



Forsyth County Procurement

Donna H. Kukarola, CPPO, CPPB, Director

February 19, 2020

ADDENDUM #B

Bid 20-07-2210

For: Providing all labor, equipment and materials for the construction of an outdoor firing range for the Forsyth County Sheriff's Office. Range to be located at 9480 Old Federal Road.

This addendum supersedes and supplements all portions of the bidding documents and becomes part of the contract documents for the above-referenced project.

Where any item called for in the specifications or indicated on the drawings is supplemented hereby, the original requirements shall remain in effect.

Where any original item is amended, voided or superseded hereby, the provision of such item not so specifically amended, voided or superseded shall remain in effect.

PART 1 – Clarifications from Pre-Bid 2/9/2020

1. Work to be completed within 120 calendar days from issuance of Notice to Proceed.
2. Sign in sheet has been posted
3. Coordination with the target installer will be required.
4. Grading is being provided as a donation; fine grading will be included as part of this scope of work.
5. Bid Schedule will be changed to a Unit Tabulation, reference attached "Exhibit A".
- 6. Bid closing date has been extended to March 12, 2020 2:00 p.m., all other closing information remains the same.**
7. Clarification on ADA parking to be concrete as indicated on contact documents and clarified under Addendum B.
8. Site visit has been scheduled for Friday, February 28, 2020 @ 10:30 a.m. Contact information is Mr. Scott Mann, 404 655 2834. He can provide access to the site. This will be the only time available.

PART 2 – Questions Received (response in *italics*)

1. In the pre-bid meeting it was clarified that all grading is by Others and not to be included in the GC's scope of work. To confirm, we're to price the finishes noted from subgrade, +/- 0.1'?
 - a. **Yes**
2. Will the placement of soils by others be evaluated by a testing company for proper compaction?
This is included in scope and provided by the GC.
3. Will all slopes be stabilized by the Grader doing the fill work?
Yes
4. To what extent will GC be responsible to seed and straw bare disturbed areas for completion of the project?
Undetermined at this point. Will be determined by initial grading contractor. GC to factor this into price as a deductive alternate and can be removed if taken.
5. All Silt fence and Erosion control measures for grading will be installed by Owner grading contractor, correct? Will GC be responsible to remove when project is complete?
Yes to both.
6. It was noted in the pre-bid meeting the intent was to only pave the two handicap parking spaces and all other areas would be compacted stone. I don't see this is the way the plans show the paving, so can this be updated to clearly show the limits of paving and stone base?
Please see attached.
7. Are we to assume that there will be enough excess dirt to build the berms that are to be installed by GC in front of the ?
That is the intent. Owner will be working with Grading Contractor to stockpile sufficient dirt for berms as grading commences and progresses.
8. We are to price Hesco Barriers per AS 1.01 in lieu of the hay bale berms shown in the Civil plans? If Hesco, what product from Hesco should be used? The heights of the berms are different from the Civil to Architectural plans as well, so should we price the heights per AS 1.01?
Hesco barriers should be priced and should be at a minimum of 8' high. Please see attached revisions.
9. What finishes should be on the walls for the rooms being built? There is no finish schedule or details on the plans.
All wall finished, except steel building walls, are to be plywood T-1-11 or eq. painted with exterior paint. Finish schedule has been added.

10. How should the floors be finished, sealed concrete? Is there a spec we should be following?
Broom finish sealed concrete. Sealed concrete is addressed in the specification.
11. The shooting house or the Modular Classroom are in our scope of work, correct?
Shoot house and modular classroom are not in scope as indicated on drawings as "N.I.C."
12. Are we responsible for the temporary storage tank for sewer? Also, are we responsible to get the toilet permit?
Yes, however the water table is too high for a septic system and would be installing a vault only.
13. Panel schedules on E-6.11 show surge suppression units on Panel R and the 'SIT-TYP' panels but no spec is given for surge unit. Can spec be provided for surge units?
A surge suppression unit specification has been added.
14. E- 0.00 'LIGHT FIXTURE SCHEDULE' lists a type EL light for emergency lighting unit with battery back-up but none are shown on drawings. Were these left off by mistake?
Emergency lights shown in attachment.
15. E-0.00 'ELECTRICAL SYMBOLS LEGEND' shows Light Controls "D" as a dimmer. Drawings E-3.11 and E-3.12 shows light fixtures C and C1 fixtures (floodlights) connected to a "D" wall dimmer or switch. Is this correct?
Wall dimmers for lighting fixtures C and C1 are correct and were requested by the owner.
16. E-0.00, E-3.11, and E-3.12: Drawing E-3.11 and E-3.12 show ceiling fans but no fans are listed on the fixture schedule on E-0.00. Is someone else supplying the fans?
Fans have been added and are shown in attachment.
17. Pages C-1; C-4A; C-4B; C-4C; C-5 are 11x17, the rest are 24x36. Can these be resent in larger format, hard to read.
Sheets have been recreated in 24x36 and confirmed size.

PART 3 - CHANGES TO THE DRAWINGS

3-1 Sheet AS-1.01 ARCHITECTURAL SITE PLAN:

1. Show extents of concrete sidewalk and H/C parking slab with control and expansion joint annotation.
2. Reference Sheet AS-1.01 ARCHITECTURAL SITE PLAN revised under Addendum "B", dated February 19, 2020.

3-2 Sheet C-TS1 TITLE SHEET:

1. Updated the project site address.
2. Added notes for Forsyth County Water and Sewer Department
3. Updated owner information.
4. Reference Sheet C-TS1 TITLE SHEET revised under Addendum "B", dated February 19, 2020.

3-3 Sheet C-1 INDEX TO DRAWINGS / LEGEND / NOTES:

1. The FIRM panel number and date has been updated.
2. Reference Sheet C-1 INDEX TO DRAWINGS / LEGEND / NOTES revised under Addendum "B", dated February 19, 2020.

3-4 Sheet C-3 EXISTING TOPOGRAPHIC CONDITIONS:

1. Added limits of disturbance.
2. Reference Sheet C-3 EXISTING TOPOGRAPHIC CONDITIONS revised under Addendum "B", dated February 19, 2020.

3-5 Sheet C-4 GRADING PLAN:

1. Note added to clarify grading to be performed by others.
2. Added junction box and concrete headwall.
3. Reference Sheet C-4 GRADING PLAN revised under Addendum "B", dated February 19, 2020.

3-6 Sheet C-4A FIRING RANGE LAYOUT:

1. Paving area clearly defined vs stone pad.
2. Clarified use of Hesco barriers minimum of 8' tall for berms.
3. Added note for temporary storage tank for sewer.
4. Reference Sheet C-4A FIRING RANGE LAYOUT revised under Addendum "B", dated February 19, 2020.

3-7 Sheet C-4B DRAINAGE PLAN:

1. Headwall, and junction box added.
2. 18" pipe clarified as HDPE and added note regarding installation per GDOT.
3. Proposed drainage structure table added.

4. Paving area clearly defined vs stone pad.
5. Clarified use of Hesco barriers minimum of 8' tall for berms.
6. Reference Sheet C-4B DRAINAGE PLAN revised under Addendum "B", dated February 19, 2020.

3-8 Sheet C-4C WATER SUPPLY / FIRE PLAN:

1. Added notes for Forsyth County Water and Sewer Department.
2. Deleted details and replaced with details on sheets C-10 through C-11.
3. Connection to public water modified.
4. Fire hydrant location and detail removed per variance by Forsyth County Fire Marshal.
5. Reference Sheet C-4C WATER SUPPLY / FIRE PLAN revised under Addendum "B", dated February 19, 2020.

3-9 Sheet C-5 EROSION AND SEDIMENTATION CONTROL PLAN:

1. Erosion control measures provided by others clarified on plan sheet.
2. Paving area clearly defined vs stone pad.
3. Reference Sheet C-5 EROSION AND SEDIMENTATION CONTROL PLAN revised under Addendum "B", dated February 19, 2020.

3-10 Sheet C-5A EROSION AND SEDIMENTATION CONTROL NARRATIVE:

1. Language added for "Description of practices to provide cover for building materials and building products on site".
2. Appendix B rationale added.
3. Reference Sheet C-5A EROSION AND SEDIMENTATION CONTROL NARRATIVE revised under Addendum "B", dated February 19, 2020.

3-11 Sheet C-7 MISCELLANEOUS DETAILS:

1. Highlighted dewatering weir on detail 2.
2. Reference Sheet C-7 MISCELLANEOUS DETAILS revised under Addendum "B", dated February 19, 2020.

3-12 Sheet C-8 MISCELLANEOUS DETAILS:

1. Dewatering weir highlighted on detail 16.

2. Reference Sheet C-8 MISCELLANEOUS DETAILS revised under Addendum “B”, dated February 19, 2020.

3-13 Sheet C-9 MISCELLANEOUS DETAILS:

1. Outlet protection and tack-on berm detail added.
2. Junction box detail added.
3. Reference Sheet C-9 MISCELLANEOUS DETAILS revised under Addendum “B”, dated February 19, 2020.

3-14 Sheet C-10 MISCELLANEOUS DETAILS:

1. RPZ detail revised to match Forsyth County code.
2. Plan and profile of 18” pipes added.
3. Reference Sheet C-10 MISCELLANEOUS DETAILS revised under Addendum “B”, dated February 19, 2020.

3-15 Sheet C-11 MISCELLANEOUS DETAILS:

1. Details added to meet Forsyth County code.
2. Reference Sheet C-11 MISCELLANEOUS DETAILS revised under Addendum “B”, dated February 19, 2020.

3-16 Sheet A-5.11 EXTERIOR ELEVATIONS AND PARTITION TYPES:

1. Modified partition type A1 and A2 annotation referenced under E1/A-5.11 PARTITION TYPES.
2. Added Finish Legend.
3. Reference Sheet A-5.11 EXTERIOR ELEVATIONS AND PARTITION TYPES revised under Addendum “B”, dated February 19, 2020.

3-17 Sheet E-0.00 ELECTRICAL NOTES, SCHEDULES AND LEGENDS:

1. Added transient voltage surge suppression devices to the electrical symbol’s legend.
2. Updated ceiling fan symbol information in the electrical symbol’s legend.
3. Reference Sheet E-0.00 ELECTRICAL NOTES, SCHEDULES AND LEGENDS revised under Addendum “B”, dated February 19, 2020.

3-18 Sheet E-3.11 BLDG. A LIGHTING PLAN:

1. Updated keyed notes #1 and #3 to include fan information.
2. Updated lighting plan to show locations of twin head battery lighting units.
3. Reference Sheet E-3.11 BLDG. A LIGHTING PLAN revised under Addendum "B", dated February 19, 2020.

3-19 Sheet E-3.12 BLDG. B LIGHTING PLAN:

1. Updated keyed notes #1 and #3 to include fan information.
2. Updated lighting plan to show locations of twin head battery lighting units.
3. Reference Sheet E-3.12 BLDG. B LIGHTING PLAN revised under Addendum "B", dated February 19, 2020.

3-20 Sheet E-6.11 RISER DIAGRAM AND PANEL SCHEDULES:

1. Updated riser diagram to for transient voltage surge suppression devices.
2. Updated riser diagram to indicate typical SIT panel.
3. Reference Sheet E-6.11 RISER DIAGRAM AND PANEL SCHEDULES revised under Addendum "B", dated February 19, 2020.

PART 4 - CHANGES TO THE SPECIFICATIONS

4-1 SECTION 01 2620 – WEATHER DAYS:

1. Added spec section.
2. Specification Section 01 2620 – WEATHER DAYS Released under Addendum 'B', dated February 19, 2020.

END OF ADDENDUM NO. B

Bid Tab and Deductive Alternates

Addendum B

Bid 20-07-2210

ITEM

NUMBER	DESCRIPTION	UNITS	QUANTITY	UNIT COST	TOTAL
	Civil				
Civil-A 01	Mobilization and General Conditions	LS	1		
Civil-A 02	Fine Grade and Subgrade Preparation	Ac	3.50		
Civil-A 03	Single-Sided Excelsior Matting (Slope Stabilization), not including matting for tack-on berms	SF	100,000		
Civil-A 04	30' Wide All-weather Access Road and Compacted Stone Parking Area, including Fine Grading, Fabric and Stone	SY	7,000		
Civil-A 05	Hesco Barriers, 8' Tall Min.	EA	2		
Civil-A 06	18" Dia. Solid Double Walled HDPE CPP Water Tight Pipe	LF	652		
Civil-A 07	6" Dia. CPP French Drain Pipes, including Tee Fitting, Stone and Fabric	LF	1,800		
Civil-A 08	3' x 3' Concrete Junction Box	EA	1		
Civil-A 09	18" Dia. Concrete Headwall	EA	1		
Civil-A 10	Reinforced Concrete Slab-on-Grade for Handicap Parking Area, including concrete sidewalk	SF	1,300		
Civil-A 11	Tack-on Drainage Berm (3' Tall & Compacted to 95% of Standard Proctor Maximum Dry Density) with Double Sided Excelsior Matting, complete	LF	580		
Civil-A 12	Purchase and Install 1-1/4" PVC water line, including trench as shown on plans	LF	1,915		
Civil-A 13	3' x 3' Catch Basin	EA	14		
Civil-A 14	Install RPZ, connect to public water stub out (work by Forsyth County) and purchase and install RPZ, complete	LS	1		
Civil-A 15	Purchase and Install Astroturf	SF	15,000		
Civil-A 16	Retrofit Existing Overflow Structure to Add Weir	LS	1		
	Pistol Firing Range (Building A)				

PFR-A 01	Concrete Slab-on-Grade for Target	SF	2,788		
PFR-A 02	Timber Wall system for Targets	LF	160		
PFR-A 03	Reinforced Concrete Slab-on-Grade and footings for Pre-Engineered Building.	SF	4,025		
PFR-A 04	Pre-Engineered Building Structure	LS	1		
PFR-A 05	Wood Stud Partitions and Siding	LS	1		
PFR-A 06	Casework - Base Cabinets and Countertops	LF	39		
PFR-A 07	Continuous Counter	LF	81		
PFR-A 08	All Mechanical Scope	LS	1		
PFR-A 09	All Plumbing Scope	LS	1		
PFR-A 10	All Electrical Scope	LS	1		
Rifle Firing Range (Building B)					
RFR-A 01	Concrete Slab-on-Grade for Target	SF	1,680		
RFR-A 01	Timber Wall system for Targets	LF	80		
RFR-A 01	Reinforced Concrete Slab-on-Grade and footings for Pre-Engineered Building.	SF	2,024		
RFR-A 01	Pre-Engineered Building Structure	LS	1		
RFR-A 01	Casework - Base Cabinets and Countertops	LF	34		
RFR-A 01	Continuous Countertop	LF	45		
RFR-A 01	All Mechanical Scope	LS	1		
RFR-A 01	All Plumbing Scope	LS	1		
RFR-A 01	All Electrical Scope	LS	1		
General Contractor Fees					
GC 01	General Conditions (Percentage of Construction)	LS	1		
GC 02	Overhead and Profit (Percentage of Construction)	LS	1		

Total Bid Amount

\$

Deductive Alternates

DA 01	Maintainence and removal of silt fence and erosion control measures.	LS	1		
DA 02	Emerald Zoysia in lieu of Astroturf @ Pistol Range (Bldg A).	LS	1		
DA 03	Emerald Zoysia Grass in lieu of Astroturf @ Rifle Range (Bldg B)	LS	1		

DA 04	Delete Pistol Range pre-engineered building (Bldg A) in its entirety including building, partitions, toilets, slab on grade, casework, counters, mechanical, electrical and plumbing. Firing range and target areas to remain.	LS	1		
DA 05	Delete Rifle Range pre-engineered building (Bldg B) in its entirety including building, slab on grade, casework, counters and electrical. Firing range and target areas to remain.	LS	1		
DA 06	Reduce Pistol Range pre-engineered building (Bldg A) one bay (20' section).	LS	1		
DA 07	Delete providing seed and straw at disturbed graded areas	LS	1		

Authorized Signature

Date

Print Name and Title

Company Name

SECTION 01 2600 WEATHER DELAYS

PART 1 GENERAL

1.01 EXTENSIONS OF CONTRACT TIME

- A. If the basis exists for an extension of time in accordance with the General Conditions, an extension of time on the basis of weather may be granted only for the number of Weather Delay Days in excess of the number of days listed as the Standard Baseline for that month.

1.02 STANDARD BASELINE FOR AVERAGE CLIMATIC RANGE

- A. The Owner has reviewed weather data available from the National Oceanic and Atmospheric Administration (NOAA) and determined a Standard Baseline of average climatic range for the state of Georgia.
- B. Standard Baseline is defined as the normal number of calendar days for each month during which construction activity exposed to weather conditions is expected to be prevented and suspended by cause of adverse weather. Suspension of construction activity for the number of days each month as listed in the Standard Baseline is included in the Work and is not eligible for extension of Contract Time.
- C. Standard Baseline is as follows:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
12	11	8	7	7	6	7	5	4	5	6	11

1.03 ADVERSE WEATHER AND WEATHER DELAY DAYS

- A. Adverse Weather is defined as the occurrence of one or more of the following conditions within a twenty-four (24) hour day that prevents construction activity exposed to weather conditions or access to the site:
1. Precipitation (rain, snow, or ice) in excess of one-tenth inch (0.10") liquid measure.
 2. Temperatures that do not rise above that required for the day's construction activity, if such temperature requirement is specified or accepted as standard industry practice.
 3. Sustained wind in excess of twenty-five (25) m.p.h.
- B. Adverse Weather may include, if appropriate, "dry-out" or "mud" days:
1. Resulting from precipitation days that occur beyond the standard baseline
 2. Only if there is a hindrance to site access or sitework and Contractor has taken all reasonable accommodations to avoid such hindrance
 3. At a rate no greater than one (1) make-up day for each day or consecutive days of precipitation beyond the standard baseline that total one (1) inch or more, liquid measure, unless specifically recommended otherwise by the Designer.
- C. A Weather Delay Day may be counted if adverse weather prevents work on the project for fifty percent (50%) or more of the contractor's scheduled work day and critical path construction activities were included in the day's schedule, including a weekend day or holiday if Contractor has scheduled construction activity that day.
- D. Contractor shall take into account that certain construction activities are more affected by adverse weather and seasonal conditions than other activities, and that "dry-out" or "mud" days are not eligible to be counted as a Weather Delay Day until the standard baseline is exceeded. Hence, Contractor should allow for an appropriate number of additional days associated with the Standard Baseline days in which such applicable construction activities are expected to be prevented and suspended.

1.04 DOCUMENTATION AND SUBMITTALS

- A. Submit daily jobsite work logs showing which and to what extent critical path construction activities have been affected by weather on a monthly basis.
- B. Submit actual weather data to support claim for time extension obtained from nearest NOAA weather station or other independently verified source approved by Designer at beginning of project.

- C. Use Standard Baseline data provided in this Section when documenting actual delays due to weather in excess of the average climatic range.
- D. Organize claim and documentation to facilitate evaluation on a basis of calendar month periods, and submit in accordance with the procedures for Claims established in the General Conditions.
- E. If an extension of the Contract Time is appropriate, such extension shall be made in accordance with the provisions of the General Conditions, and the applicable General Requirements.

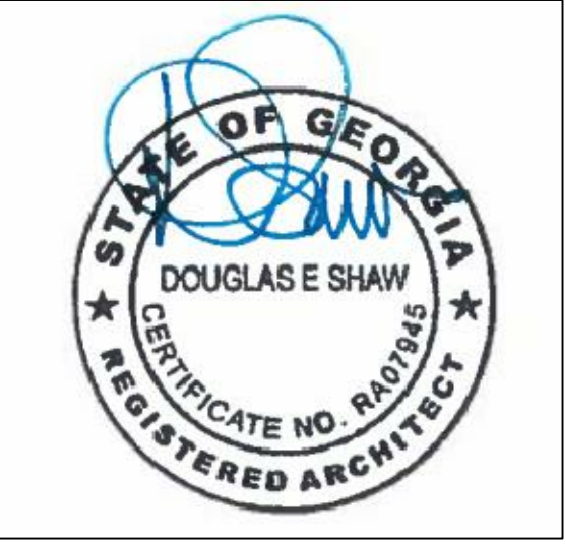
PART 2 PRODUCTS

2.01 Part not used.

PART 3 EXECUTION

3.01 Part not used.

END OF SECTION



OUTDOOR FIRING RANGE
for the
Forsyth County Sheriff's Department
5114 West Maple Street
Cumming, Georgia 30040

PRINT RECORD

No.	DATE	DESCRIPTION
12/16/2019	12/16/2019	PERMIT/PRICING SET
02/19/2020	02/19/2020	ADDENDUM B

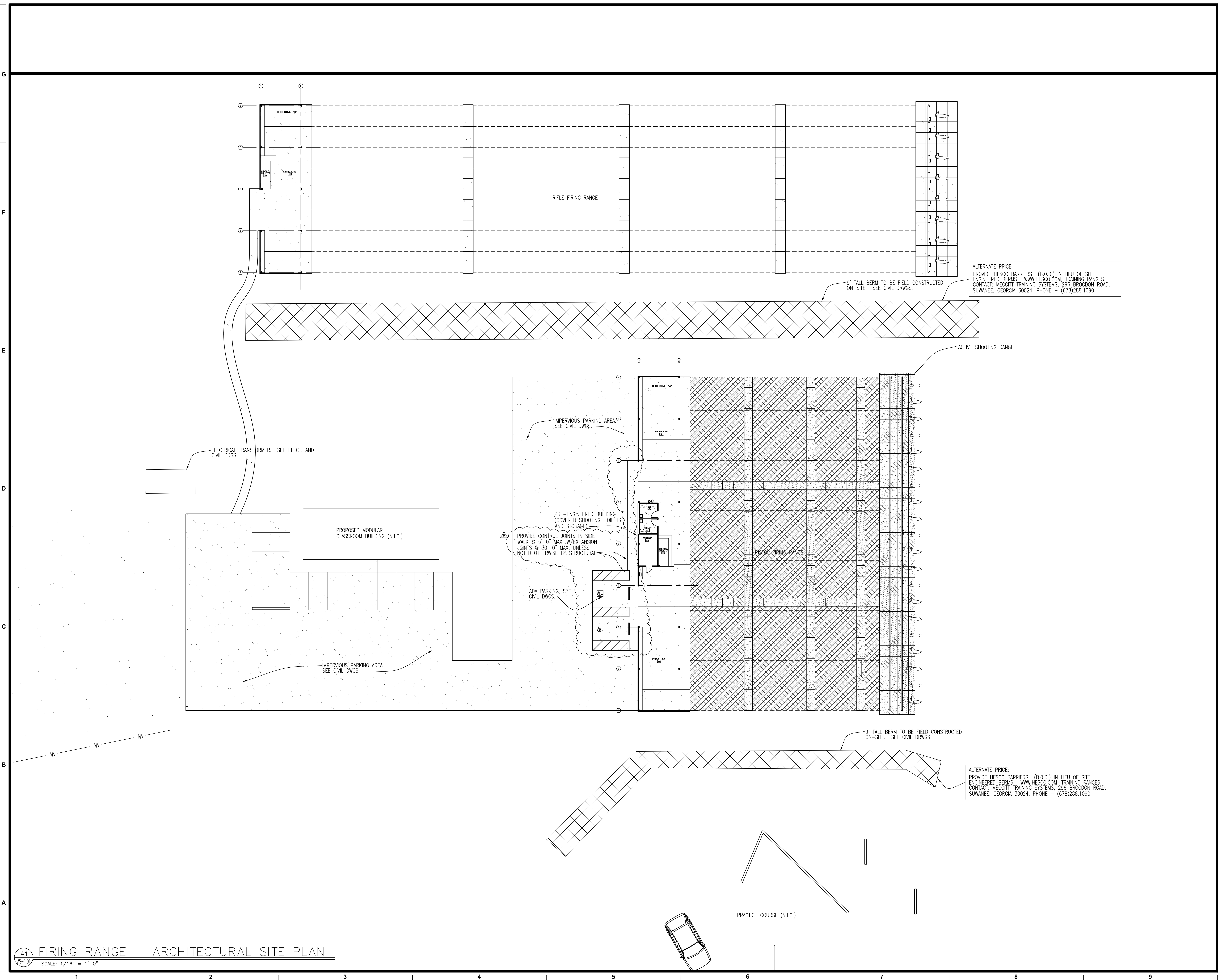
Drawn By	Checked By
JDG	JDG

Date	Job No.
12/16/2019	190490G

Sheet Title
ARCHITECTURAL SITE PLAN

Sheet No.
AS-1.01

RELEASED FOR CONSTRUCTION



A1 FIRING RANGE - ARCHITECTURAL SITE PLAN

SCALE: 1/16" = 1'-0"

1 2 3 4 5 6 7 8 9

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SITE DEVELOPMENT PLAN OUTDOOR FIRING RANGE

FORSYTH COUNTY SHERIFF'S DEPARTMENT FORSYTH COUNTY, GEORGIA DECEMBER 2019

SITE ADDRESS:
9470 OLD FEDERAL ROAD

NAME / ADDRESS AND PHONE NUMBER OF DEVELOPER / OWNER / PERMITTEE:
PROPERTY OWNER: EAGLE POINT LANDFILL, LLC C/O ADS WASTE HOLDINGS, INC.
ADDRESS: 300 COLONIAL CENTER PARKWAY
SUITE 230
ROSWELL, GEORGIA 30076
PHONE NUMBER: (770) 737-7900
DEVELOPER: FORSYTH COUNTY SHERIFF'S OFFICE
ADDRESS: 514 WEST MAPLE STREET
SUITE 104
CUMMING, GEORGIA 30040
PHONE NUMBER: (770) 888-8872

NAME OF 24-HOUR LOCAL CONTACT WHO IS RESPONSIBLE FOR EROSION AND SEDIMENT CONTROL:
NAME: CAPTAIN BILL FRANCO
TITLE: CAPTAIN - FORSYTH COUNTY SHERIFF'S OFFICE
PHONE NUMBER: OFFICE: (770) 888-8872
SITE ADDRESS: 514 WEST MAPLE STREET, SUITE 104
CUMMING, GEORGIA 30040

ENGINEER'S NAME ADDRESS AND PHONE NUMBER:
ENGINEER'S NAME: WILL GRANICH, P.E.
COMPANY NAME: HODGES, HARBIN, NEWBERRY, AND TRIBBLE, INC.
TITLE: CONSULTING ENGINEER
PHONE NUMBER: (478) 743-7175
ADDRESS: 3920 ARKWRIGHT ROAD, SUITE 101
MACON, GEORGIA 31210

PROJECT DESCRIPTION:
THIS PROJECT CONSISTS OF DEVELOPMENT OF AN OUTDOOR FIRING RANGE FOR THE FORSYTH COUNTY SHERIFF'S DEPARTMENT. THE EXISTING PROPERTY IS A SOIL BORROW AREA FOR EAGLE POINT LANDFILL. THE EXISTING SITE IS COVERED UNDER EXISTING SITE DEVELOPMENT PERMIT NO. 1308 SD190008. STORMWATER FOR THIS SITE WILL FLOW TO AN EXISTING SEDIMENT POND LOCATED EAST OF THE FIRING RANGE.

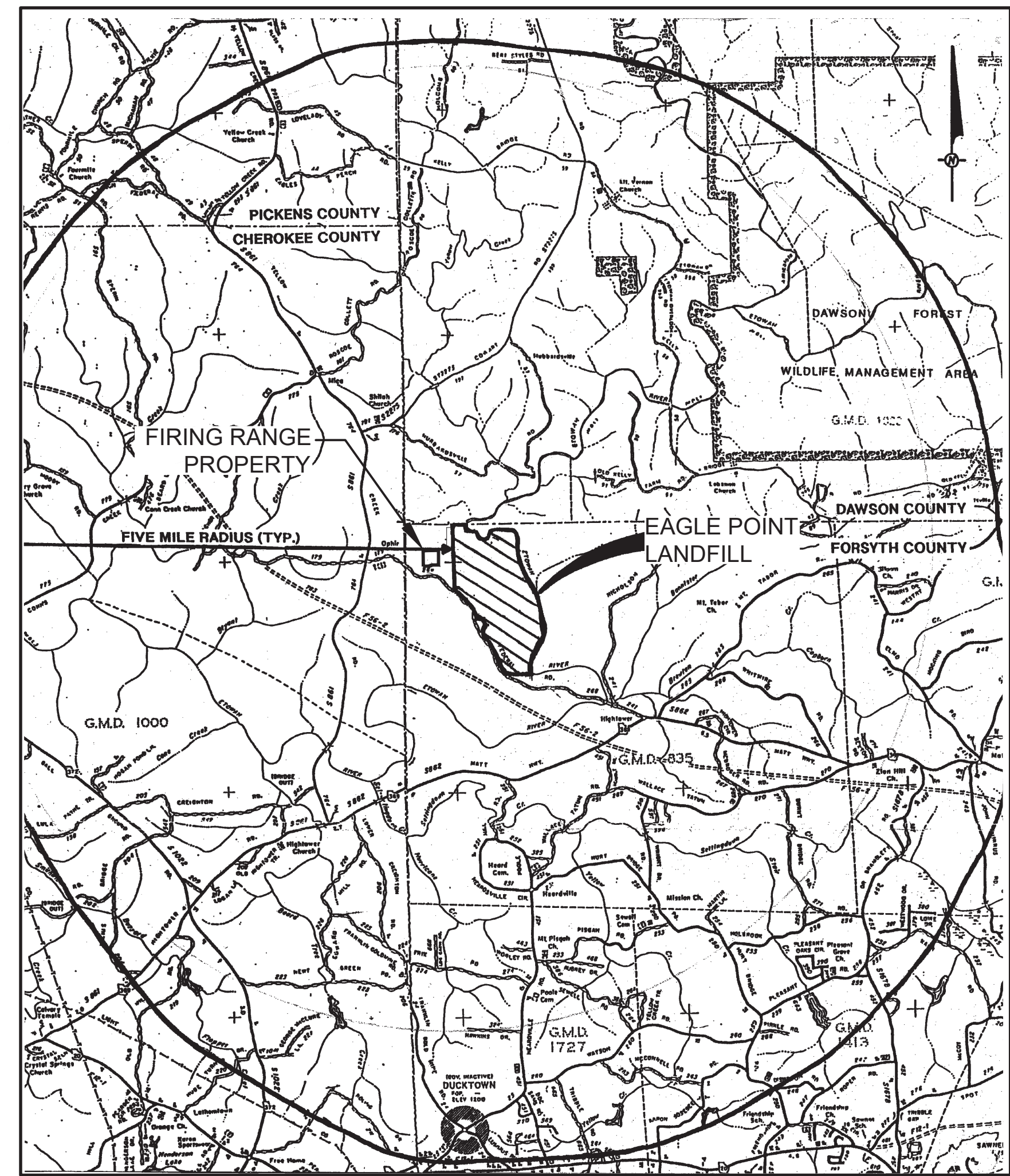
LAND LOT, DISTRICT, SECTION AND TAX MAP NUMBER:
LAND LOTS: 71
DISTRICT: THIRD DISTRICT
SECTION: FIRST SECTION
TAX MAP NUMBER(S): 001-014

ACREAGE AND DISTURBED ACREAGE:
TOTAL PROPERTY AREA: ± 16.86 ACRES
ACREAGE DISTURBED: 7.8 ACRES
NUMBER OF EMPLOYEES:
NUMBER OF EMPLOYEES: 0 (ON-SITE)

ENGINEERING NOTES:
ALL IMPROVEMENTS TO CONFORM WITH FORSYTH COUNTY CONSTRUCTION STANDARDS AND SPECIFICATIONS, LATEST EDITION.
IRRIGATION SYSTEMS ARE PROHIBITED ON ALL EXISTING AND PROPOSED COUNTY RIGHT-OF-WAY AND CONSIDERED TO BE A VIOLATION OF THE COUNTY'S ORDINANCE PROHIBITING UNPERMITTED RIGHT-OF-WAY ENCROACHMENTS.
FULL SERVICE DRIVES WILL REVERT TO RIGHT IN/RIGHT OUT DRIVES IF FORSYTH COUNTY DETERMINES THEY ARE CREATING TRAFFIC PROBLEMS AND/OR ACCIDENTS OR IF ROAD IS WIDENED TO A MULTI-LANE HIGHWAY WITH MEDIAN.
NO STRUCTURES, FENCES OR OTHER OBSTRUCTIONS MAY BE LOCATED WITHIN A DRAINAGE OR ACCESS EASEMENT WITHOUT PRIOR APPROVAL BY THE FORSYTH COUNTY DEPARTMENT OF ENGINEERING.
APPROVAL OF THESE PLANS DOES NOT CONSTITUTE APPROVAL BY FORSYTH COUNTY OF ANY LAND DISTURBING ACTIVITIES WITHIN WETLAND AREAS. IT IS THE RESPONSIBILITY OF THE PROPERTY OWNER TO CONTACT THE APPROPRIATE REGULATORY AGENCY FOR APPROVAL OF ANY WETLAND AREA DISTURBANCE.
NOTIFY FORSYTH COUNTY INSPECTOR 24 HOURS BEFORE THE BEGINNING PHASE OF CONSTRUCTION, (770) 781-2165.
APPROVAL OF THESE PLANS BY FORSYTH COUNTY IS SUBJECT TO, AND CONTINGENT UPON THE APPLICANT OBTAINING ANY AND ALL NECESSARY APPROVALS FROM ANY AND ALL APPLICABLE AGENCIES INCLUDING, BUT NOT LIMITED TO THE UNITED STATES ARMY CORPS OF ENGINEERS, THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, THE USDA-NRCS, GEORGIA DEPARTMENT OF NATURAL RESOURCES, GEORGIA ENVIRONMENTAL PROTECTION DIVISION, AND THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION.
MAXIMUM CUT SLOPES SHALL BE 2 HORIZONTAL TO 1 VERTICAL. CONTINUOUS FILL SLOPES TEN FEET IN HEIGHT OR LESS MAY BE 2 HORIZONTAL TO 1 VERTICAL. ALL CONTINUOUS FILL SLOPES THAT EXCEED TEN FEET IN HEIGHT MUST BE 3 HORIZONTAL TO 1 VERTICAL UNLESS: (A) A MECHANICALLY ENGINEERED STABILIZED SLOPE IS APPROVED BY THE FORSYTH COUNTY DIRECTOR OF ENGINEERING; OR (B) THE DESIGNED AND CONSTRUCTED SLOPES ARE CERTIFIED BY A REGISTERED ENGINEER EXPERIENCED IN GEOTECHNICAL ENGINEERING AND LICENSED IN THE STATE OF GEORGIA.
ALL UNDISTURBED BUFFERS SHALL BE IDENTIFIED WITH ORANGE, FOUR-FOOT TREE-SAVE FENCING PRIOR TO ANY LAND DISTURBANCE.
SITE IS NOT LOCATED WITHIN A 100-YEAR FLOODPLAIN AS PER FIRM PANEL NO. 13117C 0010F (LAST REVISED JUNE 7, 2019)

PLANNING AND COMMUNITY DEVELOPMENT NOTES:
THE NECESSARY SEPTIC SYSTEM COMPONENTS INCLUDING, A SETTLING TANK, DRAIN FIELD, AND BACK-UP DRAIN FIELD MUST BE PROVIDED WITHIN THE BOUNDARIES OF EACH INDIVIDUAL LOT.
CHAPTER 21, ARTICLE II, III, OR IV OVERLAY DISTRICTS ARE NOT APPLICABLE FOR THIS PROJECT.
CONSTRUCTION WASTES AND/OR VEGETATIVE MATERIAL MAY NOT BE BURNED OR BURIED AND MUST BE TAKEN TO A STATE APPROVED LANDFILL.
ALL STRUCTURES WILL COMPLY WITH THE FIRE SEPARATION DISTANCE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE AS ADOPTED AND AMENDED BY THE GA DEPARTMENT OF COMMUNITY AFFAIRS. APPROVAL OF THIS PERMIT WILL NOT JUSTIFY ANY DEVIATION FROM THE REQUIRED FIRE SEPARATION DISTANCES.
PER UDC 10-1-13 OUTSIDE CONSTRUCTION SHALL BE LIMITED TO THE HOURS OF 7:00 AM TO 7:00 PM MONDAY TO FRIDAY; 8:00 AM TO 6:00 PM SATURDAY; AND THERE WILL BE NO OUTSIDE CONSTRUCTION ON SUNDAY.
ALL UTILITY LINES SHALL BE INSTALLED UNDERGROUND.
REQUIRED LANDSCAPING MUST BE IN PLACE PRIOR TO THE APPROVAL OF AN AS-BUILT.
AS-BUILT REQUIRED FOR CO'S ON PROJECTS - PRIOR TO FINAL BUILDING INSPECTION.

EROSION, SEDIMENTATION & POLLUTION CONTROL PLAN NOTES:
THE DESIGN PROFESSIONAL WHO PREPARED THE ES&PC PLAN IS TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMPs WITHIN 7 DAYS AFTER INSTALLATION.
NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE 25 OR 50-FOOT UNDISTURBED STREAM BUFFERS AS MEASURED FROM THE POINT OF WRESTED VEGETATION OR WITHIN 25-FEET OF THE COASTAL MARSHLAND BUFFER AS MEASURED FROM THE JURISDICTIONAL DETERMINATION LINE WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS.
AMENDMENTS/REVISIONS TO THE ES&PC PLAN WHICH HAVE A SIGNIFICANT EFFECT ON BMP's WITH A HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL.
WASTE MATERIALS SHALL NOT BE DISCHARGED TO WATER OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.
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
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.
ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.
PETROLEUM STORAGE SHALL BE DONE IN ACCORDANCE WITH ONE OF THE TWO FOLLOWING METHODS TO PREVENT STORM WATER DISCHARGES ON THE SITE:
a. ALL PETROLEUM STORAGE CONTAINERS SHALL BE COVERED WITH PLASTIC SHEETING OR BE LOCATED UNDER A TEMPORARY ROOF.
b. ALL PETROLEUM STORAGE CONTAINERS SHALL BE LOCATED IN A SECONDARY CONTAINMENT AREA.



PROJECT SITE LOCATION
SCALE: 1" = 1 MILE

WATER AND SEWER DEPARTMENT
SOURCE OF WATER IS FORSYTH COUNTY WATER AND SEWER.
NOTIFY FORSYTH COUNTY WATER AND SEWER DEPARTMENT 24 HOURS PRIOR TO CONSTRUCTION (404) 623-4241.
CERTIFICATE OF OCCUPANCY WILL NOT BE ISSUED UNTIL FINAL INSPECTIONS COMPLETED BY FORSYTH COUNTY WATER AND SEWER DEPARTMENT.

DISCLAIMER:
HODGES, HARBIN, NEWBERRY, AND TRIBBLE, INC. (HHNT) HAVE PREPARED THESE PLANS ON BEHALF OF JERICO DESIGN GROUP AND THE FORSYTH COUNTY SHERIFF'S OFFICE TO OBTAIN THE SITE DEVELOPMENT PERMIT FOR THE OWNER. HHNT SHALL NOT BE HELD ACCOUNTABLE FOR THE PERMITTING AND DESIGN OF THE FIRING RANGE AS IT PERTAINS TO SAFETY OR OPERATIONAL USE OF THE FACILITY. THE SITE LAYOUT OF THE FACILITY AS IS SHOWN ON THESE PLANS WAS PREPARED BY THE FORSYTH COUNTY SHERIFF'S OFFICE. SITE PLANS FOR STRUCTURES, PLUMBING, ELECTRICAL, AND ALL OTHER UTILITIES WERE PREPARED BY OTHERS.

"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 direct supervision."

"I certify that I, as the professional who prepared the ES&PC Plan, will inspect the installation of the initial sediment storage requirements and perimeter BMP's shown on the approved plans within seven (7) days after installation."

"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 100001."

THE EROSION AND SEDIMENTATION CONTROL PLAN CONSISTS OF SHEETS TS, 1, 3, 4, 5, 5A, 6, 8A-8C, & 9.

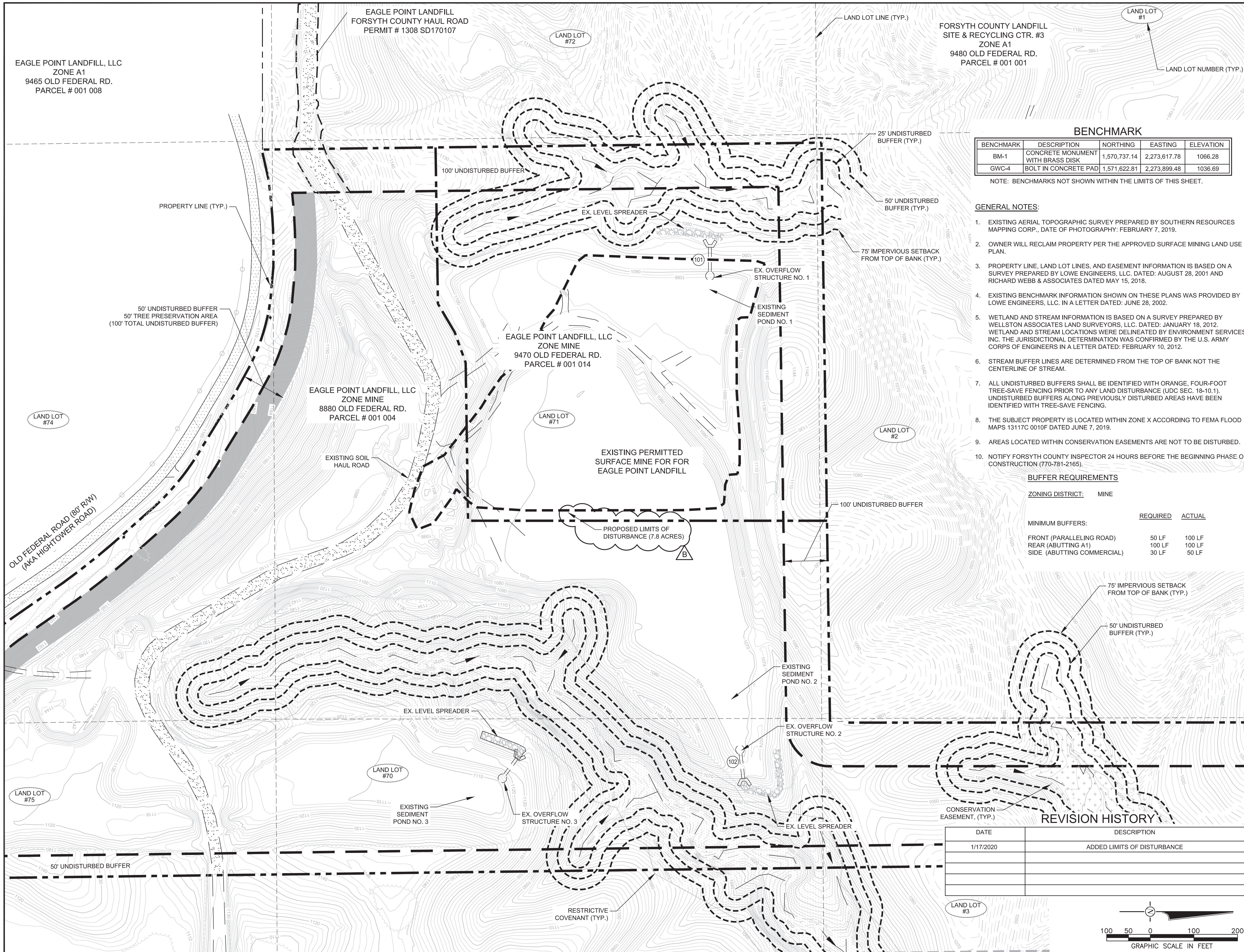
W. Michael Stubbs
WILLIAM M. STUBBS, P.E. 02/19/2020 000003048
DATE CERTIFICATION NO.
W.A. Granich
WILLIAM A. GRANICH, P.E. 02/19/2020 0000069028
DATE CERTIFICATION NO.

APPROVAL STAMPS

REVISION HISTORY

DATE	SHEET NO.
1/17/2020	TS, 1, 4A
02/19/2020	ADDENDUM B





BENCHMARK

BENCHMARK	DESCRIPTION	NORTHING	EASTING	ELEVATION
BM-1	CONCRETE MONUMENT WITH BRASS DISK	1,570,737.14	2,273,617.78	1066.28
GWC-4	BOLT IN CONCRETE PAD	1,571,622.81	2,273,899.48	1036.69

NOTE: BENCHMARKS NOT SHOWN WITHIN THE LIMITS OF THIS SHEET.

- GENERAL NOTES:**
- EXISTING AERIAL TOPOGRAPHIC SURVEY PREPARED BY SOUTHERN RESOURCES MAPPING CORP., DATE OF PHOTOGRAPHY: FEBRUARY 7, 2019.
 - OWNER WILL RECLAIM PROPERTY PER THE APPROVED SURFACE MINING LAND USE PLAN.
 - PROPERTY LINE, LAND LOT LINES, AND EASEMENT INFORMATION IS BASED ON A SURVEY PREPARED BY LOWE ENGINEERS, LLC. DATED: AUGUST 28, 2001 AND RICHARD WEBB & ASSOCIATES DATED MAY 15, 2018.
 - EXISTING BENCHMARK INFORMATION SHOWN ON THESE PLANS WAS PROVIDED BY LOWE ENGINEERS, LLC. IN A LETTER DATED: JUNE 28, 2002.
 - WETLAND AND STREAM INFORMATION IS BASED ON A SURVEY PREPARED BY WELLSTON ASSOCIATES LAND SURVEYORS, LLC. DATED: JANUARY 18, 2012. WETLAND AND STREAM LOCATIONS WERE DELINEATED BY ENVIRONMENT SERVICES, INC. THE JURISDICTIONAL DETERMINATION WAS CONFIRMED BY THE U.S. ARMY CORPS OF ENGINEERS IN A LETTER DATED: FEBRUARY 10, 2012.
 - STREAM BUFFER LINES ARE DETERMINED FROM THE TOP OF BANK NOT THE CENTERLINE OF STREAM.
 - ALL UNDISTURBED BUFFERS SHALL BE IDENTIFIED WITH ORANGE, FOUR-FOOT TREE-SAVE FENCING PRIOR TO ANY LAND DISTURBANCE (UDC SEC. 18-10.1). UNDISTURBED BUFFERS ALONG PREVIOUSLY DISTURBED AREAS HAVE BEEN IDENTIFIED WITH TREE-SAVE FENCING.
 - THE SUBJECT PROPERTY IS LOCATED WITHIN ZONE X ACCORDING TO FEMA FLOOD MAPS 13117C 0010F DATED JUNE 7, 2019.
 - AREAS LOCATED WITHIN CONSERVATION EASEMENTS ARE NOT TO BE DISTURBED.
 - NOTIFY FORSYTH COUNTY INSPECTOR 24 HOURS BEFORE THE BEGINNING PHASE OF CONSTRUCTION (770-781-2165).

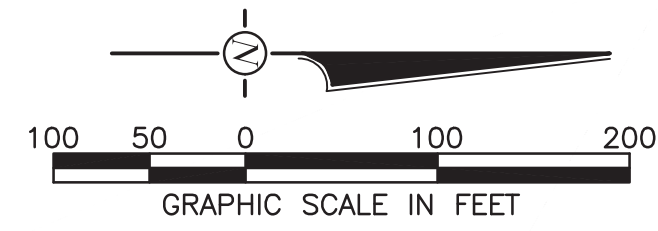
BUFFER REQUIREMENTS

ZONING DISTRICT: MINE

MINIMUM BUFFERS:	REQUIRED	ACTUAL
FRONT (PARALLELING ROAD)	50 LF	100 LF
REAR (ABUTTING A1)	100 LF	100 LF
SIDE (ABUTTING COMMERCIAL)	30 LF	50 LF

REVISION HISTORY

DATE	DESCRIPTION
1/17/2020	ADDED LIMITS OF DISTURBANCE



THIS DRAWING, THE DIMENSIONS OF WHICH ARE 24" X 36", IS THE PROPERTY OF JERICO DESIGN GROUP, LLC AND MAY NOT BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS WITHOUT THE WRITTEN PERMISSION.



HHNT
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Consulting Engineers
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PHONE: (478) 743-7175 FAX: (478) 743-1703

OUTDOOR FIRING RANGE
for the
Forsyth County Sheriff's Department
514 West Maple Street
Cumming, Georgia 30040

PRINT RECORD

No.	DATE	DESCRIPTION
	12/09/2019	PERMIT/PRICING SET
▲	2/19/2020	ADDENDUM B

Drawn By: WAG
Checked By: WMS
Date: 02/19/2020
Job No.: 19049

Sheet Title: EXISTING TOPOGRAPHIC CONDITIONS

Sheet No.: **C - 3**
RELEASED FOR CONSTRUCTION

POINT NUMBER	NORTHING	EASTING	SUBGRADE ELEVATION
100	1575307.25	2270992.32	1081.0
101	1575335.25	2270992.32	1081.0
102	1575335.25	2270946.32	1081.0
103	1575307.25	2270946.32	1081.0
104	1575364.41	2270799.30	1091.0
105	1575391.31	2270799.01	1091.0
106	1575445.61	2270798.14	1091.0
107	1575497.64	2270799.53	1091.0
108	1575495.71	2270635.52	1091.0
109	1575443.52	2270638.11	1091.0
110	1575389.61	2270638.30	1091.0
111	1575362.71	2270638.59	1091.0
112	1575182.10	2270728.34	1085.0
113	1575181.81	2270703.67	1085.0
114	1575247.44	2270727.57	1085.0
115	1575247.15	2270702.90	1085.0

50' UNDISTURBED BUFFER
50' TREE PRESERVATION AREA
(100' TOTAL UNDISTURBED BUFFER)

LAND LOT #74
OLD FEDERAL ROAD (80' R/W)
(AKA HIGHTOWER ROAD)

EAGLE POINT LANDFILL, LLC
ZONE MINE
8880 OLD FEDERAL RD.
PARCEL # 001 004

EAGLE POINT LANDFILL
FORSYTH COUNTY HAUL ROAD
PERMIT # 1308 SD170107

FORSYTH COUNTY LANDFILL
SITE & RECYCLING CTR. #3
ZONE A1
9480 OLD FEDERAL RD.
PARCEL # 001 001

BENCHMARK	DESCRIPTION	NORTHING	EASTING	ELEVATION
BM-1	CONCRETE MONUMENT WITH BRASS DISK	1,570,737.14	2,273,617.78	1066.28
GWC-4	BOLT IN CONCRETE PAD	1,571,622.81	2,273,899.48	1036.69

NOTE: BENCHMARKS NOT SHOWN WITHIN THE LIMITS OF THIS SHEET.

- GENERAL NOTES:**
- EXISTING AERIAL TOPOGRAPHIC SURVEY PREPARED BY SOUTHERN RESOURCES MAPPING CORP., DATE OF PHOTOGRAPHY: FEBRUARY 6, 2019.
 - PREVIOUS SOIL EXCAVATION WAS USED TO SUPPORT DAILY OPERATIONS AND CONSTRUCTION NEEDS FOR THE ADJACENT LANDFILL.
 - OWNER WILL RECLAIM PROPERTY PER THE APPROVED SURFACE MINING LAND USE PLAN.
 - PROPERTY LINE, LAND LOT LINES, AND EASEMENT INFORMATION IS BASED ON A SURVEY PREPARED BY LOWE ENGINEERS, LLC, DATED: AUGUST 28, 2001 AND RICHARD WEBB & ASSOCIATES DATED MAY 15, 2018.
 - EXISTING BENCHMARK INFORMATION SHOWN ON THESE PLANS WERE PROVIDED BY LOWE ENGINEERS, LLC. IN A LETTER DATED: JUNE 28, 2002.
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 - BUFFER LINES ARE DETERMINED FROM THE TOP OF BANK NOT THE CENTERLINE OF STREAM.
 - ALL UNDISTURBED BUFFERS SHALL BE IDENTIFIED WITH ORANGE, FOUR-FOOT TREE-SAVE FENCING PRIOR TO ANY LAND DISTURBANCE (UDC SEC. 18-10-1). UNDISTURBED BUFFERS ALONG PREVIOUSLY DISTURBED AREAS HAVE BEEN IDENTIFIED WITH TREE-SAVE FENCING.
 - THE SUBJECT PROPERTY IS LOCATED WITHIN ZONE X ACCORDING TO FEMA FLOOD MAPS 13177C 0010E AND 13117C 0030E, BOTH DATED SEPTEMBER 19, 2007.
 - AREAS LOCATED WITHIN CONSERVATION EASEMENTS ARE NOT TO BE DISTURBED.
 - NOTIFY FORSYTH COUNTY INSPECTOR 24 HOURS BEFORE THE BEGINNING PHASE OF CONSTRUCTION (770-781-2165).
 - PREVIOUSLY DISTURBED AREAS HAVE BEEN PROPERLY MARKED WITH CORRESPONDING MARKER POSTS AND ARE LABELED AS EXISTING MARKER POSTS ON THIS SHEET.
 - MAXIMUM CUT SLOPES SHALL BE 2 HORIZONTAL TO 1 VERTICAL. CONTINUOUS FILL SLOPES TEN (10) FEET IN HEIGHT OR LESS MAY BE 2 HORIZONTAL TO 1 VERTICAL. ALL CONTINUOUS FILL SLOPES THAT EXCEED TEN (10) FEET IN HEIGHT MUST BE 3 HORIZONTAL TO 1 VERTICAL UNLESS: (A) A MECHANICALLY ENGINEERED STABILIZED SLOPE IS APPROVED BY THE FORSYTH COUNTY DIRECTOR OF ENGINEERING; OR (B) THE DESIGNED AND CONSTRUCTED SLOPES ARE CERTIFIED BY A REGISTERED ENGINEER EXPERIENCED IN GEOTECHNICAL ENGINEERING AND LICENSED IN THE STATE OF GEORGIA.
 - OWNER TO PERFORM SITE GRADING, INCLUDING STRUCTURAL FILL, PRIOR TO GENERAL CONTRACTOR MOBILIZING ON-SITE.

SEDIMENT POND DATA	POND 2 (E)	POND 3 (E)
BOTTOM OF BASIN AT ELEVATION (FT)	1064.00	1110.00
TOP OF LEVEE (FT)	1074.00	1120.00
PERMANENT POOL ELEVATION (FT)	1066.72	1112.93

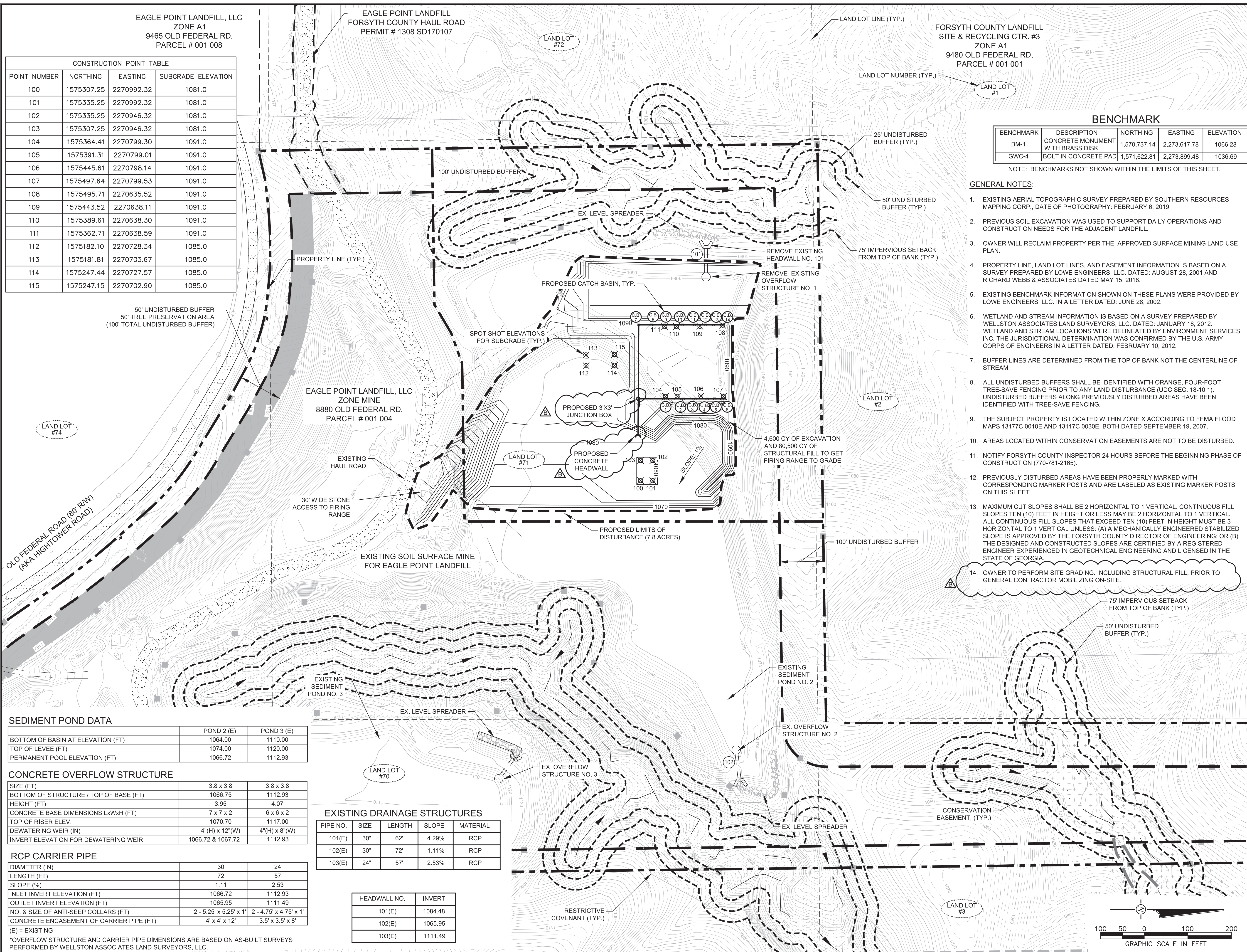
CONCRETE OVERFLOW STRUCTURE	3.8 x 3.8	3.8 x 3.8
SIZE (FT)	3.8 x 3.8	3.8 x 3.8
BOTTOM OF STRUCTURE / TOP OF BASE (FT)	1066.75	1112.93
HEIGHT (FT)	3.95	4.07
CONCRETE BASE DIMENSIONS LxWxH (FT)	7 x 7 x 2	6 x 6 x 2
TOP OF RISER ELEV.	1070.70	1117.00
DEWATERING WEIR (IN)	4"(H) x 12"(W)	4"(H) x 8"(W)
INVERT ELEVATION FOR DEWATERING WEIR	1066.72 & 1067.72	1112.93

RCP CARRIER PIPE	30	24
DIAMETER (IN)	30	24
LENGTH (FT)	72	57
SLOPE (%)	1.11	2.53
INLET INVERT ELEVATION (FT)	1066.72	1112.93
OUTLET INVERT ELEVATION (FT)	1065.95	1111.49
NO. & SIZE OF ANTI-SLEEP COLLARS (FT)	2 - 5.25' x 5.25' x 1'	2 - 4.75' x 4.75' x 1'
CONCRETE ENCASEMENT OF CARRIER PIPE (FT)	4' x 4' x 12'	3.5' x 3.5' x 8'

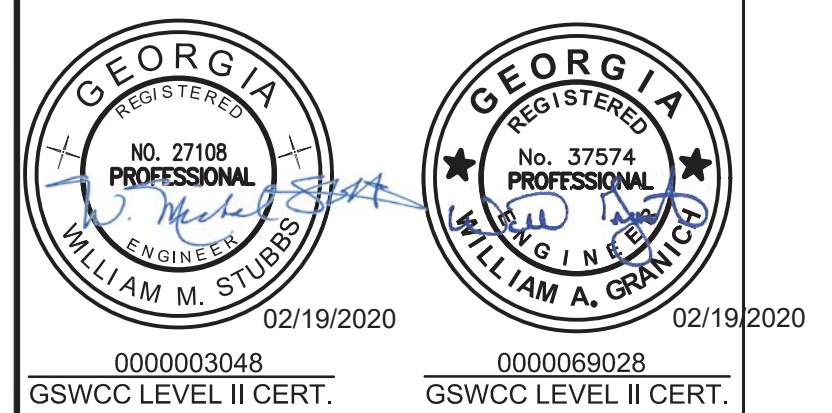
EXISTING DRAINAGE STRUCTURES	PIPE NO.	SIZE	LENGTH	SLOPE	MATERIAL
	101(E)	30"	62'	4.29%	RCP
	102(E)	30"	72'	1.11%	RCP
	103(E)	24"	57'	2.53%	RCP

HEADWALL NO.	INVERT
101(E)	1084.48
102(E)	1065.95
103(E)	1111.49

(E) = EXISTING
*OVERFLOW STRUCTURE AND CARRIER PIPE DIMENSIONS ARE BASED ON AS-BUILT SURVEYS PERFORMED BY WELLSTON ASSOCIATES LAND SURVEYORS, LLC.



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OUTDOOR FIRING RANGE
for the
Forsyth County Sheriff's Department
514 West Maple Street
Cumming, Georgia 30040

PRINT RECORD		
No.	DATE	DESCRIPTION
	12/09/2019	PERMIT PRICING SET
▲	2/19/2020	ADDENDUM B

Drawn By: WAG
Checked By: WMS
Date: 02/19/2020
Job No.: 19049

Sheet Title: GRADING PLAN
Sheet No.: **C - 4**
RELEASED FOR CONSTRUCTION

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000003048
GSWCC LEVEL II CERT.

000006928
GSWCC LEVEL II CERT.



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OUTDOOR FIRING RANGE
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514 West Maple Street
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PRINT RECORD

No.	DATE	DESCRIPTION
12/09/2019		PERMIT/PRICING SET
2/19/2020		ADDENDUM B

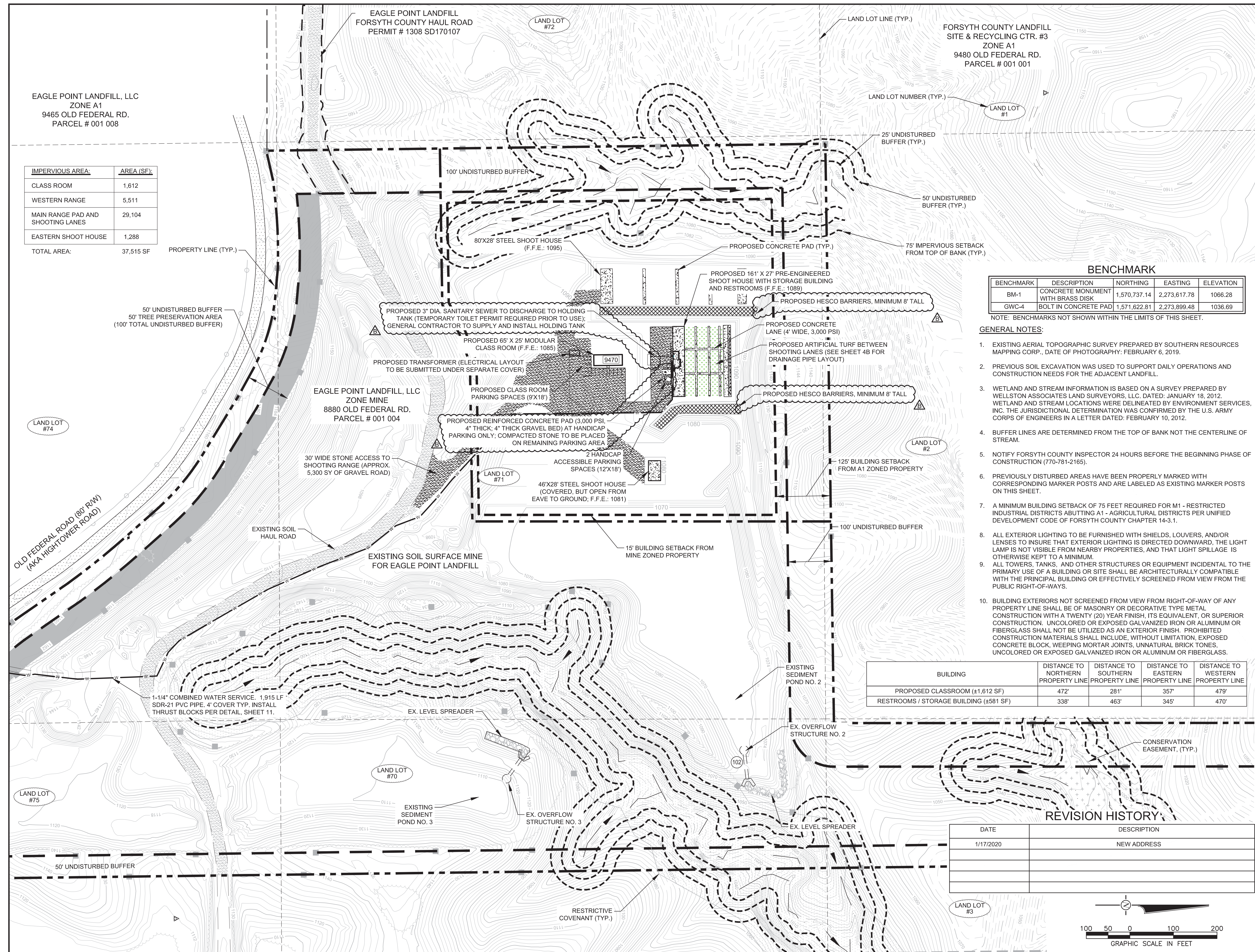
Drawn By: WAG Checked By: WMS

Date: 02/19/2020 Job No.: 19049

Sheet Title: FIRING RANGE LAYOUT

Sheet No.: **C - 4A**

RELEASED FOR CONSTRUCTION



EAGLE POINT LANDFILL, LLC
ZONE A1
9465 OLD FEDERAL RD.
PARCEL # 001 008

IMPERVIOUS AREA:	AREA (SF):
CLASS ROOM	1,612
WESTERN RANGE	5,511
MAIN RANGE PAD AND SHOOTING LANES	29,104
EASTERN SHOOT HOUSE	1,288
TOTAL AREA:	37,515 SF

FORSYTH COUNTY LANDFILL
SITE & RECYCLING CTR. #3
ZONE A1
9480 OLD FEDERAL RD.
PARCEL # 001 001

EAGLE POINT LANDFILL, LLC
ZONE MINE
8880 OLD FEDERAL RD.
PARCEL # 001 004

BENCHMARK

BENCHMARK	DESCRIPTION	NORTHING	EASTING	ELEVATION
BM-1	CONCRETE MONUMENT WITH BRASS DISK	1,570,737.14	2,273,617.78	1066.28
GWC-4	BOLT IN CONCRETE PAD	1,571,622.81	2,273,899.48	1036.69

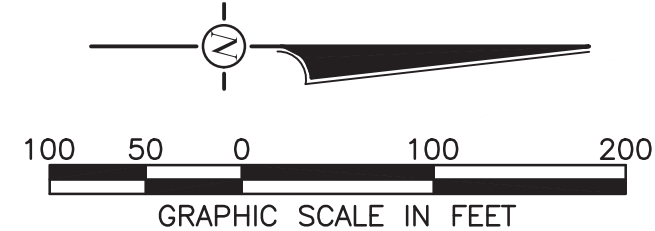
NOTE: BENCHMARKS NOT SHOWN WITHIN THE LIMITS OF THIS SHEET.

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 - BUFFER LINES ARE DETERMINED FROM THE TOP OF BANK NOT THE CENTERLINE OF STREAM.
 - NOTIFY FORSYTH COUNTY INSPECTOR 24 HOURS BEFORE THE BEGINNING PHASE OF CONSTRUCTION (770-781-2165).
 - PREVIOUSLY DISTURBED AREAS HAVE BEEN PROPERLY MARKED WITH CORRESPONDING MARKER POSTS AND ARE LABELED AS EXISTING MARKER POSTS ON THIS SHEET.
 - A MINIMUM BUILDING SETBACK OF 75 FEET REQUIRED FOR M1 - RESTRICTED INDUSTRIAL DISTRICTS ABUTTING A1 - AGRICULTURAL DISTRICTS PER UNIFIED DEVELOPMENT CODE OF FORSYTH COUNTY CHAPTER 14-3.1.
 - ALL EXTERIOR LIGHTING TO BE FURNISHED WITH SHIELDS, LOUVERS, AND/OR LENSES TO INSURE THAT EXTERIOR LIGHTING IS DIRECTED DOWNWARD, THE LIGHT LAMP IS NOT VISIBLE FROM NEARBY PROPERTIES, AND THAT LIGHT SPILLAGE IS OTHERWISE KEPT TO A MINIMUM.
 - ALL TOWERS, TANKS, AND OTHER STRUCTURES OR EQUIPMENT INCIDENTAL TO THE PRIMARY USE OF A BUILDING OR SITE SHALL BE ARCHITECTURALLY COMPATIBLE WITH THE PRINCIPAL BUILDING OR EFFECTIVELY SCREENED FROM VIEW FROM THE PUBLIC RIGHT-OF-WAYS.
 - BUILDING EXTERIORS NOT SCREENED FROM VIEW FROM RIGHT-OF-WAY OF ANY PROPERTY LINE SHALL BE OF MASONRY OR DECORATIVE TYPE METAL CONSTRUCTION WITH A TWENTY (20) YEAR FINISH, ITS EQUIVALENT, OR SUPERIOR CONSTRUCTION. UNCOLORED OR EXPOSED GALVANIZED IRON OR ALUMINUM OR FIBERGLASS SHALL NOT BE UTILIZED AS AN EXTERIOR FINISH. PROHIBITED CONSTRUCTION MATERIALS SHALL INCLUDE, WITHOUT LIMITATION, EXPOSED CONCRETE BLOCK, WEPPING MORTAR JOINTS, UNNATURAL BRICK TONES, UNCOLORED OR EXPOSED GALVANIZED IRON OR ALUMINUM OR FIBERGLASS.

BUILDING	DISTANCE TO NORTHERN PROPERTY LINE	DISTANCE TO SOUTHERN PROPERTY LINE	DISTANCE TO EASTERN PROPERTY LINE	DISTANCE TO WESTERN PROPERTY LINE
PROPOSED CLASSROOM (±1,612 SF)	472'	281'	357'	479'
RESTROOMS / STORAGE BUILDING (±581 SF)	338'	463'	345'	470'

REVISION HISTORY

DATE	DESCRIPTION
1/17/2020	NEW ADDRESS



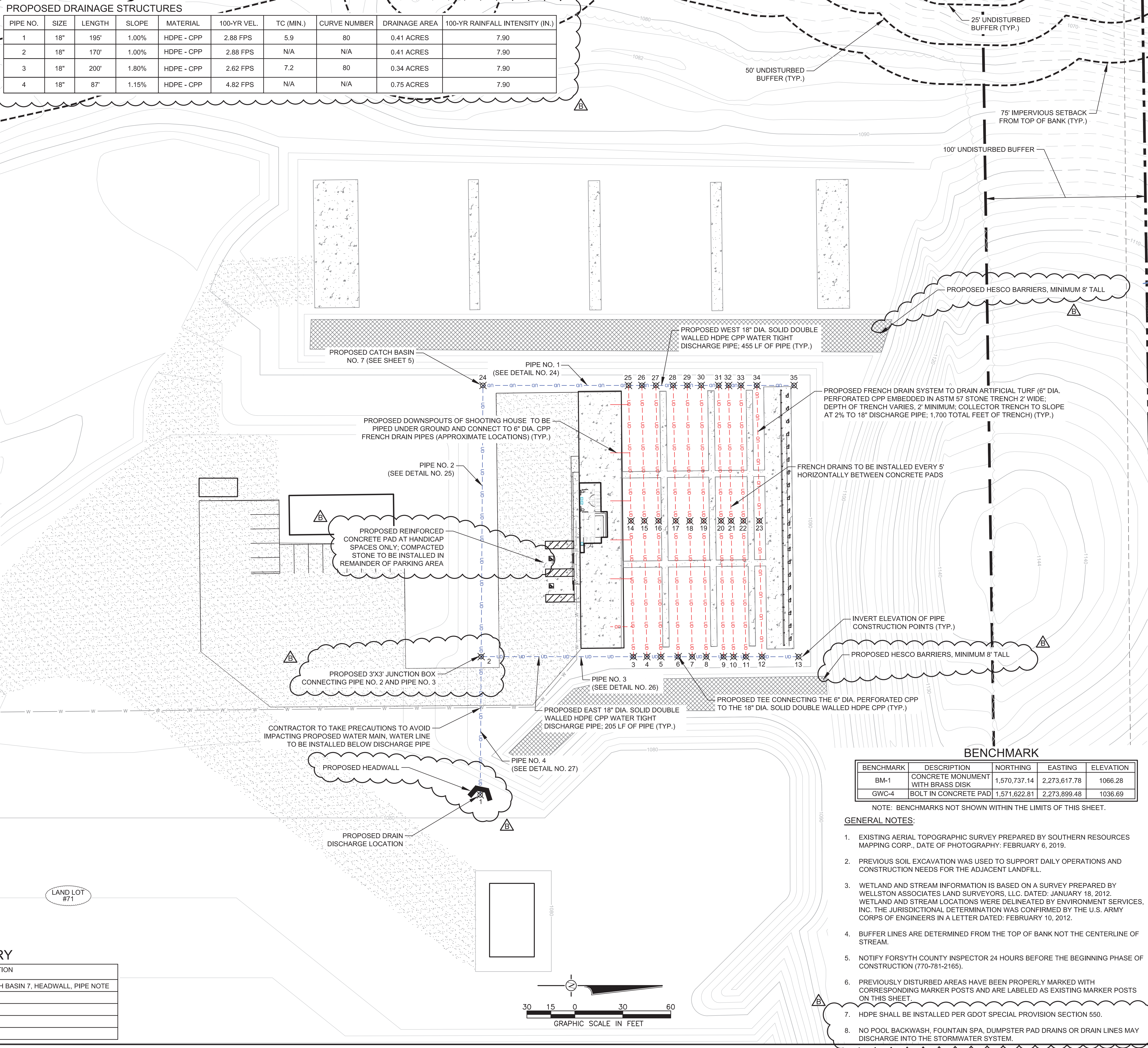
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CONSTRUCTION POINT TABLE			
POINT #	NORTHING	EASTING	PIPE INVERT ELEVATION
1	1575301.43	2270890.99	1080.9
2	1575301.99	2270804.49	1081.9
3	1575397.27	2270804.52	1084.5
4	1575405.64	2270804.52	1084.6
5	1575414.40	2270804.52	1084.7
6	1575425.24	2270804.52	1084.8
7	1575434.01	2270804.53	1084.9
8	1575442.78	2270804.53	1085.0
9	1575453.62	2270804.53	1085.1
10	1575459.88	2270804.53	1085.1
11	1575467.59	2270804.53	1085.2
12	1575477.60	2270804.50	1085.3
13	1575500.57	2270804.54	1085.5
14	1575395.71	2270719.54	1086.2
15	1575404.08	2270719.54	1086.3
16	1575412.84	2270719.54	1086.4
17	1575423.68	2270719.54	1086.5
18	1575432.45	2270719.54	1086.6
19	1575441.22	2270719.54	1086.7
20	1575452.06	2270719.54	1086.8
21	1575458.32	2270719.54	1086.8
22	1575466.03	2270719.54	1086.9
23	1575476.04	2270719.54	1087.0
24	1575303.09	2270634.82	1083.6
25	1575394.16	2270634.82	1084.5
26	1575402.53	2270634.82	1084.6
27	1575411.29	2270634.82	1084.7
28	1575422.13	2270634.82	1084.8
29	1575430.90	2270634.82	1084.9
30	1575439.67	2270634.83	1085.0
31	1575450.51	2270634.83	1085.1
32	1575456.77	2270634.83	1085.1
33	1575464.48	2270634.83	1085.2
34	1575474.49	2270634.83	1085.3
35	1575497.77	2270634.83	1085.5

PROPOSED DRAINAGE STRUCTURES										
PIPE NO.	SIZE	LENGTH	SLOPE	MATERIAL	100-YR VEL.	TC (MIN.)	CURVE NUMBER	DRAINAGE AREA	100-YR RAINFALL INTENSITY (IN.)	
1	18"	195'	1.00%	HDPE - CPP	2.88 FPS	5.9	80	0.41 ACRES	7.90	
2	18"	170'	1.00%	HDPE - CPP	2.88 FPS	N/A	N/A	0.41 ACRES	7.90	
3	18"	200'	1.80%	HDPE - CPP	2.62 FPS	7.2	80	0.34 ACRES	7.90	
4	18"	87'	1.15%	HDPE - CPP	4.82 FPS	N/A	N/A	0.75 ACRES	7.90	

NOTE: ARTIFICIAL TURF DRAINAGE LAYOUT PREPARED BY OWNER. DRAINAGE CALCULATIONS PREPARED BY HHNT TO INSURE PIPE CAPACITY.

REVISION HISTORY	
DATE	DESCRIPTION
1/17/2020	ADDED JUNCTION BOX, LABELED CATCH BASIN 7, HEADWALL, PIPE NOTE

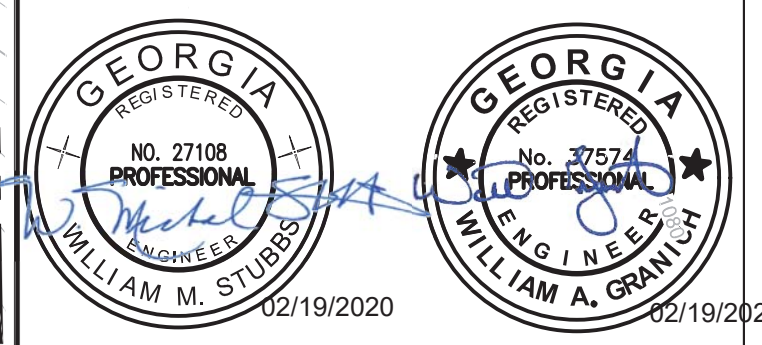


BENCHMARK				
BENCHMARK	DESCRIPTION	NORTHING	EASTING	ELEVATION
BM-1	CONCRETE MONUMENT WITH BRASS DISK	1,570,737.14	2,273,617.78	1066.28
GWC-4	BOLT IN CONCRETE PAD	1,571,622.81	2,273,899.48	1036.69

- NOTE: BENCHMARKS NOT SHOWN WITHIN THE LIMITS OF THIS SHEET.
- GENERAL NOTES:**
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 - NOTIFY FORSYTH COUNTY INSPECTOR 24 HOURS BEFORE THE BEGINNING PHASE OF CONSTRUCTION (770-781-2165).
 - PREVIOUSLY DISTURBED AREAS HAVE BEEN PROPERLY MARKED WITH CORRESPONDING MARKER POSTS AND ARE LABELED AS EXISTING MARKER POSTS ON THIS SHEET.
 - HDPE SHALL BE INSTALLED PER GDOT SPECIAL PROVISION SECTION 550.
 - NO POOL BACKWASH, FOUNTAIN SPA, DUMPSTER PAD DRAINS OR DRAIN LINES MAY DISCHARGE INTO THE STORMWATER SYSTEM.



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000003048 GSWCC LEVEL II CERT. 02/19/2020
 0000069028 GSWCC LEVEL II CERT. 02/19/2020

HHNT
 HUGHES HARRIS NEWBERRY & THIBBLE, INC.
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 PHONE: (478) 743-7175
 FAX: (478) 743-1703

OUTDOOR FIRING RANGE
 for the
Forsyth County Sheriff's Department
 514 West Maple Street
 Cumming, Georgia 30040

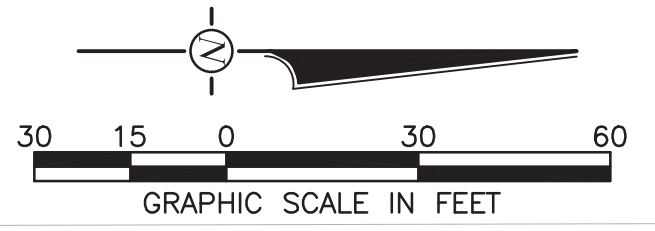
PRINT RECORD		
No.	DATE	DESCRIPTION
12/09/2019	PERMIT PRICING SET	
2/19/2020	ADDENDUM B	

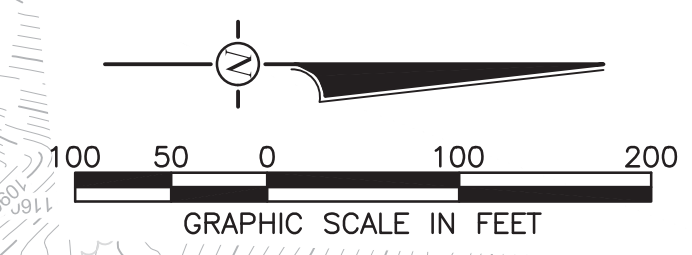
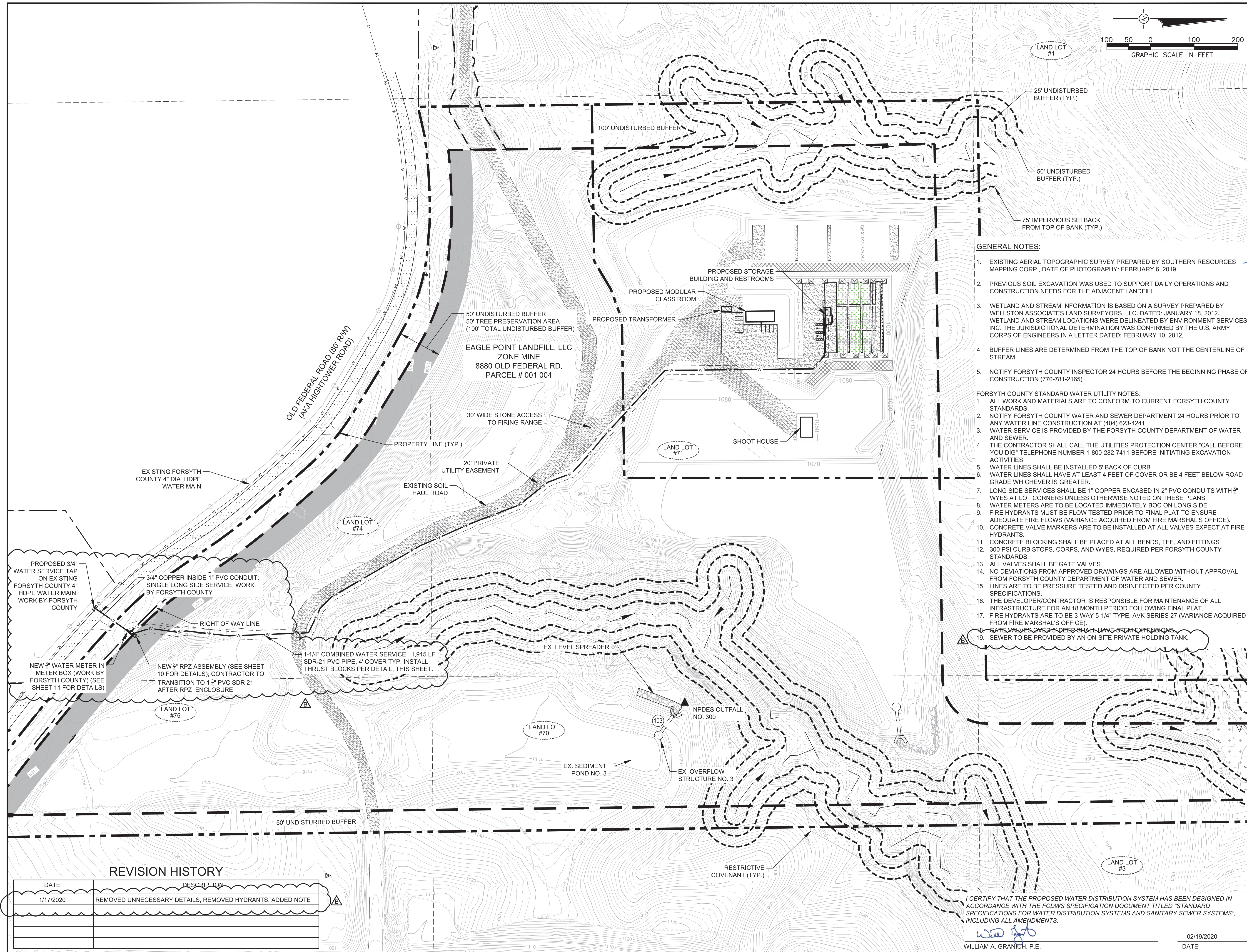
Drawn By WAG	Checked By WMS
Date 02/19/2020	Job No. 19049

Sheet Title
DRAINAGE PLAN

Sheet No.
C - 4B

RELEASED FOR CONSTRUCTION





GENERAL NOTES:

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- FORSYTH COUNTY STANDARD WATER UTILITY NOTES:
- ALL WORK AND MATERIALS ARE TO CONFORM TO CURRENT FORSYTH COUNTY STANDARDS.
 - NOTIFY FORSYTH COUNTY WATER AND SEWER DEPARTMENT 24 HOURS PRIOR TO ANY WATER LINE CONSTRUCTION AT (404) 623-4241.
 - WATER SERVICE IS PROVIDED BY THE FORSYTH COUNTY DEPARTMENT OF WATER AND SEWER.
 - THE CONTRACTOR SHALL CALL THE UTILITIES PROTECTION CENTER "CALL BEFORE YOU DIG" TELEPHONE NUMBER 1-800-282-7411 BEFORE INITIATING EXCAVATION ACTIVITIES.
 - WATER LINES SHALL BE INSTALLED 5' BACK OF CURB.
 - WATER LINES SHALL HAVE AT LEAST 4 FEET OF COVER OR BE 4 FEET BELOW ROAD GRADE WHICHEVER IS GREATER.
 - LONG SIDE SERVICES SHALL BE 1" COPPER ENCASED IN 2" PVC CONDUITS WITH 2" WYES AT LOT CORNERS UNLESS OTHERWISE NOTED ON THESE PLANS.
 - WATER METERS ARE TO BE LOCATED IMMEDIATELY BOC ON LONG SIDE.
 - FIRE HYDRANTS MUST BE FLOW TESTED PRIOR TO FINAL PLAT TO ENSURE ADEQUATE FIRE FLOWS (VARIANCE ACQUIRED FROM FIRE MARSHAL'S OFFICE). CONCRETE VALVE MARKERS ARE TO BE INSTALLED AT ALL VALVES EXPECT AT FIRE HYDRANTS.
 - CONCRETE BLOCKING SHALL BE PLACED AT ALL BENDS, TEE, AND FITTINGS.
 - 300 PSI CURB STOPS, CORPS, AND WYES, REQUIRED PER FORSYTH COUNTY STANDARDS.
 - ALL VALVES SHALL BE GATE VALVES.
 - NO DEVIATIONS FROM APPROVED DRAWINGS ARE ALLOWED WITHOUT APPROVAL FROM FORSYTH COUNTY DEPARTMENT OF WATER AND SEWER.
 - LINE ARE TO BE PRESSURE TESTED AND DISINFECTED PER COUNTY SPECIFICATIONS.
 - THE DEVELOPER/CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF ALL INFRASTRUCTURE FOR AN 18 MONTH PERIOD FOLLOWING FINAL PLAT.
 - FIRE HYDRANTS ARE TO BE 3-WAY 5-1/4" TYPE, AVK SERIES 27 (VARIANCE ACQUIRED FROM FIRE MARSHAL'S OFFICE).
 - GATE VALVES OVER 2 DEEP SHALL HAVE STEM EXTENSIONS.
 - SEWER TO BE PROVIDED BY AN ON-SITE PRIVATE HOLDING TANK.

REVISION HISTORY

DATE	DESCRIPTION
1/17/2020	REMOVED UNNECESSARY DETAILS, REMOVED HYDRANTS, ADDED NOTE

I CERTIFY THAT THE PROPOSED WATER DISTRIBUTION SYSTEM HAS BEEN DESIGNED IN ACCORDANCE WITH THE FCDWS SPECIFICATION DOCUMENT TITLED "STANDARD SPECIFICATIONS FOR WATER DISTRIBUTION SYSTEMS AND SANITARY SEWER SYSTEMS", INCLUDING ALL AMENDMENTS.

William A. Granich
 WILLIAM A. GRANICH, P.E. 02/19/2020
 DATE



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 Cumming, Georgia 30040

PRINT RECORD

No.	DATE	DESCRIPTION
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▲	2/19/2020	ADDENDUM B

Drawn By: WAG
 Checked By: WMS
 Date: 02/19/2020
 Job No.: 19049

Sheet Title: WATER SUPPLY / FIRE PLAN
 Sheet No.: **C - 4C**
 RELEASED FOR CONSTRUCTION

STRUCTURAL EROSION CONTROL PRACTICES

XX	SILT FENCE - TYPE C - DOUBLE ROW	Sd1-C							
RIP-RAP OUTLET PROTECTION WITH LEVEL SPREADER	PIPE	25 YR FLOWRATE	RIP-RAP SIZE	DEPTH	LENGTH OF LEVEL SPREADER				
St	102	4.96 cfs	TYPE III	MIN. 6"	200'				
	103	1.15 cfs	TYPE III	MIN. 6"	100'				
TEMPORARY SEDIMENT BASIN	Sd3								
SURFACE ROUGHENING	Su								
RIP-RAP OUTLET PROTECTION	W2 FLOWRATE	100 YR PIPE VELOCITY	100 YR STORM PIPE VELOCITY	PIPE SIZE	RIP-RAP SIZE	LENGTH(L)	W1	W2	DEPTH
	7.84 CFS	4.84 FT/SEC	18"	6"	9'	4.5'	13.5'	2'	

VEGETATIVE EROSION CONTROL MEASURES

Du	DUST CONTROL	Ds1	DISTURBED AREA WITH MULCH
Bf	BUFFER AREA	Ds2	DISTURBED AREA WITH TEMPORARY SEEDING
Tp	TOPSOILING	Ds3	DISTURBED AREA WITH PERMANENT SEEDING
Ss-RECP	EROSION CONTROL MATTING	Fl-Co	FLOCCULANTS & COAGULANTS
Co	CONSTRUCTION EXIT	Di	DIVERSION BERM

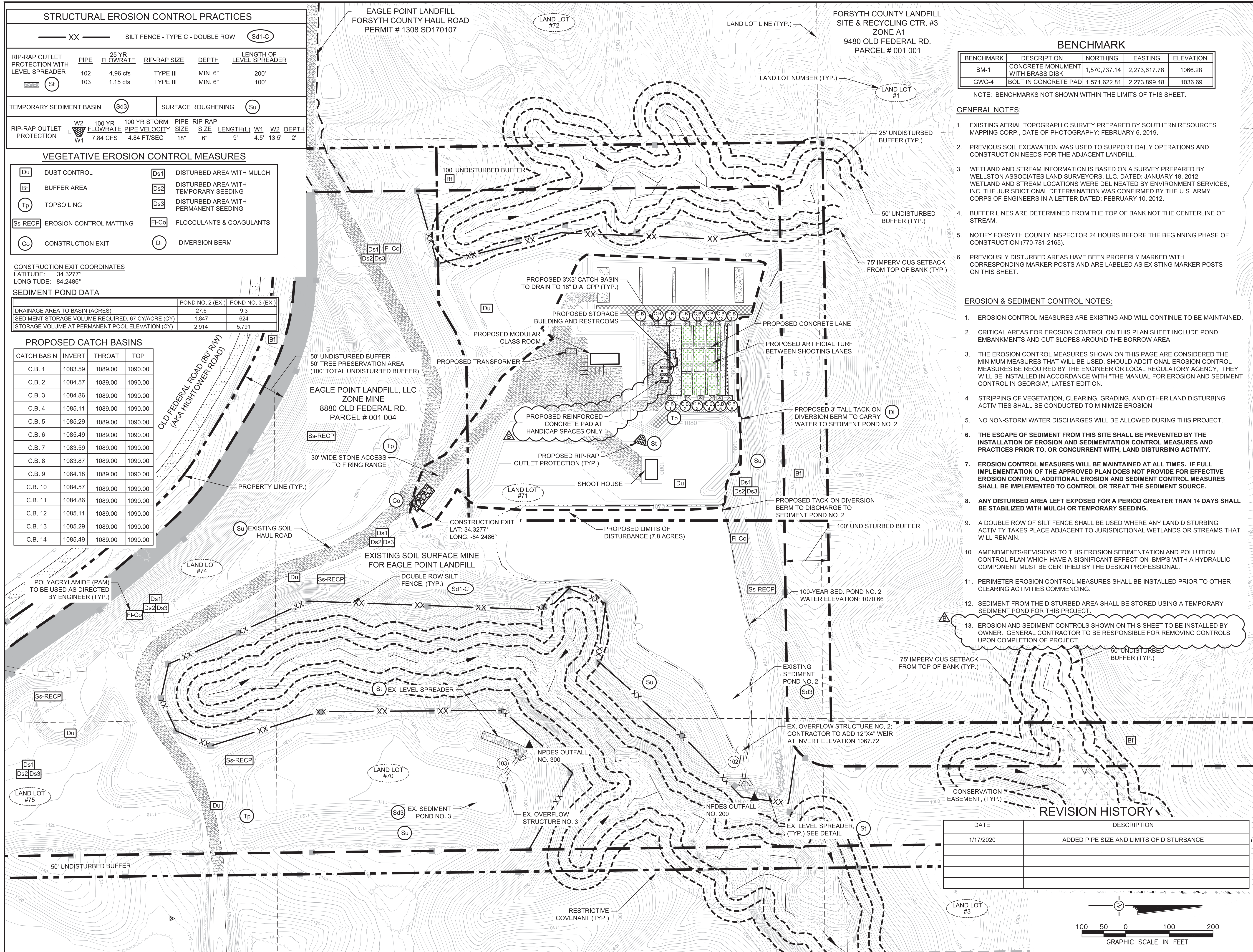
CONSTRUCTION EXIT COORDINATES
 LATITUDE: 34.3277°
 LONGITUDE: -84.2486°

SEDIMENT POND DATA

DRAINAGE AREA TO BASIN (ACRES)	POND NO. 2 (EX.)	POND NO. 3 (EX.)
27.6	9.3	
SEDIMENT STORAGE VOLUME REQUIRED, 67 CY/ACRE (CY)	1,847	624
STORAGE VOLUME AT PERMANENT POOL ELEVATION (CY)	2,914	5,791

PROPOSED CATCH BASINS

CATCH BASIN	INVERT	THROAT	TOP
C.B. 1	1083.59	1089.00	1090.00
C.B. 2	1084.57	1089.00	1090.00
C.B. 3	1084.86	1089.00	1090.00
C.B. 4	1085.11	1089.00	1090.00
C.B. 5	1085.29	1089.00	1090.00
C.B. 6	1085.49	1089.00	1090.00
C.B. 7	1083.59	1089.00	1090.00
C.B. 8	1083.87	1089.00	1090.00
C.B. 9	1084.18	1089.00	1090.00
C.B. 10	1084.57	1089.00	1090.00
C.B. 11	1084.86	1089.00	1090.00
C.B. 12	1085.11	1089.00	1090.00
C.B. 13	1085.29	1089.00	1090.00
C.B. 14	1085.49	1089.00	1090.00



BENCHMARK

BENCHMARK	DESCRIPTION	NORTHING	EASTING	ELEVATION
BM-1	CONCRETE MONUMENT WITH BRASS DISK	1,570,737.14	2,273,617.78	1066.28
GWC-4	BOLT IN CONCRETE PAD	1,571,622.81	2,273,899.48	1036.69

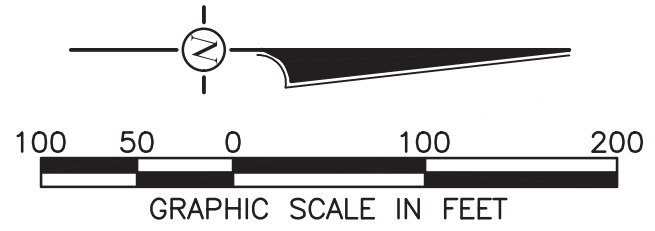
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- ### EROSION & SEDIMENT CONTROL NOTES:
- EROSION CONTROL MEASURES ARE EXISTING AND WILL CONTINUE TO BE MAINTAINED.
 - CRITICAL AREAS FOR EROSION CONTROL ON THIS PLAN SHEET INCLUDE POND EMBANKMENTS AND CUT SLOPES AROUND THE BORROW AREA.
 - THE EROSION CONTROL MEASURES SHOWN ON THIS PAGE ARE CONSIDERED THE MINIMUM MEASURES THAT WILL BE USED. SHOULD ADDITIONAL EROSION CONTROL MEASURES BE REQUIRED BY THE ENGINEER OR LOCAL REGULATORY AGENCY, THEY WILL BE INSTALLED IN ACCORDANCE WITH "THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA", LATEST EDITION.
 - STRIPPING OF VEGETATION, CLEARING, GRADING, AND OTHER LAND DISTURBING ACTIVITIES SHALL BE CONDUCTED TO MINIMIZE EROSION.
 - NO NON-STORM WATER DISCHARGES WILL BE ALLOWED DURING THIS PROJECT.
 - THE ESCAPE OF SEDIMENT FROM THIS SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENTATION CONTROL MEASURES AND PRACTICES PRIOR TO, OR CONCURRENT WITH, LAND DISTURBING ACTIVITY.
 - 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.
 - ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.
 - A DOUBLE ROW OF SILT FENCE SHALL BE USED WHERE ANY LAND DISTURBING ACTIVITY TAKES PLACE ADJACENT TO JURISDICTIONAL WETLANDS OR STREAMS THAT WILL REMAIN.
 - AMENDMENTS/REVISIONS TO THIS EROSION SEDIMENTATION AND POLLUTION CONTROL PLAN WHICH HAVE A SIGNIFICANT EFFECT ON BMP'S WITH A HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL.
 - PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO OTHER CLEARING ACTIVITIES COMMENCING.
 - SEDIMENT FROM THE DISTURBED AREA SHALL BE STORED USING A TEMPORARY SEDIMENT POND FOR THIS PROJECT.
 - EROSION AND SEDIMENT CONTROLS SHOWN ON THIS SHEET TO BE INSTALLED BY OWNER. GENERAL CONTRACTOR TO BE RESPONSIBLE FOR REMOVING CONTROLS UPON COMPLETION OF PROJECT.

REVISION HISTORY

DATE	DESCRIPTION
1/17/2020	ADDED PIPE SIZE AND LIMITS OF DISTURBANCE



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PRINT RECORD

No.	DATE	DESCRIPTION
	12/09/2019	PERMIT PRICING SET
▲	2/19/2020	ADDENDUM B

Drawn By: WAG
 Checked By: WMS
 Date: 02/19/2020
 Job No.: 19049

Sheet Title:
 EROSION AND SEDIMENTATION CONTROL PLAN

Sheet No.:
C - 5
 RELEASED FOR CONSTRUCTION

GENERAL NOTES:

The project consists of a shooting range for the Forsyth County Sheriff's Office. All areas have been previously disturbed. The project will maintain the existing sediment ponds and outfall structures as necessary. Currently this property is owned by Forsyth County. The property is located within the existing Eagle Point Borrow Area No. 1 in Forsyth County. The receiving water for this project is the Etowah River.

Owner/Permittee:
 FORSYTH COUNTY SHERIFF'S OFFICE
 514 WEST MAPLE STREET
 SUITE 104
 CUMMING, GEORGIA 30040
 (770) 888-8872

24 Hour Local Contact:
 CAPTAIN BILL FRANCO
 CAPTAIN - FORSYTH COUNTY SHERIFF'S OFFICE
 OFFICE: (770) 888-8872

POTENTIAL SOURCES OF POLLUTION

SEDIMENT

PRACTICES TO REDUCE POLLUTION AND BMP'S

SILT FENCE, OUTLET LEVEL SPREADERS, EXCELSIOR DITCHES AND SLOPE MATTING, TEMPORARY AND PERMANENT VEGETATION, DUST CONTROL, CONSTRUCTION ROAD STABILIZATION, CONSTRUCTION EXIT, AND CHECK DAMS.

CONSTRUCTION SCHEDULE - 2020	START	COMPLETE	START	COMPLETE
MAINTAIN EROSION AND SEDIMENT CONTROL FOR THE ENTIRE PROJECT	JAN. 1	DEC. 31	DAY 1	DAY 365
INSTALL TEMPORARY GRASSING (AS NEEDED)	FEB. 1	DEC. 31	DAY 32	DAY 365
PERMANENT GRASSING AND LANDSCAPING	JUNE 1	DEC. 15	DAY 152	DAY 349
CLEAN UP AND CLEANOUT OF E&S CONTROLS INCLUDING STORM DRAINS	DEC. 1	DEC. 15	DAY 335	DAY 349

DISPOSAL OF DEBRIS:

Vegetative material may be buried on this site if approved by EPD, and, if approved, will not be buried in the buffer zone nor within 100' of an enclosed structure. Construction waste may neither be burned nor buried and must be taken to a state approved landfill. No waste will be discharged to waters of the State except as authorized by a Section 404 permit.

STREAM BUFFER / WETLAND STATEMENT / CORPS OF ENGINEERS PERMIT / EPD BUFFER VARIANCE:

1. Non-exempt activities shall not be conducted within the 25 or 50 ft undisturbed stream buffers as measured from the point of wrested vegetation without first acquiring the necessary variances and permits.

CRITICAL AREAS	PRESENT / LOCATION	METHOD TO CONTROL EROSION
CUT SLOPES	BORROW AREA	SURFACE ROUGHENING / EROSION CONTROL MAT W/ VEG. OR FLEXIBLE GROWTH MEDIA
FILL > 5 FEET	POND DAM	SEE NOTE 3.01 EROSION CONTROL MAT W/ VEG. OR SURFACE ROUGHENING AND VEG.

EROSION AND SEDIMENT CONTROL

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.

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Installation of soil erosion control devices.
- B. Maintenance of soil erosion devices during construction.
- C. Removal of temporary soil erosion control devices after stabilization of disturbed areas.
- D. Temporary and permanent grassing for soil erosion control.

1.02 QUALITY ASSURANCE

- A. After installing the soil erosion control devices as called for in the Contract Documents, the Contractor shall assure himself that all reasonable measures possible have been taken to prevent the siltation of nearby water courses. Should the contractor believe additional measures are necessary, he shall immediately notify the Engineer. If rain is predicted before the Engineer can be notified, the Contractor shall take measures as he deems necessary to prevent the siltation of nearby water courses.
- B. The project is exempt from the Georgia Erosion and Sedimentation Act of 1975; however, appropriate erosion and sediment control features will be implemented as described below.

PART 2 PRODUCTS

2.01 SILT FENCE

- Sd1-C Silt fence posts, woven wire fence, and filter fabric shall be Georgia D.O.T. Standard Specifications Section 171 for Temporary Silt Fence - Type C.

2.02 BALED STRAW DITCH CHECK

Ditch checks shall be in accordance with detail.

2.03 TEMPORARY SEED (MINIMUM REQUIREMENT)

Temporary seed shall be in accordance with the following schedule (at a minimum); (All rates are PLS.)

TEMPORARY SEEDING	**LBS/ACRE		DEPTH OF COVER	DATE OF PLANTING
	ALONE	IN MIXTURES		
* ANNUAL RYEGRASS	40	N/A	1/4" - 1/2"	8/1 - 4/15
** PEARL MILLET	50	N/A	1/4" - 1/2"	4/15 - 8/31
WEeping LOVEGRASS	4	2	1/4" - 1/2"	3/1 - 6/1

- * Annual ryegrass will not be used with perennial species due to its nature of out-competing perennial species.
- ** Pearl millet is not recommended for use in mixtures with perennial seeds.
- *** Reduce seeding rates by 50% when drilling.

2.04 PERMANENT SEED (MINIMUM REQUIREMENT)

Permanent seeding shall be in accordance with the following schedule (at a minimum); (All rates are PLS.) The contractor will be responsible for providing a permanent stand of grass.

SEEDS	LBS/ACRE		DEPTH OF COVER	DATE OF PLANTING
	ALONE OR W/ TEMP.	PERENNIAL		
BERMUDA (COMMON) (HULLED)	10	6	1/4" - 1/2"	3/1 - 6/30
** BERMUDA (COMMON) (UNHULLED)	10	6	1/4" - 1/2"	10/1 - 2/28
*** TALL FESCUE	50	30	1/4" - 1/2"	8/15 - 10/31
WEeping LOVEGRASS	4	2	1/4" - 1/2"	3/1 - 6/15
**** SERICEA LESPEDEZA (UNSCARIFIED)	75	N/A	1/4" - 1/2"	1/1 - 12/31

- * Annual companion crops should be used only when perennial species are not planted during the optimum planting period.
- ** If used with another perennial, plant with tall fescue.
- *** Use alone only on better sites. Mix with perennial lespedezas or Crownvetch.
- **** Mix with tall fescue or winter annuals.

2.05 LIME

ASTM C 602, commercial agricultural limestone containing a minimum of 94 percent of total carbonates, 52 percent calcium, and 42 percent magnesium. Provide the following ASTM E 11 gradation: minimum 100 percent passing the No. 20 sieve and 75 percent passing the No. 100 sieve. Application rates shall be 2 tons per acre unless soil tests indicate otherwise. Lime and fertilizer should be uniformly spread over the area to be seeded, before seedbed preparation. Tillage operations will incorporate these materials into the top few inches of soil for a fertile seedbed.

2.06 FERTILIZER

Commercial grade, free flowing, uniform in composition and bearing the manufacturer's guaranteed statement of analysis. Analysis of fertilizer and application rates shall be as recommended by the University of Georgia County Extension Service through soil testing procedures, and in accordance with this schedule:

TYPE OF SPECIES	LBS/ACRE	FERTILIZER REQUIREMENTS (MINIMUM)		
		ANALYSIS OR EQUIVALENT N-P-K	RATE	N TOP DRESSING RATE
1. COOL SEASON GRASSES	FIRST	6-12-12	1500 lbs/ac	50-100 lbs/ac 1/2/
2. COOL SEASON GRASSES AND LEGUMES	FIRST SECOND MAINTENANCE	6-12-12	1500 lbs/ac 1000 lbs/ac 400 lbs/ac	0-50 lbs/ac 3/
3. WARM SEASON GRASSES	FIRST	6-12-12	1500 lbs/ac	50-100 lbs/ac 2/4/
4. WARM SEASON GRASSES AND LEGUMES	FIRST	6-12-12	1500 lbs/ac	50 lbs/ac 4/

- 1/ Apply in spring following seeding
- 2/ Apply in split applications when high rates are used
- 3/ Apply to grass species only when high rates are used
- 4/ Apply when plants grow to height of 2 to 4 inches

2.07 MULCH

Ds1 Use wheat or other grain straw which is free from noxious weeds, mold, or other deleterious material. Apply at a rate of 2 tons per acre. Additional mulch shall be applied during construction when directed by the engineer. Apply mulch within 24 hours of seeding and cover a minimum of 75% of the disturbed area.

PART 3 EXECUTION

3.01 GENERAL

Construct temporary and permanent erosion control measures as shown on the plans, as required by site conditions, regulatory agency, or Engineer. All permanent erosion control work shall be incorporated into the project at the earliest practicable time. Temporary erosion control measures shall be coordinated with permanent erosion control measures and all other work on the project to assure economical, effective, and continuous erosion control throughout the construction and post construction period and to minimize siltation of rivers, streams, lakes, reservoirs, other water impoundments, ground surfaces, or other property. If active construction ceases for more than 14 days, all disturbed areas shall be seeded and mulched using the temporary seed type and planting rates specified herein.

The Contractor shall be liable for all damages to public or private property and fines as may be placed on the project by the local regulatory agencies due to soil erosion from the project site. Clear only those areas required to install the soil erosion control devices, and then request an inspection by the local agency having jurisdiction.

All erosion control devices shall be inspected by the Contractor after each rainfall. Any required repairs shall be made immediately. Sediment deposits shall be removed when deposits reach approximately one-half of the capacity of the erosion control device.

All cut and fill slopes must be surface roughened and vegetated within fourteen (14) days of their construction. These slopes will be protected until permanent vegetation is established. A 25 to 35 foot undisturbed vegetative buffer adjacent to all running streams and creeks which are not permitted to be disturbed and captured in an underdrain, will remain in their existing condition.

All graded slopes 3:1 or greater must be hydro-seeded or covered with Georgia DOT-approved wheel or wood fiber matting. (Bonded fiber mat also approved by Georgia DOT and Forsyth County may be used.) If not hydro-seeded, Georgia DOT-approved matting that has been impregnated with seed and fertilizer must be used. All slopes must be properly protected until a permanent vegetative stand is established. An appropriate erosion control mat, bonded fiber matrix, or blanket will be used on all slopes steeper than 2.5:1 and with a height of ten feet or greater, and cuts and fills adjacent to stream buffers.

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

A 25 to 35 foot undisturbed vegetative buffer adjacent to all running streams (not permitted to be disturbed and captured) and creeks will be left and maintained.

3.02 SILT FENCE

Sd1-C Silt fence shall be installed where shown on the plans and in accordance with the silt fence detail. Should the filter fabric deteriorate or become ineffective prior to the end of the construction as determined by the Engineer, the fabric shall be replaced immediately at no additional cost to the owner. The silt fence shall be cleaned when one-half of the effective face is silted or blocked. Silt fence should not be installed in ditches and concentrated drainage ways. Silt fence will be placed at the toe of all fill slopes. A double row of silt fence shall be installed between land disturbing activity and state waters.

3.03 STONE CHECK DAM

Cd Check dam shall be installed where shown on the plans and as directed by the engineer in accordance with the check dam detail. Periodic inspection and required maintenance must be provided. Sediment shall be removed when it reaches a depth of one-half the original dam height.

3.04 TEMPORARY GRASSING

Ds2 Temporary grassing shall be provided on all disturbed areas which will not receive permanent vegetation for more than three (3) months or if construction activity ceases for more than 14 days.

3.05 PERMANENT GRASSING

Ds3 A. SEEDBED PREPARATION Areas required to be seeded shall have been brought to the required subgrade. New areas to be seeded shall be thoroughly tilled to a minimum depth of 4 inches by scarifying, disk harrowing, or other approved methods. Remove debris and stones larger than one inch remaining on the surface after tillage.

1. Fertilizer and Lime Apply fertilizer and lime at the rates recommended by University of Georgia County Extension Service Tests through soil testing procedures and this plan sheet.

B. SEEDING

- 1. Seeding Conditions Immediately before seeding, restore soil to the proper grade. Do not seed when the ground is muddy or in any unsatisfactory condition for seeding.
- 2. Seeding Method Apply seed within 24 hours after seedbed preparation. Sow seed with approved sowing equipment using one or a combination of the following methods. Sow one-half the seed in one direction and sow remainder at right angles to the first sowing. Use hand operated mechanical seed broadcaster. Cover seed with spike-tooth harrow.

C. PROTECTION OF SEEDED AREAS

Immediately after seeding, protect the area against traffic and other use by erecting barricades, as required, and placing approved signs at appropriate intervals until final acceptance.

D. RESTORATION

Restore to original condition existing lawn areas which have been damaged during seeding operations. Clean paving when work in adjacent areas is complete.

3.06 REMOVAL OF TEMPORARY EROSION DEVICES

The Contractor shall remove all sedimentation and erosion control devices upon the approval of permanent seeding and stabilization by the agency having jurisdiction of the area and the Engineer. All sediment deposits remaining in place after the erosion control devices are removed shall be dressed to conform with the existing grade, prepared and seeded. The cost of removal and cleanup shall be included in the cost of the installation of the device or in the cost for maintenance.

3.07 EXCELSIOR BLANKET

Ss-RECP Excelsior blankets will be installed and maintained in accordance with the "Manual for Erosion and Sediment Control in Georgia" (most recent revised version) pages 6-63 through 6-66.

3.08 DUST CONTROL

Du Use water truck when necessary to control surface and air movement of dust on disturbed areas. Other acceptable methods and materials can be found in the "Manual for Erosion and Sediment Control in Georgia" (most recent revised version).

3.09 TOPSOILING

- 1. Topsoil should be friable and loamy, free of debris, objectionable weeds and stones and contain no toxic substance that may be harmful to plant growth.
- 2. Topsoil should be handled only when it is dry enough to work without damaging soil structure.

3. A uniform application of 5 inches (unsettled) is recommended, but may be adjusted at the discretion of the engineer or landscape architect.

4. Further specifications and information about topsoil can be found in the "Manual for Erosion and Sediment Control in Georgia" latest edition.

PART 4 ADDITIONAL NOTES

TROUT STREAM: Proposed land disturbing activities are not located within 100' of the banks of a designated trout stream.

MAINTENANCE: 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.

SECONDARY PERMITTEES

Currently there are no secondary permittees expected for this project. If required, they will be added to this section at the appropriate time. A copy of the Erosion, Sedimentation, and Pollution Control Plan will be provided to all secondary permittees prior to secondary permittee beginning work on the project. Written records of this process will be retained by the primary permittee.

PETROLEUM SPILLS

PRE-/POST-DEVELOPMENT RUNOFF

No oils, grease, materials or other pollutants will be discharged from the construction activities which reach public waters. BMP's include daily inspections, daily remediation, secondary containment, earth-moving equipment to capture spills and absorbent material. All of the borrow area has been disturbed. All storm water run-off is routed to ditches which drain to the Etowah River. After construction, storm water for this project will be routed through erosion controls and through protected ditches. All water discharged from the site will drain to the Etowah River. The post-developed condition will consist of three sediment ponds and a borrow area. All slopes and ditches will be temporarily or permanently grassed using excelsior matting which will minimize erosion. Based on the calculations in the Hydrology Study the pre-developed C-value is estimated to be 0.56 and the post-developed C-value is estimated to be 0.52 for this area.

SEDIMENT POND RATIONALE

Two existing sediment ponds are part of this project and will be used to control storm water runoff. All runoff not draining to the sediment ponds will be controlled through the use of excelsior matting or bonded fiber matrix, ditch protection and disturbed area stabilization.

WASTE MATERIALS

Waste materials shall not be discharged to waters of the State, except as authorized by a Section 404 permit. Washout of the concrete drum at the site is prohibited. Washout of concrete placing tools must be done in an area where wash water can be contained and allowed to evaporate or pump and hauled to a wastewater treatment facility. Wash water from concrete totes is prohibited from discharge at this site.

RECEIVING WATERS

The receiving waters for this project is the Etowah River. Appropriate BMP's will be implemented to protect all receiving waters. This construction activity will not discharge storm water into an impaired stream segment, or within one (1) linear mile upstream of and within the same watershed as, any portion of a biota impaired stream segment. Therefore, no TMDL implementation plan is required to be followed.

INSPECTIONS

Design Professional

- 1. The design professional who prepared the ES&PC plan is to inspect the installation of the initial sediment storage requirements and perimeter control BMP's within 7 days after installation.

Primary Permittee

- 1. Each day when any type of construction activity has taken place at a primary permittee's site, certified personnel provided by the primary permittee shall inspect: (a) all areas of 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 seven (7) calendar days and within 24 hours of the end of a storm that is 0.5 inches rainfall or greater (unless such storm occurs 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 Notice of Termination is received by EPD) the areas of the site that have undergone final stabilization or established a crop of annual vegetation and a seeding of target perennials appropriate for the region. These areas shall be inspected for evidence of, or the potential for, pollutants entering the drainage system and the receiving 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, and 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 certification that the best management practices are in compliance with the Erosion, Sedimentation and Pollution Control Plan. The report shall be signed in accordance with Part V.G.2. of this permit.

RETENTION OF RECORDS

- 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. A copy of all Notices of Intent submitted to EPD;
 - b. A copy of the Erosion, Sedimentation and Pollution Control Plan required by this permit;
 - c. The design professional's reports of the results of the inspections conducted in accordance with Part IV.A.5. of this permit;
 - d. A copy of all sampling information, results, and reports required by this permit;
 - e. A copy of all inspection reports generated in accordance with Part IV.D.4.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 sampling information, results, and reports required 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 the NPDES permit. These records must be maintained at the permittee's primary place of business or at a designated alternate location once the construction activity has ceased at the permitted site. This period may be extended by request of the EPD at any time upon written notification to the permittee.

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 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 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 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 the NPDES permit either 90 days after the first sampling event or after all mass grading operations have been completed, but prior to submittal of a NOT, in the drainage area of the location selected as the sampling location, whichever comes first;
 - (c) At the time of sampling performed pursuant to (a) and (b) above, if BMP's 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 BMP's are properly designed, installed and maintained;
 - (d) Where sampling pursuant to (a), (b) or (c) above is required but not possible (or not required because there was no discharge), the permittee, in accordance with Part IV.D.4.a.(6), must include a written justification in the inspection report of why sampling was not performed. Providing this justification does not relieve the permittee of any subsequent obligations under (a), (b) or (c) above; 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.
 - (f) The sampling container should be held so that the opening faces upstream.

*Note that the permittee may choose to meet the requirements of (a) and (b) above by collecting turbidity samplings from any rain event that reaches or exceeds 0.5 inch and allows for monitoring at any time of the day or week.

REPORTING

- 1. The applicable permittees are required to submit a summary of the monitoring 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. Sampling reports must be submitted to EPD until such time as a NOT is submitted in accordance with Part VI.
- 2. 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.
- 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 name(s) of the individual(s) who performed the analyses;
 - f. References and written procedures, when available, for the analytical techniques or methods used; and
 - g. The results of such analyses, including the bench sheets, instrument readouts, computer disks or tapes, etc., used to determine these results.

RATIONALE FOR NTU VALUE
 The size of the surface water drainage area for outfall sampling points is less than 4.99 square miles and the disturbed area is greater than 10 acres. All storm water from the site flows into the Etowah River, which is a warm water fisheries stream. Based on Appendix B of Permit No. GAR100001 and the above information, the NTU value for outfall sampling points was determined to be 50. For monitoring of upstream and downstream sampling points, the turbidity of the receiving water must not be increased by more than 25 nephelometric turbidity units.

TEMPORARY BUILDING COVER
 The project will use protective cover plastic sheeting or temporary roofs to cover building materials, products, wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, and other materials in order to minimize exposure to precipitation and to stormwater.

REVISION HISTORY

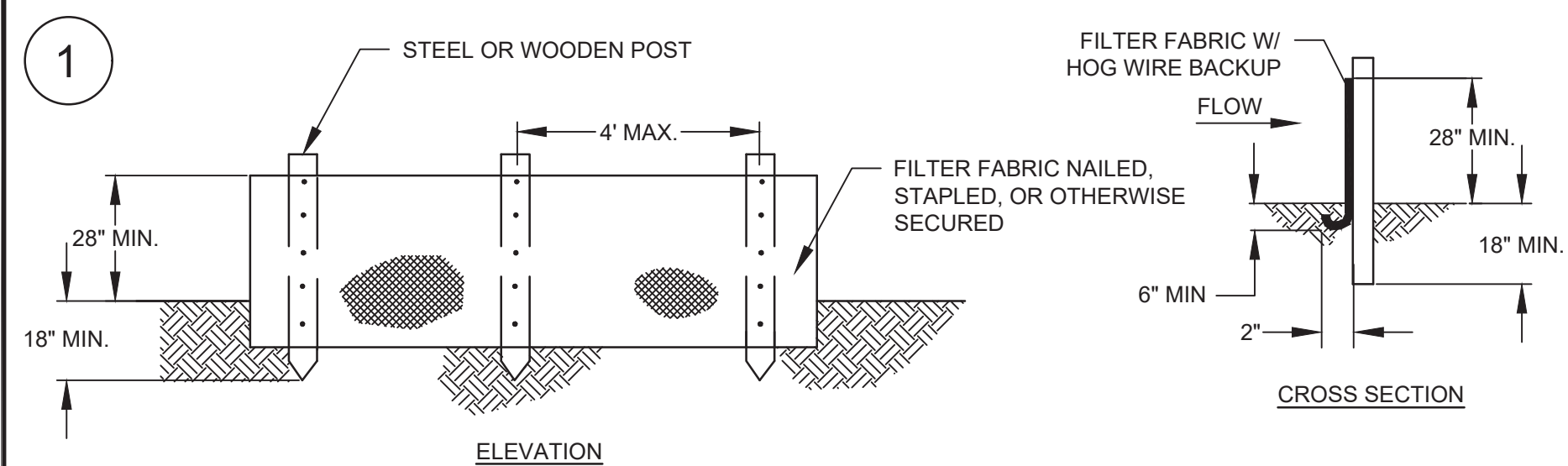
DATE	DESCRIPTION
1/17/2020	ADDED NTU RATIONALE AND BUILDING MATERIAL COVER



JERICO design group
 102 Mary Alice Park Rd., Suite 103
 Cumming, GA 30040

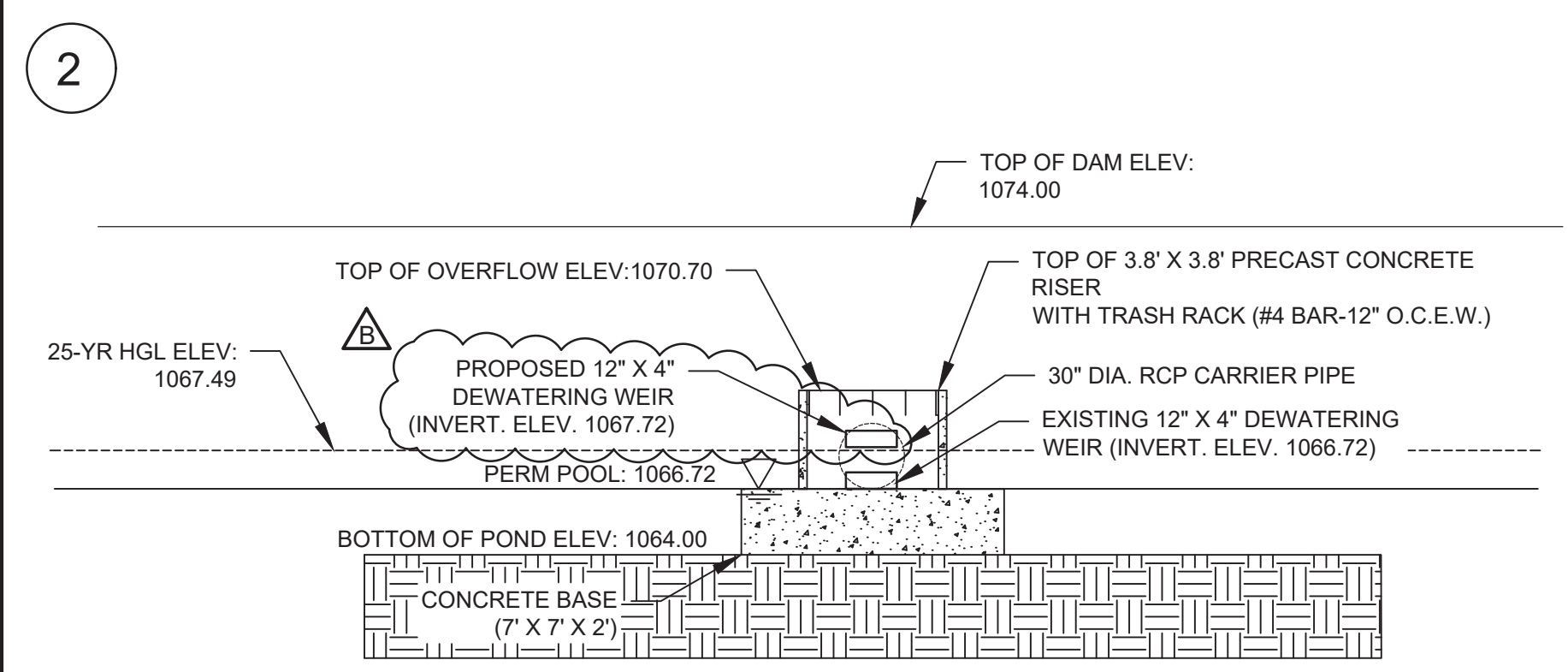
THIS DRAWING, THE DIMENSIONS OF WHICH ARE GIVEN HEREIN, IS THE PROPERTY OF JERICO DESIGN GROUP, LLC. IT IS TO BE USED ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREIN AND MAY NOT BE REPRODUCED OR USED FOR ANY OTHER PROJECT WITHOUT THE WRITTEN PERMISSION OF JERICO DESIGN GROUP, LLC.



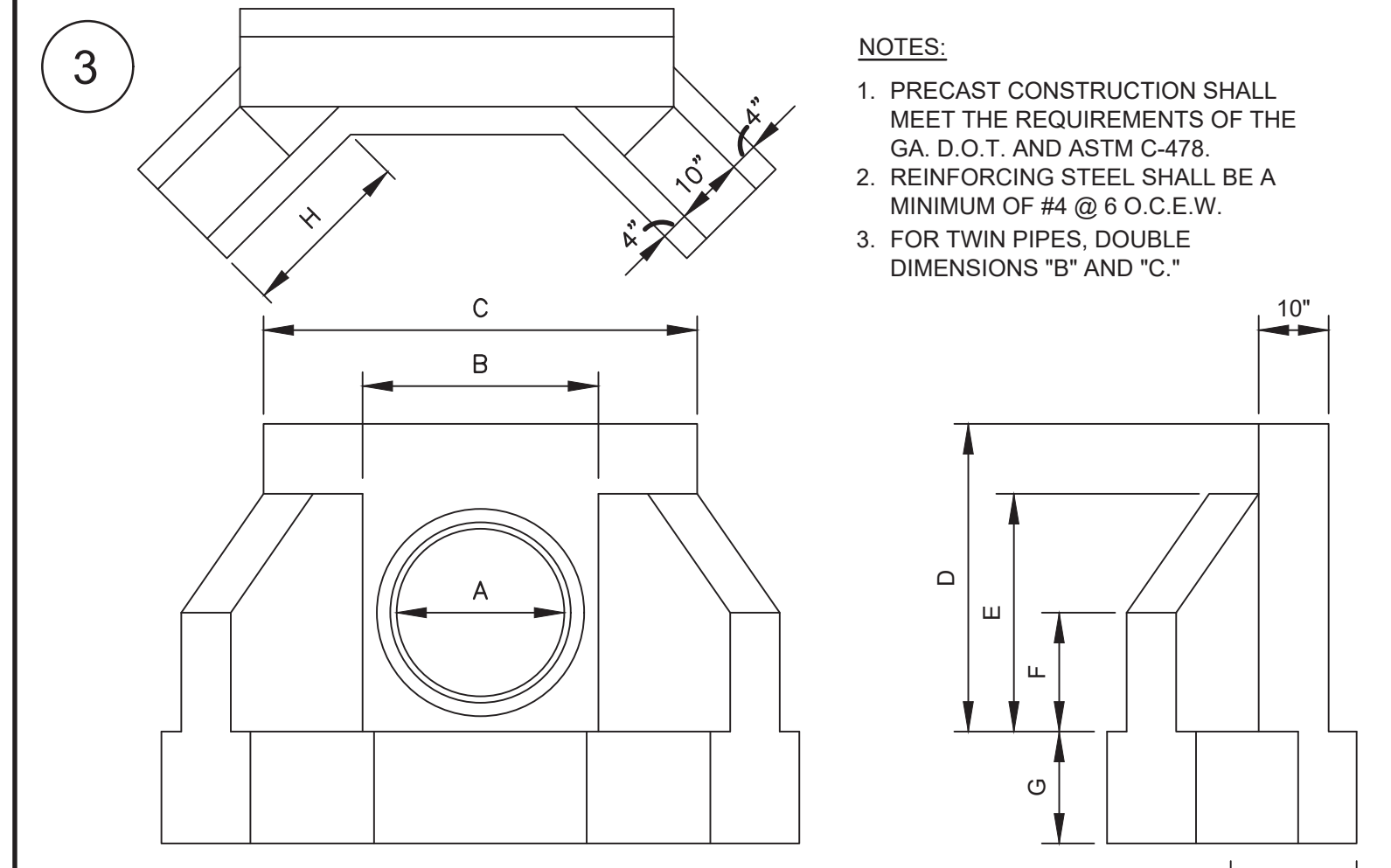


- NOTES:
1. FLOWS MAY NECESSITATE THE PLACEMENT OF HAY BALES IN FRONT OF FILTER FABRIC
 2. THE FILTER FABRIC SHALL BE CHOSEN FROM THE GEORGIA DEPARTMENT OF TRANSPORTATION LIST #36.
 3. FABRIC SHALL BE ATTACHED IN ACCORDANCE WITH THE "MANUAL FOR EROSION AND SEDIMENTATION CONTROL IN GEORGIA."
 4. SILT FENCE SHALL BE CLEANED OF SEDIMENT WHEN LESS THAN 1/2 OF SURFACE AREA IS SHOWING.
 5. SILT FENCE WILL BE INSTALLED PRIOR TO OR CONCURRENT WITH LAND DISTURBING ACTIVITIES.
 6. DOUBLE ROWS OF SILT FENCE WILL BE USED ADJACENT TO JURISDICTIONAL WETLANDS AND STREAMS.
 7. SILT FENCE SHALL BE PLACED AT DOWNSTREAM TOE OF ALL CUT AND FILL SLOPES.
 8. ALL SILT FENCE HAS BEEN INSTALLED; OWNER WILL REPLACE SILT FENCE IN ACCORDANCE WITH THIS DETAIL AS NECESSARY.

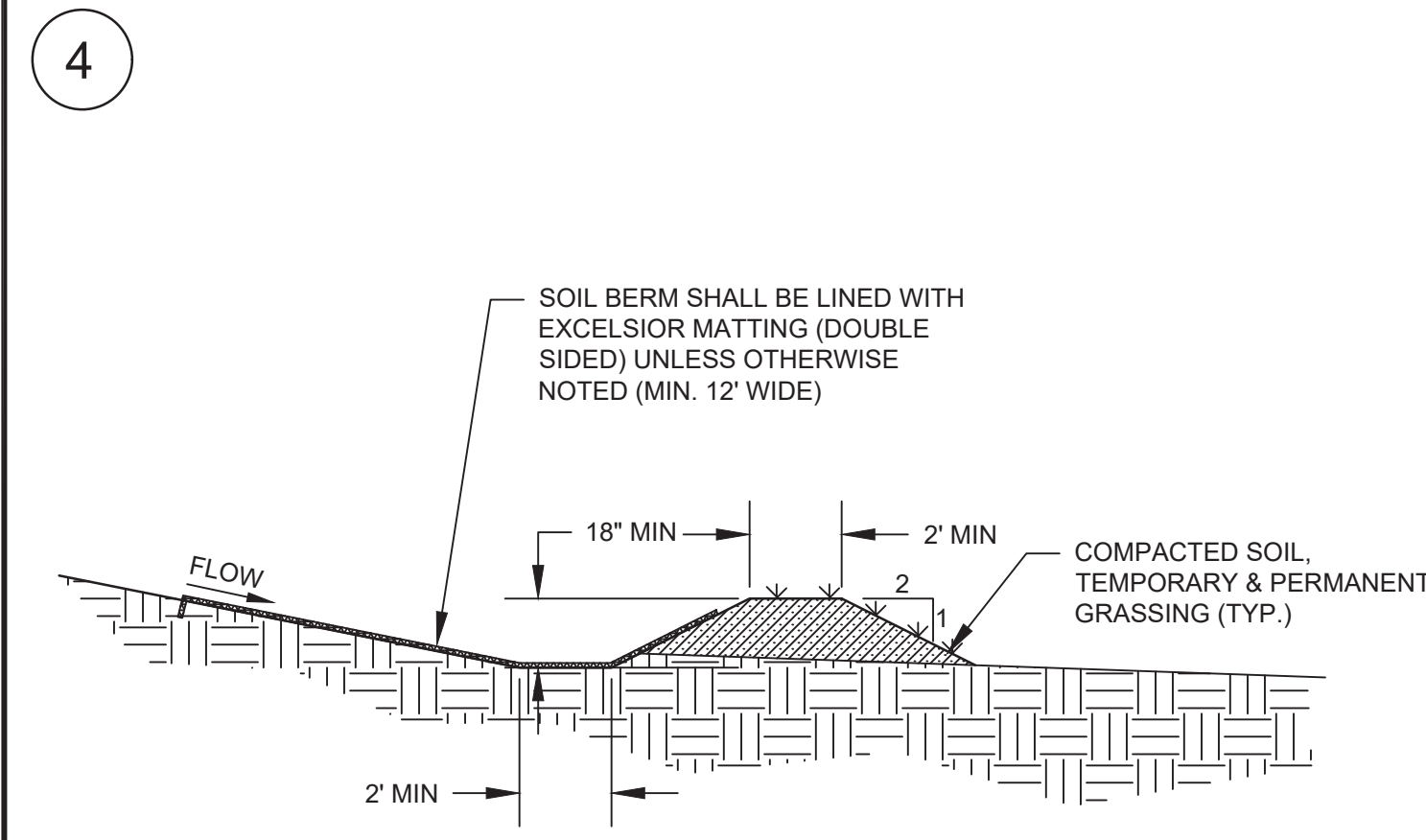
TEMPORARY SILT FENCE - TYPE C (Sd1-C)



SEDIMENT POND NO. 2 FRONT OF OVERFLOW STRUCTURE

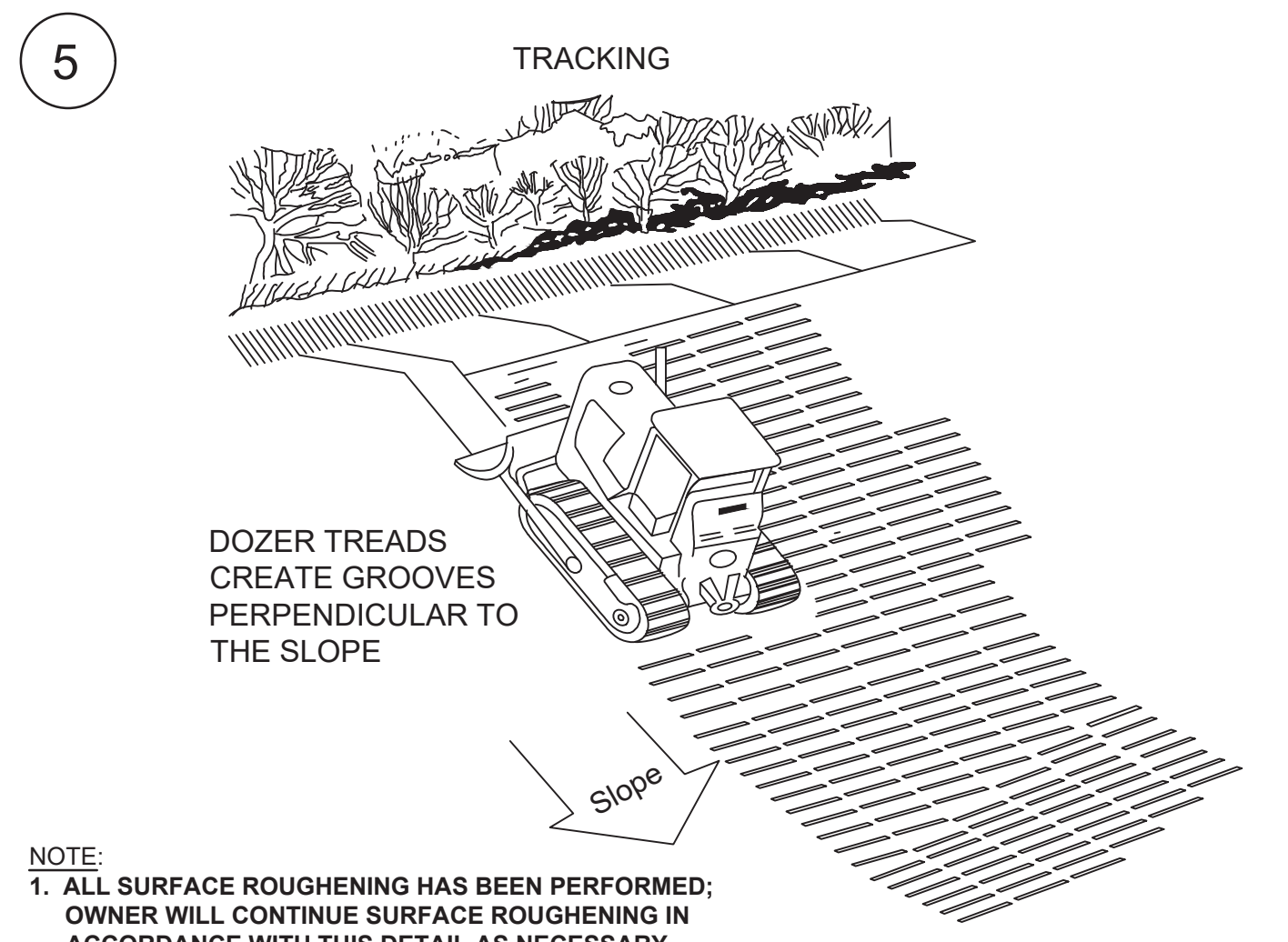


CONCRETE HEADWALL

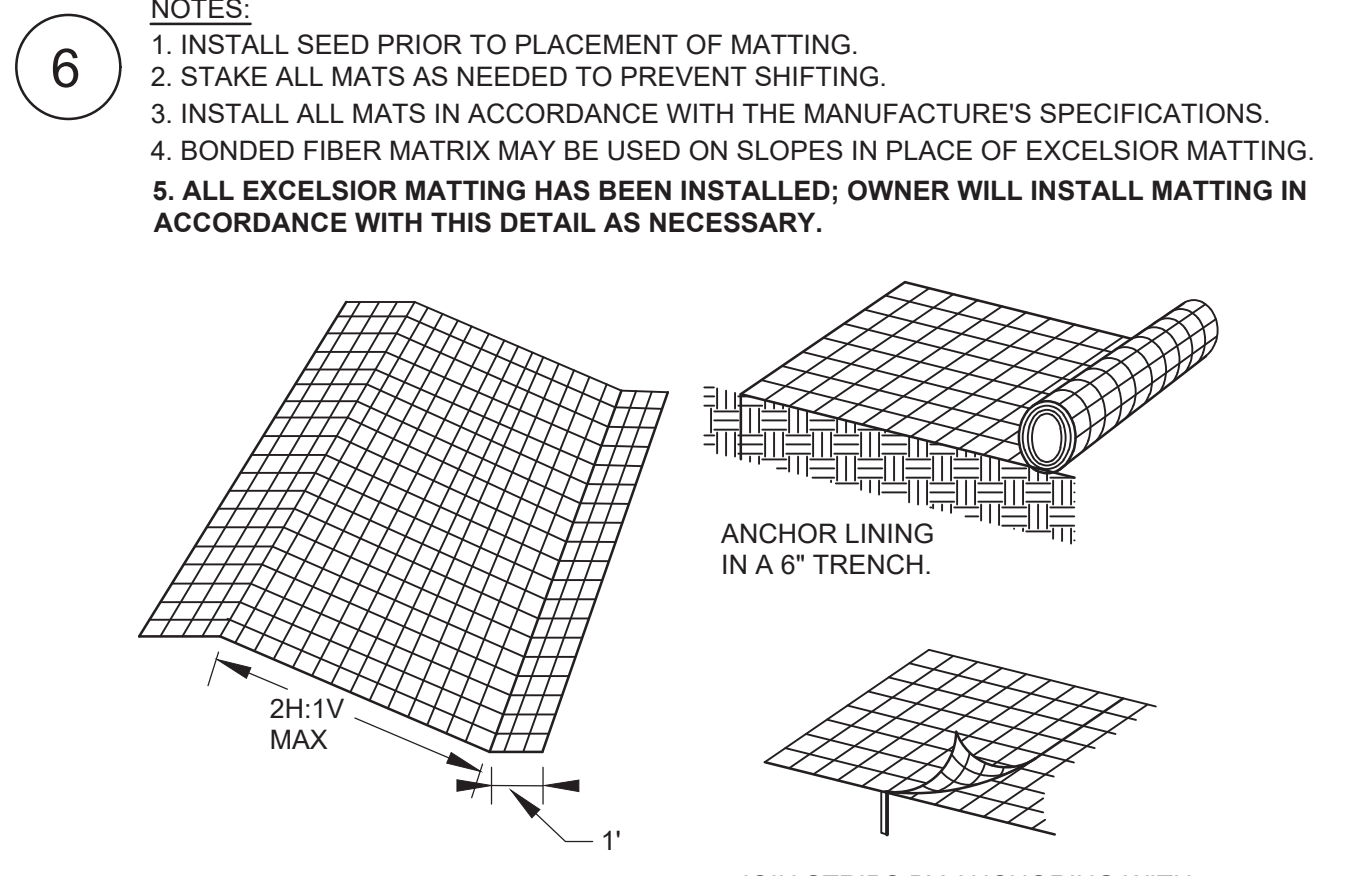


- NOTE:
1. ALL TEMPORARY STORMWATER DIVERSION BERMS HAVE BEEN INSTALLED; OWNER WILL REPLACE BERMS IN ACCORDANCE WITH THIS DETAIL AS NECESSARY.

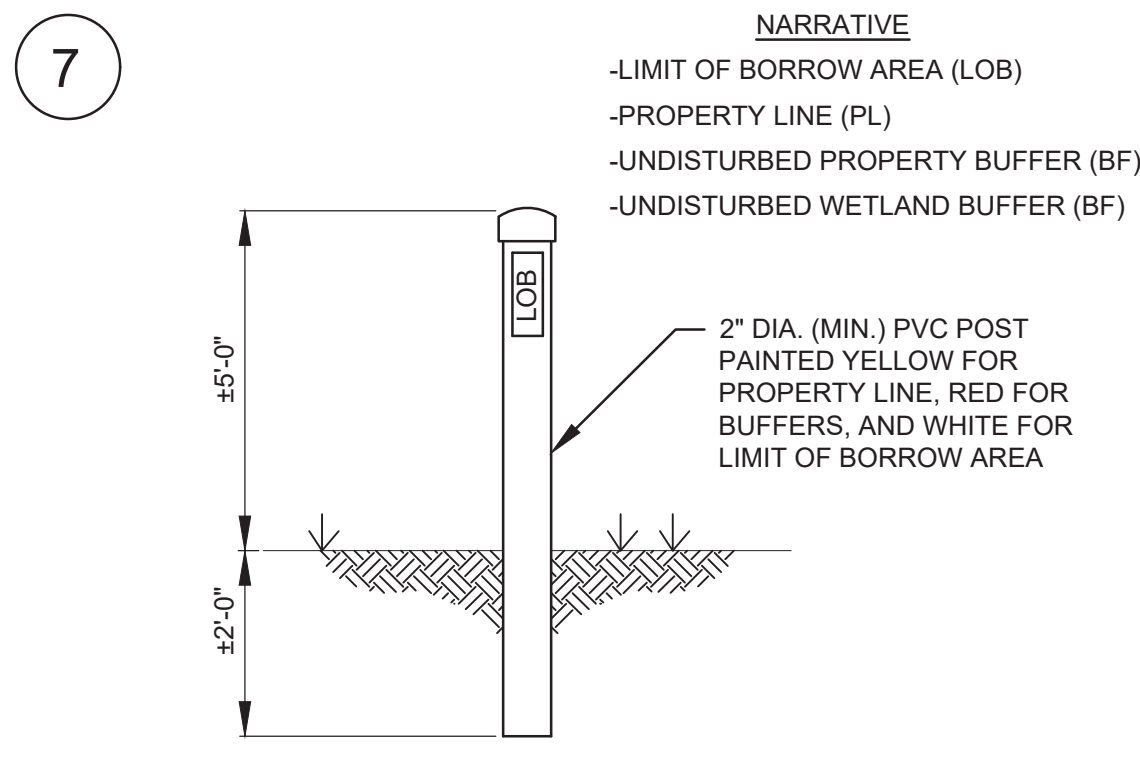
TEMPORARY STORMWATER DIVERSION BERM (AS DIRECTED BY ENGINEER) (Di)



SURFACE ROUGHENING (AS DIRECTED BY ENGINEER) (Su)

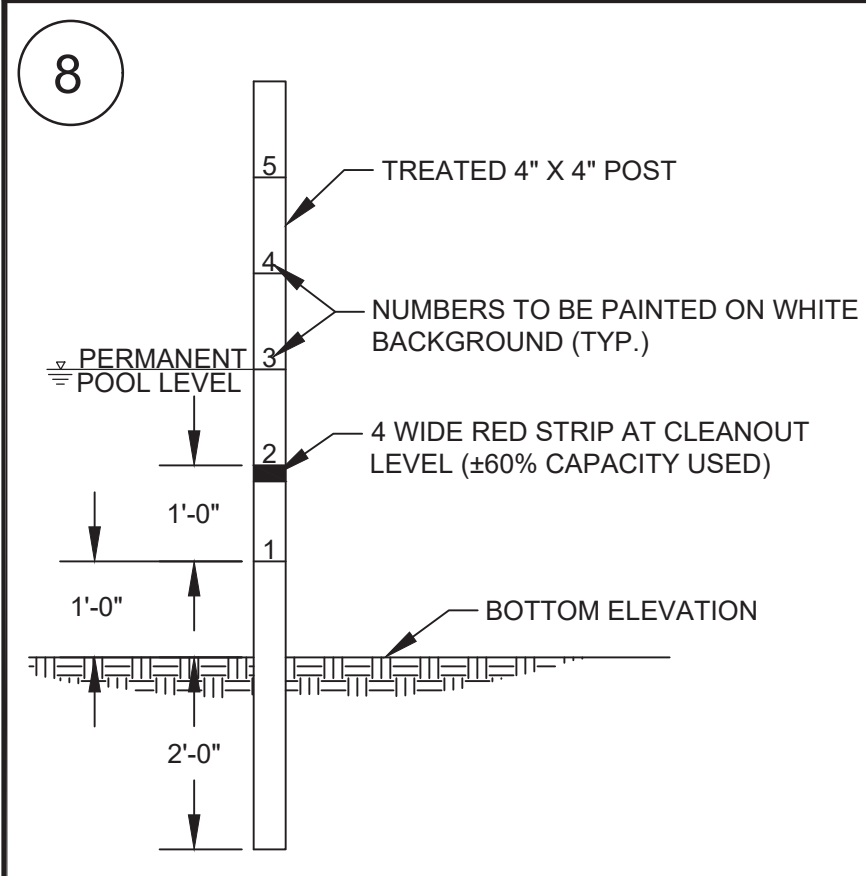


EXCELSIOR (WOOD FIBER) MATTING (SLOPES) (AS NEEDED) (Ss-RECP)



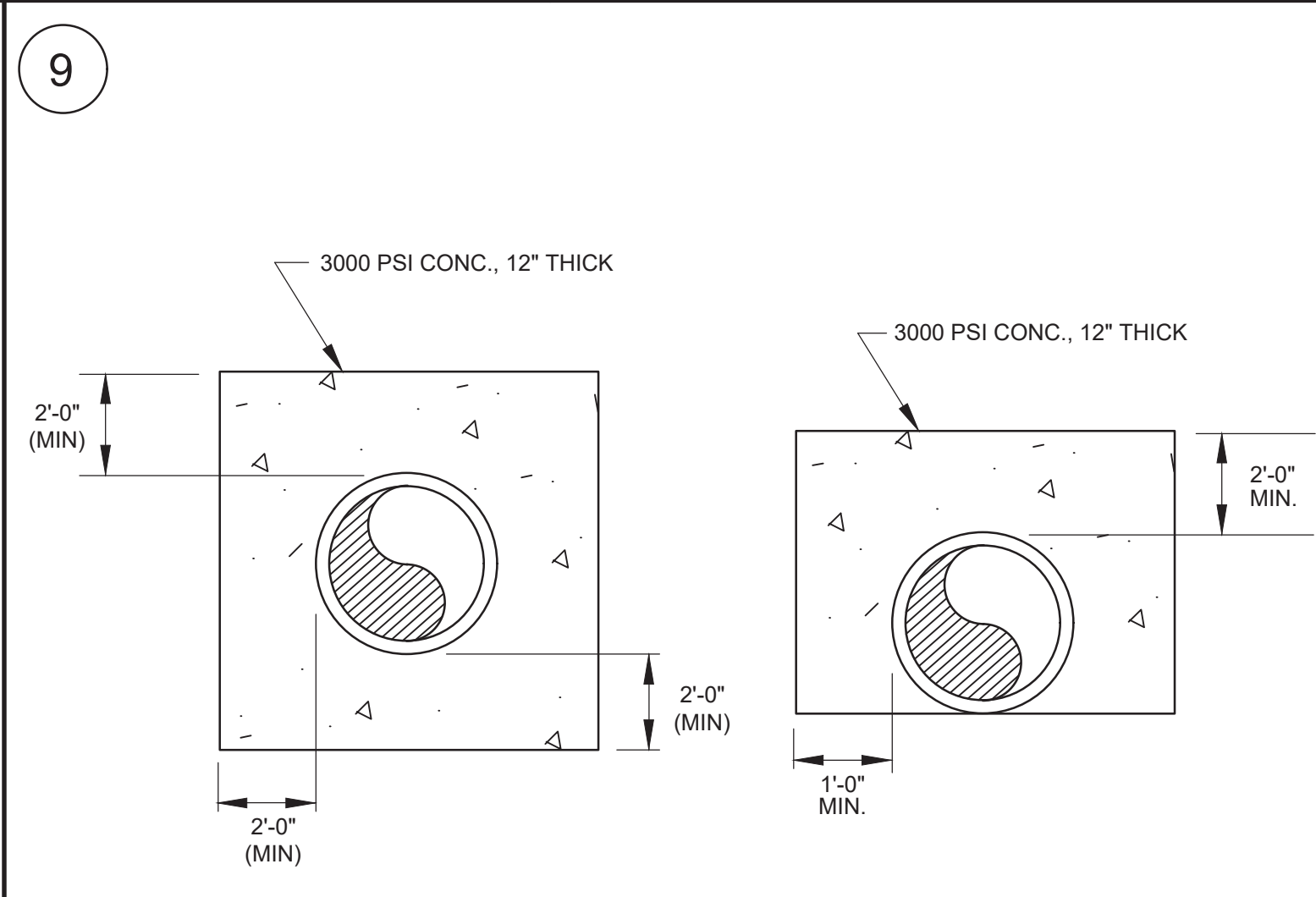
- NOTE:
1. OTHER MARKER DESIGNS MAY BE UTILIZED AT THE OPERATOR'S DISCRETION.
 2. MARKERS SHALL BE PLACED ON 300' CENTERS ALONG LIMIT OF BORROW AREA AND BORROW AREA CORNERS.
 3. BUFFERS SHALL BE MARKED AT SPACING NOT TO EXCEED 500' AND AT CORNERS.
 4. ALL MARKERS HAVE BEEN INSTALLED; OWNER WILL REPLACE MARKERS IN ACCORDANCE WITH THIS DETAIL AS NECESSARY.

MARKER POST



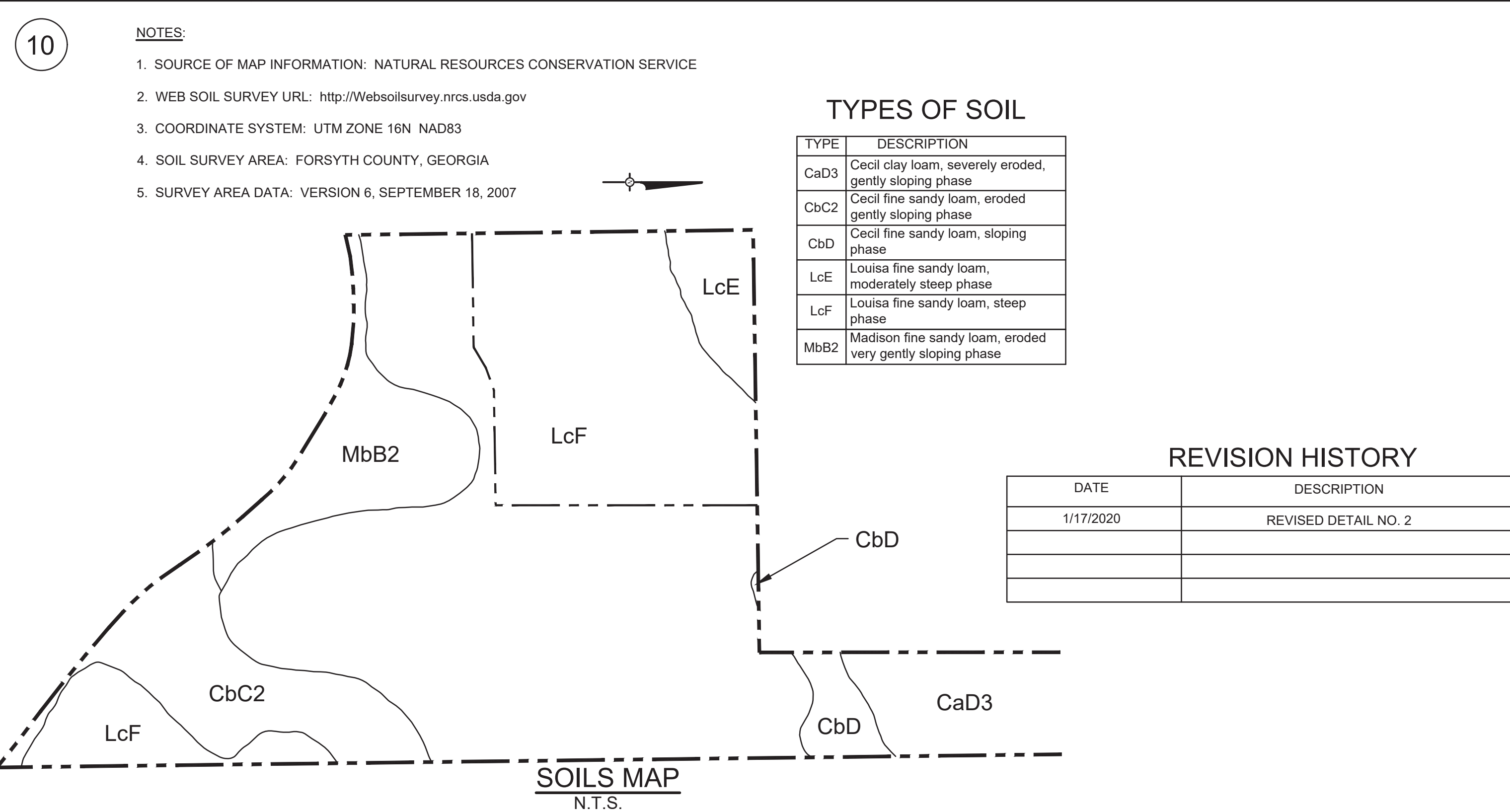
- NOTE:
1. THE SEDIMENT SHALL BE REMOVED FROM THE POND(S) ANNUALLY. HOWEVER, SEDIMENT SHALL ALSO BE REMOVED WHEN THE SEDIMENT REACHES THE BASE OF THE SEDIMENT GAGE. IF WATER PREVENTS VISUAL INSPECTION OF THE MARK, THE OPERATOR IS RESPONSIBLE FOR MEASURING THE SEDIMENT AT THE SILT GAGE BY PERSONAL INSPECTION.
 2. THE SILT GAGE SHALL BE PLACED AT 2/3 OF THE TRAVEL DISTANCE FROM THE INFLOW STORM WATER DRAINAGE LOCATION OR PIPE TO THE RISER STRUCTURE.
 3. ALL GAGES HAVE BEEN INSTALLED; OWNER WILL REPLACE GAGES IN ACCORDANCE WITH THIS DETAIL AS NECESSARY.

SILT GAGE



- NOTE:
1. SEE CHARTS ON SHEET NO. 4 FOR ACTUAL DIMENSIONS.

CARRIER PIPE ANTI-SEEPAGE COLLAR and **CARRIER PIPE CONCRETE ENCASUREMENT**



- NOTES:
1. SOURCE OF MAP INFORMATION: NATURAL RESOURCES CONSERVATION SERVICE
 2. WEB SOIL SURVEY URL: <http://Websoilsurvey.nrcs.usda.gov>
 3. COORDINATE SYSTEM: UTM ZONE 16N NAD83
 4. SOIL SURVEY AREA: FORSYTH COUNTY, GEORGIA
 5. SURVEY AREA DATA: VERSION 6, SEPTEMBER 18, 2007

TYPES OF SOIL

TYPE	DESCRIPTION
CaD3	Cecil clay loam, severely eroded, gently sloping phase
CbC2	Cecil fine sandy loam, eroded gently sloping phase
CbD	Cecil fine sandy loam, sloping phase
LcE	Louisa fine sandy loam, moderately steep phase
LcF	Louisa fine sandy loam, steep phase
MbB2	Madison fine sandy loam, eroded very gently sloping phase

REVISION HISTORY

DATE	DESCRIPTION
1/17/2020	REVISED DETAIL NO. 2



3920 ARKWRIGHT ROAD, SUITE 101 - MACON, GEORGIA 31210
PHONE: (478) 743-7175
FAX: (478) 743-1703

OUTDOOR FIRING RANGE
for the
Forsyth County Sheriff's Department
514 West Maple Street
Cumming, Georgia 30040

PRINT RECORD

No.	DATE	DESCRIPTION
	12/09/2019	PERMIT/PRICING SET
▲	2/19/2020	ADDENDUM B

Drawn By: WAG
Checked By: WMS
Date: 02/19/2020
Job No.: 19049

Sheet Title: MISCELLANEOUS DETAILS
Sheet No.: **C - 7**
RELEASED FOR CONSTRUCTION

14

**A RESOLUTION
BY
THE BOARD OF COMMISSIONERS OF FORSYTH COUNTY, GEORGIA**

WHEREAS, a request has been received that this Board further amend the Unified Development Code of Forsyth County, Georgia, adopted May 22, 2000, as amended, together with the zoning maps likewise duly adopted and amended; and,

WHEREAS, Zoning Application Number ZA3594 presented to the Department of Planning & Development which caused to be published in The Forsyth County News, a newspaper of general circulation in Forsyth County in which Sheriff's advertisements are published, a notice of hearing; and,

WHEREAS, the aforesaid notice of public hearing (a copy of which is attached hereto as Exhibit "A" and incorporated herein by reference) was published more than 15 days prior to the public hearing; and,

WHEREAS, the Planning Commission held a public hearing at the time and place set forth in the notice thereof pursuant to the authority delegated by the Board; and,

WHEREAS, the report and recommendation of the Planning Commission (attached hereto as Exhibit "B" and incorporated herein by reference) has been received regarding the subject property described on Exhibit "C" attached hereto and incorporated herein by reference; and,

WHEREAS, this Board has considered the proposed amendment in light of the Master Plan as adopted and interpreted by the Planning Commission; and, has examined the views expressed at the public hearing, the subject parcel and surrounding area, the statutory zoning criteria, and the need to modify the exercise of the police power with regard to this particular parcel as such exercise relates to the comprehensive exercise of that power throughout the unincorporated area of Forsyth County, Georgia;

NOW THEREFORE BE IT RESOLVED, that the parcel described on Exhibit "C" should be, and hereby is, declared to be zoned as Mining Operations District (MINE), and,

BE IT FURTHER RESOLVED that the Unified Development Code of Forsyth County, Georgia, adopted May 22, 2000, as amended, and the zoning maps likewise duly adopted and amended, are hereby further amended to effect the above zoning on the subject parcel; and,

Applicant: Hodges, Harbin Newberry & Tribble, Inc. ZA #3594
Page 1

BE IT FURTHER RESOLVED that the rezoning of the parcel described on Exhibit "C" is subject to the following variances and conditions:

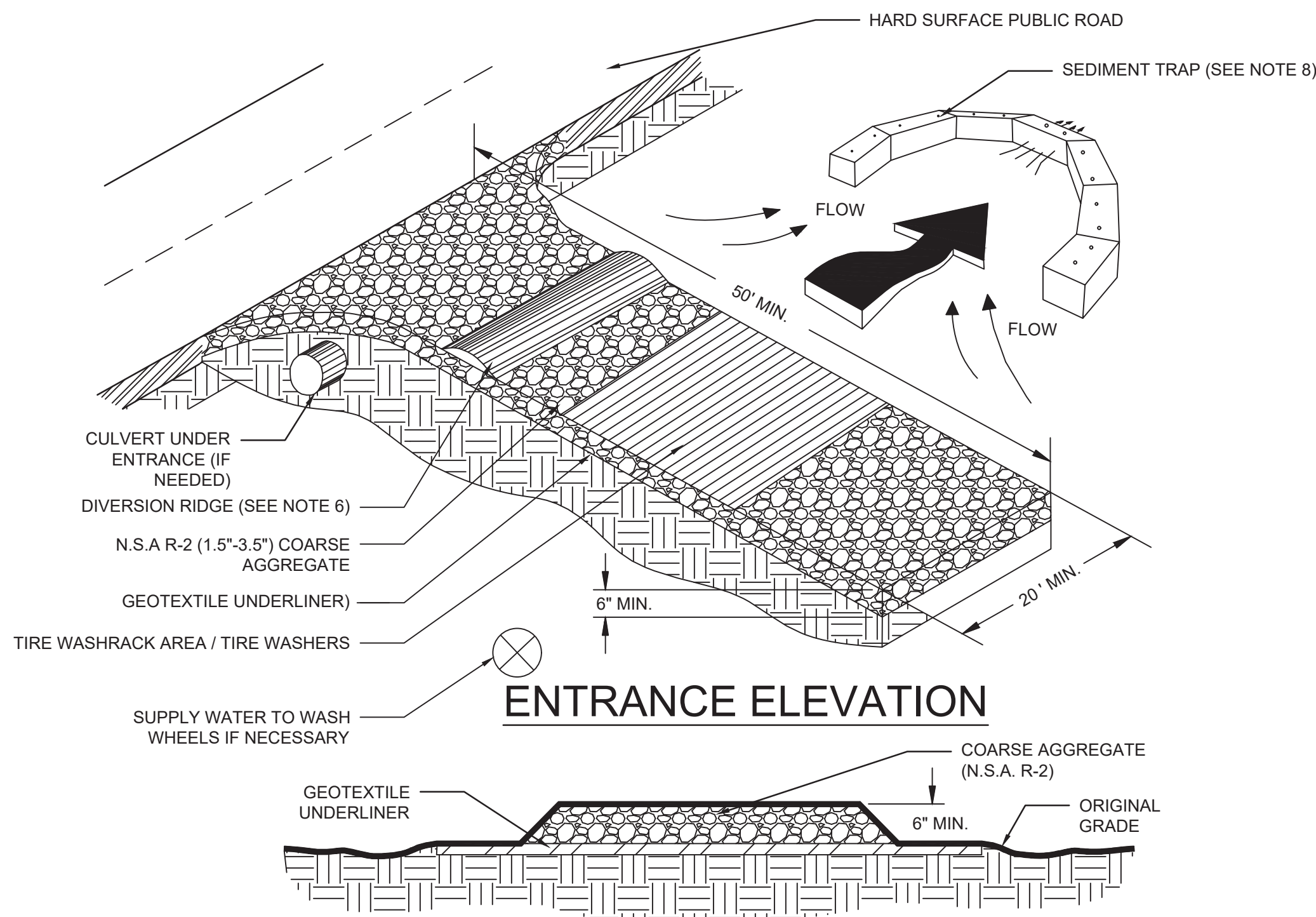
1. Expansion of the existing landfill operation shall not extend to this property. A Conditional Use Permit (CUP) approved by the Forsyth County Board of Commissioners would be required for a landfill operation.
2. No temporary or permanent access shall be granted from the soil borrow site to Old Federal Road.

SO RESOLVED, this 20th day of September, 2012.

Jim Boff Jim Boff, Chairman
Patrick B. Bell Patrick B. Bell, Vice-Chairman
Todd Levent Todd Levent, Secretary
Brian R. Tam Brian R. Tam, Member
Ralph J. Amos Ralph J. Amos, Member

Applicant: Hodges, Harbin Newberry & Tribble, Inc. ZA #3594
Page 2

15



NOTES:

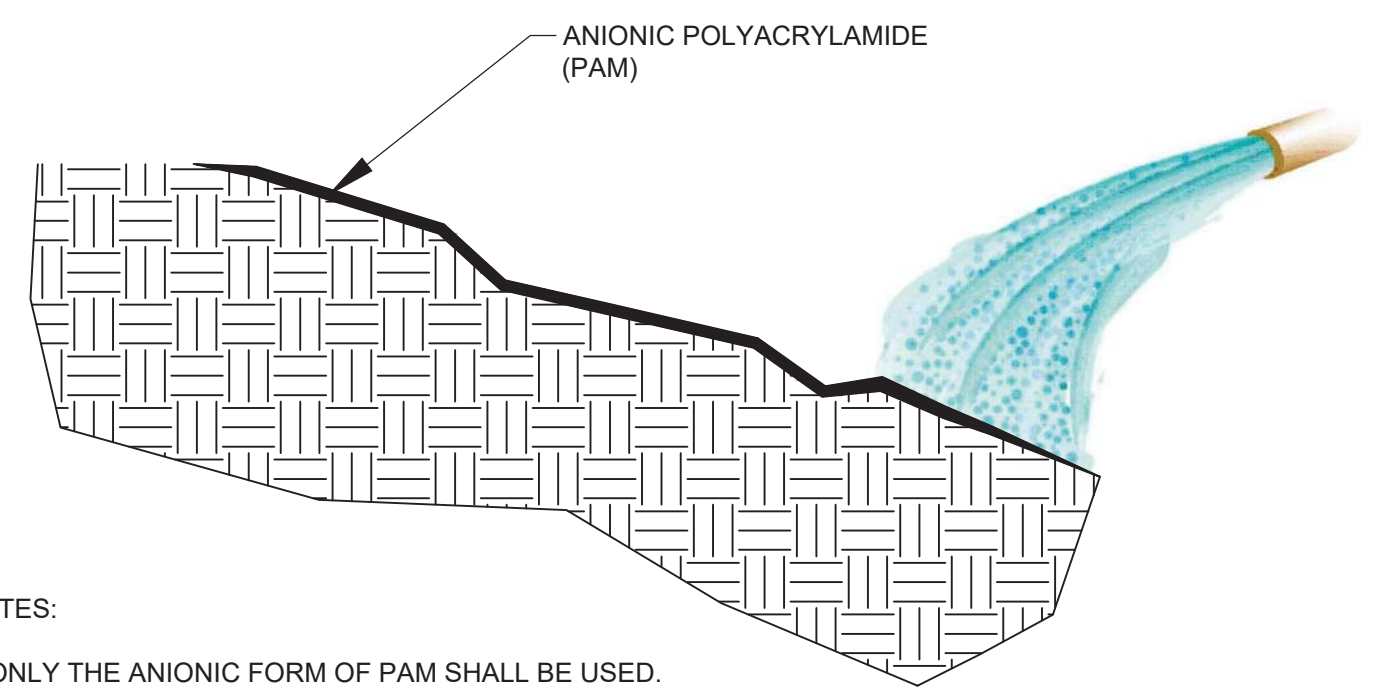
1. AVOID LOCATING ON STEEP SLOPES OR AT CURVES ON PUBLIC ROADS.
2. REMOVE ALL VEGETATION AND OTHER UNSUITABLE MATERIAL FROM THE FOUNDATION AREA, GRADE, AND CROWN FOR POSITIVE DRAINAGE.
3. AGGREGATE SIZE SHALL BE IN ACCORDANCE WITH NATIONAL STONE ASSOCIATION R-2 (1.5"-3.5") STONE.
4. GRAVEL PAD SHALL 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.

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.

CONSTRUCTION EXIT (IF NEEDED)

17



NOTES:

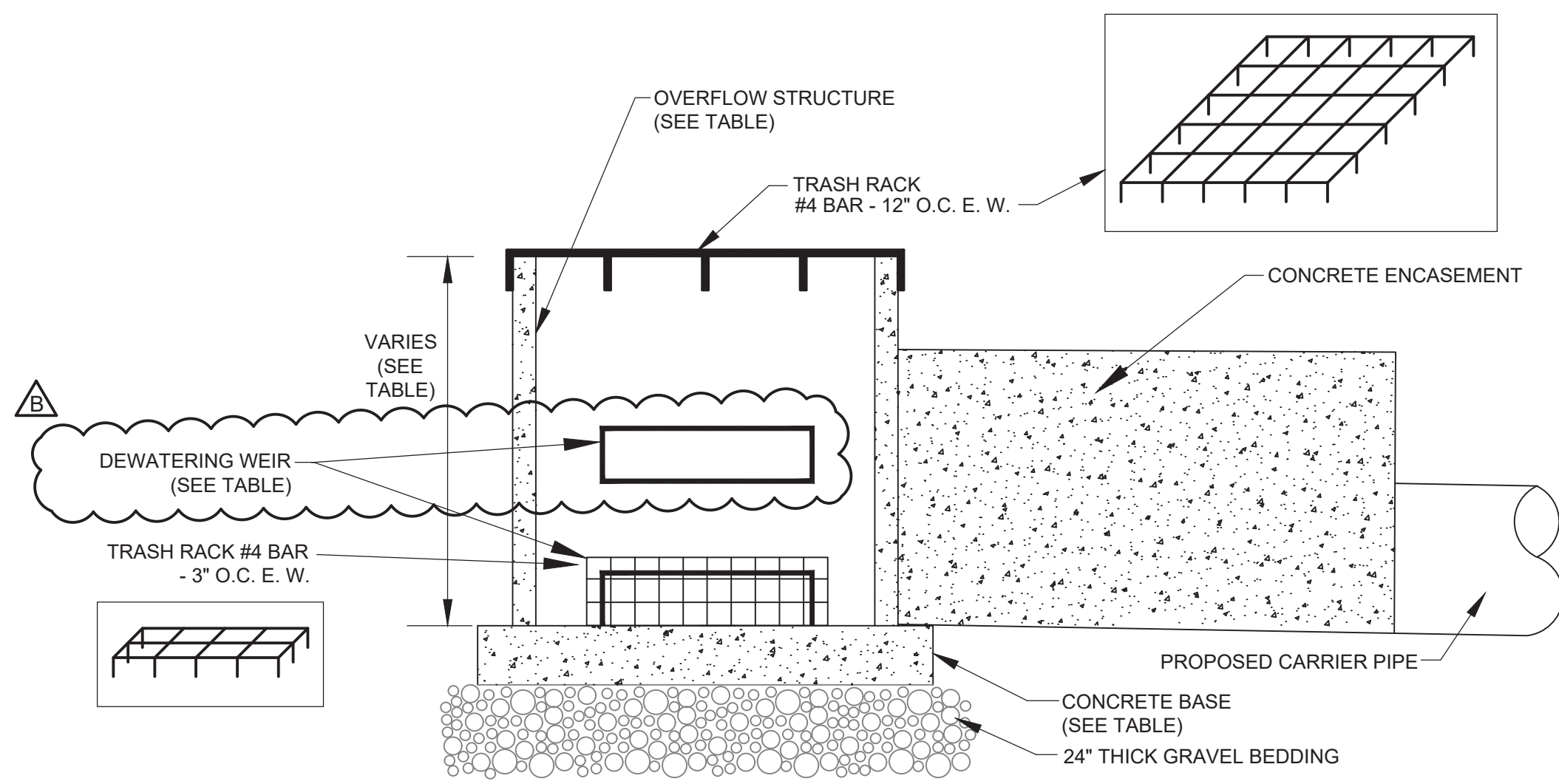
1. ONLY THE ANIONIC FORM OF PAM SHALL BE USED.
2. NEVER ADD WATER TO PAM. ADD PAM SLOWLY TO WATER TO PREVENT GLOBS
3. SEED AND MULCH SHALL BE USED IN COMBINATION WITH ANIONIC PAM.
4. ANIONIC PAM, IN PURE FORM, SHALL HAVE LESS THAN OR EQUAL TO 0.05% ACRYLAMIDE MONOMER BY WEIGHT. TO MAINTAIN LESS THAN OR EQUAL TO 0.05% OF ACRYLAMIDE MONOMER, THE MAXIMUM APPLICATION RATE OF PAM, IN PURE FORM, SHALL NOT EXCEED 200 POUNDS/ACRE/YEAR.
5. THE MANUFACTURER OR SUPPLIER SHALL PROVIDE WRITTEN APPLICATION METHODS FOR PAM AND PAM MIXTURES. THE MANUFACTURER SHALL ALSO PROVIDE WRITTEN INSTRUCTIONS TO INSURE PROPER SAFETY, STORAGE, MIXING OF THE PRODUCT, AND COMPLIANCE WITH FEDERAL, STATE, AND LOCAL LAWS, RULES, OR REGULATIONS GOVERNING ANIONIC PAM.
6. SEE "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA" (LATEST EDITION) FOR FURTHER INFORMATION ABOUT POLYACRYLAMIDE (PAM).

POLYACRYLAMIDE (PAM) FOR SLOPE STABILIZATION

REVISION HISTORY

DATE	DESCRIPTION
1/17/2020	REVISE DETAIL NO. 16

16



CONCRETE OVERFLOW STRUCTURE DESIGN

	POND 2(E)	POND 3(E)
SIZE (FT)	3.8 x 3.8	3.8 x 3.8
INVERT ELEVATION (BOTTOM OF STRUCTURE / TOP OF BASE) (FT)	1066.75	1112.93
HEIGHT (FT)	3.95	4.07
CONCRETE BASE DIMENSIONS LxWxH (FT)	7 x 7 x 2	6 x 6 x 2
TOP OF RISER ELEV.	1070.70	1117.00
DEWATERING WEIR (IN)	4"(H) x 12"(W)	4"(H) x 8"(W)
INVERT ELEVATION FOR DEWATERING WEIR	1066.72 & 1067.72	1112.93

OVERFLOW STRUCTURE



REGISTERED PROFESSIONAL ENGINEER
No. 27108
WILLIAM M. STUBBS
02/19/2020

REGISTERED PROFESSIONAL ENGINEER
No. 37574
WILLIAM A. GRANT
02/19/2020

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Cumming, Georgia 30040

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No.	DATE	DESCRIPTION
12/09/2019		PERMIT/PRICING SET
2/19/2020		ADDENDUM B

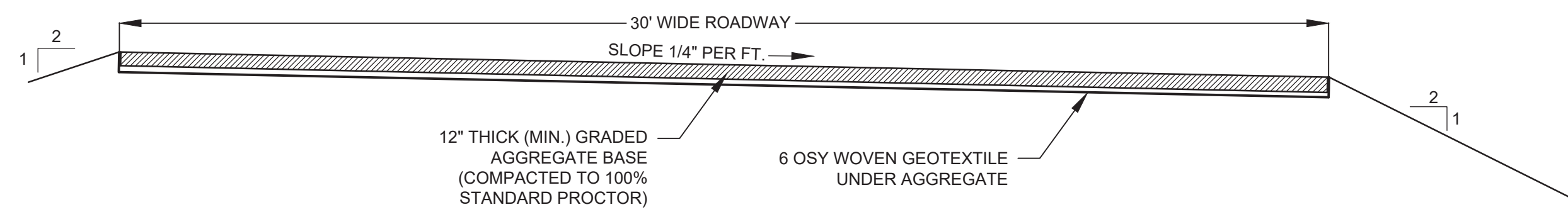
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Sheet Title: MISCELLANEOUS DETAILS

Sheet No.: **C - 8**
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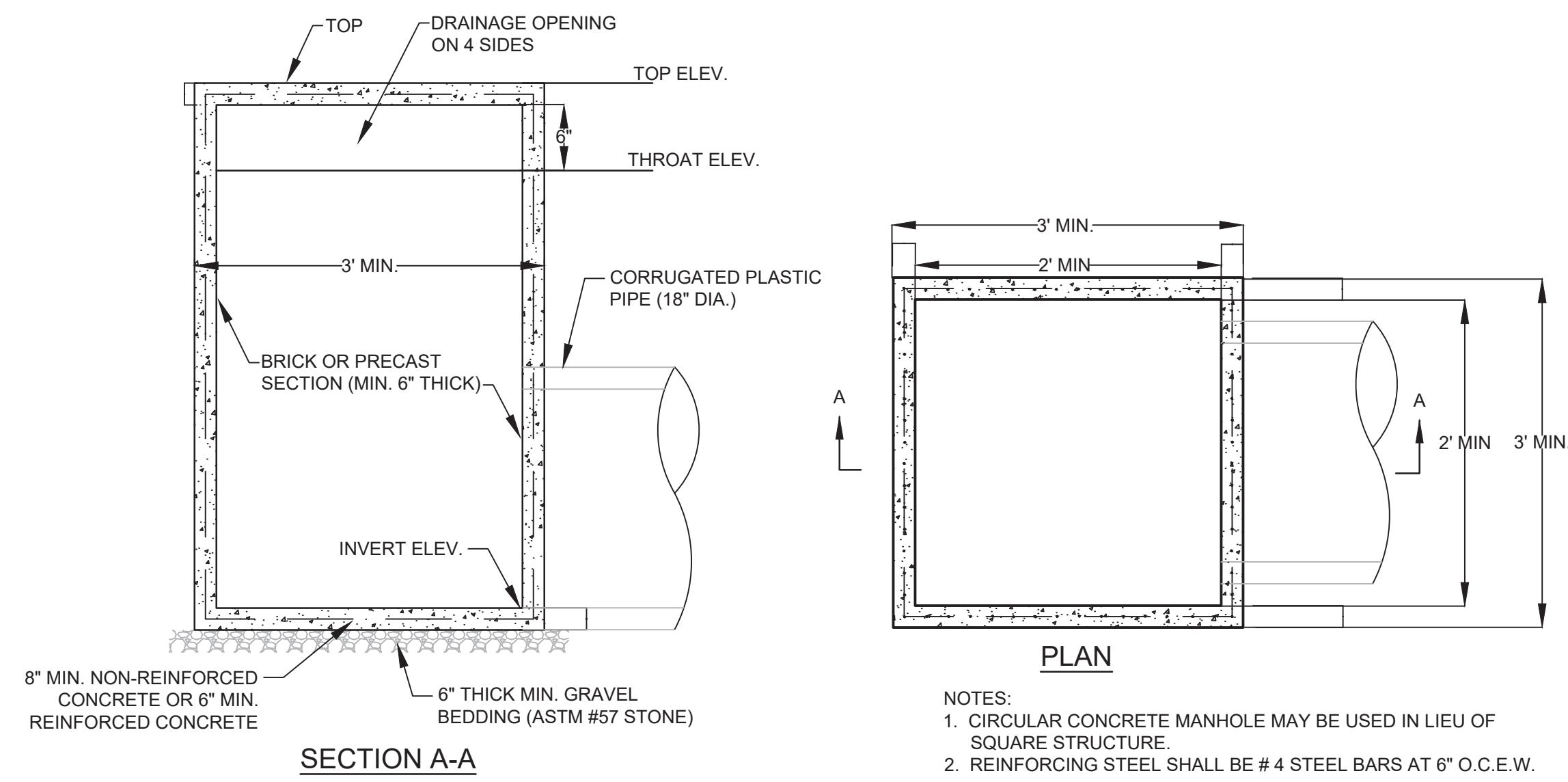
18



ALL WEATHER ACCESS ROAD SECTION

SCALE: 1"=4'

19



CATCH BASIN

SCALE: N.T.S.

- NOTES:
1. CIRCULAR CONCRETE MANHOLE MAY BE USED IN LIEU OF SQUARE STRUCTURE.
 2. REINFORCING STEEL SHALL BE # 4 STEEL BARS AT 6" O.C.E.W.

20

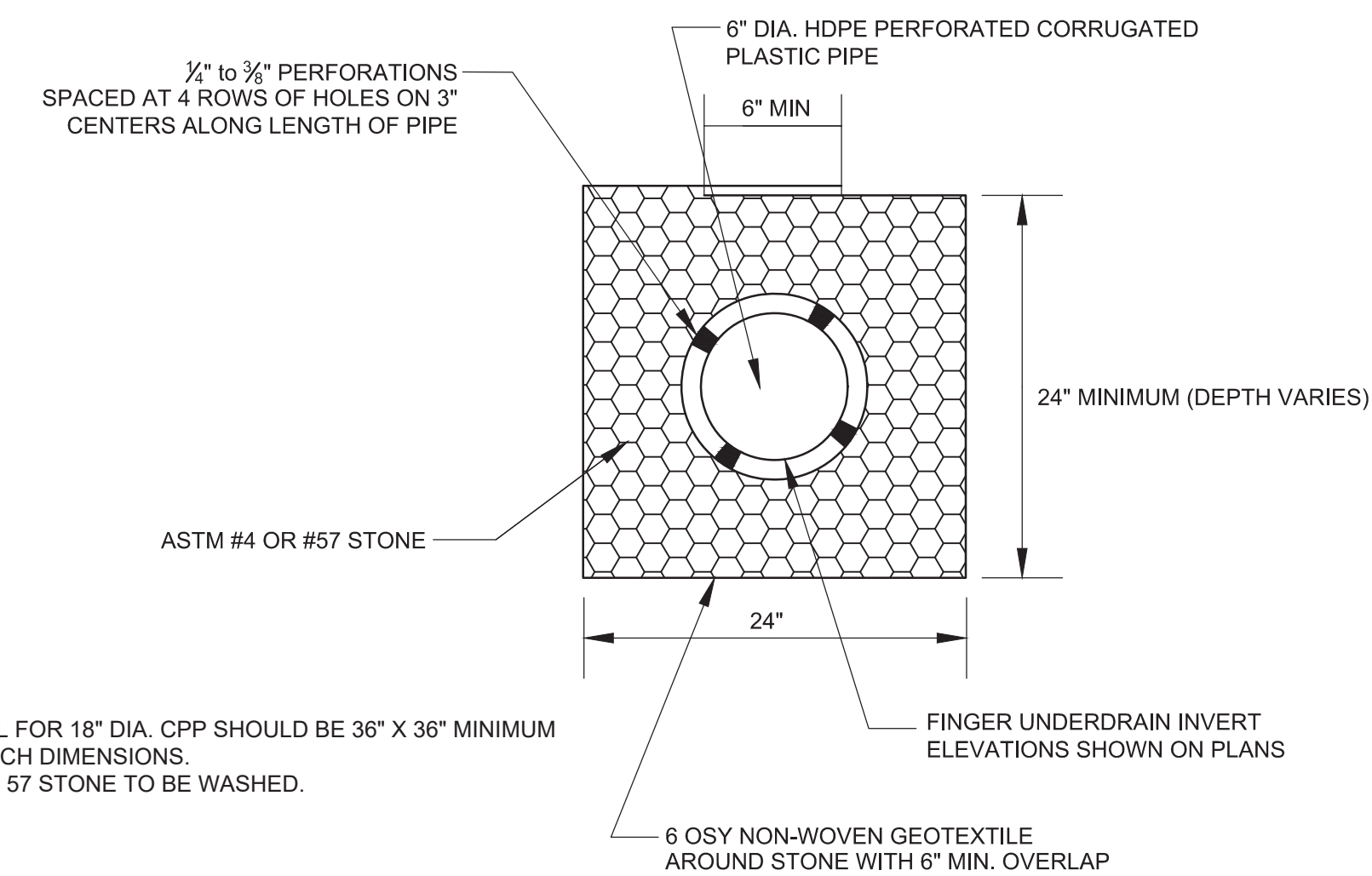


- NOTES:
1. USE WATER TRUCK WHEN NECESSARY TO CONTROL SURFACE AND AIR MOVEMENT OF DUST ON DISTURBED AREAS. OTHER ACCEPTABLE METHODS AND MATERIALS CAN BE FOUND IN THE "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA".

DUST CONTROL

SCALE: N.T.S.

21

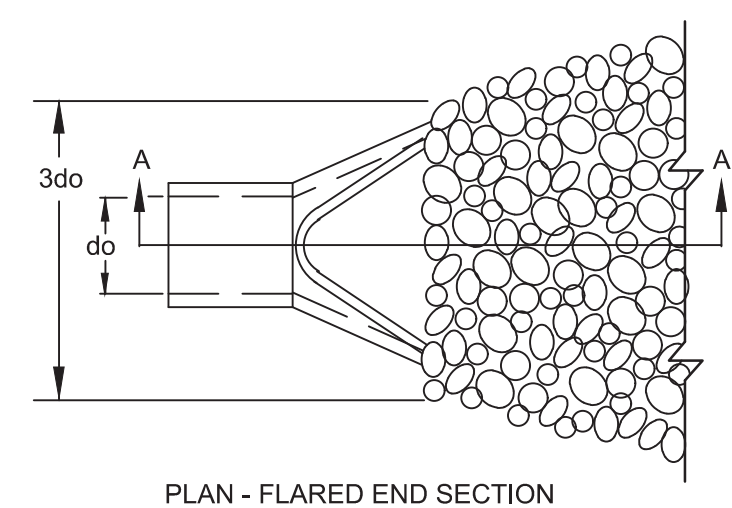


FRENCH DRAIN UNDER ARTIFICIAL TURF

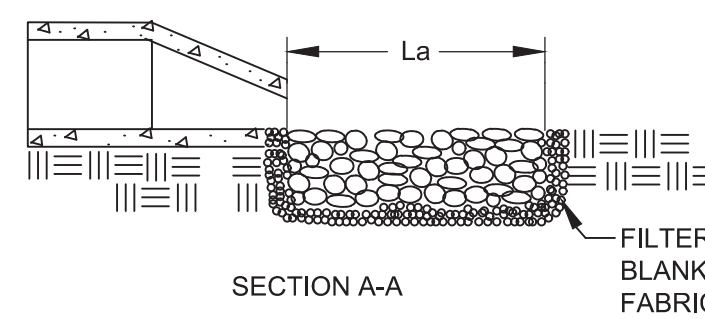
SCALE: N.T.S.

- NOTES:
1. DETAIL FOR 18" DIA. CPP SHOULD BE 36" X 36" MINIMUM TRENCH DIMENSIONS.
 2. ASTM 57 STONE TO BE WASHED.

22

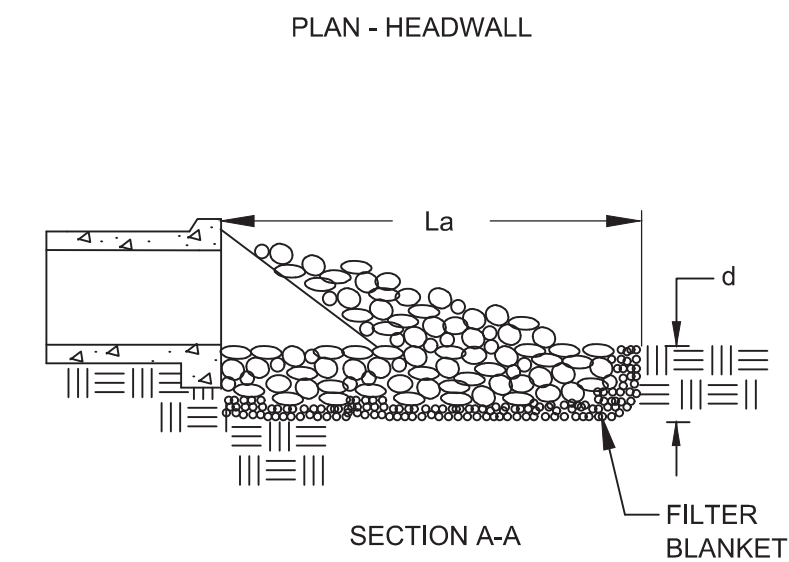
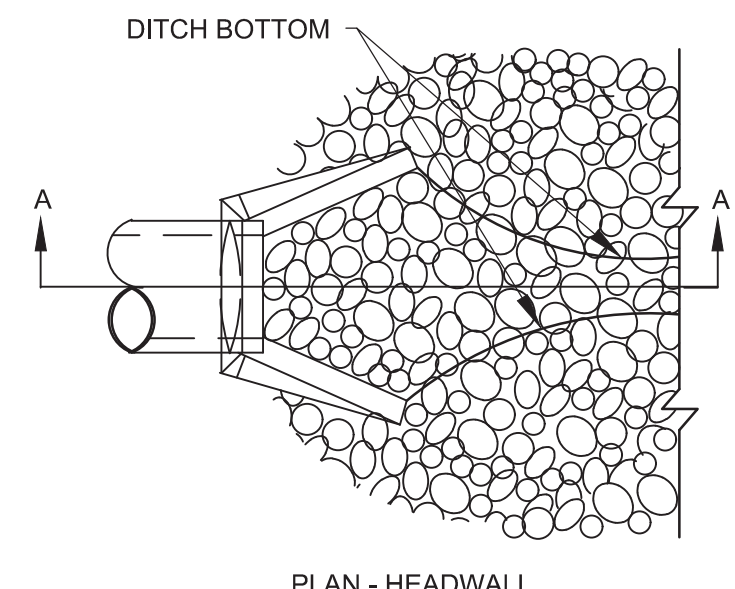


- NOTES:
1. La IS THE LENGTH OF THE RIPRAP APRON. (MINIMUM LENGTH IS EQUAL TO SIX TIMES THE DIAMETER OF THE OUTLET PIPE)
 2. d=1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6".
 3. IN A WELL-DEFINED CHANNEL, EXTEND THE APRON UP IN THE CHANNEL BANKS ELEVATION OF 6" ABOVE THE MAXIMUM TAIL WATER 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 SOIL FOUNDATION.

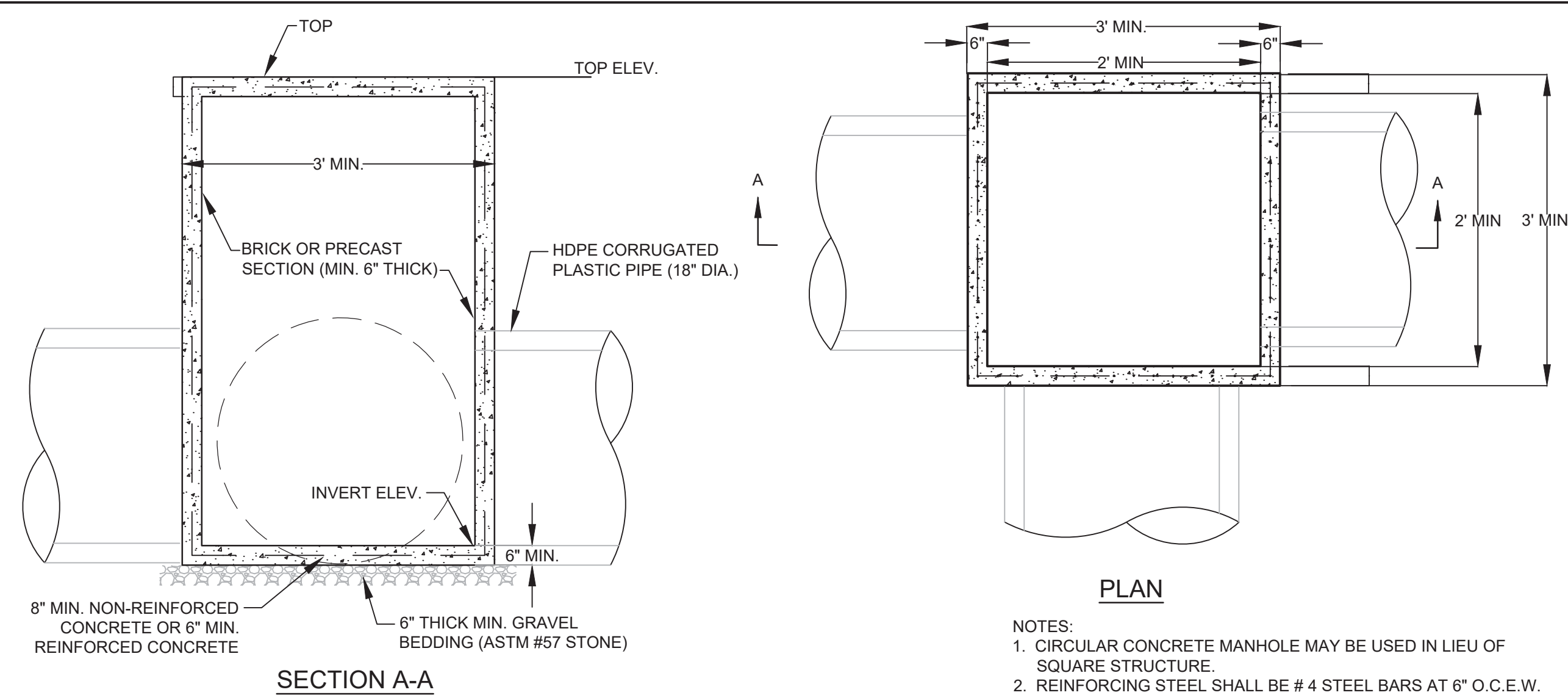


OUTLET PROTECTION

SCALE: N.T.S.



23



JUNCTION BOX

SCALE: N.T.S.

- NOTES:
1. CIRCULAR CONCRETE MANHOLE MAY BE USED IN LIEU OF SQUARE STRUCTURE.
 2. REINFORCING STEEL SHALL BE # 4 STEEL BARS AT 6" O.C.E.W.

REVISION HISTORY

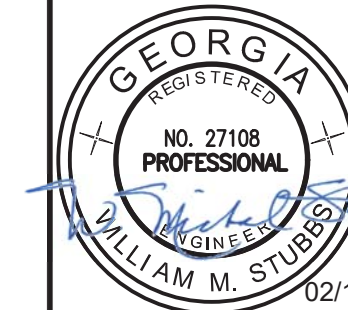
DATE	DESCRIPTION
1/17/2020	ADDED OUTLET PROTECTION AND JUNCTION BOX



JERICO design group

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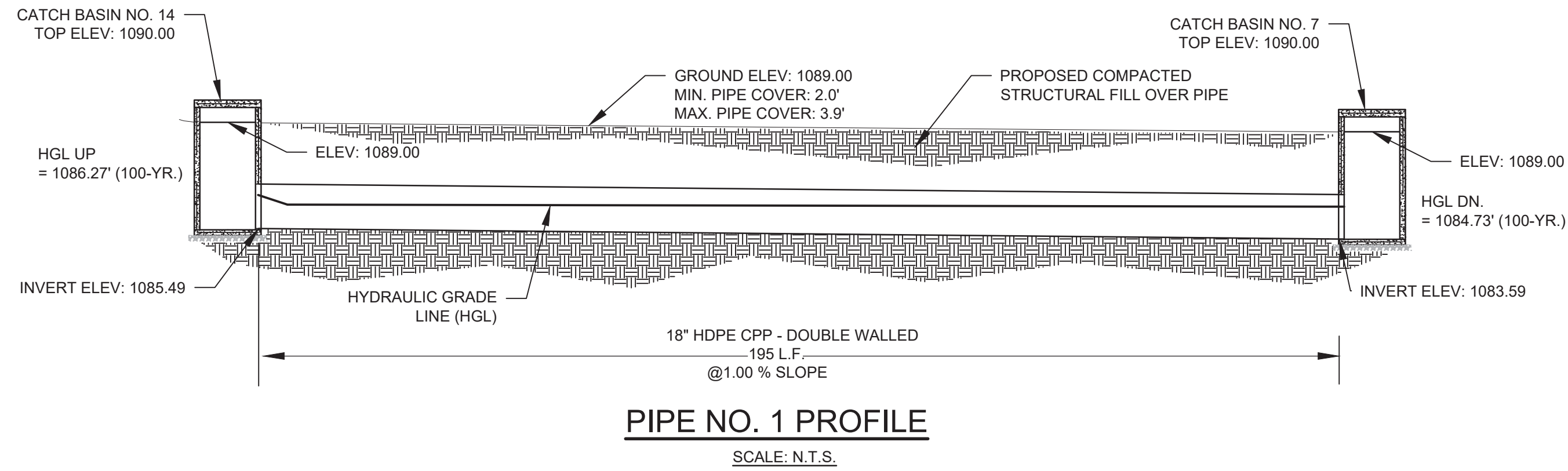
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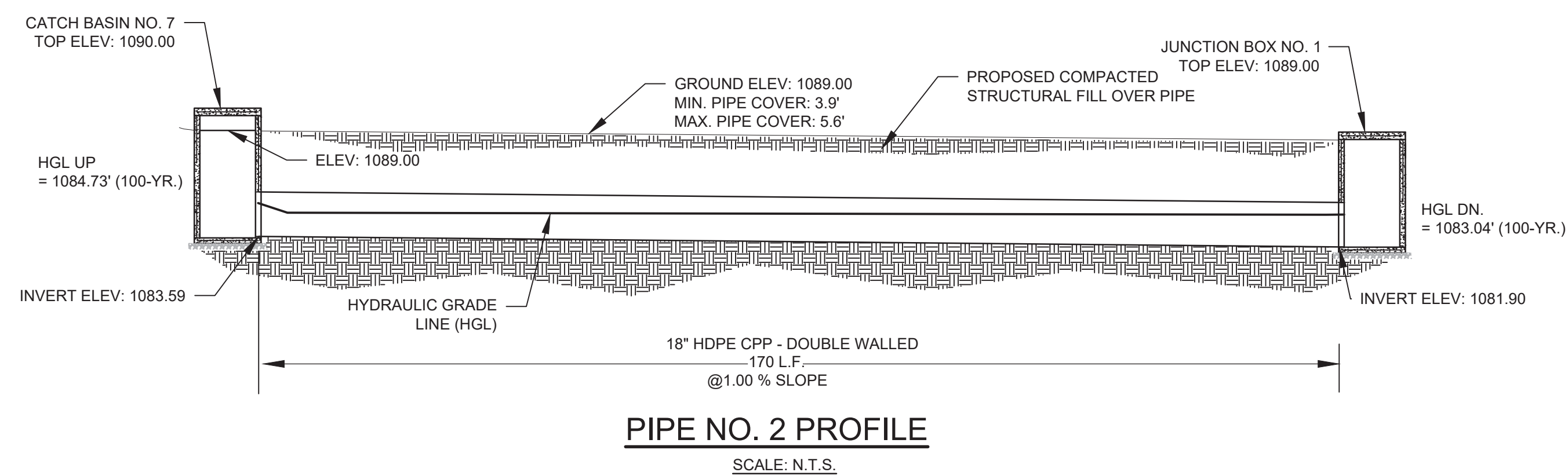
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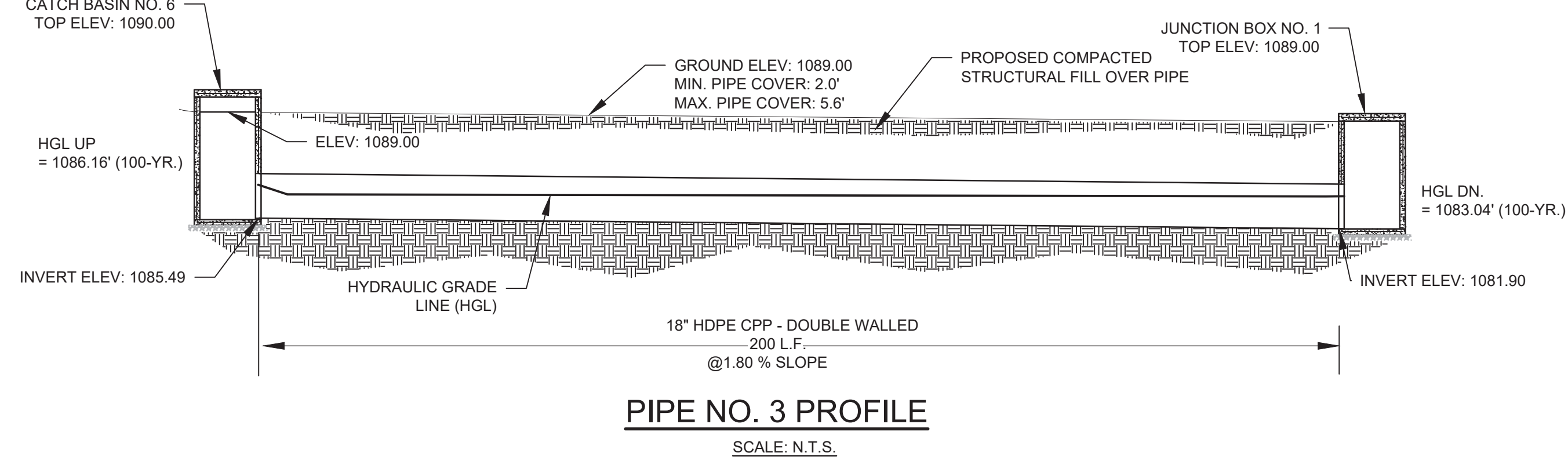
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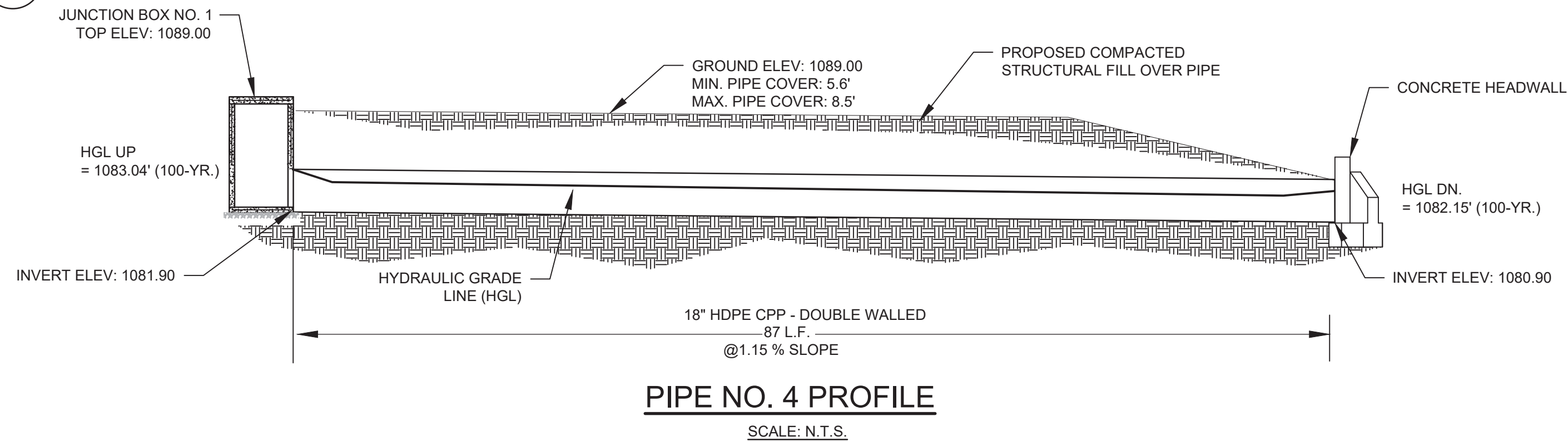
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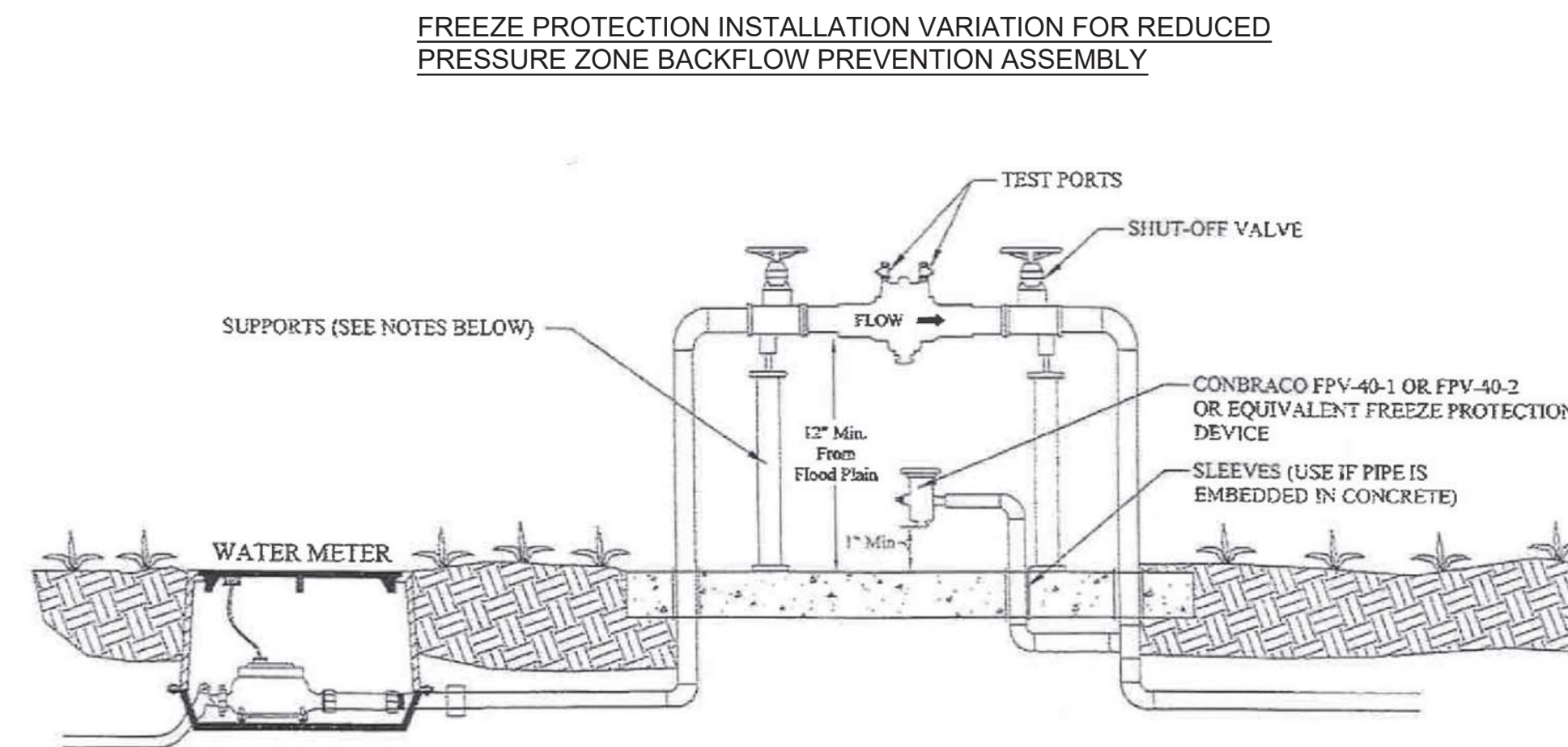
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27



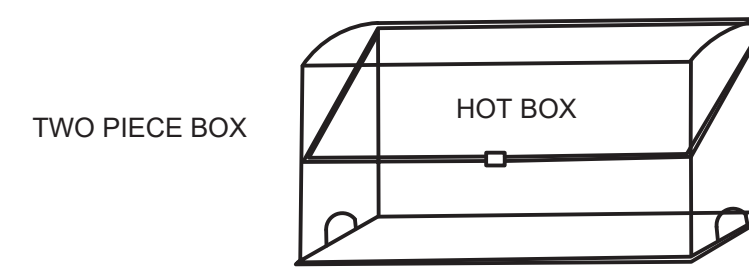
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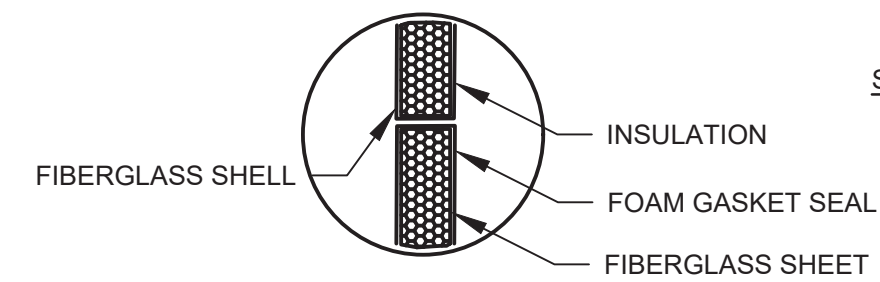
NOTE: THE COVER FOR THE ABOVE GROUND RPZ INSTALLATION CAN BE PLACED ON A FULL CONCRETE SLAB OR A PERIMETER FOOTER AS INDICATED IN CURRENT SPECIFICATIONS. FULL SLAB IS SHOWN IN THIS DIAGRAM. SUPPORTS SHOULD BE USED IF PVC PIPING IS USED AND PLACED AS SHOWN.

REDUCED PRESSURE ZONE ASSEMBLY INSTALLATION

ENCLOSURE: HOT BOX OR EQUIVALENT BOX, SIZED TO ASSEMBLY SIZE $\frac{3}{4}$ "



NOTE: BOX SHOULD BE HEATED OR INSULATED TO PROTECT FROM FREEZING



STANDARD COLORS:
WHITE
BEIGE

PHYSICAL PROPERTIES

MODEL NO.	I.P.S.	INSIDE DEPTH	INSIDE WIDTH	INSIDE HEIGHT	INSULATION "R" VALUE	DRAINAGE CAPACITY
.75	$\frac{3}{4}$ " - 1"	11"	19"	22"	8.0	180 GPM
.75	$\frac{3}{4}$ " - 1"	13"	27"	23"	8.0	180 GPM

FEATURES:
FIBERGLASS CONSTRUCTION, DRAINAGE CAPACITY (RPZ DEVICES), ENGINEERED HEATER SIZING (PROTECTION FOR 30°F), TESTING/MAINTENANCE, GROUND ANCHOR CAPABILITIES AND LOCKABLE LID.

RPZ DETAIL

SCALE: N.T.S.

\triangle B

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\triangle	2/19/2020	ADDENDUM B

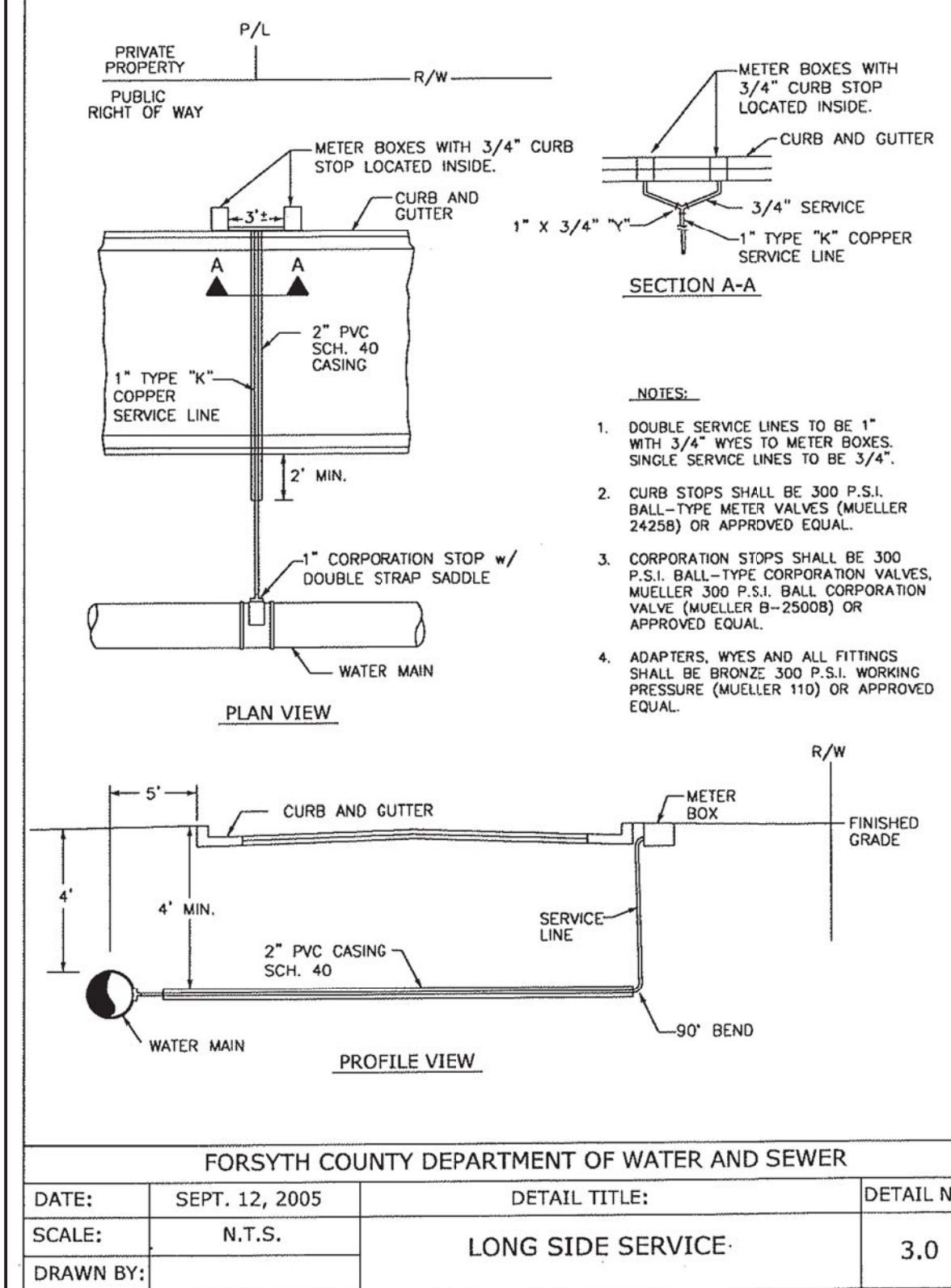
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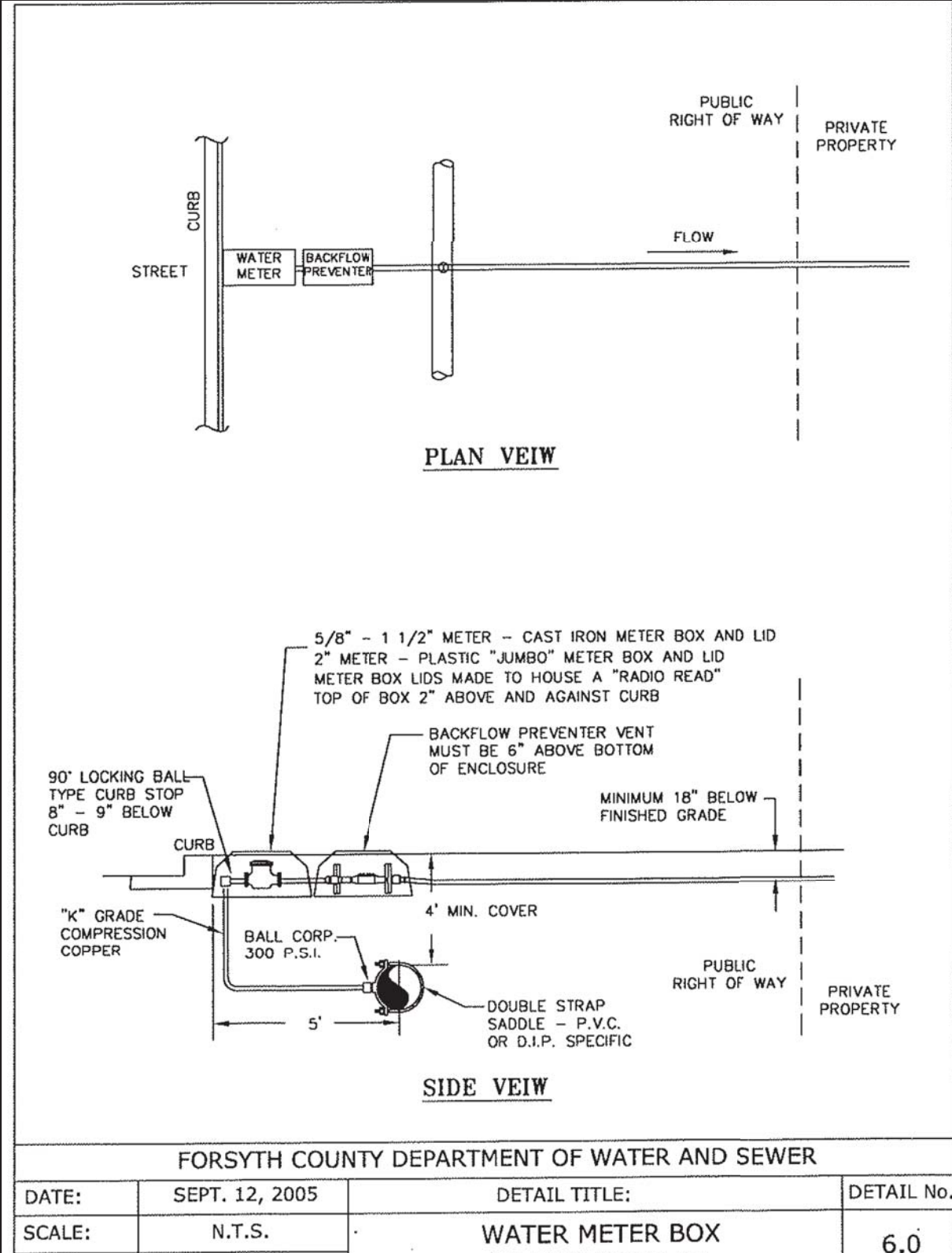
- NOTES:**
1. DOUBLE SERVICE LINES TO BE 1" WITH 3/4" WYES TO METER BOXES. SINGLE SERVICE LINES TO BE 3/4".
 2. CURB STOPS SHALL BE 300 P.S.I. BALL-TYPE METER VALVES (MUELLER 24258) OR APPROVED EQUAL.
 3. CORPORATION STOPS SHALL BE 300 P.S.I. BALL-TYPE CORPORATION VALVES, MUELLER 300 P.S.I. BALL CORPORATION VALVE (MUELLER B-25008) OR APPROVED EQUAL.
 4. ADAPTERS, WYES AND ALL FITTINGS SHALL BE BRONZE 300 P.S.I. WORKING PRESSURE (MUELLER 110) OR APPROVED EQUAL.

NOTE: FIRING RANGE TO USE 3/4" DUCTILE IRON PIPE WITHIN 1" PVC CASING.

LONG SIDE SERVICE DETAIL
SCALE: N.T.S.

FORSYTH COUNTY DEPARTMENT OF WATER AND SEWER			
DATE:	SEPT. 12, 2005	DETAIL TITLE:	DETAIL NO.
SCALE:	N.T.S.	LONG SIDE SERVICE	3.0
DRAWN BY:			

30

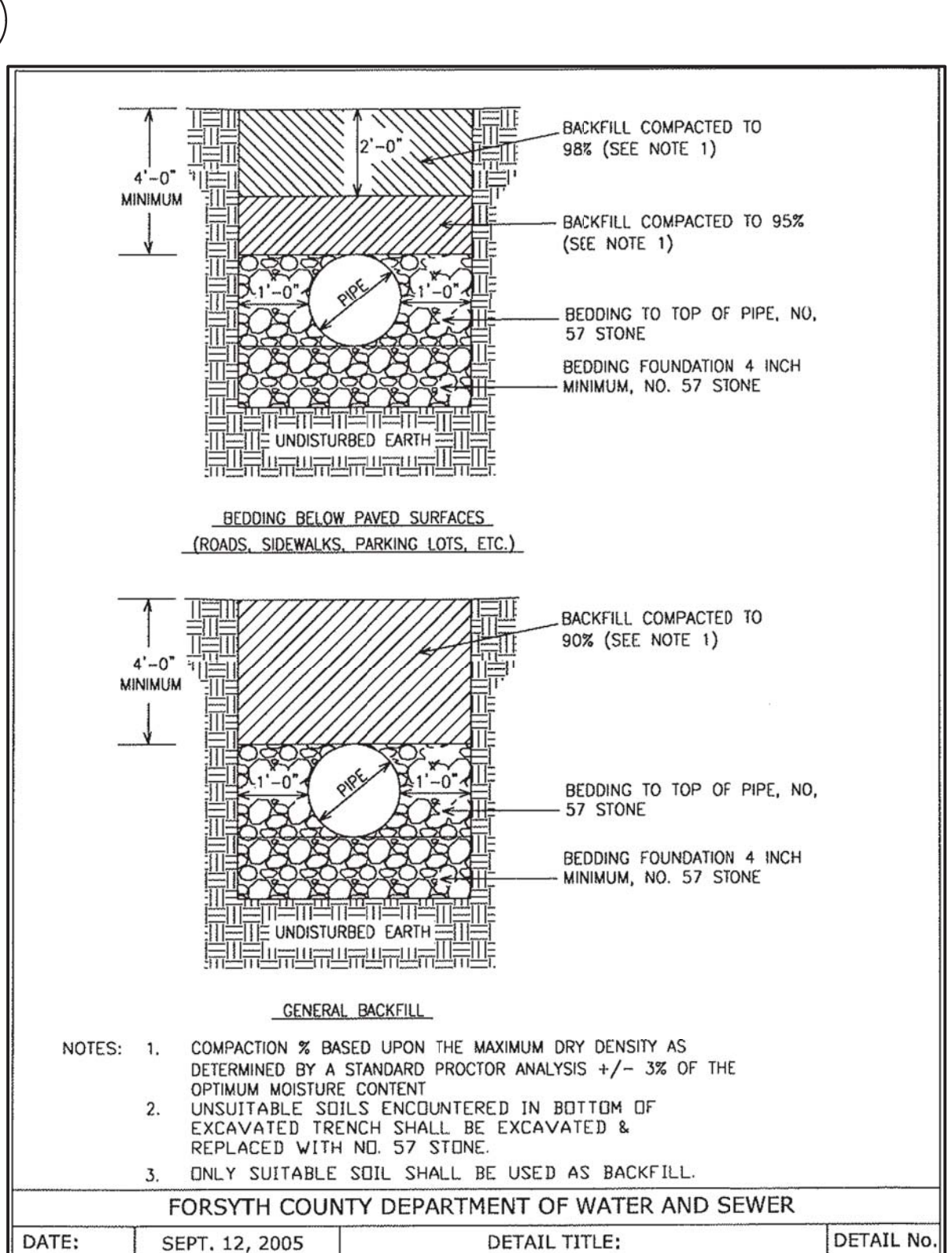


NOTE: FIRING RANGE TO USE 3/4" WATER METER.

WATER METER DETAIL
SCALE: N.T.S.

FORSYTH COUNTY DEPARTMENT OF WATER AND SEWER			
DATE:	SEPT. 12, 2005	DETAIL TITLE:	DETAIL NO.
SCALE:	N.T.S.	WATER METER BOX 2" AND SMALLER	6.0
DRAWN BY:			

31



NOTE: 1. COMPACTION % BASED UPON THE MAXIMUM DRY DENSITY AS DETERMINED BY A STANDARD PROCTOR ANALYSIS +/- 3% OF THE OPTIMUM MOISTURE CONTENT.
2. UNSUITABLE SOILS ENCOUNTERED IN BOTTOM OF EXCAVATED TRENCH SHALL BE EXCAVATED & REPLACED WITH NO. 57 STONE.
3. ONLY SUITABLE SOIL SHALL BE USED AS BACKFILL.

PVC PIPE BEDDING DETAIL
SCALE: N.T.S.

FORSYTH COUNTY DEPARTMENT OF WATER AND SEWER			
DATE:	SEPT. 12, 2005	DETAIL TITLE:	DETAIL No.
SCALE:	N.T.S.	P.V.C. SEWER PIPE BEDDING	31.0
DRAWN BY:			

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Sheet No.
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