TIP PROJECT: W-5601AC

CONTRACT: 50138.3.30

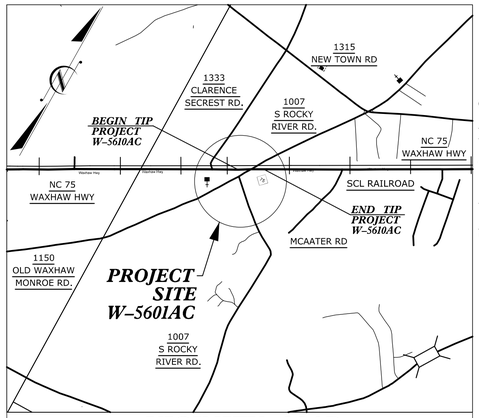
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5601AC	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
50138.1.30	HSIP-0075 (4)	PE
50138.2.30	HSIP-0075 (4)	RW UTIL.
50138.3.30	HSIP-0075 (4)	CONST.

UNION COUNTY

See Sheet 1-A For Index of Sheets



VICINITY MAP

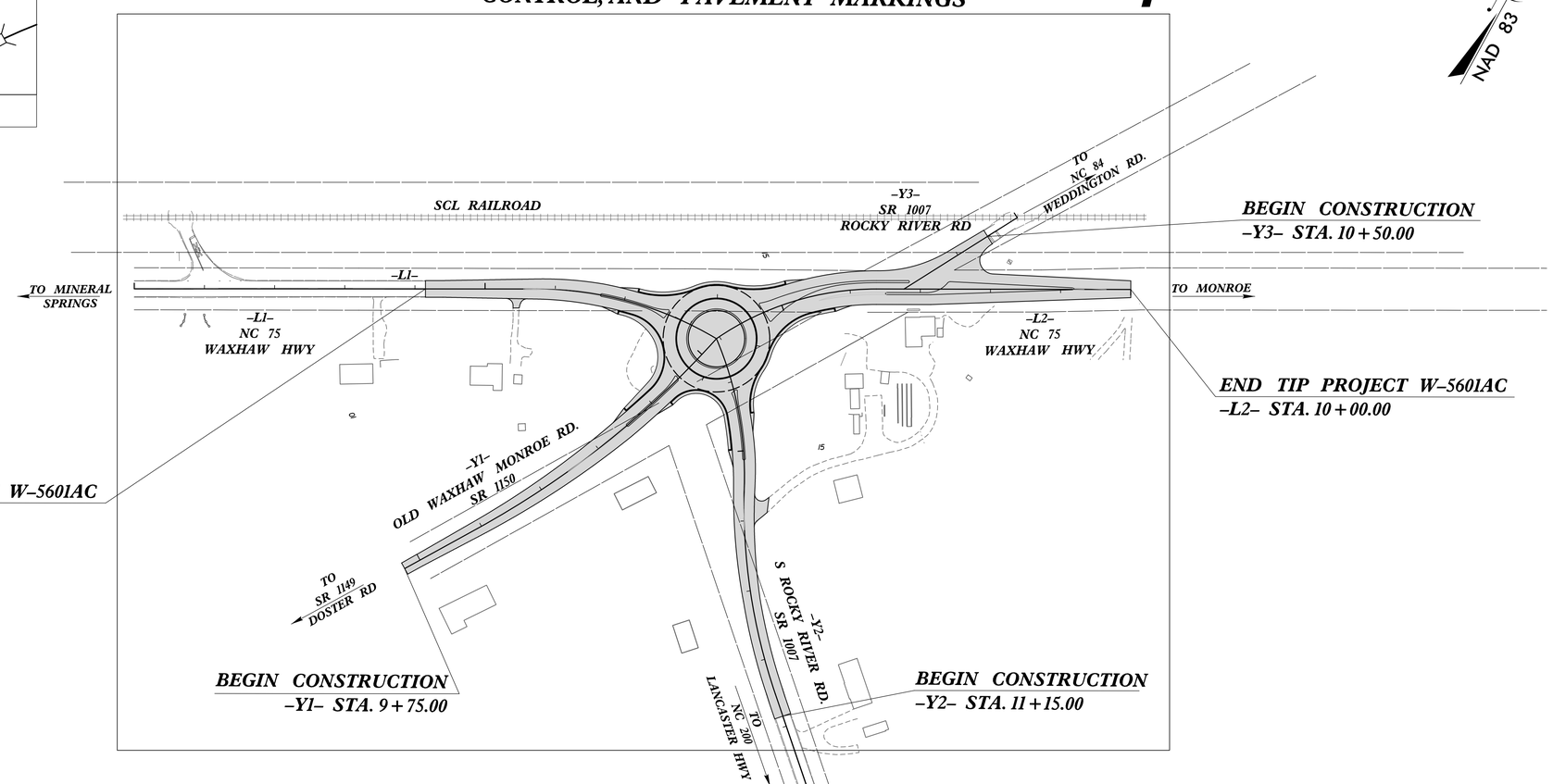
FINAL PLANS
(11-10-2017)

LOCATION: INTERSECTIONS OF WAXHAW HWY (NC 75) AND S ROCKY RIVER RD (SR 1007) AND OLD WAXHAW MONROE RD (SR 1150)

TYPE OF WORK: GRADING, PAVING, DRAINAGE, EROSION CONTROL, AND PAVEMENT MARKINGS

4

NAD 83



CONTACT: TIMOTHY M. BOLAND, PE
DIVISION OPERATIONS ENGINEER; NCDOT - DIVISION 10

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2013 = 7,800
ADT 2020 = 13,260
DHV = DHV %
T = 7.8 %
V = 45 MPH

FUNC CLASS =
RURAL
COLLECTOR

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT W-5601AC = 0.398 MILES
TOTAL LENGTH TIP PROJECT W-5601AC = 0.398 MILES

Prepared In the Office of:
WSP
1001 Morehead Square Dr., Suite 610, Charlotte NC, 28203
NC LIC NO. F-0165

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
APRIL 17, 2017

LETTING DATE:
JANUARY 16, 2019

JENNIFER L STARNES, PE
PROJECT ENGINEER

HOLLY CHRISTENBURY, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 27876 ENGINEER RANA STANSELL

Rana Stansell
SIGNATURE:
P.E. 12-13-2018

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 30882 ENGINEER JENNIFER L. STARNES

Jennifer L Starnes
SIGNATURE:
P.E. 12-13-2018

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

09/08/99

12/13/2018
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starnesjl

PROJECT REFERENCE NO.	SHEET NO.
W-5601AC	1-A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 40882 ENGINEER JENNIFER L. STARNES

DocuSigned by:
Jennifer L. Starnes
DocuSigned by:
12-13-2018

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GENERAL NOTES: 2018 SPECIFICATIONS

EFFECTIVE: 01-16-2018
REVISED:

GRADING AND SURFACING OR RESURFACING AND WIDENING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED 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.

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01

SIDE ROADS:

THE CONTRACTOR WILL BE REQUIRED TO DO ALL NECESSARY WORK TO PROVIDE SUITABLE CONNECTIONS WITH ALL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PARTICULAR ITEMS INVOLVED.

DRIVEWAYS:

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.02 USING 3 FT RADII OR RADII AS SHOWN ON THE PLANS. LOCATIONS OF DRIVES WILL BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

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

UTILITY	OWNER
POWER	DUKE ENERGY
TELEPHONE	FRONTIER COMMUNICATIONS
WATER	UNION COUNTY

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.

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
1-C	SURVEY CONTROL SHEET
2 THRU 2-B	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
2-C	ROUNDABOUT LAYOUT
2-D	HORIZONTAL LAYOUT
2-E	PAVEMENT REMOVAL
2-F	RIGHT OF WAY
2-G	OMITTED
2H-1	STOCKPILE CONTAINMENT DETAIL
3-B	MISCELLANEOUS SUMMARIES
3D-1	DRAINAGE SUMMARY SHEET
4	PLAN SHEETS
5 & 5-A	PROFILE SHEETS
TMP-1 THRU TMP-11	TRANSPORTATION MANAGEMENT PLAN
PMP-1	PAVEMENT MARKING & SIGNING PLAN
EC-1 THRU EC-5	EROSION CONTROL PLANS
UC-1 & D-1	UTILITY CONSTRUCTION PLAN
X-1 THRU X-12	CROSS-SECTIONS

EFF. 01-16-2018
REV.

2018 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, 2018 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
225.02	Guide for Grading Subgrade – Secondary and Local
225.04	Method of Obtaining Superelevation – Two Lane Pavement
225.06	Method of Grading Sight Distance at Intersections
DIVISION 3 – PIPE CULVERTS	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
DIVISION 5 – SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction – High Side of Superelevated Curve – Method I
DIVISION 8 – INCIDENTALS	
846.01	Concrete Curb, Gutter and Curb & Gutter
848.02	Driveway Turnout – Radius Type
852.01	Concrete Islands
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class "B" Rip Rap

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starnes

PROJECT REFERENCE NO.	SHEET NO.
W-5601AC	1-B

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 — EIP
- Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- 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 — FLOW
- False Sump

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — 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 — RW
- Proposed Right of Way Line with Iron Pin and Cap Marker — RW
- Proposed Right of Way Line with Concrete or Granite R/W Marker — RW
- Proposed Control of Access Line with Concrete C/A Marker — CA
- Existing Control of Access — CA
- Proposed Control of Access — CA
- 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 — S
- Storm Sewer — S

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- H-Frame Pole
- Recorded U/G Power Line — P
- Designated U/G Power Line (S.U.E.*) — P

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Booth
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- 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 — W
- 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 — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- 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 — G
- Designated U/G Gas Line (S.U.E.*) — G
- 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 — FSS
- Designated SS Forced Main Line (S.U.E.*) — FSS

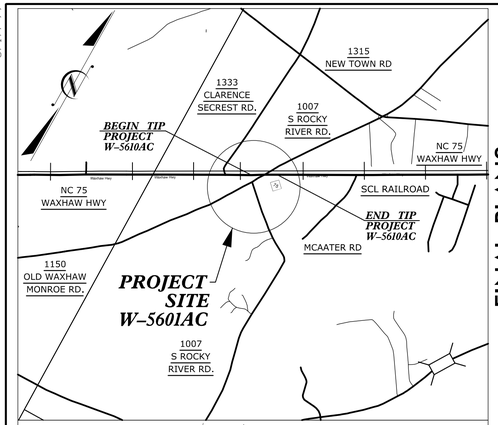
MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line — ?UTL
- 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.

SURVEY CONTROL SHEET W-5601AC

PROJECT REFERENCE NO.	SHEET NO.
W-5601AC	1-C
SURVEYOR	

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

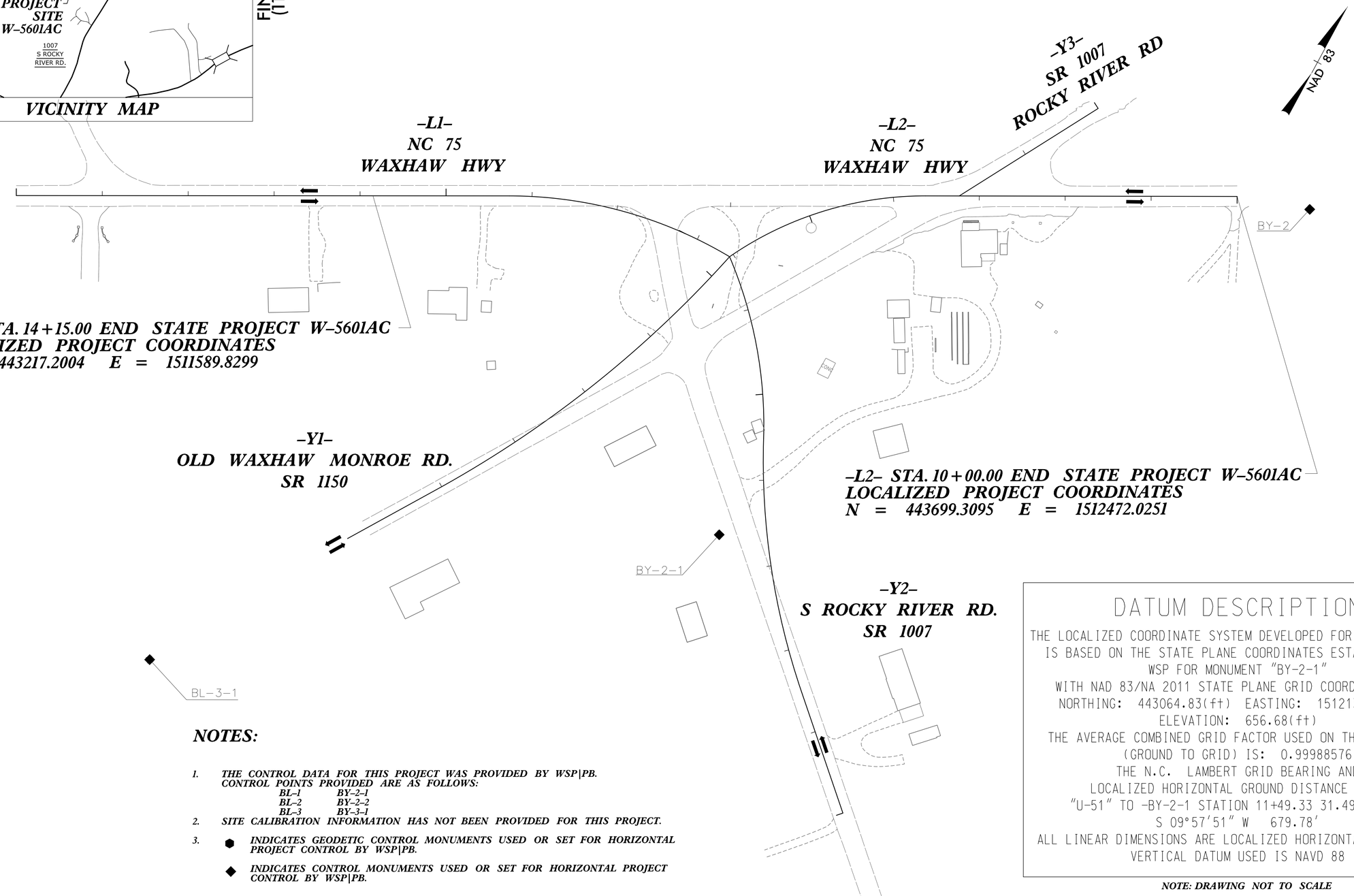


VICINITY MAP

FINAL PLANS
(11-10-2017)

BL (-BL- POINTS REFERENCED TO EXISTING ALIGNMENTS)

POINT	DESC.	NORTH	EAST	ELEVATION	EL STATION	OFFSET
1	-BL-1	442917.8498	1511074.7599	661.50		OUTSIDE PROJECT LIMITS
2	-BL-2	443726.7093	1512553.3458	655.43		OUTSIDE PROJECT LIMITS
3	-BL-3	443943.9514	1512952.0225	658.97		OUTSIDE PROJECT LIMITS
4	-BY-2-1	443064.8325	1512132.4895	656.68	11+49.33	31.49 LT
5	-BY-2-2	442586.3890	1512724.2529	652.34		OUTSIDE PROJECT LIMITS
6	-BY-3-1	442619.2172	1511620.9984	665.08		OUTSIDE PROJECT LIMITS



NOTES:

1. THE CONTROL DATA FOR THIS PROJECT WAS PROVIDED BY WSP|PB. CONTROL POINTS PROVIDED ARE AS FOLLOWS:
   BL-1 BY-2-1
   BL-2 BY-2-2
   BL-3 BY-3-1
2. SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT.
3. ⬢ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY WSP|PB.
   ◆ INDICATES CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY WSP|PB.

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY WSP FOR MONUMENT "BY-2-1"
WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF
NORTHING: 443064.83(ft) EASTING: 1512132.49(ft)
ELEVATION: 656.68(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99988576
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "U-51" TO -BY-2-1 STATION 11+49.33 31.49 LT. IS
S 09°57'51" W 679.78'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

8/17/99

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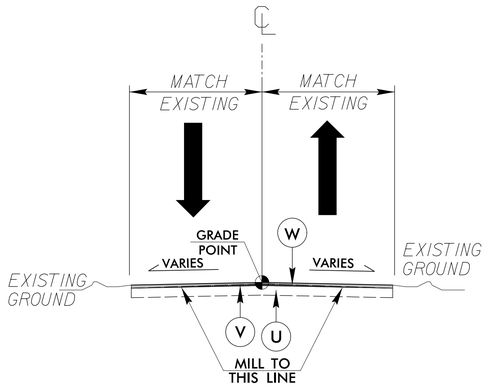
pgr11109

PROJECT REFERENCE NO.	SHEET NO.
W-5601AC	2
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

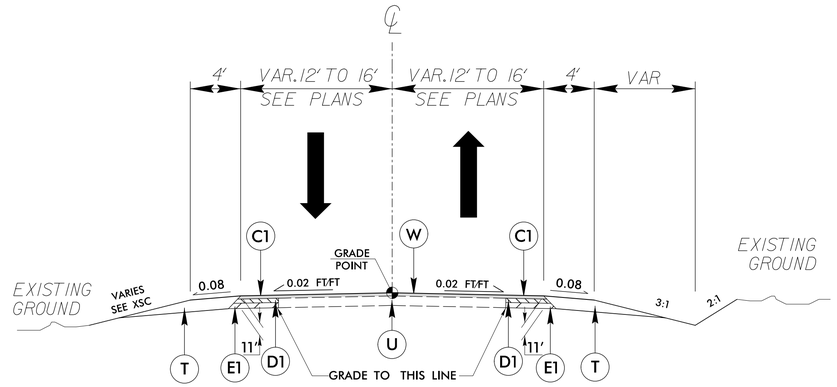
DOCUSIGNED BY: NORTH CAROLINA PROFESSIONAL SEAL 30882 ENGINEER 834F6E84B06E43... DOCUSIGNED BY: 7/18/2019 4:39:11 PM PDT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



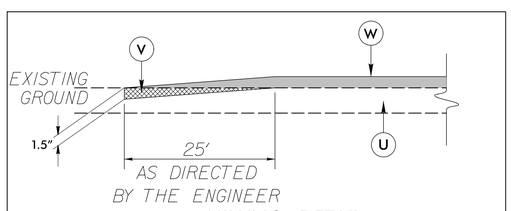
TYPICAL SECTION NO. 1

–L1– STA. 14+15 TO STA. 14+40
–L2– STA. 10+00 TO STA. 10+25
–Y1– STA. 9+75 TO STA. 10+00
–Y2– STA. 11+15 TO STA. 11+40
–Y3– STA. 10+50 TO STA. 10+75

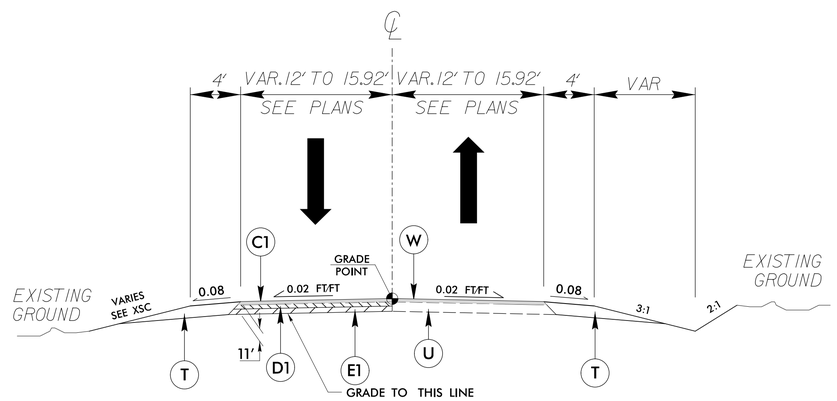


TYPICAL SECTION NO. 2

–L1– STA. 14+40.00 TO STA. 16+65.00
–Y1– STA. 10+00.00 TO STA. 11+96.93
–L2– STA. 10+25.00 TO STA. 10+80.82

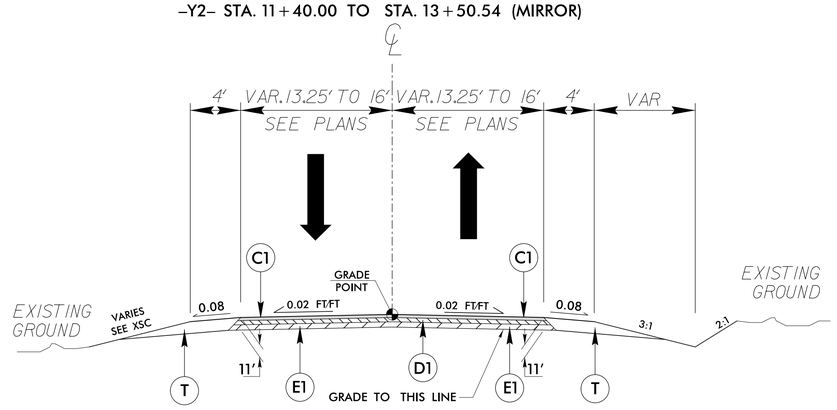


MILLING DETAIL
For Profile Connections
Tying Proposed Pavements to Existing Pavements



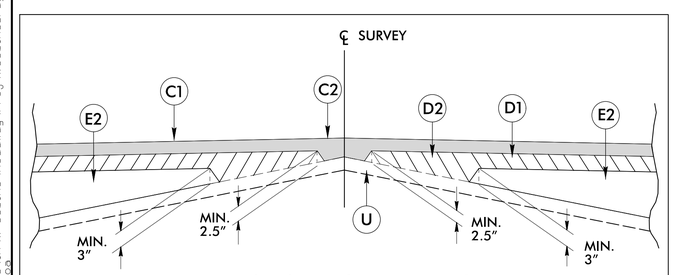
TYPICAL SECTION NO. 3

–Y1– STA. 11+96.93 TO STA. 13+45.97
–Y2– STA. 11+40.00 TO STA. 13+50.54 (MIRROR)



TYPICAL SECTION NO. 4

–Y1– STA. 13+45.97 TO STA. 13+52.00
–Y2– STA. 13+50.54 TO STA. 14+87.00



Standard Wedging Detail

PAVEMENT SCHEDULE

A1	7" TRUCK MOUNTABLE CONCRETE ISLAND (CLASS AA CONCRETE).
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
R1	9"x9" CONCRETE CURB AND GUTTER (CLASS AA CONCRETE).
R2	2'-6" CONCRETE CURB AND GUTTER (MODIFIED)
R3	5" MONOLITHIC CONCRETE ISLAND
R4	7" TRUCK MOUNTABLE CONC. APRON (CLASS AA CONC. BLACKTINT)
R5	9"x9" C & G (CLASS AA CONC. BLACKTINT)
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V	MILLING BITUMINOUS PAVEMENT. VARIABLE DEPTH.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL)

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

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7/18/2019
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PROJECT REFERENCE NO.	SHEET NO.
W-5601AC	2-A
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

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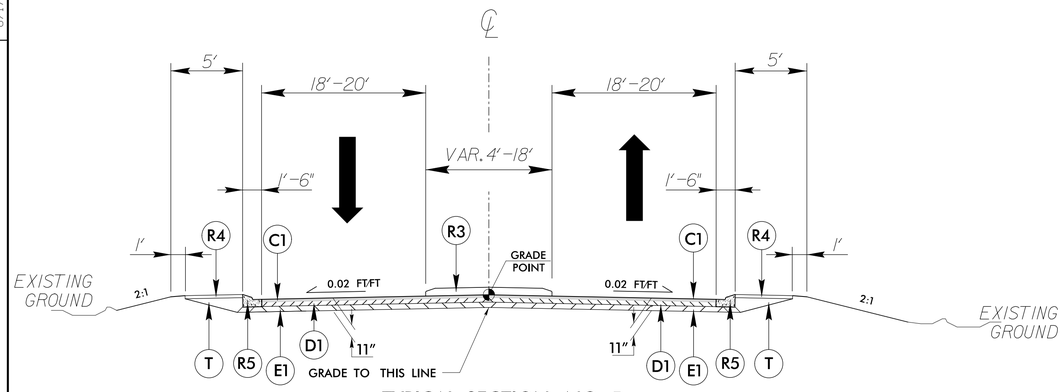
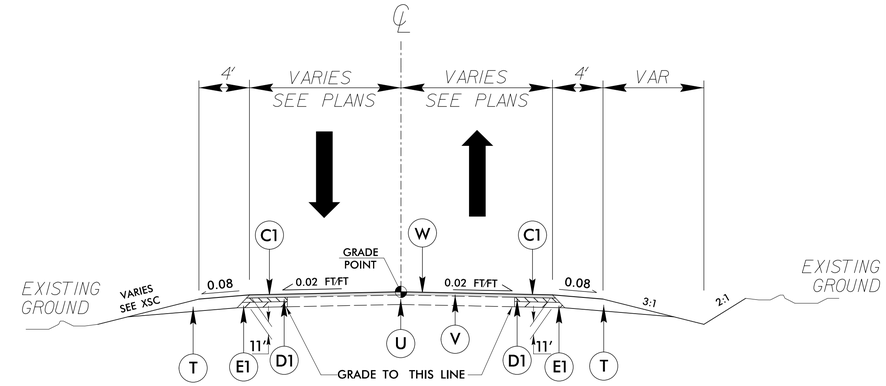
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



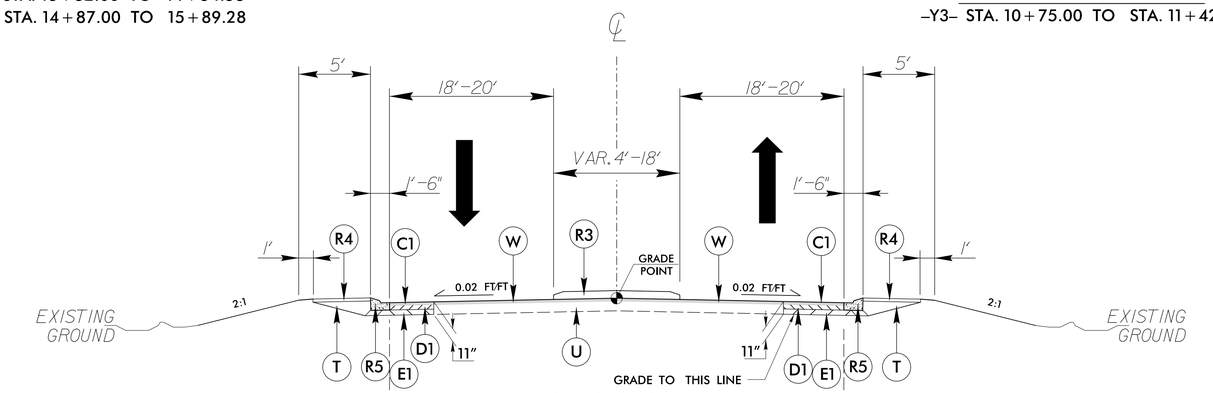
TYPICAL SECTION NO. 5

–Y1– STA. 13+52.00 TO 14+54.58
–Y2– STA. 14+87.00 TO 15+89.28



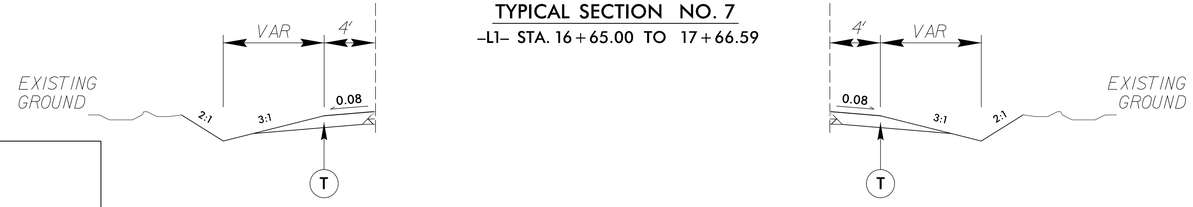
TYPICAL SECTION NO. 6

–Y3– STA. 10+75.00 TO STA. 11+42.49



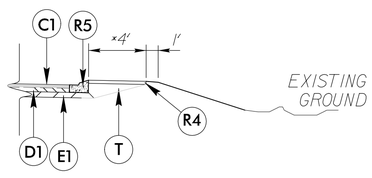
TYPICAL SECTION NO. 7

–L1– STA. 16+65.00 TO 17+66.59



PAVEMENT SCHEDULE

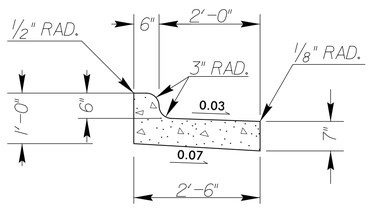
A1	7" TMCI (AA)
C1	3" S9.5C
D1	4" I19.5C
E1	4" B25.0C
R1	9"x9" C & G (AA)
R2	2'-6" C & G (MODIFIED)
R3	5" MCI
R4	7" CONC. APRON CL. AA BLACKTINT
R5	9"x9" C & G CL. AA BLACKTINT
T	EARTH MATERIAL
U	EXIST. PAVEMENT
V	MILLING
W	WEDGING

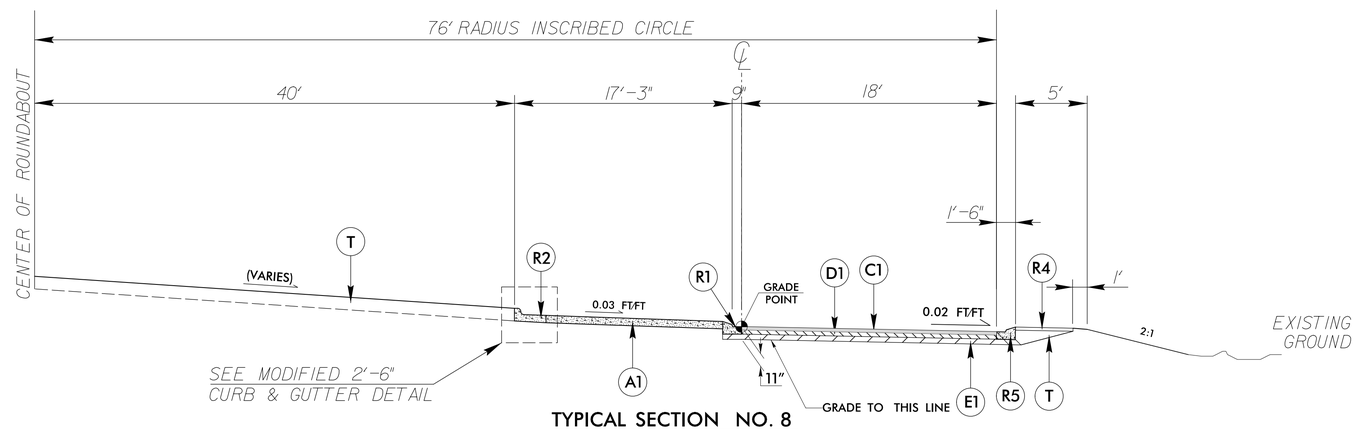


Detail Showing Concrete Apron

*NOTE: TYPICAL 4' WIDE CONC. APRON OR AS SHOWN ON THE PLANS.

MODIFIED 2'-6" CURB & GUTTER DETAIL





TYPICAL SECTION NO. 8

–L1– & –L2– WAXHAW RD. (ROUNDABOUT)
–Y1– OLD WAXHAW RD.
–Y2– ROCKY RIVER RD.

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PROJECT REFERENCE NO.	SHEET NO.
W-5601AC	2-B
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA
PROFESSIONAL SEAL
30882
ENGINEER
JENNIFER L. STARNES
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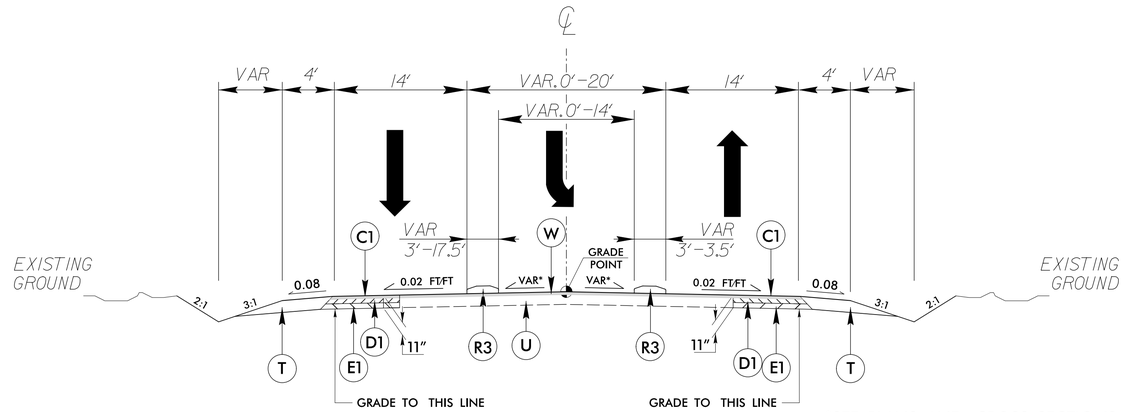
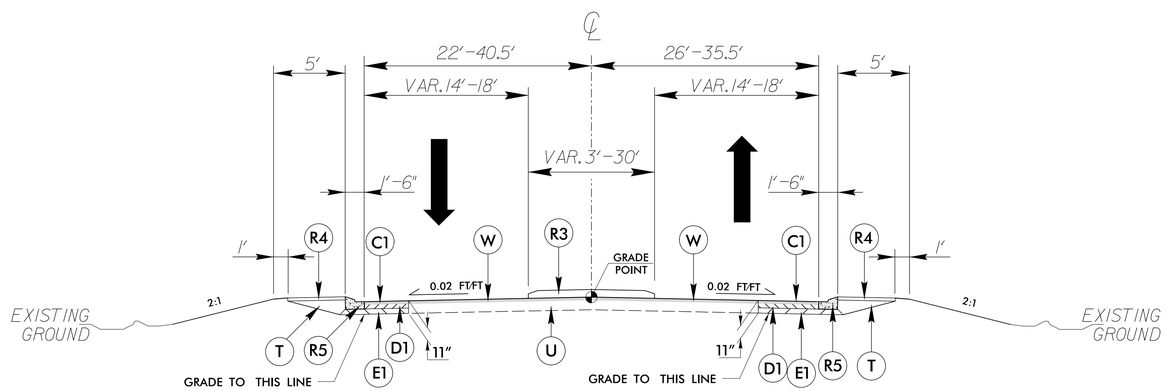


*SEE PLANS AND CROSS-SECTIONS FOR CROSS SLOPES

TYPICAL SECTION NO. 9

-L2- STA. 10+25.00 TO 14+25.00



TYPICAL SECTION NO. 10

-L2- STA. 14+25.00 TO 15+28.83

PAVEMENT SCHEDULE	
C1	3" S9.5C
D1	4" I19.5C
E1	4" B25.0C
R3	5" MCI
R4	7" CONC. APRON CL. AA BLACKTINT
R5	9"x9" C & G CL. AA BLACKTINT
T	EARTH MATERIAL
U	EXIST. PAVEMENT
V	MILLING
W	WEDGING

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W-5601AC	2-C
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 30882 ENGINEER JENNIFER L. STARNES

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NOTE: SEE SHEET 4 FOR COMPLETE PLAN VIEW.

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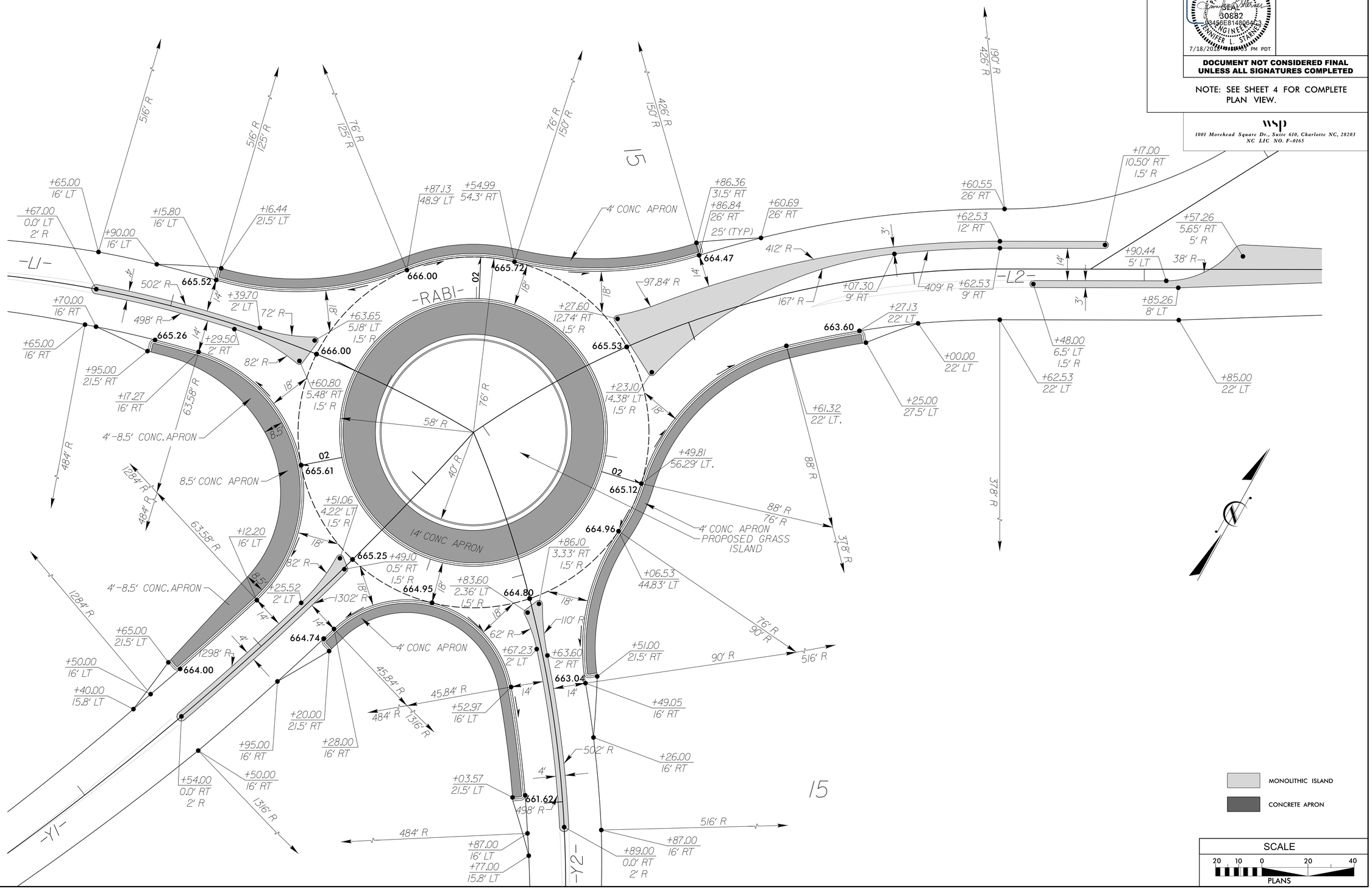
NC LIC NO. F-0165

ROUNDABOUT LAYOUT



REVISIONS

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PROJECT REFERENCE NO.	SHEET NO.
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R/W SHEET NO.	

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NC LIC NO. F-0165

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 60882 ENGINEER
JENNIFER L. STARNES
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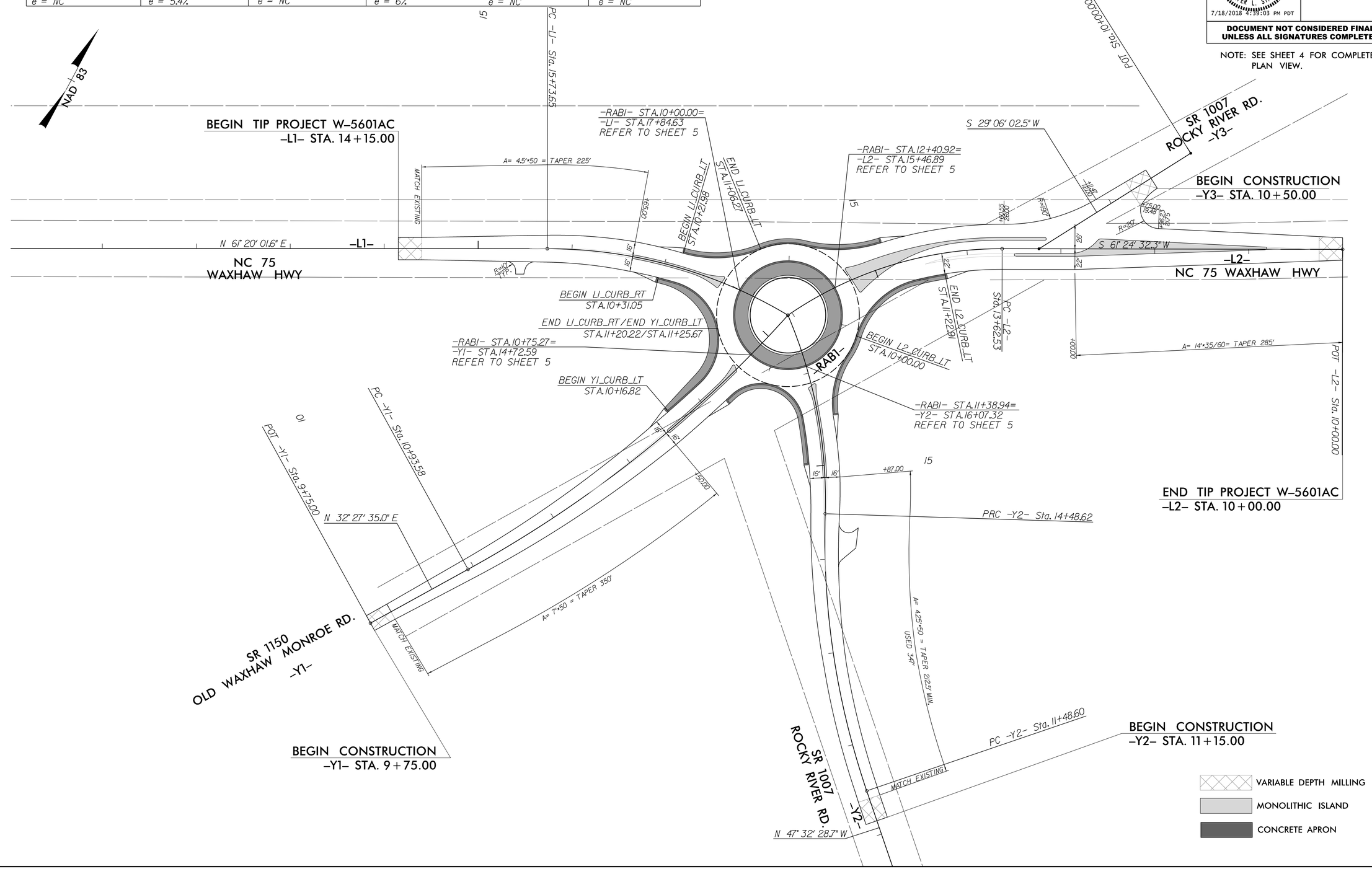
NOTE: SEE SHEET 4 FOR COMPLETE PLAN VIEW.

HORIZONTAL LAYOUT

CURVE DATA				
-L1-	-Y1-	-L2-	-Y2-	-Y3-
PI Sta 17+11.49 △ = 30° 49' 35.9" (RT) D = 11° 27' 33.0" L = 269.01' T = 137.85' R = 500.00' DS = 25 MPH e = NC	PI Sta 13+14.17 △ = 19° 15' 38.5" (LT) D = 4° 24' 26.5" L = 437.01' T = 220.59' R = 1,300.00' DS = 50 MPH e = 5.4%	PI Sta 14+87.59 △ = 34° 43' 24.7" (LT) D = 14° 19' 26.2" L = 242.42' T = 125.06' R = 400.00' DS = 25 MPH e = NC	PI Sta 13+00.25 △ = 20° 38' 09.3" (RT) D = 6° 52' 41.7" L = 300.02' T = 151.65' R = 833.00' DS = 50 MPH e = 6% PI Sta 15+58.72 △ = 24° 50' 09.6" (LT) D = 11° 27' 33.0" L = 216.74' T = 110.10' R = 500.00' DS = 25 MPH e = NC	PI Sta 11+17.16 △ = 57° 41' 29.6" (LT) D = 114° 35' 29.6" L = 50.35' T = 27.54' R = 50.00' DS = 25 MPH e = NC



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PROJECT REFERENCE NO.	SHEET NO.
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R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 30882 ENGINEER JENNIFER L. STARKS

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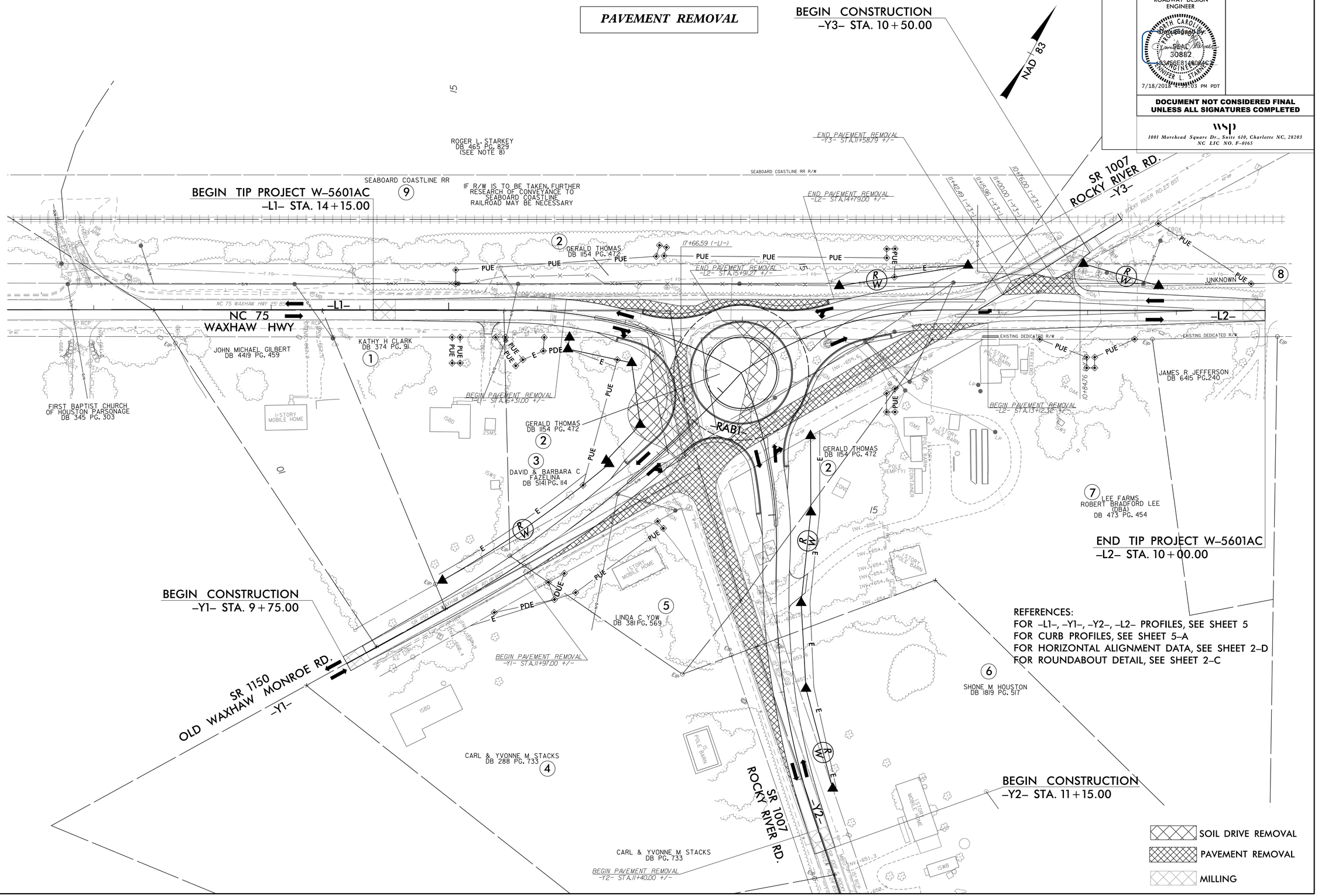
PAVEMENT REMOVAL



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PROJECT REFERENCE NO.	SHEET NO.
W-5601AC	2-F
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 60882 ENGINEER JENNIFER L. STANNEK

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Jennifer L. Stannek
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1001 Morehead Square Dr., Suite 610, Charlotte NC, 28203
NC LIC NO. F-0165

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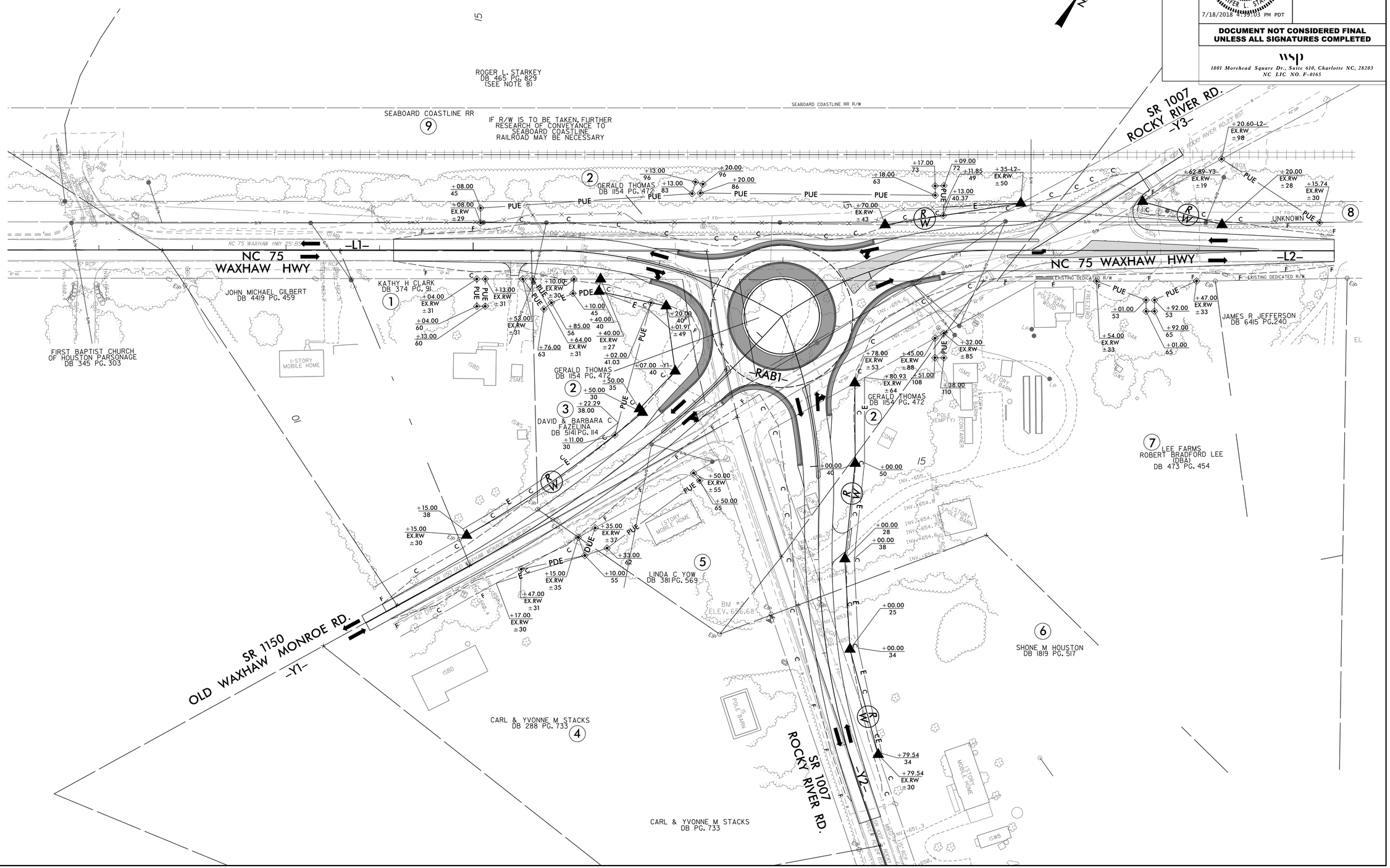
RIGHT-OF-WAY



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PROJECT REFERENCE NO.	SHEET
W-5601AC	2H-1

GEOENVIRONMENTAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 31499 ENGINEER CYRUS F. PARKER

DocuSigned by: Cyrus Parker 1/24/2018
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SIGNATURE DATE

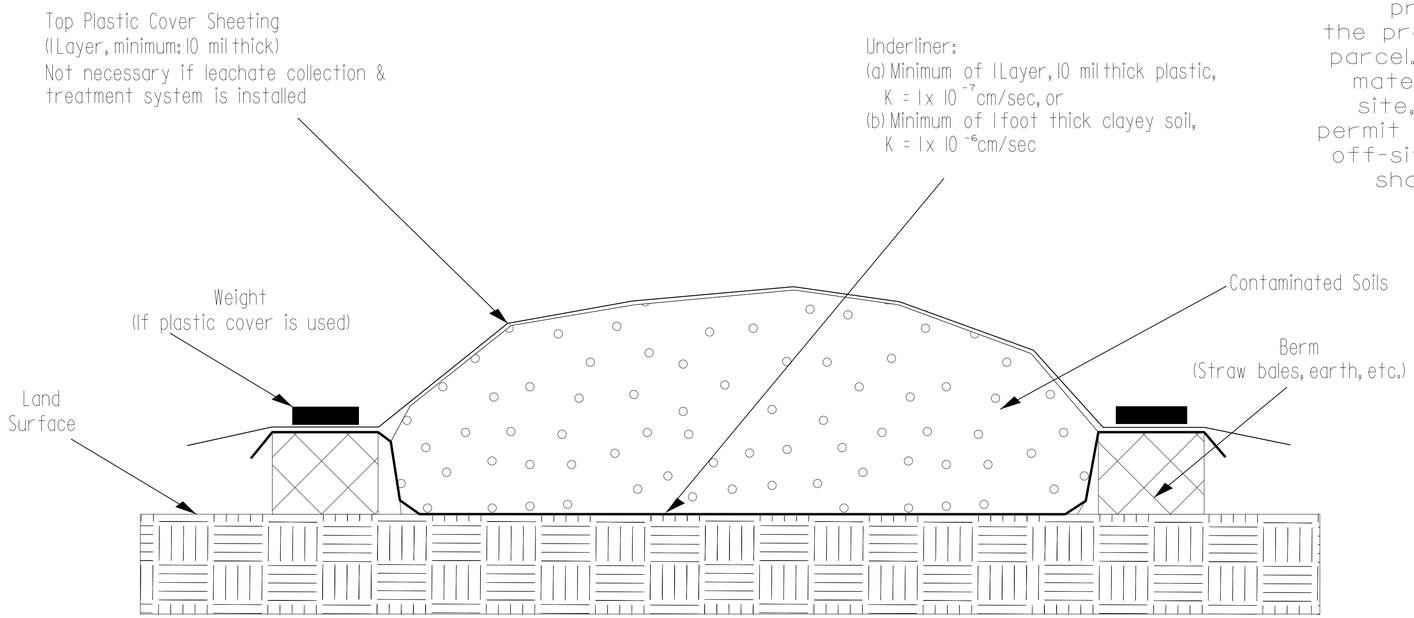
ENGINEER

SIGNATURE DATE

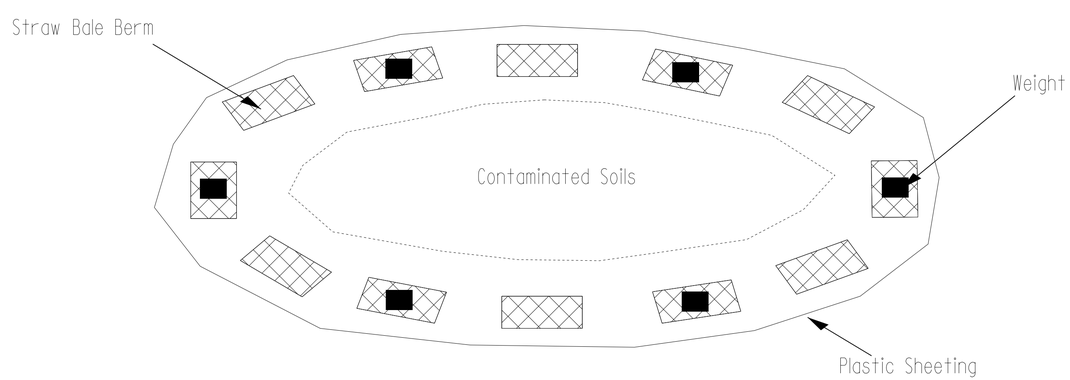
Detail for Temporary Containment of Contaminated Soil

Cross-Section View

NOTE:
The Contractor shall stockpile all contaminated soil excavated from a property in a location within the property boundaries of the source parcel. If the volume of contaminated material exceeds available space on site, the Contractor shall obtain a permit from the NCDEQ UST Section for off-site temporary storage. Stockpile shall be removed within 45 days.



Map View



PREPARED BY:	DATE:
REVIEWED BY:	DATE:

GEOTECHNICAL ENGINEERING UNIT

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ENGINEERING

☐ EASTERN REGIONAL OFFICE
☐ WESTERN REGIONAL OFFICE
☒ CONTRACT OFFICE

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STOCKPILE CONTAINMENT DETAIL

REVISIONS

NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

COMPUTED BY: HEC DATE: 4-20-2016
CHECKED BY: DATE:

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
W-5601AC	3-A

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RIGHT OF WAY AREA DATA

PARCEL NO.	PROPERTY OWNERS NAMES	TOTAL ACREAGE	TOTAL RIGHT OF WAY AREA TAKEN	AREA REMAINING RT.	AREA REMAINING LT.	TEMP. CONST. EASE.	PERM. DRAIN. EASE.	AERIAL UTL. EASE.	PERM. UTL. EASE.
1	KATHY H CLARK		129.20 SF			727.20 SF			336.92 SF
2	GERALD THOMAS		19106.09 SF			1118.91 SF			54.07 SF
3	DAVID & BARBARA C FAZELINA		7929.75 SF			3291.63 SF	397.33 SF		4150.31 SF
4	CARL & YVONNE M STACKS					312.23 SF	793.77 SF		
5	LINDA C YOW						126.28 SF		2376.11 SF
6	SHONE M HOUSTON		1493.90 SF			1382.13 SF			
7	LEE FARMS ROBERT BRADFORD LEE		4379.04 SF			1439.92 SF			1310.95 SF
8	UNKNOWN		1651.26 SF			1330.08 SF			6629.61 SF
9	SEABOARD COASTLINE RR							3645.71 SF	

PAVEMENT REMOVAL SUMMARY

LINE	STATION	STATION	LOCATION LT/RT/CL	YD²
-Y1/Y2-	11+97 +/-	11+40 +/-	RT/LT	1297.92 SY
-L2-	13+12 +/-	15+90 +/-	RT	469.67 SY
-L1/L2-	16+31 +/-	14+79 +/-	LT/RT	381.53 SY
-Y3-	10+75 +/-	11+59 +/-	RT/LT	166.03 SY
			TOTAL:	2,315.15 SY
			SAY:	2,320 SY

SUMMARY OF EARTHWORK

LINE	STATION	STATION	UNCL. EXCAV. (CY)	EMBANK. +20% (CY)	BORROW (CY)	WASTE (CY)
L1	14+40.00	17+66.59	113	180	67	
L2	10+00.00	15+28.83	355	180		175
Y1	10+00.00	14+54.58	79	920	841	
Y2	11+40.00	15+89.28	226	876	650	
Y3	10+40.00	11+38.50	68	2		66
RAB	-RAB1-10+00.00	-RAB1-13+64.42		4007	4007	
SUBTOTAL:			841	6166	5565	241
EARTH TO REPLACE BORROW					-241	-241
PROJECT TOTALS:			841	6166	5324	0
ESTIMATE 5% TOPSOIL FOR BORROW PITS:				257	257	
GRAND TOTALS:			841	6423	5581	
SAY:			850		5590	

NOTE:
APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, BORROW EXCAVATION, FINE GRADING, CLEARING AND GRUBBING, AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING."

CURB & GUTTER SUMMARY

CLASS AA CONCRETE 1'-6" CURB AND GUTTER				
LINE	STATION	STATION	LENGTH	REMARKS
L1/L2	17+15.00 (LT)	14+85.00 (RT)	226.20	
L1/Y1	16+95.00 (RT)	13+65.00 (LT)	207.50	
Y1/Y2	14+20.00 (RT)	15+02.00 (LT)	161.50	
Y2/L2	15+51.00 (RT)	14+25.00 (LT)	220.60	
RAB1	CENTRAL ISLAND		364.42	
TOTAL CLASS AA 1'-6" CURB & GUTTER:			1180.22	
SAY:			1190	
MODIFIED 2'-6" CURB AND GUTTER				
LINE	STATION	STATION	LENGTH	REMARKS
RAB1	CENTRAL ISLAND		267	
TOTAL MODIFIED 2'-6" CURB & GUTTER:			267	
SAY:			270	

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DATE:	6/11/18
CHECKED BY:	RS
DATE:	6/11/18

PROJECT NO.	SHEET NO.
W5601AC	3D-1

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

LINE & STATION / SIZE / THICKNESS OR GAUGE	OFFSET		STRUCTURE NUMBER FROM	STRUCTURE NUMBER TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC) 12	15	18	24	30	36	42	48
L1 16+18	0	CL	0401			661.5	661.3									
L1 15+45	24	RT	0404			662.1	662.0			20						
Y1 13+04	0	CL	0402			659.3	657.6									
Y1 11+02	22	RT	0405			660.7	660.3			20						
Y2 14+18	28	RT	0406			655.2	655.0			36						
Y3 11+12	0	CL	0403			658.4	657.7									
Y2 13+95	12	LT														
Y2 13+21	0	CL														
SHEET TOTALS										76						
PROJECT TOTALS										76						

LINE & STATION	C. S. PIPE 12 (.064)	15 (.064)	18 (.064)	24 (.064)	30 (.079)	36 (.079)	42 (.109)	48 (.109)	R. C. PIPE CLASS III 12	15	18	24	30	36	42	48	R. C. PIPE CLASS IV 12	15	18	24	30	36	42	48
L1 16+18																				56				
L1 15+45																								
Y1 13+04																				60				
Y1 11+02																								
Y2 14+18																								
Y3 11+12																			100					
Y2 13+95																								
Y2 13+21																								
SHEET TOTALS																			100	116				
PROJECT TOTALS																			100	116				

LINE & STATION	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY	REINFORCED ENDWALLS CY	DRAINAGE STRUCTURE MASONRY CY	QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH	A: 5' THRU 10' LIN. FT.	B: 10' AND ABOVE LIN. FT.	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E	F	G	CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06	CONCRETE TRANSITIONAL SECTION C.B. STD. 852.05	OPEN THROAT C.B. STD. 840.04 OR STD. 840.05	CONCRETE BRIDGE APPROACH D.I. STD. 840.13	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28
L1 16+18																						
L1 15+45																						
Y1 13+04																						
Y1 11+02																						
Y2 14+18																						
Y3 11+12																						
Y2 13+95																						
Y2 13+21																						
SHEET TOTALS																						
PROJECT TOTALS																						

LINE & STATION	G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20	G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29	DRIVEWAY D.I. STD. 840.30	FRAME W/ GRATE FOR DRIVEWAY STD. 840.30	J.B. STD. 840.31 OR STD. 840.32	ANGLED VANE GRATES AND FRAMES STD. 840.33	T.B.J.B. STD. 840.34	T.B.D.I. STD. 840.35	T.B.D.I. FOR STEEL GRATES STD. 840.36	STEEL FRAME WITH TWO GRATES STD. 840.37	TEMP STEEL PLATE COVER MASONRY DRAINAGE	MODIFIED CONC. FLUME	PREFORMED SCOUR HOLE (PER EACH)	ENERGY DISSIPATION BASIN	FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY	PIPE REMOVAL LIN. FT.	REMARKS
L1 16+18																									
L1 15+45																								20	
Y1 13+04																								45	
Y1 11+02																									
Y2 14+18																									
Y3 11+12																									
Y2 13+95																								40	
Y2 13+21																								22	
SHEET TOTALS																								127	
PROJECT TOTALS																								127	

ABBREVIATIONS

C.A.A.	CORRUGATED ALUMINIUM ALLOY
C.B.	CATCH BASIN
C.S.	CORRUGATED STEEL
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
H.D.P.E.	HIGH DENSITY POLYETHYLENE
J.B.	JUNCTION BOX
M.H.	MANHOLE
N.S.	NARROW SLOT
P.V.C.	POLYVINYL CHLORIDE
R.C.	REINFORCED CONCRETE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX
W.S.	WIDE SLOT

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PROJECT REFERENCE NO.	SHEET NO.
W-5601AC	4
R/W SHEET NO. 2F	

ROADWAY DESIGN ENGINEER
Designed by
Reviewed by
SEAL 30882
7/18/2018 4:17:54 PM PDT

HYDRAULICS ENGINEER
Designed by
Reviewed by
SEAL 27876
7/19/2018 5:02:11 AM PDT

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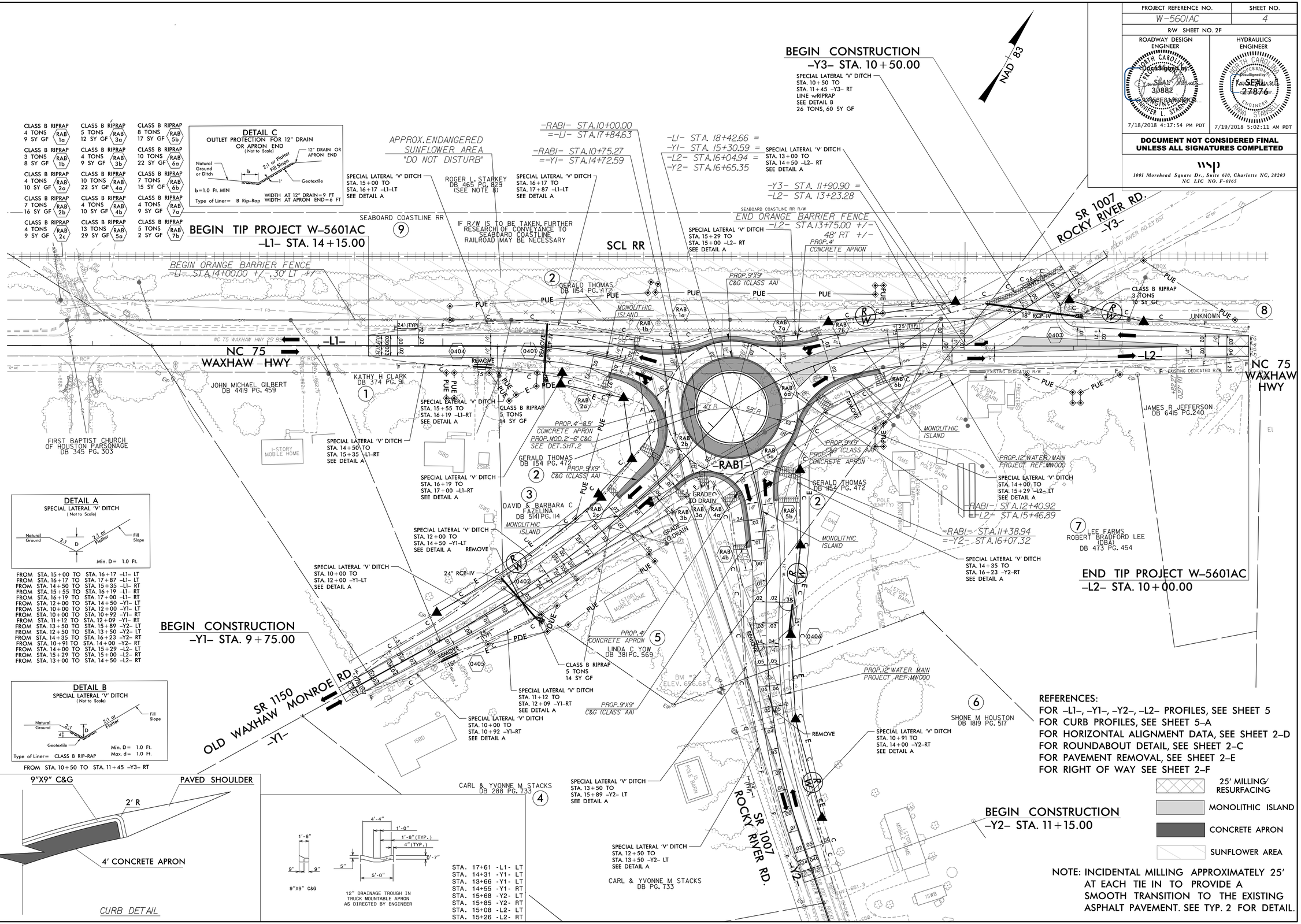
NC LIC NO. F-0165



REVISIONS

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PROJECT REFERENCE NO.	SHEET NO.
W-5601AC	5

ROADWAY DESIGN ENGINEER
Designed by:
NORTH CAROLINA PROFESSIONAL SEAL 30882 ENGINEER JENNIFER L. STARNES
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HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 27876 ENGINEER DONALD STINSELL
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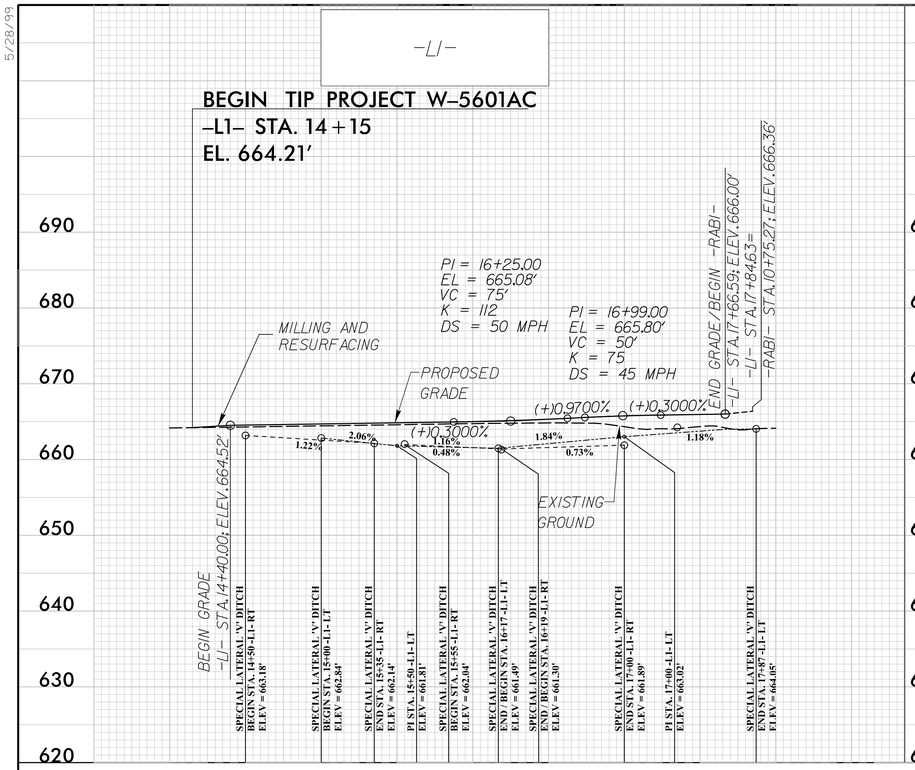
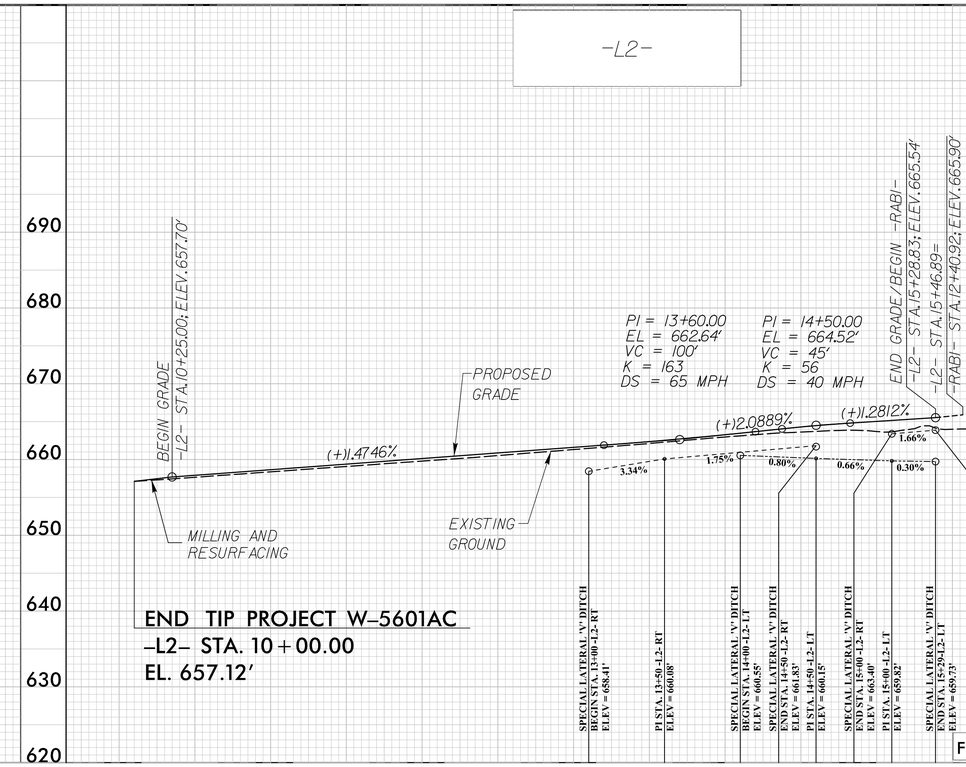
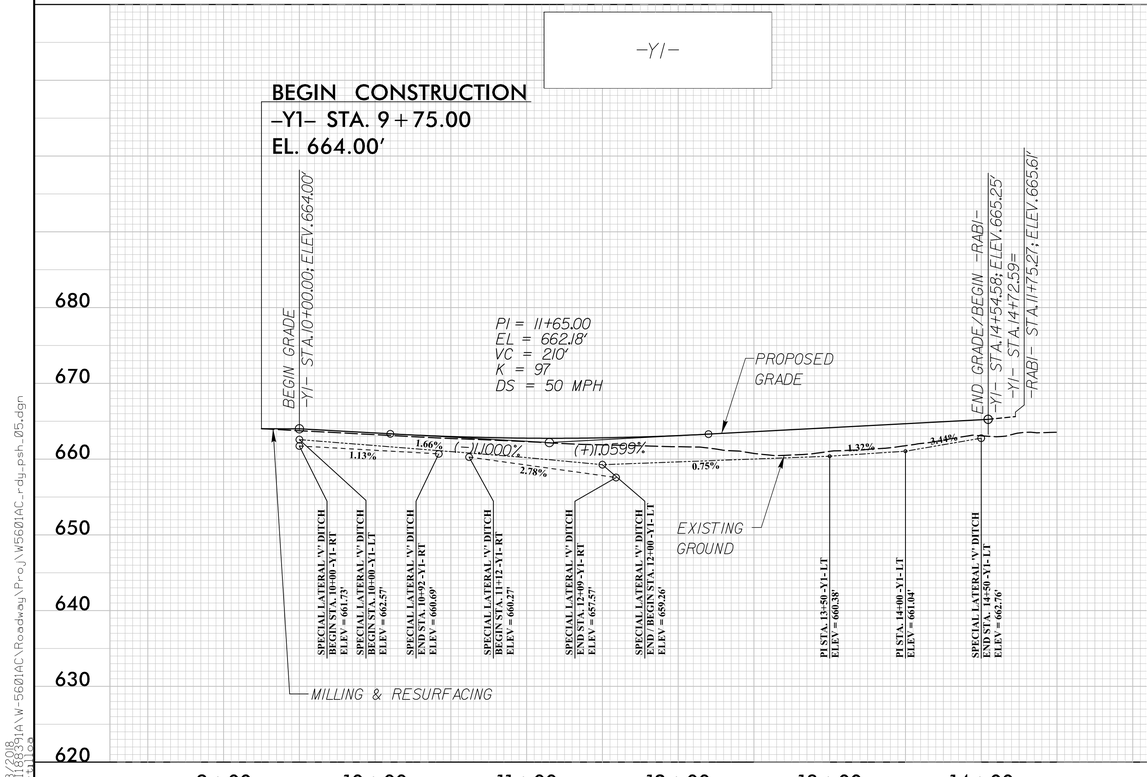
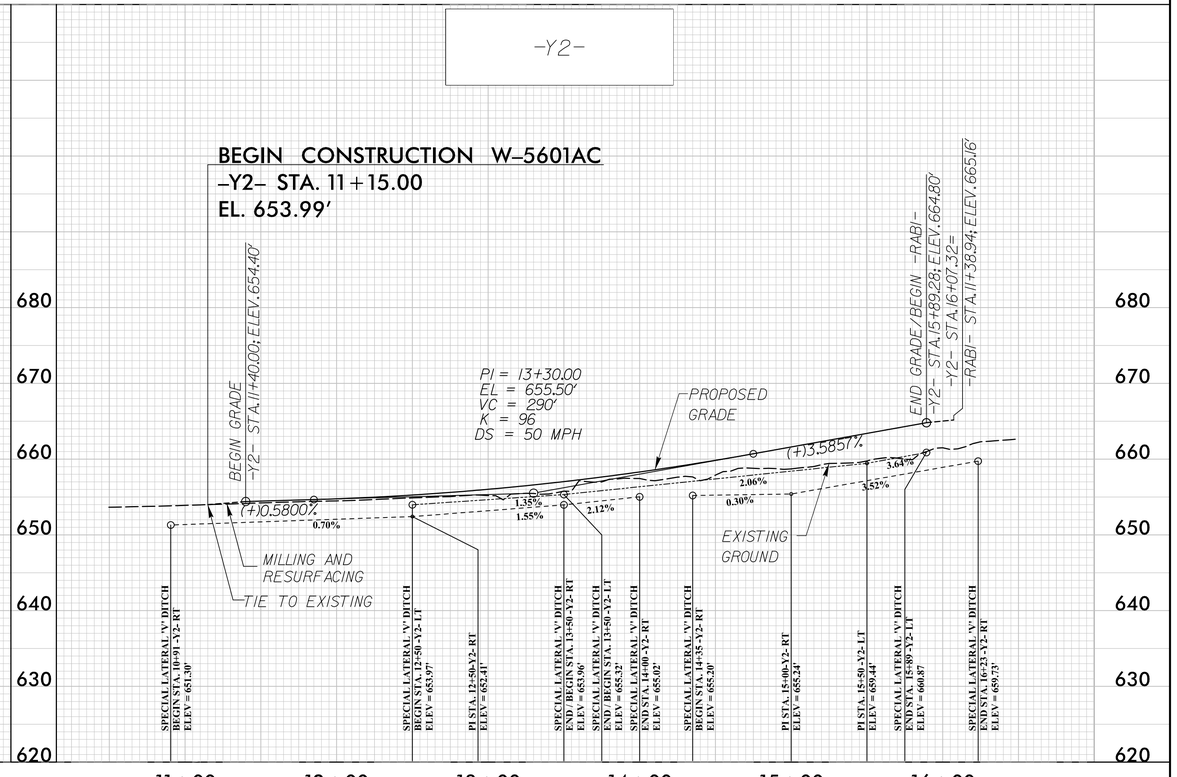




FOR -L1-, -Y1-, -Y2-, -L2- PLAN, SEE SHEET 4





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PROJECT REFERENCE NO.	SHEET NO.
W-5601AC	5-A

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 30882 ENGINEER JENNIFER L. STARNES
DocuSigned by: 1B47BE814B0C2C8...
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HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 27876 ENGINEER KONG SIMSELIS
DocuSigned by: Kong Simselis, P.E.
7/18/2018 12:39:09 PM PDT

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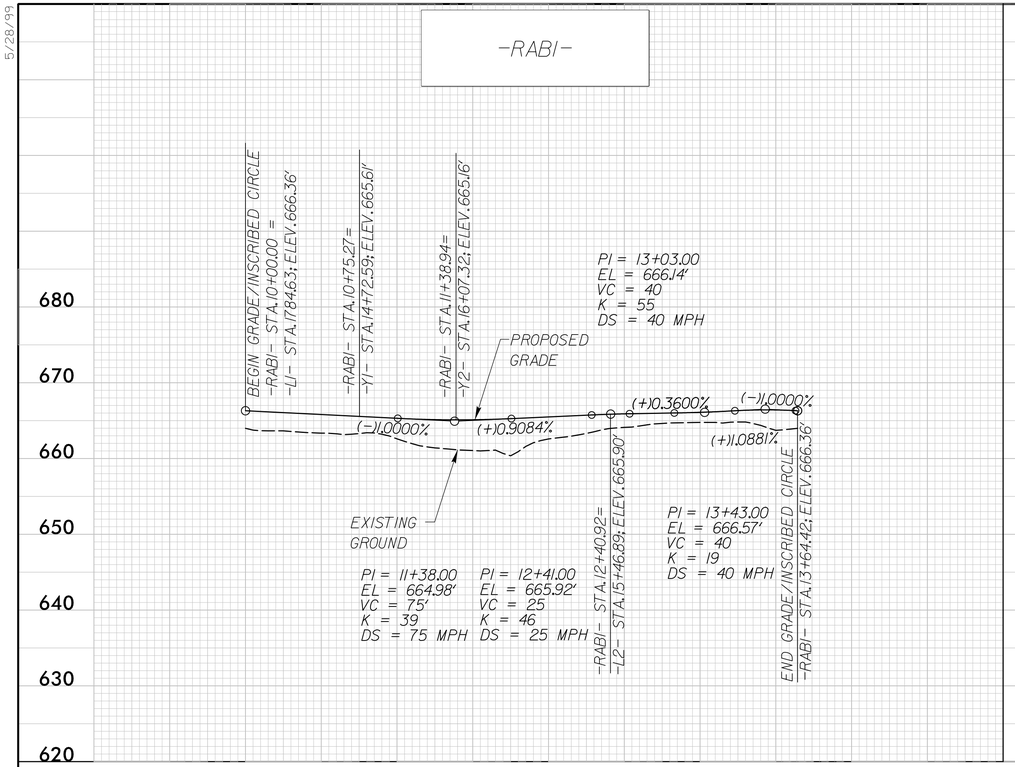

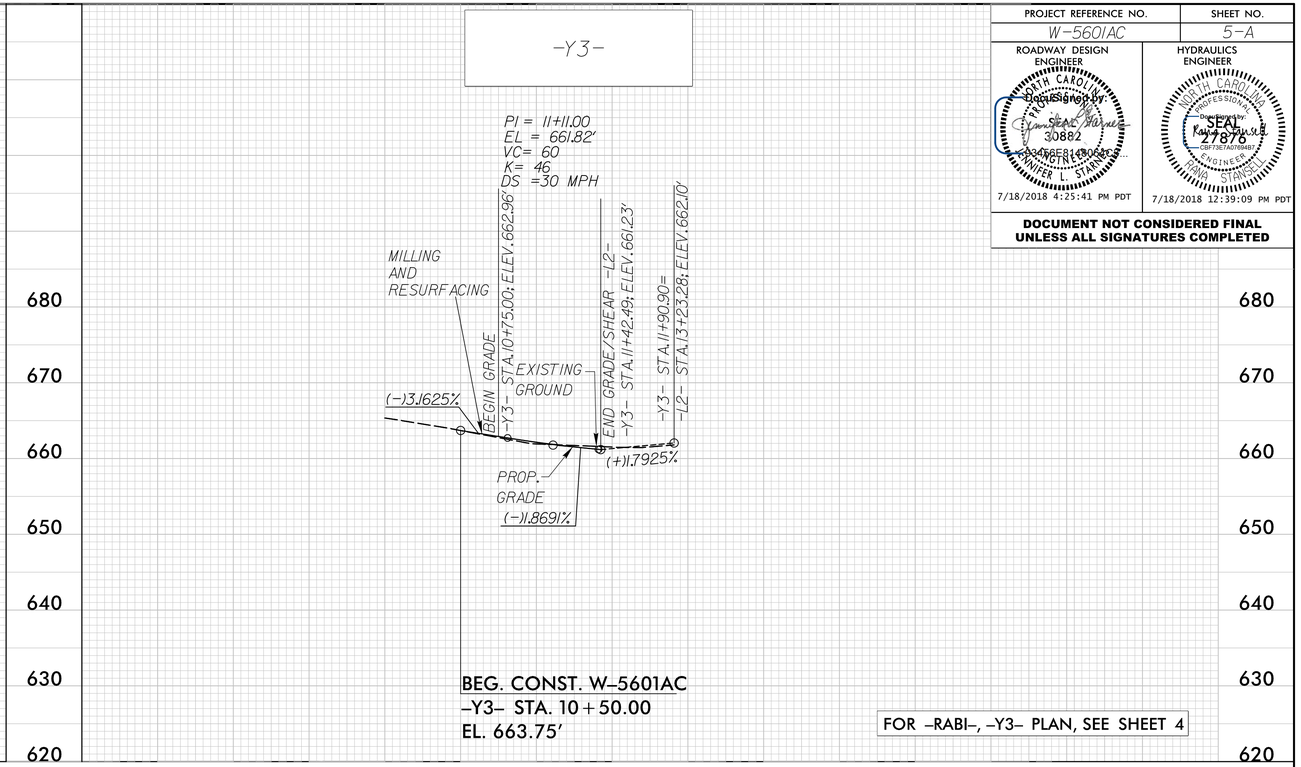

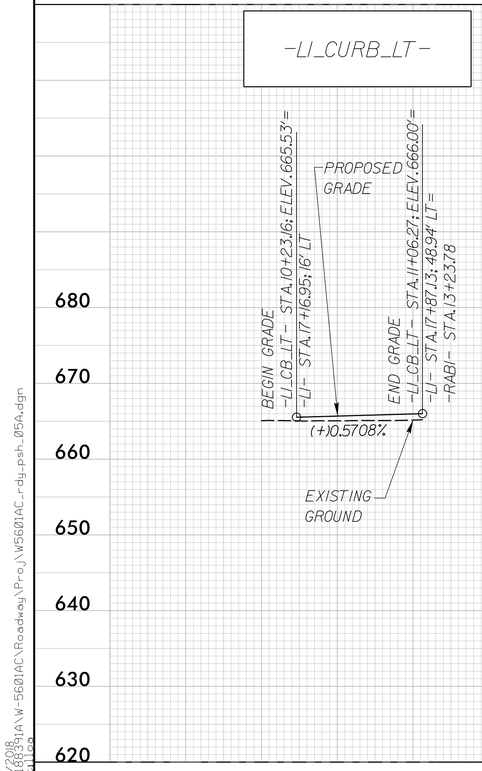

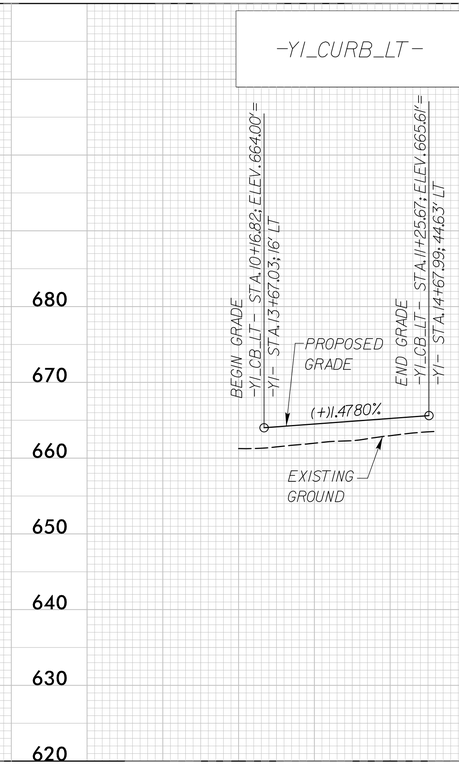

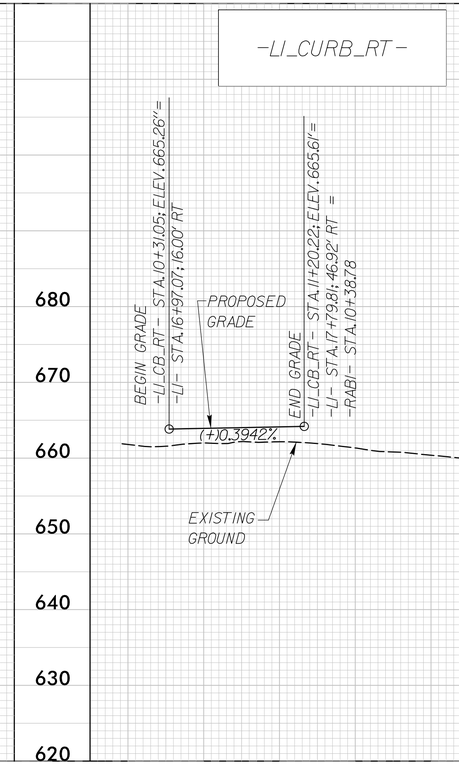

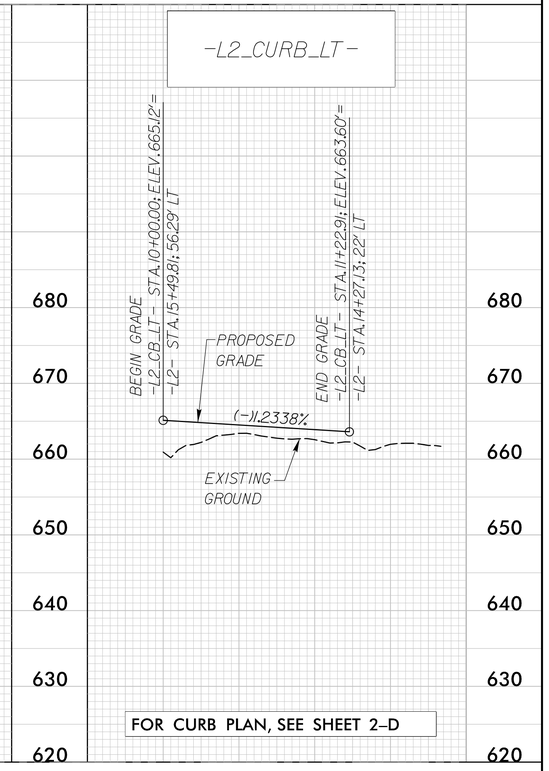

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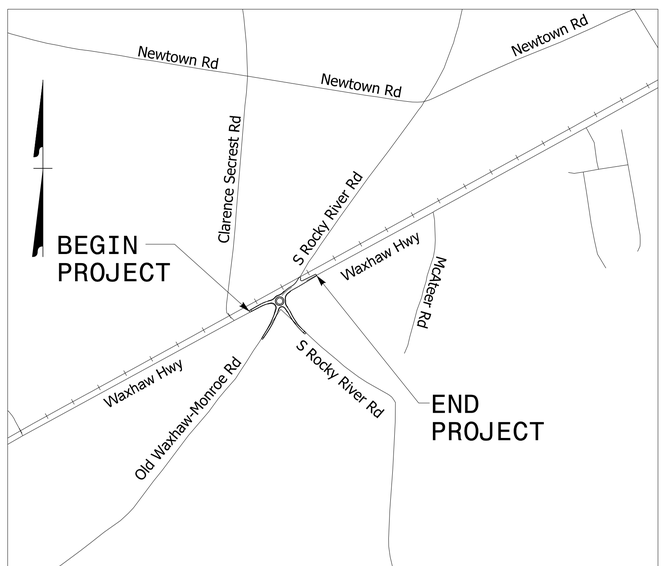
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

UNION COUNTY



VICINITY MAP

INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP, AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND
TMP-2	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES, GENERAL NOTES, AND LOCAL NOTES)
TMP-3	PHASING
TMP-4	TEMPORARY TRAFFIC CONTROL PHASE I STEP II DETAIL
TMP-5	TEMPORARY TRAFFIC CONTROL PHASE I STEP III DETAIL
TMP-6	TEMPORARY TRAFFIC CONTROL PHASE II STEP II DETAIL
TMP-7	TEMPORARY TRAFFIC CONTROL PHASE II STEP IV DETAIL
TMP-8-10	OFF SITE DETOURS
TMP-11	SPECIAL SIGN DESIGN

SHEET NO.
TMP-1

W-5601AC

TIP PROJECT:

PLANS PREPARED BY:

DRMP
ENGINEERS • PLANNERS • SCIENTISTS

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5950 FAIRVIEW ROAD, SUITE 320
CHARLOTTE, NC 28210
NC LICENSE NO. C-2213 • (704) 332-2289

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WORK ZONE SAFETY & MOBILITY
"from the MOUNTAINS to the COAST"

N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561
750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY)
PHONE: (919) 773-2800 FAX: (919) 771-2745

J. S. BOURNE, P.E. — STATE TRAFFIC MANAGEMENT ENGINEER

_____ TRAFFIC CONTROL PROJECT ENGINEER

_____ TRAFFIC CONTROL PROJECT DESIGN ENGINEER

_____ TRAFFIC CONTROL DESIGN ENGINEER

DIVISION OF HIGHWAYS • STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION • WORK ZONE TRAFFIC CONTROL

LISA M. MOON, P.E.
TRAFFIC CONTROL
PROJECT ENGINEER

ADAM J. DAVIS, P.E.
TRAFFIC CONTROL
PROJECT DESIGN ENGINEER

APPROVED: Lisa M. Moon

DATE: 10/30/2017

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

10/30/2017
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PROJ. REFERENCE NO.	SHEET NO.
W-5601AC	TMP-1A

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUM
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1165.01	WORK VEHICLE LIGHTING SYSTEMS AND TMA DELINEATION
1180.01	SKINNY-DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTI-LANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1205.11	PAVEMENT MARKINGS - RAILROAD CROSSINGS

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- TEMP. SHORING (LOCATION PURPOSES ONLY)
- WORK AREA
- REMOVAL
- WEDGING

SIGNALS

- EXISTING
- PROPOSED
- TEMPORARY

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- CONE
- DRUM
- SKINNY DRUM
- TUBULAR MARKER
- TEMPORARY CRASH CUSHION
- FLASHING ARROW BOARD
- FLAGGER
- LAW ENFORCEMENT
- TRUCK MOUNTED ATTENUATOR (TMA)
- CHANGEABLE MESSAGE SIGN

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

PAVEMENT MARKERS

- CRYSTAL/CRYSTAL
- CRYSTAL/RED
- YELLOW/YELLOW

PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

TEMPORARY PAVEMENT MARKING

		PAINT
PA	WHITE EDGE LINE	(4")
PI	YELLOW DOUBLE CENTER LINE	(4")
P2	WHITE STOP BAR	(24")
MH	YELLOW & YELLOW, TEMPORARY RAISED PAVEMENT MARKER	

PLANS PREPARED BY:

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APPROVED: DocuSigned by: Lisa Moon 58CE58BD83D0421...

DATE: 12/17/2018

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

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DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

ROADWAY STANDARD DRAWINGS & LEGEND

12/17/2018
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PROJ. REFERENCE NO.	SHEET NO.
W-5601AC	TMP-02

MANAGEMENT STRATEGIES

PROJECT HAS BEEN PHASED TO CONSTRUCT THE ROUNDABOUT AWAY FROM TRAFFIC AS MUCH AS POSSIBLE WHILE EMPLOYING THE USE OF TEMPORARY PAVEMENT NECESSARY TO COMPLETE CONSTRUCTION OF THE CENTER ISLAND AND TRUCK APRON. WEDGING WILL BE DONE UNDER TRAFFIC TO MEET REQUIRED GRADE AND PROVIDE POSITIVE DRAINAGE. LATER CONSTRUCTION PHASING USES AN ICT FOR OFF-SITE DETOUR ROUTES AND A SEQUENCE OF ROAD CLOSURES TO COMPLETE CONSTRUCTION OF THE ROUNDABOUT. THE ICT WILL BE USED TO MINIMIZE IMPACT ON NC-75 AND ROCKY RIVER ROAD.

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

TIME RESTRICTIONS

A) DO NOT CLOSE OR NARROW TRAVEL LANES AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
NC 75	MONDAY THROUGH FRIDAY
ROCKY RIVER ROAD	6:00 A.M. TO 9:00 A.M.
	4:00 P.M. TO 6:00 P.M.

B) DO NOT CLOSE OR NARROW TRAVEL LANES DURING HOLIDAYS AND SPECIAL EVENTS AS FOLLOWS:

ROAD NAME
NC 75
ROCKY RIVER ROAD

HOLIDAY

1. FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
2. FOR NEW YEAR'S, BETWEEN THE HOURS OF 6:00 A.M. DECEMBER 31ST TO 9:00 A.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 9:00 A.M. THE FOLLOWING TUESDAY.
3. FOR EASTER, BETWEEN THE HOURS OF 6:00 A.M. THURSDAY AND 9:00 A.M. MONDAY.
4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY TO 9:00 A.M. TUESDAY.
5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 9:00 A.M. THE DAY AFTER INDEPENDENCE DAY.

   IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 6:00 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 9:00 A.M. THE TUESDAY AFTER INDEPENDENCE DAY.
6. FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY AND 9:00 A.M. TUESDAY.
7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 A.M. WEDNESDAY AND 9:00 A.M. MONDAY.
8. FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 9:00 A.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

LANE AND SHOULDER CLOSURE REQUIREMENTS

C) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.

D) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.

E) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

F) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.

G) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

H) PROVIDE TRAFFIC CONTROL FOR APPROPRIATE LANE CLOSURES FOR SURVEYING DONE BY THE DEPARTMENT.

PAVEMENT EDGE DROP OFF REQUIREMENTS

I) BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS AN EDGE OF PAVEMENT DROP-OFF AS FOLLOWS:

   BACKFILL DROP-OFFS THAT EXCEED 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.

   BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.

   BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.

J) DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) 300 FT IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

K) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

L) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

M) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.

   PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRAFFIC CONTROL PLANS.

N) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.

   COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.

O) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

P) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) 300 FT IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

TRAFFIC CONTROL DEVICES

Q) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

R) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

PAVEMENT MARKINGS AND MARKERS

S) INSTALL TEMPORARY PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:

ROAD NAME	MARKING	MARKER
-L1-/-L2- NC 75	PAINT	NONE
SR 1150	PAINT	NONE

T) PLACE ONE APPLICATION OF PAINT FOR TEMPORARY TRAFFIC PATTERNS. PLACE A SECOND APPLICATION OF PAINT SIX (6) MONTHS AFTER THE INITIAL APPLICATION AND EVERY SIX MONTHS AS DIRECTED BY THE ENGINEER.

U) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

V) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

W) TRACE THE PROPOSED MONOLITHIC ISLAND LOCATIONS WITH PROPER COLOR PAVEMENT MARKINGS PRIOR TO INSTALLATION. PLACE DRUMS TO DELINEATE ANY PROPOSED MONOLITHIC ISLANDS BEFORE INSTALLATION

MISCELLANEOUS

X) LAW ENFORCEMENT MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS AS DIRECTED BY THE ENGINEER.

PLANS PREPARED BY:
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APPROVED: Lisa M. Moon
DATE: 10/30/2017
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NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

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TRANSPORTATION OPERATIONS PLAN

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PROJ. REFERENCE NO.	SHEET NO.
W-5601AC	TMP-03

PHASING

PHASE I

STEP 1: INSTALL WORK ZONE ADVANCE WARNING SIGNS. SEE RSD 1101.01

STEP 2: USING RSD 1101.02, SHEET 1, INSTALL 4' OF TEMPORARY PAVEMENT ON THE NORTH SIDE OF -L1-/-L2- (NC 75) FROM -L1- STA 16+33 TO -L2- STA 14+03, AS SHOWN ON TMP-04.

USING RSD 1101.02, SHEET 1, INSTALL 6' OF TEMPORARY PAVEMENT ON THE WEST SIDE OF SR 1150 FROM -Y1- STA 14+16, 19.4' RT TO -L1- STA 17+24, 4.4' LT, AS SHOWN ON TMP-04.

AFTER PAVEMENT CONSTRUCTION IS COMPLETE, USING RSD 1101.02, SHEETS 1 AND 11, INSTALL TEMPORARY PAVEMENT MARKINGS ON NC 75 AND SR 1150, AS SHOWN ON TMP-05. ENSURE ALL TRAFFIC CONTROL DEVICES AND SIGNING ARE CORRECT AND SHIFT TRAFFIC TO NEW TEMPORARY PATTERN.

USING RSD 1101.03, SHEET 2, CLOSE SR 1007 BETWEEN SR 1150 AND NC 75, AS SHOWN ON TMP-05.

STEP 3: AWAY FROM TRAFFIC AND USING RSD 1101.02, SHEET 1, CONSTRUCT THE -RAB- TRUCK APRON AND CENTER OF ISLAND, WITH ANY NECESSARY WEDGING ALONG EASTBOUND LANE OF NC 75 AND NORTHBOUND LANE OF SR 1150 TO PROVIDE POSITIVE DRAINAGE, AS SHOWN IN SECTIONS B AND C ON TMP-05.

AWAY FROM TRAFFIC, CONSTRUCT UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE OF -Y2- FROM STA 13+74 TO STA 16+07. THE CONTRACTOR MAY, AT HIS DISCRETION USING RSD 1101.02, SHEET 1, BEGIN CONSTRUCTION UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE OF -Y2- FROM STA 11+15 TO STA 13+47.

AWAY FROM TRAFFIC AND USING RSD 1101.02, SHEET 1, BEGIN CONSTRUCTION WITH ANY NECESSARY WEDGING ALONG NC 75 TO PROVIDE POSITIVE DRAINAGE, OF THE FOLLOWING:

-L1- FROM STA 14+40 TO STA 17+40, AS SHOWN ON TMP-05. SEE SECTION A.
-L2- FROM STA 12+12 TO STA 15+47, AS SHOWN ON TMP-05.

USING RSD 1101.02, SHEET 1, ENSURE WEDGING ALONG NC 75 FROM -L1- STA 14+40 TO -L2- STA 15+47 PROVIDES POSITIVE DRAINAGE AND A SMOOTH TRAVEL LANES ON NC 75.

INSTALL AND COVER SIGNING FOR DETOUR IN PHASE II, STEP 1.

PHASE II

THE CONTRACTOR SHALL COMPLETE THE WORK REQUIRED IN PHASE II STEPS 1, 2 AND 3 WITHIN A 14 DAY PERIOD. [SEE INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES].

STEP 1: USING RSD 1101.03, SHEETS 1 AND 2, CLOSE -Y1- AND -Y2- AS SHOWN ON TMP-06. DETOUR TRAFFIC AS SHOWN ON TMP-09.

STEP 2: AWAY FROM TRAFFIC, CONSTRUCT UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE, OF -Y1- FROM STA 9+75 TO STA 14+73.

AWAY FROM TRAFFIC, COMPLETE CONSTRUCTION, UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE, OF -Y2- FROM STA. 11+15 TO STA. 13+74.

AWAY FROM TRAFFIC AND USING RSD 1101.02, SHEET 1, BEGIN CONSTRUCTION UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE OF THE -RAB- TRAVEL LANE FROM STA 13+40 TO STA 13+64 AND STA 10+00 TO STA 12+62.

AWAY FROM TRAFFIC AND USING RSD 1101.02, SHEET 1, CONTINUE CONSTRUCTION OF -L1- FROM STA 14+40 TO STA 17+40 AND -L2- FROM STA 12+12 TO STA 15+47.

INSTALL AND COVER SIGNING FOR DETOUR IN PHASE II, STEP 3.

STEP 3: USING RSD 1101.03, SHEETS 1 AND 2, CLOSE NC 75 -L1-/-L2 WHILE MAINTAINING CLOSURE OF -Y1- AND -Y2-, AS SHOWN ON TMP-07. DETOUR TRAFFIC AS SHOWN ON TMP-10.

IMMEDIATELY BEGIN STEP 4.

THE CONTRACTOR SHALL COMPLETE THE WORK REQUIRED IN PHASE II STEP 4 & 5 WITHIN A 14 DAY PERIOD. [SEE INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES].

STEP 4: COMPLETE ALL REMAINING ROADWAY CONSTRUCTION, INCLUDING ALL MEDIAN ISLANDS.

INSTALL FINAL TRAFFIC CONTROL DEVICES FOR FINAL PATTERN (SEE SIGNING & PAVEMENT MARKING PLANS).

STEP 5: ENSURE ALL TRAFFIC CONTROL DEVICES AND SIGNING ARE CORRECT AND REOPEN ALL LANES TO FINAL TRAFFIC PATTERN.

STEP 6: FINALIZE ANY SEEDING, MULCHING, AND REMOVAL OF EQUIPMENT.

PLANS PREPARED BY:
DRMP
ENGINEERS • PLANNERS • SCIENTISTS
DRMP, INC.
5950 FAIRVIEW ROAD, SUITE 320
CHARLOTTE, NC 28210
NC LICENSE NO. C-2213 • (704) 332-2289

APPROVED: Lisa M. Moon
DATE: 10/30/2017
SEAL

NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DIVISION OF HIGHWAYS • STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION • WORK ZONE TRAFFIC CONTROL

PHASING

10/30/2017
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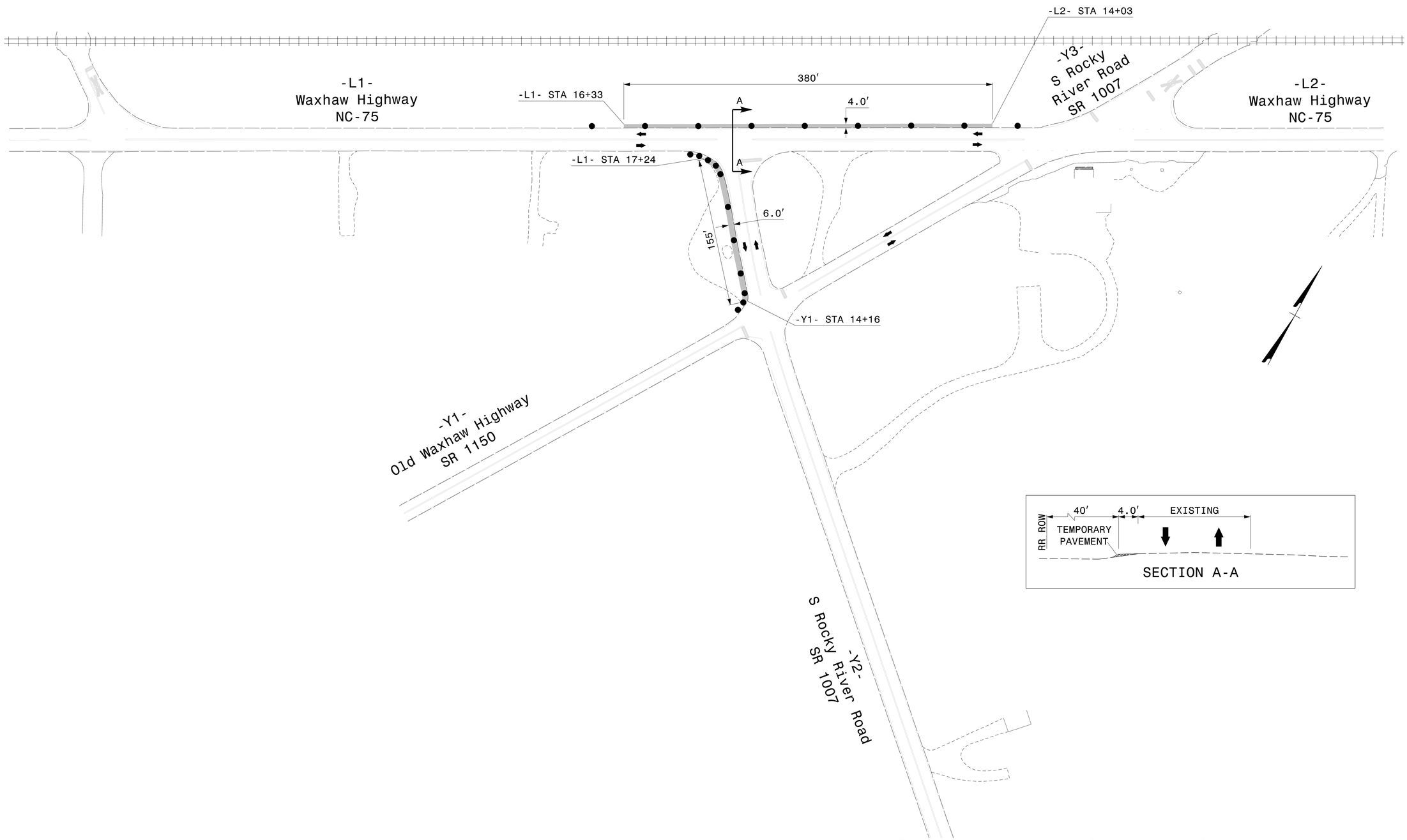
User:rlawton

DocuSign Envelope ID: F7062E7C-E96C-470D-8BB9-70F82BF7F604

PROJ. REFERENCE NO.	SHEET NO.
W-5601AC	TMP-04



PLANS PREPARED BY:

DRMP
ENGINEERS • PLANNERS • SCIENTISTS

DRMP, INC.
5950 FAIRVIEW ROAD, SUITE 320
CHARLOTTE, NC 28210
NC LICENSE NO. C-2213 • (704) 332-2289

APPROVED: Lisa M. Moon

DATE: 10/30/2017

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

PHASE I STEP II
DETAIL

10/30/2017
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User:rlawton

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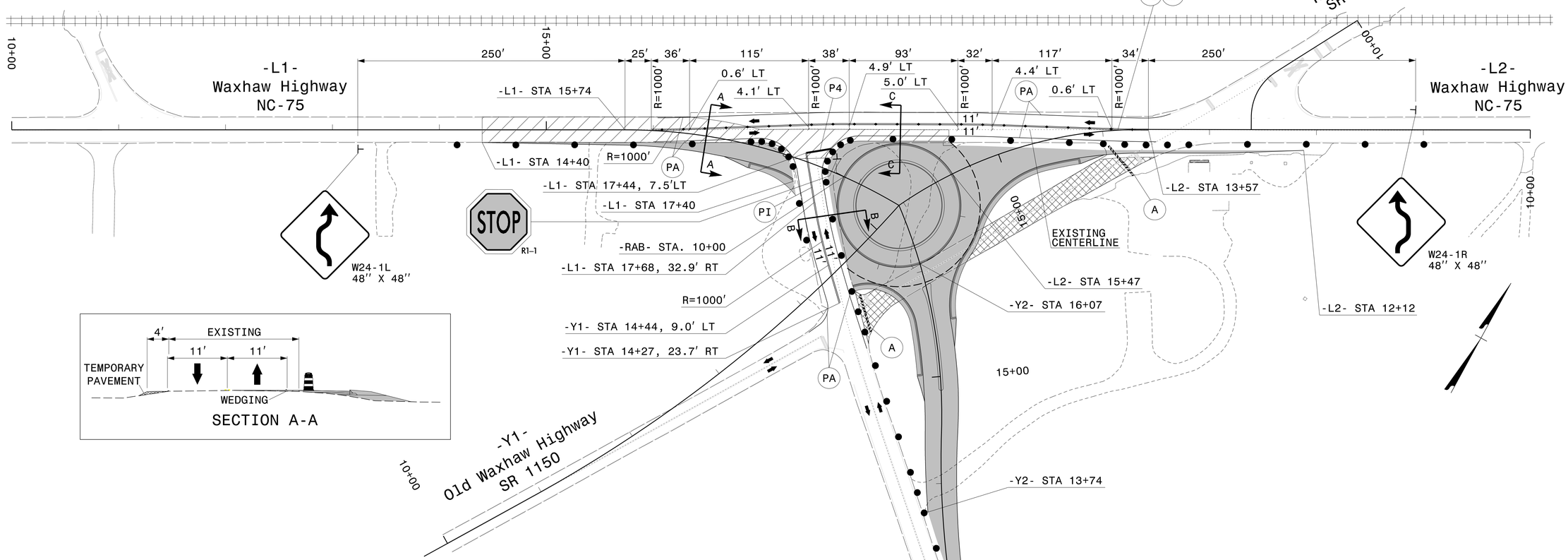
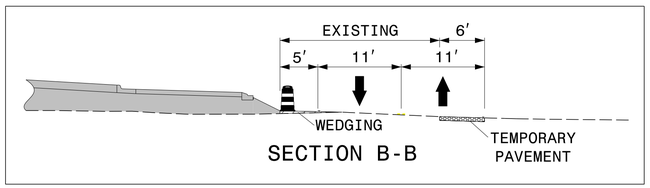
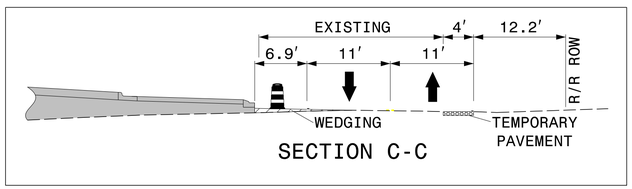
PROJ. REFERENCE NO.	SHEET NO.
W-5601AC	TMP-05



SECTION A-A



SECTION B-B



SECTION C-C

TYPE III BARRICADE(S)

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DRMP, INC.
5950 FAIRVIEW ROAD, SUITE 320
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APPROVED: Lisa M. Moon

DATE: 10/30/2017

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PHASE I STEP III
DETAIL

10/30/2017
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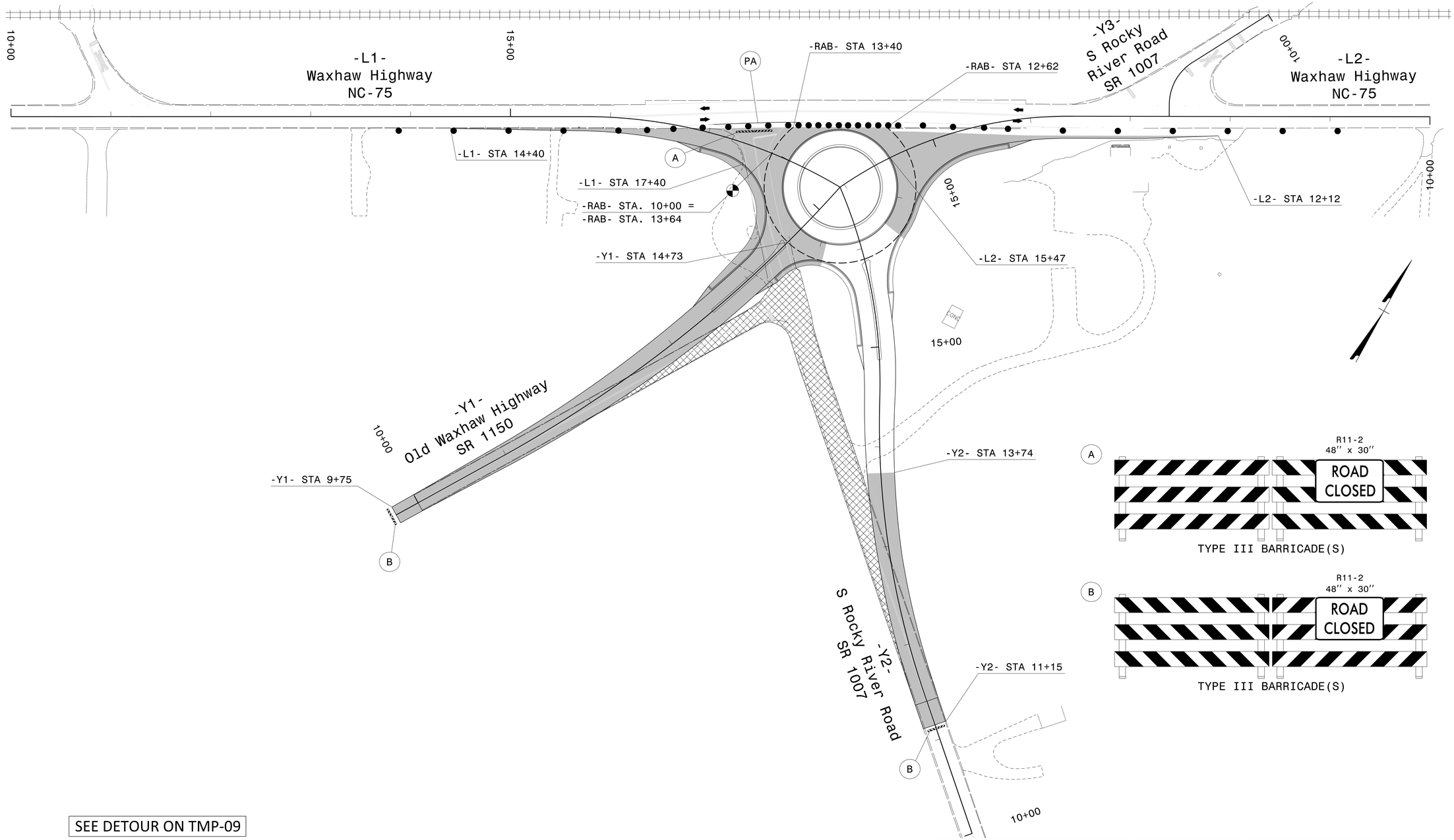
PROJ. REFERENCE NO.	SHEET NO.
W-5601AC	TMP-06



SEE DETOUR ON TMP-09

WORK PERFORMED UNDER 14 DAY ICT FOR PHASE II, STEPS 1, 2, & 3.

PLANS PREPARED BY:

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DRMP, INC.
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APPROVED: Lisa M Moon

DATE: 10/30/2017

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

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DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

PHASE II STEP II
DETAIL

10/30/2017
R:\W5601\Traffic\TrafficControl\TCP\W5601_TC_TCP_Concept02A.dgn
User:rlawton

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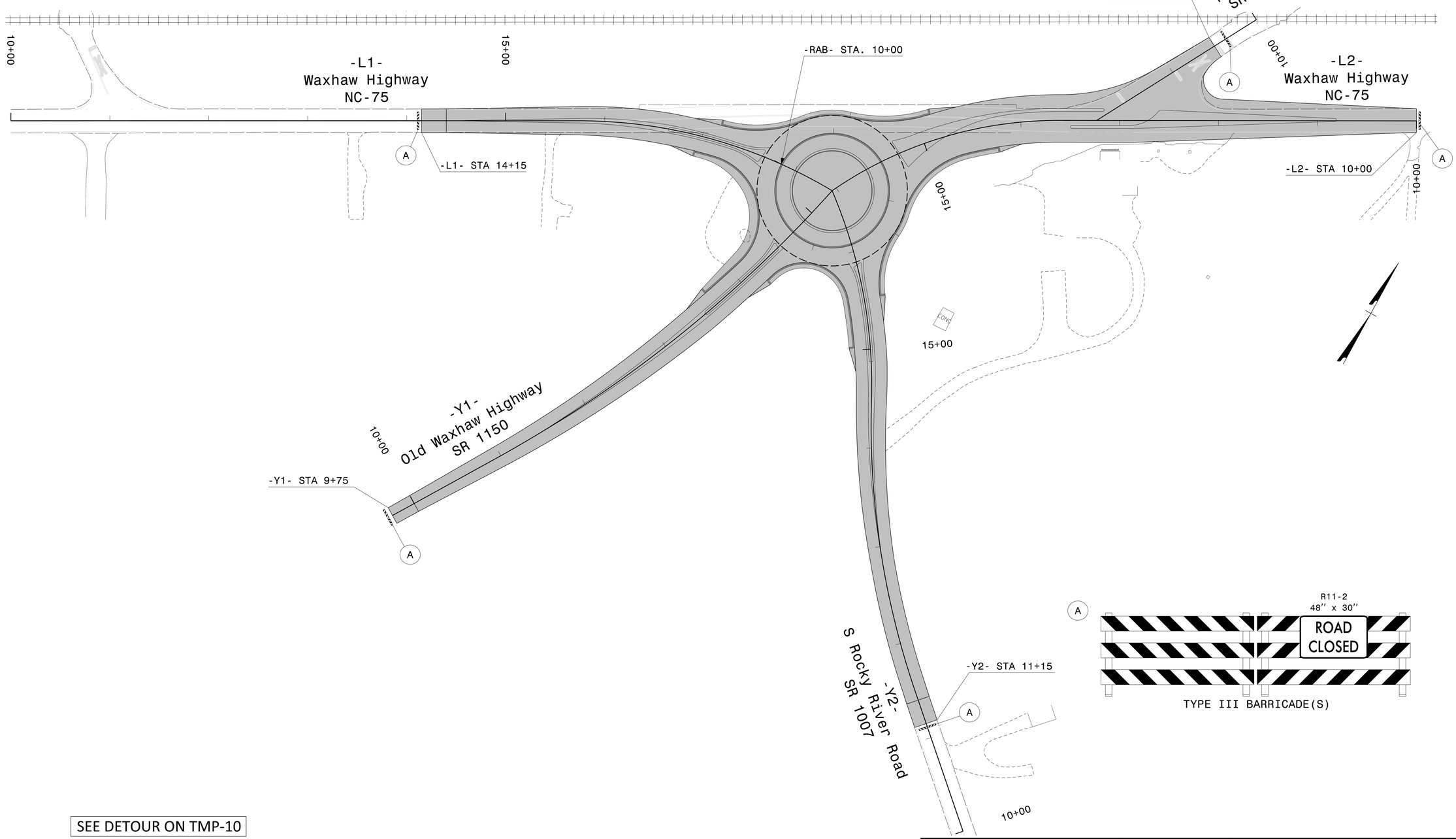
PROJ. REFERENCE NO.	SHEET NO.
W-5601AC	TMP-07



SEE DETOUR ON TMP-10

WORK PERFORMED UNDER 14 DAY ICT FOR PHASE II, STEPS 4 & 5.

PLANS PREPARED BY:

DRMP

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DRMP, INC.
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APPROVED: Lisa M. Moon

DATE: 10/30/2017

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NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

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PHASE II STEP IV
DETAIL

10/30/2017
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User:rlawton

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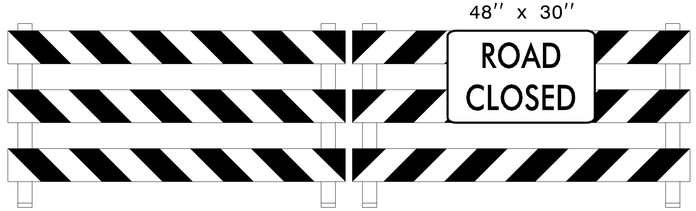
PROJ. REFERENCE NO.	SHEET NO.
W-5601AC	TMP-08

A

R11-2
48" x 30"



TYPE III BARRICADE(S)

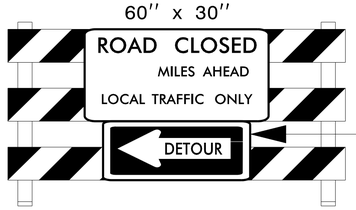
B

R11-4
60" x 30"

TYPE III BARRICADE

C

R11-3
60" x 30"

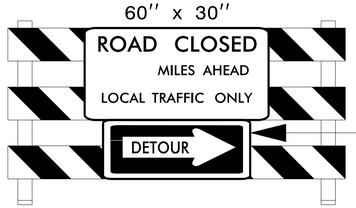


M4-10L
48" x 18"

TYPE III BARRICADE

D

R11-3
60" x 30"



M4-10R
48" x 18"

TYPE III BARRICADE

T

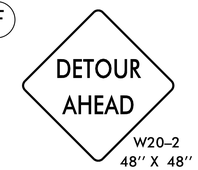
R11-3
60" x 30"

TYPE III BARRICADE

E

W20-3
48" X 48"

F

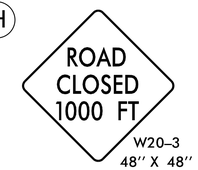


W20-2
48" X 48"

G

W20-3
48" X 48"

H



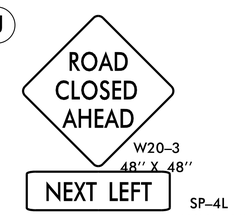
W20-3
48" X 48"

I

W20-3
48" X 48"

SP-4R
42" X 12"

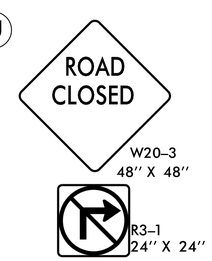
J



W20-3
48" X 48"

SP-4L
42" X 12"

U



W20-3
48" X 48"

R3-1
24" X 24"

V

W20-3
48" X 48"

R3-2
24" X 24"

K

SEE TMP-11,
SPECIAL SIGN
DESIGN

M4-8
24" X 12"

M6-1 L
21" X 15"

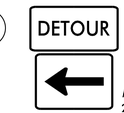
L

SEE TMP-11,
SPECIAL SIGN
DESIGN

M4-8
24" X 12"

M6-1
21" X 15"

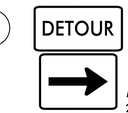
M



M4-8
24" X 12"

M6-1 L
21" X 15"

N



M4-8
24" X 12"

M6-1
21" X 15"

O

M4-8
24" X 12"

M3-2
24" X 12"

M1-5

M6-1 L
21" X 15"

P

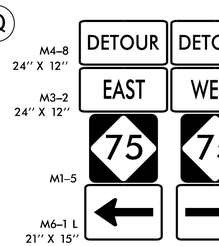
M4-8
24" X 12"

M3-4
24" X 12"

M1-5

M6-1
21" X 15"

Q



M4-8
24" X 12"

M3-2
24" X 12"

M1-5

M6-1 L
21" X 15"

M4-8
24" X 12"

M3-4
24" X 12"

M1-5

M6-1
21" X 15"

R

M4-8
24" X 12"

M3-4
24" X 12"

M1-5

M6-3
21" X 15"

S

M4-8 A
24" X 18"

PLANS PREPARED BY:

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ENGINEERS • PLANNERS • SCIENTISTS

DRMP, INC.
5950 FAIRVIEW ROAD, SUITE 320
CHARLOTTE, NC 28210
NC LICENSE NO. C-2213 • (704) 332-2289

APPROVED: Lisa M. Moon

DATE: 10/30/2017

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

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OFF SITE DETOUR ROUTES

10/30/2017
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User:rlawton

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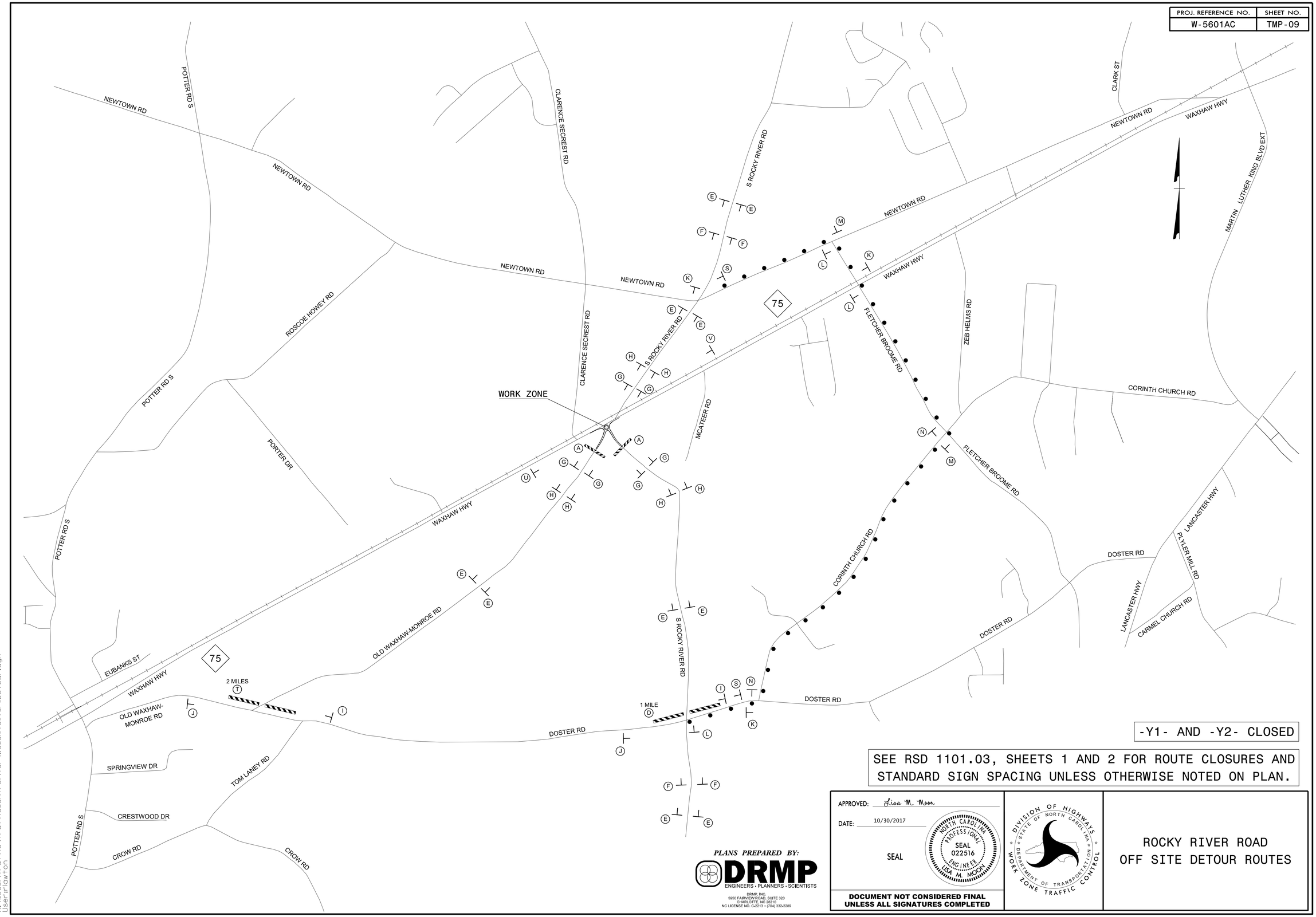
PROJ. REFERENCE NO.	SHEET NO.
W-5601AC	TMP-09



-Y1- AND -Y2- CLOSED

SEE RSD 1101.03, SHEETS 1 AND 2 FOR ROUTE CLOSURES AND STANDARD SIGN SPACING UNLESS OTHERWISE NOTED ON PLAN.

APPROVED: Lisa M. Moon

DATE: 10/30/2017

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

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ROCKY RIVER ROAD
OFF SITE DETOUR ROUTES

PLANS PREPARED BY:

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DRMP, INC.
5950 FAIRVIEW ROAD, SUITE 320
CHARLOTTE, NC 28210
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R:\W5601\Traffic\TrafficControl\TCP\W5601_TC_TCP_Detour.dgn
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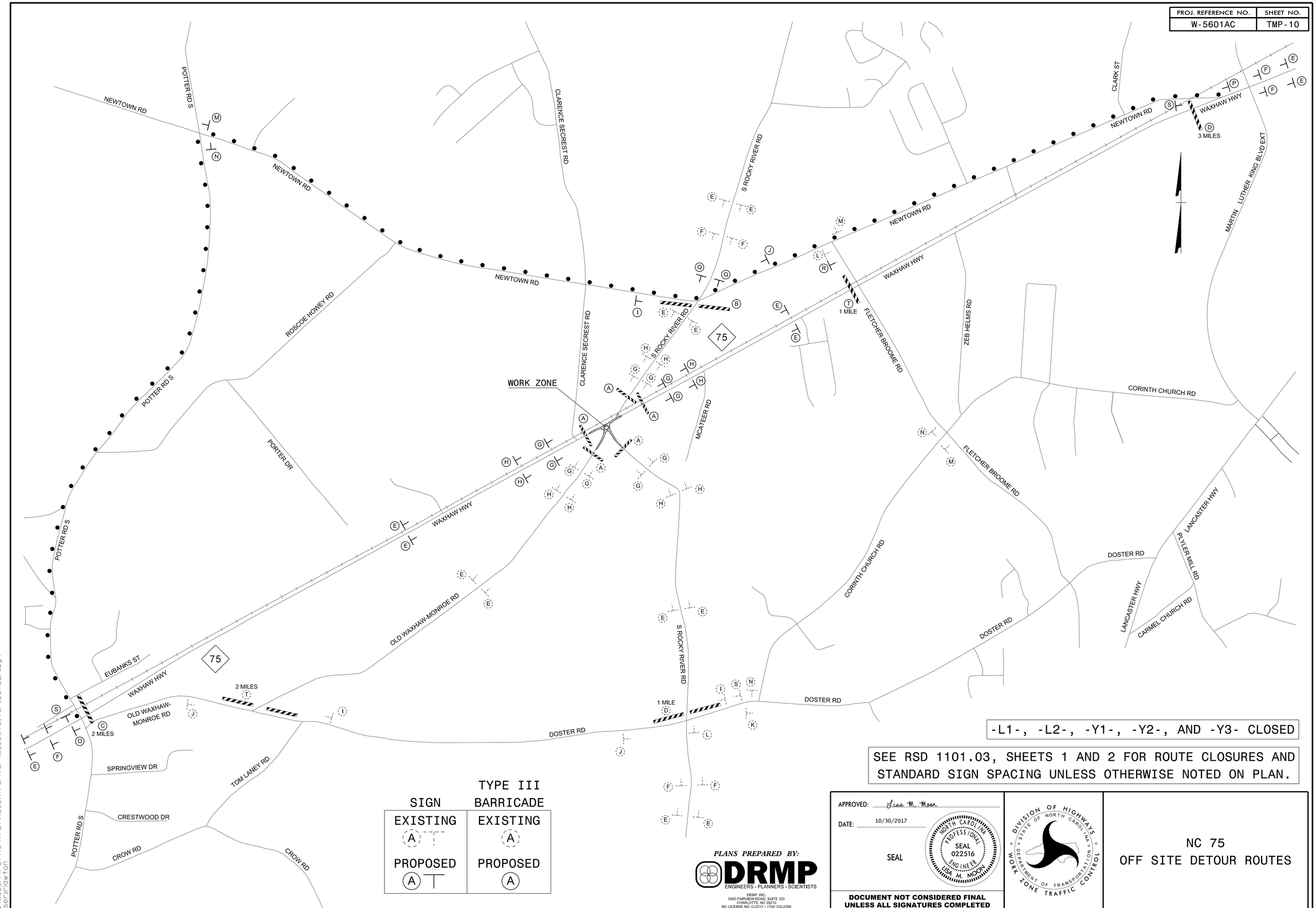
PROJ. REFERENCE NO.	SHEET NO.
W-5601AC	TMP-10



-L1-, -L2-, -Y1-, -Y2-, AND -Y3- CLOSED

SEE RSD 1101.03, SHEETS 1 AND 2 FOR ROUTE CLOSURES AND STANDARD SIGN SPACING UNLESS OTHERWISE NOTED ON PLAN.

SIGN	TYPE III BARRICADE
EXISTING (A)	EXISTING (A)
PROPOSED (A)	PROPOSED (A)

PLANS PREPARED BY:

DRMP
ENGINEERS • PLANNERS • SCIENTISTS

DRMP, INC.
5950 FAIRVIEW ROAD, SUITE 320
CHARLOTTE, NC 28210
NC LICENSE NO. C-2213 • (704) 332-2289

APPROVED: Lisa M. Moon

DATE: 10/30/2017

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

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DIVISION OF HIGHWAYS • STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION • WORK ZONE TRAFFIC CONTROL

NC 75
OFF SITE DETOUR ROUTES

10/30/2017
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PROJ. REFERENCE NO.	SHEET NO.
W-5601AC	TMP-11

SIGN NUMBER: SP-01
TYPE: D
QUANTITY: 6

SIGN WIDTH: 4′-0″
HEIGHT: 2′-0″
TOTAL AREA: 8.0 Sq.Ft.

BORDER TYPE: FLUSH
RECESS: 0.47″
WIDTH: 0.63″
RADII: 1.5″

NO. Z BARS:
LENGTH:

BACKG COLOR: Orange
COPY COLOR: Black

SYMBOL	X	Y	WID	HT

MAT'L: 0.125″ (3.2 mm) ALUMINUM

DESIGN BY: R NISSEN
PROJECT ID: W-5601AC

CHECKED BY: LM MOON
DIV: DIV 10

DATE: Jul 08, 2016

USE NOTES: 2

1. Legend and border(except those that are colored black) shall be direct applied Grade B sheeting.
2. Background shall be Grade B reflective sheeting.
3. Shields; A, B, and C type arrows shall be on 0.032″ (0.8mm) aluminum and demountable.
4. Bottom panel shall be yellow Grade C sheeting. Legend shall be direct applied black non-reflective sheeting. Yellow panel is:

Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter

																											Series/Size Text Length
		R	O	C	K	Y		R	I	V	E	R															C 2000
	5.2	3.6	3.8	3.8	3.2	3.2	5	3.6	1.4	3.8	3.4	2.8	5.1														37.7
		R	O	A	D																						C 2000
	17.2	3.6	3.6	3.9	2.8	17																					13.8

FILENAME: W5601_TC_TCP_Detour

NORTH CAROLINA D.O.T. SIGN DETAIL

PLANS PREPARED BY:

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DRMP, INC.
5950 FAIRVIEW ROAD, SUITE 320
CHARLOTTE, NC 28210
NC LICENSE NO. C-2213 • (704) 333-2289

APPROVED: Lisa M. Moon

DATE: 10/30/2017

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

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DIVISION OF HIGHWAYS • STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION • WORK ZONE TRAFFIC CONTROL

SPECIAL SIGN DESIGN

10/30/2017
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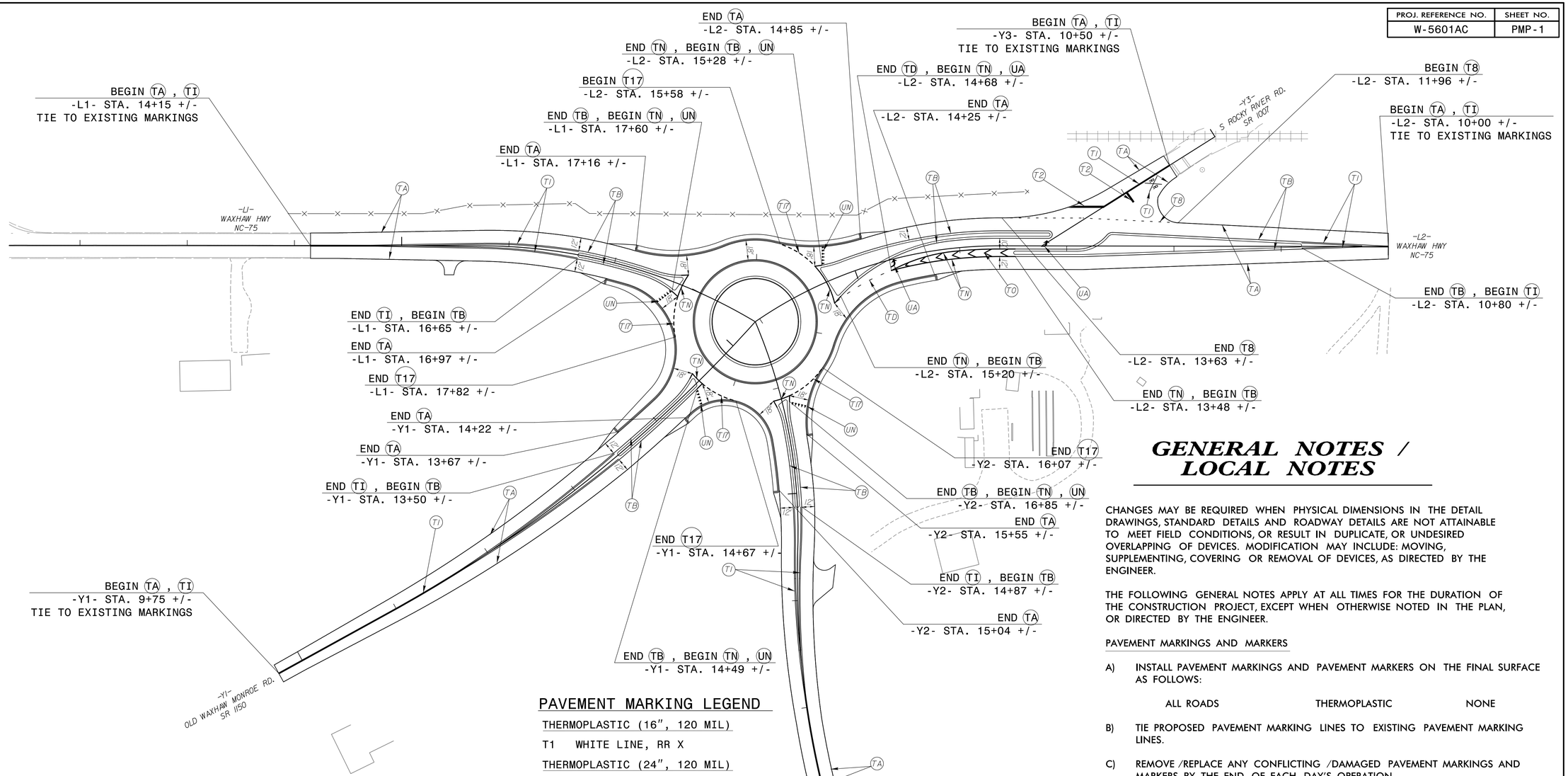
User:rlawton

DocuSign Envelope ID: C640E2B7-D091-4B03-BDB2-48B27F7502D3

PROJ. REFERENCE NO.	SHEET NO.
W-5601AC	PMP-1



GENERAL NOTES / LOCAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS, OR RESULT IN DUPLICATE, OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING OR REMOVAL OF DEVICES, AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER.

PAVEMENT MARKINGS AND MARKERS

A) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

ALL ROADS	THERMOPLASTIC	NONE

B) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

C) REMOVE /REPLACE ANY CONFLICTING /DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

D) REPLACE /RELOCATE ALL EXISTING SIGNS AS NEEDED OR DIRECTED BY THE ENGINEER. SPECIAL ATTENTION SHOULD BE PAID TO STOP SIGNS AND SPEED LIMIT SIGNS.

E) ALL STOPBARS TO BE PLACED 10 FEET BACK OF EDGE OF TRAVEL LANE UNLESS OTHERWISE NOTED.

PAVEMENT MARKING LEGEND

THERMOPLASTIC (16", 120 MIL)

T1 WHITE LINE, RR X

THERMOPLASTIC (24", 120 MIL)

T2 WHITE STOPBAR

THERMOPLASTIC (4", 90 MIL)

TA WHITE EDGELINE
TB YELLOW EDGELINE

THERMOPLASTIC (4", 120 MIL)

T8 2 FT- 6 FT SP WHITE MINISKIP
TD 3 FT- 9 FT SP WHITE MINISKIP
TI YELLOW DOUBLE CENTER

THERMOPLASTIC (8", 90 MIL)

TN WHITE GORELINE
TO WHITE DIAGONAL

THERMOPLASTIC (8", 120 MIL)

T17 3 FT- 3 FT SP WHITE MINISKIP

THERMOPLASTIC SYMBOLS (90 MIL)

UA LEFT TURN ARROW
UN 24" YIELD LINE TRIANGLE

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANAUARY 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1205.11	PAVEMENT MARKINGS - RAILROAD CROSSINGS

APPROVED: DocuSigned by: Michael N. Suraskey 15596AAD876E4D9...

DATE: 12-18-2018

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 27333 ENGINEER MICHAEL N. SURASKY

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

wsp
1001 Morehead Square Dr.
Suite 610
Charlotte NC, 28203
NC LIC. NO. F-0165

12/18/2018
T:\118839\W-5601AC\TrafficTrafficControl\TCP\W5601AC_TC_PMP.dgn
gourley

TIP PROJECT: W-5601AC

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

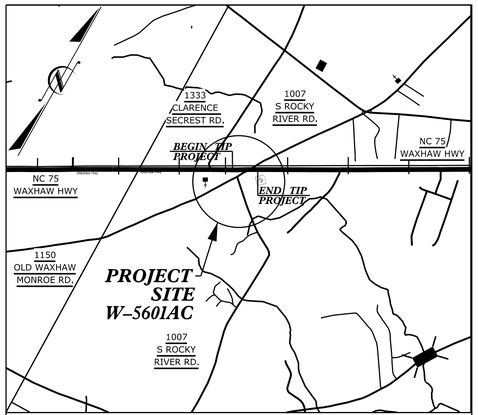
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

UNION COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5601AC	EC-1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

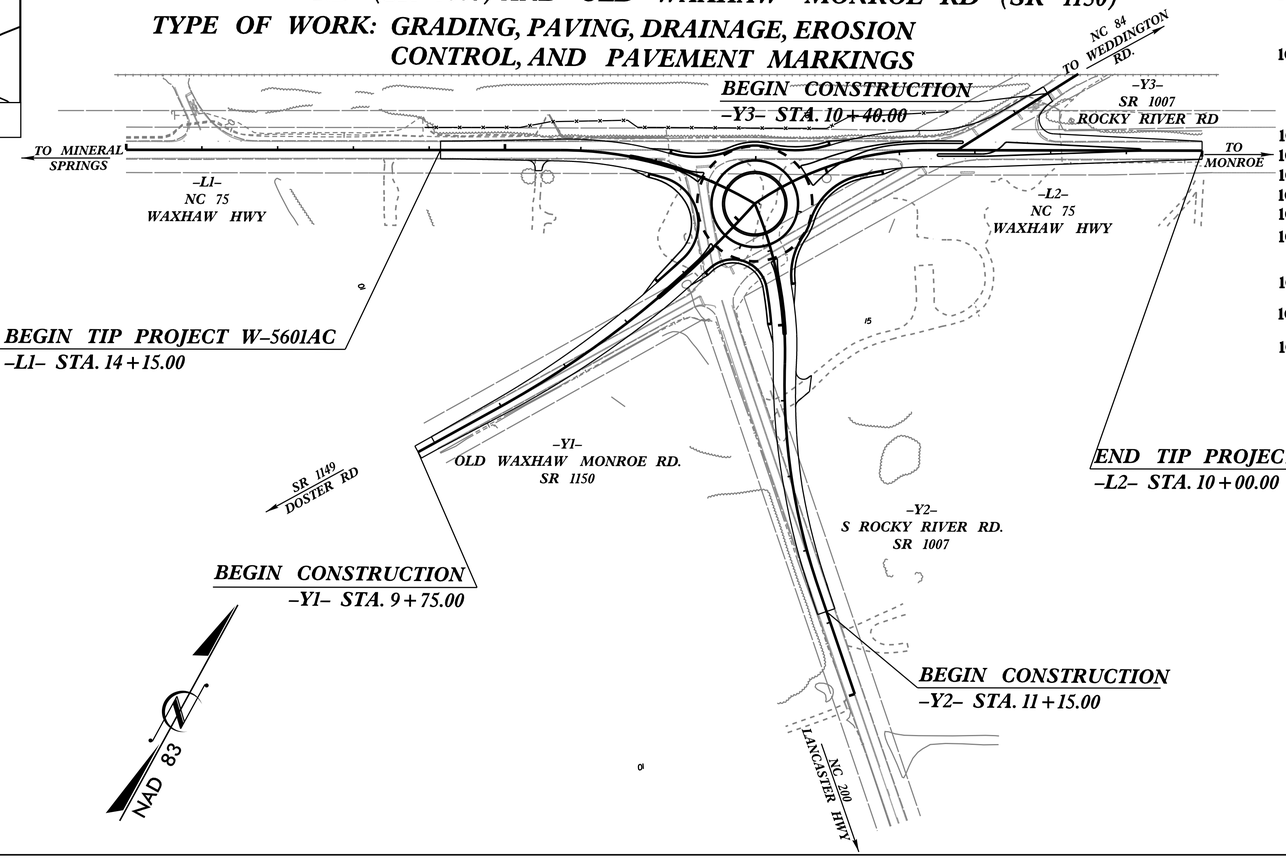
See Sheet 1-A For Index of Sheets



VICINITY MAP

LOCATION: INTERSECTIONS OF WAXHAW HWY (NC 75) AND S ROCKY RIVER RD (SR 1007) AND OLD WAXHAW MONROE RD (SR 1150)

TYPE OF WORK: GRADING, PAVING, DRAINAGE, EROSION CONTROL, AND PAVEMENT MARKINGS



EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TSD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
1633.02	Temporary Rock Silt Check Type-B	
	Wattle / Coir Fiber Wattle	EW CW
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	
1634.01	Temporary Rock Sediment Dam Type-A	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	
1635.02	Rock Pipe Inlet Sediment Trap Type-B	
1630.04	Stilling Basin	
1630.06	Special Stilling Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	
	Tiered Skimmer Basin	
	Infiltration Basin	

THIS PROJECT CONTAINS EROSION CONTROL PLANS FOR CLEARING AND GRUBBING PHASE OF CONSTRUCTION.

GRAPHIC SCALE

0 50
PLANS

0 50
PROFILE (HORIZONTAL)

0 10
PROFILE (VERTICAL)

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 1, 2018 AND ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER RESOURCES.

Prepared in the Office of:

WSP | PARSONS BRINCKERHOFF
434 FAYETTEVILLE STREET
SUITE 1500
RALEIGH, NC 27601

Designed by:

RANA STANSELL, PE — NAME
3597 — LEVEL III CERTIFICATION NO.

Reviewed in the Office of:

ROADSIDE ENVIRONMENTAL UNIT
1 South Wilmington St.
Raleigh, NC 27611

2018 STANDARD SPECIFICATIONS

Reviewed by:

Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"– Roadway Design Unit – N. C. Department of Transportation – Raleigh, N. C., dated January 2012 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

1604.01	Railroad Erosion Control Detail	1632.01	Rock Inlet Sediment Trap Type A
1605.01	Temporary Silt Fence	1632.02	Rock Inlet Sediment Trap Type B
1606.01	Special Sediment Control Fence	1632.03	Rock Inlet Sediment Trap Type C
1607.01	Gravel Construction Entrance	1633.01	Temporary Rock Silt Check Type A
1622.01	Temporary Berms and Slope Drains	1633.02	Temporary Rock Silt Check Type B
1630.01	Riser Basin	1634.01	Temporary Rock Sediment Dam Type A
1630.02	Silt Basin Type B	1634.02	Temporary Rock Sediment Dam Type B
1630.03	Temporary Silt Ditch	1635.01	Rock Pipe Inlet Sediment Trap Type A
1630.04	Stilling Basin	1635.02	Rock Pipe Inlet Sediment Trap Type B
1630.05	Temporary Diversion	1640.01	Coir Fiber Baffle
1630.06	Special Stilling Basin	1645.01	Temporary Stream Crossing
1631.01	Matting Installation		

DOT\W5601AC_EC_EC1.tsk\Hydraulics\CADD\Erosion Control\W5601AC_EC_EC1.tsk.dgn
7/19/2018
8:55:14 AM

PROJECT REFERENCE NO.	SHEET NO.
W-5601AC	EC-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	L1	14+50	15+35	RT	55
4	L1	15+55	16+19	RT	40
4	L1	15+00	17+87	LT	155
4	L2	10+50	12+00	RT	90
4	L2	13+00	15+29	RT	140
4	L2	14+00	15+29	LT	80
4	Y1	10+00	10+92	RT	55
4	Y1	11+12	12+09	RT	60
4	Y1	10+00	14+50	LT	270
4	Y2	10+91	14+00	RT	185
4	Y2	14+35	16+23	RT	115
4	Y2	12+50	15+89	LT	205
				SUBTOTAL	1450
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					1500
				TOTAL	2950
				SAY	2950

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)

PROJECT REFERENCE NO.	SHEET NO.
W-5601AC	EC-3A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

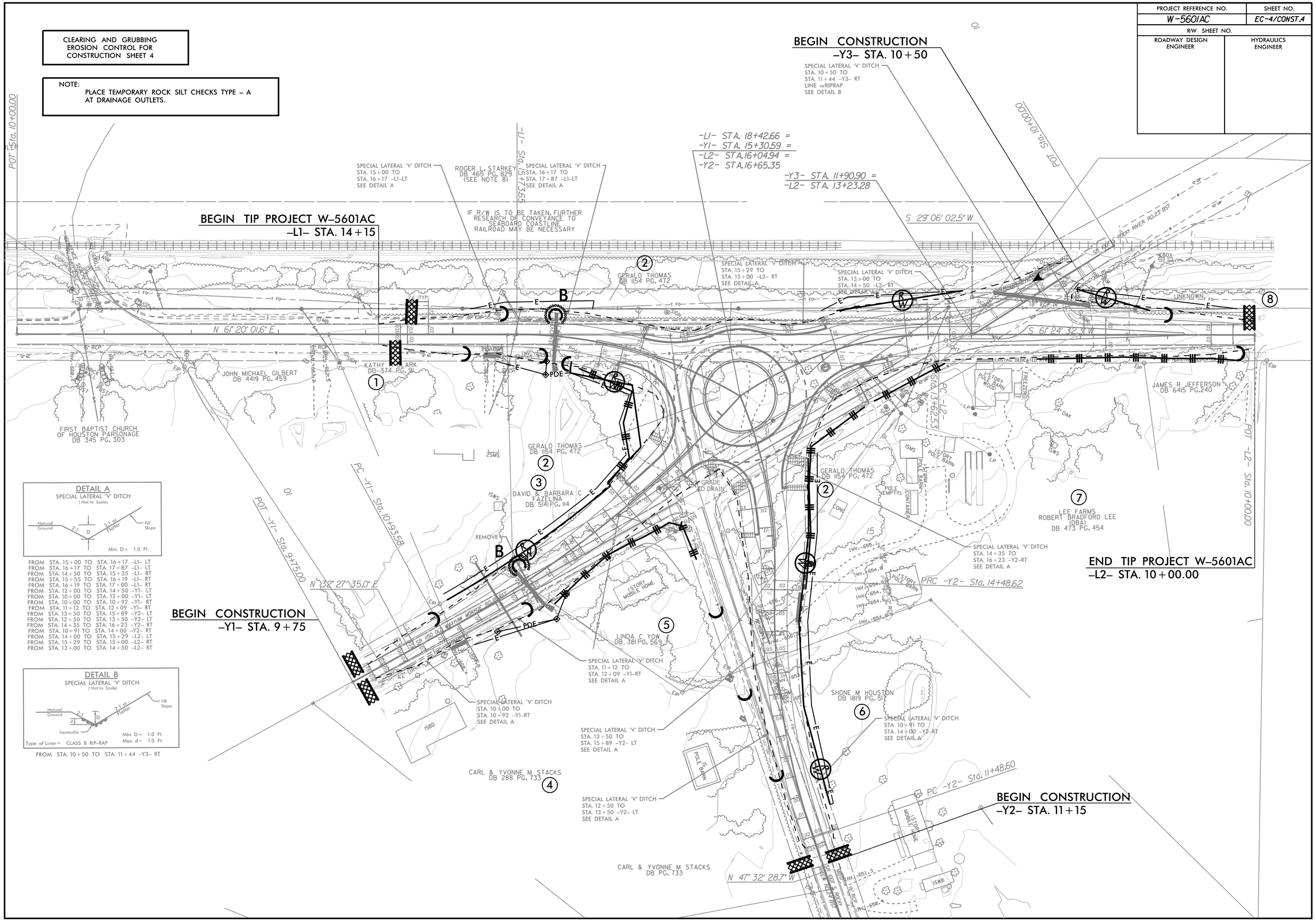
SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

PROJECT REFERENCE NO.	SHEET NO.
W-5601AC	EC-4/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

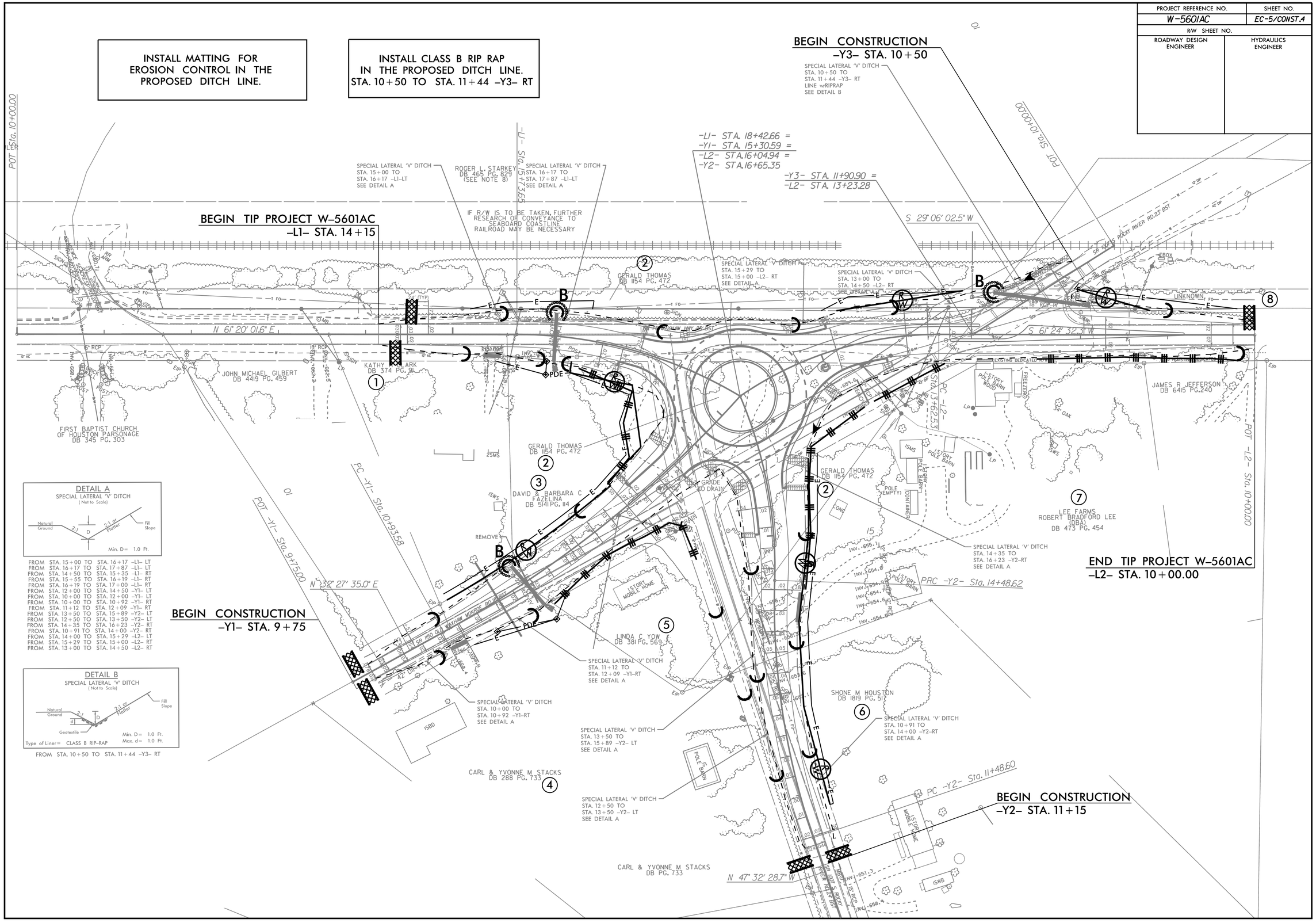
NOTE:
PLACE TEMPORARY ROCK SILT CHECKS TYPE – A
AT DRAINAGE OUTLETS.



PROJECT REFERENCE NO.	SHEET NO.
W-5601AC	EC-5/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INSTALL MATTING FOR EROSION CONTROL IN THE PROPOSED DITCH LINE.

INSTALL CLASS B RIP RAP IN THE PROPOSED DITCH LINE. STA. 10+50 TO STA. 11+44 -Y3- RT



DETAIL A

SPECIAL LATERAL 'V' DITCH
(Not to Scale)

FROM STA. 15+00 TO STA. 16+17 -L1- LT
FROM STA. 16+17 TO STA. 17+87 -L1- LT
FROM STA. 14+50 TO STA. 15+35 -L1- RT
FROM STA. 15+55 TO STA. 16+19 -L1- RT
FROM STA. 16+19 TO STA. 17+00 -L1- RT
FROM STA. 12+00 TO STA. 14+50 -Y1- LT
FROM STA. 10+00 TO STA. 12+00 -Y1- LT
FROM STA. 10+00 TO STA. 10+92 -Y1- RT
FROM STA. 11+12 TO STA. 12+09 -Y1- RT
FROM STA. 13+50 TO STA. 15+89 -Y2- LT
FROM STA. 12+50 TO STA. 13+50 -Y2- LT
FROM STA. 14+35 TO STA. 16+23 -Y2- RT
FROM STA. 10+91 TO STA. 14+00 -Y2- RT
FROM STA. 14+00 TO STA. 15+29 -L2- LT
FROM STA. 15+29 TO STA. 15+00 -L2- RT
FROM STA. 13+00 TO STA. 14+50 -L2- RT

DETAIL B

SPECIAL LATERAL 'V' DITCH
(Not to Scale)

Type of Liner = CLASS B RIP-RAP

FROM STA. 10+50 TO STA. 11+44 -Y3- RT

UNION COUNTY PUBLIC WORKS
UNION COUNTY, NORTH CAROLINA

FINAL DESIGN
ISSUED FOR BID

WATER MAIN EXTENSION FOR W-5601AC ROUNDABOUT

NC 75 - WAXHAW HIGHWAY
SR 1007 - S. ROCKY RIVER ROAD

AUGUST 2017
PROJECT NO. MW020

NORTH CAROLINA PROFESSIONAL SEAL 19697 ENGINEER MICHAEL S. CALDWELL
8/31/17

PLANS PREPARED BY:
UNION COUNTY
PUBLIC WORKS
500 NORTH MAIN STREET, SUITE 600
MONROE, NORTH CAROLINA 28112
PHONE: (704) 296-4210
FAX: (704) 296-4232

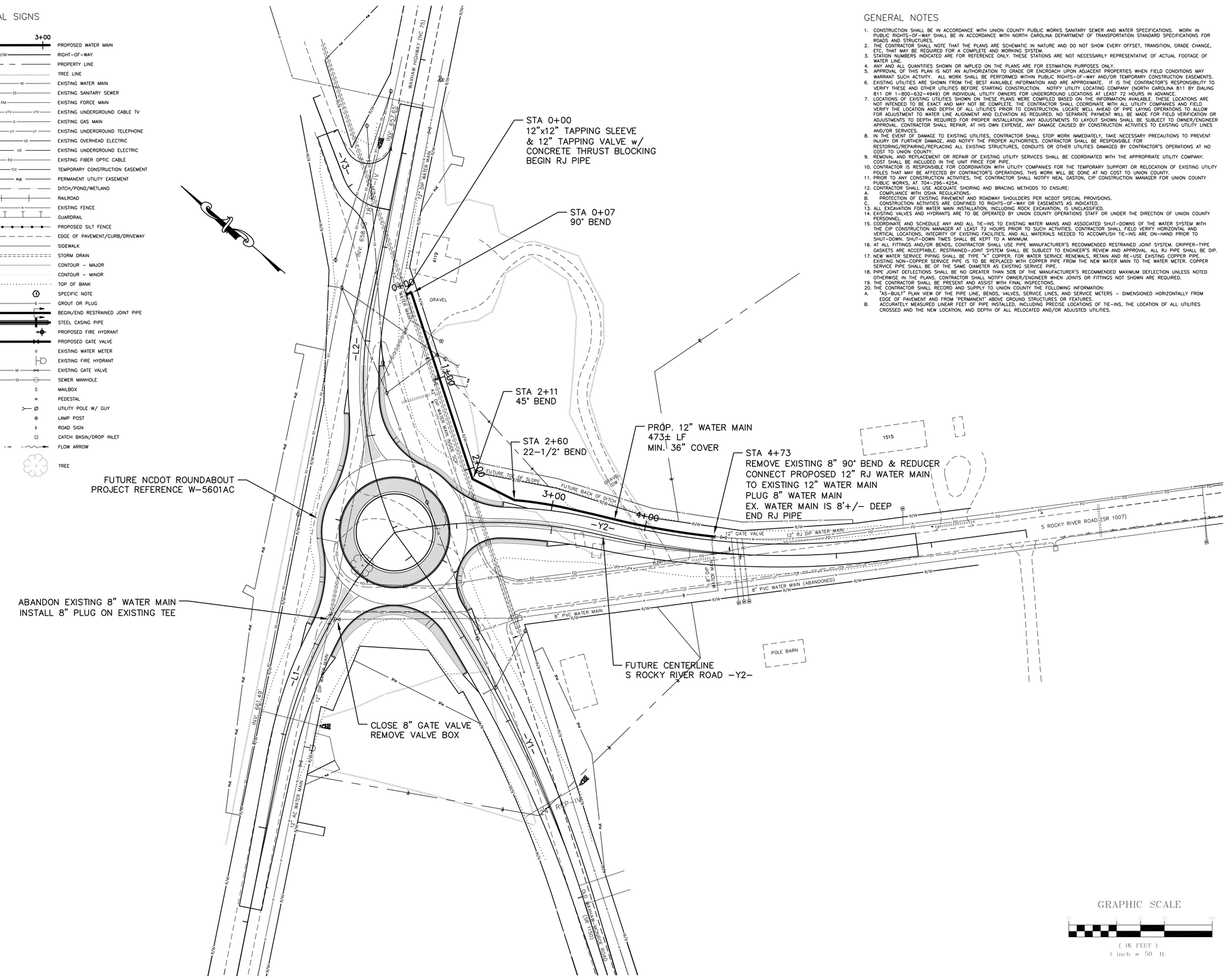
August 31, 2017 – 10:28am By: mcaldwell
I:\Common\PWORKS\Engineering\Capital Improvement Programs\CIP Water and Wastewater\NCDOT Projects\NC 75 – Rocky River Roundabout\W-5601AC – Water – IFB.dwg
IFB
WATER MAIN EXTENSION FOR W-5601AC ROUNDABOUT

August 31, 2017 – 10:31am By: mcaldwell

CONVENTIONAL SIGNS

1+00 2+00 3+00

- PROPOSED WATER MAIN
- RIGHT-OF-WAY
- PROPERTY LINE
- TREE LINE
- EXISTING WATER MAIN
- EXISTING SANITARY SEWER
- EXISTING FORCE MAIN
- EXISTING UNDERGROUND CABLE TV
- EXISTING GAS MAIN
- EXISTING UNDERGROUND TELEPHONE
- EXISTING OVERHEAD ELECTRIC
- EXISTING UNDERGROUND ELECTRIC
- EXISTING FIBER OPTIC CABLE
- TEMPORARY CONSTRUCTION EASEMENT
- PERMANENT UTILITY EASEMENT
- DITCH/POND/WETLAND
- RAILROAD
- EXISTING FENCE
- GUARDRAIL
- PROPOSED SILT FENCE
- EDGE OF PAVEMENT/CURB/DRIVEWAY
- SIDEWALK
- STORM DRAIN
- CONTOUR – MAJOR
- CONTOUR – MINOR
- TOP OF BANK
- SPECIFIC NOTE
- GROUT OR PLUG
- BEGIN/END RESTRAINED JOINT PIPE
- STEEL CASING PIPE
- PROPOSED FIRE HYDRANT
- PROPOSED GATE VALVE
- EXISTING WATER METER
- EXISTING FIRE HYDRANT
- EXISTING GATE VALVE
- SEWER MANHOLE
- MAILBOX
- PEDESTAL
- UTILITY POLE W/ GUY
- LAMP POST
- ROAD SIGN
- CATCH BASIN/DROP INLET
- FLOW ARROW
- TREE



GENERAL NOTES

1. CONSTRUCTION SHALL BE IN ACCORDANCE WITH UNION COUNTY PUBLIC WORKS SANITARY SEWER AND WATER SPECIFICATIONS. WORK IN PUBLIC RIGHTS-OF-WAY SHALL BE IN ACCORDANCE WITH NORTH CAROLINA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
2. THE CONTRACTOR SHALL NOTE THAT THE PLANS ARE SCHEMATIC IN NATURE AND DO NOT SHOW EVERY OFFSET, TRANSITION, GRADE CHANGE, ETC, THAT MAY BE REQUIRED FOR A COMPLETE AND WORKING SYSTEM.
3. STATION NUMBERS INDICATED ARE FOR REFERENCE ONLY. THESE STATIONS ARE NOT NECESSARILY REPRESENTATIVE OF ACTUAL FOOTAGE OF WATER LINE.
4. ANY AND ALL QUANTITIES SHOWN OR IMPLIED ON THE PLANS ARE FOR ESTIMATION PURPOSES ONLY.
5. APPROVAL OF THIS PLAN IS NOT AN AUTHORIZATION TO GRADE OR ENCROACH UPON ADJACENT PROPERTIES WHEN FIELD CONDITIONS MAY WARRANT SUCH ACTIVITY. ALL WORK SHALL BE PERFORMED WITHIN PUBLIC RIGHTS-OF-WAY AND/OR TEMPORARY CONSTRUCTION EASEMENTS.
6. EXISTING UTILITIES ARE SHOWN FROM THE BEST AVAILABLE INFORMATION AND ARE APPROXIMATE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THESE AND OTHER UTILITIES BEFORE STARTING CONSTRUCTION. NOTIFY UTILITY LOCATING COMPANY (NORTH CAROLINA 811 BY DIALING 811 OR 1-800-632-4949) OR INDIVIDUAL UTILITY OWNERS FOR UNDERGROUND LOCATIONS AT LEAST 72 HOURS IN ADVANCE.
7. LOCATIONS OF EXISTING UTILITIES SHOWN ON THESE PLANS WERE COMPILED BASED ON THE INFORMATION AVAILABLE. THESE LOCATIONS ARE NOT INTENDED TO BE EXACT AND MAY NOT BE COMPLETE. THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES AND FIELD VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION. LOCATE WELL AHEAD OF PIPE LAYING OPERATIONS TO ALLOW FOR ADJUSTMENT TO WATER LINE ALIGNMENT AND ELEVATION AS REQUIRED. NO SEPARATE PAYMENT WILL BE MADE FOR FIELD VERIFICATION OR ADJUSTMENTS TO DEPTH REQUIRED FOR PROPER INSTALLATION. ANY ADJUSTMENTS TO LAYOUT SHOWN SHALL BE SUBJECT TO OWNER/ENGINEER APPROVAL. CONTRACTOR SHALL REPAIR, AT HIS OWN EXPENSE, ANY DAMAGE CAUSED BY CONSTRUCTION ACTIVITIES TO EXISTING UTILITY LINES AND/OR SERVICES.
8. IN THE EVENT OF DAMAGE TO EXISTING UTILITIES, CONTRACTOR SHALL STOP WORK IMMEDIATELY, TAKE NECESSARY PRECAUTIONS TO PREVENT INJURY OR FURTHER DAMAGE, AND NOTIFY THE PROPER AUTHORITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING/REPAIRING/REPLACING ALL EXISTING STRUCTURES, CONDUITS OR OTHER UTILITIES DAMAGED BY CONTRACTOR'S OPERATIONS AT NO COST TO UNION COUNTY.
9. REMOVAL AND REPLACEMENT OR REPAIR OF EXISTING UTILITY SERVICES SHALL BE COORDINATED WITH THE APPROPRIATE UTILITY COMPANY. COST SHALL BE INCLUDED IN THE UNIT PRICE FOR PIPE.
10. CONTRACTOR IS RESPONSIBLE FOR COORDINATION WITH UTILITY COMPANIES FOR THE TEMPORARY SUPPORT OR RELOCATION OF EXISTING UTILITY POLES THAT MAY BE AFFECTED BY CONTRACTOR'S OPERATIONS. THIS WORK WILL BE DONE AT NO COST TO UNION COUNTY.
11. PRIOR TO ANY CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL NOTIFY NEAL GASTON, CIP CONSTRUCTION MANAGER FOR UNION COUNTY PUBLIC WORKS, AT 704-296-4254.
12. CONTRACTOR SHALL USE ADEQUATE SHORING AND BRACING METHODS TO ENSURE:
    A. COMPLIANCE WITH OSHA REGULATIONS.
    B. PROTECTION OF EXISTING PAVEMENT AND ROADWAY SHOULDERS PER NCDOT SPECIAL PROVISIONS.
    C. CONSTRUCTION ACTIVITIES ARE CONFINED TO RIGHTS-OF-WAY OR EASEMENTS AS INDICATED.
13. ALL EXCAVATION FOR WATER MAIN INSTALLATION, INCLUDING ROCK EXCAVATION, IS UNCLASSIFIED.
14. EXISTING VALVES AND HYDRANTS ARE TO BE OPERATED BY UNION COUNTY OPERATIONS STAFF OR UNDER THE DIRECTION OF UNION COUNTY PERSONNEL.
15. COORDINATE AND SCHEDULE ANY AND ALL TIE-INS TO EXISTING WATER MAINS AND ASSOCIATED SHUT-DOWNS OF THE WATER SYSTEM WITH THE CIP CONSTRUCTION MANAGER AT LEAST 72 HOURS PRIOR TO SUCH ACTIVITIES. CONTRACTOR SHALL FIELD VERIFY HORIZONTAL AND VERTICAL LOCATIONS, INTEGRITY OF EXISTING FACILITIES, AND ALL MATERIALS NEEDED TO ACCOMPLISH TIE-INS ARE ON-HAND PRIOR TO SHUT-DOWN. SHUT-DOWN TIMES SHALL BE KEPT TO A MINIMUM.
16. AT ALL FITTINGS AND/OR BENDS, CONTRACTOR SHALL USE PIPE MANUFACTURER'S RECOMMENDED RESTRAINED JOINT SYSTEM. GRIPPER-TYPE GASKETS ARE ACCEPTABLE. RESTRAINED-JOINT SYSTEM SHALL BE SUBJECT TO ENGINEER'S REVIEW AND APPROVAL. ALL RJ PIPE SHALL BE DIP.
17. NEW WATER SERVICE PIPING SHALL BE TYPE "K" COPPER. FOR WATER SERVICE RENEWALS, RETAIN AND RE-USE EXISTING COPPER PIPE. EXISTING NON-COPPER SERVICE PIPE IS TO BE REPLACED WITH COPPER PIPE FROM THE NEW WATER MAIN TO THE WATER METER. COPPER SERVICE PIPE SHALL BE OF THE SAME DIAMETER AS EXISTING SERVICE PIPE.
18. PIPE JOINT DEFLECTIONS SHALL BE NO GREATER THAN 50% OF THE MANUFACTURER'S RECOMMENDED MAXIMUM DEFLECTION UNLESS NOTED OTHERWISE IN THE PLANS. CONTRACTOR SHALL NOTIFY OWNER/ENGINEER WHEN JOINTS OR FITTINGS NOT SHOWN ARE REQUIRED.
19. THE CONTRACTOR SHALL BE PRESENT AND ASSIST WITH FINAL INSPECTIONS.
20. THE CONTRACTOR SHALL RECORD AND SUPPLY TO UNION COUNTY THE FOLLOWING INFORMATION:
    A. "AS-BUILT" PLAN VIEW OF THE PIPE LINE, BENDS, VALVES, SERVICE LINES, AND SERVICE METERS – DIMENSIONED HORIZONTALLY FROM EDGE OF PAVEMENT AND FROM "PERMANENT" ABOVE GROUND STRUCTURES OR FEATURES.
    B. ACCURATELY MEASURED LINEAR FEET OF PIPE INSTALLED, INCLUDING PRECISE LOCATIONS OF TIE-INS, THE LOCATION OF ALL UTILITIES CROSSED AND THE NEW LOCATION, AND DEPTH OF ALL RELOCATED AND/OR ADJUSTED UTILITIES.

PLANS PREPARED BY:
UNION COUNTY PUBLIC WORKS
500 NORTH MAIN STREET, SUITE 100
MONROE, NORTH CAROLINA 28112
PHONE: (704) 296-4210
FAX: (704) 296-4232

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 19697 MICHAEL S. CALDWELL

NO.	DATE	DESCRIPTION
2	8/17	ISSUED FOR BID
1	7/17	ISSUED FOR REGULATORY REVIEW

SHEET TITLE: WATER PLAN

PROJECT NAME: WATER MAIN EXTENSION FOR W-5601AC ROUNDABOUT

DESIGNED BY:	MSC
DRAWN BY:	MSC
CHECKED BY:	LNG
DATE:	AUGUST 2017
PROJECT#:	MW020

UC-1

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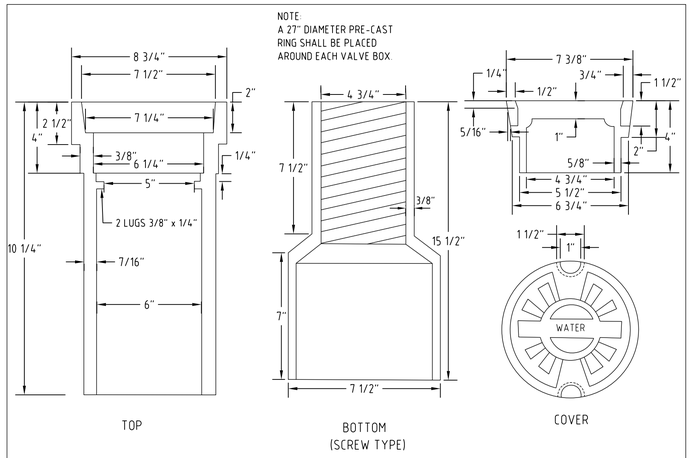


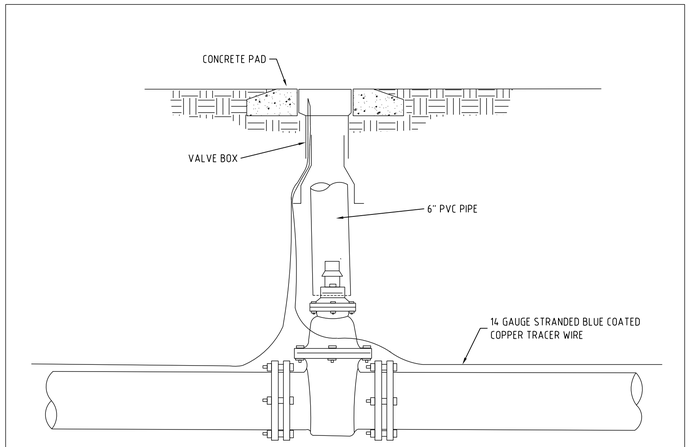
UNION COUNTY PUBLIC WORKS DEPARTMENT
UNION COUNTY, N.C.

STANDARD DETAIL

VALVE BOX

SCALE: N.T.S.
DATE: 11-17-06

1



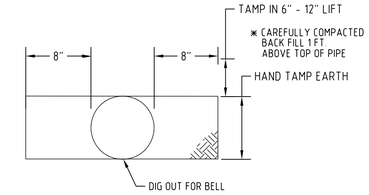
UNION COUNTY PUBLIC WORKS DEPARTMENT
UNION COUNTY, N.C.

STANDARD DETAIL

VALVE BOX INSTALLATION

SCALE: N.T.S.
DATE: 10-4-11

1A



NOTES:
MINIMUM COVER IS 36"
2" PVC SDR 21 (200 PSI)
6"-8" PVC SDR 18
12" OR LARGER DIP

* NO STONES LARGER THAN 1 INCH MEASURED IN THE LONGEST DIRECTION SHALL BE USED BETWEEN THE TRENCH BOTTOM AND 1 FOOT ABOVE THE WATER MAIN

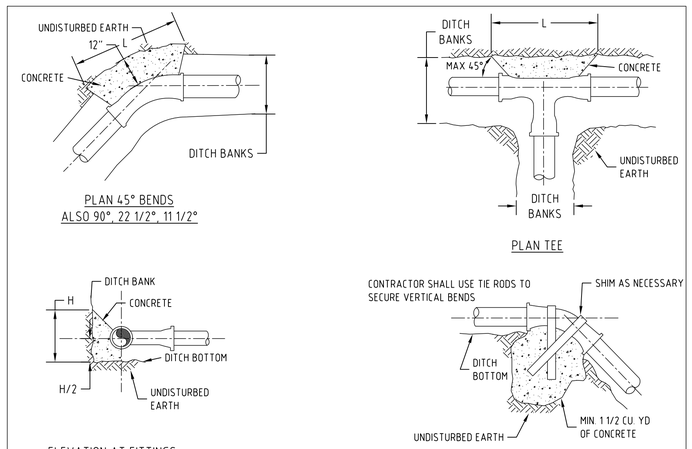
UNION COUNTY PUBLIC WORKS DEPARTMENT
UNION COUNTY, N.C.

STANDARD DETAIL

WATER TRENCH

SCALE: N.T.S.
DATE: 1-14-10

8B



UNION COUNTY PUBLIC WORKS DEPARTMENT
UNION COUNTY, N.C.

STANDARD DETAIL

THRUST BLOCK

SCALE: N.T.S.
DATE: 11-17-06

16

ANCHORAGE SCHEDULE

PIPE SIZE	11 1/4º BEND		22 1/2º BEND		45º BEND		90º BEND		TEE		TEST PRESSURE
	L	H	L	H	L	H	L	H	L	H	(P.S.I.)
6"	1'3"	1'0"	2'3"	1'0"	2'6"	1'6"	2'9"	1'6"	2'0"	1'6"	200
	1'6"	1'3"	2'3"	1'6"	3'0"	1'6"	4'0"	1'6"	3'0"	1'6"	300
8"	1'6"	1'6"	2'6"	1'9"	3'0"	2'0"	3'9"	2'0"	2'6"	2'0"	200
	2'0"	1'6"	3'0"	2'0"	3'9"	2'3"	4'6"	2'6"	3'6"	2'3"	300
12"	2'6"	1'9"	4'0"	2'3"	4'3"	3'0"	5'0"	3'3"	4'0"	3'0"	200
	3'6"	2'0"	5'3"	2'6"	6'0"	3'3"	7'0"	3'6"	5'0"	3'6"	300
14"	3'0"	1'0"	4'0"	3'0"	4'6"	3'9"	6'0"	3'9"	4'6"	3'6"	200
	4'0"	2'6"	5'3"	3'6"	6'0"	4'3"	6'6"	5'0"	5'0"	5'0"	300
16"	3'0"	2'9"	4'6"	3'6"	5'0"	4'6"	7'0"	4'3"	5'0"	4'0"	200
	4'0"	3'0"	6'3"	3'9"	6'5"	5'3"	8'0"	5'3"	7'6"	4'0"	300

THRUST BLOCK DIMENSIONS BASED ON SOIL BEARING CAPACITY OF 2000 P.S.F. AND A WATER TEST PRESSURE OF 150 P.S.I. SIZES OF THRUST BLOCKS MAY BE REVISED BY THE ENGINEER WHERE BEARING CAPACITY OF SOIL VARIES.

PROVIDE TAR PAPER JOINT BETWEEN CONCRETE THRUST BLOCK AND PORTION OF PIPE BEING ANCHORED.

ALL CONCRETE THRUST BLOCKS SHALL BE 2500 P.S.I. CONCRETE.

MAXIMUM VERTICAL DEFLECTION SHALL BE 22 1/2°.

JOINTS SHALL REMAIN FREE OF CONCRETE FOR INSPECTION, REPAIR OR REPLACEMENT OF JOINTS.

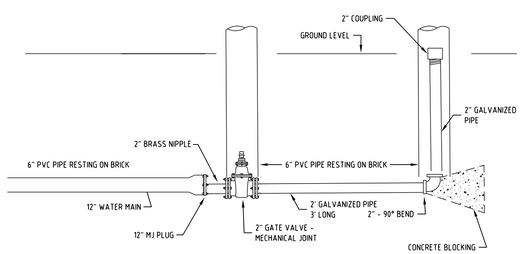
UNION COUNTY PUBLIC WORKS DEPARTMENT
UNION COUNTY, N.C.

STANDARD DETAIL

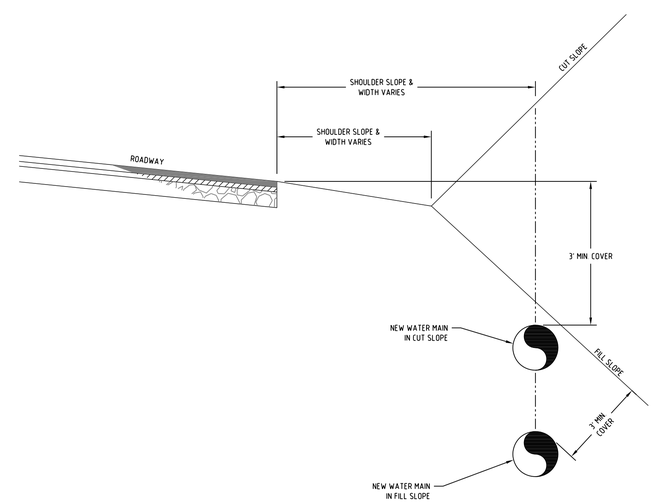
THRUST BLOCK SPECIFICATIONS

SCALE: N/A
DATE: 11-17-06

17



TEMPORARY BLOW OFF FOR TESTING



TYPICAL PIPE DEPTH IN
CUT & FILL SLOPE CONDITIONS

PLANS PREPARED BY:
UNION COUNTY PUBLIC WORKS
500 NORTH MAIN STREET, SUITE 600
MONROE, NORTH CAROLINA 28112
PHONE: (704) 296-4210
FAX: (704) 296-4232

NORTH CAROLINA PROFESSIONAL SEAL 19697 ENGINEER MICHAEL S. CAPELL
NOT FOR CONSTRUCTION

NO.	DATE	SUBMITTAL/REVISION
2	8/17	ISSUED FOR BIDS
1	7/17	ISSUED FOR REGULATORY REVIEW

SHEET TITLE: WATER DETAILS

PROJECT NAME: WATER MAIN EXTENSION FOR W-5601AC ROUNDABOUT

DESIGNED BY:	MSC
DRAWN BY:	MSC
CHECKED BY:	LNG
DATE:	AUGUST 2017
PROJECT#:	MW020

D-1

August 31, 2017 – 10:37am By: mcaldwell
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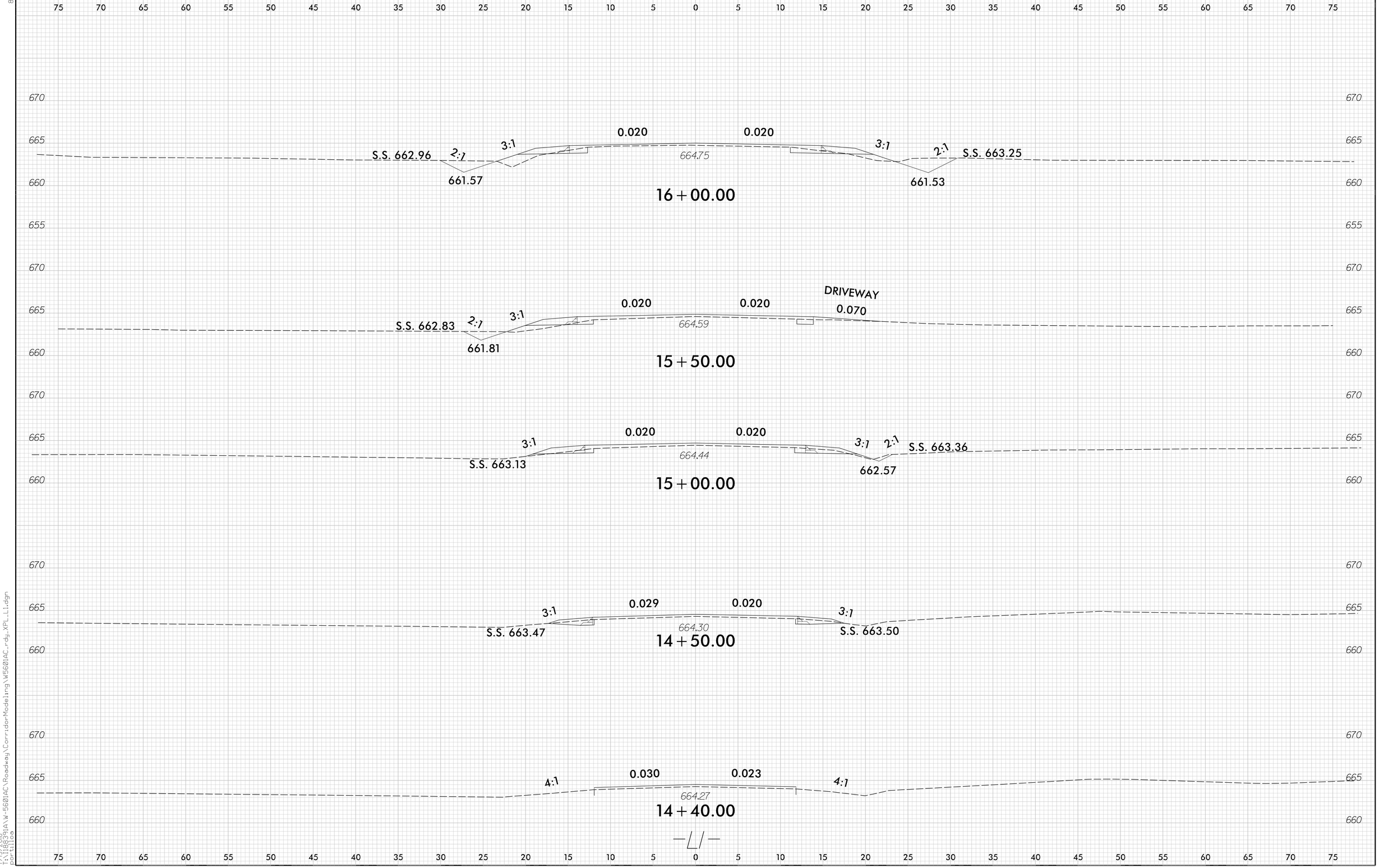

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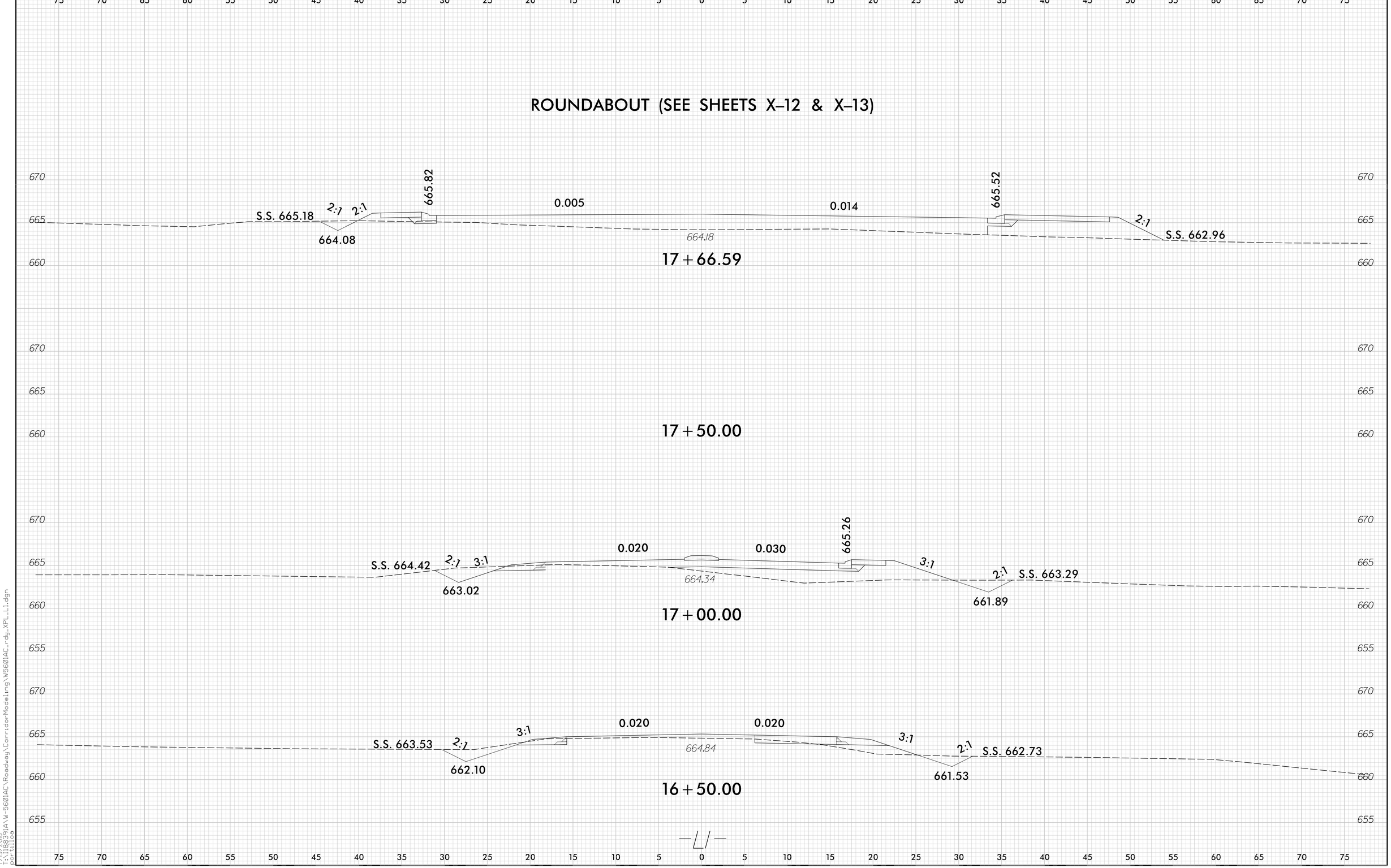

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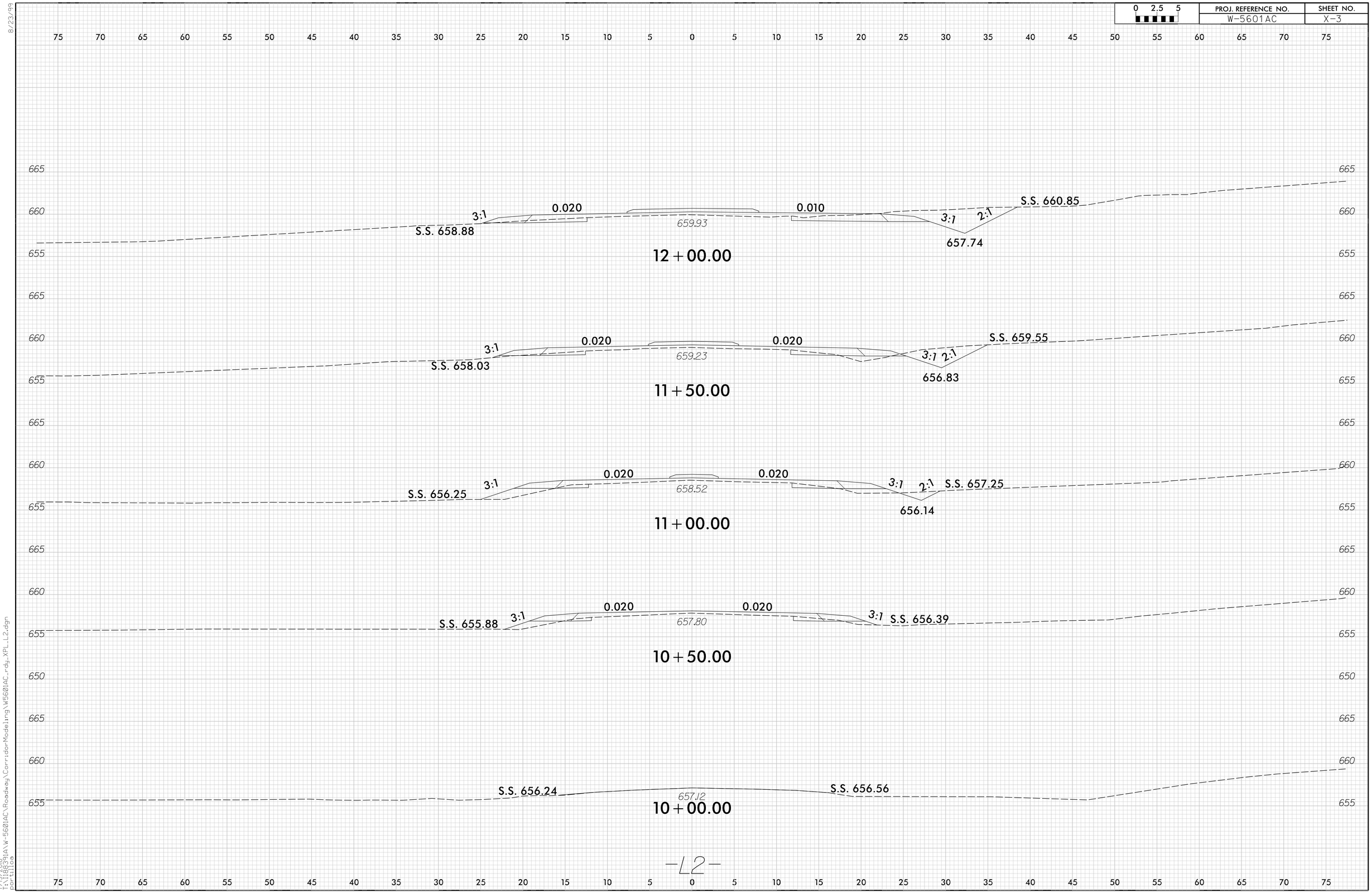

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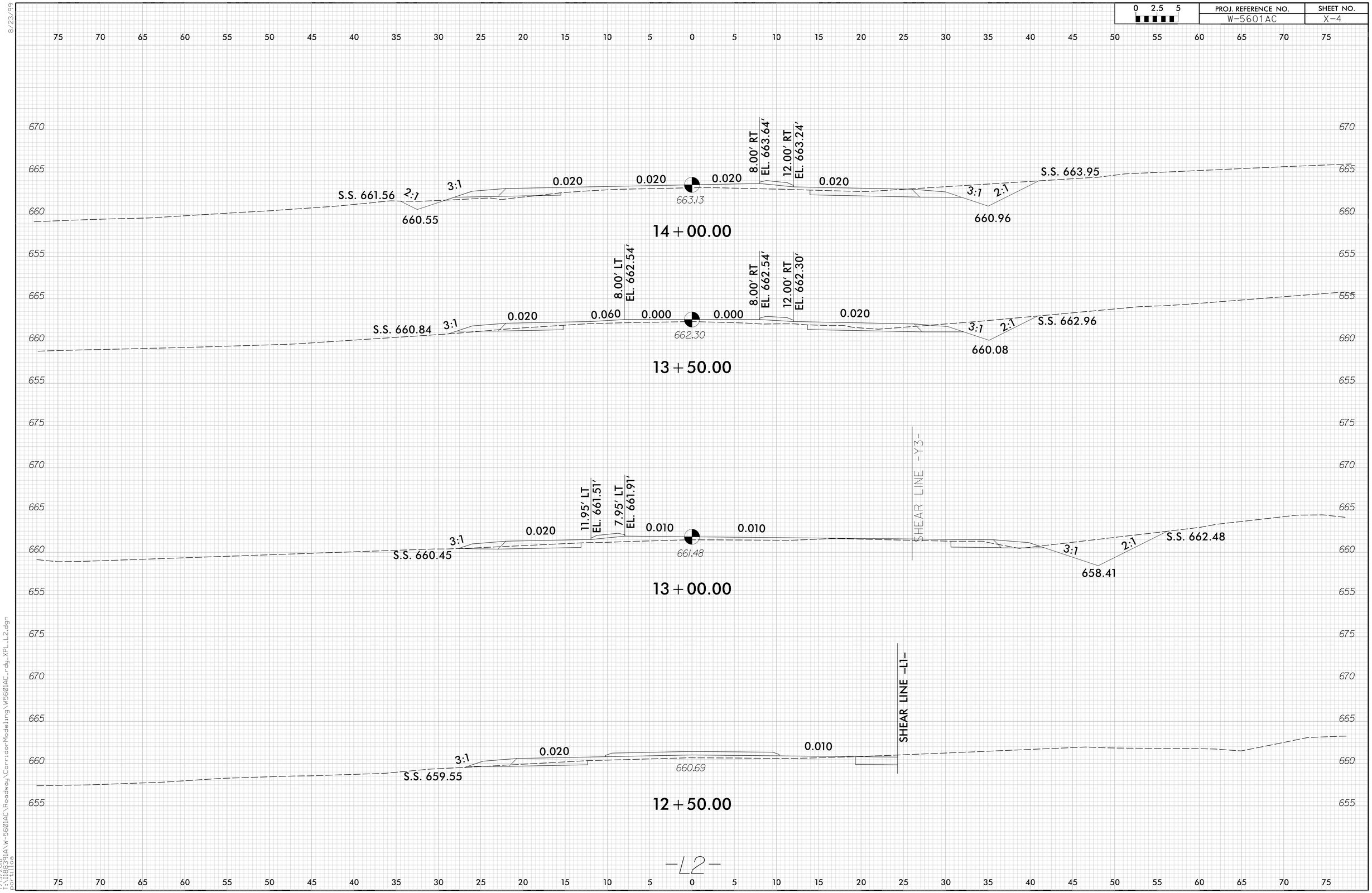

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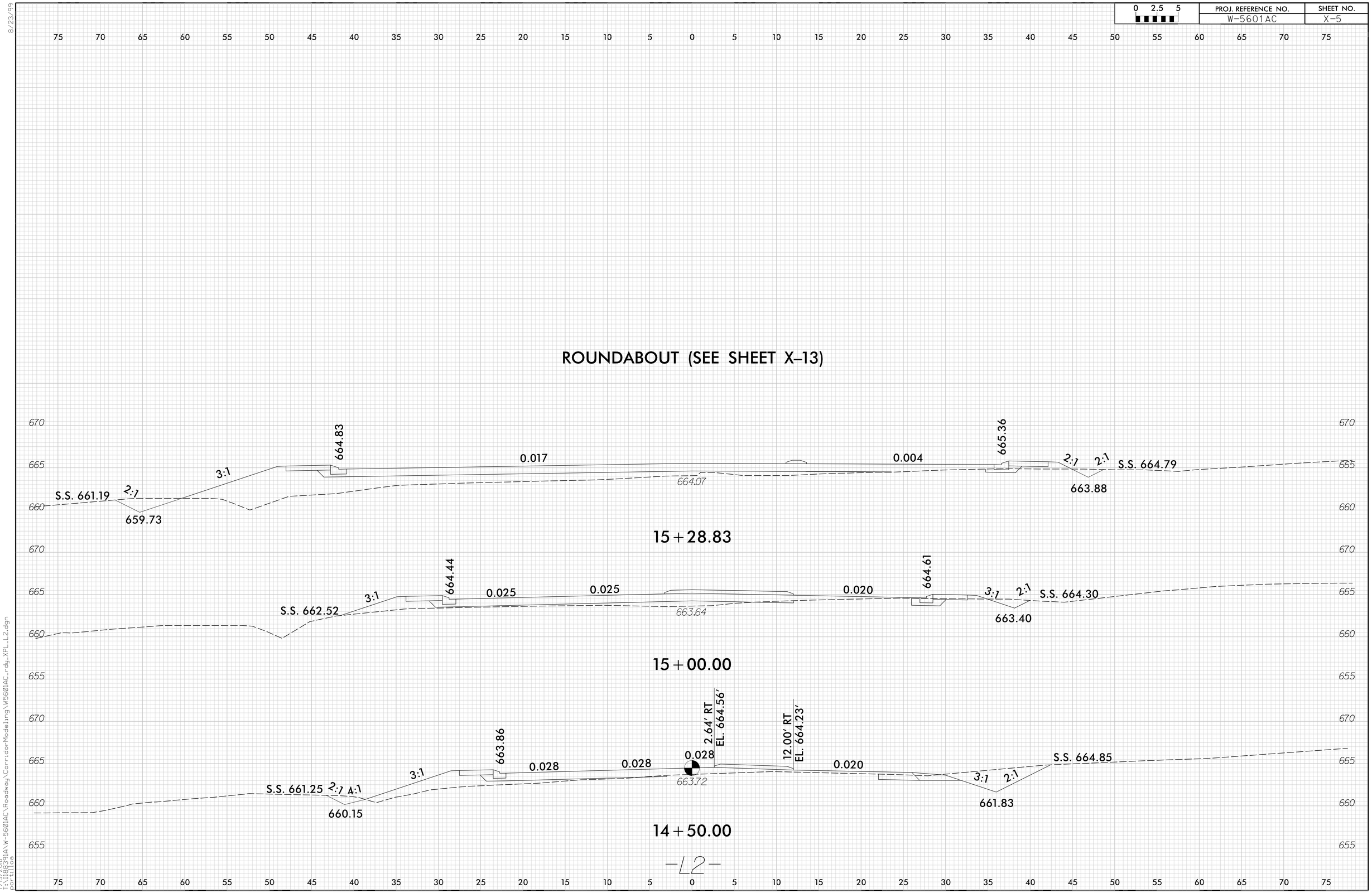

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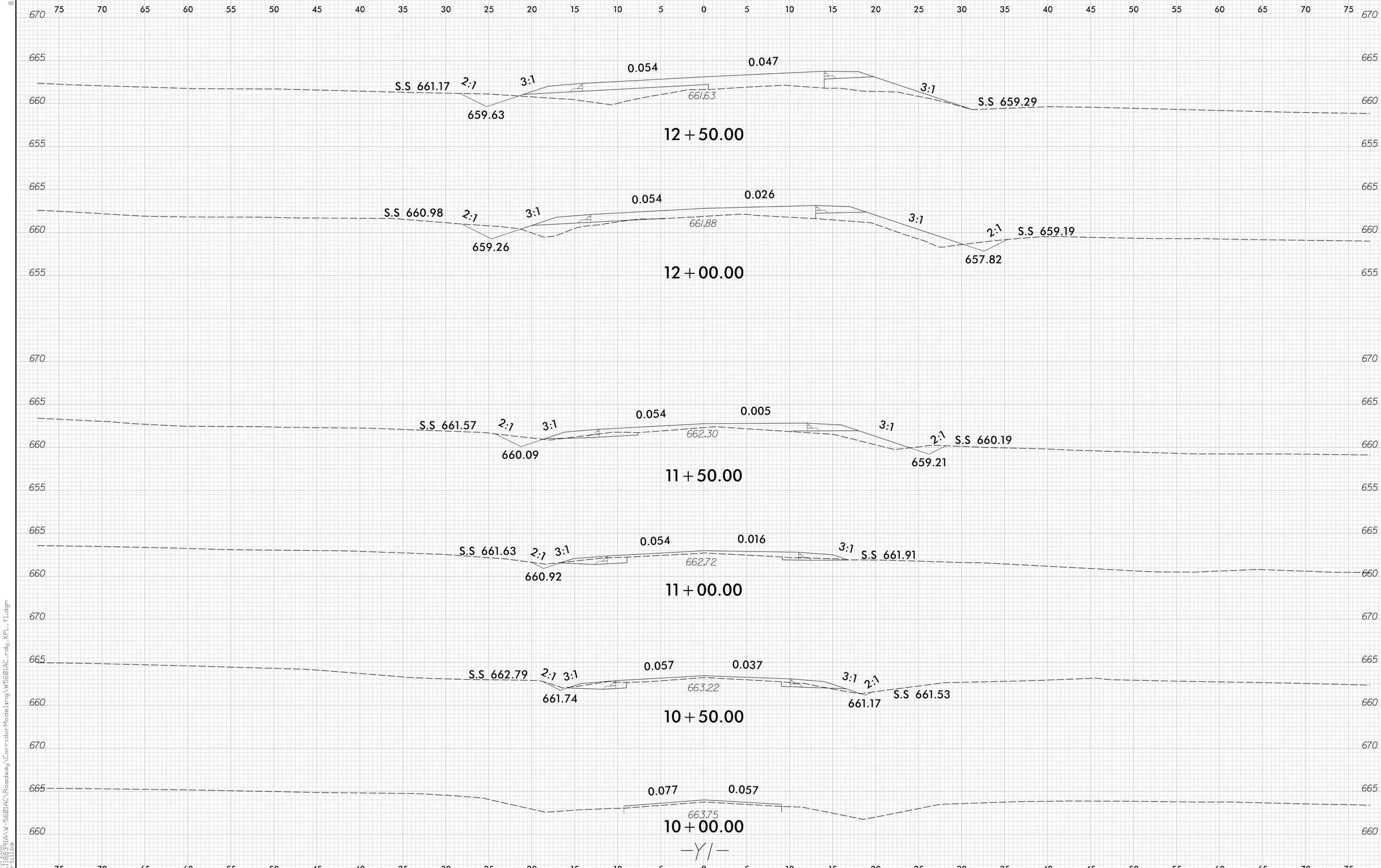

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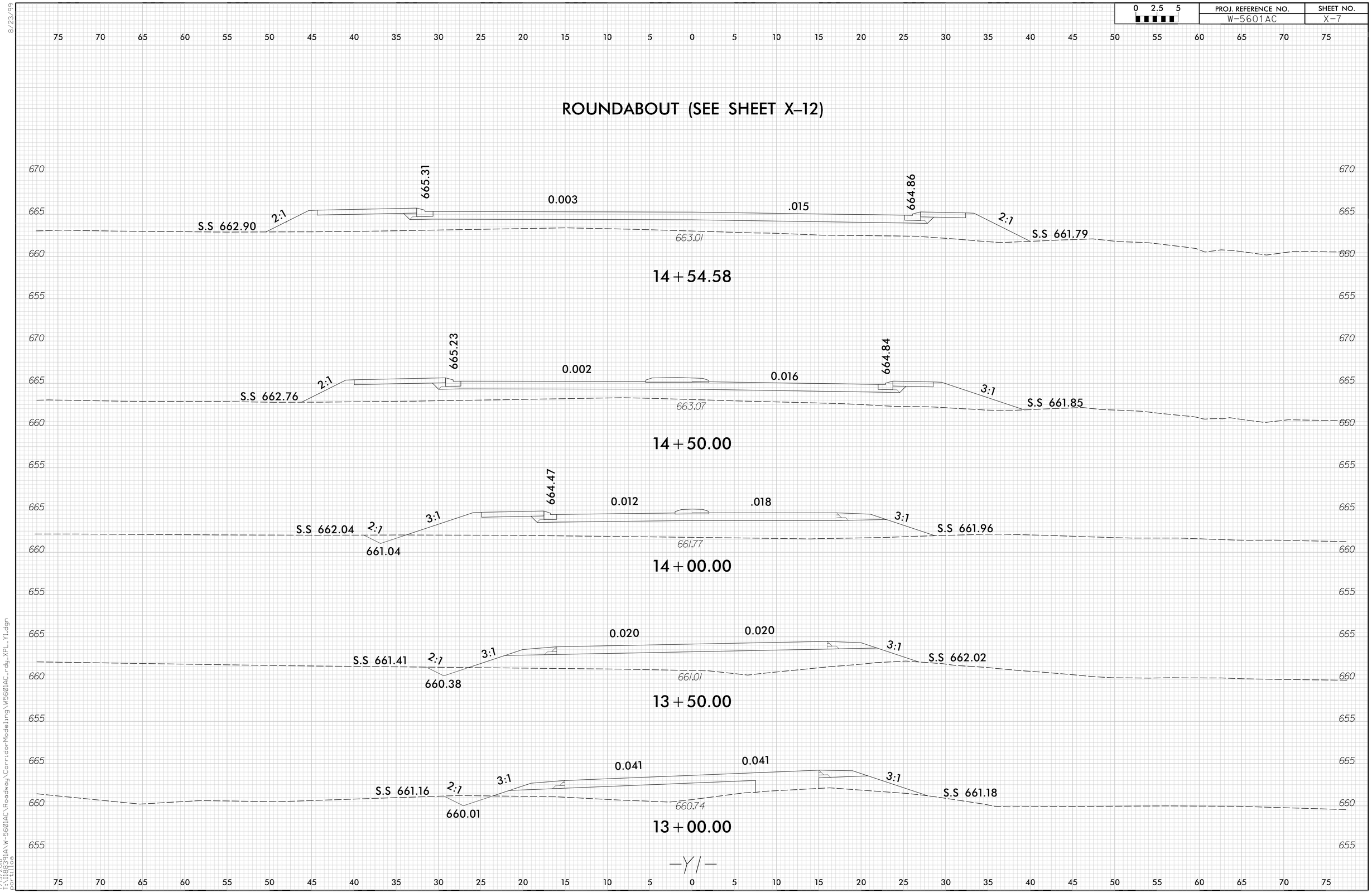

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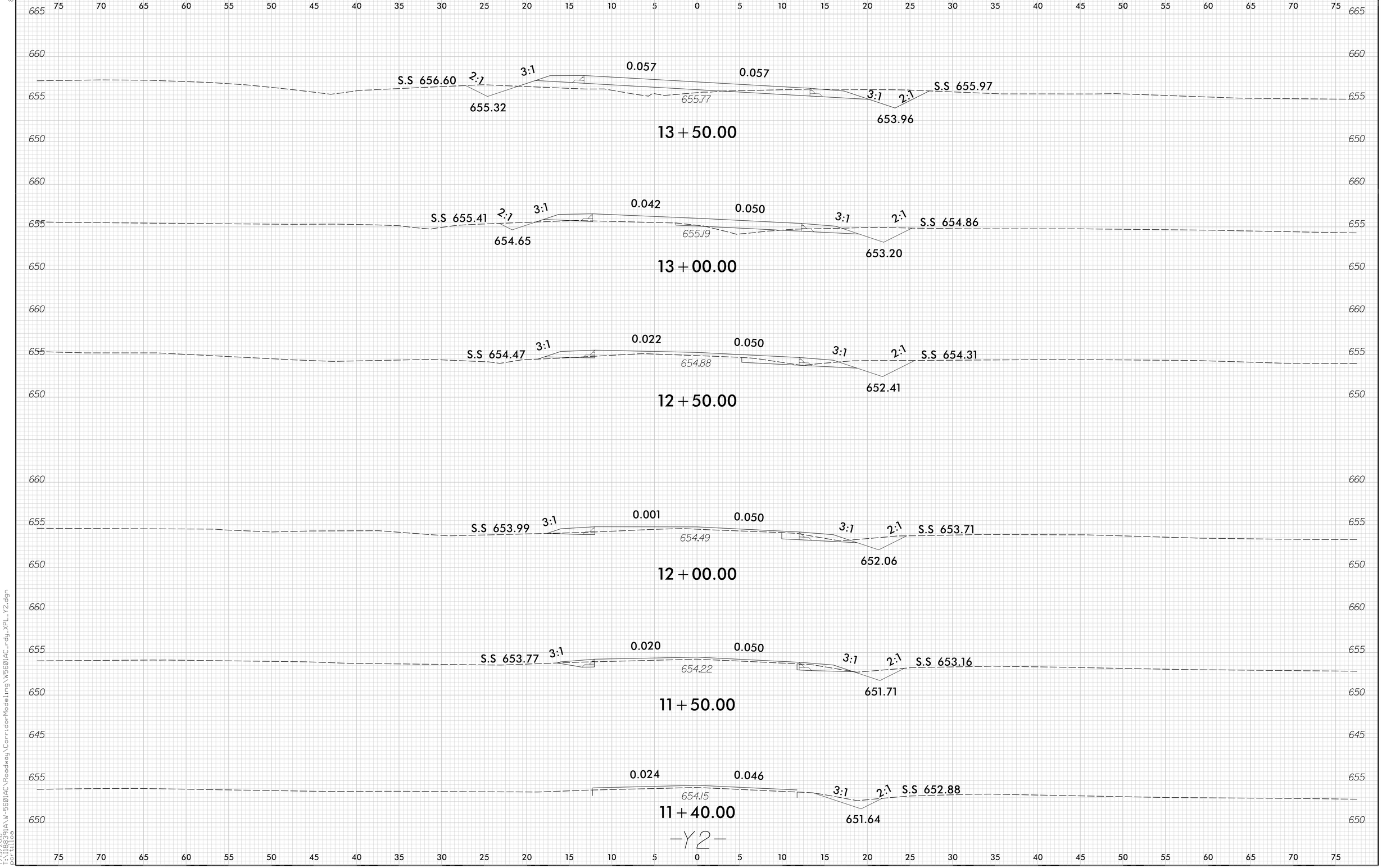

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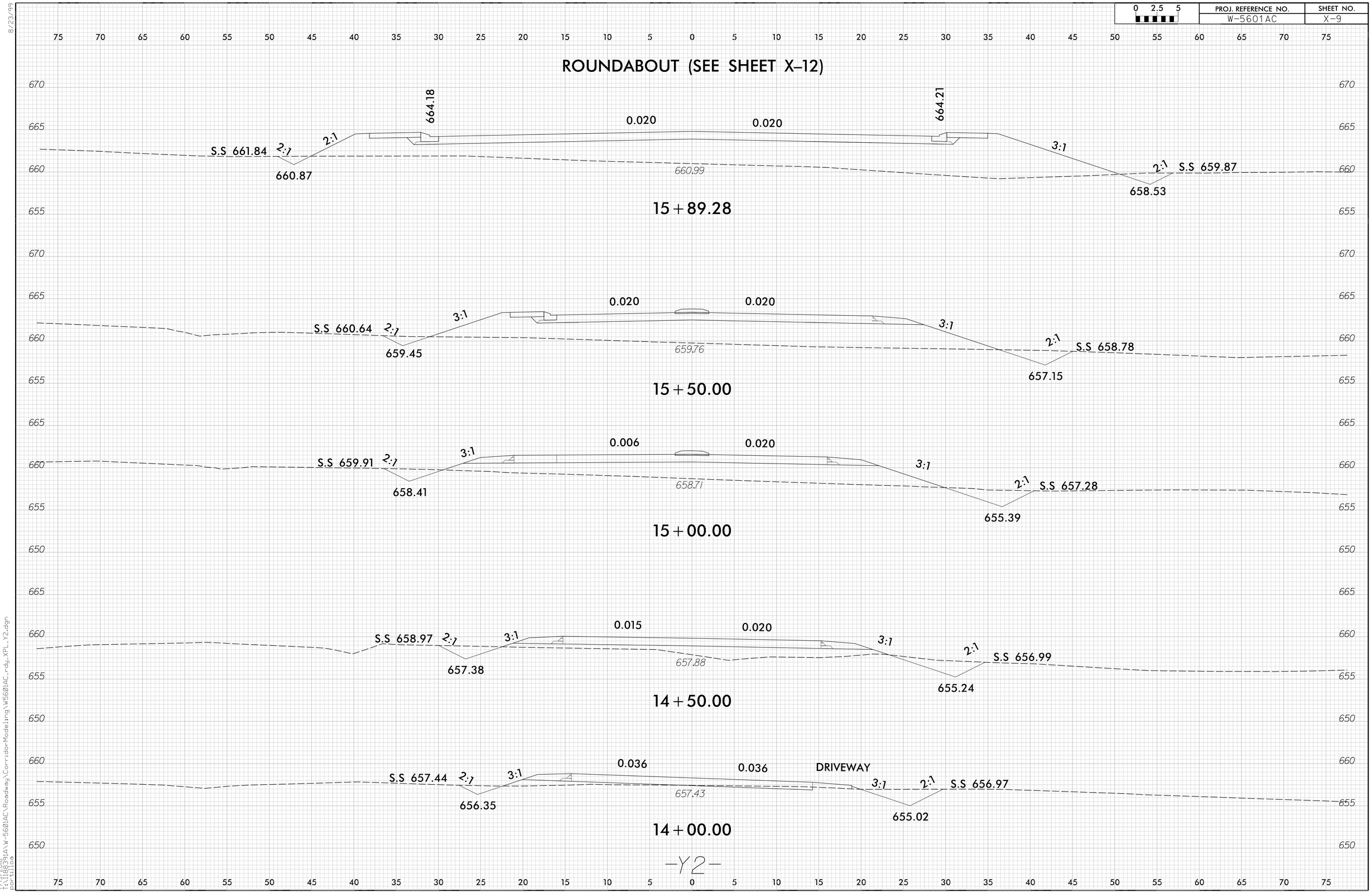

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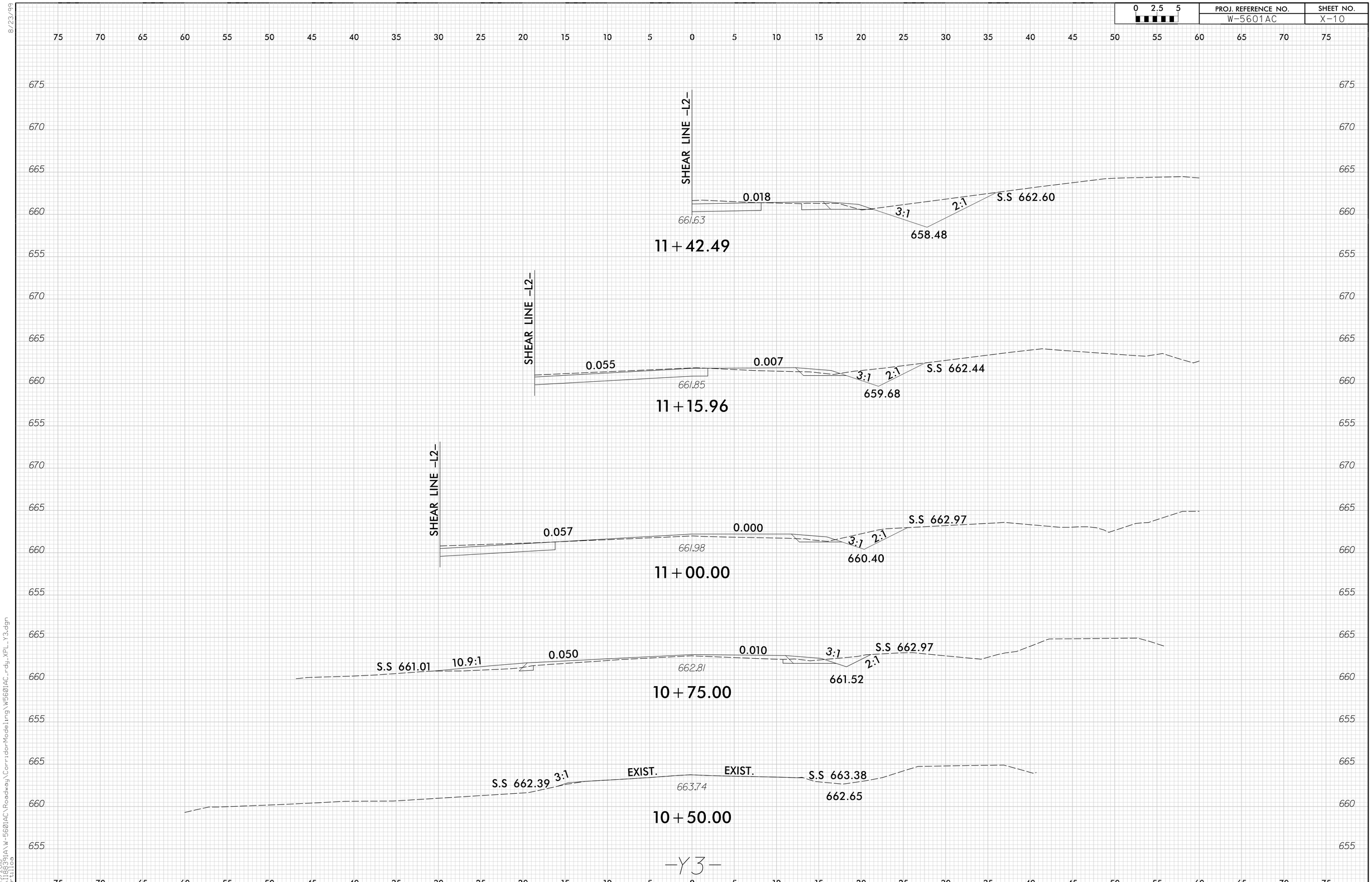

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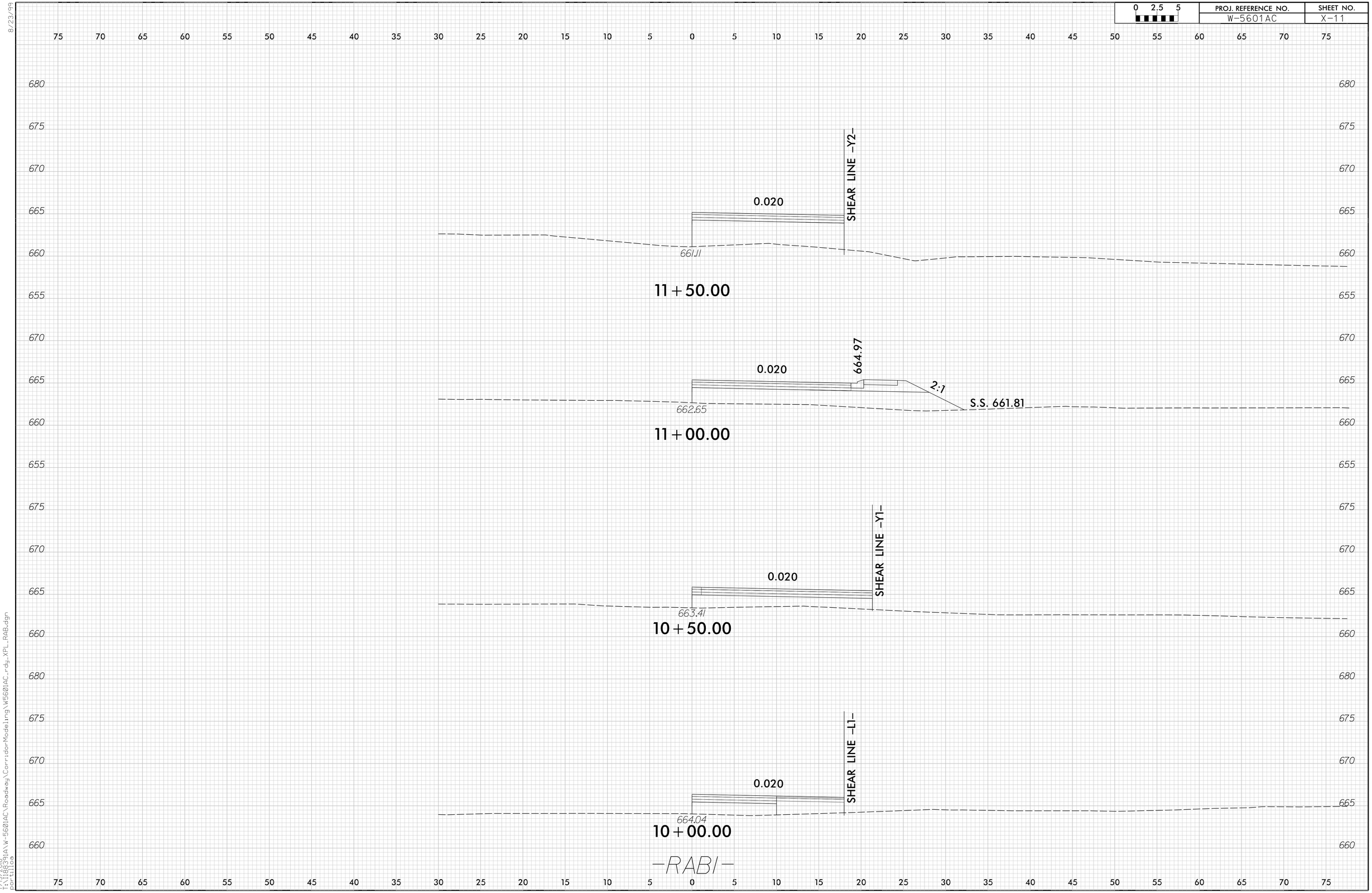

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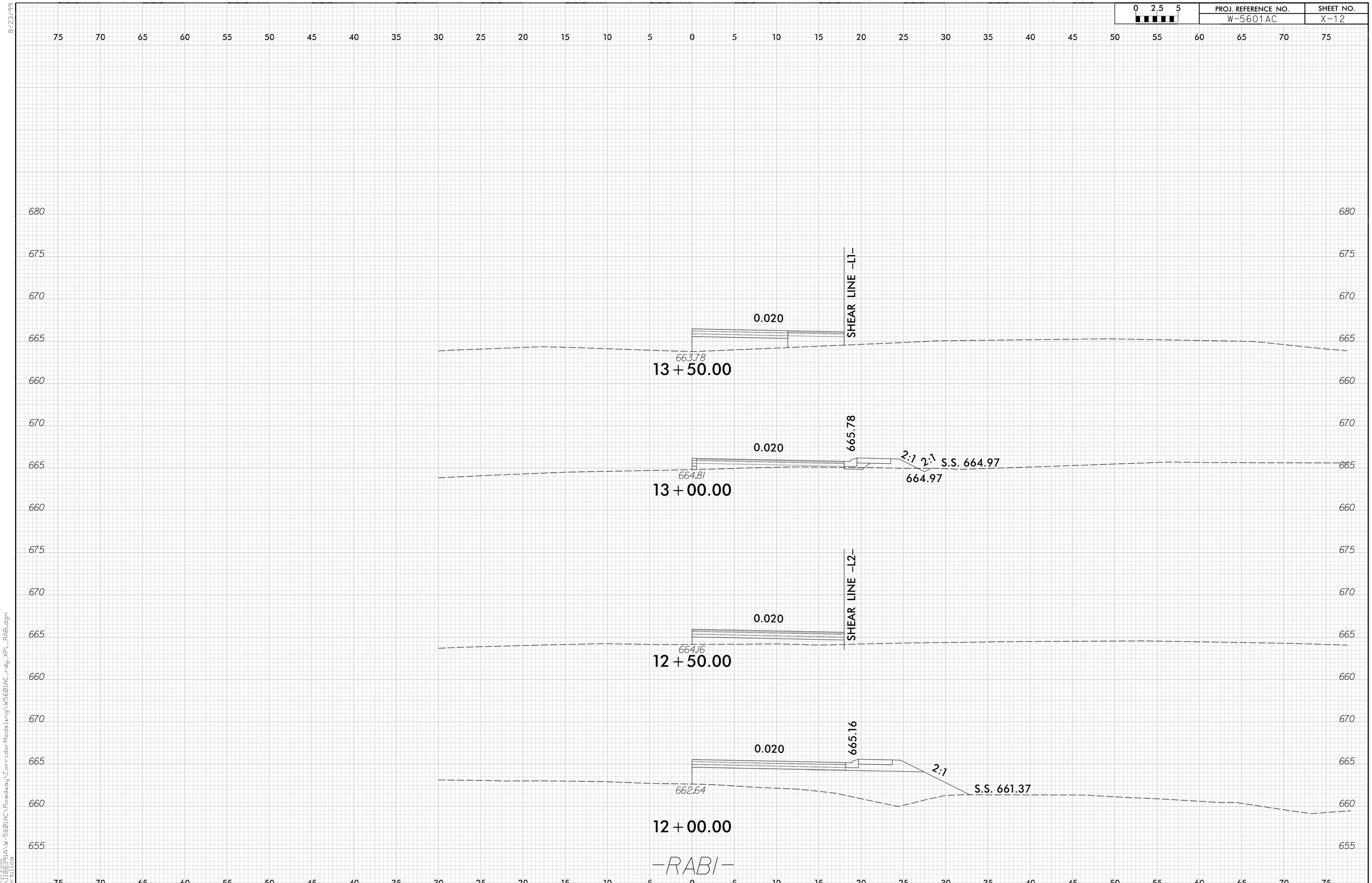

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