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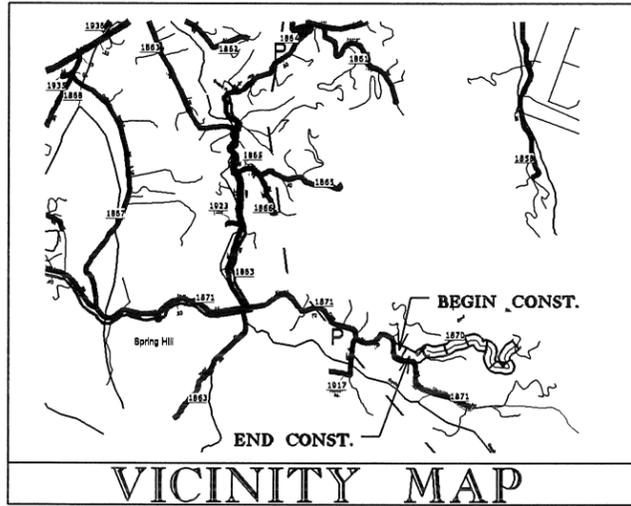
See Sheet 1-A For Index of Sheets

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

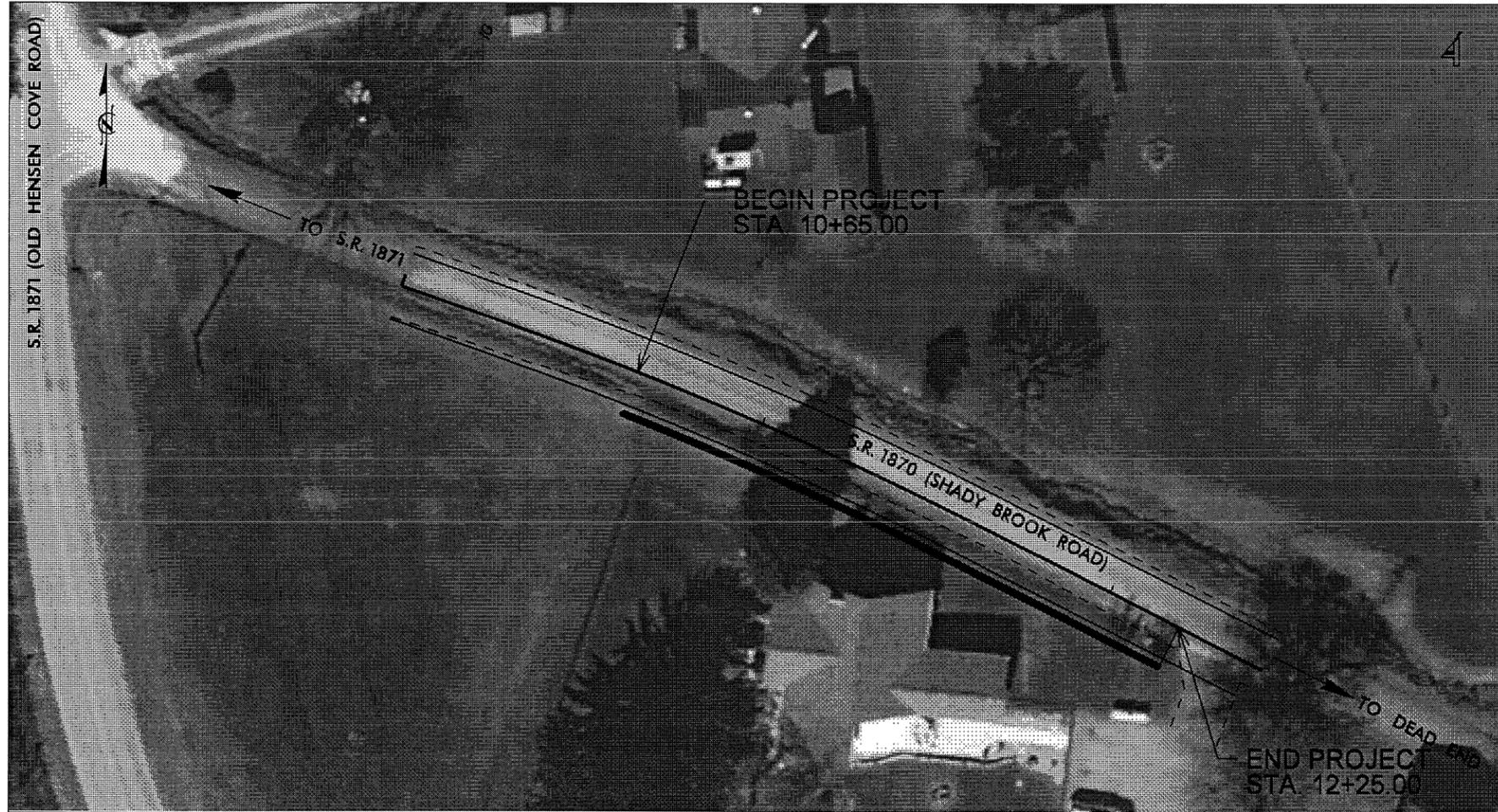
HAYWOOD COUNTY

LOCATION: S.R. 1870 (SHADY BROOK ROAD)
FROM APPROXIMATELY 155' SOUTHEAST OF S.R. 1871 (OLD HENSON COVE ROAD)
TO APPROXIMATELY 315' FROM S.R. 1871 (OLD HENSON COVE ROAD)
TYPE OF WORK: GRADING, RETAINING WALL

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	14C.044177	1	8
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

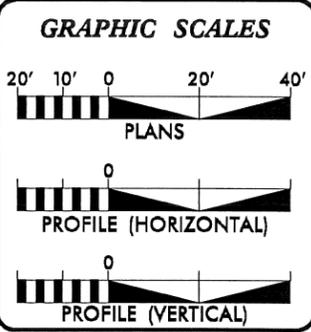


VICINITY MAP



TIP PROJECT:

CONTRACT: DN00320



DESIGN DATA

ADT	=	
ADT	=	
DHV	=	%
D	=	%
T	=	% *
V	=	MPH
* TTST	=	DUAL
FUNC CLASS	=	

PROJECT LENGTH

160 LF

TIER

Prepared in the Office of:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

2012 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE:	JONATHAN L. WOODARD, P.E. PROJECT ENGINEER
LETTING DATE:	JEFFREY E. ALSPAUGH, E.I. PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.



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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
2	TYPICAL SECTION
3	SUMMARY OF QUANTITIES
4	PLAN SHEET
TCP-1	TRAFFIC CONTROL PLAN
X-1	CROSS-SECTIONS

STANDARD DRAWINGS

EFF. 01-17-2012
REV. 10-30-2012

2012 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January, 2012 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation

STANDARD SPECIFICATIONS

GENERAL NOTES: 2012 SPECIFICATIONS
EFFECTIVE: 01-17-2012
REVISED: 07-30-2012

GRADING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED OR FUTURE SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

SUBSURFACE PLANS:

NO SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE - UNKNOWN.

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

RIGHT-OF-WAY MARKERS:

ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY OTHERS.

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EP
Property Corner	-----
Property Monument	□ ECM
Parcel/Sequence Number	⑫③
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	WLB
Proposed Wetland Boundary	WLB
Existing Endangered Animal Boundary	EAB
Existing Endangered Plant Boundary	EPB
Known Soil Contamination: Area or Site	☠ ☠
Potential Soil Contamination: Area or Site	☠ ?

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○ S
Well	○ W
Small Mine	⋈
Foundation	▭
Area Outline	▭
Cemetery	▭ ↑
Building	▭
School	▭
Church	▭
Dam	▭

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	▭
Jurisdictional Stream	JS
Buffer Zone 1	BZ 1
Buffer Zone 2	BZ 2
Flow Arrow	←
Disappearing Stream	→
Spring	○
Wetland	▭
Proposed Lateral, Tail, Head Ditch	▭
False Sump	▭

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○ CSX TRANSPORTATION MILEPOST 35
Switch	□ SWITCH
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	-----
Proposed Right of Way Line with Iron Pin and Cap Marker	○
Proposed Right of Way Line with Concrete or Granite RW Marker	▲
Proposed Control of Access Line with Concrete C/A Marker	○
Existing Control of Access	○
Proposed Control of Access	○
Existing Easement Line	E
Proposed Temporary Construction Easement	E
Proposed Temporary Drainage Easement	TDE
Proposed Permanent Drainage Easement	PDE
Proposed Permanent Drainage / Utility Easement	DUE
Proposed Permanent Utility Easement	PUE
Proposed Temporary Utility Easement	TUE
Proposed Aerial Utility Easement	AUE
Proposed Permanent Easement with Iron Pin and Cap Marker	◆

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	C
Proposed Slope Stakes Fill	F
Proposed Curb Ramp	CR
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	▭
VEGETATION:	
Single Tree	○
Single Shrub	○
Hedge	-----
Woods Line	-----

Orchard	-----
Vineyard	▭ Vineyard

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	CONC
Bridge Wing Wall, Head Wall and End Wall	CONC WW
MINOR:	
Head and End Wall	CONC HW
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	CB
Paved Ditch Gutter	-----
Storm Sewer Manhole	⊕
Storm Sewer	S

UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	⊕
Power Line Tower	⊗
Power Transformer	⊗
U/G Power Cable Hand Hole	○
H-Frame Pole	●
Recorded U/G Power Line	-----
Designated U/G Power Line (S.U.E.*)	-----

TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊕
Telephone Booth	⊕
Telephone Pedestal	⊕
Telephone Cell Tower	⊕
U/G Telephone Cable Hand Hole	○
Recorded U/G Telephone Cable	T
Designated U/G Telephone Cable (S.U.E.*)	T
Recorded U/G Telephone Conduit	TC
Designated U/G Telephone Conduit (S.U.E.*)	TC
Recorded U/G Fiber Optics Cable	T FO
Designated U/G Fiber Optics Cable (S.U.E.*)	T FO

WATER:

Water Manhole	⊕
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
Recorded U/G Water Line	-----
Designated U/G Water Line (S.U.E.*)	-----
Above Ground Water Line	A/G Water

TV:

TV Satellite Dish	⊕
TV Pedestal	⊕
TV Tower	⊗
U/G TV Cable Hand Hole	○
Recorded U/G TV Cable	TV
Designated U/G TV Cable (S.U.E.*)	TV
Recorded U/G Fiber Optic Cable	TV FO
Designated U/G Fiber Optic Cable (S.U.E.*)	TV FO

GAS:

Gas Valve	◇
Gas Meter	⊕
Recorded U/G Gas Line	C
Designated U/G Gas Line (S.U.E.*)	C
Above Ground Gas Line	A/G Gas

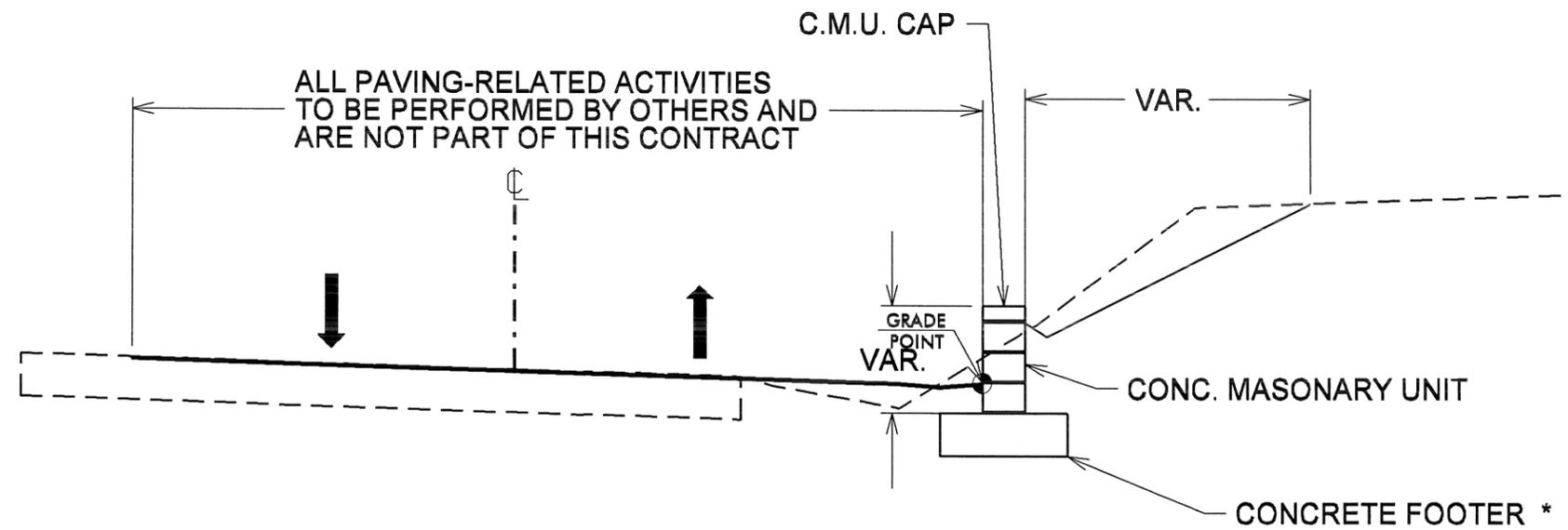
SANITARY SEWER:

Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	SS
Above Ground Sanitary Sewer	A/G Sanitary Sewer
Recorded SS Forced Main Line	RSS
Designated SS Forced Main Line (S.U.E.*)	RSS

MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	⊕
Utility Unknown U/G Line	UTIL
U/G Tank; Water, Gas, Oil	▭
Underground Storage Tank, Approx. Loc.	UST
A/G Tank; Water, Gas, Oil	▭
Geoenvironmental Boring	⊕
U/G Test Hole (S.U.E.*)	○
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

PROJECT REFERENCE NO. 14C.044177	SHEET NO. 2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER



TYPICAL SECTION NO. 1

* NOTE:
EXCAVATION FOR THE FOOTER SHALL
BE NO CLOSER THAN 3' TO THE EXISTING
HOUSE FOUNDATION OR CHIMNEY

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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

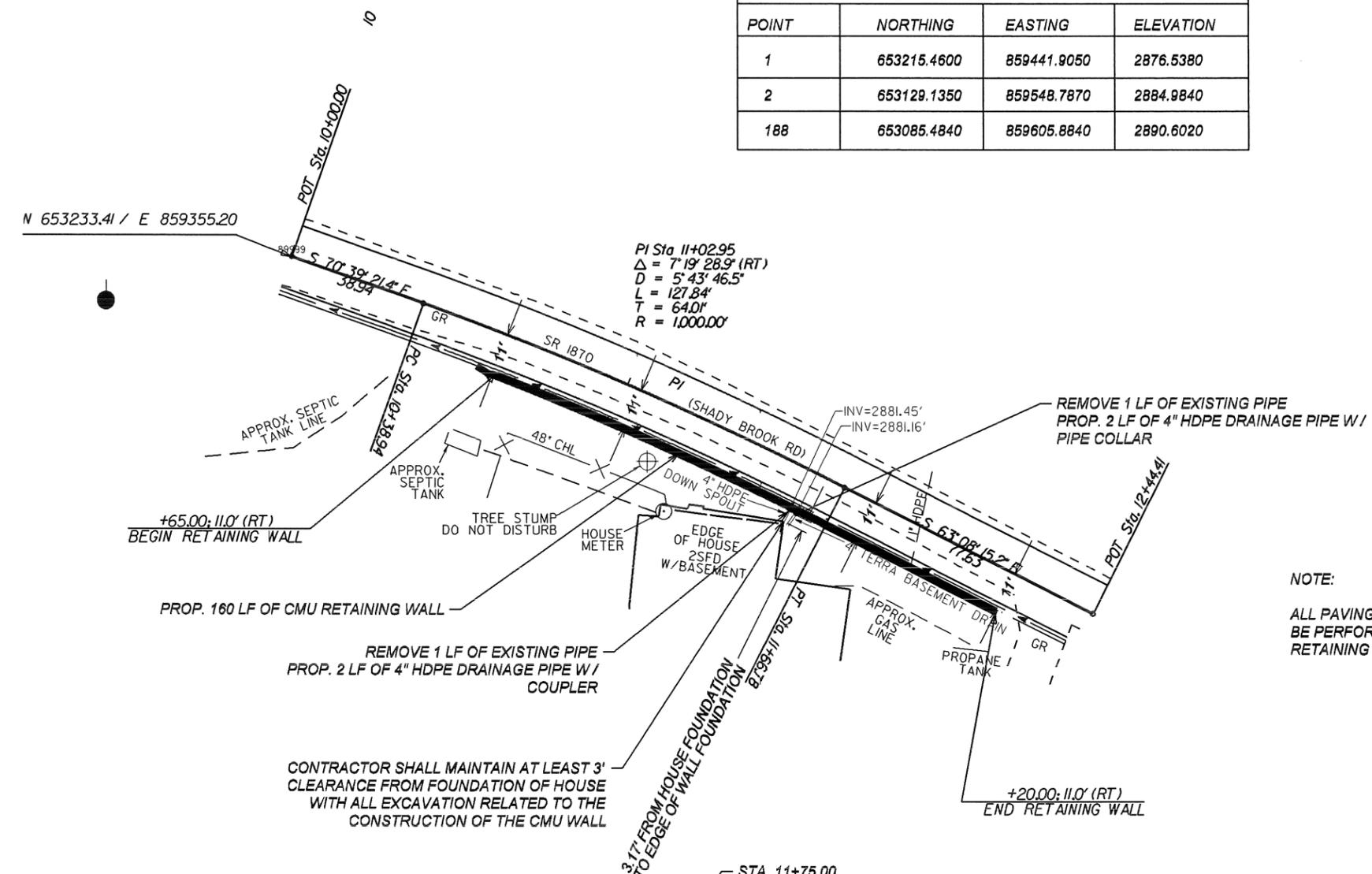
SUMMARY OF QUANTITIES

Line #	Item #	Section #	Item Description	Quantity	Units
1	0000100000-N	800	MOBILIZATION	1.00	LS
2	0063000000-N	SP	GRADING ^ LS	1.00	LS
3	0335000000-E	305	4" DRAINAGE PIPE ^ LF	4.00	LF
4	0995000000-E	340	PIPE REMOVAL ^ LF	2.00	LF
5	2253000000-E	840	PIPE COLLARS ^ CY	0.20	CY
6	4589000000-N	SP	GENERIC TRAFFIC CONTROL ITEM	1.00	LS
7	8847000000-E	SP	GENERIC RETAINING WALL ITEM ^ SF	365.00	SF

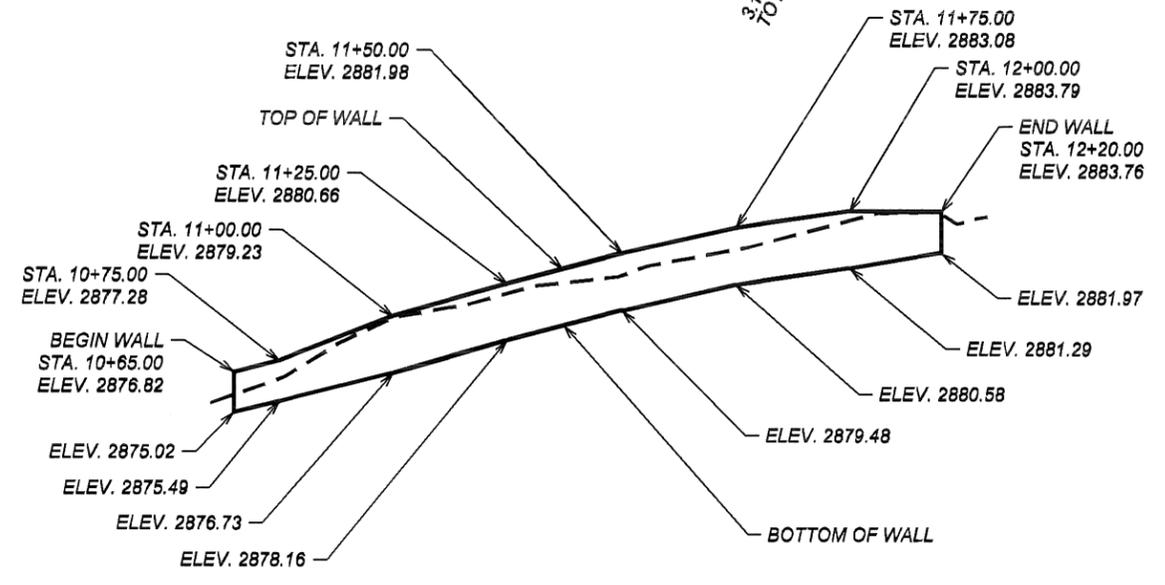
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PROJECT REFERENCE NO.	SHEET NO.
14C044177	4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SURVEY BASE LINE DATA			
POINT	NORTHING	EASTING	ELEVATION
1	653215.4600	859441.9050	2876.5380
2	653129.1350	859548.7870	2884.9840
188	653085.4840	859605.8840	2890.6020



NOTE:
ALL PAVING WORK, SHOWN ON PLANS, IS TO BE PERFORMED BY OTHERS, AFTER THE RETAINING WALL HAS BEEN COMPLETED.



RETAINING WALL ENVELOPE
OFFSET TO FACE OF WALL = 11' (RT)
FOR ENTIRE LENGTH

TOTAL STRUCTURE QUANTITIES		
CONCRETE MASONRY UNIT OR SEGMENTAL GRAVITY RETAINING WALL	365	SQ.FT.

REVISIONS

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NOTES:

- 1) SEE SITE LOCATION AND SURVEY TO DETERMINE TOP OF WALL ELEVATIONS AS DIRECTED BY THE ENGINEER.
- 2) ALL CMU SHALL BE POUR-THROUGH BOND BEAM TYPE UNITS AND GROUTED SOLID PRIOR TO PLACING CAP BLOCKS
- 3) ALL CMU UNITS ARE TO HAVE A WEATHERED APPEARANCE.
- 4) CONTRACTOR IS RESPONSIBLE TO ESTIMATING THE MATERIALS REQUIRED FOR THE PROJECT. ALL REINFORCING STEEL LAPS TO BE 24".
- 5) 3" MINIMUM CONCRETE COVER WHERE CONCRETE IS IN CONTACT WITH EARTH, 2" OTHERWISE.
- 6) TEMPORARY SLOPES FOR CONSTRUCTION OF THE FOOTINGS MAY BE USED AS FOLLOWS (MEASURED FROM THE BACK OF FOOTING):
 0.25:1 UP TO 3 FT
 0.5:1 UP TO 5 FT
 1:1 ABOVE 5 FT
 IF THE CUT SLOPES BECOME UNSTABLE OR BEGIN SLOUGHING, BANK SOIL AGAINST CUT SLOPE AS REQUIRED AND CONTACT DESIGN ENGINEER.

TOTAL STRUCTURE QUANTITIES

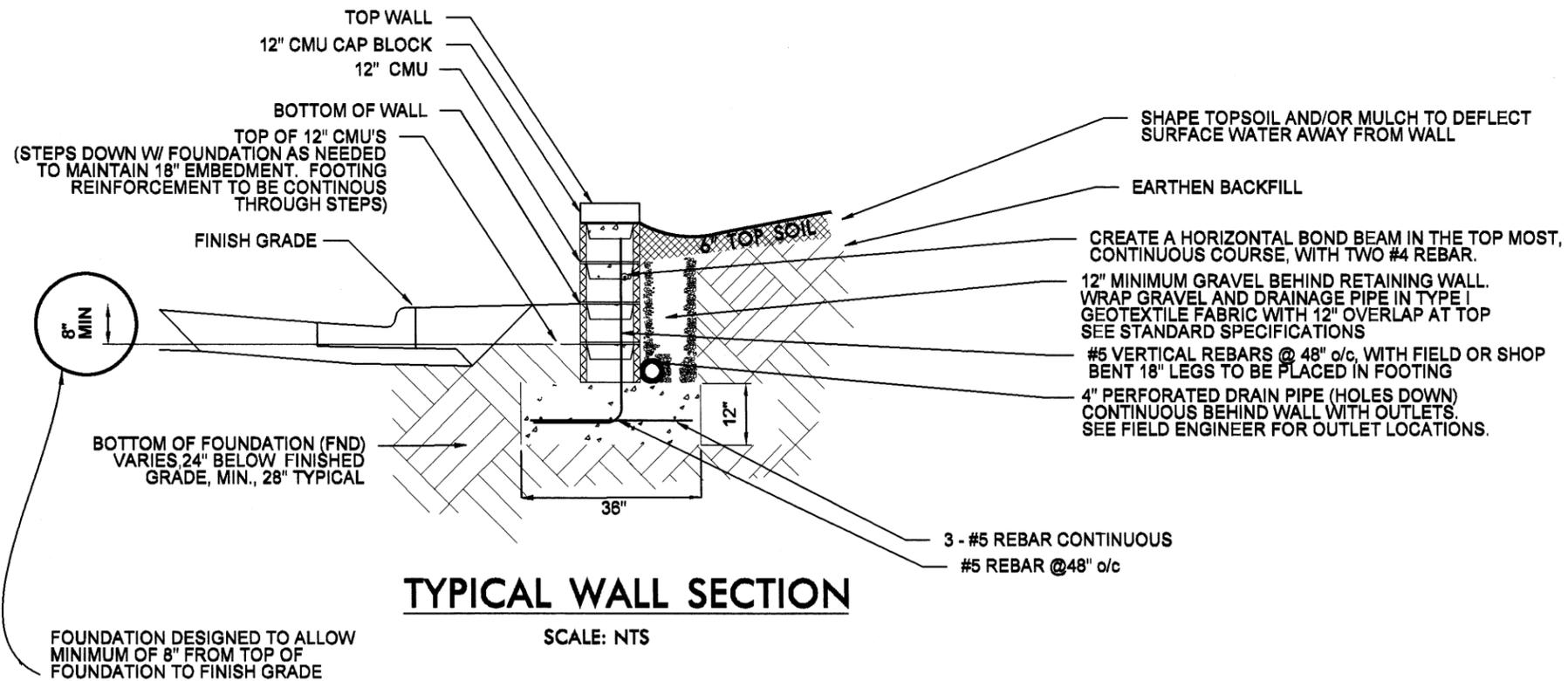
CONCRETE MASONRY UNIT RETAINING WALL 365 SQ.FT.

GEOTECHNICAL ENGINEER

ENGINEER



Signature: S. Clark Date: 4/28/14



PROJECT NO.: 14C.044177
 HAYWOOD COUNTY
 STATION: VARIES
 SHEET 1 OF 2

PREPARED BY: EJS DATE: 10/2013
 REVIEWED BY: SOC DATE: 3/2014

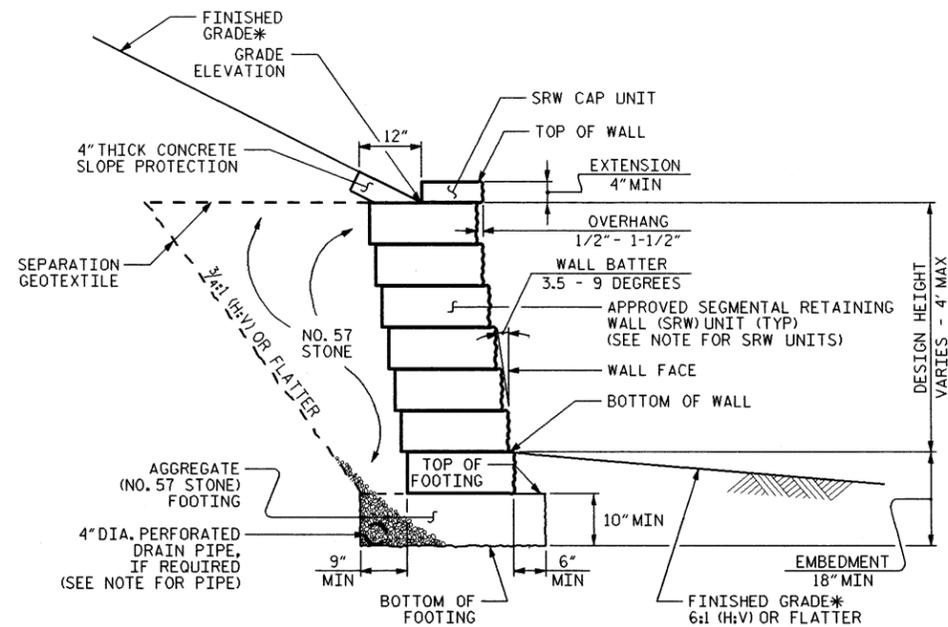
GEOTECHNICAL ENGINEERING UNIT

EASTERN REGIONAL OFFICE
 WESTERN REGIONAL OFFICE
 CONTRACT OFFICE

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

CONCRETE MASONRY UNIT (CMU) RETAINING WALL ADJACENT TO 66 SHADY BROOK ROAD

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS
1			3			
2			4			



STANDARD SEGMENTAL GRAVITY WALL WITH SLOPE

*SEE ROADWAY PLANS FOR FINISHED GRADE DETAILS.

NOTES:

FOR STANDARD SEGMENTAL GRAVITY RETAINING WALLS, SEE SEGMENTAL GRAVITY RETAINING WALLS PROVISION.

FOR STEEL BEAM GUARDRAIL, SEE ROADWAY PLANS AND SECTION 862 OF THE STANDARD SPECIFICATIONS.

DO NOT ATTACH FENCES OR HANDRAILS TO STANDARD SEGMENTAL GRAVITY WALLS.

DO NOT USE STANDARD SEGMENTAL GRAVITY WALLS FOR INTERSTATE HIGHWAY OR RAILROAD PROJECTS.

DO NOT USE STANDARD SEGMENTAL GRAVITY WALLS WHEN SURCHARGE LOADS WILL BE WITHIN 5'-6" OF THE BACK OF SRW CAP UNITS.

DO NOT USE STANDARD SEGMENTAL GRAVITY WALLS WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS BELOW WALLS.

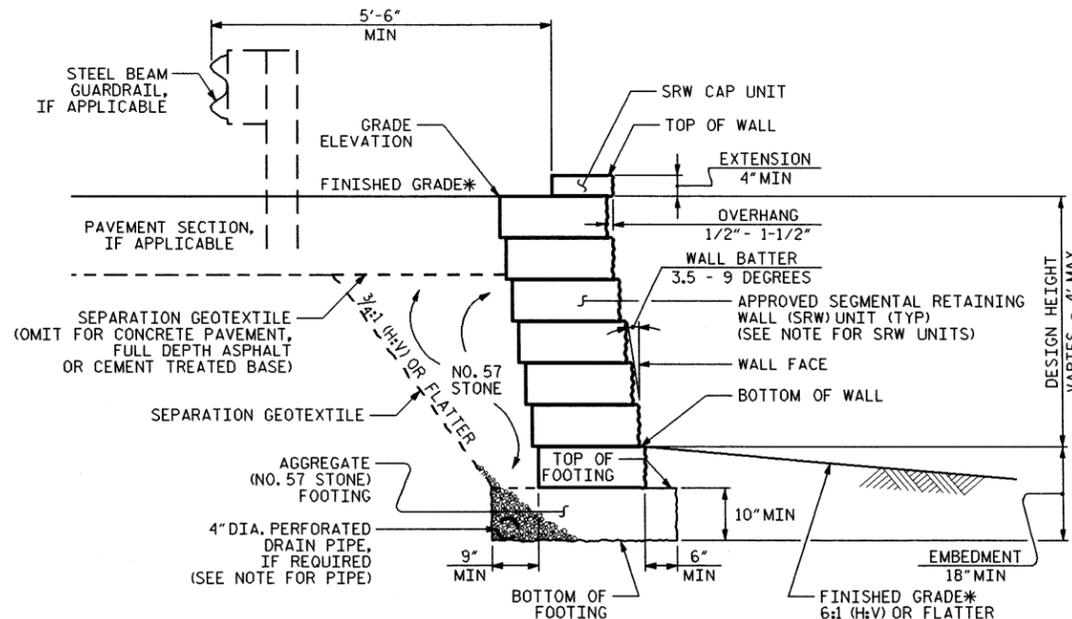
SEGMENTAL RETAINING WALL (SRW) UNITS ARE APPROVED FOR EITHER 2' OR 4' MAXIMUM DESIGN HEIGHTS. FOR DETAILS AND DIMENSIONS OF APPROVED SRW UNITS AND MAXIMUM DESIGN HEIGHTS, SEE connect.ncdot.gov/resources/Geological/Pages/Products.aspx

DO NOT MIX APPROVED SRW UNITS FROM DIFFERENT VENDORS ON THE SAME STANDARD SEGMENTAL GRAVITY WALL. USE THE SAME SIZE APPROVED SRW UNITS FOR EACH WALL SECTION.

BEFORE BEGINNING STANDARD SEGMENTAL GRAVITY WALL CONSTRUCTION, SURVEY WALL LOCATIONS AND SUBMIT WALL PROFILE VIEWS (WALL ENVELOPES) FOR REVIEW. FOR WALL ENVELOPES, INCLUDE BOTTOM OF WALL, EXISTING GROUND AND GRADE ELEVATIONS AND OTHER ELEVATIONS AS NEEDED AT INTERVALS OF 25' OR LESS ALONG WALLS. DO NOT START WALL CONSTRUCTION UNTIL WALL ENVELOPES ARE ACCEPTED.

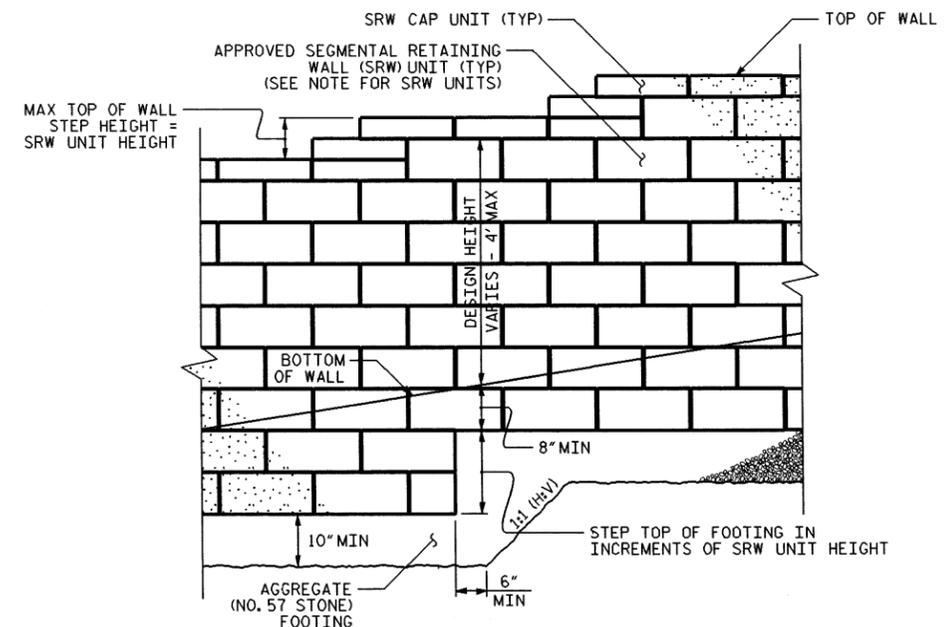
A DRAIN PIPE IS REQUIRED IF GROUNDWATER IS ABOVE BOTTOM OF FOOTINGS.

DO NOT PLACE NO. 57 STONE FOR FOOTINGS UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.



STANDARD SEGMENTAL GRAVITY WALL WITHOUT SLOPE

*SEE ROADWAY PLANS FOR FINISHED GRADE DETAILS.

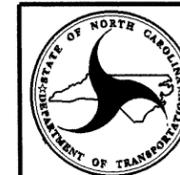


STANDARD SEGMENTAL GRAVITY WALL - PARTIAL ELEVATION

TOTAL STRUCTURE QUANTITIES

SEGMENTAL GRAVITY RETAINING WALL 365 SQ.FT.

PROJECT NO.: 14C.044177
 HAYWOOD COUNTY
 STATION: VARIES
 SHEET OF



GEOTECHNICAL ENGINEERING UNIT
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD DRAWING NO. 453.02

STANDARD SEGMENTAL GRAVITY RETAINING WALL

DATE: 11-18-13

SHEET NO.
TOTAL SHEETS

8/17/99

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REVISIONS

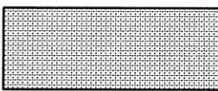
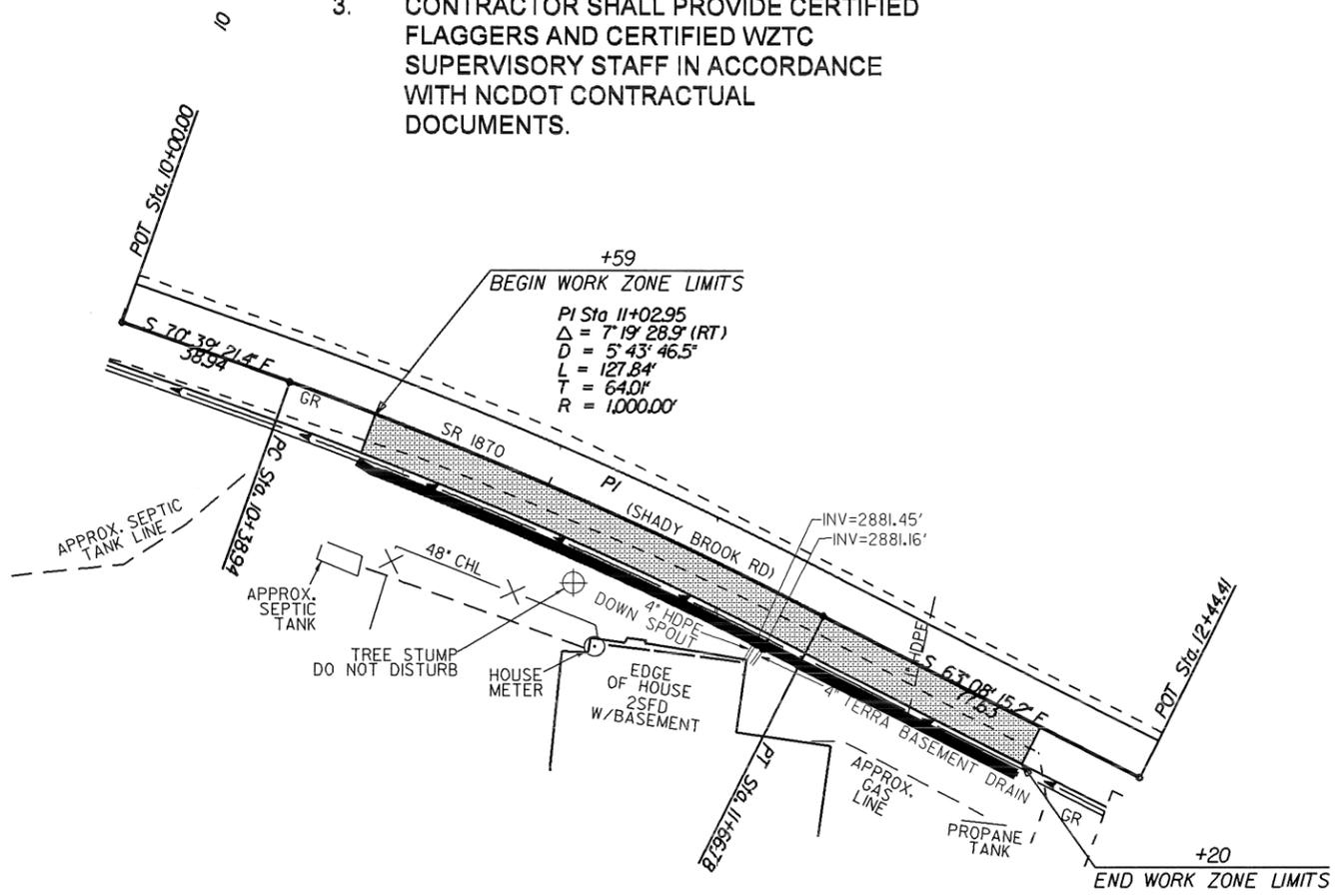


TRAFFIC CONTROL PLAN

FOR ALL PHASES OF WALL CONSTRUCTION

1. ALL WORK ZONES SHALL BE ESTABLISHED AND MAINTAINED IN ACCORDANCE WITH NCDOT CONTRACTUAL DOCUMENTS.
2. CONTRACTOR SHALL ESTABLISH AND MAINTAIN A LANE CLOSURE DURING ALL WORK ACTIVITIES RELATED TO THE CONSTRUCTION OF THE PROPOSED RETAINING WALL.
3. CONTRACTOR SHALL PROVIDE CERTIFIED FLAGGERS AND CERTIFIED WZTC SUPERVISORY STAFF IN ACCORDANCE WITH NCDOT CONTRACTUAL DOCUMENTS.

PROJECT REFERENCE NO. 14C.044177	SHEET NO. TCP-1
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

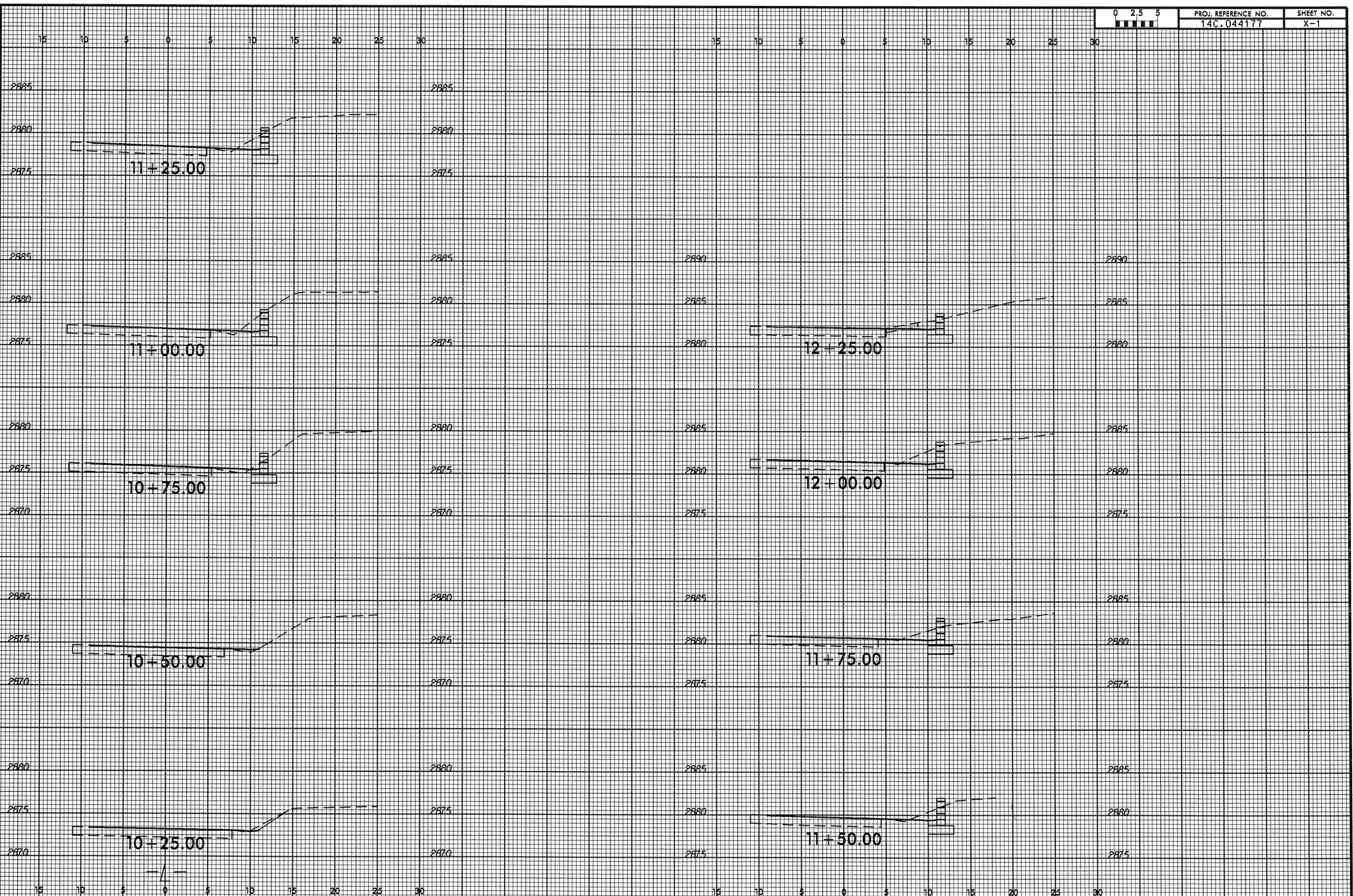


ANTICIPATED WORK ZONE AREA

8/23/99



PROJ. REFERENCE NO. 14C.044177	SHEET NO. X-1
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