

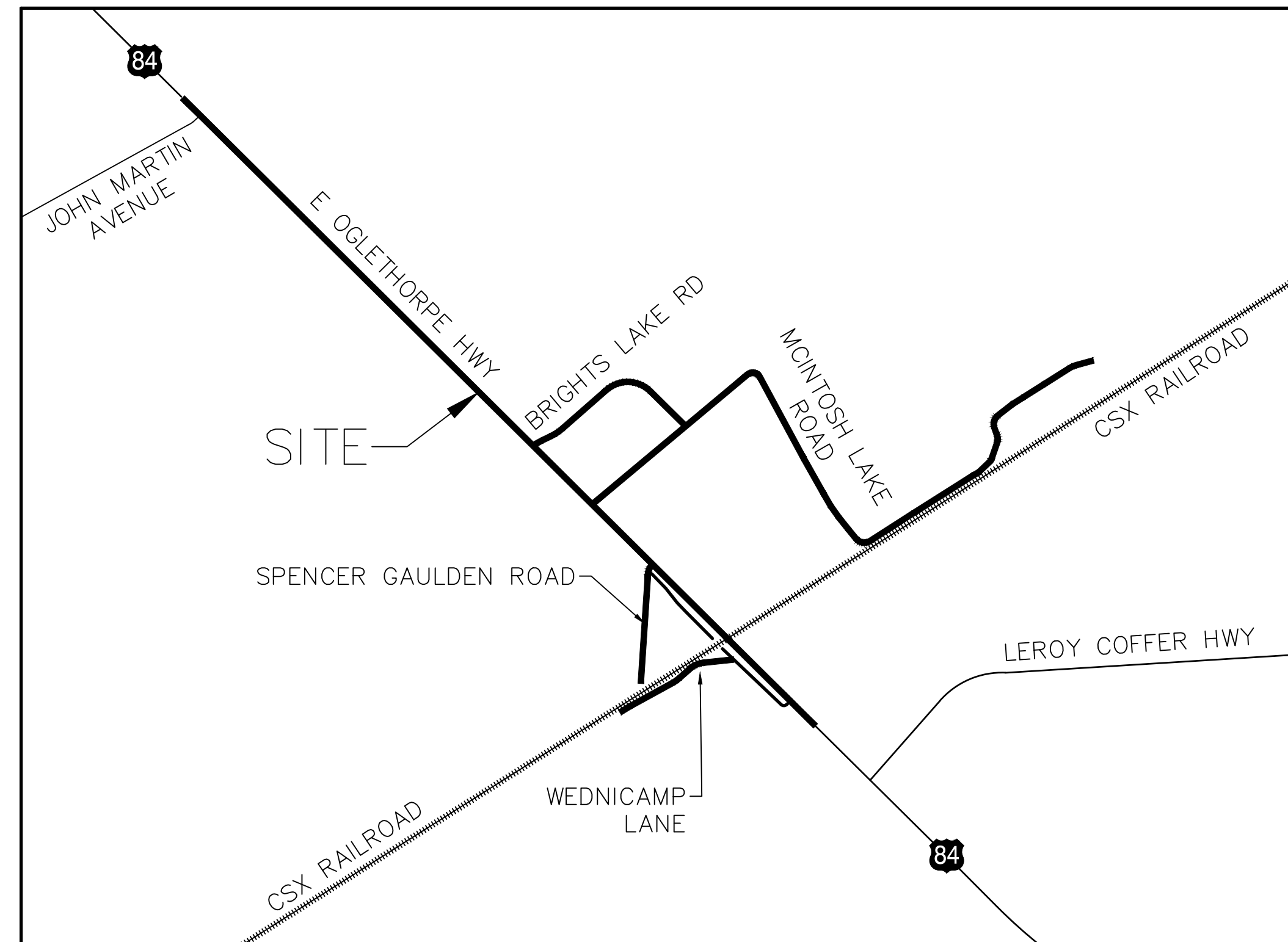
WATER SYSTEM IMPROVEMENT WEST OF CSX RAILROAD LIBERTY COUNTY BOARD OF COMMISSIONERS

OWNER
LIBERTY COUNTY BOARD OF
COMMISSIONERS
112 NORTH MAIN STREET, SUITE 201
HINESVILLE, GEORGIA 31313
(912) 368-5664

24-HOUR CONTACT
TRENT R. LONG
(912) 368-5664
TRLONG@TRLONGENG.COM

CIVIL ENGINEERING PLANS

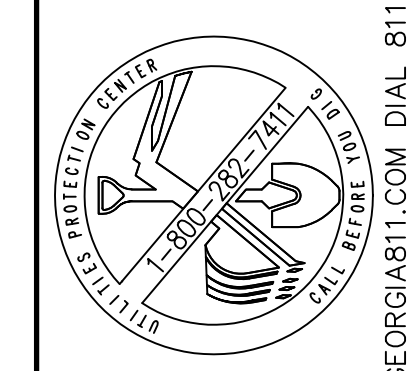
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|-------------------|------------------------------------|
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| SHEET C1.2 | GENERAL NOTES |
| SHEET C1.3 | KEY MAP |
| SHEET C2.1-C2.4 | UTILITY PLAN: E OGLETHORPE HIGHWAY |
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| SHEET C2.6 | UTILITY PLAN: SPENCER GAULDEN ROAD |
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| SHEET C2.11 | UTILITY PROFILES DETAILS |
| SHEET C2.12 | CSX CROSSING UTILITY PLAN |
| SHEET C2.13-C2.15 | UTILITY DETAILS |
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| SHEET C3.8 | EROSION CONTROL DETAILS |



VICINITY MAP N.T.S.

LOCATION: N31° 49' 30.64", W81° 31' 25.02"
(31.825178, -81.523618)
DISTURBED ACREAGE: 13.53 AC.
TOTAL SITE ACREAGE: 13.53 AC.

DRAWING LEGEND		
DESCRIPTION	PROPOSED	EXISTING
RIGHT OF WAY	--- R/W	--- R/W
EDGE OF PAVEMENT	---	---
DITCH CENTERLINE	---	---
SANITARY SEWER	8" S	---
WATER LINE	10" W	10" W
FORCE MAIN	FM	FM
UNDERGROUND GAS LINE	8" G	8" G
CONTOURS	81	81
STORM DRAINAGE PIPE	---	---
ELEVATION	FG: 78.15	X 81.90
SILT FENCE NON-SENSITIVE	Sf1-NS	
SILT FENCE SENSITIVE	Sf1-S	
INLET PROTECTION	Sd2-P	
CHECK DAM - HAY BALE	Cd-Hb	
CHECK DAM - RIP RAP	Cd-Rp	
CONSTRUCTION EXIT	Co	
STORM OUTLET PROTECTION	St	
SILT FENCE	Sf	
MULCHING	Ds1	
TEMPORARY GRASSING	Ds2	
PERMANENT GRASSING	Ds3	
FIRE HYDRANT	Fh	
SEWER MANHOLE	Mh	
WATER VALVE	V	
DRAINAGE FLOW	DF	
WATER METER	Wm	
BENCHMARK	Bm	
WELL	W	
GUY POLE	Gp	
IRON PIN	IP	
TELEPHONE PEDESTAL	TP	
POWER POLE	PP	



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THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS CONTAINED WITHIN THIS SET OF DOCUMENTS AND SHALL REPORT ANY DISCREPANCIES TO T. R. LONG ENGINEERING, P.C. FOR IMMEDIATE RESOLUTION.



HINESVILLE:
114 North Commerce Street
Hinesville, Georgia 31313
(912) 368-5664

POOLER:
1000 Towne Center Blvd
Suite 304
Pooler, Georgia 31322
(912) 335-1046



WATER SYSTEM IMPROVEMENT
WEST OF CSX RAILROAD
LIBERTY COUNTY, GEORGIA

SHEET NAME:
COVER SHEET

REVISIONS:
1. 9/13/2023 TRL
2. 4/01/2024 EPD
3. 7/29/2024
4.
5.
6.
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8.
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10.

INITIAL DATE: 6/30/2022
DRAWN BY: RC
CHECKED BY: TRL
PROJECT #: 2022-42

SHEET NUMBER:
C1.1

Paving Notes

- All work shall comply with all applicable codes, regulations, and/or local standards imposed by local utility, city, county, and state. It is the contractor's responsibility that all the construction be in accordance with Liberty County and GDOT standard details and specifications.
- Contractor shall comply with all pertinent provisions of the "Manual of Accident Prevention in Construction" issued by AGC of American Inc., and the safety and health regulations for construction issued by the U.S. Department of Labor.
- Contractor shall provide all necessary barricades, sufficient lights, signs and other traffic control methods as may be necessary for the protection and safety of the public and shall be provided and maintained throughout all construction adjacent to and within all roadways. Contractor shall submit traffic control plan to city for approval.
- The contractor shall take necessary measures to separate work areas from pedestrian traffic and to insure safe pedestrian passage at all times.
- All signs, pavement markings, and other traffic control devices shall conform to the Manual of Uniform Traffic Control Devices. A minimum clearance of two feet shall be maintained between the face of curb and any part of a traffic sign or light pole. Contractor shall coordinate installation of all signs, pavement markings, and other traffic control devices with other contractors on signs or light poles.
- Contractor shall saw-cut to provide smooth transitions at tie-ins to existing edges of pavement and at cold joints of recently paved asphalt.
- Joints or score marks are to be sharp and clean without showing edges of jointing tool.
- Contractor shall saw-cut tie-ins at existing curbs as necessary to ensure smooth transitions, contractor shall saw-cut and transition to meet existing pavement as necessary and as directed by inspector to insure positive drainage. (Typical at all intersections)
- Paving contractor shall install paper breakaway edges at cold joints or saw-cut as required to insure a straight, full-depth joint face immediately prior to installing abutting hot asphalt.
- All dimensions are to back of curb or edge of pavement unless indicated otherwise.
- Contractor shall be responsible for cost of pavement replacement where utility lines are extended across existing asphalt.
- Asphalt surface course shall be laid with the direction of traffic in all drive lanes within parking fields.
- Base and asphalt thickness are minimum required. Refer to specifications for type of paving and base to be used.
- All concrete shall be Class A 4000 P.S.I. unless noted otherwise. Do not pour any concrete before forms are inspected and approved by the Inspector.
- All ramps constructed are not to exceed a slope of 1:12. All sidewalks shall not have a cross-slope greater than 1:50
- Concrete dumpster pads to be flush with pavement unless indicated otherwise.
- See Detail sheets for additional details on striping, signs, etc.

Inspection Notes

- 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.
- The primary permittee will measure rainfall once every 24 hours except any non-working Saturday, non-working Sunday, and non-working federal holiday until a notice of termination is submitted. 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.
- Certified personnel (provided by the primary permittee) shall inspect the following at least once every seven (7) 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 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 to the 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 waters(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.
- Certified personnel (provided by the primary permittee) shall inspect at least once per month during the term of this permit (i.e., until a notice of termination is received by 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 waters(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)
- Based on the result 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.
- A report of each inspection that includes the name(s) of certified personnel making each inspection, the date(s) of each inspection, construction phase (i.e., 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 ready available at a designated alternate location until the entire site or that portion of a construction project 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 certification 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 2013 NPDES Stand Alone Permit.

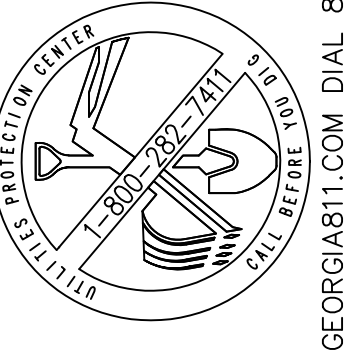
Site Grading Notes

- Dimensions on buildings are for grading purposes only and are not to be used to lay-out footings. Refer to Structural Drawings for foundation information.
- Grading contractor shall notify and cooperate with all utility companies or firms having facilities on or adjacent to the site before disturbing, altering, removing, relocating, adjusting or connecting to said facilities. Contractor shall pay all costs in connection with the alteration or relocation of the facilities. Contractors shall raise or lower tops of existing manholes to remain as required to match finished grades.
- Grading contractor shall cooperate and work with all other contractors performing work on this project to insure proper and timely completion of this project.
- The grading contractor shall use whatever measures are required to prevent silt and construction debris from flowing onto adjacent properties. Contractor shall comply with all local erosion, conservation, and siltation ordinances. Contractors shall remove all temporary erosion control structures upon completion of permanent drainage facilities and not before the establishment of a stand of grass sufficient to prevent erosion.
- For any work on the state or county right-of-way, the grading contractor shall:
 - Not store material, excess dirt, or equipment in the right-of-way. The pavement shall be kept free from any mud or excavation waste from trucks or other equipment. On completion of the work, all excess material shall be removed from the right-of-way.
 - Provide all necessary and adequate safety precautions such as signs, flags, light barricades, and flag-men as required by the local authorities and in accordance with solely responsible for and hold harmless the City, State, Architect, Engineer, and Owner from any claims for damage done to existing private property, public utilities, or to the traveling public.
 - Complete work to the satisfaction of the City Public Works Department and obtain a letter from the Department stating that the work is acceptable.
- Grading contractor shall take all available precautions to control dust. Contractor shall control dust by sprinkling, or by other methods as directed by Engineer and/or Owner's representative, at no additional cost to Owner.
- Site grading contractor shall terminate all storm drain pipes five feet maximum from building unless otherwise noted.
- Storm sewer lead-ins to building shall not be installed until building plans are completed and locations established on the architectural plans. Lead-ins may change 15' horizontally and 3' vertically prior to installation at no additional cost to the owner. Contractor shall request and receive written approval from prime contractor prior to installation of lead-ins. Contractor shall coordinate locations, size, and invert elevations of storm sewers with approved building plumbing plans.
- All excavating is unclassified and shall include all materials encountered.
- Before any machine work is done, contractor shall stake out and mark the items established by the site plan, control points shall be preserved at all times during the course of the project. Lack of proper working points and grade stakes may require satisfaction owner must approved staked items prior to construction.
- Temporary erosion control devices to be installed prior to beginning of grading. Contractor shall maintain all temporary erosion control devices and shall remove silt contractor at least once a week.
- Contractor to coordinate all work with other utility installations not covered in these plans, (Electric, Telephone, Gas, Cable, Etc.) and allow for their operations and construction to be performed.
- Cut and fill slopes are not to exceed 3:1 unless otherwise noted.
- In no case shall any paved areas be less than a slope of 1.0%. All accessible sidewalks and aisle slopes not to exceed 2% cross-slope.
- Contractor shall repair or replace in-kind any damage that occurs as result of his work.
- All linear footage for all utility pipes are approximate, actual installed quantities may vary.
- Grading contractor shall restore to grade and compaction all areas disturbed by building construction prior to base and paving operations commencing.
- Grading contractor shall maintain all weather construction access roads as required by general contractor.

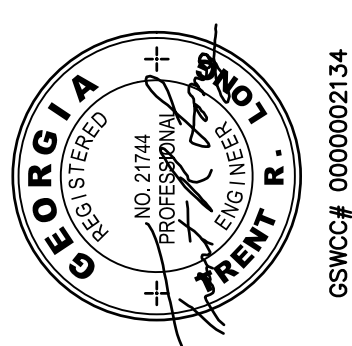
NOTE:
 CONTRACTOR IS RESPONSIBLE FOR ALL CLEARING & GRUBBING ALONG THE WATER MAIN ROUTES AS WELL AS FOR FIRE HYDRANTS AND SERVICES. CONTRACTOR MUST SATISFY HIMSELF OR HERSELF OF THE AMOUNT OF CLEARING REQUIRED.

Site Utility Notes

- The site utility plan is for sanitary sewer and water line construction only. Do not use for grading or storm sewer construction.
- All pipe lengths are horizontal distances and are approximate.
- All domestic water and sanitary sewer stubs to be terminated 5 feet outside of the building unless otherwise noted. The end of these service lines shall be tightly plugged or capped and marked until such time as connection is made inside building by plumbing contractor.
- Site utility contractor shall provide all the materials and appurtenances necessary for the complete installation of the utilities. All pipe and fittings shall be inspected by the Water Department Inspector prior to being covered. The inspector must also be present during pressure testing and disinfection of laterals and his signature of approval is required.
- All work shall comply with all applicable codes, regulations, and/or local standards imposed by local utility and Liberty County.
- The site utility contractor shall make arrangements with the local utility authorities for connection to the existing mains and pay all applicable fees.
- All water lines shall have a minimum cover of 36" above top of pipe.
- Contractor shall adjust location of proposed water lines as required to avoid conflicts with storm sewer or other utilities at no extra cost.
- Based on the current edition of the international plumbing code, cleanouts are required at a maximum spacing of 100 feet on utility lead-ins to building. Contractor to provide a cleanout within 5 feet of building and at all bends.
- The site utility contractor shall cooperate and work with all other contractors on the site.
- All materials shall be U.L. listed and approved by the local utility company unless directed otherwise by the Engineer.
- The existing utility facilities and locations shown on the drawings are taken from readily available information. The actual locations of the utility facilities may vary somewhat from the locations shown or indicated on the drawings. The site utility contractor shall contact all agencies with utility facilities in the vicinity of the work and shall locate all underground facilities before beginning work. The contractor shall project all utility facilities and repair any damages resulting from their work, in conformance with the contract documents and specifications and relocate if required.
- All sanitary sewer pipe shall be SDR-26 meeting ASTM D3034 with gasket type joints meeting ASTM F477.
- Utility lead-ins to building shall not be installed until building plans are completed and locations established on the architectural plumbing plans. Lead-ins may change 15' horizontally and 3' vertically prior to installations at no additional cost to the owner. Utility contractor shall request and receive written approval from prime contractor prior to installation of lead-ins. Location, size and invert elevations of sanitary sewer shall be coordinated with the approved plumbing plans for the building.
- Building plumbing contractor shall pay all cost for water meters, meter boxes, valves, etc. to provide a complete job per local authority requirements.
- Thrust blocks shall be provided at all tees, elbows, and bends of sufficient size to comply with minimum standards of N.F.P.A. - Existing soil conditions.
- Should latent soil conditions necessitate, contractor shall install special supports for piping and/or appurtenances including the removal of unsuitable material and backfilling with gravel or other material. Contractor shall perform any such work as directed by the civil engineer and/or soils engineer at no cost to owner.
- Contractor to coordinate all work with other utility installations not covered in these plans (Electric, Telephone, Gas, Cable, etc.) and allow for their operations and construction to be prepared.
- The site utility contractor shall coordinate and pay for all sanitary sewer connections. Sanitary sewer connection final tie-in to the existing manhole(s) shall not be made until completion of the proposed system and all manholes have been brought above ground to insure sediment does not enter system. Lines shall be properly cleaned, if needed.
- Site utility contractor to coordinate with irrigation contractor to provide power in conduit to irrigation controller per manufacturers recommendations. Verify exact location of controller with owner prior to installation.



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 114 North Commerce Street
 Hinesville, Georgia 31313
 (912) 368-5664
 POOLER:
 1000 Towne Center Blvd
 Suite 304
 Pooler, Georgia 31322
 (912) 335-1046



WATER SYSTEM IMPROVEMENT
 WEST OF CSX RAILROAD
 LIBERTY COUNTY, GEORGIA

SHEET NAME:
 GENERAL NOTES

REVISIONS:
1. 9/13/2023 TRL
2. 4/01/2024 EPD
3. 7/29/2024
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INITIAL DATE: 6/30/2022
 DRAWN BY: KC
 CHECKED BY: TRL
 PROJECT #: 2022-42

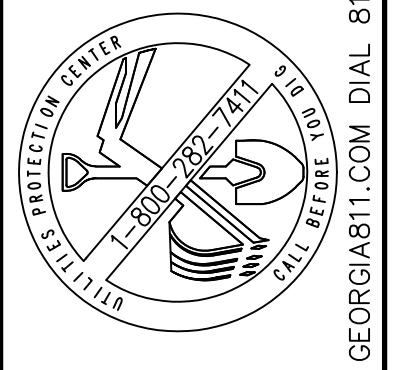
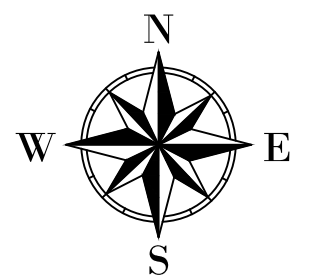
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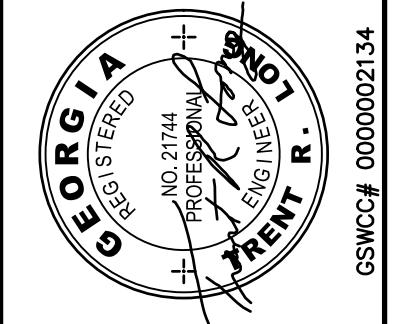
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**WATER SYSTEM IMPROVEMENT
WEST OF CSX RAILROAD
LIBERTY COUNTY, GEORGIA**

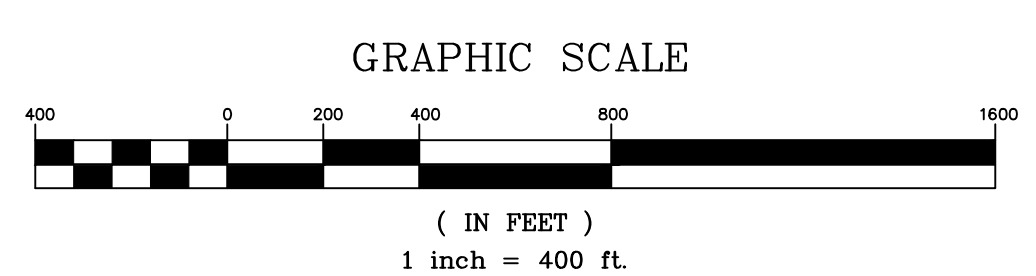
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KEY MAP

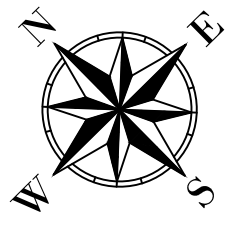
REVISIONS:

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2.	4/01/2024	EPD
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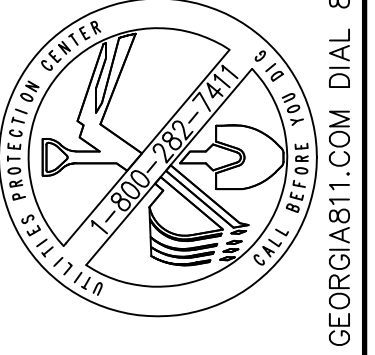
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(LIBERTY COUNTY HIGH SCHOOL)
PARCEL # 084052

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(LIBERTY COUNTY HIGH SCHOOL)
PARCEL # 084022

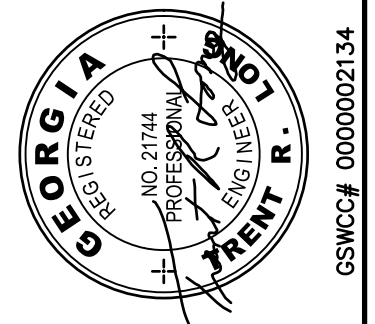
N/F JAMES E. SMITH
PARCEL # 084025

N/F JUNE SMITH HENDRY
PARCEL # 084020

N/F JAMES E. SMITH
PARCEL # 084019

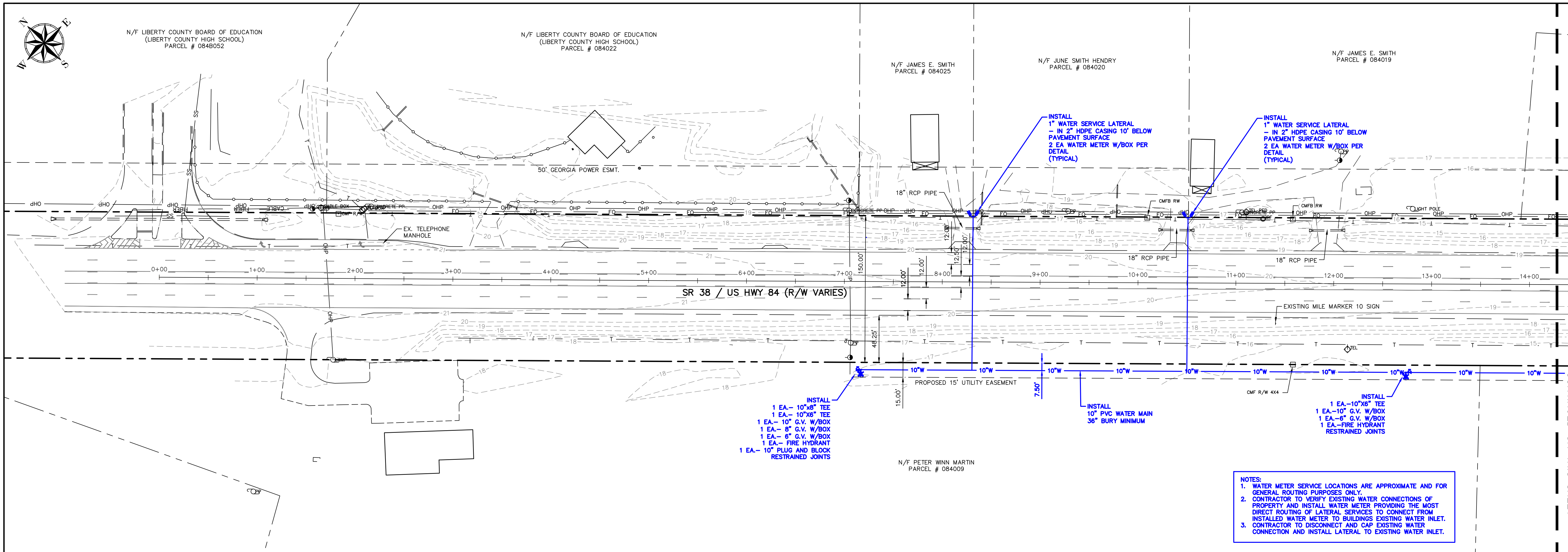


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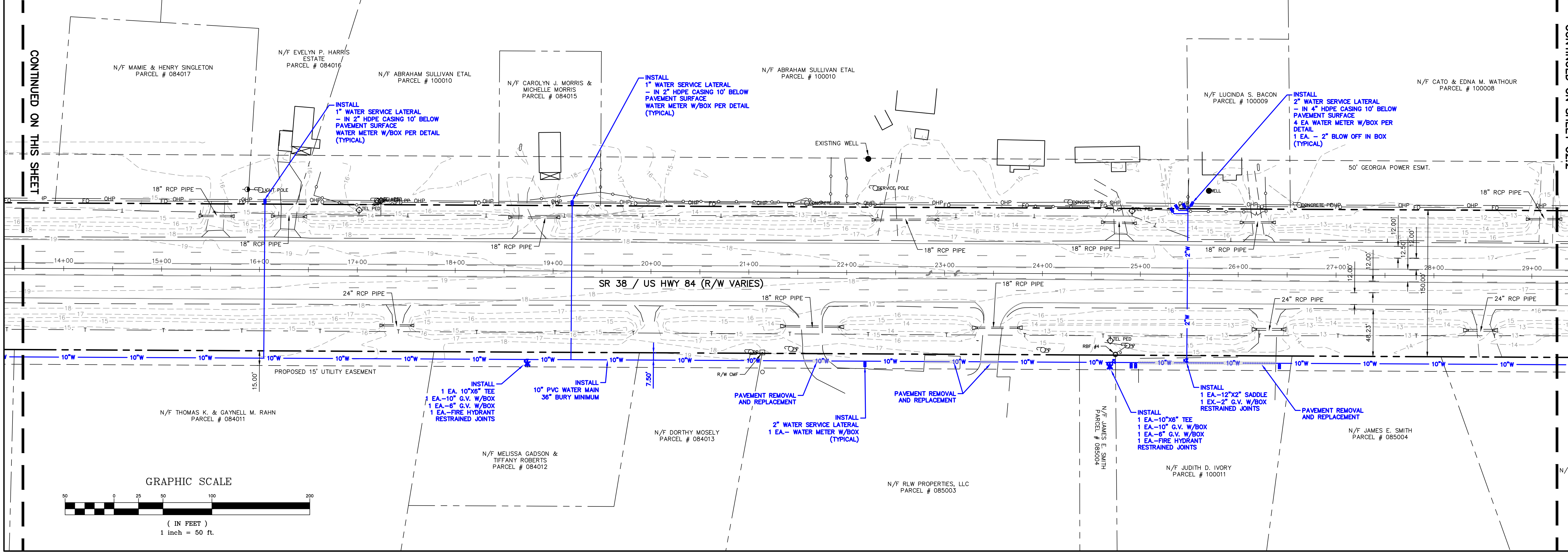


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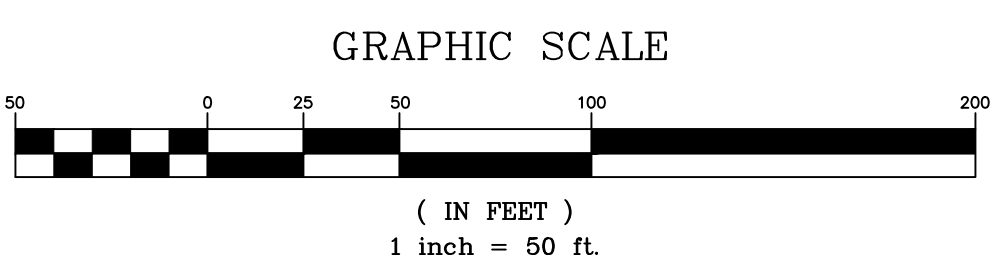
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WATER SYSTEM IMPROVEMENT
WEST OF CSX RAILROAD
LIBERTY COUNTY, GEORGIA

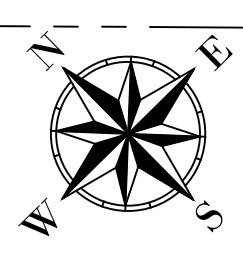
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UTILITY PLAN E
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REVISIONS:

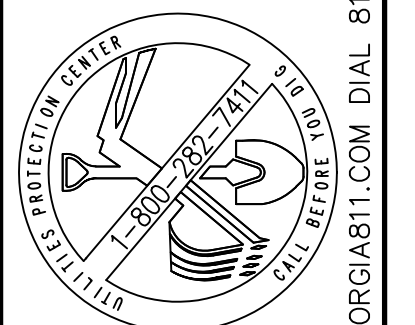
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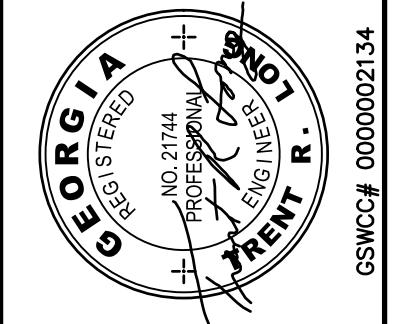
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NOTES:
 1. WATER METER SERVICE LOCATIONS ARE APPROXIMATE AND FOR GENERAL ROUTING PURPOSES ONLY.
 2. CONTRACTOR TO VERIFY EXISTING WATER CONNECTIONS OF PROPERTY AND INSTALL WATER METER PROVIDING THE MOST DIRECT ROUTING OF LATERAL SERVICES TO CONNECT FROM INSTALLED WATER METER TO BUILDINGS EXISTING WATER INLET.
 3. CONTRACTOR TO DISCONNECT AND CAP EXISTING WATER CONNECTION AND INSTALL LATERAL TO EXISTING WATER INLET.



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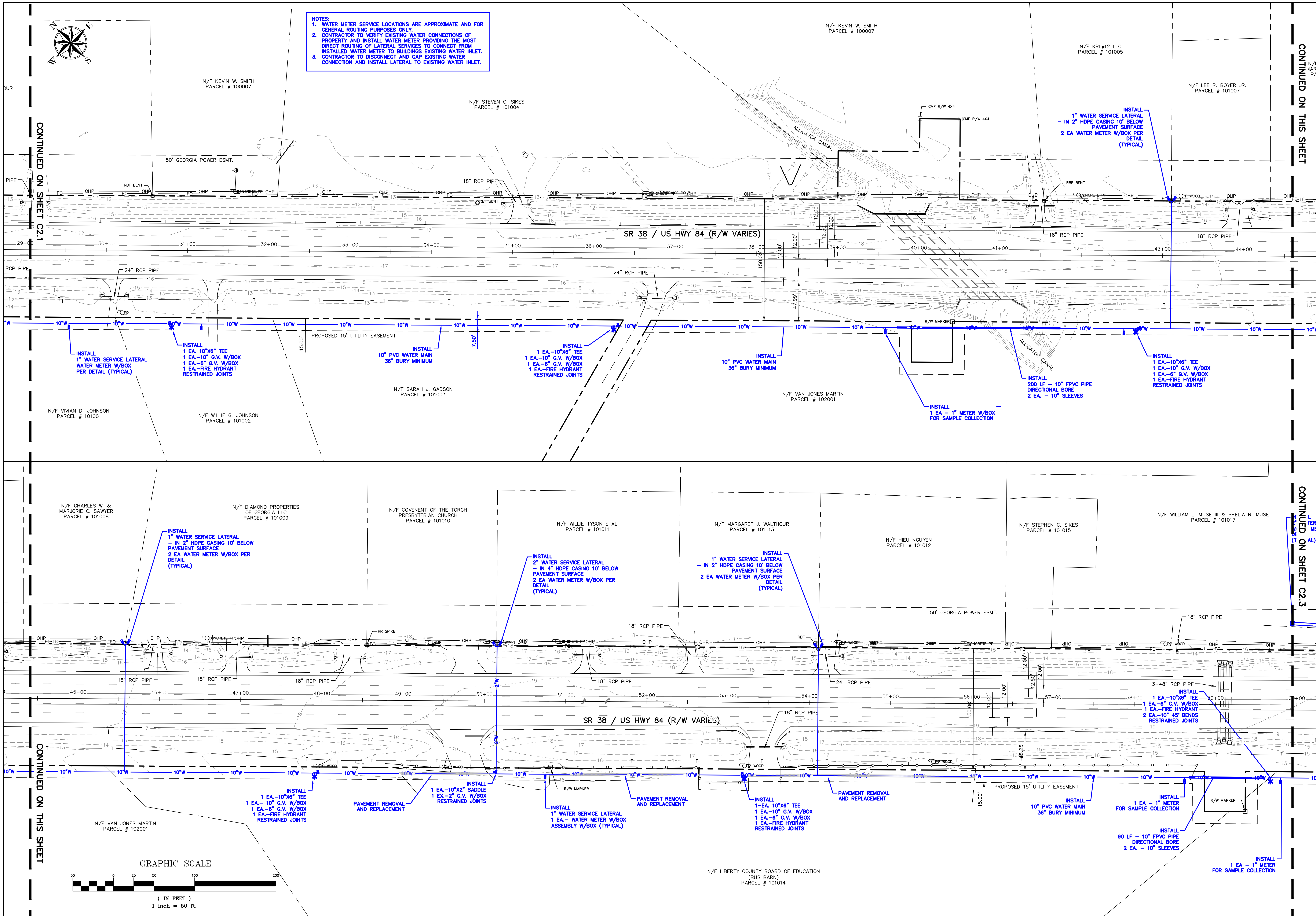
SHEET NAME:
 UTILITY PLAN
 E OGLETHORPE
 HIGHWAY

REVISIONS:

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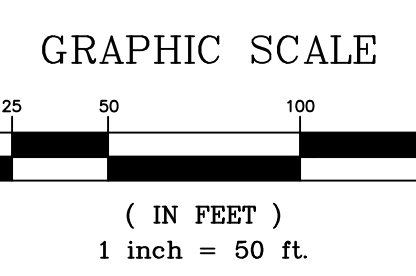


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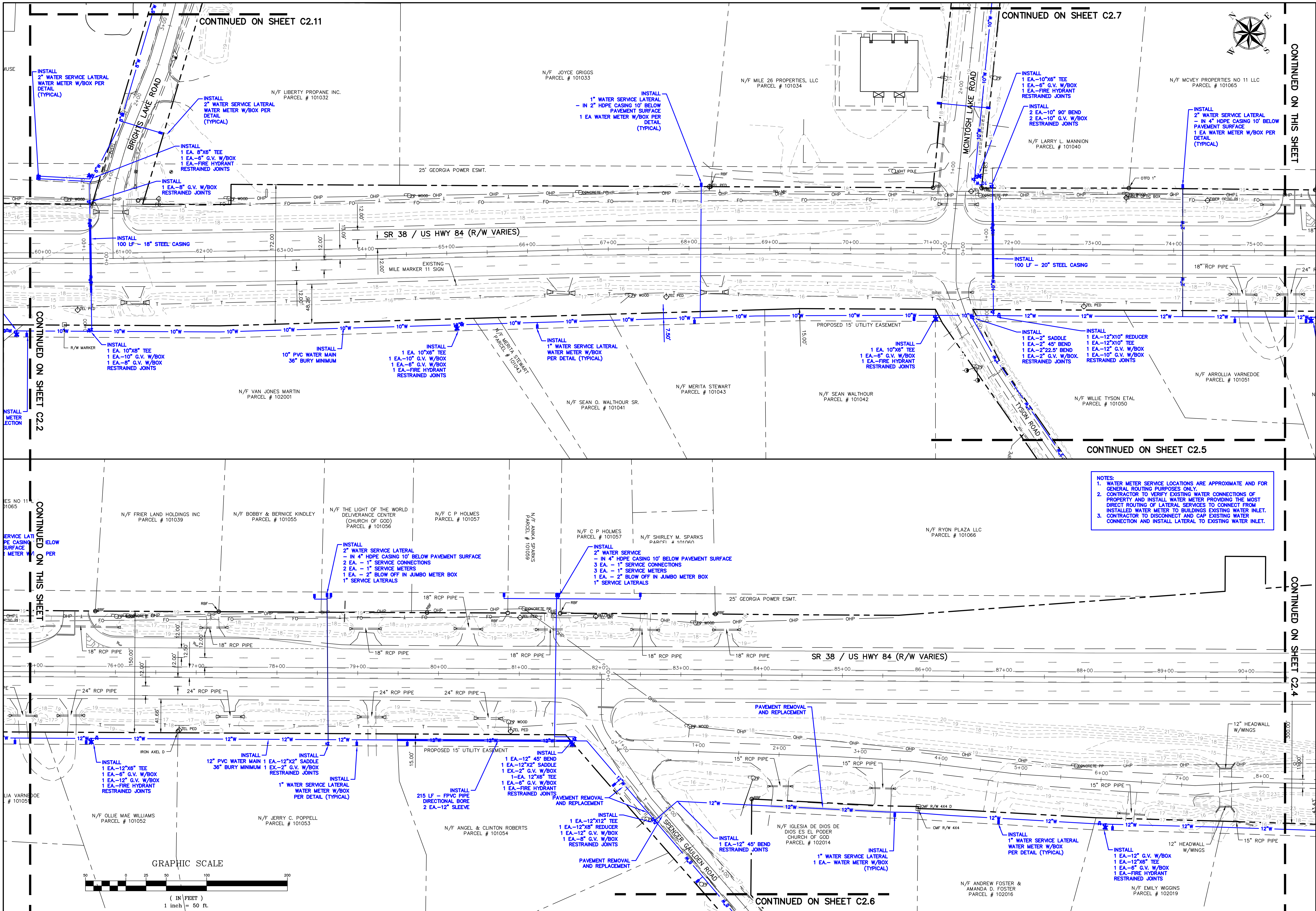
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CONTINUED ON SHEET C2.3

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C2.2



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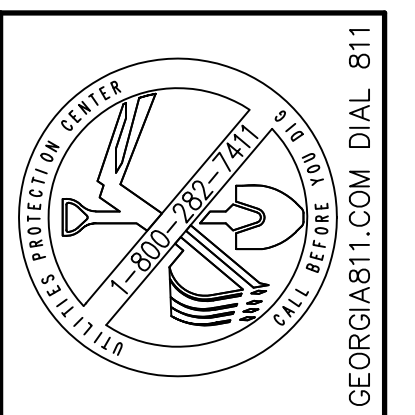
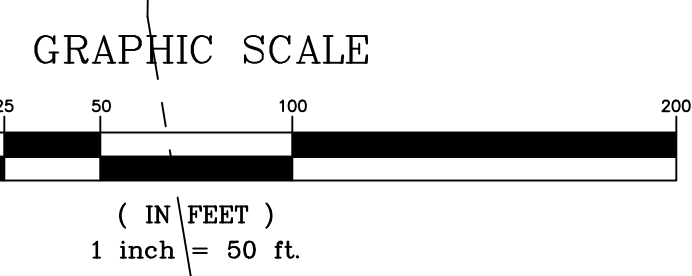
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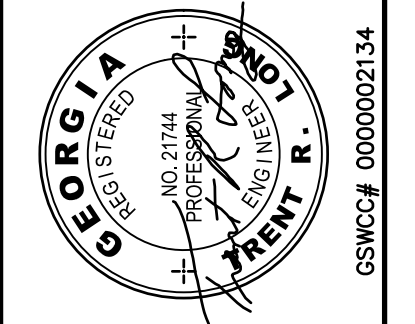
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CONTINUED ON SHEET C2.6

NOTES:
 1. WATER METER SERVICE LOCATIONS ARE APPROXIMATE AND FOR GENERAL ROUTING PURPOSES ONLY.
 2. CONTRACTOR TO VERIFY EXISTING WATER CONNECTIONS OF PROPERTY AND INSTALL WATER METER PROVIDING THE MOST DIRECT ROUTING OF LATERAL SERVICES TO CONNECT FROM INSTALLED WATER METER TO BUILDINGS EXISTING WATER INLET.
 3. CONTRACTOR TO DISCONNECT AND CAP EXISTING WATER CONNECTION AND INSTALL LATERAL TO EXISTING WATER INLET.



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 (912) 335-1046

TR LONG
 ENGINEERING, P.C.
 www.trlongeng.com

**WATER SYSTEM IMPROVEMENT
 WEST OF CSX RAILROAD
 LIBERTY COUNTY, GEORGIA**

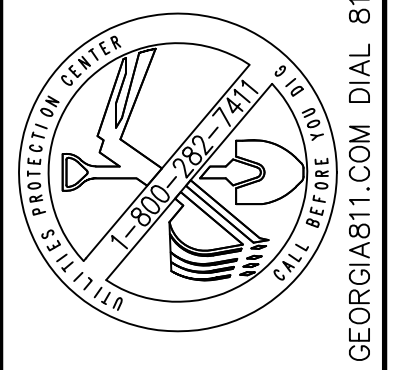
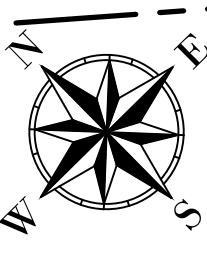
SHEET NAME:
 UTILITY PLAN
 E OGLETHORPE
 HIGHWAY

REVISIONS:

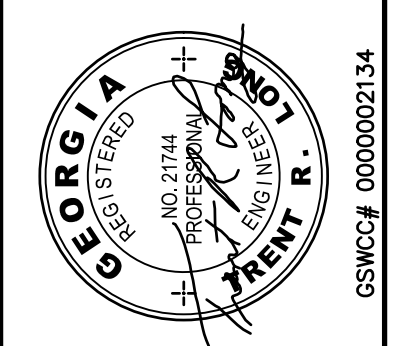
1.	1/9/13/2023	TRL
2.	4/01/2024	EPD
3.	3/7/29/2024	
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INITIAL DATE: 6/30/2022
 DRAWN BY: RC
 CHECKED BY: TRL
 PROJECT #: 2022-42

SHEET NUMBER:
C2.3



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PROJECT NO. 2022-42
SHEET NO. C2.4

TR LONG
ENGINEERING, P.C.

www.trlongeng.com

WATER SYSTEM IMPROVEMENT
WEST OF CSX RAILROAD
LIBERTY COUNTY, GEORGIA

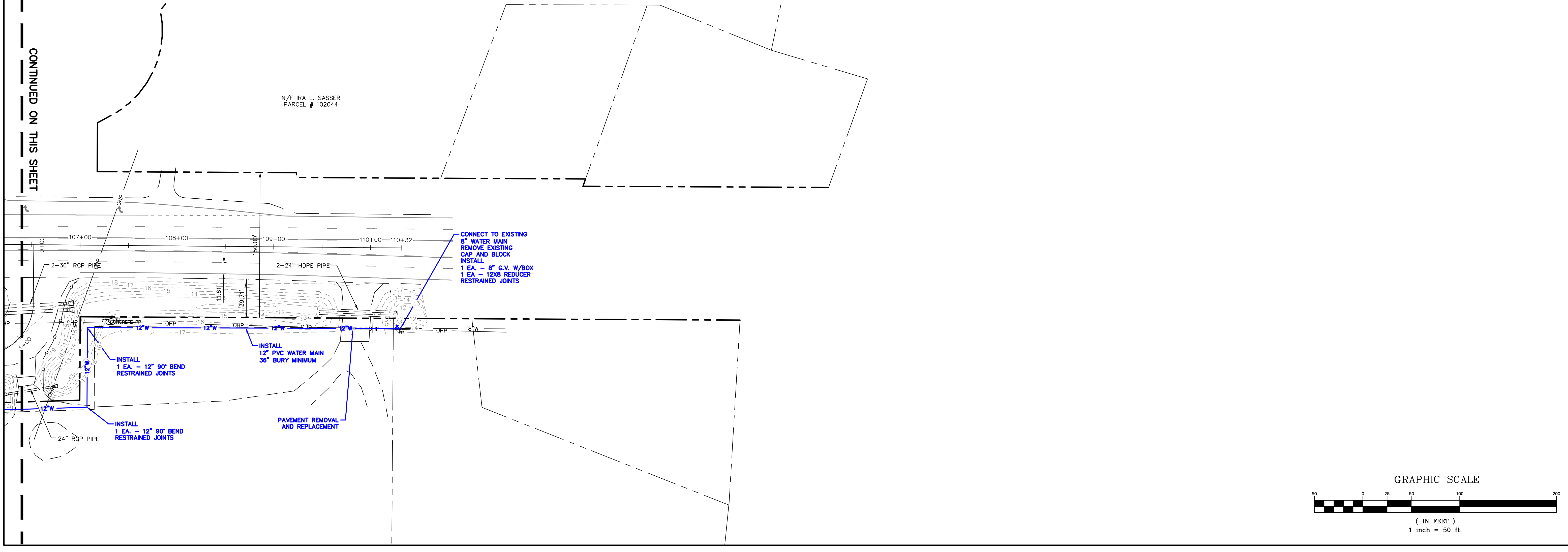
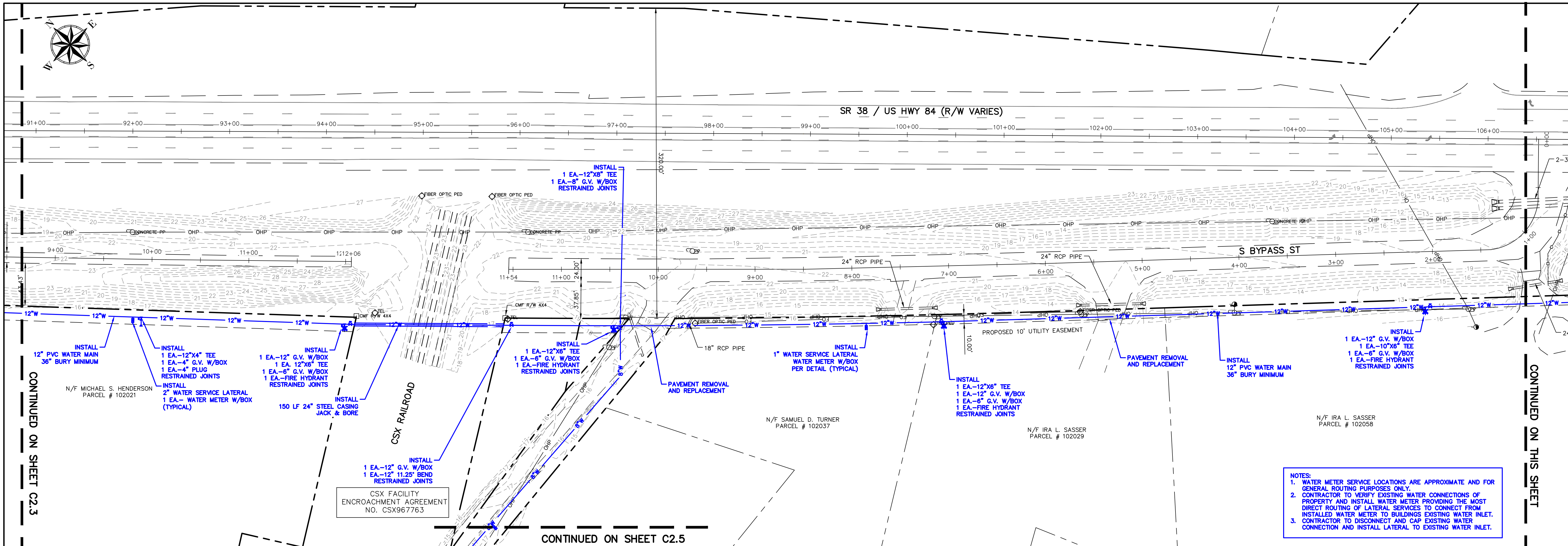
SHEET NAME:
UTILITY PLAN
E OGLETHORPE
HIGHWAY

REVISIONS:

1.	9/13/2023	TRL
2.	4/01/2024	EPD
3.	7/29/2024	
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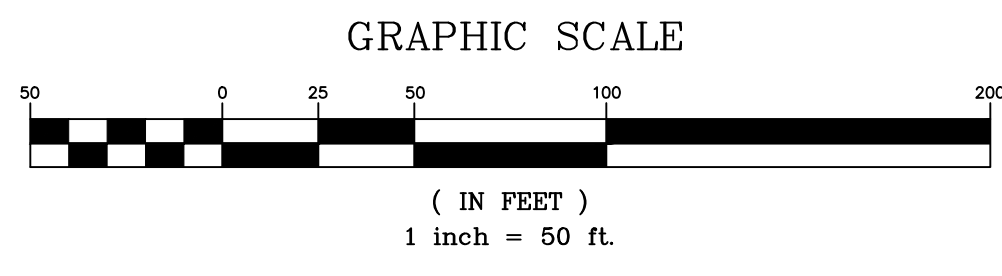
INITIAL DATE: 6/30/2022
DRAWN BY: KC
CHECKED BY: TRL
PROJECT #: 2022-42

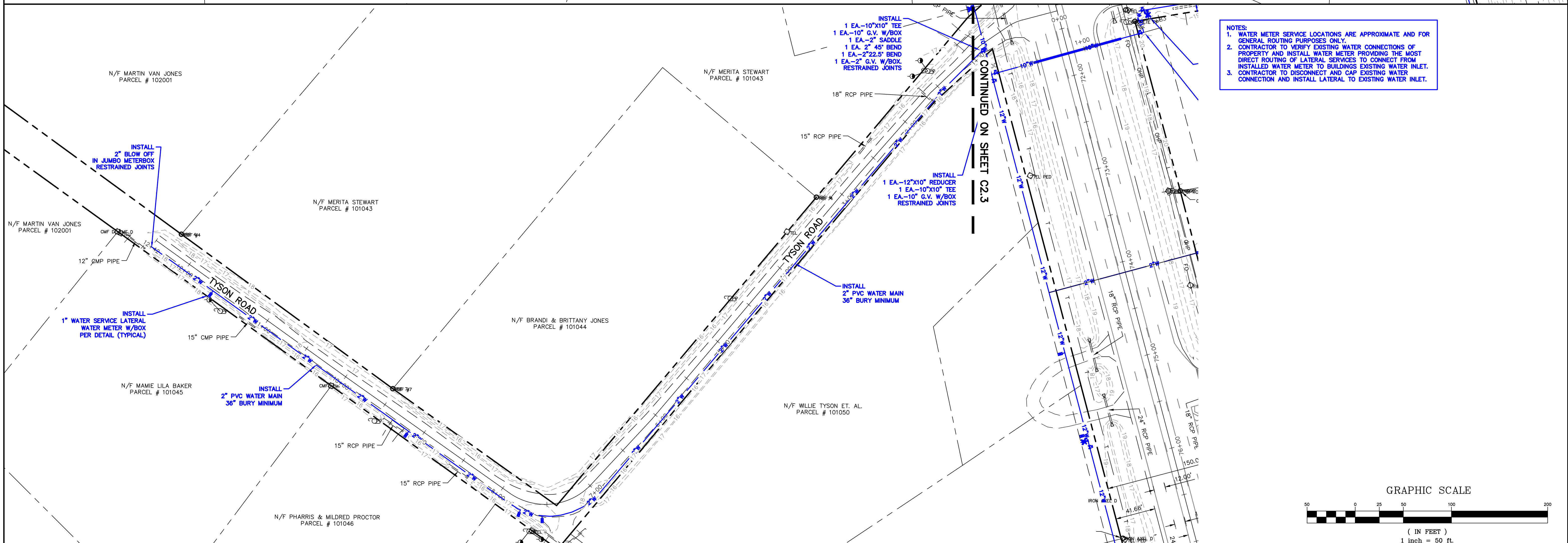
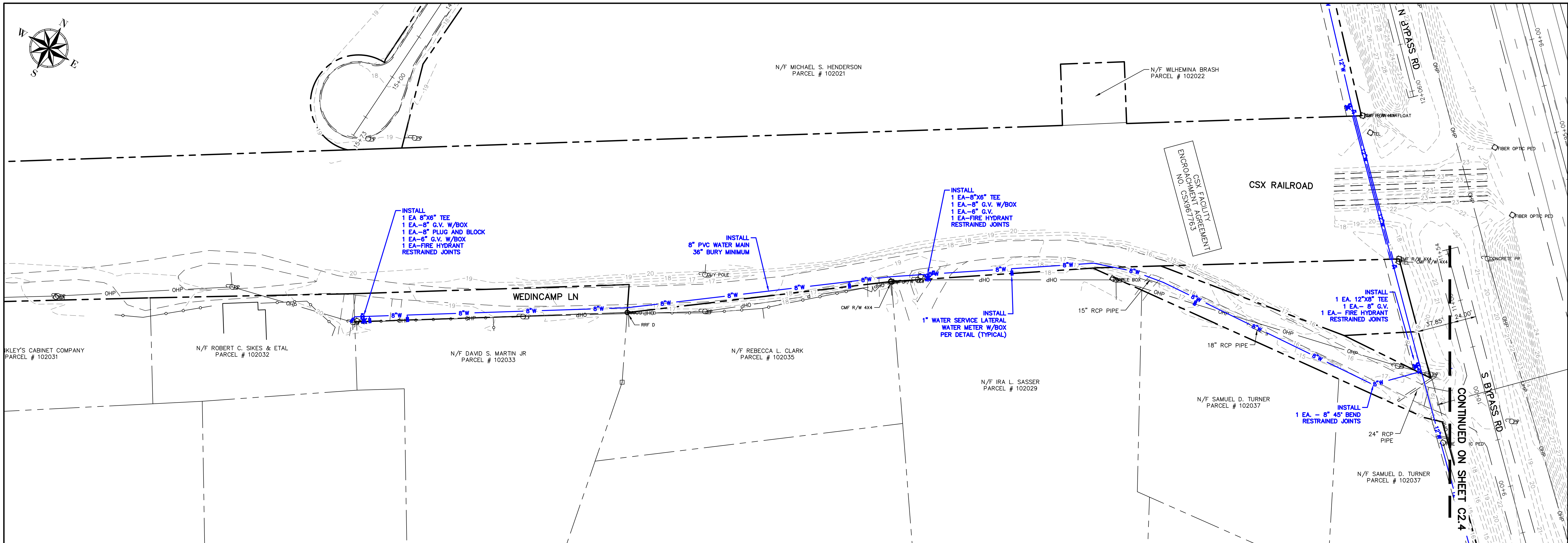
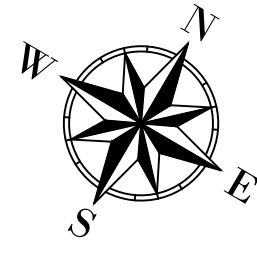
SHEET NUMBER:
C2.4



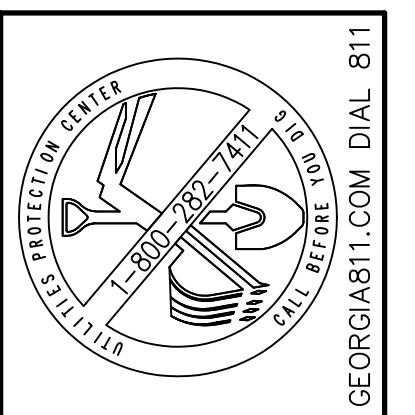
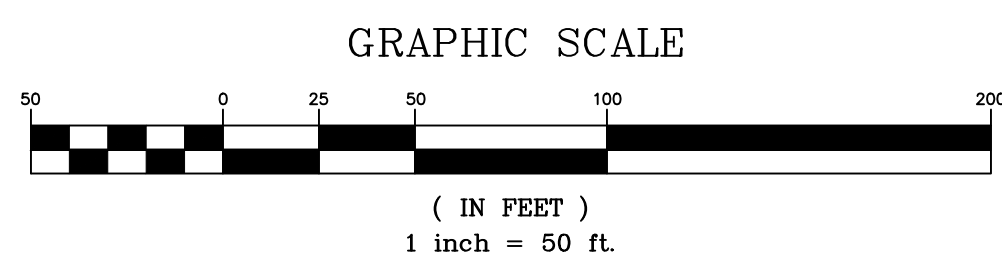
NOTES:

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2. CONTRACTOR TO VERIFY EXISTING WATER CONNECTIONS OF PROPERTY AND INSTALL WATER METER PROVIDING THE MOST DIRECT ROUTING OF LATERAL SERVICES TO CONNECT FROM INSTALLED WATER METER TO BUILDINGS EXISTING WATER INLET.
3. CONTRACTOR TO DISCONNECT AND CAP EXISTING WATER CONNECTION AND INSTALL LATERAL TO EXISTING WATER INLET.

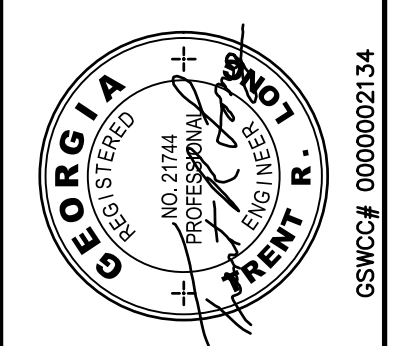




NOTES:
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**WATER SYSTEM IMPROVEMENT
 WEST OF CSX RAILROAD
 LIBERTY COUNTY, GEORGIA**

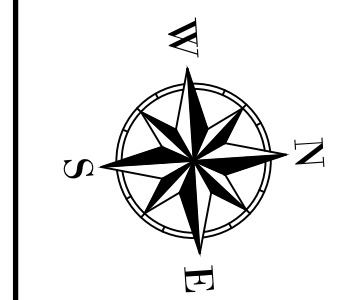
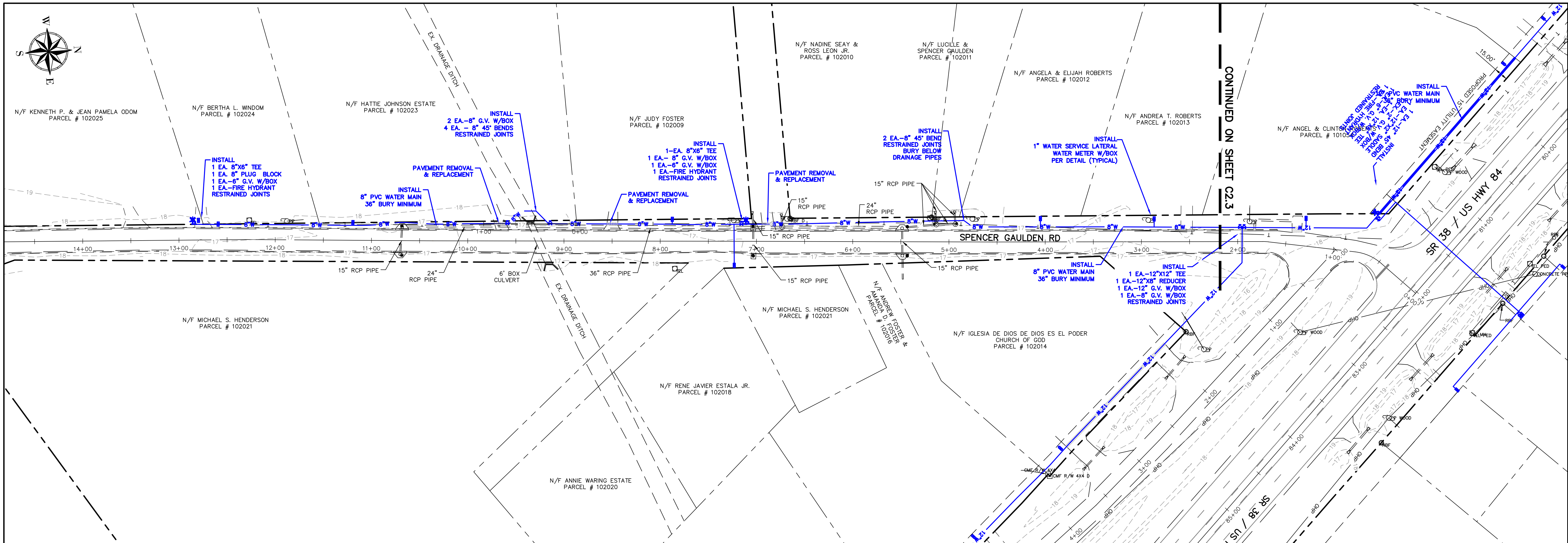
SHEET NAME:
 UTILITY PLAN
 WEDINCAMP LANE

REVISIONS:

1.	9/13/2023	TRL
2.	4/01/2024	EPD
3.	7/29/2024	
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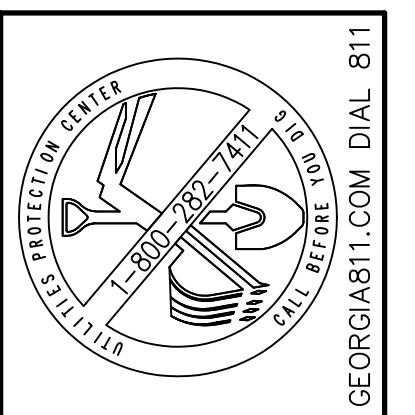
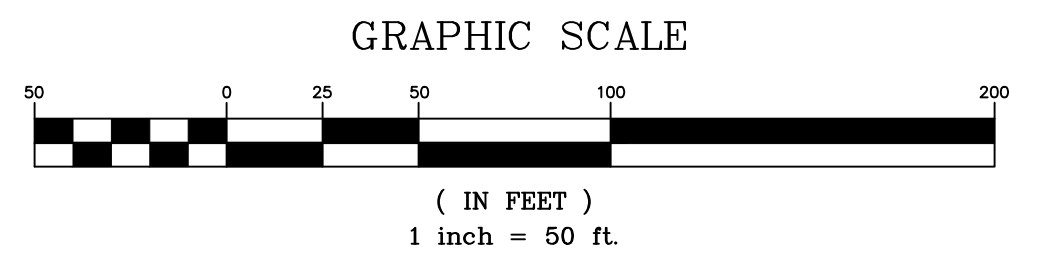
INITIAL DATE: 6/30/2022
 DRAWN BY: KC
 CHECKED BY: TRL
 PROJECT #: 2022-42

SHEET NUMBER:
C2.5

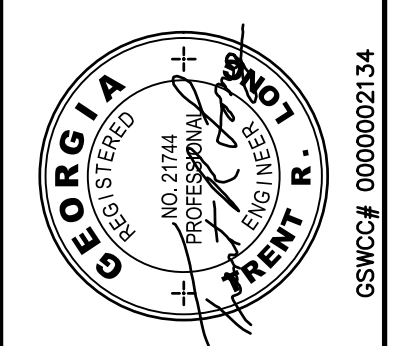


CONTINUED ON SHEET C2.3

NOTES:
 1. WATER METER SERVICE LOCATIONS ARE APPROXIMATE AND FOR GENERAL ROUTING PURPOSES ONLY.
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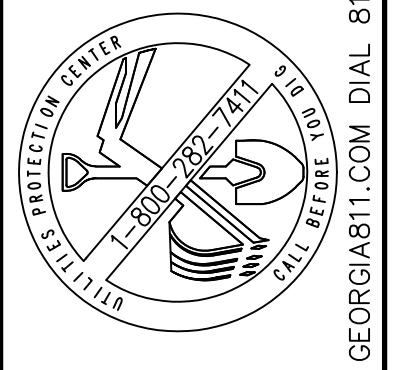
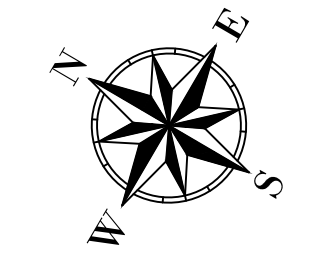
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 (912) 335-1046

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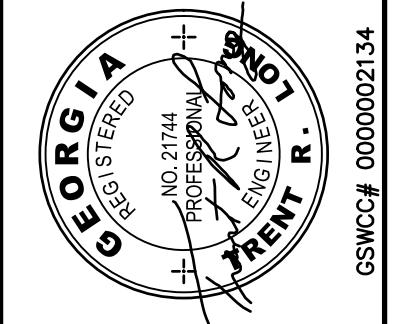
**WATER SYSTEM IMPROVEMENT
 WEST OF CSX RAILROAD
 LIBERTY COUNTY, GEORGIA**

SHEET NAME: UTILITY PLAN SPENCER GAULDEN ROAD	
REVISIONS:	
1.	9/13/2023 TRL
2.	4/01/2024 EPD
3.	7/29/2024
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INITIAL DATE: 6/30/2022 DRAWN BY: KC CHECKED BY: TRL PROJECT #: 2022-42	
SHEET NUMBER: C2.6	

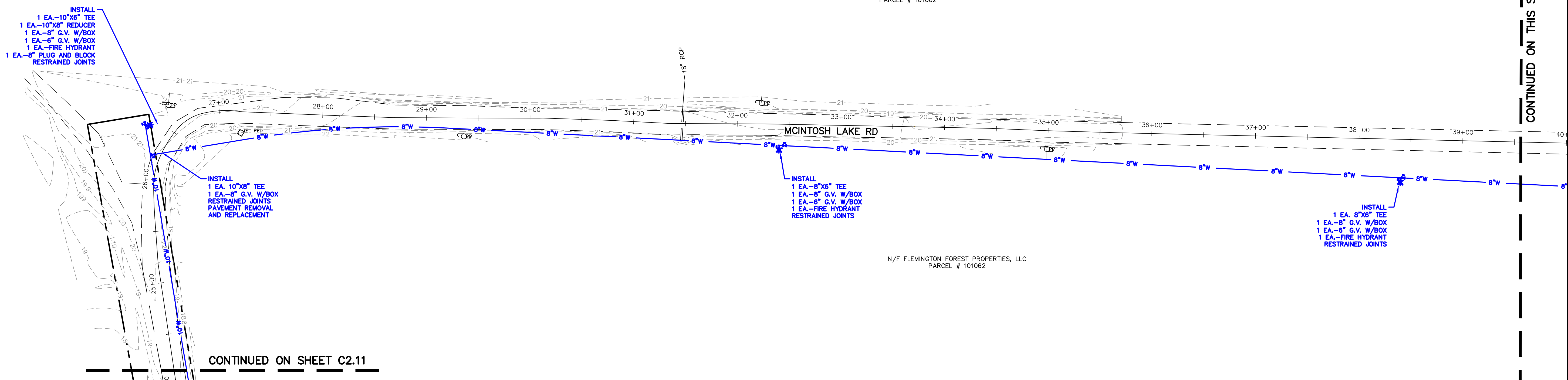
NOTES:
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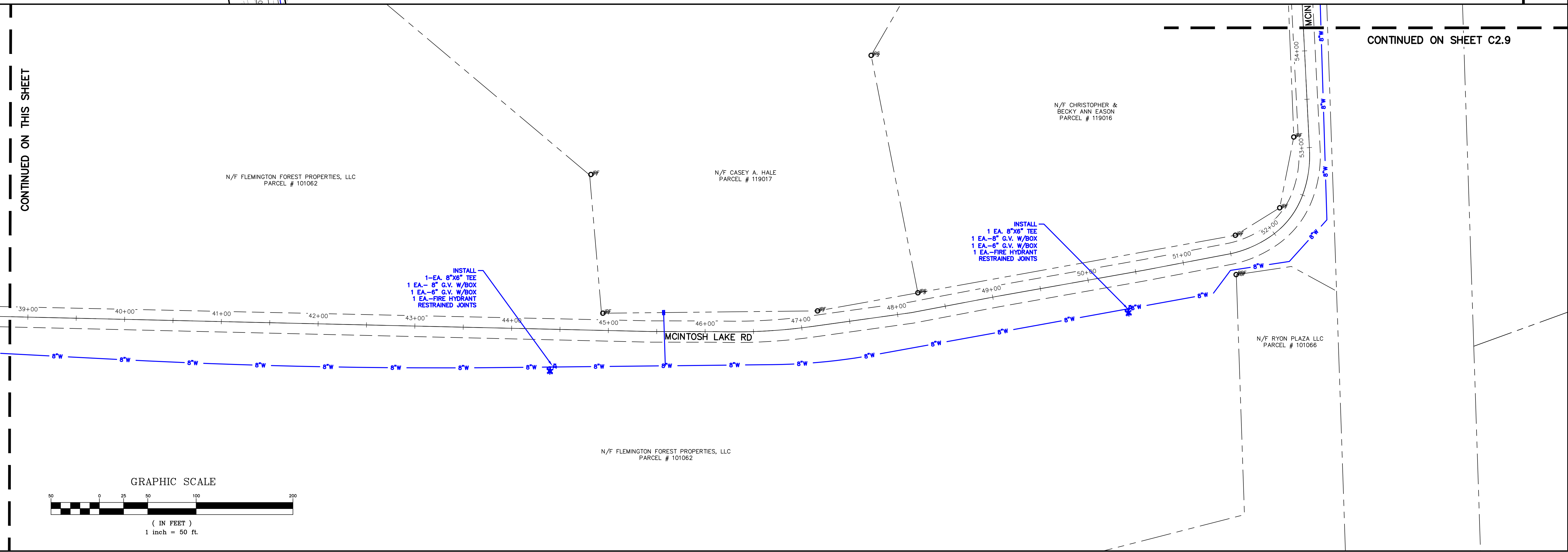
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 POOLER:
 1000 Towne Center Blvd
 Suite 304
 Pooler, Georgia 31322
 (912) 335-1046



CONTINUED ON SHEET C2.11

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CONTINUED ON THIS SHEET



CONTINUED ON SHEET C2.9

WATER SYSTEM IMPROVEMENT
 WEST OF CSX RAILROAD
 LIBERTY COUNTY, GEORGIA

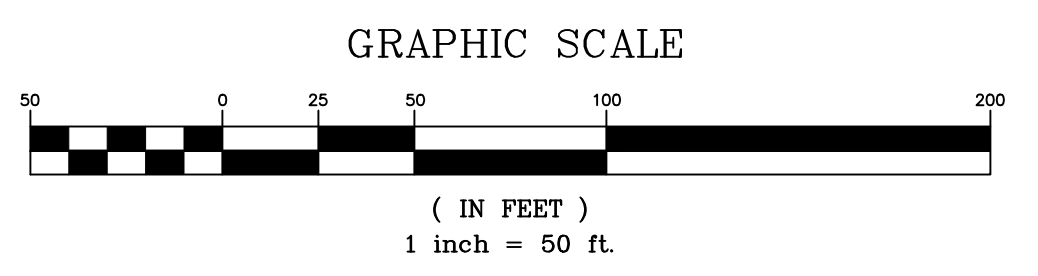
SHEET NAME:
 UTILITY PLAN
 MCINTOSH LAKE
 ROAD

REVISIONS:

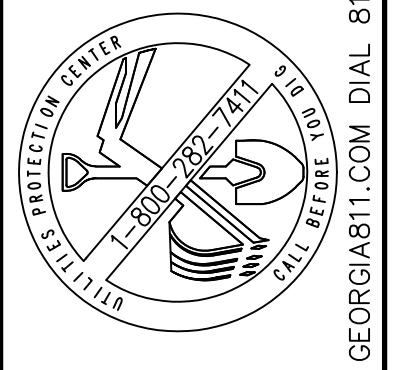
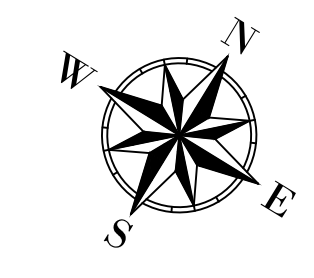
1.	9/13/2023	TRL
2.	4/01/2024	EPD
3.	7/29/2024	
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INITIAL DATE: 6/30/2022
 DRAWN BY: KC
 CHECKED BY: TRL
 PROJECT #: 2022-42

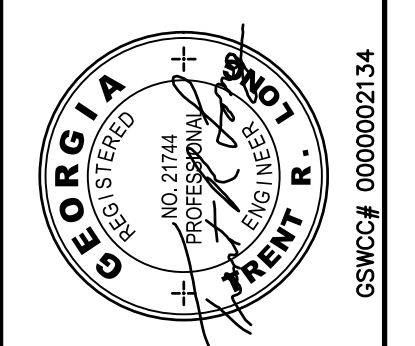
SHEET NUMBER:
C2.8



CONTINUED ON SHEET C2.8



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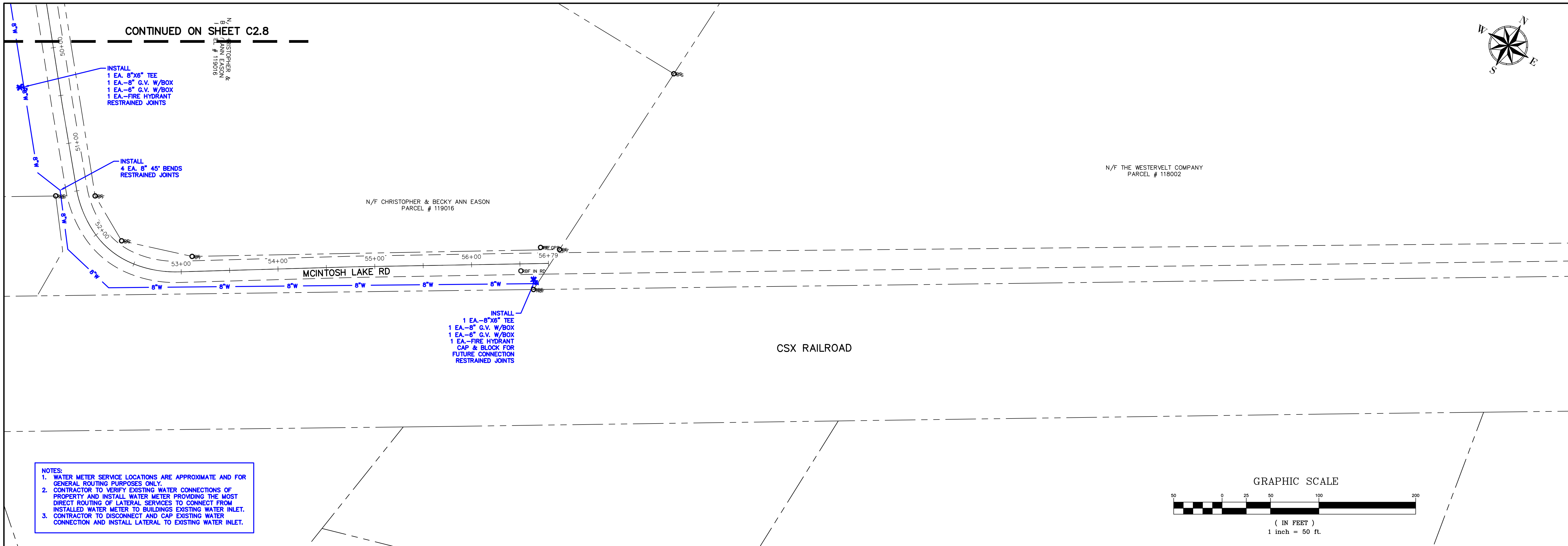
WATER SYSTEM IMPROVEMENT
WEST OF CSX RAILROAD
LIBERTY COUNTY, GEORGIA

SHEET NAME:
UTILITY PLAN
MCINTOSH LAKE
ROAD

REVISIONS:
1. 9/13/2023 TRL
2. 4/01/2024 EPD
3. 7/29/2024
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INITIAL DATE: 6/30/2022
DRAWN BY: KC
CHECKED BY: TRL
PROJECT #: 2022-42

SHEET NUMBER:
C2.9



N/F THE WESTERVELT COMPANY
PARCEL # 118002

N/F CHRISTOPHER & BECKY ANN EASON
PARCEL # 119016

CSX RAILROAD

MCINTOSH LAKE RD

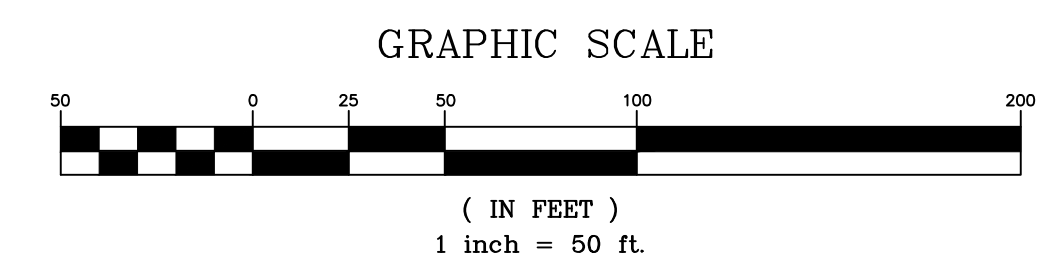
INSTALL
1 EA. 8"X6" TEE
1 EA.-8" G.V. W/BOX
1 EA.-8" G.V. W/BOX
1 EA.-FIRE HYDRANT
RESTRAINED JOINTS

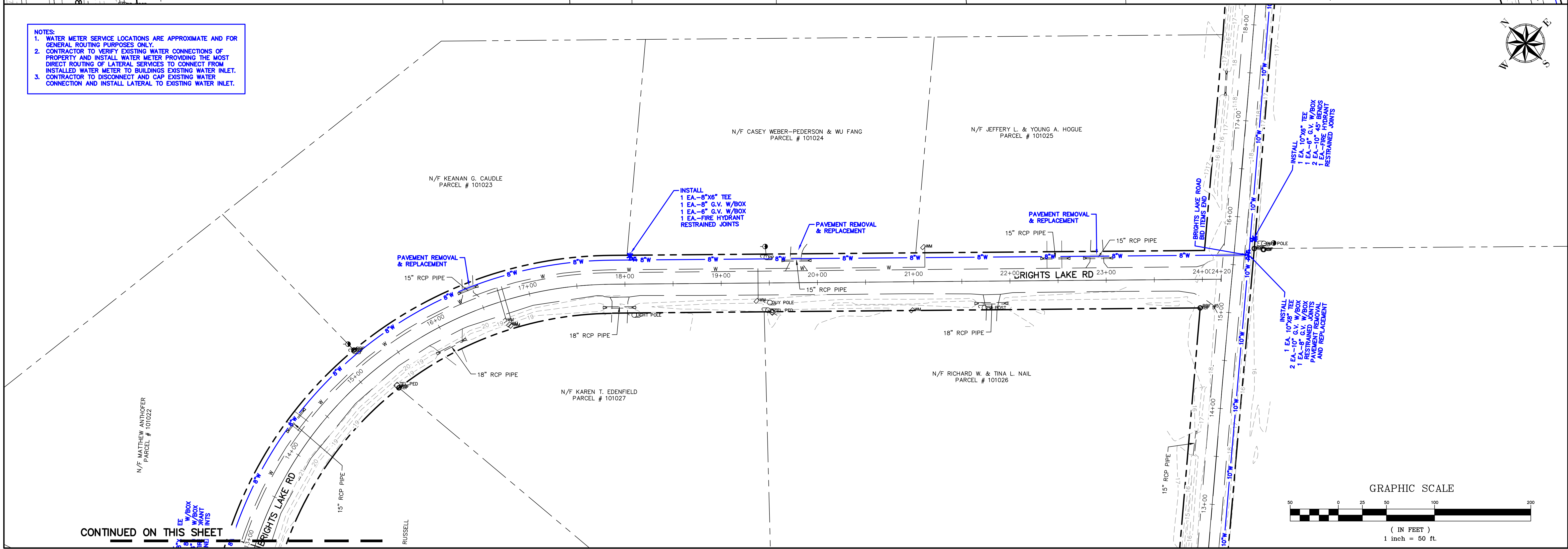
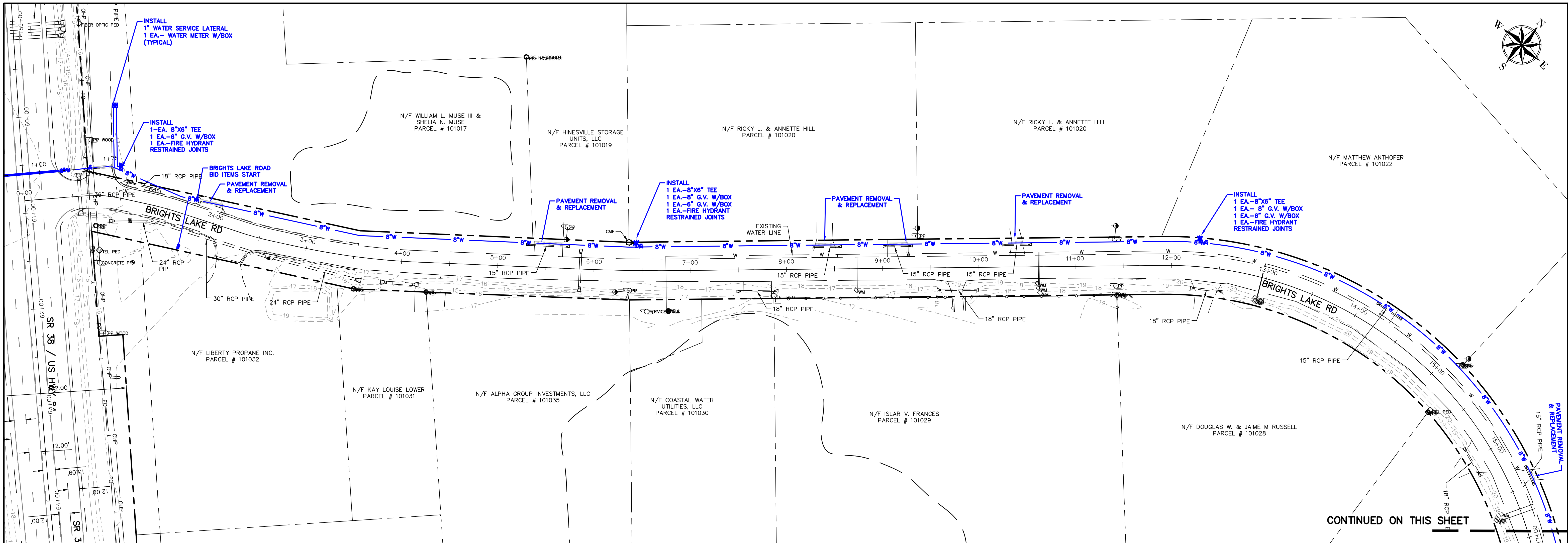
INSTALL
4 EA. 8" 45° BENDS
RESTRAINED JOINTS

INSTALL
1 EA.-8"X6" TEE
1 EA.-8" G.V. W/BOX
1 EA.-8" G.V. W/BOX
1 EA.-FIRE HYDRANT
CAP & BLOCK FOR
FUTURE CONNECTION
RESTRAINED JOINTS

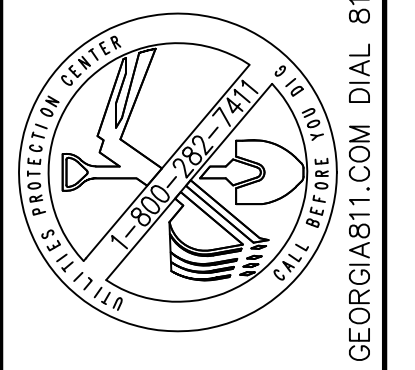
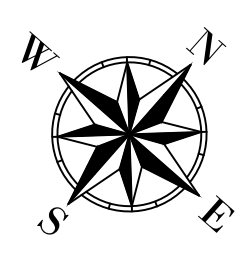
NOTES:

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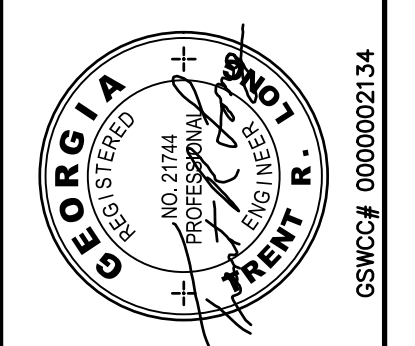




- NOTES:**
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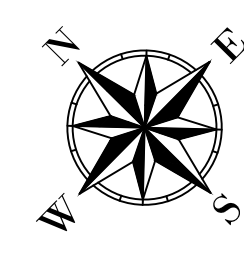
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Suite 304
Pooler, Georgia 31322
(912) 335-1046

TR LONG
ENGINEERING, P.C.

www.trlongeng.com

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CONTINUED ON THIS SHEET



**WATER SYSTEM IMPROVEMENT
WEST OF CSX RAILROAD
LIBERTY COUNTY, GEORGIA**

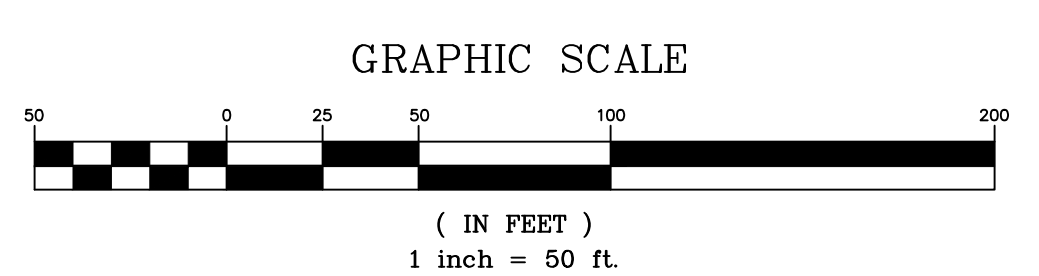
SHEET NAME:
UTILITY PLANS
BRIGHTS LAKE ROAD

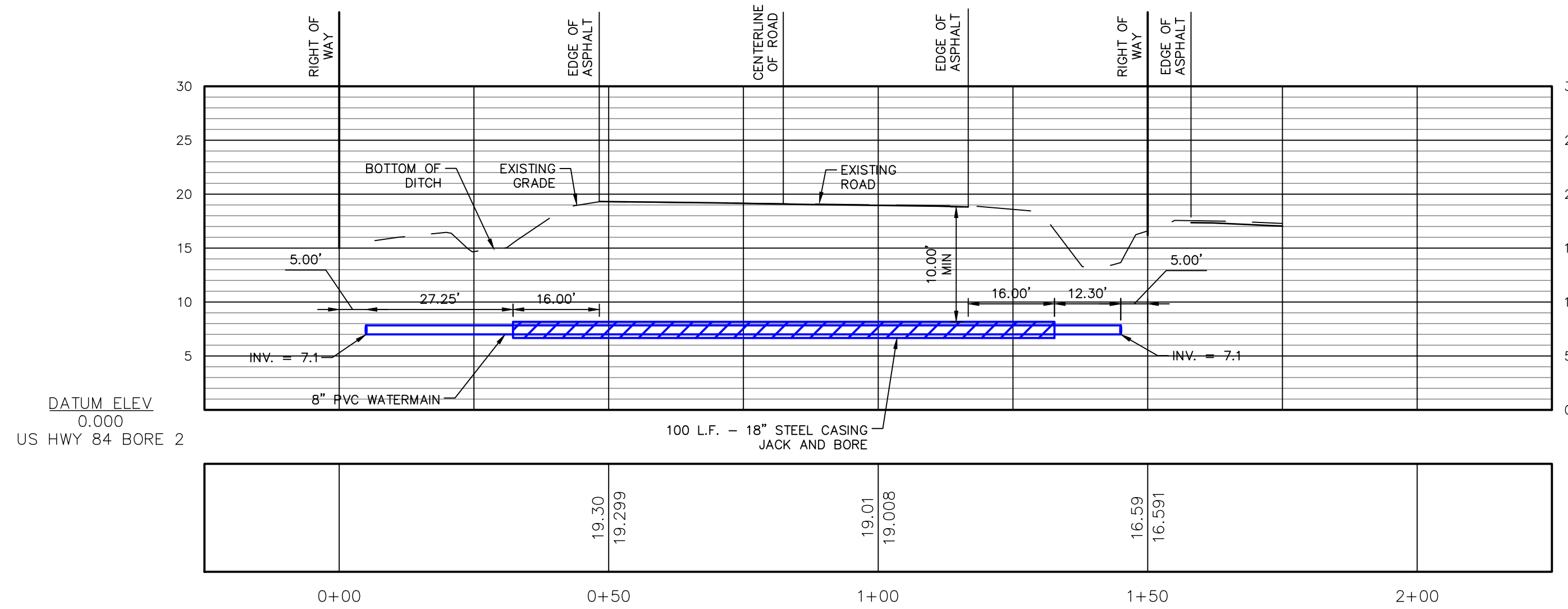
REVISIONS:

1.	9/13/2023	TRL
2.	4/01/2024	EPD
3.	7/29/2024	
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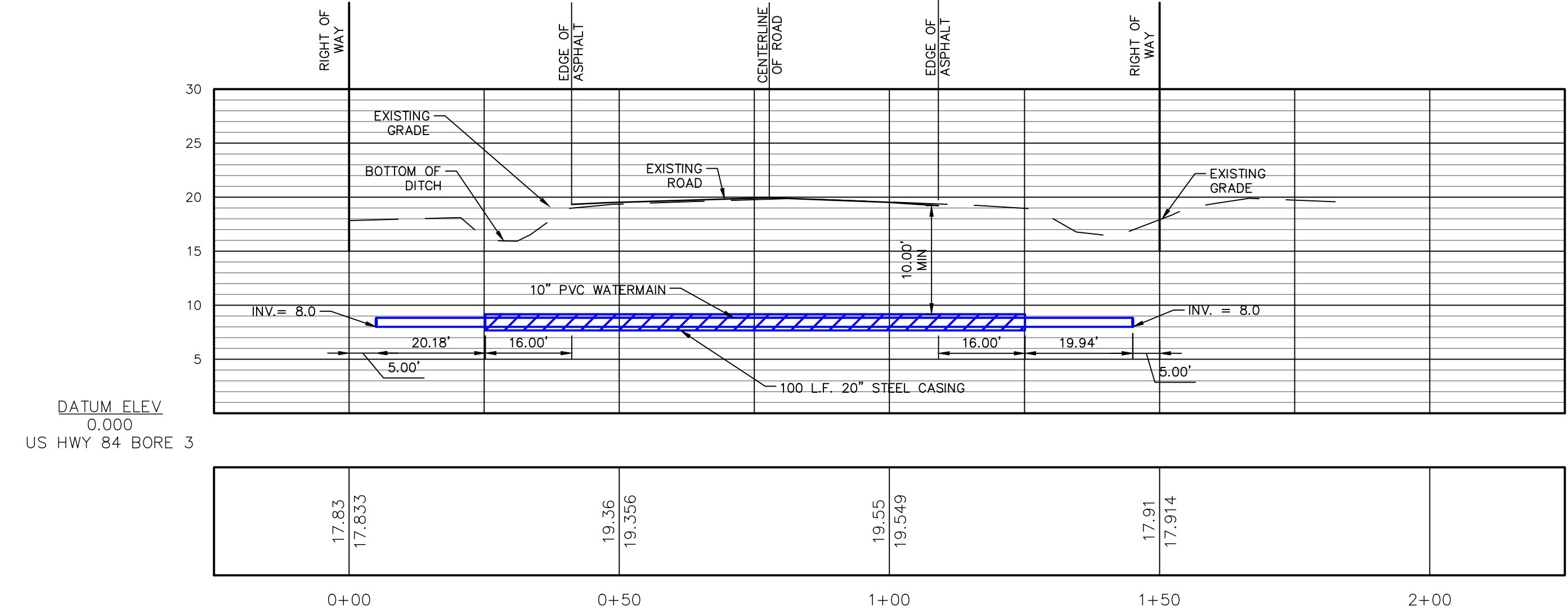
INITIAL DATE: 6/30/2022
DRAWN BY: KC
CHECKED BY: TRL
PROJECT #: 2022-42

SHEET NUMBER:
C2.10

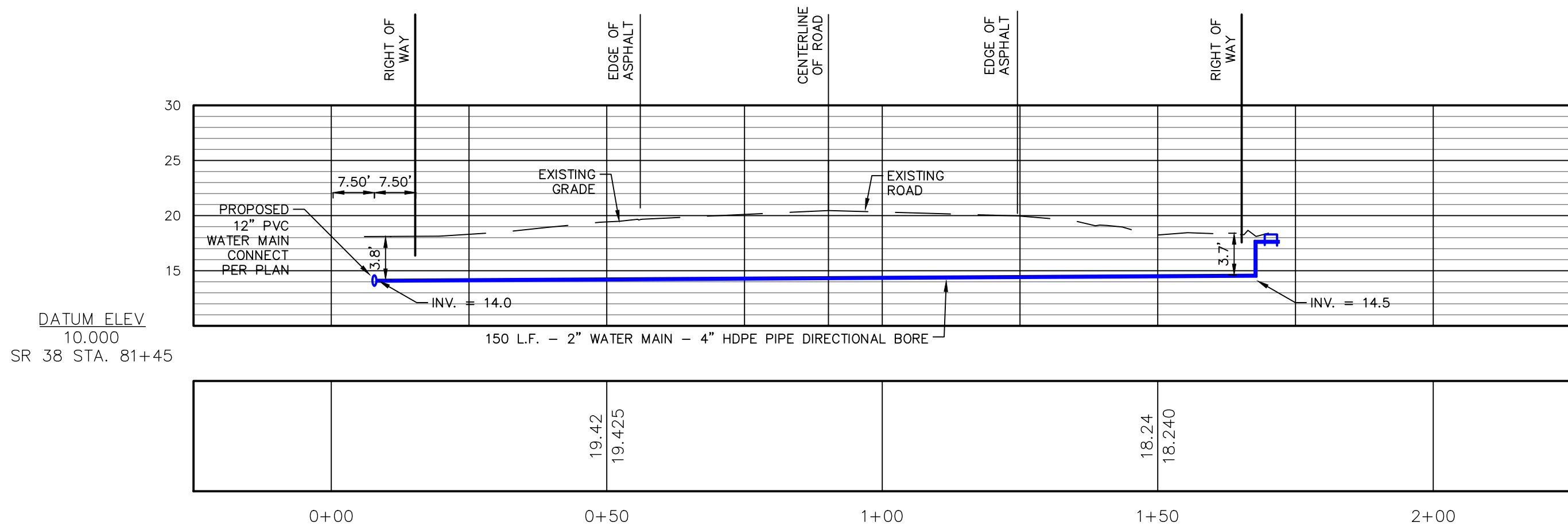
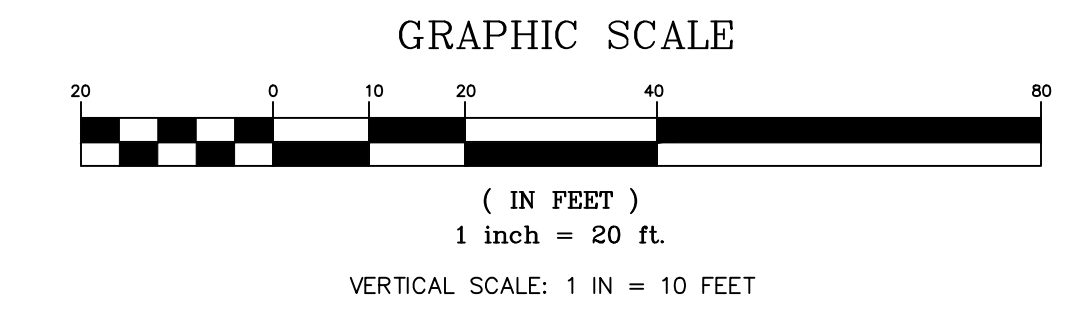




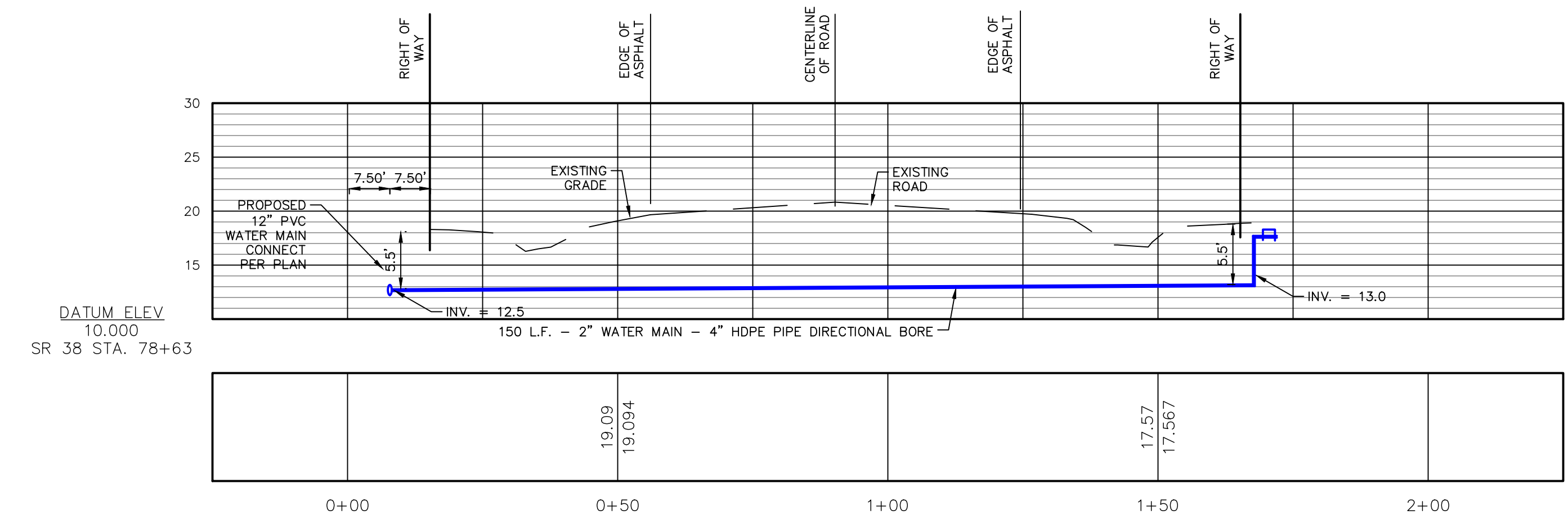
U.S. HIGHWAY 84/ STATE ROUTE 38 AT BRIGHTS LAKE ROAD



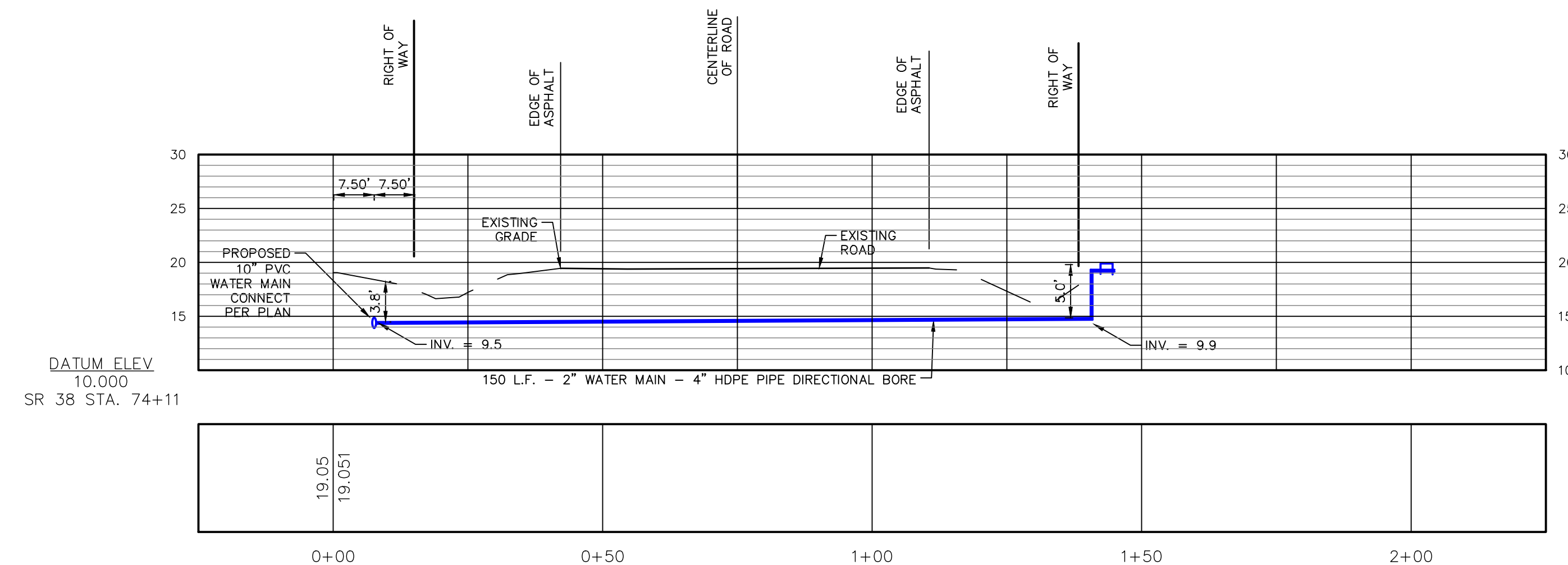
U.S. HIGHWAY 84/ STATE ROUTE 38 AT McINTOSH LAKE ROAD



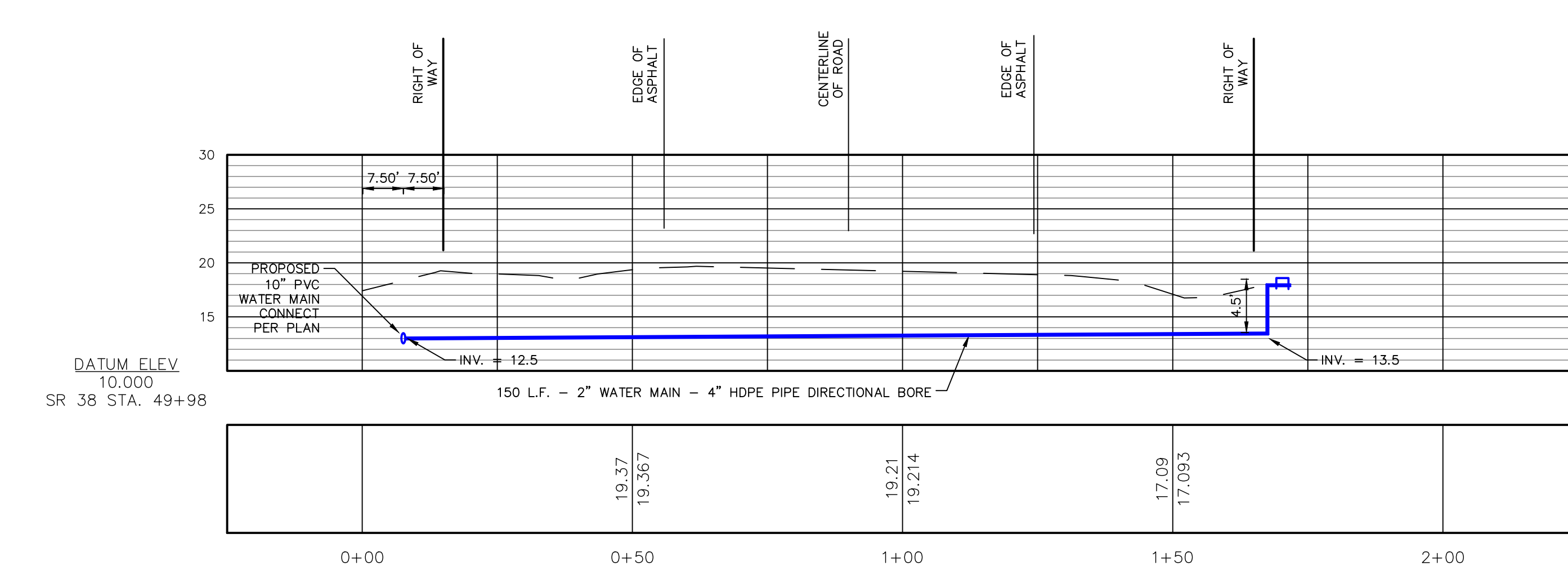
U.S. HIGHWAY 84/ STATE ROUTE 38 AT STA. 81+45



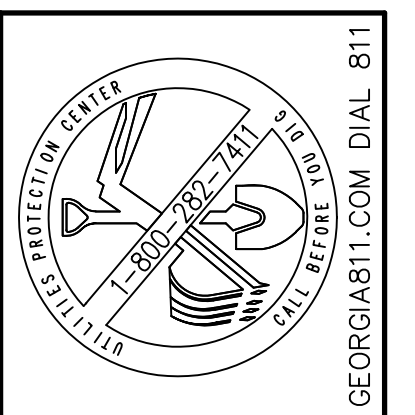
U.S. HIGHWAY 84/ STATE ROUTE 38 AT STA. 78+63



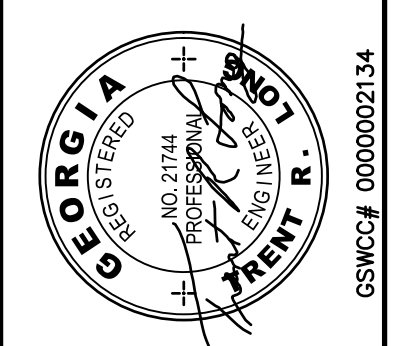
U.S. HIGHWAY 84/ STATE ROUTE 38 AT STA. 74+11



U.S. HIGHWAY 84/ STATE ROUTE 38 AT STA. 50+15



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WATER SYSTEM IMPROVEMENT
WEST OF CSX RAILROAD
LIBERTY COUNTY

SHEET NAME:
UTILITY PROFILES

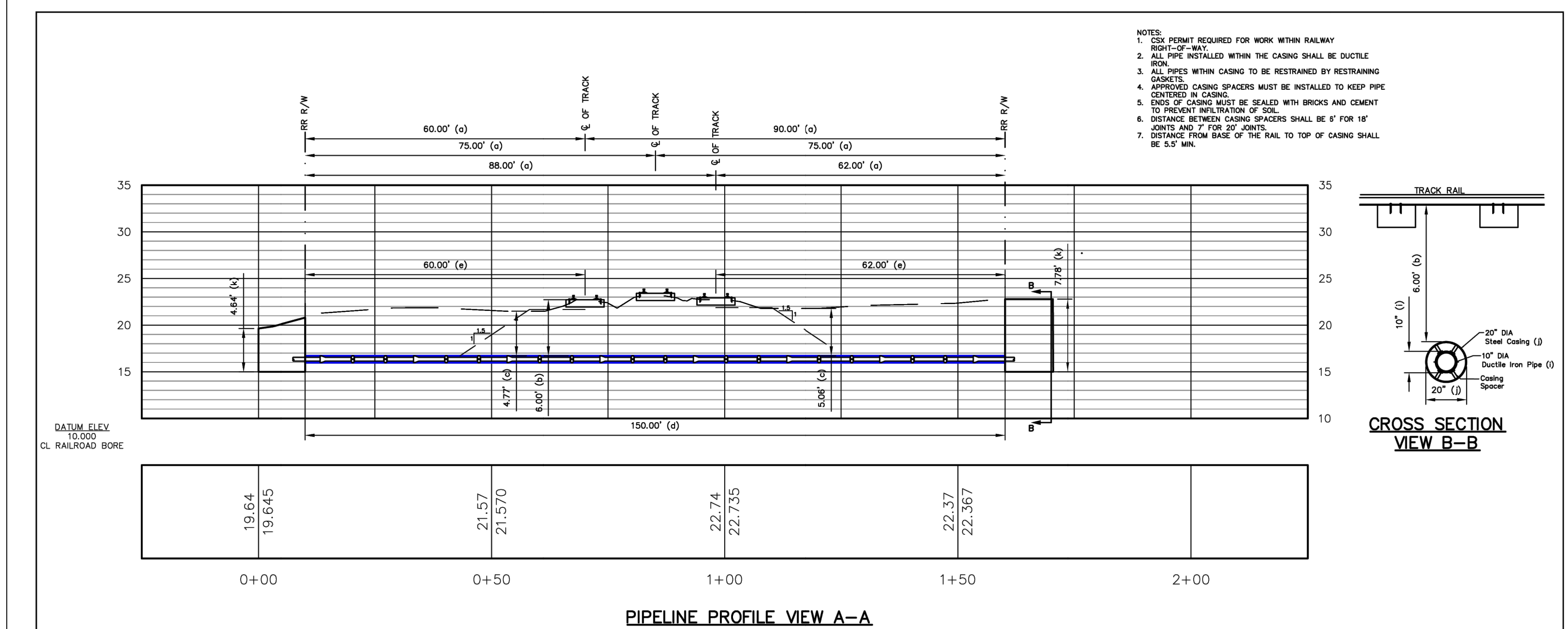
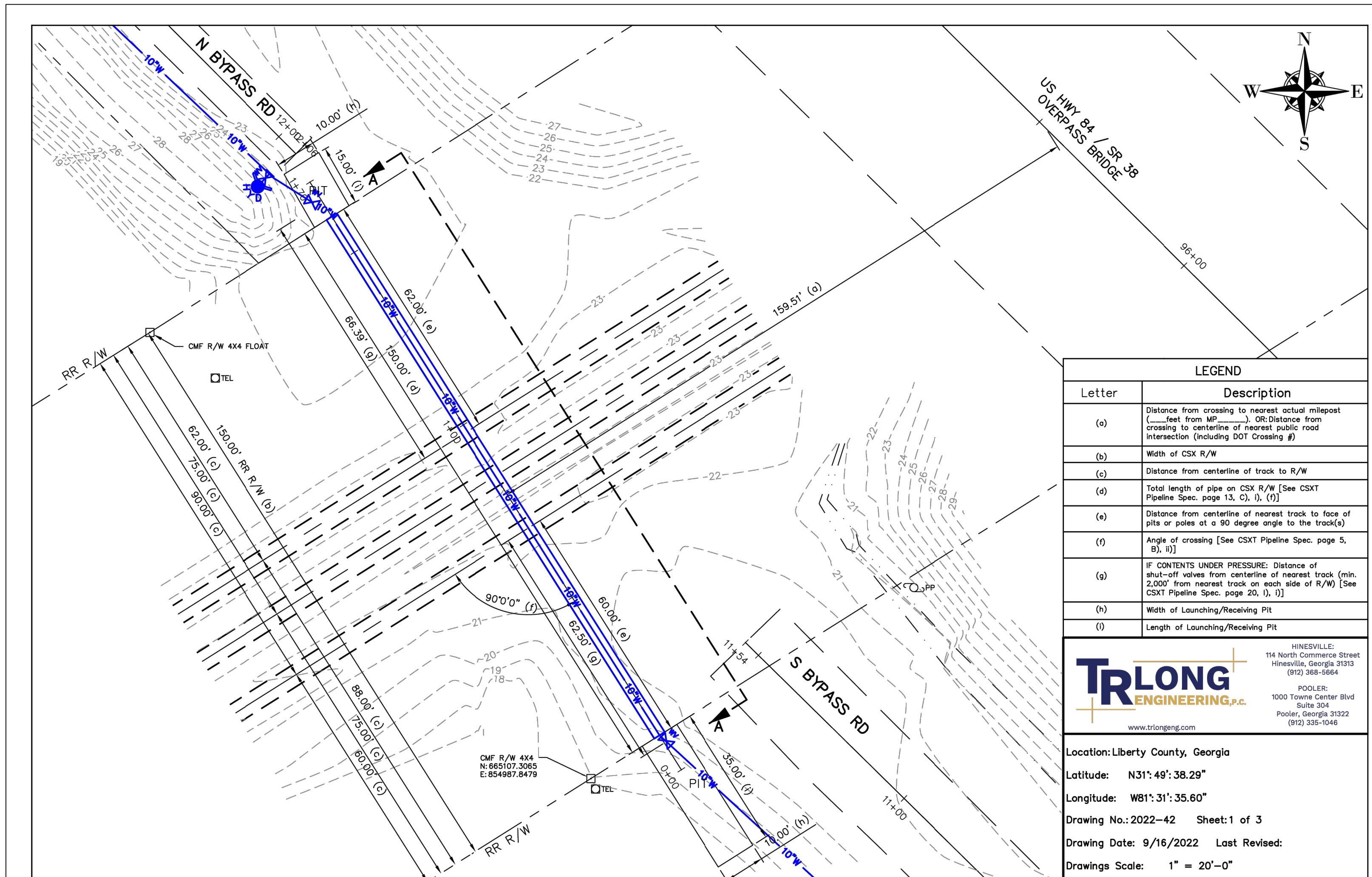
REVISIONS:

1.	9/13/2023	TRL
2.	4/01/2024	EPD
3.	7/29/2024	
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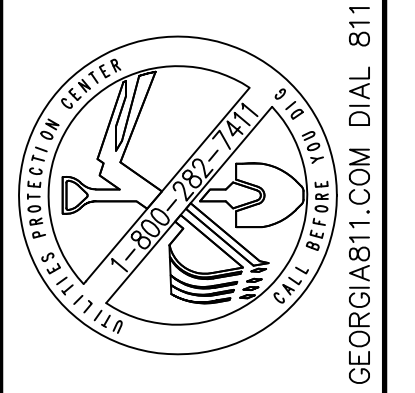
INITIAL DATE: 6/30/2022
DRAWN BY: KC
CHECKED BY: TRL
PROJECT #: 2022-42

SHEET NUMBER:

C2.11

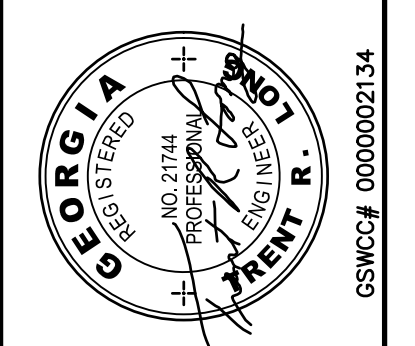


Letter	Description	CXST Pipeline Spec. Reference	PIPELINE CONTENT DETAILS
(a)	Distance from centerline of track to CSX R/W		Commodity Description: Potable Water Maximum Operating Pressure: 70 PSI Is Commodity Flammable: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
(b)	Distance from base-of-rail to top-of-coating [See CSXT Pipeline Spec. page 6, C)]		CARRIER/CASING PIPE DETAILS
(c)	Distance from base-of-ditch to top-of-coating [See CSXT Pipeline Spec. page 6, C)]		Carrier Pipe: Ductile Iron Pipe Casing Pipe: Steel Pipe
(d)	Total length of pipe on CSX R/W [See CSXT Pipeline Spec. page 13, C), D), (f)]	Page 13, C); & 17, D)	Pipe Material: ANSI 21.51, Class 51 Material Specification & Grade: AWWA C200
(e)	Distance from centerline of nearest track to face of pits at a 90 degree angle to the track(s)	Page 13, C); & 17, D)	Specified Minimum Yield Strength: 42,000 psi Nominal Size Outside Diameter (Inches): 10"
(f)	Distance from top-of-vent pipe to ground surface (4' minimum required) [See CSXT Pipeline Spec. page 20, F)]	Page 14, B), (d)	Wall Thickness (Inches): 0.26"
(g)	Distance from centerline of track to vent pipe at a 90 degree angle to the track(s) [See CSXT Pipeline Spec. page 20, F)]	Page 13, C); & 17, D)	Type of Seam: N/A Type of Joints: Push on type joints
(h)	Theoretical Embankment Line: Starts 12' from centerline of track and extends away from track at a slope of 1.5' over and 1' down [See CSXT Pipeline Spec. page 14, C), D), (f), B.P.#6]	Page 16, v)	Tunnel Liner Plates Required: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Cathodic Protection: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Protective Coating: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
(i)	Carrier pipe diameter		Temp. Track Support or Rip-Rap Req.: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
(j)	Casing pipe diameter		
(k)	Depth of Launching/Receiving Pit		Must Describe & Show on Dwg



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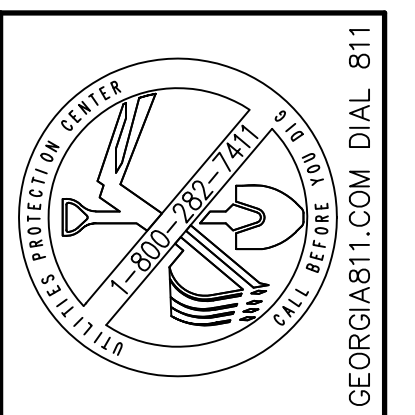
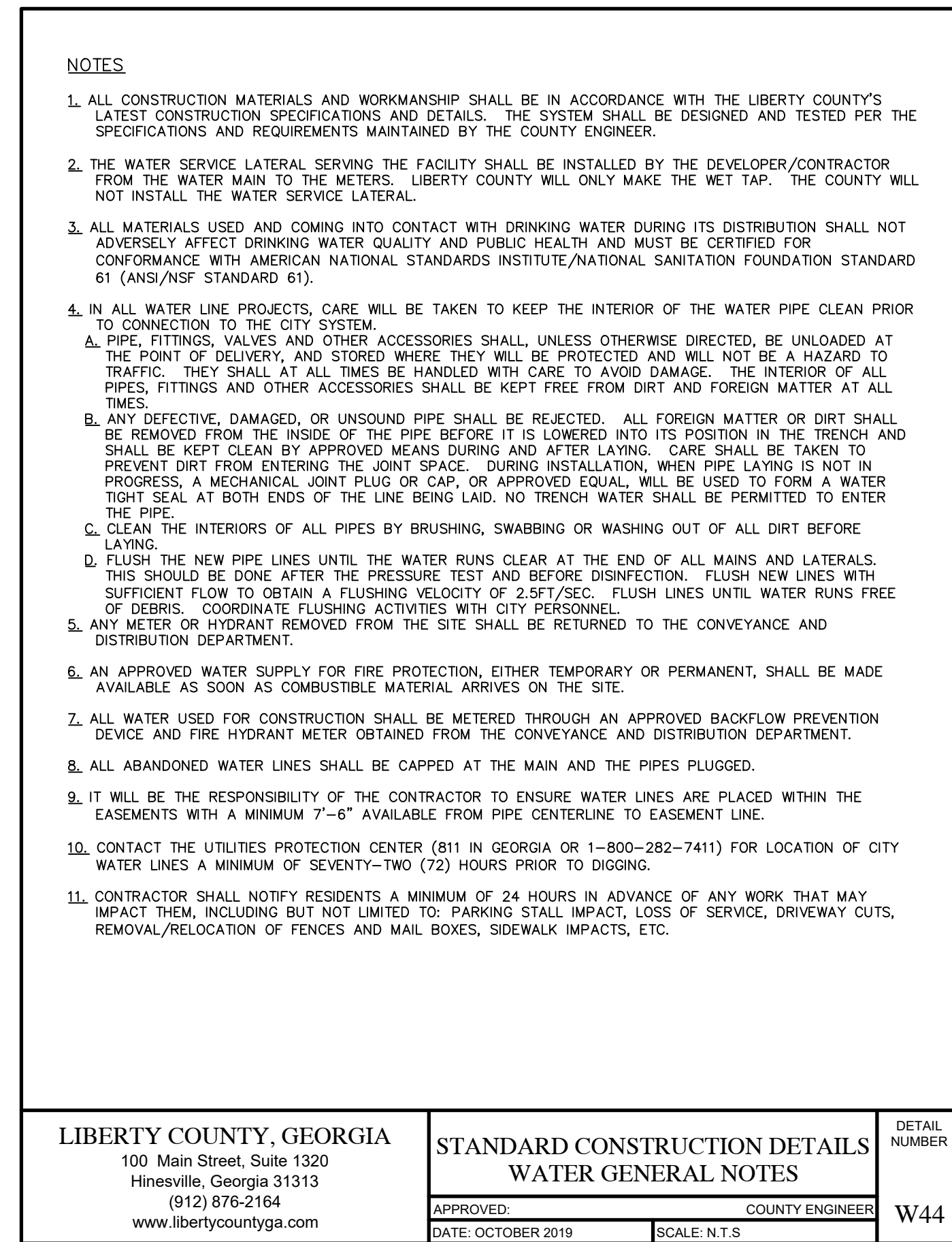
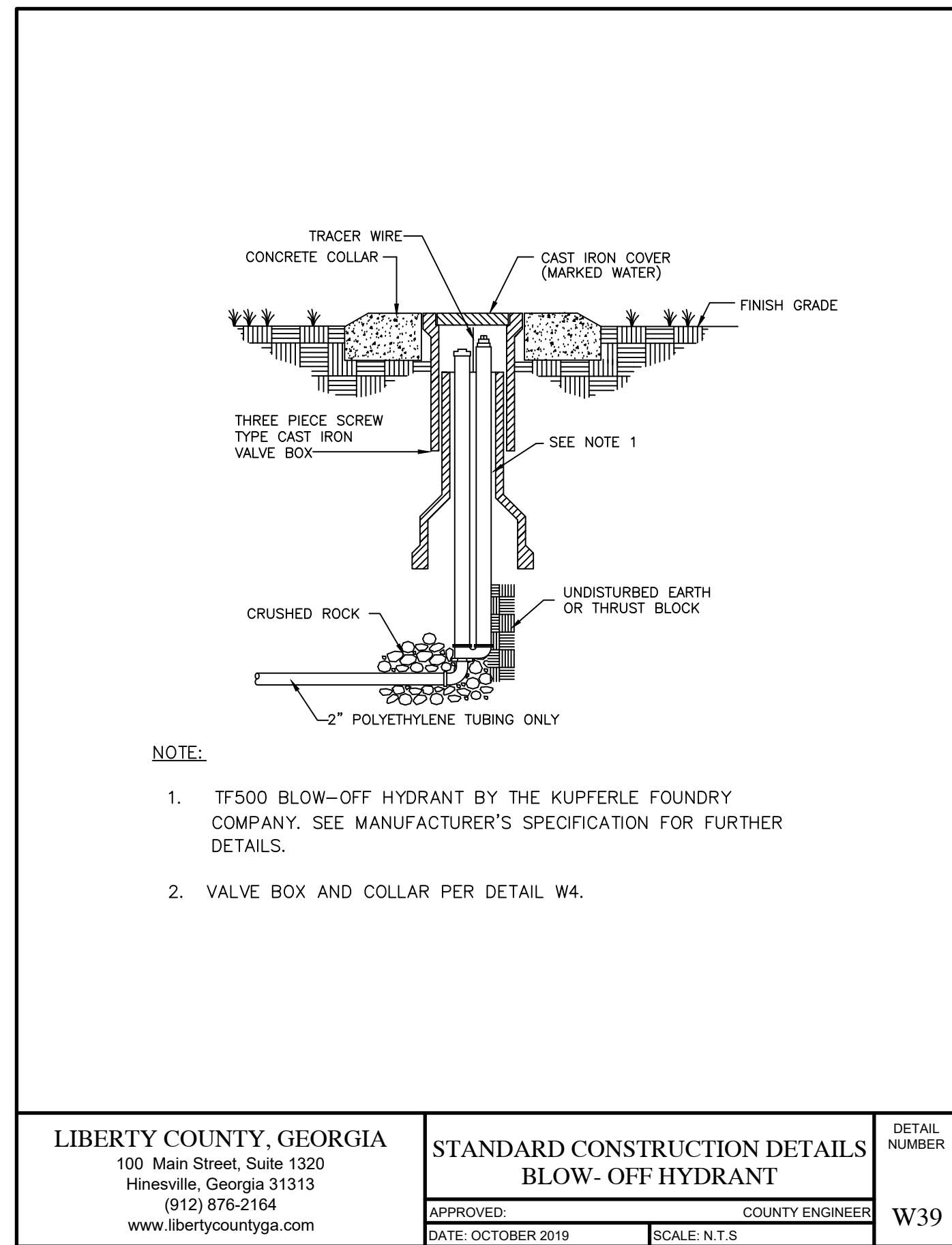
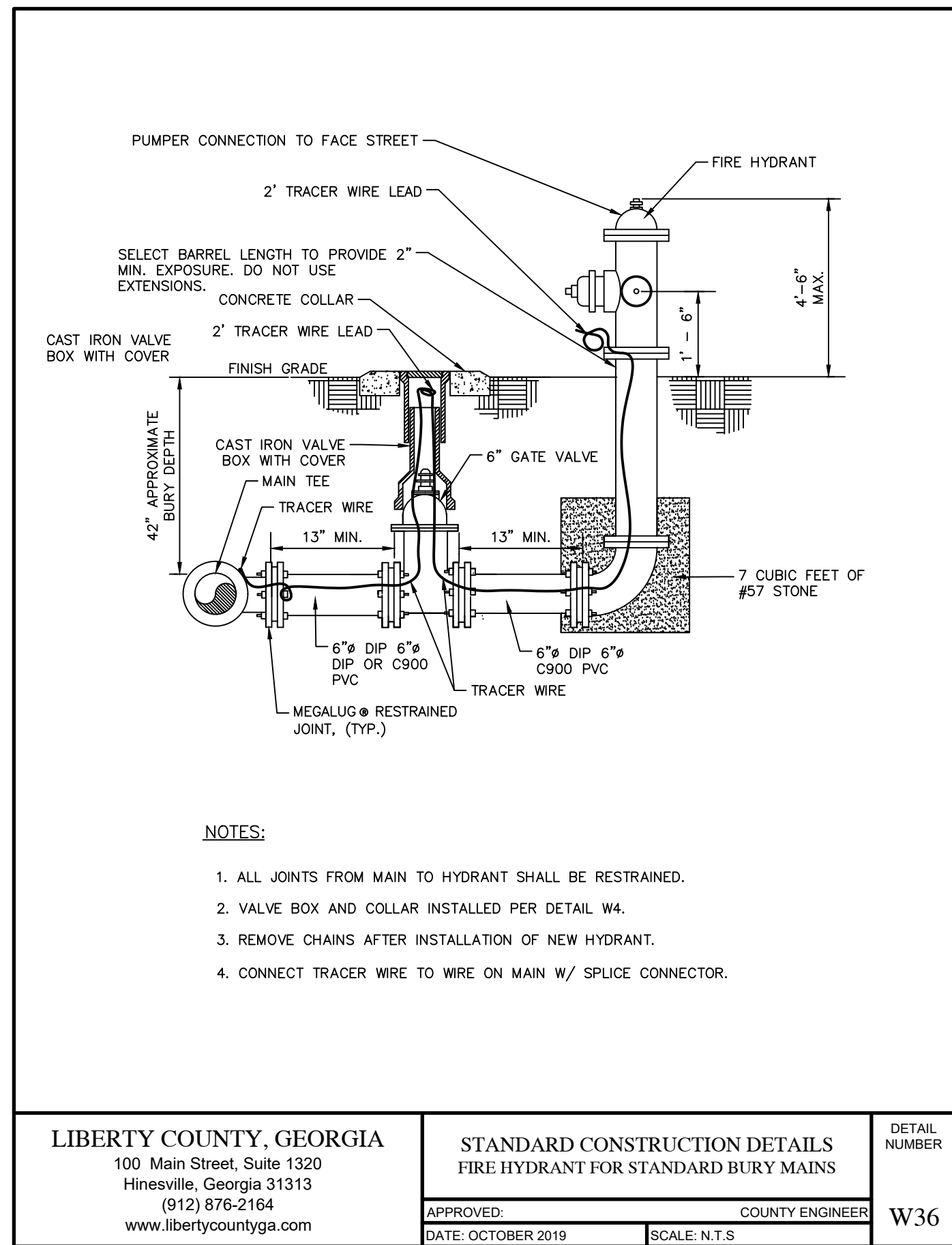
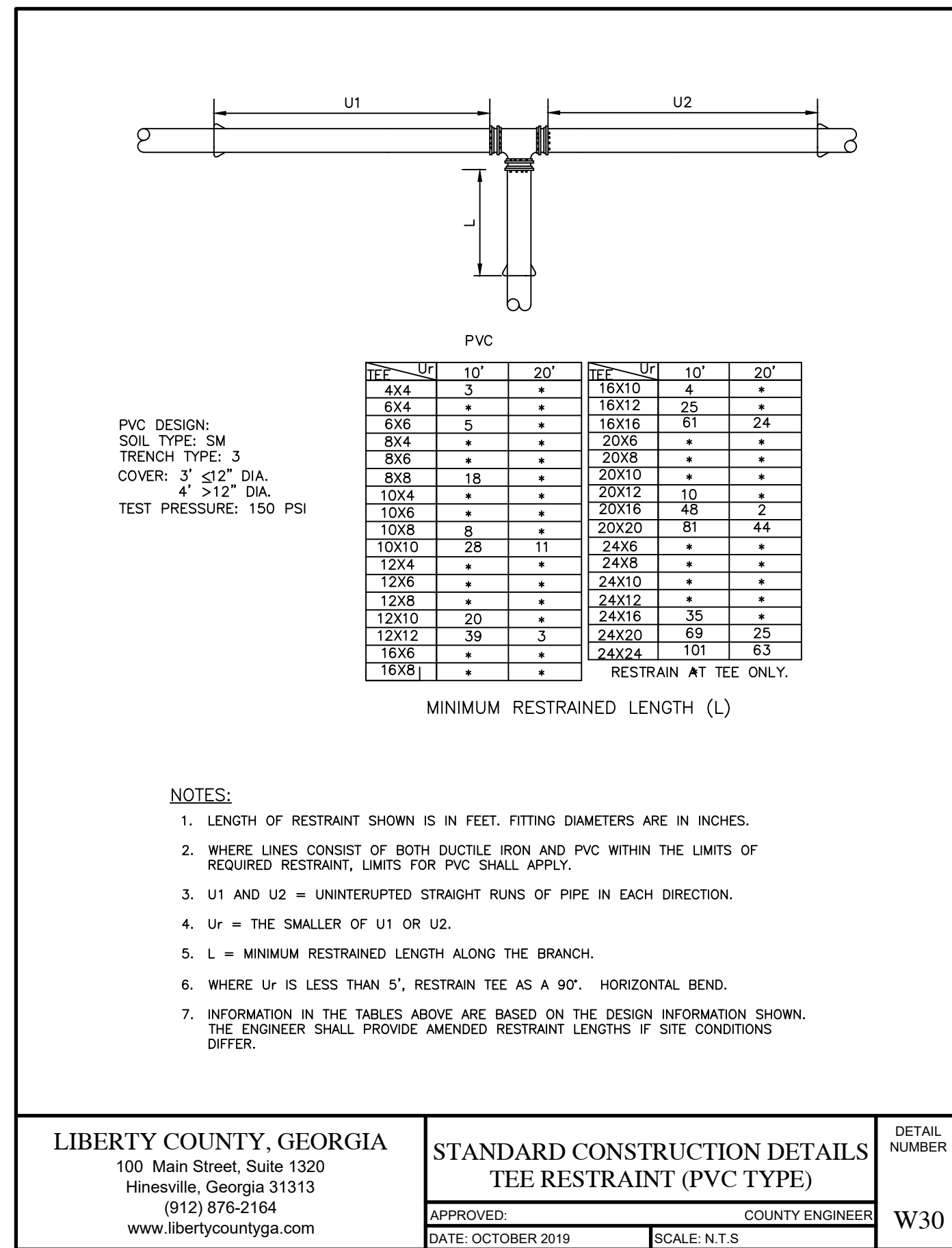
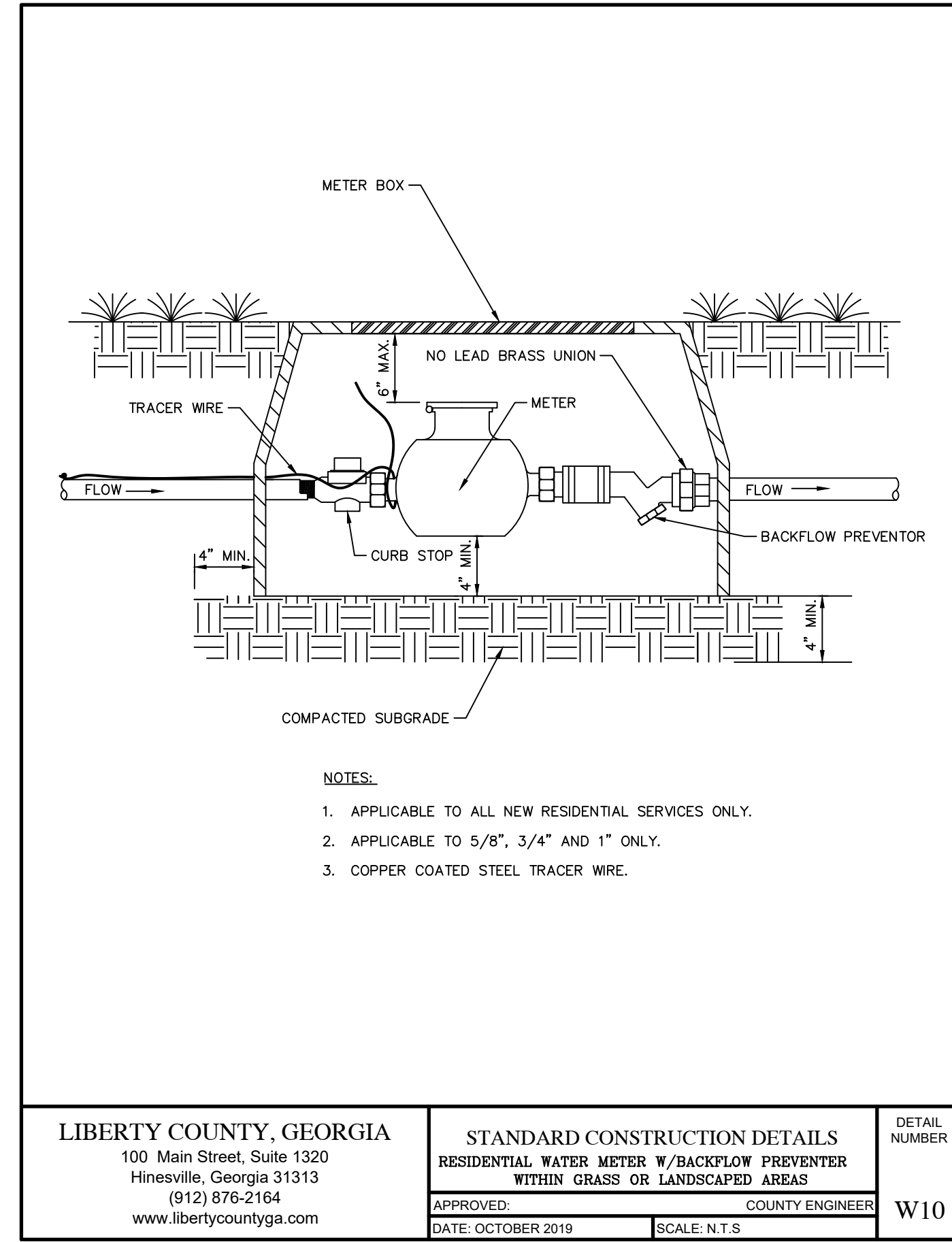
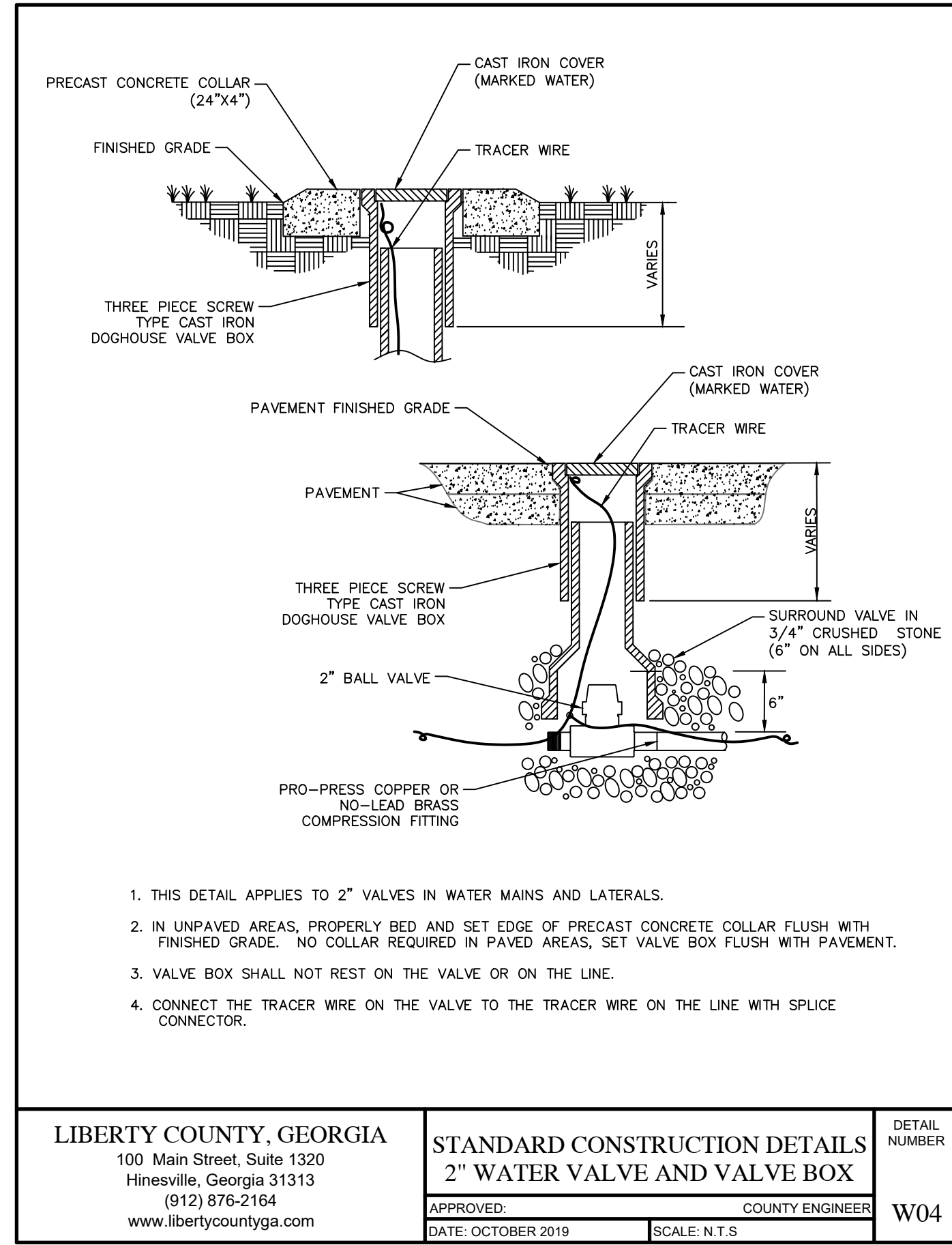
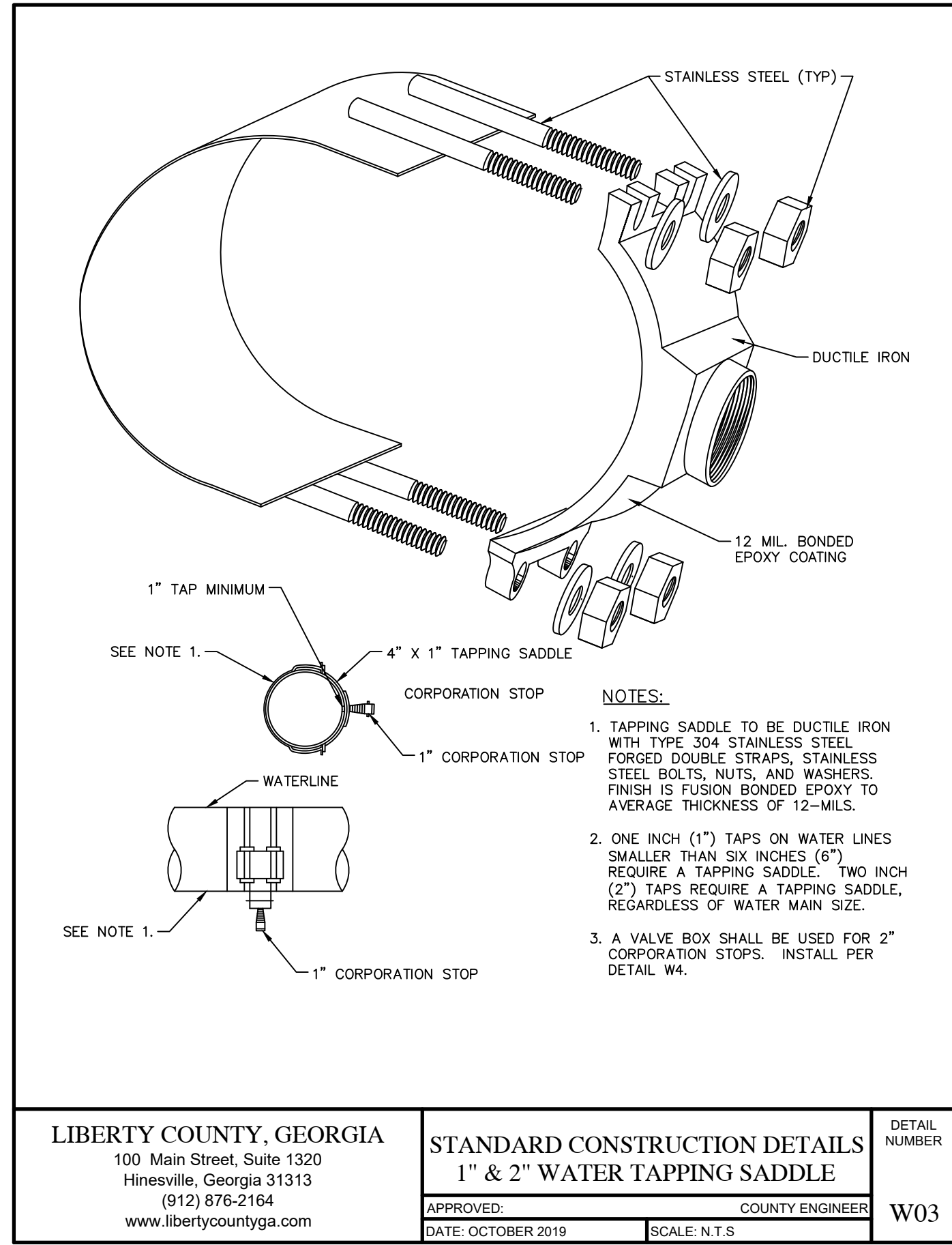
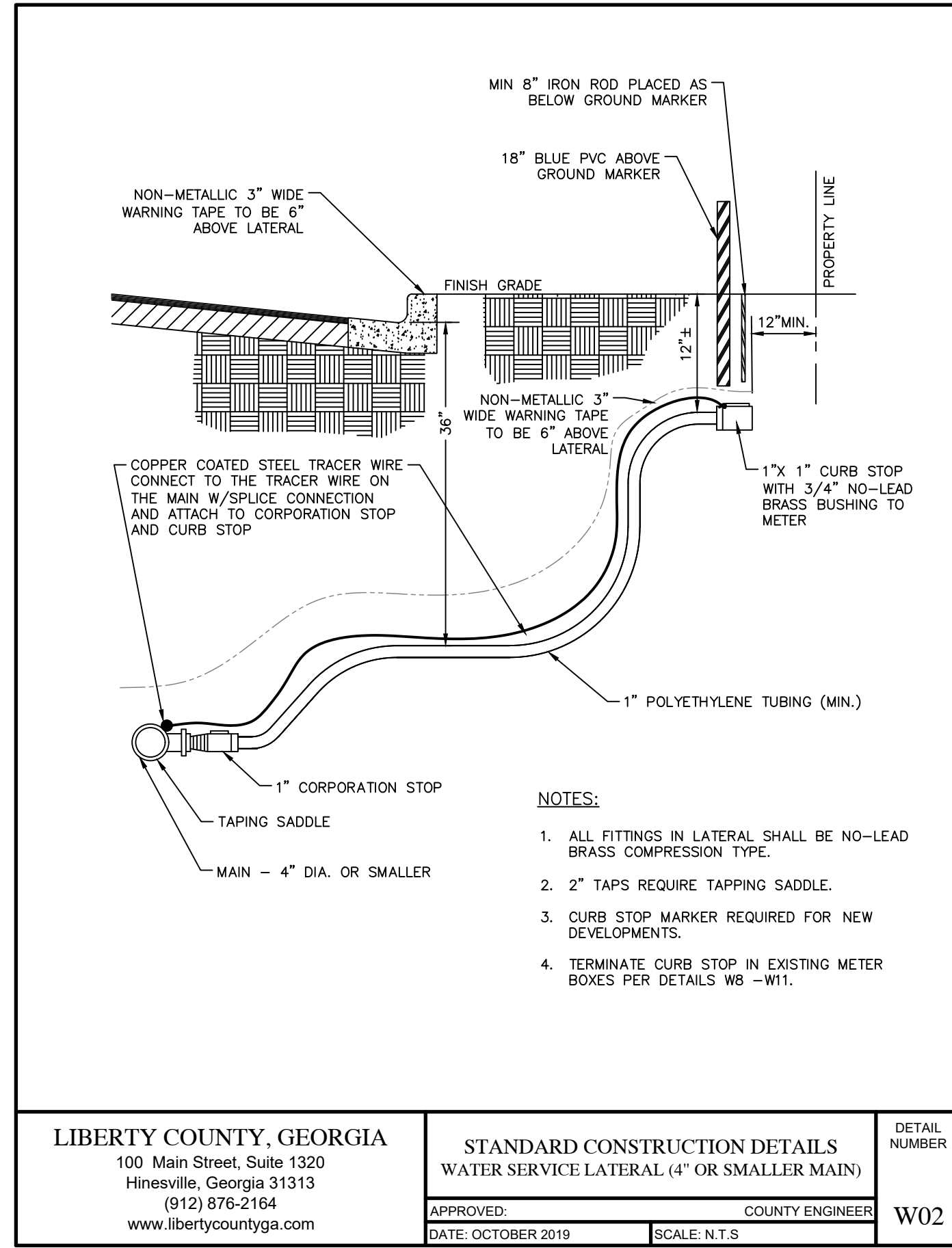
WATER SYSTEM IMPROVEMENT
WEST OF CSX RAILROAD
LIBERTY COUNTY

SHEET NAME:
CSX CROSSING
UTILITY PLAN

REVISIONS:
1. 9/13/2023 TRL
2. 4/01/2024 EPD
3. 7/29/2024
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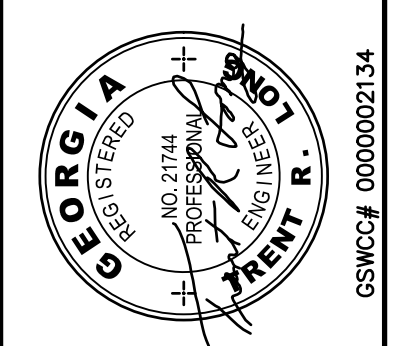
INITIAL DATE: 6/30/2022
DRAWN BY: KC
CHECKED BY: TRL
PROJECT #: 2022-42

SHEET NUMBER:
C2.12



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TR LONG ENGINEERING, P.C.
www.trlongeng.com

WATER SYSTEM IMPROVEMENT
WEST OF CSX RAILROAD
LIBERTY COUNTY

SHEET NAME:
UTILITY DETAILS

REVISIONS:

1.	9/13/2023	TRL
2.	4/01/2024	EPD
3.	7/29/2024	
4.		
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INITIAL DATE: 6/30/2022
DRAWN BY: KC
CHECKED BY: TRL
PROJECT #: 2022-42

SHEET NUMBER:
C2.13

PVC LINE

PIPE DIA.	BEND ANGLE			
	11 1/4"	22"	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

POLYETHYLENE WRAPPED DUCTILE IRON LINE

PIPE DIA.	BEND ANGLE			
	11 1/4"	22"	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

PE WRAPPED DIP: SOIL TYPE: SM TRENCH TYPE: 3 COVER: 3' $\leq 12''$ DIA. 4' >12'' DIA. TEST PRESSURE: 150 PSI

NOTES:

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

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STANDARD CONSTRUCTION DETAILS
HORIZONTAL BEND RESTRAINT

APPROVED: COUNTY ENGINEER
DATE: OCTOBER 2019 SCALE: N.T.S. **W28**

PVC LINE

PIPE DIA.	BEND ANGLE					
	11 1/4"	22 1/2"	45"	90"		
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

POLYETHYLENE WRAPPED DUCTILE IRON LINE

PIPE DIA.	BEND ANGLE					
	11 1/4"	22 1/2"	45"	90"		
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

PE WRAPPED DIP: SOIL TYPE: SM TRENCH TYPE: 3 COVER: 3' $\leq 12''$ DIA. 4' >12'' DIA. TEST PRESSURE: 150 PSI

NOTES:

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

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STANDARD CONSTRUCTION DETAILS
VERTICAL BEND RESTRAINT

APPROVED: COUNTY ENGINEER
DATE: OCTOBER 2019 SCALE: N.T.S. **W29**

PVC

TEE	U1	10'	20'	TEE	U1	10'	20'
4X4	3	*	*	16X10	4	*	*
6X4	*	*	*	16X12	25	*	*
6X6	5	*	*	16X16	61	24	*
8X4	*	*	*	20X6	*	*	*
8X6	*	*	*	20X8	*	*	*
8X8	18	*	*	20X10	*	*	*
10X4	*	*	*	20X12	10	*	*
10X6	*	*	*	20X16	48	2	*
10X8	8	*	*	20X20	81	44	*
10X10	28	11	*	24X6	*	*	*
12X4	*	*	*	24X8	*	*	*
12X6	*	*	*	24X10	*	*	*
12X8	*	*	*	24X12	*	*	*
12X10	20	*	*	24X16	35	*	*
12X12	39	3	*	24X20	69	25	*
16X6	*	*	*	24X24	103	63	*
16X8	*	*	*				
16X10	*	*	*				

PE WRAPPED DIP: SOIL TYPE: SM TRENCH TYPE: 3 COVER: 3' $\leq 12''$ DIA. 4' >12'' DIA. TEST PRESSURE: 150 PSI

NOTES:

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

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STANDARD CONSTRUCTION DETAILS
TEE RESTRAINT (PVC TYPE)

APPROVED: COUNTY ENGINEER
DATE: OCTOBER 2019 SCALE: N.T.S. **W30**

POLYETHYLENE WRAPPED DUCTILE IRON PIPE

TEE	U1	10'	20'	TEE	U1	10'	20'
4X4	4	*	*	16X10	30	*	*
6X4	*	*	*	16X12	68	*	*
6X6	27	*	*	16X16	135	78	*
8X4	*	*	*	20X6	*	*	*
8X6	9	*	*	20X8	*	*	*
8X8	52	*	*	20X10	5	*	*
10X4	*	*	*	20X12	42	*	*
10X6	*	*	*	20X16	111	40	*
10X8	35	*	*	20X20	175	116	*
10X10	72	16	*	24X6	*	*	*
12X4	*	*	*	24X8	*	*	*
12X6	*	*	*	24X10	*	*	*
12X8	20	*	*	24X12	19	*	*
12X10	58	*	*	24X16	87	5	*
12X12	94	38	*	24X20	151	82	*
16X6	*	*	*	24X24	212	159	*
16X8	*	*	*				

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

NOTES:

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

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STANDARD CONSTRUCTION DETAILS
TEE RESTRAINT DUCTILE IRON PIPE

APPROVED: COUNTY ENGINEER
DATE: OCTOBER 2019 SCALE: N.T.S. **W31**

POLYETHYLENE WRAPPED DUCTILE IRON LINE

PIPE DIA.	L
4	58
6	82
8	107
10	128
12	151
16	193
20	234
24	273

PVC LINE

PIPE DIA.	L
4	39
6	55
8	72
10	87
12	102
16	131
20	159
24	185

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

NOTES:

- LENGTH OF RESTRAINT SHOWN IS IN FEET. FITTING DIAMETERS ARE IN INCHES.
- WHERE LINES CONSIST OF BOTH DUCTILE IRON AND PVC WITHIN THE LIMITS OF REQUIRED RESTRAINT, LIMITS FOR PVC SHALL APPLY.
- FOR LINE STUBS (SEE DETAIL W34), THE LENGTH OF RESTRAINT (L) SHALL BE FROM THE VALVE AND NOT THE CAP.
- INFORMATION IN THE TABLES ABOVE ARE BASED ON THE DESIGN INFORMATION SHOWN. THE ENGINEER SHALL PROVIDE AMENDED RESTRAINT LENGTHS IF SITE CONDITIONS DIFFER.

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STANDARD CONSTRUCTION DETAILS
DEAD END RESTRAINT

APPROVED: COUNTY ENGINEER
DATE: OCTOBER 2019 SCALE: N.T.S. **W32**

PVC LINE

REDUCER	L
6X4	29
8X4	52
8X6	31
10X4	71
10X6	53
10X8	29
12X4	89
12X6	74
12X8	54
12X10	30
16X6	111
16X8	96
16X10	78
16X12	56
20X10	117
20X12	100
20X16	56
24X12	137
24X16	101
24X20	56

POLYETHYLENE WRAPPED DUCTILE IRON LINE

REDUCER	L
6X4	43
8X4	77
8X6	45
10X4	104
10X6	79
10X8	43
12X4	131
12X6	110
12X8	80
12X10	45
16X6	153
16X8	141
16X10	115
16X12	82
20X10	172
20X12	147
20X16	82
24X12	201
24X16	149
24X20	82

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

NOTES:

- LENGTH OF RESTRAINT SHOWN IS IN FEET. FITTING DIAMETERS ARE IN INCHES.
- WHERE LINES CONSIST OF BOTH DUCTILE IRON AND PVC WITHIN THE LIMITS OF REQUIRED RESTRAINT, LIMITS FOR PVC SHALL APPLY.
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STANDARD CONSTRUCTION DETAILS
REDUCER RESTRAINT

APPROVED: COUNTY ENGINEER
DATE: OCTOBER 2019 SCALE: N.T.S. **W33**

NOTES:

- VALVES 4" AND LARGER SHALL BE INSTALLED IN A MANHOLE.
- VALVES SMALLER THAN 4" SHALL BE INSTALLED IN A VALVE BOX. SEE DETAIL W4.
- ALL JOINTS SHALL BE RESTRAINED (MEGALUG OR EQUIVALENT).
- SEE DETAIL W32 FOR RESTRAINT REQUIREMENTS UPSTREAM OF THE VALVE.

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STANDARD CONSTRUCTION DETAILS
TYPICAL LINE STUB

APPROVED: COUNTY ENGINEER
DATE: OCTOBER 2019 SCALE: N.T.S. **W34**

NOTES:

- ALL JOINTS FROM MAIN TO HYDRANT SHALL BE RESTRAINED.
- VALVE BOX AND COLLAR INSTALLED PER DETAIL W4.
- REMOVE CHAINS AFTER INSTALLATION OF NEW HYDRANT.
- CONNECT TRACER WIRE TO WIRE ON MAIN W/ SPLICE CONNECTOR.

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STANDARD CONSTRUCTION DETAILS
FIRE HYDRANT FOR STANDARD BURY MAINS

APPROVED: COUNTY ENGINEER
DATE: OCTOBER 2019 SCALE: N.T.S. **W36**

PROTECTION SYSTEMS
STATE OF GEORGIA
REGISTERED PROFESSIONAL ENGINEER
NO. 27144
TRENCH

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CSWCC# 000002314

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114 North Commerce Street
Hinesville, Georgia 31313
(912) 868-5664

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Pooler, Georgia 31322
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TR LONG ENGINEERING, P.C.
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WATER SYSTEM IMPROVEMENT
WEST OF CSX RAILROAD
LIBERTY COUNTY, GEORGIA

SHEET NAME:
UTILITY DETAILS

REVISIONS:
1. 9/13/2023 TRL
2. 4/01/2024 EPD
3. 7/29/2024
4.
5.
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INITIAL DATE: 6/30/2022
DRAWN BY: KC
CHECKED BY: TRL
PROJECT #: 2022-42

SHEET NUMBER:
C2.4

NOTE:

- TF500 BLOW-OFF HYDRANT BY THE KUPFERLE FOUNDRY COMPANY. SEE MANUFACTURER'S SPECIFICATION FOR FURTHER DETAILS.
- VALVE BOX AND COLLAR PER DETAIL W4.

LIBERTY COUNTY, GEORGIA 100 Main Street, Suite 1320 Hinesville, Georgia 31313 (912) 876-2164 www.libertycountyga.com	STANDARD CONSTRUCTION DETAILS BLOW-OFF HYDRANT	DETAIL NUMBER W39
APPROVED: COUNTY ENGINEER	DATE: OCTOBER 2019	SCALE: N.T.S.

NOTES:

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

LIBERTY COUNTY, GEORGIA 100 Main Street, Suite 1320 Hinesville, Georgia 31313 (912) 876-2164 www.libertycountyga.com	STANDARD CONSTRUCTION DETAILS STEEL CASING INSTALLATION	DETAIL NUMBER W43A
APPROVED: COUNTY ENGINEER	DATE: OCTOBER 2019	SCALE: N.T.S.

NOTES:

- SEE MANUFACTURER'S DESIGN DATA FOR SPACING AND MAX LOAD PER SPACER.
- ALL HIGHWAY CROSSINGS SHALL BE INSTALLED IN ACCORDANCE WITH GA. D.O.T. REGULATIONS & PERMIT REQUIREMENTS.
- COPPER COATED STEEL TRACER WIRE MUST BE INSTALLED ON PIPE.
- SEAL BOTH ENDS OF CASING PER SPEC.

LIBERTY COUNTY, GEORGIA 100 Main Street, Suite 1320 Hinesville, Georgia 31313 (912) 876-2164 www.libertycountyga.com	STANDARD CONSTRUCTION DETAILS FUSIBLE PVC CASING INSTALLATION	DETAIL NUMBER W43B
APPROVED: COUNTY ENGINEER	DATE: OCTOBER 2019	SCALE: N.T.S.

NOTES:

- ALL CONSTRUCTION MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE LIBERTY COUNTY'S LATEST CONSTRUCTION SPECIFICATIONS AND DETAILS. THE SYSTEM SHALL BE DESIGNED AND TESTED PER THE SPECIFICATIONS AND REQUIREMENTS MAINTAINED BY THE COUNTY ENGINEER.
- THE WATER SERVICE LATERAL SERVING THE FACILITY SHALL BE INSTALLED BY THE DEVELOPER/CONTRACTOR FROM THE WATER MAIN TO THE METERS. LIBERTY COUNTY WILL ONLY MAKE THE WET TAP. THE COUNTY WILL NOT INSTALL THE WATER SERVICE LATERAL.
- ALL MATERIALS USED AND COMING INTO CONTACT WITH DRINKING WATER DURING ITS DISTRIBUTION SHALL NOT ADVERSELY AFFECT DRINKING WATER QUALITY AND PUBLIC HEALTH AND MUST BE CERTIFIED FOR CONFORMANCE WITH AMERICAN NATIONAL STANDARDS INSTITUTE/NATIONAL SANITATION FOUNDATION STANDARD 61 (ANSI/NSF STANDARD 61).
- IN ALL WATER LINE PROJECTS, CARE WILL BE TAKEN TO KEEP THE INTERIOR OF THE WATER PIPE CLEAN PRIOR TO CONNECTION TO THE CITY SYSTEM.
 - PIPE, FITTINGS, VALVES AND OTHER ACCESSORIES SHALL, UNLESS OTHERWISE DIRECTED, BE UNLOADED AT THE POINT OF DELIVERY, AND STORED WHERE THEY WILL BE PROTECTED AND WILL NOT BE A HAZARD TO TRAFFIC. THEY SHALL AT ALL TIMES BE HANDLED WITH CARE TO AVOID DAMAGE. THE INTERIOR OF ALL PIPES, FITTINGS AND OTHER ACCESSORIES SHALL BE KEPT FREE FROM DIRT AND FOREIGN MATTER AT ALL TIMES.
 - ANY DEFECTIVE, DAMAGED, OR UNSOUND PIPE SHALL BE REJECTED. ALL FOREIGN MATTER OR DIRT SHALL BE REMOVED FROM THE INSIDE OF THE PIPE BEFORE IT IS LOWERED INTO ITS POSITION IN THE TRENCH AND SHALL BE KEPT CLEAN BY APPROVED MEANS DURING AND AFTER LAYING. CARE SHALL BE TAKEN TO PREVENT DIRT FROM ENTERING THE JOINT SPACE. DURING INSTALLATION, WHEN PIPE LAYING IS NOT IN PROGRESS, A MECHANICAL JOINT PLUG OR CAP, OR APPROVED EQUIV., WILL BE USED TO FORM A WATER TIGHT SEAL AT BOTH ENDS OF THE LINE BEING LAID. NO TRENCH WATER SHALL BE PERMITTED TO ENTER THE PIPE.
 - CLEAN THE INTERIORS OF ALL PIPES BY BRUSHING, SWABBING OR WASHING OUT OF ALL DIRT BEFORE LAYING.
 - FLUSH THE NEW PIPE LINES UNTIL THE WATER RUNS CLEAR AT THE END OF ALL MAINS AND LATERALS. THIS SHOULD BE DONE AFTER THE PRESSURE TEST AND BEFORE DISINFECTION. FLUSH NEW LINES WITH SUFFICIENT FLOW TO OBTAIN A FLUSHING VELOCITY OF 2.5 FT/SEC. FLUSH LINES UNTIL WATER RUNS FREE OF DEBRIS. COORDINATE FLUSHING ACTIVITIES WITH CITY PERSONNEL.
- ANY METER OR HYDRANT REMOVED FROM THE SITE SHALL BE RETURNED TO THE CONVEYANCE AND DISTRIBUTION DEPARTMENT.
- AN APPROVED WATER SUPPLY FOR FIRE PROTECTION, EITHER TEMPORARY OR PERMANENT, SHALL BE MADE AVAILABLE AS SOON AS COMBUSTIBLE MATERIAL ARRIVES ON THE SITE.
- 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.
- ALL ABANDONED WATER LINES SHALL BE CAPPED AT THE MAIN AND THE PIPES PLUGGED.
- IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE WATER LINES ARE PLACED WITHIN THE EASEMENTS WITH A MINIMUM 7'-6" AVAILABLE FROM PIPE CENTERLINE TO EASEMENT LINE.
- CONTACT THE UTILITIES PROTECTION CENTER (811 IN GEORGIA OR 1-800-282-7411) FOR LOCATION OF CITY WATER LINES A MINIMUM OF SEVENTY-TWO (72) HOURS PRIOR TO DIGGING.
- 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, LOSS OF SERVICE, DRIVEWAY CUTS, REMOVAL/RELOCATION OF FENCES AND MAIL BOXES, SIDEWALK IMPACTS, ETC.

LIBERTY COUNTY, GEORGIA 100 Main Street, Suite 1320 Hinesville, Georgia 31313 (912) 876-2164 www.libertycountyga.com	STANDARD CONSTRUCTION DETAILS WATER GENERAL NOTES	DETAIL NUMBER W44
APPROVED: COUNTY ENGINEER	DATE: OCTOBER 2019	SCALE: N.T.S.

NOTES:

THE SEPARATION OF WATER MAINS AND SEWERS SHALL COMPLY WITH THE GEORGIA ENVIRONMENTAL PROTECTION DIVISION MINIMUM STANDARDS FOR PUBLIC WATER SYSTEMS, WHICH ARE GENERALLY AS FOLLOWS:

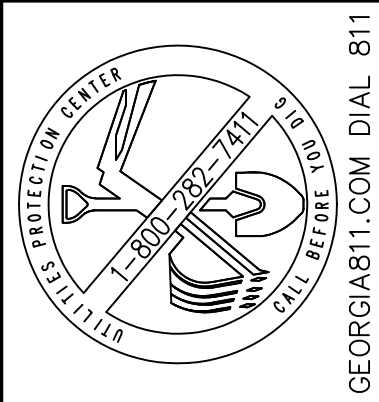
A. PARALLEL INSTALLATION:

- NORMAL CONDITIONS:** THE INSIDE EDGE OF A WATER LINE SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM THE INSIDE EDGE OF ANY SANITARY SEWER, STORM SEWER OR SEWER MANHOLE.
- UNUSUAL CONDITIONS:** WHEN LOCAL CONDITIONS PREVENT A HORIZONTAL SEPARATION OF 10 FEET, AND WHEN APPROVED BY THE ENGINEER, THE INSIDE EDGE OF A WATER MAIN MAY BE LAID A MINIMUM OF 5 FEET FROM THE INSIDE EDGE OF A SEWER PROVIDED THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES HIGHER THAN THE TOP OF THE SEWER (SEE DETAIL), AND THE WATER MAIN IS LAID IN A SEPARATE TRENCH OR ON AN UNDISTURBED EARTH SHELF.

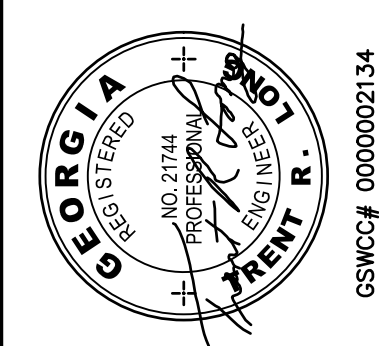
B. CROSSINGS:

- NORMAL CONDITIONS:** WHENEVER POSSIBLE, THE BOTTOM OF THE WATER MAIN SHALL BE AT LEAST 18 INCHES HIGHER THAN THE TOP OF THE SEWER.
- UNUSUAL CONDITIONS:** IF A WATER MAIN MUST CROSS UNDER A SEWER, THE TOP OF THE WATER MAIN SHALL BE AT LEAST 18 INCHES LOWER THAN THE BOTTOM OF THE SEWER. THE WATER MAIN PIPE SHALL BE DUCTILE IRON PIPE CENTERED AT THE CROSSING SO THAT THE JOINTS ARE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE SEWER, AND ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER TO PREVENT EXCESSIVE DEFLECTION OF THE SEWER AT THE CROSSING. ADEQUATE STRUCTURAL SUPPORT SHALL INCLUDE BACKFILLING THE ENTIRE UTILITY CROSSING AREA WITH 3/4" CRUSHED STONE AS SHOWN IN THE DETAIL.

LIBERTY COUNTY, GEORGIA 100 Main Street, Suite 1320 Hinesville, Georgia 31313 (912) 876-2164 www.libertycountyga.com	STANDARD CONSTRUCTION DETAILS MINIMUM WATER AND SEWER SEPARATION REQUIREMENTS	DETAIL NUMBER WS01
APPROVED: COUNTY ENGINEER	DATE: OCTOBER 2019	SCALE: N.T.S.



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(912) 868-5664

POOLER: 1000 Towne Center Blvd
Suite 304
Pooler, Georgia 31322
(912) 335-1046

TRLONG ENGINEERING, P.C.

WATER SYSTEM IMPROVEMENT
WEST OF CSX RAILROAD
LIBERTY COUNTY, GEORGIA

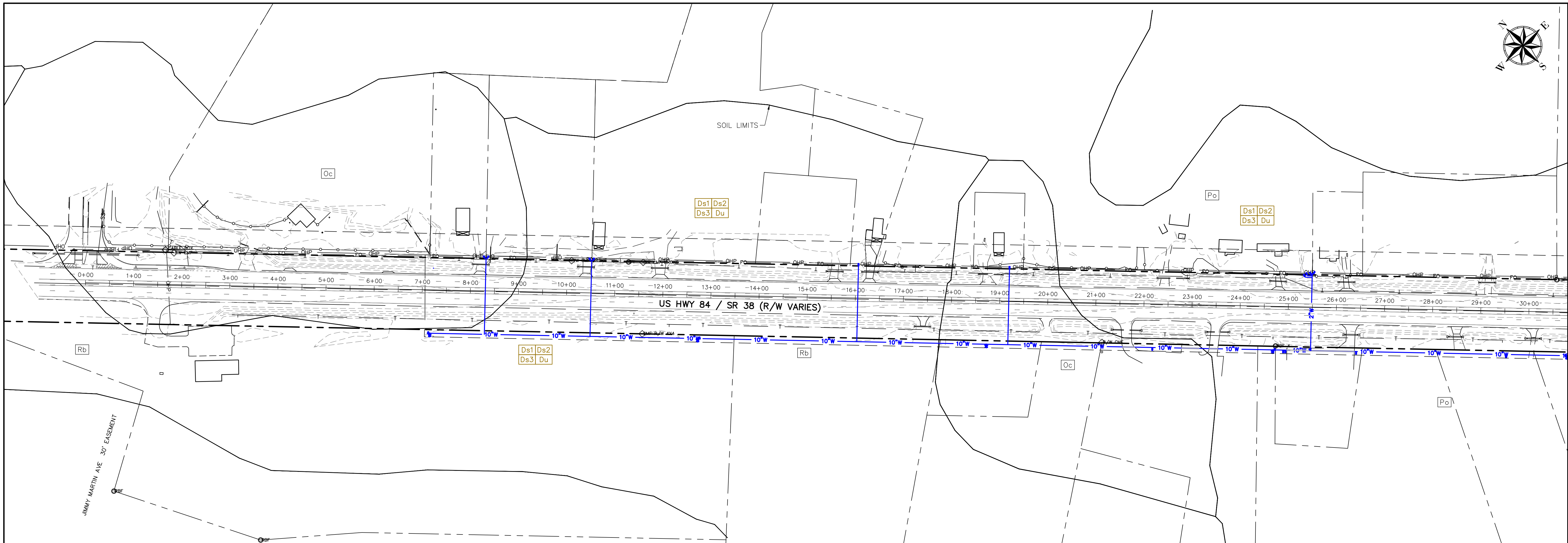
SHEET NAME:
UTILITY DETAILS

REVISIONS:

1.	9/13/2023	TRL
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INITIAL DATE: 6/30/2022
DRAWN BY: KC
CHECKED BY: TRL
PROJECT #: 2022-42

SHEET NUMBER:
C2.15



"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"

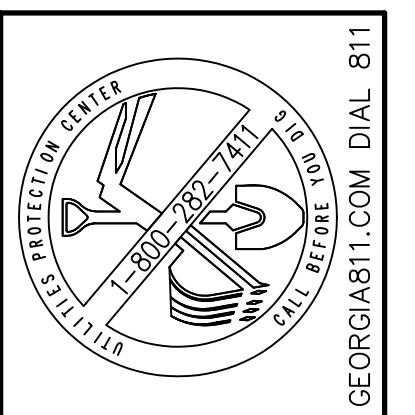
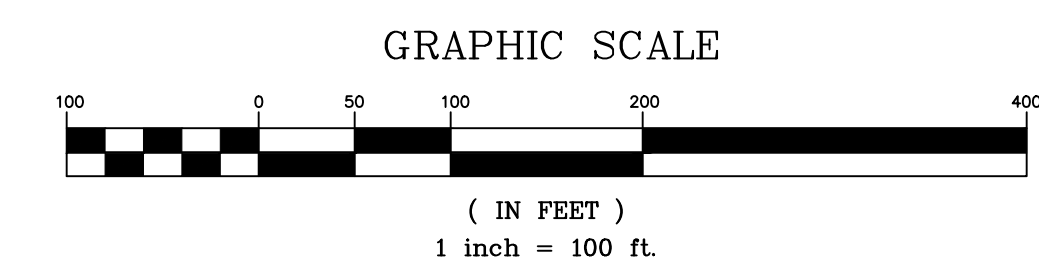
ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 CALENDAR DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.

MAINTENANCE: EROSION CONTROL MEASURES SHALL BE MAINTAINED AT ALL TIES. 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.

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.

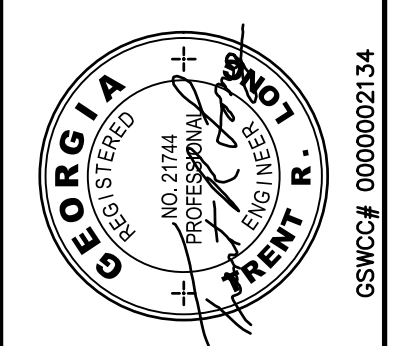
AMENDMENTS/REVISIONS TO THE ES&PC PLAN WHICH HAVE A SIGNIFICANT EFFECT ON BMPs WITH A HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL AND SUBMITTED TO THE LOCAL ISSUING AUTHORITY FOR REVIEW.

- SOIL SERIES**
- Rb - Riceboro loamy fine sand
 - Oc - Ocella loamy fine sand
 - Ba - Bayboro loam
 - Bd - Bladen fine sandy loam
 - Me - Mascotte fine sand
 - Ca - Cape Fear fine sandy loam
 - Po - Pooler fine sandy loam
 - As - Albany loamy fine sand
 - Wa - Wahee sandy loam



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WATER SYSTEM IMPROVEMENT
WEST OF CSX RAILROAD
LIBERTY COUNTY, GEORGIA

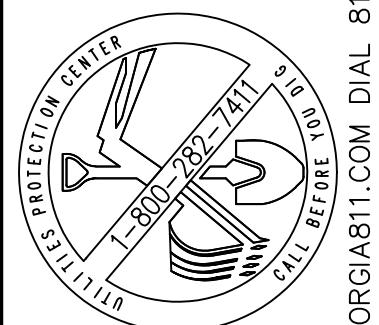
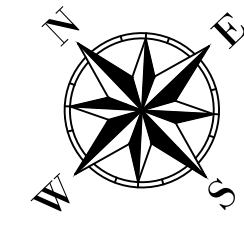
SHEET NAME:
EROSION CONTROL
PLANS

REVISIONS:

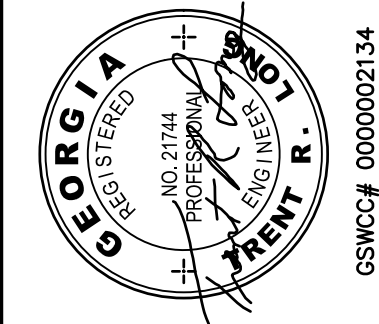
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INITIAL DATE: 6/30/2022
DRAWN BY: RC
CHECKED BY: TRL
PROJECT #: 2022-42

SHEET NUMBER:
C3.I



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**WATER SYSTEM IMPROVEMENT
WEST OF CSX RAILROAD
LIBERTY COUNTY, GEORGIA**

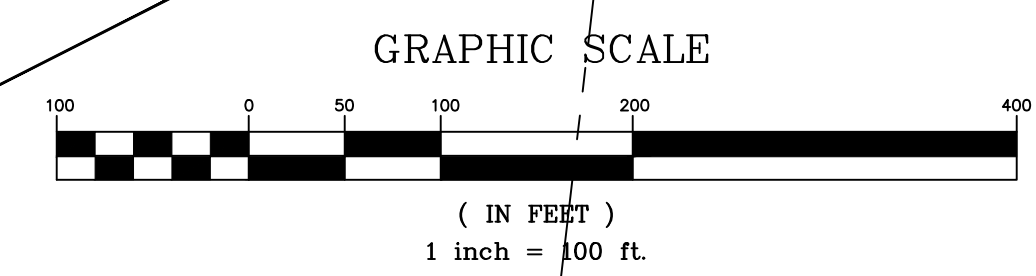
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EROSION CONTROL
PLANS

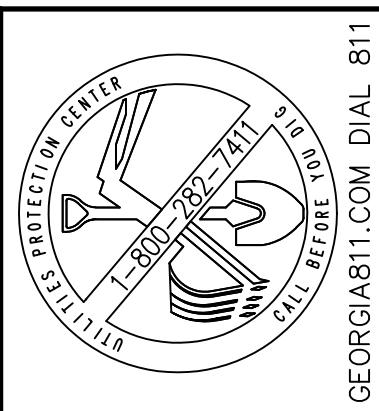
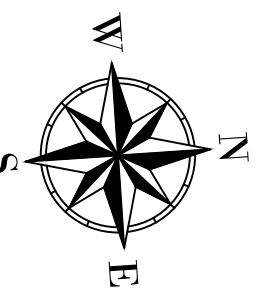
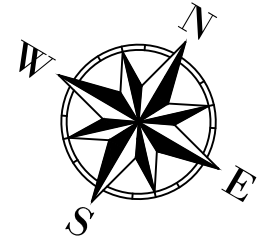
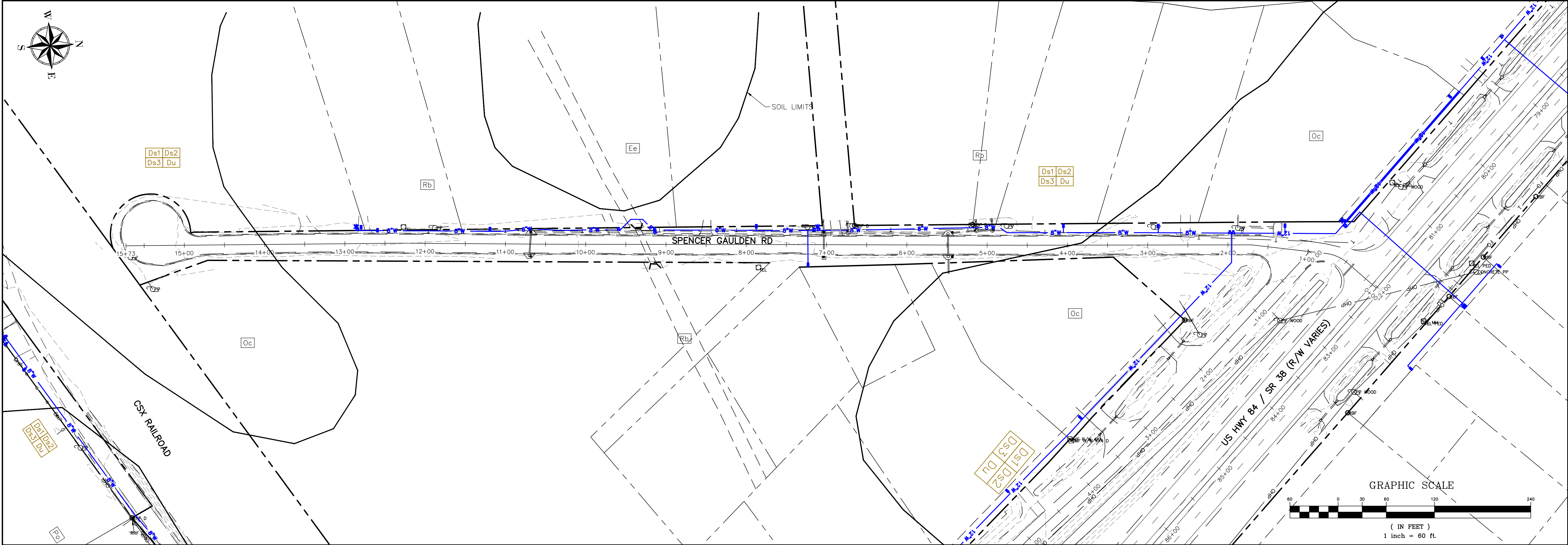
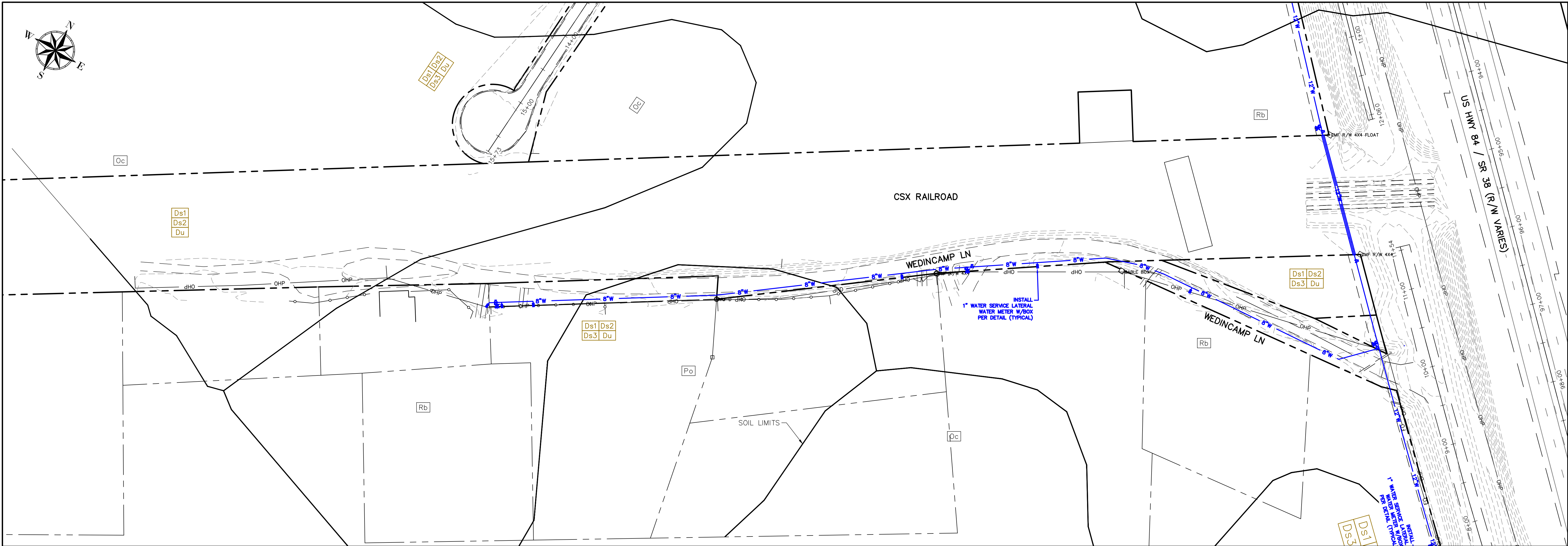
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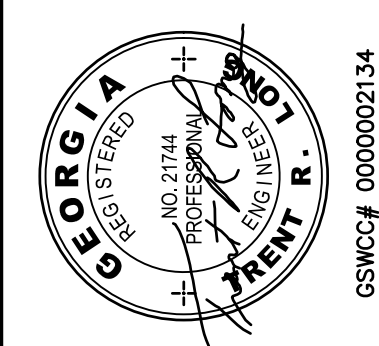
INITIAL DATE: 6/30/2022
DRAWN BY: KC
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PROJECT #: 2022-42

SHEET NUMBER:
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**WATER SYSTEM IMPROVEMENT
WEST OF CSX RAILROAD
LIBERTY COUNTY, GEORGIA**

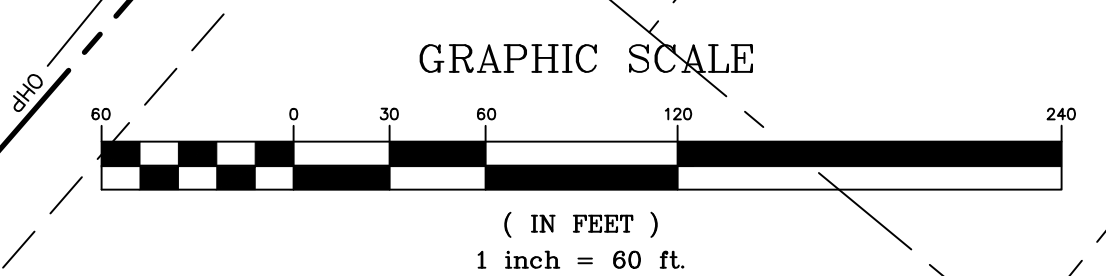
SHEET NAME:
EROSION CONTROL
PLANS

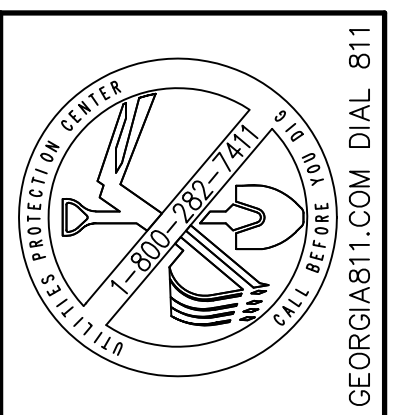
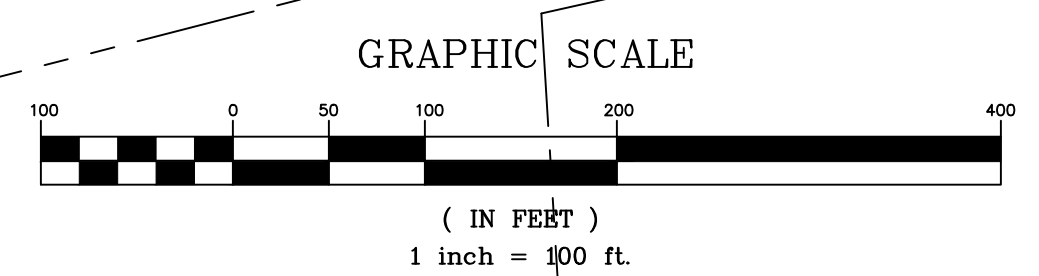
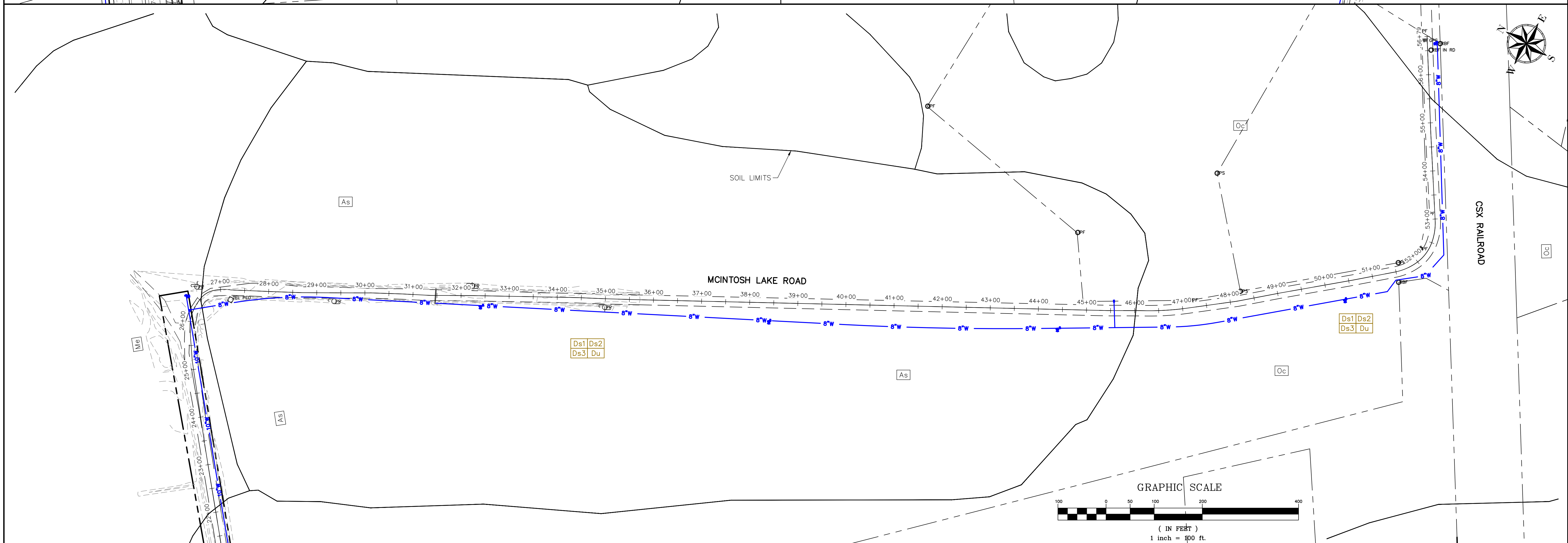
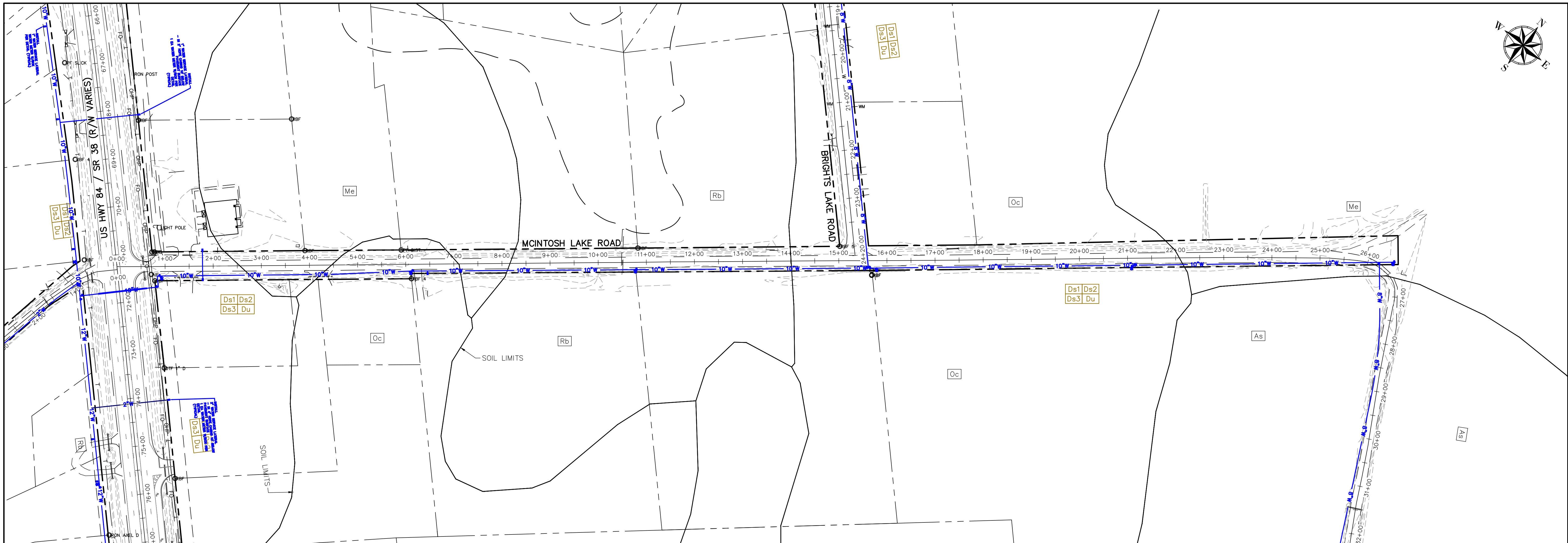
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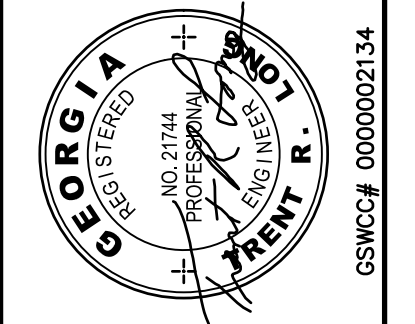
INITIAL DATE: 6/30/2022
DRAWN BY: KC
CHECKED BY: TRL
PROJECT #: 2022-42

SHEET NUMBER:
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GSWCC# 000002134

WATER SYSTEM IMPROVEMENT
WEST OF CSX RAILROAD
LIBERTY COUNTY, GEORGIA

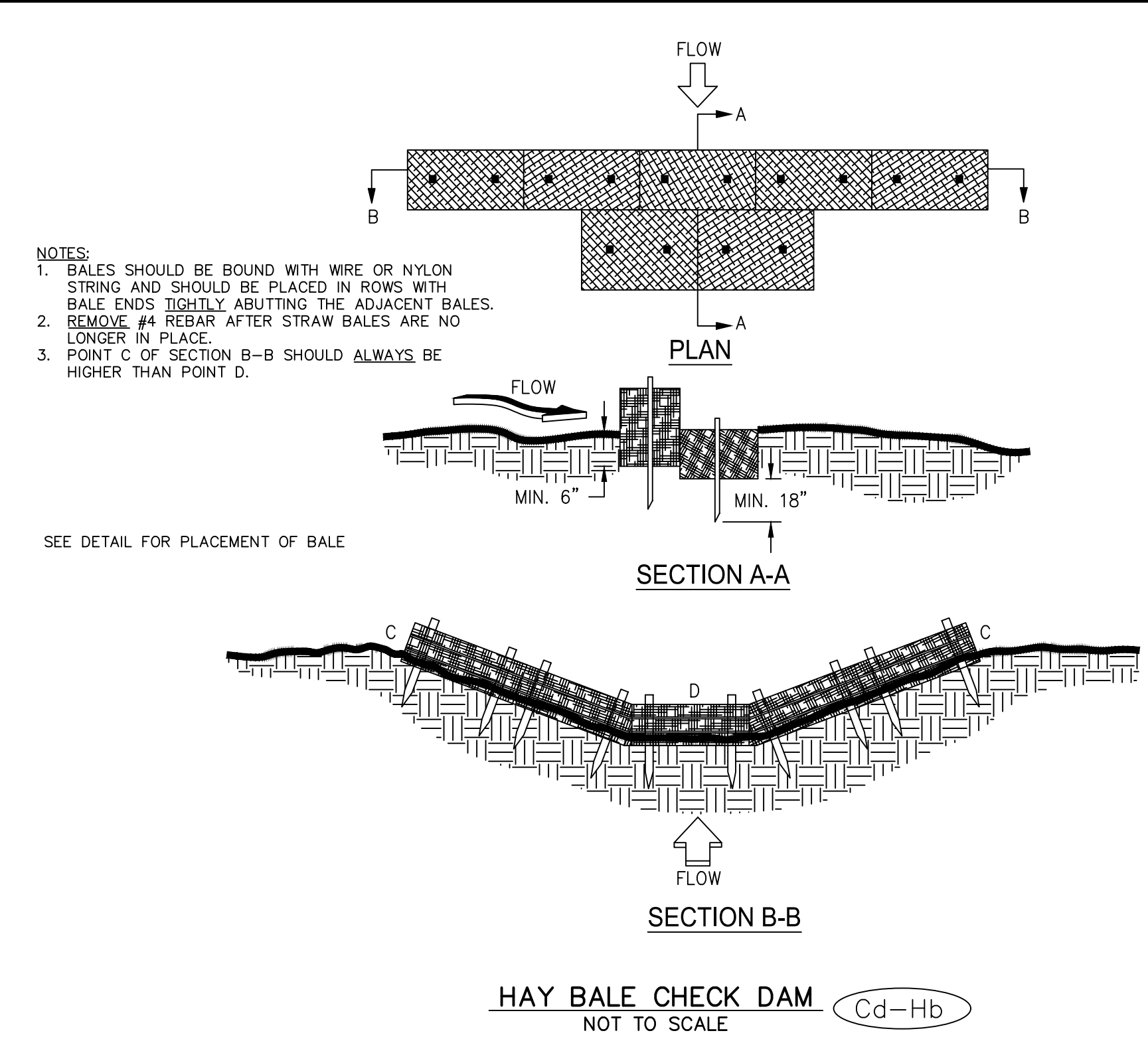
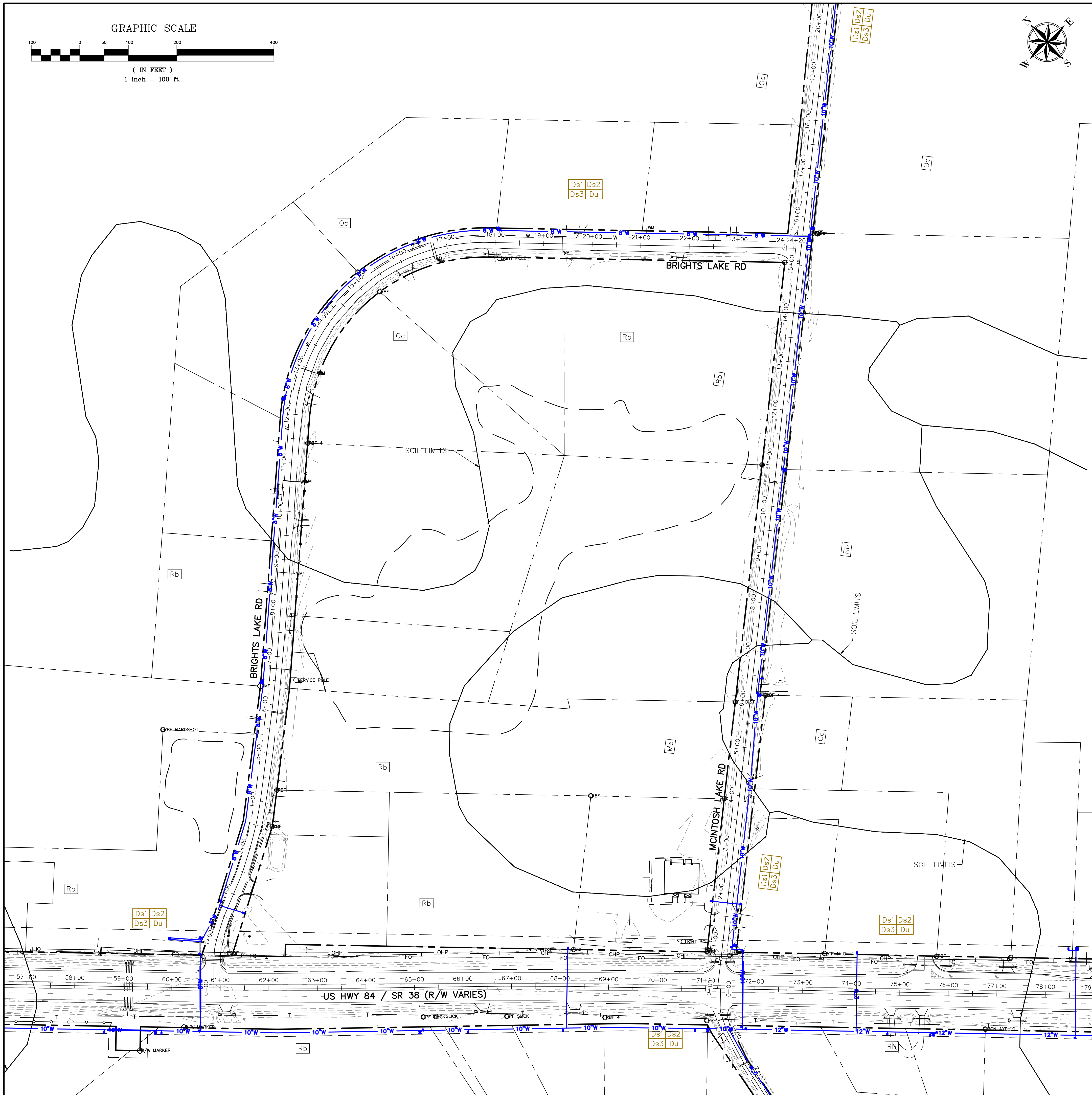
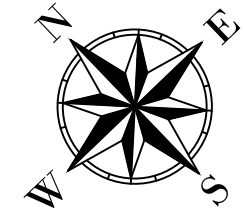
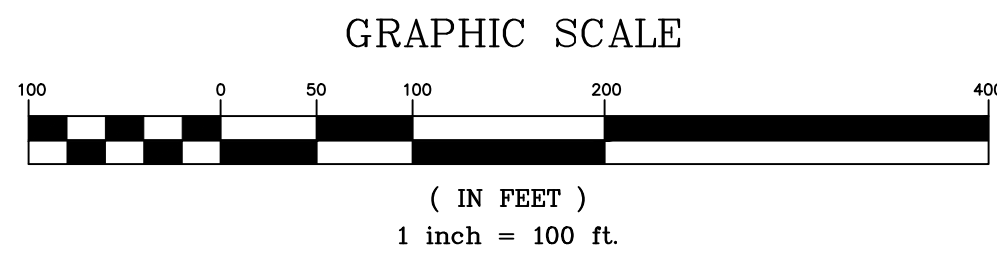
SHEET NAME:
EROSION CONTROL PLANS

REVISIONS:

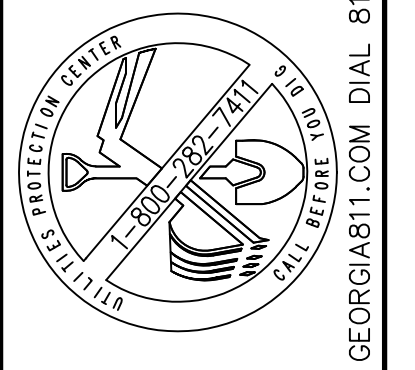
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INITIAL DATE: 6/30/2022
DRAWN BY: RC
CHECKED BY: TRL
PROJECT #: 2022-42

SHEET NUMBER:
C3.4

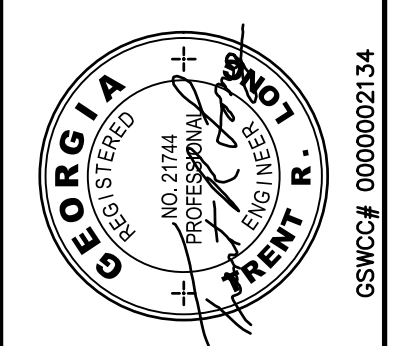


- NOTES:
1. BALES SHOULD BE BOUND WITH WIRE OR NYLON STRING AND SHOULD BE PLACED IN ROWS WITH BALE ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
 2. REMOVE #4 REBAR AFTER STRAW BALES ARE NO LONGER IN PLACE.
 3. POINT C OF SECTION B-B SHOULD ALWAYS BE HIGHER THAN POINT D.



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WATER SYSTEM IMPROVEMENT
WEST OF CSX RAILROAD
LIBERTY COUNTY, GEORGIA

SHEET NAME:
EROSION CONTROL
PLANS

REVISIONS:	
1.	9/13/2023 TRL
2.	4/01/2024 EPD
3.	7/29/2024
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INITIAL DATE: 6/30/2022
DRAWN BY: KC
CHECKED BY: TRL
PROJECT #: 2022-42

SHEET NUMBER:
C3.5

EROSION, SEDIMENTATION & POLLUTION CONTROL PLAN CHECKLIST
INFRASTRUCTURE CONSTRUCTION PROJECTS

SWCD: COASTAL GEORGIA
PROJECT NAME: WATER SYSTEM IMPROVEMENT ADDRESS: E OGLETHORE HWY
CITY/COUNTY: LIBERTY DATE ON PLANS: 6/30/2022
NAME & EMAIL OF PERSON FILLING OUT CHECKLIST: TRENT R. LONG, trlong@trlongeng.com

EROSION, SEDIMENTATION & POLLUTION CONTROL PLAN CHECKLIST (CONTINUED)

31. REQUIREMENT: PROVIDE COMPLETE REQUIREMENTS OF SAMPLING FREQUENCY AND REPORTING OF SAMPLING RESULTS *

- RESPONSE: SAMPLING FREQUENCY
- THE PRIMARY PERMITTEE MUST SAMPLE IN ACCORDANCE WITH THE PLAN AT LEAST ONCE FOR EACH RAINFALL EVENT DESCRIBED BELOW. FOR A QUALIFYING EVENT, THE PERMITTEE SHALL SAMPLE AT THE BEGINNING OF ANY STORMWATER DISCHARGE TO A MONITORED RECEIVING WATER AND/OR FROM A MONITORED OUTFALL LOCATION WITHIN IN FORTY-FIVE (45) MINUTES OR AS SOON AS POSSIBLE.
 - HOWEVER, WHERE MANUAL AND AUTOMATIC SAMPLING ARE IMPOSSIBLE (AS DEFINED IN THIS PERMIT), OR ARE BEYOND THE PERMITTEE'S CONTROL, THE PERMITTEE SHALL TAKE SAMPLES AS SOON AS POSSIBLE, BUT IN NO CASE MORE THAN TWELVE (12) HOURS AFTER THE BEGINNING OF THE STORM WATER DISCHARGE.
 - 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 RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH WITH A STORMWATER 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 NOT, 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 SAMPLING OBLIGATIONS UNDER (A), (B) OR (C) ABOVE; AND
 - e. EXISTING CONSTRUCTION ACTIVITIES, THOSE THAT ARE OCCURRING ON OR BEFORE THE EFFECTIVE DATE OF THIS PERMIT, THAT HAVE MET THE SAMPLING REQUIRED BY (A) ABOVE SHALL SAMPLE IN ACCORDANCE WITH (B). THOSE EXISTING CONSTRUCTION ACTIVITIES THAT HAVE MET THE SAMPLING REQUIRED BY (B) ABOVE SHALL NOT BE REQUIRED TO CONDUCT ADDITIONAL SAMPLING OTHER THAN AS REQUIRED BY (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

- THE APPLICABLE PERMITTEES ARE REQUIRED TO SUBMIT THE SAMPLING RESULTS TO THE EPD AT THE ADDRESS SHOWN IN PART I.C. 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 STORM WATER DISCHARGE(S) OR THE RECEIVING WATER(S) BEYOND THE MINIMUM FREQUENCY IN THIS PERMIT MUST BE REPORTED IN A SIMILAR MANNER TO THE EPD. THE SAMPLING REPORTS MUST BE SIGNED IN ACCORDANCE WITH PART V.G.2. SAMPLING REPORTS MUST BE SUBMITTED TO EPD USING THE ELECTRONIC SUBMITTAL SERVICE PROVIDED BY EPD. SAMPLING REPORTS MUST BE SUBMITTED TO EPD UNTIL SUCH TIME AS A NOT IS SUBMITTED IN ACCORDANCE WITH PART VI.

- ALL SAMPLING REPORTS RESULTS 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 TO THE METHODS AND EQUIPMENT USED FOR THE ANALYTICAL TECHNIQUES OR METHODS USED;
 - g. THE RESULTS OF SUCH ANALYSES, INCLUDING THE BENCH SHEETS, INSTRUMENT READINGS, COMPUTER DISKS OR TAPES, ETC., USED TO DETERMINE THESE RESULTS;
 - h. RESULTS WHICH EXCEED 1000 NTU SHALL BE REPORTED AS "EXCEEDS 1000 NTU"; AND
 - i. CERTIFICATION STATEMENT THAT SAMPLING WAS CONDUCTED AS PER THE PLAN.
- 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.

32. REQUIREMENT: PROVIDE COMPLETE DETAILS FOR RETENTION OF RECORDS AS PER PART IV.F. OF THE PERMIT.*

RESPONSE: THE PRIMARY PERMITTEE SHALL RETAIN THE FOLLOWING RECORDS AT THE CONSTRUCTION SITE OR THE RECORDS SHALL BE READILY AVAILABLE AT A DESIGNATED ALTERNATE LOCATION FROM COMMENCEMENT OF CONSTRUCTION UNTIL SUCH TIME AS A NOT IS SUBMITTED IN ACCORDANCE WITH PART VI:

- a. A COPY OF ALL NOTICES OF INTENT SUBMITTED TO EPD;
 - b. A COPY OF THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN REQUIRED BY THIS PERMIT;
 - c. THE DESIGN PROFESSIONAL'S REPORT OF THE RESULTS OF THE INSPECTION CONDUCTED IN ACCORDANCE WITH PART IV.A.5. OF THIS PERMIT;
 - d. A COPY OF ALL SAMPLING INFORMATION, RESULTS, AND REPORTS REQUIRED BY THIS PERMIT;
 - e. A COPY OF ALL INSPECTION REPORTS GENERATED IN ACCORDANCE WITH PART IV.D.4.(2) OF THIS PERMIT;
 - f. A COPY OF ALL VIOLATION SUMMARIES AND VIOLATION SUMMARY REPORTS GENERATED IN ACCORDANCE WITH PART III.D.2. OF THIS PERMIT; AND
 - g. DAILY RAINFALL INFORMATION COLLECTED IN ACCORDANCE WITH PART IV.D.4.(2) OF THIS PERMIT.
2. COPIES OF ALL NOTICES OF INTENT, NOTICES OF TERMINATION, INSPECTION REPORTS, SAMPLING REPORTS (INCLUDING ALL CALIBRATION AND MAINTENANCE RECORDS AND ALL ORIGINAL STRIP CHART RECORDINGS FOR CONTINUOUS MONITORING INSTRUMENTATION) OR OTHER REPORTS REQUESTED BY THE EPD, EROSION, SEDIMENTATION AND POLLUTION CONTROL PLANS, RECORDS OF ALL DATA USED TO COMPLETE THE NOTICE OF INTENT TO BE COVERED BY THIS PERMIT AND ALL OTHER RECORDS REQUIRED BY THIS PERMIT SHALL BE RETAINED BY THE PERMITTEE WHO EITHER PRODUCED OR USED IT FOR A PERIOD OF AT LEAST THREE YEARS FROM THE DATE THAT THE NOT IS SUBMITTED IN ACCORDANCE WITH PART VI. OF THIS PERMIT. THESE RECORDS MUST BE MAINTAINED AT THE PERMITTEE'S PRIMARY PLACE OF BUSINESS OR AT A DESIGNATED ALTERNATE LOCATION ONCE THE CONSTRUCTION ACTIVITY HAS CEASED AT THE PERMITTED SITE. THIS PERIOD MAY BE EXTENDED BY REQUEST OF THE EPD AT ANY TIME UPON WRITTEN NOTIFICATION TO THE PERMITTEE.

33. REQUIREMENT: DESCRIPTION OF ANALYTICAL METHODS TO BE USED TO COLLECT AND ANALYZE THE SAMPLES FROM EACH LOCATION *

RESPONSE: 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 136 (UNLESS OTHER TEST PROCEDURES HAVE BEEN APPROVED), THE GUIDANCE DOCUMENT TITLED "NPDES STORMWATER SAMPLING GUIDANCE DOCUMENT", EPA 833-B-92-001" AND GUIDANCE DOCUMENTS THAT MAY BE PREPARED BY THE EPD.

- a. SAMPLE CONTAINERS SHOULD BE LABELED PRIOR TO COLLECTING THE SAMPLES.
- b. SAMPLES SHOULD BE WELL MIXED BEFORE TRANSFERRING TO A SECONDARY CONTAINER.
- c. LARGE MOUTH, WELL CLEANED AND RINSED GLASS OR PLASTIC JARS SHOULD BE USED FOR COLLECTING SAMPLES. THE JARS SHOULD BE CLEANED THOROUGHLY TO AVOID CONTAMINATION.
- d. MANUAL, AUTOMATIC, OR RISING STAGE SAMPLING MAY BE UTILIZED. SAMPLES REQUIRED BY THIS PERMIT SHOULD BE ANALYZED IMMEDIATELY, BUT IN NO CASE LATER THAN 48 HOURS AFTER COLLECTION. HOWEVER, SAMPLES FROM AUTOMATIC SAMPLERS MUST BE COLLECTED NO LATER THAN THE NEXT BUSINESS DAY AFTER THEIR ACCUMULATION, UNLESS FLOW THROUGH AUTOMATIC ANALYSIS IS UTILIZED. IF AUTOMATIC SAMPLING AND THE AUTOMATIC SAMPLER IS NOT ACTIVATED DURING THE QUALIFYING EVENT, THE PERMITTEE MUST UTILIZE MANUAL SAMPLING OR RISING STAGE SAMPLING DURING THE NEXT QUALIFIED EVENT. DILUTION OF SAMPLES IS NOT REQUIRED. SAMPLES MAY BE ANALYZED DIRECTLY WITH A PROPERLY CALIBRATED TURBIDIMETER. SAMPLES ARE NOT REQUIRED TO BE COOLED.
- e. SAMPLING AND ANALYSIS OF THE RECEIVING WATER(S) OR OUTFALLS BEYOND MINIMUM FREQUENCY STATED IN THIS PERMIT MUST BE REPORTED TO EPD AS SPECIFIED IN PART IV. E.

STORM WATER IS TO BE SAMPLED FOR NEPHELOMETRIC TURBIDITY UNITS (NTU) AT THE OUTFALL LOCATION. 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 EXCEEDING 50, THE VALUE THAT WAS SELECTED FROM APPENDIX B IN PERMIT NO. GAR10002. THE NTU IS BASED UPON THE SITE AVERAGE OF 1.96 ACRES FOR THE PROJECT SITE, THE SURFACE WATER DRAINAGE AREA OF 0.003 SQUARE MILES, AND RECEIVING WATER WHICH SUPPORTS WARM WATER FISHERIES.

34. REQUIREMENT: APPENDIX B RATIONALE FOR NTU VALUES AT ALL OUTFALL SAMPLING POINTS WHERE APPLICABLE.*

RESPONSE: SURFACE WATER DRAINAGE AREA, SQUARE MILES

0-4.99	5-9.99	10-24.99	25-49.99	50-99.99	100-249.99	250-499.99	500+
1.00-10	150	200	400	750	750	750	750
10.01-25	50	100	100	200	300	500	750
25.01-50	50	50	100	100	200	300	750
50.01-100	50	50	100	100	150	300	600
100.01+	50	50	50	50	100	200	100

APPENDIX B
NEPHELOMETRIC TURBIDITY UNIT (NTU) TABLE

35. REQUIREMENT: DELINEATE ALL SAMPLING LOCATIONS IF APPLICABLE, 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 DISCLOSED.*

RESPONSE: FOR CONSTRUCTION ACTIVITIES THE PRIMARY PERMITTEE MUST SAMPLE ALL RECEIVING WATER(S), OR ALL OUTFALL(S), OR A COMBINATION OF RECEIVING WATER(S) AND OUTFALL(S). SAMPLES TAKEN FOR THE PURPOSE OF COMPLIANCE WITH THIS PERMIT SHALL BE REPRESENTATIVE OF THE MONITORED ACTIVITY AND REPRESENTATIVE OF THE WATER QUALITY OF THE RECEIVING WATER(S) AND/OR THE STORM WATER OUTFALL(S) USING THE FOLLOWING MINIMUM GUIDELINES:

- a. THE UPSTREAM SAMPLE FOR EACH RECEIVING WATER(S) MUST BE TAKEN IMMEDIATELY UPSTREAM OF THE CONFLUENCE OF THE FIRST STORM WATER DISCHARGE FROM THE PERMITTED ACTIVITY (I.E., THE DISCHARGE FARTHEST UPSTREAM AT THE SITE) BUT DOWNSTREAM OF ANY OTHER STORM WATER DISCHARGES 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 UPSTREAM TURBIDITY VALUE.
- b. THE DOWNSTREAM SAMPLE FOR EACH RECEIVING WATER(S) MUST BE TAKEN DOWNSTREAM OF THE CONFLUENCE OF THE LAST STORM WATER DISCHARGE FROM THE PERMITTED ACTIVITY (I.E., THE DISCHARGE FARTHEST DOWNSTREAM AT THE SITE) BUT UPSTREAM OF ANY OTHER STORM WATER 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.
- c. SAMPLES SHOULD BE TAKEN FROM THE HORIZONTAL AND VERTICAL CENTER OF THE RECEIVING WATER(S) OR THE STORMWATER OUTFALL CHANNEL(S).
- d. CARE SHOULD BE TAKEN TO AVOID STIRRING THE BOTTOM SEDIMENTS IN THE RECEIVING WATER(S) OR IN THE OUTFALL STORM WATER CHANNEL.
- e. THE SAMPLING CONTAINER SHOULD BE HELD SO THAT THE OPENING FACES UPSTREAM.
- f. THE SAMPLES SHOULD BE KEPT FREE FROM FLOATING DEBRIS.

- g. PERMITTEES DO NOT HAVE TO SAMPLE SHEETFLOW THAT FLOWS ONTO UNDISTURBED NATURAL AREAS OR AREAS STABILIZED BY THE PROJECT. FOR PURPOSES OF THIS SECTION, STABILIZED SHALL MEAN, FOR UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES ARE AREAS LOCATED OUTSIDE THE WASTE DISPOSAL LIMITS OF A LANDFILL CELL THAT HAS BEEN CERTIFIED BY EPD FOR WASTE DISPOSAL. 100% OF THE SOIL SURFACE IS UNIFORMLY COVERED IN PERMANENT VEGETATION WITH A DENSITY OF 70% OR GREATER, OR LANDSCAPED ACCORDING TO THE PLAN (UNIFORMLY COVERED WITH LANDSCAPING MATERIALS IN PLANNED LANDSCAPED AREAS), OR EQUIVALENT PERMANENT STABILIZATION MEASURES AS DEFINED IN THE MANUAL INCLUDING A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET CROP PERENNIALS APPROPRIATE FOR THE REGION).
- h. 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 STORM WATER RUNOFF FROM THE CONSTRUCTION SITE IS IN COMPLIANCE WITH THE STANDARD SET FORTH IN PARTS III.D.3. OR III.D.4., WHICHEVER IS APPLICABLE.

36. REQUIREMENT: 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.*

RESPONSE: SEE ITEM 28 FOR A DESCRIPTION OF ALL INITIAL AND INTERMEDIATE BMPs AND ITEM 26 FOR A DESCRIPTION OF ALL FINAL BMPs. PLEASE SEE THE EROSION CONTROL PLAN TO SEE WHERE THESE BMPs ARE TO IMPLEMENTED.

37. REQUIREMENT: GRAPHIC SCALE AND NORTH ARROW.

RESPONSE: THE CORRECT GRAPHIC SCALE AND NORTH ARROW ARE SHOWN ON ALL SHEETS WHERE APPLICABLE.

38. REQUIREMENT: 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

RESPONSE: CONTOURS ARE SHOWN IN 1' INTERVALS.

39. REQUIREMENT: 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 GAEPD OR THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION). PLEASE REFER TO THE ALTERNATIVE BMP GUIDANCE DOCUMENT FOUND AT WWW.GASWCC.ORG.

RESPONSE: NO ALTERNATIVE BMPs WILL BE USED.

40. REQUIREMENT: 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.*

RESPONSE: NO ALTERNATIVE BMPs WILL BE USED.

41. REQUIREMENT: 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.

RESPONSE: THERE ARE NO 25-FOOT OR 50-FOOT UNDISTURBED BUFFERS REQUIRED FOR THE SITE. THERE ARE NO STATE WATERS ADJACENT TO THE SITE AND NO ADDITIONAL BUFFERS ARE REQUIRED BY THE LOCAL ISSUING AUTHORITY.

42. REQUIREMENT: DELINEATION OF ON-SITE WETLANDS AND ALL STATE WATERS LOCATED ON AND WITHIN 200 FEET OF THE PROJECT SITE.

RESPONSE: THERE ARE NO ON-SITE WETLANDS AND STATE WATERS LOCATED ON AND WITHIN 200' OF THE SITE.

43. REQUIREMENT: DELINEATION AND ACREAGE OF CONTRIBUTING DRAINAGE BASINS ON THE PROJECT SITE.

RESPONSE: ALL DRAINAGE BASIN INFORMATION IS SHOWN IN THE HYDROLOGY STUDY PROVIDED WITH THESE PLANS.

44. REQUIREMENT: DELINEATE ON-SITE DRAINAGE AND OFF-SITE WATERSHEDS USING USGS 1"=2000' TOPOGRAPHICAL SHEETS.

RESPONSE: A HYDROLOGY REPORT INCLUDING A DRAINAGE NARRATIVE, DRAINAGE CALCULATIONS AND DELINEATION OF PRE AND POST DEVELOPED CONDITIONS IS PROVIDED WITH THESE PLANS ALONG WITH THE USGS TOPOGRAPHICAL SHEET.

45. REQUIREMENT: AN ESTIMATE OF THE RUNOFF COEFFICIENT OR PEAK DISCHARGE FLOW OF THE SITE PRIOR TO AND AFTER CONSTRUCTION ACTIVITIES ARE COMPLETED.

RESPONSE: THE PRE-DEVELOPMENT RUNOFF COEFFICIENT IS 73. THE POST-DEVELOPMENT RUNOFF COEFFICIENT IS 73.

46. REQUIREMENT: STORM-DRAIN PIPE AND WEIR VELOCITIES WITH APPROPRIATE OUTLET PROTECTION TO ACCOMMODATE DISCHARGES WITHOUT EROSION. IDENTIFY/DELINEATE ALL STORM WATER DISCHARGE POINTS.

RESPONSE: THE STORM-DRAIN PIPE AND WEIR VELOCITIES ARE SHOWN ON THE EROSION CONTROL PLAN AS WELL AS APPROPRIATE OUTLET PROTECTION FOR EACH.

47. REQUIREMENT: SOIL SERIES FOR THE PROJECT SITE AND THEIR DELINEATION

RESPONSE: THE SOIL SERIES IS SHOWN ON THE INITIAL EROSION CONTROL PLAN.

48. REQUIREMENT: THE LIMITS OF DISTURBANCE FOR EACH PHASE OF CONSTRUCTION

RESPONSE: THE LIMITS OF DISTURBANCE ARE SHOWN ON EACH EROSIONS CONTROL SHEET.

49. REQUIREMENT: 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 LOCATIN 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 INCLUDED FOR STRUCTURAL BMPs AND ALL CALCULATIONS USED BY THE STORAGE DESIGN PROFESSIONAL TO OBTAIN THE REQUIRED SEDIMENT 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.

RESPONSE: THE REQUIRED SEDIMENT STORAGE IS (13.53 ACRES)(67CY/ACRE) = 906.65CY. THE PROVIDED SEDIMENT STORAGE IS 178.4 CY. THE SEDIMENT WILL BE CAPTURED AND STORED IN THE ROADSIDE DITCHES USING TEMPORARY DITCH SEDIMENT TRAPS BECAUSE THE NARROW RIGHT OF WAY DOES NOT ALLOW FOR MORE CONVENTIONAL STORAGE. A TYPICAL DITCH SLOPE OF 0.25% WILL YIELD APPROXIMATELY 79.2 CY OF SEDIMENT STORAGE. (AREA OF TRAPEZOID = ((A+B)/2)*H) & (AVERAGE END AREA METHOD V = L*(A1+A2)/2). A TYPICAL DITCH OVER-EXCAVATION (H" W" L) WILL YIELD AN ADDITIONAL 10 CY OF SEDIMENT STORAGE. THEREFORE EACH TEMPORARY DITCH SEDIMENT TRAP WILL PRODUCE APPROXIMATELY 89.2 CY OF SEDIMENT STORAGE.

50. REQUIREMENT: 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.

RESPONSE: THE BMPs SHOWN AND DESCRIBED IN THIS PANS ARE CONSISTENT AND NO LESS STRINGENT THAN THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA CALLS FOR.

51. REQUIREMENT: 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.

RESPONSE: DETAILED DRAWINGS ARE PROVIDED ON THE SHEETS LABELED "DETAILS" IN THIS PLAN.

52. REQUIREMENT: 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.

RESPONSE: PLEASE SEE THE DETAILS SHEET FOR THE VEGETATIVE PLAN.

OTHER EROSION CONTROL NOTES

1. SHADED AREAS SHOWN ON GRADING PHASE EROSION CONTROL PLANS REPRESENT CRITICAL WORK ZONES. AT THE END OF EACH WORK DAY ALL SLOPES 2:1 OR STEEPER AND HIGHER THAN 5 FEET SHALL RECEIVE SURFACE ROUGHENING, POLYMERS, AND EROSION CONTROL MATTING. ADDITIONALLY, ALL FILL SLOPES SHALL RECEIVE A DIVERSION DIKE AND TEMPORARY DOWN DRAINS ALONG THE TOP OF THE SLOPE PREVENTING DRAINAGE SPILLING OVER THE EDGE AND DOWN THE FACE OF THE SLOPE. THE TEMPORARY DOWN DRAINS SHALL BE CONSTRUCTED WITH PERFORATED STAND PIPES AT THE TOP OF THE SLOPE AND RECONSTRUCTED EACH DAY AS THE SLOPE INCREASES IN HEIGHT.
2. THIS PLAN HAS BEEN PREPARED TO MEET THE REQUIREMENTS UNDER THE STATE OF GEORGIA, DEPARTMENT OF NATURAL RESOURCES, ENVIRONMENTAL PROTECTION DIVISION (EPD), GENERAL PERMIT NO. GAR 100002-INFRASTRUCTURE DEVELOPMENT FOR AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES), STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY FOR INFRASTRUCTURE.

AUTHORIZED DISCHARGES:

- ALL DISCHARGES OF STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITY THAT WILL RESULT IN LAND DISTURBANCE EQUAL TO OR GREATER THAN ONE ACRE. PART I.C.1.4.C
- ALL DISCHARGES COVERED BY THIS PERMIT SHALL BE COMPOSED ENTIRELY OF STORMWATER EXCEPT AS PROVIDED IN PART I.C.2 AND PART III.A.2 OF THE PERMIT. PART III.1

a. AUTHORIZED MIXED STORMWATER DISCHARGES: PART I.C.2

- a. THE INDUSTRIAL SOURCE OR ACTIVITY OTHER THAN CONSTRUCTION IS LOCATED ON THE SAME SITE AS THE CONSTRUCTION ACTIVITY AND IS AN INTEGRAL PART OF THE CONSTRUCTION ACTIVITY.
- b. THE STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY FROM THE AREAS OF THE SITE WHERE CONSTRUCTION ACTIVITIES ARE OCCURRING ARE IN COMPLIANCE WITH THE TERMS OF THIS PERMIT.

c. STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY FROM THE AREAS OF THE SITE WHERE INDUSTRIAL ACTIVITY OTHER THAN CONSTRUCTION ARE OCCURRING ARE COVERED BY A DIFFERENT NPDES GENERAL PERMIT OR INDIVIDUAL PERMIT AUTHORIZING SUCH DISCHARGES AND THE DISCHARGES ARE IN COMPLIANCE WITH A DIFFERENT NPDES PERMIT.

a. AUTHORIZED NON-STORMWATER DISCHARGES: PART III.A.2

- a. FIRE FIGHTING ACTIVITIES
- b. FIRE HYDRANT FLUSHING
- c. POTABLE WATER SOURCES INCLUDING WATER LINE FLUSHING
- d. IRRIGATION DRAINAGE
- e. AIR CONDITIONING CONDENSATE
- f. SPRINGS
- g. UNCONTAMINATED GROUND WATER
- h. FOUNDATION OR FOOTING DRAINS WHERE FLOWS ARE NOT CONTAMINATED WITH PROCESS MATERIALS OR POLLUTANTS

LIMITATIONS ON COVERAGE PART I.C.3:

- THE FOLLOWING STORMWATER DISCHARGES FROM CONSTRUCTION SITES ARE NOT AUTHORIZED BY THIS PERMIT:
 - I. STORMWATER DISCHARGES ASSOCIATED WITH AN INDUSTRIAL ACTIVITY THAT ORIGINATES FROM THE SITE AFTER CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED AND THE SITE HAS UNDERGONE FINAL STABILIZATION.
 - J. DISCHARGES THAT ARE MIXED WITH SOURCES OF NON-STORMWATER OTHER THAN DISCHARGES WHICH ARE IDENTIFIED IN PART III.A.2 OF THIS PERMIT AND WHICH ARE IN COMPLIANCE WITH PART V.D.6 (NON-STORMWATER DISCHARGES) OF THIS PERMIT.
 - K. STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY THAT ARE SUBJECT TO AN EXISTING NPDES INDIVIDUAL OR GENERAL PERMIT. SUCH DISCHARGES MAY BE AUTHORIZED UNDER THIS PERMIT AFTER AN EXISTING PERMIT EXPIRES PROVIDED THE EXISTING PERMIT DID NOT ESTABLISH NUMERICAL LIMITATIONS FOR SUCH DISCHARGES.
 - L. STORMWATER DISCHARGES FROM CONSTRUCTION SITES THAT THE DIRECTOR (EPD) HAS DETERMINED TO BE OR MAY REASONABLY BE EXPECTED TO BE CONTRIBUTING TO A VIOLATION OF A WATER QUALITY STANDARD.

m. WHERE A RELEASE CONTAINING A HAZARDOUS SUBSTANCE IN AN AMOUNT EQUAL TO OR IN EXCESS OF A REPORTING QUANTITY ESTABLISHED UNDER EITHER GEORGIA'S OIL OR HAZARDOUS MATERIAL SPILLS OR RELEASES ACT (O.C.G.A. §§12-14-2 (ET SEQ.) 40 CFR 117 OR 40 CFR 302 OCCURS DURING A 24-HOUR PERIOD, THE PERMITTEE IS REQUIRED TO NOTIFY THE FOLLOWING AGENCIES IN ACCORDANCE WITH THE ABOVE-MENTIONED REGULATIONS AS SOON AS HE HAS KNOWLEDGE OF THE DISCHARGE: EPD AT (404) 656-4863 OR (800) 241-1113, OR THE NATIONAL RESPONSE CENTER (NRC) AT (800) 424-8802. PART III.B.1

n. THIS PERMIT DOES NOT AUTHORIZE THE DISCHARGE OF HAZARDOUS SUBSTANCES OR OIL RESULTING FROM AN ON-SITE SPILL. PART III.B.2

WATER QUALITY COMPLIANCE PART I.C.4:

- ALL DISCHARGES AUTHORIZED BY THIS PERMIT SHALL NOT CAUSE VIOLATIONS OF GEORGIA'S IN-STREAM WATER QUALITY STANDARDS AS PROVIDED BY THE RULES AND REGULATIONS FOR WATER QUALITY CONTROL. CHAPTER 391-3-6-03.

3. CONSTRUCTION EXITS SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH 1/2 - 3/4 INCH STONE, AS CONDITIONS DEMAND, AND REPAIR AND/OR CLEANOUT OF MATERIALS SPILLED OR FLOWING ONTO PUBLIC RIGHTS-OF-WAY. TRACKING, WASHED, OR TRACKED FROM VEHICLES OR SITS ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.

4. RETROFIT STRUCTURES SHALL BE KEPT CLEAR OF TRASH AND DEBRIS. THIS WILL REQUIRE CONTINUOUS MONITORING AND MAINTENANCE, WHICH INCLUDES SEDIMENT REMOVAL WHEN ONE-THIRD OF THE SEDIMENT STORAGE CAPACITY HAS BEEN LOST.

5. SEDIMENT SHALL BE REMOVED FROM SILT FENCES ONCE IT HAS ACCUMULATED TO ONE-HALF THE ORIGINAL HEIGHT OF THE BARRIER. FILTER FABRIC SHALL BE REPLACED WHENEVER IT HAS DETERIORATED TO SUCH AN EXTENT THAT THE EFFECTIVENESS OF THE FABRIC IS REDUCED (APPROXIMATELY SIX MONTHS).

6. SEDIMENT SHALL BE REMOVED FROM SEDIMENT TRAPS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-HALF THE HEIGHT OF THE TRAP. SEDIMENT SHALL BE REMOVED FROM CURB INLET PROTECTION IMMEDIATELY. FOR EXCAVATED INLET SEDIMENT TRAPS, SEDIMENT SHALL BE REMOVED WHEN ONE-HALF OF THE SEDIMENT STORAGE CAPACITY HAS BEEN LOST TO SEDIMENT ACCUMULATION.

7. SEDIMENT SHALL NOT BE WASHED INTO THE INLET. IT SHALL BE REMOVED FROM THE SEDIMENT TRAP AND DISPOSED OF AND STABILIZED SO THAT IT WILL NOT ENTER THE INLET, AGAIN.

8. WHEN THE CONTRIBUTING DRAINAGE AREA HAS BEEN PERMANENTLY STABILIZED, ALL MATERIALS AND ANY SEDIMENT SHALL BE REMOVED, AND EITHER SALVAGED OR DISPOSED OF PROPERLY. THE DISTURBED AREA SHALL BE BROUGHT TO PROPER GRADE, THEN SMOOTHED AND COMPACTED. APPROPRIATELY STABILIZED ALL DISTURBED AREAS AROUND THE INLET.

9. REPAIR ALL DAMAGES CAUSED TO TEMPORARY SEDIMENT BASINS BY SOIL EROSION OR CONSTRUCTION EQUIPMENT AT OR BEFORE THE END OF EACH WORKING DAY. SEDIMENT SHALL BE REMOVED FROM THE BASIN WHEN IT REACHES THE SPECIFIED DISTANCE BELOW THE TOP OF THE RISE. SEDIMENT SHALL NOT ENTER ADJACENT STREAMS OR DRAINAGE WAYS DURING SEDIMENT REMOVAL OR DISPOSAL. THE SEDIMENT SHALL NOT BE DEPOSITED DOWNSTREAM FROM THE EMBANKMENT, ADJACENT TO A STREAM OR FLOODPLAIN.

10. INSPECT RIPRAP OUTLET STRUCTURES AFTER HEAVY RAINS TO SEE IF ANY EROSION AROUND OR BELOW THE RIPRAP HAS TAKEN PLACE OR IF STONES HAVE BEEN DISLODGED. IMMEDIATELY MAKE ALL NEEDED REPAIRS TO PREVENT FURTHER DAMAGE.

11. ROUGHENED AREAS SHALL BE SEEDED AND MULCHED AS SOON AS POSSIBLE TO OBTAIN OPTIMUM SEED GERMINATION AND SEEDING GROWTH.

12. MULCH OR TEMPORARY GRASSING SHALL BE APPLIED TO ALL EXPOSED AREAS WITHIN 14 DAYS OF DISTURBANCE. MULCH CAN BE USED AS A SINGULAR EROSION CONTROL DEVICE FOR UP TO SIX MONTHS, BUT IT SHALL BE APPLIED AT THE APPROPRIATE DEPTH, DEPENDING ON THE MATERIAL USED, ANCHORED, AND HAVE A CONTINUOUS 90% COVER OR GREATER OF THE SOIL SURFACE. MAINTENANCE SHALL BE REQUIRED TO MAINTAIN APPROPRIATE DEPTH AND 90% COVER. TEMPORARY VEGETATION MAY BE EMPLOYED INSTEAD OF MULCH IF THE AREA WILL REMAIN UNDISTURBED FOR LESS THAN SIX MONTHS. IF AN AREA WILL REMAIN UNDISTURBED FOR GREATER THAN SIX MONTHS, PERMANENT VEGETATIVE TECHNIQUES SHALL BE EMPLOYED.

13. PERMANENT VEGETATION SHALL BE APPLIED IMMEDIATELY TO ROUGH GRADED AREAS THAT WILL BE UNDISTURBED FOR LONGER THAN SIX MONTHS. THIS PRACTICE OR SOILING SHALL BE APPLIED IMMEDIATELY TO ALL AREAS AT FINAL GRADE. FINAL STABILIZATION MEANS THAT ALL SOIL DISTURBING ACTIVITIES AT THE SITE HAVE BEEN COMPLETED AND THAT FOR UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES, AT LEAST 70% OF THE SOIL SURFACE IS UNIFORMLY COVERED IN PERMANENT VEGETATION OR EQUIVALENT PERMANENT STABILIZATION MEASURES (SUCH AS THE USE OF RIP RAP, GABIANS, PERMANENT MULCHES, OR GEOTEXTILES) HAVE BEEN EMPLOYED. PERMANENT VEGETATION SHALL CONSIST OF PLANTED TREES, SHRUBS, PERENNIAL VEG, A CROP OF PERENNIAL VEGETATION APPROPRIATE FOR THE REGION, SUCH THAT WITHIN THE GROWING SEASON A 70% COVERAGE BY PERENNIAL VEGETATION SHALL BE ACHIEVED. FINAL STABILIZATION APPLIES TO EACH PHASE OF CONSTRUCTION. UNTIL THIS STANDARD IS SATISFIED AND PERMANENT CONTROL MEASURES AND FACILITIES ARE OPERATIONAL, INTERIM STABILIZATION MEASURES AND TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES SHALL NOT BE REMOVED.

14. THE CONTRACTOR WILL OBTAIN COPIES OF ANY AND ALL LOCAL AND STATE REGULATIONS THAT ARE APPLICABLE TO STORM WATER MANAGEMENT, EROSION CONTROL, AND POLLUTION MINIMIZATION AT THIS JOB SITE AND WILL COMPLY FULLY WITH SUCH REGULATIONS. THE CONTRACTOR WILL SUBMIT WRITTEN EVIDENCE OF SUCH COMPLIANCE IF REQUESTED BY THE OWNER OR ANY AGENT OF A REGULATORY BODY. THE CONTRACTOR WILL COMPLY WITH ALL CONDITIONS OF ANY AND ALL LOCAL, STATE, AND FEDERAL AGENCIES THAT HAVE GOVERNING AUTHORITY, INCLUDING THE CONDITIONS RELATED TO MAINTAINING THE ESPDC AND EVIDENCE OF COMPLIANCE WITH THE ESPDC AT THE JOB SITE AND ALLOWING REGULATORY PERSONNEL ACCESS TO THE JOB SITE AND TO RECORDS IN ORDER TO DETERMINE COMPLIANCE.

15. EACH SECONDARY PERMITTEE WILL BE PROVIDED WITH A COPY OF THE EROSION CONTROL PLANS OR PORTIONS OF THE PLAN APPLICABLE TO THEIR SITE AND EACH SECONDARY PERMITTEE SHALL SIGN THE PLAN OR PORTION OF THE PLAN APPLICABLE TO THEIR SITE.

16. AFTER CONSTRUCTION, EROSION AND SEDIMENTATION WILL BE MANAGED BY STABILIZED LOT CONSISTING OF PAVED DRIVEWAY, GRASSING, LANDSCAPING AND HOME SITE.

17. MINIMIZING WIND EROSION AND CONTROLLING DUST WILL BE ACCOMPLISHED BY ONE OR MORE OF THE FOLLOWING METHODS:

- a. COVERING 30% OR MORE OF THE SOIL SURFACE WITH NON-ERODIBLE MATERIAL.
- b. ROUGHENING THE SOIL TO PRODUCE RIDGES PERPENDICULAR TO THE PREVAILING WIND.
- c. FREQUENT WATERING OF EXCAVATION AND FILL AREAS
- d. PROVIDING GRAVEL OR PAVING AT ENTRANCE / EXIT DRIVES

18. ALL NON-STORM WATER DISCHARGES WILL BE ROUTED THROUGH ON-SITE BMPs AND THE STORM WATER MANAGEMENT SYSTEM WHERE POSSIBLE. THESE DISCHARGES INCLUDE FLUSHING OF WATER AND FIRE LINES, IRRIGATION WATER, GROUND WATER, DEWATERING OF PITS OR DEPRESSIONS WITHIN THE CONSTRUCTION SITE AND RINSE OFF WATER OF NON-TOXIC MATERIALS.

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

20. ALL WASTE MATERIALS WILL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL DUMPSTER. THE DUMPSTER WILL MEET ALL SOLID WASTE MANAGEMENT REQUIREMENTS FOR 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

DS1
DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)

DEFINITION
APPLYING PLANT RESIDUES OR OTHER SUITABLE MATERIALS, PRODUCED ON THE SITE IF POSSIBLE, TO THE SOIL SURFACE.

PURPOSE
1. TO REDUCE RUNOFF EROSION
2. TO CONSERVE MOISTURE
3. TO PREVENT SURFACE COMPACTION OR CRUSTING
4. TO CONTROL UNDESIRABLE VEGETATION
5. TO INCREASE BIOLOGICAL ACTIVITY IN THE SOIL.

REQUIREMENT FOR REGULATORY COMPLIANCE
MULCH OR TEMPORARY GRASSING SHALL BE APPLIED TO ALL EXPOSED AREAS WITHIN 14 DAYS OF DISTURBANCE. MULCH CAN BE USED AS A SINGULAR EROSION CONTROL DEVICE FOR UP TO SIX MONTHS, BUT IT SHALL BE APPLIED AT THE APPROPRIATE DEPTH, DEPENDING ON THE MATERIAL USED, ANCHORED, AND HAVE A CONTINUOUS 90% COVER OR GREATER OF THE SOIL SURFACE. MAINTENANCE SHALL BE REQUIRED TO MAINTAIN APPROPRIATE DEPTH AND 90% COVER. TEMPORARY VEGETATION MAY BE EMPLOYED INSTEAD OF MULCH IF THE AREA WILL REMAIN UNDISTURBED FOR LESS THAN SIX MONTHS. IF AN AREA WILL REMAIN UNDISTURBED FOR GREATER THAN SIX MONTHS, PERMANENT VEGETATIVE TECHNIQUES SHALL BE EMPLOYED.

SPECIFICATIONS
MULCHING WITHOUT SEEDING
THIS STANDARD APPLIES TO GRADES OR CLEARED AREAS WHERE SEEDINGS MAY NOT HAVE A SUITABLE GROWING SEASON TO PRODUCE AN EROSION RETARDANT COVER, BUT CAN BE STABILIZED WITH A MULCH COVER.

SITE PREPARATION
1. GRADE TO PERMIT THE USE OF EQUIPMENT FOR APPLYING AND ANCHORING MULCH.
2. INSTALL NEEDED EROSION CONTROL MEASURES AS REQUIRED SUCH AS DIKES, DIVERSIONS, BERMS, TERRACES AND SEDIMENT BARRIERS.
3. LOOSEN COMPACT SOIL TO A MINIMUM DEPTH OF 3 INCHES.

MULCHING MATERIALS
SELECT ONE OF THE FOLLOWING MATERIALS AND APPLY AT THE DEPTH INDICATED:
1. DRY STRAW OR HAY SHALL BE APPLIED AT A DEPTH OF 2 TO 4 INCHES PROVIDING COMPLETE SOIL COVERAGE. ONE ADVANTAGE OF THIS MATERIAL IS EASY APPLICATION.
2. WOOD WASTE (CHIPS, SAWDUST OR BARK) SHALL BE APPLIED AT A DEPTH OF 2 TO 3 INCHES. ORGANIC MATERIAL FROM THE CLEARING STAGE OF DEVELOPMENT SHOULD REMAIN ON SITE, BE CHIPPED, AND APPLIED AS MULCH. THIS METHOD OF MULCHING CAN GREATLY REDUCE EROSION CONTROL COSTS.
3. POLYETHYLENE FILM SHALL BE SECURED OVER BANKS OR STOCKPILED SOIL MATERIAL FOR TEMPORARY PROTECTION. THIS MATERIAL CAN BE SALVAGED AND REUSED.

APPLYING MULCH
WHEN MULCH IS USED WITHOUT SEEDING, MULCH SHALL BE APPLIED TO PROVIDE FULL COVERAGE OF THE EXPOSED AREA.
1. DRY STRAW OR HAY MULCH AND WOOD CHIPS SHALL BE APPLIED UNIFORMLY BY HAND OR BY MECHANICAL EQUIPMENT.
2. IF THE AREA WILL EVENTUALLY BE COVERED WITH PERENNIAL VEGETATION, 20-30 POUNDS OF NITROGEN PER ACRE IN ADDITION TO THE NORMAL AMOUNT SHALL BE APPLIED TO OFFSET NITROGEN UPTAKE OF NITROGEN CAUSED BY THE DECOMPOSITION OF THE ORGANIC MULCHES.
3. APPLY POLYETHYLENE FILM ON EXPOSED AREAS.

ANCHORING MULCH
1. STRAW OR HAY MULCH CAN BE PRESSED INTO THE SOIL WITH A DISK HARROW WITH THE DISK SET STRAIGHT OR WITH A SPECIAL "PACKER DISK." DISKS MAY BE SMOOTH OR SERRATED AND SHOULD BE 20 INCHES OR MORE IN DIAMETER AND 8 TO 12 INCHES APART. THE EDGES OF THE DISK SHOULD BE DULL ENOUGH NOT TO CUT THE MULCH BUT TO PRESS IT INTO THE SOIL LEAVING MUCH OF IT IN AN UPRIGHT POSITION. STRAW OR HAY MULCH SHALL BE ANCHORED IMMEDIATELY AFTER APPLICATION. STRAW OR HAY MULCH SPREAD WITH SPECIAL BLOWER-TYPE EQUIPMENT MAY BE ANCHORED. TACKIFIERS, BINDERS AND HYDRAULIC MULCH WITH TACKIFIERS SPECIFICALLY DESIGNED FOR TACKING STRAW CAN BE SUBSTITUTED FOR EMULSIFIED ASPHALT. PLEASE REFER TO MANUFACTURER'S SPECIFICATIONS.
2. NETTING OF THE APPROPRIATE SIZE SHALL BE USED TO ANCHOR WOOD WASTE. OPENINGS OF THE NETTING SHALL NOT BE LARGER THAN THE AVERAGE SIZE OF THE WOOD WASTE CHIPS.
3. POLYETHYLENE FILM SHALL BE ANCHOR TRENCHED AT THE TOP AS WELL AS INCREMENTALLY AS NECESSARY.

APPLICATION RATE FOR EACH TYPE OF SOIL ENCOUNTERED ON THE SITE.
MULCHING: MULCHING IS REQUIRED FOR ALL PERMANENT VEGETATION APPLICATIONS. MULCHING APPLIED TO SEEDED AREAS SHALL ACHIEVE 75% SOIL COVER. SELECT THE MULCHING MATERIAL FROM THE FOLLOWING AND APPLY AS INDICATED.
1. DRY STRAW OR DRY HAY OF GOOD QUALITY AND FREE OF WEED SEEDS CAN BE USED. DRY STRAW SHALL BE APPLIED AT THE RATE OF 2 TONS PER ACRE. DRY HAY SHALL BE APPLIED AT A RATE OF 2 1/2 TONS PER ACRE.
2. WOOD CELLULOSE MULCH OR WOOD PULP FIBER SHALL BE USED WITH HYDRAULIC SEEDING. IT SHALL BE APPLIED AT A RATE OF 500 LBS PER ACRE. DRY STRAW R DRY HAY SHALL BE APPLIED AFTER HYDRAULIC SEEDING.
3. ONE THOUSAND POUNDS OF WOOD CELLULOSE OR WOOD PULP FIBER, WHICH INCLUDES A TACKIFIER SHALL BE USED WITH HYDRAULIC SEEDING ON SLOPES GREATER THAN 3/4:1 OR STEEPER.
4. SERICEA LESPEDEZA HAY CONTAINING MATURE SEED SHALL BE APPLIED AT A RATE OF THREE TONS PER ACRE.
5. PINE STRAW OR PINE BARK SHALL BE APPLIED AT A THICKNESS OF 3" FOR BEDDING PURPOSES. OTHER SUITABLE MATERIALS IN SUFFICIENT QUANTITIES MAY BE USED WHERE ORNAMENTALS OR OTHER GROUND COVERS ARE PLANTED. THIS IS NOT APPROPRIATE FOR SEEDED AREAS.
6. WHEN USING TEMPORARY EROSION CONTROL BLANKETS OR BLOCK SOD, MULCHING IS NOT REQUIRED.

MULCHING Ds1
NOT TO SCALE

DS2
DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)

DEFINITION
THE ESTABLISHMENT OF TEMPORARY VEGETATIVE COVER WITH FAST GROWING SEEDINGS FOR SEASONAL PROTECTION ON DISTURBED OR DENUDED AREAS.

PURPOSE
TO REDUCE RUNOFF AND SEDIMENT DAMAGE OF DOWN STREAM RESOURCES
TO PROTECT THE SOIL SURFACE FROM EROSION
TO IMPROVE WILDLIFE HABITAT
TO IMPROVE AESTHETICS
TO IMPROVE TILTH, INFILTRATION AND AERATION AS WELL AS ORGANIC MATTER FOR PERMANENT PLANTINGS

REQUIREMENT FOR REGULATORY COMPLIANCE
MULCH OR TEMPORARY GRASSING SHALL BE APPLIED TO ALL EXPOSED AREAS WITHIN 14 DAYS OF DISTURBANCE. TEMPORARY GRASSING, INSTEAD OF MULCH, CAN BE APPLIED TO ROUGH GRADED AREAS THAT WILL BE EXPOSED FOR LESS THAN SIX MONTHS. IF AN AREA IS EXPECTED TO BE UNDISTURBED FOR LONGER THAN SIX MONTHS, PERMANENT PERENNIAL VEGETATION SHALL BE USED. IF OPTIMUM PLANTING CONDITIONS FOR TEMPORARY GRASSING IS LACKING, MULCH CAN BE USED AS A SINGULAR EROSION CONTROL DEVICE FOR UP TO SIX MONTHS BUT IT SHALL BE APPLIED AT THE APPROPRIATE DEPTH, ANCHORED, AND HAVE A CONTINUOUS 90% COVER OR GREATER OF THE SOIL SURFACE.

CONDITIONS
TEMPORARY GRASSING, INSTEAD OF MULCH, CAN BE APPLIED TO ROUGH GRADED AREAS THAT WILL BE EXPOSED FOR LESS THAN SIX MONTHS. TEMPORARY VEGETATIVE MEASURES SHOULD BE COORDINATED WITH PERMANENT MEASURES TO ASSURE ECONOMIC AND EFFECTIVE STABILIZATION. MOST TYPES OF TEMPORARY VEGETATION ARE IDEAL TO USE AS COMPANION CROPS UNTIL THE PERMANENT VEGETATION IS ESTABLISHED.

SPECIFICATIONS
GRADING AND SHAPING
EXCESSIVE WATER RUN-OFF SHALL BE REDUCED BY PROPERLY DESIGNED AND INSTALLED EROSION CONTROL PRACTICES SUCH AS CLOSED DRAINS, DITCHES, DIKES, DIVERSION, SEDIMENT BARRIERS AND OTHERS. NO SHAPING OR GRADING IS REQUIRED IF SLOPES CAN BE STABILIZED BY HAND-SEEDED VEGETATION OR IF HYDRAULIC SEEDING EQUIPMENT IS TO BE USED.

SEEDBED PREPARATION
WHEN A HYDRAULIC SEEDER IS USED, SEEDBED PREPARATION IS NOT REQUIRED. WHEN USING CONVENTIONAL OR HANDSEEDING, SEEDBED PREPARATION IS NOT REQUIRED IF THE SOIL MATERIAL IS LOOSE AND NOT SEALED BY RAINFALL. WHEN SOIL HAS BEEN SEALED BY RAINFALL OR CONSISTS OF SMOOTH CUT SLOPES, THE SOIL SHALL BE PITTED, TRENCHED OR OTHERWISE SCARIFIED TO PROVIDE A PLACE FOR SEED TO LODGE AND GERMINATE.

LIME AND FERTILIZER
AGRICULTURAL LIME IS REQUIRED UNLESS SOIL TESTS INDICATE OTHERWISE. APPLY AGRICULTURAL LIME AT A RATE OF ONE TON PER ACRE. GRADED AREAS REQUIRE LIME APPLICATION. SOILS CAN BE TESTED TO DETERMINE IF FERTILIZER IS NEEDED. ON REASONABLY FERTILE SOILS OR SOIL MATERIAL, FERTILIZER IS NOT REQUIRED. FOR SOILS WITH VERY LOW FERTILITY, 500 TO 700 POUNDS OF 10-10-10 FERTILIZER OR THE EQUIVALENT PER ACRE (12-16 LBS./1,000 SQ. FT.) SHALL BE APPLIED. FERTILIZER SHOULD BE APPLIED BEFORE LAND PREPARATION AND INCORPORATED WITH A DISK, RIPPER OR CHISEL.

SEEDING
SELECT A GRASS OR GRASS-LEGUME MIXTURE SUITABLE TO THE AREA AND SEASON OF THE YEAR. SEED SHALL BE APPLIED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULTIPACKER SEEDER, OR HYDRAULIC SEEDER (SLURRY INCLUDING SEED AND FERTILIZER). DRILL OR CULTIPACKER SEEDERS SHOULD NORMALLY PLACE SEED ONE-QUARTER TO ONE-HALF INCH DEEP. APPROPRIATE DEPTH OF PLANTING IS TEN TIMES THE SEED DIAMETER. SOIL SHOULD BE "RAKED" LIGHTLY TO COVER SEED WITH SOIL IF SEED BY HAND.

MULCHING
TEMPORARY VEGETATION CAN, IN MOST CASES, BE ESTABLISHED WITHOUT THE USE OF MULCH. MULCH WITHOUT SEEDING SHOULD BE CONSIDERED FOR SHORT TERM PROTECTION. REFER TO DS1-DISTURBED AREA STABILIZATION (WITH MULCHING ONLY).

IRRIGATION
DURING TIMES OF DROUGHT, WATER SHALL BE APPLIED AT A RATE NOT CAUSING RUNOFF AND EROSION. THE SOIL SHALL BE THOROUGHLY WETTED TO A DEPTH THAT WILL INSURE GERMINATION OF THE SEED. SUBSEQUENT APPLICATIONS SHOULD BE MADE WHEN NEEDED.

GRASSING TEMPORARY Ds2
NOT TO SCALE

SEEDING RATES FOR TEMPORARY SEEDING.

SPECIES	RATE PER 1,000 SQ.FT.	RATE PER ACRE.*	PLANTING DATES**
RYE	3.9 LBS.	3 BU	9/1 - 3/1
RYE GRASS	0.9 LBS.	40 LBS.	8/15 - 4/1
ANNUAL LESPEDEZA	0.9 LBS.	40 LBS.	1/15 - 9/15
WEEPING LOVEGRASS	0.1 LBS.	4 LBS.	2/15 - 6/15
SUNDANGRASS	1.4 LBS.	60 LBS.	3/1 - 8/1
BROWN MILLET	0.9 LBS.	40 LBS.	4/1 - 7/15
WHEAT	4.1 LBS.	3 BU	9/15 - 2/1

* UNUSUAL SITE CONDITIONS MAY REQUIRE HEAVIER SEEDING RATES.
** SEEDING DATES MAY NEED TO BE ALTERED TO FIT TEMPERATURE VARIATIONS AND CONDITIONS.

DU
DUST CONTROL ON DISTURBED AREAS

DEFINITION
CONTROLLING SURFACE AND AIR MOVEMENT OF DUST ON CONSTRUCTION SITES, ROADS, AND DEMOLITION SITES.

CONDITIONS
THIS PRACTICE IS APPLICABLE TO AREAS SUBJECT TO SURFACE AND AIR MOVEMENT OF DUST WHERE ON AND OFF-SITE DAMAGE MAY OCCUR WITHOUT TREATMENT.

METHOD AND MATERIALS
A. TEMPORARY METHODS

MULCHES. SEE STANDARD DS1-DISTURBED AREA STABILIZATION (WITH MULCHING ONLY). SYNTHETIC RESINS MAY BE USED INSTEAD OF ASPHALT TO BIND MULCH MATERIAL. REFER TO STANDARD TB-TACKIFIERS AND BINDERS. RESINS SUCH AS CURASOL OR TERRATAK SHOULD BE USED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

VEGETATIVE COVER. SEE STANDARD DS2- DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)

SPRAY-ON ADHESIVES. THESE ARE USED ON MINERAL SOILS (NOT EFFECTIVE ON MUCK SOILS) KEEP TRAFFIC OFF THESE AREAS. REFER TO STANDARD TB-TACKIFIERS AND BINDERS.

TILLAGE. THIS PRACTICE IS DESIGNED TO ROUGHEN AND BRING CLODS TO THE SURFACE. IT IS AN EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE WIND EROSION STARTS. BEGIN PLOWING ON WINDWARD SIDE OF SITE. CHISEL-TYPE FLOWS SPACED ABOUT 12 INCHES APART, SPRING-TOOTHED HARROWS, AND SIMILAR FLOWS ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT.

IRRIGATION. THIS IS GENERALLY DONE AS AN EMERGENCY TREATMENT. SITE IS SPRINKLED WITH WATER UNTIL THE SURFACE IS WET. REPEAT AS NEEDED.

BARRIERS. SOLID BOARD FENCES, SNOW FENCES, BURLAP FENCES, CRATE WALLS, BALES OF HAY AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING. BARRIERS PLACED AT RIGHT ANGLES TO PREVAILING CURRENTS AT INTERVALS OF ABOUT 15 TIMES THEIR HEIGHT ARE EFFECTIVE IN CONTROLLING WIND EROSION.

CALCIUM CHLORIDE. APPLY AT RATE THAT WILL KEEP SURFACE MOIST. MAY NEED RETREATMENT.

B. PERMANENT METHODS

PERMANENT VEGETATION. SEE STANDARD DS3-DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION). EXISTING TREES AND LARGE SHRUBS MAY AFFORD VALUABLE PROTECTION IF LEFT IN PLACE.

TOPSOILING. THIS ENTAILS COVERING THE SURFACE WITH LESS EROSION SOIL MATERIAL. SEE STANDARD TP-TOPSOILING.

STONE. COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL. SEE STANDARD CR-CONSTRUCTION ROAD STABILIZATION.

DUST CONTROL Du
NOT TO SCALE

PROFESSIONAL SEAL
STATE OF GEORGIA
REGISTERED PROFESSIONAL ENGINEER
NO. 27144
T. R. LONG
ENGINEERING, P.C.

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ORG
REGISTERED PROFESSIONAL ENGINEER
NO. 27144
T. R. LONG
ENGINEERING, P.C.

HINESVILLE: 114 North Commerce Street
Hinesville, Georgia 31313
(815) 368-5664
POOLER: 1000 Towne Center Blvd
Suite 304
Pooler, Georgia 31322
(912) 335-1046

TR LONG
ENGINEERING, P.C.

www.trlongeng.com

DS3
DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION)

DEFINITION
THE PLANTING OF PERENNIAL VEGETATION SUCH AS TREES, SHRUBS, VINES, GRASSES, OR LEGUMES ON EXPOSED AREAS FOR FINAL PERMANENT STABILIZATION. PERMANENT PERENNIAL VEGETATION SHALL BE USED TO ACHIEVE FINAL STABILIZATION.

CONDITIONS
PERMANENT PERENNIAL VEGETATION IS USED TO PROVIDE A PROTECTIVE COVER FOR EXPOSED AREAS INCLUDING CUTS, FILLS, DAMS, AND OTHER DENUDED AREAS.

SPECIFICATIONS
GRADING AND SHAPING
GRADING AND SHAPING MAY NOT BE REQUIRED WHERE HYDRAULIC SEEDING AND FERTILIZING EQUIPMENT IS TO BE USED. VERTICAL BANKS SHALL BE SLOPED TO ENABLE PLANT ESTABLISHMENT.
WHEN CONVENTIONAL SEEDING AND FERTILIZING ARE TO BE DONE, GRADE AND SHAPE WHERE FEASIBLE AND PRACTICAL, SO THAT EQUIPMENT CAN BE USED SAFELY AND EFFICIENTLY DURING SEEDBED PREPARATION, SEEDING, MULCHING AND MAINTENANCE OF THE VEGETATION.
CONCENTRATIONS OF WATER THAT WILL CAUSE EXCESSIVE SOIL EROSION SHALL BE DIVERTED TO A SAFE OUTLET. DIVERSIONS AND OTHER TREATMENT PRACTICES SHALL CONFORM WITH THE APPROPRIATE STANDARDS AND SPECIFICATIONS.

SEEDBED PREPARATION
SEEDBED PREPARATION MAY NOT BE REQUIRED WHERE HYDRAULIC SEEDING AND FERTILIZING EQUIPMENT IS TO BE USED. WHEN CONVENTIONAL SEEDING IS TO BE USED, SEEDBED PREPARATION WILL BE DONE AS FOLLOWS:

BROADCAST PLANTINGS
1. TILLAGE AT A MINIMUM, SHALL ADEQUATELY LOOSEN THE SOIL TO A DEPTH OF 4 TO 6 INCHES; ALLEVIATE COMPACTION; INCORPORATE LIME AND FERTILIZER; SMOOTH AND FIRM THE SOIL; ALLOW FOR THE PROPER PLACEMENT OF SEED, SPRIGS, OR PLANTS; AND ALLOW FOR THE ANCHORING OF STRAW OR HAY MULCH IF A DISK IS TO BE USED.
2. TILLAGE MAY BE DONE WITH ANY SUITABLE EQUIPMENT.
3. TILLAGE SHOULD BE DONE ON THE CONTOUR WHERE FEASIBLE.
4. ON SLOPES TOO STEEP FOR THE SAFE OPERATION OF TILLAGE EQUIPMENT, THE SOIL SURFACE SHALL BE PITTED OR TRENCHED ACROSS THE SLOPE WITH APPROPRIATE HAND TOOLS TO PROVIDE TWO PLACES 6 TO 8 INCHES APART IN WHICH SEED MAY LODGE AND GERMINATE. HYDRAULIC SEEDING MAY ALSO BE USED.

INDIVIDUAL PLANTS
1. WHERE INDIVIDUAL PLANTS ARE TO BE SET, THE SOIL SHALL BE PREPARED BY EXCAVATING HOLES, OPENING FURROWS, OR DIBBLE PLANTING.
2. FOR NURSERY STOCK PLANTS, HOLES SHALL BE LARGE ENOUGH TO ACCOMMODATE ROOTS WITHOUT CROWDING.
3. WHERE PINE SEEDLINGS ARE TO BE PLANTED, SUBSOIL UNDER THE ROW 36 INCHES DEEP ON THE CONTOUR FOUR TO SIX MONTHS PRIOR TO PLANTING. SUBSOILING SHOULD BE DONE WHEN THE SOIL IS DRY, PREFERABLY IN AUGUST OR SEPTEMBER.

PLANTING
HYDRAULIC SEEDING
MIX THE SEED (INOCULATED IF NEEDED), FERTILIZER, AND WOOD CELLULOSE OR WOOD PULP FIBER MULCH WITH WATER AND APPLY IN A SLURRY UNIFORMLY OVER THE AREA TO BE TREATED. APPLY WITHIN ONE HOUR AFTER THE MIXTURE IS MADE.

CONVENTIONAL SEEDING
SEEDING WILL BE DONE ON A FRESHLY PREPARED AND FIRMED SEEDBED. FOR BROADCAST PLANTING, USE A CULTIPACKER SEEDER, DRILL, ROTARY SEEDER, OTHER MECHANICAL SEEDER, OR HAND SEEDING TO DISTRIBUTE THE SEED UNIFORMLY OVER THE AREA TO BE TREATED. COVER THE SEED LIGHTLY WITH 1/8 TO 1/4 INCH OF SOIL FOR SMALL SEED AND 1/2 TO 1 INCH FOR LARGE SEED WHEN USING A CULTIPACKER OR OTHER SUITABLE EQUIPMENT.

NO-TILL SEEDING
NO-TILL SEEDING IS PERMISSIBLE INTO ANNUAL COVER CROPS WHEN PLANTING IS DONE FOLLOWING MATURITY OF THE COVER CROP OR IF THE TEMPORARY COVER STAND IS SPARSE ENOUGH TO ALLOW ADEQUATE GROWTH OF THE PERMANENT (PERENNIAL) SPECIES. NO-TILL SEEDING SHALL BE DONE WITH APPROPRIATE NO-TILL SEEDING EQUIPMENT. THE SEED MUST BE UNIFORMLY DISTRIBUTED AND PLANTED AT THE PROPER DEPTH.

INDIVIDUAL PLANTS
SHRUBS, VINES AND SPRIGS MAY BE PLANTED WITH APPROPRIATE PLANTERS OR HAND TOOLS. PINE TREES SHALL BE PLANTED MANUALLY IN THE SUBSOIL FURROW. EACH PLANT SHALL BE SET IN A MANNER THAT WILL AVOID CROWDING THE ROOTS. NURSERY STOCK PLANTS SHALL BE PLANTED AT THE SAME DEPTH OR SLIGHTLY DEEPER THAN THEY GREW AT THE NURSERY. THE TIPS OF VINES AND SPRIGS MUST BE AT OR SLIGHTLY ABOVE THE GROUND SURFACE. WHERE INDIVIDUAL HOLES ARE DUG, FERTILIZER SHALL BE PLACED IN THE BOTTOM OF THE HOLE, TWO INCHES OF SOIL SHALL BE ADDED AND THE PLANT SHALL BE SET IN THE HOLE.

GRASSING PERMANENT Ds3
NOT TO SCALE

MULCHING
MULCH IS REQUIRED FOR ALL PERMANENT VEGETATION APPLICATIONS. MULCH APPLIED TO SEEDED AREAS SHALL ACHIEVE 75% SOIL COVER. SELECT THE MULCHING MATERIAL FROM THE FOLLOWING AND APPLY AS INDICATED:

- DRY STRAW OR DRY HAY OF GOOD QUALITY AND FREE OF WEED SEEDS CAN BE USED. DRY STRAW SHALL BE APPLIED AT THE RATE OF 2 TONS PER ACRE. DRY HAY SHALL BE APPLIED AT A RATE OF 2 1/2 TONS PER ACRE.
- WOOD CELLULOSE MULCH OR WOOD PULP FIBER SHALL BE USED WITH HYDRAULIC SEEDING. IT SHALL BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE. DRY STRAW OR DRY HAY SHALL BE APPLIED (AT THE RATE INDICATED ABOVE) AFTER HYDRAULIC SEEDING.
- ONE THOUSAND POUNDS OF WOOD CELLULOSE OR WOOD PULP FIBER, WHICH INCLUDES A TACKIFIER, SHALL BE USED WITH HYDRAULIC SEEDING ON SLOPES 1/2:1 OR STEEPER.
- SERICEA LESPEDEZA HAY CONTAINING MATURE SEED SHALL BE APPLIED AT A RATE OF THREE TONS PER ACRE.
- PINE STRAW OR PINE BARK SHALL BE APPLIED AT A THICKNESS OF 3 INCHES FOR BEDDING PURPOSES. OTHER SUITABLE MATERIALS IN SUFFICIENT QUANTITY MAY BE USED WHERE ORNAMENTALS OR OTHER GROUND COVERS ARE PLANTED. THIS IS NOT APPROPRIATE FOR SEEDED AREAS.
- WHEN USING TEMPORARY EROSION CONTROL BLANKETS OR BLOCK SOD, MULCH IS NOT REQUIRED.
- BITUMINOUS TREATED ROVING MAY BE APPLIED ON PLANTED AREAS ON SLOPES, IN DITCHES OR DRY WATERWAYS TO PREVENT EROSION. BITUMINOUS TREATED ROVING SHALL BE APPLIED WITHIN 24 HOURS AFTER AN AREA HAS BEEN PLANTED. APPLICATION RATES AND MATERIALS MUST MEET GEORGIA DEPARTMENT OF TRANSPORTATION SPECIFICATIONS.

WOOD CELLULOSE AND WOOD PULP FIBERS SHALL NOT CONTAIN GERMINATION OR GROWTH INHIBITING FACTORS. THEY SHALL BE EVENLY DISPERSED WHEN AGITATED IN WATER. THE FIBERS SHALL CONTAIN A DYE TO ALLOW VISUAL METERING AND AID IN UNIFORM APPLICATION DURING SEEDING.

APPLYING MULCH
STRAW OR HAY MULCH WILL BE SPREAD UNIFORMLY WITHIN 24 HOURS AFTER SEEDING AND/OR PLANTING THE MULCH MAY BE SPREAD BY BLOWER-TYPE SPREADING EQUIPMENT, OTHER SPREADING EQUIPMENT OR BY HAND. MULCH SHALL BE APPLIED TO COVER 75% OF THE SOIL SURFACE.
WOOD CELLULOSE OR WOOD FIBER MULCH SHALL BE APPLIED UNIFORMLY WITH HYDRAULIC SEEDING EQUIPMENT.

ANCHORING MULCH
ANCHOR STRAW OR HAY MULCH IMMEDIATELY AFTER APPLICATION BY ONE OF THE FOLLOWING METHODS:
(A) EMULSIFIED ASPHALT CAN BE (A) SPRAYED UNIFORMLY ONTO THE MULCH AS IT IS EJECTED FROM THE BLOWER MACHINE OR
(B) SPRAYED ON THE MULCH IMMEDIATELY FOLLOWING MULCH APPLICATION WHEN STRAW OR HAY IS SPREAD BY METHODS OTHER THAN SPECIAL BLOWER EQUIPMENT.

THE COMBINATION F ASPHALT EMULSION AND WATER SHALL CONSIST OF A HOMOGENEOUS MIXTURE SATISFACTORY FOR SPRAYING. THE MIXTURE SHALL CONSIST OF 100 GALLONS OF GRADE SS-1H OR CSS-1H EMULSIFIED ASPHALT AND 100 GALLONS OF WATER PER TON OF MULCH. CARE SHALL BE TAKEN AT ALL TIMES TO PROTECT STATE WATERS, THE PUBLIC, ADJACENT PROPERTY, PAVEMENTS, CURBS, SIDEWALKS, AND ALL OTHER STRUCTURES FROM ASPHALT DISCOLORATION.

- HAY AND STRAW MULCH SHALL BE PRESSED INTO THE SOIL IMMEDIATELY AFTER THE MULCH IS SPREAD. A SPECIAL "PACKER DISK" OR DISK HARROW WITH THE DISKS SET STRAIGHT MAY BE USED. THE DISKS MAY BE SMOOTH OR SERRATED AND SHOULD BE 20 INCHES OR MORE IN DIAMETER AND 8 TO 12 INCHES APART. THE EDGES OF THE DISKS SHALL BE DULL ENOUGH TO PRESS THE MULCH INTO THE GROUND WITHOUT CUTTING IT, LEAVING MUCH OF IT IN AN UPRIGHT POSITION. MULCH SHALL NOT BE PLOWED INTO THE SOIL.
- SYNTHETIC TACKIFIERS OR BINDERS APPROVED BY GDOT SHALL BE APPLIED IN CONJUNCTION WITH OR IMMEDIATELY AFTER THE MULCH IS SPREAD. SYNTHETIC TACKIFIERS SHALL BE MIXED AND APPLIED ACCORDING TO MANUFACTURER'S SPECIFICATIONS. REFER TO TB-TACKIFIERS AND BINDERS.
- RYE OR WHEAT CAN BE INCLUDED WITH FALL AND WINTER PLANTINGS TO STABILIZE THE MULCH. THEY SHALL BE APPLIED AT A RATE OF ONE-QUARTER TO ONE HALF BUSHEL PER ACRE.
- PLASTIC MESH OR NETTING WITH MESH NO LARGER THAN ONE INCH BY ONE INCH MAY BE NEEDED TO ANCHOR STRAW OR HAY MULCH ON UNSTABLE SOILS AND CONCENTRATED FLOW AREAS. THESE MATERIALS SHALL BE INSTALLED AND ANCHORED ACCORDING TO MANUFACTURER'S SPECIFICATIONS.

IRRIGATION
IRRIGATION SHALL BE APPLIED AT A RATE THAT WILL NOT CAUSE RUNOFF.

TABLE 6-5.1 FERTILIZER REQUIREMENTS

TYPE OF SPECIES	YEAR	ANALYSIS FOR EQUIVALENT N-P-K	RATE	N TOP DRESSING RATE	
				N	P
1. COOL SEASON GRASSES	FIRST SECOND MAINTENANCE	6-12-12 6-12-12 10-10-10	1500 LBS./AC. 1000 LBS./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	1500 LBS./AC. 1000 LBS./AC. 400 LBS./AC.	0-50 LBS./AC.
3. WARM SEASON GRASSES		FIRST SECOND MAINTENANCE	10-10-10 10-10-10 10-10-10	1300 LBS./AC. 1300 LBS./AC. 1100 LBS./AC.	--
	4. PINE SEEDLINGS	FIRST	20-10-6	--	--
5. SHRUB LESPEDEZA		FIRST MAINTENANCE	0-10-10 0-10-10	700 LBS./AC. 700 LBS./AC.4/	--
	6. TEMPORARY COVER CROPS SEEDING ALONE	FIRST	10/10/2010	500 LBS./AC.	30 LB./ACRE/
7. WARM SEASON GRASSES		FIRST SECOND MAINTENANCE	6-12-12 6-12-12 10-10-10	1500 LBS./AC. 1000 LBS./AC. 400 LBS./AC.	50-100 LBS./AC.
	8. WARM SEASON GRASSES AND LEGUMES	FIRST SECOND MAINTENANCE	6-12-12 0-10-10 0-10-10	1500 LBS./AC. 1000 LBS./AC. 400 LBS./AC.	50 LBS./AC./

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.

FOR BEST RESULTS TAKE AT LEAST ONE SAMPLE OF SOIL TO THE COUNTY EXTENSION AGENT FOR ANALYSIS TO DETERMINE THE BEST FERTILIZER

- DRY STRAW OR DRY HAY OF GOOD QUALITY AND FREE OF WEED SEEDS CAN BE USED. DRY STRAW SHALL BE APPLIED AT THE RATE OF 2 TONS PER ACRE. DRY HAY SHALL BE APPLIED AT A RATE OF 2 1/2 TONS PER ACRE.
- WOOD CELLULOSE MULCH OR WOOD PULP FIBER SHALL BE USED WITH HYDRAULIC SEEDING. IT SHALL BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE. DRY STRAW OR DRY HAY SHALL BE APPLIED (AT THE RATE INDICATED ABOVE) AFTER HYDRAULIC SEEDING.
- ONE THOUSAND POUNDS OF WOOD CELLULOSE OR WOOD PULP FIBER, WHICH INCLUDES A TACKIFIER, SHALL BE USED WITH HYDRAULIC SEEDING ON SLOPES 3/4:1 OR STEEPER.
- SERICEA LESPEDEZA HAY CONTAINING MATURE SEED SHALL BE APPLIED AT A RATE OF THREE TONS PER ACRE.
- PINE STRAW OR PINE BARK SHALL BE APPLIED AT A THICKNESS OF 3 INCHES FOR BEDDING PURPOSES. OTHER SUITABLE MATERIALS IN SUFFICIENT QUANTITY MAY BE USED WHERE ORNAMENTALS OR OTHER GROUND COVERS ARE PLANTED. THIS IS NOT APPROPRIATE FOR SEEDED AREAS.
- WHEN USING TEMPORARY EROSION CONTROL BLANKETS OR BLOCK SOD, MULCH IS NOT REQUIRED.

AGRICULTURAL LIME IS REQUIRED UNLESS SOIL TESTS INDICATE OTHERWISE. APPLY AGRICULTURAL LIME AT A RATE OF ONE TON PER ACRE. GRADED AREAS REQUIRE LIME APPLICATION. SOILS CAN BE TESTED TO DETERMINE IF FERTILIZER IS NEEDED. ON REASONABLY FERTILE SOILS OR SOIL MATERIAL, FERTILIZER IS NOT REQUIRED. FOR SOILS WITH VERY LOW FERTILITY, 500 TO 700 POUNDS OF 10-10-10 FERTILIZER OR THE EQUIVALENT PER ACRE (12-16 LBS./1,000 SQ. FT.) SHALL BE APPLIED. FERTILIZER SHOULD BE APPLIED BEFORE LAND PREPARATION AND INCORPORATED WITH A DISK, RIPPER OR CHISEL.

Month	Temporary Cover [Ds2]	Rate per Acre		Permanent Cover [Ds3]	Rate per Acre	
		Seeded Alone	Added To Mix		Seeded Alone	Added To Mix
January	Rye grass	40 lbs.	---	Unhulled Bermuda Sericea Lespedeza (1)	10 lbs.	6 lbs.
	Rye grass	3 bu.	.5 bu.		75 lbs.	---
February	Annual Lespedeza	40 lbs.	10 lbs.	Unhulled Bermuda Sericea Lespedeza (1)	10 lbs.	6 lbs.
	Rye grass	40 lbs.	.5 bu.		75 lbs.	---
March	Weeping Lovegrass	4 lbs.	2 lbs.	Panicum Bahio Hulled Bermuda Sericea Lespedeza (2)	60 lbs.	30 lbs.
	Annual Lespedeza	40 lbs.	10 lbs.		10 lbs.	6 lbs.
April	Weeping Lovegrass	4 lbs.	2 lbs.	Panicum Bahio Hulled Bermuda Sericea Lespedeza (2)	60 lbs.	30 lbs.
	Sudan Grass	40 lbs.	10 lbs.		10 lbs.	6 lbs.
May	Weeping Lovegrass	4 lbs.	2 lbs.	Panicum Bahio Hulled Bermuda Sericea Lespedeza (2)	60 lbs.	30 lbs.
	Sudan Grass	40 lbs.	10 lbs.		10 lbs.	6 lbs.
June	Pearl Millet	50 lbs.	---	Panicum Bahio Hulled Bermuda	60 lbs.	30 lbs.
	Sudan Grass	40 lbs.	10 lbs.		10 lbs.	6 lbs.
July	Pearl Millet	50 lbs.	---	Panicum Bahio	60 lbs.	30 lbs.
	Sudan Grass	60 lbs.	---		10 lbs.	6 lbs.
August	Pearl Millet	50 lbs.	---	Panicum Bahio	60 lbs.	30 lbs.
	Rye grass	3 bu.	.5 bu.		10 lbs.	6 lbs.
September	Rye grass	40 lbs.	---	Sericea Lespedeza (1)	75 lbs.	---
	Oats	4 bu.	1 bu.		10 lbs.	6 lbs.
October	Rye grass	40 lbs.	---	Sericea Lespedeza (1)	75 lbs.	---
	Oats	4 bu.	1 bu.		10 lbs.	6 lbs.
November	Rye grass	40 lbs.	---	Unhulled Bermuda	75 lbs.	---
	Wheat	4 bu.	.5 bu.		10 lbs.	6 lbs.
December	Rye grass	40 lbs.	---	Sericea Lespedeza (1)	75 lbs.	---
	Oats	4 bu.	1 bu.		10 lbs.	6 lbs.

FERTILIZER:

YEAR	ANALYSIS N-P-K	RATE	N TOP DRESSING RATE
FIRST	6-12-12	1500 LBS/AC	50-100 LBS/AC
SECOND	6-12-12	800 LBS/AC	50-100 LBS/AC
MAINTENANCE	10-10-10	400 LBS/AC	30 LBS/AC

SHEET NAME:
EROSION CONTROL DETAILS

REVISIONS:
1. 9/13/2023 TRL
2. 4/01/2024 EPD
3. 7/29/2024
4.
5.
6.
7.
8.
9.
10

INITIAL DATE: 6/30/2022
DRAWN BY: KC
CHECKED BY: TRL
PROJECT #: 2022-42

SHEET NUMBER:
C3.8

WATER SYSTEM IMPROVEMENT WEST OF CSX RAILROAD LIBERTY COUNTY, GEORGIA