CONSTRUCTION DRAWINGS
FOR
STONE BRIDGE
RESIDENTIAL SUBDIVISION
LOCATED IN
HIAWASSEE TOWNSHIP
CLAY COUNTY, NORTH CAROLINA

OWNER & DEVELOPER:
BROWN HAVEN HOMES
837 HWY 400
SUITE 105
DAWSONVILLE, GA 30534
(706) 970-2456
john@brownhavenhomes.com

24 HOUR CONTACT:
JOHN ALLEN
(706) 970-2456
john@brownhavenhomes.com

ENGINEERING CONTACT:
Rochester | DCCM
MICHAEL STREAM, P.E.
(770) 718-0600
mstream@dccm.com

SURVEY CONTACT:
Rochester | DCCM
JARROD BLACK, P.L.S.
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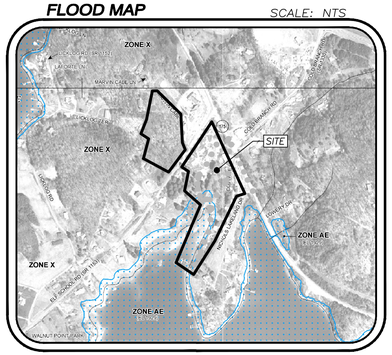
CONSTRUCTION SCHEDULE	1st Month	2nd Month	3rd Month	4th Month	5th Month	6th Month	7th Month	8th Month
MAINTAIN ALL EROSION CONTROL BMPs								
INSTALL PHASE 1 EROSION CONTROL BMPs								
CLEARING & GRUBBING								
INSTALL PHASE 2 EROSION CONTROL BMPs								
GRADING								
STORM & SANITARY SEWERS								
CURB & GUTTER								
INSTALL PHASE 3 EROSION CONTROL BMPs								
WATER LINES								
PAVING								
PERMANENT VEGETATION & LANDSCAPING								

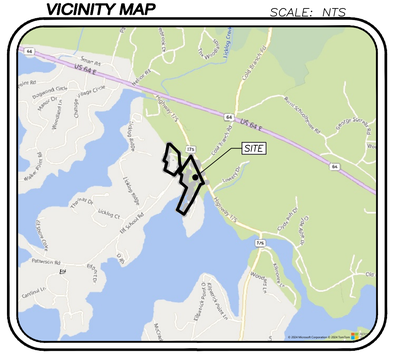
NC 811 ORG

PORTIONS OF THIS PROPERTY ARE LOCATED IN A FLOOD HAZARD ZONE "AE" AS PER F.E.M.A. INSURANCE RATE MAP OF CLAY COUNTY, NORTH CAROLINA. COMMUNITY PANEL NO. 3700548900J EFFECTIVE DATE NOVEMBER 19, 2008.

FLOOD MAP SCALE: NTS



VICINITY MAP SCALE: NTS



PROPOSED DEVELOPMENT BY:
BROWN HAVEN HOMES

Rochester Engineering, Inc.

425 Oak St NW, Gainesville, GA 30501
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1ST SUBMITTAL

TAX PARCEL ID: 548901284729, 548901293357, 548901292054, & 548901199661
G224096.TNM
04/28/25

NO.	DATE	DESCRIPTIONS
		REVISIONS

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GENERAL SITE 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. THE RIGHT OF WAY INFORMATION, TOPOGRAPHY, UTILITIES, AND PHYSICAL FEATURES WERE TAKEN FROM A TOPOGRAPHIC SURVEY AND BOUNDARY PLAT CONDUCTED BY ROCHESTER & ASSOCIATES, INC. FIELD DATA WAS COLLECTED IN AUGUST OF 2024.

4. THE LOCATIONS OF UNDERGROUND FACILITIES SHOWN ON THIS PLAN ARE BASED ON FIELD SURVEYS AND LOCAL UTILITY COMPANY RECORDS. IT SHALL BE THE CONTRACTOR'S FULL RESPONSIBILITY TO CONTACT THE VARIOUS UTILITY COMPANIES TO LOCATE THEIR FACILITIES PRIOR TO STARTING CONSTRUCTION. NO ADDITIONAL COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR DAMAGE AND REPAIR TO THESE FACILITIES CAUSED BY HIS WORK FORCE.

5. 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.

6. ALL DIMENSIONS ARE TO THE BACK OF CURB UNLESS OTHERWISE NOTED.

7. 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.

8. ALL CONSTRUCTION SHALL CONFORM TO CURRENT APPLICABLE CLAY COUNTY STANDARDS AND SPECIFICATIONS.

9. SITE IS LOCATED IN HIAWASSEE TOWNSHIP, CLAY COUNTY, NORTH CAROLINA.

10. PROPOSED USE: 3 NEW DOCKS, LAKE DREDGING, 18 ATTACHED SINGLE FAMILY UNITS, AND 43 DETACHED SINGLE FAMILY UNITS.

11. DEVELOPER: BROWN HAVEN HOMES

12. CONTRACTOR SHALL NOTIFY CLAY COUNTY 24 HOURS BEFORE THE BEGINNING OF EVERY PHASE OF CONSTRUCTION.

13. UTILITY SERVICE:
GAS – TBD
WATER – TBD
COMM. – TBD
POWER – TBD
SEWER – TBD

14. 24 HOUR CONTACT: JOHN ALLEN
MOBILE: (706) 970-2456 EMAIL: JOHN@BROWNHAVENHOMES.COM

15. ENGINEERING CONTACT: MICHAEL STREAM, P.E., (770) 718-0600

16. PORTIONS OF THIS PROPERTY ARE LOCATED IN A FLOOD HAZARD ZONE "AE" AS PER F.E.M.A. INSURANCE RATE MAP OF CLAY COUNTY, NORTH CAROLINA, COMMUNITY PANEL NO. 3700548900J EFFECTIVE DATE NOVEMBER 19, 2008.

17. THERE ARE STREAMS AND WETLANDS ON OR WITHIN 200' OF THE PROJECT SITE.

18. THERE ARE NO STREAMS REQUIRING STATE OR LOCAL BUFFERS ON OR WITHIN 200' OF THE PROJECT SITE.

19. THIS SITE DOES NOT CONTAIN ANY KNOWN CEMETERIES.

20. ALL RETAINING WALLS WILL BE PERMITTED SEPARATELY.

21. ALL LIGHTING WILL BE LOW LEVEL AND NON-SPILL.

22. ALL PLANT MATERIAL CONFORMING TO AMERICAN STANDARD FOR NURSERY STOCK.

EROSION CONTROL NOTES:

1. DESCRIPTION: 3 NEW DOCKS, LAKE DREDGING, 15 ATTACHED SINGLE FAMILY UNITS, AND 44 DETACHED SINGLE FAMILY UNITS.

2. EXISTING CONDITIONS: OPEN GRASSED FIELDS & WETLANDS

3. ADJACENT AREAS: THE SITE IS BOUNDED TO THE NORTH-EAST BY NC 175 AND A CHURCH, AND ON OTHER SIDES BY SINGLE FAMILY RESIDENTIAL LOTS.

4. SOIL CLEAN UP AND CONTROL PRACTICES:
(A) LOCAL, STATE AND MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND PROCEDURES WILL BE MADE AVAILABLE TO SITE PERSONNEL.

(B) 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.

(C) SPILL PREVENTION PRACTICES AND PROCEDURES WILL BE REVIEWED AFTER A SPILL AND ADJUSTED AS NECESSARY TO FUTURE SPILLS.

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

(E) 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.

(F) FOR SPILLS OF AN UNKNOWN AMOUNT, THE NATIONAL CENTER (NRC) WILL BE CONTACTED WITHIN 24 HOURS AT 1-800-425-2675.

(G) FOR SPILLS GREATER THAN 25 GALLONS AND NO SURFACE WATER IMPACTS, THE NORTH CAROLINA DEQ WILL BE CONTACTED WITHIN 24 HOURS.

(H) 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.

(I) 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.

5. INSPECTIONS & RECORD KEEPING:

a. Permittee requirements.

(1). Each day when any type of construction activity has taken place at a primary permittee 's site, certified personnel provided by the primary permittee shall inspect: (a) all areas at the primary permittee's site where petroleum products are stored, used, or handled for spills and leaks from vehicles and equipment and (b) all locations at the primary permittee's site where vehicles enter or exit the site for evidence of off-site sediment tracking .. These inspections must be conducted until a Notice of Termination is submitted.

(2). Measure rainfall once every 24 hours except any non-working Saturday, non-working Sunday and non-working holiday until a Notice of Termination is submitted. Measurement of rainfall may be suspended if all areas of the site have undergone final stabilization or established a crop of annual vegetation and a seeding of target perennials appropriate for the region.

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

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 CLAY COUNTY CONSTRUCTION STANDARDS

NOTIFY CLAY 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: 16.22 AC
DISTURBED AREA: 11.18 AC
EARTHWORK ESTIMATE:
CUT: 45,158 CY
FILL: 52,180 CY
DIFFERENCE: 7,022 CY *

*APPROXIMATELY 7,000 CY OF EARTHWORK TO BE TAKEN FROM DREDGING ACTIVITES TO BALANCE THE EARTHWORK.

*EARTHWORK CALCULATIONS ARE BASED ON FINISHED GRADE.

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

ADDITIONAL EROSION CONTROL NOTES:

THE DESIGN PROFESSIONAL WHO PREPARED THE ES&PC PLAN IS TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMPS WITHIN 7 DAYS AFTER INSTALLATION.

NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE 25 OR 50-FOOT UNDISTURBED STREAM BUFFERS AS MEASURED FROM THE POINT OF WRESTED VEGETATION WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS.

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.

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

THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO LAND DISTURBING ACTIVITIES.

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

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

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

NOTE:
MAINTENANCE OF ALL EROSION CONTROL MEASURES, WHETHER TEMPORARY OR PERMANENT, SHALL AT ALL TIMES BE THE RESPONSIBILITY OF THE OWNER.

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.

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.

GRADING NOTES:

COMPACTION:

COMPACTION OF THE BACKFILL OF ALL TRENCHES SHALL BE COMPACTED TO THE DENSITY OF 95% OF MODIFIED PROCTOR MAXIMUM DENSITY PER A.S.T.M. TEST D-698. BACKFILL MATERIAL SHALL BE FREE FROM ROOTS, STUMPS, OR OTHER FOREIGN DEBRIS, AND SHALL BE PLACED AT OR NEAR OPTIMUM MOISTURE. CORRECTION OF ANY TRENCH SETTLEMENT WITHIN A YEAR FROM THE DATE OF APPROVAL WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.

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 NCDOT R/W MUST CONFORM TO ALL NCDOT PAVING STANDARDS.

CONCRETE:

3000 PSI 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:

CONSTRUCTION STAKING IS THE RESPONSIBILITY OF THE CONTRACTOR.

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. *THE CLAY COUNTY SHALL BE NOTIFIED 24 HOURS PRIOR TO ANY CONSTRUCTION.*

3. *ALL WATER MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE CLAY COUNTY WATER & SEWER DEPARTMENT.*

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 THE CLAY 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.*

NOTES:

DISPOSAL: STUMPS AND CONSTRUCTION DEBRIS SHALL BE DEPOSITED IN A PROPERLY PERMITTED LANDFILL.

PIPE: STORM DRAIN PIPES WILL BE CLASS III REINFORCED CONCRETE PIPE (RCP), TYPE II ALUMINIZED CORRUGATED STEEL PIPE (A2CSP) OR HDPE.

THE HORIZONTAL DATUM FOR THIS SURVEY IS STATE PLANE NORTH CAROLINA (NAD83).

ALL DISTANCES SHOWN ARE HORIZONTAL GROUND DISTANCES IN U.S. SURVEY FEET. (39.37 INCHES = 1 METER)

EROSION CONTROL NARRATIVE

PURPOSE OF DEVELOPMENT

THE PROPOSED PROJECT INVOLVES A RESIDENTIAL DEVELOPMENT INCLUDING 15 ATTACHED SINGLE FAMILY UNITS, AND 44 DETACHED SINGLE FAMILY UNITS.

SITE AND ADJACENT AREA CONDITIONS

THE PROJECT SITE IS CURRENTLY A GRASSY FIELD ADJACENT TO LAKE CHATUGE, WITH WETLANDS THAT DRAIN DIRECTLY INTO THE LAKE. THE SITE IS BORDERED BY HIGHWAY 175 AND IS ADJACENT TO SEVERAL SINGLE-FAMILY RESIDENTIAL PROPERTIES.

PROPOSED EROSION AND SEDIMENT CONTROL MEASURES

TO PREVENT SEDIMENT FROM ENTERING THE LAKE DURING CONSTRUCTION, A TURBIDITY CURTAIN WILL BE DEPLOYED WITHIN THE LAKE TO CONTAIN DISTURBED MATERIALS. A SILT FENCE WILL BE INSTALLED AROUND ALL DISTURBED AREAS TO INTERCEPT SEDIMENT RUNOFF. A STABILIZED CONSTRUCTION ENTRANCE WILL MINIMIZE OFF-SITE TRACKING OF SEDIMENT BY CONSTRUCTION VEHICLES. EXPOSED SOILS WILL BE STABILIZED PROMPTLY USING TEMPORARY SEEDING DURING CONSTRUCTION AND PERMANENT SEEDING UPON PROJECT COMPLETION TO ENSURE LONG-TERM EROSION CONTROL.

CONSTRUCTION SEQUENCE.

INSTALL EROSION CONTROLS:
SET UP THE CONSTRUCTION ENTRANCE, SILT FENCE, AND TURBIDITY CURTAIN BEFORE ANY LAND-DISTURBING ACTIVITIES.

DREDGING OPERATIONS:
PERFORM DREDGING WITHIN THE TURBIDITY CURTAIN, WORKING TO MINIMIZE THE TURBIDITY LEVELS OF THE WATER.

WASTE PLACEMENT:
DEPOSIT DREDGED MATERIAL ON-SITE ABOVE THE DOUBLE-ROW SILT FENCE IN DESIGNATED WASTE AREA.

SITE STABILIZATION: STABILIZE DISTURBED AREAS AND BEGIN REVEGETATION IMMEDIATELY AFTER DREDGING AND WASTE PLACEMENT. ALL AREAS IN RIPARIAN BUFFER TO BE STABILIZED AT THE END OF THE WORK DAY.

REMOVE TEMPORARY CONTROLS: AFTER STABILIZATION IS COMPLETE, REMOVE THE SILT FENCE, TURBIDITY CURTAIN, AND CONSTRUCTION ENTRANCE.

REVISION HISTORY CHART

REVISION NUMBER	DATE	AFFECTED SHEETS	DESCRIPTION	P.E./ R.L.S. INITIAL

SUBMITTAL HISTORY CHART

DATE	AGENCY	DEPARTMENT	DESCRIPTION	PERMIT TYPE	PERMIT NUMBER	APPROVAL DATE
04/28/25	CLAY COUNTY	PLANNING DIVISION	1st PLAN SUBMITTAL	LDP		

Rochester Engineering, Inc.
425 Jesse St NW | Gainesville, GA 30501
770.718.0600 | rochesterdcm.com

GENERAL NOTES FOR:
STONE BRIDGE RESIDENTIAL SUBDIVISION
LOCATED IN HIAWASSEE TOWNSHIP CLAY COUNTY, NORTH CAROLINA

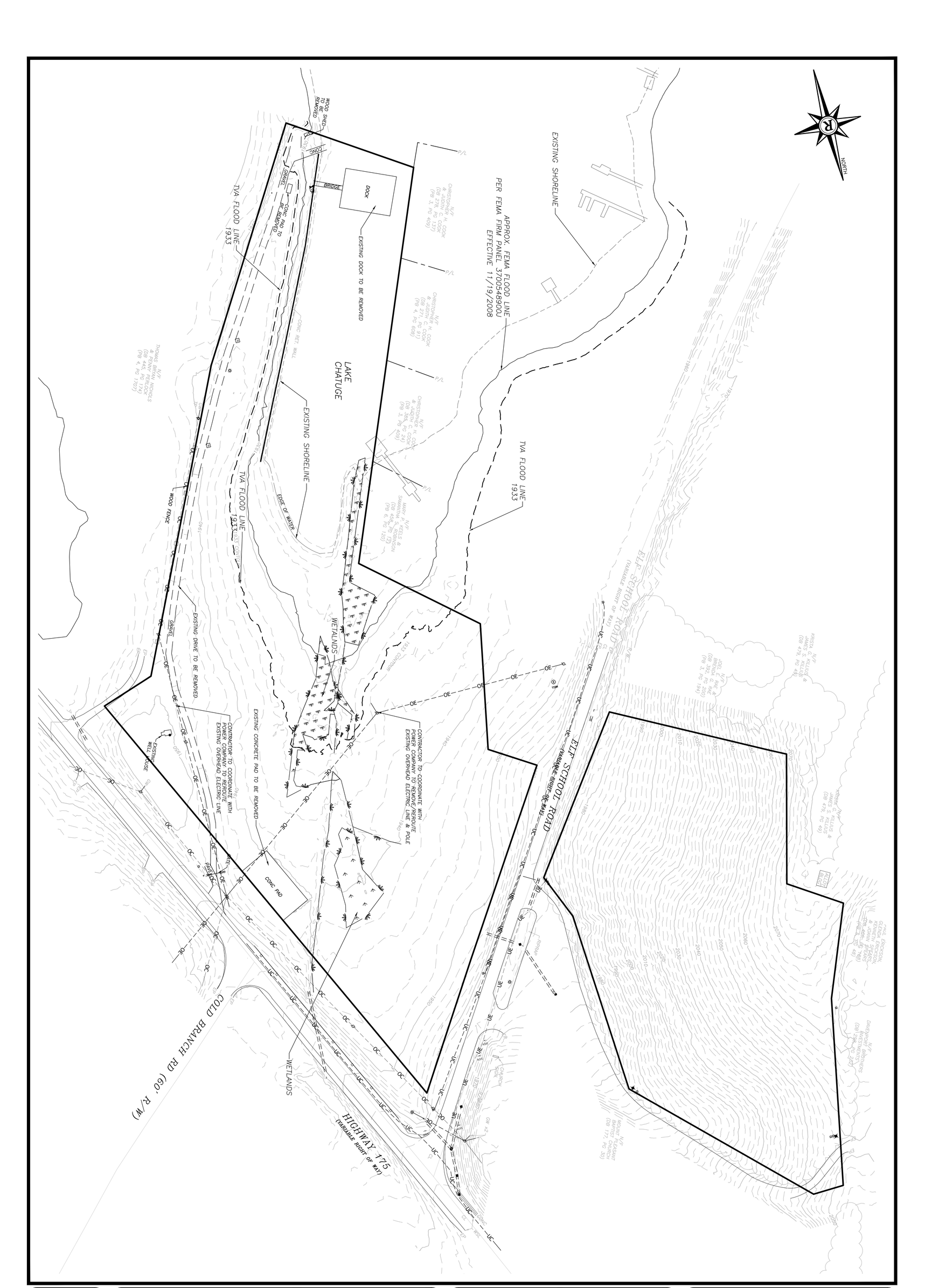
NO.	DATE	REVISIONS DESCRIPTION

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.

1ST SUBMITTAL

SHEET 2 OF 31

DATE: 04/28/25
SCALE: N.T.S.
JOB NO. G224096.TNM
DWG NO. CNST.dwg
DRAWN BY: CAM



SHEET	OF
3	31

DATE: 04/28/25
SCALE: 1" = 60'
JOB NO. G224096.TNM
DWG NO. .CNST.dwg
DRAWN BY: CMM

1ST SUBMITTAL

ANY CHANGES OR ALTERATIONS MADE TO THESE CONSTRUCTION DRAWINGS WITHOUT THE WRITTEN APPROVAL OF ROCHESTER | DCCM VOIDS THE SEAL SHOWN HEREON AND ANY LIABILITY ASSOCIATED WITH THIS PROJECT ORIGINAL DRAWINGS ARE KEPT ON FILE FOR VERIFICATION OF ANY CHANGES.

GRAPHIC SCALE
30' 0' 60' 120'

NO.	DATE	DESCRIPTION

REVISIONS

EXISTING CONDITIONS & DEMO PLAN
FOR:

STONE BRIDGE
RESIDENTIAL SUBDIVISION

LOCATED IN
HIAWASSEE TOWNSHIP
CLAY COUNTY, NORTH CAROLINA

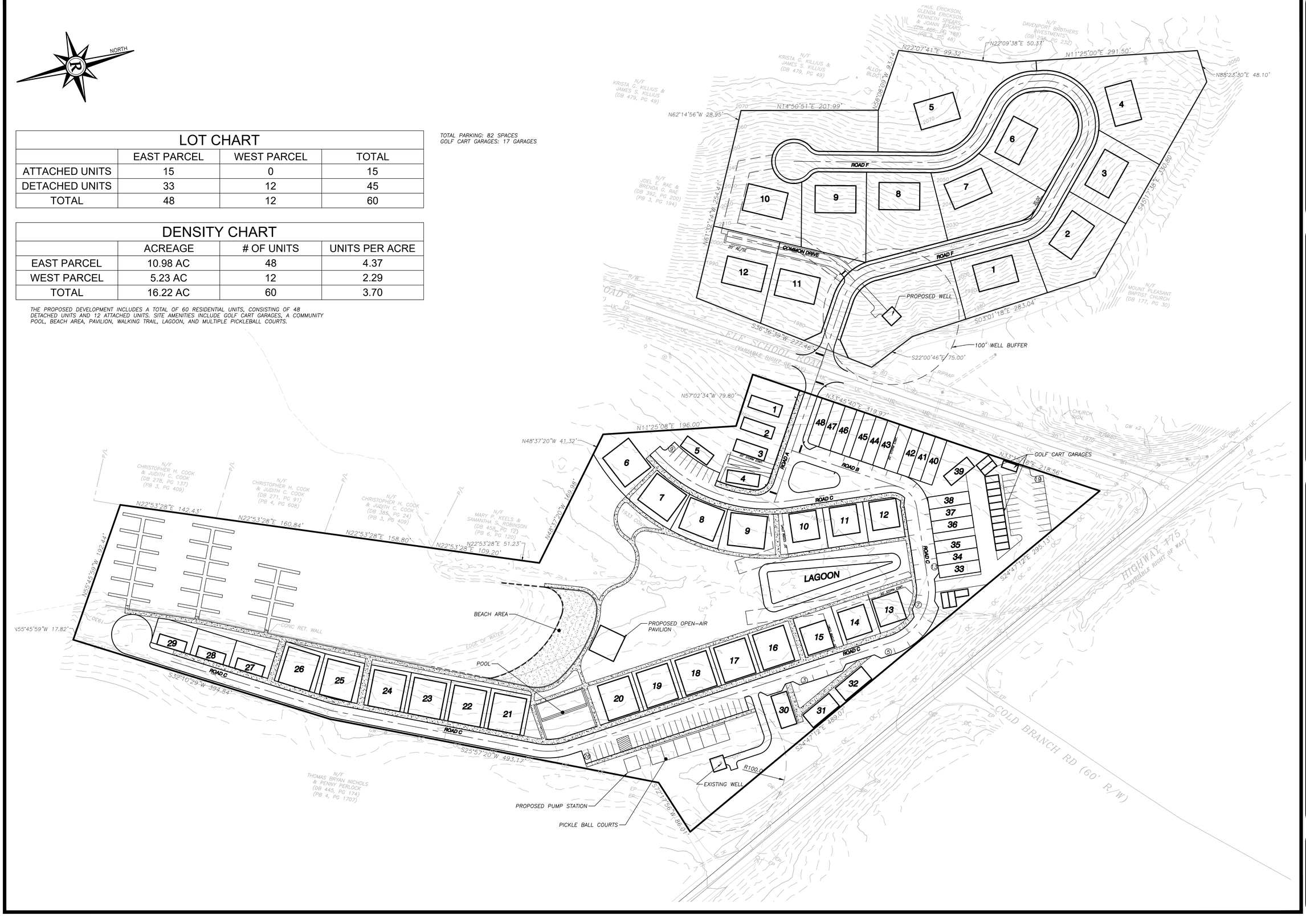
Rochester Engineering, Inc.
Rochester Engineering, INC.
425 Oak St NW, Gainesville, GA 30501
770.718.0600 | rochester.dccm.com

LOT CHART			
	EAST PARCEL	WEST PARCEL	TOTAL
ATTACHED UNITS	15	0	15
DETACHED UNITS	33	12	45
TOTAL	48	12	60

DENSITY CHART			
	ACREAGE	# OF UNITS	UNITS PER ACRE
EAST PARCEL	10.98 AC	48	4.37
WEST PARCEL	5.23 AC	12	2.29
TOTAL	16.22 AC	60	3.70

THE PROPOSED DEVELOPMENT INCLUDES A TOTAL OF 60 RESIDENTIAL UNITS, CONSISTING OF 48 DETACHED UNITS AND 12 ATTACHED UNITS. SITE AMENITIES INCLUDE GOLF CART GARAGES, A COMMUNITY POOL, BEACH AREA, PAVILION, WALKING TRAIL, LAGOON, AND MULTIPLE PICKLEBALL COURTS.

TOTAL PARKING: 82 SPACES
GOLF CART GARAGES: 17 GARAGES



Rochester Engineering, Inc.
Rochester Engineering, INC.
425 Oak St NW | Gainesville, GA 30501
770.718.0600 | rochester-decm.com

SITE PLAN
FOR:
STONE BRIDGE
RESIDENTIAL SUBDIVISION
LOCATED IN
HIAWASSEE TOWNSHIP
CLAY COUNTY, NORTH CAROLINA

NO.	DATE	REVISIONS DESCRIPTION

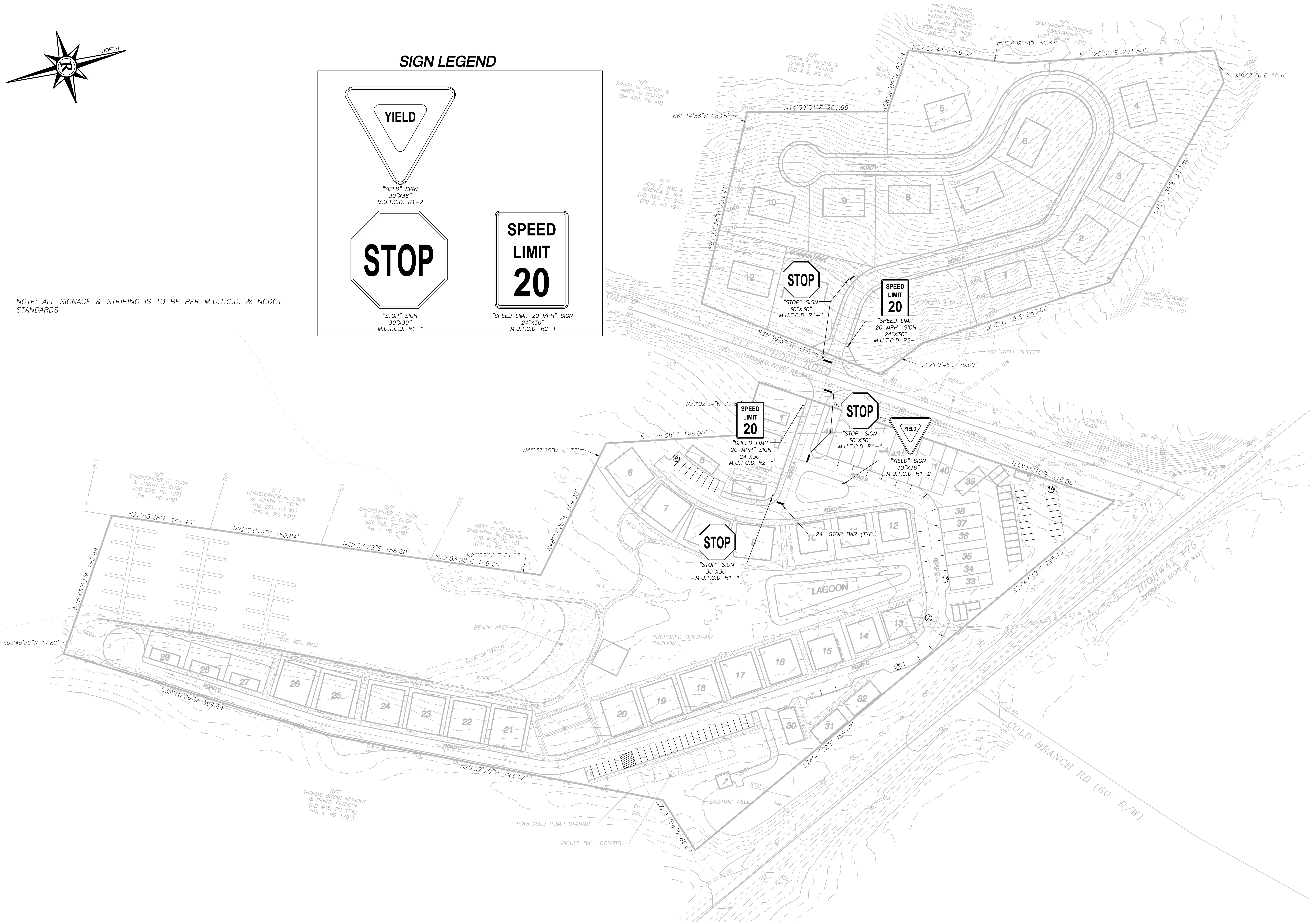
ANY CHANGES OR ALTERATIONS MADE TO THESE CONSTRUCTION DRAWINGS WITHOUT THE EXPRESS WRITTEN CONSENT OF ROCHESTER DECM VOIDS THE SEAL SHOWN HEREON AND ANY LIABILITY ASSOCIATED WITH THIS PROJECT WILL BECOME THE RESPONSIBILITY OF THE FILE FOR VERIFICATION OF ANY CHANGES.

GRAPHIC SCALE
30' 0' 60' 120'

1ST SUBMITTAL

SHEET 4 OF 31

DATE: 04/28/25
SCALE: 1" = 60'
JOB NO. G224096.1NM
DWG NO. CNST.dwg
DRAWN BY: CAM



SIGN LEGEND

NOTE: ALL SIGNAGE & STRIPING IS TO BE PER M.U.T.C.D. & NCDOT STANDARDS

Rochester Engineering, Inc.
Rochester Engineering, INC.
425 Oak St NW, Gainesville, GA 30501
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SIGNAGE & STRIPING PLAN
FOR:
STONE BRIDGE RESIDENTIAL SUBDIVISION
LOCATED IN
HIAWASSEE TOWNSHIP
CLAY COUNTY, NORTH CAROLINA

NO.	DATE	DESCRIPTION

REVISIONS

ANY CHANGES OR ALTERATIONS MADE TO THESE CONSTRUCTION DRAWINGS WITHOUT THE WRITTEN APPROVAL OF ROCHESTER | DCCM VOIDS THE SEAL SHOWN HEREON AND ANY LIABILITY ASSOCIATED WITH THIS PROJECT. ORIGINAL DRAWINGS ARE KEPT ON FILE FOR VERIFICATION OF ANY CHANGES.

GRAPHIC SCALE
30' 0' 60' 120'

1ST SUBMITTAL

SHEET 5 OF 31

DATE: 04/28/25
SCALE: 1" = 60'
JOB NO. G224096.TNM
DWG NO. .CNST.dwg
DRAWN BY: CMM

Rochester Engineering, Inc.

Rochester Engineering, INC.
425 Oak St NW, Gainesville, GA 30501
770.718.0600 | rochester.dccm.com

ENTRANCE PLAN
FOR:
STONE BRIDGE
RESIDENTIAL SUBDIVISION
LOCATED IN
HIAWASSEE TOWNSHIP
CLAY COUNTY, NORTH CAROLINA

REVISIONS

NO.	DATE	DESCRIPTION

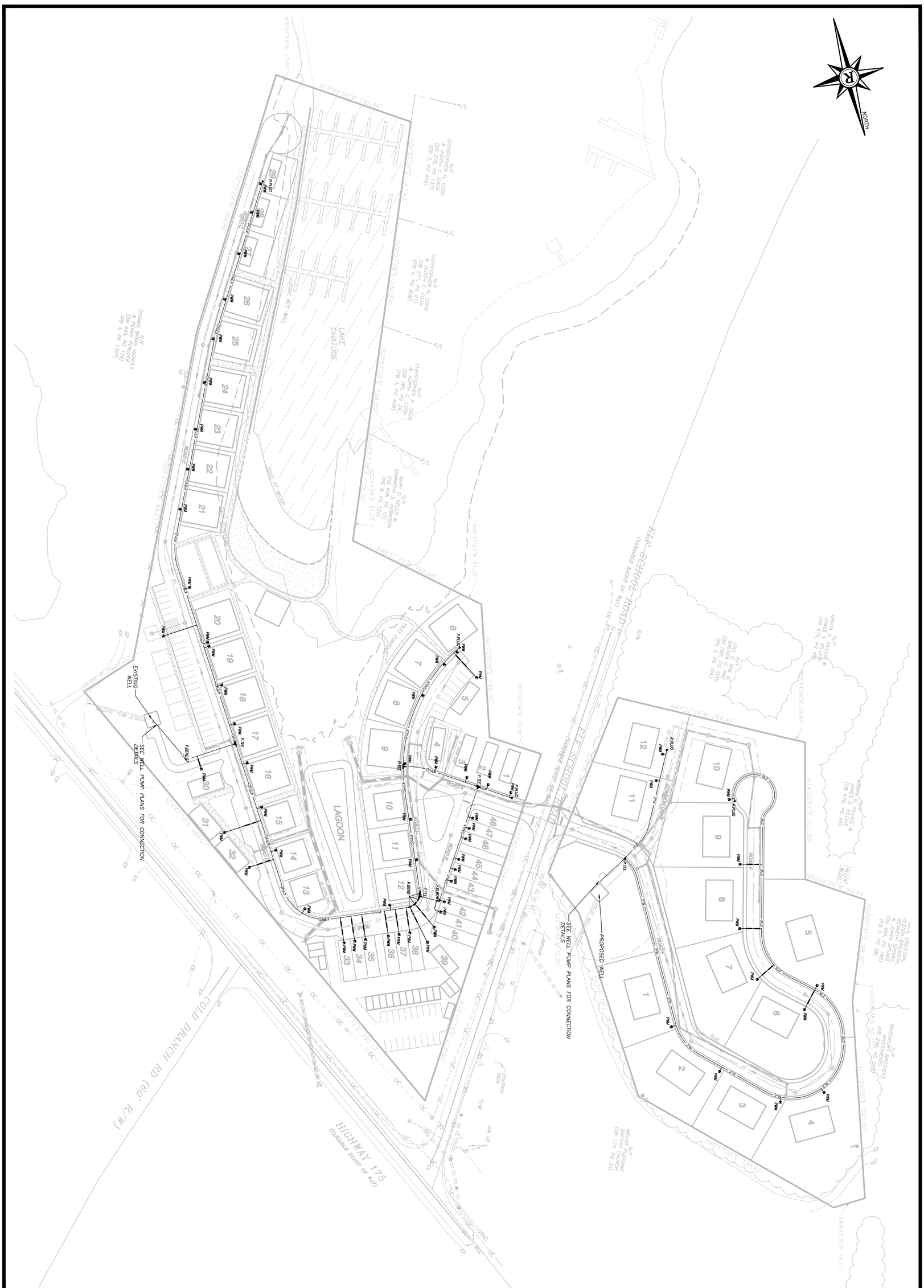
ANY CHANGES OR ALTERATIONS MADE TO THESE CONSTRUCTION DRAWINGS WITHOUT THE WRITTEN APPROVAL OF ROCHESTER | DCCM VOIDS THE SEAL SHOWN HEREON AND ANY LIABILITY ASSOCIATED WITH THIS PROJECT. ORIGINAL DRAWINGS ARE KEPT ON FILE FOR VERIFICATION OF ANY CHANGES.

GRAPHIC SCALE
5' 0' 10' 20'

1ST SUBMITTAL

SHEET
6
OF
31

DATE: 04/28/25
SCALE: 1" = 10'
JOB NO. G224096.TNM
DWG NO. .CNST.dwg
DRAWN BY: CMM



SHEET	7
OF	31
DATE:	04/28/25
SCALE:	1" = 60'
JOB NO.	G224096.TNM
DWG NO.	.CNST.dwg
DRAWN BY:	CMM

1ST SUBMITTAL

ANY CHANGES OR ALTERATIONS MADE TO THESE CONSTRUCTION DRAWINGS WITHOUT THE WRITTEN APPROVAL OF ROCHESTER | DCCM VOIDS THE SEAL SHOWN HEREON AND ANY LIABILITY ASSOCIATED WITH THIS PROJECT ORIGINAL DRAWINGS ARE KEPT ON FILE FOR VERIFICATION OF ANY CHANGES.

GRAPHIC SCALE
30' 0' 60' 120'

NO.	DATE	DESCRIPTION

REVISIONS

WATER DISTRIBUTION PLAN
FOR:

STONE BRIDGE
RESIDENTIAL SUBDIVISION

LOCATED IN
HIAWASSEE TOWNSHIP
CLAY COUNTY, NORTH CAROLINA

Rochester Engineering, Inc.
Rochester Engineering, INC.
425 Oak St NW, Gainesville, GA 30501
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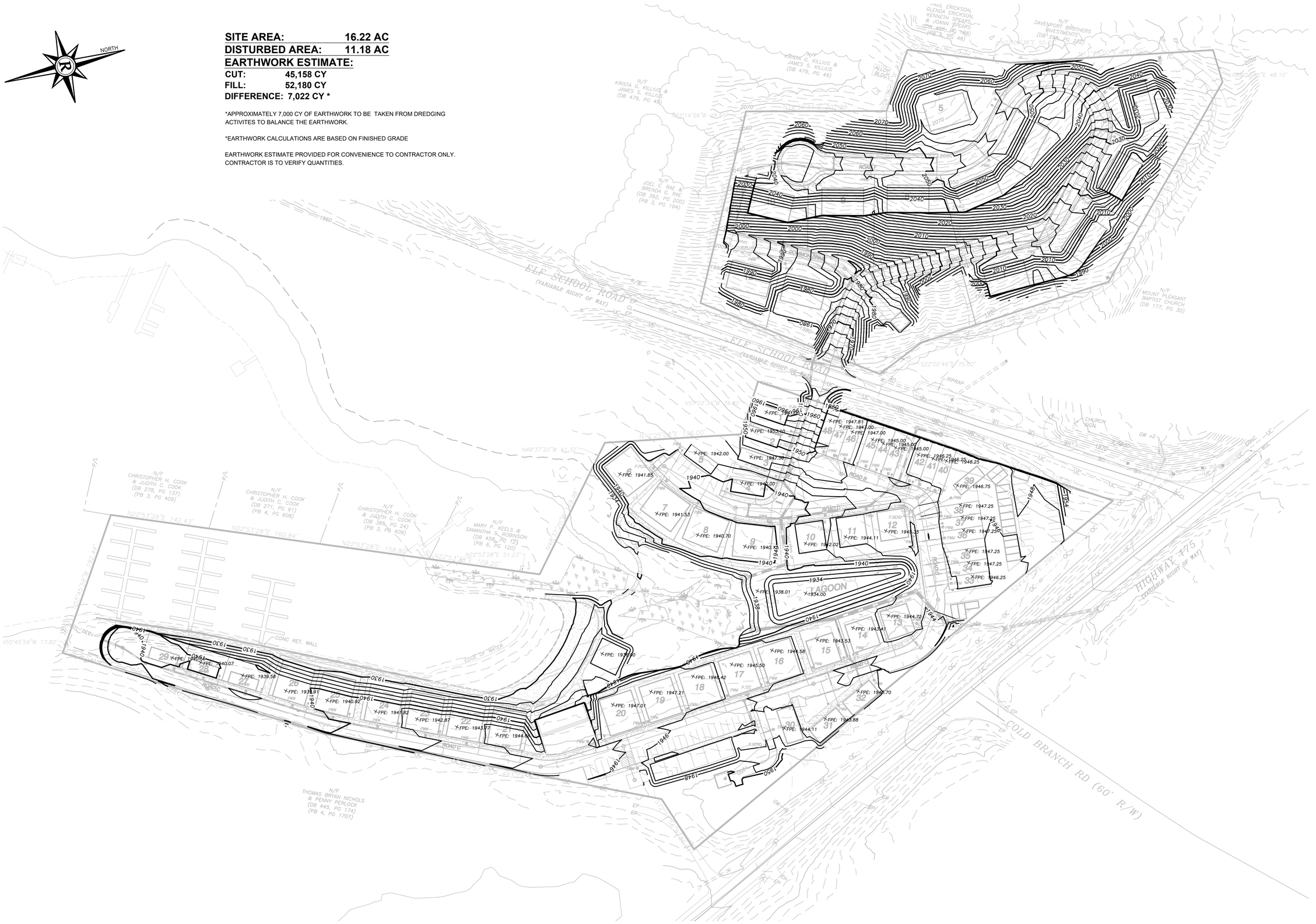
NORTH

SITE AREA: 16.22 AC
DISTURBED AREA: 11.18 AC
EARTHWORK ESTIMATE:
CUT: 45,158 CY
FILL: 52,180 CY
DIFFERENCE: 7,022 CY *

*APPROXIMATELY 7,000 CY OF EARTHWORK TO BE TAKEN FROM DREDGING ACTIVITES TO BALANCE THE EARTHWORK.

*EARTHWORK CALCULATIONS ARE BASED ON FINISHED GRADE

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



Rochester Engineering, Inc.
Rochester Engineering, INC.
425 Oak St NW | Gainesville, GA 30501
770.718.0600 | rochester-decm.com

GRADING PLAN
FOR:
STONE BRIDGE
RESIDENTIAL SUBDIVISION

LOCATED IN
HIAWASSEE TOWNSHIP
CLAY COUNTY, NORTH CAROLINA

NO.	DATE	REVISIONS	DESCRIPTION

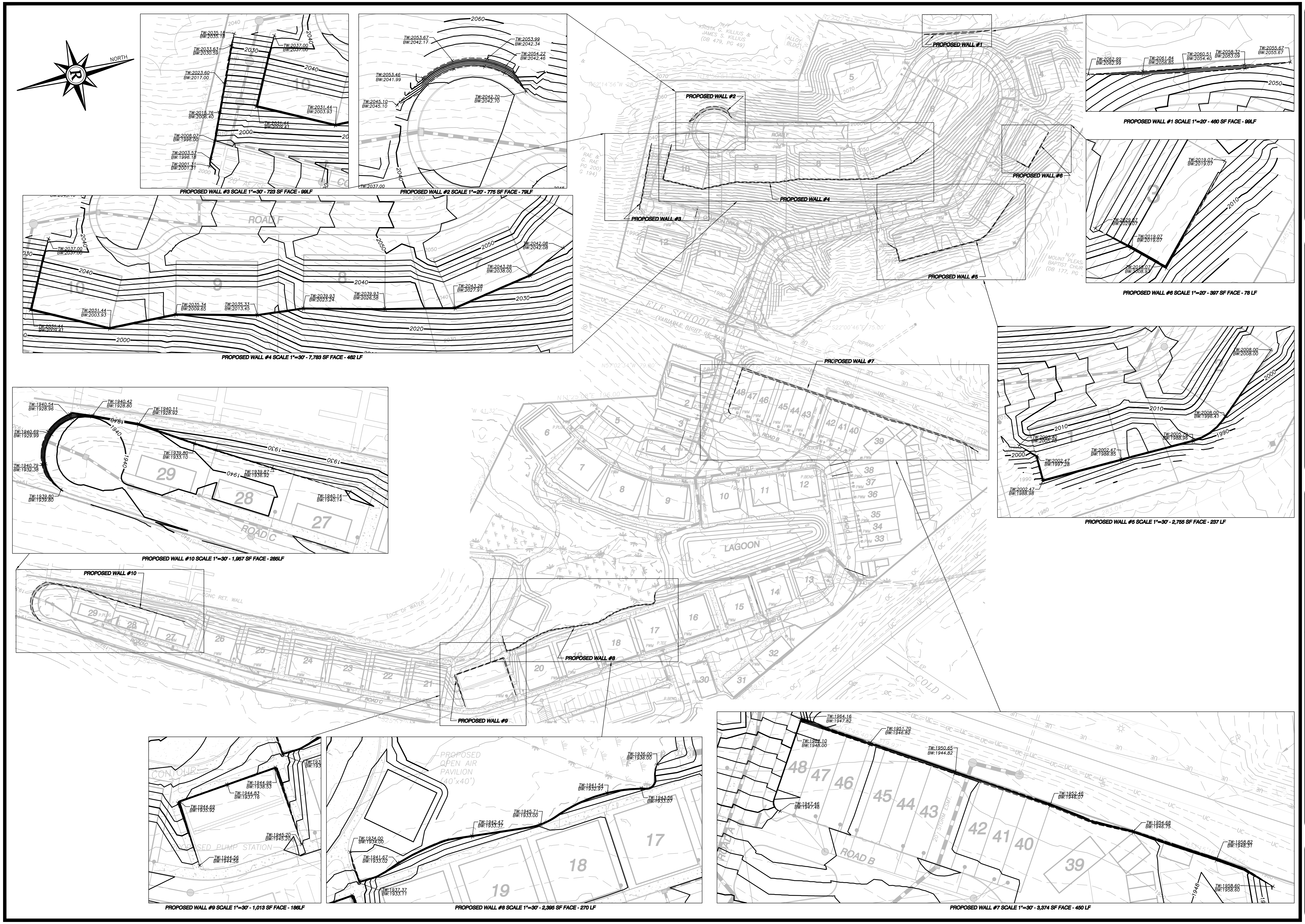
ANY CHANGES OR ALTERATIONS MADE TO THESE CONSTRUCTION DRAWINGS WITHOUT THE WRITTEN CONSENT OF ROCHESTER ENGINEERING, INC. DECAN VOIDS THE SEAL SHOWN HEREON AND ANY LIABILITY ASSOCIATED WITH THIS PROJECT. CONTACT ENGINEER OF RECORD FOR FIELD VERIFICATION OF ANY CHANGES.

GRAPHIC SCALE
30' 0' 60' 120'

1ST SUBMITTAL

SHEET 8 OF 31

DATE: 04/28/25
SCALE: 1" = 60'
JOB NO. C224096.TNM
DWG NO. CIVST.dwg
DRAWN BY: CAM



Rochester Engineering, Inc.
Rochester Engineering, INC.
425 Oak St NW, Gainesville, GA 30501
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WALL PLAN
FOR:
STONE BRIDGE
RESIDENTIAL SUBDIVISION

LOCATED IN
HIAWASSEE TOWNSHIP
CLAY COUNTY, NORTH CAROLINA

NO.	DATE	DESCRIPTION
		REVISIONS

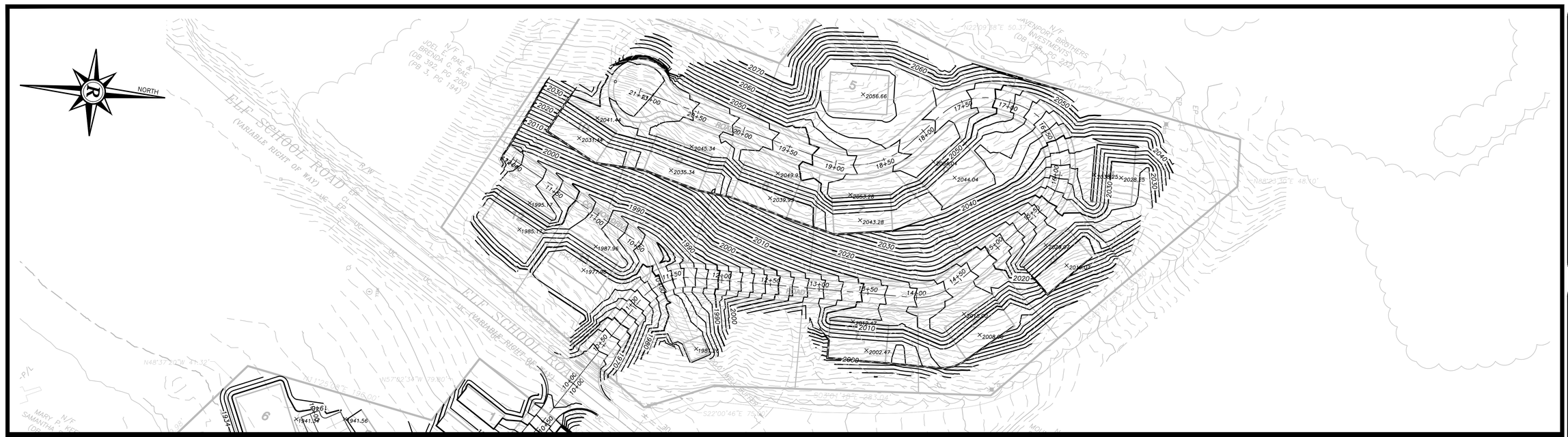
ANY CHANGES OR ALTERATIONS MADE TO THESE CONSTRUCTION DRAWINGS WITHOUT THE WRITTEN APPROVAL OF ROCHESTER | DCCM VOIDS THE SEAL SHOWN HEREON AND ANY LIABILITY ASSOCIATED WITH THIS PROJECT. ORIGINAL DRAWINGS ARE KEPT ON FILE FOR VERIFICATION OF ANY CHANGES.

GRAPHIC SCALE
30' 0' 60' 120'

1ST SUBMITTAL

SHEET 9 OF 31

DATE: 04/28/25
SCALE: 1" = 60'
JOB NO. G224096.TNM
DWG NO. .CNST.dwg
DRAWN BY: CMM



Road F

Common Drive

Rochester Engineering, Inc.

Rochester Engineering, INC.
425 Oak St NW, Gainesville, GA 30501
770.718.0600 | rochester.dccm.com

ROADWAY PLAN & PROFILE
FOR:

STONE BRIDGE
RESIDENTIAL SUBDIVISION

LOCATED IN
HIAWASSEE TOWNSHIP
CLAY COUNTY, NORTH CAROLINA

REVISIONS

NO.	DATE	DESCRIPTION

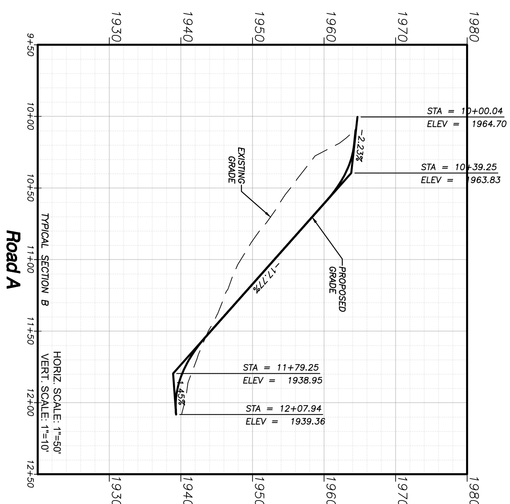
ANY CHANGES OR ALTERATIONS MADE TO THESE CONSTRUCTION DRAWINGS WITHOUT THE WRITTEN APPROVAL OF ROCHESTER | DCCM VOIDS THE SEAL SHOWN HEREON AND ANY LIABILITY ASSOCIATED WITH THIS PROJECT. ORIGINAL DRAWINGS ARE KEPT ON FILE FOR VERIFICATION OF ANY CHANGES.

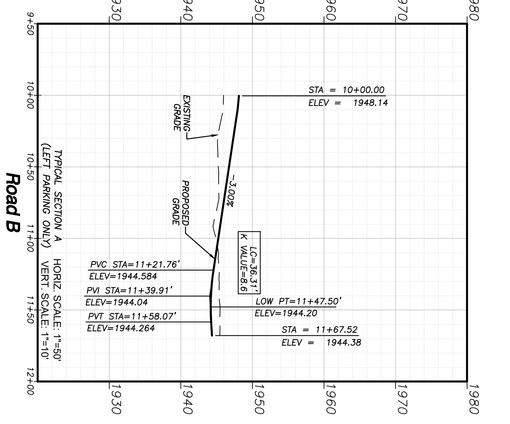
GRAPHIC SCALE
25' 0' 50' 100'

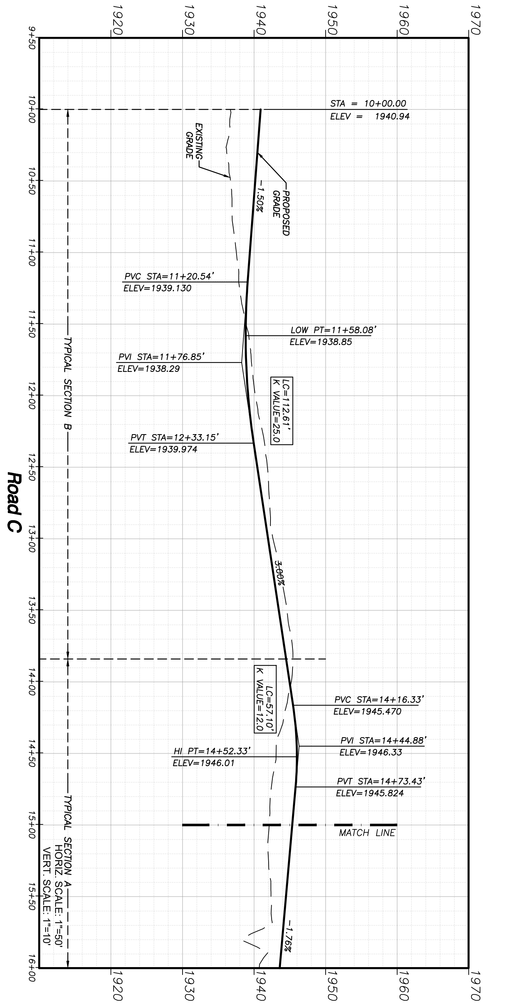
1ST SUBMITTAL

SHEET
10
OF
31

DATE: 04/28/25
SCALE: 1" = 50'
JOB NO. G224096.TNM
DWG NO. .CNST.dwg
DRAWN BY: CMM







SHEET	11
OF	31

DATE: 04/28/25
SCALE: 1" = 50'
JOB NO. G224096.TNM
DWG NO. .CNST.dwg
DRAWN BY: CMM

1ST SUBMITTAL

ANY CHANGES OR ALTERATIONS MADE TO THESE CONSTRUCTION DRAWINGS WITHOUT THE WRITTEN APPROVAL OF ROCHESTER | DCCM VOIDS THE SEAL SHOWN HEREON AND ANY LIABILITY ASSOCIATED WITH THIS PROJECT. ORIGINAL DRAWINGS ARE KEPT ON FILE FOR VERIFICATION OF ANY CHANGES.

GRAPHIC SCALE
25' 0' 50' 100'

NO.	DATE	DESCRIPTION
		REVISIONS

ROADWAY PLAN & PROFILE
FOR:

STONE BRIDGE
RESIDENTIAL SUBDIVISION

LOCATED IN
HIAWASSEE TOWNSHIP
CLAY COUNTY, NORTH CAROLINA

Rochester Engineering, Inc.
425 Oak St NW, Gainesville, GA 30501
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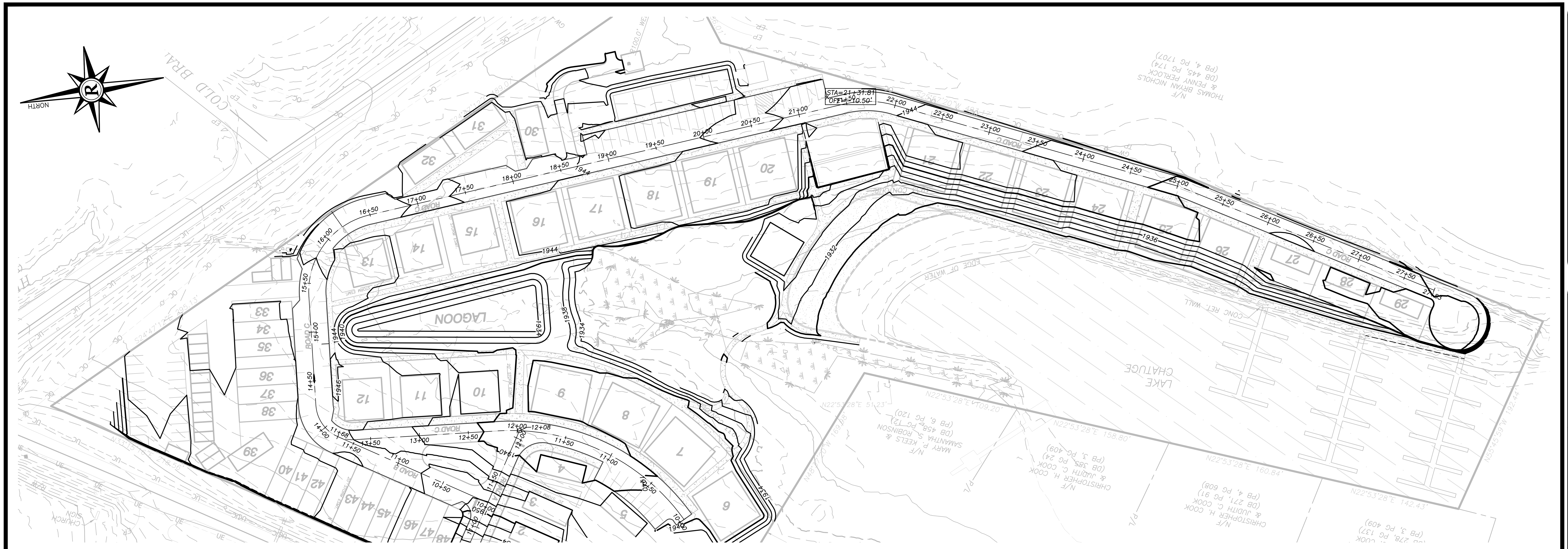
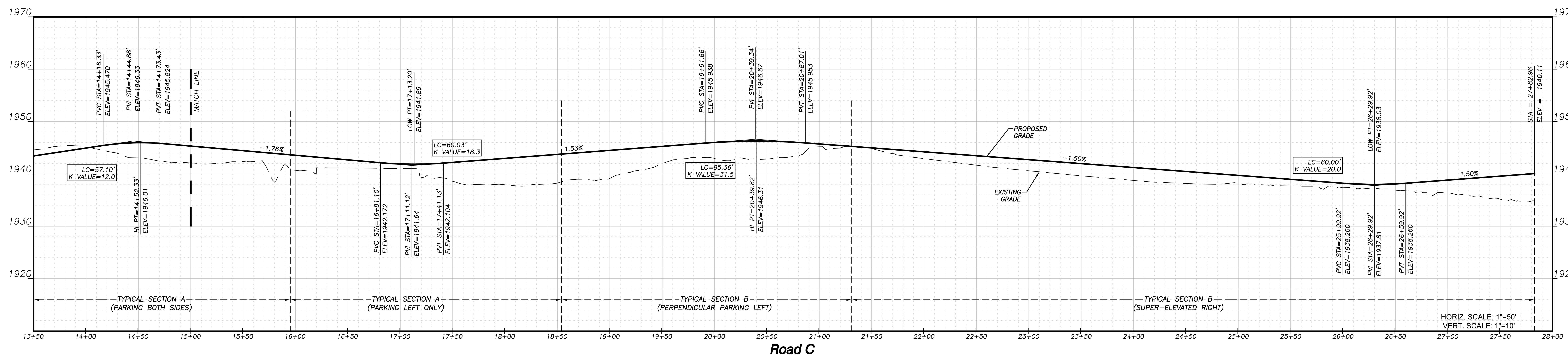




Rochester Engineering, Inc.
Rochester Engineering, INC.
425 Oak St NW, Gainesville, GA 30501
770.718.0600 | rochester.dccm.com

ROADWAY PLAN & PROFILE
FOR:
STONE BRIDGE RESIDENTIAL SUBDIVISION
LOCATED IN
HIAWASSEE TOWNSHIP
CLAY COUNTY, NORTH CAROLINA

NO.	DATE	DESCRIPTION

REVISIONS

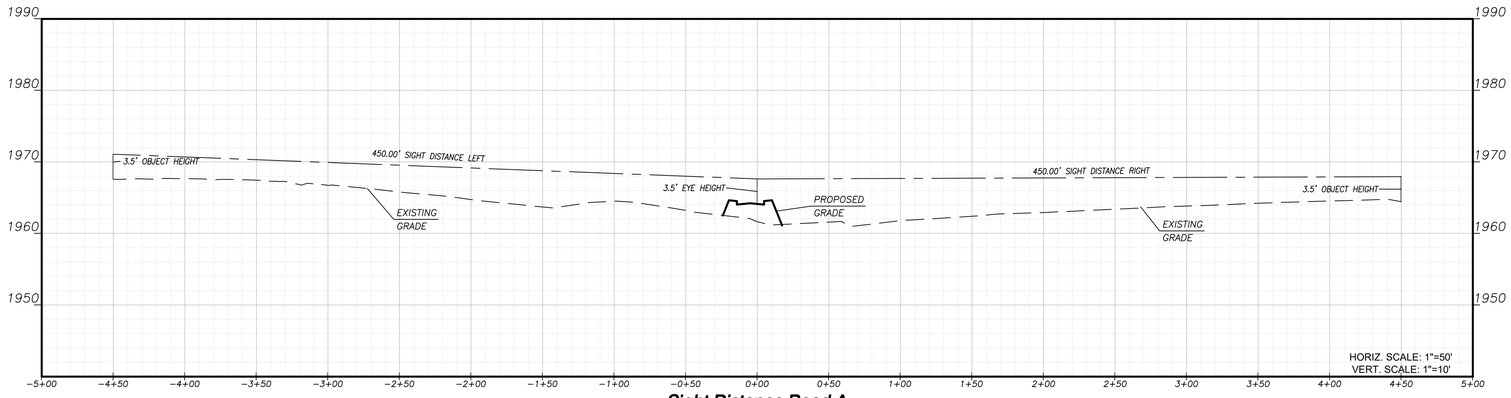
ANY CHANGES OR ALTERATIONS MADE TO THESE CONSTRUCTION DRAWINGS WITHOUT THE WRITTEN APPROVAL OF ROCHESTER, DCCM VOIDS THE SEAL SHOWN HEREON AND ANY LIABILITY ASSOCIATED WITH THIS PROJECT. ORIGINAL DRAWINGS ARE KEPT ON FILE FOR VERIFICATION OF ANY CHANGES.

GRAPHIC SCALE
25' 0' 50' 100'

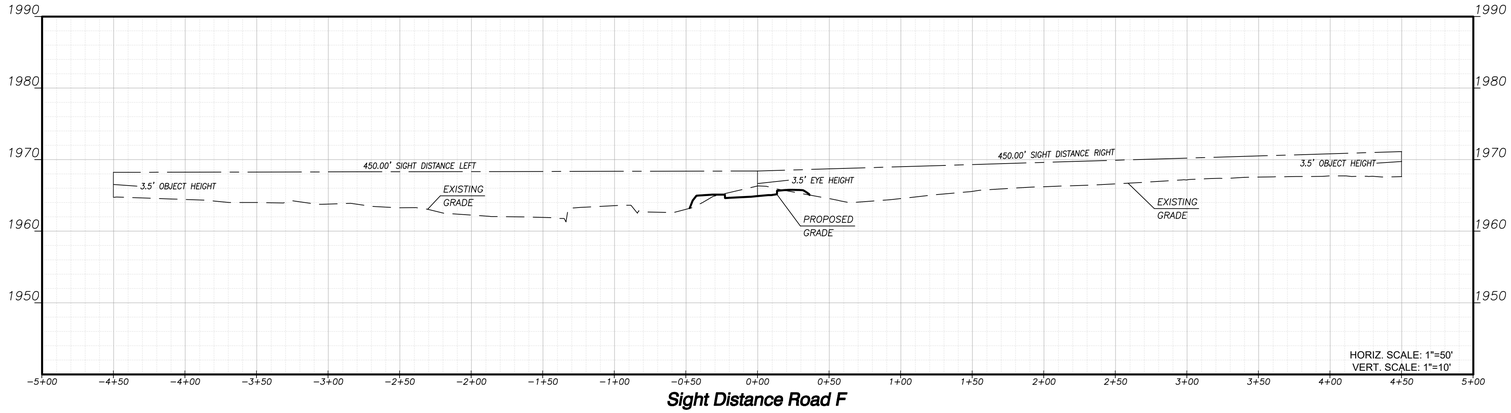
1ST SUBMITTAL

SHEET 12 OF 31

DATE: 04/28/25
SCALE: 1"=50'
JOB NO: G24096.TNM
DWG NO: .CNST.dwg
DRAWN BY: CMM



Sight Distance Road A



Sight Distance Road F

SIGHT DISTANCE CERTIFICATION

I, THE UNDERSIGNED, HEREBY CERTIFY THE SIGHT DISTANCE FOR THE PROJECT IS DESIGNED WITH ADEQUATE DISTANCE. THE REGULATED SPEED LIMIT ON THE APPROACHING THOROUGHFARE IS 45 MPH. THE DESIGNED SIGHT DISTANCE PROVIDES VISIBILITY OF 450 FEET TO THE LEFT AND 450 FEET TO THE RIGHT. THE SIGHT DISTANCE SHALL BE MEASURED FROM A POINT OF 15 FEET FROM TRAVEL LANE AT AN EYE LEVEL OF 3.5 FEET AND LOOKING AT AN OBJECT 3.5 FEET ABOVE THE CENTERLINE.

1ST SUBMITTAL

SIGNED AND SEALED — *DATE*

Rochester Engineering, Inc.
Rochester Engineering, INC.
425 Pine St NW | Gainesville, GA 30501
770.718.0600 | rochester-decm.com

SIGHT DISTANCE PLAN
FOR:
STONE BRIDGE
RESIDENTIAL SUBDIVISION
LOCATED IN
HIAWASSEE TOWNSHIP
CLAY COUNTY, NORTH CAROLINA

NO.	DATE	DESCRIPTION
		REVISIONS

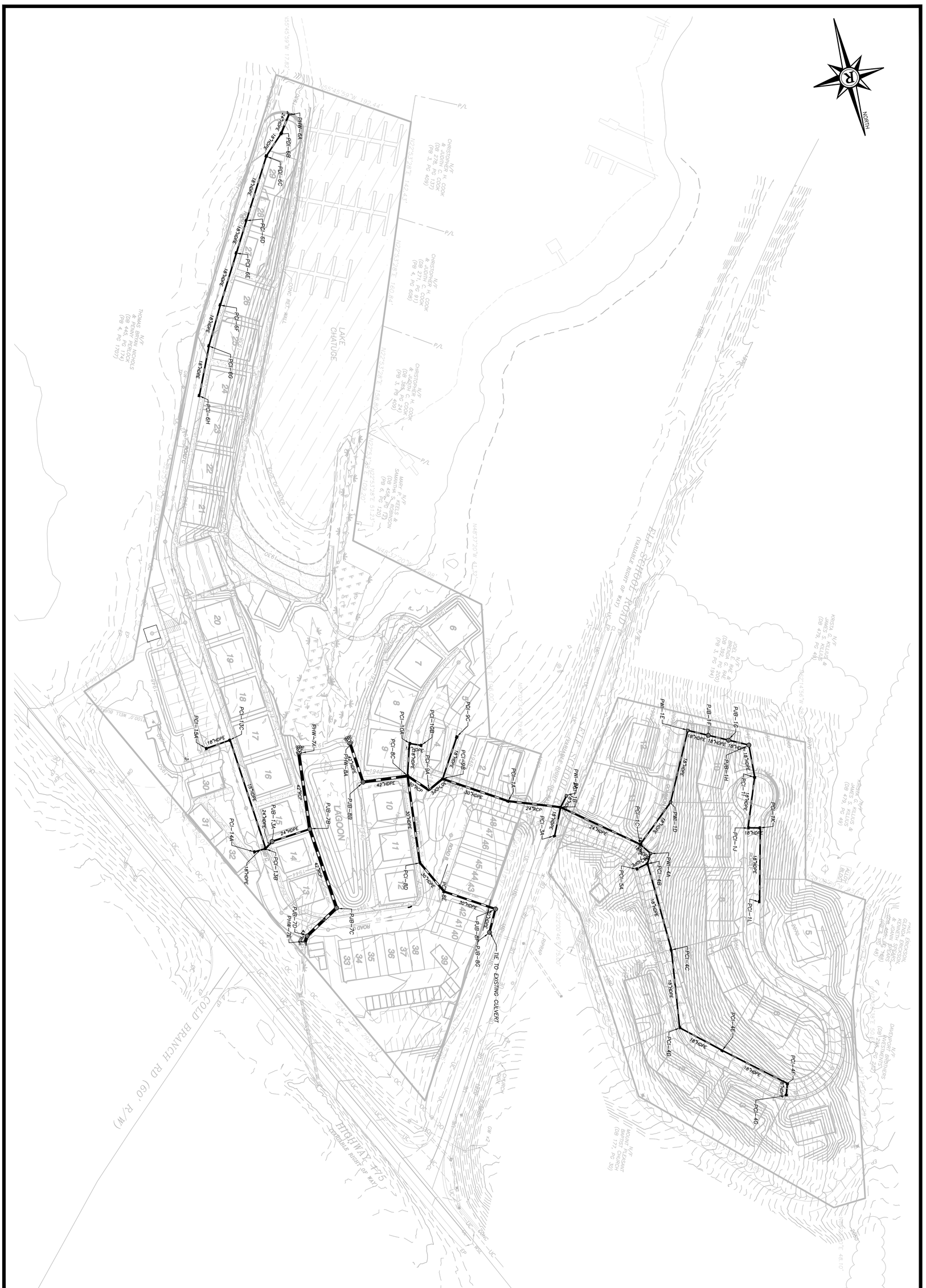
ANY CHANGES OR ALTERATIONS MADE TO THESE CONSTRUCTION DRAWINGS WITHOUT THE WRITTEN APPROVAL OF ROCHESTER ENGINEERING, INC. DECM VOIDS THE SEAL SHOWN HEREON AND ANY LIABILITY ASSOCIATED WITH THIS PROJECT AND SHALL REQUIRE RESUBMITTAL FOR VERIFICATION OF ANY CHANGES.

GRAPHIC SCALE
25' 0' 50' 100'

1ST SUBMITTAL

SHEET 13 OF 31

DATE: 04/28/25
SCALE: 1" = 50'
JOB NO. G224096.7NM
DWG NO. CNST.dwg
DRAWN BY: CMM



DATE:	04/28/25
SCALE:	1" = 60'
JOB NO.	G224096.TNM
DWG NO.	.CNST.dwg
DRAWN BY:	CMM

SHEET 14 OF 31

1ST SUBMITTAL

ANY CHANGES OR ALTERATIONS MADE TO THESE CONSTRUCTION DRAWINGS WITHOUT THE WRITTEN APPROVAL OF ROCHESTER | DCCM VOIDS THE SEAL SHOWN HEREON AND ANY LIABILITY ASSOCIATED WITH THIS PROJECT ORIGINAL DRAWINGS ARE KEPT ON FILE FOR VERIFICATION OF ANY CHANGES.

GRAPHIC SCALE
30' 0' 60' 120'

NO.	DATE	DESCRIPTION

REVISIONS

STORM SEWER PLAN
FOR:

STONE BRIDGE
RESIDENTIAL SUBDIVISION

LOCATED IN
HIAWASSEE TOWNSHIP
CLAY COUNTY, NORTH CAROLINA

Rochester Engineering, Inc.
Rochester Engineering, INC.
425 Oak St NW, Gainesville, GA 30501
770.718.0600 | rochester.dccm.com

Storm Line 1

Rochester Engineering, Inc.
Rochester Engineering, INC.
425 Oak St. NW | Gainesville, GA 30501
770.718.0000 | rochester-decm.com

STORM SEWER PLAN & PROFILE FOR:

STONE BRIDGE
RESIDENTIAL SUBDIVISION

LOCATED IN
HIAWASSEE TOWNSHIP
CLAY COUNTY, NORTH CAROLINA

NO.	DATE	DESCRIPTION
		REVISIONS

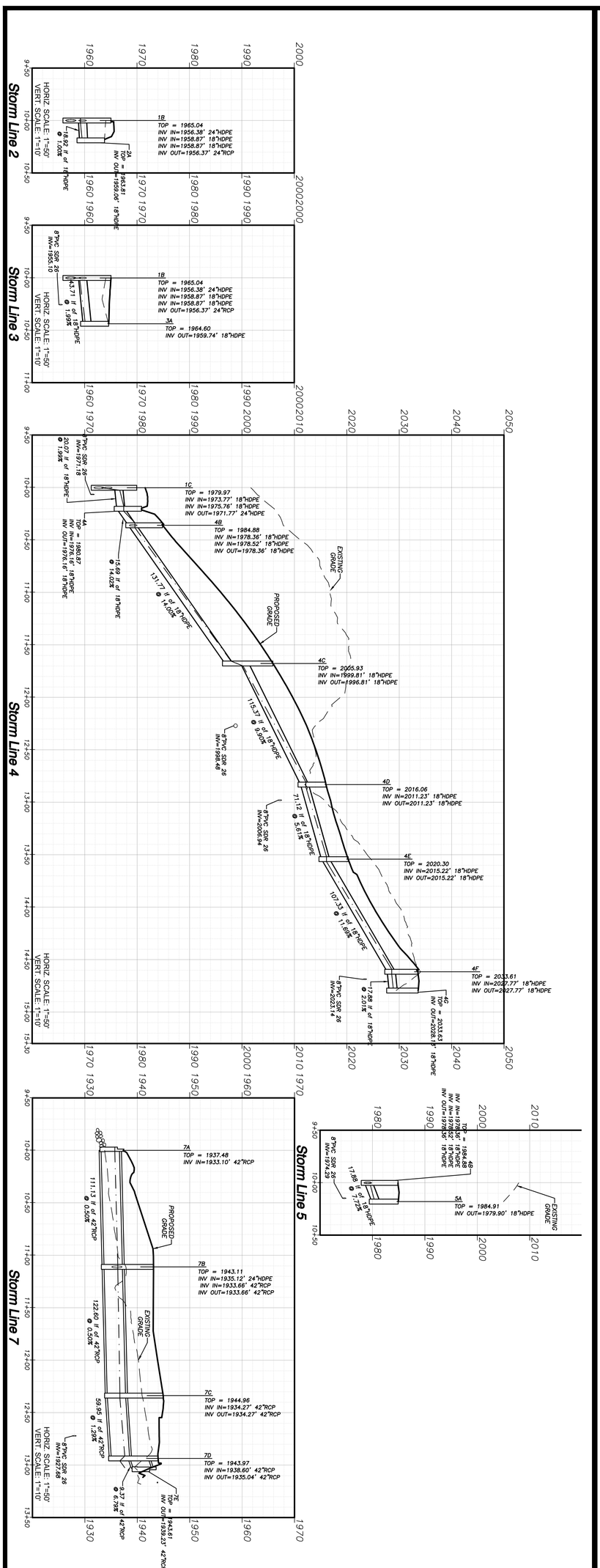
ANY CHANGES OR ALTERATIONS MADE TO THESE CONSTRUCTION DRAWINGS WITHOUT THE WRITTEN CONSENT OF ROCHESTER ENGINEERING (DECM) VOIDS THE SEAL SHOWN HEREON AND ANY LIABILITY ASSOCIATED WITH THIS PROJECT. DECM WILL ASSUME NO RESPONSIBILITY FOR VERIFICATION OF ANY CHANGES.

GRAPHIC SCALE
25' 0' 50' 100'

1ST SUBMITTAL

SHEET 15 OF 31

DATE: 04/28/25
SCALE: 1" = 50'
JOB NO. G22-096.TNM
DWG NO. CNST.dwg
DRAWN BY: CAM



SHEET	16
OF	31

DATE: 04/28/25
SCALE: 1" = 50'
JOB NO. G224096.TNM
DWG NO. .CNST.dwg
DRAWN BY: CMM

1ST SUBMITTAL

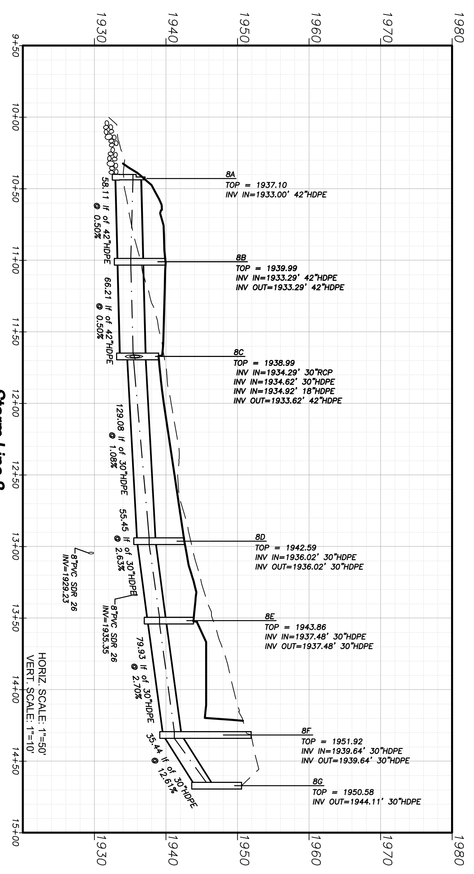
ANY CHANGES OR ALTERATIONS MADE TO THESE CONSTRUCTION DRAWINGS WITHOUT THE WRITTEN APPROVAL OF ROCHESTER | DCCM VOIDS THE SEAL SHOWN HEREON AND ANY LIABILITY ASSOCIATED WITH THIS PROJECT. ORIGINAL DRAWINGS ARE KEPT ON FILE FOR VERIFICATION OF ANY CHANGES.

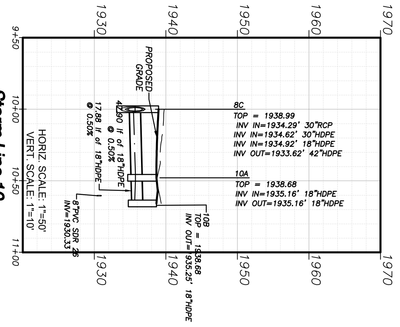
GRAPHIC SCALE
25' 0' 50' 100'

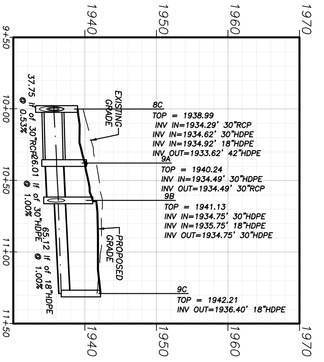
NO.	DATE	DESCRIPTION
		REVISIONS

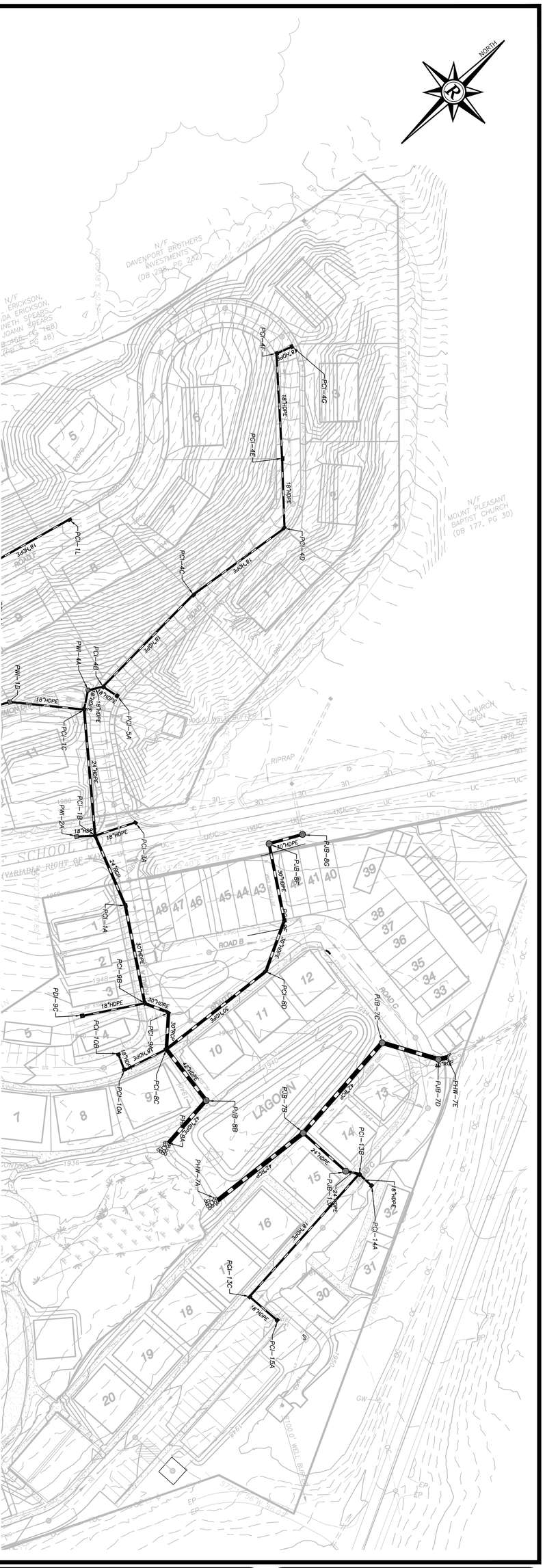
STORM SEWER PLAN & PROFILE
FOR:
STONE BRIDGE
RESIDENTIAL SUBDIVISION
LOCATED IN
HIAWASSEE TOWNSHIP
CLAY COUNTY, NORTH CAROLINA

Rochester Engineering, Inc.
Rochester Engineering, INC.
425 Oak St NW, Gainesville, GA 30501
770.718.0600 | rochester.dccm.com









SHEET 17 OF 31	1ST SUBMITTAL	ANY CHANGES OR ALTERATIONS MADE TO THESE CONSTRUCTION DRAWINGS WITHOUT THE WRITTEN APPROVAL OF ROCHESTER	DCCM VOIDS THE SEAL SHOWN HEREON AND ANY LIABILITY ASSOCIATED WITH THIS PROJECT. ORIGINAL DRAWINGS ARE KEPT ON FILE FOR VERIFICATION OF ANY CHANGES.

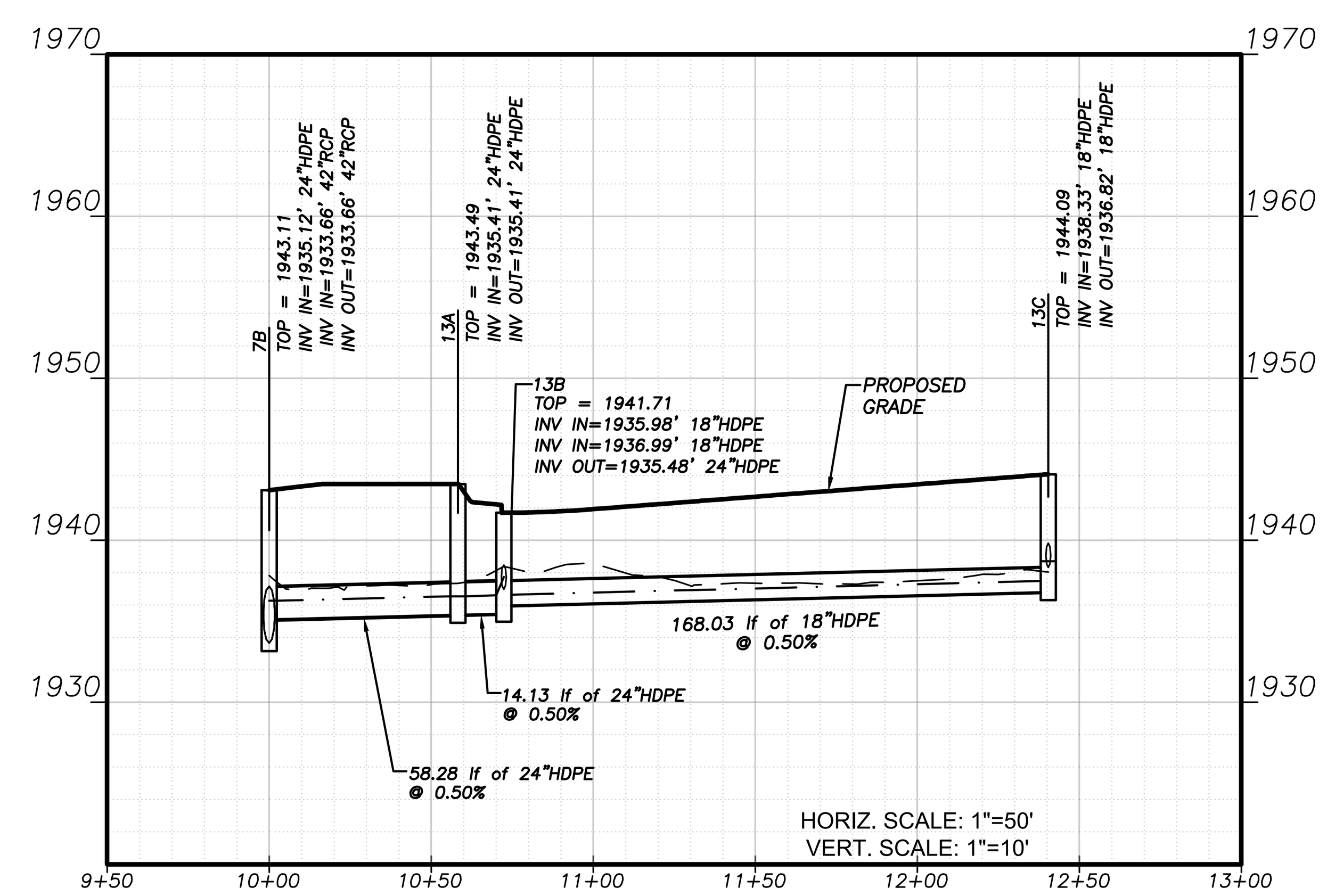
DATE: 04/28/25
SCALE: 1" = 50'
JOB NO. G224096.TNM
DWG NO. .CNST.dwg
DRAWN BY: CMM

GRAPHIC SCALE
25' 0' 50' 100'

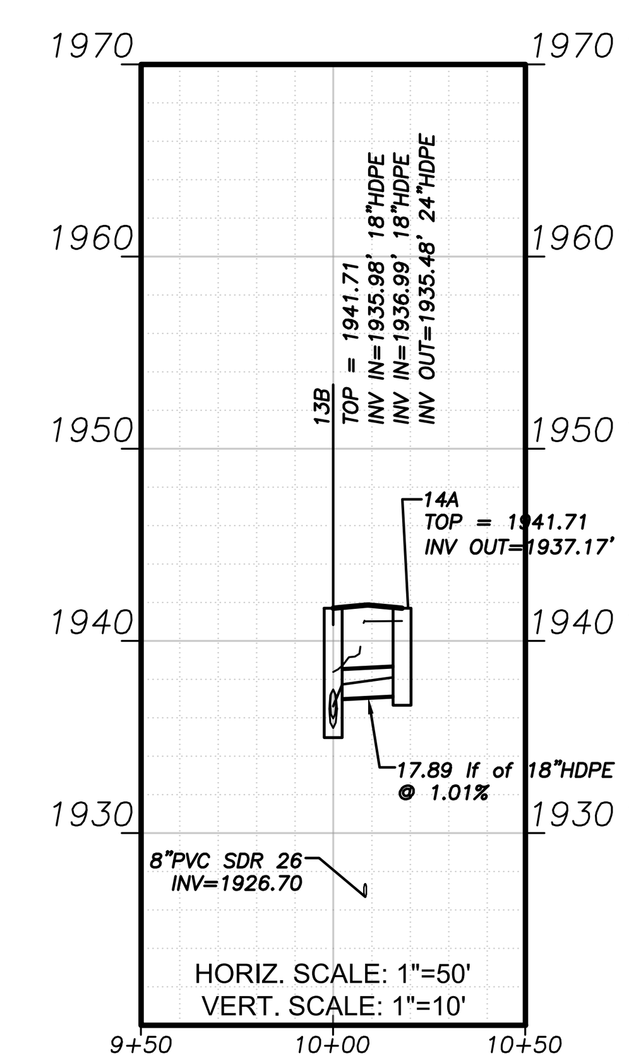
NO.	DATE	DESCRIPTION
		REVISIONS

STORM SEWER PLAN & PROFILE
FOR:
STONE BRIDGE
RESIDENTIAL SUBDIVISION
LOCATED IN
HIAWASSEE TOWNSHIP
CLAY COUNTY, NORTH CAROLINA

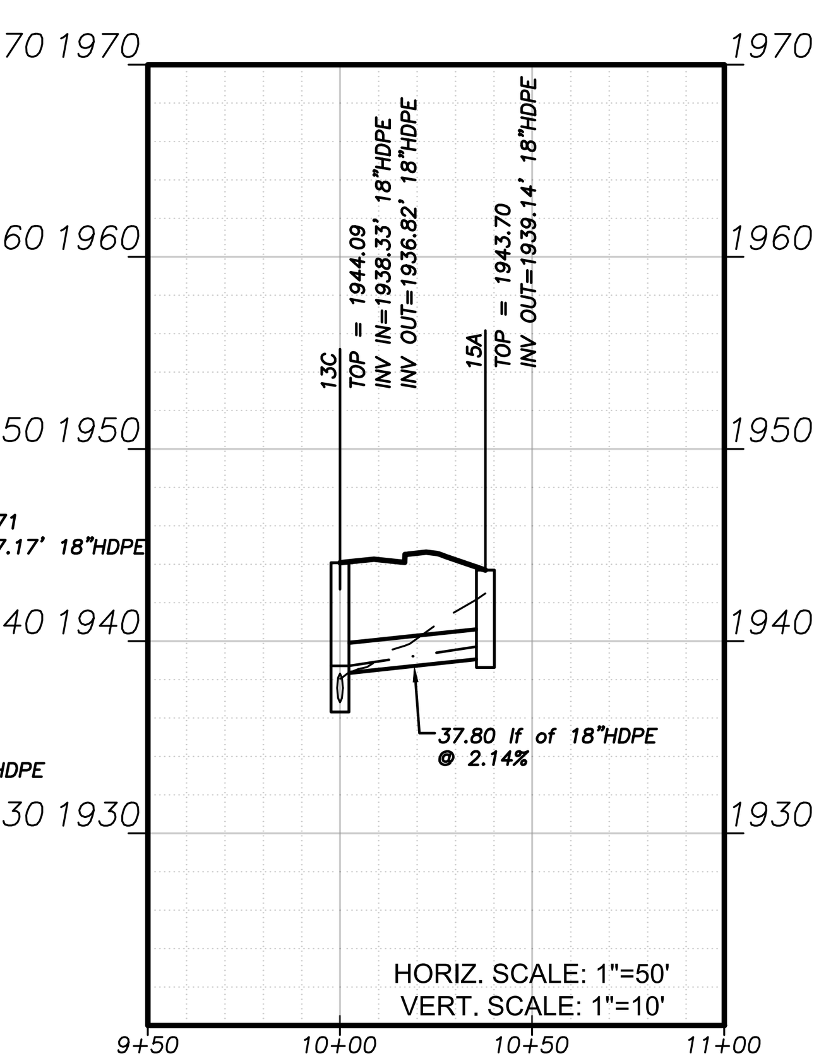
Rochester Engineering, Inc.
Rochester Engineering, INC.
425 Oak St NW, Gainesville, GA 30501
770.718.0600 | rochester.dccm.com



Storm Line 13



Storm Line 14



Storm Line 15

Rochester Engineering, Inc.

Rochester Engineering, INC.
425 Oak St NW, Gainesville, GA 30501
770.718.0600 | rochester.dccm.com

STORM SEWER PLAN & PROFILE
FOR:
STONE BRIDGE
RESIDENTIAL SUBDIVISION

LOCATED IN
HIAWASSEE TOWNSHIP
CLAY COUNTY, NORTH CAROLINA

NO.	DATE	DESCRIPTION

REVISIONS

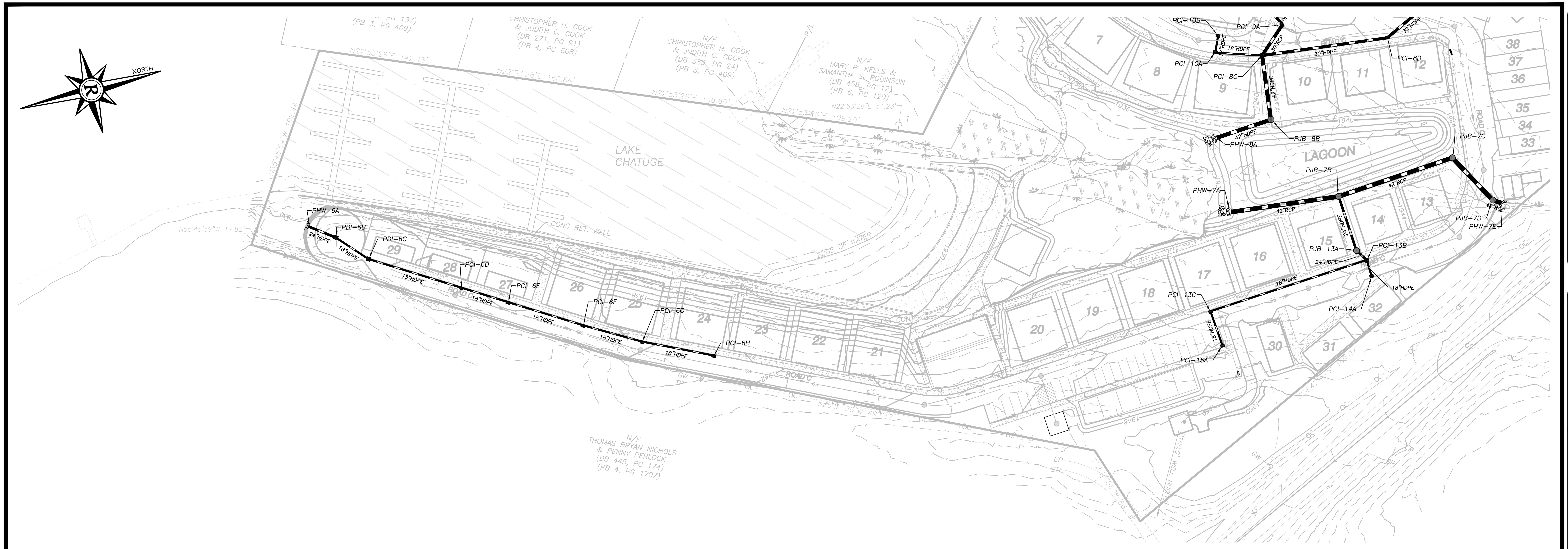
ANY CHANGES OR ALTERATIONS MADE TO THESE CONSTRUCTION DRAWINGS WITHOUT THE WRITTEN APPROVAL OF ROCHESTER | DCCM VOIDS THE SEAL SHOWN HEREON AND ANY LIABILITY ASSOCIATED WITH THIS PROJECT. ORIGINAL DRAWINGS ARE KEPT ON FILE FOR VERIFICATION OF ANY CHANGES.

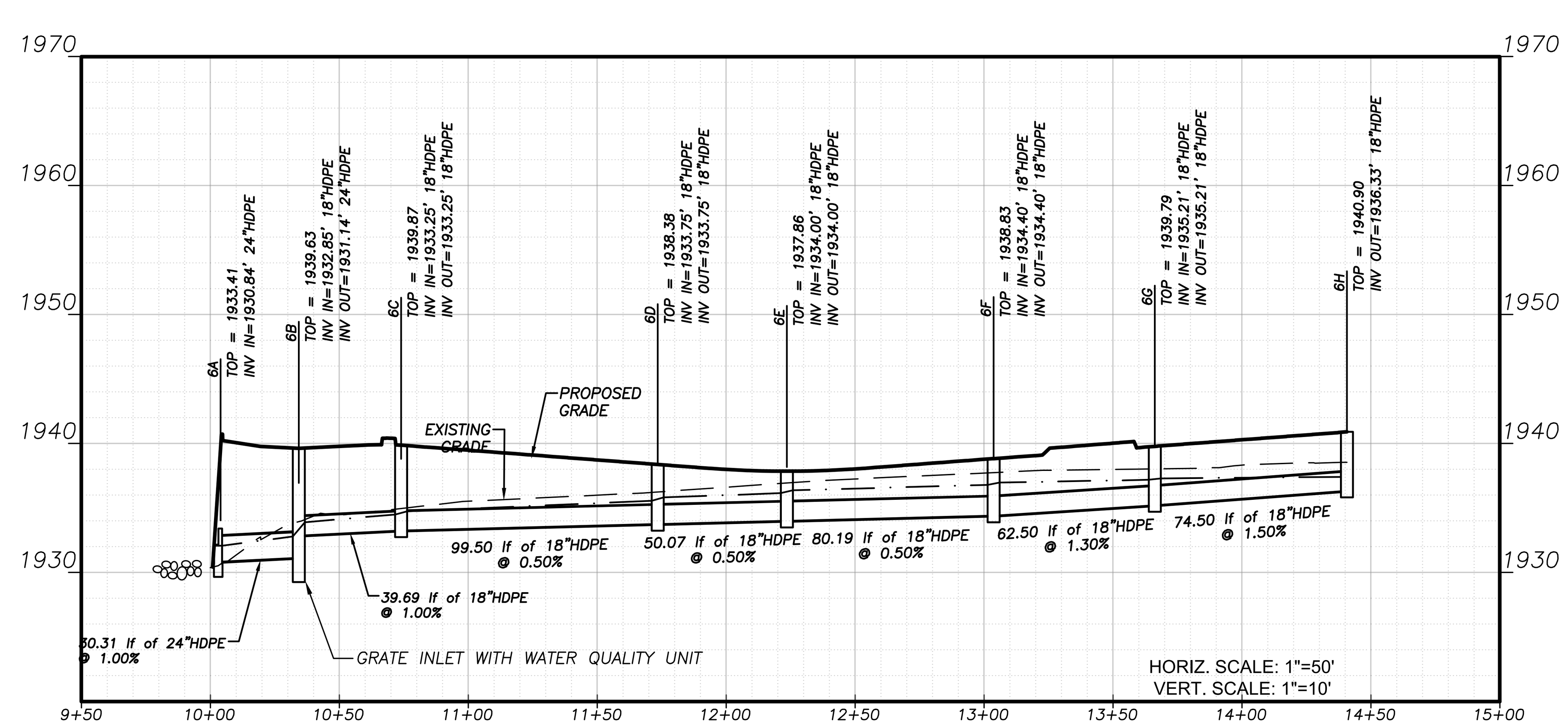
GRAPHIC SCALE
25' 0' 50' 100'

1ST SUBMITTAL

SHEET 18 OF 31

DATE: 04/28/25
SCALE: 1" = 50'
JOB NO. G224096.TNM
DWG NO. CNST.dwg
DRAWN BY: CMM





Storm Line 6

InletID	LineSize	LineLength	LineSlope	n-valuePipe	DrainageArea	RunoffCoeff	InletTime	Tc	iInlet	iSys	IncrQ	KnownQ	TotalRunoff	VelDn
	(in)	(ft)	(%)		(ac)	(C)	(min)	(min)	(in/hr)	(in/hr)	(cfs)	(cfs)	(cfs)	(ft/s)
8B	42	58.11	0.50	0.01	0.00	0.76	5.00	11.20	0.00	5.99	0.00	0.00	26.10	5.81
8C	42	66.21	0.50	0.01	0.13	0.76	5.00	11.00	7.63	6.03	0.74	0.00	26.30	7.64
9A	30	37.75	0.53	0.01	0.18	0.76	5.00	10.90	7.63	6.06	1.04	0.00	21.39	7.53
9B	30	26.01	1.00	0.01	0.12	0.76	5.00	10.80	7.63	6.08	0.70	0.00	20.63	6.35
1A	30	101.83	14.00	0.01	0.05	0.76	5.00	10.40	7.63	6.16	0.29	0.00	19.83	6.25
1B	24	77.98	5.59	0.01	0.11	0.76	5.00	10.20	7.63	6.20	0.64	0.00	19.73	17.77
1C	24	129.29	11.90	0.01	0.10	0.76	5.00	9.80	7.63	6.28	0.58	0.00	17.55	6.57
1D	18	76.27	8.90	0.01	0.22	0.76	5.00	9.50	7.63	6.36	1.28	0.00	6.26	14.64
1E	18	108.97	9.40	0.01	0.09	0.76	5.00	8.90	7.63	6.49	0.52	0.00	5.30	4.51
1F	18	30.83	14.00	0.01	0.00	0.76	5.00	8.80	0.00	6.53	0.00	0.00	4.89	4.33
1G	18	30.83	14.00	0.01	0.00	0.76	5.00	8.60	0.00	6.57	0.00	0.00	4.92	16.06
1H	18	30.83	14.00	0.01	0.00	0.76	5.00	8.40	0.00	6.62	0.00	0.00	4.95	16.08
1I	18	47.86	3.09	0.01	0.30	0.76	5.00	8.20	7.63	6.68	1.74	0.00	5.00	9.41
1J	18	75.46	6.60	0.01	0.19	0.76	5.00	7.60	7.63	6.83	1.10	0.00	3.56	3.13
1K	18	17.88	1.00	0.01	0.27	0.76	5.00	7.40	7.63	6.89	1.54	0.00	2.59	3.04
1L	18	108.55	5.00	0.01	0.23	0.76	5.00	5.00	7.63	7.63	1.33	0.00	1.33	2.02
4A	18	20.07	2.00	0.01	0.27	0.76	5.00	7.20	7.63	6.94	1.57	0.00	12.02	9.97
4B	18	15.69	14.02	0.01	0.28	0.76	5.00	7.20	7.63	6.95	1.62	0.00	10.61	6.47
4C	18	131.77	14.00	0.01	0.34	0.76	5.00	6.70	7.63	7.09	1.97	0.00	8.19	5.20
4D	18	115.37	9.90	0.01	0.13	0.76	5.00	6.20	7.63	7.24	0.75	0.00	6.50	15.37
4E	18	71.13	5.61	0.01	0.25	0.76	5.00	5.80	7.63	7.36	1.43	0.00	5.87	4.77
4F	18	107.33	11.69	0.01	0.14	0.76	5.00	5.10	7.63	7.58	0.81	0.00	4.63	4.00
4G	18	17.88	2.01	0.01	0.66	0.76	5.00	5.00	7.63	7.63	3.85	0.00	3.85	3.86
5A	18	17.88	7.72	0.01	0.21	0.76	5.00	5.00	7.63	7.63	1.22	0.00	1.22	0.89
3A	18	43.71	2.00	0.01	0.15	0.76	5.00	5.00	7.63	7.63	0.87	0.00	0.87	4.84
2A	18	18.92	1.00	0.01	0.25	0.76	5.00	5.00	7.63	7.63	1.45	0.00	1.45	4.42
8D	30	129.08	1.34	0.01	0.10	0.76	5.00	5.70	7.63	7.41	0.56	0.00	3.08	10.24
8E	30	55.45	2.63	0.01	0.45	0.76	5.00	5.50	7.63	7.47	2.61	0.00	2.56	6.70
8F	30	79.93	2.70	0.01	0.00	0.76	5.00	5.10	0.00	0.00	0.00	0.00	0.00	6.04
8G	30	35.44	12.61	0.01	0.00	0.76	5.00	5.00	0.00	0.00	20.48	20.48	0.00	6.48
7B	42	111.14	0.50	0.01	0.00	0.76	5.00	7.30	0.00	6.90	0.00	0.00	10.07	9.06
13A	24	58.28	0.50	0.01	0.00	0.76	5.00	7.00	0.00	6.98	0.00	0.00	10.19	5.39
13B	24	14.13	0.50	0.01	0.33	0.76	5.00	7.00	7.63	7.00	1.91	0.00	10.22	5.51
13C	18	168.03	0.50	0.01	0.16	0.76	5.00	5.50	7.63	7.47	0.93	0.00	3.24	4.30
15A	18	37.80	2.14	0.01	0.41	0.76	5.00	5.00	7.63	7.63	2.38	0.00	2.38	6.68
14A	18	17.90	1.01	0.01	1.02	0.76	5.00	5.00	7.63	7.63	5.92	0.00	5.92	6.51
9C	18	65.12	1.00	0.01	0.11	0.76	5.00	5.00	7.63	7.63	0.64	0.00	0.64	1.11
7C	42	122.60	0.50	0.01	0.00	0.76	5.00	5.20	0.00	0.00	0.00	0.00	0.00	7.76
7D	42	70.80	1.30	0.01	0.00	0.76	5.00	5.00	0.00	0.00	59.92	59.92	0.00	8.43
6B	24	30.31	0.50	0.01	0.25	0.76	5.00	6.50	7.63	7.14	1.45	0.00	11.99	4.01
6C	18	39.69	5.87	0.01	0.10	0.76	5.00	6.40	7.63	7.18	0.58	0.00	10.69	12.24
6D	18	99.50	0.50	0.01	0.19	0.76	5.00	6.10	7.63	7.27	1.10	0.00	10.27	5.81
6E	18	50.07	0.50	0.01	0.19	0.76	5.00	5.90	7.63	7.32	1.10	0.00	9.29	5.26
6F	18	80.19	0.50	0.01	0.31	0.76	5.00	5.70	7.63	7.41	1.80	0.00	8.33	4.72
6G	18	62.50	1.30	0.01	0.17	0.76	5.00	5.40	7.63	7.50	0.99	0.00	6.67	3.78
6H	18	74.50	1.50	0.01	1.00	0.76	5.00	5.00	7.63	7.63	5.80	0.00	5.80	3.28
10A	18	47.90	0.50	0.01	0.23	0.76	5.00	5.50	7.63	7.47	1.33	0.00	2.38	3.97
10B	18	17.88	0.50	0.01	0.19	0.76	5.00	5.00	7.63	7.63	1.10	0.00	1.10	1.73

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STORM SEWER PLAN & PROFILE
FOR:
STONE BRIDGE
RESIDENTIAL SUBDIVISION
LOCATED IN
HIAWASSEE TOWNSHIP
CLAY COUNTY, NORTH CAROLINA

NO.	DATE	DESCRIPTION

REVISIONS

ANY CHANGES OR ALTERATIONS MADE TO THESE CONSTRUCTION DRAWINGS WITHOUT THE WRITTEN APPROVAL OF ROCHESTER, DCCM VOIDS THE SEAL SHOWN HEREON AND ANY LIABILITY ASSOCIATED WITH THIS PROJECT. ORIGINAL DRAWINGS ARE KEPT ON FILE FOR VERIFICATION OF ANY CHANGES.

GRAPHIC SCALE
25' 0' 50' 100'

1ST SUBMITTAL

SHEET 19 OF 31

DATE: 04/28/25
SCALE: 1"=50'
JOB NO: G24096.TNM
DWG NO: .CNST.dwg
DRAWN BY: CMM

SHEET	20
OF	31
DATE:	04/28/25
SCALE:	1" = 60'
JOB NO.	G224096.TNM
DWG NO.	.CNST.dwg
DRAWN BY:	CMM

1ST SUBMITTAL

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GRAPHIC SCALE
30' 0' 60' 120'

NO.	DATE	DESCRIPTION

REVISIONS

SANITARY SEWER PLAN
FOR:
STONE BRIDGE
RESIDENTIAL SUBDIVISION
LOCATED IN
HIAWASSEE TOWNSHIP
CLAY COUNTY, NORTH CAROLINA

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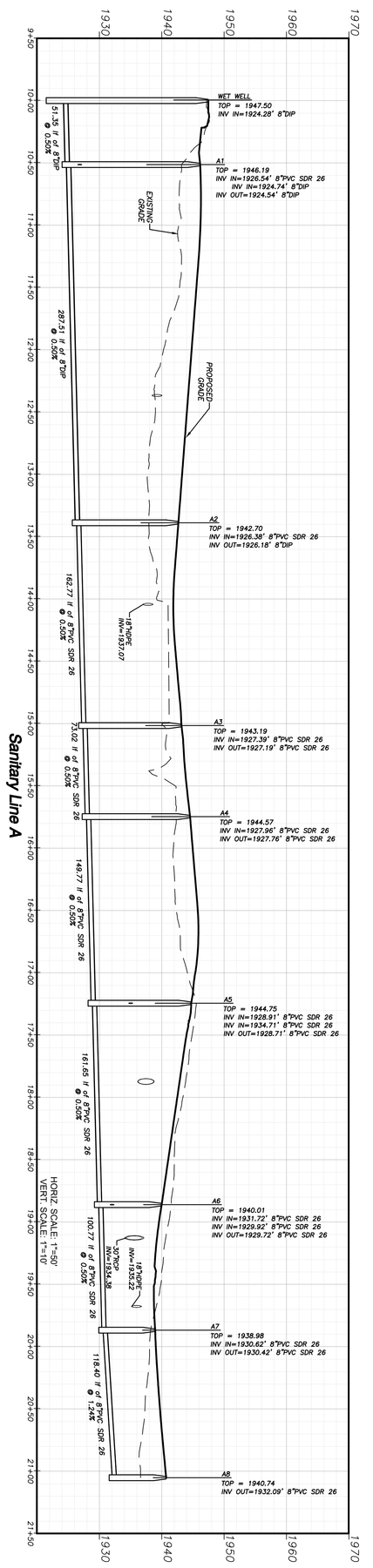

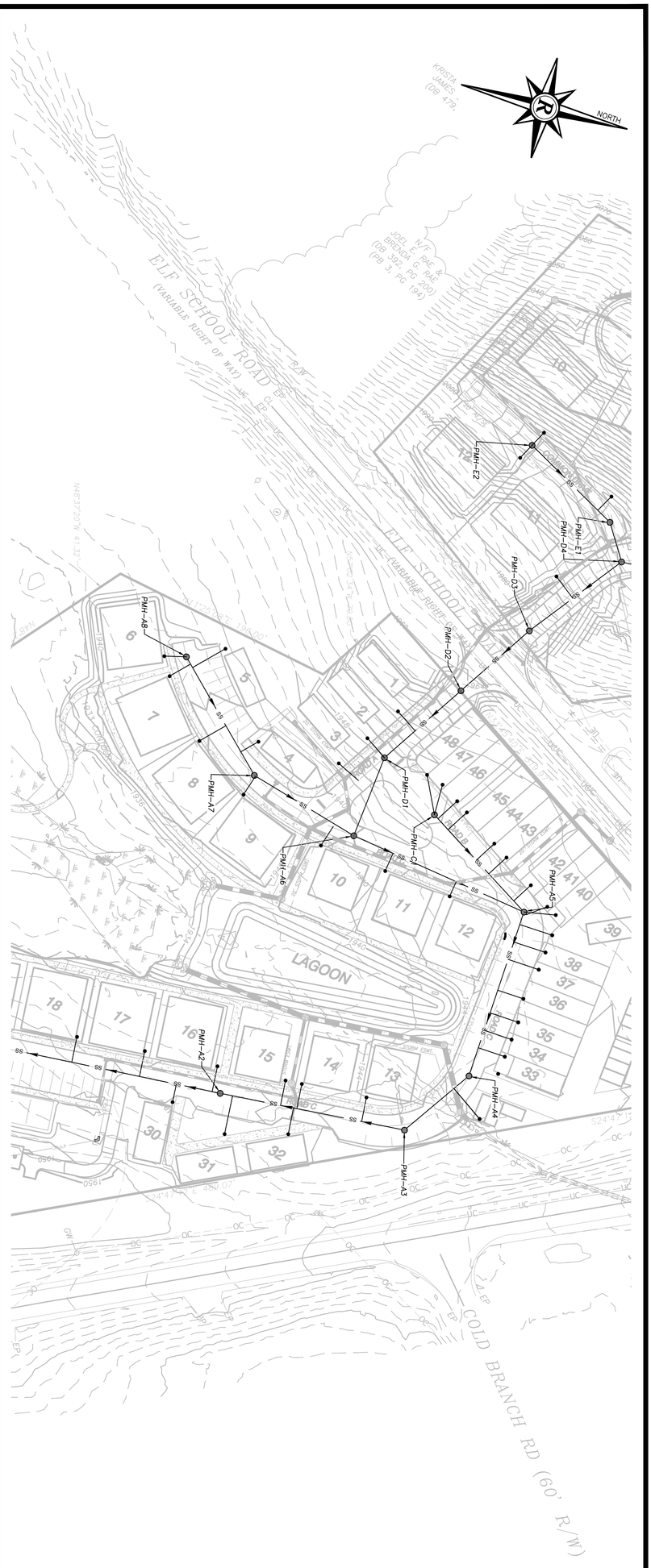

SHEET 21 OF 31

DATE: 04/28/25
SCALE: 1" = 50'
JOB NO. G224096.TNM
DWG NO. .CNST.dwg
DRAWN BY: CMM

1ST SUBMITTAL

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GRAPHIC SCALE
25' 0' 50' 100'

NO.	DATE	DESCRIPTION

REVISIONS

SANITARY SEWER PLAN & PROFILE
FOR:
STONE BRIDGE
RESIDENTIAL SUBDIVISION

LOCATED IN
HIAWASSEE TOWNSHIP
CLAY COUNTY, NORTH CAROLINA

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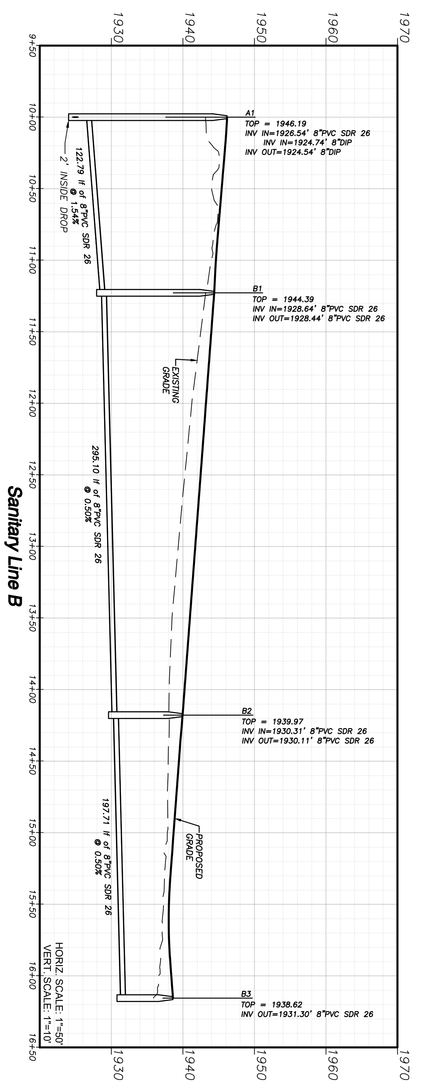

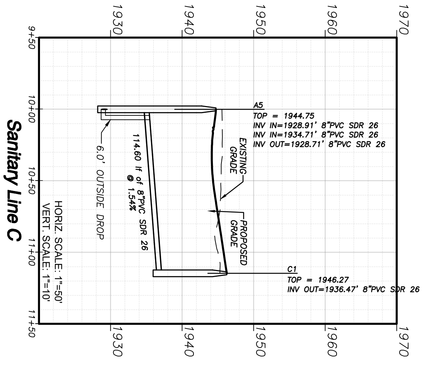

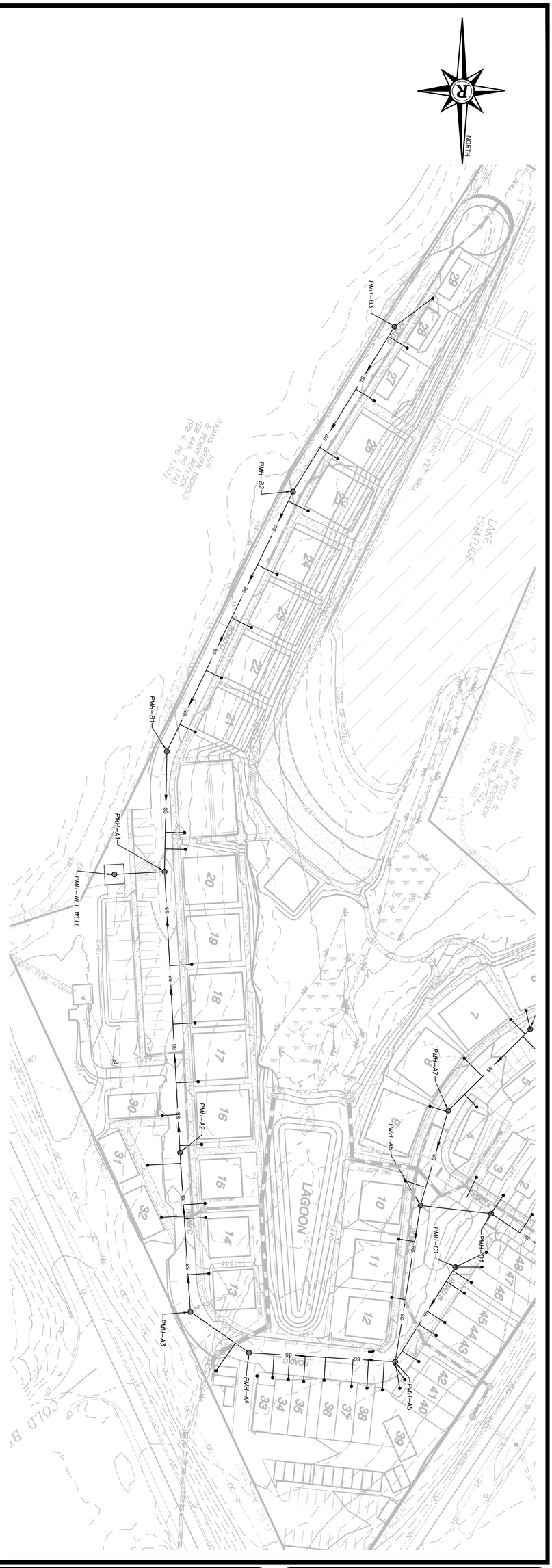

SHEET	OF
22	31

DATE: 04/28/25
SCALE: 1" = 50'
JOB NO. G224096.TNM
DWG NO. .CNST.dwg
DRAWN BY: CMM

1ST SUBMITTAL

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GRAPHIC SCALE
25' 0' 50' 100'

NO.	DATE	DESCRIPTION

REVISIONS

SANITARY SEWER PLAN & PROFILE
FOR:
STONE BRIDGE
RESIDENTIAL SUBDIVISION

LOCATED IN
HIAWASSEE TOWNSHIP
CLAY COUNTY, NORTH CAROLINA

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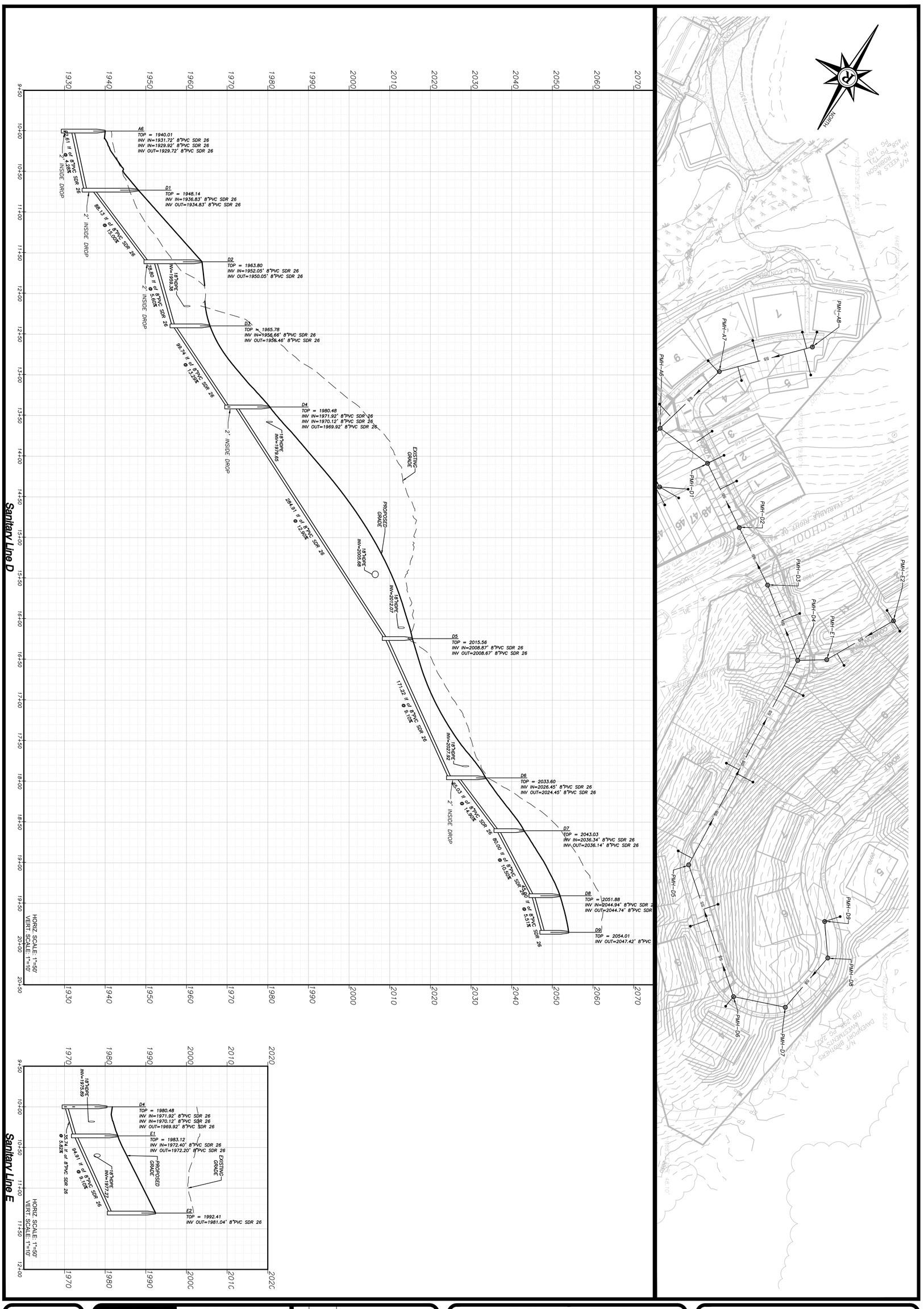

SHEET 23 OF 31

DATE: 04/28/25
SCALE: 1" = 50'
JOB NO. G224096.TNM
DWG NO. .CNST.dwg
DRAWN BY: CMM

1ST SUBMITTAL

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GRAPHIC SCALE
25' 0' 50' 100'

NO.	DATE	DESCRIPTION
		REVISIONS

SANITARY SEWER PLAN & PROFILE
FOR:

STONE BRIDGE
RESIDENTIAL SUBDIVISION

LOCATED IN
HIAWASSEE TOWNSHIP
CLAY COUNTY, NORTH CAROLINA

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NOTE: DUST CONTROL AS NECESSARY

NORTH

TREE SAVE FENCE

HAY BALE CHECK DAM (TYP)

TEMPORARY SEDIMENT TRAP 2
DRAINAGE BASIN: 3.81 AC
REQUIRED VOL: 13,735 Cu.Ft.
PROVIDED VOL: 15,895 Cu.Ft.
TOP OF BASIN: 1988
BOTTOM OF BASIN: 1982
WEIR LENGTH: 10 Ft.
WEIR ELEVATION: 1986.5

BAFFLES

OVERFLOW WEIR

STONE CHECKDAM

TEMPORARY DIVERSION 1
SIDE SLOPES: 3:1
BOTTOM WIDTH: 2'
DEPTH:1.0'
DRAINAGE BASIN: 2.67 AC
25 YEAR FLOW: 4.04 CFS
VELOCITY 4.1 FT/S
LINING: VEGETATIVE LINING

DOUBLE ROW SILT FENCE

ELE SCHOOL ROAD
(VARIABLE RIGHT OF WAY)

CONSTRUCTION ENTRANCE

LAT=N035.028982
LONG=W083.338205

TEMPORARY DIVERSION 2
SIDE SLOPES: 3:1
BOTTOM WIDTH: 2'
DEPTH:1.0'
DRAINAGE BASIN: 1.09 AC
25 YEAR FLOW: 1.66 CFS
VELOCITY 2.3 FT/S
LINING: VEGETATIVE LINING

TEMPORARY SEDIMENT TRAP 2
DRAINAGE BASIN: 3.81 AC
REQUIRED VOL: 13,735 Cu.Ft.
PROVIDED VOL: 15,895 Cu.Ft.
TOP OF BASIN: 1938
BOTTOM OF BASIN: 1934
WEIR LENGTH: 10 Ft.
WEIR ELEVATION: 1987.0

BAFFLES

OVERFLOW WEIR

TREE SAVE FENCE/
LIMITS OF DISTRURBANCE

STONE
CHECK DAM (TYP)

HAY BALE CHECK DAM (TYP)

TEMPORARY DIVERSION 3
SIDE SLOPES: 3:1
BOTTOM WIDTH: 2'
DEPTH:1.0'
DRAINAGE BASIN: 1.37 AC
25 YEAR FLOW: 2.08 CFS
VELOCITY 2.2 FT/S
LINING: VEGETATIVE LINING

LAKE
CHATUGE

HIGHWAY 175
(VARIABLE RIGHT OF WAY)

COLD BRANCH RD (60' R/W)

LEGEND

- SILT FENCE
- TREE SAVE FENCE
- LIMITS OF DISTURBANCE
- TEMP. DIVERSION
- SOIL DELINEATION LINE

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INITIAL EROSION CONTROL PLAN
FOR:

STONE BRIDGE
RESIDENTIAL SUBDIVISION

LOCATED IN
HIAWASSEE TOWNSHIP
CLAY COUNTY, NORTH CAROLINA

NO.	DATE	REVISIONS DESCRIPTION

ANY CHANGES OR ALTERATIONS MADE TO THESE CONSTRUCTION DRAWINGS WITHOUT THE WRITTEN CONSENT OF ROCHESTER ENGINEERING, INC. VOIDS THE SEAL SHOWN HEREON AND ANY LIABILITY ASSOCIATED WITH THIS PROJECT AND ROCHESTER ENGINEERING, INC. SHALL BE NOTIFIED FOR VERIFICATION OF ANY CHANGES.

GRAPHIC SCALE
30' 0' 60' 120'

1ST SUBMITTAL

SHEET 24 OF 31

DATE: 04/29/25
SCALE: 1" = 60'
JOB NO. G224096.TNM
DWG NO. CNST.dwg
DRAWN BY: CAM

NOTE: DUST CONTROL AS NECESSARY

NORTH

SURFACE ROUGHENING

TREE SAVE FENCE

TEMPORARY SEEDING

INLET PROTECTION (TYP.)

DOUBLE ROW SILT FENCE

CONSTRUCTION ENTRANCE

LAT=N035.028982
LONG=W083.338205

ELF SCHOOL ROAD
(VARIABLE RIGHT-OF-WAY)

HIGHWAY 175
(VARIABLE RIGHT OF WAY)

COLD BRANCH RD (60' R/W)

LAKE
CHATUGE

LAGOON

ROAD A

ROAD B

ROAD C

TREE SAVE FENCE/
LIMITS OF DISTURBANCE

RIPRAP APRON
LENGTH: 9'
WIDTH 1: 4.5'
WIDTH 2: 11'
d50: 4"
DEPTH: 8"

RIPRAP APRON
LENGTH: 20'
WIDTH 1: 9'
WIDTH 2: 23'
d50: 7"
DEPTH: 1.3'

RIPRAP APRON
LENGTH: 22'
WIDTH 1: 11'
WIDTH 2: 26'
d50: 8"
DEPTH: 1.6'

LEGEND

- SILT FENCE
- TREE SAVE FENCE
- LIMITS OF DISTURBANCE
- TEMP. DIVERSION
- SOIL DELINEATION LINE

Rochester Engineering, Inc.
Rochester Engineering, INC.
425 Oak St NW | Gainesville, GA 30501
770.718.0600 | rochester-decm.com

INTERMEDIATE EROSION CONTROL PLAN
FOR:

STONE BRIDGE
RESIDENTIAL SUBDIVISION

LOCATED IN
HIAWASSEE TOWNSHIP
CLAY COUNTY, NORTH CAROLINA

NO.	DATE	REVISIONS
		DESCRIPTION

ANY CHANGES OR ALTERATIONS MADE TO THESE CONSTRUCTION DRAWINGS WITHOUT THE WRITTEN CONSENT OF ROCHESTER ENGINEERING, INC. DECM VOIDS THE SEAL SHOWN HEREON AND ANY LIABILITY ASSOCIATED WITH THIS PROJECT. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND NOTIFY ENGINEER FOR VERIFICATION OF ANY CHANGES.

GRAPHIC SCALE
30' 0' 60' 120'

1ST SUBMITTAL

SHEET 25 OF 31

DATE: 04/28/25
SCALE: 1" = 60'
JOB NO. G224096.1NM
DWG NO. CNST.dwg
DRAWN BY: CAM

NOTE:
UPON FINAL SITE STABILIZATION ALL TEMPORARY EROSION CONTROL MEASURES ARE TO BE REMOVED AND DISPOSED OF PROPERLY.

NORTH

N/F KRISTA G. KILLIUS & JAMES S. KILLIUS (DB 479, PG 49)

N/F PAUL ERICKSON, GLENDA ERICKSON, KENNETH SPEARS, & JOANN SPEARS (DB 466, PG 188) (PB 6, PG 48)

N/F DAVENPORT BROTHERS INVESTMENTS (DB 900, PG 232)

N/F JOEL E. RAE & BRENDA G. RAE (DB 392, PG 200) (PB 3, PG 194)

N/F MOUNT PLEASANT BAPTIST CHURCH (DB 177, PG 30)

ELF SCHOOL ROAD (VARIABLE RIGHT OF WAY)

HIGHWAY 175 (VARIABLE RIGHT OF WAY)

COLD BRANCH RD (60' R/W)

LAKE CHATUGE

LAGOON

ALLEY BLDG.

CHURCH SIGN

PERMANENT SEEDING

INLET PROTECTION (TYP.)

TREE SAVE FENCE

DOUBLE ROW SILT FENCE

CONSTRUCTION ENTRANCE

LAT=N035.028982
LONG=W083.338205

RIPRAP

RIPRAP APRON
LENGTH: 20'
WIDTH 1: 9'
WIDTH 2: 23'
d50: 7"
DEPTH: 1.3'

RIPRAP APRON
LENGTH: 22'
WIDTH 1: 11'
WIDTH 2: 26'
d50: 8"
DEPTH: 1.6'

TREE SAVE FENCE/ LIMITS OF DISTURBANCE

CONC. RET. WALL

EDGE OF WATER

WSL CONTOUR

N/F CHRISTOPHER H. COOK & JUDITH C. COOK (DB 278, PG 137) (PB 3, PG 409)

N/F CHRISTOPHER H. COOK & JUDITH C. COOK (DB 271, PG 91) (PB 4, PG 608)

N/F CHRISTOPHER H. COOK & JUDITH C. COOK (DB 385, PG 24) (PB 3, PG 409)

N/F MARY P. KEELS & SAMANTHA S. ROBINSON (DB 458, PG 12) (PB 6, PG 120)

N/F THOMAS BRYAN NICHOLS & PENNY PERLOCK (DB 445, PG 174) (PB 4, PG 1707)

LEGEND

- SILT FENCE
- TREE SAVE FENCE
- LIMITS OF DISTURBANCE
- TEMP. DIVERSION
- SOIL DELINEATION LINE

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FINAL EROSION CONTROL PLAN
FOR:

STONE BRIDGE
RESIDENTIAL SUBDIVISION

LOCATED IN
HIAWASSEE TOWNSHIP
CLAY COUNTY, NORTH CAROLINA

NO.	DATE	REVISIONS
		DESCRIPTION

ANY CHANGES OR ALTERATIONS MADE TO THESE CONSTRUCTION DRAWINGS WITHOUT THE WRITTEN CONSENT OF ROCHESTER ENGINEERING, INC. DCM VOIDS THE SEAL SHOWN HEREON AND ANY LIABILITY ASSOCIATED WITH THIS PROJECT. CONTACT ENGINEER OF RECORD FOR FILE FOR VERIFICATION OF ANY CHANGES.

GRAPHIC SCALE
30' 0' 60' 120'

1ST SUBMITTAL

SHEET 26 OF 31

DATE: 04/28/25
SCALE: 1" = 60'
JOB NO.: C224096.1NM
DWG NO.: CNST.dwg
DRAWN BY: CAM

DATE: PAGE:

CONSIDERATIONS FOR CONSTRUCTION SCHEDULING

CONSTRUCTION ACTIVITY	SCHEDULE CONSIDERATION
CONSTRUCTION ACCESS: Construction entrance, construction routes, equipment parking areas.	First land-disturbing activity- Stabilize bare areas immediately with gravel and temporary vegetation as construction takes place.
SEDIMENT TRAPS AND BARRIERS: Basin traps, sediment fences, and outlet protection.	Install principal basins after construction site is accessed. Install additional traps and barriers as needed during grading.
RUNOFF CONTROL: Diversions, perimeter dikes, water bars, and outlet protection.	Install key practices after principal sediment traps and before land grading. Install additional runoff-control measures during grading.
RUNOFF CONVEYANCE SYSTEM: Stabilize streambanks, storm drains, channels, inlet and outlet protection, and slope drains.	Where necessary, stabilize streambanks as early as possible. Install principal runoff conveyance system with runoff-control measures. Install remainder of system after grading.
LANDING CLEARING AND GRADING: Site preparation- cutting, filling and grading, sediment traps, barriers, diversions, drains, and surface roughening.	Begin major clearing and grading **AFTER** principal sediment and key runoff-control measures are installed. Clear borrow and disposal areas only as needed. Install additional control measures as grading progresses. Mark trees and buffer areas for preservation.
SURFACE STABILIZATION: Temporary and permanent seeding, mulching, sodding and riprap.	Apply temporary or permanent stabilization measures immediately on all disturbed areas where work is delayed or complete.
BUILDING CONSTRUCTION: Buildings, utilities, and paving.	Install necessary additional erosion and sedimentation control practices as work takes place.
LANDSCAPE AND FINAL STABILIZATION: Topsoiling, trees and shrubs, permanent seeding, mulching, sodding, and riprap.	Last construction phase: Stabilize all open areas, including borrow and spoil areas. Remove and stabilize all temporary control areas.

NOTE: The above are the main aspects of a typical construction sequence in general terms. A detailed Construction Sequence should be site specific based on your project and site needs. As a minimum, the construction sequence schedule should show the following:

- The erosion and sedimentation control practices to be installed,
- Principal development activities,
- What measures should be in place before other activities are begun, and
- Compatibility with the general construction schedule of the contract.

Many timely construction techniques can reduce the erosion potential of a site, such as (1) shaping earthen fills daily to prevent overflows and (2) constructing temporary diversions ahead of anticipated storms. These types of activities cannot be put on the construction sequence schedule, but should be used whenever possible.

DEQ

CONSTRUCTION SEQUENCING

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

DATE: PAGE:

SPACING GUIDE FOR SLOPE BREAKS		
	SLOPE	SPACING (FT)
Steep Slopes	2:1	20
	3:1	35
	4:1	45
Long Slopes	15-25%	50
	10-15%	80
	6-10%	125
	3-6%	200
	<3%	300

Use slope breaks, such as diversions, wattles, or benches, as appropriate, to reduce the length of cut-and-fill slope to limit sheet and rill erosion and prevent gullying.

MAINTENANCE:

1. Periodically check all graded areas and the supporting erosion and sedimentation control practices, especially after heavy rainfalls.
2. Promptly remove all sediment from diversions and other water-disposal practices.
3. If washouts or breaks occur, repair immediately.
4. Prompt maintenance of small eroded areas before they become significant gullies is an essential part of an effective erosion and sedimentation control plan.

NOTES:

1. Construct and maintain all erosion and sediment control practices and measures in accordance with the approved sedimentation control plan and construction schedule.
2. Remove good topsoil from areas to be graded and filled, and preserve it for use in finishing the grading of all critical areas.
3. Scarify areas to be topsoiled to a minimum depth of 2 inches before placing topsoil.
4. Clear and grub areas to be filled by removing trees, vegetation, roots, or other objectionable material that would affect the planned stability of the fill.
5. Ensure that fill material is free of brush, rubbish, rocks, logs, stumps, building debris, and other materials inappropriate for constructing stable fills.
6. Place all fill in layers not to exceed 9 inches in thickness, and compact the layers as required to reduce erosion, slippage, settlement, or other related problems.
7. Do not incorporate frozen, soft, mucky, or highly compressible materials into fill slopes.
8. Do not place fill on a frozen foundation, due to possible subsidence and slippage.
9. Keep diversions and other water conveyance measures free of sediment during all phases of development.
10. Handle seeps or springs encountered during construction in accordance with approved methods (subsurface drain).
11. Permanently stabilize all graded areas immediately after final grading is completed on each area in the grading plan. Apply temporary stabilization measures on all graded areas when work is to be interrupted or delayed for 30 days or longer.
12. Show topsoil, stockpiles, borrow areas, and spoil areas on the plans, and make sure they are adequately protected from erosion. Include final stabilization of these areas in the plan.

DEQ

LAND GRADING

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

DATE: PAGE:

TEMPORARY SEEDING RECOMMENDATIONS FOR LATE WINTER AND EARLY SPRING

Seeding Mixture

Species	Rate (lb/acre)
Rye (grain)	120
Annual lespedeza (Kobe in Piedmont and Coastal Plain, Korean in Mountains)	50

Omit annual lespedeza when duration of temporary cover is not to extend beyond June.

Seeding Dates
Mountains—Above 2500 feet: Feb. 15 - May 15
Below 2500 feet: Feb. 1- May 1
Piedmont—Jan. 1 - May 1
Coastal Plain—Dec. 1 - Apr. 15

Mulch
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance
Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

TEMPORARY SEEDING RECOMMENDATIONS FOR SUMMER

Seeding Mixture

Species	Rate (lb/acre)
German millet	40

In the Piedmont and Mountains, a small-stemmed Sudangrass may be substituted at a rate of 50 lb/acre.

Seeding Dates
Mountains — May 15 - Aug. 15
Piedmont — May 1 - Aug. 15
Coastal Plain — Apr. 15 - Aug. 15

Mulch
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance
Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

TEMPORARY SEEDING RECOMMENDATIONS FOR FALL

Seeding Mixture

Species	Rate (lb/acre)
Rye (grain)	120

Seeding Dates
Mountains — Aug. 15 - Dec. 15
Coastal Plain and Piedmont — Aug. 15 - Dec. 31

Mulch
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance
Repair and refertilize damaged areas immediately. Topdress with 50 lb/acre of nitrogen in March. If it is necessary to extend temporary cover beyond June 15, overseed with 50 lb/acre Kobe (Piedmont and Coastal Plain) or Korean (Mountains) lespedeza in late February or early March.

SEED BED PREPARATION:

LIMING- Apply lime according to soil test recommendations. If the pH (acidity) of the soil is not known, an application of ground agricultural limestone at the rate of 1-1½ tons/acre on coarse-textured soils and 2-3 tons/acre on fine-textured soils is usually sufficient. Apply limestone uniformly and incorporate into the top 4-6 inches of soil. Soils with a pH of 6 or higher need not be limed.

FERTILIZER- Base application rates on soil tests. When these are not possible, apply a 10-10-10 grade fertilizer at 700 - 1,000 lb/acre. Both fertilizer and lime should be incorporated into the top 4-6 inches of soil. If a hydraulic seeder is used, do not mix seed and fertilizer more than 30 minutes before application.

SURFACE ROUGHENING- If recent tillage operations have resulted in a loose surface additional roughening may not be required, except to break up large clods. If rainfall causes the surface to become sealed or crusted, loosen it just prior to seeding by raking, harrowing, or other suitable methods for fine grading. The finished grade shall be a smooth even soil surface with a loosen uniformly fine texture. All ridges and depressions shall be removed and filled to provide the approved surface drainage. Planting is to be done immediately after finished grades are obtained and seedbed preparation is completed.

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TEMPORARY SEEDING

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

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NON-INVASIVE PERMANENT SEEDING RECOMMENDATIONS FOR LATE WINTER AND EARLY SPRING

SEEDING MIXTURE

Species	Rate
Centipede	5 lbs/acre
Indian Woodoats	1.5-2.5 lbs/acre*
Virginia Wild Rye	4-6 lbs/acre

*Depending upon mix with other species. See table 6.11.d from Chapter 6 of the NC Erosion and Sediment Control Planning and Design Manual.

Seeding Dates
Coastal or Eastern Piedmont for Centipede- Sept. 1 - May 1
Coastal and Piedmont for Indian Woodoats and Virginia Wild Rye- Feb 15 - April 1
Mountains for Indian Woodoats and Virginia Wild Rye- March 1 - May 15

Maintenance:
Significant maintenance may be required to obtain desired cover.

NON-INVASIVE PERMANENT SEEDING RECOMMENDATIONS FOR SUMMER

SEEDING MIXTURE

Species	Rate
Indian Woodoats	1.5-2.5 lbs/acre*
Virginia Wild Rye	4-6 lbs/acre*

*Depending upon mix with other species. See table 6.11.d from Chapter 6 of the NC Erosion and Sediment Control Planning and Design Manual.

Seeding Dates
Mountains - July 15- Aug 15
Piedmont - Aug 15 - Oct 15

Maintenance:
Indian Woodoats and Virginia Wild Rye are both sun and shade tolerant.

NON-INVASIVE PERMANENT SEEDING RECOMMENDATIONS FOR FALL

SEEDING MIXTURE

Species	Rate
Hard Fescue	15 lbs/acre
Switchgrass	2.5-3.5 lbs/acre*
Indian Grass	5-7 lbs/acre*
Big Bluestem	5-7 lbs/acre*
Indian Woodoats	1.5-2.5 lbs/acre*
Virginia Wild Rye	4-6 lbs/acre*

*Depending upon mix with other species. See table 6.11.d from Chapter 6 of the NC Erosion and Sediment Control Planning and Design Manual.

Seeding Dates
Mountains - Hard Fescue- Aug 1 - June 1
Mountains- Switchgrass, Indian Grass, Big Bluestem- Dec 1 - April 15
Piedmont and Coastal- Switchgrass, Indian Grass, Big Bluestem- Dec 1 - April 1
Coastal- Indian Woodoats and Virginia Wild Rye- Sept 1 - Nov 1

Maintenance:
Hard Fescue is not recommended for slopes > 5%. Prefers shade.

SEED BED PREPARATION:

LIMING- Apply lime according to soil test recommendations. If the pH (acidity) of the soil is not known, an application of ground agricultural limestone at the rate of 1 to 1½ tons/acre on coarse0textured soils and 2-3 tons/acre on fine-textured soils is usually sufficient. Apply limestone uniformly and incorporate into the top 4-6 inches of soil. Soils with a pH of 6 or higher need not be limed.

FERTILIZER- Base application rates on soil tests. When these are not possible, apply a 10-10-10 grade fertilizer at 700-1,000 lb/acre. Both fertilizer and lime should be incorporated into the top 4-6 inches of soil. If a hydraulic seeder is used, do not mix seed and fertilizer more than 30 minutes before application.

SURFACE ROUGHENING- If recent tillage operations have resulted in a loose surface additional roughening may not be required, except to break up large clods. If rainfall causes the surface to become sealed or crusted, loosen it just prior to seeding by raking, harrowing, or other suitable methods for fine grading. the finished grade shall be a smooth even soil surface with a loosen uniformly fine texture. all ridges and depressions shall be removed and filled to provide the approved surface drainage . Planting is to be done immediately after finished grades are obtained and seedbed preparation is completed.

NOTES:

1. Permanent seeding, sodding or other means of stabilization are required when all construction work is completed according to the NPDES timeframes table.
2. A North Carolina Department of Agriculture soils test (or equal) is highly recommended to be obtained for all areas to be seeded, sprigged, sodded or planted.
3. Use a seeding mix that will produce fast0growing nurse crops and includes non-invasive species that will eventually provide a permanent groundcover. Soil blankets may be used in lieu of nurse crops. Mat, tack or crimp mulch, as needed to stabilize seeded areas until root establishment. Mulch must cover at leaser 80% of the soil surface.
4. Ground cover shall be maintained until permanent vegetation is established and stable against accelerated erosion.

DEQ

PERMANENT SEEDING

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In accordance with the 2013 Design Manual Updates

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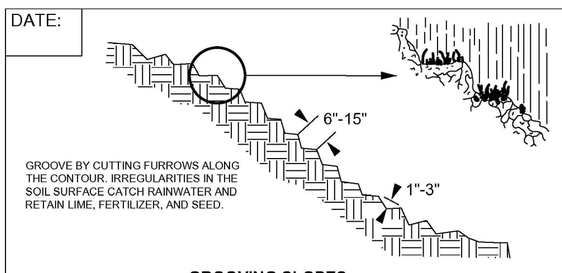

GROOVING SLOPES

STAIR STEPPING CUT SLOPES

CUT SLOPE ROUGHENING FOR AREAS NOT TO BE MOWED:

1. Stair-step grade or groove cut slopes with a gradient steeper than 3:1.
2. Use stair-step grading on any erodible material soft enough to be ripped with a bulldozer. Slopes consisting of soft rock with some subsoil are particularly suited to stair-stepping.
3. Make the vertical cut distance less than the horizontal distance, and slightly slope the horizontal position of the "step" in toward the vertical wall.
4. Do not make individual vertical cuts more than 2 feet in soft materials or more than 3 feet in rocky materials.
5. Grooving uses machinery to create a series of ridges and depressions that run across the slope (on the contour).
6. Groove using any appropriate implement that can be safely operated on the slope. Such as disks, tillers, spring harrows, or the teeth on a front-end loader bucket. Do not make such grooves less than 3 inches deep nor more than 15 inches apart.

FILL SLOPE ROUGHENING FOR AREAS NOT TO BE MOWED:

1. Place fill slopes with a gradient steeper than 3:1 in lifts not to exceed 9 inches, and make sure each lift is properly compacted. Ensure that the face of the slope consists of loose, uncompacted fill 4 to 6 inches deep. Use grooving, as described above, to roughen the face of the slopes, if necessary.
2. Do not blade or scrape the final slope face.

CUTS, FILLS, AND GRADED AREAS THAT WILL BE MOWED:

1. Make mowed slopes **no steeper than 3:1**
2. Roughen these areas to shallow grooves by normal tilling, disking, harrowing, or use of a cultipacker-seeder. Make the final pass of any such tillage implement on the contour.
3. Make grooves, formed by such implements, close together (less than 10 inches) and not less than 1 inch deep.
4. Excessive roughness is undesirable where mowing is planned.

ROUGHENING WITH TRACKED MACHINERY:

1. Limit roughening with tracked machinery to sandy soils to avoid undue compaction of the soil surface. Tracking is generally not as effective as the other roughening methods described.
2. Operate tracked machinery up and down the slope to leave horizontal depressions in the soil. Do not back-blade during the final grading operation.

SEED AND MULCH ROUGHENED AREAS IMMEDIATELY TO OBTAIN OPTIMUM SEED GERMINATION AND GROWTH.

DEQ

SURFACE ROUGHENING

Effective Date: 9/1/2023
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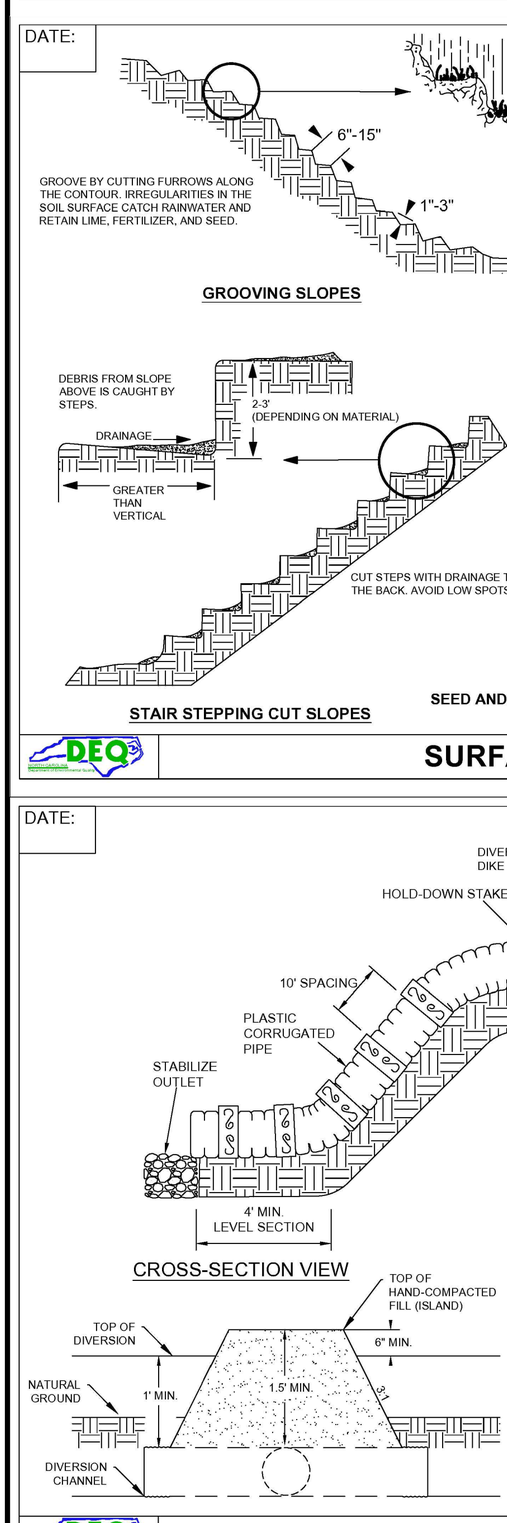

Construction:

1. Clear the entrance and exit area of all vegetation, roots, and other objectionable material and properly grade it.
2. Place the gravel to the specific grade and dimensions shown on the plans, and smooth it.
3. Provide drainage to carry water to a sediment trap or other suitable outlet.
4. Use geotextile fabrics in order to improve stability of the foundation in locations subject to seepage or high water table.

Maintenance:

1. Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater. Make any required repairs immediately.
2. Maintain the gravel pad in a condition to prevent mud or sediment from leaving the construction site. This may require periodic topdressing with 2-inch stone.
3. Sediment on roadways is to be removed immediately by broom and shovel, either by manual or mechanical means, and not to be washed off where it has the potential to enter a stream, drainage way or storm drain system.

DEQ

TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

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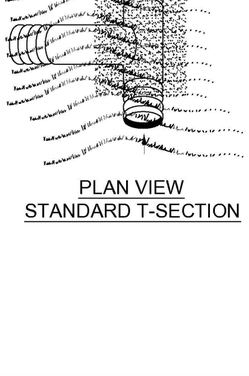
CROSS-SECTION VIEW



PLAN VIEW

STANDARD T-SECTION

Size of Slope Drain	
Max. Drainage Area per Pipe (Acres)	Pipe Diameter (Inches)
0.50	12
0.75	15
1.00	18
>1.00*	as designed
* Inlet design becomes more complex beyond this size.	

NOTES:

1. Place slope drains on undisturbed soil or well compacted fill at locations and elevations shown on the plan.
2. Slightly slope the section of pipe under the dike toward its outlet.
3. Hand tamp the soil under and around the entrance section in lifts not to exceed 6 inches.
4. Fill over the drain at the top of the slope to a minimum of 1.5 feet depth, 4 feet top width and 3:1 side slopes.
2. Ensure all slope drain connections are watertight.
3. Compact fill material and securely fasten the exposed section of the drain with grommets or stakes spaced no more than 10 feet apart.
4. Extend the drain beyond the toe of the slope, and adequately protect the outlet from erosion.
5. Make the compacted, settled dike ridge no less than 1 foot above the top of the pipe at every point.
6. Immediately stabilize all disturbed areas following construction.

MAINTENANCE:

1. Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater; repair immediately.

DEQ

TEMPORARY SLOPE DRAINS

Effective Date: 9/1/2023

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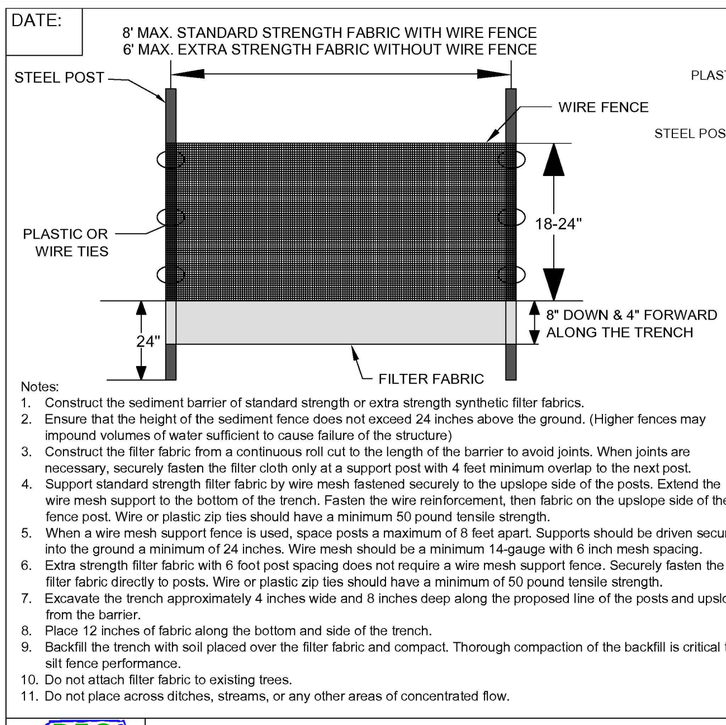
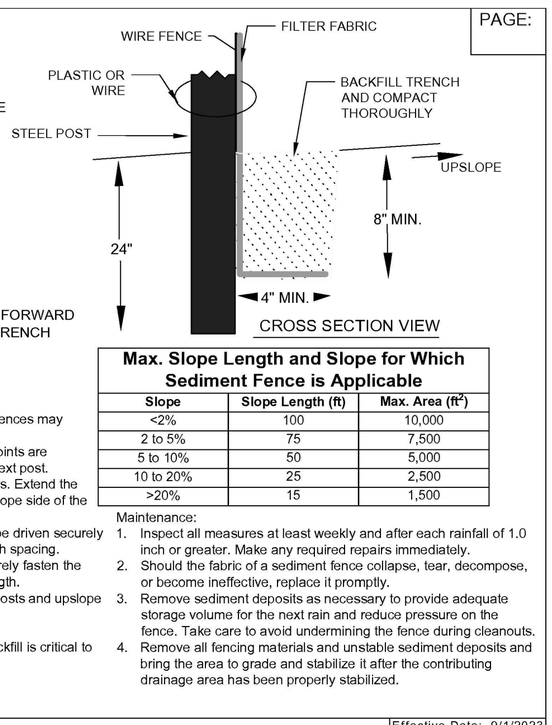


Notes:

1. Construct the sediment barrier of standard strength or extra strength synthetic filter fabrics.
2. Ensure that the height of the sediment fence does not exceed 24 inches above the ground. (Higher fences may impound volumes of water sufficient to cause failure of the structure)
3. Construct the filter fabric from a continuous roll cut to the length of the barrier to avoid joints. When joints are necessary, securely fasten the filter cloth only at a support post with 4 feet minimum overlap to the next post.
4. Support standard strength filter fabric by wire mesh fastened securely to the upslope side of the posts. Extend the wire mesh support to the bottom of the trench. Fasten the wire reinforcement, then fabric on the upslope side of the fence post. Wire or plastic zip ties should have a minimum 50 pound tensile strength.
5. When a wire mesh support fence is used, space posts a maximum of 8 feet apart. Supports should be driven securely into the ground a minimum of 24 inches. Wire mesh should be a minimum 14-gauge with 6 inch mesh spacing.
6. Extra strength filter fabric with 6 foot post spacing does not require a wire mesh support fence. Securely fasten the filter fabric directly to posts. Wire or plastic zip ties should have a minimum of 50 pound tensile strength.
7. Excavate the trench approximately 4 inches wide and 8 inches deep along the proposed line of the posts and upslope from the barrier.
8. Place 12 inches of fabric along the bottom and side of the trench.
9. Backfill the trench with soil placed over the filter fabric and compact. Thorough compaction of the backfill is critical to silt fence performance.
10. Do not attach filter fabric to existing trees.
11. Do not place across ditches, streams, or any other areas of concentrated flow.



CROSS SECTION VIEW

Max. Slope Length and Slope for Which Sediment Fence is Applicable

Slope	Slope Length (ft)	Max. Area (ft^2)
<2%	100	10,000
2 to 5%	75	7,500
5 to 10%	50	5,000
10 to 20%	25	2,500
>20%	15	1,500

Maintenance:

1. Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater. Make any required repairs immediately.
2. Should the fabric of a sediment fence collapse, tear, decompose, or become ineffective, replace it promptly.
3. Remove sediment deposits as necessary to provide adequate storage volume for the next rain and reduce pressure on the fence. Take care to avoid undermining the fence during cleanouts.
4. Remove all fencing materials and unstable sediment deposits and bring the area to grade and stabilize it after the contributing drainage area has been properly stabilized.

DEQ

SEDIMENT FENCE

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

SHEET 27 OF 31

DATE: 04/28/25
SCALE: N.T.S.
JOB NO. G224096.TNM
DWG NO. .CNST.dwg
DRAWN BY: CMM

1ST SUBMITTAL

ANY CHANGES OR ALTERATIONS MADE TO THESE CONSTRUCTION DRAWINGS WITHOUT THE WRITTEN APPROVAL OF ROCHESTER | DCCM VOIDS THE SEAL SHOWN HEREON AND ANY LIABILITY ASSOCIATED WITH THIS PROJECT. ORIGINAL DRAWINGS ARE KEPT ON FILE FOR VERIFICATION OF ANY CHANGES.

NO.	DATE	DESCRIPTION

REVISIONS

EROSION CONTROL DETAILS
FOR:
STONE BRIDGE

LOCATED IN
HIAWASSEE TOWNSHIP
CLAY COUNTY, NORTH CAROLINA

Rochester Engineering, Inc.
Rochester Engineering, INC.
425 Oak St NW, Gainesville, GA 30501
770.718.0600 | rochester.dccm.com

GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

SECTION E: GROUND STABILIZATION

Required Ground Stabilization Timeframes		
Site Area Description	**Stabilize within this many calendar days after ceasing land disturbance**	**Timeframe variations**
(a) Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b) High Quality Water (HQW) Zones	7	None
(c) Slopes steeper than 3:1	7	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
(d) Slopes 3:1 to 4:1	14	-7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(e) Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope

Note: After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

GROUND STABILIZATION SPECIFICATION

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

Temporary Stabilization	Permanent Stabilization
• Temporary grass seed covered with straw or other mulches and tackifiers • Hydroseeding • Rolled erosion control products with or without temporary grass seed • Appropriately applied straw or other mulch • Plastic sheeting	• Permanent grass seed covered with straw or other mulches and tackifiers • Geotextile fabrics such as permanent soil reinforcement matting • Hydroseeding • Shrubs or other permanent plantings covered with mulch • Uniform and evenly distributed ground cover sufficient to restrain erosion • Structural methods such as concrete, asphalt or retaining walls • Rolled erosion control products with grass seed

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

1. Select flocculants that are appropriate for the soils being exposed during construction, selecting from the *NC DWR List of Approved PAMS/Flocculants*.
2. Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
3. Apply flocculants at the concentrations specified in the *NC DWR List of Approved PAMS/Flocculants* and in accordance with the manufacturer's instructions.
4. Provide ponding area for containment of treated Stormwater before discharging offsite.
5. Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

EQUIPMENT AND VEHICLE MAINTENANCE

1. Maintain vehicles and equipment to prevent discharge of fluids.
2. Provide drip pans under any stored equipment.
3. Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
4. Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
5. Remove leaking vehicles and construction equipment from service until the problem has been corrected.
6. Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

1. Never bury or burn waste. Place litter and debris in approved waste containers.
2. Provide a sufficient number and size of waste containers (e.g.dumpster, trash receptacle) on site to contain construction and domestic wastes.
3. Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
4. Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
5. Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
6. Anchor all lightweight items in waste containers during times of high winds.
7. Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
8. Dispose waste off-site at an approved disposal facility.
9. On business days, clean up and dispose of waste in designated waste containers.

PAINT AND OTHER LIQUID WASTE

1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled, sized and placed appropriately for the needs of site.
5. Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

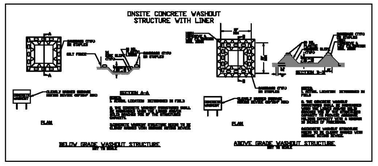
PORTABLE TOILETS

1. Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
2. Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
3. Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

EARTHEN STOCKPILE MANAGEMENT

1. Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
2. Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
3. Provide stable stone access point when feasible.
4. Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.

NORTH CAROLINA Environmental Quality



CONCRETE WASHOUTS

1. Do not discharge concrete or cement slurry from the site.
2. Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
3. Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
4. Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
5. Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
6. Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
7. Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
8. Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
9. Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
10. At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

HERBICIDES, PESTICIDES AND RODENTICIDES

1. Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
2. Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
3. Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
4. Do not stockpile these materials onsite.

HAZARDOUS AND TOXIC WASTE

1. Create designated hazardous waste collection areas on-site.
2. Place hazardous waste containers under cover or in secondary containment.
3. Do not store hazardous chemicals, drums or bagged materials directly on the ground.

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

EFFECTIVE: 04/01/19

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record.

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual day rainfall information is available, record the cumulative rain measurement for those un-attended days (and this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the measures inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Indication of whether the measures were operating properly, 5. Description of maintenance needs for the measure, 6. Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outfalls (SDOs)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, 5. Indication of visible sediment leaving the site, 6. Description, evidence, and date of corrective actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit.
(6) Ground stabilization measures	After each phase of grading	1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover). 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or an assurance that they will be provided as soon as possible

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

1. E&SC Plan Documentation

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be kept on site and available for inspection at all times during normal business hours.

Item to Document	Documentation Requirements
(a) Each E&SC measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC plan.	Initial and date each E&SC measure on a copy of the approved E&SC plan or complete, date and sign an inspection report that lists each E&SC measure shown on the approved E&SC plan. This documentation is required upon the initial installation of the E&SC measures or if the E&SC measures are modified after initial installation.
(b) A phase of grading has been completed.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate completion of the construction phase.
(c) Ground cover is located and installed in accordance with the approved E&SC plan.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.
(d) The maintenance and repair requirements for all E&SC measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&SC measures.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate the completion of the corrective action.

2. Additional Documentation to be Kept on Site

In addition to the E&SC plan documents above, the following items shall be kept on the site and available for inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

(a) This General Permit as well as the Certificate of Coverage, after it is received.

(b) Records of inspections made during the previous twelve months. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

3. Documentation to be Retained for Three Years

All data used to complete the e-NOI and all inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that Must be Reported

Permittees shall report the following occurrences:

(a) Visible sediment deposition in a stream or wetland.

(b) Oil spills if:

- **They are 25 gallons or more,**
- **They are less than 25 gallons but cannot be cleaned up within 24 hours,**
- **They cause sheen on surface waters (regardless of volume), or**
- **They are within 100 feet of surface waters (regardless of volume).**

(c) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.

(d) Anticipated bypasses and unanticipated bypasses.

(e) Noncompliance with the conditions of this permit that may endanger health or the environment.

2. Reporting Timeframes and Other Requirements

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Department's Environmental Emergency Center personnel at (800) 858-0368.

Occurrence	Reporting Timeframes [After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days***, a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis. • If the stream is named on the NC 303(d) list as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.
(b) Oil spills and release of hazardous substances per Item 1(b) (c) above	• ***Within 24 hours***, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	• ***A report at least ten days before the date of the bypass, if possible***. The report shall include an evaluation of the anticipated quality and effect of the bypass.
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days***, a report that includes an evaluation of the quality and effect of the bypass.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment[40 CFR 122.41(l)(7)]	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days***, a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6). • Division staff may waive the requirement for a written report on a case-by-case basis.

PART II, SECTION G, ITEM (4)
DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT

Sediment basins and traps that receive runoff from drainage areas of one acre or more shall use outlet structures that withdraw water from the surface when these devices need to be drawn down for maintenance or close out unless this is infeasible. The circumstances in which it is not feasible to withdraw water from the surface shall be rare (for example, times with extended cold weather). Non-surface withdrawals from sediment basins shall be allowed only when all of the following criteria have been met:

(a) The E&SC plan authority has been provided with documentation of the non-surface withdrawal and the specific time periods or conditions in which it will occur. The non-surface withdrawal shall not commence until the E&SC plan authority has approved these items,
(b) The non-surface withdrawal has been reported as an anticipated bypass in accordance with Part III, Section C, Item (2)(c) and (d) of this permit,
(c) Dewatering discharges are treated with controls to minimize discharges of pollutants from stormwater that is removed from the sediment basin. Examples of appropriate controls include properly sited, designed and maintained dewatering tanks, weir tanks, and filtration systems,
(d) Vegetated, upland areas of the sites or a properly designed stone pad is used to the extent feasible at the outlet of the dewatering treatment devices described in Item (c) above,
(e) Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices, and
(f) Sediment removed from the dewatering treatment devices described in Item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

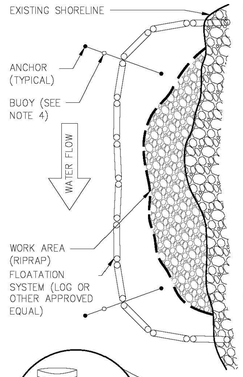
NORTH CAROLINA Environmental Quality

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

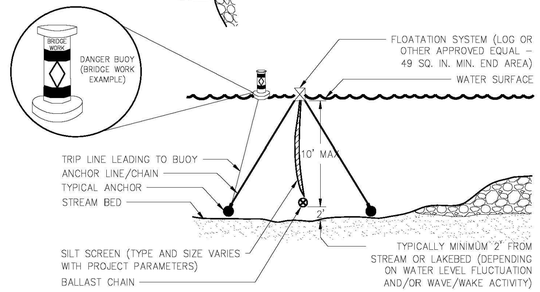
EFFECTIVE: 04/01/19

TURBIDITY CURTAIN SYSTEM

ANCHOR SYSTEM AND LAYOUT DETAILS



NOTES:
1. SILT CURTAINS SHOULD BE ORIENTED PARALLEL TO THE DIRECTION OF FLOW.
2. FOR SITES NOT SUBJECT TO HEAVY WAVE ACTION, THE CURTAIN HEIGHT SHALL PROVIDE SUFFICIENT SLACK TO ALLOW THE TOP OF THE CURTAIN TO RISE TO THE MAXIMUM EXPECTED HIGH-WATER LEVEL (INCLUDING WAVES) WHILE THE BOTTOM MAINTAINS CONTINUOUS CONTACT WITH THE BOTTOM OF THE WATER BODY. THE BOTTOM EDGE OF THE CURTAIN SHALL HAVE A WEIGHT SYSTEM CAPABLE OF HOLDING THE BOTTOM OF THE CURTAIN DOWN AND CONFORMING TO THE BOTTOM OF THE WATER BODY, SO AS TO PROHIBIT ESCAPE OF TURBID WATER UNDER THE CURTAIN.
3. THE SILT CURTAIN SHALL BE LOCATED BEYOND THE LATERAL LIMITS OF THE CONSTRUCTION SITE AND FIRMLY ANCHORED INTO PLACE (THE ALIGNMENT SHOULD BE SET AS CLOSE TO THE WORK AREA AS POSSIBLE BUT NO SO CLOSE AS TO BE DISRUPTED BY CONSTRUCTION EQUIPMENT).
4. DANGER BUOYS SHALL BE USED AS DIRECTED BY THE COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERS.
5. THE ENDS OF THE SILT CURTAIN SHALL BE SECURELY ANCHORED AND KEYED IN ORDER TO ENCLOSE AREA.
6. A GENERAL RULE OF THUMB FOR ATTACHING ANCHORS IS TO DO SO AT 100' INTERVALS (DEPENDING ON CURRENT AND TIDAL CONDITIONS, IT MAY BE NECESSARY TO ANCHOR THE BARRIER ON BOTH SIDES-AS SHOWN).



6

Table 6.10a Temporary Seeding Recommendations for Late Winter and Early Spring

Seeding mixture

Species	Rate (lb/acre)
Rye (grain)	120
Annual lespedeza (Kobe in Piedmont and Coastal Plain, Korean in Mountains)	50

Omit annual lespedeza when duration of temporary cover is not to extend beyond June.

Seeding dates
Mountains—Above 2500 feet: Feb. 15 - May 15
Below 2500 feet: Feb. 1- May 1
Piedmont—Jan. 1 - May 1
Coastal Plain—Dec. 1 - Apr. 15

Soil amendments
Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 750 lb/acre 10-10-10 fertilizer.

Mulch
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance
Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

Rochester Engineering, Inc.
Rochester Engineering, INC.
425 Jesse St NW | Gainesville, GA 30501
770.718.0600 | rochesterdecm.com

EROSION CONTROL DETAILS
FOR:
STONE BRIDGE
LOCATED IN
HIAWASSEE TOWNSHIP
CLAY COUNTY, NORTH CAROLINA

NO.	DATE	DESCRIPTION
		REVISIONS

ANY CHANGES OR ALTERATIONS MADE TO THESE CONSTRUCTION DRAWINGS WITHOUT THE KNOWLEDGE AND CONSENT OF THE ENGINEER DOES NOT VOIDS THE SEAL SHOWN HEREON AND ASSUMES ALL RESPONSIBILITY AND LIABILITY ASSOCIATED WITH THIS PROJECT AND ANY LIABILITY ASSOCIATED WITH THE FILE FOR VERIFICATION OF ANY CHANGES.

1ST SUBMITTAL

SHEET 28 OF 31

DATE: 04/29/25
SCALE: N.T.S.
JOB NO. G224096.TNM
DWG NO. CNST.dwg
DRAWN BY: CMM

Table 6.10b
Temporary Seeding Recommendations for Summer

Seeding mixture

Species	Rate (lb/acre)
German millet	40

In the Piedmont and Mountains, a small-stemmed Sudangrass may be substituted at a rate of 50 lb/acre.

Seeding dates
Mountains—May 15 - Aug. 15
Piedmont—May 1 - Aug. 15
Coastal Plain—Apr. 15 - Aug. 15

Soil amendments
Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 750 lb/acre 10-10-10 fertilizer.

Mulch
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance
Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

Table 6.10c
Temporary Seeding Recommendations for Fall

Seeding mixture

Species	Rate (lb/acre)
Rye (grain)	120

Seeding dates
Mountains—Aug. 15 - Dec. 15
Coastal Plain and Piedmont—Aug. 15 - Dec. 30

Soil amendments
Follow soil tests or apply 2,000 lb/acre ground agricultural limestone and 1,000 lb/acre 10-10-10 fertilizer.

Mulch
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance
Repair and refertilize damaged areas immediately. Topdress with 50 lb/acre of nitrogen in March. If it is necessary to extent temporary cover beyond June 15, overseed with 50 lb/acre Kobe (Piedmont and Coastal Plain) or Korean (Mountains) lespedeza in late February or early March.

Table 6.11.a

HERBACEOUS PLANTS-Seeding recommendations for immediate stabilization/nurse crops
(2 to 5 weeks for development; effectiveness goal: 6 months to 1 year stabilization)

NURSE CROP SPECIES

					Optimal Planting Dates								
Common Name	Botanical Name	Native / Introduced	Seeding Rates lbs/acre	Fertilization/ limestone lbs/acre	Mountains	Piedmont	Coastal Plains	Sun/Shade tolerant	Wetlands	Riparian Buffers	Invasive Yes or No	Installation / Maintenance Considerations	Other information, commentary
Rye Grain	*Secale cereale*	I	40 lbs	By soil test	11/1 - 4/30	8/15 - 4/15	8/15 - 4/15	Sun	Yes	Yes	No	Must be mown to reduce competitiveness with permanent or long term vegetation	
Wheat	*Triticum aestivum*	I	30 lbs	By soil test	11/1 - 4/30	8/15 - 5/15	8/15 - 4/15	Sun	Yes	Yes	No	Must be mown to reduce competitiveness with permanent or long term vegetation	Not water tolerant. May be used in wetlands that are not continuously saturated.
German Millet	*Setaria italica*	I	10 lbs	By soil test	5/11 - 9/30	5/15 - 8/15	4/15 - 8/15	Sun	Yes	Yes	No	Crop should be cut / disc prior to planting primary or long term vegetation	Not water tolerant. May be used in wetlands that are not continuously saturated.
Browntop Millet	*Urochloa ramosa*	I	10 lbs	By soil test	5/11 - 9/30	5/15 - 8/15	4/15 - 8/15	Sun	Yes	Yes	No	Crop should be cut / disc prior to planting primary or long term vegetation	Not water tolerant. May be used in wetlands that are not continuously saturated.
Sudangrass (hybrids)	*Sorghum saccharatum* *S. bicolor ssp.Drummondi*	I	15 lbs	By soil test	NR	NR	4/15 - 8/15	Sun	No	No	Yes	Crop should be cut / disc prior to planting primary or long term vegetation	Use only where plants and seed can be contained and controlled.
Kobe Lespedeza	*Kummerowia striata v. kobe*	I	10 lbs	By soil test	5/1 - 9/1	5/1 - 9/1	5/1 - 9/1	Sun	No	No	No	Consult qualified horticulturalist or extension agent for over-seeding with primary cover	Use in Coastal Plain
Korean Lespedeza	*Kummerowia stipulacea*	I	10 lbs	By soil test	5/1 - 9/1	5/1 - 9/1	5/1 - 9/1	Sun	No	No	No	Consult qualified horticulturalist or extension agent for over-seeding with primary cover	Use in Piedmont and Mountains. May become invasive

NOTES:
1. Seeding rates are for hulled seed unless otherwise noted.
2. Fertilizer & Limestone - rates to be applied in absense of soils tests. Recommended application rate assumes significantly disturbed site soils with little or no residual value.
3. NR means Species not recommended for this region or application area.
4. Invasive designation as determined by the N.C. Exotic Pest Pant Council and N.C. Native Plant Society .
5. Sprigging is not recommended for immediate stabilization unless terrain is flat heavy mulch is applied and no other immediate stabilization method is practical.

Table 6.11.b

HERBACEOUS PLANTS-Seeding recommendations for primary stabilization
Successful development depends on planting date (effectiveness goal: 6 mo. - 3 yrs. without an ongoing maintenance program)

NON-NATIVE SPECIES

					Optimal Planting Dates								
Common Name	Botanical Name / Cultivar	Native / Introduced	Broadcast Seeding Rates lbs/acre	Fertilization/ limestone lbs/acre	Mountains	Piedmont	Coastal Plains	Sun/Shade tolerant	Wetlands	Riparian Buffers	Invasive Yes or No	Installation / Maintenance Considerations	Other information, commentary
Sericea Lespedeza	*Lespedeza cuneata Dumont'*	I	15 lbs	By soil test	9/1 - 6/1	9/1 - 5/1	10/1 - 4/1	Sun	NR	NR	Yes	Responds well to controlled burns	Severe Threat Invasive species
Crown Vetch	*Securigera varia* *(Coronilla varia)*	I	15 lbs	By soil test	3/15-4/30	NR	NR	Sun	NR	NR	Yes	Highly competitive, not recommended unless an acceptable alternative is not available.	Prefers neutral soils
Centipede Grass	*Eremochloa ophiuroi*	I	5 lbs 10 lbs. for road shoulders	By soil test	NR	Eastern only	9/1 - 5/1	Sun	NR	NR	No	Significant maintenance may be required to obtain desired cover	Does not tolerate high traffic. Acceptable for sodding
KY 31 Tall Fescue	*Schedonorus phoeni* *(Festuca arundinacea)*	I	100 lbs	By soil test	8/15-5/1	9/1-4/15	9/30 - 3/15	Sun / mod. Shade	NR	NR	Yes	If utilized, it is imperative that maintenance includes a containment plan	Acceptable for sodding
KY Blue Grass	*Poa pratensis*	I	15 lbs	By soil test	8/15-5/1	NR	NR	Sun	NR	NR	Yes	If utilized, it is imperative that maintenance includes a containment plan	Prefers neutral soils, highly competitive, not recommended unless an acceptable alternative is not available. Acceptable for sodding
Hard Fescue	*Festuca brevipila* *(Festuca longifolia)*	I	15 lbs	By soil test	8/1 - 6/1	NR	NR	Shade	NR	NR	No	Not recommended for slopes greater than 5%	Low growing, bunch grass
Bermuda Grass	*Cynodon dactylon*	I	25 lbs	By soil test	NR	4/15-6/30	4/15-6/30	Sun	NR	NR	Yes	If utilized, it is imperative that maintenance includes a containment plan	Extremely aggressive, not recommended and should be avoided unless an acceptable alternative is not available. May be sodded or sprigged

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Table 6.11.c

HERBACEOUS PLANTS-Seeding recommendations for primary stabilization
Successfull development depends on planting date (effectiveness goal: 6 mo. - 3 yrs. without an ongoing maintenance program)

NATIVE SPECIES

					Optimal Planting Dates								
Common Name	Botanical Name / Cultivar	Native / Introduced	See Table 6.11.d for variety seedling rates	Fertilization/ limestone lbs/acre	Mountains	Piedmont	Coastal Plains	Sun/Shade tolerant	Wetlands	Riparian Buffers	Invasive Yes or No	Installation / Maintenance Considerations	Other information, commentary
Switchgrass	*Panicum virgatum / Cave-in-Rock*	N	A	By soil test	12/1-4/15	NR	NR	Sun	NR	Well drained only	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	
Switchgrass	*Panicum virgatum / Blackwell*	N	A	By soil test	12/1-4/15	12/1 - 4/1	12/1-4/1	Sun	NR	Well drained only	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	
Switchgrass	*Panicum virgatum / Shelter*	N	A	By soil test	12/1-4/15	12/1 - 4/1	12/1-4/1	Sun	NR	Well drained only	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	
Switchgrass	*Panicum virgatum / Carthage*	N	A	By soil test	12/1-4/15	12/1 - 4/1	12/1-4/1	Sun	Yes	Yes	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	
Switchgrass	*Panicum virgatum / Kanlow*	N	A	By soil test	12/1-4/15	12/1 - 4/1	12/1-4/1	Sun	No	Poorly drained	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	
Switchgrass	*Panicum virgatum / Alamo*	N	A	By soil test	NR	12/1 - 5/1	1/1 - 5/1	Sun	No	Poorly drained	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	
Indiangrass	*Sorghastrum nutans / Rumsey*	N	B	By soil test	12/1-4/15	12/1 - 4/1	12/1-4/1	Sun	NR	Well drained	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	Western coastal plain only
Indiangrass	*Sorghastrum nutans / Osage*	N	B	By soil test	12/1-4/15	12/1 - 4/1	12/1-4/1	Sun	NR	Well drained	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	Western coastal plain only

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Table 6.11.c (con't)

HERBACEOUS PLANTS-Seeding recommendations for primary stabilization
Successfull development depends on planting date (effectiveness goal: 6 mo. - 3 yrs. without an ongoing maintenance program)

NATIVE SPECIES

					Optimal Planting Dates								
Common Name	Botanical Name / Cultivar	Native / Introduced	See Table 6.11.d for variety seedling rates	Fertilization/ limestone lbs/acre	Mountains	Piedmont	Coastal Plains	Sun/Shade tolerant	Wetlands	Riparian Buffers	Invasive Yes or No	Installation / Maintenance Considerations	Other information, commentary
Indiangrass	*Sorghastrum nutans / Cheyenne*	N	B	By soil test	12/1-4/15	12/1 - 4/1	12/1-4/1	Sun	NR	Well drained	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	Western coastal plain only
Indiangrass	*Sorghastrum nutans / Lomenta*	N	B	By soil test	NR	12/1 - 5/1	1/1 -5/1	Sun	NR	Well drained	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	Only Indiangrass adaptable to Eastern coastal plain (Zone 8)
Deertongue	*Dichanthelium clandestinum / Tioga*	N	C	By soil test	5/1-4/15	5/1 - 4/1	NR	Sun & Shade	Yes	Poorly drained to drought	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	
Big Bluestem	*Andropogon gerardii / Rountree*	N	D	By soil test	12/1-4/15	12/1 - 4/1	NR	Sun	NR	Welll drained	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	Warm season grass
Big Bluestem	*Andropogon gerardii / Kaw*	N	D	By soil test	12/1-4/15	12/1 - 4/1	NR	Sun	NR	Welll drained	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	Warm season grass
Big Bluestem	*Andropogon gerardii / Earl*	N	D	By soil test	12/1-4/15	12/1 - 4/1	12/1-5/1	Sun	NR	Welll drained	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	Warm season grass
Little Bluestem	*Schizachyrium scoparium / Aldous*	N	E	By soil test	12/1-4/15	NR	NR	Sun	NR	Welll drained	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	Warm season grass
Little Bluestem	*Schizachyrium scoparium / Cimmaron*	N	E	By soil test	12/1-4/15	12/1 - 4/1	NR	Sun	NR	Welll drained	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	Warm season grass

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Table 6.11.c (con't)

HERBACEOUS PLANTS-Seeding recommendations for primary stabilization
Successfull development depends on planting date (effectiveness goal: 6 mo. - 3 yrs. without an ongoing maintenance program)

NATIVE SPECIES

					Optimal Planting Dates								
Common Name	Botanical Name / Cultivar	Native / Introduced	See Table 6.11.d for variety seedling rates	Fertilization/ limestone lbs/acre	Mountains	Piedmont	Coastal Plains	Sun/Shade tolerant	Wetlands	Riparian Buffers	Invasive Yes or No	Installation / Maintenance Considerations	Other information, commentary
Little Bluestem	*Schizachyrium scoparium / Common*	N	E	By soil test	NR	NR	12/1-4/1	Sun	NR	Welll drained	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	Warm season grass
Sweet Woodreed	*Cinna arundinacea*	N	F	By soil test	12/1-4/15	12/1 - 4/1	12/1-4/1	Sun & mod. Shade	Yes	Poorly to well drained	No	Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations	Warm season grass
Rice Cutgrass	*Leersia oryzoides*	N	G	By soil test	12/1-4/15	12/1 - 4/1	12/1-4/1	Sun	Yes	Poorly drained	No	Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations	Warm season grass
Indian Woodoats	*Chasmanthium latifolium*	N	H	By soil test	3/1 - 5/15 7/15-8/15	2/15 - 4/1 8/15 - 10/15	2/15-3/20 9/1 - 11/1	Sun & mod. Shade	NR	Well drained	No	Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations	Cool season grass
Virginia Wild Rye	*Elymus virginicus*	N	I	By soil test	3/1 - 5/15 7/15-8/15	2/15 - 4/1 8/15 - 10/15	2/15-3/20 9/1 - 11/1	Sun & mod. Shade	NR	Well drained	No	Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations	Cool season grass
Eastern Bottlebrush Grass	*Elymus hystrix*	N	J	By soil test	3/1 - 5/15 7/15-8/15	2/15 - 4/1 8/15 - 10/15	NR	Sun & mod. Shade	NR	Well drained	No	Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations	Cool season grass
Soft Rush	*Juncus effusus*	N	K	By soil test	12/1 - 5/15 8/15-10/15	12/1 - 5/1 9/1 - 11/1	12/1-4/15	Sun	Yes	Poorly drained	No	Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations	
Shallow Sedge	*Carex lurida*	N	L	By soil test	12/1 - 5/15 8/15-10/15	12/1 - 5/1 9/1 - 11/1	12/1-4/15	Sun	Yes	Poorly drained	No	Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations	
Fox Sedge	*Carex vulpinoidea*	N	L	By soil test	12/1 - 5/15 8/15-10/15	12/1 - 5/1 9/1 - 11/1	12/1-4/15	Sun	Yes	Poorly drained	No	Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations	

NOTE:
1. Seeding rates are for hulled seed unless otherwise noted.
2. Fertilizer & Limestone - rates to be applied in absense of soils tests. Recommended application rate assumes significantly disturbed site soils with little or no residual value.
3. NR means Species not recommended for this region or application area.
4. Native, warm season grasses require six or more months to germinate under optimum conditions. If they are planted in the summer, then a whole year will have to pass before they germinate.
5. Invasive designation as determined by the N.C. Exotic Pest Pant Council and N.C. Native Plant Society .
6. Sprigging is not recommended for immediate stabilization unless terrain is flat, heavymulch is applied and no other immediate stabilization method is practical.
7. Sodding for immediate stabilization - see primary stabilization charts (other information column) and Section 6.12.
8. Long term stabilization can only be accomplished with an adequate, immediate, and primary stabilization program. To achieve long term protective cover with the species listed in

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Table 6.11.d

Seed Mixes for Native Species (lbs/ac)
When Mixed with 3, 4, or 5 Other Native Species
(See Table 6.11.a for nurse crop species to be added to these mixes)

	3 Other (total 4 species)	4 Other (total 5 species)	5 Other (total 6 species)
Switch Grasses (A)	3.5 lbs.	3.0 lbs.	2.5 lbs.
Indian Grasses (B)	7.0 lbs.	6.0 lbs.	5.0 lbs.
Deertongue (C)	6.0 lbs.	5.0 lbs.	4.0 lbs.
Big Bluestem (D)	7.0 lbs.	6.0 lbs.	5.0 lbs.
Little Bluestem (E)	7.0 lbs.	6.0 lbs.	5.0 lbs.
Sweet Woodreed (F)	2.5 lbs.	2.0 lbs.	1.5 lbs.
Rice Cutgrass (G)	6.0 lbs.	5.0 lbs.	4.0 lbs.
Indian Woodoats (H)	2.5 lbs.	2.0 lbs.	1.5 lbs.
Virginia Wild Rye (I)	6.0 lbs.	5.0 lbs.	4.0 lbs.
Eastern Bottlebrush Grass (J)	2.5 lbs.	2.0 lbs.	1.5 lbs.
Soft Rush (K)	2.5 lbs.	2.0 lbs.	1.5 lbs.
Sedges (L)	2.5 lbs.	2.0 lbs.	1.5 lbs.

NOTE:
With the native varieties, the seed mix should be in the range of 15 pounds per acre. Depending on availability of native seeds adaptable to North Carolina, the percentage of a particular variety used may be reduced or increased accordingly. Although diversity is desirable, it is imperative that the primary crop develop and become an effective protective cover. In addition to the native species mix, additional nurse crop species must be included to provide immediate stabilization and an adequate ground cover.

Rochester Engineering, Inc.
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EROSION CONTROL DETAILS
FOR:
STONE BRIDGE

LOCATED IN
HIAWASSEE TOWNSHIP
CLAY COUNTY, NORTH CAROLINA

NO.	DATE	DESCRIPTION

REVISIONS

ANY CHANGES OR ALTERATIONS MADE TO THESE CONSTRUCTION DRAWINGS WITHOUT THE WRITTEN APPROVAL OF ROCHESTER | DCCM VOIDS THE SEAL SHOWN HEREON AND ANY LIABILITY ASSOCIATED WITH THIS PROJECT. ORIGINAL DRAWINGS ARE KEPT ON FILE FOR VERIFICATION OF ANY CHANGES.

1ST SUBMITTAL

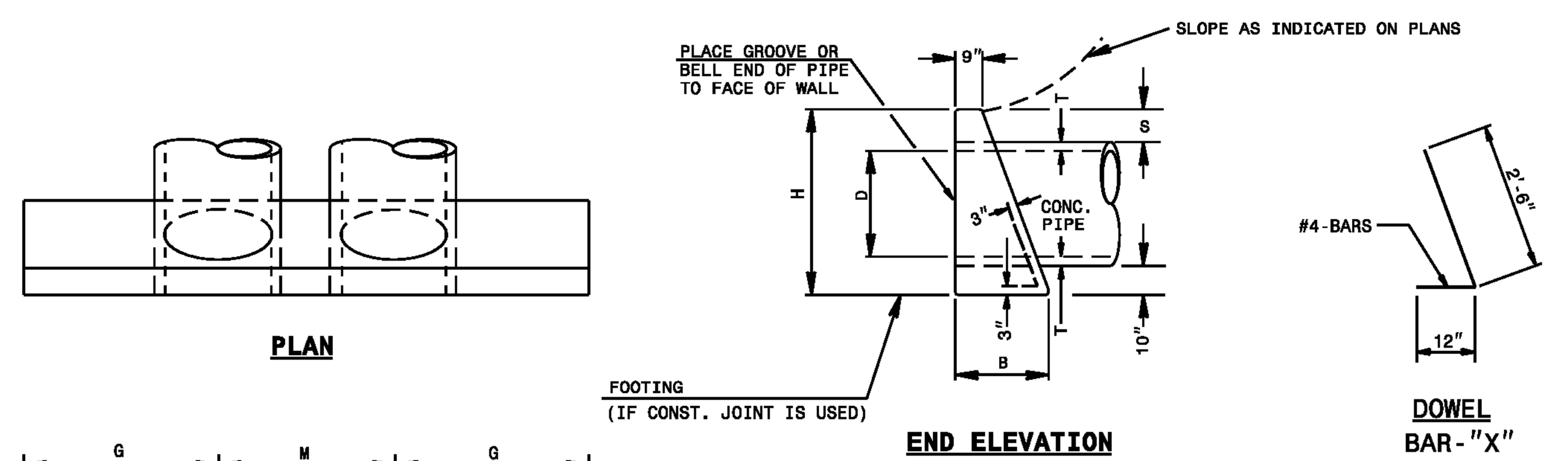
SHEET
29
OF
31

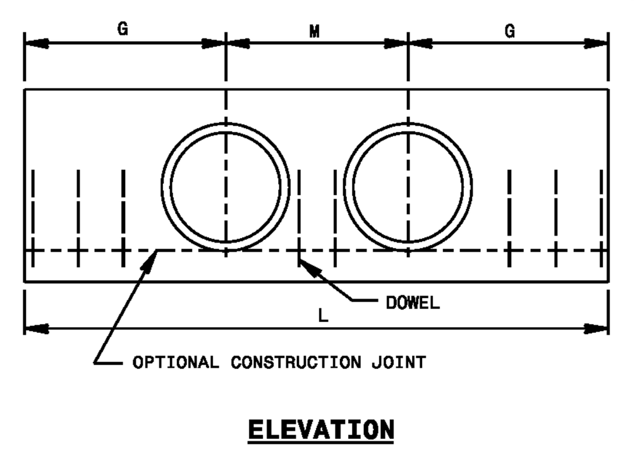
DATE: 04/28/25
SCALE: N.T.S.
JOB NO. G224096.TNM
DWG NO. .CNST.dwg
DRAWN BY: CMM

ROADWAY STANDARD DRAWING FOR CONCRETE ENDWALL FOR SINGLE AND DOUBLE PIPE CULVERTS 15" THRU 48" PIPE - 90° SKEW

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-24 — SHEET 1 OF 3 — 838.01





DOWELS IN ENDWALL WITH REINFORCED CONCRETE PIPE																		
LOC.	PIPE	SINGLE PIPE									DOUBLE PIPE							
	DIA.	15"	18"	24"	30"	36"	42"		48"		15"	18"	24"	30"	36"	42"		48"
	BARS	"X"	"X"	"X"	"X"	"X"	"X"	Y*	"X"	Y*	"X"	"X"	"X"	"X"	"X"	"X"	Y*	"X"	Y*
G	QTY.	2	2	3	3	4	4	2	5	2	2	2	3	3	4	4	2	5	2
M	QTY.	-	-	-	-	-	-		-		1	1	2	2	2	2		3	
G	QTY.	2	2	3	3	4	4		5		2	2	3	3	4	4		5	
TOTAL LBS.		9	9	14	14	19	55		65		12	12	19	19	23	77		92	

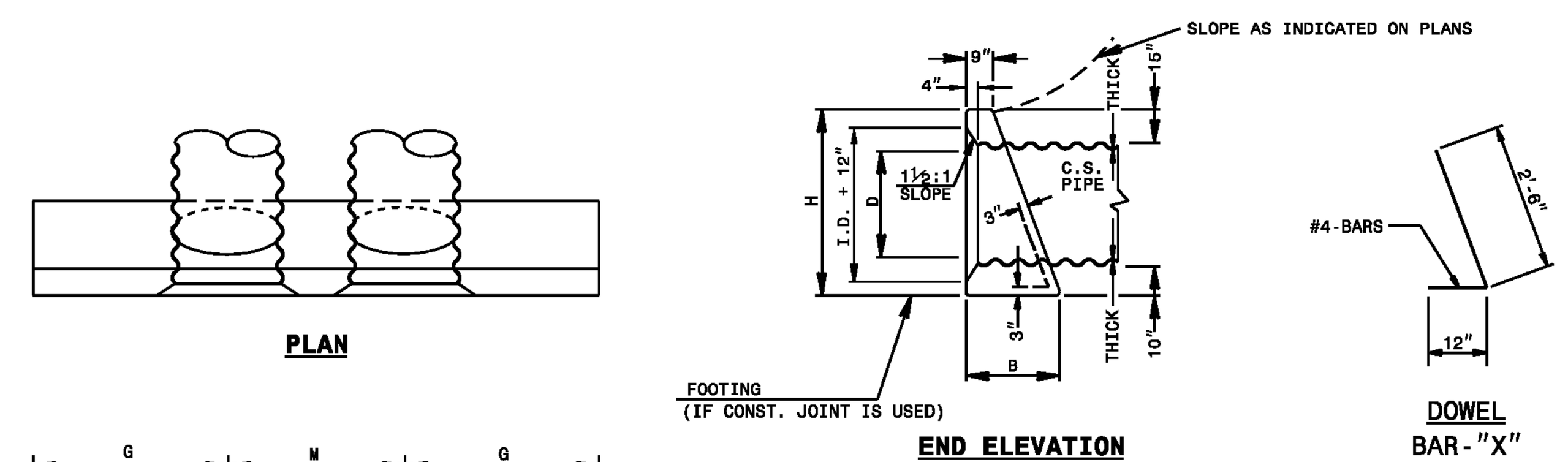
DIMENSIONS AND CONCRETE QUANTITIES USING CONCRETE PIPE										
	COMMON DIMENSIONS					SINGLE PIPE		DOUBLE PIPE		
D	H	B	G	T	S	L	YD^3	M	L	YD^3
15"	3'-3"	1'-8"	2'-9"	2¼"	9½"	5'-6"	0.7	2'-2"	7'-8"	1.0
18"	3'-7"	1'-10"	3'-2"	2½"	10"	6'-4"	1.0	2'-7"	8'-11"	1.3
24"	4'-2"	2'-1"	4'-0"	3"	10"	8'-0"	1.5	3'-5"	11'-5"	2.0
30"	5'-0"	2'-6"	4'-7"	4¼"	11½"	9'-2"	2.3	4'-3"	13'-5"	3.1
36"	5'-8"	2'-8"	5'-6"	4¾"	11½"	11'-0"	3.4	5'-0"	16'-0"	4.5
42"	6'-2"	3'-1"	6'-4"	5¼"	11½"	12'-8"	4.5	5'-10"	18'-6"	6.0
48"	6'-9"	3'-5"	7'-2"	5¾"	11½"	14'-4"	6.0	6'-8"	21'-0"	8.0

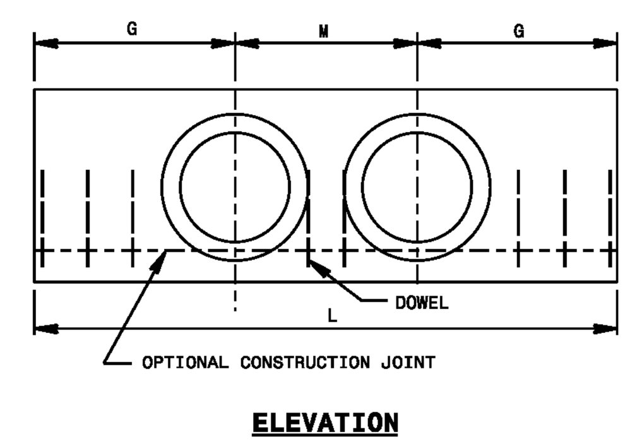
*SEE SHEET 3

ROADWAY STANDARD DRAWING FOR CONCRETE ENDWALL FOR SINGLE AND DOUBLE PIPE CULVERTS 15" THRU 48" PIPE - 90° SKEW

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-24 — SHEET 2 OF 3 — 838.01





DOWELS IN ENDWALL WITH C. S. PIPE																		
LOC.	PIPE	SINGLE PIPE									DOUBLE PIPE							
	DIA.	15"	18"	24"	30"	36"	42"		48"		15"	18"	24"	30"	36"	42"		48"
	BARS	"X"	"X"	"X"	"X"	"X"	"X"	Y*	"X"	Y*	"X"	"X"	"X"	"X"	"X"	"X"	Y*	"X"	Y*
G	QTY.	2	2	3	3	4	4	2	5	2	2	2	3	3	4	4	2	5	2
M	QTY.	-	-	-	-	-	-		-		1	1	1	2	2	2		2	
G	QTY.	2	2	3	3	4	4		5		2	2	3	3	4	4		5	
TOTAL LBS.		9	9	14	14	19	53		62		12	12	16	19	23	73		85	

DIMENSIONS AND CONCRETE QUANTITIES USING CORRUGATED STEEL PIPE								
	COMMON			SINGLE PIPE		DOUBLE PIPE		
D	H	B	G	L	YD^3	M	L	YD^3
15"	3'-4"	1'-8"	2'-6"	5'-0"	0.7	1'-11"	6'-11"	1.0
18"	3'-7"	1'-10"	2'-11"	5'-10"	1.0	2'-3"	8'-1"	1.2
24"	4'-1"	2'-1"	3'-8"	7'-4"	1.4	3'-0"	10'-4"	1.9
30"	4'-7"	2'-4"	4'-5"	8'-10"	2.0	3'-9"	12'-7"	2.7
36"	5'-1"	2'-7"	5'-2"	10'-4"	2.8	4'-6"	14'-10"	3.8
42"	5'-7"	2'-10"	5'-11"	11'-10"	3.8	5'-3"	17'-1"	5.0
48"	6'-1"	3'-1"	6'-8"	13'-4"	4.9	6'-0"	19'-4"	7.5

*SEE SHEET 3

ROADWAY STANDARD DRAWING FOR CONCRETE ENDWALL FOR SINGLE AND DOUBLE PIPE CULVERTS 15" THRU 48" PIPE - 90° SKEW

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-24 — SHEET 3 OF 3 — 838.01

GENERAL NOTES:

CHAMFER ALL CORNERS 1" OR HAVE A RADIUS OF 1".

PLACE 2 #6 "Y" BARS IN THE TOP OF ALL ENDWALL FOR PIPE CULVERTS 42" AND OVER WITH A MINIMUM OF 3" COVER AND A LENGTH OF 6" LESS THAN ENDWALL LENGTH.

CONSTRUCT BOTTOM SLAB WITH FORMS.

DO NOT INTERPRET WALL THICKNESS (T) SHOWN FOR THE THICKNESS ACCEPTABLE, BUT IS USED IN COMPUTING ENDWALL QUANTITIES.

WHEN THE CONTRACTOR ELECTS TO USE A CONSTRUCTION JOINT AT THE BOTTOM OF THE PIPE, PLACE BAR "X" DOWELS IN THE BASE AS SHOWN ON PLANS. SPACE BARS APPROXIMATELY ON 12" CENTERS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

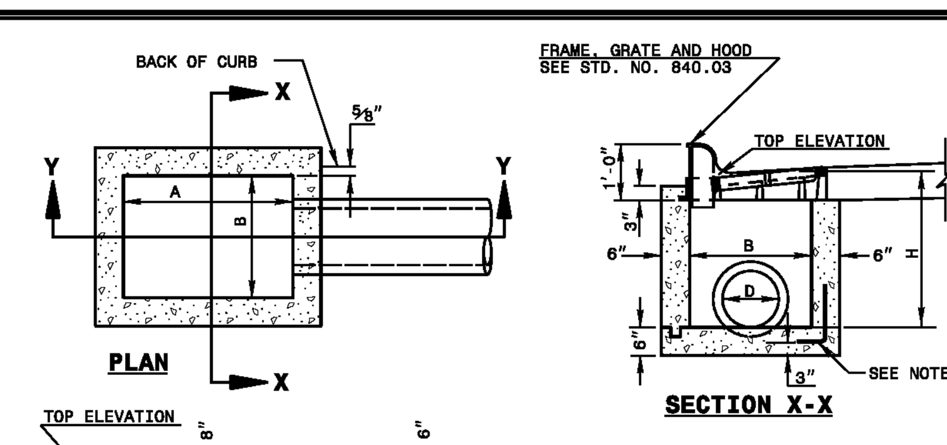
WHEN THE CONTRACTOR ELECTS TO USE A CONSTRUCTION JOINT AT THE BOTTOM OF THE PIPE AND POUR THE BASE SEPARATELY LEAVE THE POUR ROUGH.

USE CLASS "B" CONCRETE.

ROADWAY STANDARD DRAWING FOR CONCRETE CATCH BASIN 12" THRU 54" PIPE

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-24 — SHEET 1 OF 2 — 840.02



GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.

OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.

USE TYPE "E", "F" AND "G" GRATES UNLESS OTHERWISE INDICATED.

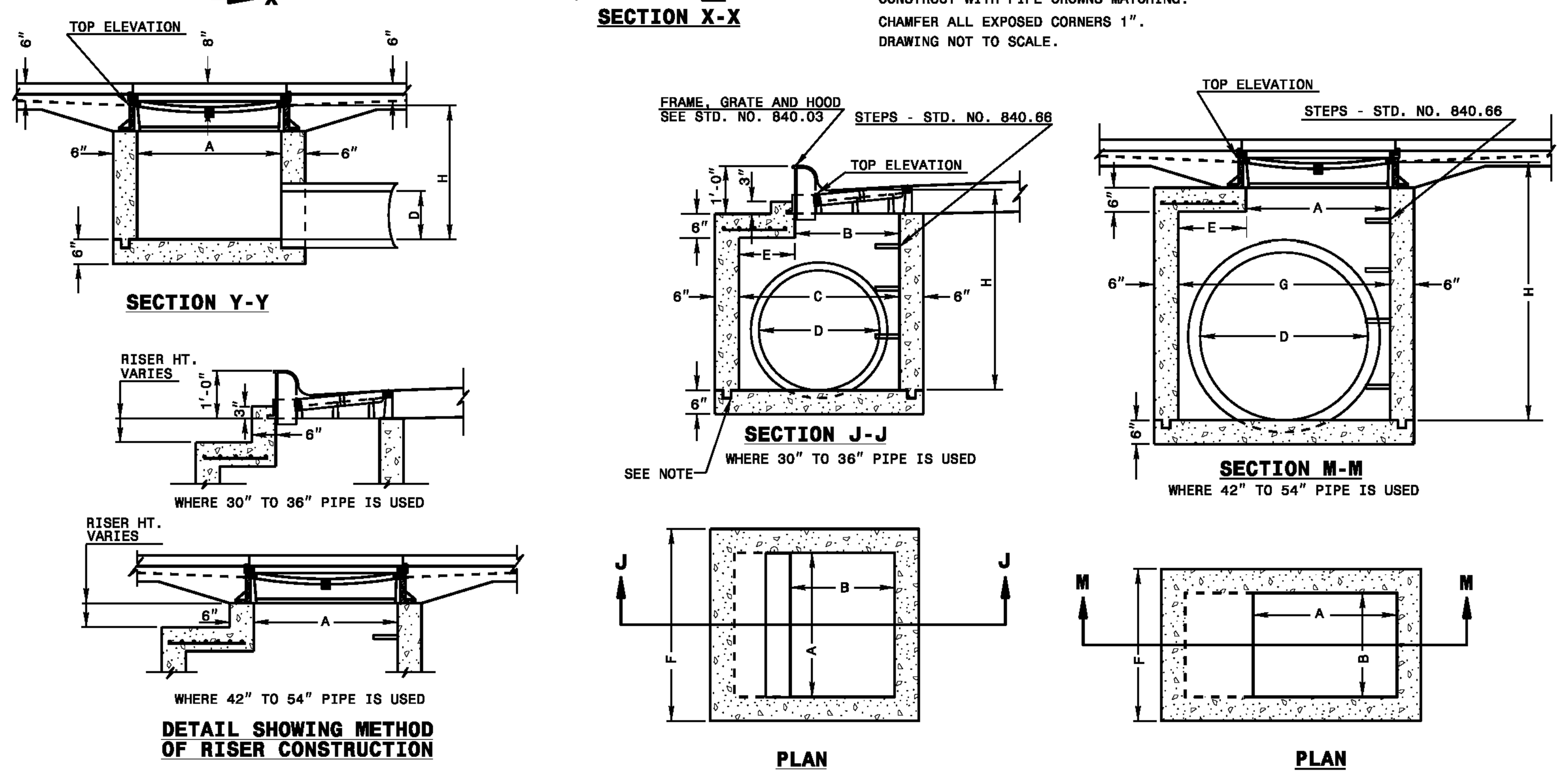
FOR 8'-0" IN HEIGHT OR LESS USE 6" WALLS AND BOTTOM SLAB. OVER 8'-0" TO 16'-0" IN HEIGHT USE 8" WALLS AND BOTTOM SLAB. ADJUST QUANTITIES ACCORDINGLY.

MAXIMUM DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 16'-0". STD. NO. 840.45 CONTROLS MAXIMUM DEPTH IF PRECAST BOX IS USED.

CONSTRUCT WITH PIPE CROWNS MATCHING.

CHAMFER ALL EXPOSED CORNERS 1".

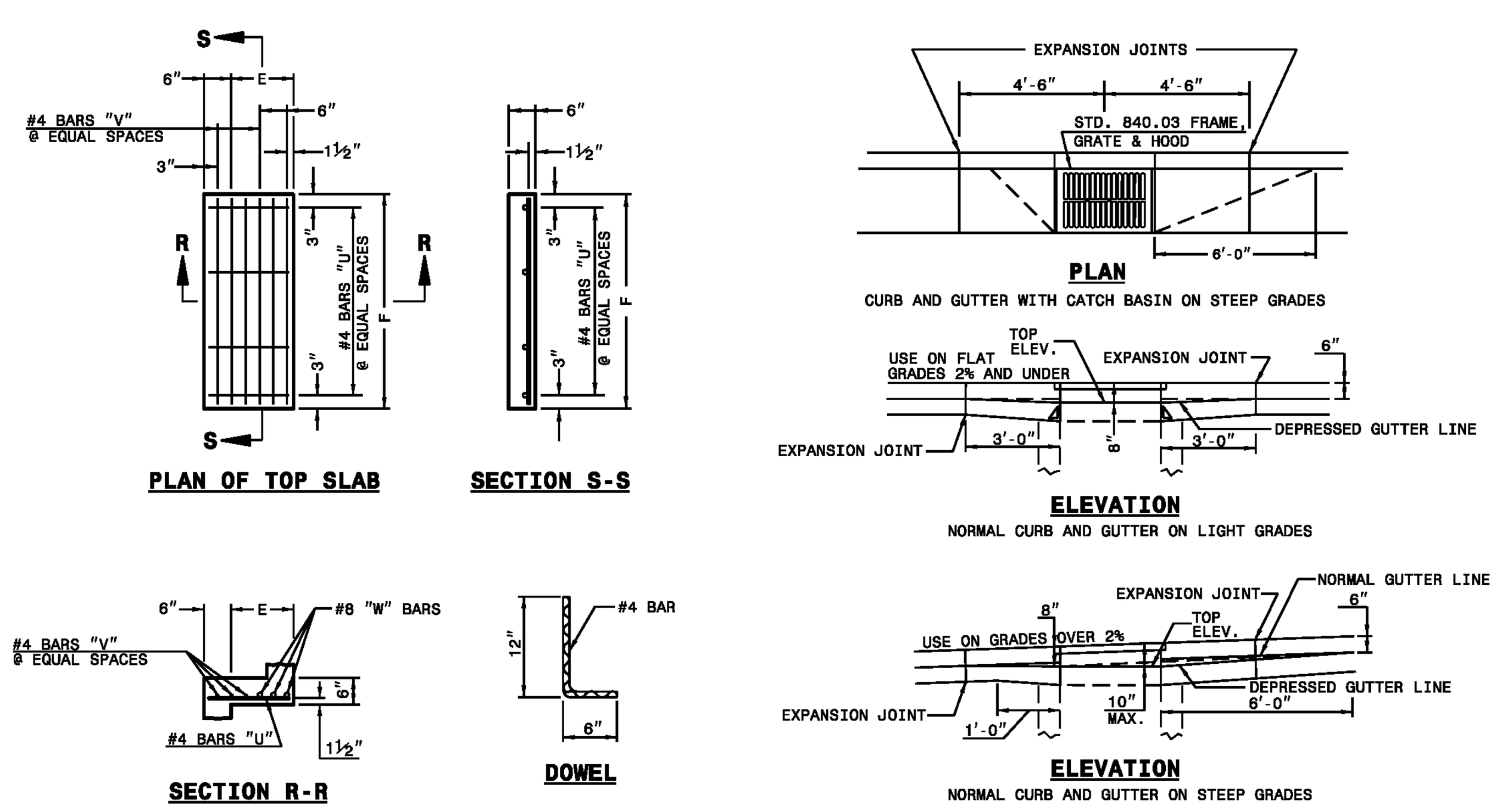
DRAWING NOT TO SCALE.



ROADWAY STANDARD DRAWING FOR CONCRETE CATCH BASIN 12" THRU 54" PIPE

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-24 — SHEET 2 OF 2 — 840.02



MINIMUM DIMENSIONS AND QUANTITIES FOR CONCRETE CATCH BASIN(BASED ON MIN. HEIGHT, H, WITH NO RISER) *																			
DIMENSIONS OF BOX AND PIPE						COVER DIMENSION									CU.YDS. CONC. IN BOX			DEDUCTIONS ONE PIPE	
PIPE	SPAN	WIDTH	WIDTH	SPAN	MIN. HEIGHT			BARS-U		BARS-V		BARS-W		TOTAL	TOP	BOTTOM	TOT. CONC. FOR MINIMUM		
D	A	B	C	G	H	E	F	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	LBS.	SLAB	SLAB	HEIGHT, H	C.M.	R.C.
12"	3'-0"	2'-2"	--	--	2'-9"	--	--	--	--	--	--	--	--	--	--	0.235	0.772	0.015	0.026
15"	3'-0"	2'-2"			3'-0"											0.235	0.829	0.023	0.036
18"	3'-0"	2'-2"			3'-3"											0.235	0.887	0.033	0.049
24"	3'-0"	2'-2"			3'-9"											0.235	1.001	0.059	0.085
30"	3'-0"	2'-2"	3'-4"		4'-3"	1'-2"	4'-0"	4	1'-5"	2	3'-9"	3	3'-9"	39	0.123	0.321	1.433	0.092	0.127
36"	3'-0"	2'-2"	3'-10"		4'-9"	1'-8"	4'-0"	4	1'-11"	3	3'-9"	3	3'-9"	43	0.161	0.358	1.714	0.132	0.178
42"	3'-0"	2'-2"		4'-5"	5'-3"	1'-5"	3'-2"	4	1'-8"	2	2'-11"	3	2'-11"	32	0.112	0.318	1.738	0.180	0.243
48"	3'-0"	2'-2"		5'-0"	5'-9"	2'-0"	3'-2"	4	2'-3"	3	2'-11"	3	2'-11"	35	0.145	0.352	2.052	0.235	0.317
54"	3'-0"	2'-2"		5'-7"	6'-3"	2'-7"	3'-2"	4	2'-10"	5	2'-11"	3	2'-11"	41	0.180	0.386	2.387	0.297	0.401

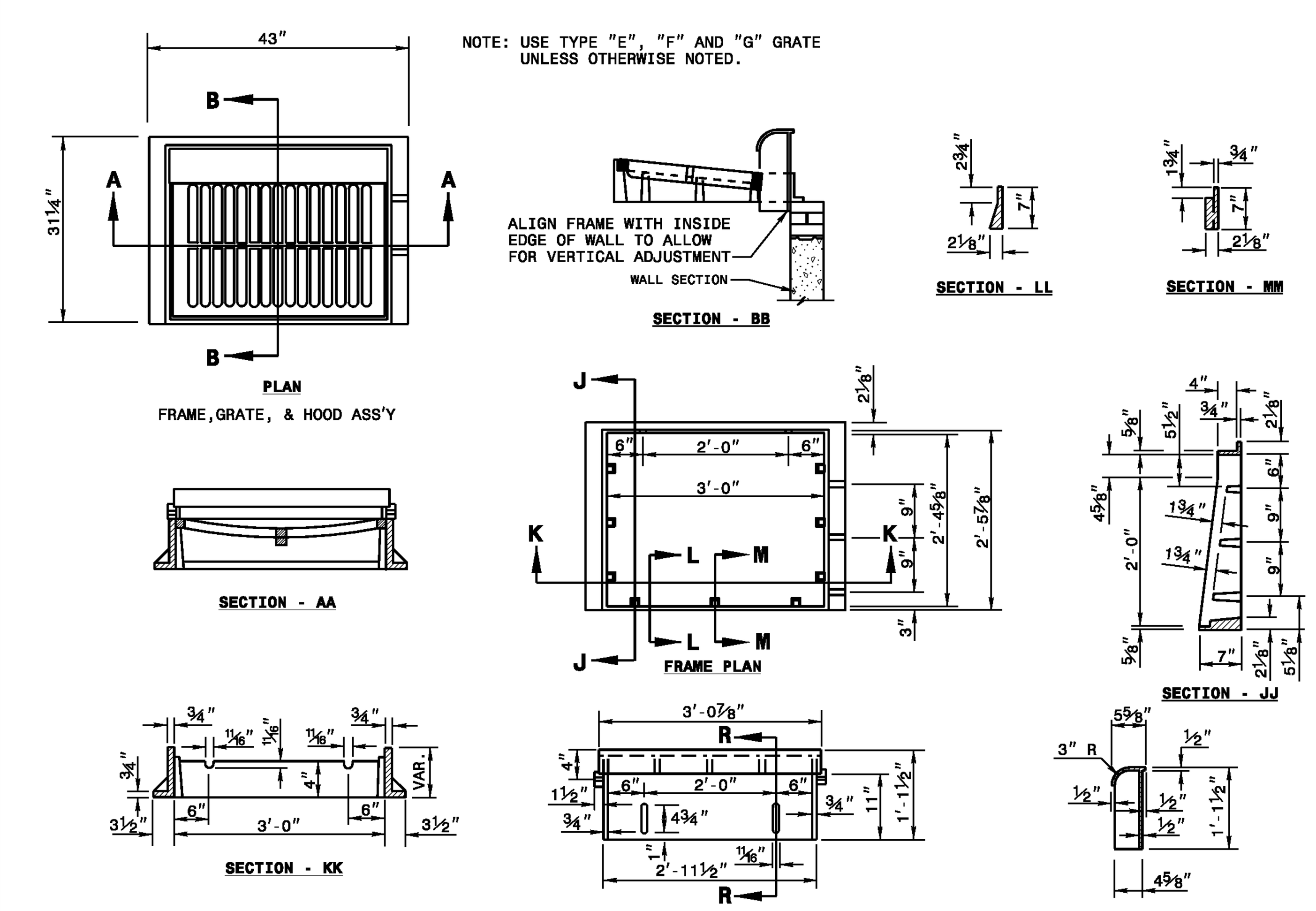
* RISER HAS .228 CUBIC YARDS OF CONCRETE PER FOOT HEIGHT

ROADWAY STANDARD DRAWING FOR FRAME, GRATES, AND HOOD FOR USE ON STANDARD CATCH BASIN

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-24 — SHEET 1 OF 2 — 840.03

NOTE: USE TYPE "E", "F" AND "G" GRATE UNLESS OTHERWISE NOTED.



Rochester Engineering, Inc.

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CONSTRUCTION DETAILS FOR:

STONE BRIDGE

LOCATED IN HIAWASSEE TOWNSHIP CLAY COUNTY, NORTH CAROLINA

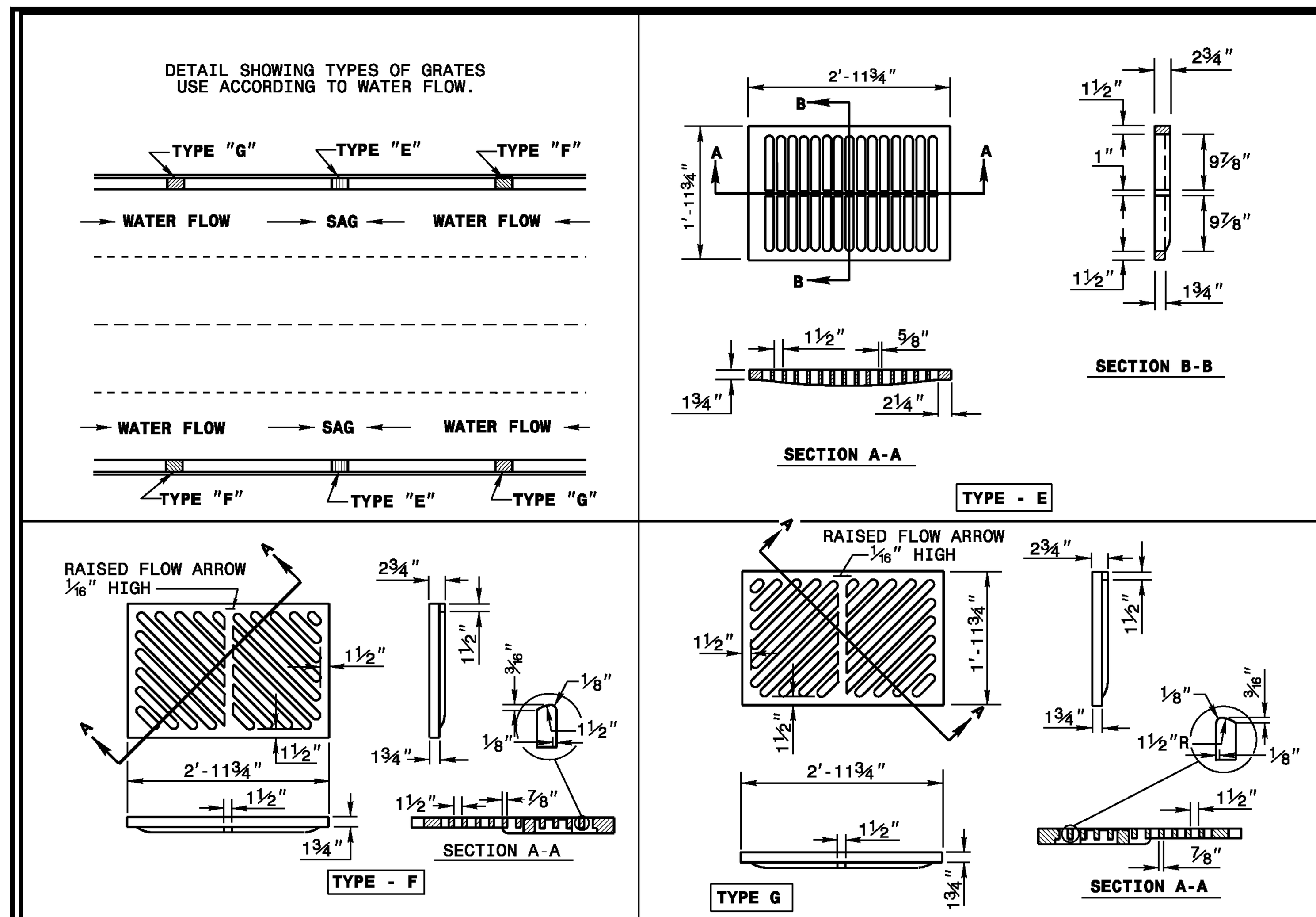
NO.	DATE	DESCRIPTION

REVISIONS

ANY CHANGES OR ALTERATIONS MADE TO THESE CONSTRUCTION DRAWINGS WITHOUT THE WRITTEN APPROVAL OF ROCHESTER/ DCCM VOIDS THE SEAL SHOWN HEREON AND ANY LIABILITY ASSOCIATED WITH THIS PROJECT. ORIGINAL DRAWINGS ARE KEPT ON FILE FOR VERIFICATION OF ANY CHANGES.

1ST SUBMITTAL

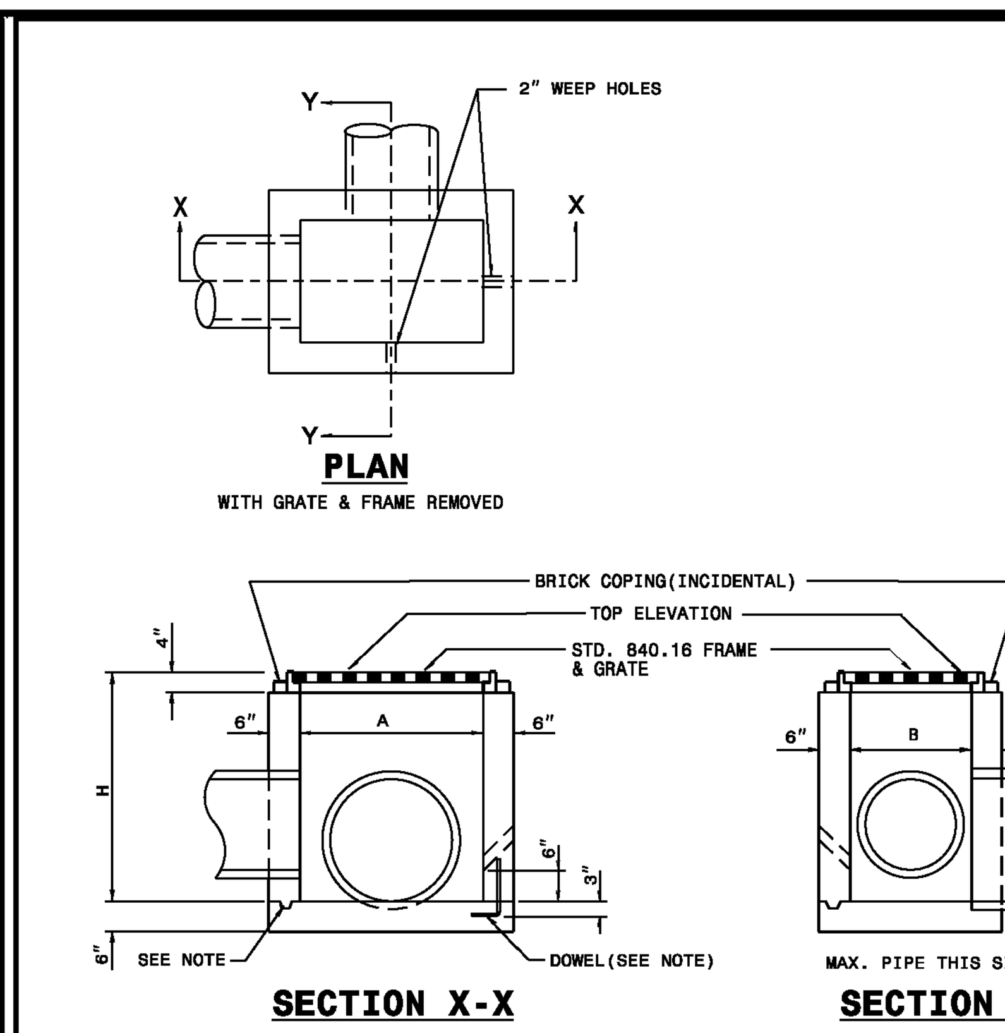
DATE: 04/28/25
SCALE: N.T.S.
JOB NO.: G224096.TNM
DWG NO.: CNST.dwg
DRAWN BY: CMM



ROADWAY STANDARD DRAWING FOR **FRAME, GRATES, AND HOOD** FOR USE ON STANDARD CATCH BASIN

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-24 | SHEET 2 OF 2 | **840.03**



GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

PROVIDE ALL DROP INLETS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.

OPTIONAL CONSTRUCTION - MONOLITHIC POUR 2" KEYWAY OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.

MAX.DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 12'-0". STD. DWG. 840.45 OR 840.46 CONTROLS MAXIMUM DEPTH IF PRECAST BOX IS USED.

CONSTRUCT WITH PIPE CROWNS MATCHING.

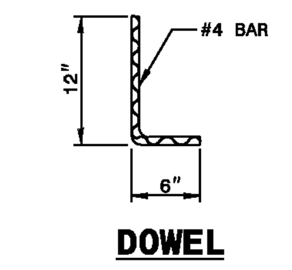
SEE STANDARD DRAWING 840.25 FOR ATTACHMENT OF FRAMES AND GRATES NOT SHOWN.

INSTALL 2" WEEPHOLES AS DIRECTED BY THE ENGINEER.

INSTALL STONE DRAINS, OF A MINIMUM OF 1 CUBIC FOOT OF NO. 78M STONE IN A POROUS FABRIC BAG OR WRAP, AT EACH WEEP HOLE OR AS DIRECTED BY THE ENGINEER.

CHAMFER ALL EXPOSED CORNERS 1".

DRAWING NOT TO SCALE.

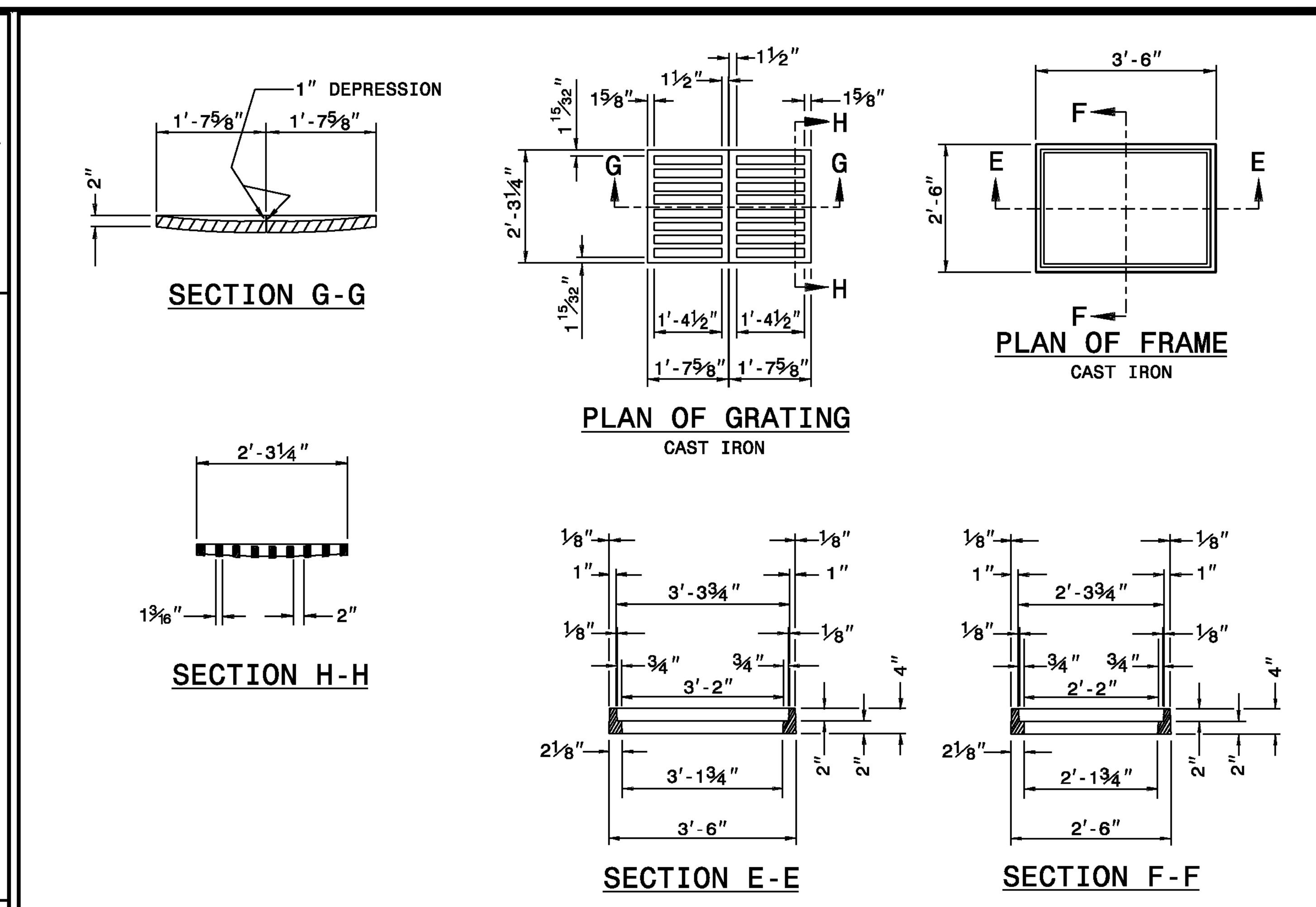


DIMENSIONS AND QUANTITIES FOR DROP INLET(BASED ON MIN. HEIGHT, H)								
DIMENSIONS OF BOX & PIPE				CUBIC YARDS CONC. IN BOX			DEDUCTIONS FOR ONE PIPE	
PIPE	SPAN	WIDTH	MIN. HEIGHT					
D	A	B	H	BOTTOM SLAB	WALL PER FT. HT.	TOTAL CONCRETE FOR MINIMUM HEIGHT, H	C.M.	R.C.
12"	3'-0"	2'-0"	2'-0"	0.222	0.222	0.592	0.015	0.026
15"			2'-3"			0.648	0.023	0.036
18"			2'-6"			0.703	0.033	0.049
24"			3'-0"			0.814	0.059	0.085
30"	3'-0"	2'-0"	3'-6"	0.222	0.222	0.925	0.092	0.127

ROADWAY STANDARD DRAWING FOR **CONCRETE DROP INLET** 12" THRU 30" PIPE

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

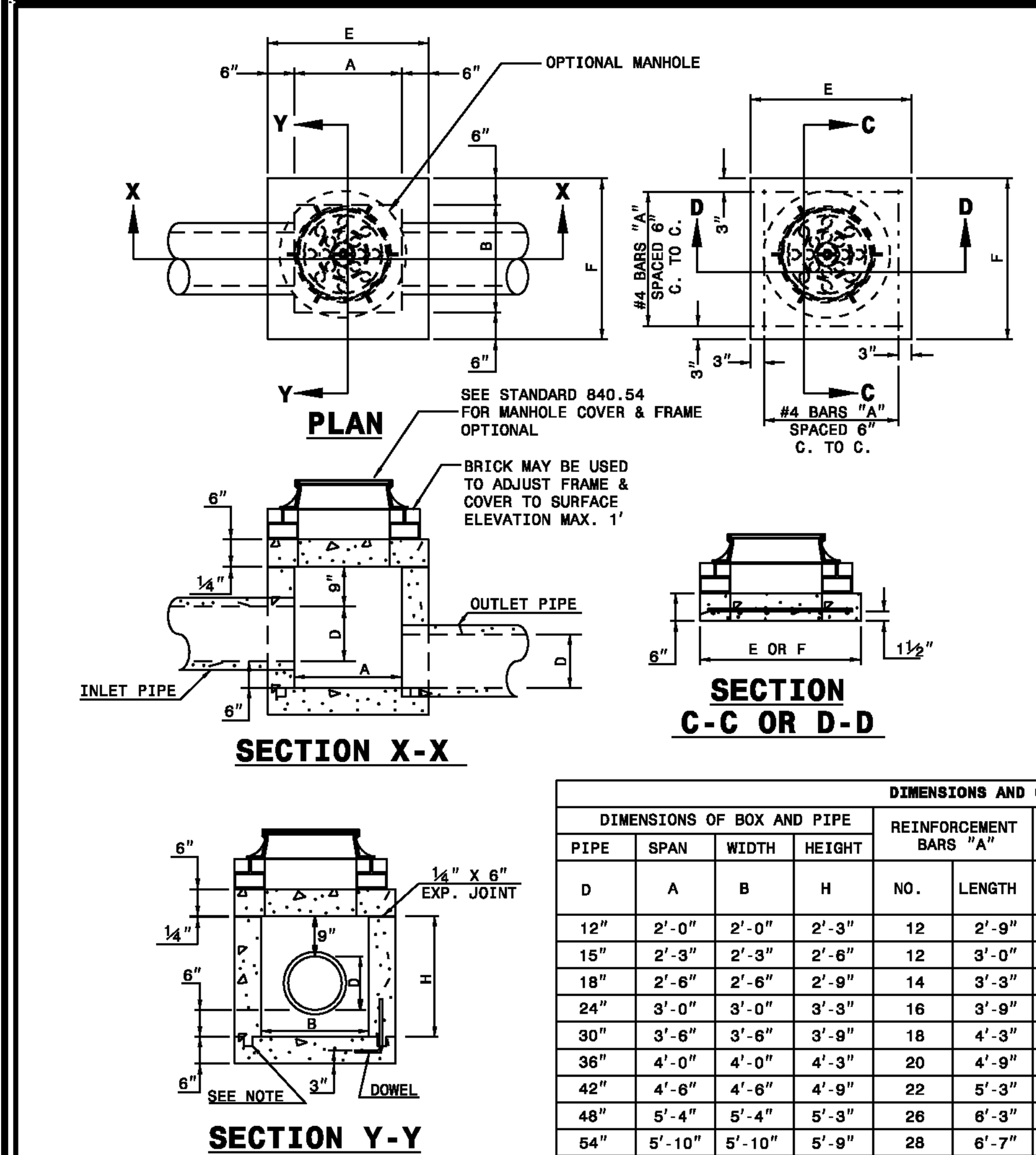
1-24 | SHEET 1 OF 1 | **840.14**



ROADWAY STANDARD DRAWING FOR **DROP INLET FRAME AND GRATES** FOR USE WITH STD. DWG.S 840.14 AND 840.15

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-24 | SHEET 1 OF 1 | **840.16**



GENERAL NOTES:

CHAMFER ALL EXPOSED CORNERS 1".

USE CLASS "B" CONCRETE THROUGHOUT.

OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.

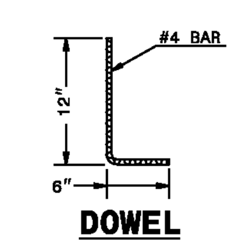
USE FORMS TO CONSTRUCT THE BOTTOM SLAB.

IF REINFORCED CONCRETE PIPE IS SET IN BASE SLAB OF BOX, ADD TO BASE AS SHOWN ON STANDARD NO. 840.00.

PROVIDE ALL JUNCTION BOXES OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTERS IN ACCORDANCE WITH STD. NO. 840.66.

ADJUST THE STEEL, CONCRETE AND BRICK MASONRY QUANTITIES TO INCLUDE THE ADDITION OF THE MANHOLE (I.E. DIAGONAL BARS SHORTENED AROUND OPENING IN TOP SLAB, ADDITIONAL VARIABLE HEIGHT BRICK MASONRY, OPENING IN TOP SLAB.)

MAX. DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 12'-0". STANDARD DRAWING 840.45 OR 840.46 CONTROLS MAXIMUM DEPTH IF PRECAST BOX IS USED.

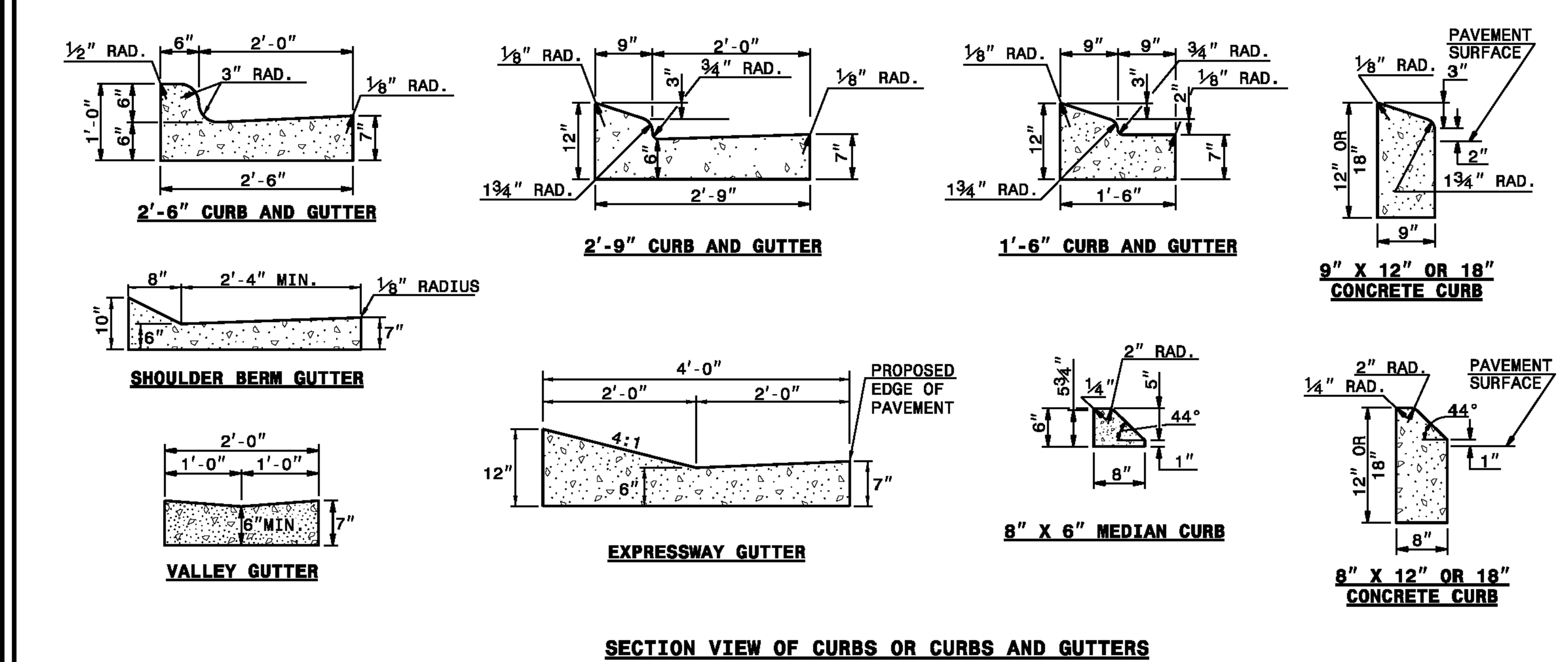


DIMENSIONS AND QUANTITIES FOR CONCRETE JUNCTION BOXES														
DIMENSIONS OF BOX AND PIPE				REINFORCEMENT BARS "A"		TOP SLAB DIMENSIONS		CUBIC YARDS IN BOX			TOTAL QUANTITIES BOX AND SLABS		DEDUCTIONS FOR ONE PIPE CU.YDS.	
PIPE	SPAN	WIDTH	HEIGHT											
D	A	B	H	NO.	LENGTH	E	F	TOP SLAB	BOTTOM SLAB	WALL/ FT. OF HT.	LBS. REINF	CU. YDS. MIN. "H"	C.S.	R.C.
12"	2'-0"	2'-0"	2'-3"	12	2'-9"	3'-0"	3'-0"	0.167	0.167	0.185	22	0.750	0.015	0.024
15"	2'-3"	2'-3"	2'-6"	12	3'-0"	3'-3"	3'-3"	0.196	0.196	0.204	24	0.902	0.023	0.036
18"	2'-6"	2'-6"	2'-9"	14	3'-3"	3'-6"	3'-6"	0.227	0.227	0.222	30	1.065	0.033	0.049
24"	3'-0"	3'-0"	3'-3"	16	3'-9"	4'-0"	4'-0"	0.296	0.296	0.259	40	1.434	0.059	0.085
30"	3'-6"	3'-6"	3'-9"	18	4'-3"	4'-6"	4'-6"	0.375	0.375	0.296	51	1.860	0.092	0.127
36"	4'-0"	4'-0"	4'-3"	20	4'-9"	5'-0"	5'-0"	0.463	0.463	0.333	64	2.341	0.132	0.178
42"	4'-6"	4'-6"	4'-9"	22	5'-3"	5'-6"	5'-6"	0.560	0.560	0.370	77	2.878	0.180	0.243
48"	5'-4"	5'-4"	5'-3"	26	6'-3"	6'-4"	6'-4"	0.743	0.743	0.407	111	3.623	0.235	0.317
54"	5'-10"	5'-10"	5'-9"	28	6'-7"	6'-10"	6'-10"	0.865	0.865	0.444	126	4.283	0.297	0.401
60"	6'-6"	6'-6"	6'-3"	30	7'-3"	7'-6"	7'-6"	1.042	1.042	0.481	145	5.090	0.367	0.495
66"	7'-1"	7'-1"	6'-9"	32	7'-10"	8'-1"	8'-1"	1.210	1.210	0.518	169	5.917	0.444	0.589

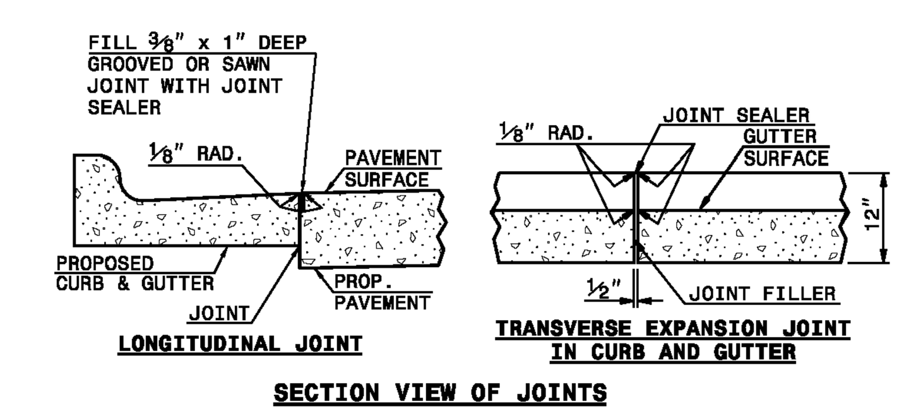
ROADWAY STANDARD DRAWING FOR **CONCRETE JUNCTION BOX** 12" THRU 66" PIPE

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-24 | SHEET 1 OF 1 | **840.31**



GENERAL NOTES:
- PLACE CONTRACTION JOINTS AT 10' INTERVALS, EXCEPT THAT A 15' SPACING MAY BE USED WHEN A MACHINE IS USED OR WHEN SATISFACTORY SUPPORT FOR THE FACE FORM CAN BE OBTAINED WITHOUT THE USE OF TEMPLATES AT 10' INTERVALS.
- JOINT SPACING MAY BE ALTERED IF REQUIRED BY THE ENGINEER.
- CONTRACTION JOINTS MAY BE INSTALLED WITH THE USE OF TEMPLATES OR FORMED BY OTHER APPROVED METHODS. CONSTRUCT NON-TEMPLATE FORMED JOINTS A MIN. OF 1½" DEEP.
- FILL ALL CONSTRUCTION JOINTS, EXCEPT IN 8"x6" MEDIAN CURB, WITH JOINT FILLER AND SEALER.
- SPACE EXPANSION JOINTS AT 90' INTERVALS AND ADJACENT TO ALL RIGID OBJECTS.



ROADWAY STANDARD DRAWING FOR **CONCRETE CURB, GUTTER AND CURB & GUTTER**

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

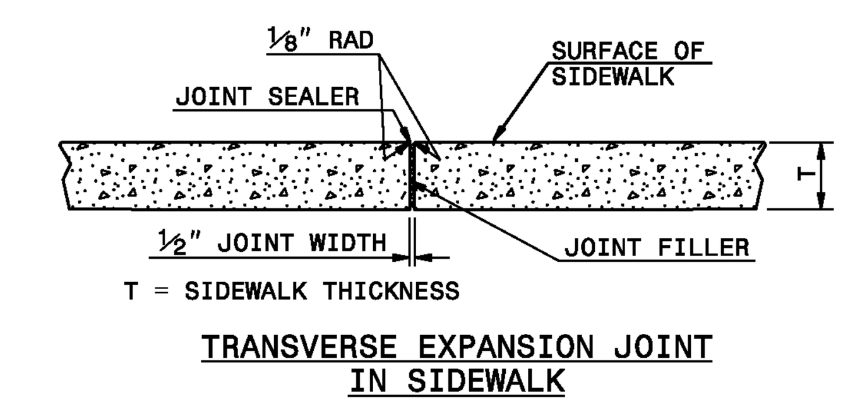
1-24 | SHEET 1 OF 3 | **846.01**

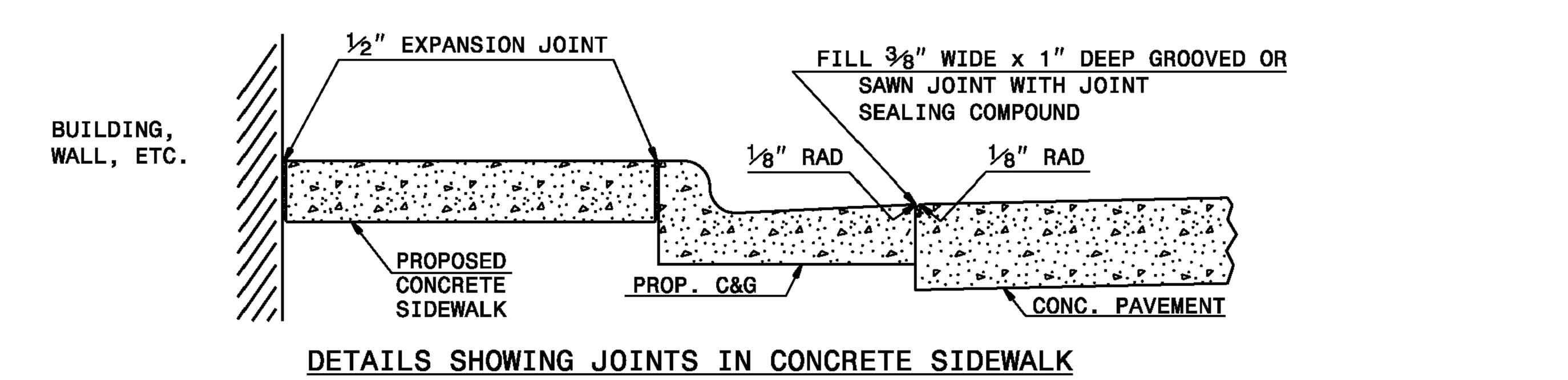
NOTES:

CONSTRUCT STANDARD SIDEWALK 5' WIDE AND 4" THICK UNLESS OTHERWISE DENOTED ON PLANS.

PLACE A GROOVE JOINT 1" DEEP WITH 1/8" RADII IN THE CONCRETE SIDEWALK AT 5' INTERVALS. ONE ½" EXPANSION JOINT WILL BE REQUIRED AT 50' INTERVALS. A ½" EXPANSION JOINT WILL BE REQUIRED WHERE THE SIDEWALK JOINS ANY RIGID STRUCTURE.

SEE STD. DWG. 848.05 FOR CURB RAMP LOCATION REQUIREMENTS AND CONSTRUCTION GUIDELINES.

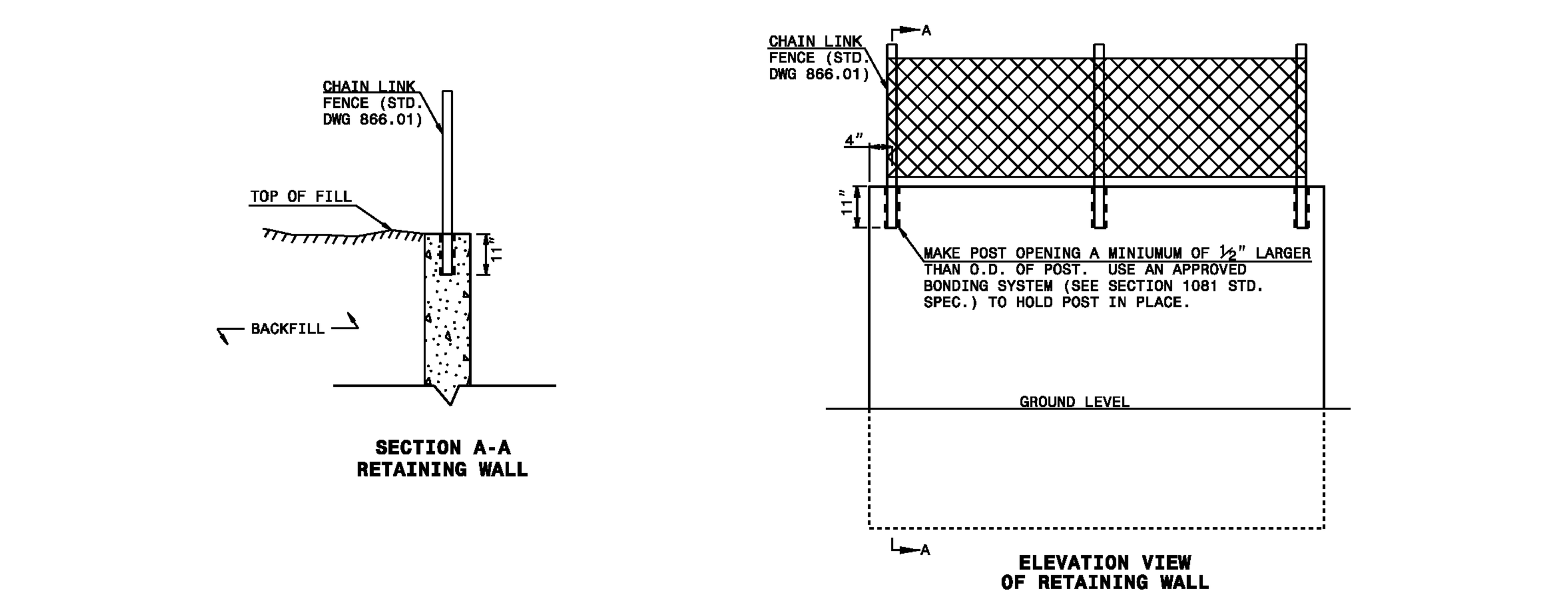




ROADWAY STANDARD DRAWING FOR **CONCRETE SIDEWALK**

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-24 | SHEET 1 OF 1 | **848.01**

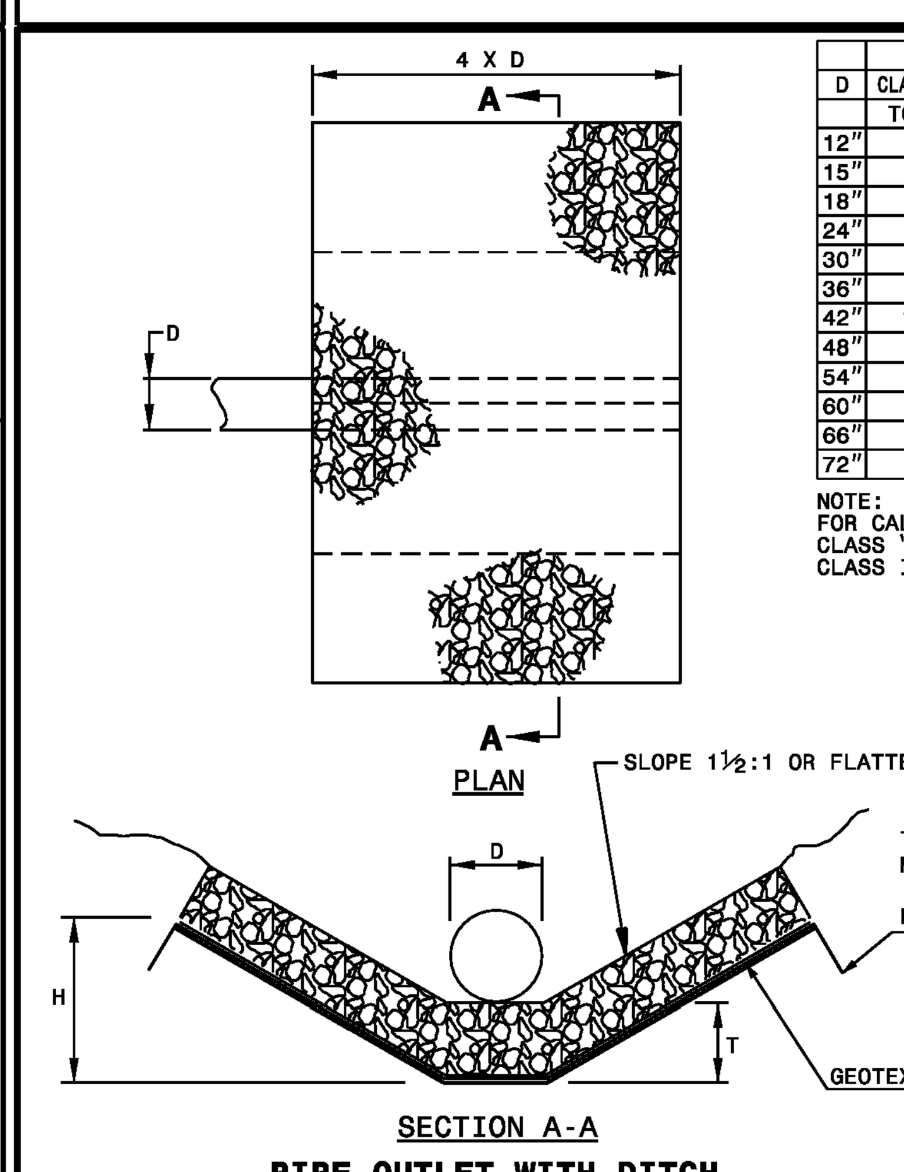


EMBED CHAIN LINK FENCE 11" INTO PROPOSED WALL IN A SLEEVE OR BLOCKOUT WITH EPOXY OR CONCRETE GROUT ANCHORING SYSTEM. PRE-MEASURE AND CENTER THE PROPOSED FENCE ON TOP OF WALL FOR POST SPACINGS. IF DRILLING THE HOLES FOR POSTS, USE A ROTARY DRILL TO DRILL HOLES IN THE CONCRETE. NO IMPACT DRILLS WILL BE ALLOWED, TO ELIMINATE ANY POSSIBILITY OF STRUCTURAL DAMAGES TO THE PROPOSED WALL.

ROADWAY STANDARD DRAWING FOR **CHAIN LINK FENCE ON RETAINING WALL**

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

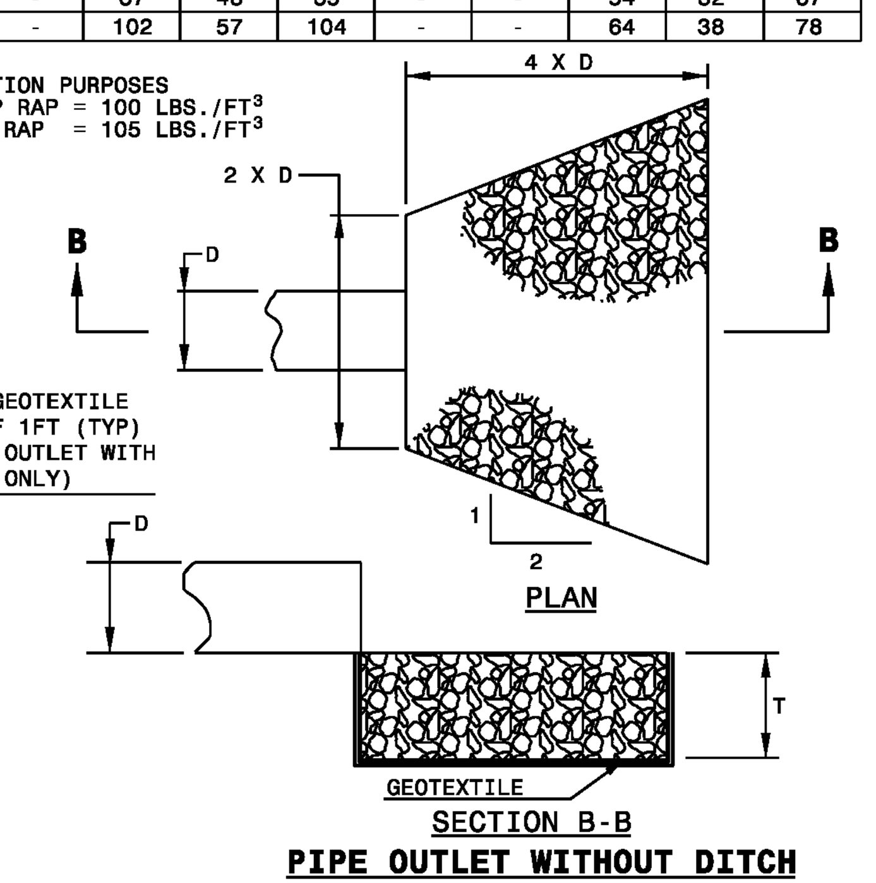
1-24 | SHEET 1 OF 1 | **866.06**



H= RIP RAP TO TOP OF PIPE (MAX. H = D + T)
T= 18" CLASS I RIP RAP, UNLESS OTHERWISE SHOWN ON PLANS
T= 12" CLASS 'B' RIP RAP, UNLESS OTHERWISE SHOWN ON PLANS
KEY-IN RIP-RAP

	OUTLET W/DITCH					OUTLET W/O DITCH				
D	CLASS 'B' RIP RAP		CLASS I RIP RAP			CLASS 'B' RIP RAP		CLASS I RIP RAP		
	TONS	GEO-TEXTILE (S.Y.)	S.Y.	TONS	GEO-TEXTILE (S.Y.)	TONS	GEO-TEXTILE (S.Y.)	S.Y.	TONS	GEO-TEXTILE (S.Y.)
12"	2	5	5	2	5	1	4	2	1	4
15"	2	7	7	3	7	1	5	3	2	6
18"	3	10	9	4	10	2	7	4	2	8
24"	5	14	15	7	15	3	11	7	4	12
30"	8	21	21	11	22	5	16	11	7	17
36"	11	28	29	15	30	7	22	16	10	23
42"	15	37	39	20	39	10	28	22	13	30
48"	-	-	49	26	50	-	-	28	17	38
54"	-	-	60	33	62	-	-	36	21	47
60"	-	-	73	40	75	-	-	44	26	56
66"	-	-	87	48	89	-	-	54	32	67
72"	-	-	102	57	104	-	-	64	38	78

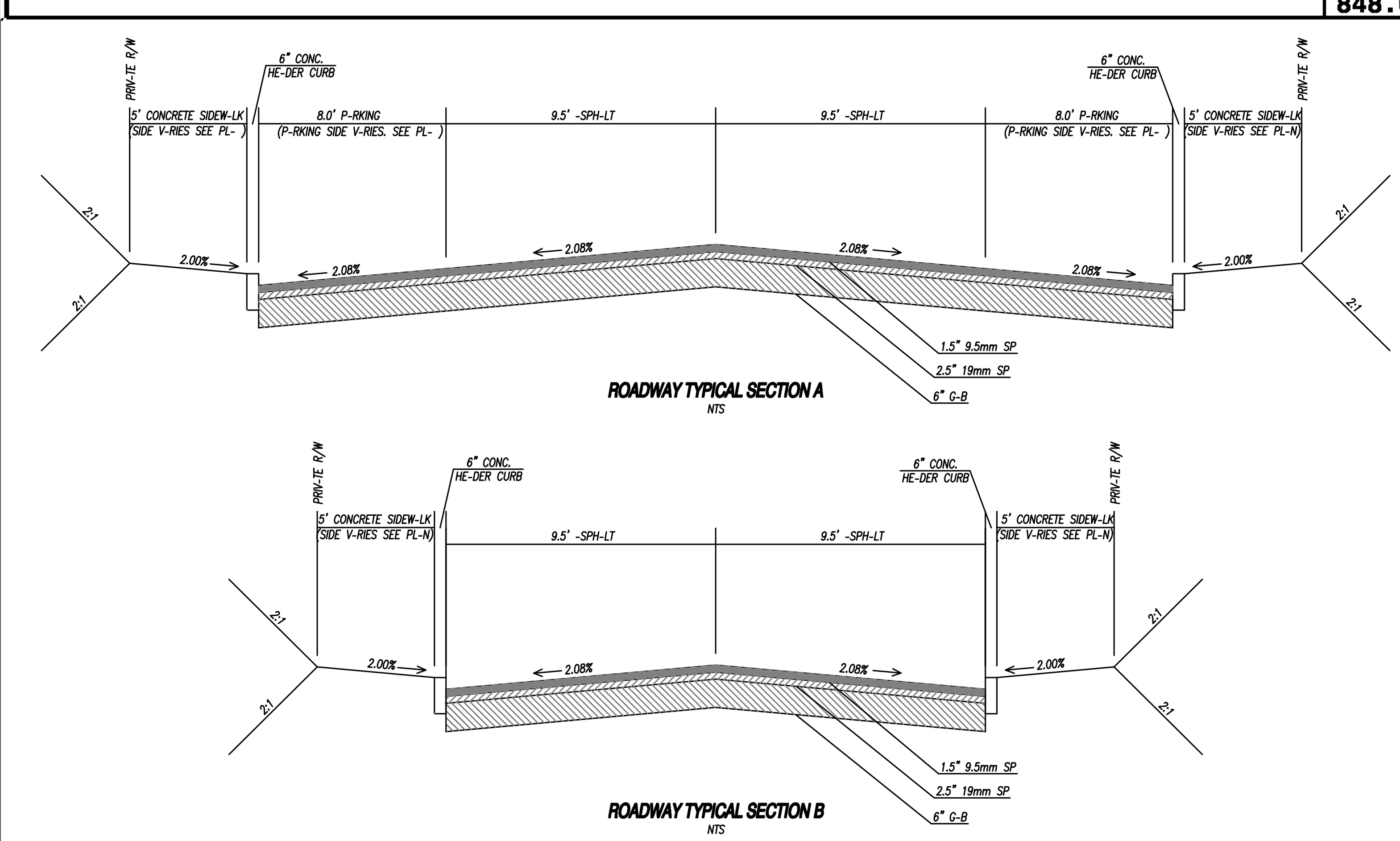
NOTE:
FOR CALCULATION PURPOSES
CLASS 'B' RIP RAP = 100 $LBS./FT^3$
CLASS I RIP RAP = 105 $LBS./FT^3$



ROADWAY STANDARD DRAWING FOR **GUIDE FOR RIP RAP AT PIPE OUTLETS**

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-24 | SHEET 1 OF 1 | **876.02**



Rochester Engineering, Inc.
Rochester Engineering, INC.
425 Oak St NW, Gainesville, GA 30501
770.718.0600 | rochester.dccm.com

CONSTRUCTION DETAILS
FOR:
STONE BRIDGE
LOCATED IN
HIAWASSEE TOWNSHIP
CLAY COUNTY, NORTH CAROLINA

NO.	DATE	DESCRIPTION

REVISIONS

ANY CHANGES OR ALTERATIONS MADE TO THESE CONSTRUCTION DRAWINGS WITHOUT THE WRITTEN APPROVAL OF ROCHESTER DCCM VOIDS THE SEAL SHOWN HEREON AND ANY LIABILITY ASSOCIATED WITH THIS PROJECT. ORIGINAL DRAWINGS ARE KEPT ON FILE FOR VERIFICATION OF ANY CHANGES.

1ST SUBMITTAL

SHEET 31 OF 31

DATE: 04/28/25
SCALE: N.T.S.
JOB NO: G224096.TNM
DWG NO: .CNST.dwg
DRAWN BY: CMM

JOINT APPLICATION FOR
STONE BRIDGE RESIDENTIAL / MARINA PROJECT
CLAY COUNTY, NORTH CAROLINA

ATTACHMENTS

ATTACHMENT 1 – STONE BRIDGE RESIDENTIAL / MARINA PROJECT MAP SET

ATTACHMENT 2 – PROJECT DESCRIPTION, ALTERNATIVES ANALYSIS, AVOIDANCE & MINIMIZATION

ATTACHMENT 3 – USACE FORM 4345

ATTACHMENT 4 – STONE BRIDGE RESIDENTIAL DEVELOPMENT ENGINEERING PLANS

ATTACHMENT 5 – STONE BRIDGE MARINA COVE DEEPENING ENGINEERING PLANS

ATTACHMENT 6 – IPAC SPECIES LIST

ATTACHMENT 7 – STONE BRIDGE DELINEATION REPORT

ATTACHMENT 8 – ADJACENT PROPERTY OWNERS

CONSTRUCTION DRAWINGS
FOR
STONE BRIDGE

LOCATED IN
HIAWASSEE TOWNSHIP
CLAY COUNTY, NORTH CAROLINA

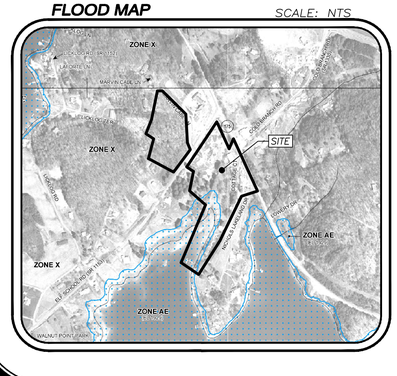
NOTE:
ALL SLOPES WITHIN 14 DAYS OF COMPLETION OF ANY PHASE OF GRADING, MUST BE PLANTED OR OTHERWISE PROVIDED WITH TEMPORARY OR PERMANENT GROUND COVER, DEVICES, OR STRUCTURES SUFFICIENT TO RESTRAIN EROSION.

CONSTRUCTION SCHEDULE	1st Month	2nd Month	3rd Month	4th Month	5th Month	6th Month	7th Month	8th Month
MAINTAIN ALL EROSION CONTROL BMPs								
INSTALL PHASE 1 EROSION CONTROL BMPs								
CLEARING & GRUBBING								
INSTALL PHASE 2 EROSION CONTROL BMPs								
GRADING								
STORM & SANITARY SEWERS								
CURB & GUTTER								
INSTALL PHASE 3 EROSION CONTROL BMPs								
WATER LINES								
PAVING								
PERMANENT VEGETATION & LANDSCAPING								

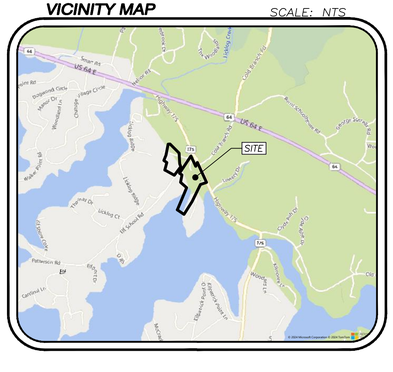
NC 811.ORG

PORTIONS OF THIS PROPERTY ARE LOCATED IN A FLOOD HAZARD ZONE "AE" AS PER F.E.M.A. INSURANCE RATE MAP OF CLAY COUNTY, NORTH CAROLINA. COMMUNITY PANEL NO. 3700548900J EFFECTIVE DATE NOVEMBER 19, 2008.

FLOOD MAP SCALE: NTS



VICINITY MAP SCALE: NTS



PROPOSED DEVELOPMENT BY:
BROWN HAVEN HOMES

Rochester Engineering, Inc.

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

1ST SUBMITTAL

TAX PARCEL ID: 548901284729, 548901293357, 548901292054, & 548901199661
G224096.TNM
01/08/25

NO.	DATE	DESCRIPTIONS

REVISIONS

OWNER & DEVELOPER:
BROWN HAVEN HOMES
837 HWY 400
SUITE 105
DAWSONVILLE, GA 30534
(706) 970-2456
john@brownhavenhomes.com

ENGINEERING CONTACT:
ROCHESTER ENGINEERING, INC.
MICHAEL STREAM, P.E.
(770) 718-0600
mstream@dccm.com

24 HOUR CONTACT:
JOHN ALLEN
(706) 970-2456
john@brownhavenhomes.com

SURVEY CONTACT:
ROCHESTER ENGINEERING, INC.
JARROD BLACK, P.L.S.
(770) 718-0600
jblack@dccm.com

Sheet List Table

GENERAL SITE 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. THE RIGHT OF WAY INFORMATION, TOPOGRAPHY, UTILITIES, AND PHYSICAL FEATURES WERE TAKEN FROM A TOPOGRAPHIC SURVEY AND BOUNDARY PLAT CONDUCTED BY ROCHESTER & ASSOCIATES, INC. FIELD DATA WAS COLLECTED IN MAY OF 2018.

4. THE LOCATIONS OF UNDERGROUND FACILITIES SHOWN ON THIS PLAN ARE BASED ON FIELD SURVEYS AND LOCAL UTILITY COMPANY RECORDS. IT SHALL BE THE CONTRACTOR'S FULL RESPONSIBILITY TO CONTACT THE VARIOUS UTILITY COMPANIES TO LOCATE THEIR FACILITIES PRIOR TO STARTING CONSTRUCTION. NO ADDITIONAL COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR DAMAGE AND REPAIR TO THESE FACILITIES CAUSED BY HIS WORK FORCE.

5. 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.

6. ALL DIMENSIONS ARE TO THE BACK OF CURB UNLESS OTHERWISE NOTED.

7. 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.

8. ALL CONSTRUCTION SHALL CONFORM TO CURRENT APPLICABLE CLAY COUNTY STANDARDS AND SPECIFICATIONS.

9. SITE IS LOCATED IN HIAWASSEE TOWNSHIP, CLAY COUNTY, NORTH CAROLINA.

10. PROPOSED USE: 3 NEW DOCKS, LAKE DREDGING, WALL, SIDEWALK & BEACH CONSTRUCTION

11. DEVELOPER: BROWN HAVEN HOMES

12. CONTRACTOR SHALL NOTIFY CLAY COUNTY 24 HOURS BEFORE THE BEGINNING OF EVERY PHASE OF CONSTRUCTION.

13. UTILITY SERVICE:
GAS –
WATER –
COMM. –
POWER –
SEWER –

14. 24 HOUR CONTACT: JOHN ALLEN
MOBILE: (706) 970-2456 EMAIL: JOHN@BROWNHAVENHOMES.COM

15. ENGINEERING CONTACT: JEREMY FRYDRYCH, PE, (678) 450-5203

16. PORTIONS OF THIS PROPERTY ARE LOCATED IN A FLOOD HAZARD ZONE "AE" AS PER F.E.M.A. INSURANCE RATE MAP OF CLAY COUNTY, NORTH CAROLINA, COMMUNITY PANEL NO. 3700548900J EFFECTIVE DATE NOVEMBER 19, 2008.

17. THERE ARE STREAMS AND WETLANDS ON OR WITHIN 200' OF THE PROJECT SITE.

18. THERE ARE NO STREAMS REQUIRING STATE OR LOCAL BUFFERS ON OR WITHIN 200' OF THE PROJECT SITE.

19. THIS SITE DOES NOT CONTAIN ANY KNOWN CEMETERIES.

20. ALL RETAINING WALLS WILL BE PERMITTED SEPARATELY.

21. ALL LIGHTING WILL BE LOW LEVEL AND NON-SPILL.

22. ALL PLANT MATERIAL CONFORMING TO AMERICAN STANDARD FOR NURSERY STOCK.

EROSION CONTROL NOTES:

1. DESCRIPTION: 3 NEW DOCKS, LAKE DREDGING, WALL, SIDEWALK & BEACH CONSTRUCTION

2. EXISTING CONDITIONS: OPEN GRASSED FIELDS & WETLANDS

3. ADJACENT AREAS: THE SITE IS BOUNDED TO THE NORTH & EAST BY OFFICE, SOUTH BY A CHURCH, TO THE WEST BY A POWER SUB-STATION.

4. SOIL CLEAN UP AND CONTROL PRACTICES:
(A) LOCAL, STATE AND MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND PROCEDURES WILL BE MADE AVAILABLE TO SITE PERSONNEL.

(B) 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.

(C) SPILL PREVENTION PRACTICES AND PROCEDURES WILL BE REVIEWED AFTER A SPILL AND ADJUSTED AS NECESSARY TO FUTURE SPILLS.

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

(E) 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.

(F) FOR SPILLS OF AN UNKNOWN AMOUNT, THE NATIONAL CENTER (NRC) WILL BE CONTACTED WITHIN 24 HOURS AT 1-800-425-2675.

(G) FOR SPILLS GREATER THAN 25 GALLONS AND NO SURFACE WATER IMPACTS, THE NORTH CAROLINA DEQ WILL BE CONTACTED WITHIN 24 HOURS.

(H) 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.

(I) 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.

5. INSPECTIONS & RECORD KEEPING:

a. Permittee requirements.

(1). Each day when any type of construction activity has taken place at a primary permittee 's site, certified personnel provided by the primary permittee shall inspect: (a) all areas at the primary permittee's site where petroleum products are stored, used, or handled for spills and leaks from vehicles and equipment and (b) all locations at the primary permittee's site where vehicles enter or exit the site for evidence of off-site sediment tracking .. These inspections must be conducted until a Notice of Termination is submitted.

(2). Measure rainfall once every 24 hours except any non-working Saturday, non-working Sunday and non-working Federal holiday until a Notice of Termination is submitted. Measurement of rainfall may be suspended if all areas of the site have undergone final stabilization or established a crop of annual vegetation and a seeding of target perennials appropriate for the region.

(3). Certified personnel (provided by the primary permittee) shall inspect the following at least once every 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.

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 CLAY COUNTY CONSTRUCTION STANDARDS

NOTIFY CLAY 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: 17.19 AC
DISTURBED AREA: 3.1 AC (INCLUDING DEDGING)
EARTHWORK ESTIMATE:
CUT: 7,000 CY
FILL: 7,000 CY WASTE
DIFFERENCE: 0 CY *

*EARTHWORK CALCULATIONS ARE BASED ON FINISHED GRADE

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

ADDITIONAL EROSION CONTROL NOTES:

THE DESIGN PROFESSIONAL WHO PREPARED THE ES&PC PLAN IS TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMPS WITHIN 7 DAYS AFTER INSTALLATION.

NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE 25 OR 50-FOOT UNDISTURBED STREAM BUFFERS AS MEASURED FROM THE POINT OF WRESTED VEGETATION WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS.

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.

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

THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO LAND DISTURBING ACTIVITIES.

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

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

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

NOTE:
MAINTENANCE OF ALL EROSION CONTROL MEASURES, WHETHER TEMPORARY OR PERMANENT, SHALL AT ALL TIMES BE THE RESPONSIBILITY OF THE OWNER.

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.

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.

GRADING NOTES:

COMPACTION:

COMPACTION OF THE BACKFILL OF ALL TRENCHES SHALL BE COMPACTED TO THE DENSITY OF 95% OF MODIFIED PROCTOR MAXIMUM DENSITY PER A.S.T.M. TEST D-698. BACKFILL MATERIAL SHALL BE FREE FROM ROOTS, STUMPS, OR OTHER FOREIGN DEBRIS, AND SHALL BE PLACED AT OR NEAR OPTIMUM MOISTURE. CORRECTION OF ANY TRENCH SETTLEMENT WITHIN A YEAR FROM THE DATE OF APPROVAL WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.

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:

3000 PSI 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:

CONSTRUCTION STAKING IS THE RESPONSIBILITY OF THE CONTRACTOR.

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. *THE CLAY COUNTY SHALL BE NOTIFIED 24 HOURS PRIOR TO ANY CONSTRUCTION.*
3. *ALL WATER MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE CLAY COUNTY WATER & SEWER DEPARTMENT.*
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 THE CLAY 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.*

NOTES:

DISPOSAL: STUMPS AND CONSTRUCTION DEBRIS SHALL BE DEPOSITED IN A PROPERLY PERMITTED LANDFILL.

PIPE: STORM DRAIN PIPES WILL BE CLASS III REINFORCED CONCRETE PIPE (RCP), TYPE II ALUMINIZED CORRUGATED STEEL PIPE (A2CSP) OR HDPE.

THE HORIZONTAL DATUM FOR THIS SURVEY IS STATE PLANE NORTH CAROLINA (NAD83).

ALL DISTANCES SHOWN ARE HORIZONTAL GROUND DISTANCES IN U.S. SURVEY FEET. (39.37 INCHES = 1 METER)

EROSION CONTROL NARRATIVE

PURPOSE OF DEVELOPMENT

THE PROPOSED PROJECT INVOLVES DREDGING 10,000 CUBIC YARDS OF MATERIAL FROM LAKE CHATUGE TO IMPROVE WATER DEPTH AND RECREATIONAL ACCESS. FOLLOWING THE DREDGING, A RETAINING WALL WILL BE CONSTRUCTED ALONG THE NEW SHORELINE, AND A BEACH AREA WILL BE DEVELOPED. THE PROJECT ALSO INCLUDES THE CONSTRUCTION OF A WALKING PATH AND GRADING OF THE SURROUNDING AREA TO ENHANCE USABILITY AND AESTHETICS.

SITE AND ADJACENT AREA CONDITIONS

THE PROJECT SITE IS CURRENTLY A GRASSY FIELD ADJACENT TO LAKE CHATUGE, WITH WETLANDS THAT DRAIN DIRECTLY INTO THE LAKE. THE SITE IS BORDERED BY HIGHWAY 175 AND IS ADJACENT TO SEVERAL SINGLE-FAMILY RESIDENTIAL PROPERTIES.

PROPOSED EROSION AND SEDIMENT CONTROL MEASURES

TO PREVENT SEDIMENT FROM ENTERING THE LAKE DURING CONSTRUCTION, A TURBIDITY CURTAIN WILL BE DEPLOYED WITHIN THE LAKE TO CONTAIN DISTURBED MATERIALS. A SILT FENCE WILL BE INSTALLED AROUND ALL DISTURBED AREAS TO INTERCEPT SEDIMENT RUNOFF. A STABILIZED CONSTRUCTION ENTRANCE WILL MINIMIZE OFF-SITE TRACKING OF SEDIMENT BY CONSTRUCTION VEHICLES. EXPOSED SOILS WILL BE STABILIZED PROMPTLY USING TEMPORARY SEEDING DURING CONSTRUCTION AND PERMANENT SEEDING UPON PROJECT COMPLETION TO ENSURE LONG-TERM EROSION CONTROL.

REVISION NUMBER	DATE	AFFECTED SHEETS	REVISION HISTORY CHART DESCRIPTION	P.E./ R.L.S. INITIAL

DATE	AGENCY	DEPARTMENT	SUBMITTAL HISTORY CHART DESCRIPTION	PERMIT TYPE	PERMIT NUMBER	APPROVAL DATE
01/08/25	TVA	PLANNING DIVISION	1st PLAN SUBMITTAL	LDP		

Rochester Engineering, Inc.
Rochester Engineering, INC.
425 Pirkle Ct NW | Gainesville, GA 30501
770.718.0000 | rochester-dcm.com

GENERAL NOTES FOR:
STONE BRIDGE
LOCATED IN
HIAWASSEE TOWNSHIP
CLAY COUNTY, NORTH CAROLINA

NO.	DATE	DESCRIPTION

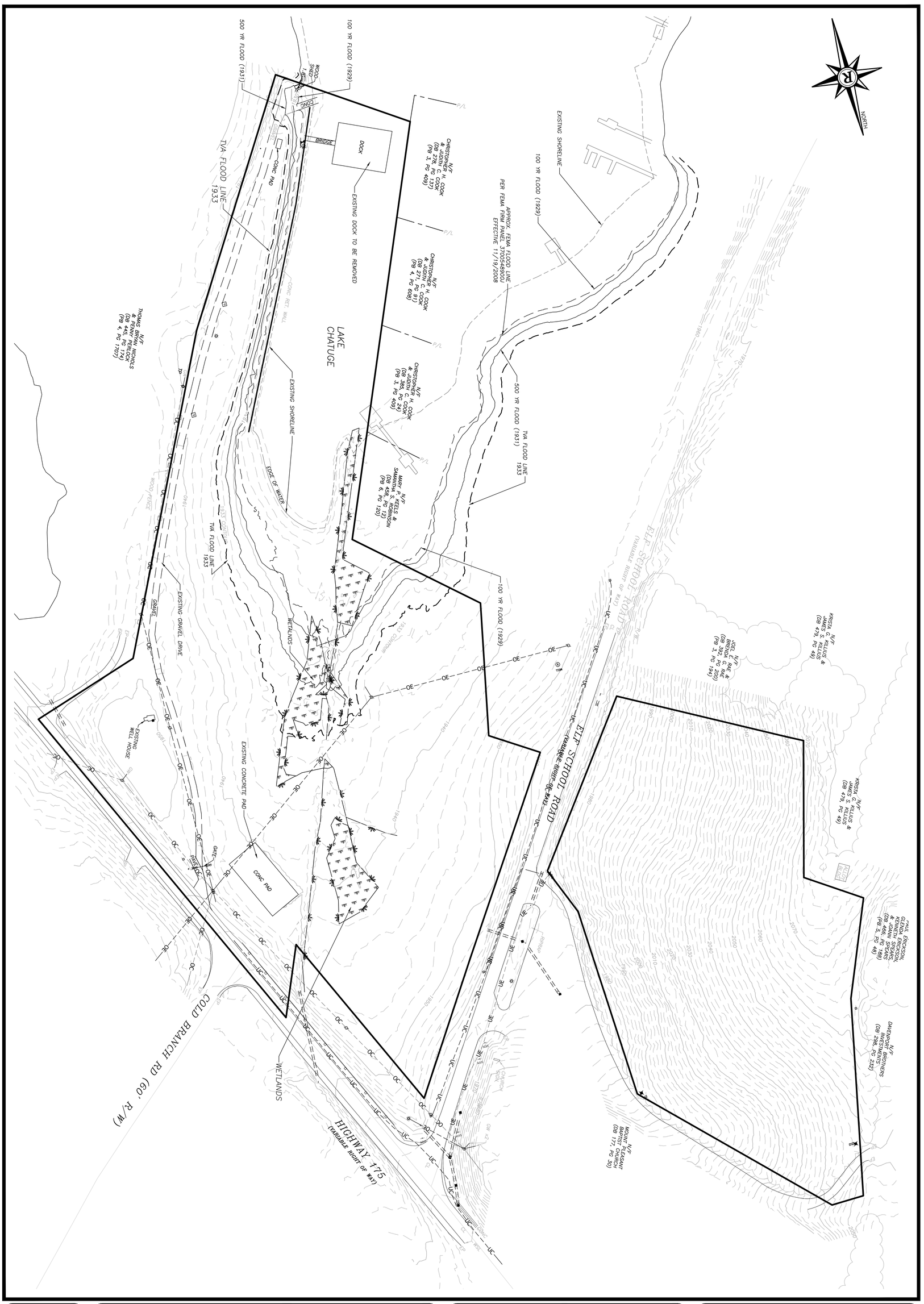
REVISIONS

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.

1ST SUBMITTAL

SHEET 2 OF 6

DATE: 01/08/25
SCALE: N.T.S.
JOB NO. G224096.TNM
DWG NO. CNST.dwg
DRAWN BY: CMM



SHEET	3
OF	6

DATE: 01/08/25
SCALE: 1" = 60'
JOB NO. G224096.TNM
DWG NO. .CNST.dwg
DRAWN BY: CMM

1ST SUBMITTAL

ANY CHANGES OR ALTERATIONS MADE TO THESE CONSTRUCTION DRAWINGS WITHOUT THE WRITTEN APPROVAL OF ROCHESTER | DCCM VOIDS THE SEAL SHOWN HEREON AND ANY LIABILITY ASSOCIATED WITH THIS PROJECT ORIGINAL DRAWINGS ARE KEPT ON FILE FOR VERIFICATION OF ANY CHANGES.

GRAPHIC SCALE
30' 0' 60' 120'

NO.	DATE	DESCRIPTION

REVISIONS

EXISTING SITE PLAN
FOR:
STONE BRIDGE

LOCATED IN
HIAWASSEE TOWNSHIP
CLAY COUNTY, NORTH CAROLINA

Rochester Engineering, Inc.
Rochester Engineering, INC.
425 Oak St NW, Gainesville, GA 30501
770.718.0600 | rochester.dccm.com

SHEET	OF
6	4

DATE: 01/08/25
SCALE: 1" = 60'
JOB NO. G224096.TNM
DWG NO. .CNST.dwg
DRAWN BY: CMM

ANY CHANGES OR ALTERATIONS MADE TO THESE CONSTRUCTION DRAWINGS WITHOUT THE WRITTEN APPROVAL OF ROCHESTER | DCCM VOIDS THE SEAL SHOWN HEREON AND ANY LIABILITY ASSOCIATED WITH THIS PROJECT ORIGINAL DRAWINGS ARE KEPT ON FILE FOR VERIFICATION OF ANY CHANGES.

GRAPHIC SCALE
30' 0' 60' 120'

NO.	DATE	DESCRIPTION

REVISIONS

EROSION CONTROL PLAN
FOR:
STONE BRIDGE

LOCATED IN
HIAWASSEE TOWNSHIP
CLAY COUNTY, NORTH CAROLINA

Rochester | DCCM
Rochester & Associates, LLC
425 Oak St NW, Gainesville, GA 30501
770.718.0600 p | rochester.dccm.com

DATE: PAGE:

CONSIDERATIONS FOR CONSTRUCTION SCHEDULING

CONSTRUCTION ACTIVITY	SCHEDULE CONSIDERATION
CONSTRUCTION ACCESS: Construction entrance, construction routes, equipment parking areas.	First land-disturbing activity- Stabilize bare areas immediately with gravel and temporary vegetation as construction takes place.
SEDIMENT TRAPS AND BARRIERS: Basin traps, sediment fences, and outlet protection.	Install principal basins after construction site is accessed. Install additional traps and barriers as needed during grading.
RUNOFF CONTROL: Diversions, perimeter dikes, water bars, and outlet protection.	Install key practices after principal sediment traps and before land grading. Install additional runoff-control measures during grading.
RUNOFF CONVEYANCE SYSTEM: Stabilize streambanks, storm drains, channels, inlet and outlet protection, and slope drains.	Where necessary, stabilize streambanks as early as possible. Install principal runoff conveyance system with runoff-control measures. Install remainder of system after grading.
LANDING CLEARING AND GRADING: Site preparation- cutting, filling and grading, sediment traps, barriers, diversions, drains, and surface roughening.	Begin major clearing and grading **AFTER** principal sediment and key runoff-control measures are installed. Clear borrow and disposal areas only as needed. Install additional control measures as grading progresses. Mark trees and buffer areas for preservation.
SURFACE STABILIZATION: Temporary and permanent seeding, mulching, sodding and riprap.	Apply temporary or permanent stabilization measures immediately on all disturbed areas where work is delayed or complete.
BUILDING CONSTRUCTION: Buildings, utilities, and paving.	Install necessary additional erosion and sedimentation control practices as work takes place.
LANDSCAPE AND FINAL STABILIZATION: Topsoiling, trees and shrubs, permanent seeding, mulching, sodding, and riprap.	Last construction phase: Stabilize all open areas, including borrow and spoil areas. Remove and stabilize all temporary control areas.

NOTE: The above are the main aspects of a typical construction sequence in general terms. A detailed Construction Sequence should be site specific based on your project and site needs. As a minimum, the construction sequence schedule should show the following:

- The erosion and sedimentation control practices to be installed,
- Principal development activities,
- What measures should be in place before other activities are begun, and
- Compatibility with the general construction schedule of the contract.

Many timely construction techniques can reduce the erosion potential of a site, such as (1) shaping earthen fills daily to prevent overflows and (2) constructing temporary diversions ahead of anticipated storms. These types of activities cannot be put on the construction sequence schedule, but should be used whenever possible.

CONSTRUCTION SEQUENCING

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

DATE: PAGE:

SPACING GUIDE FOR SLOPE BREAKS		
	SLOPE	SPACING (FT)
Steep Slopes	2:1	20
	3:1	35
	4:1	45
Long Slopes	15-25%	50
	10-15%	80
	6-10%	125
	3-6%	200
	<3%	300

Use slope breaks, such as diversions, wattles, or benches, as appropriate, to reduce the length of cut-and-fill slope to limit sheet and rill erosion and prevent gullying.

MAINTENANCE:
1. Periodically check all graded areas and the supporting erosion and sedimentation control practices, especially after heavy rainfalls.
2. Promptly remove all sediment from diversions and other water-disposal practices.
3. If washouts or breaks occur, repair immediately.
4. Prompt maintenance of small eroded areas before they become significant gullies is an essential part of an effective erosion and sedimentation control plan.

NOTES:
1. Construct and maintain all erosion and sediment control practices and measures in accordance with the approved sedimentation control plan and construction schedule.
2. Remove good topsoil from areas to be graded and filled, and preserve it for use in finishing the grading of all critical areas.
3. Scarify areas to be topsoiled to a minimum depth of 2 inches before placing topsoil.
4. Clear and grub areas to be filled by removing trees, vegetation, roots, or other objectionable material that would affect the planned stability of the fill.
5. Ensure that fill material is free of brush, rubbish, rocks, logs, stumps, building debris, and other materials inappropriate for constructing stable fills.
6. Place all fill in layers not to exceed 9 inches in thickness, and compact the layers as required to reduce erosion, slippage, settlement, or other related problems.
7. Do not incorporate frozen, soft, mucky, or highly compressible materials into fill slopes.
8. Do not place fill on a frozen foundation, due to possible subsidence and slippage.
9. Keep diversions and other water conveyance measures free of sediment during all phases of development.
10. Handle seeps or springs encountered during construction in accordance with approved methods (subsurface drain).
11. Permanently stabilize all graded areas immediately after final grading is completed on each area in the grading plan. Apply temporary stabilization measures on all graded areas when work is to be interrupted or delayed for 30 days or longer.
12. Show topsoil, stockpiles, borrow areas, and spoil areas on the plans, and make sure they are adequately protected from erosion. Include final stabilization of these areas in the plan.

LAND GRADING

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

DATE: PAGE:

TEMPORARY SEEDING RECOMMENDATIONS FOR LATE WINTER AND EARLY SPRING

Seeding Mixture

Species	Rate (lb/acre)
Rye (grain)	120
Annual lespedeza (Kobe in Piedmont and Coastal Plain, Korean in Mountains)	50

Omit annual lespedeza when duration of temporary cover is not to extend beyond June.

Seeding Dates
Mountains—Above 2500 feet: Feb. 15 - May 15
Below 2500 feet: Feb. 1- May 1
Piedmont—Jan. 1 - May 1
Coastal Plain—Dec. 1 - Apr. 15

Mulch
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance
Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

TEMPORARY SEEDING RECOMMENDATIONS FOR SUMMER

Seeding Mixture

Species	Rate (lb/acre)
German millet	40

In the Piedmont and Mountains, a small-stemmed Sudangrass may be substituted at a rate of 50 lb/acre.

Seeding Dates
Mountains — May 15 - Aug. 15
Piedmont — May 1 - Aug. 15
Coastal Plain — Apr. 15 - Aug. 15

Mulch
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance
Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

TEMPORARY SEEDING RECOMMENDATIONS FOR FALL

Seeding Mixture

Species	Rate (lb/acre)
Rye (grain)	120

Seeding Dates
Mountains — Aug. 15 - Dec. 15
Coastal Plain and Piedmont — Aug. 15 - Dec. 31

Mulch
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance
Repair and refertilize damaged areas immediately. Topdress with 50 lb/acre of nitrogen in March. If it is necessary to extend temporary cover beyond June 15, overseed with 50 lb/acre Kobe (Piedmont and Coastal Plain) or Korean (Mountains) lespedeza in late February or early March.

SEED BED PREPARATION:

LIMING- Apply lime according to soil test recommendations. If the pH (acidity) of the soil is not known, an application of ground agricultural limestone at the rate of 1-1½ tons/acre on coarse-textured soils and 2-3 tons/acre on fine-textured soils is usually sufficient. Apply limestone uniformly and incorporate into the top 4-6 inches of soil. Soils with a pH of 6 or higher need not be limed.

FERTILIZER- Base application rates on soil tests. When these are not possible, apply a 10-10-10 grade fertilizer at 700 - 1,000 lb/acre. Both fertilizer and lime should be incorporated into the top 4-6 inches of soil. If a hydraulic seeder is used, do not mix seed and fertilizer more than 30 minutes before application.

SURFACE ROUGHENING- If recent tillage operations have resulted in a loose surface additional roughening may not be required, except to break up large clods. If rainfall causes the surface to become sealed or crusted, loosen it just prior to seeding by raking, harrowing, or other suitable methods for fine grading. The finished grade shall be a smooth even soil surface with a loosen uniformly fine texture. All ridges and depressions shall be removed and filled to provide the approved surface drainage. Planting is to be done immediately after finished grades are obtained and seedbed preparation is completed.

TEMPORARY SEEDING

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

DATE: PAGE:

NON-INVASIVE PERMANENT SEEDING RECOMMENDATIONS FOR LATE WINTER AND EARLY SPRING

SEEDING MIXTURE

Species	Rate
Centipede	5 lbs/acre
Indian Woodoats	1.5-2.5 lbs/acre*
Virginia Wild Rye	4-6 lbs/acre

*Depending upon mix with other species. See table 6.11.d from Chapter 6 of the NC Erosion and Sediment Control Planning and Design Manual.

Seeding Dates
Coastal or Eastern Piedmont for Centipede- Sept. 1 - May 1
Coastal and Piedmont for Indian Woodoats and Virginia Wild Rye- Feb 15 - April 1
Mountains for Indian Woodoats and Virginia Wild Rye- March 1 - May 15

Maintenance:
Significant maintenance may be required to obtain desired cover.

NON-INVASIVE PERMANENT SEEDING RECOMMENDATIONS FOR SUMMER

SEEDING MIXTURE

Species	Rate
Indian Woodoats	1.5-2.5 lbs/acre*
Virginia Wild Rye	4-6 lbs/acre*

*Depending upon mix with other species. See table 6.11.d from Chapter 6 of the NC Erosion and Sediment Control Planning and Design Manual.

Seeding Dates
Mountains - July 15- Aug 15
Piedmont - Aug 15 - Oct 15

Maintenance:
Indian Woodoats and Virginia Wild Rye are both sun and shade tolerant.

NON-INVASIVE PERMANENT SEEDING RECOMMENDATIONS FOR FALL

SEEDING MIXTURE

Species	Rate
Hard Fescue	15 lbs/acre
Switchgrass	2.5-3.5 lbs/acre*
Indian Grass	5-7 lbs/acre*
Big Bluestem	5-7 lbs/acre*
Indian Woodoats	1.5-2.5 lbs/acre*
Virginia Wild Rye	4-6 lbs/acre*

*Depending upon mix with other species. See table 6.11.d from Chapter 6 of the NC Erosion and Sediment Control Planning and Design Manual.

Seeding Dates
Mountains - Hard Fescue- Aug 1 - June 1
Mountains- Switchgrass, Indian Grass, Big Bluestem- Dec 1 - April 15
Piedmont and Coastal- Switchgrass, Indian Grass, Big Bluestem- Dec 1 - April 1
Coastal- Indian Woodoats and Virginia Wild Rye- Sept 1 - Nov 1

Maintenance:
Hard Fescue is not recommended for slopes > 5%. Prefers shade.

SEED BED PREPARATION:

LIMING- Apply lime according to soil test recommendations. If the pH (acidity) of the soil is not known, an application of ground agricultural limestone at the rate of 1 to 1½ tons/acre on coarse0textured soils and 2-3 tons/acre on fine-textured soils is usually sufficient. Apply limestone uniformly and incorporate into the top 4-6 inches of soil. Soils with a pH of 6 or higher need not be limed.

FERTILIZER- Base application rates on soil tests. When these are not possible, apply a 10-10-10 grade fertilizer at 700-1,000 lb/acre. Both fertilizer and lime should be incorporated into the top 4-6 inches of soil. If a hydraulic seeder is used, do not mix seed and fertilizer more than 30 minutes before application.

SURFACE ROUGHENING- If recent tillage operations have resulted in a loose surface additional roughening may not be required, except to break up large clods. If rainfall causes the surface to become sealed or crusted, loosen it just prior to seeding by raking, harrowing, or other suitable methods for fine grading. the finished grade shall be a smooth even soil surface with a loosen uniformly fine texture. all ridges and depressions shall be removed and filled to provide the approved surface drainage . Planting is to be done immediately after finished grades are obtained and seedbed preparation is completed.

NOTES:
1. Permanent seeding, sodding or other means of stabilization are required when all construction work is completed according to the NPDES timeframes table.
2. A North Carolina Department of Agriculture soils test (or equal) is highly recommended to be obtained for all areas to be seeded, sprigged, sodded or planted.
3. Use a seeding mix that will produce fast0growing nurse crops and includes non-invasive species that will eventually provide a permanent groundcover. Soil blankets may be used in lieu of nurse crops. Mat, tack or crimp mulch, as needed to stabilize seeded areas until root establishment. Mulch must cover at leaser 80% of the soil surface.
4. Ground cover shall be maintained until permanent vegetation is established and stable against accelerated erosion.

PERMANENT SEEDING

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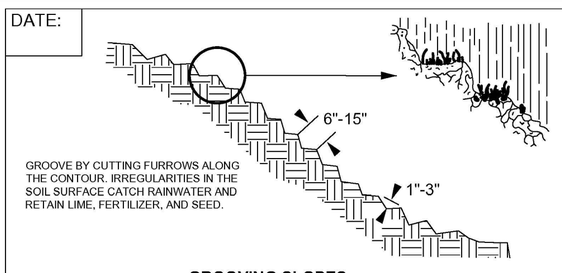
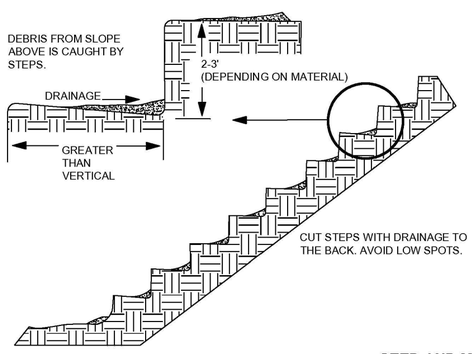


GROOVING SLOPES



STAIR STEPPING CUT SLOPES

CUT SLOPE ROUGHENING FOR AREAS NOT TO BE MOWED:
1. Stair-step grade or groove cut slopes with a gradient steeper than 3:1.
2. Use stair-step grading on any erodible material soft enough to be ripped with a bulldozer. Slopes consisting of soft rock with some subsoil are particularly suited to stair-stepping.
3. Make the vertical cut distance less than the horizontal distance, and slightly slope the horizontal position of the "step" in toward the vertical wall.
4. Do not make individual vertical cuts more than 2 feet in soft materials or more than 3 feet in rocky materials.
5. Grooving uses machinery to create a series of ridges and depressions that run across the slope (on the contour).
6. Groove using any appropriate implement that can be safely operated on the slope. Such as disks, tillers, spring harrows, or the teeth on a front-end loader bucket. Do not make such grooves less than 3 inches deep nor more than 15 inches apart.

FILL SLOPE ROUGHENING FOR AREAS NOT TO BE MOWED:
1. Place fill slopes with a gradient steeper than 3:1 in lifts not to exceed 9 inches, and make sure each lift is properly compacted. Ensure that the face of the slope consists of loose, uncompacted fill 4 to 6 inches deep. Use grooving, as described above, to roughen the face of the slopes, if necessary.
2. Do not blade or scrape the final slope face.

CUTS, FILLS, AND GRADED AREAS THAT WILL BE MOWED:
1. Make mowed slopes **no steeper than 3:1**
2. Roughen these areas to shallow grooves by normal tilling, disking, harrowing, or use of a cultipacker-seeder. Make the final pass of any such tillage implement on the contour.
3. Make grooves, formed by such implements, close together (less than 10 inches) and not less than 1 inch deep.
4. Excessive roughness is undesirable where mowing is planned.

ROUGHENING WITH TRACKED MACHINERY:
1. Limit roughening with tracked machinery to sandy soils to avoid undue compaction of the soil surface. Tracking is generally not as effective as the other roughening methods described.
2. Operate tracked machinery up and down the slope to leave horizontal depressions in the soil. Do not back-blade during the final grading operation.

SEED AND MULCH ROUGHENED AREAS IMMEDIATELY TO OBTAIN OPTIMUM SEED GERMINATION AND GROWTH.

SURFACE ROUGHENING

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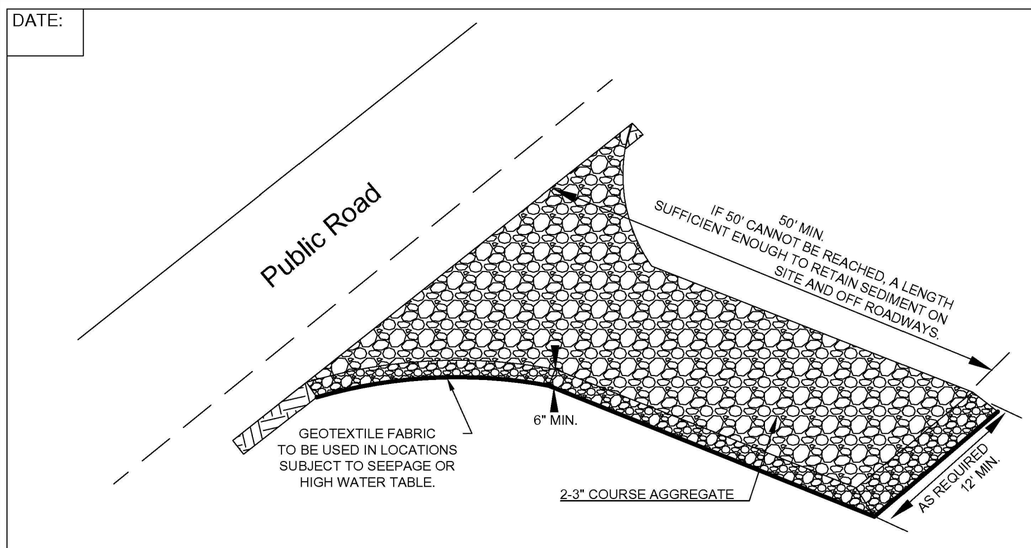

Construction:
1. Clear the entrance and exit area of all vegetation, roots, and other objectionable material and properly grade it.
2. Place the gravel to the specific grade and dimensions shown on the plans, and smooth it.
3. Provide drainage to carry water to a sediment trap or other suitable outlet.
4. Use geotextile fabrics in order to improve stability of the foundation in locations subject to seepage or high water table.

Maintenance:
1. Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater. Make any required repairs immediately.
2. Maintain the gravel pad in a condition to prevent mud or sediment from leaving the construction site. This may require periodic topdressing with 2-inch stone.
3. Sediment on roadways is to be removed immediately by broom and shovel, either by manual or mechanical means, and not to be washed off where it has the potential to enter a stream, drainage way or storm drain system.

TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT

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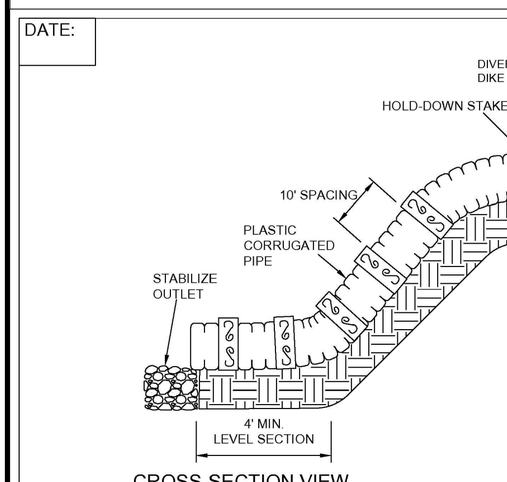
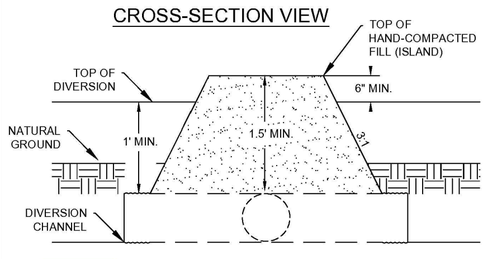
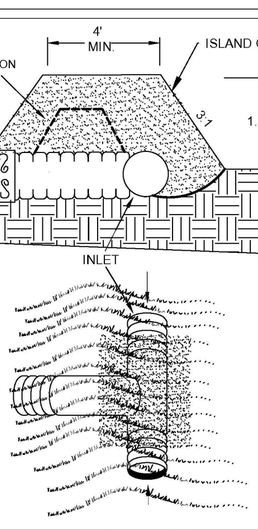


CROSS-SECTION VIEW





PLAN VIEW
STANDARD T-SECTION

Size of Slope Drain	
Max. Drainage Area per Pipe (Acres)	Pipe Diameter (Inches)
0.50	12
0.75	15
1.00	18
>1.00*	as designed
* Inlet design becomes more complex beyond this size.	

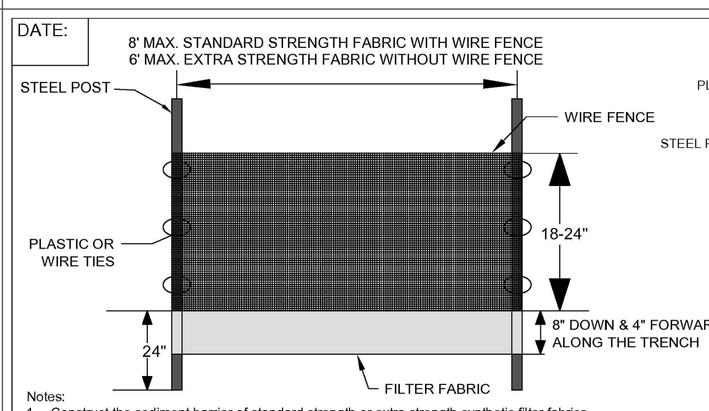
NOTES:
1. Place slope drains on undisturbed soil or well compacted fill at locations and elevations shown on the plan.
2. Slightly slope the section of pipe under the dike toward its outlet.
3. Hand tamp the soil under and around the entrance section in lifts not to exceed 6 inches.
4. Fill over the drain at the top of the slope to a minimum of 1.5 feet depth, 4 feet top width and 3:1 side slopes.
2. Ensure all slope drain connections are watertight.
3. Compact fill material and securely fasten the exposed section of the drain with grommets or stakes spaced no more than 10 feet apart.
4. Extend the drain beyond the toe of the slope, and adequately protect the outlet from erosion.
5. Make the compacted, settled dike ridge no less than 1 foot above the top of the pipe at every point.
6. Immediately stabilize all disturbed areas following construction.

MAINTENANCE:
1. Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater; repair immediately.

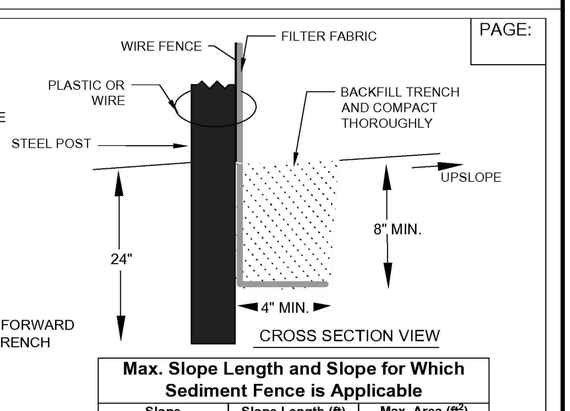
TEMPORARY SLOPE DRAINS

Effective Date: 9/1/2023

DATE: PAGE:



Notes:
1. Construct the sediment barrier of standard strength or extra strength synthetic filter fabrics.
2. Ensure that the height of the sediment fence does not exceed 24 inches above the ground. (Higher fences may impound volumes of water sufficient to cause failure of the structure)
3. Construct the filter fabric from a continuous roll cut to the length of the barrier to avoid joints. When joints are necessary, securely fasten the filter cloth only at a support post with 4 feet minimum overlap to the next post.
4. Support standard strength filter fabric by wire mesh fastened securely to the upslope side of the posts. Extend the wire mesh support to the bottom of the trench. Fasten the wire reinforcement, then fabric on the upslope side of the fence post. Wire or plastic zip ties should have a minimum 50 pound tensile strength.
5. When a wire mesh support fence is used, space posts a maximum of 8 feet apart. Supports should be driven securely into the ground a minimum of 24 inches. Wire mesh should be a minimum 14-gauge with 6 inch mesh spacing.
6. Extra strength filter fabric with 6 foot post spacing does not require a wire mesh support fence. Securely fasten the filter fabric directly to posts. Wire or plastic zip ties should have a minimum of 50 pound tensile strength.
7. Excavate the trench approximately 4 inches wide and 8 inches deep along the proposed line of the posts and upslope from the barrier.
8. Place 12 inches of fabric along the bottom and side of the trench.
9. Backfill the trench with soil placed over the filter fabric and compact. Thorough compaction of the backfill is critical to silt fence performance.
10. Do not attach filter fabric to existing trees.
11. Do not place across ditches, streams, or any other areas of concentrated flow.



CROSS SECTION VIEW

Max. Slope Length and Slope for Which Sediment Fence is Applicable

Slope	Slope Length (ft)	Max. Area (ft²)
<2%	100	10,000
2 to 5%	75	7,500
5 to 10%	50	5,000
10 to 20%	25	2,500
>20%	15	1,500

Maintenance:
1. Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater. Make any required repairs immediately.
2. Should the fabric of a sediment fence collapse, tear, decompose, or become ineffective, replace it promptly.
3. Remove sediment deposits as necessary to provide adequate storage volume for the next rain and reduce pressure on the fence. Take care to avoid undermining the fence during cleanouts.
4. Remove all fencing materials and unstable sediment deposits and bring the area to grade and stabilize it after the contributing drainage area has been properly stabilized.

SEDIMENT FENCE

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

SHEET 5 OF 6

DATE: 01/08/25
SCALE: N.T.S.
JOB NO. G224096.TNM
DWG NO. .CNST.dwg
DRAWN BY: CMM

1ST SUBMITTAL

ANY CHANGES OR ALTERATIONS MADE TO THESE CONSTRUCTION DRAWINGS WITHOUT THE WRITTEN APPROVAL OF ROCHESTER | DCCM VOIDS THE SEAL SHOWN HEREON AND ANY LIABILITY ASSOCIATED WITH THIS PROJECT. ORIGINAL DRAWINGS ARE KEPT ON FILE FOR VERIFICATION OF ANY CHANGES.

NO.	DATE	DESCRIPTION

REVISIONS

EROSION CONTROL DETAILS
FOR:
STONE BRIDGE

LOCATED IN
HIAWASSEE TOWNSHIP
CLAY COUNTY, NORTH CAROLINA

Rochester Engineering, Inc.
Rochester Engineering, INC.
425 Oak St NW, Gainesville, GA 30501
770.718.0600 | rochester.dccm.com

GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

SECTION E: GROUND STABILIZATION

Required Ground Stabilization Timeframes

Site Area Description	Stabilize within this many calendar days after ceasing land disturbance	Timeframe variations
(a) Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b) High Quality Water (HQW) Zones	7	None
(c) Slopes steeper than 3:1	7	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
(d) Slopes 3:1 to 4:1	14	-7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(e) Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope

Note: After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

GROUND STABILIZATION SPECIFICATION

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

Temporary Stabilization	Permanent Stabilization
• Temporary grass seed covered with straw or other mulches and tackifiers • Hydroseeding • Rolled erosion control products with or without temporary grass seed • Appropriately applied straw or other mulch • Plastic sheeting	• Permanent grass seed covered with straw or other mulches and tackifiers • Geotextile fabrics such as permanent soil reinforcement matting • Hydroseeding • Shrubs or other permanent plantings covered with mulch • Uniform and evenly distributed ground cover sufficient to restrain erosion • Structural methods such as concrete, asphalt or retaining walls • Rolled erosion control products with grass seed

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

1. Select flocculants that are appropriate for the soils being exposed during construction, selecting from the *NC DWR List of Approved PAMS/Flocculants*.
2. Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
3. Apply flocculants at the concentrations specified in the *NC DWR List of Approved PAMS/Flocculants* and in accordance with the manufacturer's instructions.
4. Provide ponding area for containment of treated Stormwater before discharging offsite.
5. Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

EQUIPMENT AND VEHICLE MAINTENANCE

1. Maintain vehicles and equipment to prevent discharge of fluids.
2. Provide drip pans under any stored equipment.
3. Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
4. Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
5. Remove leaking vehicles and construction equipment from service until the problem has been corrected.
6. Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

1. Never bury or burn waste. Place litter and debris in approved waste containers.
2. Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
3. Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
4. Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
5. Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
6. Anchor all lightweight items in waste containers during times of high winds.
7. Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
8. Dispose waste off-site at an approved disposal facility.
9. On business days, clean up and dispose of waste in designated waste containers.

PAINT AND OTHER LIQUID WASTE

1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled, sized and placed appropriately for the needs of site.
5. Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

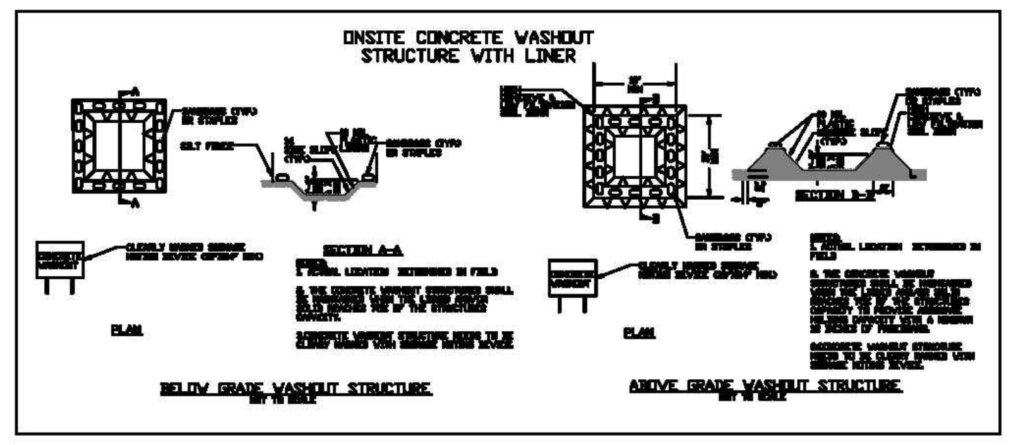
PORTABLE TOILETS

1. Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
2. Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
3. Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

EARTHEN STOCKPILE MANAGEMENT

1. Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
2. Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
3. Provide stable stone access point when feasible.
4. Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.

NORTH CAROLINA *Environmental Quality*



CONCRETE WASHOUTS

1. Do not discharge concrete or cement slurry from the site.
2. Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
3. Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
4. Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
5. Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
6. Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
7. Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
8. Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
9. Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
10. At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

HERBICIDES, PESTICIDES AND RODENTICIDES

1. Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
2. Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
3. Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
4. Do not stockpile these materials onsite.

HAZARDOUS AND TOXIC WASTE

1. Create designated hazardous waste collection areas on-site.
2. Place hazardous waste containers under cover or in secondary containment.
3. Do not store hazardous chemicals, drums or bagged materials directly on the ground.

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

EFFECTIVE: 04/01/19

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record.

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual day rainfall information is available, record the cumulative rain measurement for those unattended days (and this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the measures inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Indication of whether the measures were operating properly, 5. Description of maintenance needs for the measure, 6. Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outfalls (SDCs)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, 5. Indication of visible sediment leaving the site, 6. Description, evidence, and date of corrective actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit.
(6) Ground stabilization measures	After each phase of grading	1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover). 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or an assurance that they will be provided as soon as possible.

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

1. E&SC Plan Documentation

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be kept on site and available for inspection at all times during normal business hours.

Item to Document	Documentation Requirements
(a) Each E&SC measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC plan.	Initial and date each E&SC measure on a copy of the approved E&SC plan or complete, date and sign an inspection report that lists each E&SC measure shown on the approved E&SC plan. This documentation is required upon the initial installation of the E&SC measures or if the E&SC measures are modified after initial installation.
(b) A phase of grading has been completed.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate completion of the construction phase.
(c) Ground cover is located and installed in accordance with the approved E&SC plan.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.
(d) The maintenance and repair requirements for all E&SC measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&SC measures.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate the completion of the corrective action.

2. Additional Documentation to be Kept on Site

In addition to the E&SC plan documents above, the following items shall be kept on the site and available for inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

(a) This General Permit as well as the Certificate of Coverage, after it is received.

(b) Records of inspections made during the previous twelve months. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

3. Documentation to be Retained for Three Years

All data used to complete the e-NOI and all inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that Must be Reported

Permittees shall report the following occurrences:

(a) Visible sediment deposition in a stream or wetland.

(b) Oil spills if:

- **They are 25 gallons or more,**
- **They are less than 25 gallons but cannot be cleaned up within 24 hours,**
- **They cause sheen on surface waters (regardless of volume), or**
- **They are within 100 feet of surface waters (regardless of volume).**

(c) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.

(d) Anticipated bypasses and unanticipated bypasses.

(e) Noncompliance with the conditions of this permit that may endanger health or the environment.

2. Reporting Timeframes and Other Requirements

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Department's Environmental Emergency Center personnel at (800) 858-0368.

Occurrence	Reporting Timeframes (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days***, a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis. • If the stream is named on the NC 303(d) list as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.
(b) Oil spills and release of hazardous substances per Item 1(b)-(c) above	• ***Within 24 hours***, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	• ***A report at least ten days before the date of the bypass, if possible***. The report shall include an evaluation of the anticipated quality and effect of the bypass.
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days,*** a report that includes an evaluation of the quality and effect of the bypass.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment[40 CFR 122.41(l)(7)]	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days***, a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6). • Division staff may waive the requirement for a written report on a case-by-case basis.

PART II, SECTION G, ITEM (4)
DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT

Sediment basins and traps that receive runoff from drainage areas of one acre or more shall use outlet structures that withdraw water from the surface when these devices need to be drawn down for maintenance or close out unless this is infeasible. The circumstances in which it is not feasible to withdraw water from the surface shall be rare (for example, times with extended cold weather). Non-surface withdrawals from sediment basins shall be allowed only when all of the following criteria have been met:

(a) The E&SC plan authority has been provided with documentation of the non-surface withdrawal and the specific time periods or conditions in which it will occur. The non-surface withdrawal shall not commence until the E&SC plan authority has approved these items,
(b) The non-surface withdrawal has been reported as an anticipated bypass in accordance with Part III, Section C, Item (2)(c) and (d) of this permit,
(c) Dewatering discharges are treated with controls to minimize discharges of pollutants from stormwater that is removed from the sediment basin. Examples of appropriate controls include properly sited, designed and maintained dewatering tanks, weir tanks, and filtration systems,
(d) Vegetated, upland areas of the sites or a properly designed stone pad is used to the extent feasible at the outlet of the dewatering treatment devices described in Item (c) above,
(e) Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices, and
(f) Sediment removed from the dewatering treatment devices described in Item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

NORTH CAROLINA *Environmental Quality*

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

EFFECTIVE: 04/01/19

Rochester Engineering, Inc.
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425 Oak St NW, Gainesville, GA 30501
770.718.0600 | rochester.dccm.com

EROSION CONTROL DETAILS
FOR:
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