ADVERTISEMENT FOR BIDDERS
for
OLD BALLGROUND SANITARY SEWER REPLACEMENT PHASE 2 AND ETOWAH RIVER TRAIL EXTENSION

AUGUST 28, 2020

ADDENDUM NO. 2

This Addendum forms part of the "Construction Documents" and modifies or clarifies the original advertisement dated June 2020. Prospective bidders shall acknowledge receipt of the total number of Addenda issued for this Project in their Bid. Failure to do so may subject the Bidder to disqualification.

SPECIFICATIONS

2-1 SPECIFICATION INDEX

DELETE the Specification Index in its entirety and **REPLACE** with a new Specification Index consisting of 3 pages, attached hereto.

2-2 SECTION 00410 – BID FORM

Page 4 of 8

DELETE the note "Sheets 00410-4.1 4.24" and **REPLACE** with "Sheets 00410-4.1 – 4.29"

2-3 SECTION 00410 – BID PROPOSAL

DELETE Section 00410, Bid Proposal consisting of 24 pages, in its entirety and **REPLACE** with a new Section 00410, Bid Proposal consisting of 29 pages, attached hereto.

2-4 SECTION 01012 – MOBILIZATION AND DEMOBILIZATION

DELETE Section 01012, Mobilization and Demobilization in its entirety and **REPLACE** with a new Section 01012, Mobilization and Demobilization consisting of 1 page, attached hereto.

2-5 SECTION 01150 – MEASUREMENT AND PAYMENT

DELETE Section 01150, Measurement and Payment in its entirety and **REPLACE** with a new Section 01150, Measurement and Payment consisting of 14 pages, attached hereto.

2-6 SECTION 02210 – SOIL EROSION AND SEDIMENT CONTROL

DELETE Section 02210, Soil Erosion and Sediment Control in its entirety and **REPLACE** with a new Section 02210 Soil Erosion and Sediment Control consisting of 13 pages, attached hereto.

2-7 SECTION 02486 – GRASSING AND MULCHING

DELETE Section 02486, Grassing and Mulching in its entirety and **REPLACE** with a new Section 02486, Grassing and Mulching consisting of 1page, attached hereto.

2-8 SECTION 02605 – PRECAST MANHOLES AND STRUCTURES

DELETE Section 02605, Precast Manholes and Structures in its entirety and **REPLACE** with a new Section 02605, Precast Manholes and Structures consisting of 10 pages, attached hereto.

2-9 SECTION 02606 – SANITARY SEWER CONSTRUCTION

DELETE Section 02606, Sanitary Sewer Construction in its entirety and **REPLACE** with a new Section 02606, Sanitary Sewer Construction consisting of 18 pages, attached hereto.

2-10 SECTION 999-9000 – SPECIAL PROVISIONS

DELETE Section 999-9000, Special Provisions in its entirety and **REPLACE** with a new Section 999-9000, Special Provisions consisting of 1 page, attached hereto.

PLANS

2-11 CONSTRUCTION PLANS

DELETE Sheet 06-01 in its entirety

2-12 CONSTRUCTION PLANS

DELETE Sheets "C-01, G-01, S-01, S-02, S-03, S-04, S-07, EC-02, EC-04, EC-05, EC-06, EC-07, EC-11, EC-19, EN-01, ECL-01, CMP-01, 04-01, 05-01, 11-02, 11-03, 11-04, 11-05, 11-06, 11-07, 11-12, 11-13, 16-01, 18-02, 18-03, 18-04, 18-05, 18-06, 18-07, 18-12, 18-13, 22-03, 23-03, 23-04, 29-02, 29-03, 29-04, 29-05, 29-06, 29-07, 29-12, 29-13, 29-14, 31-02, 40-01, 40-02, 40-03, 40-04, PT-01, PT-02, PT-03, and Precast Specs" and **REPLACE** them

with new Plan Sheets "C-01, G-01, S-01, S-02, S-03, S-04, S-07, EC-02, EC-04, EC-05, EC-06, EC-07, EC-11, EC-19, EN-01, ECL-01, CMP-01, 04-01, 05-01, 11-02, 11-03, 11-04, 11-05, 11-06, 11-07, 11-12, 11-13, 16-01, 18-02, 18-03, 18-04, 18-05, 18-06, 18-07, 18-12, 18-13, 22-03, 23-03, 23-04, 29-02, 29-03, 29-04, 29-05, 29-06, 29-07, 29-12, 29-13, 29-14, 31-02, 40-01, 40-02, 40-03, 40-04, PT-01, PT-02, PT-03, and Precast Specs", attached hereto.

2-13 CONSTRUCTION PLANS

ADD new Sheets "D-07 and 22-04" to the Plan Set, attached hereto.

End of Addendum No. 2

Questions and Clarifications

These Questions and Clarifications are for Information Only and do not form part of the Contract Documents.

1. Items 162 through 173 in that sequence request the contractor to bid an "Alternate Deduct" for the boardwalk section of the trail. **Bid Alternate #1 has been eliminated. See revised Plans and Bid Form.**
2. It appears like the Owner would like to see how much a shorter length of boardwalk would cost? **Bid Alternate #1 has been eliminated. See revised Plans and Bid Form.**
3. There is nothing pertaining to items 86 through 173 in the measurement and payment. **Bid Items for the Etowah Trail will follow Georgia Department of Transportation (GDOT) specifications, measurement and payment.**
4. Shouldn't the line item noted as "3" on the attachment Subtotal Trail Extension Bid Alternate 1 Deduct *live below the grand total*? **Bid Alternate #1 has been eliminated. See revised Plans and Bid Form.**
5. The units for Items 162 through 173 are not intended to be negative units. **Bid Alternate #1 has been eliminated. See revised Plans and Bid Form.**
6. Geotech Report – Was there a subsurface analysis done for the Sewer portion of the work? If so, will it be provided? **There was not any subsurface analysis done for the Sewer portion.**
7. Will the use of blasting be permitted to excavate rock? **Yes.**
8. Bid Item 61 – GA Power Monument – Is there a detail or spec for this item? T**he item has been added to the measurement and payment section of the specs. There is no detail. Only replace monuments that have been damaged due to construction**.
9. Bid Item 71 – Solid Rock Excavation – Given in tons, was this meant to be C.Y.? **Yes, this has been revised to state C.Y. in bid proposal.**
10. Bid Item 149 – 30" Steel Casing – Given in EA units, was this supposed to be LF? **Yes, this has been revised to state LF in the bid proposal.**
11. Bid Item 90 – Foundation Backfill Material – please clarify the use and when it is to be utilized. **Bid Item Found Backfill Material Type 2 as directed by Engineer. Contactor shall refer to GDOT, Section 812 – Backfill Materials – Type II, use material that meets the requirements of Section 800, Class A or B aggregate. Contractor is to provide a CY price for the material cost and placement and is associated with proposed storm drain installation.**
12. Bid Item 140 – Material Testing – Can the Owner/Engineer provide an allowance in lieu of a lump sum? **Bid Item 159 – Material Testing has been changed from a Lump Sum to an Allowance of $25,000.00**
13. Bid Item 153 – Should any of the Boardwalk Foundations be part of the Deduct Bid? **Bid Item 153 Boardwalk Foundations has been eliminated from the Bid Form. Refer to revised Bid Form.**
14. Can Owner/Engineer provide a pay item for Unsuitable Soils to match work included with Measurement and Payment #9? **Bid Item 72 Remove and Replace Unsuitable Soil has been added to the Bid Form.**
15. Will payment for stored materials be allowed? **Yes**
16. Does the City or Engineer have data on the existing flow of the pump station to help determine bypass flow requirements? **1.2 MGD Average and 3.27 MGD Peak**

17. Section 01012 – Mobilization and Demobilization pay limits is stated to be maximum allowed at 1%. This is not reasonable as the cost of the bond along with other upfront costs far exceeds this amount. Can this maximum bid amount be increased? **Yes, no limits for mobilization and demobilization.**
18. On Detail Sheet 40-02, Omega II Fence is shown. Where does it get installed? **The Omega II Fence gets installed on the boardwalks.**
19. Bid Items 62 & 63 – Power Pole and Light Pole Removement and Replacement – please indicate where work is shown on drawings along with a specification for particular requirements. **Light poles are at Riverview Investors parking lot, See Sheet S-04. Power pole is at Station 55+92 at Waleska Street. Only replace poles that are damaged or required to be removed and replaced during construction.**
20. Can the Owner provide a specific list / purchase order scope of work for the PermaTrak boardwalk? **Contractor shall refer to Sheet PT-01 for items that will be supplied by PermaTrak and items required by PermaTrak to construct the proposed boardwalks. Contractor is responsible for unloading the material, storing the material safely on site, and installing the boardwalk.**
21. Please clarify / highlight any specific work that is to be included for work as shown on Sheet D-06, Pump Station. Do any of the notes apply to this contract? **D-06 is the existing pump station. The existing steps will need to be removed and replaced or re-used if approved by the Engineer, See Item 52 in Bid Proposal. Wet well will need to be cored and link seal added inside and out. See Item 28 in Bid Proposal, Connect to Existing Wet Well. The Wet Well will need to be Byasss Pumped, See Bid Item 82.**
22. Are bidders required to purchase the bid documents in order for their bid to be considered? **No**
23. Will questions brought up at the pre-bid meeting be answered in an addendum? The pre-bid is 7 days from the bid date and Article 6 of instruction requires questions to be received 10 days prior to bid. **All questions brought up at the Pre-Bid meeting will be answered in Addendum Two and the bid date has been pushed back to Thursday September 10.**
24. Please confirm that City of Canton's sales tax will apply for a total sales tax of 8.75%. **Cherokee County Sales Tax is 6%.**
25. Please identify the locations of Bid Proposal Items 45, 46, 47 & 48 (now Bid Items 46-49). **Bid Item 46, Remove & Replace Existing 16" DIP Force Main is at Station 2+10. Bid Item 47, Remove & Replace Existing 12" DIP Water Main is at Station 30+40 and 55+60. Bid Item 48, Remove and Replace Existing 8" DIP Water Main and Bid Item 49, Remove and Replace Existing 4" DIP Water Main, are at Station 51+60.**
26. For these items is the existing pipe to be salvaged & turned over to the owner? **No.**
27. If only installing polywrap can the existing pipe be reused? **No.**
28. What is the 4" water being replaced with? **4" DIP Pressure Class 350.**
29. S.C. 5.04.B.6 requires auto liability of 1,000,000 for each person, each accident with a combined single limit of 2,000,000. Would a 10,000,000 umbrella policy cover the deficit of each of these items if individually not up to limits stated? **Yes, a $10M umbrella policy will cover the deficiencies in the underlying policies.**
30. Please clarify the Alternate Deduct. Is there a separate grading plan and pipe profile for the alternate deduct? **Alternate #1 has been eliminated. Please see revised Plans and Bid Form.**

31. Is 60" RCP for alternate deduct to be used at each Boardwalk 1, 2, & 3? Only 40 LF is in the bid schedule. **Alternate #1 has been eliminated. Please see revised Plans and Bid Form for updated quantities.**
32. Special Conditions and Plan notes indicates NO work is to be performed on weekends. Will any exceptions be made to this requirement? **Normal working hours are Monday through Friday 7 AM to 7 PM and Saturday 9:00 AM to 6:00 PM. Work is not allowed on Sundays.**
33. S.C. 6.06G. If more than 25% of work is to be done by subcontractors, owner must be notified in writing with the bid. Where should this be clarified on the bid form? **The City is not requiring the subcontractor notification in the Bid Form.**
34. Contractor must comply with General Permit GAR100002 – please provide. **See Specifications Section 02210 and CMP-01 and CMP-02 of the Plans.**
35. Are there any easement stipulations associated with this project? **As of Addendum No. 2 issue date, there are no easement stipulations, however, not all easements have been acquired.**
36. Please confirm price for "double row" silt fence is for 2 rows side by side. Therefore, based on the Bid Schedule, all silt fence on the project will be double row? **Bid item is for 2 rows. All silt fence will be double row.**
37. Is concrete ditch cap in the bid schedule the same as concrete base for trenches in measurement and payment? **Yes**
38. There is only a fraction of the area when compared to Asphalt. Where else is the asphalt surfacing to be used? **Decreased the quantity to 100 SY.**
39. Bid Item 75 – Landscaping – Where does this bid item apply? **This item applies when any landscaping (trees, bushes, shrubs, etc.) not covered under a separate line item has been disturbed during sewer main construction and must be replaced.**
40. The Bid Schedule has Remove & Replace Gravel Drive but does not have Remove & Replace Asphalt or Concrete. The 1-1/2" Type F is described as being for resurfacing only. Please clarify. **Remove and Replace Asphalt = 1-1/2" Type F Asphalt, Bid Item 50. Remove & Replace Concrete Parking Lot has been added, See Bid Item 77.**
41. Should there be a Remove & Replace Sidewalk item? **Use Item 55 – Remove & Replace Existing Concrete Trail.**
42. Measurement & Payment describes Tree Protection Fence as ONLY that directed by the Engineer. Will the TP Fence shown on the plans be paid for under Item 179? **Yes, item is now Bid Item 180.**
43. Are any 2" PVC GPS Data Collection Pipes required? **Yes for all water mains.**
44. Bid Item 149 – 30" Steel Casing is shown being installed on EXISTING 24" Sanitary. Is this the intent? What is the detail for installation? **Yes. Steel Casing is to be installed around Existing 24" Sanitary Sewer Pipe. Steel Casing has been revised to 36" size (See Bid Item 160) and construction detail for casing is located on Sheet 40-04 (Detail 2).**
45. Ductile Iron Fittings – Is the bid item for the 30" pipe or for smaller sizes? **For all water mains, not for 30" sewer.**
46. Bid Item 78 – Reconnect Existing Water Meter and Bid Item 82 – Connect to Existing Water Meter – What size are these meters? **2-4" and 2-8" water meters.**
47. Measurement & Payment item 10. Connecting to Existing Sewer or MH indicates that this pay item is to include "Drop Manholes & extra depths of the same" – the bid schedule appears to pay for the

drop MHs on the plans under the MH section. Please clarify. **Connect to is for existing manholes. Drop Manholes are for proposed.**

48. It appears based on the Bid Schedule & Plans that each 6" service (for Example) that is tied into the new 30" will be paid under the following items:
    a. #34 - 30 x 6 Wye; #35 - 6" bend – if installed; #36 - 6" cleanout - if installed; #32 - Connect to Ex 6"; #41- Cut & Plug 6"; #21 - 6" PVC Service; Please confirm, as measurement and payment does not indicate ALL these items are to be paid for a connection. **Yes, all items will be paid.**
49. Please confirm the contractor must pay for soils testing. The frequency identified in Section 01410 (each 6" lift) will require a full-time testing agency to be on-site during backfill operations. **The Contractor shall follow GDOT's requirements for testing the embankments and the backfills as per GDOT's Standard Specifications Current Edition Sections 208 and 209, and GDOT's Sampling, Testing and Inspection Manual. In general, under pavement the Contractor shall test fill areas every foot to 95% laboratory dry density and the final lift to the fill, which will be the subgrade level, to be compacted to 100% density. For the shoulder construction, the testing can be performed every 2 feet intervals.**
50. The boardwalk bid schedule has a line item for material testing – is that exclusively for the boardwalk scope or should the above soils testing also be incorporated? **Material Testing is for the entire Project. Soil Testing is broken out into a total of three Geotechnical items:**
    1. **Geotechnical Report for Boardwalk Foundation Investigation (BFI), (Includes boring locations at each bent location, beginning and end of the boardwalks – Total of 4.**
    2. **Geotechnical Report for Wall Foundation Investigation (WFI)**
    3. **Geotechnical Testing (Entire Project, excluding Geotechnical Report for Boardwalk Foundation Investigation (BFI) and Geotechnical Report for Wall Foundation Investigation (WFI)**
51. Note 32 on the plans indicate marketable timber shall be salvaged. What is the owner's intent with regard to salvaging timber? **All timber shall be removed from the site.**
52. Section 01590 & 01510 – Are any field offices or phone services required for this contract? **No**
53. Section 02605 calls for dampproofing. The product indicated is Hydrocide 648. Will CS-55 (a waterborne acrylic based coating) be acceptable for an "equal"? **No, must be emulsified-asphalt coating.**
54. Can 5' or 6' diameter manhole be reduced to 4' as indicated in detail S702? **Yes**
55. Detail S702, Note 5 calls for S730 details for the MH before the lift station. Please provide detail. **Delete Note 5.**
56. Will Owner supply all water for testing at NO cost to contractor? **No**
57. Must manholes have BOTH an Exfiltration Test and a Vacuum test or just one? **Both**
58. Does the allowance for the PermaTrak include sales tax or does that need to be included in another item? **Yes, it includes sales tax.**
59. The CIP grade beams do not seem to have an item in the Bid Schedule. Should there be a CY unit price and a LB unit price for reinforcing since this will have to be designed? **Contractor is to provide CIP grade beam. CIP grade beam is identified in PermaTrak details. Line items for Cast in Place Concrete, 4000 PSI and Bar Reinforced Steel have been added to the Bid Form.**

Contractor to provide shop drawings, signed and sealed by Structural Engineer in the State of Georgia for structural CIP grade beams for review and approval.

60. Storm profiles H through N call for 12" RCP – the smallest manufactured is 15". Can this be 12" SCH 40? **RCP size has been revised to 15" as noted in the Plans and Bid Form.**
61. What size will the elm and cherry tree be replaced with? These are actually described as a particular caliper. **Please refer to Bid Form for replacement quantities, type, size, etc.**
62. Bid Item 103 – Is it acceptable to have ALL precast Headwalls – this is a GDOT CY item? **Precast or poured in place headwalls are acceptable. Comply with GDOT standards, details and specifications for concrete headwalls.**
63. Sheet 29-14 – There are details for various plantings, but not specifically for the 1500 EA – bare root plants. Is there a specific method for installing those? **Install plants 10' on center in a triangular pattern.**
64. Sheet 29-14 – Note 29. Requires the contractor to provide water bag irrigation devices at all trees until the end of the guaranteed period – 1 year. This is a highly labor intensive requirement. Should watering be at the discretion of the contractor/landscaper? **The Contractor shall water at their discretion to keep all plant material alive and in healthy condition for the one-year guarantee period. Note has been revised to not include water bags.**
65. Item 135 – Landscape mulch is measured as SY. Is this correct? The note on the bottom of Sheet 29-14 says "4" layer of Pine Straw" the detail says "3" mulch – hardwood bark". Please clarify. **Note has been revised to include pine straw mulch only, and SY measurement is correct.**
66. Sheet S-04 between MHs 19-21 indicate EX as DIP in Profile but Vitrified Clay in Plan View – Please confirm. **All Existing 24" Sewer is DIP. Plan Sheet S-04 has been corrected in Plan View.**
67. It appears there are less vents called out for proposed MHs than is provided on existing. Is this correct? **Need 6 vents, one every 1200 FT.**
68. Measurement & Payment calls for "waterproof" MH vents, detail shows 4" DIP. Is there special coating required on the DIP? **No**
69. Where is "Connect to EX 24" Sewer"? is this at MH 24? **Yes**
70. Can historical flow data be provided, average and peak? **1.7 MGD Average, 3.67 MGD Peak in February 2020.**
71. Reference Drawing 40-01:
    a. Please confirm joint details for the concrete trail walkway. Detail 4 notes tooled picture framed joint pattern. Detail 3 notes 3/8" x 1" deep saw cut joints. Detail 5 notes scored pattern at the approach slab which is interpreted as tooled. **Contractor to provide picture framing on concrete walk per detail, then come back and saw cut joints.**
    b. Will mockups be required for concrete paving and/or wooden railing? **Yes**
72. Reference Drawings 11-12 and PRW-1: Please clarify required exposed concrete wall finish and if a graffiti proof coating is required. **Graffiti coating is required on Wall PW-1.**
73. Reference PermaTrak Precast Specifications Drawing:
    a. 1.2, D: Has a texture been selected? **PermaGrip**
    b. 1.2, F: Has a color been selected? **Natural Concrete**

c. 1.3, E: Will mockups be required? **Yes, PermaTrak will provide to the Contractor/City, a free mockup would be a small "brick" size sample that will show color and texture of the concrete panels.**

74. Reference PermaTrak Drawing PT-01:
    a. Design Data Note 2: Helical piers are referenced. Will a pay item be added for helical piers or how will they be paid for if determined required? **Contactor to refer to revised PermaTrak documents, reference to Helical Piers has been deleted.**
    b. Design Data Note 4: Has there been a hydraulic analysis performed? Under which item will this be paid if bidders are to include? **Contractor is to provide a Hydraulic Analysis and Scour Calculations for the boardwalk features by a licensed and registered civil engineer within the State of Georgia and will be paid under the Geotechnical Report Boardwalk Foundation Investigation (BFI) report pay item. The Contractor shall provide a hydraulic analysis of the proposed boardwalk features contained within the trail project to ensure that the structures are sized appropriately and set at the appropriate elevations to accommodate storm events. Calculations for scour at the boardwalk piers will assist the geotechnical engineer and structural engineer in the design of the boardwalk foundations. Documentation for the hydraulic analysis and scour calculations will be provided to in electronic (pdf) format. Completion of the hydraulic analysis and scour calculations shall be completed within 45 (forty five) days of the notice to proceed. The design storm event for the drainage features is the 10-year flood, as designated by the Georgia Department of Transportation's guidance for pedestrian crossings. Scour calculations will be performed for the 100-year and 500-year flood, as designated by the Federal Highway Administration.**

75. Reference PermaTrak Drawing PT-02:
    a. Typical Section 1'-0" x 1'-6" beams. Please provide connection details to the HP 14 x 89 steel piles. **Contractor shall refer to PermaTrak Sheet PT-03.**
    b. Typical Shim/Grout Detail: Please provide specifications for the grout material. **Contractor to provide non shrink grout.**

76. Measurement and Payment for the steel casing item says to include grouting the annular space. There is no detail showing the casing installation. What is the spacer requirement and the grouting requirement? **Casing Spacers (pipe supports), one per joint to prevent floating in wet grout.**

77. Class C and B bedding are included in the pipe. The general note calls for Class C. Is there anywhere on the project that Class B is required? **Yes, over 18 feet deep. Class "B" Bedding has been added to the Plans as part of Addendum Two.**

78. Is there irrigation in the park? In order to properly install sod, a tremendous amount of water will be necessary and that is a large area. Is there a water source at the park, if no irrigation? **There is no irrigation or water supply at Heritage Park. However, the Parks & Rec Department has water trucks that they use to water newly placed sod. The Contractor will coordinate with the City and the City will water newly placed sod within Heritage Park.**

79. Measurement and Payment Item 46 references 2" PVC survey pipe is paid for by the foot. There is no pay item for this. What is required? **Location of depth of water main for record drawing survey. Include in water main price.**

80. Are surveyed as-builts required for the sewer and trail? **Yes for both sewer and trail.**
81. The trail bid form includes a line item for Material Testing. Who pays for the testing associated with the sewer line? Can these items be turned into allowances so that all bidders are including the same amount of testing? **The Contractor and No.**
82. Are current flow rates available for determining the amount of bypass necessary to make connections and install the 24" crossing manhole? **1.2 MGD Average and 3.27 MGD Peak.**
83. The force main crossing near the pump station will require removing and replacing the force main. There is a bid item for 10" Force Main but the plans call it out as 16" DIP. Can a pay item be added to pay for this? **This has been changed to 16" Force Main.**
84. Where is the 16" Force Main pumping from and to? Some bypass pumping will be necessary to remove, cross, and replace. **Another pump station across the Etowah River pumping to Treatment Plant. Contact the City.**
85. Almost the entire 30" line is laid at a 0.1% grade. This will be difficult to attain, especially with the depths being excavated to install. What testing will be required to determine a passing section of pipe? **Survey, TV, Air Test.**
86. The plans reference a safety plan for working within the Georgia Power Easement. The plans also call out the entire area as construction easement and within the limits of disturbance. What are the Georgia Power limitations on equipment and movement through the easement? If an agreement is in hand, there should be some guidelines already in place that would have to be worked within when creating the safety plan. **A note has been added to the general notes sheet along with all plan sheets within the Georgia Power easement that reads: "When working within the Georgia Power easement, the contractor is responsible for the safety of his or her laborers, equipment and Georgia Power facilities at all times. The contractor is required to schedule and attend a pre-construction meeting with Georgia Power to determine means and methods of work conducted within the Georgia Power easement, including but not limited to, safety measures, equipment limitations or restrictions, and movement through the easements during construction".**
87. Wall #1 is only 3.5' tall at the highest point, but there is no railing shown. Will one be required? **No. Railing is not required for Wall #1.**
88. How long can access to the bowling alley be closed? The line shows open cutting across the driveway at 26' deep. Access cannot be maintained within the space given. **Added 42" Steel Casing Jack & Bore– 60 L.F. See Bid Item 2 in the Addendum Two Bid Form.**
89. The erosion plans show the limits of disturbance and silt fence within the miniature golf course at the bowling alley. Is it correct to assume we will not encroach upon the golf course? **Bid Item 73 – Remove and Replace Miniature Golf Course – 1 Lump Sum was added to the Addendum Two Bid Form.**
90. How deep is the water line when it is crossed at Station 76+60? **3 Ft. to 4 Ft.**
91. What is the water line that is crossed at Station 30+25 feeding? Can it be valved off and sections removed when installing the sewer? **School and businesses on Hwy 5. Valved for short time only during non-school or business hours.**
92. Are temporary pipe creek crossings allowed at boardwalk locations and sewer crossings? **Yes**

93. Are precast headwalls acceptable? **Precast or poured in place headwalls are acceptable. Comply with GDOT standards, details and specifications for concrete headwalls.**
94. What is the specification for the geogrid required under the trail? How is this geogrid paid for? **Refer to geogrid material specifications and the revised Bid Form line item added for geogrid.**
95. The erosion plans call for tree protection of trees on the uphill side of the sewer line in several locations where the new sewer line is 30+ feet deep. In order to safely install lines, it will be difficult to save trees within 20' of the sewer centerline. The general notes on the plans say that any tree that dies within 1 year of construction will have to be removed. Can additional trees be removed before construction in these deep locations so that the contractor is not coming back when the trail and sewer are complete and trying to take down large trees off of steep slopes? **Yes**
96. There is a wooden dumpster enclosure at Station 51+70 that will have to be removed to install the sewer line as shown on the plans. Will there be a pay item added for this? **Bid Item 74 – Remove and Replace Wooden Dumpster Enclosure added to Addendum Two Bid Form.**
97. There is a bid item for removing and replacing a power pole. This appears to be the power pole at the Manhole where the 24" line and 30" line cross. This pole is approximately 30' tall with 3 power lines and multiple other phone and fiber feeds that crosses under the main transmission lines. Has this temporary relocation been discussed with the utilities? This could be very expensive and take a long time for a contractor to coordinate. Can this be changed to an allowance item set by the City so that bidders are on the same playing field**? No**
98. There are trees shown to be saved in the park at Stations 64+75 and 68+35 that are less than 7' from the centerline of the sewer. With a 5' minimum trench box, the excavator will be into the trees if they are not removed. Can these be changed to be removed? **Added Remove and Replace 4 Oaks and 2 River Birch to Addendum Two Bid Form. See Bid Items 75 and 76.**
99. Are the existing trees in the park that will be removed for sewer line construction being put back? What is required to go back and how is it paid for? **Refer to the Bid Form for replacement tree quantities, type, size, etc.**
100. There appears to be a blow off near the pump station that is not shown on the plans. What is this a blow off from and will it be impacted by the sewer construction? **Existing Force Main and No.**
101. The benches and trash can that will be impacted by the sewer installation at Station 74+50 are not shown on the plans. Will they need to be reset or replaced? How is this paid for? **See Bid Items 78 and 79 in the Addendum Two Bid Form for Remove and Replace Bench and Remove and Replace Trash Can. The Contractor shall remove trash receptacles and benches prior to construction and reset to original standards following construction.**
102. There is a bid item for 6" clean outs. Where are these on the plan and how deep are they? **At all service connects. 6 Ft. to 12 Ft. deep.**
103. Can the cut and plugs of the lines that are tying into the new 30" line take place within the new sewer construction excavation or will the contractor need to dig down closer to the old sewer line? **Old Line.**
104. How is the raising of the existing manhole at Station 1+00 being paid for? **Under Manhole, V.F.**
105. The bid form includes removing and resetting 4 Georgia Power Monuments. What are the monuments and where are they located? **One is located at Station 30+80. The others are extras in the event other Georgia Power Monuments require removal and replacement.**

106. The bid form includes removing and replacing two detention ponds. Only one is called out on the plans at the apartment complex. Where is the second? There is not a measurement and payment section for what we are required to do for the remove and replace. Will the contractor have to clear and clean out the whole pond even though the sewer line construction is only passing through the corner? **There are two detention ponds at the apartment complex. Replace only what is damaged.**

107. Are the drop manholes inside drops or outside drops? Measurement and payment references outside drops and the detail in the plans is for an inside drop. **Outside drops See Detail S701.**

108. What are the limitations for closing access to Heritage Park? Is the bidder required to maintain any working trails during construction? Will security fencing be required and if so, paid for under a unit price? **Yes the Contractor will be required to maintain any working trails during construction. Security fencing has been added to the Bid Form. See Bid Item 80.**

109. There is a power pole at the trail head near the Hardees sign that shows having 8' of fill placed around it. Has Georgia Power been notified of this and will this be allowed? The lowest utility on that line will be very low to the trail once the fill is placed. **Georgia Power is aware of the existing utility pole with the proposed trail. Georgia Power is currently looking at alternatives regarding the potential utility pole relocation. The Contractor will be required to coordinate the construction of the trail project with Georgia Power on the potential trail improvements and or the potential utility pole relocation.**

110. Where is the work for Alternate #1 shown? The description in the bid form cuts off and it is not clear where this is. Are these bid items 162 through 173 all what will be removed from the base bid of the trail? There is a note before item 170 to "include the following". Are these for doing work not included in the base bid for the trail? Please clarify how the deductive alternate is to be calculated. **Alternate #1 has been eliminated. See revised Plans and Bid Form.**

111. Is the work in the erosion control bid section for both the sewer and the trail? **Yes**

112. Will this contract be awarded to one bidder, or will the City award the sewer and the trail and erosion separately? **Project will be awarded as a single contract.**

113. There are 30 standard manholes on the plan but the bid item is for 32. Are there additional manholes anticipated or are the quantities just high? **Last Connect to Manhole may require a new 6 Ft. diameter manhole.**

114. Specification Section 02606-2, 2.03.A states ductile iron pipe shall not be less than Pressure Class 350. Drawing Sheet G-01, Note 53 states the DIP to be Class 50. Please clarify. **Only Pressure Class 350. Note 53 on Drawing Sheet G-01 has been revised to reflect this.**

115. Is there a geotechnical report for this project? If so, please provide. If not, how did the engineer determine the quantity of rock? **No. 15% of trench is solid rock.**

116. Drawing Sheet G-01, Note 53 states Class "C" bedding is the minimum allowed. Specification Section 02606-7, 3.04.C states whenever water is encountered, Class "B" bedding shall be used. Please clarify which bedding is to be used for the project. How is the Contractor to anticipate the use of Class "B" bedding and how will the Contractor be compensated for the additional bedding? **Class "B" is required for over 18 FT depth and water is encountered is minimum. Only paid for additional subgrade stabilizer stone when it is beyond the minimum required.**

117. Specification Section 02200-6, 16, Backfilling Trenches, Paragraph C states compaction of 95%. Specification Section 02606-6-6, 3.04.B states backfill compacted to 85%. Specification Section 02606-10, 3.09 states backfill compacted to 90%. Please clarify what is the required compaction of the backfill material for the sanitary sewer. **The Contractor shall follow GDOT's requirements for testing the embankments and the backfills as per GDOT's Standard Specifications Current Edition Sections 208 and 209, and GDOT's Sampling, Testing and Inspection Manual. In general, under pavement the Contractor shall test fill areas every foot to 95% laboratory dry density and the final lift to the fill, which will be the subgrade level, to be compacted to 100% density. For the shoulder construction, the testing can be performed every 2 feet intervals.**

118. Specification Section 02606-12, 3.15 states "Actual pipe slope will be computed and any segment having less than minimum allowable slope will be rejected and installed." What is the minimum allowable slope for this project? What is the allowable deviation from the planned slope? **Pipe flat or back graded will be rejected. Minimum allowable slope for 30" DIP Sewer is 0.06%. Must be checked by survey before payment.**

119. Specification Section 02606-14, 3.16.F shows 85 seconds per 100 Ft. of Pipe. Specification Section 02742-3, 3.01.D.1 shows 288 seconds minimum test time/100 Ft. Please clarify which is correct. **288 seconds minimum test time/100 Ft. for 30" Pipe.**

120. Bid Item 25, Drop Manhole, please confirm that inside drops are required. The measurement and payment for this item only references outside drops. Please confirm that all inside drops require 72" Dia. Manholes. Also, is a drop manhole required at MH-22? If not, then it appears the quantity is incorrect for this bid item. **Only outside drop manholes. Manhole 22 is not a drop manhole. An extra one was added to the bid proposal just in case.**

121. Bid Item 45 is for 10" DIP force main. The force main on Sheet S-01 is 16" DIP. Please clarify which is correct. Also, how long can the force main be out of service? **The existing force main is a 16". This Bid Item has been revised on the Bid Form to 16". Bypass pumping or support for the existing 16" force main will be required during construction in this area.**

122. Drawing sheet S-01 shows an existing manhole that is to be raised. How will the Contractor be compensated for raising this manhole? **Bid Item 25, Extra Depth Manhole 12+ Ft., in Vertical Feet.**

123. Bid Items 49 and 51 appear to be restoration items. There are no limits of pavement resurfacing shown on the Drawings or call outs for replacing curb and gutter. Please clarify the limits of restoration of existing paving, curb, driveways, etc. **You replace everything you damage during construction.**

124. Bid Item 76 Bermuda Sod and Bid Item 186 Sod appear to be the same. Please clarify the differences between these two items and clarify the intended location. **Item 76 (now Bid Item 86 in Addendum 2) Bermuda Sod is in the Sewer section and is a remove and replace in Heritage Park. Bid Item 186 now Bid Item 184 in Addendum Two) is sod for that may be required in other locations along the sewer and trail project.**

125. Bid Alternate #1 Deduct, Bid Items 162-173. The term "Deduct" would indicate a subtraction. Please confirm that assumption is correct. **Alternate #1 has been eliminated. See revised Plans and Bid Form.**

126. Also, please clarify the limits and scope of work associated with the deduct. Does the basis of award of the project include the Bid Alternate #1 Deduct? **Alternate #1 has been eliminated. See revised Plans and Bid Form.**
127. Drawings Sheets EC-06 through EC-10 shows several existing trees located within the LOD that have tree protection fencing around each tree. Please confirm that these trees are to remain. If they are to remain, how is the Contractor to install the sanitary sewer at the planned excavation depths without disturbing these trees? **Existing trees on Sheets EC-06 through EC-10 inside the limits of disturbance can be cut. Trees in Heritage Park must be replaced.**
128. If rock is encountered under the bridge for Waleska Street will the contractor be allowed to blast in this location? If not, how is the Contractor to remove the rock and how will the Contractor be compensated? **Yes the Contractor will be allowed to blast in this area.**
129. How long can the driveway to the bowling alley be closed? **Bid Item 2 – 42" Steel Casing (0.500" W.T.)(Jack & Bore) has been added to the Addendum Two Bid Form for the bowling alley driveway.**
130. Are the Subcontractor Affidavits required to be submitted with the bid? **Yes**
131. MH 24 appears to be in direct conflict with an existing utility pole. How is the Contractor to install this manhole? **Remove and Replace Power Pole pay item. This pole was installed on top of the Existing 24" Sewer by Georgia Power. Another option is to shift the alignment an additional 6 feet south, further away from the power pole.**
132. Please provide a copy of the GUPS encroachment agreement for Georgia Power with the bid documents. This would be beneficial for the safety requirements noted on Drawing Sheets 11-04 through 11-06. **Safety Note has been revised and final encroachment agreement will be provided to the Contractor upon completion.**
133. Drawing Sheet S-04 shows the new sewer main crossing the parking lot of the apartment complex. This parking area is concrete. How will the Contractor be compensated for replacing the concrete paving and what are the limits of restoration? **Bid Item 77 – Remove and Replace Concrete Parking – 1,800 S.Y. was added to the Addendum Two Bid Form. The Contractor is required to replace all that is damaged during construction.**
134. Will the engineer allow the profile of the walking trail to be adjusted to balance grading to minimize import or export of soil material? **Yes, with review and approval from Project Manager. However, the proposed trail easements are approximately 100' wide and should be sufficient to acquire required fill to build the trail and or to grade out excess fill material.**
135. Can headwalls and concrete flared ends be precast? **Yes, as long as they meet GDOT standards, details and specifications.**
136. Is there a possibility of pushing the bid date? **The Bid Date has been changed to Thursday, September 10, 2020 at 10:00 A.M. See Addendum 1.**
137. Will bid item be added for temporary fencing in park, around bowling alley, and behind apartment complex? **Yes**
138. On the sheet passed out at the Pre-Bid meeting, Item 11 indicates that "DIP must be made in the USA". Must fittings be manufactured in the USA? Will this be applicable to force main and water main also? **Yes, all DIP must be made in the USA.**

139. Is the Contractor required to Clear and Grub ALL areas within the "LOD" or just what may be required to complete the work? **Just what is required to complete the work.**

140. Bid Schedule Item 178 – Stream Bank Restoration, 10 EA. There is no detail for this item and the limits of work are not indicated on the plans. Will this consist of special matting, aggregate placement, or live staking? **This detail has been included on Sheet D-07 of Addendum Two.**

141. Bid Schedule Item 83 – 30" Restrained Joint Gasket. Will these be used for 30" pipe inside casing? **Yes**

142. Will the existing asphalt between the bowling alley and the pump station need to be replaced at the completion of the project or can this be left gravel? **Must be replaced if damaged during construction.**

143. Will you extend the cutoff for questions? **Yes, August 31, 2020 at 5:00 P.M.**

144. Cast-In-Place-Concrete specification, 1.05, A.3 – 2" slump tests "as deemed necessary" for each load. Please clarify. Slump tests for each load are not standard practice. **In accordance with GODT Standards, the Contractor shall provide a set of cylinders be fabricated for each cumulative 50 CY or fraction thereof, of concrete placed per week in each structure. Cylinders shall not be fabricated at one structure to represent concrete placed in another structure. Therefore, a set of cylinders needs to be fabricated for each 50 CY of concrete or once a week, whichever comes first. Air content, slump and mix temperature tests are all required when cylinders are made and as judged necessary to insure adequate controls.**

145. Cast-In-Place-Concrete specification, 1.05, A.3 – Standard practice is 2 cylinders for 7 days, 2 days for 28 days and reserve of 2 for 56 days if required. All three tests are generally the average of two cylinders in accordance with ASTM and ACI. **In accordance with GDOT Standards, the Contractor shall provide a set of 2 cylinders is required for 28 days break and the Contractor may cast a set of 2 cylinders for 7 days early breaks if they will be putting any dead or live load on the concrete before the concrete is 14 days old. In order to open the concrete for dead or live loads, the representative compressive tests should show that the slab has a compressive strength of 2,500 PSI.**

146. Please stipulate how alternate pile designs and associated cost variations will be handled if after Geotechnical Data allows use thereof in lieu of the HP piles.

147. **Changes in Work – no changes in the work covered by the approved Contract Documents shall be made without having prior written approval of the Owner. Charges or credits for the work covered by the approved changes shall be determined by one or more, or a combination of the following methods:**
    a. Unit bid prices previously approved.
    b. An agreed lump sum
    c. The actual cost of the following:
        1. Labor, including foremen;
        2. Materials entering permanently into the work;
        3. The ownership or rental cost of construction plant and equipment during the time of use on the extra work;
        4. Power and consumable supplies for the operation of power equipment;
        5. Insurance;

6. **Social Security and old age and unemployment contributions;**
7. **To the cost under (c) there shall be added a fixed fee to the agreed upon but not to exceed fifteen percent (15%) of the actual cost of the work. The fee shall be compensation to cover the cost of supervision, overhead, bond, profit, and any other general expenses.**

Changes in Other Quantities – The Engineer may increase or decrease the quantities of any and all other Pay Items, without changing the Unit Prices Bid, regardless if it should increase or decrease the original Contract Amount by more than 20 percent.

Extras – Without invalidating the Contract, the Owner may order extra work or make changes by altering, adding to or deducting from the work, the contract sum being adjusted accordingly

148. How will the replacement of existing walkway paving the heritage where removed for the DIP installation be paid? In unit for 30" DIP piping or Concrete Trail/Sidewalk 6 inch? **Item 55 – Remove and Replace Existing Concrete Trail**
149. Can the Owner/Engineer provide a bid item for Mass Rock Excavation to be Utilized in Benching of Slopes? **No**
150. Please provide requirements for construction inside park area. (Is temporary fencing required for construction?) **Temporary Fencing inside of Heritage Park added to the Addendum Two Bid Form. See Bid Item 80.**
151. Please provide any information of water levels in the Etowah River. **100 Year Flood Elevation is 872.**
152. Will the Contractor be able to close the parking lot at the lofts apartments near final tie-in location? **No**
153. Please clarify pay limits for asphalt paving. **Contractor will replace what is damaged.**
154. Please clarify pay limits for concrete paving. (Especially at the apartment complex.) **Contractor will replace what is damaged.**
155. Can the Owner provide specific storage/laydown areas for material, etc.? **See Now or Formerly City of Canton Sheet S-01, Lift Station, Sheets S-04 through S-07 behind River View Apartments, and Heritage Park. Also, 3.83 acres shown as Wolf Creek Real Estate behind the Brusters Ice Cream and Avis/Budget Rental across the highway from Cherokee High School.**
156. On Sheet S-01 between Stations 5+50 and 11+50, there is a good bit of curb and gutter that will need to come out because of the depth of the line. How will the curb and gutter/asphalt in this area be paid for? **See Bid Item 52 Remove and Replace Concrete Curb & Gutter 1240 LF and Bid Item 50 Remove and Replace 1-1/2" Type F Asphalt 5600 SY in the Addendum Two Bid Form.**
157. Is there a time/money consideration for rise in the river affecting mobilization/demobilization? **Mobilization limits have been removed.**
158. The lift station detail on Sheet D-06 does not specify the way the 30" influent will be tied into the LS via boot/seal. Please advise. **Core wetwell. Install link seal inside and outside.**
159. Will the interior of the station have to be grouted around the influent? **No**

160. Will you be able to keep flow down using the interior pumps on the lift station to make the tie-in or will the station have to be bypassed entirely? **Bypass pump wetwell.**
161. Are there any prevailing wage requirements? **No**
162. Are there any tax exemptions? **No**.
163. Are there any domestic hardware requirements? **No**.
164. Do we have to follow GDOT specs? **Use the Project Specifications**
165. Will bids be opened and read aloud on bid due day ? **Yes, unless circumstances change**
166. Will alternate proposed designs / products to the PermaTrak boardwalks be considered ? **No.**
167. Bid item # 96 plain ditch paving, 4 inch quantity appears low for ditch paving and ditch/flume paving as shown on plans ? **See the revised Bid Form.**
168. Reference drawing 11-11. It appears that foundations for boardwalk 5 interferes with the existing water main. Should relocation of one or the other be considered to avoid potential risks ? **No, not at this time.**
169. Special provision Section 03-3301 "Concrete Reinforcement", page 1 of 2, item 2.02 "C" notes roll stock not acceptable for interior slabs on grade and elevated slabs. It appears roll stock is acceptable for exterior concrete walkway. Please verify. **Roll stock is acceptable for exterior concrete.**
170. Can we be provided with a copy of PermaTrak's proposal for bid items so we know exactly what it includes and excludes ? **See Sheet PT-01**
171. Due to addendum 2 not being issued as oy yet, will bid date be extended accordingly to allow time for addendum review, addendum revisions and preparation of bids ? **No. Bids are due Thursday, September 10, 2020 at 10:00 am.**

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Special Provisions-

In addition to the Bidding and Contract Documents, Division 1 General the Old Ball Sanitary Sewer, for the bidding and construction of the Etowah Trail Extension Project, the Contract shall comply with the Special Provisions that are provided below, as well as the GDOT standard plans, details and specifications. The Special Provisions indicated below are meant to supplement the Old Ball Ground Sanitary Sewer Division 1 General Requirements and Division 2 Site Work Specifications. Prior to bidding, the Contractors shall bring to the attention of the Project Engineer, any and all conflicts that may impact their bid.

CONCRETE FORM WORK	03-1000
CONCRETE REINFORCEMENT	03-2000
ON-SITE DECORATIVE SIGNAGE	09-0000
BOARDWALK RAILING AND GATE SPECIFICATION	323116
VINE, SHRUB AND TREE PLANTING.	702-0000
PLANT TOPSOIL	708-0000
OUTDOOR FURNITURE	754-0000
MISCELLANEOUS CONSTRUCTION	999-9000

Conflicts within the Contract Documents – If conflicts exist between the Specifications, the governing descending order will be as follows:

1. DIVISION 0 - BIDDING AND CONTRACT REQUIREMENTS
2. DIVISION 1 - GENERAL REQUIREMENTS
3. PROJECT SPECIFIC SPECIAL PROVISION
4. PROJECT PLANS INCLUDING SPECIAL PLAN DETAILS
5. SPECIAL PROVISIONS
6. SUPPLEMENTAL SPECIFICATIONS
7. GDOT STANDARD PLANS INCLUDING STANDARD CONSTRUCTION DETAILS
8. GDOT STANDARD SPECIFICATIONS

Old **Ball Ground Sanitary Sewer Ph 2**
and the Etowah River Trail Extension
Bid Proposal

Item No.	Description	Est. Qty	Units	Unit Price	Total Amount
	SANITARY SEWER				
1.	42" Steel Casing (0.500" W.T.)(Open Cut)	100	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
2.	42" Steel Casing (0.500" W.T.)(Jack & Bore) Bowling Alley Drive	60	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
3.	30" DIP in Casing	160	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
4.	30" DIP 0 - 6' deep	43	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
5.	30" DIP 6' - 8' deep	220	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
6.	30" DIP 8' - 10' deep	431	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
7.	30" DIP 10' - 12' deep	1,434	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals

Item No.	Description	Est. Qty	Units	Unit Price	Total Amount
8.	30" DIP 12' - 14' deep	744	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
9.	30" DIP 14' - 16' deep	1,185	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
10.	30" DIP 16' - 18' deep	665	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
11.	30" DIP 18' - 20' deep	667	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
12.	30" DIP 20' - 22' deep	500	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
13.	30" DIP 22' - 24' deep	355	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
14.	30" DIP 24' - 26' deep	462	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals

Item No.	Description	Est. Qty	Units	Unit Price	Total Amount
15.	30" DIP 26' - 28' deep	715	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
16.	30" DIP 28' - 30' deep	213	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
17.	30" DIP 30' - 32' deep	175	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
18.	30" DIP 32' - 34' deep	169	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
19.	30" DIP 34' - 36' deep	111	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
20.	30" DIP 36' - 38' deep	23	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
21.	8" DIP 12' - 14' deep	40	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals

Item No.	Description	Est. Qty	Units	Unit Price	Total Amount
22.	6" PVC Service	120	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
23.	Standard Manhole 0 - 6' deep	31	EA	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
24.	Extra Depth Manhole 6' - 12'	186	V.F	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
25.	Extra Depth Manhole 12'+	220	V.F	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
26.	Drop Manhole 0 - 6' deep	4	EA	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
27.	Extra Depth Drop Manhole 6' - 12'	24	V.F	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
28.	Extra Depth Drop Manhole 12'+	60	V.F	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals

Item No.	Description	Est. Qty	Units	Unit Price	Total Amount
29.	Connect to Existing Wet Well	1	EA	$ _____ Numerals	$ _____ Numerals
				_____ Unit Price in Words	
30.	Connect to Existing 24" Sewer	1	EA	$ _____ Numerals	$ _____ Numerals
				_____ Unit Price in Words	
31.	Connect to Existing 10" Sewer	1	EA	$ _____ Numerals	$ _____ Numerals
				_____ Unit Price in Words	
32.	Connect to Existing 8" Sewer	2	EA.	$ _____ Numerals	$ _____ Numerals
				_____ Unit Price in Words	
33.	Connect to Existing 6" Service	5	EA	$ _____ Numerals	$ _____ Numerals
				_____ Unit Price in Words	
34.	Connect to Existing Manhole	1	EA	$ _____ Numerals	$ _____ Numerals
				_____ Unit Price in Words	
35.	30" x 6" Wye	3	EA.	$ _____ Numerals	$ _____ Numerals
				_____ Unit Price in Words	

Item No.	Description	Est. Qty	Units	Unit Price	Total Amount
36.	6" 45-deg Bend	5	EA	$ _____ Numerals	$ _____ Numerals
				_____ Unit Price in Words	
37.	6" Clean-Out	5	EA	$ _____ Numerals	$ _____ Numerals
				_____ Unit Price in Words	
38.	Concrete Ditch Cap	100	S.Y	$ _____ Numerals	$ _____ Numerals
				_____ Unit Price in Words	
39.	Cut & Plug Existing 30" Sewer	1	EA.	$ _____ Numerals	$ _____ Numerals
				_____ Unit Price in Words	
40.	Cut & Plug Existing 10" Sewer	1	EA.	$ _____ Numerals	$ _____ Numerals
				_____ Unit Price in Words	
41.	Cut & Plug Existing 8" Sewer	2	EA.	$ _____ Numerals	$ _____ Numerals
				_____ Unit Price in Words	
42.	Cut & Plug Existing 6" Service	3	EA.	$ _____ Numerals	$ _____ Numerals
				_____ Unit Price in Words	

Item No.	Description	Est. Qty	Units	Unit Price	Total Amount
43.	Remove and Replace 30" CMP	120	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
44.	Remove and Replace 24" CMP	80	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
45.	Remove and Replace 18" CMP	200	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
46.	Remove and Replace 16" DIP Force Main Class 350 with Protecto 401	160	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
47.	Remove and Replace 12" DIP Water Main Class 350 with Polywrap	200	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
48.	Remove and Replace 8" DIP Water Main Class 350 with Polywrap	160	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
49.	Remove and Replace 4" DIP Water Main Class 350	80	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals

Item No.	Description	Est. Qty	Units	Unit Price	Total Amount
50.	Remove and Replace 1-1/2" Type F Asphalt	2,000	S.Y.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
51.	Remove and Replace Gravel Drive	2,400	S.Y.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
52.	Remove and Replace Concrete Curb & Gutter	1,240	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
53.	Remove and Replace Conc. Steps	1	EA.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
54.	Remove and Replace Conc. Headwall	6	EA.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
55.	Remove and Replace Exist. Conc. Trail	600	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
56.	Remove and Replace 8' (h) Chain Link Fence	120	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals

Item No.	Description	Est. Qty	Units	Unit Price	Total Amount
57.	Remove and Replace 6' (h) Chain Link Fence	640	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
58.	Remove and Replace 4' (h) Chain Link Fence	220	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
59.	Remove and Replace 3' (h) Wood Fence	200	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
60.	Remove and Replace Gate	2	EA.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
61.	Remove and Replace Brick Wall	80	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
62.	Remove and Replace Georgia Power Monument	4	EA.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
63.	Remove and Replace Power Pole	1	EA.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals

Item No.	Description	Est. Qty	Units	Unit Price	Total Amount
64.	Remove and Replace Light Pole	3	EA.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
65.	Remove and Replace Drop Inlet	2	EA.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
66.	Remove and Replace Iron Pin	8	EA.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
67.	Remove and Replace Allee Elm Tree (4" Cal.)	4	EA.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
68.	Remove and Replace Okame Cherry Tree (2.5" Cal.)	4	EA.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
69.	Remove and Replace Rip-Rap Dam	1	L.S.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
70.	Remove and Replace Detention Pond	2	EA.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals

Item No.	Description	Est. Qty	Units	Unit Price	Total Amount
71.	Additional Subgrade Stabilizer Beyond Minimum Required	3,118	TON	$ _____ Numerals	$ _____ Numerals
				_____ Unit Price in Words	
72.	Remove and Replace Unsuitable Soil	4,000	C.Y.	$ _____ Numerals	$ _____ Numerals
				_____ Unit Price in Words	
73.	Remove and Replace Miniature Golf Course	1	L.S.	$ _____ Numerals	$ _____ Numerals
				_____ Unit Price in Words	
74.	Remove and Replace Wooden Dumpster Enclosure	1	EA.	$ _____ Numerals	$ _____ Numerals
				_____ Unit Price in Words	
75.	Remove and Replace White Oak Tree (4" Cal.)	4	EA.	$ _____ Numerals	$ _____ Numerals
				_____ Unit Price in Words	
76.	Remove and Replace River Birch Tree (2.5" Cal. Multi-Stem, 3 Canes Max.)	2	EA.	$ _____ Numerals	$ _____ Numerals
				_____ Unit Price in Words	

Item No.	Description	Est. Qty	Units	Unit Price	Total Amount
77.	Remove and Replace Concrete Parking	1,800	S.Y.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
78.	Remove and Replace Bench (Refer to Landscape Details for Material Type)	2	EA.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
79.	Remove and Repalce Trash Can (Refer to Landscape Details for Material Type)	2	EA.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
80.	Security Fence at Heritage Park	4,000	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
81.	Solid Rock Excavation	5,600	C.Y.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
82.	ByPass Pumping	1	L.S.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
83.	Miscellaneous Ductile Iron Fittings	2,000	LBS	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals

Item No.	Description	Est. Qty	Units	Unit Price	Total Amount
84.	Miscellaneous Concrete Blocking	32	C.Y.	$ _____ Numerals	$ _____ Numerals
				_____ Unit Price in Words	
85.	Landscaping	1	L.S	$ _____ Numerals	$ _____ Numerals
				_____ Unit Price in Words	
86.	Sod - Bermuda (Within Heritage Park)	11,900	S.Y.	$ _____ Numerals	$ _____ Numerals
				_____ Unit Price in Words	
87.	Reconnect Existing Water Meter	4	EA.	$ _____ Numerals	$ _____ Numerals
				_____ Unit Price in Words	
88.	Copper Water Service (All Sizes)	40	L.F.	$ _____ Numerals	$ _____ Numerals
				_____ Unit Price in Words	
89.	12" Retainer Gland	4	EA.	$ _____ Numerals	$ _____ Numerals
				_____ Unit Price in Words	
90.	16" Retainer Gland	4	EA.	$ _____ Numerals	$ _____ Numerals
				_____ Unit Price in Words	

Item No.	Description	Est. Qty	Units	Unit Price	Total Amount
91.	8" Retainer Gland	4	EA.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
92.	Connect to Existing Water Main	8	EA.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
93.	30" Restrained Joint Gasket	6	EA.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
94.	Additional Compensation for 42" Rock Bore	60	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
95.	Mobilization and Demobilization	1	L.S.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
96.	Owners Allowance	1	L.S.	$ 250,000.00 Numerals Two Hundred Fifty Thousand Dollars and 00/100 Unit Price in Words	$ 250,000.00 Numerals
SUBTOTAL SANITARY SEWER				$ _____ Subtotal Sanitary Sewer in Numerals	

_____

_____

_____

Subtotal Sanitary Sewer in Words

Item No.	Description	Est. Qty	Units	Unit Price	Total Amount
TRAIL EXTENSION					
97.	Traffic Control	1	L.S.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
98.	Mobilization and Demobilization	1	L.S.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
99.	Clearing and Grubbing	1	L.S.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
100.	Grading Complete Project	1	L.S.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
101.	Found Bkfill Matl, TP II (As Directed By Engineer)	500	C.Y.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
102.	Conc Sidewalk, 8 inch, ADA Ramp, inc Material and Detectable Warning Strip	8	S.Y.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
103.	Grading Aggregate Base Crs, 6" (Inc material for Sidewalk / Trail Base)	12,000	S.Y.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals

Item No.	Description	Est. Qty	Units	Unit Price	Total Amount
104.	Aggregate Surface Course, 6"	4,200	S.Y.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
105.	Reinf Conc Approach Slab (inc Material at Beginning and End of Boardwalks)	60	S.Y.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
106.	Concrete Sidewalk /Trail w/10 ga. WWF 6x6, inc Include Detectable Warning Surface	8,700	S.Y.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
107.	Plain Concrete Ditch Paving, 4 inch	450	S.Y.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
108.	Concrete Curb & Gutter, 6" x 30", TP 2	38	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
109.	Sawed Joints in Existing Pavements - PCC	12	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals

Item No.	Description	Est. Qty	Units	Unit Price	Total Amount
110.	Geogrid (Hanes Geo Components - Terragrid RX1200)	8,760	S.Y.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
111.	Mortar Rubble Masonry, Gravity Retaining Wall No. 1	85	C.Y.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
112.	Mortar Rubble Masonry, Gravity Retaining Wall No. 2	35	C.Y.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
113.	Class A Concrete Type P3 Retaining Wall No. 3	95	C.Y.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
114.	Concrete Headwalls	110	C.Y.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
115.	Storm Drain Pipe, 15 inch, H 1-10	153	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
116.	Storm Drain Pipe, 18 inch, H 1-10	85	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals

Item No.	Description	Est. Qty	Units	Unit Price	Total Amount
117.	Storm Drain Pipe, 24 inch, H 1-10	160	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
118.	Storm Drain Pipe, 60 inch, H 1-10	114	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
119.	Flared End Section, 15 inch	1	E.A.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
120.	Slope Drain Pipe, 15 inch	25	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
121.	Stone Dumped Rip Rap, TP 3, 24"	1,035	S.Y.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
122.	Plastic Filter Fabric	1,035	S.Y.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
123.	Drop Inlet, GP 1	8	EA.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals

Item No.	Description	Est. Qty	Units	Unit Price	Total Amount
124.	Storm Sewer Manhole, TP 1	4	EA.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
125.	Solid Traffic Stripe, 12 inch, White (Crosswalk)	75	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
126.	Solid Traffic Stripe, 24 inch, White	12	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
127.	Permanent Grassing - Hydroseed Bermuda Grass	0.5	AC.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
128.	Permanent Grassing - Hydroseed Native Grass Roadside Seed Mix	4	AC.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
129.	Permanent Grassing - Hydroseed Native Grass Roadside Slope Seed Mix	5	AC.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
130.	Permanent Grassing - Hydroseed Annual/Perennial Wildflower Seed Mix	6	AC.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals

Item No.	Description	Est. Qty	Units	Unit Price	Total Amount
131.	Permanent Grassing - Hydroseed Riparian Seed Mix	1	AC.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
132.	Agricultural Lime	20	TON	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
133.	Fertilizer Mixed Grade	15	TON	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
134.	Fertilizer Nitrogen Content	1,000	LB	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
135.	Azalea X 'George L. Taber' - 3 Gal.	24	EA.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
136.	Buddleja Davidii 'Black Knight' - 3 Gal.	3	EA.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
137.	Miscanthus Sinensis 'Adagio' - 3 Gal.	19	EA.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals

Item No.	Description	Est. Qty	Units	Unit Price	Total Amount
138.	Rudbeckia Fulgida 'Goldsturm' - 1 Gal.	90	EA.	$ _____ Numerals	$ _____ Numerals
				_____ Unit Price in Words	
139.	Lagerstroemia Indica 'Sioux' - 8'-10' HT.	6	EA.	$ _____ Numerals	$ _____ Numerals
				_____ Unit Price in Words	
140.	Quercus Phellos ‘Hightower’ 3" Cal.	3	EA.	$ _____ Numerals	$ _____ Numerals
				_____ Unit Price in Words	
141.	Pinus Taeda - Bare Root Seedling (Reforested Tree Mix)	300	EA.	$ _____ Numerals	$ _____ Numerals
				_____ Unit Price in Words	
142.	Quercus Alba - Bare Root Seedling (Reforested Tree Mix)	300	EA.	$ _____ Numerals	$ _____ Numerals
				_____ Unit Price in Words	
143.	Quercus Nigra - Bare Root Seedling (Reforested Tree Mix)	300	EA.	$ _____ Numerals	$ _____ Numerals
				_____ Unit Price in Words	
144.	Quercus Rubra - Bare Root Seedling (Reforested Tree Mix)	300	EA.	$ _____ Numerals	$ _____ Numerals
				_____ Unit Price in Words	

Item No.	Description	Est. Qty	Units	Unit Price	Total Amount
145.	Liriodendron Tulipifera - Bare Root Seedling (Reforested Tree Mix)	300	EA.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
146.	Landscape Mulch	200	S.Y.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
147.	Plant Topsoil	25	C.Y.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
148.	Reset Stop / Street Sign (Incl. All Material and Installation)	1	EA.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
149.	Bench, 8 FT. (include concrete footing)	1	EA.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
150.	Waste Receptacle Unit (include concrete footing)	1	EA.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
151.	Bicycle Rack (include concrete footing)	2	EA.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals

Item No.	Description	Est. Qty	Units	Unit Price	Total Amount
152.	Bicycle Repair Station (include concrete footing)	1	EA.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
153.	Retractable Bollard	18	EA.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
154.	Guardrail, TP W (Incl. All Material and Installation)	88	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
155.	Guardrail Terminal, TP 12A, 31 Inch, Tangent, Energy Absorbing	1	EA.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
156.	Orange Safety Fence	4,650	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
157.	Fence Special Design - 48 inch Ht. Wood Railing Fence	1,665	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
158.	Informational Kiosk	3	E.A	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals

Item No.	Description	Est. Qty	Units	Unit Price	Total Amount
159.	Material Testing Allowance	1	L.S.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
160.	Steel Casing - 36 inch	45	L.F	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
161.	Boardwalk Installation and Contractor Supplied Materials Only (Manufactured by Perma Trak)	175	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
162.	Boardwalk Material Allowance (Manufactured by Perma Trak)	1	L.S.	$ 250,000.00 Numerals Two Hundred Fifty Thousans Dollars and 00/100 Unit Price in Words	$ 250,000.00 Numerals
163.	Boardwalk Railing	500	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
164.	H-Pile Points, HP 14 X 89	24	E.A.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
165.	Piling in Place, Steel H, HP 14 X 89	600	V.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals

Item No.	Description	Est. Qty	Units	Unit Price	Total Amount
166.	Load Test, Steel H, 14 X 89	1	E.A.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
167.	Dynamic Pile Test	2	E.A.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
168.	Pile Encasement, 14 inch Pile	120	V.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
169.	Cast-In-Place Concrete, 4,000 PSI (Concrete Cast-In-Place Grade Beam)	84	C.Y.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
170.	Bar Reinforced Steel (Concrete Cast-In-Place Grade Beam)	6,200	LBS.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
171.	Geotechnical Report Boardwalk Foundation Investigation (BFI)	1	L.S.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
172.	Geotechnical Report Wall Foundation Investigation (WFI)	1	L.S.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals

Item No.	Description	Est. Qty	Units	Unit Price	Total Amount
173.	Geotechnical Testing	1	L.S.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
174.	Ownera Allowance	1	L.S.	$ 150,000.00 Numerals One Hundred Fifty Thousand Dollars and 00/100 Unit Price in Words	$ 150,000.00 Numerals

SUBTOTAL TRAIL EXTENSION $ _____
Subtotal Trail Extension in Numerals

_____

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_____
Subtotal Trail Extension in Words

EROSION CONTROL ITEMS

175.	Temporary Construction Exit and Maintenance	9	EA.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
176.	Double Row Type "C" Silt Fence and Maintenance	17,350	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
177.	Storm Drain Outlet Protection	18	EA.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals

Item No.	Description	Est. Qty	Units	Unit Price	Total Amount
178.	Inlet Sediment Trap and Maintenance	20	EA.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
179.	Stream Bank Stabilization	10	EA.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
180.	Tree Protection Fencing	4,000	L.F.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
181.	Erosion Control Matting (Bonded Fiber Matrix Slope Matting)	24,600	S.Y.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
182.	Water Quality Monitoring and Sampling	9	EA.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
18.	Water Quality Inspections	18	MO.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
184.	Mulching	27,400	S.Y.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals

Item No.	Description	Est. Qty	Units	Unit Price	Total Amount
185.	Temporary Grassing	27,400	S.Y.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
186.	Permanent Grassing	27,400	S.Y.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
187.	Sod	10,000	S.Y.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
188.	Dust Control	1	L.S.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals
189.	Concrete Washdown Station	2	E.A.	$ _____ Numerals _____ Unit Price in Words	$ _____ Numerals

SUBTOTAL EROSION CONTROL $ _____
Subtotal Erosion Control in Numerals

_____

_____

_____
Subtotal Erosion Control in Words

Old **Ball Ground Sanitary Sewer Ph 2**
and the Etowah River Trail Extension
Bid Proposal

Item No.	Description	Est. Qty	Units	Unit Price	Total Amount

SUMMARY

SUBTOTAL SANITARY SEWER $ _____
Subtotal Sanitary Sewer in Numerals

SUBTOTAL TRAIL EXTENSION $ _____
Subtotal Trail Extension in Numerals

SUBTOTAL EROSION CONTROL $ _____
Subtotal Erosion Control in Numerals

GRAND TOTAL, BASE BID $ _____
Grand Total in Numerals

_____

_____

_____
Grand Total in Words

SECTION 01012

MOBILIZATION AND DEMOBILIZATION

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Mobilization and Demobilization

1.02 MEASUREMENT AND PAYMENT

A. All work performed as part of mobilization and demobilization will be measured as a lump sum when mobilization and demobilization is listed as a separate bid item.

B. When mobilization and demobilization is listed in the Bid Proposal as a separate bid item, partial payments will be made on the following basis:

1. Mobilization shall not be limited.

2. Mobilization shall constitute 70 percent of the total lump sum bid for mobilization and demobilization. Partial payments will be made in two equal or approximately equal payments.

a. The first payment will be made on the first pay estimate as long as work performed to date on other Contract pay items exceeds $1,000.00.

b. The second payment will be made on the first pay estimate after the Contractor has earned five (5) percent or more of the total Contract amount for other items. Both payments will be made simultaneously when requirements a. and b. are met at the same time.

3. Demobilization shall constitute 30 percent of the total lump sum bid for mobilization and demobilization. Payment for demobilization may be authorized after final acceptance of the project.

C. When mobilization and demobilization is not listed in the Proposal as a separate bid item, then all costs associated with mobilization and demobilization will be considered incidental to the Contract, and no separate payment will be made.

END OF SECTION

SECTION 01150

MEASUREMENT AND PAYMENT

1. GENERAL

No quantities shall be measured for payment except items listed in the proposal, unless the Owner has approved "extra" work, in writing, in accordance with the contract documents and has so advised the Contractor before the work was actually performed.

Any and all other materials, labor, etc., furnished and required shall be considered as incidental to the items to be measured for payment.

The unit or lump sum prices bid for the various items shall be full compensation for furnishing all materials, tools, equipment, labor and incidentals necessary and/or required to complete the work as shown on the plans and called for in the specifications.

The quantities to be paid for shall be determined by actual measurement or count of the amount placed. The Engineer shall make all measurements and the Contractor shall make certain all work has been measured before concealing; otherwise, he may be required to uncover or make accessible any work so concealed in order to receive payment for such items.

2. REMOVE AND REPLACE EXISTING FORCE MAIN

All existing force main removed and replaced shall be measured horizontally and payment shall be made at the unit price bid per linear foot. Unit price bid for force main replaced shall include any and all clearing and grubbing of right-of-way required for the construction, property restoration and other work that is not designated as a pay item. Price shall also include polyethylene encasement.

3. FORCE MAIN TESTING

No separate payment will be made for required pressure testing of the force main. Contractor's cost for testing shall be included in the bid price of the force main pipe.

4. STEEL CASINGS

Payment for this item shall be made at the unit price bid per linear foot and shall include furnishing all incidentals and extra labor required to complete installation of the sewer pipe in the steel pipe. Unit price bid shall also include payment for furnishing and installing grout in the annular space between the force main and the steel pipe. Unit price bid shall also include full compensation for all tools, labor, and materials necessary to seal up the steel pipe after installation of force main pipe.

5. POLYETHYLENE CASING FOR FORCE MAIN AND WATER MAINS

All ductile iron pipe shall be encased in polyethylene tubing. No extra payment for this tubing shall be given.

6. STANDARD MANHOLES

Manholes will be counted in place.

Payment will be made at the unit price bid per each for manholes having a depth of six feet or less, measured from the invert of the lowest pipe to the top of the brickwork, and the unit price bid shall include the manhole ring, cover, boots, steps and water proof manhole casting and cover if required. It shall also include the cost of vents where shown. When the depth of manholes exceeds six feet, the difference between the actual depth and six feet will be paid for at the unit price bid per vertical foot for extra depth for manholes.

7. WATER PROOF MANHOLE VENTS

Waterproof manhole vents shall be counted in place. Payment will be made as a part of the unit price bid for manholes.

8. WATERTIGHT FRAME & COVERS

Watertight frame & covers payment will be made as a part of the unit price bid for manholes.

9. SEWER PIPE

All sewer lines will be measured horizontally from center to center of manholes, and cut determined by the difference in elevation from the ground surface of the center line of the ditch to the invert grade of sewer.

Payment will be made at the unit price bid per linear foot for each size, cut classification and type of pipe as included in the proposal and as shown on the plans and in the specifications.

Unit price bid for sewer pipe shall include any and all clearing and grubbing of right-of-way required for the construction of sewer lines, property restoration and other work that is not designated as a pay item.

The unit price per linear foot of pipe shall also include stabilizer stone used for Class "C" bedding. The unit price shall also include Class "B" bedding, where shown, and installation of stone to 2/3 of the pipe diameter where P.V.C. pipe is used. If poor soil conditions require using stabilizer stone in excess of these minimum requirements, then the stone will be paid for extra at the bid price for stabilizer stone.

10. CONNECTING TO EXISTING SEWER MANHOLE OR WET WELL

The price bid for connection to existing facilities shall include and shall be full compensation for all labor, materials, tools, equipment, and incidentals necessary to complete the connection as shown on the contract drawings, including drop manholes and extra depths of the same. Payment shall be made on a per each basis at the unit price bid for that type and size connection. All tools, materials, equipment, labor and other incidentals necessary to core and connect to the existing manhole or wet well, rework the manhole invert and plug any existing sewer mains to be abandoned shall be included in the unit price bid. No payment shall be made under any other item for work necessary to make connections to existing manholes, except under the category of subgrade stabilizer which shall be paid for separately at the unit price bid. Connection shall be completed in accordance with City of Canton Sanitary Sewer Standards.

11. SOLID ROCK EXCAVATION

The quantity of rock excavation to be paid for shall be the average actual length times the average actual depth, times a width equal to the nominal diameter of the pipe plus 24 inches. Solid rock excavation will be paid for at the unit price bid per cubic yard.

12. ADDITIONAL SUBGRADE STABILIZER

Subgrade stabilizer stone will be paid for at the unit price bid per ton. Stone that is used for Class "C" bedding will not be paid for as subgrade stabilizer, nor will it be paid for where Class "B" is shown on the plans. It will be paid for where job conditions require stabilizer stone beyond the minimum bedding requirements shown on the plans only where extra stone is approved in writing by the Engineer. Where stabilizer stone is eligible for payment the quantity (tonnage) will be taken from delivery tickets, if these are identified separately from non-legible stone; otherwise, the quantity will be computed by measuring the volume placed and applying a weight of 120 pounds per cubic foot. If a discrepancy exists the computed quantities shall govern.

13. MISCELLANEOUS CONCRETE

Miscellaneous concrete for thrust blocking of the force main and other uses shall be measured in place. Payment under this item at the unit price bid per cubic yard shall cover all costs of furnishing and placing miscellaneous concrete.

14. PIPE FOR SERVICE LINE

The actual length of service lines for sanitary sewer that is installed and accepted will be measured in place and paid for at the unit price bid per linear foot.

15. SERVICE CLEANOUTS

Cleanouts shall be paid for at the unit price bid for each constructed and accepted. The unit price bid for each shall include all materials, labor, equipment, tools and other incidentals required to complete installation as shown on the detailed drawings.

16. TEMPORARY SILT FENCE "Sd1" – DOUBLE ROW OF TYPE C

Double Row of Type C Silt fence shall be measured in place and paid for at the unit price bid per linear foot for 2 side by side silt fences. Payment shall be full compensation for all materials and labor necessary to install, maintain and eventually remove and properly dispose of silt fencing as indicated on the plans or called for in the specifications. Silt fence must be installed in accordance with the Manual for Erosion Control in Georgia in order to be eligible for payment. Silt fence that is not properly trenched in will not be paid for. Silt fence materials that are not in accord with the Manual for Erosion Control in Georgia will not be paid for.

17. TEMPORARY SILT FENCE "Sd1" – SINGLE ROW OF TYPE C

Single Row of Type C Silt fence shall be measured in place and paid for at the unit price bid per linear foot for one row of silt fence. Payment shall be full compensation for all materials and labor necessary to install, maintain and eventually remove and properly dispose of silt fencing as indicated on the plans or called for in the specifications. Silt fence must be installed in accordance with the Manual for Erosion Control in Georgia in order to be eligible for payment. Silt fence that is not properly trenched in will not be paid for. Silt fence materials that are not in accord with the Manual for Erosion Control in Georgia will not be paid for.

18. CONSTRUCTION EXIT "Co"

Temporary construction exits that are installed and accepted in accordance with the Manual for Erosion Control in Georgia will be counted in place and paid for at the unit price bid per each. Payment shall be full compensation for all labor, materials, geotextile underlayment, stone and miscellaneous items necessary for construction of the construction exit as indicated on the plans. No additional payment will be made for maintenance or removal of the exit.

19. EROSION CONTROL MATTING "Mb"

Erosion control matting shall be paid for on a square yard basis for matting actually placed and maintained. The unit price shall be full compensation for all labor, tools, equipment, and materials necessary to put matting in place.

20. CHECK DAMS “Cd”

Check dams shall be paid for on a per unit basis for each. The unit price shall be full compensation for all labor, tools, equipment, and materials necessary to put the check dams in place in accordance with the Manual for Erosion Control in Georgia.

21. STORM DRAIN OUTLET PROTECTION “ST”

Storm drain outlet protection shall be paid for on a per unit basis for each. The unit price shall be full compensation for all labor, tools, equipment, and materials necessary to put the storm drain outlet protection in place.

22. INLET SEDIMENT TRAP “Sd2”

Inlet sediment traps shall be paid for on a per unit basis for each. The unit price shall be full compensation for all labor, tools, equipment, and materials necessary to put the inlet sediment trap in place.

23. FILL DIRT

No payment shall be made for any fill dirt shown on the plans.

24. LOCATOR TAPE

No separate payment will be made for locator tape. The cost of installing this item shall be included in the contractor's bid price for the installation of PVC service line.

25. WYES AND BENDS

Wyes and bends that are installed and accepted will be counted in place by size and type. Payment for wyes and bends will be made at the unit price bid per each of the various sizes and types of wyes and bends.

26. ASPHALT TOPPING TYPE "F" (For Asphalt Resurfacing of Streets)

If directed by the Owner, the Contractor will pave the designated portion of street with 1-1/2" type "F" topping. Asphalt topping type "F" will be paid for at the unit price bid per square yard of the material actually placed and accepted.

27. CONCRETE DITCH CAP (For Asphalt Resurfacing of Streets)

Before asphalt topping is placed, a layer of concrete shall be placed in compacted trench as shown in the details. The ditch cap shall be finished flush with existing pavement. Payment will be on a square yard basis as measured along the pipe centerline.

28. EXFILTRATION AND INFILTRATION TESTING

Payment for this item should be included in the bid price of the pipe.

29. GRASSING (All Types)

The area to be seeded will be measured when a satisfactory solid stand of grass has been obtained, and the area will be obtained by multiplying the length times the width. Grassing will be paid for at the unit price bid per square yard. Grassing shall conform to the requirements of the Manual for Erosion Control in Georgia.

Special grassing (sod) will be replaced as sod and will be paid for under the unit price bid per square yard for sod. Sod placed without the direction of the Engineer or Owner shall be paid for as seeded grassing.

Before seeding or sodding is placed, the Contractor shall consult with the Engineer to determine which form of grassing shall be utilized.

30. TEMPORARY STRAW MULCH STABILIZATION (Ds1)

Straw mulch stabilization placed for temporary purposes in areas where the Contractor needs to return after a short absence (such as a weekend) shall be paid for at the unit price bid per square yard. The Engineer's field representative must approve the use of this item prior to its installation to be eligible for payment. Mulch placed such that the soil is still visible shall not be measured or eligible for payment.

31. LANDSCAPING NOT RELATED TO TRAIL PROJECT

The lump sum price bid for landscaping is for landscaping removed and replaced that is not covered by other proposal items. The price shall include, but not limited to all labor, materials, laying and staking, fertilizing, mulching and guaranteeing involved in the installation.

32. REMOVE AND REPLACE FENCE

Fencing payment will be made at the unit price bid per linear foot for the actual number of linear feet of fence removed and replaced.

33. REMOVE AND REPLACE CONCRETE CURB AND GUTTER

Concrete curb and gutter removed and replaced shall be paid for at the unit price bid per linear foot.

34. REMOVE AND REPLACE ASPHALT DRIVEWAY

Asphalt pavement shall be removed, disposed of, and replaced as detailed on the plans. Payment shall be made on a square yard basis. The width used in payment calculations shall be the actual replacement width up to a maximum of nominal pipe diameter plus 48". The unit price bid per square yard for removal and replacement of asphalt pavement shall be full compensation for all labor, materials, tools, and equipment necessary to remove, dispose of, and replace asphalt pavement.

35. REMOVE AND REPLACE CONCRETE DRIVEWAY

Concrete pavement shall be removed, disposed of, and replaced as detailed on the plans. Payment shall be made on a square yard basis. The width used in payment calculations shall be the actual replacement width up to a maximum of nominal pipe diameter plus 48". The unit price bid per square yard for removal and replacement of concrete pavement shall be full compensation for all labor, materials, tools, and equipment necessary to remove, dispose of, and replace concrete or pavement.

36. REMOVE AND REPLACE GRAVEL DRIVEWAY

Gravel driveways shall be removed and restored to a condition equal to or better than that before construction.

Removal and replacement of gravel driveway shall be measured in place and paid for at the unit price bid per square yard. The unit price bid shall be full compensation for removal proper disposal of debris and replacement of gravel driveway to a condition equal to or better than existed before construction.

37. REMOVE AND REPLACE EXISTING CONCRETE SIDEWALK/TRAIL

Existing sidewalk/trail removed and replaced will be measured in place and paid for at the unit price bid per linear foot for variable width of concrete of sidewalk or trail removed and replaced.

38. REPLACING RIGHT-OF-WAY MARKERS OR IRON PINS

When existing concrete markers or iron pins are moved during the construction of the sanitary sewer, the Contractor shall replace the iron pin or concrete markers. The iron pin or marker shall be offset and replaced in the same existing location. All concrete markers or iron pins replaced shall be paid at the bid price for each.

39. REMOVE AND REPLACE BRICK WALL

Brick wall removed and replaced shall be paid at the unit price bid per linear foot for the actual number of linear feet of wall removed and replaced.

40. DUST CONTROL

Dust control efforts completed in accordance with the Manual for Erosion and Sediment Control in Georgia shall be paid for at the lump sum price bid and shall include all materials, equipment, tools and labor necessary to complete the work. Payment for this item shall be included in the final pay request only.

41. REMOVE AND REPLACE HEADWALL

Removing and replacing storm drain headwalls shall be paid for at the unit price bid per each to remove and replace the headwall to the satisfaction of the Engineer and Owner and in accordance with City of Canton standards.

42. TREE PROTECTION FENCING

Payment for tree protection fencing shall be made at the unit price bid per linear foot for the actual number of linear foot of tree save fence installed in accordance with the Georgia Manual for Erosion and Sediment Control. Payment will only be made for the tree protection fence placed at the direction of the field engineer.

43. INSTALLATION OF VERTICAL 2" PVC PIPING FOR GPS DATA COLLECTION

No separate payment shall be made for per each location of 2" PVC piping installed for the purpose of as-built data collection. The Contractor shall be responsible for all materials, labor, equipment and other incidentals necessary to install, label and protect the PVC vertical sections from the time that the force main and water main is installed until the Contractor's Surveyor can make the necessary measurements and cut the pipe off below the ground. If debris clogs the pipe or if the pipe is broken off or lost, the Contractor will be required to excavate the area down to the main to reinstall the PVC pipe at the Contractor's expense.

44. REMOVE AND REPLACE LIGHT POLE

Light poles removed and replaced shall be paid for at the unit price bid for each.

45. WATER QUALITY MONITORING AND SAMPLING

In accordance with these specifications, the Contractor shall comply with the EPD's NPDES GAR 100002 Permit. The bid proposal has been set up to include all costs of maintaining the sampling locations for the duration of the sanitary sewer and trail project. This item shall be paid for at the unit price per each monitoring location.

46. WATER QUALITY INSPECTIONS

In accordance with these specifications, the Contractor shall comply with the EPD's NPDES GAR 100002 Permit. The bid proposal has been set up to include all costs of the

inspecting, required fees, filing of notices, reporting and other requirements of the Permit as required by the contract documents and the NPDES GAR 100002 within the unit prices bid per month for compliance.

47. REMOVE AND REPLACE EXISTING WATER MAIN

Measurement of the pipe in place will be along the main axis of the pipe line, and no deduction in the length of the pipe will be made for space occupied by valves, specials and fittings. In case of branch lines, measurement of said lines will be made from the center line of the main line to the end of the branch line or to the center of the valve or special at the end of the branch line. The unit price bid for pipe shall include all of the materials, labor and incidentals necessary for the completion of the pipeline as called for under these specifications, including all pressure testing and disinfection testing.

Pipe will be paid for at the unit price bid per linear foot for the various sizes and kinds of pipe. The payment for water mains shall include all associated costs for installing the water main at the location and depth shown on the plans. There shall be no additional pay for extra depth where extra depth is incurred due to valve locations, tie-ins, restrained joint requirements, installation for future road improvements, conflicts with other utilities or storm sewers, or other field conditions.

48. POLYETHYLENE CASING FOR WATER MAINS

All ductile iron water main pipe shall be encased in polyethylene tubing. Payment for this tubing shall be included in the unit price bid per linear foot for the water main.

49. CONNECT TO EXISTING WATER MAINS OR VALVES

Connections to existing water mains and valves shall be paid for at the unit price bid per each for the various size connections, including the extra labor involved in locating the existing facilities for the connection. The unit price shall be full compensation for all labor, tools, equipment, and basic appurtenances. Sleeves, fittings, etc. shall be paid for separately as described in the measurement and payment section under the heading "Miscellaneous D.I. Fittings and Specials". This item does not apply to tapping water mains.

This unit price includes plugging the abandoned section of line with fittings. If a “Cut and Plug…” item is done in conjunction with a “Connect to Existing …” item, the cost of the “Cut and Plug” item shall be included in the price of the “Connect to Existing” item and the Contractor shall only be paid for the one “Connect to Existing ..” item. This criteria applies to any cut/plug performed in the same excavation as a “Connect to Existing”, since the Contractor is already being paid for the excavation and the cutting of the existing water main in the excavation.

50. MISCELLANEOUS DUCTILE IRON FITTINGS

Ductile iron fittings and specials will be counted in place. Payment will be made at the unit

price bid per pound for miscellaneous fittings. Weight of the fittings shall be determined by the AWWA C110 weight for 350 PSI mechanical joint fittings, NOT the manufacturer's listed weight for the brand's version of C110 fittings. Weight used for payment shall not include the weight of joint accessories, and this payment shall cover the cost of joint accessories. A list of the fittings installed including their weights shall accompany each pay request. Retainer glands shall be paid for separately.

51. MISCELLANEOUS CONCRETE FOR BLOCKING AND THRUST COLLARS

The actual quantity of concrete used for blocking pipe and bends and for thrust collars will be measured in place. This item will be paid for at the price bid per cubic yard of concrete for miscellaneous concrete. Any reinforcing steel bars or threaded rod required shall also be included in the payment made per cubic yard for concrete blocking.

52. RETAINER GLANDS

Retainer glands for mechanical joints shall be paid for at the unit price bid per each for each size as listed in the proposal.

53. CONCRETE THRUST COLLARS AND ANCHORS

The concrete used in thrust collars and anchors shall be paid for under miscellaneous concrete. The retainer glands used shall be paid for under retainer glands.

54. RECONNECT EXISTING WATER METER

Reconnection of existing water meters shall be paid for at the unit price bid per each water meter reconnected. The unit price bid shall include all labor, tools, equipment, and incidental materials necessary to reconnect the water meter and restore service. The Contractor shall install a service saddle, corporation cock, new copper service tubing, curb stop, reconnect the water meter, and restore service. New copper services shall be installed from the proposed water main to the existing meter. Copper service pipe and PVC casing will be paid for separately on a per linear foot basis for the size of pipe used. All other materials will be considered incidental and will be included in the unit price. If the existing water meter or box is damaged in the process of reconnection, the Contractor shall replace the meter and/or box at his/her own expense.

55. COPPER WATER SERVICE

Copper tubing for service connections shall be paid for at the unit price bid per linear foot of pipe installed. The cost of service saddles, corporation cocks, new curb stops, and service fittings shall be included in the payment of this item. Longside services shall be bored under the roadway and shortside services can be open cut. The Contractor shall make sure that the new copper service tubing is installed at least eighteen inches below any proposed ditches cut or storm drains installed for the new roadway.

56. REMOVE AND REPLACE RCP

Payment for removal and replacement of RCP storm drains will be made per linear feet of all sizes of RCP pipe replaced. Unit price shall include all labor and materials necessary for removal and replacement.

57. REMOVE AND REPLACE CMP

Payment for removal and replacement of CMP storm drains will be made per linear feet of all sizes of CMP pipe replaced. Unit price shall include all labor and materials necessary for removal and replacement.

58. REMOVE AND REPLACE CONCRETE STORM DRAIN

Payment for removal and replacement of concrete storm drains will be made per linear feet of all sizes of concrete pipe replaced. Unit price shall include all labor and materials necessary for removal and replacement.

59. REMOVE AND REPLACE DROP INLET

Payment for removal and replacement of drop inlets will be made per each drop inlet removed and replaced. Unit price shall include all labor and materials necessary for removal and replacement.

60. REMOVE AND REPLACE TREES AND BUSHES

Payment for removal and replacement of trees and bushes will be made per each for all types and sizes of trees or bushes replaced. Unit price shall include all labor and materials necessary for removal and replacement. All trees and bushes not listed separately in Bid Form shall be paid for under Landscaping.

61. CUT AND PLUG EXISTING SEWER LINE

All cut and plugs shall be paid for at the unit price bid for each size as listed in the proposal. The number of cut and plugs installed shall be counted in the field and shall be full compensation to locate, excavate and plug existing sewer or force main line with concrete.

62. OUTSIDE DROP MANHOLES

Outside Drop Manholes will be counted in place. Payment will be made at the unit price bid per each for outside drop manholes having a depth of six feet or less, measured from the invert of the lowest pipe to the top of the brickwork, and the unit price bid shall include the manhole frame, cover, boots, steps, and water proof manhole frame and cover if required. Payment for each outside drop manhole shall also include all outside vertical piping and other incidentals to construct the outside drop manhole in accordance with the standard details included in the plans. The unit price shall also include the cost of vents

where shown on the plans. When the depth of outside drop manholes exceeds six feet, the difference between the actual depth and six feet will be paid for at the unit price bid per vertical foot for extra depth for outside drop manholes.

Where outside drop manholes exceed 16 feet in depth from the rim to the invert, manholes must be supplied with concrete footings and safety platforms as shown on the details. No extra payment shall be made to the contractor for these features as required.

63. STREAM BANK STABILIZATION

Stream bank stabilization shall be paid for at the unit price bid for each stream bank stabilization installed, restored and accepted. Payment is per each stream crossed and covers both sides of the stream. Payment shall include all tools, labor, materials and other incidentals required for the installation as detailed on the plans and described in the Manual for Erosion and Sediment Control in Georgia.

64. BY-PASS PUMPING

Payment for bypass pumping shall be made at the lump sum price bid for all bypass pumping required for all sanitary sewer rehabilitation. The Contractor shall be responsible for plugging or diverting the flow of wastewater as needed for sanitary sewer rehabilitation. Wastewater flow control shall be performed as specified in Section 02600 – Wastewater Flow Control.

65. MOBILIZATION AND DEMOBILIZATION FOR SANITARY SEWER

Payment for the Contractor's mobilization and demobilization efforts shall be made in accordance with the specifics defined in the M&P section of Section 01012.

66. REMOVE AND REPLACE POWER POLE

Power poles removed and replaced shall be paid for at the unit price bid per each for power poles removed and replaced.

67. TRAIL CONSTRUCTION

Items related to trail construction shall be measured and paid for in accordance with the special provisions related to the trial.

68. REMOVE AND REPLACE CONCRETE STEPS

Concrete steps removed and replaced shall be paid for at the unit price bid per each for concrete steps removed and replaced.

69. REMOVE AND REPLACE GATE

Gates removed and replaced shall be paid for at the unit price bid per each for gates removed and replaced.

70. REMOVE AND REPLACE GEORGIA POWER MONUMENT

Georgia Power monuments removed and replaced shall be paid for at the unit price bid per each for Georgia Power monuments removed and replaced.

71. REMOVE AND REPLACE RIP-RAP DAM

The rip-rap dam removed and replaced shall be paid for at the unit price bid per lump sum for the removal and replacement of the rip-rap dam.

72. REMOVE AND REPLACE DETENTION POND

Detention ponds removed and replaced shall be paid for at the unit price bid per each for detention ponds removed and replaced.

73. RESTRAINED JOINT GASKETS

Payment for restrained joint gaskets as required inside steel casings and at other locations required by the Engineer shall be paid for at the unit price bid for each of these gaskets installed.

74. OWNERS ALLOWANCE

The lump sum price for owners allowance is to be used for any unforeseen conditions not accounted for elsewhere in the construction proposal. The Contractor shall not be reimbursed for Miscellaneous Items, unless he has **in writing specific authorization to proceed with the work from the City of Canton City Engineer**.

75. CONCRETE WASHDOWN STATION

Payment for concrete washdown stations shall be paid for at the unit price bid per each for the concrete washdown stations utilized as shown on the Erosion Control plans.

76. REMOVE AND REPLACE MINIATURE GOLF COURSE

The miniature golf course removed and replaced shall be paid for at the unit price bid per lump sum for the removal and replacement of the miniature golf course.

77. REMOVE AND REPLACE UNSUITABLE SOIL

Existing soil deemed unsuitable will be removed and replaced and shall be paid for at the unit price bid per cubic yard for all unsuitable soil removed and replaced.

78. REMOVE AND REPLACE WOODEN DUMPSTER ENCLOSURE

Wooden dumpster enclosures removed and replaced shall be paid for at the unit price bid per each for wooden dumpster enclosures removed and replaced.

79. REMOVE AND REPLACE CONCRETE PARKING

Existing concrete parking removed and replaced shall be paid for at the unit price bid per square yard for all concrete parking removed and replaced.

80. REMOVE AND REPLACE BENCH

Benches removed and replaced shall be paid for at the unit price bid per each for benches removed and replaced.

81. REMOVE AND REPLACE TRASH CAN

Trash cans removed and replaced shall be paid for at the unit price bid per each for trash cans removed and replaced.

82. SECURITY FENCE AT HERITAGE PARK

Payment for security fencing at Heritage Park shall be made at the unit price bid per linear foot for the actual number of linear foot of security fence installed. Payment will only be made for the security fence placed at the direction of the field engineer.

83. ADDITIONAL COMPENSATION FOR ROCK BORE

Where extremely hard solid rock is encountered, such as solid blue granite, and the casing cannot move forward with a normal soil cutting head, and when the Engineer has so directed, the Contractor shall be authorized to utilize a hard-face rock cutting head and shall be paid an additional fee per linear foot for the length of casing that is cut through solid rock. This extra fee per linear foot shall be added to the base unit cost per linear foot for steel casing and shall be paid for the remainder of the length of the casing to be installed, and this fee per linear foot shall be full compensation for all costs associated with providing and using the hard-face rock cutting head, providing and delivering the water supply needed for the cutting head, and other incidentals associated with installing a cased bore through solid rock.

END OF SECTION

SECTION 02210

SOIL EROSION AND SEDIMENT CONTROL

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. The contractor is responsible for implementing best management practices to prevent and minimize erosion and resultant sedimentation in all cleared and grubbed areas during and after construction. This Section covers the work necessary for the installation of structures and measures for the prevention and control of soil erosion. The CONTRACTOR shall furnish all material, labor and equipment necessary for the proper installation, maintenance, inspection, monitoring, reporting and removal (where applicable) of erosion prevention and control measures.

B. Any portions of Section 02210 in conflict with current requirements of Cherokee County or the Georgia EPD permit requirements are hereby declared void.

1.02 RELATED SECTIONS

A. N/A

1.03 REFERENCES

A. CONTRACTOR shall be familiar with the following reference documents and keep those at the construction site at all times. These documents need to be complied with as applicable.

1. Manual for Erosion and Sediment Control in Georgia (the "Green Book"), Latest Edition.

2. State of Georgia Department of Transportation Standard Specifications, Construction of Roads and Bridges, (the GDOT Specifications).

3. National Stone Association, Aggregate Classification (the NSA Classification).

4. Erosion, Sedimentation and Pollution Control Plan (the Plan) as required by the NPDES Permit.

1.04 DEFINITIONS

A. ENGINEER: For the purposes of this Section 02210, the term ENGINEER is synonymous with consulting engineer, licensed

professional, designer, and consultant as used in permits, laws, rules, regulations, ordinances and other soil erosion and sediment control references. For the purposes of this Section 02210, the Owner's representative may at any time during the project provide direction. This direction shall be considered equivalent to direction from the ENGINEER.

B. CONTRACTOR: For purposes of this Section 02210, the term CONTRACTOR is synonymous with general contractor, discharger, operator, primary permittee and permittee (permit holder) as used in permits, laws, rules, regulations, ordinances and other soil erosion and sediment control references.

C. Qualified Personnel: For purposes of this Section 02210, the term Qualified Personnel means a person who has successfully completed an erosion and sediment control short course eligible for continuing education units, or an equivalent course approved by Environmental Protection Division of the Georgia Department of Natural Resources and the State Soil and Water Conservation Commission.

1.05 REGULATORY COMPLIANCE

A. Land disturbance activities are not authorized to begin until after all required erosion and sediment control permits are obtained from the United States, the State of Georgia, Cherokee County and/or the City of Canton. CONTRACTOR shall comply with requirements specified in the Contract Documents or by the ENGINEER. CONTRACTOR shall also comply with all other laws, rules, regulations, ordinances and requirements concerning soil erosion and sediment control established by the United States, the State of Georgia, and/or Cherokee County. The following documents and the documents referenced therein define the regulatory requirements for this Section 02210.

1. Manual for Erosion and Sediment Control: CONTRACTOR shall follow practices and standards of the Georgia Soil and Water Conservation Commission Manual for Erosion and Sediment Control in Georgia

2. Comprehensive Monitoring Plan: When a Comprehensive Monitoring Plan (CMP) is provided in the Contract Documents, CONTRACTOR shall follow the practices described in the CMP.

1.06 SUBMITTALS

A. CONTRACTOR shall submit to the ENGINEER the proposed schedule for installation, maintenance and removal of all temporary and permanent erosion and sediment control measures. The schedule shall reflect the requirements of Paragraph 1.07 below (Sequence of Construction of

Temporary Sediment Control Structures) and must show the anticipated starting and completion date for all land development activities including:

1. Installation of temporary and permanent sediment control structures

2. Stormwater management facilities,

3. Timber salvage operations,

4. Clearing operations,

5. Grubbing operations,

6. Rough and finished grading,

7. Building construction,

8. Landscaping, including all seeding and sodding, and

9. Removal of temporary sediment control structures.

1.07 SEQUENCE OF CONSTRUCTION OF TEMPORARY SEDIMENT CONTROL MEASURES

A. Install all erosion and sediment control structures specified herein and shown in the Contract Documents, or as directed by the ENGINEER, as the first item of work within a given drainage area. Construction and installation of all sediment control structures shall begin downgradient of the area to be disturbed and proceed upgradient. CONTRACTOR shall at all times maintain all soil erosion and sediment control structures and practices throughout construction and until permanent grass cover is established.

1.08 PAYMENT PROCEDURES

A. The price bid for work covered under this Section 02210 shall include the furnishing, placement, maintenance, and removal of the silt fence, hay bales, temporary dikes and ditches, sediment traps, sediment basins, construction exits and all temporary vegetative and non-vegetative ground cover and all earthwork, labor, materials, and equipment necessary to complete the work as specified or directed by ENGINEER.

PART 2 - SPECIFIC REQUIREMENTS

A. The requirements specified herein and shown in the Contract Documents are minimum requirements for preventing or minimizing soil erosion and

sediment transport. CONTRACTOR shall install and maintain soil erosion and sediment control measures in accordance with the following criteria. Requirements set forth in the Manual for Erosion and Sediment Control in Georgia shall govern in case of a conflicting information, unless clearly identified as a deviation from this Manual.

2.01 TEMPORARY INTERCEPTOR, DIVERSION, AND PERIMETER DIKES

A. Install interceptor, diversion and perimeter dikes to intercept and prevent storm water runoff from entering disturbed areas from any other upgradient area regardless of whether area is on-site or off-site. Dikes must divert runoff to a drainage ditch, sediment basin or temporary or permanent channel. Dikes shall remain in place until the disturbed area is permanently stabilized. Construct dikes of earth fill free from all perishable matter and refuse, such as scraps of forms, wire, brush, rocks larger than six (6) inches or any foreign materials. Ashes, large stones, muck or other soft materials shall not be used. Compact all dikes using construction equipment. Dikes shall be stabilized immediately after construction with temporary seeding in accordance with Paragraph 2.09 to prevent sediment transport to downstream areas.

2.02 TEMPORARY INTERCEPTOR, DIVERSION, AND PERIMETER DITCHES

A. Install temporary ditches where shown on the Drawings or as directed by the ENGINEER. In general, temporary ditches shall be installed parallel and contiguous to and upslope of temporary dikes. Construct ditches to the lines and cross section shown on the drawings, provided that ditches have a minimum depth of one foot and side slopes have a slope of 2H:1V or flatter. Ditches shall be free of bank projections, trees, brush, stumps or other objectionable materials or irregularities that will impede normal flows. Downstream outlets of temporary ditches shall be constructed and stabilized prior to construction of the ditch. The outlet must discharge in such a manner as to not cause an erosion problem.

2.03 TEMPORARY SEDIMENT BARRIERS (SILT FENCE)

Install silt fence where shown on the Drawings or as directed by the ENGINEER.

A. Material Specifications: Filter fabric must meet the requirements set forth in Section 171 - Temporary Silt Fence, of the State of Georgia Department of Transportation (DOT) Standard Specifications, Construction of Roads and Bridges. CONTRACTOR shall submit to ENGINEER copies of delivery invoices, certifications or other documentation that the filter fabric complies with these specifications if requested by ENGINEER.

B. Installation: In general, silt fencing shall be installed on the downgradient side of all areas to be disturbed as well as the perimeter of the project site (ENGINEER may authorize an exception for a perimeter which is

upgradient from all land disturbing activity). All posts used to install silt fence shall comply with the specifications in the Manual for Erosion and Sediment Control in Georgia. Posts must be placed at least 18 inches in the ground and cannot be more than 6 feet apart from one another. Fence fabric must be inserted below ground and fence fabric must be fastened to posts according to the specifications in the Manual.

C. Maintenance: In accordance with Paragraph 3.01 below, all silt fencing shall be inspected and maintenance performed, if needed, within 24 hours of inspection once every seven (7) calendar days and within 24 hours of a rainfall event that has precipitation of 0.5 inches or greater. All silt fencing materials, including fabric, posts and fasteners must be replaced six months after installation. At the earlier of (1) every 14 calendar days, or (2) when sediment reaches a depth of one half the installed fence height, all soil, silt, sediment and other material captured by the silt fence should be removed and returned upgradient on the construction site. The silt fence shall maintain such that it minimizes sediment transport as designed.

2.04 TEMPORARY SEDIMENT BARRIERS (HAY BALES)

Install bales of hay where shown on the Drawings or as directed by ENGINEER.

A. Material Specifications: Hay bales shall be wire or nylon bound and of a rectangular shape.

B. Installation: Place bales in a row with ends tightly abutting the adjacent bales. Corner abutment is not acceptable. Embed bales in the soil a minimum of four (4) inches below grade. Build up backfilled soil a minimum of four (4) inches above grade on the uphill side of the barrier and conform to grade on the downhill side of the barrier. Anchor each bale in place with 1- by 2-inch wood stakes or No. three (3) reinforcing bars. The first stakes shall be driven toward the previously laid bale to force the bales together. Stakes shall be 24 inches long and shall reach a minimum of six (6) inches into the ground.

C. Maintenance: In accordance with Paragraph 3.01 below, all hay bales shall be inspected and maintenance performed, if needed, within 24 hours of inspection once every seven (7) calendar days and within 24 hours of a rainfall event that has precipitation of ½ inch or greater. Hay bales must be replaced one month after installation. At the earlier of (1) every 14 calendar days or (2) when sediment reaches a depth of one-half the original bale height, all soil, silt, sediment and other material captured by the hay bales should be removed and returned upgradient on the construction site. The hay bales shall be maintained such that they minimize sediment transport as designed.

2.05 CONSTRUCTION EXIT

Locate construction exits as shown on the Drawings or as directed by the ENGINEER.

A. Material Specifications: A geotextile underliner, conforming to Section 881.06 - Plastic Filter Fabric of the State of Georgia DOT Standard Specifications, Construction of Roads and Bridges, shall be used in all instances to stabilize and support the pad aggregate. Aggregate size will conform to the National Stone Association's (NSA) R-2 classification 1½-inch to 3½-inch stone).

B. Installation: Construction exits should be located at all points where traffic will be leaving the construction site to a public or private right of way, street, alley, or parking area. All construction exits must be fully installed prior to the commencement of timber salvage, clearing, grubbing, grading or construction operations.

C. Maintenance: In accordance with Paragraph 3.01 below, all construction exits shall be inspected and maintenance performed, if needed, within 24 hours of inspection once every seven (7) calendar days and within 24 hours of rainfall event that has precipitation of 0.5 inches or greater. At the earlier of (1) thirty calendar days since construction exit was installed or last maintained, or (2) geotextile underliner is visible or if construction exit does not conform to specifications established in this Paragraph 2.05, construction exit pad shall be top dressed with NSA's R-2 (1½- inch to 3½-inch stone) such that underliner is no longer visible and exit pad conforms to specifications.

2.06 CHECK DAM

Install check dams as shown on the Drawings or as directed by the ENGINEER.

A. Installation: Install check dams in all ditches, channels or swales draining disturbed areas of one (1) acre or greater and which are not installed with permanent, non-erodible lining or a vegetative cover as specified in Paragraph 2.09. The specifications for the design criteria, materials, installation and maintenance of check dams are dependent on the upslope drainage area and are described below. A check dam shall not drain a disturbed area greater than ten (10) acres.

1. Check Dam for Ditches Draining Up To Two (2) Acres: Hay bales may be used if all bales used conform to the specifications established in Paragraph 2.04.

2. Check Dam For Ditches Draining Up To Five (5) Acres: Install stone check dams in ditches draining upgradient areas greater than two acres. Construct check dam with graded size 5- to 10-inch

stone. Hand placement may be required to insure complete coverage of entire width of ditch.

3. Check Dam For Ditches Draining Five (5) to Ten (10) Acres: Check dams for use with drainage areas between five and ten acres must serve as a sediment filtering device in addition to reducing the velocity of storm water runoff. Construct check dam with graded size 5- to 10-inch stone. Check dam shall not substantially impound water. Hand placement may be required to ensure complete coverage of entire width of ditch.

B. Maintenance: In accordance with Paragraph 3.01 below, all check dams shall be inspected and maintenance performed, if needed, within 24 hours of inspection once every seven (7) calendar days and within 24 hours of a rainfall event that has precipitation of 0.5 inches or greater. Dress dams with appropriate-sized stone or additional hay bales as is necessary to maintain check dams in accordance with these specifications. At the earlier of (1) every 14 calendar days, or (2) when sediment reaches a depth of one-half the original check dam height, all soil, silt, sediment and other material captured by the dam should be removed and returned upgradient on the construction site.

2.07 INLET SEDIMENT TRAP

Install inlet sediment traps where shown on the Drawings, as directed by ENGINEER, and around all storm drain drop inlets that receive runoff from disturbed areas.

A. Material Specifications: Filter fabric used in constructing inlet sediment traps shall conform to the specifications established in Paragraph 2.03. For gravel drop inlet filters, stone shall conform to NSA's R-3 specification (3- to 6-inch stone). Baffle box inlet filters shall be constructed of 2-inch x 4-inch or 4-inch x 4-inch posts and 2-inch x 4-inch boards.

B. Installation: Install in accordance with Chapter Six of the Manual for Erosion and Sediment Control in Georgia. Excavation may only be used in combination with a filtering device such as stone or silt fence. All sediment traps should provide a minimum of 1.5 feet of sediment storage. Sediment traps must be self-draining.

C. Maintenance: In accordance with Paragraph 3.01, inlet sediment traps shall be inspected and maintenance performed, if needed, within 24 hours of inspection once every seven (7) calendar days and within 24 hours of a rainfall event that has precipitation of 0.5 inches or greater. Clean and repair traps such that traps meet the specifications of this Paragraph 2.07 and minimize sediment transport. Remove sediment as necessary to provide adequate storage volume for subsequent rains.

2.08 TEMPORARY SEDIMENT BASINS AND INLETS

Install temporary sediment basins and inlets where shown on the Drawings or as directed by ENGINEER.

A. Material Specifications: Concrete used in constructing sediment basin shall be ready mixed, conforming to ASTM C 94, Alternate 2. Compressive field strength shall be not less than 2,500 psi at 28 days. Maximum size of aggregate shall be 1-1/2 inch. Slump shall be between 2 and 4 inches. Field strength shall be assumed as equal to 85 percent of the strength of laboratory-cured cylinders. Forms used in constructing sediment basin shall have exposed surfaces of plywood; others shall be steel, matched boards, plywood, or other acceptable material. Form all vertical surfaces. Provide fillets on reentrant angles. Trench walls, large rock, or earth will not be acceptable form material. Reinforcing steel shall conform to ASTM A 615, Grade 40, deformed bars. At the option of the CONTRACTOR, approved precast units may be substituted for cast-in place units. Precast units shall conform to ASTM C 478. Submit details of proposed units to the ENGINEER for review. Concrete risers for extensions shall be a maximum of 6 inches high and of the same quality as the sections. Risers shall be reviewed by ENGINEER before installation. Mortar shall be standard premixed mortar conforming to ASTM C 387, Type S, or proportion 1 part portland cement to 2 parts clean, well-graded sand which will pass a 1/8-inch screen. Admixtures may be used not exceeding the following percentages of weight of cement: Hydrated lime, 10 percent; diatomaceous earth or other inert materials, 5 percent. Consistency of mortar shall be such that it will readily adhere to the concrete. Cast iron frames and gratings for catch basins and storm drain inlets shall be designed for AASHTO H-20 truck loadings and shall be bike-proof veticuline grates. Bearing surfaces shall be clean and shall provide uniform contact. Castings shall be tough, close-grained gray iron, sound, smooth, clean, free from blisters, blowholes, shrinkage, cold shunts, and all defects, and shall conform to ASTM A 48, Class 30.

B. Construction: Excavation of basin and backfill of any adjoining pipe trenches shall be as specified in Section 02200, Earth Excavation. Construct forms to the dimensions and elevations required. Forms shall be tight and well braced. Chamfer corners of forms. Prior to placing the concrete, remove all water and debris from the forms. Moisten forms just prior to placing the concrete. Handle concrete from the transporting vehicle to the forms in a continuous manner as rapidly as practical without segregation or loss of ingredients. Immediately after placing, compact concrete with a mechanical vibrator. Limit the duration of vibration to the time necessary to produce satisfactory consolidation without causing segregation. Screed the top surface of exposed slabs and walls. When the initial water has been absorbed, float the surfaces with a wood float and lightly trowel with a steel trowel to a smooth finish free from marks or

irregularities. Finish exposed edges with a steel edging tool. Remove forms and patch any defects in the concrete with mortar mixed in the same proportions as the original concrete mix. Cure concrete by preventing the loss of moisture for a period of 7 days. Accomplish with a membrane-forming curing compound. Apply the curing compound immediately after removal of forms or finishing of the slabs. Protect concrete from damage during the 7-day curing period. If precast unit is used and material in bottom of trench is unsuitable for supporting unit, excavate and backfill to required grade with 3-inch minus, clean, pit-run material. Set units to grade at locations shown. Set frames and grates at elevations indicated on Drawings. Frames may be cast in, or shall be set in mortar.

C. Maintenance: In accordance with Paragraph 3.01, temporary sediment basins and inlets shall be inspected and maintenance performed, if needed, within 24 hours of inspection once every seven (7) calendar days and within 24 hours of a rainfall event that has precipitation of 0.5 inches or greater. Clean and repair basins and inlets such that they meet the specifications of this Paragraph 2.08 and minimize sediment transport. Remove sediment as necessary to provide adequate storage volume for subsequent rains.

2.09 TEMPORARY SOIL EROSION STABILIZATION (VEGETATIVE)

This section covers work necessary for temporary stabilization of soil to prevent erosion following clearing, grubbing, grading or other construction activities in the areas identified in the Contract Documents or as directed by the ENGINEER, except wetlands. The right is reserved to modify the use, location, and quantities of the areas requiring stabilization as the ENGINEER consider being in the best interest of the City of Marietta. During construction, the ENGINEER will designate the extent of stabilization used in each location throughout the project.

A. General Criteria: The stabilization measures specified herein shall be initiated on all disturbed areas including dikes and ditches within 24 hours of completion to minimize erosion and soil transport, provided however, that stabilization measures specified herein do not have to be initiated in the event that construction activities will resume on that portion of the site within fourteen (14) days from the date activities temporarily ceased. For cleared areas which may not receive permanent vegetative or other stabilization measure for six (6) months or less AND a suitable growing season is not available for seedings to establish an erosion retardant cover, mulch may be applied according to the specifications below.

B. Material Specifications: Seed shall be clean, delivered in original unopened packages and bearing an analysis of the contents. Guaranteed 95 percent pure with minimum germination rate of 85 percent. Summer seed mix shall be 40 percent by weight Fawn Fescue, 30 percent by weight Perennial Ryegrass, 15 percent by weight Orchard Grass, and 15 percent by weight Dutch White Clover. Winter seed mix shall be 35 percent by

weight Fawn Fescue, 30 percent by weight Perennial Ryegrass, 30 percent by weight Hairy Vetch, and 5 percent by weight Dutch White Clover. Fertilizer shall be used if directed by ENGINEER. Fertilizer shall be commercial, chemical type, uniform in composition, free-flowing, conforming to state and federal laws, and suitable for application with equipment designed for that purpose. Fertilizer shall have a minimum percentage of plant food by weight for the following: Summer mix shall be 10 percent nitrogen, 10 percent phosphoric acid, and 6 percent potash; Winter mix shall be 16 percent nitrogen, 8 percent phosphoric acid, and zero percent potash. Straw mulch shall be threshed straw of oats, wheat, or rye, free from obnoxious weed seeds or obnoxious weeds, or shall be clean hay. Average stalk length shall be 6 inches. Wood waste, asphaltic emulsion, or erosion control matting such as jute, excelsior, are also appropriate for temporary stabilization. Asphaltic emulsion shall be CSS-1 as manufactured by Chevron Asphalt Company.

1. CONTRACTOR shall submit to ENGINEER certificates of inspection of seed by state or federal authorities and copies of delivery invoices or other documentation of quantities of mulch and fertilizer.

2. The CONTRACTOR shall give at least three (3) days notice to the ENGINEER of the time and place of starting the following operations:

   a. Delivery of materials

   b. Planting of grass

3. The CONTRACTOR shall keep the ENGINEER advised of his schedule of operations.

C. Application: Planting and seeding shall be performed in accordance with the following schedule:

1. Summer Seeding: No earlier than April 1 and no later than October 15.

2. Winter Seeding: October 16 until weather conditions prohibit further construction operations as determined by the ENGINEER.

3. Soil Preparation: Prior to seeding operations, and after surface has been shaped, graded, and compacted, scarify surface to a minimum depth of 1 inch.

4. Seeding: All seedbeds shall be a minimum depth of one (1) inch. Seedbeds shall be reviewed by the ENGINEER prior to seeding. After soil has been scarified, apply required seed mix, as specified

in this section, uniformly with a cyclone seeder, drill, cultipacker seeder, or hydroseeder. When hydroseeding is the selected method of seeding, prepare and apply slurry at the rate and proportion specified below:

a. Seed Mix 100 lbs/acre

b. Fertilizer 650 lbs/acre

c. Water as necessary

The required fertilizer mix shall be uniformly applied at the time of seeding.

Upon completion of the seeding operations, apply straw mulch to a reasonably uniform thickness of 1-1/2 inches to 2-1/2 inches in depth. Mulch shall be loose enough to permit penetration of sunlight and air circulation, but dense enough to shade ground, reduce evaporation rate, and prevent or materially reduce erosion of underlying soil. Retain straw in place by applying asphaltic emulsion at a rate of 100 gallons per acre or mechanically tack the mulch into the soil to approximately 3 inches. Equipment used for tacking shall be specially designed for this use.

D. Application of Mulch Only: In accordance with Paragraph 2.09A, for areas to receive mulch only, apply at the following rates, to the following depths and according to the following specifications:

1. Dry Straw or Hay: Spread at a rate of two and one-half (2 1/2) tons per acre. Apply to a depth of six (6) to ten (10) inches. Apply uniformly and anchor as necessary.

2. Wood Waste: Spread at a rate of six (6) to nine (9) tons per acre. Apply to a depth of two to three inches. Apply wood waste only on slopes that are 3:1 or flatter. Anchoring is not necessary.

3. Jute Matting or Excelsior Netting: Apply in accordance with manufacturer's recommendations.

4. Asphaltic Emulsion: Apply at a rate of 1200 gallons per acre. Apply uniformly.

E. Maintenance: In accordance with Paragraph 3.01, stabilized areas shall be inspected and maintenance performed, if needed, within 24 hours of inspection once every seven (7) calendar days and within 24 hours of a rainfall event that has precipitation of 0.5 inches or greater. Apply additional stabilization materials as needed.

2.10 EROSION CONTROL MATTING AND BLANKETS

A. Erosion control matting and blankets shall be applied on steep slopes where the hazard of erosion is high and planting is likely to be too slow to provide adequate cover. Erosion control matting shall be applied in concentrated flow area, slopes 2.5:1 and steeper with a height of ten feet or greater and cuts and fills within stream banks. The choice of the installation of matting or blankets, permanent or temporary shall be dependent on the specific condition of the area to be stabilized and the manufacturers recommendations to obtain maximum erosion control.

PART 3 - EXECUTION

3.01 INSPECTIONS AND MAINTENANCE

A. CONTRACTOR shall designate a Qualified Person to perform inspections. The following areas are to be inspected and maintenance performed, if needed.

1. Disturbed areas of the construction site that have not undergone final stabilization.

2. Erosion and sediment control structures.

3. All locations where vehicles enter or exit the site.

4. Material storage and construction laydown areas that are exposed to precipitation and have not been finally stabilized.

B. In areas that have been finally stabilized, inspections and, if necessary, maintenance by CONTRACTOR will occur at least once per month for duration of contract or project, whichever is longer.

C. During inspections, the following will be observed and appropriate maintenance procedures taken:

1. The conformance to specifications and current condition of all erosion and sediment control structures.

2. The effectiveness and operational success of all erosion and sediment control measures.

3. The presence of sediments or other pollutants in stormwater runoff at all runoff discharge points.

4. If reasonably accessible, the presence of sediments or other pollutants in receiving waters.

5. Evidence of off-site sediment tracking at all locations where vehicles enter or exit the site.

Silt and erosion control devices shall be inspected by the Contractor for effectiveness, damage and proper installation at the end of each working day not to exceed once every seven (7) calendar days and within 24 hours of the end of a rainfall event that is 0.5 inches or greater. Repair of damage or improper installation shall be remedied by the Contractor within 24 hours of inspection. Improper effectiveness of any silt and erosion control device or combination thereof that has been properly installed and maintained shall be reported to the Engineer within 24 hours of inspection. Silt and erosion control devices shall be cleaned of sediment as required for the specific device. Disposal of sediment in a fashion that it will not re-enter the silt and erosion control devices. The Contractor shall promptly remedy all damage or improper installation.

3.02 REMOVAL OF TEMPORARY SEDIMENT CONTROL STRUCTURES

A. At such time that temporary erosion and control structures are no longer required under this Section 02210, the CONTRACTOR shall notify the ENGINEER of its intent and schedule for the removal of the temporary structures, and obtain the ENGINEER's approval in writing prior to removal. Once CONTRACTOR has received such written approval from ENGINEER, CONTRACTOR shall remove as approved the temporary structures and all sediments accumulated at the removed structure shall be returned upgradient. In areas where temporary control structures are removed, the site shall be left in a condition that will restore original drainage.

END OF SECTION

SECTION 02486

GRASSING AND MULCHING

PART 1 - GENERAL

1.01 WORK INCLUDED:

A. This work shall consist of ground preparation, furnishing and planting, seeding, fertilizing, sodding and mulching of all disturbed areas. Note that all grassing and mulching shall meet the requirements of the latest edition of the Manual for Erosion and Sediment Control in Georgia, with regard to Products and Execution.

B. Areas to be grassed:

1. All graded or disturbed areas within the construction limits where natural vegetation has been removed except for areas to be paved.

2. All existing grassed areas within the final fenced area of the site shall be regrassed to meet the requirements of this specification.

1.02 RELATED WORK

A. Earthwork Section 02200

1.03 JOB CONDITIONS: Schedule work to comply with requirements for erosion control.

1.04 PRODUCT

A. All grass/mulch products shall meet all requirements of the latest edition of the Manual for Erosion and Sediment Control in Georgia.

END OF SECTION

SECTION 02605

PRECAST CONCRETE MANHOLES AND STRUCTURES

PART 1 - GENERAL

1.01 WORK INCLUDED

A. Provide and install pre-cast concrete manholes and vaults of the size and types at the locations shown on the drawings.

1.02 RELATED WORK

A. Earthwork is included in Section 02200

B. Cast-in-Place Concrete is included in Section 03300

1.03 SUBMITTALS

A. Submit to the Engineer, in accordance with Section 01300, copies of all materials required to establish compliance with this Section. Submittals shall include at least the following:

1. Product data, materials data, and installation data for base sections, riser sections, eccentric and concentric conical top sections, and flat slab tops, with notarized certificate indicating compliance with ASTM C478.

2. Details of pipe connections to manholes and vaults.

3. Product data for manhole rungs, including method of installation.

4. Product data for manhole frame and cover with notarized certificate indicating compliance with ASTM C48, Class 30.

5. Product data for sewer brick with notarized certificate indicating compliance with ASTM C32, Grade 55

6. Design data for precast concrete structures:

   a. Sectional plans and elevations showing dimensions and reinforcing steel placement.

   b. Structural calculations including assumptions.

1.04 REFERENCE STANDARDS

A. Design, manufacturing, and assembly of elements of the equipment herein specified shall be in accordance with, but not limited to, published standards of the following, as applicable:

1. American Society for Testing and Materials (ASTM)

    a. ASTM A48 – Standard Specification for Gray Iron Castings.

    b. ASTM A615 – Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.

    c. ASTM C32 – Standard Specification for Sewer and Manhole Brick Made from Clay or Shale.

    d. ASTM C33 – Standard Specification for Concrete Aggregates.

    e. ASTM C62 – Standard Specifications for Building Brick (Solid Masonry Units Made from Clay or Shale).

    f. ASTM C150 – Standard Specification for Portland Cement.

    g. ASTM C207 – Standard Specification for Hydrated Lime for Masonry Purposes.

    h. ASTM C443 – Standard Specifications for Joints for Circular Concrete Sewer and Culvert pipe, using Rubber Gaskets.

    i. ASTM C478 – Standard Specification for Precast Reinforced Concrete Manhole Sections.

    j. ASTM D4101 – Standard Specification for Propylene Plastic Injection and Extrusion Materials.

2. American Concrete Institute (ACI)

    a. ACI 318 – Building Code Requirements for Reinforced Concrete

    b. ACI 350R – Environmental Engineering Concrete Structures

3. American Association of State Highway and Transportation Officials (AASHTO)

    a. Standard Specifications for Highway Bridges

4. Occupational Safety and Health Administration (OSHA)

B. Where reference is made to standards of one of the above or other organizations, the version of the standard in effect at the time of bid opening shall apply.

1.05 QUALITY ASSURANCE

A. All materials shall be new and unused. The design, materials, manufacturing process, and transportation or sections shall be subject to inspection and approval at any time by the Engineer. Inspection may be made at place of manufacture, at work site

following delivery, or both.

B. Materials will be examined for compliance with ASTM standards, this Section, and approved manufacturer's drawings. Additional inspection criteria shall include: appearance, dimensions(s), blisters, cracks, and soundness.

C. Materials shall be rejected for failure to meet any requirements specified herein. Rejection may occur at place of manufacture, at work site, or following installation. Material on the job site that is found to be defective shall be moved immediately after being notified as unacceptable. Rejected materials shall be replaced at no cost to the Owner.

PART 2 - PRODUCTS

2.01 GENERAL

A. Reference to a manufacturer's name and model or catalog number is for the purpose of establishing the standard of quality and general configuration desired.

B. Like items of materials/equipment shall be the end products of one manufacturer in order to provide standardization for appearance, operation, maintenance, spare parts and manufacturer's service.

C. Provide lifting lugs or holes in each precast section for proper handling.

2.02 PRECAST CONCRETE MANHOLES

A. Precast manholes, including base sections, risers, top sections, and flat slab top sections shall conform to ASTM C478 and meet the following requirements:

1. Bottom slab thickness shall equal the riser wall thickness or flat slab top thickness, whichever is greater.

2. Top section shall be eccentric cone where cover over pipe exceeds 4 ft. Top section shall be a flat slab where cover over top of pipe is 4 ft or less.

3. Base, riser, and transition top sections shall have tongue and groove joints with preformed mastic sealer.

4. Precast concrete sections shall be constructed of Portland Cement with a 28-day compressive strength of not less than 4,000 pounds per square inch.

5. Design precast concrete base, riser, transition top, flat slab top, and grade ring for a minimum 300 psf loading plus earth load. Calculate earth load with a unit weight of 130 pcf.

6. Mark date of manufacture, name and trademark of manufacturer on the inside of each precast section.

7. Construct and install precast concrete base as shown on the Drawings.

8. Provide integrally cast knockout panels in precast concrete manhole sections at locations and with sizes shown on Drawings. Knockout panels shall have no steel reinforcing.

2.03 PRECAST CONCRETE STRUCTURES

A. Precast reinforced concrete structures shall be manufactured by Tindall, Stay-Rite, or an approved equal. Refer to Drawings for inside dimensions, headroom requirements, and minimum thickness of concrete.

B. Manufacturer shall notify Engineer at least 5 working days prior to placing concrete during manufacturing process. Engineer may inspect reinforcing steel placement prior to placing concrete.

C. Structural design calculations and shop drawings shall be prepared and stamped by a professional engineer registered in Georgia.

D. Design criteria:

1. Precast concrete

a. The 28-day minimum compressive strength shall be 5,000 psi.

b. The maximum water content shall be six gallons per 94 pound sack of cement.

c. Minimum cement content shall be six 94 pound sacks of cement per cubic yard of concrete.

2. Manufactured products

a. Conform to ACI 318 and ACI 350R.

b. Analyze walls and slabs using accepted engineering principals.

c. When “fy” exceeds 40,000 psi, “z” (ACI 318) shall not exceed 95,000 psi. “fs” shall not exceed 50 percent of “fy”.

d. Design products to support their own weight, weight of the soil at 120 pcf, and a live load equal to 300 psf applied to top of slab.

e. Cast base slab and walls together to form a monolithic base section.

f. Design structure walls for a water pressure of 90 psf. Originate pressure diagram at finished ground surface.

g. Consider discontinuities in structure produced by openings and joints.

Provide additional reinforcing around openings. Frame openings to carry full design loads to support walls.

h. Prevent flotation, with ground water level at finished ground surface, by dead weight of structure and soil load above structure. Do not consider skin friction, soil friction, or weight of equipment in structure.

i. Locate horizontal wall joints 18-in minimum from horizontal centerline of wall openings. Design structure with a minimum number of joints.

j. Provide lifting hooks for top slab.

k. Locate access openings, wall sleeves, and pipe penetrations as shown on Drawings. Wall sleeves shall be provided by precast concrete manufacturer.

2.04 BRICK MASONARY

A. Bricks shall be sound, hard, uniformly burned, regular and uniform in shape and size. Underburned or salmon brick shall not be acceptable. Only whole bricks shall be used.

1. Bricks for channels and shelves shall conform to ASTM C32, Grade SS except that the mean of five tests for absorption shall not exceed 8 percent and no individual brick shall exceed 11 percent.

2. Bricks for raising manhole frames to finished grade shall conform to ASTM C62.

B. Mortar shall be composed of 1 part Portland cement, 2 parts sand, and hydrated lime not to exceed 10-lbs to each bag of cement. Portland cement shall be ASTM C150, Type II; hydrated lime shall conform to ASTM C207.

C. Sand shall be washed, cleaned, screened, well graded with all particles passing a No. 4 sieve and conform to ASTM C33.

2.05 FRAMES AND COVERS

A. Manhole covers shall be of cast iron with a coat of asphaltic paint applied at the foundry. The weight of the frame and cover shall be approximately 315 lbs. The clear opening shall be twenty-one and one-half inches (21 1/2"). The frame and cover shall be equal and similar to Neenah R-1776.

B. Where waterproof covers are required, the weight of the frame and cover shall be approximately 375 lbs. The clear opening shall be twenty-four inches (24"). The frame and cover shall be equal and similar to Neenah R-1915-H2 with a "bolt-down" lid.

C. The cast iron frame for the manhole cover shall be set at the required elevation and properly anchored to the masonry. Frames and covers shall be in compliance with the

latest edition of ASTM 48. Where manholes are constructed in paved areas, the top surface of the frame and cover shall be tilted, if necessary, to conform to the exact slope, crown and grade of the existing adjacent pavement. All covers shall have "SEWER" printed on them. Riser rings are NOT ALLOWED for adjusting frames/covers to the grade of the asphalt.

2.06 VAULT HATCHES

A. Vault hatches shall be as shown on the detailed plan drawings.

2.07 JOINTING PRECAST MANHOLE SECTIONS AND STRUCTURES

A. Seal tongue and groove joints of precast manhole and structure sections with either rubber O-ring gasket or preformed flexible joint sealant. O-ring gasket shall conform to ASTM C443. Preformed flexible joint sealant shall be Kent Seal No. 2 as manufactured by Hamilton-Kent; Ram-Nek as manufactured by K.T. Snyder Company or approved equal.

B. Completed joint shall withstand 15 psi internal water pressure without leakage or displacement of gasket or sealant.

2.08 MANHOLE RUNGS

A. Rungs shall be steel reinforced, copolymer polypropylene, 14-in wide, M.A. Industries Inc., PF Series or approved equal. Copolymer polypropylene shall conform to ASTM D4101 Classification PP200 B33450 Z02. Steel reinforcing shall be ½-in diameter, conforming to ASTM A615, Grade 60 and shall be continuous throughout rung.

2.09 PIPE CONNECTIONS TO MANHOLES AND STRUCTURES

A. Connect pipe to manholes and structures in the following ways:

1. Flexible sleeve – Integrally cast sleeve in precast section or install sleeve in a formed or cored opening. Fasten pipe in sleeve with stainless steel clamps. Coat stainless steel clamps with bituminous material to protect from corrosion. Flexible sleeve shall be Lock Joint Flexible Manhole Sleeve; Kor-N-Seal connector type as manufactured by National Pollution Control Systems, Inc ; PSX Press-Seal Gasket or approved equal.

2. Compression gasket – Integrally cast compression gasket in precast section. Insert pipe into compression gasket. Compression gasket shall be A-Lok, or approved equal.

2.10 VAULT STEPS

A. Manhole and vault steps shall consist of #3 steel reinforcing bars covered with polypropylene plastic or rubber and shall be supplied with depth rings and other necessary appurtenances. The manhole steps shall be “HILT” as manufactured by

M.A. Industries, Inc or approved equal.

2.11 DAMPPROOFING

A. Dampproofing shall be Hydrocide 648 by Sonneborn Building Products; Dehydratine 4 by A.C. Horn Inc.; RIW Marine Liquid by Tock Brothers, or approved equal.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Manhole and Structure Installation.

1. Manholes and structures shall be constructed to the dimensions shown on the Drawings and as specified herein. Protect all work against flooding and flotation. Construct cast-in-place bases in accordance with the requirements of Division 3 and the details shown on the Drawings.

2. Place base on a bed of 12-in screened gravel as shown on the Drawings. Set base grade so that a maximum grade adjustment of 8-in is required to bring the frame and cover to final grade.

a. Use precast concrete grade rings or brick and non-shrink mortar to adjust frame and cover to final grade.

3. Set precast concrete barrel sections and structures plumb with a ¼-in maximum out of plumb tolerance allowed. Seal joints of precast barrel sections with either a rubber "O" ring set in a recess or preformed flexible joint sealant in sufficient quantity to fill 75 percent of the joint cavity. Fill the outside and inside joint with non-shrink mortar and finished flush with the adjoining surfaces. Leaking barrel section joints shall be caulked on the inside with lead wool or non-shrink grout.

4. Allow joints to set for at least 14 hours before backfilling.

5. Plug holes in the concrete barrel sections required for handling with a non-shrinking grout or non-shrinking in combination with concrete plugs. Finish flush on the inside.

6. Cut holes in precast sections to accommodate pipes prior to setting sections in place to prevent jarring which may loosen the mortar joints.

7. Backfill carefully and evenly around sections.

B. Pipe Connections

1. Construct pipe connections, including pipe stubs, as specified above. Close or seal pipe stubs for future connections with a gasketed watertight plug.

C. Rung Installation

1. Steel Reinforced Polypropylene Plastic Rungs

    a. Preform holes for rungs during casting of the sections, using tapered form pins specifically made for performing manhole rung holes.

    b. Drive rungs into preformed holes after concrete has developed a compressive strength of 3,000 psi.

    c. Alternatively, cast rungs into precast sections when concrete is placed.

    d. Drilling holes for rungs may be used to accommodate field conditions when approved by the Engineer. Drill holes of diameter, spacing, and depth required by rung manufacturer.

D. Brickwork

1. Mix mortar only in such quantity as may be required for immediate use. Use mortar before initial set has taken place. Mortar shall be used within 1-1/2 hours and shall be constantly worked with hoe or shovel until used. Anti-freeze mixtures shall not be included in the mortar. Install masonry when the outside temperature is above 40^{o}F unless provisions are made to protect the mortar, bricks, and finished work from frost by heating and enclosing the work with tarpaulins or other suitable material.

2. Construct channels and shelves or brick and concrete as shown on the Drawings. Brick lined channels shall correspond in shape with the lower half of the pipe. Set shelf elevation at crown of highest pipe and slope 1-in/ft to drain toward the flow through the channel. Construct brick surfaces exposed to sewage flow with nominal 2-in by 8-in face exposed or bricks on edge.

E. Setting Frames and Covers

1. Set frames and covers in a full mortar bed. Utilize bricks or precast concrete grade rings, a maximum of 9-in thick, to assure frame and cover are set to the finished grade.

2. Set frame and cover to final grade prior to placement of permanent paving, when applicable.

F. Dampproofing

1. Paint outer surfaces of precast and cast-in-place manholes and structures with two coats of bituminous dampproofing at the rate of 30 to 60 ft^2/gallon, in accordance with manufacturer's instructions.

3.02 LEAKAGE TESTS

A. Test each manhole and structure for leakage. The Engineer shall observe each test.

Perform exfiltration test as described below:

B. Assemble manhole in place; fill and point all lifting holes and exterior joints within 6-ft of the ground surface with an approved non-shrinking mortar. Test prior to placing the shelf and invert and before filling and pointing the horizontal joints below 6-ft of depth. Lower ground water table below bottom of the manhole for the duration of the test. Plug all pipes and other openings into the manhole and brace to prevent blow out.

C. Fill manhole with water to the top of the cone section.

1. If the excavation has not been backfilled and no water is observed on the exterior surface of the manhole, the manhole is satisfactorily watertight.

2. If water is observed on the exterior surface or if the manhole excavation has been backfilled, continue the test as follows:

3. A period of time may be permitted to allow for absorption. Following this period, refill manhole to the top of the cone, if necessary and allow at least 8 hours to pass. At the end of the test period, refill the manhole to the top of the cone again, measuring the volume of water added. Extrapolate the refill amount to a 24-hour leakage rate.

4. The leakage for each manhole shall not exceed one gallon per vertical foot for a 24-hour period. If the manhole fails this requirement, but the leakage does not exceed three gallons per vertical foot per day, make repairs using approved methods and materials.

5. If leakage due to a defective section of joint exceeds three gallons per vertical foot per day, the manhole shall be rejected. Uncover the rejected manhole as necessary and disassemble, reconstruct and reseal, or replace it as directed by the Engineer. Retest the manhole and, if satisfactory, fill and paint the interior joints.

D. No adjustment in the leakage allowance will be made for unknown causes such as leaking plugs, absorptions, etc. It will be assumed that all losses of water during the test is a result of leaks through the joints or through the concrete.

E. An infiltration test may be substituted for an exfiltration test if the ground water table is above the highest joint in the manhole. If there is no leakage into the manhole, the manhole will be considered watertight. If leakage is detected, conduct exfiltration tests as described herein before.

F. Leakage Test for Structures

1. Structures shall be visually inspected for possible leaks before backfilling of structures is allowed. Leaking joints shall be sealed using approved methods and materials.

2. Perform exfiltration tests as described above for manholes on any structure which shows detectable leakage after the joints have been sealed.

3.03 CLEANING

A. Thoroughly clean all manholes and structures of all silt, debris, and foreign material of any kind prior to final inspection.

END OF SECTION

SECTION 02606

SANITARY SEWER CONSTRUCTION

PART 1 - GENERAL

1.01 WORK INCLUDED

The work covered in this section includes the furnishing of all labor, tools, equipment, materials and incidentals necessary to construct sewer lines at the location and in accordance with the details shown on the plans. All workmanship shall be first class and conform to accepted practice.

1.02 ORDER OF WORK

Work shall proceed in an orderly and workmanlike manner. The starting point or points for construction and the order in which the work shall be constructed, completed and placed into operation shall be coordinated with the Engineers or their representative. Contractor must keep siltation and bank erosion to an absolute minimum during construction.

1.03 GENERAL METHODS

A. Information Concerning Conditions

B. The accuracy of information furnished by the Owner, the consulting engineer, or information shown on the plans and specifications as to the underground and surface structures, foundation conditions, character of soil, position and quantity of ground and surface water, rock, etc., shall not relieve the Contractor of his responsibility. The Contractor must satisfy himself by personal examination and by such other means as he may desire with respect to actual conditions in regard to the nature of the ground, subsoil, and water conditions, and in regard to the location of existing underground or subsurface structures.

C. All existing pipes, drains, or other structures on, above or below ground shall be carefully supported and protected from injury and if injured, they shall be restored in a satisfactory manner by and at the expense of the Contractor.

PART 2 - PRODUCT

2.01 GENERAL

The Contractor shall furnish all materials and incidental items (whether or not they are specifically described herein) necessary to complete all work called for under the contract, except for any items that are specifically listed in these contract documents as being furnished by the Owner.

MATERIAL SPECIFICATIONS

All materials provided shall be in conformance with the requirements and standards set forth in the Facility Owner's specification document, current published edition. All materials used in the work including equipment shall be new and unused materials of a reputable U.S. Manufacturer (cast and lined in the U.S.) conforming to the applicable requirements of these Standards, and no materials shall be used in the work until they have been approved by the Utility Owner. The Contractor shall furnish all materials necessary except as otherwise specifically noted or specified. Any reference to an AWWA, ANSI or other such specification shall mean the latest revision published.

2.02 SUBGRADE STABILIZER

Subgrade stabilizer shall consist of crushed stone meeting size and gradation requirements for Georgia D.O.T. #57 designation.

2.03 GRAVITY SEWER PIPE

All sanitary sewer pipe be, Polyvinyl Chloride (PVC) or Ductile Iron Pipe (DIP) as shown on the plans or specifically called out otherwise.

A. Ductile Iron Pipe (DIP)

Ductile Iron Pipe shall be designed in accordance with AWWA C150. The thickness and class of the pipe shall be governed by AWWA C150. For this project, thickness of all sanitary sewer, force main, and water main ductile iron pipe shall be Standard Pressure Class 350. Ductile Iron Pipe shall be manufactured in accordance with AWWA C151, and shall have an outside bitumastic coating per AWWA C151.

The interior lining of the pipe and fittings shall be Protecto 401 ceramic epoxy with a minimum thickness of 40 mils. Both bare pipe and cement linings conforming to AWWA C104 are NOT allowed for any sanitary sewer pipe. All DIP force mains and water mains shall be encased in polyethylene film, manufactured of virgin polyethylene material conforming to AWWA C105, Section 4.1.1. The polyethylene film shall have a minimum thickness of 8 mil. The polyethylene encasement material shall be provided in tube sizes adequate for the various sizes of pipe and shall be GREEN in color to designate wastewater.

Joints – DIP joints shall be of the bell and spigot type with push-on joints, conforming to AWWA C111, unless another type of restrained joint is required by the Utility Owner.

Fittings - All fittings and accessories shall be manufactured and furnished by the pipe supplier. They shall have bell and/or spigot configurations compatible with that of the pipe and shall have an equivalent wall thickness.

B. Polyvinyl Chloride (PVC) Sewer Pipe

1. Scope: The Contractor shall provide unplasticized polyvinyl chloride (PVC) plastic gravity sewer pipe meeting the requirements of ASTM D3034 and ASTM F679 (Latest Revision) in the sizes shown unless otherwise indicated on the contract documents.

2. Materials: Pipe and fittings shall meet the requirements as specified under ASTM D3034 (Latest Revision) for pipe, through 15" and ASTM F679 for pipe 18" through 24". All pipe and fitting shall be suitable for use as a gravity sewer conduit. Bell joints shall consist of an integral wall section with elastomeric gasket joint which provides a water tight seal. The pipe shall be capable of passing all tests which are detailed in this specification. Minimum wall thickness shall be as follows:

4" - 0.120 inches

6" - 0.180 inches

8" - 0.240 inches

10" - 0.300 inches

12" - 0.360 inches

15" - 0.437 inches

18" - 0.536 inches

24" - 0.711 inches

3. Fittings: All fittings and accessories shall be manufactured and furnished by the pipe supplier. They shall have bell and/or spigot configurations compatible with that of the pipe and shall have an equivalent wall thickness.

4. Pipe and Fittings Tests: The Contractor will be required to furnish a written outline of the manufacturer's quality control program for the Engineer's approval prior to shipping any pipe to the project. Before installing any pipe the Contractor shall furnish written certification that all pipe through 15" meets ASTM Specification D3034 and for 18" through 24" must meet ASTM F679. At least one sample from each 100 pieces of pipe furnished shall be subjected to each test outlined under section eight (8) of ASTM D3034. The samples will be tested by an independent laboratory approved by the Engineer, and a certified copy of results will be furnished to the Engineer. If any test is not met then nine (9) additional tests of that pipe will be ordered; and, if any of these

nine (9) tests are not met, the manufacturer will not be allowed to furnish materials for this project. The cost of all testing shall be included in the Contractor's bid proposal and no pipe shall be installed until the testing is complete and approved by the Engineer.

5. Pipe Stiffness: Minimum "pipe stiffness" (F/Y) at five (5) percent deflection shall be 46 psi for all sizes, when tested in accordance with ASTM Standard Method of Test D2412 (Latest Edition), to determine the 'External Loading Properties of Plastic Pipe by Parallel Plat Loading". There shall be no evidence of splitting, cracking, or breaking at a deflection of up to 30 percent of the original diameter.

6. Fusion Quality: There shall be no evidence of flaking, swelling, or disintegration when the pipe material is tested in accordance with ASTM D2152, "Quality of extruded Poly (Vinyl Chloride) pipe by Acetone Immersion".

7. Joint Tightness: Pipe and fitting joints shall comply with ASTM D3212 (Latest Edition) for "Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals". Joint assemblies shall not leak when subjected to both an internal and external hydrostatic test at equivalent pressures of 10.8 psi gauge for a period of one hour. Pipes shall be tested in straight alignment, axially deflected position, and by shear load test as otherwise defined in paragraphs 7.2, 7.3, and 7.4 of ASTM D3212.

8. Installation: PVC pipe will be installed in accordance with ASTM D2321 (Latest Revision). In any area where the pipe is below existing ground water level, the contractor will embed PVC pipe in sand or graded gravel. No special compaction requirements will be necessary; however, the sand or gravel must extend from six inches below the pipe to the top of the pipe, and the material must be firmly placed under the pipe haunches. When embedding PVC pipe in friable, compressible soils (Eg. silt, clay, sandy clay, silty clays, etc.), special care must be exercised to provide a uniform (undisturbed or fully compacted) trench bottom. Additionally, the backfill must be compacted to 95% standard proctor in six (6) to eight (8) lifts to twelve inches above the top of the pipe. The engineer may require up to ten (10) random compaction tests to insure compliance with D2321. If any material tested is less than the required density then the contractor shall re-compact said material at no additional expense to the owner, and the engineer shall then have the right to additional compaction tests at the expense of the contractor to insure compliance with D2321.

9. Deflection Limit: Vertical deflection of installed pipe shall not exceed five (5) percent of the undeflected diameter as defined in Table XI.1 of ASTM D3034.

Upon completion of the pipe laying, and at least 30 days after installation (to allow for settling), the pipe will be tested again for final acceptance. The test shall be performed by the Contractor pulling a mandrel of specified dimensions through the pipeline.

C. General Materials

1. COPPER TUBING SERVICE MATERIAL

House service pipe shall be copper service pipe, type K, soft temper, seamless copper tubing, conforming to ASTM B-88, latest revision. Compression joints will be used. Pipe will be 1" diameter unless shown otherwise on the drawings or directed by the field engineer. Long side service lines shall be bored and encased in 2" P.V.C. pipe, Schedule 40.

2. DUCTILE IRON FITTINGS FOR WATER MAINS

Fittings shall be in accordance with AWWA C110 or AWWA C153, latest revision, and shall be a minimum of 350 psi pressure class rating. Fittings shall be mechanical joint with retainer glands except where shown otherwise on plan. Cement mortar lining conforming to AWWA C104 or fusion bonded epoxy coating conforming to AWWA C116 shall be furnished for fittings.

3. CONCRETE FOR BLOCKING AND THRUST COLLARS

Concrete for thrust restraint blocking and thrust collars shall have a minimum compressive strength of 3000 psi at 28 days.

4. POLYETHYLENE TUBING FOR D.I. PIPE

Polyethylene tubing shall be manufactured of virgin polyethylene material conforming to the requirements specified in AWWA C105, Section 4.1.1 for linear, low density polyethylene film. The polyethylene film shall have a minimum thickness of 8 mil. The polyethylene encasement material shall be provided in tube sizes adequate for the various sizes of pipe. Polywrap for water mains shall be black and polywrap for sanitary sewer mains shall be green.

5. STEEL CASING PIPE

Casing pipe, where specified, shall be smooth steel pipe conforming to ASTM Designation A-139, Grade B, electric fusion welded steel pipe. The pipe shall have a minimum yield strength of 35,000 psi. The exterior and interior of the pipe shall have a bitumastic coating. Minimum wall thickness shall be 0.500".

6. CONCRETE FOR PAVEMENT / CURB & GUTTER / SIDEWALK/ STEPS REPLACED

Concrete shall be 3,000 psi concrete with not over 3" slump and shall conform to the requirements of the Standard Specification of the Georgia Department of Transportation for concrete pavement and sidewalk and other hard surface items. Pavement shall be replaced in accordance with details shown on the drawings and as set out under the section for construction methods.

7. SERVICE SADDLES-DOUBLE STRAPPED

Double-strapped service saddles are required and shall be either Ford F202 or approved equal.

8. CURB STOPS

All metal parts of curb stops shall be made of bronze. The stops shall be Ford B43-332W with padlock wings or approved equal for copper service pipe. The cock shall be operated with a combined cap and tee and shall open when turned counter-clock wise. The stop shall be compression joint inlet with meter swivel nut outlet.

9. CORPORATION STOPS

Corporation stops shall have AWWA tapered threaded inlet and compression joint outlet connection for copper service pipe. All metal parts of the stop assembly shall be made of bronze. The stop shall be operated with a tee head and shall open when turned counter-clockwise. Corporation stops for copper service line pipe outlets shall be Ford FB1000 or approved equal.

10. SERVICE LINE COUPLINGS

Service line pipe couplings shall be compression style Ford C44 or approved equal. Branch connection shall be 1" x 3/4" x 3/4" Ford Y44-243 or approved equal. Female compression adapters shall be a Mueller-H-15451 or approved equal. Male compression adapters shall be a Mueller-H-15428 or approved equal.

11. GRAVEL FOR DRIVEWAYS

Gravel driveway replacement stone shall resemble the original stone as close as practical and if a substitution must be made it shall be approved by the Owner's representative.

12. RIP RAP

The stone used for rip-rap shall meet the requirements of Section 805.01-B of Ga. D.O.T. Specifications, latest edition, "Stone For Plain Rip Rap."

13. EROSION CONTROL MEASURES

Materials and installation for all erosion control measures and BMPs (Best Management Practices) shall conform to the requirements in the "Manual for Erosion and Sediment Control in Georgia", latest edition.

14. RETAINER GLANDS

Retainer glands for mechanical joints shall be EBAA Mega-Lug or approved equal. Note the different models for fittings on DIP and PVC pipe.

15. RESTRAINED JOINT GASKETS

Inside of all casings and other locations specified and as directed by the Engineer, D.I.P. water main joints shall be slip joint restrained by using American Pipe "Fast-Grip" gaskets, U. S. Pipe "Field-Lok" gaskets or approved equal.

16. CONCRETE DITCH CAP

Concrete ditch cap shall be 3,000 psi concrete with not over 3" slump and shall conform to the requirements of the Standard Specification of the Georgia Department of Transportation for concrete pavement. Ditch cap shall be replaced in accordance with details shown on the drawings and as set out under the section for construction methods.

17. PVC MATERIAL FOR 2" DIA. PIPE USED FOR GPS DATA COLLECTION

Piping used for placement on the water main for GPS data collection (water main elevation) shall be 2" P.V.C. rigid, straight pipe, conforming to SDR 26 (Class 160) or greater wall thickness.

18. GENERAL REQUIREMENTS

Any pipe, solder or flux used in the installation or repair of the water lines must be lead-free. Pipes and fittings must not contain more than 8.0% lead and solders and flux must not contain more than 0.2% lead.

PART 3 - EXECUTION

3.01 CLEARING AND GRUBBING

Where necessary, the Contractor shall clear and grub a travelway of sufficient width along the pipeline to permit installation of the pipe and shall dispose of all trees, shrubs and refuse as directed by the Engineer.

All burning (when permitted) shall comply with local regulations.

No trees, stumps, brush or other debris shall be pushed out into the area which is not being cleared and the trees in the uncleared area shall be protected and not damaged during the clearing and construction operation.

3.02 TRENCH EXCAVATION FOR GRAVITY SEWER

Excavation shall be by open cut from the ground surface, unless otherwise called for on the plans or allowed by the Engineer. Not more than 100 feet of trench shall be opened on any line in advance of pipe laying.

No excavation shall be made under highways, streets, alleys or private property until satisfactory arrangements have been made with the State, City, County, and owners of the property to be crossed.

Pipe trenches shall be excavated straight and true to grade and line. The trenches shall have smooth even bottoms affording the pipe support throughout its length between bell holes. Bell holes shall be dug sufficiently large for properly joining the pipe.

If so ordered by the Engineers, the bottom of the trenches shall be hand dressed. Trenches shall be of sufficient width to provide ample working space on each side of the pipe and for maintaining a straight line of pipe. However, in general the trench width should not exceed the diameter of the pipe plus two feet.

It is the responsibility of those installing sanitary sewers to conform to OSHA regulations, 29 CFR Part 1926, Subpart P, Paragraph 1226.650 through A26.653 during trench excavation. All excavations shall be adequately guarded with barricades and lights in compliance with all OSHA and Georgia Department of Transportation requirements so as to protect the public from hazard. Excavations adjacent to existing or proposed buildings and structures or in paved streets or alleys shall be sheeted, shored and braced adequately to prevent undermining or subsequent settlement of such structures or pavements. Underpinning of adjacent

structures shall be done when necessary to maintain structures in safe condition, at no additional cost to the owner.

When possible, all crossings of paved highways or driveways by pipe line shall be made by boring or jacking the pipe under the pavement and shall be done in such manner as not to damage the pavement or foundation, unless the casing or pipe is in solid rock, in which case the crossing shall be made by the open cut method or by tunneling.

Wherever streets, roads, or driveways are cut, they shall be immediately backfilled and compacted after the pipe is laid and shall be maintained in first-class condition as passable at all times until repaved.

Backfilling, compaction, dressing and clean-up shall be kept as close to the line laying crew as is practical, and negligence in this feature of the work will not be tolerated.

3.03 TRENCH WIDTHS

Trench widths for sewer pipe shall have a maximum width, measured at the center line of the pipe, equal to the nominal diameter of the pipe, plus two feet. The trenches may have a greater width than this, beginning at one foot above the top of the pipe and extending to the top of the ground, is such width is necessary or desirable.

3.04 SUBGRADE AND BEDDING

All pipe shall have a minimum Class "C" bedding as shown on the drawings, unless specifically designated in the plans and specs as Class "A" and "B".

A. Class "A" Bedding

Class "A" bedding refers to bedding with concrete cradle, arch or encasement. The Contractor shall conform to details shown in the contract drawings when Class "A" bedding is required.

B. Class "B" Bedding

The pipe shall be bedded in crushed granite material, conforming to ASTM D448 "Standard Specification for Coarse Aggregate," size #57 or other suitable materials and methods, as approved by the Engineer. The bedding shall be placed on a flat trench bottom with a minimum thickness beneath the pipe of one-eighth the outside pipe diameter, but not less than six (6) inches (150 mm) and sliced under the haunches of the pipe with a shovel or other suitable tool to height of one-half the outside pipe diameter, or to the horizontal centerline. The initial backfill shall be hand placed to a level of 12 inches (300 mm) over the top of the pipe and shall consist of finely divided materials free from debris, organic material and large rock and stones. It shall be tamped in layers not over 6 inches thick to at least 90% standard proctor, AASHTO T-99 (95% under road

crossings). Remainder of backfill to top of trench shall be tamped in layers not over 12 inches thick (six 6 inches under roads) to 85% standard proctor, AASHTO T-99 (95% under road crossings and 90% inside treatment plant facilities).

Tamping shall be done with mechanical tamps in such a manner as to meet compaction requirements without moving or injuring pipes. Compaction shall be done with either pneumatic hand tamps, hydro-tamps or other approved methods. Compaction tests will be as directed by the Engineer to insure that the above specifications are being met.

In rock excavation, the backfill from one-half the outside pipe diameter to two feet above the top of the pipe shall be finely pulverized soil, free from rocks and stones. The rest of the backfill shall not contain over 50% broken stone, and the maximum sized stone placed in the trench shall not have a weight exceeding 25 pounds. Excess rock and fragments of rock weighing more than 25 pounds shall be loaded and hauled to disposal as directed by the Engineer. If it is necessary, in order to comply with the above specifications, selected backfill shall be borrowed and hauled to the trenches in rock excavation, at no additional cost to the Owner.

C. Class "C" Bedding

The pipe shall be bedded in granular material placed on a flat trench bottom. The bedding material shall have a minimum thickness beneath the pipe of six (6) inches (150 mm) or one-eighth of the outside diameter of the pipe, whichever is greater and sliced under the haunches of the pipe with a shovel or other suitable tool to a height of one-sixth or one-half (as may apply per the detail shown on the plans) of the outside diameter of the pipe. Bedding materials may be crushed stone, rounded gravel, shells, pea gravel, sand or other locally available non-cohesive soils meeting the following requirements:

Allowable soils shall be dry course-grained soils ranging from well-graded gravel-sand mixtures with little or no fines to clayey sands and sand-clay mixtures with appreciable amounts of fines. All soil materials shall have 100% passing a 1-1/2 inch sieve and a maximum of 55% passing a No. two (2) sieve. The maximum volume change allowable shall be 15%. Allowable soils shall be Class I and Class II as defined in Section 810, of the Georgia Department of Transportation Specifications for the Construction of Roads and Bridges.

Wherever water is encountered Class "B" bedding shall be provided. In case a trench is excavated below grade, except in rock excavation or unless ordered by the Engineer, the Contractor shall refill same to the proper grade with suitable, thoroughly compacted material without additional compensation to the contractor for the additional material.

All gravel or crushed stone used for Class "C" bedding shall have a gradation equal to or smaller than #57 stone in order to limit the void area, and all the material must pass a 1-1/2 inch sieve. Where sand or other acceptable soil is used, it shall be spread over the trench bottom, compacted to at least 85% maximum density and shaped before placing the pipe; after the pipe is placed, additional material shall be compacted under the haunches and for the full trench width as described above in Class "B".

The excavation for manholes shall extend to a firm acceptable foundation and leave not less than 24 inches in the clear between their exterior surface and the embankment of timber that may be used to protect it.

The Contractor shall furnish, install and maintain such sheathing, bracing, etc., as may be required to support the sides of the excavation and to prevent any movement that might injure the pipe, or sloughing of the street or trench, or otherwise injure or delay the work or interfere with adjoining structures.

Trenches shall be kept free of water. No structure shall be built or pipe shall be laid in water, and water shall not be allowed to flow over or rise upon any concrete, masonry or pipe until the same has been inspected and the concrete or joint material has thoroughly set. All water pumped, bailed or otherwise removed from the trench or other excavation shall be conveyed in a proper manner to a suitable place of discharge where it will not cause injury to the public health or to public or private property or to work completed or in progress, or to the surface of the streets or cause any interference with the use of same by the public.

The length of the trench to be opened in advance of the completed work shall be limited by the Engineer with regard to both the expeditious construction and to the convenience and comfort of the persons residing in the vicinity of the work.

In excavation and backfilling and laying pipe, care must be taken not to remove or injure any water, sewer, gas or other pipes, conduits or other structures without an order from the Engineer. When an obstruction is encountered, the Contractor shall notify the Engineer who will have the Owners, of the obstruction adjust same or make necessary changes in grade and/or alignment to avoid such obstruction. Any connection, drains or other structures damaged by the Contractor shall be repaired or replaced without cost to the Owner.

All excavation shall be placed on one side of the trench, unless permission is given by the Engineer to place it on both sides. Excavation materials shall be so placed as not to endanger the work and so that free access may be had at all times to all parts of the trench and to all hydrants or water valve boxes, etc. All shade trees, shrubs, etc., shall be protected.

3.05 SUBGRADE STABILIZER

In the event that the subgrade under the pipe or other structures does not provide a suitable foundation for the pipe or other structure and when so directed by the Engineer, the said subgrade shall be stabilized with crushed stone.

3.06 ROCK EXCAVATION

Rock excavation shall comprise solid rock in the original bed, or well-defined ledges, the removal of which requires drilling, blasting or the use of jack-hammers and shall include all boulders, or detached pieces of rock, eight cubic feet or more in content.

Rock in trenches shall be excavated over the horizontal limits of excavation and to depths as follows:

Size of Pipeline Inches	Depth of Excavation Below Bottom of Sewer Pipe, Inches
4 and Less	4
6	6
8 to 18	8
20 to 30	10
Over 30	12

The space below grade for pipelines shall then be backfilled with #57 and smaller crushed rock, gravel, or other approved bedding material.

Blasting operations shall be conducted in strict accordance with all existing ordinances and regulations and shall be done by persons licensed to use explosives. No blasting shall be done less than 50 feet in advance of the completed work.

All exposed structures shall be carefully protected and where necessary, the blast shall be covered with suitable mats. Any damage caused by blasting shall be promptly repaired by the Contractor at his expense. Explosives and other blasting supplies shall be stored in accordance with all local ordinances and a watchman shall be stationed at the place of storage at all times.

3.07 LAYING PIPE FOR GRAVITY SEWER

All pipe and special fittings shall be of the dimensions and laid to the line and grade as shown on the plans and as established by the Engineer.

Pipe shall be laid with joints close and even, butting all around, special care being taken that there is no sagging at the hub and that a true surface is given to the invert throughout the entire length of the sewers.

Wyes and/or service connections and stubs from manholes shall be placed where shown on plans and as directed by the Engineer.

All such connections shall be blanked off with suitable stopper and made watertight with jute and cement mortar.

Bell holes must be dug so that the barrel of the pipe shall carry to load. After the pipe is laid, backfilling up to 12 inches above the top of the pipe shall be made of loose six inch layers of clean dry earth, thoroughly tamped with mechanical tamps between each layer.

The contractor will be required to provide and operate any equipment necessary to keep the trenches free from water while pipe is being laid and the joints made. The installed pipe shall not be used for draining water from the ditch.

Pipe grades shall be obtained by use of a laser and double checked with a surveying level and rod.

Completed sewer shall be tested between manholes with lanterns or reflected light and shall show at least 80% of the full circle of the pipe from manhole to manhole without obstruction.

Sewers shall be laid tight and the rate of infiltration in any section of line between adjacent manholes shall not exceed fifty (50) G.P.D. per inch diameter of pipe per mile of line, per 24 hour day when the trenches are saturated with water.

The Contractor shall be responsible for staking for both line and grade and the correctness thereof. The Engineer shall furnish benchmarks as shown on the plans.

3.08 MAKING OF JOINTS

When joining gravity sewer pipe, both the spigot end and the bell end of the pipe shall be perfectly clean and free from dirt, oil, grease, or other foreign matter.

The spigot end shall be lightly coated with the lubricant recommended and furnished by the manufacturer, and the pipe then shall be securely and firmly seated in the bell end of the adjoining pipe. In making the joint, the spigot end of the pipe, after being cleaned and coated with lubricant, shall not be allowed to touch the sides or bottom of the trench before being inserted in the bell end of the adjoining pipe.

In addition to the above, joints shall be made in strict accordance with the specifications and recommendations of the manufacturer.

ALL OPENINGS ALONG THE LINE OF THE SEWERS SHALL BE SECURELY CLOSED AT NIGHT, DURING SUSPENSION OF WORK, AND AT THE END OF EACH WORK PERIOD, WITH A WATER-TIGHT STOPPER.

NO LENGTH OF PIPE SHALL BE LAID UNTIL ONE PRECEDING IT SHALL HAVE SUFFICIENT QUANTITY OF FINE EARTH TAMPED AROUND IT TO HOLD IT FIRMLY IN PLACE.

3.09 BACKFILLING

As soon as joints have been completed, the bellhole under the hub, when necessary, shall be carefully and completely filled with sand or other selected material so as to hold the joints securely in place.

Backfilling shall be carried along as closely to pipe laying as possible. The maximum length of trench left open overnight shall not exceed three times the depth of the trench. All openings shall be surrounded by barricades at night with blinker lights not more than ten feet apart around the opening.

As each section of the line is completed, the trench shall be carefully backfilled. Outside of the roadway, the backfilling shall be placed in 6" layers and tamped so that after consolidation, the dry weight shall be not less than 90% of the maximum laboratory dry weight per cubic foot as determined by Standard Proctor Test. The soil in trenches within roadways and paved areas shall be compacted to a dry density of 100% Standard Proctor. The standard maximum dry density and the optimum moisture shall be determined by the same method.

3.10 BARRICADES AND WARNING SIGNS

The Contractor shall provide, erect and maintain all necessary barricades, suitable and sufficient red lights, danger signals and signs, provide sufficient number of watchmen and take all necessary precautions for the protection of the work and the safety of the public. Streets closed to traffic shall be protected by effective barricades on which shall be placed acceptable warning signs. All barricades and obstructions shall be illuminated at night, and all lights for this purpose shall be kept burning from sunset to sunrise.

3.11 CLEAN-UP AND MAINTENANCE

All surplus materials, tools, temporary structures, excess dirt, rubbish and debris shall be removed by the Contractor and the site of construction shall be left in a clean and neat condition, satisfactory to the Engineer.

After the work is accepted as a whole, the Contractor shall maintain the fences, grass and other disturbed surfaces until final acceptance of the project.

All labor and material required for such maintenance and/or repairs shall be furnished at no cost to the Owner, and the work shall be done in a manner satisfactory to the Engineer.

3.12 CONNECTION TO EXISTING FACILITIES

Connections to existing sewer lines and manholes shall be made at the various locations shown on the plans and as directed by the Engineer.

3.13 RIP-RAP

Stone shall be dumped and hand placed to form a compact layer. Stone rip-rap shall be placed to a thickness of not less than eight (8) inches and not more than 18 inches.

3.14 PROTECTION OF PROPERTY

The following provisions apply to protection and restoration of property in the vicinity of the project:

Unless otherwise noted, the Contractor is responsible for removal of trees within the construction easement as necessary for safe performance of the work, but only such trees as necessary shall be removed. Trees which are damaged by or later die as a result of the work shall be removed.

In the case of shrubs and ornamental trees smaller than three (3) inches diameter, the Contractor is responsible for either: (a) protecting these from damage, or (b) temporarily removing and then re-setting them without damage, or (c) replacing them with new stock of equal quality. The cost of this, if any, will be deemed included in the overall bid price.

In general, grass will be seeded over all areas as specified in section 02486 and all areas will be left in a neat condition, free of debris.

All property such as mailboxes, fences, signs, curb, paving, drain pipes, etc. shall be restored to original condition. Payment will be made only for those items that are listed in the bid proposal.

No property beyond the construction easement is to be altered, but if that does occur the Contractor will promptly remedy same at no cost to the Owner.

3.15 ACCEPTANCE TESTING

The Contractor will be required to furnish pipe plugs, weirs, cords, mandrels and any other customary devices needed to carry out the below-listed tests at no added cost. He will also furnish supervision and labor to carry out these tests in the presence of the Engineer at no additional cost.

Horizontal location. Horizontal location of the line will be checked by measuring "as-built" distances between manholes and bearings from manhole to manhole.

Elevation and slope. Elevation of each invert and top of manhole will be measured and recorded. Actual pipe slope will be computed and any segment having less than minimum allowable slope will be rejected and installed.

Manhole construction. Every manhole will be visually inspected to check for plugging of lift holes inside & outside, use of connecting boots, use of joint material, leakage, proper invert construction, proper setting of frame and cover.

Pipe straightness. Every section of sewer line will be visually checked for straightness. A passing section shall show at least 80% of a full circle when observed from one end. Any section which fails this visual test shall be further checked as follows:

The section shall have water run through it sufficient to fill any sags that may exist. Then it shall have a television camera pulled through it to check for sags. Any sag holding more than one and one-half inches of water will require that the pipe be removed and replaced to proper grade after which the section shall be televised again to verify correction.

Infiltration. The allowable limit for any section from manhole to manhole will be 200 gallons per day per inch of pipe diameter per mile of pipe. If any infiltration is present at the most downstream point, then it will be measured using a specially-made weir and measurements will also be made at each upstream manhole that has any visible flow of water. Any individual segment which exceeds the allowable infiltration shall be corrected to within allowable limits.

3.16 OTHER TESTING REQUIREMENTS

The tests listed below shall be performed by the Contractor during the presence of the Engineer. The City will be notified at least 2 days prior to these tests and may choose to be present.

A. Mandrel Test For PVC Pipe

Procedure for testing PVC sewer pipe for maximum allowable deflection shall be generally as follows (see ASTM specs for mandrel dimensions and more detail):

Completely flush the line making sure the pipe is clean of any mud or trash that would hinder the passage of the mandrel.

During the final flushing of the line, attach a floating block or ball to the end of the mandrel pull rope and float the rope through the line. (A nylon ski rope is recommended).

After the rope is threaded through line, connect the pull rope to the mandrel and place the mandrel in the entrance of the pipe.

Connect a second rope to the back of the mandrel. This will enable the mandrel to be retrieved if excessive deflection is encountered.

Draw mandrel through the sewer line.

An increasing resistance to pull is an indication of excessive deflection. If this occurs mark the rope to note the location. Televise the sewer section to identify the extent of the problem and develop a plan, subject to Engineer approval, for correcting the problem.

Retest:

Vertical deflection shall not exceed 5 percent of the undeflected diameter as defined in ASTM D3034, Table X1.1.

B. Air Pressure Test

A low pressure test of each sewer line section will be conducted by the contractor to check for leaks. The following general procedures will apply (also refer to ASTM specs):

1. Temporarily plug line segment between two manholes using plugs having air tight fittings through which low pressure air can be introduced into the pipe segment being tested.

2. Introduce low pressure air into the test pipe segment until the internal air pressure reaches 4.5 psig above ground water pressure, if any.

C. Wait at least five minutes for air temperature in the test segment to stabilize while internal air pressure remains no less than 3.5 psig above ground water pressure.

D. Bleed internal air pressure to exactly 3.5 psig above ground water pressure.

E. Accurately determine the elapsed time for internal pressure to drop to 2.5 psig above ground water pressure.

F. The air test is acceptable if elapsed time is no less than shown by the following table:

Pipe Dia. Inches	Seconds Per 100 Ft. of Pipe	Pipe Dia. Inches	Seconds Per 100 Ft. of Pipe
4	11	27	77
6	17	30	85
8	23	36	102
10	28	42	119
12	34	48	136
15	43	54	153
18	51	60	170
21	60	66	187

Air time is based on pipe being damp. If pipe and joints are dry, dampen line if helpful in meeting air test time requirement.

Permanently correct excessive leakage determined by air testing, and repeat operations until Engineer witnesses a successful test on each line segment.

3.17 PROTECTION OF TREES

The Contractor shall remove only such trees on or along the work as the Engineer permits, and shall carefully protect all other trees adjacent to the work. He shall not permit excavating machinery or if trees are damaged they shall be coated with an approved treatment.

3.18 INTERFERENCE WITH EXISTING STRUCTURES

All existing pipes, drains, or other structures on, above, or below ground shall be carefully supported and protected from injury and if injured, they shall be restored in a satisfactory manner by and at the expense of the Contractor.

3.19 INFORMATION CONCERNING CONDITIONS

The accuracy of information furnished by the Engineer and/or the plans and specifications as to underground and surface structures, foundation conditions, character of soil, position and quantity of ground and subsoil water, etc., are not guaranteed by the Owner. Bidders must satisfy themselves by personal examination and by such other means as they desire with respect to actual conditions in the nature of the ground and subsoil water and in regard to the locations of existing underground or surface structures. Unforeseen conditions shall not constitute a claim for increased compensation under the terms of the contract, nor constitute a basis for the cancellation thereof.

3.20 FENCE REMOVED AND REPLACED (ALL TYPES AND SIZES)

The Contractor shall take down fences on or crossing right-of-way for such periods of time only as are necessary to prosecute the work of clearing, grubbing, trenching, pipe laying and backfilling. Gaps made in fences shall be closed in a substantial manner at night and during any suspension of work, and upon completion of the pipe line, fences shall be restored to as good condition as before disturbed. No charges shall be made by the Contractor for any expense incurred in taking down or restoring fences, except where listed in the bid proposal.

END OF SECTION

City of Canton
Etowah River Park Trail Extension

SPECIAL PROVISION
SECTION-999-9000
MISCELLANEOUS CONSTRUCTION ALLOWANCE

Supplemental to GDOT Standard Specification;

Bid Items 85 and 161 are intended for Miscellaneous Construction Allowance, which may or may not be required to construct the project. The Allowance shall be directed by the City Engineer/Project Manager. The Contractor shall not be reimbursed for Miscellaneous Items, unless he has **in writing specific authorization to proceed with the work from the City of Canton City Engineer.**

In the event that the scope of the project, and therefore this contract, needs to be adjusted, either by adding or deducting work, The Contractor agrees to furnish all services, labor, material, demolition (removal), overhead, profit, insurance, tools, equipment, transportation, supervision and other items necessary to complete the installation of the additional construction items for **Unit Price that has been provided in the Bid Proposal Form.**

If the City request additional work to be performed that is not listed as a Unit Price in the Bid Proposal Form, the Contractor agrees to make every effort to negotiate an acceptable price with the City. If the City of Canton is unable to negotiate an agreeable price with the Contractor, the City of Canton reserves the right to negotiate both price and warranties with specialty contractors for the completion of the work. The Contractor will then be required to include the work that is authorized, and utilizing the City authorized specialty subcontractor. The additional work will be billed under the Miscellaneous Construction items.

Section 999.2 Payment for Miscellaneous Construction Items:

Payment will be only for amounts authorized and approved by the City Engineer.

Final Payment to the Contractor may or may not equal 100% of the Items No. 85 and 161 Miscellaneous Construction Allowance included in the Bid Proposal Form.

At the completion of the project, the remaining balance of the Miscellaneous Construction Allowance, will be reduced from the Total Contract Amount.

The intended purpose of Bid Items 85 and 161 Miscellaneous Construction Allowance is to be used for unforeseen conditions.

CITY OF CANTON, GEORGIA

OLD BALLGROUND SANITARY SEWER REPLACEMENT PHASE II AND ETOWAH RIVER TRAIL EXTENSION

AUGUST, 2020

JO ELLEN WILSON
MAYOR PRO TEM

SANDRA McGREW

SHAWN TOLAN

BILL GRANT
MAYOR

DAVID HATABIAN
CITY ENGINEER

BILLY PEPPERS
CITY MANAGER

NICK ESTES

BROOKE SCHMIDT

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1

1

I CERTIFY UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED AFTER A SITE VISIT TO THE LOCATION DESCRIBED HERE-IN BY MYSELF OR MY AUTHORIZED AGENT UNDER MY DIRECT SUPERVISION.

William F. Livingston, Jr., Professional Engineer
GSWCC LEVEL II Certified Design Professional Certification # 21845
expires Nov. 04, 2021

PREPARED BY:

ATKINS

1600 Riveredge Parkway NW, Suite 700
Atlanta,Ga 30328
P: 770-933-0280

PROJECT No: 100065927

BEGIN PROJECT:
N: 34.228932
W: 84.499607

END PROJECT:
N: 34.243451
W: 84.486859

PROJECT SITE ADDRESS:
1149 MARIETTA HIGHWAY
CANTON, GEORGIA 30114

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED BASED UPON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION. THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

William F. Livingston, Jr. , Professional Engineer
GSWCC LEVEL II Certified Design Professional Certification # 21845
expires Nov. 04, 2021

1

NOTE:
24-HOUR CONTACT IS BILL LIVINGSTON, (404) 819-2399,
ATKINS, 1600 RIVEREDGE PARKWAY, SUITE 700, ATLANTA, GA 30328

Primary Permittee:
The Owner/Developer is :
City of Canton, Georgia
110 Academy Street
Canton, GA 30114
Phone (770) 704-1500, Fax: (770) 704-1538
www.canton-georgia.com
David Hatabian, City Engineer
david.hatabian@canton-georgia.com

NOTE:
TOTAL DISTURBED ACREAGE = 21.53 ACRES

GEORGIA REGISTERED No. 15044 PROFESSIONAL ENGINEER WILLIAM F. LIVINGSTON, JR.

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta,Ga 30328
P: 770-933-0280

REVISION	DATE
1 ADDENDUM NUMBER TWO	8-4-20

PROJ. NO.: 100065927
DESIGNED BY: W.F.L.
DRAWN BY: M.R.T.
CHECKED BY: R.E.B.
APPROVED BY: W.F.L.
DATE: OCTOBER, 2019
SCALE: NTS

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER REPLACEMENT PHASE II AND ETOWAH RIVER TRAIL EXTENSION

COVER

SHEET NO.
C-01
100065927

File Name: C:\USERS\THUR750\ONEDRIVE CORP\ONEDRIVE - ATKINS LTD\DOCUMENTS\CANTON SEWER\COVER.DWG|Tab:COVER|Plotted: August 17, 2020 10:20am

GENERAL NOTES

1. Information regarding underground utilities on these plans is not guaranteed as to accuracy or completeness. Prior to beginning work, the contractor shall request a field location through the utility protection center and any utility owners thought to have facilities in the area. The contractor shall promptly compare these field-marked locations with the project plans and notify the engineer of any anticipated problems or need for contract changes. It is the contractor's responsibility to excavate or cause the utility owner to excavate for the purpose of determining exact elevations or locations at utility crossings and other critical locations well in advance of the work under this contract. Damage to existing utilities resulting from the Contractor's negligence shall be repaired at the Contractor's expense. The Contractor is responsible for verifying the exact location, size, and material of any existing water or sanitary sewer facility proposed for connection or use by this project.

2. The contractor is responsible for staking the alignment of the proposed pipeline prior to pipe installation. If a conflict should arise, the contractor shall notify the engineer at that time in writing.

3. The contractor shall place mulch or begin grassing within two days after the completion of any land disturbing activity or if activity is discontinued for a period of two weeks or longer. Any disturbed area left exposed for a period greater than 14 days shall be stabilized with mulch or temporary seeding. No additional payment shall be made for grassing the same area twice.

4. The contractor shall perform regular maintenance requirements on erosion control devices. All devices should be cleaned out before they reach half full.

5. All excavated dirt shall be placed on the high side of the trench away from any creeks or branches.

6. Any fill dirt over the pipe shall be graded to preconstruction elevations to prevent ponding.

7. The limits of disturbance represents the limits of clearing for the complete job. The contractor shall not clear beyond this limit.

8. Bank stabilization (riprap) shall only be placed where necessary for erosion prevention. No riprap shall be placed in excess of the minimum needed for erosion protection.

9. No riprap shall be placed in any wetland area or in any location or manner to impair surface water flow into or out of any wetland area.

10. This project is allowed construction within wetland areas under the Nationwide Permit, Corps of Engineers Regulations, dated November 22, 1991, Part 330.5, Section 12 and 33. Part 330.6 shall also be followed, to the maximum extent practicable, in order to minimize the adverse effects of these discharges on the aquatic environment. Failure to comply with these practices may be cause for the district engineer to recommend or the division engineer to take discretionary authority to regulate the activity on an individual or regional basis pursuant to Part 330.8 of the Nationwide Permit, Corps of Engineers Regulations.

11. Discharges of material for backfill or bedding for utility lines, including outfall and intake structures, provided there is no change in preconstruction contours. A "utility line" is defined as any pipe or pipeline for the transportation of any gaseous, liquid, liquefiable, or slurry substance, for any purpose, and any cable, line, or wire for the transmission for any purpose of electrical energy, telephone and telegraph messages, and radio and television communication. The term "utility line" does not include activities that drain a water of the United States, such as drainage tile; however, it does apply to pipes conveying drainage from another area. Material resulting from trench excavation may be temporarily sidecast (up to three months) into waters of the United States provided that the material is not placed in such a manner that it is dispersed by currents or other forces. The district engineer may extend the period of temporary side casting up to 180 days, where appropriate. The area of waters of the United States that is disturbed must be limited to the minimum necessary to construct the utility line. In wetlands, the top 6" to 12" of the trench should generally be backfilled with topsoil from the trench. Excess material must be removed to upland areas immediately upon completion of construction. Any exposed slopes and streambanks must be stabilized immediately upon completion of the utility line. The utility line itself will require a Section 10 permit if in navigable waters of the United States (See 33 CFR Part 322). (Section 404)

12. Temporary construction, access and dewatering, temporary structures and discharges, including cofferdams, necessary for construction activities or access fills or dewatering of construction sites; provided the associated permanent activity was previously authorized by the Corps of Engineers or the United States Coast Guard, or for bridge construction activities not subject to federal regulation. Appropriate measures must be taken to maintain near normal downstream flows and to minimize flooding. Fill must be of materials and placed in a manner that will not be eroded by expected high flows. Temporary fill must be entirely removed to upland areas following completion of the construction activity and the affected areas restored to the pre-project conditions. Cofferdams cannot be used to dewater wetlands or other aquatic areas to change their use. Structures left in place after cofferdams are removed require a Section 10 permit if located in navigable waters of the United States. (See 33 CFR Part 322). The permittee must notify the district engineer in accordance with the "notification" general condition. The notification must also include a restoration plan of reasonable measures to avoid and minimize impacts to aquatic resources. The district engineer will add special conditions, where necessary, to ensure that adverse environmental impacts are minimal. Such conditions may include: limiting the temporary work to the minimum necessary, requiring seasonal restrictions, modifying the restoration plan, and requiring alternative construction methods (e.g. construction mats in wetlands where practicable). This Nationwide Permit does not authorize temporary structures or fill associated with mining activities or the construction of marina basins that have not been authorized by the Corps (Section 10 and 404).

13. All temporary fills shall be removed in their entirety.

14. Ductile iron solid sleeves are required for joining different types of sanitary sewer pipes.

15. A copy of the approved construction plans must be on the job site at all times that construction is underway.

16. No bury pits are allowed.

17. Topographic ground elevations are from field surveys and benchmarks are mean sea level.

18. All sanitary sewer system construction must follow the the current City of Canton Water and Sewerage Development Standards.

19. 24-Hour local contact for erosion and sediment control is Bill Livingston (404) 819-2399.

20. The Owner/Developer is the City of Canton.

21. The project is located in the 14th District, Cherokee County, Georgia in Land Lots 158, 159, 160, 165, 166, 167 and 194.

22. Existing land use is residential, commercial, and industrial.

23. This project or phase under construction is 21.53 acres.

24. The engineering consultants are Atkins North America, 1600 Riveredge Parkway, Suite 700, Atlanta, Georgia 30328, Phone: (770) 933-0280, Fax: (770) 933-9946.

25. This project consists of 8,180 L.F. of 30" sanitary sewer and 7,100 L.F. of walking trail.

26. Adjacent areas include residential, commercial, industrial, and education facilities.

27. All fill slopes will have silt fence at the toe of the slopes.

28. A portion of this project is located within a 100 year flood plain as shown on F.I.R.M. Community Map Number 13057C0251E dated July 7, 2019.

29. A 25 foot undisturbed vegetative buffer adjacent to all running streams and creeks will be left as is except in areas where a stream buffer variance will be obtained.

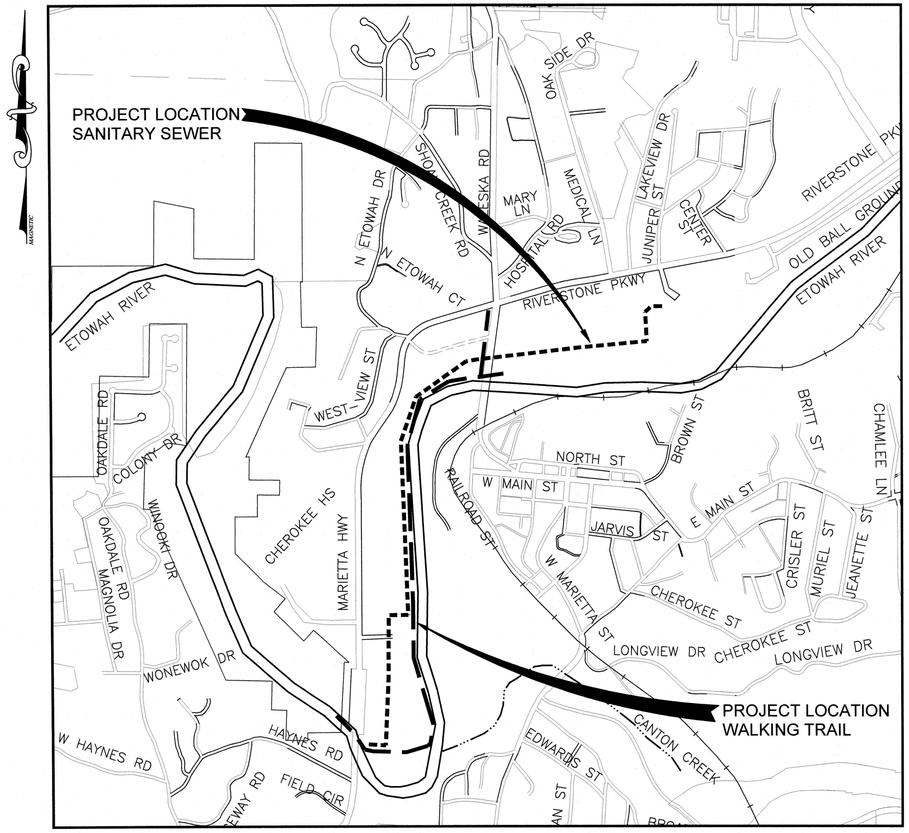
30. Clearing will be kept to an absolute minimum. Vegetation and mulch will be applied to applicable areas immediately after grading is complete. Land disturbing will be scheduled to limit exposure of bare soils to erosive elements.

31. Construction activities will be performed in compliance with all applicable laws and regulations.

32. All marketable timber will be salvaged. Top soil will be salvaged, stock piled and spread on areas to be vegetated. Trees outside of the clearing line will be protected from damage by appropriate markings. Supplemental vegetation will be established.

33. Clean out of sediment control structures will be accomplished in accordance with the sediment disposal accomplished by spreading on site. Sediment barriers will remain in place until sediment contributing areas are stabilized.

34. There shall be no change in pre-construction contours (excess material must be removed to an upland disposal area).



VICINITY MAP
NOT TO SCALE

35. Erosion control must be in place before construction is to begin. Tree protection fencing barrier shall be installed throughout the project. Erosion control fence is to be installed inside construction limits.

36. Noise abatement shall be of a reasonable level. All equipment must be in good working order, no broken mufflers, oil, or hydraulic fluid leaks, etc.

37. Work hours will be limited to Monday to Friday 7:00 am to 6:00 pm. No work on Weekends.

38. Material storage shall be along the easements, not within any road Right-of-Way.

39. Contractor shall remove all severed bushes, underbrush, branches, trees and debris including excess dirt, in a timely manner.

40. A pre blast and post blast survey will be the responsibility of the contractor. All rock blasting will be monitored and recorded for resolving any claims.

41. Contractor shall return to remove any trees that die due to construction of the sanitary sewer up to one year from completion of job.

42. The contractor must call the Utilities Protection Center "CALL BEFORE YOU DIG" telephone number (811) three days before starting any excavation.

43. There are wetlands located on this project.

44. This project shall be required to meet all development codes, regulations and laws.

45. All State Waters within 200' of this project have been delineated.

46. No storm water will be contained on this project.

47. No construction activities will be conducted within the 25' stream buffer, except where stream is crossed in perpendicular fashion in accordance with regulatory requirements.

48. Any damages caused to the existing pavement, bridges, shoulders, ditches, and roadway right-of-way shall be repaired in accordance with county standards and to the satisfaction of the City of Canton engineering department.

49. All work shall conform to all federal, state and county rules, regulations and guidelines, including, but not limited to, the construction, installation, erosion control and traffic control.

50. An undisturbed vegetative buffer meeting local and state requirements adjacent to all running streams and creeks will be left in place and maintained, except where a stream is crossed in perpendicular fashion in accordance with regulatory requirements.

51. Clean-out of sediment control structures will be accomplished via spreading sediment on site. sediment barriers will remain in place until disturbed areas are established with permanent grassing or ground cover.

52. No portion of this project is being constructed on or near an existing landfill, abandoned landfill, or any other site used for waste disposal.

53. For D.I.P. sewer lines, the minimum wall thickness shall be Pressure Class 350 and the interior lining shall be Protecto 401 ceramic epoxy. Wall thicknesses greater than the minimum called for above may be required due to greater depths or varying bedding requirements. Class C bedding is the minimum allowed. 1

54. All sewer service laterals shall have a minimum diameter of 6" and a minimum grade of 1%.

55. The Contractor shall obtain a land disturbance permit from the City of Canton governing all items related to erosion control.

56. Contractor must show proof of insurance in the amount specified by the City of Canton.

57. A horizontal separation of at least 10 feet is required between existing or proposed water mains and existing or proposed sanitary sewer lines.

58. A vertical separation of at least 18 inches is required where a sewer line crosses an existing or proposed water main. A full joint of sanitary sewer pipe is required to be centered at the water main crossing.

59. Record drawings of water and sanitary sewer facilities are required to be submitted to the Engineer upon completion of the project.

60. All streams and protective buffers shall be crossed in accordance with current County and State regulations.

61. Inside of steel casings, pipe joints will be restrained using Fast-Grip gaskets or approved equal.

62. Safety platforms are required for all manholes that are 16' in depth or more.

63. Concrete footings are required for all manholes that are 16' in depth or more and for all manholes installed in fill materials.

64. Manholes that are located outside of roadways shall be installed to be at least 18" above grade and shall be provided with self-sealing, bolt-down covers.

65. For connecting to an existing manhole, the Contractor shall core and boot the existing manhole at an elevation that is 2 feet or less from the existing invert out.

66. Locator wire must be installed above all sewer lateral lines.

67. Horizontal locations will be referenced to Georgia State Plane Coordinates System (NAD 83 West Zone Feet).

68. Vertical locations will be referenced to North American Vertical Datum (NAVD 88).

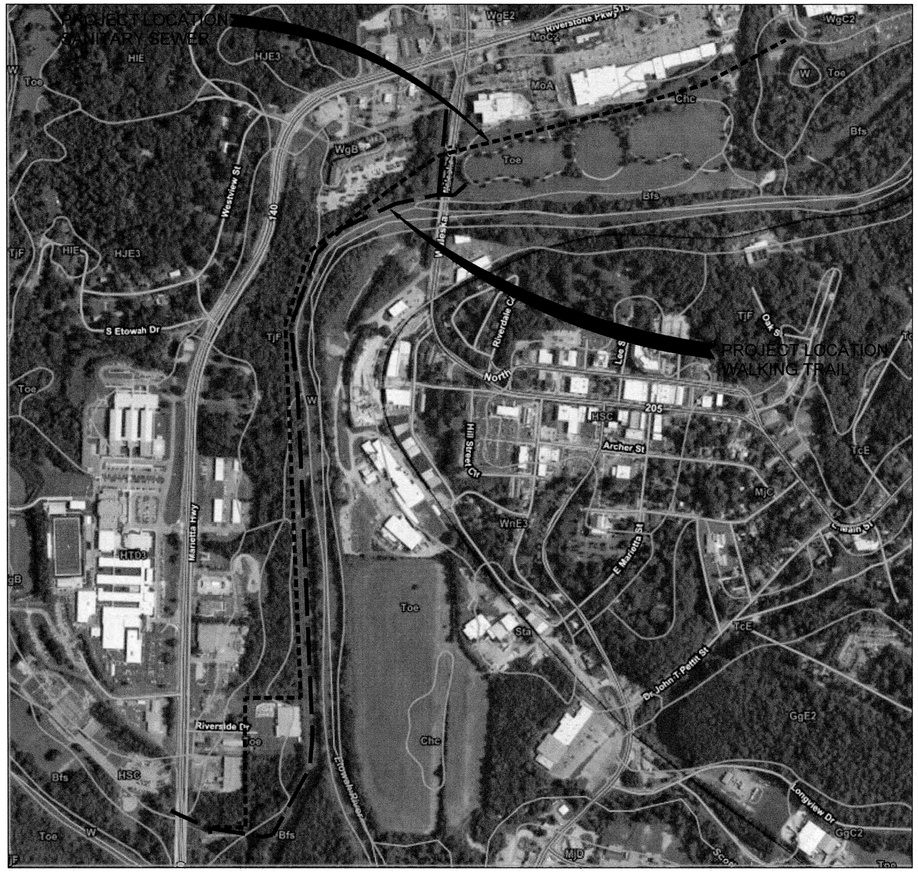
69. Orthometric locations will be referenced to GEOID 99/03.

70. No landscaping or structures will be allowed within 10 feet of the sewer line.

71. Contact the Development Inspector at 770-704-1500 prior to beginning construction.

72. A 48 hour advance notice is required prior to performing sanitary sewer pressure tests and mandrel/video.

811
Know what's below
Call before you dig



SOILS MAP
NOT TO SCALE

SOIL TYPE

- (Bfs) **Buncombe loamy sand**
- (ChC) **Chewacla-Cartecay complex**
- (MoA) **Masada fine sandy loam, 0 to 2 percent slopes**
- (TjF) **Tallapoosa channery sandy loam, 25 to 60 percent slopes**
- (Toe) **Toccoa complex**
- (W) **Water**

ORIGINAL PLAN DATE: JULY 9, 2020

REVISIONS

DATE	SHEET NO.	REVISION DESCRIPTON
8-4-20	C-01, EC-02, EC-05, EC-07, EC-11, EC-19, EN-01, ECL-01, D-07, CMP-01	REVISED PER CHEROKEE PLAN REVIEW
8-4-20	S-01, S-02, S-03, S-04, S-07	ADDED CLASS "B" BEDDING
8-12-20	G-01, S-01, EC-04	REVISED PER CONTRACTOR QUESTIONS
8-17-20	S-02, S-03, EC-05, EC-06, EC-07, 04-01, 05-01, 06-01,11-02, 11-03, 11-04, 11-05, 11-06, 11-07, 11-12, 11-13, 16-01, 18-02, 18-03, 18-04, 18-05, 18-06, 18-07, 18-12, 18-13, 22-03, 22-04, 23-03, 23-04, 29-02, 29-03, 29-04, 29-05, 29-06, 29-07, 29-12, 29-13, 29-14, 31-02, 40-01, 40-02, 40-03, 40-04, PT-01, PT-02, PT-03, PT-04	REVISED PER CONTRACTOR QUESTIONS TRAIL PORTION

1

ACTIVITY SCHEDULE

DESCRIPTION	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC,	JAN.
INSTALLATION OF TREE PROTECTION & SILT BARRIERS															
CLEARING AND GRUBBING															
SANITARY SEWER MAIN AND TRAIL MAIN INSTALLATION															
GRASSING *															

* TEMPORARY GRASSING TO BE SOWN WITHIN 14 DAYS OF INITIAL LAND DISTURBANCE.

GEORGIA REGISTERED PROFESSIONAL ENGINEER No. 15041 WILLIAM F. LIVINGSTON JR.

ATKINS

1600 Riveredge Parkway, Suite 700
Atlanta,Ga 30328
P: 770-933-0280

△	REVISION	DATE
1	ADDENDUM NUMBER TWO	8-4-20
1	ADDENDUM NUMBER TWO	8-12-20

PROJ. NO.: 100065927
DESIGNED BY: W.F.L.
DRAWN BY: M.R.T.
CHECKED BY: R.E.B.
APPROVED BY: W.F.L.
DATE: OCTOBER, 2019
SCALE: NTS

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER REPLACEMENT PHASE II AND ETOWAH RIVER TRAIL EXTENSION

INDEX, LOCATION MAP AND GENERAL NOTES

SHEET NO.
G-01
100065927

File Name: C:\USERS\THUR7504\ONEDRIVE CORP\ONEDRIVE - ATKINS LTD\DOCUMENTS\CANTON SEWER\GENERAL NOTES.DWG|Tab:G-1|Plotted: August 20, 2020 9:04am

N1° 00' 07"E
20.00 LF 30" SANITARY SEWER
NOW OR FORMERLY CITY OF CANTON
SSMH
TOP = 861.12
INV IN = 845.44
INV OUT = 845.48
EXISTING 70' ACCESS AND UTILITY EASEMENT
EXIST. 16" D.I.P. FORCE MAIN
STA. 0+20.00
MH #1
N 1538547
E 2195953
NOW OR FORMERLY CITY OF CANTON
PROPOSED TRAIL
PROPOSED 15' PERMANENT EASEMENT
28" OAK
EXIST. 220 L.F. 24" SANITARY SEWER
N89° 40' 37"E
269.63 LF 30" SANITARY SEWER
STA. 2+89.63
MH #2
N 1538549
E 2196223
24" PINE
INV = 858.58
26" PINE
INV = 858.78
DRY DITCH
INV = 859.49
INV = 859.41
28" PINE
SSMH
TOP = 862.51
INV IN = 845.69
INV OUT = 845.69
GRAVEL
PROPOSED TRAIL
100' PERMANENT TRAIL EASEMENT
24" PINE
EXIST. 16" D.I.P. FORCE MAIN
DITCH
36" OAK
26" OAK
24" PINE
EXIST. 243 L.F. 24" SANITARY SEWER
EXISTING 6" SERVICE LINE
N2° 23' 11"E
250.00 LF 30" SANITARY SEWER
IPF
SSMH
TOP = 867.95
INV IN = 845.96
INV OUT = 845.94
EXISTING 30' PERMANENT EASEMENT
N2° 19' 56"E
277.80 LF 30" SANITARY SEWER
EXIST. 302 L.F. 24" SANITARY SEWER
NOW OR FORMERLY TAGH, LLC
TEMPORARY 20' CONSTRUCTION EASEMENT
SSMH
TOP = 870.94
INV IN = 846.29
INV OUT = 846.26
NOW OR FORMERLY ETOWAH DECORATING CENTER, INC.
NOW OR FORMERLY RONALD KIRBY
60 L.F. - 42" STEEL CASING (0.500" W.T.)(JACK & BORE)
STA. 5+39.63
MH #3
N 1538799
E 2196233
CONCRETE BLOCK BUILDING
EXIST. 8" SERVICE LINE @ 1.0%
CONC. PAD
CONC.
AC
6' CHAIN LINK FENCE
STA. 8+17.43
MH #4
N 1539076
E 2196245
40' X 20' BORE PIT
24" CONC. CURB & GUTTER
ASPH
ASPHALT DRIVE
4' CHAIN LINK FENCE
N2° 31' 19"E
350.00 LF 30" SANITARY SEWER
EXIST. 304 L.F. 24" SANITARY SEWER
BRICK WALL
ASPHALT PARKING LOT
NOW OR FORMERLY CHEROKEE BOWL, INC.
NOW OR FORMERLY CITY OF CANTON
STA. 11+67.43
MH #5
N 1539426
E 2196260
DI
24" CMP OUT = 867.90
24" CMP
20' X 20' REC. PIT
EXIST. 6" SERVICE LINE
TEMPORARY 20' CONSTRUCTION EASEMENT
NOW OR FORMERLY TAGH, LLC
DI
24" CMP IN = 863.27
30" CMP OUT = 863.27
3'-WOOD FENCE
OVERHEAD POWER LINE
POWER POLE
CUT & PLUG
SSMH
TOP = 872.63
INV IN = 846.59
INV OUT = 846.55
30" CMP
N39° 04' 15"E
100.00 LF 30" SANITARY SEWER
EXIST. 132 LF 24" SANITARY SEWER
30" CMP IN = 862.62
MATCH STA. 13+00 LINE
STA. 10+60
1-30" X 6" WYE
1-6" 1/8 BEND
1-CONN. TO EXIST. 6" SERVICE LINE
NOW OR FORMERLY CHEROKEE COUNTY, GEORGIA
STA. 12+67.43
MH #6
N 1539513
E 2196309
SSMH
TOP = 864.47
INV IN = 846.81
INV OUT = 846.81

0' 25' 50' 100' 150'
GRAPHIC SCALE
Scale: 1 Inch = 50' Ft.

NOTE: ALL MANHOLES SHALL HAVE WATER TIGHT FRAME & COVERS UNLESS OTHERWISE NOTED.

EXISTING PUMP STATION
STA. 0+20.00 MH #1 TOP= 866.50
STA. 2+89.63 MH #2 TOP= 863.96
STA. 5+39.63 MH #3 TOP= 869.87
STA. 8+17.43 MH #4 TOP= 872.98 DROP MANHOLE
STA. 11+67.43 MH #5 TOP= 875.06 VENTED TO ELEV. 878.00
STA. 12+67.43 MH #6 TOP= 867.56
RAISE EXISTING MANHOLE TOP ELEV. 868.00 WATER TIGHT FRAME & COVER
EX. 16" D.I.P. FORCE MAIN
EX. 18" CMP
EX. 18" CMP
100-YEAR FLOOD 873.00
874.00
839.76
STEPS
40' X 20' BORE PIT
ASPHALT DRIVE
EX. GAS
EX. WATER
EX. 24" CMP
20' X 20' REC. PIT
EX. 65 LF 24" DIP @ 0.10%
EX. 220 LF 24" DIP @ 0.10%
EX. 220 LF 24" DIP @ 0.10%
EX. 243 LF 24" DIP @ 0.10%
EX. 304 LF 24" DIP @ 0.08%
60 L.F. - 42" STEEL CASING 0.500" W.T.
EX. 132 LF 24" DIP @ 0.06%
269.63 LF 30" DIP @ 0.10%
250.00 LF 30" DIP @ 0.10%
277.80 LF 30" DIP @ 0.10%
350.00 LF 30" DIP @ 0.10%
100.00 LF 30" DIP @ 0.10%
CLASS "B" BEDDING
20.00 LF 30" DIP @ 0.10%
30" INV. IN = 844.76
30" INV. OUT = 844.78
30" INV. IN = 844.80
30" INV. OUT= 845.07
30" INV. IN = 845.09
30" INV. OUT= 845.34
30" INV. IN = 845.36
30" INV. OUT= 845.64
30" INV. IN = 845.66
8" INV. IN = 859.15
30" INV. OUT= 846.01
30" INV. IN = 846.03
30" INV. OUT= 846.13
30" INV. IN = 846.15
874.0 874.03
864.7 864.67
861.4 861.42
861.9 861.88
861.9 861.94
862.8 862.79
862.8 862.81
861.7 861.65
862.1 862.09
864.2 864.23
865.9 865.85
868.7 868.69
870.4 870.39
870.3 870.32
870.8 870.79
871.1 871.10
871.7 871.65
872.0 872.03
872.1 872.05
871.6 871.38
872.0 872.05
872.3 872.31
872.7 872.70
873.3 873.27
872.8 872.82
863.8 863.79
862.5 862.46
−1+00 0+00 1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00 9+00 10+00 11+00 12+00 13+00
900 890 880 870 860 850 840 830 820

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770-933-0280

GEORGIA REGISTERED No. 15044 PROFESSIONAL ENGINEER WILLIAM F. LIVINGSTON, JR.

REVISION	DATE
1 ADDENDUM NUMBER TWO	8-4-20

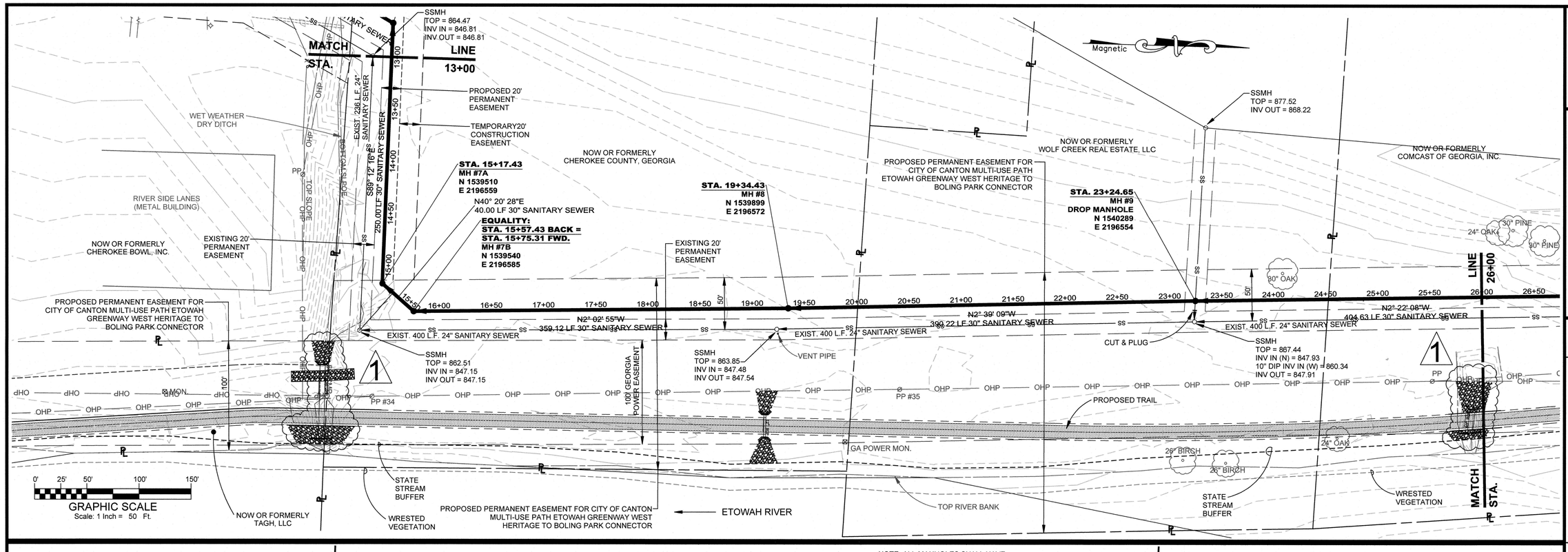
PROJ. NO.: 100065927
DESIGNED BY: W.F.L.
DRAWN BY: M.R.T.
CHECKED BY: R.E.B.
APPROVED BY: W.F.L.
DATE: AUG., 2019
SCALE: AS SHOWN

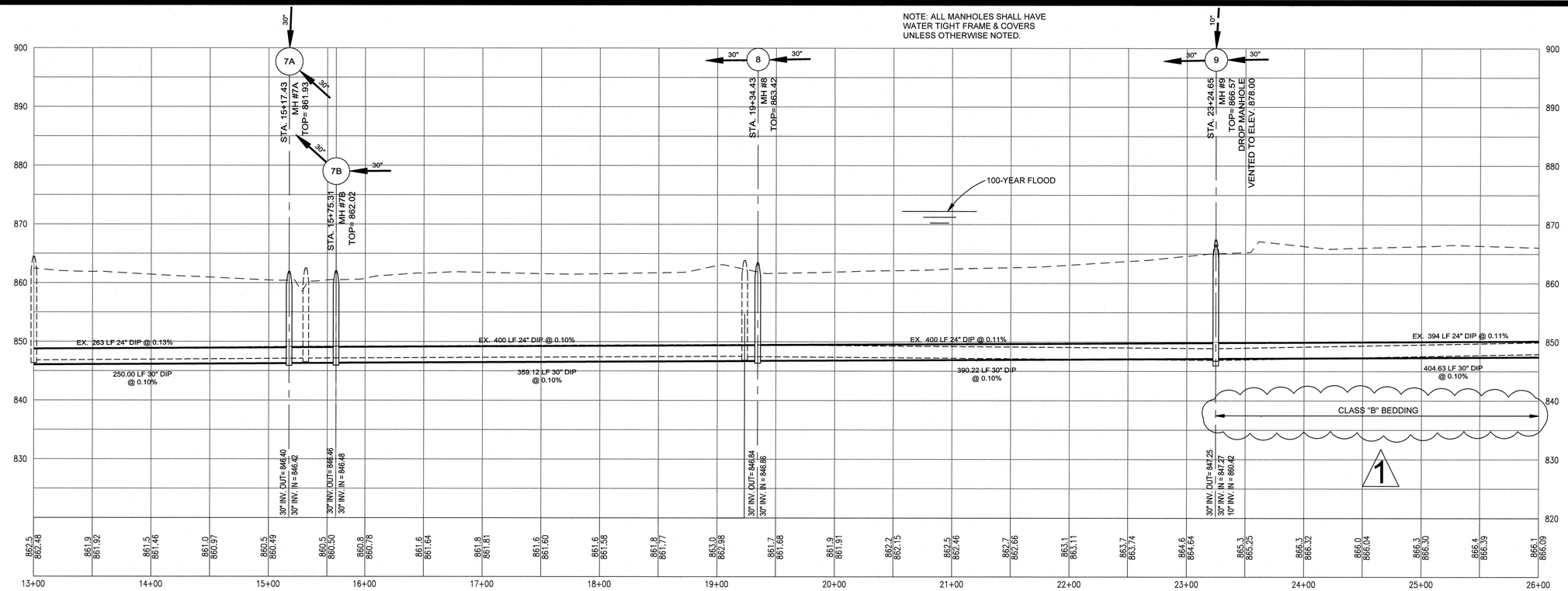
CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

SANITARY SEWER PLAN

SHEET NO.
S-01
100065927

File Name: C:\USERS\THUR7504\ONEDRIVE CORP\ONEDRIVE – ATKINS LTD\DOCUMENTS\CANTON SEWER\CANTON PLAN.DWG|Tab: S–01|Plotted: August 17, 2020 10:27am





ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770-933-0280

GEORGIA REGISTERED No. 15903 PROFESSIONAL ENGINEER WILLIAM F. LIVINGSTON, JR.

	DATE	REVISION
1	8-17-20	ADDENDUM NUMBER TWO

PROJ. NO.:	100065927
DESIGNED BY:	W.F.L.
DRAWN BY:	M.R.T.
CHECKED BY:	R.E.B.
APPROVED BY:	W.F.L.
DATE:	AUG., 2019
SCALE:	AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

SANITARY SEWER PLAN

SHEET NO.
S-02
100065927

File Name: C:\USERS\THUR7504\ONEDRIVE CORP\ONEDRIVE - ATKINS LTD\DOCUMENTS\CANTON SEWER\CANTON PLAN.DWG[Tab: S-02]Plotted: August 17, 2020 10:30am

NOW OR FORMERLY
COMCAST OF GEORGIA, INC.

PROPOSED PERMANENT EASEMENT FOR CITY OF CANTON MULTI-USE PATH ETOWAH GREENWAY WEST HERITAGE TO BOLING PARK CONNECTOR

STA. 27+29.28
MH #10
DROP MANHOLE
N 1540693
E 2196537

STA. 30+60.18
MH #11
N 1541024
E 2196521

STA. 31+90.22
MH #12
N 1541136
E 2196587

STA. 34+70.22
MH #13
N 1541414
E 2196554

STA. 37+78.22
MH #14
N 1541719
E 2196515

EQUALITY:
STA. 39+41.06 (BACK) =
STA. 39+39.21 (FWD)
MH #15
N 1541881
E 2196495

NOW OR FORMERLY
EDGEWATER HALL ENTERPRISES, LLC

NOW OR FORMERLY
MJS COMMERCIAL
REAL ESTATE, LLC

Magnetic

EXIST. 12" WATER MAIN

SSMH
TOP = 883.75
INV OUT = 875.75

SSMH
TOP = 876.87
INV IN = 848.66
INV OUT = 848.66

PROPOSED PERMANENT EASEMENT FOR CITY OF CANTON MULTI-USE PATH ETOWAH GREENWAY WEST HERIGATE TO BOLING PARK CONNECTOR

STATE STREAM BUFFER

EXIST. 6" SERVICE LINE

WETLANDS

IPF

VENT PIPE

N2° 48' 40"W
330.90 LF 30" SANITARY SEWER

N90° 34' 08"E
130.03 LF 30" SANITARY SEWER
EXIST. 130 LF 24" SANITARY SEWER

N6° 50' 45"W
280.00 LF 30" SANITARY SEWER
EXIST. 276 LF 24" SANITARY SEWER

N7° 08' 13"W
308.00 LF 30" SANITARY SEWER
EXIST. 310 LF 24" SANITARY SEWER

N7° 09' 55"W
162.84 LF 30" SANITARY SEWER
EXIST. 155 LF 24" SANITARY SEWER

N7°

100' GEORGIA POWER EASEMENT

100' POWER EASEMENT

SSMH
TOP = 867.70
INV IN (N) = 848.40
8" INV IN (NW) = 850.78
INV OUT = 848.39

STATE STREAM BUFFER

WRESTED VEGETATION

PROPOSED TRAIL

SSMH
TOP = 865.04
INV IN = 848.74
INV OUT = 848.72

PROPERTY LINE IS TOP RIVER BANK

EXIST. 12" WATER MAIN

SSMH
TOP = 865.14
INV IN = 848.89
INV OUT = 848.89

EXISTING 20' PERMANENT EASEMENT

PROPERTY LINE IS TOP RIVER BANK

WRESTED VEGETATION

SSMH
TOP = 870.14
INV IN = 849.32
INV OUT = 849.40

STATE STREAM BUFFER

SSMH
TOP = 864.85
INV IN = 849.45
INV OUT = 849.45

MATCH STA.

ETOWAH RIVER

0' 25' 50' 100' 150'
GRAPHIC SCALE
Scale: 1 Inch = 50 Ft.

NOTE: ALL MANHOLES SHALL HAVE WATER TIGHT FRAME & COVERS UNLESS OTHERWISE NOTED.

STA. 27+29.28 MH #10 TOP= 869.40 DROP MANHOLE

EXIST. 12" WATER MAIN

STA. 30+60.18 MH #11 TOP= 879.86

STA. 31+90.22 MH #12 TOP= 868.47

STA. 34+70.22 MH #13 TOP= 876.76

STA. 37+78.22 MH #14 TOP= 882.46 VENTED TO ELEV. 884.00

STA. 39+39.21 MH #15 TOP= 870.83

STA. 39+82 30" X 6" WYE 1-CONNECT TO EXIST. 6"

EXIST. 12" WATER MAIN

EX. 394 LF 24" DIP @ 0.11%
EX. 336 LF 24" DIP @ 0.08%
EX. 130 LF 24" DIP @ 0.07%
EX. 276 LF 24" DIP @ 0.06%
EX. 318 LF 24" DIP @ 0.16%
EX. 155 LF 24" DIP @ 0.08%

404.63 LF 30" DIP @ 0.10%
330.90 LF 30" DIP @ 0.10%
130.03 LF 30" DIP @ 0.10%
280.00 LF 30" DIP @ 0.10%
308.00 LF 30" DIP @ 0.10%
162.84 LF 30" DIP @ 0.10%

CLASS "B" BEDDING

	10	11	12	13	14	15
30" INV. OUT=	847.68	848.04	848.19	848.48	848.82	849.00
30" INV. IN=	847.70	848.06	848.21	848.57	848.84	849.02
8" INV. IN=	855.78					

	26+00	27+00	28+00	29+00	30+00	31+00	32+00	33+00	34+00	35+00	36+00	37+00	38+00	39+00	40+00
	866.1	868.4	868.2	869.1	871.8	879.1	879.3	880.9	878.5	876.4	883.4	876.7	867.2	870.9	872.9	871.0	871.2	874.7	874.0	874.8	873.5	876.2	874.1	881.9	879.2	879.8	881.1	864.5	861.4
	866.09	868.41	868.16	869.05	871.82	879.12	879.27	880.93	878.55	876.40	883.41	876.74	867.25	870.93	872.87	871.03	871.24	874.73	873.95	874.85	873.55	876.25	874.10	881.87	879.24	879.84	881.14	864.47	861.35

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770-933-0280

GEORGIA
REGISTERED
No. 15004
PROFESSIONAL
ENGINEER
WILLIAM F. LIVINGSTON, JR.
8-17-2020

	DATE	REVISION
1	8-4-20	ADDENDUM NUMBER TWO

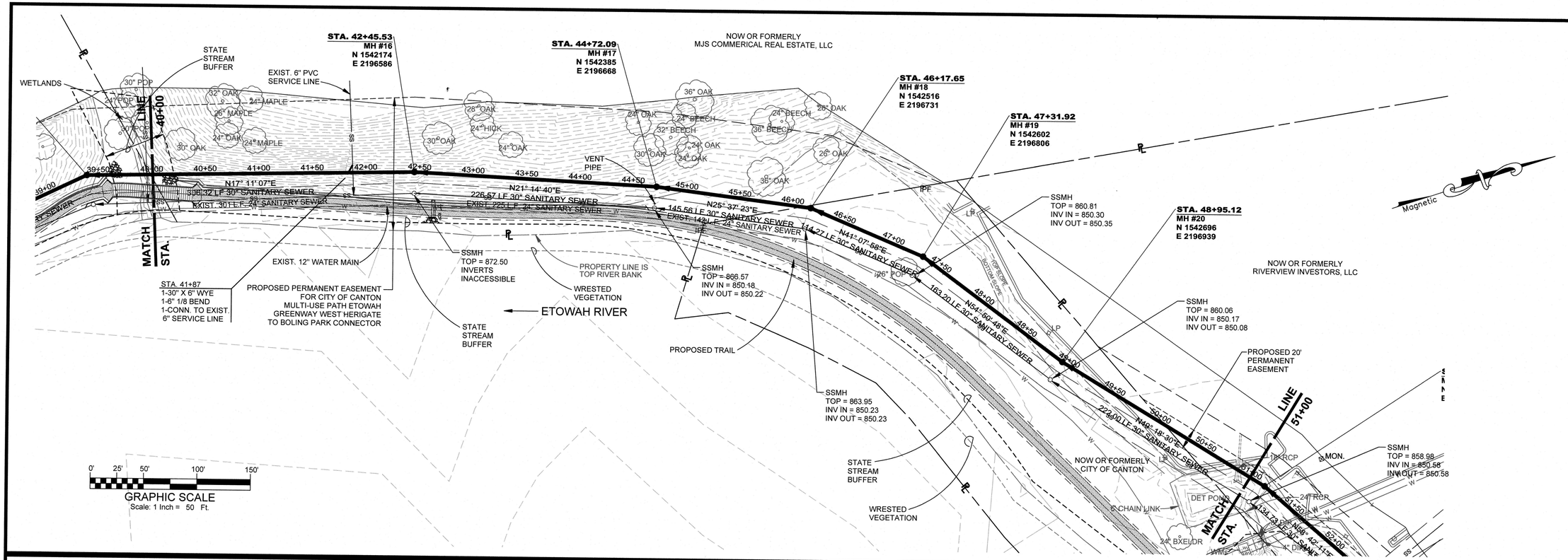
PROJ. NO.:	100065927
DESIGNED BY:	W.F.L.
DRAWN BY:	M.R.T.
CHECKED BY:	R.E.B.
APPROVED BY:	W.F.L.
DATE:	AUG., 2019
SCALE:	AS SHOWN

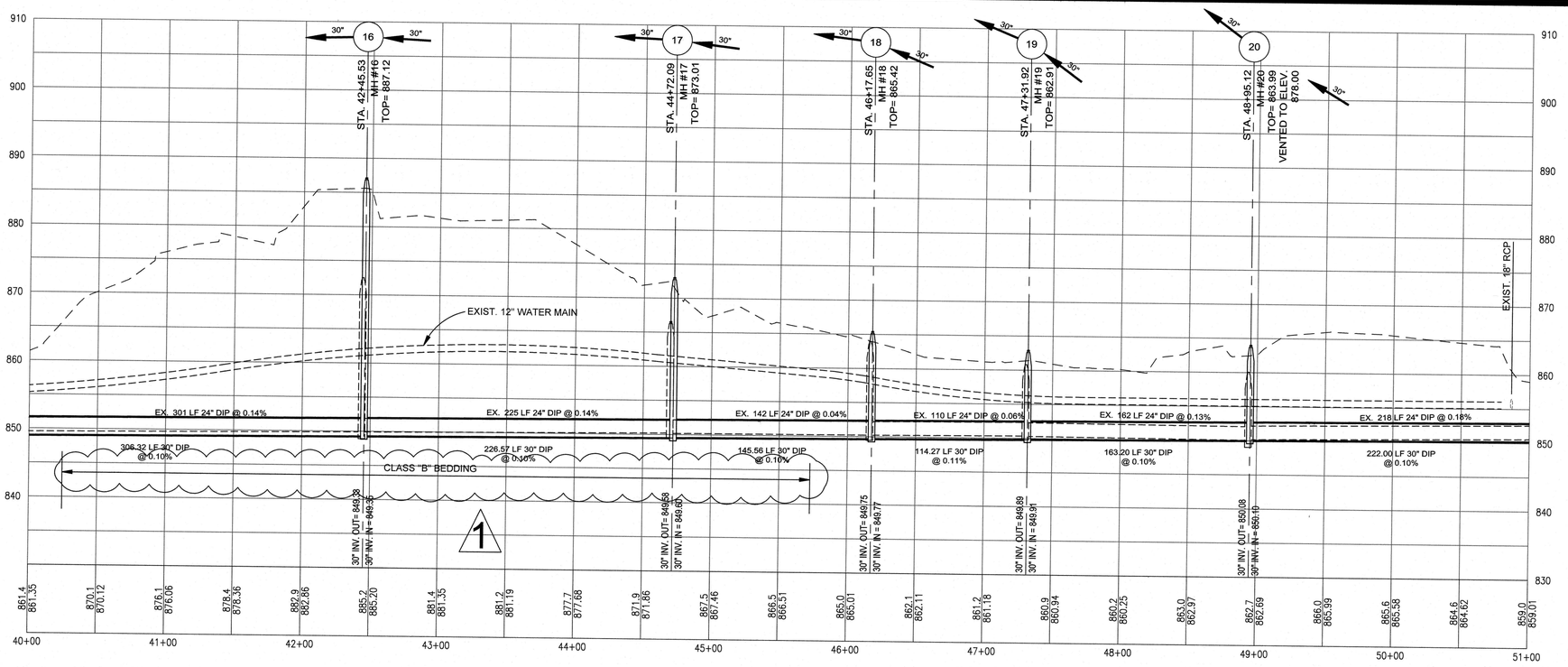
CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

SANITARY SEWER PLAN

SHEET NO.
S-03
100065927

File Name: C:\USERS\THUR7504\ONEDRIVE CORP\ONEDRIVE – ATKINS LTD\DOCUMENTS\CANTON SEWER\CANTON PLAN.DWG|Tab:S-03|Plotted: August 17, 2020 10:31am





ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770-933-0280

GEORGIA REGISTERED No. 15044 PROFESSIONAL ENGINEER WILLIAM F. LIVINGSTON, JR.

REVISION	DATE
1 ADDENDUM NUMBER TWO	8-4-20

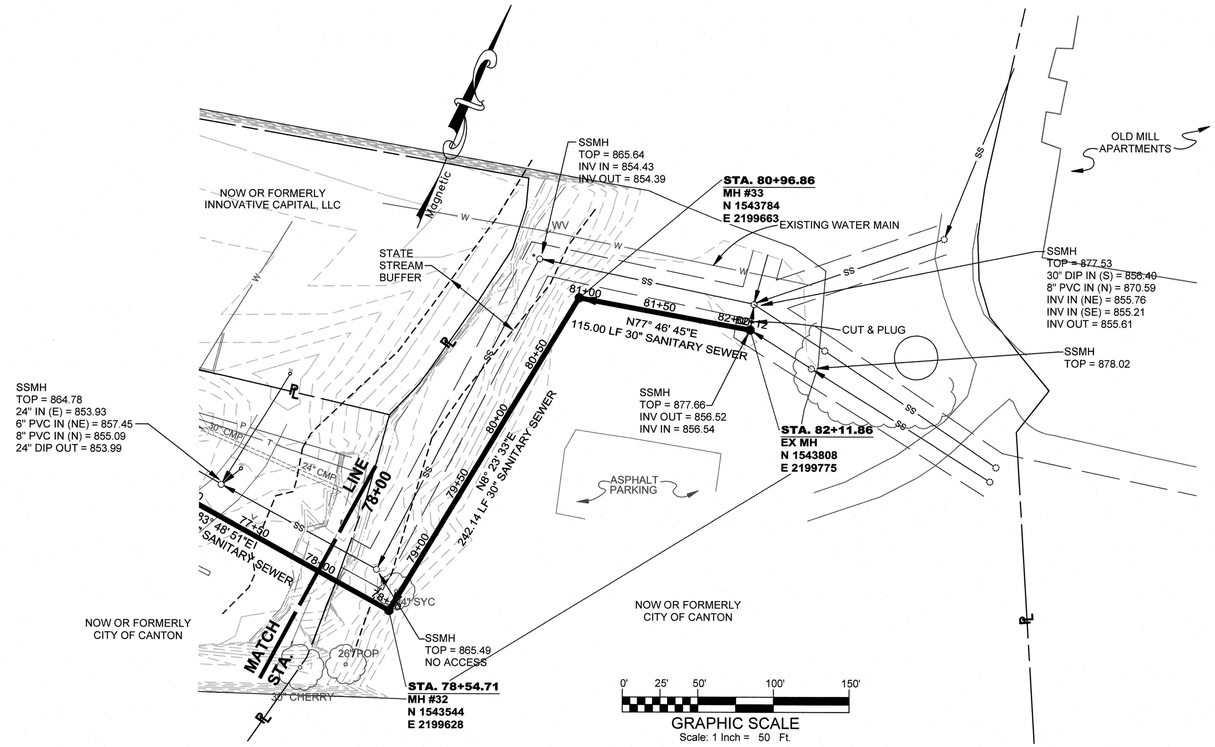
PROJ. NO.:	100065927
DESIGNED BY:	W.F.L.
DRAWN BY:	M.R.T.
CHECKED BY:	R.E.B.
APPROVED BY:	W.F.L.
DATE:	AUG., 2019
SCALE:	AS SHOWN

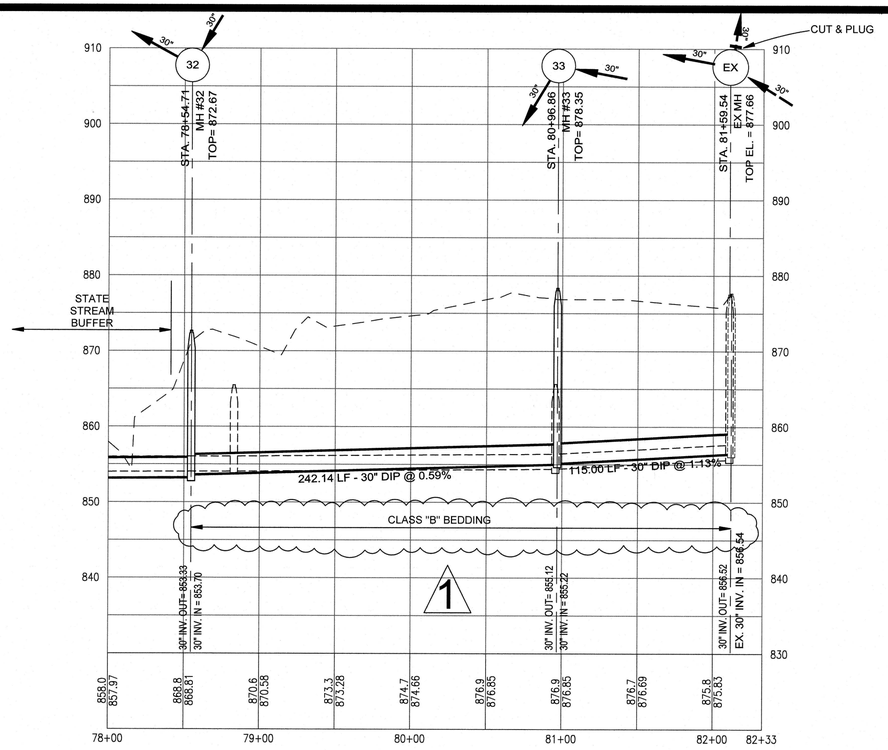
CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

SANITARY SEWER PLAN

SHEET NO.
S-04
100065927

File Name: C:\USERS\THUR7504\ONEDRIVE CORP\ONEDRIVE - ATKINS LTD\DOCUMENTS\CANTON SEWER\CANTON PLAN.DWG|Tab: S-04|Plotted: August 17, 2020 10:33am





ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770-933-0280

GEORGIA REGISTERED No. 15044 PROFESSIONAL ENGINEER WILLIAM F. LIVINGSTON, JR.

△	REVISION	DATE
1	ADDENDUM NUMBER TWO	8-4-20

PROJ. NO.:	100065927
DESIGNED BY:	W.F.L.
DRAWN BY:	M.R.T.
CHECKED BY:	R.E.B.
APPROVED BY:	W.F.L.
DATE:	AUG., 2019
SCALE:	AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 &
RIVER TRAIL EXTENSION

SANITARY SEWER PLAN

SHEET NO.
S-07
100065927

File Name: C:\USERS\THUR7504\ONEDRIVE CORP\ONEDRIVE - ATKINS LTD\DOCUMENTS\CANTON SEWER\CANTON PLAN.DWG|Tab: S-07|Plotted: August 17, 2020 10:36am

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure certified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

WILLIAM F. LIVINGSTON, JR., P.E.
GSWCC LEVEL II

I certify that the permittee's Erosion, Sedimentation and Pollution Control Plan provides for an appropriate and comprehensive system of best management practices required by the Georgia Water Quality Control Act and the document "Manual for Erosion and Sediment Control in Georgia" (Manual) published by the State Soil and Water Conservation Commission as of January 1 of the year in which the land-disturbing activity was permitted, provides for the sampling of the receiving water(s) or the sampling of the storm water outfalls and that the designed system of best management practices and sampling methods is expected to meet the requirements contained in the General NPDES Permit No. Gar 100002.

William F. Livingston, Jr. , Professional Engineer
GSWCC LEVEL II Certified Design Professional Certification # 21845

I CERTIFY UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED AFTER A SITE VISIT TO THE LOCATION DESCRIBED HERE-IN BY MYSELF OR MY AUTHORIZED AGENT UNDER MY DIRECT SUPERVISION.

William F. Livingston, Jr. , Professional Engineer
GSWCC LEVEL II Certified Design Professional Certification # 21845
EXPIRES NOVEMBER 04, 2021

MATCH LINE 01

STATE ROUTE 140
MARIETTA HIGHWAY

BRIDGE OVER ETOWAH RIVER

BRIDGE PIER

St STORM DRAIN OUTLET PROTECTION

24" CMP

Sd2 INLET SEDIMENT TRAP

EXISTING 16" D.I.P. FORCE MAIN

LIMITS OF DISTURBANCE

CONCRETE DITCH

POWER LINE

R/W

Sd1-S SEDIMENT BARRIER SENSITIVE DOUBLE ROW

N1° 00' 07"E
20.00 LF 30" SANITARY SEWER

PUMP STATION

LP

0+00

CHAIN LINK FENCE

CONCRETE WASHDOWN AREA
SEE SHEET D-07 FOR DETAIL.

1

NOW OR FORMERLY
ETOWAH DECORATING CENTER, INC.

NOW OR FORMERLY
CITY OF CANTON

EXISTING 70' ACCESS AND UTILITY EASEMENT

Ds1	STABILIZATION WITH MULCHING
Ds2	TEMPORARY SEEDING
Ds3	PERMANENT VEGETATION
Du	DUST CONTROL

28" OAK

NOW OR FORMERLY
TAGH, LLC

N89° 40' 37"E
PROPOSED 269.63 LF 30" SANITARY SEWER

EXISTING 24" D.I.P. SANITARY SEWER

PROPOSED TRAIL

EXISTING GRAVEL DRIVE

IPF

PROPOSED TRAIL EASEMENT

NOTE:
SEE TRAIL LANDSCAPE PLAN
FOR TYPE OF Ds3.

MATCH LINE 02

STORM DRAIN OUTLET PROTECTION (St) PLAN									
Dia.	Q	V	Tw	La	W1	W2	d50	dmax.	Depth
24"	3.50	1.78	Max.	5'	6.0'	8.0'	0.1ft	0.15ft	2.0ft

0' 10' 20' 40' 60'
GRAPHIC SCALE
Scale: 1 Inch = 20 Ft.

GEORGIA REGISTERED No. 15044 PROFESSIONAL ENGINEER WILLIAM F. LIVINGSTON, JR.

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770-933-0280

REVISION		DATE
1	ADDENDUM NUMBER TWO	8-4-20

PROJ. NO.:	100065927
DESIGNED BY:	W.F.L.
DRAWN BY:	M.R.T.
CHECKED BY:	R.E.B.
APPROVED BY:	W.F.L.
DATE:	AUG., 2019
SCALE:	AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

EROSION CONTROL PLAN

SHEET NO.
EC-02
100065927

File Name: C:\USERS\THUR7504\ONEDRIVE CORP\ONEDRIVE - ATKINS LTD\DOCUMENTS\CANTON SEWER\CANTON EROSION CONTROL PLAN 031620.DWG[Tab:EC-02]Plotted: August 17, 2020 10:38am

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure certified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

WILLIAM F. LIVINGSTON, JR., P.E.
GSWCC LEVEL II

I certify that the permittee's Erosion, Sedimentation and Pollution Control Plan provides for an appropriate and comprehensive system of best management practices required by the Georgia Water Quality Control Act and the document "Manual for Erosion and Sediment Control in Georgia" (Manual) published by the State Soil and Water Conservation Commission as of January 1 of the year in which the land-disturbing activity was permitted, provides for the sampling of the receiving water(s) or the sampling of the storm water outfalls and that the designed system of best management practices and sampling methods is expected to meet the requirements contained in the General NPDES Permit No. Gar 100002.

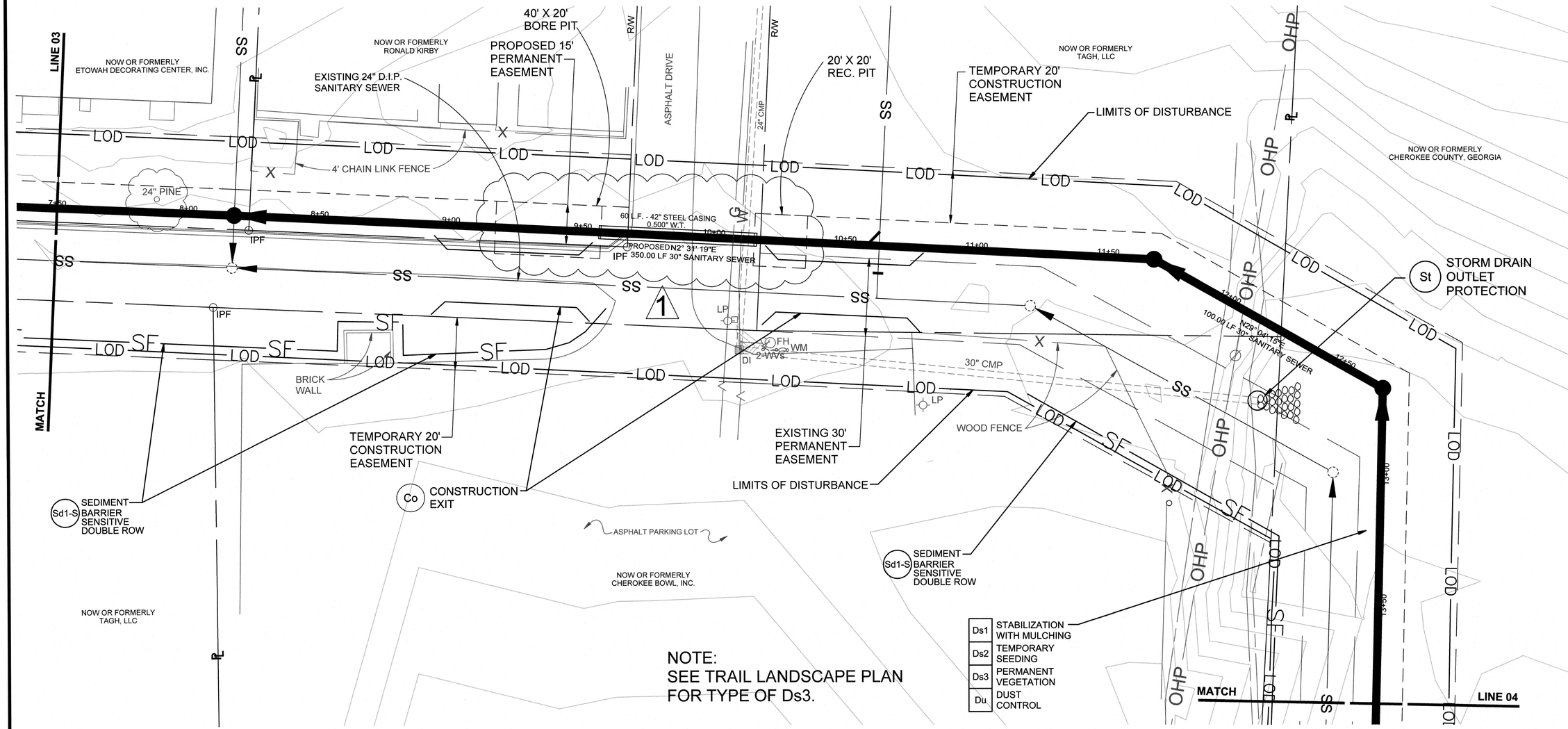
William F. Livingston, Jr. , Professional Engineer
GSWCC LEVEL II Certified Design Professional Certification # 21845

I CERTIFY UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED AFTER A SITE VISIT TO THE LOCATION DESCRIBED HERE-IN BY MYSELF OR MY AUTHORIZED AGENT UNDER MY DIRECT SUPERVISION.

William F. Livingston, Jr. , Professional Engineer
GSWCC LEVEL II Certified Design Professional Certification # 21845
EXPIRES NOVEMBER 04, 2021

Magnetic

STORM DRAIN OUTLET PROTECTION (St) PLAN									
Dia.	Q	V	Tw	La	W1	W2	d50	dmax.	Depth
30"	1.88	0.60	Max.	5'	7.5'	7.5'	0.1ft	0.15ft	2.5ft



ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770-933-0280

REVISION	DATE
1 ADDENDUM NUMBER TWO	8-4-20

PROJ. NO.:	100065927
DESIGNED BY:	W.F.L.
DRAWN BY:	M.R.T.
CHECKED BY:	R.E.B.
APPROVED BY:	W.F.L.
DATE:	AUG., 2019
SCALE:	AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

EROSION CONTROL PLAN

SHEET NO.
EC-04
100065927

File Name: C:\USERS\THUR7504\ONEDRIVE CORP\ONEDRIVE - ATKINS LTD\DOCUMENTS\CANTON SEWER\CANTON EROSION CONTROL PLAN 031620.DWG[Tab:EC-04]Plotted: August 17, 2020 10:40am

GRAPHIC SCALE
Scale: 1 Inch = 20 Ft.
0' 10' 20' 40' 60'

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure certified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

WILLIAM F. LIVINGSTON, JR., P.E.
GSWCC LEVEL II

I certify that the permittee's Erosion, Sedimentation and Pollution Control Plan provides for an appropriate and comprehensive system of best management practices required by the Georgia Water Quality Control Act and the document "Manual for Erosion and Sediment Control in Georgia" (Manual) published by the State Soil and Water Conservation Commission as of January 1 of the year in which the land-disturbing activity was permitted, provides for the sampling of the receiving water(s) or the sampling of the storm water outfalls and that the designed system of best management practices and sampling methods is expected to meet the requirements contained in the General NPDES Permit No. Gar 100002.

William F. Livingston, Jr. , Professional Engineer
GSWCC LEVEL II Certified Design Professional Certification # 21845

I CERTIFY UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED AFTER A SITE VISIT TO THE LOCATION DESCRIBED HERE-IN BY MYSELF OR MY AUTHORIZED AGENT UNDER MY DIRECT SUPERVISION.

William F. Livingston, Jr. , Professional Engineer
GSWCC LEVEL II Certified Design Professional Certification # 21845
EXPIRES NOVEMBER 04, 2021

Magnetic

STORM DRAIN OUTLET PROTECTION (St) PLAN									
Dia.	Q	V	Tw	La	W1	W2	d50	dmax.	Depth
12"	1.78	1.02	Max.	5'	4.5'	6.5'	0.1ft	0.15ft	1.5ft

STORM DRAIN OUTLET PROTECTION (St) PLAN									
Dia.	Q	V	Tw	La	W1	W2	d50	dmax.	Depth
60"	23.4	1.96	Min.	30'	12'	34'	0.9ft	1.35ft	2.0ft

Ds1	STABILIZATION WITH MULCHING
Ds2	TEMPORARY SEEDING
Ds3	PERMANENT VEGETATION
Du	DUST CONTROL

NOTE:
SEE TRAIL LANDSCAPE PLAN FOR TYPE OF Ds3.

MATCH LINE 04
S89° 12' 16"E
250.00 LF 30" SANITARY SS
PROPOSED
N40° 20' 28"E
40.00 LF 30" SANITARY SEWER
NOW OR FORMERLY
CHEROKEE COUNTY, GEORGIA
PROPOSED
N2° 02' 55"W
359.12 LF 30" SANITARY SEWER
MATCH LINE 05
MATCH LINE 18
Sd1-S SEDIMENT BARRIER SENSITIVE DOUBLE ROW
Sd2 INLET SEDIMENT TRAP
Ch-2 CHANNEL STABILIZATION
LIMITS OF DISTURBANCE
EXISTING 24" D.I.P. WATER MAIN
EXISTING 20' PERMANENT EASEMENT
100' GEORGIA POWER EASEMENT
PROPOSED TRAIL
PP #34
60" CMP
60" RCP
St STORM DRAIN OUTLET PROTECTION
GPCMF
ETOWAH RIVER
WRESTED VEGETATION
25' STATE STREAM BUFFER
TOP RIVER BANK
PROPOSED PERMANENT EASEMENT FOR CITY OF CANTON
MULTI-USE PATH ETOWAH GREENWAY WEST
HERITAGE TO BOLING PARK CONNECTOR
OHP SS SF LOD PP PL

GEORGIA REGISTERED No. 35344 PROFESSIONAL ENGINEER WILLIAM F. LIVINGSTON, JR.

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770-933-0280

REVISION	DATE
1 ADDENDUM NUMBER TWO	8-4-20

PROJ. NO.: 100065927
DESIGNED BY: W.F.L.
DRAWN BY: M.R.T.
CHECKED BY: R.E.B.
APPROVED BY: W.F.L.
DATE: AUG., 2019
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

EROSION CONTROL PLAN

SHEET NO.
EC-05
100065927

File Name: C:\USERS\THUR7504\ONEDRIVE CORP\ONEDRIVE - ATKINS LTD\DOCUMENTS\CANTON SEWER\CANTON EROSION CONTROL PLAN 031620.DWG|Tab:EC-05|Plotted: August 17, 2020 10:43am

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure certified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

WILLIAM F. LIVINGSTON, JR., P.E.
GSWCC LEVEL II

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William F. Livingston, Jr. , Professional Engineer
GSWCC LEVEL II Certified Design Professional Certification # 21845

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William F. Livingston, Jr. , Professional Engineer
GSWCC LEVEL II Certified Design Professional Certification # 21845
EXPIRES NOVEMBER 04, 2021

NOW OR FORMERLY
WOLF CREEK REAL ESTATE, LLC

NOW OR FORMERLY
COMCAST OF GEORGIA, INC.

Magnetic

NOTE:
SEE TRAIL LANDSCAPE PLAN
FOR TYPE OF Ds3.

LIMITS OF DISTURBANCE

Tr TREE PROTECTION

Ds1	STABILIZATION WITH MULCHING
Ds2	TEMPORARY SEEDING
Ds3	PERMANENT VEGETATION
Du	DUST CONTROL

PROPOSED PERMANENT EASEMENT FOR
CITY OF CANTON MULTI-USE PATH
ETOWAH GREENWAY WEST HERITAGE TO
BOLING PARK CONNECTOR

EXISTING 24" D.I.P.
SANITARY SEWER

LINE 05

LINE 06

30" OAK

20+00 20+50 21+00 21+50 22+00 22+50 23+00 23+50 24+00 24+50 25+00 25+50

PROPOSED N2° 39' 09"W
390.22 LF 30" SANITARY SEWER

PROPOSED N2° 22' 08"W
404.63 LF 30" SANITARY SEWER

SEDIMENT BARRIER SENSITIVE DOUBLE ROW (Sd1-S)

EXISTING 20'
PERMANENT
EASEMENT

100' GEORGIA POWER
EASEMENT

PROPOSED TRAIL

24" OAK

26" BIRCH

26" BIRCH

WRESTED VEGETATION

TOP RIVER BANK

25' STATE STREAM BUFFER

LIMITS OF DISTURBANCE

ETOWAH RIVER

MATCH

MATCH

GRAPHIC SCALE
0' 10' 20' 40' 60'
Scale: 1 Inch = 20 Ft.

GEORGIA REGISTERED No. 18044 PROFESSIONAL ENGINEER WILLIAM F. LIVINGSTON JR.

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770-933-0280

REVISION	DATE
1 ADDENDUM NUMBER TWO	8-17-20

PROJ. NO. 100065927
DESIGNED BY: W.F.L.
DRAWN BY: M.R.T.
CHECKED BY: R.E.B.
APPROVED BY: W.F.L.
DATE: AUG., 2019
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 &
RIVER TRAIL EXTENSION

EROSION CONTROL PLAN

SHEET NO.
EC-06
100065927

File Name: C:\USERS\THUR7504\ONEDRIVE CORP\ONEDRIVE - ATKINS LTD\DOCUMENTS\CANTON SEWER\CANTON EROSION CONTROL PLAN 031620.DWG|Tab:EC-06|Plotted: August 17, 2020 10:44am

GRAPHIC SCALE
Scale: 1 Inch = 20 Ft.

Magnetic

NOTE:
SEE TRAIL LANDSCAPE PLAN
FOR TYPE OF Ds3.

Ds1 STABILIZATION WITH MULCHING
Ds2 TEMPORARY SEEDING
Ds3 PERMANENT VEGETATION
Du DUST CONTROL

Tr TREE PROTECTION

PROPOSED PERMANENT EASEMENT FOR CITY OF CANTON MULTI-USE PATH ETOWAH GREENWAY WEST HERIGATE TO BOLING PARK CONNECTOR

LIMITS OF DISTURBANCE

NOW OR FORMERLY COMCAST OF GEORGIA, INC.

Ch-2 CHANNEL STABILIZATION

Mb EROSION CONTROL MATTING

LINE 06

LINE 07

PROPOSED N2° 48' 40"W 330.90 LF 30" SANITARY SEWER

EXISTING 20' PERMANENT EASEMENT

EXISTING 24" D.I.P. SANITARY SEWER

PROPOSED TRAIL

Ss SLOPE STABILIZATION

100' POWER EASEMENT

EXISTING 12" D.I.P. WATER MAIN

GPCMF

130.03 LF 30" SANITARY SEWER

130° 34' 08"E

Sd1-S SEDIMENT BARRIER SENSITIVE DOUBLE ROW

Sd2 INLET SEDIMENT TRAP

St STORM DRAIN OUTLET PROTECTION

TOP OF RIVER BANK

WRESTED VEGETATION

25' STATE STREAM BUFFER

LIMITS OF DISTURBANCE

MATCH

STORM DRAIN OUTLET PROTECTION (St) PLAN									
Dia.	Q	V	Tw	La	W1	W2	d50	dmax.	Depth
12"	1.78	1.02	Max.	5'	4.5'	6.5'	0.1ft	0.15ft	1.5ft
60"	23.4	1.96	Min.	30'	12'	34'	0.9ft	1.35ft	2.0ft

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William F. Livingston, Jr. , Professional Engineer
GSWCC LEVEL II Certified Design Professional Certification # 21845

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GSWCC LEVEL II

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William F. Livingston, Jr. , Professional Engineer
GSWCC LEVEL II Certified Design Professional Certification # 21845
EXPIRES NOVEMBER 04, 2021

GEORGIA REGISTERED No. 15044 PROFESSIONAL ENGINEER WILLIAM F. LIVINGSTON, JR.

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770-933-0280

REVISION		DATE
ADDENDUM NUMBER TWO	1	8-17-20

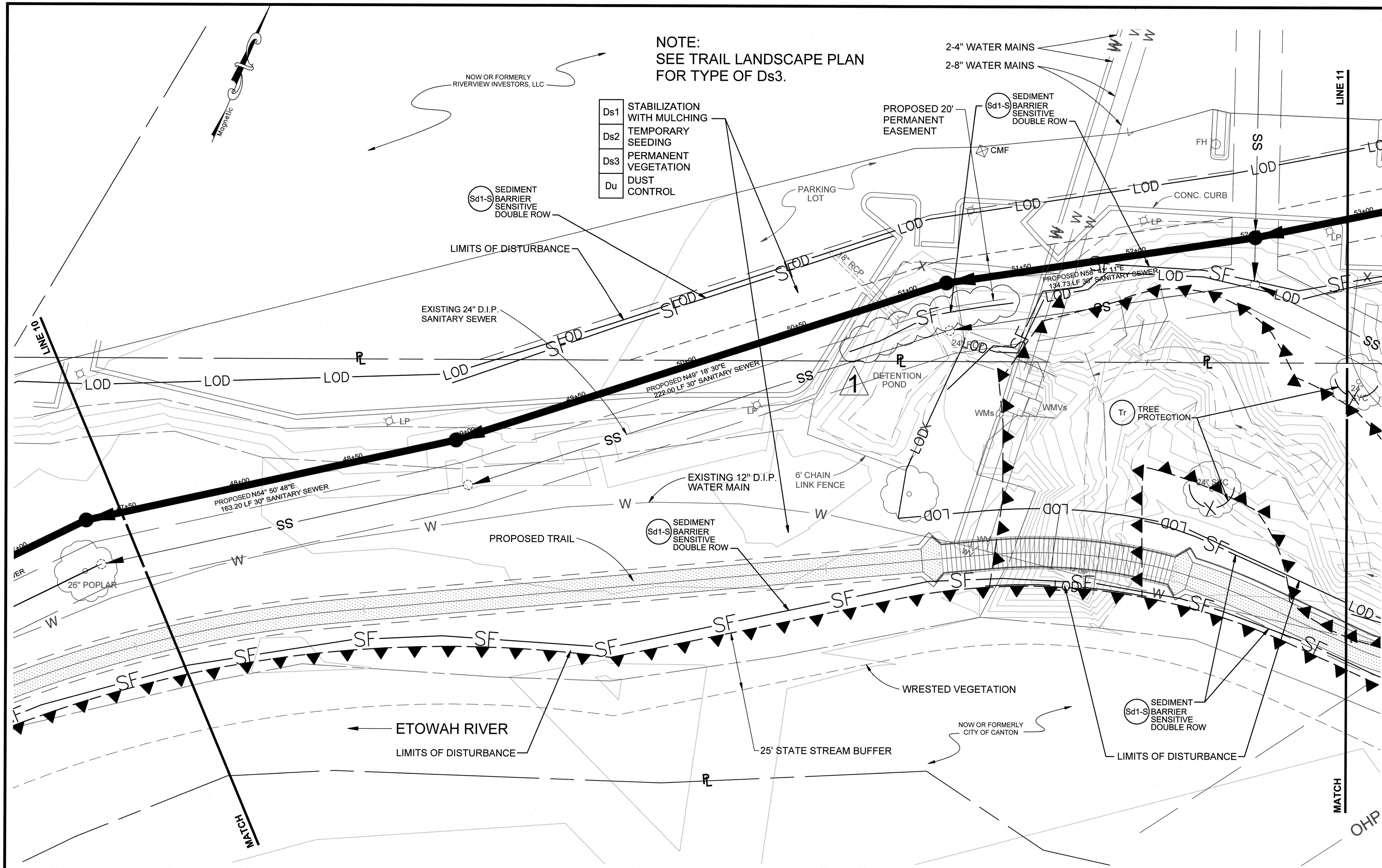
PROJ. NO.:	100065927
DESIGNED BY:	W.F.L.
DRAWN BY:	M.R.T.
CHECKED BY:	R.E.B.
APPROVED BY:	W.F.L.
DATE:	AUG., 2019
SCALE:	AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

EROSION CONTROL PLAN

SHEET NO.
EC-07
100065927

File Name: C:\USERS\THUR7504\ONEDRIVE CORP\ONEDRIVE - ATKINS LTD\DOCUMENTS\CANTON SEWER\CANTON EROSION CONTROL PLAN 031620.DWG[Tab:EC-07]Plotted: August 17, 2020 10:46am



0' 10' 20' 40' 60'

GRAPHIC SCALE

Scale: 1 Inch = 20 Ft.

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GEORGIA REGISTERED PROFESSIONAL ENGINEER No. 15044 WILLIAM F. LIVINGSTON, JR.

ATKINS

1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770-933-0280

REVISION		DATE
1	ADDENDUM NUMBER TWO	8-4-20

PROJ. NO.:	100065927
DESIGNED BY:	W.F.L.
DRAWN BY:	M.R.T.
CHECKED BY:	R.E.B.
APPROVED BY:	W.F.L.
DATE:	AUG., 2019
SCALE:	AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

EROSION CONTROL PLAN

SHEET NO.

EC-11

100065927

NOW OR FORMERLY
RIVERVIEW INVESTORS, LLC

EXIST. 24" D.I.P.
SANITARY SEWER

RCP

72" CMP

ANDERSON AVENUE

R/W

SS

PP

LP

St STORM DRAIN OUTLET PROTECTION

MATCH LINE 19

LOD

SF

OHP

25' STATE
STREAM BUFFER

PROPOSED TRAIL

St STORM DRAIN OUTLET PROTECTION

PROPOSED 50' PERMANENT EASEMENT FOR
CITY OF CANTON MULTI-USE
PATH ETOWAH GREENWAY
WEST HERITAGE TO BOLING
PARK CONNECTION

Ss SLOPE STABILIZATION

Sd2 INLET SEDIMENT TRAP

18" CMP

15" SLOPE DRAIN PIPE

15" RCP

Co CONSTRUCTION EXIT

W

EXISTING
WATER
MAIN

24" CMP

LIMITS OF
DISTURBANCE

RIP RAP

HANDICAP SIGN

CB

Sd2 INLET SEDIMENT TRAP

WALESKA STREET

1 CONCRETE WASHDOWN AREA
SEE SHEET D-07 FOR DETAIL.

150' R/W

Sd1-S SEDIMENT BARRIER SENSITIVE DOUBLE ROW

LIMITS OF DISTURBANCE

T

Magnetic

NOTE:
SEE TRAIL LANDSCAPE PLAN
FOR TYPE OF Ds3.

Ds1	STABILIZATION WITH MULCHING
Ds2	TEMPORARY SEEDING
Ds3	PERMANENT VEGETATION
Du	DUST CONTROL

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EXPIRES NOVEMBER 04, 2021

STORM DRAIN OUTLET PROTECTION (St) PLAN									
Dia.	Q	V	Tw	La	W1	W2	d50	dmax.	Depth
24"	3.50	1.78	Max.	5'	6'	8'	0.1ft	0.15ft	2.0ft
15"	0.76	0.62	Max.	5'	4.5'	6.5'	0.1ft	0.15ft	1.5ft
18"	1.22	1.08	Max.	5'	4.5'	6.5'	0.1ft	0.15ft	1.5ft

0' 10' 20' 40' 60'
GRAPHIC SCALE
Scale: 1 Inch = 20 Ft.

GEORGIA REGISTERED No 15044 PROFESSIONAL ENGINEER WILLIAM F. LIVINGSTON JR

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770-933-0280

REVISION	DATE
1 ADDENDUM NUMBER TWO	8-4-20

PROJ. NO.: 100065927
DESIGNED BY: W.F.L.
DRAWN BY: M.R.T.
CHECKED BY: R.E.B.
APPROVED BY: W.F.L.
DATE: AUG., 2019
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 &
RIVER TRAIL EXTENSION

EROSION CONTROL PLAN

SHEET NO.
EC-19
100065927

File Name: C:\USERS\THUR7504\ONEDRIVE CORP\ONEDRIVE - ATKINS LTD\DOCUMENTS\CANTON SEWER\CANTON EROSION CONTROL PLAN 031620.DWG|Tab:EC-19|Plotted: August 17, 2020 10:47am

EROSION CONTROL NOTES:

1. **AT ALL TIMES, THE CONTRACTOR SHALL ADHERE TO LOCAL, STATE AND FEDERAL EROSION AND SEDIMENT CONTROL REGULATIONS AND TO THE LATEST EDITION OF THE "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA". BEST MANAGEMENT PRACTICES (BMP's) SHALL BE EXERCISED TO CONTROL EROSION AND SEDIMENTATION FOR ALL RAINFALL EVENTS UP TO AND INCLUDING A 25 YEAR, 24 HOUR RAINFALL EVENT.**

2. STRIPPING OF VEGETATION, RE-GRADING, AND OTHER DEVELOPMENT ACTIVITIES SHALL BE CONDUCTED IN SUCH A MANNER SO AS TO MINIMIZE EROSION.

3. CUT AND FILL OPERATIONS SHALL BE KEPT TO A MINIMUM.

4. THE DISTURBED AREA AND THE DURATION OF EXPOSURE TO EROSIVE ELEMENTS SHALL BE KEPT TO A PRACTICABLE MINIMUM.

5. ADEQUATE PROVISIONS SHALL BE PROVIDED TO MINIMIZE DAMAGE FROM SURFACE WATER TO THE CUT FACE OF EXCAVATIONS OR THE SLOPING SURFACES OF FILLS.

6. CUTS AND FILLS SHALL NOT ENDANGER ADJOINING PROPERTY.

7. FILLS SHALL NOT ENCROACH UPON NATURAL WATER COURSES OR CONSTRUCTED CHANNELS IN A MANNER SO AS TO ADVERSELY AFFECT OTHER PROPERTY OWNERS.

8. THE TOTAL AREA ENCOMPASSED BY THIS PROJECT IS APPROXIMATELY 25.18 ACRES. THE TOTAL AREA EXPECTED TO BE DISTURBED BY THIS PROJECT IS APPROXIMATELY 21.53 ACRES.

9. PROJECT IS LOCATED IN CHEROKEE COUNTY, GEORGIA LAND DISTRICT 14, LAND LOTS 158, 159, 160, 165, 166, 167, AND 194.

10. JURISDICTIONAL WETLANDS WERE FOUND ADJACENT TO THE PROJECT CORRIDOR, STATE WATERS WERE FOUND WITHIN 200 FEET OF THE PROJECTS LIMITS OF DISTURBANCE.

11. THE PROPOSED RECEIVING WATER IS THE ETOWAH RIVER.

12. THE PROPOSED STORM WATER DISCHARGE FROM THIS PROPOSED PROJECT IS WITHIN 1 LINEAR MILE UPSTREAM OF AND WITHIN THE SAME WATERSHED OF A BIOTA IMPAIRED STREAM SEGMENT.

13. SEDIMENT STORAGE DESIGN:

    DETERMINE STORAGE VOLUME REQUIREMENTS:

    SILT FENCE: 100 L.F. PER 0.25 ACRES DISTURBED AREA, WHEN OTHER METHODS OF STORAGE ARE NOT FEASIBLE
    - DISTURBED AREA: 21.53 ACRES
    - SILT FENCE REQUIRED: 100 L.F. x (21.53 AC /0.25 AC) = 8,612 L.F.
    - SILT FENCE PROVIDED: 17,350 L.F. = (OK)

    SEDIMENT STORAGE: 67 C.Y. PER 1.0 ACRES DISTURBED AREA

    - DISTURBED AREA: 21.53 ACRES
    - SEDIMENT STORAGE REQUIRED: 67 CY x 21.53 AC = 1,442.51 CY
    - SEDIMENT STORAGE PROVIDED: (17,350 LF x 3' x 2' x 0.5) / 27 = 1,927.8 CY (OK)

14. NO ALTERNATIVE BMP'S WHOSE PERFORMANCE HAS BEEN DOCUMENTED TO BE EQUIVALENT TO OR SUPERIOR TO CONVENTIONAL BMPS AS CERTIFIED BY A DESIGN PROFESSIONAL ARE PROPOSED.

15. OFF-SITE VEHICLE TRACKING OF DIRT, SOILS, AND SEDIMENT AND THE GENERATION OF DUST SHALL BE MINIMIZED OR ELIMINATED TO THE MAXIMUM EXTENT POSSIBLE. THE CONTRACTOR SHALL STRICTLY ADHERE TO DUST CONTROL REGULATIONS. ALL AREAS SUBJECT TO DUST FORMATION MUST BE PERIODICALLY WATERED, SUFFICIENT TO RETARD DUST.

16. **WASHING DOWN AND CLEANING OF ALL CONCRETE TRUCKS AND EQUIPMENT IS NOT ALLOWED ON-SITE.**

17. CLEAN UP AND / OR CONTAIN FUEL AND OIL SPILLS IMMEDIATELY. REPORT ANY CHEMICAL SPILLS INTO WATERWAYS IMMEDIATELY TO THE GEORGIA EPD EMERGENCY RESPONSE PROGRAM (1-800-241-4113). IF FUEL AND OIL ARE TO BE STORED ON SITE, THEY MUST BE STORED IN ACCORDANCE WITH THE GEORGIA FIRE MARSHALL'S RULES AND REGULATIONS. A DIKE OF SUFFICIENT HEIGHT TO CONTAIN THE VOLUME OF FUEL OR OIL BEING STORED ALONG WITH MATERIALS AND PRODUCTS MADE FOR THE ABSORPTION OF PETROLEUM PRODUCTS ARE REQUIRED ON- SITE. ANY USED ABSORPTION MATERIAL MUST BE DISPOSED OF IN AN APPROVED DISPOSAL SITE.

18. SPILL CLEANUP AND CONTROL PRACTICES

    LOCAL, STATE AND MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND PROCEDURES WILL BE MADE AVAILABLE TO SITE PERSONNEL.

    MATERIAL AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREAS. TYPICAL MATERIALS AND EQUIPMENT INCLUDES, BUT IS NOT LIMITED TO, BROOMS, DUSTPANS, MPPS, RAGS, GLOVES, GOGGLES, CAT LITTER, SAND, SAWDUST AND PROPERLY LABELED PLASTIC AND METAL WASTE CONTAINERS.

    SPILL PREVENTION PRACTICES AND PROCEDURES WILL BE REVIEWED AFTER A SPILL AND ADJUSTED AS NECESSARY TO PREVENT FUTURE SPILLS.

    ALL SPILLS WILL BE CLEANED UP IMMEDIATELY UPON DISCOVERY. ALL SPILLS WILL BE REPORTED AS REQUIRED BY LOCAL, STATE AND FEDERAL REGULATIONS.

    FOR SPILLS THAT IMPACT SURFACE WATER (LEAVE A SHEEN ON SURFACE WATER), THE NATIONAL RESPONSE CENTER (NRC) WILL BE CONTACTED WITHIN 24 HOURS AT 1-800-425-2675.

    FOR SPILLS OF AN UNKNOWN AMOUNT. THE NATIONAL CENTER (NRC) WILL BE CONTACTED WITHIN 24 HOURS AT 1-800-425-2675.

    FOR SPILLS GREATER THAN 25 GALLONS AND NO SURFACE WATER IMPACTS, THE GEORGIA EPD WILL BE CONTACTED WITHIN 24 HOURS AT THE GEORGIA EPD EMERGENCY RESPONSE PROGRAM 1-800-241-4113 .

19. SPILL CLEANUP AND CONTROL PRACTICES (CONTINUED)

    FOR SPILLS LESS THAN 25 GALLONS AND NO SURFACE WATER IMPACTS, THE SPILL WILL BE CLEANED UP AND LOCAL AGENCIES WILL BE CONTACTED AS REQUIRED.

    THE CONTRACTOR SHALL NOTIFY THE LICENSED PROFESSIONAL WHO PREPARED THIS PLAN IF MORE THAN 1320 GALLONS OF PETROLEUM IS STORED ONSITE (THIS INCLUDES CAPACITIES OF EQUIPMENT) OR IF ANY ONE PIECE OF EQUIPMENT HAS A CAPACITY GREATER THAN 660 GALLONS. THE CONTRACTOR WILL NEED A SPILL PREVENTION CONTAINMENT AND COUNTERMEASURES PLAN PREPARED BY THAT LICENSED PROFESSIONAL.

20. THE NATURE OF CONSTRUCTION ACTIVITY: THIS IS AN INFRASTRUCTURE PROJECT THAT CONSISTS OF APPROXIMATELY 5,985 LINEAR FEET OF SANITARY SEWER, 700 LINEAR FEET OF FORCE MAIN, AND 905 LINEAR FEET OF WATER MAIN. THE EXISTING LAND THAT WILL BE DISTURBED IS OPEN AREAS AND PAVED PARKING LOTS AND ROADWAYS. THIS PROJECT ENCROACHES INTO STATE WATERS BUFFER AREA.

21. PROVISIONS SHALL BE PROVIDED FOR TREATMENT OR CONTROL OF ANY SOURCE OF SEDIMENT AND ADEQUATE SEDIMENTATION CONTROL FACILITIES TO RETAIN SEDIMENTS ON SITE OR PRECLUDE SEDIMENTATION OF ADJACENT WATERS BEYOND THE LEVELS SPECIFIED IN THE GA NPDES PERMIT.

22. A BRIEF DESCRIPTION OF THE EROSION CONTROL MEASURES PROPOSED TO BE IMPLEMENTED AT THE CONSTRUCTION SITE INCLUDE: DOUBLE ROW OF SD1 TEMPORARY SILT FENCE TYPE "C" AND TREE PROTECTION FENCING FOR INITIAL AND TEMPORARY SEDIMENT PERIMETER CONTROL,DS1 TEMPORARY MULCH, DS2 TEMPORARY SEEDING,DS3 FINAL SEEDING FOR FINAL STABILIZATION AND EROSION CONTROL, AND EROSION CONTROL MATTING (Mb).

23. **PRACTICES THAT WILL BE USED TO REDUCE THE POLLUTANTS IN STORM WATER DISCHARGES ARE AS FOLLOWS:**

    PETROLEUM BASED PRODUCTS - CONTAINERS FOR PRODUCTS SUCH AS FUELS, LUBRICANTS AND TARS WILL BE INSPECTED DAILY FOR LEAKS AND SPILLS, THIS INCLUDES ON - SITE VEHICLE AND MACHINERY DAILY INSPECTIONS AND REGULAR PREVENTATIVE MAINTENANCE OF SUCH EQUIPMENT. EQUIPMENT MAINTENANCE AREAS WILL BE LOCATED AWAY FROM STATE WATERS, NATURAL DRAINS AND STORM WATER DRAINAGE INLETS. IN ADDITION, TEMPORARY FUELING TANKS SHALL HAVE A SECONDARY CONTAINMENT LINER TO PREVENT / MINIMIZE SITE CONTAMINATION DISCHARGE OF OILS, FUELS AND LUBRICANTS IS PROHIBITED. PROPER DISPOSAL METHODS WILL INCLUDE COLLECTION IN A SUITABLE CONTAINER AND DISPOSAL AS REQUIRED BY LOCAL AND STATE REGULATIONS.

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

    FERTILIZER . HERBICIDES - THESE PRODUCTS WILL BE APPLIED AT RATES THAT DO NOT EXCEED THE MANUFACTURER'S SPECIFICATIONS OR ABOVE THE GUIDELINES SET FORTH IN THE CROP ESTABLISHMENT OR IN THE GSWCC MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA. ANY STORAGE OF THOSE MATERIALS WILL BE UNDER ROOF IN SEALED CONTAINERS.

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

24. THE EROSION CONTROL MEASURES PROPOSED DURING THE CONSTRUCTION PROCESS TO ASSIST IN CONTROL OF THE POLLUTANTS IN STORM WATER THAT WILL OCCUR AFTER CONSTRUCTION OPERATIONS HAVE BEEN COMPLETED ARE: DURING THE CONSTRUCTION PROCESS OF INFRASTRUCTURE PROJECTS THE EROSION CONTROL DEVICES INSTALLED ARE TO CONTROL SEDIMENT FROM ESCAPING FROM THE SITE. WHEN THE PROJECT IS COMPLETED AND BEFORE EROSION CONTROL DEVICES ARE REMOVED A STAND OF GRASS SHALL BE ESTABLISHED TO CONTROL ANY EROSION AND SEDIMENT FROM LEAVING THE SITE.

25. THE RUNOFF COEFFICIENT PRIOR TO CONSTRUCTION ACTIVITIES AT THE SITE IS APPROXIMATELY 0.35 PER THE " MANUAL FOR EROSION AND SEDIMENT CONTROL" APPENDIX A-3, TABLE A-3.1. THE RUNOFF COEFFICIENT POST CONSTRUCTION ACTIVITIES AT THE SITE IS APPROXIMATELY 0.35 PER THE " MANUAL FOR EROSION AND SEDIMENT CONTROL" APPENDIX A-3, TABLE A-3.1.

26. NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE 25 FOOT OR 50 FOOT UNDISTURBED STREAM BUFFERS AS MEASURED FROM THE POINT OF WRESTED VEGETATION WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS.

27. ANY AMENDMENTS / REVISIONS TO THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN WHICH HAVE A SIGNIFICANT EFFECT ON BEST MANAGEMENT PRACTICES WITH A HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL.

28. ALL WASTE AND DEBRIS GENERATED BY THE PROPOSED CONSTRUCTION IS TO BE DISPOSED OF PROPERLY AND IN AN APPROVED AREA. ALL DISTURBED AREAS ARE TO BE STABILIZED WITH PERMANENT VEGETATION AS SOON AS PRACTICAL.

29. NO WASTE WILL BE DISPOSED OF INTO STORM WATER INLETS OR WATERS OF THE STATE. EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.

    WASTE MATERIALS:

    ALL WASTE MATERIALS WILL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL DUMPSTER. THE DUMPSTER WILL MEET ALL SOLID WASTE MANAGEMENT REGULATIONS. ALL TRASH AND INSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN THE DUMPSTER. THE DUMPSTER WILL BE EMPTIED A MINIMUM OF ONCE PER WEEK OR MORE OFTEN IF NECESSARY AND TRASH WILL BE HAULED AS REQUIRED BY LOCAL REGULATIONS. NO CONSTRUCTION WASTE WILL BE BURIED ON SITE.

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

30. THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN MUST BE IN COMPLIANCE WITH WASTE DISPOSAL, SANITARY SEWER, AND SEPTIC TANK REGULATIONS DURING AND AFTER CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED.

    HAZARDOUS WASTE

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

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

    SANITARY WASTES

    A MINIMUM OF ONE PORTABLE SANITARY UNIT WILL BE PROVIDED FOR EVERY TEN (10) WORKERS ON THE SITE. ALL SANITARY WASTE WILL BE COLLECTED FROM THE PORTABLE UNITS A MINIMUM OF ONE TIME PER WEEK BY A LICENSED PORTABLE FACILITY PROVIDER IN COMPLETE COMPLIANCE WITH LOCAL AND STATE REGULATIONS.

    ALL SANITARY WASTE UNITS WILL BE LOCATED IN AN AREA WERE THE LIKELIHOOD OF THE UNIT CONTRIBUTING TO STORM WATER DISCHARGE IS NEGLIGIBLE. ADDITIONAL CONTAINMENT BMP'S MUST BE IMPLEMENTED SUCH AS GRAVEL BAGS OR SPECIALLY DESIGNED PLASTIC SKID CONTAINERS AROUND THE BASE TO PREVENT WASTES FROM CONTRIBUTING TO STORM WATER DISCHARGES. THE LOCATION OF SANITARY WASTE UNITS MUST BE IDENTIFIED ON THE EROSION CONTROL PLAN SHEET BY THE CONTRACTOR ONCE THE LOCATIONS HAVE BEEN DETERMINED.

31. **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.**

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

33. **ANY DISTURBED AREA LEFT EXPOSED SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING AT THE END OF EACH WORKING DAY.**

34. **DISTURBED AREAS LEFT IDLE FOR 5 DAYS, AND NOT TO FINAL GRADE, WILL BE ESTABLISHED WITH TEMPORARY VEGETATION (DS2). ALL AREAS TO FINAL GRADE WILL BE ESTABLISHED WITH PERMANENT VEGETATION IMMEDIATELY UPON COMPLETION.**

35. IN CONCENTRATED FLOW AREAS, ALL SLOPES STEEPER THAN 2.5:1 AND WITH A HEIGHT TEN FEET OR GREATER, AND CUTS AND FILLS WITHIN STREAM BUFFERS, SHALL BE STABILIZED WITH THE APPROPRIATE EROSION CONTROL MATTING OR BLANKET.

36. WHEN HAND PLANTING, MULCH (HAY OR STRAW) SHOULD BE UNIFORMLY SPREAD OVER SEEDED AREA WITHIN 24 HOURS OF SEEDING. IF UNABLE TO ACCOMPLISH, MULCH SHALL BE USED AS A TEMPORARY COVER.

37. MULCH WILL BE USED AS TEMPORARY COVER (DS1). ON SLOPES GREATER THAN 2:1 MULCH, IF USED, SHALL BE ANCHORED.

38. SILT FENCE MUST MEET THE REQUIREMENTS OF "THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA".

39. PRIOR TO CONSTRUCTION ACTIVITIES, THE CONTRACTOR MUST CALL THE CITY OF CANTON AT 770-704-1500 FOR AN EROSION CONTROL INSPECTION.

40. FAILURE TO INSTALL, OPERATE, OR MAINTAIN ALL EROSION CONTROL MEASURES WILL RESULT IN ALL CONSTRUCTION BEING STOPPED ON THE JOB SITE UNTIL SUCH MEASURES ARE CORRECTED TO THE LOCAL, STATE AND FEDERAL EROSION AND SEDIMENT CONTROL REGULATIONS.

41. PRIOR TO COMMENCING LAND DISTURBANCE ACTIVITY THE LIMITS OF LAND DISTURBANCE SHALL BE CLEARING AND ACCURATELY DEMARCATED WITH STAKES, RIBBONS, OR OTHER APPROPRIATE MEANS. THE LOCATION AND EXTENT OF ALL AUTHORIZED LAND DISTURBANCE SHALL OCCUR INSIDE THE APPROVED LIMITS INDICATED ON THE APPROVED PLANS.

42. IMMEDIATELY AFTER THE ESTABLISHMENT OF THE LIMITS OF CLEARING, ALL PERIMETER EROSION CONTROL DEVICES AND STORM WATER MANAGEMENT DEVICES SHALL BE INSTALLED AS ACCESS IS OBTAINED PRIOR TO ANY CONSTRUCTION ACTIVITIES.

43. CONTRACTOR AGREES TO PROVIDE AND MAINTAIN OFF STREET PARKING, AND A CONSTRUCTION STORAGE AREA DURING THE ENTIRE CONSTRUCTION PERIOD. THIS AREA WILL BE LOCATED ADJACENT TO THE LIMITS OF DISTURBANCE FOR THIS PROJECT.

44. THE CONTRACTOR WILL INSTALL EROSION CONTROL MEASURES SUFFICIENT TO CONTROL SEDIMENT DEPOSITS AND EROSION. SEDIMENT CONTROL WILL BE MAINTAINED UNTIL ALL UP GRADIENT GROUND WITHIN THE CONSTRUCTION AREA HAS BEEN COMPLETELY STABILIZED WITH PERMANENT VEGETATION AND ALL ROADS/DRIVEWAYS HAVE BEEN RE-PAVED.

45. CONTRACTOR IS RESPONSIBLE FOR MONITORING DOWNSTREAM CONDITIONS THROUGHOUT THE CONSTRUCTION PERIOD AND CLEARING ANY DEBRIS AND SEDIMENT CAUSED BY CONSTRUCTION.

46. EROSION CONTROL DEVICES SHALL BE INSTALLED IMMEDIATELY AFTER GROUND DISTURBANCE OCCURS. THE LOCATION OF SOME OF THE EROSION CONTROL DEVICES MAY HAVE TO BE ALTERED FROM THAT SHOWN ON THE APPROVED PLANS IF DRAINAGE PATTERNS DURING CONSTRUCTION ARE DIFFERENT FROM THE FINAL PROPOSED DRAINAGE PATTERNS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ACCOMPLISH ALL EROSION CONTROL FOR THE ENTIRE SITE AT ALL STAGES DURING CONSTRUCTION. ANY DIFFICULTY IN CONTROLLING EROSION DURING ANY PHASE OF CONSTRUCTION SHALL BE REPORTED TO THE DESIGN ENGINEER IMMEDIATELY.

47. USE ANIONIC POLYACRYLAMIDE (PAM) AND/OR MULCH TO STABILIZE ALL AREAS LEFT DISTURBED FOR MORE THAN SEVEN (7) CALENDAR DAYS IN ACCORDANCE WITH PART III.D.1 OF THIS PERMIT.

48. CONDUCT TURBIDITY SAMPLING AFTER EVERY RAIN EVENT OF 0.5 INCH OR GREATER WITHIN ANY 24 HOUR PERIOD, RECOGNIZING THE EXCEPTIONS SPECIFIED IN PART IV.D.6.d OF THIS PERMIT.

49. USE ANIONIC PAM UNDER A PASSIVE DOSING METHOD (e.g., FLOCCULANT BLOCKS) WITHIN ALL CONSTRUCTION STORM WATER DITCHES AND STORM DRAINAGES THAT FEED INTO TEMPORARY SEDIMENT BASINS AND RETROFITTED MANAGEMENT BASINS.

50. CERTIFIED PERSONNEL SHALL CONDUCT INSPECTIONS AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF THE STORM THAT IS 0.5 INCHES RAINFALL OR GREATER IN ACCORDANCE WITH PART IV.D.4.a.(3), (a) - (c) OF THIS PERMIT.

51. THE TRAIL PROJECT ENCROACHES INTO APPROXIMATELY 3,335± S.F. OF THE 25 FOOT STATE STREAM BUFFER. APPROXIMATELY 1,318± S.F. OF THE 25 FOOT STATE STREAM BUFFER ENCROACHMENT IS IMPERVIOUS CONCRETE TRAIL OR RETAINING WALL. THE STATE STREAM BUFFER VARIANCE IS REQUIRED DUE TO SEVERAL FACTORS INCLUDING; THE PROXIMITY AND ALIGNMENT OF A TRIBUTARY THAT FEEDS INTO THE ETOWAH RIVER, THE EXISTING WALESKA STREET BRIDGE THAT CROSSES THE ETOWAH RIVER, THE LOCATION OF THE EXISTING GEORGIA POWER EASEMENT AND LARGE TRANSMISSION UTILITY POLES, AND THE NEED FOR GEORGIA POWER TO MAINTAIN THE TRAIL ON GRADE TO CONTINUE TO PROVIDE ACCESS TO MAINTAIN THEIR FACILITIES IN THE FUTURE.

52. ALL BUILDING MATERIALS AND BUILDING PRODUCTS STORED ON SITE SHALL BE COVERED WITH A TARP.

1

I certify under penalty of law that this Plan was prepared after a site visit to the locations described herein by myself or my authorized agent, under my supervision.

William F. Knight

Professional Engineer
GSWCC Level II Certified Design Professional
Certification # 21845, Expires November 4, 2021

GEORGIA
CERTIFICATE NO. 15042
PROFESSIONAL
ENGINEER
WILLIAM F. LIVINGSTON, JR.

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta,Ga 30328
P: 770-933-0280

△	REVISION	DATE
1	ADDENDUM NUMBER TWO	8-4-20

PROJ. NO.: 100065927
DESIGNED BY: W.F.L.
DRAWN BY: M.R.T.
CHECKED BY: R.E.B.
APPROVED BY: W.F.L.
DATE: OCTOBER, 2019
SCALE: NTS

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER REPLACEMENT PHASE II AND ETOWAH RIVER TRAIL EXTENSION

EROSION CONTROL NOTES

SHEET NO.
EN-01
100065927

File Name: C:\USERS\THUR7504\ONEDRIVE CORP\ONEDRIVE - ATKINS LTD\DOCUMENTS\CANTON SEWER\ECNOTES.DWG Tab:ECNPlotted: August 17, 2020 10:51am

(The completed Checklist must be submitted with the ES&PC Plan or the Plan will not be reviewed)

	C-01 & ALL EROSION SHEETS	Y	2 Level II certification number issued by the Commission, signature and seal of the certified design professional. (Signature, seal and Level II number must be on each sheet pertaining to ES&PC Plan or the Plan will not be reviewed)
	C-01	Y	3 The name and phone number of the 24-hour local contact responsible for erosion, sedimentation and pollution controls.
	C-01	Y	4 Provide the name, address, email address, and phone number of primary permittee.
	C-01	Y	5 Note total and disturbed acreage of the project or phase under construction.
	C-01	Y	6 Provide the GPS locations of the beginning and end of the Infrastructure project. Give the Latitude and Longitude in decimal degrees.
	G-01	Y	7 Initial date of the Plan and the dates of any revisions made to the Plan including the entity who requested the revisions.
25	G-01	Y	8 Description of the nature of construction activity.
	G-01	Y	9 Provide vicinity map showing site's relation to surrounding areas. Include designation of specific phase, if necessary.
11	EN-01	Y	10 Identify the project receiving waters and describe all sensitive adjacent areas including streams, lakes, residential areas, wetlands, marshlands, etc. which may be affected.
	C-01 & ALL EROSION SHEETS	Y	11 Design professional's certification statement and signature that the site was visited prior to development of the ES&PC Plan as stated on Part IV page 21 of the permit.
	CMP-01	Y	12 Design professional's certification statement and signature that the permittee's ES&PC Plan provides for an appropriate and comprehensive system of BMPs and sampling to meet permit requirements as stated on Part IV page 20 of the permit. *
	CMP-01	Y	13 Design professional certification statement and signature that the permittee's ES&PC Plan provides for representative sampling as stated on Part IV.D.6.c.(3) page 37 of the permit as applicable. *
	CMP-01	Y	14 Clearly note the statement that "The design professional who prepared the ES&PC Plan is to inspect the installation of the initial sediment storage requirements, perimeter control BMPs, and sediment basins within 7 days after installation." in accordance with Part IV.A.5 page 26 of the permit. *
26	EN-01	Y	15 Clearly note the statement that "Non-exempt activities shall not be conducted within the 25 or 50-foot undisturbed stream buffers as measured from the point of wrested vegetation or within 25-feet of the coastal marshland buffer as measured from the Jurisdictional Determination Line without first acquiring the necessary variances and permits."
51	EN-01	Y	16 Provide a description of any buffer encroachments and indicate whether a buffer variance is required.
27	EN-01	Y	17 Clearly note the statement that "Amendments/revisions to the ES&PC Plan which have a significant effect on BMPs with a hydraulic component must be certified by the design professional." *
29	EN-01	Y	18 Clearly note the statement that "Waste materials shall not be discharged to waters of the State, except as authorized by a Section 404 permit." *

I certify under penalty of law that this Plan was prepared after a site visit to the locations described herein by myself or my authorized agent, under my supervision.

Professional Engineer
GSWCC Level II Certified Design Professional
Certification # 21845, Expires November 4, 2021

GEORGIA REGISTERED No. 15041 PROFESSIONAL ENGINEER WILLIAM F. LIVINGSTON, JR.

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta,Ga 30328
P: 770-933-0280

△	REVISION	DATE

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DRAWN BY: M.R.T.
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CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER REPLACEMENT PHASE II AND ETOWAH RIVER TRAIL EXTENSION

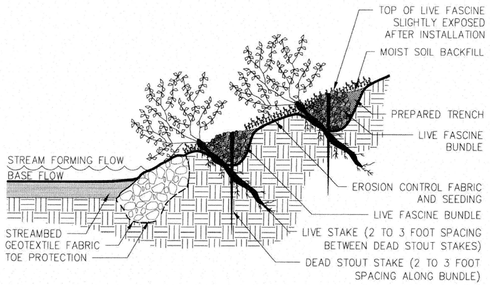
EROSION CONTROL CHECKLIST

SHEET NO.
ECL-01
100065927

File Name: C:\USERS\THUR750A\ONEDRIVE CORP\ONEDRIVE - ATKINS LTD\DOCUMENTS\CANTON SEWER\ECNOTES.DWG Tab:ECL1 Plotted: August 17, 2020 10:53am

FASCINE BUNDLE DETAIL

LIVE FASCINE CROSS-SECTION DETAIL



NOTES:
1. ROOTED/LEAFED CONDITION OF THE LIVING PLANT MATERIAL IS NOT REPRESENTATIVE OF THE TIME OF INSTALLATION.
2. LIVE FASCINES SHALL BE PREPARED FROM FRESHLY CUT DORMANT PLANTS AND INSTALLED WITHIN 8 HOURS OF THE TIME THE MATERIAL IS HARVESTED, UNLESS PROPERLY STORED.
3. LIVE FASCINE SHALL BE OBTAINED FROM SOURCES APPROVED BY ENGINEER.
4. LIVE FASCINES SHALL BE 4"–8" IN DIAMETER WITH MINIMUM 8' LENGTH.
5. BEGINNING AT THE BASE OF THE SLOPE, A TRENCH SHALL BE DUG LARGE ENOUGH TO CONTAIN THE LIVE FASCINES. THE LIVE FASCINES SHALL BE PLACED IN THE TRENCH. WHERE ENDS MEET IN THE TRENCH, THE FASCINES SHALL OVERLAP BY 18".
6. THE TRENCH SHALL BE BACKFILLED WITH MOIST SOIL AND HAND TAMPED. THE TOP OF THE FASCINE SHALL BE SLIGHTLY EXPOSED WHEN THE INSTALLATION IS COMPLETE AS SHOWN ON CROSS SECTION.
7. SEED OR OTHER EROSION CONTROL MATERIAL SHALL BE USED BETWEEN THE FASCINE ROWS, AS SPECIFIED IN THE CONTRACT DOCUMENTS.
8. LIVE FASCINE TRENCHES SHALL BE FROM 3' TO 8' APART, ACCORDING TO SLOPE AND/OR CONTRACT DOCUMENTS.

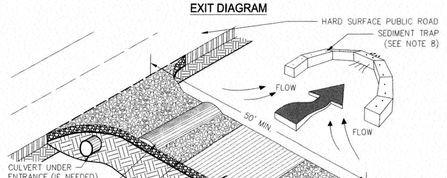
Sb STREAMBANK STABILIZATION

MAINTENANCE
The exit shall be maintained in a condition which will prevent tracking or flow of mud onto public rights-of-way. This may require periodic top dressing with 1.5-3.5 inch stone, as conditions demand, and repair and/or cleanout of any structures to trap sediment. All materials spilled, dropped, washed, or tracked from vehicles or site onto roadways or into storm drains must be removed immediately.

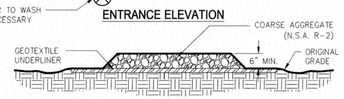
Co

CRUSHED STONE CONSTRUCTION EXIT

EXIT DIAGRAM



ENTRANCE ELEVATION



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

Figure 6-14.1

Channel Stabilization (Ch)

DEFINITION
Improving, constructing or stabilizing an open channel for water conveyance.

PURPOSE
Open channels are constructed or stabilized to be non-erosive, with no sediment deposition and to provide adequate capacity for flood water, drainage, other water management practices, or any combination thereof.

CONDITIONS
This standard applies to the improvement, construction or stabilization of open channels and existing ditches with drainage areas less than one square mile. This standard applies only to channels conveying intermittent flow, not to channels conveying a continuous, live stream.

An adequate outlet for the modified channel length must be available for discharge by gravity flow. Construction or other improvements of the channel should not adversely affect the environmental integrity of the area and must not cause significant erosion upstream or flooding and/or sediment deposition downstream.

DESIGN CRITERIA
Planning
The alignment and design of channels shall give careful consideration to the preservation of valuable fish and wildlife habitat and trees of significant value for wildlife food or shelter or for aesthetic purposes.

Where channel construction will adversely affect significant fish or wildlife habitat, mitigation measures should be included in the plan. Mitigation measures may include pools, riffles, flats, cascades or other similar provisions.

As many trees as possible are to be left inside channel rights-of-way considering the requirements of construction, operation, and maintenance.

Unusually large or attractive trees shall be preserved.

Realignment
The realignment of channels shall be kept to an absolute minimum and should be permitted only to correct an adverse environmental condition.

Channel Capacity
The capacity for open channels shall be determined by procedures applicable to the purposes to be served.

Hydraulic Requirements
Manning's formula shall be used to determine velocities in channels. The "n" values for use in this formula shall be estimated using currently accepted guides along with knowledge and experience regarding the conditions. Acceptable guides can be found in hydrology textbooks.

Channel Cross-Section
The required channel cross-section and grade are determined by the design capacity, the materials in which the channel is to be constructed, and the requirements for maintenance. A minimum depth may be required to provide adequate outlets for subsurface drains and tributary channels.

Channel Stability
All channel construction, improvement and modification shall be in accordance with a design expected to result in a stable channel that can be maintained.

Characteristics of a Stable Channel
1. Ag radation or degradation does not interfere with the function of the channel or affect adjacent areas.
2. The channel banks do not erode to the extent that the channel cross-section is changed appreciably.
3. Excessive sediment bars do not develop.
4. Excessive erosion does not occur around culverts, bridges or elsewhere.
5. Gullies do not form or enlarge due to the entry of uncontrolled surface flow to the channel.
6. The determination of channel stability considers "bankfull" flow. Bankfull flow is defined as flow in the channel that creates a water surface that is at or near normal ground elevation for a significant length of a channel reach. Excessive channel depth created by cutting through high ground should not be considered in determinations of bankfull flow.

CHANNEL LININGS AND STRUCTURAL MEASURES

Where channel velocities exceed safe velocities for vegetated lining due to increased grade or a change in channel cross-section, or where durability of vegetative lining is adversely affected by seasonal changes, channel linings of rock, concrete or other durable material may be needed. Grade stabilization structures may also be needed.

The following categories for flow velocities shall apply when selecting the channel lining:

Category 1 (less than 5 ft/sec*) (Ch-1)

Vegetated Lining
A vegetated lining may be used to stabilize channels with a velocity of less than 5 ft/s temporary erosion control blankets or sod shall be used on all channels and concentrated flow areas to aid in the establishment of the vegetated lining. Refer to specifications **Ds3 - Disturbed Area Stabilization (With Permanent Vegetation), Ds4 - Disturbed Area Stabilization (With Sodding), and Ss – Slope Stabilization.** Hydraulic Erosion Control Products (HECPs) are not intended to be applied in channels, swales or other areas where concentrated flows are anticipated, unless installed in conjunction with Rolled Erosion Control Products (RECPs).

Category 2 (greater than or equal to 5 ft/sec* but less than 10 ft/sec*) (Ch-2)

Turf Reinforcement Matting
Turf Reinforcement Matting (TRM) shall be used, if a vegetated lining is used in channels with velocities greater than or equal to 5 feet/sec but less than 10 ft/sec. TRM is permanent geosynthetic erosion control matting that is used in channels to stabilize the soil while permanent vegetation is rooting, and to provide additional long-term protection.

Velocities in channels when flowing at the bankfull discharge or the 25-year frequency discharge, whichever is the greater, shall be used in determining the appropriate TRM for stabilization of the channels.

Rock Riprap Lining
Rock riprap shall be designed to resist displacement when the channel is flowing at the bankfull discharge or 25-year frequency discharge, whichever is the greater. Rock riprap lining should be used when channel velocities are greater than or equal to 5 ft/sec but less than 10 ft/sec.

Dumped and machine placed riprap should not be installed on slopes steeper than 1:1/2 horizontal to 1 vertical. Rock shall be dense, resistant to the action of air and water, and suitable in all other respects for the purpose intended. Rock shall be installed according to standards specified in Riprap, Appendix C.

A filter blanket layer consisting of an appropriately designed graded filter sand and/or gravel or geotextile material shall be placed between the riprap and base material. The gradation of the filter blanket material shall be designed to create a graded filter between the base material and the riprap. A geotextile can be used as a substitution for a layer of sand in a graded filter or as the filter blanket. Criteria for selecting an appropriate geotextile and guidance for recommended drop heights and stone weights are found in AASHTO M288-96 Section 7.5, Permanent Erosion Control Specifications.

Category 3 (greater than or equal to 10 ft/sec*) (Ch-3)

Concrete Lining
If a channel has velocities high enough to require a concrete lining (when channel velocities exceed 10 ft/sec), methods should be utilized to reduce the velocity of the runoff and reduce erosion at the outlet - a common problem created by the smooth, concrete lining. Refer to specification **St - Storm Drain Outlet Protection** for information regarding energy dispators.

If a concrete lining is chosen, it shall be designed according to currently accepted guides for structural and hydraulic adequacy. It must be designed to carry the required discharge and to withstand the loading imposed by site conditions. A separation geotextile should be placed under concrete linings to prevent undermining in the event of stress cracks due to settlement of the base material. The separation geotextile will keep the base material soils in place and minimize the likelihood of a system failure.

Grade Stabilization Structures
Grade stabilization structures are used to reduce or prevent excessive erosion by reduction of velocities in the watercourse or by providing structures that can withstand and reduce the higher velocities. They may be constructed of concrete, rock, masonry, steel, aluminum, or treated wood.

These structures are constructed where the capability of earth and vegetative measures is exceeded in the safe handling of water at permissible velocities, where excessive grades or overall conditions are encountered or where water is to be lowered structurally from one elevation to another. These structures should generally be planned and installed along with or as a part of other erosion control practices.

The structures shall be designed hydraulically to adequately carry the channel discharge and structurally to withstand loadings imposed by the site conditions. The structure shall meet requirements **of Gr - Grade Stabilization Structure**.

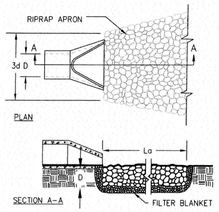
* The equivalent shear stress may also be used to determine the appropriate measure.

TO BE SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN

1. The velocity in the channel, in ft/sec, for when the channel is flowing at the bank-full discharge or 25-year frequency discharge, whichever is the greater.
2. The type of lining to be used to stabilize the channel, i.e. vegetation (Ch-1); indicate type of vegetation and matting or blanket to be used), riprap (Ch-2); indicate average stone size), or concrete (Ch-3).

St RIPRAP OUTLET PROTECTION

PIPE OUTLET TO FLAT AREA -- NO WELL DEFINED CHANNEL



NOTES:
1. Lo IS THE LENGTH OF THE RIPRAP APRON.
2. D = 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6".
3. IN A WELL-DEFINED CHANNEL, EXTEND THE APRON UP THE CHANNEL BANKS TO AN ELEVATION OF 6" ABOVE THE MAXIMUM TAILWATER DEPTH OR TO THE TOP OF THE BANK (WHICHEVER IS LESS).
4. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND THE SOIL FOUNDATION.

PIPE OUTLET TO WELL DEFINED CHANNEL

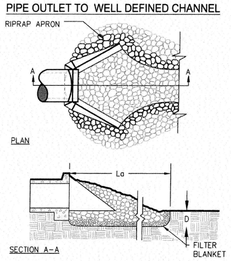
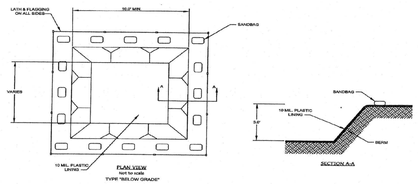


Figure 6-34.3 - Riprap Outlet Protection (Modified From Va SWCC)

CONCRETE WASHDOWN
1. THE CONTRACTOR MUST PROVIDE A DESIGNATED AREA FOR CONCRETE WASHDOWN OF TOOLS, CONCRETE TRUCKS, AND OTHER EQUIPMENT AT THE REAR OF THE VEHICLES. THIS AREA MUST HAVE A CONCRETE WASHOUT FACILITY AND SHALL BE CONSTRUCTED ACCORDING TO THE DETAIL SHOWN BELOW.
2. THE CONCRETE WASHOUT FACILITY SHALL BE LOCATED A MINIMUM OF 50 FEET FROM STORM DRAINS, OPEN DITCHES, OR WATER BODIES.
3. WASH OUT DISCHARGE FROM THE CLEANING OF CONCRETE TRUCKS, TOOLS, AND OTHER EQUIPMENT MUST NOT BE DISCHARGED INTO STORM DRAINS, OPEN DITCHES, STREETS, OR STREAMS.
4. EXCESS CONCRETE SHALL BE DISPOSED OF PROPERLY ON SITE. ALL EXCESS CONCRETE SHALL BE TRANSPORTED OFF-SITE AND DISPOSED OF PROPERLY.
5. IT IS PROHIBITED TO WASH OUT THE MIXING DRUM OF CONCRETE TRUCKS ON-SITE.



I certify under penalty of law that this Plan was prepared after a site visit to the locations described herein by myself or my authorized agent, under my supervision.

William F. Livingston Jr.
Professional Engineer
GSWCC Level II Certified Design Professional
Certification # 21845, Expires November 4, 2021

GEORGIA REGISTERED No. 19044 PROFESSIONAL ENGINEER WILLIAM F. LIVINGSTON, JR. 8/17/2020

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, Ga 30328
P: 770-933-0280

	REVISION	DATE
1	ADDED SHEET PER CHEROKEE COUNTY PLAN REVIEW	8-4-20

PROJ. NO.: 100065927
DESIGNED BY: W.F.L.
DRAWN BY: M.R.T.
CHECKED BY: R.E.B.
APPROVED BY: W.F.L.
DATE: OCTOBER, 2019
SCALE: NTS

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER REPLACEMENT PHASE II AND ETOWAH RIVER TRAIL EXTENSION

EROSION CONTROL DETAILS

SHEET NO.
D-07
100065927

File Name: C:\USERS\THUR7504\ONEDRIVE CORP\ONEDRIVE - ATKINS LTD\DOCUMENTS\CANTON SEWER\DETAILS.DWG|Tab:D-07|Plotted: August 17, 2020 10:57am

DESIGN PROFESSIONAL 7-DAY VISIT CERTIFICATION

DATE OF INSPECTION_____

I certify the site was in compliance with the ES&PC Plan on the date of inspection.

_____
GSWCC Level II Design Professional Certification # 21852

Inspection revealed the following discrepancies from the ES&PC Plan:

_____

_____

_____

These discrepancies must be addressed immediately and a re-inspection scheduled.
Work shall not proceed on the site until design Professional Certification is obtained.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure certified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

_____
WILLIAM F. LIVINGSTON, JR., P.E.
GSWCC LEVEL II

I certify that the permittee's Erosion, Sedimentation and Pollution Control Plan provides for an appropriate and comprehensive system of best management practices required by the Georgia Water Quality Control Act and the document "Manual for Erosion and Sediment Control in Georgia" (Manual) published by the State Soil and Water Conservation Commission as of January 1 of the year in which the land-disturbing activity was permitted, provides for the sampling of the receiving water(s) or the sampling of the storm water outfalls and that the designed system of best management practices and sampling methods is expected to meet the requirements contained in the General NPDES Permit No. Gar 100002.

_____
William F. Livingston, Jr. , Professional Engineer
GSWCC LEVEL II Certified Design Professional Certification # 21845

I CERTIFY UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED AFTER A SITE VISIT TO THE LOCATION DESCRIBED HERE-IN BY MYSELF OR MY AUTHORIZED AGENT UNDER MY DIRECT SUPERVISION.

_____
William F. Livingston, Jr. , Professional Engineer
GSWCC LEVEL II Certified Design Professional Certification # 21845

For monitoring outfalls, the disturbed area associated with this project is 8.06 acres. The receiving streams are not trout streams. The surface water drainage areas for the outfalls to be monitored is 527.34 square miles. Appendix B of the NPDES GAR 100002 Permit sets the approved NTU value at 750 NTUs for this outfall.

COMPREHENSIVE MONITORING PLAN NOTES:

1. *A Comprehensive Monitoring Plan (CMP) must be implemented as part of the project's Erosion, Sedimentation and Pollution Control Plan in compliance with the EPD's General Permit No. 100002 (NPDES) prior to conducting any construction activity. The contractor shall keep a copy of the Erosion, Sedimentation, and Pollution Control Plan on site at all times from project beginning until final stabilization is achieved.*

2. *This CMP has been prepared by a Design Professional in accordance with the Permit.*

3. *For linear construction, the monitoring may be phased so that a monitor is always downstream of active construction. Monitoring of outfalls (drainage ditches) and streams is not required for inactive phases or for areas that have undergone final stabilization and all storm water discharges associated with construction activity from that phase have ceased.*

4. *MONITORING SITES*
For the monitoring of this linear infrastructure project, two monitoring sites have been selected and are shown on the map on Sheet CMP-02 of these plans. Both monitors are to be installed in the Etowah River.

a. Monitor A - This monitoring point shall be located in the Etowah River, 100 feet upstream of Canton Mill Drive. This monitor shall measure turbidity levels to compare with the levels recorded at Monitor B. No sanitary sewer construction will be upstream of Monitor A while the measurements at Monitor A are being compared with the readings at Monitor B. Storm water from approximately 294,750 acres of basin flows to this point.

b. Monitor B - This monitoring point shall be located in the Etowah River, downstream of the intersection of the Etowah River and Canton Creek. This monitor should be located approximately 500 feet downstream of Marietta Highway State Route 140 so that all of the storm water leaving the sanitary sewer construction enters the Etowah River upstream of the monitor, and shall monitor turbidity levels to compare with the levels recorded at Monitor A. This monitoring site will collect storm water flows from the sanitary sewer construction between Stations 0+00 and 81+71. The area flowing to this location includes approximately 21.53 acres of disturbed area and a total acreage of approximately 337,500 acres. The allowable increase in the NTU value for this stream between Monitors A and B is 25 NTUs. Existing land use is residential, commercial, and woodlands.

5. *COMPLIANCE WITH THE EPD'S NPDES GAR 100002 PERMIT*
This project is expected to disturb approximately 21.53 acres of land. This in turn requires the Contractor and Owner to comply with the NPDES GAR 100002 Permit. A copy of the permit is included in the bid documents. This contract has been set up to have the Design Professional prepare the Erosion, Sedimentation and Pollution Control Plan (the Plan). The Contractor's environmental engineer will prepare and submit the NOI and the NOT to the EPD and the local issuing authority as the permit requires. If the site exceeds 50 acres, the Plan will be submitted with the NOI. The Contractor has to sign the NOI and the NOT as the primary permittee. The Contractor will be responsible for the installation and maintenance of the BMPs, daily inspections as required by the Permit and daily rainfall measurements as stated in the Erosion Control Notes shown on sheet EN-01. The Contractor will employ the services of an environmental engineer approved by the Owner to be responsible for the implementation of the Comprehensive Monitoring Plan (CMP), the storm water flow monitoring, the 14-day and monthly inspections of the BMPs, collection of records, paying all required fees, and the required report preparation and submittal. Reports are required for every month during which samples are taken in accordance with this permit. As noted above, certain parts of the compliance have been assigned to the Contractor and certain parts have been assigned to the sub-contracted environmental engineer. The bid proposal has been set up to pay the contractor on a unit price basis per month for all of the monitoring,inspecting, filing of notices and reporting required by the GAR 100002. Since the design, installation and maintenance of the BMPs presents a complete defense against actions by the EPD for violations, and the Contractor is responsible for the installation and maintenance of the BMPs, the Contractor shall be responsible for any fines imposed by the EPD against the project, and the Owner shall be held blameless. The environmental engineer is also responsible for suggesting revisions and improvements to the BMPs. The Design Professional shall inspect the installation of the BMPs within seven days after construction activities begin as required by the permit.

6. *The contractor shall submit copies of all inspection and monitoring reports to the owner and to the engineer on a monthly basis and to the EPD when the permit requires. Failure to comply with this requirement shall result in the owner holding payments due to the contractor.*

7. *COLLECTION AND ANALYSIS OF STORM WATER SAMPLES*

All sampling shall be collected by "grab samples" and the analysis of these samples must be conducted in accordance with the methodology and test procedures established by 40 CFR Part 136, entitled "NPDES Storm Water Sampling Guidance Document, EPA 833-B-92-001" and other guidance documents that may be prepared by the EPD.
Sample containers should be labeled prior to collecting the samples.
Samples should be well mixed before transferring to a secondary container.
Large mouth, well cleaned and rinsed glass or plastic jars should be used for collecting samples. The jar should be cleaned thoroughly to avoid contamination.
Manual or automatic sampling may be utilized. (If automatic samplers are used, use only those samplers approved for use by the Georgia EPD.)
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 automated analysis is utilized. Dilution of samples is not required. Samples may be analyzed directly with a properly calibrated turbidimeter. Samples are not required to be cooled.
Sampling and analysis of the receiving waters or outfalls beyond the minimum frequency required by this permit must be reported to the EPD as specified in Section IV.E of the permit.
Samples taken for the purpose of compliance with this permit must be representative of the monitored activity and representative of the water quality of the receiving waters and/or outfalls using the following guidelines, detailed in section IV.D.6.c:

a. The upstream sample for each receiving water must be taken immediately upstream of the confluence of the first storm water discharge from the construction project, but downstream of any other storm water discharges not associated with the construction of this project.
b. The downstream sample for each receiving water must be taken downstream of the confluence of the last storm water discharge from the construction project, but upstream of any other storm water discharges not associated with the construction of this project.
c. Ideally, the samples should be taken from the horizontal and vertical center of the receiving water(s) or the storm water outfall channel(s).
d. Care should be taken to avoid stirring the bottom sediments in the receiving water or outfall channel.
e. The sampling container should be held so that the opening faces upstream.
f. The samples should be kept free from floating debris.

8. PHASING OF SAMPLING AREAS

If the Contractor chooses to use automated sample collection equipment, the Contractor's approved environmental engineer shall provide a minimum of six sampling assemblies to work in a sequence so as not to delay the construction of the project. In a typical area, the Contractor shall arrange to have the sample collectors installed to monitor the area that was just seeded, the area where work is currently ongoing, and the next area to be worked in. Please note that no work can occur in a drainage basin until a monitor is operational in that basin. Please also note that areas where the work is complete and the area has been seeded must be monitored until the area has reached final stabilization. For these purposes, final stabilization is defined as meaning that at least 70% of the soil surface is uniformly covered in permanent vegetation or equivalent permanent stabilization measures (such as rip-rap, permanent mulches or geo-textiles). Permanent vegetation shall consist of: planted trees, shrubs, perennial vines, a crop of perennial vegetation appropriate for the time of year and region, or a crop of annual vegetation and a seeding of target crop perennials appropriate for the region such that within the growing season a 70% coverage by perennial vegetation shall be achieved. Once an area has achieved final stabilization, as determined by the Engineer, the monitor can be removed and relocated to a site in advance of the construction.

9. SAMPLING FREQUENCY

The Contractor's environmental engineer must sample at least once for each rainfall event described below. For a qualifying event, samples must be taken within 45 minutes of:

i. the accumulation of the minimum amount of rainfall, if the storm water discharge to a monitored receiving water or outfall has begun at or prior to the accumulation, or
ii. the beginning of any storm water discharge to a monitored receiving water or outfall, if the discharge begins after the accumulation of the minimum amount of rainfall.

However, where manual and automatic sampling are impossible, as defined in the permit, or are beyond the Contractor's control, the Contractor shall take the sample as soon as possible, but in no case more than 12 hours after the beginning of the storm water discharge.

Sampling by the Contractor's environmental engineer shall occur for the following events:

a. For each area of the site that discharges to a receiving stream, the first rain event that reaches or exceeds 0.5 inch and allows for monitoring during normal business hours* (Monday thru Friday, 8:00 AM to 5:00 PM and Saturday 8:00 AM to 5:00 PM, excluding all non-working Federal holidays, when construction activity is being conducted by the Primary permittee) that occurs after all clearing and grubbing operations have been completed in the drainage area of the location selected;
b. In addition to (a) above, for each area of the site that discharges to a receiving stream, the first rain event that reaches or exceeds 0.5 inch and allows for monitoring during normal business hours* that occurs either 90 days after the first sampling event or after all mass grading operations have been completed in the drainage area of the location selected , whichever comes first;
c. At the time of sampling performed pursuant to (a) and (b) above, if BMPs are found to be properly designed, installed and maintained, no further action is required. If BMPs in any area of the site that discharges to a receiving stream are not properly designed, installed and maintained, corrective action shall be defined and implemented within 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.

*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 monitoring at any time of the day or week.

10. INSPECTIONS AND RAINFALL MEASUREMENTS

(1) Each day when any type of construction activity has taken place at a primary permittee's site, certified personnel provided by the primary permittee shall inspect: (a) all areas at the primary permittee's site where petroleum products are stored, used, or handled for spills and leaks from vehicles and equipment and (b) all locations at the primary permittee's site where vehicles enter or exit the site for evidence of off-site sediment tracking. These inspections must be conducted until a Notice of Termination is submitted.

(2) Measure and record rainfall within disturbed areas of the site that have not met final stabilization once every 24 hours except any non-working Saturday, non-working Sunday, and non-working Federal holiday. The data collected for the purpose of compliance with this permit shall be representative of the monitored activity. Measurement of rainfall may be suspended if all areas of the site have undergone final stabilization or established a crop of annual vegetation and a seeding of target perennials appropriate for the region. 1

(3) Certified personnel (provided by the primary permittee) shall inspect the following at least once every fourteen (14) calendar days and within 24 hours of the end of a storm that is 0.5 inches rainfall or greater (unless such storm ends after 5:00 PM on any Friday or on any non-working Saturday, non-working Sunday or any non-working Federal holiday in which case the inspection shall be completed by the end of the next business day and/or working day, whichever occurs first): (a) disturbed areas of the primary permittee's construction site; (b) areas used by the primary permittee for storage of materials that are exposed to precipitation; and (c) structural control measures. Erosion and sediment control measures identified in the Plan applicable 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 water(s). For areas of a site that have undergone final stabilization or established a crop of annual vegetation and a seeding of target perennials appropriate for the region, the permittee must comply with Part IV.D.4.a.(4). These inspections must be conducted until a Notice of Termination is submitted.

(4) Certified personnel (provided by the primary permittee) shall inspect at least once per month during the term of this permit (i.e., until a Notice of Termination is submitted to EPD) the areas of the site that have undergone final stabilization or established a crop of annual vegetation and a seeding of target perennials appropriate for the region. These areas shall be inspected for evidence of, or the potential for, pollutants entering the drainage system and the receiving water(s). Erosion and sediment control measures identified in the Plan shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impact to receiving water(s).

(5) Based on the results of each inspection, the site description and the pollution prevention and control measures identified in the Erosion, Sedimentation and Pollution Control Plan, the Plan shall be revised not later than seven (7) calendar days following each inspection. Implementation of such changes shall be made as soon as practical but in no case later than seven (7) calendar days following each inspection.

(6) A report of each inspection that includes the name(s) of certified personnel making each inspection, the date(s) of each inspection, construction phase (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 readily 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 statement that the best management practices are in compliance with the Erosion, Sedimentation and Pollution Control Plan. The report shall be signed in accordance with Part V.G.2 of this permit.

11. REPORTING

1. The contractor is required to submit the sampling results to the EPD at the address shown in Part II.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 stormwater discharge(s) or the receiving water(s) beyond the minimum frequency stated in this permit must be reported in a similar manner to the EPD. 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 in accordance with Part VI. 1

2. The contractor shall be familiar with and adhere to all requirements included in this EPD NPDES Permit GAR 100002 with regards to inspections, monitoring and reporting. The contractor shall also submit copies of all reports and monitoring results to the owner and the design professional.

3. All monitoring results shall include the following information:

a. The date, exact place and time of sampling or measurements.
b. The name(s) of the individual(s) who performed the sampling and measurements.
c. The date(s) analyses were performed.
d. The time(s) analyses were initiated.
e. The names of the individuals who performed the analyses.
f. References and written procedures, when available, for the analytical techniques or methods used; A quality control program must be included in the written procedures.
g. The results of such analyses, including the bench sheets, instrument readouts, computer disks or tapes, etc., used to determine these results;
h. Results which exceed 1000 NTU shall be reported as "exceeds 1000 NTU".
i. The summary report detailing the findings of the daily, 14-day, and monthly inspections of the BMPs, including the log of the erosion control measures and rainfall.

12. RETENTION OF RECORDS

1. The primary permittee (contractor) 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 (NOIs, NOTs, etc.);
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 monitoring information, results and reports required by this permit;
e. A copy of all inspection reports generated in accordance with Part IV.D.4.a of this permit;
f. A copy of all violation summaries and violation summary reports generated in accordance with Part III.D of this permit; and
g. Daily rainfall information collected in accordance with Part IV.D.4.a.(1) of this permit.

2. Copies of all Notices of Intent, Notices of Termination, reports, plans, monitoring reports, monitoring information, including all calibration and maintenance reports and all original strip chart recordings for continuous monitoring instrumentation, 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 contractor and owner 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 contractor's and owner's primary places of business or at a designated 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 contractor.

I certify under penalty of law that this Plan was prepared after a site visit to the locations described herein by myself or my authorized agent, under my supervision.

_____
Professional Engineer
GSWCC Level II Certified Design Professional
Certification # 21845, Expires November 4, 2021

GEORGIA REGISTERED No. 25044 PROFESSIONAL ENGINEER WILLIAM F. LIVINGSTON, JR.

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta,Ga 30328
P: 770-933-0280

	REVISION	DATE
1	ADDENDUM NUMBER TWO	8-4-20

PROJ. NO.: 100065927
DESIGNED BY: W.F.L.
DRAWN BY: M.R.T.
CHECKED BY: R.E.B.
APPROVED BY: W.F.L.
DATE: OCTOBER, 2019
SCALE: NTS

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER REPLACEMENT PHASE II AND ETOWAH RIVER TRAIL EXTENSION

COMPREHENSIVE MONITORING PLAN

SHEET NO.
CMP-01
100065927

File Name: C:\USERS\THUR7504\ONEDRIVE CORP\ONEDRIVE - ATKINS LTD\DOCUMENTS\CANTON SEWER\CMP.DWG[Tab:cmp01]Plotted: August 17, 2020 11:05am

GENERAL NOTES:

1. ALL CONSTRUCTION IS TO BE IN ACCORDANCE WITH GDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION OF TRANSPORTATION SYSTEMS, 2013 EDITION.
2. CONTRACTOR SHALL NOTIFY CALL-BEFORE-YOU-DIG PHONE # 811 AND HAVE UTILITY LOCATOR SERVICE LOCATE ALL UTILITIES IN PROJECT AREA PRIOR TO BEGINNING CONSTRUCTION.
3. THE EXISTING UTILITY LINES SHOWN ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LOCATIONS PRIOR TO ANY CONSTRUCTION. DAMAGE TO EXISTING UTILITY LINES RESULTING FROM CONSTRUCTION ACTIVITIES SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR AND PAY FOR ALL RELOCATION AND/OR RECONSTRUCTION OF EXISTING UTILITIES NECESSARY TO PERFORM THE WORK AS SHOWN ON THE PLANS.
5. THE CONTRACTOR WILL BE RESPONSIBLE FOR PREPARING THE MEASUREMENTS TO MANAGE TRAFFIC DURING CONSTRUCTION ACTIVITIES. THE PLAN SHALL CONFORM TO THE 2009 MANUAL OF UNIFORM TRAFFIC CONTROL DEVICE AND GDOT SPECIFICATIONS ISO. ANY LANE CLOSURES MUST BE APPROVED BY AND COORDINATED WITH THE CITY PUBLIC WORKS DEPARTMENT. LANE CLOSURES WILL REQUIRE PROPER LANE TAPERS AND ADVANCE WARNINGS PER GEORGIA DOT STANDARDS.
6. CONTRACTOR SHALL TO PROVIDE TEMPORARY WALKS, TEMPORARY SIGNS, AND/OR OTHER MEANS AS NECESSARY TO INSURE SAFETY AND UNINTERRUPTED OF FLOW OF PEDESTRIAN AND VEHICULAR TRAFFIC AT ALL TIMES DURING CONSTRUCTION.
7. SIGNAL, MARKING AND TRAFFIC CONTROL SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
8. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO OR CONCURRENT WITH LAND DISTURBANCE ACTIVITIES AND SHALL BE MAINTAINED AT ALL TIMES. ADDITIONAL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED IF DEEMED NECESSARY BY ON SITE INSPECTION OR AS DIRECTED BY THE ENGINEER.
9. HORIZONTAL CONTROL IS BASED UPON GEORGIA STATE PLANE COORDINATE SYSTEM. SEE PLANS FOR LOCATIONS OF MONUMENTS USED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION LAYOUT. REFER TO SECTION 149 OF THE STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS. NO SEPARATE PAYMENT WILL BE MADE FOR ANY COST INCURRED TO COMPLY WITH THIS REQUIREMENT.
10. ALL SIDEWALKS AND CURB RAMPS WILL BE CONSTRUCTED TO MEET ALL REQUIREMENTS OF THE UNIFORM FEDERAL ACCESSIBILITY STANDARDS (UFAS) AND "AMERICAN DISABILITY ACT OF 1991". SEE GDOT CONSTRUCTION DETAIL CURB CUT (WHEELCHAIR) RAMPS. RAMPS SHALL BE CONSTRUCTED AT ALL SIDE STREETS THAT INTERSECT THE SIDEWALK CONSTRUCTION.
11. ALL EXISTING MANHOLES, VALVES, WATER METERS, FIRE HYDRANTS, SURVEY POINTS/BENCH MARKS ETC., AND OTHER UTILITIES LOCATED WITHIN THE AREAS WHERE THE SIDEWALK/TRAIL IS TO BE CONSTRUCTED SHALL BE ADJUSTED TO GRADE OR RELOCATED. THE TOPS OF THESE OBJECTS MUST REMAIN ACCESSIBLE AND FLUSH WITH THE TOP OF THE SIDEWALK OR FINISHED GRADE. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING ADJUSTMENTS AND RELOCATIONS WITH UTILITY OWNERS.
12. ALL DRAINAGE STRUCTURES AND PIPES SHALL BE MAINTAINED UNLESS OTHERWISE NOTED.
13. CONTRACTOR IS TO PROVIDE SHOP DRAWINGS FOR ALL PROPOSED COMPONENTS INCLUDING ALL SITE FURNISHINGS, RAILINGS, BENCHES, WASTE RECEPTACLES, BIKE RACKS, BIKE REPAIR STATION, AND SIGNS FOR APPROVAL BY LANDSCAPE ARCHITECT.
14. A NOTICE OF INTENT (NOI) IS REQUIRED FOR THIS PROJECT.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MATERIAL TESTING IN ACCORDANCE WITH THE GDOT SAMPLING, TESTING, AND INSPECTION GUIDE.

LAYOUT NOTES:

1. ALL DIMENSIONS ARE PARALLEL OR PERPENDICULAR TO THE ELEMENTS FROM WHICH THEY ARE MEASURED, UNLESS OTHERWISE INDICATED ON DRAWINGS.
2. ANY DEVIATION FROM THESE DRAWINGS TO BE MADE IN THE FIELD DURING CONSTRUCTION SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION AND THEN RECORDED ON "AS BUILT" DRAWINGS.
3. REPORT ALL THE FIELD LAYOUT DISCREPANCIES IMMEDIATELY TO LANDSCAPE ARCHITECT. CONTRACTOR TO VERIFY THAT ALL DIMENSIONS WORK IN THE FIELD PRIOR TO CONSTRUCTION. CONTRACTOR TO STAKE IN CENTERLINE OF SIGNS, FENCING, AND WALLS TO BE APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.
4. DO NOT SCALE FROM DRAWINGS.
5. ALL PAVED AREAS ARE TO BE CONSTRUCTED IN SUCH A MANNER AS TO PREVENT PONDING OF WATER AND ALLOW FOR POSITIVE DRAINAGE. SIDEWALKS AND TRAIL SHALL BE CONSTRUCTED IN SUCH A MANNER THAT PROVIDES POSITIVE DRAINAGE. MAXIMUM SLOPE ON SIDEWALKS AND TRAIL SHALL BE 2% UNLESS OTHERWISE NOTED ON DRAWINGS, AND SHALL SLOPE AWAY FROM BUILDINGS.
6. AT LOCATIONS WHERE NEW PAVEMENT OR NEW CURB IS TO BE PLACED ADJACENT TO EXISTING PAVEMENT WITHOUT AN OVERLAY, A JOINT SHALL BE SAWED ON A LINE ESTABLISHED BY THE ENGINEER TO ENSURE PAVEMENT REMOVAL TO A NEAT LINE. A NEAT EDGE WILL BE INCLUDED IN GRADING COMPLETE - LUMP SUM.

IF YOU DIG GEORGIA...
CALL US FIRST!
Know what's **below**.
Call before you dig.
UTILITIES PROTECTION CENTER

GRADING AND DRAINAGE NOTES:

1. ALL STRUCTURAL FILL AREAS TO BE CONSTRUCTED IN ACCORDANCE WITH GDOT STANDARDS.
2. IF EXCAVATED MATERIAL IS UNSUITABLE FOR COMPACTION, AS DETERMINED BY THE SOILS TESTING LABORATORY. THE CONTRACTOR SHALL FURNISH SUITABLE BORROW.
3. CUT OR FILL, SHALL BE GRADED AS NOTED, OR INDICATED IN TYPICAL SECTIONS, PROFILES, AND CROSS SECTIONS.
4. THE CONTRACTOR SHALL ENSURE THAT POSITIVE AND ADEQUATE DRAINAGE IS MAINTAINED AT ALL TIMES WITHIN THE PROJECT LIMITS. THIS MAY INCLUDE, BUT NOT LIMITED TO PLACEMENT OR RECONSTRUCTION OF EXISTING DRAINAGE STRUCTURES THAT HAVE BEEN DAMAGED OR REMOVED, OR RE-GRADING AS REQUIRED BY THE ENGINEER. EXCEPT FOR THOSE DRAINAGE ITEMS SHOWN AT SPECIFIC LOCATIONS IN THE PLANS AND HAVING SPECIFIC PAY ITEMS IN THE DETAILED ESTIMATE. NO SEPARATE PAYMENT WILL BE MADE FOR ANY COSTS INCURRED TO COMPLY WITH THIS REQUIREMENT.
5. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL SURFACE AND GROUNDWATER CONTROL MEASURES.
6. GRADES NOT OTHERWISE INDICATED ON THE PLANS SHALL BE UNIFORM LEVELS OR SLOPES BETWEEN POINTS WHERE ELEVATIONS ARE GIVEN, ABRUPT CHANGES IN SLOPES SHALL BE WELL ROUNDED, MAXIMUM SLOPES SHALL COMPLY WITH ADA GUIDELINES.
7. ALL SILT BARRIERS SHALL BE PLACED AS ACCESS IS OBTAINED DURING CLEARING. NO GRADING SHALL BE DONE UNTIL THE TREE PROTECTION AND SILT BARRIERS ARE IN PLACE.
8. EXISTING TREES SHALL BE PROTECTED FROM CONSTRUCTION ACTIVITIES. CARE SHALL BE TAKEN IN ALL GRADING ACTIVITIES TO REMAIN OUTSIDE THE DRIP LINES OF EXISTING TREES. ALL TREE PROTECTION/SILT FENCING TO BE INSPECTED DAILY AND REPLACED OR REPAIRED AS NEEDED.
9. ALL SOILS UNDERCUTTING, OVER EXCAVATION AND UNDERDRAIN INSTALLATION SHALL BE DETERMINED AND DIRECTED BY THE SOILS ENGINEER.
10. EXISTING DRAINAGE STRUCTURES THAT ARE AFFECTED WITH THE PROJECT ARE TO BE INSPECTED AND REPAIRED AS NEEDED. EXISTING PIPES TO REMAIN ARE TO BE CLEANED OUT OF ALL SILT AND DEBRIS. PRICE IS TO BE INCLUDED IN "GRADING COMPLETE".
11. THE CONTOUR INTERVAL IS ONE FOOT OR AS SHOWN.
12. THE ELEVATION OF MANHOLE/INLET TOPS ARE TO BE AT THE FINISHED ELEVATION OF THE PAVEMENT. THE DEFINITION OF THE TYPE OF TOP IS AS LISTED:
    WEIR INLET - THROAT - THE ELEVATION OF THE POINT AT WHICH WATER PASSES INTO THE BOX.
    DROP INLET - GRATE - THE TOP MOST PART OF THE FRAME AND GRATE.
    CATCH BASIN - THROAT - THE ELEVATION OF THE POINT AT WHICH WATER PASSES INTO THE BOX.
    MANHOLE - TOP - THE TOP MOST PART OF THE RIM AND COVER CASTINGS.
13. THE CONTRACTOR SHALL PROVIDE TO THE CITY RECORD DRAWINGS OF AS-BUILT CONDITIONS AT THE COMPLETION OF THIS PROJECT, INCLUDING DRAINAGE INVERTS AND ADJUSTED STORM PROFILES.
14. UTILITY TRENCHES SHALL BE DEWATERED AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER AND THE SPECIFICATIONS, APPROVED MEASURES SHALL BE TAKEN TO INSURE THE PROPER INSTALLATION OF THE PIPING SYSTEM. THE CONTRACTOR SHALL HOLD THE OWNER AND THE ENGINEER HARMLESS FOR ADDITIONAL COSTS FOR DE-WATERING AND BACKFILL LABOR AND MATERIALS. CONTRACTOR IS TO PROVIDE GEOTECHNICAL SERVICES.
15. EXISTING CONTOUR AND SURVEY INFORMATION IS FOR REFERENCE USE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING UNDERGROUND UTILITY LOCATIONS PRIOR TO CONSTRUCTION AND DEMOLITION.
16. AS PART OF GRADING COMPLETE, THE CONTRACTOR IS RESPONSIBLE TO BRING ON SITE ALL NECESSARY FILL MATERIAL TO CONSTRUCT THE PROJECT. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR REMOVAL OF EXCESS MATERIAL OFF SITE.

PROJECT SPECIFIC NOTES:

1. THIS PROJECT IS LOCATED 100 PERCENT WITHIN CITY OF CANTON, CHEROKEE COUNTY.
2. ALL COSTS FOR EARTHWORK AND GRADING SHALL BE PAID FOR AT THE PRICE BID FOR GRADING COMPLETE - LUMP SUM. THE CONTRACTOR WILL BE RESPONSIBLE FOR FURNISHING SUITABLE BORROW MATERIAL FOR THIS PROJECT, AND DISPOSE OF ANY UNSUITABLE OR WASTE MATERIAL. ALL FILL AREAS MUST BE COMPACTED TO MINIMUM 95% STANDARD PROCTOR ALL AREAS WITHIN THE PROJECT LIMITS TO BE FINE GRADED AS OUTLINED IN SPECIFICATIONS. THE COSTS FOR AND SAWCUT OF PAVEMENT (ASPHALT AND CONCRETE) TO INCLUDED IN THE BID PRICE FOR 'GRADING COMPLETE'.
3. UTILITY WORK COORDINATION WILL BE REQUIRED AS A PART OF THIS CONTRACT. THE CONTRACTOR IS RESPONSIBLE FOR USING THE CALL-BEFORE-YOU-DIG PHONE # 811 PRIOR TO THE START OF WORK FOR THE PURPOSE OF COORDINATING THE MARKING OF UNDERGROUND UTILITIES.
4. CLEARING AND GRUBBING ON THIS PROJECT IS LIMITED TO THE ACTUAL CONSTRUCTION LIMITS. NO CLEARING AND GRUBBING BEYOND CONSTRUCTION LIMITS UNLESS DIRECTED BY THE CITY ENGINEER. STRUCTURES, TREES, SHRUBS, AND OTHER LANDSCAPE PLANT MATERIAL THAT FALL WITHIN THE RIGHT-OF-WAY AND EASEMENT LIMITS, BUT OUTSIDE THE LIMITS OF CONSTRUCTION SHALL NOT BE DISTURBED.
5. FIELD CHANGES DURING CONSTRUCTION SHALL BE SUBMITTED TO THE CITY ENGINEER FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION COMMENCING.
6. EROSION CONTROL DRAWINGS INCLUDED IN THIS SET ARE FOR ALL PHASES OF THE PROJECT. EROSION CONTROL BMP'S (I.E. SILT FENCE, INLET SEDIMENT TRAPS, ETC.) MAY BE LEFT IN PLACE AFTER COMPLETION OF THE PRIOR PHASE OF WORK.. THE CONTRACTOR SHALL PERFORM A SITE INSPECTION TO DETERMINE THE LOCATION AND CONDITION OF REMAINING BMP'S. THE CONTRACTOR SHALL MAINTAIN ALL REQUIRED EXITING BMP'S AND INSTALL ANY ADDITIONAL BMP'S REQUIRED TO COMPLETE THE PROPOSED SCOPE OF WORK.EROSION CONTROL MEASURES NOT REQUIRED MAY BE DEDUCTED FROM THE CONTRACT BY THE CITY OR LANDSCAPE ARCHITECT.
7. THE CONTRACTOR SHALL PROVIDE TO THE CITY RECORD DRAWINGS OF AS-BUILT CONDITIONS FOR ALL PROPOSED SITE IMPROVEMENTS INCLUDED AS PART OF THIS BID PHASE. THESE INCLUDE BUT ARE NOT LIMITED TO: STORM STRUCTURES (TOP AND INVERTS),AND UTILITIES.
8. ANY AND ALL IRRIGATION HEADS, BACK FLOW PREVENTERS, VALVES, AND PIPES IMPACTED BY CONSTRUCTION OF THE WALK OR WALLS SHALL BE COORDINATED AND RELOCATED BY THE CONTRACTOR AND WILL BE PART OF THE WORK IN THIS PROJECT. THIS WORK SHALL BE INCLUDED IN THE BID PRICE FOR 'GRADING COMPLETE'.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL SITE DEBRIS (LANDSCAPE PLANTING, EXISTING TREES, ROCKS, ETC) TO CONSTRUCT PROPOSED TRAIL.
10. THE COST FOR REMOVAL AND DISPOSAL OF EXISTING CONCRETE, EXISTING ASPHALT PAVEMENT, EXISTING GRAVEL, TREE AND STUMP REMOVAL, EXISTING CONSTRUCTION DEBRIS ITEMS, AND GRADING ACTIVITIES SHALL BE INCLUDED IN THE BID PRICE FOR GRADING COMPLETE - LUMP SUM.
11. GEOTECHNICAL ENGINEER - THE CONTRACTOR SHALL PREPARED FOR EACH BRIDGE, BOARDWALK, FOUNDATION AND WALL LOCATION, A BRIDGE FOUNDATION INVESTIGATION (BFI) AND WALL FOUNDATION INVESTIGATION (WFI) REPORT IN ACCORDANCE WITH GDOT REQUIREMENTS FOR REVIEW AND APPROVAL. THE GEOTECHNICAL ENGINEER PREPARING THE REPORT SHALL BE GEORGIA DEPARTMENT OF TRANSPORTATION, (GDOT) PREQUALIFIED GEOTECHNICAL ENGINEER. THEY ARE TO FOLLOW THE FOUNDATION INVESTIGATION (DRILLINGS AND SAMPLING) IN ACCORDANCE CRITERIA ESTABLISHED BY GDOT AND PROVIDE GEOTECHNICAL RECOMMENDATIONS FOR FUTURE STRUCTURAL DESIGN OF PROJECT FEATURES. THE GEOTECHNICAL ENGINEER IN CHARGE OF THE PROJECT IS THE PROFESSIONAL GEOTECHNICAL ENGINEER WHO WILL SIGN THE BFI AND THE WFI REPORTS.
12. STRUCTURAL ENGINEERING - THE CONTRACTOR SHALL PREPARED AND SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL FOR EACH BRIDGE, BOARDWALK, FOUNDATION AND WALL LOCATION. THE SHOP DRAWINGS SHALL BE PREPARED BY A GEORGIA DEPARTMENT OF TRANSPORTATION, (GDOT) PREQUALIFIED STRUCTURAL ENGINEER. THE SHOP DRAWINGS FINAL DESIGN SHALL BE PREPARED IN ACCORDANCE WITH GDOT BRIDGE AND STRUCTURAL DESIGN MANUAL.
13. WHEN WORKING WITHIN THE GEORGIA POWER EASEMENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF HIS OR HER LABORERS, EQUIPMENT AND GEORGIA POWER FACILITIES AT ALL TIMES. THE CONTRACTOR IS REQUIRED TO SCHEDULE AND ATTEND A PRE-CONSTRUCTION MEETING WITH GEORGIA POWER TO DETERMINE MEANS AND METHODS OF WORK CONDUCTED WITHIN THE GEORGIA POWER EASEMENT, INCLUDING BUT NOT LIMITED TO, SAFETY MEASURES, EQUIPMENT LIMITATIONS OR RESTRICTIONS, AND MOVEMENT THROUGH THE EASEMENTS DURING CONSTRUCTION.

TRAFFIC CONTROL NOTES

1. ALL TRAFFIC CONTROL AND WARNING DEVICES MUST BE SHOWN AND PLACED PER THE MUTCD. THE TRAFFIC CONTROL PLAN IS SUBJECT TO CHANGE BY THE CITY OF CANTON TRAFFIC ENGINEER.
2. TEMPORARY TRAFFIC CONTROL AND WARNING DEVICES SHALL BE PLACED PRIOR TO THE COMMENCEMENT OF ANY ROAD IMPROVEMENT WORK ON CITY ROADS AND SHALL REMAIN IN PLACE UNTIL THE CONCLUSION OF ALL SIGNING AND STRIPING WORK.
3. ALL SIGNS SHALL CONFORM TO THE MUTCD STANDARDS AND CITY OF CANTON STANDARDS FOR COLOR, SIZE, REFLECTIVITY, HEIGHT, AND PLACEMENT.
4. STRIPING (WHITE AND YELLOW) AND ARROW MARKINGS SHALL BE APPLIED USING GDOT STANDARDS FOR THERMOPLASTIC STRIPING.
5. WHEN NECESSARY, EXISTING STRIPING SHALL BE REMOVED BY HYDROBLASTING UNLESS SPECIFIED BY THE CITY OF CANTON TRAFFIC ENGINEER.
6. ALL FINAL SIGNAGE MUST BE INSTALLED CONCURRENTLY WITH THE PERFORMANCE OF THE STRIPING WORK.
7. NO CLOSURES OF OR ENCROACHMENTS INTO THE PEDESTRIAN, BICYCLE, OR VEHICULAR TRAVEL AREAS SHALL BE DONE WITHOUT PRIOR APPROVAL FROM THE CITY OF CANTON TRAFFIC ENGINEER. ALL PROPOSED PLANS FOR CLOSURES AND ENCROACHMENTS SHALL BE SUBMITTED AT LEAST TWO WEEKS PRIOR TO INTENDED BEGINNING AND MUST BE APPROVED PRIOR TO COMMENCEMENT.
8. THE CONTRACTORS ATTENTION IS DIRECTED TO ARTICLES 104.05 AND 107.07 OF THE STANDARD SPECIFICATIONS AND THE SPECIAL PROVISIONS FOR TRAFFIC CONTROL AND SEQUENCE OF OPERATIONS IN REGARDS TO MAINTENANCE OF TRAFFIC DURING CONSTRUCTION. FOR ADDITIONAL TRAFFIC CONTROL NOTES SEE GDOT STD. DRAWING NO. 9100.
9. PRICE BID FOR TRAFFIC CONTROL - LUMP SUM SHALL INCLUDE, BUT IS NOT LIMITED TO, CONSTRUCTION, MAINTENANCE, AND REMOVAL OF TEMPORARY SIGNING AND PAVEMENT MARKINGS, BARRICADES, CHANNELIZING DEVICES, ETC. REQUIRED FOR MAINTENANCE OF TRAFFIC DURING CONSTRUCTION. ALL TEMPORARY SIGNING AND PAVEMENT MARKING SHALL BE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", CURRENT EDITION AND/OR AS DIRECTED BY THE ENGINEER.
10. NO SEPARATE PAYMENT WILL BE MADE FOR AGGREGATE SURFACE COURSE FOR MAINTENANCE OF TRAFFIC. COSTS FOR AGGREGATE SURFACE COURSE FOR MAINTENANCE OF TRAFFIC SHALL BE INCLUDED UNDER THE PRICE BID FOR TRAFFIC CONTROL - LUMP SUM. QUANTITY SHOWN IN PLANS FOR AGGREGATE SURFACE COURSE IS FOR FINISHED DRIVEWAYS ONLY.
11. WARNING DEVICES SHALL BE PLACED PRIOR TO COMMENCEMENT OF ANY ROAD IMPROVEMENT WORK AND SHALL REMAIN IN PLACE UNTIL THE CONCLUSION OF ALL SIGNING AND STRIPING WORK.

GEORGIA REGISTERED LANDSCAPE ARCHITECT No. LA000750 JOHN D BOUDREAU 08-11-2020
NOT VALID FOR CONSTRUCTION UNLESS SIGNED IN THIS BLOCK

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770-933-0280

△	REVISION	DATE
1	ADDENDUM NO. 2	08-11-20

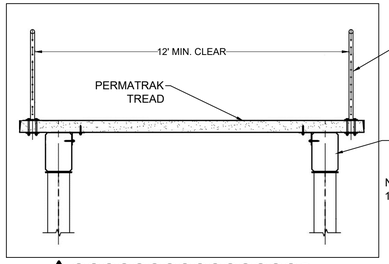
PROJ. NO.: 100062569
DESIGNED BY: C.L.H.
DRAWN BY: C.L.H.
CHECKED BY:
APPROVED BY:
DATE: AUG., 2019
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 &
RIVER TRAIL EXTENSION

GENERAL NOTES

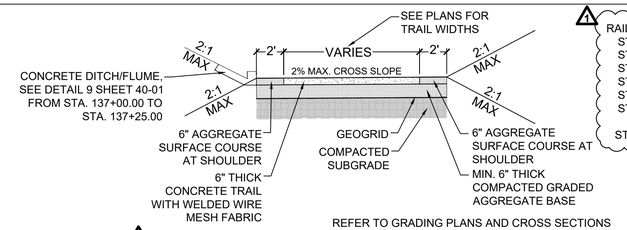
SHEET NO.
04-01
100062569

File Name: M:\100062569 - HFRITAGF TO ROJING PARK TRAIL\CAD\DFI\FRABIFS\04 GFNFRAI NOTFS.DWG[Tab: 4-01]Plotted: August 18, 2020 4:35pm



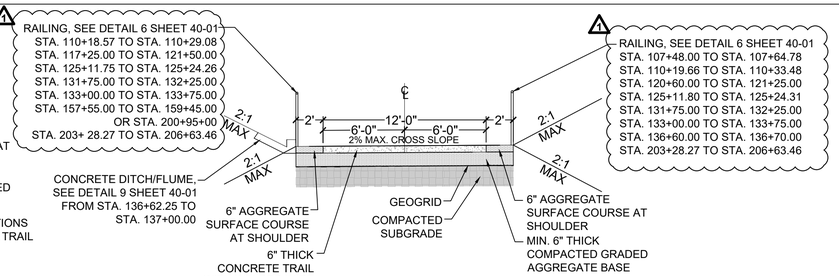
NOTES:
1. REFER TO PERMA TRAK DETAILS FOR ADDITIONAL INFORMATION.

1 TYPICAL SECTION 7
BOARDWALK WITH RAILING
STA. 145+50.00 TO STA. 146+25.00
STA. 156+50.00 TO STA. 157+50.00



REFER TO GRADING PLANS AND CROSS SECTIONS FOR DIRECTION OF CROSS SLOPE ALONG THE TRAIL

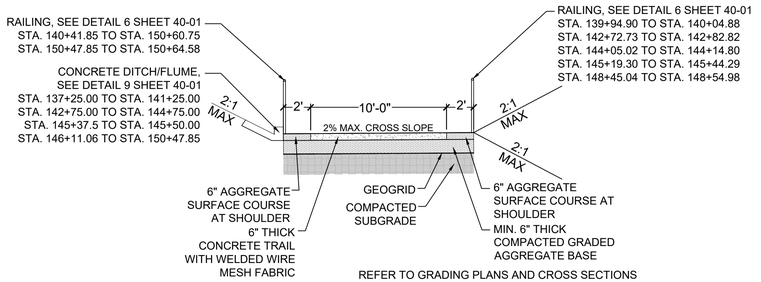
1 TYPICAL SECTION 5
HEAVY-DUTY CONCRETE TRAIL AT TRAIL HEAD AND TRANSITIONS
STA. 101+00.00 TO STA. 101+16.70
STA. 137+00.00 TO STA. 137+25.00
STA. 145+41.28 TO STA. 145+50.00
STA. 146+25.00 TO STA. 146+33.70
STA. 156+41.30 TO STA. 156+50.00
STA. 157+50.00 TO STA. 157+57.70
STA. 159+98.23 TO STA. 160+02.48
STA. 160+22.19 TO STA. 160+74.26
STA. 160+86.45 TO STA. 161+78.67
STA. 162+50.14 TO STA. 162+89.99
STA. 201+90.00 TO STA. 202+31.01
STA. 206+63.46 TO STA. 206+90.61
STA. 301+00.00 TO STA. 301+35.24
STA. 301+51.47 TO STA. 301+55.59
STA. 301+74.30 TO STA. 302+25.57
STA. 302+37.76 TO STA. 303+26.78
STA. 303+81.17 TO STA. 304+21.16



REFER TO GRADING PLANS AND CROSS SECTIONS FOR DIRECTION OF CROSS SLOPE ALONG THE TRAIL

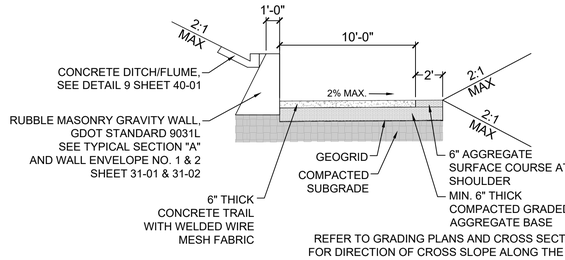
1 TYPICAL SECTION 1
12' HEAVY-DUTY CONCRETE TRAIL WITH 2' SHOULDER
STA. 101+16.70 TO STA. 107+93.66
STA. 108+08.41 TO STA. 137+00.00
STA. 157+57.70 TO STA. 159+45.00
STA. 160+02.48 TO STA. 160+22.19

TYPICAL SECTION 1
12' HEAVY-DUTY CONCRETE TRAIL WITH 2' SHOULDER
STA. 160+74.26 TO STA. 160+86.45
STA. 161+78.67 TO STA. 162+50.14
STA. 201+54.36 TO STA. 201+74.12
STA. 202+31.01 TO STA. 206+63.46
STA. 301+55.59 TO STA. 301+74.30
STA. 302+25.57 TO STA. 302+37.76
STA. 303+26.78 TO STA. 303+81.17



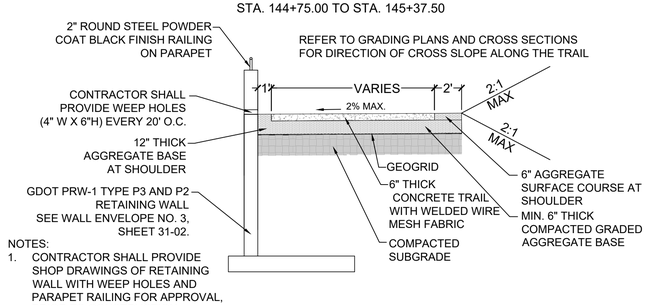
REFER TO GRADING PLANS AND CROSS SECTIONS FOR DIRECTION OF CROSS SLOPE ALONG THE TRAIL

TYPICAL SECTION 2
10' HEAVY-DUTY CONCRETE TRAIL WITH 2' SHOULDER
STA. 137+25.00 TO STA. 141+25.00
STA. 142+75.00 TO STA. 144+75.00
STA. 146+33.70 TO STA. 156+41.30



REFER TO GRADING PLANS AND CROSS SECTIONS FOR DIRECTION OF CROSS SLOPE ALONG THE TRAIL

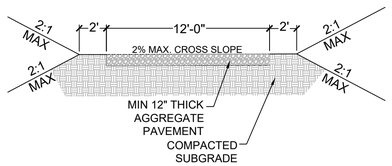
TYPICAL SECTION 3
10' HEAVY-DUTY CONCRETE TRAIL WITH 2' SHOULDER & GRAVITY WALL
STA. 141+25.00 TO STA. 142+75.00
STA. 144+75.00 TO STA. 145+37.50



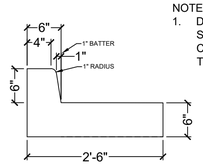
NOTES:
1. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF RETAINING WALL WITH WEEP HOLES AND PARAPET RAILING FOR APPROVAL, PRIOR TO CONSTRUCTION.

TYPICAL SECTION 4
HEAVY-DUTY CONCRETE TRAIL WITH 2' SHOULDER & RETAINING WALL
STA. 159+45.00 TO STA. 159+98.23
STA. 201+00.00 TO STA. 201+90.00
STA. 301+35.24 TO STA. 301+51.47

REFER TO GRADING PLANS AND CROSS SECTIONS FOR DIRECTION OF CROSS SLOPE ALONG DRIVE

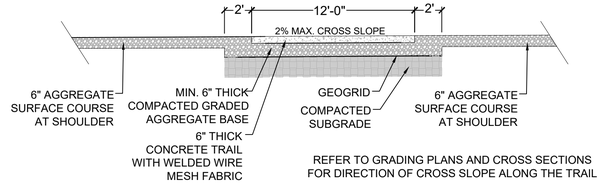


TYPICAL SECTION 8
GRAVEL DRIVE



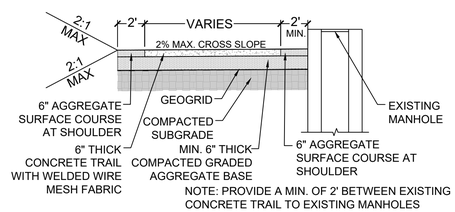
NOTES:
1. DETAIL SAME AS GDOT STD 9032B CONCRETE CURB AND GUTTER, TYPE 2.

9 / 05-01 30" TYPE 2 CURB AND GUTTER
N.T.S.



REFER TO GRADING PLANS AND CROSS SECTIONS FOR DIRECTION OF CROSS SLOPE ALONG THE TRAIL

TYPICAL SECTION 6
12' HEAVY-DUTY CONCRETE TRAIL AT GRAVEL DRIVE
STA. 107+93.66 TO STA. 108+08.41



NOTE: PROVIDE A MIN. OF 2' BETWEEN EXISTING CONCRETE TRAIL TO EXISTING MANHOLES

TYPICAL SECTION 7
EXISTING MANHOLES AT 10' HEAVY-DUTY CONCRETE TRAIL WITH 2' SHOULDER
STA. 137+72.48
STA. 140+51.79
STA. 143+71.12
STA. 145+28.89
STA. 148+31.93
STA. 150+56.21
STA 151+92.51
STA. 152+94.91
STA. 154+49.09

GEORGIA REGISTERED No. LA000780 LANDSCAPE ARCHITECT JOHN D BOUDREAU 08-11-2020
NOT VALID FOR CONSTRUCTION UNLESS SIGNED IN THIS BLOCK

ATKINS
1600 Riveredge Parkway, Suite 700
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△	REVISION	DATE
1	ADDENDUM NO. 2	08-11-20

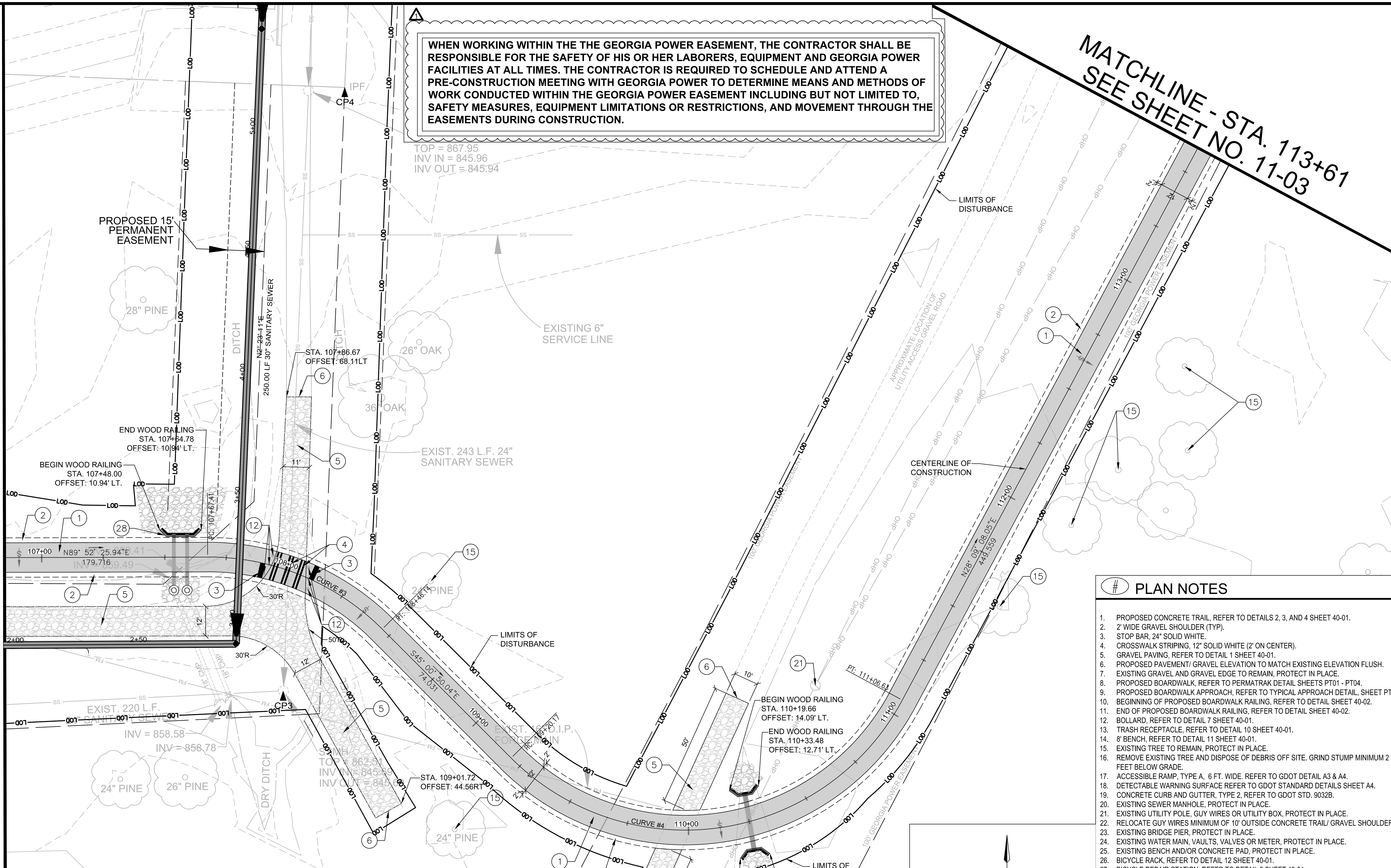
PROJ. NO.: 100062569
DESIGNED BY: C.L.H.
DRAWN BY: C.L.H.
CHECKED BY:
APPROVED BY:
DATE: AUG. 2019
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

TYPICAL SECTIONS

SHEET NO.
05-01
100062569

File Name: M:\100062569 – HERITAGE TO BOLING PARK TRAIL\CAD\DELIVERABLES\05 TYPICAL SECTIONS.DWG[Tab:5–01]Plotted: August 13, 2020 4:25pm



PLAN NOTES

1. PROPOSED CONCRETE TRAIL, REFER TO DETAILS 2, 3, AND 4 SHEET 40-01.
2. 2' WIDE GRAVEL SHOULDER (TYP).
3. STOP BAR, 24" SOLID WHITE.
4. CROSSWALK STRIPING, 12" SOLID WHITE (2' ON CENTER).
5. GRAVEL PAVING, REFER TO DETAIL 1 SHEET 40-01.
6. PROPOSED PAVEMENT/ GRAVEL ELEVATION TO MATCH EXISTING ELEVATION FLUSH.
7. EXISTING GRAVEL AND GRAVEL EDGE TO REMAIN, PROTECT IN PLACE.
8. PROPOSED BOARDWALK, REFER TO PERMATRAK DETAIL SHEETS PT01 - PT04.
9. PROPOSED BOARDWALK APPROACH, REFER TO TYPICAL APPROACH DETAIL, SHEET PT03.
10. BEGINNING OF PROPOSED BOARDWALK RAILING, REFER TO DETAIL SHEET 40-02.
11. END OF PROPOSED BOARDWALK RAILING, REFER TO DETAIL SHEET 40-02.
12. BOLLARD, REFER TO DETAIL 7 SHEET 40-01.
13. TRASH RECEPTACLE, REFER TO DETAIL 10 SHEET 40-01.
14. 8' BENCH, REFER TO DETAIL 11 SHEET 40-01.
15. EXISTING TREE TO REMAIN, PROTECT IN PLACE.
16. REMOVE EXISTING TREE AND DISPOSE OF DEBRIS OFF SITE. GRIND STUMP MINIMUM 2 FEET BELOW GRADE.
17. ACCESSIBLE RAMP, TYPE A, 6 FT. WIDE. REFER TO GDOT DETAIL A3 & A4.
18. DETECTABLE WARNING SURFACE REFER TO GDOT STANDARD DETAILS SHEET A4.
19. CONCRETE CURB AND GUTTER, TYPE 2, REFER TO GDOT STD. 9032B.
20. EXISTING SEWER MANHOLE, PROTECT IN PLACE.
21. EXISTING UTILITY POLE, GUY WIRES OR UTILITY BOX, PROTECT IN PLACE.
22. RELOCATE GUY WIRES MINIMUM OF 10' OUTSIDE CONCRETE TRAIL/ GRAVEL SHOULDER.
23. EXISTING BRIDGE PIER, PROTECT IN PLACE.
24. EXISTING WATER MAIN, VAULTS, VALVES OR METER, PROTECT IN PLACE.
25. EXISTING BENCH AND/OR CONCRETE PAD, PROTECT IN PLACE.
26. BICYCLE RACK, REFER TO DETAIL 12 SHEET 40-01.
27. BICYCLE REPAIR STATION, REFER TO DETAIL 8 SHEET 40-01.
28. WOOD RAILING/ FENCE, REFER TO DETAIL 6 SHEET 40-01.
29. REMOVE EXISTING GUARDRAIL.
30. GUARDRAIL, GDOT TYPE 12, NON FLARED ANCHOR WITH 31 INCH HT. TRANSITION, REFER TO GDOT STANDARDS 4000W, 4380, 4381, 4384, 4385, AND 4390.
31. RUBBLE MASONRY GRAVITY WALL, GDOT STANDARD 9031L, SEE TYPICAL SECTION "A" AND WALL ENVELOPE NO. 1 AND 2, SHEET 31-01 AND 31-02.
32. CONCRETE RETAINING WALL, GDOT PRW-1 TYPE P3,SEE WALL ENVELOPE NO. 3, SHEET 31-02.
33. CONTRACTOR TO MANUALLY CUT & CLEAR VEGETATION AND TREES FLUSH TO GROUND BETWEEN BEGINNING AND END OF BOARDWALK LOCATIONS. ALL CLEARING SHALL OCCUR WITHIN THE LIMITS OF DISTURBANCE. GROUND IS TO REMAIN UNDISTURBED.
34. ORANGE BARRIER FENCE, 4' HT. LIMITS OF DISTURBANCE NEAR STATE BUFFER/ SENSITIVE AREAS.
35. CONCRETE DITCH/ FLUME, SEE DETAIL 9 SHEET 40-01.

CURVE #3
Δ = 45° 6' 43.92" RT
DEG = 57° 17' 44.88"
T = 41.54
PI Station 108+08.94
N = 1538584.29 E = 2196253.07
Length = 78.74'
Radius = 100.00'
Chord Bearing = S67° 34' 12"E
Chord Length = 76.72'

CURVE #4
Δ = 106° 50' 2.04" LT
DEG = 57° 17' 44.88"
T = 134.73
PI Station 110+54.91
N = 1538407.34 E = 2196430.10
Length = 186.46'
Radius = 100.00'
Chord Bearing = N81° 34' 09"E
Chord Length = 160.60'

COORDINATE CONTROL TABLE

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET	DESCRIPTION
3	1538529.7129	2196242.2177	862.513	108+26.61	45.230' RT	SSMH
4	1538774.8911	2196267.2295	866.593	107+86.48	195.940' LT	IPF RB

GEORGIA REGISTERED No. LA000750 08-11-2020 LANDSCAPE ARCHITECT JOHN D BOUDREAU
NOT VALID FOR CONSTRUCTION UNLESS SIGNED IN THIS BLOCK

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770--933-0280

	REVISION	DATE
1	ADDENDUM NO. 2	08-11-20

PROJ. NO.: 100062569
DESIGNED BY: C.L.H.
DRAWN BY: C.L.H.
CHECKED BY:
APPROVED BY:
DATE: AUG., 2019
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

CONSTRUCTION LAYOUT PLANS

SHEET NO.
11-02
100062569

File Name: M:\100062569 – HERITAGE TO BOLING PARK TRAIL\CAD\DELIVERABLES\11 LAYOUT.DWG|Tab: 02|Plotted: August 18, 2020 4:15pm

COORDINATE CONTROL TABLE						
POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET	DESCRIPTION
5	1538967.6165	21966707.7482	862.922	116+01.55	13.344' LT	PP

CURVE #5
Δ = 33° 8' 55.32" LT
DEG = 38° 11' 49.92"
T = 44.64
PI Station 116+00.84
N = 1538961.87 E = 2196726.84
Length = 86.78'
Radius = 150.00'
Chord Bearing = N11° 34' 40"E
Chord Length = 85.58'

PLAN NOTES

1. PROPOSED CONCRETE TRAIL, REFER TO DETAILS 2, 3, AND 4 SHEET 40-01.
2. 2' WIDE GRAVEL SHOULDER (TYP).
3. STOP BAR, 24" SOLID WHITE.
4. CROSSWALK STRIPING, 12" SOLID WHITE (2' ON CENTER).
5. GRAVEL PAVING, REFER TO DETAIL 1 SHEET 40-01.
6. PROPOSED PAVEMENT/ GRAVEL ELEVATION TO MATCH EXISTING ELEVATION FLUSH.
7. EXISTING GRAVEL AND GRAVEL EDGE TO REMAIN, PROTECT IN PLACE.
8. PROPOSED BOARDWALK, REFER TO PERMATRAK DETAIL SHEETS PT01 - PT04.
9. PROPOSED BOARDWALK APPROACH, REFER TO TYPICAL APPROACH DETAIL, SHEET PT03.
10. BEGINNING OF PROPOSED BOARDWALK RAILING, REFER TO DETAIL SHEET 40-02.
11. END OF PROPOSED BOARDWALK RAILING, REFER TO DETAIL SHEET 40-02.
12. BOLLARD, REFER TO DETAIL 7 SHEET 40-01.
13. TRASH RECEPTACLE, REFER TO DETAIL 10 SHEET 40-01.
14. 8' BENCH, REFER TO DETAIL 11 SHEET 40-01.
15. EXISTING TREE TO REMAIN, PROTECT IN PLACE.
16. REMOVE EXISTING TREE AND DISPOSE OF DEBRIS OFF SITE. GRIND STUMP MINIMUM 2 FEET BELOW GRADE.
17. ACCESSIBLE RAMP, TYPE A, 6 FT. WIDE. REFER TO GDOT DETAIL A3 & A4.
18. DETECTABLE WARNING SURFACE REFER TO GDOT STANDARD DETAILS SHEET A4.
19. CONCRETE CURB AND GUTTER, TYPE 2, REFER TO GDOT STD. 9032B.
20. EXISTING SEWER MANHOLE, PROTECT IN PLACE.
21. EXISTING UTILITY POLE, GUY WIRES OR UTILITY BOX, PROTECT IN PLACE.
22. RELOCATE GUY WIRES MINIMUM OF 10' OUTSIDE CONCRETE TRAIL/ GRAVEL SHOULDER.
23. EXISTING BRIDGE PIER, PROTECT IN PLACE.
24. EXISTING WATER MAIN, VAULTS, VALVES OR METER, PROTECT IN PLACE.
25. EXISTING BENCH AND/OR CONCRETE PAD, PROTECT IN PLACE.
26. BICYCLE RACK, REFER TO DETAIL 12 SHEET 40-01.
27. BICYCLE REPAIR STATION, REFER TO DETAIL 8 SHEET 40-01.
28. WOOD RAILING/ FENCE, REFER TO DETAIL 6 SHEET 40-01.
29. REMOVE EXISTING GUARDRAIL.
30. GUARDRAIL, GDOT TYPE 12, NON FLARED ANCHOR WITH 31 INCH HT. TRANSITION, REFER TO GDOT STANDARDS 4000W, 4380, 4381, 4384, 4385, AND 4390.
31. RUBBLE MASONRY GRAVITY WALL, GDOT STANDARD 9031L, SEE TYPICAL SECTION "A" AND WALL ENVELOPE NO. 1 AND 2, SHEET 31-01 AND 31-02.
32. CONCRETE RETAINING WALL, GDOT PRW-1 TYPE P3,SEE WALL ENVELOPE NO. 3, SHEET 31-02.
33. CONTRACTOR TO MANUALLY CUT & CLEAR VEGETATION AND TREES FLUSH TO GROUND BETWEEN BEGINNING AND END OF BOARDWALK LOCATIONS. ALL CLEARING SHALL OCCUR WITHIN THE LIMITS OF DISTURBANCE. GROUND IS TO REMAIN UNDISTURBED.
34. ORANGE BARRIER FENCE, 4' HT. LIMITS OF DISTURBANCE NEAR STATE BUFFER/ SENSITIVE AREAS.
35. CONCRETE DITCH/ FLUME, SEE DETAIL 9 SHEET 40-01.

MATCHLINE - STA. 113+61
SEE SHEET NO. 11-02

MATCHLINE - STA. 119+37
SEE SHEET NO. 11-04

NOW OR FORMERLY
TAGH, LLC

NOW OR FORMERLY
CHEROKEE BOWL, INC.

APPROXIMATE LOCATION OF
UTILITY ACCESS GRAVEL ROAD

APPROXIMATE LOCATION OF
UTILITY ACCESS GRAVEL ROAD

LIMITS OF
DISTURBANCE

LIMITS OF
DISTURBANCE

114+00
115+00
116+00 CURVE #5
117+00
118+00
119+00

N28° 09' 08.05"E
449.559

N04° 59' 47.19"W
367.566

BC: 115+86.19
PT: 116+42.98

CP5

BEGIN WOOD RAILING
STA. 117+25.00
OFFSET: 8.00' LT.

CENTERLINE OF
CONSTRUCTION

GEORGIA POWER EASEMENT

25' STATE BUFFER

WRESTED VEGETATION

ETOWAH RIVER

WHEN WORKING WITHIN THE THE GEORGIA POWER EASEMENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF HIS OR HER LABORERS, EQUIPMENT AND GEORGIA POWER FACILITIES AT ALL TIMES. THE CONTRACTOR IS REQUIRED TO SCHEDULE AND ATTEND A PRE-CONSTRUCTION MEETING WITH GEORGIA POWER TO DETERMINE MEANS AND METHODS OF WORK CONDUCTED WITHIN THE GEORGIA POWER EASEMENT INCLUDING BUT NOT LIMITED TO, SAFETY MEASURES, EQUIPMENT LIMITATIONS OR RESTRICTIONS, AND MOVEMENT THROUGH THE EASEMENTS DURING CONSTRUCTION.

N

0' 10' 20' 40' 60'
GRAPHIC SCALE
Scale: 1 Inch = 20 Ft.

GEORGIA REGISTERED No. LA000750 LANDSCAPE ARCHITECT JOHN D BOUDREAU 08-11-2020
NOT VALID FOR CONSTRUCTION UNLESS SIGNED IN THIS BLOCK

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770-933-0280

REVISION	DATE
1 ADDENDUM NO. 2	08-11-20

PROJ. NO.:	100062569
DESIGNED BY:	C.L.H.
DRAWN BY:	C.L.H.
CHECKED BY:	
APPROVED BY:	
DATE:	AUG. 2019
SCALE:	AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 &
RIVER TRAIL EXTENSION

CONSTRUCTION LAYOUT PLANS

SHEET NO.
11-03
100062569

File Name: M:\100062569 – HERITAGE TO BOLING PARK TRAIL\CAD\DELIVERABLES\11 LAYOUT.DWG Tab: 03 Plotted: August 18, 2020 4:16pm

MATCHLINE - STA. 119+37 SEE SHEET NO. 11-03

MATCHLINE - STA. 124+62 SEE SHEET NO. 11-05

RIVER SIDE LANES
(METAL BUILDING)

NOW OR FORMERLY
CHEROKEE BOWL, INC.

277.00'

EXISTING 20'
PERMANENT
EASEMENT

NOW OR FORMERLY
GEORGIA POWER COMPANY

LIMITS OF
DISTURBANCE

N2° 02' 55"W
390.00 LF 30" SANITARY SEWER

EXIST. 400 L.F. 24" SANITARY SEWER

100' GEORGIA POWER EASEMENT

CP6

SSMH
TOP = 862.51
INV IN = 847.15
INV OUT = 847.15

EXISTING 20'
EASEMENT

100' GEORGIA POWER
EASEMENT

APPROXIMATE LOCATION OF
UTILITY ACCESS GRAVEL ROAD

APPROXIMATE LOCATION OF
UTILITY ACCESS GRAVEL ROAD

END WOOD RAILING
STA. 121+50.00
OFFSET: 8.00' LT.

PP #34

CENTERLINE OF
CONSTRUCTION

PC: 120+10.58

PT: 120+49.98

CURVE #6

N04° 59' 47.19"W
367.566

N00° 28' 37.45"W
743.430

N00° 28' 37.45"W
743.430

120+00

121+00

122+00

123+00

124+00

BEGIN WOOD RAILING
STA. 120+60.00
OFFSET: 8.00' RT.

END WOOD RAILING
STA. 121+25.00
OFFSET: 8.00' RT.

LIMITS OF
DISTURBANCE

100' GEORGIA POWER EASEMENT

25' STATE BUFFER

WRESTED VEGETATION

ETOWAHRIVER

WHEN WORKING WITHIN THE THE GEORGIA POWER EASEMENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF HIS OR HER LABORERS, EQUIPMENT AND GEORGIA POWER FACILITIES AT ALL TIMES. THE CONTRACTOR IS REQUIRED TO SCHEDULE AND ATTEND A PRE-CONSTRUCTION MEETING WITH GEORGIA POWER TO DETERMINE MEANS AND METHODS OF WORK CONDUCTED WITHIN THE GEORGIA POWER EASEMENT INCLUDING BUT NOT LIMITED TO, SAFETY MEASURES, EQUIPMENT LIMITATIONS OR RESTRICTIONS, AND MOVEMENT THROUGH THE EASEMENTS DURING CONSTRUCTION.

COORDINATE CONTROL TABLE

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET	DESCRIPTION
6	1539489.0435	2196604.4847	862.508	121+27.82	83.929' LT	SSMH

CURVE #6
Δ = 4° 31' 9.84" RT
DEG = 11° 27' 32.98"
T = 19.73
PI Station 120+30.27
N = 1539392.17 E = 2196689.22
Length = 39.44'
Radius = 500.00'
Chord Bearing = N2° 44' 12"W
Chord Length = 39.43'

PLAN NOTES

1. PROPOSED CONCRETE TRAIL, REFER TO DETAILS 2, 3, AND 4 SHEET 40-01.
2. 2' WIDE GRAVEL SHOULDER (TYP).
3. STOP BAR, 24" SOLID WHITE.
4. CROSSWALK STRIPING, 12" SOLID WHITE (2' ON CENTER).
5. GRAVEL PAVING, REFER TO DETAIL 1 SHEET 40-01.
6. PROPOSED PAVEMENT/ GRAVEL ELEVATION TO MATCH EXISTING ELEVATION FLUSH.
7. EXISTING GRAVEL AND GRAVEL EDGE TO REMAIN, PROTECT IN PLACE.
8. PROPOSED BOARDWALK, REFER TO PERMATRAK DETAIL SHEETS PT01 - PT04.
9. PROPOSED BOARDWALK APPROACH, REFER TO TYPICAL APPROACH DETAIL, SHEET PT03.
10. BEGINNING OF PROPOSED BOARDWALK RAILING, REFER TO DETAIL SHEET 40-02.
11. END OF PROPOSED BOARDWALK RAILING, REFER TO DETAIL SHEET 40-02.
12. BOLLARD, REFER TO DETAIL 7 SHEET 40-01.
13. TRASH RECEPTACLE, REFER TO DETAIL 10 SHEET 40-01.
14. 8' BENCH, REFER TO DETAIL 11 SHEET 40-01.
15. EXISTING TREE TO REMAIN, PROTECT IN PLACE.
16. REMOVE EXISTING TREE AND DISPOSE OF DEBRIS OFF SITE. GRIND STUMP MINIMUM 2 FEET BELOW GRADE.
17. ACCESSIBLE RAMP, TYPE A, 6 FT. WIDE. REFER TO GDOT DETAIL A3 & A4.
18. DETECTABLE WARNING SURFACE REFER TO GDOT STANDARD DETAILS SHEET A4.
19. CONCRETE CURB AND GUTTER, TYPE 2, REFER TO GDOT STD. 9032B.
20. EXISTING SEWER MANHOLE, PROTECT IN PLACE.

PLAN NOTES

21. EXISTING UTILITY POLE, GUY WIRES OR UTILITY BOX, PROTECT IN PLACE.
22. RELOCATE GUY WIRES MINIMUM OF 10' OUTSIDE CONCRETE TRAIL/ GRAVEL SHOULDER.
23. EXISTING BRIDGE PIER, PROTECT IN PLACE.
24. EXISTING WATER MAIN, VAULTS, VALVES OR METER, PROTECT IN PLACE.
25. EXISTING BENCH AND/OR CONCRETE PAD, PROTECT IN PLACE.
26. BICYCLE RACK, REFER TO DETAIL 12 SHEET 40-01.
27. BICYCLE REPAIR STATION, REFER TO DETAIL 8 SHEET 40-01.
28. WOOD RAILING/ FENCE, REFER TO DETAIL 6 SHEET 40-01.
29. REMOVE EXISTING GUARDRAIL.
30. GUARDRAIL, GDOT TYPE 12, NON FLARED ANCHOR WITH 31 INCH HT. TRANSITION, REFER TO GDOT STANDARDS 4000W, 4380, 4381, 4384, 4385, AND 4390.
31. RUBBLE MASONRY GRAVITY WALL, GDOT STANDARD 9031L, SEE TYPICAL SECTION "A" AND WALL ENVELOPE NO. 1 AND 2, SHEET 31-01 AND 31-02.
32. CONCRETE RETAINING WALL, GDOT PRW-1 TYPE P3,SEE WALL ENVELOPE NO. 3, SHEET 31-02.
33. CONTRACTOR TO MANUALLY CUT & CLEAR VEGETATION AND TREES FLUSH TO GROUND BETWEEN BEGINNING AND END OF BOARDWALK LOCATIONS. ALL CLEARING SHALL OCCUR WITHIN THE LIMITS OF DISTURBANCE. GROUND IS TO REMAIN UNDISTURBED.
34. ORANGE BARRIER FENCE, 4' HT. LIMITS OF DISTURBANCE NEAR STATE BUFFER/ SENSITIVE AREAS.
35. CONCRETE DITCH/ FLUME, SEE DETAIL 9 SHEET 40-01.

0' 10' 20' 40' 60'
GRAPHIC SCALE
Scale: 1 Inch = 20 Ft.

GEORGIA REGISTERED No. LA000750 LANDSCAPE ARCHITECT JOHN D BOUDREAU 08-11-2020
NOT VALID FOR CONSTRUCTION UNLESS SIGNED IN THIS BLOCK

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770--933-0280

REVISION	DATE
1 ADDENDUM NO. 2	08-11-20

PROJ. NO.: 100062569
DESIGNED BY: C.L.H.
DRAWN BY: C.L.H.
CHECKED BY:
APPROVED BY:
DATE: AUG. 2019
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 &
RIVER TRAIL EXTENSION

CONSTRUCTION LAYOUT PLANS

SHEET NO.
11-04
100062569

File Name: M:\100062569 – HERITAGE TO BOLING PARK TRAIL\CAD\DELIVERABLES\11 LAYOUT.DWG Tab: 04 Plotted: August 18, 2020 4:17pm

MATCHLINE - STA. 124+62 SEE SHEET NO. 11-04

MATCHLINE - STA. 129+62 SEE SHEET NO. 11-06

NOW OR FORMERLY
GEORGIA POWER COMPANY

NOW OR FORMERLY
WOLF CREEK REAL ESTATE, LLC

PL

LOD

LIMITS OF DISTURBANCE

50'

19+00 19+50 20+00 20+50 21+00 21+50 22+00 22+50 23+00

N2° 39' 09"W
390.22 LF 30" SANITARY SEWER

CP7

CUT & PLUG

CP8

SS

EXIST. 400 L.F. 24" SANITARY SEWER

100' GEORGIA POWER EASEMENT

SSMH
TOP = 863.85
INV IN = 847.48
INV OUT = 847.54

VENT PIPE

APPROXIMATE LOCATION OF UTILITY ACCESS GRAVEL ROAD

SSMH
TOP = 867.44
INV IN (N) = 847.93
10" DIP INV IN (W) = 860.34
INV OUT = 847.91

APPROXIMATE LOCATION OF UTILITY ACCESS GRAVEL ROAD

OHP

21

PP #35

BEGIN WOOD RAILING
STA. 125+11.75
OFFSET: 13.62' LT.

END WOOD RAILING
STA. 125+24.26
OFFSET: 13.62' LT.

1 2

125+00 126+00 127+00 128+00 129+00

N00° 28' 37.45"W
743.430

2%

PC: 127+93.41

CENTERLINE OF CONSTRUCTION

CURVE #7

100' GEORGIA POWER EASEMENT

BEGIN WOOD RAILING
STA. 125+11.80
OFFSET: 13.60' RT.

END WOOD RAILING
STA. 125+24.31
OFFSET: 13.64' RT.

GA POWER MON.

34

25' STATE BUFFER

26" BIRCH

26" BIRCH

15

LIMITS OF DISTURBANCE

WRESTED VEGETATION

ETOWAH RIVER

PL

PL

1

WHEN WORKING WITHIN THE THE GEORGIA POWER EASEMENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF HIS OR HER LABORERS, EQUIPMENT AND GEORGIA POWER FACILITIES AT ALL TIMES. THE CONTRACTOR IS REQUIRED TO SCHEDULE AND ATTEND A PRE-CONSTRUCTION MEETING WITH GEORGIA POWER TO DETERMINE MEANS AND METHODS OF WORK CONDUCTED WITHIN THE GEORGIA POWER EASEMENT INCLUDING BUT NOT LIMITED TO, SAFETY MEASURES, EQUIPMENT LIMITATIONS OR RESTRICTIONS, AND MOVEMENT THROUGH THE EASEMENTS DURING CONSTRUCTION.

CURVE #7
Δ = 6° 3' 27" LT
DEG = 1° 16' 23.66"
T = 238.10
PI Station 130+31.51
N = 1540393.39 E = 2196680.89
Length = 475.75'
Radius = 4500.00'
Chord Bearing = N3° 30' 21"W
Chord Length = 475.53'

COORDINATE CONTROL TABLE

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET	DESCRIPTION
7	1539888.8189	2196592.1941	863.847	125+27.69	92.890' LT	SSMH
8	1540288.7933	2196573.9935	867.437	129+31.05	105.704' LT	SSMH

PLAN NOTES

1. PROPOSED CONCRETE TRAIL, REFER TO DETAILS 2, 3, AND 4 SHEET 40-01.
2. 2' WIDE GRAVEL SHOULDER (TYP).
3. STOP BAR, 24" SOLID WHITE.
4. CROSSWALK STRIPING, 12" SOLID WHITE (2' ON CENTER).
5. GRAVEL PAVING, REFER TO DETAIL 1 SHEET 40-01.
6. PROPOSED PAVEMENT/ GRAVEL ELEVATION TO MATCH EXISTING ELEVATION FLUSH.
7. EXISTING GRAVEL AND GRAVEL EDGE TO REMAIN, PROTECT IN PLACE.
8. PROPOSED BOARDWALK, REFER TO PERMATRAK DETAIL SHEETS PT01 - PT04.
9. PROPOSED BOARDWALK APPROACH, REFER TO TYPICAL APPROACH DETAIL, SHEET PT03.
10. BEGINNING OF PROPOSED BOARDWALK RAILING, REFER TO DETAIL SHEET 40-02.
11. END OF PROPOSED BOARDWALK RAILING, REFER TO DETAIL SHEET 40-02.
12. BOLLARD, REFER TO DETAIL 7 SHEET 40-01.
13. TRASH RECEPTACLE, REFER TO DETAIL 10 SHEET 40-01.
14. 8' BENCH, REFER TO DETAIL 11 SHEET 40-01.
15. EXISTING TREE TO REMAIN, PROTECT IN PLACE.
16. REMOVE EXISTING TREE AND DISPOSE OF DEBRIS OFF SITE. GRIND STUMP MINIMUM 2 FEET BELOW GRADE.
17. ACCESSIBLE RAMP, TYPE A, 6 FT. WIDE. REFER TO GDOT DETAIL A3 & A4.
18. DETECTABLE WARNING SURFACE REFER TO GDOT STANDARD DETAILS SHEET A4.
19. CONCRETE CURB AND GUTTER, TYPE 2, REFER TO GDOT STD. 9032B.
20. EXISTING SEWER MANHOLE, PROTECT IN PLACE.

PLAN NOTES

21. EXISTING UTILITY POLE, GUY WIRES OR UTILITY BOX, PROTECT IN PLACE.
22. RELOCATE GUY WIRES MINIMUM OF 10' OUTSIDE CONCRETE TRAIL/ GRAVEL SHOULDER.
23. EXISTING BRIDGE PIER, PROTECT IN PLACE.
24. EXISTING WATER MAIN, VAULTS, VALVES OR METER, PROTECT IN PLACE.
25. EXISTING BENCH AND/OR CONCRETE PAD, PROTECT IN PLACE.
26. BICYCLE RACK, REFER TO DETAIL 12 SHEET 40-01.
27. BICYCLE REPAIR STATION, REFER TO DETAIL 8 SHEET 40-01.
28. WOOD RAILING/ FENCE, REFER TO DETAIL 6 SHEET 40-01.
29. REMOVE EXISTING GUARDRAIL.
30. GUARDRAIL, GDOT TYPE 12, NON FLARED ANCHOR WITH 31 INCH HT. TRANSITION, REFER TO GDOT STANDARDS 4000W, 4380, 4381, 4384, 4385, AND 4390.
31. RUBBLE MASONRY GRAVITY WALL, GDOT STANDARD 9031L, SEE TYPICAL SECTION "A" AND WALL ENVELOPE NO. 1 AND 2, SHEET 31-01 AND 31-02.
32. CONCRETE RETAINING WALL, GDOT PRW-1 TYPE P3,SEE WALL ENVELOPE NO. 3, SHEET 31-02.
33. CONTRACTOR TO MANUALLY CUT & CLEAR VEGETATION AND TREES FLUSH TO GROUND BETWEEN BEGINNING AND END OF BOARDWALK LOCATIONS. ALL CLEARING SHALL OCCUR WITHIN THE LIMITS OF DISTURBANCE. GROUND IS TO REMAIN UNDISTURBED.
34. ORANGE BARRIER FENCE, 4' HT. LIMITS OF DISTURBANCE NEAR STATE BUFFER/ SENSITIVE AREAS.
35. CONCRETE DITCH/ FLUME, SEE DETAIL 9 SHEET 40-01.

N

0' 10' 20' 40' 60'

GRAPHIC SCALE
Scale: 1 Inch = 20 Ft.

GEORGIA REGISTERED No. LA000750 LANDSCAPE ARCHITECT JOHN D BOUDREAU 08-11-2020

NOT VALID FOR CONSTRUCTION UNLESS SIGNED IN THIS BLOCK

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770-933-0280

REVISION	DATE
1 ADDENDUM NO. 2	08-11-20

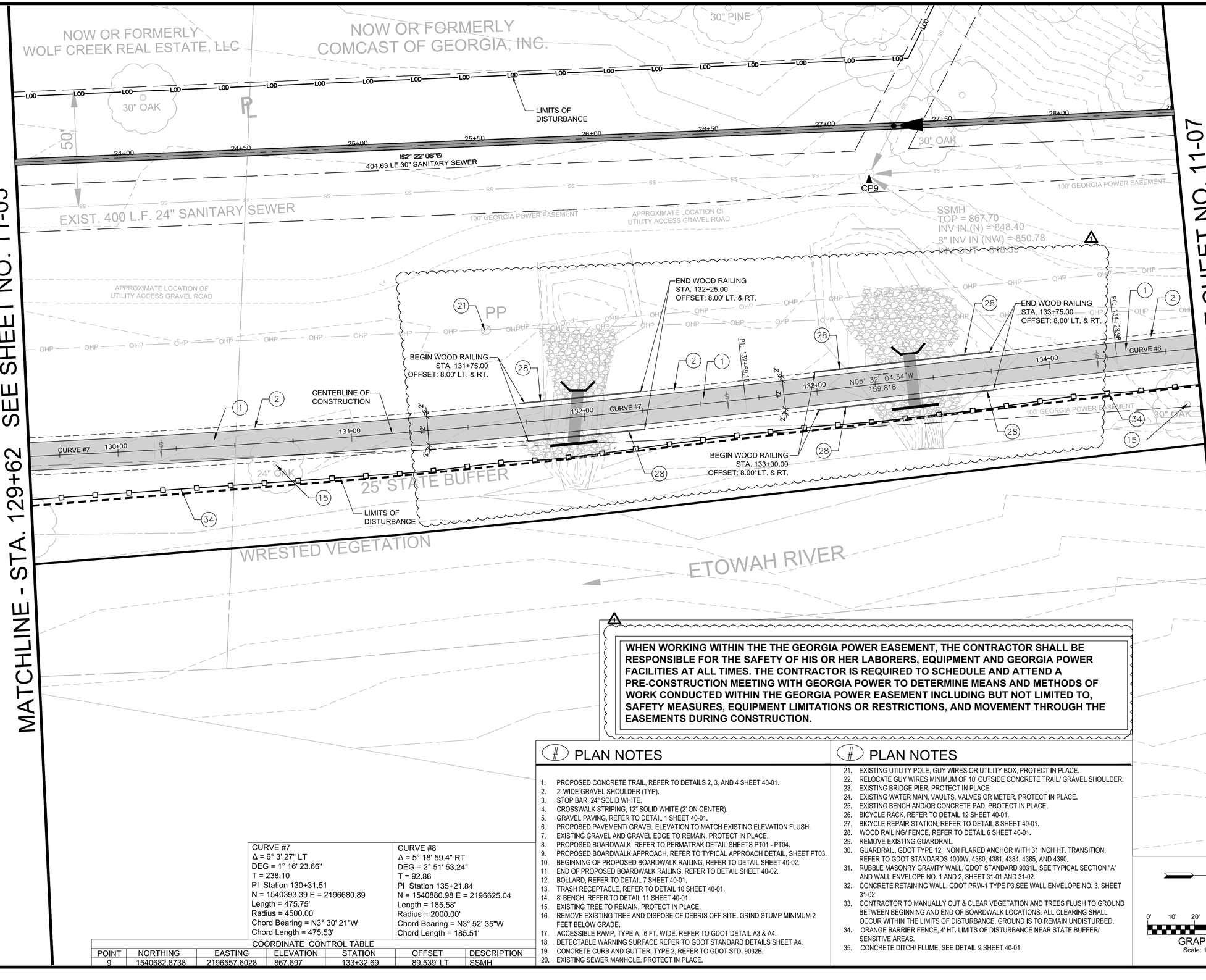
PROJ. NO.: 100062569
DESIGNED BY: C.L.H.
DRAWN BY: C.L.H.
CHECKED BY:
APPROVED BY:
DATE: AUG. 2019
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

CONSTRUCTION LAYOUT PLANS

SHEET NO.
11-05
100062569

File Name: M:\100062569 – HERITAGE TO BOLING PARK TRAIL\CAD\DELIVERABLES\11 LAYOUT.DWG|Tab: 05|Plotted: August 18, 2020 4:18pm



CURVE #7	CURVE #8
Δ = 6° 3' 27" LT	Δ = 5° 18' 59.4" RT
DEG = 1° 16' 23.66"	DEG = 2° 51' 53.24"
T = 238.10	T = 92.86
PI Station 130+31.51	PI Station 135+21.84
N = 1540393.39 E = 2196680.89	N = 1540880.98 E = 2196625.04
Length = 475.75'	Length = 185.58'
Radius = 4500.00'	Radius = 2000.00'
Chord Bearing = N3° 30' 21"W	Chord Bearing = N3° 52' 35"W
Chord Length = 475.53'	Chord Length = 185.51'

COORDINATE CONTROL TABLE

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET	DESCRIPTION
9	1540682.8738	2196557.6028	867.697	133+32.69	89.539' LT	SSMH

WHEN WORKING WITHIN THE THE GEORGIA POWER EASEMENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF HIS OR HER LABORERS, EQUIPMENT AND GEORGIA POWER FACILITIES AT ALL TIMES. THE CONTRACTOR IS REQUIRED TO SCHEDULE AND ATTEND A PRE-CONSTRUCTION MEETING WITH GEORGIA POWER TO DETERMINE MEANS AND METHODS OF WORK CONDUCTED WITHIN THE GEORGIA POWER EASEMENT INCLUDING BUT NOT LIMITED TO, SAFETY MEASURES, EQUIPMENT LIMITATIONS OR RESTRICTIONS, AND MOVEMENT THROUGH THE EASEMENTS DURING CONSTRUCTION.

PLAN NOTES

1. PROPOSED CONCRETE TRAIL, REFER TO DETAILS 2, 3, AND 4 SHEET 40-01.
2. 2' WIDE GRAVEL SHOULDER (TYP).
3. STOP BAR, 24" SOLID WHITE.
4. CROSSWALK STRIPING, 12" SOLID WHITE (2' ON CENTER).
5. GRAVEL PAVING, REFER TO DETAIL 1 SHEET 40-01.
6. PROPOSED PAVEMENT/ GRAVEL ELEVATION TO MATCH EXISTING ELEVATION FLUSH.
7. EXISTING GRAVEL AND GRAVEL EDGE TO REMAIN, PROTECT IN PLACE.
8. PROPOSED BOARDWALK, REFER TO PERMATRAK DETAIL SHEETS PT01 - PT04.
9. PROPOSED BOARDWALK APPROACH, REFER TO TYPICAL APPROACH DETAIL, SHEET PT03.
10. BEGINNING OF PROPOSED BOARDWALK RAILING, REFER TO DETAIL SHEET 40-02.
11. END OF PROPOSED BOARDWALK RAILING, REFER TO DETAIL SHEET 40-02.
12. BOLLARD, REFER TO DETAIL 7 SHEET 40-01.
13. TRASH RECEPTACLE, REFER TO DETAIL 10 SHEET 40-01.
14. 8' BENCH, REFER TO DETAIL 11 SHEET 40-01.
15. EXISTING TREE TO REMAIN, PROTECT IN PLACE.
16. REMOVE EXISTING TREE AND DISPOSE OF DEBRIS OFF SITE. GRIND STUMP MINIMUM 2 FEET BELOW GRADE.
17. ACCESSIBLE RAMP, TYPE A, 6 FT. WIDE. REFER TO GDOT DETAIL A3 & A4.
18. DETECTABLE WARNING SURFACE REFER TO GDOT STANDARD DETAILS SHEET A4.
19. CONCRETE CURB AND GUTTER, TYPE 2, REFER TO GDOT STD. 9032B.
20. EXISTING SEWER MANHOLE, PROTECT IN PLACE.

PLAN NOTES

21. EXISTING UTILITY POLE, GUY WIRES OR UTILITY BOX, PROTECT IN PLACE.
22. RELOCATE GUY WIRES MINIMUM OF 10' OUTSIDE CONCRETE TRAIL/ GRAVEL SHOULDER.
23. EXISTING BRIDGE PIER, PROTECT IN PLACE.
24. EXISTING WATER MAIN, VAULTS, VALVES OR METER, PROTECT IN PLACE.
25. EXISTING BENCH AND/OR CONCRETE PAD, PROTECT IN PLACE.
26. BICYCLE RACK, REFER TO DETAIL 12 SHEET 40-01.
27. BICYCLE REPAIR STATION, REFER TO DETAIL 8 SHEET 40-01.
28. WOOD RAILING/ FENCE, REFER TO DETAIL 6 SHEET 40-01.
29. REMOVE EXISTING GUARDRAIL.
30. GUARDRAIL, GDOT TYPE 12, NON FLARED ANCHOR WITH 31 INCH HT. TRANSITION, REFER TO GDOT STANDARDS 4000W, 4380, 4381, 4384, 4385, AND 4390.
31. RUBBLE MASONRY GRAVITY WALL, GDOT STANDARD 9031L, SEE TYPICAL SECTION "A" AND WALL ENVELOPE NO. 1 AND 2, SHEET 31-01 AND 31-02.
32. CONCRETE RETAINING WALL, GDOT PRW-1 TYPE P3,SEE WALL ENVELOPE NO. 3, SHEET 31-02.
33. CONTRACTOR TO MANUALLY CUT & CLEAR VEGETATION AND TREES FLUSH TO GROUND BETWEEN BEGINNING AND END OF BOARDWALK LOCATIONS. ALL CLEARING SHALL OCCUR WITHIN THE LIMITS OF DISTURBANCE. GROUND IS TO REMAIN UNDISTURBED.
34. ORANGE BARRIER FENCE, 4' HT. LIMITS OF DISTURBANCE NEAR STATE BUFFER/ SENSITIVE AREAS.
35. CONCRETE DITCH/ FLUME, SEE DETAIL 9 SHEET 40-01.

0' 10' 20' 40' 60'
GRAPHIC SCALE
Scale: 1 Inch = 20 Ft.

GEORGIA REGISTERED No. LA000750 08-11-2020 LANDSCAPE ARCHITECT JOHN D BOUDREAUX
NOT VALID FOR CONSTRUCTION UNLESS SIGNED IN THIS BLOCK

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770--933-0280

REVISION	DATE
1 ADDENDUM NO. 2	08-11-20

PROJ. NO.: 100062569
DESIGNED BY: C.L.H.
DRAWN BY: C.L.H.
CHECKED BY:
APPROVED BY:
DATE: AUG. 2019
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

CONSTRUCTION LAYOUT PLANS

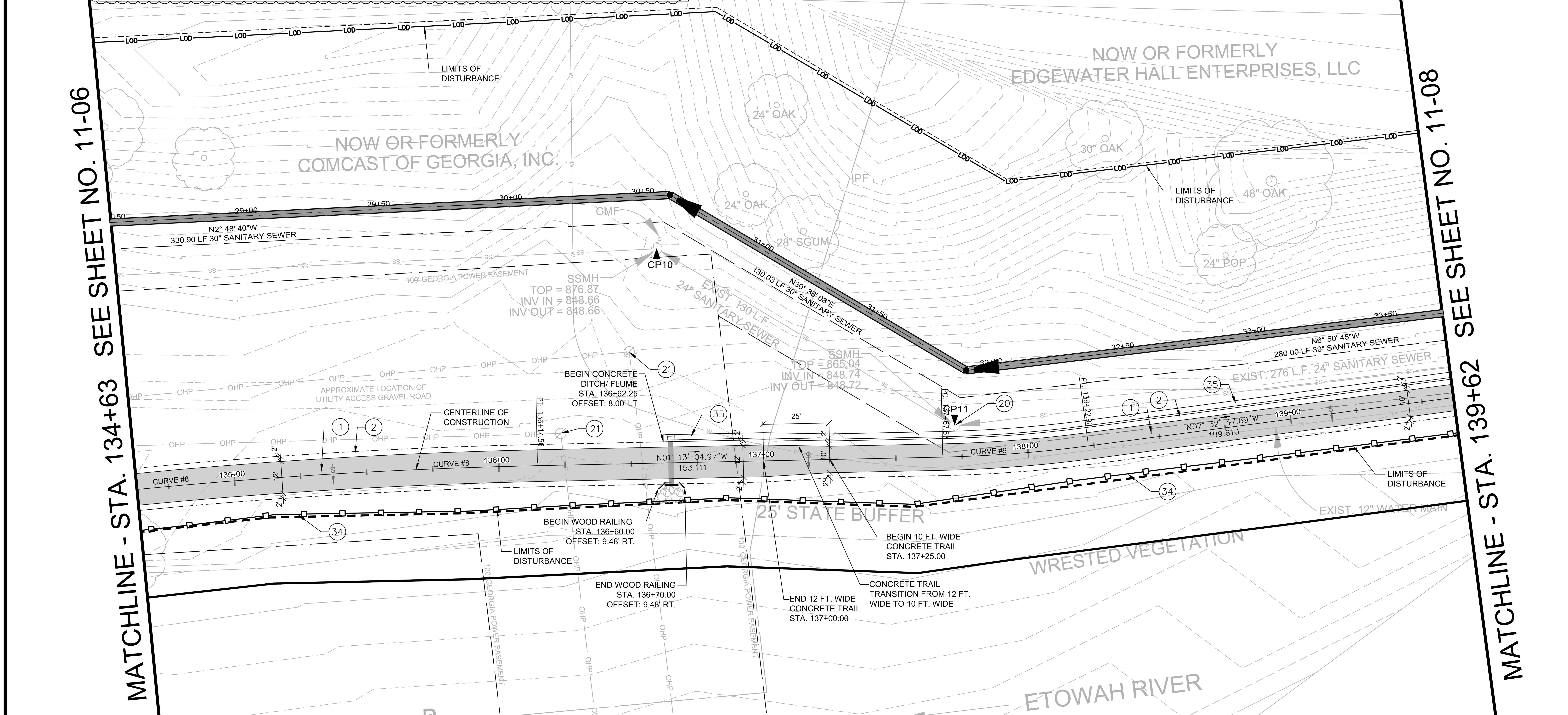
SHEET NO.
11-06
100062569

File Name: M:\100062569 – HERITAGE TO BOLING PARK TRAIL\CAD\DELIVERABLES\11 LAYOUT.DWG|Tab: 06|Plotted: August 18, 2020 4:19pm

WHEN WORKING WITHIN THE THE GEORGIA POWER EASEMENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF HIS OR HER LABORERS, EQUIPMENT AND GEORGIA POWER FACILITIES AT ALL TIMES. THE CONTRACTOR IS REQUIRED TO SCHEDULE AND ATTEND A PRE-CONSTRUCTION MEETING WITH GEORGIA POWER TO DETERMINE MEANS AND METHODS OF WORK CONDUCTED WITHIN THE GEORGIA POWER EASEMENT INCLUDING BUT NOT LIMITED TO, SAFETY MEASURES, EQUIPMENT LIMITATIONS OR RESTRICTIONS, AND MOVEMENT THROUGH THE EASEMENTS DURING CONSTRUCTION. ⚠1

COORDINATE CONTROL TABLE

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET	DESCRIPTION
10	1541018.8123	2196541.0639	867.873	136+61.29	81.022' LT	SSMH
11	1541131.3974	2196607.5934	865.041	137+72.55	12.091' LT	SSMH



CURVE #8	CURVE #9
Δ = 5° 18' 59.4" RT	Δ = 6° 19' 42.96" LT
DEG = 2° 51' 53.24"	DEG = 11° 27' 32.98"
T = 92.86	T = 27.64
PI Station 135+21.84	PI Station 137+95.31
N = 1540880.98 E = 2196625.04	N = 1541154.53 E = 2196619.22
Length = 185.58'	Length = 55.23'
Radius = 2000.00'	Radius = 500.00'
Chord Bearing = N3° 52' 35"W	Chord Bearing = N4° 22' 56"W
Chord Length = 185.51'	Chord Length = 55.20'

PLAN NOTES

1. PROPOSED CONCRETE TRAIL, REFER TO DETAILS 2, 3, AND 4 SHEET 40-01.
2. 2' WIDE GRAVEL SHOULDER (TYP).
3. STOP BAR, 24" SOLID WHITE.
4. CROSSWALK STRIPING, 12" SOLID WHITE (2' ON CENTER).
5. GRAVEL PAVING, REFER TO DETAIL 1 SHEET 40-01.
6. PROPOSED PAVEMENT/ GRAVEL ELEVATION TO MATCH EXISTING ELEVATION FLUSH.
7. EXISTING GRAVEL AND GRAVEL EDGE TO REMAIN, PROTECT IN PLACE.
8. PROPOSED BOARDWALK, REFER TO PERMATRAK DETAIL SHEETS PT01 - PT04.
9. PROPOSED BOARDWALK APPROACH, REFER TO TYPICAL APPROACH DETAIL, SHEET PT03.
10. BEGINNING OF PROPOSED BOARDWALK RAILING, REFER TO DETAIL SHEET 40-02.
11. END OF PROPOSED BOARDWALK RAILING, REFER TO DETAIL SHEET 40-02.
12. BOLLARD, REFER TO DETAIL 7 SHEET 40-01.
13. TRASH RECEPTACLE, REFER TO DETAIL 10 SHEET 40-01.
14. 8' BENCH, REFER TO DETAIL 11 SHEET 40-01.
15. EXISTING TREE TO REMAIN, PROTECT IN PLACE.
16. REMOVE EXISTING TREE AND DISPOSE OF DEBRIS OFF SITE. GRIND STUMP MINIMUM 2 FEET BELOW GRADE.
17. ACCESSIBLE RAMP, TYPE A, 6 FT. WIDE. REFER TO GDOT DETAIL A3 & A4.
18. DETECTABLE WARNING SURFACE REFER TO GDOT STANDARD DETAILS SHEET A4.
19. CONCRETE CURB AND GUTTER, TYPE 2, REFER TO GDOT STD. 9032B.
20. EXISTING SEWER MANHOLE, PROTECT IN PLACE.

PLAN NOTES

21. EXISTING UTILITY POLE, GUY WIRES OR UTILITY BOX, PROTECT IN PLACE.
22. RELOCATE GUY WIRES MINIMUM OF 10' OUTSIDE CONCRETE TRAIL/ GRAVEL SHOULDER.
23. EXISTING BRIDGE PIER, PROTECT IN PLACE.
24. EXISTING WATER MAIN, VAULTS, VALVES OR METER, PROTECT IN PLACE.
25. EXISTING BENCH AND/OR CONCRETE PAD, PROTECT IN PLACE.
26. BICYCLE RACK, REFER TO DETAIL 12 SHEET 40-01.
27. BICYCLE REPAIR STATION, REFER TO DETAIL 8 SHEET 40-01.
28. WOOD RAILING/ FENCE, REFER TO DETAIL 6 SHEET 40-01.
29. REMOVE EXISTING GUARDRAIL.
30. GUARDRAIL, GDOT TYPE 12, NON FLARED ANCHOR WITH 31 INCH HT. TRANSITION, REFER TO GDOT STANDARDS 4000W, 4380, 4381, 4384, 4385, AND 4390.
31. RUBBLE MASONRY GRAVITY WALL, GDOT STANDARD 9031L, SEE TYPICAL SECTION "A" AND WALL ENVELOPE NO. 1 AND 2, SHEET 31-01 AND 31-02.
32. CONCRETE RETAINING WALL, GDOT PRW-1 TYPE P3,SEE WALL ENVELOPE NO. 3, SHEET 31-02.
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34. ORANGE BARRIER FENCE, 4' HT. LIMITS OF DISTURBANCE NEAR STATE BUFFER/ SENSITIVE AREAS.
35. CONCRETE DITCH/ FLUME, SEE DETAIL 9 SHEET 40-01.

0' 10' 20' 40' 60'
GRAPHIC SCALE
Scale: 1 Inch = 20 Ft.

GEORGIA REGISTERED No. LA000780 08-11-2020 LANDSCAPE ARCHITECT JOHN D BOUDREAU
NOT FOR CONSTRUCTION UNLESS SIGNED IN THIS BLOCK

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770–933-0280

	REVISION	DATE
1	ADDENDUM NO. 2	08-11-20

PROJ. NO.: 100062569
DESIGNED BY: C.L.H.
DRAWN BY: C.L.H.
CHECKED BY:
APPROVED BY:
DATE: AUG., 2019
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

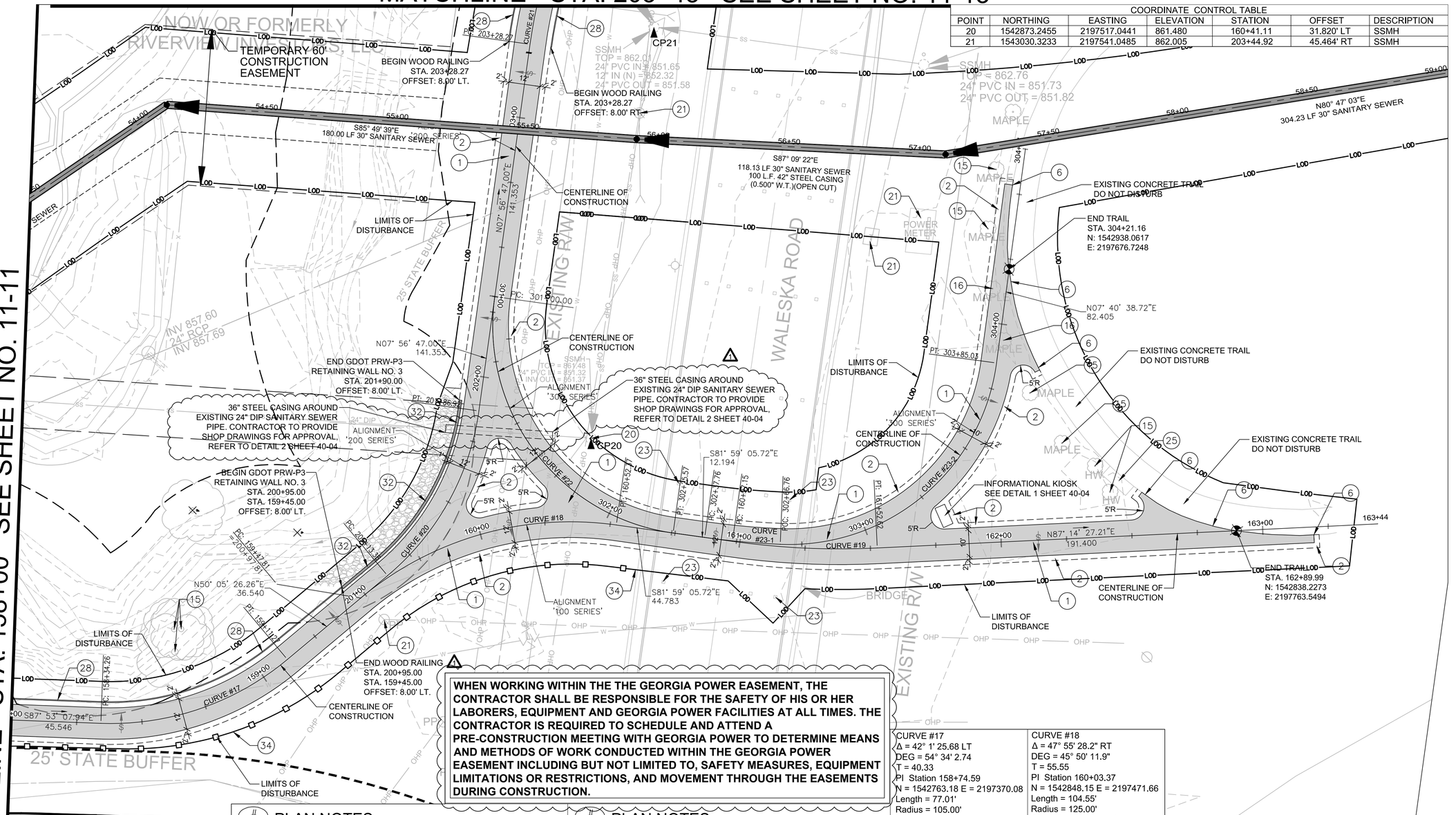
CONSTRUCTION LAYOUT PLANS

SHEET NO.
11-07
100062569

File Name: M:\100062569 – HERITAGE TO BOLING PARK TRAIL\CAD\DELIVERABLES\11 LAYOUT.DWG|Tab: 07|Plotted: August 18, 2020 4:21pm

MATCHLINE - STA. 203+43 SEE SHEET NO. 11-13

MATCHLINE - STA. 158+00 SEE SHEET NO. 11-11



COORDINATE CONTROL TABLE						
POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET	DESCRIPTION
20	1542873.2455	2197517.0441	861.480	160+41.11	31.820' LT	SSMH
21	1543030.3233	2197541.0485	862.005	203+44.92	45.464' RT	SSMH

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PLAN NOTES

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2. 2' WIDE GRAVEL SHOULDER (TYP).
3. STOP BAR, 24" SOLID WHITE.
4. CROSSWALK STRIPING, 12" SOLID WHITE (2' ON CENTER).
5. GRAVEL PAVING, REFER TO DETAIL 1 SHEET 40-01.
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7. EXISTING GRAVEL AND GRAVEL EDGE TO REMAIN, PROTECT IN PLACE.
8. PROPOSED BOARDWALK, REFER TO PERMATRAK DETAIL SHEETS PT01 - PT04.
9. PROPOSED BOARDWALK APPROACH, REFER TO TYPICAL APPROACH DETAIL, SHEET PT03.
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11. END OF PROPOSED BOARDWALK RAILING, REFER TO DETAIL SHEET 40-02.
12. BOLLARD, REFER TO DETAIL 7 SHEET 40-01.
13. TRASH RECEPTACLE, REFER TO DETAIL 10 SHEET 40-01.
14. 8' BENCH, REFER TO DETAIL 11 SHEET 40-01.
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19. CONCRETE CURB AND GUTTER, TYPE 2, REFER TO GDOT STD. 9032B.
20. EXISTING SEWER MANHOLE, PROTECT IN PLACE.

PLAN NOTES

21. EXISTING UTILITY POLE, GUY WIRES OR UTILITY BOX, PROTECT IN PLACE.
22. RELOCATE GUY WIRES MINIMUM OF 10' OUTSIDE CONCRETE TRAIL/ GRAVEL SHOULDER.
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24. EXISTING WATER MAIN, VAULTS, VALVES OR METER, PROTECT IN PLACE.
25. EXISTING BENCH AND/OR CONCRETE PAD, PROTECT IN PLACE.
26. BICYCLE RACK, REFER TO DETAIL 12 SHEET 40-01.
27. BICYCLE REPAIR STATION, REFER TO DETAIL 8 SHEET 40-01.
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34. ORANGE BARRIER FENCE, 4' HT. LIMITS OF DISTURBANCE NEAR STATE BUFFER/ SENSITIVE AREAS.
35. CONCRETE DITCH/ FLUME, SEE DETAIL 9 SHEET 40-01.

CURVE #17	CURVE #18
Δ = 42° 1' 25.68 LT DEG = 54° 34' 2.74 T = 40.33 PI Station 158+74.59 N = 1542763.18 E = 2197370.08 Length = 77.01' Radius = 105.00' Chord Bearing = N71° 06' 09"E Chord Length = 75.30'	Δ = 47° 55' 28.2" RT DEG = 45° 50' 11.9" T = 55.55 PI Station 160+03.37 N = 1542848.15 E = 2197471.66 Length = 104.55' Radius = 125.00' Chord Bearing = N74° 03' 10"E Chord Length = 101.53'

CURVE #19	CURVE #20	CURVE #21
Δ = 10° 46' 27.12" LT DEG = 19° 25' 20.3" T = 27.82 PI Station 161+24.97 N = 1542830.28 E = 2197598.56 Length = 55.47' Radius = 295.00' Chord Bearing = S87° 22' 19"E Chord Length = 55.39'	Δ = 42° 8' 39.12" LT DEG = 57° 17' 44.88" T = 38.53 PI Station 201+51.89 N = 1542845.79 E = 2197468.85 Length = 73.56' Radius = 100.00' Chord Bearing = N29° 01' 07"E Chord Length = 71.91'	Δ = 10° 21' 45.72" RT DEG = 28° 38' 52.08" T = 18.14 PI Station 203+46.40 N = 1543041.91 E = 2197496.22 Length = 36.17' Radius = 200.00' Chord Bearing = N13° 07' 40"E Chord Length = 36.12'
CURVE #22	CURVE #23-1	CURVE #23-2
Δ = 89° 55' 52.68 LT DEG = 71° 37' 11.1 T = 79.90 PI Station 301+79.90 N = 1542848.49 E = 2197469.22 Length = 125.57' Radius = 80.00' Chord Bearing = S37° 01' 09"E Chord Length = 113.07'	Δ = 5° 37' 58.44" LT DEG = 19° 25' 20.3" T = 14.51 PI Station 302+52.27 N = 1542833.62 E = 2197574.79 Length = 29.00' Radius = 295.00' Chord Bearing = S84° 48' 05"E Chord Length = 28.99'	Δ = 84°42' 16.92" LT DEG = 71° 37' 11.1" T = 81.51 PI Station 303+39.69 N = 1542829.99 E = 2197662.16 Length = 118.27' Radius = 80.00' Chord Bearing = N50°01' 47"E Chord Length = 107.79'

N

0' 10' 20' 40' 60'

GRAPHIC SCALE
Scale: 1 Inch = 20 Ft.

GEORGIA REGISTERED No. LA000750 LANDSCAPE ARCHITECT JOHN D BOUDREAU
08-11-2020
NOT VALID WITHOUT EMBOSSED SEAL UNLESS SIGNED IN THIS BLOCK

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770-933-0280

REVISION	DATE
1 ADDENDUM NO. 2	08-11-20

PROJ. NO.: 100062569
DESIGNED BY: C.L.H.
DRAWN BY: C.L.H.
CHECKED BY:
APPROVED BY:
DATE: AUG. 2019
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

CONSTRUCTION LAYOUT PLANS

SHEET NO.
11-12
100062569

File Name: M:\100062569 – HERITAGE TO BOLING PARK TRAIL\CAD\DELIVERABLES\11 LAYOUT.DWG|Tab:12|Plotted: August 19, 2020 12:06pm

WHEN WORKING WITHIN THE THE GEORGIA POWER EASEMENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF HIS OR HER LABORERS, EQUIPMENT AND GEORGIA POWER FACILITIES AT ALL TIMES. THE CONTRACTOR IS REQUIRED TO SCHEDULE AND ATTEND A PRE-CONSTRUCTION MEETING WITH GEORGIA POWER TO DETERMINE MEANS AND METHODS OF WORK CONDUCTED WITHIN THE GEORGIA POWER EASEMENT INCLUDING BUT NOT LIMITED TO, SAFETY MEASURES, EQUIPMENT LIMITATIONS OR RESTRICTIONS, AND MOVEMENT THROUGH THE EASEMENTS DURING CONSTRUCTION.

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET	DESCRIPTION
22	1543258.2662	2197389.3278	864.344	205+18.13	169.448' LT	SSMH
23	1543367.6659	2197443.5219	870.702	206+39.01	152.364' LT	SSMH

CURVE #22
Δ = 89° 55' 52.68 LT
DEG = 71° 37' 11.1
T = 79.90
PI Station 301+79.90
N = 1542848.49 E = 2197469.22
Length = 125.57'
Radius = 80.00'
Chord Bearing = S37° 01' 09"E
Chord Length = 113.07'

PLAN NOTES

1. PROPOSED CONCRETE TRAIL, REFER TO DETAILS 2, 3, AND 4 SHEET 40-01.
2. 2' WIDE GRAVEL SHOULDER (TYP).
3. STOP BAR, 24" SOLID WHITE.
4. CROSSWALK STRIPING, 12" SOLID WHITE (2' ON CENTER).
5. GRAVEL PAVING, REFER TO DETAIL 1 SHEET 40-01.
6. PROPOSED PAVEMENT/ GRAVEL ELEVATION TO MATCH EXISTING ELEVATION FLUSH.
7. EXISTING GRAVEL AND GRAVEL EDGE TO REMAIN, PROTECT IN PLACE.
8. PROPOSED BOARDWALK, REFER TO PERMATRAK DETAIL SHEETS PT01 - PT04.
9. PROPOSED BOARDWALK APPROACH, REFER TO TYPICAL APPROACH DETAIL, SHEET PT03.
10. BEGINNING OF PROPOSED BOARDWALK RAILING, REFER TO DETAIL SHEET 40-02.
11. END OF PROPOSED BOARDWALK RAILING, REFER TO DETAIL SHEET 40-02.
12. BOLLARD, REFER TO DETAIL 7 SHEET 40-01.
13. TRASH RECEPTACLE, REFER TO DETAIL 10 SHEET 40-01.
14. 8' BENCH, REFER TO DETAIL 11 SHEET 40-01.
15. EXISTING TREE TO REMAIN, PROTECT IN PLACE.
16. REMOVE EXISTING TREE AND DISPOSE OF DEBRIS OFF SITE. GRIND STUMP MINIMUM 2 FEET BELOW GRADE.
17. ACCESSIBLE RAMP, TYPE A, 6 FT. WIDE. REFER TO GDOT DETAIL A3 & A4.
18. DETECTABLE WARNING SURFACE REFER TO GDOT STANDARD DETAILS SHEET A4.
19. CONCRETE CURB AND GUTTER, TYPE 2, REFER TO GDOT STD. 9032B.
20. EXISTING SEWER MANHOLE, PROTECT IN PLACE.
21. EXISTING UTILITY POLE, GUY WIRES OR UTILITY BOX, PROTECT IN PLACE.
22. RELOCATE GUY WIRES MINIMUM OF 10' OUTSIDE CONCRETE TRAIL/ GRAVEL SHOULDER.
23. EXISTING BRIDGE PIER, PROTECT IN PLACE.
24. EXISTING WATER MAIN, VAULTS, VALVES OR METER, PROTECT IN PLACE.
25. EXISTING BENCH AND/OR CONCRETE PAD, PROTECT IN PLACE.
26. BICYCLE RACK, REFER TO DETAIL 12 SHEET 40-01.
27. BICYCLE REPAIR STATION, REFER TO DETAIL 8 SHEET 40-01.
28. WOOD RAILING/ FENCE, REFER TO DETAIL 6 SHEET 40-01.
29. REMOVE EXISTING GUARDRAIL.
30. GUARDRAIL, GDOT TYPE 12, NON FLARED ANCHOR WITH 31 INCH HT. TRANSITION, REFER TO GDOT STANDARDS 4000W, 4380, 4381, 4384, 4385, AND 4390.
31. RUBBLE MASONRY GRAVITY WALL, GDOT STANDARD 9031L, SEE TYPICAL SECTION "A" AND WALL ENVELOPE NO. 1 AND 2, SHEET 31-01 AND 31-02.
32. CONCRETE RETAINING WALL, GDOT PRW-1 TYPE P3,SEE WALL ENVELOPE NO. 3, SHEET 31-02.
33. CONTRACTOR TO MANUALLY CUT & CLEAR VEGETATION AND TREES FLUSH TO GROUND BETWEEN BEGINNING AND END OF BOARDWALK LOCATIONS. ALL CLEARING SHALL OCCUR WITHIN THE LIMITS OF DISTURBANCE. GROUND IS TO REMAIN UNDISTURBED.
34. ORANGE BARRIER FENCE, 4' HT. LIMITS OF DISTURBANCE NEAR STATE BUFFER/ SENSITIVE AREAS.
35. CONCRETE DITCH/ FLUME, SEE DETAIL 9 SHEET 40-01.

END TRAIL
STA. 206+90.61
N: 1543368.7885
E: 2197604.3822

BEGIN CURB & GUTTER, TYPE 2
STA. 206+87.04
OFFSET: 9.00' LT
MATCH TO EXISTING

INFORMATIONAL KIOSK
SEE DETAIL 1 SHEET 40-04

END WOOD RAILING
STA. 206+63.46
OFFSET: 8.00' LT

LIMITS OF DISTURBANCE

END CURB & GUTTER, TYPE 2
STA. 206+74.17
OFFSET: 18.70' RT
MATCH TO EXISTING

END NEW GUARDRAIL, TYPE 12
STA. 206+68.75
OFFSET: 10.61' RT

END WOOD RAILING
STA. 206+63.46
OFFSET: 8.00' RT

BEGIN REMOVE & REPLACE WITH NEW GUARDRAIL, TYPE 12
STA. 205+86.91
OFFSET: 25.86' RT
ADJUST GUARDRAIL LENGTH ACCORDINGLY

LIMITS OF DISTURBANCE

LIMITS OF DISTURBANCE

CENTERLINE OF CONSTRUCTION

PT: 203+64.44

CURVE #22

N18° 18' 32.82"E
362.661'

EXISTING R/W

ANDERSON AVENUE

NOW OR FORMERLY
RIVERVIEW INVESTORS, LLC

EXIST. 24"/30"L.F. 12" SANITARY SEWER

EXIST. 8" D.I.P. WATER MAIN

RIP RAP

150' R/W

STATE ROUTE 140
WALESKA ROAD

CP23

CP22

18" RCP

52" RCP

12" CMP

207+27

207+00

206+00

205+00

204+00

MATCHLINE - STA. 203+43 SEE SHEET NO. 11-12

N

GRAPHIC SCALE
Scale: 1 Inch = 20 Ft.
0' 10' 20' 40' 60'

GEORGIA REGISTERED No. LA000750 LANDSCAPE ARCHITECT JOHN D BOUDREAU 08-11-2020
NOT VALID FOR CONSTRUCTION UNLESS SIGNED IN THIS BLOCK

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770-933-0280

REVISION	DATE
1 ADDENDUM NO. 2	08-11-20

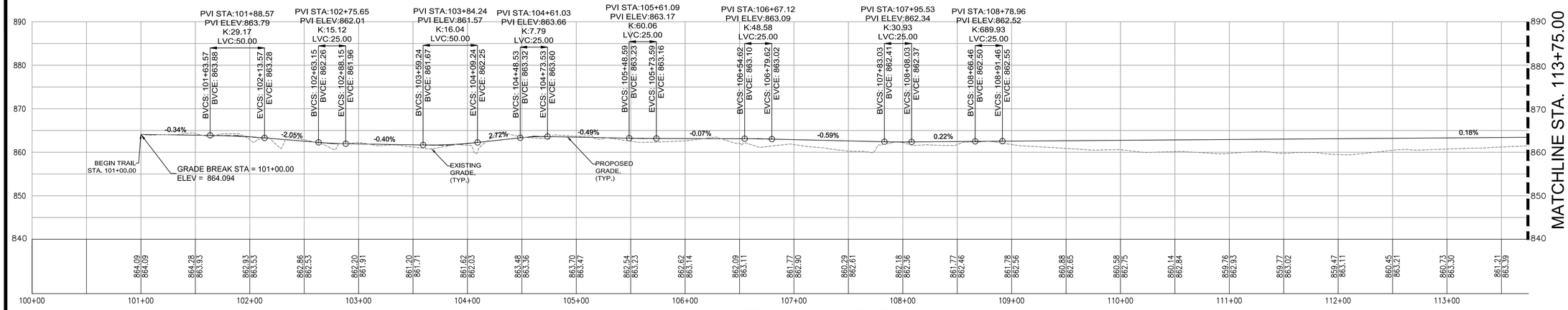
PROJ. NO.: 100062569
DESIGNED BY: C.L.H.
DRAWN BY: C.L.H.
CHECKED BY:
APPROVED BY:
DATE: AUG. 2019
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

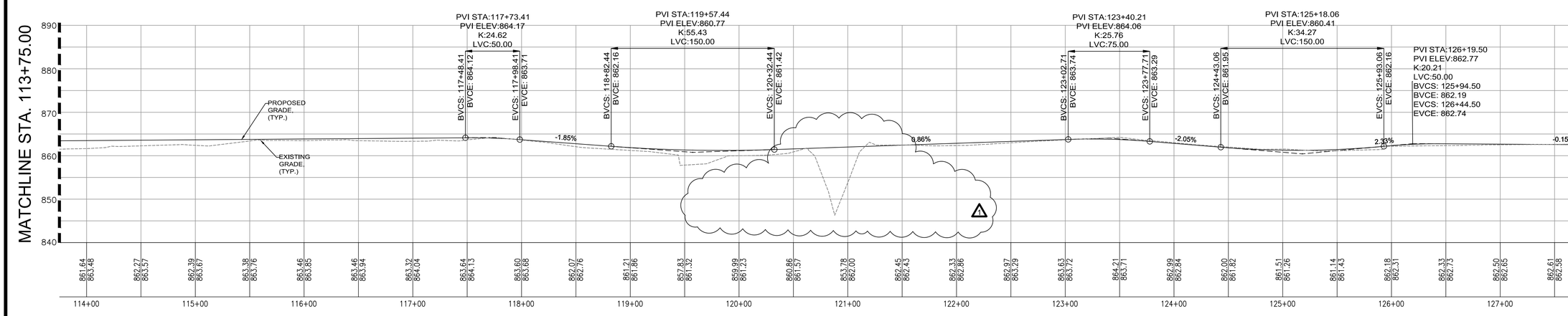
CONSTRUCTION LAYOUT PLANS

SHEET NO.
11-13
100062569

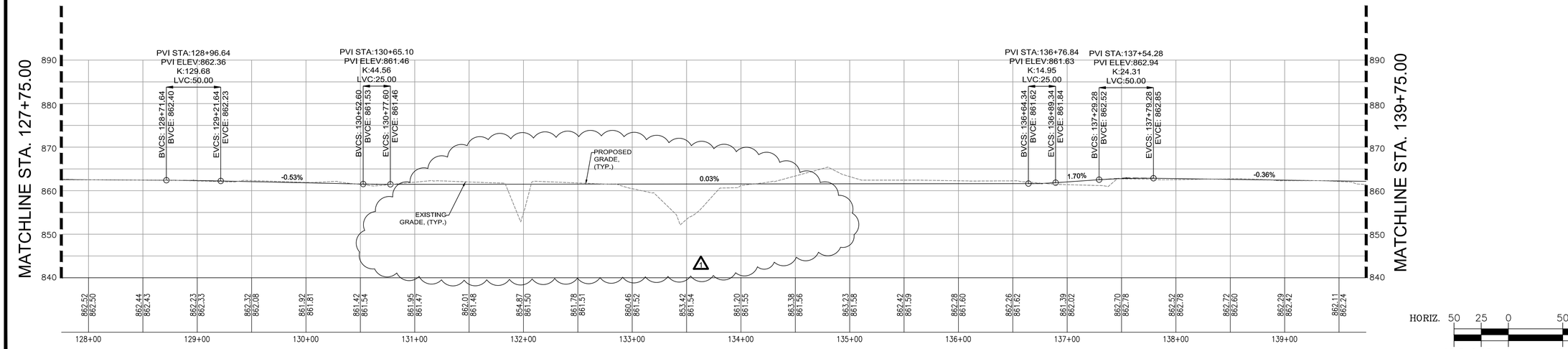
File Name: M:\100062569 – HERITAGE TO BOLING PARK TRAIL\CAD\DELIVERABLES\11 LAYOUT.DWG|Tab:13|Plotted: August 19, 2020 12:08pm



TRAIL ALIGNMENT 100



TRAIL ALIGNMENT 100



TRAIL ALIGNMENT 100

HORIZ. 50 25 0 50 100
VERT. 12.5 6.25 0 12.5 25
SCALE IN FEET

GEORGIA REGISTERED No. LA000750 LANDSCAPE ARCHITECT JOHN D BOUDREAU 08-11-2020
NOT VALID FOR CONSTRUCTION UNLESS SIGNED IN THIS BLOCK

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770-933-0280

REVISION	DATE
△ 1 ADDENDUM NO. 2	08-11-20

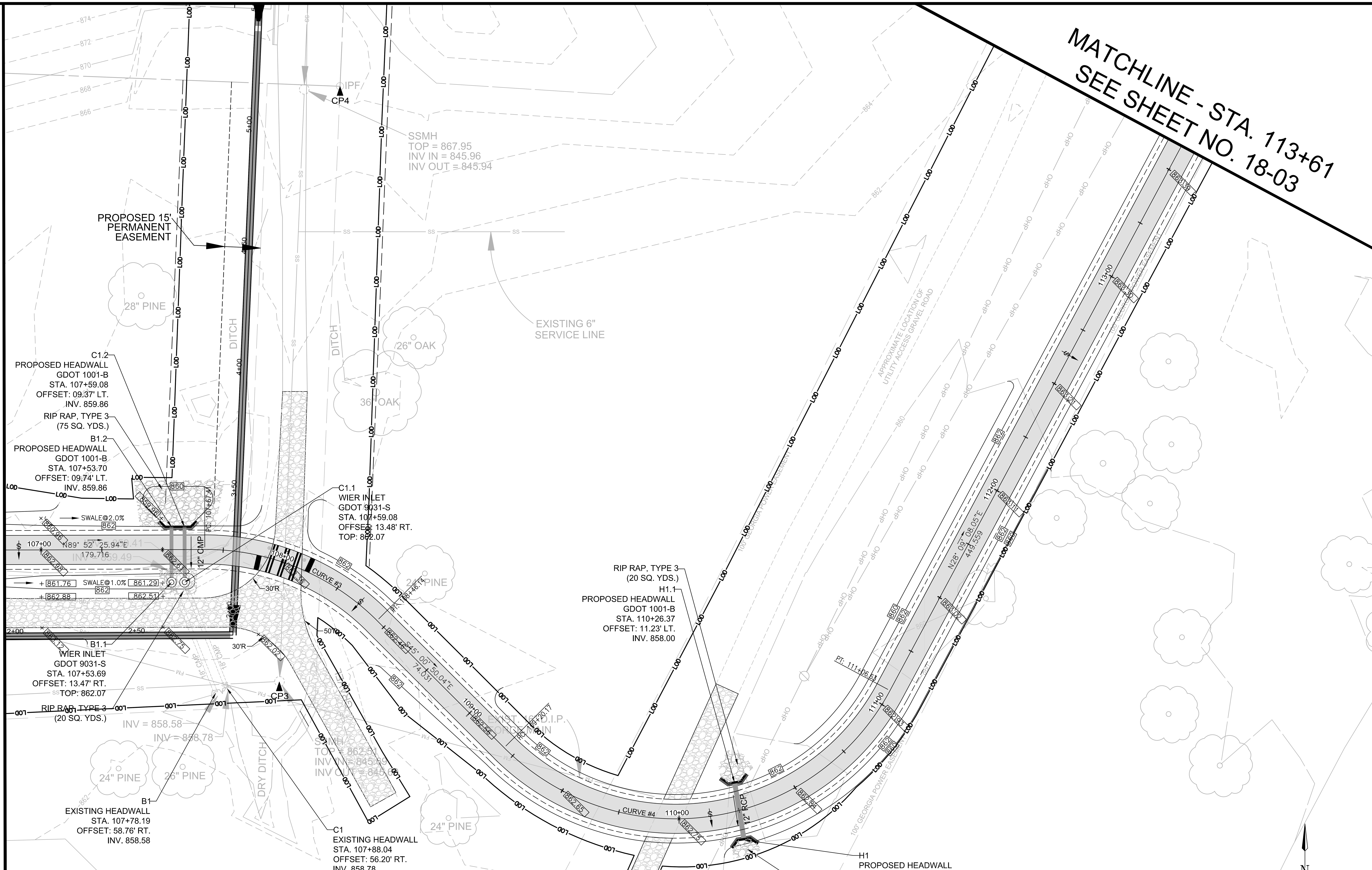
PROJ. NO.: 100062569
DESIGNED BY: C.L.H.
DRAWN BY: C.L.H.
CHECKED BY:
APPROVED BY:
DATE: AUG. 2019
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

TRAIL PROFILE

SHEET NO.
16-01
100062569

File Name: M:\100062569 – HERITAGE TO BOLING PARK TRAIL\CAD\DELIVERABLES\16 PROFILES.DWG|Tab:16-01|Plotted: August 13, 2020 4:20pm


MATCHLINE - STA. 106+85 SEE SHEET NO. 18-01
MATCHLINE - STA. 113+61 SEE SHEET NO. 18-03
PROPOSED 15' PERMANENT EASEMENT
SSMH
TOP = 867.95
INV IN = 845.96
INV OUT = 845.94
CP4
IPF
EXISTING 6" SERVICE LINE
28" PINE
26" OAK
36" OAK
24" PINE
26" PINE
DITCH
DRY DITCH
C1.2
PROPOSED HEADWALL
GDOT 1001-B
STA. 107+59.08
OFFSET: 09.37' LT.
INV. 859.86
RIP RAP, TYPE 3
(75 SQ. YDS.)
B1.2
PROPOSED HEADWALL
GDOT 1001-B
STA. 107+53.70
OFFSET: 09.74' LT.
INV. 859.86
C1.1
WIER INLET
GDOT 9031-S
STA. 107+59.08
OFFSET: 13.48' RT.
TOP: 862.07
B1.1
WIER INLET
GDOT 9031-S
STA. 107+53.69
OFFSET: 13.47' RT.
TOP: 862.07
RIP RAP, TYPE 3
(20 SQ. YDS.)
INV = 858.58
INV = 858.78
B1
EXISTING HEADWALL
STA. 107+78.19
OFFSET: 58.76' RT.
INV. 858.58
C1
EXISTING HEADWALL
STA. 107+88.04
OFFSET: 56.20' RT.
INV. 858.78
CP3
SWALE@2.0%
SWALE@1.0%
12" CMP
N89° 52' 25.94"E
179.716
CURVE #3
CURVE #4
S45° 00' 50.04"E
74.031
N28° 09' 08.05"E
PT: 111+06.51
RIP RAP, TYPE 3
(20 SQ. YDS.)
H1.1
PROPOSED HEADWALL
GDOT 1001-B
STA. 110+26.37
OFFSET: 11.23' LT.
INV. 858.00
H1
PROPOSED HEADWALL
GDOT 1001-B
STA. 110+24.05
OFFSET: 11.60' RT.
INV. 857.80
RIP RAP, TYPE 3
(20 SQ. YDS.)
12" RCP
APPROXIMATE LOCATION OF UTILITY ACCESS GRAVEL ROAD
100' GEORGIA POWER EASEMENT
N
0' 10' 20' 40' 60'
GRAPHIC SCALE
Scale: 1 Inch = 20 Ft.

WHEN WORKING WITHIN THE THE GEORGIA POWER EASEMENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF HIS OR HER LABORERS, EQUIPMENT AND GEORGIA POWER FACILITIES AT ALL TIMES. THE CONTRACTOR IS REQUIRED TO SCHEDULE AND ATTEND A PRE-CONSTRUCTION MEETING WITH GEORGIA POWER TO DETERMINE MEANS AND METHODS OF WORK CONDUCTED WITHIN THE GEORGIA POWER EASEMENT INCLUDING BUT NOT LIMITED TO, SAFETY MEASURES, EQUIPMENT LIMITATIONS OR RESTRICTIONS, AND MOVEMENT THROUGH THE EASEMENTS DURING CONSTRUCTION.

GEORGIA REGISTERED No. LA000750 08-11-2020 LANDSCAPE ARCHITECT JOHN D BOUDREAU

NOT VALID FOR CONSTRUCTION UNLESS SIGNED IN THIS BLOCK

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770-933-0280

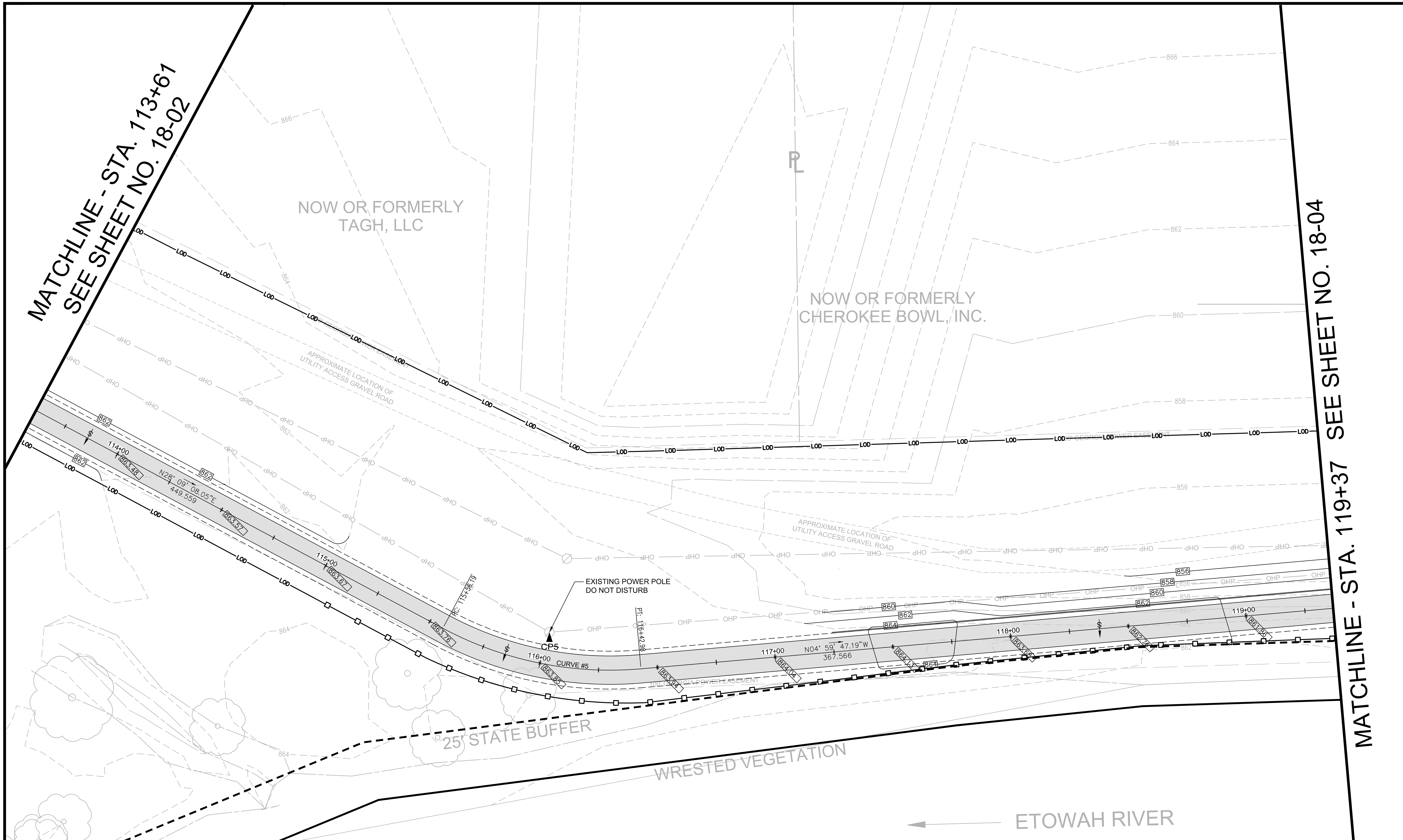
	REVISION	DATE
1	ADDENDUM NO. 2	08-11-20

PROJ. NO.: 100062569
DESIGNED BY: C.L.H.
DRAWN BY: C.L.H.
CHECKED BY:
APPROVED BY:
DATE: AUG., 2019
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

GRADING AND DRAINAGE PLANS

SHEET NO.
18-02
100062569



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GEORGIA REGISTERED No. LA000750 08-11-2020 LANDSCAPE ARCHITECT JOHN D BOUDREAU

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ATKINS

1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770--933-0280

△	REVISION	DATE
1	ADDENDUM NO. 2	08-11-20

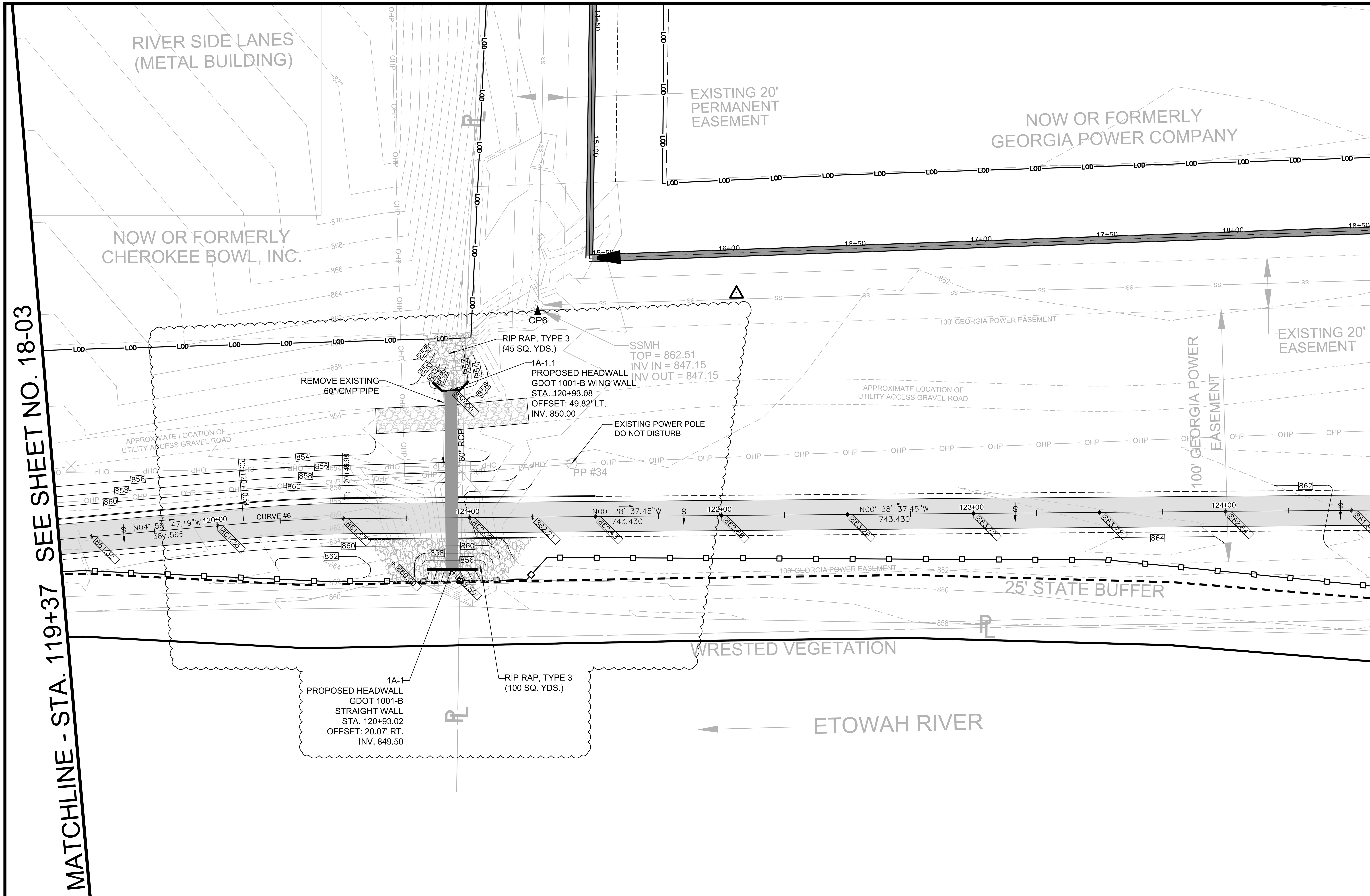
PROJ. NO.: 100062569
DESIGNED BY: C.L.H.
DRAWN BY: C.L.H.
CHECKED BY:
APPROVED BY:
DATE: AUG., 2019
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

GRADING AND DRAINAGE PLANS

SHEET NO.
18-03
100062569

File Name: M:\100062569 – HERITAGE TO BOLING PARK TRAIL\CAD\DELIVERABLES\18 GRADING AND DRAINAGE.DWG|Tab: 03|Plotted: August 18, 2020 4:32pm



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N

0' 10' 20' 40' 60'

GRAPHIC SCALE
Scale: 1 Inch = 20 Ft.

GEORGIA REGISTERED No. LA000780 08-11-2020 LANDSCAPE ARCHITECT JOHN D BOUDREAU

NOT VALID FOR CONSTRUCTION UNLESS SIGNED IN THIS BLOCK

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770-933-0280

	REVISION	DATE
1	ADDENDUM NO. 2	08-11-20

PROJ. NO.: 100062569
DESIGNED BY: C.L.H.
DRAWN BY: C.L.H.
CHECKED BY:
APPROVED BY:
DATE: AUG., 2019
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

GRADING AND DRAINAGE PLANS

SHEET NO.
18-04
100062569

File Name: M:\100062569 – HERITAGE TO BOLING PARK TRAIL\CAD\DELIVERABLES\18 GRADING AND DRAINAGE.DWG|Tab: 04|Plotted: August 18, 2020 4:32pm

MATCHLINE - STA. 124+62 SEE SHEET NO. 18-04

MATCHLINE - STA. 129+62 SEE SHEET NO. 18-06

NOW OR FORMERLY
GEORGIA POWER COMPANY

NOW OR FORMERLY
WOLF CREEK REAL ESTATE, LLC

PL

LOD

50'

CP7

SSMH
TOP = 863.85
INV IN = 847.48
INV OUT = 847.54

VENT PIPE

100' GEORGIA POWER EASEMENT

APPROXIMATE LOCATION OF
UTILITY ACCESS GRAVEL ROAD

N1.1
PROPOSED HEADWALL
GDOT 1001-B
STA. 125+18.00
OFFSET: 11.50' LT.
INV. 859.23

RIP RAP, TYPE 3
(50 SQ. YDS.)

EXISTING POWER POLE
DO NOT DISTURB

PP #35

OHP

SS

862

864

860

858

125+00

126+00

127+00

128+00

129+00

N00° 28' 37.45"W
743.430

PC: 127+93.41

CURVE #7

12" RCP

GA POWER MON.

100' GEORGIA POWER EASEMENT

25' STATE BUFFER

26" BIRCH

26" BIRCH

CUT & PLUG

CP8

SSMH
TOP = 867.44
INV IN (N) = 847.93
10" DIP INV IN (W) = 860.34
INV OUT = 847:91

WRESTED VEGETATION

ETOWAH RIVER

N1
PROPOSED HEADWALL
GDOT 1001-B
STA. 125+18.00
OFFSET: 11.50' RT.
INV. 859.00

RIP RAP, TYPE 3
(50 SQ. YDS.)

⚠1 WHEN WORKING WITHIN THE THE GEORGIA POWER EASEMENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF HIS OR HER LABORERS, EQUIPMENT AND GEORGIA POWER FACILITIES AT ALL TIMES. THE CONTRACTOR IS REQUIRED TO SCHEDULE AND ATTEND A PRE-CONSTRUCTION MEETING WITH GEORGIA POWER TO DETERMINE MEANS AND METHODS OF WORK CONDUCTED WITHIN THE GEORGIA POWER EASEMENT INCLUDING BUT NOT LIMITED TO, SAFETY MEASURES, EQUIPMENT LIMITATIONS OR RESTRICTIONS, AND MOVEMENT THROUGH THE EASEMENTS DURING CONSTRUCTION.

0' 10' 20' 40' 60'
GRAPHIC SCALE
Scale: 1 Inch = 20 Ft.

GEORGIA REGISTERED No. LA000750 LANDSCAPE ARCHITECT JOHN D BOUDREAU 08-11-2020
NOT VALID without ORIGINAL SIGNATURE AND RAISED SEAL UNLESS SIGNED IN THIS BLOCK

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770-933-0280

△	REVISION	DATE
1	ADDENDUM NO. 2	08-11-20

PROJ. NO.: 100062569
DESIGNED BY: C.L.H.
DRAWN BY: C.L.H.
CHECKED BY:
APPROVED BY:
DATE: AUG. 2019
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 &
RIVER TRAIL EXTENSION

GRADING AND DRAINAGE PLANS

SHEET NO.
18-05
100062569

File Name: M:\100062569 – HERITAGE TO BOLING PARK TRAIL\CAD\DELIVERABLES\18 GRADING AND DRAINAGE.DWG|Tab:05|Plotted: August 18, 2020 4:33pm

MATCHLINE - STA. 129+62 SEE SHEET NO. 18-05

MATCHLINE - STA. 134+63 SEE SHEET NO. 18-07

NOW OR FORMERLY
WOLF CREEK REAL ESTATE, LLC

NOW OR FORMERLY
COMCAST OF GEORGIA, INC.

30" PINE

30" OAK

30" OAK

24" OAK

50'

LOD

24+00 24+50 25+00 25+50 26+00 26+50 27+00 27+50 28+00

CP9

SSMH
TOP = 867.70
INV IN (N) = 848.40
8" INV IN (NW) = 850.78
INV OUT 848.30

100' GEORGIA POWER EASEMENT

APPROXIMATE LOCATION OF
UTILITY ACCESS GRAVEL ROAD

APPROXIMATE LOCATION OF
UTILITY ACCESS GRAVEL ROAD

EXISTING POWER POLE
DO NOT DISTURB

PP

OHP

SS

1B-1.1
PROPOSED HEADWALL
GDOT 1001-B
WING WALL
STA. 131+98.17
OFFSET: 11.01' LT.
INV. 855.00

RIP RAP, TYPE 3
(90 SQ. YDS.)

1C-1.1
PROPOSED HEADWALL
GDOT 1001-B
WING WALL
STA. 133+40.90
OFFSET: 11.00' LT.
INV. 854.00

RIP RAP, TYPE 3
(145 SQ. YDS.)

SWALE@2.0%

CURVE #7

CURVE #8

PT: 132+69.16

130+00 131+00 132+00 133+00 134+00

N06° 32' 04.34"W
159.818

60" RCP

RIP RAP, TYPE 3
(40 SQ. YDS.)

RIP RAP, TYPE 3
(35 SQ. YDS.)

1B-1
PROPOSED HEADWALL
GDOT 1001-B
STRAIGHT WALL
STA. 131+94.30
OFFSET: 10.68' RT.
INV. 854.75

1C-1
PROPOSED HEADWALL
GDOT 1001-B
STRAIGHT WALL
STA. 133+40.90
OFFSET: 11.07' RT.
INV. 853.00

25' STATE BUFFER

WRESTED VEGETATION

ETOWAH RIVER

PL

1 WHEN WORKING WITHIN THE THE GEORGIA POWER EASEMENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF HIS OR HER LABORERS, EQUIPMENT AND GEORGIA POWER FACILITIES AT ALL TIMES. THE CONTRACTOR IS REQUIRED TO SCHEDULE AND ATTEND A PRE-CONSTRUCTION MEETING WITH GEORGIA POWER TO DETERMINE MEANS AND METHODS OF WORK CONDUCTED WITHIN THE GEORGIA POWER EASEMENT INCLUDING BUT NOT LIMITED TO, SAFETY MEASURES, EQUIPMENT LIMITATIONS OR RESTRICTIONS, AND MOVEMENT THROUGH THE EASEMENTS DURING CONSTRUCTION.

N

0' 10' 20' 40' 60'
GRAPHIC SCALE
Scale: 1 Inch = 20 Ft.

GEORGIA REGISTERED No. LA0000765 LANDSCAPE ARCHITECT JOHN D BOUDREAU 08-11-2020
NOT VALID FOR CONSTRUCTION UNLESS SIGNED IN THIS BLOCK

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770--933-0280

	REVISION	DATE
1	ADDENDUM NO. 2	08-11-20

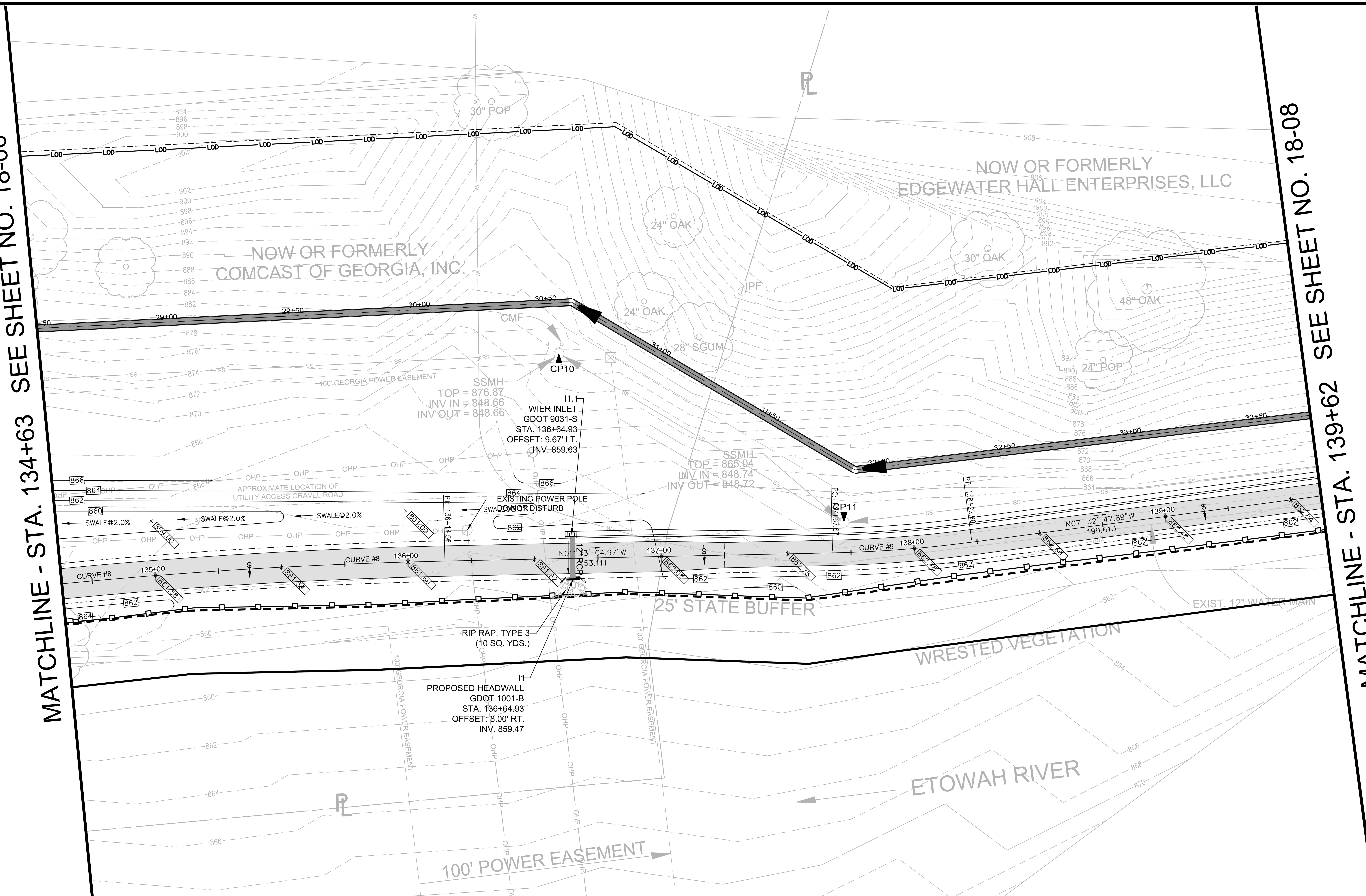
PROJ. NO.: 100062569
DESIGNED BY: C.L.H.
DRAWN BY: C.L.H.
CHECKED BY:
APPROVED BY:
DATE: AUG. 2019
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 &
RIVER TRAIL EXTENSION

GRADING AND DRAINAGE PLANS

SHEET NO.
18-06
100062569

File Name: M:\100062569 – HERITAGE TO BOLING PARK TRAIL\CAD\DELIVERABLES\18 GRADING AND DRAINAGE.DWG[Tab: 06|Plotted: August 18, 2020 4:34pm



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GEORGIA REGISTERED No. LA000780 08-11-2020 LANDSCAPE ARCHITECT JOHN D BOUDREAU

NOT VALID FOR CONSTRUCTION UNLESS SIGNED IN THIS BLOCK

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770-933-0280

	REVISION	DATE
1	ADDENDUM NO. 2	08-11-20

PROJ. NO.: 100062569
DESIGNED BY: C.L.H.
DRAWN BY: C.L.H.
CHECKED BY:
APPROVED BY:
DATE: AUG., 2019
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

GRADING AND DRAINAGE PLANS

SHEET NO.
18-07
100062569

File Name: M:\100062569 – HERITAGE TO BOLING PARK TRAIL\CAD\DELIVERABLES\18 GRADING AND DRAINAGE.DWG|Tab:07|Plotted: August 18, 2020 4:34pm

MATCHLINE - STA. 203+43 SEE SHEET NO. 18-13

MATCHLINE - STA. 158+00 SEE SHEET NO. 18-11

NOW OR FORMERLY
RIVERVIEW INVESTORS, LLC

TEMPORARY 60' CONSTRUCTION EASEMENT

ALIGNMENT '200 SERIES'

ALIGNMENT '300 SERIES'

ALIGNMENT '100 SERIES'

CP21

SSMH
TOP = 862.01
24" PVC IN = 851.65
12" IN (N) = 852.32
24" PVC OUT = 851.58

SSMH
TOP = 862.76
24" PVC IN = 851.73
24" PVC OUT = 851.82

CP20

SSMH
TOP = 861.48
24" PVC = 851.32
INV OUT = 851.37

END GDOT PRW-P3
RETAINING WALL NO. 3
STA. 201+89.91
OFFSET: 8.00' LT.

BEGIN GDOT PRW-P3
RETAINING WALL NO. 3
STA. 200+95.00
STA. 159+42.81
OFFSET: 8.00' LT.

RIP RAP, TYPE 3
(80 SQ. YDS.)

END TRAIL
STA. 304+21.16
N: 1542938.06
E: 2197676.73

END TRAIL
STA. 162+89.99
N: 1542838.23
E: 2197763.55

N07° 56' 47.00"E
141.353

N07° 40' 38.72"E
82.405

N87° 14' 27.21"E
191.400

S81° 59' 05.72"E
12.194

S81° 59' 05.72"E
44.783

S87° 53' 07.94"E
45.546

N50° 05' 26.26"E
36.540

EXISTING BRIDGE PIER
DO NOT DISTURB

EXISTING POWER POLE
DO NOT DISTURB

POWER METER

WALESKA ROAD

EXISTING R/W

BRIDGE

25' STATE BUFFER

WRESTED VEGETATION

MAPLE

HW

OHP

24" DIP

INV 857.60
24" RCP
INV 857.69

CURVE #17
CURVE #18
CURVE #19
CURVE #20
CURVE #22
CURVE #23-1
CURVE #23-2

WHEN WORKING WITHIN THE THE GEORGIA POWER EASEMENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF HIS OR HER LABORERS, EQUIPMENT AND GEORGIA POWER FACILITIES AT ALL TIMES. THE CONTRACTOR IS REQUIRED TO SCHEDULE AND ATTEND A PRE-CONSTRUCTION MEETING WITH GEORGIA POWER TO DETERMINE MEANS AND METHODS OF WORK CONDUCTED WITHIN THE GEORGIA POWER EASEMENT INCLUDING BUT NOT LIMITED TO, SAFETY MEASURES, EQUIPMENT LIMITATIONS OR RESTRICTIONS, AND MOVEMENT THROUGH THE EASEMENTS DURING CONSTRUCTION.

N

0' 10' 20' 40' 60'
GRAPHIC SCALE
Scale: 1 Inch = 20 Ft.

GEORGIA REGISTERED LANDSCAPE ARCHITECT
No. LA000750
08-11-2020
JOHN D BOUDREAULT
NOT VALID FOR CONSTRUCTION UNLESS SIGNED IN THIS BLOCK

ATKINS
1600 Riveredge Parkway, Suite 700
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REVISION	DATE
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APPROVED BY:
DATE: AUG. 2019
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CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

GRADING AND DRAINAGE PLANS

SHEET NO.
18-12
100062569

File Name: M:\100062569 – HERITAGE TO BOLING PARK TRAIL\CAD\DELIVERABLES\18 GRADING AND DRAINAGE.DWG|Tab:12|Plotted: August 19, 2020 11:56am

WHEN WORKING WITHIN THE THE GEORGIA POWER EASEMENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF HIS OR HER LABORERS, EQUIPMENT AND GEORGIA POWER FACILITIES AT ALL TIMES. THE CONTRACTOR IS REQUIRED TO SCHEDULE AND ATTEND A PRE-CONSTRUCTION MEETING WITH GEORGIA POWER TO DETERMINE MEANS AND METHODS OF WORK CONDUCTED WITHIN THE GEORGIA POWER EASEMENT INCLUDING BUT NOT LIMITED TO, SAFETY MEASURES, EQUIPMENT LIMITATIONS OR RESTRICTIONS, AND MOVEMENT THROUGH THE EASEMENTS DURING CONSTRUCTION.

END TRAIL
STA. 206+90.61
N: 1543368.79
E: 2197604.38

EXISTING 18" CMP TO REMAIN

E1.1
GDOT 1011A MANHOLE
STA. 206+19.07
OFFSET: 23.26' LT.
TOP: 865.95
TIE EXISTING PIPE TO PROPOSED MANHOLE

E1
PROPOSED HEADWALL
STA. 205+82.98
OFFSET: 36.67' LT.
INV. 857.17

RIP RAP, TYPE 3
(60 SQ. YDS.)

D1
FLARED END SECTION
STA. 205+61.42
OFFSET: 31.45' LT.
INV. 857.70

D1.1
GDOT 1011A MANHOLE
STA. 205+63.41
OFFSET: 10.78' LT.
TOP: 869.38

D1.2
GDOT 1011A MANHOLE
STA. 205+66.24
OFFSET: 17.00' RT.
TOP: 873.18

D1.3
EXISTING CATCH BASIN
STA. 205+68.00
OFFSET: 32.64' RT.
TOP: 877.04

EXISTING 15" CMP TO REMAIN

TIE EXISTING PIPE TO PROPOSED MANHOLE

G1
PROPOSED HEADWALL
STA. 204+18.69
OFFSET: 14.87' LT.
INV: 858.20

RIP RAP, TYPE 3
(20 SQ. YDS.)

G1.1
PROPOSED HEADWALL
STA. 204+25.84
OFFSET: 25.47' RT.
INV: 858.60

RIP RAP, TYPE 3
(20 SQ. YDS.)

CONTRACTOR SHALL VERIFY LOCATION OF EXISTING STORM PIPE AND REPORT FINDINGS TO ENGINEER PRIOR TO CONSTRUCTION.

15" SLOPE DRAIN PIPE

15" RCP

24" RCP

18" RCP

12" CMP

52" RCP

EXISTING R/W

ANDERSON AVENUE

NOW OR FORMERLY
RIVERVIEW INVESTORS, LLC

STATE ROUTE 140
WALESKA ROAD

EXIST. 8" D.I.P. WATER MAIN

SOUTHERN BELL MANHOLE VAULT

150' R/W

CP22

CP23

MATCHLINE - STA. 203+43 SEE SHEET NO. 18-12

N

0' 10' 20' 40' 60'
GRAPHIC SCALE
Scale: 1 Inch = 20 Ft.

GEORGIA REGISTERED LANDSCAPE ARCHITECT JOHN D BOUDREAULT No. LA000750 08-11-2020
NOT VALID FOR CONSTRUCTION UNLESS SIGNED IN THIS BLOCK

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770--933-0280

	DATE
1 ADDENDUM NO. 2	08-11-20

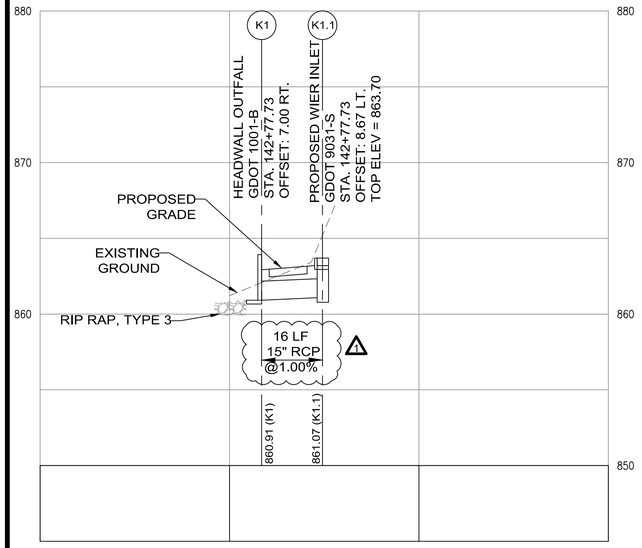
PROJ. NO.: 100062569
DESIGNED BY: C.L.H.
DRAWN BY: C.L.H.
CHECKED BY:
APPROVED BY:
DATE: AUG. 2019
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

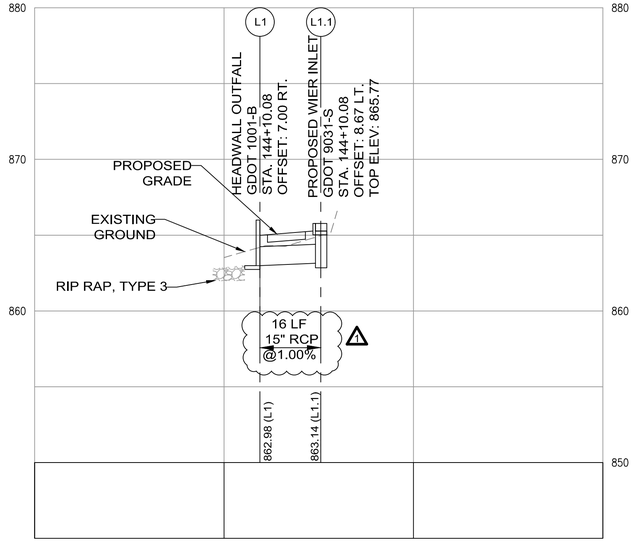
GRADING AND DRAINAGE PLANS

SHEET NO.
18-13
100062569

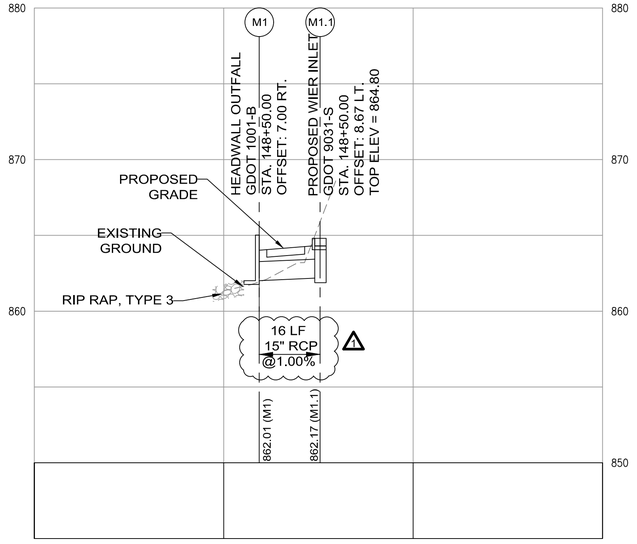
File Name: M:\100062569 – HERITAGE TO BOLING PARK TRAIL\CAD\DELIVERABLES\18 GRADING AND DRAINAGE.DWG[Tab:13]Plotted: August 19, 2020 11:56am



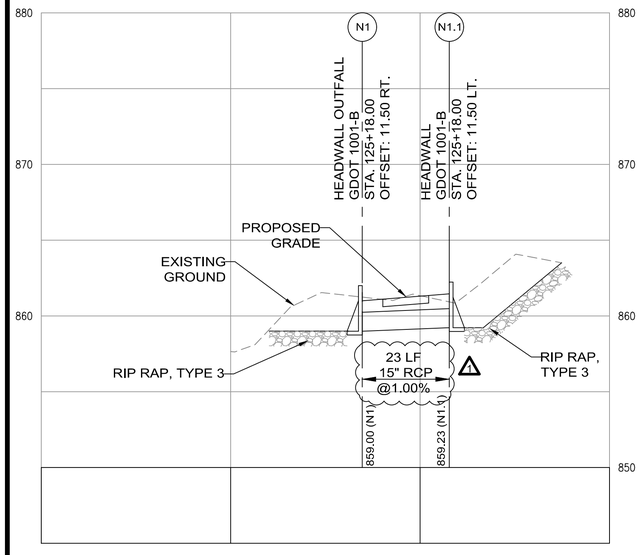
STORM PROFILE K



STORM PROFILE L



STORM PROFILE M



STORM PROFILE N

HORIZ. 20 10 0 20 40

VERT. 5 2.5 0 5 10

SCALE IN FEET

GEORGIA REGISTERED No. LAC000760 LANDSCAPE ARCHITECT JOHN D BOUDREAU 08-11-2020

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ATKINS

1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770--933-0280

△	REVISION	DATE
1	ADDENDUM NO. 2	08-11-20

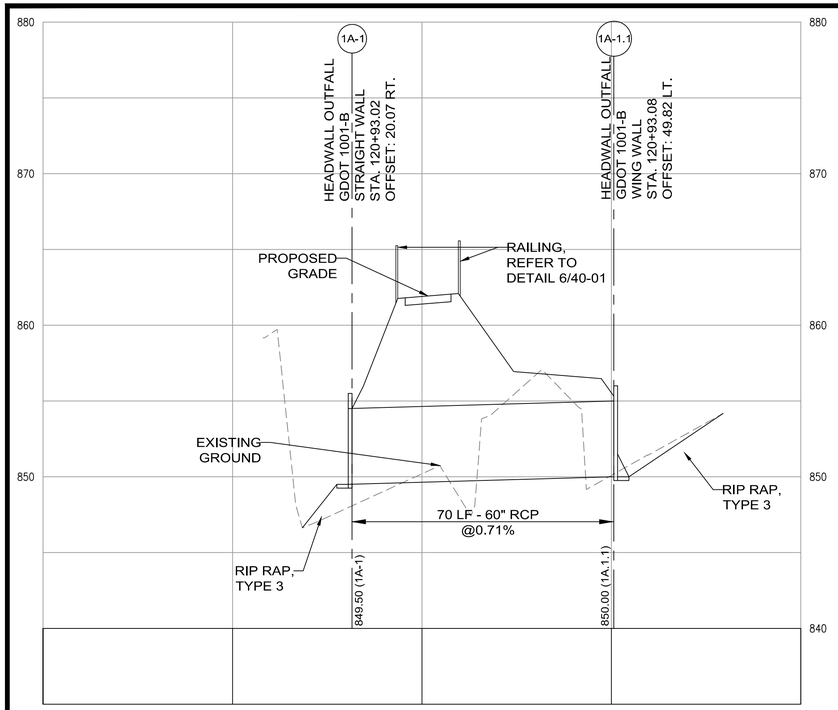
PROJ. NO.: 100062569
DESIGNED BY: C.L.H.
DRAWN BY: C.L.H.
CHECKED BY:
APPROVED BY:
DATE: AUG. 2019
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 &
RIVER TRAIL EXTENSION

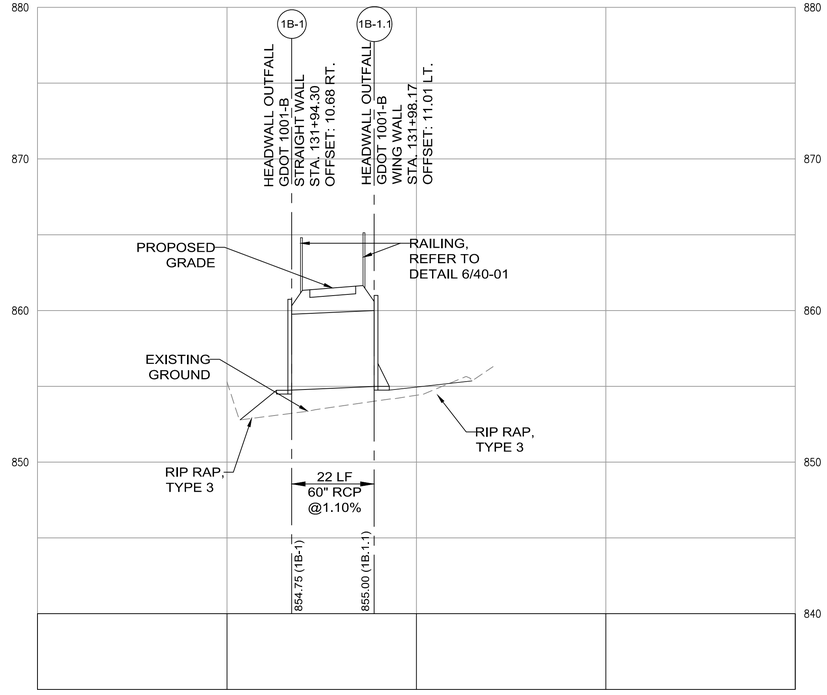
STORM PROFILES

SHEET NO.
22-03
100062569

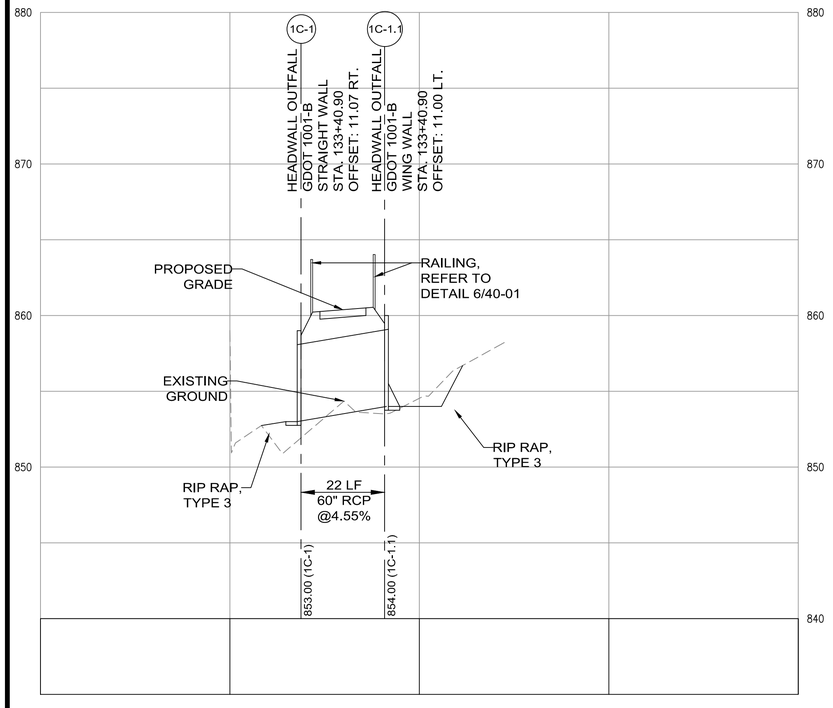
File Name: M:\100062569 – HERITAGE TO BOLING PARK TRAIL\CAD\DELIVERABLES\22 STORM PROFILES.DWG|Tab: 22--03|Plotted: August 13, 2020 3:08pm



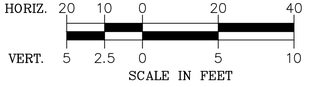
⚠ STORM PROFILE ALT. 1A



⚠ STORM PROFILE ALT. 1B



⚠ STORM PROFILE ALT. 1C



GEORGIA REGISTERED No. LA000780 LANDSCAPE ARCHITECT JOHN D BOUDREAU 08-11-2020
NOT VALID FOR CONSTRUCTION UNLESS SIGNED IN THIS BLOCK

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770--933-0280

△	REVISION	DATE
1	ADDENDUM NO. 2	08-11-20

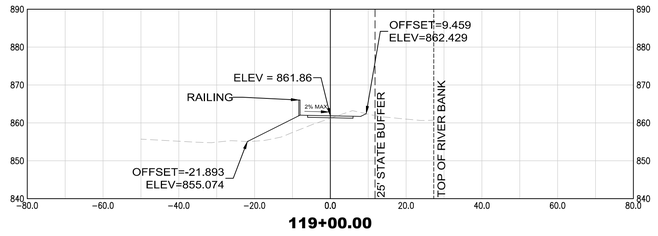
PROJ. NO.:	100062569
DESIGNED BY:	C.L.H.
DRAWN BY:	C.L.H.
CHECKED BY:	
APPROVED BY:	
DATE:	AUG. 2019
SCALE:	AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

STORM PROFILES

SHEET NO.
22-04
100062569

File Name: M:\100062569 – HERITAGE TO BOLING PARK TRAIL\CAD\DELIVERABLES\22 STORM PROFILES.DWG Tab: 22--04 Plotted: August 13, 2020 3:12pm



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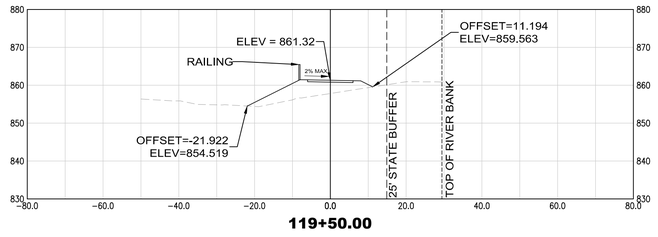

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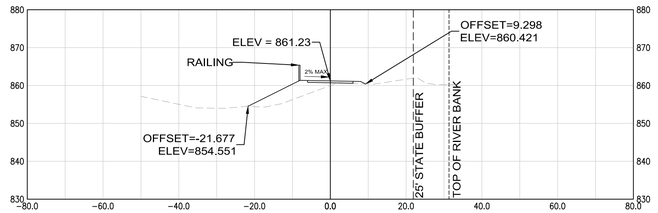

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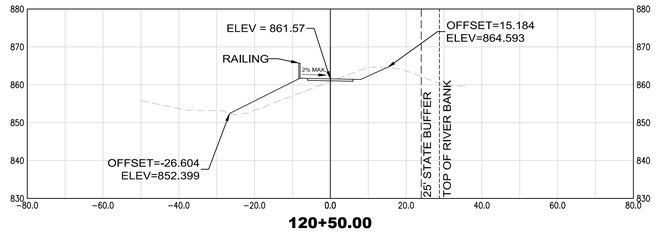

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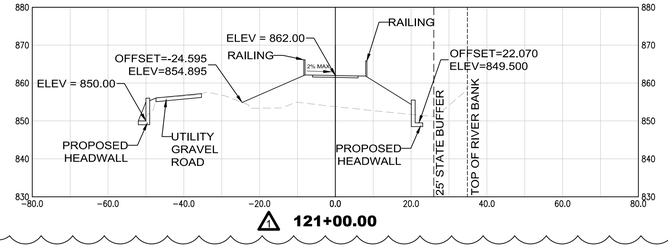

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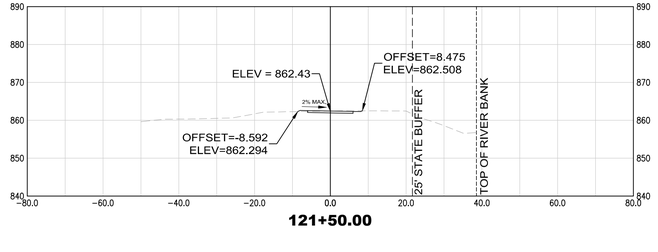

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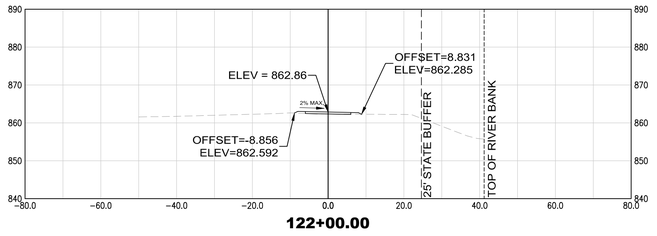

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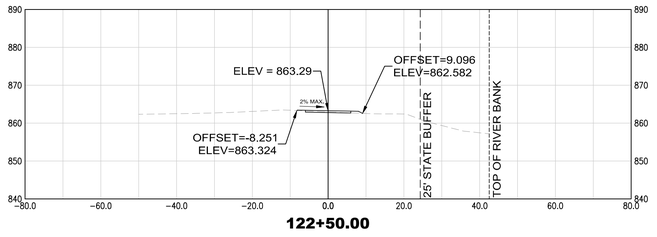

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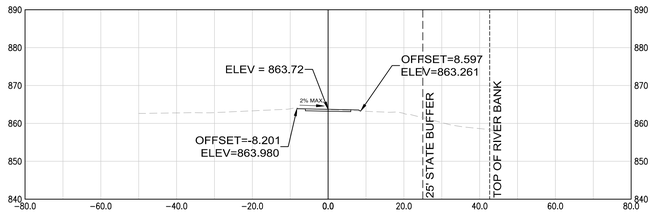

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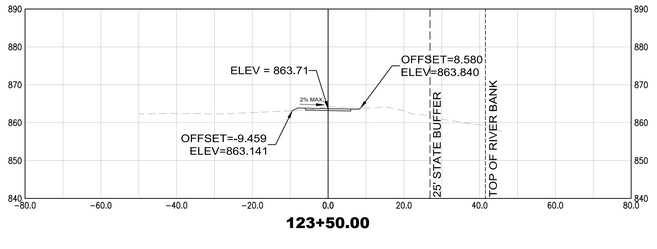

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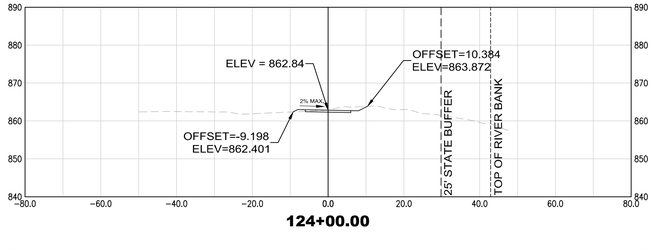

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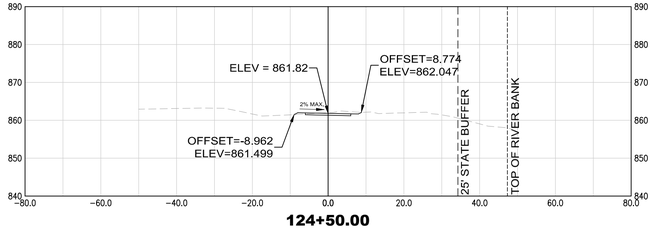

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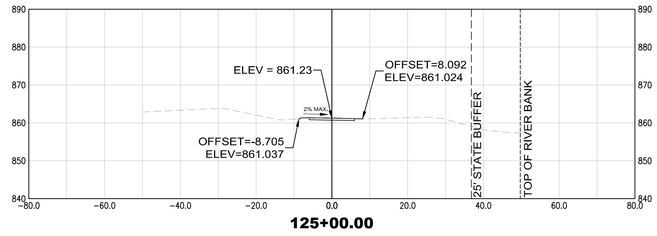

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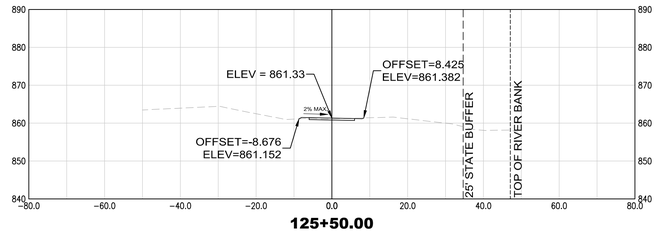

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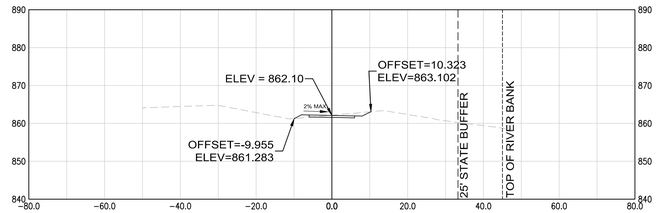

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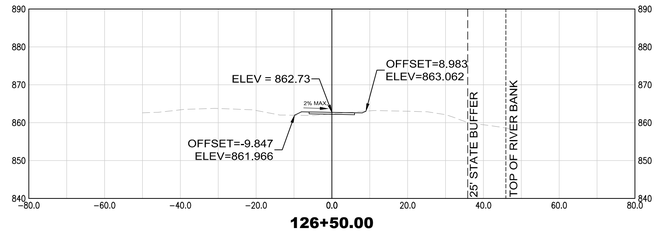

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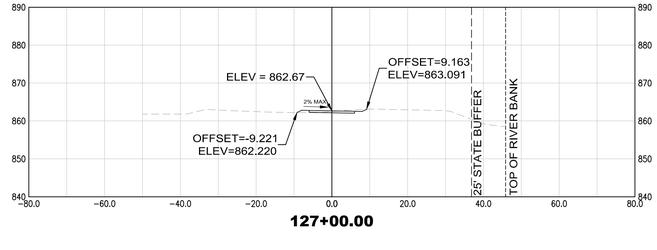

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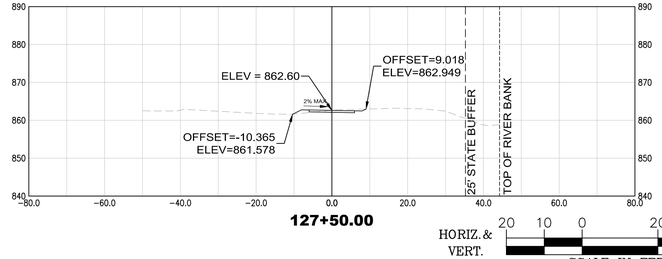


127+50.00

HORIZ. & VERT. SCALE IN FEET 20 10 0 20 40

GEORGIA REGISTERED No. LA000726 LANDSCAPE ARCHITECT JOHN D BOUDREAU 08-11-2020

NOT VALID FOR CONSTRUCTION UNLESS SIGNED IN THIS BLOCK

ATKINS

1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770-933-0280

REVISION	DATE
△ 1 ADDENDUM NO. 2	08-11-20

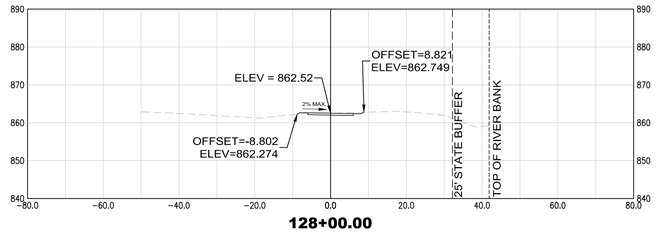
PROJ. NO.: 100062569
DESIGNED BY: C.L.H.
DRAWN BY: C.L.H.
CHECKED BY:
APPROVED BY:
DATE: AUG. 2019
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

CROSS SECTIONS

SHEET NO.
23-03
100062569

File Name: M:\100062569 – HERITAGE TO BOLING PARK TRAIL\CAD\DELIVERABLES\23 CROSS SECTIONS.DWG Tab: 23-03 Plotted: August 14, 2020 11:45am



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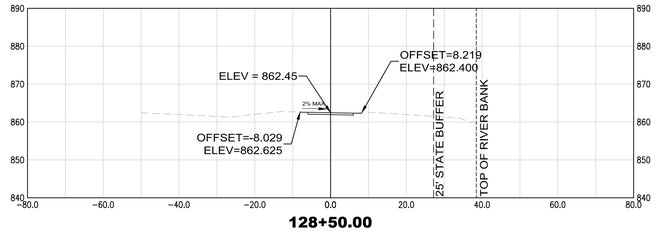

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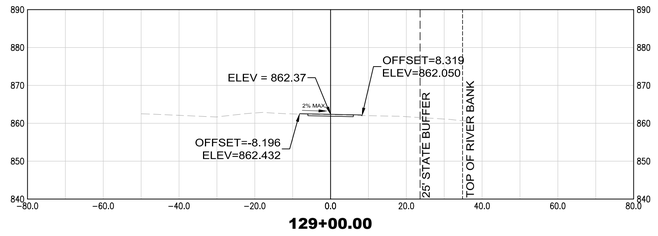

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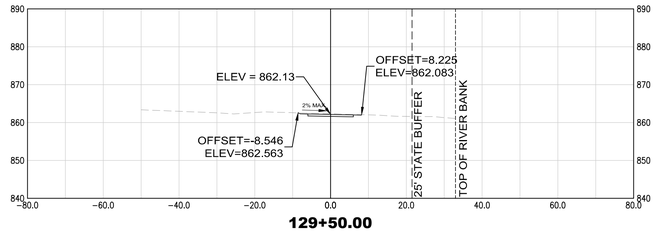

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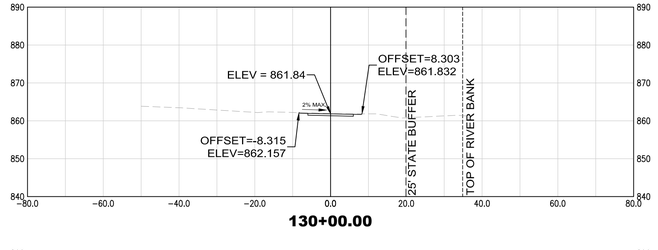

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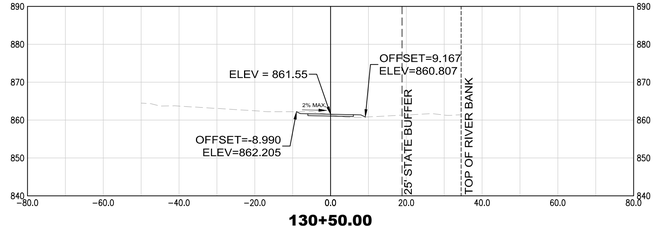

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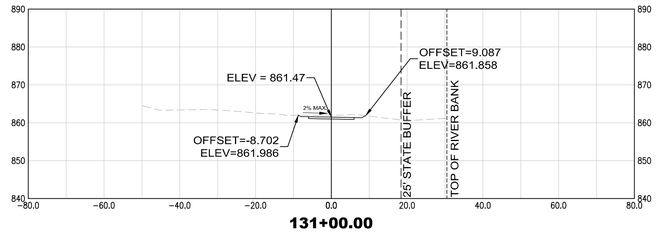

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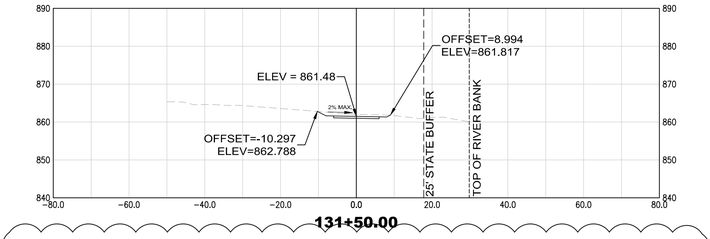

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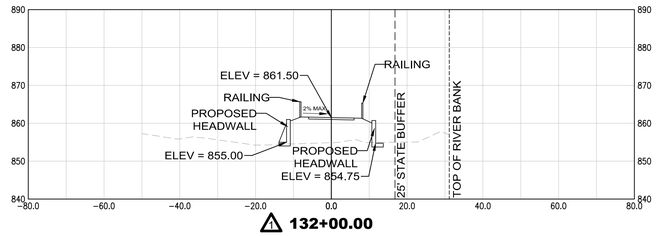
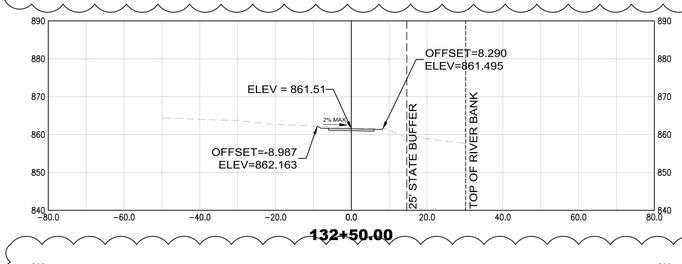


⚠1 132+00.00



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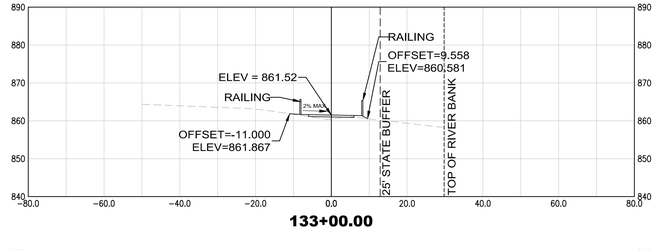

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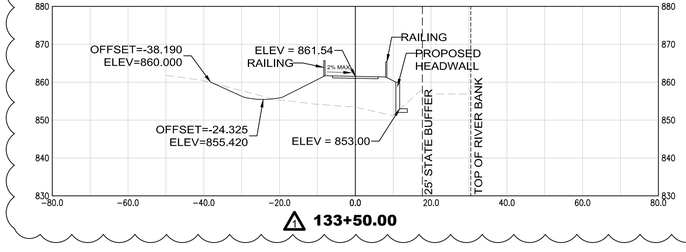

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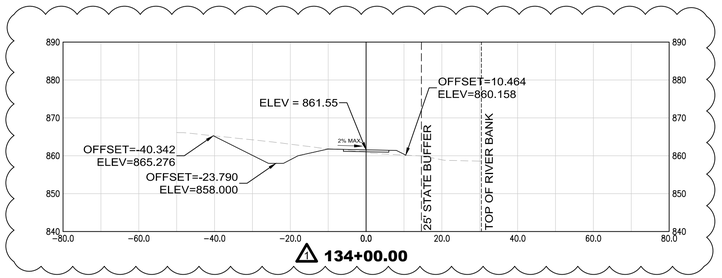

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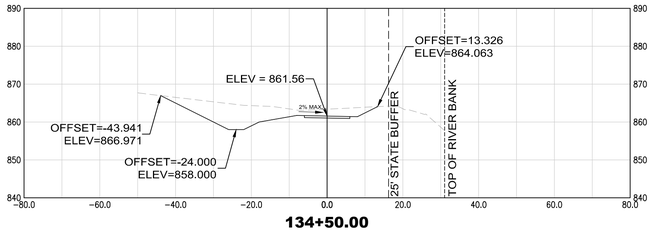

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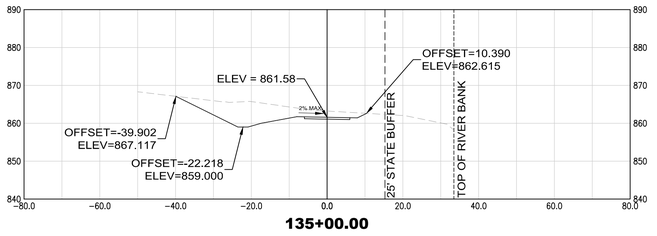

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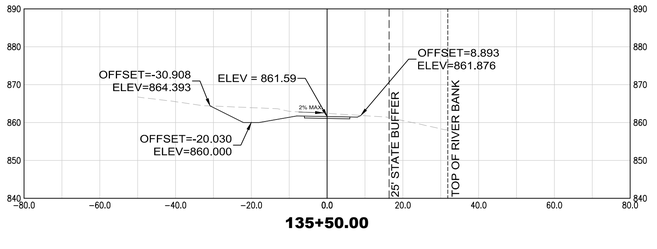

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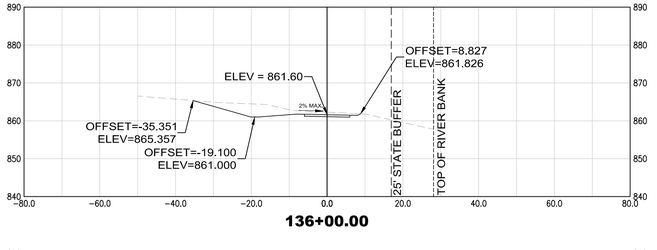

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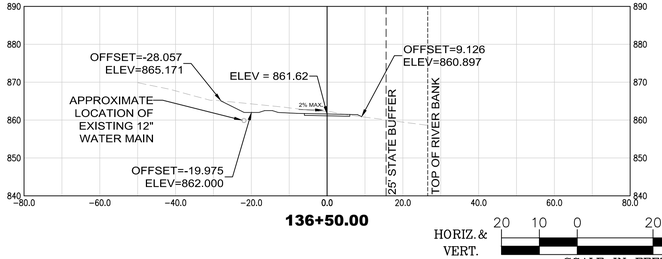


136+50.00

HORIZ. & VERT. SCALE IN FEET 20 10 0 20 40

GEORGIA REGISTERED No. LAC000760 JOHN D BOUDREAU LANDSCAPE ARCHITECT 08-11-2020

NOT VALID FOR CONSTRUCTION UNLESS SIGNED IN THIS BLOCK

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770-933-0280

REVISION	DATE
ADDENDUM NO. 2	08-11-20
1	

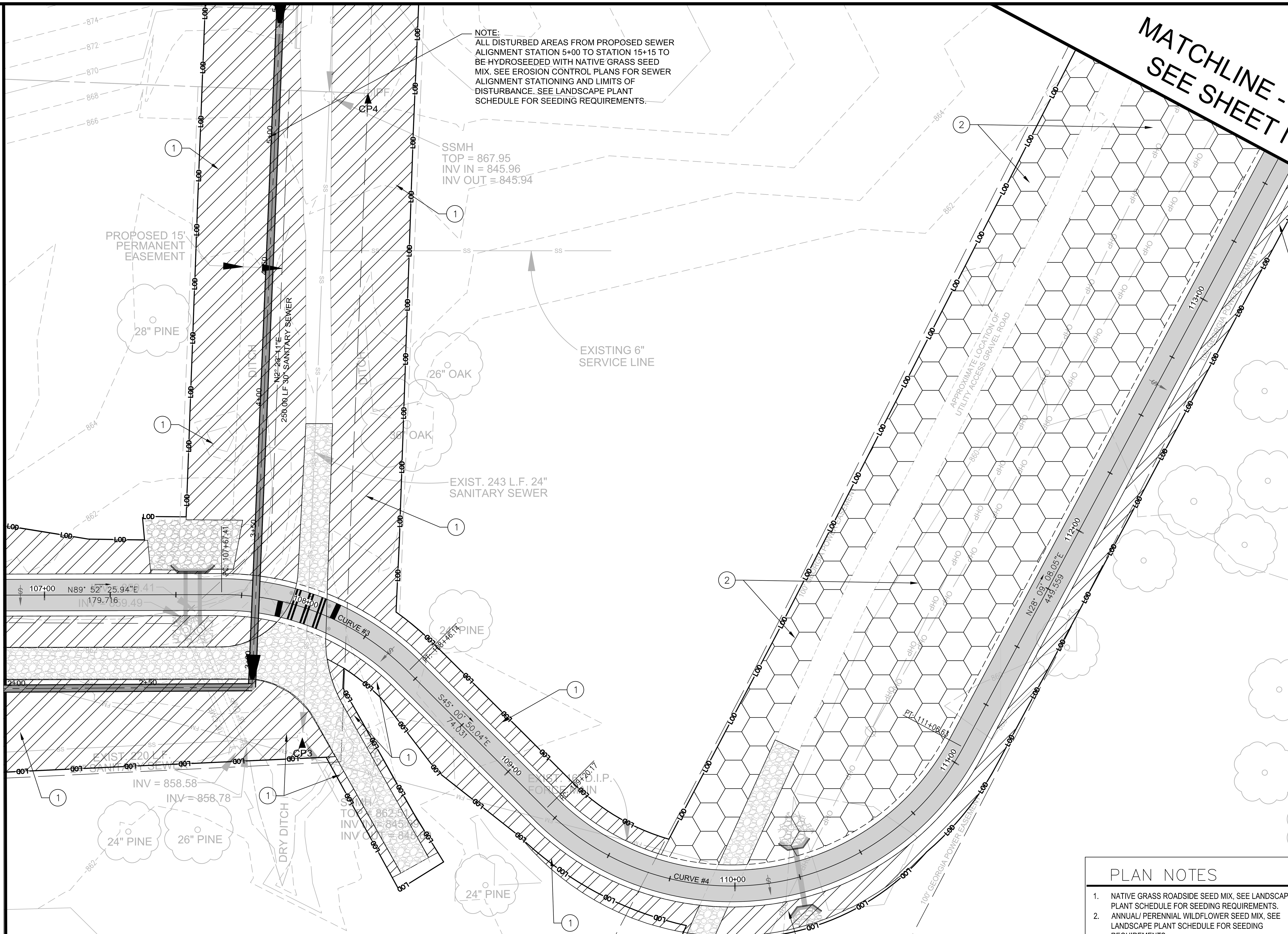
PROJ. NO.: 100062569
DESIGNED BY: C.L.H.
DRAWN BY: C.L.H.
CHECKED BY:
APPROVED BY:
DATE: AUG. 2019
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

CROSS SECTIONS

SHEET NO.
23-04
100062569

File Name: M:\100062569 – HERITAGE TO BOLING PARK TRAIL\CAD\DELIVERABLES\23 CROSS SECTIONS.DWG Tab: 23-04 Plotted: August 14, 2020 11:46am



LEGEND	
SYMB.	COMMON NAME
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	ANNUAL/ PERENNIAL WILDFLOWER SEED MIX
	RIPARIAN BUFFER SEED MIX
	REFORESTED TREE MIX WITH NATIVE GRASS ROADSIDE SLOPE SEED MIX
	COMMON BERMUDA GRASS SEED
	NATIVE GRASS ROADSIDE SLOPE SEED MIX
	PINE STRAW MULCH
	GEORGE TABOR AZALEA (AGT)
	BLACK EYED SUSAN (RG)
	ADAGIO DWARF MAIDEN GRASS (MGN)
	BLACK KNIGHT BUTTERFLY BUSH (BD)
	SIOUX CRAPE MYRTLE (LIS)
	HIGHTOWER WILLOW OAK (QPH)

GRAPHIC SCALE
Scale: 1 Inch = 20 Ft.

PLAN NOTES

1. NATIVE GRASS ROADSIDE SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.
2. ANNUAL/ PERENNIAL WILDFLOWER SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.
3. RIPARIAN BUFFER SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.
4. REFORESTED TREE MIX WITH NATIVE GRASS ROADSIDE SLOPE SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR PLANTING AND SEEDING REQUIREMENTS.
5. COMMON BERMUDA GRASS SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.
6. NATIVE GRASS ROADSIDE SLOPE SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.
7. PINE STRAW MULCH, SEE LANDSCAPE PLANT SCHEDULE FOR REQUIREMENTS.

WHEN WORKING WITHIN THE THE GEORGIA POWER EASEMENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF HIS OR HER LABORERS, EQUIPMENT AND GEORGIA POWER FACILITIES AT ALL TIMES. THE CONTRACTOR IS REQUIRED TO SCHEDULE AND ATTEND A PRE-CONSTRUCTION MEETING WITH GEORGIA POWER TO DETERMINE MEANS AND METHODS OF WORK CONDUCTED WITHIN THE GEORGIA POWER EASEMENT INCLUDING BUT NOT LIMITED TO, SAFETY MEASURES, EQUIPMENT LIMITATIONS OR RESTRICTIONS, AND MOVEMENT THROUGH THE EASEMENTS DURING CONSTRUCTION.

GEORGIA REGISTERED LANDSCAPE ARCHITECT No. LA000780 08-11-2020 JOHN D BOUDREAU
NOT VALID FOR CONSTRUCTION UNLESS SIGNED IN THIS BLOCK

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770–933-0280

	REVISION	DATE
1	ADDENDUM NO. 2	08-11-20

PROJ. NO.: 100062569
DESIGNED BY: C.L.H.
DRAWN BY: C.L.H.
CHECKED BY:
APPROVED BY:
DATE: AUG., 2019
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

LANDSCAPE PLANS

SHEET NO.
29-02
100062569

MATCHLINE - STA. 113+61
SEE SHEET NO. 29-02

NOW OR FORMERLY
TAGH, LLC

NOW OR FORMERLY
CHEROKEE BOWL, INC.

SEE SHEET NO 29-04

MATCHLINE - STA. 119+37

LEGEND

SYMB.	COMMON NAME
	NATIVE GRASS ROADSIDE SEED MIX
	ANNUAL/ PERENNIAL WILDFLOWER SEED MIX
	RIPARIAN BUFFER SEED MIX
	REFORESTED TREE MIX WITH NATIVE GRASS ROADSIDE SLOPE SEED MIX
	COMMON BERMUDA GRASS SEED
	NATIVE GRASS ROADSIDE SLOPE SEED MIX
	PINE STRAW MULCH
	GEORGE TABOR AZALEA (AGT)
	BLACK EYED SUSAN (RG)
	ADAGIO DWARF MAIDEN GRASS (MGN)
	BLACK KNIGHT BUTTERFLY BUSH (BD)
	SIOUX CRAPE MYRTLE (LIS)
	HIGHTOWER WILLOW OAK (QPH)

PLAN NOTES

1. NATIVE GRASS ROADSIDE SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.
2. ANNUAL/ PERENNIAL WILDFLOWER SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.
3. RIPARIAN BUFFER SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.
4. REFORESTED TREE MIX WITH NATIVE GRASS ROADSIDE SLOPE SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR PLANTING AND SEEDING REQUIREMENTS.
5. COMMON BERMUDA GRASS SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.
6. NATIVE GRASS ROADSIDE SLOPE SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.
7. PINE STRAW MULCH, SEE LANDSCAPE PLANT SCHEDULE FOR REQUIREMENTS.

APPROXIMATE LOCATION OF UTILITY ACCESS GRAVEL ROAD

114+00
N28° 09' 08.05"E
449.559
115+00
PC: 115+36.19
CP5
116+00 CURVE #5
PT: 116+49.38
117+00
N04° 59' 47.19"W
367.566
118+00
119+00

GEORGIA POWER EASEMENT

25' STATE BUFFER

WRESTED VEGETATION

ETOWAH RIVER

WHEN WORKING WITHIN THE THE GEORGIA POWER EASEMENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF HIS OR HER LABORERS, EQUIPMENT AND GEORGIA POWER FACILITIES AT ALL TIMES. THE CONTRACTOR IS REQUIRED TO SCHEDULE AND ATTEND A PRE-CONSTRUCTION MEETING WITH GEORGIA POWER TO DETERMINE MEANS AND METHODS OF WORK CONDUCTED WITHIN THE GEORGIA POWER EASEMENT INCLUDING BUT NOT LIMITED TO, SAFETY MEASURES, EQUIPMENT LIMITATIONS OR RESTRICTIONS, AND MOVEMENT THROUGH THE EASEMENTS DURING CONSTRUCTION.

N

0' 10' 20' 40' 60'
GRAPHIC SCALE
Scale: 1 Inch = 20 Ft.

GEORGIA REGISTERED LANDSCAPE ARCHITECT JOHN D BOUDREAU No. LA000750 08-11-2020
NOT VALID FOR CONSTRUCTION UNLESS SIGNED IN THIS BLOCK

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770--933-0280

	DATE
1 ADDENDUM NO. 2	08-11-20

PROJ. NO.: 100062569
DESIGNED BY: C.L.H.
DRAWN BY: C.L.H.
CHECKED BY:
APPROVED BY:
DATE: AUG. 2019
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

LANDSCAPE PLANS

SHEET NO.
29-03
100062569

File Name: M:\100062569 – HERITAGE TO BOLING PARK TRAIL\CAD\DELIVERABLES\29 LANDSCAPE.DWG[Tab: 03]Plotted: August 18, 2020 4:23pm

MATCHLINE - STA. 119+37 SEE SHEET NO. 29-03

MATCHLINE - STA. 124+62 SEE SHEET NO. 29-05

RIVER SIDE LANES
(METAL BUILDING)

NOW OR FORMERLY
CHEROKEE BOWL, INC.

NOW OR FORMERLY
GEORGIA POWER COMPANY

NOTE:
ALL DISTURBED AREAS FROM PROPOSED SEWER ALIGNMENT STATION 5+00 TO STATION 15+15 TO BE HYDROSEEDED WITH NATIVE GRASS SEED MIX. SEE EROSION CONTROL PLANS FOR SEWER ALIGNMENT STATIONING AND LIMITS OF DISTURBANCE. SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.

EXISTING 20'
PERMANENT
EASEMENT

EXIST. 400 L.F. 24" SANITARY SEWER

SSMH
TOP = 860.51
INV IN = 847.15
INV OUT = 847.15

N2° 02' 55"W
398.00 LF 30" SANITARY SEWER

100' GEORGIA POWER EASEMENT

EXISTING 20'
EASEMENT

APPROXIMATE LOCATION OF
UTILITY ACCESS GRAVEL ROAD

APPROXIMATE LOCATION OF
UTILITY ACCESS GRAVEL ROAD

100' GEORGIA POWER EASEMENT

CP6

PC: 120+10.58

PT: 120+49.98

PI #34

N04° 59' 47.19"W
367.566

CURVE #6

N00° 28' 37.45"W
743.430

N00° 28' 37.45"W
743.430

100' GEORGIA POWER EASEMENT

25' STATE BUFFER

WRESTED VEGETATION

ETOWAH RIVER

⚠1 WHEN WORKING WITHIN THE THE GEORGIA POWER EASEMENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF HIS OR HER LABORERS, EQUIPMENT AND GEORGIA POWER FACILITIES AT ALL TIMES. THE CONTRACTOR IS REQUIRED TO SCHEDULE AND ATTEND A PRE-CONSTRUCTION MEETING WITH GEORGIA POWER TO DETERMINE MEANS AND METHODS OF WORK CONDUCTED WITHIN THE GEORGIA POWER EASEMENT INCLUDING BUT NOT LIMITED TO, SAFETY MEASURES, EQUIPMENT LIMITATIONS OR RESTRICTIONS, AND MOVEMENT THROUGH THE EASEMENTS DURING CONSTRUCTION.

LEGEND	
SYMB.	COMMON NAME
	NATIVE GRASS ROADSIDE SEED MIX
	ANNUAL/ PERENNIAL WILDFLOWER SEED MIX
	RIPARIAN BUFFER SEED MIX
	REFORESTED TREE MIX WITH NATIVE GRASS ROADSIDE SLOPE SEED MIX
	COMMON BERMUDA GRASS SEED
	NATIVE GRASS ROADSIDE SLOPE SEED MIX

LEGEND	
	PINE STRAW MULCH
	GEORGE TABOR AZALEA (AGT)
	BLACK EYED SUSAN (RG)
	ADAGIO DWARF MAIDEN GRASS (MGN)
	BLACK KNIGHT BUTTERFLY BUSH (BD)
	SIOUX CRAPE MYRTLE (LIS)
	HIGHTOWER WILLOW OAK (QPH)

PLAN NOTES

1. NATIVE GRASS ROADSIDE SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.
2. ANNUAL/ PERENNIAL WILDFLOWER SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.
3. RIPARIAN BUFFER SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.
4. REFORESTED TREE MIX WITH NATIVE GRASS ROADSIDE SLOPE SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR PLANTING AND SEEDING REQUIREMENTS.
5. COMMON BERMUDA GRASS SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.
6. NATIVE GRASS ROADSIDE SLOPE SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.
7. PINE STRAW MULCH, SEE LANDSCAPE PLANT SCHEDULE FOR REQUIREMENTS.

N

0' 10' 20' 40' 60'
GRAPHIC SCALE
Scale: 1 Inch = 20 Ft.

GEORGIA REGISTERED No. LA000750 LANDSCAPE ARCHITECT JOHN D BOUDREAU
08-11-2020
NOT VALID WITHOUT EMBOSSED SEAL UNLESS SIGNED IN THIS BLOCK

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770-933-0280

REVISION	DATE
1 ADDENDUM NO. 2	08-11-20

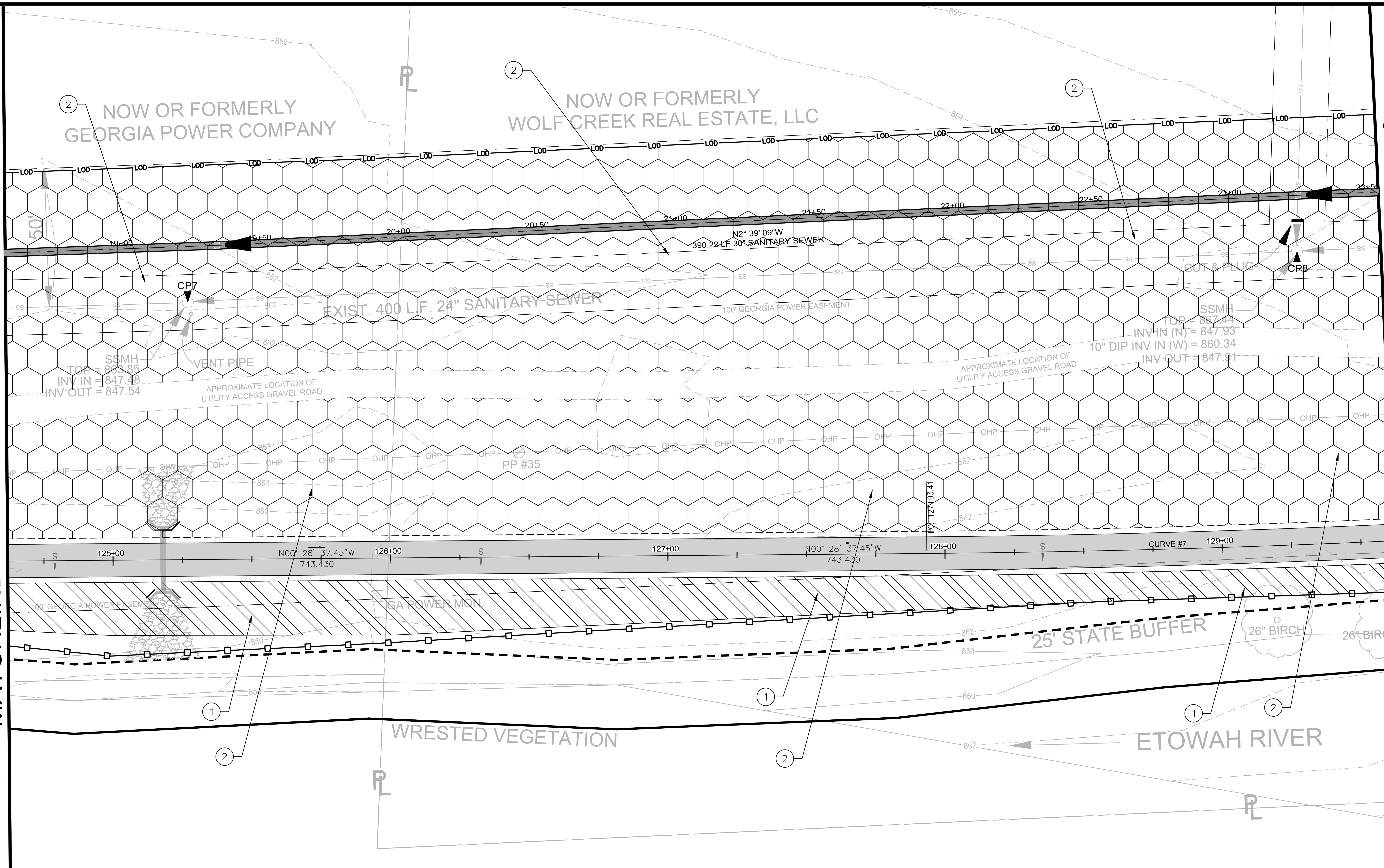
PROJ. NO.: 100062569
DESIGNED BY: C.L.H.
DRAWN BY: C.L.H.
CHECKED BY:
APPROVED BY:
DATE: AUG., 2019
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

LANDSCAPE PLANS

SHEET NO.
29-04
100062569

File Name: M:\100062569 – HERITAGE TO BOLING PARK TRAIL\CAD\DELIVERABLES\29 LANDSCAPE.DWG[Tab: 04]Plotted: August 18, 2020 4:25pm



LEGEND	
SYMB.	COMMON NAME
	NATIVE GRASS ROADSIDE SEED MIX
	ANNUAL/ PERENNIAL WILDFLOWER SEED MIX
	RIPARIAN BUFFER SEED MIX
	REFORESTED TREE MIX WITH NATIVE GRASS ROADSIDE SLOPE SEED MIX
	COMMON BERMUDA GRASS SEED
	NATIVE GRASS ROADSIDE SLOPE SEED MIX

LEGEND	
	PINE STRAW MULCH
	GEORGE TABOR AZALEA (AGT)
	BLACK EYED SUSAN (RG)
	ADAGIO DWARF MAIDEN GRASS (MGN)
	BLACK KNIGHT BUTTERFLY BUSH (BD)
	SIOUX CRAPE MYRTLE (LIS)
	HIGHTOWER WILLOW OAK (QPH)

PLAN NOTES

1. NATIVE GRASS ROADSIDE SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.
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3. RIPARIAN BUFFER SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.
4. REFORESTED TREE MIX WITH NATIVE GRASS ROADSIDE SLOPE SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR PLANTING AND SEEDING REQUIREMENTS.
5. COMMON BERMUDA GRASS SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.
6. NATIVE GRASS ROADSIDE SLOPE SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.
7. PINE STRAW MULCH, SEE LANDSCAPE PLANT SCHEDULE FOR REQUIREMENTS.

△1

WHEN WORKING WITHIN THE THE GEORGIA POWER EASEMENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF HIS OR HER LABORERS, EQUIPMENT AND GEORGIA POWER FACILITIES AT ALL TIMES. THE CONTRACTOR IS REQUIRED TO SCHEDULE AND ATTEND A PRE-CONSTRUCTION MEETING WITH GEORGIA POWER TO DETERMINE MEANS AND METHODS OF WORK CONDUCTED WITHIN THE GEORGIA POWER EASEMENT INCLUDING BUT NOT LIMITED TO, SAFETY MEASURES, EQUIPMENT LIMITATIONS OR RESTRICTIONS, AND MOVEMENT THROUGH THE EASEMENTS DURING CONSTRUCTION.

N

0' 10' 20' 40' 60'
GRAPHIC SCALE
Scale: 1 Inch = 20 Ft.

GEORGIA REGISTERED LANDSCAPE ARCHITECT No. LA000780 08-11-2020 JOHN D BOUDREAU

NOT VALID FOR CONSTRUCTION UNLESS SIGNED IN THIS BLOCK

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770-933-0280

△	REVISION	DATE
1	ADDENDUM NO. 2	08-11-20

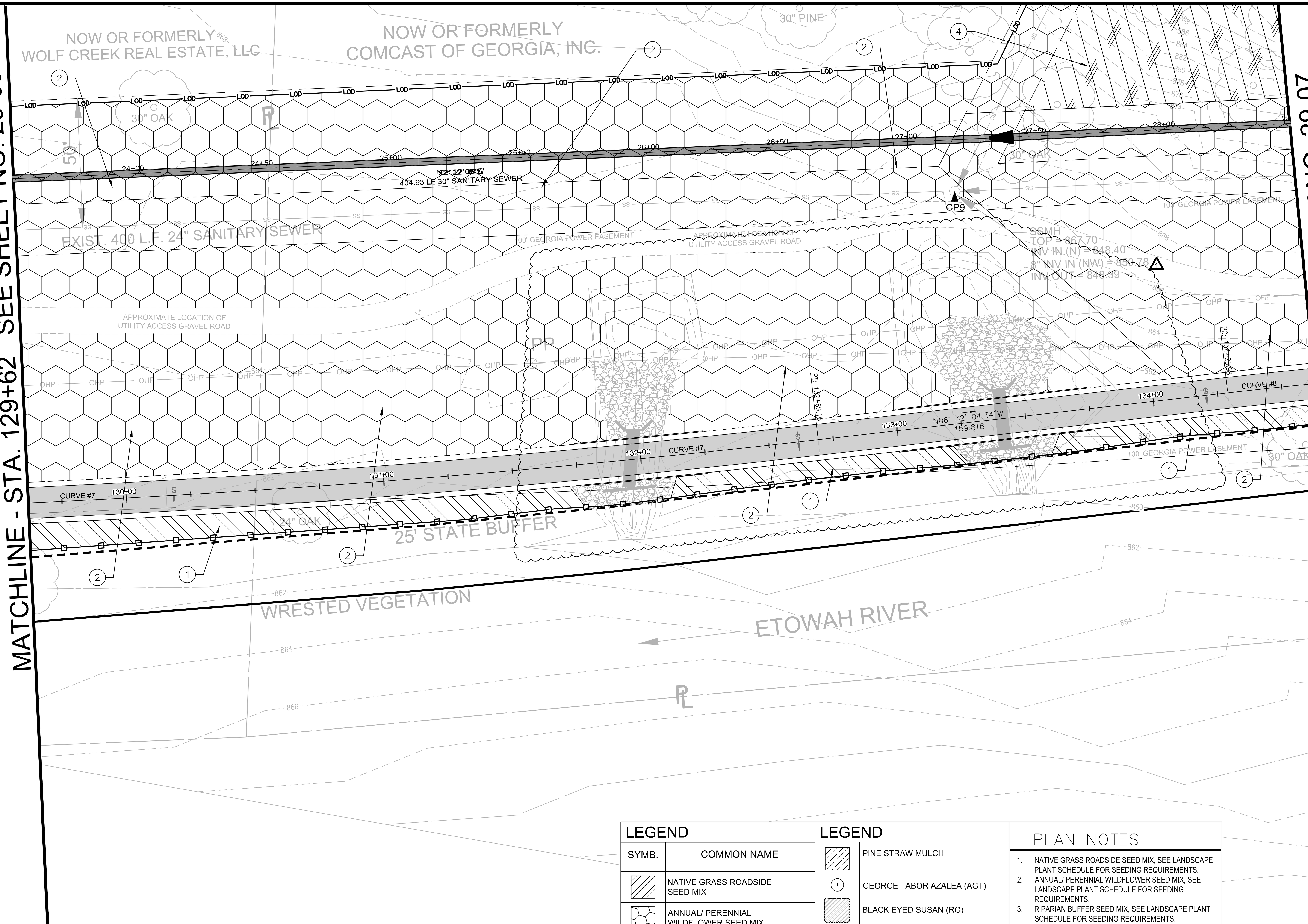
PROJ. NO.: 100062569
DESIGNED BY: C.L.H.
DRAWN BY: C.L.H.
CHECKED BY:
APPROVED BY:
DATE: AUG., 2019
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

LANDSCAPE PLANS

SHEET NO.
29-05
100062569

File Name: M:\100062569 – HERITAGE TO BOLING PARK TRAIL\CAD\DELIVERABLES\29 LANDSCAPE.DWG|Tab:05|Plotted: August 18, 2020 4:27pm



WHEN WORKING WITHIN THE THE GEORGIA POWER EASEMENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF HIS OR HER LABORERS, EQUIPMENT AND GEORGIA POWER FACILITIES AT ALL TIMES. THE CONTRACTOR IS REQUIRED TO SCHEDULE AND ATTEND A PRE-CONSTRUCTION MEETING WITH GEORGIA POWER TO DETERMINE MEANS AND METHODS OF WORK CONDUCTED WITHIN THE GEORGIA POWER EASEMENT INCLUDING BUT NOT LIMITED TO, SAFETY MEASURES, EQUIPMENT LIMITATIONS OR RESTRICTIONS, AND MOVEMENT THROUGH THE EASEMENTS DURING CONSTRUCTION.

LEGEND

SYMB.	COMMON NAME
	NATIVE GRASS ROADSIDE SEED MIX
	ANNUAL/ PERENNIAL WILDFLOWER SEED MIX
	RIPARIAN BUFFER SEED MIX
	REFORESTED TREE MIX WITH NATIVE GRASS ROADSIDE SLOPE SEED MIX
	COMMON BERMUDA GRASS SEED
	NATIVE GRASS ROADSIDE SLOPE SEED MIX

LEGEND

	PINE STRAW MULCH
	GEORGE TABOR AZALEA (AGT)
	BLACK EYED SUSAN (RG)
	ADAGIO DWARF MAIDEN GRASS (MGN)
	BLACK KNIGHT BUTTERFLY BUSH (BD)
	SIOUX CRAPE MYRTLE (LIS)
	HIGHTOWER WILLOW OAK (QPH)

PLAN NOTES

1. NATIVE GRASS ROADSIDE SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.
2. ANNUAL/ PERENNIAL WILDFLOWER SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.
3. RIPARIAN BUFFER SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.
4. REFORESTED TREE MIX WITH NATIVE GRASS ROADSIDE SLOPE SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR PLANTING AND SEEDING REQUIREMENTS.
5. COMMON BERMUDA GRASS SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.
6. NATIVE GRASS ROADSIDE SLOPE SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.
7. PINE STRAW MULCH, SEE LANDSCAPE PLANT SCHEDULE FOR REQUIREMENTS.

GEORGIA REGISTERED LANDSCAPE ARCHITECT No. LA000750 JOHN D BOUDREAU 08-11-2020

NOT VALID FOR CONSTRUCTION UNLESS SIGNED IN THIS BLOCK

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770--933-0280

△	REVISION	DATE
1	ADDENDUM NO. 2	08-11-20

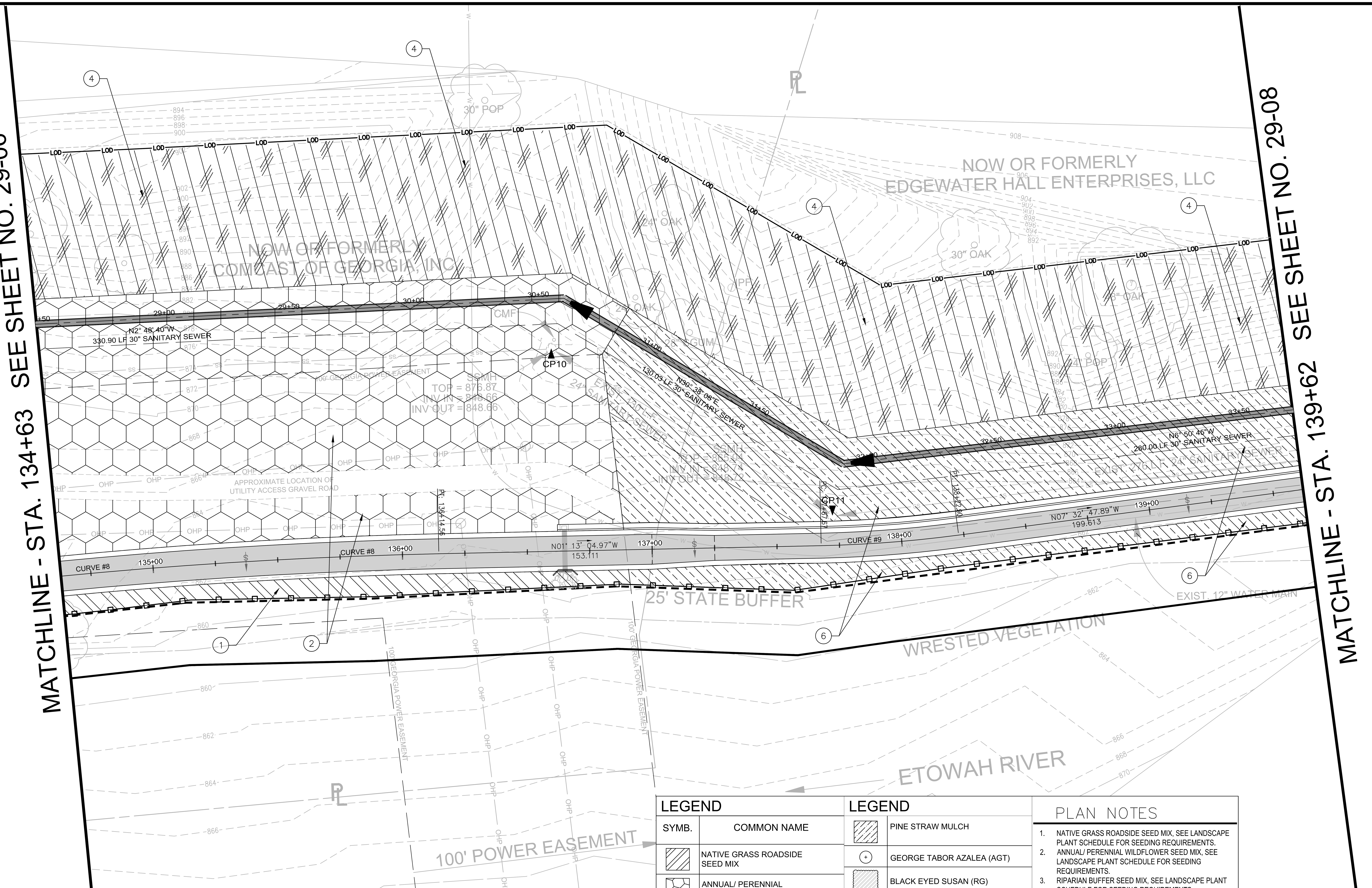
PROJ. NO.: 100062569
DESIGNED BY: C.L.H.
DRAWN BY: C.L.H.
CHECKED BY:
APPROVED BY:
DATE: AUG., 2019
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

LANDSCAPE PLANS

SHEET NO.
29-06
100062569

File Name: M:\100062569 – HERITAGE TO BOLING PARK TRAIL\CAD\DELIVERABLES\29 LANDSCAPE.DWG|Tab: 06|Plotted: August 18, 2020 4:28pm



LEGEND

SYMB.	COMMON NAME
	NATIVE GRASS ROADSIDE SEED MIX
	ANNUAL/ PERENNIAL WILDFLOWER SEED MIX
	RIPARIAN BUFFER SEED MIX
	REFORESTED TREE MIX WITH NATIVE GRASS ROADSIDE SLOPE SEED MIX
	COMMON BERMUDA GRASS SEED
	NATIVE GRASS ROADSIDE SLOPE SEED MIX

LEGEND

	PINE STRAW MULCH
	GEORGE TABOR AZALEA (AGT)
	BLACK EYED SUSAN (RG)
	ADAGIO DWARF MAIDEN GRASS (MGN)
	BLACK KNIGHT BUTTERFLY BUSH (BD)
	SIOUX CRAPE MYRTLE (LIS)
	HIGHTOWER WILLOW OAK (QPH)

PLAN NOTES

1. NATIVE GRASS ROADSIDE SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.
2. ANNUAL/ PERENNIAL WILDFLOWER SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.
3. RIPARIAN BUFFER SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.
4. REFORESTED TREE MIX WITH NATIVE GRASS ROADSIDE SLOPE SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR PLANTING AND SEEDING REQUIREMENTS.
5. COMMON BERMUDA GRASS SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.
6. NATIVE GRASS ROADSIDE SLOPE SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.
7. PINE STRAW MULCH, SEE LANDSCAPE PLANT SCHEDULE FOR REQUIREMENTS.

1

WHEN WORKING WITHIN THE THE GEORGIA POWER EASEMENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF HIS OR HER LABORERS, EQUIPMENT AND GEORGIA POWER FACILITIES AT ALL TIMES. THE CONTRACTOR IS REQUIRED TO SCHEDULE AND ATTEND A PRE-CONSTRUCTION MEETING WITH GEORGIA POWER TO DETERMINE MEANS AND METHODS OF WORK CONDUCTED WITHIN THE GEORGIA POWER EASEMENT INCLUDING BUT NOT LIMITED TO, SAFETY MEASURES, EQUIPMENT LIMITATIONS OR RESTRICTIONS, AND MOVEMENT THROUGH THE EASEMENTS DURING CONSTRUCTION.

0' 10' 20' 40' 60'
GRAPHIC SCALE
Scale: 1 Inch = 20 Ft.

GEORGIA REGISTERED LANDSCAPE ARCHITECT No. LA000780 08-11-2020 JOHN D BOUDREAU
NOT VALID FOR CONSTRUCTION UNLESS SIGNED IN THIS BLOCK

ATKINS
1600 Riveredge Parkway, Suite 700
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P: 770-933-0280

	REVISION	DATE
1	ADDENDUM NO. 2	08-11-20

PROJ. NO.: 100062569
DESIGNED BY: C.L.H.
DRAWN BY: C.L.H.
CHECKED BY:
APPROVED BY:
DATE: AUG., 2019
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

LANDSCAPE PLANS

SHEET NO.
29-07
100062569

File Name: M:\100062569 – HERITAGE TO BOLING PARK TRAIL\CAD\DELIVERABLES\29 LANDSCAPE.DWG|Tab: 07|Plotted: August 18, 2020 4:30pm

MATCHLINE - STA. 203+43 SEE SHEET NO. 29-13

MATCHLINE - STA. 158+00 SEE SHEET NO. 29-11

NOW OR FORMERLY
RIVERVIEW INVESTMENTS, LLC
CONSTRUCTION EASEMENT

EXISTING CONCRETE PARKING LOT

INV 857.60
24" RCP
INV 857.69

25' STATE BUFFER

WRESTED VEGETATION

EXISTING R/W

WALESKA ROAD

CP21

CP20

7 | MSA
3 | BD
30 | RG
6 | MSA

30 | RG
30 | RG
6 | MSA

3 | QPH
6 | LIS

N80° 47' 03"E
304.23 LF 30" SANITARY SEWER

N07° 40' 38.72"E
82.405

S81° 59' 05.72"E
12.194

CURVE #23-1
CURVE #23-2
CURVE #22

BRIDGE

NOTE:
AREAS WITHIN HERITAGE PARK TO BE SEEDED OR SODDED WITH BERMUDA GRASS AS PART OF SEWER PROJECT AND QUANTITIES. REFER TO EROSION CONTROL PLANS FOR LIMITS OF DISTURBANCE AND SEEDING OR SODDING REQUIREMENTS.

WHEN WORKING WITHIN THE THE GEORGIA POWER EASEMENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF HIS OR HER LABORERS, EQUIPMENT AND GEORGIA POWER FACILITIES AT ALL TIMES. THE CONTRACTOR IS REQUIRED TO SCHEDULE AND ATTEND A PRE-CONSTRUCTION MEETING WITH GEORGIA POWER TO DETERMINE MEANS AND METHODS OF WORK CONDUCTED WITHIN THE GEORGIA POWER EASEMENT INCLUDING BUT NOT LIMITED TO, SAFETY MEASURES, EQUIPMENT LIMITATIONS OR RESTRICTIONS, AND MOVEMENT THROUGH THE EASEMENTS DURING CONSTRUCTION.

LEGEND

SYMB.	COMMON NAME
	NATIVE GRASS ROADSIDE SEED MIX
	ANNUAL/ PERENNIAL WILDFLOWER SEED MIX
	RIPARIAN BUFFER SEED MIX
	REFORESTED TREE MIX WITH NATIVE GRASS ROADSIDE SLOPE SEED MIX
	COMMON BERMUDA GRASS SEED
	NATIVE GRASS ROADSIDE SLOPE SEED MIX

LEGEND

	PINE STRAW MULCH
	GEORGE TABOR AZALEA (AGT)
	BLACK EYED SUSAN (RG)
	ADAGIO DWARF MAIDEN GRASS (MGN)
	BLACK KNIGHT BUTTERFLY BUSH (BD)
	SIOUX CRAPE MYRTLE (LIS)
	HIGHTOWER WILLOW OAK (QPH)

PLAN NOTES

1. NATIVE GRASS ROADSIDE SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.
2. ANNUAL/ PERENNIAL WILDFLOWER SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.
3. RIPARIAN BUFFER SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.
4. REFORESTED TREE MIX WITH NATIVE GRASS ROADSIDE SLOPE SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR PLANTING AND SEEDING REQUIREMENTS.
5. COMMON BERMUDA GRASS SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.
6. NATIVE GRASS ROADSIDE SLOPE SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.
7. PINE STRAW MULCH, SEE LANDSCAPE PLANT SCHEDULE FOR REQUIREMENTS.

N

0' 10' 20' 40' 60'
GRAPHIC SCALE
Scale: 1 Inch = 20 Ft.

GEORGIA REGISTERED No. LA000750 LANDSCAPE ARCHITECT JOHN D BOUDREAU 08-11-2020
NOT VALID FOR CONSTRUCTION UNLESS SIGNED IN THIS BLOCK

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770-933-0280

△	REVISION	DATE
1	ADDENDUM NO. 2	08-11-20

PROJ. NO.:	100062569
DESIGNED BY:	C.L.H.
DRAWN BY:	C.L.H.
CHECKED BY:	
APPROVED BY:	
DATE:	AUG. 2019
SCALE:	AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

LANDSCAPE PLANS

SHEET NO.
29-12
100062569

File Name: M:\100062569 – HERITAGE TO BOLING PARK TRAIL\CAD\DELIVERABLES\29 LANDSCAPE.DWG[Tab:12]Plotted: August 19, 2020 12:14pm

1

WHEN WORKING WITHIN THE THE GEORGIA POWER EASEMENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF HIS OR HER LABORERS, EQUIPMENT AND GEORGIA POWER FACILITIES AT ALL TIMES. THE CONTRACTOR IS REQUIRED TO SCHEDULE AND ATTEND A PRE-CONSTRUCTION MEETING WITH GEORGIA POWER TO DETERMINE MEANS AND METHODS OF WORK CONDUCTED WITHIN THE GEORGIA POWER EASEMENT INCLUDING BUT NOT LIMITED TO, SAFETY MEASURES, EQUIPMENT LIMITATIONS OR RESTRICTIONS, AND MOVEMENT THROUGH THE EASEMENTS DURING CONSTRUCTION.

PLAN NOTES

1. NATIVE GRASS ROADSIDE SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.
2. ANNUAL/ PERENNIAL WILDFLOWER SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.
3. RIPARIAN BUFFER SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.
4. REFORESTED TREE MIX WITH NATIVE GRASS ROADSIDE SLOPE SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR PLANTING AND SEEDING REQUIREMENTS.
5. COMMON BERMUDA GRASS SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.
6. NATIVE GRASS ROADSIDE SLOPE SEED MIX, SEE LANDSCAPE PLANT SCHEDULE FOR SEEDING REQUIREMENTS.
7. PINE STRAW MULCH, SEE LANDSCAPE PLANT SCHEDULE FOR REQUIREMENTS.

LEGEND

SYMB.	COMMON NAME
▨	NATIVE GRASS ROADSIDE SEED MIX
⬡	ANNUAL/ PERENNIAL WILDFLOWER SEED MIX
⁘	RIPARIAN BUFFER SEED MIX
▨	REFORESTED TREE MIX WITH NATIVE GRASS ROADSIDE SLOPE SEED MIX
▩	COMMON BERMUDA GRASS SEED
▨	NATIVE GRASS ROADSIDE SLOPE SEED MIX
▨	PINE STRAW MULCH
⊕	GEORGE TABOR AZALEA (AGT)
▨	BLACK EYED SUSAN (RG)
⊙	ADAGIO DWARF MAIDEN GRASS (MGN)
⊘	BLACK KNIGHT BUTTERFLY BUSH (BD)
⊙	SIOUX CRAPE MYRTLE (LIS)
◎	HIGHTOWER WILLOW OAK (QPH)

MATCHLINE - STA. 203+43 SEE SHEET NO. 29-12

GEORGIA REGISTERED No. LA000750 08-11-2020 LANDSCAPE ARCHITECT JOHN D BOUDREAU

NOT VALID FOR CONSTRUCTION UNLESS SIGNED IN THIS BLOCK

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770--933-0280

△	REVISION	DATE
1	ADDENDUM NO. 2	08-11-20

PROJ. NO.: 100062569
DESIGNED BY: C.L.H.
DRAWN BY: C.L.H.
CHECKED BY:
APPROVED BY:
DATE: AUG., 2019
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 &
RIVER TRAIL EXTENSION

LANDSCAPE PLANS

SHEET NO.
29-13
100062569

File Name: M:\100062569 – HERITAGE TO BOLING PARK TRAIL\CAD\DELIVERABLES\29 LANDSCAPE.DWG|Tab:13|Plotted: August 19, 2020 12:15pm

LANDSCAPE PLANTING NOTES:

1. ALL PLANTS MUST BE HEALTHY, VIGOROUS MATERIAL, FREE OF PESTS & DISEASES.

2. ALL PLANTS MUST BE CONTAINER-GROWN OR BALLED & BURLAPPED (B&B) AS INDICATED IN THE PLANT LIST. BURLAP MATERIAL ON BALLED AND BURLAPPED PLANTS SHALL BE THE TYPE WHICH WILL DECAY WITHIN TWO YEARS (NO SYNTHETICS, PLASTIC, NYLON , TREATED OR OTHER NON NATURAL TYPES WILL BE ALLOWED.) AFTER SETTING BALLED AND BURLAPPED PLANTS IN THE PLANTING PIT, ALL BINDER TWINE SHALL BE CUT AND THE BURLAP REMOVED FROM THE TOP 1/3 OF THE ROOTBALL.

3. ALL TREES MUST BE STRAIGHT TRUNKED, FULL-HEADED & MEET ALL REQUIREMENTS SPECIFIED.

4. ALL PLANTS ARE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT & THE OWNER BEFORE, DURING & AFTER INSTALLATION UNTIL THE DATE OF FINAL ACCEPTANCE.

5. ALL TREES MUST BE GUYED OR STAKED AS SHOWN IN THE DETAILS.

6. ALL PLANTS & PLANTING AREAS MUST BE COMPLETELY MULCHED AS PER SPECIFICATIONS.

7. PRIOR TO CONSTRUCTION, THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES & SHALL AVOID DAMAGE TO ALL UTILITIES DURING THE COURSE OF THE WORK. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY & ALL DAMAGE TO UTILITIES, STRUCTURES, SITE APPURTENANCES, ETC. WHICH OCCURS AS A RESULT OF THE LANDSCAPE CONSTRUCTION.

8. THE QUANTITIES SHOWN IN THE PLANT SCHEDULE ARE SOLELY FOR THE INFORMATION OF THE CONTRACTOR. THE CONTRACTOR SHALL VERIFY THE QUANTITIES SHOWN IN THE PLANT SCHEDULE WITH THE QUANTITIES SHOWN ON THE PLANTING PLAN. ALL DIFFERENCES IN THE QUANTITIES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT FOR CLARIFICATION. CONTRACTOR IS RESPONSIBLE TO INSTALL THE PLANT MATERIAL QUANTITIES THAT ARE SHOWN IN THE LANDSCAPE PLANS.

9. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL PLANTING (INCLUDING, BUT NOT LIMITED TO: WEEDING, WATERING, SPRAYING, MULCHING, FERTILIZING, ETC.) OF PLANTING AREAS & LAWNS UNTIL FINAL ACCEPTANCE OF THE PROJECT.

10. THE LANDSCAPE CONTRACTOR SHALL COMPLETELY GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF ONE YEAR BEGINNING FROM THE FINAL ACCEPTANCE DATE. FINAL ACCEPTANCE WILL BE GRANTED BY THE OWNER'S REPRESENTATIVE UPON COMPLETION OF THE ENTIRE PROJECT. THE CONTRACTOR SHALL PROMPTLY MAKE ALL REPLACEMENTS BEFORE, DURING, AND AT THE END OF THE GUARANTEE PERIOD AS DIRECTED BY THE OWNER'S REPRESENTATIVE.

11. THE LANDSCAPE ARCHITECT OR OWNERS REPRESENTATIVE WILL APPROVE THE STAKED LOCATION OF ALL MATERIAL PRIOR TO INSTALLATION.

12. AFTER BEING DUG AT THE NURSERY SOURCE, ALL TREES IN LEAF SHALL BE ACCLIMATED FOR TWO (2) WEEKS UNDER A MIST SYSTEM PRIOR TO INSTALLATION.

13. ANY PLANT MATERIAL WHICH DIES, TURNS BROWN OR DEFOLIATES (PRIOR TO FINAL ACCEPTANCE OF THE PROJECT AND DURING THE COURSE OF THE ONE YEAR GUARANTEE PERIOD) SHALL BE PROMPTLY REMOVED FROM THE SITE AND REPLACED WITH MATERIAL OF THE SAME SPECIES, QUALITY AND SIZE AND MEETING ALL PLANT LIST SPECIFICATIONS.

14. ALL PLANT MATERIAL SHALL CONFORM WITH THE LATEST EDITION OF "AMERICAN STANDARDS FOR NURSERY STOCK" BY THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION. ALL PLANT MATERIAL SHALL MEET OR EXCEED THE SPECIFICATIONS OF THE FEDERAL, STATE, AND COUNTY LAWS REQUIRING INSPECTION FOR DISEASE AND INSECT CONTROL. ONE PLANT OF EACH SPECIES SHALL BE PROVIDED FOR THE OWNER'S REVIEW WITH THE NAME AND SIZE OF THE PLANT IN ACCORDANCE WITH THE STANDARDS OF PRACTICE FOR THE AMERICAN NURSERY & LANDSCAPE ASSOCIATION, INC. (ANLA). BOTANICAL NAMES SHALL TAKE PRECEDENCE OVER COMMON NAMES.

15. THE CONTRACTOR SHALL REMOVE ALL DEAD WOOD, SUCKERS, AND ALL BROKEN OR DAMAGED BRANCHES IN ACCORDANCE WITH THE ANLA IN ORDER TO PRESERVE THE NATURAL CHARACTER OF THE TREE AND SHRUB.

16. ALL PLANTING PITS SHALL BE FREE OF ROCKS, GRAVEL, AND OTHER DEBRIS. ALL PLANTING PITS SHALL BE PREPARED IN ACCORDANCE WITH THE PLANTING DETAILS.

17. NO SUBSTITUTION OF PLANT SPECIES OR VARIETY SHALL BE MADE WITHOUT PRIOR WRITTEN PERMISSION FROM THE LANDSCAPE ARCHITECT OR OWNERS REPRESENTATIVE.

18. ALL SHRUB, GROUNDCOVER, AND SEASONAL COLOR BED AREAS SHALL BE TOP DRESSED WITH A MINIMUM OF 3" OF COMPACTED PINE STRAW MULCH. THE MULCH SHALL BE FREE FROM MOLD, STICKS, CONES, WEEDS AND OTHER DEBRIS. COMPACTION OF THE MULCH SHALL OCCUR NATURALLY OVER A TWO WEEK PERIOD DURING WHICH AT LEAST ONE SIGNIFICANT RAINFALL HAS OCCURRED. ADDITIONAL MULCH SHALL BE PLACED IN ORDER TO MAINTAIN THE MINIMUM DEPTH UNTIL DATE OF FINAL ACCEPTANCE AND APPROVED BY OWNER.

19. FERTILIZER APPLICATION AMOUNTS AND SOIL PREPARATION DESCRIBED IN THE PLANT SCHEDULE SHALL BE STRICTLY FOLLOWED.

20. SPRAY TREES AND SHRUBS WITH ANTI-DESICCANT, PRIOR TO TRANSPORTING AND TRANSPLANTING IF FOLIAGE IS PRESENT. ALL PLANT MATERIAL MUST BE PROTECTED DURING SHIPMENT FROM WIND BY A TARPAULIN.

21. ALL PLANT MATERIALS SHALL BE PLANTED AS PER THE PLANTING DETAILS OR THE PLANTINGS NOTES.

22. ALL EXISTING TURF AND VEGETATION SHALL BE STRIPPED AND REMOVED PRIOR TO THE INSTALLATION OF ANY TURF OR PLANT MATERIAL.

23. BACKFILL MIXTURE FOR ALL AREAS SHALL CONTAIN 1 / 3 BY VOLUME OF AMENDMENT GRADE, FINELY GROUND AND FULLY COMPOSTED PINE OR HARDWOOD BARK. AMENDMENT SHALL BE MIXED THOROUGHLY WITH THE ENTIRE VOLUME OF GOOD SOIL REMOVED FROM THE PLANTING PIT. THIS MIXTURE SHALL BE USED TO BACKFILL AROUND THE ROOTBALL.

24. ALL PLANT MATERIAL SHALL BE PROPERLY WATERED IMMEDIATELY AFTER PLANTING. WATER SHALL BE APPLIED AT A RATE THAT WILL COMPLETELY SATURATE THE ENTIRE ROOTBALL REGARDLESS OF WEATHER CONDITIONS. IF THE HEIGHT OF THE ROOTBALL IS 24", THEN THE PLANT SHALL BE WATERED TO A DEPTH OF 24".

25. THE OWNER'S REPRESENTATIVE RESERVES THE RIGHT TO REJECT, AT ANY TIME UNTIL THE END OF THE GUARANTEE PERIOD, ANY AND/OR ALL PLANT MATERIAL THAT DOES NOT MEET THE SPECIFICATIONS AS SET FORTH HERE IN AND IN THE PLANT SCHEDULE.

26. ALL DISTURBED AREAS SHALL BE SEEDED UNLESS INDICATED OTHERWISE ON THE PLANS. CONTRACTOR IS TO PROVIDE A VIGOROUS STAND OF TURF, FREE FROM DISEASE AND / OR WEEDS.

27. ALL SLOPES THAT ARE GREATER THAN 3:1 SHALL BE STABILIZED WITH EROSION CONTROL FABRIC PRIOR TO PLANTING. EROSION CONTROL FABRIC SHALL BE OF THE TYPE THAT DECOMPOSES AFTER 18 MONTHS TO 2 YEARS.

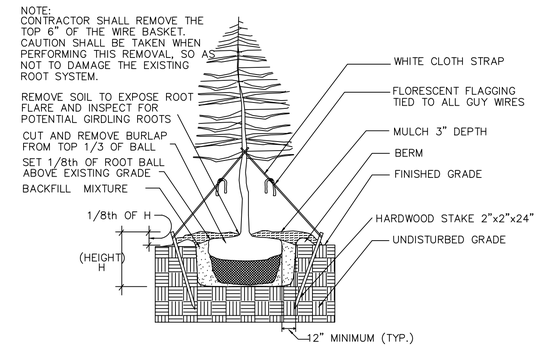
28. FINAL LOCATION OF ALL PLANT MATERIAL SHALL BE SUBJECT TO THE APPROVAL OF THE OWNER'S REPRESENTATIVE. BEFORE INSTALLATION, THE CONTRACTOR IS TO NOTIFY THE OWNER'S REPRESENTATIVE FOR INSPECTION AFTER THE LAYOUT IS COMPLETE. FIELD VERIFY PLANT LOCATIONS WITH LANDSCAPE ARCHITECT PRIOR TO INSTALLATION OF ANY PLANT MATERIAL. ANY PLANT MATERIAL INSTALLED PRIOR TO THE OWNER'S REPRESENTATIVE'S APPROVAL WILL BE SUBJECT TO ADJUSTMENT/RELOCATION AT THE LANDSCAPE CONTRACTOR'S EXPENSE.

29. CONTRACTOR SHALL WATER ALL PLANT MATERIAL AS NECESSARY TO MAINTAIN PLANT MATERIAL IN HEALTHY CONDITION UNTIL THE END OF THE ONE YEAR GUARANTEE PERIOD.

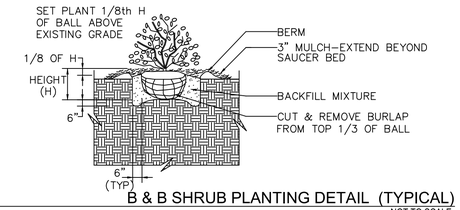
30. DO NOT SCALE FROM DRAWINGS.

31. PLANT QUALITY: ALL PLANTS SHALL BE SOUND, FREE OF PLANT DISEASE OR PESTS AND SHALL HAVE A HEALTHY, NORMAL ROOT SYSTEM FREE OF GIRDLING ROOTS. TREES ARE TO BE PLANTED THE APPROPRIATE DEPTH, EXPOSING THE ROOT FLARE. THE OWNER'S REPRESENTATIVE RESERVES THE RIGHT TO REJECT AT ANY TIME, AN AND/OR ALL PLANT MATERIAL THAT DOES NOT MEET THE SPECIFICATIONS AS SET FORTH IN THE PLANTING SCHEDULE.

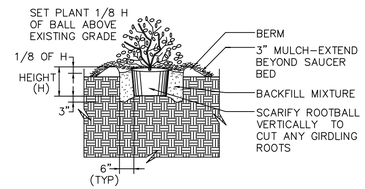
32. TOPPING AND HEADING CUTS OF ALL TREES ARE STRICTLY PROHIBITED, INCLUDING CRAPE MYRTLES.



1 TREE WELL DETAIL (Typical)
NOT TO SCALE



2 B & B SHRUB PLANTING DETAIL (TYPICAL)
NOT TO SCALE



3 CONTAINERIZED SHRUB PLANTING DETAIL (TYPICAL)
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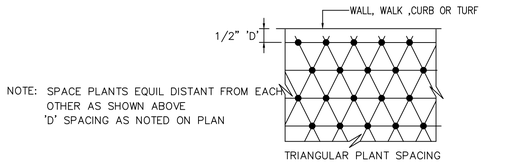
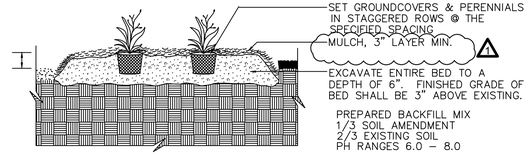
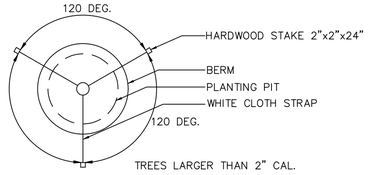




4 GROUNDCOVER & PERENNIAL DETAIL (TYPICAL)
NOT TO SCALE



5 TREE STAKING DETAIL (TYPICAL)
NOT TO SCALE

LANDSCAPE PLANT SCHEDULE

KEY	QUANTITY	SCIENTIFIC NAME	COMMON NAME	MINIMUM SIZE	COMMENT
TREES					
QPH	3	QUERCUS PHELLOS 'HIGHTOWER'	HIGHTOWER WILLOW OAK	3" CAL.	B.B., SINGLE-STEM
LIS	6	LAGERSTROMIA INDICA 'SIOUX'	SIOUX CRAPE MYRTLE	8'-10' HT..	B.B., SINGLE-STEM
SHRUBS AND ORNAMENTAL GRASSES					
BD	3	BUDDLEJA DAVIDII 'BLACK KNIGHT'	BLACK KNIGHT BUTTERLY BUSH	3 GAL.	CONT., +/- 3'-4' ON CENTER
MSA	19	MISCANTHUS SINENSIS 'ADAGIO'	ADAGIO DWARF MAIDEN GRASS	3 GAL.	CONT., +/- 3'-4' ON CENTER
AGT	24	AZALEA X 'GEORGE L. TABOR'	GEORGE L. TABOR AZALEA	3 GAL.	CONT., +/- 3'-4' ON CENTER
PERENNIALS AND GROUNDCOVERS					
RG	90	RUDBECKIA FULGIDA 'GOLDSTURM'	BLACK EYED SUSAN	1 GAL.	CONT., +/- 18" ON CENTER
REFORESTED TREE MIX (MIX AND PLANT TREES IN TRIANGULAR SPACING)					
	300	PINUS TAEDA	LOBLOLLY PINE	SEEDLING	BARE ROOT, +/- 10' ON CENTER
	300	QUERCUS ALBA	WHITE OAK	SEEDLING	BARE ROOT, +/- 10' ON CENTER
	300	LIRIODENDRON TULIPIFERA	YELLOW TULIP POPLAR	SEEDLING	BARE ROOT, +/- 10' ON CENTER
	300	QUERCUS NIGRA	WATER OAK	SEEDLING	BARE ROOT, +/- 10' ON CENTER
	300	QUERCUS RUBRA	NORTHERN RED OAK	SEEDLING	BARE ROOT, +/- 10' ON CENTER

KEY	QUANTITY	% OF MIX	SCIENTIFIC NAME	COMMON NAME	COMMENT
RIPARIAN BUFFER SEED MIX	1 AC. (20 LBS)	2.0	CAREX ALBOLUTESCENS	GREENWHITE SEDGE	APPLY THIS MIX BY HYDROSEEDING AT 20 LBS/ACRE WITH COVER CROP. PLANT OCT-MAY. PLANT AND PREP THE SOIL ACCORDING TO MANUFACTURERS RECOMMENDATIONS. AFTER ESTABLISHED, MOW ANNUALLY IN LATE WINTER WITH MOWER DECK SET HIGH.
		3.0	CHAMAECRISTA FASCICULATA	PARTRIDGE PEA	
CONTACT: ERNST CONSERVATION SEEDS, 8884 MERCER PIKE, MEADVILLE, PA 16335 ERNSTSEED.COM (800) 873-3321 PLANTING DENSITY REQUIREMENTS: PROVIDE 100% COVERAGE OF ALL EXPOSED SOIL. PROVIDE COVER CROP BASED ON THE FOLLOWING SCHEDULE: SEPTEMBER 1 – APRIL 30; GRAIN RYE AT 30 LBS/ACRE. MAY 1 – AUGUST 31; JAPANESE MILLET AT 10 LBS/ACRE.		21.0	CHASMANTHIUM LATIFOLIUM	RIVER OATS	
		20.0	ELYMUS VIRGINICUS	VIRGINIA WILDRYE	
		1.0	EUPATORIUM COELESTINUM	MISTFLOWER	
		45.0	PANICUM ANCEPS	BEAKED PANICGRASS	
		7.5	PANICUM RIGIDULUM	REDTOP PANICGRASS	
		0.5	VERNONIA NAVEBORACENSIS	NEW YORK IRONWEED	
		100	TOTAL		

KEY	QUANTITY	% OF MIX	SCIENTIFIC NAME	COMMON NAME	COMMENT
NATIVE GRASS ROADSIDE SEED MIX	4 AC. (20 LBS)	0.8	BAPTISIA PENDULA	LARGELEAF WILD INDIGO	APPLY THIS MIX BY HYDROSEEDING AT 15 LBS/ACRE WITH COVER CROP. PLANT OCT-MAY. PLANT AND PREP THE SOIL ACCORDING TO MANUFACTURERS RECOMMENDATIONS. AFTER ESTABLISHED, MOW ANNUALLY IN LATE WINTER WITH MOWER DECK SET HIGH.
		4.0	CHAMAECRISTA FASCICULATA	PARTRIDGE PEA	
CONTACT: ERNST CONSERVATION SEEDS, 8884 MERCER PIKE, MEADVILLE, PA 16335 ERNSTSEED.COM (800) 873-3321 PLANTING DENSITY REQUIREMENTS: PROVIDE 100% COVERAGE OF ALL EXPOSED SOIL. PROVIDE COVER CROP BASED ON THE FOLLOWING SCHEDULE: JANUARY 1 – APRIL 30; GRAIN OATS AT 30 LBS/ACRE. MAY 1 – AUGUST 31; BROWN TOP MILLET AT 10 LBS/ACRE. SEPTEMBER 1 – DECEMBER 31; GRAIN RYE AT 30 LBS/ACRE.		4.0	COREOPSIS LANCEOLATA	LANCE LEAF COREOPSIS	
		15.0	ELYMUS VIRGINICUS	VIRGINIA WILDRYE	
		0.7	ERYNGIUM YUCCIFOLIUM	RATTLESNAKE MASTER	
		1.5	EUPATORIUM COELESTINUM	MISTFLOWER	
		1.5	LESPEDEZA VIRGINICA	SLENDER BUSHCLOVER	
		0.5	LIATRIS SPICATA	SPIKED GAYFEATHER	
		1.5	MONARDA PUNCTATA	DOTTED MINT	
		40.0	PANICUM ANCEPS	BEAKED PANICGRASS	
		4.0	RUDBECKIA HIRTA	BLACK EYED SUSAN	
		25.0	SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	
		1.5	TRADESCANTIA OHIENSIS	OHIO SPIDERWORT	
		100	TOTAL		

KEY	QUANTITY	% OF MIX	SCIENTIFIC NAME	COMMON NAME	COMMENT
NATIVE GRASS ROADSIDE SLOPE SEED MIX	5 AC. (225 LBS)	0.3	BAPTISIA PENDULA	LARGELEAF WILD INDIGO	APPLY THIS MIX BY HYDROSEEDING AT 45 LBS/ACRE WITH COVER CROP. PLANT OCT-MAY. PLANT AND PREP THE SOIL ACCORDING TO MANUFACTURERS RECOMMENDATIONS. AFTER ESTABLISHED, MOW ANNUALLY IN LATE WINTER WITH MOWER DECK SET HIGH. USE BONDED FIBER MATRIX SLOPE MATTING WITH THIS SEED MIX.
		1.5	CHAMAECRISTA FASCICULATA	PARTRIDGE PEA	
CONTACT: ERNST CONSERVATION SEEDS, 8884 MERCER PIKE, MEADVILLE, PA 16335 ERNSTSEED.COM (800) 873-3321 PLANTING DENSITY REQUIREMENTS: PROVIDE 100% COVERAGE OF ALL EXPOSED SOIL. PROVIDE COVER CROP BASED ON THE FOLLOWING SCHEDULE: JANUARY 1 – APRIL 30; GRAIN OATS AT 30 LBS/ACRE. MAY 1 – AUGUST 31; BROWN TOP MILLET AT 10 LBS/ACRE. SEPTEMBER 1 – DECEMBER 31; GRAIN RYE AT 30 LBS/ACRE.		1.5	COREOPSIS LANCEOLATA	LANCE LEAF COREOPSIS	
		25.0	ELYMUS VIRGINICUS	VIRGINIA WILDRYE	
		0.5	EUPATORIUM COELESTINUM	MISTFLOWER	
		0.5	LESPEDEZA VIRGINICA	SLENDER BUSHCLOVER	
		0.5	MONARDA PUNCTATA	DOTTED MINT	
		10.0	PANICUM VIRGATUM	SWITCHGRASS	
		1.5	RUDBECKIA HIRTA	BLACK EYED SUSAN	
		38.4	SORGHASTRUM NUTANS	INDIANGRASS	
		0.3	TRADESCANTIA OHIENSIS	OHIO SPIDERWORT	
		20.0	TRIDENS FLAVUS	PURPLE TOP	
		100	TOTAL		

KEY	QUANTITY	PRODUCT NAME	PRODUCT NUMBER	COMMENT
ANNUAL/ PERENNIAL WILDFLOWER SEED MIX	6 AC. (60 LBS)	SOUTHEAST ANNUAL & PERENNIAL WILDFLOWER MIX	ERNMX-169	APPLY ERNMX-169 MIX BY HYDROSEEDING AT 10 LBS/ACRE WITH COVER CROP. PLANT NOV-MARCH. PLANT AND PREP THE SOIL ACCORDING TO MANUFACTURERS RECOMMENDATIONS. AFTER ESTABLISHED, MOW ANNUALLY IN LATE WINTER WITH MOWER DECK SET HIGH. APPLY LITTLE BLUESTEM SEED BY HUDROSEEDING AT 3 LBS/ACRE ALONG WITH ERNMX-169 MIX.
(COMBINE ERNMX-169 MIX ALONG WITH LITTLE BLUESTEM SEED)	6 AC. (18 LBS)	SCIENTIFIC NAME	COMMON NAME	
		SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	
CONTACT: ERNST CONSERVATION SEEDS, 8884 MERCER PIKE, MEADVILLE, PA 16335 ERNSTSEED.COM (800) 873-3321 PLANTING DENSITY REQUIREMENTS: PROVIDE 100% COVERAGE OF ALL EXPOSED SOIL. PROVIDE COVER CROP BASED ON THE FOLLOWING SCHEDULE: NOVEMBER 1 – MARCH 31; CEREAL RYE AT 30 LBS/ACRE. APRIL 1 – OCTOBER 31; BROWN TOP MILLET AT 10 LBS/ACRE.				

SEED	± 0.5 ACRES	COMMON BERMUDA GRASS SEED, HYDROSEEDED (MID-SPRING PLANTING IF POSSIBLE)
MULCH	± 200 SY.	4 IN LAYER OF PINE STRAW – REAPPLY TWICE A YEAR OR AS DIRECTED UNTIL END OF LANDSCAPE MAINTENANCE AGREEMENT. PINESTRAW TREE RINGS SHALL BE 5' DIAMETER.
PLANT TOPSOIL – ± 25 X CY.		± 3 CY PER TREE PLANTING AREA, ± 2 CF PER SHRUB/ORNAMENTAL GRASS, AND ± 1 CF PER PERENNIAL/ GROUNDCOVER. REFER TO PLANTING DETAILS, SPECIAL PROVISIONS AND SPECIFICATIONS FOR PLANT TOPSOIL PREPARATION FOR PLANTING.

FERTILIZER = RATE PER SOILS TEST RECOMMENDATIONS * PRE-EMERGENT TO BE APPLIED TO ALL PLANT BEDS PER MANUFACTURER'S RECOMMENDATIONS
* DO NOT USE PRE-EMERGENT IN AREAS THAT WILL BE SEEDED (RIPARIAN BUFFER, WILDFLOWER AND NATIVE GRASS MIXES AND BERMUDA GRASS SEED)

GEORGIA REGISTERED No. LA000780 LANDSCAPE ARCHITECT JOHN D BOUDREAU 08-11-2020
NOT VALID FOR CONSTRUCTION UNLESS SIGNED IN THIS BLOCK

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770-933-0280

	REVISION	DATE
1	ADDENDUM NO. 2	08-11-20

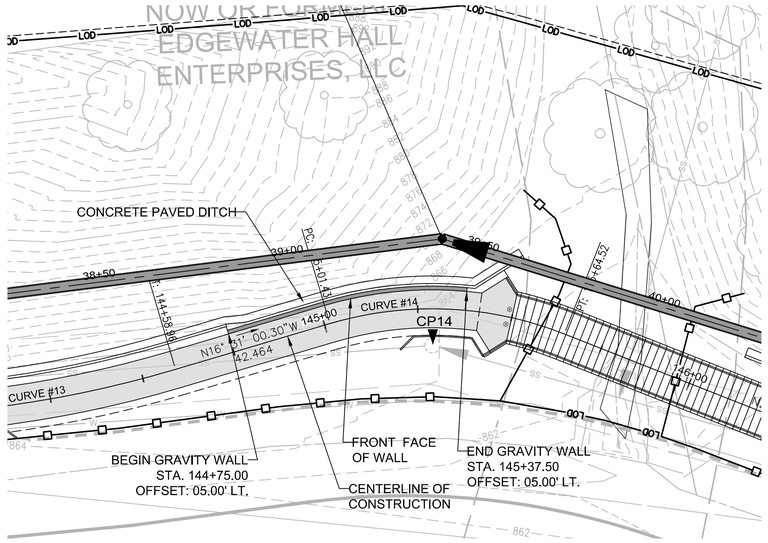
PROJ. NO.: 100062569
DESIGNED BY: C.L.H.
DRAWN BY: C.L.H.
CHECKED BY:
APPROVED BY:
DATE: AUG. 2019
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

LANDSCAPE DETAILS

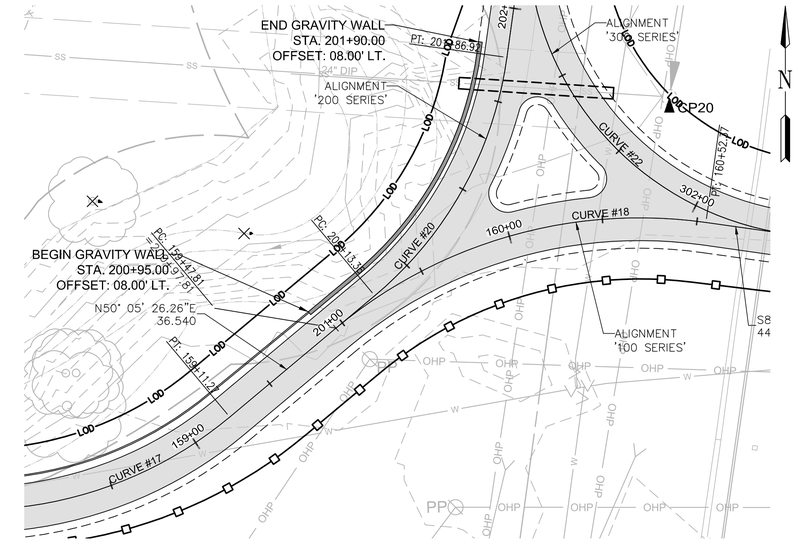
SHEET NO.
29-14
100062569

File Name: M:\100062569 - HERITAGE TO BOLING PARK TRAIL\CAD\DELIVERABLES\29 LANDSCAPE.DWG Tab: DETAILS Plotted: August 13, 2020 4:03pm



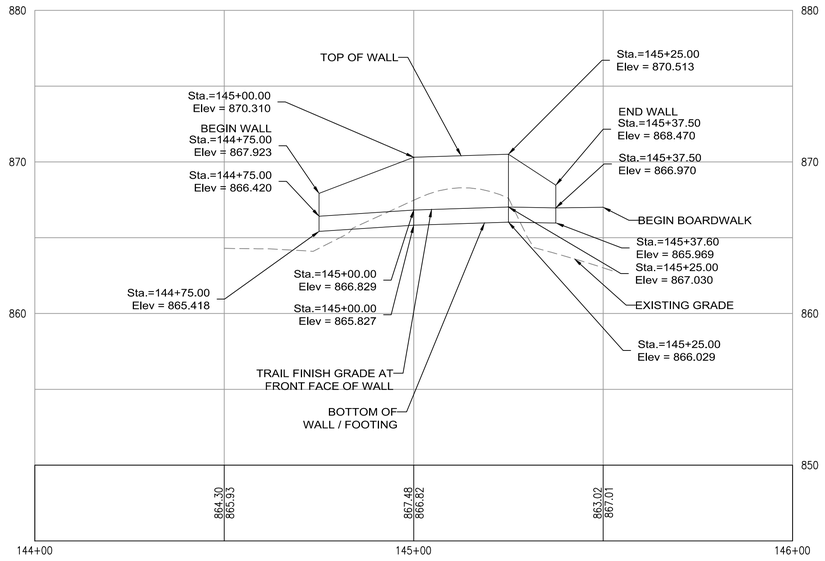
PLAN VIEW

SCALE: 1"=20'



PLAN VIEW

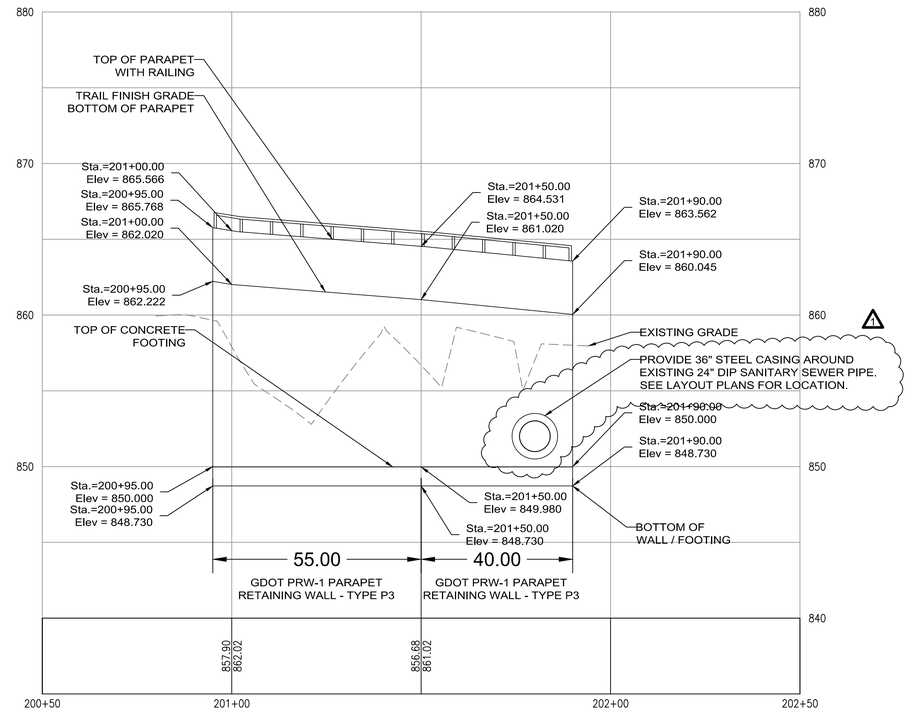
SCALE: 1"=20'



GRAVITY WALL ENVELOPE NO. 2

PROFILE VIEW

SCALE:
HORIZONTAL: 1"= 20'
VERTICAL: 1"= 5'



GDOT PRW-1 TYPE P3 RETAINING WALL ENVELOPE NO. 3

PROFILE VIEW

SCALE:
HORIZONTAL: 1"= 20'
VERTICAL: 1"= 5'

CURVE #20
Δ = 42° 8' 39.12" LT
DEG = 57° 17' 44.88"
T = 38.53
PI Station 201+51.89
N = 1542845.79 E = 2197468.85
Length = 73.56'
Radius = 100.00'
Chord Bearing = N29° 01' 07"E
Chord Length = 71.91'

CURVE #14
Δ = 38° 3' 11.88" RT
DEG = 60° 18' 40.92"
T = 32.76
PI Station 145+34.19
N = 1541882.70 E = 2196508.16
Length = 63.09'
Radius = 95.00'
Chord Bearing = N2° 30' 36"E
Chord Length = 61.94'

HORIZ. 20 10 0 20 40
VERT. 5 2.5 0 5 10
SCALE IN FEET

GENERAL RETAINING WALL NOTES:

GEOTECHNICAL ENGINEER- THE CONTRACTOR SHALL PREPARED FOR EACH BRIDGE, BOARDWALK, FOUNDATION AND WALL LOCATION, A BRIDGE FOUNDATION INVESTIGATION (BFI) AND WALL FOUNDATION INVESTIGATION (WFI) REPORT IN ACCORDANCE WITH GDOT REQUIREMENTS FOR REVIEW AND APPROVAL. THE GEOTECHNICAL ENGINEER PREPARING THE REPORT SHALL BE GEORGIA DEPARTMENT OF TRANSPORTATION, (GDOT) PREQUALIFIED GEOTECHNICAL ENGINEER. THEY ARE TO FOLLOW THE FOUNDATION INVESTIGATION (DRILLINGS AND SAMPLING) IN ACCORDANCE CRITERIA ESTABLISHED BY GDOT AND PROVIDE GEOTECHNICAL RECOMMENDATIONS FOR FUTURE STRUCTURAL DESIGN OF PROJECT FEATURES. THE GEOTECHNICAL ENGINEER IN CHARGE OF THE PROJECT IS THE PROFESSIONAL GEOTECHNICAL ENGINEER WHO WILL SIGN THE BFI AND THE WFI REPORTS.

STRUCTURAL ENGINEERING- THE CONTRACTOR SHALL PREPARED AND SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL FOR EACH BRIDGE, BOARDWALK, FOUNDATION AND WALL LOCATION. THE SHOP DRAWINGS SHALL BE PREPARED BY A GEORGIA DEPARTMENT OF TRANSPORTATION, (GDOT) PREQUALIFIED STRUCTURAL ENGINEER. THE SHOP DRAWINGS FINAL DESIGN SHALL BE PREPARED IN ACCORDANCE WITH GDOT BRIDGE AND STRUCTURAL DESIGN MANUAL.

GEORGIA REGISTERED No. LA0007676 LANDSCAPE ARCHITECT JOHN D BOUDREAU 08-11-2020
NOT VALID FOR CONSTRUCTION UNLESS SIGNED IN THIS BLOCK

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770-933-0280

REVISION	DATE
1 ADDENDUM NO. 2	08-11-20

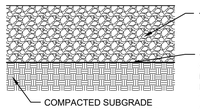
PROJ. NO.:	100062569
DESIGNED BY:	C.L.H.
DRAWN BY:	C.L.H.
CHECKED BY:	
APPROVED BY:	
DATE:	AUG. 2019
SCALE:	AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 &
RIVER TRAIL EXTENSION

RETAINING WALL ENVELOPES

SHEET NO.
31-02
100062569

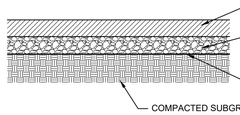
File Name: M:\100062569 - HERITAGE TO BOLING PARK TRAIL\CAD\DELIVERABLES\31 RETAINING WALL ENVELOPES.DWG[Tab: 31-02]Plotted: August 13, 2020 3:32pm



1 GRAVEL DRIVE DETAIL

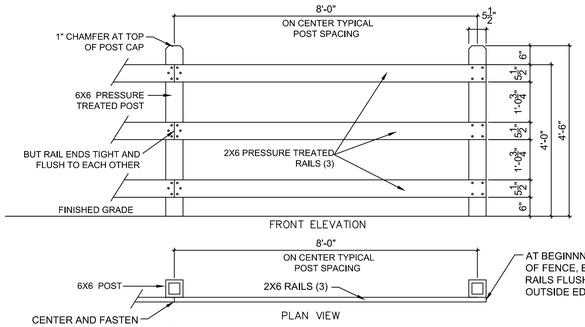
NTS

NOTE:
1. CONTRACTOR TO COMPACT GRADED AGGREGATE BASE COURSE PRIOR TO APPLICATION OF 6" CONCRETE SURFACE COURSE.
2. REFER TO DETAIL 3/40-01 FOR CONTROL JOINT AND EXPANSION JOINT INFORMATION.
3. CONTROL JOINT TO BE EVERY 10 FT. ALONG 10 FT. WIDE TRAIL OR EVERY 12 FT. ALONG 12 FT. WIDE TRAIL. EXPANSION JOINT TO BE EVERY 60 FT.



2 CONC. PVMT. DETAIL

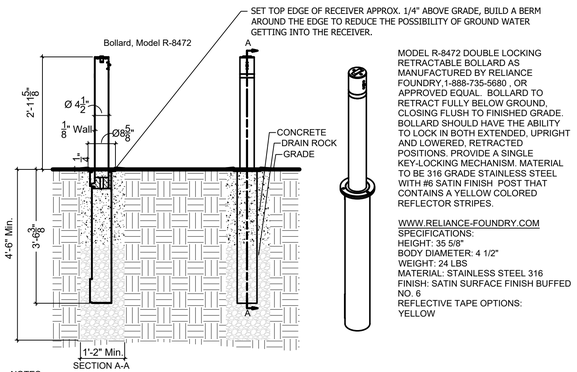
NTS



NOTE:
1. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS, IDENTIFYING DIMENSIONS FOR CONCRETE FOOTING DETAILS, CONCRETE PSI, FASTENER TYPE, AND LAYOUTS FOR EACH FENCE SECTIONS FOR APPROVAL PRIOR TO ORDERING AND INSTALLATION.
2. POST SPACING TO BE 8'-0" MAXIMUM AND EQUALLY SPACED BETWEEN TOTAL FENCE LENGTH.
3. ALL WOOD TO BE STAINED WITH BENJAMIN MOORE MOORCRAFT SUPER SPEC® ACRYLIC SOLID COLOR EXTERIOR STAIN, (OR APPROVED EQUAL) CONTRACTOR TO PROVIDE COLORS SAMPLES FOR APPROVAL.
4. ALL WOOD TO BE SELECT GRADE PRESSURE TREATED PINE.
5. FASTEN RAILS WITH EXTERIOR GRADE FASTENERS.

6 RAILING DETAIL

NTS



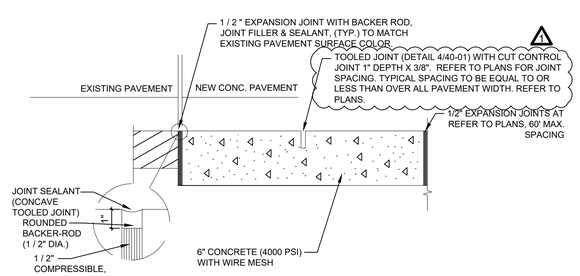
MODEL R-8472 DOUBLE LOCKING RETRACTABLE BOLLARD AS MANUFACTURED BY RELIANCE FOUNDRY, 1-888-735-5680 , OR APPROVED EQUAL. BOLLARD TO RETRACT FULLY BELOW GROUND, CLOSING FLUSH TO FINISHED GRADE. BOLLARD SHOULD HAVE THE ABILITY TO LOCK IN BOTH EXTENDED, UPRIGHT AND LOWERED, RETRACTED POSITIONS. PROVIDE A SINGLE KEY-LOCKING MECHANISM. MATERIAL TO BE 316 GRADE STAINLESS STEEL WITH #6 SATIN FINISH POST THAT CONTAINS A YELLOW COLORED REFLECTOR STRIPES.

WWW.RELIANCE-FOUNDRY.COM
SPECIFICATIONS:
HEIGHT: 35 5/8"
BODY DIAMETER: 4 1/2"
WEIGHT: 24 LBS
MATERIAL: STAINLESS STEEL 316
FINISH: SATIN SURFACE FINISH BUFFED NO. 6
REFLECTIVE TAPE OPTIONS:
YELLOW

NOTES:
EMBEDMENT DETAILS ARE FOR REFERENCE ILLUSTRATION ONLY. INSTALL PER MANUFACTURERS REQUIREMENTS

7 BOLLARD DETAIL

NTS

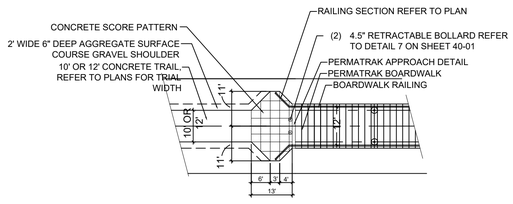


3 CONCRETE TRAIL PAVING SECTION

NTS

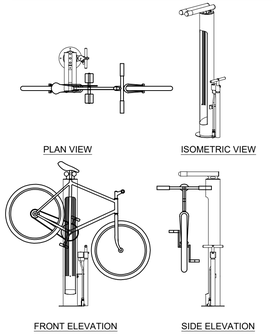
4 TYPICAL TRAIL JOINT LAYOUT

NTS



5 PROPOSED TRAIL / BOARDWALK TRANSITION (CONC. APPROACH SLAB) DETAIL

NTS



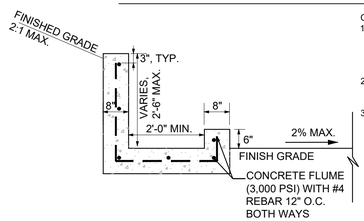
MANUFACTURER:
DERO BIKE RACK COMPANY
42 NORTHERN STACKS DRIVE, SUITE 100,
MINNEAPOLIS, MN 55421
TELEPHONE: 1-888-337-6729
WEBSITE: HTTP://WWW.DERO.COM

MODEL: FIXIT
(INCLUDES BIKE HANGER/RACK, HAND TOOLS,
MANUAL AIR PUMP)
FINISH AND COLOR: BLACK TGIC POWDER-COAT
INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

OR APPROVED EQUAL.

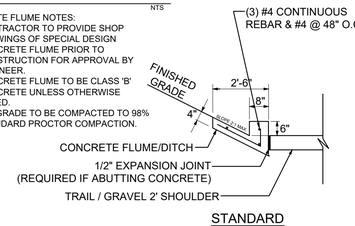
8 BIKE REPAIR STATION

NTS



CONCRETE FLUME NOTES:
1. CONTRACTOR TO PROVIDE SHOP DRAWINGS OF SPECIAL DESIGN CONCRETE FLUME PRIOR TO CONSTRUCTION FOR APPROVAL BY ENGINEER.
2. CONCRETE FLUME TO BE CLASS 'B' CONCRETE UNLESS OTHERWISE NOTED.
3. SUBGRADE TO BE COMPACTED TO 98% STANDARD PROCTOR COMPACTION.

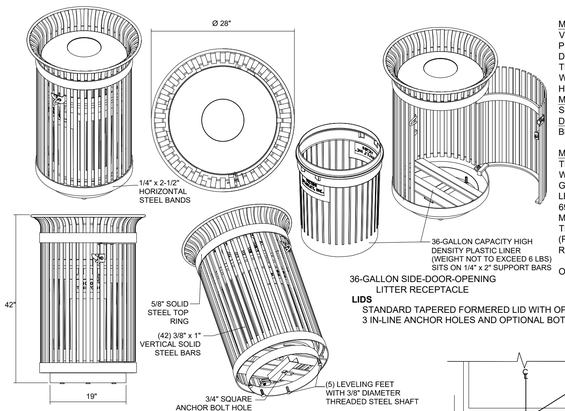
SPECIAL DESIGN CONCRETE FLUME SECTION AT EXISTING MANHOLE STA. 140+51.75 LT.



STANDARD CONCRETE FLUME SECTION

9 CONCRETE DITCH/FLUME DETAILS

NTS



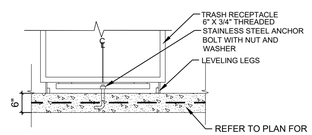
MANUFACTURER:
VICTOR STANLEY, INC.
P.O DRAWER 330
DUNKIRK, MD 20754
TELEPHONE: (301) 855-8300
WEBSITE:
HTTP://WWW.VICTORSTANLEY.COM
MODEL NO:
S-42 LITTER RECEPTACLE UNIT
DESCRIPTION
BLACK RECEPTACLE.

MANUFACTURER: DUMOR, INC.
TELEPHONE: 800-598-4018
WEBSITE: HTTP://WWW.DUMOR.COM
GEORGIA REPRESENTATIVE:
LEISURE LINES, INC.
6924 COMMERICAL DRIVE
MORROW, GA 30260
TELEPHONE: 770-968-4000
(PROVIDE SIMILAR TRASH RECEPTACLE AS SPECIFIED ABOVE)

OR APPROVED EQUAL.

36-GALLON SIDE-DOOR-OPENING LITTER RECEPTACLE

LIDS
STANDARD TAPERED FORMERED LID WITH OPTIONAL MOUNT WITH 3 IN-LINE ANCHOR HOLES AND OPTIONAL BOTTOM PLATE COVER.

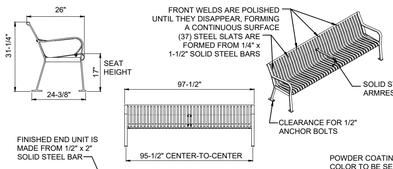


ANCHORING DETAIL ON CONCRETE SLAB

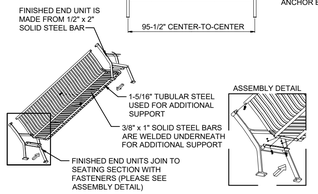
NOTES:
INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
1. DRAWINGS NOT TO SCALE. DO NOT SCALE DRAWINGS.
2. ALL FABRICATED METAL COMPONENTS ARE STEEL SHOTBLASTED, ETCHED, PHOSPHATIZED, PREHEATED, AND ELECTROSTATICALLY POWDER-COATED WITH T.G.I.C. POLYESTER POWDER COATINGS. PRODUCTS ARE FULLY CLEANED AND PRETREATED, PREHEATED AND COATED WHILE HOT TO FILL CREVICES AND BUILD FILM COATING. COATED PARTS ARE THEN FULLY CURED TO COATING MANUFACTURER'S SPECIFICATIONS. THE THICKNESS OF THE RESULTING FINISH AVERAGES 8-10 MILS (200-250 MICRONS).
3. OIL IMPREGNATED BRONZE BUSHINGS AND STAINLESS STEEL PIVOT PINS FOR DOOR MOVEMENT, STANDARD 3/16" SOLID STEEL LATCH ASSEMBLY OR OPTIONAL PATENTED STAINLESS STEEL KEYED LOCK ASSEMBLY.
4. PRODUCT MUST BE PERMANENTLY AFFIXED TO THE GROUND. CONSULT YOUR LOCAL CODES FOR REGULATIONS.
5. VICTOR STANLEY, INC., PLASTIC INNER LINERS ARE MOLDED ON TOOLING DESIGNED FOR AND OWNED BY VICTOR STANLEY, INC. THEY OFFER MAXIMUM CAPACITY AND STRENGTH WITH LIGHTWEIGHT CONSTRUCTION USING CRITICAL MOLDED RIBS, INTEGRAL HANDHOLDS, AND HIGH-STRENGTH MATERIALS. THIS MINIMIZES HANDLING DIFFICULTY AND FACILITATES EASY EMPTYING AND STORAGE WHILE AFFORDING LONG SERVICE LIFE.
6. ANCHOR BOLT NOT PROVIDED BY MANUFACTURER.
7. FOR HIGH SALT ABUSIVE CLIMATES, HOT DIP GALVANIZING BEFORE POWDER COATING IS AVAILABLE. SEE WRITTEN SPECIFICATIONS FOR DETAILS.
8. ALL SPECIFICATIONS ARE SUBJECT TO CHANGE. CONTACT MANUFACTURER FOR DETAILS.
9. THIS PRODUCT IS SHIPPED FULLY ASSEMBLED.

10 TRASH RECEPTACLE DETAIL

NTS



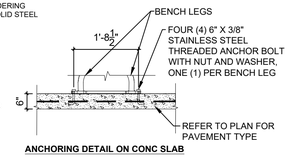
NOTES:
1. DRAWINGS NOT TO SCALE. DO NOT SCALE DRAWINGS.
2. ALL FABRICATED METAL COMPONENTS ARE STEEL SHOTBLASTED, ETCHED, PHOSPHATIZED, PREHEATED, AND ELECTROSTATICALLY POWDER-COATED WITH T.G.I.C. POLYESTER POWDER COATINGS. PRODUCTS ARE FULLY CLEANED AND PRETREATED, PREHEATED AND COATED WHILE HOT TO FILL CREVICES AND BUILD COATING FILM. COATED PARTS ARE THEN FULLY CURED TO COATING MANUFACTURER'S SPECIFICATIONS. THE THICKNESS OF THE RESULTING FINISH AVERAGES 8-10 MILS (200-250 MICRONS).
3. IT IS NOT RECOMMENDED TO LOCATE ANCHOR BOLTS UNTIL BENCH IS IN PLACE. THIS VICTOR STANLEY, INC. PRODUCT MUST BE PERMANENTLY AFFIXED TO THE GROUND. CONSULT YOUR LOCAL CODES FOR REGULATIONS.
4. ANCHOR BOLTS NOT PROVIDED BY VICTOR STANLEY, INC.
5. FOR HIGH SALT ABUSIVE CLIMATES, HOT DIP GALVANIZING BEFORE POWDER COATING IS AVAILABLE. SEE WRITTEN SPECIFICATIONS FOR DETAILS.



POWDER COATING
COLOR TO BE SELECTED BY CITY PRIOR TO ORDERING
PROVIDE INTERMEDIATE / CENTER ARMREST SOLID STEEL ARMRESTS

MANUFACTURER:
VICTOR STANLEY, INC.
P.O DRAWER 330
MODEL NO. RB-28 STEELSITES RB SERIES. ALL STEEL CONTOURED BENCH, 8-FOOT LENGTH, INSTALL PER MANUFACTURER'S RECOMMENDATIONS
DUNKIRK, MD 20754
TELEPHONE: (301) 855-8300
WEBSITE:
HTTP://WWW.VICTORSTANLEY.COM

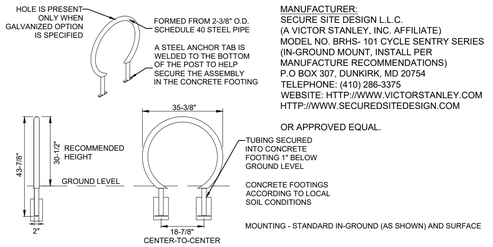
OR APPROVED EQUAL.



ANCHORING DETAIL ON CONC SLAB

11 8' BENCH DETAIL

NTS



MOUNTING - STANDARD IN-GROUND (AS SHOWN) AND SURFACE

MANUFACTURER:
SECURE SITE DESIGN L.L.C.
(A VICTOR STANLEY, INC. AFFILIATE)
MODEL NO. BRHS- 101 CYCLE SENTRY SERIES (IN-GROUND MOUNT, INSTALL PER MANUFACTURE RECOMMENDATIONS)
P.O BOX 307, DUNKIRK, MD 20754
TELEPHONE: (410) 286-3375
WEBSITE: HTTP://WWW.VICTORSTANLEY.COM
HTTP://WWW.SECUREDSITEDESIGN.COM

OR APPROVED EQUAL.

NOTES:
1. DRAWINGS NOT TO SCALE. DO NOT SCALE DRAWINGS.
2. ALL FABRICATED METAL COMPONENTS ARE STEEL SHOTBLASTED, ETCHED, PHOSPHATIZED, PREHEATED, AND ELECTROSTATICALLY POWDER-COATED WITH T.G.I.C. POLYESTER POWDER COATINGS. PRODUCTS ARE FULLY CLEANED AND PRETREATED, PREHEATED AND COATED WHILE HOT TO FILL CREVICES AND BUILD COATING FILM. COATED PARTS ARE THEN FULLY CURED TO COATING MANUFACTURER'S SPECIFICATIONS. THE THICKNESS OF THE RESULTING FINISH AVERAGES 8-10 MILS (200-250 MICRONS).
3. THIS VICTOR STANLEY, INC. PRODUCT MUST BE PERMANENTLY AFFIXED IN THE GROUND. CONSULT YOUR LOCAL CODES FOR REGULATIONS.
4. INSTALL PER MANUFACTURERS REQUIREMENTS

12 BIKE RACK DETAIL

NTS

GEORGIA REGISTERED LANDSCAPE ARCHITECT JOHN D BOUDREAU No. LA000775 08-11-2020
NOT VALID FOR CONSTRUCTION UNLESS SIGNED IN THIS BLOCK

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770-933-0280

REVISION	DATE
1 ADDENDUM NO. 2	08-11-20

PROJ. NO.: 100062569
DESIGNED BY: C.L.H.
DRAWN BY: C.L.H.
CHECKED BY:
APPROVED BY:
DATE: AUG. 2019
SCALE: AS SHOWN

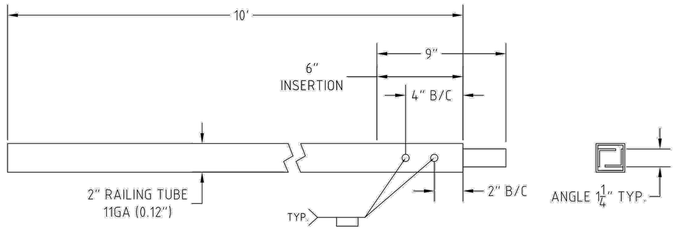
CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

CONSTRUCTION DETAILS

SHEET NO.
40-01
100062569

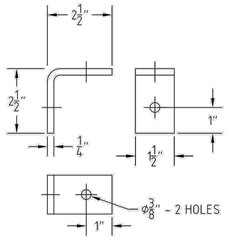
File Name: M:\100062569 - HERITAGE TO BOLING PARK TRAIL\CAD\DELIVERABLES\40 CONSTRUCTION DETAILS.DWG|Tab: 40-01|Plotted: August 13, 2020 2:57pm

BOARDWALK RAILING DETAILS



NOTE:
- Plug welds are done on the two sides of the railing tube
- Drill 2 x Ø0.5" on two side of the railing as shown

NOTE: DETAIL PROVIDED FOR REFERENCE. MANUFACTURER TO PROVIDE PROJECT SPECIFIC SHOP DRAWINGS FOR REVIEW PRIOR TO MANUFACTURING AND INSTALLING BOARDWALK RAILING.



NOTE : For hardware refer to final assembly (Typical Panel Assembly)

Rev.	Description :	App.	Date :
1			
2			

omega II FENCE SYSTEMS

Part code	Variant	Finish Description / Color
C-DIVBK	BK	BLACK RAL9004 (50%-60% GLOSS)

TOLERANCES UNLESS OTHERWISE SPECIFIED / TOLERANCES A MOINS D' AVIS CONTRAIRE
ANGLES = ±2° // THICKNESS = ±10%

ASSEMBLY / ASSEMBLAGE	METRIC / MÉTRIQUE	IMPERIAL / IMPÉRIAL
	X = ± 6 mm X.X = ± 1.5 mm X.XX = ± 0.76 mm HOLES/TROUS = ± 0.13 mm	X = ± 0.3" X.X = ± 0.06" X.XX = ± 0.030" HOLES/TROUS = ± 0.005"

MAJOR REQUIREMENT WHERE DEFECT IS LIKELY TO REDUCE USABILITY FOR INTENDED PURPOSE

Metaltech-Omega Inc. 1735 St-Elzéar Ouest Laval, QC. H7L 3N6 — Tél: 800-836-6342 Fax: 450-681-5318 Website / Site internet: www.metaltech.co

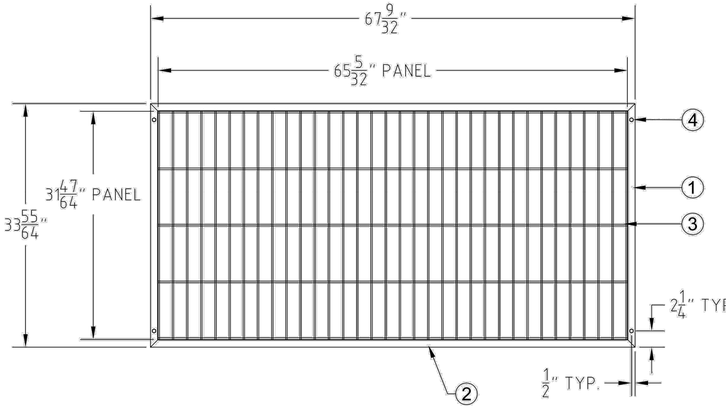
Part code : C-DIV — Revision : C

Part description : RAILING TUBE AND CUSTOM ANGLE BRACKET

Project : OMEGA — Scale : n/a

Drawing by: P.-O. POULIN — Approved by: P. BELAND — Date :

FRAMED PANEL ASSEMBLY



NOTES: Square tube 16 GA x 1" CUT 45deg

NOTE: DETAIL PROVIDED FOR REFERENCE. MANUFACTURER TO PROVIDE PROJECT SPECIFIC SHOP DRAWINGS FOR REVIEW PRIOR TO MANUFACTURING AND INSTALLING BOARDWALK RAILING.

REF	QTE.	Description
1	2	Square tube 16 GA x 1"x33 55/64"/ Tube carré 16 Ga x 1"x33 55/64"
2	2	Square tube 16 GA x 1"x 67 9/32"/ Tube carré 16 Ga x 1"x 67 9/32"
3	1	OMEGA ELITE Panel / Panneau OMEGA ELITE
4	4	Hex bolt 5/16"-18 X 1"L.

Rev.	Description :	App.	Date :
1			
2			

omega II FENCE SYSTEMS

TOLERANCES UNLESS OTHERWISE SPECIFIED / TOLERANCES A MOINS D' AVIS CONTRAIRE
ANGLES = ±2° // THICKNESS = ±10%

ASSEMBLY / ASSEMBLAGE	METRIC / MÉTRIQUE	IMPERIAL / IMPÉRIAL
	X = ± 6 mm X.X = ± 1.5 mm X.XX = ± 0.76 mm HOLES/TROUS = ± 0.13 mm	X = ± 0.3" X.X = ± 0.06" X.XX = ± 0.030" HOLES/TROUS = ± 0.005"

MAJOR REQUIREMENT WHERE DEFECT IS LIKELY TO REDUCE USABILITY FOR INTENDED PURPOSE

Metaltech-Omega Inc. 1735 St-Elzéar Ouest Laval, QC. H7L 3N6 — Tél: 800-836-6342 Fax: 450-681-5318 Website / Site internet: www.metaltech.co

Part code : C-PANDIV 34"H – 1" FRAME — Revision : D

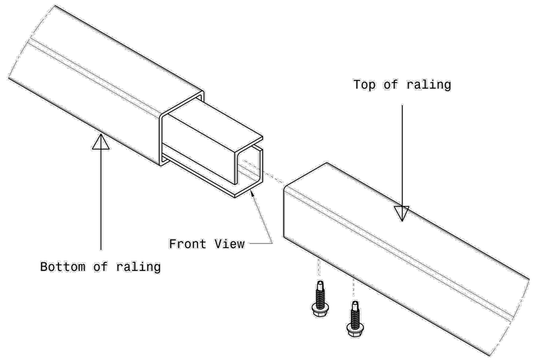
Part description : FRAMED PANEL

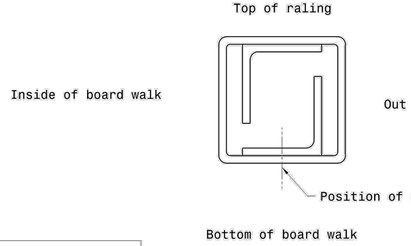
Project : OMEGA — Scale : n/a

Drawing by: P.-O. POULIN — Approved by: F. GOYER — Date :

Rail Installation

NOTE: DETAIL PROVIDED FOR REFERENCE. MANUFACTURER TO PROVIDE PROJECT SPECIFIC SHOP DRAWINGS FOR REVIEW PRIOR TO MANUFACTURING AND INSTALLING BOARDWALK RAILING.





Detail of Front View

SYSTÈMES DE CLÔTURES omega II FENCE SYSTEMS

Rev.	Description	App.	Date:

MAJOR REQUIREMENT WHERE DEFECT IS LIKELY TO REDUCE USABILITY FOR INTENDED PURPOSE

Metaltech-Omega Inc. 1735 St-Elzéar Ouest Laval, Québec, Canada H7L 3N6 — Tél: 800-836-6342 Fax: 450-681-5318 Website/Site internet: www.metaltech.info

Part code: — Revision:

Part description: Rail Installation

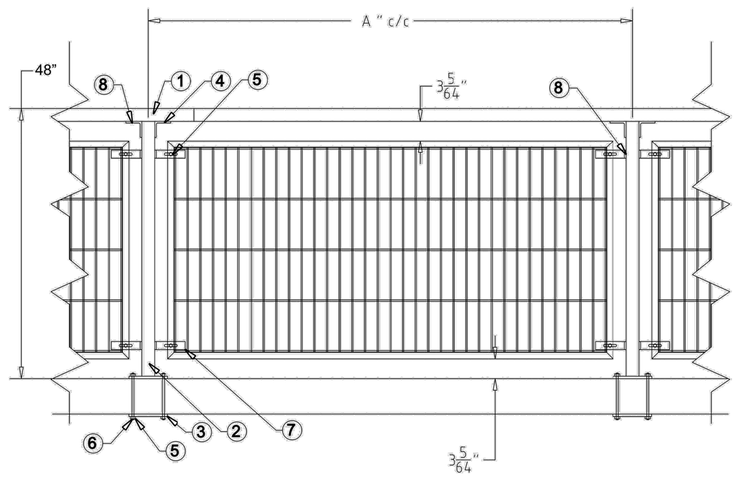
Project: OMEGA — Scale: n/a

Drawing by: P.-O. POULIN — Approved by: P.-O. POULIN — Date:

PANEL INSTALLATION ASSEMBLY

Note : A Dimension varies depending the position of post on drawing:

NOTE: DETAIL PROVIDED FOR REFERENCE. MANUFACTURER TO PROVIDE PROJECT SPECIFIC SHOP DRAWINGS FOR REVIEW PRIOR TO MANUFACTURING AND INSTALLING BOARDWALK RAILING.



REF	Description
1	Square railing tube 11GA x 2" X 10' L. / Tube carré 11GA x 2" X 10' L.
2	Post with base plate 11GA x 2" / Poteau avec plaque de base 11GA x 2"
3	Bottom plate 6" x 6" x 3/8" / Plaque dessous
4	Bracket angles 2 1/2" x 2 1/2" x 1 1/2" drilled / Profilé en L 2 1/2" x 2 1/2" x 1 1/2"
5	Hex Nut 5/16"-18 / Écrou 5/16"-18
6	Hex bolt 5/16"-18/ Boulon 5/16"-18
7	Wall Mounted Bracket / Bracket de Mur
8	Self Drilling Screw 5/16"-18 / Vis auto-foreuse 5/16"-18

Rev.	Description :	App.	Date :
1			
2			

omega II FENCE SYSTEMS

Part code	Variant	Finish Description / Color
C-DIVBK	BK	BLACK RAL9004 (50%-60% GLOSS)

TOLERANCES UNLESS OTHERWISE SPECIFIED / TOLERANCES A MOINS D' AVIS CONTRAIRE
ANGLES = ±2° // THICKNESS = ±10%

ASSEMBLY / ASSEMBLAGE	METRIC / MÉTRIQUE	IMPERIAL / IMPÉRIAL
	X = ± 6 mm X.X = ± 1.5 mm X.XX = ± 0.76 mm HOLES/TROUS = ± 0.13 mm	X = ± 0.3" X.X = ± 0.06" X.XX = ± 0.030" HOLES/TROUS = ± 0.005"

MAJOR REQUIREMENT WHERE DEFECT IS LIKELY TO REDUCE USABILITY FOR INTENDED PURPOSE / EXIGENCE MAJEURE LORSQU' UN DEFAUT EST SUSCEPTIBLE DE RÉDUIRE L' UTILISATION PREVUE

Metaltech-Omega Inc. 1735 St-Elzéar Ouest Laval, QC. H7L 3N6 — Tél: 800-836-6342 Fax: 450-681-5318 Website / Site internet: www.metaltech.co

Part code : C-DIV — Revision :

Part description : TYPICAL PANEL INSTALLATION

Project : OMEGA — Scale : 1 : 10

Drawing by: P.-O. POULIN — Approved by: P. BELAND — Date :

GEORGIA REGISTERED No. LA000750 LANDSCAPE ARCHITECT JOHN D BOUDREAU 08-11-2020

NOT VALID FOR CONSTRUCTION UNLESS SIGNED IN THIS BLOCK

ATKINS

1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770-933-0280

	DATE
1 ADDENDUM NO. 2	08-11-20

REVISION

PROJ. NO.: 100062569
DESIGNED BY: C.L.H.
DRAWN BY: C.L.H.
CHECKED BY:
APPROVED BY:
DATE: AUG. 2019
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

CONSTRUCTION DETAILS

SHEET NO.
40-02
100062569

File Name: M:\100062569 – HERITAGE TO BOLING PARK TRAIL\CAD\DELIVERABLES\40 CONSTRUCTION DETAILS.DWG[Tab: 40-02]Plotted: August 13, 2020 2:57pm

PILE FOUNDATION GENERAL NOTES:

SPECIFICATIONS .....AASHTO LRFD 7TH EDITION. 2014

STEEL H-PILES:.....GRADE 50, FY = 50,000 PSI

SPECIFICATIONS - GEORGIA STANDARD SPECIFICATIONS, 2013 EDITION AND 2016 SUPPLEMENTAL, AS MODIFIED BY CONTRACT DOCUMENTS.

DRIVING RESISTANCE - DETERMINE DRIVING RESISTANCE FOR PILES USING DYNAMIC PILE TESTING IN ACCORDANCE WITH SPECIAL PROVISION 520. DYNAMIC PILE TESTING SHALL BE REQUIRED FOR AT LEAST ONE PILE IN A BENT.

DYNAMIC PILE TESTING - PERFORM PILE TESTING USING THE PILE DRIVING ANALYZER (PDA) IN ACCORDANCE WITH SPECIAL PROVISION SECTION 523. NOTIFY THE GEOTECHNICAL ENGINEER TWO WEEKS PRIOR TO DRIVING PILES.

WAVE EQUATION - PERFORM WAVE EQUATION ANALYSIS (WEAP) IN ACCORDANCE WITH SPECIAL PROVISION 520. PROVIDE RESULTS OF THE WEAP TO THE GEOTECHNICAL ENGINEER FOR REVIEW AND APPROVAL TWO WEEKS PRIOR TO DRIVING PILES.

STEEL H-PILES - USE STEEL FOR H-PILES THAT MEETS THE REQUIREMENTS OF ASTM A 709 GR 50.

PILE POINTS - REINFORCE ALL PILE TIPS AT ALL BENTS IN ACCORDANCE WITH SECTIONS 520 AND 855 OF THE GEORGIA DOT SPECIFICATIONS.

WELDING - ALL WELDING ON GEORGIA DOT PROJECTS SHALL BE PERFORMED BY CERTIFIED WELDERS THAT HAVE IN THEIR POSSESSION A CURRENT WELDING CERTIFICATION CARD ISSUED BY THE OFFICE OF MATERIALS AND TESTING. USE ONLY E70XX (EXCLUDING E7014 AND E7024) LOW HYDROGEN ELECTRODES FOR MANUAL SHIELDED METAL ARC WELDING.

SPECIAL PROTECTIVE COATING - CLEAN AND PAINT PILES WITH SPECIAL PROTECTIVE COATING NO. 2P IN ACCORDANCE WITH SECTIONS 520 AND 535 OF THE GEORGIA DOT SPECIFICATIONS.

PILE ENCASEMENT - ENCASEH-PILES AT ALL BENTS UP TO 2'-0" ABOVE NORMAL POOL, OR 2MT ABOVE GROUND, WHICHEVER IS HIGHER. ENCASEMENT SHALL BEIN ACCORDANCE WITH SECTION 547 OF THE GEORGIA DOT SPECIFICATIONS.

INCIDENTAL ITEMS - INCLUDE THE COST INCIDENTAL TO THE WORK THAT IS NOT SPECIFICALLY COVERED BY THE GEORGIA STANDARD SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND/OR SPECIAL PROVISIONS IN THE OVERALL BID SUBMITTED.

SUMMARY OF QUANTITIES

PAY ITEM

NUMBER	QUANTITY	UNIT	DESCRIPTION
520-0589	24	EA	H-PILE POINTS, HP 14 X 89
520-1151	600	VF	PILING IN PLACE, STEEL H, HP 14 X 89
520-4151	1	EA	LOAD TEST, STEEL H, HP 14 X 89 (IF REQD')
523-1100	2	EA	DYNAMIC PILE TEST
547-2014	120	VF	PILE ENCASEMENT, I4 IN. PILE

GENERAL NOTES:

GEOTECHNICAL ENGINEER - THE CONTRACTOR SHALL PREPARED FOR EACH BRIDGE, BOARDWALK, FOUNDATION AND WALL LOCATION, A BRIDGE FOUNDATION INVESTIGATION (BFI) AND WALL FOUNDATION INVESTIGATION (WFI) REPORT IN ACCORDANCE WITH GDOT REQUIREMENTS FOR REVIEW AND APPROVAL. THE GEOTECHNICAL ENGINEER PREPARING THE REPORT SHALL BE GEORGIA DEPARTMENT OF TRANSPORTATION, (GDOT) PREQUALIFIED GEOTECHNICAL ENGINEER. THEY ARE TO FOLLOW THE FOUNDATION INVESTIGATION (DRILLINGS AND SAMPLING) IN ACCORDANCE CRITERIA ESTABLISHED BY GDOT AND PROVIDE GEOTECHNICAL RECOMMENDATIONS FOR FUTURE STRUCTURAL DESIGN OF PROJECT FEATURES. THE GEOTECHNICAL ENGINEER IN CHARGE OF THE PROJECT IS THE PROFESSIONAL GEOTECHNICAL ENGINEER WHO WILL SIGN THE BFI AND THE WFI REPORTS.

STRUCTURAL ENGINEERING - THE CONTRACTOR SHALL PREPARED AND SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL FOR EACH BRIDGE, BOARDWALK, FOUNDATION AND WALL LOCATION. THE SHOP DRAWINGS SHALL BE PREPARED BY A GEORGIA DEPARTMENT OF TRANSPORTATION, (GDOT) PREQUALIFIED STRUCTURAL ENGINEER. THE SHOP DRAWINGS FINAL DESIGN SHALL BE PREPARED IN ACCORDANCE WITH GDOT BRIDGE AND STRUCTURAL DESIGN MANUAL.

GEORGIA REGISTERED No. LA000780 LANDSCAPE ARCHITECT JOHN D BOUDREAU 08-11-2020
NOT VALID FOR CONSTRUCTION UNLESS SIGNED IN THIS BLOCK

ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770--933-0280

△	REVISION	DATE
1	ADDENDUM NO. 2	08-11-20

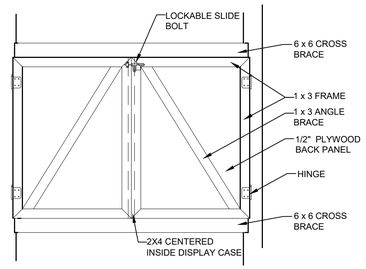
PROJ. NO.: 100062569
DESIGNED BY: C.L.H.
DRAWN BY: C.L.H.
CHECKED BY:
APPROVED BY:
DATE: AUG. 2019
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

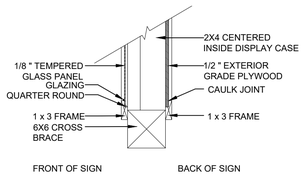
CONSTRUCTION DETAILS

SHEET NO.
40-03
100062569

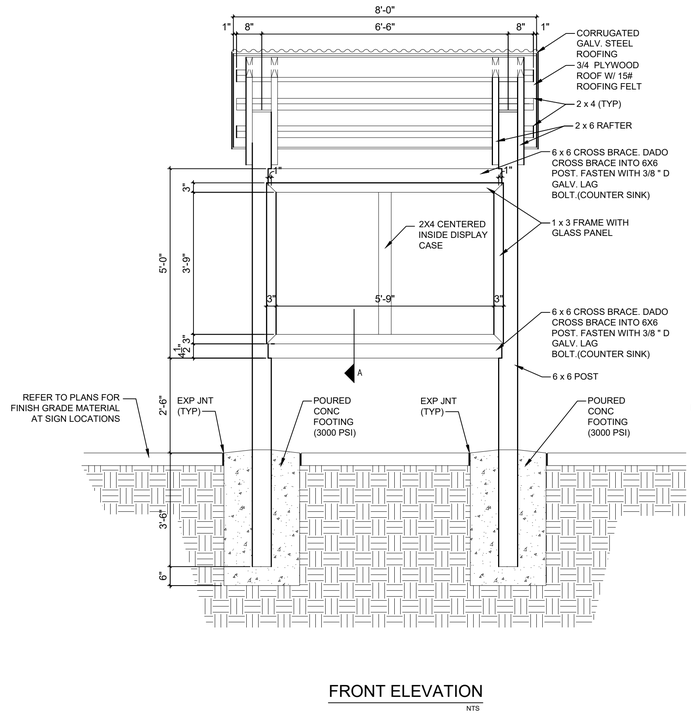
File Name: M:\100062569 – HERITAGE TO BOLING PARK TRAIL\CAD\DELIVERABLES\40 CONSTRUCTION DETAILS.DWG|Tab: 40--03|Plotted: August 13, 2020 3:02pm



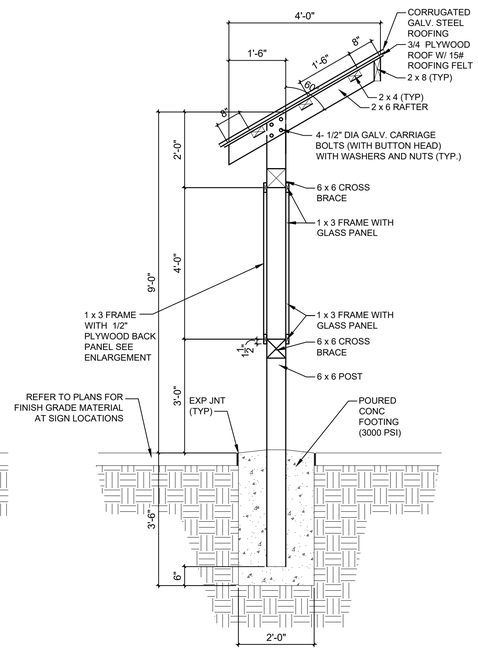
REAR DOOR DETAIL
NTS



SECTION A
NTS

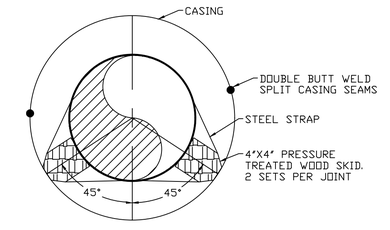


FRONT ELEVATION
NTS



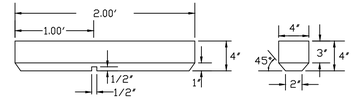
SIDE ELEVATION
NTS

1 INFORMATIONAL KIOSK
NTS



CASING-END VIEW
PIPE ACCESSIBLE

BORED CASINGS			
PIPE SIZE	PIPE O.D.	CASING SIZE	CASING I.D.
<4"	--	6"	5.845"
4"	4.80"	8"	7.609"
6"	6.90"	12"	11.376"
8"	9.05"	16"	14.314"
12"	13.20"	20"	17.938"
16"	17.40"	24"	21.564"
18"	19.50"	28"	27.0"
24"	25.80"	36"	35.0"



WOOD SKID DETAIL

2 STEEL CASING / PIPE SUPPORT INSTALLATION
NTS

GEORGIA REGISTERED No. LA000750 LANDSCAPE ARCHITECT JOHN D BOUDREAU 08-11-2020
NOT VALID FOR CONSTRUCTION UNLESS SIGNED IN THIS BLOCK

ATKINS

1600 Riveredge Parkway, Suite 700
Atlanta, GA 30328
P: 770--933-0280

△	REVISION	DATE
1	ADDENDUM NO. 2	08-11-20

PROJ. NO.: 100062569
DESIGNED BY: C.L.H.
DRAWN BY: C.L.H.
CHECKED BY:
APPROVED BY:
DATE: AUG. 2019
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

CONSTRUCTION DETAILS

SHEET NO.
40-04
100062569

File Name: M:\100062569 – HERITAGE TO BOLING PARK TRAIL\CAD\DELIVERABLES\40 CONSTRUCTION DETAILS.DWG|Tab: 40--04|Plotted: August 13, 2020 2:58pm

OLD BALL GROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

GENERAL NOTES

1. This structure has been designed in accordance with the project architects plan layout and guidelines. Suitability for access and intended usage shall be the responsibility of the architect.

2. Vehicular access larger than the design live load shall be limited by permanent physical means.

3. Prior to construction the contractor shall verify all elevations through the project architect.

4. Only PermaTrak North America may provide the precast structure shown on these plans.

DESIGN DATA

1. Boardwalk shall be designed in accordance with the AASHTO LRFD bridge design specifications and the LRFD guide specification for the design of pedestrian bridges.

Design Live Load:
Pedestrian Loading - 90 psf Uniform
Vehicular Loading - H-10 Truck (10,000 lb. Vehicle Load)

⚠1 2. Piers shall be designed for lateral earth pressure, live load surcharge and structure loads. H-Piles shall be designed for the following applied pier loads:

Compression: 32.0 Kips (Service)
Lateral: 2.5 Kips (Factored)

3. At the time these drawings were created, geotechnical information was unavailable for analysis of the substructure. Contractor shall provide geotechnical report prior to completing final submittal.

4. A Hydraulic Analysis, Including Scour Evaluation, has not been performed by Permatrak. This Scope is the responsibility of the design consultant.

MATERIAL

1. All bolts, nuts, washers, and hardware shall be hot dipped galvanized after fabrication in accordance with ASTM A153.

2. Cast-in-place concrete shall have a 28-day concrete compressive strength of 4000 psi.

3. All reinforcing shall be Grade 60 conforming to ASTM A615.

GENERAL NOTES:

1. **BOARDWALK TO BE MANUFACTURED BY PERMATRAK. CONTACT**
   JASON V. PHILBIN, P.E., M.ASCE
   PRESIDENT/CEO
   980-229-3036 | 877-332-7862
   jphilbin@permatrak.com
   www.permatrak.com
   6419 BANNINGTON ROAD, SUITE B
   CHARLOTTE, NC 28226
2. **PERMATRAK BOARDWALK DETAILS ARE PROVIDED FOR CONTRACTOR REFERENCE. MANUFACTURER TO PROVIDE PROJECT SPECIFIC SHOP DRAWINGS FOR REVIEW PRIOR TO MANUFACTURING AND INSTALLING BOARDWALK AND FOUNDATIONS. SHOP DRAWING SHALL BE SIGNED AND SEALED BY A STRUCTURAL ENGINEER IN THE STATE OF GEORGIA.**
3. **CONTRACTOR RESPONSIBLE FOR ALL LABOR, TOOLS, AND EQUIPMENT REQUIRED TO ASSEMBLE AND INSTALL PERMATRAK BOARDWALK**
4. **CONTRACTOR TO COORDINATE WITH MANUFACTURER ON ALL REQUIRED INSTALLATION DETAILS, MATERIALS, AND DELIVERY SCHEDULING.**
5. **THE CITY OF CANTON HAS PRE-NEGOTIATED A MATERIALS COST FOR ALL PERMATRAK BOARDWALK MATERIALS. CONTRACTOR TO INCLUDE THE PRE-NEGOTIATED MATERIAL COSTS AS PART OF THE FINAL BID.**
6. **REFER TO DETAIL SHEET 40-02 FOR RAILING DETAILS.**

PROJECT COMPONENTS

SUPPLIED BY PERMATRAK
PRECAST CONCRETE TREADS
PRECAST CONCRETE BEAMS
RUBBER LEVELING PADS
GALVANIZED CLIP ANGLES WITH 3/4" DIAMETER RODS, WASHERS AND NUTS(6x6x3/8x0'-4")
3/4" DIAMETER THREADED BARS WITH NUTS AND WASHERS (BEAM TO PIER CONNECTION)
1/2" ELASTOMERIC BEARING PAD

SUPPLIED BY CONTRACTOR
HILTI HY-200 EPOXY ADHESIVE (ANCHORING SYSTEM CONNECTION)
SHIMS AND NON-SHRINK GROUT (LEVELING FOR PRECAST COMPONENTS)
RAILING AND CONNECTION HARDWARE
STEEL H-PILES, CAP PLATES AND CONNECTION HARDWARE
1/2" EXPANSION JOINT MATERIAL
CAST-IN-PLACE CONCRETE
#8 x 2'-0" DOWEL (BEAM TO CAST-IN-PLACE GRADE BEAM)
ASPHALTIC MATERIAL

⚠1

APPROXIMATE NUMBER OF COMPONENTS REQUIRED PER STRUCTURE*

STRUCTURE	TOTAL STRUCTURE LENGTH	# BEAMS	# PILES	# CLIP ANGLES
#1	75'-0"	6	12	28
#2	100'-0"	6	12	36

* NUMBERS SHOWN IN THE TABLE ABOVE ARE APPROXIMATE, CURVED ALIGNMENT AND SITE CONDITIONS (SUCH AS EXISTING UTILITIES TO BE AVOIDED) MAY CAUSE VARIATION IN QUANTITIES SHOWN. ALSO NOTE THAT EACH SUPPORT AT END OF 50 FT. SPAN SHALL HAVE A GRADE BEAM WITH (4) STEEL H-PILES SUPPORTING. SEE TYPICAL SECTION ON PT02.

Patented Product: U.S. Patent #5,906,084 #8,302,362 #8,522,505 #8,839,588 #9,096,975

NO.	DATE	DESCRIPTION	BY:
6			
5			
4			
3			
2			
1	08-11-20	ADDENDUM NO. 2	

PREPARED FOR:

ATKINS

FOR BIDDING
NOT FOR CONSTRUCTION

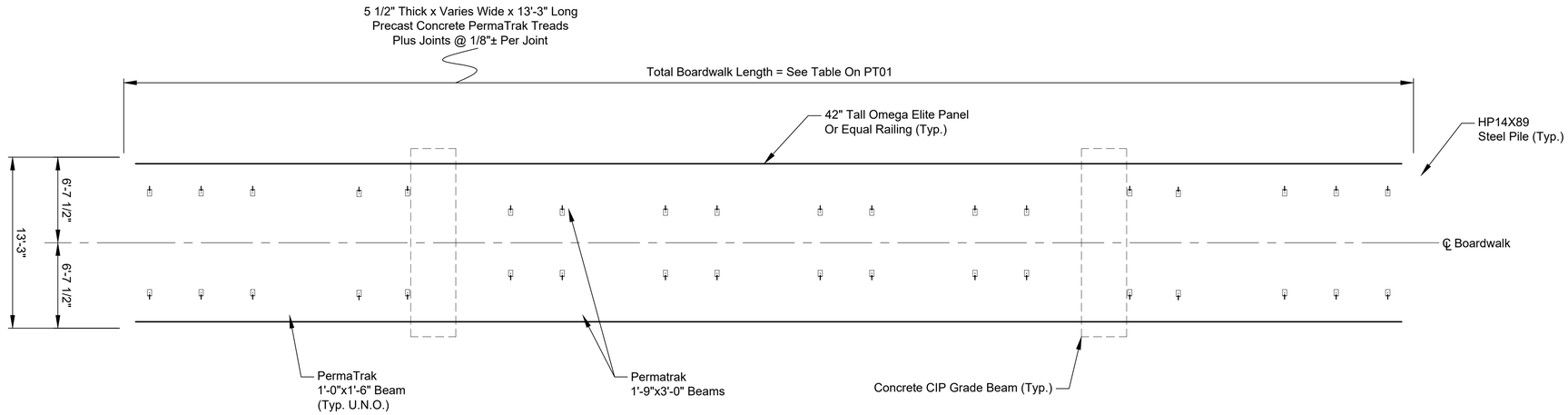
PermaTrak®
The Concrete Boardwalk Company
www.permatrak.com TEL: 877-332-7862

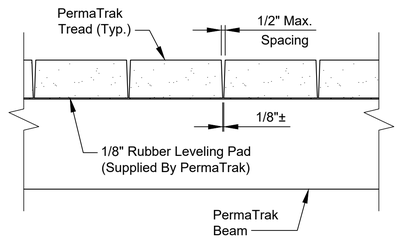
OFFICE LOCATIONS
FLORIDA
TEXAS
LOUISIANA
NORTH CAROLINA
OHIO

PROJECT TITLE:

OLD BALL GROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION
CANTON, GEORGIA

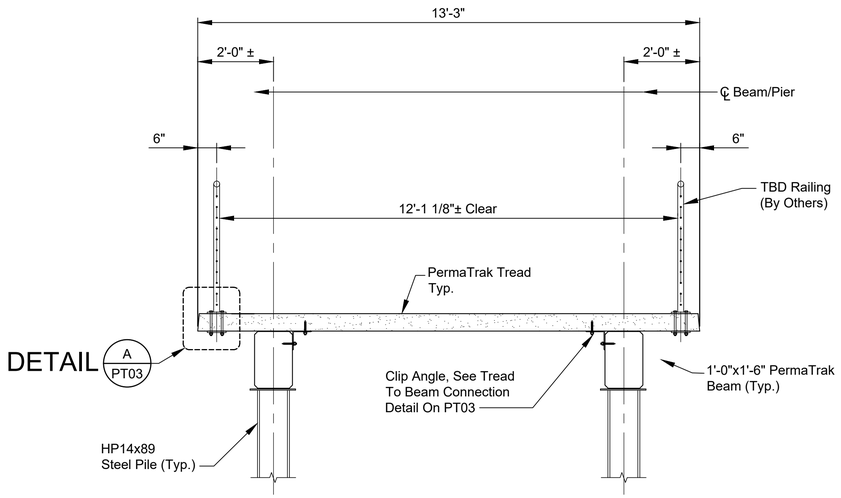
JOB NUMBER:	2020-1435
DATE:	08/10/2020
DESIGNED BY:	KAS
DRAWN BY:	KAS
CHECKED BY:	JVP
SHEET NO.	PT01





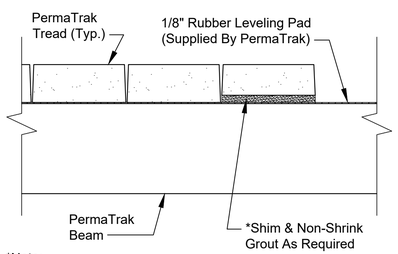
TYPICAL TREAD SPACING DETAIL

Scale: Not To Scale



TYPICAL SECTION - 1'-0" x 1'-6" BEAMS

Scale = 1/2" = 1'-0"

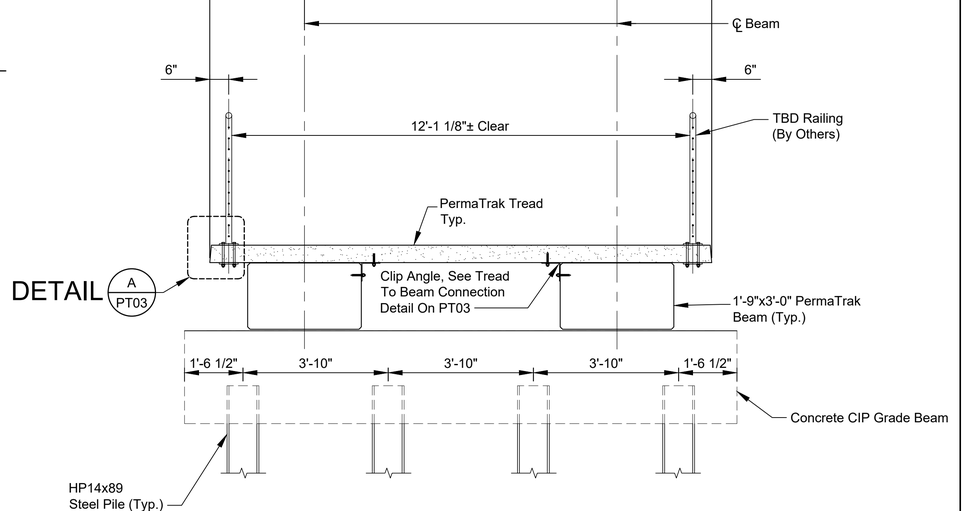


*Note:
Due to tolerances and variance in precast production and installation accuracy, shimming and grouting may be required. Where required the entire bearing area and void shall be shim and grouted with non-shrink grout.

TYPICAL SHIM/GROUT DETAIL

Scale: Not To Scale (UNDER TREAD)

*Note:
Each support at end of 50 ft. span, shall have a grade beam with (4) steel H-Piles supporting.



TYPICAL SECTION - 1'-9" x 3'-0" BEAMS

Scale = 1/2" = 1'-0"

Patented Product: U.S. Patent #5,906,084 #8,302,362 #8,522,505 #8,839,588 #9,096,975

NO.	DATE	DESCRIPTION	BY:
6			
5			
4			
3			
2			
1	08-11-20	ADDENDUM NO. 2	

PREPARED FOR:

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PermaTrak®
The Concrete Boardwalk Company
www.permatrak.com TEL: 877-332-7862

OFFICE LOCATIONS
FLORIDA
TEXAS
LOUISIANA
NORTH CAROLINA
OHIO

PROJECT TITLE:

OLD BALL GROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION

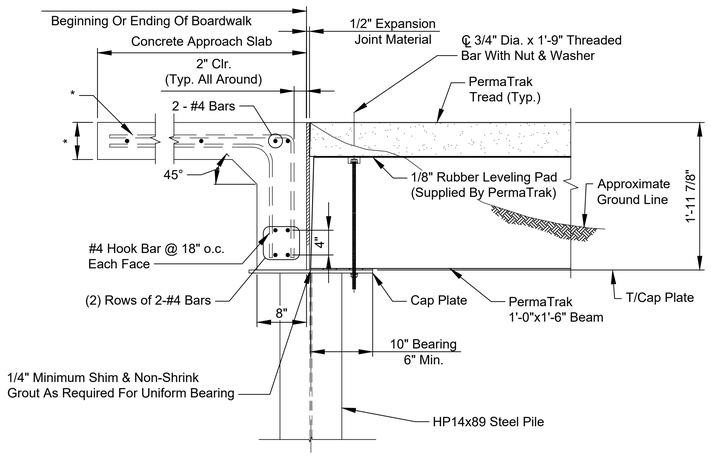
CANTON, GEORGIA

JOB NUMBER:	2020-1435
DATE:	08/10/2020
DESIGNED BY:	KAS
DRAWN BY:	KAS
CHECKED BY:	JVP
SHEET NO.	PT02

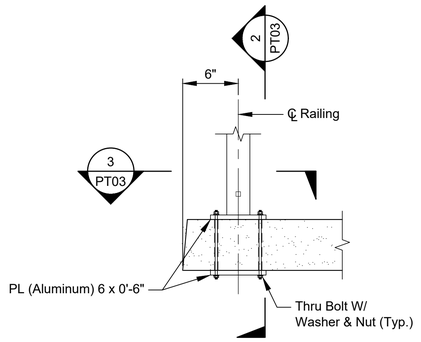
Notes:
1. Nut Shall Be Securely Fastened Below Cap Plate. Use Locking Nut Or Deform Threads Below To Prevent Loosening.
2. Completely Cover The Threaded Bar, Nut & Washer At The Beam Connection And Fill The Void With Epoxy Adhesive Or Non-Shrink Grout.

Note: Railing Not Shown For Clarity.

* See Site Drawings For Dimensioning, Reinforcement, And Concrete Material Requirements Of Approach Slab.

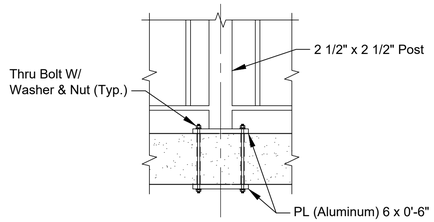


TYPICAL APPROACH DETAIL
Scale: 1" = 1'-0"

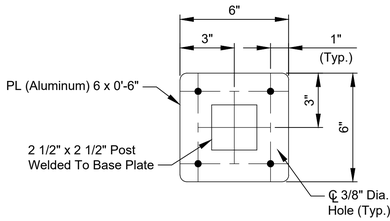


A / PT02 — DETAIL
Scale: 1 1/2" = 1'-0"

Note:
Railing & Connection Hardware Supplied By Others (Typ.).

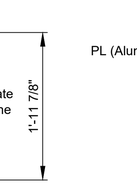


2 / PT03 — SECTION
Scale: 1 1/2" = 1'-0"



3 / PT03 — SECTION
Scale: 3" = 1'-0"

* Indicates Supplied By Boardwalk Manufacturer and Installed by contractor



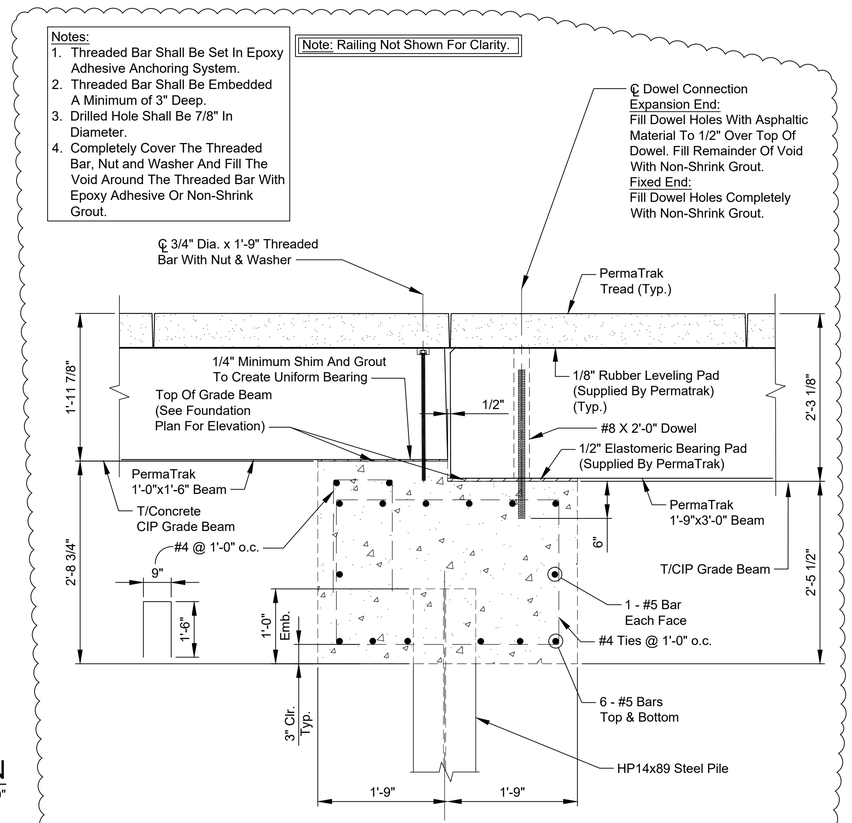
1 / PT03 — SECTION
Scale: 1 1/2" = 1'-0"

Notes:
1. All holes shall be drilled by contractor.
2. One (1) Clip Angle is required on each end of any tread with a handrail post attachment. Two (2) Clip Angles total per individual tread U.N.O. in plan view.

TREAD TO BEAM CONNECTION
Scale: Not To Scale

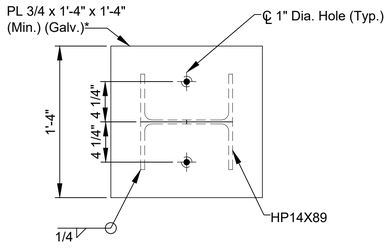
Notes:
1. Threaded Bar Shall Be Set In Epoxy Adhesive Anchoring System.
2. Threaded Bar Shall Be Embedded A Minimum of 3" Deep.
3. Drilled Hole Shall Be 7/8" In Diameter.
4. Completely Cover The Threaded Bar, Nut and Washer And Fill The Void Around The Threaded Bar With Epoxy Adhesive Or Non-Shrink Grout.

Note: Railing Not Shown For Clarity.



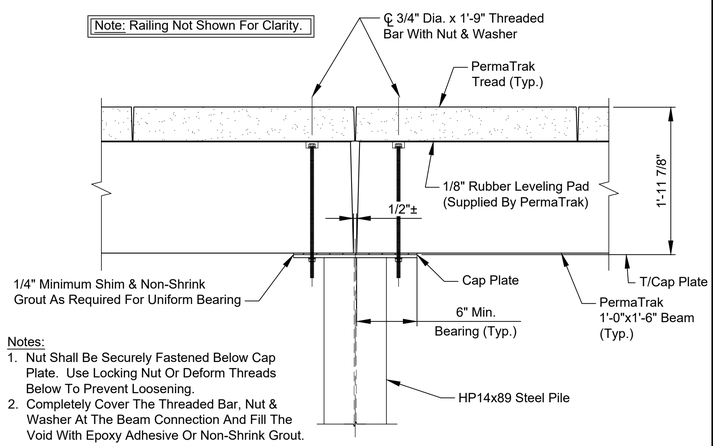
TYPICAL CONCRETE CIP GRADE BEAM CONNECTION DETAIL
Scale: 1" = 1'-0"

*Dimensions And Plate Thickness Shown Are Minimums. Final Plate Design To Be Provided By Contractor.



TYPICAL HP CAP DETAIL
Scale: Not To Scale

Note: Railing Not Shown For Clarity.



Notes:
1. Nut Shall Be Securely Fastened Below Cap Plate. Use Locking Nut Or Deform Threads Below To Prevent Loosening.
2. Completely Cover The Threaded Bar, Nut & Washer At The Beam Connection And Fill The Void With Epoxy Adhesive Or Non-Shrink Grout.

TYPICAL HP PIER CONNECTION DETAIL
Scale: 1" = 1'-0"

Patented Product: U.S. Patent #5,906,084 #8,302,362 #8,522,505 #8,839,588 #9,096,975

NO.	DATE	DESCRIPTION	BY:
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1	08-11-20	ADDENDUM NO. 2	

PREPARED FOR:
ATKINS

FOR BIDDING
NOT FOR CONSTRUCTION

PermaTrak® The Concrete Boardwalk Company
www.permatrak.com TEL: 877-332-7862

OFFICE LOCATIONS
FLORIDA
TEXAS
LOUISIANA
NORTH CAROLINA
OHIO

PROJECT TITLE:
OLD BALL GROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION
CANTON, GEORGIA

JOB NUMBER:	2020-1435
DATE:	08/10/2020
DESIGNED BY:	KAS
DRAWN BY:	KAS
CHECKED BY:	JVP
SHEET NO.	PT03

ELEVATED PRECAST CONCRETE BOARDWALK
PROJECT SPECIFICATIONS

V3.6 UPDATED APRIL 2020

PRECAST CONCRETE BOARDWALK SYSTEM

PART 1-GENERAL

1.1 SUMMARY

A. These specifications are for a precast concrete boardwalk and shall be regarded as minimum standards for this project. These specifications are based upon products designed and supplied by:

PermaTrak North America LLC
Ph: (864) 354-4870
Ph: 877-332-7862
www.permatrak.com
Contact: Mr. John Pyle
jpyle@permatrak.com

This item shall also include the design, specification, and construction of a railing and foundation system that is attached to the proposed boardwalk system.

1.2 MINIMUM STANDARDS: The selected boardwalk shall have the following minimum characteristics:

A. The precast system shall be designed as a modular flexible system allowing a prescribed settlement at pier locations. Joints shall be designed for such movement to occur without damage to the structural integrity of the system.

B. Boardwalk system (beams, treads, and curbs if applicable) must be reinforced precast concrete. A material change, including cast-in-place concrete, is not considered an equal to the design shown on the bid documents.

C. Walking surface (treads) shall be made of reinforced precast concrete, and supported by reinforced precast concrete beams. Where applicable, edges of treads will receive precast concrete curbs.

D. Walking surface (finish) of top surface of treads shall have a formliner finish with one of PermaTrak's standard textures. Texture must be integral with the concrete and shall not be an applied post pour wearing surface.

E. Precast concrete treads shall be structural load bearing elements and shall interlock with one another via a "tongue and groove" connection.

F. All precast shall consist of integrally colored concrete in a color selected by the owner from one of PermaTrak's "standard colors".

G. DESIGN LOADS: See PT01 for pedestrian and vehicular design live loads.

H. Treads shall maintain a "boardwalk appearance", specifically meaning each tread shall have a width: length ratio ranging from a minimum of 3:1 to a maximum of 14:1. Width is defined as the tread dimension perpendicular to the normal direction of travel. Length is defined as the tread dimension measured in the direction of travel.

I. Tread width shall be as noted on the contract drawings. Alignment should follow the horizontal and vertical alignment shown on the contract plans.

J. Connectors for curbs (if applicable) to treads shall not be visible to boardwalk users while viewed from the top of the walkway.

K. All tread-to-beam connectors shall be non-corrosive, and hidden from view. Metallic tread-to-beam connectors are not acceptable for this project.

L. Boardwalk supplier shall provide a field representative on site for a minimum of 2 days. Field representative shall be knowledgeable in the installation of precast concrete boardwalks.

1.3 QUALITY ASSURANCE

A. The contractor performing the installation of the pile foundations shall have installed piles of size and length similar to those shown on the plans for a minimum of three (3) years prior to the bid date for this project. The contractor shall submit a list containing at least three (3) projects completed in the last three (3) years on which the contractor has installed piles of a size and length similar to those shown on the plans. The list of projects shall contain names and phone numbers of owner's representatives who can verify the Contractor's participation on those projects.

B. Manufacturer Qualifications: Not less than 10 years experience in the actual production of precast products as described below.

1. Components shall be factory fabricated and engineered by single entity. This entity shall be registered to do business in the State of the project location.
2. Boardwalk supplier (Precaster) for the boardwalk shall have in-house color mixing facilities for color pigmentation.
3. Boardwalk supplier (Precaster) shall have either a minimum experience of 5 years or 50 boardwalk projects in design, production, and field consultation.
4. Boardwalk supplier (Precaster) must be certified by PCI or NPCA.
5. Precast components must be manufactured with the use of hot rolled steel skin in reinforced steel forms. Temporary (i.e., Timber) and/or single use forms are unacceptable unless approved in writing by the Boardwalk Engineer.

C. Acceptability Criteria for Treads and Curbs (if applicable): The finished visible (in the final installed position) surface shall have no obvious imperfections other than minimal color or texture variations from the approved samples or evidence of repairs when viewed in good typical daylight illumination with the unaided naked eye at a 20 ft. viewing distance. Appearance of the surface shall not be evaluated when light is illuminating the surface from an extreme angle as it tends to accentuate the minor surface irregularities. The following is a list of finish defects that shall be properly repaired, if obvious when viewed at a 20 ft. distance. Patching (by a trained skilled concrete repair person) is an acceptable repair method.

1. Ragged or irregular surfaces.
2. Excessive air voids (commonly called bug holes) larger than ¼ in. evident on the top surface of the tread or curbs (if applicable).
3. Adjacent flat and return surfaces with greater texture and/or color differences than the approved samples or mockups.
4. Casting and/or aggregate segregation lines evident from different concrete placement lifts and consolidation.
5. Visible mold joints or irregular surfaces.
6. Rust stains on exposed surfaces.
7. Units with excessive variation in texture and/or color from the approved samples, within the unit or compared with adjacent units.
8. Blocking stains evident on exposed surfaces.
9. Areas of backup concrete bleeding through the facing concrete.
10. Foreign material embedded in the surface.
11. Visible repairs at a 20 ft. viewing distance.
12. Reinforcement shadow lines.
13. Cracks visible at a 20 ft. viewings distance.

D. Installer Qualifications: Firm with 3 years experience in installation of systems similar in complexity to those required for this Project.

E. Mock-Up: Provide, if required by Architect/ Engineer, a mock-up for evaluation of the boardwalk showing the surface preparation techniques and application workmanship.

1. Finish areas designated by Architect / Engineer.
2. Do not proceed with remaining work until mock-up is accepted by Architect / Engineer.
3. Refinish mock-up area as required to produce acceptable work.

1.4 DESIGN

A. For applications requiring minimum disturbance due to tree roots or other existing objects specified by the Owner to be avoided during construction, the Boardwalk Manufacturer requires the Contractor or Engineer/Architect to provide a survey of the proposed boardwalk location identifying items of interest including tree roots that cannot be disturbed per the Owner.

B. The designer of the boardwalk, foundation and railing system shall be a qualified registered Professional Engineer licensed in the State of the project location and having a minimum of 20 years of experience in the design of concrete structures, foundation and railing systems.

C. The foundation design shown on the boardwalk drawings are based recommendations found in the geotechnical report entitled referenced on PT01 (if applicable).

D. DESIGN CRITERIA: The design of the boardwalk and railing system shall comply with the following guidelines:

1. AASHTO LRFD Guide Specifications for The Design of Pedestrian Bridges, 2nd Edition with 2015 Interim Revisions.
2. Latest Version of AASHTO LRFD Bridge Design Specifications for Highway Bridges.
3. Latest Version of American Concrete Institute - Building Code and Commentary.
4. In addition to the dead loads of the system, the structure shall be designed for the live loads defined in Section 1.2 G above.

1.5 SUBMISSIONS: Prior to the start of fabrication or construction, the Contractor shall submit to the Engineer a design package, which shall include, but is not limited to, the following:

A. PRELIMINARY SUBMISSIONS: Prior to the start of fabrication or construction, the Contractor shall submit to the Engineer a design package, which shall include but not limited to the following:

1. DETAILED PLANS:
   a. REGISTRATION / SEAL: Sealed by a licensed Professional Engineer in the state of the project location.
   b. PLAN VIEW: Full plan view of the boardwalk, foundation and railing system drawn to scale. The plan view must reflect the proposed horizontal alignment as shown on the design plans.
   c. ELEVATION VIEW: Full elevation view of the boardwalk, railing and foundation system drawn to scale which reflect the actual vertical alignment. Elevation views shall indicate the elevation at the top and bottom of the boardwalk and foundation system components, horizontal and vertical break points, and location of the finished grade.
   d. DETAILS: Details of all boardwalk and railing system components and their connections such as the length, size and where changes occur; connections; etc.
   e. CODE REFERENCE: Design parameters used along with AASHTO references.

2. DESIGN COMPUTATIONS: computations shall:
   a. Be stamped by a licensed Professional Engineer in the State of the project location.
   b. Clearly refer to the applicable AASHTO provisions.
   c. Include documentation of computer programs including all design parameters.
   d. Clearly show that all reinforced precast treads and beams meet AASHTO requirements for the loading per Section 1.3.F.
   e. Include sketches of reinforcement in treads and beams, shear and moment diagrams, and all equations used shall be referenced to applicable code.

3. CONSTRUCTION SPECIFICATIONS:
   a. Construction methods specific to the boardwalk vendor chosen. Submittal requirements such as certification, quality and acceptance/rejection criteria shall be included. Details on connection of boardwalk units and foundation system such that assurance of uniform load transfer shall be checked.

B. FINAL SUBMISSION: Once a boardwalk, foundation and railing system design has been reviewed and accepted by the Owner, the Contractor shall submit the final plans. The designer of the boardwalk, foundation and railing system is responsible for the review of any drawings prepared for fabrication. One set of all approved shop drawings shall be submitted to the Engineer's permanent records.

C. SUBMITTALS: Product Data: Submit Manufacturer's technical product data for railing components and accessories.
Manufacturer to supply submittal drawings for approval to include the following:

1. Section-thru details.
2. Mounting methods.
3. Typical Elevations.
4. Key plan layout.

D. SHOP DRAWINGS: Shop drawings shall:
   a. Be stamped by a licensed Professional Engineer in the State of the project location.
   b. Show actual field conditions and true elevation and location supplied after field verification.
   c. Clearly detail reinforcement in beams, treads and curbs including clear dimension from concrete edge, size and amount of rebar.
   d. Clearly state concrete compressive strength, steel type and strength, and a listing of all component weights including lifting locations.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Field Measurements: Where handrails and railings are indicated to fit to other construction, check actual dimensions of other construction by accurate field measurements before fabrication; show recorded measurements on final shop drawings:

1. Where field measurements cannot be made without delaying the railing fabrication and delivery, obtain guaranteed dimensions in writing by the Contractor and proceed with fabrication of products so as not to delay fabrication, delivery and installation.

C. Coordinate fabrication and delivery schedule of handrails with construction progress and sequence to avoid delay of railing installation.

   e. Air entrained composed of Portland cement, fine and course aggregates, admixtures and water. The air-entraining feature may be obtained by the use of either an air entraining Portland cement or an air entraining admixture. The entrained air-content shall be not less than four percent or more than seven percent.

1.7 WARRANTY:

A. Contractor will be responsible for installation defects associated with the boardwalk and abutment components, foundation system, and railings for a period of 12 calendar months from the date of final acceptance by the Owner.

B. Boardwalk manufacturer shall warranty all precast concrete components against defects in material and workmanship for a period of 10 years.

C. Railing manufacturer shall warranty the railing against defects in materials and workmanship for a period of 12 months.

1.8 MEASUREMENT AND PAYMENT

A. Precast concrete boardwalk, railings, and foundations shall be paid for at the contract lump sum price as listed in the bid proposal for "Precast Concrete Boardwalk". This price shall include all materials, equipment, labor and work necessary for and incidental to the design, construction, delivery, unloading, assembly, and placement of the boardwalk and foundation as shown in the contract plans including all railings on the superstructure.

PART 2-MATERIALS & TESTING

2.1 PRECAST CONCRETE: shall conform to the following:
   a. The minimum compressive strength of the concrete shall be 4000 psi measured at 28 days.
   b. All precast concrete shall contain structural steel reinforcement as designed by the Engineer of record.
   c. All precast concrete components shall be air entrained composed of Portland cement, fine and course aggregates, admixtures and water. The air-entraining feature may be obtained by the use of either an air entraining Portland cement or an air entraining admixture. The entrained air-content shall be not less than four percent or more than seven percent.
   d. All reinforcing steel shall be standard uncoated steel conforming to ASTM A615

PART 3 - EXECUTION

1.1 PRECAST CONCRETE BOARDWALK

A. Installation of the precast concrete boardwalk system and railings, if applicable, shall be performed in accordance to the approved plans and manufacturers installation instructions. Boardwalk manufacturer shall provide a field representative to review installation instructions with the Contractor and Engineer and to certify that the installation has been performed according to the approved drawings and manufacturer's instructions.

Patented Product: U.S. Patent #5,906,084 #8,302,362 #8,522,505 #8,839,588 #9,096,975

NO.	DATE	DESCRIPTION	BY:
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1	08-11-20	ADDENDUM NO. 2	

PREPARED FOR:

ATKINS

FOR BIDDING
NOT FOR CONSTRUCTION

PermaTrak
The Concrete Boardwalk Company

www.permatrak.com TEL: 877-332-7862

OFFICE LOCATIONS
FLORIDA
TEXAS
LOUISIANA
NORTH CAROLINA
OHIO

PROJECT TITLE:
OLD BALL GROUND SANITARY SEWER PHASE 2 & RIVER TRAIL EXTENSION
CANTON, GEORGIA

JOB NUMBER: 2020-1435
DATE: 08/10/2020
DESIGNED BY: KAS
DRAWN BY: KAS
CHECKED BY: JVP
SHEET NO.
Precast Specs