

ADDENDUM NO. 1

DATE: **September 7, 2018**
OWNER: **City of Stockbridge**
PROJECT: **WWTP Improvements and Glynn Addy Pump Station Rehabilitation**
C & S PROJECT NO.: **S9100.013 & S9100.014**

ENGINEER: **Martin C. Boyd, P.E.**
CARTER & SLOOPE, INC.
P.O. Box 534
Watkinsville, Georgia 30677
Telephone: 706-769-4119 Fax: 706-769-4546
Email: mboyd@cartersloope.com

BID DATE: September 25, 2018 **BID OPENING: 12:00 PM Local Time**

TO ALL BIDDERS:

ACKNOWLEDGE RECEIPT OF THIS ADDENDUM BY INSERTING ITS NUMBER IN YOUR BID FORM – SECTION 00400. FAILURE TO DO SO MAY SUBJECT BONA FIDE BIDDERS TO DISQUALIFICATION. THIS ADDENDUM FORMS A PART OF THE BIDDING DOCUMENTS WHICH ARE HEREBY MODIFIED IN THE FOLLOWING RESPECTS:

I. QUESTIONS & CLARIFICATIONS

A. Attached is a copy of the pre-bid meeting presentation.

B. Questions

1. Q: Is there a stated budget for this project?

A: The Engineer's Estimated cost of the project is \$3.5 million.

2. Q: Bid due date? Bid due time?

A: Bids will be received until September 25, 2018 at 12:00 PM local time (refer to Section 00100 Paragraph 1.1 in the Specifications" for additional information)

3. Q: Last day for questions?

A: The last date for questions will be before 5 PM local time on September 17, 2018

4. **Q: Are there any gas monitoring equipment at the Glynn Addy pump station?**

A: No, there is no gas monitoring equipment at the Glynn Addy pump station.

5. **Q: In the specifications it has a swing check style valve but on the drawings it looks like it was a for a ball check valve. Would a ball check valve also be accepted on this project?**

A: No. The check valves on the pump stations must be check valves as specified in the Technical Specifications.

II. CONTRACT DOCUMENTS & SPECIFICATIONS

A. Section 00100 – Invitation to Bid

1. Change Paragraph 1.7.B to read:

“B. NPDES GAR 100002 (Stormwater) Contractor to Submit NOI”

2. Change Paragraph 1.7.E to read:

“E. Building Permit Contractor to obtain from City of Stockbridge”

B. Section 01025 – Measurements and Payments

1. Refer to Paragraph 3.1.A.

On line 10, strike “...and sediment control, demolition of existing structures and all other work and...”

Replace with “...and sediment control, NPDES stormwater sampling, demolition of existing structures and all other work and...”

Clarification: The Contractor shall include in their lump sum price the cost of complying with requirements of GAR1000002 and the NOI.

C. Section 02370 – Soil Erosion and Sediment Control

1. Refer to Paragraph 1.2.

Add the following to Paragraph 1.2:

“C. Section 02372 – NPDES Stormwater Permitting”

D. Section 02372 – NPDES Stormwater Permitting Index

1. Add the attached Section 02372 into the existing Contract Documents & Specifications

E. Section 03150 – Concrete Accessories

1. Refer to Paragraph 2.1.C.

On line 8, strike “A.C. Horn, Inc.” and replace with “Durajoint.”

- F. Section 13400 – Process Instrumentation and Control Supplier**
- 1. Add the following to Paragraph 1.5.C:**
“4. Dexter Fortson”
- G. Section 11600 – Ultraviolet Disinfection Equipment**
- 1. Change Paragraph 1.3.B.1 to read:**
“f. Redundancy: 1 UV bank at Peak Design Flow”
Clarification: Strike “(75% Peak Design Flow)” from this Paragraph.
 - 2. Change Paragraph 1.3.B.2 to read:**
“The UV system is to be installed in one (1) serpentine open channel having the following dimensions:
 - Length: 16 feet per serpentine
 - Width: 2 feet
 - Depth: 78 inches”
 - 3. Change Paragraph 1.3.B.4.b to read:**
“• Number of Lamps per UV Module: 8”
“• Total Number of Lamps in the UV System: 48”

III. PLANS

- A. Replace the following sheets with the attached sheets: 1, C1.02, C1.09, C1.10, C1.17, EC2, EC3**
- B. Add the attached sheets after Sheet EC3: EC4, EC5, EC6**
- C. Refer to Sheet C1.22.**
- In Section A, change “12” D.I. Overflow to holding pond” to “18” D.I. Overflow to holding pond.”
Clarification: Any reference to the overflow pipe from the proposed treatment structure should be 18” D.I.P. and not 12” D.I.P. The Contractor shall furnish and install the pipe and fittings shown in 18” diameter.
- D. Refer to Sheet E2.02.**
- In the lower right-hand corner to the right of the natural gas generator under “DB-1”, strike Notes 1 & 2 and replace with the following:
 1. 2” C. (230V Power to Pump 1)
 2. 2” C. (230V Power to Pump 2)”
- E. Clarification:** Any reference to proposed ½” Sch. 80 PVC Chemical Feed Line should be changed to read “¾” Sch. 80 PVC”

END OF ADDENDUM NO. 1



WWTP IMPROVEMENTS AND GLYNN ADDY PUMP STATION REHABILITATION PRE-BID MEETING

August 28, 2018



Carter & Sloop

CONSULTING ENGINEERS

WELCOME AND INTRODUCTIONS

City of Stockbridge

Decius Aaron

Public Works Director

Daaron@cityofstockbridge.ga.gov

Brad Holtsinger

WWTP Superintendent

Bholtsinger@cityofstockbridge.ga.gov

Donald Riley, CPPB

Procurement Specialist

Driley@cityofstockbridge.ga.gov

Carter & Sloop

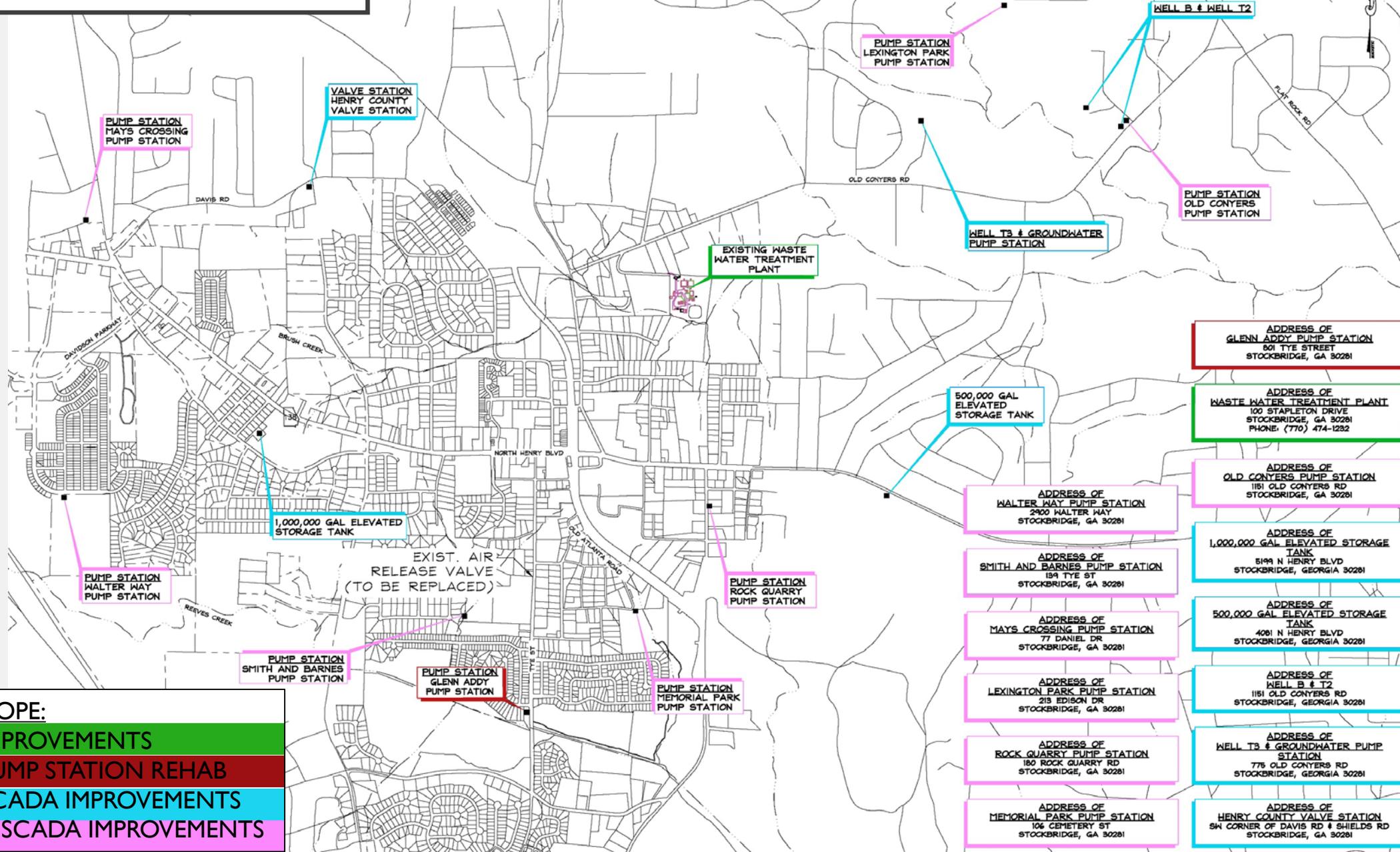
Marty Boyd, PE

mboyd@cartersloope.com

Lindsey Fields, PhD

lfields@cartersloope.com

PROJECT MAP



SCOPE:

1.) WWTP IMPROVEMENTS

2.) GLYNN ADDY PUMP STATION REHAB

3.) WATER SYSTEM SCADA IMPROVEMENTS

4.) SEWERAGE SYSTEM SCADA IMPROVEMENTS

ADDRESS OF
GLYNN ADDY PUMP STATION
501 TYE STREET
STOCKBRIDGE, GA 30281

ADDRESS OF
WASTE WATER TREATMENT PLANT
100 STAPLETON DRIVE
STOCKBRIDGE, GA 30281
PHONE: (770) 474-1232

ADDRESS OF
OLD CONYERS PUMP STATION
1181 OLD CONYERS RD
STOCKBRIDGE, GA 30281

ADDRESS OF
1,000,000 GAL ELEVATED STORAGE
TANK
5199 N HENRY BLVD
STOCKBRIDGE, GEORGIA 30281

ADDRESS OF
500,000 GAL ELEVATED STORAGE
TANK
4081 N HENRY BLVD
STOCKBRIDGE, GEORGIA 30281

ADDRESS OF
WELL B & T2
1181 OLD CONYERS RD
STOCKBRIDGE, GEORGIA 30281

ADDRESS OF
WELL T3 & GROUNDWATER PUMP
STATION
775 OLD CONYERS RD
STOCKBRIDGE, GEORGIA 30281

ADDRESS OF
HENRY COUNTY VALVE STATION
SW CORNER OF DAVIS RD & SHIELDS RD
STOCKBRIDGE, GA 30281

ADDRESS OF
WALTER WAY PUMP STATION
2900 WALTER WAY
STOCKBRIDGE, GA 30281

ADDRESS OF
SMITH AND BARNES PUMP STATION
134 TYE ST
STOCKBRIDGE, GA 30281

ADDRESS OF
MAYS CROSSING PUMP STATION
77 DANIEL DR
STOCKBRIDGE, GA 30281

ADDRESS OF
LEXINGTON PARK PUMP STATION
213 EDISON DR
STOCKBRIDGE, GA 30281

ADDRESS OF
ROCK QUARRY PUMP STATION
180 ROCK QUARRY RD
STOCKBRIDGE, GA 30281

ADDRESS OF
MEMORIAL PARK PUMP STATION
104 CEMETERY ST
STOCKBRIDGE, GA 30281

500,000 GAL
ELEVATED
STORAGE TANK

1,000,000 GAL ELEVATED
STORAGE TANK

VALVE STATION
HENRY COUNTY
VALVE STATION

PUMP STATION
MAYS CROSSING
PUMP STATION

PUMP STATION
LEXINGTON PARK
PUMP STATION

WELL B & WELL T2

PUMP STATION
OLD CONYERS
PUMP STATION

WELL T3 & GROUNDWATER
PUMP STATION

EXISTING WASTE
WATER TREATMENT
PLANT

PUMP STATION
WALTER WAY
PUMP STATION

PUMP STATION
SMITH AND BARNES
PUMP STATION

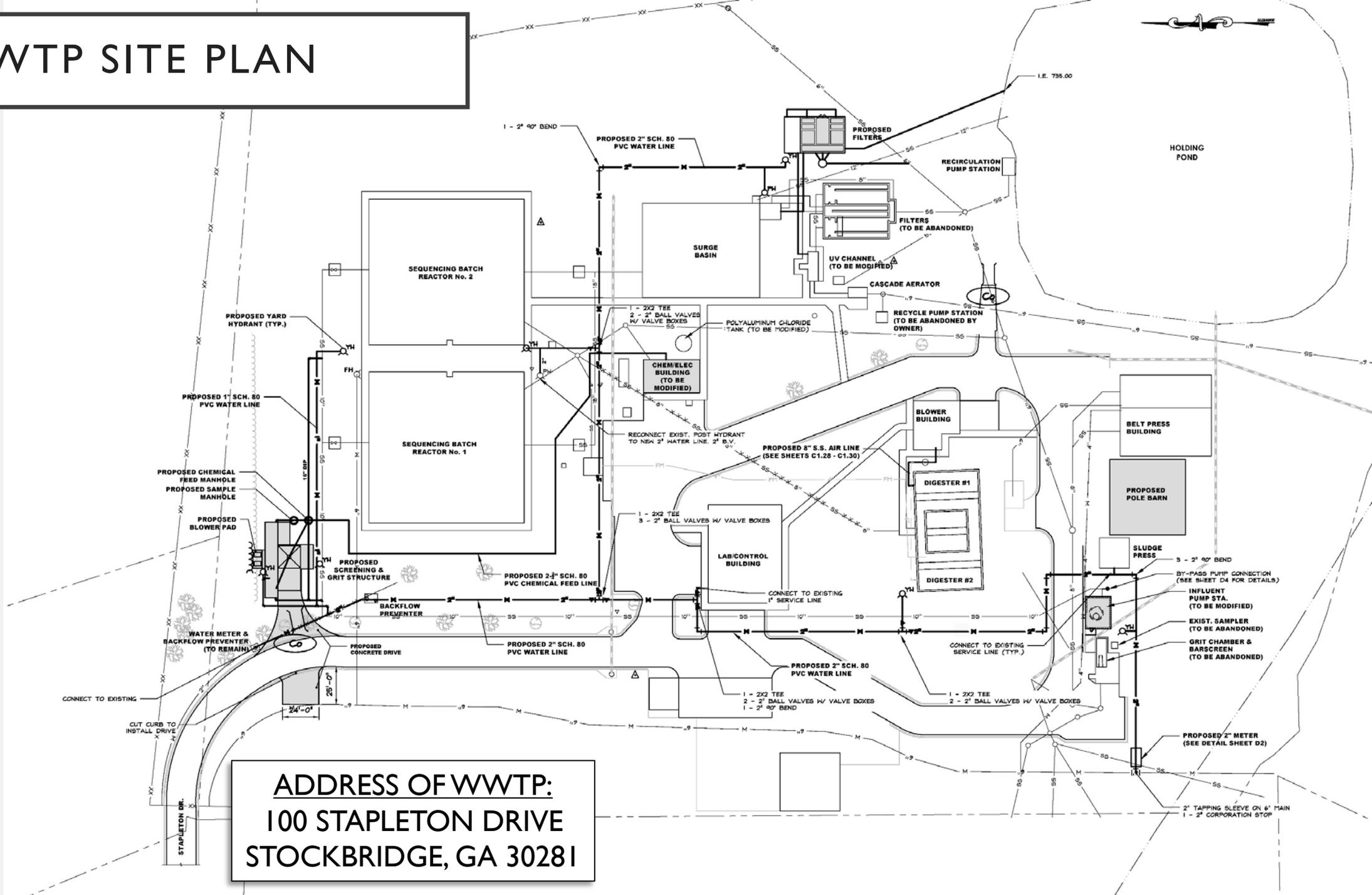
PUMP STATION
GLYNN ADDY
PUMP STATION

PUMP STATION
ROCK QUARRY
PUMP STATION

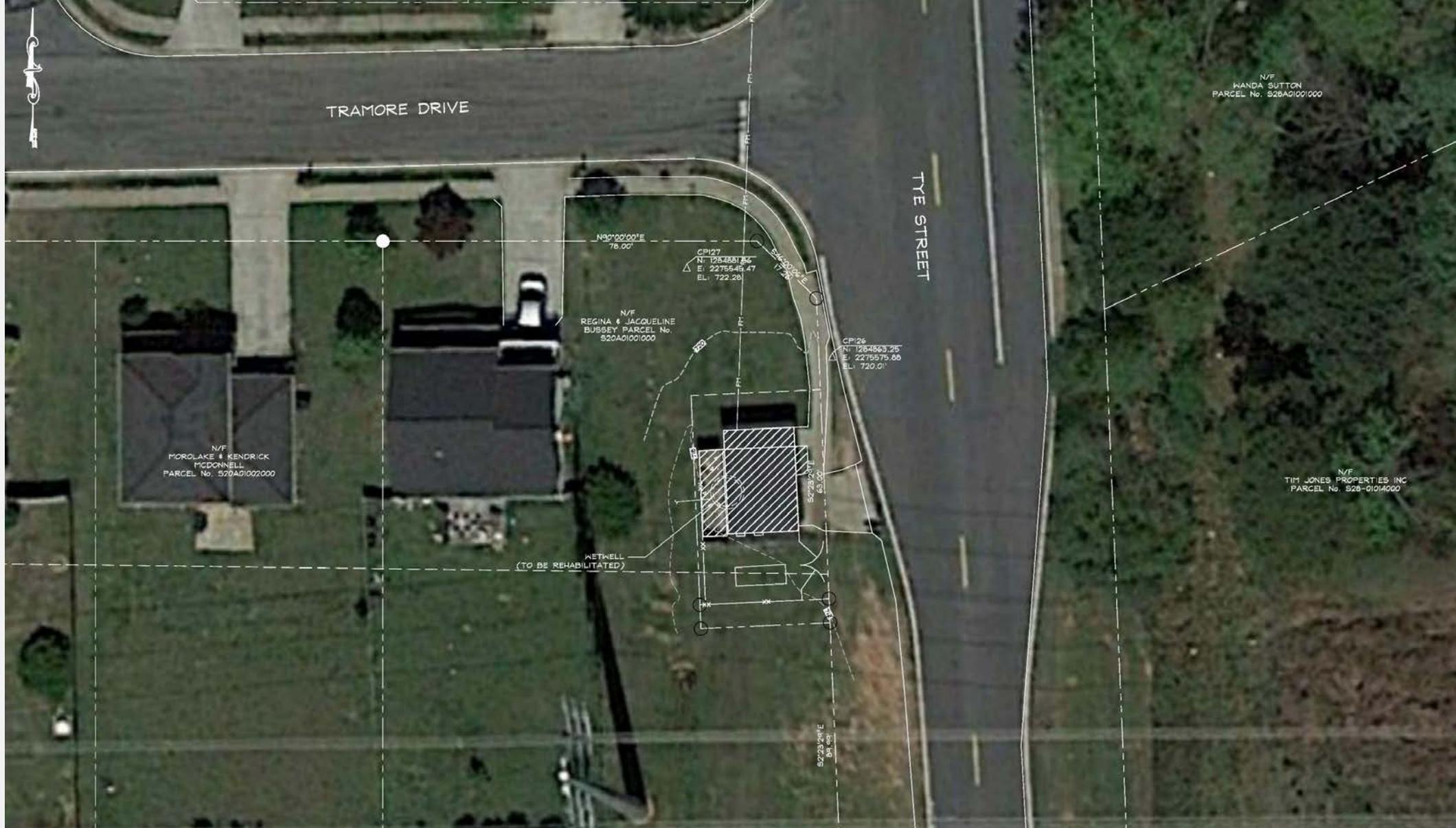
PUMP STATION
MEMORIAL PARK
PUMP STATION

EXIST. AIR
RELEASE VALVE
(TO BE REPLACED)

WWTP SITE PLAN



**ADDRESS OF WWTP:
100 STAPLETON DRIVE
STOCKBRIDGE, GA 30281**

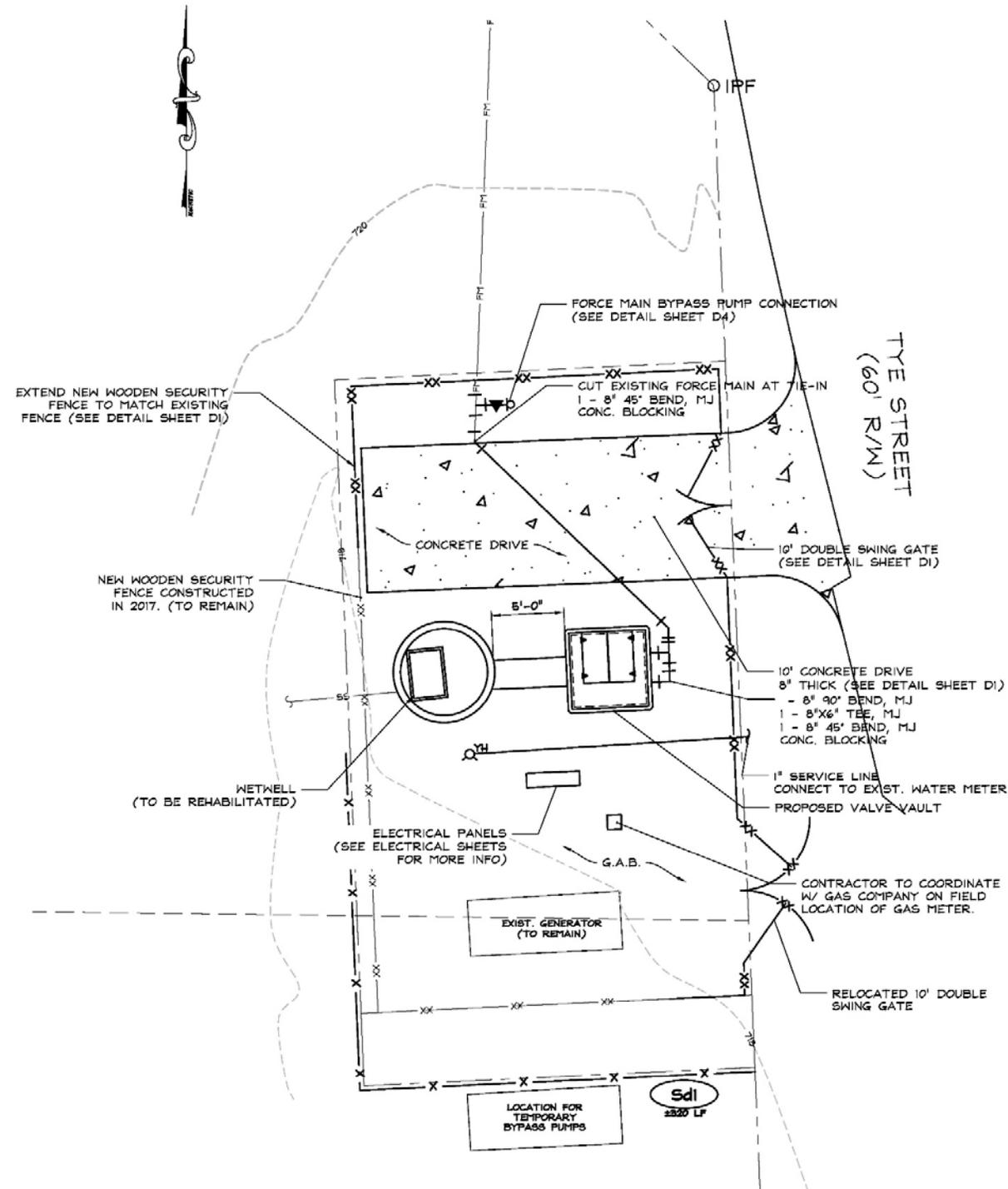


**GLYNN ADDY PUMP
STATION**

**ADDRESS OF GLYNN ADDY PS:
801 TYE STREET
STOCKBRIDGE, GA 30281**

GLYNN ADDY PUMP STATION

ADDRESS OF GLYNN ADDY PS:
801 TYE STREET
STOCKBRIDGE, GA 30281



CONTRACT REQUIREMENTS

- **Contract Schedule**
 - Bid Opening: September 25, 2018 @ 12:00 PM Local Time
 - City Council Meeting: On or about October 8, 2018
 - Pre-con & Notice to Proceed: On or about November 12, 2018
 - Contract Time: 330 days
 - Substantial Completion on or about October 8, 2018
- **Bonding Requirements**
 - Performance Bond Required
 - Payment Bond Required
- **Contractor License**
 - Utility Contractor License Required

PERMITS

- Land Disturbing Permit – Submitted
- NPDES GAR 100002 (Stormwater) – Contractor to submit NOI
- EPD – Approved
- Building Permit – Contractor to obtain from City of Stockbridge

BID FORM & ADDENDA

- Bid Form
 - Awarded as One Contract (Local Funds)
- Major Mechanical Equipment & Materials Schedule
- Allowances
 - Spare Parts Cash Allowance
 - Testing Allowance
 - SCADA Allowance
 - Supplemental Work Allowance
- Addenda
 - Please email all questions to DRiley@cityofstockbrige.ga.gov and copy mboyd@cartersloope.com & lfields@cartersloope.com
 - Last date for questions will be before 5 PM on 9/17
 - Last date to issue addenda will be before 12 PM on 9/20

CONCLUSION

- Questions?
- Site Visit
 - WWTP Address:
100 Stapleton Drive
Stockbridge, GA 30281
 - Glynn Addy PS Address:
801 Tye Street
Stockbridge, GA 30281

SECTION 02372
NPDES STORMWATER PERMITTING
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SECTION 02372
NPDES STORMWATER PERMITTING

PART 1. GENERAL

1.1 SCOPE OF WORK

- A. Comply with requirements of State of Georgia Department of Natural Resources Environmental Protection Division General Permit No. GAR100002. Permit governs storm water discharges associated with construction activity for infrastructure construction projects under the National Pollutant Discharge Elimination System (NPDES).

1.2 RELATED DOCUMENTS

- A. NPDES General Permit for Stormwater Discharges Associated with Construction Activity for Infrastructure Construction Projects No. GAR100002 – Georgia Department of Natural Resources Environmental Protection Division
- B. Manual for Erosion and Sediment Control in Georgia – State Soil and Water Conservation Commission

1.3 RELATED WORK

- A. Section 02230 – Site Clearing
- B. Section 02305 – Earthwork
- C. Section 02370 – Soil Erosion & Sediment Control
- D. Section 02920 – Grassing

1.4 SUBMITTALS

- A. The Engineer will prepare the Notice of Intent (N.O.I) and deliver it to the Owner and Contractor to review and sign. The Contractor shall be the Operator and the Primary Permittee as defined in the General Permit No. GAR 100002 on the N.O.I. Upon execution of N.O.I, the Contractor shall submit by return receipt certified mail (or similar service) an executed copy of the N.O.I, Erosion, Sedimentation and Pollution Control Plans that will be furnished by the Engineer, certifications and any other supporting documents and reports to the appropriate District Office of EPD in accordance with the General Permit and to the Local Issuing Authority in jurisdictions authorized to issue a Land Disturbance Activity permit. The Contractor shall retain a copy of the proof of submittal at the construction jobsite until such times as a Notice of Termination (N.OT.) is submitted.

- B. The Contractor shall also submit the appropriate fees and fee forms for the NPDES General Permit to the Local Issuing Authority and EPD as required by the General Permit.
- C. Contractor shall assume responsibilities and requirements of Primary Permittee once awarded the contract.

1.5 QUALITY ASSURANCE

- A. Regulatory Requirements:
 - 1. Contractor shall obtain required permits and licenses in accordance with requirements of Federal Clean Water Act (CWA) and Water Quality Act (WQA). The Contractor shall file Notice of Intent (NOI) with Georgia Environmental Protection Division. The Contractor shall be Operator/Primary Permittee on Notice of Intent. Contact GA. EPD at 404-362-2671 for additional information and permit forms.
 - 2. Contractor shall provide temporary and permanent erosion control systems as indicated on Drawings and as necessary to protect adjacent properties and water resources from erosion and sedimentation.
 - 3. CWA (1972) and WQA (1987) Requirements:
 - a. Where Work on this project will disturb 1 or more acres, do not start Work without obtaining a “National Pollution Discharge Elimination System” (NPDES) permit governing discharge of storm water from project site for duration of Contract. Obtain approved Erosion, Sedimentation, and Pollution Control (ES&PC) Plan from Owner/Engineer prior to construction.
 - b. Provide storm water management in accordance with NPDES permit and for any enforcement action taken or imposed by Federal or State agencies, including cost of fines, construction delays and remedial actions resulting from failure to comply with all provisions of NPDES permit and SWP3.
 - c. Keep NOI and ES&PC Plan on site and make available for inspection by appropriate authority having jurisdiction at any time.

PART 2. PRODUCTS (NOT USED)

PART 3. EXECUTION

3.1 GENERAL

- A. The following information generally summarizes certain requirements of General Permit No. GAR100002. This information is not intended to represent the complete requirements to comply with the Permit for this project. The General Contractor shall assume the responsibilities and requirements of the Primary Permittee and Operator for the project.

3.2 NOTICE OF INTENT (NOI)

- A. The Contractor shall submit the Notice of Intent (NOI) and any necessary supporting documentation to Georgia Environmental Protection Division (EPD) 14 days prior to the start of construction activities. The Contractor shall be the Operator/Primary Permittee on Notice of Intent. The Contractor shall also submit appropriate fees and fee forms to the Local Issuing Authority and EPD as required by the Permit.

3.3 EROSION, SEDIMENTATION, AND POLLUTION CONTROL (ES & PC) PLAN

- A. The ES&PC Plan shall be amended if a significant change in the design, construction, operation, or maintenance of the Best Management Practices (BMPs) is needed. The Primary Permittee shall be responsible for amending the plan and shall have it certified by the licensed professional. The certification and any necessary supporting documentation shall be sent to EPD.

3.4 SAMPLING

- A. Samples collected manually shall be collected within 45 minutes following the rain event. However, where manual and automatic sampling are impossible as defined by the Permit, or beyond the Permittee's control, the Permittee shall take samples as soon as possible, but in no case more than twelve (12) hours after beginning stormwater discharges.
- B. The Primary Permittee shall sample in accordance with the General Permit for the following rainfall events:
1. The first rainfall event greater than or equal to 0.5 inches and allows for monitoring during normal business hours (Monday thru Friday 8AM – 5PM and Saturday 9AM – 5PM) that occurs after all clearing and grubbing operations are complete in the drainage area of the location selected as the representative sampling location.
 2. First rain event greater than or equal to 0.5 in. that follows either 90 days after initial sampling event or after mass grading is complete in said area.

- C. If BMPs have not been properly designed, installed, or maintained, corrective action shall be defined and implemented within 2 days and samples shall be taken for each subsequent rain event that greater than or equal to 0.5 in. during normal business hours until selected turbidity is attained or until post-storm event inspections determine that BMP's are properly designed, installed, and maintained.

3.5 ANALYSIS

- A. Samples should be analyzed immediately as required by the permit, but shall be analyzed no later than 48 hours after collection.
- B. All samples that have been analyzed shall be documented.

3.6 SITE INSPECTIONS BY LICENSED PROFESSIONAL (ENGINEER OF RECORD)

- A. Within seven (7) days after initial construction begins, the licensed professional (Engineer of Record) who prepared the ES&PC Plan shall inspect the execution of the ES&PC Plan and determine if BMP's have been installed and maintained as designed. The Primary Permittee shall notify the licensed professional that the Plan has been implemented and his/her inspection is required.
- B. The Primary Permittee shall correct all deficiencies identified by the licensed professional within two (2) business days of inspection.

3.7 SITE INSPECTIONS BY PRIMARY PERMITTEE

- A. Certified personnel, which are individuals who have successfully completed a Level IA and or IB E&SC short course approved by EPD, shall perform all site inspections.
- B. Site inspections shall be conducted in accordance with the following schedule:
 - 1. Each day when any type of construction activity has taken place, certified personnel shall inspect (a) all areas where petroleum products are stored, used or handled and (b) all locations where vehicles enter or exit the site; and (c) measure rainfall once each twenty-four-hour period at the site.
 - 2. A site inspection shall be conducted at least every fourteen (14) calendar days and within 24 hours of the end of any rainfall event that is greater than or equal to 0.5 inches.
 - 3. Certified personnel shall inspect at least once per month (until NOT is received by EPD) the areas of the site that have undergone final stabilization.
 - 4. A report summarizing each inspection should be kept on site for documentation.

- C. Any deficiencies identified during the inspection of BMPs shall be corrected within seven (7) days of the inspection.
- D. Amendments to the ES&PC Plan resulting from inadequate BMP design shall be developed and resubmitted (ES&PC Plan to EPD) by a certified professional hired by the Contractor.
- E. Any additional erosion and sedimentation control measures necessary during construction to prevent silt and sediment from leaving the site shall be the responsibility of the Contractor.

3.8 PERMIT VIOLATIONS AND PENALTIES

- A. Permit violations are grounds for an enforcement action, permit termination (stop work order), or denial of a permit renewal application.
- B. Failure to properly design, install or maintain BMPs shall constitute a violation of the Permit for each day on which such a failure occurs.
- C. If BMPs are not properly designed, installed and maintained, the following will result in a second violation of the Permit:
 - 1. If monitoring receiving waters: an increase in the turbidity of downstream waters by 10 Nephelometric Turbidity Units (NTUs) for waters classified as trout streams or 25 NTUs for waters supporting warm water fisheries; or
 - 2. If monitoring outfalls: turbidity measurements that exceed the value set forth by the NTU Tables presented in Appendix B of Permit No. GAR10002.
- D. A fine or imprisonment or both shall, upon conviction, punish any person who falsifies, tampers with or knowingly renders inaccurate monitoring information, any record, or document.
- E. The Primary Permittee is not excused from compliance with the Permit even if a local government authority has approved the ES&PC Plan or failed to take enforcement action.

3.9 RECORD KEEPING AND REPORTING REQUIREMENTS

- A. The Primary Permittee shall submit to EPD by the 15th of each month, a summary of storm water discharge monitoring (turbidity) results. A summary of all known violations of the Permit at the site shall be included.
- B. The following records are required by the Permit and shall be retained by the Primary Permittee at the construction site or a readily available designated alternate location:

1. Copy of NOI and delivery receipt
 2. Copy of ES&PC (Erosion, Sedimentation, and Pollution Control Plan)
 3. Seven (7) day inspection report from the licensed professional that prepared the ES&PC Plan
 4. Daily rainfall log
 5. Daily inspection logs of entrances and exits (when construction activity has taken place)
 6. Bi-weekly inspection logs of all disturbed areas indicating whether or not BMPs identified in the ES&PC Plan are operating correctly. The Primary Permittee shall document any and all known violations.
 7. Sampling records including date, place, and time of sampling and analyses, quality assurance program and turbidity readings.
 8. Inspection results of all areas that have undergone final stabilization
- C. For at least three years, copies of all records must be maintained at the Primary Permittee's place of business.
- D. Upon request, the Primary Permittee shall make the ES&PC Plan, CMP, and/or records available to EPD or the local government within three days.

3.10 NOTICE OF TERMINATION (NOT)

- A. The Primary Permittee may submit a Notice of Termination (NOT) and any necessary supporting documentation to EPD when the site undergone final stabilization and all storm water discharges associated with construction have ceased.
- B. A NOT shall be filed if the Owner or Operator of the site changes. The Primary Permittee shall notify subsequent owners of the requirements of the Permit.

END OF SECTION

INDEX TO DRAWINGS

SHT #	TITLE	SHT #	TITLE
GENERAL			
-	TITLE SHEET	EC3	NPDES PERMIT
1	INDEX & LOCATION MAP	EC4	EROSION CONTROL PLAN
2	OVERALL PROJECT MAP	EC5	MAPS
3	GENERAL CONSTRUCTION NOTES	EC6	EROSION & SEDIMENTATION CONTROL DETAILS
MODIFICATIONS TO EXISTING WWTP			
C1.01	EXISTING SITE PLAN	E3.01	GROUND WATER PUMPING STATION SCHEMATIC WIRING DIAGRAM
C1.02	PROPOSED SITE PLAN	E3.02	GROUND WATER PUMPING STATION ELECTRICAL SITE PLAN
C1.03	PLANT FLOW SCHEMATIC	E3.03	WELL B SCHEMATIC AND ELECTRICAL SITE PLAN
C1.04	HYDRAULIC PROFILE	E3.04	WELL T2 SCHEMATIC AND ELECTRICAL SITE PLAN
C1.05	EXISTING HEADWORKS MODIFICATIONS	E3.05	WELL T3 SCHEMATIC AND ELECTRICAL SITE PLAN
C1.06	EXISTING RAW SEWAGE PUMP STATION PLAN	E3.06	HENRY CO VALVE STATION SCHEMATIC AND ELECTRICAL SITE PLAN
C1.07	EXISTING RAW SEWAGE PUMP STATION SECTIONS	E3.07	500,000 GAL EL. TANK SCHEMATIC AND ELECTRICAL SITE PLAN
C1.09 - C1.14	PROPOSED HEADWORKS	E3.08	1,000,000 GAL EL. TANK GROUND STORAGE TANK SCHEMATIC AND
C1.15	CHEMICAL FEED BUILDING	E3.09	MAYS CROSSING PUMP STATION SCHEMATIC AND ELECTRICAL SITE PLAN
C1.16	EXISTING FILTER MODIFICATIONS	E3.10	WALTER WAY PUMP STATION SCHEMATIC AND ELECTRICAL SITE PLAN
C1.17	PROPOSED FILTER SITE PLAN	E3.11	SMITH AND BARNES PUMP STATION SCHEMATIC AND ELECTRICAL SITE PLAN
C1.18 - C1.24	PROPOSED TREATMENT STRUCTURE	E3.12	MEMORIAL PARK PUMP STATION SCHEMATIC AND ELECTRICAL SITE PLAN
C1.25 - C1.26	UV CHANNEL MODIFICATIONS	E3.13	ROCKY QUARRY PUMP STATION SCHEMATIC AND ELECTRICAL SITE PLAN
C1.27 - C1.28	BLOWER BUILDING	E3.14	OLD CONYERS PUMP STATION SCHEMATIC AND ELECTRICAL SITE PLAN
C1.29 - C1.30	DIGESTER MODIFICATIONS	E3.15	LEXINGTON PARK PUMP STATION SCHEMATIC AND ELECTRICAL SITE PLAN
C1.31 - C1.32	POLE BARN	I3.01	SCADA BLOCK DIAGRAM
E0.01	ELECTRICAL LEGEND AND SYMBOLS	I3.02	SEWAGE PUMP STATIONS SCADA BLOCK DIAGRAM
E0.02 - E0.04	ELECTRICAL INSTALLATION DETAILS		
E1.01	ONE-LINE DIAGRAM & NOTES		
E1.02	PANELBOARD SCHEDULES		
E1.03	ELECTRICAL SITE PLAN AND DUCT BANK ROUTING		
E1.04	EXISTING CHEMICAL BUILDING ELECTRICAL ROOM PLAN		
E1.05	EXISTING LAB CONTROL BUILDING ELECTRICAL PLAN		
E1.06	INFLUENT PUMP STATION AND METER VAULT ELECTRICAL PLANS		
E1.07	SCREENING AND GRIT STRUCTURE ELECTRICAL PLAN		
E1.08	FILTERS AND UV SYSTEM ELECTRICAL PLANS		
E1.09	EXISTING SBR #1 AND #2 ELECTRICAL PLAN		
E1.10	INFLUENT PUMPS SCHEMATIC		
E1.11	HEADWORKS SCREENING AND GRIT SCHEMATIC		
E1.12	DISC FILTERS SCHEMATIC		
E1.13	SCHEMATIC DIAGRAMS		
I1.01	SCADA BLOCK DIAGRAM		
M1.01	INFLUENT PUMP STATION HVAC PLAN, NOTES, AND DETAILS		
M1.02	FILTER PUMP ROOM HVAC PLAN, NOTES, AND DETAILS		
MODIFICATIONS TO GLENN ADDY PUMP STATION			
C2.01	GLENN ADDY OVERALL PUMP STATION SITE PLAN		
C2.02	GLENN ADDY PUMP STATION SITE PLANS		
C2.03	PROPOSED GLENN ADDY PUMP STATION		
E2.01	GLENN ANDY PUMP STATION ELECTRICAL ONE-LINE DIAGRAM		
E2.02	GLENN ANDY PUMP STATION ELECTRICAL PLAN		
DETAILS AND EROSION CONTROL			
D1	SITE DETAILS		
D2	PIPE DETAILS		
D3	MISC. METAL DETAILS		
D4	PUMP STATION REHABILITATION DETAILS		
D5	CHEMICAL FEED DETAILS		
D6	STRUCTURAL NOTES & DETAILS		
EC1 - EC2	EROSION & SEDIMENTATION CONTROL PLAN		



PROJECT LOCATION MAP
SCALE: 1" = 5000'

REVISIONS:

A	RELEASE FOR GOV'T REVIEW	07/13/18
B	RELEASE FOR BID	07/20/18
C	ADDENDUM #1	09/07/18

MODIFICATIONS TO EXISTING
WASTEWATER TREATMENT PLANT
FOR THE
CITY OF STOCKBRIDGE
HENRY COUNTY, GEORGIA
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Carter & Sloope
CONSULTING ENGINEERS
MACON ♦ ATHENS ♦ CANTON ♦ MOULTRE
1031 STONEBRIDGE PARKWAY, WATKINSVILLE, GA 30677 . 706.769.4119 TEL . 706.769.4546 FAX



Know what's below.
Call before you dig.



INDEX & LOCATION MAP

THIS LINE IS ONE INCH LONG
WHEN DRAWING IS PLOTTED FULL SCALE

DSGN: MB/GD	DRWN: DS
DWG. NAME: TITLE SHEET	
PROJ. NO.: S9100.013	
DATE: JULY 2018	SHEET NO.: 1
	OF 48 SHEETS

REVISIONS:	
A	RELEASE FOR GOV'T REVIEW 07/13/18
B	RELEASE FOR BID 07/20/18
C	ADDENDUM #1 09/07/18

**MODIFICATIONS TO EXISTING
WASTEWATER TREATMENT PLANT
FOR THE
CITY OF STOCKBRIDGE
HENRY COUNTY, GEORGIA**

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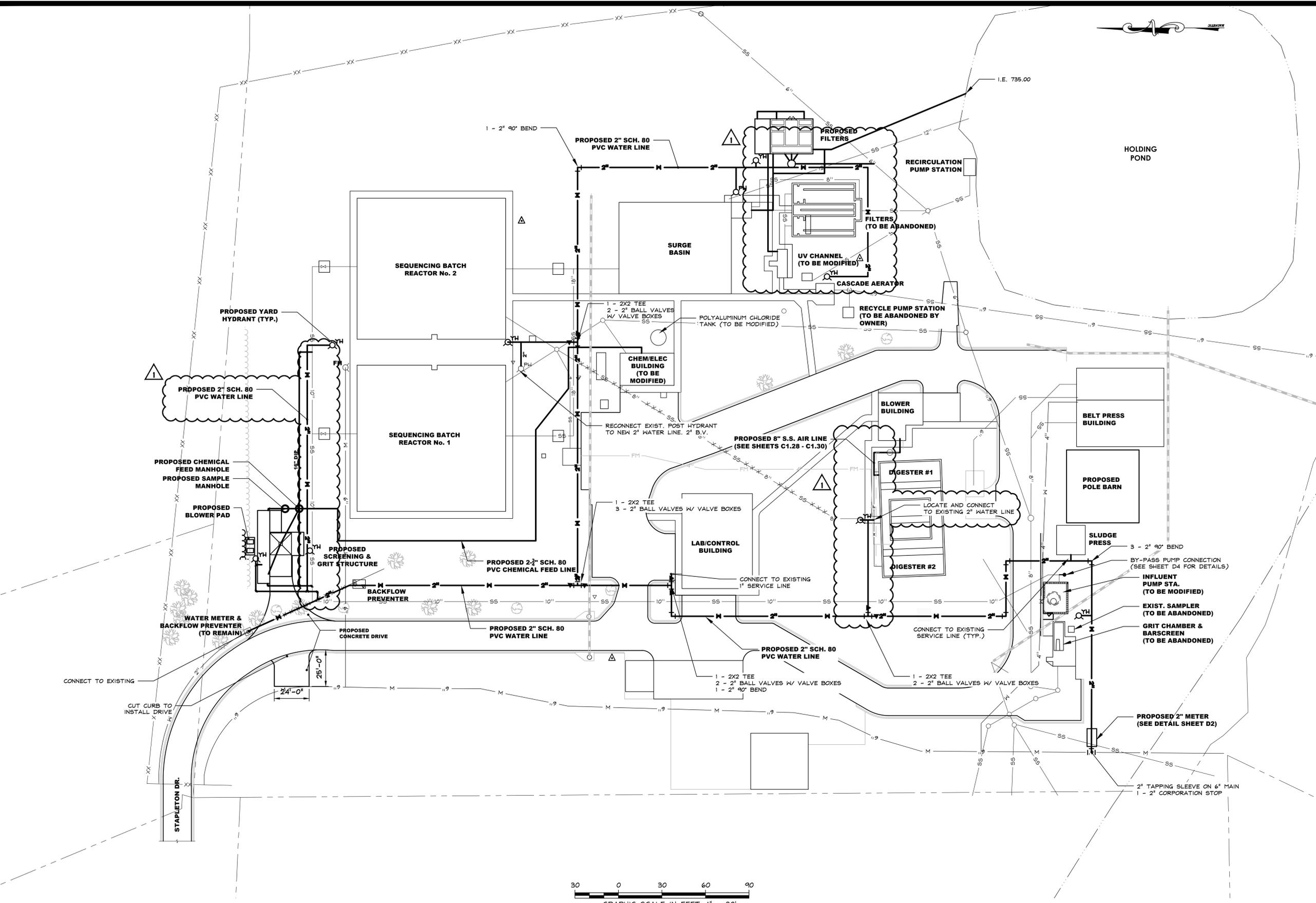
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DSGN: MB/GD	DRWN: DS
DWG. NAME: TITLE SHEET	
PROJ. NO.: S9100.013	
DATE: JULY 2018	SHEET NO.: C1.02
	OF 48 SHEETS



LEVEL II CERTIFICATION No. 3581



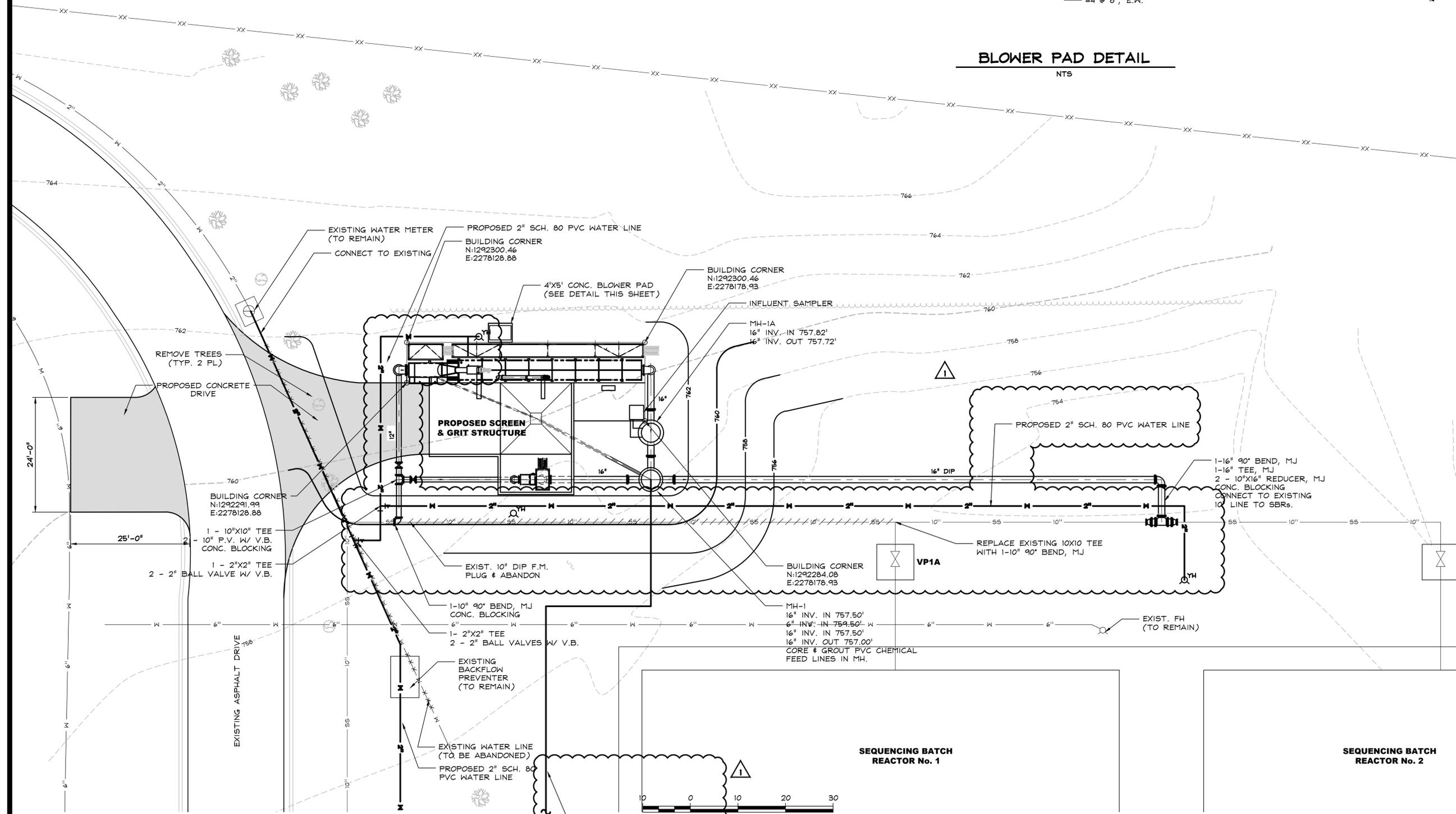
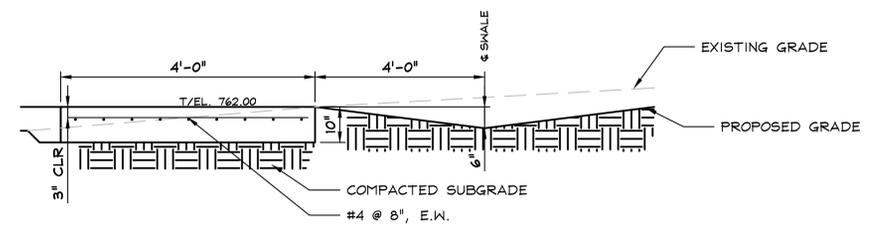
NOTES:
 1. CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY BENDS, FITTINGS, COUPLINGS, REDUCERS, INCREASERS, BALL VALVES AND VALVE BOXES FOR PROPOSED PVC WATER LINE AND CHEMICAL FEED LINES.
 2. CONTRACTOR TO POTHOLE AND/OR USE GROUND PENETRATING RADAR (GPR) TO LOCATE EXISTING UTILITIES AND PRIOR TO BEGINNING CONSTRUCTION.



Know what's below.
Call before you dig.

PROPOSED SITE PLAN

REVISIONS:	
A	RELEASE FOR GOVT REVIEW 07/13/18
B	RELEASE FOR BID 07/20/18
C	ADDENDUM #1 09/07/18



MODIFICATIONS TO EXISTING WASTEWATER TREATMENT PLANT
FOR THE
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De1 TO BE PLACED ON ALL DISTURBED AREAS TO MATCH EXISTING CONDITIONS



PROPOSED HEADWORKS SITE PLAN

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DSGN: MB/GD	DRWN: DS
DWG. NAME: PROPOSED SITE PLAN	
PROJ. NO.: S9100.013	
DATE: JULY 2018	SHEET NO.: C1.09
	OF 48 SHEETS

07/13/2018
LEVEL II CERTIFICATION No. 3581

REVISIONS:	
A	RELEASE FOR GOV'T REVIEW 07/13/18
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**MODIFICATIONS TO EXISTING
WASTEWATER TREATMENT PLANT
FOR THE
CITY OF STOCKBRIDGE
HENRY COUNTY, GEORGIA**

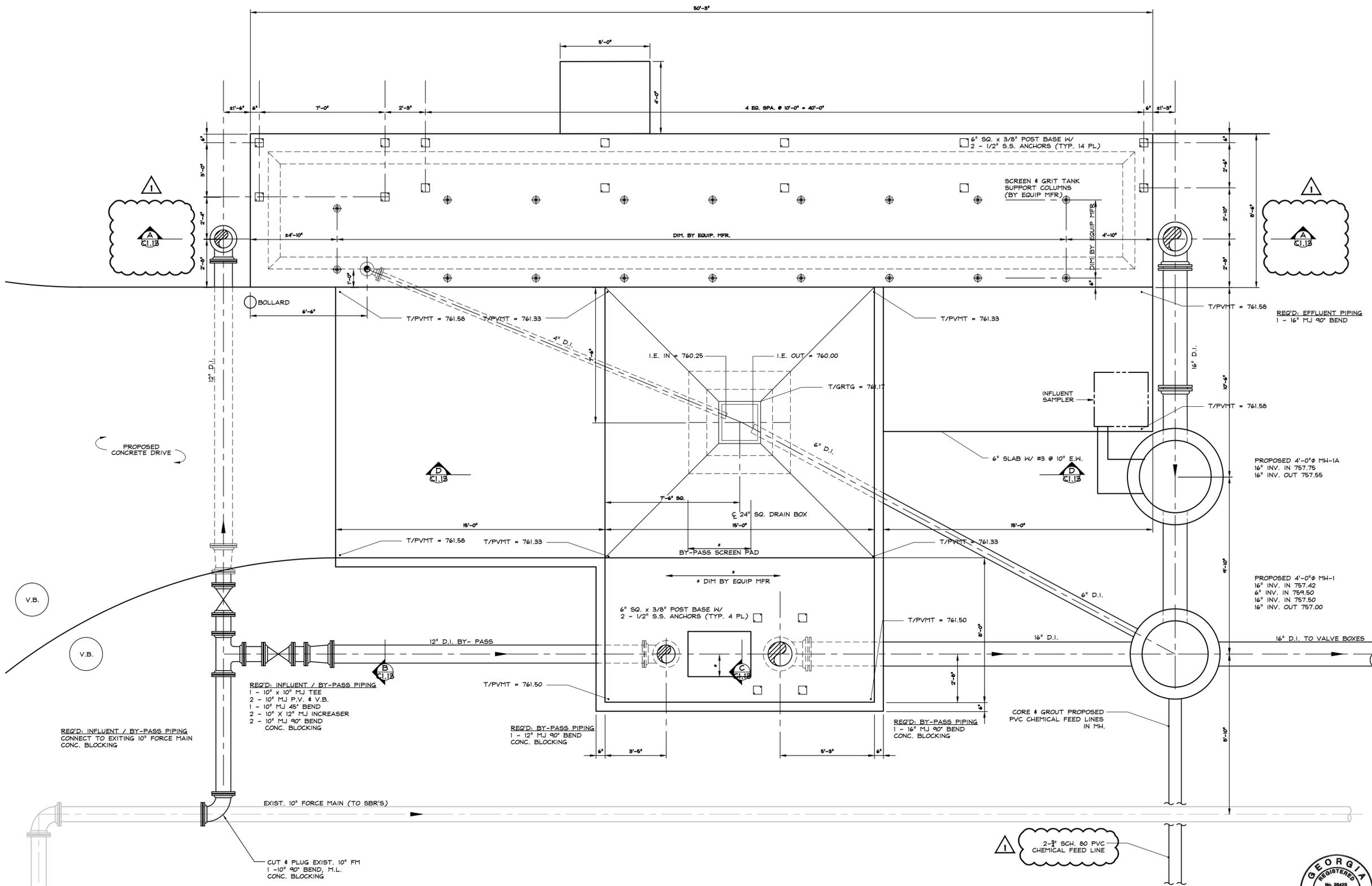
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DSGN: MB/GD	DRWN: DS
DWG. NAME: GRIT STRUCTURE	
PROJ. NO.: S9100.013	
DATE:	SHEET NO.:
JULY 2018	C1.10
OF 48 SHEETS	



PROPOSED HEADWORKS

SAMPLING REQUIREMENTS - PART IV SECTION D.6

THIS PERMIT REQUIRES THE MONITORING OF NEPHELOMETRIC TURBIDITY IN RECEIVING WATER(S) OR OUTFALLS IN ACCORDANCE WITH THIS PERMIT. THE FOLLOWING PROCEDURES CONSTITUTE EPD'S GUIDELINES FOR SAMPLING TURBIDITY.

a. SAMPLING REQUIREMENTS SHALL INCLUDE THE FOLLOWING:

(1) A USGS TOPOGRAPHIC MAP, A TOPOGRAPHIC MAP OR A DRAWING (REFERRED TO AS A TOPOGRAPHIC MAP) THAT IS A SCALE EQUAL TO OR MORE DETAILED THAN A 1:24000 MAP SHOWING THE LOCATION OF THE INFRASTRUCTURE CONSTRUCTION; (A) THE LOCATION OF ALL PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES AS SHOWN ON A USGS TOPOGRAPHIC MAP, AND ALL OTHER PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES LOCATED DURING MANDATORY FIELD VERIFICATION, INTO WHICH THE STORM WATER IS DISCHARGED AND (B) THE RECEIVING WATER AND/OR OUTFALL SAMPLING LOCATIONS FOR EACH REPRESENTATIVE STORMWATER OUTFALL. WHEN THE PERMITTEE HAS CHOSEN TO USE A USGS TOPOGRAPHIC MAP AND THE RECEIVING WATER(S) IS NOT SHOWN ON THE USGS TOPOGRAPHIC MAP, THE LOCATION OF THE RECEIVING WATER(S) MUST BE HAND-DRAWN ON THE USGS TOPOGRAPHIC MAP FROM WHERE THE STORM WATER(S) ENTERS THE RECEIVING WATER(S) TO THE POINT WHERE THE RECEIVING WATER(S) COMBINES WITH THE FIRST BLUE LINE STREAM SHOWN ON THE USGS TOPOGRAPHIC MAP;

(2) A WRITTEN NARRATIVE OF SITE SPECIFIC ANALYTICAL METHODS USED TO COLLECT AND ANALYZE THE SAMPLES INCLUDING QUALITY CONTROL/QUALITY ASSURANCE PROCEDURES. THIS NARRATIVE MUST INCLUDE PRECISE SAMPLING METHODOLOGY FOR EACH SAMPLING LOCATION;

(3) WHEN THE PERMITTEE HAS DETERMINED THAT SOME OR ALL OUTFALLS WILL BE SAMPLED, A RATIONALE MUST BE INCLUDED ON THE PLAN FOR THE NTU LIMIT(S) SELECTED FROM APPENDIX B. THIS RATIONALE MUST INCLUDE THE SIZE OF THE CONSTRUCTION SITE, THE CALCULATION OF THE SIZE OF THE SURFACE WATER DRAINAGE AREA, AND THE TYPE OF RECEIVING WATER(S) (I.E., TROUT STREAM OR SUPPORTING WARM WATER FISHERIES); AND

(4) ANY ADDITIONAL INFORMATION EPD DETERMINES NECESSARY TO BE PART OF THE PLAN. EPD WILL PROVIDE WRITTEN NOTICE TO THE PERMITTEE OF THE INFORMATION NECESSARY AND THE TIME LINE FOR SUBMITTAL.

b. SAMPLE TYPE. ALL SAMPLING SHALL BE COLLECTED BY "GRAB SAMPLES" AND THE ANALYSIS OF THESE SAMPLES MUST BE CONDUCTED IN ACCORDANCE WITH METHODOLOGY AND TEST PROCEDURES ESTABLISHED BY 40 CFR PART 136 (UNLESS OTHER TEST PROCEDURES HAVE BEEN APPROVED); THE GUIDANCE DOCUMENT TITLED "NPDES STORM WATER SAMPLING GUIDANCE DOCUMENT, EPA 833-8-92-001" AND GUIDANCE DOCUMENTS THAT MAY BE PREPARED BY THE EPD.

(1). SAMPLE CONTAINERS SHOULD BE LABELED PRIOR TO COLLECTING THE SAMPLES.

(2). SAMPLES SHOULD BE WELL MIXED BEFORE TRANSFERRING TO A SECONDARY CONTAINER.

(3). LARGE MOUTH, WELL CLEANED AND RINSED GLASS OR PLASTIC JARS SHOULD BE USED FOR COLLECTING SAMPLES. THE JARS SHOULD BE CLEANED THOROUGHLY TO AVOID CONTAMINATION.

(4). MANUAL, AUTOMATIC OR RISING STAGE SAMPLING MAY BE UTILIZED. SAMPLES REQUIRED BY THIS PERMIT SHOULD BE ANALYZED IMMEDIATELY, BUT IN NO CASE LATER THAN 48 HOURS AFTER COLLECTION. HOWEVER, SAMPLES FROM AUTOMATIC SAMPLERS MUST BE COLLECTED NO LATER THAN THE NEXT BUSINESS DAY AFTER THEIR ACCUMULATION, UNLESS FLOW THROUGH AUTOMATIC ANALYSIS IS UTILIZED. IF AUTOMATIC SAMPLING IS UTILIZED AND THE AUTOMATIC SAMPLER IS NOT ACTIVATED DURING THE QUALIFYING EVENT, THE PERMITTEE MUST UTILIZE MANUAL SAMPLING OR RISING STAGE SAMPLING DURING THE NEXT QUALIFYING EVENT. DILUTION OF SAMPLES IS NOT REQUIRED. SAMPLES MAY BE ANALYZED DIRECTLY WITH A PROPERLY CALIBRATED TURBIDIMETER. SAMPLES ARE NOT REQUIRED TO BE COOLED.

(5). SAMPLING AND ANALYSIS OF THE RECEIVING WATER(S) OR OUTFALLS BEYOND THE MINIMUM FREQUENCY STATED IN THIS PERMIT MUST BE REPORTED TO EPD AS SPECIFIED IN PART IV.E.

c. SAMPLING POINTS.

(1). FOR CONSTRUCTION ACTIVITIES THE PRIMARY PERMITTEE MUST SAMPLE ALL PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES SHOWN ON THE USGS TOPOGRAPHIC MAP AND ALL OTHER FIELD VERIFIED PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES, OR ALL OUTFALLS INTO SUCH STREAMS AND OTHER WATER BODIES, OR A COMBINATION THEREOF. HOWEVER, PROVIDED FOR IN AND IN ACCORDANCE WITH PART IV.D.6.C.(2). OF THIS PERMIT, PRIMARY PERMITTEES ON AN INFRASTRUCTURE CONSTRUCTION PROJECT MAY SAMPLE THE REPRESENTATIVE PERENNIAL AND INTERMITTENT STREAMS, OTHER WATER BODIES OR OUTFALLS, OR A COMBINATION THEREOF. SAMPLES TAKEN FOR THE PURPOSE OF COMPLIANCE WITH THIS PERMIT SHALL BE REPRESENTATIVE OF THE MONITORED ACTIVITY AND REPRESENTATIVE OF THE WATER QUALITY OF THE RECEIVING WATER(S) AND/OR THE STORM WATER OUTFALLS USING THE FOLLOWING MINIMUM GUIDELINES:

(A). THE UPSTREAM SAMPLE FOR EACH RECEIVING WATER(S) MUST BE TAKEN IMMEDIATELY UPSTREAM OF THE CONFLUENCE OF THE FIRST STORM WATER DISCHARGE FROM THE PERMITTED ACTIVITY (I.E., THE DISCHARGE FARTHEST UPSTREAM AT THE SITE) BUT DOWNSTREAM OF ANY OTHER STORM WATER DISCHARGES NOT ASSOCIATED WITH THE PERMITTED ACTIVITY. WHERE APPROPRIATE, SEVERAL UPSTREAM SAMPLES FROM ACROSS THE RECEIVING WATER(S) MAY NEED TO BE TAKEN AND THE ARITHMETIC AVERAGE OF THE TURBIDITY OF THESE SAMPLES USED FOR THE UPSTREAM TURBIDITY VALUE.

(B). THE DOWNSTREAM SAMPLE FOR EACH RECEIVING WATER(S) MUST BE TAKEN DOWNSTREAM OF THE CONFLUENCE OF THE LAST STORM WATER DISCHARGE FROM THE PERMITTED ACTIVITY (I.E., THE DISCHARGE FARTHEST DOWNSTREAM AT THE SITE) BUT UPSTREAM OF ANY OTHER STORM WATER DISCHARGE NOT ASSOCIATED WITH THE PERMITTED ACTIVITY. WHERE APPROPRIATE, SEVERAL DOWNSTREAM SAMPLES FROM ACROSS THE RECEIVING WATER(S) MAY NEED TO BE TAKEN AND THE ARITHMETIC AVERAGE OF THE TURBIDITY OF THESE SAMPLES USED FOR THE DOWNSTREAM TURBIDITY VALUE.

(C). 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(S) OR IN THE OUTFALL STORM WATER CHANNEL.

(E). THE SAMPLING CONTAINER SHOULD BE HELD SO THAT THE OPENING FACES UPSTREAM.

(F). THE SAMPLES SHOULD BE KEPT FREE FROM FLOATING DEBRIS.

(G). PERMITTEES DO NOT HAVE TO SAMPLE SHEETFLOW THAT FLOWS ONTO UNDISTURBED NATURAL AREAS OR AREAS STABILIZED BY THE PROJECT. FOR PURPOSES OF THIS SECTION, STABILIZED SHALL MEAN, FOR UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES,, 100% OF THE SOIL SURFACE IS UNIFORMLY COVERED IN PERMANENT VEGETATION WITH A DENSITY OF 70% OR GREATER, OR LANDSCAPED ACCORDING TO THE PLAN (UNIFORMLY COVERED WITH LANDSCAPING MATERIALS IN PLANNED LANDSCAPED AREAS), OR EQUIVALENT PERMANENT STABILIZATION MEASURES AS DEFINED IN THE MANUAL (EXCLUDING A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET CROP PERENNIALS APPROPRIATE FOR THE REGION). FOR INFRASTRUCTURE CONSTRUCTION PROJECTS ON LAND USED FOR AGRICULTURAL OR SILVICULTURAL PURPOSES, FINAL STABILIZATION MAY BE ACCOMPLISHED BY STABILIZING THE DISTURBED LAND FOR ITS AGRICULTURAL OR SILVICULTURAL USE.

(H). ALL SAMPLING PURSUANT TO THIS PERMIT MUST BE DONE IN SUCH A WAY (INCLUDING GENERALLY ACCEPTED SAMPLING METHODS, LOCATIONS, TIMING, AND FREQUENCY) AS TO ACCURATELY REFLECT WHETHER STORM WATER RUNOFF FROM THE CONSTRUCTION SITE IS IN COMPLIANCE WITH THE STANDARD SET FORTH IN PARTS III.D.3. OR III.D.4., WHICHEVER IS APPLICABLE.

(2). FOR INFRASTRUCTURE CONSTRUCTION PROJECTS, THE PERMITTEE IS NOT REQUIRED TO SAMPLE A PERENNIAL OR INTERMITTENT STREAM OR OTHER WATER BODIES (OR THE ASSOCIATED OUTFALL, IF APPLICABLE) IF THE DESIGN PROFESSIONAL PREPARING THE PLAN CERTIFIES THAT AN INCREASE IN THE TURBIDITY OF A SPECIFIC IDENTIFIED RECEIVING WATER TO BE SAMPLED WILL BE REPRESENTATIVE OF THE INCREASE IN THE TURBIDITY OF A SPECIFIC IDENTIFIED UN-SAMPLED RECEIVING WATER. A WRITTEN JUSTIFICATION AND DETAILED ANALYSIS SHALL BE PREPARED BY THE DESIGN PROFESSIONAL JUSTIFYING SUCH PROPOSED SAMPLING. A SUMMARY CHART OF THE JUSTIFICATION AND ANALYSIS FOR THE REPRESENTATIVE SAMPLING MUST BE INCLUDED ON THE PLAN. THE JUSTIFICATION AND ANALYSIS SHALL INCLUDE THE LOCATION AND DESCRIPTION OF THE SPECIFIED SAMPLED AND UN-SAMPLED RECEIVING WATER AND SHALL CONTAIN A DETAILED COMPARISON AND DISCUSSION OF EACH SUCH RECEIVING WATER IN THE FOLLOWING AREAS:

(A). SITE LAND DISTURBANCES AND CHARACTERISTICS;

(B). RECEIVING WATER WATERSHED SIZES AND CHARACTERISTICS; AND

(C). SITE AND WATERSHED RUNOFF CHARACTERISTICS UTILIZING THE METHODS IN APPENDIX A-1 (UNITED STATES DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE'S TR-55, URBAN HYDROLOGY FOR SMALL WATERSHEDS) OF THE MOST RECENT VERSION OF THE "MANUAL FOR EROSION AND SEDIMENTATION CONTROL IN GEORGIA" FOR THE VARIOUS PRECIPITATION EVENTS AND ANY OTHER SUCH CONSIDERATIONS NECESSARY TO SHOW THAT THE INCREASE IN THE TURBIDITY OF A SPECIFIC IDENTIFIED SAMPLED RECEIVING WATER WILL BE REPRESENTATIVE OF THE INCREASES IN THE TURBIDITY OF A SPECIFIC IDENTIFIED UN-SAMPLED RECEIVING WATERS.

(3). FOR INFRASTRUCTURE CONSTRUCTION PROJECTS, WHEN THE PERMITTEE DETERMINES THAT SOME RECEIVING WATER(S) WILL NOT BE SAMPLED DUE TO REPRESENTATIVE SAMPLING, THE DESIGN PROFESSIONAL MAKING THIS DETERMINATION AND PREPARING THE PLAN MUST INCLUDE AND SIGN THE FOLLOWING CERTIFICATION IN THE PLAN:

"I CERTIFY THAT THE PERMITTEE'S EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN PROVIDES FOR THE MONITORING OF: (A) ALL PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES SHOWN ON THE USGS TOPOGRAPHIC MAP AND ALL OTHER FIELD VERIFIED PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES, OR (B) WHERE ANY SUCH SPECIFIC IDENTIFIED PERENNIAL OR INTERMITTENT STREAM AND OTHER WATER BODY IS NOT PROPOSED TO BE SAMPLED, I HAVE DETERMINED IN MY PROFESSIONAL JUDGMENT, UTILIZING THE FACTORS REQUIRED IN THE GENERAL NPDES PERMIT NO. GAR 100002, THAT THE INCREASE IN THE TURBIDITY OF EACH SPECIFIC IDENTIFIED SAMPLED RECEIVING WATER WILL BE REPRESENTATIVE OF THE INCREASE IN THE TURBIDITY OF A SPECIFIC IDENTIFIED UN-SAMPLED RECEIVING WATER."

(4). FOR INFRASTRUCTURE CONSTRUCTION PROJECTS, IF AT ANY TIME DURING THE LIFE OF THE PROJECT A SELECTED RECEIVING WATER NO LONGER REPRESENTS ANOTHER RECEIVING WATER, THEN THE PERMITTEE SHALL SAMPLE THE LATTER RECEIVING WATER UNTIL SELECTION OF AN ALTERNATIVE REPRESENTATIVE RECEIVING WATER.

(5). FOR INFRASTRUCTURE CONSTRUCTION PROJECTS, IF AT ANY TIME DURING THE LIFE OF THE PROJECT A RECEIVING WATER IS DETERMINED NOT TO BE REPRESENTED AS CERTIFIED IN THE PLAN, THE PERMITTEE SHALL SAMPLE THAT RECEIVING WATER UNTIL A NOTICE OF TERMINATION IS SUBMITTED OR UNTIL THE APPLICABLE PHASE IS STABILIZED IN ACCORDANCE WITH THIS PERMIT.

(6). FOR INFRASTRUCTURE CONSTRUCTION PROJECTS, MONITORING OBLIGATIONS SHALL CEASE FOR ANY PHASE OF THE PROJECT THAT HAS BEEN STABILIZED IN ACCORDANCE WITH PART IV.D.6.C.(1).(G).

D. SAMPLING FREQUENCY.

(1). THE PRIMARY PERMITTEE MUST SAMPLE IN ACCORDANCE WITH THE PLAN AT LEAST ONCE FOR EACH RAINFALL EVENT DESCRIBED BELOW. FOR A QUALIFYING EVENT, THE PERMITTEE SHALL SAMPLE AT THE BEGINNING OF ANY STORM WATER DISCHARGE TO A MONITORED RECEIVING WATER AND/OR FROM A MONITORED OUTFALL LOCATION WITHIN FORTY-FIVE (45) MINUTES OR AS SOON AS POSSIBLE. .

(2). HOWEVER, WHERE MANUAL AND AUTOMATIC SAMPLING ARE IMPOSSIBLE (AS DEFINED IN THIS PERMIT), OR ARE BEYOND THE PERMITTEE'S CONTROL, THE PERMITTEE SHALL TAKE SAMPLES AS SOON AS POSSIBLE, BUT IN NO CASE MORE THAN TWELVE (12) HOURS AFTER THE BEGINNING OF THE STORM WATER DISCHARGE.

(3). SAMPLING BY THE PERMITTEE SHALL OCCUR FOR THE FOLLOWING QUALIFYING EVENTS:

(A). FOR EACH AREA OF THE SITE THAT DISCHARGES TO A RECEIVING WATER OR FROM AN OUTFALL, THE FIRST RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH WITH A STORM WATER DISCHARGE THAT OCCURS DURING NORMAL BUSINESS HOURS AS DEFINED IN THIS PERMIT. AFTER ALL CLEARING AND GRUBBING OPERATIONS HAVE BEEN COMPLETED, BUT PRIOR TO COMPLETION OF MASS GRADING OPERATIONS, IN THE DRAINAGE AREA OF THE LOCATION SELECTED AS THE REPRESENTATIVE SAMPLING LOCATION;

(B). IN ADDITION TO (A) ABOVE, FOR EACH AREA OF THE SITE THAT DISCHARGES TO A RECEIVING WATER OR FROM AN OUTFALL, THE FIRST RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH WITH A STORM WATER DISCHARGE THAT OCCURS DURING NORMAL BUSINESS HOURS AS DEFINED IN THIS PERMIT EITHER 90 DAYS AFTER THE FIRST SAMPLING EVENT OR AFTER ALL MASS GRADING OPERATIONS HAVE BEEN COMPLETED, BUT PRIOR TO SUBMITTAL OF A NOT, IN THE DRAINAGE AREA OF THE LOCATION SELECTED AS THE REPRESENTATIVE SAMPLING LOCATION, WHICHEVER COMES FIRST;

(C). AT THE TIME OF SAMPLING PERFORMED PURSUANT TO (A) AND (B) ABOVE, IF BMPs IN ANY AREA OF THE SITE THAT DISCHARGES TO A RECEIVING WATER OR FROM AN OUTFALL ARE NOT PROPERLY DESIGNED, INSTALLED AND MAINTAINED, CORRECTIVE ACTION SHALL BE DEFINED AND IMPLEMENTED WITHIN TWO (2) BUSINESS DAYS, AND TURBIDITY SAMPLES SHALL BE TAKEN FROM DISCHARGES FROM THAT AREA OF THE SITE FOR EACH SUBSEQUENT RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH DURING NORMAL BUSINESS HOURS* UNTIL THE SELECTED TURBIDITY STANDARD IS ATTAINED, OR UNTIL POST-STORM EVENT INSPECTIONS DETERMINE THAT BMPs ARE PROPERLY DESIGNED, INSTALLED AND MAINTAINED;

(D). WHERE SAMPLING PURSUANT TO (A), (B) OR (C) ABOVE IS REQUIRED BUT NOT POSSIBLE (OR NOT REQUIRED BECAUSE THERE WAS NO DISCHARGE), THE PERMITTEE, IN ACCORDANCE WITH PART IV.D.4.A.(6), MUST INCLUDE A WRITTEN JUSTIFICATION IN THE INSPECTION REPORT OF WHY SAMPLING WAS NOT PERFORMED. PROVIDING THIS JUSTIFICATION DOES NOT RELIEVE THE PERMITTEE OF ANY SUBSEQUENT SAMPLING OBLIGATIONS UNDER (A), (B) OR (C) ABOVE; AND

(E). EXISTING CONSTRUCTION ACTIVITIES, I.E., THOSE THAT ARE OCCURRING ON OR BEFORE THE EFFECTIVE DATE OF THIS PERMIT, THAT HAVE MET THE SAMPLING REQUIRED BY (A) ABOVE SHALL SAMPLE IN ACCORDANCE WITH (B). THOSE EXISTING CONSTRUCTION ACTIVITIES THAT HAVE MET THE SAMPLING REQUIRED BY (B) ABOVE SHALL NOT BE REQUIRED TO CONDUCT ADDITIONAL SAMPLING OTHER THAN AS REQUIRED BY (C) ABOVE.

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

6. NON-STORM WATER DISCHARGES. EXCEPT FOR FLOWS FROM FIRE FIGHTING ACTIVITIES, SOURCES OF NON-STORM WATER LISTED IN PART III.A.2. OF THIS PERMIT THAT ARE COMBINED WITH STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY MUST BE IDENTIFIED IN THE PLAN. THE PLAN SHALL IDENTIFY AND ENSURE THE IMPLEMENTATION OF APPROPRIATE POLLUTION PREVENTION MEASURES FOR THE NON-STORM WATER COMPONENT(S) OF THE DISCHARGE .

THE INFORMATION ABOVE IS A EXACT EXCERPT FROM THE GEORGIA DNR ENVIRONMENTAL PROTECTION DIVISION'S GENERAL PERMIT NO. GAR100002: NPDES STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY FOR INFRASTRUCTURE CONSTRUCTION PROJECTS.

INSPECTIONS - PART IV SECTION D.4

a. PERMITTEE REQUIREMENTS.

(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 RAINFALL ONCE EVERY 24 HOURS EXCEPT ANY NON-WORKING SATURDAY, NON-WORKING SUNDAY AND NON-WORKING FEDERAL HOLIDAY UNTIL A NOTICE OF TERMINATION IS SUBMITTED. MEASUREMENT OF RAINFALL MAY BE SUSPENDED IF ALL AREAS OF THE SITE HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION.

(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 IMPACTS TO RECEIVING WATER(S) .

(5). BASED ON THE RESULTS OF EACH INSPECTION, THE SITE DESCRIPTION AND THE POLLUTION PREVENTION AND CONTROL MEASURES IDENTIFIED IN THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN, THE PLAN SHALL BE REVISED AS APPROPRIATE NOT LATER THAN SEVEN (7) CALENDAR DAYS FOLLOWING EACH INSPECTION. IMPLEMENTATION OF SUCH CHANGES SHALL BE MADE AS SOON AS PRACTICAL BUT IN NO CASE LATER THAN SEVEN (7) CALENDAR DAYS FOLLOWING EACH INSPECTION.

(6). A REPORT OF EACH INSPECTION THAT INCLUDES THE NAME(S) OF CERTIFIED PERSONNEL MAKING EACH INSPECTION, THE DATE(S) OF EACH INSPECTION, CONSTRUCTION PHASE (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.

REPORTING - PART IV SECTION E

1. THE APPLICABLE PERMITTEES ARE 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 STORM WATER 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 UNTIL SUCH TIME AS A NOT IS SUBMITTED IN ACCORDANCE WITH PART VI.

2. ALL SAMPLING REPORTS SHALL INCLUDE THE FOLLOWING INFORMATION:

- THE RAINFALL AMOUNT, DATE, EXACT PLACE AND TIME OF SAMPLING OR MEASUREMENTS;
- THE NAME(S) OF THE CERTIFIED PERSONNEL WHO PERFORMED THE SAMPLING AND MEASUREMENTS;
- THE DATE(S) ANALYSES WERE PERFORMED;
- THE TIME(S) ANALYSES WERE INITIATED;
- THE NAME(S) OF THE CERTIFIED PERSONNEL WHO PERFORMED THE ANALYSES;
- REFERENCES AND WRITTEN PROCEDURES, WHEN AVAILABLE, FOR THE ANALYTICAL TECHNIQUES OR METHODS USED;
- THE RESULTS OF SUCH ANALYSES, INCLUDING THE BENCH SHEETS, INSTRUMENT READOUTS, COMPUTER DISKS OR TAPES, ETC., USED TO DETERMINE THESE RESULTS;
- RESULTS WHICH EXCEED 1000 NTU SHALL BE REPORTED AS "EXCEEDS 1000 NTU;" AND
- CERTIFICATION STATEMENT THAT SAMPLING WAS CONDUCTED AS PER THE PLAN.

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

RETENTION OF RECORDS - PART IV SECTION F

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

- A COPY OF ALL NOTICES OF INTENT SUBMITTED TO EPD;
- A COPY OF THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN REQUIRED BY THIS PERMIT;
- THE DESIGN PROFESSIONAL'S REPORT OF THE RESULTS OF THE INSPECTION CONDUCTED IN ACCORDANCE WITH PART IV.A.5. OF THIS PERMIT;
- A COPY OF ALL SAMPLING INFORMATION, RESULTS, AND REPORTS REQUIRED BY THIS PERMIT;
- 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.2. OF THIS PERMIT; AND

g. DAILY RAINFALL INFORMATION COLLECTED IN ACCORDANCE WITH PART IV.D.4.A.(2) . OF THIS PERMIT.

2. COPIES OF ALL NOTICES OF INTENT, NOTICES OF TERMINATION , INSPECTION REPORTS, SAMPLING REPORTS (INCLUDING ALL CALIBRATION AND MAINTENANCE RECORDS AND ALL ORIGINAL STRIP CHART RECORDINGS FOR CONTINUOUS MONITORING INSTRUMENTATION), OR OTHER REPORTS REQUESTED BY THE EPD, EROSION, SEDIMENTATION AND POLLUTION CONTROL PLANS, RECORDS OF ALL DATA USED TO COMPLETE THE NOTICE OF INTENT TO BE COVERED BY THIS PERMIT AND ALL OTHER RECORDS REQUIRED BY THIS PERMIT SHALL BE RETAINED BY THE PERMITTEE WHO EITHER PRODUCED OR USED IT FOR A PERIOD OF AT LEAST THREE YEARS FROM THE DATE THAT THE NOT IS SUBMITTED IN ACCORDANCE WITH PART VI OF THIS PERMIT. THESE RECORDS MUST BE MAINTAINED AT THE PERMITTEE'S PRIMARY PLACE OF BUSINESS OR AT A DESIGNATED ALTERNATIVE LOCATION ONCE THE CONSTRUCTION ACTIVITY HAS CEASED AT THE PERMITTED SITE. THIS PERIOD MAY BE EXTENDED BY REQUEST OF THE EPD AT ANY TIME UPON WRITTEN NOTIFICATION TO THE PERMITTEE.

REVISIONS:	
C ADDENDUM #1	09/07/18

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DSGN: MB/GD DRWN: DS

DWG. NAME: EROSION CONTROL

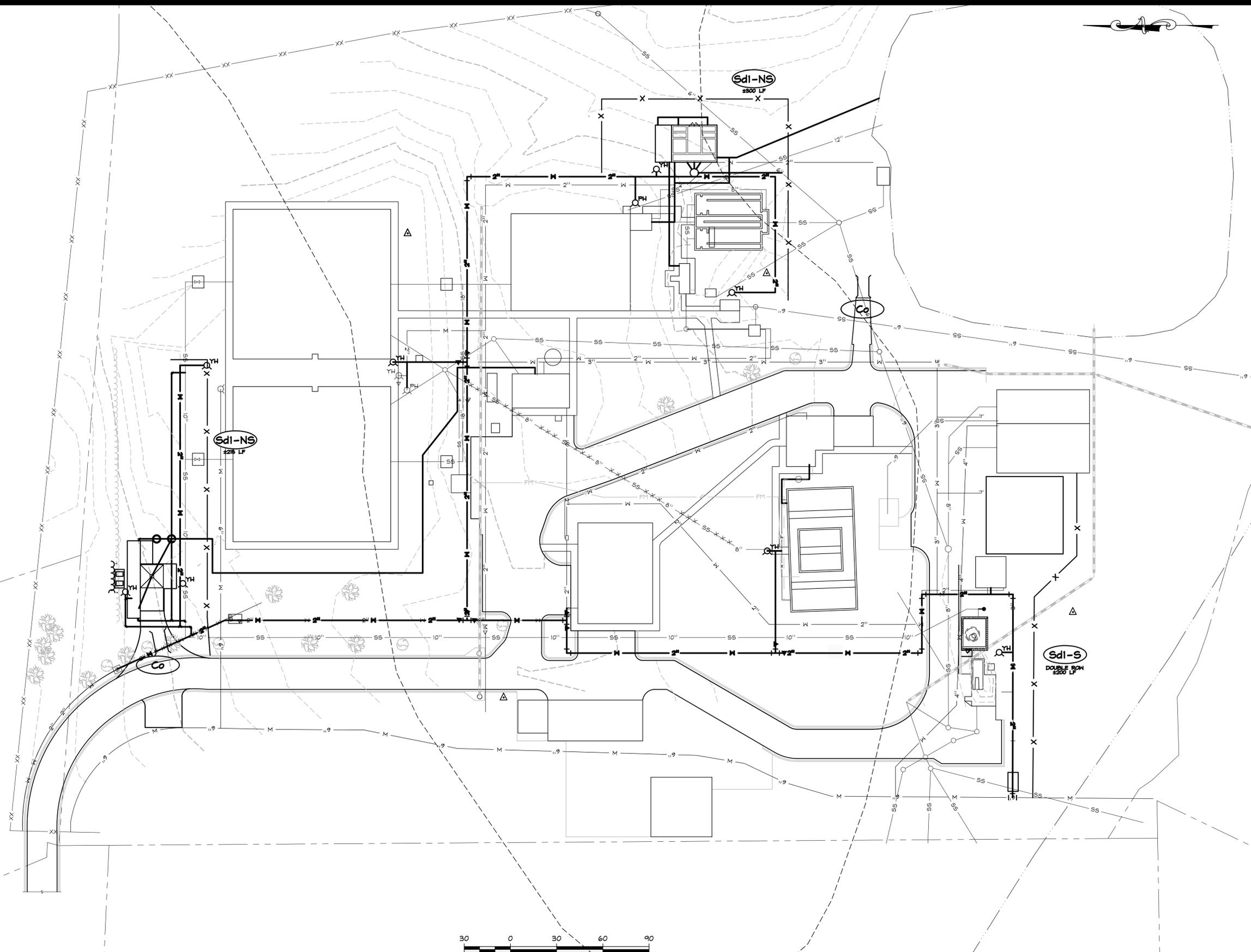
PROJ. NO.: S9100.013

DATE: JULY 2018

SHEET NO. EC3 OF 48 SHEETS

07/13/2018

NPDES PERMIT



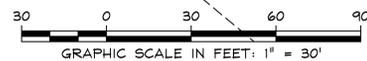
REVISIONS:	
C	ADDENDUM #1 09/07/18

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 DSGN: MB/GD DRWN: DS
 DWG. NAME: EROSION CONTROL
 PROJ. NO.: S9100.013
 DATE: JULY 2018
 SHEET NO. **EC4**
 OF 48 SHEETS

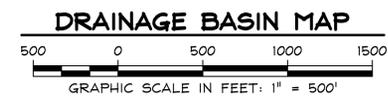
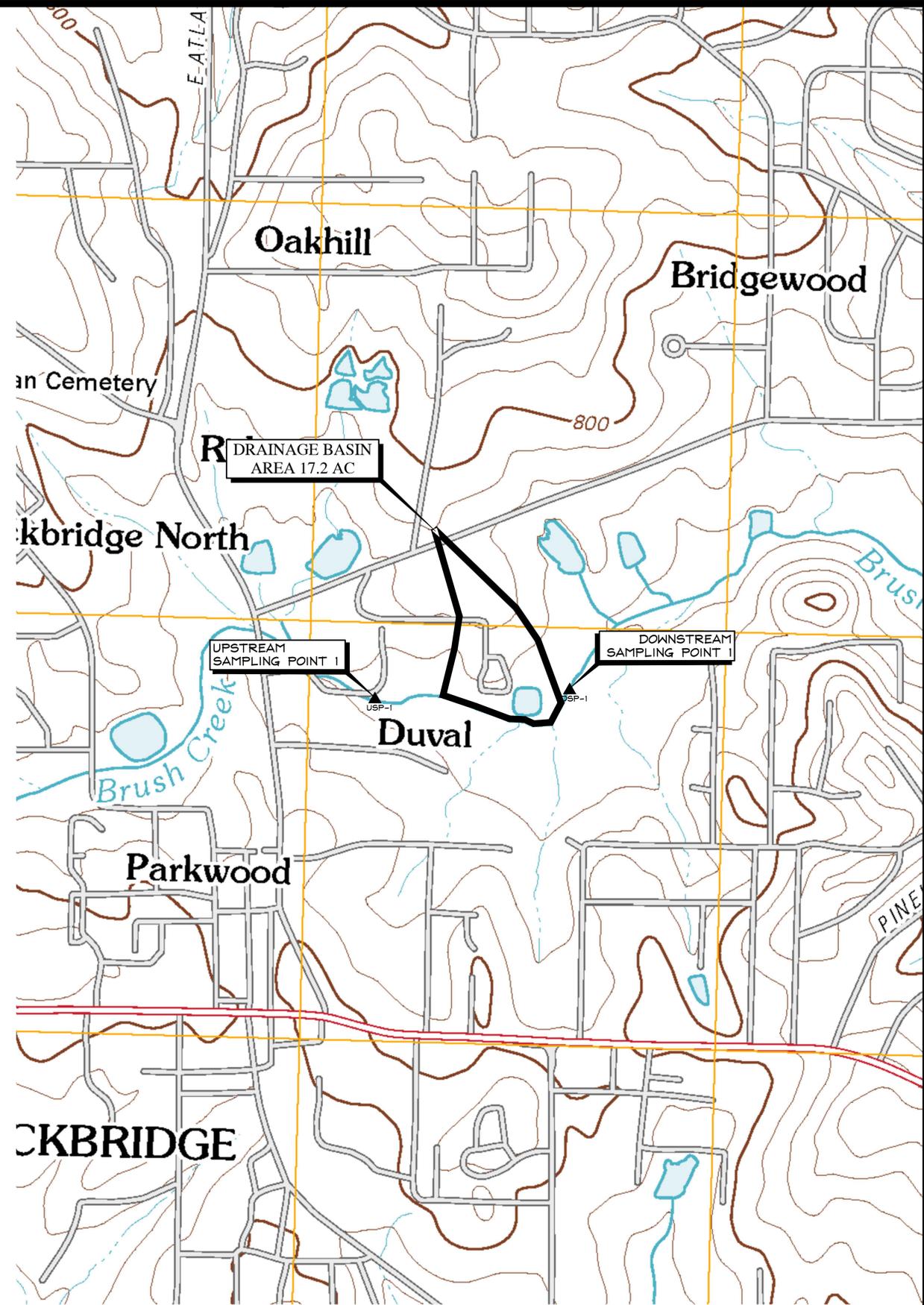
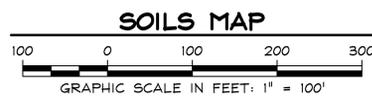
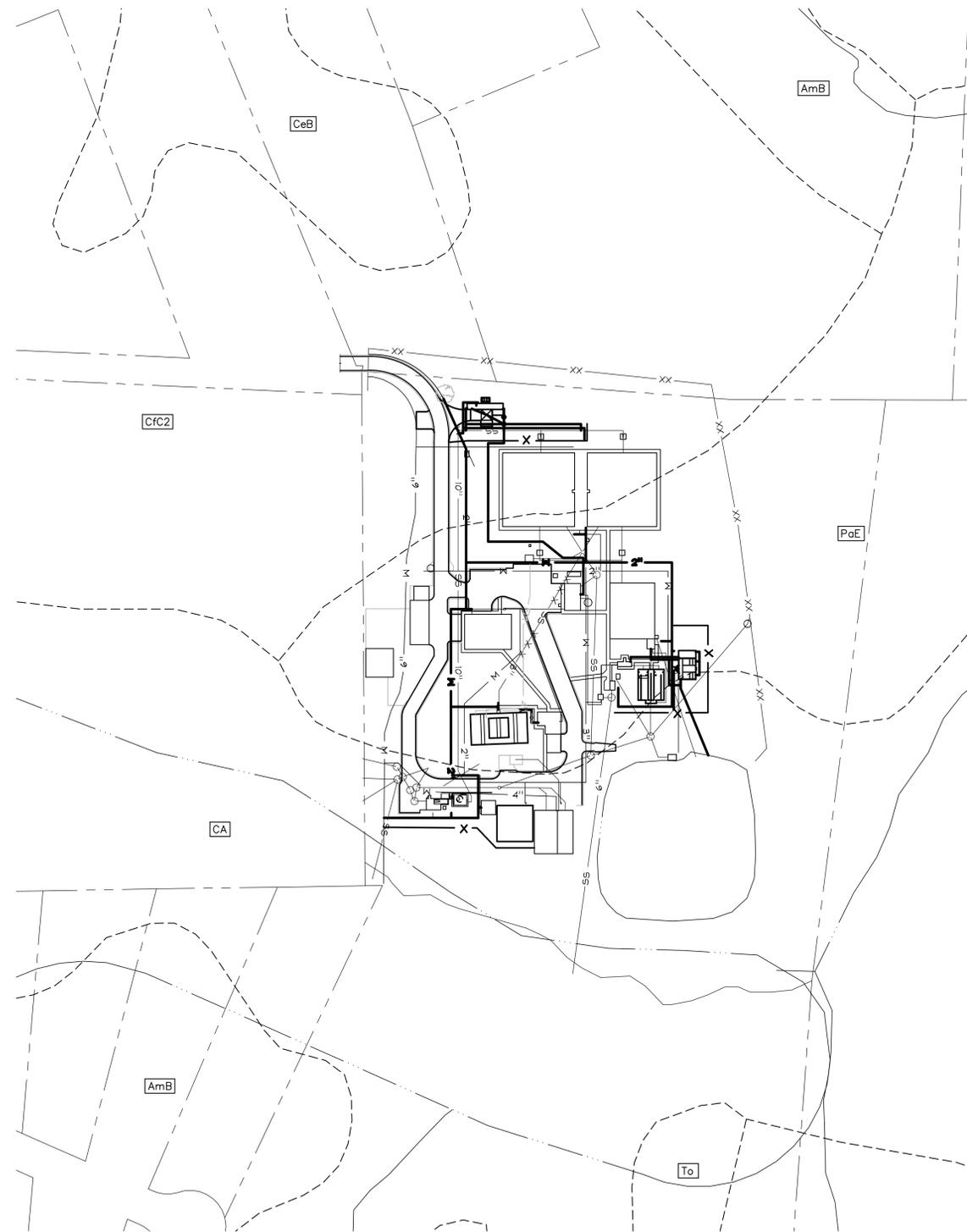
Ds1 TO BE PLACED ON
Ds2 ALL DISTURBED AREAS
Ds3 TO MATCH EXISTING
 CONDITIONS



EROSION CONTROL PLAN



SOILS LEGEND	
SYMBOL	SOIL NAME
AmB	APPLING SANDY LOAM, 2 TO 6 PERCENT SLOPES
CA	CARTECAY LOAM, 0 TO 2 PERCENT SLOPES, FREQUENTLY FLOODED
CeB	CECIL SANDY LOAM, 2 TO 6 PERCENT SLOPES
CFC2	CECIL SANDY CLAY LOAM, 6 TO 10 PERCENT SLOPES, ERODED
PoC	PACOLET SANDY LOAM, 6 TO 10 PERCENT SLOPES
To	TOCCOA SANDY LOAM, 0 TO 2 PERCENT SLOPES, OCCASIONALLY FLOODED



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DSGN: MB/GD DRWN: DS

DWG. NAME: EROSION CONTROL

PROJ. NO.: S9100.013

DATE: JULY 2018

SHEET NO. EC5

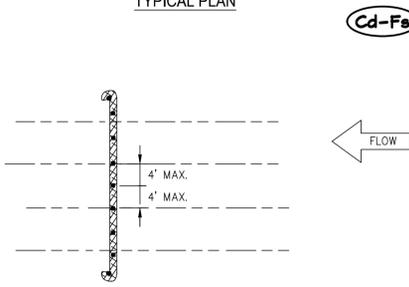
OF 48 SHEETS



MAPS

COMPOST SOCKS FOR CHECK DAMS

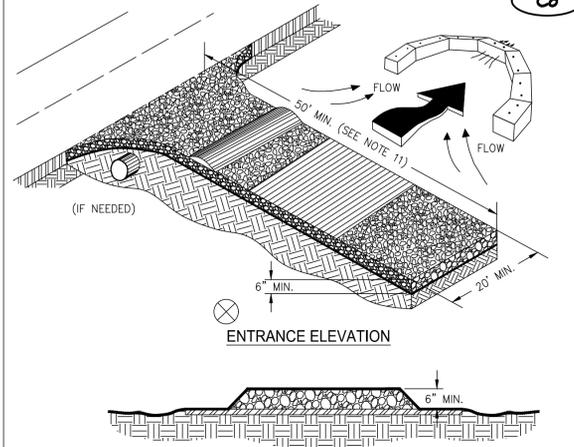
TYPICAL PLAN



- NOTES:**
1. ALL MATERIAL TO MEET SPECIFICATIONS.
 2. PLACE ONE STAKE AT THE CENTER OF THE DITCH/CHANNEL. ALSO PLACE STAKES AT THE BED/BANK JUNCTION AND AT END OF THE DEVICE NOT SPACED MORE THAN 4 FEET APART.
 3. SEDIMENT SHOULD BE REMOVED FROM BEHIND THE CHECK DAM ONCE THE ACCUMULATED HEIGHT HAS REACHED 1/2 THE HEIGHT OF THE CHECK DAM.
 4. CHECK DAMS CAN BE DIRECT SEEDED AT THE TIME OF INSTALLATION.
 5. MINIMUM STAKING DEPTH FOR SAND, SILT, AND CLAY SHALL BE 18".

CRUSHED STONE CONSTRUCTION EXIT

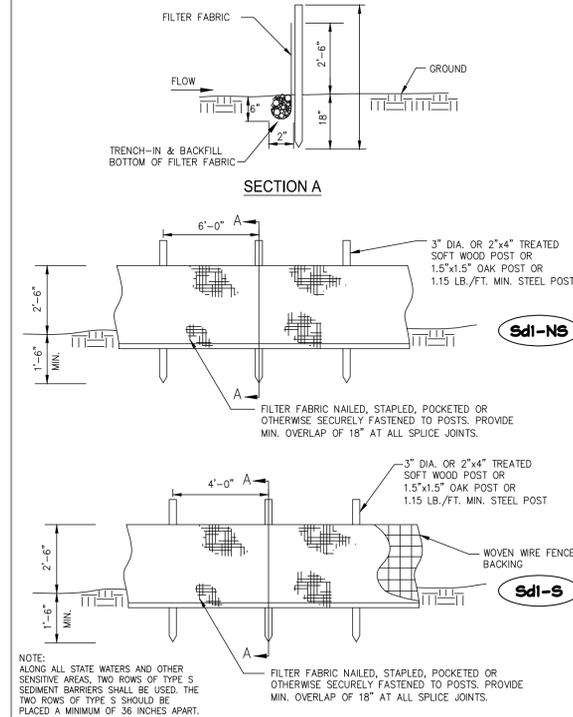
EXIT DIAGRAM



- 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.
 11. WHEN THE CONSTRUCTION IS LESS THAN 50' FROM THE PAVED ACCESS, THE LENGTH SHALL BE FROM THE EDGE OF EXISTING PAVEMENT TO THE PERMITTED BUILDING BEING CONSTRUCTED.

SEDIMENT BARRIER - SILT FENCE

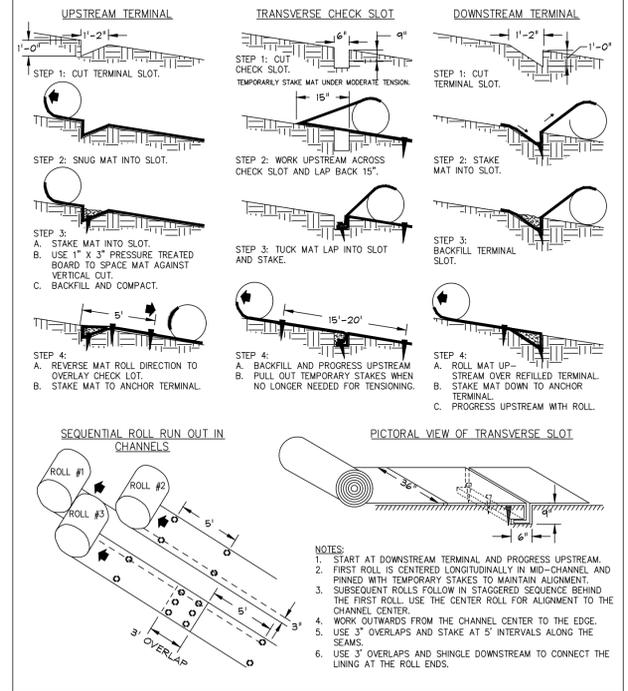
NOTE: SILT FENCE INSTALLATION & MATERIALS SHALL MEET THE MINIMUM REQUIREMENTS OF SECTION 171 OF THE GA DOT SPECIFICATION (LATEST EDITION)



- NOTE:** ALONG ALL STATE WATERS AND OTHER SENSITIVE AREAS, TWO ROWS OF TYPE S SEDIMENT BARRIERS SHALL BE USED. THE TWO ROWS OF TYPE S SHOULD BE PLACED A MINIMUM OF 36 INCHES APART.

TYPICAL INSTALLATION GUIDELINES FOR ROLLED EROSION CONTROL PRODUCTS (RECP)

BLANKET AND MATTING CROSS-SECTIONS



- NOTES:**
1. START AT DOWNSTREAM TERMINAL AND PROGRESS UPSTREAM.
 2. FIRST ROLL IS CENTERED LONGITUDINALLY IN MID-CHANNEL AND PINNED WITH TEMPORARY STAKES TO MAINTAIN ALIGNMENT.
 3. SUBSEQUENT ROLLS FOLLOW IN STAGGERED SEQUENCE BEHIND THE FIRST ROLL. USE THE CENTER ROLL FOR ALIGNMENT TO THE CHANNEL CENTER.
 4. WORK OUTWARDS FROM THE CHANNEL CENTER TO THE EDGE.
 5. USE 3' OVERLAPS AND STAKE AT 5' INTERVALS ALONG THE SEAMS.
 6. USE 3' OVERLAPS AND SINGLE DOWNSTREAM TO CONNECT THE LINING AT THE ROLL ENDS.

REVISIONS:		
C ADDENDUM #1		09/07/18

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DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)

Ds1

DEFINITION: Applying plant residues or other suitable materials, produced on the site if possible, to the soil surface.

CONDITIONS: Mulch or temporary grassing shall be applied to all exposed areas within 14 days of disturbance. Mulch can be used as a singular erosion control device for up to six months, but it shall be applied at the appropriate depth, depending on the material used, anchored, and have a continuous 90% cover or greater of the soil surface. Maintenance shall be required to maintain appropriate depth and 90% cover. Temporary vegetation may be employed instead of mulch if the area will remain undisturbed for less than six months. If an area will remain undisturbed for greater than six months, permanent vegetative techniques shall be employed.

SPECIFICATIONS: MULCHING WITHOUT SEEDING
This standard applies to grades or cleared areas where seedings may not have a suitable growing season to develop an erosion retardant cover, but can be stabilized with a mulch cover.

Site Preparation
 1. Grade to permit the use of equipment for applying and anchoring mulch.
 2. Install needed erosion control measures as required such as dikes, diversions, berms, terraces and sediment barriers.
 3. Loosen compact soil to a minimum depth of 3 inches.

Mulching Materials
 Select one of the following materials and apply at the depth indicated:
 1. Dry straw or hay shall be applied at a depth of 2 to 4 inches providing complete soil coverage. One advantage of this material is easy application.
 2. Wood waste (chips, sawdust or bark) shall be applied at a depth of 2 to 3 inches. Organic material from the clearing stage of development should remain on site, be chipped, and applied as mulch. This method of mulching can greatly reduce erosion control costs.
 3. Cutback asphalt (slow curing) shall be applied at 1200 gallons per acre (or 1/4 gallon per sq.yd.).
 4. Polyethylene film shall be secured over banks or stockpiled soil material for temporary protection. This material can be salvaged and reused.

Applying Mulch
 When mulch is used without seeding, mulch shall be applied to provide full coverage of the exposed area.
 1. Dry straw or hay mulch and wood chips shall be applied uniformly by hand or by mechanical equipment.
 2. If the area will eventually be covered with perennial vegetation, 20-30 pounds of nitrogen per acre in addition to the normal amount shall be applied to offset the uptake of nitrogen caused by the decomposition of the organic mulches.
 3. Cutback asphalt shall be applied uniformly. Care should be taken in areas of pedestrian traffic due to problems of "tracking in" or damage to shoes, clothing, etc.
 4. Apply polyethylene film on exposed areas.

Anchoring Mulch
 1. Straw or hay mulch can be pressed into the soil with a disk harrow with the disk set straight or with a special "packer disc". Disks may be smooth or serrated and should be 20 inches or more in diameter and 8 to 12 inches apart. The edges of the disk should be dull enough not to cut the mulch but to press it into the soil leaving much of it in an erect position. Straw or hay mulch shall be anchored immediately after application. Straw or hay mulch spread with special blower-type equipment may be anchored with emulsified asphalt (Grade AE-5 or SS-1). The asphalt emulsion shall be sprayed onto the mulch as it is ejected from the machine. Use 100 gallons of emulsified asphalt and 100 gallons of water per ton of mulch. Tackifiers and binders can be substituted for emulsified asphalt. Please refer to specification 1b.
 -Tackifiers and Binders: Plastic mesh or netting with mesh no larger than one inch by one inch shall be installed according to manufacturer's specifications.
 2. Netting of the appropriate size shall be used to anchor wood waste. Openings of the netting shall not be larger than the average size of the wood waste chips.
 3. Polyethylene film shall be anchor trenched at the top as well as incrementally as necessary. DEFINITION App

DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)

Ds2

DEFINITION: The establishment of temporary vegetative cover with fast growing seedings for seasonal protection on disturbed or denuded areas.

CONDITIONS: Temporary grassing, instead of mulch, can be applied to rough graded areas that will be exposed for less than six months. Temporary vegetative measures should be coordinated with permanent measures to assure economical and effective stabilization. Most types of temporary vegetation are ideal to use as comparison crops until the permanent vegetation is established, seeded.

SEEDING RATES FOR TEMPORARY SEEDING
 Refer to Temporary Vegetative Covers Chart

SPECIFICATIONS: Grading and Shaping
 Excessive water run-off shall be reduced by properly designed and installed erosion control practices such as closed drains, ditches, dikes, diversions, sediment barriers and others. No shaping or grading is required if slopes can be stabilized by hand-seeded vegetation or if hydraulic seeding equipment is to be used.

Seedbed Preparation
 When a hydraulic seeder is used, seedbed preparation is not required. When using conventional or handseeding, seedbed preparation is not required if the soil material is loose and not seeded by rainfall. When soil has been seeded by rainfall or consists of smooth cut slopes, the soil shall be pitted, trenched or otherwise scarified to provide a place for seed to lodge and germinate.

Lime and Fertilizer
 Agricultural lime is required unless soil tests indicate otherwise. Apply agricultural lime at a rate of one ton per acre. Graded areas require lime application. Soils can be tested to determine if fertilizer is needed. On reasonably fertile soils or soil material, fertilizer is not required. For soils with very low fertility, 500 to 700 pounds of 10-10-10 fertilizer or the equivalent per acre (12-16 lbs./1,000 sq. ft.) shall be applied. Fertilizer should be applied before land preparation and incorporated with a disk, ripper or chisel.

Seeding
 Select a grass or grass-legume mixture suitable to the area and season of the year. Seed shall be applied uniformly by hand, cyclone seeder, drill, cultipacker seeder, or hydraulic seeder (slurry including seed and fertilizer). Drill or cultipacker seeders should normally place seed one-quarter to one-half inch deep. Appropriate depth of planting is ten times the seed diameter. Soil should be "raked" lightly to cover seed with soil if seeded by hand.

Mulching
 Temporary vegetation can, in most cases, be established without the use of mulch. Mulch without seeding should be considered for short term protection. Refer to Ds1 - Disturbed Area Stabilization (With Mulching Only).

Irrigation
 During times of drought, water shall be applied at a rate not causing runoff and erosion. The soil shall be thoroughly wetted to a depth that will insure germination of the seed. Subsequent applications should be made when needed.

DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION)

Ds3

DEFINITION: The planting of perennial vegetation such as trees, shrubs, vines, grasses, or legumes on exposed areas for final permanent stabilization. Permanent perennial vegetation shall be used to achieve final stabilization.

CONDITIONS: Permanent perennial vegetation is used to provide a protective cover for exposed areas including cuts, fills, dams, and other denuded areas.

SEEDING RATES FOR PERMANENT SEEDING
 Refer to Permanent Vegetative Covers Chart

SPECIFICATIONS: Grading and Shaping
 Grading and shaping may not be required where hydraulic seeding and fertilizing equipment is to be used. Vertical banks shall be sloped to enable plant establishment.

When conventional seeding and fertilizing are to be done, grade and shape where feasible and practical, so that equipment can be used safely and efficiently during seedbed preparation, seeding, mulching and maintenance of the vegetation. Concentrations of water that will cause excessive soil erosion shall be diverted to a safe outlet. Diversions and other treatment practices shall conform with the appropriate standards and specifications.

Seedbed Preparation
 Seedbed preparation may not be required where hydraulic seeding and fertilizing equipment is to be used. When conventional seeding is to be used, seedbed preparation will be done as follows:

- Broadcast plantings**
1. Tillage at a minimum, shall adequately loosen the soil to a depth of 4 to 6 inches; alleviate compaction; incorporate lime and fertilizer; smooth and firm the soil; allow for the proper placement of seed, sprigs, or plants; and allow for the anchoring of straw or hay mulch if a disk is to be used.
 2. Tillage may be done with any suitable equipment.
 3. Tillage should be done on the contour where feasible.
 4. On slopes too steep for the safe operation of tillage equipment, the soil surface shall be pitted or trenched across the slope with appropriate hand tools to provide two places 6 to 8 inches apart in which seed may lodge and germinate. Hydraulic seeding may also be used.

Individual Plants

1. Where individual plants are to be set, the soil shall be prepared by excavating holes, opening furrows, or dibble planting.
2. For nursery stock plants, holes shall be large enough to accommodate roots without crowding.
3. Where pine seedlings are to be planted, subsoil under the row 36 inches deep on the contour four to six months prior to planting. Subsoiling should be done when the soil is dry, preferably in August or September.

Planting
Hydraulic Seeding
 Mix the seed (inoculated if needed), fertilizer, and wood cellulose or wood pulp fiber mulch with water and apply in a slurry uniformly over the area to be treated. Apply within one hour after the mixture is made.

Conventional Seeding
 Seeding will be done on a freshly prepared and firmed seedbed. For broadcast planting, use a cultipacker seeder, drill, rotary seeder, other mechanical seeder, or hand seeding to distribute the seed uniformly over the area to be treated. Cover the seed lightly with 1/8 to 1/4 inch of soil for small seed and 1/2 to 1 inch for large seed when using a cultipacker or other suitable equipment.

No-Till Seeding
 No-till seeding is permissible into annual cover crops when planting is done following maturity of the cover crop or if the temporary cover stand is sparse enough to allow adequate growth of the permanent (perennial) species. No-till seeding shall be done with appropriate no-till seeding equipment. The seed must be uniformly distributed and planted at the proper depth.

Individual Plants
 Shrubs, vines and sprigs may be planted with appropriate planters or hand tools. Pine trees shall be planted manually in the subsoil furrow. Each plant shall be set in a manner that will avoid crowding the roots. Nursery stock plants shall be planted at the same depth or slightly deeper than they grew at the nursery. The tips of vines and sprigs must be at or slightly above the ground surface. Where individual holes are dug, fertilizer shall be placed in the bottom of the hole, two inches of soil shall be added and the plant shall be set in the hole.

Mulching
 Mulch is required for all permanent vegetation applications. Mulch applied to seeded areas shall achieve 75% soil cover. Select the mulching material from the following and apply as indicated:
 1. Dry straw or dry hay of good quality and free of weed seeds can be used. Dry straw shall be applied at the rate of 2 tons per acre. Dry hay shall be applied at a rate of 2 1/2 tons per acre.
 2. Wood cellulose mulch or wood pulp fiber shall be used with hydraulic seeding. It shall be applied at the rate of 500 pounds per acre. Dry straw or dry hay shall be applied (at the rate indicated above) after hydraulic seeding.
 3. One thousand pounds of wood cellulose or wood pulp fiber, which includes a tackifier, shall be used with hydraulic seeding on slopes 3/4:1 or steeper.
 4. Sericea lespedeza hay containing mature seed shall be applied at a rate of three tons per acre.
 5. Pine straw or pine bark shall be applied at a thickness of 3 inches for bedding purposes. Other suitable materials in sufficient quantity may be used where ornamentals or other ground covers are planted. This is not appropriate for seeded areas.
 6. When using temporary erosion control blankets or block sod, mulch is not required.
 7. Bituminous treated roving may be applied on planted areas on slopes, in ditches or dry waterways to prevent erosion. Bituminous treated roving shall be applied within 24 hours after an area has been planted. Application rates and materials must meet Georgia Department of Transportation specifications.

Wood cellulose and wood pulp fibers shall not contain germination or growth inhibiting factors. They shall be evenly dispersed when agitated in water. The fibers shall contain a dye to allow visual metering and aid in uniform application during seeding.

Applying Mulch
 Straw or hay mulch will be spread uniformly within 24 hours after seeding and/or planting. The mulch may be spread by blower-type spreading equipment, other spreading equipment or by hand. Mulch shall be applied to cover 75% of the soil surface. Wood cellulose or wood pulp fiber mulch shall be applied uniformly with hydraulic seeding equipment.

Anchoring Mulch
 Anchor straw or hay mulch immediately after application by one of the following methods:
 1. Emulsified asphalt can be (a) sprayed uniformly onto the mulch as it is ejected from the blower machine or (b) sprayed on the mulch immediately following mulch application when straw or hay is spread by methods other than special blower equipment.
 The combination of asphalt emulsion and water shall consist of a homogeneous mixture satisfactory for spraying. The mixture shall consist of 100 gallons of grade SS-1h or CSS-1h emulsified asphalt and 100 gallons of water per ton of mulch. Care shall be taken at all times to protect state waters, the public, adjacent property, pavements, curbs, sidewalks, and all other structures from asphalt discoloration.
 2. Hay and straw mulch shall be pressed into the soil immediately after the mulch is spread. A special "packer disk" or disk harrow with the disks set straight may be used. The disks may be smooth or serrated and should be 20 inches or more in diameter and 8 to 12 inches apart. The edges of the disks shall be dull enough to press the mulch into the ground without cutting it, leaving much of it in an erect position. Mulch shall not be plowed into the soil.
 3. Synthetic tackifiers or binders approved by GDOT shall be applied in conjunction with or immediately after the mulch is spread. Synthetic tackifiers shall be mixed and applied according to manufacturer's specifications. Refer to 1b - Tackifiers and Binders.
 4. Rye or wheat can be included with Fall and Winter plantings to stabilize the mulch. They shall be applied at a rate of one-quarter to one half bushel per acre.
 5. Plastic mesh or netting with mesh no larger than one inch by one inch may be needed to anchor straw or hay mulch on unstable soils and concentrated flow areas. These materials shall be installed and anchored according to manufacturer's specifications.

Irrigation
 Irrigation shall be applied at a rate that will not cause runoff.

EROSION & SEDIMENTATION CONTROL DETAILS

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THIS LINE IS ONE INCH LONG WHEN DRAWING IS PLOTTED FULL SCALE

DSGN: MB/GD DRWN: DS

DWG. NAME: EROSION CONTROL

PROJ. NO.: S9100.013

DATE: JULY 2018

SHEET NO. 6 OF 18 SHEETS

EC6

07/13/2018