN IN COLOR.
3. ALL SHORTER PIECE PIPING (SHORTER THAN FULL LENGTH) IN BETWEEN THE BENDS AND FITTINGS SHALL BE D.I. CLASS 350, AND LINED WITH CEMENT.
4. CONTRACTOR TO CONTACT BOTH RAILROADS (NORFOLK SOUTHERN AND CSX IN ADVANCE OF ANY CONSTRUCTION ACTIVITIES AND COORDINATE FOR FIELD INSPECTOR, LIABILITY INSURANCE, ETC. NO WORK SHALL BE DONE WITHOUT RAILROAD INSPECTOR ON SITE.



GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.



TRAVIS FIELD FORCE MAIN ALIGNMENT–01
STATIONS: 0+00 – 8+50
SCALE: HORZ.: 1" = 30'
VERT.: 1" = 3'

BID SET - NOT FOR CONSTRUCTION

NO.	DATE	BY	REVISIONS
0	11–2020	CDR	ISSUED FOR BIDS

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TRAVIS FIELD WATER RECLAMATION FACILITY FORCE MAIN

FORCE MAIN PLAN & PROFILE

JOB NO:	J–27788.0000
DATE:	10–2–19
DRAWN:	CDR
DESIGNED:	CDR
REVIEWED:	FS
APPROVED:	FS
SCALE:	AS NOTED

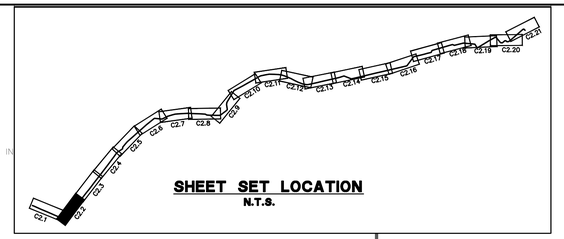
C2.1

MATCH LINE – SEE SHEET NO. C2.1 – STA: 8+50

MATCH LINE – SEE SHEET NO. C2.3 – STA NO. 17+00

NOTE:
1. THE FORCE MAIN SHALL BE PVC (AWWA DR-25) AND SHALL BE GREEN IN COLOR.
2. ALL SHORTER PIECE PIPING (SHORTER THAN FULL LENGTH) IN BETWEEN THE BENDS AND FITTINGS SHALL BE D.I. CLASS 350, AND LINED WITH CEMENT.
3. CONTRACTOR TO CONTACT BOTH RAILROADS (NORFOLK SOUTHERN AND CSX IN ADVANCE OF ANY CONSTRUCTION ACTIVITIES AND COORDINATE FOR FIELD INSPECTOR, LIABILITY INSURANCE, ETC. NO WORK SHALL BE DONE WITHOUT RAILROAD INSPECTOR ON SITE.

NOTE:
1. CONTRACTOR TO INSTALL WOODEN MATTING OVER THE ENTIRE 100-FT ATLANTA GAS LIGHT (AGL) EASEMENT DURING CONSTRUCTION ACTIVITIES TO PROTECT THE EXISTING GAS MAINS FROM HEAVY LOADS OF MACHINERY CROSSING OVER THE EXISTING GAS MAINS.
2. DUE TO THE LIMITS OF DISTURBANCE, CONTRACTOR IS ENCOURAGED TO USE TRENCH SAFETY BOX WHERE IS APPROPRIATE.
3. CONTRACTOR TO CONTACT AGL AND COORDINATE WITH THE FIELD INSPECTOR PRIOR TO ANY WORK IN THE 100-FT EASEMENT



SHEET SET LOCATION
N.T.S.

BENCHMARK
"BENCHTIE" IN 27" LAUREL OAK
EL 3.66
(NAVD 1988)

SSMH
FRAME: 4.27
-0.42 (CENTERLINE FLOW)

SSMH
FRAME: 4.69
-0.18 (CENTERLINE FLOW – FULL)

REMOVE APPROX. 30 LF OF ABANDONED GRAVITY SEWER AND INSTALL (2) CAPS. CONTRACTOR TO VERIFY SEWER MAIN SIZE PRIOR TO CONSTRUCTION

REMOVE APPROX. 30 LF OF ABANDONED GRAVITY SEWER AND INSTALL (2) CAPS. CONTRACTOR TO VERIFY SEWER MAIN SIZE PRIOR TO CONSTRUCTION.

REMOVE APPROX. 30 LF OF ABANDONED GRAVITY SEWER AND INSTALL (2) CAPS. CONTRACTOR TO VERIFY SEWER MAIN SIZE PRIOR TO CONSTRUCTION

CONTRACTOR TO VERIFY LOCATION OF EXISTING FORCE MAIN

4-INCH AIR RELEASE VALVE PEDESTAL ASSEMBLY (SEE DETAIL)
N: 769355.2568
E: 960688.2041

EXISTING PIPELINE MARKER (TYP.)

AGL GAS EASEMENT LINE

AGL 12" GAS MAIN CROSSING
N: 769494.0582
E: 960798.8345
LAT: N032.111850
LONG: W081.182760

AGL 10" GAS MAIN CROSSING
N: 769467.3614
E: 960778.8239
LAT: N032.111777
LONG: W081.182826

100' ATLANTA GAS LIGHT COMPANY EASEMENT (APPROX. LOCATION)

MINIMUM 18-INCH SEPARATION BETWEEN EXISTING (2) 42" DRAINAGE AND 30" EFFLUENT FORCE MAIN

30" 45° BEND D.I.R.J.
N: 769549.4892
E: 960840.6376

30" 45° BEND D.I.R.J.
N: 769558.5186
E: 960847.4721

DELINEATED WETLAND LINE (TYP.)

PIPEMAKERS CANAL R/W LINE

WETLANDS

5'x5' R/W CMF

118' AGL ENCROACHMENT CROSSING

GRAVEL DRIVE

30" 45° BEND D.I.R.J.
N: 769314.1899
E: 960656.0279

30" 45° BEND D.I.R.J.
N: 769315.4441
E: 960659.1868

30" 45° BEND D.I.R.J. (VERTICAL)
N: 769336.4450
E: 960673.8304

30" 45° BEND D.I.R.J. (VERTICAL)
N: 769329.6333
E: 960669.2160

PROTECT EXISTING UNDERGROUND GAS MAINS. (TYP. 2) CONTACT AGL PRIOR TO ANY EXCAVATION IN THE AGL RIGHT-OF-WAY

30" 45° BEND D.I.R.J.
N: 769916.8325
E: 960815.9050

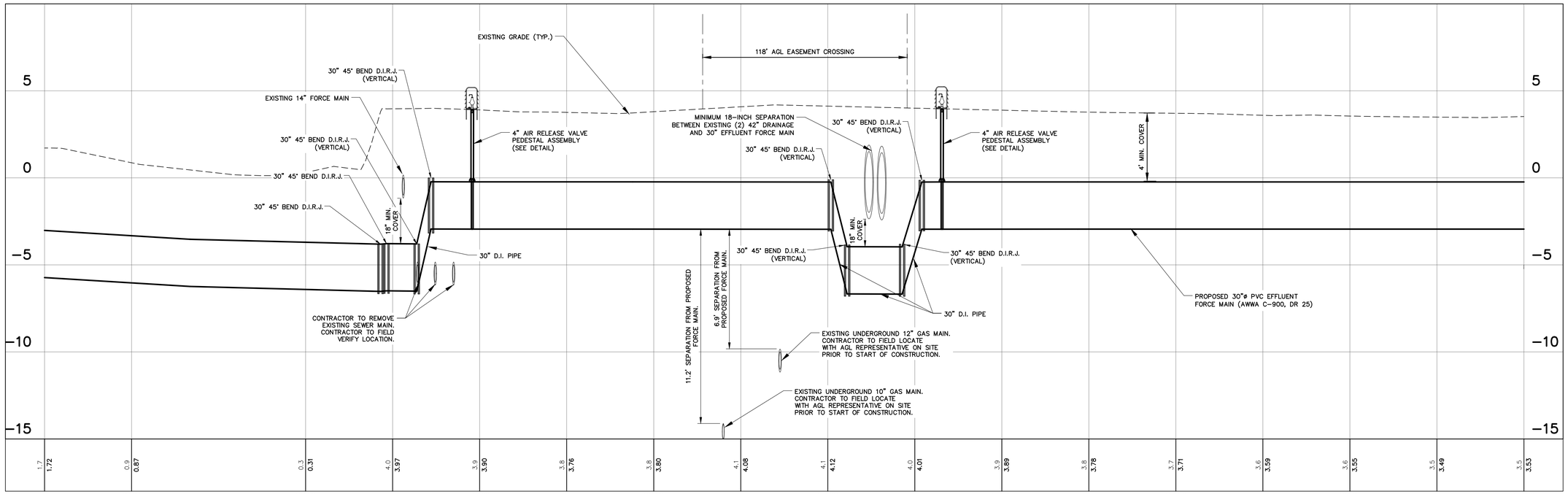
30" 45° BEND D.I.R.J.
N: 769524.2970
E: 960821.5696

4-INCH AIR RELEASE VALVE PEDESTAL ASSEMBLY (SEE DETAIL)
N: 769567.7159
E: 960854.4336

PROPOSED 30"ø PVC EFFLUENT FORCE MAIN (AWWA C-900, DR 25) APPROX. 850 LF (THIS SHEET)

PIPEMAKERS CANAL

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.



TRAVIS FIELD FORCE MAIN ALIGNMENT-01
STATIONS: 8+50 – 17+00
SCALE: HORZ.: 1" = 30'
VERT.: 1" = 3'

BID SET - NOT FOR CONSTRUCTION

NO.	DESCRIPTION	BY	DATE
0	ISSUED FOR BIDS	CDR	11-2020

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TRAVIS FIELD WATER RECLAMATION FACILITY FORCE MAIN

FORCE MAIN PLAN & PROFILE

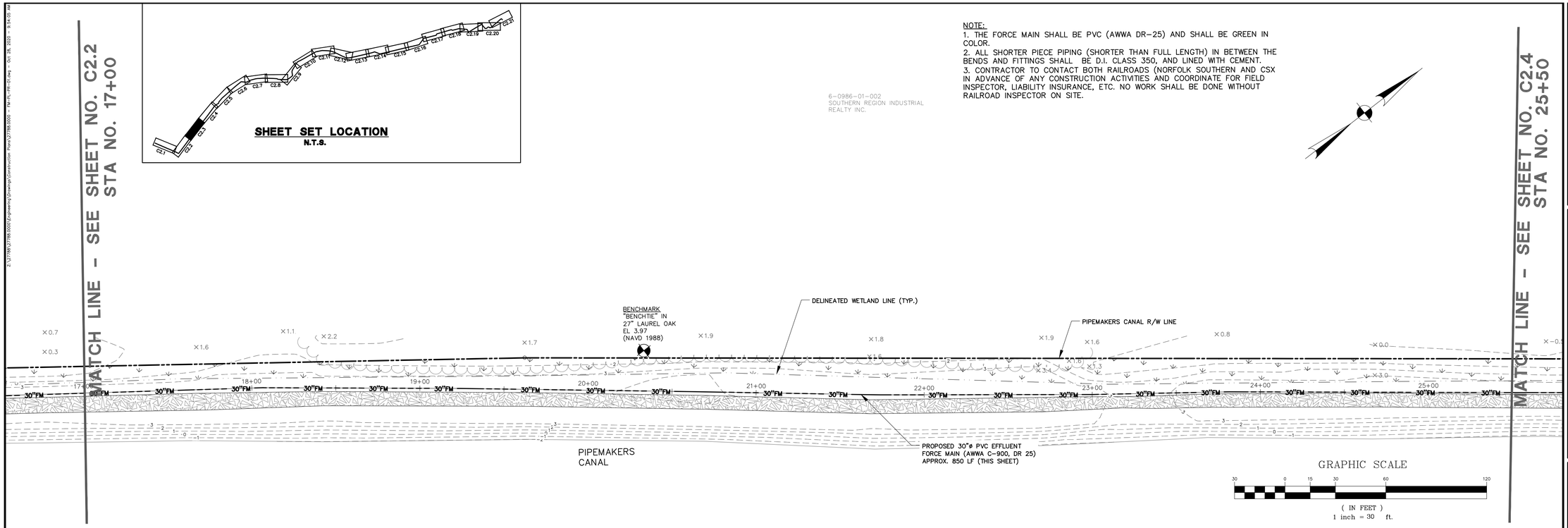
JOB NO:	J-27788.0000
DATE:	10-2-19
DRAWN:	CDR
DESIGNED:	CDR
REVIEWED:	FS
APPROVED:	FS
SCALE:	AS NOTED

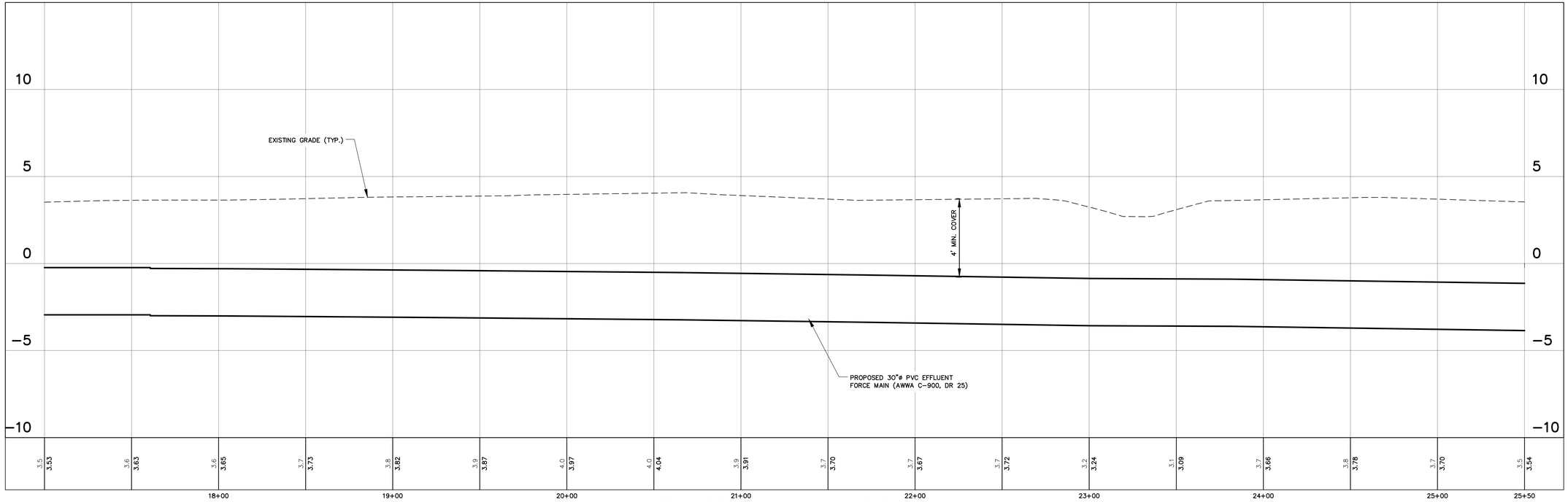
C2.2

SHEET SET LOCATION
N.T.S.

NOTE:
1. THE FORCE MAIN SHALL BE PVC (AWWA DR-25) AND SHALL BE GREEN IN COLOR.
2. ALL SHORTER PIECE PIPING (SHORTER THAN FULL LENGTH) IN BETWEEN THE BENDS AND FITTINGS SHALL BE D.I. CLASS 350, AND LINED WITH CEMENT.
3. CONTRACTOR TO CONTACT BOTH RAILROADS (NORFOLK SOUTHERN AND CSX IN ADVANCE OF ANY CONSTRUCTION ACTIVITIES AND COORDINATE FOR FIELD INSPECTOR, LIABILITY INSURANCE, ETC. NO WORK SHALL BE DONE WITHOUT RAILROAD INSPECTOR ON SITE.

6-0986-01-002
SOUTHERN REGION INDUSTRIAL REALTY INC.





TRAVIS FIELD FORCE MAIN ALIGNMENT-01
STATIONS: 17+00 - 25+50
SCALE: HORZ.: 1" = 30'
VERT.: 1" = 3'

BID SET - NOT FOR CONSTRUCTION

GEORGIA REGISTERED PROFESSIONAL ENGINEER No. 26741 FRED SORORIAN

NO.	REVISIONS	BY	DATE
0	ISSUED FOR BIDS	CDR	11-2020

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TRAVIS FIELD WATER RECLAMATION FACILITY FORCE MAIN

FORCE MAIN PLAN & PROFILE

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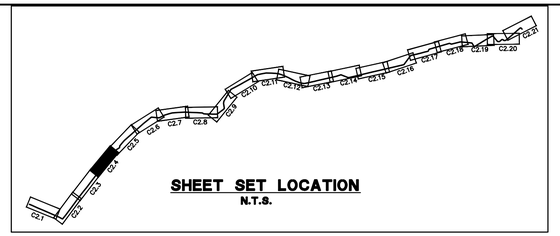
REVIEWED:	FS
APPROVED:	FS
SCALE:	AS NOTED

C2.3



SHEET SET LOCATION
N.T.S.

NOTE:
1. THE FORCE MAIN SHALL BE PVC (AWWA DR-25) AND SHALL BE GREEN IN COLOR.
2. ALL SHORTER PIECE PIPING (SHORTER THAN FULL LENGTH) IN BETWEEN THE BENDS AND FITTINGS SHALL BE D.I. CLASS 350, AND LINED WITH CEMENT.
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6-0986-01-002
SOUTHERN REGION INDUSTRIAL REALTY INC.

MATCH LINE - SEE SHEET NO. C2.3 STA NO. 25+50

MATCH LINE - SEE SHEET NO. C2.5 STA NO. 34+00

START OF JACK UNDER

ZONE AE FLOODWAY

ZONE AE

DELINEATED WETLAND LINE (TYP.)

PIPEMAKERS CANAL R/W LINE

WETLANDS

GRAVEL DRIVE

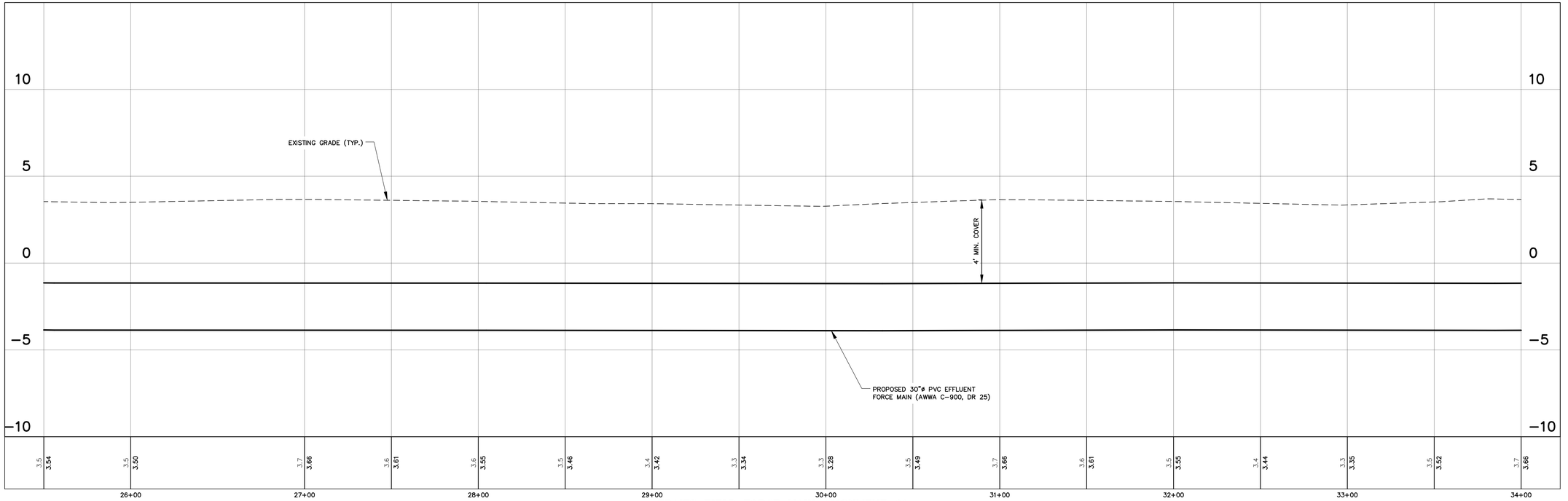
PIPEMAKERS CANAL

PROPOSED 30"ø PVC EFFLUENT FORCE MAIN (AWWA C-900, DR 25) APPROX. 850 LF (THIS SHEET)

MH FR

BENCHMARK
"BENCHTIE" IN 26" LAURREL OA EL 4.20 (NAVD 1988)

GRAPHIC SCALE
(IN FEET)
1 inch = 30 ft.



TRAVIS FIELD FORCE MAIN ALIGNMENT-01
STATIONS: 25+50 - 34+00
SCALE: HORZ.: 1" = 30'
VERT.: 1" = 3'

BID SET - NOT FOR CONSTRUCTION

NO.	DATE
0	11-2020
ISSUED FOR BIDS	CDR
REVISIONS	BY

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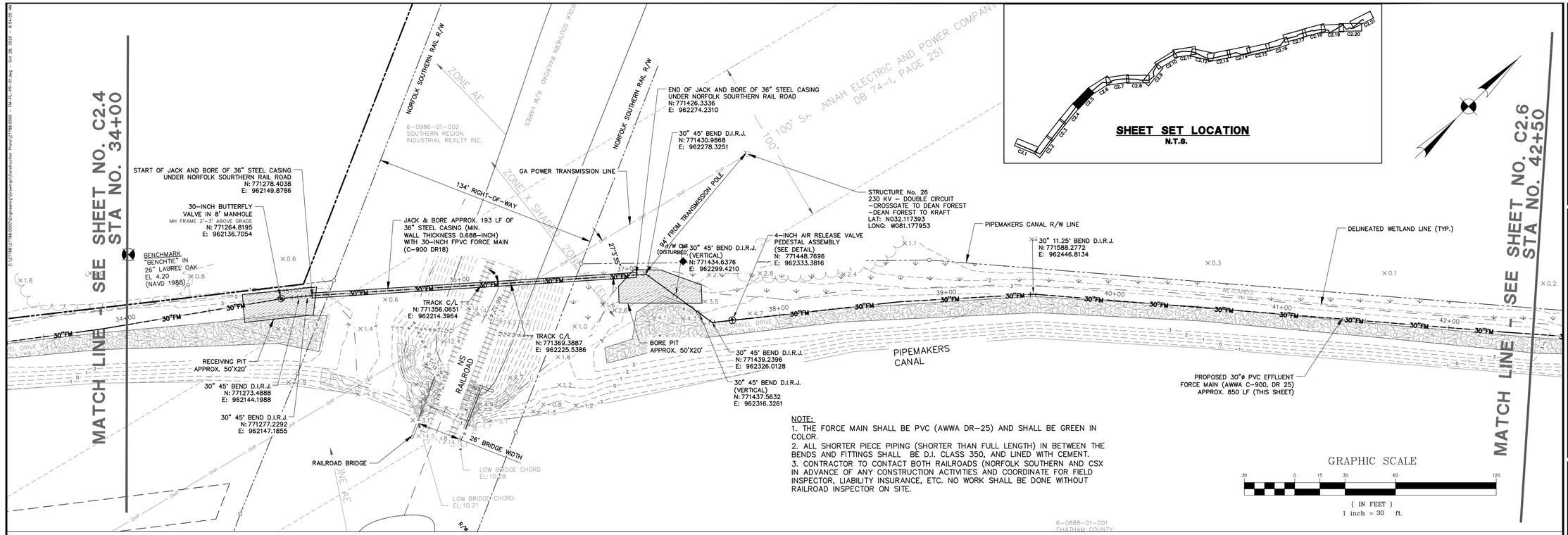
TRAVIS FIELD WATER RECLAMATION FACILITY FORCE MAIN

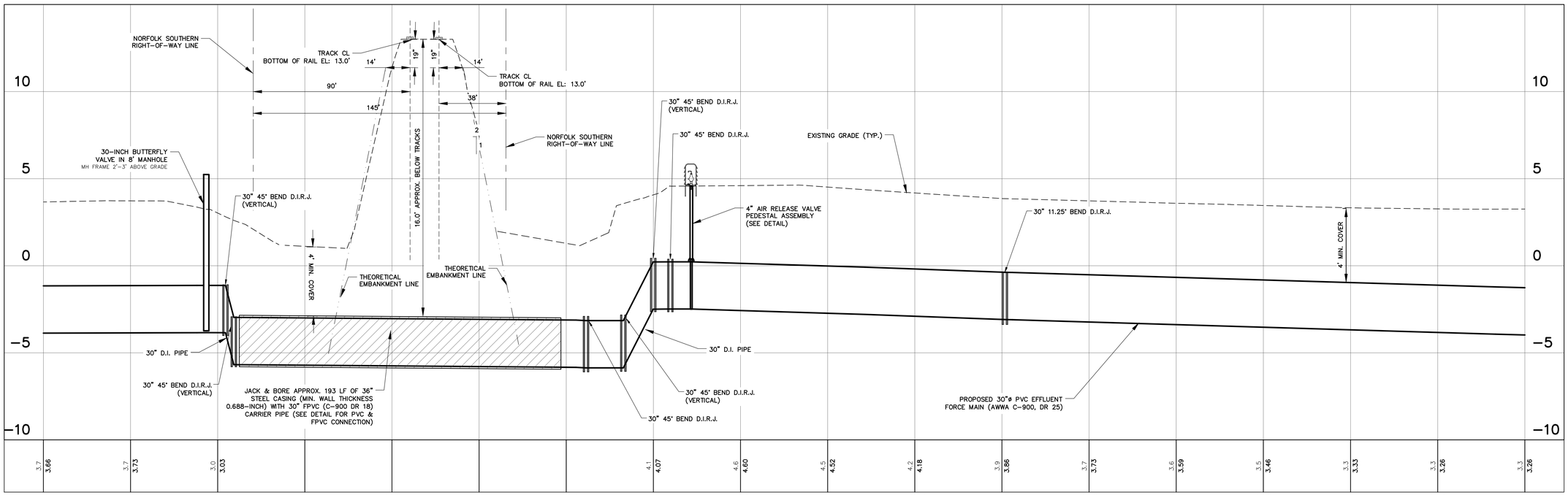
FORCE MAIN PLAN & PROFILE

JOB NO:	J-27788.0000
DATE:	10-2-19
DRAWN:	CDR
DESIGNED:	CDR
REVIEWED:	FS
APPROVED:	FS
SCALE:	AS NOTED

C2.4



NOTE:
1. THE FORCE MAIN SHALL BE PVC (AWWA DR-25) AND SHALL BE GREEN IN COLOR.
2. ALL SHORTER PIECE PIPING (SHORTER THAN FULL LENGTH) IN BETWEEN THE BENDS AND FITTINGS SHALL BE D.I. CLASS 350, AND LINED WITH CEMENT.
3. CONTRACTOR TO CONTACT BOTH RAILROADS (NORFOLK SOUTHERN AND CSX IN ADVANCE OF ANY CONSTRUCTION ACTIVITIES AND COORDINATE FOR FIELD INSPECTOR, LIABILITY INSURANCE, ETC. NO WORK SHALL BE DONE WITHOUT RAILROAD INSPECTOR ON SITE.



TRAVIS FIELD FORCE MAIN ALIGNMENT-01

STATIONS: 34+00 - 42+50
SCALE: HORZ.: 1" = 30'
VERT.: 1" = 3'

BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE
0	ISSUED FOR BIDS	CDR	11-2020

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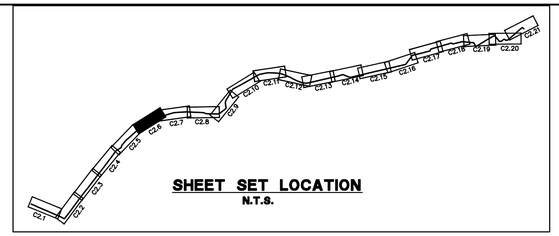
TRAVIS FIELD WATER RECLAMATION FACILITY FORCE MAIN

FORCE MAIN PLAN & PROFILE

JOB NO:	J-27788.0000
DATE:	10-2-19
DRAWN:	CDR
DESIGNED:	CDR
REVIEWED:	FS
APPROVED:	FS
SCALE:	AS NOTED

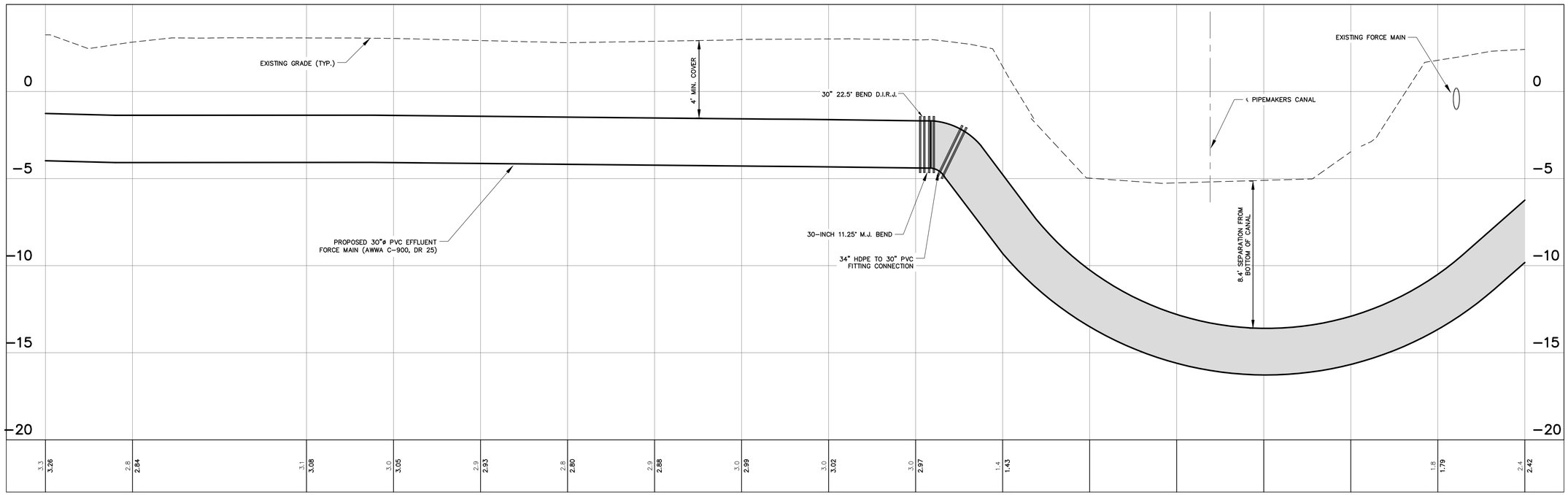
C2.5



SHEET SET LOCATION
N.T.S.

NOTE:
1. THE FORCE MAIN SHALL BE PVC (AWWA DR-25) AND SHALL BE GREEN IN COLOR.
2. ALL SHORTER PIECE PIPING (SHORTER THAN FULL LENGTH) IN BETWEEN THE BENDS AND FITTINGS SHALL BE D.I. CLASS 350, AND LINED WITH CEMENT.
3. CONTRACTOR TO CONTACT BOTH RAILROADS (NORFOLK SOUTHERN AND CSX IN ADVANCE OF ANY CONSTRUCTION ACTIVITIES AND COORDINATE FOR FIELD INSPECTOR, LIABILITY INSURANCE, ETC. NO WORK SHALL BE DONE WITHOUT RAILROAD INSPECTOR ON SITE.

30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.



TRAVIS FIELD FORCE MAIN ALIGNMENT-01
STATIONS: 42+50 - 51+00
SCALE: HORZ.: 1" = 30'
VERT.: 1" = 3'

BID SET - NOT FOR CONSTRUCTION

NO.	ISSUED FOR BIDS	REVISIONS	BY	DATE
0			CDR	11-2020

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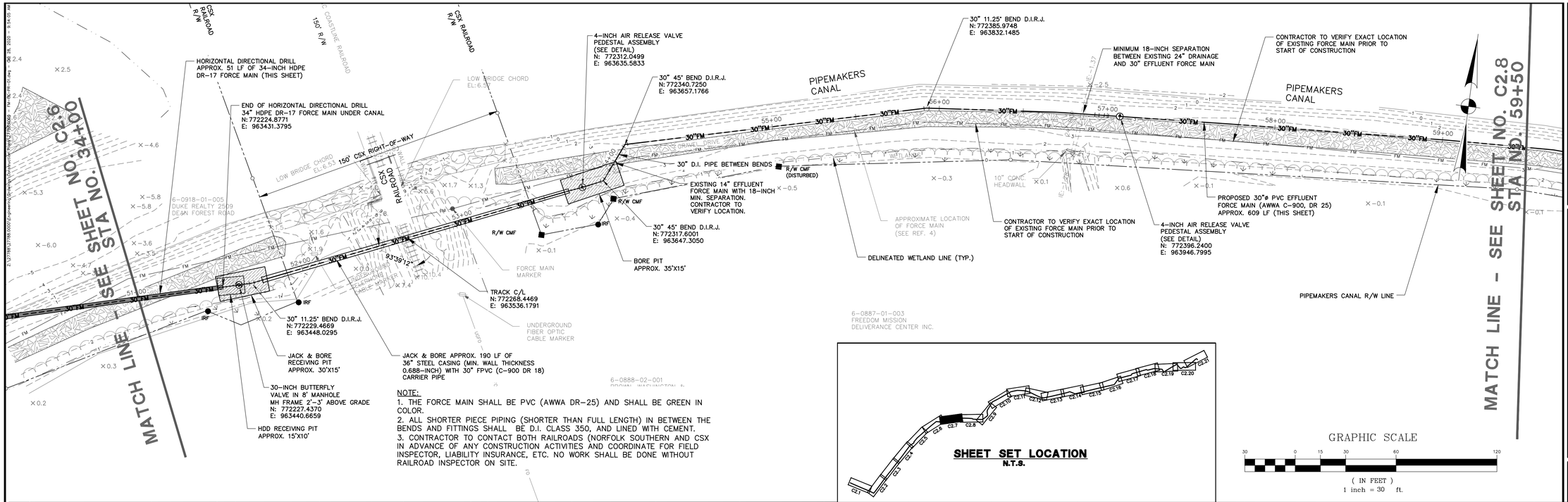
TRAVIS FIELD WATER RECLAMATION FACILITY FORCE MAIN

FORCE MAIN PLAN & PROFILE

JOB NO:	J-27788.0000
DATE:	10-2-19
DRAWN:	CDR
DESIGNED:	CDR
REVIEWED:	FS
APPROVED:	FS
SCALE:	AS NOTED

C2.6



NOTE:

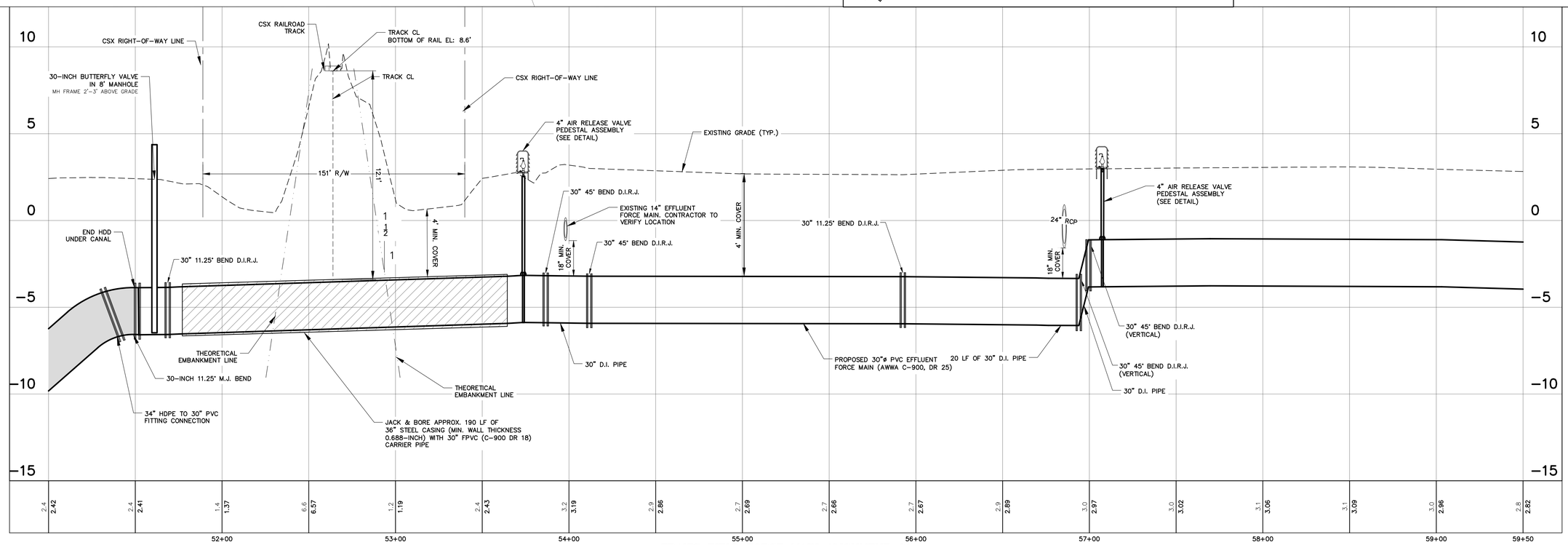
1. THE FORCE MAIN SHALL BE PVC (AWWA DR-25) AND SHALL BE GREEN IN COLOR.
2. ALL SHORTER PIECE PIPING (SHORTER THAN FULL LENGTH) IN BETWEEN THE BENDS AND FITTINGS SHALL BE D.I. CLASS 350, AND LINED WITH CEMENT.
3. CONTRACTOR TO CONTACT BOTH RAILROADS (NORFOLK SOUTHERN AND CSX IN ADVANCE OF ANY CONSTRUCTION ACTIVITIES AND COORDINATE FOR FIELD INSPECTOR, LIABILITY INSURANCE, ETC. NO WORK SHALL BE DONE WITHOUT RAILROAD INSPECTOR ON SITE.

SHEET SET LOCATION
N.T.S.

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.



TRAVIS FIELD FORCE MAIN ALIGNMENT-01
STATIONS: 51+00 - 59+50
SCALE: HORZ.: 1" = 30'
VERT.: 1" = 3'

BID SET - NOT FOR CONSTRUCTION

NO.	ISSUED FOR BIDS	BY	DATE
0	REVISIONS	CDR	11-2020

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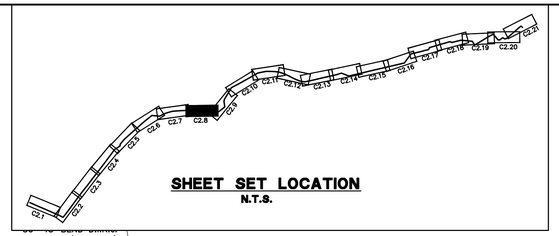
TRAVIS FIELD WATER RECLAMATION FACILITY FORCE MAIN

FORCE MAIN PLAN & PROFILE

JOB NO:	J-27788.0000
DATE:	10-2-19
DRAWN:	CDR
DESIGNED:	CDR
REVIEWED:	FS
APPROVED:	FS
SCALE:	AS NOTED

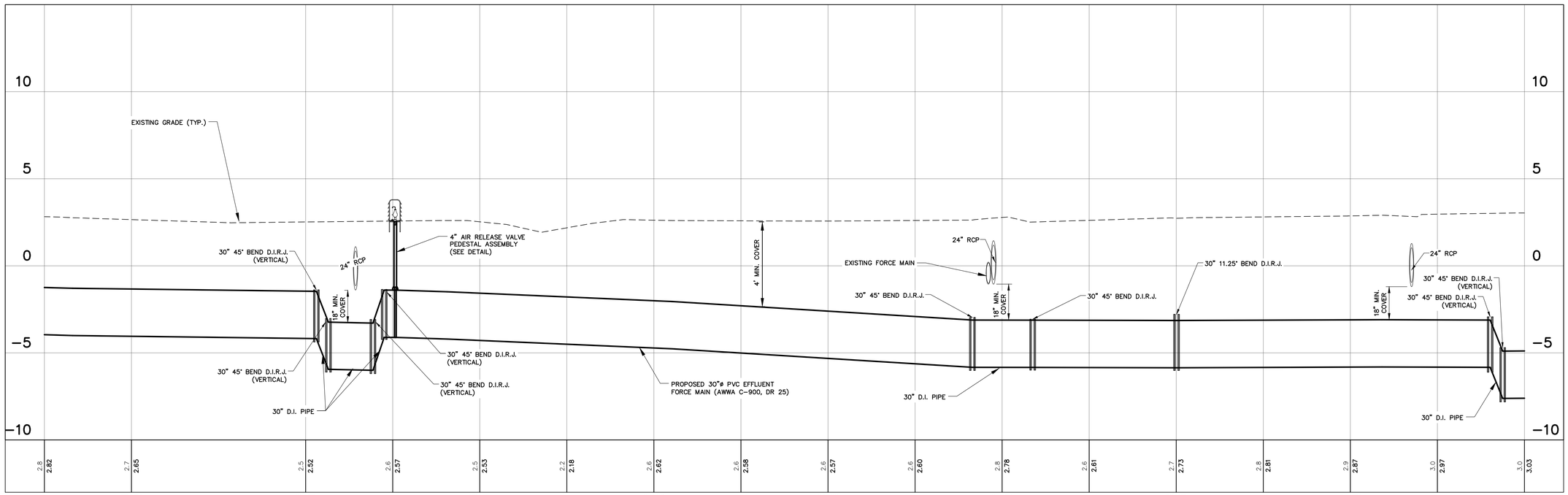
C2.7



SHEET SET LOCATION
N.T.S.

NOTE:
1. THE FORCE MAIN SHALL BE PVC (AWWA DR-25) AND SHALL BE GREEN IN COLOR.
2. ALL SHORTER PIECE PIPING (SHORTER THAN FULL LENGTH) IN BETWEEN THE BENDS AND FITTINGS SHALL BE D.I. CLASS 350, AND LINED WITH CEMENT.
3. CONTRACTOR TO CONTACT BOTH RAILROADS (NORFOLK SOUTHERN AND CSX IN ADVANCE OF ANY CONSTRUCTION ACTIVITIES AND COORDINATE FOR FIELD INSPECTOR, LIABILITY INSURANCE, ETC. NO WORK SHALL BE DONE WITHOUT RAILROAD INSPECTOR ON SITE.

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.



TRAVIS FIELD FORCE MAIN ALIGNMENT-01
STATIONS: 59+50 - 68+00
SCALE: HORZ.: 1" = 30'
VERT.: 1" = 3'

BID SET - NOT FOR CONSTRUCTION

NO.	ISSUED FOR BIDS	REVISIONS	BY	DATE
0			CDR	11-2020

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TRAVIS FIELD WATER RECLAMATION FACILITY FORCE MAIN

FORCE MAIN PLAN & PROFILE

JOB NO:	J-27788.0000
DATE:	10-2-19
DRAWN:	CDR
DESIGNED:	CDR
REVIEWED:	FS
APPROVED:	FS
SCALE:	AS NOTED

C2.8

NOTE:
1. THE FORCE MAIN SHALL BE PVC (AWWA DR-25) AND SHALL BE GREEN IN COLOR.
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3. CONTRACTOR TO CONTACT BOTH RAILROADS (NORFOLK SOUTHERN AND CSX IN ADVANCE OF ANY CONSTRUCTION ACTIVITIES AND COORDINATE FOR FIELD INSPECTOR, LIABILITY INSURANCE, ETC. NO WORK SHALL BE DONE WITHOUT RAILROAD INSPECTOR ON SITE.

MATCH LINE - SEE SHEET NO. C2.8 STA NO. 68+00

MATCH LINE - SEE SHEET NO. C2.10 STA NO. 76+50

MINIMUM 18-INCH SEPARATION BETWEEN EXISTING GRAVITY SEWER MAIN AND 30" EFFLUENT FORCE MAIN

MINIMUM 18-INCH SEPARATION BETWEEN EXISTING 24" DRAINAGE AND 30" EFFLUENT FORCE MAIN

30-INCH BUTTERFLY VALVE IN 8' MANHOLE
N: 772354.2422
E: 965111.6102

30" 45° BEND D.I.R.J.
N: 772353.5224
E: 965132.2604

30" 22.5° BEND D.I.R.J.
N: 772330.4157
E: 965173.6399

30" 45° BEND D.I.R.J. (VERTICAL)
N: 772340.0848
E: 965156.3244

30" 45° BEND D.I.R.J. (VERTICAL)
N: 772336.7071
E: 965162.3733

30" 45° BEND D.I.R.J.
N: 772329.7019
E: 965181.5821

BENCHMARK
"BENCHTIE" IN
20" LAUREL OAK
EL 4.63
(NAVD 1988)

JACK & BORE RECEIVING PIT APPROX. 30'X15'

START OF JACK AND BORE OF 36" STEEL CASING UNDER NORFOLK SOUTHERN RAIL ROAD
N: 772336.3944
E: 965188.7912

JACK & BORE APPROX. 212 LF OF 36" STEEL CASING (MIN. WALL THICKNESS 0.688-INCH) WITH 30" FPVC (C-900 DR 18) CARRIER PIPE

150' CSX RIGHT-OF-WAY

CSX RAIL R/W

TRACK CL
N: 772410.6175
E: 965262.6331

TRACK CL
N: 772421.9689
E: 965273.9050

PROPOSED 30"ø PVC EFFLUENT FORCE MAIN (AWWA C-900, DR 25) APPROX. 436 LF (THIS SHEET)

30" 45° BEND D.I.R.J. (VERTICAL)
N: 772493.2208
E: 965343.5464

4-INCH AIR RELEASE VALVE PEDESTAL ASSEMBLY (SEE DETAIL)
N: 772542.4858
E: 965366.2229

MINIMUM 18-INCH SEPARATION BETWEEN EXISTING FORCE MAIN AND 30" EFFLUENT FORCE MAIN

END OF JACK AND BORE OF 36" STEEL CASING UNDER NORFOLK SOUTHERN RAIL ROAD
N: 772487.3185
E: 965337.9505

BORE PIT APPROX. 35'X15'

30" 45° BEND D.I.R.J.
N: 772529.6913
E: 965368.9554

30" 45° BEND D.I.R.J.
N: 772489.6071
E: 965340.1024

30" 22.5° BEND D.I.R.J.
N: 772505.3554
E: 965355.5065

BORE PIT APPROX. 15'X10'

30-INCH BUTTERFLY VALVE IN 8' MANHOLE
N: 772705.1828
E: 965325.3355

CONTRACTOR TO VERIFY EXACT LOCATION OF EXISTING FORCE MAIN PRIOR TO START OF CONSTRUCTION

30" 45° BEND D.I.R.J.
N: 772720.8726
E: 965323.4520

30" 11.25° BEND D.I.R.J.
N: 772665.6644
E: 965326.9706

(2) FUTURE 10'X11' BOX CULVERTS (BY OTHERS)

HORIZONTAL DIRECTIONAL DRILL
202 LF (THIS SHEET) 42-INCH HDPE DR17 CASING WITH 34-INCH HDPE FORCE MAIN - DR 17

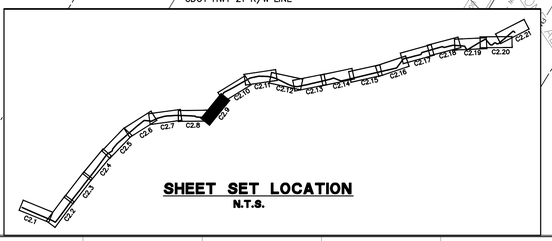
START HORIZONTAL DIRECTIONAL DRILLING
34-INCH HDPE DR-17 UNDER HIGHWAY 17 AND PIPEMAKERS CANAL
N: 772737.7438
E: 965335.4044

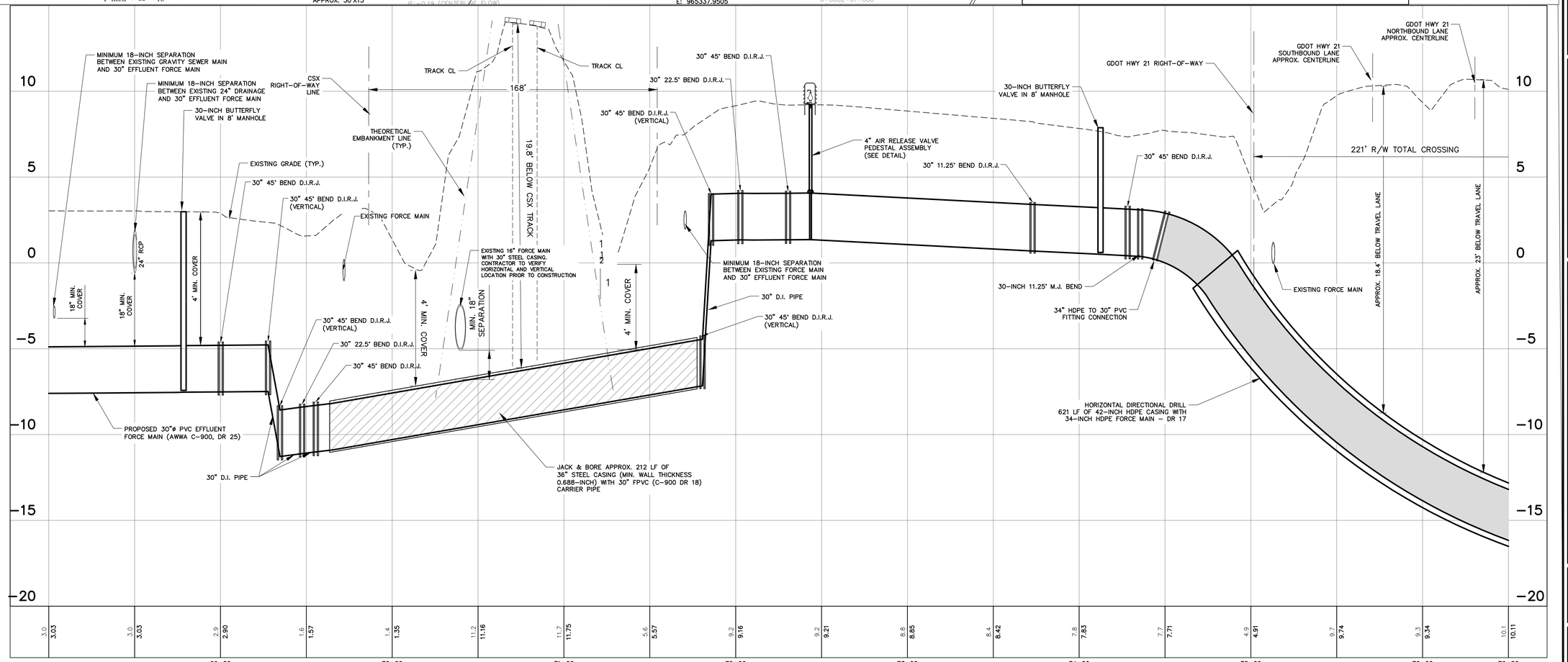
BENCHMARK
PKS ORANGE WASHER
EL 9.56

GDOT HWY 21 R/W LINE

GRAPHIC SCALE
GARDEN CITY
30 0 15 30 60.0001 120.0001
(IN FEET)
1 inch = 30 ft.

SHEET SET LOCATION
N.T.S.





BID SET - NOT FOR CONSTRUCTION

NO.	DATE	BY	REVISIONS
0	11-2020	CDR	ISSUED FOR BIDS

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www.thomasandhutton.com

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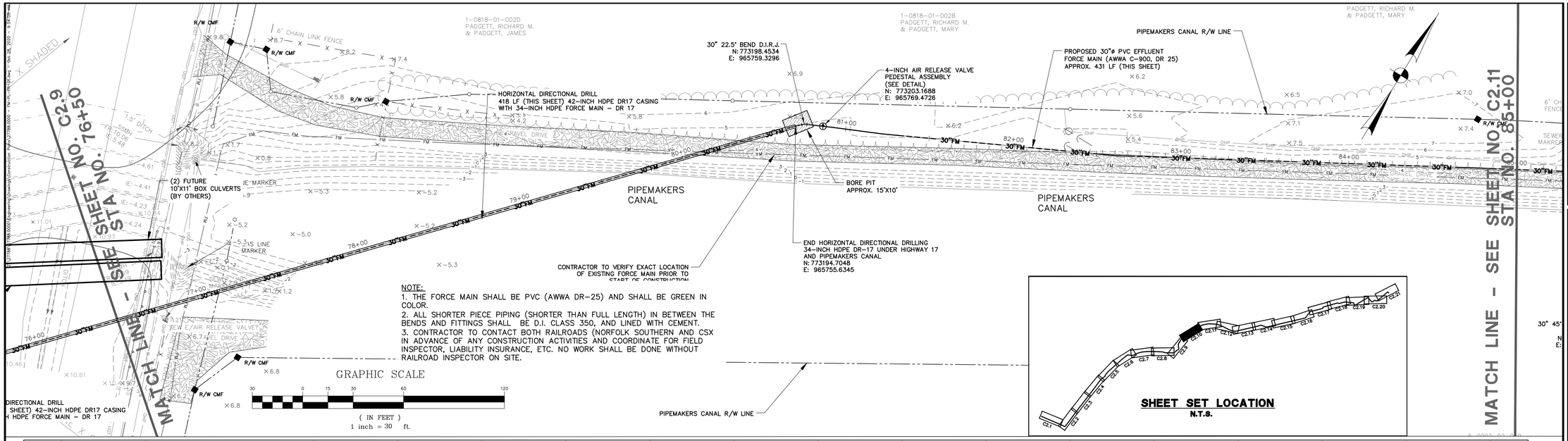
savannahga.gov

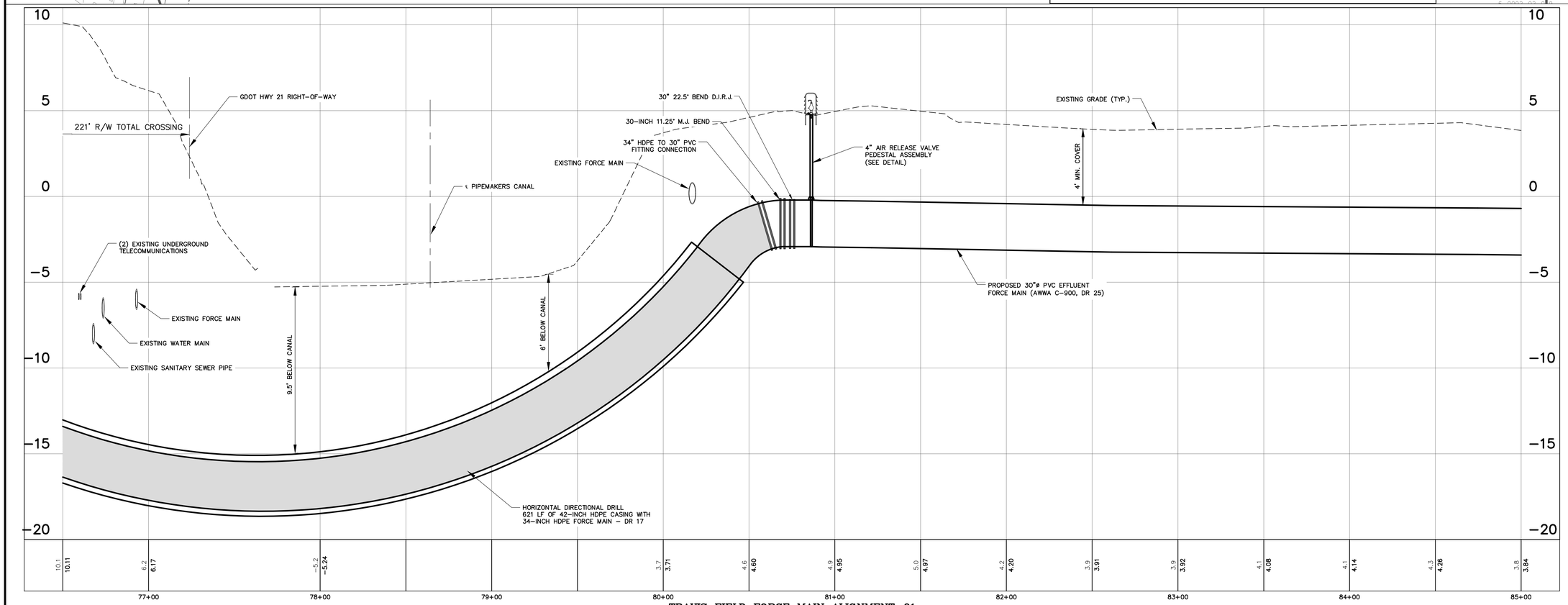
TRAVIS FIELD WATER RECLAMATION FACILITY FORCE MAIN

FORCE MAIN PLAN & PROFILE

JOB NO:	J-27788.0000
DATE:	10-2-19
DRAWN:	CDR
DESIGNED:	CDR
REVIEWED:	FS
APPROVED:	FS
SCALE:	AS NOTED

C2.9





TRAVIS FIELD FORCE MAIN ALIGNMENT-01

STATIONS: 76+50 - 85+00
SCALE: HORZ.: 1" = 30'
VERT.: 1" = 3'

BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE
0	ISSUED FOR BIDS	CDR	11-2020

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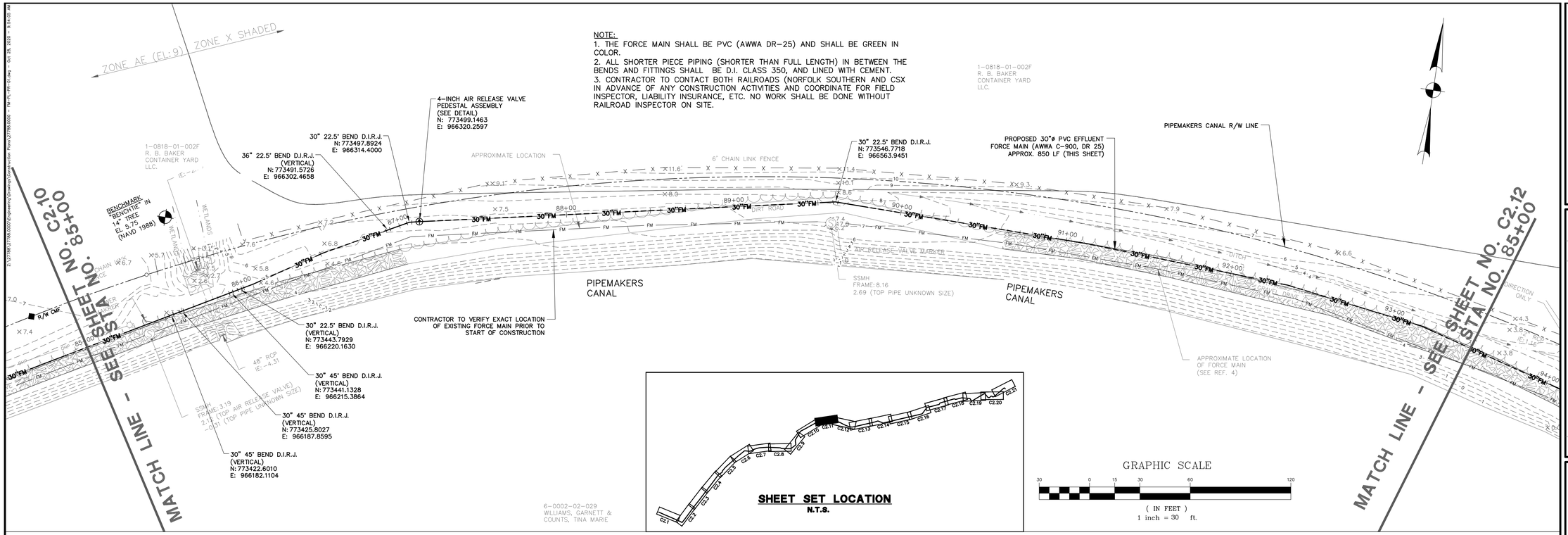
TRAVIS FIELD WATER RECLAMATION FACILITY FORCE MAIN

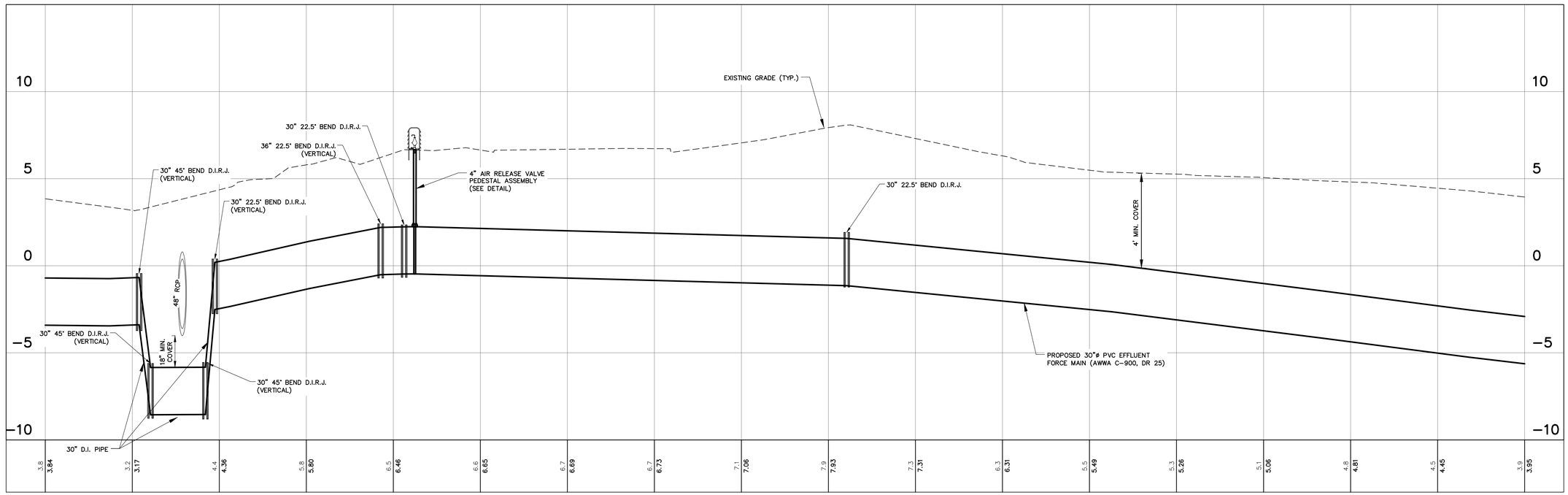
FORCE MAIN PLAN & PROFILE

JOB NO:	J-27788.0000
DATE:	10-2-19
DRAWN:	CDR
DESIGNED:	CDR
REVIEWED:	FS
APPROVED:	FS
SCALE:	AS NOTED

C2.10

NOTE:
1. THE FORCE MAIN SHALL BE PVC (AWWA DR-25) AND SHALL BE GREEN IN COLOR.
2. ALL SHORTER PIECE PIPING (SHORTER THAN FULL LENGTH) IN BETWEEN THE BENDS AND FITTINGS SHALL BE D.I. CLASS 350, AND LINED WITH CEMENT.
3. CONTRACTOR TO CONTACT BOTH RAILROADS (NORFOLK SOUTHERN AND CSX IN ADVANCE OF ANY CONSTRUCTION ACTIVITIES AND COORDINATE FOR FIELD INSPECTOR, LIABILITY INSURANCE, ETC. NO WORK SHALL BE DONE WITHOUT RAILROAD INSPECTOR ON SITE.





TRAVIS FIELD FORCE MAIN ALIGNMENT-01
STATIONS: 85+00 - 93+50
SCALE: HORZ.: 1" = 30'
VERT.: 1" = 3'

BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE
0	ISSUED FOR BIDS	CDR	11-2020

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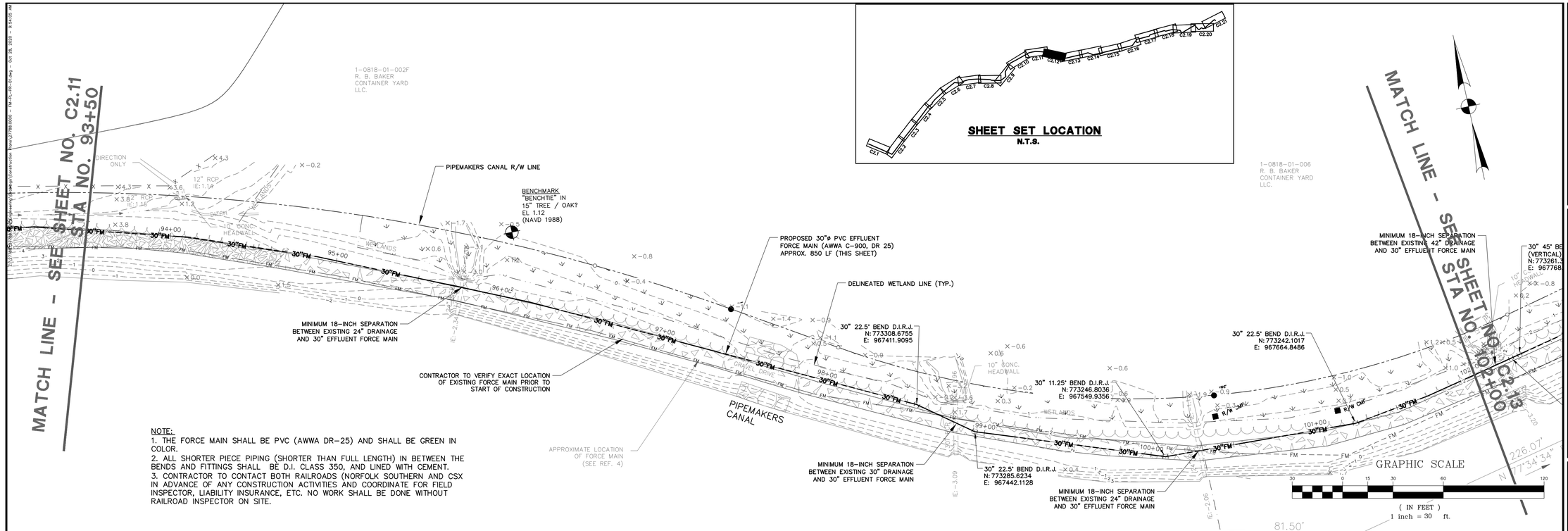
TRAVIS FIELD WATER RECLAMATION FACILITY FORCE MAIN

FORCE MAIN PLAN & PROFILE

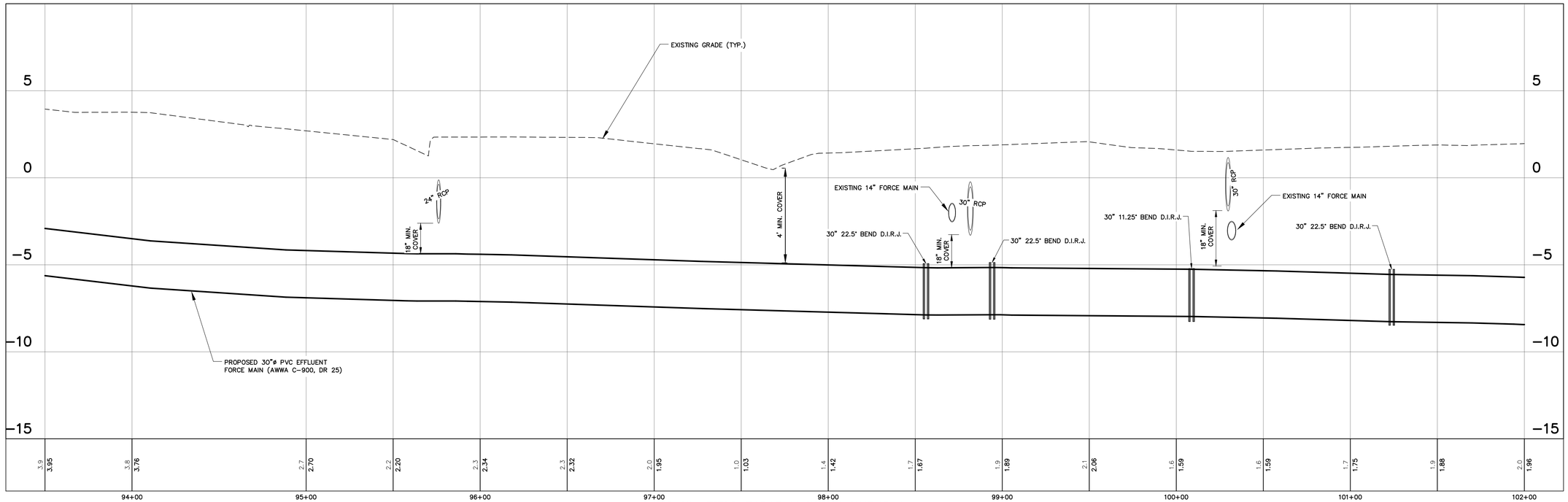
JOB NO:	J-27788.0000
DATE:	10-2-19
DRAWN:	CDR
DESIGNED:	CDR
REVIEWED:	FS
APPROVED:	FS
SCALE:	AS NOTED

C2.11



SHEET SET LOCATION
N.T.S.

NOTE:
1. THE FORCE MAIN SHALL BE PVC (AWWA DR-25) AND SHALL BE GREEN IN COLOR.
2. ALL SHORTER PIECE PIPING (SHORTER THAN FULL LENGTH) IN BETWEEN THE BENDS AND FITTINGS SHALL BE D.I. CLASS 350, AND LINED WITH CEMENT.
3. CONTRACTOR TO CONTACT BOTH RAILROADS (NORFOLK SOUTHERN AND CSX IN ADVANCE OF ANY CONSTRUCTION ACTIVITIES AND COORDINATE FOR FIELD INSPECTOR, LIABILITY INSURANCE, ETC. NO WORK SHALL BE DONE WITHOUT RAILROAD INSPECTOR ON SITE.



TRAVIS FIELD FORCE MAIN ALIGNMENT-01
STATIONS: 93+50 - 102+00
SCALE: HORZ.: 1" = 30'
VERT.: 1" = 3'

BID SET - NOT FOR CONSTRUCTION

NO.	DATE	BY	REVISIONS
0	11-2020	CDR	ISSUED FOR BIDS

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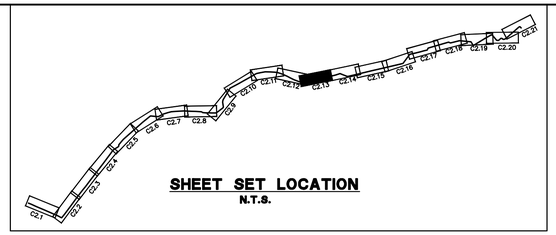
TRAVIS FIELD WATER RECLAMATION FACILITY FORCE MAIN

FORCE MAIN PLAN & PROFILE

JOB NO:	J-27788.0000
DATE:	10-2-19
DRAWN:	CDR
DESIGNED:	CDR
REVIEWED:	FS
APPROVED:	FS
SCALE:	AS NOTED

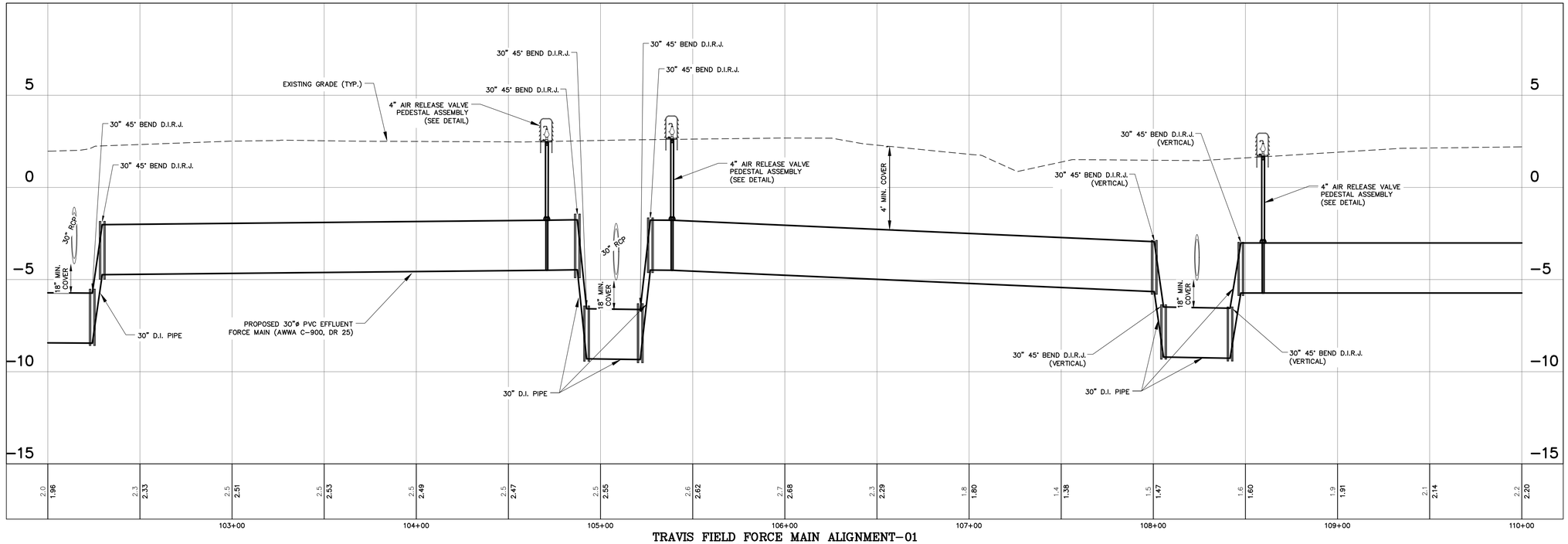
C2.12

NOTE:
1. THE FORCE MAIN SHALL BE PVC (AWWA DR-25) AND SHALL BE GREEN IN COLOR.
2. ALL SHORTER PIECE PIPING (SHORTER THAN FULL LENGTH) IN BETWEEN THE BENDS AND FITTINGS SHALL BE D.I. CLASS 350, AND LINED WITH CEMENT.
3. CONTRACTOR TO CONTACT BOTH RAILROADS (NORFOLK SOUTHERN AND CSX IN ADVANCE OF ANY CONSTRUCTION ACTIVITIES AND COORDINATE FOR FIELD INSPECTOR, LIABILITY INSURANCE, ETC. NO WORK SHALL BE DONE WITHOUT RAILROAD INSPECTOR ON SITE.



SHEET SET LOCATION
N.T.S.

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.



TRAVIS FIELD FORCE MAIN ALIGNMENT-01
STATIONS: 102+00 - 110+00
SCALE: HORZ.: 1" = 30'
VERT.: 1" = 3'

BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE
0	ISSUED FOR BIDS	CDR	11-2020

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TRAVIS FIELD WATER RECLAMATION FACILITY FORCE MAIN

FORCE MAIN PLAN & PROFILE

JOB NO:	J-27788.0000
DATE:	10-2-19
DRAWN:	CDR
DESIGNED:	CDR
REVIEWED:	FS
APPROVED:	FS
SCALE:	AS NOTED

C2.13

NOTE:
1. THE FORCE MAIN SHALL BE PVC (AWWA DR-25) AND SHALL BE GREEN IN COLOR.
2. ALL SHORTER PIECE PIPING (SHORTER THAN FULL LENGTH) IN BETWEEN THE BENDS AND FITTINGS SHALL BE D.I. CLASS 350, AND LINED WITH CEMENT.
3. CONTRACTOR TO CONTACT BOTH RAILROADS (NORFOLK SOUTHERN AND CSX IN ADVANCE OF ANY CONSTRUCTION ACTIVITIES AND COORDINATE FOR FIELD INSPECTOR, LIABILITY INSURANCE, ETC. NO WORK SHALL BE DONE WITHOUT RAILROAD INSPECTOR ON SITE.

MATCH LINE – SEE SHEET NO. C2.13 STA NO. 110+00

MATCH LINE – SEE SHEET NO. C2.15 STA NO. 118+00

CANAL R/W LINE

DELINEATED WETLAND LINE (TYP.)

MINIMUM 18-INCH SEPARATION BETWEEN EXISTING 24" DRAINAGE AND 30" EFFLUENT FORCE MAIN

30-INCH BUTTERFLY VALVE IN 8' MANHOLE
N: 773488.7114
E: 968714.5123

START HORIZONTAL DIRECTIONAL DRILLING
34-INCH HDPE DR-17 UNDER PIPEMAKERS CANAL
N: 773493.4137
E: 968738.5688

4-INCH AIR RELEASE VALVE PEDESTAL ASSEMBLY (SEE DETAIL)
N: 773465.6863
E: 968650.7078

30" 45° BEND D.I.R.J. (VERTICAL)
N: 773455.2050
E: 968613.6587

30" 45° BEND D.I.R.J. (VERTICAL)
N: 773453.6790
E: 968607.5498

30" 45° BEND D.I.R.J. (VERTICAL)
N: 773461.5438
E: 968638.6213

30" 45° BEND D.I.R.J. (VERTICAL)
N: 773460.0303
E: 968632.7236

30" 45° BEND D.I.R.J. (VERTICAL)
N: 773495.4624
E: 968733.2198

BORE PIT APPROX. 15'X10'

CONTRACTOR TO VERIFY EXACT LOCATION OF EXISTING FORCE MAIN PRIOR TO START OF CONSTRUCTION

HORIZONTAL DIRECTIONAL DRILL
216 LF TOTAL
34-INCH HDPE FORCE MAIN – DR 17

END HORIZONTAL DIRECTIONAL DRILLING
34-INCH HDPE DR-17 UNDER PIPEMAKERS CANAL
N: 773414.1522
E: 968939.0414

BORE PIT APPROX. 15'X10'

RECEIVING PIT APPROX. 20'X10'

TRACK C/L
N: 773425.4684
E: 969014.2818

PIPEMAKERS CANAL

N 75°00'04" E 301.34'

N 74°56'07" E 114.00'

N 76°06'09" E 299.18'

1-0818-01-006
R. B. BAKER CONTAINER YARD LLC.

1-0818-01-013
PCS NITROGEN INC.

1-0818-01-024
SOUTHERN REGION INDUSTRIAL REALTY INC.

1-0804-01-001
GEORGIA PORTS AUTHORITY

1-0805-01-002
GEORGIA POWER COMPANY

GA POWER TRANSMISSION LINE

STRUCTURE NO. 33
115 KV
– GRANGE TO INTERNATIONAL PAPER
LAT: N032.122570
LONG: W081.156092

40' FROM TRANSMISSION POLE

JACK & BORE APPROX. 82 LF OF 36" STEEL CASING (MIN. WALL THICKNESS 0.688-INCH) WITH 30" FPVC (C-900 DR 18) CARRIER PIPE

NS RAILROAD

NS R/W

SKETCHED FROM EMC DRAWINGS (SCALED AND ROTATED BASED ON CENTERLINE PROPOSED CANAL ALIGNMENT) (SEE REF. 3)

PROPOSED 30"ø PVC EFFLUENT FORCE MAIN (AWWA C-900, DR 25) APPROX. 493 LF (THIS SHEET)

30" 45° BEND D.I.R.J. (VERTICAL)
N: 773464.8435
E: 969189.2155

30" 45° BEND D.I.R.J. (VERTICAL)
N: 773462.8408
E: 969180.8600

BORE PIT APPROX. 30'X15'

30" 45° BEND D.I.R.J. (VERTICAL)
N: 773446.5956
E: 969111.2838

4-INCH AIR RELEASE VALVE PEDESTAL ASSEMBLY (SEE DETAIL)
N: 773447.7099
E: 969115.8468

30" 45° BEND D.I.R.J. (VERTICAL)
N: 773454.8284
E: 969147.3032

30" 45° BEND D.I.R.J. (VERTICAL)
N: 773456.2399
E: 969153.3203

4-INCH AIR RELEASE VALVE PEDESTAL ASSEMBLY (SEE DETAIL)
N: 773467.2026
E: 969199.0580

PIPEMAKERS CANAL R/W LINE

1-0003-02-001
216-J PG 615
JASPER SPRING B CHURCH INC.

6-0003-01-040
BRATTON, L. H. & BRATTON, GAIL P.

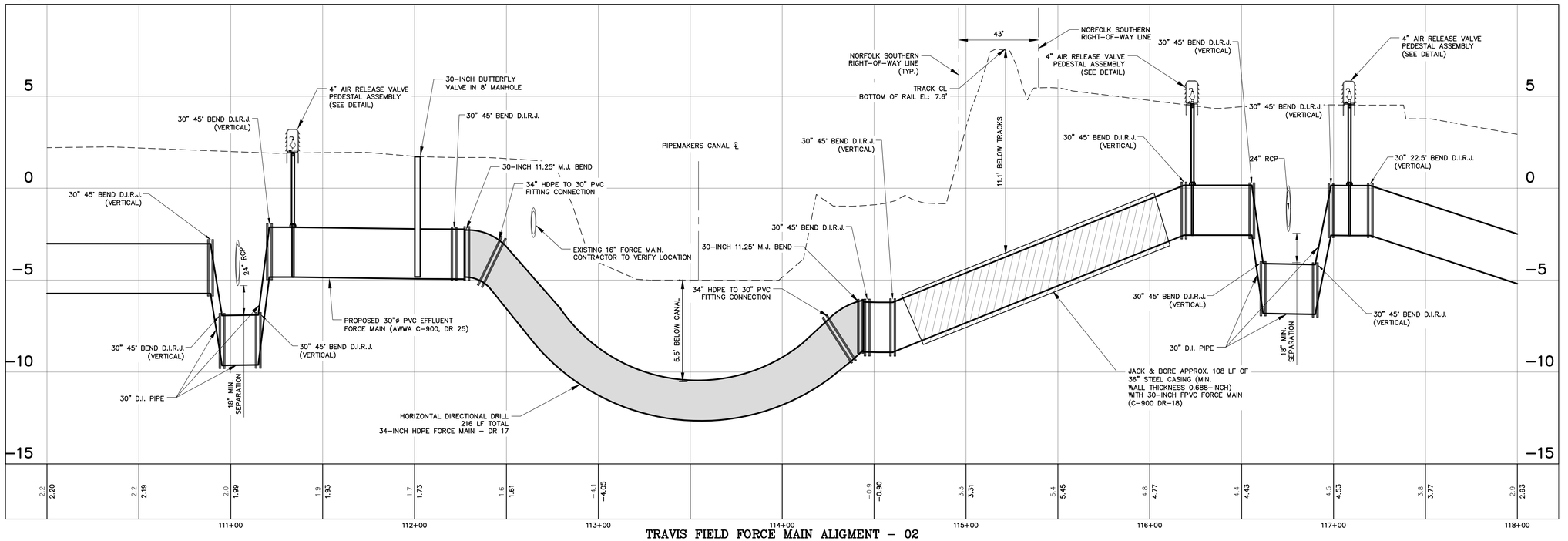
6-0003-01-037
KEITH

BENCHMARK
"BENCHTIE" IN 20 / 427" CYPRESS
EL. 0.88
(NAVD 1988)

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

SHEET SET LOCATION
N.T.S.

C2.1 C2.2 C2.3 C2.4 C2.5 C2.6 C2.7 C2.8 C2.9 C2.10 C2.11 C2.12 C2.13 C2.14 C2.15 C2.16 C2.17 C2.18 C2.19 C2.20



TRAVIS FIELD FORCE MAIN ALIGMENT – 02
STATIONS: 110+00 – 118+00
SCALE: HORZ.: 1" = 30'
VERT.: 1" = 3'

GEORGIA REGISTERED PROFESSIONAL ENGINEER FRED SORORIANO

BID SET - NOT FOR CONSTRUCTION

NO.	DATE	BY	REVISIONS
0	11-2020	CDR	ISSUED FOR BIDS

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TRAVIS FIELD WATER RECLAMATION FACILITY FORCE MAIN

FORCE MAIN PLAN & PROFILE

JOB NO:	J-27788.0000
DATE:	10-2-19
DRAWN:	CDR
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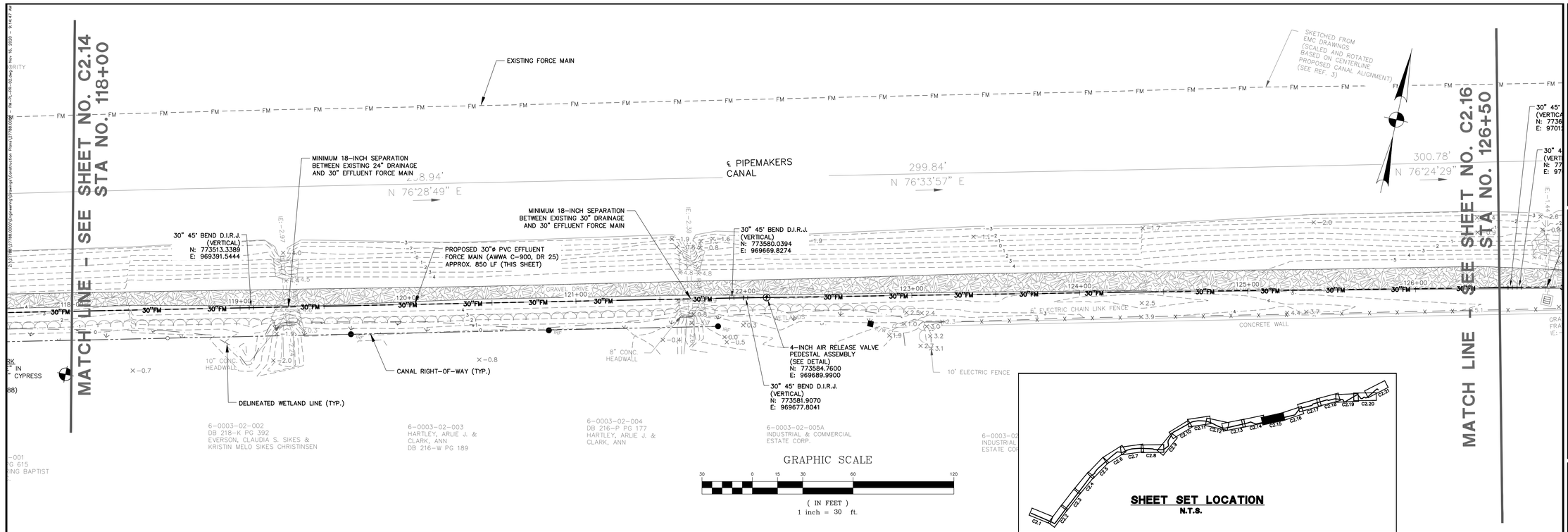
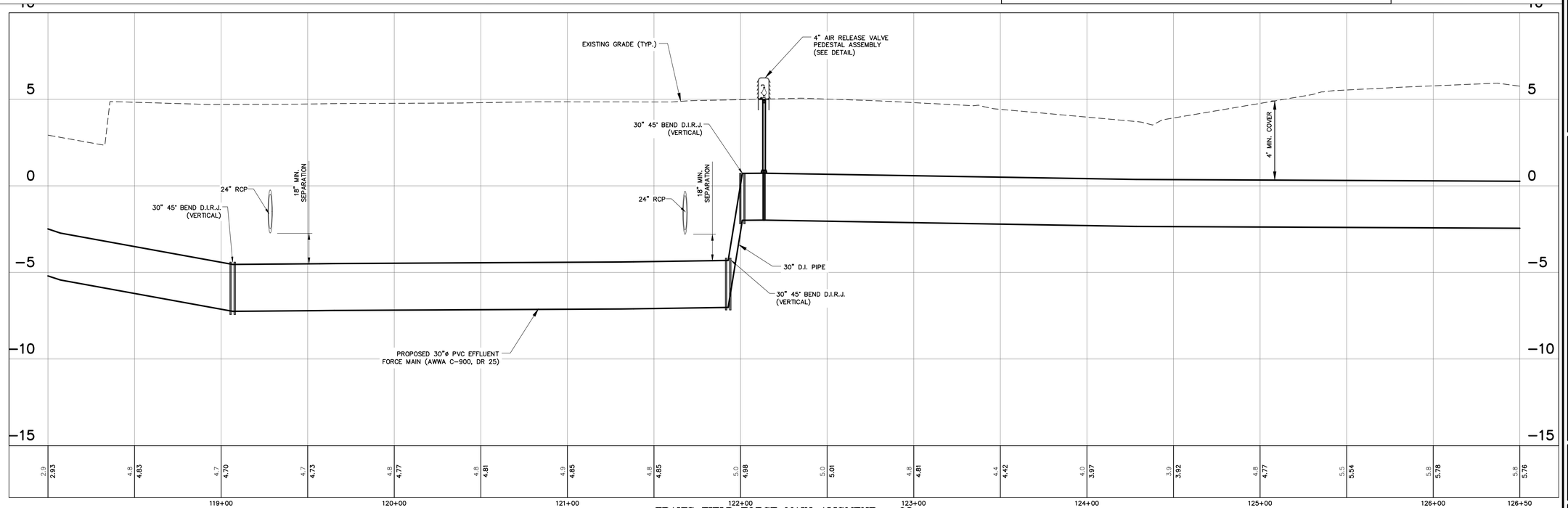
APPROVED:	FS
SCALE:	AS NOTED

C2.14





TRAVIS FIELD FORCE MAIN ALIGMENT – 02

STATIONS: 118+00 – 126+50
SCALE: HORZ.: 1" = 30'
VERT.: 1" = 3'

BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE
0	ISSUED FOR BIDS	CDR	11-2020

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TRAVIS FIELD WATER RECLAMATION FACILITY FORCE MAIN

FORCE MAIN PLAN & PROFILE

JOB NO:	J-27788.0000
DATE:	10-2-19
DRAWN:	CDR
DESIGNED:	CDR
REVIEWED:	FS
APPROVED:	FS
SCALE:	AS NOTED

C2.15

NOTE:
1. THE FORCE MAIN SHALL BE PVC (AWWA DR-25) AND SHALL BE GREEN IN COLOR.
2. ALL SHORTER PIECE PIPING (SHORTER THAN FULL LENGTH) IN BETWEEN THE BENDS AND FITTINGS SHALL BE D.I. CLASS 350, AND LINED WITH CEMENT.
3. CONTRACTOR TO CONTACT BOTH RAILROADS (NORFOLK SOUTHERN AND CSX IN ADVANCE OF ANY CONSTRUCTION ACTIVITIES AND COORDINATE FOR FIELD INSPECTOR, LIABILITY INSURANCE, ETC. NO WORK SHALL BE DONE WITHOUT RAILROAD INSPECTOR ON SITE.

MATCH LINE - SEE SHEET NO. C2.15 STA NO. 126+50

MATCH LINE - SEE SHEET NO. C2.17 STA NO. 135+00

1-0804-01-001 GEORGIA PORTS AUTHORITY

1-0730-01-001 GEORGIA PORTS AUTHORITY

EXISTING FORCE MAIN

30" 45° BEND D.I.R.J. (VERTICAL) N: 773685.0748 E: 970121.2598

30" 45° BEND D.I.R.J. (VERTICAL) N: 773686.2932 E: 970126.4765

℄ PIPEMAKERS CANAL

MINIMUM 18-INCH SEPARATION BETWEEN EXISTING 24" DRAINAGE AND 30" EFFLUENT FORCE MAIN

30" 45° BEND D.I.R.J. (VERTICAL) N: 773695.4025 E: 970165.9002

30" 45° BEND D.I.R.J. (VERTICAL) N: 773697.2888 E: 970174.0588

PROPOSED 30"ø PVC EFFLUENT FORCE MAIN (AWWA C-900, DR 25) APPROX. 1038 LF (THIS SHEET)

APPROX. 1,040 SY OF EXISTING ASPHALT DRIVE TO BE RESTORED TO EXISTING OR BETTER CONDITION AFTER EFFLUENT FORCE MAIN HAS BEEN INSTALLED

START HORIZONTAL DIRECTIONAL DRILLING 34-INCH HDPE DR-17 UNDER U.S. HWY 17 AND PIPEMAKERS CANAL N: 773769.7308 E: 970487.8713

30-INCH BUTTERFLY VALVE IN 8' MANHOLE N: 773764.4224 E: 970472.4260

4-INCH AIR RELEASE VALVE PEDESTAL ASSEMBLY (SEE DETAIL) N: 773762.3998 E: 970463.5537

299.50' N 76°38'06" E

192.76' N 72°14'30" E

300.17' N 77°02'51" E

GRATE INLET FRAME: 5.32 IE: 1.00

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

30" 22.5° BEND D.I.R.J. N: 773767.1527 E: 970484.4024

BORE PIT APPROX. 15'X10'

STRUCTURE NO. 48 46 KV - KRAFT TO MILL HAVEN ANNEX LAT: N032.123469 LONG: W081.150952

GA POWER TRANSMISSION LINE

APPROXIMATE EXISTING ABANDONED TIMBER PILE

US HWY 17 - GDOT RIGHT-OF-WAY

US HWY 17

45° FROM TRANSMISSION POLE

HORIZONTAL DIRECTIONAL DRILL 495 LF TOTAL of 42-INCH HDPE CASING SR-17 WITH 34-INCH HDPE FORCE MAIN - DR 17

APPROXIMATE EXISTING ABANDONED TIMBER PILE

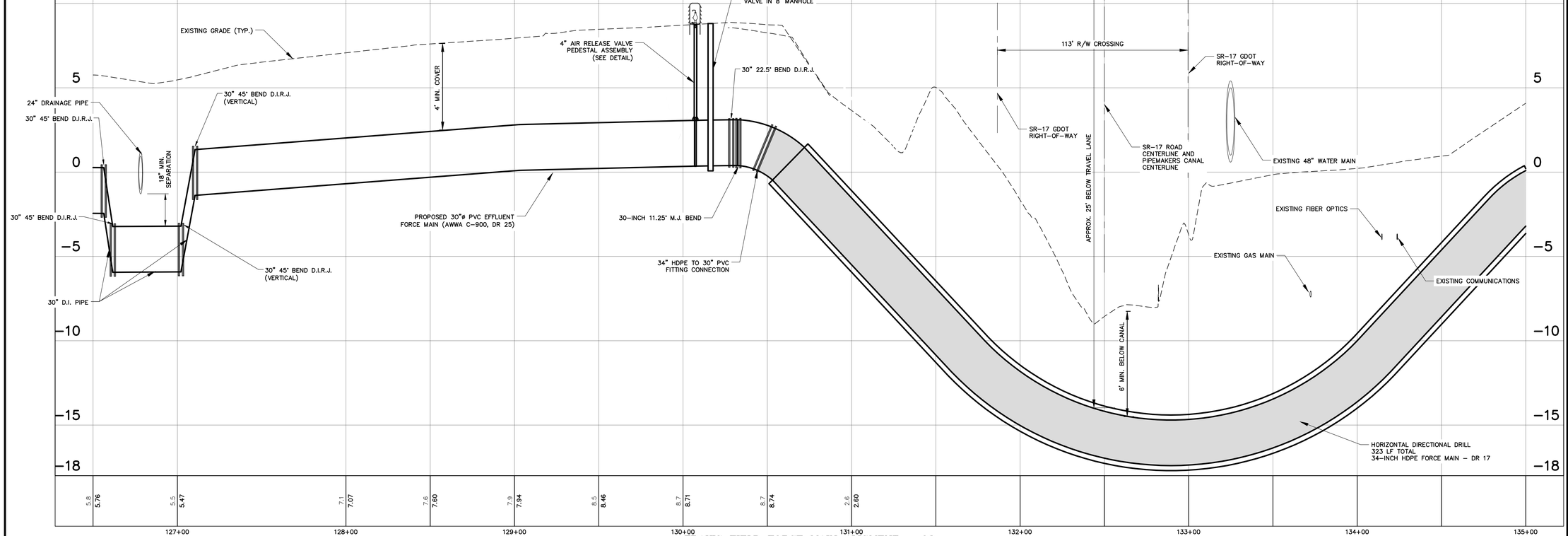
6' ELECTRIC CHAIN LINK FENCE

ASPHALT DRIVE

UNDER CONSTRUCTION

SHEET SET LOCATION
N.T.S.

C2.1 C2.2 C2.3 C2.4 C2.5 C2.6 C2.7 C2.8 C2.9 C2.10 C2.11 C2.12 C2.13 C2.14 C2.15 C2.16 C2.17 C2.18 C2.19 C2.20 C2.21



TRAVIS FIELD FORCE MAIN ALIGMENT - 02
STATIONS: 126+50 - 135+00
SCALE: HORZ.: 1" = 30'
VERT.: 1" = 3'

GEORGIA REGISTERED PROFESSIONAL ENGINEER FRED SOMORAJSKI

BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE
0	ISSUED FOR BIDS	CDR	11-2020

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TRAVIS FIELD WATER RECLAMATION FACILITY FORCE MAIN

FORCE MAIN PLAN & PROFILE

JOB NO:	J-27788.0000
DATE:	10-2-19
DRAWN:	CDR
DESIGNED:	CDR
REVIEWED:	FS
APPROVED:	FS
SCALE:	AS NOTED

C2.16

NOTE:
1. THE FORCE MAIN SHALL BE PVC (AWWA DR-25) AND SHALL BE GREEN IN COLOR.
2. ALL SHORTER PIECE PIPING (SHORTER THAN FULL LENGTH) IN BETWEEN THE BENDS AND FITTINGS SHALL BE D.I. CLASS 350, AND LINED WITH CEMENT.
3. CONTRACTOR TO CONTACT BOTH RAILROADS (NORFOLK SOUTHERN AND CSX IN ADVANCE OF ANY CONSTRUCTION ACTIVITIES AND COORDINATE FOR FIELD INSPECTOR, LIABILITY INSURANCE, ETC. NO WORK SHALL BE DONE WITHOUT RAILROAD INSPECTOR ON SITE.

BORE PIT
APPROX. 15'X10'

CONTRACTOR TO VERIFY EXACT LOCATION OF EXISTING FORCE MAIN PRIOR TO START OF CONSTRUCTION

END HORIZONTAL DIRECTIONAL DRILLING 34-INCH HDPE DR-17 UNDER U.S. HWY 17 AND PIPEMAKERS CANAL
N: 774081.8449
E: 970872.4863

4-INCH AIR RELEASE VALVE PEDESTAL ASSEMBLY (SEE DETAIL)
N: 774093.5198
E: 970898.8695

30" 22.5° BEND D.I.R.J.
N: 774089.2032
E: 970881.3815

PROPOSED 30"ø PVC EFFLUENT FORCE MAIN (AWWA C-900, DR 25) APPROX. 792 LF (THIS SHEET)

CANAL RIGHT-OF-WAY (TYP.)

MATCH LINE - SEE SHEET NO. C2.16 STA NO. 135+00

MINIMUM 18-INCH SEPARATION BETWEEN EXISTING 24" DRAINAGE AND 30" EFFLUENT FORCE MAIN

30" 22.5° BEND D.I.R.J.
N: 774206.1008
E: 971311.6123

30" 22.5° BEND D.I.R.J. (VERTICAL)
N: 774204.2185
E: 971308.8602

30" 45° BEND D.I.R.J. (VERTICAL)
N: 774202.3618
E: 971306.1455

30" 22.5° BEND D.I.R.J.
N: 774181.4638
E: 971275.5907

START OF EXISTING 48" STEEL CASING (BY OTHERS) FOR PROPOSED 30-INCH FPVC FORCE MAIN TO CROSS UNDER RAILROAD TRACKS
N: 774224.9304
E: 971376.7962

STEEL CASING BY OTHERS

STEEL CASING FOR EXISTING 16" FORCE MAIN RELOCATION (BY OTHERS)

SKETCHED FROM ERC DRAWINGS (SCALED AND ROTATED BASED ON CENTERLINE PROPOSED CANAL ALIGNMENT REFERENCE)

525.44'

4-INCH AIR RELEASE VALVE PEDESTAL ASSEMBLY (SEE DETAIL)
N: 774212.2766
E: 971331.9930

EXISTING 48-INCH STEEL CASING (BY OTHERS) WITH PROPOSED 30" FPVC 292 LF (THIS SHEET)

EXISTING FORCE MAIN UTILITY EASEMENT

MATCH LINE - SEE SHEET NO. C2.18 STA NO. 110+00

CONTRACTOR TO VERIFY EXACT LOCATION OF EXISTING FORCE MAIN PRIOR TO START OF CONSTRUCTION

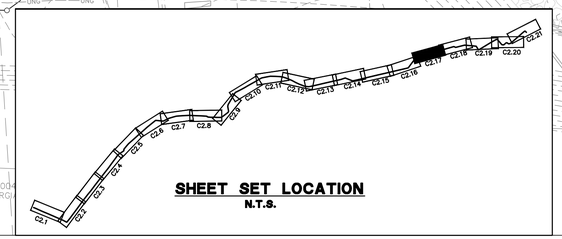
R/W LINE WORK TAKEN FROM MEGARAN CAD FILE 5931175-CU101FM (AREA LOCATED)

300.17'
N 77°02'51" E

116.34'
N 77°02'51" E

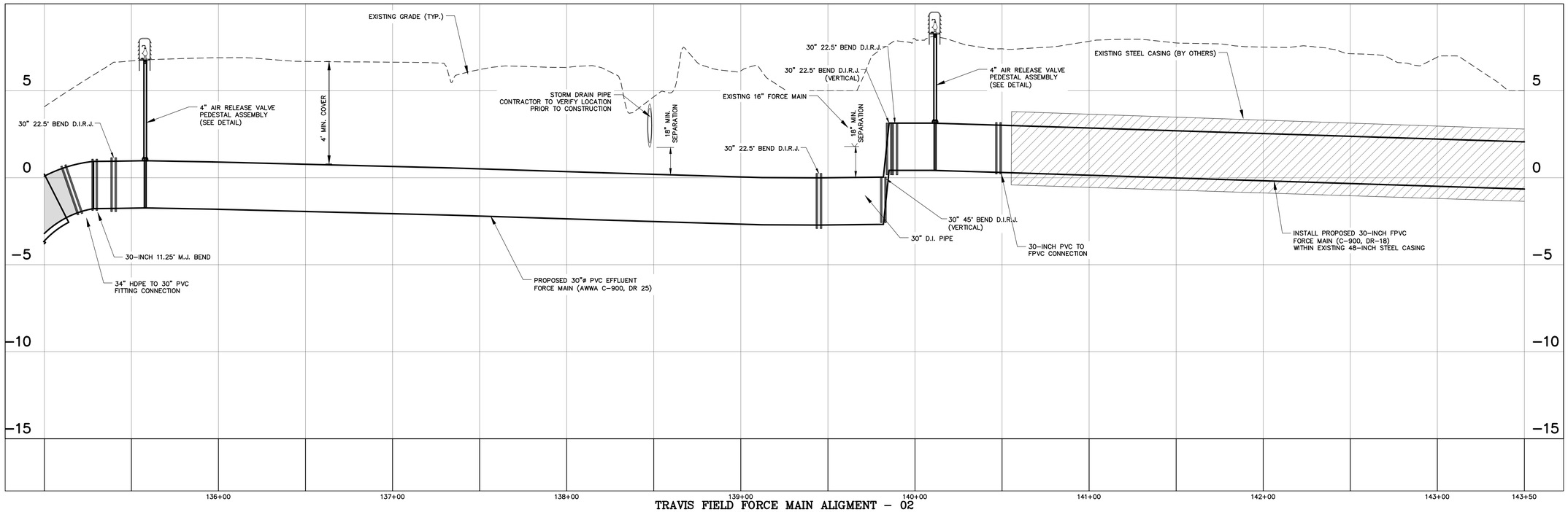
6-0004-02-001
GEORGIA PORTS AUTHORITY

6-0004-02-001
GEORGIA PORTS AUTHORITY



SHEET SET LOCATION
N.T.S.

GRAPHIC SCALE
30 0 15 30 60 120.0001
(IN FEET)
1 inch = 30 ft.



TRAVIS FIELD FORCE MAIN ALIGMENT - 02
STATIONS: 135+00 - 143+50
SCALE: HORZ.: 1" = 30'
VERT.: 1" = 3'

BID SET - NOT FOR CONSTRUCTION

NO.	DATE	BY
0	ISSUED FOR BIDS	CDR 11-2020
	REVISIONS	

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TRAVIS FIELD WATER RECLAMATION FACILITY FORCE MAIN

FORCE MAIN PLAN & PROFILE

JOB NO:	J-27788.0000
DATE:	10-2-19
DRAWN:	CDR
DESIGNED:	CDR
REVIEWED:	FS
APPROVED:	FS
SCALE:	AS NOTED

C2.17

NOTE:
1. THE FORCE MAIN SHALL BE PVC (AWWA DR-25) AND SHALL BE GREEN IN COLOR.
2. ALL SHORTER PIECE PIPING (SHORTER THAN FULL LENGTH) IN BETWEEN THE BENDS AND FITTINGS SHALL BE D.I. CLASS 350, AND LINED WITH CEMENT.
3. CONTRACTOR TO CONTACT BOTH RAILROADS (NORFOLK SOUTHERN AND CSX IN ADVANCE OF ANY CONSTRUCTION ACTIVITIES AND COORDINATE FOR FIELD INSPECTOR, LIABILITY INSURANCE, ETC. NO WORK SHALL BE DONE WITHOUT RAILROAD INSPECTOR ON SITE.

MATCH LINE – SEE SHEET NO. C2.17 STA NO. 143+50

STEEL CASING BY OTHERS

END OF EXISTING 48" STEEL CASING (BY OTHERS) FOR PROPOSED 30-INCH FPVC FORCE MAIN TO CROSS UNDER RAILROAD TRACKS
N: 774374.3288
E: 971880.7842

STEEL CASING FOR EXISTING 16" FORCE MAIN RELOCATION (BY OTHERS)

30" 45° BEND D.I.R.J.
N: 774381.4576
E: 971921.7841

30" 45° BEND D.I.R.J.
N: 774373.2024
E: 971937.9574

PROPOSED 30"ø PVC EFFLUENT FORCE MAIN (AWWA C-900, DR 25)
APPROX. 326 LF (THIS SHEET)

START HORIZONTAL DIRECTIONAL DRILLING 34-INCH HDPE DR-17 UNDER DRAINAGE AND ASPHALT ROAD
N: 774446.1469
E: 972190.4860

30" 22.5° BEND D.I.R.J.
N: 774446.5414
E: 972185.4865

PROTECT EXISTING OVERHEAD POWER POLE
N: 774449.4755
E: 972179.1869

SKETCHED FROM RMC DRAWING SR (SCALED AND ROTATED BASED ON CENTERLINE OF PROPOSED CANAL ALIGNMENT) (SEE REF. 3)

EXISTING 48-INCH STEEL CASING (BY OTHERS) WITH PROPOSED 30" FPVC 232 LF (THIS SHEET)

EXISTING FORCE MAIN UTILITY EASEMENT

MINIMUM 18-INCH SEPARATION BETWEEN EXISTING 24" DRAINAGE AND 30" EFFLUENT FORCE MAIN

BORE PIT
APPROX. 15'X10'

PROTECT EXISTING OVERHEAD POWER POLE
N: 774441.1620
E: 972197.3131

HORIZONTAL DIRECTIONAL DRILL
293 LF (THIS SHEET)
34-INCH HDPE FORCE MAIN – DR 17

CONTRACTOR TO VERIFY EXACT LOCATION OF EXISTING FORCE MAIN PRIOR TO START OF CONSTRUCTION

MATCH LINE – SEE SHEET NO. C2.19 STA NO. 152+00

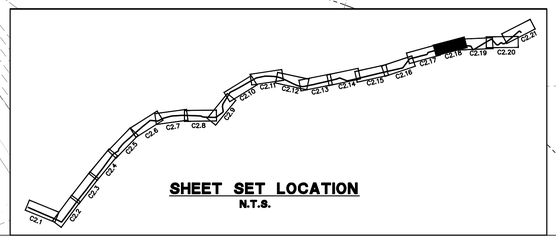
TOMOCHICHI ROAD

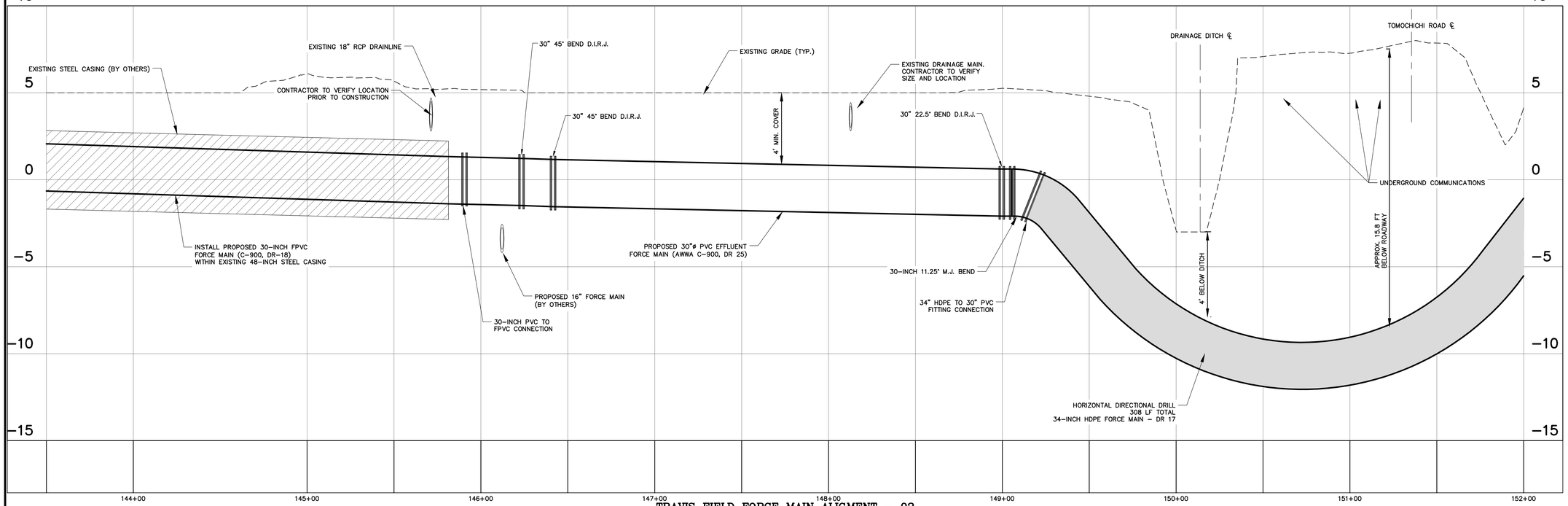
BORE PIT
APPROX. 15'X10'

BENCHM
"X" IN CONCR
CONC. SSMH BA
EL.

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

SHEET SET LOCATION
N.T.S.





TRAVIS FIELD FORCE MAIN ALIGMENT – 02
STATIONS: 143+50 – 152+00
SCALE: HORZ.: 1" = 30'
VERT.: 1" = 3'

BID SET - NOT FOR CONSTRUCTION

NO.	ISSUED FOR BIDS	BY	DATE
0	REVISIONS	CDR	11-2020

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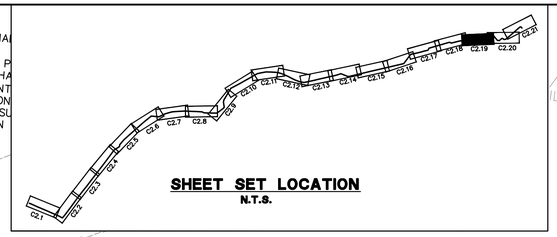
TRAVIS FIELD WATER RECLAMATION FACILITY FORCE MAIN

FORCE MAIN PLAN & PROFILE

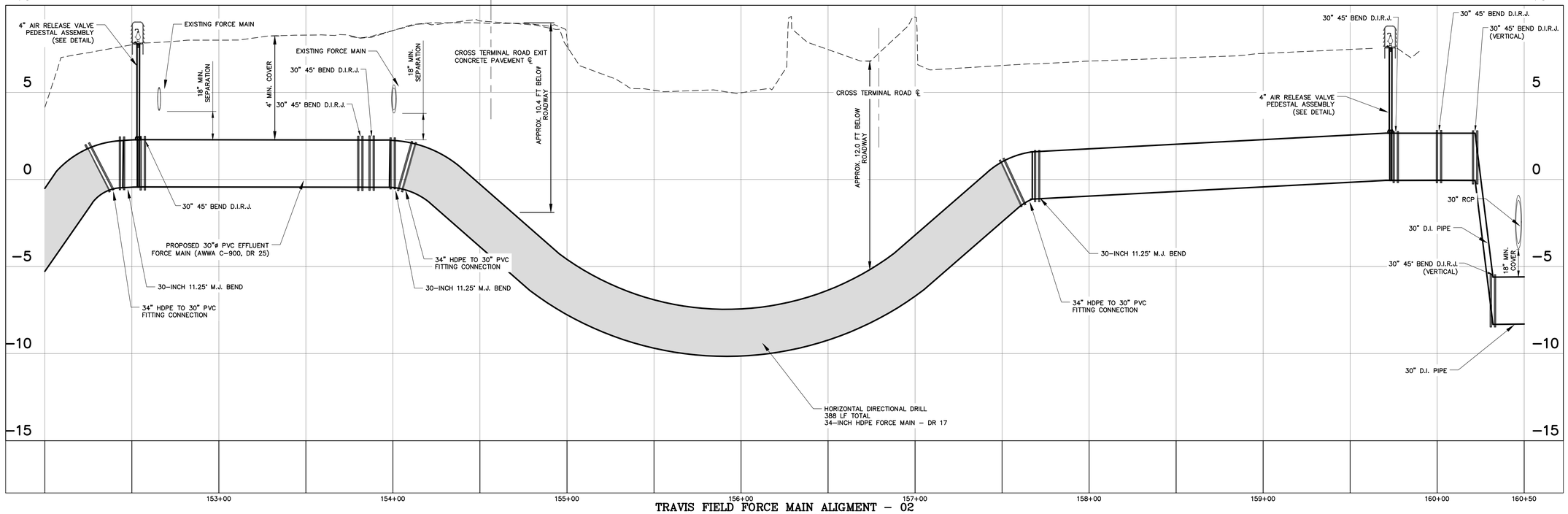
JOB NO:	J-27788.0000
DATE:	10-2-19
DRAWN:	CDR
DESIGNED:	CDR
REVIEWED:	FS
APPROVED:	FS
SCALE:	AS NOTED

C2.18

NOTE:
1. THE FORCE MAIN SHA
COLOR.
2. ALL SHORTER PIECE P
BENDS AND FITTINGS SHA
3. CONTRACTOR TO CONT
IN ADVANCE OF ANY CON
INSPECTOR, LIABILITY INSU
RAILROAD INSPECTOR ON



SHEET SET LOCATION
N.T.S.



TRAVIS FIELD FORCE MAIN ALIGMENT – 02
STATIONS: 152+00 – 160+50
SCALE: HORZ.: 1" = 30'
VERT.: 1" = 3'

BID SET - NOT FOR CONSTRUCTION

GEORGIA REGISTERED PROFESSIONAL ENGINEER FRED SOROKOPUD

NO.	DATE	BY	REVISIONS
0	11–2020	CDR	ISSUED FOR BIDS

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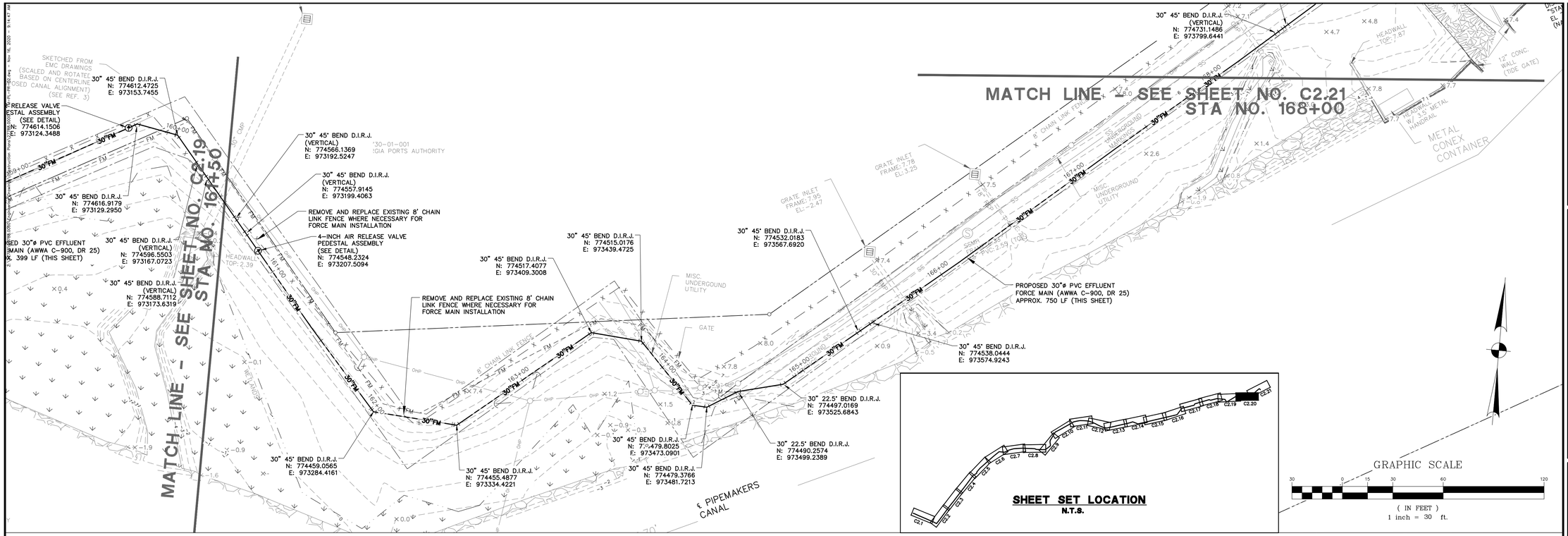
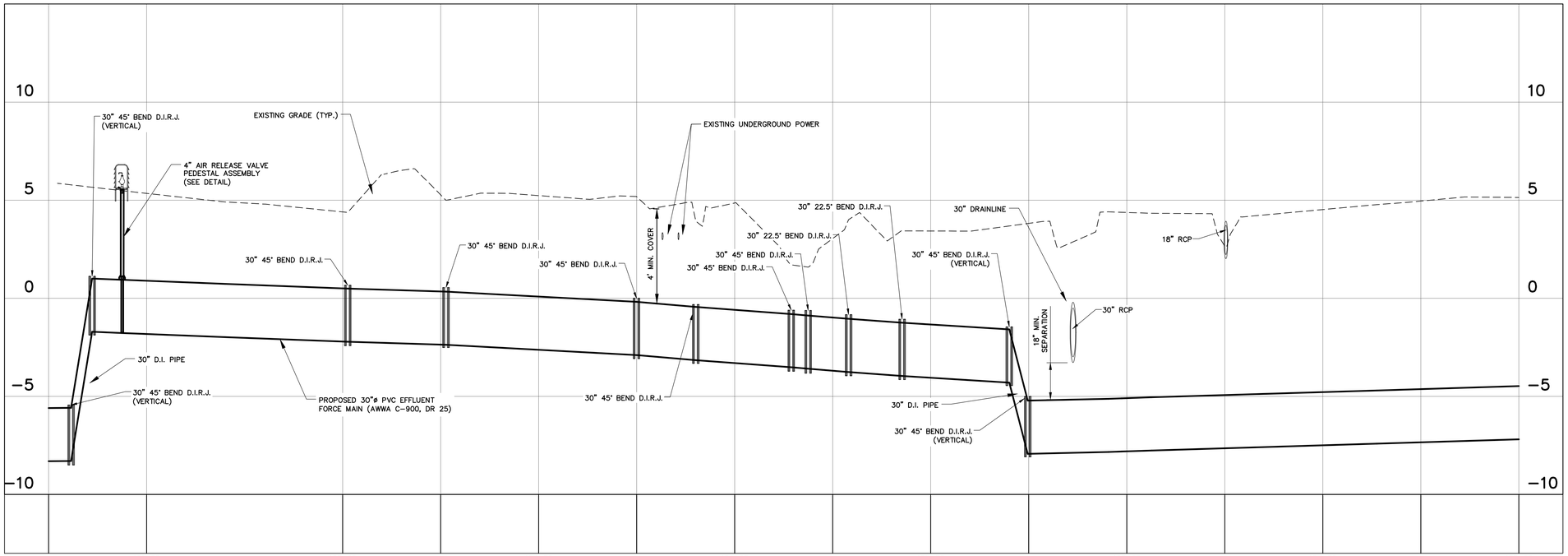
TRAVIS FIELD WATER RECLAMATION FACILITY FORCE MAIN

FORCE MAIN PLAN & PROFILE

JOB NO:	J–27788.0000
DATE:	10–2–19
DRAWN:	CDR
DESIGNED:	CDR
REVIEWED:	FS
APPROVED:	FS
SCALE:	AS NOTED

C2.19





TRAVIS FIELD FORCE MAIN ALIGMENT – 02

STATIONS: 160+50 – 168+00
SCALE: HORZ.: 1" = 30'
VERT.: 1" = 3'

BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE
0	ISSUED FOR BIDS	CDR	11-2020

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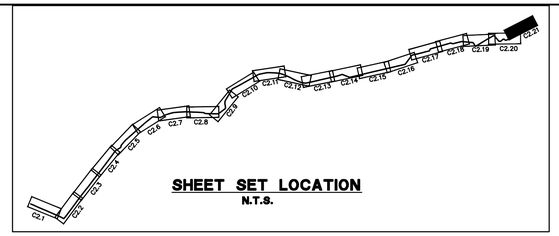
TRAVIS FIELD WATER RECLAMATION FACILITY FORCE MAIN

FORCE MAIN PLAN & PROFILE

JOB NO:	J-27788.0000
DATE:	10-2-19
DRAWN:	CDR
DESIGNED:	CDR
REVIEWED:	FS
APPROVED:	FS
SCALE:	AS NOTED

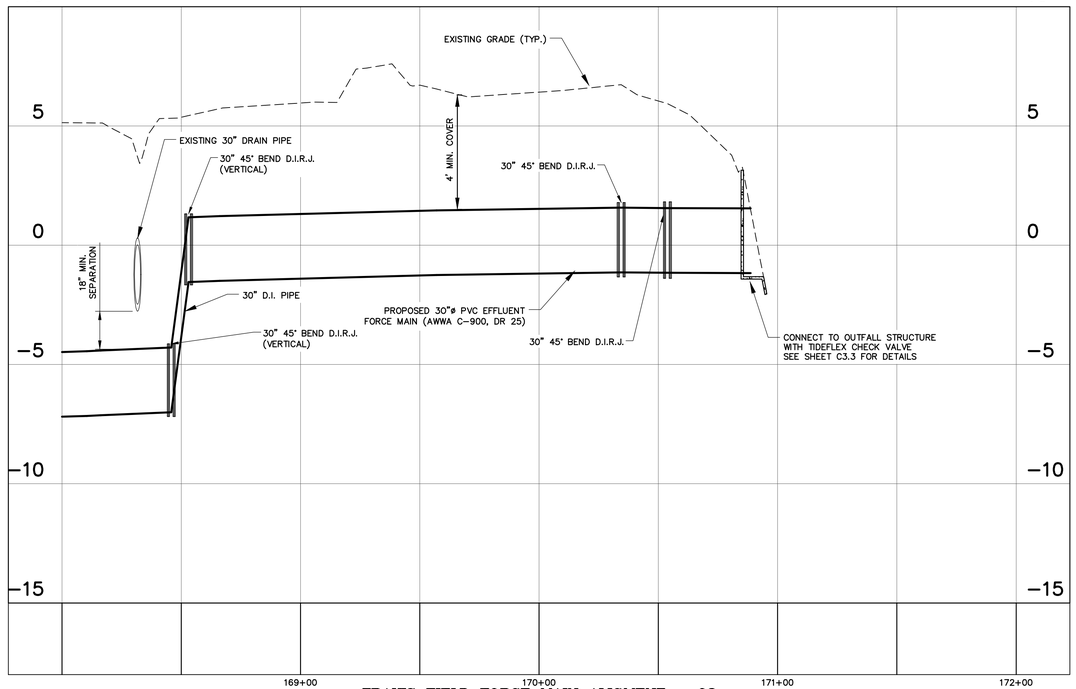
C2.20



SHEET SET LOCATION
N.T.S.

NOTE:
1. THE FORCE MAIN SHALL BE PVC (AWWA DR-25) AND SHALL BE GREEN IN COLOR.
2. ALL SHORTER PIECE PIPING (SHORTER THAN FULL LENGTH) IN BETWEEN THE BENDS AND FITTINGS SHALL BE D.I. CLASS 350, AND LINED WITH CEMENT.
3. CONTRACTOR TO CONTACT BOTH RAILROADS (NORFOLK SOUTHERN AND CSX IN ADVANCE OF ANY CONSTRUCTION ACTIVITIES AND COORDINATE FOR FIELD INSPECTOR, LIABILITY INSURANCE, ETC. NO WORK SHALL BE DONE WITHOUT RAILROAD INSPECTOR ON SITE.

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.



TRAVIS FIELD FORCE MAIN ALIGMENT - 02
STATIONS: 168+00 - 172+00
SCALE: HORZ.: 1" = 30'
VERT.: 1" = 3'

BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE
0	ISSUED FOR BIDS	CDR	11-2020

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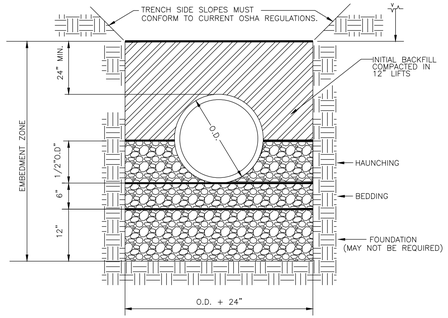
TRAVIS FIELD WATER RECLAMATION FACILITY FORCE MAIN

FORCE MAIN PLAN & PROFILE

JOB NO:	J-27788.0000
DATE:	10-2-19
DRAWN:	CDR
DESIGNED:	CDR
REVIEWED:	FS
APPROVED:	FS
SCALE:	AS NOTED

C2.21

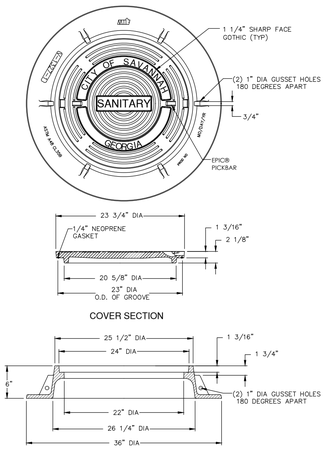


NOTES:

1. FOUNDATION, BEDDING AND HAUNCHING SHALL BE #57 STONE.
2. INITIAL BACKFILL FOR GRAVITY SEWER SHALL BE CLASS II OR BETTER SELECT COMMON FILL.
3. INITIAL BACKFILL FOR SANITARY FORCEMAIN SHALL BE CLASS III OR BETTER SELECT COMMON FILL.
4. FINAL BACKFILL SHALL BE CLASS III OR BETTER COMMON FILL.
5. SEE CITY OF SAVANNAH STANDARD SPECIFICATIONS SECTION 02554 PART 2.11 FOR MORE DETAILS.

STANDARD PIPE BEDDING

STANDARD CONSTRUCTION DETAILS | CITY OF Savannah WATER RESOURCES AND PUBLIC WORKS BUREAU Planning & Engineering | SCALE: N.T.S. | DATED: JAN 2017 | PLATE NUMBER: S16

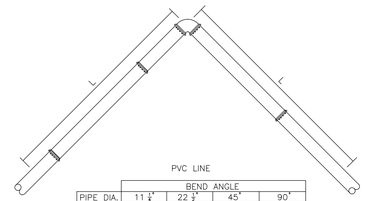


NOTE:

1. MANHOLE RING AND COVER SHALL BE IN COMPLIANCE TO CITY OF SAVANNAH SPECIFICATION 02554

SANITARY MANHOLE RING AND COVER

STANDARD CONSTRUCTION DETAILS | CITY OF Savannah WATER RESOURCES AND PUBLIC WORKS BUREAU Planning & Engineering | SCALE: N.T.S. | DATED: JAN 2017 | PLATE NUMBER: S10



PVC LINE

PIPE DIA.	BEND ANGLE 11 1/4°	22 1/2°	45°	90°
4	2	4	8	18
6	3	5	11	25
8	4	7	14	33
10	4	8	16	39
12	5	9	19	45
16	5	9	19	45
20	6	11	23	54
24	8	16	26	62
*30	10	20	41	99

PVC DESIGN:
SOIL TYPE: SM
TRENCH TYPE: 3
COVER: 3' ≤12" DIA.
4' >12" DIA.
TEST PRESSURE: 150 PSI

POLYETHYLENE WRAPPED DUCTILE IRON LINE

PIPE DIA.	BEND ANGLE 11 1/4°	22 1/2°	45°	90°
4	3	5	9	20
6	3	6	12	28
8	4	8	16	36
10	5	9	19	43
12	6	11	22	51
16	7	14	28	65
20	8	16	33	79
24	9	19	38	92
*30	10	20	42	100

PE WRAPPED DIP:
SOIL TYPE: SM
TRENCH TYPE: 3
COVER: 3'
TEST PRESSURE: 150 PSI

* INDICATES INFORMATION ADDED TO STANDARD CITY OF SAVANNAH DETAIL

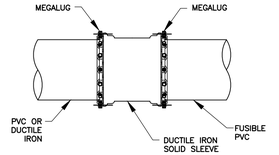
MINIMUM RESTRAINED LENGTH (L)

NOTES:

1. LENGTH OF RESTRAINT SHOWN IS IN FEET. PIPE DIAMETERS ARE IN INCHES.
2. WHERE LINES CONSIST OF BOTH DUCTILE IRON AND PVC WITHIN THE LIMITS OF REQUIRED RESTRAINT, LIMITS FOR PVC SHALL APPLY.
3. INFORMATION IN THE TABLES ABOVE ARE BASED ON THE DESIGN INFORMATION SHOWN. THE ENGINEER SHALL PROVIDE AMENDED RESTRAINT LENGTHS IF SITE CONDITIONS DIFFER

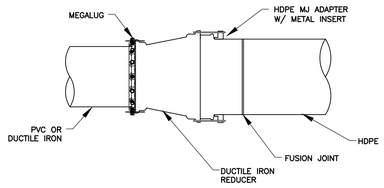
HORIZONTAL BEND RESTRAINT

STANDARD CONSTRUCTION DETAILS | CITY OF Savannah WATER RESOURCES AND PUBLIC WORKS BUREAU Planning & Engineering | SCALE: N.T.S. | DATED: JAN 2017 | PLATE NUMBER: S4



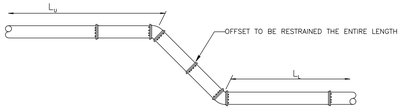
FPVC CONNECTION DETAIL

SCALE: NONE



HDPE CONNECTION DETAIL

SCALE: NONE



PVC LINE

PIPE DIA.	BEND ANGLE 11 1/4° L_U	L_L	22 1/2° L_U	L_L	45° L_U	L_L
4	4	1	8	2	17	3
6	6	1	11	2	23	4
8	8	2	15	3	30	6
10	9	2	18	4	36	7
12	11	2	21	4	43	8
16	10	3	21	5	42	10
20	13	3	25	6	51	12
24	15	4	29	7	60	15
*30	23	7	46	13	96	26

PVC DESIGN:
SOIL TYPE: SM
TRENCH TYPE: 3
COVER: 3' ≤12" DIA.
4' >12" DIA.
TEST PRESSURE: 150 PSI

POLYETHELYNE WRAPPED DUCTILE IRON LINE

PIPE DIA.	BEND ANGLE 11 1/4° L_U	L_L	22 1/2° L_U	L_L	45° L_U	L_L
4	6	1	12	2	24	4
6	9	2	17	3	34	5
8	11	2	22	3	45	7
10	13	2	26	4	53	8
12	15	3	30	5	63	9
16	19	3	39	6	80	12
20	23	4	47	7	97	15
24	27	4	55	8	113	17
*30	19	5	38	10	78	21

PE WRAPPED DIP:
SOIL TYPE: SM
TRENCH TYPE: 3
COVER: 3'
TEST PRESSURE: 150 PSI

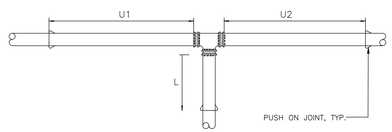
* INDICATES INFORMATION ADDED TO STANDARD CITY OF SAVANNAH DETAIL

NOTES:

1. LENGTH OF RESTRAINT SHOWN IS IN FEET. PIPE DIA. IS IN INCHES
2. WHERE LINES CONSIST OF BOTH DUCTILE IRON AND PVC WITHIN THE LIMITS OF REQUIRED RESTRAINT, LIMITS FOR PVC SHALL APPLY.
3. INFORMATION IN THE TABLES ABOVE ARE BASED ON THE DESIGN INFORMATION SHOWN. THE ENGINEER SHALL PROVIDE AMENDED RESTRAINT LENGTHS IF SITE CONDITIONS DIFFER

VERTICAL BEND RESTRAINT

STANDARD CONSTRUCTION DETAILS | CITY OF Savannah WATER RESOURCES AND PUBLIC WORKS BUREAU Planning & Engineering | SCALE: N.T.S. | DATED: JAN 2017 | PLATE NUMBER: S5



POLYETHYLENE WRAPPED DUCTILE IRON PIPE

TEE U1	U2 10°	20°
4X4	4	*
6X4	*	*
6X6	27	*
8X4	*	*
8X6	9	*
8X8	52	*
10X4	*	*
10X6	*	*
10X8	35	*
10X10	72	16
12X4	*	*
12X6	*	*
12X8	20	*
12X10	58	*
12X12	94	38
16X6	*	*
16X8	*	*

TEE U1	U2 10°	20°
16X10	30	*
16X12	68	*
16X16	135	78
20X6	*	*
20X8	*	*
20X10	5	*
20X12	42	*
20X16	111	40
20X20	175	116
24X6	*	*
24X8	*	*
24X10	*	*
24X12	19	*
24X16	87	5
24X20	151	82
24X24	212	152

TEE U1	U2 10°	20°
30X6	*	*
30X8	*	*
30X10	*	*
30X12	*	*
30X16	42	*
30X20	119	*
30X24	183	80
*30X30	264	183

*RESTRAIN AT TEE ONLY.

PE WRAPPED DIP:
SOIL TYPE: SM
TRENCH TYPE: 3
COVER: 3'
TEST PRESSURE=150 PSI

MINIMUM RESTRAINED LENGTH (L)

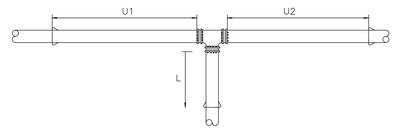
* INDICATES INFORMATION ADDED TO STANDARD CITY OF SAVANNAH DETAIL

NOTES:

1. LENGTH OF RESTRAINT SHOWN IS IN FEET. FITTING DIAMETERS ARE IN INCHES.
2. WHERE LINES CONSIST OF BOTH DUCTILE IRON AND PVC WITHIN THE LIMITS OF REQUIRED RESTRAINT, LIMITS FOR PVC SHALL APPLY.
3. U1 AND U2 = UNINTERUPTED STRAIGHT RUNS OF RESTRAINED JOINT PIPE IN EACH DIRECTION.
4. Ur = THE SMALLER OF U1 OR U2 (E.G., U1, IN THE ABOVE DIAGRAM).
5. L = MINIMUM RESTRAINED LENGTH ALONG THE BRANCH.
6. WHERE Ur IS LESS THAN 5', RESTRAIN TEE AS A 90° HORIZONTAL BEND.
7. INFORMATION IN THE TABLES ABOVE ARE BASED ON THE DESIGN INFORMATION SHOWN. THE ENGINEER SHALL PROVIDE AMENDED RESTRAINT LENGTHS IF SITE CONDITIONS DIFFER.

TEE RESTRAINT (DUCTILE IRON PIPE)

STANDARD CONSTRUCTION DETAILS | CITY OF Savannah WATER RESOURCES AND PUBLIC WORKS BUREAU Planning & Engineering | SCALE: N.T.S. | DATED: JAN 2017 | PLATE NUMBER: S7



PVC

TEE U1	U2 10°	20°
4X4	3	*
6X4	*	*
6X6	5	*
8X4	*	*
8X6	*	*
8X8	18	*
10X4	*	*
10X6	*	*
10X8	8	*
10X10	28	11
12X4	*	*
12X6	*	*
12X8	*	*
12X10	20	*
12X12	39	3
16X6	*	*
16X8	*	*

TEE U1	U2 10°	20°
16X10	4	*
16X12	25	*
16X16	61	24
20X6	*	*
20X8	*	*
20X10	*	*
20X12	10	*
20X16	48	2
20X20	81	44
24X6	*	*
24X8	*	*
24X10	*	*
24X12	*	*
24X16	35	*
24X20	69	25
24X24	101	63

TEE U1	U2 10°	20°
30X6	*	*
30X8	*	*
30X10	*	*
30X12	*	*
30X16	29	*
30X20	80	*
30X24	123	54
*30X30	178	124

*RESTRAIN AT TEE ONLY.

PVC DESIGN:
SOIL TYPE: SM
TRENCH TYPE: 3
COVER: 3' ≤12" DIA.
4' >12" DIA.
TEST PRESSURE: 150 PSI

MINIMUM RESTRAINED LENGTH (L)

* INDICATES INFORMATION ADDED TO STANDARD CITY OF SAVANNAH DETAIL

NOTES:

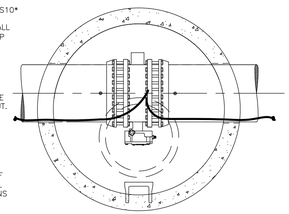
1. LENGTH OF RESTRAINT SHOWN IS IN FEET. FITTING DIAMETERS ARE IN INCHES.
2. WHERE LINES CONSIST OF BOTH DUCTILE IRON AND PVC WITHIN THE LIMITS OF REQUIRED RESTRAINT, LIMITS FOR PVC SHALL APPLY.
3. U1 AND U2 = UNINTERUPTED STRAIGHT RUNS OF PIPE IN EACH DIRECTION.
4. Ur = THE SMALLER OF U1 OR U2.
5. L = MINIMUM RESTRAINED LENGTH ALONG THE BRANCH.
6. WHERE Ur IS LESS THAN 5', RESTRAIN TEE AS A 90°.
7. INFORMATION IN THE TABLES ABOVE ARE BASED ON THE DESIGN INFORMATION SHOWN. THE ENGINEER SHALL PROVIDE AMENDED RESTRAINT LENGTHS IF SITE CONDITIONS DIFFER.

TEE RESTRAINT (PVC PIPE)

STANDARD CONSTRUCTION DETAILS | CITY OF Savannah WATER RESOURCES AND PUBLIC WORKS BUREAU Planning & Engineering | SCALE: N.T.S. | DATED: JAN 2017 | PLATE NUMBER: S6

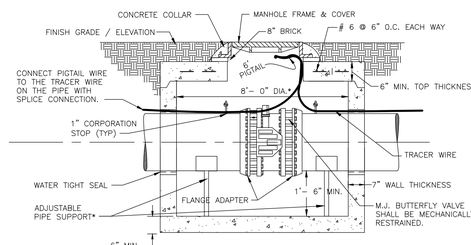
NOTES:

1. MANHOLE FRAME AND COVER PER DETAIL S10*
2. THE BOTTOM OF THE MANHOLE FRAME SHALL NOT BE MORE THAN 12" ABOVE THE TOP OF THE MANHOLE STRUCTURE.
3. PRECAST CONCENTRIC CONE RISERS MAY BE USED WHERE REQUIRED FOR DEPTH.
4. THE MANHOLE FRAME AND COVER MUST BE CENTERED OVER THE VALVE OPERATING NUT.
5. POLYPROPYLENE MANHOLE STEPS SHALL BE PROVIDED AT 12" O.C. FOR MANHOLES GREATER THAN 5 FEET DEEP.
6. FORCE MAIN PIPE – ONE FULL LENGTH OF DUCTILE IRON PIPE (INSTALLED EACH WAY), COATED FOR HIGH CORROSION APPLICATIONS PER CITY SPECIFICATION 02554. *



PLAN

* INDICATES INFORMATION ADDED TO STANDARD CITY OF SAVANNAH DETAIL



SECTION

VALVE MANHOLE FOR 30" BUTTERFLY VALVE*

STANDARD CONSTRUCTION DETAILS | CITY OF Savannah WATER RESOURCES AND PUBLIC WORKS BUREAU Planning & Engineering | SCALE: N.T.S. | DATED: JAN 2017 | PLATE NUMBER: W26

REGISTERED GEORGIA PROFESSIONAL ENGINEER FRED SORORIAN

BID SET - NOT FOR CONSTRUCTION

NO.	DATE
0	11–2020
ISSUED FOR BIDS	CDR
REVISIONS	BY

THOMAS & HUTTON
50 Park of Commerce Way
Savannah, GA 31405 • 912.234.5300
www.thomasandhutton.com

SAVANNAH savannahga.gov

TRAVIS FIELD WATER RECLAMATION FACILITY FORCE MAIN

EFFLUENT FORCE MAIN DETAILS

JOB NO:	J-27788.0000
DATE:	10-2-19
DRAWN:	CDR
DESIGNED:	CDR
REVIEWED:	FS
APPROVED:	FS
SCALE:	AS NOTED

C3.1

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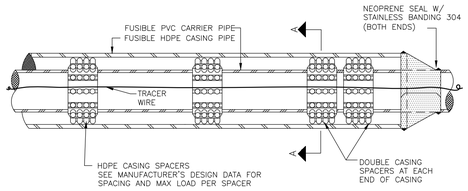
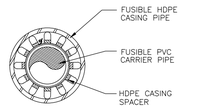


PROFILE



SECTION A–A

NOTES:

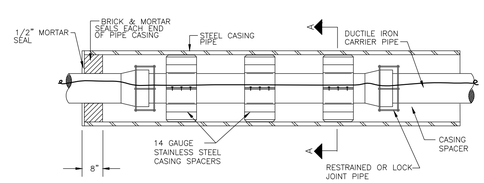
1. SEE MANUFACTURES DESIGN DATA FOR SPACING AND MAX LOAD PER SPACER.
2. ALL HIGHWAY CROSSINGS SHALL BE INSTALLED IN ACCORDANCE WITH GA. D.O.T. REGULATIONS & PERMIT REQUIREMENTS.
3. COPPER COATED STEEL TRACER WIRE MUST BE INSTALLED ON PIPE.
4. SEAL BOTH ENDS OF CASING PER SPEC.
5. FOR FORCEMAIN ONLY, DO NOT CASE GRAVITY LINES IN PLASTIC PIPE.

FUSIBLE PVC FORCEMAIN CASING INSTALLATION

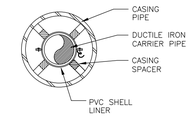
STANDARD CONSTRUCTION DETAILS

CITY OF Savannah
WATER RESOURCES AND PUBLIC WORKS BUREAU
Planning & Engineering

SCALE: N.T.S.
DATED: JAN 2017
PLATE NUMBER: S9B



PROFILE



SECTION A–A

NOTES:

1. CASING SPACERS SHALL BE PLACED ON 6' CENTERS MAXIMUM.
2. ALL RAILROAD CROSSINGS SHALL BE INSTALLED IN ACCORDANCE WITH AMERICAN RAILWAY ENGINEERING ASSOCIATION REGULATIONS, UNDER PART 5, PIPELINES (LATEST EDITION) AND PERMIT REQUIREMENTS.
3. ALL HIGHWAY CROSSINGS SHALL BE INSTALLED IN ACCORDANCE WITH GA. D.O.T. REGULATIONS & PERMIT REQUIREMENTS.
4. COPPER COATED STEEL TRACER WIRE MUST BE INSTALLED ON PIPE.

STEEL CASING INSTALLATION

STANDARD CONSTRUCTION DETAILS

CITY OF Savannah
WATER RESOURCES AND PUBLIC WORKS BUREAU
Planning & Engineering

SCALE: N.T.S.
DATED: JAN 2017
PLATE NUMBER: S9A

NOTES:

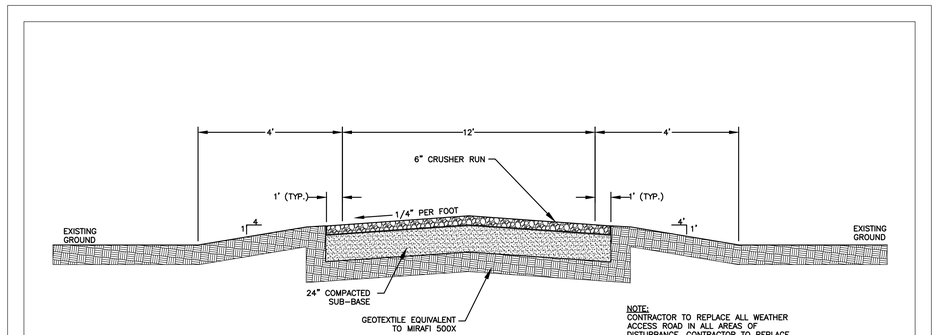
1. ALL CONSTRUCTION MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE CITY OF SAVANNAH'S LATEST CONSTRUCTION SPECIFICATIONS AND DETAILS. THE SYSTEM SHALL BE DESIGNED AND TESTED PER THE SPECIFICATIONS AND REQUIREMENTS MAINTAINED BY THE CITY ENGINEER.
2. AN APPROVED WATER SUPPLY FOR FIRE PROTECTION, EITHER TEMPORARY OR PERMANENT, SHALL BE MADE AVAILABLE AS SOON AS COMBUSTIBLE MATERIAL ARRIVES ON THE SITE.
3. ALL WATER USED FOR CONSTRUCTION SHALL BE METERED THROUGH AN APPROVED BACKFLOW–PREVENTION DEVICE AND FIRE HYDRANT METER OBTAINED FROM THE CONVEYANCE AND DISTRIBUTION DEPARTMENT.
4. ALL ABANDONED SANITARY SEWER LINES SHALL BE PLUGGED.
5. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE SEWER LINES ARE PLACED WITHIN THE EASEMENTS WITH A MINIMUM 7'–6" AVAILABLE FROM PIPE CENTERLINE TO EASEMENT LINE.
6. CONTACT THE UTILITIES PROTECTION CENTER (811 IN GEORGIA OR 1–800–282–7411) FOR LOCATION OF CITY SEWER LINES A MINIMUM OF SEVENTY–TWO (72) HOURS PRIOR TO DIGGING.
7. CONTRACTOR SHALL NOTIFY RESIDENTS A MINIMUM OF 24 HOURS IN ADVANCE OF ANY WORK THAT MAY IMPACT THEM, INCLUDING BUT NOT LIMITED TO: PARKING STALL IMPACT, LOSS OF SERVICE, DRIVEWAY CUTS, REMOVAL/RELOCATION OF FENCES AND MAIL BOXES, SIDEWALK IMPACTS, ETC.

SANITARY SEWER GENERAL NOTES

STANDARD CONSTRUCTION DETAILS

CITY OF Savannah
WATER RESOURCES AND PUBLIC WORKS BUREAU
Planning & Engineering

SCALE: N.T.S.
DATED: JAN 2017
PLATE NUMBER: S17

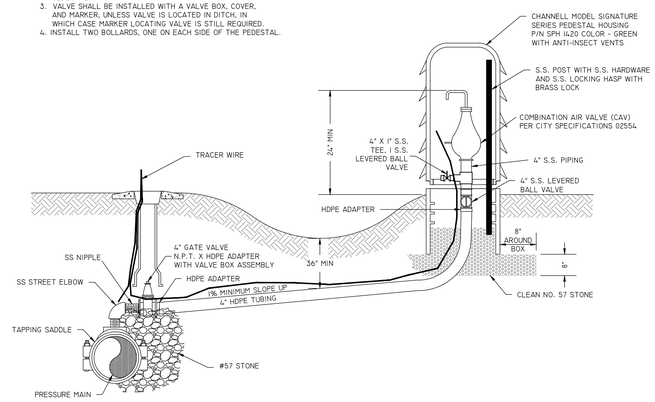


NOTE:
CONTRACTOR TO REPLACE ALL WEATHER ACCESS ROAD IN ALL AREAS OF DISTURBANCE. CONTRACTOR TO REPLACE ACCESS ROAD TO THE SAME OR BETTER THAN THE EXISTING ACCESS ROAD CONDITION.

P32
OCT. 2008
THOMAS & HUTTON

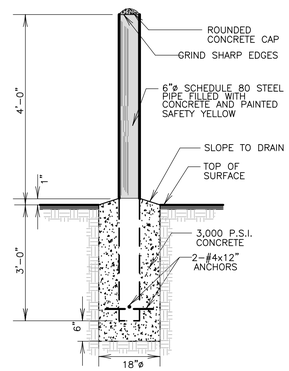
ALL WEATHER ACCESS ROAD REPLACEMENT
NOT TO SCALE

NOTES:
1. PIPING, NIPPLES, PLUGS & BALL VALVES TO BE 300 SERIES STAINLESS STEEL OR AS NOTED.
2. 36" MINIMUM COVER ON HDPE TUBING TO WITHIN 12" OF PEDESTAL.
3. VALVE SHALL BE INSTALLED WITH A VALVE BOX, COVER, AND MARKER, UNLESS VALVE IS LOCATED IN DITCH, IN WHICH CASE MARKER LOCATING VALVE IS STILL REQUIRED.
4. INSTALL TWO BOLLARDS, ONE ON EACH SIDE OF THE PEDESTAL.



SEWER AIR RELEASE PEDESTAL ASSEMBLY

SCALE: NOT TO SCALE



STEEL BOLLARD DETAIL

SCALE: NONE

BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE
0	ISSUED FOR BIDS	CDR	11-2020

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TRAVIS FIELD WATER RECLAMATION FACILITY FORCE MAIN

EFFLUENT FORCE MAIN DETAILS

JOB NO:	J-27788.0000
DATE:	10-2-19
DRAWN:	CDR
DESIGNED:	CDR
REVIEWED:	FS
APPROVED:	FS
SCALE:	AS NOTED

C3.2

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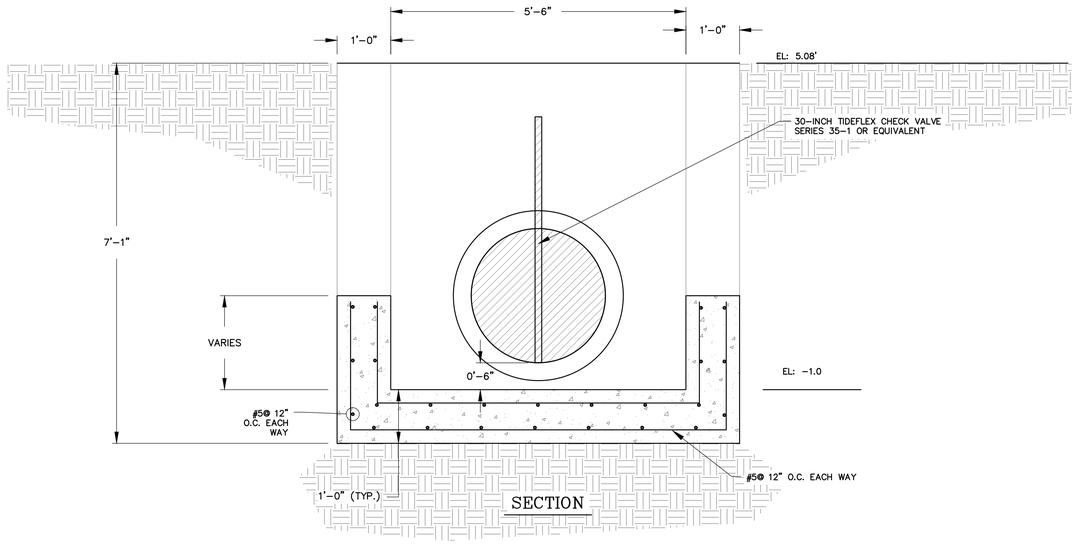
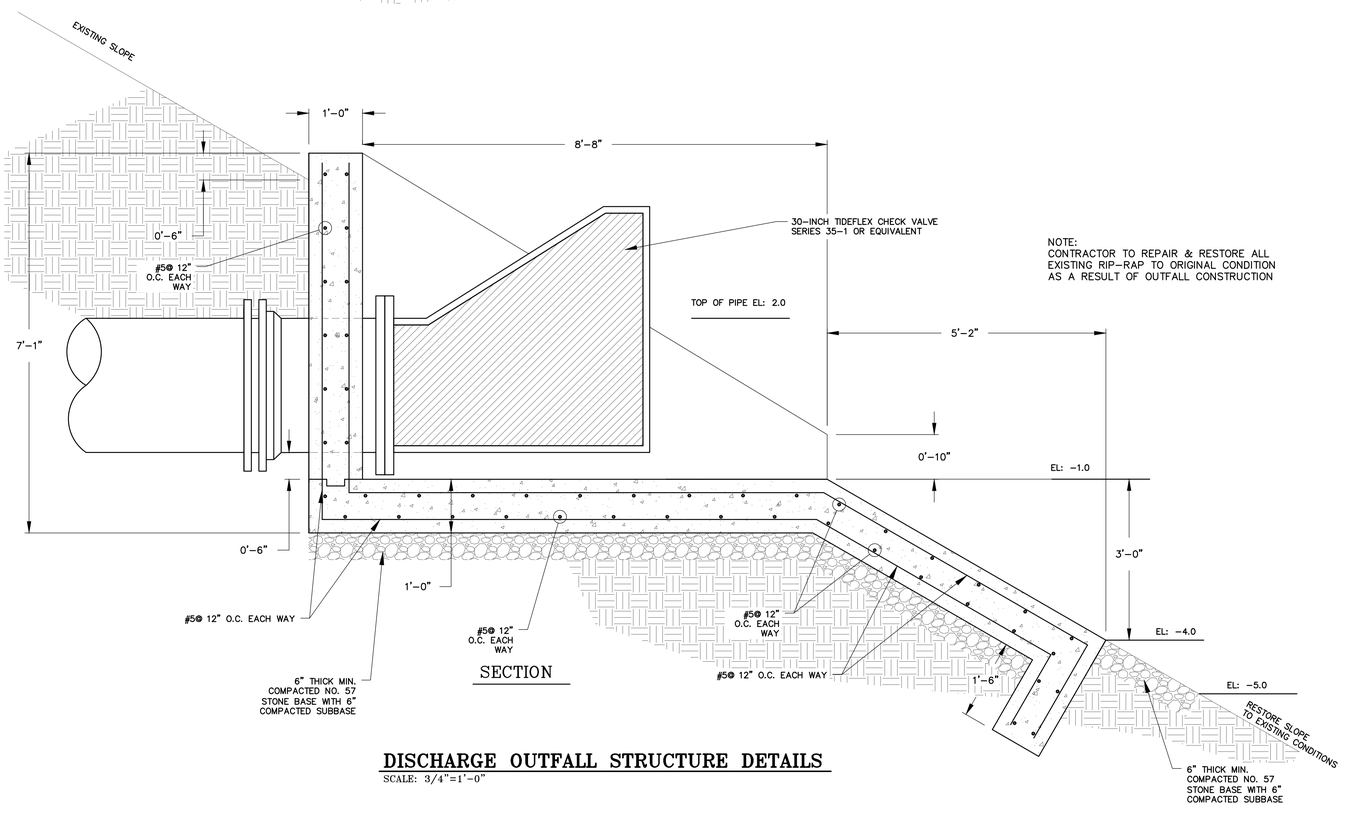


SECTION



SECTION

DISCHARGE OUTFALL STRUCTURE DETAILS

SCALE: 3/4"=1'-0"

BID SET - NOT FOR CONSTRUCTION

REGISTERED GEORGIA PROFESSIONAL ENGINEER
No. 27741
FRED SORORIAN

NO.	ISSUED FOR BIDS / REVISIONS	BY	DATE
0		CDR	11-2020

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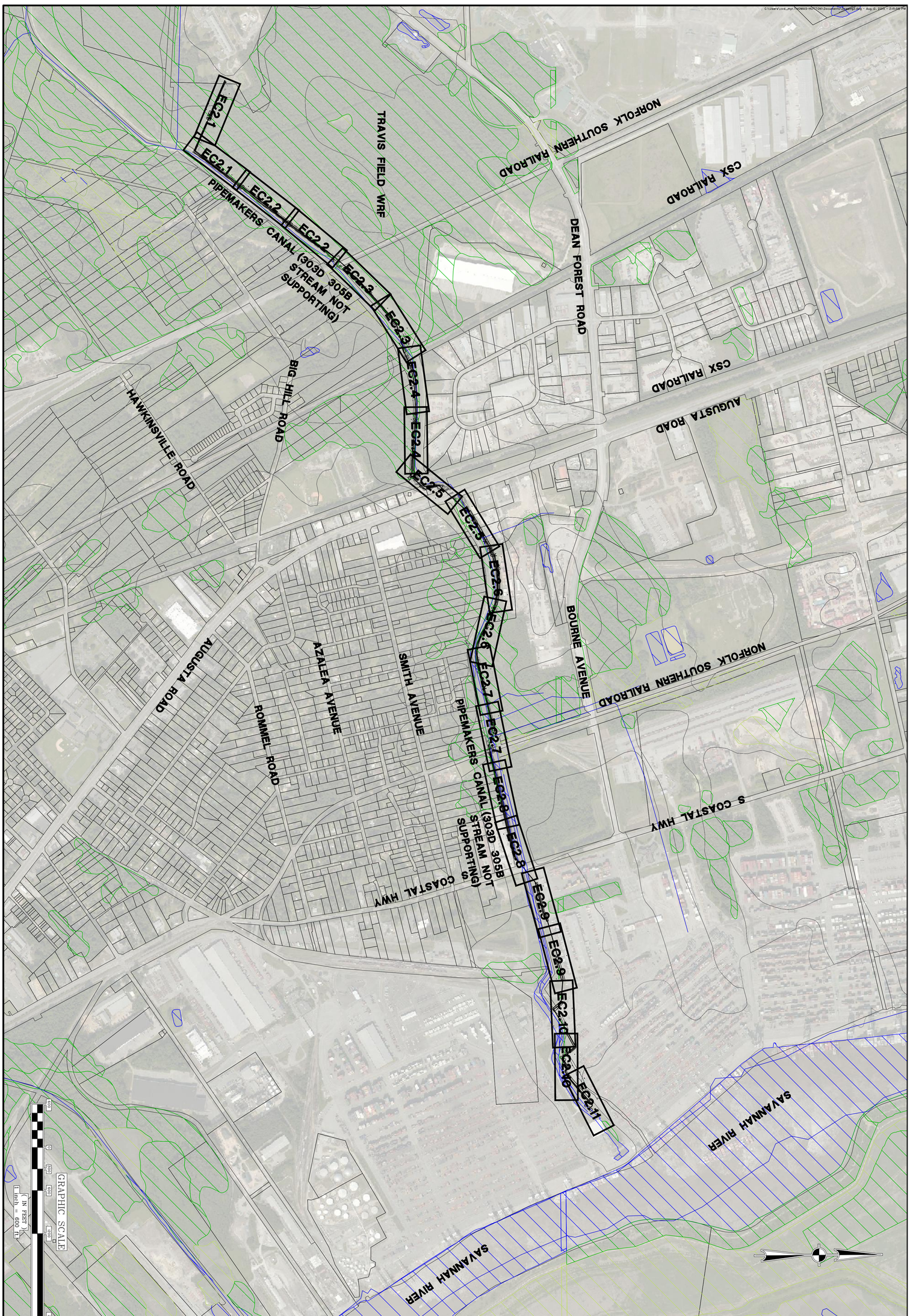
TRAVIS FIELD WATER RECLAMATION FACILITY FORCE MAIN

DISCHARGE OUTFALL STRUCTURE

JOB NO:	J-27788.0000
DATE:	10-2-19
DRAWN:	CDR
DESIGNED:	CDR
REVIEWED:	FS
APPROVED:	FS
SCALE:	AS NOTED

C3.3



EC0.1

JOB NO: J-27788.0000
DATE: 10-2-19
DRAWN: CDR
DESIGNED: CDR
REVIEWED: FS
APPROVED: FS
SCALE: 1" = 600'

SAVANNAH
savannahga.gov

TRAVIS FIELD WATER RECLAMATION FACILITY FORCE MAIN

ESPC OVERALL SITE LOCATION

THOMAS & HUTTON
50 Park of Commerce Way
Savannah, GA 31405 • 912.234.5300
www.thomasandhutton.com

NO.	REVISIONS	BY	DATE
0	ISSUED FOR BIDS	CDR	11-2020

FRED SORORIAN
GSWCC LEVEL II
PLAN REVIEWER
CERTIFICATION #
0000012474

GEORGIA REGISTERED PROFESSIONAL ENGINEER No. 26741 FRED SORORIAN

BID SET - NOT FOR CONSTRUCTION

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EROSION, SEDIMENTATION & POLLUTION CONTROL NOTES

1. THIS PLAN WAS PREPARED AS REQUIRED BY NPDES GENERAL PERMIT No. **IOOOO2**. THESE PLAN SHEETS AND ALL REQUIREMENTS OF THE GENERAL PERMIT AS WELL AS LOCAL, STATE AND FEDERAL REGULATIONS OR LAWS APPLY REGARDLESS OF SPECIFIC INCLUSIONS IN THIS PLAN.
2. THE CONTRACTOR SHALL VERIFY THE SIZE AND LOCATION OF ALL EXISTING UTILITIES. EXISTING UTILITIES ARE ALL UTILITIES ON THE PROJECT IN AN ORIGINAL, RELOCATED OR NEWLY INSTALLED POSITION. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR THE COST OF REPAIRS TO DAMAGED UNDERGROUND OR OVERHEAD FACILITIES, EVEN IF THE UTILITY IS NOT SHOWN ON THE SITE DEVELOPMENT PLANS. THE CONTRACTOR SHALL CONTACT THE UTILITIES PROTECTION CENTER AT 1-800-282-7411 TO COORDINATE THE MARKING OF EXISTING UTILITY LINES A MAXIMUM OF 72 HOURS PRIOR TO COMMENCEMENT OF ANY WORK.
3. CONTRACTOR SHALL FLUSH ALL INLETS AND PIPE AT THE COMPLETION OF CONSTRUCTION TO REMOVE SILT AND DEBRIS. THE CLEANING AND FLUSHING OF INLETS AND PIPE (EXISTING AND PROPOSED) SHALL BE CONSIDERED PART OF THE COST FOR PIPE ON THE PROJECT. SCHEDULE CONSTRUCTION ACTIVITIES TO MINIMIZE THE EXPOSED AREA AND DURATION OF EXPOSURE. IN SCHEDULING, TAKE INTO ACCOUNT THE SEASON AND THE WEATHER FORECAST.
4. EROSION CONTROL MEASURES ARE THE MINIMUM REQUIRED. THE CONTRACTOR SHALL PROVIDE ADDITIONAL CONTROL MEASURES AS DICTATED BY ACTUAL FIELD CONDITIONS AT THE TIME OF CONSTRUCTION IN ORDER TO PREVENT EROSION AND CONTROL SEDIMENT. THE CONTRACTOR SHALL BE FAMILIAR WITH THE "NARRATIVE DESCRIPTION: LAND DISTURBING ACTIVITIES" REPORT THAT ACCOMPANIES THIS PROJECT, AND HAVE A CLEAR UNDERSTANDING OF THE CONCEPTS, APPLICATIONS, STANDARDS AND SPECIFICATIONS OF THE BEST MANAGEMENT PRACTICES LISTED IN SAID DOCUMENT. EROSION AND SEDIMENT CONTROL MEASURES WILL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE ENTIRE PROJECT IS TERMINATED OR SUSPENDED FOR AN INDEFINITE LENGTH OF TIME. ALL DISTURBED AREA. ALL DISTURBED AREAS SHALL BE PLANTED WITH PERMANENT VEGETATION.
5. THE DATA, TOGETHER WITH ALL OTHER INFORMATION SHOWN ON THESE PLANS, OR IN ANY WAY INDICATED THEREBY, WHETHER BY DRAWINGS OR NOTES, OR IN ANY OTHER MANNER, IS BASED UPON FIELD INVESTIGATIONS AND IS BELIEVED TO BE INDICATIVE OF ACTUAL CONDITIONS. HOWEVER, THE SAME IS SHOWN AS INFORMATION ONLY, IS NOT GUARANTEED AND DOES NOT BIND THOMAS & HUTTON, OR THE OWNER IN ANY WAY.
6. CONTRACTOR SHALL MAINTAIN SITE ON A DAILY BASIS TO PROVIDE FOR POSITIVE DRAINAGE. CONTRACTOR, AT HIS COST, SHALL GRADE SITE AND PROVIDE NECESSARY TEMPORARY DRAINAGE SWALES TO INSURE STORM WATER DOES NOT POND ON SITE.
7. SITE DRAINAGE SHALL BE ESTABLISHED TO PREVENT ANY PONDED WATER CONDITIONS WITHIN THE CONSTRUCTION AREA AND TO FACILITATE THE RAPID RUN-OFF OF STORM WATER.
8. NO ACTIVITIES SHALL BE CONDUCTED WITHIN THE 25 OR 50-FOOT STREAM BUFFER ALONG THE BANKS OF ALL STATE WATERS.
9. AMENDMENT/ REVISIONS TO THE ES&PC PLAN WHICH HAVE A SIGNIFICANT EFFECT ON BMPS WITH A HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL. #17
10. WASTE MATERIALS SHALL NOT BE DISCHARGED TO WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT. #18
11. ANY CONSTRUCTION ACTIVITY WHICH DISCHARGES STORM WATER INTO AN IMPAIRED STREAM SEGMENT, OR WITHIN I LINEAR MILE UPSTREAM OF AND WITHIN THE SAME WATERSHED AS, ANY PORTION OF AN BIOTA IMPAIRED STREAM SEGMENT MUST COMPLY WITH PART III. C. OF THE PERMIT.
12. IF A TMDL IMPLEMENTATION PLAN FOR SEDIMENT HAS BEEN FINALIZED FOR THE IMPAIRED STREAM SEGMENT (IDENTIFIED IN ITEM II ABOVE) AT LEAST SIX MONTHS PRIOR TO SUBMITTAL OF NOI, THE ES&PC PLAN MUST ADDRESS ANY SITE-SPECIFIC CONDITIONS OR REQUIREMENTS INCLUDED IN THE TMDL IMPLEMENTATION PLAN.
13. EXCEPT AS REQUIRED TO INSTALL THE INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMPS AS DESCRIBED IN PART IV.D.3., THE INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMPS MUST BE INSTALLED AND IMPLEMENTED PRIOR TO CONDUCTING ANY OTHER CONSTRUCTIONS ACTIVITIES (E.G., CLEARING, GRUBBING AND GRADING) WITHIN THE CONSTRUCTION SITE OR WHEN APPLICABLE, WITHIN PHASED SUB-PARTS OR SEGMENTS OF THE CONSTRUCTION SITE. FAILURE TO COMPLY SHALL CONSTITUTE A VIOLATION OF THIS PERMIT FOR EACH DAY ON WHICH CONSTRUCTION ACTIVITIES OCCUR. THE DESIGN PROFESSIONAL WHO PREPARED THE PLAN MUST INSPECT THE INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMPS IN ACCORDANCE WITH PART IV.A.5. WITHIN SEVEN (7) DAYS AFTER INSTALLATION.

NOTE:
THERE ARE JURISDICTIONAL WETLANDS AND STATE WATERS WITHIN THE PROJECT AREA.

NOTE:
NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE 25 OR 50-FOOT UNDISTURBED STREAM BUFFERS AS MEASURED FROM THE POINT OF WRESTED VEGETATION OR WITHIN 25-FEET OF THE COASTAL MARSHLAND BUFFER AS MEASURED FROM THE JURISDICTIONAL DETERMINATION LINE WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS. #15

THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO LAND DISTURBING ACTIVITIES. #19

EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE. #20

ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING. #21

67 CY SEDIMENT STORAGE PER DISTURBED ACRE REQUIREMENT

TOTAL PROJECT ACREAGE = 8.9 #49

TOTAL DISTURBED ACREAGE = 8.9

TOTAL REQUIRED SEDIMENT STORAGE:
8.9 Ac. X 67 c.y./Ac. =596.3 c.y.

THIS PROJECT WILL UTILIZE SILT FENCE FOR THE SEDIMENT STORAGE REQUIREMENT. A SEDIMENT BASIN IS NOT PRACTICAL FOR THIS PROJECT. THE PROPOSED LAND DISTURBING ACTIVITIES FOR THIS PROJECT IS TO INSTALL A SANITARY SEWER WE DO NOT WISH TO DISTURB MORE LAND THAN NECESSARY TO PERFORM THE DESIRED TASK. DOUBLE ROW SENSITIVE TYPE SILT FENCE WILL BE INSTALLED WHERE CONSTRUCTION ACTIVITIES ARE ADJACENT TO WETLANDS AND STATE WATERS. IN THE BELOW CALCULATIONS WE ARE ONLY CONSIDERING 1 ROW OF SILT FENCE FOR THE SEDIMENT STORAGE REQUIREMENT.

SILT FENCE :
24,890 L.F. SILT FENCE
24,890 x 1.5' (HEIGHT ACCUMULATION) x4' (HORIZONTAL ACCUMULATION) x 1/2 = 74,670 C.F., 74,670/27= 2,765 C.Y.

2,765 CY EXCEEDS THE REQUIRED 596.3 CY OF SEDIMENT STORAGE

NOTE: THE MAXIMUM ALLOWABLE AREA TO CONTRIBUTE TO 100LF OF SILT FENCE IS 0.25 ACRES. FOR THIS PROJECT, 0.04 ACRES CONTRIBUTE TO 100 LF OF SILT FENCE. #10

SECONDARY PERMITTEES

NOTE: THIS MASTER LIST TO BE COMPLETED AND SIGNED AND KEPT IN THE "ON-SITE" CONSTRUCTION TRAILER.

SECONDARY PERMITTEES SIGN WHEN RECEIVING PLANS. ALL SECONDARY PERMITTEES MUST SUBMIT SECONDARY NOI AT LEAST 14 DAYS PRIOR TO BEGINNENG CONSTRUCTION ACTIVITY.

NAME
COMPANY PHONE:
ADDRESS FAX:
ADDRESS SIGNATURE
GSWCC LEVEL 1A CERTIFICATION NO.

NAME
COMPANY PHONE:
ADDRESS FAX:
ADDRESS SIGNATURE
GSWCC LEVEL 1A CERTIFICATION NO.

NAME
COMPANY PHONE:
ADDRESS FAX:
ADDRESS SIGNATURE
GSWCC LEVEL 1A CERTIFICATION NO.

NAME
COMPANY PHONE:
ADDRESS FAX:
ADDRESS SIGNATURE
GSWCC LEVEL 1A CERTIFICATION NO.

DESIGN PROFESSIONAL 7-DAY VISIT CERTIFICATION

DATE OF INSPECTION _____

I CERTIFY THE INITIAL SEDIMENT STORAGE AND PERIMETER CONTROL BMPS HAVE BEEN INSTALLED AND ARE BEING MAINTAINED AS DESIGNED AS OF 7 DAYS AFTER INSTALLATION.

FRED SORORIAN, P.E. 0000012474
GSWCC LEVEL II DESIGN PROFESSIONAL CERTIFICATION #

INSPECTION REVEALED THE FOLLOWING DISCREPANCIES FROM THE ES&PC PLAN

THESE DEFICIENCIES MUST BE ADDRESSED IMMEDIATELY AND A RE-INSPECTION SCHEDULED. WORK SHALL NOT PROCEED ON THE SITE UNTIL DESIGN PROFESSIONAL CERTIFICATION IS OBTAINED.

#14 **NOTE:**
THE DESIGN PROFESSIONAL WHO PREPARED THE ES&PC PLAN IS TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS, PERIMETER CONTROL BMPS, AND SEDIMENT BASINS WITHIN 7 DAYS AFTER INSTALLATION.

CONSIDERATIONS FOR CONSTRUCTION SCHEDULING

A SPECIFIED WORK SCHEDULE IS NEEDED TO COORDINATE THE TIMING OF LAND DISTURBING ACTIVITIES WITH THE INSTALLATION OF EROSION AND SEDIMENTATION CONTROL MEASURES.

THE PURPOSE OF THE SCHEDULE IS TO REDUCE ON-SITE EROSION AND OFF-SITE SEDIMENTATION BY PERFORMING LAND DISTURBING ACTIVITIES AND INSTALLING EROSION AND SEDIMENTATION CONTROL PRACTICES IN ACCORDANCE WITH A PLANNED SCHEDULE.

IN PLANNING CONSTRUCTION WORK, IT MAY BE HELPFUL TO OUTLINE ALL LAND DISTURBING ACTIVITIES NECESSARY TO COMPLETE THE PROPOSED PROJECT. THEN LIST ALL PRACTICES NEEDED TO CONTROL EROSION AND SEDIMENTATION ON THE SITE. THESE TWO LISTS CAN THEN BE COMBINED IN LOGICAL ORDER TO PROVIDE A PRACTICAL AND EFFECTIVE CONSTRUCTION SEQUENCE SCHEDULE THAT BECOMES PART OF THE EROSION AND SEDIMENTATION CONTROL PLAN.

CONSTRUCTION ACTIVITY	SCHEDULE CONSIDERATION
1. OBTAIN ALL PLAN APPROVALS AND OTHER APPLICABLE PERMITS.	
2. FLAG THE WORK LIMITS AND MARK THE TREES AND BUFFER AREAS FOR PROTECTION.	
3. HOLD PRE CONSTRUCTION CONFERENCE AT LEAST ONE WEEK PRIOR TO STARTING CONSTRUCTION.	
4. CONSTRUCTION ACCESS – CONSTRUCTION ENTRANCE, CONSTRUCTION ROUTES, EQUIPMENT PARKING AREAS.	FIRST LAND DISTURBING ACTIVITY -- STABILIZE BARE AREAS IMMEDIATELY WITH GRAVEL AND TEMPORARY VEGETATION AS CONSTRUCTION TAKES PLACE.
5. SEDIMENT TRAPS AND BARRIERS – BASIN TRAPS, SEDIMENT FENCES, AND OUTLET PROTECTION.	INSTALL PRINCIPAL BASINS AFTER CONSTRUCTION SITE IS ACCESSED. INSTALL ADDITIONAL TRAPS AND BARRIERS AS NEEDED DURING GRADING.
6. RUNOFF CONTROL – DIVERSIONS, PERIMETER DIKES, WATER BARS, AND OUTLET PROTECTION.	INSTALL KEY PRACTICES AFTER PRINCIPAL SEDIMENT TRAPS AND BEFORE LAND GRADING. INSTALL ADDITIONAL RUNOFF-CONTROL MEASURES DURING GRADING.
7. RUNOFF CONVEYANCE SYSTEM- STABILIZE STREAM BANKS, STORM DRAINS, CHANNELS, INLET AND OUTLET PROTECTION, SLOPE DRAINS.	WHERE NECESSARY, STABILIZE STREAM BANKS AS EARLY AS POSSIBLE. INSTALL PRINCIPAL RUNOFF CONVEYANCE SYSTEM WITH RUNOFF-CONTROL MEASURES. INSTALL REMAINDER OF SYSTEM AFTER GRADING.
8. LAND CLEARING AND GRADING-SITE PREPARATION CUTTING, FILLING AND GRADING, SEDIMENTATION BASINS, BARRIERS, DIVERSIONS, DRAINS,SURFACE ROUGHENING.	BEGIN MAJOR CLEARING AND GRADING AFTER PRINCIPAL SEDIMENT AND KEY RUNOFF-CONTROL MEASURES ARE INSTALLED. CLEAR BORROW AND DISPOSAL AREAS ONLY AS NEEDED. INSTALL ADDITIONAL CONTROL MEASURES AS GRADING PROGRESSES. MARK TREES AND BUFFER AREAS FOR PRESERVATION.
9. SURFACE STABILIZATION-TEMPORARY AND PERMANENT SEEDING, MULCHING, SODDING, RIPRAP.	APPLY TEMPORARY OR PERMANENT STABILIZATION MEASURES IMMEDIATELY ON ALL DISTURBED AREAS WHERE WORK IS DELAYED OR COMPLETE.
10. BUILDING CONSTRUCTION- BUILDINGS UTILITIES, PAVING.	INSTALL NECESSARY EROSION AND SEDIMENTATION CONTROL PRACTICES AS WORK TAKES PLACE.
11. LANDSCAPING AND FINAL STABILIZATION – TOPSOILING, TREES AND SHRUBS, PERMANENT SEEDING, MULCHING, SODDING RIPRAP.	LAST CONSTRUCTION PHASE--STABILIZE ALL OPEN AREAS, INCLUDING BORROW AND SPOIL AREAS. REMOVE AND STABILIZE ALL TEMPORARY CONTROL MEASURES.

#28

OWNER/OPERATOR'S CERTIFICATION:

1. ***I CERTIFY THAT THE RECEIVING WATER(S) OR THE OUTFALL(S) OR A COMBINATION OF RECEIVING WATER(S) AND OUTFALL(S) WILL BE MONITORED IN ACCORDANCE WITH THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN.***
2. ***I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THAT THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN (PLAN) WAS PREPARED BY A DESIGN PROFESSIONAL, AS DEFINED BY THIS PERMIT, THAT HAS COMPLETED THE APPROPRIATE CERTIFICATION COURSE APPROVED BY THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION IN ACCORDANCE WITH THE PROVISIONS OF O.C.G.A. 12-7-19 AND THAT I WILL ADHERE TO THE PLAN AND COMPLY WITH ALL APPLICABLE REQUIREMENTS OF THIS PERMIT.***

OWNERS PRINTED NAME *TITLE*

SIGNATURE *DATE*

DESIGN PROFESSIONAL CERTIFICATION:

1. "I CERTIFY UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED AFTER A SITE VISIT TO THE LOCATIONS DESCRIBED HEREIN BY MYSELF OR MY AUTHORIZED AGENT, UNDER MY SUPERVISION." #11
2. "I CERTIFY THAT THE PERMITTEE'S EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN PROVIDES FOR AN APPROPRIATE AND COMPREHENSIVE SYSTEM OF BEST MANAGEMENT PRACTICES REQUIRED BY THE GEORGIA WATER QUALITY CONTROL ACT AND THE DOCUMENT "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA " (MANUAL) PUBLISHED BY THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION AS OF JANUARY 1 OF THE YEAR IN WHICH LAND DISTURBING ACTIVITY WAS PERMITTED, PROVIDES FOR THE SAMPLING OF THE RECEIVING WATER (S) OR THE SAMPLING OF THE STORM WATER OUTFALLS AND THAT THE DESIGNED SYSTEM OF BEST MANAGEMENT PRACTICES AND SAMPLING METHODS IS EXPECTED TO MEET THE REQUIREMENTS CONTAINED IN THE GENERAL NPDES No. GAR 100002. #12
3. "I CERTIFY THAT THE PERMITTEE'S EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN PROVIDES FOR THE MONITORING OF: (A) ALL PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES SHOWN ON THE USGS TOPOGRAPHIC MAP AND ALL OTHER FIELD VERIFIED PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES, OR (B) WHERE ANY SUCH SPECIFIC IDENTIFIED PERENNIAL OR INTERMITTENT STREAM AND OTHER WATER BODY IS NOT PROPOSED TO BE SAMPLED, I HAVE DETERMINED IN MY PROFESSIONAL JUDGMENT, UTILIZING THE FACTORS REQUIRED IN THE GENERAL NPDES PERMIT NO. GAR 100002, THAT THE INCREASE IN TURBIDITY OF EACH SPECIFIC IDENTIFIED SAMPLED RECEIVING WATER WILL BE REPRESENTATIVE OF THE INCREASE IN THE TURBIDITY OF A SPECIFIC IDENTIFIED UN-SAMPLED RECEIVING WATER." #13

GSWCC LEVEL II DESIGN PROFESSIONAL- FRED SORORIAN, PE

0000012474 *01/20/2022*

CERTIFICATION # *EXPIRATION DATE*

ENGINEER'S NAME (PRINTED): FRED SORORIAN, P.E.
GA PE NUMBER: 26741
GSWCC LEVEL II CERTIFICATION NUMBER: 0000012474
CERTIFICATION NUMBER EXPIRATION DATE: 01/20/2022

TRAVIS FIELD WATER RECLAMATION FACILITY
30-INCH EFFLUENT FORCE MAIN
SAVANNAH, GEORGIA
PROJECT #J-27788.0000
DATE: 4/2/2020
TOTAL PROJECT ACREAGE: 8.9± #5
TOTAL DISTURBED ACREAGE: 8.9±

PROJECT DESCRIPTION - TRAVIS FIELD WATER RECLAMATION FACILITY 30-INCH EFFLUENT FORCE MAIN

#8 THE PROPOSED WORK CONSISTS OF APPROXIMATELY 17,000 LF OF 30-INCH EFFLUENT FORCE MAIN TO BE INSTALLED ALONG PIPEMAKERS CANAL FROM THE NEW TRAVIS FIELD WATER RECLAMATION FACILITY TO THE DISCHARGE LOCATION INTO THE SAVANNAH RIVER. THIS INSTALLATION CONSISTS OF MULTIPLE JACK & BORE AND HORIZONTAL DIRECTIONAL DRILLS ALONG PIPEMAKERS CANAL. THE INSTALLATION WILL TAKE PLACE WITHIN 25-FT OF THE CANAL AND WITHIN 25-FT OF THE WETLANDS. THE OUTFALL DISCHARGE LOCATION IS PERMITTED BY EPD UNDER THE NPDES PERMIT NUMBER GA0020427.

1 ONLY 50% OF THE TOTAL PROJECT DISTURBED ACREAGE CAN BE DISTURBED AT ONE TIME, THEREFORE ONLY 4.45 ACRES OF AREA CAN BE DISTURBED AT ONE TIME. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE DISTURBED ACREAGE.

#45 THE ESTIMATE FOR RUNOFF COEFFICIENT PRIOR TO CONSTRUCTION ACTIVITIES IS 0.25, THE POST CONSTRUCTION RUNOFF COEFFICIENT IS 0.25. THERE WILL BE NO CHANGE, THEREFORE POST DEVELOPMENT RUNOFF FROM THE SITE WILL NOT AFFECT NEIGHBORING AREAS.

#44 ELEVATIONS ON THE SITE RANGE FROM ±7' TO ±0' (NAVD88 DATUM).

ACCORDING TO THE FLOOD INSURANCE RATE MAP PANEL 13029C0278C, AS PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY 8/5/2013, THE PROJECT AREA IS WITHIN FLOOD HAZARD ZONES AE AND X.

SURFACE RUNOFF FROM THE SITE DRAINS INITIALLY INTO SURROUNDING WETLANDS, PIPEMAKERS CANAL, AND ULTIMATELY TO THE SAVANNAH RIVER.

FOR THE CONSTRUCTION OF THIS PROJECT INSTALLATION AND MAINTENANCE OF SILT FENCE AS WELL AS TEMPORARY GRASSING WILL PROVIDE PROTECTION FROM STORM WATERS RUNOFF. AFTER COMPLETION PERMANENT GRASSING WILL CONTROL POLLUTANTS.
SOILS WITHIN THE PROJECT AREA CONSISTS OF THE FOLLOWING SERIES BASED ON USGS SOILS SURVEY DATA FOR CHATHAM COUNTY:

#47 Pn Pooler Fine Sandy Loam — Mce Made Land
Cc Cape Fear — W Water

#4 **DEVELOPER/OWNER**
CITY OF SAVANNAH
EMAIL: ctessmer@savannahga.gov
PHONE: 912-651-6573
702 STILES AVENUE
SAVANNAH, GA 31415

#3 **24 HOUR CONTACT PERSON RESPONSIBLE FOR EROSION, SEDIMENTATION AND POLLUTION CONTROLS**
MR. CHUCK TESSMER, P.E.
EMAIL: ctessmer@savannahga.gov
PHONE: 912-651-6573
702 STILES AVENUE
SAVANNAH, GA 31415

#29 **CONSTRUCTION**
CONSTRUCTION ACTIVITIES WILL INVOLVE NORMAL CONSTRUCTION ACTIVITIES ASSOCIATED WITH WATER MAIN UTILITY INSTALLATION. IT IS ANTICIPATED THAT CONSTRUCTION ACTIVITIES WILL BEGIN ON OR ABOUT NOVEMBER 2020, AND BE COMPLETED ON OR ABOUT NOVEMBER 2021. THE INSTALLATION OF EROSION CONTROL MEASURES AND PRACTICES SHALL BE INSTALLED PRIOR TO AND CONCURRENT WITH LAND DISTURBING ACTIVITIES.

PROCESSES AND PRINCIPLES OF EROSION, SEDIMENTATION AND POLLUTION

WHEN LAND IS DISTURBED AT A CONSTRUCTION SITE, THE EROSION RATE ACCELERATES DRAMATICALLY. SINCE GROUND COVER ON AN UNDISTURBED SITE PROTECTS THE SURFACE, REMOVAL OF THAT COVER INCREASES THE SITE'S SUSCEPTIBILITY TO EROSION. DISTURBED LAND MAY HAVE AN EROSION RATE 1,000 TIMES GREATER THAN THE PRE-CONSTRUCTION RATE. EVEN THOUGH CONSTRUCTION REQUIRES THAT LAND BE DISTURBED AND BE LEFT BARE FOR PERIODS OF TIME, PROPER PLANNING AND USE OF CONTROL MEASURES CAN REDUCE THE IMPACT OF MAN-INDUCED ACCELERATED EROSION.

EFFECTIVE EROSION, SEDIMENTATION AND POLLUTION CONTROL REQUIRES FIRST THAT THE SOIL SURFACE BE PROTECTED FROM THE EROSIVE FORCES OF WIND, RAIN, AND RUNOFF, AND SECOND THAT ERODED SOIL CAN BE CAPTURED ON-SITE.

#26 PERMANENT GRASSING SHALL REMAIN IN PLACE AFTER PROJECT IS COMPLETED TO CONTROL POLLUTANTS IN THE PROJECT'S STORM WATER.

#27 CONTRACTOR SHALL PROVIDE MEASURES TO COVER ALL BUILDING MATERIALS AND BUILDING PRODUCTS ON-SITE, INCLUDING BUT NOT LIMITED TO, PLASTIC SHEETING OR TEMPORARY ROOFING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MEASURES THAT HE DEEM NECESSARY TO MINIMIZE THE EXPOSURE TO PRECIPITATION AND STORMWATER FOR THE PROPOSED UTILITIES.

#52 **LAND DISTURBING ACTIVITIES PLAN**

GENERAL DESIGN PRINCIPLES

FOR AN EROSION, SEDIMENTATION AND POLLUTION CONTROL PROGRAM TO BE EFFECTIVE, IT IS IMPERATIVE THAT PROVISIONS FOR SEDIMENT CONTROL MEASURES BE MADE IN THE PLANNING STAGE. THESE PLANNED MEASURES WHEN CONSCIENTIOUSLY AND EXPEDITIOUSLY APPLIED DURING CONSTRUCTION, WILL RESULT IN ORDERLY DEVELOPMENT WITHOUT ADVERSE ENVIRONMENTAL DEGRADATION. THE FOLLOWING KEY PRINCIPALS SHALL BE UTILIZED, TO THE MAXIMUM EXTENT POSSIBLE, IN ALL PLANNING.

1. FIT THE ACTIVITY TO THE TOPOGRAPHY AND SOILS.

   DETAILED PLANNING SHOULD BE EMPLOYED TO ASSURE THE ROADWAYS, BUILDINGS AND OTHER PERMANENT FEATURES OF THE ACTIVITY CONFORM TO THE NATURAL CHARACTERISTICS OF THE SITE. LARGE GRADED AREAS SHOULD BE LOCATED ON THE MOST LEVEL PORTION OF THE SITE. AREAS SUBJECT TO FLOODING SHOULD BE AVOIDED. AREAS OF STEEP SLOPES, ERODIBLE SOILS, AND SOILS WITH SEVERE LIMITATIONS FOR THE INTENDED USES SHOULD NOT BE UTILIZED WITHOUT OVERCOMING THE LIMITATIONS THROUGH SOUND ENGINEERING PRACTICES. EROSION CONTROL, DEVELOPMENT AND MAINTENANCE COSTS CAN BE MINIMIZED IF A SITE IS SELECTED FOR A SPECIFIC ACTIVITY.
2. THE DISTURBED AREA AND DURATION OF EXPOSURE TO EROSION ELEMENTS SHOULD BE MINIMIZED.

   CLEARING OF NATURAL VEGETATION SHOULD BE LIMITED TO ONLY THOSE AREAS OF THE SITE TO BE DEVELOPED AT A GIVEN TIME. NATURAL VEGETATION SHOULD BE RETAINED, PROTECTED AND SUPPLEMENTED WITH CONSTRUCTION SCHEDULING EMPLOYED TO LIMIT THE DURATION OF SOIL EXPOSURE.
3. STABILIZE DISTURBED AREAS IMMEDIATELY.

   PERMANENT STRUCTURES, TEMPORARY OR PERMANENT VEGETATION, AND MULCH, OR A COMBINATION OF THESE MEASURES, SHOULD BE EMPLOYED AS QUICKLY AS POSSIBLE AFTER THE LAND IS DISTURBED. TEMPORARY VEGETATION AND MULCHES CAN BE MOST EFFECTIVE ON AREAS WHERE IT IS NOT PRACTICAL TO ESTABLISH PERMANENT VEGETATION. THESE TEMPORARY MEASURES SHOULD BE EMPLOYED IMMEDIATELY AFTER ROUGH GRADING IS COMPLETED IF A DELAY IS ANTICIPATED ON OBTAINING FINISHED GRADE. THE FINISHED SLOPE OF A CUT OR FILL SHOULD BE STABLE AND EASE OF MAINTENANCE CONSIDERED IN THE DESIGN. STABILIZE ALL ROADWAYS, PARKING AREAS, AND PAVED AREAS WITH THE GRAVEL SUBBASE, TEMPORARY VEGETATION OR MULCH.
4. RETAIN OR ACCOMMODATE RUNOFF.

   RUNOFF FROM THE DEVELOPMENT SHOULD BE SAFELY CONVEYED TO A STABLE OUTLET USING STORM DRAINS, DIVERSIONS, STABLE WATERWAYS OR SIMILAR CONSERVATION MEASURES. CONSIDERATION SHOULD ALSO BE GIVEN TO THE INSTALLATION OF STORM WATER RETENTION STRUCTURES TO PREVENT FLOODING AND DAMAGE TO DOWNSTREAM FACILITIES RESULTING FROM INCREASED RUNOFF FROM THE SITE. TEMPORARY OR PERMANENT FACILITIES FOR CONVEYANCE OF STORM WATER SHOULD BE DESIGNED TO WITHSTAND THE VELOCITIES OF PROJECTED PEAK DISCHARGES. THESE FACILITIES SHOULD BE IN OPERATION AS SOON AS POSSIBLE AFTER THE START OF CONSTRUCTION.
5. RETAIN SEDIMENT.

   SEDIMENT BASINS, SEDIMENT BARRIERS AND RELATED STRUCTURES SHOULD BE INSTALLED TO FILTER OR TRAP SEDIMENT ON THE SITE TO BE DISTURBED. THE MOST EFFECTIVE METHOD OF CONTROLLING SEDIMENT, HOWEVER, IS TO CONTROL EROSION AT ITS SOURCE. SEDIMENT RETENTION STRUCTURES SHOULD BE PLANNED TO RETAIN SEDIMENT WHEN EROSION CONTROL METHODS ARE NOT PRACTICAL, ARE INSUFFICIENT, OR IN THE PROCESS OF BEING INSTALLED, OR HAVE FAILED DUE TO SOME UNFORESEEN FACTOR.
6. DO NOT ENCROACH UPON WATERCOURSES

   PERMANENT BUILDINGS SHOULD NOT BE SUBJECTED TO FLOODING. SEDIMENT DAMAGE OR EROSION HAZARDS. EARTH FILLS SHOULD NOT BE CONSTRUCTED IN FLOOD-PRONE AREAS SO AS TO ADVERSELY OBSTRUCT WATER FLOWS. WHEN IT IS NECESSARY TO SPAN A FLOOD PRONE AREA OR WATERCOURSE, BRIDGE OR CULVERT OPENINGS SHOULD BE SIZED TO PERMIT PASSAGE OF PEAK DISCHARGES WITHOUT CAUSING UNDUE RESTRICTIONS IN WATER FLOWS OR WITHOUT CREATING EXCESSIVE DOWNSTREAM VELOCITIES. USES OF FLOOD PRONE AREAS SHOULD BE LIMITED TO ACTIVITIES WHICH WOULD NOT SUFFER EXCESSIVE DAMAGES FROM FLOODING, SCOUR, AND SEDIMENT DAMAGES. TEMPORARY BRIDGES OR CULVERTS SHOULD BE EMPLOYED WHEN CONSTRUCTION EQUIPMENT IS REQUIRED TO CROSS NATURAL OR CONSTRUCTED CHANNELS.

STANDARDS AND SPECIFICATIONS

ALL DESIGNS WILL CONFORM TO AND WORK WILL BE PERFORMED IN ACCORDANCE WITH THE PUBLICATION ENTITLED " MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA", ISSUED 2014 AND THE ATTACHED DETAILS.

MAINTENANCE PROGRAM

EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE. ALL DRAINAGE SWALES, POCKETS, DEPRESSIONS, FLOW LINES, AND OUTLET DITCHES SHALL DRAIN EFFECTIVELY AT ALL TIMES. SETTLEMENT OR WASHING THAT MAY OCCUR SHALL BE REPAIRED BY THE CONTRACTOR. SEDIMENT SHALL BE REMOVED ONCE IT HAS ACCUMULATED TO ONE-HALF THE ORIGINAL HEIGHT OF THE BARRIER. THE SEDIMENT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN AN EFFECTIVE BARRIER. MAINTAIN THE CONSTRUCTION EXIT IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE SITE. THIS MAY REQUIRE PERIODIC TOPDRESSING WITH 2-INCH STONE. IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS. RESEED AND MULCH AREAS WHERE SEEDLING EMERGENCE IS POOR, OR WHERE EROSION OCCURS. PROTECT FROM TRAFFIC AS MUCH AS POSSIBLE. INSPECT ALL MULCHES PERIODICALLY, AND AFTER RAINSTORMS TO CHECK FOR RILL EROSION, DISLOCATION OR FAILURE. IF WASHOUT OCCURS REPAIR THE SLOPE GRADE, RESEED AND REINSTALL MULCH. INSPECT RIPRAP OUTLET STRUCTURES AFTER HEAVY RAINS ANY EROSION IN AND AROUND THE RIPRAP HAS TAKEN PLACE OR IF STONES HAVE BEEN DISLODGED. FOLLOW THE CONSTRUCTION SEQUENCE THROUGHOUT THE PROJECT DEVELOPMENT. WHEN CHANGES IN CONSTRUCTION ACTIVITIES ARE NEEDED, AMEND THE SEQUENCE SCHEDULE IN ADVANCE TO MAINTAIN MANAGEMENT CONTROL. ORDERLY MODIFICATION ASSURES COORDINATION OF CONSTRUCTION AND EROSION CONTROL PRACTICES TO MINIMIZE EROSION AND SEDIMENTATION PROBLEMS. IF MAJOR CHANGES ARE NECESSARY, SEND A COPY OF THE MODIFIED SCHEDULE TO THE LOCAL SEDIMENT CONTROL AGENCY. SEDIMENT AND E

OTHER CONTROLS
NO WASTE WILL BE DISPOSED OF INTO STORM WATER INLETS OR WATERS OF THE STATE.

WASTE MATERIALS
ALL WASTE MATERIALS WILL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL DUMPSTER. THE DUMPSTER WILL MEET ALL SOLID WASTE MANAGEMENT REGULATIONS. SELECT A DESIGNATED WASTE COLLECTION AREA, WHEN POSSIBLE LOCATE CONTAINERS IN A COVERED AREA. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN THE DUMPSTER. THE DUMPSTER WILL BE EMPTIED A MINIMUM OF ONCE PER WEEK OR MORE OFTEN IF NECESSARY AND TRASH WILL BE HAULED AS REQUIRED BY LOCAL REGULATIONS. NO CONSTRUCTION WASTE WILL BE BURIED ONSITE.

ALL PERSONNEL WILL BE INSTRUCTED ON PROPER PROCEDURES FOR WASTE DISPOSAL. A NOTICE STATING THESE PRACTICES WILL BE POSTED AT THE JOBSITE AND THE CONTRACTOR WILL BE RESPONSIBLE FOR SEEING THAT THESE PROCEDURES ARE FOLLOWED.

HAZARDOUS WASTES
ALL HAZARDOUS WASTE MATERIALS WILL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL, STATE, AND/OR FEDERAL REGULATIONS AND BY THE MANUFACTURER OF SUCH PRODUCTS. THE JOB SITE SUPERINTENDENT, WHO WILL ALSO BE RESPONSIBLE FOR SEEING THAT THESE PRACTICES ARE FOLLOWED, WILL INSTRUCT SITE PERSONNEL IN THESE PRACTICES. MATERIAL SAFETY DATA SHEETS (MSDS'S) FOR EACH SUBSTANCE WITH HAZARDOUS PROPERTIES THAT IS USED ON THE JOB SITE WILL BE OBTAINED AND USED FOR THE PROPER MANAGEMENT OF POTENTIAL WASTES THAT MAY RESULT FROM THESE PRODUCTS. AN MSDS WILL BE POSTED IN THE IMMEDIATE AREA WHERE SUCH PRODUCT IS STORED AND/OR USED AND ANOTHER COPY OF EACH MSDS WILL BE MAINTAINED IN THE ESPCP FILE AT THE JOB SITE CONSTRUCTION TRAILER OFFICE. EACH EMPLOYEE WHO MUST HANDLE A SUBSTANCE WITH HAZARDOUS PROPERTIES WILL BE INSTRUCTED ON THE USE OF MSDS AND THE SPECIFIC INFORMATION IN THE APPLICABLE MSDS FOR THE PRODUCT HE/SHE IS USING, PARTICULARLY REGARDING SPILL CONTROL TECHNIQUES.

THE CONTRACTOR WILL IMPLEMENT THE SPILL PREVENTION CONTROL AND COUNTERMEASURES (SPCC) PLAN FOUND WITHIN THE ESPCP AND WILL TRAIN ALL PERSONNEL IN THE PROPER CLEANUP AND HANDLING OF SPILLED MATERIALS. NO SPILLED HAZARDOUS MATERIAL OR HAZARDOUS WASTES WILL BE ALLOWED TO COME IN CONTACT WITH STORM WATER DISCHARGES. IF SUCH CONTACT OCCURS, THE STORM WATER DISCHARGE WILL BE CONTAINED ON SITE UNTIL APPROPRIATE MEASURES IN COMPLIANCE WITH STATE AND FEDERAL REGULATIONS ARE TAKEN TO DISPOSE OF SUCH CONTAMINATED STORM WATER. IF SHALL BE THE RESPONSIBILITY OF THE JOB SITE SUPERINTENDENT TO PROPERLY TRAIN ALL PERSONNEL IN THE USE OF THE SPCC PLAN.

SANITARY WASTES
A MINIMUM OF ONE PORTABLE SANITARY UNIT WILL BE PROVIDED FOR EVERY TEN (IO) WORKERS ON THE SITE. ALL SANITARY WASTE WILL BE DISPOSED BY THE PORTABLE FACILITY PROVIDER IN COMPLETE COMPLIANCE WITH LOCAL AND STATE REGULATIONS. PROVIDE REGULAR SERVICING BY A QUALIFIED DOMESTIC WASTE HAULER TO PREVENT OVER-FILLING.

ALL SANITARY WASTE UNITS WILL BE LOCATED IN AN AREA WHERE THE LIKELIHOOD OF THE UNIT CONTRIBUTING TO STORM WATER DISCHARGE IS NEGLIGIBLE. PLACEMENT OF FACILITIES SHOULD BE OUT OF HIGH FLOW AREAS AND IN ACCORDANCE WITH ALL STATE AND LOCAL REGULATIONS. ADDITIONAL CONTAINMENT BMP'S MUST BE IMPLEMENTED, SUCH AS GRAVEL BAGS OR SPECIALLY DESIGNED PLASTIC SKID CONTAINERS AROUND THE BASE, TO PREVENT WASTES FROM CONTRIBUTING TO STORM WATER DISCHARGES. THE LOCATION OF SANITARY WASTE UNITS MUST BE IDENTIFIED ON THE EROSION CONTROL PHASE SHEETS BY THE CONTRACTOR ONCE THE LOCATIONS HAVE BEEN DETERMINED. REGULARLY INSPECT FOR CRACKS OR LEAKAGE IN CONTAINERS/TANKS.

SANITARY SEWER WILL BE PROVIDED BY MUNICIPAL AUTHORITY/SEPTIC SYSTEM AFTER COMPLETION OF THIS PROJECT.

OFFSITE VEHICLE TRACKING
A STABILIZED CONSTRUCTION EXIT HAS BEEN PROVIDED TO HELP REDUCE VEHICLE TRACKING OF SEDIMENT. SEE SHEETS **EC1.1** AND **EC1.3** FOR CONSTRUCTION EXIT LOCATIONS AND SHEET **EC2.3** FOR DETAILS. THE PAVED STREET ADJACENT TO THE CONSTRUCTION SITE EXIT WILL BE KEPT CLEAN AT ALL TIMES. VEHICLES LEAVING THE SITE MUST TRAVERSE CONSTRUCTION EXITS TO REMOVE MUD FROM TIRES.

INVENTORY FOR POLLUTION PREVENTION PLAN THE FOLLOWING MATERIALS ARE EXPECTED ONSITE DURING CONSTRUCTION: PETROLEUM BASED FUELS AND LUBRICANTS FOR EQUIPMENT, ADDITIVES FOR SOIL STABILIZATION, PESTICIDES, FERTILIZERS, HERBICIDES, CRUSHED STONE, CONCRETE PRODUCTS, ASPHALT, TAR, METAL BUILDING MATERIALS, LUMBER, SHEET ROCK, FLOOR COVERINGS, ELECTRICAL WIRE AND FIXTURES, PAINTS/STAINS/FINISHING TREATMENTS, SOAPS, PAINT SOLVENTS, CLEANING SOLVENTS, PLASTICS AND METAL PIPES.

SPILL PREVENTION
PRACTICES SUCH AS GOOD HOUSEKEEPING, PROPER HANDLING OF HAZARDOUS PRODUCTS AND PROPER SPILL CONTROL PRACTICES WILL BE FOLLOWED TO REDUCE THE RISK OF SPILLS FROM DISCHARGING INTO STORM WATER RUNOFF.

GOOD HOUSEKEEPING
1. QUANTITIES ONSITE WILL BE LIMITED TO THE AMOUNT NEEDED FOR THE JOB.
2. PRODUCTS AND MATERIALS WILL BE STORED IN A NEAT, ORDERLY MANNER IN APPROPRIATE CONTAINERS PROTECTED FROM RAINFALL, WHERE POSSIBLE.
3. PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH MANUFACTURER'S LABELS LEGIBLE AND VISIBLE.
4. PRODUCT MIXING, DISPOSAL, AND DISPOSAL OF PRODUCT CONTAINERS WILL BE ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
5. THE CONTRACTOR WILL INSPECT SUCH MATERIALS TO ENSURE PROPER USE, STORAGE AND DISPOSAL.
6. THIS PERMIT DOES NOT AUTHORIZE THE DISCHARGE OF SOAPS OR SOLVENTS USED IN VEHICLE AND EQUIPMENT WASHING.
7. THIS PERMIT DOES NOT AUTHORIZE THE DISCHARGE OF WASTEWATER FROM WASHOUT AND CLEANOUT OF STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS AND OTHER CONSTRUCTIONS MATERIALS.

PRODUCT SPECIFIC PRACTICES
PETROLEUM BASED PRODUCTS- CONTAINERS FOR PRODUCTS SUCH AS FUELS, LUBRICANTS AND TARS WILL BE INSPECTED DAILY FOR LEAKS AND SPILLS. THIS INCLUDES ON-SITE VEHICLE AND MACHINERY INSPECTIONS AND REGULAR PREVENTATIVE MAINTENANCE FOR SUCH EQUIPMENT. EQUIPMENT MAINTENANCE AREAS WILL BE LOCATED AWAY FROM STATE WATER, NATURAL DRAINS AND STORM WATER DRAINAGE INLETS. IN ADDITION, TEMPORARY FUELING TANKS SHALL HAVE A SECONDARY CONTAINMENT LINER TO PREVENT/MINIMIZE SITE CONTAMINATION. DISCHARGE OF OILS, FUELS AND LUBRICANTS IS PROHIBITED. PROPER DISPOSAL METHODS WILL INCLUDE COLLECTION IN A SUITABLE CONTAINER AND DISPOSAL AS REQUIRED BY LOCAL AND STATE REGULATIONS. HAVE EQUIPMENT TO CONTAIN AND CLEAN UP PETROLEUM SPILLS IN FUEL STORAGE AREAS OR ON MAINTENANCE AND FUELING VEHICLES. STORE IN COVERED AREAS PROTECTED WITH DIKES. REGULARLY INSPECT FOR CRACKS OR LEAKAGE IN CONTAINERS/TANKS.

FERTILIZER/HERBICIDES/PESTICIDES/DETERGENTS- THESE WILL BE APPLIED AT RATES THAT DO NOT EXCEED THE MANUFACTURER'S SPECIFICATIONS OR ABOVE THE GUIDELINES SET FORTH IN THE CROP ESTABLISHMENT OR IN THE GSWCC MANUAL FOR EROSION AND SEDIMENTATION CONTROL IN GEORGIA. ANY STORAGE OF THESE MATERIALS WILL BE UNDER ROOF IN SEALED CONTAINERS. DO NOT DISCHARGE WASH WATER INTO STORM WATER SYSTEM. INSTALL CURBS OR DIKES AROUND STORAGE AREA TO PROTECT AGAINST SPILLS. LIMIT USE OF DETERGENTS ON-SITE.

PAINTS/FINISHES/SOLVENTS- ALL PRODUCTS WILL BE STORED IN TIGHTLY SEALED ORIGINAL CONTAINERS WHEN NOT IN USE. EXCESS PRODUCT WILL NOT BE DISCHARGED TO THE STORM WATER COLLECTION SYSTEM. EXCESS PRODUCT, MATERIALS USED WITH THESE PRODUCTS AND PRODUCT CONTAINERS WILL BE DISPOSED OF ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS. #24

CONCRETE TRUCK WASHING- BMP'S FOR CONCRETE WASHDOWN OF TOOLS, CONCRETE MIXER CHUTES, HOPPERS AND THE REAR OF THE VEHICALS. WASHOUT OF THE DRUM AT THE CONSTRUCTION SITE IS PROHIBITED.

BUILDING MATERIALS- NO BUILDING OR CONSTRUCTION MATERIALS WILL BE BURIED OR DISPOSED OF ONSITE. ALL SUCH MATERIAL WILL BE DISPOSED OF IN PROPER WASTE DISPOSAL PROCEDURES.

SPILL CLEANUP AND CONTROL PRACTICES #25
1. LOCAL, STATE AND MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND PROCEDURES WILL BE MADE AVAILABLE TO SITE PERSONNEL.
2. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREAS. TYPICAL MATERIALS AND EQUIPMENT INCLUDES, BUT IS NOT LIMITED TO, BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, GOGGLES, CAT LITTER, SAND, SAWDUST, AND PROPERLY LABELED PLASTIC AND MEAL WASTE CONTAINERS.
3. SPILL PREVENTION PRACTICES AND PROCEDURES WILL BE REVIEWED AFTER A SPILL AND ADJUSTED AS NECESSARY TO PREVENT FUTURE SPILLS.
4. FOR SPILLS THAT IMPACT SURFACE WATER (LEAVE A SHEEN ON SURFACE WATER), THE NATIONAL RESPONSE CENTER (NRC) WILL BE CONTACTED WITHIN 24 HOURS AT 800-424-8802.
5. FOR SPILLS OF AN UNKNOWN AMOUNT, THE NATIONAL CENTER (NRC) WILL BE CONTACTED WITHIN 24 HOURS
6. FOR SPILLS GREATER THAN 25 GALLONS AND NO SURFACE WATER IMPACTS, THE GEORGIA EPD WILL BE CONTACTED WITHIN 24 HOURS.
7. FOR SPILLS LESS THAN 25 GALLONS AND NO SURFACE WATER IMPACTS, THE SPILL WILL BE CLEANED UP AND LOCAL AGENCIES WILL BE CONTACTED AS REQUIRED.

INSPECTIONS #30
PRIMARY PERMITTEE
1. EACH DAY WHEN ANY TYPE OF CONSTRUCTION ACTIVITY HAS TAKEN PLACE AT A PRIMARY PERMITTEE'S SITE, CERTIFIED PERSONNEL PROVIDED BY THE PRIMARY PERMITTEE SHALL INSPECT: (A) ALL AREAS AT THE PRIMARY PERMITTEE'S SITE WHERE PETROLEUM PRODUCTS ARE STORED, USED, OR HANDLED FOR SPILLS AND LEAKS FROM VEHICLES AND EQUIPMENT AND (B) ALL LOCATIONS AT THE PRIMARY PERMITTEE'S SITE WHERE VEHICLES ENTER OR EXIT THE SITE FOR EVIDENCE OF OFF-SITE SEDIMENT TRACKING. THESE INSPECTIONS MUST BE CONDUCTED UNTIL A NOTICE OF TERMINATION IS SUBMITTED.
2. MEASURE AND RECORD RAINFALL WITHIN DISTURBED AREAS OF THE SITE THAT HAVE NOT MET FINAL STABILIZATION ONCE EVERY 24 HOURS EXCEPT ANY NON-WORKING SATURDAY, NON-WORKING SUNDAY AND NON-WORKING FEDERAL HOLIDAY. THE DATA COLLECTED FOR THE PURPOSE OF COMPLIANCE WITH THIS PERMIT SHALL BE REPRESENTATIVE OF THE MONITORED ACTIVITY. MEASUREMENT OF RAINFALL MAY BE SUSPENDED IF ALL AREAS OF THE SITE HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION.
3. CERTIFIED PERSONNEL (PROVIDED BY THE PRIMARY PERMITTEE) SHALL INSPECT THE FOLLOWING AT LEAST ONCE EVERY FOURTEEN (I4) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.5 INCHES RAINFALL OR GREATER (UNLESS SUCH STORM ENDS AFTER 5:00 PM ON ANY FRIDAY OR ON ANY NON-WORKING SATURDAY, NON-WORKING SUNDAY OR ANY NON-WORKING FEDERAL HOLIDAY IN WHICH CASE THE INSPECTION SHALL BE COMPLETED BY THE END OF THE NEXT BUSINESS DAY AND/OR WORKING DAY, WHICHEVER OCCURS FIRST); (A) DISTURBED AREAS OF THE PRIMARY PERMITTEE'S CONSTRUCTION SITE; (B) AREAS USED BY THE PRIMARY PERMITTEE FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION; AND (C) STRUCTURAL CONTROL MEASURES. EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN APPLICABLE TOTHE PRIMARY PERMITTEE'S SITE SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. WHERE DISCHARGE LOCATIONS OR POINTS ARE ACCESSIBLE, THEY SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATER(S). FOR AREAS OF A SITE THAT HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION, THE PERMITTEE MUST COMPLY WITH PART IV.D.4.a.(4). THESE INSPECTIONS MUST BE CONDUCTED UNTIL A NOTICE OF TERMINATION IS SUBMITTED.
4. CERTIFIED PERSONNEL (PROVIDED BY PRIMARY PERMITTEE) SHALL INSPECT AT LEAST ONCE PER MONTH DURING THE TERM OF THIS PERMIT (i.e. UNTIL A NOTICE OF TERMINATION IS SUBMITTED TO EPD) THE AREAS OF THE SITE THAT HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION. THESE AREAS SHALL BE INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE DRAINAGE SYSTEM AND THE RECEIVING WATER(S). EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. WHERE DISCHARGE LOCATIONS OR POINTS ARE ACCESSIBLE, THEY SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATER(S).
5. BASED ON THE RESULTS OF EACH INSPECTION, THE SITE DESCRIPTION AND THE POLLUTION PREVENTION AND CONTROL MEASURES IDENTIFIED IN THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN, THE PLAN SHALL BE REVISED AS APPROPRIATE NOT LATER THAN SEVEN (7) CALENDAR DAYS FOLLOWING EACH INSPECTION. IMPLEMENTATION OF SUCH CHANGES SHALL BE MADE AS SOON AS PRACTICAL BUT IN NO CASE LATER THAN SEVEN (7) CALENDAR DAYS FOLLOWING EACH INSPECTION.
6. A REPORT OF EACH INSPECTION THAT INCLUDES THE NAME(S) OF CERTIFIED PERSONNEL MAKING EACH INSPECTION, THE DATE(S) OF EACH INSPECTION, CONSTRUCTION PHASE (ie., INITIAL, INTERMEDIATE OR FINAL), MAJOR OBSERVATIONS RELATING TO THE IMPLEMENTATION OF THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN, AND ACTIONS TAKEN IN ACCORDANCE WITH PART IV.D.4.a.(5). OF THE PERMIT SHALL BE MADE AND RETAINED AT THE SITE OR BE READILY AVAILABLE AT A DESIGNATED ALTERNATE LOCATION UNTIL THE ENTIRE SITE OR THAT PORTION OF A CONSTRUCTION SITE THAT HAS BEEN PHASED HAS UNDERGONE FINAL STABILIZATION AND A NOTICE OF TERMINATION IS SUBMITTED TO EPD. SUCH REPORTS SHALL BE READILY AVAILABLE BY END OF THE SECOND BUSINESS DAY AND/OR WORKING DAY AND SHALL IDENTIFY ALL INCIDENTS OF BEST MANAGEMENT PRACTICES THAT HAVE NOT BEEN PROPERLY INSTALLED AND/OR MAINTAINED AS DESCRIBED IN THE PLAN. WHERE THE REPORT DOES NOT IDENTIFY ANY INCIDENTS, THE INSPECTION REPORT SHALL CONTAIN A STATEMENT THAT THE BEST MANAGEMENT PRACTICES ARE IN COMPLIANCE WITH THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN. THE REPORT SHALL BE SIGNED IN ACCORDANCE WITH PART V.G.2. OF THIS PERMIT.

AN "EROSION & SEDIMENTATION INSPECTION AND MAINTENANCE REPORT" SHEET IS ATTACHED. SHOULD THE INSPECTION REVEAL ANY DEFICIENCIES, A COPY SHALL BE SENT TO:

ATTN.: CHUCK TESSMER
CITY OF SAVANNAH
702 STILES AVENUE
SAVANNAH, GA 31415
(912) 651-6573
EMAIL: ctessmer@savannahga.gov

ATTN.: KEITH STRONG
50 PARK OF COMMERCE WAY
SAVANNAH, GA 31405
DAY (912) 721-4103
NIGHT (912) 667-9793
EMAIL: strong.k@tandh.com

STORM WATER SAMPLING #33

SAMPLE ANALYSIS
STORM WATER SAMPLES ARE TO BE ANALYZED IN ACCORDANCE WITH METHODOLOGY AND TEST PROCEDURES ESTABLISHED BY 40 CFR PART I36 AND THE GUIDANCE DOCUMENT TITLED "NPDES STORM WATER SAMPLING GUIDANCE DOCUMENT EPA 833-8-92-OOI."

APPENDIX B IN PERMIT NO. GAR IOOO2 WAS USED TO DETERMINE THE NTU ALLOWABLE **AND UPSTREAM AND DOWNSTREAM SAMPLING** WILL BE PERFORMED FOR THIS PROJECT (SEE LOCATION ON THE PLAN). STORM WATER IS TO BE SAMPLED FOR NEPHELOMETRIC TURBIDITY UNITS (NTU) AT THE UPSTREAM AND DOWNSTREAM LOCATIONS. A DISCHARGE OF STORM WATER RUNOFF FROM DISTURBED AREAS WHERE BEST MANAGEMENT PRACTICES HAVE NOT BEEN PROPERLY DESIGNED, INSTALLED, AND MAINTAINED SHALL CONSTITUTE A SEPARATE VIOLATION FOR EACH DAY ON WHICH SUCH CONDITION RESULTS IN THE TURBIDITY OF THE DISCHARGE EXCEEDS **25** NTU. THERE SHALL BE A MAXIMUM 25 NTU VALUE DIFFERENCE BETWEEN UPSTREAM AND DOWNSTREAM SAMPLING POINTS. PER NPDES PERMIT GAR IOOOO2, FOR CONSTRUCTION ACTIVITIES, THE PRIMARY PERMITTEE MUST COMPLETE ALL SAMPLING.

SAMPLE TYPE
ALL SAMPLING SHALL BE COLLECTED BY "GRAB SAMPLES" AND THE ANALYSIS OF THESE SAMPLES MUST BE CONDUCTED IN ACCORDANCE WITH METHODOLOGY AND TEST PROCEDURES ESTABLISHED BY 40 CFR PART I36 (UNLESS OTHER TEST PROCEDURES HAVE BEEN APPROVED); THE GUIDANCE DOCUMENT TITLED "NPDES STORM WATER SAMPLING GUIDANCE DOCUMENT, EPA 833-8-92-OOI" AND GUIDANCE DOCUMENTS PREPARED BY THE EPD.

PER NPDES PERMIT, GAR IOOOO2. "SAMPLE CONTAINERS SHOULD BE LABELED PRIOR TO COLLECTING THE SAMPLES. SAMPLES SHOULD BE WELL MIXED BEFORE TRANSFERRING TO A SECONDARY CONTAINER. LARGE-MOUTH, WELL CLEANED AND RINSED GLASS OR PLASTIC JARS SHOULD BE USED FOR COLLECTING SAMPLES. THE JARS SHOULD BE CLEANSED THOROUGHLY TO AVOID CONTAMINATION. MANUAL, AUTOMATIC AND RISING STAGE SAMPLING MAY BE UTILIZED. IF AUTOMATIC SAMPLING IS USED AND NOT ACTIVATED DURING QUALIFYING EVENT, THE PERMITTEE MUST USE MANUAL SAMPLING OR RINSING STAGE SAMPLING DURING THE NEXT QUALIFYING EVENT.

SAMPLING POINTS #34
THERE WILL BE 2 STORM WATER SAMPLING LOCATION . SAMPLING LOCATION I WILL BE UPSTREAM OF THE FORCE MAIN INSTALLATION AT PIPEMAKERS CANAL, SAMPLING LOCATION 2 WILL BE DOWNSTREAM OF SAMPLING LOCATION I JUST BEYOND THE END OF CONSTRUCTION. UPSTREAM-DOWNSTREAM SAMPLING HAS BEEN SELECTED FOR THIS PROJECT DUE TO CONSTRUCTION OCCURING WITHOUT ANY OUTFALLS. THERE SHALL BE A 25 NTU VALUE DIFFERENCE BETWEEN UPSTREAM AND DOWNSTREAM SAMPLING POINTS. PER NPDES PERMIT GAR IOOOO2, FOR CONSTRUCTION ACTIVITIES, THE PRIMARY PERMITTEE MUST COMPLETE ALL SAMPLING.

- THE UPSTREAM SAMPLE FOR EACH RECEIVING WATER(S) MUST BE TAKEN IMMEDIATELY UPSTREAM OF THE CONFLUENCE OF THE FIRST STORMWATER DISCHARGE FROM THE PERMITTED ACTIVITY (I.E., THE DISCHARGE FARTHEST UPSTREAM AT THE SITE) BUT DOWNSTREAM OF ANY OTHER STORMWATER DISCHARGES NOT ASSOCIATED WITH THE PERMITTED ACTIVITY. WHERE APPROPRIATE, SEVERAL UPSTREAM SAMPLES FROM ACROSS THE RECEIVING WATER(S) MAY NEED TO BE TAKEN AND THE ARITHMETIC AVERAGE OF THE TURBIDITY OF THESE SAMPLES USED FOR THE UPSTREAM TURBIDITY VALUE.
- THE DOWNSTREAM SAMPLE FOR EACH RECEIVING WATER(S) MUST BE TAKEN DOWNSTREAM OF THE CONFLUENCE OF THE LAST STORMWATER DISCHARGE FROM THE PERMITTED ACTIVITY (I.E., THE DISCHARGE FARTHEST DOWNSTREAM AT THE SITE) BUT UPSTREAM OF ANY OTHER STORMWATER DISCHARGE NOT ASSOCIATED WITH THE PERMITTED ACTIVITY. WHERE APPROPRIATE, SEVERAL DOWNSTREAM SAMPLES FROM ACROSS THE RECEIVING WATER(S) MAY NEED TO BE TAKEN AND THE ARITHMETIC AVERAGE OF THE TURBIDITY OF THESE SAMPLES USED FOR THE DOWNSTREAM TURBIDITY VALUE.
- IDEALLY THE SAMPLES SHOULD BE TAKEN FROM THE HORIZONTAL AND VERTICAL CENTER OF THE RECEIVING SAMPLE FOR THE STORMWATER OUTFALL CHANNEL(S).
- CARE SHOULD BE TAKEN TO AVOID STIRRING THE BOTTOM SEDIMENTS IN THE RECEIVING WATER(S) OR IN THE OUTFALL STORMWATER CHANNEL.
- THE SAMPLING CONTAINER SHOULD BE HELD SO THAT THE OPENING FACES UPSTREAM.
- THE SAMPLES SHOULD BE KEPT FREE FROM FLOATING DEBRIS.
- PERMITTEES DO NOT HAVE TO SAMPLE SHEET FLOW THAT FLOWS ONTO UNDISTURBED NATURAL AREAS OR AREAS STABILIZED BY THE PROJECT. REFER TO PERMIT GARIOOOO2 FOR DEFINITION OF STABILIZED AREAS. FOR INFRASTRUCTURE CONSTRUCTION PROJECTS ON LAND USED FOR AGRICULTURAL OR SILVICULTURAL PURPOSES, FINAL STABILIZATION MAY BE ACCOMPLISHED BY STABILIZING THE DISTURBED LAND FOR ITS AGRICULTURAL OR SILVICULTURAL USE.
- ALL SAMPLING PURSUANT TO THIS PERMIT MUST BE DONE IN SUCH A WAY (INCLUDING GENERALLY ACCEPTED SAMPLING METHODS, LOCATIONS, TIMING, AND FREQUENCY) AS TO ACCURATELY REFLECT WHETHER STORMWATER RUNOFF FROM THE CONSTRUCTION SITE IS IN COMPLIANCE WITH THE STANDARD SET FORTH IN PARTS III.D.3 OR III.D.4 OF GAR IOOOO2.

#31

SAMPLING FREQUENCY
1. THE PRIMARY PERMITTEE MUST SAMPLE IN ACCORDANCE WITH THE PLAN AT LEAST ONCE FOR EACH RAINFALL EVENT DESCRIBED BELOW. FOR QUALIFYING EVENT, THE PERMITTEE SHALL SAMPLE AT THE BEGINNING OF ANY STORM WATER DISCHARGE TO A MONITORED RECEIVING WATER AND/OR FROM A MONITORED OUTFALL LOCATION WITHIN FORTY-FIVE (45) MINUTES OR AS SOON AS POSSIBLE.
2. HOWEVER, WHERE MANUAL AUTOMATIC SAMPLING ARE IMPOSSIBLE (AS DEFINED IN THE PERMIT), OR ARE BEYOND THE PERMITTEE'S CONTROL, THE PERMITTEE SHALL TAKE SAMPLES AS SOON AS POSSIBLE, BUT IN NO CASE MORE THAN TWELVE (I2) HOURS AFTER THE BEGINNING OF THE STORM WATER DISCHARGE.
3. SAMPLING BY THE PERMITTEE SHALL OCCUR FOR THE FOLLOWING QUALIFYING EVENTS:

A. FOR EACH AREA OF THE SITE THAT DISCHARGES TO A RECEIVING WATER OR FROM AN OUTFALL, THE FIRST EVENT THAT REACHES OR EXCEEDS 0.5 INCH WITH A STORM WATER DISCHARGE THAT OCCURS DURING NORMAL BUSINESS HOURS AS DEFINED IN THIS PERMIT AFTER ALL CLEARING AND GRUBBING OPERATIONS HAVE BEEN COMPLETED, BUT PRIOR TO COMPLETION OF MASS GRADING OPERATIONS, IN THE DRAINAGE AREA OF THE LOCATION SELECTED AS THE SAMPLING LOCATION;
B. IN ADDITION TO (A) ABOVE, FOR EACH AREA OF THE SITE THAT DISCHARGES TO A RECEIVING WATER OR FROM AN OUTFALL, THE FIRST RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH WITH A STORM WATER DISCHARGE THAT OCCURS DURING NORMAL BUSINESS HOURS AS DEFINED IN THIS PERMIT EITHER 90 DAYS AFTER THE FIRST SAMPLING EVENT OR AFTER ALL MASS GRADING OPERATIONS HAVE BEEN COMPLETED, BUT PRIOR TO SUBMITTAL OF A N.O.T., IN THE DRAINAGE AREA OF THE LOCATION SELECTED AS THE SAMPLING LOCATION, WHICHEVER COMES FIRST;
C. AT THE TIME OF SAMPLING PERFORMED PURSUANT TO (A) AND (B) ABOVE, IF BMPS IN ANY AREA OF THE SITE THAT DISCHARGES TO A RECEIVING WATER OR FROM AN OUTFALL ARE NOT PROPERLY DESIGNED, INSTALLED AND MAINTAINED, CORRECTIVE ACTION SHALL BE DEFINED AND IMPLEMENTED WITHIN TWO (2) BUSINESS DAYS, AND TURBIDITY SAMPLES SHALL BE TAKEN FROM DISCHARGES FROM THAT AREA OF THE SITE FOR EACH SUBSEQUENT RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH DURING NORMAL BUSINESS HOURS UNTIL THE SELECTED TURBIDITY STANDARD IS ATTAINED, OR UNTIL POST-STORM EVENT INSPECTIONS DETERMINE THAT BMPS ARE PROPERLY DESIGNED, INSTALLED AND MAINTAINED;
D. WHERE SAMPLING PURSUANT TO (A), (B) OR (C) ABOVE IS REQUIRED BUT NOT POSSIBLE (OR NOT REQUIRED BECAUSE THERE WAS NO DISCHARGE), THE PERMITTEE, IN ACCORDANCE WITH PART IV.D.4.A.(6), MUST INCLUDE A WRITTEN JUSTIFICATION IN THE INSPECTION REPORT OF WHY SAMPLING WAS NOT PERFORMED. PROVIDING THIS JUSTIFICATION DOES NOT RELIEVE THE PERMITTEE OF ANY SUBSEQUENT OBLIGATIONS UNDER (A), (B) OR (C) ABOVE.

* NOTE THAT THE PERMITTEE MAY CHOOSE TO MEET THE REQUIREMENTS OF (A) AND (B) ABOVE BY COLLECTING TURBIDITY SAMPLES FROM ANY RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH AND ALLOWS FOR SAMPLING AT ANY TIME OF THE DAY OR WEEK.

REPORTING
1. THE APPLICABLE PERMITTEES ARE REQUIRED TO SUBMIT THE SAMPLING RESULTS TO THE EPD BY THE FIFTEENTH DAY OF THE MONTH FOLLOWING THE REPORTING PERIOD. REPORTING PERIODS ARE MONTHS DURING WHICH SAMPLES ARE TAKEN IN ACCORDANCE WITH THIS PERMIT. SAMPLING RESULTS SHALL BE IN A CLEARLY LEGIBLE FORMAT. UPON WRITTEN NOTIFICATION, EPD MAY REQUIRE THE APPLICABLE PERMITTEE TO SUBMIT THE SAMPLING RESULTS ON A MORE FREQUENT BASIS. SAMPLING AND ANALYSIS OF ANY STORMWATER DISCHARGE(S) OR THE RECEIVING WATER(S) BEYOND THE MINIMUM FREQUENCY STATED IN THIS PERMIT MUST BE REPORTED IN A SIMILAR MANNER TO THE EPD. SAMPLING REPORTS MUST BE SUBMITTED TO EPD USING THE ELECTRONIC SUBMITTAL SERVICE PROVIDED BY EPD. SAMPLING REPORTS MUST BE SUBMITTED UNTIL SUCH TIME AS A NOT IS SUBMITTED IN ACCORDANCE WITH PART VI.

2. ALL SAMPLING REPORTS SHALL INCLUDE THE FOLLOWING INFORMATION:

A. THE RAINFALL AMOUNT, DATE, EXACT PLACE AND TIME OF SAMPLING OR MEASUREMENTS;
B. THE NAME(S) OF THE CERTIFIED PERSONNEL WHO PERFORMED THE SAMPLING AND MEASUREMENTS;
C. THE DATE(S) ANALYSES WERE PERFORMED;
D. THE TIME(S) ANALYSES WERE INITIATED;
E. THE NAME(S) OF THE CERTIFIED PERSONNEL WHO PERFORMED THE ANALYSES;
F. REFERENCES AND WRITTEN PROCEDURES, WHEN AVAILABLE, FOR THE ANALYTICAL TECHNIQUES OR METHODS USED;
G. THE RESULTS OF SUCH ANALYSES, INCLUDING THE BENCH SHEETS, INSTRUMENT READOUTS, COMPUTER DISKS OR TAPES, ETC., USED TO DETERMINE THESE RESULTS;
H. RESULTS WHICH EXCEED IOOO NTU SHALL BE REPORTED AS "EXCEEDS IOOO NTU;" AND
I. CERTIFICATION STATEMENT THAT SAMPLING WAS CONDUCTED AS PER THE PLAN.

GOVERNING AGENCY: **CITY OF SAVANNAH**
702 STILES AVENUE
SAVANNAH GA, 31415

ATTN.: CHUCK TESSMER
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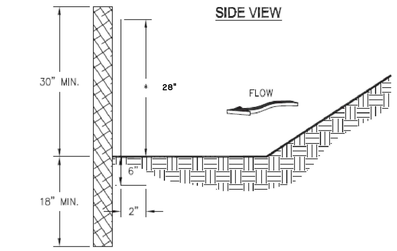
ATTN.: KEITH STRONG
THOMAS & HUTTON
50 PARK OF COMMERCE WAY
SAVANNAH, GA 31405
DAY (912) 721-4103
NIGHT (912) 667-9793
EMAIL: strong.k@tandh.com

3. ALL WRITTEN CORRESPONDENCE REQUIRED BY THIS PERMIT SHALL BE SUBMITTED BY RETURN RECEIPT CERTIFIED MAIL (OR SIMILAR SERVICE) TO THE APPROPRIATE DISTRICT OFFICE OF THE EPD ACCORDING TO THE SCHEDULE IN APPENDIX A OF THIS PERMIT. THE PERMITTEE SHALL RETAIN A COPY OF THE PROOF OF SUBMITTAL AT THE CONSTRUCTION SITE OR THE PROOF OF SUBMITTAL SHALL BE READILY AVAILABLE AT A DESIGNATED LOCATION FROM COMMENCEMENT OF CONSTRUCTION UNTIL SUCH TIME AS A NOT IS SUBMITTED IN ACCORDANCE WITH PART VI.

COMPLIANCE WITH FED

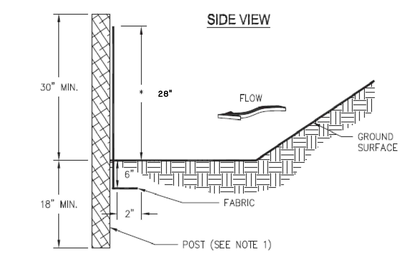
#51

SILT FENCE - TYPE NON-SENSITIVE



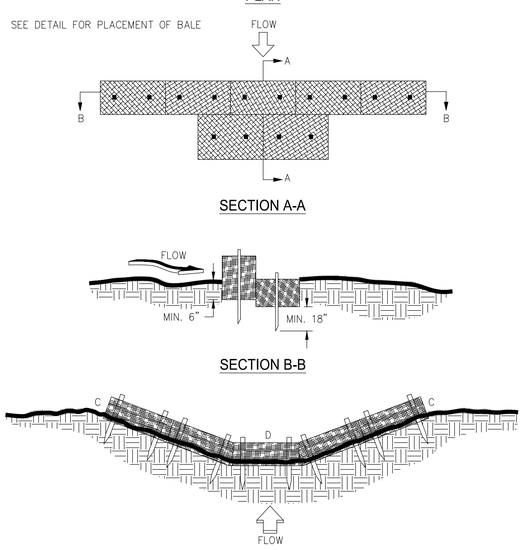
NOTES:
1. USE STEEL OR WOOD POSTS OR AS SPECIFIED BY THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.
2. HEIGHT (*) IS TO BE SHOWN ON THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.

SILT FENCE - TYPE SENSITIVE



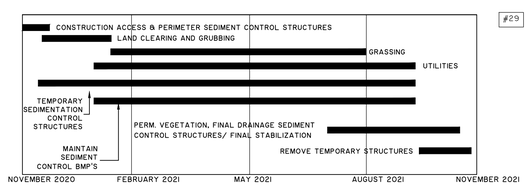
NOTES:
1. USE STEEL OR WOOD POSTS OR AS SPECIFIED BY THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.
2. HEIGHT (*) IS TO BE SHOWN ON THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.

TYPICAL STRAW BALE CHECK DAM



NOTES:
1. BALES SHOULD BE BOUND WITH WIRE OR NYLON STRING AND SHOULD BE PLACED IN ROWS WITH BALE ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. REMOVE #4 REBAR AFTER STRAW BALES ARE NO LONGER IN PLACE.
3. POINT C OF SECTION B-B SHOULD ALWAYS BE HIGHER THAN POINT D.

#29



SEEDING RATES FOR TEMPORARY & PERMANENT COVER

MONTH	TEMPORARY COVER	RATE PER ACRE: SEEDED ALONE	RATE PER ACRE: ADDED TO MIX	PERMANENT COVER	RATE PER ACRE: SEEDED ALONE	RATE PER ACRE: ADDED TO MIX
JANUARY	* LESPEDEZA, ANNUAL * RYE RYEGRASS, ANNUAL * WHEAT	40 lbs. 3 bu. 40 lbs. 3 bu.	10 lbs. .5 bu. - .5 bu.	* BAHIA, PENSACOLA BERMUDA, UNHULLED CENTIPEDE, SOD LESPEDEZA, SERICEA 1	60 lbs. 10 lbs. - 75 lbs.	30 lbs. 6 lbs. - -
FEBUARY	LESPEDEZA, ANNUAL * LOVEGRASS, WEEPING * RYE * RYEGRASS, ANNUAL	40 lbs. 4 lbs. 3 bu. 40 lbs.	10 lbs. 2 lbs. .5 bu. -	* BAHIA, PENSACOLA CENTIPEDE, SOD LESPEDEZA, SEDICEA 1 * LESPEDEZA, SEDICEA 2 * LOVEGRASS, WEEPING	60 lbs. - 75 lbs. 75 lbs. 4 lbs.	30 lbs. - - - 2 lbs.
MARCH	* LESPEDEZA, ANNUAL LOVEGRASS, WEEPING * RYEGRASS, ANNUAL * SUDANGRASS	40 lbs. 4 lbs. 40 lbs. 60 lbs.	10 lbs. 2 lbs. - -	BAHIA, PENSACOLA * BERMUDA, HULLED CENTIPEDE, SOD * LESPEDEZA, SEDICEA 1 LESPEDEZA, SEDICEA 2 LOVEGRASS, WEEPING	60 lbs. 10 lbs. - 75 lbs. 75 lbs. 4 lbs.	30 lbs. 6 lbs. - - - 2 lbs.
APRIL	LOVEGRASS, WEEPING MILLET, BROWNTOP * MILLET, PEARL SUDANGRASS	4 lbs. 40 lbs. 50 lbs. 60 lbs.	2 lbs. 10 lbs. - -	BAHIA, PENSACOLA BERMUDA, HULLED CENTIPEDE, SOD * LESPEDEZA, SEDICEA 1 LESPEDEZA, SEDICEA 2 LOVEGRASS, WEEPING	60 lbs. 10 lbs. - 75 lbs. 75 lbs. 4 lbs.	30 lbs. 6 lbs. - - - 2 lbs.
MAY	LOVEGRASS, WEEPING MILLET, BROWNTOP MILLET, PEARL SUDANGRASS	4 lbs. 40 lbs. 50 lbs. 60 lbs.	2 lbs. 10 lbs. - -	BAHIA, PENSACOLA BERMUDA, HULLED CENTIPEDE, SOD * LESPEDEZA, SEDICEA 1 LESPEDEZA, SEDICEA 2 LOVEGRASS, WEEPING	60 lbs. 10 lbs. - 75 lbs. 75 lbs. 4 lbs.	30 lbs. 6 lbs. - - - 2 lbs.
JUNE	* LOVEGRASS, WEEPING MILLET, BROWNTOP MILLET, PEARL SUDANGRASS	4 lbs. 40 lbs. 50 lbs. 60 lbs.	2 lbs. 10 lbs. - -	BAHIA, PENSACOLA * BERMUDA, HULLED * LESPEDEZA, SEDICEA 1 * LESPEDEZA, SEDICEA 2 * LOVEGRASS, WEEPING	60 lbs. 10 lbs. 75 lbs. 75 lbs. 4 lbs.	30 lbs. 6 lbs. - - 2 lbs.

SEEDING RATES FOR TEMPORARY & PERMANENT COVER

MONTH	TEMPORARY COVER	RATE PER ACRE: SEEDED ALONE	RATE PER ACRE: ADDED TO MIX	PERMANENT COVER	RATE PER ACRE: SEEDED ALONE	RATE PER ACRE: ADDED TO MIX
JULY	* MILLET, BROWNTOP MILLET, PEARL SUDANGRASS	40 lbs. 50 lbs. 60 lbs.	10 lbs. - -	* BAHIA, PENSACOLA * LESPEDEZA, SEDICEA 1	60 lbs. 75 lbs.	30 lbs. -
AUGUST	* MILLET, PEARL * RYEGRASS, ANNUAL	50 lbs. 40 lbs.	- -	* BAHIA, PENSACOLA * LESPEDEZA, SEDICEA 1	60 lbs. 75 lbs.	30 lbs. -
SEPTEMBER	* BARLEY * OATS * RYE RYEGRASS, ANNUAL * WHEAT	3 bu. 4 bu. 3 bu. 40 lbs. 3 bu.	.5 bu. 1 bu. .5 bu. - .5 bu.	* BAHIA, PENSACOLA LESPEDEZA, SEDICEA 1	60 lbs. 75 lbs.	30 lbs. -
OCTOBER	BARLEY OATS RYE RYEGRASS, ANNUAL WHEAT	3 bu. 4 bu. 3 bu. 40 lbs. 3 bu.	.5 bu. 1 bu. .5 bu. - .5 bu.	* BAHIA, PENSACOLA LESPEDEZA, SEDICEA 1	60 lbs. 75 lbs.	30 lbs. -
NOVEMBER	BARLEY OATS RYE RYEGRASS, ANNUAL WHEAT	3 bu. 4 bu. 3 bu. 40 lbs. 3 bu.	.5 bu. 1 bu. .5 bu. - .5 bu.	* BAHIA, PENSACOLA BERMUDA, UNHULLED CENTIPEDE, SOD LESPEDEZA, SEDICEA 1	60 lbs. 10 lbs. - 75 lbs.	30 lbs. 6 lbs. - -
DECEMBER	BARLEY OATS RYE RYEGRASS, ANNUAL WHEAT	3 bu. 4 bu. 3 bu. 40 lbs. 3 bu.	.5 bu. 1 bu. .5 bu. - .5 bu.	* BAHIA, PENSACOLA BERMUDA, UNHULLED CENTIPEDE, SOD LESPEDEZA, SEDICEA 1	60 lbs. 10 lbs. - 75 lbs.	30 lbs. 6 lbs. - -

NOTES
ALL PERMANENT GRASS PLANTINGS SHALL BE MULCHED
** INDICATES MARGINAL (BUT PERMISSIBLE) PLANTING DATE*
1. UNSCARIFIED
2. SCARIFIED
3. CENTIPEDE SOD CAN BE USED AS PERMANENT COVER ANYTIME EXCEPT JUNE THRU OCTOBER

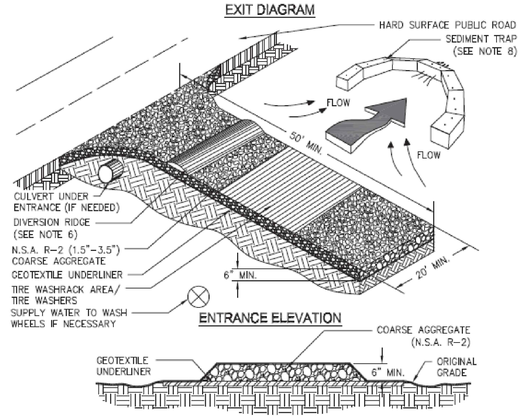
FERTILIZER REQUIREMENTS #52

TYPE OF SPECIES	YEAR	ANALYSIS OR EQUIVALENT N-P-K	RATE	N TOP DRESSING RATE
1. COOL SEASON GRASSES	FIRST SECOND MAINTENANCE	6-12-12 6-12-12 10-10-10	1500lbs./ac. 1000lbs./ac. 400 lbs./ac.	50-100 lbs./ac. * 1 & 2 30
2. COOL SEASON GRASSES AND LEGUMES	FIRST SECOND MAINTENANCE	6-12-12 0-10-10 0-10-10	1500lbs./ac. 1000lbs./ac. 400 lbs./ac.	50-100 lbs./ac. * 1 - -
3. GROUND COVERS	FIRST SECOND MAINTENANCE	10-10-10 10-10-10 10-10-10	1300lbs./ac. * 3 1500lbs./ac. * 3 1100 lbs./ac.	- - -
4. PINE SEEDLINGS	FIRST	20-10-5	ONE 21-GRAM PELLET PER SEEDLING PLACED IN THE CLOSING HOLE	-
5. SHRUB LESPEDEZA	FIRST MAINTENANCE	0-10-10 0-10-10	700lbs./ac. 700lbs./ac. * 4	-
6. TEMPORARY COVER CROPS SEEDED ALONE	FIRST	10-10-10	500lbs./ac.	30 lbs./ac. * 5
7. WARM SEASON GRASSES	FIRST SECOND MAINTENANCE	6-12-12 6-12-12 10-10-10	1500lbs./ac. 800lbs./ac. 400 lbs./ac.	50-100 lbs./ac. * 2 & 6 50-100 lbs./ac. 30 lbs./ac. * 2
8. WARM SEASON GRASSES AND LEGUMES	FIRST SECOND MAINTENANCE	6-12-12 0-10-10 0-10-10	1500lbs./ac. 1000lbs./ac. 400 lbs./ac.	50-100 lbs./ac. * 6

** 1 APPLY IN SPRING FOLLOWING SEEDING.*
** 2 APPLY IN SPLIT APPLICATIONS WHEN HIGH RATES ARE USED.*
** 3 APPLY IN 3 SPLIT APPLICATIONS.*
** 4 APPLY WHEN PLANTS ARE PRUNED.*
** 5 APPLY TO GRASS SPECIES ONLY.*
** 6 APPLY WHEN PLANTS GROW TO A HEIGHT OF 2 TO 4 INCHES.*

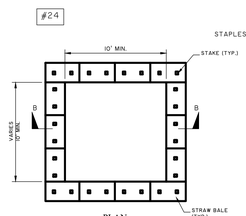
#52

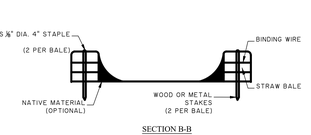
CRUSHED STONE CONSTRUCTION EXIT



NOTES:
1. AVOID LOCATING ON STEEP SLOPES OR AT CURVES ON PUBLIC ROADS.
2. REMOVE ALL VEGETATION AND OTHER UNSUITABLE MATERIAL FROM THE FOUNDATION AREA, GRADE, AND CROWN FOR POSITIVE DRAINAGE.
3. AGGREGATE SIZE SHALL BE IN ACCORDANCE WITH NATIONAL STONE ASSOCIATION R-2 (1.5"-3.5" STONE).
4. GRAVEL PAD SHALL HAVE A MINIMUM THICKNESS OF 6".
5. PAD WIDTH SHALL BE EQUAL FULL WIDTH AT ALL POINTS OF VEHICULAR EGRESS, BUT NO LESS THAN 20'.
6. A DIVERSION RIDGE SHOULD BE CONSTRUCTED WHEN GRADE TOWARD PAVED AREA IS GREATER THAN 2%.
7. INSTALL PIPE UNDER THE ENTRANCE IF NEEDED TO MAINTAIN DRAINAGE DITCHES.
8. WHEN WASHING IS REQUIRED, IT SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN (DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE ENTRANCE TO A SEDIMENT CONTROL DEVICE).
9. WASHRACKS AND/OR TIRE WASHERS MAY BE REQUIRED DEPENDING ON SCALE AND CIRCUMSTANCE. IF NECESSARY, WASHRACK DESIGN MAY CONSIST OF ANY MATERIAL SUITABLE FOR TRUCK TRAFFIC THAT REMOVE MUD AND DIRT.
10. MAINTAIN AREA IN A WAY THAT PREVENTS TRACKING AND/OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.

#24





NOTES:
1. ACTUAL LAYOUT DETERMINED IN FIELD.
2. INSTALL CONCRETE WASHOUT SIGN (24"X24", MINIMUM) WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
3. TEMPORARY WASHOUT AREA MUST BE AT LEAST 50' FROM A STORM DRAIN, CREEK BANK OR PERIMETER CONTROL.
4. CLEAN OUT CONCRETE WASHOUT AREA WHEN 50% FULL.
5. THE KEY TO FUNCTIONAL CONCRETE WASHOUTS IS WEEKLY INSPECTIONS, ROUTINE MAINTENANCE, AND REGULAR CLEAN OUT.
6. SILT FENCE SHALL BE INSTALLED AROUND PERIMETER OF CONCRETE WASHOUT AREA EXCEPT FOR THE SIDE UTILIZED FOR ACCESSING THE WASHOUT.
7. A ROCK CONSTRUCTION ENTRANCE MAY BE NECESSARY ALONG ONE SIDE OF THE WASHOUT TO PROVIDE VEHICLE ACCESS.

STRAW BALE BARRIER CONCRETE WASHOUT

GEORGIA REGISTERED PROFESSIONAL ENGINEER FRED SORORIAN
FRED SORORIAN
CIVIL ENGINEER
PLAN REVIEWER
CERTIFICATION #
0000015494

BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE
0	ISSUED FOR BIDS	CDR	11-2020

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SAVANNAH savannahga.gov

TRAVIS FIELD WATER RECLAMATION FACILITY FORCE MAIN

ESPC NOTES

JOB NO:	J-27788.0000
DATE:	10-2-19
DRAWN:	CDR
DESIGNED:	CDR
REVIEWED:	FS
APPROVED:	FS
SCALE:	1" = 1'

EC1.3

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#1

EROSION, SEDIMENTATION & POLLUTION CONTROL PLAN CHECKLIST
INFRASTRUCTURE CONSTRUCTION PROJECTS

SWCD:_____

Project Name: TRAVIS FIELD WRF 30-INCH EFFLUENT FORCE MAIN **Address:** Pipemakers Canal Acess Road

City/County: Savannah, GA/Chatham County **Date on Plans:** 10-20-19

Name & email of person filling out checklist: Christina Richard; richard.c@tandh.com

TO BE SHOWN ON ES&PC PLAN

Plan Page #	Included Y/N		
EC1.4	Y	1	The applicable Erosion, Sedimentation and Pollution Control Plan Checklist established by the Commission as of January 1 of the year in which the land-disturbing activity was permitted. (The completed Checklist must be submitted with the ES&PC Plan or the Plan will not be reviewed)
EC1.1	Y	2	Level II certification number issued by the Commission, signature and seal of the certified design professional. (Signature, seal and Level II number must be on each sheet pertaining to ES&PC Plan or the Plan will not be reviewed)
EC1.1	Y	3	The name and phone number of the 24-hour local contact responsible for erosion, sedimentation and pollution controls.
EC1.1	Y	4	Provide the name, address, email address, and phone number of primary permittee.
EC1.1	Y	5	Note total and disturbed acreage of the project or phase under construction.
EC2.1-EC2.11	Y	6	Provide the GPS locations of the beginning and end of the Infrastructure project. Give the Latitude and Longitude in decimal degrees.
EC1.1	Y	7	Initial date of the Plan and the dates of any revisions made to the Plan including the entity who requested the revisions.
EC1.1	Y	8	Description of the nature of construction activity.
EC0.1	Y	9	Provide vicinity map showing site's relation to surrounding areas. Include designation of specific phase, if necessary.
EC0.1, EC2.1-EC2.11,	Y	10	Identify the project receiving waters and describe all sensitive adjacent areas including streams, lakes, residential areas, wetlands, marshlands, etc. which may be affected.
EC1.1	Y	11	Design professional's certification statement and signature that the site was visited prior to development of the ES&PC Plan as stated on Part IV page 21 of the permit.
EC1.1	Y	12	Design professional's certification statement and signature that the permittee's ES&PC Plan provides for an appropriate and comprehensive system of BMPs and sampling to meet permit requirements as stated on Part IV page 20 of the permit. *
EC1.1	Y	13	Design professional certification statement and signature that the permittee's ES&PC Plan provides for representative sampling as stated on Part IV.D.6.c.(3) page 37 of the permit as applicable. *
EC1.1	Y	14	Clearly note the statement that "The design professional who prepared the ES&PC Plan is to inspect the installation of the initial sediment storage requirements, perimeter control BMPs, and sediment basins within 7 days after installation." in accordance with Part IV.A.5 page 26 of the permit. *
EC1.1	Y	15	Clearly note the statement that "Non-exempt activities shall not be conducted within the 25 or 50-foot undisturbed stream buffers as measured from the point of wrested vegetation or within 25-feet of the coastal marshland buffer as measured from the Jurisdictional Determination Line without first acquiring the necessary variances and permits."
EC2.1	Y	16	Provide a description of any buffer encroachments and indicate whether a buffer variance is required.
EC1.1	Y	17	Clearly note the statement that "Amendments/revisions to the ES&PC Plan which have a significant effect on BMPs with a hydraulic component must be certified by the design professional." *
EC1.1	Y	18	Clearly note the statement that "Waste materials shall not be discharged to waters of the State, except as authorized by a Section 404 permit." *
EC1.1	Y	19	Clearly note statement that "The escape of sediment from the site shall be prevented by the installation of erosion and sediment control measures and practices prior to land disturbing activities."
EC1.1	Y	20	Clearly note statement that "Erosion control measures will be maintained at all times. If full implementation of the approved Plan does not provide for effective erosion control, additional erosion and sediment control measures shall be implemented to control or treat the sediment source."
EC1.1	Y	21	Clearly note the statement "Any disturbed area left exposed for a period greater than 14 days shall be stabilized with mulch or temporary seeding."
EC1.4	Y	22	Any construction activity which discharges storm water into an Impaired Stream Segment, or within 1 linear mile upstream of and within the same watershed as, any portion of an Biota Impaired Stream Segment must comply with Part III. C. of the permit. Include the completed Appendix 1 listing all the BMPs that will be used for those areas of the site which discharge to the Impaired Stream Segment. *
	N/A	23	If a TMDL Implementation Plan for sediment has been finalized for the Impaired Stream Segment (identified in item 22 above) at least six months prior to submittal of NOI, the ES&PC Plan must address any site-specific conditions or requirements included in the TMDL Implementation Plan. *
EC1.4	Y	24	BMPs for concrete washdown of tools, concrete mixer chutes, hoppers and the rear of the vehicles. Washout of the drum at the construction site is prohibited. *
EC1.2	Y	25	Provide BMPs for the remediation of all petroleum spills and leaks.
EC1.1	Y	26	Description of the measures that will be installed during the construction process to control pollutants in storm water that will occur after construction operations have been completed. *
EC1.1	Y	27	Description of practices to provide cover for building materials and building products on site. *
EC1.1	Y	28	Description of the practices that will be used to reduce the pollutants in storm water discharges. *
EC1.4	Y	29	Description and chart or timeline of the intended sequence of major activities which disturb soils for the major portions of the site (i.e., initial perimeter and sediment storage BMPs, clearing and grubbing activities, excavation activities, utility activities, temporary and final stabilization).
EC1.2	Y	30	Provide complete requirements of inspections and record keeping by the primary permittee. *
EC1.2	Y	31	Provide complete requirements of sampling frequency and reporting of sampling results. *
EC1.2	Y	32	Provide complete details for retention of records as per Part IV.F. of the permit. *
EC1.2	Y	33	Description of analytical methods to be used to collect and analyze the samples from each location. *
	N/A	34	Appendix B rationale for NTU values at all outfall sampling points where applicable. *
EC2.1 & EC2.11	Y	35	Delineate all sampling locations, perennial and intermittent streams and other water bodies into which storm water is discharged also provide a summary chart of the justification and analysis for the representative sampling as applicable. *
EC1.1	Y	36	A description of appropriate controls and measures that will be implemented at the construction site including: (1) initial sediment storage requirements and perimeter control BMPs, (2) intermediate grading and drainage BMPs, and (3) final BMPs. For construction sites where there will be no mass grading and the initial perimeter control BMPs, intermediate grading and drainage BMPs, and final BMPs are the same, the Plan may combine all of the BMPs into a single phase. *
EC2.1-EC2.11	Y	37	Graphic scale and North arrow.
EC2.1-EC2.11	Y	38	Existing and proposed contour lines with contour lines drawn at an interval in accordance with the following:

Existing Contours	USGS 1": 2000' Topographical Sheets
Proposed Contours	1": 400' Centerline Profile

	N/A	39	Use of alternative BMPs whose performance has been documented to be equivalent to or superior to conventional BMPs as certified by a Design Professional (unless disapproved by EPD or the Georgia Soil and Water Conservation Commission). Please refer to the Alternative BMP Guidance Document found at www.gaswcc.org.
	N/A	40	Use of alternative BMP for application to the Equivalent BMP List. Please refer to Appendix A-2 of the Manual for Erosion & Sediment Control in Georgia 2016 Edition. *
EC2.1-EC2.11	N/A	41	Delineation of the applicable 25-foot or 50-foot undisturbed buffers adjacent to State waters and any additional buffers required by the Local Issuing Authority. Clearly note and delineate all areas of impact.
EC2.1-EC2.11	Y	42	Delineation of on-site wetlands and all State waters located on and within 200 feet of the project site.
	EXHIBIT	43	Delineation and acreage of contributing drainage basins on the project site.
	EXHIBIT	44	Delineate on-site drainage and off-site watersheds using USGS 1" :2000' topographical sheets.
EC1.1	Y	45	An estimate of the runoff coefficient or peak discharge flow of the site prior to and after construction activities are completed.
	N/A	46	Storm-drain pipe and weir velocities with appropriate outlet protection to accommodate discharges without erosion. Identify/Delineate all storm water discharge points.
EC2.1-EC2.11	Y	47	Soil series for the project site and their delineation.
EC2.1-EC2.11	Y	48	The limits of disturbance for each phase of construction.
EC1.1	Y	49	Provide a minimum of 67 cubic yards of sediment storage per acre drained using a temporary sediment basin, retrofitted detention pond, and/or excavated inlet sediment traps for each common drainage location. Sediment storage volume must be in place prior to and during all land disturbance activities until final stabilization of the site has been achieved. A written justification explaining the decision to use equivalent controls when a sediment basin is not attainable must be included in the Plan for each common drainage location in which a sediment basin is not provided. A written justification as to why 67 cubic yards of storage is not attainable must also be given. Worksheets from the Manual must be included for structural BMPs and all calculations used by the design professional to obtain the required sediment storage when using equivalent controls. When discharging from sediment basins and impoundments, permittees are required to utilize outlet structures that withdraw water from the surface, unless infeasible. If outlet structures that withdraw water from the surface are not feasible, a written justification explaining this decision must be included in the Plan.
EC2.1-EC2.11	Y	50	Location of Best Management Practices that are consistent with and no less stringent than the Manual for Erosion and Sediment Control in Georgia. Use uniform coding symbols from the Manual, Chapter 6, with legend.
EC1.3	Y	51	Provide detailed drawings for all structural practices. Specifications must, at a minimum, meet the guidelines set forth in the Manual for Erosion and Sediment Control in Georgia.
EC1.3	Y	52	Provide vegetative plan, noting all temporary and permanent vegetative practices. Include species, planting dates and seeding, fertilizer, lime and mulching rates. Vegetative plan shall be site specific for appropriate time of year that seeding will take place and for the appropriate geographic region of Georgia.

* If using this checklist for a project that is less than 1 acre and not part of a common development but within 200 ft of a perennial stream, the * checklist items would be N/A.

Effective January 1, 2020

#22

APPENDIX 1 SELECTED BMP'S

(SEE APPENDIX 1 ON THIS SHEET)

#D

CONSTRUCTION SITE

PRIMARY PERMITTEE

CONTACT PERSON

TELEPHONE NUMBER

PREMITTEE WEBSITE FOR ESPC PLAN

INSTALL SIGN (MIN. 4'X8') BY START DATE OF CONSTRUCTION VISIBLE FROM PUBLIC ROADWAY
(SEE APPENDIX 1 ON SHEET EC2.4)

#F

CONDUCT TURBIDITY SAMPLING AFTER EVERY RAIN EVENT OF 0.5 INCH OR GREATER WITHIN ANY 24-HOUR PERIOD, RECOGNIZING THE EXCEPTIONS SPECIFIED IN SECTION IV.D.6.D. OF NPEDS PERMITS

#I

ONLY 50% OF THE TOTAL PROJECT DISTURBED ACREAGE CAN BE DISTURBED AT ONE TIME. THEREFORE ONLY 4.45 ACRES OF AREA CAN BE DISTURBED AT ONE TIME. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE DISTURBED ACREAGE.

#P

CONDUCT SOIL TESTS TO IDENTIFY AND TO IMPLEMENT SITE-SPECIFIC FERTILIZER NEEDS.

#22

APPENDIX 1

THE ES&PC PLAN MUST INCLUDE AT LEAST FOUR (4) OF THE FOLLOWING BMPS FOR THOSE AREAS OF THE SITE WHICH DISCHARGE TO A IMPAIRED STREAM SEGMENT AND FOR SITES WHICH EPD HAS APPROVED IN WRITING A REQUEST TO DISTURB 50 ACRES OR MORE AT ANY ONE TIME.

The four items chosen must be appropriate for the site conditions.

Plan Page #	Included Y/N		
		a.	During construction activities, double the width of the 25 foot undisturbed vegetated buffer along all State waters requiring a buffer and the 50 foot undisturbed vegetated buffer along all State waters classified as "trout streams" requiring a buffer. During construction activities, EPD will not grant variances to any such buffers that are increased in width.
		b.	Increase all temporary sediment basins and retrofitted storm water management basins to provide sediment storage of at least 3600 cubic feet (134 cubic yards) per acre drained.
		c.	Use baffles in all temporary sediment basins and retrofitted storm water management basins to at least double the conventional flow path length to the outlet structure.
EC2.9 & EC1.4	Y	d.	A large sign (minimum 4 feet x 8 feet) must be posted on site by the actual start date of construction. The sign must be visible from a public roadway. The sign must identify the following: (1) construction site, (2) the permittee(s), (3) the contact person(s) and telephone number(s), and (4) the permittee-hosted website where the Plan can be viewed must be provided on the submitted NOI. The sign must remain on site and the Plan must be available on the provided website until a NOT has been submitted.
		e.	Use flocculants or coagulants and/or mulch to stabilize areas left disturbed for more than seven (7) calendar days in accordance with Section III. D.1. of the NPDES Permit.
	Y	f.	Conduct turbidity sampling after every rain event of 0.5 inch or greater within any 24 hour period, recognizing the exceptions specified in Section IV.D.6.d. of the NPDES Permits.
		g.	Comply with the applicable end-of-pipe turbidity effluent limit, without the "BMP defense" as provided for in O.C.G.A. 12-7-6 (a)(1).
		h.	Reduce the total planned site disturbance to less than 50% impervious surfaces (excluding any State-mandated buffer areas from such calculations). All calculations must be included on the Plan.
EC1.1 & EC1.4	Y	i.	Limit the amount of disturbed area at any one time to no greater than 25 acres or 50% of the total planned site, whichever is less. All calculations must be included on the Plan.
		j.	Use "Dirt II" techniques available on the EPD website to model and manage construction storm water runoff (including sheet flow). All calculations must be included on the Plan. (https://epd.georgia.gov/erosion-and-sedimentation)
		k.	Add appropriate organic soil amendments (e.g., compost) and conduct pre- and post-construction soil sampling to a depth of six (6) inches to document improved levels of soil carbon after final stabilization of the construction site.
		l.	Use mulch filter berms, in addition to a silt fence, on the site perimeter wherever construction storm water (including sheet flow) may be discharged. Mulch filter berms cannot be placed in waterways or areas of concentrated flow.
		m.	Use appropriate erosion control slope stabilization instead of concrete in all construction storm water ditches and storm drainages designed for a 25 year, 24 hour rainfall event.
		n.	Use flocculants or coagulants under a passive dosing method (e.g., flocculant blocks) within construction storm water ditches and storm drainages that feed into temporary sediment basins and retrofitted management basins.
		o.	Install sod for a minimum 20 foot width (in lieu of seeding) after final grade has been achieved, along the site perimeter wherever storm water (including sheet flow) may be discharged.
EC1.4	Y	p.	Conduct soil tests to identify and to implement site-specific fertilizer needs.
		q.	Certified personnel for primary permittees shall conduct inspections at least twice every seven (7) calendar days and within 24 hours of the end of the storm that is 0.5 inches rainfall or greater in accordance with Section IV.D.4.a.(3)(a) – (c); secondary permittees, Section IV.D.4.b.(3)(a) – (c); and tertiary permittees Section IV.D.4.c.(3)(a) – (c) *
		r.	Apply the appropriate compost blankets (minimum depth 1.5 inches) to protect soil surfaces until vegetation is established during the final stabilization phase of the construction activity.
		s.	Use alternative BMPs whose performance has been documented to be superior to conventional BMPs as certified by a Design Professional (unless disapproved by EPD or the Georgia Soil and Water Conservation Commission). (If using this item please refer to the Alternative BMP guidance document found at www.gaswcc.georgia.gov)
		t.	Limit the total planned site disturbance to less than 15% impervious surfaces (excluding any state mandated buffer areas from such calculations). All calculations must be included in the Plan.
		u.	Conduct inspections during the intermediate grading and drainage BMP phase and during the final BMP phase of the project by the design professional who prepared the Plan in accordance with Section IV.A.5 of the permit. The Plan must include a statement that the primary permittee must retain the design professional who prepared the Plan to conduct inspections during the intermediate grading and drainage BMP phase and during the final BMP phase.
		v.	Install Post Construction BMPs (e.g., runoff reduction BMPs) which remove 80% TSS as outlined in the Georgia Stormwater Management Manual known as the Blue Book or an equivalent or more stringent design manual.

Effective January 1, 2019

* This requirement is different for infrastructure projects:
Certified personnel for primary permittees shall conduct inspections at least once every seven (7) calendar days and within 24 hours of the end of the storm that is 0.5 inches rainfall or greater in accordance with Section IV.D.4.a.(3)(a) – (c) of the permit.

GEORGIA REGISTERED PROFESSIONAL ENGINEER FRED SORORIAN
FRED SORORIAN
CIVIL ENGINEER
PLAN REVIEWER
CERTIFICATION #
0000012474

BID SET - NOT FOR CONSTRUCTION

NO.	DATE	BY	REVISIONS
0	11-2020	CDR	ISSUED FOR BIDS

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50 Park of Commerce Way
Savannah, GA 31405 • 912.234.5300
www.thomasandhutton.com

SAVANNAH savannahga.gov

TRAVIS FIELD WATER RECLAMATION FACILITY FORCE MAIN

ESPC NOTES

JOB NO:	J-27788.0000
DATE:	10-2-19
DRAWN:	CDR
DESIGNED:	CDR
REVIEWED:	FS
APPROVED:	FS
SCALE:	1" = 1'

EC1.4

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EROSION, SEDIMENTATION CONTROL PHASING NOTES

1. THE FOLLOWING EROSION & SEDIMENTATION CONTROL PLANS ILLUSTRATE THE EROSION AND SEDIMENTATION CONTROL MEASURES TO BE INSTALLED AND MAINTAINED UNTIL FINAL STABILIZATION HAS BEEN REACHED.
2. INITIAL PERIMETER EROSION AND SEDIMENTATION CONTROL MEASURES, INCLUDING SILT FENCING, DITCH CHECKS AND SEDIMENT BARRIERS, SHALL BE INSTALLED AS INDICATED IN THE EROSION AND SEDIMENTATION CONTROL PLAN DURING CLEARING ACTIVITIES.
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EROSION CONTROL LEGEND

DESCRIPTION	PLAN SYMBOL
BUFFER ZONE	Bf
DISTURBED AREA STABILIZATION (MULCHING ONLY)	Ds1
DISTURBED AREA STABILIZATION (PERMANENT VEGETATION)	Ds3
DUST CONTROL	Du
SILT FENCE - TYPE S	Sd1-S
HAYBALE CHECK DAM	Cd-Hb

SOILS

Pn	Pooler Fine Sandy Loam
Co	Cape Fear
Mae	Made Land
W	Water

LOD — APPROX. LIMITS OF DISTURBANCE

X — SILT FENCE

BENCHMARK
"BENCHTIE" IN
27" LAUREL OAK
EL 3.66
(NAVD 1988)

NPDES UPSTREAM
MONITORING STATION
N: 769274.7872
E: 960661.1768

BEGINNING OF PROJECT
N: 769743.4700
E: 959684.2200
LAT: N032.112564
LONG: W081.186353

TRAVIS FIELD WRF PROPERTY LINE

6-0986-01-002
SOUTHERN REGION INDUSTRIAL
REALTY INC.

2-0984-01-001
SAVANNAH AIRPORT COMMISSION

CONNECTION TO TRAVIS FIELD PLANT
(SEE REF. 8)

SSMH
FRAME:6.96
2.12 (CENTERLINE FLOW)

SSMH
FRAME:5.87

SSMH
FRAME:7.66
2.71 (CENTERLINE FLOW)

SSMH
FRAME:4.27
-0.42 (CENTERLINE FLOW)

SSMH
FRAME:4.69
-0.18 (CENTERLINE FLOW - FULL)

LIMITS OF DISTURBANCE
AND EXISTING UTILITY EASEMENT

APPROXIMATE LOCATION
OF FORCE MAIN
(SEE REF. 10)

30-INCH PVC EFFLUENT FORCE MAIN

PIPEMAKERS CANAL
RIGHT-OF-WAY LINE

100' ATLANTA GAS LIGHT COMPANY EASEMENT (APPROX. LOCATION)

1,714 LF OF DOUBLE ROW
SENSITIVE SILT FENCE
(TO MATCH LINE)

1,900 LF OF DOUBLE ROW
SENSITIVE SILT FENCE
(MATCH LINE TO MATCH LINE)

LIMITS OF DISTURBANCE

WETLANDS (TYP.)

PIPEMAKERS CANAL

Du | Ds1 | Ds3

Sd1-S

MATCH LINE THIS SHEET

MATCH LINE - SEE SHEET NO. EC2.2

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

FRED SORORIAN
GEORGIA
REGISTERED
No. 26741
PROFESSIONAL
ENGINEER
FRED SORORIAN

FRED SORORIAN
PROJECT ENGINEER
PLAN REVIEWER
CERTIFICATION #
0000012474

BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE
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TRAVIS FIELD WATER RECLAMATION FACILITY FORCE MAIN

ES&PC PLAN

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EC2.1

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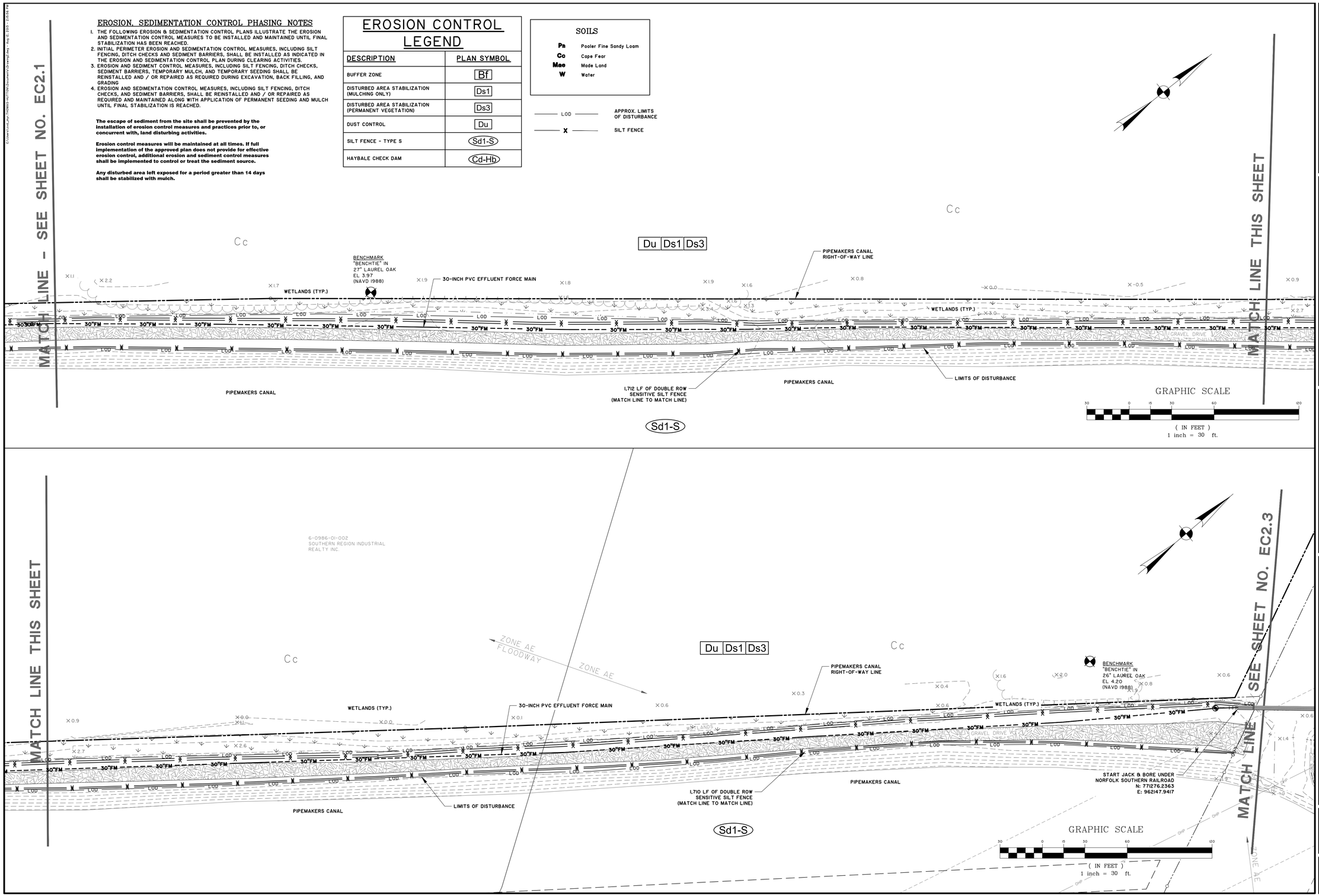
HAYBALE CHECK DAM	Cd-Hb

SOILS

Pa	Pooler Fine Sandy Loam
Co	Cape Fear
Mac	Made Land
W	Water

LOD — APPROX. LIMITS OF DISTURBANCE

X — SILT FENCE



FRED SORORIAN
GEORGIA LICENSE
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TRAVIS FIELD WATER RECLAMATION FACILITY FORCE MAIN

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EC2.2

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DUST CONTROL	Du
SILT FENCE - TYPE S	Sd1-S
HAYBALE CHECK DAM	Cd-Hb

SOILS

Pa	Pooler Fine Sandy Loam
Co	Cape Fear
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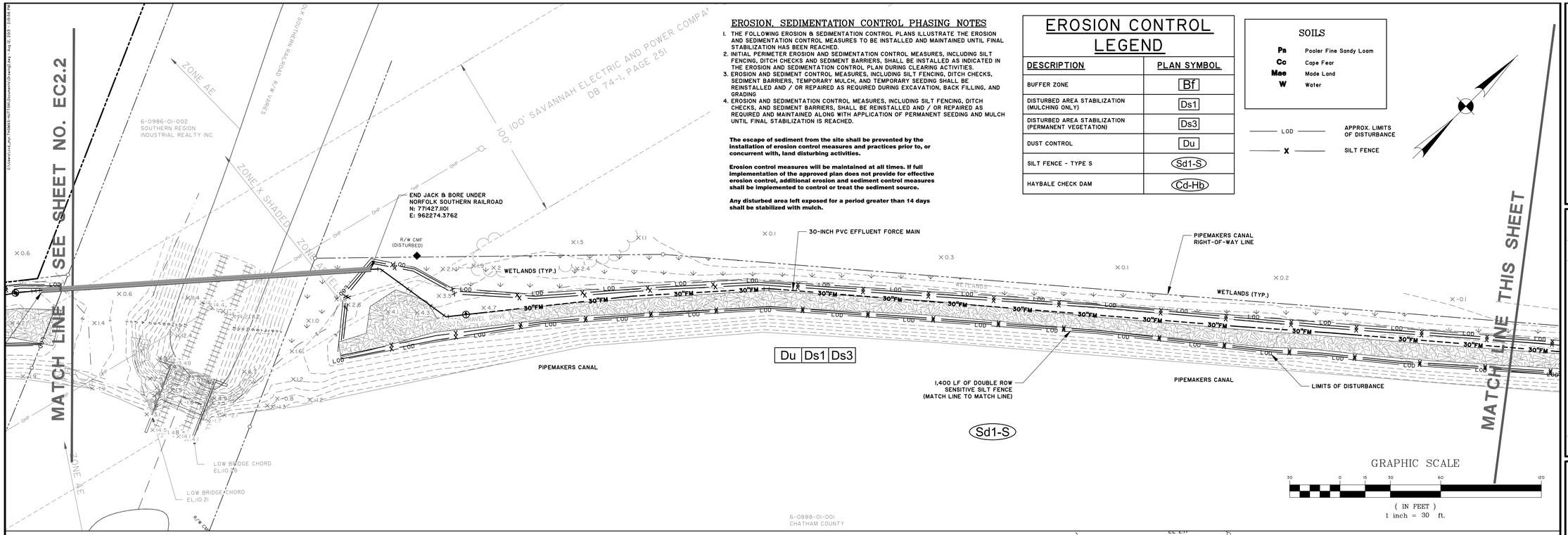
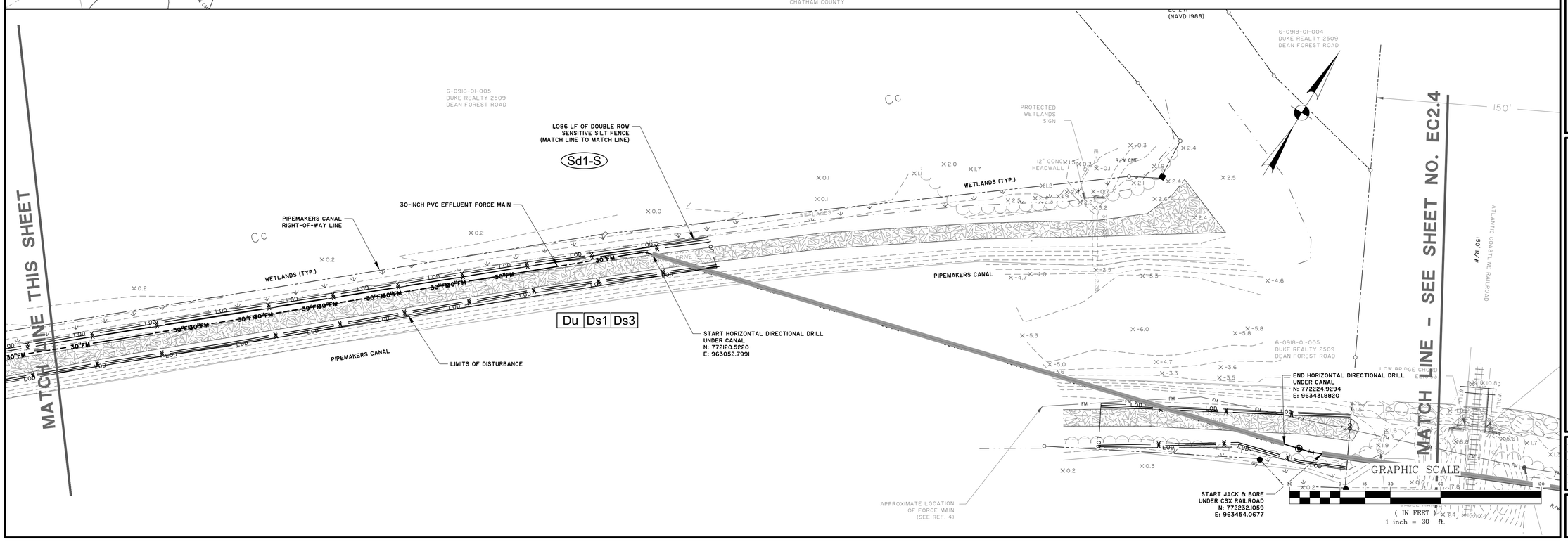
W	Water

LOD — APPROX. LIMITS OF DISTURBANCE

X — SILT FENCE





GEORGIA REGISTERED PROFESSIONAL ENGINEER FRED SORORIAN No. 26741

FRED SORORIAN
GSWCC LEVEL II
PLAN REVIEWER
CERTIFICATION #
0000012474

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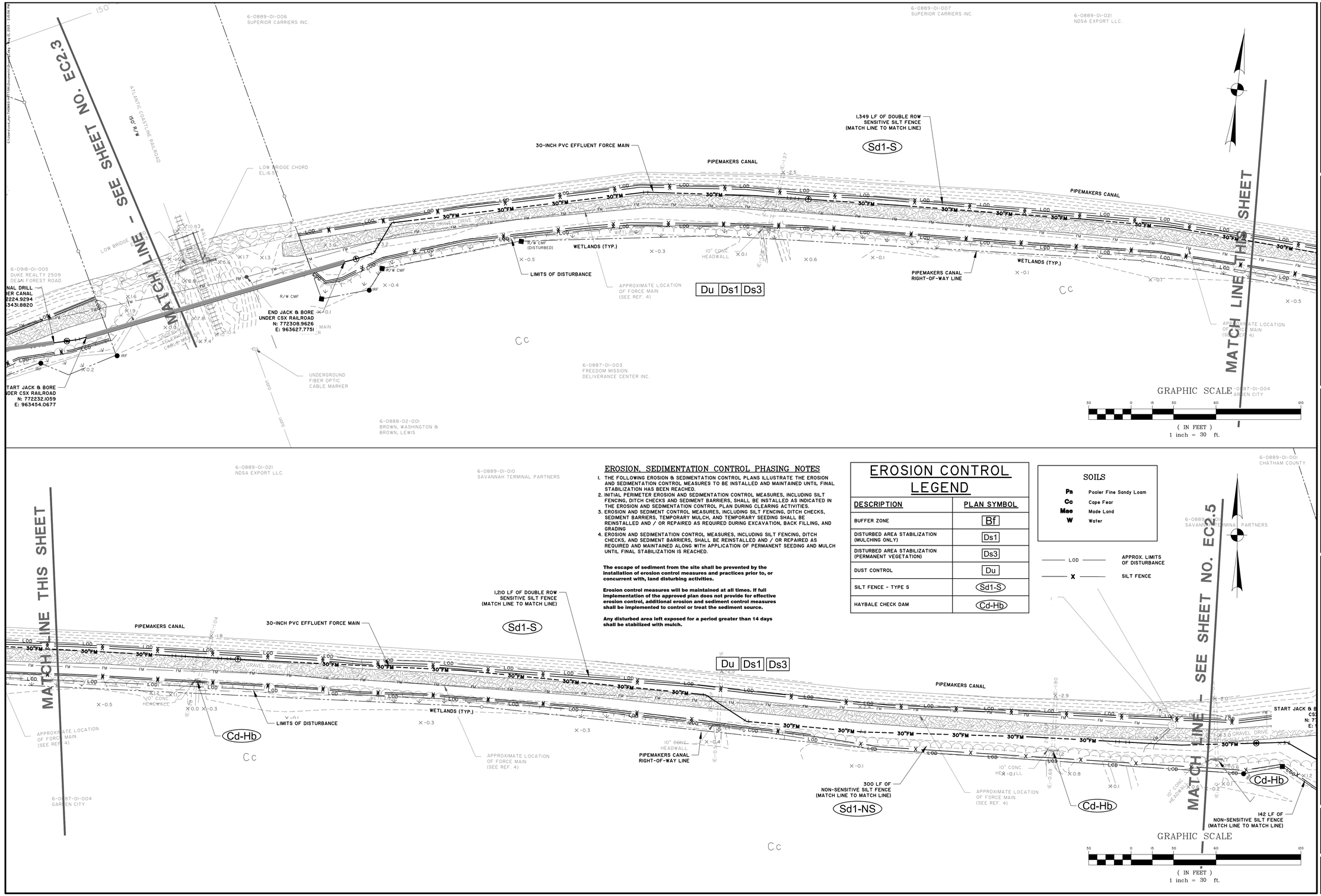

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SOILS

Pa	Pooler Fine Sandy Loam
Co	Cape Fear
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LOD — APPROX. LIMITS OF DISTURBANCE

X — SILT FENCE

FRED SORORIAN
GEORGIA REGISTERED PROFESSIONAL ENGINEER
PLAN REVIEWER
CERTIFICATION # 0000012474

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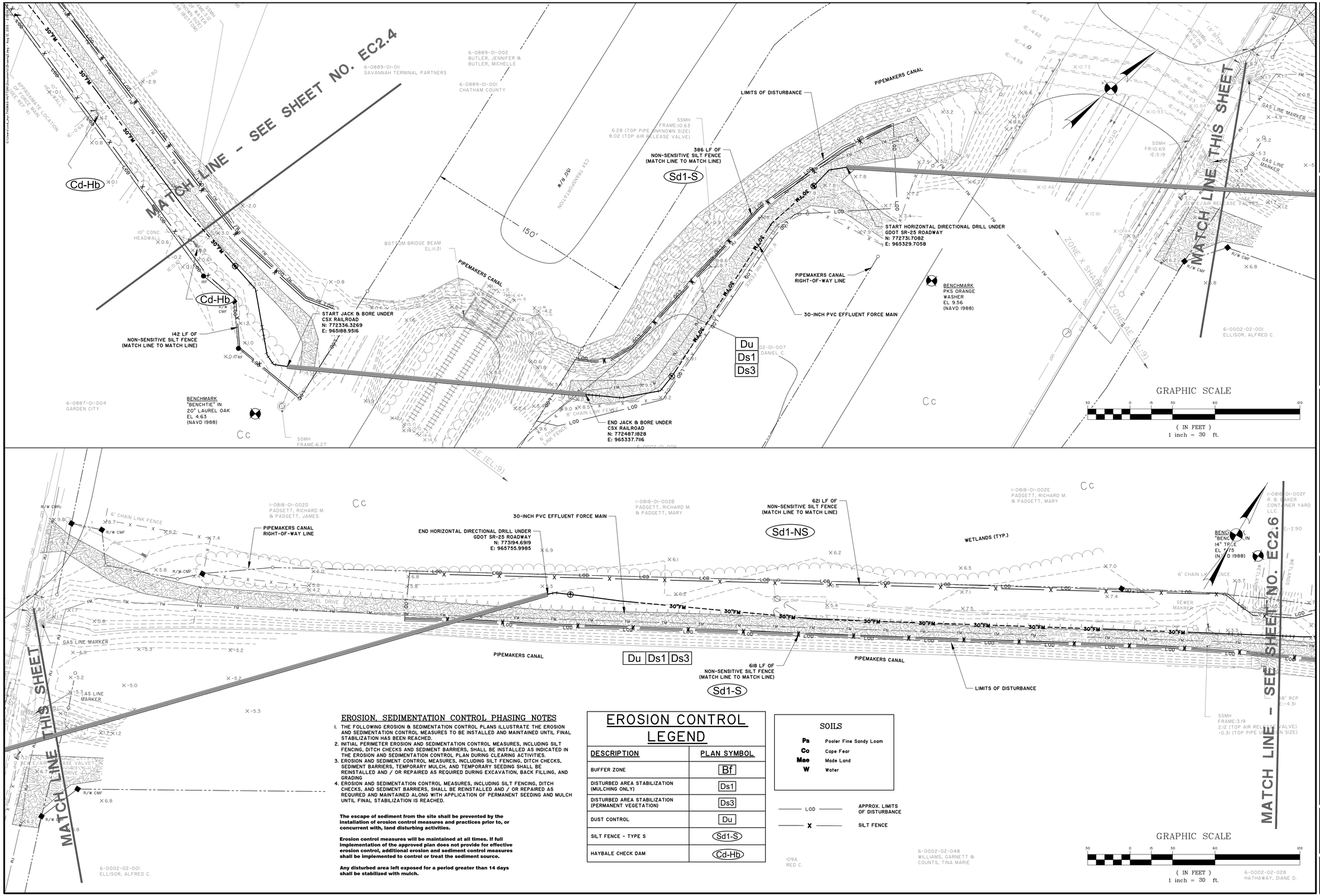

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EROSION CONTROL LEGEND

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HAYBALE CHECK DAM	Cd-Hb

SOILS

Pa	Pooler Fine Sandy Loam
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LOD — APPROX. LIMITS OF DISTURBANCE

X — SILT FENCE

FRED SORORIAN
GEORGIA
REGISTERED
No. 027741
PROFESSIONAL ENGINEER
FRED SORORIAN
PE LICENSE
PLAN REVIEWER
CERTIFICATION #
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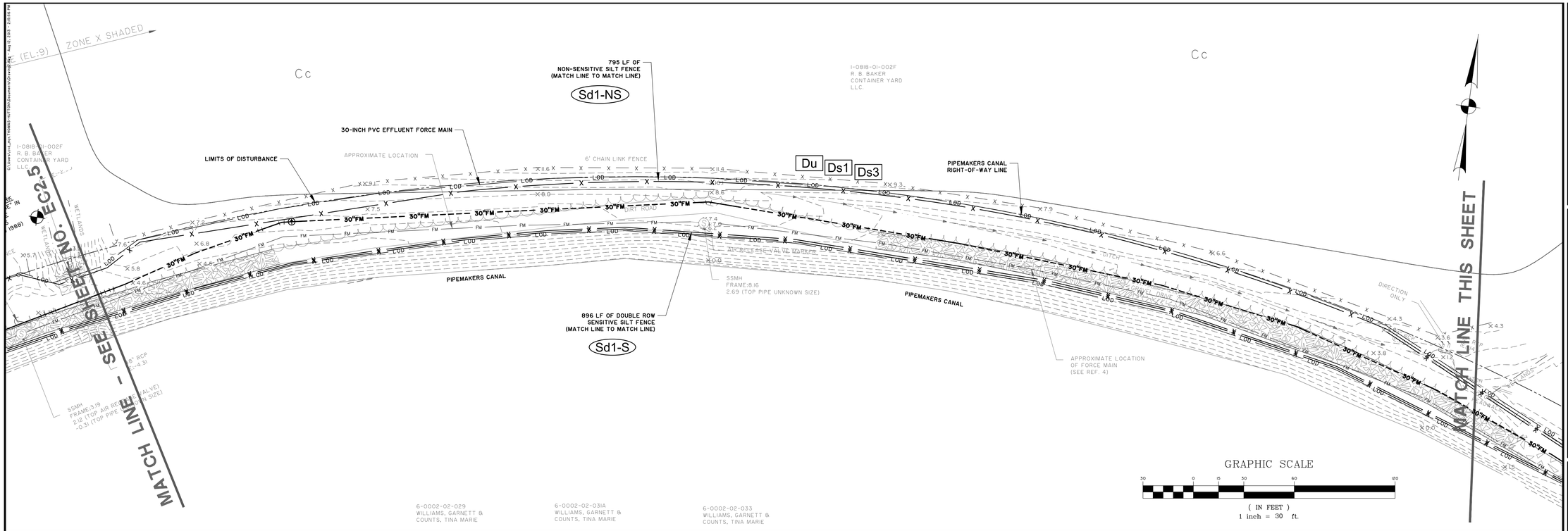
EC2.5



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SOILS

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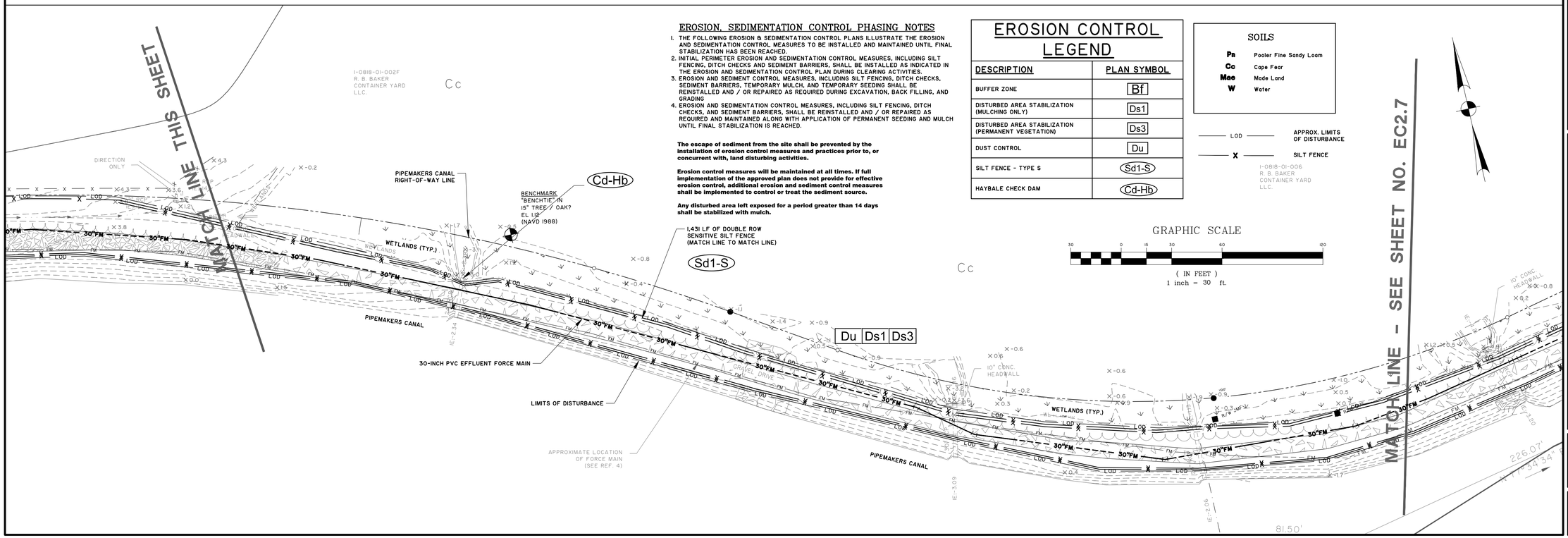
LOD — APPROX. LIMITS OF DISTURBANCE

X — SILT FENCE

I-0818-01-006 R. B. BAKER CONTAINER YARD LLC.



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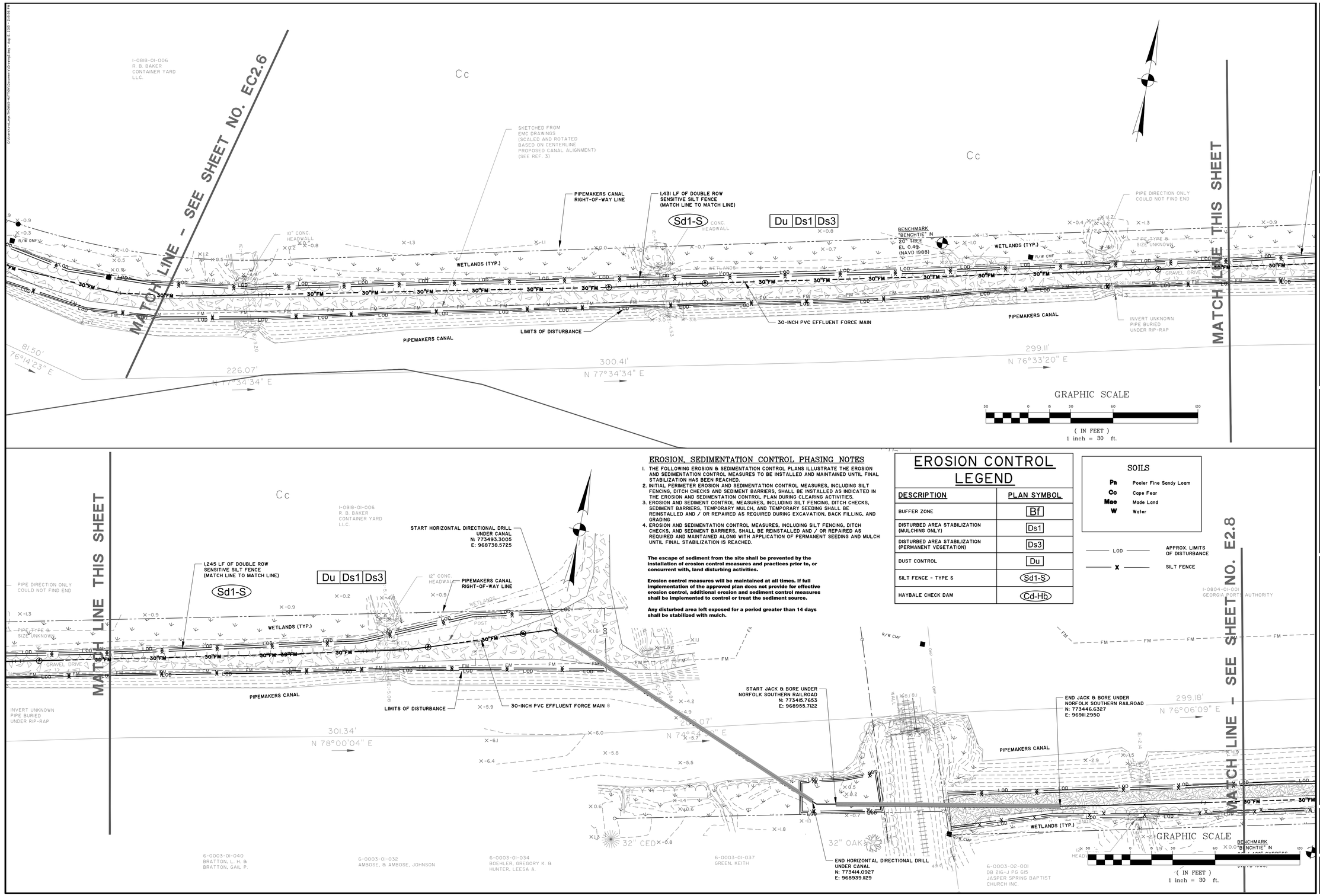

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LOD — APPROX. LIMITS OF DISTURBANCE

X — SILT FENCE

FRED SORORIAN
GEORGIA
REGISTERED
No. 027241
PROFESSIONAL
ENGINEER
FRED SORORIAN

FRED SORORIAN
ISSUE DATE
PLAN REVIEWER
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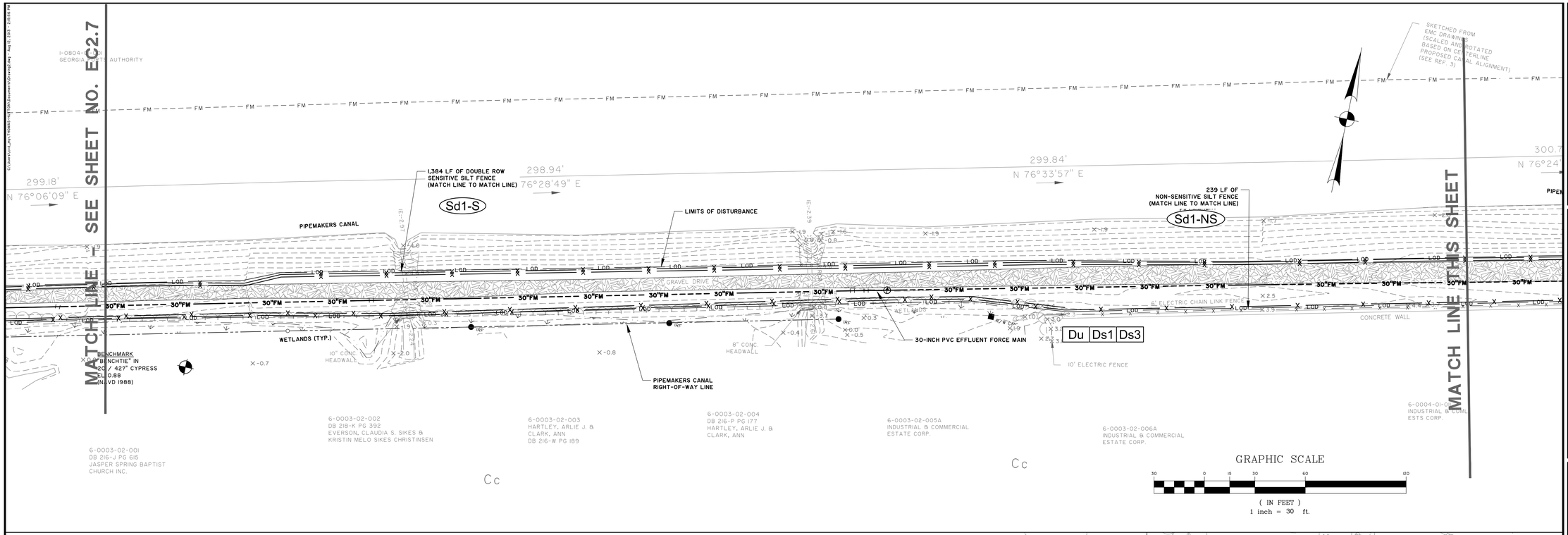

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EROSION CONTROL LEGEND

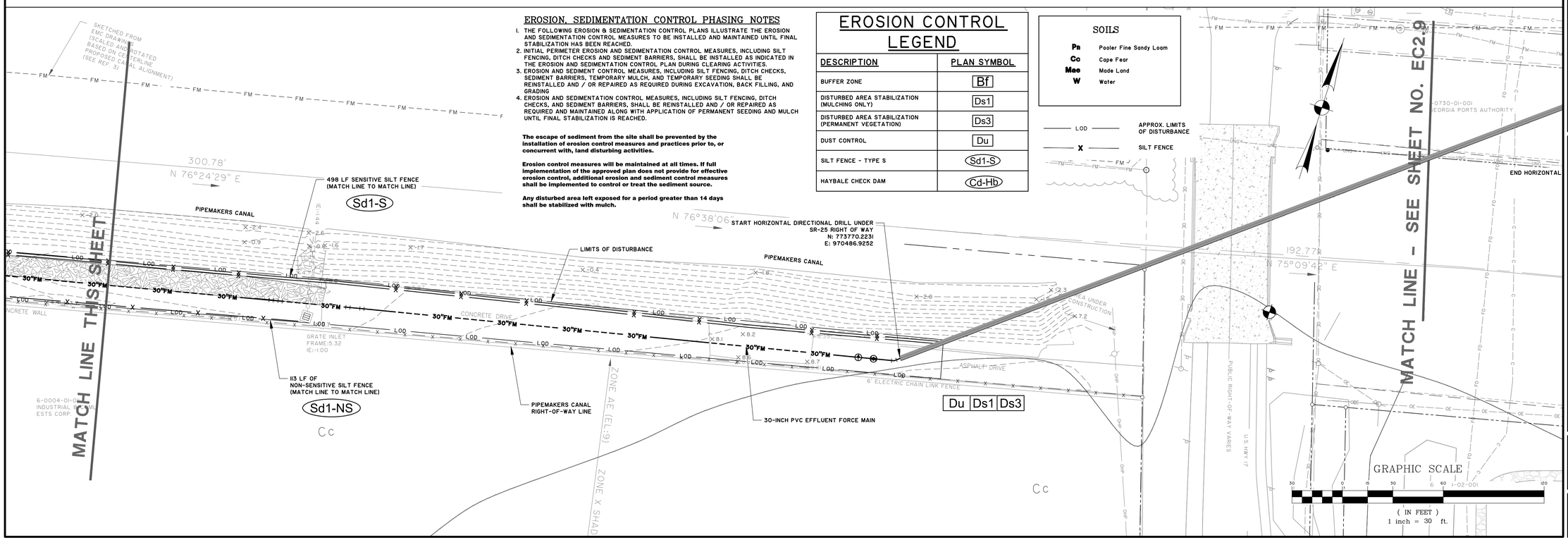
DESCRIPTION	PLAN SYMBOL
BUFFER ZONE	Bf
DISTURBED AREA STABILIZATION (MULCHING ONLY)	Ds1
DISTURBED AREA STABILIZATION (PERMANENT VEGETATION)	Ds3
DUST CONTROL	Du
SILT FENCE - TYPE S	Sd1-S
HAYBALE CHECK DAM	Cd-Hb

SOILS

Pn	Pooler Fine Sandy Loam
Cc	Cape Fear
Mae	Made Land
W	Water

LOD — APPROX. LIMITS OF DISTURBANCE

X — SILT FENCE



GEORGIA REGISTERED PROFESSIONAL ENGINEER No. 26741 FRED SORORIAN

FRED SORORIAN
CIVIL ENGINEER
PLAN REVIEWER
CERTIFICATION #
0000012474

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BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE
0	ISSUED FOR BIDS	CDR	11-2020

SAVANNAH savannahga.gov

TRAVIS FIELD WATER RECLAMATION FACILITY FORCE MAIN

ES&PC PLAN

JOB NO:	J-27788.0000
DATE:	10-2-19
DRAWN:	CDR
DESIGNED:	CDR
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APPROVED:	FS
SCALE:	AS NOTED

EC2.8

BID SET - NOT FOR CONSTRUCTION

INSTALL APPENDIX I SIGN. CONTRACTOR TO ENSURE SIGN IS VISIBLE FROM PUBLIC ROADWAY

Du | Ds1 | Ds3

MATCH LINE THIS SHEET

SEE SHEET NO. EC2.8

0730-01-001
GEORGIA PORTS AUTHORITY

END HORIZONTAL DIRECTIONAL DRILL UNDER SR-25 RIGHT OF WAY
N: 774081.9692
E: 970872.8382

Sd1-S

500 LF SENSITIVE SILT FENCE (MATCH LINE TO MATCH LINE)

LIMITS OF DISTURBANCE

END 30-INCH PIPE INSTALLED WITHIN EXISTING CASING
N: 774223.5191
E: 971366.0905

30-INCH PVC EFFLUENT FORCE MAIN

PIPEMAKERS CANAL

PIPEMAKERS CANAL RIGHT-OF-WAY LINE

SKETCHED FROM EMC DRAWINGS (SCALED AND ROTATED BASED ON CENTERLINE PROPOSED CANAL ALIGNMENT)

R/W LINE WORK TAKEN FROM MEG

300.17'
N 77°02'51" E

116.34'
N 77°02'51" E

543.13'
N 49°55'56" E

135.08'
N 76°48'04" E

301.67'

6-0004-02-001
GEORGIA PORTS AUTHORITY

6-0004-02-003
GEORGIA PORTS AUTHORITY

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

MATCH LINE THIS SHEET

SEE SHEET NO. EC2.10

I-0730-01-001
GEORGIA PORTS AUTHORITY

END 30-INCH PIPE INSTALLED WITHIN EXISTING CASING
N: 774360.6432
E: 971837.7060

Du | Ds1 | Ds3

LIMITS OF DISTURBANCE

30-INCH PVC EFFLUENT FORCE MAIN

SKETCHED FROM EMC DRAWINGS (SCALED AND ROTATED BASED ON CENTERLINE PROPOSED CANAL ALIGNMENT) (SEE REF. 3)

Sd1-S

353 LF SENSITIVE SILT FENCE (MATCH LINE TO MATCH LINE)

START HORIZONTAL DIRECTIONAL DRILL UNDER ROADWAY
N: 774445.6760
E: 972190.6621

PIPEMAKERS CANAL RIGHT-OF-WAY LINE

PIPEMAKERS CANAL

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

EROSION, SEDIMENTATION CONTROL PHASING NOTES

1. THE FOLLOWING EROSION & SEDIMENTATION CONTROL PLANS ILLUSTRATE THE EROSION AND SEDIMENTATION CONTROL MEASURES TO BE INSTALLED AND MAINTAINED UNTIL FINAL STABILIZATION HAS BEEN REACHED.
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EROSION CONTROL LEGEND

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BUFFER ZONE	Bf
DISTURBED AREA STABILIZATION (MULCHING ONLY)	Ds1
DISTURBED AREA STABILIZATION (PERMANENT VEGETATION)	Ds3
DUST CONTROL	Du
SILT FENCE - TYPE S	Sd1-S
HAYBALE CHECK DAM	Cd-Hb

SOILS

Pn	Pooler Fine Sandy Loam
Co	Cape Fear
Mae	Made Land
W	Water

LOD — APPROX. LIMITS OF DISTURBANCE

X — SILT FENCE

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

GEORGIA REGISTERED PROFESSIONAL ENGINEER No. 26741 FRED SORORIAN

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PROJECT ENGINEER
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SCALE:	AS NOTED

EC2.9

EROSION, SEDIMENTATION CONTROL PHASING NOTES

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DUST CONTROL	Du
SILT FENCE - TYPE S	Sd1-S
HAYBALE CHECK DAM	Cd-Hb

SOILS

Pa	Pooler Fine Sandy Loam
Co	Cape Fear
Mae	Made Land
W	Water

LOD — APPROX. LIMITS OF DISTURBANCE

X — SILT FENCE

MATCH LINE - SEE SHEET NO. EC2.9

MATCH LINE THIS SHEET

MATCH LINE - SEE SHEET NO. EC2.11

MATCH LINE THIS SHEET

R/W TAKEN FROM MEGARAIL DRAWING FILE

30-INCH PVC EFFLUENT FORCE MAIN

LIMITS OF DISTURBANCE

END HORIZONTAL DIRECTIONAL DRILL UNDER ROADWAY
N: 774514.2926
E: 972945.9825

END HORIZONTAL DIRECTIONAL DRILL UNDER ROADWAY
N: 774420.2932
E: 972530.2570

START HORIZONTAL DIRECTIONAL DRILL UNDER ROADWAY
N: 774323.2222
E: 972630.5407

SKETCHED FROM EMC DRAWINGS (SCALED AND ROTATED BASED ON CENTERLINE PROPOSED CANAL ALIGNMENT (SEE REF. 3)

EMC DRAWINGS (SCALED AND ROTATED BASED ON CENTERLINE PROPOSED CANAL ALIGNMENT) (SEE REF. 3)

Du Ds1 Ds3

Sd1-S

3/4 LF SENSITIVE SILT FENCE (MATCH LINE TO MATCH LINE)

787 LF SENSITIVE SILT FENCE (MATCH LINE TO MATCH LINE)

Cd-Hb

PIPEMAKERS CANAL

PIPEMAKERS CANAL RIGHT-OF-WAY LINE

WETLANDS (TYP.)

RIPRAP UNDER BRIDGE

18"X18" CONC. COLUMN (TYP.)

4" CONDUIT PIPE (2)

4W BRIDGE BEAM EL:6.90

TOP WATER EL:-3.23 7/15/2019 2:00 PM

12" WALL W/ 1.5' HANDRAIL

SPEED LIMIT 25 MPH

TELEPHONE MARKER FIBER OPTIC CABLE

BENCHMARK "X" IN CONCRETE CONC. SEMH BASE EL. 8.71 (NAVD 1988)

GATE

GRATE INLET FRAME-T-95 EL:2.47

GRATE INLET FRAME-T-95 EL:2.78

MISC. UNDERGROUND UTILITY

CHAIN LINK FENCE

ASPHALT PAVEMENT

CONCRETE PAVEMENT

CROSS TERMINAL RD

BRIDGE

111.93' N 87°10'15" E

116.07' N 63°31'22" E

74.73' N 63°31'22" E

293.70' N 65°06'22" E

I-0730-01-001 GEORGIA PORTS AUTHORITY

I-0618-01-001 GEORGIA PORTS AUTHORITY

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

FRED SORORIAN GEORGIA REGISTERED PROFESSIONAL ENGINEER PLAN REVIEWER CERTIFICATION # 0000012474

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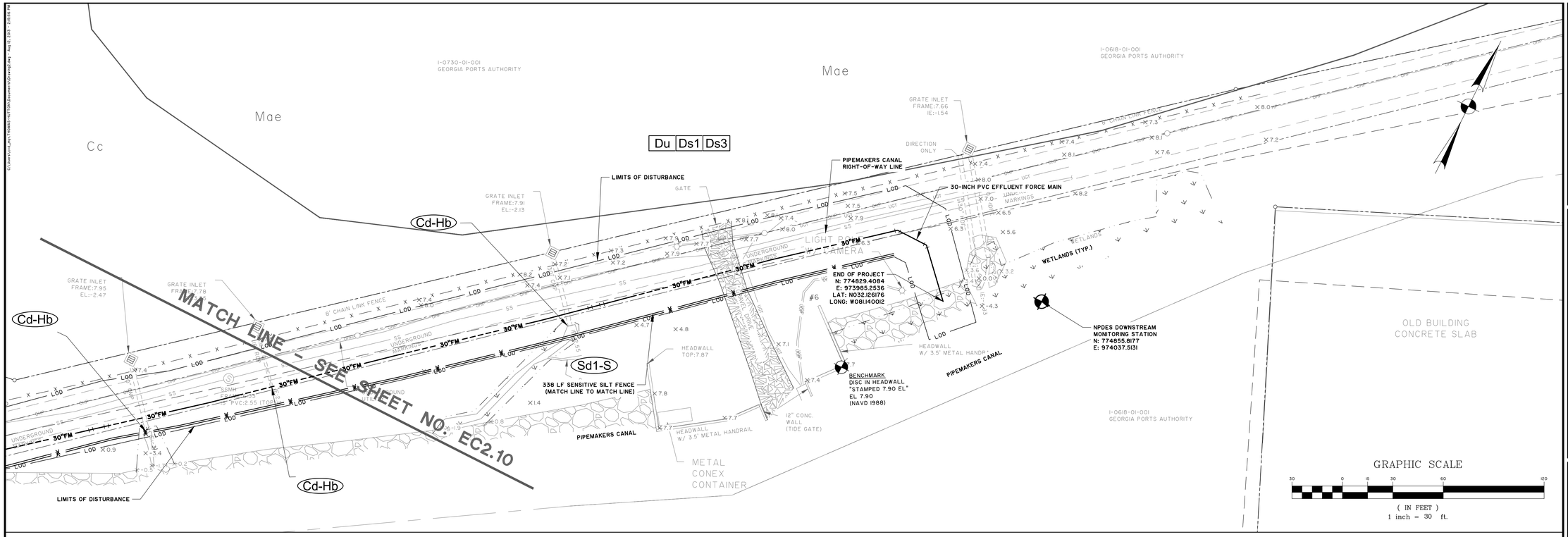

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