NOTIFY CHEROKEE COUNTY INSPECTOR 24 HOURS PRIOR TO THE BEGINNING PHASE OF CONSTRUCTION.

SITE DEVELOPMENT PLANS FOR

4195 HICKORY FLAT HWY

PROJECT NO. ? , ZONED OI

LOCATED IN

LAND LOT 115–15TH DISTRICT

PIN 15–0115–0059, TIN–15N25 031

CHEROKEE COUNTY, GEORGIA

B.C. ENGINEERING, INC.

116 NORTH MAIN STREET, CUMMING, GEORGIA 30040

PHONE: (770) 205–6181 FAX: (770) 205–6162

E–MAIL: office@bcengineering–ga.com

SITE ADDRESS:
4195 HICKORY FLAT HIGHWAY

APPROVAL OF THESE PLANS BY

THIS SITE IS
WITH THE "H

Cherokee County
GEORGIA

EXHIBIT C

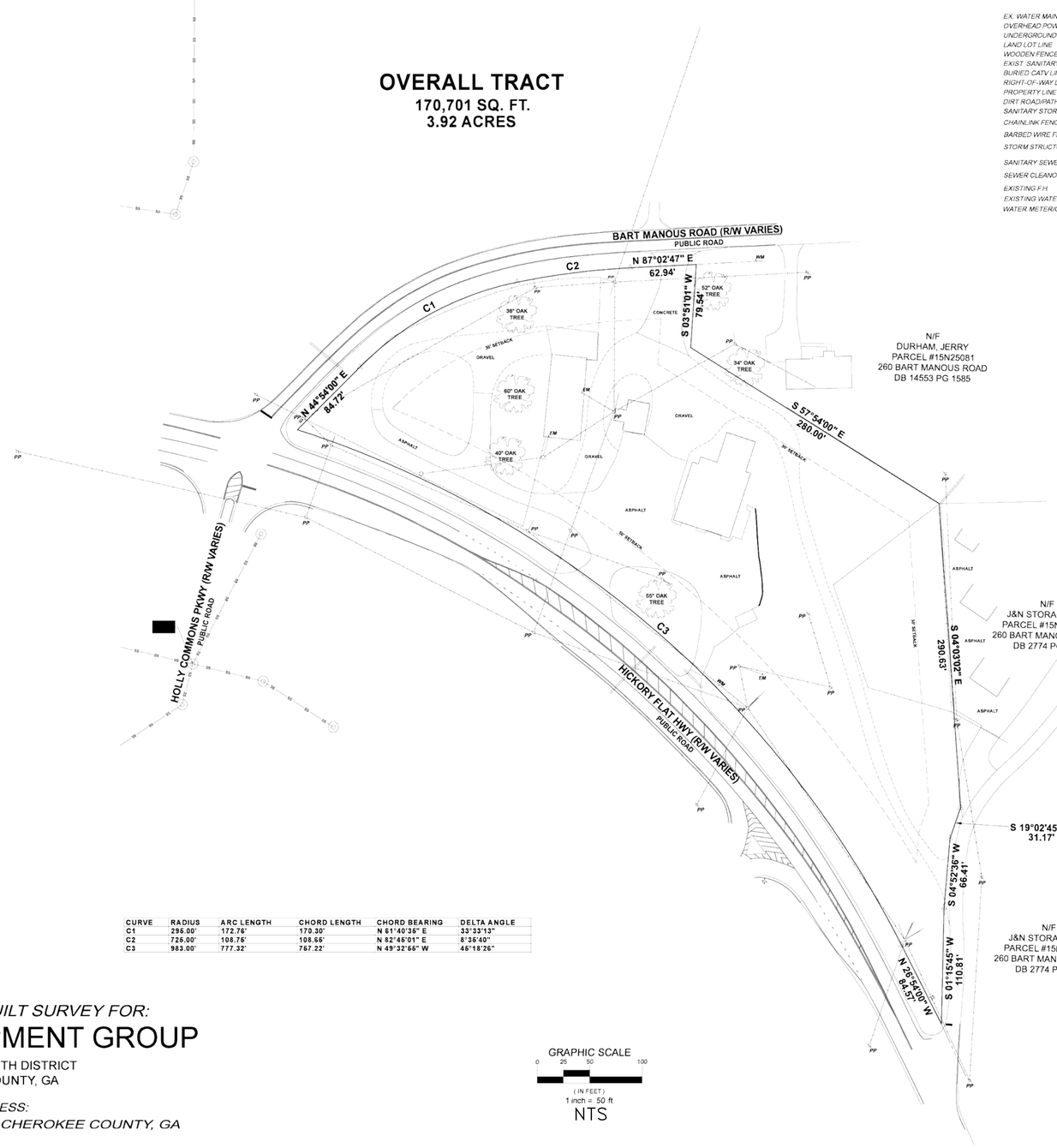
Department of Planning and Zoning
1130 Bluffs Parkway • Canton, Georgia 30114

DATE: February 6, 2024

TO: Board of Commissioners
Geoff Morton, County Manager

(RESERVED FOR CLERK'S FILING STAMP)

OVERALL TRACT
170,701 SQ. FT.
3.92 ACRES



EX. WATER MAIN
OVERHEAD POWER
UNDERGROUND POWER
LAND LOT LINE
WOODEN FENCE
EXIST. SANITARY SEWER
BURIED CATV LINE
RIGHT-OF-WAY LINE
PROPERTY LINE
DIRT ROAD/PATH
SANITARY STORM PIPE
CHAINLINK FENCING
BARBED WIRE FENCING
STORM STRUCTURES
SANITARY SEWER MANHOLE
SEWER CLEANOUT
EXISTING F.H.
EXISTING WATER VALVE
WATER METER/GAS METER/ELECTRIC METER

POWER POLE W/GUY WIRE
TELEPHONE POLE
SERVICE POLE
GUY POLE
MAILBOX
COMPUTED POINT
IRON PINS
CABLE JUNCTION BOX
GAS VALVE
UTILITY JUNCTION BOX
SINGLE/DOUBLE SIGN POST
LAMP/OUTDOOR LIGHTING
CONCRETE MONUMENT

SURVEYOR'S NOTES

1. THE FIELD DATA ON WHICH THIS PLAT IS BASED WAS COMPLETED ON OCTOBER 10, 2023.

2. THE FIELD DATA ON WHICH THIS PLAT IS BASED USED REDUNDANT LINEAR MEASUREMENTS TO VERIFY ACCURACY, THE CALCULATED POSITIONAL TOLERANCE ON OBSERVED POSITIONS WAS FOUND TO BE .01 FEET

3. THE LINEAR AND ANGULAR MEASUREMENTS SHOWN ON THIS PLAT WERE OBTAINED BY FIELD SURVEY USING A LEICA TS12 ROBOTIC TOTAL STATION AND NETWORK ROVER ON eGPS NETWORK.

4. THIS PLAT HAS BEEN CALCULATED FOR CLOSURE ON THE OVERALL PROPERTY AND IS FOUND TO BE ACCURATE WITHIN ONE FOOT IN 1,102,368 FEET.

5. LOCATION AND ARRANGEMENT OF UNDERGROUND UTILITIES ARE PROVIDED BY VISIBLE ACCESSIBLE FIELD EVIDENCE, MAKINGS BY UTILITY LOCATION AND PUBLIC RECORDS. THERE IS NO CERTAINTY OF THE ACCURACY OF THIS INFORMATION AND IT SHALL BE CONSIDERED IN THAT LIGHT BY THOSE USING THIS SURVEY. THE OWNER, THEIR CONSULTANTS, AND THEIR CONTRACTORS SHALL HEREBY DISTINCTLY UNDERSTAND THAT THIS SURVEYOR IS NOT RESPONSIBLE FOR THE SUFFICIENCY OF THE UNDERGROUND UTILITY INFORMATION PROVIDED HEREON.

6. PARCEL HAS DIRECT ACCESS TO BART MANOUS ROAD AND HICKORY FLAT HWY, BOTH DEDICATED PUBLIC ROADS

7. THERE ARE NO MARKED PARKING SPACES.

8. THERE ARE NO VISIBLE SIGNS OF ENCROACHMENTS. THERE ARE FENCELINES ALONG THE EASTERN AND NORTHERN PROPERTY LINES ALSO FENCE LINES ARE INTERCONNECTED AND MAY MEANDER THE PROPERTY LINES

9. THERE IS NO OBSERVABLE EVIDENCE OF EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS WITHIN RECENT MONTHS

10. THERE ARE NO PROPOSED CHANGES IN STREET RIGHT OF WAY LINES AFFECTING PROPERTY, ACCORDING TO CHEROKEE COUNTY

11. THERE IS OBSERVED EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS AFFECTING THE PROPERTY

12. THERE IS NO OBSERVABLE EVIDENCE OF THE SITE BEING USED AS A SOLID WASTE DUMP, SUMP OR SANITARY LANDFILL.

13. THERE IS NO OBSERVABLE EVIDENCE OF A CEMETARY OR BURIAL GROUNDS ON THE PROPERTY. HOWEVER, NO HISTORICAL OR ARCHAEOLOGICAL STUDY HAS BEEN CONDUCTED BY THIS FIRM

14. ADJOINERS NAMES ARE CURRENT PER CHEROKEE COUNTY TAX RECORDS ON OCTOBER 10, 2023

15. THIS SURVEY WAS PREPARED IN CONFORMITY WITH THE TECHNICAL STANDARDS FOR PROPERTY SURVEYS IN GEORGIA AS SET FORTH BY IN CHAPTER 180-7 OF THE RULES OF THE GEORGIA BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND LAND SURVEYORS AS SET FORTH IN THE GEORGIA PLAT ACT O.C.G.A. 15-6-67.

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C1	296.00'	172.76'	170.30'	N 61°40'35" E	33°33'13"
C2	726.00'	108.76'	108.66'	N 82°46'01" E	8°35'40"
C3	983.00'	777.32'	757.22'	N 49°32'56" W	45°18'26"

CONSTRUCTION AS-BUILT SURVEY FOR:

MACK DEVELOPMENT GROUP

LAND LOT 115 - 15TH DISTRICT
CHEROKEE COUNTY, GA

SITE ADRESS:
4195 HICKORY FLAT HWY, CHEROKEE COUNTY, GA

GRAPHIC SCALE
0 25 50 100
(IN FEET)
1 inch = 50 ft.
NTS

GEORGIA REGISTERED No. 3167 PROFESSIONAL LAND SURVEYOR BRIAN D. DOBBINS

BRIAN DOBBINS, GA RLS #3167
770-722-7625
RLSDOBBINS@GMAIL.COM

DRAWN BY: BDD
APPROVED BY: BDD
DATE: 10/10/23
PROJECT # 13126
DWG NAME:4195HICKORYFLATHWY.DWG

B.C. ENGINEERING, INC.
116 NORTH MAIN ST.
CUMMING, GA 30040
PHONE: (770) 205-6181
FAX: (770) 205-6162
EMAIL: office@bcengineering-ga.com

4195 HICKORY FLAT HWY
SURVEY
LAND LOT 115
15TH DISTRICT, 1ST SECTION
CHEROKEE COUNTY
PREPARED FOR
JACOB DYLAN

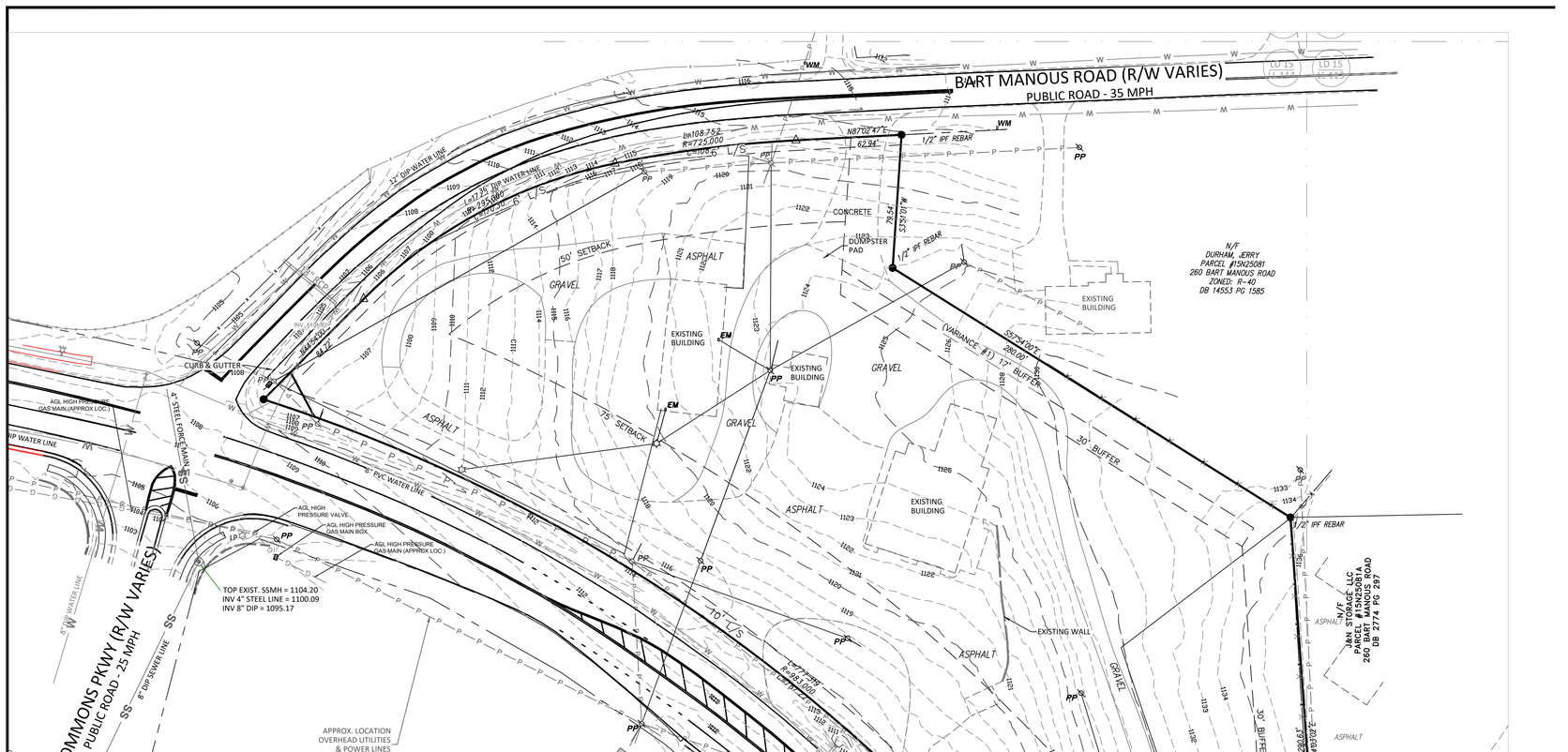
GEORGIA REGISTERED NO. 22083 PROFESSIONAL ENGINEER BRIAN W. COLE
09/13/24

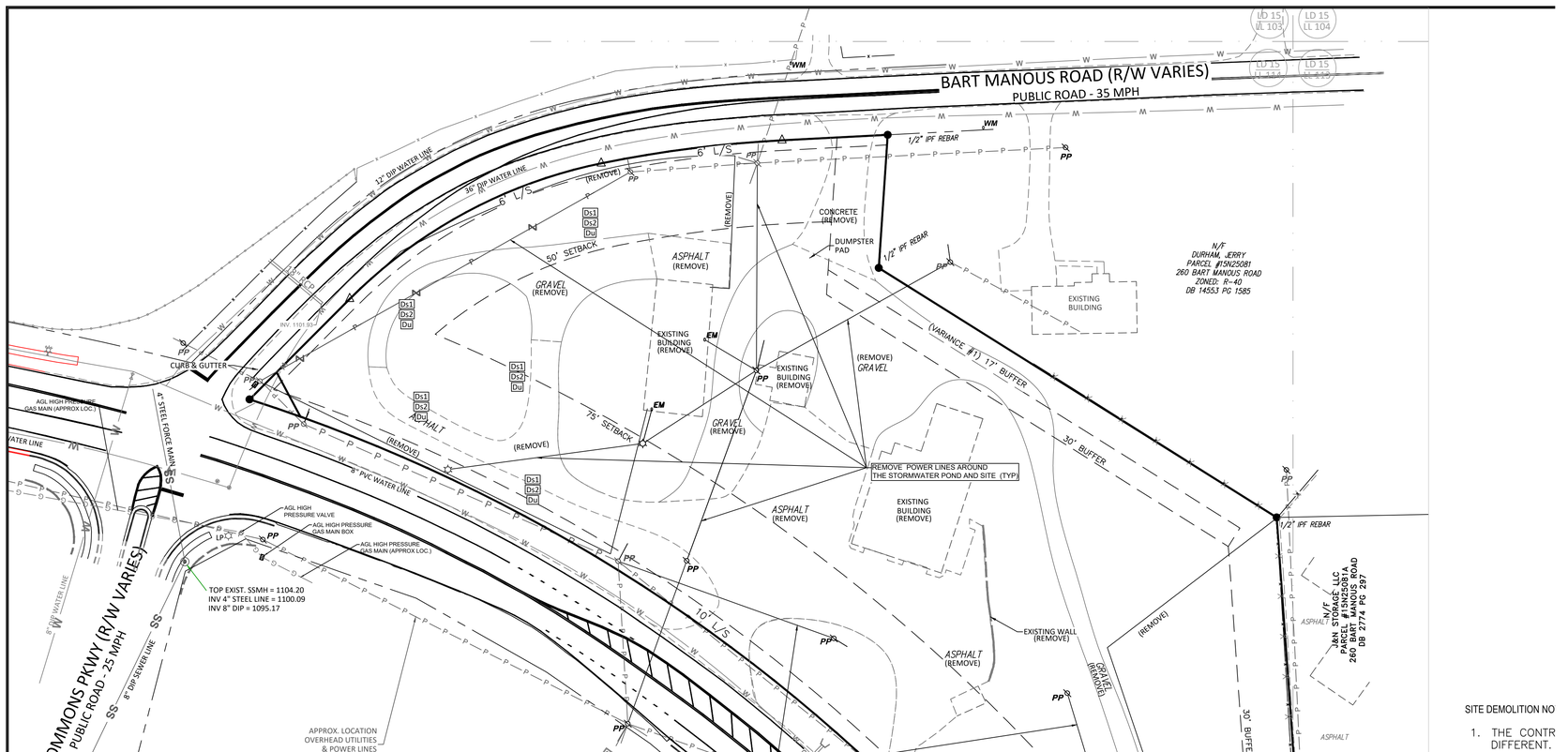
REVISION	DATE	DESCRIPTION

DRAWN BY: NBG
CHECKED BY: BC
DATE: 09/13/24
SCALE: AS NOTED
LAND LOTS: 115
DISTRICT: 15TH
SECTION: 1ST

SHEET NO. 2 OF 23

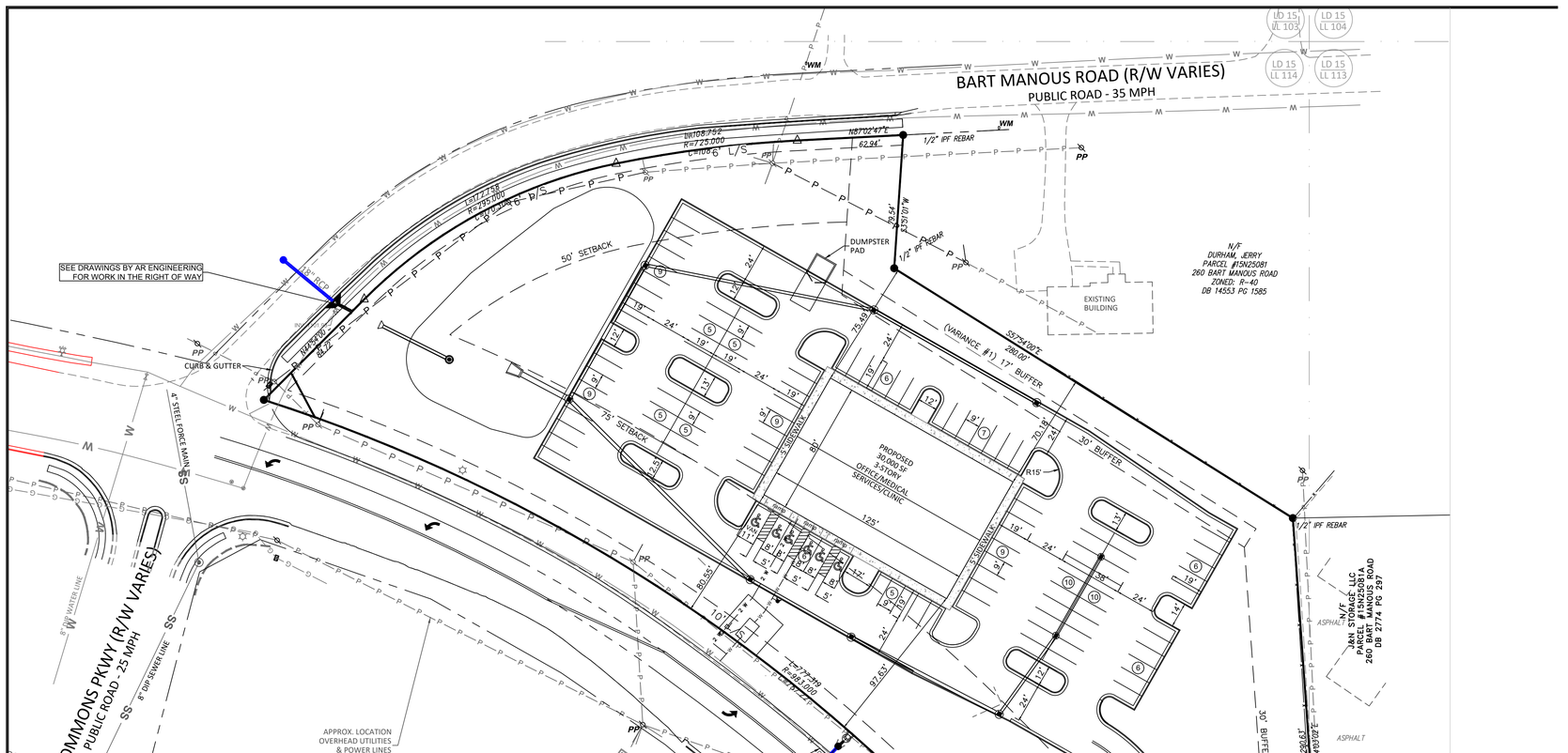
JOB NO.
2023-082

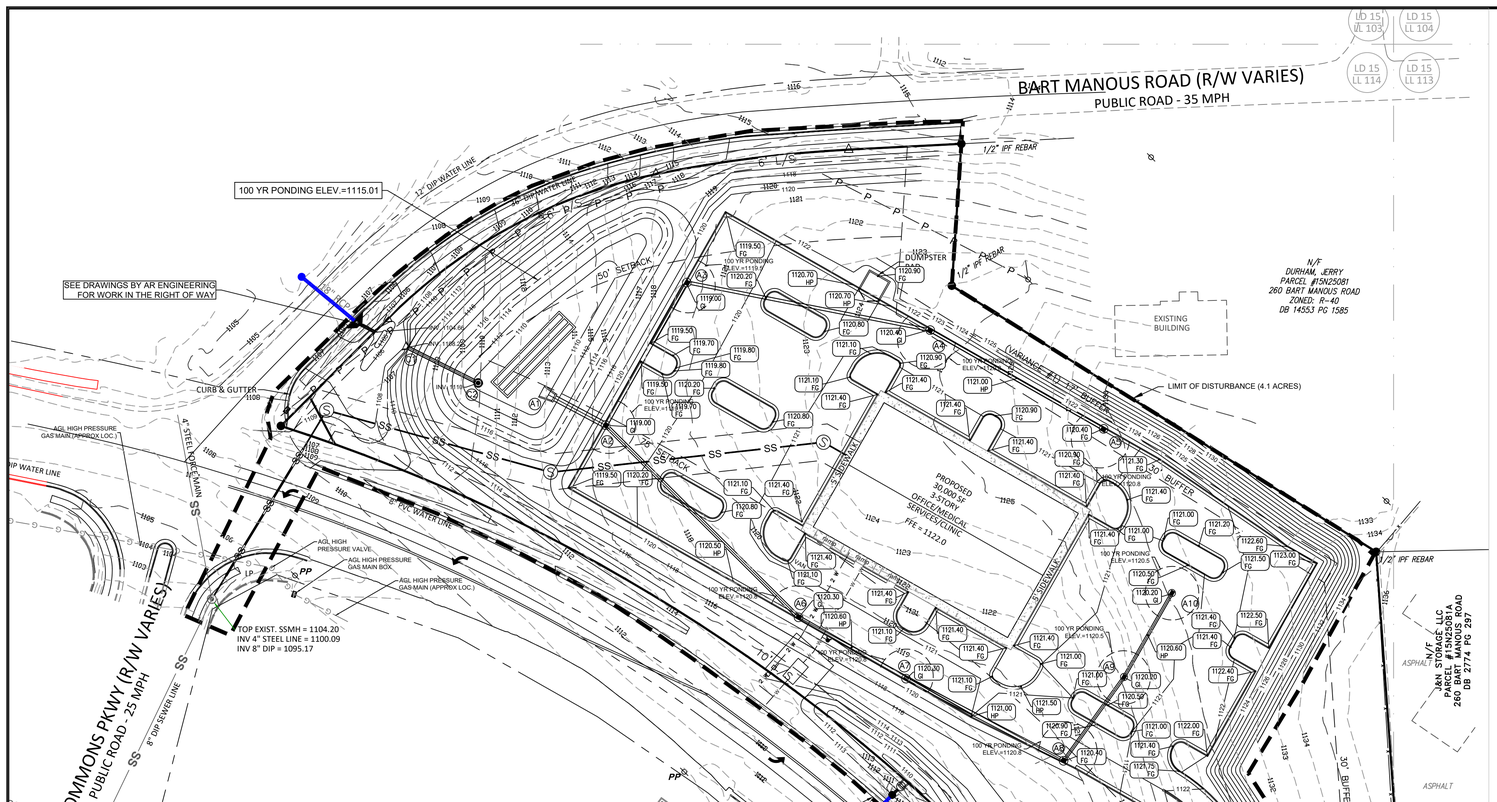




SITE DEMOLITION NO

1. THE CONTR
DIFFERENT.





GENERAL NOTES:

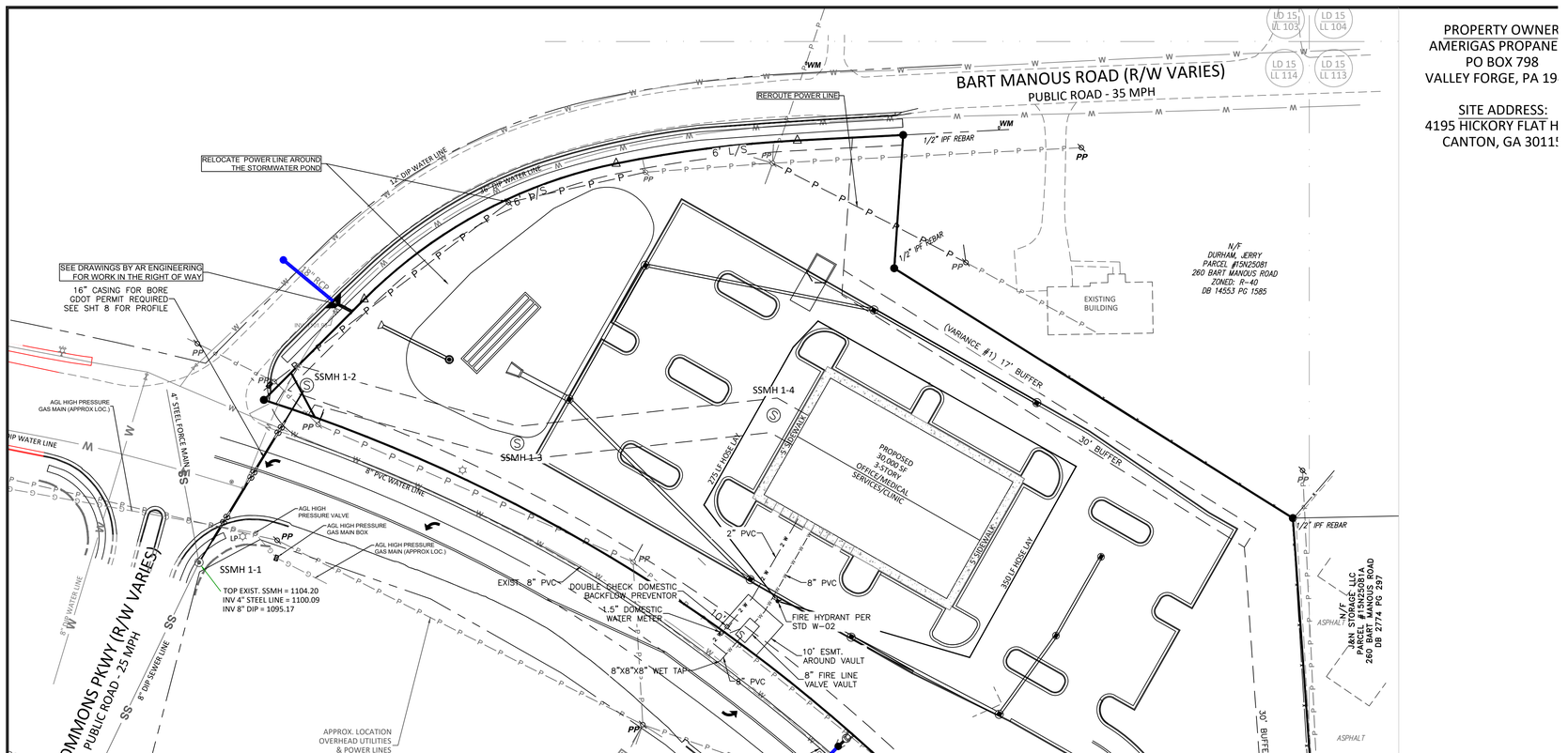
1. THE CONTRACTOR SHALL BE RESPONSIBLE F
EXISTENCE OF ALL UTILITIES SHOWN AND NOT
2. ALL CONSTRUCTION SHALL BE IN CONFORM
ORDINANCES. CONTRACTOR SHALL VERIFY CO
3. THE ENGINEER ASSUMES NO RESPONSIBILI
INSPECTION OF THE PROPOSED IMPROVEMEN
4. FILL MATERIAL SHALL BE FREE OF ORGANIC
A MINIMUM DENSITY OF 100 PCF.
5. FILL MATERIAL SHALL BE PLACED IN 6" LIFT
MAXIMUM STANDARD PROCTOR DENSITY.
6. FILL OPERATIONS SHOULD BE OBSERVED BY
TESTS SHOULD BE PERFORMED BY THE SOILS
7. AREAS TO RECEIVE FILL SHALL BE CLEARED
ORGANIC OR DELETERIOUS MATERIAL PRIOR
8. SUBGRADE CONDITIONS SHOULD BE INVES
9. ROOF DRAINS FROM BUILDING TO BE CONN
10. THE PROPERTY IS CURRENTLY UNDEVELOP
11. THIS PLAN TO COMPLY WITH ALL ZONING
12. ALL PAVEMENT MARKINGS, STRIPING & SI
SPECIFICATIONS OF FORSYTH COUNTY AND TH
13. ALL HANDICAP PARKING SPACES REQUIRE
14. SIGHT LIGHTING TO BE PREPARED BY OTHE
15. ALL UNDISTURBED BUFFERS SHALL BE IDE
TREE-SAVE FENCING PRIOR TO ANY LAND DIS
16. ALL CURBS DESIGNATING FIRE LANES SHA
WORDING OF "FIRE LANE - NO PARKING" PAI
FOUR TO SIX INCHES IN HEIGHT ON THE CURB
TWENTY FEET. CURBS SHALL BE PAINTED ON
SHALL BE PAINTED FOR THE ENTIRE WIDTH OF
SIGNS SHALL BE INSTALLED AT EACH END AN
FIRE LANES AT INTERVALS NOT EXCEEDING FI
FOUR FEET FROM THE EDGE OF THE CURB OR
REFLECTIVE BACKGROUND WITH A MINIMUM
CONTAINING THE WORDS "NO PARKING FIRE
LETTERS. NO PARKING SIGNS SHALL BE A MINI
INCHES AND SHALL BE VISIBLE FROM ALL APPR
SHALL BE PERMANENTLY MOUNTED ON POST
MATERIALS. SIGNS SHALL BE MOUNTED SO TH
THAN SEVENTY-TWO INCHES ABOVE THE SUR
17. CONTACT STORM WATER TECHNICIAN JOE
770-781-2165, AT BEGINNING OF SITE CONSTR
EXISTING DETENTION POND. ANY REQUIRED P
DURING SITE CONSTRUCTION AND SHALL BE V
CERTIFICATE OF OCCUPANCY.
18. PROPOSED A/C UNITS TO BE LOCATED ON
19. IRRIGATION SYSTEMS ARE PROHIBITED ON
AND CONSIDERED TO BE A VIOLATION OF THE
RIGHT-OF-WAY ENCROACHMENTS.
20. NO STRUCTURES, FENCES OR OTHER OBST
ACCESS EASEMENT WITHOUT PRIOR APPROVA
21. APPROVAL OF THESE PLANS DOES NOT CO
DISTURBING ACTIVITIES WITHIN WETLAND AR
TO CONTACT THE APPROPRIATE REGULATORY
DISTURBANCE.
22. ALL ROOFTOP MECHANICAL EQUIPMENT SH
RIGHT-OF-WAY AND ADJACENT STREETS BY A PA
ARCHITECTURAL FEATURE. ROOF EQUIPMENT A
ROOF OR PARAPET WALL.
23. ALL WATER TOWERS, COOLING TOWERS, ST
INCIDENTAL TO THE PRIMARY USE OF A BUILDIN
WITH THE PRINCIPAL BUILDING OR EFFECTIVELY
24. DUMPSTER WALL CONSTRUCTION, DECORA
SEPARATE PERMIT.

GRADING NOTES:

1. ALL AREAS TO RECEIVE PAVEMENT
MATERIAL, TOPSOIL, AND DEBRIS PRI

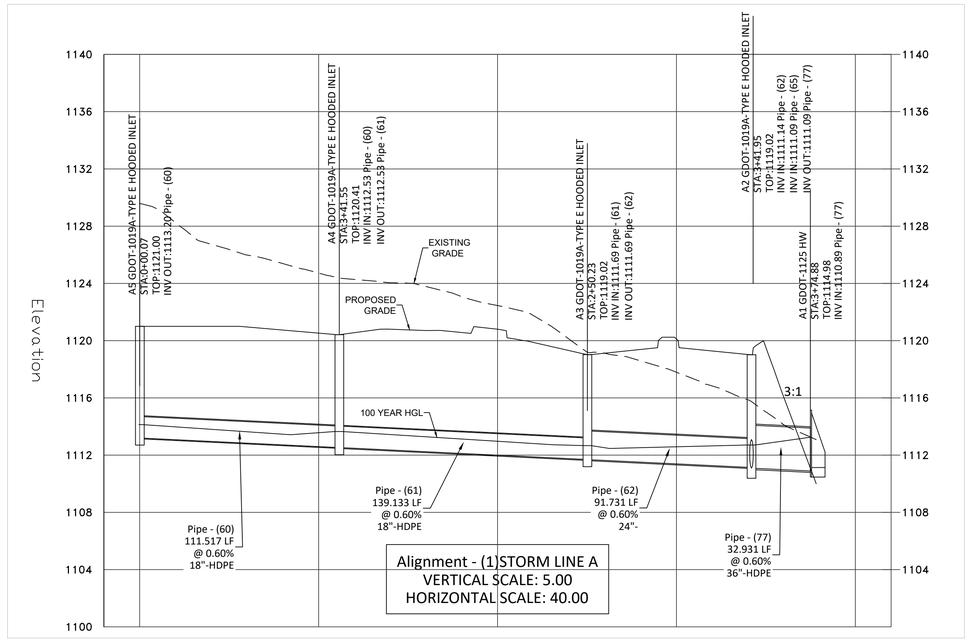
2. ONCE STRIPPING HAS BEEN COMP
THE PRESENCE OF A REPRESENTATIV
PROOF-ROLLING SHALL BE STABILIZE

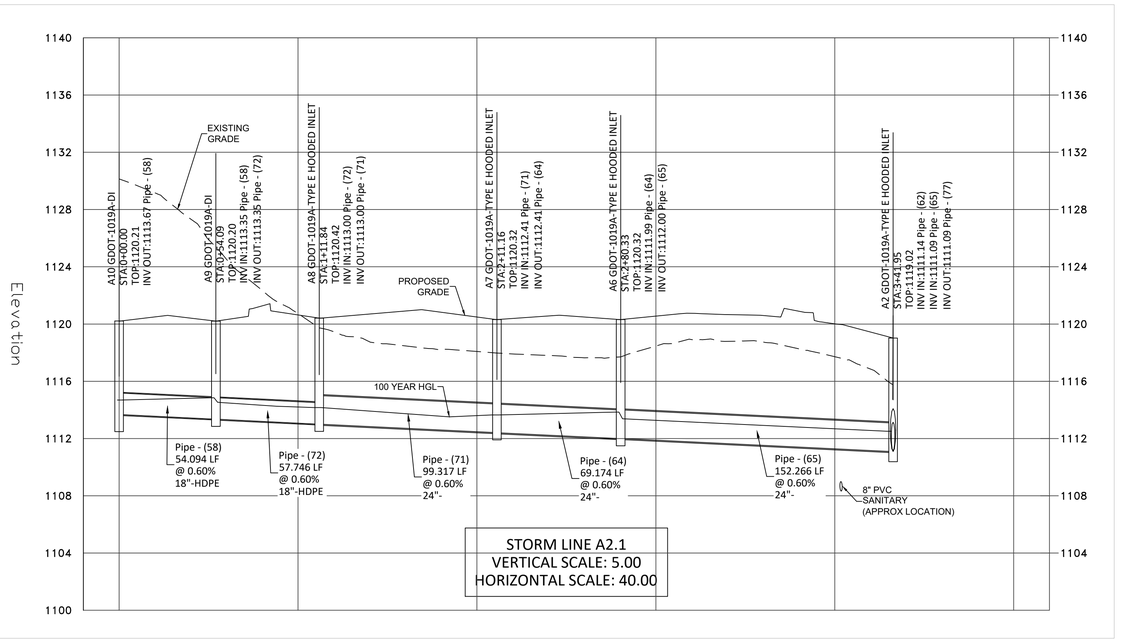
3. ALL FILL AREAS SHALL BE FREE OF
COMPACTED TO 95% OF MAXIMUM D

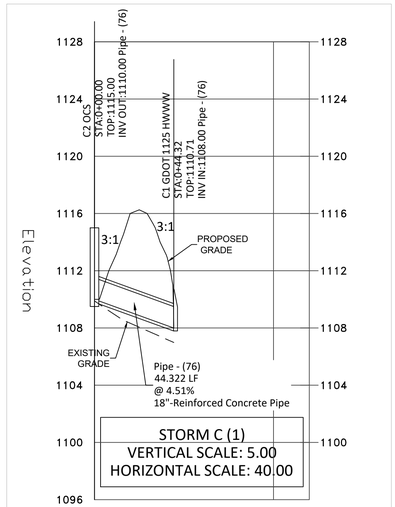


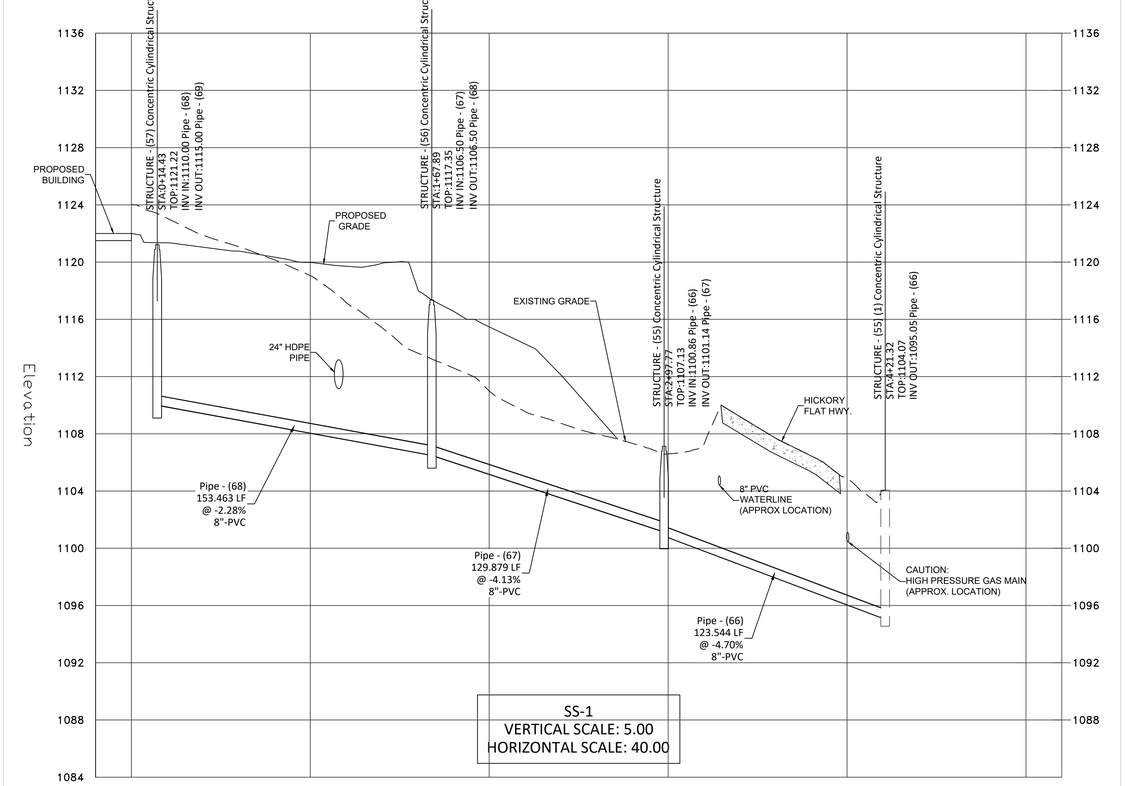
PROPERTY OWNER
AMERIGAS PROPANE
PO BOX 798
VALLEY FORGE, PA 19

SITE ADDRESS:
4195 HICKORY FLAT H
CANTON, GA 3011









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41195 HICKORY FLAT HWY
PROFILES
LAND LOT 115
15TH DISTRICT, 1ST SECTION
CHEROKEE COUNTY
PREPARED FOR
JACOB DYLAN

GEORGIA REGISTERED NO. 26083 PROFESSIONAL ENGINEER BRIAN W. COLE
09/13/24

DESCRIPTION	DATE	REVISION

DRAWN BY: NBG
CHECKED BY: BC
DATE: 09/13/24
SCALE: AS NOTED
LAND LOTS: 115
DISTRICT: 15TH
SECTION: 1ST

SHEET NO. 8 OF 23

JOB NO.
2023-082

Storm Sewer Tabulation STORM LINE A

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Dn	Up	Dn	Up	Dn	Up	
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
1	End	33	0.22	2.79	0.95	0.21	2.58	5.0	6.9	11.0	28.44	56.30	5.77	36	0.61	1110.89	1111.09	1113.25	1112.81	1113.39	1119.02	A1-A2
2	1	152	0.41	1.63	0.95	0.39	1.55	5.0	6.3	11.4	17.70	18.94	6.53	24	0.60	1111.09	1112.00	1112.81	1113.52	1119.02	1120.32	A2-A6
3	2	69	0.32	1.22	0.95	0.30	1.16	5.0	6.0	11.6	13.46	19.09	5.24	24	0.61	1111.99	1112.41	1113.89	1113.73	1120.32	1120.32	A6-A7
4	3	99	0.22	0.90	0.95	0.21	0.86	5.0	5.5	12.0	10.25	18.88	5.09	24	0.59	1112.41	1113.00	1113.73	1114.15	1120.32	1120.42	A7-A8
5	4	58	0.23	0.68	0.95	0.22	0.65	5.0	5.3	12.2	7.85	8.86	5.57	18	0.61	1113.00	1113.35	1114.15	1114.44	1120.42	1120.20	A8-A9
6	5	54	0.45	0.45	0.95	0.43	0.43	5.0	5.0	12.4	5.30	8.89	4.03	18	0.61	1113.35	1113.68	1114.69	1114.57	1120.20	1120.21	A9-A10
7	1	92	0.22	0.94	0.95	0.21	0.82	5.0	6.4	11.4	9.33	18.97	4.32	24	0.60	1111.14	1111.69	1112.81	1112.78	1119.02	1119.02	A2-A3
8	7	139	0.35	0.72	0.85	0.30	0.61	5.0	5.8	11.7	7.19	8.84	5.37	18	0.60	1111.69	1112.53	1112.78	1113.57	1119.02	1120.41	A3-A4
9	8	112	0.37	0.37	0.85	0.31	0.31	5.0	5.0	12.4	3.90	8.82	3.68	18	0.60	1112.53	1113.20	1113.57	1113.96	1120.41	1121.00	A4-A5

2023-082 HICKORY FLAT	Number of lines: 9	Run Date: 9/11/2024

NOTES:Intensity = 72.08 / (Inlet time + 6.10) ^ 0.73; Return period =Yrs. 100 ; c = cir e = ellip b = box

Storm Sewers v2023.00

MANNING n = 0.012

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4195 HICKORY FLAT HWY
PIPE CHARTS
LAND LOT 115
15TH DISTRICT, 1ST SECTION
CHEROKEE COUNTY
PREPARED FOR
JACOB DYLAN

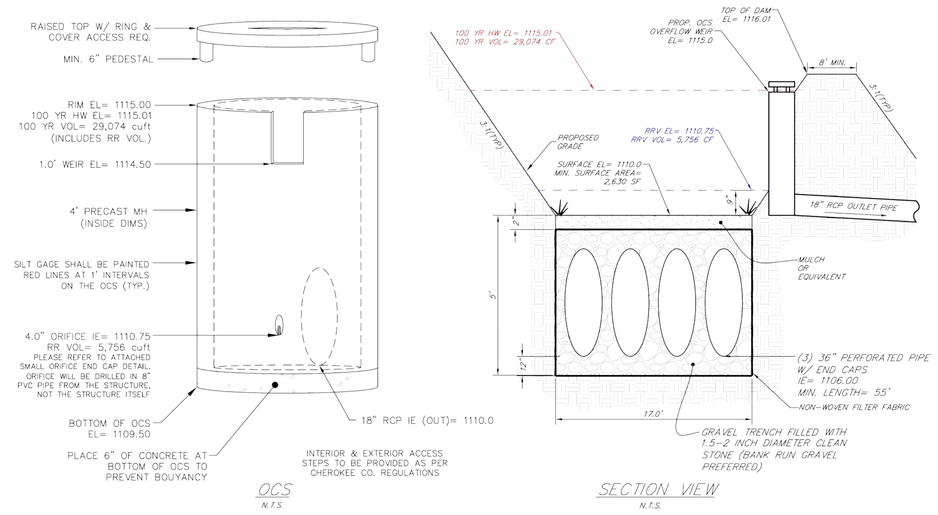
GEORGIA REGISTERED NO. 26083 PROFESSIONAL ENGINEER BRIAN W. COLB
09/13/24

DRAWN BY: NBG	REVISION	DATE	DESCRIPTION
CHECKED BY: BC			
DATE: 09/13/24			
SCALE: AS NOTED			
LAND LOTS: 115			
DISTRICT: 15TH			
SECTION: 1ST			

SHEET NO. 9 OF 23

JOB NO. 2023-082

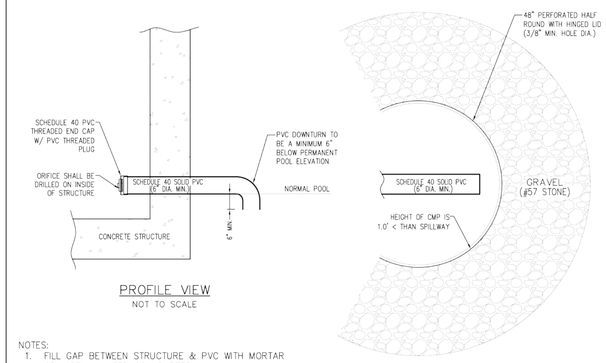
BMP 1- INFILTRATION BASIN
DETAILS



PLEASE NOTE THE DETAIL ABOVE IS TO ILLUSTRATE HYDRLOGIC CONFIGURATION OF THE OCS ONLY. STRUCTURAL DESIGN BY OTHERS.

PLEASE NOTE THE DETAIL ABOVE IS TO ILLUSTRATE HYDRLOGIC CONFIGURATION OF THE OCS ONLY. STRUCTURAL DESIGN BY OTHERS.

SMALL ORIFICE END CAP DETAIL
N.T.S.



NOTES:
1. FILL GAP BETWEEN STRUCTURE & PVC WITH MORTAR OR INSTALL A FERNCO APAPTER.
2. SEE OCS DETAIL FOR ORIFICE SIZE.
3. PIPE SIZE SHALL BE SPECIFIED PER TABLE BELOW.

OUTLET ORIFICE DIA.	PIPE SIZE
< 3"	6"
3" TO < 5"	8"
5" TO < 8"	12"
8" TO < 12"	16"

SCALE: 1" = 40'

40 0 40 80 120 FEET

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4195 HICKORY FLAT HWY
STORMWATER DETAILS
LAND LOT 115
15TH DISTRICT, 1ST SECTION
CHEROKEE COUNTY
PREPARED FOR
JACOB DYLAN

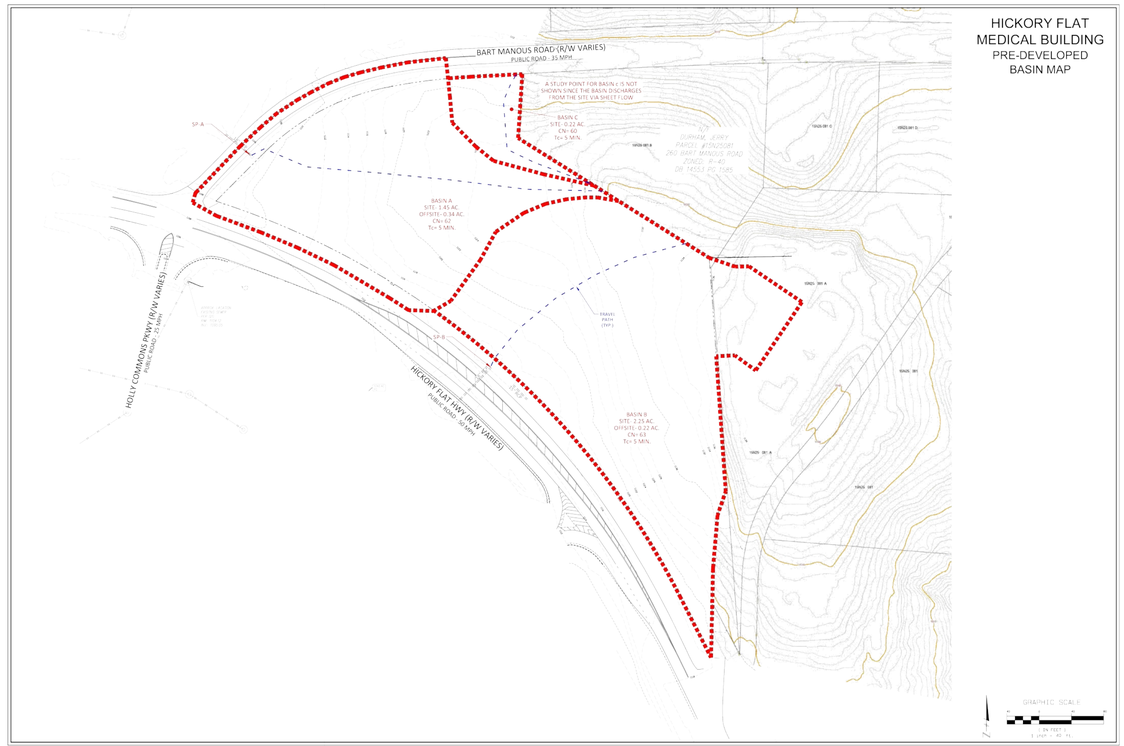
GEORGIA REGISTERED NO. 26083 PROFESSIONAL ENGINEER BRIAN W. COLE
09/13/24

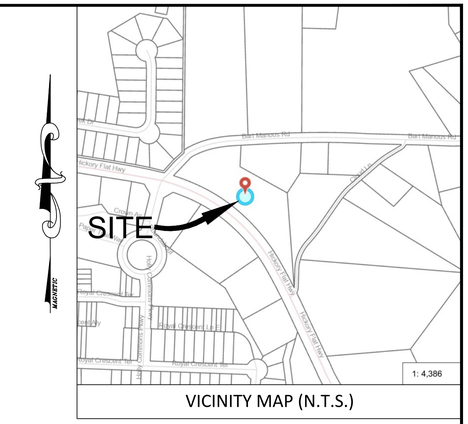
DRAWN BY:	NBG
CHECKED BY:	BC
DATE:	09/13/24
SCALE:	AS NOTED
LAND LOTS:	115
DISTRICT:	15TH
SECTION:	1ST

REVISION	DATE	DESCRIPTION

SHEET NO. 10 OF 23

JOB NO. 2023-082





VICINITY MAP (N.T.S.)

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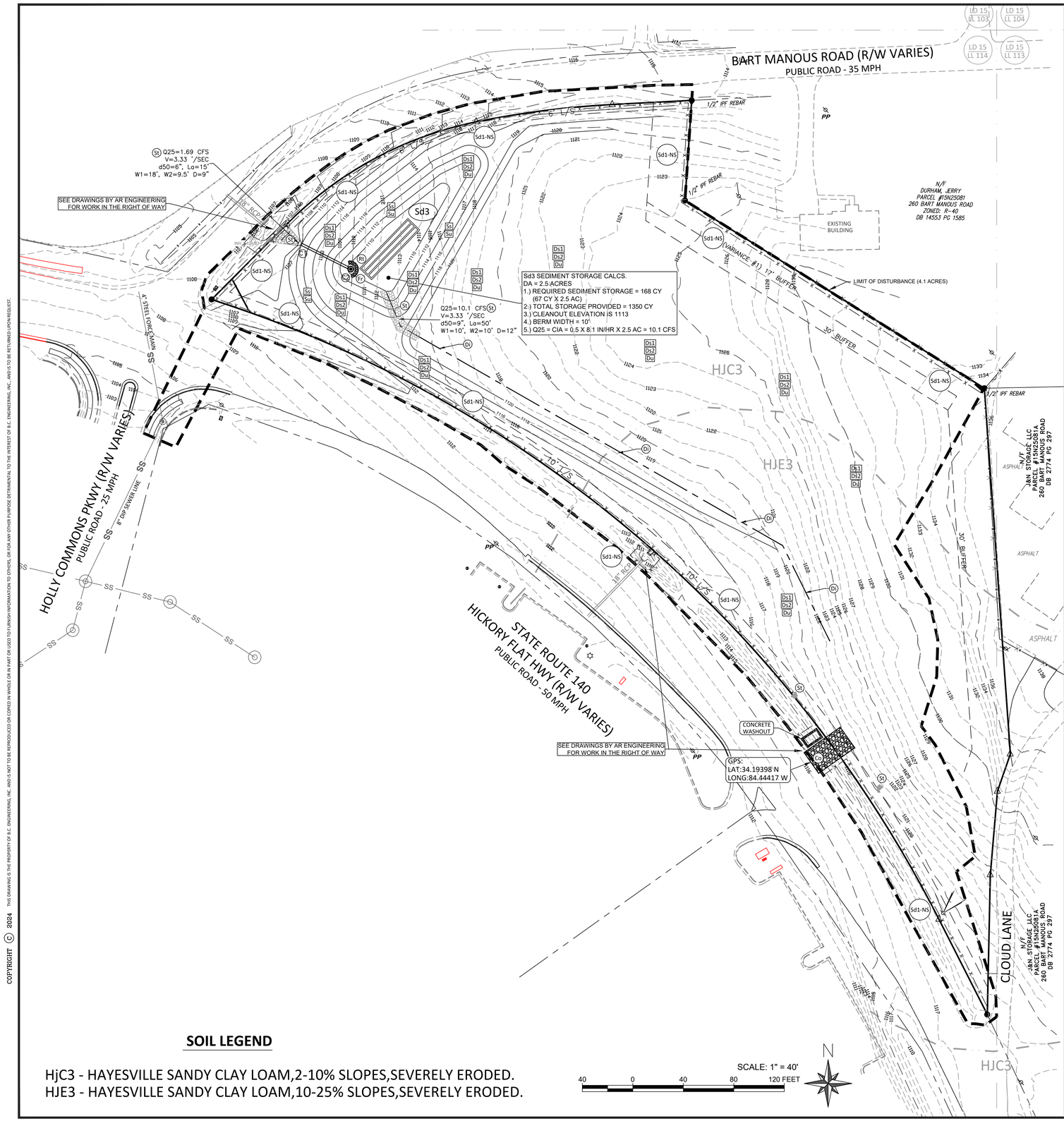
4195 HICKORY FLAT HWY
BASIN MAPS
LAND LOT 115
15TH DISTRICT, 1ST SECTION
CHEROKEE COUNTY
PREPARED FOR
JACOB DYLAN

GEORGIA REGISTERED NO. 26083 PROFESSIONAL ENGINEER BRIAN W. COLE
09/13/24

DRAWN BY: NBG	REVISION	DATE	DESCRIPTION
CHECKED BY: BC			
DATE: 09/13/24			
SCALE: AS NOTED			
LAND LOTS: 115			
DISTRICT: 15TH			
SECTION: 1ST			

SHEET NO. 11 OF 23

JOB NO. 2023-082



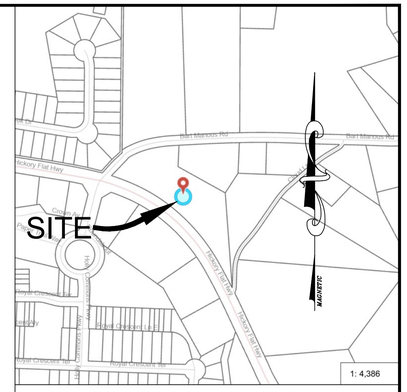
EROSION CONTROL NOTES:

1.) EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.
2.) ALL DISTURBED AREAS TO BE GRASSED AS SOON AS CONSTRUCTION PHASES PERMIT.
3.)THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION CONTROL MEASURES AND PRACTICES PRIOR TO LAND DISTURBING ACTIVITIES.
4.) CUT AND FILL SLOPES SHALL NOT EXCEED 2H:1V ON ALL SLOPES.
5.) ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.
6.) AMMENDMTS/ REVISIONS TO THE ES&PC PLAN WHICH HAVE A SIGNIFICANT EFFECT ON BMP'S WITH A HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL.
7.) INSPECTIONS BY CERTIFIED PERSONNEL PROVIDED BY THE PRIMARY PERMITTEE AND THE ASSOCIATED RECORDS SHALL BE KEPT ON SITE IN COMPLIANCE WITH GAR. 100001.
8.) WASTE MATERIALS SHALL NOT BE DISCHARGED INTO WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.
9.) IT IS THE RESPONSIBILITY OF THE PRIMARY PERMITTEE TO PREPARE THE NOI.
10.) NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE 25 OR 50-FOOT UNDISTURBED STREAM BUFFERS AS MEASURED FROM THE POINT OF WRESTED VEGETATION OR WITHIN 25-FEET OF THE COASTAL MARSHLAND BUFFER AS MEASURED FROM THE JURISDICTIONAL DETERMINATION LINE WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES & PERMITS.
11.) THIS ES&PC PLAN IS IN COMPLIANCE WITH WASTE DISPOSAL & SANITARY SEWER REGULATIONS DURING AND AFTER CONSTRUCTION.
12.) THIS PROJECT DOES NOT DISCHARGE STORMWATER INTO AN IMPAIRED STREAM SEGMENT, OR WITHIN 1 LINEAR MILE UPSTREAM OF AND WITHIN THE SAME WATERSHED, AS ANY PORTION OF A BIOTA IMPAIRED STREAM SEGMENT (BIG CREEK).
13.) 67 CY/ AC. SEDIMENT STORAGE SUBSTANTIALLY HANDLED BY Sd4 - TEMPORARY SEDIMENT TRAP (SEE CALCULATIONS ON SHEET 8)
14.) SEDIMENT STORAGE VOLUME MUST BE IN PLACE PRIOR TO, AND DURING ALL LAND DISTURBANCE ACTIVITIES UNTIL FINAL STABILIZATION OF THE SITE HAS BEEN ACHIEVED.
15.) CONTRACTOR MUST HAUL OFF ALL SOLID WASTE TO AN APPROVED LANDFILL. SOLID WASTE BURNING ON SITE IS PROHIBITED.
16.) THE DESIGN PROFESSIONAL WHO PREPARED THE ES&PC PLAN IS TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMP'S WITHIN 7 DAYS AFTER INSTALLATION.
17.) CONTRACTOR MUST ADHERE TO CHEROKEE COUNTY EROSION AND SEDIMENT CONTROL REGULATIONS AND THE "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA"
18.) SEDIMENT / EROSION CONTROL FACILITIES AND STORM DRAINAGE FACILITIES SHALL BE INSTALLED PRIOR TO ANY OTHER CONSTRUCTION.
19.) ALL GRADED AREAS SHALL BE STABILIZED IMMEDIATELY WITH A FAST- GROWING COVER AND/OR MULCH.
20.) OWNER/ DEVELOPER AND CONTRACTOR SHALL BE RESPONSIBLE DURING CONSTRUCTION FOR THE CONTINUOUS MAINTENANCE OF SEDIMENT AND EROSION CONTROL MEASURES AS CALLED FOR ON DRAWINGS AND SPECIFICATIONS.
21.) SEDIMENT AND EROSION CONTROL MEASURES SHALL NOT BE REMOVED UNTIL ALL CONSTRUCTION IS COMPLETE AND UNTIL A PERMANENT GROUND COVER HAS BEEN ESTABLISHED.
22.) SILT FENCE SHALL BE LOCATED ON SITE TO PREVENT SEDIMENT AND EROSION FROM LEAVING PROPERTY LIMITS.
23.) SILT FENCE SHALL BE CLEANED OR REPLACED WHEN SILT HAS ACCUMULATED TO ONE-HALF THE ORIGINAL HEIGHT OF THE BARRIER.
24.) "THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION CONTROL MEASURES AND PRACTICES PRIOR TO LAND DISTURBING ACTIVITIES. EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES AND THE INSPECTIONS AND REPAIRS WILL BE MADE BY:

NAME: JACOB DYLAN
ADDRESS: 4195 HICKORY FLAT HIGHWAY
CANTON, GA. 30115
PHONE (24HR.): (770)-851-7663

25.) PETROLEUM STORAGE SHALL BE PROVIDED BY ONE OF THE FOLLOWING METHODS:
- ALL PETROLEUM STORAGE CONTAINERS SHALL BE LOCATED IN A SECONDARY CONTAINMENT AREA.
- PETROLEUM STORAGE CONTAINERS SHALL BE COVERED WITH PLASTIC SHEETING OR BE LOCATED UNDER A TEMPORARY ROOF.

NOTES:
- -THE RECEIVING STREAM IS AN UNNAMED TRIBUTARY TO CANTON CREEK. THE UNNAMED TRIBUTARY IS NOT SUPPORTING BIO F. CANTON CREEK IS SUPPORTING. THE DEVELOPMENT SHOULD NOT HAVE A NEGATIVE EFFECT ON CANTON CREEK.
- -THE SITE IS CURRENTLY DEVELOPED.
- -24-HOUR CONTACT: (770)-851-7663
- -RUNOFF COEFFICIENT "CN": PRE DEV- 60, POST DEV- 79
- -THE PROPOSED CONSTRUCTION IS 1 BUILDING & PARKING LOT.
- - THERE ARE NO BUFFERED STATE WATERS ON OR WITHIN 200' OF THE SITE.



VICINITY MAP (N.T.S.)

PROJECT PERMITTEE:
MACK DEVELOPMENT GROUP, LLC.

24-HOUR CONTACT:
MACK DEVELOPMENT GROUP, LLC.
JACOB DYLAN
770-851-7663

PROPERTY INFORMATION:
PIN: 15-0115-0059
TIN: 15N25 031
ZONED: R40

WATER AND SEWER:
CHEROKEE COUNTY
WATER & SEWER

PROPERTY OWNER:
AMERIGAS PROPANE L.P.
PO BOX 798
VALLEY FORGE, PA 19482

SITE ADDRESS:
4195 HICKORY FLAT HWY
CANTON, GA 30115

SOIL LEGEND

HjC3 - HAYESVILLE SANDY CLAY LOAM,2-10% SLOPES,SEVERELY ERODED.
HJE3 - HAYESVILLE SANDY CLAY LOAM,10-25% SLOPES,SEVERELY ERODED.

TOTAL SITE AREA=3.92 ACRES
TOTAL AREA OF DISTURBANCE=4.1 AC.

NO REFUELING TO BE DONE ON SITE

BRIAN W. COLE
GSWCC
LEVEL II CERTIFICATION NO.
0000000089

B.C. ENGINEERING, INC.
116 NORTH MAIN ST.
CUMMING, GA 30040
PHONE: (770) 205-6181
FAX: (770) 205-6162
EMAIL: office@bcengineering-ga.com

4195 HICKORY FLAT HWY
EROSION CONTROL PHASE 1
LAND LOT 115
15TH DISTRICT, 1ST SECTION
CHEROKEE COUNTY
PREPARED FOR
JACOB DYLAN

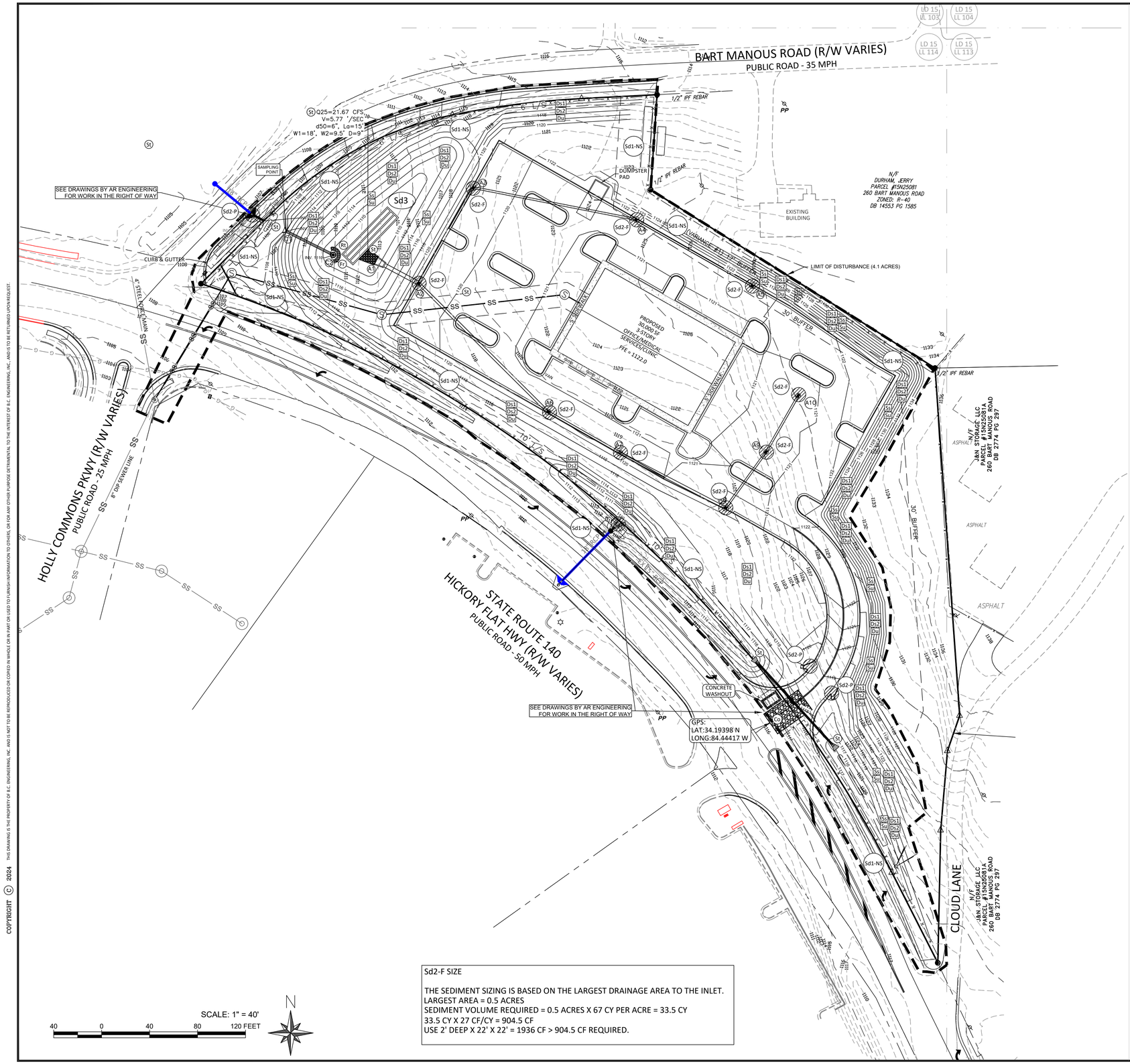
GEORGIA REGISTERED NO. 23093 PROFESSIONAL ENGINEER BRIAN W. COLE
09/13/24

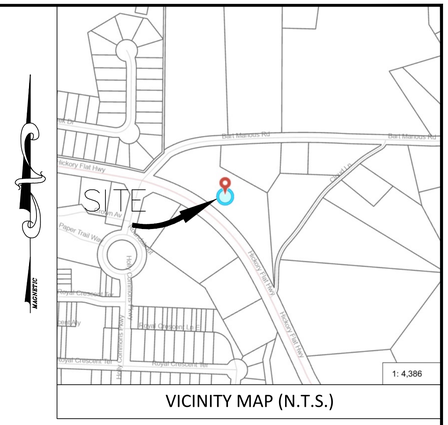
DESCRIPTION	DATE	REVISION

DRAWN BY: NBG
CHECKED BY: BC
DATE: 09/13/24
SCALE: AS NOTED
LAND LOTS: 115
DISTRICT: 15TH
SECTION: 1ST

SHEET NO. 12 OF 23

JOB NO. 2023-082





VICINITY MAP (N.T.S.)

PROJECT PERMITTEE:
MACK DEVELOPMENT GROUP, LLC.

24-HOUR CONTACT:
MACK DEVELOPMENT GROUP, LLC.
JACOB DYLAN
770-851-7663

PROPERTY INFORMATION:
PIN: 15-0115-0059
TIN: 15N25 031
ZONED: R40

WATER AND SEWER:
CHEROKEE COUNTY
WATER & SEWER

PROPERTY OWNER:
AMERIGAS PROPANE L.P.
PO BOX 798
VALLEY FORGE, PA 19482

SITE ADDRESS:
4195 HICKORY FLAT HWY
CANTON, GA 30115

Sd2-F SIZE

THE SEDIMENT SIZING IS BASED ON THE LARGEST DRAINAGE AREA TO THE INLET.
LARGEST AREA = 0.5 ACRES
SEDIMENT VOLUME REQUIRED = 0.5 ACRES X 67 CY PER ACRE = 33.5 CY
33.5 CY X 27 CF/CY = 904.5 CF
USE 2' DEEP X 22' X 22' = 1936 CF > 904.5 CF REQUIRED.

SCALE: 1" = 40'
40 0 40 80 120 FEET

N

NO REFUELING TO BE DONE ON SITE

BRIAN W. COLE
GSWCC
LEVEL II CERTIFICATION NO.
0000000089

B.C. ENGINEERING, INC.
116 NORTH MAIN ST.
CUMMING, GA 30040
PHONE: (770) 205-6181
FAX: (770) 205-6162
EMAIL: office@bcengineering-ga.com

4195 HICKORY FLAT HWY
EROSION CONTROL PHASE 2
LAND LOT 115
15TH DISTRICT, 1ST SECTION
CHEROKEE COUNTY
PREPARED FOR
JACOB DYLAN

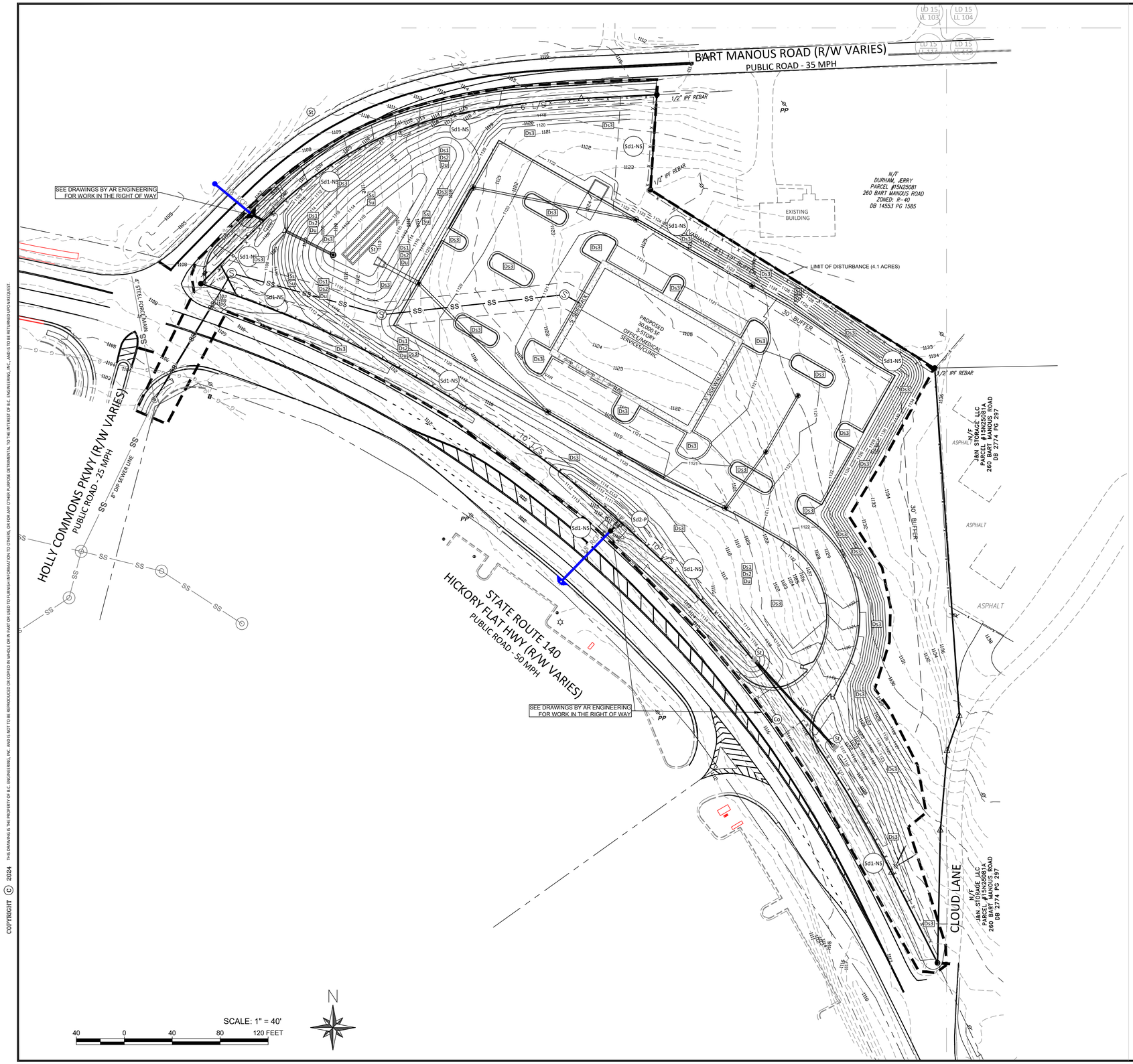
GEORGIA REGISTERED NO. 22083 PROFESSIONAL ENGINEER BRIAN W. COLE
09/13/24

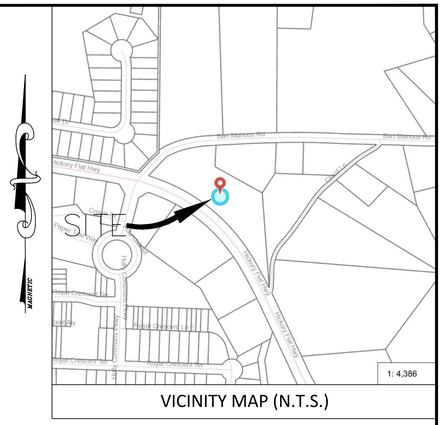
REVISION	DATE	DESCRIPTION

DRAWN BY: NBG
CHECKED BY: BC
DATE: 09/13/24
SCALE: AS NOTED
LAND LOTS: 115
DISTRICT: 15TH
SECTION: 1ST

SHEET NO. 13 OF 23

JOB NO.
2023-082





VICINITY MAP (N.T.S.)

PROJECT PERMITTEE:
MACK DEVELOPMENT GROUP, LLC.

24-HOUR CONTACT:
MACK DEVELOPMENT GROUP, LLC.
JACOB DYLAN
770-851-7663

PROPERTY INFORMATION:
PIN: 15-0115-0059
TIN: 15N25 031
ZONED: R40

WATER AND SEWER:
CHEROKEE COUNTY
WATER & SEWER

PROPERTY OWNER:
AMERIGAS PROPANE L.P.
PO BOX 798
VALLEY FORGE, PA 19482

SITE ADDRESS:
4195 HICKORY FLAT HWY
CANTON, GA 30115

NO REFUELING TO BE DONE ON SITE

BRIAN W. COLE
GSWCC
LEVEL II CERTIFICATION NO.
0000000089

B.C. ENGINEERING, INC.
116 NORTH MAIN ST.
CUMMING, GA 30040
PHONE: (770) 205-6181
FAX: (770) 205-6162
EMAIL: office@bcengineering-ga.com

4195 HICKORY FLAT HWY
EROSION CONTROL PHASE 2
LAND LOT 115
15TH DISTRICT, 1ST SECTION
CHEROKEE COUNTY
PREPARED FOR
JACOB DYLAN

GEORGIA REGISTERED NO. 22093 PROFESSIONAL ENGINEER BRIAN W. COLE
09/13/24

REVISION	DATE	DESCRIPTION

DRAWN BY: NBG
CHECKED BY: BC
DATE: 09/13/24
SCALE: AS NOTED
LAND LOTS: 115
DISTRICT: 15TH
SECTION: 1ST

SHEET NO. 14 OF 23

JOB NO.
2023-082

EROSION, SEDIMENTATION & POLLUTION CONTROL PLAN CHECKLIST
STAND ALONE CONSTRUCTION PROJECTS

SWCD: Limestone Valley

Project Name: 4195 Hickory Flat Hwy. **Address:** 4195 Hickory Flat Hwy.

Local Issuing Authority: Cherokee County **Date on Plans:** 09/ /2024

Name & Email of person filling out checklist: Brian Cole

Plan Page #	Included Y/N	TO BE SHOWN ON ES&PC PLAN
15	y	1 The applicable Erosion, Sedimentation and Pollution Control Plan Checklist established by the Commission as of January 1 of the year in which the land-disturbing activity was permitted. (The completed Checklist must be submitted with the ES&PC Plan or the Plan will not be reviewed)
16	y	2 Level II certification number issued by the Commission, signature and seal of the certified design professional. (Signature, seal and Level II number must be on each sheet pertaining to ES&PC plan or the Plan will not be reviewed)
	na	3 Limits of disturbance shall be no greater than 50 acres at any one time without prior written authorization from the GAEPD District Office. If GAEPD approves the request to disturb 50 acres or more at any one time, the Plan must include at least 4 of the BMPs listed in Appendix 1 of this checklist and the GAEPD approval letter. * (A copy of the written approval by GAEPD must be attached to the plan for the Plan to be reviewed.)
12-16	y	4 The name and phone number of the 24-hour contact responsible for erosion, sedimentation and pollution controls.
12-16	y	5 Provide the name, address, email address, and phone number of primary permittee.
12-16	y	6 Note total and disturbed acreages of the project or phase under construction.
12-16	y	7 Provide the GPS location of the construction exit for the site. Give the Latitude and Longitude in decimal degrees.
all	y	8 Initial date of the Plan and the dates of any revisions made to the Plan including the entity who requested the revisions.
16	y	9 Description of the nature of construction activity and existing site conditions.
12-14	y	10 Provide vicinity map showing site's relation to surrounding areas. Include designation of specific phase, if necessary.
16	y	11 Identify the project receiving waters and describe all sensitive adjacent areas including streams, lakes, residential areas, wetlands, marshlands, etc. which may be affected.
16	y	12 Design professional's certification statement and signature that the site was visited prior to development of the ES&PC Plan as stated on **Part IV page 19** of the permit.
16	y	13 Design professional's certification statement and signature that the permittee's ES&PC Plan provides for an appropriate and comprehensive system of BMPs and sampling to meet permit requirements as stated on **Part IV page 19** of the permit. *
16	y	14 Clearly note the statement that "The design professional who prepared the ES&PC Plan is to inspect the installation of the initial sediment storage requirements and perimeter control BMPs within 7 days after installation." in accordance with **Part IV.A.5 page 25** of the permit. *
16	y	15 Clearly note the statement that "Non-exempt activities shall not be conducted within the 25 or 50-foot undisturbed stream buffers as measured from the point of wrested vegetation or within 25-feet of the coastal marshland buffer as measured from the Jurisdictional Determination Line without first acquiring the necessary variances and permits."
16	y	16 Provide a description of any buffer encroachments and indicate whether a buffer variance is required.
16	y	17 Clearly note the statement that "Amendments/revisions to the ES&PC Plan which have a significant effect on BMPs with a hydraulic component must be certified by the design professional." *
16	y	18 Clearly note the statement that "Waste materials shall not be discharged to waters of the State, except as authorized by a Section 404 permit." *
16	y	19 Clearly note statement that "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."
16	y	20 Clearly note statement that "Erosion control measures will be maintained at all times. If full implementation of the approved Plan does not provide for effective erosion control, additional erosion and sediment control measures shall be implemented to control or treat the sediment source."
16	y	21 Clearly note the statement "Any disturbed area left exposed for a period greater than 14 days shall be stabilized with mulch or temporary seeding."
16	y	22 Any construction activity which discharges storm water into an Impaired Stream Segment, or within 1 linear mile upstream of and within the same watershed as, any portion of a Biota Impaired Stream Segment must comply with Part III. C. of the permit. Include the completed Appendix 1 listing all the BMPs that will be used for those areas of the site which discharge to the Impaired Stream Segment. *
16	y	23 If a TMDL Implementation Plan for sediment has been finalized for the Impaired Stream Segment (identified in Item 22 above) at least six months prior to submittal of NOI, the ES&PC Plan must address any site-specific conditions or requirements included in the TMDL Implementation Plan. *
16	y	24 BMPs for concrete washdown of tools, concrete mixer chutes, hoppers and the rear of the vehicles. Washout of the drum at the construction site is prohibited. *
16	y	25 Provide BMPs for the remediation of all petroleum spills and leaks.
16	y	26 Description of the measures that will be installed during the construction process to control pollutants in storm water that will occur after construction operations have been completed. *
16	y	27 Description of practices to provide cover for building materials and building products on site. *
16	y	28 Description of the practices that will be used to reduce the pollutants in storm water discharges. *
16	y	29 Description and chart or timeline of the intended sequence of major activities which disturb soils for the major portions of the site (i.e., initial perimeter and sediment storage BMPs, clearing and grubbing activities, excavation activities, utility activities, temporary and final stabilization).
16	y	30 Provide complete requirements of Inspections and record keeping by the primary permittee. *
16	y	31 Provide complete requirements of Sampling Frequency and Reporting of sampling results. *
16	y	32 Provide complete details for Retention of Records as per Part IV.F. of the permit. *
16	y	33 Description of analytical methods to be used to collect and analyze the samples from each location. *
16	y	34 Appendix B rationale for NTU values at all outfall sampling points where applicable. *
16	y	35 Delineate all sampling locations, perennial and intermittent streams and other water bodies into which storm water is discharged. *
16	y	36 A description of appropriate controls and measures that will be implemented at the construction site including: (1) initial sediment storage requirements and perimeter control BMPs, (2) intermediate grading and drainage BMPs, and (3) final BMPs. For construction sites where there will be no mass grading and the initial perimeter control BMPs, intermediate grading and drainage BMPs, and final BMPs are the same, the Plan may combine all of the BMPs into a single phase. *
16	y	37 Graphic scale and North arrow.
16	y	38 Existing and proposed contour lines with contour lines drawn at an interval in accordance with the following:

Map Scale	Ground Slope	Contour Intervals, ft.
1 inch = 100ft or larger scale	Flat 0 - 2%	0.5 or 1
	Rolling 2 - 8%	1 or 2
	Steep 8% +	2,5 or 10

16	n	39 Use of alternative BMPs whose performance has been documented to be equivalent to or superior to conventional BMPs as certified by a Design Professional (unless disapproved by GAEPD or the Georgia Soil and Water Conservation Commission). Please refer to the Alternative BMP Guidance Document found at www.gaswcc.georgia.gov.
16	n	40 Use of alternative BMP for application to the Equivalent BMP List. Please refer to Appendix A-2 of the Manual for Erosion & Sediment Control in Georgia 2016 Edition. *
16	n	41 Delineation of the applicable 25-foot or 50-foot undisturbed buffers adjacent to state waters and any additional buffers required by the Local Issuing Authority. Clearly note and delineate all areas of impact.
16	yn	42 Delineation of on-site wetlands and all state waters located on and within 200 feet of the project site.
16	y	43 Delineation and acreage of contributing drainage basins on the project site.
16	y	44 Provide hydrology study and maps of drainage basins for both the pre- and post-developed conditions. *
16	y	45 An estimate of the runoff coefficient or peak discharge flow of the site prior to and after construction activities are completed.
12-13	y	46 Storm-drain pipe and weir velocities with appropriate outlet protection to accommodate discharges without erosion. Identify/Delineate all storm water discharge points.
12	y	47 Soil series for the project site and their delineation.
12-14	y	48 The limits of disturbance for each phase of construction.
12	y	49 Provide a minimum of 67 cubic yards of sediment storage per acre drained using a temporary sediment basin, retrofitted detention pond, and/or excavated inlet sediment traps for each common drainage location. Sediment storage volume must be in place prior to and during all land disturbance activities until final stabilization of the site has been achieved. A written justification explaining the decision to use equivalent controls when a sediment basin is not attainable must be included in the Plan for each common drainage location in which a sediment basin is not provided. A written justification as to why 67 cubic yards of storage is not attainable must also be given. Worksheets from the Manual included for structural BMPs and all calculations used by the storage design professional to obtain the required sediment when using equivalent controls. When discharging from sediment basins and impoundments, permittees are required to utilize outlet structures that withdraw water from the surface, unless infeasible. If outlet structures that withdraw water from the surface are not feasible, a written justification explaining this decision must be included in the Plan.
12-14	y	50 Location of Best Management Practices that are consistent with and no less stringent than the Manual for Erosion and Sediment Control in Georgia. Use uniform coding symbols from the Manual, Chapter 6, with legend.
17-14	y	51 Provide detailed drawings for all structural practices. Specifications must, at a minimum, meet the guidelines set forth in the Manual for Erosion and Sediment Control in Georgia.
17	y	52 Provide vegetative plan, noting all temporary and permanent vegetative practices. Include species, planting dates and seeding, fertilizer, lime and mulching rates. Vegetative plan shall be site specific for appropriate time of the year that seeding will take place and for the appropriate geographic region of Georgia.

* If using this checklist for a project that is less than 1 acre and not part of a common development but within 200 ft of a perennial stream, the * checklist items would be N/A.

Effective January 1, 2024

NO REFUELING TO BE DONE ON SITE

BRIAN W. COLE
GSWCC
LEVEL II CERTIFICATION NO.
0000000089

B.C. ENGINEERING, INC.
116 NORTH MAIN ST.
CUMMING, GA 30040
PHONE: (770) 205-6181
FAX: (770) 205-6162
EMAIL: office@bcengineering-ga.com

4195 HICKORY FLAT HWY
STORMWATER DETAILS
LAND LOT 115
15TH DISTRICT, 1ST SECTION
CHEROKEE COUNTY
PREPARED FOR
JACOB DYLAN

GEORGIA REGISTERED NO. 33083 PROFESSIONAL ENGINEER BRIAN W. COLE
09/13/24

DRAWN BY: NBG	REVISION	DATE	DESCRIPTION
CHECKED BY: BC			
DATE: 09/13/24			
SCALE: AS NOTED			
LAND LOTS: 115			
DISTRICT: 15TH			
SECTION: 1ST			

SHEET NO. 15 OF 23

JOB NO. 2023-082

PROJECT SPECIFIC ES&PC PLAN CHECKLIST NOTES

(3) THE PROPOSED SITE CONSTRUCTION WILL NOT DISTURB MORE THAN 50 ACRES AT ONE TIME.

(4) 24-HOUR LOCAL CONTACT:
MACK DEVELOPMENT GROUP
JACOB DYLAN
770-851-7663

(5) PRIMARY PERMITTEE:
MACK DEVELOPMENT GROUP
JACOB DYLAN 770-851-7663

(6) PROJECT AREA = 3.92 AC
INITIAL LIMITS OF DISTURBANCE= 4.1 AC.
TOTAL LIMITS OF DISTURBANCE = 4.1 AC.

(7) GPS LOCATION PROJECT : 34.34.19398, -84.44417 (LAT / LONG)

(9) DESCRIPTION AND NATURE OF THE CONSTRUCTION ACTIVITY
THE PROJECT WILL CONSIST OF THE CONSTRUCTION OF A 30,000 SF THREE STORY OFFICE MEDICAL SERVICES CLINIC FACILITY. THE POLLUTANT SOURCES WILL BE SILT, SEDIMENT, AND OTHER SUSPENDED SOLIDS DURING THE CONSTRUCTION PROCESS AS WELL AS RUNOFF FROM THE IMPERVIOUS AREAS AFTER CONSTRUCTION. Sd4-C ALONG WITH Sd2 BE WILL UTILIZED FOR THE SILT CONTROL. AN Sd3 WILL BE INSTALLED IN PHASE ONE FOR SEDIMENT CONTROL. A DIVERSION DITCH WILL BE INSTALLED TO DIRECT WATER TO THE Sd3.The SITE WAS PREVIOUSLY DEVELOPED.

(11) THE PROJECT'S INITIAL RECEIVING WATER IS AN UNNAMED TRIBUTARY TO CANTON CREEK. THE UNNAMED TRIBUTARY IS NOT SUPPORTING BIO - F. CANTON CREEK IS SUPPORTING. THE DEVELOPMENT SHOULD NOT HAVE A NEGATIVE EFFECT ON CANTON CREEK.

(13) THE FOLLOWING STATEMENT AND THE SIGNATURE OF THE DESIGN PROFESSIONAL MUST BE SHOWN ON THE ES&PC PLAN OR UNDER ES&PC NOTES. "I CERTIFY THAT THE PERMITTEE'S EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN PROVIDES FOR AN APPROPRIATE AND COMPREHENSIVE SYSTEM OF BEST MANAGEMENT PRACTICES REQUIRED BY THE GEORGIA WATER QUALITY CONTROL ACT AND THE DOCUMENT "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA" (MANUAL) PUBLISHED BY THE **GEORGIA** SOIL AND WATER CONSERVATIONCOMMISSION AS OF JANUARY 1 OF THE YEAR IN WHICH THE LAND-DISTURBING ACTIVITY WAS PERMITTED, PROVIDES FOR THE SAMPLING OFTHE RECEIVING WATER(S) OR THE SAMPLING OF THE STORM WATER OUTFALLS AND THAT THE DESIGNED SYSTEM OF BEST MANAGEMENT PRACTICES AND SAMPLING METHODS IS EXPECTED TO MEET THE REQUIREMENTS CONTAINED IN THE GENERAL NPDES PERMIT NO. GAR 100001.".

Brian W. Cole 09/20/2024
SIGNATURE DATE

(12) THE FOLLOWING STATEMENT AND THE SIGNATURE OF THE DESIGN PROFESSIONAL MUST BE SHOWN ON THE ES&PC PLAN OR UNDER ES&PCNOTES. "I CERTIFY UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED AFTER A SITE VISIT TO THE LOCATIONS DESCRIBED HEREIN BY MYSELFOR MY AUTHORIZED AGENT, UNDER MY SUPERVISION."

Brian W. Cole 09/20/2024
SIGNATURE DATE

(14) THE DESIGN PROFESSIONAL WHO PREPARED THE ES&PC PLAN IS TO INSPECT THE INSTALLATION OF INITIAL SEDIMENT STORAGE REQUIREMENTS, PERIMETER CONTROL BMPs, AND SEDIMENT BASINS IN ACCORDANCE WITH PART IV.A.5. WITHIN 7 DAYS AFTER INSTALLATION.

(15) NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE 25 OR 50-FOOT UNDISTURBED STREAM BUFFERS AS MEASURED FROM THE POINT OF WRESTED VEGETATION OR WITHIN 25-FEET OF THE COASTAL MARSHLAND BUFFER AS MEASURED FROM THE JURISDICTIONAL DETERMINATION LINE WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS.

(16) THERE WILL BE NO ENCROACHMENTS IN THE BUFFER, THEREFORE A BUFFER PERMIT IS NOT REQUIRED. THERE ARE NO STREAM BUFFERS ONSITE.

(17) AMENDMENTS/REVISIONS TO THE EX&PC PLAN WHICH HAVE A SIGNIFICANT EFFECT ON THE BMPs WITH A HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL.

(18) WASTE MATERIALS SHALL NOT BE DISCHARGED TO THE WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.

(19) 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.

(20) EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.

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

(22) THE PROJECT DOES NOT DISCHARGE STORM WATER INTO AN IMPAIRED STREAM SEGMENT, OR WITHIN 1 LINEAR MILE UPSTREAM OF AND WITHIN THE SAME WATERSHED AS, ANY PORTION OF A BIOTA IMPAIRED STREAM SEGMENT.

(23) IF A TMDL IMPLEMENTATION PLAN FOR SEDIMENT HAS BEEN FINALIZED FOR THE IMPAIRED STREAM SEGMENT AT LEAST SIX MONTHS PRIOR TO SUBMITTAL OF NOI, THE ES&PC PLAN MUST ADDRESS ANY SITE-SPECIFIC CONDITIONS OR REQUIREMENTS INCLUDED IN THE TMDL IMPLEMENTATION PLAN. N/A

(24) CONCRETE TRUCK WASHING - AREA TO BE USED TO WASHDOWN TOOLS, CONCRETE MIXER CHUTES, HOPPERS AND THE REAR OF VEHICLES. **WASHOUT OF THE DRUM AT CONSTRUCTION SITE IS PROHIBITED**.

(25) BMP'S FOR PETROLEUM SPILLS AND LEAKS:
LOCAL, STATE AND MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND PROCEDURES WILL BE MADE AVAILABLE TO SITE PERSONNEL. MATERIAL AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREAS. TYPICAL MATERIALS AND EQUIPMENT INCLUDES, BUT IS NOT LIMITED TO, BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, GOGGLES, CAT LITTER, SAND, SAWDUST AND PROPERLY LABELED PLASTIC AND METAL WASTE CONTAINERS. SPILL PREVENTION PRACTICES AND PROCEDURES WILL BE REVIEWED AFTER A SPILL AND ADJUSTED AS NECESSARY TO PREVENT FUTURE SPILLS. ALL SPILLS WILL BE CLEANED UP IMMEDIATELY UPON DISCOVERY. ALL SPILLS WILL BE REPORTED AS REQUIRED BY LOCAL, STATE AND FEDERAL REGULATIONS. FOR SPILLS THAT IMPACT SURFACE WATER (LEAVE A SHEEN ON SURFACE WATER) OR SPILLS OF AN UNKNOWN AMOUNT, THE NATIONAL RESPONSE CENTER (NRC) SHALL BE CONTACTED WITHIN 24 HOURS AT 1-800-424-8802. FOR SPILLS GREATER THAN 25 GALLONS AND NO SURFACE WATER IMPACTS, THE GEORGIA EPD WILL BE CONTACTED WITHIN 24 HOURS. FOR SPILLS LESS THAN 25 GALLONS AND NO SURFACE WATER IMPACTS, THE SPILL WILL BE CLEANED UP AND LOCAL AGENCIES WILL BE CONTACTED AS REQUIRED. THE CONTRACTOR SHALL NOTIFY THE DESIGN PROFESSIONAL WHO PREPARED THIS PLAN IF MORE THAN 1320 GALLONS OF PETROLEUM IS STORED ONSITE (THIS INCLUDES CAPACITIES OF EQUIPMENT) OR IF ANY ONE PIECE OF EQUIPMENT HAS A CAPACITY GREATER THAN 660 GALLONS. THE CONTRACTOR WILL NEED A SPILL PREVENTION CONTAINMENT AND COUNTERMEASURES PLAN PREPARED BY THE LICENSED PROFESSIONAL.

(26) A DESCRIPTION OF MEASURES THAT WILL BE INSTALLED DURING THE CONSTRUCTION PROCESS TO CONTROL POLLUTANTS IN STORM WATER THAT WILL OCCUR AFTER CONSTRUCTION OPERATIONS HAVE BEEN COMPLETED.

THIS DEVELOPMENT WILL HAVE ONE Sd4-C TO HANDLE THE SEDIMENT FROM THE PROPOSED MEDICAL FACITY . SD2 BE WILL UTILIZED FOR THE SILT CONTROL. A PERMANENT Sd3/STORMWATER POND WILL BE INSTALLED IN PHASE ONE FOR SEDIMENT CONTROL. A DIVERSION DITCH WILL BE INSTALLED TO DIRECT WATER TO THE SD3.THE SITE WAS PREVIOUSLY DEVELOPED.

(27) DESCRIPTIION OF PRACTICES TO PROVIDE COVER FOR BUILDING MATERIALS AND BUILDING PRODECTS ON SITE. PLASTIC SHEETING TO COVER TEMPORARY ROOFS, TO COVER BUILDING MATERIALS, BUILDING PRODUCTS, CONSTRUCTION WASTES, TRASH, LANDSCAPE MATERIALS, FERTILIZERS, PESTICIDES, HERBICIDES, DETERGENTS, SANITARY WASTE,AND OTHER MATERIALS IN ORDER TO MINIMIZE EXPOSURE TO PRECIPITATION AND TO STORMWATER.

(28) DESCRIPTION OF THE PRACTICES THAT WILL BE USED TO REDUCE THE POLLUTANTS IN STORM WATER DISCHARGES CONTAINERS FOR PRODUCTS SUCH AS FUELS, LUBRICANTS AND TARS WILL BE INSPECTED DAILY FOR LEAKS AND SPILLS. THIS INCLUDES ON-SITE VEHICLE AND MACHINERY DAILY INSPECTIONS AND REGULAR PREVENTATIVE MAINTENANCE OF SUCH EQUIPMENT. EQUIPMENT MAINTENANCE AREAS WILL BE LOCATED AWAY FROM STATE WATER, NATURAL DRAINS AND STORMWATER DISCHARGE INLETS. IN ADDITION, TEMPORARY FUELING TANKS SHALL HAVE A SECONDARY CONTAINMENT LINER TO PREVENT/MINIMIZE SITE CONTAMINATION. DISCHARGE OF OILS, FUELS AND DISPOSAL AS REQUIRED BY LOCAL AND STATE REGULATIONS.

PAINTS/FINISHES/SOLVENTS- ALL PRODUCTS WILL BE STORED IN TIGHTLY SEALED ORIGINAL CONTAINERS WHEN NOT IN USE. EXCESS PRODUCT WILL NOT BE DISCHARGED TO THE STORM WATER COLLECTION SYSTEM. EXCESS PRODUCT, MATERIALS USED WITH THESE PRODUCTS, AND PRODUCT CONTAINERS WILL BE DISPOSED OF ACCORDING TO MANUFACTURES SPECIFICATIONS AND RECOMMENDATIONS.

CONCRETE TRUCK WASHING- AREA TO BE USED TO WASHDOWN TOOLS, CONCRETE MIXER CHUTES, HOPPERS AND THE REAR OF VEHICLES. **WASHOUT OF THE DRUM AT CONSTRUCTION SITE IS PROHIBITED**.

FERTILZER/HERBICIDES- THESE PRODUCTS WILL BE APPLIED AT RATES THAT DO NOT EXCEED THE MANUFACTURE'S SPECIFICATIONS OR ABOVE THE GUIDELINES SET FORTH IN THE CROP ESTABLISHMENTS OR IN THE GSWCC MANUAL FOR EROSION AND SEDIMENTS CONTROL IN GEORGIA. ANY STORAGE OF THESE MATERIALS WILL BE UNDER ROOF IN SEALED CONTAINERS.

BUILDING MATERIALS- NO BUILDING OR CONSTRUCTION MATERIALS WILL BE BURIED OR DISPOSED ONSITE. ALL SUCH MATERIAL WILL BE DISPOSED OF IN PROPER WASTE DISPOSAL PROCEDURES.

(29) SEE THIS SHEET FOR CONSTRUCTION SCHEDULE.

(30) INSPECTIONS:

a. PERMITTEE REQUIREMENTS

1. EACH DAY WHEN ANY TYPE OF CONSTRUCTION ACTIVITY HAS TAKEN PLACE AT A PRIMARY PERMITTEE'S SITE, CERTIFIED PERSONNEL PROVIDED BY THE PRIMARY PERMITTEE SHALL INSPECT: (A) ALL AREAS AT THE PRIMARY PERMITTEE'S SITE WHERE PETROLEUM PRODUCTS ARE STORED, USED, OR HANDLED FOR SPILLS AND LEAKS FROM VEHICLES AND EQUIPMENT AND (B) ALL LOCATIONS AT THE PRIMARY PERMITTEE'S SITE WHERE VEHICLES ENTER OR EXIT THE SITE FOR EVIDENCE OF OFF-SITE SEDIMENT TRACKING. THESE INSPECTIONS MUST BE CONDUCTED UNTIL A NOTICE OF TERMINATION IS SUBMITTED.
2. MEASURE AND RECORD RAINFALL WITHIN DISTURBED AREAS OF THE SITE THAT HAVE NOT MET FINAL STABILIZATION ONCE EVERY 24 HOURS EXCEPT ANY NON WORKING SATURDAY, NON WORKING SUNDAY, AND NON WORKING FEDERAL HOLIDAY. THE DATA COLLECTED FOR THE PURPOSE WITH COMPLIANCE OF THIS PERMIT SHALL BE REPRESENTATIVE OF THE MONITORED ACTIVITY. MEASUREMENT OF RAINFALL MAY BE SUSPENDED IF ALL AREAS OF THE SITE HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION.
3. CERTIFIED PERSONNEL (PROVIDED BY THE PRIMARY PERMITTEE) SHALL INSPECT THE FOLLOW AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.5 INCHES RAINFALL OR GREATER (UNLESS SUCH STORM ENDS AFTER 5:00 PM ON ANY FRIDAY OR ON ANY NON-WORKING SATURDAY, NON-WORKING SUNDAY OR ANY NON-WORKING FEDERAL HOLIDAY IN WHICH CASE THE INSPECTION SHALL BE COMPLETED BY THE END OF THE NEXT BUSINESS DAY AND/OR WORKING DAY, WHICHEVER OCCURS FIRST) : (A) DISTURBED AREAS OF THE PRIMARY PERMITTEE'S CONSTRUCTION SITE ; (B) AREAS USED BY THE PRIMARY PERMITTEE FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION ; AND (C) STRUCTURAL CONTROL MEASURES. EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN APPLICABLE TO THE PRIMARY PERMITTEE'S SITE SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. WHERE DISCHARGE LOCATIONS OR POINTS ARE ACCESSIBLE, THEY SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATER(S). FOR AREAS OF A SITE THAT HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION, THE PERMITTEE MUST COMPLY WITH PART IV.D.4.A.(4). THESE INSPECTIONS MUST BE CONDUCTED UNTIL A NOTICE OF TERMINATION IS SUBMITTED.
4. CERTIFIED PERSONNEL (PROVIDED BY THE PRIMARY PERMITTEE) SHALL INSPECT AT LEAST ONCE PER MONTH DURING THE TERM OF THIS PERMIT (I.E., UNTIL A NOTICE OF TERMINATION IS RECEIVED BY EPD) THE AREAS OF THE SITE THAT HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION. THESE AREAS SHALL BE INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE DRAINAGE SYSTEM AND THE RECEIVING WATER(S). EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. WHERE DISCHARGE LOCATIONS OR POINTS ARE ACCESSIBLE, THEY SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATER(S).
5. BASED ON THE RESULTS OF EACH INSPECTION, THE SITE DESCRIPTION AND THE POLLUTION PREVENTION AND CONTROL MEASURES IDENTIFIED IN THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN, THE PLAN SHALL BE REVISED AS APPROPRIATE NOT LATER THAN SEVEN (7) CALENDAR DAYS FOLLOWING EACH INSPECTION. IMPLEMENTATION OF SUCH CHANGES SHALL BE MADE AS SOON AS PRACTICAL BUT IN NO CASE LATER THAN SEVEN (7) CALENDAR DAYS FOLLOWING EACH INSPECTION.
6. A REPORT OF EACH INSPECTION THAT INCLUDES THE NAME(S) OF CERTIFIED PERSONNEL MAKING EACH INSPECTION, THE DATE(S) OF EACH INSPECTION, CONSTRUCTION PHASE (I.E., INITIAL, INTERMEDIATE OR FINAL), MAJOR OBSERVATIONS RELATING TO THE IMPLEMENTATION OF THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN, AND ACTIONS TAKEN IN ACCORDANCE WITH PART IV.D.4.A.(5). OF THE PERMIT SHALL BE MADE AND RETAINED AT THE SITE OR BE READILY AVAILABLE AT A DESIGNATED ALTERNATE LOCATION UNTIL THE ENTIRE SITE OR THAT PORTION OF A CONSTRUCTION PROJECT THAT HAS BEEN PHASED HAS UNDERGONE FINAL STABILIZATION AND A NOTICE OF TERMINATION IS SUBMITTED TO EPD. SUCH REPORTS SHALL BE READILY AVAILABLE BY END OF THE SECOND BUSINESS DAY AND.OR WORKING DAY AND SHALL IDENTIFY ALL INCIDENTS OF BEST MANAGEMENT PRACTICES THAT HAVE NOT BEEN PROPERLY INSTALLED AND/OR MAINTAINED AS DESCRIBED IN THE PLAN. WHERE THE REPORT DOES NOT IDENTIFY ANY INCIDENTS, THE INSPECTION REPORT SHALL CONTAIN A CERTIFICATION THAT THE BEST MANAGEMENT PRACTICES ARE IN COMPLIANCE WITH THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN. THE REPORT SHALL BE SIGNED IN ACCORDANCE WITH PART V.G.2. OF THIS PERMIT.

MAINTENANCE

THE PLAN SHALL INCLUDE A DESCRIPTION OF PROCEDURES TO ENSURE THE TIMELY MAINTENANCE OF VEGETATION, EROSION AND SEDIMENT CONTROL MEASURES AND OTHER PROTECTIVE MEASURES IDENTIFIED IN THE SITE PLAN.

(31) SAMPLING FREQUENCY

1. THE PRIMARY PERMITTEE MUST SAMPLE IN ACCORDANCE WITH THE PLAN AT LEAST ONCE FOR EACH RAINFALL EVENT DESCRIBED BELOW. FOR A QUALIFYING EVENT, THE PERMITTEE SHALL SAMPLE AT THE BEGINNING OF ANY STORM WATER DISCHARGE TO A MONITORED RECEIVING WATER AND/OR FROM A MONITORED OUTFALL LOCATION WITHIN IN FORTY-FIVE (45) MINUTES OR AS SOON AS POSSIBLE.
2. HOWEVER, WHERE MANUAL AND AUTOMATIC SAMPLING ARE IMPOSSIBLE (AS DEFINED IN THIS PERMIT), OR ARE BEYOND THE PERMITTEE'S CONTROL, THE PERMITTEE SHALL TAKE SAMPLES AS SOON AS POSSIBLE, BUT IN NO CASE MORE THAN TWELVE (12) HOURS AFTER THE BEGINNING OF THE STORM WATER DISCHARGE.
3. SAMPLING BY THE PERMITTEE SHALL OCCUR FOR THE FOLLOWING QUALIFYING EVENTS:

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

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

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

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

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

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

NON-STORM WATER DISCHARGES.

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

REPORTING

1. THE APPLICABLE PERMITTEES ARE REQUIRED TO SUBMIT THE SAMPLING RESULTS TO THE EPD AT THE ADDRESS SHOWN IN PART II.C. BY THE FIFTEENTH DAY OF THE MONTH FOLLOWING THE REPORTING PERIOD. REPORTING PERIODS ARE MONTHS DURING WHICH SAMPLES ARE TAKEN IN ACCORDANCE WITH THIS PERMIT. SAMPLING RESULTS SHALL BE IN A CLEARLY LEGIBLE FORMAT. UPON WRITTEN NOTIFICATION, EPD MAY REQUIRE THE APPLICABLE PERMITTEE TO SUBMIT THE SAMPLING RESULTS ON A MORE FREQUENT BASIS. SAMPLING AND ANALYSIS OF ANY STORM WATER DISCHARGE(S) OR THE RECEIVING WATER(S) BEYOND THE MINIMUM FREQUENCY STATED IN THIS PERMIT MUST BE REPORTED IN A SIMILAR MANNER TO THE EPD. SIGNED IN ACCORDANCE WITH PART V.G.2. THE SAMPLING REPORTS MUST BE SUBMITTED TO EPD USING THE ELECTRONIC SUBMITTAL SERVICE PROVIDED BY THE EPD. SAMPLING REPORTS MUST BE SUBMITTED TO EPD UNTIL SUCH TIME AS A N.O.T IS SUBMITTED IN ACCORDANCE WITH PART VI.
2. ALL SAMPLING REPORTS SHALL INCLUDE THE FOLLOWING INFORMATION:
   a. THE RAINFALL AMOUNT, DATE, EXACT PLACE AND TIME OF SAMPLING OR MEASUREMENTS;
   b. THE NAME(S) OF THE CERTIFIED PERSONNEL WHO PERFORMED THE SAMPLING AND MEASUREMENTS;
   c. THE DATE(S) ANALYSES WERE PERFORMED;
   d. THE TIME(S) ANALYSES WERE INITIATED;
   e. THE NAME(S) OF THE CERTIFIED PERSONNEL WHO PERFORMED THE ANALYSES;
   f. REFERENCES AND WRITTEN PROCEDURES, WHEN AVAILABLE, FOR THE ANALYTICAL TECHNIQUES OR METHODS USED;
   g. THE RESULTS OF SUCH ANALYSES, INCLUDING THE BENCH SHEETS, INSTRUMENT READOUTS, COMPUTER DISKS OR TAPES, ETC., USED TO DETERMINE THESE RESULTS;
   h. RESULTS WHICH EXCEED 1000 NTU SHALL BE REPORTED AS "EXCEEDS 1000 NTU;" AND
   i. CERTIFICATION STATEMENT THAT SAMPLING WAS CONDUCTED AS PER THE PLAN.
3. ALL WRITTEN CORRESPONDENCE REQUIRED BY THIS PERMIT SHALL BE SUBMITTED BY RETURN RECEIPT CERTIFIED MAIL (OR SIMILAR SERVICE) TO THE APPROPRIATE DISTRICT OFFICE OF THE EPD ACCORDING TO THE SCHEDULE IN APPENDIX A OF THIS PERMIT. THE PERMITTEE SHALL RETAIN A COPY OF THE PROOF OF SUBMITTAL AT THE CONSTRUCTION SITE OR THE PROOF OF SUBMITTAL SHALL BE READILY AVAILABLE AT THE DESIGNATED LOCATION FROM COMMENCEMENT OF CONSTRUCTION UNTIL SUCH TIME AS A NOT IS SUBMITTED IN ACCORDANCE WITH PART VI.

(32) RETENTION OF RECORDS

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

(33) SAMPLING REQUIREMENTS

THIS PERMIT REQUIRES THE MONITORING OF NEPHELOMETRIC TURBIDITY IN RECEIVING WATER(S) OR OUTFALLS IN ACCORDANCE WITH THIS PERMIT. THIS PARAGRAPH SHALL NOT APPLY TO ANY LAND DISTURBANCE ASSOCIATED WITH THE CONSTRUCTION OF SINGLE-FAMILY HOMES WHICH ARE NOT PART OF A SUBDIVISION OR PLANNED COMMON DEVELOPMENT UNLESS FIVE (5) ACRES OR MORE WILL BE DISTURBED. THE FOLLOWING PROCEDURES CONSTITUTE EPD'S GUIDELINES FOR SAMPLING TURBIDITY.

a. SAMPLING REQUIREMENTS SHALL INCLUDE THE FOLLOWING:
1. A USGS TOPOGRAPHIC MAP, A TOPOGRAPHIC MAP OR A DRAWING (REFERRED TO AS A TOPOGRAPHIC MAP) THAT IS A SCALE EQUAL TO OR MORE DETAILED THAN A 1:24000 MAP SHOWING THE LOCATION OF THE SITE OR THE STAND ALONE CONSTRUCTION; (A) THE LOCATION OF ALL PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES AS SHOWN ON A USGS TOPOGRAPHIC MAP, AND ALL OTHER PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES LOCATED DURING MANDATORY FIELD VERIFICATION, INTO WHICH THE STORM WATER IS DISCHARGED AND (B) THE RECEIVING WATER AND/OR OUTFALL SAMPLING LOCATIONS. WHEN THE PERMITTEE HAS CHOSEN TO USE A USGS TOPOGRAPHIC MAP AND THE RECEIVING WATER(S) IS NOT SHOWN ON THE USGS TOPOGRAPHIC MAP, THE LOCATION OF THE RECEIVING WATER(S) MUST BE HAND-DOWN ON THE USGS TOPOGRAPHIC MAP FROM WHERE THE STORM WATER(S) ENTERS THE RECEIVING WATER(S) TO THE POINT WHERE THE RECEIVING WATER(S) COMBINES WITH THE FIRST BLUE LINE STREAM SHOWN ON THE USGS TOPOGRAPHIC MAP;
2. A WRITTEN NARRATIVE OF SITE SPECIFIC ANALYTICAL METHODS USED TO COLLECT, HANDLE AND ANALYZE THE SAMPLES INCLUDING QUALITY CONTROL/QUALITY ASSURANCE PROCEDURES. THIS NARRATIVE MUST INCLUDE PRECISE SAMPLING METHODOLOGY FOR EACH SAMPLING LOCATION;
3. WHEN THE PERMITTEE HAS DETERMINED THAT SOME OR ALL OUTFALLS WILL BE SAMPLED, A RATIONALE MUST BE INCLUDED ON THE PLAN FOR THE NTU LIMIT(S) SELECTED FROM APPENDIX B. THIS RATIONALE MUST INCLUDE THE SIZE OF THE CONSTRUCTION SITE, THE CALCULATION OF THE SIZE OF THE SURFACE WATER DRAINAGE AREA, AND THE TYPE OF RECEIVING WATER(S) (I.E., TROUT STREAM OR SUPPORTING WARM WATER FISHERIES); AND
4. ANY ADDITIONAL INFORMATION EPD DETERMINES NECESSARY TO BE PART OF THE PLAN. EPD WILL PROVIDE WRITTEN NOTICE TO THE PERMITTEE OF THE INFORMATION NECESSARY AND THE TIME LINE FOR SUBMITTAL.

b. SAMPLE TYPE. ALL SAMPLING SHALL BE COLLECTED BY "GRAB SAMPLES" AND THE ANALYSIS OF THESE SAMPLES MUST BE CONDUCTED IN ACCORDANCE WITH METHODOLOGY AND TEST PROCEDURES ESTABLISHED BY 40 CFR PART 136 (UNLESS OTHER TEST PROCEDURES HAVE BEEN APPROVED); THE GUIDANCE DOCUMENT TITLED "NPDES STORM WATER SAMPLING GUIDANCE DOCUMENT, EPA 833-B-92-001" AND GUIDANCE DOCUMENTS THAT MAY BE PREPARED BY THE EPD.
1. SAMPLE CONTAINERS SHOULD BE LABELED PRIOR TO COLLECTING THE SAMPLES.
2. SAMPLES SHOULD BE WELL MIXED BEFORE TRANSFERRING TO A SECONDARY CONTAINER.
3. LARGE MOUTH, WELL CLEANED AND RINSED GLASS OR PLASTIC JARS SHOULD BE USED FOR COLLECTING SAMPLES. THE JARS SHOULD BE CLEANED THOROUGHLY TO AVOID CONTAMINATION.
4. MANUAL, AUTOMATIC OR RISING STAGE SAMPLING MAY BE UTILIZED. SAMPLES REQUIRED BY THIS PERMIT SHOULD BE ANALYZED IMMEDIATELY, BUT IN NO CASE LATER THAN 48 HOURS AFTER COLLECTION. HOWEVER, SAMPLES FROM AUTOMATIC SAMPLERS MUST BE COLLECTED NO LATER THAN THE NEXT BUSINESS DAY AFTER THEIR ACCUMULATION, UNLESS FLOW THROUGH AUTOMATED ANALYSIS IS UTILIZED. IF AUTOMATIC SAMPLING IS UTILIZED AND THE AUTOMATIC SAMPLER IS NOT ACTIVATED DURING THE QUALIFYING EVENT, THE PERMITTEE MUST UTILIZE MANUAL SAMPLING OR RISING STAGE SAMPLING DURING THE NEXT QUALIFYING EVENT. DILUTION OF SAMPLES IS NOT REQUIRED. SAMPLES MAY BE ANALYZED DIRECTLY WITH A PROPERLY CALIBRATED TUBIDIMETER. SAMPLES ARE NOT REQUIRED TO BE COOLED.
5. SAMPLING AND ANALYSIS OF THE RECEIVING WATER(S) OR OUTFALLS BEYOND THE MINIMUM FREQUENCY STATED IN THIS PERMIT MUST BE REPORTED TO EPD AS SPECIFIED IN PART IV.E

(34) SEE APPENDIX B ON THIS SHEET

(35) SEE SHEETS 10-12 FOR LOCATION OF SAMPLING POINTS.

(36) INITIAL PHASE CONSTRUCTION SCHEDULE NOTES:
- STAKE CLEARING LIMITS
- PRIOR TO BEGINNING DEMOLITION CONTRACTOR TO INSTALL SILT FENCE, CONSTRUCTION ENTRANCE, TEMPORARY SEDIMENT BASIN.
- CONTRACTOR TO DIRECT STORMWATER TO THE TEMPORARY SEDIMENT BASIN.
- INSTALL ALL EROSION CONTROL MEASURES, DIVERSION DITCHES AS SHOWN ON THE INITIAL PHASE PLAN (EROSION CONTROL MEASURES TO BE CONSTRUCTED AND FULLY FUNCTIONAL PRIOR TO ANY GRADING).
- BEGIN CLEARING AND GRUBBING.

INTERMEDIATE PHASE CONSTRUCTION SCHEDULE NOTES:
- INSTALL CONCRETE WASHOUT AREA
- BEGIN GRADING SITE
- BEGIN INSTALLING STORM (IF APPLICABLE)
- DIRECT TEMPORARY SEDIMENT BASIN DURING GRADING OF THE PROPERTY.
- INSTALL INLET SEDIMENT PROTECTION (SD2-F) (IF APPLICABLE)
- INSTALL OUTLET PROTECTION AT STORM OUTFALLS
- PROVIDE DS1, DS2 & SS FOR AREAS THAT HAVE NOT BEEN DISTURBED FOR MORE THAN 14 DAYS.
- MAINTAIN BMP'S AS NEEDED.

FINAL PHASE CONSTRUCTION SCHEDULE NOTES:
- MAINTAIN BMP'S AS GRADING PROGRESSES.
- FINAL GRADE PROPOSED BUILDING PAD AND PARKING LOT
- BEGIN INSTALLING BASE AND PAVING.
- BEGIN INSTALL PERMANENT VEGETATION AND LANDSCAPING, Ds3 AND SS
- RETAIN Du AND Ds1 IN FINAL PHASE UNTIL Ds3 IS ESTABLISHED.
- REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER SITE IS 100% STABILIZED.

(37) SEE SHEETS 11-14

(38) SEE SHEETS 11-14

(39)(40) NO ALTERNATIVE BMP'S HAVE BEEN SPECIFIED. USE OF ALTERNATIVE BMP FOR APPLICATION TO THE EQUIVALENT BMP LIST. PLEASE REFER TO APPENDIX A-2 OF THE MANUAL.

(41)(42) THERE ARE NO STATE WATERS LOCATED ON OR WITHIN 200 FEET OF THE PROJECT SITE.
THERE ARE NO TROUT STREAMS LOCATED ON OR WITHIN 200 FEET OF THE PROJECT SITE.

(43) SEE SHEET 11 FOR CONTRIBUTING DRAINAGE BASINS

(44) SEE PREVIOUSLY APPROVED HYDROLOGY STUDY ATTACHED WITH THESE PLANS

(45) ESTIMATE OF RUNOFF CN COEFFICIENT:
EXISTING CONDITIONS = 60
PROPOSED CONDITIONS = 79

(46) SEE SHEET 12-13

(47) SEE SHEET 12 FOR DELINEATION OF ONSITE SOILS

(48) SEE SHEET 12-14 FOR THE LIMITS OF DISTURBANCE FOR EACH PHASE OF DEVELOPMENT.

(49) SEE SHEET 12 FOR SEDIMENT STORAGE CALCULATIONS.

(50) SEE SHEET 12-14 FOR LOCATION OF BMP'S

(51) SEE SHEETS 17-19 FOR LOCATION OF EROSION CONTROL DETAILS

(52) SEE SHEET 17 FOR THE VEGETATION PLAN.

(34) APPENDIX B, NTU TABLES

Nephelometric Turbidity Unit (NTU) TABLES

Cold Water (Trout Stream)

Surface Water Drainage Area, square miles

Site Size, acres	0-4.99	5-9.99	10-24.99	25-49.99	50-99.99	100-249.99	250-499.99	500+
1.00-10	25	50	75	150	300	500	500	500
10.01-25	25	25	50	75	150	200	500	500
25.01-50	25	25	25	50	75	100	300	500
50.01-100	20	25	25	35	59	75	150	300
100+	20	20	25	25	25	50	60	100

Warm Water (Supporting Warm Water Fisheries)

Surface Water Drainage Area, square miles

Site Size, acres	0-4.99	5-9.99	10-24.99	25-49.99	50-99.99	100-249.99	250-499.99	500+
1.00-10	75	150	200	400	750	750	750	750
10.01-25	(50)	100	100	200	300	500	750	750
25.01-50	50	50	100	100	200	300	750	750
50.01-100	50	50	50	100	100	150	300	600
100+	50	50	50	50	50	100	200	100

To use these tables, select the size (acres) of the facility or common development. Then, select the surface water drainage area (square miles.) The NTU matrix value arrived at from the above tables is the one to use in Part III.C.4.

Example1: For a site size of 12.5 acres and a cold water drainage area of 37.5 square miles, the NTU value to use in Part III.C.4 is 75 NTU.

Example 2: For a site size of 51.7 acres and a warm water drainage area of 72 square miles, the NTu value to use in Part III.C.4 is 100 NTU.

(29) ANTICIPATED ACTIVITY SCHEDULE

	ACTIVITY	1	2	3	4	5	6	7	8	9	10	11	12
1	INSTALL SEDIMENT CONTROLS	■											
2	CLEARING AND GRADING	■	■	■	■								
3	STORM DRAIN INSTALLATION	■	■	■	■								
4	SANITARY SEWER INSTALLATION		■	■	■								
5	GRASS (TEMP.) (PERM.)	■						■					
6	UTILITY INSTALLATION			■	■								
7	MAINTAIN EROSION CONTROL	■	■	■	■	■	■	■	■				
8	BLDG. CONST. AND PAVING			■	■	■	■	■	■				
9	FINAL LANDSCAPING							■	■				
10	CLEAN UP								■				

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

BRIAN W. COLE
GSWCC
LEVEL II
CERTIFICATION NO.
0000000089

B.C. ENGINEERING, INC.
116 NORTH MAIN ST.
CUMMING, GA 30040
PHONE: (770) 205-6181
FAX: (770) 205-6162
EMAIL: office@bcengineering-ga.com

4195 HICKORY FLAT HWY
SWPPP
LAND LOT 115
15TH DISTRICT, 1ST SECTION
CHEROKEE COUNTY
PREPARED FOR
JACOB DYLAN

GEORGIA REGISTERED PROFESSIONAL ENGINEER NO. 22093 BRIAN W. COLE
09/13/24

REVISION	DATE	DESCRIPTION

DRAWN BY: NBG
CHECKED BY: BC
DATE: 09/13/24
SCALE: AS NOTED
LAND LOTS: 115
DISTRICT: 15TH
SECTION: 1ST

SHEET NO. 16 OF 23

JOB NO. 2023-082

DEFINITION

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

CONDITIONS

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

SPECIFICATIONS

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

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

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

APPLYING MULCH
WHEN MULCH IS USED WITHOUT SEEDING, MULCH SHALL BE APPLIED TO PROVIDE FULL COVERAGE OF THE EXPOSED AREA.
1. DRY STRAW OR HAY MULCH AND WOOD CHIPS SHALL BE APPLIED UNIFORMLY BY HAND OR BY MECHANICAL EQUIPMENT.
2. IF THE AREA WILL EVENTUALLY BE COVERED WITH PERENNIAL VEGETATION, 20-30 POUNDS OF NITROGEN PER ACRE IN ADDITION TO THE NORMAL AMOUNT SHALL BE APPLIED TO OFFSET THE UPTAKE OF NITROGEN CAUSED BY THE DECOMPOSITION OF THE ORGANIC MULCHES.
3. CUTBACK ASPHALT SHALL BE APPLIED UNIFORMLY. CARE SHOULD BE TAKEN IN AREAS OF PEDESTRIAN TRAFFIC DUE TO PROBLEMS OF "TRACKING IN" OR DAMAGE TO SHOES, CLOTHES, 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. 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. TACKIFERS AND BINDERS CAN BE SUBSTITUTED FOR EMULSIFIED ASPHALT. PLEASE REFER TO SPECIFICATION TB-TACKIFERS AND BINDERS. PLASTIC MESH OR NETTING WITH MESH NO LARGER THAN ONE INCH BY ONE INCH SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
2. NETTING OF THE APPROPRIATE SIZE SHALL BE USED TO ANCHOR WOOD WASTE. OPENINGS OF THE NETTING SHALL NOT BE LARGER THAN THE AVERAGE SIZE OF THE WOOD WASTE CHIPS.
3. POLYETHYLENE FILM SHALL BE ANCHOR TRENCHED AT THE TOP AS WELL AS INCREMENTALLY AS NECESSARY.

Ds1 DISTURBED AREA STABILIZATION WITH MULCHING

DEFINITION

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

CONDITIONS

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

SEEDING RATES FOR TEMPORARY SEEDING

SPECIES	RATE PER 1,000 SQ. FT.	RATE PER ACRE*	PLANTING DATES**
WHEAT	4.1 POUNDS	3 BU.	9/1–12/31
BARLEY	3.3 POUNDS	3 BU.	8/7–11/21
LESPEDEZA	0.9 POUNDS	40 POUNDS	2/1–5/1
LOVEGRASS, WEEPING	0.1 POUNDS	4 POUNDS	3/14–6/21
MILLET, BROWNTOP	0.9 POUNDS	40 POUNDS	4/1–7/1
MILLET, PEARL	1.1 POUNDS	50 POUNDS	5/1–8/1
OATS	2.9 POUNDS	4 BU.	9/1–12/1
RYE	3.9 POUNDS	3 BU.	7/14–12/1
RYEGRASS, ANNUAL	0.9 POUNDS	40 POUNDS	8/1–5/1
SUDANGRASS	1.4 POUNDS	60 POUNDS	4/1–9/1

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

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 OF THE EQUIVALENT PER ACRE (12-16 LBS./1,000 SQ.FT.) SHALL BE APPLIED. FERTILIZER SHOULD BE APPLIED BEFORE LAND PREPARATION AND INCORPORATED WITH A DISK, RIPPER OR CHISEL.

SEEDING

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

MULCHING

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

Ds2 DISTURBED AREA STABILIZATION WITH TEMPORARY SEEDING

DEFINITION

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

CONDITIONS

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

SPECIFICATIONS

GRADING AND SHAPING

GRADING AND SHAPING MAY NOT BE REQUIRED WHERE HYDRAULIC SEEDING AND FERTILIZER EQUIPMENT IS TO BE USED. VERTICAL BANKS SHALL BE SLOPED TO ENABLE PLANT ESTABLISHMENT.

WHEN CONVENTIONAL SEEDING AND FERTILIZING ARE TO BE DONE GRADE AND SHAPE WHERE FEASIBLE AND PRACTICAL, SO THAT EQUIPMENT CAN BE USED SAFELY AND EFFICIENTLY DURING SEEDBED PREPARATION, SEEDING, MULCHING AND MAINTENANCE OF THE VEGETATION.

CONCENTRATIONS OF WATER THAT WILL CAUSE EXCESSIVE SOIL EROSION SHALL BE DIVERTED TO A SAFE OUTLET. DIVERSIONS AND OTHER TREATMENT PRACTICES SHALL CONFORM WITH THE APPROPRIATE STANDARDS AND SPECIFICATIONS.

SEEDBED PREPARATION

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

BROADCAST PLANTINGS

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

INDIVIDUAL PLANTS

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

PLANTING

HYDRAULIC SEEDING

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

CONVENTIONAL SEEDING

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

NO-TILL SEEDING

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

INDIVIDUAL PLANTS

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

MULCHING

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

1. DRY STRAW OR DRY HAY OF GOOD QUALITY AND FREE OF WEED SEEDS CAN BE USED. DRY STRAW SHALL BE APPLIED AT THE RATE OF 2 TONS PER ACRE. DRY HAY SHALL BE APPLIED AT A RATE OF 2 1/2 TONS PER ACRE.
2. WOOD CELLULOSE MULCH OR WOOD PULP FIBER SHALL BE USED WITH HYDRAULIC SEEDING. IT SHALL BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE. DRYSTRAW OR DRY HAY SHALL BE APPLIED (AT THE RATE INDICATED ABOVE) AFTER HYDRAULIC SEEDING.
3. ONE THOUSAND POUNDS OF WOOD CELLULOSE OR WOOD PULP FIBER, WHICH INCLUDES A TACKIFIER, SHALL BE USED WITH HYDRAULIC SEEDING ON SLOES OF 3/4 : 1 OR STEEPER.
4. SERICEA LESPEDEZA HAY CONTAINING MATURE SEED SHALL BE APPLIED AT A RATE OF THREE TONS PER ACRE.
5. PINE STRAW OR PINE BARK SHALL BE APPLIED AT A THICKNESS OF 3 INCHES FOR BEDDING PURPOSES. OTHER SUITABLE MATERIALS IN SUFFICIENT QUANTITY MAY BE USED WHERE ORNAMENTALS OR OTHER GROUND COVERS ARE PLANTED. THIS IS NOT APPROPRIATE FOR SEEDED AREAS.
6. WHEN USING TEMPORARY EROSION CONTROL BLANKETS OR BLOCK SOD, MULCH IS NOT REQUIRED.
7. BITUMINOUS TREATED ROVING MAY BE APPLIED ON PLANTED AREAS ON SLOPES, IN DITCHES OR DRY WATERWAYS TO PREVENT EROSION. BITUMINOUS TREATED ROVING SHALL BE APPLIED WITHIN 24 HOURS AFTER AN AREA HAS BEEN PLANTED. APPLICATION RATES AND MATERIALS MUST MEET GEORGIA DEPARTMENT OF TRANSPORTATION SPECIFICATIONS.

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

APPLY 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:
1.EMULSIFIED ASPHALT CAN BE (A) SPRAYED UNIFORMLY ONTO THE MULCH AS IT IS EJECTED FROM THE BLOWER MACHINE OR (B) SPRAYED ON THE MUCH IMMEDIATELY FOLLOWING MULCH APPLICATION WHEN STRAW OR HAY IS SPREAD BY METHODS OTHER THAN SPECIAL BLOWER EQUIPMENT.
THE EQUIPMENT OF ASPHALT EMULSION AND WATER SHALL CONSIST OF A HOMOGENEOUS MIXTURE SATISFACTORY FOR SPRAYING. THE MIXTURE SHALL CONSIST OF 100 GALLONS OF GRADE SS-1H OR CSS-1H EMULSIFIED ASPHALT AND 100 GALLONS OF WATER PER TON OF MULCH.
CARE SHALL BE TAKEN AT ALL TIMES TO PROTECT STATE WATER, THE PUBLIC, ADJACENT PROPERTY, PAVEMENTS, CURBS, SIDEWALKS, AND ALL OTHER STRUCTURES FROM ASPHALT DISCOLORATION.
2. HAY AND STRAW MULCH SHALL BE PRESSED INTO THE SOIL IMMEDIATELY AFTER THE MULCH IS SPREAD. A SPECIAL "PACKER DISK" OR DISK HARROW WITH THE DISKS SET STRAIGHT MAYBE USED. THE DISKS MAYBE 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 PREAD. 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.

IRRIGATION

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

SEEDING RATE FOR PERMANENT SEEDING

SPECIES	RATE PER 1,000 SQ. FT.	RATE PER ACRE*	PLANTING DATES**
BAHIA, PENSACOLA	1.4 POUNDS	60 POUNDS	1/1–12/31
BERMUDA SPRIGS	0.9 CU FT.	40 CU FT.	3/14–7/14
CROWNVETCH	0.3 POUNDS	15 POUNDS	9/1–11/1
FESCUE, TALL	1.1 POUNDS	50 POUNDS	3/1–5/1 & 8/1–10/1
LESPEDEZA SERICEA	1.7 POUNDS	75 POUNDS	1/1–12/31
LOVEGRASS, WEEPING	0.1 POUNDS	4 POUNDS	3/14–6/21
REED CANARY	1.1 POUNDS	50 POUNDS	8/1–11/1
SUNFLOWER, AZTEC'MAX.	0.2 POUNDS	10 POUNDS	4/1–6/1

*Unusual site conditions may require heavier seeding rates
**Seeding dates may need to be altered to fit temperature variations and conditions

Ds3 DISTURBED AREA STABILIZATION WITH PERMANENT SEEDING

GRASS TYPE	PLANTING YEAR	FERTILIZER (NPK)	RATE (LBS/ ACRE)	NITROGEN TOP DRESSING (LBS/ ACRE)
COOL SEASON GRASSES	1ST 2ND MAINTENANCE	6-12-12 6-12-12 10-10-10	1500 1000 400	50-100 --- 30
WARM SEASON GRASSES	1ST 2ND MAINTENANCE	6-12-12 6-12-12 10-10-10	1500 800 400	50-100 50-100 30

FERTILIZER RATES FOR PERMANENT VEGETATION (Ds-3)

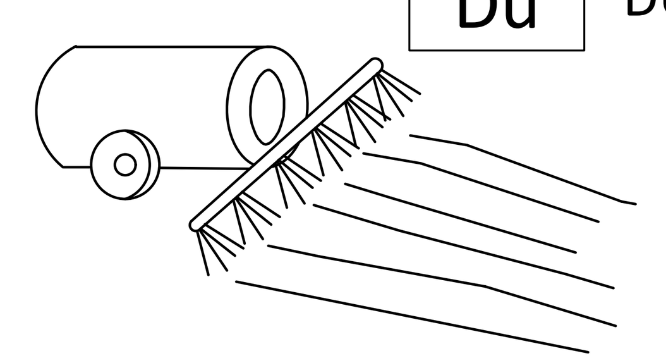
APPROPRIATE SOD VARIETIES FOR MOUNTAIN; BLUE RIDGE; AND RIDGES AND VALLEYS.

GRASS	VARIETY	GROWING SEASON
BERMUDA	COMMON TIFWAY TIFGREEEN, TIFLAWN	WARM WEATHER
TALL FESCUE	KENTUCKY	COOL WEATHER

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.
MIX FERTILIZER INTO SOIL SURFACE. FERTILIZE BASED ON SOIL TESTS OR GENERAL APPLICATION OF 10-10-10 @ 1000 LBS PER ACRE (1 LB /40 SQ. FT.)
AGRICULTURAL LIME SHOULD BE APPLIED BASED ON SOIL TESTS OR AT A RATE OF 1 TO 2 TONS / ACRE.

Ds4 STABILIZATION WITH SODDING

Du DUST CONTROL



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

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

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

TILLAGE. THIS PRACTICE IS DESIGNED TO ROUGHEN AND BRING CLODS TO THE SURFACE. IT IS AN EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE WIND EROSION STARTS.

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

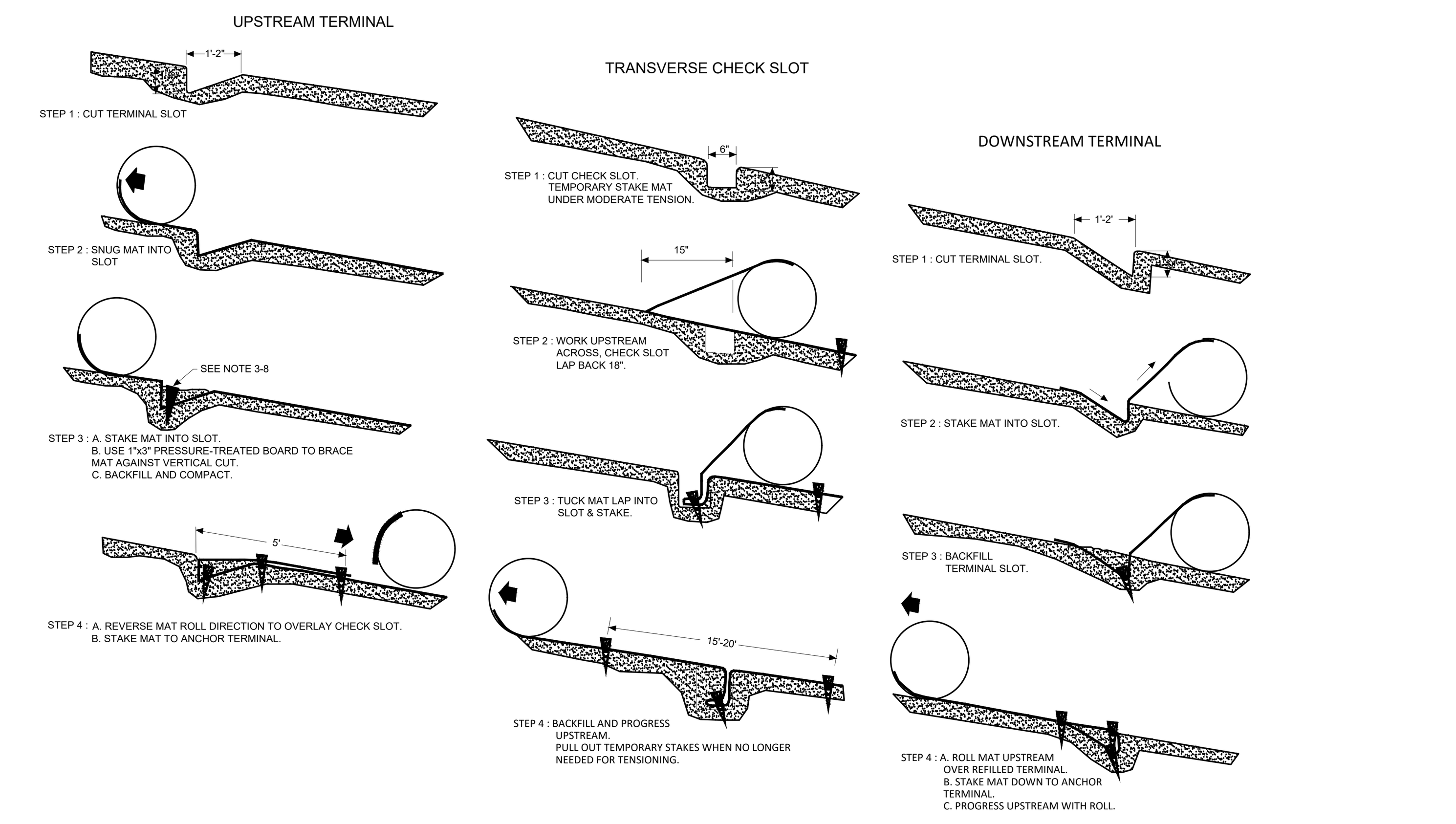
BARRIERS. SOLID BOARD FENCES, SNOWFENCES, BURLAP FENCES, CRATE WALLS, BALES OF HAY AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING. BARRIERS PLACED AT RIGHT ANGLES TO PREVAILING CURRENTS AT INTERVALS OF ABOUT 15 TIMES THEIR HEIGHT ARE EFFECTIVE IN CONTROLLING WIND EROSION.

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

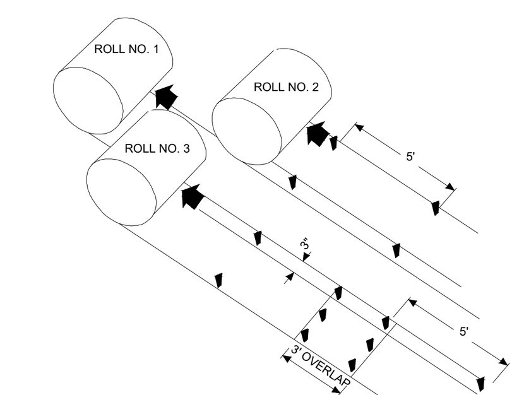
PERMANENT METHODS
PERMANENT VEGETATION. SEE STANDARD DS3 -DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION). EXISTING TREES AND LARGE SHRUBS MAY AFFORD VALUABLE PROTECTION IF LEFT IN PLACE.

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

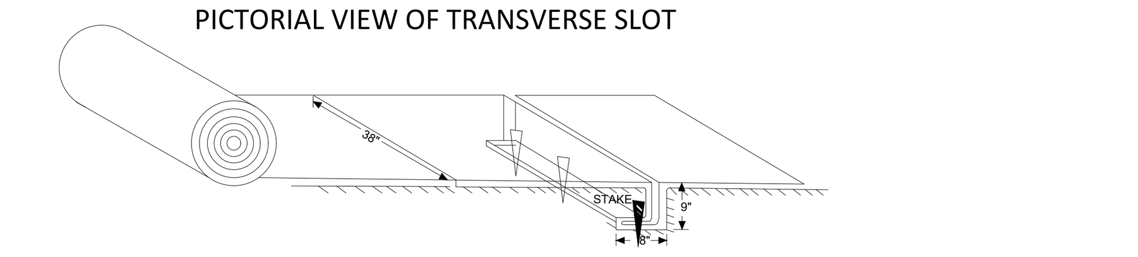
STONE. COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL. SEE STANDARD CR-CONSTRUCTION ROAD STABILIZATION.



SEQUENTIAL ROLL RUN OUT IN CHANNELS



PICTORIAL VIEW OF TRANSVERSE SLOT



INSTALLATION INSTRUCTIONS
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. 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.

INSTALLATION NOTES
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 DIAM ETER, AND ANY FOREIGN MATERIAL THAT WILL PREVENT CONTACT OF THE SOIL STABILIZATION 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 INSTALLATION.

STAPLES
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 PRIOR 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 ET(WITH PERMANENT VEGETATION).

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

Ss EROSION CONTROL MATTING AND BLANKETS

VEGETATION NOTES

MULCH OR TEMPORARY GRASSING SHALL BE APPLIED TO ALL EXPOSED AREAS WITHIN 14 DAYS OF DISTURBANCE. TEMPORARY GRASSING, INSTEAD OF MULCH, CAN BE APPLIED TO ROUGH GRADED AREAS THAT WILL BE EXPOSED FOR LESS THAN SIX MONTHS. IF AN AREA IS EXPECTED TO BE UNDISTURBED FOR LONGER THAN SIX MONTHS, PERMANENT PERENNIAL VEGETATION SHALL BE USED. IF OPTIMUM PLANTING CONDITIONS FOR TEMPORARY GRASSING IS LACKING, MULCH CAN BE USED AS A SINGULAR EROSION CONTROL DEVICE FOR UP TO SIX MONTHS BUT IT SHALL BE APPLIED AT THE APPROPRIATE DEPTH, ANCHORED, AND HAVE A CONTINUOUS 90% COVER OR GREATER OF THE SOIL SURFACE. REFER TO SPECIFICATION DS1-DISTURBED AREA STABILIZATION (WITH MULCHING ONLY).

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 (TEMPORARY VEGETATION, DS-2)
AGRICULTURAL LIME IS REQUIRED UNLESS SOIL TESTS INDICATE OTHERWISE. APPLY AGRICULTURAL LIME AT A RATE OF TWO TONS PER ACRE. GRADED AREAS REQUIRE LIME APPLICATION. SOILS CAN BE TESTED TO DETERMINE IF FERTILIZER IS NEEDED. ON REASONABLY FERTILE SOILS OR SOIL MATERIAL, FERTILIZER IS NOT REQUIRED. FOR SOILS WITH VERY LOW FERTILITY, 500 TO 700 POUNDS OF 10-10-10 FERTILIZER OR THE EQUIVALENT PER ACRE (12-16 LBS./1,000 SQ. FT.) SHALL BE APPLIED. FERTILIZER SHOULD BE APPLIED BEFORE LAND PREPARATION AND INCORPORATED WITH A DISK, RIPPER OR CHISEL.

LIME AND FERTILIZER RATES AND ANALYSIS (PERMANENT VEGETATION, DS-3)
AGRICULTURAL LIME IS REQUIRED AT THE 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. INITIAL FERTILIZATION, NITROGEN, TOPDRESSING, AND MAINTENANCE FERTILIZER REQUIREMENTS FOR EACH SPECIES OR COMBINATION OF SPECIES ARE LISTED IN TABLE 6-5.1.

MULCHING
MULCH IS REQUIRED FOR ALL PERMANENT VEGETATION APPLICATIONS. MULCH APPLIED TO SEEDED AREAS SHALL ACHIEVE 75% SOIL COVER. SELECT THE MULCHING MATERIAL FROM THE FOLLOWING AND APPLY AS INDICATED:
1. DRY STRAW OR DRY HAY OF GOOD QUALITY AND FREE OF WEED SEEDS CAN BE USED. DRY STRAW SHALL BE APPLIED AT THE RATE OF 2 TONS PER ACRE. DRY HAY SHALL BE APPLIED AT A RATE OF 2 1/2 TONS PER ACRE.
2. WOOD CELLULOSE MULCH OR WOOD PULP FIBER SHALL BE USED WITH HYDRAULIC SEEDING. IT SHALL BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE. DRY STRAW OR DRY HAY SHALL BE APPLIED (AT THE RATE INDICATED ABOVE) AFTER HYDRAULIC SEEDING.
3. ONE THOUSAND POUNDS OF WOOD CELLULOSE OR WOOD PULP FIBER, WHICH INCLUDES A TACKIFIER, SHALL BE USED WITH HYDRAULIC SEEDING ON SLOPES 3/4:1 OR STEEPER.
4. SERICEA LESPEDEZA HAY CONTAINING MATURE SEED SHALL BE APPLIED AT A RATE OF THREE TONS PER ACRE.
5. PINE STRAW OR PINE BARK SHALL BE APPLIED AT A THICKNESS OF 3 INCHES FOR BEDDING PURPOSES. OTHER SUITABLE MATERIALS IN SUFFICIENT QUANTITY MAY BE USED WHERE ORNAMENTALS OR OTHER GROUND COVERS ARE PLANTED. THIS IS NOT APPROPRIATE FOR SEEDED AREAS.
6. WHEN USING TEMPORARY EROSION CONTROL BLANKETS OR BLOCK SOD, MULCH IS NOT REQUIRED.
7. BITUMINOUS TREATED ROVING MAY BE APPLIED ON PLANTED AREAS ON SLOPES, IN DITCHES OR DRY WATERWAYS TO PREVENT EROSION. BITUMINOUS TREATED ROVING SHALL BE APPLIED WITHIN 24 HOURS AFTER AN AREA HAS BEEN PLANTED. APPLICATION RATES AND MATERIALS MUST MEET GEORGIA DEPARTMENT OF TRANSPORTATION SPECIFICATIONS.

BRIAN W. COLE
GSWCC
LEVEL II
CERTIFICATION NO.
0000000089

Know what's below. Call before you dig.

B.C. ENGINEERING, INC.
116 NORTH MAIN ST.
CUMMING, GA 30040
PHONE: (770) 205-6181
FAX: (770) 205-6162
EMAIL: office@bcengineering-ga.com

4195 HICKORY FLAT HWY
EROSION CONTROL DETAILS
LAND LOT 115
15TH DISTRICT, 1ST SECTION
CHEROKEE COUNTY
PREPARED FOR
JACOB DYLAN

09/13/24

REVISION	DATE	DESCRIPTION

DRAWN BY: NBG
CHECKED BY: BC
DATE: 09/13/24
SCALE: AS NOTED
LAND LOTS: 115
DISTRICT: 15TH
SECTION: 1ST

SHEET NO. 17 OF 23
JOB NO. 2023-082

Channel Report

Di

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. — Thursday, Sep 5 2024

DIVERSION DITCH

Trapezoidal

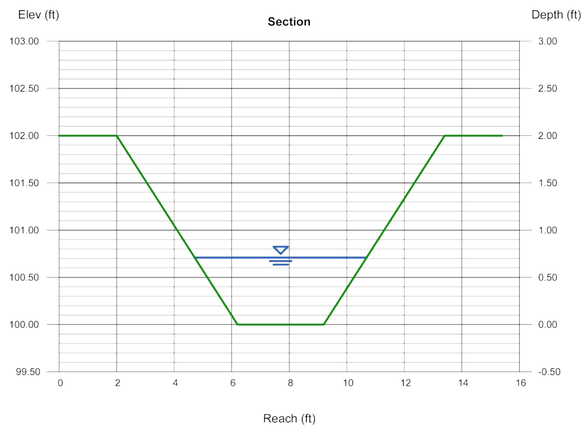
Bottom Width (ft)	= 3.00
Side Slopes (z:1)	= 2.10, 2.10
Total Depth (ft)	= 2.00
Invert Elev (ft)	= 100.00
Slope (%)	= 1.00
N-Value	= 0.025

Calculations

Compute by:	Known Q
Known Q (cfs)	= 12.00

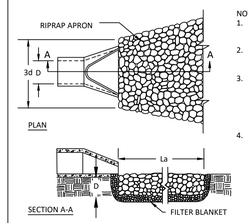
Highlighted

Depth (ft)	= 0.71
Q (cfs)	= 12.00
Area (sqft)	= 3.19
Velocity (ft/s)	= 3.76
Wetted Perim (ft)	= 6.30
Crit Depth, Yc (ft)	= 0.68
Top Width (ft)	= 5.98
EGL (ft)	= 0.93



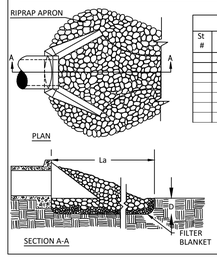
St RIPRAP OUTLET PROTECTION 43

PIPE OUTLET TO FLAT AREA – NO WELL DEFINED CHANNEL



NOTES:
1. La IS THE LENGTH OF THE RIPRAP APRON.
2. D = 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6".
3. IN A WELL-DEFINED CHANNEL, EXTEND THE APRON UP THE CHANNEL BANKS TO AN ELEVATION OF 6" ABOVE THE MAXIMUM TAILWATER DEPTH OR TO THE TOP OF THE BANK (WHICHEVER IS LESS).
4. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND THE SOIL FOUNDATION.

PIPE OUTLET TO WELL DEFINED CHANNEL



St - CALCULATIONS

St #	STRUCTURE	Do (in)	Q25 (cfs)	V25 (fps)	La (ft)	W1 (ft)	W2 (ft)	d50 (ft)	DEPTH (ft)

BRIAN W. COLE
GSWCC
LEVEL II
CERTIFICATION NO.
0000000089

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

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4195 HICKORY FLAT HWY
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JACOB DYLAN

GEORGIA REGISTERED NO. 26083 PROFESSIONAL ENGINEER BRIAN W. COLE
09/13/24

REVISION	DATE	DESCRIPTION

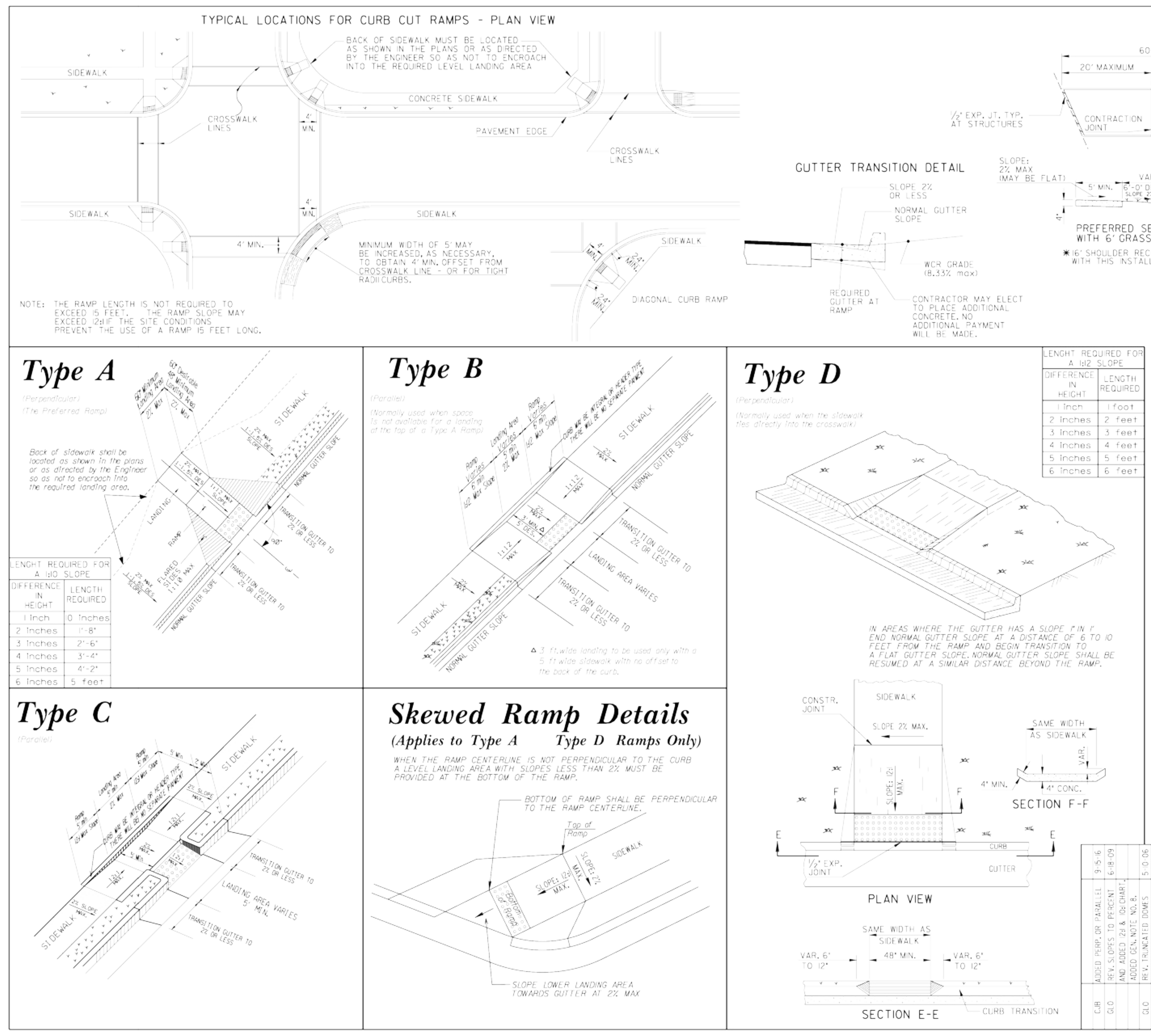
DRAWN BY: NBG
CHECKED BY: BC
DATE: 09/13/24
SCALE: AS NOTED
LAND LOTS: 115
DISTRICT: 15TH
SECTION: 1ST

SHEET NO. 1 OF 1

JOB NO. 2023-082

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

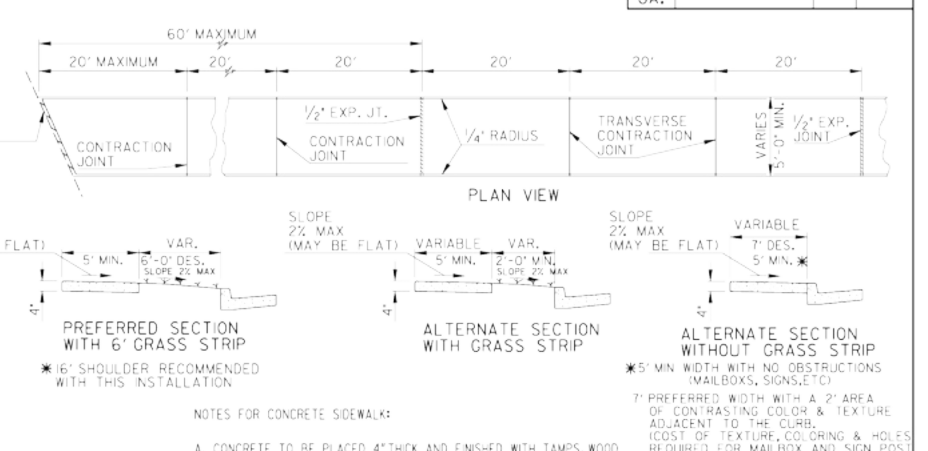
TYPICAL LOCATIONS FOR CURB CUT RAMPS - PLAN VIEW



LENGHT REQUIRED FOR A 1:10 SLOPE	
DIFFERENCE IN HEIGHT	LENGTH REQUIRED
1 Inch	0 Inches
2 Inches	1'-8"
3 Inches	2'-6"
4 Inches	3'-4"
5 Inches	4'-2"
6 Inches	5 feet

LENGHT REQUIRED FOR A 1:12 SLOPE	
DIFFERENCE IN HEIGHT	LENGTH REQUIRED
1 Inch	1 foot
2 Inches	2 feet
3 Inches	3 feet
4 Inches	4 feet
5 Inches	5 feet
6 Inches	6 feet

CONCRETE SIDEWALK DETAILS



✱(6' SHOULDER RECOMMENDED WITH THIS INSTALLATION

✱5' MIN WIDTH WITH NO OBSTRUCTIONS (MAILBOXS, SIGNS,ETC)

7' PREFERRED WIDTH WITH A 2' AREA OF CONTRASTING COLOR & TEXTURE ADJACENT TO THE CURB. (COST OF TEXTURE, COLORING & HOLES REQUIRED FOR MAILBOX AND SIGN POST SHALL BE INCLUDED IN THE PRICE BID FOR SIDEWALK)

NOTES FOR CONCRETE SIDEWALK:

A. CONCRETE TO BE PLACED 4" THICK AND FINISHED WITH TAMPS, WOOD FLOATS AND STIFF-BRISTLE BROOMS.
B. TRANSVERSE CONTRACTION JOINTS SHALL BE PLACED AT 20 FT. INTERVALS. ALL EDGES TO BE ROUNDED TO 1/4" RADIUS.
C. 1/2" EXPANSION JOINTS SHALL BE PLACED, WHERE SIDEWALK TIE INTO A STRUCTURE OR TERMINATE AT CURB, RAMPS OR DRIVEWAYS AND AT 60' INTERVALS.

NOTES FOR CURB CUT RAMPS:

1. CURB CUT RAMPS WILL BE LOCATED AS FOLLOWS UNLESS PLANS OR CONTRACT SPECIFY OTHERWISE.
   a) AT ALL PEDESTRIAN CROSSWALKS WHERE CURB IS CONSTRUCTED OR REPLACED.
   b) WHERE THE SIDEWALK, CONCRETE OR UNPAVED, IS INTERRUPTED BY THE CURB AT TURNOUTS OR AT INTERSECTIONS.
   c) AT OTHER LOCATIONS SUCH AS HOSPITALS, NURSING HOMES, REST AREAS, ETC., WHERE THE CURB WOULD OTHERWISE BE AN OBSTRUCTION TO THE PHYSICALLY DISABLED.
2. RAMPS WILL BE CONSTRUCTED FROM CONCRETE. SPECIFICATIONS FOR RAMPS WILL BE THE SAME AS FOR CONCRETE SIDEWALK. RAMPS SHALL HAVE EITHER A ROUGH OR A TEXTURED FINISH.
3. DROP INLETS ARE NOT TO BE LOCATED DIRECTLY IN FRONT OF RAMPS. CATCH BASINS SHOULD BE LOCATED AT LEAST 10 FT. FROM RAMPS WHEN FEASIBLE.
4. WHERE RAMPS ARE LOCATED IN RADII, THE DIMENSIONS SHOWN FOR RAMP WIDTHS AND TAPERS ARE MEASURED PERPENDICULAR TO THE RAMP AND NOT ALONG THE CURVE.
5. WHERE UTILITY STRUCTURES CONFLICT, WHERE SIDEWALK GEOMETRY VARIES, AT SKEWED INTERSECTIONS, OR IN OTHER SPECIAL CASES, THE RAMP DESIGNS MAY BE MODIFIED BY THE DESIGNER OR ENGINEER, PROVIDED THAT THE WIDTH REMAINS A MINIMUM OF 48 INCHES, AND NO SLOPE ON THE ACCESSIBLE PART OF THE RAMP IS STEEPER THAN 12:1.
6. LIN. FT. OF CURB AND GUTTER WILL INCLUDE THE TRANSITIONED CURB IN FRONT OF RAMPS. SQ. YDS. OF CONCRETE SIDEWALK AND CONCRETE MEDIAN PAVING WILL INCLUDE RAMPS. NO ADDITIONAL PAYMENT WILL BE MADE FOR CURB RAMPS. NO ADDITIONAL PAYMENT WILL BE MADE FOR SAWING AND REMOVING EXISTING SIDEWALK OR CURB WHERE NECESSARY FOR RAMP CONSTRUCTION.
7. WHEN A CURB RAMP IS PLACED ON EXISTING PAVEMENT, THE PAVEMENT SHALL BE REMOVED TO PROVIDE A MINIMUM THICKNESS OF 3 INCHES OF CONCRETE AT ALL LOCATIONS. NO SEPARATE PAYMENT WILL BE MADE FOR REMOVAL OF THE PAVEMENT.
8. DETECTABLE WARNING SURFACES ARE REQUIRED ON ALL INTERSECTIONS WITH PUBLIC STREETS, SIGNALIZED COMMERCIAL DRIVEWAYS, AND COMMERCIAL DRIVEWAYS WITH AN AADT OF 25 VPD.

This Detail Replaces Ga Standard 9031W

Guidelines For Usage On Metric Projects

When these details are incorporated into plans and or projects that are being prepared or constructed in metric units, exact or precise conversion to metric units is not required. The dimensions shown that are in feet and inches may be converted to corresponding metric units using the following "Rounded-Off" conversion factors: 1"=25mm, 4"=100mm, and 12" or 1'=300mm. All measurement notes that refer to linear feet and square yards shall be interpreted to mean linear meters and square meters.

DATE	REVISION	BY
9-5-16	ADDED PERP. OR PARALLEL	CJR
6-18-09	REV. SLOPES TO PERCENT	GLO
5-0-06	AND ADDED 2d & 10d CHART, ADDED GEN. NOTE NO. 8, REV. TRUNCATED DOMES	GLO
2-2-03	REVISED	
2-10-03	REVISED	
7-29-02	REVISED	
5-29-02	REVISED	
5-23-02	REVISED	
5-3-02	REVISED	
4-29-02	REVISED	
4-1-02	REVISED	
4-3-02	REVISED	
3-28-02	REVISED	

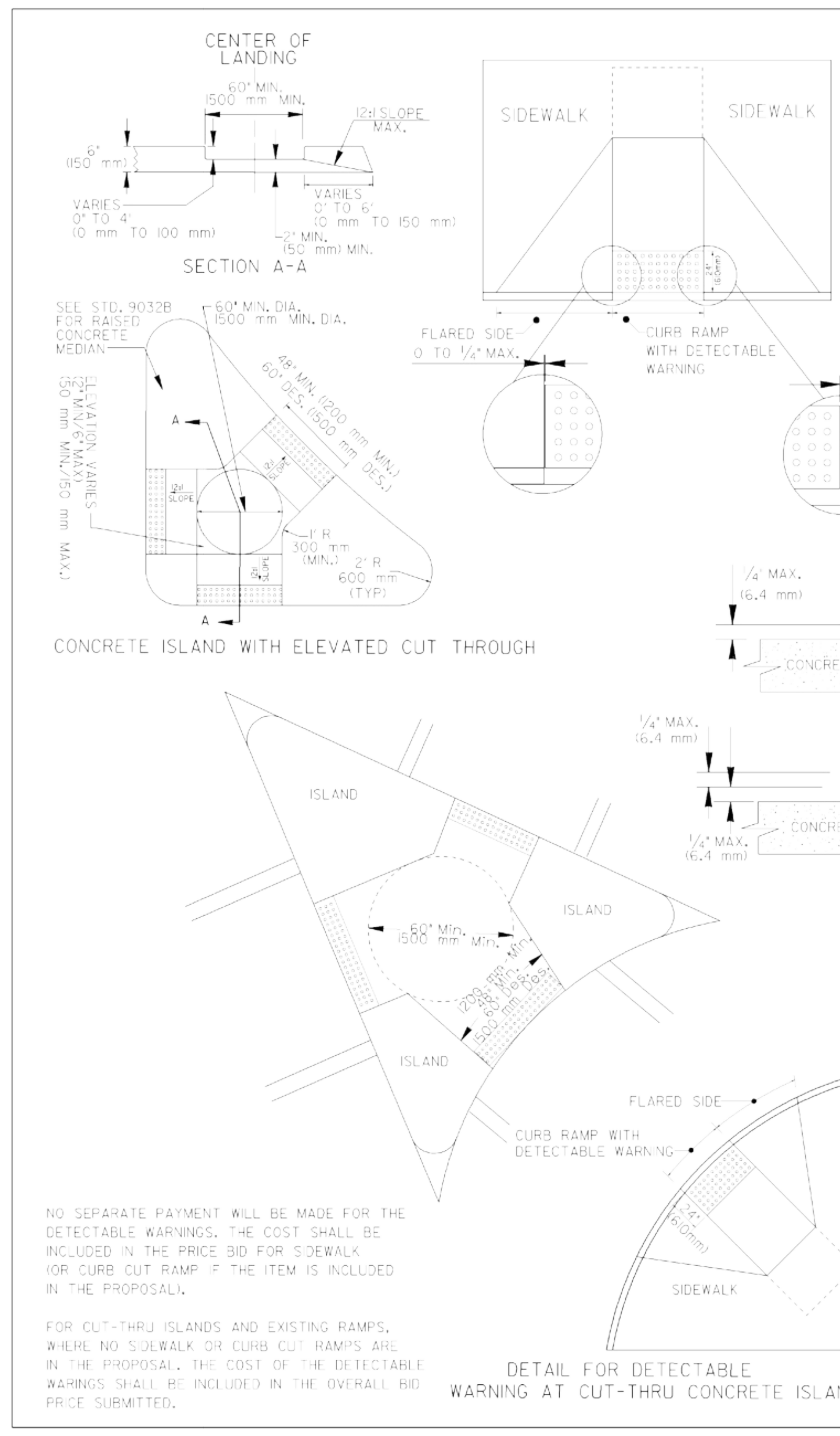
DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

SPECIAL DETAIL
CONCRETE SIDEWALK DETAILS
CURB CUT (WHEELCHAIR) RAMPS

NO SCALE — MARCH 12, 2002

NUMBER A3

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

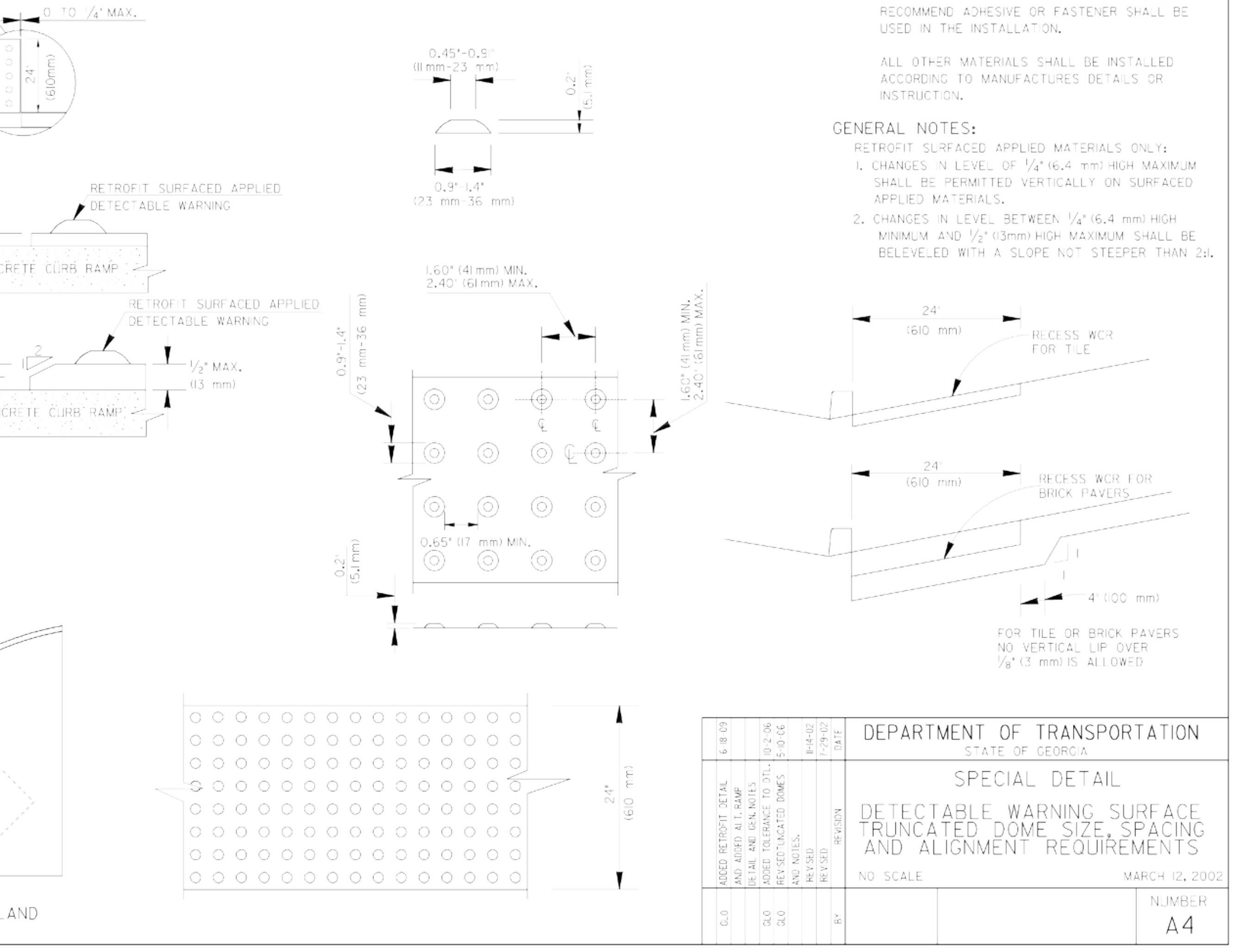


SIZE: DETECTABLE WARNINGS SHALL BE 24 INCHES (610 mm) IN THE DIRECTION OF PEDESTRAIN TRAVEL AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR FLUSH SURFACE.

LOCATION: THE DETECTABLE WARNING SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE OR OTHER POTENTIAL HAZARD IS 6 TO 8 INCHES (150 mm to 180mm) FROM THE CURB LINE OR OTHER POTENTIAL HAZARD, SUSH AS A REFLECTIVE POOL EDGE OR THE DYNAMIC ENVELOPE OF RAIL OPERATIONS.

DOME SIZE AND SPACING: TRUNCATED DOMES SHALL HAVE A BASE DIAMETER OF 0.9 INCH TO 1.4 INCH (23mm-36mm) AT THE BOTTOM, A DIAMETER OF 0.45 INCH TO 0.9 INCH (11mm-23mm) AT THE TOP, THE TOP DIAMETER SHALL BE A MINIMUM OF 50% AND A MAXIMUM OF 65% OF THE BASE DIAMENTER, A HEIGHT OF 0.2 INCH (5.1mm) AND A CENTER-TO-CENTER SPACING OF 2.40 INCHES (61mm) DESIRABLE 1.60 INCHES (41mm) MINIMUM MEASURED ALONG ONE SIDE OF A SQUARE ARRANGEMENT. DOMES SHALL HAVE A SQUARE ARRANGEMENT. DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF TRAVEL TO PERMIT WHEELS TO ROLL BETWEEN DOMES.

VISUAL CONTRAST: DETECTABLE WARNING SURFACES SHALL CONTRAST VISUALLY WITH THE ADJACENT WALKING SURFACE EITHER LIGHT-ON-DARK OR DARK-ON-LIGHT. THE MATERIAL USED TO PROVIDE VISUAL CONTRACT SHALL BE AN INTEGRAL PART OF THE DETECTABLE WARNING SURFACE.



MATERIALS:

NEW CONSTRUCTION
THE DETECTABLE WARNINGS SHALL BE MADE OF MATERIALS SPECIFIED ON QPL 87.

RETROFIT OF EXISTING RAMPS
SURFACED APPLIED MATERIALS WILL ONLY BE APPROVED TO BE USED ON EXISTING WHEELCHAIR RAMPS.

INSTALLATION:
BRICK PAVERS SHALL BE SET IN A WET MORTAR BED. THE BED SHALL BE PLACED ON CONCRETE. THE CONCRETE SHALL BE A MINIMUM OF 4" THICK.

CERAMIC TILE SHALL BE EPOXIED IN PLACE OR SET IN A WET MORTAR BED. MANUFACTURER RECOMMEND ADHESIVE OR FASTENER SHALL BE USED IN THE INSTALLATION.

ALL OTHER MATERIALS SHALL BE INSTALLED ACCORDING TO MANUFACTURES DETAILS OR INSTRUCTION.

GENERAL NOTES:
RETROFIT SURFACED APPLIED MATERIALS ONLY:
1. CHANGES IN LEVEL OF 1/4" (6.4 mm) HIGH MAXIMUM SHALL BE PERMITTED VERTICALLY ON SURFACED APPLIED MATERIALS.
2. CHANGES IN LEVEL BETWEEN 1/4" (6.4 mm) HIGH MINIMUM AND 1/2" (13mm) HIGH MAXIMUM SHALL BE BELEVELED WITH A SLOPE NOT STEEPER THAN 2:1.

NO SEPARATE PAYMENT WILL BE MADE FOR THE DETECTABLE WARNINGS. THE COST SHALL BE INCLUDED IN THE PRICE BID FOR SIDEWALK (OR CURB CUT RAMP IF THE ITEM IS INCLUDED IN THE PROPOSAL).

FOR CUT-THRU ISLANDS AND EXISTING RAMPS, WHERE NO SIDEWALK OR CURB CUT RAMPS ARE IN THE PROPOSAL, THE COST OF THE DETECTABLE WARINGS SHALL BE INCLUDED IN THE OVERALL BID PRICE SUBMITTED.

DATE	REVISION	BY
6-18-09	ADDED RETROFIT DETAIL AND ADDED ALT. RAMP DETAIL AND GEN. NOTES	GLO
10-2-06	ADDED TOLERANCE TO DTL.	GLO
5-10-06	REVISED TRUNCATED DOMES AND NOTES.	GLO
11-14-02	REVISED	
7-29-02	REVISED	

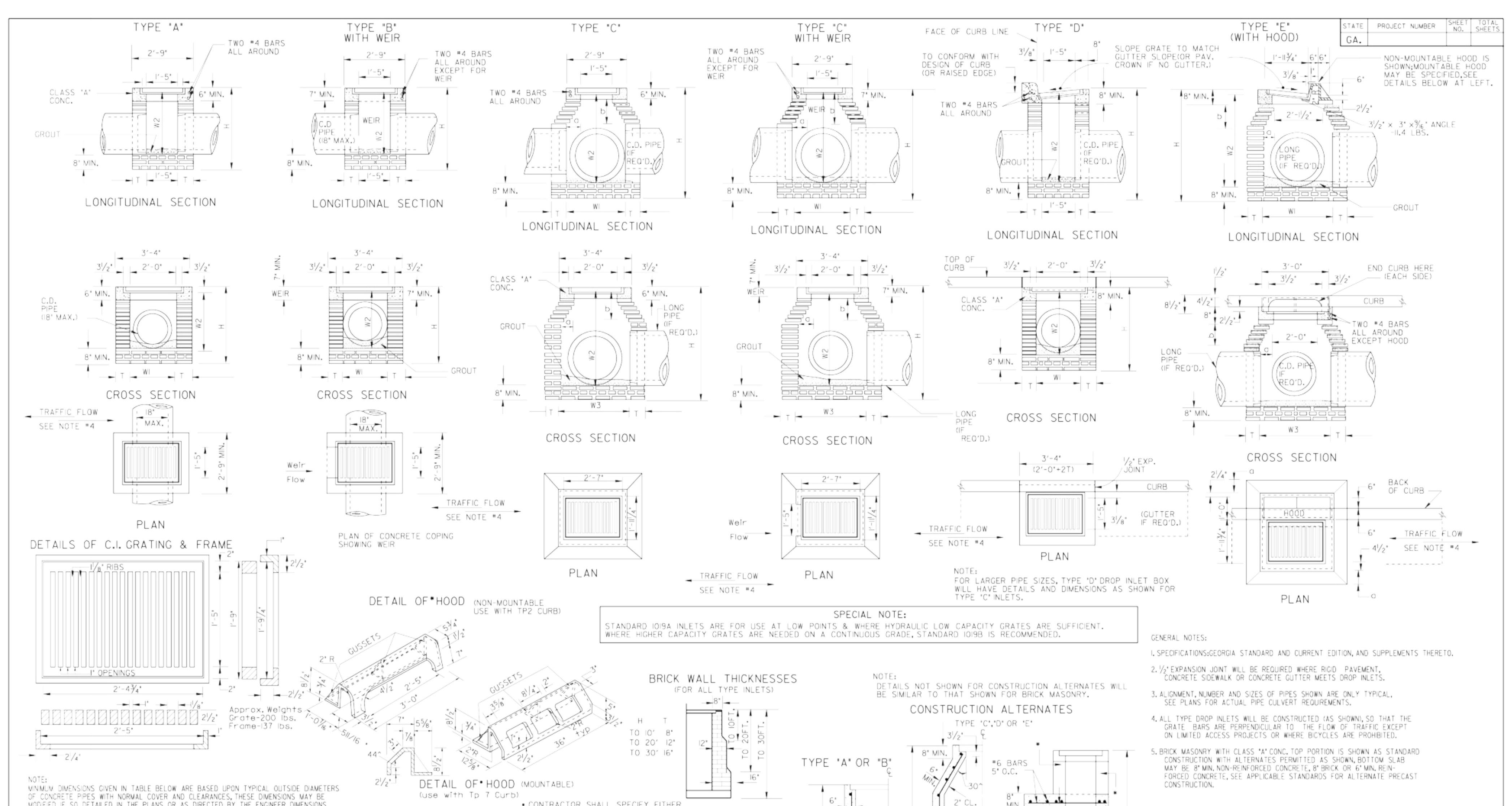
DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

SPECIAL DETAIL
DETECTABLE WARNING SURFACE
TRUNCATED DOME SIZE, SPACING
AND ALIGNMENT REQUIREMENTS

NO SCALE — MARCH 12, 2002

NUMBER A4

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



SPECIAL NOTE:
STANDARD 1019A INLETS ARE FOR USE AT LOW POINTS & WHERE HYDRAULIC LOW CAPACITY GRATES ARE SUFFICIENT. WHERE HIGHER CAPACITY GRATES ARE NEEDED ON A CONTINUOUS GRADE, STANDARD 1019B IS RECOMMENDED.

NOTE:
DETAILS NOT SHOWN FOR CONSTRUCTION ALTERNATES WILL BE SIMILAR TO THAT SHOWN FOR BRICK MASONRY.

NOTE:
MINIMUM DIMENSIONS GIVEN IN TABLE BELOW ARE BASED UPON TYPICAL OUTSIDE DIAMETERS OF CONCRETE PIPES WITH NORMAL COVER AND CLEARANCES, THESE DIMENSIONS MAY BE MODIFIED IF SO DETAILED IN THE PLANS OR AS DIRECTED BY THE ENGINEER, DIMENSIONS GIVEN ARE MINIMUM EXCEPT FOR "a" WHICH IS MAXIMUM.

TABLE OF MINIMUM DIMENSIONS FOR DROP INLETS

D	TYPES "A" or "B" BRICK OR REINF. CONC.			TYPE "C" OR "D" (BRICK)						TYPE "E" (BRICK)						TYPE "C","D" OR "E" (REINFORCED CONCRETE)						
	W1	W2	H(min)	W1	W2	W3	a (MAX.)	b	H(min.)	W1	W2	W3	a (MAX.)	b	H(min.)	W1 type "C"	W1 type "E"	W2	W3	a (MAX.)	b	H(min.)
15"	2'-0"	2'-7"	3'-3 1/2"	2'-2 1/8"	2'-11"	2'-9 1/8"	0'-4 9/16"	0'-7 7/8"	3'-9 1/2"	3'-2 1/8"	3'-1"	3'-0 5/8"	0'-7 9/16"	1'-1 1/8"	3'-11 1/2"	2'-0"	2'-1"	2'-7"	2'-0"	3 1/2"	6"	3'-6"
18"	2'-0"	2'-10"	3'-7"	2'-2 1/8"	3'-2 1/2"	2'-9 1/8"	0'-4 9/16"	0'-7 7/8"	4'-1"	3'-2 1/8"	3'-4 1/2"	3'-0 5/8"	0'-7 9/16"	1'-1 1/8"	4'-1"	2'-0"	2'-1"	3'-0"	2'-0"	3 1/2"	6"	3'-11"
24"	~	~	~	2'-8 1/8"	3'-3 1/8"	3'-3 1/8"	0'-7 9/16"	1'-1 1/8"	4'-9"	3'-2 1/8"	3'-11 1/2	3'-0 5/8"	0'-7 9/16"	1'-1 1/8"	4'-8 1/4"	2'-8"	2'-9"	3'-8"	2'-6"	6 1/2"	11 1/4"	4'-7"
30"	~	~	~	3'-7 1/4"	4'-0 1/4"	3'-10 1/16"	1'-0 1/8"	1'-9"	5'-10"	3'-5 1/2"	4'-8 3/8"	3'-4"	0'-8"	1'-1 7/8"	5'-6 7/8"	3'-4"	3'-6"	4'-9"	3'-0"	9 1/2"	16 1/2"	5'-10"
36"	~	~	~	4'-1 7/8"	6'-0 5/8"	4'-8 7/8"	1'-4 7/16"	2'-2 1/4"	6'-11 1/8"	3'-11 1/2	5'-8 9/16"	3'-10"	0'-11"	1'-7 1/16"	6'-7 1/16"	3'-10"	4'-0"	5'-10"	3'-9"	1'-2"	2'-0"	6'-10"
42"	~	~	~	4'-5"	7'-1 3/4"	5'-0"	1'-6"	2'-7 3/16"	8'-0 1/4"	4'-6 1/2"	7'-5 11/16"	4'-5"	1'-2 1/2"	2'-1 3/16"	8'-4 3/16"	4'-5"	4'-6"	7'-0"	4'-3"	1'-5"	2'-5 1/2"	7'-11"
48"	~	~	~	5'-0"	8'-2 3/4"	5'-7"	1'-9 1/2"	3'-1 1/4"	9'-1 1/4"	5'-1 1/2"	8'-6 11/16"	5'-0"	1'-6"	2'-7 3/16"	9'-5 3/16"	5'-0"	5'-0"	8'-2"	5'-0"	1'-9 1/2"	3'-1 1/2"	9'-2"
54"	~	~	~	5'-7"	9'-4"	6'-2"	2'-1"	3'-7 1/2"	10'-2 1/2"	5'-8 1/2"	9'-7 3/4"	5'-7"	1'-9 1/2"	3'-1 1/4"	10'-6 1/4"	5'-6"	5'-6"	9'-2"	5'-6"	2'-0 1/2"	3'-6 1/2"	10'-0"
60"	~	~	~	6'-2"	11'-4 7/8"	6'-9"	2'-4 1/2"	4'-1 3/8"	11'-3 1/4"	6'-3 1/2"	10'-8 15/16"	6'-2"	2'-1"	3'-7 5/16"	11'-7 5/16"	6'-0"	6'-0"	10'-3"	6'-0"	2'-3 1/2"	4'-0"	11'-1"

NOTE: CONCRETE WALLS WILL BE REINFORCED WITH #4 BARS 12" O.C. BOTH WAYS, BUT WHERE H IS OVER 9 FT., AND PIPE IS OVER 30" I.D., THE HORIZONTAL STEEL, WHICH IS MORE THAN 9 FT. DEEP WILL BE INCREASED TO 6" SPACINGS. 6" CONC. BOTTOM SLABS WILL BE REINFORCED WITH #4 BARS 12" O.C. BOTH WAYS.

NOTE: FOR PRECAST ALTERNATES, SEE STD. 1019-A PRECAST AND/OR STD. 1040 PRECAST AND BUILT-IN-PLACE COMPONENTS MAY BE USED IN COMBINATIONS WHICH PROVIDE PROPER FITS AND STRUCTURAL ADEQUACY.

GENERAL NOTES:

1. SPECIFICATIONS:GEORGIA STANDARD AND CURRENT EDITION, AND SUPPLEMENTS THERETO.
2. 1/2" EXPANSION JOINT WILL BE REQUIRED WHERE RIGID PAVEMENT, CONCRETE SIDEWALK OR CONCRETE GUTTER MEETS DROP INLETS.
3. ALIGNMENT, NUMBER AND SIZES OF PIPES SHOWN ARE ONLY TYPICAL. SEE PLANS FOR ACTUAL PIPE CULVERT REQUIREMENTS.
4. ALL TYPE DROP INLETS WILL BE CONSTRUCTED (AS SHOWN), SO THAT THE GRATE BARS ARE PERPENDICULAR TO THE FLOW OF TRAFFIC EXCEPT ON LIMITED ACCESS PROJECTS OR WHERE BICYCLES ARE PROHIBITED.
5. BRICK MASONRY WITH CLASS "A" CONC. TOP PORTION IS SHOWN AS STANDARD CONSTRUCTION WITH ALTERNATES PERMITTED AS SHOWN. BOTTOM SLAB MAY BE 8" MIN. NON-REINFORCED CONCRETE, 8" BRICK OR 6" MIN. REINFORCED CONCRETE, SEE APPLICABLE STANDARDS FOR ALTERNATE PRECAST CONSTRUCTION.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
DROP INLETS
(BUILT-IN-PLACE)

SCALE AS SHOWN — REV. & REDR. AUG., 1999

DES. REV. TRA. CHK.
(SUBMITTED) [illegible] STATE ROAD & AIRPORT DESIGN ENGR.
(APPROVED) [illegible] CHIEF ENGINEER

NUMBER 1019A

B.C. ENGINEERING, INC.
116 NORTH MAIN ST.
CUMMING, GA 30040
PHONE: (770) 205-6181
FAX: (770) 205-6162
EMAIL: office@bcengineering-ga.com

4195 HICKORY FLAT HWY
CONSTRUCTION DETAILS
LAND LOT 115
15TH DISTRICT, 1ST SECTION
CHEROKEE COUNTY
PREPARED FOR
JACOB DYLAN

GEORGIA REGISTERED NO. 22093 PROFESSIONAL ENGINEER BRIAN W. COLE
[illegible]
09/13/24

REVISION	DATE	DESCRIPTION

DRAWN BY: NBG
CHECKED BY: BC
DATE: 09/13/24
SCALE: AS NOTED
LAND LOTS: 115
DISTRICT: 15TH
SECTION: 1ST

SHEET NO. 20 OF 23

JOB NO. 2023-082

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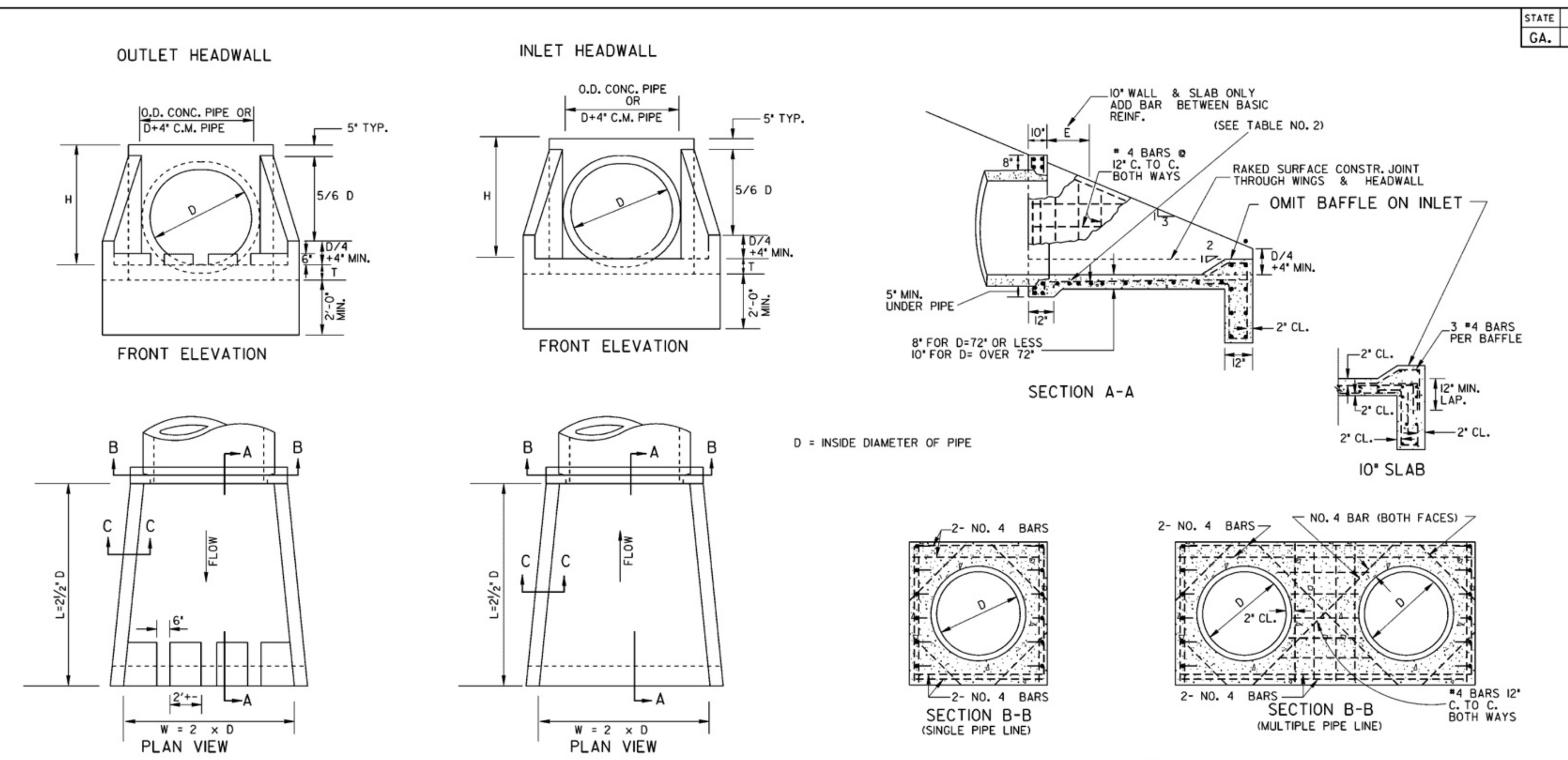
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



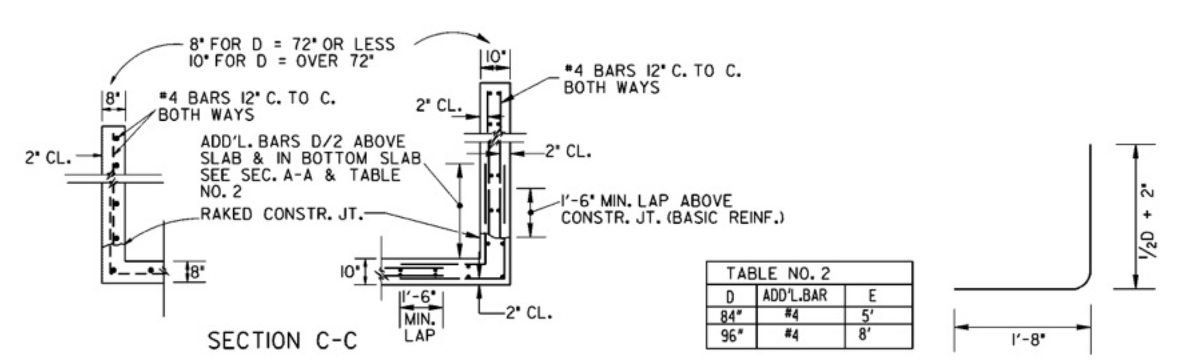


TABLE NO. 2		
D	ADD'L.BAR	E
84"	#4	5'
96"	#4	8'

TABLE NO. 1 - QUANTITIES FOR HEADWALLS

	CU. YDS. CONCRETE (PAY QUANTITIES) ✳				LBS. STEEL (GIVEN FOR INFORMATION ONLY)			
	FOR SINGLE LINE		ADD FOR ADD'L LINE		FOR SINGLE LINE		ADD FOR EACH ADD'L LINE	
D	INLET	OUTLET	INLET	OUTLET	INLET	OUTLET	INLET	OUTLET
15"	0.87	0.93	0.60	0.66	102	113	73	83
18"	1.10	1.16	0.85	0.93	106	117	93	104
24"	1.61	1.69	1.29	1.37	127	138	124	134
30"	2.21	2.32	1.83	1.96	170	180	154	164
36"	2.92	3.05	2.49	2.63	238	254	196	212
42"	3.73	3.87	3.00	3.17	290	306	231	247
48"	4.62	4.80	3.58	3.74	335	351	265	281
54"	5.63	5.83	4.17	4.38	407	428	319	340
60"	6.72	6.95	4.82	5.01	456	477	360	391
72"	9.22	9.48	6.24	6.46	623	649	475	494
84"	14.84	15.19	9.05	9.29	1517	1539	1017	1044
96"	18.88	19.27	11.13	11.41	2118	2150	1323	1350

✳NOTE:
QUANTITIES SHOWN WILL BE ACTUAL PAY QUANTITIES FOR CLASS "A" CONCRETE, INCLUDING REINFORCED STEEL. NO ADJUSTMENT WILL BE MADE FOR AS BUILT QUANTITIES.

D - INSIDE DIAMETER OF PIPE CULVERT

H = D + 10" MIN. FOR C.M. PIPE
H = D + PIPE WALL THICKNESS + 8" FOR CONC. PIPE (13/12 D + 9" TYP.)

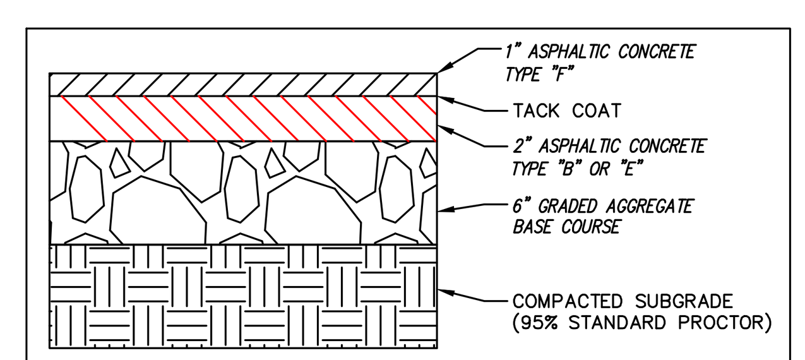
T = 8" FOR D = 72" OR LESS
T = 10" FOR D = OVER 72"

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

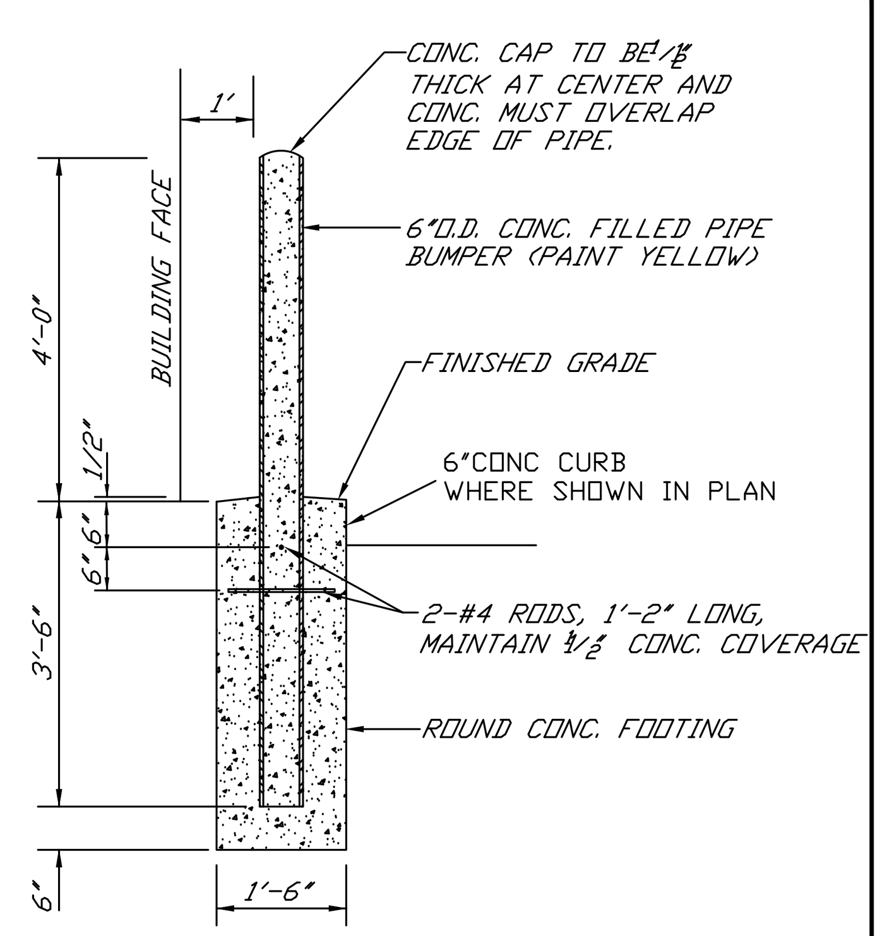
STANDARD
TAPERED
INLET HEADWALL - OUTLET HEADWALL
(BUILT-IN-PLACE)

NO SCALE — REV. & REDR. OCT., 1999
DES. ___ DRW. ___ TRA. ___ CHK. ___
(SUBMITTED) [illegible] STATE ROAD & AIRPORT DESIGN ENGR.
(APPROVED) [illegible] CHIEF ENGINEER
NUMBER 1125

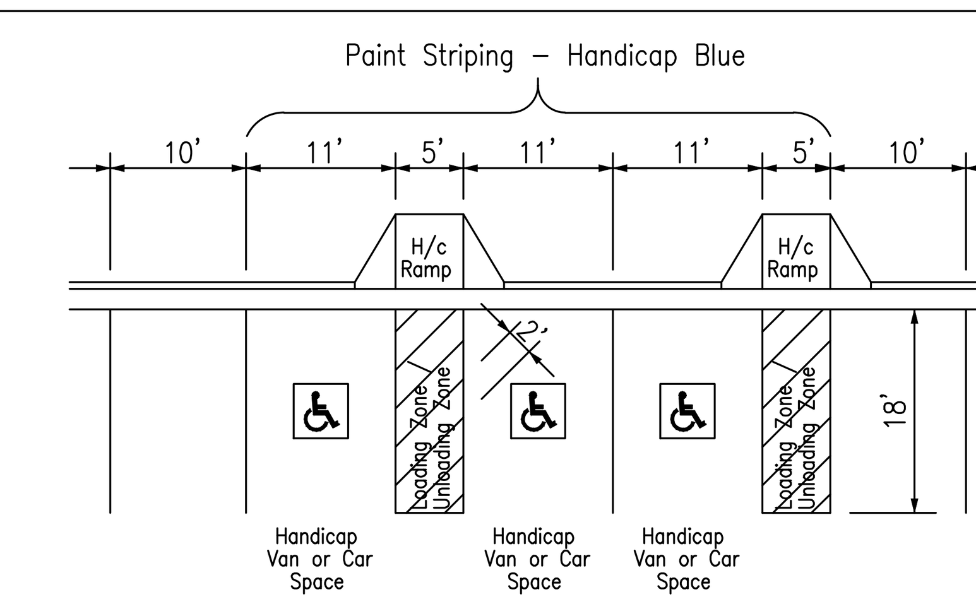
7/7/2004 10:49:45 AM \\GDOT-DSN1\GOPLOT\QCF\GO_TIFF_OUTPUT.QCF GOWENS M:\GARY\ENGLISH STANDARDS UPDATED AND UPDATED INDEX\1125.PRF



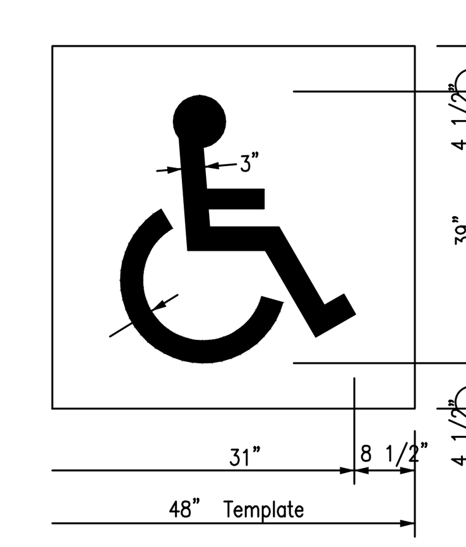
LIGHT-DUTY ASPHALT (L.D.A.)
PAVING SECTION (N.T.S.)



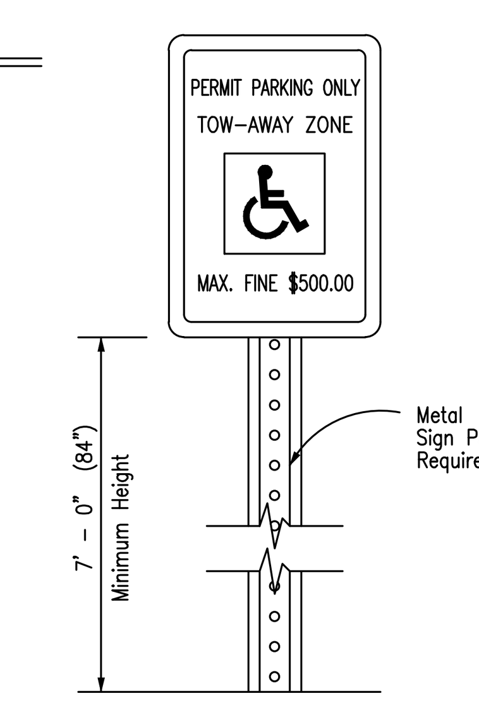
BOLLARD DETAIL
NTS



UNIVERSAL PARKING SPACE DETAIL



HANDICAP SYMBOL / PAVEMENT DETAIL



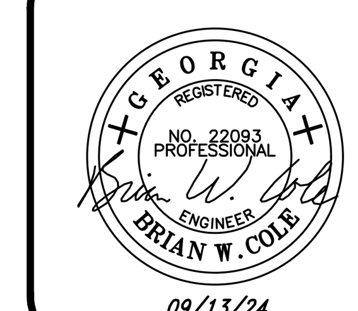
HANDICAPPED PARKING SIGN DETAIL

HANDICAPPED SYMBOL TO BE WHITE. (TYPICAL)
BACKGROUND TO BE COLORED HANDICAP BLUE. (TYPICAL)
LOADING / UNLOADING ZONE TO BE LOCATED AT THE RIGHT OR LEFT OF ALL HANDICAPPED SPACES.
ALL HANDICAPPED SPACE STRIPING TO BE PAINTED HANDICAP BLUE.
SIGN COLORS TO BE HANDICAP BLUE WITH WHITE PRINTING.
SIGN SIZE TO BE 18" HEIGHT x 12" WIDTH.
PARKING SPACE DETAILS TAKEN FROM THE ADA HANDBOOK, PAGE 73.

HANDICAPPED PARKING and SIGN DETAIL
SCALE : NO SCALE

B.C. ENGINEERING, INC.
116 NORTH MAIN ST.
CUMMING, GA 30040
PHONE: (770) 205-6181
FAX: (770) 205-6162
EMAIL: office@bcengineering-ga.com

4195 HICKORY FLAT HWY
CONSTRUCTION DETAILS
LAND LOT 115
15TH DISTRICT, 1ST SECTION
CHEROKEE COUNTY
PREPARED FOR
JACOB DYLAN



09/13/24

REVISION	DATE	DESCRIPTION

DRAWN BY: NBG
CHECKED BY: BC
DATE: 09/13/24
SCALE: AS NOTED
LAND LOTS: 115
DISTRICT: 15TH
SECTION: 1ST

SHEET NO. 21 OF 23

JOB NO.
2023-082

CHEROKEE COUNTY WATER & SEWERAGE AUTHORITY
POTABLE WATER SYSTEM

GENERAL CONSTRUCTION NOTES

1.) All potable water system construction must follow the current Cherokee County Water & Sewerage Authority Water Main Standards.

2.) All water mains shall be ductile iron pipe, except where the Construction Manager approves otherwise. Ductile iron pipe shall be thickness Class 50 or Class 350, designed in accordance with AWWA C150 and manufactured in accordance with AWWA C151. All ductile iron pipe shall have an outside bituminous coating per AWWA C151 and an inside standard cement lining with bituminous seal coat per AWWA C104. All references to AWWA standards shall mean latest revisions published.

3.) Inside of developments with curb and gutter, the Contractor shall cut a "V" into the top of the curb for all water valves (line valves and hydrant valves) with the point of the "V" aimed at the valve.

4.) A concrete valve marker is to be placed directly above the plug on all dead-end water mains.

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

6.) All service lines under pavement shall be encased in Schedule 40 PVC casing with a minimum diameter of 2", extending a minimum of 3 feet beyond the pavement and/or sidewalk on each side of the road. 2" services shall be encased in 4" PVC casings. All water service laterals 2" and smaller shall be Type K copper tubing with compression fittings as specified in the Water Standards.

7.) Concrete thrust blocking shall be placed at all bends, tees, valves, reducers and all other fittings. Prior to blocking, fittings shall be wrapped with polyethylene film.

8.) The Developer/Contractor shall meet with the Chief Inspector at least 24 hours before beginning construction. The Contractor shall notify the Chief Inspector or his designated representative by 8:30 AM of each workday when work is scheduled unless authorized otherwise.

9.) Water mains shall be installed so that the top of the pipe is a minimum of four feet below final grade; four feet below the edge of the pavement, or four feet below the ditch paralleling the road, whichever is deepest.

10.) Contractor shall place a vertical piece of 2" PVC pipe on top of the water main at all tees, bends, fittings, elevation transitions, and every fifty feet along the length of the main for the purpose of collecting elevation data for record drawings. The top of the 2" PVC shall be capped or taped to prevent dirt and other debris from clogging the 2" pipe before the depth can be measured.

11.) All fittings and valves are to be mechanical joint with retainer glands unless otherwise approved. Retainer glands shall be EBAA Mega-Lug or approved equal.

12.) Type 4 bedding is required at all restrained pipe installations.

13.) Contractor must show proof of insurance in the amount specified by the CCWSA.

14.) All backflow preventer devices are to be tested by a CCWSA approved tester. A list of testers is available from the CCWSA. Any tester not on the list is subject to approval by the CCWSA. Contact the Backflow Coordinator with the CCWSA for more information.

15.) All meters, backflow preventers and double detector check valve assemblies are to be purchased from the CCWSA.

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

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

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

19.) Potable water and sanitary sewer structures are not allowed within a dam. Utility pipelines and structures must be a minimum of 30 feet outside the toe of slope of the dam.

20.) Hydrant flow tests are valid for one year and only apply to a single phase of this project.

21.) Existing County roads shall not be open cut unless permission is granted by the Cherokee County Department of Public Transportation.

22.) Plan approval is valid for 12 months without beginning construction. Plans shall be subject to beginning the process of review and approval if 12 months expire prior to the start of construction.

23.) As-Built drawings of water and sanitary sewer facilities are required to be submitted to the CCWSA upon completion of the project.

24.) If construction plans are stamped for a full project, and then the Developer revises the plans to build the development in phases, no construction or field inspection will be allowed to begin until the revised, phased plans are re-approved and stamped for the phased construction.

25.) If an existing water main is to be paved over by a new entrance or accel/decel lanes, the water main is to be abandoned and replaced with a new DIP water main located five feet or more behind the new back of curb.

26.) New water mains installed within 80 feet of steel gas main crossings, or in any wetland areas must be encased in polyethylene tubing (Polywrap 8 mil).

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

28.) Fire hydrants shall be designed to be placed within 200 feet of new entrances, in all cul-de-sacs, and at every proposed intersection.

29.) New fire hydrants shall be Mueller Super Centurion 250, M&H AWWA C502 Style 129 Traffic Model, or EJ Watermaster 5CD 250. All hydrants shall be rated for 250 psi working pressure and shall be equipped with a 5¼" valve opening, two 2½" hose nozzles and one 4½" pumper nozzle.

30.) Inside of steel casings, pipe joints shall be restrained using Fast-Grip gaskets or approved equal.

31.) All new water mains must pass leakage testing and disinfection testing witnessed by a CCWSA representative before a project is released and accepted.

32.) All water meter vaults and DDCV assembly vaults are to be located off of the road right-of-way in a permanent easement dedicated to the CCWSA. The easement shall be dimensioned to be 10 feet off each corner of the vault. Smaller domestic use meters adjacent to a DDCV assembly can be located within the 10-foot spacing between the vault and the edge of the easement.

33.) The report stating the results of the hydrant flow test and the 24 hour pressure recording chart shall be shown within the plans for this project.

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

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

36.) Orthometric locations will be referenced to GEOID 99/03

37.) No landscaping or structures will be allowed inside CCWSA easements.

38.) Contractor shall provide meter stubs.

39.) Must show all street lights within development

40.) Must show 911 addresses for each lot or parcel

41.) Developers are required to comply with CCWSA specifications in section W314 with respect to irrigation of large landscapes.

Street Light Ordinance
Pole Specifications:
- 30 Foot Poles Only
- Wood or Fiberglass Only
- Arms must be 2 ½' to 6' long
- Roadway Fixtures

Street light plans are submitted by the Power Companies to the Street Light Coordinator. All power pole contributions must be paid by the Developer ***before*** the release of water meter sales.

The above does not apply to subdivisions that are located inside city limits.

Any further questions please call:
Street Light Coordinator at (770) 479-9107

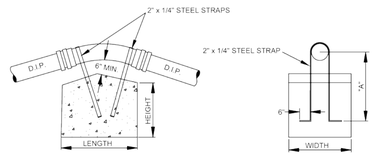


TABLE FOR CONCRETE BLOCKING
(250 PSI TEST PRESSURE)

FITTING	SIZE	MINIMUM DIMENSIONS OF BLOCKING HEIGHT (FT.)	LENGTH (FT.)	WIDTH (FT.)	VOLUME (C.Y.)	"A" (IN.)	LENGTH OF STRAP (IN.)
11 1/4° BEND	6"	2.0	2.0	2.5	0.37	24	69.5
11 1/4° BEND	8"	3.0	2.2	2.5	0.61	24	72.5
11 1/4° BEND	10"	3.0	3.0	3.0	1.00	26	80.0
11 1/4° BEND	12"	3.0	4.0	3.0	1.33	30	91.0
11 1/4° BEND	16"	3.0	5.0	4.5	2.50	30	97.0
11 1/4° BEND	20"	3.3	6.0	5.0	3.67	36	115.0
11 1/4° BEND	24"	4.0	6.5	5.5	5.30	36	122.0
22 1/2° BEND	6"	2.5	3.0	2.5	0.69	24	69.5
22 1/2° BEND	8"	3.1	3.5	3.0	1.21	24	72.5
22 1/2° BEND	10"	3.2	4.0	4.0	1.90	26	80.0
22 1/2° BEND	12"	3.5	5.0	4.5	2.92	30	91.0
22 1/2° BEND	16"	4.7	5.5	5.0	4.79	36	109.0
22 1/2° BEND	20"	6.0	6.0	5.7	7.60	45	133.0
22 1/2° BEND	24"	8.0	5.7	6.5	10.98	60	170.0

NOTES:
1. COVER GLANDS AND BOLTS WITH POLYETHYLENE BEFORE PLACING CONCRETE.
2. ALLOW CONCRETE TO SET UP A MINIMUM OF 6 HOURS BEFORE PLACING BACKFILL.
3. CONCRETE SHALL BE 3000 PSI, CLASS A.
4. ALL IRON FITTINGS SHALL BE BLOCKED AND SUPPORTED AS SHOWN ABOVE.

CONCRETE BLOCKING-VERTICAL BENDS-UPWARD THRUST

April 2018

CHEROKEE COUNTY WATER & SEWERAGE AUTHORITY	Concrete Blocking — CONSTRUCTION STANDARD	STANDARD DETAIL NO. W-12

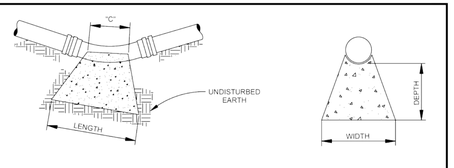


TABLE FOR CONCRETE BLOCKING
(250 PSI TEST PRESSURE)

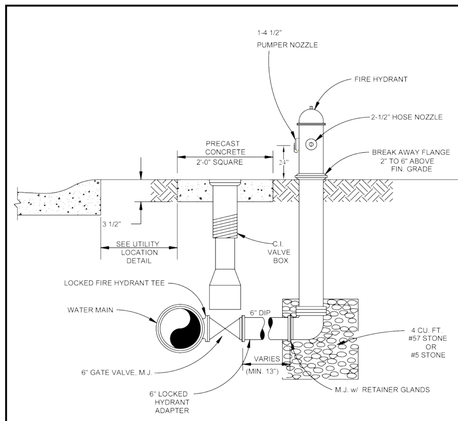
FITTING	SIZE	MINIMUM DIMENSIONS OF BLOCKING DEPTH (FT.)	LENGTH (FT.)	"C" (IN.)	WIDTH (FT.)	VOLUME (C.Y.)	THRUST (LB.)
11 1/4° BEND	6"	1.0	2.0	6	1.0	0.04	1,385
11 1/4° BEND	8"	1.0	2.0	7	1.0	0.05	2,465
11 1/4° BEND	10"	1.0	2.0	9	1.0	0.07	3,850
11 1/4° BEND	12"	1.0	2.5	11	1.5	0.12	5,550
11 1/4° BEND	16"	2.0	2.5	12	2.1	0.26	9,860
11 1/4° BEND	20"	2.0	3.5	15	2.5	0.48	15,406
11 1/4° BEND	24"	2.0	4.0	18	3.0	0.70	22,185
22 1/2° BEND	6"	1.0	2.0	6	1.0	0.04	2,760
22 1/2° BEND	8"	1.0	2.0	7	1.5	0.06	4,905
22 1/2° BEND	10"	1.0	2.0	9	2.0	0.10	7,665
22 1/2° BEND	12"	1.0	3.0	11	2.0	0.16	11,040
22 1/2° BEND	16"	2.0	3.5	12	3.0	0.45	19,625
22 1/2° BEND	20"	2.0	4.0	15	4.0	0.74	30,665
22 1/2° BEND	24"	3.0	5.0	18	4.5	1.47	44,160
45° BEND	6"	1.0	2.0	6	1.5	0.06	5,415
45° BEND	8"	1.0	2.5	7	2.0	0.10	9,625
45° BEND	10"	2.0	3.5	9	2.5	0.31	15,040
45° BEND	12"	2.0	3.5	11	3.0	0.41	21,655
45° BEND	16"	3.0	5.0	12	4.0	1.45	38,495
45° BEND	20"	4.0	6.0	15	5.0	2.05	60,145
45° BEND	24"	4.0	7.5	18	6.5	3.35	91,610
90° BEND	6"	1.0	2.5	12	2.0	0.13	10,005
90° BEND	8"	2.0	3.0	14	3.0	0.38	17,765
90° BEND	10"	2.5	4.5	18	3.0	0.74	27,785
90° BEND	12"	3.0	5.0	20	4.0	1.24	40,000
90° BEND	16"	4.0	6.5	26	5.5	2.91	71,125
90° BEND	20"	4.0	8.0	32	7.0	4.68	111,135
90° BEND	24"	5.0	10.0	40	8.0	8.50	160,035

NOTES:
1. SOIL BEARING STRENGTH OF 2000 PSI IS ASSUMED IN THE CALCULATIONS ABOVE. ENGINEER SHALL VERIFY.
2. COVER GLANDS AND BOLTS WITH POLYETHYLENE BEFORE PLACING CONCRETE.
3. ALLOW CONCRETE TO SET UP A MINIMUM OF 6 HOURS BEFORE PLACING BACKFILL.
4. CONCRETE SHALL BE 3000 PSI, CLASS A.
5. ALL IRON FITTINGS SHALL BE BLOCKED AND SUPPORTED AS SHOWN ABOVE.

CONCRETE BLOCKING-VERTICAL BENDS-DOWNWARD THRUST

April 2018

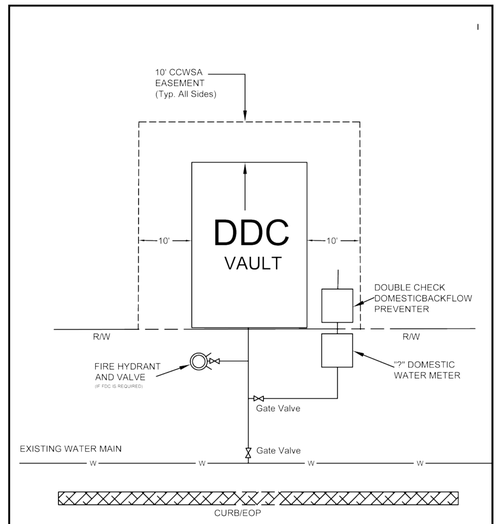
CHEROKEE COUNTY WATER & SEWERAGE AUTHORITY	Concrete Blocking — CONSTRUCTION STANDARD	STANDARD DETAIL NO. W-13



NOTES:
1. 4 1/2" PUMPER NOZZLE TO FACE STREET
2. HYDRANT NOT TO BE SET ON STREET SIDE OF WATER MAIN.
3. VALVE BOX TO BE ADJUSTED TO GRADE
4. CONCRETE COLLAR AROUND VALVE BOX IF NOT IN PAVED AREA
5. GRAVEL TO BE PLACED AROUND HYDRANT DRAIN. MINIMUM DIMENSIONS 20" x 20" x 20"

April 2018

CHEROKEE COUNTY WATER & SEWERAGE AUTHORITY	Typical Fire Hydrant Installation — CONSTRUCTION STANDARD	STANDARD DETAIL NO. W-02



April 2018

CHEROKEE COUNTY WATER & SEWERAGE AUTHORITY	Backflow and Easement — CONSTRUCTION STANDARD	STANDARD DETAIL NO. W-21

B.C. ENGINEERING, INC.
116 NORTH MAIN ST.
CUMMING, GA 30040
PHONE: (770) 205-6181
FAX: (770) 205-6162
EMAIL: office@bcengineering-ga.com

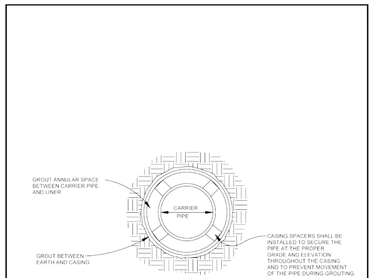
4195 HICKORY FLAT HWY
WATER DETAILS
LAND LOT 115
15TH DISTRICT, 1ST SECTION
CHEROKEE COUNTY
PREPARED FOR
JACOB DYLAN

GEORGIA REGISTERED NO. 72083 PROFESSIONAL ENGINEER BRIAN W. COLE
08/13/24

DRAWN BY: NBG	REVISION	DATE	DESCRIPTION
CHECKED BY: BC			
DATE: 09/13/24			
SCALE: AS NOTED			
LAND LOTS: 115			
DISTRICT: 15TH			
SECTION: 1ST			

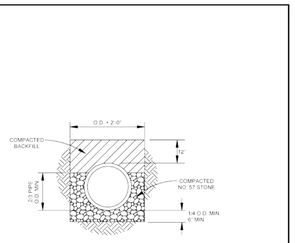
SHEET NO. 22 OF 23

JOB NO. 2023-082



April 2018

CHEROKEE COUNTY WATER & SEWERAGE AUTHORITY	Sewer Casing Spacer CONSTRUCTION STANDARD	STANDARD DETAIL NO. S-25

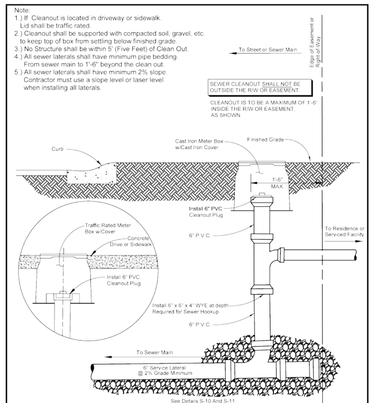


NOTE: IF PVC SANITARY SEWER LINE IS CONSTRUCTED IN 100 YEAR FLOOD PLAIN OR BELOW GROUNDWATER TABLE, COMPACTED CLASS 1 MATERIAL IS REQUIRED TO THE TOP OF THE PIPE.

April 2018

CHEROKEE COUNTY WATER & SEWERAGE AUTHORITY	Minimum P.V.C. Pipe Bedding CONSTRUCTION STANDARD	STANDARD DETAIL NO. S-22

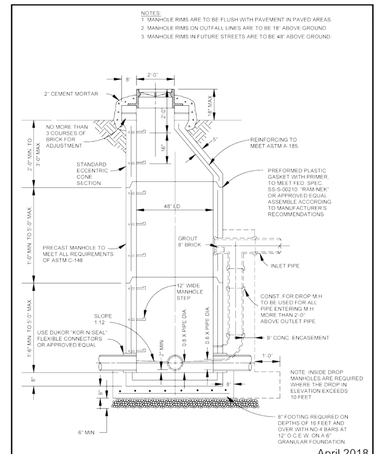
Note:
1.) If Cleanout is located in driveway or sidewalk, Lid shall be traffic rated.
2.) Cleanout shall be supported with compacted soil, gravel, etc. to keep top of box from settling below finished grade.
3.) No Structure shall be within 5' (Five Feet) of Clean Out.
4.) All sewer laterals shall have minimum pipe bedding. From sewer main to 1'-6" beyond the clean out.
5.) All sewer laterals shall have minimum 2% slope. Contractor must use a slope level or laser level when installing all laterals.



April 2018

CHEROKEE COUNTY WATER & SEWERAGE AUTHORITY	Cleanout Detail (BY BUILDER) CONSTRUCTION STANDARD	STANDARD DETAIL NO. S-15

NOTES:
1. MANHOLE RIMS ARE TO BE FLUSH WITH PAVEMENT IN PAVED AREAS.
2. MANHOLE RIMS ON OUT-ALL LINES ARE TO BE 18" ABOVE GROUND.
3. MANHOLE RIMS IN FUTURE STREETS ARE TO BE 48" ABOVE GROUND.



April 2018

CHEROKEE COUNTY WATER & SEWERAGE AUTHORITY	Precast Concrete Manhole CONSTRUCTION STANDARD	STANDARD DETAIL NO. S-01

CHEROKEE COUNTY WATER & SEWERAGE AUTHORITY
SANITARY SEWER SYSTEM

GENERAL CONSTRUCTION NOTES

1.) All sanitary sewer system construction must follow the current Cherokee County Water and Sewerage Authority Sanitary Sewer System Standards.

2.) For D.I.P. sewer lines, the minimum wall thickness shall be Class 50 and the interior lining shall be Protecto 401 ceramic epoxy. Wall thicknesses greater than the minimum called for above may be required due to greater depths or varying bedding requirements. Class C bedding is the minimum allowed.

3.) All Polyvinyl Chloride (PVC) sewers 6" to 15" in diameter shall meet the requirements for minimum wall thickness as specified under SDR 35 in ASTM D3034, latest revision. PVC sewers that are 18" and larger in diameter shall have a minimum wall thickness as specified under T-1 in ASTM F679, latest revision. PVC sewers with more than 12' of cover may require wall thicknesses greater than SDR 35 or T-1. PVC is not allowed for sewers greater than 24" in diameter or more than 16' of cover.

4.) Ductile Iron Pipe or CCWSA approved equal is required for sanitary sewer lines:
A.) Crossing storm sewers or other utilities with less than 2' of clearance
B.) Crossing water mains
C.) Crossing all streams and vegetative buffers
D.) For all cross country locations with less than 3' of cover
E.) For all locations in roadways with less than 5' of cover
F.) For all locations with 16' or more of cover
G.) With 20% or greater slope
H.) Inside all casings
I.) Installed in subdivision easements between lots
J.) Adjacent to all drop manholes.
K.) For all installations in fill material
L.) At all other locations designated by the CCWSA

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

6.) All sewer service laterals shall have a minimum diameter of 6" and a minimum grade of 2%. All sewer laterals shall be installed using a laser level or slope level. All laterals shall have minimum pipe bedding. Laterals "SHALL" be located per CCWSA Standard Details S-13, S-14 and S15. Clean out shall not be located outside of Right-of-Way or Easement. No structure can within 5' (five feet) of a sewer clean out. Including, but not limited to any type of building, porches, foundations, stairs, signs, fences, retaining wall, other types of walls, etc……

7.) The Developer shall obtain a land disturbance permit from Cherokee County governing all items related to erosion control.

8.) This project is located in Land Lots _____, in the _____ District of Cherokee County, Georgia.

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

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

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

12.) Contractor is responsible for staking the alignment of the proposed pipeline prior to pipe installation. If a conflict should arise, the contractor shall notify the designer at that time.

13.) All excavated dirt shall be placed on the high side of the trench away from any creeks.

14.) Any fill dirt over the pipe shall be graded to prevent ponding.

15.) The right-of-way or construction easement represents the limits of clearing for the complete job. The contractor shall not clear beyond this limit.

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

17.) No bury pits are allowed.

18.) Topographic ground elevations along all sewer lines, gravity and force mains, are from field-run surveys, not aerial photographs.

19.) All easements must be acquired prior to the preconstruction meeting with the Chief Inspector.

20.) The Developer/Contractor shall meet with the Chief Inspector at least 24 hours before beginning construction. The Contractor shall notify the Chief Inspector or his designated representative by 8:30 AM of each workday when work is scheduled unless authorized otherwise.

21.) Sanitary sewer force mains shall be installed so that the top of the pipe is a minimum of four feet below final grade, four feet below the edge of the pavement, or four feet below the ditch paralleling the road, whichever is deepest.

22.) Type 4 bedding is required at all restrained pipe installations.

23.) Contractor must show proof of insurance in the amount specified by the CCWSA. See Detail M-04

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

25.) A vertical separation of at least 18 inches is required where a sewer line crosses an existing or proposed water main. A full joint of sanitary sewer pipe is required to be centered at the water main crossing. See **Section S316.2**

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

27.) Potable water and sanitary sewer structures are not allowed within a dam. Utility pipelines and structures must be a minimum of 30 feet outside the toe of slope of the dam.

28.) Existing County roads shall "**NOT**" be open cut unless permission is granted by the Cherokee County Department of Public Transportation.

29.) Plan approval is valid for 12 months without beginning construction. Plans shall be subject to beginning the process of review and approval if 12 months expire prior to the start of construction.

30.) As-Built drawings of water and sanitary sewer facilities are required to be submitted to the CCWSA upon completion of the project.

31.) If construction plans are stamped for a full project, and then the Developer revises the plans to build the development in phases, no construction or field inspection will be allowed to begin until the revised, phased plans are re-approved and stamped for the phased construction.

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

33.) Inside of steel casings, pipe joints shall be restrained using Fast-Grip gaskets or approved equal.

34.) Concrete footings are required for all manholes that are 16' in depth or more and for all manholes installed in fill material.

35.) Sanitary sewers in roadways shall be installed with a minimum of 7' of cover where laterals are located in order to obtain a minimum cover of 3' over the lateral at the R/W limit, or DIP laterals are required.

36.) The CCWSA shall not be responsible for any building that is built too low to be served by the sanitary sewer system.

37.) The CCWSA shall not be responsible for any sanitary sewer services covered or buried by construction.

38.) Soil adjacent to all manholes located in roadways will be tested for 95% compaction. The CCWSA must receive a copy of the results of the testing before the final plat will be signed.

39.) When transitioning from DIP to PVC, the Contractor must utilize solid sleeves or "Harco" fittings.

40.) All angles between "in" lines and "out" lines for manholes shall be labeled. Acute angles (angles<90 degrees) are not allowed for sewer mains or sewer services.

41.) Sewer lines that have slopes greater than 20% shall be DIP and shall be provided with concrete anchors (CCWSA Standard Detail S-18).

42.) Manholes located in future streets must be installed to be 48" or higher above grade.

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

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

45.) Inside drop manholes shall be 5 feet in diameter and shall be built in accordance with CCWSA Standard Detail S-03.

46.) All force mains paralleling water mains shall be encased in green polyethylene tubing so as to identify the force main as sanitary sewer.

47.) Locator wire must be installed above all sewer lateral lines.

48.) Sanitary sewer cleanouts shall be installed for all service laterals at the edge of the sewer easement or right-of-way. See CCWSA Standard Details S-13, S-14 and S-15. CCWSA shall maintain the sewer mains and sewer laterals to the County, City or State Right-Of-Way or to the edge of an easement dedicated to CCWSA. If sewer main is located within a private ingress-egress or a blanket utility easement, CCWSA shall maintain sewer mains and laterals from back of curb to back of curb. In the event of zero building setback adjacent to a Right-Of-Way, CCWSA will maintain sewer mains and laterals from back of curb to back of curb. Clean out shall not be located outside of Right-of-Way or Easement. No structure can be within 5' (five feet) of a sewer clean out. Including, but not limited to any type of building, porches, foundations, stairs, signs, fences, retaining wall, other types of walls, etc……

49.) Horizontal locations will be referenced to Georgia State Plane Coordinate System NAD 83 West Zone Feet.

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

51.) Orthometric locations will be referenced to GEOID 99/03

52.) No landscaping or structures will be allowed inside CCWSA easements.

53.) Must show all street lights within development.

54.) Must show 911 address for each lot or parcel.

Street Light Ordinance
Pole Specifications:
- 30 Foot Poles Only
- Wood or Fiberglass Only
- Arms must be 2 ½ to 6' long
- Roadway Fixtures

Street light plans are submitted by the Power Companies to the Street Light Coordinator. All power pole contributions must be paid by the Developer ***before*** the release of water meter sales.

The above does not apply to subdivisions that are located inside city limits.

Any further questions please call:
Street Light Coordinator at (770) 479-9107

B.C. ENGINEERING, INC.
116 NORTH MAIN ST.
CUMMING, GA 30040
PHONE: (770) 205-6181
FAX: (770) 205-6162
EMAIL: office@bcengineering-ga.com

4195 HICKORY FLAT HWY
SANITARY DETAILS
LAND LOT 115
15TH DISTRICT, 1ST SECTION
CHEROKEE COUNTY
PREPARED FOR
JACOB DYLAN

GEORGIA REGISTERED NO. 26083 PROFESSIONAL ENGINEER BRIAN W. COLE
09/13/24

DRAWN BY: NBG	REVISION	DATE	DESCRIPTION
CHECKED BY: BC			
DATE: 09/13/24			
SCALE: AS NOTED			
LAND LOTS: 115			
DISTRICT: 15TH			
SECTION: 1ST			

SHEET NO. 23 OF 23

JOB NO. 2023-082

NOTES

ALL EXISTING TREES, SPECIMEN AND NON-SPECIMEN, COUNTED FOR EDF CREDITS MUST BE FULLY PRESERVED DURING ALL PHASES OF THIS PROJECT. THE CRZ OF SPECIMEN TREES PLUS ALL STREAM BUFFERS SHALL BE PROTECTED WITH A WIRE-BACK TREE SAVE FENCING WITH METAL SUPPORT POSTS AND TREE SAVE SIGNAGE. INSTALLATION OF THE TREE SAVE FENCE WILL INVOLVE NO TRENCHING.

TREE SAVE FENCE FOR THE ENTIRE SITE MUST BE INSTALLED, INSPECTED AND APPROVED PRIOR TO INSTALLATION OF EROSION CONTROL MEASURES. NO LAND DISTURBANCE OR DEMOLITIION IS ALLOWED BEFORE TREE SAVE FENCING HAS BEEN INSPECTED AND APPROVED BY CITY ARBORIST

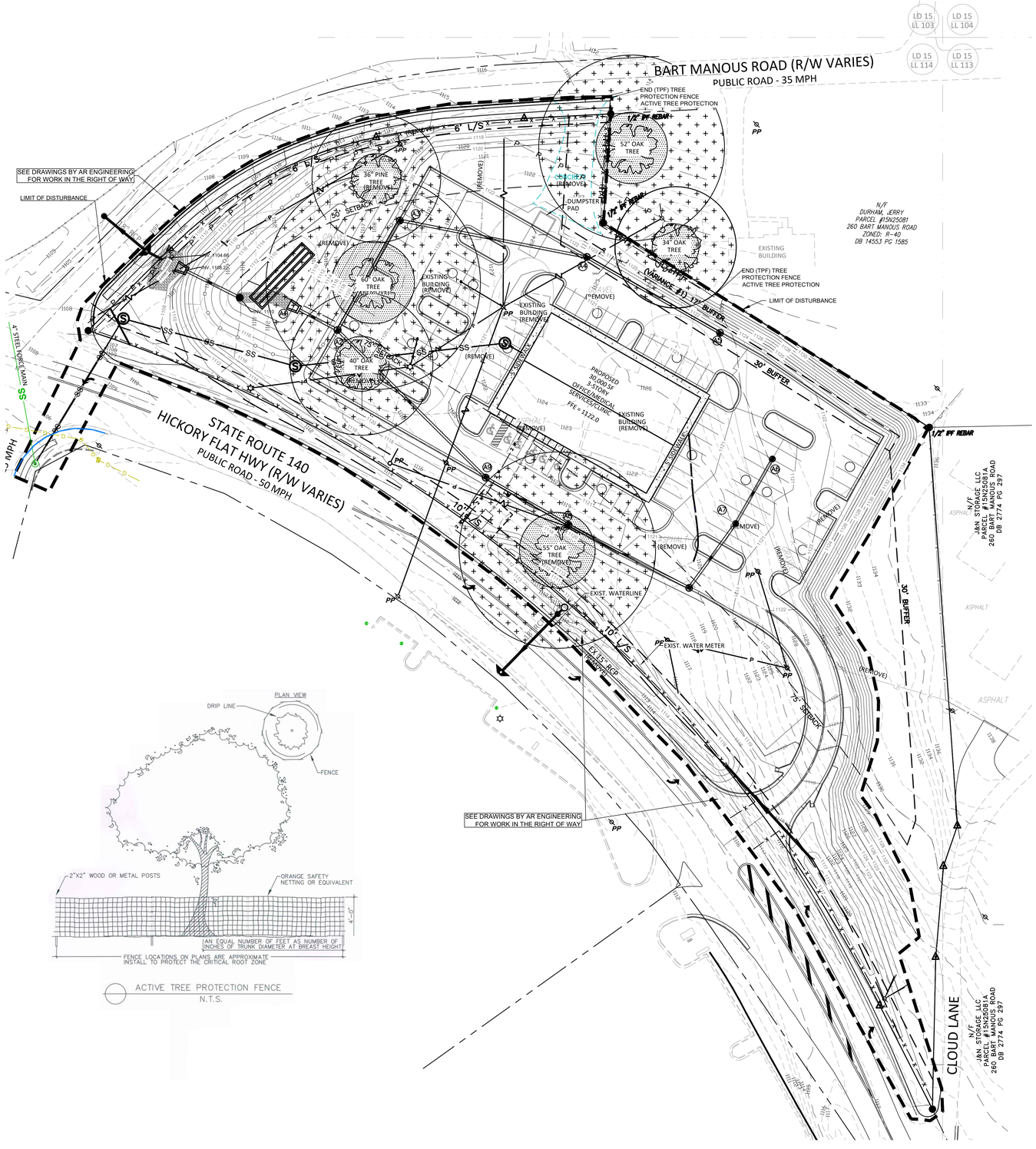
TREE SAVE FENCE FOR ENTIRE SITE MUST BE INSTALLED, INSPECTED AND APPROVED PRIOR TO INSTALLATION OF EROSION CONTROL MEASURES. NO LAND DISTURBANCE OF DEMOLITION IS ALLOWED BEFORE TREE SAVE FENCING HAS BEEN INSPECTED AND APPROVED BY CITY ARBORIST.

THE CLEANING OF EQUIPMENT, STORAGE OF MATERIALS OR DIRT, DISPOSAL OF WASTE MATERIAL SUCH AS PAINT, OIL SOLVENTS OR OTHER HARMFUL SUBSTANCES, OR ANY OTHER SUCH ACT WHICH MAY BE HARMFUL TO THE CONTINUED FATALITY OF THE TREE(S) WITHIN THE TREE PROTECTION AREA, IS PROHIBITED.

PRIOR TO COMMENCEMENT OF ANY GRADING, CONSTRUCTION OR TREE REMOVAL AUTHORIZED THROUGH THE ISSUANCE OF A LAND DISTURBANCE PERMIT, A TREE PROTECTION AREA FOR ANY TREE LOCATED WITHIN 25' OF ANY PROPOSED GRADING, CONSTRUCTION OR TREE REMOVAL MUST BE ESTABLISHED BY PHYSICAL BARRIERS AND MAINTAINED UNTIL SUCH WORK IS COMPLETED.

ANY TREE DESIGNATED IN THE PLAN TO BE SAVED THAT IS DAMAGED DURING CONSTRUCTION, OR AS A RESULT OF SUCH CONSTRUCTION, SHALL BE TREATED ACCORDING TO ACCEPTED NATIONAL ARBORISTS ASSOCIATION STANDARDS, OR REPLACED WITH A TREE(S) EQUAL IN THE UNIT VALUE OF THE TREE REMOVED. HOWEVER, ANY SPECIMEN TREE DAMAGED AS DESCRIBED ABOVE SHALL BE REPLACED ACCORDING TO MUNICIPAL ORDINANCES. DAMAGE TO ANY TREES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND COMPENSATED FOR AT THE CONTRACTOR'S EXPENSE.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO BRING TO THE ATTENTION OF THE APPROPRIATE PARTY ANY CONFLICT WITH ANY SPECIMEN TREE PRIOR TO ANY DISTURBANCE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES WHICH MAY RESULT FOR NOT REPORTING POTENTIAL DAMAGE TO SPECIMEN TREES.



LANDSCAPE COMPLIANCE -CHEROKEE COUNTY

TOTAL AREA-CHEROKEE COUNTY :
3.92 AC

TOTAL PROPOSED LIMITS OF DISTURBANCE (LOD):
3.92 AC

TREE DENSITY CALCULATION:
PROPOSED ZONING: OI (DENSITY = 16 UNITS PER DISTURBED AC)
REQUIRED DENSITY: DISTURBED 3.92AC x 16 UNITS/AC = 67.72UNITS
61.7 units provided (no additional room to plant reviewer to assess compensation for deficit of 6.02units)

EXISTING DENSITY (SEE TABLES): 0 UNITS

SPECIMEN DENSITY TO BE REMOVED: 44.2 TOTAL UNITS
(NON-SPECIMEN UNITS (PINE NIC) 0 + 44.2 SPECIMEN UNITS)

DENSITY TO REMAIN (SEE TABLES):
0 DENSITY UNITS

SPECIMEN RECOMPENSE:
3 SPECIMEN SIZED TREES TO BE REMOVED

REMOVED SPECIMEN SIZE/CONDITION TREES: 44.2 UNITS
CALCULATED RECOMPENSE: 44.2 UNITS x 2 = 88.4UNITS
- 4" MIN. CAL. TREES PLANTED FOR RECOMPENSE (0.7 UNITS EA.). 88.4 UNITS/0.7 UNITS = 126, 4" CALIPER TREES FOR SPECIMEN REC.

126, 4" CALIPER TREES TO BE PLANTED ON SITE.
SEE SHEET FOR TREE SCHEDULE.

NORTH:

SCALE:
0 40' 60' 80'
SCALE: 1"=40'

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

IT IS THE CLIENT OR CONTRACTOR'S RESPONSIBILITY TO CONTACT UTILITY COMPANIES PRIOR TO ANY CONSTRUCTION AS THE LOCATION OF UTILITIES SHOWN ON THIS PLAT ARE APPROXIMATE AND POSSIBLY INCOMPLETE. THEREFORE CERTIFICATION TO THE LOCATION OF ALL UNDERGROUND UTILITIES ARE WITHHELD.

REVISIONS:

DATE	#
– –	

STATE OF GEORGIA
PETER J. FRAWLEY 766 REGISTERED LANDSCAPE ARCHITECT

FRAWLEY ASSOCIATES, LLC.
LANDSCAPE ARCHITECTS
675 SEMINOLE AVE (SUITE 101)
ATLANTA, GA 30307 (404) 874-5091

4195 HICKORY FLATS HWY.
LL 115, 15TH DISTRICT, 1st SECTION
CANTON, CHEROKEE COUNTY, GA

TREE SURVEY
TREE PROTECTION

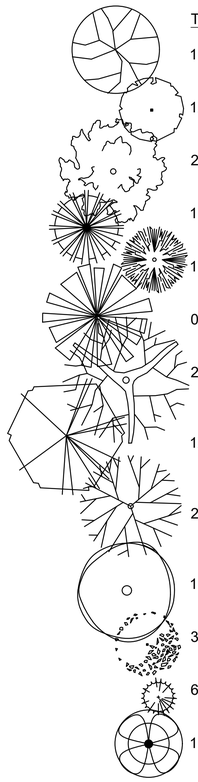
SCALE: AS SHOWN

DATE: 09/04/2024

PROJECT: FA-24039

SHEET
L-1.0
SHEET 1 OF 3

SURVEY/BASE INFORMATION PREPARED BY OTHERS; FRAWLEY ASSOCIATES LLC DOES NOT WARRANT THE ACCURACY OF ANY INFORMATION PROVIDED BY OTHERS.



TREE LIST

13 CHINESE PISTACHE -Pistacia chinensis
4.0" CAL. (9.1 TDUs)

12 EUROPEAN HORNBEAM - CARPINUS betulus 'Fastigiata"
4.0" CAL. (8.4 TDUS)

21 RED MAPLE - Acer rubrum Red Sunset
4.0" CAL. (14.7 TDUS)

15 CRYPTOMERIA - CRYPTOMERIA japonica
4.0" CAL. (10.5 TDUS)

15 EASTERN REDCEDAR - JUNIPERUS virginiana
4.0" CAL. (10.5 TDUS)

04 SOUTHERN MAGNOLIA - MAGNOLIA grandiflora
4.0" CAL. (2.8 TDUS)

24 SHUMARD OAK - QUERCUS shumardii
4.0" CAL. (16.8 TDUS)

12 BALD CYPRESS - TAXODIUM distichum
4.0" CAL. (8.4 TDUS)

22 BLACK GUM Nyssa sylvatica
4.0" CAL. (15.4 TDU)

13 LACEBARK ELM - ULMUS parvifolia
4" CAL. (9.1 TDUS)

33 REDBUD - CERCIS canadensis
2.0" CAL. (13.2 TDU)

65 SAVANNAH HOLLY - Ilex atenuata
Full to ground - 2.0" CAL.(26.0 TDU)

13 FLOWERING DOGWOOD - Cornus florida
2" CAL. (5.2 TDU)

TOTAL TREES PROVIDED:	262
TOTAL INCHES PROVIDED:	826
TOTAL TDU' PROVIDED	150.0
SPECIMEN RECOMPENSE TDU	88.4
SITE DENSITY TDU	61.7

NORTH:

SCALE:

0 40' 60' 80'
SCALE: 1"=40'

BART MANOUS ROAD (R/W VARIES)
PUBLIC ROAD - 35 MPH

STATE ROUTE 140
HICKORY FLAT HWY (R/W VARIES)
PUBLIC ROAD - 50 MPH

CLOUD LANE

SEE DRAWINGS BY AR ENGINEERING FOR WORK IN THE RIGHT OF WAY

LIMIT OF DISTURBANCE

END (TPF) TREE PROTECTION FENCE ACTIVE TREE PROTECTION

50' SETBACK

30' BUFFER

52" OAK TREE

36" PINE TREE (BE MOVED)

34" OAK TREE

40" OAK TREE (REMOVE)

EXISTING BUILDING (REMOVE)

PROPOSED 30,000 SF 3-STORY OFFICE/CLINIC FFE = 1122.0

EXISTING BUILDING (REMOVE)

N/F DURHAM, JERRY PARCEL #15N25081 260 BART MANOUS ROAD ZONED: R-40 DB 14553 PG 1585

N/F J&M STORAGE, LLC PARCEL #15N25081A 260 BART MANOUS ROAD DB 2774 PG 297

1/2" FF REBAR

4" STEEL FORCE MAIN

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

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SURVEY/BASE INFORMATION PREPARED BY OTHERS; FRAWLEY ASSOCIATES LLC DOES NOT WARRANT THE ACCURACY OF ANY INFORMATION PROVIDED BY OTHERS.

REVISIONS:

DATE	#
– –	

STATE OF GEORGIA
PETER J. FRAWLEY 766
REGISTERED LANDSCAPE ARCHITECT

FRAWLEY ASSOCIATES, LLC.
LANDSCAPE ARCHITECTS
675 SEMINOLE AVE (SUITE 101)
ATLANTA, GA 30307 (404) 874-5091

4195 HICKORY FLATS HWY.
LL 115, 15TH DISTRICT, 1st SECTION
CANTON, CHEROKEE COUNTY, GA

TREE REPLACEMENT

SCALE: AS SHOWN

DATE: 09/04/2024

PROJECT: FA-24039

SHEET
L-1.1
SHEET 2 OF 3

NORTH: SCALE:

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

IT IS THE CLIENT OR CONTRACTOR'S RESPONSIBILITY TO CONTACT UTILITY COMPANIES PRIOR TO ANY CONSTRUCTION AS THE LOCATION OF UTILITIES SHOWN ON THIS PLAT ARE APPROXIMATE AND POSSIBLY INCOMPLETE. THEREFORE CERTIFICATION TO THE LOCATION OF ALL UNDERGROUND UTILITIES ARE WITHHELD.

REVISIONS:

DATE	#
– –	

GENERAL CONTRACT NOTES

SURVEY/BASE/TREE SURVEY: INFORMATION PREPARED BY OTHERS; FRAWLEY ASSOCIATES LLC (FA) DOES NOT WARRANT THE ACCURACY OF ANY INFORMATION PROVIDED BY OTHERS.

LIMITS TO WORK: THE CONTRACTOR SHALL VISIT THE SITE TO DETERMINE WHETHER THE CONSTRUCTION WAS PERFORMED WITHIN THE LIMIT OF WORK AREA DEPICTED ON THIS DRAWING. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE TO TURN OVER IN A 'FINISHED CONDITION' ALL THE DISTURBED AREA, EVEN IF IT IS OUTSIDE THE LIMIT OF WORK AREA SHOWN ON THE DRAWINGS. AT A MINIMUM THE DISTURBED AREA ASSOCIATED WITH THIS CONSTRUCTION SHALL BE SODDED AND LEFT IN A 'FINISHED CONDITION'.

PERMITS: THE LANDSCAPE CONTRACTOR SHALL WORK FROM A STAMPED SET OF PERMIT PLANS. DO NOT WORK FROM ANY PLANS THAT DO NOT HAVE THE PERMIT STAMP BY THE MUNICIPALITY.. MOST CURRENT PLANS: THESE PLANS MAY NOT BE THE MOST CURRENT DRAWINGS AVAILABLE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE GENERAL CONTRACTOR/ENGINEER TO VERIFY/INSURE THAT THESE PLANS ARE THE MOST CURRENT.

SITE CONDITIONS: ACTUAL SITE CONDITIONS MAY HAVE CHANGED SINCE SINCE THESE DRAWINGS WERE PREPARED. IT IS THE CONTRACTORS RESPONSIBILITY TO NOTIFY THE LANDSCAPE ARCHITECT OF ANY DISCREPANCIES/CONFLICTS WHICH MAY EXIST BETWEEN THE DRAWINGS AND ACTUAL SITE CONDITIONS. FAILURE TO NOTIFY, WILL BE CONSIDERED ACCEPTANCE OF THE CURRENT SITE CONDITIONS.

TREE PROTECTION ALL EXISTING TREES, SPECIMEN AND OR NON-SPECIMEN, COUNTED FOR MUNICIPAL CREDIT MUST BE FULLY PRESERVED DURING ALL PHASES OF THIS PROJECT.

TREE SAVE FENCE FOR ENTIRE SITE MUST BE INSTALLED, PRIOR TO OR IN CONJUNCTION WITH THE INSTALLATION OF EROSION CONTROL MEASURES. NO LAND DISTURBANCE OF DEMOLITION IS ALLOWED BEFORE TREE SAVE FENCING HAS BEEN INSTALLED.

THE CLEANING OF EQUIPMENT, STORAGE OF MATERIALS OR DIRT, DISPOSAL OF WASTE MATERIAL SUCH AS PAINT, OIL SOLVENTS OR OTHER HARMFUL SUBSTANCES, OR ANY OTHER SUCH ACT WHICH MAY BE HARMFUL TO THE CONTINUED FATALITY OF THE TREE(S) WITHIN THE TREE PROTECTION AREA, IS PROHIBITED.

PRIOR TO COMMENCEMENT OF ANY GRADING, CONSTRUCTION OR TREE REMOVAL AUTHORIZED THROUGH THE ISSUANCE OF A LAND DISTURBANCE PERMIT, A TREE PROTECTION AREA FOR ANY TREE LOCATED WITHIN 25' OF ANY PROPOSED GRADING, CONSTRUCTION OR TREE REMOVAL MUST BE ESTABLISHED BY PHYSICAL BARRIERS AND MAINTAINED UNTIL SUCH WORK IS COMPLETED.

ANY TREE DESIGNATED IN THE PLAN TO BE SAVED THAT IS DAMAGED DURING CONSTRUCTION, OR AS A RESULT OF SUCH CONSTRUCTION, SHALL BE TREATED ACCORDING TO ACCEPTED NATIONAL ARBORISTS ASSOCIATION STANDARDS, OR REPLACED WITH A TREE(S) EQUAL IN THE UNIT VALUE OF THE TREE REMOVED. HOWEVER, ANY SPECIMEN TREE DAMAGED AS DESCRIBED ABOVE SHALL BE REPLACED ACCORDING TO MUNICIPAL ORDINANCES. DAMAGE TO ANY TREES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND COMPENSATED FOR AT THE CONTRACTOR'S EXPENSE.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO BRING TO THE ATTENTION OF THE APPROPRIATE PARTY ANY CONFLICT WITH ANY SPECIMEN TREE PRIOR TO ANY DISTURBANCE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES WHICH MAY RESULT FOR NOT REPORTING POTENTIAL DAMAGE TO SPECIMEN TREES.

SITE OBSERVATION/DRAWING DISCREPANCIES: THE OWNER MAY OR MAY NOT HAVE CONTRACTED WITH FRAWLEY ASSOCIATES LLC TO OBSERVE CONTRACTOR COMPLIANCE WITH THE CONTRACT DRAWINGS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ADHERE TO THE DRAWINGS AND SPECIFICATIONS.

SUBSTITUTIONS: NO TREE SPECIES OR SIZE SUBSTITUTIONS WILL BE CONSIDERED UNLESS A SUBSTITUTION HAS BEEN SUBMITTED IN WRITING TO THE MUNICIPALITY AND APPROVED BY THE MUNICIPALITY. FAILURE TO COMPLY IN THIS REGARD MAY RESULT IN THE REPLACEMENT OF ALREADY INSTALLED PLANT MATERIAL AND IN A DELAY IN RECEIVING THE CERTIFICATE OF OCCUPANCY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COPY THE LANDSCAPE ARCHITECT ON ANY CHANGES APPROVED BY THE MUNICIPALITY.

MUNICIPAL COMPLIANCE: IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE MUNICIPALITY HAVING JURISDICTION THAT THE INSTALLED LANDSCAPE/IRRIGATION IS IN COMPLIANCE WITH PERMITTED DRAWINGS. THE CONTRACTOR SHALL COORDINATE WITH THE MUNICIPAL ARBORIST/PLANNER ON ALL ASPECTS OF THE INSTALLATION.

FRAWLEY ASSOCIATES LLC (FA) SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION, MEANS, METHODS, TECHNIQUES, OR PROCEDURES UTILIZED BY ANY CONTRACTOR, NOR FOR THE SAFETY OF PUBLIC OR ANY CONTRACTORS EMPLOYEES, OR FOR THE FAILURE OF ANY CONTRACTOR TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO INSURE THAT THE CONTRACTOR'S WORK SITE IS KEPT IN A SAFE CONDITION FOR WORKERS AND THE PUBLIC DURING THE COURSE OF THE CONSTRUCTION AND LEAVE THE SITE IN A SAFE CONDITION AT THE END OF EACH WORK DAY. THE CONTRACTOR SHALL CONFORM WITH ALL OSHA CONSTRUCTION STANDARDS. SEE WWW.OSHA.GOV NO DISCREPANCY IN CONSTRUCTION DRAWINGS OR SPECIFICATIONS SHALL CAUSE DEFECTIVE OR INAPPROPRIATE MATERIALS TO BE USED OR POOR WORKMANSHIP TO BE ALLOWED/ACCEPTED. (FA) SHALL NOT BE LIABLE FOR SAFETY ISSUES RELATIVE TO TREE PLANTINGS REQUIRED BY ANY MUNICIPALITY TO BE WITHIN THE ROW.

FA HAS ONLY BEEN CONTRACTED TO PREPARE THE LANDSCAPE PLANTING PLAN FOR THIS PROPERTY. FA HAS NOT PREPARED THE FOLLOWING: IRRIGATION/WELL DESIGN, GRADING DESIGN, HYDROLOGY DESIGN, SOILS DESIGN, PLANT MAINTENANCE SCHEDULES, UTILITY DESIGN, STRUCTURAL DESIGN, ARCHITECTURAL DESIGN, ELECTRICAL DESIGN. THE CONTRACTOR SHALL CONTACT THE OWNER FOR ANY ISSUES RELATED TO WORK PREPARED BY OTHERS.

CALL BEFORE YOU DIG-811-UTILITY LOCATION: IT IS THE CONTRACTOR'S RESPONSIBILITY TO HAVE ALL UTILITIES LOCATED PRIOR TO ANY DIGGING. PRIOR TO CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE UTILITIES PROTECTION CENTER IN GEORGIA @ 811, 72 HOURS BEFORE DIGGING, (EXCLUDING HOLIDAYS AND WEEKENDS) AS SPECIFIED IN THE 'CALL-BEFORE-YOU-DIG' LAW. FINES AND PENALTIES THAT OCCUR AS A RESULT OF NOT LOCATING OVERHEAD OR UNDERGROUND UTILITIES, WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

THE CONTRACTOR SHALL NOTIFY THE MUNICIPALITY AND LANDSCAPE ARCHITECT IN WRITING, IF IT BECOMES APPARENT DURING THE INSTALLATION THAT OVERHEAD WIRES WILL INTERFERE WITH THE GROWTH OF TREES OVER TIME. FAILURE TO NOTIFY PRIOR TO INSTALLATION MAY REQUIRE RELOCATION AT NO ADDITIONAL COST TO THE OWNER.

COORDINATION: THE CONTRACTOR SHALL COORDINATE AND SEQUENCE HIS WORK WITH THAT OF OTHER SITE CONTRACTORS.

TREE MEASUREMENTS: SPECIFIC TO MUNICIPAL REQUIREMENTS ALL DECIDUOUS AND EVERGREEN TREES SHALL FIRST MEET THE CONDITIONS OF CALIPER AND THEN HEIGHT. CALIPER MEASUREMENTS ARE TAKEN 6" ABOVE THE GROUND FOR TREES 4" CAL. OR LESS AND 12" ABOVE THE GROUND FOR TREES OVER 4" CALIPER. SHRUBS SHALL MEET THE REQUIREMENTS FOR HEIGHT AND CONTAINER/B&B SIZE.

SIGHT DISTANCES: ALL TREES 3" CAL. OR LARGER SHALL HAVE A CLEARANCE TO THE LOWEST LIMB/BRANCH OVERHANG OF 6.5' HT. ALL SHRUBS AT ANY INTERSECTION OR AT THE TIPS OF PARKING LOT ISLANDS SHALL BE INSTALLED AND MAINTAINED AT OR BELOW 2'-0" IN ORDER TO MAINTAIN SAFE SITE DISTANCES FOR DRIVERS. THE OWNER/CONTRACTOR IS RESPONSIBLE FOR ONGOING MAINTENANCE OF THE PLANT MATERIAL AFTER INSTALLATION, AS DESCRIBED ABOVE. THE CONTRACTOR SHALL INFORM THE OWNER OF THIS OBLIGATION AND SUBMIT TO THE OWNER A COST FOR ONGOING MAINTENANCE OF THE INSTALLATION FOR THE GUARANTEE PERIOD.

ROOT GUARDS ANY TREE INSTALLED WITHIN 10' OF ANY WALK, CURB OR PAVEMENT SURFACE SHALL HAVE AN 18" DEEP ROOT GUARD INSTALLED TO EXTEND A MINIMUM OF 10' IN EACH DIRECTION FROM THE TRUNK. ROOT GUARDS MAY BE CONTINUOUS FOR TREES ALIGNED WITH PAVED OR CURBED AREAS.

CLEANING: THE CONTRACTOR SHALL BE RESPONSIBLE TO CLEAN AND REMOVE/DISPOSE, IN A LEGAL MANNER, FROM THE SITE ALL DEBRIS THAT IS A PART OF THE CONTRACTOR'S OPERATION.

PARKING LOT ISLANDS: THE CONTRACTOR SHALL VERIFY THAT NO CONSTRUCTION DEBRIS NOR COMPACTED SUB-BASE EXISTS IN PARKING LOT ISLANDS. THE CONTRACTOR SHALL EXCAVATE EACH ENTIRE ISLAND TO A DEPTH OF 2'-0" AND REFILL WITH SUITABLE PLANTING SOIL PRIOR TO THE INSTALLATION OF THE PLANT MATERIAL; REMOVAL OF INSTALLED PLANT MATERIAL AND EXCAVATION OF ISLANDS WILL BE REQUIRED IF ANY ISLAND IS NOT PREPARED IN THIS MANNER.

OTHER MATERIALS: THE CONTRACTOR SHALL SUPPLY, AS A PART OF THIS CONTRACT, ALL MATERIALS NECESSARY FOR THE COMPLETE INSTALLATION OF THE LANDSCAPE AS SHOWN ON THE DRAWINGS. THE OWNER SHALL SUPPLY THE WATER NECESSARY FOR THE LANDSCAPE INSTALLATION. THE CONTRACTOR SHALL IMMEDIATELY BRING TO THE ATTENTION OF THE OWNER, IN WRITING AND BEFORE INSTALLATION, ANY CONDITIONS WHICH MAY ADVERSELY EFFECT THE PLANTING OR THE PROPER GROWTH OF VEGETATION.

GRADING/DRAINAGE/HYDROLOGY: SITE GRADING/DRAINAGE DESIGN HAS BEEN PREPARED BY OTHERS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO 'FINE GRADE' WITH POSITIVE DRAINAGE THE TOP 3" AS A PART OF THE LANDSCAPE WORK. THE CONTRACTOR SHALL ACCEPT GRADING PRIOR TO COMMENCEMENT OF LANDSCAPE WORK. THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE GENERAL CONTRACTOR OF ANY AREAS WHICH DO NOT HAVE POSITIVE DRAINAGE PRIOR TO PROCEEDING. REFER TO CIVIL ENGINEER'S DRAWING FOR ALL DRAINAGE, SPOT GRADES, DRAINAGE STRUCTURES ETC.

PLANT DETAILS: ALL PLANT MATERIAL WILL BE INSTALLED AS PER THE DETAILS SHOWN ON THE DRAWING. THE CONTRACTOR SHALL DEMONSTRATE THAT TREE ANCHORS HAVE BEEN INSTALLED AS DETAILED.

PLANT QUALITY/CRITERIA: ALL TREES SHALL BE OF GOOD QUALITY, FREE OF DISEASE, STRAIGHT TRUNKED, FULL HEADED, SYMMETRICAL AND WELL ROOTED. PLANT MATERIAL SHALL BE WELL LEAFED WITH 90% COVERAGE; NO SUBSTANTIAL AREAS WHICH EXHIBIT DEAD, DYING OR DETERIORATING LEAF MASS WILL BE ACCEPTED. ALL TREES/SHRUBS MUST BE CONTAINER GROWN OR BALLED AND BURLAPPED WITH SIZES AS INDICATED ON THE PLANT LIST OR ON THE DRAWINGS. ALL PLANTS SHALL BE HEALTHY, VIGOROUS MATERIAL, FREE OF PESTS AND DISEASES. ALL ROOTBALLS, CONTAINERS & HEIGHT TO WIDTH RATIOS SHALL CONFORM TO THE SIZE STANDARDS SET FORTH IN 'AMERICAN STANDARDS FOR NURSERY STOCK' AS PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN. THE CONTRACTOR SHALL ARRANGE AND COORDINATE PLANT APPROVAL 'PRIOR TO INSTALLATION'. THE OWNER/OWNER'S REPRESENTATIVE MAY AT ANY POINT BEFORE, DURING OR AFTER THE INSTALLATION BUT PRIOR TO FINAL ACCEPTANCE REJECT PLANT MATERIAL OR INSTALLATION WHICH DOES NOT COMPLY WITH THE SPECIFICATIONS OF THIS DRAWING. ALL PLANT MATERIAL SHALL BE NUMBER ONE OR BETTER.

PLANTING CONDITIONS: IT IS THE LANDSCAPE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE GENERAL CONTRACTOR AND ACCEPT PLANTING/GRADED/SITE CONDITIONS. PLANT MATERIAL SHALL NOT BE INSTALLED IN AREAS WHICH HAVE NOT BEEN BROUGHT TO FINISHED GRADE OR IN AREAS WHERE BUILDING MATERIALS HAVE BEEN BURIED OR NOT PROPERLY REMOVED FROM THE SITE. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE TO 'FINE GRADE' THE SITE. THE CONTRACTOR SHALL BRING TO THE ATTENTION OF THE LANDSCAPE ARCHITECT ANY SITE CONDITIONS WHICH WILL ADVERSELY EFFECT THE GROWTH OF THE PLAN MATERIAL.

ORGANIC MULCH SHALL BE PINE STRAW. ALL PLANTED AREAS SHALL BE MULCHED WITH 3" FRESH MULCH CURRENT CROP 'SETTLED'. TREES IN SOD SHALL BE MULCHED WITH A 6' DIAMETER CIRCLE OF MULCH TO A DEPTH OF 3" SETTLED.

TOPSOIL: 2" OF NEW OR STOCKPILED TOPSOIL SHALL BE ADDED TO ALL AREAS TO BE SEEDED OR PLANTED WITH ANNUALS/GROUND COVER. TOPSOIL SHALL BE ADDED TO TREE AND SHRUB PLANTINGS IN A RATIO OF $\frac{1}{3}$ TOPSOIL TO $\frac{2}{3}$ SITE SOIL. TOPSOIL SHALL BE NATURAL, FRIABLE, FERTILE, FINE LOAMY SOIL.

MAINTENANCE DURING CONSTRUCTION: IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE LANDSCAPE INSTALLATION INCLUDING WATERING, MOWING, PRUNING, WEEDING, MAINTAINING BED EDGES, PEST CONTROL AND SLOPE STABILIZATION UNTIL 'FINAL ACCEPTANCE' BY THE OWNER/OWNER'S REPRESENTATIVE.

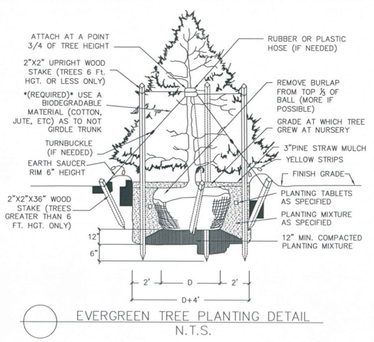
SODDING: THE SPECIES OF SOD SHALL BE BERMUDA GRASS OR AS REQUIRED BY THE DEVELOPMENT AND AS SUITABLE FOR THE GEOGRAPHIC LOCALITY. SOD SHALL ONLY BE INSTALLED DURING THE APPROPRIATE SEASON. SOD SHALL BE STRONGLY ROOTED, WEED, DISEASE AND PEST FREE AND UNIFORM IN THICKNESS. IT SHALL BE INSTALLED WITHIN 24 HOURS OF DELIVERY. IT SHALL BE INSTALLED IN AREAS FINE GRADED TO DRAIN PROPERLY. ANY SOD WHICH CREATES PONDING SHALL BE REMOVED, THE AREA RE-GRADED AND THE SOD RESET.

PLANT GUARANTEE: ALL PLANT MATERIAL SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR BEGINNING AT FINAL ACCEPTANCE. THE CONTRACTOR SHALL REPLACE ANY PLANT MATERIAL WHICH DIES OR IS IN A DETERIORATING CONDITION DURING THE GUARANTEE PERIOD AND HAS BEEN PROPERLY MAINTAINED, (WHICH INCLUDES PROPER WATERING). UNHEALTHY TREES WILL BE DEFINED AS A MAIN LEADER DIE BACK OR 25% OF THE CROWN IS DEAD. UNHEALTHY SHRUBS AND GROUND COVER WILL BE DEFINED AS A MINIMUM OF NOT COMPLYING WITH SPECIFICATIONS IN THE 'AMERICAN STANDARD FOR NURSERY STOCK'.

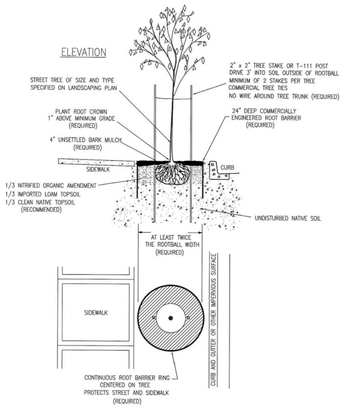
IRRIGATION: THE CONTRACTOR SHALL SUBMIT A PRICE TO DESIGN AND INSTALL A FULLY AUTOMATIC IRRIGATION SYSTEM FOR THIS LANDSCAPE INSTALLATION. THE LANDSCAPE CONTRACTOR SHALL SPECIFY THE TYPE OF CONTROL SYSTEM, THE INCLUSION OF AS-BUILT DRAWINGS, THE TYPES & SIZES OF PIPES AND FITTINGS, BACKFLOW PREVENTION DEVICE, PRESSURE REDUCING VALVES, SLEEVES AND LOCATIONS, CONTROL WIRE, IRRIGATION VALVES, VALVE BOXES AND THRUST BLOCKS. THE LANDSCAPE CONTRACTOR SHALL PAY FOR ALL PERMITS AND FEES. THE LANDSCAPE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES AND ORDINANCES. THE LANDSCAPE CONTRACTOR SHALL PROVIDE A CERTIFICATE OF WARRANTY, REGISTRATION AND WRITTEN GUARANTEE FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL ASPECTS OF ANY IRRIGATION SYSTEM; FRAWLEY ASSOCIATES LLC, HAS NOT, IN ANY MANNER, PARTICIPATED IN THE DESIGN AND OR INSTALLATION OF ANY IRRIGATION SYSTEM.

MANUAL WATERING: ANY PLANTING INSTALLED WITHOUT OR PRIOR TO THE OPERATION OF AUTOMATIC IRRIGATION SYSTEM SHALL BE WATERED BY THE CONTRACTOR ON A REGULAR SCHEDULE UNTIL FINAL ACCEPTANCE. ALL TREES SHALL BE INSTALLED WITH 'GATOR BAGS' OR APPROVED EQUAL FOR ANY INSTALLATION WITHOUT AN AUTOMATIC IRRIGATION SYSTEM,

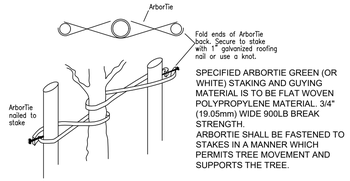
IRRIGATION METER: THE LANDSCAPE CONTRACTOR SHALL VERIFY WHETHER THE OWNER OR MUNICIPALITY REQUIRES A SEPARATE IRRIGATION METER. IF A SEPARATE IRRIGATION METER IS REQUIRED THE OWNER SHALL PAY OF THE METER AND ITS INSTALLATION. IF A SEPARATE IRRIGATION METER IS NOT REQUIRED AND THE HOUSE METER IS PROPERLY SIZED TO ACCOMMODATE AN IRRIGATION SYSTEM; THE IRRIGATION SYSTEM SHALL BE ATTACHED TO THE HOUSE METER. ALL IRRIGATION CONNECTIONS SHALL HAVE THE PROPER CHECK AND OR BACK FLOW DEVICES AS REQUIRED BY THE MUNICIPALITY FOR SUCH AN IRRIGATION CONNECTION. THESE DEVICES SHALL BE A PART OF THE IRRIGATION INSTALLERS' WORK.



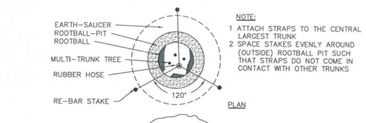
EVERGREEN TREE PLANTING DETAIL
N.T.S.



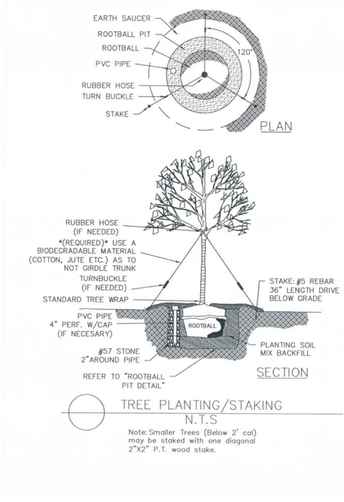
CHEROKEE COUNTY, GEORGIA
STREET TREE PLANTING DETAIL



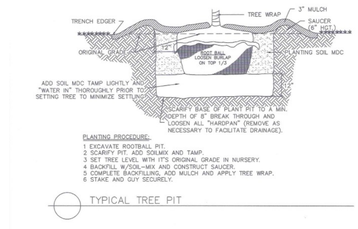
SPECIFIED ARBORTIE GREEN (OR WHITE) STAKING AND GUYING MATERIAL IS TO BE FLAT WOVEN POLYPROPYLENE MATERIAL, 3/4" (19.05mm) WIDE 900LB BREAK STRENGTH.
ARBORTIE SHALL BE FASTENED TO STAKES IN A MANNER WHICH PERMITS TREE MOVEMENT AND SUPPORTS THE TREE.



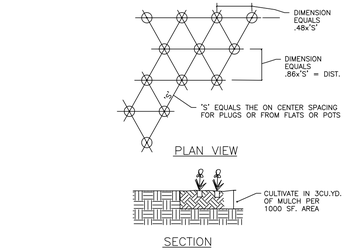
MULTI TRUNK GUYING
NTS



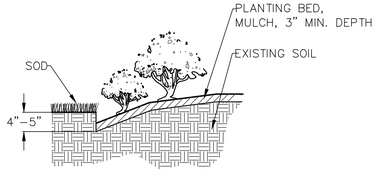
TREE PLANTING/STAKING
N.T.S
Note: Smaller Trees (Below 2' cal) may be staked with one diagonal 2"X2" P.T. wood stake.



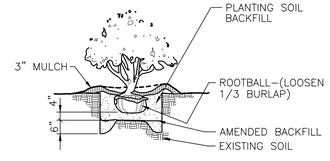
TYPICAL TREE PIT



GROUND COVER DETAIL
NOT TO SCALE



SHOVEL CUT BED EDGE
NOT TO SCALE



SHRUB PLANTING
NOT TO SCALE

FRAWLEY ASSOCIATES, LLC.
LANDSCAPE ARCHITECTS
675 SEMINOLE AVE (SUITE 101)
ATLANTA, GA 30307 (404) 874-5091

4195 HICKORY FLATS HWY.
LL 115, 15TH DISTRICT, 1st SECTION
CANTON, CHEROKEE COUNTY, GA

NOTES & DETAILS

SCALE: AS SHOWN

DATE: 09/04/2024

PROJECT: FA-24039

SHEET
L-1.2
SHEET 3 OF 3