CONTRACT FOR SERVICES

THIS AGREEMENT is made this _____ day of ___May_____, 2019 , between the City of Dalton, Georgia, a municipal corporation("City"), with a principal place of business at 535 Elm Street (PO Box 1205), Dalton, Georgia, 30722 and Northwest Georgia Paving, Inc. ("Contractor"), with a principal place of business at 501 West May Street (P.O. Box 578), Calhoun, GA 30701 .

1. Term. This agreement will become effective on the date stated above and will continue in effect until the services provided for under this agreement have been performed, unless otherwise terminated as provided in this Agreement.

2. Services.
   a. Contractor agrees to perform the services specified in the **Botany Woods Drive Slope Reconstruction plans and specifications and Addendums 1&2** attached to this Agreement as **Exhibit A** and incorporated herein.
   b. Contractor will determine the method, details, and means of performing the services described in Paragraph 2(a). Unless otherwise outlined by the specifications.
   c. Contractor may, at Contractor's own expense and responsibility, employ any assistants that contractor deems necessary to perform the services required of Contractor by this Agreement. Contractor's relationship to city shall be that of an independent contractor. Neither Contractor nor its employees shall have any right to participate in any City employee-benefit plan or program.

3. Consideration.
   a. In consideration for the services to be performed by Contractor, City agrees to pay to Contractor under unit pricing as provided in **Exhibit B (Bid Form from Northwest Georgia Paving)**, attached hereto and incorporated herein.

4. Obligations of Contractor.
   a. Contractor agrees to devote the time set forth in the **Botany Woods Drive Slope Reconstruction plans and specification** to the performance of the services described in this agreement. Contractor may represent, perform services for, and be employed by any additional clients, persons, or companies as Contractor, in Contractor's sole discretion, sees fit.
   b. Contractor agrees that all services described in this Agreement must be fully completed no later than **July 31, 2019**. Contractor further agrees to pay as liquidated damages the sum of **$200** for each consecutive calendar day thereafter for unfinished work until final completion is achieved. Additionally, the contractor will receive **forty-five (45) calendar days to achieve substantial completion (85-90%)** of the project from issuance of Notice to Proceed. Liquidated damages, under the same terms outlined above, will also be enforced on the substantial completion requirement.
   c. Contractor will supply all manpower to perform these services.
   d. Contractor agrees to provide workers' compensation insurance for Contractor's employees and agents and agrees to hold harmless and indemnify City for any and all claims arising out of any injury, disability, or death of any of Contractor's employees or agents.
   e. Contractor agrees to maintain a policy of insurance in the minimum amount of $**1,000,000** to cover any negligent acts committed by Contractor or Contractor's employees or agents during the performance of any duties under this agreement. Contractor further agrees to indemnify and hold City harmless from any and all claims arising from any such negligent act or omission.
   (a) Contractor shall maintain said insurance coverage through the completion of the Project and for a period of two years following the Final Completion of the Project.
   (b) Said insurance coverage shall include an endorsement providing that City shall receive notice of any cancellation of coverage no less than thirty (30) days prior to its effective date.
   (c) Said coverage shall be written on such policy forms as are acceptable to City.
   (d) Said coverage shall be underwritten by such insurance companies as are acceptable to City.

(e) In the event that Contractor subcontracts any portion of the Project with a third party, the Contractor shall require said third party to comply with the insurance provisions of Section 4e.

f. Neither this Agreement nor any duties or obligations under this Agreement may be assigned by Contractor without the prior written consent of City.

5. Obligations of City.

a. City agrees to give due consideration to all reasonable requests of Contractor necessary to the performance of Contractor's duties under this Agreement.

b. Neither this Agreement nor any duties or obligations under this Agreement may be assigned by City without the prior written consent of Contractor.

6. Termination.

a. Unless otherwise terminated as provided in this Agreement, this Agreement shall continue in force until the services provided for have been fully and completely performed and shall then terminate.

b. This Agreement shall terminate automatically on the occurrence of any of the following events.

   i. Bankruptcy or insolvency of either party.
   ii. Sale of the business of Contractor.
   iii. Death or dissolution of Contractor.
   iv. Assignment of this Agreement by either party without the consent of the other party.

c. If Contractor defaults in the performance of this Agreement or materially breaches any of its provisions, City, at City's option, may terminate this Agreement by giving two (2) days written notification to Contractor. For the purposes of this section, material breach of this Agreement shall be determined in the reasonable discretion of the City.

d. Prior to execution of the contract, Contractor shall provide the City with a **Performance and Payment Bond** for **100**% of the agreed contract price, **$587,291.75**.

(a) Said Bonds shall include an endorsement providing that City shall receive notice of any cancellation of coverage no less than thirty (30) days prior to its effective date.

(b) Said Bonds shall be written on such policy forms as are acceptable to City.

(c) Said Bonds shall be underwritten by such insurance/bond companies as are acceptable to City.

e. If City fails to pay Contractor all or any part of the compensation set forth in this Agreement on the date due, Contractor, at Contractor's option, may terminate this agreement if the failure is not remedied by City within ten (10) days after notice from Contractor that payment is overdue.

7. Miscellaneous

a. Any notices to be given under this Agreement by either party to the other may be effected either by personal delivery in writing or by registered or certified mail, with postage prepaid and return receipt requested. Mailed notices shall be addressed to the parties at the addresses appearing in the introductory paragraph of this Agreement. However, each party may change the address for receipt of notice by giving written notice in accordance with this paragraph. Notices delivered personally will be deemed communicated at the time of delivery. Mailed notices will be deemed communicated two (2) days after mailing.

b. This Agreement supersedes any and all agreements, both oral and written, between the parties with respect to the rendering of services by Contractor for City and contains all of the covenants and agreements between the parties with respect to the rendering of these services in any manner whatsoever. Each party acknowledges that no representations, inducements, promises, or agreements, written or oral, have been made by either party, or by anyone acting on behalf of either party, that are not embodied in this Agreement. Any modification of this Agreement will be effective only if it is in writing signed by the party to be charged.

c. If any provision of this Agreement is held by a court of competent jurisdiction to be invalid, void, or unenforceable, the remaining provisions will nevertheless continue in full force without.

d. This Agreement will be governed by and construed in accordance with the laws of the State of Georgia.

e. The parties agree that in the event that any suit or proceeding is brought in connection with this Agreement, such suit or proceeding shall be brought in the Superior Court of Whitfield County, Georgia and the parties shall submit to the exclusive jurisdiction of such Court and hereby waive any and all jurisdiction, venue, and inconvenient forum objections to such Court.

f. All work constructed under this Contract shall be fully guaranteed by the Contractor for a period of one (1) year from the date of final inspection and acceptance by the City.

Executed at Dalton, Georgia on the date first written above.

CITY: The City of Dalton, Georgia	CONTRACTOR: Northwest Georgia Paving, Inc.
By:_____.	By:_____.
Print Name: Dennis Mock, Mayor .	Print Name: Russell Smith - President .

Exhibit A -
Construction Plans For:
Botany Woods Dr Slope Reconstruction
&
Addendums 1&2

CONSTRUCTION PLANS FOR:
BOTANY WOODS DR SLOPE RECONSTRUCTION

PROJECT LOCATED AT:
BOTANY WOODS DR DALTON, GEORGIA
PREPARED FOR (OWNER/DEVELOPER):
CITY OF DALTON
535 ELM STREET DALTON, GA,
30722
PHONE: (706) 278-7077
AREA DISTURBED: 0.91AC

LOCATION MAP
SCALE: NTS

Sheet List Table

Sheet Number	Sheet Title
C1	COVER
C2	GENERAL NOTES & LEGEND
C3	SUMMARY OF QUANTITIES
C4	EXISTING CONDITIONS PLAN
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C6	STORM PROFILES
C7	CONSTRUCTION DETAILS
C7.1	CONSTRUCTION DETAILS
C8	EROSION CONTROL PLAN
C9	EROSION CONTROL DETAILS
C9.1	EROSION CONTROL DETAILS
C9.2	EROSION CONTROL DETAILS

ISSUED FOR PERMITTING

PROJECT OWNED/DEVELOPED BY:
CITY OF DALTON
535 ELM STREET DALTON, GA 30722
DALTON, GA, 30722
APARKER@CITYOFDALTON-GA-GOV

24 HOUR CONTACT INFORMATION
P. ANDREW PARKER, P.E. (706) 278-7077

No	REVISION DESCRIPTION	DATE
1	-	-
2	-	-
3	-	-
4	-	-

SOUTHEASTERN ENGINEERING, INC.
2410 Sandy Plains Road Marietta, Georgia 30066
tel: 770-321-3936 fax: 770-321-3935
www.serengineering.com

931-19-082

COVER

BOTANY WOODS DR SLOPE RECONSTRUCTION
PROJECT LOCATED AT:
BOTANY WOODS DR DALTON, GA, 30720
CITY OF DALTON

GEORGIA REGISTERED NO. 32450 PROFESSIONAL ENGINEER KEVIN WAYNE CLARK
04/22/19

ISSUED FOR:
REVIEW

Project No.: 931-19-082
Designed By: KWC
Issue Date: 4/19/18

C1

811 Know what's below. Call before you dig.

FILE NAME: I:\CUSTOMERS_PROJECTS\931 City of Dalton\931-19-082 Botany Woods Drive\Eng\Construction\931-19-082 C-ANNO.dwg PLOT STYLE: SEI-BASE-M.ctb PLOT DATE:5/3/2019 USER:IAN CLARK

THE UTILITIES SHOWN HEREON ARE FOR THE CONTRACTORS CONVENIENCE ONLY. THERE MAY BE OTHER UTILITIES NOT SHOWN ON THESE PLANS. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE LOCATIONS SHOWN AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL UTILITIES WITHIN THE LIMITS OF THE WORK. ALL DAMAGE MADE TO EXISTING UTILITIES BY THE CONTRACTOR SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. IT IS THE OWNER/DEVELOPER'S RESPONSIBILITY TO VERIFY EXISTING UTILITY CAPACITY PRIOR TO INITIATING DESIGN. THE ENGINEER MAKES NO GUARANTEES, NEITHER EXPRESSED OR IMPLIED, REGARDING EXISTING UTILITY LOCATION, CAPACITY OR CONDITION.

LINETYPE LEGEND

PROPOSED		EXISTING
	LAND LOT LINE	
	PROJECT PROPERTY LINE	
	ADJOINING PROPERTY LINE	
	EASEMENT	
	SANITARY EASEMENT	
	UNDISTURBED BUFFER	
	SETBACK	
	BOUNDARY OF FIELD SHOT DATA	
	WATER ELEVATION (100 YEAR POND ELEVATION / HYDRAULIC GRADE LINE)	
X X	FENCE	X X
	CHAINLINK FENCE	
	DECORATIVE FENCE (WOOD / VINYL)	
	GUARDRAIL	
XXXXXXXXXXXXXXXXXXX	LINEAR FEATURE TO BE REMOVED	
	SOIL DELINEATION	
	CREEK CENTERLINE	
OHT	OVERHEAD TELEPHONE	OHT
G	NATURAL GAS	G
UGP	UNDERGROUND POWER	UGP
	OVERHEAD POWER	
SS SS	SANITARY SEWER	SS SS
FM	FORCE MAIN	FM
W	WATER MAIN	W
COMM	COMMUNICATIONS UTILITY LINE	COMM
	SETBACK LINE	
	TREELINE	
	RIGHT OF WAY	
	FLOOD LINE	
	ROAD CENTERLINE	
	LIMITS OF CONSTRUCTION	
	WETLAND	
XX NS	SILT FENCE - NON-SENSITIVE	
XX S	SILT FENCE - SENSITIVE	
	DIVERSION PATH	
TPF	TREE PROTECTION FENCING	
CRZ	CRITICAL ROOT ZONE	

ABBREVIATION LEGEND

LLL	LAND LOT LINE
IPS	IRON PIN SET
IPF	IRON PIN FOUND
OTP	OPEN TOP PIPE
CTP	CRIMP TOP PIPE
RB	REINFORCING BAR
CL	CENTERLINE
R/W	RIGHT OF WAY
LL	LAND LOT
L	LINE
A	ARC
R	RADIUS
CH	CHORD
C	CURVE
CONC	CONCRETE
CMF	CONCRETE MONUMENT FOUND
POB	POINT OF BEGINNING
POC	POINT OF COMMENCEMENT
PI	POINT OF INTERSECTION
SBL	SETBACK LINE
BSL	BUILDING SETBACK LINE
DE	DRAINAGE EASEMENT
SSE	SANITARY SEWER EASEMENT
AE	ACCESS EASEMENT
DI	DROP INLET
PI	PEDESTAL INLET
SWCB	SINGLE WING CATCH BASIN
DWCB	DOUBLE WING CATCH BASIN
HW	HEADWALL

SYMBOL LEGEND

PROPOSED		EXISTING
	BOLLARD	
	CENTERLINE	
	CONCRETE MONUMENT	
	CURB INLET	
	DROP INLET	
	DOUBLE WING CATCH BASIN	
	DRAINAGE FLOW	
	ELBOW (TYPE SPECIFIED) WITH THRUST BLOCK	
	ELECTRIC METER	EM
	EXISTING IRON PIN FOUND	
	FIRE HYDRANT	
	FIBER MARKER	
	FENCE POST	
	FLARED END SECTION (CONCRETE)	
	FLARED END SECTION (METAL)	
	GAS METER	GM
	GAS MARKER	
	GAS VALVE	GV
	GUY WIRE	
	GSWCC STRUCTURAL PRACTICE	
	GSWCC VEGETATIVE MEASURE	
	HEADWALL	
	IRRIGATION VALVE	IRV
	IRON PIN TO BE SET	
	IRON PIN FOUND	
	LIGHT POLE	
	MAILBOX	
	MONITORING WELL	
	PEDESTRIAN SIGNAL	
	PEDESTAL INLET	
	PRESSURE REDUCER VALVE	
	PLUG / CAP	
	POWER STUB	
	PVC STUB	
	REDUCER	
	SANITARY SEWER CLEANOUT	
	SIGN	
	SINGLE WING CATCH BASIN	
	SOIL BORING	
	SQUARE BOLLARD	
	TEE WITH THRUST BLOCK	
	TELEPHONE BOX	TB
	TELEPHONE MANHOLE	T
	TELEPHONE PEDESTAL	TP
	TEMPORARY BENCH MARK	
	TRAFFIC BOX	
	TREE TO BE REMOVED	
	UTILITY POLE	
	UTILITY MANHOLE (UTILITY SPECIFIED)	
	UTILITY METER BOX (UTILITY SPECIFIED)	
	UTILITY VALVE (UTILITY SPECIFIED)	
	WATER METER	WM
	WATER SEEP	
	WATER SPIGOT	
	WATER VALVE	
	WETLAND FLAG	

GRADING NOTES:

1. ELEVATIONS ARE BASED ON MEAN SEA LEVEL.
2. EXISTING CONDITIONS FROM FIELD RUN TOPOGRAPHY PREPARED BY LOWERY & ASSOCIATES, APRIL 19, 2019.
3. CONTOUR INTERVALS ARE 2.0 FEET.
4. ALL TREE SAVE AREAS AND BUFFERS ARE TO BE CLEARLY IDENTIFIED WITH FLAGGING AND/OR FENCING PRIOR TO COMMENCEMENT OF ANY LAND DISTURBANCE.
5. CLEARING AND GRUBBING: ON ALL AREAS WHERE GRADING, EXCAVATING AND FILL ARE TO BE DONE, ALL TIMBER BRUSH, STUMPS, ROOTS, RUBBISH AND ORGANIC MATERIALS SHALL BE REMOVED. STUMP HOLES SHALL BE FILLED WITH COMPACTED CLEAN SOIL. A MINIMUM OF SIX INCHES MUST BE CUT BELOW EXISTING GRADE FOR ENTIRE AREA RECEIVING FILL. STORM DETENTION MEASURES MUST BE ACCOMPLISHED CONCURRENT WITH THIS PHASE. REFER TO THE CURRENT EDITION OF THE MANUAL FOR EROSION AND SEDIMENT CONTROL.
6. ALL EARTHWORK OPERATION SHALL COMPLY WITH REQUIREMENTS OF OSHA CONSTRUCTION STANDARDS, PART 1926, SUBPART P, EXCAVATIONS, TRENCHING, AND SHORING, AND SUBPART O, MOTOR VEHICLES, MECHANIZED EQUIPMENT, AND MARINE OPERATIONS, AND SHALL BE CONDUCTED IN A MANNER ACCEPTABLE TO THE ENGINEER.
7. FILL MATERIALS SHALL CONSIST OF CLEAN SOIL, FREE OF ORGANIC OR DELETERIOUS MATERIALS, ROCKS, OR BROKEN PIECES OF CONCRETE LARGER THAN THREE INCHES IN SIZE, OR OF ANY OTHER FOREIGN OBJECTS THAT COULD IMPEDE THE COMPACTION RESULTS.
8. FILL MATERIALS SHALL BE SPREAD EVENLY IN HORIZONTAL LAYERS OF NOT MORE THAN 8 INCHES IN LOOSE LIFTS OVER THE FULL WIDTH OF FILL AND COMPACTED TO AT LEAST 95% MAXIMUM DRY DENSITY BY STANDARD PROCTOR COMPACTION TEST ASTM D698.
9. MAXIMUM CUT OR FILL SLOPES IS 2H:1V.
10. GRADE TO PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDINGS INTO STORM INLETS.
11. SEE GEOTECHNICAL ENGINEER FOR RECOMMENDATIONS CONCERNING PROPER PLACEMENT AND COMPACTION OF STRUCTURAL FILL.
12. ALL SPOT ELEVATIONS ARE FINISHED GRADE ELEVATIONS UNLESS OTHERWISE NOTED.
13. THE INSTALLATION OF ALL EROSION CONTROL MEASURES AND DETENTION FACILITIES SHOULD BE ACCOMPLISHED PRIOR TO ANY OTHER CONSTRUCTION ON THE SITE AND MAINTAINED UNTIL PERMANENT GROUND COVER IS ESTABLISHED.

GENERAL EROSION AND SEDIMENTATION CONTROL NOTES:

1. SILT FENCE MUST MEET THE REQUIREMENTS OF SECTION 171-TEMPORARY SILT FENCE OF THE DEPARTMENT OF TRANSPORTATION, STATE OF GEORGIA, STANDARD SPECIFICATION, LATEST EDITION.
2. ADDITIONAL EROSION CONTROL MEASURES WILL BE EMPLOYED WHERE DETERMINED NECESSARY BY ACTUAL SITE CONDITIONS TO PREVENT THE RELEASE OF SILT FROM THE SITE.
3. PRIOR TO ANY OTHER CONSTRUCTION, A STABILIZED CONSTRUCTION ENTRANCE SHALL BE CONSTRUCTED AT EACH ENTRY TO OR EXIT FROM THE SITE.
4. THE CONSTRUCTION EXITS SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH STONE, AS CONDITIONS DEMAND, AND REPAIR AND/OR CLEAN-OUT OF ANY STRUCTURES USED TO TRAP SEDIMENT. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLE OFF SITE ONTO PUBLIC ROADWAY OR INTO STORM DRAIN MUST BE REMOVED.
5. PRIOR TO COMMENCING LAND DISTURBANCE ACTIVITIES THE LIMITS OF LAND DISTURBANCE SHALL BE CLEARLY AND ACCURATELY DEMARCATED WITH STAKES, RIBBONS, OR OTHER APPROPRIATE MEANS. THE LOCATION AND EXTENT OF ALL AUTHORIZED LAND DISTURBANCE SHALL OCCUR INSIDE THE APPROVED LIMITS INDICATED ON THE APPROVED PLANS.
6. IMMEDIATELY AFTER THE ESTABLISHMENT OF CONSTRUCTION ENTRANCES/EXITS, ALL PERIMETER EROSION CONTROL DEVICES AND STORM WATER MANAGEMENT DEVICES SHALL BE INSTALLED PRIOR TO ANY OTHER CONSTRUCTION.
7. THE CONTRACTOR SHALL FURNISH AND MAINTAIN ALL NECESSARY BARRICADES WHILE ROADWAY FRONTAGE IMPROVEMENTS ARE BEING MADE.
8. THE CONSTRUCTION OF THE SITE WILL INITIATE WITH THE INSTALLATION OF EROSION CONTROL MEASURES SUFFICIENT TO CONTROL SEDIMENT DEPOSITS AND EROSION. ALL SEDIMENT CONTROLS WILL BE MAINTAINED UNTIL UPSTREAM GROUND WITHIN THE CONSTRUCTION AREA HAS BEEN COMPLETELY STABILIZED WITH PERMANENT VEGETATION AND ALL ROADS/DRIVEWAYS HAVE BEEN PAVED.
9. THE LOCATION OF SOME OF THE EROSION CONTROL DEVICES MAY HAVE TO BE ALTERED FROM THAT SHOWN ON THE APPROVED PLANS IF DRAINAGE PATTERNS DURING CONSTRUCTION ARE DIFFERENT FROM THE FINAL PROPOSED DRAINAGE PATTERNS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ACCOMPLISH EROSION CONTROL FOR ALL DRAINAGE PATTERNS CREATED AT VARIOUS STAGES DURING CONSTRUCTION. ANY DIFFICULTY IN CONTROLLING EROSION DURING ANY PHASE OF CONSTRUCTION SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
10. ALL SILT BARRIERS MUST BE PLACED AS ACCESS IS OBTAINED DURING CLEARING. NO GRADING SHALL BE DONE UNTIL SILT BARRIER INSTALLATION AND DETENTION FACILITIES ARE CONSTRUCTED.
11. CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL MEASURES UNTIL PERMANENT VEGETATION HAS BEEN ESTABLISHED. IF SEDIMENT PONDS ARE DEEMED NECESSARY, CONTRACTOR SHALL CLEAN OUT EACH AS REQUIRED BY ENGINEER OR THE CITY OF DALTON INSPECTOR. CONTRACTOR SHALL INSPECT EROSION CONTROL MEASURES AT THE END OF EACH WORKING DAY TO ENSURE MEASURES ARE FUNCTIONING PROPERLY.
12. THE CONTRACTOR SHALL REMOVE ACCUMULATED SILT WHEN THE SILT IS WITHIN 12" OF THE TOP OF THE SILT FENCE UTILIZED FOR EROSION CONTROL.
13. FAILURE TO INSTALL, OPERATE OR MAINTAIN ALL EROSION CONTROL MEASURES WILL RESULT IN A POSSIBILITY OF ALL CONSTRUCTION BEING STOPPED ON JOB SITE UNTIL SUCH MEASURES ARE CORRECTED BACK TO CURRENT STDS.
14. ALL SEWER EASEMENTS DISTURBED MUST BE DRESSED AND GRASSED TO CONTROL EROSION.
15. ALL OPEN SWALES MUST BE GRASSED, AND RIP-RAP MUST BE PLACED AS REQUIRED TO CONTROL EROSION, A MINIMUM OF 4.5 SQUARE YARDS OF 50 LB STONES SHALL BE PLACED AT ALL DOWNSTREAM HEADWALLS IMMEDIATELY UPON THE INSTALLATION OF PIPES AND DRAINAGE DITCHES.
16. SILT BARRIERS TO BE PLACED DOWNSTREAM OF ALL FILL SLOPES.

UTILITY NOTES:

1. CONTRACTOR SHALL VERIFY LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION. CONTRACTOR SHALL BE SPECIFICALLY RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES THAT MIGHT HAVE EXISTING UTILITIES ON SITE TO DETERMINE IF ANY EXIST AND HOW TO HANDLE. ENGINEER CANNOT BE RESPONSIBLE FOR EXISTENCE OR LOCATION OF UNDERGROUND UTILITIES.
2. CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES PRIOR TO BEGINNING CONSTRUCTION, AND SHALL BE RESPONSIBLE FOR COORDINATING WITH THEM REGARDING UTILITY LOCATIONS, CONSTRUCTION AND SCHEDULES.
3. ALL CONNECTIONS TO EXISTING UTILITIES AND ALL UTILITY INSTALLATIONS SHALL BE IN COMPLIANCE WITH REQUIREMENTS OF APPROPRIATE JURISDICTIONAL AGENCIES
4. FOR GRADING AND DRAINAGE INFORMATION, SEE GRADING AND DRAINAGE PLAN.
5. EXISTING SERVICES SHOWN WERE OBTAINED FROM AS BUILTS BY OTHERS.
6. AT COMPLETION OF SEWER AND WATER CONSTRUCTION, ALL MANHOLES, VALVE BOXES, METERS AND APPURTENANCES SHALL BE SET FOR PROPER FINISH GRADE AND SHALL BE NOTICEABLY STAKED AND FLAGGED. SITE UTILITY SUBCONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE ABOVE ITEMS UNTIL SYSTEM IS ACCEPTED BY OWNER.
7. RIGID PIPE BEDDING SHALL BE PER ASTM C-12, FLEXIBLE PIPE BEDDING PER ASTM D-2321.
8. LARGE STONES AND CONTAINING NOT MORE THAN 10% BY WEIGHT OF LOAM OR CLAY.
9. CONTRACTOR SHALL COMPLY WITH REQUIREMENTS SET FORTH IN CITY OF DALTON DEVELOPMENT REGULATIONS FOR ALL UTILITY INSTALLATIONS.

GENERAL NOTES:

1. THE CONTRACTOR SHALL COMPLY WITH ALL LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS THAT ARE PERTINENT TO THIS WORK.
2. AREAS OUTSIDE THE PROJECT LIMITS ARE DESIGNATED AS RESTRICTED AREAS. THE CONTRACTOR'S FORCES ARE PROHIBITED FROM ENTERING RESTRICTED AREAS AT ANY TIME, UNLESS SPECIFICALLY AUTHORIZED BY THE ADJACENT OWNER.
3. THE CONTRACTOR SHALL CONTROL DUST AND DEBRIS FROM HIS OPERATION TO A LEVEL ACCEPTABLE TO THE CITY AT ALL TIMES. THE CONTRACTOR SHALL HAVE ON THE PROJECT SITE:VACUUM SWEEPERS, WATERING TRUCKS, AND OTHER EQUIPMENT NECESSARY TO CONTROL DUST AT ALL TIMES. ALL METHODS FOR CONTROLLING DUST SHALL BE SUBJECT TO THE COUNTY'S APPROVAL. FAILURE TO PROPERLY CONTROL DUST OR TO RESPOND TO ANY REQUEST TO DO SO WILL RESULT IN CONSTRUCTION ACTIVITIES BEING STOPPED.
4. ALL CONSTRUCTION TRAFFIC SHALL ENTER AND EXIT THE PROJECT AREA AS SHOWN ON THE PHASED EROSION CONTROL PLAN.
5. THE ROADS USED BY THE CONTRACTOR FOR ACCESS OR HAULING SHALL BE KEPT CLEAN AND ACCESSIBLE TO ALL OTHER TRAFFIC FOR THE ENTIRE DURATION OF THE PROJECT. HAUL TRUCKS MUST BE COVERED AND ANY SPILLAGE OR DEBRIS BUILDUP PROMPTLY REMOVED FROM ALL HAUL ROUTES ON AIRPORT AND PUBLIC ROADS.

MATERIAL NOTES:

1. PRECAST STRUCTURES MAY BE USED AT THE CONTRACTOR'S OPTION. ALL CONCRETE TO HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 P.S.I.

PROJECT OWNED/DEVELOPED BY:
CITY OF DALTON
535 ELM STREET DALTON, GA 30722
DALTON, GA, 30722
APARKER@CITYOFDALTON-GA-GOV

24 HOUR CONTACT INFORMATION
P. ANDREW PARKER, P.E. (706) 278-7077

SEI
SOUTHEASTERN ENGINEERING, INC.
2410 Shade Plain Road Marietta, Georgia 30066
tel: 770-321-3936 fax: 770-321-3935
www.sereqineering.com

931-19-082

No	REVISION DESCRIPTION	DATE
1	-	-
2	-	-
3	-	-
4	-	-

GENERAL NOTES & LEGEND

BOTANY WOODS DR SLOPE RECONSTRUCTION
PROJECT LOCATED AT:
BOTANY WOODS DR DALTON, GA, 30720
CITY OF DALTON

GEORGIA REGISTERED
NO. 32199
PROFESSIONAL
ENGINEER
KEVIN WAYNE CLARK
04/22/19

ISSUED FOR:
REVIEW

Project No.: 931-19-082
Designed By: KWC
Issue Date: 4/19/18

C2

811 Know what's below. Call before you dig.

PROJECT #931-19-082
BOTANY WOODS DRIVE SLOPE FAILURES - ENGINEERS CONSTRUCTION COST ESTIMATE

ITEM NO.	ITEM DESCIRPTION	UNIT	QUANTITY
	GRADING & ROADWAY ITEMS		
150-1000	TRAFFIC CONTROL - 931-19-082	LS	1
~~205-0100~~	~~CONSTRUCTION ALLOWANCE - 931-19-082~~ Construction Allowance Item Removed	~~LS~~	~~1~~
210-0100	GRADING COMPLETE - 931-19-082 (Approximately 9340 CY of Fill Material)	LS	1
310-5080	GR AGGR BASE CRS, 8 INCH, INCL MATL	SY	650
402-3103	RECYCLED ASPH CONC 9.5 MM SUPERPAVE, TYPE II, GP 2 ONLY, INCL BITUM MATL & H LIME	TN	25
402-3111	RECYCLED ASPH CONC 19 MM SUPERPAVE, TYPE II, GP 1 or GP 2, INCL BITUM MATL & H LIME	TN	35
413-1000	BITUM TACK COAT	GL	20
441-6216	CONC CURB & GUTTER, 8 IN X 24 IN, TP 2	LF	200
643-3000	ORANGE SAFETY FENCE	LF	250
	DRAINAGE ITEMS		
207-0203	FOUND BKFILL MATL, TYPE 2 BACKFILL MATERIAL (WASHED 57)	CY	148
500-3800	CLASS A CONCRETE, INCL REINF STEEL	CY	2
550-1240	STORM DRAIN PIPE, 24 IN, H 1-10 - CLASS III RCP	LF	265
550-1243	STORM DRAIN PIPE, 24 IN, H 20-25 - CLASS V RCP	LF	85
603-2180	STN DUMPED RIP RAP, TP 3, 12 IN	SY	100
603-2182	STN DUMPED RIP RAP, TP 3, 24 IN	SY	50
603-7000	PLASTIC FILTER FABRIC	SY	616
611-3004	RECONSTRUCT CATCH BASIN	EA	1
668-2105	DROP INLET, GP1, SPCL DES	EA	1
668-2115	DROP INLET, GP1, ADDL DEPTH, SPCL DES	LF	1
668-4300	STORM SEW MANHOLE, TP 1	EA	5
668-4311	STORM SEW MANHOLE, TP 1, ADDL DEPTH, CL 1	LF	50
	TEMPORARY EROSION CONTROL ITEMS		
163-0232	TEMPORARY GRASSING	AC	0.91
163-0240	MULCH	TN	5
163-0300	CONSTRUCTION EXIT	EA	1
163-0550	CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	EA	10
165-0010	MAINTENANCE OF TEMPORARY SILT FENCE - TYPE A	LF	272
165-0030	MAINTENANCE OF TEMPORARY SILT FENCE - TYPE C	LF	789
165-0105	MAINTENANCE OF INLET SEDIMENT TRAP	EA	10
171-0010	TEMPORARY SILT FENCE, TYPE A	LF	272
171-0030	TEMPORARY SILT FENCE, TYPE C	LF	789
	PERMANENT EROSION CONTROL ITEMS		
700-6910	PERMANENT GRASSING	AC	0.76
700-7000	AGRICULTURAL LIME	TN	1
700-8000	FERTILIZER MIXED GRADE	TN	1
700-8100	FERTILIZER NITROGEN CONTENT	LB	10
700-9300	SOD	SY	705
700-9000	PERMANENT SOIL REINFORCING MAT	SY	385

PROJECT OWNED/DEVELOPED BY:
CITY OF DALTON
535 ELM STREET DALTON, GA 30722
DALTON, GA, 30722
APARKER@CITYOFDALTON-GA-GOV

SOUTHEASTERN ENGINEERING, INC.
2410 Sandy Plains Road Marietta, Georgia 30066
tel: 770-321-3936 fax: 770-321-3935
www.sereqineering.com

931-19-082

No	REVISION DESCRIPTION	DATE
1	-	-
2	-	-
3	-	-
4	-	-

24 HOUR CONTACT INFORMATION
P. ANDREW PARKER, P.E. (706) 278-7077

SUMMARY OF QUANTITIES

BOTANY WOODS DR SLOPE RECONSTRUCTION
PROJECT LOCATED AT:
BOTANY WOODS DR DALTON, GA, 30720
CITY OF DALTON

GEORGIA REGISTERED NO. 32190 PROFESSIONAL ENGINEER KEVIN WAYNE CLARK
04/22/19

ISSUED FOR:
REVIEW

Project No.: 931-19-082
Designed By: KWC
Issue Date: 4/19/18

C3

THE UTILITIES SHOWN HEREON ARE FOR THE CONTRACTORS CONVENIENCE ONLY. THERE MAY BE OTHER UTILITIES NOT SHOWN ON THESE PLANS. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE LOCATIONS SHOWN AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL UTILITIES WITHIN THE LIMITS OF THE WORK. ALL DAMAGE MADE TO EXISTING UTILITIES BY THE CONTRACTOR SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. IT IS THE OWNER/DEVELOPER'S RESPONSIBILITY TO VERIFY EXISTING UTILITY CAPACITY PRIOR TO INITIATING DESIGN. THE ENGINEER MAKES NO GUARANTEES, NEITHER EXPRESSED OR IMPLIED, REGARDING EXISTING UTILITY LOCATION, CAPACITY OR CONDITION.

Know what's below. Call before you dig.

PROJECT OWNED/DEVELOPED BY:
CITY OF DALTON
535 ELM STREET DALTON, GA 30722
DALTON, GA. 30722
APARKER@CITYOFDALTON-GA-GOV

24 HOUR CONTACT INFORMATION
P. ANDREW PARKER, P.E. (706) 278-7077

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931-19-082

EXISTING CONDITIONS PLAN

BOTANY WOODS DR SLOPE RECONSTRUCTION
PROJECT LOCATED AT:
BOTANY WOODS DR DALTON, GA. 30720
CITY OF DALTON

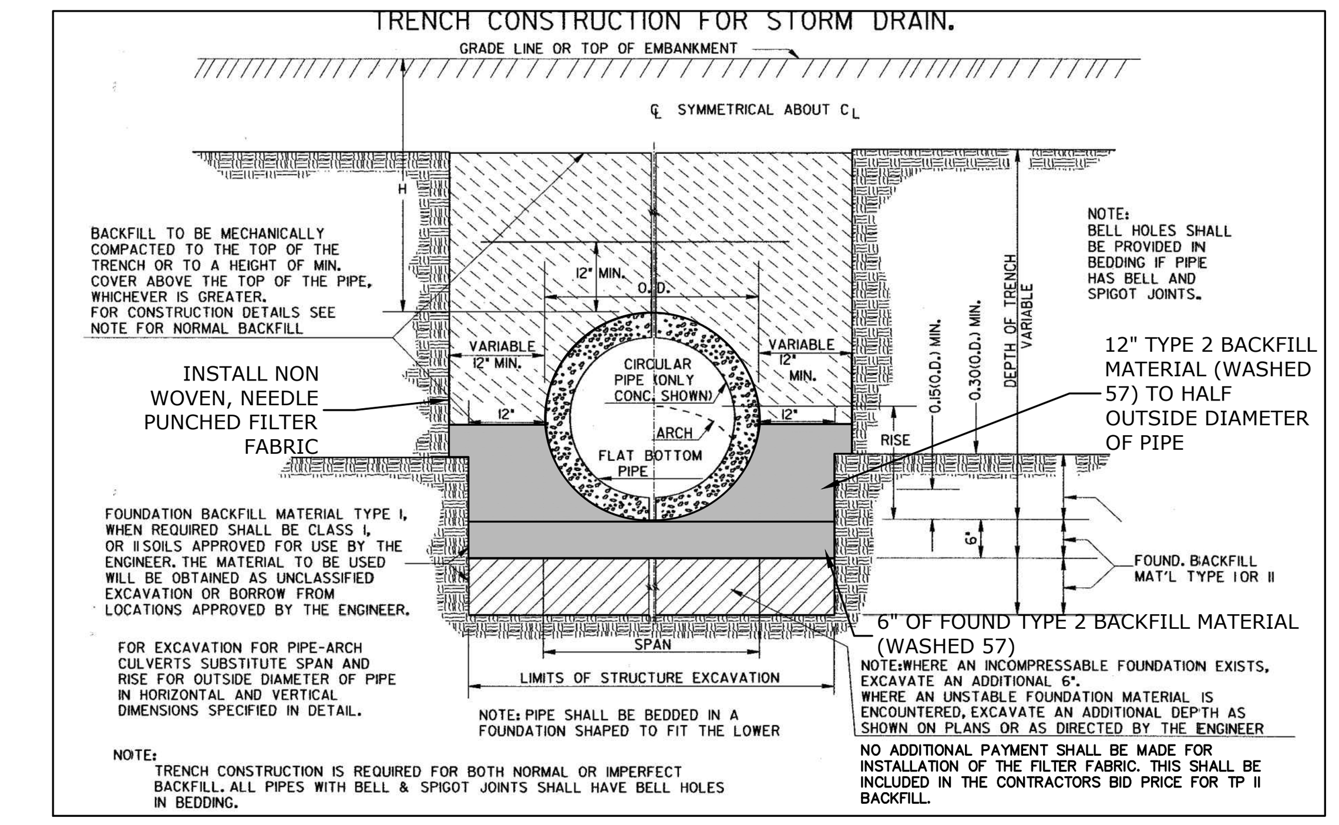
GEORGIA REGISTERED NO. 32450 PROFESSIONAL ENGINEER KEVIN WAYNE CLARK
04/22/19

ISSUED FOR:
REVIEW

Project No.: 931-19-082
Designed By: KWC
Issue Date: 4/19/18

C4

FILE NAME: I:\CUSTOMERS_PROJECTS\931 City of Dalton\931-19-082 Botany Woods Drive\Eng\Construction\931-19-082 C-PLAN.dwg PLOT STYLE: SEI-BASE-M.ctb PLOT DATE:5/3/2019 USER:IAN CLARK

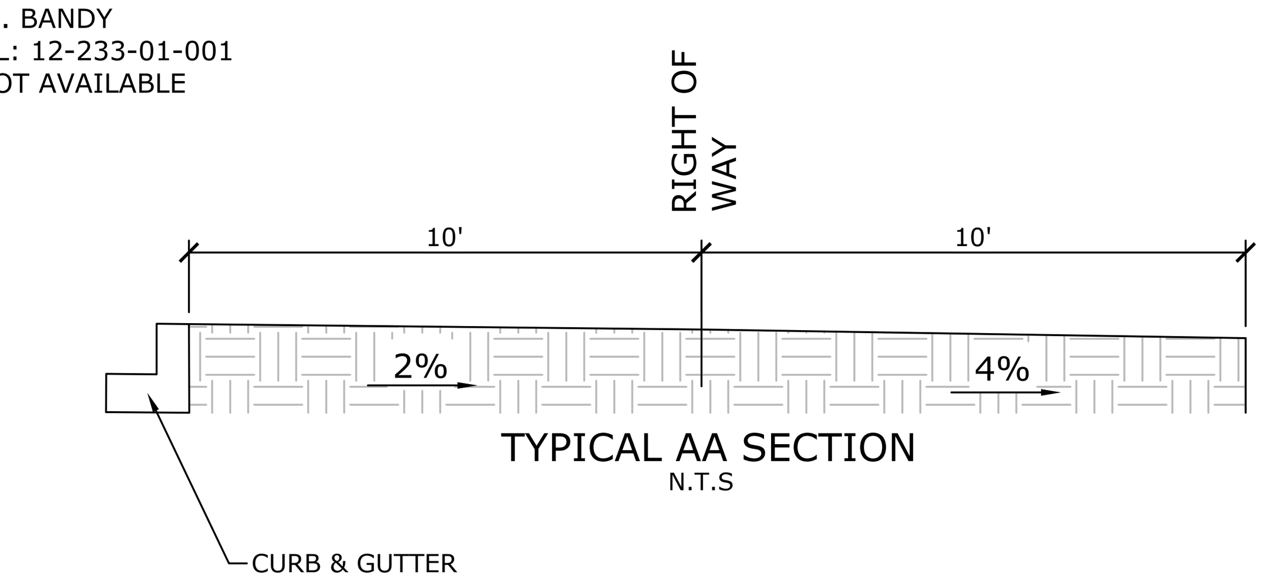


EARTHWORK QUANTITY

9340 CY OF FILL REQUIRED.
FOR INFORMATION ONLY

GRADING AND DRAINAGE NOTES:

1. PROVIDE POSITIVE DRAINAGE AT ALL TIMES.
2. SEE PROFILE SHEET FOR STORM SEWER PROFILES OF ALL LABELED STORM LINES.
3. MAXIMUM NEW CUT/FILL SLOPE IS 2H:1V
4. MATCH EXISTING GRADE AT THE INTERFACE BETWEEN NEW AND EXISTING SURFACES. NOTIFY ENGINEER IMMEDIATELY IF DESIGN GRADES DIFFER
5. CLEAN AND FLUSH EXISTING STORM SEWER STRUCTURE AND/OR LINE. CONTRACTOR SHALL REMOVE ALL DEBRIS & SEDIMENT WITH VACUUM TRUCK & REMOVE FROM SITE. DO NOT FLUSH DEBRIS OR SEDIMENT DOWNSTREAM.
6. PROVIDE ¼" PER FOOT CROSS SLOPE FOR ALL CROWNED DRIVEWAYS.
7. ADJUST THE TOPS OF ALL EXISTING STORM STRUCTURES TO FINAL GRADE
8. CONTRACTOR SHALL MATCH ALL NEW PAVEMENT, SIDEWALK, AND/OR CURB & GUTTER WITH EXISTING AT ALL CONNECTION POINTS. PROVIDE SEALANT AT ALL JOINTS BETWEEN EX. AND PROPOSED ASPHALT PAVEMENTS TO PROVIDE A SMOOTH & SEAMLESS TRANSITION.
9. THE INSTALLATION OF ALL EROSION CONTROL MEASURES AND DETENTION FACILITIES SHOULD BE ACCOMPLISHED PRIOR TO ANY OTHER CONSTRUCTION ON THE SITE AND MAINTAINED UNTIL PERMANENT GROUND COVER IS ESTABLISHED.



TYPICAL AA SECTION
N.T.S

GRAPHIC SCALE
20 0 20 40
(IN FEET)
1 inch = 20 ft.

GRID (GA WEST)

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931-19-082

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24 HOUR CONTACT INFORMATION
P. ANDREW PARKER, P.E. (706) 278-7077

GRADING & DRAINAGE PLAN

BOTANY WOODS DR SLOPE RECONSTRUCTION
PROJECT LOCATED AT:
BOTANY WOODS DR DALTON, GA, 30720
CITY OF DALTON

GEORGIA REGISTERED NO. 32190 PROFESSIONAL ENGINEER KEVIN WAYNE CLARK 04/22/19

ISSUED FOR:
REVIEW

Project No.: 931-19-082
Designed By: KWC
Issue Date: 4/19/18

C5

811 Know what's below. Call before you dig.

FILE NAME: I:\CUSTOMERS_PROJECTS\931 City of Dalton\931-19-082 Botany Woods Drive\Eng\Construction\931-19-082 C-PLAN.dwg PLOT STYLE: SEI-BASE-M.ctb PLOT DATE:5/3/2019 USER:IAN CLARK

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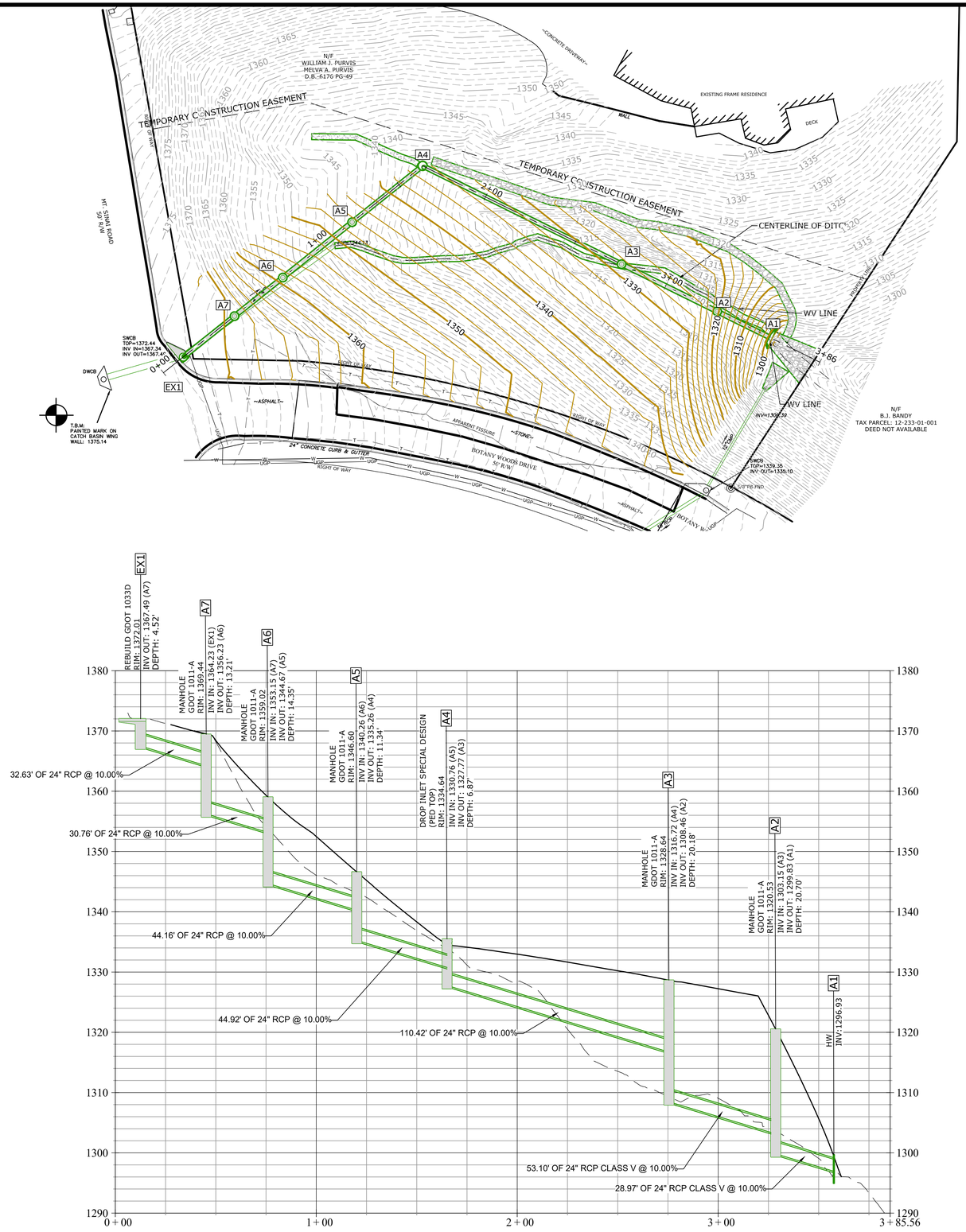

1 STORM SEWER A

H: 1" = 30'
0 25' 50' 100'

V: 1"=10'
0 5' 10' 20'

No	REVISION DESCRIPTION	DATE
1	-	-
2	-	-
3	-	-
4	-	-

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931-19-082

STORM PROFILES
BOTANY WOODS DR SLOPE RECONSTRUCTION
PROJECT LOCATED AT:
BOTANY WOODS DR DALTON, GA, 30720
CITY OF DALTON

GEORGIA REGISTERED NO. 32190 PROFESSIONAL ENGINEER KEVIN WAYNE CLARK
04/22/19

ISSUED FOR:
REVIEW

Project No.: 931-19-082
Designed By: KWC
Issue Date: 4/19/18

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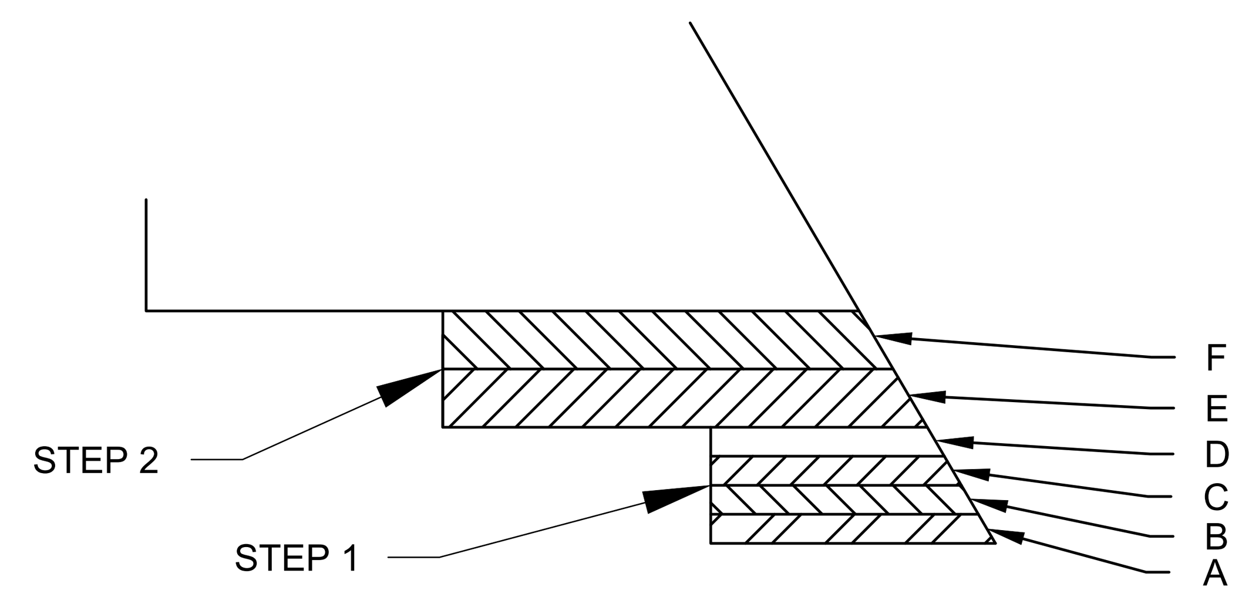
FILE NAME: I:\CUSTOMERS_PROJECTS\931 City of Dalton\931-19-082 Botany Woods Drive\Eng\Construction\931-19-082 C-UTIL.dwg PLOT STYLE: SEI-BASE-M.ctb PLOT DATE:5/3/2019 USER:IAN CLARK

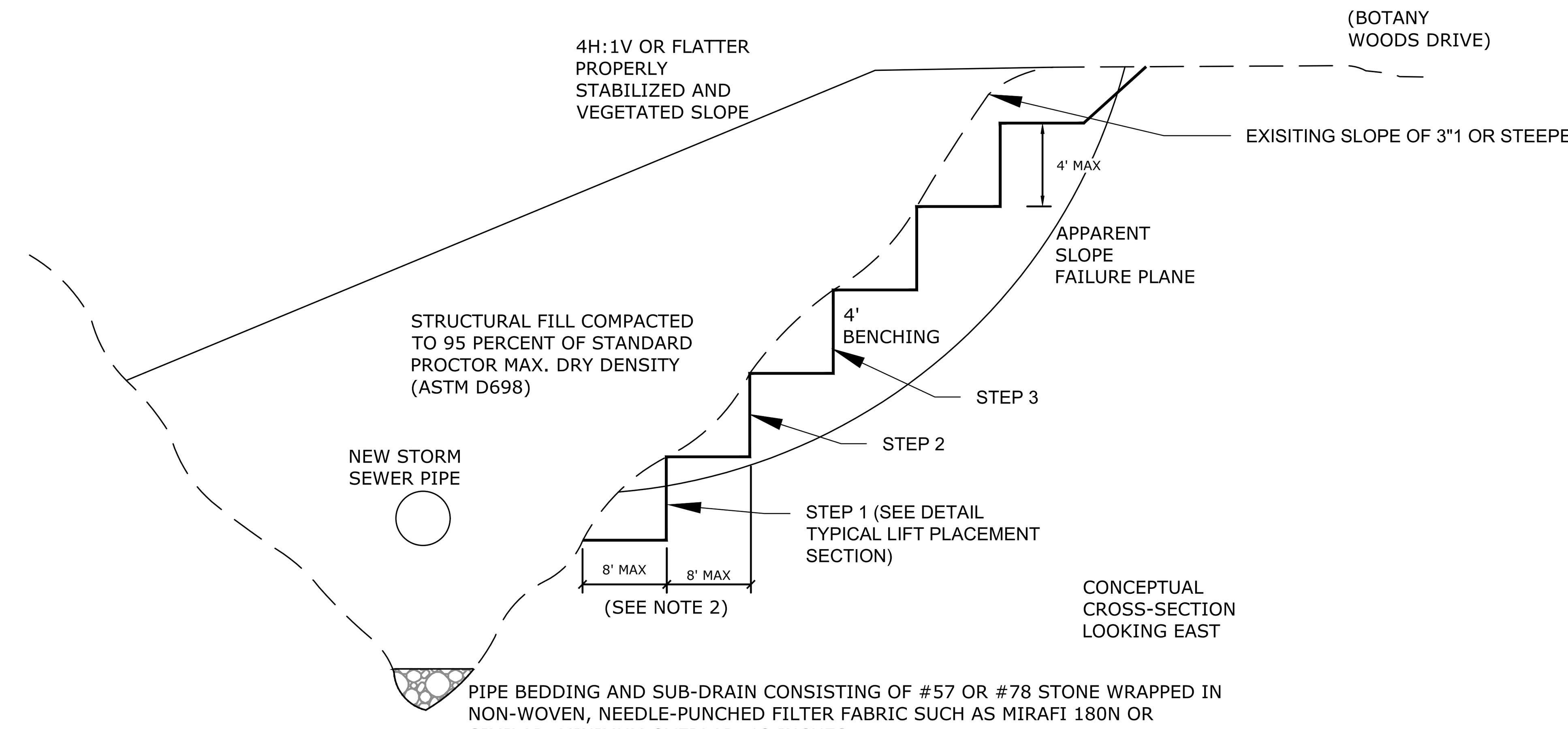


NOTES:

1. WHERE THE EMBANKMENT IS TO BE PLACED ON A HILLSIDE OR ANOTHER EXISTING EMBANKMENT HAVING A SLOPE OF 3 TO 1 OR STEEPER, THE FOUNDATION MUST BE BENCHED WHILE THE EMBANKMENT IS BEING BUILT(SEE DIAGRAM ABOVE)
2. THE DIAGRAM SHOWS THAT BEFORE LAYER "A" IS PLACED THE FIRST STEP (1) IS CUT INTO THE SLOPE A MAXIMUM DISTANCE OF ABOUT 8' (ABOUT ½ THE WIDTH OF THE TYPICAL 0-8 BULLDOZER BLADE). SUCCESSIVE LAYERS B,C, AND D ARE THEN PLACED BEFORE LAYER "E" IS PLACED, THE SECOND STEP IS CUT 8 FEET INTO THE SLOPE AND SUCCESSIVE LAYERS ARE AGAIN PLACED. IF IT IS ANTICIPATED THAT THE VERTICAL PART OF THE STEP WILL EXCEED 4 FEET IF A 8 FEET HORIZONTAL CUT IS MADE,THEN THE ACTUAL CUT STOPS WHEN THE VERTICAL PART REACHES A MAXIMUM OF 4 FEET ALLOWING THE HORIZONTAL DISTANCE TO VARY
3. THE PROCESS OF BENCHING IS CONSIDERED INCIDENTAL TO THE ITEM OF UNCLASSIFIED EXCAVATION AND BORROW OR GRADING COMPLETE IN CONSTRUCTION OF THE EMBANKMENT AND NO ADDITIONAL NEASUREMENT OF THE QUANTITY OR PAYMENT WILL BE MADE FOR BENCHING.

TYPICAL LIFT PLACEMENT SECTION

N.T.S

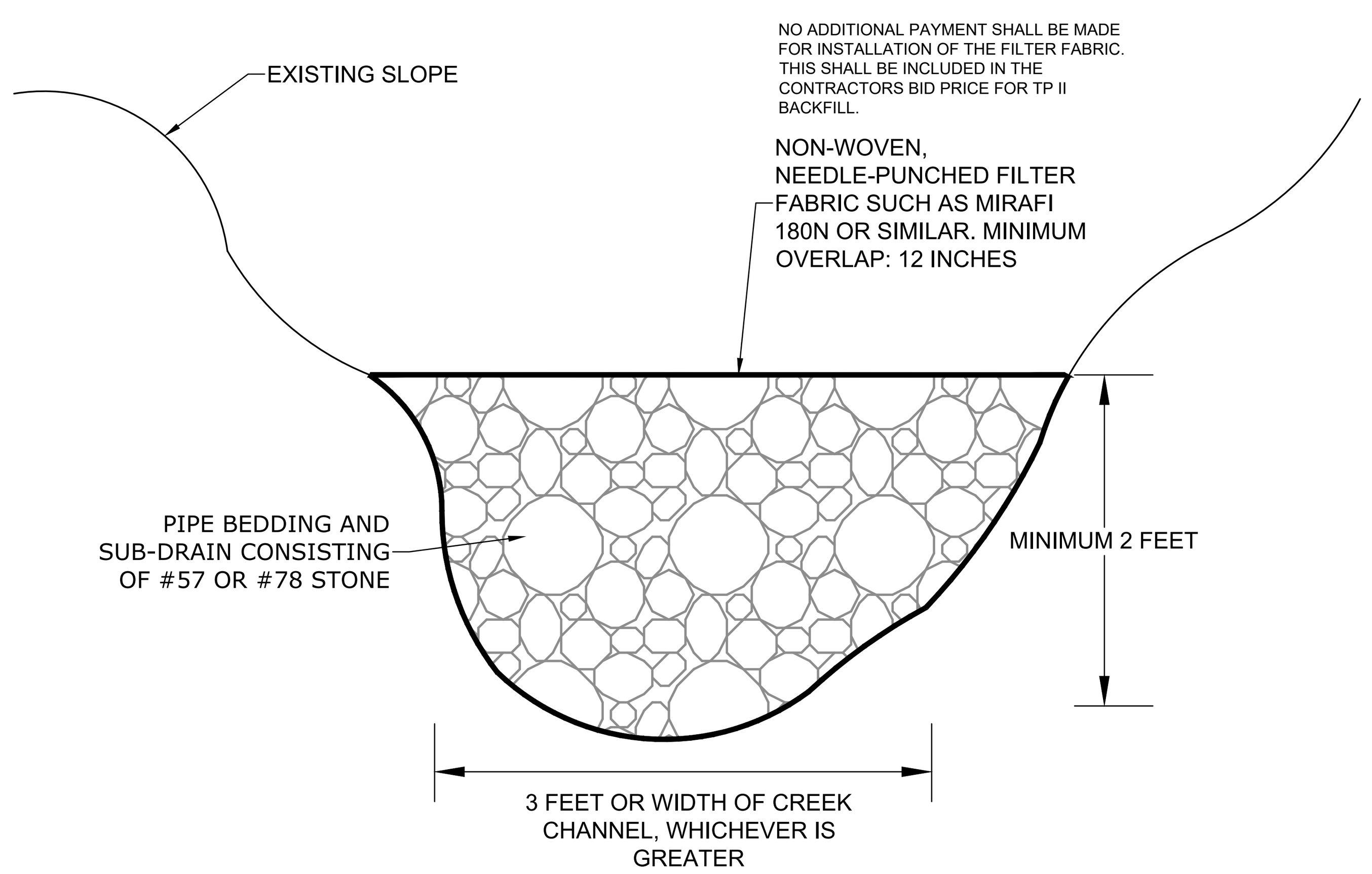


PIPE BEDDING AND SUB-DRAIN CONSISTING OF #57 OR #78 STONE WRAPPED IN NON-WOVEN, NEEDLE-PUNCHED FILTER FABRIC SUCH AS MIRAFI 180N OR SIMILAR. MINIMUM OVERLAP: 12 INCHES

NO ADDITIONAL PAYMENT SHALL BE MADE FOR INSTALLATION OF THE FILTER FABRIC. THIS SHALL BE INCLUDED IN THE CONTRACTORS BID PRICE FOR TP II BACKFILL.

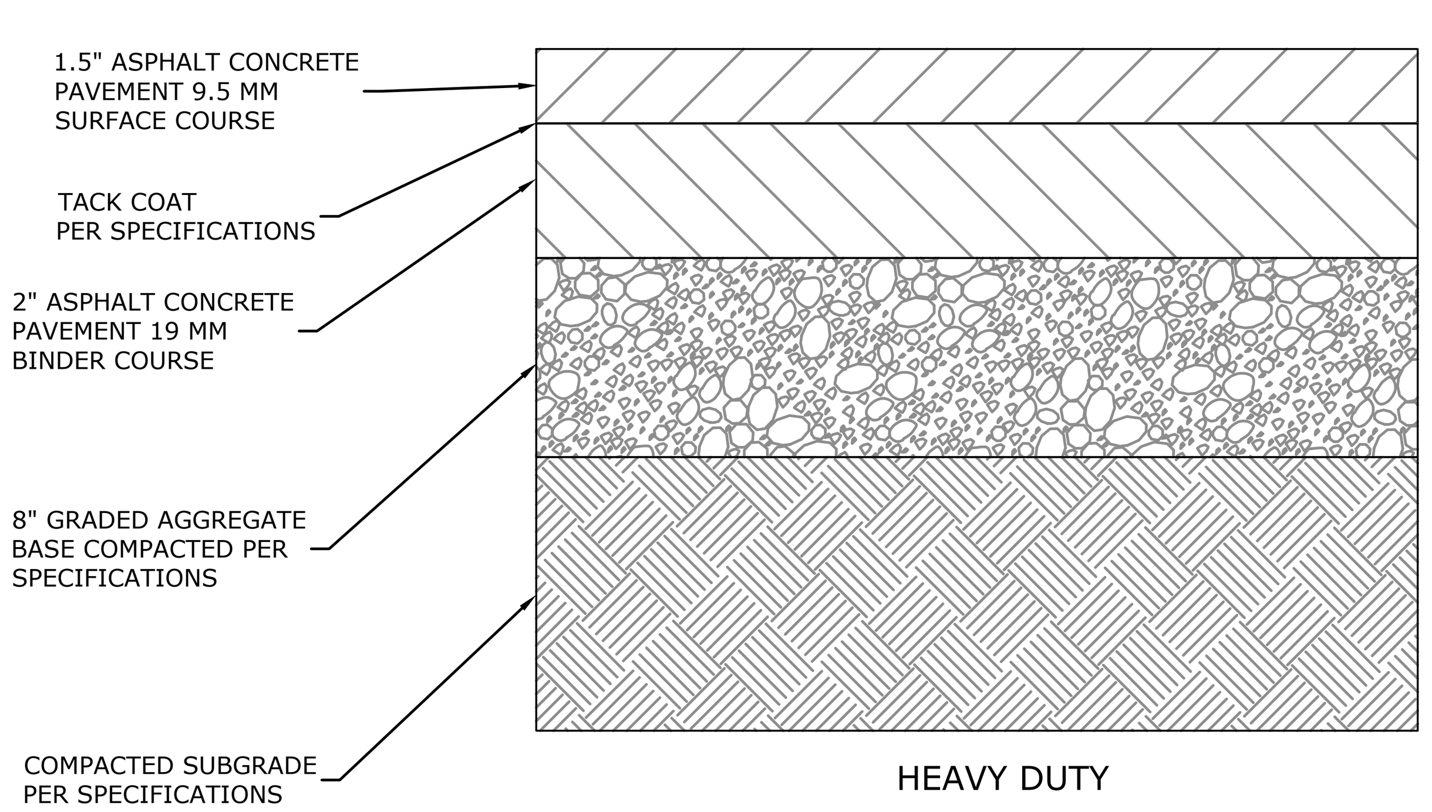
TYPICAL FILL PLACEMENT SECTION

N.T.S



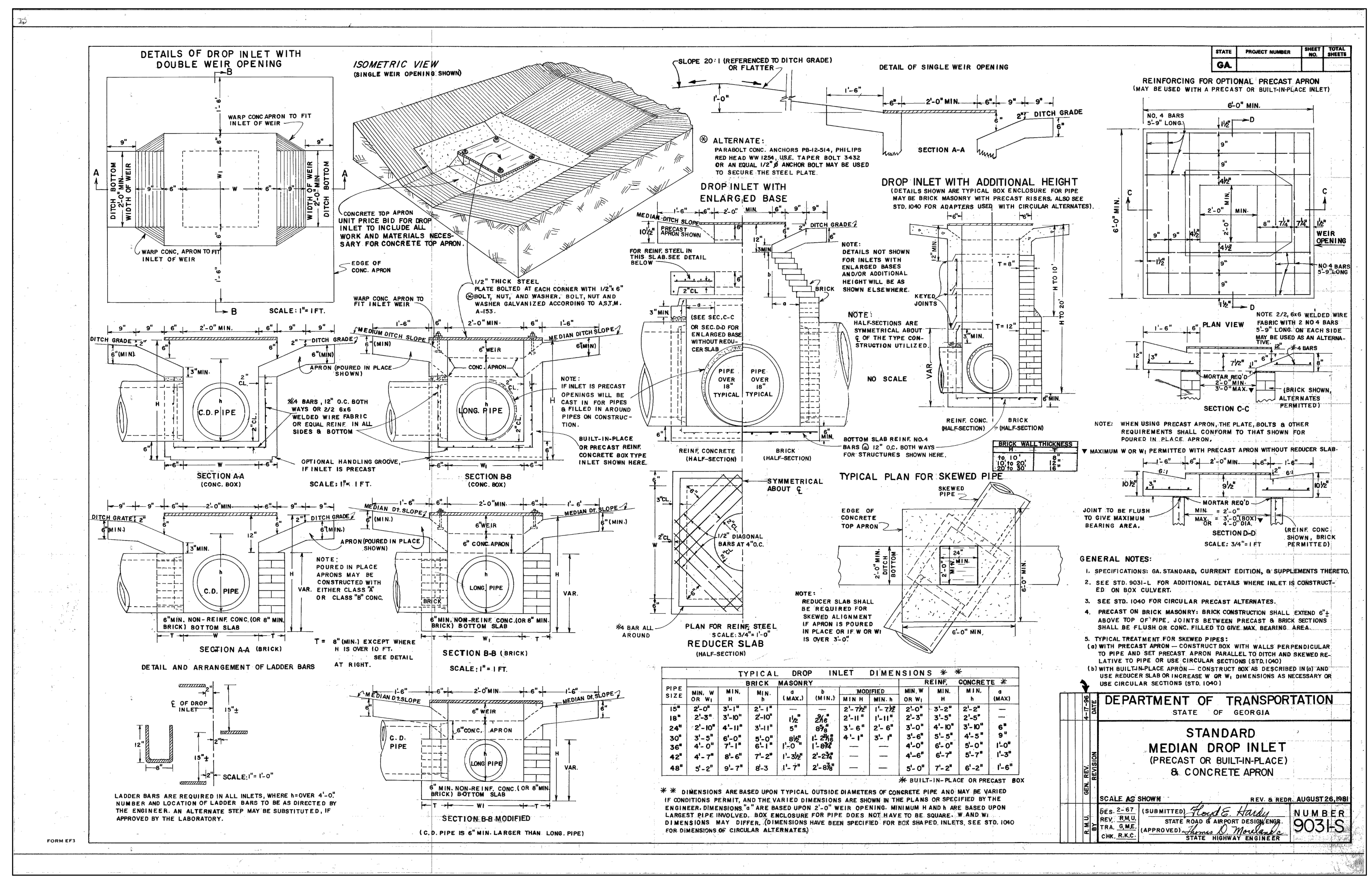
SUB DRAIN DETAIL

N.T.S



ASPHALTIC CONCRETE PAVEMENT

NOT TO SCALE



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SEI
SOUTHEASTERN ENGINEERING, INC.
2470 Sandy Plains Road Marietta, Georgia 30066
tel: 770-321-3936 fax: 770-321-3935
www.seengineering.com

931-19-082

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PROJECT OWNER/DEVELOPED BY:
CITY OF DALTON
535 ELM STREET DALTON, GA 30722
DALTON, GA, 30722
APARKER@CITYOFDALTON-GA-GOV
24 HOUR CONTACT INFORMATION
P. ANDREW PARKER, P.E. (706) 278-7077

CONSTRUCTION DETAILS

BOTANY WOODS DR SLOPE RECONSTRUCTION

PROJECT LOCATED AT:
BOTANY WOODS DR DALTON, GA, 30720
CITY OF DALTON

GEORGIA REGISTERED PROFESSIONAL ENGINEER NO. 32490 KEVIN WAYNE CLARK 04/22/19

ISSUED FOR:
REVIEW

Project No.: 931-19-082
Designed By: KWC
Issue Date: 4/19/18

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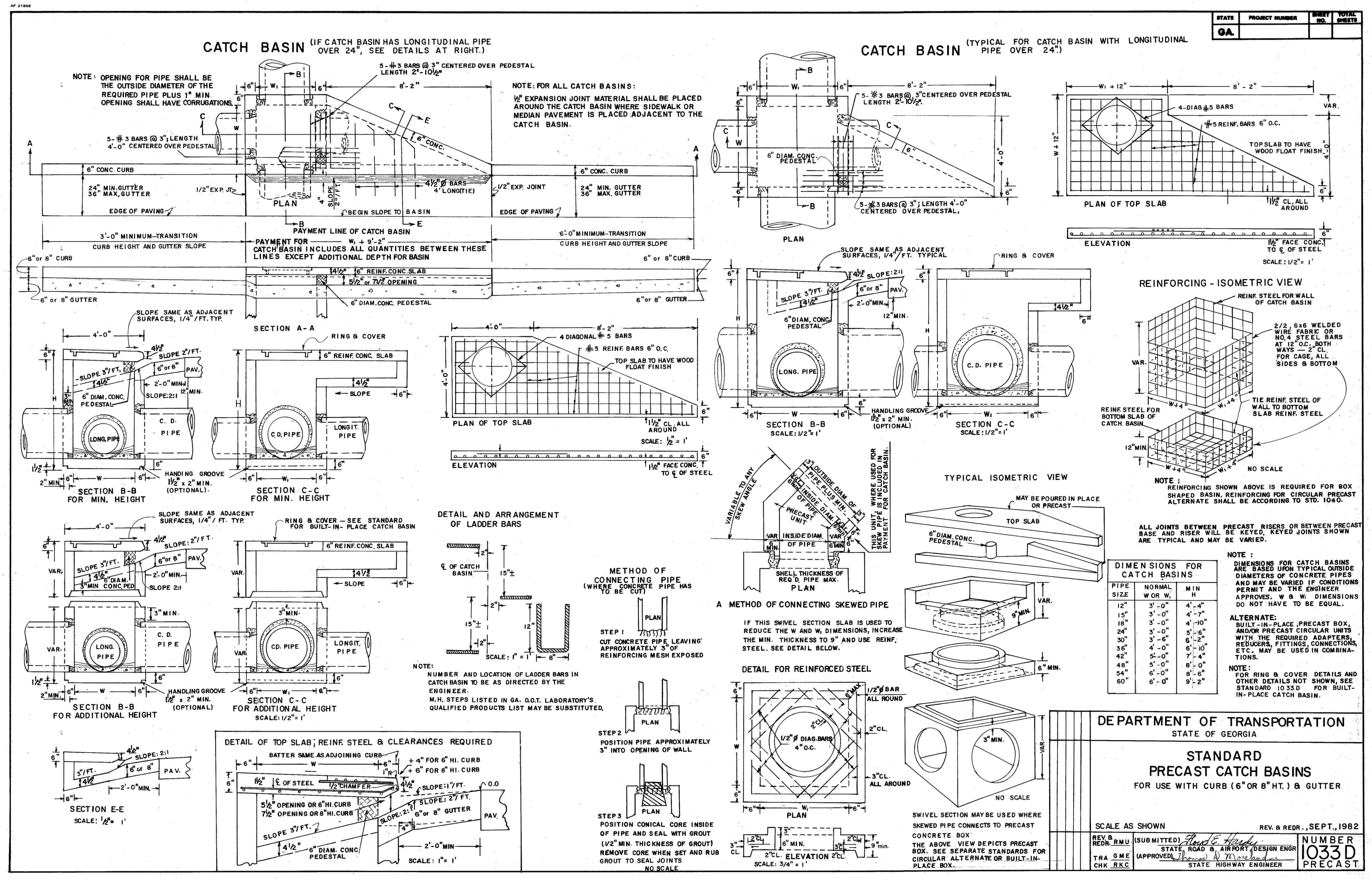
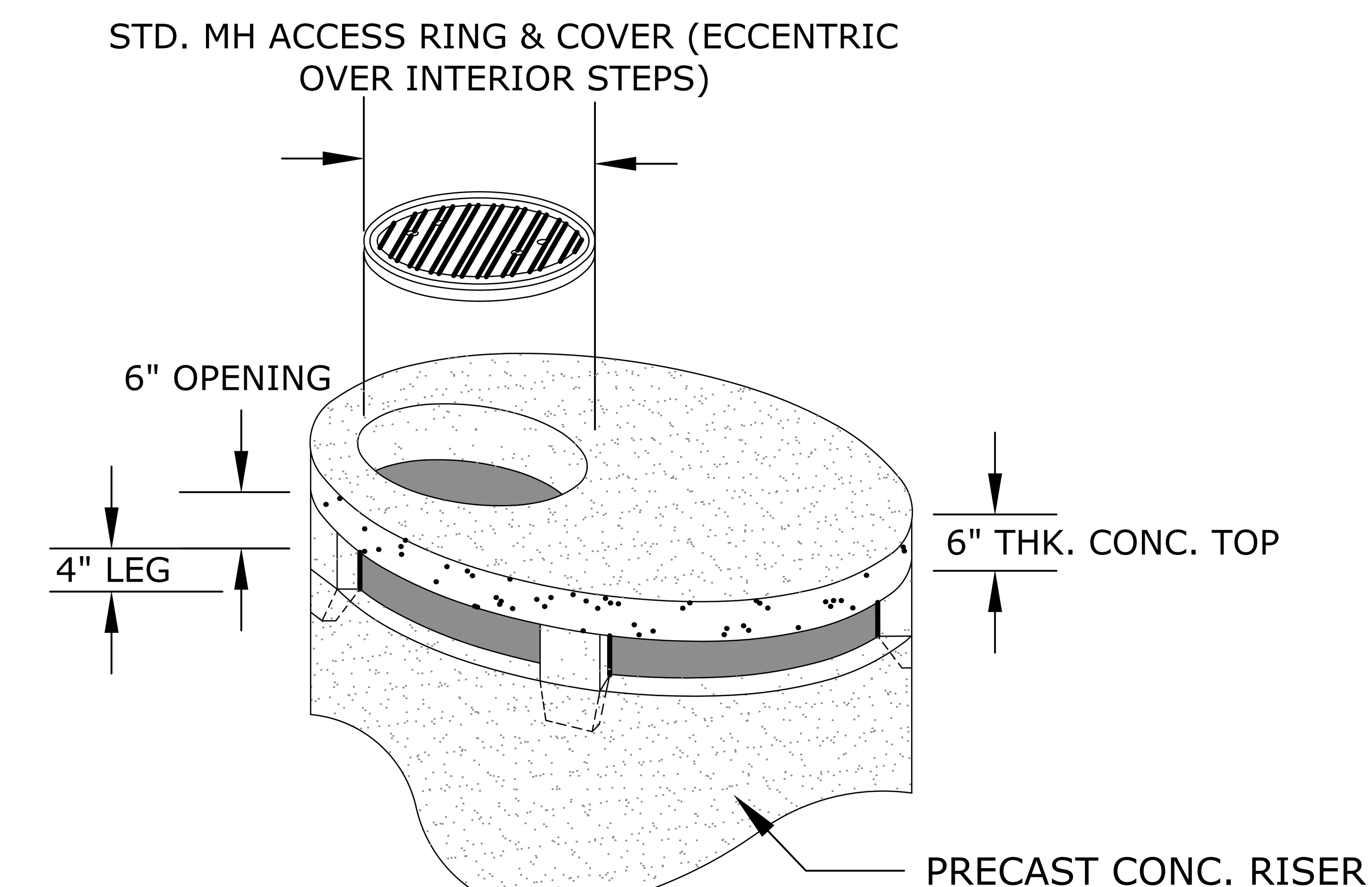
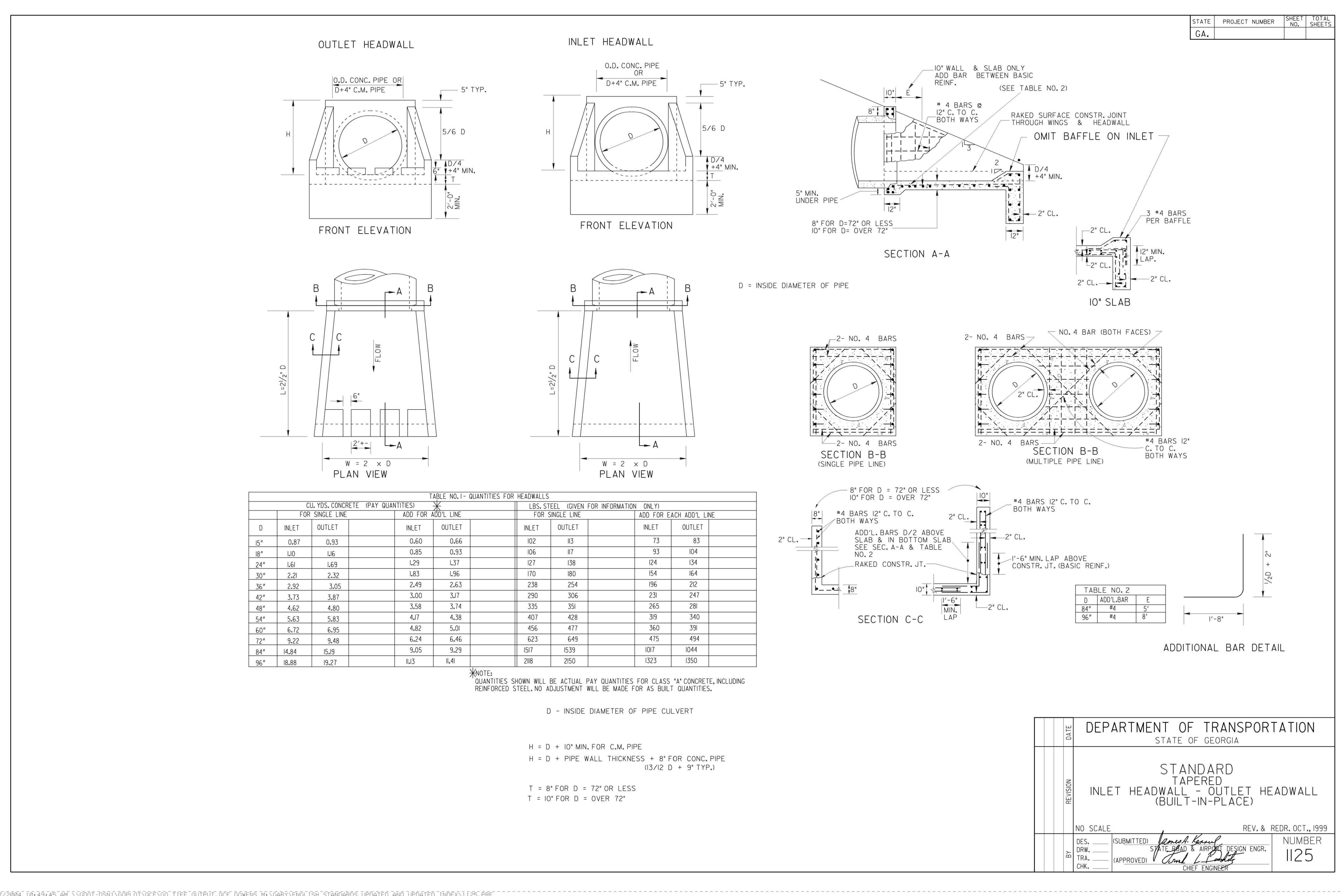
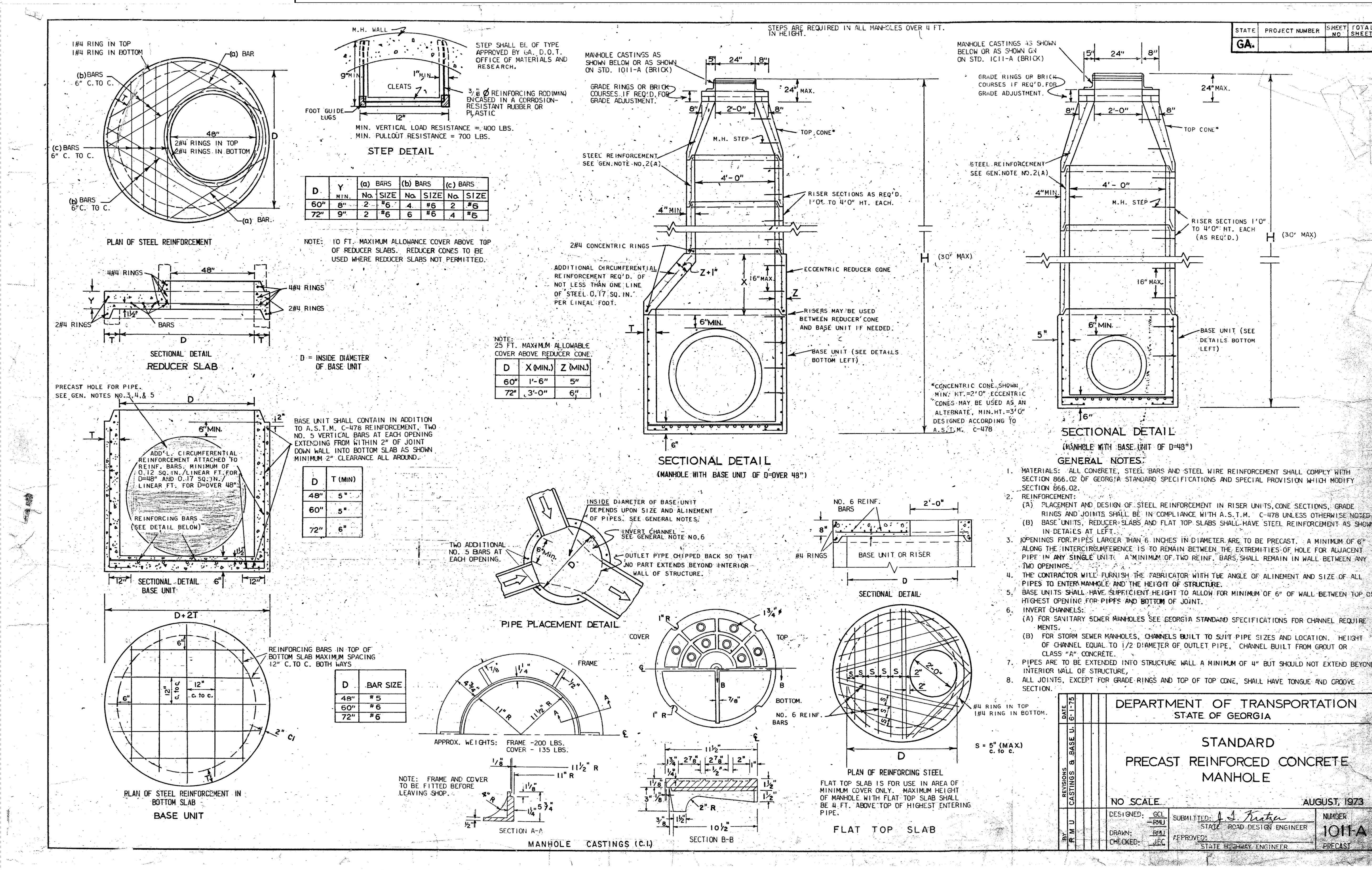




PEDESTAL INLET TOP DETAIL

NOT TO SCALE





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931-19-082

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PROJECT OWNER/DEVELOPED BY:
CITY OF DALTON
535 ELM STREET DALTON, GA 30722
DALTON, GA 30722
APARKER@CITYOFDALTON-GA.GOV

24 HOUR CONTACT INFORMATION
P. ANDREW PARKER, P.E. (706) 278-7077

CONSTRUCTION DETAILS

BOTANY WOODS DR SLOPE RECONSTRUCTION

PROJECT LOCATED AT:
BOTANY WOODS DR DALTON, GA 30720
CITY OF DALTON

GEORGIA REGISTERED PROFESSIONAL ENGINEER NO. 32190 KEVIN WAYNE CLARK 04/22/19

ISSUED FOR:
REVIEW

Project No.: 931-19-082
Designed By: KWC
Issue Date: 4/19/18

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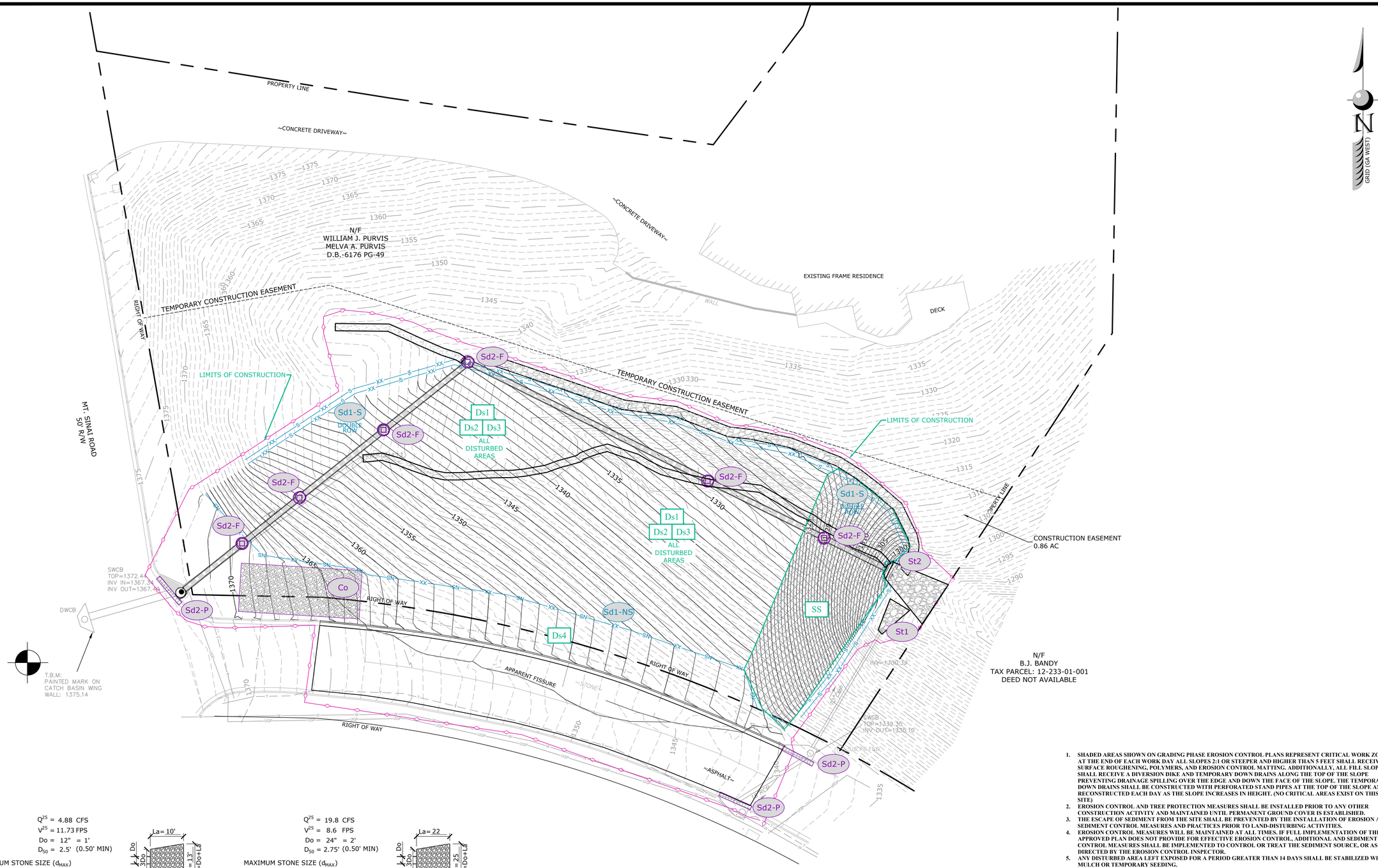
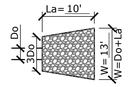


Q^{25} = 4.88 CFS
V^{25} = 11.73 FPS
Do = 12" = 1'
D_{50} = 2.5' (0.50' MIN)

MAXIMUM STONE SIZE (d_{MAX})
d_{MAX} = 1.5 x d_{50}
d_{MAX} = 1.5 x 2.5'
d_{MAX} = 3.75'

APRON THICKNESS
1.5 x d_{MAX}
1.5 x 3.75 = 5.75'

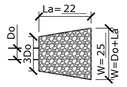


1 STORM OUTLET PROTECTION CALCULATIONS — St

Q^{25} = 19.8 CFS
V^{25} = 8.6 FPS
Do = 24" = 2'
D_{50} = 2.75' (0.50' MIN)

MAXIMUM STONE SIZE (d_{MAX})
d_{MAX} = 1.5 x d_{50}
d_{MAX} = 1.5 x 2.75'
d_{MAX} = 4.25'

APRON THICKNESS
1.5 x d_{MAX}
1.5 x 4.25' = 6.5'



2 STORM OUTLET PROTECTION CALCULATIONS — St

GRAPHIC SCALE
20 0 20 40
(IN FEET)
1 inch = 20 ft.

1. SHADED AREAS SHOWN ON GRADING PHASE EROSION CONTROL PLANS REPRESENT CRITICAL WORK ZONES. AT THE END OF EACH WORK DAY ALL SLOPES 2:1 OR STEEPER AND HIGHER THAN 5 FEET SHALL RECEIVE SURFACE ROUGHENING, POLYMERS, AND EROSION CONTROL MATTING. ADDITIONALLY, ALL FILL SLOPES SHALL RECEIVE A DIVERSION DIKE AND TEMPORARY DOWN DRAINS ALONG THE TOP OF THE SLOPE PREVENTING DRAINAGE SPILLING OVER THE EDGE AND DOWN THE FACE OF THE SLOPE. THE TEMPORARY DOWN DRAINS SHALL BE CONSTRUCTED WITH PERFORATED STAND PIPES AT THE TOP OF THE SLOPE AND RECONSTRUCTED EACH DAY AS THE SLOPE INCREASES IN HEIGHT. (NO CRITICAL AREAS EXIST ON THIS SITE)
2. EROSION CONTROL AND TREE PROTECTION MEASURES SHALL BE INSTALLED PRIOR TO ANY OTHER CONSTRUCTION ACTIVITY AND MAINTAINED UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
3. 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.
4. EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE, OR AS DIRECTED BY THE EROSION CONTROL INSPECTOR.
5. ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.

GSWCC Georgia Soil and Water Conservation Commission

Kevin Wayne Clark
Level II Certified Design Professional
Certification Number 0000011388
Issued: 05/31/2009 Expires: 05/31/2021

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EROSION CONTROL PLAN

BOTANY WOODS DR SLOPE RECONSTRUCTION
PROJECT LOCATED AT:
BOTANY WOODS DR DALTON, GA, 30720
CITY OF DALTON

GEORGIA REGISTERED PROFESSIONAL ENGINEER
NO. 32450
KEVIN WAYNE CLARK
04/22/19

ISSUED FOR:
REVIEW

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Designed By: KWC
Issue Date: 4/19/18

C8

Know what's below. Call before you dig.

FILE NAME: I:\CUSTOMERS_PROJECTS\931 City of Dalton\931-19-082 Botany Woods Drive\Eng\Construction\931-19-082 C-EROS.dwg PLOT STYLE: SEI-BASE-M.ctb PLOT DATE:5/3/2019 USER:JIAN CLARK

GEORGIA
UNIFORM CODING SYSTEM
FOR SOIL EROSION AND SEDIMENT CONTROL PRACTICES
GEORGIA SOIL AND WATER CONSERVATION COMMISSION

STRUCTURAL PRACTICES

CODE	PRACTICE	DETAIL	MAP SYMBOL	DESCRIPTION
Cd	CHECKDAM			A small temporary barrier or dam constructed across a swale, drainage ditch or area of concentrated flow.
Ch	CHANNEL STABILIZATION			Improving, constructing or stabilizing an open channel, existing stream, or ditch.
Co	CONSTRUCTION EXIT		Co (LAND)	A crushed stone pad located at the construction site exit to provide a place for removing mud from tires thereby protecting public streets.
Cr	CONSTRUCTION ROAD STABILIZATION		Cr (LAND)	A travelway constructed as part of a construction plan including access roads, subdivision roads, parking areas and other on-site vehicle transportation routes.
Dc	STREAM DIVERSION CHANNEL			A temporary channel constructed to convey flow around a construction site while a permanent structure is being constructed.
Di	DIVERSION			An earth channel or dike located above, below, or across a slope to divert runoff. This may be a temporary or permanent structure.
Dn1	TEMPORARY DOWNDRAIN STRUCTURE		Dn1 (LAND)	A flexible conduit of heavy-duty fabric or other material designed to safely conduct surface runoff down a slope. This is temporary and inexpensive.
Dn2	PERMANENT DOWNDRAIN STRUCTURE		Dn2 (LAND)	A paved chute, pipe, sectional conduit or similar material designed to safely conduct surface runoff down a slope.
Fr	FILTER RING			A temporary stone barrier constructed at storm drain inlets and pond outlets.
Ga	GABION			Rock filter baskets which are hand-placed into position forming soil stabilizing structures.
Gr	GRADE STABILIZATION STRUCTURE		Gr (LAND)	Permanent structures installed to protect channels or waterways where otherwise the slope would be sufficient for the running water to form gullies.
Lv	LEVEL SPREADER			A structure to convert concentrated flow of water into less erosive sheet flow. This should be constructed only on undisturbed soils.
Rd	ROCK FILTER DAM			A permanent or temporary stone filter dam installed across small streams or drainageways.
Re	RETAINING WALL		Re (LAND)	A wall installed to stabilize cut and fill slopes where maximum permissible slopes are not obtainable. Each situation will require special design.
Rt	RETRO FITTING		Rt (LAND)	A device or structure placed in front of a permanent stormwater detention pond outlet structure to serve as a temporary sediment filter.
Sd1	SEDIMENT BARRIER		(INDICATE TYPE)	A barrier to prevent sediment from leaving the construction site. It may be sandbags, bales of straw or hay, brush, logs and poles, gravel, or a silt fence.
Sd2	INLET SEDIMENT TRAP			An impounding area created by excavating around a storm drain drop inlet. The excavated area will be filled and stabilized on completion of construction activities.
Sd3	TEMPORARY SEDIMENT BASIN		Sd3 (LAND)	A basin created by excavation or a dam across a waterway. The surface water runoff is temporarily stored allowing the bulk of the sediment to drop out.
Sd4	TEMPORARY SEDIMENT TRAP			A small temporary pond that drains a disturbed area so that sediment can settle out. The principle feature distinguishing a temporary sediment trap from a temporary sediment basin is the lack of a pipe or riser.
Sk	FLOATING SURFACE SKIMMER		Sk (LAND)	A buoyant device that releases/drains water from the surface of sediment ponds, traps, or basins at a controlled rate of flow.
Spb	SEEP BERM		Spb (LAND)	Linear control device constructed as a diversion perpendicular to the direction of runoff to enhance dissipation and infiltration, while creating multiple sedimentation chambers with the employment of intermediate dikes.

STRUCTURAL PRACTICES

CODE	PRACTICE	DETAIL	MAP SYMBOL	DESCRIPTION
Sr	TEMPORARY STREAM CROSSING	TYP. CROSS SECTION	Sr (LAND)	A temporary bridge or culvert-type structure protecting a stream or watercourse from damage by crossing construction equipment.
St	STORMDRAIN OUTLET PROTECTION		St	A paved or short section of riprap channel at the outlet of a storm drain system preventing erosion from the concentrated runoff.
Su	SURFACE ROUGHENING		Su	A rough soil surface with horizontal depressions on a contour or slopes left in a roughened condition after grading.
Tc	TURBIDITY CURTAIN		Tc	A floating or staked barrier installed within the water (it may also be referred to as a floating boom, silt barrier, or silt curtain).
Tp	TOPSOILING		Tp (DATUM STRIPPING AND STORAGE AREAS)	The practice of stripping off the more fertile soil, storing it, then spreading it over the disturbed area after completion of construction activities.
Tr	TREE PROTECTION		(DRIPLINE TREE CENTERS)	To protect desirable trees from injury during construction activity.
Wt	~~VEGETATED~~ WATERWAY OR STORMWATER CONVEYANCE CHANNEL			Paved or vegetative water outlets for diversions, terraces, berms, dikes or similar structures.

VEGETATIVE PRACTICES

CODE	PRACTICE	DETAIL	MAP SYMBOL	DESCRIPTION
Bf	BUFFER ZONE		Bf (LAND)	Strip of undisturbed original vegetation, enhanced or restored existing vegetation or the reestablishment of vegetation surrounding an area of disturbance or bordering streams.
Cs	COASTAL DUNE STABILIZATION (WITH VEGETATION)		Cs	Planting vegetation on dunes that are denuded artificially constructed, or re-nourished.
Ds1	DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)		Ds1	Establishing temporary protection for disturbed areas where seedlings may not have a suitable growing season to produce an erosion retarding cover.
Ds2	DISTURBED AREA STABILIZATION (WITH TEMP SEEDING)		Ds2	Establishing a temporary vegetative cover with fast growing seedings on disturbed areas.
Ds3	DISTURBED AREA STABILIZATION (WITH PERM SEEDING)		Ds3	Establishing a permanent vegetative cover such as trees, shrubs, vines, grasses, or legumes on disturbed areas.
Ds4	DISTURBED AREA STABILIZATION (SODDING)		Ds4	A permanent vegetative cover using sods on highly erodable or critically eroded lands.
Du	DUST CONTROL ON DISTURBED AREAS		Du	Controlling surface and air movement of dust on construction site, roadways and similar sites.
Fl-Co	FLOCCULANTS AND COAGULANTS		Fl-Co	Substance formulated to assist in the solids/liquid separation of suspended particles in solution.
Sb	STREAMBANK STABILIZATION (USING PERM VEGETATION)		Sb	The use of readily available native plant materials to maintain and enhance streambanks, or to prevent, or restore and repair small streambank erosion problems.
Ss	SLOPE STABILIZATION		Ss	A protective covering used to prevent erosion and establish temporary or permanent vegetation on steep slopes, shore lines, or channels.
Tac	TACKIFIERS AND BINDERS		Tac	Substance used to anchor straw or hay mulch by causing the organic material to bind together.

GaSWCC (Amended - 2013)

DEFINITION
A PROTECTIVE COVERING (BLANKET) OR SOIL STABILIZATION MAT USED TO ESTABLISH PERMANENT VEGETATION ON STEEP SLOPES, CHANNELS, OR SHORELINES.

PURPOSE
- TO PROVIDE A MICROCLIMATE WHICH PROTECTS YOUNG VEGETATION AND PROMOTES ITS ESTABLISHMENT.
- TO REINFORCE THE TURF TO RESIST FORCES OF EROSION DURING STORM EVENTS.

CONDITIONS
MATTING AND BLANKETS CAN BE APPLIED ON STEEP SLOPES WHERE EROSION HAZARD IS HIGH AND PLANTING IS LIKELY TO BE TOO SLOW IN PROVIDING ADEQUATE PROTECTIVE COVER. CONCENTRATED FLOW AREAS, ALL SLOPES STEEPER THAN 2.5:1 AND WITH A HEIGHT OF TEN FEET OR GREATER, AND CUTS AND FILLS WITHIN STREAM BUFFERS, SHALL BE STABILIZED WITH THE APPROPRIATE EROSION CONTROL MATTING OR BLANKETS. MAINTENANCE OF FINAL VEGETATIVE COVER MUST BE CONSIDERED WHEN CHOOSING BLANKETS VERSES MATTING. ON STREAMBANKS OR TIDAL SHORELINES WHERE MOVING WATER IS PRESENT, MATTING CAN PREVENT NEW PLANTINGS FROM BEING WASHED AWAY.

PLANNING CONSIDERATIONS
CARE MUST BE TAKEN TO CHOOSE THE TYPE OF BLANKET OR MATTING WHICH IS MOST APPROPRIATE FOR THE SPECIFIC NEEDS OF A PROJECT. TWO GENERAL TYPES OF BLANKETS AND MATS ARE DISCUSSED WITHIN THIS SPECIFICATION. DUE TO THE ABUNDANCE OF EROSION CONTROL MATTING AND BLANKET PRODUCTS AVAILABLE, ALL OF THE ADVANTAGES, DISADVANTAGES, AND SPECIFICATIONS OF ALL MANUFACTURED PRODUCTS WILL NOT BE DISCUSSED IN THIS MANUAL. MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS, AS WELL AS A SITE VISIT BY DESIGNER AND PLAN REVIEWER IS HIGHLY RECOMMENDED TO DETERMINE A PRODUCT'S APPROPRIATENESS.

TEMPORARY EROSION CONTROL BLANKETS
THIS INCLUDES TEMPORARY "COMBINATION" BLANKETS (ROLLED EROSION CONTROL BLANKETS-RECB) CONSISTING OF A PLASTIC NETTING WHICH COVERS AND IS INTERTWINED WITH A NATURAL ORGANIC OR MANMADE MULCH; OR, A JUTE MESH WHICH IS TYPICALLY HOMOGENOUS IN DESIGN AND CAN ACT ALONE AS A SOIL STABILIZATION BLANKET. TEMPORARY BLANKETS AS A MINIMUM SHALL BE USED TO STABILIZE CONCENTRATED FLOW AREAS WITH A VELOCITY LESS THAN 5 FT/SEC AND SLOPES 2.5:1 OR STEEPER WITH A HEIGHT OF 10 FEET OT GREATER. BECAUSE TEMPORARY BLANKETS WILL DETERIORATE IN A SHORT PERIOD OF TIME, THEY PROVIDE NO ENDURING REDUCTION IN EROSION PROTECTION.

BENEFITS OF USING EROSION BLANKETS INCLUDE THE FOLLOWING:
1. PROTECTION OF THE SEED AND SOIL FROM RAINDROP IMPACT AND SUBSEQUENT DISPLACEMENT.
2. THERMAL CONSISTENCY AND MOISTURE RETENTION FOR SEEDBED AREA.
3. STRONGER AND FASTER GERMINATION OF GRASSES AND LEGUMES
4. PLANING OFF EXCESS STORMWATER RUNOFF.
5. PREVENTION OF SLOUGHING OF TOPSOIL ADDED TO STEEPER SLOPES.

PERMANENT EROSION CONTROL MATTING

CONSISTS OF A PERMANENT NON-DEGRADABLE, THREE-DIMENSIONAL PLASTIC STRUCTURE WHICH CAN BE FILLED WITH SOIL PRIOR TO PLANTING. THESE MATS ARE ALSO KNOWN AS PERMANENT SOIL REINFORCING MATS (TURF REINFORCEMENT MATTING). ROOTS PENETRATE AND BECOME ENTANGLED IN THE MATRIX, FORMING A CONTINUOUS ANCHORAGE FOR SURFACE GROWTH AND PROMOTING ENHANCED ENERGY DISSIPATION. MATTING SHALL BE USED WHEN A VEGETATIVE LINING IS DESIRED IN STORMWATER CONVEYANCE CHANNELS WHERE THE VELOCITY IS BETWEEN FIVE AND TEN FEET PER SECOND.

BENEFITS OF USING EROSION CONTROL MATTING INCLUDE THE FOLLOWING:
1. ALL BENEFITS GAINED FROM USING EROSION CONTROL BLANKETS.
2. CAUSES SOIL TO DROP OUT OF STORMWATER AND FILL MATRIX WITH FINE SOILS WHICH BECOME THE GROWTH MEDIUM FOR THE DEVELOPMENT OF ROOTS.
3. ACTS WITH THE VEGETATIVE ROOT SYSTEM TO FORM AN EROSION RESISTANT COVER WHICH RESISTS HYDRAULIC LIFT AND SHEAR FORCES WHEN EMBEDDED IN THE SOIL WITHIN STORMWATER CHANNELS.

MATERIALS: ALL BLANKET AND MATTING MATERIALS SHALL BE ON THE GEORGIA DEPARTMENT OF TRANSPORTATION QUALIFIED PRODUCTS LIST (QPL # 62 FOR BLANKETS, QPL # 49 FOR MATTING). ALL BLANKETS SHALL BE NONTOXIC TO VEGETATION AND TO THE GERMINATION OF SEED AND SHALL NOT BE INJURIOUS TO THE UNPROTECTED SKIN OF HUMANS. AT A MINIMUM, THE PLASTIC NETTING SHALL BE INTERTWINED WITH THE MULCHING MATERIAL/FIBER TO MAXIMIZE STRENGTH AND PROVIDE FOR EASE OF HANDLING.

TEMPORARY BLANKETS: MACHINE PRODUCED TEMPORARY COMBINATION BLANKETS SHALL HAVE A CONSISTENT THICKNESS WITH THE ORGANIC MATERIAL EVENLY DISTRIBUTED OVER THE ENTIRE BLANKET AREA. ALL COMBINATION BLANKETS SHALL HAVE AT WEED-FREE STRAW FROM AGRICULTURAL CROPS FORMED INTO A BLANKET. BLANKETS WITH A TOP SIDE OF PHOTODEGRADABLE PLASTIC MESH WITH A MAXIMUM MESH SIZE OF 5/16 X 5/16 INCH AND SEWN TO THE STRAW WITH BIODEGRADABLE THREAD IS APPROPRIATE FOR SLOPES. THE BLANKET SHALL HAVE A MINIMUM THICKNESS OF 3/8 INCH AND MINIMUM DRY WEIGHT OF 0.5 POUNDS PER SQUARE YARD.
B. EXCELSIOR BLANKETS ARE COMBINATION BLANKETS THAT CONSIST OF CURLED WOOD EXCELSIOR (80% OF FIBERS ARE SIX INCHES OR LONGER) FORMED INTO A BLANKET. THE BLANKET SHALL HAVE CLEAR MARKINGS INDICATING THE TOP SIDE OF THE BLANKET AND BE SMOLDER RESISTANT. BLANKETS SHALL HAVE PHOTODEGRADABLE PLASTIC MESH HAVING A MAXIMUM MESH SIZE OF 1 1/2 X 1 INCHES. THE BLANKET SHALL HAVE A MINIMUM THICKNESS OF 1/4 OF AN INCH AND A MINIMUM DRY WEIGHT OF 0.8 POUNDS PER SQUARE YARD. SLOPES REQUIRE EXCELSIOR MATTING WITH THE TOP SIDE OF THE BLANKET COVERED IN THE PLASTIC MESH, AND FOR WATER- WAYS, BOTH SIDES OF THE MESH REQUIRE PLASTIC MESH.
C. COCONUT FIBER BLANKETS ARE COMBINATION BLANKETS THAT CONSIST OF 70% COCONUT FIBER FORMED INTO A BLANKET. THE MINIMUM THICKNESS OF THE BLANKET SHALL BE 1/4 OF AN INCH WITH A MINIMUM WEIGHT OF 0.5 POUNDS PER SQUARE YARD. BLANKETS SHALL HAVE PHOTODEGRADABLE PLASTIC MESH, WITH A MAXIMUM MESH SIZE OF 5/8 X 5/8 INCH AND SEWN TO THE FIBER WITH A BREAKDOWN RESISTANT SYNTHETIC YARN. PLASTIC MESH IS REQUIRED ON BOTH SIDES OF THE BLANKET IF USED IN WATER- WAYS. A MAXIMUM OF TWO INCHES IS ALLOWABLE FOR THE STITCH PATTERN AND ROW SPACING.
D. WOOD FIBER BLANKETS ARE COMBINATION BLANKETS THAT CONSIST OF REPROCESSED WOOD FIBERS THAT DO NOT POSSESS OR CONTAIN ANY GROWTH OR GERMINATION INHIBITING FACTORS. THE BLANKET SHALL HAVE A PHOTODEGRADABLE PLASTIC MESH, WITH A MAXIMUM MESH SIZE OF 5/8 X 3/4 INCH, SECURELY BONDED TO THE TOP OF THE MAT. THE BLANKET SHALL HAVE A MINIMUM DRY WEIGHT OF 0.35 POUNDS PER SQUARE YARD. A MAXIMUM OF TWO INCHES IS ALLOWABLE FOR THE STITCH PATTERN AND ROW SPACING. THIS PRACTICE SHALL BE APPLIED ONLY TO SLOPES.
E. JUTE MESH CAN BE APPLIED TO SLOPES. JUTE MESH WITH A 48 INCH WIDTH SHALL SHOW BETWEEN 76 AND 80 WARPINGS AND A ONE YARD LENGTH SHALL SHOW BETWEEN 39 AND 43 WEFTINGS. THE WOVEN MESH SHALL BE AT LEAST 45 INCHES WIDE. YARN SHALL HAVE A UNIT WEIGHT OF AT LEAST 0.9 POUNDS PER SQUARE YARD, BUT NOT MORE THAN 1.5 POUNDS PER SQUARE YARD. A MAXIMUM OF TWO INCHES IS ALLOWABLE FOR THE STITCH PATTERN AND ROW SPACING. THIS PRACTICE SHALL BE APPLIED ONLY TO SLOPES.

STEP 1: CUT CHECK SLOT TEMPORARILY STAKE MAT UNDER MODERATE TENSION

STEP 2: SNUG MAT INTO SLOT
SEE NOTE 3-B

STEP 2: WORK UPSTREAM ACROSS. CHECK SLOT LAP BACK 15".
15"

STEP 2: STAKE MAT INTO SLOT

STEP 3: TUCK MAT LAP INTO SLOT & STAKE
15'-20'

STEP 3: BACKFILL TERMINAL SLOT

STEP 3:
A. STAKE MAT INTO SLOT
B. USE 1"x3" PRESSURE TREATED BOARD TO BRACE MAT AGAINST VERTICAL CUT.
C. BACKFILL AND COMPACT.

STEP 4:
A. REVERSE MAT ROLL DIRECTION TO OVERLAY CHECK SLOT.
B. STAKE MAT TO ANCHOR TERMINAL

STEP 4: BACKFILL AND PROGRESS UPSTREAM PULL OUT TEMPORARY STAKES WHEN NO LONGER NEEDED FOR TENSIONING.

STEP 4:
A. ROLL MAT UPSTREAM OVER REFILLED TERMINAL.
B. STAKE MAT DOWN TO ANCHOR TERMINAL.
C. PROGRESS UPSTREAM WITH ROLL.

SEQUENTIAL ROLL RUN OUT IN CHANNELS
1. START AT DOWNSTREAM TERMINAL AND PROGRESS UPSTREAM.
2. FIRST ROLL IS CENTERED LONGITUDINALLY IN MID CHANNEL AND PINNED WITH TEMPORARY STAKES TO MAINTAIN ALIGNMENT.
3. SUBSEQUENT ROLLS FOLLOW IN STAGGERED SEQUENCE BEHIND FIRST ROLL. USE CENTER ROLL FOR ALIGNMENT TO CHANNEL CENTER.
4. WORK OUTWARDS FROM CHANNEL CENTER TO EDGE.
5. USE 3' OVERLAP AND STAKE AT 5' INTERVAL ALONG SEAMS.
6. USE 3' OVERLAPS AND SHINGLE DOWNSTREAM TO CONNECT LINING AT ROLL ENDS.

ROLL #1
ROLL #2
ROLL #3
5'
5'
5'
3'
OVERLAP

PICTORAL VIEW OF TRANSVERSE SLOT

30°

PERMANENT MATTING: PERMANENT MATTING SHALL CONSIST OF A LOFTY WEB OF MECHANICALLY OR MELT BONDED POLYMER NETTINGS, MONOFILAMENTS OR FIBER WHICH ARE ENTANGLED TO FORM A STRONG AND DIMENSIONALLY STABLE MATRIX. AND POLYMER WELDING, THERMAL OR POLYMER FUSION, OR THE PLACEMENT OF FIBERS BETWEEN TWO HIGH STRENGTH, BIAXIALLY ORIENTED NETS BOUND SECURELY TOGETHER BY PARALLEL LOCK STITCHING WITH POLYOLEFIN, NYLON OR POLYESTER THREADS ARE ALL APPROPRIATE BONDING METHODS. MATS SHALL MAINTAIN THEIR SHAPE BEFORE, DURING, AND AFTER INSTALLATION, UNDER DRY OR WATER SATURATED CONDITIONS. MATS MUST BE STABILIZED AGAINST ULTRAVIOLET DEGRADATION AND SHALL BE INERT TO CHEMICALS NORMALLY ENCOUNTERED IN A NATURAL SOIL ENVIRONMENT. THE MAT SHALL CONFORM TO THE FOLLOWING PHYSICAL PROPERTIES:

PROPERTY	MINIMUM VALUE
THICKNESS	0.5 INCH
WEIGHT	0.6 PSY
ROLL WIDTH	38 INCHES
TENSILE STRENGTH	
LENGTH (50% ELONGATION)	15 IBS./IN.
LENGTH (ULTIMATE)	20 LBS./IN.
WIDTH (50% ELONGATION)	5 LBS./IN.
WIDTH (ULTIMATE)	10 LBS./IN.
(ASTM D 1682 - 6"STRIP)	
ULTRAVIOLET STABILITY	80%
(1000 HRS. IN AN ATLAS ARC WEATHERMETER, ASTM G 23, TYPE D IN ACCORDANCE WITH ASTM D 822)	

SITE PREPARATION: AFTER THE SITE HAS BEEN SHAPED AND GRADED TO THE APPROVED DESIGN, PREPARE A FRIABLE SEEDBED RELATIVELY FREE FROM CLODS AND ROCKS MORE THAN ONE INCH IN DIAMETER, AND ANY FOREIGN MATERIAL THAT WILL PREVENT CONTACT OF THE SOIL STABILITATION MAT WITH THE SOIL SURFACE.

SURFACE MUST BE SMOOTH TO ENSURE PROPER CONTACT OF BLANKETS OR MATTING TO THE SOIL SURFACE. IF NECESSARY, REDIRECT ANY RUNOFF FROM THE DITCH OR SLOPE DURING THE FOLLOWING ARE CONSIDERED APPROPRIATE STAPLING AND STAKING MATERIALS. TEMPORARY BLANKETS THIS INCLUDES STRAW, EXCELSIOR, COCONUT FIBER, AND WOOD FIBER BLANKETS. STAPLES SHALL BE USED TO ANCHOR TEMPORARY BLANKETS. U-SHAPED WIRE (11 GAUGE OR GREATER) STAPLES WITH LEGS AT LEAST 6 INCHES IN LENGTH AND A CROWN OF ONE INCH OR APPROPRIATE BIODEGRADABLE STAPLES CAN BE USED. STAPLES SHALL BE OF SUFFICIENT THICKNESS FOR SOIL PENETRATION WITHOUT UNDUE DISTORTION.

PERMANENT MATTING: SOUND WOOD STAKES, 1X3 INCHES STOCK SAWN IN A TRIANGULAR SHAPE, SHALL BE USED. DEPENDING ON THE COMPACTION OF THE SOIL, SELECT STAKES WITH A LENGTH FROM 12 TO 18 INCHES. U-SHAPED STAPLES SHALL BE 11 GAUGE STEEL OR GREATER, WITH LEGS AT A MINIMUM OF 8 INCHES LENGTH WITH A 2 INCH CROWN.

PLANTING: LIME, FERTILIZER, AND SEED SHALL BE APPLIED IN ACCORDANCE WITH SEEDING OR OTHER TYPE OF PLANTING PLAN COMPLETED TO INSTALLATION OF TEMPORARY COMBINATION BLANKETS OR JUTE MESH. FOR PERMANENT MATS, THE AREA MUST BE BROUGHT TO FINAL GRADE, PLOWED, LIMED, AND FERTILIZED. AFTER THE PERMANENT MAT HAS BEEN INSTALLED AND BACKFILLED, THE ENTIRE AREA SHALL BE GRASSED. REFER TO SPECIFICATION Ds3 - DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION).

INSTALLATION: FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR LAYING AND STAPLING.

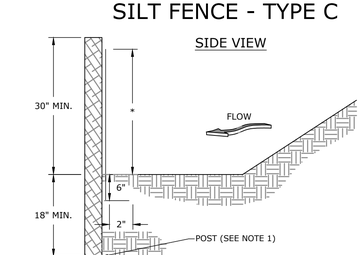
MAINTENANCE: ALL EROSION CONTROL BLANKETS AND MATTING SHOULD BE INSPECTED PERIODICALLY TO CHECK FOR EROSION AND UNDERMINING. ANY DISLOCATION OR FAILURE SHOULD BE REPAIRED IMMEDIATELY. IF WASHOUTS OR BREAKAGE OCCURS, REINSTALL THE MATERIAL AFTER REPAIRING THE DAMAGE TO THE SLOPE OR DITCH. CONTINUE TO MONITOR THESE AREAS UNTIL THEY BECOME PERMANENTLY STABILIZED.

SS — EROSION CONTROL MATTING & BLANKETS
SLOPE STABILIZATION
N.T.S.

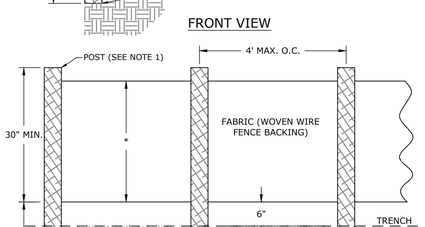
SILT FENCE - TYPE C

Sd1-S

SIDE VIEW



FRONT VIEW

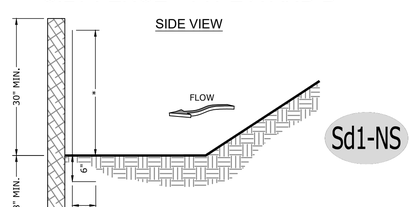


NOTES:
1. USE STEEL POSTS OR AS SPECIFIED BY THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.
2. HEIGHT (*) IS TO BE SHOWN ON THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.

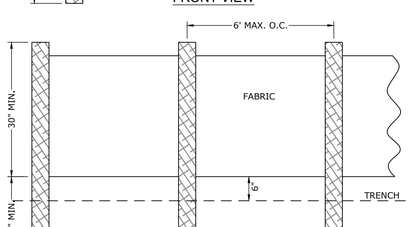
SILT FENCE - TYPE A AND B

Sd1-NS

SIDE VIEW



FRONT VIEW



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

No	REVISION DESCRIPTION	DATE
1	-	-
2	-	-
3	-	-
4	-	-

SEI
SOUTHEASTERN ENGINEERING, INC.
2410 Sandy Plain Road Marietta, Georgia 30066
tel: 770-321-3936 fax: 770-321-3935
www.sereginering.com
931-19-082

PROJECT OWNED/DEVELOPED BY:
CITY OF DALTON
535 ELM STREET DALTON, GA 30722
DALTON, GA, 30722
APARKER@CITYOFDALTON-GA-GOV
24 HOUR CONTACT INFORMATION
P. ANDREW PARKER, P.E. (706) 278-7077

EROSION CONTROL DETAILS
BOTANY WOODS DR SLOPE RECONSTRUCTION
PROJECT LOCATED AT:
BOTANY WOODS DR DALTON, GA, 30720
CITY OF DALTON

GEORGIA REGISTERED NO. 32190 PROFESSIONAL ENGINEER KEVIN WAYNE CLARK
04/22/19

ISSUED FOR:
REVIEW

Project No.: 931-19-082
Designed By: KWC
Issue Date: 4/19/18

C9

811 Know what's below. Call before you dig.

FILE NAME: I:\CUSTOMERS_PROJECTS\931 City of Dalton\931-19-082 Botany Woods Drive\Eng\Construction\931-19-082 C-EROS.dwg PLOT STYLE: SEI-BASE-M.ctb PLOT DATE:5/3/2019 USER:JAN CLARK

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

INSTRUCTIONS

THIS PRACTICE SHALL BE APPLIED IMMEDIATELY TO ROUGH GRADED AREAS THAT WILL BE UNDISTURBED FOR LONGER THAN SIX MONTHS. THIS PRACTICE OR SODDING SHALL BE APPLIED IMMEDIATELY TO ALL AREAS AT FINAL GRADE. FINAL STABILIZATION MEANS THAT ALL SOIL DISTURBING ACTIVITIES AT THE SITE HAVE BEEN COMPLETED, AND THAT FOR UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES, AT LEAST 70% OF THE SOIL SURFACE IS UNIFORMLY COVERED IN PERMANENT VEGETATION OR EQUIVALENT PERMANENT STABILIZATION MEASURES (SUCH AS THE USE OF RIP RAP, GABIONS, PERMANENT MULCHES OR GEOTEXTILES) HAVE BEEN EMPLOYED. PERMANENT VEGETATION SHALL CONSIST OF: PLANTED TREES, SHRUBS, PERENNIAL VINES; A CROP OF PERENNIAL VEGETATION APPROPRIATE FOR THE REGION, SUCH THAT WITHIN THE GROWING SEASON A 70% COVERAGE BY PERENNIAL VEGETATION SHALL BE ACHIEVED.

FINAL STABILIZATION APPLIES TO EACH PHASE OF CONSTRUCTION. FOR LINEAR CONSTRUCTION PROJECTS ON LAND USED FOR AGRICULTURAL OR SILVICULTURAL PURPOSES, FINAL STABILIZATION MAY BE ACCOMPLISHED BY STABILIZING THE DISTURBED LAND FOR ITS AGRICULTURAL OR SILVICULTURAL USE. UNTIL THIS STANDARD IS SATISFIED AND PERMANENT CONTROL MEASURES AND FACILITIES ARE OPERATIONAL, INTERIM STABILIZATION MEASURES AND TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES SHALL NOT BE REMOVED.

PLANNING CONSIDERATIONS

1. USE CONVENTIONAL PLANTING METHODS WHERE POSSIBLE.
2. WHEN MIXED PLANTINGS ARE DONE DURING MARGINAL PLANTING PERIODS, COMPANION CROPS SHALL BE USED.
3. NO-TILL PLANTING IS EFFECTIVE WHEN PLANTING IS DONE FOLLOWING A SUMMER OR WINTER ANNUAL COVER CROP.
4. BLOCK SOD PROVIDES IMMEDIATE COVER. IT IS ESPECIALLY EFFECTIVE IN CONTROLLING EROSION ADJACENT TO CONCRETE FLUMES AND OTHER STRUCTURES. REFER TO Ds-4 DISTURBED AREA STABILIZATION (WITH SODDING).
5. IRRIGATION SHOULD BE USED WHEN THE SOIL IS DRY OR WHEN SUMMER PLANTINGS ARE DONE.
6. LOW MAINTENANCE PLANTS, AS WELL AS NATIVES, SHOULD BE USED TO ENSURE LONG LASTING EROSION CONTROL.
7. MOWING SHOULD NOT BE PERFORMED DURING THE QUAIL NESTING SEASON (MAY TO SEPT.) WILDLIFE PLANTINGS SHOULD BE INCLUDED IN CRITICAL AREA PLANTINGS. SEE MANUAL FOR PLANT LIST.

GRADING & SHAPING

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

LIME AND FERTILIZER APPLICATION

WHEN HYDRAULIC SEEDING EQUIPMENT IS USED, THE INITIAL FERTILIZER SHALL BE MIXED WITH SEED, INNOCULANT (IF NEEDED), AND WOOD CELLULOSE OR WOOD PULP FIBER MULCH AND APPLIED IN A SLURRY. THE INNOCULANT, IF NEEDED, SHALL BE MIXED WITH THE SEED PRIOR TO BEING PLACED INTO THE HYDRAULIC SEEDER. THE SLURRY MIXTURE WILL BE AGITATED DURING APPLICATION TO KEEP THE INGREDIENTS THOROUGHLY MIXED. THE MIXTURE WILL BE SPREAD UNIFORMLY OVER THE AREA WITHIN ONE HOUR AFTER BEING PLACED IN THE HYDROSEEDER.

FINELY GROUND LIMESTONE WILL BE MIXED WITH WATER AND APPLIED IMMEDIATELY AFTER MULCHING IS COMPLETED OR IN COMBINATION WITH THE TOP DRESSING. WHEN CONVENTIONAL PLANTING IS TO BE DONE, LIME AND FERTILIZER SHALL BE APPLIED UNIFORMLY IN ONE OF THE FOLLOWING WAYS.

1. APPLY BEFORE LAND PREPARATION SO THAT IT WILL BE MIXED WITH THE SOIL DURING SEEDBED PREPARATION.
2. MIX WITH THE SOIL USED TO FILL THE HOLES, DISTRIBUTE IN FURROWS.
3. BROADCAST AFTER STEEP SURFACES ARE SCARIFIED, PITTED OR TRENCHED.
4. A FERTILIZER PELLET SHALL BE PLACED AT ROOT DEPTH IN THE CLOSING HOLE BESIDE EACH TREE SEEDLING.

LIME AND FERTILIZER RATES AND ANALYSIS

AGRICULTURAL LIME IS REQUIRED AT A RATE OF ONE TO TWO TONS PER ACRE UNLESS SOIL TESTS INDICATE OTHERWISE. GRADED AREAS REQUIRE LIME APPLICATION. IF LIME IS APPLIED WITHIN SIX MONTHS OF PLANTING PERMANENT PERENNIAL VEGETATION, ADDITIONAL LIME IS NOT REQUIRED. AGRICULTURAL LIME SHALL BE WITHIN THE SPECIFICATIONS OF THE GEORGIA DEPARTMENT OF AGRICULTURE.

LIME SPREAD BY CONVENTIONAL EQUIPMENT SHALL BE "GROUND LIMESTONE." GROUND LIMESTONE IS CALCITIC OR DOLOMITIC LIMESTONE GROUND SO THAT 90% OF THE MATERIAL WILL PASS THROUGH A 10-MESH SIEVE, NOT LESS THAN 50% WILL PASS THROUGH A 50-MESH SIEVE AND NOT LESS THAN 25 PERCENT WILL PASS THROUGH A 100-MESH SIEVE.

AGRICULTURAL LIME SPREAD BY HYDRAULIC SEEDING EQUIPMENT SHALL BE "FINELY GROUND LIMESTONE." FINELY GROUND LIMESTONE IS CALCITIC OR DOLOMITIC LIMESTONE GROUND SO THAT 98% OF THE MATERIAL WILL PASS THROUGH A 20-MESH SIEVE AND NOT LESS THAN 70% WILL PASS THROUGH A 100-MESH SIEVE.

IT IS DESIRABLE TO USE DOLOMITIC LIMESTONE IN THE SAND HILLS, SOUTHERN COASTAL PLAIN AND ATLANTIC COAST FLATWOODS MLRA'S. (SEE MANUAL). AGRICULTURAL LIME IS GENERALLY NOT REQUIRED WHERE ONLY TREES ARE PLANTED. INITIAL FERTILIZATION, NITROGEN, TOPDRESSING, AND MAINTENANCE FERTILIZER REQUIREMENTS FOR EACH SPECIES OR COMBINATION OF SPECIES ARE LISTED IN TABLE 6-5.1.

PLANT SELECTION

REFER TO TABLES 6-4.1, 6-5.2, 6-5.3 AND 6-5.4 FOR APPROVED SPECIES. SPECIES NOT LISTED SHALL BE APPROVED BY THE STATE RESOURCE CONSERVATIONIST OF THE NATURAL RESOURCE CONSERVATION SERVICE BEFORE THEY ARE USED. PLANTS SHALL BE SELECTED ON THE BASIS OF SPECIES CHARACTERISTICS, SITE AND SOIL CONDITIONS, PLANNED USE AND MAINTENANCE OF THE AREA; TIME OF YEAR OF PLANTING, METHOD OF PLANTING; AND THE NEEDS AND DESIRES OF THE LAND USER. SOME PERENNIAL SPECIES ARE EASILY ESTABLISHED AND CAN BE PLANTED ALONE. EXAMPLES OF THESE ARE COMMON BERMUDA, TALL FESCUE AND WEEPING LOVEGRASS. OTHER PERENNIALS SUCH AS BAHIA GRASS AND SERICEA LESPEDEZA ARE SLOW TO BECOME ESTABLISHED AND SHOULD BE PLANTED WITH ANOTHER PERENNIAL SPECIES. THE ADDITIONAL SPECIES WILL PROVIDE QUICK COVER AND AMPLE SOIL PROTECTION UNTIL THE TARGET PERENNIAL SPECIES BECOME ESTABLISHED. FOR EXAMPLE COMMON SEEDING COMBINATIONS INCLUDE: WEEPING LOVEGRASS WITH SERICEA LESPEDEZA (SCARIFIED) AND TALL FESCUE WITH SERICEA LESPEDEZA (UNSCARIFIED).

PLANT SELECTION MAY ALSO INCLUDE ANNUAL COMPANION CROPS. ANNUAL COMPANION CROPS SHOULD BE USED ONLY WHEN THE PERENNIAL SPECIES ARE NOT PLANTED DURING THEIR OPTIMUM PLANTING PERIOD. A COMMON MIXTURE IS BROWN TOP MILLET WITH COMMON BERMUDA IN MID-SUMMER. CARE SHOULD BE TAKEN IN SELECTING COMPANION CROP SPECIES AND SEEDING RATES BECAUSE ANNUAL CROPS WILL COMPETE WITH PERENNIAL SPECIES FOR WATER, NUTRIENTS AND GROWING SPACE. A HIGH SEEDING RATE OF THE COMPANION CROP MAY PREVENT THE ESTABLISHMENT OF PERENNIAL SPECIES. RYEGRASS SHALL NOT BE USED IN ANY SEEDING MIXTURES CONTAINING PERENNIAL SPECIES DUE TO ITS ABILITY TO OUT-COMPETE DESIRED SPECIES CHOSEN FOR PERMANENT PERENNIAL COVER.

SEED QUALITY

THE TERM "PURE LIVE SEED" IS USED TO EXPRESS THE QUALITY OF SEED AND IS NOT SHOWN ON THE LABEL. PURE LIVE SEED, PLS, IS EXPRESSED AS A PERCENTAGE OF THE SEEDS THAT ARE PURE AND WILL GERMINATE. INFORMATION ON PERCENT GERMINATION AND PURITY CAN BE FOUND ON SEED TAGS. PLS IS DETERMINED BY MULTIPLYING THE PERCENT OF PURE SEED WITH THE PERCENT OF GERMINATION; I.E., PLS = % GERMINATION x % PURITY

THE PERCENT OF PLS HELPS YOU DETERMINE THE AMOUNT OF SEED YOU NEED. FOR EXAMPLE IF THE SEEDING RATE IS 10 POUNDS PLS AND THE BULK SEED IS 56% PLS,

$$\text{THE BULK SEEDING RATE IS: } \frac{\text{10 LBS. OF PLS / ACRE}}{\text{56\% PLS}} = \text{17.9 LBS / ACRE}$$

YOU WOULD NEED TO PLANT 17.9 LBS/ACRE TO PROVIDE 10 LBS/ACRE OF PURE LIVE SEED.

SEEDBED PREPARATION

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

BROADCAST PLANTINGS:

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

INDIVIDUAL PLANTS

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

INNOCULANTS

ALL LEGUME SEED SHALL BE INOCULATED WITH APPROPRIATE NITROGEN-FIXING BACTERIA. THE INNOCULANT SHALL BE A PURE CULTURE PREPARED SPECIFICALLY FOR THE SEED SPECIES AND USED WITHIN THE DATES ON THE CONTAINER. A MIXING MEDIUM RECOMMENDED BY THE MANUFACTURER SHALL BE USED TO BOND THE INNOCULANT TO THE SEED. FOR CONVENTIONAL SEEDING, USE TWICE THE AMOUNT OF INNOCULANT RECOMMENDED BY THE MANUFACTURER. FOR HYDRAULIC SEEDING, FOUR TIMES THE AMOUNT OF INNOCULANT RECOMMENDED BY THE MANUFACTURER SHALL BE USED. ALL INOCULATED SEED SHALL BE PROTECTED FROM THE SUN AND HIGH TEMPERATURES AND SHALL BE PLANTED THE SAME DAY INOCULATED. NO INOCULATED SEED SHALL REMAIN IN THE HYDROSEEDER LONGER THAN ONE HOUR.

PLANTING

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

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

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

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

MULCHING

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

DRY STRAW OR DRY HAY OF GOOD QUALITY AND FREE OF WEED SEEDS CAN BE USED. DRY STRAW SHALL BE APPLIED AT THE RATE OF 2 TONS PER ACRE. DRY HAY SHALL BE APPLIED AT A RATE OF 2 1/2 TONES PER ACRE.

WOOD CELLULOSE MULCH OR WOOD PULP FIBER SHALL BE USED WITH HYDRAULIC SEEDING. IT SHALL BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE. DRY STRAW OR DRY HAY SHALL BE APPLIED (AT THE RATE INDICATED ABOVE) AFTER THE HYDRAULIC SEEDING.

ONE THOUSAND POUNDS OF WOOD CELLULOSE OR WOOD PULP FIBER, WHICH INCLUDES A TACKIFIER, SHALL BE USED WITH HYDRAULIC SEEDING ON SLOPES 4:1 OR STEEPER

SERICEA LESPEDEZA HAY CONTAINING MATURE SEED SHALL BE APPLIED AT A RATE OF THREE TONS PER ACRE.

PINE STRAW OR PINE BARK SHALL BE APPLIED AT A THICKNESS OF 3 INCHES FOR BEDDING PURPOSES OTHER SUITABLE MATERIALS IN SUFFICIENT QUANTITY MAY BE USED WHERE ORNAMENTALS OR OTHER GROUND COVERS ARE PLANTED. THIS IS NOT APPROPRIATE FOR SEEDED AREAS.

WHEN USING TEMPORARY EROSION CONTROL BLANKETS OR BLOCK SOD, MULCH IS NOT REQUIRED. BITUMINOUS TREATED ROVING MAY BE APPLIED ON PLANTED AREAS ON SLOPES, IN DITCHES OR DRY WATERWAYS TO PREVENT EROSION. BITUMINOUS TREATED ROVING SHALL BE APPLIED WITHIN 24 HOURS AFTER AN AREA HAS BEEN PLANTED. APPLICATION RATES AND MATERIALS MUST MEET GEORGIA DEPARTMENT OF TRANSPORTATION SPECIFICATIONS.

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

APPLYING MULCH

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

ANCHORING MULCH

ANCHOR STRAW OR HAY MULCH IMMEDIATELY AFTER APPLICATION BY ONE OF THE FOLLOWING METHODS.:

EMULSIFIED ASPHALT CAN BE (A) SPRAYED UNIFORMLY ONTO THE MULCH AS IT IS EJECTED FROM THE BLOWER MACHINE OR (B) SPRAYED ON THE MULCH IMMEDIATELY FOLLOWING MULCH APPLICATION WHEN STRAW OR HAY IS SPREAD BY METHODS OTHER THAN SPECIAL BLOWER EQUIPMENT. THE COMBINATION OF ASPHALT EMULSION AND WATER SHALL CONSIST OF A HOMOGENEOUS MIXTURE SATISFACTORY FOR SPRAYING. THE MIXTURE SHALL CONSIST OF 100 GALLONS OF WATER PER TON OF MULCH. CARE SHALL BE TAKEN AT ALL TIMES TO PROTECT STATE WATERS, THE PUBLIC, ADJACENT PROPERTY, PAVEMENTS, CURBS, SIDEWALKS AND OTHER STRUCTURES FROM ASPHALT DISCOLORATION. 2. HAY AND STRAW MULCH SHALL BE PRESSED INTO THE SOIL IMMEDIATELY AFTER THE MULCH IS SPREAD. A SPECIAL "PACKER DISK" OR DISK HARROW WITH THE DISKS SET STRAIGHT MAY BE USED. THE DISKS MAY BE SMOOTH OR SERRATED AND SHOULD BE 20 INCHES OR MORE IN DIAMETER AND 8 TO 12 INCHES APART. THE EDGES OF THE DISKS SHALL BE DULL ENOUGH TO PRESS THE MULCH INTO THE GROUND WITHOUT CUTTING IT, LEAVING MUCH OF IT IN AN ERECT POSITION. MULCH SHALL NOT BE PLOWED INTO THE SOIL. 3. SYNTHETIC TACKIFIERS OR BINDERS APPROVED BY GDOT SHALL BE APPLIED IN CONJUNCTION WITH OR IMMEDIATELY AFTER THE MULCH IS SPREAD. SYNTHETIC TACKIFIERS SHALL BE MIXED AND APPLIED ACCORDING TO MANUFACTURER'S SPECIFICATIONS. REFER TO Tb - TACKIFIERS AND BINDERS. 4. RYE OR WHEAT CAN BE INCLUDED WITH FALL AND WINTER PLANTINGS TO STABILIZE THE MULCH. THEY SHALL BE APPLIED AT A RATE OF ONE-QUARTER TO ONE-HALF BUSHEL PER ACRE. 5. PLASTIC MESH OR NETTING WITH MESH NO LARGER THAN ONE INCH BY ONE INCH MAY BE NEEDED TO ANCHOR STRAW OR HAY MULCH ON UNSTABLE SOILS AND CONCENTRATED FLOW AREAS. THESE MATERIALS SHALL BE INSTALLED AND ANCHORED ACCORDING TO MANUFACTURER'S SPECIFICATIONS.

BEDDING MATERIAL: MULCH USED AS A BEDDING MATERIAL TO CONSERVE MOISTURE AND CONTROL WEEDS IN NURSERIES, ORNAMENTAL BEDS, AROUND SHRUBS, AND ON BARE AREAS ON LAWNS.

MATERIAL	DEPTH
GRAIN STRAW	4" TO 6"
GRASS HAY	4" TO 6"
PINE NEEDLES	3" TO 5"
WOOD WASTE	4" TO 6"

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

TOPDRESSING: WILL BE APPLIED ON ALL TEMPORARY AND PERMANENT (PERENNIAL) SPECIES PLANTED ALONE OR IN MIXTURES WITH OTHER SPECIES. RECOMMENDED RATES OF APPLICATION ARE LISTED IN TABLE 6-5.1

SECOND YEAR AND MAINTENANCE FERTILIZATION: SECOND YEAR FERTILIZER RATES AND MAINTENANCE FERTILIZER RATES ARE LISTED IN TABLE 6-5.1

LIME MAINTENANCE APPLICATION: APPLY ONE TON OF AGRICULTURAL LIME EVERY 4 TO 6 YEARS OR AS INDICATED BY SOIL TESTS. SOIL TESTS CAN BE CONDUCTED TO DETERMINE MORE ACCURATE REQUIREMENTS IF DESIRED.

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

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

USE AND MANAGEMENT: MOW SERICEA LESPEDEZA ONLY AFTER FROST TO ENSURE THAT THE SEEDS ARE MATURE. MOW BETWEEN NOVEMBER AND MARCH. BERMUDAGRASS, BAHIAGRASS AND TALL FESCUE MAY BE MOWED AS DESIRED. MAINTAIN AT LEAST 6 INCHES OF TOP GROWTH UNDER ANY USE AND MANAGEMENT. MODERATE USE OF TOP GROWTH IS BENEFICIAL AFTER ESTABLISHMENT. EXCLUDE TRAFFIC UNTIL THE PLANTS ARE WELL ESTABLISHED. BECAUSE OF THE QUAIL NESTING SEASON, MOWING SHOULD NOT TAKE PLACE BETWEEN MAY AND SEPTEMBER.

PLANTS, PLANTING RATES, AND PLANTING DATES

PLANTING DATES BY RESOURCE AREAS — PLANTING DATES (SOLID LINES INDICATE OPTIMUM DATES, DOTTED LINES INDICATE PERMISSIBLE BUT MARGINAL DATES.) J F M A M J J A S O N D

SPECIES	BROADCAST RATES 1/ - PLS 2/ PER ACRE	PER 1000 sq. ft.	RESOURCE AREA 3/	REMARKS
BAHIA, PENSACOLA (PASPALUM NOTATUM)			P C	166,000 SEED PER POUND. LOW GROWING. SOD FORMING. SLOW TO ESTABLISH. PLANT WITH A COMPANION CROP. WILL SPREAD INTO BERMUDA PASTURES AND LAWNS. MIX WITH SERICEA LESPEDEZA OR WEEPING LOVEGRASS.
ALONE OR WITH TEMPORARY COVER	60 LBS	1.4 LB		
WITH OTHER PERENNIALS	30 LBS	0.7 LB		
BAHIA, WILMINGTON (PASPALUM NOTATUM)			M-L P	SAME AS ABOVE
ALONE OR WITH TEMPORARY COVER	60 LBS	1.4 LB		
WITH OTHER PERENNIALS	30 LBS	0.7 LB		
BERMUDA, COMMON (CYNODON DACTYLON)			P C	1,787,000 SEED PER POUND. QUICK COVER. LOW GROWING AND SOD FORMING. FULL SUN. GOOD FOR ATHLETIC FIELDS.
ALONE	10 LBS	0.2 LB		
WITH OTHER PERENNIALS	6 LBS	0.1 LB		
BERMUDA, COMMON (CYNODON DACTYLON)			P C	
UNHULLED SEED				PLANT WITH WINTER ANNUALS.
WITH TEMPORARY COVER	10 LBS	0.2 LB		PLANT WITH TALL FESCUE.
WITH OTHER PERENNIALS	6 LBS	0.1 LB		
BERMUDA SPRIGS (CYNODON DACTYLON)	40 CU. FT OR SOD PLUGS 3' X 3'	0.9 CU. FT	M-L	
COASTAL, COMMON, MIDLAND, OR TIFT 44				A CUBIC FOOT CONTAINS APPROXIMATELY 650 SPRIGS. A BUSHEL CONTAINS 1.25 CUBIC FEET OR APPROXIMATELY 800 SPRIGS.
COASTAL, COMMON, OR TIFT 44			P C	SAME AS ABOVE
TIFT 78			C	SOUTHERN COASTAL PLAIN ONLY.
CENTIPEDE (ERMOCHLOA OPHIUROIDES)	BLOCK SOD ONLY		P C	DROUGHT TOLERANT. FULL SUN OR PARTIAL SHADE. EFFECTIVE ADJACENT TO CONCRETE AND IN CONCENTRATED FLOW AREAS. IRRIGATION IS NEEDED UNTIL FULLY ESTABLISHED. DO NOT PLANT NEAR PASTURES. WINTERHARDY AS FAR NORTH AS ATHENS AND ATLANTA.

PLANTS, PLANTING RATES, AND PLANTING DATES

PLANTING DATES BY RESOURCE AREAS — PLANTING DATES (SOLID LINES INDICATE OPTIMUM DATES, DOTTED LINES INDICATE PERMISSIBLE BUT MARGINAL DATES.) J F M A M J J A S O N D

SPECIES	BROADCAST RATES 1/ - PLS 2/ PER ACRE	PER 1000 sq. ft.	RESOURCE AREA 3/	REMARKS
CROWNVETCH (CORONILLA VARIA)				100,000 SEED PER POUND. DENSE GROWTH. DROUGHT TOLERANT AND FIRE RESISTANT. ATTRACTIVE ROSE, PINK, AND WHITE BLOSSOMS SPRING TO LATE FALL. MIX WITH 30 POUNDS OF TALL FESCUE OR 15 POUNDS OF RYE. INOCULATE SEED WITH M INNOCULANT. USE FROM NORTH ATLANTA AND NORTHWARD.
WITH WINTER ANNUALS OR COOL SEASON GRASSES	15 LBS	0.3 LB	M-L P	
FESCUE, TALL (FESTUCA ARUNDINACEA)			M-L P	227,000 SEED PER POUND. USE ALONE ONLY ON BETTER SITES. NOT FOR DROUGHTY SOILS. MIX WITH PERENNIAL LESPEDEZAS OR CROWNVETCH. APPLY TOPDRESSING IN SPRING FOLLOWING FALL PLANTINGS. NOT FOR HEAVY USE AREAS OR ATHLETIC FIELDS.
ALONE	50 LBS.	1.1 LB.		
WITH OTHER PERENNIALS	30 LBS.	0.7 LB.		
LESPEDEZA SERICEA (LESPEDEZA CUNEATA)				350,000 SEED PER POUND. WIDELY ADAPTED. LOW MAINTENANCE. MIX WITH WEEPING LOVEGRASS, COMMON BERMUDA, BAHIA, OR TALL FESCUE. TAKES 2 TO 3 YEARS TO BECOME FULLY ESTABLISHED. EXCELLENT ON ROADBANKS. INOCULATE SEED WITH EL INNOCULANT.
SCARIFIED	60 LBS.	1.4 LB.	M-L P C	
UNSCARIFIED	75 LBS.	1.7 LB.	M-L P C	MIX WITH TALL FESCUE OR WINTER ANNUALS.
SEED-BEARING HAY	3 TONS	138 LBS.	M-L P C	CUT WHEN SEED IS MATURE, BUT BEFORE IT SHATTERS. ADD TALL FESCUE OR WINTER ANNUALS.

PLANTS, PLANTING RATES, AND PLANTING DATES

PLANTING DATES BY RESOURCE AREAS — PLANTING DATES (SOLID LINES INDICATE OPTIMUM DATES DOTTED LINES INDICATE PERMISSIBLE BUT MARGINAL DATES.) J F M A M J J A S O N D

SPECIES	BROADCAST RATES 1/ - PLS 2/ PER ACRE	PER 1000 SQ. FT.	RESOURCE AREA 3/	REMARKS
LESPEDEZA AMBRO VIRGATA (LESPEDEZA VIRGATA DC) OR APPALOW (LESPEDEZA CUNEATA [DUMONT] G. DON)				300,000 SEED PER POUND. HEIGHT OF GROWTH IS 18 TO 24 INCHES. ADVANTAGEOUS IN URBAN AREAS. SPREADING-TYPE GROWTH. NEW GROWTH HAS BRONZE COLORATION. MIX WITH WEEPING LOVEGRASS, COMMON BERMUDA, BAHIA, TALL FESCUE OR WINTER ANNUALS. DO NOT MIX WITH SERICEA LESPEDEZA. SLOW TO DEVELOP SOLID STANDS. INNOCULATE SEED WITH EL INNOCULANT.
SCARIFIED	60 LBS	1.4 LB	M-L P C	
UNSCARIFIED	75 LBS	1.7 LB	M-L P C	
LESPEDEZA, SHRUB (LESPEDEZA BICOLOR) (LESPEDEZA THUMBERGII)			M-L P C	PROVIDE WILDLIFE FOOD AND COVER
PLANTS	3' X 3'			
LOVEGRASS, WEEPING (ERAGROSTIS CURVULA)			M-L P C	1,500,000 SEED PER POUND. QUICK COVER. DROUGHT TOLERANT. GROWS WELL WITH SERICEA LESPEDEZA ON ROADBANKS
ALONE WITH OTHER PERENNIALS	4 LBS 2 LBS	0.1 LB 0.05 LB		
MAIDENCANE (PANICUM HERMITOMON)				FOR VERY WET SITES. MAY CLOG CHANNELS. DIG SPRIGS FROM LOCAL SOURCES. USE ALONG RIVER BANKS AND SHORELINES.
SPRIGS	2' X 3' SPACING		ALL	
PANICGRASS, ATLANTIC COASTAL (PANICUM AMARUM VAR. AMARULUM)	20 LBS	0.5 LB	P C	GROWS WELL ON COASTAL SAND DUNES, BORROW AREAS, AND GRAVEL PITS. PROVIDES WINTER COVER FOR WILDLIFE. MIX WITH SERICEA LESPEDEZA EXCEPT ON SAND DUNES
REED CANARY GRASS (PHALARIS ARUNDINACEA)				GROWS SIMILAR TO TALL FESCUE
ALONE WITH OTHER PERENNIALS	50 LBS 30 LBS	1.1 LB 0.7 LB	M-L P	
SUNFLOWER 'AZTEC' MAXIMILLIAN (HELIANTHUS MAXIMILIANI)	10 LBS	0.2 LB	M-L P C	227,000 SEED PER POUND. MIX WITH WEEPING LOVEGRASS OR OTHER LOW-GROWING GRASSES OR LEGUMES.

Ds-3 DISTURBED AREA STABILIZATION w/ PERMANENT VEGETATION

N.T.S.

GSWCC GEORGIA SOIL AND WATER CONSERVATION COMMISSION

Kevin Wayne Clark
Level II Certified Design Professional
CERTIFICATION NUMBER 0000011388
ISSUED: 05/31/2009 EXPIRES: 05/31/2021

SOUTHEASTERN ENGINEERING, INC.
2470 Sandy Plains Road Marietta, Georgia 30066
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931-19-082

No	REVISION DESCRIPTION	DATE
1	-	-
2	-	-
3	-	-
4	-	-

PROJECT OWNED/DEVELOPED BY:
CITY OF DALTON
535 ELM STREET DALTON, GA 30722
DALTON, GA, 30722
APARKER@CITYOFDALTON-GA-GOV

24 HOUR CONTACT INFORMATION
P. ANDREW PARKER, P.E. (706) 278-7077

4

EROSION CONTROL DETAILS

BOTANY WOODS DR SLOPE RECONSTRUCTION

PROJECT LOCATED AT:
BOTANY WOODS DR DALTON, GA, 30720
CITY OF DALTON

NO. 32190
KEVIN WAYNE CLARK
04/22/19

ISSUED FOR:
REVIEW

Project No.: 931-19-082
Designed By: KWC
Issue Date: 4/19/18

C9.1

Know what's below. Call before you dig.

FILE NAME: I:\CUSTOMERS_PROJECTS\931 City of Dalton\931-19-082 Botany Woods Drive\Eng\Construction\931-19-082 C-EROS.dwg PLOT STYLE: SEI-BASE-M.ctb PLOT DATE:5/3/2019 USER:IAN CLARK

THE UTILITIES SHOWN HEREON ARE FOR THE CONTRACTORS CONVENIENCE ONLY. THERE MAY BE OTHER UTILITIES NOT SHOWN ON THESE PLANS. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE LOCATIONS SHOWN AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL UTILITIES WITHIN THE LIMITS OF THE WORK. ALL DAMAGE MADE TO EXISTING UTILITIES BY THE CONTRACTOR SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. IT IS THE OWNER/DEVELOPER'S RESPONSIBILITY TO VERIFY EXISTING UTILITY CAPACITY PRIOR TO INITIATING DESIGN. THE ENGINEER MAKES NO GUARANTEES, NEITHER EXPRESSED OR IMPLIED, REGARDING EXISTING UTILITY LOCATION, CAPACITY OR CONDITION.

DEFINITION

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

REQUIREMENT FOR REGULATORY COMPLIANCE

MULCH OR TEMPORARY GRASSING SHALL BE APPLIED TO ALL EXPOSED AREAS WITHIN 14 DAYS OF DISTURBANCE. TEMPORARY GRASSING, INSTEAD OF MULCH, CAN BE APPLIED TO ROUGH GRADED AREAS THAT WILL BE EXPOSED FOR LESS THAN SIX MONTHS. IF AN AREA IS EXPECTED TO BE UNDISTURBED FOR LONGER THAN SIX MONTHS, PERMANENT PERENNIAL VEGETATION SHALL BE USED. IF OPTIMUM PLANTING CONDITIONS FOR TEMPORARY GRASSING ARE LACKING, MULCH CAN BE USED AS A SINGULAR EROSION CONTROL DEVICE FOR UP TO SIX MONTHS BUT IT SHALL BE APPLIED AT THE APPROPRIATE DEPTH, ANCHORED, AND HAVE A CONTINUOUS 90% COVER OR GREATER OF THE SOIL SURFACE. REFER TO SPECIFICATION Ds1-DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING).

SPECIFICATIONS

GRADING AND SHAPING

EXCESSIVE WATER RUN-OFF SHALL BE REDUCED BY PROPERLY DESIGNED AND INSTALLED EROSION CONTROL PRACTICES SUCH AS CLOSED DRAINS, DITCHES, DIKES, DIVERSIONS, SEDIMENT BARRIERS AND OTHERS.

NO SHAPING OR GRADING IS REQUIRED IF SLOPES CAN BE STABILIZED BY HAND-SEEDED VEGETATION OR IF HYDRAULIC SEEDING EQUIPMENT IS TO BE USED.

SEEDBED PREPARATION

WHEN A HYDRAULIC SEEDER IS USED, SEEDBED PREPARATION IS NOT REQUIRED. WHEN USING CONVENTIONAL OR HANDSEEDING, SEEDBED PREPARATION IS NOT REQUIRED IF THE SOIL MATERIAL IS LOOSE AND NOT SEALED BY RAINFALL.

WHEN SOIL HAS BEEN SEALED BY RAINFALL OR CONSISTS OF SMOOTH CUT SLOPES, THE SOIL SHALL BE PITTED, TRENCHED OR OTHERWISE SCARIFIED TO PROVIDE A PLACE FOR SEED TO LODGE AND GERMINATE.

LIME AND FERTILIZER

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

SEEDING

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

MULCHING

TEMPORARY VEGETATION CAN, IN MOST CASES, BE ESTABLISHED WITHOUT THE USE OF MULCH. MULCH WITHOUT SEEDING SHOULD BE CONSIDERED FOR SHORT TERM PROTECTION. REFER TO Ds1 - DISTURBED AREA STABILIZATION (WITH MULCHING ONLY).

IRRIGATION

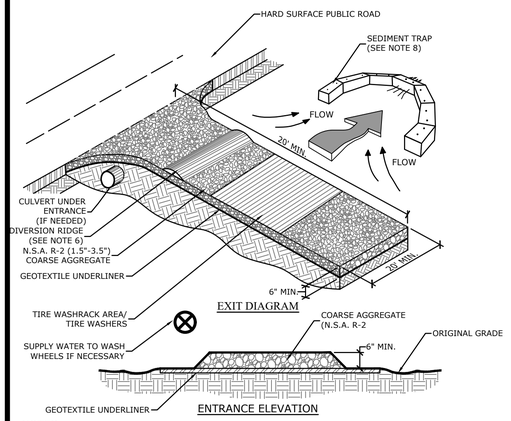
DURING TIMES OF DROUGHT, WATER SHALL BE APPLIED AT A RATE NOT CAUSING RUNOFF AND EROSION. THE SOIL SHALL BE THOROUGHLY WETTED TO A DEPTH THAT WILL INSURE GERMINATION OF THE SEED. SUBSEQUENT APPLICATIONS SHOULD BE MADE WHEN NEEDED.

PLANTS, PLANTING RATES, AND PLANTING DATES FOR TEMPORARY COVER OR COMPANION CROPS 1/

SPECIES	BROADCAST RATES 2/ - PLS 3/ PER ACRE	BROADCAST RATES 2/ - PLS 3/ PER 1000 S.F.	RESOURCE AREA 4/	PLANTING DATES J F M A M J J A S O N D	REMARKS
BARLEY (Hordeum vulgare) ALONE IN MIXTURES	144 LBS. 24 LBS.	3.3 LBS. 0.6 LBS.	M-L P C	J F M A M J J A S O N D	14,000 SEED PER POUND. WINTERHARDY. USE ON PRODUCTIVE SOILS.
LESPEDEZA, ANNUAL (Lespedeza striata) ALONE IN MIXTURES	40 LBS. 10 LBS.	0.9 LBS. 0.2 LBS.	M-L P C	J F M A M J J A S O N D	200,000 SEED PER POUND, MAY VOLUNTEER FOR SEVERAL YEARS. USE INOCULANT EL.
LOVEGRASS, WEEPING (Eragrotis curvula) ALONE IN MIXTURES	4 LBS. 2 LBS.	0.1 LBS. 0.05 LBS.	M-L P C	J F M A M J J A S O N D	1,500,000 SEED PER POUND. MAY LAST FOR SEVERAL YEARS. MIX WITH SERICEA LESPEDEZA
MILLET, BROWNTOP (Panicum fasciculatum) ALONE IN MIXTURES	40 LBS. 10 LBS.	0.9 LBS. 0.2 LBS.	M-L P C	J F M A M J J A S O N D	137,000 SEED PER POUND. QUICK COVER. DENSE COVER. WILL PROVIDE TOO MUCH COMPETITION IN MIXTURES IF SEEDED AT HIGH RATES.
RYE (Secale cereale) ALONE IN MIXTURES	168 LBS. 28 LBS.	3.9 LBS. 0.6 LBS.	M-L P C	J F M A M J J A S O N D	18,000 SEED PER POUND. QUICK COVER. DROUGHT TOLERANT AND WINTERHARDY.
RYEGRASS, ANNUAL (Lullum temulentum) ALONE	40 LBS.	0.9 LBS.	M-L P C	J F M A M J J A S O N D	227,000 SEED PER POUND. DENSE COVER. VERY COMPETITIVE AND IS NOT TO BE USED IN MIXTURES.
MILLET, PEARL (Panicum glaucum) ALONE	50 LBS.	1.1 LBS.	M-L P C	J F M A M J J A S O N D	88,000 SEED PER POUND. QUICK, DENSE COVER. MAY REACH 5 FEET IN HEIGHT. NOT RECOMMENDED FOR MIXTURES.
OATS (Avena sativa) ALONE IN MIXTURES	128 LBS. 32 LBS.	2.9 LBS. 0.7 LBS.	M-L P C	J F M A M J J A S O N D	13,000 SEED PER POUND. USE ON PRODUCTIVE SOILS. NOT AS WINTERHARDY AS RYE OR BARLEY.
SUDAN GRASS (Sorghum sudanese) ALONE	60 LBS.	1.4 LBS.	M-L P C	J F M A M J J A S O N D	55,000 SEED PER POUND. GOOD NOT ON DROUGHT SITES. RECOMMENDED FOR MIXTURES.
TRITICALE (X-Triticosecale) ALONE IN MIXTURES	144 LBS. 24 LBS.	3.3 LBS. 0.6 LBS.	C	J F M A M J J A S O N D	USE ON LOWER PART OF SOUTHERN COASTAL PLAIN AND IN ATLANTIC COASTAL FLATWOODS ONLY.
WHEAT (Triticum aestivum) ALONE IN MIXTURES	180 LBS. 30 LBS.	4.1 LBS. 0.7 LBS.	M-L P C	J F M A M J J A S O N D	15,000 SEED PER POUND. WINTERHARDY.

1/ TEMPORARY COVER CROPS ARE VERY COMPETITIVE AND WILL CROWN OUT PERENNIALS IF SEEDED TOO HEAVILY.
2/ REDUCE SEEDING RATES BY 50% WHEN DRILLED.
3/ PLS IS AN ABBREVIATION FOR PURE LIVE SEED.
4/ M-L REPRESENTS TO MOUNTAIN; BLUE RIDGE; AND RIDGES AND VALLEYS MLRA'S
P REPRESENTS THE SOUTHERN PIEDMONT MLRA
C REPRESENTS THE SOUTHERN COASTAL PLAIN; SAND HILLS; BLACK LANDS; AND ATLANTIC COAST FLATWOODS MLRAs

Ds-2 DISTURBED AREA STABILIZATION w/ TEMPORARY SEEDING
N.T.S.



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 SHALL 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.

1 CRUSHED STONE CONSTRUCTION EXIT
NOT TO SCALE Co

DEFINITION

A PERMANENT VEGETATIVE COVER USING SODS ON HIGHLY ERODIBLE OR CRITICALLY ERODED LANDS.

CONDITIONS

THIS APPLICATION IS APPROPRIATE FOR AREAS WHICH REQUIRE IMMEDIATE VEGETATIVE COVERS, DROP INLETS, GRASS SWALES, AND WATERWAYS WITH INTERMITTENT FLOW.

PLANNING CONSIDERATIONS

SODDING CAN INITIALLY BE MORE COSTLY THAN SEEDING, BUT THE ADVANTAGES JUSTIFY THE INCREASED INITIAL COSTS.

1. IMMEDIATE EROSION CONTROL, GREEN SURFACE, AND QUICK USE.
2. REDUCED FAILURE AS COMPARED TO SEED AS WELL AS THE LACK OF WEEDS
3. CAN BE ESTABLISHED NEARLY YEAR-ROUND.

SODDING IS PREFERABLE TO SEED IN WATERWAYS AND SWALES BECAUSE OF THE IMMEDIATE PROTECTION OF THE CHANNEL AFTER APPLICATION. SODDING MUST BE STAKED IN CONCENTRATED FLOW AREAS (SEE FIGURE 6-6.1) CONSIDER USING SOD FRAMED AROUND DROP INLETS TO REDUCE SEDIMENTS AND MAINTAINING THE GRADE.

CONSTRUCTION SPECIFICATIONS INSTALLATION

SOIL PREPARATION

BRING SOIL SURFACE TO FINAL GRADE. CLEAR SURFACE OF TRASH, WOODY DEBRIS, STONES AND CLODS LARGER THAN 1". APPLY SOD TO SOIL SURFACES ONLY AND NOT FROZEN SURFACES, OR GRAVEL TYPE SOILS.TOPSOIL PROPERLY APPLIED WILL HELP GUARANTEE A STAND. DON'T USE TOPSOIL RECENTLY TREATED WITH HERBICIDES OR SOIL STERILANTS. MIX FERTILIZER INTO SOIL SURFACE. FERTILIZE BASED ON SOIL TESTS OR TABLE 6-6.1.

INSTALLATION

LAY SOD WITH TIGHT JOINTS AND IN STRAIGHT LINES. DON'T OVERLAP JOINTS. STAGGER JOINTS AND DO NOT STRETCH SOD (SEE FIGURE 6-6.2) ON SLOPES STEEPER THAN 3:1, SOD SHOULD BE ANCHORED WITH PINS OR OTHER APPROVED METHODS. INSTALLED SOD SHOULD BE ROLLED OR TAMPED TO PROVIDE GOOD CONTACT BETWEEN SOD AND SOIL. IRRIGATE SOD AND SOIL TO A DEPTH OF 4" IMMEDIATELY AFTER INSTALLATION. SOD SHOULD NOT BE CUT OR SPREAD IN EXTREMELY WET OR DRY WEATHER. IRRIGATION SHOULD BE USED TO SUPPLEMENT RAINFALL FOR A MINIMUM OF 2-3 WEEKS.

MATERIALS

SOD SELECTED SHOULD BE CERTIFIED. SOD GROWN IN THE GENERAL AREA OF THE PROJECT IS DESIRABLE.

1. SOD SHOULD BE MACHINE CUT AND CONTAIN 3/4" (±1/4 ") OF SOIL, NOT INCLUDING SHOOTS OR THATCH.
2. SOD SHOULD BE CUT TO THE DESIRED SIZE WITHIN ±5% TORN OR UNEVEN PADS SHOULD BE REJECTED.
3. SOD SHOULD BE CUT AND INSTALLED WITHIN 36 HOURS OF DIGGING.
4. AVOID PLANTING WHEN SUBJECT TO FROST HEAVE OR HOT WEATHER IF IRRIGATION IS NOT AVAILABLE
5. THE SOD TYPE SHOULD BE SHOWN ON THE PLANS OR INSTALLED ACCORDING TO TABLE 6-6.2. SEE FIGURE 6-4.1 FOR YOUR RESOURCE AREA.

MAINTENANCE

RE-SOD AREAS WHERE AN ADEQUATE STAND OF SOD IS NOT OBTAINED. NEW SOD SHOULD BE MOWED SPARINGLY. GRASS HEIGHT SHOULD NOT BE CUT LESS THAN 2"-3" OR AS SPECIFIED (SEE FIGURE 6-6.2). APPLY ONE TON OF AGRICULTURAL LIME AS INDICATED BY SOIL TEST OR EVERY 4-6 YEARS. FERTILIZE GRASSES IN ACCORDANCE WITH SOIL TESTS OR TABLE 6-6.3

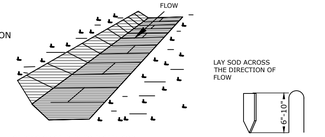
TABLE 6-6.3
FERTILIZER REQUIREMENTS FOR SOD

TYPES OF SPECIES	PLANTING YEAR	FERTILIZER (N-P-K)	RATE (lbs./acre)	NITROGEN TOP DRESSING RATE (lbs./acre)
COOL SEASON GRASSES	FIRST	6-12-12	1500	50-100
	SECOND	6-12-12	1000	--
	MAINTENANCE	10-10-10	400	30
WARM SEASON GRASSES	FIRST	6-12-12	1500	50-100
	SECOND	6-12-12	800	50-100
	MAINTENANCE	10-10-10	400	30

FERTILIZER REQUIREMENTS FOR SOIL SURFACE APPLICATION

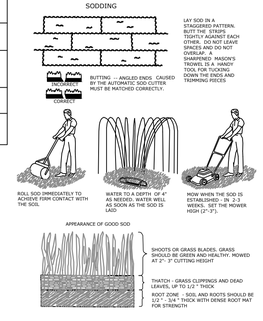
FERTILIZER TYPE	FERTILIZER RATE (lbs/acre)	FERTILIZER RATE (lbs/sq ft)	SEASON
10-10-10	1000	.025	FALL

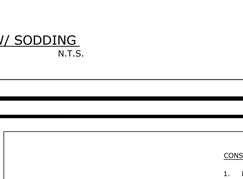
AGRICULTURAL LIME SHOULD BE APPLIED BASED ON SOIL TESTS OR AT A RATE OF 1 TO 2 TONS PER ACRE.



SOD PLANTING REQUIREMENTS

GRASS	VARIETIES	RESOURCE AREA	GROWING SEASON
BERMUDAGRASS	COMMON TIFWAY TIFGREEN TIFLAWN	M-L,P,C P,C P,C P,C	WARM WEATHER
BAHIAGRASS	PENSACOLA	P,C	WARM WEATHER
CENTIPEDE	-	P,C	WARM WEATHER
ST. AUGUSTINE	COMMON BITTERBLUE RALEIGH	C	WARM WEATHER
ZOYSIA	EMERALD MYER	P,C	WARM WEATHER
TALL FESCUE WEATHER	KENTUCKY	M-L,P	COOL





Ds-4 DISTURBED AREA STABILIZATION W/ SODDING
N.T.S.

SPECIFICATIONS

MULCHING WITHOUT SEEDING

THIS STANDARD APPLIES TO GRADES OR CLEARED AREAS WHERE SEEDINGS MAY NOT HAVE A SUITABLE GROWING SEASON TO PRODUCE AND EROSION RETARDANT COVER, BUT CAN BE STABILIZED WITH A MULCH COVER.

SITE PREPARATION

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

MULCHING MATERIALS

SELECT ONE OF THE FOLLOWING MATERIALS AND APPLY AT THE DEPTH INDICATED:

1. DRY STRAW OR HAY SHALL BE APPLIED AT A DEPTH OF 2 TO 4 INCHES PROVIDING COMPLETE SOIL COVERAGE. ONE ADVANTAGE OF THIS MATERIAL IS EASY APPLICATION.
2. WOOD WASTE (CHIPS, SAWDUST OR BARK) SHALL BE APPLIED AT A DEPTH OF 2 TO 3 INCHES. ORGANIC MATERIAL FROM THE CLEARING STAGE OF DEVELOPMENT SHOULD REMAIN ON SITE, BE CHIPPED AND APPLIED AS MULCH. THIS METHOD OF MULCHING CAN GREATLY REDUCE EROSION CONTROL COSTS.
3. CUTBACK ASPHALT (SLOW CURING) SHALL BE APPLIED AT 1200 GALLONS PER ACRE (OR 1/4 GALLON PER SQUARE YARD).
4. POLYETHYLENE FILM SHALL BE SECURED OVER BANKS OR STOCKPILED SOIL MATERIAL FOR TEMPORARY PROTECTION. THIS MATERIAL CAN BE SALVAGED AND RE-USED.

APPLYING MULCH

WHEN MULCH IS USED WITHOUT SEEDING, MULCH SHALL BE APPLIED TO PROVIDE FULL COVERAGE OF THE EXPOSED AREA.

1. DRY STRAW OR HAY MULCH AND WOOD CHIPS SHALL BE APPLIED UNIFORMLY BY HAND OR BY MECHANICAL EQUIPMENT.
2. IF THE AREA WILL EVENTUALLY BE COVERED WITH PERENNIAL VEGETATION, 20-30 POUNDS OF NITROGEN PER ACRE IN ADDITION TO THE NORMAL AMOUNT SHALL BE APPLIED TO OFFSET THE UPTAKE OF NITROGEN CAUSED BY THE DECOMPOSITION OF THE ORGANIC MULCHES.
3. CUTBACK ASPHALT SHALL BE APPLIED UNIFORMLY. CARE SHOULD BE TAKEN IN AREAS OF PEDESTRIAN TRAFFIC DUE TO PROBLEMS OF "TRACKING IN" OR DAMAGE TO SHOES, CLOTHING, ETC.
4. APPLY POLYETHYLENE FILM ON EXPOSED AREAS.

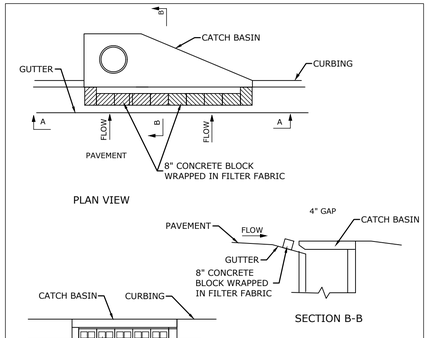
ANCHORING MULCH

1. STRAW OR HAY MULCH CAN BE PRESSED INTO THE SOIL WITH A DISK HARROW WITH THE DISK SET STRAIGHT OR WITH A SPECIAL "PACKER DISK". DISKS MAY BE SMOOTH OR SERRATED AND SHOULD BE 20 INCHES OR MORE IN DIAMETER AND 8 TO 12 INCHES APART. THE EDGES OF THE DISK SHOULD BE DULL ENOUGH NOT TO CUT THE MULCH BUT TO PRESS IT INTO THE SOIL LEAVING MUCH OF IT IN AN ERECT POSITION. STRAW OR HAY MULCH SHALL BE ANCHORED IMMEDIATELY AFTER APPLICATION ON ALL SLOPES 5H:1V OR GREATER.

   STRAW OR HAY MULCH SPREAD WITH SPECIAL BLOWER-TYPE EQUIPMENT MAY BE ANCHORED WITH EMULSIFIED ASPHALT (GRADE AE-5 OR SS-1). THE ASPHALT EMULSION SHALL BE SPRAYED ONTO THE MULCH AS IT IS EJECTED FROM THE MACHINE. USE 100 GALLONS OF EMULSIFIED ASPHALT AND 100 GALLONS OF WATER PER TON OF MULCH. TACKIFIERS AND BINDERS CAN BE SUBSTITUTED FOR EMULSIFIED ASPHALT. PLEASE REFER TO SPECIFICATION Tb - TACKIFIERS AND BINDERS. PLASTIC MESH OR

2. NETTING WITH MESH NO LARGER THAN ONE INCH BY ONE INCH SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
3. NETTING OF THE APPROPRIATE SIZE SHALL BE USED TO ANCHOR WOOD WASTE. OPENINGS OF THE NETTING SHALL NOT BE LARGER THAN THE AVERAGE SIZE OF THE WOOD WASTE CHIPS. POLYETHYLENE FILM SHALL BE ANCHOR TRENCHED AT THE TOP AS WELL AS INCREMENTALLY AS NECESSARY.

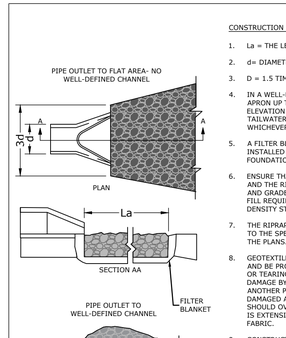
Ds-1 DISTURBED AREA STABILIZATION w/MULCHING ONLY
N.T.S.



CONSTRUCTION SPECIFICATIONS:

1. ONCE PAVEMENT HAS BEEN INSTALLED, A CURB INLET FILTER SHALL BE INSTALLED ON INLETS RECEIVING RUNOFF FROM DISTURBED AREAS.
2. THIS METHOD OF INLET PROTECTION SHALL BE REMOVED IF A SAFETY HAZARD IS CREATED.
3. ONE METHOD OF CURB INLET PROTECTION USES "PIGS-IN-A-BLANKET" - 8" CONCRETE BLOCKS WRAPPED IN FILTER FABRIC.
4. THE OTHER USES GRAVEL BAGS CONSTRUCTED BY WRAPPING DOT #57 STONE WITH FILTER FABRIC, WIRE, PLASTIC MESH, OR EQUIVALENT MATERIAL.
5. A GAP OF APPROXIMATELY 4 INCHES SHALL BE LEFT BETWEEN THE INLET FILTER AND THE INLET TO ALLOW FOR OVERFLOW AND PREVENT HAZARDOUS PONDING IN THE ROADWAY.
6. SEDIMENT SHALL BE REMOVED WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-HALF THE HEIGHT OF THE TRAP.
7. SEDIMENT SHALL BE REMOVED FROM CURB INLET PROTECTION IMMEDIATELY.
8. SEDIMENT SHALL NOT BE WASHED INTO THE INLET. IT SHALL BE REMOVED FROM THE SEDIMENT TRAP, DISPOSED OF AND STABILIZED SO THAT IT WILL NOT ENTER THE INLET AGAIN.
9. WHEN THE CONTRIBUTING DRAINAGE AREA HAS BEEN PERMANENTLY STABILIZED, ALL MATERIALS AND ANY SEDIMENT SHALL BE REMOVED, AND EITHER SALVAGED OR DISPOSED OF PROPERLY.

Sd2-P INLET SEDIMENT TRAP-CURB INLET PROTECTION
N.T.S.



CONSTRUCTION NOTES:

1. La = THE LENGTH OF APRON.
2. d= DIAMETER OR OUTLET PIPE
3. D = 1.5 TIMES STONE DIAMETER,6" MIN.
4. IN A WELL-DEFINCED CHANNEL, EXTEND THE APRON UP THE CHANNEL BANKS TO AN ELEVATION OF 6" ABOVE THE MAXIMUM TAILWATER DEPTH OR TO THE TOP OF THE BANK, WHICHEVER IS LESS.
5. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND SOIL FOUNDATION.
6. ENSURE THAT THE SUBGRADE FOR THE FILTER AND THE RIPRAP FOLLOWS THE REQUIRED LINES AND GRADES SHOWN IN THE PLAN. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO THE DENSITY STATED IN THE SPECIFICATIONS.
7. THE RIPRAP AND GRAVEL FILTER MUST CONFORM TO THE SPECIFIED GRADING LIMITS SHOWN ON THE PLANS.
8. GEOTEXTILE MUST MEET DESIGN REQUIREMENTS AND BE PROPERLY PROTECTED FROM PUNCHING OR TEARING DURING INSTALLATION. REPAIR ANY DAMAGE BY REMOVING THE RIPRAP AND PLACING ANOTHER PIECE OF FILTER FABRIC OVER THE DAMAGED AREA. ALL CONNECTING JOINTS SHOULD OVERLAP A MIN. OF 1 FT. IF THE DAMAGE IS EXTENSIVE, REPLACE THE ENTIRE FILTER FABRIC.
9. CONSTRUCT THE APRON ON ZERO GRADE WITH NO OVERFALL AT THE END. MAKE THE TOP OF THE RIPRAP AT THE DOWNSTREAM END LEVEL WITH THE RECEIVING AREA OR SLIGHTLY BELOW IT.
10. FILTER: INSTALL A FILTER TO PREVENT SOIL MOVEMENT THROUGH THE OPENINGS IN THE RIPRAP. THE FILTER SHOULD CONSIST OF A GRADED GRAVEL LAYER AND A SYNTHETIC FILTER CLOTH.
11. INSPECT RIPRAP OUTLET STRUCTURES AFTER HEAVY RAINS TO SEE IF ANY EROSION AROUND OR BELOW THE RIPRAP HAS TAKEN PLACE OR IF STONES HAVE BEEN DISLODGED. IMMEDIATELY MAKE ALL NEEDED REPAIRS TO PREVENT FURTHER DAMAGE.

St STORM DRAIN OUTLET PROTECTION
N.T.S.

I:\CUSTOMERS_PROJECTS\931 City of Dalton\931-19-082 Botany Woods Drive\Eng\Construction

PROJECT OWNED/DEVELOPED BY:
CITY OF DALTON
535 ELM STREET DALTON, GA 30722
DALTON, GA, 30722
APARKER@CITYOFDALTON-GA-GOV
24 HOUR CONTACT INFORMATION
P. ANDREW PARKER, P.E. (706) 278-7077

SEI
SOUTHEASTERN ENGINEERING, INC.
2410 Sandy Plains Road Marietta, Georgia 30066
tel: 770-321-3936 fax: 770-321-3935
www.sreengineering.com

931-19-082

No	REVISION DESCRIPTION	DATE
1	-	-
2	-	-
3	-	-
4	-	-

EROSION CONTROL DETAILS
BOTANY WOODS DR SLOPE RECONSTRUCTION
PROJECT LOCATED AT:
BOTANY WOODS DR DALTON, GA, 30720
CITY OF DALTON

GEORGIA REGISTERED NO. 32196 PROFESSIONAL ENGINEER KEVIN WAYNE CLARK
04/22/19

ISSUED FOR:
REVIEW

Project No.: 931-19-082
Designed By: KWC
Issue Date: 4/19/18

C9.2

811 Know what's below. Call before you dig.

THE UTILITIES SHOWN HEREON ARE FOR THE CONTRACTORS CONVENIENCE ONLY. THERE MAY BE OTHER UTILITIES NOT SHOWN ON THESE PLANS. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE LOCATIONS SHOWN AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL UTILITIES WITHIN THE LIMITS OF THE WORK. ALL DAMAGE MADE TO EXISTING UTILITIES BY THE CONTRACTOR SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. IT IS THE OWNER/DEVELOPER'S RESPONSIBILITY TO VERIFY EXISTING UTILITY CAPACITY PRIOR TO INITIATING DESIGN. THE ENGINEER MAKES NO GUARANTEES, NEITHER EXPRESSED OR IMPLIED, REGARDING EXISTING UTILITY LOCATION, CAPACITY OR CONDITION.

FILE NAME: I:\CUSTOMERS_PROJECTS\931 City of Dalton\931-19-082 Botany Woods Drive\Eng\Construction\931-19-082 C-EROS.dwg PLOT STYLE: SEI-BASE-N.ctb PLOT DATE:5/3/2019 USER:JAN CLARK

CONTRACT ADDENDUM

ADDENDUM NO.: 001

DATE ISSUED: May 9, 2019

BID DATE: Wednesday, May 15, 2019

BID TIME: 2 PM ET

BID LOCATION: City of Dalton Public Works Department (535 Elm Street, Dalton GA 30721; newer brick building with green metal roof)

CONTRACTOR ACTION:

1. Acknowledge receipt of this addendum by writing in "Addendum No. 1" on the attached bid form.

INTERPRETATIONS:

Responses by the City of Dalton follow the questions in red font.

1. Are there any other bid documents, or is it just the plan sheets? The bid documents are the 12 plan sheets developed by SEI stamped on 04/22/2019, GDOT Standard Specifications, the contract which is attached, and any addenda issued on the project.

2. Is there a formal bid form? Yes – See attached bid form.

3. Is it a unit price bid or a lump sum bid? Unit price bid

4. Will the Notice to Proceed be provided quickly? Notice to Proceed is estimated to be issued to the awarded contractor on Tuesday, May 21st, 2019.

5. What is the final completion date and will there be liquidated damages? The final completion date for this project is July 31st, 2019. Liquidated damages will be assessed in the sum of $200 for each consecutive calendar day thereafter for unfinished work until final completion is achieved. Additionally, the contractor will receive **forty-five (45) calendar days to achieve substantial completion (85-90%)** of the project from issuance of Notice to Proceed. Liquidated damages, under the same terms outlined above, will also be enforced on the substantial completion requirement.

6. Does substantial Completion include the reopening of the lane? No, the substantial completion of the project shall only require the slope to be stabilized and evidence of progress towards the reopening of the current lane closure.

7. Notes on Trench Construction for Storm Drain Detail about says no addition payment shall be made for installation of filter fabric. This note will not be in effect since filter fabric is listed as a pay item (603-7000). Please note the requirements for the filter fabric to separate the top of the type II backfill from the native material/backfill above it.

8. Is the vendor packet required as part of the bid package submittal? No, this will be required of the awarded contractor, but it doesn't have to be included in the bid submittal. **However, the E-Verify Affidavit is a requirement of the bid submittal (see attached)**.

9. How are we to address the communications line on the site? The City will work with the utility company to get the line relocated temporarily through the construction phase.

10. Is it a responsibility of the Contractor to remove the large boulders on the site? Can these boulders be used as fill on the site? The boulders should be removed if required to achieve the intended scope of the work, but they do not have to be removed if they do not interfere with the work to be done. The boulders can be pushed down to create an armored splash pad for the storm drain outlet.

11. Where is the construction entrance to the site to be located? See plan sheet C8.

12. Does the contract include modifications to the curb and gutter on the south side of the road? No, the City will be responsible for curb and gutter installation on the south side of the road and will coordinate with the contractor to facilitate this work prior to paving.

13. Can the displaced dirt on the site as it sits currently be used as fill? What can be used as fill on the site? Yes, the dirt on site can be used as long as the required benching is performed. All fill materials from offsite shall consist of clean soil, free of organic or deleterious materials, rocks, or broken pieces of concrete or any other foreign objects that could impede compaction results. Third party compaction testing will be performed by GeoHydro.

14. How are rain days to be addressed? The City and Contractor will mutually agree, as the project is commencing, on what will be considered rain days which result in no work being able to be performed.

15. Remove pay item number 205-0100- Construction Allowance- 937-19-082. The pay item table has been modified to removed this pay item (see attached).

16. Who performed the existing conditions survey and performed staking of the limits of disturbance and easement?

Jason Burnette
Senior Project Manager
jasonb@lasurveys.com
Lowery & Associates Land Surveying, LLC

317 Grassdale Road, Cartersville, GA 30120
(770) 334-8186 (706) 278-8955
Licensed throughout the Southeast
http://www.lowerylandsurveys.com

17. Can you advise why Standard 9031S is shown in addition to the detail for the pedestal inlet top? Is it your desire to use the pedestal inlet top for structure A4? Due to the wooded nature of the area, the pedestal top would be a better fit for long term maintenance. The 9031S structure will be used, but with the pedestal top detail shown on C7.1.

18. Where is the erosion control detail located for Sd2-F? Can you incorporate a detail into the plans or advise how we should handle this? For GDOT Construction Details EC6 and D-24C for additional information for Inlet Sediment Trap Sd2-F, please see the attached.

19. Please Clarify the location of the 50 SY of 12" rip rap. The 50 SY of 12 inch rip rap is at the location where the new slope ties into the existing slope. It is inadvertently labeled as 24 inch on the plans currently.

20. What bonds are required for this project? This project will only require a performance bond for 100% of the awarded contract price. This bond will only be required of the awarded bidder.

BY:

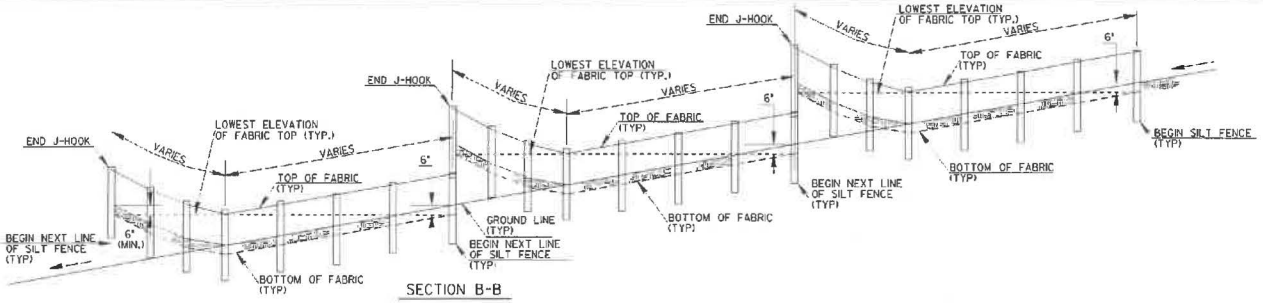
Megan Elliott
Project Engineer

Attachments:

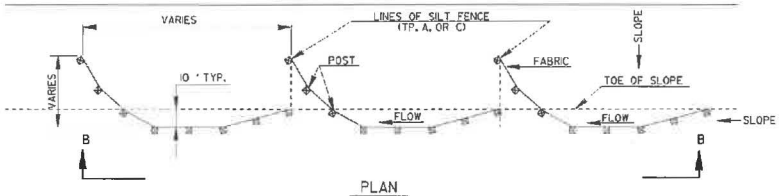
- Contract
- Bid Form
- E-Verify Affidavit
- Erosion Control Details

###

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



SECTION B-B



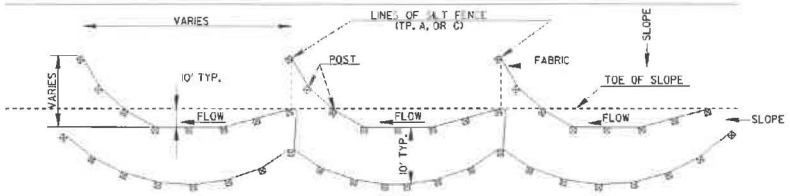
PLAN

SINGLE ROW SILT FENCE

TYPICAL J HOOK SPACING		
SLOPE PERCENT	TYPE OF SILT FENCE	MINIMUM SPACING (FEET)
1% TO 2%	TYPE A	100' ±
2% TO 3%	TYPE A	50' ±
3% TO 4%	TYPE C	50' ±
4% TO 5%	TYPE C	25' ±

NOTE:

1. IF THE GRADE IS BETWEEN 0 TO 1 PERCENT, THE SILT FENCE SHALL BE PLACED ACROSS THE DITCH.
2. TEMPORARY SILT FENCE SHALL NOT BE PLACED WITHIN STATE WATERS.

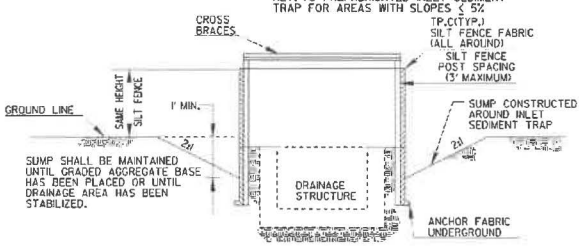


PLAN

DOUBLE ROW SILT FENCE

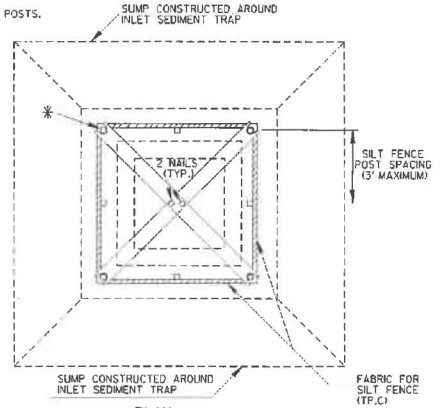
TYPICAL LOCATION AROUND DROP INLETS

ALT. TO PREFABRICATED INLET SEDIMENT TRAP FOR AREAS WITH SLOPES ≤ 5%



ELEVATION

* CROSS BRACING REQUIRED WHEN USING "ALTERNATE" TYPE C PRODUCTS WHICH USE WOOD POSTS.



PLAN

CROSS BRACES:

TWO - 2 X 4's WITH ENDS TO FIT POST, PROVIDING STURDY SUPPORT, OR AN APPROVED ALTERNATE

NOTE:
PAYMENT AS INLET SEDIMENT TRAP PER EACH.

NOTE:
SEE SEPARATE SHEET ENTITLED "TEMPORARY SILT FENCE DETAILS" FOR SILT FENCE ERECTION DETAILS.

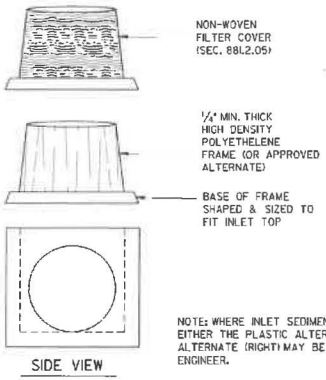
NOTE:
THE DRAINAGE AREA ENTERING THE INLET SEDIMENT TRAP SHALL BE NO GREATER THAN ONE ACRE.

TYPICAL CONSTRUCTION SEQUENCE FOR INLET SEDIMENT TRAP ALTERNATE

1. EXCAVATE APPROXIMATELY 4' TO 6' BELOW THE TOP OF THE INLET STRUCTURE.
2. PLACE THE FRAME ONTO THE INLET STRUCTURE, ENSURING PROPER SEATING OF FRAME TO STRUCTURE.
3. SLIDE THE FILTER OVER THE FRAME.
4. FILL THE FILTER POCKETS WITH SOIL, #57 GRAVEL OR EQUIVALENT. THE FILTER POCKETS SHOULD BE COMPLETELY FILLED TO ENSURE A GOOD SEAL BETWEEN THE GROUND AND INLET STRUCTURE.
5. BACK FILL AROUND THE FRAME AND FILTER ASSEMBLY IS NOT REQUIRED TO COMPLETE INSTALLATION; HOWEVER, BACK FILLING MAY BE NECESSARY TO COMPLETE EXCAVATION REQUIREMENTS FOR THE SITE.

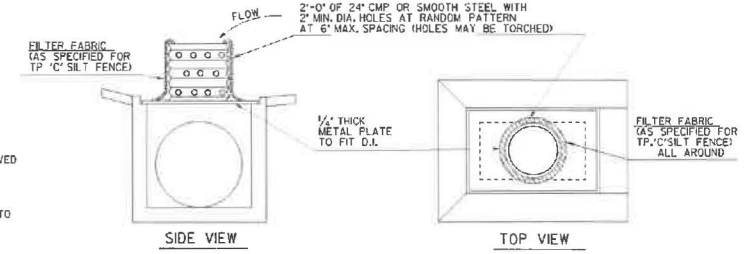
NOTE:
INLET SEDIMENT TRAP ALTERNATE SHALL BE AS APPROVED BY THE GA. D.O.T. OFFICE OF MATERIALS & RESEARCH. DETAILS & SPECIFICATIONS NOT SHOWN ARE PER THE MANUFACTURER'S REQUIREMENTS.

(PLASTIC ALTERNATE)



SIDE VIEW

(METAL ALTERNATE)



SIDE VIEW

TOP VIEW

NOTE: WHERE INLET SEDIMENT TRAPS ARE SPECIFIED, EITHER THE PLASTIC ALTERNATE (LEFT) OR THE METAL ALTERNATE (RIGHT) MAY BE USED AS APPROVED BY THE ENGINEER.

NOTE:
INLET SEDIMENT TRAP AND INLET TO BE BUILT CONTINUOUS WITH PIPE

NOTE:
PAYMENT AS INLET SEDIMENT TRAP PER EACH

NOTE: SEE SEPARATE DETAILS FOR SILT FENCE AROUND DROP INLETS.

INLET SEDIMENT TRAP - FOR DROP INLETS

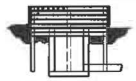
DATE	REVISION	BY

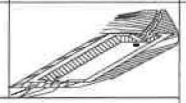
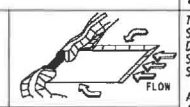
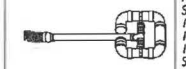
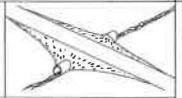
DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

CONSTRUCTION DETAILS
TEMPORARY SILT FENCE
J-HOOK, INLET SEDIMENT TRAPS

NO SCALE — JANUARY 2011

NUMBER D-24C
(SHEET 3 OF 4)

CODE	PRACTICE STD OR DETAIL SPEC. SECT.	DETAIL	DESCRIPTION
Sd1-BB	SEDIMENT BARRIER BRUSH BARRIER CONSTRUCTION DETAIL D-24B SECTION 201		THIS ITEM CONSISTS OF INTERMINGLED BRUSH, LOGS, ETC. SO AS NOT TO FORM A SOLID DAM. CONSTRUCTED AT THE TOE OF FILL SLOPES ONLY DURING THE CLEARING AND GRUBBING OPERATION. THE BARRIER SHOULD BE USED AT THE TOE OF FILL SLOPES ON GRADING PROJECTS IN RURAL AREAS WHERE SUFFICIENT RIGHT OF WAY OR EASEMENT IS AVAILABLE (10 FEET OR MORE). THE BARRIER SHOULD RUN ROUGHLY PERPENDICULAR TO THE FLOW OF WATER WHERE THIS DOES NOT CONFLICT WITH RIGHT-OF-WAY OR EASEMENT LIMITS. THEY WILL NOT BE PLACED IN WETLANDS. TYPICALLY NOT SHOWN ON PLANS. PAYMENT FOR THIS ITEM IS INCLUDED IN THE CLEARING AND GRUBBING COST. NO SEPARATE PAYMENT SHALL BE MADE.
		LINE CODE * * * (Sd1-BB) * * *	
Sd2-B	INLET SEDIMENT TRAP (BAFFLE BOX) CONSTRUCTION DETAIL D-42 SECTION 163		BAFFLE BOX INLET SEDIMENT TRAP USED FOR INLETS RECEIVING HIGH FLOW RATE AND/OR VELOCITY. A GUIDE FOR USE WILL BE FOR AN INLET RECEIVING FLOW RATES 7 cfs AND GREATER.
		SYMBOL Sd2-B	
Sd2-Bg	INLET SEDIMENT TRAP (BLOCK & GRAVEL) CONSTRUCTION DETAIL D-42 SECTION 163		BLOCK AND GRAVEL DROP INLET PROTECTION USED FOR WHERE HEAVY FLOWS ARE EXPECTED AND WHERE OVERFLOW CAPACITY IS NECESSARY TO PREVENT EXCESSIVE PONDING AROUND THE STRUCTURE. CAN BE USED AT CULVERT INLETS. A GUIDE FOR USE WILL BE FOR AN INLET RECEIVING FLOW RATES THAT RANGE FROM 5 - 7 cfs.
		SYMBOL Sd2-Bg	
Sd2-F	INLET SEDIMENT TRAP (FILTER FABRIC) CONSTRUCTION DETAIL D-24C SECTION 163	 (a) OR (b) OR (c)	(a) A SEDIMENT BARRIER CONSISTING OF A PREFABRICATED FRAME WITH FILTER FABRIC USED AROUND A DROP INLET OR CATCH BASIN. (b) A SEDIMENT BARRIER CONSISTING OF A PERFORATED METAL STAND PIPE WITH FILTER FABRIC USED AROUND A DROP INLET OR CATCH BASIN. (c) TYPE C SILT FENCE WITH SUPPORTING FRAME CAN BE USED AS AN ALTERNATE TO INLET SEDIMENT TRAP FOR AREAS WITH SLOPES < 5%. THIS ITEM IS USED TO PREVENT SILT FROM ENTERING THE PIPE SYSTEM. SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS. RECOMMENDED FOR INLET RECEIVING FLOW RATES THAT RANGE FROM 0 - 4 cfs.
		SYMBOL Sd2-F	
Sd2-G	INLET SEDIMENT TRAP (GRAVEL) CONSTRUCTION DETAIL D42 SECTION 163		GRAVEL DROP INLET PROTECTION USED WHERE HEAVY CONCENTRATED FLOWS ARE EXPECTED. STONE AND GRAVEL ARE USED TO TRAP SEDIMENT. THE SLOPE TOWARD THE INLET SHALL BE NO MORE THAN 3:1. A GUIDE FOR USE WILL BE FOR AN INLET RECEIVING FLOW RATES THAT RANGE FROM 3 - 5 cfs.
		SYMBOL Sd2-G	

CODE	PRACTICE STD OR DETAIL SPEC. SECT.	DETAIL	DESCRIPTION
Sd3	TEMPORARY SEDIMENT BASIN CONSTRUCTION DETAIL D-22A, D-22B SECTION 163		A BASIN CREATED BY EXCAVATING AN AREA, DAMMING CONCENTRATED FLOW, OR A COMBINATION OF BOTH. THE BASIN IS DESIGNED TO STORE 67 CUBIC YARDS OF SEDIMENT PER ACRE OF DRAINAGE AREA. THE DRAINAGE AREA SHOULD NOT EXCEED 150 ACRES. BASINS TYPICALLY CONSISTS OF A DAM, PRINCIPAL SPILLWAY, AND AN EMERGENCY SPILLWAY. A FLOATING SURFACE SKIMMER SHALL BE REQUIRED AS PART OF THE PRINCIPAL SPILLWAY UNLESS INFEASIBLE. SUFFICIENT RIGHT-OF-WAY OR EASEMENT IS NEEDED FOR BASIN CONSTRUCTION AND MAINTENANCE ACCESS. SEDIMENT BASINS SHALL BE CONSIDERED ON ALL PROJECTS, BUT MAY NOT BE PRACTICAL. BASINS SHOULD BE LOCATED TO MINIMIZE INTERFERENCE WITH CONSTRUCTION ACTIVITIES AND UTILITIES. REFER TO THE LATEST EDITION OF THE "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA" FOR DESIGN CRITERIA.
		SYMBOL Sd3	
Sd4-C	ROCK OUTLET TEMPORARY SEDIMENT TRAP CONSTRUCTION DETAIL D-53 SECTION 163	 FLOW	TEMPORARY POND WITH ROCK OUTLET DESIGNED TO STORE 67 CUBIC YARDS OF SEDIMENT PER DRAINAGE AREA. DRAINAGE AREA SHALL NOT EXCEED 5 ACRES. DISTINGUISHED FROM TEMPORARY SEDIMENT BASIN BY LACK OF PRINCIPAL SPILLWAY. MAXIMUM POND DEPTH FROM BOTTOM OF POND TO EMERGENCY SPILLWAY IS 4 FEET. A TEMPORARY SEDIMENT BASIN SHALL BE EVALUATED PRIOR TO CONSIDERING A TEMPORARY SEDIMENT TRAP. A TEMPORARY SEDIMENT TRAP IS IDEAL FOR SMALL AREAS WITH NO UNUSUAL DRAINAGE FEATURES AND EFFECTIVE AGAINST COARSE SEDIMENT, BUT NOT AGAINST SILT OR CLAY PARTICLES THAT REMAIN SUSPENDED. REFER TO THE LATEST EDITION OF THE "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA" FOR DESIGN CRITERIA.
		SYMBOL Sd4-C	
Sk	FLOATING SURFACE SKIMMER CONSTRUCTION DETAIL D-22A, D-22B SECTION 163		A BUOYANT DEVICE THAT DRAINS WATER FROM THE SURFACE OF A TEMPORARY SEDIMENT BASIN AT A CONTROLLED FLOW RATE. THE INLET/ORIFICE SIZE IS DESIGNED TO DRAIN THE BASIN WITHIN 24 - 48 HOURS. THE SKIMMER INFORMATION SHALL BE PROVIDED IN CONJUNCTION WITH THE SEDIMENT BASIN INFORMATION IN PLANS. IF A SKIMMER IS INFEASIBLE, THE DESIGNER SHALL PROVIDE A WRITTEN JUSTIFICATION IN THE PLANS. SKIMMERS ARE ATTACHED TO A RISER WITHOUT PERFORATIONS AND ACTS AS THE PRIMARY SPILLWAY. THE SKIMMER BMP SYMBOL SHALL BE SHOWN IN CONJUNCTION WITH THE TEMPORARY SEDIMENT BASIN BMP SYMBOL WHEN APPLICABLE. REFER TO THE LATEST EDITION OF THE "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA" FOR ADDITIONAL INFORMATION.
		SYMBOL Sk	
Sr	TEMPORARY STREAM CROSSING SECTION 107		A TEMPORARY STRUCTURE INSTALLED ACROSS A FLOWING STREAM OR WATERCOURSE FOR USE BY CONSTRUCTION EQUIPMENT. THIS BMP PROVIDES A MEANS TO CROSS STREAMS OR WATERCOURSES WITHOUT MOVING SEDIMENT INTO STREAMS, DAMAGING THE STREAM BED OR CHANNEL, OR CAUSING FLOODING. THIS BMP SHOULD NOT BE USED ON STREAMS WITH DRAINAGE AREAS GREATER THAN ONE SQUARE MILE, UNLESS SPECIFICALLY DESIGNED TO ACCOMMODATE THE ADDITIONAL DRAINAGE AREA BY THE DESIGN PROFESSIONAL. A CERTIFICATION STATEMENT AND SIGNATURE SHALL ACCOMPANY THE DESIGN. THIS BMP SHALL BE DESIGNED ACCORDING TO THE LATEST EDITION OF THE "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA". FOR CONTRACTOR'S USE ONLY!
		SYMBOL Sr	

NOTE:

1. DO NOT USE EROSION CONTROL ITEMS IN A FLOWING STREAM OR IN A TIDAL AREA BELOW HIGH TIDE.
2. FOR ADDITIONAL INFORMATION ON THE DESIGN AND APPLICATION OF EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMPs), REFER TO THE LATEST EDITION OF THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION'S, "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA".

GDOT

NO SCALE

REVISION DATES
3/2/2017
11/28/2018

EROSION CONTROL LEGEND
UNIFORM CODE SHEET
SHEET 6 OF 7

CHECKED:	A. EARLETON	DATE: 01/01/16	DRAWING No.
BACKCHECKED:		DATE:	52-0006
CORRECTED:		DATE:	
VERIFIED:		DATE:	

CONTRACT ADDENDUM

ADDENDUM NO.: 002

DATE ISSUED: May 13, 2019

BID DATE: Wednesday, May 15, 2019

BID TIME: 2 PM ET

BID LOCATION: City of Dalton Public Works Department (525 Elm Street, Dalton, GA 30721; newer brick building with green metal roof)

CONTRACTOR ACTION:

1. Acknowledge receipt of this addendum by writing in "Addendum No. 2" on the attached bid form.

INTERPRETATIONS:

Responses by the City of Dalton follow the questions in red font.

1. Is there a location that wood chippings can be taken and disposed of at no cost? Yes, disposal of clean finely ground mulch may be disposed of at the Closed Brooker Inert Landfill Facility located at 145 Raisin Way, Dalton, Ga 30721. All material should be of a high enough quality that it can be burned in a boiler for the production of power.

2. Is there a location that root balls can be taken and disposed of at no cost? No, unless the materials can be sheared and separated finely enough to comply with the requirements necessary to be burned in a boiler for the production of power.

BY:

Megan Elliott
Project Engineer

###

EXHIBIT "B"

CONDITIONS AND TERMS OF PAYMENT

- Contractor's unit bid prices for work items as outlined in the specifications are:

Bid Proposal Form - PROJECT #931-19-082
Botany Woods Drive Slope Reconstruction

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
	GRADING & ROADWAY ITEMS				
150-1000	TRAFFIC CONTROL - 931-19-082	LS	1	15,850.00	$15,850.00
210-0100	GRADING COMPLETE - 931-19-082 (Approximately 9340 CY of Fill Material)	LS	1	325,000.00	$325,000.00
310-5080	GR AGGR BASE CRS, 8 INCH, INCL MATL	SY	650	30.00	$19,500.00
402-3103	RECYCLED ASPH CONC 9.5 MM SUPERPAVE, TYPE II, GP 2 ONLY, INCL BITUM MATL & H LIME	TN	25	130.00	$3,250.00
402-3111	RECYCLED ASPH CONC 19 MM SUPERPAVE, TYPE II, GP 1 or GP 2, INCL BITUM MATL & H LIME	TN	35	180.00	$6,300.00
413-1000	BITUM TACK COAT	GL	20	0.01	$0.20
441-6216	CONC CURB & GUTTER, 8 IN X 24 IN, TP 2	LF	200	17.70	$3,540.00
643-3000	ORANGE SAFETY FENCE	LF	250	7.00	$1,750.00
				SUB TOTAL	$375,190.20
	DRAINAGE ITEMS				
207-0203	FOUND BKFILL MATL, TYPE 2 BACKFILL MATERIAL (WASHED 57s)	CY	148	160.00	$23,680.00
500-3800	CLASS A CONCRETE, INCL REINF STEEL	CY	2	3,500.00	$7,000.00
550-1240	STORM DRAIN PIPE, 24 IN, H 1-10 - CLASS III RCP	LF	265	75.00	$19,875.00
550-1243	STORM DRAIN PIPE, 24 IN, H 20-25 - CLASS V RCP	LF	85	125.00	$10,625.00
603-2180	STN DUMPED RIP RAP, TP 3, 12 IN	SY	100	86.00	$8,600.00
603-2182	STN DUMPED RIP RAP, TP 3, 24 IN	SY	50	96.00	$4,800.00
603-7000	PLASTIC FILTER FABRIC	SY	616	80.00	$49,280.00
611-3004	RECONSTRUCT CATCH BASIN	EA	1	4,000.00	$4,000.00
668-2105	DROP INLET, GP1, SPCL DES	EA	1	7,500.00	$7,500.00
668-2115	DROP INLET, GP1, ADDL DEPTH, SPCL DES	LF	1	7,500.00	$7,500.00
668-4300	STORM SEW MANHOLE, TP 1	EA	5	4,822.21	$24,111.05
668-4311	STORM SEW MANHOLE, TP 1, ADDL DEPTH, CL 1	LF	50	310.00	$15,500.00
				SUB TOTAL	$182,471.05

Bid Proposal Form - PROJECT #931-19-082
Botany Woods Drive Slope Reconstruction

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
	TEMPORARY EROSION CONTROL ITEMS				
163-0232	TEMPORARY GRASSING	AC	0.91	550.00	$500.50
163-0240	MULCH	TN	5	250.00	$1,250.00
163-0300	CONSTRUCTION EXIT	EA	1	2,100.00	$2,100.00
163-0550	CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	EA	10	350.00	$3,500.00
165-0010	MAINTENANCE OF TEMPORARY SILT FENCE - TYPE A	LF	272	0.50	$136.00
165-0030	MAINTENANCE OF TEMPORARY SILT FENCE - TYPE C	LF	789	0.50	$394.50
165-0105	MAINTENANCE OF INLET SEDIMENT TRAP	EA	10	150.00	$1,500.00
171-0010	TEMPORARY SILT FENCE, TYPE A	LF	272	7.00	$1,904.00
171-0030	TEMPORARY SILT FENCE, TYPE C	LF	789	7.00	$5,523.00
				SUB TOTAL	$16,808.00
	PERMANENT EROSION CONTROL ITEMS				
700-6910	PERMANENT GRASSING	AC	0.76	3, 500.00	$2,660.00
700-7000	AGRICULTURAL LIME	TN	1	250.00	$250.00
700-8000	FERTILIZER MIXED GRADE	TN	1	250.00	$250.00
700-8100	FERTILIZER NITROGEN CONTENT	LB	10	11.00	$110.00
700-9300	SOD	SY	705	10.00	$7,050.00
700-9000	PERMANENT SOIL REINFORCING MAT	SY	385	6.50	$2,502.50
				SUB TOTAL	$12,822.50

Company Name: Northwest Georgia Paving, Inc.

Authorized Bid Rep. Signature: [signature]

Authorized Bid Rep. Title: President

TOTAL	$587,291.75

- Contractor will submit monthly payment requests to the Public Works Department at the beginning of each month. This billing will be for work performed the previous month and will be reviewed and approved by the City's Project Engineer.

CITY OF DALTON

DALTON PROJECT NO: PW-931-19-082 BOTANY WOODS SLOPE RECONSTRUCTION

				NORTHWEST GEORGIA PAVING, INC.	
ITEM NO.	**DESCRIPTION**	**UNIT**	**QUANTITY**	**BID UNIT PRICE**	**AMOUNT**
150-1000	TRAFFIC CONTROL - 931-19-082	LS	1	$15,850.00	$15,850.00
210-0100	GRADING COMPLETE - 931-19-082 (Approximately 9340 CY of Fill Material)	LS	1	$325,000.00	$325,000.00
310-5080	GR AGGR BASE CRS, 8 INCH, INCL MATL	SY	650	$30.00	$19,500.00
402-3103	RECYCLED ASPH CONC 9.5 MM SUPERPAVE, TYPE II, GP 2 ONLY, INCL BITUM MATL & H LIME	TN	25	$130.00	$3,250.00
402-3111	RECYCLED ASPH CONC 19 MM SUPERPAVE, TYPE II, GP 1 or GP 2, INCL BITUM MATL & H LIME	TN	35	$180.00	$6,300.00
413-1000	BITUM TACK COAT	GL	20	$0.01	$0.20
441-6216	CONC CURB & GUTTER, 8 IN X 24 IN, TP 2	LF	200	$17.70	$3,540.00
643-3000	ORANGE SAFETY FENCE	LF	250	$7.00	$1,750.00
207-0203	FOUND BKFILL MATL, TYPE 2 BACKFILL MATERIAL (WASHED 57s)	CY	148	$160.00	$23,680.00
500-3800	CLASS A CONCRETE, INCL REINF STEEL	CY	2	$3,500.00	$7,000.00
550-1240	STORM DRAIN PIPE, 24 IN, H 1-10 - CLASS III RCP	LF	265	$75.00	$19,875.00
550-1243	STORM DRAIN PIPE, 24 IN, H 20-25 - CLASS V RCP	LF	85	$125.00	$10,625.00
603-2180	STN DUMPED RIP RAP, TP 3, 12 IN	SY	100	$86.00	$8,600.00
603-2182	STN DUMPED RIP RAP, TP 3, 24 IN	SY	50	$96.00	$4,800.00
603-7000	PLASTIC FILTER FABRIC	SY	616	$80.00	$49,280.00
611-3004	RECONSTRUCT CATCH BASIN	EA	1	$4,000.00	$4,000.00
668-2105	DROP INLET, GP1, SPCL DES	EA	1	$7,500.00	$7,500.00
668-2115	DROP INLET, GP1, ADDL DEPTH, SPCL DES	LF	1	$7,500.00	$7,500.00
668-4300	STORM SEW MANHOLE, TP 1	EA	5	$4,822.21	$24,111.05
668-4311	STORM SEW MANHOLE, TP 1, ADDL DEPTH, CL 1	LF	50	$310.00	$15,500.00
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163-0240	MULCH	TN	5	$250.00	$1,250.00
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165-0030	MAINTENANCE OF TEMPORARY SILT FENCE - TYPE C	LF	789	$0.50	$394.50
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171-0010	TEMPORARY SILT FENCE, TYPE A	LF	272	$7.00	$1,904.00
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700-6910	PERMANENT GRASSING	AC	0.76	$3,500.00	$2,660.00
700-7000	AGRICULTURAL LIME	TN	1	$250.00	$250.00
700-8000	FERTILIZER MIXED GRADE	TN	1	$250.00	$250.00
700-8100	FERTILIZER NITROGEN CONTENT	LB	10	$11.00	$110.00
700-9300	SOD	SY	705	$10.00	$7,050.00
700-9000	PERMANENT SOIL REINFORCING MAT	SY	385	$6.50	$2,502.50
			Base Bid Total	**Total**	**$587,291.75**

CONTRACTOR AFFIDAVIT AND AGREEMENT (E-VERIFY)

By executing this affidavit, the undersigned contractor verifies its compliance with O.C.G.A. 13-10-91, stating affirmatively that the individual, firm, or corporation which is contracting with City of Dalton has registered with and is participating in a federal work authorization program* [any of the electronic verification of work authorization programs operated by the United States Department of Homeland Security or any equivalent federal work authorization program operated by the United States Department of Homeland Security to verify information of newly hired employees, pursuant to the Immigration Reform and Control Act of 1986 (IRCA), P.L. 99-603], in accordance with the applicability provisions and deadlines established in O.C.G.A. 13-10-91.

The undersigned further agrees that, should it employ or contract with any subcontractor(s) in connection with the physical performance of services pursuant to this contract with City of Dalton, contractor will secure from such subcontractor(s) similar verification of compliance with O.C.G.A. 13-10-91 on the Subcontractor Affidavit provided in Rule 300-10-01-.08 or substantially similar form. Contractor further agrees to maintain records of such compliance and provide a copy of each such verification to the City of Dalton at the time the subcontractor(s) is retained to perform such service.

The undersigned Contractor is using and will continue to use the federal work authorization program throughout the contract period.

110560
EEV/Basic Pilot Program* User Identification Number (E-VERIFY #)

BY: Authorized Officer or Agent — 5/15/19 Date

(Contractor Name) Northwest Georgia Paving, Inc.

President
Title of Authorized Officer or Agent of Contractor

Russell Smith
Printed Name of Authorized Officer or Agent

SUBSCRIBED AND SWORN
BEFORE ME ON THIS THE
14th DAY OF May, 2019

KAREN BROWN NOTARY PUBLIC GORDON COUNTY GEORGIA EXPIRES June 1, 2021

Notary Public
My Commission Expires:
6/1/2021

* As of the effective date of O.C.G.A. 13-10-91, the applicable federal work authorization program is the "EEV/Basic Pilot Program" operated by the U.S. Citizenship and Immigration Services Bureau of the U.S. Department of Homeland Security, in conjunction with the Social Security Administration (SSA).