CONSTRUCTION DRAWINGS

FOR

HABERSHAM COUNTY ANIMAL SHELTER

BRAVO SITE SET 02-11-2026

LOCATED IN
LAND LOT 10
101ST DISTRICT
HABERSHAM COUNTY, GEORGIA

THIS SHEET PLOTS ON 42" x 30"

Croft & Associates
3380 Blue Springs Road
Kennesaw, Georgia 30144
770.529.7714 (p)
www.croftae.com

Rochester | DCCM
425 Oak Street
Gainesville, Georgia 30501
770.718.0600
www.rochester-assoc.com

GEORGIA REGISTERED No. 31411 PROFESSIONAL ENGINEER ERIC M. CHINI 01.17.25

OWNER & DEVELOPER:

HABERSHAM COUNTY ANIMAL CONTROL
130 JACOBS WAY
CLARKESVILLE, GA, 30523
(706) 839-0216

ENGINEERING CONTACT:

Rochester | DCCM
ERIC M. CHINI, P.E.
(770) 718-0600

24 HOUR CONTACT:

JERRY BAGGETT
PUBLIC WORKS DIRECTOR/
CAPITAL PROJECTS MANAGER
(404) 987-9272
jbaggett@habershamga.com

SURVEY CONTACT:

DAVIDSON LAND SURVEYING, INC.
E.G. (EDDIE) DAVIDSON, PLS
(706) 754-7498

PROPOSED DEVELOPMENT BY:
HABERSHAM COUNTY ANIMAL CONTROL

Rochester DCCM

425 Oak St NW, Gainesville, GA 30501
770.718.0600 p | 770.718.9090 f
rochester-assoc.com

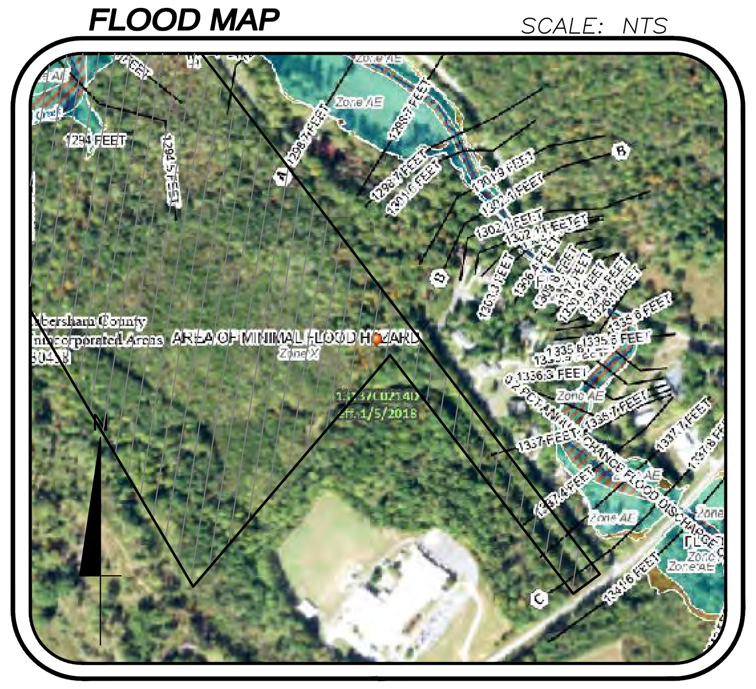
CONSTRUCTION SCHEDULE	1st Month	2nd Month	3rd Month	4th Month	5th Month	6th Month	7th Month	8th Month	9th Month	10th Month	11th Month	12th Month
MAINTAIN ALL EROSION CONTROL BMPs												
INSTALL PHASE 1 EROSION CONTROL BMPs												
INSTALL PHASE 2 EROSION CONTROL BMPs												
INSTALL PHASE 3 EROSION CONTROL BMPs												
GRADING												
BUILDING												
STORM & SANITARY SEWERS												
CURB & GUTTER												
PAVING												
PERMANENT VEGETATION & LANDSCAPING												

GEORGIA811 www.Georgia811.com

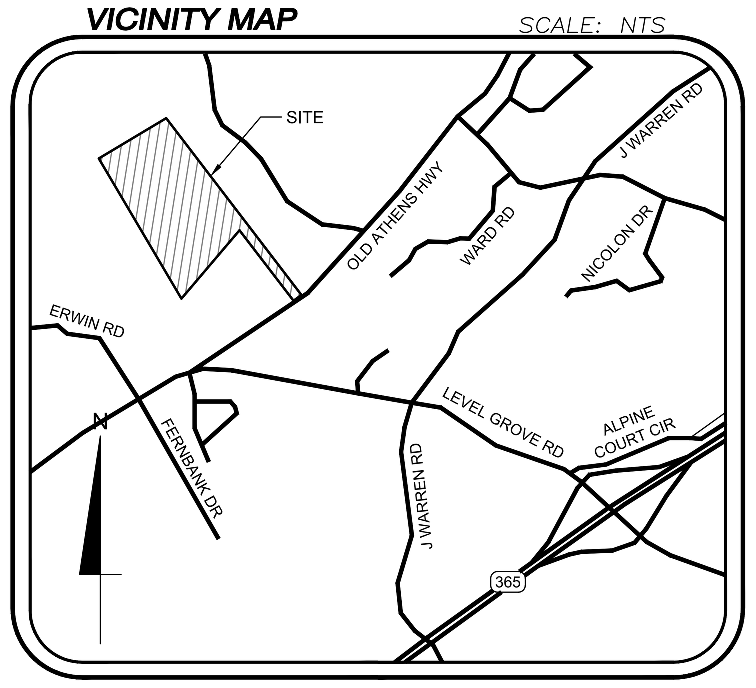
GSWCC Georgia Soil and Water Conservation Commission
ERIC M. CHINI, P.E.
Level II Certified Design Professional
CERTIFICATION NUMBER #13398
ISSUED: 11/18/2024 EXPIRES: 11/18/2027

NO PORTION OF THIS PROPERTY IS LOCATED IN A FLOOD HAZARD ZONE AS PER F.E.M.A. FLOOD INSURANCE RATE MAP OF HABERSHAM COUNTY, GEORGIA COMMUNITY PANEL NUMBER 13137C0214D, DATED 01/05/2018.

FLOOD MAP SCALE: NTS



VICINITY MAP SCALE: NTS



GEORGIA REGISTERED No. 31411 PROFESSIONAL ENGINEER ERIC M. CHINI 10.27.2025

PARCEL ID: 044 080A
ZONING: LI (LOW INTENSITY)
ROCHESTER PROJECT NO.: G223037.CFT
6.07.2024

NO.	DATE	DESCRIPTIONS
4.	10.27.2025	REVISION 2
3.	1.17.2025	VE REVISION 1
2.	8.13.2024	2ND SUBMITTAL – ADDRESSING COUNTY COMMENTS
1.	6.07.2024	1ST SUBMITTAL – INITIAL SUBMITTAL

REVISIONS

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ATTACHMENTS: LANDSCAPE PLANS BY LAND DESIGN GROUP, INC.

OWNER

HABERSHAM COUNTY ANIMAL CONTROL
130 JACOBS WAY, SUITE 302
CLARKSVILLE, GA
30523

HABERSHAM COUNTY ANIMAL SHELTER

HABERSHAM ANIMAL CONTROL
OLD ATHENS HWY
CORNELIA, GA
30531

No.	Date	Description
3	2025-11-24	REVISION 3 SET
2	2025-10-27	REVISION 2 SET
1	2025-01-17	VE REVISION 1 SET
0	2024-06-10	PERMIT SET

ISSUANCE

PROJECT NUMBER
2022-313

DRAWN: DCB
CHECKED: EMC

SHEET TITLE
COVER SHEET

SHEET NO.
C-1

3/6/2024 4:01:25 PM

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THIS SHEET PLOTS ON 42" X 30"

3" 2" 1" 1/2" 0

GENERAL NOTES:

1. "PRIOR TO STARTING CONSTRUCTION CONTRACTOR SHALL BE RESPONSIBLE TO MAKE SURE THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PLANS AND OTHER DOCUMENTS APPROVED BY ALL OF THE PERMITTING AUTHORITIES."
2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND THE REQUIREMENTS AND STANDARDS OF THE LOCAL GOVERNING AUTHORITY.
3. SITE GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND REPLACING ALL SOFT, YIELDING OR UNSUITABLE MATERIALS AND REPLACING WITH SUITABLE MATERIALS AS REQUIRED. ALL EXCAVATED OR FILLED AREAS SHALL BE COMPACTED PER THE GRADING NOTES THIS PAGE.
4. ALL BOUNDARY LINES, EXISTING FEATURES, AND TOPOGRAPHY HAVE BEEN TAKEN FROM A TOPOGRAPHICAL SURVEY FOR HABERSHAM COUNTY CONDUCTED BY DAVIDSON LAND SURVEYING, INC. DATED 6/15/2023. ROCHESTER & ASSOCIATES, LLC. ASSUMES NO LIABILITY CONCERNING THE ACCURACY OF THE BOUNDARY OR TOPOGRAPHY SHOWN.
5. NO UNDERGROUND UTILITY SURVEY HAS BEEN CONDUCTED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE UNDERGROUND UTILITIES MARKED OUT.
6. ALL DIMENSIONS AND GRADES SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE OWNER'S CONSTRUCTION MANAGER IF ANY DISCREPANCIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION FOR NECESSARY PLAN OR GRADE CHANGES. NO EXTRA COMPENSATION SHALL BE PAID TO CONTRACTOR FOR WORK HAVING TO BE REDONE DUE TO DIMENSIONS OR GRADES SHOWN INCORRECTLY ON THESE PLANS IF SUCH NOTIFICATION HAS NOT BEEN GIVEN.
7. ALL DIMENSIONS ARE TO THE BACK OF CURB UNLESS OTHERWISE NOTED.
8. ANY CHANGES OR ALTERATIONS MADE TO THESE CONSTRUCTION DRAWINGS WITHOUT THE WRITTEN APPROVAL OF ROCHESTER AND ASSOCIATES, INC. VOIDS THE SEAL SHOWN HEREON AND ANY LIABILITY ASSOCIATED WITH THIS PROJECT. THE ORIGINAL DRAWINGS ARE KEPT ON FILE FOR VERIFICATION OF ANY CHANGES.
9. THIS PROPERTY IS ZONED: LI (LOW INTENSITY)
10. ALL CONSTRUCTION SHALL CONFORM TO CURRENT APPLICABLE HABERSHAM COUNTY STANDARDS AND SPECIFICATIONS.
11. SITE IS LOCATED IN LAND LOT 10, 101ST DISTRICT, HABERSHAM COUNTY, GEORGIA.
12. PROPOSED USE: ANIMAL SHELTER
13. DEVELOPER: HABERSHAM COUNTY ANIMAL CONTROL
14. CONTRACTOR SHALL NOTIFY HABERSHAM COUNTY 24 HOURS BEFORE THE BEGINNING OF EVERY PHASE OF CONSTRUCTION.
15. UTILITY SERVICE:
    GAS - UNKNOWN
    WATER - CITY OF DEMOREST
    COMMS - UNKNOWN
    POWER - UNKNOWN
    SEWER - CITY OF DEMOREST
16. 24 HOUR CONTACT: JERRY BAGGETT, (404) 987-9272
17. ENGINEERING CONTACT: ERIC M. CHINI, P.E., (770) 718-0600
18. NO PORTION OF THIS PROPERTY SITE IS LOCATED IN A FLOOD HAZARD ZONE AS PER F.E.M.A. FLOOD INSURANCE RATE MAP OF HABERSHAM COUNTY, GEORGIA COMMUNITY PANEL NUMBER 13137C0214D DATED JANUARY 5, 2018.
19. NO PORTION OF THIS PROPERTY IS LOCATED IN A FLOOD HAZARD ZONE AS PER F.E.M.A. FLOOD INSURANCE RATE MAP OF HABERSHAM COUNTY, GEORGIA COMMUNITY PANEL NUMBER 13137C0214D, DATED 01/05/2018.
20. THERE ARE STREAMS OR WETLANDS ON OR WITHIN 200' OF THIS PROJECT SITE.

ABBREVIATIONS LEGEND

AIF - ANGLE IRON FOUND
AKA - ALSO KNOWN AS
A2CSP - ALUMIZED TYPE 2 CORRUGATED STEEL PIPE
BC - BACK OF CURB
BL - BUILDING SETBACK LINE
BWF - BARB WIRE FENCE
C&G - CURB & GUTTER
C/T - CRIMP TOP PIPE
CI - CURB INLET
CL - CENTER LINE
CLF - CHAIN LINK FENCE
CMF - CONCRETE MONUMENT FOUND
CMP - CORRUGATED METAL PIPE
CO - CLEAN OUT
CONC - CONCRETE
CORPS - ARMY CORPS OF ENGINEERS
DB,PG - DEED BOOK, PAGE
DI - DROP INLET
DIP - DUCTILE IRON PIPE
DS - DOWN SPOUT
DWCB - DOUBLE WING CATCH BASIN
EP - EDGE OF PAVEMENT
FFE - FINISH FLOOR ELEVATION
FH - FIRE HYDRANT
-G- - GAS LINE
GM - GAS METER
GP - GUY POLE
GV - GAS VALVE
GW - GUY WIRE
HC - HANDICAP
HW - HEADWALL
HWF - HOG WIRE FENCE
IE - INVERT ELEVATION
IPF - IRON PIN FOUND
IPS - IRON PIN SET
JB - JUNCTION BOX
LL - LAND LOT
LLL - LAND LOT LINE
LP - LIGHT POLE
MH - MANHOLE
MON - MONUMENT
N/F - NOW OR FORMERLY
O/T - OPEN TOP PIPE
PBX - POWER BOX / TRANSFORMER
-P- - OVERHEAD POWER LINE
-P/T- - O/H POWER & TELE LINE
PL - PROPERTY LINE
PM - POWER METER
POB - POINT OF BEGINNING
PP - POWER POLE
PTP - POWER & TELEPHONE POLE
PVC - POLYVINYLCHLORIDE PIPE
R/B - REINFORCING IRON BAR
RCP - REINFORCED CONCRETE PIPE
R/W - RIGHT OF WAY
-SS- - SANITARY SEWER LINE
SSE - SANITARY SEWER EASEMENT
S/W - SIDEWALK
SWCB - SINGLE WING CATCH BASIN
TBM - TEMPORARY BENCHMARK
TBX - TELEPHONE BOX
TF - TRANSFORMER
TMH - TELEPHONE MANHOLE
TP - TELEPHONE POLE
TPOB - TRUE POINT OF BEGINNING
-T- - OVERHEAD TELEPHONE LINE
UP - UNDERGROUND POWER
UT - UNDERGROUND TELEPHONE
WI - WEIR INLET
-W- - WATER LINE
WM - WATER METER
WMH - WATER MANHOLE
WV - WATER VALVE

EROSION CONTROL NOTES:

1. DESCRIPTION: THE PROPOSED DEVELOPMENT IS A NEW ANIMAL SHELTER FOR HABERSHAM COUNTY.
2. EXISTING CONDITIONS: THE EXISTING SITE IS UNDEVELOPED EXCEPT FOR AN EXISTING GRAVEL DRIVE.
3. ADJACENT AREAS: THE ADJACENT AREAS ARE MAINLY SINGLE FAMILY RESIDENTIAL AND FARM LAND WITH A PUBLIC SCHOOL TO THE SOUTHEAST.
4. THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO, OR CONCURRENT WITH, LAND DISTURBING ACTIVITIES.
5. 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.
6. ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.
7. ANY AMENDMENT TO THE EROSION CONTROL PLANS WHICH HAVE A SIGNIFICANT EFFECT ON BMPs WITH A HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL.
8. SOIL CLEAN UP AND CONTROL PRACTICES:
   LOCAL, STATE AND MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND PROCEDURES WILL BE MADE AVAILABLE TO SITE PERSONNEL.
9. MATERIAL AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREAS. TYPICAL MATERIAL AND EQUIPMENT INCLUDES, BUT IS NOT LIMITED TO, BROOMS, DUSTPANS, MOPS, GLOVES, GOGGLES, CAT LITTER, SAND, SAWDUST AND PROPERLY LABELED PLASTIC AND METAL WASTE CONTAINERS.
10. SPILL PREVENTION PRACTICES AND PROCEDURES WILL BE REVIEWED AFTER A SPILL AND ADJUSTED AS NECESSARY TO FUTURE SPILLS.
11. ALL SPILLS WILL BE CLEANED UP IMMEDIATELY UPON DISCOVERY. ALL SPILLS WILL BE REPORTED AS REQUIRED BY LOCAL, STATE AND FEDERAL REGULATIONS.
12. FOR SPILLS THAT IMPACT SURFACE WATER (LEAVE A SHEEN ON SURFACE WATER). THE NATIONAL RESPONSE CENTER (NRC) WILL BE CONTACTED WITHIN 24 HOURS AT 1-800-426-2675.
13. FOR SPILLS OF AN UNKNOWN AMOUNT, THE NATIONAL CENTER (NRC) WILL BE CONTACTED WITHIN 24 HOURS AT 1-800-425-2675.
14. FOR SPILLS GREATER THAN 25 GALLONS AND NO SURFACE WATER IMPACTS, THE GEORGIA EPD WILL BE CONTACTED WITHIN 24 HOURS.
15. 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.
16. THE CONTRACTOR SHALL NOTIFY THE LICENSED PROFESSIONAL WHO PREPARED THIS PLAN IF MORE THAN 1320 GALLONS OF PETROLEUM IS STORED ONSITE (THIS INCLUDES CAPACITIES OF EQUIPMENT) OR IF ANY ONE PIECE OF EQUIPMENT HAS A CAPACITY GREATER THAN 560 GALLONS. THE CONTRACTOR WILL NEED A SPILL PREVENTION CONTAINMENT AND COUNTER MEASURES PLAN BY THAT LICENSED PROFESSIONAL.
17. 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.
18. NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE 25 OR 50-FOOT UNDISTURBED STREAM BUFFERS AS MEASURED FROM THE POINT OF WRESTED VEGETATION WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS.
19. 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.
20. MAINTENANCE OF ALL EROSION CONTROL MEASURES, WHETHER TEMPORARY OR PERMANENT, SHALL AT ALL TIMES BE THE RESPONSIBILITY OF THE OWNER.
21. WASTE MATERIALS SHALL NOT BE DISCHARGED TO WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.
22. 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.
23. 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.
24. ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.
25. ALL FILL SLOPES WILL HAVE SILT FENCE AT TOE OF SLOPE.
26. CLEARING AND CONSTRUCTION LIMITS WILL BE CLEARLY LOCATED IN THE FIELD. NO CONSTRUCTION ACTIVITY SHALL TAKE PLACE OUTSIDE OF THE CLEARING LIMITS.

NO MATERIAL IS TO BE BURNED ON SITE. ALL WASTE MATERIAL SHALL BE DISPOSED OF AT A PERMITTED OFFSITE LANDFILL

THE INSTALLATION OF EROSION CONTROL MEASURES SHALL TAKE PLACE PRIOR TO OR CONCURRENT WITH LAND DISTURBING ACTIVITIES

ALL IMPROVEMENTS TO CONFORM WITH HABERSHAM COUNTY CONSTRUCTION STANDARDS

NOTIFY HABERSHAM COUNTY 24 HOURS BEFORE STARTING EACH PHASE OF CONSTRUCTION

MAXIMUM CUT OR FILL SLOPES ARE 2 HORIZONTAL TO 1 VERTICAL

ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSPECTED DAILY AND ANY DEFICENCIES NOTED WILL BE CORRECTED BY THE END OF EACH DAY. ADDITIONAL EROSION CONTROL MEASURES WILL BE INSTALLED IF DEEMED NECESSARY BY ON-SITE INSPECTOR.

SITE AREA:	**65.6 ACRES**
DISTURBED AREA:	**10.8 ACRES**
EARTHWORK ESTIMATE:	
CUT:	**58,348 CY**
FILL:	**58,282 CY**
DIFFERENCE:	**66 CY WASTE**

*ASSUMES 12" SUBGRADE FOR PAVEMENT AREAS
*ASSUMES 8" SUBGRADE FOR BUILDING
*NO ADJUSTMENTS MADE FOR TOP SOIL

EARTHWORK ESTIMATE PROVIDED FOR CONVENIENCE TO CONTRACTOR ONLY. CONTRACTOR IS TO VERIFY QUANTITIES.

DISPOSAL AREAS:
ALL STUMPS AND DEBRIS ARE TO BE TAKEN OFFSITE TO AND EPD APPROVED LOCATION.

DETENTION PONDS:
DETENTION PONDS AND SEDIMENT BASINS/STORAGE WILL BE INSTALLED AND FUNCTIONING BEFORE ANY MAJOR GRADING OR IMPERVIOUS SURFACES ARE CONSTRUCTED.

GRADING NOTES:

COMPACTION OF SOIL BACKFILLS AND FILLS:

FILL SHOULD BE PLACED IN THIN, HORIZONTAL LOOSE LIFTS (MAXIMUM 8-INCH) AND COMPACTED TO AT LEAST 95 PERCENT OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D698). THE UPPER 24 INCHES OF SOIL BENEATH PAVEMENTS AND SLAB-ON-GRADE SHOULD BE COMPACTED TO AT LEAST 98 PERCENT. IN CONFINED AREAS, SUCH AS UTILITY TRENCHES OR BEHIND RETAINING WALLS, PORTABLE COMPACTION EQUIPMENT AND THINNER FILL LIFTS (3 TO 4 INCHES) MAY BE NECESSARY. FILL MATERIALS USED IN STRUCTURAL AREAS SHOULD HAVE A TARGET MAXIMUM DRY DENSITY OF AT LEAST 95 POUNDS PER CUBIC FOOT (PCF). IF LIGHTER WEIGHT FILL MATERIALS ARE USED, THE GEOTECHNICAL DESIGN PROFESSIONAL SHOULD BE CONSULTED TO ASSESS THE IMPACT ON DESIGN RECOMMENDATIONS.

PLACE BACKFILL AND FILL SOIL MATERIALS IN LAYERS NOT MORE THAN 8 INCHES IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HEAVY COMPACTION EQUIPMENT, AND NOT MORE THAN 4 INCHES IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HAND-OPERATED TAMPERS.

PLACE BACKFILL AND FILL SOIL MATERIALS EVENLY ON ALL SIDES OF STRUCTURES TO REQUIRED ELEVATIONS, AND UNIFORMLY ALONG THE FULL LENGTH OF EACH STRUCTURE.

COMPACT SOIL MATERIALS TO NOT LESS THAN THE FOLLOWING PERCENTAGES OF MAXIMUM DRY UNIT WEIGHT ACCORDING TO ASTM D 698:

UNDER STRUCTURES, BUILDING SLABS, STEPS, AND PAVEMENTS, SCARIFY AND RECOMPACT TOP 12 INCHES OF EXISTING SUBGRADE AND EACH LAYER OF BACKFILL OR FILL SOIL MATERIAL AT 98 PERCENT. FUTURE BUILDING PADS SHALL BE COMPACTED TO 98 PERCENT.
UNDER WALKWAYS, SCARIFY AND RECOMPACT TOP 6 INCHES BELOW SUBGRADE AND COMPACT EACH LAYER OF BACKFILL OR FILL SOIL MATERIAL AT 95 PERCENT.
UNDER TURF OR UNPAVED AREAS, SCARIFY AND RECOMPACT TOP 6 INCHES BELOW SUBGRADE AND COMPACT EACH LAYER OF BACKFILL OR FILL SOIL MATERIAL AT 95 PERCENT.
FOR UTILITY TRENCHES, COMPACT EACH LAYER OF INITIAL AND FINAL BACKFILL SOIL MATERIAL AT 85 PERCENT.

BEDDING:
ALL STORM DRAIN AND SANITARY SEWER PIPES SHALL HAVE A CLASS "C" BEDDING AS A MINIMUM UNLESS NOTED OTHERWISE. EXCAVATE AND SHAPE BOTTOM OF TRENCH TO THE PROPER GRADE AND TO FIT THE LOWER PART OF THE PIPE EXTERIOR FOR A WIDTH OF A LEAST 50 PERCENT OF THE OUTSIDE DIAMETER OF THE PIPE. SIDES AND AREA OVER THE PIPE SHALL THEN BE FILLED WITH COMPACTED BACKFILL.

PAVING:
PAVING SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS PROVIDED IN THESE PLANS. ALL PAVEMENT WITHIN THE GDOT R/W MUST CONFORM TO ALL GDOT PAVING STANDARDS.

CONCRETE:
4000 PSI (PAVEMENT), 3000 PSI (SIDEWALK) COMPRESSIVE STRENGTH AT 28 DAYS, REINFORCING BARS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 615 GRADE 60.

FIELD CONDITIONS:
CONTRACTOR SHALL VERIFY FIELD CONDITIONS AFFECTING CONSTRUCTION, PARTICULARLY UTILITIES, PRIOR TO CONSTRUCTION. CHANGES IN CONSTRUCTION NECESSITATED BY FIELD CONDITIONS SHALL BE APPROVED BY THE OWNER OR OWNER'S ENGINEER PRIOR TO CONSTRUCTION. IN ACCORDANCE WITH STATE LAW, THE CONTRACTOR SHALL CALL 800-288-7411 AT LEAST THREE (3) WORKING DAYS PRIOR TO CONSTRUCTION FOR LOCATION OF UNDERGROUND UTILITIES.

CONSTRUCTION STAKING:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION STAKING.

CONSTRUCTION NOTES:

1. NO ADDITIONAL CONSTRUCTION OR IMPROVEMENTS, INCLUDING BUT NOT LIMITED TO WALLS, FENCES, SIGNS, SPRINKLER SYSTEMS, LIGHTS, TRESS, ETC., WILL BE ALLOWED ON THE ROAD RIGHT-OF-WAY.
2. HABERSHAM COUNTY SHALL BE NOTIFIED 24 HOURS PRIOR TO ANY CONSTRUCTION.
3. ALL WATER MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH GAINESVILLE DEPARTMENT OF WATER RESOURCES.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING A MARKED-UP SET OF DESIGN DRAWINGS SHOWING ALL "ASBUILT" CONDITIONS. THESE "RECORD DRAWINGS" SHALL BE MADE AVAILABLE TO THE DESIGNER AND/OR THE CITY INSPECTOR UPON REQUEST. THE MARK-UPS SHALL BE AT THE SITE AT ALL TIMES AND SHALL BE UTILIZED TO DEVELOP FINAL RECORD DRAWINGS.
5. ANY CHANGES IN THE HORIZONTAL ALIGNMENT SHOWN HEREON SHALL BE APPROVED BY THE DESIGN ENGINEER AND HABERSHAM COUNTY PRIOR TO CONSTRUCTION.
6. THE CONTRACTOR IS RESPONSIBLE FOR ALL UTILITY LOCATIONS. CONTRACTOR SHOULD NOTIFY THE UTILITIES PROTECTION CENTER, INC. AT (800) 282-7411 THREE WORKING DAYS BEFORE CONSTRUCTION IS TO BEGIN.
7. THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION & MAINTENANCE OF ALL REQUIRED SEDIMENT CONTROL STRUCTURES.
8. ALL DISTURBED AREAS SHALL BE GRASSED IMMEDIATELY UPON COMPLETION OF BACK FILLING TRENCHES.
9. CLEARING LIMITS SHALL BE CLEARLY DELINEATED WITH TREE SAVE FENCE OR OTHER SUITABLE MEANS.
10. CONTRACTOR IS RESPONSIBLE FOR THE ADJUSTMENTS TO ALL EXISTING UTILITIES ON SITE TO FINAL GRADE.

SURFACE ROUGHENING:
ALL CUT AND FILL SLOPES SHALL BE SURFACED ROUGHENED AND VEGETATED WITHIN THREE (3) DAYS AFTER GRADING.

DISPOSAL:
STUMPS AND CONSTRUCTION DEBRIS SHALL BE DEPOSITED IN A PROPERLY PERMITTED LANDFILL. NO BURY PITS ALLOWED.

TYPE "S" SILT FENCE:
A DOUBLE ROW OF TYPE "S" SILT FENCE SHALL BE REQUIRED WHEN PLACED WITHIN 200' OF STATE WATERS AND AT THE TOE OF SLOPES GREATER THAN 10' IN HEIGHT.

PIPE:
STORM DRAIN PIPES WILL BE CLASS III REINFORCED CONCRETE PIPE (RCP), TYPE II ALUMINIZED CORRUGATED METAL PIPE (CMP) OR HDPE. ALL STORM DRAIN STREET CROSSINGS SHALL BE CLASS III RCP.

STORM DRAIN DESIGN:
THE PIPED STORM WATER SYSTEMS WERE DESIGNED FOR A 25-YEAR STORM. CROSS DRAINS WERE DESIGNED FOR A 100-YEAR STORM.

DETENTION:
ALL DETENTION FACILITIES WHETHER A POND OR UNDERGROUND WILL BE PRIVATELY OWNED AND MAINTAINED.

DETENTION POND OR SEDIMENT BASIN/STORAGE WILL BE INSTALLED AND FUNCTIONING BEFORE ANY MAJOR GRADING OR IMPERVIOUS SURFACE ARE CONSTRUCTED.

CEMETERIES:
THIS SITE DOES NOT CONTAIN ANY KNOWN CEMETERIES.

RETAINING WALLS:
WALLS OVER 4' IN HEIGHT AND PART OF INITIAL INFRASTRUCTURE WILL BE REQUIRED TO BE DESIGNED AND INSPECTED BY DESIGN PROFESSIONAL OR REPRESENTATIVE AND INSPECTION REPORT WILL BE REQUIRED AT TIME OF C.O.

LINETYPE AND SYMBOLS LEGEND

EXISTING UTILITY LINETYPE LEGEND

OHP / OHP — OVERHEAD POWER / TELEPHONE
UC / UC — UNDERGROUND COMMUNICATIONS
OE / OE — OVERHEAD ELECTRIC
UP / UP — UNDERGROUND POWER
UE / UE — UNDERGROUND ELECTRIC
W / W — WATER UTILITY
SS / SS — SANITARY SEWER UTILITY
FM — SANITARY SEWER FORCE MAIN
STORM SEWER PIPE
G — GAS LINE

EXISTING SYMBOLS LEGEND

STORM - DOUBLE WING CATCH BASIN
STORM - SINGLE WING CATCH BASIN
STORM - DROP INLET
STORM - HOOD AND GRATE INLET
STORM - JUNCTION BOX
STORM - WEIR INLET (PEDESTAL)
WATER - WATER VALVE
WATER - FIRE HYDRANT
WATER - WATER METER
WATER - WATER VAULT
GAS - GAS METER
GAS - GAS VALVE
POWER - LIGHT POLE
POWER - POWER POLE
POWER - POWER METER
SANITARY - CLEAN OUT
SANITARY - MANHOLE

PROPOSED UTILITY LINETYPE LEGEND

OHP / OHP — OVERHEAD POWER / TELEPHONE
UC / UC — UNDERGROUND COMMUNICATIONS
OE / OE — OVERHEAD ELECTRIC
UP — UNDERGROUND POWER
8"DIP — WATER UTILITY (8" DIP)
8"PVC — WATER UTILITY (8" PVC)
S / S — SANITARY SEWER UTILITY
FM — SANITARY SEWER FORCE MAIN
STORM SEWER PIPE
G — GAS LINE

PROPOSED SYMBOLS LEGEND

STORM - DOUBLE WING CATCH BASIN
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POWER - LIGHT POLE
POWER - POWER POLE
POWER - POWER METER
POWER - TRANSFORMER
SANITARY - CLEAN OUT
SANITARY - MANHOLE

REVISION HISTORY CHART				
REVISION NUMBER	DATE	AFFECTED SHEETS	DESCRIPTION	P.E. INITIAL
1	1.17.2025	ALL	REMOVING PROPOSED CURB AND GUTTER ALONG DRIVEWAY, ADJUSTING CROSS SLOPE OF DRIVEWAY, ADDING GRASS CHANNEL ALONG DRIVEWAY AND ADJUSTING STORM SEWER ALONG DRIVEWAY, REDUCING PAVEMENT, MOVING LOCATION OF DUMPSTER, AND REMOVING HORSE CORRAL	MDS
2	10.27.2025	C-8, C-13, C-16, C-31	CHANGING PROPOSED SANITARY SEWER ROAD CROSSING, CHANGED PROPOSED WATER CONNECTION	MDS
3	11.24.2025	ALL	RIGHT-OF-WAY PROVIDED TO ROAD GOING TO PROPOSED ANIMAL CONTROL FACILITY, ROAD NARROWED TO 20FT WIDE, CURB AND GUTTER REDUCED TO PROPOSED RIGHT-OF-WAY LINE, DOMESTIC AND FIRE VAULT COMBINED INTO ONE PER CITY OF DEMOREST DETAIL, WATER LINES AFTER VAULT REROUTED, AND A 20FT WATER EASEMENT ADDED TO WATER LINES LOCATED ON PROPERTY.	MDS

SUBMITTAL HISTORY CHART						
DATE	AGENCY	DEPARTMENT	DESCRIPTION	PERMIT TYPE	PERMIT NUMBER	PERMIT APPROVAL DATE
6.07.2024	HABERSHAM COUNTY	ALL	1ST SUBMITTAL - INITIAL SUBMITTAL	LDP		
8.13.2024	HABERSHAM COUNTY	ALL	2ND SUBMITTAL - ADDRESSING COUNTY COMMENTS	LDP		
1.17.2025	HABERSHAM COUNTY		VE REVISION 1			
10.27.2025	HABERSHAM COUNTY		REVISION 2			
11.24.2025	CITY OF DEMOREST	WATER AND SEWER	REVISION 3			

Georgia Soil and Water Conservation Commission

GSWCC
ERIC M. CHINI, P.E.
Level II Certified Design Professional
CERTIFICATION NUMBER #13398
ISSUED: 11/18/2024 EXPIRES: 11/18/2027

GSWCC EROSION CONTROL CERTIFICATION #13398 - ERIC M. CHINI, P.E.

CROFT

Croft & Associates
3380 Blue Springs Road
Kennesaw, Georgia 30144
770.529.7714 (p)
www.croftae.com

Rochester | DCCM
425 Oak Street
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GEORGIA REGISTERED PROFESSIONAL No. 31471 01.17.25 ENGINEER ERIC M. CHINI

OWNER

HABERSHAM COUNTY ANIMAL CONTROL
130 JACOBS WAY, SUITE 302
CLARKSVILLE, GA
30523

HABERSHAM COUNTY ANIMAL SHELTER

HABERSHAM ANIMAL CONTROL
OLD ATHENS HWY
CORNELIA, GA
30531

No.	Date	Description
3	2025-11-24	REVISION 3 SET
2	2025-10-27	REVISION 2 SET
1	2025-01-17	VE REVISION 1 SET
0	2024-06-10	PERMIT SET
ISSUANCE		

PROJECT NUMBER
2022-313

DRAWN: DCB
CHECKED: EMC

SHEET TITLE
GENERAL NOTES

SHEET NO.
C-2

BRAVO SITE SET 02-11-2026

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THIS SHEET PLOTS ON 42" x 30"

3" 2" 1" 1/2" 0

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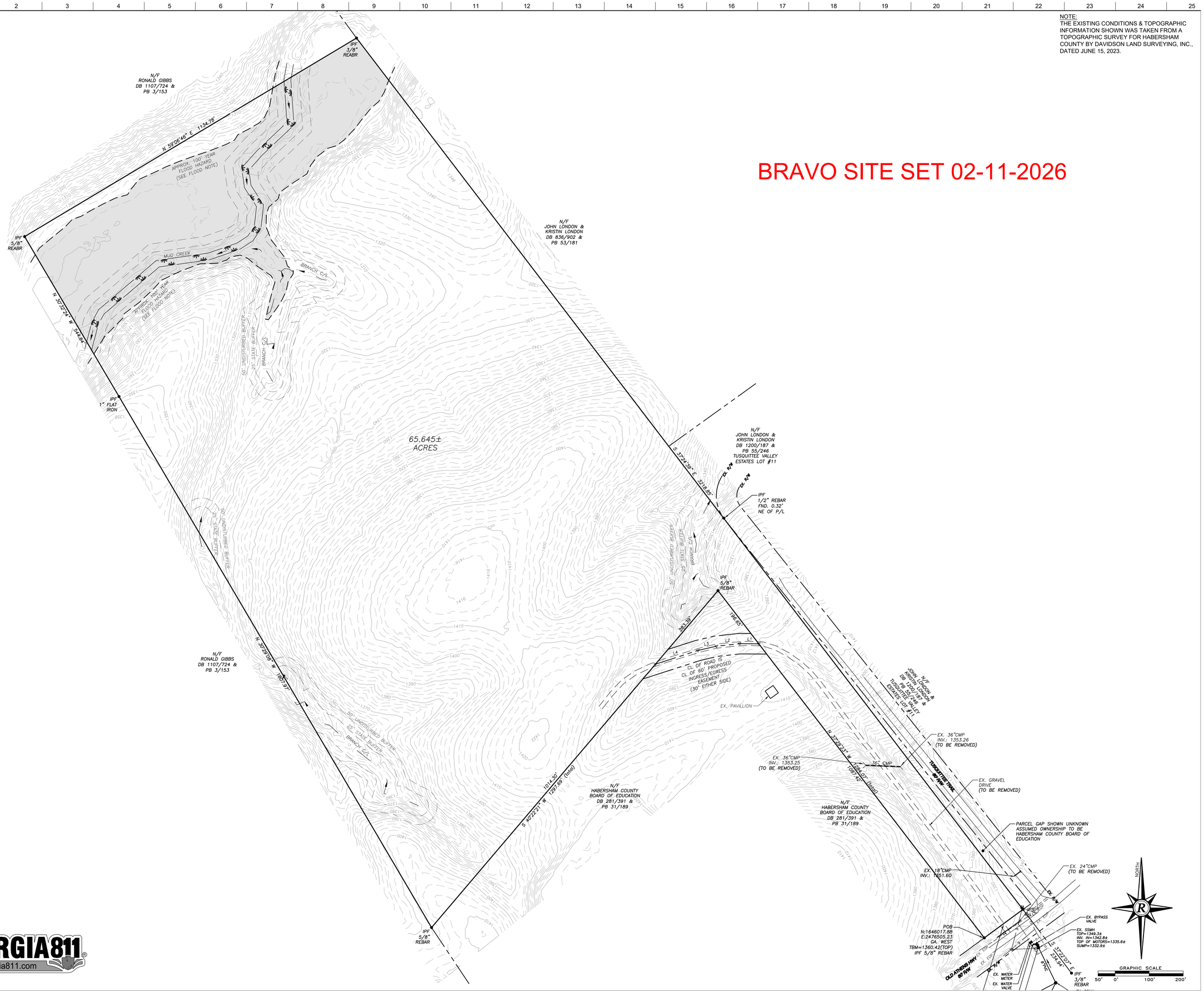
NOTE:
THE EXISTING CONDITIONS & TOPOGRAPHIC INFORMATION SHOWN WAS TAKEN FROM A TOPOGRAPHIC SURVEY FOR HABERSHAM COUNTY BY DAVIDSON LAND SURVEYING, INC., DATED JUNE 15, 2023.

BRAVO SITE SET 02-11-2026



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0	2024-06-10	PERMIT SET
		ISSUANCE

PROJECT NUMBER
2022-313

DRAWN: DCB
CHECKED: EMC

SHEET TITLE
OVERALL EXISTING

SHEET NO.
C-3

THIS SHEET PLOTS ON 42" x 30"

3" 2" 1" 1/2" 0

BRAVO SITE SET 02-11-2026

LEGEND

AIF	- ANGLE IRON FOUND
AKA	- ALSO KNOWN AS
AJCSP	- ALUMIZED TYPE 2 CORRUGATED STEEL PIPE
BC	- BACK OF CURB
BL	- BUILDING SETBACK LINE
BWF	- BARB WIRE FENCE
C&G	- CURB & GUTTER
C/T	- CRIMP TOP PIPE
CI	- CURB INLET
CL	- CENTER LINE
CLF	- CHAIN LINK FENCE
CMF	- CONCRETE MONUMENT FOUND
CMP	- CORRUGATED METAL PIPE
CO	- CLEAN OUT
CONC	- CONCRETE
CORPS	- ARMY CORPS OF ENGINEERS
DB,PG	- DEED BOOK, PAGE
DI	- DROP INLET
DIP	- DUCTILE IRON PIPE
DS	- DOWN SPOUT
DWCB	- DOUBLE WING CATCH BASIN
EP	- EDGE OF PAVEMENT
FFE	- FINISH FLOOR ELEVATION
FH	- FIRE HYDRANT
-G-	- GAS LINE
GM	- GAS METER
GP	- GUY POLE
GV	- GAS VALVE
GW	- GUY WIRE
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HW	- HEADWALL
HWF	- HOG WIRE FENCE
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IPF	- IRON PIN FOUND
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JB	- JUNCTION BOX
LL	- LAND LOT
LLL	- LAND LOT LINE
LP	- LIGHT POLE
MH	- MANHOLE
MON	- MONUMENT
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O/T	- OPEN TOP PIPE
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R/B	- REINFORCING IRON BAR
RCP	- REINFORCED CONCRETE PIPE
R/W	- RIGHT OF WAY
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SSE	- SANITARY SEWER EASEMENT
S/W	- SIDEWALK
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-W-	- WATER LINE
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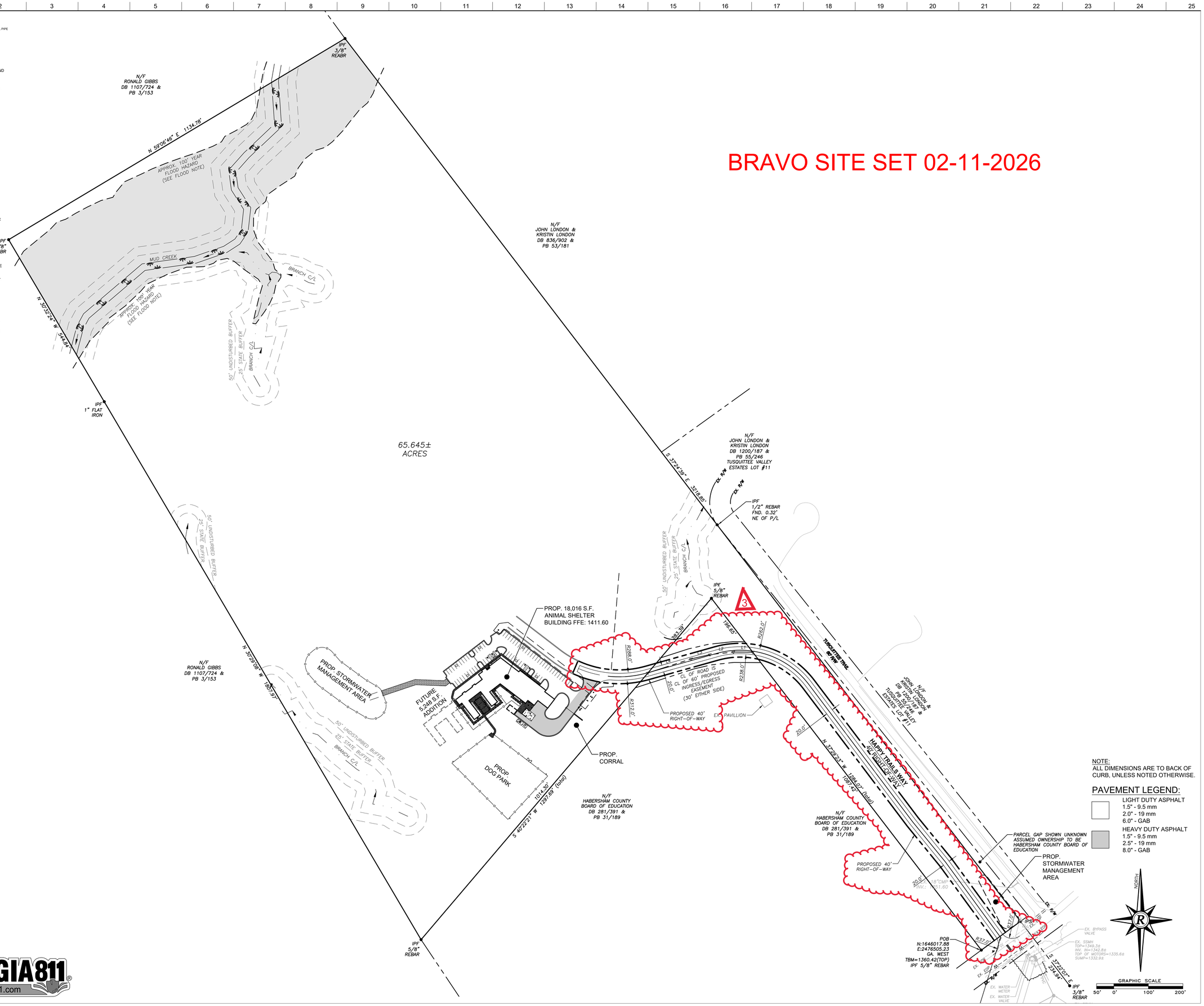

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CORNELIA, GA
30531

No.	Date	Description
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2	2025-10-27	REVISION 2 SET
1	2025-01-17	VE REVISION 1 SET
0	2024-06-10	PERMIT SET
		ISSUANCE

PROJECT NUMBER
2022-313

DRAWN: DCB
CHECKED: EMC

SHEET TITLE
OVERALL SITE PLAN

SHEET NO.
C-4

THIS SHEET PLOTS ON 42" X 30"

3" 2" 1" 1/2" 0

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LEGEND

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AKA	- ALSO KNOWN AS
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BC	- BACK OF CURB
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WI	- WEIR INLET
-W-	- WATER LINE
WM	- WATER METER
WMH	- WATER MANHOLE
WV	- WATER VALVE

UTILITY NOTES:

PROVIDERS:

SANITARY:	*UNKNOWN*
WATER:	*UNKNOWN*
GAS:	*UNKNOWN*
COMMUNICATIONS:	*UNKNOWN*
POWER:	*UNKNOWN*

UTILITIES ARE TO BE PROTECTED AT ALL TIMES.

CONTRACTOR IS TO VERIFY DEPTH AND LOCATION OF ALL UTILITIES AND ADJUST THE DEPTH OF UTILITIES AS NECESSARY WITH THE PROPOSED GRADE.

STRIPING LEGEND

YELLOW CURBING AND PARKING LOT BOLLARDS:

SURFACES SHOULD BE CLEAN, DRY AND METAL
SURFACES FREE OF HEAVY RUST 2 COATS SHERWIN WILLIAMS - KEM 4000 ACRYLIC ALKYD ENAMEL SAFETY YELLOW B55Y300

STRIPING (PARKING LOT):

SURFACES SHOULD BE CLEAN, DRY. TOP COAT SHERWIN WILLIAMS - PRO MAR TRAFFIC MARKING PAINT WHITE TM5494.

HANDICAP STRIPING (PARKING LOT):

SURFACES SHOULD BE CLEAN, DRY. TOP COAT SHERWIN WILLIAMS - PRO MAR TRAFFIC MARKING PAINT "H.C." BLUE.

SITE NOTES

1. PAINTED STANDARD PARKING SPACE AND ISLAND STRIPE COLOR SHALL BE WHITE FOR ASPHALT PAVEMENT AND CONCRETE PAVEMENT. COLOR FOR PAINTED H.C. ACCESSIBLE PARKING SPACE STRIPES, ACCESSIBLE ISLE STRIPES, AND H.C. SYMBOLS, SHALL BE "H.C." BLUE COLOR. BOLLARDS SHALL BE PAINTED YELLOW. PAINT SHALL BE REFLECTIVE TYPE.

2. SIDEWALKS ADJACENT TO BUILDING SLABS SHALL HAVE SEALED ISOLATION JOINTS.

3. PORTLAND CEMENT SIDEWALKS SHALL BE MINIMUM 4" THICK, USE WELDED WIRE FABRIC OR FIBER REINFORCING.

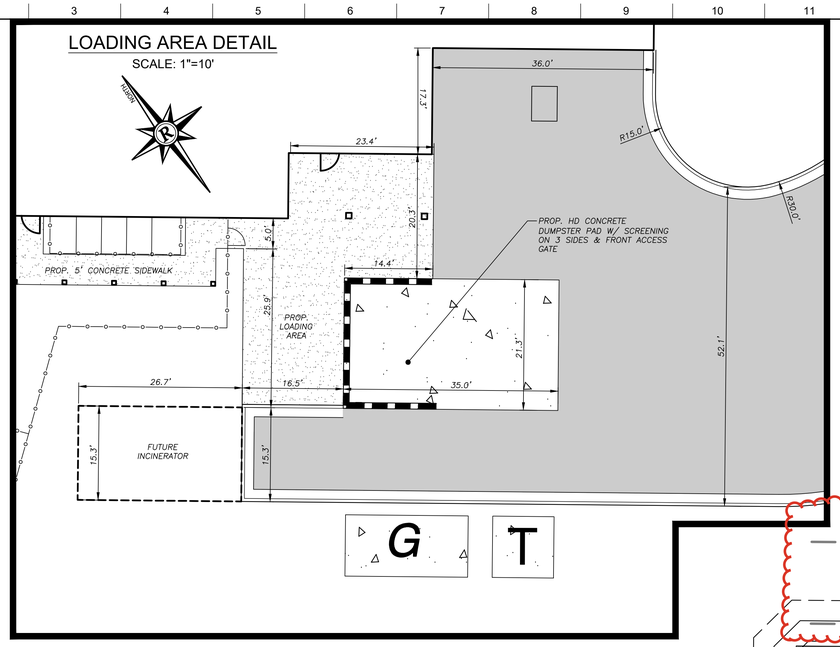
4. CONCRETE SPLASH BLOCKS SHALL BE INSTALLED AT ALL BUILDING DOWNSPOUTS THAT ARE NOT DISCHARGING ON CONCRETE PAVEMENT. SPLASH PADS ARE TO BE SECURED IN PLACE TO EACH DOWN DRAIN PIPE. DOWNSPOUTS SHALL NOT BE ALLOWED TO DISCHARGE ON CONCRETE SIDEWALKS.

5. SEE SHEET C-28 FOR ONSITE PAVEMENT SPECIFICATIONS.

6. RETAINING WALLS GREATER THAN 6' TALL REQUIRE A SEPARATE PERMIT PRIOR TO BEING BUILT.

LOADING AREA DETAIL

SCALE: 1"=10'



PARKING CALCULATIONS

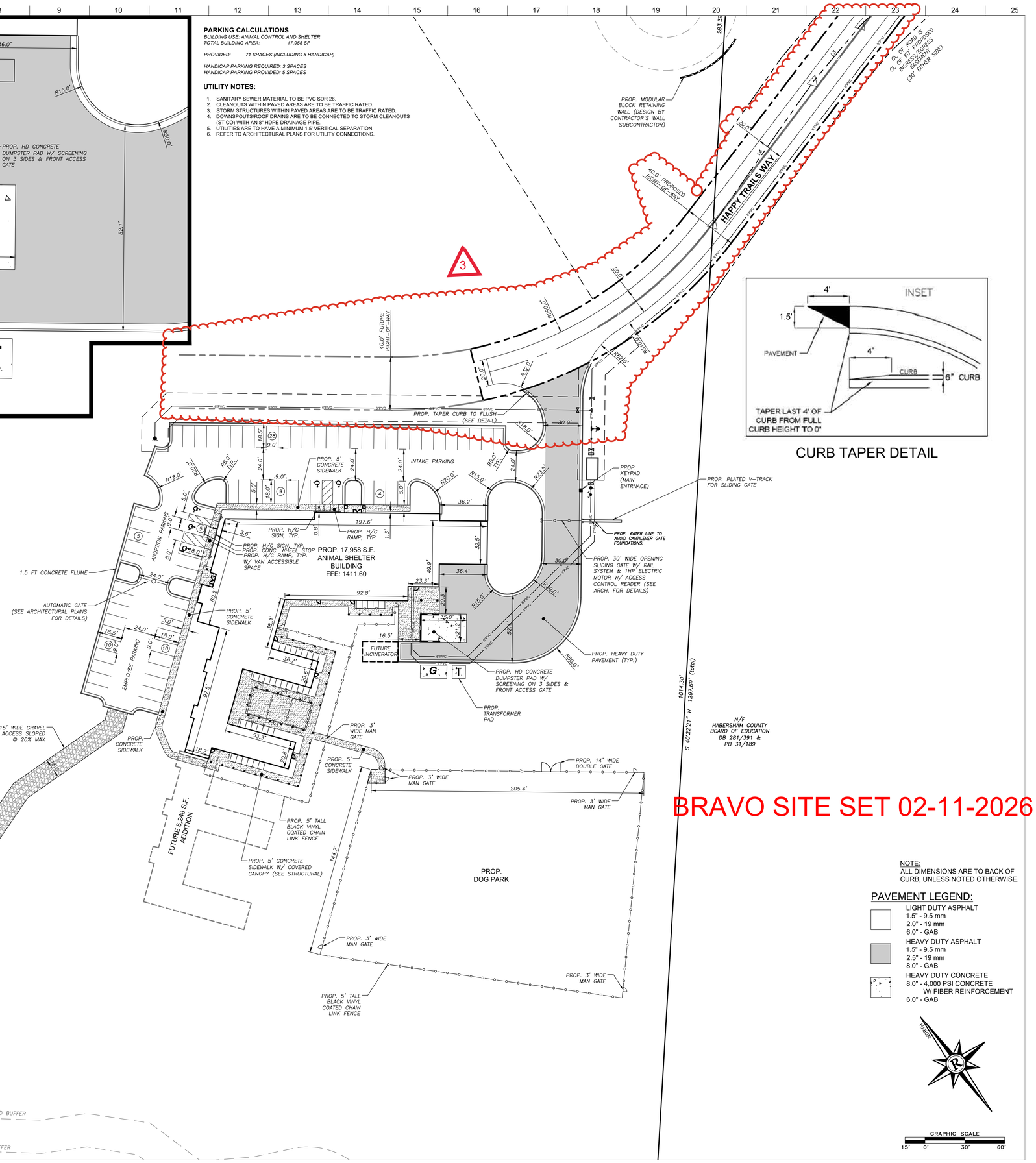
BUILDING USE: ANIMAL CONTROL AND SHELTER
TOTAL BUILDING AREA: 17,958 SF

PROVIDED: 71 SPACES (INCLUDING 5 HANDICAP)

HANDICAP PARKING REQUIRED: 3 SPACES
HANDICAP PARKING PROVIDED: 5 SPACES

UTILITY NOTES:

1. SANITARY SEWER MATERIAL TO BE PVC SDR 26.
2. CLEANOUTS WITHIN PAVED AREAS ARE TO BE TRAFFIC RATED.
3. STORM STRUCTURES WITHIN PAVED AREAS ARE TO BE TRAFFIC RATED.
4. DOWNSPOUTS/ROOF DRAINS ARE TO BE CONNECTED TO STORM CLEANOUTS (ST CO) WITH AN 8" HDPE DRAINAGE PIPE.
5. UTILITIES ARE TO HAVE A MINIMUM 1.5' VERTICAL SEPARATION.
6. REFER TO ARCHITECTURAL PLANS FOR UTILITY CONNECTIONS.



CURB TAPER DETAIL

BRAVO SITE SET 02-11-2026

NOTE:
ALL DIMENSIONS ARE TO BACK OF CURB, UNLESS NOTED OTHERWISE.

PAVEMENT LEGEND:

- LIGHT DUTY ASPHALT
  1.5" - 9.5 mm
  2.0" - 19 mm
  6.0" - GAB
- HEAVY DUTY ASPHALT
  1.5" - 9.5 mm
  2.5" - 19 mm
  8.0" - GAB
- HEAVY DUTY CONCRETE
  8.0" - 4,000 PSI CONCRETE W/ FIBER REINFORCEMENT
  6.0" - GAB

UTILITY NOTES:
ALL UTILITIES ARE TO BE PROTECTED AT ALL TIMES. CONTRACTOR IS TO VERIFY LOCATION AND DEPTH OF UTILITIES, AND ADJUST UTILITIES AS NECESSARY WITH THE PROPOSED GRADE.

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50' UNDISTURBED BUFFER

25' STATE BUFFER

GRAPHIC SCALE
15' 0' 30' 60'

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0	2024-06-10	PERMIT SET
		ISSUANCE

PROJECT NUMBER
2022-313

DRAWN: DCB
CHECKED: EMC

SHEET TITLE
SITE PLAN

SHEET NO.
C-5

THIS SHEET PLOTS ON 42" X 30"

3" 2" 1" 1/2" 0

LEGEND

AIF	- ANGLE IRON FOUND
AKA	- ALSO KNOWN AS
AJCSP	- ALUMIZED TYPE 2 CORRUGATED STEEL PIPE
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WI	- WEIR INLET
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WM	- WATER METER
WMH	- WATER MANHOLE
WV	- WATER VALVE

UTILITY NOTES:

PROVIDERS:	
SANITARY:	*CITY OF DEMOREST*
WATER:	*CITY OF DEMOREST*
GAS:	*UNKNOWN*
COMMUNICATIONS:	*UNKNOWN*
POWER:	*UNKNOWN*

UTILITIES ARE TO BE PROTECTED AT ALL TIMES.

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UTILITY NOTES:

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5. UTILITIES ARE TO HAVE A MINIMUM 1.5' VERTICAL SEPARATION.
6. REFER TO ARCHITECTURAL PLANS FOR UTILITY CONNECTIONS.

WATER UTILITY NOTE:

1. WATER LINE BENDS ARE TO BE 45° BENDS WITH APPROPRIATE THRUST BLOCKING UNLESS OTHERWISE NOTED.

CITY OF DEMOREST WATER AND SEWER NOTES:

WATER SYSTEMS:

1. ALL WATER AND SEWER LINE CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE DEMOREST STANDARD SPECIFICATIONS AND DETAILS, LATEST EDITION.

2. 12-GAUGE, SOLID STRAND DETECTION WIRE IS REQUIRED TO BE INSTALLED ABOVE ALL WATERLINES WITH WATERPROOF CONNECTORS AND CONNECTIONS AT EVERY VALVE AND HYDRANT.

3. ALL WATER AND SEWER FACILITIES SHALL BE INSTALLED BY A LICENSED UTILITY CONTRACTOR IN THE STATE OF GEORGIA.

4. MARKING TAPE SHOWING "CAUTION BURIED WATERLINE" SHALL BE INSTALLED APPROXIMATELY 24-INCHES ABOVE ALL WATER LINES.

5. ALL WATER AND SEWER CONSTRUCTION SHALL BE INSPECTED AND TESTED AS PER DEMOREST STANDARDS PRIOR TO FINAL ACCEPTANCE BY THE CITY.

6. AS-BUILT RECORD DRAWINGS FOR THIS PROJECT SHALL BE SUBMITTED AND APPROVED PRIOR TO FINAL ACCEPTANCE BY THE CITY OF DEMOREST.

7. THE CITY OF DEMOREST SHALL BE NOTIFIED AT A MINIMUM 48 HOURS (MONDAY THROUGH FRIDAY) PRIOR TO COMMENCING ANY WORK, TESTING, AND PRIOR TO MAKING ANY CONNECTIONS TO EXISTING WATERLINES.

SEWER SYSTEMS:

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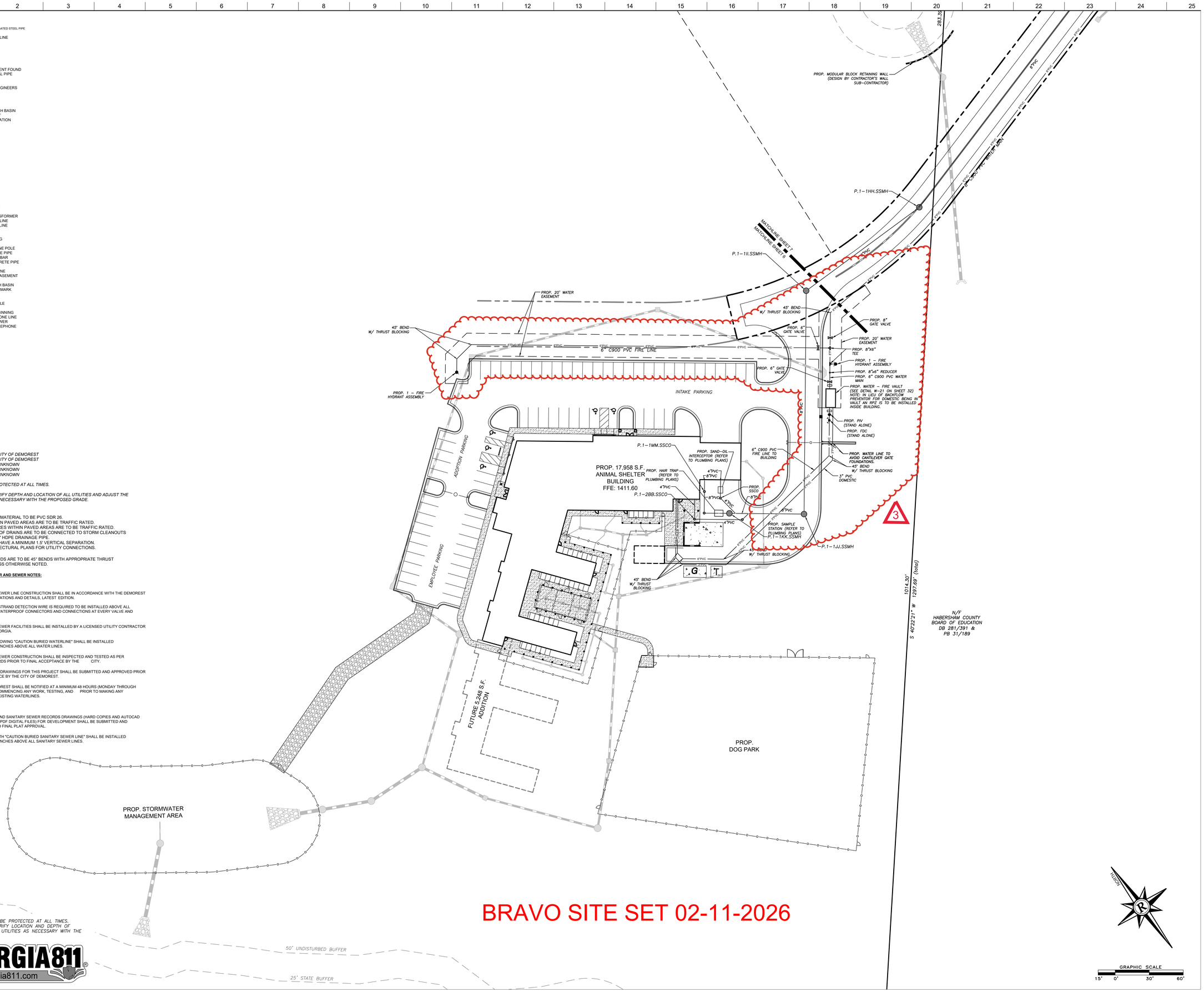
2. MARKING TAPE WITH "CAUTION BURIED SANITARY SEWER LINE" SHALL BE INSTALLED APPROXIMATELY 18 INCHES ABOVE ALL SANITARY SEWER LINES.



BRAVO SITE SET 02-11-2026

UTILITY NOTES:
ALL UTILITIES ARE TO BE PROTECTED AT ALL TIMES. CONTRACTOR IS TO VERIFY LOCATION AND DEPTH OF UTILITIES, AND ADJUST UTILITIES AS NECESSARY WITH THE PROPOSED GRADE.

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NORTH

GRAPHIC SCALE
15' 0' 30' 60'

3/6/2024 4:01:25 PM
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GEORGIA REGISTERED No. 31471 PROFESSIONAL 01.17.25 ENGINEER ERIC M. CHINI

OWNER

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CLARKSVILLE, GA
30523

HABERSHAM COUNTY ANIMAL SHELTER

HABERSHAM ANIMAL CONTROL
OLD ATHENS HWY
CORNELIA, GA
30531

No.	Date	Description
3	2025-11-24	REVISION 3 SET
2	2025-10-27	REVISION 2 SET
1	2025-01-17	VE REVISION 1 SET
0	2024-06-10	PERMIT SET
		ISSUANCE

PROJECT NUMBER
2022-313

DRAWN: DCB
CHECKED: EMC

SHEET TITLE
UTILITY PLAN

SHEET NO.
C-6

THIS SHEET PLOTS ON 42" x 30"

3" 2" 1" 1/2" 0

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LEGEND

AIF	- ANGLE IRON FOUND
AKA	- ALSO KNOWN AS
AJCSP	- ALUMIZED TYPE 2 CORRUGATED STEEL PIPE
BC	- BACK OF CURB
BL	- BUILDING SETBACK LINE
BWF	- BARB WIRE FENCE
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WV	- WATER VALVE

TUSQUITTEE TRAIL
60' R/W

N/F
JOHN LONDON &
KRISTIN LONDON
DB 1200/187 &
PB 53/246
TUSQUITEE VALLEY
ESTATES LOT #11

IPF
5/8"
REBAR

196.65'

P.1–1FF.SSMH

P.1–1DD.SSMH

P.1–1GG.SSMH

8"PVC

N 37°29'23" W 1284.07' (total)
1087.42'

MATCHLINE 7
MATCHLINE 8

283.39'

PROP. MODULAR BLOCK RETAINING WALL
(DESIGN BY CONTRACTOR'S WALL
SUB–CONTRACTOR)

EX. PAVILION

N/F
HABERSHAM COUNTY
BOARD OF EDUCATION
DB 281/391 &
PB 31/189

P.1–1HH.SSMH

MATCHLINE SHEET 7
MATCHLINE SHEET 6

P.1–1II.SSMH

45° BEND
W/ THRUST BLOCKING

PROP. 8"
GATE VALVE

PROP. 6"
GATE VALVE

PROP. 20' WATER
EASEMENT

PROP.
8"X6" TEE

PROP. 1 – FIRE
HYDRANT ASSEMBLY

6" C900 PVC FIRE LINE

PROP. 8" GATE
VALVE

PROP. WATER – FIRE VAULT
(SEE DETAIL W–21 ON SHEET 32)
NOTE: IN LIEU OF BACKFLOW
PREVENTOR FOR DOMESTIC BEING IN
VAULT AN RPZ IS TO BE INSTALLED
INSIDE BUILDING.

INTAKE PARKING

PROP. PIV
(STAND ALONE)

PROP. FDC
(STAND ALONE)

P.1–1MM.SSCO

PROP. SAND–OIL
INTERCEPTOR (REFER
TO PLUMBING PLANS)

6" C900 PVC
FIRE LINE TO
BUILDING

PROP. WATER LINE TO
AVOID CANTILEVER GATE
FOUNDATIONS.

45° BEND
W/ THRUST BLOCKING

3" PVC
DOMESTIC

PROP. 17,958 S.F.
ANIMAL SHELTER
BUILDING
FFE: 1411.60

PROP. HAIR TRAP
(REFER TO
PLUMBING PLANS)

4"PVC

P.1–2BB.SSCO

PROP.
SSCO

8"PVC

PROP. SAMPLE
STATION (REFER TO
PLUMBING PLANS)

P.1–1KK.SSMH

45° BEND
W/ THRUST BLOCKING

P.1–1JJ.SSMH

1014.30'
1297.69' (total)

BRANCH C/L

25' STATE BUFFER

50' UNDISTURBED BUFFER

WATER

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BRAVO SITE SET 02-11-2026

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TUSCAN

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ISSUANCE

PROJECT NUMBER
2022-313

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SHEET TITLE
UTILITY PLAN

SHEET NO.
C-7

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N/F JOHN LONDON & KRISTIN LONDON DB 1200/187 & PB 55/246 TUGQUITTEE VALLEY ESTATES LOT #11

P.1–1DD.SSMH

PARCEL GAP SHOWN. UNKNOWN ASSUMED OWNERSHIP TO BE HABERSHAM COUNTY BOARD OF EDUCATION

8"PVC

N 37°29'23" W 1284.07' (total)
1087.42'

MATCHLINE MATCHLINE 8

P.1–1CC.SSMH

8" DUCTILE IRON WATER MAIN

N/F HABERSHAM COUNTY BOARD OF EDUCATION DB 281/391 & PB 31/189

Ex. R/W

EX. 18"CMP INV.: 1351.60

EX. BYPASS VALVE

EX. SSMH RIM=1344.39 INV. IN=1340.89 INV. OUT=1340.79 SSMH 1339.89

PROP. STORMWATER MANAGEMENT AREA

IPS

EX. EOP

APPROX. TREE LINE

S 37°22'07" E 234.94'

IPF 1/8" REBAR

P.1–1.SSMH

P.1–1BB.SSMH

8"DIP

8"PVC

45° BEND W/ THRUST BLOCKING

TREE CLEARING REQUIRED TO INSTALL PROP. SANITARY SEWER

PROP. 8" GATE VALVE

PROP. OPEN CUT

P.1–1A.SSMH

POB
N:1646017.88
E:2476505.23
GA. WEST
TBM=1360.42(TOP)
IPF 5/8" REBAR

S 52°39'03" W 140.56'

PROP. 8"X8" TAPPING SLEEVE & VALVE INTO EXISTING WATER MAIN

Ex. R/W

EX. 8" PVC WATER LINE

EX. 6" PVC WATER LINE

EX. WATER VALVE

EX. BYPASS ACCESS

EX. ELECTRICAL PANEL

NORTH

GRAPHIC SCALE
15' 0' 30' 60'

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ISSUANCE

PROJECT NUMBER
2022-313

DRAWN: DCB
CHECKED: EMC

SHEET TITLE
UTILITY PLAN

SHEET NO.
C-8

THIS SHEET PLOTS ON 42" x 30"

3" 2" 1" 1/2" 0

LEGEND

AIF	- ANGLE IRON FOUND
AKA	- ALSO KNOWN AS
AJCSP	- ALUMIZED TYPE 2 CORRUGATED STEEL PIPE
BC	- BACK OF CURB
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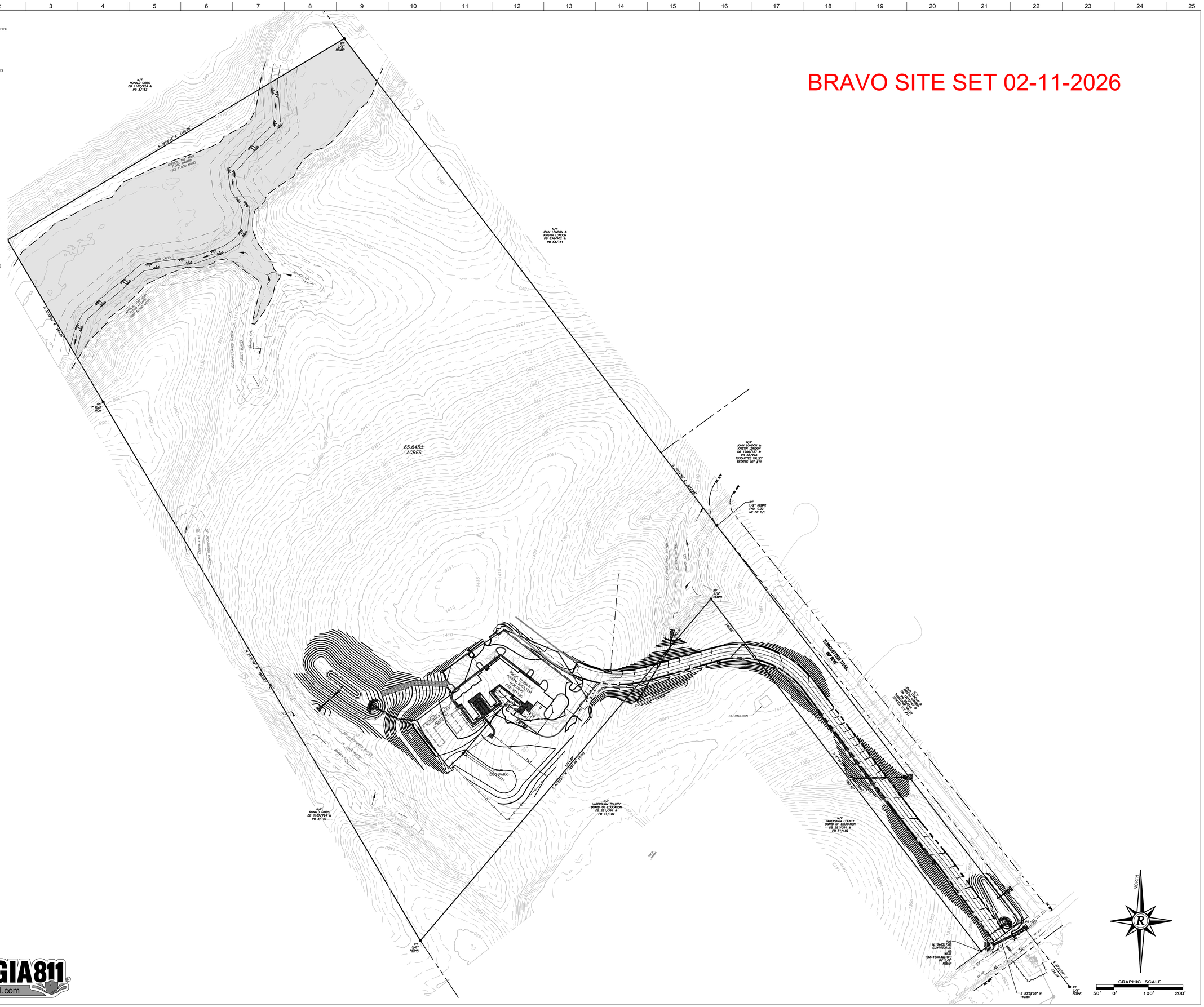

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OVERALL GRADING PLAN

SHEET NO.
C-9

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WMH	- WATER MANHOLE
WV	- WATER VALVE

LOADING AREA DETAIL

SCALE: 1"=10'

HANDICAP SPACE DETAIL

SCALE: 1"=10'

TSW:1411.32
BSW:1410.82

TSW:1411.38
BSW:1410.88

BRAVO SITE SET 02-11-2026

NOTE:
SPOT POINTS WHERE THE PAVEMENT MEETS THE SIDEWALK INDICATE THE ELEVATION AT THE BOTTOM OF THE SIDEWALK, UNLESS NOTED OTHERWISE. PROVIDE A 6" DOWNTURN FOR THE SIDEWALK EXCEPT AT HANDICAP RAMPS AND LANDINGS.
TSW - TOP OF SIDEWALK
BSW - BOTTOM OF SIDEWALK

GRAPHIC SCALE
15' 0' 30' 60'

3/6/2024 4:01:25 PM
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Croft & Associates
3380 Blue Springs Road
Kennesaw, Georgia 30144
770.529.7714 (p)
www.croftae.com

Rochester | DCCM
425 Oak Street
Gainesville, Georgia 30501
770.718.0600
www.rochester-assoc.com

GEORGIA REGISTERED No. 31471 PROFESSIONAL 01.17.25 ENGINEER ERIC M. CHINI

OWNER

HABERSHAM COUNTY ANIMAL CONTROL
130 JACOBS WAY, SUITE 302
CLARKSVILLE, GA
30523

HABERSHAM ANIMAL CONTROL
OLD ATHENS HWY
CORNELIA, GA
30531

No.	Date	Description
3	2025-11-24	REVISION 3 SET
2	2025-10-27	REVISION 2 SET
1	2025-01-17	VE REVISION 1 SET
0	2024-06-10	PERMIT SET
		ISSUANCE

PROJECT NUMBER
2022-313

DRAWN: DCB
CHECKED: EMC

SHEET TITLE
GRADING PLAN

SHEET NO.
C-10

THIS SHEET PLOTS ON 42" x 30"

3" 2" 1" 1/2" 0

LEGEND

AIF	- ANGLE IRON FOUND
AKA	- ALSO KNOWN AS
AJCSP	- ALUMIZED TYPE 2 CORRUGATED STEEL PIPE
BC	- BACK OF CURB
BL	- BUILDING SETBACK LINE
BWF	- BARB WIRE FENCE
C&G	- CURB & GUTTER
C/T	- CRIMP TOP PIPE
CI	- CURB INLET
CL	- CENTER LINE
CLF	- CHAIN LINK FENCE
CMF	- CONCRETE MONUMENT FOUND
CMP	- CORRUGATED METAL PIPE
CO	- CLEAN OUT
CONC	- CONCRETE
CORPS	- ARMY CORPS OF ENGINEERS
DB,PG	- DEED BOOK, PAGE
DI	- DROP INLET
DIP	- DUCTILE IRON PIPE
DS	- DOWN SPOUT
DWCB	- DOUBLE WING CATCH BASIN
EP	- EDGE OF PAVEMENT
FFE	- FINISH FLOOR ELEVATION
FH	- FIRE HYDRANT
-G-	- GAS LINE
GM	- GAS METER
GP	- GUY POLE
GV	- GAS VALVE
GW	- GUY WIRE
HC	- HANDICAP
HW	- HEADWALL
HWF	- HOG WIRE FENCE
IE	- INVERT ELEVATION
IPF	- IRON PIN FOUND
IPS	- IRON PIN SET
JB	- JUNCTION BOX
LL	- LAND LOT
LLL	- LAND LOT LINE
LP	- LIGHT POLE
MH	- MANHOLE
MON	- MONUMENT
N/F	- NOW OR FORMERLY
O/T	- OPEN TOP PIPE
PBX	- POWER BOX / TRANSFORMER
-P-	- OVERHEAD POWER LINE
-P/T-	- O/H POWER & TELE LINE
PL	- PROPERTY LINE
PM	- POWER METER
POB	- POINT OF BEGINNING
PP	- POWER POLE
PTP	- POWER & TELEPHONE POLE
PVC	- POLYVINYLCHLORIDE PIPE
R/B	- REINFORCING IRON BAR
RCP	- REINFORCED CONCRETE PIPE
R/W	- RIGHT OF WAY
-SS-	- SANITARY SEWER LINE
SSE	- SANITARY SEWER EASEMENT
S/W	- SIDEWALK
SWCB	- SINGLE WING CATCH BASIN
TBM	- TEMPORARY BENCHMARK
TBX	- TELEPHONE BOX
TF	- TRANSFORMER
TMH	- TELEPHONE MANHOLE
TP	- TELEPHONE POLE
TPOB	- TRUE POINT OF BEGINNING
-T-	- OVERHEAD TELEPHONE LINE
UP	- UNDERGROUND POWER
UT	- UNDERGROUND TELEPHONE
WI	- WEIR INLET
-W-	- WATER LINE
WM	- WATER METER
WMH	- WATER MANHOLE
WV	- WATER VALVE

P.5–1.OEP
TOP = 1386.01
INV IN=1363.64' 24"RCP

P.5–1A.JB
TOP = 1383.90
INV IN=1360.84' 24"RCP
INV OUT=1364.11' 24"RCP

P.5–1H.WI
TOP = 1390.81
INV OUT=1385.81' 18"HDPE

P.5–1B.HW
TOP = 1386.08
INV OUT=1384.00' 24"RCP

P.2–1F.SWCB
TOP = 1408.53
INV IN=1400.41' 18"AJCSP
INV OUT=1400.41' 18"AJCSP

P.2–1G.WI
TOP = 1406.10
INV IN=1402.10' 18"HDPE
INV OUT=1402.10' 18"AJCSP

P.2–1H.DWCB
TOP = 1408.81
INV OUT=1403.67' 18"HDPE

INTAKE PARKING

P.2–2H.ST CO
TOP = 1411.41
INV OUT=1409.41' 8"HDPE

P.2–2O.ST CO
TOP = 1411.10
INV IN=1409.00' 8"HDPE
INV OUT=1407.34' 8"HDPE

PROP. 17,958 S.F.
ANIMAL SHELTER
BUILDING
FFE: 1411.60

PROP. DOWNSPOUT COLLECTOR

PROP. WATER LINE TO AVOID CANTILEVER GATE FOUNDATIONS.

P.2–5B.CO
TOP = 1410.50
INV IN=1408.24' 12"HDPE
INV IN=1407.79' 12"HDPE
INV OUT=1407.79' 12"HDPE

P.2–5C.YI
TOP = 1410.91
INV IN=1408.54' 8"HDPE
INV OUT=1408.29' 12"HDPE

P.2–5O.ST CO
TOP = 1411.27
INV OUT=1409.27' 8"HDPE

P.2–6A.YI
TOP = 1410.76
INV IN=1408.55' 12"HDPE
INV OUT=1408.55' 12"HDPE

P.2–6B.YI
TOP = 1411.00
INV OUT=1409.00' 12"HDPE

P.2–4B.CO
TOP = 1411.09
INV IN=1407.08' 12"HDPE
INV OUT=1407.08' 12"HDPE

P.2–6C.YI
TOP = 1411.02
INV IN=1407.44' 12"HDPE
INV OUT=1407.44' 12"HDPE

P.2–6D.YI
TOP = 1411.03
INV IN=1408.08' 8"HDPE
INV OUT=1407.75' 12"HDPE

P.2–4E.YI
TOP = 1411.02
INV OUT=1408.39' 8"HDPE

P.2–3C.ST CO
TOP = 1411.22
INV IN=1408.70' 8"HDPE
INV OUT=1408.20' 8"HDPE

P.2–3D.ST CO
TOP = 1411.22
INV OUT=1409.22' 8"HDPE

P.2–2W.DWCB
TOP = 1408.96
INV IN=1405.76' 8"HDPE
INV OUT=1404.66' 18"HDPE

P.2–7B.ST CO
TOP = 1411.21
INV OUT=1409.21' 8"HDPE

P.2–2E.DI
TOP = 1409.40
INV IN=1402.35' 18"HDPE
INV IN=1406.69' 12"HDPE
INV IN=1407.03' 8"HDPE
INV OUT=1402.35' 18"HDPE

P.2–7A.ST CO
TOP = 1411.20
INV IN=1408.71' 8"HDPE
INV OUT=1407.27' 8"HDPE

P.2–1E.SWCB
TOP = 1407.96
INV IN=1398.26' 18"AJCSP
INV OUT=1398.26' 18"HDPE

P.2–1D.JB
TOP = 1410.34
INV IN=1397.54' 18"HDPE
INV OUT=1397.54' 18"HDPE

PROP. 8"HDPE DOWNSPOUT CONNECTION, TYP. (SEE ARCHITECTURAL PLANS FOR ACTUAL DOWNSPOUT LOCATION)

FUTURE 7,448 S.F. ADDITION

P.2–2O.DI
TOP = 1408.46
INV IN=1401.40' 18"HDPE
INV IN=1404.05' 12"HDPE
INV OUT=1401.40' 18"HDPE

P.2–4A.CO
TOP = 1411.20
INV IN=1407.39' 8"HDPE
INV IN=1406.70' 12"HDPE
INV OUT=1406.70' 12"HDPE

P.2–3A.ST CO
TOP = 1411.21
INV IN=1407.89' 8"HDPE
INV OUT=1407.89' 8"HDPE

P.2–3B.ST CO
TOP = 1411.19
INV IN=1408.13' 8"HDPE
INV OUT=1408.13' 8"HDPE

PROP. SODDED 2'-4' WIDE SWALE

P.2–2A.WI
TOP = 1407.08
INV IN=1396.19' 18"HDPE
INV OUT=1395.69' 24"HDPE

PROP. DOG PARK

P.2–2C.DI
TOP = 1403.89
INV IN=1399.44' 18"HDPE
INV OUT=1399.44' 18"HDPE

P.2–2B.JB
TOP = 1405.78
INV IN=1398.24' 18"HDPE
INV OUT=1398.24' 18"HDPE

ADOPTION PARKING

EMPLOYEE PARKING

N/F HABERSHAM COUNTY BOARD OF EDUCATION DB 281/391 & PB 31/189

S 40°22'21" W 1297.69' (total)

1014.30'

100–YR POND ELEV.: 1370.90

TOP. OF MICROPOOL ELEV.: 1363.00

P.1–1A.OCS
TOP = 1371.00
INV IN=1359.80' 6"PVC
INV OUT=1359.00' 30"RCP

P.1–1.HW
TOP = 1361.84
INV IN=1358.34' 30"RCP

PROP. RIPRAP APRON

P.2–1A.JB
TOP = 1374.97
INV IN=1369.92' 24"RCP
INV OUT=1364.56' 30"RCP

P.2–2.HW
TOP = 1367.45
INV IN=1364.16' 30"RCP

PROP. RIPRAP APRON

PROP. 2' TALL STONE FOREBAY

P.2–1B.JB
TOP = 1392.89
INV IN=1384.29' 24"RCP
INV OUT=1374.29' 24"RCP

P.2–1C.JB
TOP = 1408.60
INV IN=1394.45' 24"HDPE
INV IN=1394.95' 18"HDPE
INV OUT=1389.65' 24"RCP

50' UNDISTURBED BUFFER

25' STATE BUFFER

BRAVO SITE SET 02-11-2026

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GRAPHIC SCALE
15' 0' 30' 60'

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HABERSHAM COUNTY ANIMAL SHELTER

HABERSHAM ANIMAL CONTROL
OLD ATHENS HWY
CORNELIA, GA
30531

No.	Date	Description
3	2025-11-24	REVISION 3 SET
2	2025-10-27	REVISION 2 SET
1	2025-01-17	VE REVISION 1 SET
0	2024-06-10	PERMIT SET
		ISSUANCE

PROJECT NUMBER
2022-313

DRAWN: DCB
CHECKED: EMC

SHEET TITLE
DRAINAGE PLAN

SHEET NO.
C-10.1

BRAVO SITE SET 02-11-2026

THIS SHEET PLOTS ON 42" x 30"

3" 2" 1" 1/2" 0

LEGEND

AIF	- ANGLE IRON FOUND
AKA	- ALSO KNOWN AS
AJCSP	- ALUMADED TYPE 2 CORRUGATED STEEL PIPE
BC	- BACK OF CURB
BL	- BUILDING SETBACK LINE
BWF	- BARB WIRE FENCE
C&G	- CURB & GUTTER
C/T	- CRIMP TOP PIPE
CI	- CURB INLET
CL	- CENTER LINE
CLF	- CHAIN LINK FENCE
CMF	- CONCRETE MONUMENT FOUND
CMP	- CORRUGATED METAL PIPE
CO	- CLEAN OUT
CONC	- CONCRETE
CORPS	- ARMY CORPS OF ENGINEERS
DB,PG	- DEED BOOK, PAGE
DI	- DROP INLET
DIP	- DUCTILE IRON PIPE
DS	- DOWN SPOUT
DWCB	- DOUBLE WING CATCH BASIN
EP	- EDGE OF PAVEMENT
FFE	- FINISH FLOOR ELEVATION
FH	- FIRE HYDRANT
-G-	- GAS LINE
GM	- GAS METER
GP	- GUY POLE
GV	- GAS VALVE
GW	- GUY WIRE
HC	- HANDICAP
HW	- HEADWALL
HWF	- HOG WIRE FENCE
IE	- INVERT ELEVATION
IPF	- IRON PIN FOUND
IPS	- IRON PIN SET
JB	- JUNCTION BOX
LL	- LAND LOT
LLL	- LAND LOT LINE
LP	- LIGHT POLE
MH	- MANHOLE
MON	- MONUMENT
N/F	- NOW OR FORMERLY
O/T	- OPEN TOP PIPE
PBX	- POWER BOX / TRANSFORMER
-P-	- OVERHEAD POWER LINE
-P/T-	- O/H POWER & TELE LINE
PL	- PROPERTY LINE
PM	- POWER METER
POB	- POINT OF BEGINNING
PP	- POWER POLE
PTP	- POWER & TELEPHONE POLE
PVC	- POLYVINYLCHLORIDE PIPE
R/B	- REINFORCING IRON BAR
RCP	- REINFORCED CONCRETE PIPE
R/W	- RIGHT OF WAY
-SS-	- SANITARY SEWER LINE
SSE	- SANITARY SEWER EASEMENT
S/W	- SIDEWALK
SWCB	- SINGLE WING CATCH BASIN
TBM	- TEMPORARY BENCHMARK
TBX	- TELEPHONE BOX
TF	- TRANSFORMER
TMH	- TELEPHONE MANHOLE
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TPOB	- TRUE POINT OF BEGINNING
-T-	- OVERHEAD TELEPHONE LINE
UP	- UNDERGROUND POWER
UT	- UNDERGROUND TELEPHONE
WI	- WEIR INLET
-W-	- WATER LINE
WM	- WATER METER
WMH	- WATER MANHOLE
WV	- WATER VALVE

TUSQUITTEE TRAIL
60' R/W

N/F
JOHN LONDON &
KRISTIN LONDON
DB 1200/187 &
PB 55/246
TUSQUITTEE VALLEY
ESTATES LOT #11

IPF
5/8"
REBAR

P.3-1F.WI
TOP = 1391.46
INV IN=1382.43' 18"HDPE
INV OUT=1382.50' 18"HDPE

P.3-1G.WI
TOP = 1389.25
INV IN=1384.41' 18"HDPE
INV OUT=1384.41' 18"HDPE

P.3-1H.WI
TOP = 1390.81
INV OUT=1385.81' 18"HDPE

P.3-1E.JB
TOP = 1395.19
INV IN=1379.03' 18"HDPE
INV OUT=1379.03' 18"HDPE

P.4-1A.HW
TOP = 1365.06

P.3-1D.WI
TOP = 1372.73
INV IN=1367.73' 18"HDPE
INV OUT=1367.69' 18"HDPE

P.5-1A.JB
TOP = 1383.60
INV IN=1369.64' 24"RCP
INV OUT=1364.11' 24"RCP

P.5-1B.HW
TOP = 1383.90
INV IN=1369.64' 24"RCP
INV OUT=1364.11' 24"RCP

P.5-1.OEP
TOP = 1366.01
INV IN=1363.64' 24"RCP

P.5-18.HW
TOP = 1388.08
INV OUT=1384.00' 24"RCP

P.2-1G.WI
TOP = 1406.10
INV IN=1402.10' 18"HDPE
INV OUT=1402.10' 18"ADSP

P.2-1H.DWCB
TOP = 1408.81
INV OUT=1403.67' 18"HDPE

P.2-2H.ST CO
TOP = 1411.41
INV OUT=1409.41' 8"HDPE

P.2-2G.ST CO
TOP = 1411.10
INV IN=1409.00' 8"HDPE
INV OUT=1407.34' 8"HDPE

P.2-5B.CO
TOP = 1410.50
INV IN=1408.24' 12"HDPE
INV IN=1407.79' 12"HDPE
INV OUT=1407.79' 12"HDPE

P.2-5C.YI
TOP = 1410.91
INV IN=1408.54' 8"HDPE
INV OUT=1408.54' 8"HDPE

P.2-5D.ST CO
TOP = 1411.27
INV OUT=1409.27' 8"HDPE

P.2-2I.DWCB
TOP = 1408.96
INV IN=1405.36' 8"HDPE
INV OUT=1404.96' 18"HDPE

P.2-7B.ST CO

PROP. 2H:1V SLOPE

PROP. 6FT GRASS CHANNEL. PROP. 1' STONE CHECK DAM DOWN STREAM OF WEIR INLET

PROP. 4FT GRASS CHANNEL. (CHANNEL WIDENS TO 6FT AROUND WEIR INLETS)

PROP. 4FT GRASS CHANNEL. (CHANNEL WIDENS TO 6FT AROUND WEIR INLETS)

PROP. 1' STONE CHECK DAM DOWN STREAM OF WEIR INLET

PROP. 4FT GRASS CHANNEL. (CHANNEL WIDENS TO 6FT AROUND WEIR INLETS)

PROP. 10' WIDE BENCH @ 2.0%

PROP. RETAINING WALL (DESIGN BY OTHERS).

1' SWALE BEHIND RETAINING WALL. GRADE TO DRAIN.

PROP. WATER LINE TO AVOID CANTILEVER GATE FOUNDATIONS.

INTAKE PARKING

PROP. 17,958 S.F. ANIMAL SHELTER BUILDING FFE: 1411.60

EX. PAVILION

MATCHLINE SHEET 11
MATCHLINE SHEET 10

MATCHLINE SHEET 12
MATCHLINE SHEET 10

N/F
HABERSHAM COUNTY
BOARD OF EDUCATION
DB 281/391 &
PB 31/189

N 37°29'23" W 1284.07' (total)
1087.42'

283.39'

196.65'

1014.30'
1297.69' (total)

2:1 SLOPE TIE UP CUT SLOPE
7'-11' GRASS SHOULDER
2% SLOPE
3:1 SLOPE
2:1 SLOPE
4' - 6'
4' BERM
2:1 SLOPE TIE DOWN FILL SLOPE
BOTTOM OF CHANNEL TO BE SODDED
4 FT BERM TO BE INSTALLED ON FILL SLOPES

GRASS CHANNEL TYPICAL DETAIL
SCALE: N.T.S.

2:1 SLOPE TIE UP CUT SLOPE
7'-11' GRASS SHOULDER
2% SLOPE
3:1 SLOPE
2:1 SLOPE
6' GRASS CHANNEL
4' BERM
2:1 SLOPE TIE DOWN FILL SLOPE
BOTTOM OF CHANNEL TO BE SODDED
WEIR INLET STRUCTURE
4 FT BERM TO BE INSTALLED ON FILL SLOPES

GRASS CHANNEL W/ WIER INLET DETAIL
SCALE: N.T.S.

BOTTOM OF CHANNEL TO BE SODDED
6'
4'
UP STREAM FLOW
6'
50' TAPER
WEIR INLET STRUCTURE
BOTTOM OF CHANNEL TO BE SODDED
DOWN STREAM FLOW
4'
1' STONE CHECK DAM DOWN STREAM OF WEIR INLET (SEE DETAIL)

GRASS CHANNEL WIDENING FOR WIER INLET TYPICAL DETAIL
SCALE: N.T.S.

GRAPHIC SCALE
15' 0' 30' 60'

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No.	Date	Description
3	2025-11-24	REVISION 3 SET
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0	2024-06-10	PERMIT SET
		ISSUANCE

PROJECT NUMBER
2022-313

DRAWN: DCB
CHECKED: EMC

SHEET TITLE
GRADING & DRAINAGE PLAN

SHEET NO.
C-11

THIS SHEET PLOTS ON 42" x 30"

3" 2" 1" 1/2" 0

LEGEND

AIF	- ANGLE IRON FOUND
AKA	- ALSO KNOWN AS
AJCSP	- ALUMIZED TYPE 2 CORRUGATED STEEL PIPE
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-G-	- GAS LINE
GM	- GAS METER
GP	- GUY POLE
GV	- GAS VALVE
GW	- GUY WIRE
HC	- HANDICAP
HW	- HEADWALL
HWF	- HOG WIRE FENCE
IE	- INVERT ELEVATION
IPF	- IRON PIN FOUND
IPS	- IRON PIN SET
JB	- JUNCTION BOX
LL	- LAND LOT
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MH	- MANHOLE
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N/F	- NOW OR FORMERLY
O/T	- OPEN TOP PIPE
PBX	- POWER BOX / TRANSFORMER
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PTP	- POWER & TELEPHONE POLE
PVC	- POLYVINYLCHLORIDE PIPE
R/B	- REINFORCING IRON BAR
RCP	- REINFORCED CONCRETE PIPE
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-SS-	- SANITARY SEWER LINE
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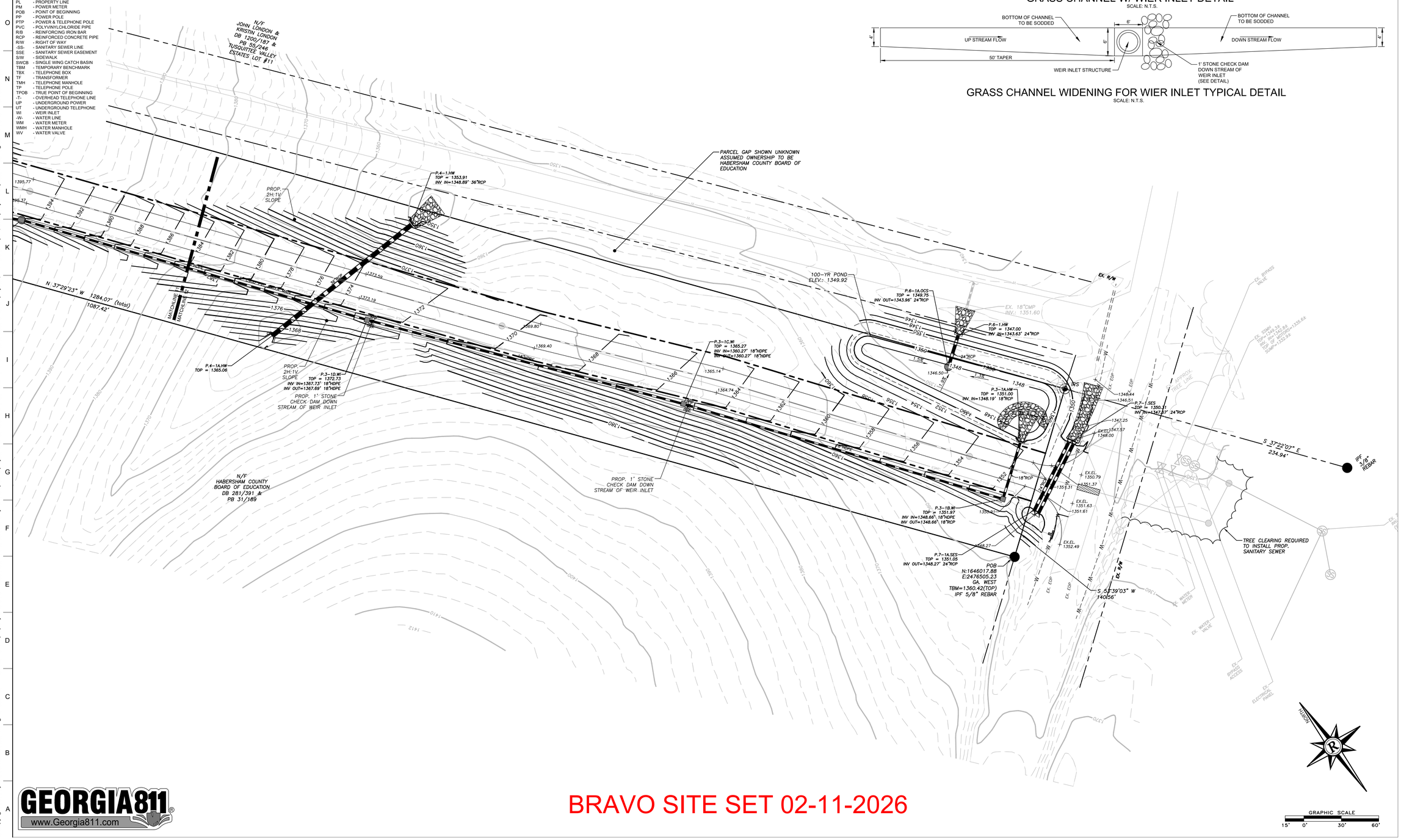
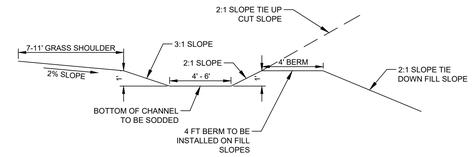
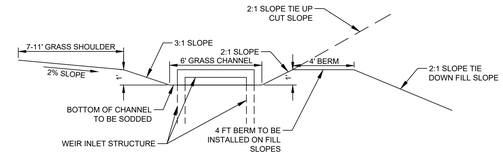
UT	- UNDERGROUND TELEPHONE
WI	- WEIR INLET
-W-	- WATER LINE
WM	- WATER METER
WMH	- WATER MANHOLE
WV	- WATER VALVE





GRASS CHANNEL TYPICAL DETAIL
SCALE: N.T.S.



GRASS CHANNEL W/ WIER INLET DETAIL
SCALE: N.T.S.

GRASS CHANNEL WIDENING FOR WIER INLET TYPICAL DETAIL
SCALE: N.T.S.

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BRAVO SITE SET 02-11-2026

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Gainesville, Georgia 30501
770.718.0600
www.rochester-assoc.com

GEORGIA REGISTERED No. 31471 PROFESSIONAL 01.17.25 ENGINEER ERIC M. CHINN

OWNER

HABERSHAM COUNTY ANIMAL CONTROL
130 JACOBS WAY, SUITE 302
CLARKSVILLE, GA
30523

HABERSHAM COUNTY ANIMAL SHELTER

HABERSHAM ANIMAL CONTROL
OLD ATHENS HWY
CORNELIA, GA
30531

No.	Date	Description
3	2025-11-24	REVISION 3 SET
2	2025-10-27	REVISION 2 SET
1	2025-01-17	VE REVISION 1 SET
0	2024-06-10	PERMIT SET

ISSUANCE

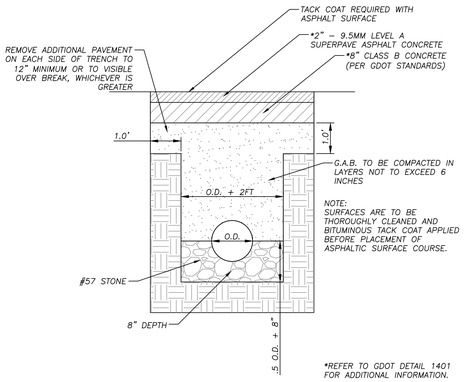
PROJECT NUMBER
2022-313

DRAWN: DCB
CHECKED: EMC

SHEET TITLE
GRADING & DRAINAGE PLAN

SHEET NO.
C-12

THIS SHEET PLOTS ON 42" x 30"



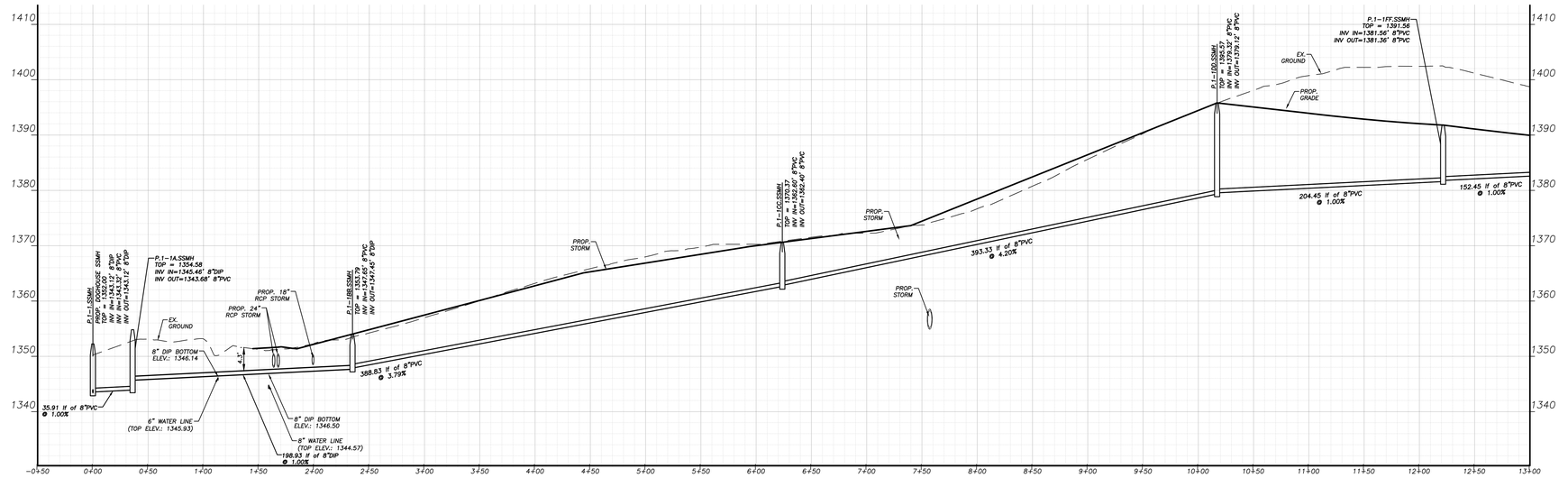
OPEN CUT TRENCH PAVEMENT REPLACEMENT AND PIPE BEDDING DETAIL

SCALE: N.T.S

PER:
GEORGIA MINIMUM STANDARDS FOR PUBLIC WATER SYSTEMS

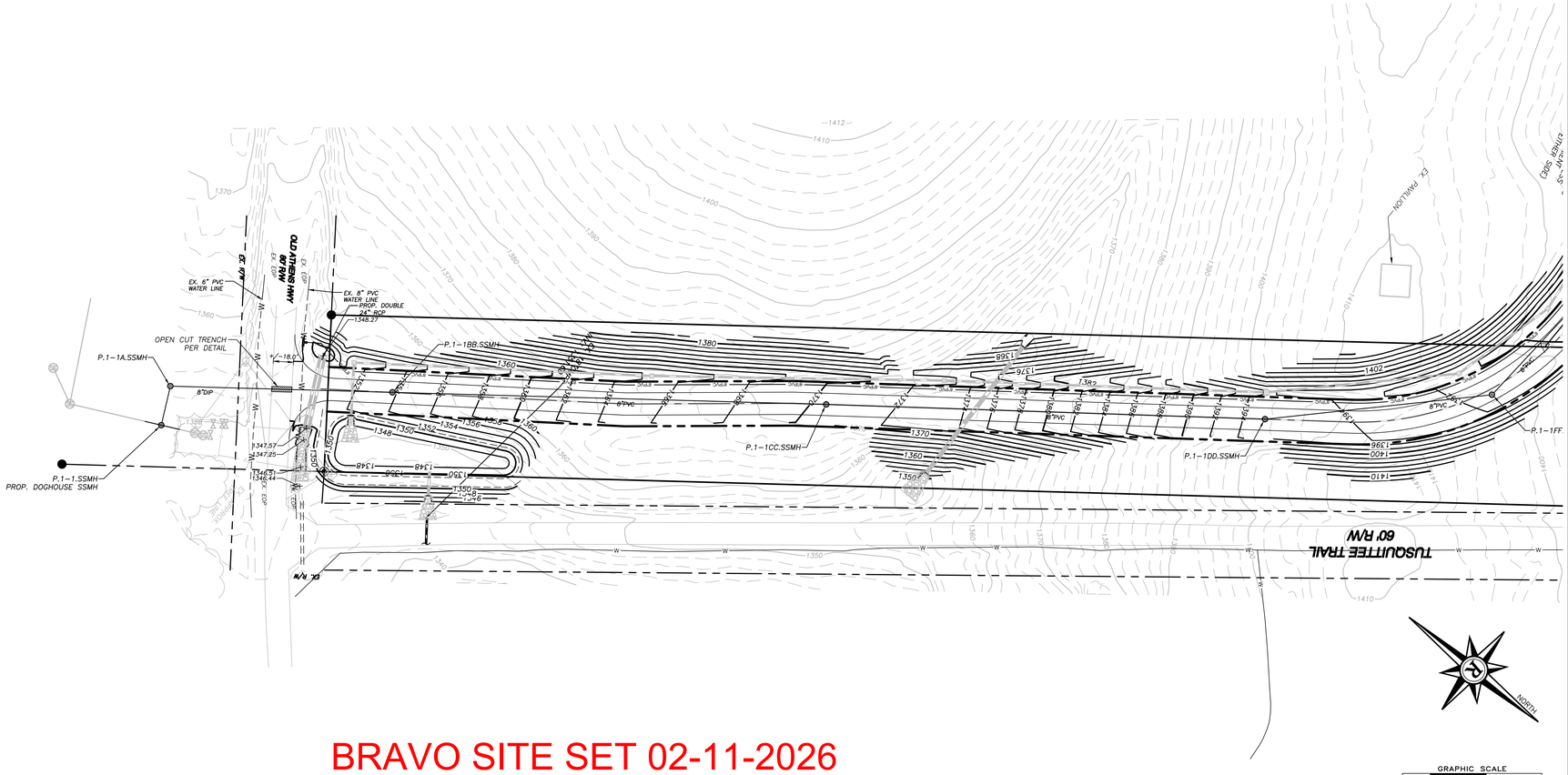
SECTION: 12.6.2 CROSSINGS

B. WHEN LOCAL CONDITIONS PREVENT A VERTICAL SEPARATION OF 18 INCHES, THE SEWER PASSING OVER OR UNDER WATER MAINS SHALL BE CONSTRUCTED OF MATERIALS AND WITH JOINTS THAT ARE EQUIVALENT TO WATER MAIN STANDARDS OF CONSTRUCTION AND SHALL BE PRESSURE TESTED TO ASSURE WATER-TIGHTNESS PRIOR TO BACKFILLING.



SCALE:
1"=50' HORIZONTAL,
1"=10' VERTICAL

PROPOSED SANITARY SEWER LINE STA. 0+00-13+00



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BRAVO SITE SET 02-11-2026

GRAPHIC SCALE
25' 0' 50' 100'

NORTH

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0	2024-06-10	PERMIT SET

ISSUANCE

PROJECT NUMBER
2022-313

DRAWN: DCB
CHECKED: EMC

SHEET TITLE
SANITARY SEWER PIPE PROFILES

SHEET NO.
C-13

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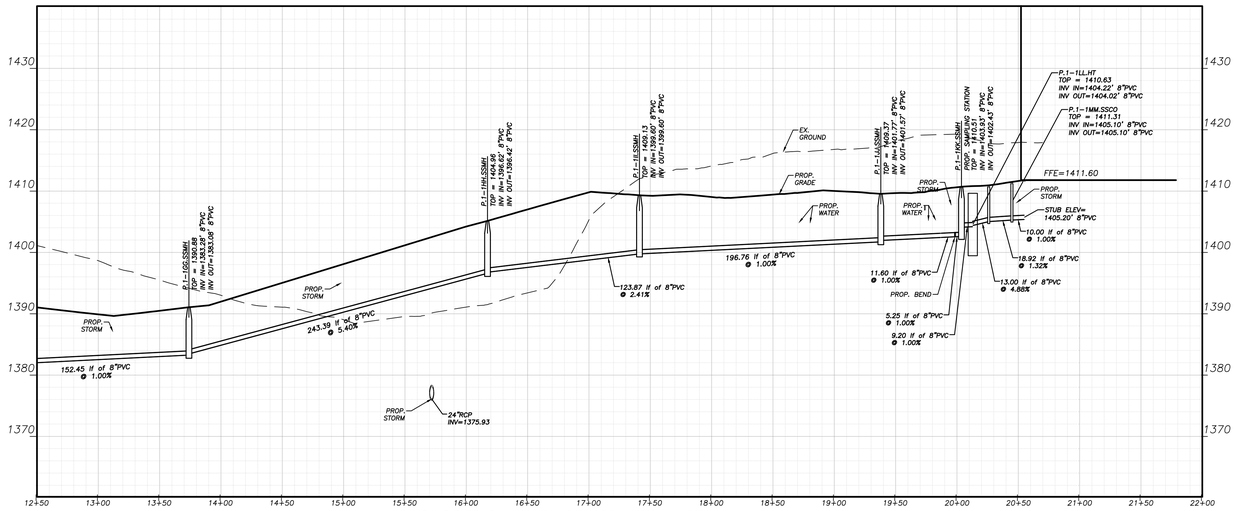
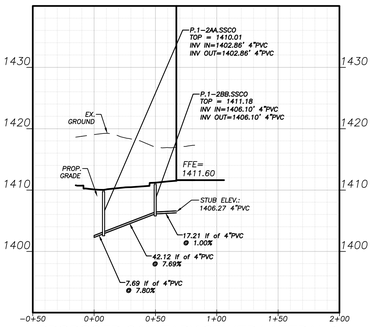
BRAVO SITE SET 02-11-2026



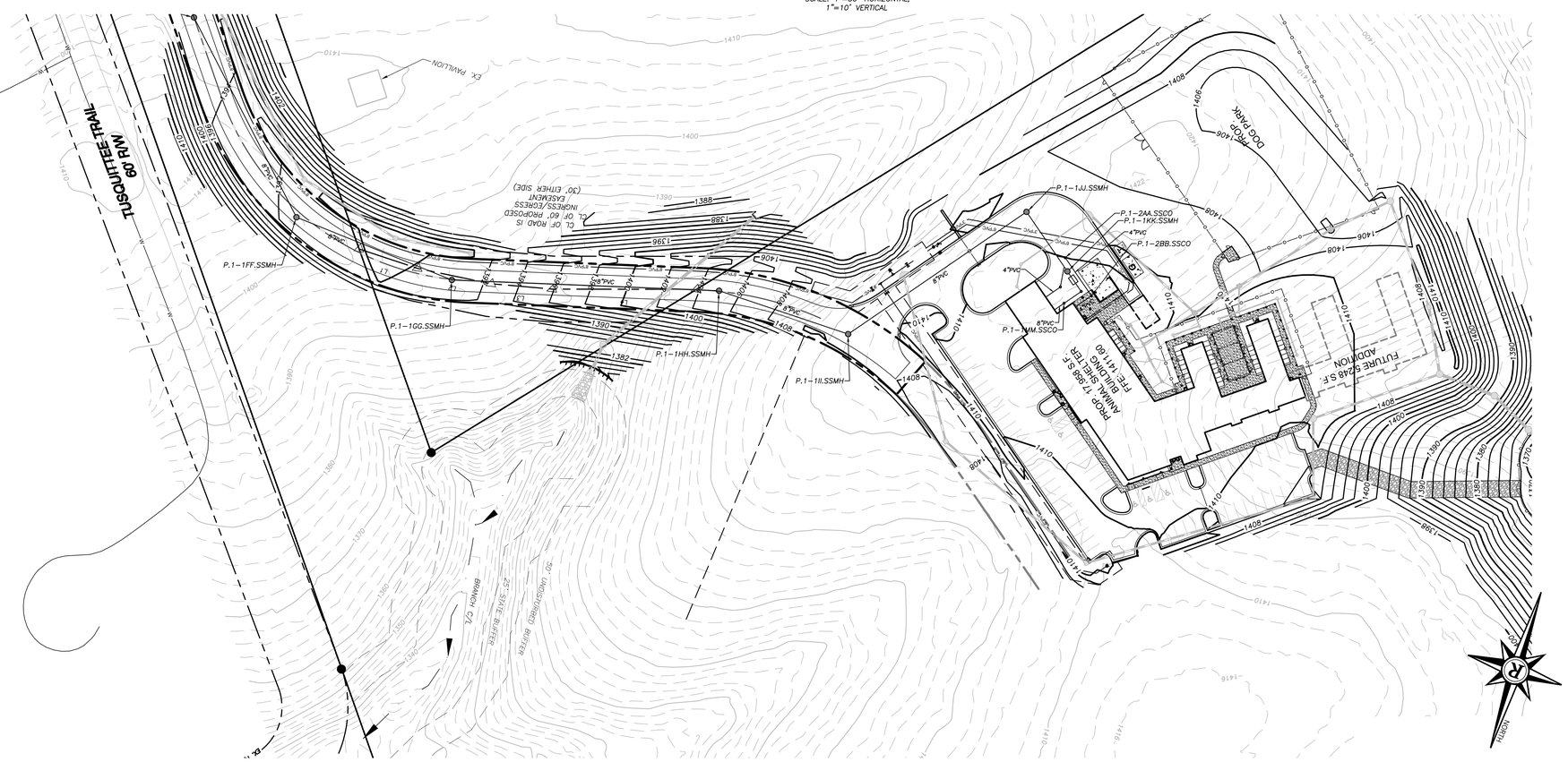
PROPOSED SANITARY SEWER LINE 1-1 STA. 12+50-20+23.68

SCALE: 1"=50' HORIZONTAL, 1"=10' VERTICAL



PROPOSED SANITARY SEWER LATERAL 1

SCALE: 1"=50' HORIZONTAL, 1"=10' VERTICAL



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		ISSUANCE

PROJECT NUMBER
2022-313

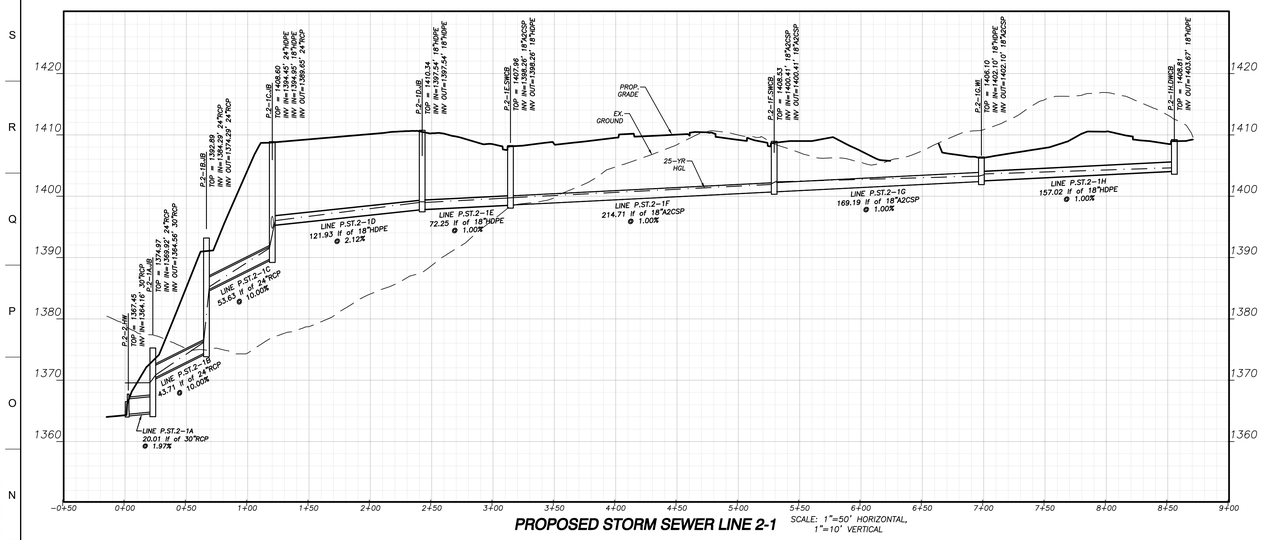
DRAWN: DCB
CHECKED: EMC

SHEET TITLE
SANITARY SEWER PIPE PROFILES

SHEET NO.
C-14

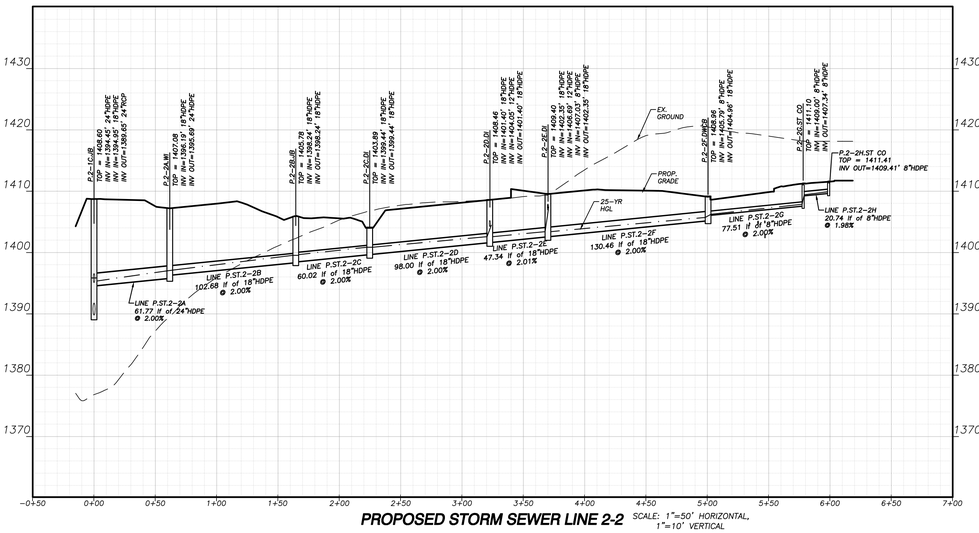
THIS SHEET PLOTS ON 42" X 30"

3" 2" 1" 1/2" 0



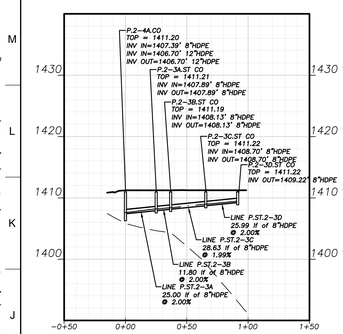
PROPOSED STORM SEWER LINE 2-1

SCALE: 1"=50' HORIZONTAL, 1"=10' VERTICAL



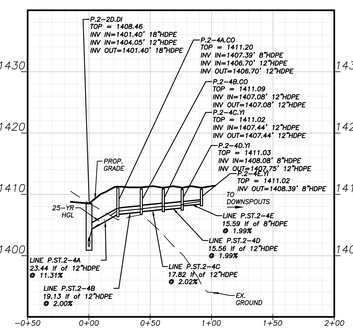
PROPOSED STORM SEWER LINE 2-2

SCALE: 1"=50' HORIZONTAL, 1"=10' VERTICAL



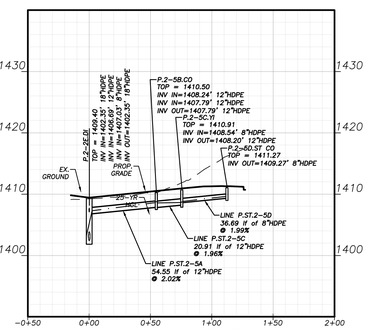
PROPOSED STORM SEWER LINE 2-3

SCALE: 1"=50' HORIZONTAL, 1"=10' VERTICAL



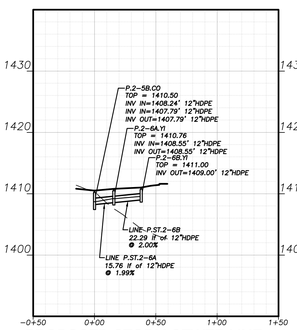
PROPOSED STORM SEWER LINE 2-4

SCALE: 1"=50' HORIZONTAL, 1"=10' VERTICAL



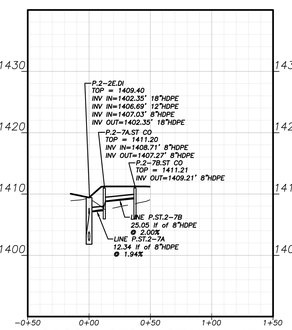
PROPOSED STORM SEWER LINE 2-5

SCALE: 1"=50' HORIZONTAL, 1"=10' VERTICAL



PROPOSED STORM SEWER LINE 2-6

SCALE: 1"=50' HORIZONTAL, 1"=10' VERTICAL



PROPOSED STORM SEWER LINE 2-7

SCALE: 1"=50' HORIZONTAL, 1"=10' VERTICAL

LEGEND

AIF	- ANGLE IRON FOUND
AKA	- ALSO KNOWN AS
AZCSP	- ALUMIZED TYPE 2 CORRUGATED STEEL PIPE
BC	- BACK OF CURB
BL	- BUILDING SETBACK LINE
BWF	- BARB WIRE FENCE
C&G	- CURB & GUTTER
CT	- CRIMP TOP PIPE
CI	- CURB INLET
CL	- CENTER LINE
CLF	- CHAIN LINK FENCE
CMF	- CONCRETE MONUMENT FOUND
CMP	- CORRUGATED METAL PIPE
CO	- CLEAN OUT
CONC	- CONCRETE
CORPS	- ARMY CORPS OF ENGINEERS
DB,PG	- DEED BOOK, PAGE
DI	- DROP INLET
DIP	- DUCTILE IRON PIPE
DS	- DOWN SPOUT
DWCB	- DOUBLE WING CATCH BASIN
EP	- EDGE OF PAVEMENT
FFE	- FINISH FLOOR ELEVATION
FH	- FIRE HYDRANT
-G-	- GAS LINE
GM	- GAS METER
GP	- GUY POLE
GV	- GAS VALVE
GW	- GUY WIRE
HC	- HANDICAP
HW	- HEADWALL
HWF	- HOG WIRE FENCE
IE	- INVERT ELEVATION
IPF	- IRON PIN FOUND
IPS	- IRON PIN SET
JB	- JUNCTION BOX
LL	- LAND LOT
LLL	- LAND LOT LINE
LP	- LIGHT POLE
MH	- MANHOLE
MON	- MONUMENT
N/F	- NOW OR FORMERLY
OT	- OPEN TOP PIPE
PBX	- POWER BOX / TRANSFORMER
-P-	- OVERHEAD POWER LINE
-P/T-	- O/H POWER & TELE LINE
PL	- PROPERTY LINE
PM	- POWER METER
POB	- POINT OF BEGINNING
PP	- POWER POLE
PTP	- POWER & TELEPHONE POLE
PVC	- POLYVINYLCHLORIDE PIPE
R/B	- REINFORCING IRON BAR
RCP	- REINFORCED CONCRETE PIPE
R/W	- RIGHT OF WAY
-SS-	- SANITARY SEWER LINE
SSE	- SANITARY SEWER EASEMENT
S/W	- SIDEWALK
SWCB	- SINGLE WING CATCH BASIN
TBM	- TEMPORARY BENCHMARK
TBX	- TELEPHONE BOX
TF	- TRANSFORMER
TMH	- TELEPHONE MANHOLE
TP	- TELEPHONE POLE
TPOB	- TRUE POINT OF BEGINNING
-T-	- OVERHEAD TELEPHONE LINE
UP	- UNDERGROUND POWER
UT	- UNDERGROUND TELEPHONE
WI	- WEIR INLET
-W-	- WATER LINE
WM	- WATER METER
WMH	- WATER MANHOLE
WV	- WATER VALVE

BRAVO SITE SET 02-11-2026

25-YR PIPE CHART

LineID	InletID	LineSize (in)	lineLength (ft)	LineSlope (%)	Line Material	n-valuePipe	DrainageArea (ac)	RunoffCoeff (C)	InletTime (min)	Tc (min)	iInlet (in/hr)	iSys (in/hr)	InscQ (cfs)	KnownQ (cfs)	TotalRunoff (cfs)	VelDn (ft/s)
1	P.ST.2-1A	P.2-1A.JB	30	20.005	1.97	0.011	0	0	0	10.3	0.0	7.1	0.0	0	19.2	3.9
2	P.ST.2-1B	P.2-1B.JB	24	43.713	10	0.011	0	0	0	10.2	0.0	7.1	0.0	0	19.3	21.8
3	P.ST.2-1C	P.2-1C.JB	24	53.631	10	0.011	0	0	0	10	0.0	7.2	0.0	0	19.4	21.8
4	P.ST.2-2A	P.2-2A.WI	24	61.773	2	0.012	0.39	0.72	5	9.8	9.5	7.2	2.7	0	11.1	9.8
5	P.ST.2-2B	P.2-2B.JB	18	102.682	2	0.012	0	0	0	9.5	0.0	7.4	0.0	0	9.2	9.4
6	P.ST.2-2C	P.2-2C.DI	18	60.024	2	0.012	1.33	0.35	5	9.3	9.5	7.4	4.4	0	9.3	6.2
7	P.ST.2-2D	P.2-2D.DI	18	98.003	2	0.012	0.07	0.35	5	8.9	9.53	7.57	0.23	0	5.93	3.99
8	P.ST.2-2E	P.2-2E.DI	18	47.344	2.01	0.012	0.02	0.35	5	8.6	9.53	7.67	0.07	0	4.44	3.81
9	P.ST.2-2F	P.2-2F.DWCB	18	130.457	2	0.012	0.23	0.79	5	6.7	9.53	8.53	1.73	0	1.87	1.93
10	P.ST.2-2G	P.2-2G.ST.CO	8	77.508	2	0.012	0.01	0.95	5	5.4	9.53	9.24	0.09	0	0.35	4.07
11	P.ST.2-2H	P.2-2H.ST.CO	8	20.739	1.98	0.012	0.03	0.95	5	5	9.53	9.53	0.27	0	0.27	3.77
12	P.ST.2-5A	P.2-5B.CO	12	54.552	2.02	0.012	0.02	0.35	5	5.9	9.53	8.97	0.07	0	2.99	7.12
13	P.ST.2-6A	P.2-6A.YI	12	15.764	1.97	0.012	0.07	0.86	5	5.2	9.53	9.41	0.57	0	2.18	6.51
14	P.ST.2-6B	P.2-6B.YI	12	22.295	2.02	0.012	0.18	0.95	5	5	9.53	9.53	1.63	0	1.63	3.13
15	P.ST.2-7A	P.2-7A.ST.CO	8	12.34	1.94	0.012	0.01	0.95	5	6.6	9.53	8.58	0.09	0	0.16	3.23
16	P.ST.2-7B	P.2-7B.ST.CO	8	25.049	2	0.012	0.01	0.95	5	5	9.53	9.53	0.09	0	0.09	2.74
17	P.ST.2-4A	P.2-4A.CO	12	23.438	11.31	0.012	0.01	0.95	5	7.1	9.53	8.32	0.09	0	1.5	11.02
18	P.ST.2-3A	P.2-3A.ST.CO	8	24.998	2	0.012	0.01	0.95	5	6.7	9.53	8.53	0.09	0	0.32	3.98
19	P.ST.2-3B	P.2-3B.ST.CO	8	11.8	2	0.012	0	0	0	6.5	0	8.66	0	0	0.25	1.94
20	P.ST.2-3C	P.2-3C.ST.CO	8	28.629	1.99	0.012	0.01	0.95	5	5.8	9.53	9.01	0.09	0	0.26	2.45
21	P.ST.2-3D	P.2-3D.ST.CO	8	25.993	2	0.012	0.02	0.95	5	5	9.53	9.53	0.18	0	0.18	1.66
22	P.ST.2-5C	P.2-5C.YI	12	20.907	1.96	0.012	0.06	0.95	5	5.6	9.53	9.15	0.54	0	0.87	1.39
23	P.ST.2-5D	P.2-5D.ST.CO	8	36.693	1.99	0.012	0.04	0.95	5	5	9.53	9.53	0.36	0	0.36	4.11
24	P.ST.2-4B	P.2-4B.CO	12	19.13	2	0.012	0	0	0	5.5	0	9.2	0	0	1.22	2.94
25	P.ST.2-4C	P.2-4C.YI	12	17.824	2.02	0.012	0.03	0.95	5	5.3	9.53	9.31	0.27	0	1.24	3.47
26	P.ST.2-4D	P.2-4D.YI	12	15.56	1.99	0.012	0.03	0.95	5	5.1	9.53	9.45	0.27	0	0.99	2.73
27	P.ST.2-4E	P.2-4E.YI	8	15.592	1.99	0.012	0.08	0.95	5	5	9.53	9.53	0.72	0	0.72	4.97
28	P.ST.2-1D	P.2-1D.JB	18	121.926	2.12	0.012	0	0	0	9.3	0	7.41	0	0	8.75	9.5
29	P.ST.2-1E	P.2-1E.SWCB	18	72.246	1	0.012	0.35	0.77	5	9.1	9.53	7.49	2.57	0	8.85	6.12
30	P.ST.2-1F	P.2-1F.SWCB	18	214.706	1	0.019	0.53	0.72	5	8.3	9.53	7.81	3.64	0	7.12	4.63
31	P.ST.2-1G	P.2-1G.WI	18	169.193	1	0.019	0.41	0.76	5	7.2	9.53	8.27	2.97	0	4.39	2.48
32	P.ST.2-1H	P.2-1H.DWCB	18	157.019	1	0.012	0.28	0.78	5	5	9.53	9.53	2.08	0	2.08	1.47

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PROJECT NUMBER
2022-313

DRAWN: DCB
CHECKED: EMC

SHEET TITLE
STORM SEWER PIPE PROFILES

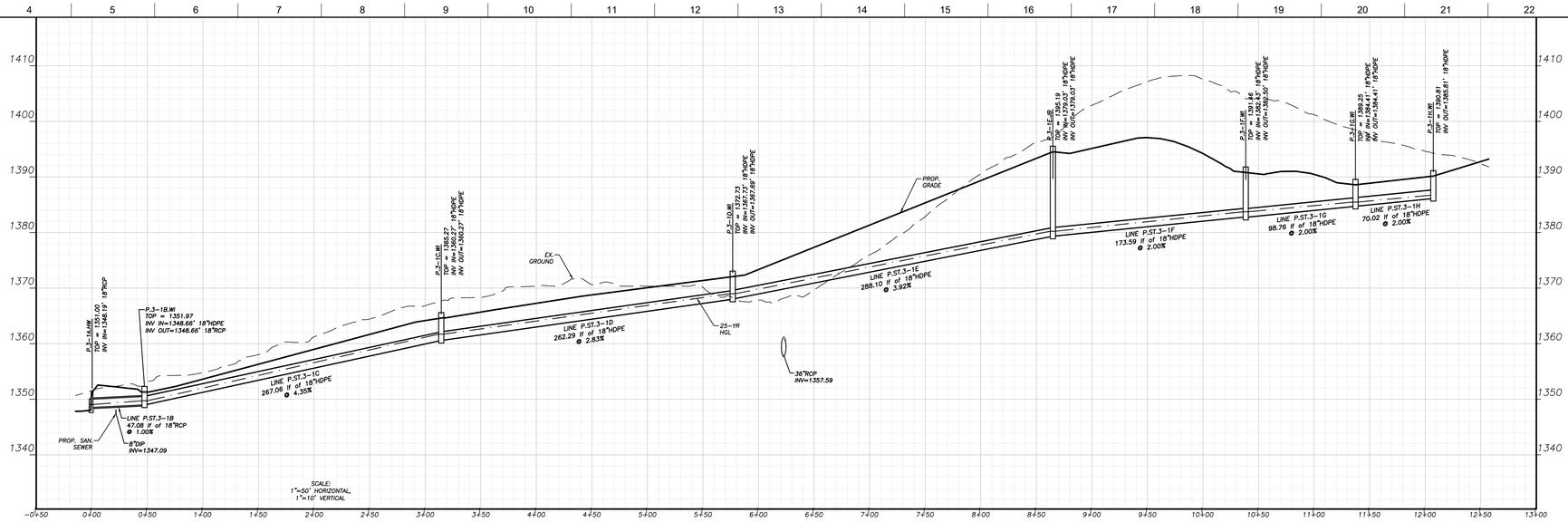
SHEET NO.
C-15

THIS SHEET PLOTS ON 42" x 30"

3" 2" 1" 1/2" 0

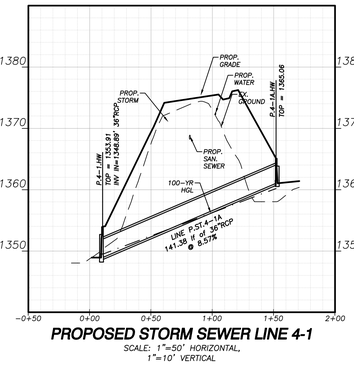
LEGEND

AIF	- ANGLE IRON FOUND
AKA	- ALSO KNOWN AS
AJCSP	- ALUMIZED TYPE 2 CORRUGATED STEEL PIPE
BC	- BACK OF CURB
BL	- BUILDING SETBACK LINE
BWF	- BARB WIRE FENCE
C&G	- CURB & GUTTER
C/T	- CRIMP TOP PIPE
CI	- CURB INLET
CL	- CENTER LINE
CLF	- CHAIN LINK FENCE
CMF	- CONCRETE MONUMENT FOUND
CMP	- CORRUGATED METAL PIPE
CO	- CLEAN OUT
CONC	- CONCRETE
CORPS	- ARMY CORPS OF ENGINEERS
DB,PG	- DEED BOOK, PAGE
DI	- DROP INLET
DIP	- DUCTILE IRON PIPE
DS	- DOWN SPOUT
DWCB	- DOUBLE WING CATCH BASIN
EP	- EDGE OF PAVEMENT
FFE	- FINISH FLOOR ELEVATION
FH	- FIRE HYDRANT
-G-	- GAS LINE
GM	- GAS METER
GP	- GUY POLE
GV	- GAS VALVE
GW	- GUY WIRE
HC	- HANDICAP
HW	- HEADWALL
HWF	- HOG WIRE FENCE
IE	- INVERT ELEVATION
IPF	- IRON PIN FOUND
IPS	- IRON PIN SET
JB	- JUNCTION BOX
LL	- LAND LOT
LLL	- LAND LOT LINE
LP	- LIGHT POLE
MH	- MANHOLE
MON	- MONUMENT
N/F	- NOW OR FORMERLY
O/T	- OPEN TOP PIPE
PBX	- POWER BOX / TRANSFORMER
-P-	- OVERHEAD POWER LINE
-P/T-	- O/H POWER & TELE LINE
PL	- PROPERTY LINE
PM	- POWER METER
POB	- POINT OF BEGINNING
PP	- POWER POLE
PTP	- POWER & TELEPHONE POLE
PVC	- POLYVINYLCHLORIDE PIPE
R/B	- REINFORCING IRON BAR
RCP	- REINFORCED CONCRETE PIPE
R/W	- RIGHT OF WAY
-SS-	- SANITARY SEWER LINE
SSE	- SANITARY SEWER EASEMENT
S/W	- SIDEWALK
SWCB	- SINGLE WING CATCH BASIN
TBM	- TEMPORARY BENCHMARK
TBX	- TELEPHONE BOX
TF	- TRANSFORMER
TMH	- TELEPHONE MANHOLE
TP	- TELEPHONE POLE
TPOB	- TRUE POINT OF BEGINNING
-T-	- OVERHEAD TELEPHONE LINE
UP	- UNDERGROUND POWER
UT	- UNDERGROUND TELEPHONE
WI	- WEIR INLET
-W-	- WATER LINE
WM	- WATER METER
WMH	- WATER MANHOLE
WV	- WATER VALVE



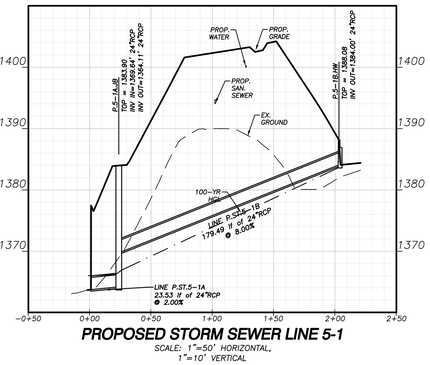
PROPOSED STORM SEWER LINE 3-2

SCALE: 1"=50' HORIZONTAL, 1"=10' VERTICAL



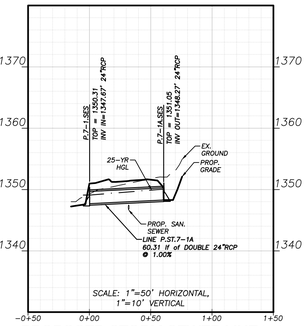
PROPOSED STORM SEWER LINE 4-1

SCALE: 1"=50' HORIZONTAL, 1"=10' VERTICAL



PROPOSED STORM SEWER LINE 5-1

SCALE: 1"=50' HORIZONTAL, 1"=10' VERTICAL



PROPOSED STORM SEWER LINE 7-1

SCALE: 1"=50' HORIZONTAL, 1"=10' VERTICAL

100-YR PIPE CHART

LineID	InletID	LineSize (in)	lineLengt (ft)	LineSlope (%)	Line Material	n-valuePipe	DrainageArea (ac)	RunoffCoeff (C)	InletTime (min)	Tc (min)	iInlet (in/hr)	iSys (in/hr)	IncrQ (cfs)	KnownQ (cfs)	TotalRunoff (cfs)	VelDn (ft/s)
P.ST.4-1A	P.4-1A.HW	36	155.76	6.24	RCP	0.011	6.80	0.40	7.0	7.0	10.5	10.5	28.6	0.0	28.6	19.8
P.ST.5-1A	P.5-1A.JB	24	14.23	1.00	RCP	0.011	3.90	0.40	8.0	8.6	9.9	9.6	15.5	0.0	29.9	9.8
P.ST.5-1B	P.5-1B.HW	24	182.06	10.00	RCP	0.011	3.90	0.40	8.0	8.0	9.9	9.9	15.5	0.0	15.5	4.9

25-YR PIPE CHART

LineID	InletID	LineSize (in)	lineLengt (ft)	LineSlope (%)	Line Material	n-valuePipe	DrainageArea (ac)	RunoffCoeff (C)	InletTime (min)	Tc (min)	iInlet (in/hr)	iSys (in/hr)	IncrQ (cfs)	KnownQ (cfs)	TotalRunoff (cfs)	VelDn (ft/s)
1	P.ST.3-1B	P.3-1B.WI	18	47.081	1	0.011	1.19	0.29	5	11.3	9.5	6.8	3.3	0	10.3	7.8
2	P.ST.3-1C	P.3-1C.WI	18	267.062	4.54	0.012	1.08	0.31	5	10.4	9.5	7.0	3.2	0	8.3	5.3
3	P.ST.3-1D	P.3-1D.WI	18	262.293	2.83	0.012	0.33	0.64	5	9.2	9.5	7.5	2.0	0	6.2	4.4
4	P.ST.3-1E	P.3-1E.JB	18	288.097	3.92	0.012	0	0	0	7.6	0.0	8.1	0.0	0	5.1	4.4
5	P.ST.3-1F	P.3-1F.WI	18	173.59	2	0.012	0.45	0.48	5	6.7	9.5	8.6	2.1	0	5.4	5.1
6	P.ST.3-1G	P.3-1G.WI	18	98.755	2	0.012	0.34	0.5	5	5.9	9.5	9.0	1.6	0	3.7	3.1
7	P.ST.3-1H	P.3-1H.WI	18	70.021	2	0.012	0.4	0.6	5	5	9.5	9.5	2.3	0	2.3	2.7

BRAVO SITE SET 02-11-2026

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770.718.0600
www.rochester-assoc.com

GEORGIA REGISTERED No. 31471 PROFESSIONAL 01.17.25 ENGINEER ERIC M. CHINI

OWNER

HABERSHAM COUNTY ANIMAL CONTROL
130 JACOBS WAY, SUITE 302
CLARKSVILLE, GA
30523

HABERSHAM COUNTY ANIMAL SHELTER

HABERSHAM ANIMAL CONTROL
OLD ATHENS HWY
CORNELIA, GA
30531

No.	Date	Description
3	2025-11-24	REVISION 3 SET
2	2025-10-27	REVISION 2 SET
1	2025-01-17	VE REVISION 1 SET
0	2024-06-10	PERMIT SET
		ISSUANCE

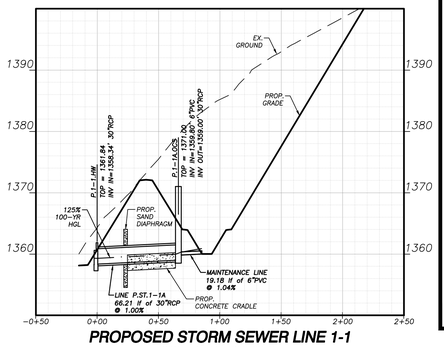
PROJECT NUMBER
2022-313

DRAWN: DCB
CHECKED: EMC

SHEET TITLE
STORM SEWER PIPE PROFILES

SHEET NO.
C-16

THIS SHEET PLOTS ON 42" x 30"

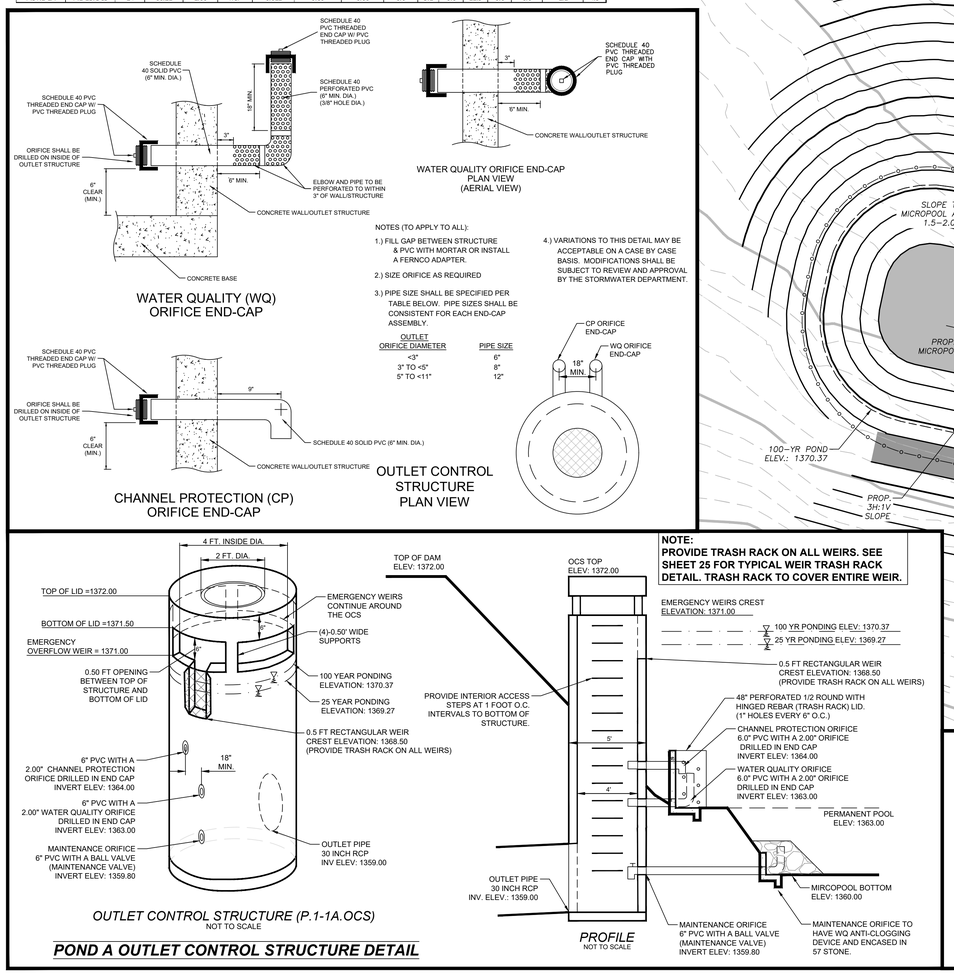


PROPOSED STORM SEWER LINE 1-1

SCALE: 1"=50' HORIZONTAL,
1"=10' VERTICAL

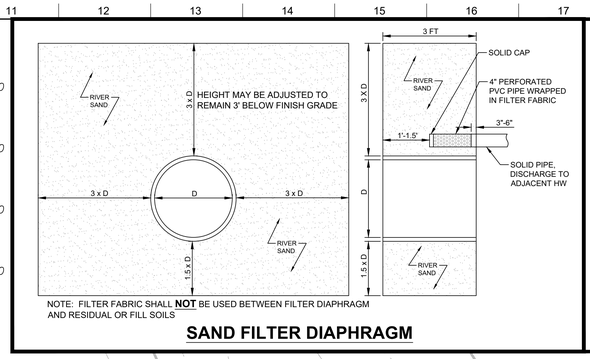
125% 100-YR PIPE CHART

LineID	InletID	LineSize (in)	LineLength (ft)	LineSlope (%)	Line Material	n-valuePipe	DrainageArea (ac)	RunoffCoeff (C)	InletTime (min)	Tc (min)	iInlet (in/hr)	iSys (in/hr)	IncrQ (cfs)	KnownQ (cfs)	TotalRunoff (cfs)	Vel Dn (ft/s)
P.ST.1-1A	P.1-1B.OCS	24	66.21	1.00	RCP	0.011	0.00	0.00	0.0	5.1	0.0	11.9	6.0	6.0	1.1	4.9



NOTE:
PROVIDE TRASH RACK ON ALL WEIRS. SEE SHEET 25 FOR TYPICAL WEIR TRASH RACK DETAIL. TRASH RACK TO COVER ENTIRE WEIR.

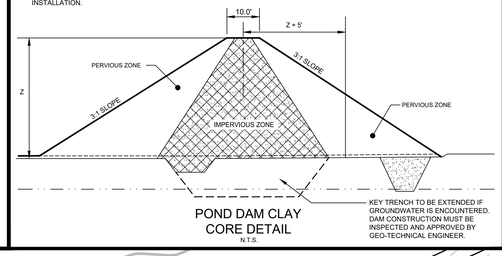
POND A OUTLET CONTROL STRUCTURE DETAIL



NOTE: FILTER FABRIC SHALL **NOT** BE USED BETWEEN FILTER DIAPHRAGM AND RESIDUAL OR FILL SOILS

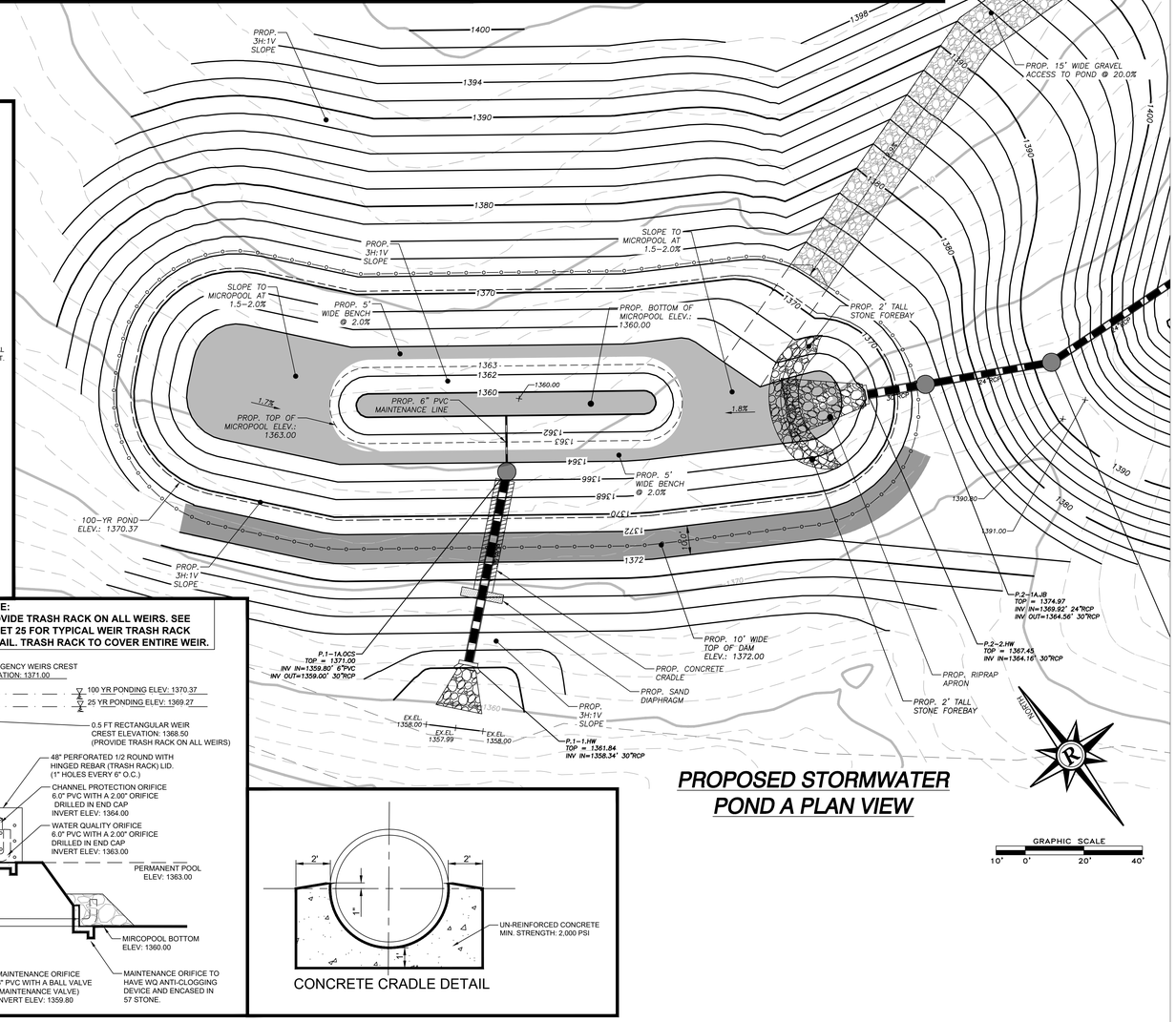
SAND FILTER DIAPHRAGM

NOTES:
1. DAM SIDE SLOPES - FILL SECTIONS 2FT OR MORE MUST BE COMPACTED TO 98% STANDARD PROCTOR. TEST TO BE TAKEN BASED ON GEO-TECH RECOMMENDATIONS DURING DAM CONSTRUCTION.
2. IMPERVIOUS ZONE - MUST BE COMPACTED TO 98% STANDARD PROCTOR AND CONSIST OF MATERIAL WITH AN INFILTRATION RATE LESS THAN 0.60 IN/HR. DESIGN TO BE APPROVED BY GEOTECHNICAL ENGINEER GRAVEL DRAINAGE TRENCH WITH TOE DRAIN.
3. CONTRACTOR SHALL PROVIDE CERTIFIED STRUCTURAL SHOP DRAWINGS FOR THE OUTLET CONTROL STRUCTURE WHICH SHALL INCLUDE WATER STOPS. DRAWINGS MUST BE SUBMITTED TO THE ENGINEER OF RECORD FOR APPROVAL PRIOR TO FABRICATION AND INSTALLATION.



POND DAM CLAY CORE DETAIL

N.T.S.



PROPOSED STORMWATER POND A PLAN VIEW

GRAPHIC SCALE
10' 0' 20' 40'

CONCRETE CRADLE DETAIL

BRAVO SITE SET 02-11-2026

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ISSUANCE

PROJECT NUMBER
2022-313

DRAWN: DCB
CHECKED: EMC

SHEET TITLE
STORMWATER POND A DETAILS

SHEET NO.
C-17

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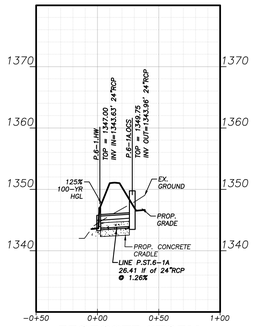
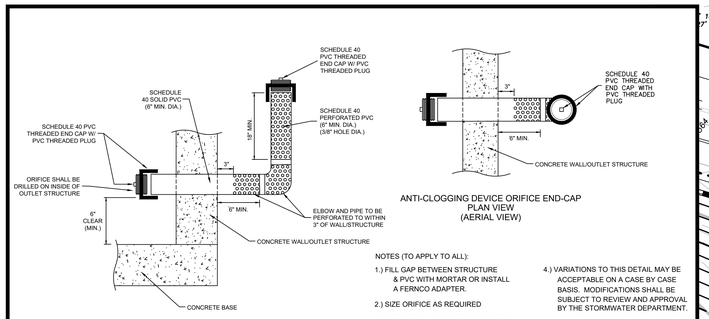


PROPOSED STORM SEWER LINE 6-1

SCALE: 1"=50' HORIZONTAL, 1"=10' VERTICAL

125% 100-YR PIPE CHART

LineID	InletID	LineSize (in)	LineLength (ft)	LineSlope (%)	Line Material	n-valuePipe	DrainageArea (ac)	RunoffCoeff (C)	InletTime (min)	Tc (min)	iInlet (in/hr)	iSys (in/hr)	IncrQ (cfs)	KnownQ (cfs)	TotalRunoff (cfs)	VelDn (ft/s)
P.ST.6-1A	P.6-1A.OCS	24	33.38	1.00	RCP	0.011	0.00	0.00	0.0	0.0	0.0	0.0	16.9	16.9	0.0	6.8



ANTI-CLOGGING DEVICE ORIFICE END-CAP

ANTI-CLOGGING DEVICE ORIFICE END-CAP PLAN VIEW (AERIAL VIEW)

NOTES (TO APPLY TO ALL):

1.) FILL GAP BETWEEN STRUCTURE & PVC WITH MORTAR OR INSTALL A FERNCO ADAPTER.

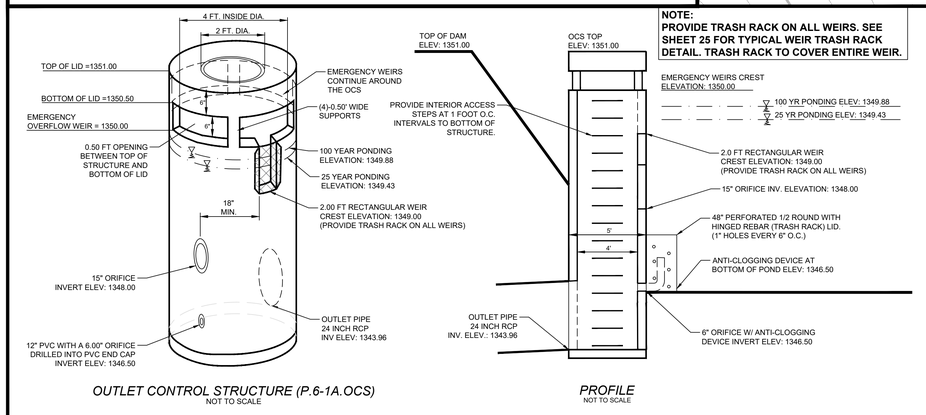
2.) SIZE ORIFICE AS REQUIRED

3.) PIPE SIZE SHALL BE SPECIFIED PER TABLE BELOW. PIPE SIZES SHALL BE CONSISTENT FOR EACH END-CAP ASSEMBLY.

OUTLET ORIFICE DIAMETER	PIPE SIZE
<3"	6"
3" TO <5"	8"
5" TO <11"	12"

4.) VARIATIONS TO THIS DETAIL MAY BE ACCEPTABLE ON A CASE BY CASE BASIS. MODIFICATIONS SHALL BE SUBJECT TO REVIEW AND APPROVAL BY THE STORMWATER DEPARTMENT.

NOTE:
PROVIDE TRASH RACK ON ALL WEIRS. SEE SHEET 25 FOR TYPICAL WEIR TRASH RACK DETAIL. TRASH RACK TO COVER ENTIRE WEIR.



OUTLET CONTROL STRUCTURE (P.6-1A.OCS) NOT TO SCALE

PROFILE NOT TO SCALE

POND B OUTLET CONTROL STRUCTURE DETAIL

NOTES:

1. DAM SIDE SLOPES - FILL SECTIONS 2FT OR MORE MUST BE COMPACTED TO 98% STANDARD PROCTOR. TEST TO BE TAKEN BASED ON GEO-TECH RECOMMENDATIONS DURING DAM CONSTRUCTION.
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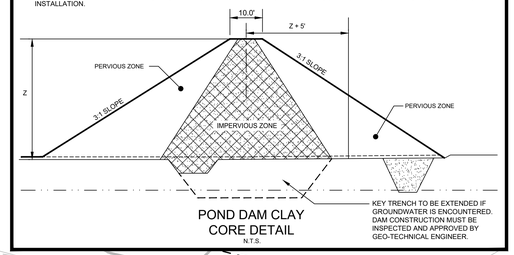
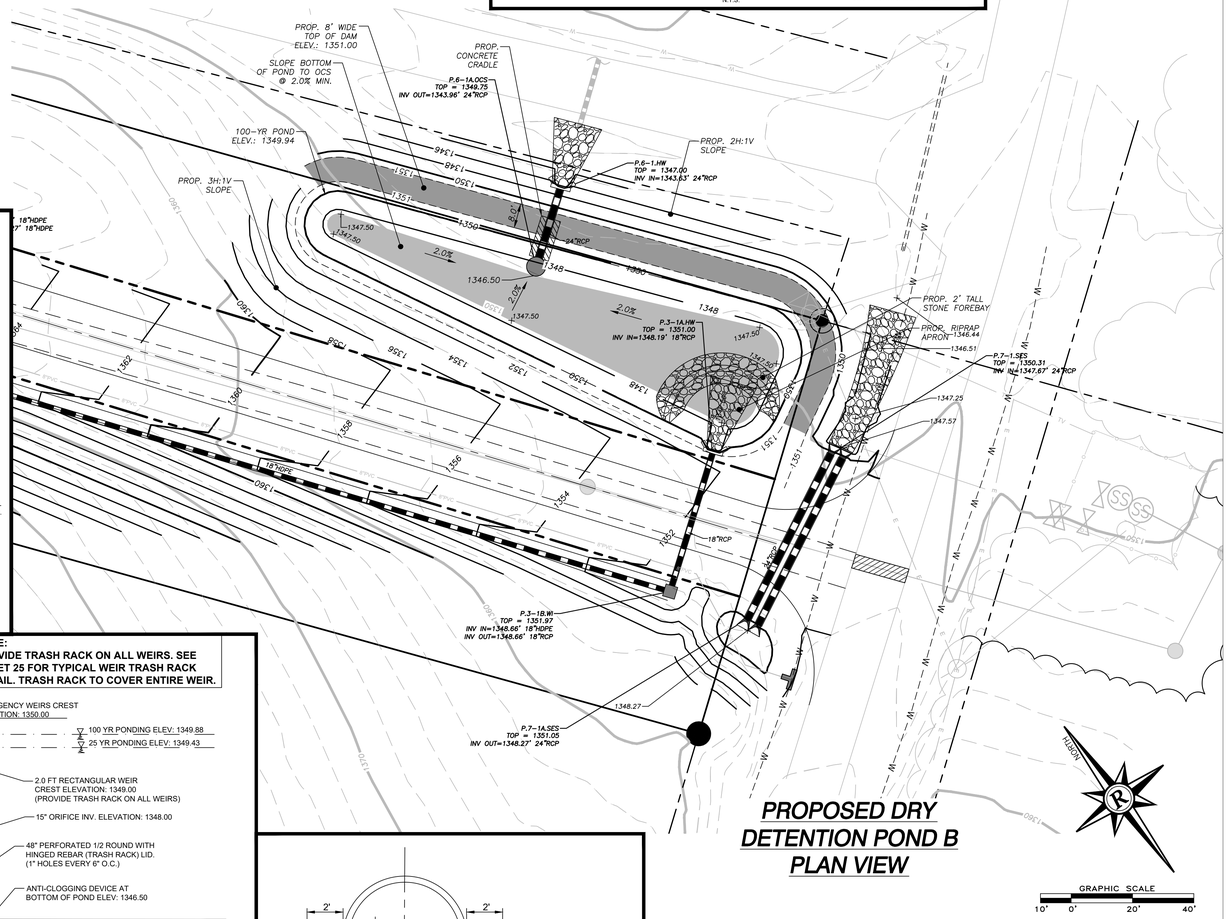
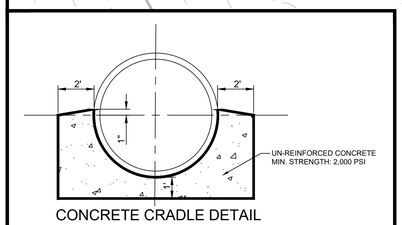


POND DAM CLAY CORE DETAIL
N.T.S.



PROPOSED DRY DETENTION POND B PLAN VIEW



CONCRETE CRADLE DETAIL

BRAVO SITE SET 02-11-2026

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0	2024-06-10	PERMIT SET

ISSUANCE

PROJECT NUMBER
2022-313

DRAWN: DCB
CHECKED: EMC

SHEET TITLE
DRY DETENTION POND B DETAILS

SHEET NO.
C-18

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THIS SHEET PLOTS ON 42" x 30"

0 1/2" 1" 2" 3"

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

SWCD: UPPER CHATTAHOOCHEE RIVER
Project Name: HAB. CO. ANIMAL SHELTER **Address:** OLD ATHENS HWY
Local Issuing Authority: HABERSHAM **Date on Plans:** 10.27.2025
Name & Email of person filling out checklist: ERIC M. CHINI, P.E. emchini@rochester-assoc.com

TO BE SHOWN ON ES&PC PLAN

Plan Page #	Included Y/N	
2	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)
2	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)
	N/A	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.)
, 2	Y	4 The name and phone number of the 24-hour contact responsible for erosion, sedimentation and pollution controls.
2	Y	5 Provide the name, address, email address, and phone number of primary permittee.
1	Y	6 Note total and disturbed acreages of the project or phase under construction.
22-26	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.
2	Y	9 Description of the nature of construction activity and existing site conditions.
1	Y	10 Provide vicinity map showing site's relation to surrounding areas. Include designation of specific phase, if necessary.
2	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.
22-26	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.
22-26	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. *
22-26	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. *
2	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."
	N/A	16 Provide a description of any buffer encroachments and indicate whether a buffer variance is required.
2	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." *
2	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." *
2	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."
2	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."
2	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."
9	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. *
	N/A	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. *
23	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. *
2	Y	25 Provide BMPs for the remediation of all petroleum spills and leaks.
2	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. *
2	Y	27 Description of practices to provide cover for building materials and building products on site. *
2	Y	28 Description of the practices that will be used to reduce the pollutants in storm water discharges. *
2	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).
2	Y	30 Provide complete requirements of Inspections and record keeping by the primary permittee. *
2	Y	31 Provide complete requirements of Sampling Frequency and Reporting of sampling results. *
2	Y	32 Provide complete details for Retention of Records as per Part IV.F. of the permit. *
2	Y	33 Description of analytical methods to be used to collect and analyze the samples from each location. *
2	Y	34 Appendix B rationale for NTU values at all outfall sampling points where applicable. *
2	Y	35 Delineate all sampling locations, perennial and intermittent streams and other water bodies into which storm water is discharged. *
2	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. *
22-26	Y	37 Graphic scale and North arrow.
22-26	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

Plan Page #	Included Y/N	
	N/A	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.
	N/A	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. *
22-26	Y	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.
22-26	Y	42 Delineation of on-site wetlands and all state waters located on and within 200 feet of the project site.
22-23	Y	43 Delineation and acreage of contributing drainage basins on the project site.
N/A	N	44 Provide hydrology study and maps of drainage basins for both the pre- and post-developed conditions. *
2	Y	45 An estimate of the runoff coefficient or peak discharge flow of the site prior to and after construction activities are completed.
23	Y	46 Storm-drain pipe and weir velocities with appropriate outlet protection to accommodate discharges without erosion. Identify/Delineate all storm water discharge points.
22-26	Y	47 Soil series for the project site and their delineation.
22-26	Y	48 The limits of disturbance for each phase of construction.
22-26	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.
22-26	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.
30	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.
29	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, 2025

ES & PC CHECKLIST NOTES

6. TOTAL DISTURBED ACREAGE IS 10.8 ACRES.

9. DESCRIPTION OF CONSTRUCTION ACTIVITY: THE PROPOSED PROJECT CONSISTS OF CONSTRUCTING A NEW ANIMAL SHELTER ON AN UNDEVELOPED PROPERTY AND REMOVING A GRAVEL DRIVE TO THE SITE TO BE REPLACED WITH A PAVED DRIVE.

11.(A). RECEIVING WATERS: MUD CREEK.

11.(B). ADJACENT AREAS: THE ADJACENT PROPERTIES ARE MAINLY RURAL PROPERTIES CONSISTING OF SINGLE FAMILY RESIDENTIAL AND FARM LAND AND A PUBLIC SCHOOL TO THE SOUTHEAST.

14. 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.

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 WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS.

16. BUFFER ENCROACHMENT: THERE ARE NO PROPOSED BUFFER ENCROACHMENTS ASSOCIATED WITH THIS PROJECT.

17. 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.

18. WASTE MATERIALS SHALL NOT BE DISCHARGED TO 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 SITE IS WITHIN 1 LINEAR MILE TO AN IMPAIRED STREAM SEGMENT (MUD CREEK) THAT HAS BEEN LISTED AS 'BIO F' OR 'BIO M'. (BIOTA IMPAIRED STREAM SEGMENT)

23. THERE IS A T.M.D.L. PLAN FOR THE RECEIVING WATERS COMPLETED 2008.

24. BMP'S FOR CONCRETE WASHDOWN OF TOOLS, MIXER CHUTES, AND REAR OF VEHICLES ARE SHOWN ON THE ES&PC PLANS. CONCRETE TRUCK DRUMS MAY NOT BE WASHED OUT ONSITE.

25. SOIL CLEANUP AND CONTROL PRACTICES FOR SPILLS & 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 MATERIAL AND EQUIPMENT INCLUDES, BUT IS NOT LIMITED TO, BROOMS, DUSTPANS, MOPS, 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 FUTURE SPILLS.

* ALL SPILLS WILL BE CLEANED UP IMMEDIATELY UPON DISCOVERY. ALL SPILLS WILL BE REPORTED AS REQUIRED BY LOCAL, STATE AND FEDERAL REGULATIONS.

* FOR SPILLS THAT IMPACT SURFACE WATER (LEAVE A SHEEN ON SURFACE WATER). THE NATIONAL RESPONSE CENTER (NRC) WILL BE CONTACTED WITHIN 24 HOURS AT 1-800-426-2675.

* FOR SPILLS OF AN UNKNOWN AMOUNT, THE NATIONAL RESPONSE CENTER (NRC) WILL 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 LICENSED PROFESSIONAL WHO PREPARED THIS PLAN IF MORE THAN 1320 GALLONS OF PETROLEUM IS STORED ONSITE (THIS INCLUDES CAPACITIES OF EQUIPMENT) OR IF ANY ONE PIECE OF EQUIPMENT HAS A CAPACITY GREATER THATN 560 GALLONS. THE CONTRACTOR WILL NEED A SPILL PREVENTION CONTAINMENT AND COUNTER MEASURES PLAN BY THAT LICENSED PROFESSIONAL.

26. A STORMWATER POND AND DETENTION POND ALONG WITH PERMANENT GRASSING WILL TREAT POST-CONSTRUCTION STORM WATER RUNOFF.

27. PLASTIC SHEETING OR TEMPORARY STRUCTURES SHALL BE USED 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 STORMWATER.

28. EROSION CONTROL BMP'S ARE UTILIZED TO REDUCE POLLUTANTS IN STORM WATER DISCHARGES. THESE INCLUDE SEDIMENT TRAPS, PONDS, PERIMETER CONTROLS, AND TEMPORARY & PERMANENT VEGETATIVE COVER.

PETROLEUM BASED PRODUCTS-CONTAINERS FOR PRODUCTS SUCH AS FUELS, LUBRICANTS, AND TARS WILL BE INSPECTED DAILY FOR LEAKS AND SPILLS. THIS INCLUDES ON-SITE VEHICLE AND MACHINERY DAILY INSPECTIONS AND REGULAR PREVENTATIVE MAINTENANCE OF SUCH EQUIPMENT. EQUIPMENT MAINTENANCE AREAS WILL BE LOCATED AWAY FROM STATE WATER, NATURAL DRAINS AND STORMWATER DRAINAGE INLETS. IN ADDITION, TEMPORARY FUELING TANKS SHALL HAVE A SECONDARY CONTAINMENT LINER TO PREVENT OR MINIMIZE SITE CONTAMINATION. DISCHARGE OF OILS, FUELS, LUBRICANTS IS PROHIBITED. PROPER DISPOSAL METHODS WILL INCLUDE COLLECTION IN A SUITABLE CONTAINER AND DISPOSAL AS REQUIRED BY LOCAL AND STATE REGULATIONS.

PAINTS/FINISHES/SOLVENTS-ALL PRODUCTS WILL BE STORED IN TIGHTLY SEALED ORIGINAL CONTAINERS WHEN NOT IN USE. EXCESS 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 MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.

CONCRETE TRUCK WASHING-NO CONCRETE TRUCKS WILL BE ALLOWED TO WASH OUT THE DRUM ON-SITE.

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

30. INSPECTIONS & RECORD KEEPING (GAR100001-IV.D.4.a)

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 of compliance with this permit shall be representative of the monitored activity. Measurement of rainfall may be suspended if all areas of the site have undergone final stabilization or established a crop of annual vegetation and a seeding of target perennials appropriate for the region.

(3). Certified personnel (provided by the primary permittee) shall inspect the following at least once every seven (7) calendar days and within 24 hours of the end of a storm that is 0.5 inches rainfall or greater (unless such storm 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.

31a. SAMPLING FREQUENCY (GAR 100001 IV.D.6.d)

(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 from an outfall, the first rain event that reaches or exceeds 0.5 inch with a storm water discharge that occurs during normal business hours as defined in this permit either 90 days after the first sampling event or after all mass grading operations have been completed, but prior to submittal of a NOT, in the drainage area of the location selected as the sampling location, whichever comes first;

(c). At the time of sampling performed pursuant to (a) and (b) above, if BMPs in any area of the site that discharges to a receiving water or from an outfall are not properly designed, installed and maintained, corrective action shall be defined and implemented within two (2) business days, and turbidity samples shall be taken from discharges from that area of the site for each subsequent rain event that reaches or exceeds 0.5 inch during normal business hours* until the selected turbidity standard is attained, or until post-storm event inspections determine that BMPs are properly designed, installed and maintained;

(d). Where sampling pursuant to (a), (b) or (c) above is required but not possible (or not required because there was no discharge), the permittee, in accordance with Part IV.D.4.a. (6) must include a written justification in the inspection report of why sampling was not performed. Providing this justification does not relieve the permittee of any subsequent sampling obligations under (a), (b) or (c) above; and

(e). Existing construction activities, i.e., those that are occurring on or before the effective date of this permit, that have met the sampling required by (a) above shall sample in accordance with (b) . Those existing construction activities that have met the sampling required by (b) above shall not be required to conduct additional sampling other than as required by (c) above.

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

31b. REPORTING (GAR 100001 IV.E)

1. The applicable permittees are required to submit the sampling results to the EPD at the address shown in Part II.C. by the fifteenth day of the month following the reporting period. Reporting periods are months during which samples are taken in accordance with this permit. Sampling results shall be in a clearly legible format. Upon written notification, EPD may require the applicable permittee to submit the sampling results on a more frequent basis. Sampling and analysis of any stormwater discharge(s) or the receiving water(s) beyond the minimum frequency stated in this permit must be reported in a similar manner to the EPD. The sampling reports must be signed in accordance with Part V.G.2. Sampling reports must be submitted to EPD using the electronic submittal service provided by EPD. Sampling reports must be submitted to EPD until such time as a NOT 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 a designated location from commencement of construction until such time as a NOT is submitted in accordance with Part VI. If an electronic submittal is provided by EPD then the written correspondence may be submitted electronically; if required, a paper copy must also be submitted by return receipt certified mail or similar service.

32. RETENTION OF RECORDS (GAR 100001 IV.F)

1. The primary permittee shall retain the following records at the construction site or the records shall be readily available at a designated alternate location from commencement of construction until such time as a NOT is submitted in accordance with Part VI:

a. 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 111. 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 ANALYSIS METHODS

THERE IS ONE SAMPLING LOCATIONS FOR THIS PROJECT AS SHOWN ON THE PLAN SHEETS. SAMPLING AT THE OUTFALLS SHALL BE CONDUCTED AS FOLLOWS:

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 turbidimeter. Samples are not required to be cooled.

(5). Sampling and analysis of the receiving water(s) or outfalls beyond the minimum frequency stated in this permit must be reported to EPD as specified in Part IV.E.

34. APPENDIX B RATIONALE FOR NTU VALUES

STORM WATER IS TO BE SAMPLED FOR NEPHELOMETRIC TURBIDITY UNITS (NTU) AT THE OUTFALL LOCATION. A DISCHARGE OF STORM WATER RUNOFF FROM DISTURBED AREAS WHERE BEST MANAGEMENT PRACTICES HAVE NOT BEEN PROPERLY DESIGNED, INSTALLED, AND MAINTAINED SHALL CONSTITUTE A SEPARATE VIOLATION FOR EACH DAY ON WHICH SUCH CONDITION RESULTS IN THE TURBIDITY OF THE DISCHARGE EXCEEDING 25, THE VALUE THAT WAS SELECTED FROM APPENDIX B IN PERMIT NO. GAR 100001. THE NTU IS BASED UPON THE TOTAL SITE ACREAGE OF 66 ACRES FOR THE PROJECT SITE, THE SURFACE WATER DRAINAGE OF 5-9.99 SQUARE MILES. THE RECEIVING WATER IS MUD CREEK.

36. INITIAL PHASE: INCLUDES CONSTRUCTION OF A TEMPORARY SEDIMENT BASIN FOR THE DRIVE AT THE ENTRANCE, ANOTHER TEMPORARY SEDIMENT BASIN FOR THE SITE AND CONSTRUCTION OF THE CONSTRUCTION ENTRANCE.

GRADING PHASE: INCLUDES GRADING OF THE ACCESS DRIVE AND ANIMAL SHELTER PAD. PERMANENT GRASSING IS PLACED ONCE FINAL GRADES ARE MET.

FINAL PHASE: ONGOING MAINTENANCE OF BMPs UNTIL FINAL STABILIZATION. FINAL STABILIZATION WITH PERMANENT GRASSING. ONCE PERMANENT GRASS IS ESTABLISHED AND ALL CONSTRUCTION IS COMPLETE REMOVE ALL TEMPORARY BMPs.

THE STORMWATER MANAGEMENT REPORT IS TO BE PROVIDED AS A SEPARATE ATTACHMENT.

PRE-DEVELOPED COMPOSITE CN: 55
POST-DEVELOPED COMPOSITE CN: 72 COMPOSITE

GEORGIA811 www.Georgia811.com

Ss SLOPE STABILIZATION EROSION CONTROL MATTING AND BLANKETS

PRODUCT USED MUST BE LISTED ON GEORGIA D.O.T. QPL
*ECO-GUARD EG-1S (SHORT-TERM STRAW BLANKET OR EQUIVALENT)

DEFINITION
A protective covering used to prevent erosion and establish temporary or permanent vegetation on steep slopes, shore lines, or channels.

PURPOSE
To provide a cover layer that stabilizes the soil and acts as a rain drop impact dissipater while providing a microclimate which protects young vegetation and promotes its establishment. If using slope stabilization to reinforce channels, please refer to specifi cation, Ch- Channel Stablization.

CONDITIONS
Slope stabilization can be applied to fl at areas or slopes where the erosion hazard is high and slope protection is needed during the establishment of vegetation.

PERFORMANCE EVALUATION
For a product or practice to be approved as slope stabilization, that product or practice must have a documented C- factor of 0.080, as specified by GSWCC. For complete test procedures and approved products list please visit www.gaswcc.georgia.gov.

PLANNING CONSIDERATIONS
Care must be taken to choose the type of slope stabilization product which is most appropriate for the specific needs of a project. Two general types of slope stabilization products are discussed within this specification.

Rolled Erosion Control Products (RECP)
A natural fiber blanket with single or double photo-degradable or biodegradable nets.

Hydraulic Erosion Control Products (HECP)
HECP shall utilize straw, cotton, wood or other natural based fibers held together by a soil binding agent which works to stabilize soil particles. Paper mulch should not be used for erosion control.

CRITERIA
Rolled Erosion Control Products (RECPs) and Hydraulic Erosion Control Products (HECPs):
•Installation and stapling of RECPs and application rates for the HECPs shall conform to manufacturer's guidelines for application
•Products shall have a maximum C-factor (ASTM D6459) for the following slope grade:

Slope (H:V)	C-Factor (max.)
3:1 or greater	0.080

MATERIALS - HECP
Hydraulic erosion control products shall be prepackaged from the manufacturer. Field mixing of performance enhancing additives will not be allowed. Fiberous components should be all natural or biodegradable. Products shall be determined to be non-toxic in accordance with EPA-821-R-02-012.

MATERIALS - RECP
Blankets shall be nontoxic to vegetation, seed, or wildlife. Products shall be determined to be non-toxic in accordance with EPA- 821-R-02-012. At minimum, the plastic or biodegradable netting shall be stitched to the fibrous matrix to maximize strength and provide for ease of handling.

RECPs ARE CATEGORIZED AS FOLLOWS:
a. Short-Term (functional longevity 12 mo.)
i. Photodegradable
Straw blankets with a top and bottom side photo degradable net. The maximum size of the mesh shall be openings of ½" X ½". The blanket should be sewn together on 1.5" centers with degradable thread. Minimum thickness should be 0.35" and minimum density should be 0.5 lbs per square yard.

ii. Biodegradable
Straw blanket with a top and bottom side biodegradable jute net. The top side net shall consist of machine direction strands that are twisted together and then interwoven with cross direction strands (leno weave). The bottom net may be leno weave or otherwise to meet requirements. The approximate size of the mesh shall be openings of 0.5" X 1.0". The blanket should be sewn together on 1.5" centers with degradable thread. Minimum thickness should be 0.25" and minimum density should be 0.5 lbs per square yard.

b. Extended-Term (functional longevity 24 mo.)
i.Photodegradable
Blankets that consist of 70% straw and 30% coconut with a top and bottom side photodegradable net. The top net should have ultraviolet additives to delay breakdown. The maximum size of the mesh shall be openings of 0.65" X 0.65". The blanket should be sewn together on 1.5" centers with degradable thread. Minimum thickness should be 0.35" and minimum density should be 0.6 lbs per square yard.

ii.Biodegradable
Blankets that consist of 70% straw and 30% coconut with a top and bottom side biodegradable jute net. The top side net shall consist of machine direction strands that are twisted together and then interwoven with cross direction strands (leno weave). The bottom net may be leno weave or otherwise to meet requirements. The approximate size of the mesh shall be openings of 0.5" X 1.0". The blanket should be sewn together on 1.5" centers with degradable thread. Minimum thickness should be 0.25" and minimum density should be 0.65 lbs per square yard.

c. Long-Term (functional longevity 36 mo.)
i. Photodegradable
Blankets that consist of 100% coconut with a top and bottom side photodegradable net. Each net should have ultraviolet additives to delay breakdown. The maximum size of the mesh shall be openings of 0.65" X 0.65". The blanket should be sewn together on 1.5" centers with degradable thread. Minimum thickness should be 0.3" and minimum density should be 0.5 lbs per square yard.

iii. Biodegradable
Blankets that consist of 100% coconut with a top and bottom side biodegradable jute net. The top side net shall consist of machine direction strands that are twisted together and then interwoven with cross direction strands (leno weave). The bottom net may be leno weave or otherwise to meet requirements. The approximate size of the mesh shall be openings of 0.5" X 1.0". The blanket should be sewn together on 1.5" centers with degradable thread. Minimum thickness should be 0.25" and minimum density should be 0.5 lbs per square yard.

NOTES
It is the intention of this section to allow interchangeable use of RECPs and HECPs for erosion protection on slopes. The project engineer should select the type of erosion control product that best fits the need of the particular site.

SITE PREPARATION
After the site has been shaped and graded to the approved design, prepare a friable seedbed relatively free from clods and rocks more than one inch in diameter, and any foreign material that will prevent contact of the soil 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.

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.

PRIMARY PERMITTEE:
HABERSHAM COUNTY ANIMAL CONTROL
130 JACOBS WAY
CLARKESVILLE, GA, 30523
(706) 839-0216
CLIENT@COMPANY.COM

24 HOUR CONTACT:
JERRY BAGGETT
(404) 987-9272
JBAGGETT@HABERSHAMGA.COM

Trout Streams
Surface Water Drainage Area, square miles

Site Size, acres	0-4.99	5-9.99	10-24.99	25-49.99	50-9.99	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 (circled)	25	35	59	75	150	300
100.01+	20	20	25	25	25	50	60	100

WASTE DISPOSAL PRACTICES:

Waste Materials - All waste materials will be collected and stored in a securely lidded metal dumpster rented from a licensed solid waste management company. The dumpster will meet all local and any state solid waste management regulations. All trash and construction debris from the site will be deposited in the dumpster. The dumpster will be emptied a minimum of twice per week or more often if necessary, and the trash will be hauled to a dump. No construction waste materials will be buried onsite. All personnel will be instructed regarding the correct procedure for waste disposal. Notices stating these practices will be posted and the individual who manages the day to day site operations, will be responsible for seeing that these procedures are followed.

Hazardous Waste - All hazardous waste materials will be disposed of in the manner specified be local, state, and/or federal regulations and by the manufacturer of such products. The job superintendent, who will also be responsible for seeing that these practices are followed, will instruct site personnel in these practices. Material safety data sheets (MSDS's) for each substance with hazardous properties that is used on the job site will be obtained and used for the proper management of potential wastes that may result from these products. An MSDS will be posted in the immediate area where such product is stored and/or used and another copy of each MSDS will be maintained in the ES&PC file at the job site construction trailer office. Each employee who must handle substance with hazardous properties will be instructed on the use of MSDS sheets and the specific information in the applicable MSDS for the product he/she is using, particularly regarding spill control techniques.

The contractor will implement the spill prevention control and countermeasures (SPCC) plan found within the ES&PC and will train all personnel in the proper clean up and handling of spilled materials. No spilled hazardous materials or hazardous wastes will be allowed to come in contact with storm water discharges. if such contact occurs, the storm water discharge will be contained on site until appropriate measures in compliance with state and federal regulations are taken to dispose of such contaminated storm water. it shall be the responsibility of the of the job site superintendent to properly train all personnel in the use of the SPCC plan.

Sanitary Waste - A minimum of one portable sanitary unit will be provided for every (10) workers on the site. all sanitary waste will be collected from the portable sanitary units a minimum of one time per week by a licensed portable facility provider in complete compliance with local and state ordinances.

All sanitary waste units will be located in an area where the likelihood of the unit contributing to storm water discharge is negligible. additional containment bmp's must be implemented, such as gravel bags or specially designed plastic skid containers around the base, to prevent wastes from contributing to storm water discharges. the location of sanitary waste units must be identified on the ESPC plans grading phase by the contractor once the locations are determined.

Offsite VehicleTracking:
A stabilized construction entrance has been provided to help reduce vehicle tracking of sediments. The paved street adjacent to the site entrance will be swept daily to remove any excess mud, dirt or rock tracked from the site. Dump trucks hauling material from the construction site will be covered with a tarpaulin.

Spill Prevention:
The following are the material management practices that will be used to reduce the risk of spills or other accidental exposure of materials and substances to storm water runoff.

Good Housekeeping:
-An effort will be made to store only enough product required to do the job
-All materials stored onsite will be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure
-Products will be kept in their original containers with the original manufacturers label
-Substances will not be mixed with one another unless recommended by the manufacturer
-Whenever possible, all of a product will be used up before disposing of the container
-Manufacturers' recommendations for proper use and disposal will be followed
-The site superintendent will inspect daily to ensure proper use and disposal of materials onsite

Hazardous Products:
-Products will be kept in original containers unless they are not re-sealable
-Original labels and material safety data will be retained; they contain important product information
-If surplus product must be disposed of, manufacturers' or local and state recommended methods for proper disposal will be followed

Petroleum Products:
All onsite vehicles will be monitored for leaks and receive regular preventative maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers which are clearly labeled. Any asphalt substances used onsite will be applied according to the manufacturer's recommendations.

Fertilizers:
Fertilizers used will be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer will be worked into the soil to limit exposure to storm water. Storage will be in a covered shed. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.

Paints:
All containers will be tightly sealed an stored when not required for use. Excess paint will not be discharged to the storm sewer system but will be properly disposed of according to manufacturers instructions of state and local regulations.

Building Materials:
All building materials stored onsite shall be in temporary structures or covered by plastic sheeting to limit exposure to precipitation & storm water. All waste building materials shall be hauled off site and disposed of in a state approved landfill.

SITE AREA: 65.6 ACRES
DISTURBED AREA: 10.8 ACRES
EARTHWORK ESTIMATE:

CUT:	58,348 CY
FILL:	58,282 CY
NET:	66 CY WASTE

*NO ADJUSTMENTS MADE FOR TOP SOIL
EARTHWORK ESTIMATE PROVIDED FOR CONVENIENCE TO CONTRACTOR ONLY.
CONTRACTOR IS TO VERIFY QUANTITIES.

EROSION CONTROL CERTIFICATIONS:
I certify that to the best of my knowledge and belief, that the Erosion, Sedimentation and Pollution Control Plan (Plan) was prepared by a design professional, as defined by this permit, that has completed the appropriate certification course approved by the Georgia Soil and Water Conservation Commission in accordance with the provisions of O.C.G.A. 12-7-19 and that I will adhere to the Plan and comply with all requirements of this permit.

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 Conservation Commission as of January 1 of the year in which the land-disturbing activity was permitted, provides for the sampling of the receiving water(s) or the sampling of the stormwater 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. GAR100001.

I certify under penalty of law that this Plan was prepared after a site visit to the locations described herein by myself or my authorized agent, under my supervision

ERIC M. CHINI, P.E. CERTIFICATION #13398

DESIGN PROFESSIONAL 7-DAY VISIT CERTIFICATION

DATE OF INSPECTION: ______________________

I CERTIFY THE SITE WAS IN COMPLIANCE WITH THE ES&PC PLAN ON THE DATE ON INSPECTION.

GSWCC LEVEL II DESIGN PROFESSIONAL CERTIFICATION #

INSPECTION REVEALED THE FOLLOWING DISCREPANCIES FROM THE ES&PC PLAN.

THE DEFICIENCIES MUST BE ADDRESSED AND AN RE-INSPECTION SCHEDULED. WORK SHALL NOT PROCEED ON THE SITE UNTIL DESIGN PROFESSIONAL CERTIFICATION IS OBTAINED.

GSWCC Georgia Soil and Water Conservation Commission
ERIC M. CHINI, P.E.
Level II Certified Design Professional
CERTIFICATION NUMBER #13398
ISSUED: 11/18/2024 EXPIRES: 11/18/2027

GSWCC EROSION CONTROL CERTIFICATION #13398 - ERIC M. CHINI, P.E.

GEORGIA REGISTERED PROFESSIONAL ENGINEER No. 31411 01.17.25 ERIC M. CHINI

BRAVO SITE SET 02-11-2026

CROFT

Croft & Associates
3380 Blue Springs Road
Kennesaw, Georgia 30144
770.529.7714 (p)
www.croftae.com

Rochester DCCM

Rochester | DCCM
425 Oak Street
Gainesville, Georgia 30501
770.718.0600
www.rochester-assoc.com

OWNER

HABERSHAM COUNTY ANIMAL CONTROL
130 JACOBS WAY, SUITE 302
CLARKSVILLE, GA
30523

HABERSHAM COUNTY ANIMAL SHELTER

HABERSHAM ANIMAL CONTROL
OLD ATHENS HWY
CORNELIA, GA
30531

No.	Date	Description
3	2025-11-24	REVISION 3 SET
2	2025-10-27	REVISION 2 SET
1	2025-01-17	VE REVISION 1 SET
0	2024-06-10	PERMIT SET

ISSUANCE

PROJECT NUMBER
2022-313

DRAWN: DCB
CHECKED: EMC

SHEET TITLE
EROSION CONTROL NOTES

SHEET NO.
C-19

THIS SHEET PLOTS ON 42" x 30"

3" 2" 1" 1/2" 0

LEGEND

AIF	- ANGLE IRON FOUND
AKA	- ALSO KNOWN AS
AZCSP	- ALUMIZED TYPE 2 CORRUGATED STEEL PIPE
BC	- BACK OF CURB
BL	- BUILDING SETBACK LINE
BWF	- BARB WIRE FENCE
C&G	- CURB & GUTTER
C/T	- CRIMP TOP PIPE
CI	- CURB INLET
CL	- CENTER LINE
CLF	- CHAIN LINK FENCE
CMF	- CONCRETE MONUMENT FOUND
CMP	- CORRUGATED METAL PIPE
CO	- CLEAN OUT
CONC	- CONCRETE
CORPS	- ARMY CORPS OF ENGINEERS
DB,PG	- DEED BOOK, PAGE
DI	- DROP INLET
DIP	- DUCTILE IRON PIPE
DS	- DOWN SPOUT
DWCB	- DOUBLE WING CATCH BASIN
EP	- EDGE OF PAVEMENT
FFE	- FINISH FLOOR ELEVATION
FH	- FIRE HYDRANT
-G-	- GAS LINE
GM	- GAS METER
GP	- GUY POLE
GV	- GAS VALVE
GW	- GUY WIRE
HC	- HANDICAP
HW	- HEADWALL
HWF	- HOG WIRE FENCE
IE	- INVERT ELEVATION
IPF	- IRON PIN FOUND
IPS	- IRON PIN SET
JB	- JUNCTION BOX
LL	- LAND LOT
LLL	- LAND LOT LINE
LP	- LIGHT POLE
MH	- MANHOLE
MON	- MONUMENT
N/F	- NOW OR FORMERLY
O/T	- OPEN TOP PIPE
PBX	- POWER BOX / TRANSFORMER
-P-	- OVERHEAD POWER LINE
-P/T-	- O/H POWER & TELE LINE
PL	- PROPERTY LINE
PM	- POWER METER
POB	- POINT OF BEGINNING
PP	- POWER POLE
PTP	- POWER & TELEPHONE POLE
PVC	- POLYVINYLCHLORIDE PIPE
R/B	- REINFORCING IRON BAR
RCP	- REINFORCED CONCRETE PIPE
R/W	- RIGHT OF WAY
-SS-	- SANITARY SEWER LINE
SSE	- SANITARY SEWER EASEMENT
S/W	- SIDEWALK
SWCB	- SINGLE WING CATCH BASIN
TBM	- TEMPORARY BENCHMARK
TBX	- TELEPHONE BOX
TF	- TRANSFORMER
TMH	- TELEPHONE MANHOLE
TP	- TELEPHONE POLE
TPOB	- TRUE POINT OF BEGINNING
-T-	- OVERHEAD TELEPHONE LINE
UP	- UNDERGROUND POWER
UT	- UNDERGROUND TELEPHONE
WI	- WEIR INLET
-W-	- WATER LINE
WM	- WATER METER
WMH	- WATER MANHOLE
WV	- WATER VALVE

PHASE 1 St CHART

St. No.	TAILWATER CONDITION Tw	PIPE DIAMETER D_O (in)	25-YR DISCHARGE (cfs)	25-YR FLOW DEPTH d (in)	25-YR VELOCITY v (ft/s)	LENGTH OF APRON L_a (ft)	WIDTH AT OUTLET $3D_O$ (ft)	WIDTH AT END OF APRON (ft)	STONE MEDIAN SIZE D_{50} (ft)	APRON THICKNESS D (ft)
1	Tw < 0.5 D_O	24	5.3	7.3	6.5	14	6.0	16.0	0.5	1.2

NRCS SOILS TABLE

SOIL NAME	SLOPES	HYDROLOGIC GROUP	K FACTOR	T FACTOR	DEPTH TO ROCK (IN.)
MjC - MADISON FINE SANDY LOAM	6-10%	B	0.24	5	>78
MjC2 - MADISON FINE SANDY LOAM, ERODED	6-10%	B	0.24	5	>78
MjD2 - MADISON FINE SANY LOAM, ERODED	10-15%	B	0.24	5	>78
MjE - MADISON FINE SANDY LOAM	15-25%	B	0.24	5	>78
MjE2 - MADISON FINE SANDY LOAM, ERODED	15-25%	B	0.24	5	>78
MkC3 - MADISON FINE SANDY CLAY LOAM, SEVERELY ERODED	6-10%	B	0.10	4	>78
MkD3 - MADISON FINE SANDY CLAY LOAM, SEVERELY ERODED	10-15%	B	0.24	4	>78
MkE3 - MADISON FINE SANDY CLAY LOAM, SEVERELY ERODED	15-25%	B	0.10	4	>78

Pond A Sediment Storage Calculations

1.	Required Stormwater Storage (25 year) =	2,226	cy
2.	Pond Total Drainage Basin (include offsite) =	7.7	ac
	Required Sediment Storage per acre =	134	cy/ac
	Total Required Sediment Storage =	1,032	cy
3.	Total Storage Required (Stormwater Storage + Sediment Storage) =	3,258	cy
	Available Storage =	3,657	cy
	Available Storage Corresponding Elevation =	1,372	ft
	Total Sediment Storage Provided (Total Provided - Stormwater Req) =	1,431	cy
4.	Is available storage greater than total required storage =	Y	
5.	Is additional sediment storage required =	N	
6.	Clean Out Storage Volume (Provided Sediment Storage / 3) =	477	cy
	Clean Out Storage Volume Corresponding Elevation =	1366.0	ft
7.	Is Length to Width Ratio Greater than 2:1 =	Y	
8.	Is a Baffle Required to Increase the Length/Width Ratio =	N	

SEDIMENT STORAGE CALCULATIONS

TOTAL DISTURBED AREA = 10.8 AC
REQUIRED SEDIMENT STORAGE = 1,447CY (134 CY/AC x 10.7 AC)

SEDIMENT STORAGE PROVIDED W/ POND A Sk SKIMMER = 1,599 CY
SEDIMENT STORAGE PROVIDED W/ POND B Sk SKIMMER = 333 CY

TOTAL SEDIMENT STORAGE PROVIDED = 1,932 CY > 1,447 CY => OK

APPENDIX 1 ITEMS

B. INCREASE ALL TEMPORARY SEDIMENT BASINS AND RETROFITTED STORM WATER MANAGEMENT BASINS TO PROVIDE SEDIMENT STORAGE OF AT LEAST 3600 CUBIC FEET (134 CUBIC YARDS) PER ACRE DRAINED.

F. CONDUCT TURBIDITY SAMPLING AFTER EVERY RAIN EVENT OF 0.5 INCH OR GREATER WITHIN ANY 24-HOUR PERIOD, RECOGNIZING THE EXCEPTIONS SPECIFIED IN PART IV.D.6.D. OF THE CURRENT NPDES PERMITS.

L. USE MULCH FILTER BERMS, IN ADDITION TO A SILT FENCE, ON THE SITE PERIMETER WHEREVER CONSTRUCTION STORM WATER (INCLUDING SHEET FLOW) MAY BE DISCHARGED. MULCH FILTER BERMS CANNOT BE PLACED IN WATERWAYS OR AREAS OF CONCENTRATED FLOW.

V. INSTALL POST CONSTRUCTION BMPS (E.G., RUNOFF REDUCTION BMPS) WHICH REMOVE 80% TSS AS OUTLINED IN THE GEORGIA STORMWATER MANAGEMENT MANUAL KNOWN AS THE BLUE BOOK OR AN EQUIVALENT OR MORE STRINGENT DESIGN MANUAL.

EROSION CONTROL CERTIFICATION:

(1) "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 CONSERVATION COMMISSION AS OF JANUARY 1 OF THE YEAR IN WHICH THE LAND-DISTURBING ACTIVITY WAS PERMITTED, PROVIDES FOR THE SAMPLING OF THE RECEIVING WATER(S) OR THE SAMPLING OF THE STORM WATER OUTFALLS AND THAT THE DESIGNED SYSTEM OF BEST MANAGEMENT PRACTICES AND SAMPLING METHODS IS EXPECTED TO MEET THE REQUIREMENTS CONTAINED IN THE GENERAL NPDES PERMIT NO. GAR 100001."

(2) "I CERTIFY UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED AFTER A SITE VISIT TO THE LOCATIONS DESCRIBED HEREIN BY MYSELF OR MY AUTHORIZED AGENT, UNDER MY DIRECT SUPERVISION."

ERIC M. CHINI, P.E. CERTIFICATION ##13398 ISSUED: 11/18/2024 EXPIRES: 11/18/2027

GSWCC Georgia Soil and Water Conservation Commission

ERIC M. CHINI, P.E.

Level II Certified Design Professional

CERTIFICATION NUMBER #13398

ISSUED: 11/18/2024 EXPIRES: 11/18/2027

PRIMARY PERMITTEE

OWNER & DEVELOPER:

HABERSHAM COUNTY ANIMAL CONTROL
130 JACOBS WAY
CLARKESVILLE, GA, 30523

24 HOUR EMERGENCY CONTACT
JERRY BAGGETT
(404) 987-9272
ENGINEERING CONTACT
ERIC M. CHINI, P.E.
(770) 718-0600
SURVEYING CONTACT
E.G. (EDDIE) DAVIDSON, PLS
(706) 754-7498

MkD3 MjE MkC3 MjE2 MjC MjC2 MkE3 MjD2

Sd1-S DOUBLE ROW W/ MULCH BERM

PROP. LIMITS OF DISTURBANCE

Du Ds1 Ds2

BASIN DELINEATION

BASIN TO Sk
AREA: 5.9 ACRES

SOIL SERIES LINE

Ss

Sk A

St No.1

SAMPLING/DISCHARGE LOCATION #1

Cd-S

Di

50' UNDISTURBED BUFFER

25' STATE BUFFER

PROP. WATERLINE TO AVOID CANTILEVER GATE FOUNDATIONS

283.35'

1014.30' S 40°22'21" W 1397.69' (total)

N/F HABERSHAM COUNTY BOARD OF EDUCATION DB 281/391 & PB 31/189

BRAVO SITE SET 02-11-2026

GEORGIA811 www.Georgia811.com

3/6/2024 4:01:25 PM
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CROFT

Croft & Associates
3380 Blue Springs Road
Kennesaw, Georgia 30144
770.529.7714 (o)
www.croftae.com

Rochester DCCM

Rochester | DCCM
425 Oak Street
Gainesville, Georgia 30501
770.718.0600
www.rochester-assoc.com

GEORGIA No. 31471 PROFESSIONAL 01.17.25 ENGINEER ERIC M. CHINI

OWNER

HABERSHAM COUNTY ANIMAL CONTROL
130 JACOBS WAY, SUITE 302
CLARKSVILLE, GA
30523

HABERSHAM COUNTY ANIMAL SHELTER

HABERSHAM ANIMAL CONTROL
OLD ATHENS HWY
CORNELIA, GA
30531

No.	Date	Description
3	2025-11-24	REVISION 3 SET
2	2025-10-27	REVISION 2 SET
1	2025-01-17	VE REVISION 1 SET
0	2024-06-10	PERMIT SET
		ISSUANCE

PROJECT NUMBER
2022-313

DRAWN: DCB CHECKED: EMC

SHEET TITLE
EROSION CONTROL PHASE 1 - SITE AREA

SHEET NO.
C-20

NORTH

SCALE 1" = 30' GRAPHIC SCALE
15' 0' 30' 60'

THIS SHEET PLOTS ON 42" x 30"

3" 2" 1" 1/2" 0

LEGEND

AIF - ANGLE IRON FOUND
AKA - ALSO KNOWN AS
AJCSP - ALUMIZED TYPE 2 CORRUGATED STEEL PIPE
BC - BACK OF CURB
BL - BUILDING SETBACK LINE
BWF - BARB WIRE FENCE
C&G - CURB & GUTTER
C/T - CRIMP TOP PIPE
CI - CURB INLET
CL - CENTER LINE
CLF - CHAIN LINK FENCE
CMF - CONCRETE MONUMENT FOUND
CMP - CORRUGATED METAL PIPE
CO - CLEAN OUT
CONC - CONCRETE
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DIP - DUCTILE IRON PIPE
DS - DOWN SPOUT
DWCB - DOUBLE WING CATCH BASIN
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-G- - GAS LINE
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IPS - IRON PIN SET
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LLL - LAND LOT LINE
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R/B - REINFORCING IRON BAR
RCP - REINFORCED CONCRETE PIPE
R/W - RIGHT OF WAY
-SS- - SANITARY SEWER LINE
SSE - SANITARY SEWER EASEMENT
S/W - SIDEWALK
SWCB - SINGLE WING CATCH BASIN
TBM - TEMPORARY BENCHMARK
TBX - TELEPHONE BOX
TF - TRANSFORMER
TMH - TELEPHONE MANHOLE
TP - TELEPHONE POLE
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-T- - OVERHEAD TELEPHONE LINE
UP - UNDERGROUND POWER
UT - UNDERGROUND TELEPHONE
WI - WEIR INLET
-W- - WATER LINE
WM - WATER METER
WMH - WATER MANHOLE
WV - WATER VALVE

PHASE 1 St CHART

St. No.	TAILWATER CONDITION Tw	PIPE DIAMETER D_0 (in)	25-YR DISCHARGE (cfs)	25-YR FLOW DEPTH d (in)	25-YR VELOCITY v (ft/s)	LENGTH OF APRON L_t (ft)	WIDTH AT OUTLET $3D_0$ (ft)	WIDTH AT END OF APRON (ft)	STONE MEDIAN SIZE D_{50} (ft)	APRON THICKNESS D (ft)
3	Tw < 0.5 D_0	24	8.5	9.4	7.5	14	6.0	16.0	0.5	1.2

NRCS SOILS TABLE

SOIL NAME	SLOPES	HYDROLOGIC GROUP	K FACTOR	T FACTOR	DEPTH TO ROCK (IN.)
LjE - LOUISA FINE SANDY LOAM	15-25%	D	0.15	2	38
MjC2 - MADISON FINE SANDY LOAM, ERODED	6-10%	B	0.24	5	>78
MjD - MADISON FINE SANDY LOAM	10-15%	B	0.24	5	>78
MjD2 - MADISON FINE SANY LOAM, ERODED	10-15%	B	0.24	5	>78
MjE - MADISON FINE SANDY LOAM	15-25%	B	0.24	5	>78
WgC2 - WICKHAM FINE SANDY LOAM	6-10%	B	0.28	4	>78

Pond B Sediment Storage Calculations

1.	Required Stormwater Storage (25 year) =	356	cy
2.	Total Drainage Basin (include offsite) =	0.4	ac
	Required Sediment Storage per acre =	134	cy/ac
	Total Required Sediment Storage =	54	cy
3.	Total Storage Required (Stormwater Storage + Sediment Storage) =	410	cy
	Available Storage =	689	cy
	Available Storage Corresponding Elevation =	1,351	ft
	Total Sediment Storage Provided (Total Provided - Stormwater Req) =	995	cy
4.	Is available storage greater than total required storage =	Y	
5.	Is additional sediment storage required =	N	
6.	Clean Out Storage Volume (Provided Sediment Storage / 3) =	332	cy
	Clean Out Storage Volume Corresponding Elevation =	1348.0	ft
7.	Is Length to Width Ratio Greater than 2:1 =	Y	
8.	Is a Baffle Required to Increase the Length/Width Ratio =	N	

SEDIMENT STORAGE CALCULATIONS

TOTAL DISTURBED AREA = 10.8 AC
REQUIRED SEDIMENT STORAGE = 1,447CY (134 CY/AC x 10.7 AC)

SEDIMENT STORAGE PROVIDED W/ POND A Sk SKIMMER = 1,599 CY
SEDIMENT STORAGE PROVIDED W/ POND B Sk SKIMMER = 333 CY

TOTAL SEDIMENT STORAGE PROVIDED = 1,932 CY > 1,447 CY => OK

APPENDIX 1 ITEMS

B. INCREASE ALL TEMPORARY SEDIMENT BASINS AND RETROFITTED STORM WATER MANAGEMENT BASINS TO PROVIDE SEDIMENT STORAGE OF AT LEAST 3600 CUBIC FEET (134 CUBIC YARDS) PER ACRE DRAINED.
F. CONDUCT TURBIDITY SAMPLING AFTER EVERY RAIN EVENT OF 0.5 INCH OR GREATER WITHIN ANY 24-HOUR PERIOD, RECOGNIZING THE EXCEPTIONS SPECIFIED IN PART IV.D.6.D. OF THE CURRENT NPDES PERMITS.
L. USE MULCH FILTER BERMS, IN ADDITION TO A SILT FENCE, ON THE SITE PERIMETER WHEREVER CONSTRUCTION STORM WATER (INCLUDING SHEET FLOW) MAY BE DISCHARGED. MULCH FILTER BERMS CANNOT BE PLACED IN WATERWAYS OR AREAS OF CONCENTRATED FLOW.
V. INSTALL POST CONSTRUCTION BMPS (E.G., RUNOFF REDUCTION BMPS) WHICH REMOVE 80% TSS AS OUTLINED IN THE GEORGIA STORMWATER MANAGEMENT MANUAL KNOWN AS THE BLUE BOOK OR AN EQUIVALENT OR MORE STRINGENT DESIGN MANUAL.

EROSION CONTROL CERTIFICATION:

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(2) "I CERTIFY UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED AFTER A SITE VISIT TO THE LOCATIONS DESCRIBED HEREIN BY MYSELF OR MY AUTHORIZED AGENT, UNDER MY DIRECT SUPERVISION."

ERIC M. CHINI, P.E. CERTIFICATION ##13398 ISSUED: 11/18/2024 EXPIRES: 11/18/2027

GSWCC Georgia Soil and Water Conservation Commission
ERIC M. CHINI, P.E.
Level II Certified Design Professional
CERTIFICATION NUMBER #13398
ISSUED: 11/18/2024 EXPIRES: 11/18/2027

PRIMARY PERMITTEE

OWNER & DEVELOPER:

HABERSHAM COUNTY ANIMAL CONTROL
130 JACOBS WAY
CLARKESVILLE, GA, 30523

24 HOUR EMERGENCY CONTACT
JERRY BAGGETT
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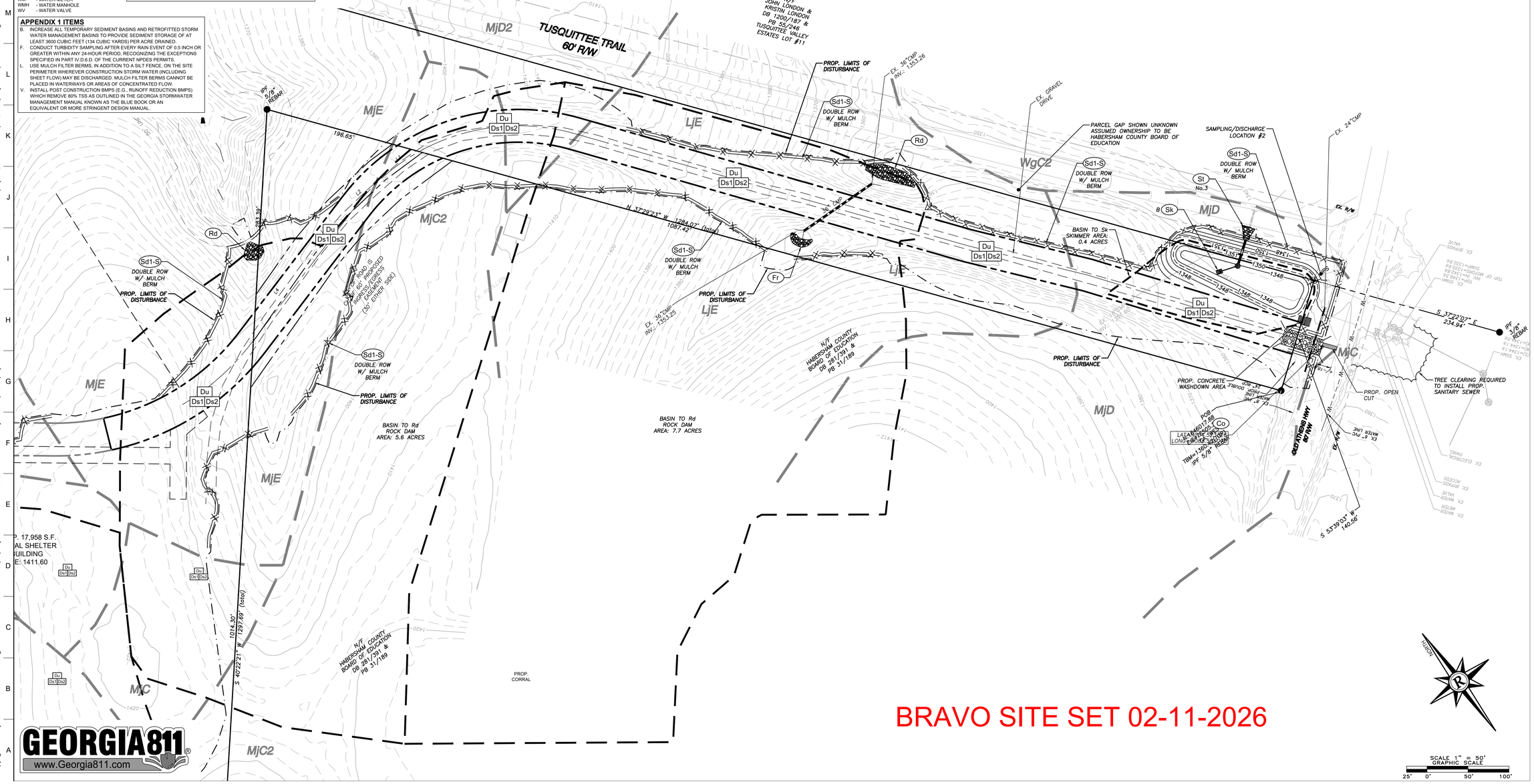

BRAVO SITE SET 02-11-2026

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Croft & Associates
3380 Blue Springs Road
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CLARKSVILLE, GA
30523

HABERSHAM COUNTY ANIMAL SHELTER

HABERSHAM ANIMAL CONTROL
OLD ATHENS HWY
CORNELIA, GA
30531

No.	Date	Description
3	2025-11-24	REVISION 3 SET
2	2025-10-27	REVISION 2 SET
1	2025-01-17	VE REVISION 1 SET
0	2024-06-10	PERMIT SET
		ISSUANCE

PROJECT NUMBER
2022-313

DRAWN: DCB
CHECKED: EMC

SHEET TITLE
EROSION CONTROL PHASE 1 - DRIVEWAY

SHEET NO.
C-21

THIS SHEET PLOTS ON 42" x 30"

3" 2" 1" 1/2" 0

LEGEND

AIF	- ANGLE IRON FOUND
AKA	- ALSO KNOWN AS
AZCSP	- ALUMIZED TYPE 2 CORRUGATED STEEL PIPE
BC	- BACK OF CURB
BL	- BUILDING SETBACK LINE
BWF	- BARB WIRE FENCE
C&G	- CURB & GUTTER
C/T	- CRIMP TOP PIPE
CI	- CURB INLET
CL	- CENTER LINE
CLF	- CHAIN LINK FENCE
CMF	- CONCRETE MONUMENT FOUND
CMP	- CORRUGATED METAL PIPE
CO	- CLEAN OUT
CONC	- CONCRETE
CORPS	- ARMY CORPS OF ENGINEERS
DB/PG	- DEED BOOK, PAGE
DI	- DROP INLET
DIP	- DUCTILE IRON PIPE
DS	- DOWN SPOUT
DWCB	- DOUBLE WING CATCH BASIN
EP	- EDGE OF PAVEMENT
FFE	- FINISH FLOOR ELEVATION
FH	- FIRE HYDRANT
-G-	- GAS LINE
GM	- GAS METER
GP	- GUY POLE
GV	- GAS VALVE
GW	- GUY WIRE
HC	- HANDICAP
HW	- HEADWALL
HWF	- HOG WIRE FENCE
IE	- INVERT ELEVATION
IPF	- IRON PIN FOUND
IPS	- IRON PIN SET
JB	- JUNCTION BOX
LL	- LAND LOT
LLL	- LAND LOT LINE
LP	- LIGHT POLE
MH	- MANHOLE
MON	- MONUMENT
N/F	- NOW OR FORMERLY
O/T	- OPEN TOP PIPE
PBX	- POWER BOX / TRANSFORMER
-P-	- OVERHEAD POWER LINE
-P/T-	- O/H POWER & TELE LINE
PL	- PROPERTY LINE
PM	- POWER METER
POB	- POINT OF BEGINNING
PP	- POWER POLE
PTP	- POWER & TELEPHONE POLE
PVC	- POLYVINYLCHLORIDE PIPE
R/B	- REINFORCING IRON BAR
RCP	- REINFORCED CONCRETE PIPE
R/W	- RIGHT OF WAY
-SS-	- SANITARY SEWER LINE
SSE	- SANITARY SEWER EASEMENT
S/W	- SIDEWALK
SWCB	- SINGLE WING CATCH BASIN
TBM	- TEMPORARY BENCHMARK
TBX	- TELEPHONE BOX
TF	- TRANSFORMER
TMH	- TELEPHONE MANHOLE
TP	- TELEPHONE POLE
TPOB	- TRUE POINT OF BEGINNING
-T-	- OVERHEAD TELEPHONE LINE
UP	- UNDERGROUND POWER
UT	- UNDERGROUND TELEPHONE
WI	- WEIR INLET
-W-	- WATER LINE
WM	- WATER METER
WMH	- WATER MANHOLE
WV	- WATER VALVE

PHASE 2 St CHART

St. No.	TAILWATER CONDITION Tw	PIPE DIAMETER D_O (in)	25-YR DISCHARGE (cfs)	25-YR FLOW DEPTH d (in)	25-YR VELOCITY v (ft/s)	LENGTH OF APRON L_a (ft)	WIDTH AT OUTLET $3D_O$ (ft)	WIDTH AT END OF APRON (ft)	STONE MEDIAN SIZE D_{50} (ft)	APRON THICKNESS D (ft)
1	Tw < 0.5 D_O	24	5.3	7.3	6.5	14	6.0	16.0	0.5	1.2
2	Tw < 0.5 D_O	30	28.9	16.7	10.3	18	7.5	20.5	0.6	1.4

NRCS SOILS TABLE

SOIL NAME	SLOPES	HYDROLOGIC GROUP	K FACTOR	T FACTOR	DEPTH TO ROCK (IN.)
MjC - MADISON FINE SANDY LOAM	6-10%	B	0.24	5	>78
MjC2 - MADISON FINE SANDY LOAM, ERODED	6-10%	B	0.24	5	>78
MjD2 - MADISON FINE SANDY LOAM, ERODED	10-15%	B	0.24	5	>78
MjE - MADISON FINE SANDY LOAM	15-25%	B	0.24	5	>78
MjE2 - MADISON FINE SANDY LOAM, ERODED	15-25%	B	0.24	5	>78
MkC3 - MADISON FINE SANDY CLAY LOAM, SEVERELY ERODED	6-10%	B	0.10	4	>78
MkD3 - MADISON FINE SANDY CLAY LOAM, SEVERELY ERODED	10-15%	B	0.24	4	>78
MkE3 - MADISON FINE SANDY CLAY LOAM, SEVERELY ERODED	15-25%	B	0.10	4	>78

Pond A Sediment Storage Calculations

1.	Required Stormwater Storage (25 year) =	2,226	cy
2.	Pond Total Drainage Basin (include offsite) =	7.7	ac
	Required Sediment Storage per acre =	134	cy/ac
	Total Required Sediment Storage =	1,032	cy
3.	Total Storage Required (Stormwater Storage + Sediment Storage) =	3,258	cy
	Available Storage =	3,657	cy
	Available Storage Corresponding Elevation =	1,372	ft
	Total Sediment Storage Provided (Total Provided - Stormwater Req) =	1,431	cy
4.	Is available storage greater than total required storage =	Y	
5.	Is additional sediment storage required =	N	
6.	Clean Out Storage Volume (Provided Sediment Storage / 3) =	477	cy
	Clean Out Storage Volume Corresponding Elevation =	1366.0	ft
7.	Is Length to Width Ratio Greater than 2:1 =	Y	
8.	Is a Baffle Required to Increase the Length/Width Ratio =	N	

SEDIMENT STORAGE CALCULATIONS

TOTAL DISTURBED AREA = 10.8 AC
REQUIRED SEDIMENT STORAGE = 1,447CY (134 CY/AC x 10.7 AC)

SEDIMENT STORAGE PROVIDED W/ POND A Sk SKIMMER = 1,599 CY
SEDIMENT STORAGE PROVIDED W/ POND B Sk SKIMMER = 333 CY

TOTAL SEDIMENT STORAGE PROVIDED = 1,932 CY > 1,447 CY => OK

APPENDIX 1 ITEMS

B. INCREASE ALL TEMPORARY SEDIMENT BASINS AND RETROFITTED STORM WATER MANAGEMENT BASINS TO PROVIDE SEDIMENT STORAGE OF AT LEAST 3600 CUBIC FEET (134 CUBIC YARDS) PER ACRE DRAINED.
F. CONDUCT TURBIDITY SAMPLING AFTER EVERY RAIN EVENT OF 0.5 INCH OR GREATER WITHIN ANY 24-HOUR PERIOD, RECOGNIZING THE EXCEPTIONS SPECIFIED IN PART IV.D.6.D. OF THE CURRENT NPDES PERMITS.
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MkD3 MjE MkC3 MjE2 MjC MjE MjC2 MkE3 MjE MjD2

SOIL SERIES LINE

BASIN TO Sk
AREA: 7.7 ACRES

BASIN DELINEATION

PROP. LIMITS OF DISTURBANCE

Sd1-S DOUBLE ROW W/ MULCH BERM

Sd2-F

Du Ds1 Ds2

Ds1 Ds2 Ds3

Ss

Sk

St No.1

St No.2

Cd-S

Di

SAMPLING/DISCHARGE LOCATION #1

PROP. WATER LINE TO AVOID GATE/EVER GATE FOUNDATIONS

50' UNDISTURBED BUFFER

25' STATE BUFFER

N/F HABERSHAM COUNTY BOARD OF EDUCATION DB 281/391 & PB 31/189

S 40°22'21" W 1014.30'

N 49°37'39" W 283.35'

BRAVO SITE SET 02-11-2026

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SCALE 1" = 30' GRAPHIC SCALE
15' 0' 30' 60'

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Croft & Associates
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1	2025-01-17	VE REVISION 1 SET
0	2024-06-10	PERMIT SET
		ISSUANCE

PROJECT NUMBER
2022-313

DRAWN: DCB
CHECKED: EMC

SHEET TITLE
EROSION CONTROL PHASE 2 - SITE AREA

SHEET NO.
C-22

THIS SHEET PLOTS ON 42" x 30"

3" 2" 1" 1/2" 0

LEGEND
AIF - ANGLE IRON FOUND
AKA - ALSO KNOWN AS
AJCSP - ALUMIZED TYPE 2 CORRUGATED STEEL PIPE
BC - BACK OF CURB
BL - BUILDING SETBACK LINE
BWF - BARB WIRE FENCE
C&G - CURB & GUTTER
C/T - CRIMP TOP PIPE
CI - CURB INLET
CL - CENTER LINE
CLF - CHAIN LINK FENCE
CMF - CONCRETE MONUMENT FOUND
CMP - CORRUGATED METAL PIPE
CO - CLEAN OUT
CONC - CONCRETE
CORPS - ARMY CORPS OF ENGINEERS
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DIP - DUCTILE IRON PIPE
DS - DOWN SPOUT
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FH - FIRE HYDRANT
-G- - GAS LINE
GM - GAS METER
GP - GUY POLE
GV - GAS VALVE
GW - GUY WIRE
HC - HANDICAP
HW - HEADWALL
HWF - HOG WIRE FENCE
IE - INVERT ELEVATION
IPF - IRON PIN FOUND
IPS - IRON PIN SET
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LLL - LAND LOT LINE
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MH - MANHOLE
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-P- - OVERHEAD POWER LINE
-P/T- - O/H POWER & TELE LINE
PL - PROPERTY LINE
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PP - POWER POLE
PTP - POWER & TELEPHONE POLE
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RCP - REINFORCED CONCRETE PIPE
R/W - RIGHT OF WAY
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SSE - SANITARY SEWER EASEMENT
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WI - WEIR INLET
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WM - WATER METER
WMH - WATER MANHOLE
WV - WATER VALVE

PHASE 2 St CHART

St. No.	TAILWATER CONDITION Tw	PIPE DIAMETER D_O (in)	25-YR DISCHARGE (cfs)	25-YR FLOW DEPTH d (in)	25-YR VELOCITY v (ft/s)	LENGTH OF APRON L_t (ft)	WIDTH AT OUTLET $3D_O$ (ft)	WIDTH AT END OF APRON (ft)	STONE MEDIAN SIZE D_{50} (ft)	APRON THICKNESS D (ft)
3	Tw < 0.5 D_O	24	8.5	9.4	7.5	14	6.0	16.0	0.5	1.2
4	Tw < 0.5 D_O	18	6.4	10.2	6.2	14	4.5	15.5	0.5	1.2
5	Tw > 0.5 D_O	30	48.8	24.8	11.2	32	7.5	15.5	0.3	0.7
6	Tw < 0.5 D_O	36	22.8	8.3	18.3	15	9.0	18.0	1.0	2.3
7	Tw < 0.5 D_O	24	23.7	17.6	9.6	30	6.0	14.0	0.6	1.4

NRCS SOILS TABLE

SOIL NAME	SLOPES	HYDROLOGIC GROUP	K FACTOR	T FACTOR	DEPTH TO ROCK (IN.)
LjE - LOUISA FINE SANDY LOAM	15-25%	D	0.15	2	38
MjC2 - MADISON FINE SANDY LOAM, ERODED	6-10%	B	0.24	5	>78
MjD - MADISON FINE SANDY LOAM	10-15%	B	0.24	5	>78
MjD2 - MADISON FINE SANY LOAM, ERODED	10-15%	B	0.24	5	>78
MjE - MADISON FINE SANDY LOAM	15-25%	B	0.24	5	>78
WgC2 - WICKHAM FINE SANDY LOAM	6-10%	B	0.28	4	>78

Pond B Sediment Storage Calculations

1.	Required Stormwater Storage (25 year) =	356	cy
2.	Pond Total Drainage Basin (include offsite) =	1.8	ac
	Required Sediment Storage per acre =	134	cy/ac
	Total Required Sediment Storage =	241	cy
3.	Total Storage Required (Stormwater Storage + Sediment Storage) =	597	cy
	Available Storage =	689	cy
	Available Storage Corresponding Elevation =	1,351	ft
	Total Sediment Storage Provided (Total Provided - Stormwater Req) =	333	cy
4.	Is available storage greater than total required storage =	Y	
5.	Is additional sediment storage required =	N	
6.	Clean Out Storage Volume (Provided Sediment Storage / 3) =	111	cy
	Clean Out Storage Volume Corresponding Elevation =	1348.0	ft
7.	Is Length to Width Ratio Greater than 2:1 =	Y	
8.	Is a Baffle Required to Increase the Length/Width Ratio =	N	

SEDIMENT STORAGE CALCULATIONS

TOTAL DISTURBED AREA = 10.8 AC
REQUIRED SEDIMENT STORAGE = 1,447CY (134 CY/AC x 10.7 AC)

SEDIMENT STORAGE PROVIDED W/ POND A Sk SKIMMER = 1,599 CY
SEDIMENT STORAGE PROVIDED W/ POND B Sk SKIMMER = 333 CY

TOTAL SEDIMENT STORAGE PROVIDED = 1,932 CY > 1,447 CY => OK

APPENDIX 1 ITEMS

B. INCREASE ALL TEMPORARY SEDIMENT BASINS AND RETROFITTED STORM WATER MANAGEMENT BASINS TO PROVIDE SEDIMENT STORAGE OF AT LEAST 3600 CUBIC FEET (134 CUBIC YARDS) PER ACRE DRAINED.
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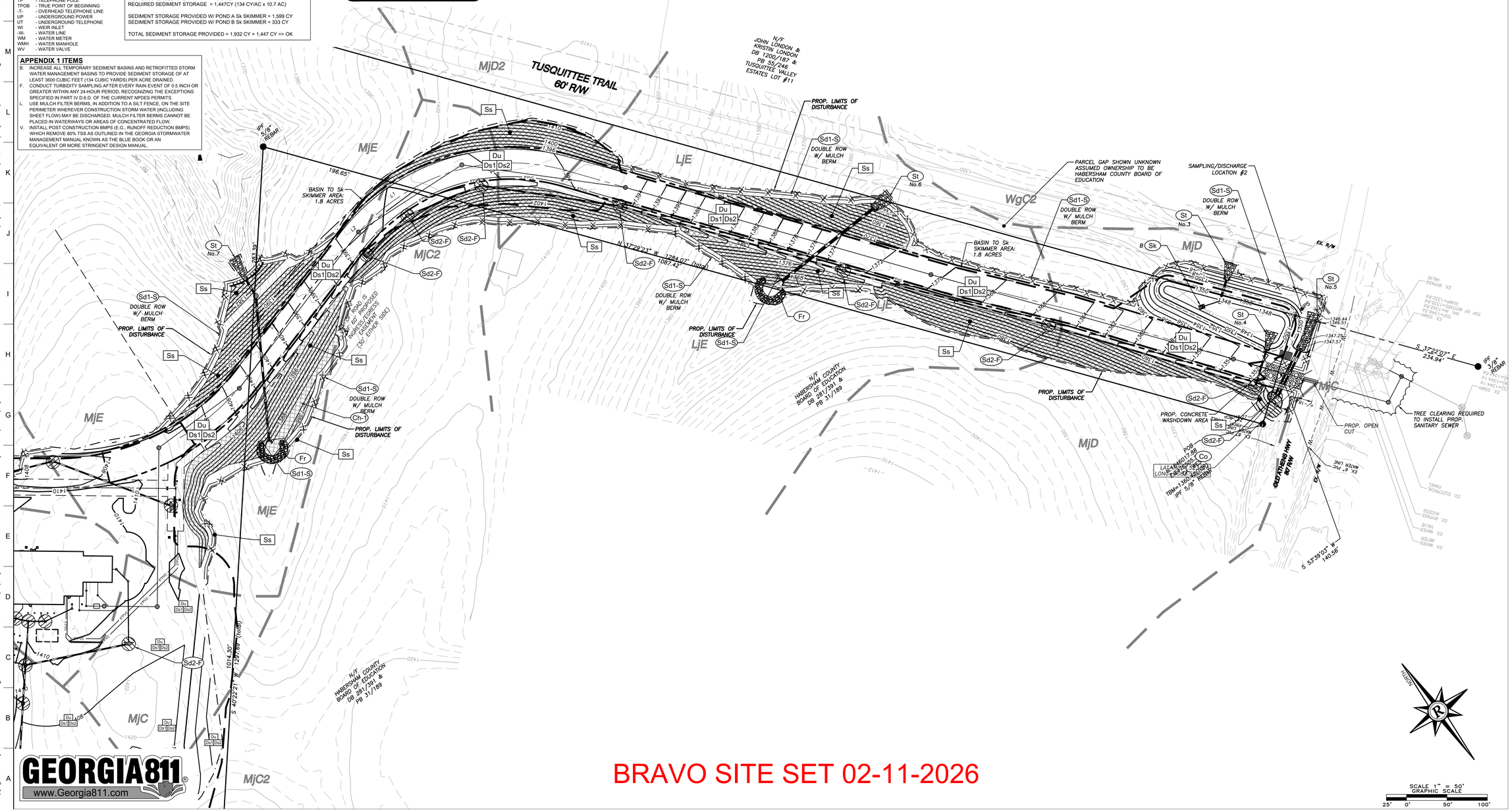

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BRAVO SITE SET 02-11-2026

SCALE 1" = 50'
GRAPHIC SCALE
25' 0' 50' 100'

NORTH

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Croft & Associates
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SHEET TITLE
EROSION CONTROL PHASE 2 - DRIVEWAY

SHEET NO.
C-23

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THIS SHEET PLOTS ON 42" X 30"

3" 2" 1" 1/2" 0

LEGEND

AIF	- ANGLE IRON FOUND
AKA	- ALSO KNOWN AS
AZCSP	- ALUMIZED TYPE 2 CORRUGATED STEEL PIPE
BC	- BACK OF CURB
BL	- BUILDING SETBACK LINE
BWF	- BARB WIRE FENCE
C&G	- CURB & GUTTER
C/T	- CRIMP TOP PIPE
CI	- CURB INLET
CL	- CENTER LINE
CLF	- CHAIN LINK FENCE
CMF	- CONCRETE MONUMENT FOUND
CMP	- CORRUGATED METAL PIPE
CO	- CLEAN OUT
CONC	- CONCRETE
CORPS	- ARMY CORPS OF ENGINEERS
DB,PG	- DEED BOOK, PAGE
DI	- DROP INLET
DIP	- DUCTILE IRON PIPE
DS	- DOWN SPOUT
DWCB	- DOUBLE WING CATCH BASIN
EP	- EDGE OF PAVEMENT
FFE	- FINISH FLOOR ELEVATION
FH	- FIRE HYDRANT
-G-	- GAS LINE
GM	- GAS METER
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GV	- GAS VALVE
GW	- GUY WIRE
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HWF	- HOG WIRE FENCE
IE	- INVERT ELEVATION
IPF	- IRON PIN FOUND
IPS	- IRON PIN SET
JB	- JUNCTION BOX
LL	- LAND LOT
LLL	- LAND LOT LINE
LP	- LIGHT POLE
MH	- MANHOLE
MON	- MONUMENT
N/F	- NOW OR FORMERLY
O/T	- OPEN TOP PIPE
PBX	- POWER BOX / TRANSFORMER
-P-	- OVERHEAD POWER LINE
-P/T-	- O/H POWER & TELE LINE
PL	- PROPERTY LINE
PM	- POWER METER
POB	- POINT OF BEGINNING
PP	- POWER POLE
PTP	- POWER & TELEPHONE POLE
PVC	- POLYVINYLCHLORIDE PIPE
R/B	- REINFORCING IRON BAR
RCP	- REINFORCED CONCRETE PIPE
R/W	- RIGHT OF WAY
-SS-	- SANITARY SEWER LINE
SSE	- SANITARY SEWER EASEMENT
S/W	- SIDEWALK
SWCB	- SINGLE WING CATCH BASIN
TBM	- TEMPORARY BENCHMARK
TBX	- TELEPHONE BOX
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TMH	- TELEPHONE MANHOLE
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UP	- UNDERGROUND POWER
UT	- UNDERGROUND TELEPHONE
WI	- WEIR INLET
-W-	- WATER LINE
WM	- WATER METER
WMH	- WATER MANHOLE
WV	- WATER VALVE

PHASE 3 (PERMANENT) St CHART

St. No.	TAILWATER CONDITION Tw	PIPE DIAMETER D_O (in)	25-YR DISCHARGE (cfs)	25-YR FLOW DEPTH d (in)	25-YR VELOCITY v (ft/s)	LENGTH OF APRON L_a (ft)	WIDTH AT OUTLET $3D_O$ (ft)	WIDTH AT END OF APRON (ft)	STONE MEDIAN SIZE D_{50} (ft)	APRON THICKNESS D (ft)
1	Tw < 0.5 D_O	24	5.3	7.3	6.5	14	6.0	16.0	0.5	1.2
2	Tw < 0.5 D_O	30	28.9	16.7	10.3	18	7.5	20.5	0.6	1.4

NRCS SOILS TABLE

SOIL NAME	SLOPES	HYDROLOGIC GROUP	K FACTOR	T FACTOR	DEPTH TO ROCK (IN.)
MjC - MADISON FINE SANDY LOAM	6-10%	B	0.24	5	>78
MjC2 - MADISON FINE SANDY LOAM, ERODED	6-10%	B	0.24	5	>78
MjD2 - MADISON FINE SANY LOAM, ERODED	10-15%	B	0.24	5	>78
MjE - MADISON FINE SANDY LOAM	15-25%	B	0.24	5	>78
MjE2 - MADISON FINE SANDY LOAM, ERODED	15-25%	B	0.24	5	>78
MkC3 - MADISON FINE SANDY CLAY LOAM, SEVERELY ERODED	6-10%	B	0.10	4	>78
MkD3 - MADISON FINE SANDY CLAY LOAM, SEVERELY ERODED	10-15%	B	0.24	4	>78
MkE3 - MADISON FINE SANDY CLAY LOAM, SEVERELY ERODED	15-25%	B	0.10	4	>78

Pond A Sediment Storage Calculations

1.	Required Stormwater Storage (25 year) =	2,226	cy
2.	Pond Total Drainage Basin (include offsite) =	7.7	ac
	Required Sediment Storage per acre =	134	cy/ac
	Total Required Sediment Storage =	1,032	cy
3.	Total Storage Required (Stormwater Storage + Sediment Storage) =	3,258	cy
	Available Storage =	3,657	cy
	Available Storage Corresponding Elevation =	1,372	ft
	Total Sediment Storage Provided (Total Provided - Stormwater Req) =	1,431	cy
4.	Is available storage greater than total required storage =	Y	
5.	Is additional sediment storage required =	N	
6.	Clean Out Storage Volume (Provided Sediment Storage / 3) =	477	cy
	Clean Out Storage Volume Corresponding Elevation =	1366.0	ft
7.	Is Length to Width Ratio Greater than 2:1 =	Y	
8.	Is a Baffle Required to Increase the Length/Width Ratio =	N	

SEDIMENT STORAGE CALCULATIONS

TOTAL DISTURBED AREA = 10.8 AC
REQUIRED SEDIMENT STORAGE = 1,447CY (134 CY/AC x 10.7 AC)

SEDIMENT STORAGE PROVIDED W/ POND A Sk SKIMMER = 1,599 CY
SEDIMENT STORAGE PROVIDED W/ POND B Sk SKIMMER = 333 CY

TOTAL SEDIMENT STORAGE PROVIDED = 1,932 CY > 1,447 CY => OK

APPENDIX 1 ITEMS

B. INCREASE ALL TEMPORARY SEDIMENT BASINS AND RETROFITTED STORM WATER MANAGEMENT BASINS TO PROVIDE SEDIMENT STORAGE OF AT LEAST 3600 CUBIC FEET (134 CUBIC YARDS) PER ACRE DRAINED.

F. CONDUCT TURBIDITY SAMPLING AFTER EVERY RAIN EVENT OF 0.5 INCH OR GREATER WITHIN ANY 24-HOUR PERIOD, RECOGNIZING THE EXCEPTIONS SPECIFIED IN PART IV.D.6.D. OF THE CURRENT NPDES PERMITS.

L. USE MULCH FILTER BERMS, IN ADDITION TO A SILT FENCE, ON THE SITE PERIMETER WHEREVER CONSTRUCTION STORM WATER (INCLUDING SHEET FLOW) MAY BE DISCHARGED. MULCH FILTER BERMS CANNOT BE PLACED IN WATERWAYS OR AREAS OF CONCENTRATED FLOW.

V. INSTALL POST CONSTRUCTION BMPS (E.G., RUNOFF REDUCTION BMPS) WHICH REMOVE 80% TSS AS OUTLINED IN THE GEORGIA STORMWATER MANAGEMENT MANUAL KNOWN AS THE BLUE BOOK OR AN EQUIVALENT OR MORE STRINGENT DESIGN MANUAL.

EROSION CONTROL CERTIFICATION:

(1) "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 CONSERVATION COMMISSION AS OF JANUARY 1 OF THE YEAR IN WHICH THE LAND-DISTURBING ACTIVITY WAS PERMITTED, PROVIDES FOR THE SAMPLING OF THE RECEIVING WATER(S) OR THE SAMPLING OF THE STORM WATER OUTFALLS AND THAT THE DESIGNED SYSTEM OF BEST MANAGEMENT PRACTICES AND SAMPLING METHODS IS EXPECTED TO MEET THE REQUIREMENTS CONTAINED IN THE GENERAL NPDES PERMIT NO. GAR 100001."

(2) "I CERTIFY UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED AFTER A SITE VISIT TO THE LOCATIONS DESCRIBED HEREIN BY MYSELF OR MY AUTHORIZED AGENT, UNDER MY DIRECT SUPERVISION."

ERIC M. CHINI, P.E. CERTIFICATION ##13398 ISSUED: 11/18/2024 EXPIRES: 11/18/2027

GSWCC Georgia Soil and Water Conservation Commission

ERIC M. CHINI, P.E.

Level II Certified Design Professional

CERTIFICATION NUMBER: #13398
ISSUED: 11/18/2024 EXPIRES: 11/18/2027

PRIMARY PERMITTEE

OWNER & DEVELOPER:

HABERSHAM COUNTY ANIMAL CONTROL
130 JACOBS WAY
CLARKESVILLE, GA, 30523

24 HOUR EMERGENCY CONTACT
JERRY BAGGETT
(404) 987-9272
ENGINEERING CONTACT
ERIC M. CHINI, P.E.
(770) 718-0600
SURVEYING CONTACT
E.G. (EDDIE) DAVIDSON, PLS
(706) 754-7498

Croft & Associates
3380 Blue Springs Road
Kennesaw, Georgia 30144
770.529.7714 (p)
www.croftae.com

Rochester | DCCM
425 Oak Street
Gainesville, Georgia 30501
770.718.0600
www.rochester-assoc.com

GEORGIA REGISTERED PROFESSIONAL ENGINEER No. 31471 01.17.25 ERIC M. CHINI

OWNER

HABERSHAM COUNTY ANIMAL CONTROL
130 JACOBS WAY, SUITE 302
CLARKSVILLE, GA
30523

HABERSHAM ANIMAL CONTROL
OLD ATHENS HWY
CORNELIA, GA
30531

BRAVO SITE SET 02-11-2026

No.	Date	Description
3	2025-11-24	REVISION 3 SET
2	2025-10-27	REVISION 2 SET
1	2025-01-17	VE REVISION 1 SET
0	2024-06-10	PERMIT SET
		ISSUANCE

PROJECT NUMBER
2022-313

DRAWN: DCB
CHECKED: EMC

SHEET TITLE
EROSION CONTROL PHASE 3 - SITE AREA

SHEET NO.
C-24

SCALE 1" = 30' GRAPHIC SCALE
15' 0' 30' 60'

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GEORGIA811 www.Georgia811.com

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3" 2" 1" 1/2" 0

LEGEND

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AJCSP	- ALUMIZED TYPE 2 CORRUGATED STEEL PIPE
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C&G	- CURB & GUTTER
C/T	- CRIMP TOP PIPE
CI	- CURB INLET
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CMP	- CORRUGATED METAL PIPE
CO	- CLEAN OUT
CONC	- CONCRETE
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WM	- WATER METER
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WV	- WATER VALVE

PHASE 2 St CHART

St. No.	TAILWATER CONDITION Tw	PIPE DIAMETER D_O (in)	25-YR DISCHARGE (cfs)	25-YR FLOW DEPTH d (in)	25-YR VELOCITY v (ft/s)	LENGTH OF APRON L_t (ft)	WIDTH AT OUTLET $3D_O$ (ft)	WIDTH AT END OF APRON (ft)	STONE MEDIAN SIZE D_{50} (ft)	APRON THICKNESS D (ft)
3	Tw < 0.5 D_O	24	8.5	9.4	7.5	14	6.0	16.0	0.5	1.2
4	Tw < 0.5 D_O	18	6.4	10.2	6.2	14	4.5	15.5	0.5	1.2
5	Tw > 0.5 D_O	30	48.8	24.8	11.2	32	7.5	15.5	0.3	0.7
6	Tw < 0.5 D_O	36	22.8	8.3	18.3	15	9.0	18.0	1.0	2.3
7	Tw < 0.5 D_O	24	23.7	17.6	9.6	30	6.0	14.0	0.6	1.4

NRCS SOILS TABLE

SOIL NAME	SLOPES	HYDROLOGIC GROUP	K FACTOR	T FACTOR	DEPTH TO ROCK (IN.)
LjE - LOUISA FINE SANDY LOAM	15-25%	D	0.15	2	38
MjC2 - MADISON FINE SANDY LOAM, ERODED	6-10%	B	0.24	5	>78
MjD - MADISON FINE SANDY LOAM	10-15%	B	0.24	5	>78
MjD2 - MADISON FINE SANY LOAM, ERODED	10-15%	B	0.24	5	>78
MjE - MADISON FINE SANDY LOAM	15-25%	B	0.24	5	>78
WgC2 - WICKHAM FINE SANDY LOAM	6-10%	B	0.28	4	>78

Pond B Sediment Storage Calculations

1.	Required Stormwater Storage (25 year) =	356	cy
2.	Total Drainage Basin (include offsite) =	1.8	ac
	Required Sediment Storage per acre =	134	cy/ac
	Total Required Sediment Storage =	241	cy
3.	Total Storage Required (Stormwater Storage + Sediment Storage) =	597	cy
	Available Storage =	689	cy
	Available Storage Corresponding Elevation =	1,351	ft
	Total Sediment Storage Provided (Total Provided - Stormwater Req) =	333	cy
4.	Is available storage greater than total required storage =	Y	
5.	Is additional sediment storage required =	N	
6.	Clean Out Storage Volume (Provided Sediment Storage / 3) =	111	cy
	Clean Out Storage Volume Corresponding Elevation =	1348.0	ft
7.	Is Length to Width Ratio Greater than 2:1 =	Y	
8.	Is a Baffle Required to Increase the Length/Width Ratio =	N	

SEDIMENT STORAGE CALCULATIONS

TOTAL DISTURBED AREA = 10.8 AC
REQUIRED SEDIMENT STORAGE = 1,447CY (134 CY/AC x 10.7 AC)

SEDIMENT STORAGE PROVIDED W/ POND A Sk SKIMMER = 1,599 CY
SEDIMENT STORAGE PROVIDED W/ POND B Sk SKIMMER = 333 CY

TOTAL SEDIMENT STORAGE PROVIDED = 1,932 CY > 1,447 CY => OK

APPENDIX 1 ITEMS

B. INCREASE ALL TEMPORARY SEDIMENT BASINS AND RETROFITTED STORM WATER MANAGEMENT BASINS TO PROVIDE SEDIMENT STORAGE OF AT LEAST 3600 CUBIC FEET (134 CUBIC YARDS) PER ACRE DRAINED.

F. CONDUCT TURBIDITY SAMPLING AFTER EVERY RAIN EVENT OF 0.5 INCH OR GREATER WITHIN ANY 24-HOUR PERIOD, RECOGNIZING THE EXCEPTIONS SPECIFIED IN PART IV.D.6.D. OF THE CURRENT NPDES PERMITS.

L. USE MULCH FILTER BERMS, IN ADDITION TO A SILT FENCE, ON THE SITE PERIMETER WHEREVER CONSTRUCTION STORM WATER (INCLUDING SHEET FLOW) MAY BE DISCHARGED. MULCH FILTER BERMS CANNOT BE PLACED IN WATERWAYS OR AREAS OF CONCENTRATED FLOW.

V. INSTALL POST CONSTRUCTION BMPS (E.G., RUNOFF REDUCTION BMPS) WHICH REMOVE 80% TSS AS OUTLINED IN THE GEORGIA STORMWATER MANAGEMENT MANUAL KNOWN AS THE BLUE BOOK OR AN EQUIVALENT OR MORE STRINGENT DESIGN MANUAL.

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(2) "I CERTIFY UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED AFTER A SITE VISIT TO THE LOCATIONS DESCRIBED HEREIN BY MYSELF OR MY AUTHORIZED AGENT, UNDER MY DIRECT SUPERVISION."

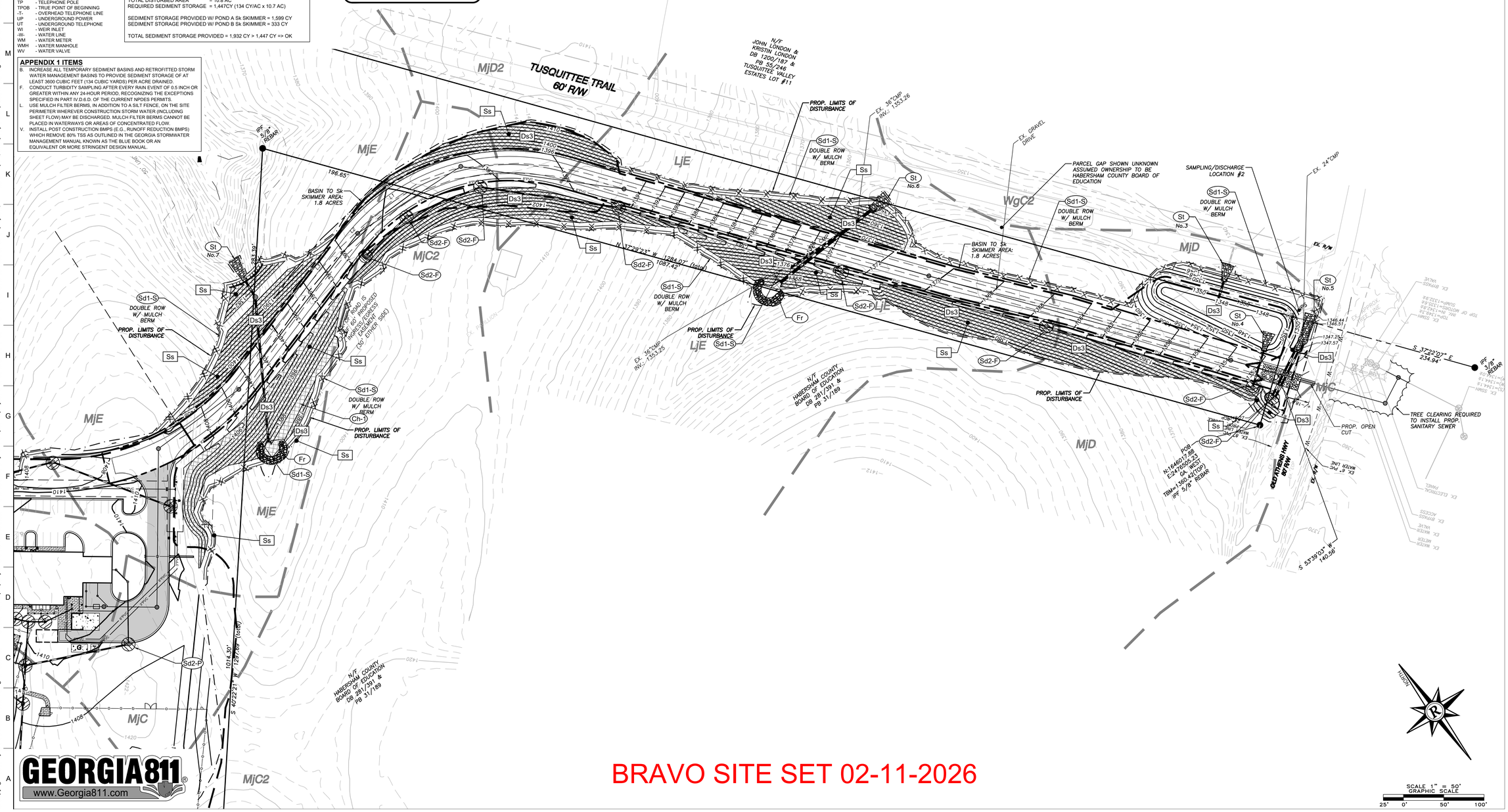
ERIC M. CHINI, P.E. CERTIFICATION ##13398 ISSUED: 11/18/2024 EXPIRES: 11/18/2027

GSWCC Georgia Soil and Water Conservation Commission

ERIC M. CHINI, P.E.

Level II Certified Design Professional

CERTIFICATION NUMBER: #13398
ISSUED: 11/18/2024 EXPIRES: 11/18/2027



BRAVO SITE SET 02-11-2026

SCALE 1" = 50'
GRAPHIC SCALE
25' 0' 50' 100'

PRIMARY PERMITTEE

OWNER & DEVELOPER:

HABERSHAM COUNTY
ANIMAL CONTROL
130 JACOBS WAY
CLARKESVILLE, GA, 30523

24 HOUR EMERGENCY CONTACT
JERRY BAGGETT
(404) 987-9272
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ERIC M. CHINI, P.E.
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(706) 754-7498

CROFT

Croft & Associates
3380 Blue Springs Road
Kennesaw, Georgia 30144
770.529.7714 (p)
www.croftae.com

Rochester DCCM

Rochester | DCCM
425 Oak Street
Gainesville, Georgia 30501
770.718.0600
www.rochester-assoc.com

GEORGIA REGISTERED No. 31471 PROFESSIONAL 01.17.25 ENGINEER ERIC M. CHINI

OWNER

HABERSHAM COUNTY ANIMAL CONTROL
130 JACOBS WAY, SUITE 302
CLARKSVILLE, GA
30523

HABERSHAM COUNTY ANIMAL SHELTER

HABERSHAM ANIMAL CONTROL
OLD ATHENS HWY
CORNELIA, GA
30531

No.	Date	Description
3	2025-11-24	REVISION 3 SET
2	2025-10-27	REVISION 2 SET
1	2025-01-17	VE REVISION 1 SET
0	2024-06-10	PERMIT SET

ISSUANCE

PROJECT NUMBER
2022-313

DRAWN: DCB
CHECKED: EMC

SHEET TITLE
EROSION CONTROL PHASE 3 - DRIVEWAY

SHEET NO.
C-25

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THIS SHEET PLOTS ON 42" x 30"

DISTURBED AREA STABILIZATION (WITH MULCHING ONLY) Ds1

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

PURPOSE
-To reduce runoff and erosion
-To conserve moisture
-To prevent surface compaction or crusting
-To control undesirable vegetation
-To modify soil temperature
-To increase biological activity in the soil

REQUIREMENT FOR REGULATORY COMPLIANCE
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 any area will remain undisturbed for greater than six months, permanent vegetative techniques shall be employed. Refer to Ds2 -Disturbed Area Stabilization (With Temporary Seeding), Ds3 - Disturbed Area Stabilization (With Permanent Seeding), and Ds4 - Disturbed Area Stabilization (With Sodding).

SPECIFICATIONS
Mulching Without Seeding
This standard applies to graded 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
-Grade to permit the use of equipment for applying and anchoring mulch.

-Install needed erosion control measures as required such as dikes, diversions, berms, terraces and sediment barriers.

-Loosen compact soil to a minimum depth of 3 inches.

Mulching Materials
Select one of the following materials and apply at the depth indicated:

-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.

-Wood waste (chips, sawdust or bark) shall be applied at a depth of 2 to 3 inches. Organic material from the clearing STAGED of develop- ment should remain on site, be chipped, and applied as mulch. This method of mulching can greatly reduce erosion control costs.

-Polyethylene film shall be secured over banks or stockpiled soil material for tem- porary protection. This material can be salvaged and re-used.

Applying Mulch
When mulch is used without seeding, mulch shall be applied to provide full coverage of the exposed area.

-Dry straw or hay mulch and wood chips shall be applied uniformly by hand or by mechanical equipment.

-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.

-Apply polyethylene fi lm on exposed areas.

Anchoring Mulch
-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. Tackifers, binders and hydraulic mulch with tackifier specifically designed for tacking straw can be substituted for emulsified asphalt. Please refer to specification Tac- Tackifers. Plastic mesh or netting with mesh no larger than one inch by one inch shall be installed according to manufacturer's specifications.

-Netting of the appropriate size shall be used to anchor wood waste. Openings of the net- ting shall not be larger than the average size of the wood waste chips.

-Polyethylene fi lm shall be anchor trenched at the top as well as incrementally as necessary.

DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING) Ds2

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

PURPOSE
-To reduce runoff and sediment damage of down stream resources
-To protect the soil surface from erosion
-To improve wildlife habitat
-To improve aesthetics
-To improve tilth, infiltration and aeration as well as organic matter for permanent plantings

REQUIREMENT FOR REGULATORY COMPLIANCE
Mulch or temporary grassing shall be applied to all exposed areas within 14 days of disturbance. Temporary grassing, instead of mulch, can be applied to rough graded areas that will be exposed for less than six months. If an area is expected to be undisturbed for longer than six months, permanent perennial vegetation shall be used. If optimum planting conditions for temporary grassing 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 Temporary Seeding).

CONDITIONS
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. Note: Some species of temporary vegetation are not appropriate for companion crop plantings because of their potential to out-compete the desired species (e.g. annual ryegrass). Contact NRCS or the local SWCD for more information.

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 hand-seeding, seedbed preparation is not required if the soil material is loose and not sealed by rainfall.

When soil has been sealed by rainfall or con- sists 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 determined by soil test for pH. Quick acting lime should be incorporated to modify pH during the germination period. Bio stimulants should also be considered when there is less than 3% organic matter in the soil. Graded areas require lime application. Soils must be tested to deter- mine required amounts of fertilizer and amendments. Fertilizer should be applied before land preparation and incorporated with a disk, ripper, or chisel. On slopes too steep for, or inaccessible to equipment, fertilizer shall be hydraulically applied, preferably in the first pass with seed and some hydraulic mulch, then topped with the remaining required application rate.

Seeding
Select a grass or grass-legume mixture suit- able to the area and season of the year. Seed shall be applied uniformly by hand, cyclone seeder, drill, culti-packer-seeder, or hydraulic seeder (slurry including seed and fertilizer). Drill or cultipacker seeders should normally place seed one-quarter to one-half inch deep. Appropriate depth of planting is ten times the seed diameter. Soil should be "raked" lightly to cover seed with soil if seeded by hand. See Table 6-4.1

Mulching
Temporary vegetation can, in most cases, be established without the use of mulch, provided there is little to no erosion potential. However, the use of mulch can often accelerate and enhance germination and vegetation establishment. Mulch without seeding should be considered for short term protection. Refer to Ds1 - Disturbed Area Stabilization (With Mulching Only).

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

DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION) Ds3

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

PURPOSE
-To protect the soil surface from erosion
-To reduce damage from sediment and runoff to down-stream areas
-To improve wildlife habitat and visual resources
-To improve aesthetics

REQUIREMENT FOR REGULATORY COMPLIANCE
This practice shall be applied immediately to rough graded areas that will be undisturbed for longer than six months. This practice or sodding shall be applied immediately to all areas at final grade. Final Stabilization means that all soil disturbing activities at the site have been completed, and that for unpaved areas and areas not covered by permanent structures and areas located outside the waste disposal limits of a landfill cell that has been certified by the GA EPD for waste disposal, 100% of the soil surface is uniformly covered in permanent vegetation with a density of 70% or greater, or landscaped ac- cording to the Plan (uniformly covered with landscaping materials in planned landscaped areas), or equivalent permanent stabilization measures. Permanent vegetation shall consist of, planted trees, shrubs, perennial vines; or a crop of perennial vegetation appropriate for the region, such that within the growing season a 70% coverage by perennial vegetation shall be achieved. Final stabilization applies to each phase of construction. For linear construction projects on land used for agricultural or silvicultural purposes, final stabilization may be accomplished by stabilizing the disturbed land for its agricultural or silvicultural use. Until this standard is satisfied and permanent control measures and facilities are operational, interim stabilization measures and temporary erosion and sedimentation control measures shall not be removed.

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

PLANNING CONSIDERATIONS

-Use conventional planting methods where possible.

-When mixed plantings are done during marginal planting periods, companion crops shall be used.

-No-till planting is effective when planting is done following a summer or winter annual cover crop. Sericea lespedeza planted no-till into stands of rye is an excellent procedure.

-Block sod provides immediate cover. It is especially effective in controlling erosion adjacent to concrete flumes and other structures. Refer to Specification Ds4-Disturbed Area Stabilization (With Sodding).

-Irrigation should be used when the soil is dry or when summer plantings are done.

-Low maintenance plants, as well as natives, should be used to ensure long-lasting erosion control.

-Mowing should not be performed during the quail nesting season (May to September).

-Wildlife plantings should be included in critical area plantings.

Wildlife Plantings
Commercially available plants beneficial to wildlife species include the following:

Mast Bearing Trees

Beech, Black Cherry, Blackgum, Chestnut, Chinkapin, Hackberry, Hickory, Honey Locust, Native Oak, Persimmon, Sawtooth Oak and Sweetgum.

All trees that produce nuts or fruits are favored by many game species. Hickory provides nuts used mainly by squirrels and bear.

Shrubs and Small Trees

Bayberry, Bicolor Lespedeza, Crabapple, Dog- wood, Huckleberry or Native Blueberry, Mountain Laurel, Native Holly, Red Cedar, Red Mulberry, Sumac, Wax Myrtle, Wild Plum and Blackberry.

Plant in patches without tall trees to develop stable shrub communities. All produce fruits used by many kinds of wildlife, except for lespedeza which produces seeds used by quail and songbirds.

Grasses, Legumes, Vines and Temporary Cover

Bahiagrass, Bermudagrass, Grass-Legume mixtures, Partridge Pea, Annual Lespedeza, Orchardgrass (for mountains), Browntop Millet (for temporary cover), and Native grapes.

Provides herbaceous cover in clearings for a game bird brood-rearing habitat. Appropriate legumes such as vetches, clovers, and lespedezas may be mixed with grass, but they may die out after a few years.

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

When conventional seeding and fertilizing are to be done, grade and shape where feasible and practical, so that equipment can be used safely and efficiently during seedbed preparation, seeding, mulching and maintenance of the vegetation.

Concentrations of water that will cause excessive soil erosion shall be diverted to a safe outlet. Diversions and other treatment practices shall conform with the appropriate standards and specifications.

Lime and Fertilizer Rates and Analysis
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.

Lime spread by conventional equipment shall be "ground limestone." Ground limestone is calcitic or dolomitic limestone ground so that 90 percent of the material will pass through a 10-mesh sieve, not less than 50 percent will pass through a 50-mesh sieve and not less than 25 percent will pass through a 100-mesh sieve.

Fast-acting lime spread by hydraulic seeding equipment should be "finely ground limestone" spanning from the 180 micron size to the 5 micron size. Finely ground limestone is calcitic or dolomitic limestone ground so that 95 percent of the material will pass through a 100-mesh sieve.

It is desirable to use dolomitic limestone in the Sand Hills, Southern Coastal Plain and Atlantic Coast Flatwoods MLRAs. (See Figure 6-4.1)

Agricultural lime is generally not required where only trees are planted.

Initial fertilization, nitrogen, topdressing, and maintenance fertilizer requirements for each species or combination of species are listed in Table 6-5.1.

Lime and Fertilizer Application
When hydraulic seeding equipment is used, the initial fertilizer shall be mixed with seed, innoculant (if needed), and wood cellulose or wood pulp fiber mulch and applied in a slurry. The innoculant, if needed, shall be mixed with the seed prior to being placed into the hydraulic seeder. The slurry mixture will be agitated during application to keep the ingredients thoroughly mixed. The mixture will be spread uniformly over the area within one hour after being placed in the hydroseeder.

Finely ground limestone can be applied in the mulch slurry or in combination with the top dressing.

When conventional planting is to be done, lime and fertilizer shall be applied uniformly in one of the following ways:

-Apply before land preparation so that it will be mixed with the soil during seedbed preparation.

-Mix with the soil used to fill the holes, distribute in furrows.

-Broadcast after steep surfaces are scarified, pitted or trenched.

-A fertilizer pellet shall be placed at root depth in the closing hole beside each pine tree seedling.

Plant Selection
Refer to Tables 6-4.1, 6-5.2, 6-5.3 and 6-5.4 for approved species. Species not listed shall be approved by the State Resource Conservationist of the Natural Resources Conservation Service before they are used.

Plants shall be selected on the basis of species characteristics, site and soil conditions, planned use and maintenance of the area; time of year of planting, method of planting; and the needs and desires of the land user.

Some perennial species are easily established and can be planted alone. Examples of these are Common Bermuda, Tall Fescue, and Weeping Lovegrass.

Other perennials, such as Bahia Grass and Seri- cea Lespedeza, are slow to become established and should be planted with another perennial spe- cies. The additional species will provide quick cover and ample soil protection until the target perennial species become established. For example, Common seeding combinations are 1) Weeping Lovegrass with Sericea Lespedeza (scarified) and 2) Tall Fescue with Sericea Lespedeza (unscarified).

Plant selection may also include annual companion crops. Annual companion crops should be used only when the perennial species are not planted during their optimum planting period. A common mixture is Brown Top Millet with Common Bermuda in mid-summer. Care should be taken in selecting companion crop species and seeding rates because annual crops will compete with perennial species for water, nutrients, and growing space. A high seeding rate of the companion crop may prevent the establishment of perennial species.

Ds3 CONTINUED
Ryegrass shall not be used in any seeding mixtures containing perennial species due to its ability to out-compete desired species chosen for permanent perennial cover.

Seed Quality
The term "pure live seed" is used to express the quality of seed and is not shown on the label. Pure live seed, PLS, is expressed as a percent- age of the seeds that are pure and will germinate. Information on percent germination and purity can be found on seed tags. PLS is deter- mined by multiplying the percent of pure seed with the percent of germination; i.e.,

(PLS = % germination x % purity)

EXAMPLE:
Common Bermuda seed 70% germination, 80% purity
-PLS = 70% germination x 80% purity PLS = 56%
The percent of PLS helps you determine the amount of seed you need. If the seeding rate is 10 pounds PLS and the bulk seed is 56 % PLS, the bulk seeding rate is:
-10 lbs. PLS/acre = 17.9 lbs/acre
56% PLS
-You would need to plant 17.9 lbs/acre to provide 10 lbs/acre of pure live seed.

Seedbed Preparation
Seedbed preparation may not be required where hydraulic seeding and fertilizing equipment is to be used (but is strongly recommended for any seeding process, when possible). When conventional seeding is to be used, seedbed preparation will be done as follows:

Broadcast plantings

-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.
-Tillage may be done with any suitable equipment.
-Tillage should be done on the contour where feasible.
-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

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

Innoculants
All legume seed shall be inoculated with appropriate nitrogenfixing bacteria. The innoculant shall be a pure culture prepared specifically for the seed species and used within the dates on the container.
A mixing medium recommended by the manufacturer shall be used to bond the innoculant to the seed. For conventional seeding, use twice the amount of innoculant recommended by the manufacturer. For hydraulic seeding, four times the amount of innoculant recommended by the manufacturer shall be used.
All inoculated seed shall be protected from the sun and high temperatures and shall be planted the same day inoculated. No inoculated seed shall remain in the hydroseeder longer than one hour.

Planting
Hydraulic Seeding
Mix the seed (innoculated 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 fi rmed seedbed. For broadcast planting, use a culti-packer-seeder, drill, rotary seeder, other mechanical seeder, or hand seeding to distribute the seed uniformly over the area to be treated. Cover the seed lightly with 1/8 to 1/4 inch of soil for small seed and 1/2 to 1 inch for large seed when using a cultipacker or other suitable equipment.
No-Till Seeding
No-till seeding is permissible into annual cov- er 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 seed- ing shall be done with appropriate no-till seeding equipment. The seed must be uniformly distrib- uted 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% to 100% soil cover. When selecting a mulch, design professionals should consider the mulch's functional longevity, vegetation establishment enhancement, and erosion control effectiveness. Select the mulching material from the following and apply as indicated:
-Dry straw or dry hay of good quality and free of weed seeds can be used. Dry straw shall be applied at the rate of 2 tons per acre. Dry hay shall be applied at a rate of 2 1/2 tons per acre.
-Wood cellulose mulch or wood pulp fiber shall be used with hydraulic seeding. It shall be applied at the rate of 500 pounds per acre. Dry straw or dry hay shall be applied (at the rate indicated above) after hydraulic seeding.
-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.
-Sericea Lespedeza hay containing mature seed shall be applied at a rate of three tons per acre.
-Pine straw or pine bark shall be applied at a thickness of 3 inches for bedding purposes. Other suitable materials in sufficient quantity may be used where ornamentals or other ground covers are planted. This is not appropriate for seeded areas.
-When using temporary erosion control blan-kets or block sod, mulch is not required.
-Bituminous treated roving may be applied on planted areas, slopes, in ditches or dry water- ways 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 Depart- ment of Transportation specifications.
Wood cellulose and wood pulp fibers shall not contain germination or growth inhibiting factors. They shall be evenly dispersed when agitated in water. The fibers shall contain a dye to allow visual metering and aid in uniform application during seeding.

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

Wood cellulose or wood fiber mulch shall be applied uniformly with hydraulic seeding equipment.

Anchoring Mulch
Anchor straw or hay mulch immediately after application by one of the following methods:

-Hay and straw mulch shall be pressed into the soil immediately after the mulch is spread. A special "packer disk"' or disk harrow with the disks set straight may be used. The disks may be smooth or serrated and should be 20 inches or more in diameter and 8 to 12 inches apart. The edges of the disks shall be dull enough to press the mulch into the ground without cutting it, leaving much of it in an erect position. Mulch shall not be plowed into the soil.
-Synthetic tackifiers, binders or hydraulic mulch specifi cally designed to tack straw, shall be applied in conjunction with or im- mediately after the mulch is spread. Syn- thetic tackifi ers shall be mixed and applied according to manufacturer's specifications. All tackifi ers, binders or hydraulic mulch specifi cally designed to tack straw should be verifi ed nontoxic through EPA 2021.0 testing. Refer to Tackifi ers-Tac
-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.
-Plastic mesh or netting with mesh no larger than one inch by one inch may be needed to anchor straw or hay mulch on unstable soils and concentrated flow areas. These materials shall be installed and anchored according to manufacturer's specifications.

Bedding Material
Mulch is used as a bedding material to con- serve moisture and control weeds in nurseries, ornamental beds, around shrubs, and on bare areas on lawns.

Material	Depth
Grain straw	4" to 6"
Grass Hay	4" to 6"
Pine needles	3" to 5"
Wood waste	4" to 6"

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

Topdressing
Topdressing will be applied on all temporary and permanent (perennial) species planted alone or in mixtures with other species. Recommended rates of application are listed in Table 6-5.1.

Second Year and Maintenance Fertilization
Second year fertilizer rates and maintenance fertilizer rates are listed in Table 6-5.1.

Lime Maintenance Application
Apply one ton of agricultural lime every 4 to 6 years or as indicated by soil tests. Soil tests can be conducted to determine more accurate requirements. if desired.

Use and Management
-Mow Sericea Lespedeza only after frost to ensure that the seeds are mature. Mow between November and March.
-Bermudagrass, Bahiagrass and Tall Fescue may be mowed as desired. Maintain at least 6 inches of top growth under any use and management. Moderate use of top growth is beneficial after establishment.
-Exclude traffic until the plants are well established. Because of the quail nesting season, mowing should not take place between May and September.

PLANTS, PLANTING RATES, AND PLANTING DATES FOR TEMPORARY COVER OR COMPANION CROPS (Ds2)

PLANTING DATES BY RESOURCE AREAS (J F M A M J J A S O N D) — (DOUBLE LINES INDICATE OPTIMUM DATES, SINGLE LINES INDICATE PERMISSABLE BUT MARGINAL DATES.)

SPECIES	BROADCAST 2/RATES PER ACRE	3/PLS PER 1000 FT2	RESOURCE AREA 4/	REMARKS
BARLEY (Hordeum vulgare)				14,000 SEED PER POUND. WINTER HARDY. USE ON PRODUCTIVE SOILS.
ALONE	3 bu. (144lbs.)	3.3lbs.	P	
IN MIXTURES	1/2 bu. (24 lbs.)	0.6lbs.		
LESPEDEZA, ANNUAL (Lespedeza striata)				200,000 SEED PER POUND. MAY VOLUNTEER FOR SEVERAL YEARS. USE INOCULENT EL.
ALONE	40 lbs.	0.9lbs.	P	
IN MIXTURES	10 lbs.	0.2lbs.		
LOVEGRASS, WEEPING (Eragrotis curvula)				1,500,000 SEED PER POUND MAY LAST FOR SEVERAL YEARS. MIX WITH SERICEA LESPEDEZA.
ALONE	4 lbs.	0.1 lbs.	P	
IN MIXTURES	2 lbs.	0.05 lbs.		
MILLET, BROWNTOP (Pancium fasciculatum)				137,000 SEED PER POUND. QUICK DENSE COVER. WILL PROVIDE TOO MUCH COMPETITION IN MIXTURES IF SEEDED AT HIGH RATES.
ALONE	40 lbs.	0.9lbs.	P	
IN MIXTURES	10 lbs.	0.2lbs.		
MILLET, PEARL (Pennesetum glaucum)				88,000 SEED PER POUND. QUICK DENSE COVER. MAY REACH 5' IN HEIGHT. NOT RECOMMENDED FOR MIXTURES.
ALONE	50 lbs.	1.1lbs.	P	
IN MIXTURES	N/A	N/A		
OATS (Avena sativa)				13,000 SEED PER POUND. USE ON PRODUCTIVE SOIL. NOT AS WINTER HARDY AS RYE OR BARLEY.
ALONE	4 bu. (128lbs.)	2.9lbs.	P	
IN MIXTURES	1 bu. (32 lbs.)	0.7lbs.		
RYE (Secale cereale)				18,000 SEED PER POUND. QUICK COVER. DROUGHT TOLERANT AND WINTER-HARDY.
ALONE	3 bu. (168 lbs.)	3.9lbs.	P	
IN MIXTURES	1/2 bu. (28 lbs.)	0.6lbs.		
RYEGRASS, ANNUAL (Lolium temulentum)				227,000 SEED PER POUND. DENSE COVER. VERY COMPETATIVE AND IS NOT TO BE USED IN MIXTURES.
ALONE	40 lbs.	0.9lbs.	P	
IN MIXTURES	N/A	N/A		
SUDANGRASS (Sorghum sudanese)				55,000 SEED PER POUND. GOOD ON DROUGHTY SITES. NOT RECOMMEND-ED FOR MIXTURES.
ALONE	60 lbs.	1.4lbs.	P	
IN MIXTURES	N/A	N/A		
WHEAT (Triticum aestivum)				15,000 SEED PER POUND. WINTER HARDY.
ALONE	3 bu. (180lbs.)	4.1lbs.	P	
IN MIXTURES	1/2 bu.	0.7lbs.		

1. TEMPORARY COVER CROPS ARE VERY COMPETITIVE AND WILL CROWN OUT PERENNIALS IF SEEDED TOO HEAVILY.
2. REDUCE SEEDING RATES BY 50% WHEN DRILLED.
3. PLS IS AN ABBREVIATION FOR PURE LIVE SEED.
4. P REPRESENTS THE SOUTHERN PIEDMONT MLRA.

MAINTENANCE STATEMENT:
ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CHECKED DAILY AND ANY DEFICIENCIES NOTED WILL BE CORRECTED BY THE END OF EACH DAY. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED IF DEEMED NECESSARY AFTER ON-SITE INSPECTION BY THE ISSUING AUTHORITY.

INSTALLATION STATEMENT:
THE INSTALLATION OF EROSION CONTROL MEASURES AND PRACTICES SHALL TAKE PLACE PRIOR TO OR CONCURRENT WITH LAND DISTURBING ACTIVITIES.

ALL CUT AND FILL SLOPES MUST BE SURFACED ROUGHENED AND VEGETATED WITHIN (3) DAYS OF THEIR COMPLETION.

ALL FILL SLOPES WILL HAVE SILT FENCE AT TOE OF SLOPE. - CLEARING LIMITS SHALL BE CLEARLY DELINEATED WITH EITHER TREE SAVE FENCE OR OTHER SUITABLE MEANS.

Table 6-5.1 Fertilizer Requirements

TYPE OF SPECIES	YEAR	ANALYSIS OR EQUIVALENT N-P-K	RATE	N TOP DRESSING RATE
1. Cool season grasses	First Second Maintenance	6-12-12 6-12-12 10-10-10	1500 lbs. / ac. 1000 lbs. / ac. 400 lbs. / ac.	50-100 lbs. / ac. 1/2/ - 30
2. Cool season grasses and legumes.	First Second Maintenance	6-12-12 10-10-10 10-10-10	1500 lbs. / ac. 1000 lbs. / ac. 400 lbs. / ac.	50-100 lbs. / ac. 1/ - -
3. Ground Covers	First Second Maintenance	10-10-10 10-10-10 10-10-10	1300 lbs. / ac. 3/ 1300 lbs. / ac. 3/ 1100 lbs. / ac.	- - -
4. Pine seedlings	First	10/5/2020	one 21-gram pellet per seedling placed in the closing hole	-
5. Shrub Lespedeza	First Maintenance	0-10-10 0-10-10	700 lbs. / ac. 700 lbs. / ac. 4/	-
6. Temporary cover crops seeded alone	First	10/10/2010	500 lbs. / ac.	30 lbs. / ac. 5/
7. Warm season grasses	First Second Maintenance	6-12-12 6-12-12 10-10-10	1500 lbs. / ac. 800 lbs. / ac. 400 lbs. / ac.	50-100 lbs. / ac. 1/6/ 50-100 lbs. / ac. 2/ 30 lbs. / ac.
8. Warm season grasses and legumes	First Second Maintenance	6-12-12 0-10-10 0-10-10	1500 lbs. / ac. 800 lbs. / ac. 400 lbs. / ac.	50 lbs. / ac. 6/

1/ Apply in spring following seeding. 2/ Apply in split applications when high rates are used. 3/ Apply in 3 split applications. 4/ Apply when plants are pruned. 5/ Apply to grass species only. 6/ Apply when plants grow to a height of 2 to 4 inches.

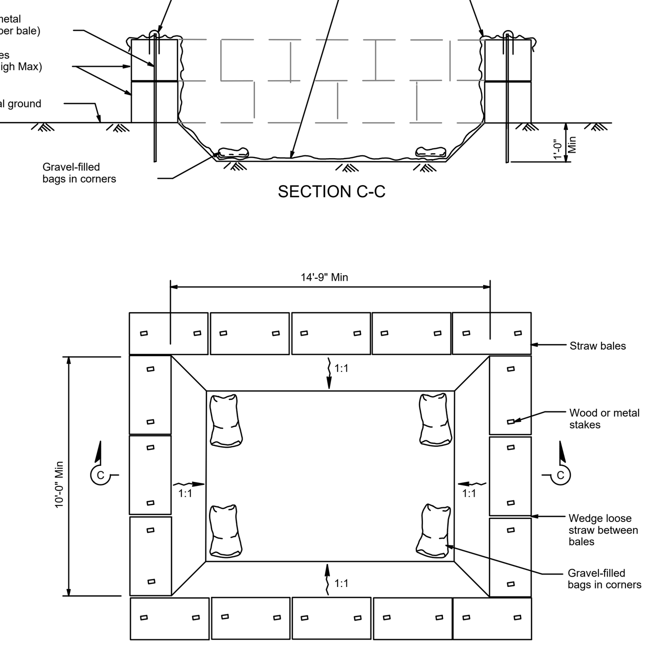
PLANTS, PLANTING RATES, AND PLANTING DATES FOR PERMANENT COVER (Ds3)

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

SPECIES	BROADCAST RATES 1/ PER ACRE	PLS 2/ PER 1000 FT2	RESOURCE AREA 3/	REMARKS
BAHIA, PENSACOLA (Paspalum notatum) alone or with temporary cover / with other perennials	60 lbs. 30 lbs.	1.4 lbs. 0.7 lbs.	P	166,000 SEED PER POUND. LOW GROWING. SOD FORMING. SLOW TO ESTABLISH. PLAN WITH COMPANION CROP. WILL SPREAD INTO BERMUDA PASTURES AND LAWNS. MIX WITH SERCIA LESPEDEZA OR WEEPING LOVEGRASS.
BAHIA, WILMINGTON (Paspalum notatum) alone or with temporary cover / with other perennials	60 lbs. 30 lbs.	1.4 lbs. 0.7 lbs.	P	SAME AS ABOVE.
BERMUDA,COMMON (Cynodon dactylon) alone / with other perennials	10 lbs. 6 lbs.	0.2 lbs. 0.1 lbs.	P	1,787,000 SEED PER POUND QUICK COVER. LOW GROW-ING AND SOD FORMING. FULL SUN. GOOD FOR ATHLETIC FIELDS.
BERMUDA,COMMON (Cynodon dactylon) Unhulled seed with temporary cover / with other perennials	10 lbs. 6 lbs.	0.2 lbs. 0.1 lbs.	P	PLANT WITH WINTER ANNUALS. PLANT WITH TALL FESCUE.
BERMUDA SPRIGS (Pennesetum glaucum)	40 cu.Ft. or sod plugs 3' x 3'	0.9 cu.Ft.	P	A CUBIC FOOT CONTAINS APPROX-IMATELY 650 SPRIGS. A BUSHEL CONTAINS 1.25 CUBIC FEET OR APPROXIMATELY 800 SPRIGS.
CENTIPEDE (Erernochloa ophiuroides)	Block sod only		P	DROUGHT TOLERANT. FULL SON OR PARTIAL SHADE. EFFECTIVE ADJA-CENT TO CONCRETE AND IN CONCE-NTRATED FLOW AREAS. IRRIGATION IS NEEDED UNTIL FULLY ESTABLI-SHED. DO NOT PLANT NEAR PAST-URES. WINTER HARDY AS FAR NORTH AS ATHENS AND ATLANTA.
CROWNVETECH (Coronelia varia) with winter annuals or cool season grasses	15 lbs.	0.3 lbs.	P	100,000 SEED PER POUND. DENSE GROWTH. DROUGHT TOLERANT AND FIRE RESISTANT. ATTRACTIVE ROSE, PINK, AND WHITE BLOSSOMS SPRING TO LATE FALL. MIX WITH 30 POUNDS OF TALL FESCUE OR 15 POUNDS OF RYE. INOCULATE SEED WITH M INOCULANT. USE FROM NORTH ATLANTA AND NORTHWARD
FESCUE, TALL (Festuca arundinacea) alone / with other perennials	50 lbs. 30 lbs.	1.1 lbs. 0.7 lbs.	P	227,000 SEED PER POUND. USE ALONE ONLY ON BETTER SITES. NOT FOR DROUGHTY SOILS. MIX WITH PERENNIAL LESPEDEZAS OR CROWNVETCH. APPLY TOP DRESS-ING IN SPRING FOLLOWING FALL PLANTINGS. NOT FOR HEAVY USE AREAS OR ATHLETIC FIELDS.
LESPEDEZA,SERICEA (Lespedeza cuneata) scarified	60 lbs.	1.4 lbs.	P	350,000 SEED PER POUND. WIDELY ADAPTED. LOW MAINTENANCE. MIX WITH WEEPING LOVE GRASS, COMMON BERMUDA, BAHIA, OR TALL FESCUE. TAKES 2-3 YEARS TO BECOME FULLY ESTABLISHED. EXCELLENT ON ROAD BANKS. INOCULATE SEED WITH EL INOCU-LANT.
unscarified	75 lbs.	1.7 lbs.	P	MIX WITH TALL FESCUE OR WINTER ANNUALS.
seed-bearing hay	3 tons	138 lbs.	P	CUT WHEN SEED IS MATURE, BUT BEFORE IT SHATTERS. ADD TALL FESCUE OR WINTER ANNUALS.
LESPEDEZA Ambro virgata (Lespedeza virgata DC) or Appalow (Lespedeza cuneata [Dumont] G. Don) scarified	60 lbs.	1.4 lbs.	P	300,000 SEED PER POUND. HEIGHT OF GROWTH IS 18-24 IN. ADVANT-AGEOUS IN URBAN AREAS. SPREADING TYPE GROWTH. NEW GROWTH HAS BRONZE COROLAT-ION. MIX WITH WEEPING LOVEGRASS, COMMON BERMUDA, BAHIA, TALL FESCUE OR WINTER ANNUALS. DO NOT MIX WITH SERICEA LESPEDEZA. SLOW TO DEVELOP SOLID STANDS. INOCULATE SEED WITH EL INOCULANT.
unscarified	75 lbs.	1.7 lbs.	P	
LESPEDEZA, SHRUB (Lespedeza bicolor) (Lespedeza thumergii) plants	3' x 3'		P	PROVIDE WILDLIFE FOOD AND COVER.
LOVEGRASS,WEEPING (Eragrotis curvula) alone / with other perennials	4 lbs. 2 lbs.	0.1 lbs. 0.05lbs.	P	1,500,000 SEED PER POUND. QUICK COVER. DROUGHT TOLERANT WELL WITH SERICEA LESPEDEZA ON ROAD BANKS.
MAIDENCANE (Panicum hemitomon sprigs)	2' x 3'	SPACING	P	FOR VERY WET SITES. MAY CLOG CHANNELS. DIG SPRIGS FROM LOCAL SOURCES. USE ALONG RIVERBANKS AND SHORELINES.
PANICGRASS, ATLANTIC COASTAL (Panicum amarum var. amarulum)	20 lbs.	0.5 lbs.	P	GROWS WELL ON COASTAL SAND DUNES, BORROW AREAS, AND GRAVEL PITS. PROVIDES WINTER COVER FOR WILDLIFE. MIX WITH SERICEA LESPEDEZA EXCEPT ON SAND DUNES.
REED CANARY GRASS (Phalaris arundinacea) alone / with other perennials	50 lbs. 30 lbs.	1.1 lbs. 0.7 lbs.	P	GROWS SIMILAR TO TALL FESCUE.
SUNFLOWER, 'AZTEC' MAXIMILLIAN (Helianthus maximiliani)	10 lbs.	0.2 lbs.	P	227,000 SEED PER POUND. MIX WITH WEEPING LOVEGRASS OR OTHER LOW GROWING GRASSES OR LEGUMES.

1/REDUCE SEEDING RATES BY 50% WHEN DRILLED.
2/PLS IS AN ABBREVIATION FOR PURE LIVE SEED.
3/P REPRESENTS THE SOUTHERN PIEDMONT MLRA.

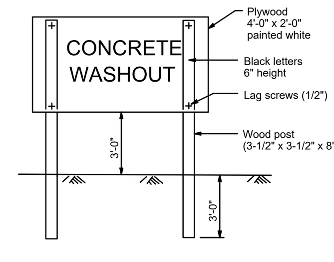
GSWCC EROSION CONTROL CERTIFICATION #13398 – ERIC M. CHINI, P.E.



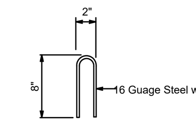
SECTION C-C

PLAN

NOTES:
1. The concrete washout sign shall be installed within 20' of the temporary concrete washout facility.
2. Plastic liner shall be anchored with gravel-filled bags for below grade concrete washout facility.



CONCRETE WASHOUT SIGN DETAIL



STAPLE DETAIL

TEMPORARY CONCRETE WASHOUT

GSWCC Georgia Soil and Water Conservation Commission
ERIC M. CHINI, P.E.
Level II Certified Design Professional
CERTIFICATION NUMBER #13398
ISSUED: 11/18/2024 EXPIRES: 11/18/2027

GSWCC EROSION CONTROL CERTIFICATION #13398 - ERIC M. CHINI, P.E.

BRAVO SITE SET 02-11-2026

CROFT

Croft & Associates
3380 Blue Springs Road
Kennesaw, Georgia 30144
770.529.7714 (p)
www.croftae.com

Rochester DCCM

Rochester | DCCM
425 Oak Street
Gainesville, Georgia 30501
770.718.0600
www.rochester-assoc.com

GEORGIA REGISTERED No. 31411 PROFESSIONAL 01.17.25 ENGINEER ERIC M. CHINI

OWNER

HABERSHAM COUNTY ANIMAL CONTROL
130 JACOBS WAY, SUITE 302
CLARKSVILLE, GA
30523

HABERSHAM COUNTY ANIMAL SHELTER

HABERSHAM ANIMAL CONTROL
OLD ATHENS HWY
CORNELIA, GA
30531

No.	Date	Description
3	2025-11-24	REVISION 3 SET
2	2025-10-27	REVISION 2 SET
1	2025-01-17	VE REVISION 1 SET
0	2024-06-10	PERMIT SET

ISSUANCE

PROJECT NUMBER
2022-313

DRAWN: DCB
CHECKED: EMC

SHEET TITLE
EROSION CONTROL NOTES

SHEET NO.
C-26

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THIS SHEET PLOTS ON 42" X 30"

Du DUST CONTROL ON DISTURBED AREA

DEFINITION
Controlling surface and air movement of dust on construction sites, roads, and demolition sites.

PURPOSE
•To prevent surface and air movement of dust from exposed soil surfaces.
•To reduce the presence of airborne substances which may be harmful or injurious to human health, welfare, or safety, or to animals or plant life.

CONDITIONS
This practice is applicable to areas subject to surface and air movement of dust where on and off-site damage may occur without treatment.

METHOD AND MATERIALS
A. Temporary Methods
Mulches. See standard **Ds1 - Disturbed Area Stabilization (With Mulching Only)**. Synthetic resins may be used instead of asphalt to bind much material. Refer to specification **Tac - Tackifiers**. Resins such as Curasol or Terratack should be used according to manufacturer's recommendations.

Vegetative Cover. See specification **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 specification **Tac - Tackifiers**.

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. Begin plowing on windward side of site. Chisel-type plows spaced about 12 inches apart, spring-toothed harrows, and similar plows are examples of equipment which may produce the desired effect.

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.

B. Permanent Methods

Permanent Vegetation. See specification **Ds3 -Disturbed Area Stabilization (With Permanent Vegetation)**. Existing trees and large shrubs may afford valuable protection if left in place.

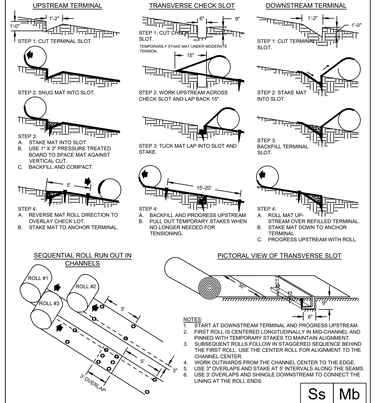
Topsoiling. This entails covering the surface with less erosive soil material. See specification **Tp - Topsoiling**.

Stone. Cover surface with crushed stone or coarse gravel. See specification **Cr-Construction Road Stabilization**.

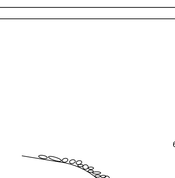
TYPICAL INSTALLATION OF TRANSVERSE OR ROLLED EROSION CONTROL PRODUCTS (RECP)

Du DUST CONTROL ON DISTURBED AREA

BLANKET AND MATTING CROSS-SECTIONS



SEQUENTIAL ROLL RUN OUT IN CHANNELS



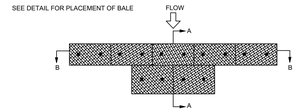
PICTORIAL VIEW OF TRANSVERSE SLOT

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

Ss | Mb

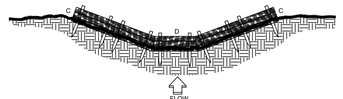
TYPICAL STRAW BALE CHECK DAM

PLAN



SECTION A-A

SECTION B-B

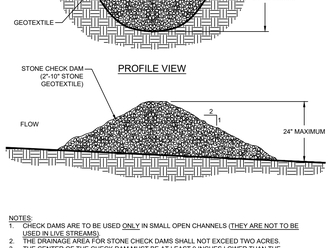


NOTES:
1. BALES SHOULD BE BOUND WITH WIRE OR NYLON STRING AND SHOULD BE PLACED IN ROWS WITH BALE ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. REMOVE #4 REBAR AFTER STRAW BALES ARE NO LONGER IN PLACE.
3. POINT C OF SECTION B-B SHOULD ALWAYS BE HIGHER THAN POINT D.

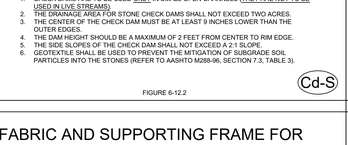
Cd-Hb

STONE CHECK DAM

CROSS SECTION



PROFILE VIEW



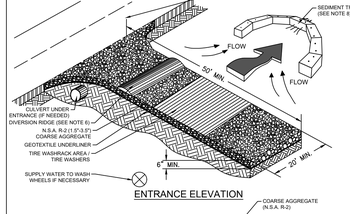
NOTES:
1. CHECK DAMS ARE TO BE USED ONLY IN SMALL OPEN CHANNELS (THEY ARE NOT TO BE USED IN LIVE STREAMS).
2. THE DRAINAGE AREA FOR STONE CHECK DAMS SHALL NOT EXCEED TWO ACRES.
3. THE CENTER OF THE CHECK DAM MUST BE AT LEAST 9 INCHES LOWER THAN THE OUTER EDGES.
4. THE DAM HEIGHT SHOULD BE A MAXIMUM OF 2 FEET FROM CENTER TO RIM EDGE.
5. THE SIDE SLOPES OF THE CHECK DAM SHALL NOT EXCEED A 2:1 SLOPE.
6. GEOTEXTILE SHALL BE USED TO PREVENT THE MITIGATION OF SUBGRADE SOIL PARTICLES INTO THE STONES (REFER TO AASHTO M288-96, SECTION 7.3, TABLE 3).

FIGURE 6-12.2

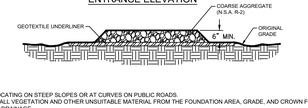
Cd-S

CRUSHED STONE CONSTRUCTION EXIT

EXIT DIAGRAM



ENTRANCE ELEVATION

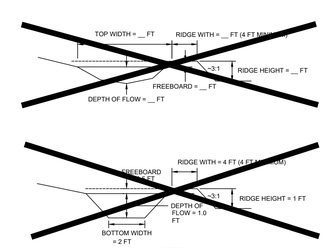


NOTES:
1. AVOID LOCATING ON STEEP SLOPES OR AT CURVES ON PUBLIC ROADS.
2. REMOVE ALL VEGETATION AND OTHER UNSUITABLE MATERIAL FROM THE FOUNDATION AREA, GRADE, AND CROWN FOR POSITIVE DRAINAGE.
3. AGGREGATE SIZE SHALL BE IN ACCORDANCE WITH NATIONAL STONE ASSOCIATION R-2 (1.5"-3.5" STONE).
4. GRAVEL PAD SHALL HAVE A MINIMUM THICKNESS OF 6".
5. PAD WIDTH SHALL BE EQUAL FULL WIDTH AT ALL POINTS OF VEHICULAR EGRESS, BUT NO LESS THAN 20'.
6. A DIVERSION RIDGE SHOULD BE CONSTRUCTED WHEN GRADE TOWARD PAVED AREA IS GREATER THAN 2%.
7. INSTALL PIPE UNDER THE ENTRANCE IF NEEDED TO MAINTAIN DRAINAGE DITCHES.
8. WHEN WASHING IS REQUIRED, IT SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN (DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE ENTRANCE TO A SEDIMENT CONTROL DEVICE).
9. WASHRACKS AND/OR TIRE WASHERS MAY BE REQUIRED DEPENDING ON SCALE AND CIRCUMSTANCE. IF NECESSARY, WASHRACK DESIGN MAY CONSIST OF ANY MATERIAL SUITABLE FOR TRUCK TRAFFIC THAT REMOVE MUD AND DIRT.
10. MAINTAIN AREA IN A WAY THAT PREVENTS TRACKING AND/OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.

Co

SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN

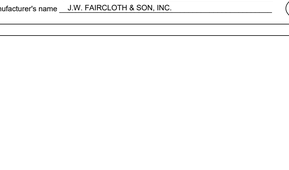
COMPLETE THE APPROPRIATE DETAIL DRAWING FOR THE CHANNEL CROSS-SECTION OF CHOICE:



Di

STONE FILTER RING

PERSPECTIVE VIEW



PLAN VIEW (NOT TO SCALE)

CROSS SECTION (NOT TO SCALE)

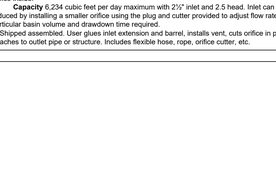
Fr

ROCK DAM FOR SEDIMENT CONTROL

Rd

SILT FENCE - TYPE SENSITIVE

SIDE VIEW



FRONT VIEW

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

Sd1-S

FABRIC AND SUPPORTING FRAME FOR INLET PROTECTION

STEEL FRAME AND SILT FENCE INSTALLATION

NOTES
1. DESIGN IS FOR SLOPES NO GREATER THAN 5% (NOT DESIGNED FOR CONCENTRATED FLOWS).
2. THE STEEL POSTS SUPPORTING THE SILT FENCE MATERIAL SHOULD BE SPACED EVENLY AROUND THE PERIMETER OF THE INLET (MAXIMUM OF 3' APART).
3. THE STEEL POSTS SHOULD BE SECURELY DRIVEN AT LEAST 18" DEEP.
4. THE FABRIC SHOULD BE ENTRENCHED AT LEAST 12" AND THEN BACKFILLED WITH CRUSHED STONE OR COMPACTED SOIL.

Sd2-F

CURB INLET FILTER "PIGS IN BLANKET"

PLAN

SECTION B-B

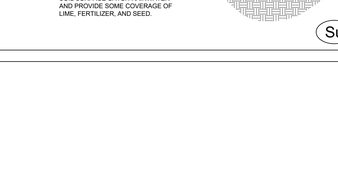
NOTES:
1. INSTALL FILTER AFTER ANY ASPHALT PAVEMENT INSTALLATION.
2. WRAP 8" CONCRETE BLOCKS IN FILTER FABRIC AND SPAN ACROSS CATCH BASIN INLET.
3. FACE OPENINGS IN BLOCKS OUTWARD.
4. LEAVE A GAP OF APPROXIMATELY 4 INCHES BETWEEN THE CURB AND THE FILTERS TO ALLOW FOR OVERFLOW TO PREVENT HAZARDOUS PONDING.
5. INSTALL OUTLET PROTECTION BELOW STORM DRAIN OUTLETS.

Sd2-P

TEMPORARY SEDIMENT TRAP

COURTESY OF CITY OF KNOXVILLE BMP EROSION AND SEDIMENT

ROCK OUTLET



CROSS-SECTION

BOTTOM: L=220 L.F., W=40 L.F.; TOP: L=270 L.F., W=70 L.F.; DEPTH=12.0 L.F.

72 HOURS (3 DAYS)

PROFILE THROUGH EMBANKMENT

CAPACITY = 5 CFS WITH 6 INCHES, HEAD=6.0 INCHES

Sd4-C

TEMPORARY SEDIMENT POND

NOTE
SKIMMER CONFIGURATION SHOWN IS TYPICAL. THE DESIGNER/ENGINEER MAY SUBMIT AN ALTERNATE SKIMMER DETAIL FOR REVIEW.

SKIMMER PERSPECTIVE

SKIMMER FRONTAL SECTION VIEW

SKIMMER SIDE SECTION VIEW

SKIMMER A:
1. Pond, trap or basin size, length* (top and bottom) width* (top and bottom) and depth = _____
2. Time to Drain (hrs) = _____
3. Skimmer Dimensions (orifice and head size)** _____
4. Manufacturer's name _____

SKIMMER B:
1. Pond, trap or basin size, length* (top and bottom) width* (top and bottom) and depth = BOTTOM: L=155 L.F., W=25 L.F.; TOP: L=175 L.F., W=45 L.F.; DEPTH=4.5 L.F.
2. Time to Drain (hrs) = 72 HOURS (3 DAYS)
3. Skimmer Dimensions (orifice and head size)** ORIFICE=2.4 INCHES, HEAD=2.5 INCHES
4. Manufacturer's name J.W. FAIRCLOTH & SON, INC.

Sk

6.0" FAIRCLOTH SKIMMER SURFACE DRAIN CUT SHEET

J.W. FAIRCLOTH & SON, INC.

SKIMMER A www.FaircothSkimmer.com

INLET NOTE:
THE INLET ORIFICE IS SHIPPED WITH THE MINIMUM ORIFICE SIZE OPENING. USE THE SUPPLIED CUTTING TOOL TO CUT THE ORIFICE TO A DIAMETER OF 4.8 INCHES.

1. Hose can be attached to outlet using the threaded 5" nipple. Typical methods used: on a metal structure a steel stubout welded on the side at the bottom with a 5" threaded coupling or reducers; on a concrete structure with a hole or orifice at the bottom, use a steel plate with a hole and coupling welded to it that will fit over the hole in the concrete and bolted to the structure with sealant.
2. Dimensions are approximate, not intended as plans for construction.
3. Barrel (solid, not foam core pipe) should be 1.4 times the depth of water with a minimum length of 8' so the inlet can be pulled to the side for maintenance. If more than 12' long weight may have to be added to inlet to counter the increased buoyancy.
4. Inlet tapers down from 6" maximum inlet to a 5" barrel and hose. Barrel is smaller to reduce buoyancy and tendency to lift inlet but is sufficient for flow through inlet because of slope. The inlet orifice can be reduced using the plug and cutter provided to control the outflow rate.
5. Inlet is 10" pipe between the straps with slots cut in the inlet and aluminum screen door (smaller than shown in illustration) for access to the 6" inlet and orifice inside.
6. Capacity 51,840 cubic feet per day maximum with 6" inlet and 5" head. Inlet can be reduced by installing a smaller orifice using the plug and cutter provided to adjust flow rate for the particular basin volume and draw-down time required.
7. Shipped assembled. User glues inlet extension and barrel, installs vent, cuts orifice in plug and attaches to outlet pipe or structure. Includes flexible hose, rope, orifice cutter, etc.

2.5" FAIRCLOTH SKIMMER SURFACE DRAIN CUT SHEET

J.W. FAIRCLOTH & SON, INC.

SKIMMER B www.FaircothSkimmer.com

INLET NOTE:
THE INLET ORIFICE IS SHIPPED WITH THE MINIMUM ORIFICE SIZE OPENING. USE THE SUPPLIED CUTTING TOOL TO CUT THE ORIFICE TO A DIAMETER OF 2.4 INCHES.

1. Skimmer can be attached to a straight 4" sch 40 pipe through the dam but the pipe may need to be anchored to the bottom at the connection so it is secure. Coupling can be removed and hose attached to outlet using the threaded 2" fitting. Typical methods used: on a metal structure a steel stubout welded on the side at the bottom with a 2" threaded coupling or reducers; on a concrete structure with a hole or orifice at the bottom, use a steel plate with a hole cut in it and coupling welded to it that will fit over the hole in the concrete and bolted to the structure with sealant: grout a 4" pvc pipe in a hole in the concrete to connect the skimmer.
2. Dimensions are approximate, not intended as plans for construction.
3. Barrel (solid, not foam core pipe) should be 1.4 times the depth of water with a minimum length of 6' so the inlet can be pulled to the side for maintenance. If more than 8' long weight may have to be added to inlet to counter the increased buoyancy.
4. Inlet tapers down from 2 ½" maximum inlet to a 1½" barrel and hose. Barrel is smaller to reduce buoyancy and tendency to lift inlet but is sufficient for flow through inlet because of slope. The inlet orifice can be reduced using the plug and cutter provided to control the outflow rate.
5. Inlet is 5" pipe between the straps with aluminum screen door for access to the 2½" inlet and orifice inside.
6. **Capacity** 6,234 cubic feet per day maximum with 2½" inlet and 2.5 head. Inlet can be reduced by installing a smaller orifice using the plug and cutter provided to adjust flow rate for the particular basin volume and drawdown time required.
7. Shipped assembled. User glues inlet extension and barrel, installs vent, cuts orifice in plug and attaches to outlet pipe or structure. Includes flexible hose, rope, orifice cutter, etc.

RIPRAP OUTLET PROTECTION

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 DIAMETERBUT NOT LESSTHAN 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

FILL SLOPE TREATMENT

EACH LIFT OF THE FILL IS COMPACTED, BUT THE OUTER FACE OF THE SLOPE IS ALLOWED TO REMAIN LOOSE SO THAT THE ROCKS, CLODS, ETC. REACH THE NATURAL ANGLE OF REPOSE.

TRACKING

DOZER TREADS CREATE GROOVES PERPENDICULAR TO THE SLOPE.

Su

STAIR STEPPING CUT SLOPES

WATER, SOIL, AND FERTILIZER ARE HELD BY STEPS -- PLANTS CAN BECOME ESTABLISHED ON THE STEPS.

GROOVING SLOPES

GROOVING IS CUTTING FURROWS ALONG THE CONTOUR OF A SLOPE. IRREGULARITIES IN THE SOIL SURFACE CATCH RAINWATER AND PROVIDE SOME COVERAGE OF LIME, FERTILIZER, AND SEED.

Su

BRAVO SITE SET 02-11-2026

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CROFT

Croft & Associates
3380 Blue Springs Road
Kennesaw, Georgia 30144
770.529.7714 (p)
www.croftae.com

Rochester DCCM

Rochester | DCCM
425 Oak Street
Gainesville, Georgia 30501
770.718.0600
www.rochester-assoc.com

GEORGIA REGISTERED PROFESSIONAL ENGINEER No. 31471 ERIC M. CHINN 01.17.25

OWNER

HABERSHAM COUNTY ANIMAL CONTROL
130 JACOBS WAY, SUITE 302
CLARKSVILLE, GA
30523

HABERSHAM COUNTY ANIMAL SHELTER

HABERSHAM ANIMAL CONTROL
OLD ATHENS HWY
CORNELIA, GA
30531

No.	Date	Description
3	2025-11-24	REVISION 3 SET
2	2025-10-27	REVISION 2 SET
1	2025-01-17	VE REVISION 1 SET
0	2024-06-10	PERMIT SET
	ISSUANCE	

PROJECT NUMBER
2022-313

DRAWN: DCB
CHECKED: EMC

SHEET TITLE
EROSION CONTROL DETAILS

SHEET NO.
C-27

THIS SHEET PLOTS ON 42" X 30"

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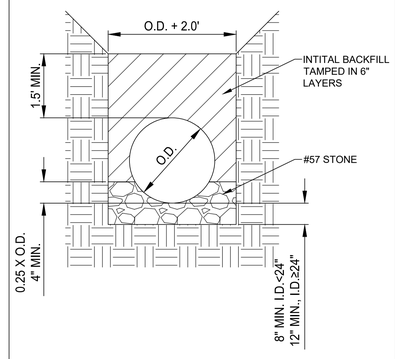
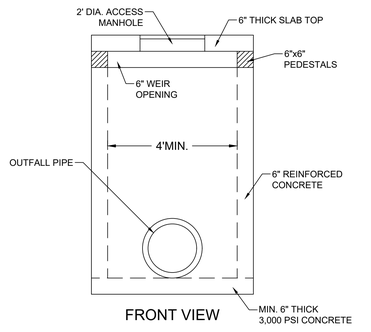
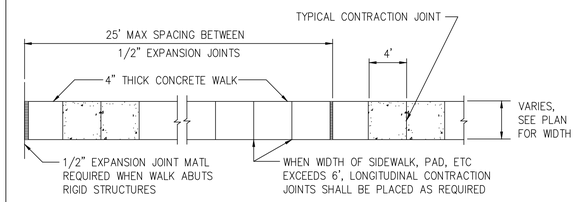


CLASS "C" PIPE BEDDING
SCALE: N.T.S.

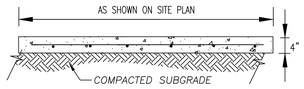


NOT TO SCALE

PRECAST CONCRETE PEDESTAL WEIR



TYPICAL CONCRETE WALKWAY

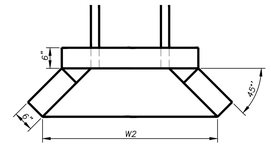


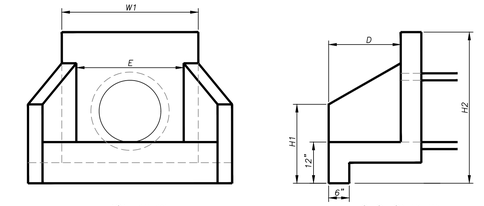
NOTES:

1. *USE ½" X 4" EXPANSIONS JOINTS AT CHANGE OF DIRECTIONS, CURBS RIGID STRUCTURES, AND RIGID PAVEMENT. ON STRAIGHT RUNS PROVIDE EXPANSION JOINTS EVERY 24' FEET AND SCRIBE TRANSVERSE CONTROL JOINTS IN SQUARES EQUAL TO SIDEWALK WIDTH.*
2. *USE READY-MIX CONCRETE WITH 3000 PSI STRENGTH AT 28 DAYS.*
3. *USE REINFORCEMENT 6X6 – W1.4 x W1.4 W.W.M.*
4. *TOOL ALL EXPOSED EDGES AND JOINTS TO ¼" RADIUS.*
5. *BROOM FINISH ACROSS DIRECTION OF TRAVEL.*

DETAILS - N.T.S.

SIDEWALK DETAIL

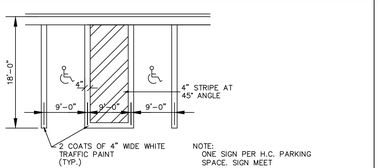




PIPE DIAMETER	W1	W2	H1	H2	D	E
15"-18"	3.17'	4.25'	1.25'	3.17'	1.25'	1.75'
21"-24"	4.17'	6.33'	2.67'	4.17'	1.67'	2.75'
30"-36"	4.67'	9.08'	3.17'	4.67'	2.42'	3.25'
42"-48"	5.67'	10.08'	4.08'	5.67'	2.67'	4.25'
54"-60"	6.42'	11.42'	4.67'	6.33'	2.91'	5.42'
66"-72"	8.42'	12.58'	5.58'	8.00'	3.42'	7.00'

1. CONCRETE USED FOR PRECAST HEADWALLS SHALL BE MINIMUM 4,000 PSI.
2. REINFORCING STEEL SHALL BE #5 BARS, INTERMEDIATE. PLACE REINFORCEMENT A MINIMUM OF 2" FROM SURFACE AT 6" ON CENTER BOTH WAYS.
3. ALL EXPOSED EDGES TO HAVE ¾" CHAMFERS.

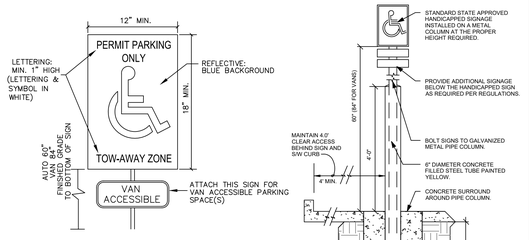
PRECAST CONCRETE HEADWALL



NOTE: ONE SIGN PER H.C. PARKING SPACE. SIGN MEET STATE OF GEORGIA REGULATION.

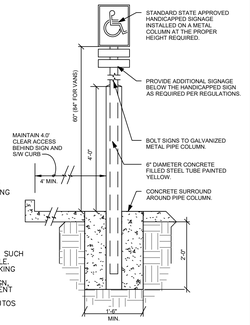
UNIVERSAL PARKING LAYOUT

NOTE: ALL ACCESSIBLE ROUTES, FIXTURES, SLOPES, ETC; MEET ADA ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES, FED. REG. VOL 56, NO. 144.

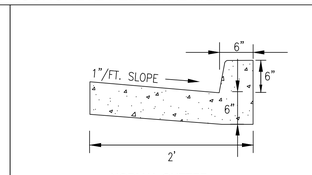


NOTE: THE HANDICAP SIGN SHALL BE A BLUE METAL REFLECTIVE SIGN WHICH IS AT LEAST 12"x18" AND SHALL BE ERECTED AT SUCH HEIGHT THAT IT WILL NOT BE OBSCURED BY A PARKED VEHICLE. THE SIGN SHALL BEAR THE FOLLOWING LEGEND: "PERMIT PARKING ONLY, TOW AWAY ZONE; OR THE INTERNATIONAL SYMBOL OF ACCESSIBILITY. THE LEGEND SHALL BE CENTERED ON THE SIGN, BE PRINTED IN WHITE AND OCCUPY NOT LESS THAN 75 PERCENT OF THE SURFACE AREA. THE HANDICAP SIGN SHALL BE POST MOUNTED 60 IN. FOR AUTOS AND 84 IN. FOR VANS FROM GRADE TO BOTTOM OF SIGN.

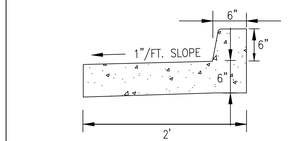
HANDICAP SIGN DETAIL
NOT TO SCALE



ACCESSIBLE PARKING SIGN
NOT TO SCALE



NORMAL GUTTER

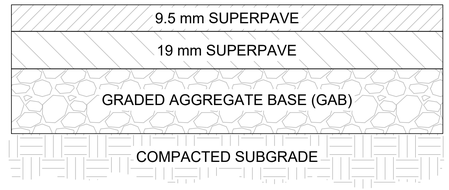


SPILL GUTTER

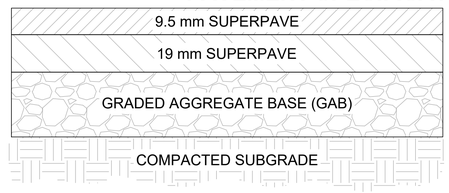
24" CONCRETE CURB & GUTTER

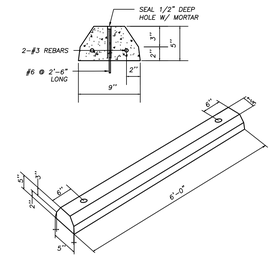
NOTE:
1. NO ROLL CURB ALLOWED.
2. STREET BASE MUST EXTEND FULLY UNDER CURB & GUTTER PER ULDC SECTION 9-13-9-20.

LIGHT DUTY ASPHALT PAVEMENT SPECIFICATION

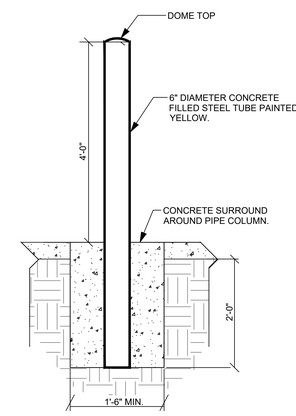


HEAVY DUTY ASPHALT PAVEMENT SPECIFICATION

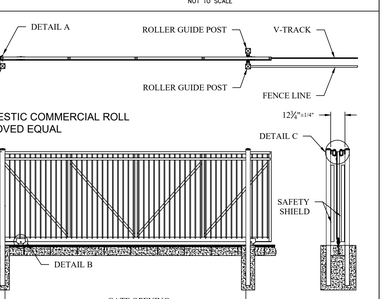




CONCRETE WHEELSTOP



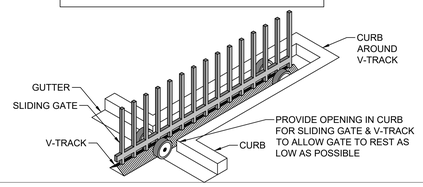
CONCRETE BOLLARD
SCALE: NTS

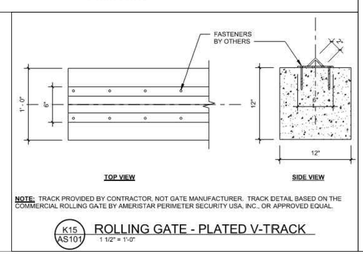


PassPort○ Commercial Ornamental Roll Gate

Ornamental Pickets: ½" Square
Top Rail(s), Uprights and Diagonals Braces: 2"Square
Bottom Rail: 2" x 4" (Notched & Plated for V-track Wheels)
Roll Gate Hardware : Kit #PGKOD
Available in Profiles of 2-Rail, 3-Rail, & 3-Rail w/Rings

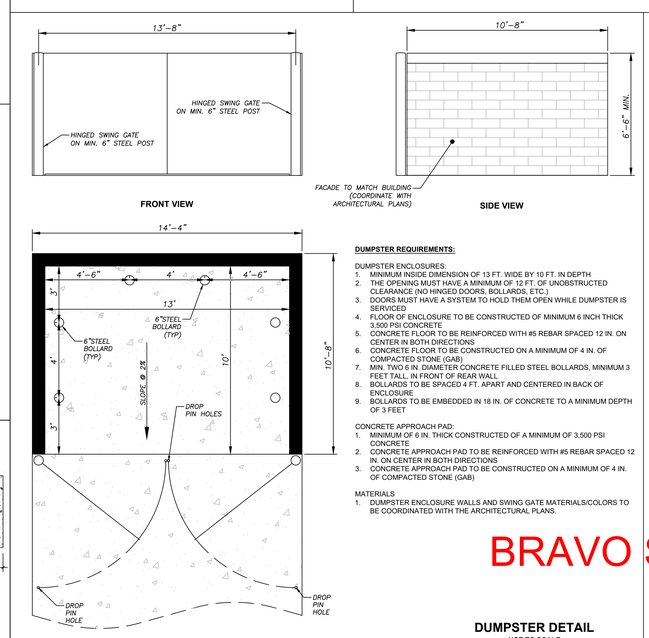
Values shown are nominal and not to be used for installation purposes. See product specification for installation requirements.





NOTE: TRACK PROVIDED BY CONTRACTOR, NOT GATE MANUFACTURER. TRACK DETAIL BASED ON THE COMMERCIAL ROLLING GATE BY AMERISTAR PERIMETER SECURITY USA, INC., OR APPROVED EQUAL.

K15 / AS101 ROLLING GATE - PLATED V-TRACK
1 1/2" = 1'-0"



DUMPSTER REQUIREMENTS:

DUMPSTER ENCLOSURES:
1. MINIMUM INSIDE DIMENSION OF 13 FT. WIDE BY 10 FT. IN DEPTH
2. THE OPENING MUST HAVE A MINIMUM OF 12 FT. OF UNOBSTRUCTED CLEARANCE (NO HINGED DOORS, BOLLARDS, ETC.)
3. DOORS MUST HAVE A SYSTEM TO HOLD THEM OPEN WHILE DUMPSTER IS SERVICED
4. FLOOR OF ENCLOSURE TO BE CONSTRUCTED OF MINIMUM 6 INCH THICK 3,500 PSI CONCRETE
5. CONCRETE FLOOR TO BE REINFORCED WITH #5 REBAR SPACED 12 IN. ON CENTER IN BOTH DIRECTIONS
6. CONCRETE FLOOR TO BE CONSTRUCTED ON A MINIMUM OF 4 IN. OF COMPACTED STONE (GAB)
7. MIN. TWO 6 IN. DIAMETER CONCRETE FILLED STEEL BOLLARDS, MINIMUM 3 FEET TALL, IN FRONT OF REAR WALL
8. BOLLARDS TO BE SPACED 4 FT. APART AND CENTERED IN BACK OF ENCLOSURE
9. BOLLARDS TO BE EMBEDDED IN 18 IN. OF CONCRETE TO A MINIMUM DEPTH OF 3 FEET

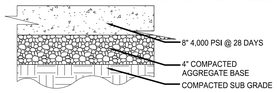
CONCRETE APPROACH PAD:
1. MINIMUM OF 6 IN. THICK CONSTRUCTED OF A MINIMUM OF 3,500 PSI CONCRETE
2. CONCRETE APPROACH PAD TO BE REINFORCED WITH #5 REBAR SPACED 12 IN. ON CENTER IN BOTH DIRECTIONS
3. CONCRETE APPROACH PAD TO BE CONSTRUCTED ON A MINIMUM OF 4 IN. OF COMPACTED STONE (GAB)

MATERIALS
1. DUMPSTER ENCLOSURE WALLS AND SWING GATE MATERIALS/COLORS TO BE COORDINATED WITH THE ARCHITECTURAL PLANS.

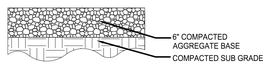
DUMPSTER DETAIL
NOT TO SCALE
COORDINATE MATERIALS WITH ARCHITECTURAL PLANS

PAVEMENT SPECIFICATION NOTE:

ASPHALT AND CONCRETE PAVEMENT DETAIL SPECIFICATIONS ARE IN REFERENCE TO THE "PRELIMINARY GEOTECHNICAL REPORT" PREPARED BY TERRACON CONSULTANTS, INC. AND DATED JUNE 15, 2022.

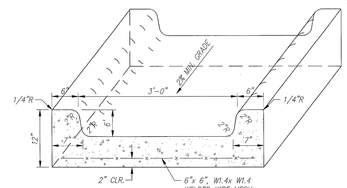


HEAVY DUTY CONCRETE DETAIL
SCALE: NOT TO SCALE



GRAVEL ACCESS DRIVE DETAIL
SCALE: NOT TO SCALE

BRAVO SITE SET 02-11-2026



CONCRETE FLUME

CROFT

Croft & Associates
3380 Blue Springs Road
Kennesaw, Georgia 30144
770.529.7714 (p)
www.croftae.com

Rochester DCCM

Rochester | DCCM
425 Oak Street
Gainesville, Georgia 30501
770.718.0600
www.rochester-assoc.com

GEORGIA REGISTERED No. 31471 PROFESSIONAL 01.17.25 ENGINEER ERIC M. CHENEY

OWNER

HABERSHAM COUNTY ANIMAL CONTROL
130 JACOBS WAY, SUITE 302
CLARKSVILLE, GA
30523

HABERSHAM COUNTY ANIMAL SHELTER

HABERSHAM ANIMAL CONTROL
OLD ATHENS HWY
CORNELIA, GA
30531

No.	Date	Description
3	2025-11-24	REVISION 3 SET
2	2025-10-27	REVISION 2 SET
1	2025-01-17	VE REVISION 1 SET
0	2024-06-10	PERMIT SET
		ISSUANCE

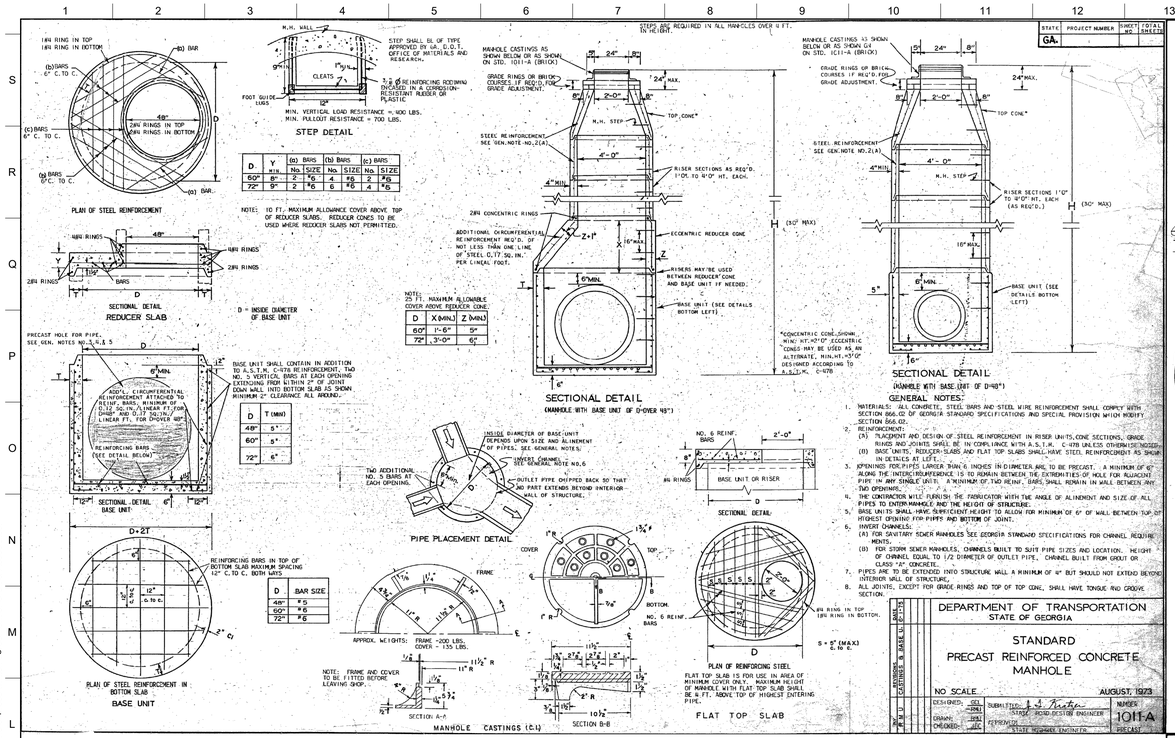
PROJECT NUMBER
2022-313

DRAWN: DCB
CHECKED: EMC

SHEET TITLE
CONSTRUCTION DETAILS

SHEET NO.
C-28

THIS SHEET PLOTS ON 42" X 30"
3" 2" 1" 1/2" 1"
0
S R Q P O N M L K J I H G F E D C B A
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25



STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

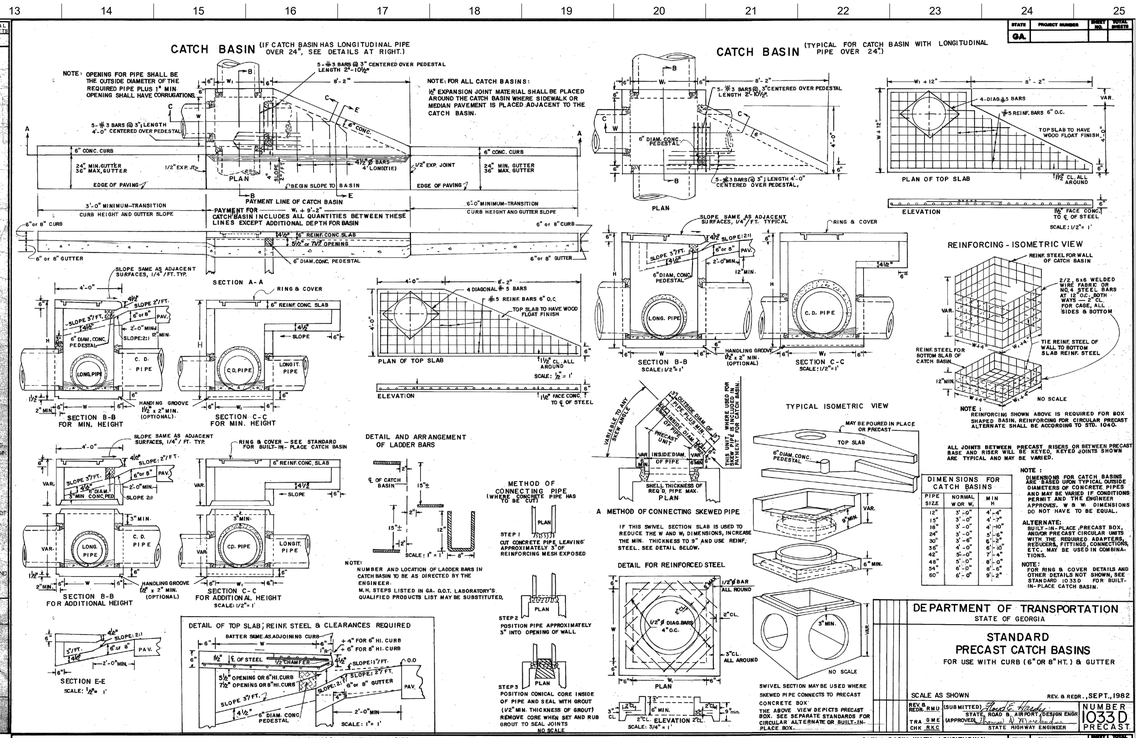
STANDARD
PRECAST REINFORCED CONCRETE MANHOLE

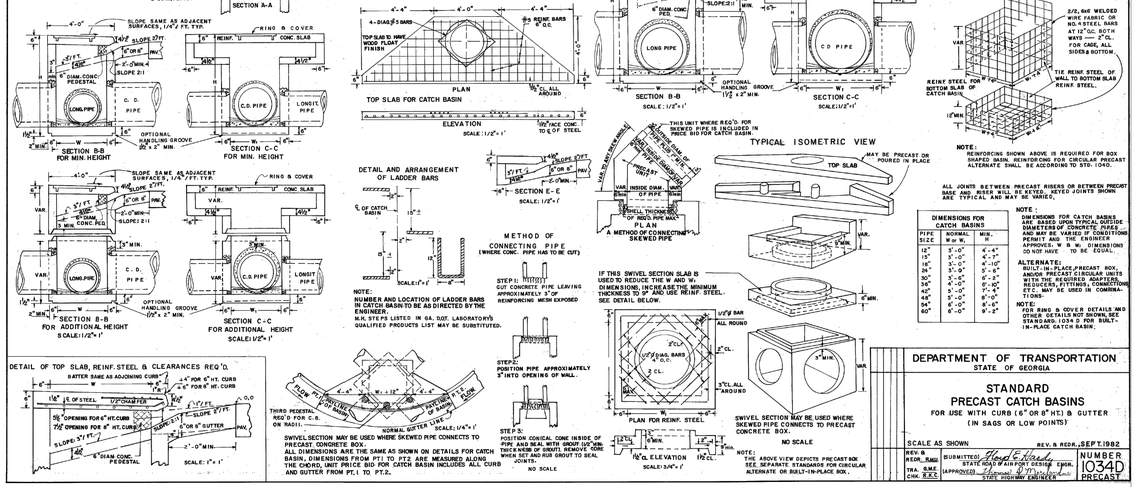
NO SCALE — AUGUST, 1973

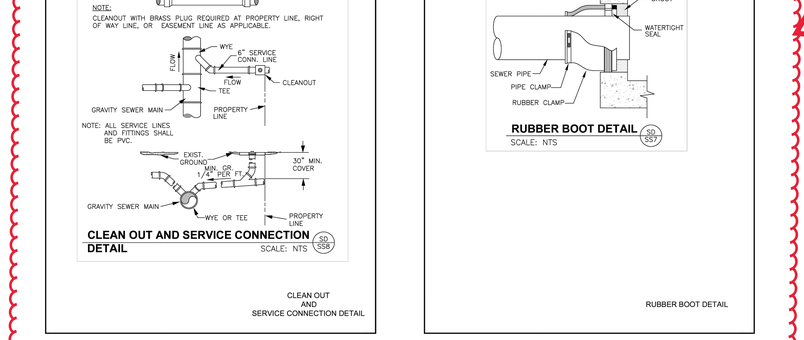
DESIGNED: SEL — SUBMITTED: [signature] — STATE ROAD & TOLLWAY ENGINEER
DRAWN: SEL — APPROVED: [signature] — STATE HIGHWAY ENGINEER
CHECKED: JLC

NUMBER 1011-A
PRECAST

NO.	DATE	BY	REVISIONS & MARK OF ERASURE
1	1-1-74	SEL	CHANGED "A" & "B" TO "C" & "D"
2	1-1-74	SEL	CHANGED "C" & "D" TO "A" & "B"







3

BRAVO SITE SET 02-11-2026

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CROFT
Croft & Associates
3380 Blue Springs Road
Kennesaw, Georgia 30144
770.529.7714 (o)
www.croftae.com

Rochester | DCCM
425 Oak Street
Gainesville, Georgia 30501
770.718.0600
www.rochester-assoc.com

GEORGIA REGISTERED PROFESSIONAL ENGINEER No. 31477 01.17.25 ERIC M. CHINI

OWNER
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130 JACOBS WAY, SUITE 302
CLARKSVILLE, GA
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No.	Date	Description
3	2025-11-24	REVISION 3 SET
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0	2024-06-10	PERMIT SET
ISSUANCE		

PROJECT NUMBER
2022-313

DRAWN: DCB
CHECKED: EMC

SHEET TITLE
CONSTRUCTION DETAILS

SHEET NO.
C-29

3/6/2024 4:01:25 PM
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THIS SHEET PLOTS ON 42" x 30"

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

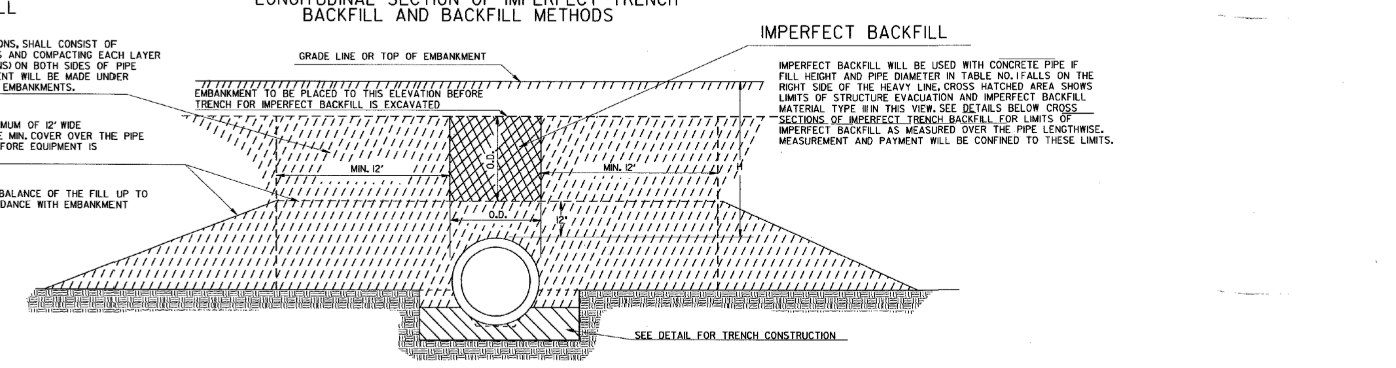
NORMAL BACKFILL

BACKFILL, AS SHOWN BY THE BROKEN LINE SECTIONS, SHALL CONSIST OF PLACING COMPACTABLE SOIL IN 6" (LOOSE) LAYERS AND COMPACTING EACH LAYER (ACCORDING TO GEORGIA STANDARD SPECIFICATIONS) ON BOTH SIDES OF PIPE FOR ITS FULL LENGTH. MEASUREMENT AND PAYMENT WILL BE MADE UNDER ROADWAY EXCAVATION ITEMS FOR FORMATION OF EMBANKMENTS.

NORMAL EMBANKMENT SHALL BE PLACED A MINIMUM OF 12" WIDE ON EACH SIDE OF THE PIPE AND AT LEAST THE MIN. COVER OVER THE PIPE AND COMPACTED TO THE REQUIRED DENSITY BEFORE EQUIPMENT IS ALLOWED TO CROSS.

AFTER BACKFILL HAS BEEN COMPACTED, THE BALANCE OF THE FILL UP TO GRADE LINE SHALL BE CONSTUCTED IN ACCORDANCE WITH EMBANKMENT SPECIFICATIONS

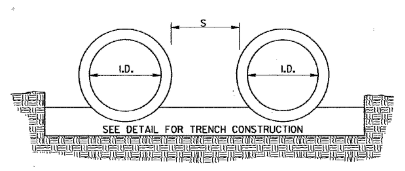
LONGITUDINAL SECTION OF IMPERFECT TRENCH BACKFILL AND BACKFILL METHODS



IMPERFECT BACKFILL

IMPERFECT BACKFILL WILL BE USED WITH CONCRETE PIPE IF FILL HEIGHT AND PIPE DIAMETER IN TABLE NO. 1 FALLS ON THE RIGHT SIDE OF THE HEAVY LINE. CROSS HATCHED AREA SHOWS LIMITS OF STRUCTURE EVACUATION AND IMPERFECT BACKFILL MATERIAL TYPE III IN THIS VIEW. SEE DETAILS BELOW CROSS SECTIONS OF IMPERFECT TRENCH BACKFILL FOR LIMITS OF IMPERFECT BACKFILL AS MEASURED OVER THE PIPE LENGTHWISE. MEASUREMENT AND PAYMENT WILL BE CONFINED TO THESE LIMITS.

MULTIPLE PIPE CULVERT SPACING

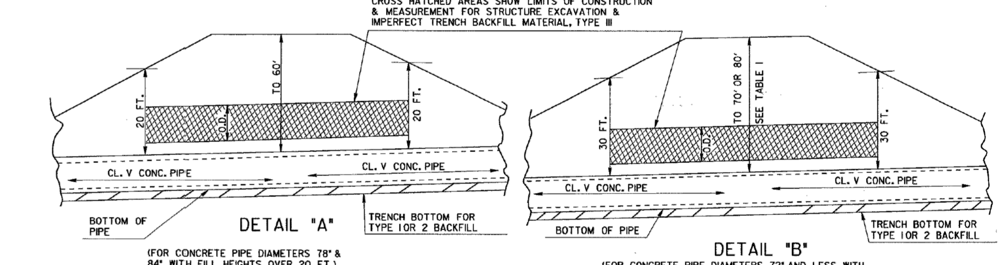


S=ONE INSIDE DIAMETER OF PIPE, OR 3 FEET, WHICHEVER IS SMALLER.
FOR PIPE ARCH CULVERTS, SUBSTITUTE SPAN FOR INSIDE DIAMETER.

NOTE:
FOR MULTIPLE LINES OF C.M. PIPE WITH METAL FLARED END SECTIONS. S MAY BE INCREASED ENOUGH TO AVOID OVERLAP OF END SECTION WINGTIPS. LOCATION OF METAL END SECTION SHOULD BE DETERMINED BEFORE PLACEMENT OF PIPE.

CROSS SECTIONS OF IMPERFECT TRENCH BACKFILL

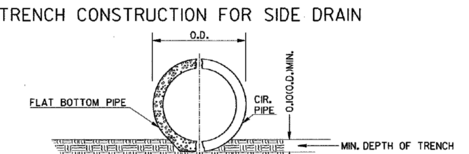
CROSS HATCHED AREAS SHOW LIMITS OF CONSTRUCTION & MEASUREMENT FOR STRUCTURE EXCAVATION & IMPERFECT TRENCH BACKFILL MATERIAL, TYPE III



DETAIL "A"
(FOR CONCRETE PIPE DIAMETERS 78" & 84", WITH FILL HEIGHTS OVER 20 FT.)

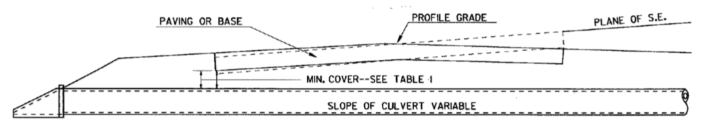
DETAIL "B"
(FOR CONCRETE PIPE DIAMETERS 72" AND LESS WITH FILL HEIGHTS OVER 30 FT.)

TRENCH CONSTRUCTION FOR SIDE DRAIN

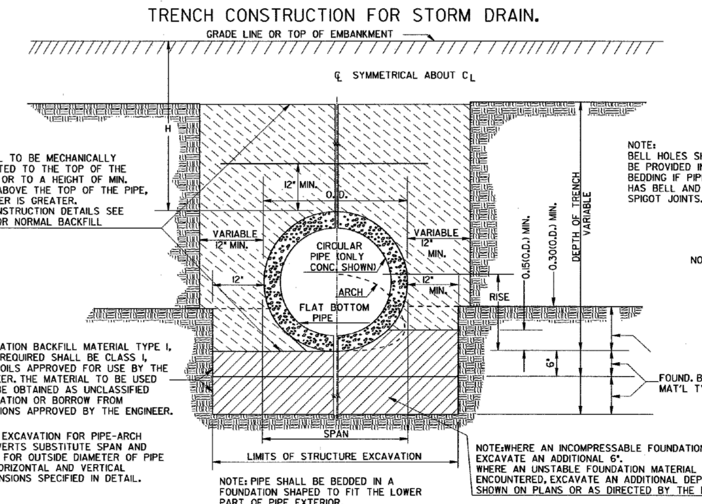


NOTE: THE PIPE SHALL BE BEDDED TO LINE AND GRADE IN A FIRM FOUNDATION SHAPED TO FIT THE LOWER PART OF THE PIPE EXTERIOR. WHERE ROCK EXISTS, EXCAVATE AND BACKFILL WITH COMPRESSABLE MATERIAL (UNCLASSIFIED EXCAVATION) A MINIMUM OF 6" BELOW THE PIPE.

DETAIL SHOWING MINIMUM COVER FOR PIPE CULVERTS



TRENCH CONSTRUCTION FOR STORM DRAIN.



BACKFILL TO BE MECHANICALLY COMPACTED TO THE TOP OF THE TRENCH OR TO A HEIGHT OF MIN. COVER ABOVE THE TOP OF THE PIPE, WHICHEVER IS GREATER. FOR CONSTRUCTION DETAILS SEE NOTE FOR NORMAL BACKFILL

FOUNDATION BACKFILL MATERIAL TYPE I, WHEN REQUIRED SHALL BE CLASS I, OR II SOILS APPROVED FOR USE BY THE ENGINEER. THE MATERIAL TO BE USED WILL BE OBTAINED AS UNCLASSIFIED EXCAVATION OR BORROW FROM LOCATIONS APPROVED BY THE ENGINEER.

FOR EXCAVATION FOR PIPE-ARCH CULVERTS SUBSTITUTE SPAN AND RISE FOR OUTSIDE DIAMETER OF PIPE IN HORIZONTAL AND VERTICAL DIMENSIONS SPECIFIED IN DETAIL.

NOTE: PIPE SHALL BE BEDDED IN A FOUNDATION SHAPED TO FIT THE LOWER PART OF PIPE EXTERIOR.

NOTE: WHERE AN INCOMPRESSABLE FOUNDATION EXISTS, EXCAVATE AN ADDITIONAL 6". WHERE AN UNSTABLE FOUNDATION MATERIAL IS ENCOUNTERED, EXCAVATE AN ADDITIONAL DEPTH AS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER

NOTE: BELL HOLES SHALL BE PROVIDED IN BEDDING IF PIPE HAS BELL AND SPIGOT JOINTS.

NOTE:
TRENCH CONSTRUCTION IS REQUIRED FOR BOTH NORMAL OR IMPERFECT BACKFILL. ALL PIPES WITH BELL & SPIGOT JOINTS SHALL HAVE BELL HOLES IN BEDDING.

NOTE:
1. FOR FILL HEIGHT TABLES SEE SHEET 2 OF 3 AND SHEET 3 OF 3.
2. ONLY ONE CLASS OR THICKNESS OF PIPE WILL BE SPECIFIED FOR EACH INDIVIDUAL LOCATION. THE CLASS OR THICKNESS WILL BE DETERMINED BY THE MAXIMUM HEIGHT OF FILL.

DATE	DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA
REVISION	STANDARD CONCRETE & METAL PIPE CULVERTS SHEET 1 OF 3 (TRENCH CONSTRUCTION, BEDDING, BACKFILLING)
	NO SCALE — REV. & REDR.: SEPT., 2001
BY	DES. — DRW. — TRA. — CHK. — (SUBMITTED) STATE ROAD & AIRPORT DESIGN ENGR. (APPROVED) CHIEF ENGINEER — NUMBER 1030D

TABLE NO. 1 ROUND PIPE - CONCRETE - CORRUGATED STEEL - CORRUGATED ALUMINUM

MINIMUM CLASS OF CONCRETE OR MINIMUM THICKNESS OF STEEL AND ALUMINUM

PIPE DIAMETER (INCHES)	TYPE	MINIMUM COVER (INCHES)	HEIGHT OF FILL IN FEET ABOVE TOP OF PIPE: 1 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 50	50 - 60	60 - 70	70 - 80	80 - 90	PIPE DIAMETER (INCHES)
12	CONCRETE	12	III	III	IV	V	V	V	V	V	V	V	V		12
	STEEL 1	12	.064	.064	.064	.064	.064	.064	.064	.064	.064	.064	.064	.064	
	ALUM 1	12	.060	.060	.060	.060	.075	.075	.075	.075	.075	.075	.075	.075	
15	CONCRETE	12	III	III	IV	V	V	V	V	V	V	V	V		15
	STEEL 1	12	.064	.064	.064	.064	.064	.064	.064	.064	.064	.064	.064	.064	
	ALUM 1	12	.060	.060	.060	.060	.075	.075	.075	.075	.075	.075	.075	.105	
18	CONCRETE	12	III	III	IV	V	V	V	V	V	V	V	V		18
	STEEL 1	12	.064	.064	.064	.064	.064	.064	.064	.064	.064	.064	.064	.064	
	ALUM 1	12	.060	.060	.060	.060	.075	.075	.075	.075	.105	.105	.105	.105	
24	CONCRETE	12	III	III	IV	V	V	V	V	V	V	V	V		24
	STEEL 1	12	.064	.064	.064	.064	.064	.064	.064	.064	.064	.064	.079	.079	
	ALUM 1	12	.060	.060	.060	.075	.075	.075	.075	.105	.105	.105	.105		
30	CONCRETE	12	III	III	IV	V	V	V	V	V	V	V	V		30
	STEEL 1	12	.064	.064	.064	.064	.064	.064	.064	.064	.079	.079	.109	.109	
	ALUM 1	12	.075	.075	.075	.075	.075	.105	.105	.105	.135	.135			
36	CONCRETE	12	III	III	IV	V	V	V	V	V	V	V	V		36
	STEEL 1	12	.064	.064	.064	.064	.064	.064	.064	.079	.079	.109	.109	.138	
	STEEL 2	12	.064	.064	.064	.064	.064	.064	.064	.064	.079	.079	.109	.109	
	ALUM 1	12	.075	.105	.105	.105	.105	.105	.135	.135	.135	.135			
	ALUM 2	12	.060	.060	.060	.060	.075	.075	.105	.105	.105	.135			
42	CONCRETE	12	III	III	IV	V	V	V	V	V	V	V	V		42
	STEEL 1	12	.064	.064	.064	.064	.064	.064	.064	.079	.109	.109	.138	.138	
	STEEL 2	12	.064	.064	.064	.064	.064	.064	.064	.079	.109	.109	.109	.138	
	ALUM 1	12	.105	.105	.135	.135	.164	.164							
	ALUM 2	12	.060	.060	.060	.075	.075	.105	.105	.105	.135	.135			
48	CONCRETE	12	III	III	IV	V	V	V	V	V	V	V	V		48
	STEEL 1	12	.064	.064	.064	.064	.064	.064	.079	.109	.109	.138	.138	.168	
	STEEL 2	12	.064	.064	.064	.064	.064	.064	.064	.079	.109	.109	.138	.138	
	ALUM 1	12	.105	.105	.135	.164	.164	.164							
	ALUM 2	12	.060	.060	.060	.075	.075	.105	.105	.135	.135	.164	.164		
54	CONCRETE	12	III	III	IV	V	V	V	V	V	V	V	V		54
	STEEL 1	12	.079	.079	.079	.079	.079	.079	.079	.109	.138	.138	.168		
	STEEL 2	12	.064	.064	.064	.064	.064	.064	.079	.109	.109	.138	.138	.168	
	ALUM 1	15	.105	.105	.135	.164	.164	.164							
	ALUM 2	15	.060	.060	.060	.075	.075	.105	.135	.135	.164	.164			
60	CONCRETE	12	III	III	IV	V	V	V	V	V	V	V	V		60
	STEEL 1	12	.109	.109	.109	.109	.109	.109	.109	.109	.138	.168			
	STEEL 2	12	.064	.064	.064	.064	.064	.079	.079	.109	.138	.138	.168	.168	
	ALUM 1	15	.135	.135	.164	.164	.164	.164							
	ALUM 2	15	.060	.060	.075	.105	.105	.135	.135	.164	.164				
66	CONCRETE	12	III	III	IV	V	V	V	V	V	V	V			66
	STEEL 1	12	.138	.138	.138	.138	.138	.138	.138	.138	.168	.168			
	STEEL 2	12	.064	.064	.064	.064	.064	.079	.109	.109	.138	.168	.168		
	ALUM 1	18	.164	.164	.164	.164	.164								
	ALUM 2	18	.075	.075	.105	.105	.135	.135	.164	.164					
72	CONCRETE	12	III	III	IV	V	V	V	V	V	V	V			72
	STEEL 1	12	.138	.138	.138	.138	.138	.138	.138	.138	.168				
	STEEL 2	12	.064	.064	.064	.064	.079	.109	.109	.138	.138	.168			
	ALUM 1	18	.164	.164	.164	.164	.164								
	ALUM 2	18	.075	.075	.105	.105	.135	.164	.164	.164					
78	CONCRETE	12	III	III	IV	V	V	V	V	V	V				78
	STEEL 1	15	.168	.168	.168	.168	.168	.168	.168	.168					
	STEEL 2	15	.064	.064	.064	.064	.079	.109	.109	.138	.168	.168			
	ALUM 2	21	.075	.075	.105	.105	.135	.164	.164						
84	CONCRETE	12	III	III	IV	V	V	V	V	V	V				84
	STEEL 1	15	.168	.168	.168	.168	.168	.168	.168	.168					
	STEEL 2	15	.064	.064	.064	.079	.079	.109	.109	.138	.168				
	ALUM 2	21	.105	.105	.105	.135	.135	.164	.164						
90	CONCRETE	12	III	III											90
	STEEL 2	18	.064	.064	.064	.079	.109	.109	.138	.138	.168				
	ALUM 2	24	.105	.105	.135	.135	.164								
96	CONCRETE	12	III	III											96
	STEEL 2	18	.079	.079	.079	.079	.109	.109	.138	.168					
	ALUM 2	24	.105	.105	.135	.135	.164								
102	CONCRETE	12	III	III											102
	STEEL 2	24	.079	.079	.079	.109	.109	.138	.138	.168					
	ALUM 2	24	.135	.164	.164										
108	CONCRETE	12	III	III											108
	STEEL 2	24	.109	.109	.109	.109	.109	.138	.138	.168					
	ALUM 2	24	.135	.164											
114	CONCRETE														114
	STEEL 2	24	.109	.109	.109	.109	.109	.138	.168						
	ALUM 2	24	.164	.164											
120	CONCRETE														120
	STEEL 2	24	.109	.109	.109	.109	.138	.138	.168						
	ALUM 2	24	.164	.164											

IMPERFECT BACKFILL IS NOT REQUIRED FOR CONDTIONS SHOWN ON THE LEFT SIDE OF THE HEAVY LINE. USE NORMAL BACKFILL.

FOR CONDITIONS TO THE RIGHT OF THE HEAVY LINE, CLASS V CONCRETE PIPE REQUIRES IMPERFECT BACKFILL ACCORDING TO DETAIL "A" OR "B" ON SHEET 1 OF 3.

TABLE NO. 3-(INFORMATION ONLY)

	COR. METAL THICKNESS	EQUIVALENT GAGE
STEEL	.064	16
	0.079	14
	0.109	12
	0.138	10
	0.168	8
ALUMINUM	0.060	16
	0.075	14
	0.105	12
	0.135	10
	0.164	8

STEEL 1 OR ALUM 1 DENOTES CORRUGATION PROFILE 2 2/3" X 1/2"

STEEL 2 OR ALUM 2 DENOTES CORRUGATION PROFILE 3" X 1" (OR 5" X 1" FOR STEEL PIPE ONLY)

ALL STEEL AND ALUMINUM PIPE SHALL BE LOCK-SEAM OR WELDED-SEAM (HELICAL) CONSTRUCTION.

MINIMUM COVER VALUES APPLY TO HS-20 LIVE LOAD. MINIMUM COVER NEEDED FOR CONSTRUCTION VEHICLES MAY BE GREATER AND IS THE RESPONSIBILITY OF THE CONTRACTOR.

TRENCH CONSTRUCTION IS REQUIRED FOR CONDITIONS ON BOTH SIDES OF HEAVY LINE. SEE SHEET 1 OF 3.

FOR CONDITIONS TO RIGHT OF HEAVY LINE, CONCRETE PIPE REQUIRES IMPERFECT BACKFILL ACCORDING TO SPECIFICATIONS AND THIS STANDARD.

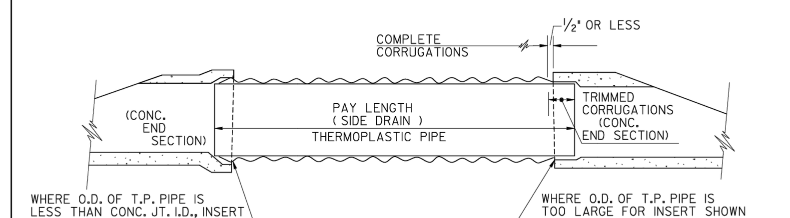
TABLE VALUES FOR ALUMINUM CORRUGATED PIPE (OR ALUMINUM SPIRAL RIB PIPE) ARE COMPUTED BASED UPON ALCLAD ALLOY 3004-H34 HAVING MINIMUM YIELD STRENGTH, fy=24,000 PSI. IF ALUMINUM PIPE IS OTHERWISE FURNISHED AS 3004-H32 (fy=20,000 PSI), THE TABLE NO. 1 ALLOWABLE FILL HEIGHTS SHALL BE ADJUSTED AS FOLLOWS:

A. ALL MINIMUM COVER VALUES SHALL BE INCREASED BY 15 PERCENT. (EXAMPLE: 12 INCHES BECOMES 13.8 INCHES)
B. ALL HEIGHT OF FILL VALUES SHALL BE DECREASED BY 15 PERCENT. (EXAMPLE: 35-40 FEET BECOMES 29.7-34.0 FEET)

BY	REVISION	DATE	
	GEN. REV. NOTES	9-26-01	DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA
GJP	ADDED SEAM CONST. NOTE	3-9-99	STANDARD CONCRETE & METAL PIPE CULVERTS SHEET 2 OF 3 (FILL HEIGHTS FOR CONCRETE & CORRUGATED METAL PIPE)
			NO SCALE — OCTOBER 21, 1998
			DES. — DRW. — TRA. — CHK. — (SUBMITTED) STATE ROAD & AIRPORT DESIGN ENGR. (APPROVED) CHIEF ENGINEER — NUMBER 1030D

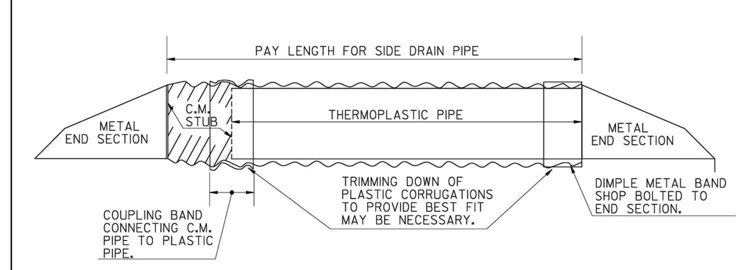
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

CONCRETE TO THERMOPLASTIC SIDE DRAIN OR CROSS DRAIN CONNECTION ALTERNATES



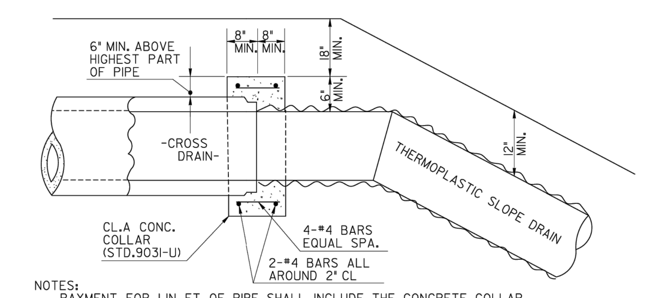
METAL TO THERMOPLASTIC SIDE DRAIN CONNECTION ALTERNATES

(SEE GENERAL NOTE NO. 5)



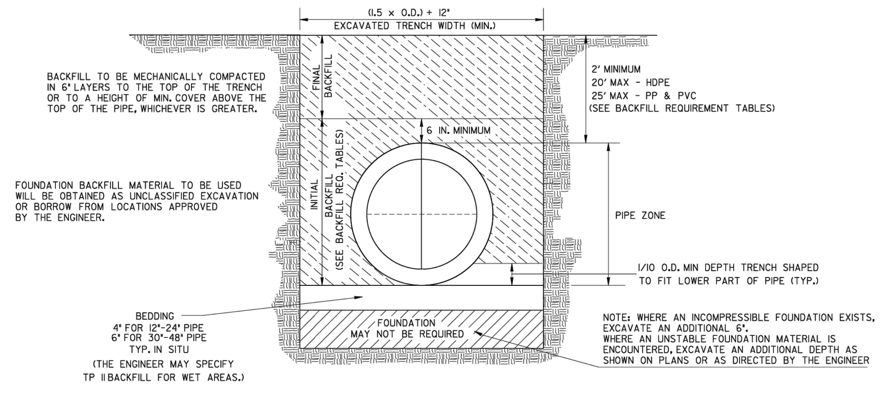
NOTE:
FOR PLASTIC SIDE DRAIN CONNECTIONS TO SAFETY END SECTIONS, SEE THE SMOOTH TAPERED SLEEVE CONNECTOR DETAILS (SEE GA STANDARD 1122 FOR SAFETY SLOPE END SECTIONS FOR SIDE DRAIN PIPES).

ALL CROSS DRAIN TYPES TO THERMOPLASTIC SLOPE DRAIN CONNECTION



NOTES:
PAYMENT FOR LIN. FT. OF PIPE SHALL INCLUDE THE CONCRETE COLLAR. CONCRETE COLLARS ARE ALSO PERMITTED FOR SIDE DRAIN CONNECTIONS. CONNECTIONS SHOWN ABOVE FOR SIDE DRAIN ARE NOT PERMITTED FOR SLOPE DRAIN CONNECTIONS.

THERMOPLASTIC PIPE TRENCH INSTALLATIONS



BACKFILL TO BE MECHANICALLY COMPACTED IN 6" LAYERS TO THE TOP OF THE TRENCH OR TO A HEIGHT OF MIN. COVER ABOVE THE TOP OF THE PIPE, WHICHEVER IS GREATER.

FOUNDATION BACKFILL MATERIAL TO BE USED WILL BE OBTAINED AS UNCLASSIFIED EXCAVATION OR BORROW FROM LOCATIONS APPROVED BY THE ENGINEER.

BEDDING
4" FOR 12"-24" PIPE
6" FOR 30"-48" PIPE
TYP. IN SITU
(THE ENGINEER MAY SPECIFY TP II BACKFILL FOR WET AREAS.)

NOTE: WHERE AN INCOMPRESSIBLE FOUNDATION EXISTS, EXCAVATE AN ADDITIONAL 6". WHERE AN UNSTABLE FOUNDATION MATERIAL IS ENCOUNTERED, EXCAVATE AN ADDITIONAL DEPTH AS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER

MULTIPLE PIPE SPACING: A CLEAR SPACE EQUAL TO TWO TIMES THE INSIDE DIAMETER, OR 6 FT., WHICHEVER IS LESSER SHALL BE REQUIRED BETWEEN MULTIPLE LINES OF THERMOPLASTIC PIPE.

ALLOWABLE PIPE SIZES

HIGH DENSITY POLYETHYLENE (HDPE) AASHTO M 294	POLYPROPYLENE (PP) AASHTO M 330	PROFILE WALL POLYVINYL CHLORIDE (PVC) AASHTO M 304	CORRUGATED SMOOTH INTERIOR POLYVINYL CHLORIDE (PVC) ASTM F 949
NOMINAL SIZE (IN.)	NOMINAL SIZE (IN.)	NOMINAL SIZE (IN.)	NOMINAL SIZE (IN.)
12	12	12	12
15	15	15	15
18	18	18	18
24	24	21	21
30	30	24	24
36	36	30	30
42	42	36	36
48	48	42	
		48	

BACKFILL REQUIREMENT TABLES

STORM DRAIN INSTALLATIONS			
PIPE TYPE	MAX. FILL HEIGHT (FT)	INITIAL BACKFILL TYPE	FOUNDATION BACKFILL TYPE
HDPE	20	STRUCTURAL	CLASS II B2 OR BETTER
PVC	25	STRUCTURAL	CLASS II B3 OR BETTER
PP	25	STRUCTURAL	CLASS II B3 OR BETTER

SIDE DRAIN (DRIVEWAY) INSTALLATIONS (FILL HEIGHTS UP TO 10-FT)			
PIPE TYPE	MAX. FILL HEIGHT (FT)	INITIAL BACKFILL TYPE	FOUNDATION BACKFILL TYPE
HDPE	10	CLASS II B2 OR BETTER	CLASS II B2 OR BETTER
PVC	10	CLASS II B3 OR BETTER	CLASS II B3 OR BETTER
PP	10	CLASS II B3 OR BETTER	CLASS II B3 OR BETTER

SIDE DRAIN (DRIVEWAY) INSTALLATIONS (FILL HEIGHTS ABOVE 10-FT)			
PIPE TYPE	MAX. FILL HEIGHT (FT)	INITIAL BACKFILL TYPE	FOUNDATION BACKFILL TYPE
HDPE	20	STRUCTURAL	CLASS II B2 OR BETTER
PVC	25	STRUCTURAL	CLASS II B3 OR BETTER
PP	25	STRUCTURAL	CLASS II B3 OR BETTER

INITIAL BACKFILL & BEDDING QUANTITIES		
NOMINAL SIZE (IN.)	INITIAL BACKFILL (FT^3/LF)	BEDDING (FT^3/LF)
12	2.97	0.83
15	3.80	0.96
18	4.73	1.08
24	6.86	1.33
30	9.34	2.38
36	12.18	2.75
42	15.38	3.13
48	18.93	3.50

NOTE: BACKFILL AND BEDDING QUANTITIES IN THE ABOVE TABLE ARE BASED ON THE TYPICAL INSIDE DIAMETER OF PIPE - NOT THE OUTSIDE DIAMETER OF PIPE.

GENERAL NOTES:
1. SPECIFICATIONS: GEORGIA STANDARD, CURRENT EDITION & SUPPLEMENTS THERETO.
2. THE MINIMUM COVER SHALL BE 24" FOR STORM AND SIDE DRAINS AND 12" FOR SLOPE DRAIN PIPE.
3. THE MAXIMUM HEIGHT OF FILL SHALL BE:
   - 20' FOR HIGH DENSITY POLYETHYLENE (HDPE)
   - 25' FOR POLYVINYL CHLORIDE (PVC)
   - 25' FOR POLYPROPYLENE (PP)
4. MINIMUM PIPE STIFFNESS SHALL BE IN ACCORDANCE WITH AASHTO M 294, TYPE "S" FOR HDPE PIPE, AASHTO M 304 FOR PROFILE WALL PVC PIPE, AASHTO M 330 FOR PP PIPE, AND ASTM F 949 FOR CORRUGATED SMOOTH INTERIOR PVC PIPE.
5. METAL FLARED END SECTIONS PER STD. 1120 ARE PERMITTED ONLY WHERE THE PLANS LIST PLAIN CORRUGATED STEEL PIPE AS AN ALLOWABLE ALTERNATE FOR THE CULVERT.
6. GRADED AGGREGATE MEETING SECTION 815 SHALL BE USED FOR STRUCTURAL BACKFILL IN ACCORDANCE WITH BACKFILL REQUIREMENT TABLES AND WILL NOT BE PAID FOR SEPARATELY. PAYMENT WILL BE INCLUDED IN THE OVERALL PRICE BID FOR PIPE.
7. NORMAL BACKFILL MATERIAL MEETING SUBSECTION 810.2.01 MAY BE USED FOR SIDE DRAIN APPLICATIONS FOR FILL HEIGHTS UP TO 10 FT IN ACCORDANCE WITH TYPE AND CLASS LISTED IN THE BACKFILL REQUIREMENT TABLES. IF THE REQUIRED SOIL CLASS IS NOT AVAILABLE USE GRADED AGGREGATE MATERIAL MEETING SECTION 815.

BY	REVISION	DATE	
HAC	REV INITL BKFILL TO 6" MIN REV INITL BKFILL QUANTITIES REV GRAD. AGG. MTL. TO REF SEC 815 IN GEN NOTES 6&7	11-14-19	DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA STANDARD THERMOPLASTIC PIPE
			NO SCALE — SEPTEMBER 2016
			DESIGNED — TRACED — DRAWN B.J.O. CHECKED W.D.T. (SUBMITTED) STATE DESIGN POLICY ENGINEER (APPROVED) CHIEF ENGINEER — NUMBER 1030P

BRAVO SITE SET 02-11-2026

CROFT

Croft & Associates
3380 Blue Springs Road
Kennesaw, Georgia 30144
770.529.7714 (p)
www.croftae.com

Rochester DCCM

Rochester | DCCM
425 Oak Street
Gainesville, Georgia 30501
770.718.0600
www.rochester-assoc.com

GEORGIA REGISTERED No. 31411 PROFESSIONAL ENGINEER ERIC M. CHINI 01.17.25

OWNER
HABERSHAM COUNTY ANIMAL CONTROL
130 JACOBS WAY, SUITE 302
CLARKSVILLE, GA
30523

HABERSHAM COUNTY ANIMAL SHELTER

HABERSHAM ANIMAL CONTROL
OLD ATHENS HWY
CORNELIA, GA
30531

No.	Date	Description
3	2025-11-24	REVISION 3 SET
2	2025-10-27	REVISION 2 SET
1	2025-01-17	VE REVISION 1 SET
0	2024-06-10	PERMIT SET

ISSUANCE

PROJECT NUMBER
2022-313

DRAWN: DCB
CHECKED: EMC

SHEET TITLE
CONSTRUCTION DETAILS

SHEET NO.
C-30

THIS SHEET PLOTS ON 42" X 30"

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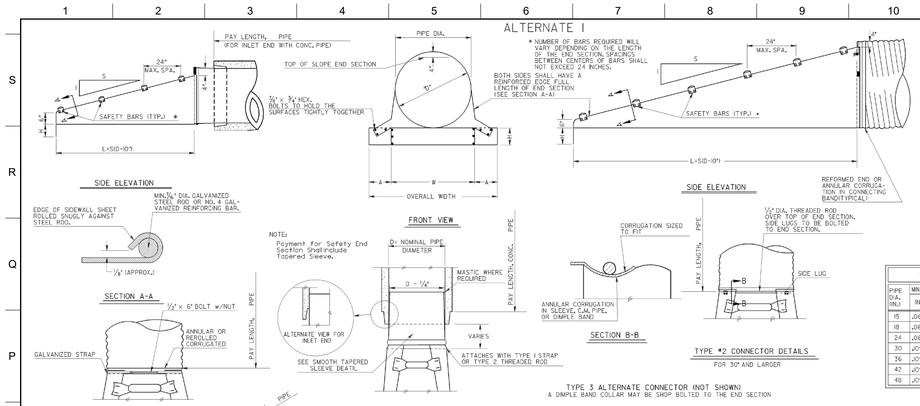
ALTERNATE 1



GENERAL NOTES ALTERNATE 1

GALVANIZED STEEL SHEET
USE GALVANIZED STEEL SHEET CONFORMING TO AASHTO M 218.

CONNECTORS.
PAYMENT FOR END SECTION SHALL INCLUDE CONNECTION OF THE TYPE REQUIRED FOR THE SIDE DRAIN USED.

SAFETY BARS
SHALL BE 3" SCHEDULE 40 GALVANIZED STEEL PIPE. PIPE TO BE GALVANIZED AFTER FORMING. SAFETY BARS SHALL BE REQUIRED FOR ALL SAFETY END SECTIONS.

MISCELLANEOUS DETAILS
DETAILS OF CONSTRUCTION MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE APPLICABLE REQUIREMENTS. SAMPLES SUBJECT TO APPROVAL BY THE ENGINEER. MANUFACTURER'S SAMPLE MUST BE SUBMITTED TO PRE-QUALIFY THE PRODUCT.

SIZES, DIMENSIONS, AND THICKNESSES									
PIPE DIA. (IN.)	MIN. THICK. IN.	GAGE	DIMENSIONS (INCHES) A	H	# (HH)	OVERALL WIDTH	* L DIMENSION SLOPE (SH)	LENGTH (IN.)	SLOPE (SH)	LENGTH (IN.)
15	.064	16	8	6	21	37	4H	20	6H	30
18	.064	16	8	6	24	40	4H	32	6H	48
24	.064	16	8	6	30	43	4H	56	6H	84
30	.109	12	12	9	36	60	4H	80	6H	120
36	.109	12	12	9	42	66	4H	104	6H	156
42	.109	12	16	12	48	80	4H	128	6H	192
48	.109	12	16	12	54	86	4H	152	6H	228

*SEE STD. NO. 9031F FOR SLOPES AT SIDE ROAD OR AT DRIVES.

SPECIAL NOTE:
WHERE THE LENGTH OF DITCH OR THE DISTANCE BETWEEN TOE POINTS OF END SECTIONS ON SEPARATE INSTALLATIONS WOULD BE LESS THAN 30 FT., CONTINUED S.D. PIPE WITH AN INTERMEDIATE INLET OR OTHER ALTERNATE MAY BE SPECIFIED INSTEAD.

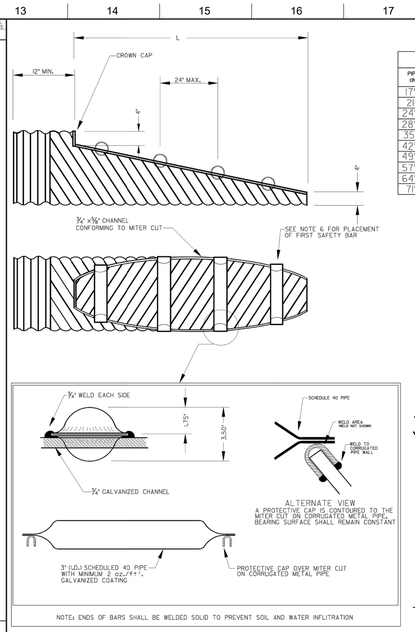
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

REVISED GENERAL NOTES	7-29-05
CONVERTED TO STANDARD	11-18-94
ADD SAFETY BARS	10-25-93
REVISE TITLES, SCALE	6-30-93

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
STANDARD
SAFETY END SECTION
(METAL)
(FOR SIDE DRAIN PIPE-OR FOR STORM DRAIN PIPE PARALLEL TO MAINLINE)
ALTERNATE 1
NO SCALE — SEPT., 1993

DESIGNED	DRAWN	TRACED	CHECKED
SUBMITTED: STATE ROAD & AIRPORT DESIGN ENGR.	APPROVED: CHIEF ENGINEER	NUMBER 1122	SHEET 1 OF 3

ALTERNATE 2



END TREATMENT DIMENSIONS FOR ARCHED METAL PIPE				
PIPE DIA. (INCHES)	GAGE	SHEET THICKNESS (INCHES)	* 4d SLOPE L DIMENSION	* 6d SLOPE L DIMENSION
17"x13"	16	.064"	1'-8"	2'-6"
21"x15"	16	.064"	2'-4"	3'-6"
24"x18"	16	.064"	3'-4"	5'-0"
28"x20"	16	.064"	4'-0"	6'-0"
35"x24"	14	.079"	5'-4"	8'-0"
42"x29"	14	.079"	7'-0"	10'-6"
49"x33"	14	.079"	8'-4"	12'-6"
57"x38"	12	.109"	10'-0"	15'-0"
64"x43"	12	.109"	11'-8"	17'-6"
71"x47"	10	.138"	13'-0"	19'-6"

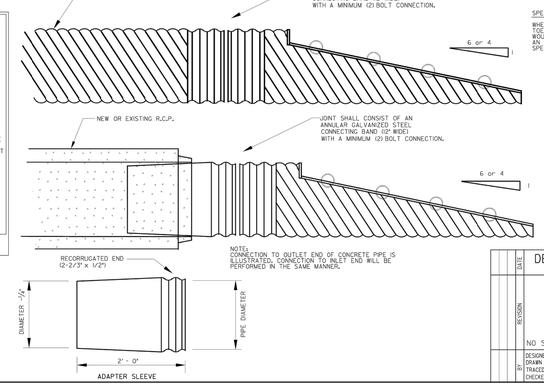
* SEE STD. NO. 9031F FOR SLOPES AT SIDE ROAD OR AT DRIVES.

END TREATMENT DIMENSIONS FOR CIRCULAR METAL AND CIRCULAR CONCRETE PIPES				
PIPE DIA. (INCHES)	GAGE	SHEET THICKNESS (INCHES)	* 4d SLOPE L DIMENSION	* 6d SLOPE L DIMENSION
15"	16	.064"	2'-4"	3'-6"
18"	16	.064"	3'-4"	5'-0"
21"	16	.064"	4'-4"	6'-6"
24"	16	.064"	5'-4"	8'-0"
30"	16	.064"	7'-4"	11'-0"
36"	16	.064"	9'-4"	14'-0"
42"	14	.079"	11'-4"	17'-0"
48"	14	.079"	13'-4"	20'-0"
54"	14	.079"	15'-4"	23'-0"
60"	12	.109"	17'-4"	26'-0"

* SEE STD. NO. 9031F FOR SLOPES AT SIDE ROAD OR AT DRIVES.

GENERAL NOTE ALTERNATE 2:

1. THE MATERIAL USED IN FABRICATION OF SLOPED END SECTION SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M 218 (GALVANIZED STEEL)
2. SLOPED END SECTIONS SHALL BE FORMED FROM FULL CIRCLE PIPE, MAY BE FORMED INTO PIPE ARCHES, WHERE SPECIFIED, AND SHALL MEET ALL REQUIREMENTS FOR CORRUGATION, CAGE, AND OTHER FABRICATION REQUIREMENTS.
3. THE EXPOSED EDGE CUT ON THE TOP SHALL BE COVERED WITH A PROTECTIVE CAP OVERLAPPING THE TOP OF THE ANNULAR NOT LESS THAN 5/8INCH, THE 4 TO 1OR 6 TO 1 BEVEL SHALL BE ENCASED WITH A PROTECTIVE CAP OVERLAPPING EACH SIDE OF THE CUT BY NOT LESS THAN 5/8INCH. THE PROTECTIVE CAP SHALL BE 14 GAGE (.079") GALVANIZED STEEL. THE 14 GAGE (.079") PROTECTIVE CAPS SHALL BE WELDED WITH 1/4INCH WELDS ALTERNATING FROM SIDE TO SIDE OFTHE CAP AT 12 INCH INTERVALS. WELDS SHALL BE AT THE ENDS OF EACH CAPS, REGARDLESS OF SPACING. REPAIR DAMAGED GALVANIZED COATINGS IN ACCORDANCE WITH GDOT STANDARD SPECIFICATIONS SECTION 645.
4. CONNECTIONS OF GALVANIZED STEEL END TREATMENTS TO CORRUGATED ALUMINUM OR ALUMINIZED STEEL PIPE MUST UTILIZED A POLYMER COATED GALVANIZED STEEL BAND MEETING THE REQUIREMENTS OF AASHTO M 256 84.
5. ADAPTER SLEEVE IS TO BE CONSTRUCTED OF GALVANIZED STEEL CONFORMING TO THE REQUIREMENTS OF AASHTO M 218, MINIMUM 12 GAGE (.109") MATERIAL.
6. BOTTOM SAFETY BAR SHALL HAVE A MAXIMUM CLEARANCE OF 5" WHEN MEASURED FROM THE BOTTOM OF THE INSTALLED BAR TO INSIDE CREST OF PIPE CORRUGATION.



SPECIAL NOTE:
WHERE THE LENGTH OF DITCH OR THE DISTANCE BETWEEN TOE POINTS OF THE END SECTION ON SEPARATE INSTALLATIONS WOULD BE LESS THAN 30 FT., CONTINUED S.D. PIPE WITH AN INTERMEDIATE INLET OR OTHER ALTERNATE MAY BE SPECIFIED INSTEAD.

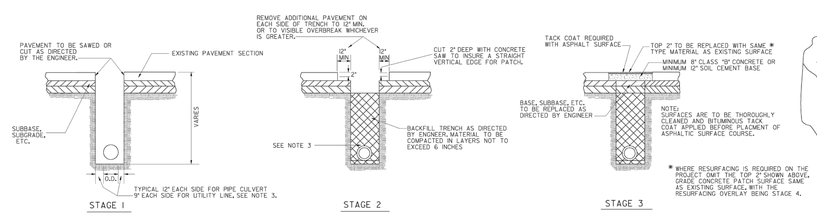
NOTE:
CONNECTION TO OUTLET END OF CONCRETE PIPE IS ILLUSTRATED. CONNECTION TO INLET END WILL BE PERFORMED IN THE SAME MANNER.

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

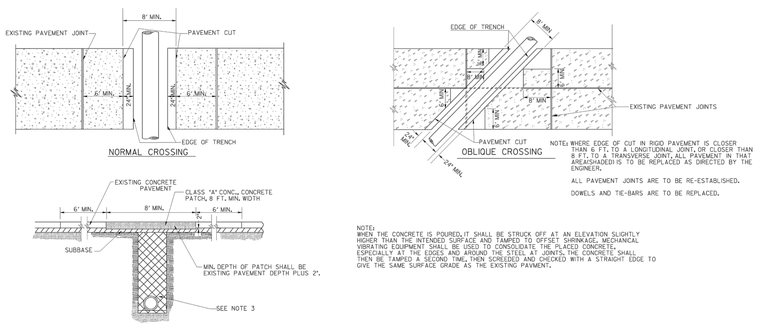
DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
STANDARD
SAFETY END SECTION
(METAL)
(FOR SIDE DRAIN PIPE-OR FOR STORM DRAIN PIPE PARALLEL TO MAINLINE)
ALTERNATE 2
NO SCALE — JAN. 2005

DESIGNED	DRAWN	TRACED	CHECKED
SUBMITTED: STATE ROAD & AIRPORT DESIGN ENGINEER	APPROVED: CHIEF ENGINEER	NUMBER 1122	SHEET 2 OF 3

STORM DRAIN AND UTILITY INSTALLATION BY OPEN CUT - GENERAL



STORM DRAIN AND UTILITY INSTALLATION BY OPEN CUT ACROSS P.C. CONCRETE PAVING



NOTE:
WHEN THE CONCRETE IS POURED, IT SHALL BE STRUCK OFF AT AN ELEVATION SLIGHTLY HIGHER THAN THE INTENDED SURFACE AND TAMPED TO OFFSET SHRINKAGE. MECHANICAL VIBRATING EQUIPMENT SHALL BE USED TO CONSOLIDATE THE PLACED CONCRETE, ESPECIALLY AT THE EDGES AND AROUND THE STEEL AT JOINTS. THE CONCRETE SHALL THEN BE TAMPED A SECOND TIME, THEN SCREEDED AND CHECKED WITH A STRAIGHT EDGE TO GIVE THE SAME SURFACE GRADE AS THE EXISTING PAVMENT.

GENERAL NOTES:
1. SPECIFICATIONS: GEORGIA STANDARD, CURRENT EDITION & SUPPLEMENTS THERETO.
2. (a) OTHER PAVEMENT REPLACEMENT MATERIALS, SUCH AS HIGH EARLY STRENGTH CONCRETE, MAY BE SUBSTITUTED FOR MATERIALS SHOWN WHEN CALLED FOR IN THE PLANS OR BY THE ENGINEER.
(b) PAYMENT AND PIPE CULVERT OR UTILITY SHALL INCLUDE SAWING AND/OR CUTTING AND REMOVING EXISTING PAVEMENT AND REPLACING THE PAVEMENT AS SPECIFIED. PAYMENT FOR PIPE OR UTILITY INCLUDES THIS PAVEMENT REPLACEMENT MATERIAL, REGARDLESS OF WHERE MATERIALS SHOWN ARE USED OR WHERE OTHER MATERIALS SUCH AS HIGH EARLY STRENGTH CONCRETE ARE USED.
(c) PAYMENT FOR PIPE CULVERT OR UTILITY INSTALLATION SHALL INCLUDE REPLACING IN KIND ANY PORTIONS OF SIDEWALK, CURB, CURB & GUTTER, MEDIAN PAVING, DRIVEWAYS, ETC., WHICH ARE DISTURBED DUE TO THE INSTALLATION.
3. TRENCH DETAIL SHOWN IS GENERAL, SEE STANDARD 10300 FOR DETAILS REQUIRED FOR PIPE CULVERT INSTALLATIONS. SEE THE UTILITIES MANUAL FOR UTILITY INSTALLATION REQUIREMENTS.
4. AFTER REMOVING EXISTING PAVEMENT, THE SUBBASE AND VERTICAL FACE OF EXISTING PAVING SHALL BE DAMPED (BUT NOT WET), ADDITIONALLY, THE VERTICAL FACE OF THE EXISTING PAVEMENT SHALL BE PAINTED WITH A SOLUTION OF PORTLAND CEMENT AND WATER MIXED TO THE CONSISTENCY OF HEAVY CREAM. THE PAINT SHALL BE APPLIED IMMEDIATELY AHEAD OF THE SURFACE CREW. OUT. AFTER CONCRETE IS POURED, IT SHALL BE WORKED INTO ALL CORNERS AND INTO ALL ROUGH SURFACES OF THE EXISTING PAVEMENT.
5. WHERE PIPE IS REMOVED, BUT NOT REPLACED, PAYMENT FOR PIPE REMOVAL INCLUDES ALL ITEMS DESCRIBED IN GENERAL NOTE 2, WITH ALL OTHER NOTES AND DETAILS ALSO BEING APPLICABLE.

NOTE:
THIS STANDARD IS FOR USE WHERE PERMANENT PAVEMENT PATCHING IS REQUIRED. TEMPORARY PATCHING, IF REQUIRED, SHALL BE ACCORDING TO OTHER DETAILS, SPECIFICATIONS, AND/OR AS DIRECTED BY THE ENGINEER.

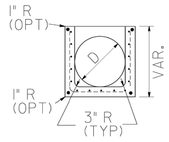
DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
STANDARD
PAVEMENT PATCHING DETAILS
(STORM DRAIN OR UTILITY INSTALLATIONS BY OPEN CUT ACROSS EXISTING PAVEMENT)
NO SCALE — REV. & REDR., AUG. 1999

REV.	TRA.	CHA.
SUBMITTED: STATE ROAD & AIRPORT DESIGN ENGR.	APPROVED: CHIEF ENGINEER	NUMBER 1401

ALTERNATE 3

PIPE DIA	T (MIN)	D	H	L
15"	3"	15"	21"	4'-6"
18"	3"	18"	24"	6'-0"
24"	3"	24"	30"	9'-0"
30"	4"	30"	38"	12'-6"
36"	4"	36"	44"	15'-6"
42"	4"	42"	50"	18'-6"
48"	5"	48"	58"	22'-0"

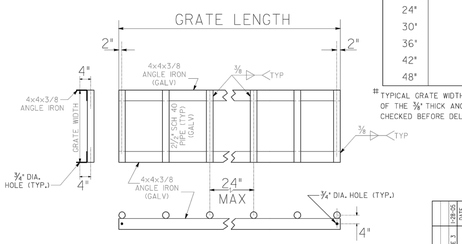
GENERAL NOTES:
1. CONCRETE STRENGTH SHALL BE 4000 PSI MINIMUM
2. REINFORCING SHALL BE PER AASHTO M170, CLASS II REINFORCED CONCRETE PIPE, PLUS ONE #4 BAR TOP AND BOTTOM, EACH SIDE.
3. WALLS MAY HAVE 1/4" TAPER. WALL THICKNESSES SHOWN ARE THE MINIMUM.
4. LIFT HOLES MAY BE PROVIDED IN THE SIDE WALLS FOR HANDLING.
5. END SECTION JOINT WILL BE A MATCHED FIT TO THE ADJOINING PIPE JOINT AT ALL INLET AND OUTLET ENDS. NON-FITTING JOINTS WILL REQUIRE A BUILT-IN-PLACE REINFORCED COLLAR CONNECTION WITH NO ADDITIONAL PAYMENT.
6. ALL END SECTIONS FOR PIPES WITH "D" OVER 24" ON SINGLE LINES WILL HAVE GALV. SAFETY BARS, SPACED NOT MORE THAN 24" ON CENTERS, AND INSTALLED PERPENDICULAR TO THE MAINLINE TRAFFIC FLOW. ALL END SECTIONS FOR MULTIPLE LINE PIPES WILL HAVE GRATES.
7. TYPICAL USE OF SAFETY END SECTIONS IS AT THE ENDS OF PIPES UNDER DRIVEWAYS OR SIDEROADS WHERE THE PIPE CULVERT IS PARALLEL TO THE MAINLINE AND FALLS INSIDE THE MAINLINE CLEAR ZONE WIDTH.



SECTION A-A

D	(MIN) GRATE LENGTH	GRATE WIDTH (TYP) #
15"	2'-4"	1'-9 1/8"
18"	2'-4"	2'-0 5/8"
24"	6'-4"	2'-6 5/8"
30"	8'-6"	3'-2 5/8"
36"	12'-4"	3'-8 5/8"
42"	14'-6"	4'-2 5/8"
48"	18'-4"	4'-10 5/8"

TYPICAL GRATE WIDTHS SHOWN ARE MEASURED FROM INSIDE TO INSIDE OF THE 3/8" THICK ANGLE IRON. GRATE FIT WITH END SECTION SHALL BE CHECKED BEFORE DELIVERY.



GALVANIZED SAFETY GRATE DETAIL

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
STANDARD
SAFETY END SECTION
(CONCRETE)
(FOR SIDE DRAIN PIPE-OR FOR STORM DRAIN PIPE PARALLEL TO MAINLINE)
ALTERNATE 3
NO SCALE — OCT., 2000

REVISED TO KEY PAGE 3	10-25-05
REVISED	DATE

DESIGNED	DRAWN	TRACED	CHECKED
SUBMITTED: STATE ROAD & AIRPORT DESIGN ENGINEER	APPROVED: CHIEF ENGINEER	NUMBER 1122	SHEET 3 OF 3

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

No.	Date	Description
3	2025-11-24	REVISION 3 SET
2	2025-10-27	REVISION 2 SET
1	2025-01-17	VE REVISION 1 SET
0	2024-06-10	PERMIT SET
ISSUANCE		

CROFT

Croft & Associates
3380 Blue Springs Road
Kennesaw, Georgia 30144
770.529.7714 (o)
www.croftae.com

Rochester | DCCM
425 Oak Street
Gainesville, Georgia 30501
770.718.0600
www.rochester-assoc.com

GEORGIA REGISTERED ENGINEER No. 31477 PROFESSIONAL 01.17.25 ENGINEER ERIC M. CHINN

OWNER

HABERSHAM COUNTY ANIMAL CONTROL
130 JACOBS WAY, SUITE 302
CLARKSVILLE, GA
30523

HABERSHAM COUNTY ANIMAL SHELTER

HABERSHAM ANIMAL CONTROL
OLD ATHENS HWY
CORNELIA, GA
30531

PROJECT NUMBER
2022-313

DRAWN: DCB
CHECKED: EMC

SHEET TITLE
CONSTRUCTION DETAILS

SHEET NO.
C-31

BRAVO SITE SET 02-11-2026

THIS SHEET PLOTS ON 42" X 30"
3" 2" 1" 1/2" 0
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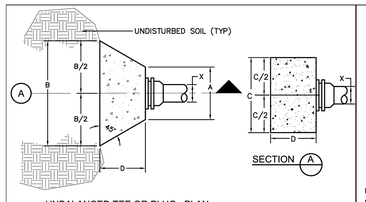
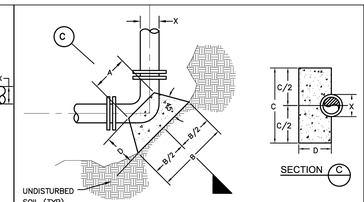


NOTE:
MEGALUGS OR MJ–FIELD LOK WITH BLOCKING REQUIRED ON ALL FITTINGS.

NOTE:
DEVELOPER/CONTRACTOR IS REQUIRED TO PERFORM HYDROSTATIC PRESSURE TESTS IN ACCORDANCE WITH SECTION 02660–"WATER DISTRIBUTION SYSTEMS", OF THE CITY OF DEMOREST STANDARD SPECIFICATIONS (LATEST EDITION).

SHEET 1 of 5

CITY OF DEMOREST						
JOB TITLE	SHEET TITLE	DRN. BY: EMI	REV. NO.	BY	DATE
STANDARD DETAIL	THRUST BLOCKING DIMENSIONS (200 psi LINE PRESSURE)	CKD BY:			
		APPD. BY:			
		DATE: DECEMBER 2024			
DETAIL No. W-1	FILE No. 22001 W-4.dwg	SCALE: N.T.S.			

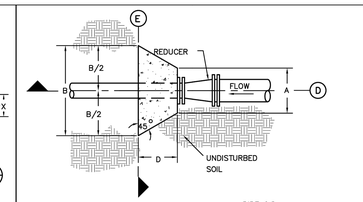


NOTE:
MEGALUGS OR MJ–FIELD LOK WITH BLOCKING REQUIRED ON ALL FITTINGS.

NOTE:
DEVELOPER/CONTRACTOR IS REQUIRED TO PERFORM HYDROSTATIC PRESSURE TESTS IN ACCORDANCE WITH SECTION 02660–"WATER DISTRIBUTION SYSTEMS", OF THE CITY OF DEMOREST STANDARD SPECIFICATIONS (LATEST EDITION).

SHEET 2 of 5

CITY OF DEMOREST						
JOB TITLE	SHEET TITLE	DRN. BY: EMI	REV. NO.	BY	DATE
STANDARD DETAIL	THRUST BLOCKING DIMENSIONS (200 psi LINE PRESSURE)	CKD BY:			
		APPD. BY:			
		DATE: DECEMBER 2024			
DETAIL No. W-2	FILE No. 22001 W-4.dwg	SCALE: N.T.S.			



NOTE:
MEGALUGS OR MJ–FIELD LOK WITH BLOCKING REQUIRED ON ALL FITTINGS.

NOTE:
DEVELOPER/CONTRACTOR IS REQUIRED TO PERFORM HYDROSTATIC PRESSURE TESTS IN ACCORDANCE WITH SECTION 02660–"WATER DISTRIBUTION SYSTEMS", OF THE CITY OF DEMOREST STANDARD SPECIFICATIONS (LATEST EDITION).

SHEET 3 of 5

CITY OF DEMOREST						
JOB TITLE	SHEET TITLE	DRN. BY: EMI	REV. NO.	BY	DATE
STANDARD DETAIL	THRUST BLOCKING DIMENSIONS (200 psi LINE PRESSURE)	CKD BY:			
		APPD. BY:			
		DATE: DECEMBER 2024			
DETAIL No. W-3	FILE No. 22001 W-4.dwg	SCALE: N.T.S.			

Line Pressure = 200 PSI
Soil Pressure = 2000 PSF

Pipe Size X	A	B	C	D
90 DEGREE BEND				
* 12"	1'-4"	4'-0"	3'-6"	2'-0"
* 10"	1'-3"	3'-4"	3'-4"	1'-6"
8"	1'-0"	3'-4"	2'-3"	1'-6"
6"	0'-11"	3'-4"	2'-3"	1'-6"
45 DEGREE BEND				
* 12"	1'-4"	3'-9"	3'-4"	1'-9"
10"	1'-3"	4'-0"	2'-3"	1'-10"
8"	1'-0"	3'-4"	2'-3"	1'-6"
6"	0'-11"	2'-6"	2'-0"	1'-6"

Line Pressure = 200 PSI
Soil Pressure = 2000 PSF

Pipe Size X	A	B	C	D
11 1/4 DEGREE BEND				
12"	1'-0"	2'-0"	2'-0"	1'-0"
10"	1'-0"	1'-9"	1'-9"	1'-0"
8"	0'-10"	1'-5"	1'-3"	1'-0"
6"	0'-9"	1'-0"	1'-0"	1'-0"
22 1/2 DEGREE BEND				
12"	1'-2"	3'-7"	2'-3"	1'-3"
10"	1'-0"	3'-1"	2'-3"	1'-0"
8"	0'-10"	1'-9"	2'-3"	1'-0"
6"	0'-9"	1'-3"	1'-3"	1'-0"

Line Pressure = 200 PSI
Soil Pressure = 2000 PSF

Pipe Size X	A	B	C	D
Unbalanced Tee & Plug				
* 12"	1'-9"	6'-0"	3'-6"	2'-4"
* 10"	1'-6"	4'-6"	3'-6"	1'-9"
* 8"	1'-4"	4'-4"	2'-3"	1'-9"
6"	1'-2"	3'-3"	2'-3"	1'-9"
Tee				
* 12"	1'-4"	6'-0"	3'-6"	2'-4"
* 10"	1'-3"	4'-6"	3'-6"	1'-9"
* 8"	1'-0"	4'-4"	2'-3"	1'-9"
6"	0'-11"	3'-3"	2'-3"	1'-9"

NOTES :
1. BLOCKING SHALL BE 3000psi CONCRETE ; "SACKCRETE" WILL NOT BE ALLOWED.
2. THE WATER LINE MUST BE LOWERED IN ORDER TO HAVE FIVE FEET (5') OF COVER AT THE BEND, TEE, REDUCER, OR PLUG AT ALL LOCATIONS WHERE THESE FITTINGS * MAY BE UTILIZED.
3. DEVELOPER/CONTRACTOR IS REQUIRED TO PERFORM HYDROSTATIC PRESSURE TESTS IN ACCORDANCE WITH SECTION 02660–WATER DISTRIBUTION SYSTEMS, OF THE CITY OF DEMOREST STANDARD SPECIFICATIONS (LATEST EDITION).
4. MEGALUGS OR MJ–FIELD LOK WITH BLOCKING REQUIRED ON ALL FITTINGS.
5. PIPELINE UPSTREAM AND/OR DOWNSTREAM OF ALL FITTINGS SHALL BE RESTRAINED MJ–FIELD LOK GASKETS. SEE SHEET 4A FOR MINIMUM REQUIRED LENGTHS PER FITTINGS AND SIZES.

SHEET 4 of 5

CITY OF DEMOREST						
JOB TITLE	SHEET TITLE	DRN. BY: EMI	REV. NO.	BY	DATE
STANDARD DETAIL	THRUST BLOCKING DIMENSIONS (200 psi LINE PRESSURE)	CKD BY:			
		APPD. BY:			
		DATE: DECEMBER 2024			
DETAIL No. W-4	FILE No. 22001 W-4.dwg	SCALE: N.T.S.			

HORIZONTAL 90 DEGREE BEND

DIAMETER (INCHES)	REQUIRED LENGTH OF RESTRAINED PIPE (FEET)
12"	120'
10"	96'
8"	68'
6"	64'

* THE REQUIRED LENGTH OF RESTRAINED PIPE IS ON BOTH SIDES OF FITTING

HORIZONTAL 45 DEGREE BEND

DIAMETER (INCHES)	REQUIRED LENGTH OF RESTRAINED PIPE (FEET)
12"	52'
10"	40'
8"	30'
6"	28'

* THE REQUIRED LENGTH OF RESTRAINED PIPE IS ON BOTH SIDES OF FITTING

VERTICAL 90 DEGREE BEND UP

DIAMETER (INCHES)	REQUIRED LENGTH OF RESTRAINED PIPE (FEET)
12"	120'
10"	96'
8"	80'
6"	68'

* THE REQUIRED LENGTH OF RESTRAINED PIPE IS ON BOTH SIDES OF FITTING

TEE

DIAMETER (INCHES)	REQUIRED LENGTH OF RESTRAINED PIPE (FEET)
12"	80'
10"	70'
8"	60'
6"	46'

* THE REQUIRED LENGTH OF RESTRAINED PIPE IS ON BRANCH SIDE OF FITTING

REDUCER

DIAMETER (INCHES)	REQUIRED LENGTH OF RESTRAINED PIPE (FEET)
8" X 6"	68'
10" X 6"	48'
10" X 8"	68'
12" X 6"	68'
12" X 8"	48'
12" X 10"	89'

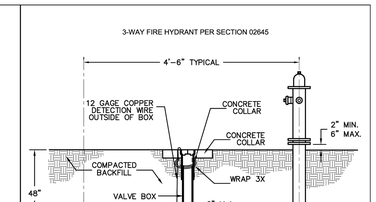
* THE REQUIRED LENGTH OF RESTRAINED PIPE IS ON LARGE SIZE PIPE

SEASIDE

DIAMETER (INCHES)	REQUIRED LENGTH OF RESTRAINED PIPE (FEET)
12"	89'
10"	79'
8"	68'
6"	46'

SHEET 5 of 5

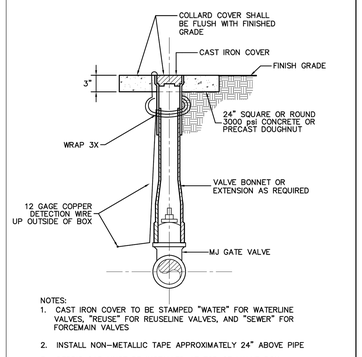
CITY OF DEMOREST						
JOB TITLE	SHEET TITLE	DRN. BY: EMI	REV. NO.	BY	DATE
STANDARD DETAIL	PIPELINE RESTRAINT LENGTHS	CKD BY:			
		APPD. BY:			
		DATE: DECEMBER 2024			
DETAIL No. W-4A	FILE No. 22001 W-4.dwg	SCALE: N.T.S.			



NOTE:

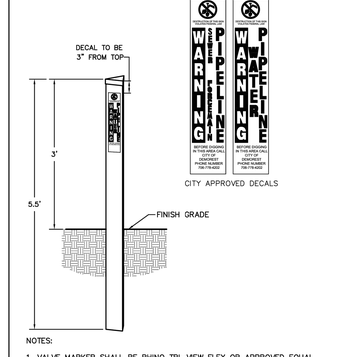
1. INSTALL NON-METALLIC TAPE APPROXIMATELY 24" ABOVE PIPE.
2. NO FIRE HYDRANTS SHALL BE INSTALLED IN CONCRETE FINISHED SURFACES OR IN SIDEWALK.

CITY OF DEMOREST						
JOB TITLE	SHEET TITLE	DRN. BY: EMI	REV. NO.	BY	DATE
STANDARD DETAIL	FIRE HYDRANT ASSEMBLY	CKD BY:			
		APPD. BY:			
		DATE: DECEMBER 2024			
DETAIL No. W-7	FILE No. 22021W-7.dwg	SCALE: N.T.S.			



NOTES:
1. CAST IRON COVER TO BE STAMPED "WATER" FOR WATERLINE VALVES, "REUSE" FOR REUSELINE VALVES, AND "SEWER" FOR FORCEMAIN VALVES
2. INSTALL NON–METALLIC TAPE APPROXIMATELY 24" ABOVE PIPE
3. DEBRIS CAP MUST BE INSTALLED AT TOP OF VALVE BOX.
4. TRENCH ADAPTOR MAY BE INSTALLED IN PLACE OF VALVE BOX AND DEBRIS CAP. SEE SECTION 2.05.
5. NO VALVE SHALL BE INSTALLED IN CONCRETE FINISHED SURFACE OR IN SIDEWALK.

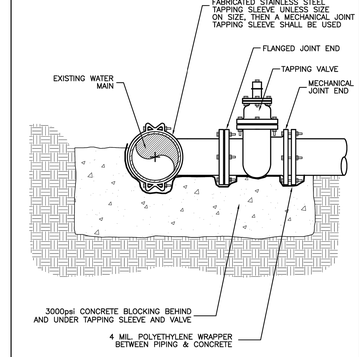
CITY OF DEMOREST						
JOB TITLE	SHEET TITLE	DRN. BY: EMI	REV. NO.	BY	DATE
STANDARD DETAIL	VALVE BOX	CKD BY:			
		APPD. BY:			
		DATE: DECEMBER 2024			
DETAIL No. W-8	FILE No. 22001W-8.dwg	SCALE: N.T.S.			



NOTES:

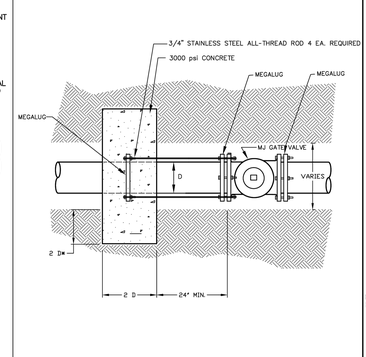
1. VALVE MARKER SHALL BE RHINO TRI–VIEW FLEX OR APPROVED EQUAL WITH DECAL ON ALL SIDES. SEE SPECIFICATION 02660 AND 02732 FOR MODEL NUMBER AND DETAILS.
2. VALVE MARKER SHALL BE BLUE FOR WATER VALVES, GREEN FOR FORCEMAIN VALVES, GREEN FOR SEWER, AND WHITE FOR REUSE VALVES.
3. DECAL SHALL BE 2–7/8" X 14" OR APPROVED EQUAL.

CITY OF DEMOREST						
JOB TITLE	SHEET TITLE	DRN. BY: EMI	REV. NO.	BY	DATE
STANDARD DETAIL	VALVE MARKER	CKD BY:			
		APPD. BY:			
		DATE: DECEMBER 2024			
DETAIL No. W-9	FILE No. 22001W-9.dwg	SCALE: N.T.S.			



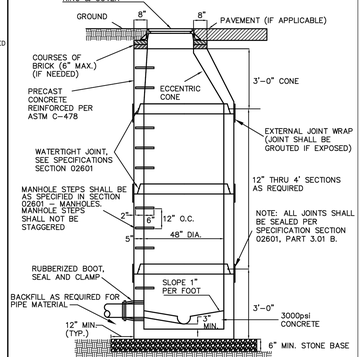
NOTES:
1. TAPPING SLEEVE TO BE PER STANDARD SPECIFICATIONS SECTION 2660.
2. DEVELOPER/CONTRACTOR IS REQUIRED TO PERFORM HYDROSTATIC PRESSURE TESTS IN ACCORDANCE WITH SECTION 02660–WATER DISTRIBUTION SYSTEMS, OF THE CITY OF DEMOREST STANDARD SPECIFICATIONS (LATEST EDITION)

CITY OF DEMOREST						
JOB TITLE	SHEET TITLE	DRN. BY: EMI	REV. NO.	BY	DATE
STANDARD DETAIL	TAPPING SLEEVE AND VALVE	CKD BY:			
		APPD. BY:			
		DATE: DECEMBER 2024			
DETAIL No. W-11	FILE No. 22001W-11.dwg	SCALE: N.T.S.			



* DENOTES CONCRETE ANCHOR TO BE SET IN UNDISTURBED SOIL

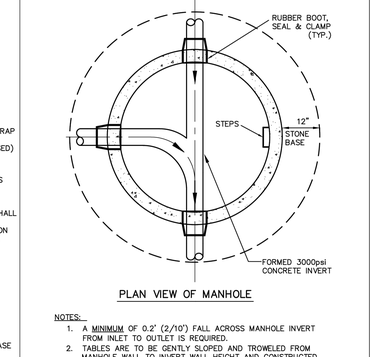
CITY OF DEMOREST						
JOB TITLE	SHEET TITLE	DRN. BY: EMI	REV. NO.	BY	DATE
STANDARD DETAIL	CONCRETE RESTRAINT ANCHOR	CKD BY:			
		APPD. BY:			
		DATE: DECEMBER 2024			
DETAIL No. W-23	FILE No. 22001W-23.dwg	SCALE: N.T.S.			



NOTE:
DEVELOPER/CONTRACTOR IS REQUIRED TO PERFORM VACUUM TESTS IN ACCORDANCE WITH SECTION 02601–MANHOLES, OF THE CITY OF DEMOREST STANDARD SPECIFICATIONS (LATEST EDITION)

SHEET 1 OF 4

CITY OF DEMOREST						
JOB TITLE	SHEET TITLE	DRN. BY: EMI	REV. NO.	BY	DATE
STANDARD DETAIL	STANDARD MANHOLE	CKD BY:			
		APPD. BY:			
		DATE: DECEMBER 2024			
DETAIL No. S-1	FILE No. 22001S-1.dwg	SCALE: N.T.S.			



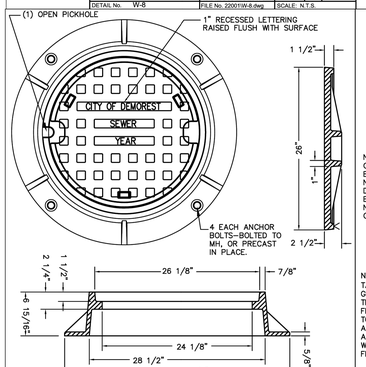
PLAN VIEW OF MANHOLE

NOTES:

1. A MINIMUM OF 0.2' (2/10") FALL ACROSS MANHOLE INVERT FROM INLET TO OUTLET IS REQUIRED.
2. TABLES ARE TO BE GENTLY SLOPED AND TROWELED FROM MANHOLE WALL TO INVERT WALL HEIGHT AND CONSTRUCTED OF AGGREGATE–MIX CEMENT WITH SMOOTH VENEER FINISH.
3. DEVELOPER/CONTRACTOR IS REQUIRED TO PERFORM VACUUM TESTS IN ACCORDANCE WITH SECTION 02601–MANHOLES OF THE CITY OF DEMOREST STANDARD SPECIFICATIONS (LATEST EDITION).

SHEET 2 OF 4

CITY OF DEMOREST						
JOB TITLE	SHEET TITLE	DRN. BY: EMI	REV. NO.	BY	DATE
STANDARD DETAIL	MANHOLE INVERT	CKD BY:			
		APPD. BY:			
		DATE: DECEMBER 2024			
DETAIL No. S-2	FILE No. 22001S-2.dwg	SCALE: N.T.S.			

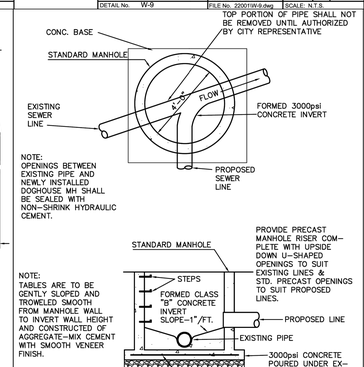


MATERIAL: CAST GRAY IRON ASTM A48, CLASS 35B
FINISH UNPAINTED
WEIGHT 276LBS. PER SET
PER NEENAH FOUNDRY R–1642 WITH T–GASKET OR APPROVED EQUIVALENT BY THE CITY.

COVER SHALL BE STAMPED WITH APPROPRIATE DESIGNATION

SHEET 3 OF 4

CITY OF DEMOREST						
JOB TITLE	SHEET TITLE	DRN. BY: EMI	REV. NO.	BY	DATE
STANDARD DETAIL	ON-ROAD MANHOLE COVER	CKD BY:			
		APPD. BY:			
		DATE: DECEMBER 2024			
DETAIL No. S-3	FILE No. 22001S-3.dwg	SCALE: N.T.S.			



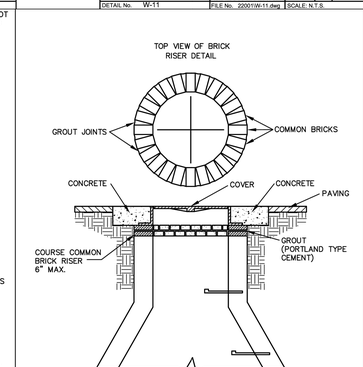
NOTE:
OPENINGS BETWEEN EXISTING PIPE AND NEWLY INSTALLED DOGHOUSE MH SHALL BE SEALED WITH NON–SHRINK HYDRAULIC CEMENT.

NOTE:
TABLES ARE TO BE GENTLY SLOPED AND TROWELED SMOOTH FROM MANHOLE WALL TO INVERT WALL HEIGHT AND CONSTRUCTED OF AGGREGATE–MIX CEMENT WITH SMOOTH VENEER FINISH.

NEW PIPE SHALL BE LOCATED AT THE TOP OF INVERT TABLE.

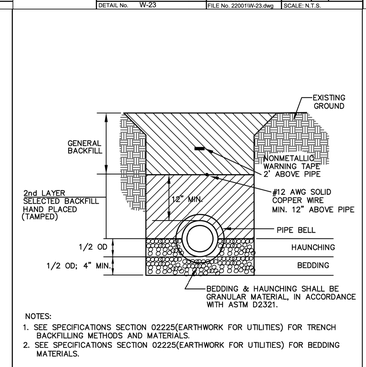
NOTE:
DEVELOPER/CONTRACTOR IS REQUIRED TO PERFORM VACUUM TESTS IN ACCORDANCE WITH SECTION 02601–MANHOLES, OF THE CITY OF DEMOREST STANDARD SPECIFICATIONS (LATEST EDITION)

CITY OF DEMOREST						
JOB TITLE	SHEET TITLE	DRN. BY: EMI	REV. NO.	BY	DATE
STANDARD DETAIL	DOGHOUSE MANHOLE	CKD BY:			
		APPD. BY:			
		DATE: DECEMBER 2024			
DETAIL No. S-5	FILE No. 22001S-5.dwg	SCALE: N.T.S.			



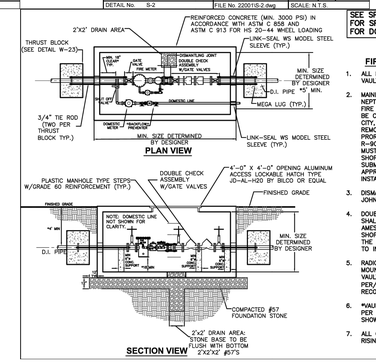
NOTE: BRICK SHALL BE USED WHEN UPWARD ADJUSTMENTS TO FINISHED GRADE ARE REQUIRED.

CITY OF DEMOREST						
JOB TITLE	SHEET TITLE	DRN. BY: EMI	REV. NO.	BY	DATE
STANDARD DETAIL	LID GROUTING DETAIL	CKD BY:			
		APPD. BY:			
		DATE: DECEMBER 2024			
DETAIL No. S-7	FILE No. 22001S-7.dwg	SCALE: N.T.S.			



NOTES:
1. SEE SPECIFICATIONS SECTION 02225(EARTHWORK FOR UTILITIES) FOR TRENCH BACKFILLING METHODS AND MATERIALS.
2. SEE SPECIFICATIONS SECTION 02225(EARTHWORK FOR UTILITIES) FOR BEDDING MATERIALS.

CITY OF DEMOREST						
JOB TITLE	SHEET TITLE	DRN. BY: EMI	REV. NO.	BY	DATE
STANDARD DETAIL	CLASS "B" BEDDING DETAIL	CKD BY:			
		APPD. BY:			
		DATE: DECEMBER 2024			
DETAIL No. S-9	FILE No. 22001S-9.dwg	SCALE: N.T.S.			



SEE SPECIFICATION 02665 FOR SPECIFIC REQUIREMENTS FOR DOMESTIC LINE.

FIRELINE NOTES

1. ALL FIRELINE PIPING INSIDE VAULT SHALL BE FLANGED.
2. MAINLINE METER SHALL BE NEPTUNE HIGH PROTECTUS III FIRE SERVICE METER– SIZE TO BE COORDINATED WITH THE CITY. METER SHALL FEATURE REMOTE READING SYSTEM – PROREAD AUTO DETECT WITH R–900 RF PIT MILL METER MUST READ IN US GALLONS. SHOP DRAWING MUST BE SUBMITTED TO THE CITY FOR APPROVAL PRIOR TO INSTALLATION.
3. DISMANTLING JOINT BY VIKING JOHNSON.
4. DOUBLE CHECK ASSEMBLY SHALL BE SERIES BY WATTS, AMES OR APPROVED EQUAL. SHOP MUST BE SUBMITTED TO THE CITY FOR APPROVAL PRIOR TO INSTALLATION.
5. RADIO READ PAD SHALL BE MOUNTED ON TOP OF METER VAULT AS PER/MANUFACTURER'S RECOMMENDATIONS.
6. *VAULT SHALL BE SIZED AS PER MINIMUM CLEARANCES SHOWN.
7. ALL GATE VALVES SHALL HAVE RISING STEMS.

CITY OF DEMOREST						
JOB TITLE	SHEET TITLE	DRN. BY: EMI	REV. NO.	BY	DATE
STANDARD DETAIL	3-INCH AND LARGER METER FIRELINE DOMESTIC FIRELINE DOMESTIC	CKD BY: DCB			
		APPD. BY: EMC			
		DATE: DECEMBER 2024			
DETAIL No. W-24	FILE No. 22001W-24.dwg	SCALE: N.T.S.			

*NOTE: SEE NOTE ON SHEET C-6 ABOUT DOMESTIC BACKFLOW PREVENTOR.

NOTE: DOMESTIC WATER - FIRE VAULT WATER LINE LAYOUT TO MATCH UTILITY PLAN ON SHEET C-6.

BRAVO SITE SET 02-11-2026

CROFT

Croft & Associates
3380 Blue Springs Road
Kennesaw, Georgia 30144
770.529.7714 (o)
www.croftae.com

Rochester DCCM

Rochester | DCCM
425 Oak Street
Gainesville, Georgia 30501
770.718.0600
www.rochester-assoc.com

GEORGIA REGISTERED No. 31471 PROFESSIONAL 01.17.25 ENGINEER ERIC M. CHENEY

OWNER

HABERSHAM COUNTY ANIMAL CONTROL
130 JACOBS WAY, SUITE 302
CLARKSVILLE, GA
30523

HABERSHAM COUNTY ANIMAL SHELTER

HABERSHAM ANIMAL CONTROL
OLD ATHENS HWY
CORNELIA, GA
30531

No.	Date	Description
3	2025-11-24	REVISION 3 SET
2	2025-10-27	REVISION 2 SET
1	2025-01-17	VE REVISION 1 SET
0	2024-06-10	PERMIT SET
		ISSUANCE

PROJECT NUMBER
2022-313

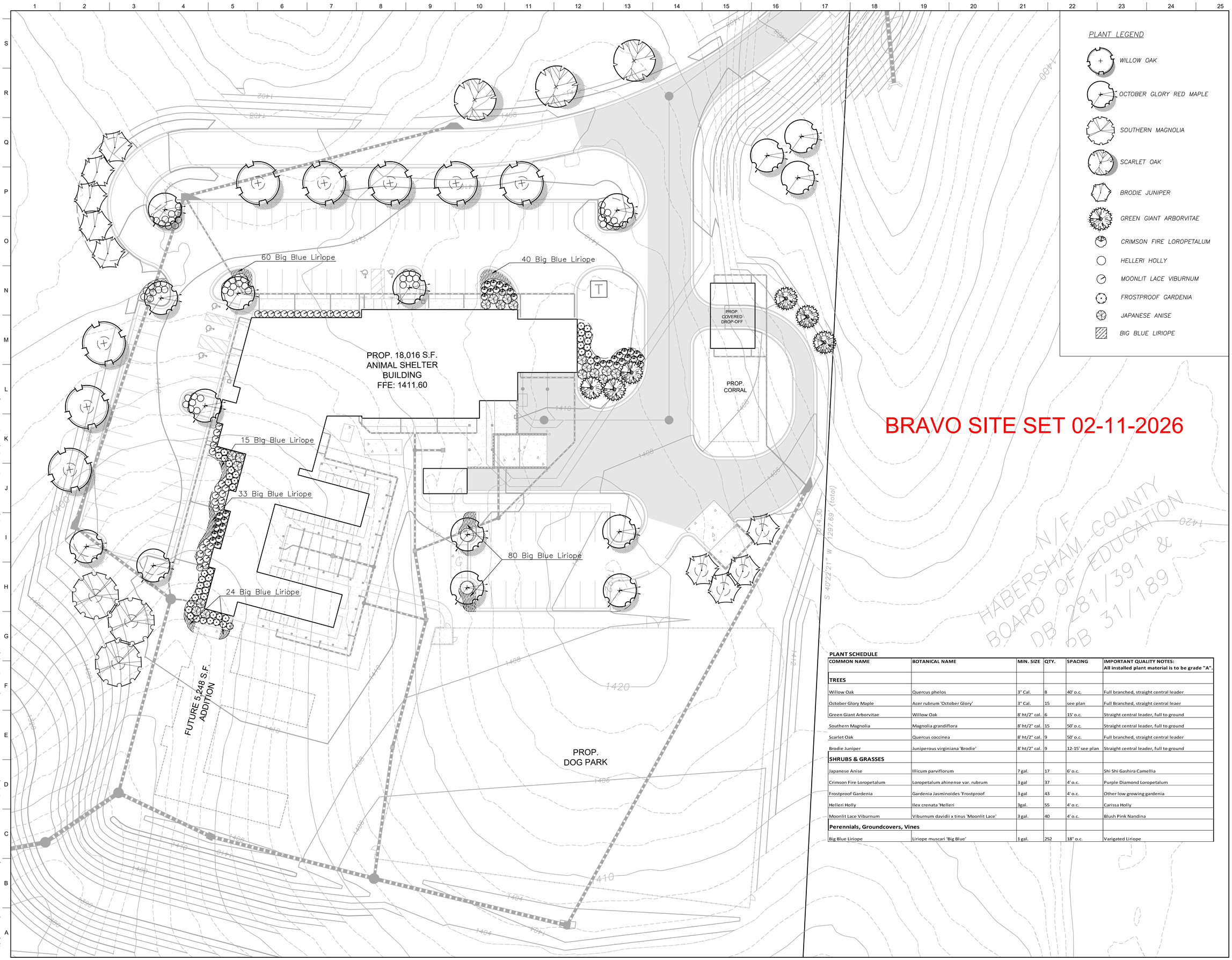
DRAWN: DCB
CHECKED: EMC

SHEET TITLE
CONSTRUCTION DETAILS

SHEET NO.
C-32

THIS SHEET PLOTS ON 42" x 30"

0 10' 20' 40' 60'



PLANT LEGEND

- WILLOW OAK
- OCTOBER GLORY RED MAPLE
- SOUTHERN MAGNOLIA
- SCARLET OAK
- BRODIE JUNIPER
- GREEN GIANT ARBORVITAE
- CRIMSON FIRE LOROPETALUM
- HELLERI HOLLY
- MOONLIT LACE VIBURNUM
- FROSTPROOF GARDENIA
- JAPANESE ANISE
- BIG BLUE LIRIOPE

BRAVO SITE SET 02-11-2026

PLANT SCHEDULE

COMMON NAME	BOTANICAL NAME	MIN. SIZE	QTY.	SPACING	IMPORTANT QUALITY NOTES: All installed plant material is to be grade "A".
TREES					
Willow Oak	Quercus phelos	3" Cal.	8	40' o.c.	Full branched, straight central leader
October Glory Maple	Acer rubrum 'October Glory'	3" Cal.	15	see plan	Full Branched, straight central leaer
Green Giant Arborvitae	Willow Oak	8' ht/2" cal.	6	15' o.c.	Straight central leader, full to ground
Southern Magnolia	Magnolia grandiflora	8' ht/2" cal.	15	50' o.c.	Straight central leader, full to ground
Scarlet Oak	Quercus coccinea	8' ht/2" cal.	9	50' o.c.	Full branched, straight central leader
Brodie Juniper	Juniperous virginiana 'Brodie'	8' ht/2" cal.	9	12-15' see plan	Straight central leader, full to ground
SHRUBS & GRASSES					
Japanese Anise	Illicum parviflorum	7 gal.	17	6' o.c.	Shi Shi Gashira Camellia
Crimson Fire Loropetalum	Loropetalum ahinense var. rubrum	3 gal	37	4' o.c.	Purple Diamond Loropetalum
Frostproof Gardenia	Gardenia Jasminoides 'Frostproof	3 gal	43	4' o.c.	Other low growing gardenia
Helleri Holly	Ilex crenata 'Helleri	3gal.	55	4' o.c.	Carissa Holly
Moonlit Lace Viburnum	Viburnum davidii x tinus 'Moonlit Lace'	3 gal.	40	4' o.c.	Blush Pink Nandina
Perennials, Groundcovers, Vines					
Big Blue Liriope	Liriope muscari 'Big Blue'	1 gal.	252	18" o.c.	Varigated Liriope

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Kennesaw, Georgia 30144
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OWNER

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130 JACOBS WAY, SUITE 302
CLARKSVILLE, GA
30523

HABERSHAM ANIMAL CONTROL
OLD ATHENS HWY
CORNELIA, GA
30531

No.	Date	Description
A	2023-12-01	DD DELIVERABLE
		ISSUANCE

PROJECT NUMBER
2022-313

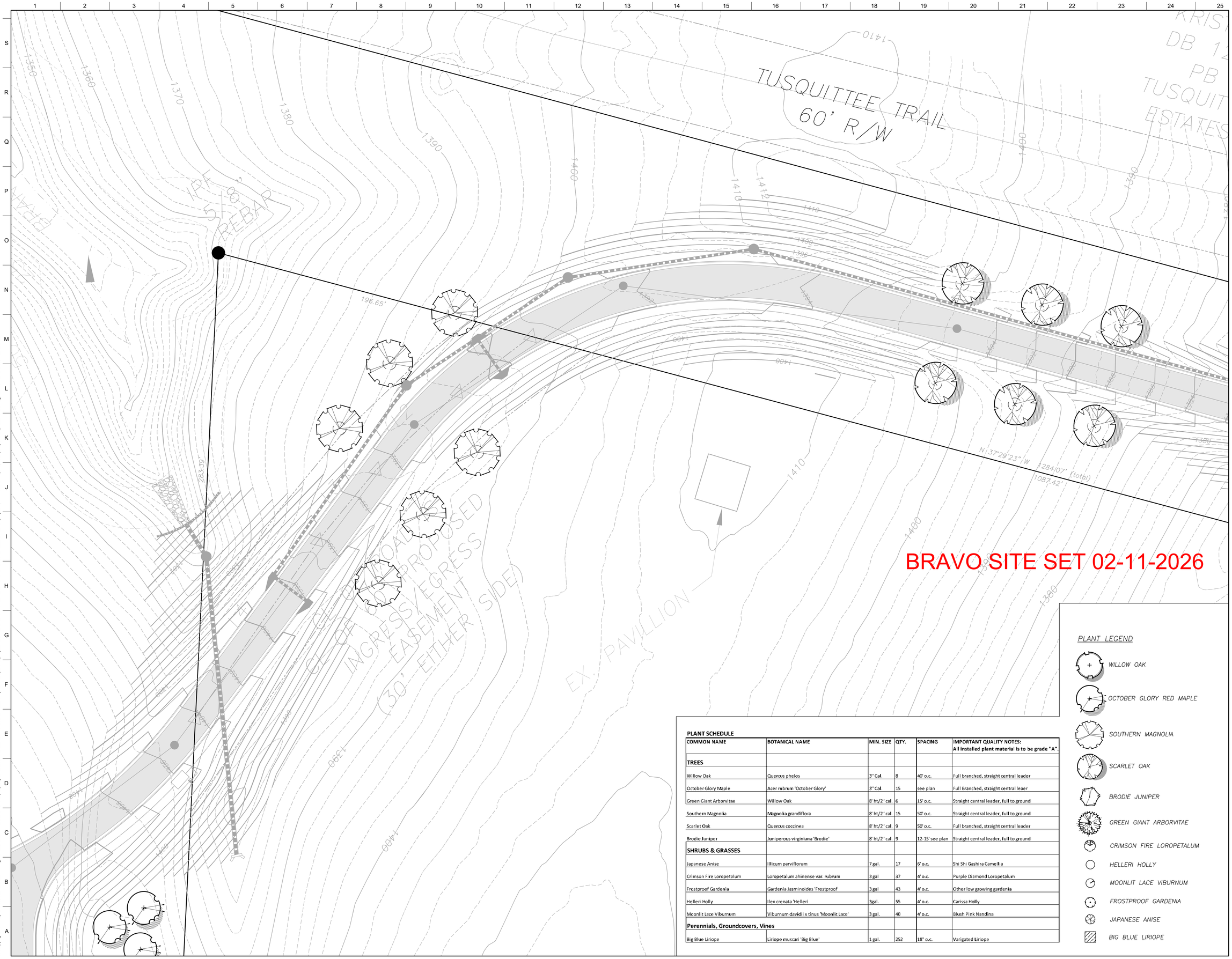
DRAWN: LAJ
CHECKED: JMJ

SHEET TITLE
LANDSCAPE PLAN

SHEET NO.
L1.0

THIS SHEET PLOTS ON 42" x 30"

0 10' 20' 40' 60'



BRAVO SITE SET 02-11-2026

PLANT SCHEDULE

COMMON NAME	BOTANICAL NAME	MIN. SIZE	QTY.	SPACING	IMPORTANT QUALITY NOTES: All installed plant material is to be grade "A".
TREES					
Willow Oak	Quercus phelos	3" Cal.	8	40' o.c.	Full branched, straight central leader
October Glory Maple	Acer rubrum 'October Glory'	3" Cal.	15	see plan	Full Branched, straight central leaer
Green Giant Arborvitae	Willow Oak	8' ht/2" cal.	6	15' o.c.	Straight central leader, full to ground
Southern Magnolia	Magnolia grandiflora	8' ht/2" cal.	15	50' o.c.	Straight central leader, full to ground
Scarlet Oak	Quercus coccinea	8' ht/2" cal.	9	50' o.c.	Full branched, straight central leader
Brodie Juniper	Juniperous virginiana 'Brodie'	8' ht/2" cal.	9	12-15' see plan	Straight central leader, full to ground
SHRUBS & GRASSES					
Japanese Anise	Illicum parviflorum	7 gal.	17	6' o.c.	Shi Shi Gashira Camellia
Crimson Fire Loropetalum	Loropetalum ahinense var. rubrum	3 gal	37	4' o.c.	Purple Diamond Loropetalum
Frostproof Gardenia	Gardenia Jasminoides 'Frostproof	3 gal	43	4' o.c.	Other low growing gardenia
Helleri Holly	Ilex crenata 'Helleri	3gal.	55	4' o.c.	Carissa Holly
Moonlit Lace Viburnum	Viburnum davidii x tinus 'Moonlit Lace'	3 gal.	40	4' o.c.	Blush Pink Nandina
Perennials, Groundcovers, Vines					
Big Blue Liriope	Liriope muscari 'Big Blue'	1 gal.	252	18" o.c.	Varigated Liriope

PLANT LEGEND

- WILLOW OAK
- OCTOBER GLORY RED MAPLE
- SOUTHERN MAGNOLIA
- SCARLET OAK
- BRODIE JUNIPER
- GREEN GIANT ARBORVITAE
- CRIMSON FIRE LOROPETALUM
- HELLERI HOLLY
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Croft & Associates
3380 Blue Springs Road
Kennesaw, Georgia 30144
770.529.7714 (p)
www.croftae.com

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30523

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OLD ATHENS HWY
CORNELIA, GA
30531

No.	Date	Description
A	2023-12-01	DD DELIVERABLE
		ISSUANCE

PROJECT NUMBER
2022-313

DRAWN: LAJ
CHECKED: JMJ

SHEET TITLE
LANDSCAPE PLAN

SHEET NO.
L1.1

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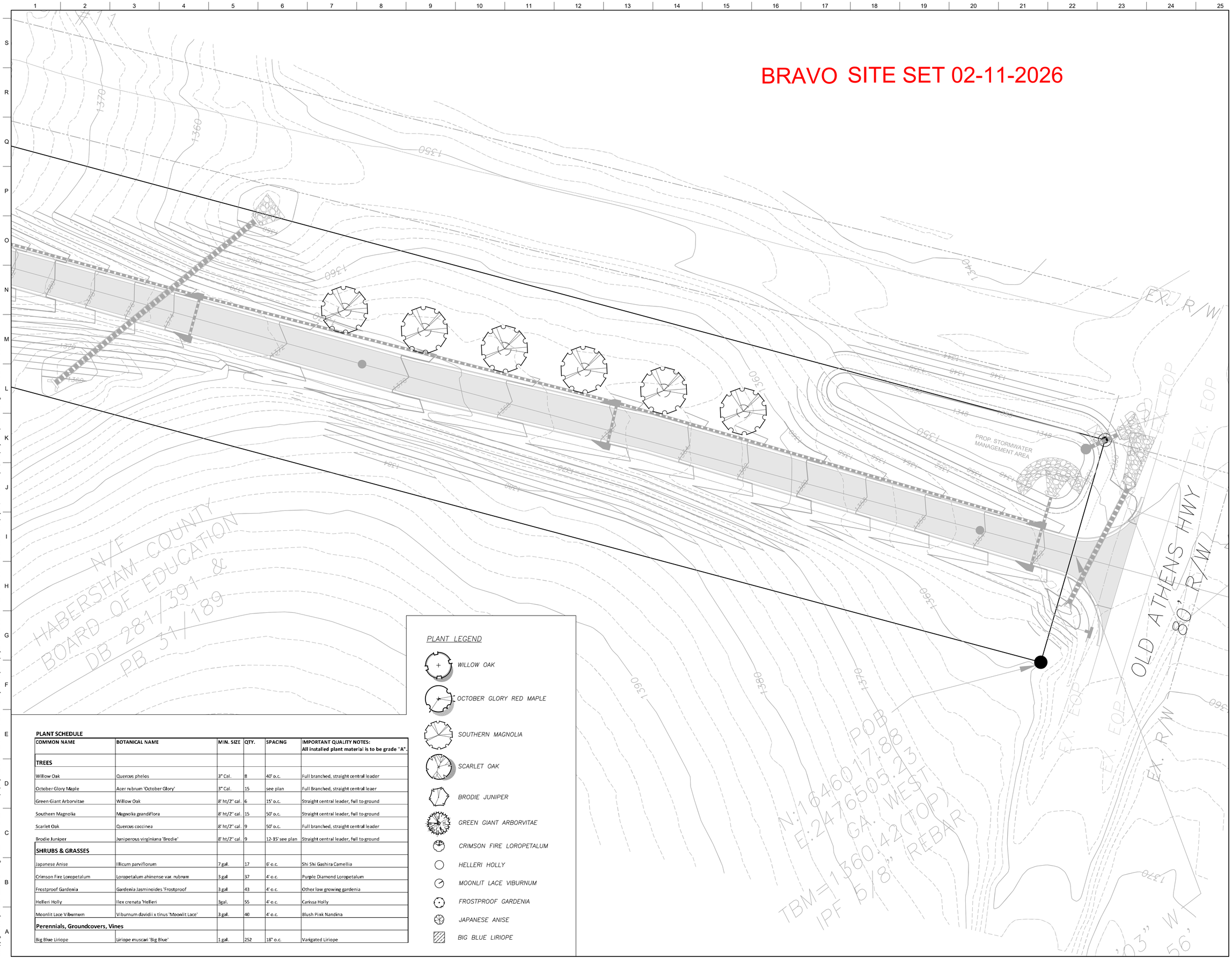
BRAVO SITE SET 02-11-2026

THIS SHEET PLOTS ON 42" x 30"

0 10' 20' 40' 60'



PLANT SCHEDULE

COMMON NAME	BOTANICAL NAME	MIN. SIZE	QTY.	SPACING	IMPORTANT QUALITY NOTES: All installed plant material is to be grade "A".
TREES					
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Green Giant Arborvitae	Willow Oak	8' ht/2' cal.	6	15' o.c.	Straight central leader, full to ground
Southern Magnolia	Magnolia grandiflora	8' ht/2' cal.	15	50' o.c.	Straight central leader, full to ground
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Moonlit Lace Viburnum	Viburnum davidii x tinus 'Moonlit Lace'	3 gal.	40	4' o.c.	Blush Pink Nandina
Perennials, Groundcovers, Vines					
Big Blue Liriope	Liriope muscari 'Big Blue'	1 gal.	252	18" o.c.	Variegated Liriope

PLANT LEGEND

- *WILLOW OAK*
- *OCTOBER GLORY RED MAPLE*
- *SOUTHERN MAGNOLIA*
- *SCARLET OAK*
- *BRODIE JUNIPER*
- *GREEN GIANT ARBORVITAE*
- *CRIMSON FIRE LOROPETALUM*
- *HELLERI HOLLY*
- *MOONLIT LACE VIBURNUM*
- *FROSTPROOF GARDENIA*
- *JAPANESE ANISE*
- *BIG BLUE LIRIOPE*

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No.	Date	Description
A	2023-12-01	DD DELIVERABLE
		ISSUANCE

PROJECT NUMBER
2022-313

DRAWN: LAJ
CHECKED: JMJ

SHEET TITLE
LANDSCAPE PLAN

SHEET NO.
L1.2

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THIS SHEET PLOTS ON 42" X 30"

0 10' 20' 40' 60'

LANDSCAPE SPECIFICATIONS

1. SCOPE OF WORK

THIS WORK SHALL CONSIST OF SOIL PREPARATION, FINISH GRADING, PLANTING AND DRAINAGE, INCLUDING ALL LABOR, MATERIALS, TOOLS, EQUIPMENT, AND ANY OTHER APPURTENANCES NECESSARY FOR THE COMPLETION OF THIS PROJECT.

2. GENERAL

A. QUALITY

1. OWNER'S REPRESENTATIVE RESERVES THE RIGHT TO REJECT SUBSTANDARD PLANT MATERIAL AT ANY POINT OF THE LANDSCAPING OPERATION.

2. PLANTS SHALL MEET OR EXCEED QUALIFICATIONS SET FORTH BY AMERICAN STANDARD NURSERY STOCK'S LATEST EDITION.

B. DELIVERY, STORAGE, HANDLING:

1. REASONABLE CARE SHALL BE TAKEN TO ASSURE HEALTHY PLANT MATERIAL.
2. PLANTS THAT SUFFER IN DELIVERY, STORAGE OR HANDLING WILL BE REJECTED.

C. PROJECT CONDITIONS:

1. COORDINATE LANDSCAPING OPERATIONS WITH WORK OF OTHER TRADES.
2. PRIOR TO COMMENCING WORK, HAVE UTILITY LOCATOR SERVICE LOCATE AND MARK LINES.
3. COORDINATE SITE SPECIFIC LINES (UTILITY, PIPED DOWNSPOUTS, ETC.) WITH GENERAL CONTRACTOR.

3. MATERIALS

A. TOPSOIL

1. GENERAL CONTRACTOR IS RESPONSIBLE FOR PLACING TOPSOIL AND BACKFILLING CURBS AND WALKS TO 1" PLUS OR MINUS.
2. LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR FINE GRADING.

B. PLANTING BACKFILL MIXTURE

1. PLANT MIX SHALL BE 50% EXISTING SOIL AND 50% COMMERCIAL PLANT MIX.
2. DO NOT USE PEAT MOSS AS A PLANT MIX.

C. SOD

1. EITHER ROLLED OR CUT IS ACCEPTABLE
2. SOD SHALL BE WELL GROWN AND HOLD TOGETHER WHEN SUSPENDED IN AIR AND HELD FROM ONE END.
3. CLUMP TYPE GRASS SHALL BE GROWN IN A NYLON TYPE WEB.

D. MULCH

1. PINE STRAW, FRESH AND CLEAN OF DEBRIS, IN PERIMETER AREAS – 3" DEPTH.

E. FERTILIZER

ADJUST LEVEL OF NITROGEN BASED ON SEASON RATES ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

F. PRE-EMERGENT

GRANULAR TYPE FOR BED AREAS ONLY, RATES ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

NOTE: FERTILIZER AND PRE-EMERGENTS MAY BE IN COMBINED FORM.

G. STAKES AND GUYS

1. GUYING MATERIAL SHALL BE ARBORTIE OR AN EQUIVALENT SUBSTITUTE, AND THE 3-STAKE METHOD SHALL BE USED.

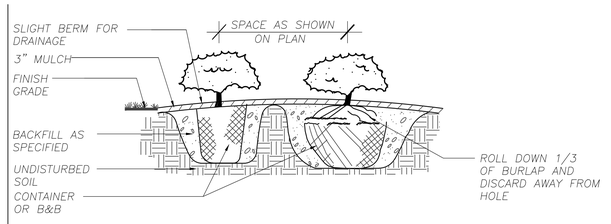
4. EXECUTION

A. PLANTING

1. POSITION TREES AND SHRUBS AS PER PLANS AND SECURE THE APPROVAL OF THE OWNER'S REPRESENTATIVE BEFORE EXCAVATING PITS, MAKING NECESSARY ADJUSTMENTS AS DIRECTED.
2. PLANT PITS – TREES, SHRUBS AND MOST GROUNDCOVERS
   a. DIG HOLE TWICE THE WIDTH OF THE CONTAINER OR BALL.
   b. THE TOP 1/3 TO 1/2 THE BURLAP AND BASKET ARE TO BE REMOVED AND DISCARDED AWAY FROM PLANTING HOLE.
   c. REMOVE ALL NYLON STRAPS AND TWINE.
   d. DEPTH SHALL NOT EXCEED DEPTH OF CONTAINER OR BALL.

NOTE: SCARIFY ROOTS OF CONTAINERIZED PLANTS. BREAK OR CUT ROOTS THAT HAVE BEGUN TO WRAP AROUND THE ROOT BALL. NO SYNTHETIC BURLAP ALLOWED.

3. FILL PREPARED SOIL AROUND BALL OF PLANT. COMPLETE BACK-FILLING AND WATER THOROUGHLY.
4. ALL PLANTS SHALL BE SET SO THAT, WHEN SETTLED, THEY BEAR THE SAME RELATION TO THE REQUIRED GRADE AS THEY BORE TO THE NATURAL GRADE BEFORE BEING TRANSPLANTED.



1 L1.8 SHRUB AND GROUNDCOVER PLANTING
SCALE: NOT TO SCALE

5. IMMEDIATELY AFTER PLANTING, STAKE ALL TREES TO PREVENT DAMAGE FROM WIND.
6. PREPARE RAISED EARTH BASIN AS WIDE AS PLANTING HOLE OF EACH TREE.
7. WATER IMMEDIATELY AFTER PLANTING. WATER SHALL BE APPLIED TO EACH TREE AND SHRUB IN SUCH MANNER AS NOT TO DISTURB BACKFILL AND TO THE EXTENT THAT ALL MATERIALS IN THE PLANTING HOLE ARE THOROUGHLY SATURATED.
8. ALL SHRUBS AND GROUND COVER AREAS SHALL BE TREATED WITH A PRE-EMERGENT AFTER MULCHING. PRE-EMERGENT TO BE APPLIED AS PER MANUFACTURER'S RECOMMENDATION.

B. ANNUALS AND PERENNIAL BED PREPARATION

1. ROTOTILL EXISTING SOIL.
2. ADD THE FOLLOWING AMENDMENTS (PER 100 SQUARE FEET) AND ROTOTILL AGAIN.
   a. 4 BAGS NATURE'S HELPER SOIL CONDITIONER
   b. 50 # COMPOSTED COW MANURE
   c. 5 CUPS FERTILIZER 10-10-10
   d. LIME (AS NEEDED PER LABORATORY RECOMMENDATIONS AFTER SOIL TEST, TO ACHIEVE OPTIMUM pH)
3. SLIGHTLY MOUND THE BED AREA TO FACILITATE "DRY FEET". DO NOT INTERRUPT SITE DRAINAGE.

C. BEDLINES

3" DEEP SHOVEL CUT TRENCH EDGE WHERE MULCH MEETS GRASS AND CONCRETE WALKS OR CURB.

5. FINISH GRADING

A. ALL AREAS WILL BE RECEIVED BY THE CONTRACTOR AT SUBSTANTIALLY PLUS/MINUS 1" OF FINISH GRADE.

B. ALL LAWN AND PLANTING AREAS SHALL BE GRADED TO A SMOOTH, EVEN AND UNIFORM PLANE WITH NO ABRUPT CHANGE OF SURFACE. SOIL AREAS ADJACENT TO THE BUILDINGS SHALL SLOPE AWAY FROM THE BUILDINGS.

C. ALL PLANTING AREAS SHALL BE GRADED AND MAINTAINED TO ALLOW FREE FLOW OF SURFACE WATER.

6. GUARANTEE

A. CONTRACTOR SHALL GUARANTEE ALL TREES FOR A PERIOD OF ONE (1) YEAR.

B. CONTRACTOR SHALL GUARANTEE ALL OTHER MATERIAL FOR A PERIOD OF 90 DAYS.

7. MAINTENANCE

MAINTAIN SITE WEEKLY BY MOWING, WATERING, AND REPLACING DEAD PLANT MATERIAL UNTIL SUBSTANTIAL COMPLETION AND ACCEPTANCE. ALL MULCH SHOULD BE REPLENISHED BI-ANNUALLY. ALL PERENNIALS SHALL BE CUT BACK AFTER GROWING SEASON TO FACILITATE ANNUAL REGROWTH.

8. SUBSTANTIAL COMPLETION

A. SUBSTANTIAL COMPLETION SHALL BE DETERMINED SOLELY BY THE OWNER'S REPRESENTATIVE.

B. THE FOLLOWING ITEMS MUST BE COMPLETE PRIOR TO WRITTEN APPLICATION FOR SUBSTANTIAL COMPLETION:
1. ALL SPECIFICATIONS STRICTLY ADHERED.
2. 100% OF PLANT MATERIAL INSTALLED (LESS ANY PLANTS THAT MAY BE PLANTED IN ANOTHER SEASON FOR HORTICULTURAL OR AVAILABILITY REASONS UPON APPROVAL BY OWNER'S REPRESENTATIVE).
3. SEEDED AREAS GERMINATED.
4. SOD AREAS SHALL DISPLAY UNIFORM COLOR, QUALITY, AND COVERAGE.

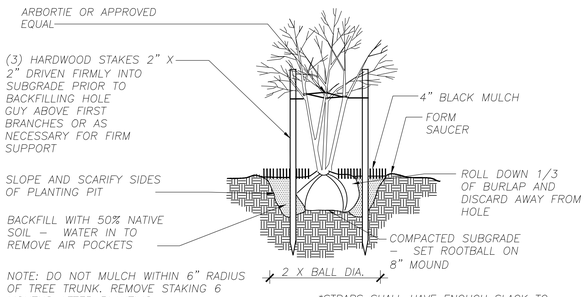
9. CLEAN-UP

UPON THE COMPLETION OF ALL PLANTING WORK AND BEFORE FINAL ACCEPTANCE, THE CONTRACTOR SHALL REMOVE ALL MATERIAL, EQUIPMENT, AND DEBRIS RESULTING FROM HIS WORK. ALL PAVED AREAS SHALL BE BROOM CLEANED AND THE SITE LEFT IN A NEAT AND ACCEPTABLE CONDITION AS APPROVED BY THE OWNER'S REPRESENTATIVE. MAINTENANCE (ALTERNATE BID) COST PER MONTH AFTER FINAL ACCEPTANCE OF SITE BY OWNER.

MAINTENANCE (ALTERNATE BID)

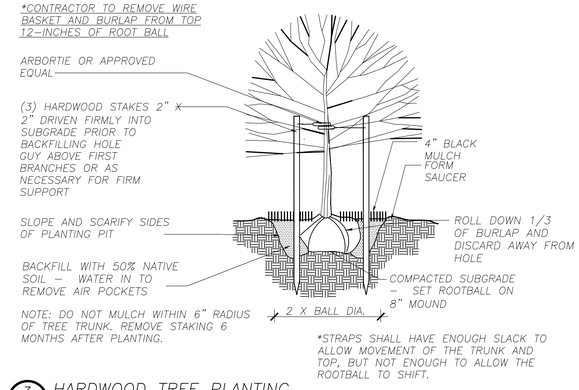
COST PER MONTH AFTER FINAL ACCEPTANCE OF SITE BY OWNER.

*CONTRACTOR TO REMOVE WIRE BASKET AND BURLAP FROM TOP 12-INCHES OF ROOT BALL



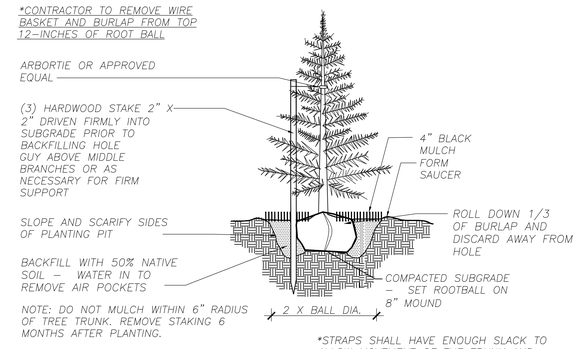
2 L1.8 MULTI-STEM TREE PLANTING
SCALE: NOT TO SCALE

*CONTRACTOR TO REMOVE WIRE BASKET AND BURLAP FROM TOP 12-INCHES OF ROOT BALL



3 L1.8 HARDWOOD TREE PLANTING
SCALE: NOT TO SCALE

*CONTRACTOR TO REMOVE WIRE BASKET AND BURLAP FROM TOP 12-INCHES OF ROOT BALL



4 L1.8 EVERGREEN TREE PLANTING
SCALE: NOT TO SCALE

BRAVO SITE SET 02-11-2026

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HABERSHAM COUNTY ANIMAL SHELTER

Croft & Associates
3380 Blue Springs Road
Kennesaw, Georgia 30144
770.529.7714 (p)
www.croftae.com

OWNER

HABERSHAM COUNTY ANIMAL CONTROL
130 JACOBS WAY, SUITE 302
CLARKSVILLE, GA
30523

HABERSHAM COUNTY ANIMAL SHELTER

HABERSHAM ANIMAL CONTROL
OLD ATHENS HWY
CORNELIA, GA
30531

No.	Date	Description
A	2023-12-01	DD DELIVERABLE
ISSUANCE		

PROJECT NUMBER
2022-313

DRAWN: LAJ
CHECKED: JMJ

SHEET TITLE
LANDSCAPE NOTES/DETAILS

SHEET NO.
L1.3