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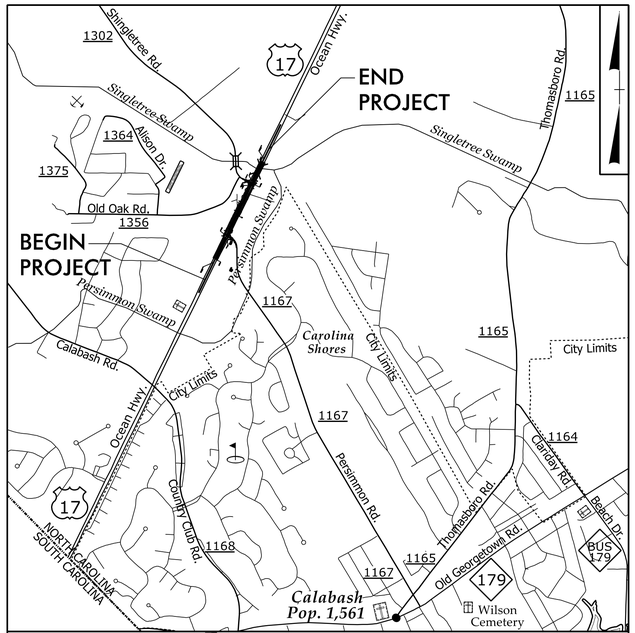
09/08/99

TIP PROJECT: W-5203Q

CONTRACT: DC00143

See Sheet 1-A For Index of Sheets



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

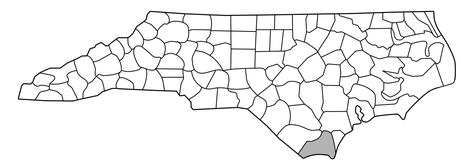
BRUNSWICK COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5203Q	1	

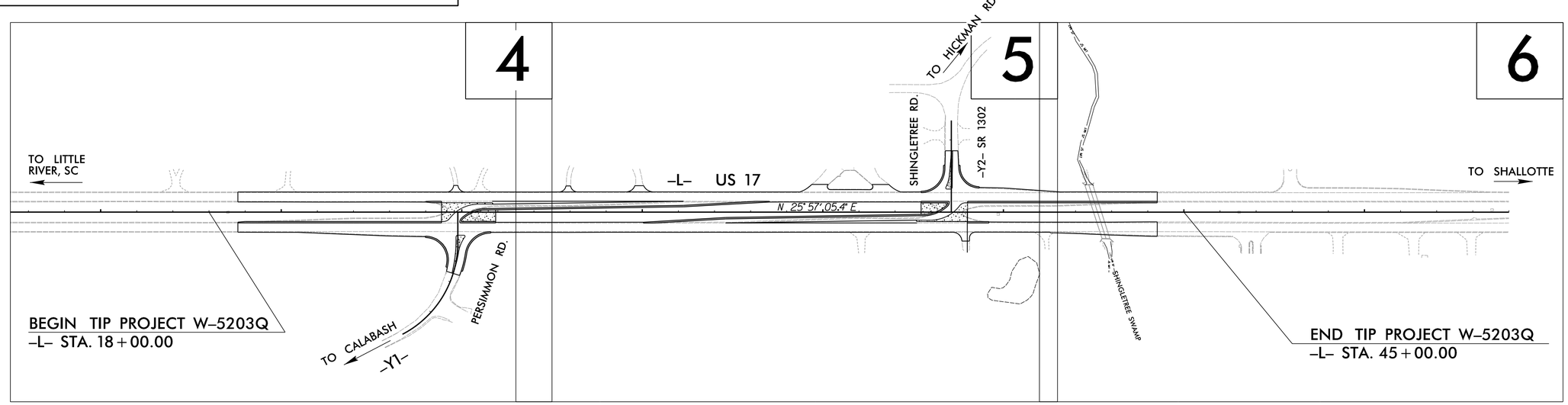
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
45333.1.FS17	HSIP-0017(133)	PE
45333.2.FS17	HSIP-0017(133)	ROW, UTIL
45333.3.FS17	HSIP-0017(133)	CONST

LOCATION: DIRECTIONAL CROSSOVERS AT THE INTERSECTION OF US 17 AND SR 1167 (PERSIMMON RD.) & SR 1302 (SHINGLETREE RD.)

TYPE OF WORK: GRADING, DRAINAGE, & PAVING



NAD 83/
NA 2011



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 = 15,600
DHV = 10 %
D = 60 %
T = 07 % *
V = 60 MPH
* TTST = 3% DUAL 4%
FUNC CLASS =
PRINCIPAL ARTERIAL
STATEWIDE TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT W-5203Q	=	0.511 MILES
LENGTH STRUCTURES TIP PROJECT W-5203Q	=	0.000 MILES
TOTAL LENGTH TIP PROJECT W-5203Q	=	0.511 MILES

Prepared for:
HIGHWAY DIVISION 3
5501 Barbados Blvd.
Castle Hayne, NC 28429

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
APRIL 10, 2016

LETTING DATE:
JUNE 16, 2016

Prepared by:
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6750 TRYON ROAD
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JOHNNY BANKS
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ROADWAY PROJECT DESIGN ENGINEER

DAVID LEONARD, PE
NCDOT CONTACT

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 029984 ENGINEER DAVID P. BOCKER

DocuSigned by:
David P. Bocker 3/31/2016 P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 15759 ENGINEER STEPHEN C. BROWDE

DocuSigned by:
Stephen C. Browde 3/31/2016 P.E.
SIGNATURE:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

3/31/2016
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PROJECT REFERENCE NO.	SHEET NO.
W-5203Q	1-A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARDS

NORTH CAROLINA PROFESSIONAL SEAL 75759 ENGINEER STEPHEN C. BRONDE
DocuSigned by: 4/1/2016

INDEX OF SHEETS

SHEET #	DESCRIPTION
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, & LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1C-1	SURVEY CONTROL SHEET
2A-1 THRU 2A-2	PAVEMENT SCHEDULE & TYPICAL SECTIONS
2B-1	INTERSECTION DETAILS
3D-1	SUMMARY OF DRAINAGE
3G-1	GEOTECHNICAL SUMMARY TABLES
4 THRU 6	PLAN
7 THRU 10	PROFILE
TMP-1 THRU TMP-8	TRANSPORTATION MANAGEMENT PLANS
PMP-1 THRU PMP-4	PAVEMENT MARKING PLANS
EC-1 THRU EC-9	EROSION CONTROL PLANS
SIGN-1 THRU SIGN-5	SIGNING PLANS
UO-1 THRU UO-4	UTILITIES BY OTHERS PLANS
X-1A	CROSS SECTION SUMMARY
X-1 THRU X-11	CROSS-SECTIONS

LIST OF STANDARD DRAWINGS

GENERAL NOTES:

2012 SPECIFICATIONS
EFFECTIVE: 01-17-2012
REVISED: 10-31-2014

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 AS 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 III.

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.02

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.

SUBSURFACE DRAINS:

SUBSURFACE DRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.02 AT LOCATIONS DIRECTED BY THE ENGINEER.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE: BRUNSWICK EMC, BRUNSWICK WATER, & ATLANTIC TELEPHONE CO-OP.

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

STANDARD SPECIFICATIONS

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
200.03	Method of Clearing - Method III
225.02	Guide for Grading Subgrade - Secondary and Local
225.05	Method of Obtaining Superelevation - Divided Highways
225.09	Guide for Shoulder and Ditch Transition at Grade Separations
DIVISION 3 -	PIPE CULVERTS
300.01	Method of Pipe Installation
DIVISION 5 -	SUBGRADE, BASES AND SHOULDERS
560.02	Method of Shoulder Construction - High Side of Superelevated Curve - Method II (Sheet 2 of 3 is no longer applicable)
DIVISION 6 -	ASPHALT BASES AND PAVEMENTS
654.01	Pavement Repairs
DIVISION 8 -	INCIDENTALS
815.02	Subsurface Drain
840.03	Frame, Grates and Hood - for Use on Standard Catch Basin
840.16	Drop Inlet Frame and Grates - for use with Std. Dwg 840.14 and 840.15
840.22	Frames and Wide Slot Sag Grates
840.29	Frames and Narrow Slot Flat Grates
840.66	Drainage Structure Steps
852.01	Concrete Islands
852.02	Concrete Mountable Median - for Use with Rigid or Flexible Pavement
852.06	Method for Placement of Drop Inlets in Concrete Islands
876.02	Guide for Rip Rap at Pipe Outlets
876.03	Drainage Ditches with Class 'A' Rip Rap
876.04	Drainage Ditches with Class 'B' Rip Rap

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12/05/11

PROJECT REFERENCE NO.	SHEET NO.
W-5203Q	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.

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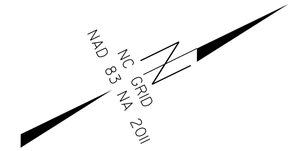
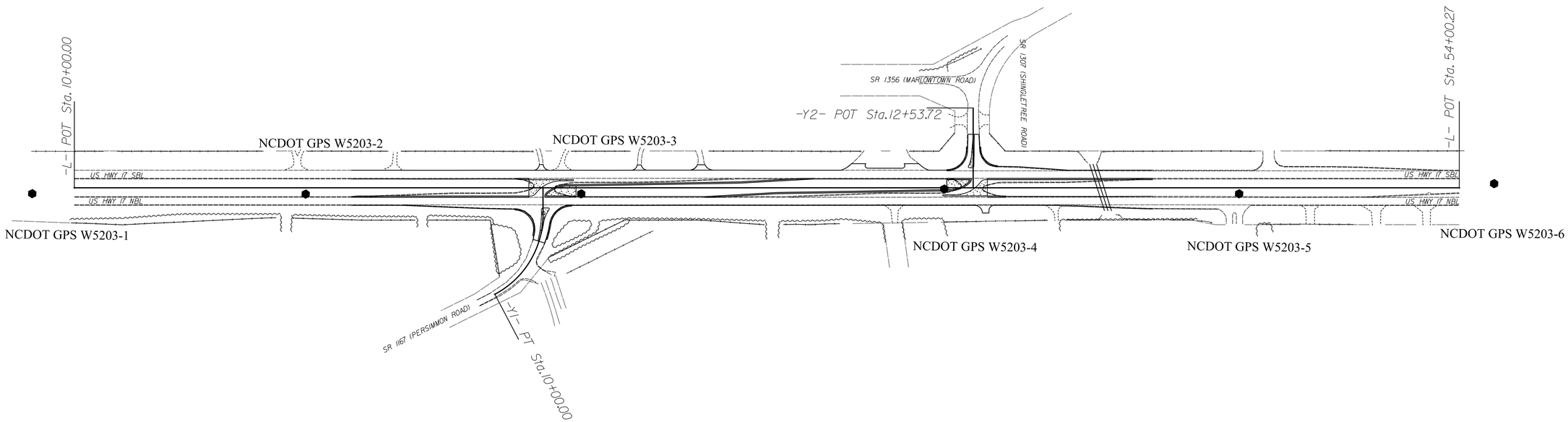
PROJECT REFERENCE NO.	SHEET NO.
WBS# 45333.1.FS17	1C-1
Location and Surveys	

SURVEY CONTROL SHEET W-5203Q

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "W5203-4"
WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF
NORTHING: 61771.968(ft) EASTING: 2127971.287(ft)
ELEVATION: 34.47(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.00014478
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "W5203-4" TO -L- L STATION 10+00.00 IS
S 26° 02' 10" W 2763.91'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88





BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
W52031	GPS CAP & REBAR	59160.0940	2126716.2620	41.43	OUTSIDE PROJECT LIMITS	
W52032	GPS CAP & REBAR	59940.6850	2127097.7340	40.38	17+35.01	20.00 RT
W52033	GPS CAP & REBAR	60728.1870	2127480.1230	37.59	26+10.44	19.21 RT
W52034	GPS CAP & REBAR	61771.9680	2127971.2870	34.47	37+63.91	4.08 RT
W52035	GPS CAP & REBAR	62607.7320	2128394.7070	35.46	47+00.69	19.07 RT
W52036	GPS CAP & REBAR	63350.3850	2128720.3080	35.14	OUTSIDE PROJECT LIMITS	

NOTE: DRAWING NOT TO SCALE

3/31/2016
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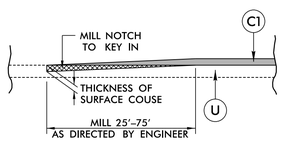
PAVEMENT SCHEDULE	
C	PROP. APPROX. 3.0″ ASPHALT CONCRETE SURFACE COURSE TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C1	PROP. APPROX. 1.5″ ASPHALT CONCRETE SURFACE COURSE TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
D1	PROP. APPROX. 3″ ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
E1	PROP. APPROX. 4″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
R1	5″ MONOLITHIC ISLAND (KEYED IN).
T	SHOULDER CONSTRUCTION WITH AGGREGATE SHOULDER BORROW.
U	EXISTING PAVEMENT.

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

MILLING DETAIL



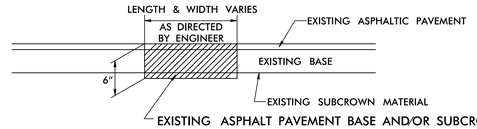
NOTES TO CONTRACTOR:

For surface mixes over 1″ in thickness, mill the existing pavement in accordance with the above sketch as directed by the Engineer.

Locations shall include ties at the beginning and ending point of each surfacing map.

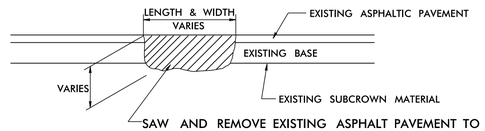
Perform the work in accordance with Section 607 of the January 2012 North Carolina Department of Transportation Standard Specifications for Roads and Structures. Resurfacing will be accomplished at the same time as the milling operation.

DETAILS OF REPAIRING EXISTING PAVEMENT PRIOR TO RESURFACING FOR FULL DEPTH AND MILLING



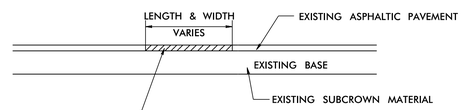
EXISTING ASPHALT PAVEMENT BASE AND/OR SUBCROWN MATERIAL TO BE REMOVED AND REPLACED WITH BASE COURSE, INTERMEDIATE COURSE OR SURFACE COURSE OR A COMBINATION OF BASE, INTERMEDIATE AND SURFACE COURSE, AND PAVEMENT REMOVAL, AS DIRECTED BY THE ENGINEER.

DETAIL NO. 1



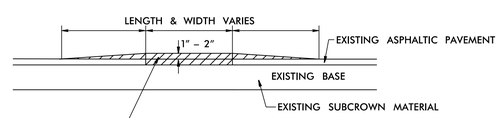
SAW AND REMOVE EXISTING ASPHALT PAVEMENT TO NEAT LINES AND REMOVE EXISTING LOOSE BASE AND/OR SUBCROWN MATERIAL AND REPLACE WITH BASE COURSE, INTERMEDIATE COURSE, OR SURFACE COURSE OR A COMBINATION OF BASE, INTERMEDIATE AND SURFACE COURSE, AND PAVEMENT REMOVAL, AS DIRECTED BY THE ENGINEER.

DETAIL NO. 2



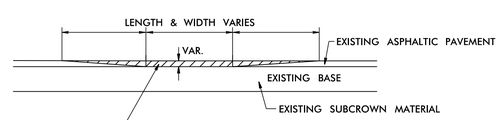
SAW AND REMOVE EXISTING BROKEN–UP ASPHALT PAVEMENT TO NEAT LINES AND REPLACE WITH SURFACE COURSE, AS DIRECTED BY THE ENGINEER

DETAIL NO. 3



OVERLAY PAVEMENT WITH 1″ – 2″ SURFACE COURSE AS DIRECTED BY THE ENGINEER.

DETAIL NO. 4



OVERLAY PAVEMENT WITH LEVELING COURSE AS DIRECTED BY THE ENGINEER.

DETAIL NO. 5

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CARY, NC 27518
phone: 919.851.1912
CALYXengineers.com
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Formerly McKay Engineers & Consultants

PROJECT REFERENCE NO.	SHEET NO.
W-5203Q	2A-1

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 17759 ENGINEER STEPHEN C. BROWNE
DocuSigned by: Stephen C. Browne
4/11/2016

PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 022896 ENGINEER CLARK S. MORRISON
DocuSigned by: Clark S. Morrison
4/8/2016

4/8/2016
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PAVEMENT SCHEDULE	
C	PROP. APPROX. 3.0″ ASPHALT CONCRETE SURFACE COURSE TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C1	PROP. APPROX. 1.5″ ASPHALT CONCRETE SURFACE COURSE TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
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R1	5″ MONOLITHIC ISLAND (KEYED IN).
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U	EXISTING PAVEMENT.

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

CALYX
ENGINEERS + CONSULTANTS
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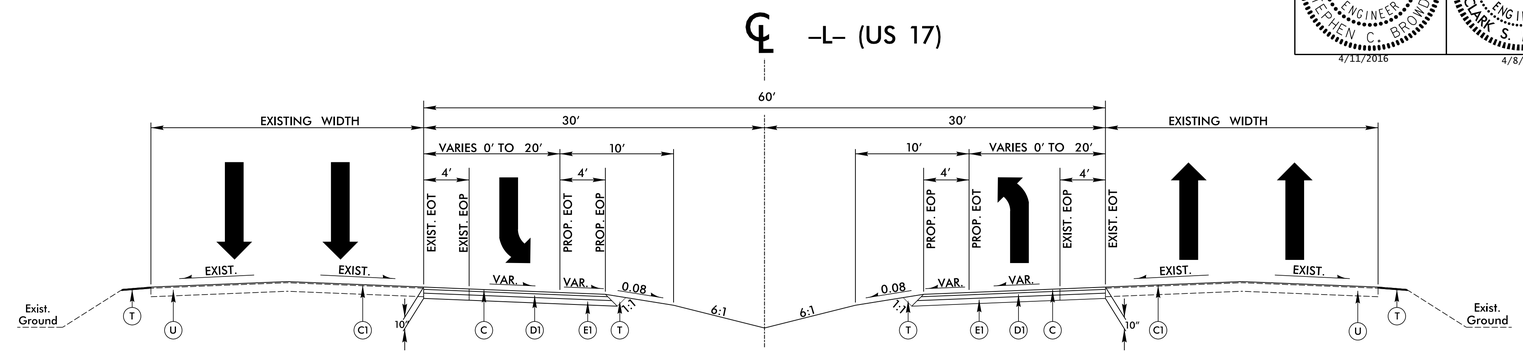
CARY, NC 27518
phone: 919.851.1912
CALYXengineers.com
NC License # F-1333
Formerly McKay Engineers & Consultants

PROJECT REFERENCE NO.	SHEET NO.
W-5203Q	2A-2

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 045759 ENGINEER STEPHEN C. BROOKS
DocuSigned by: Stephen C. Brooks
4/11/2016

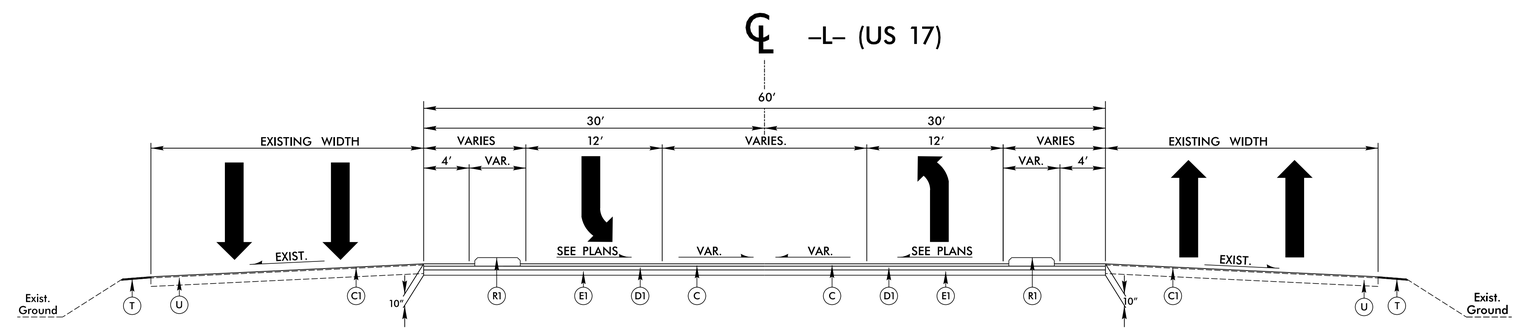
PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 022826 ENGINEER CLARK S. MORRISON
DocuSigned by: Clark S. Morrison
4/8/2016



TYPICAL SECTION NO. 1

TYPICAL SECTION NO. 1

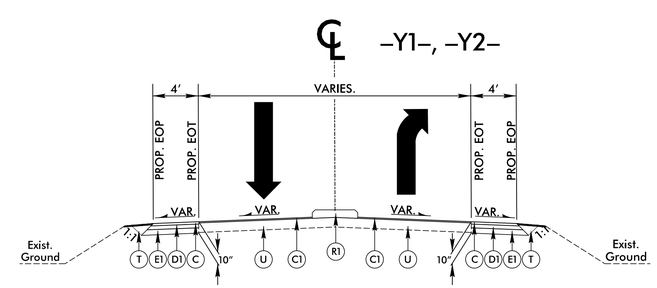
USE TYPICAL SECTION NO.1 FOR
SEE PLANS FOR TAPER LENGTHS AND LOCATIONS
–L– STA. 18+80± TO –L– STA. 32+97± LT
–L– STA. 30+48± TO –L– STA. 44+26± RT



TYPICAL SECTION NO. 2

TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2 FOR
MEDIAN CROSSOVER LANE
SEE PLANS FOR TAPER LENGTHS AND LOCATIONS
–L– STA. 24+44± TO –L– STA. 25+93± MED
–L– STA. 37+61± TO –L– STA. 39+01± MED



TYPICAL SECTION NO. 3

TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 2 FOR
–Y1– STA. 12+25± TO –Y1– STA. 13+42±
–Y2– STA. 10+54± TO –Y2– STA. 11+70±

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REVISIONS

INTERSECTION DETAILS

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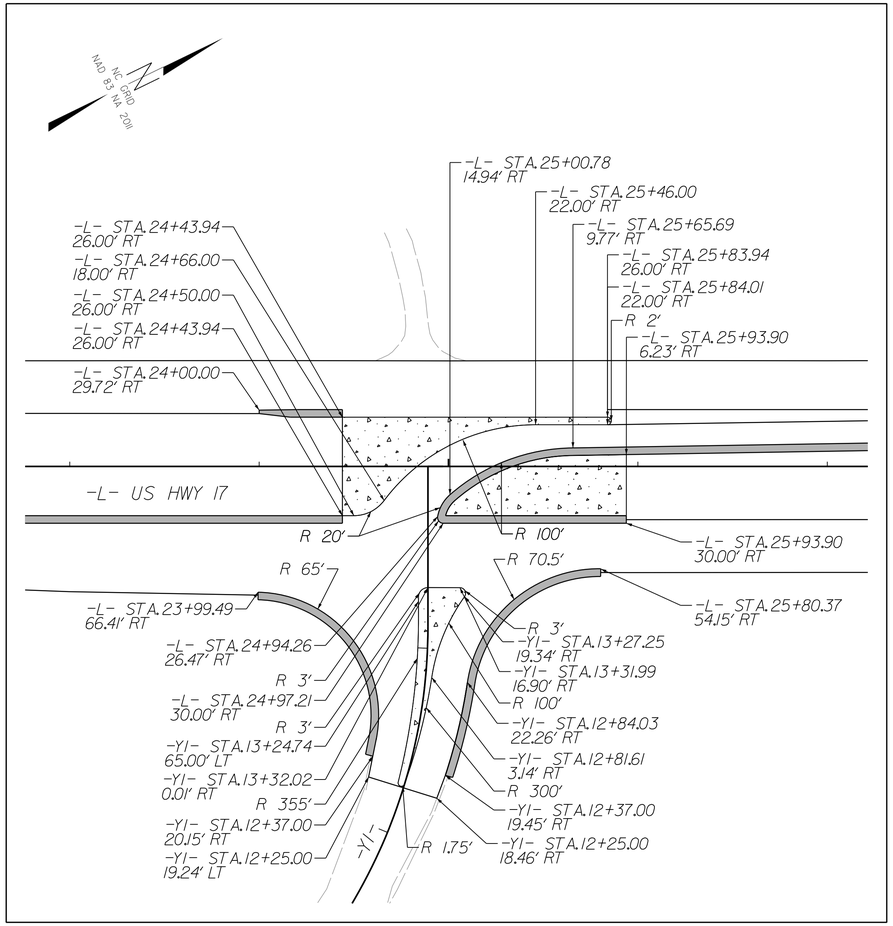
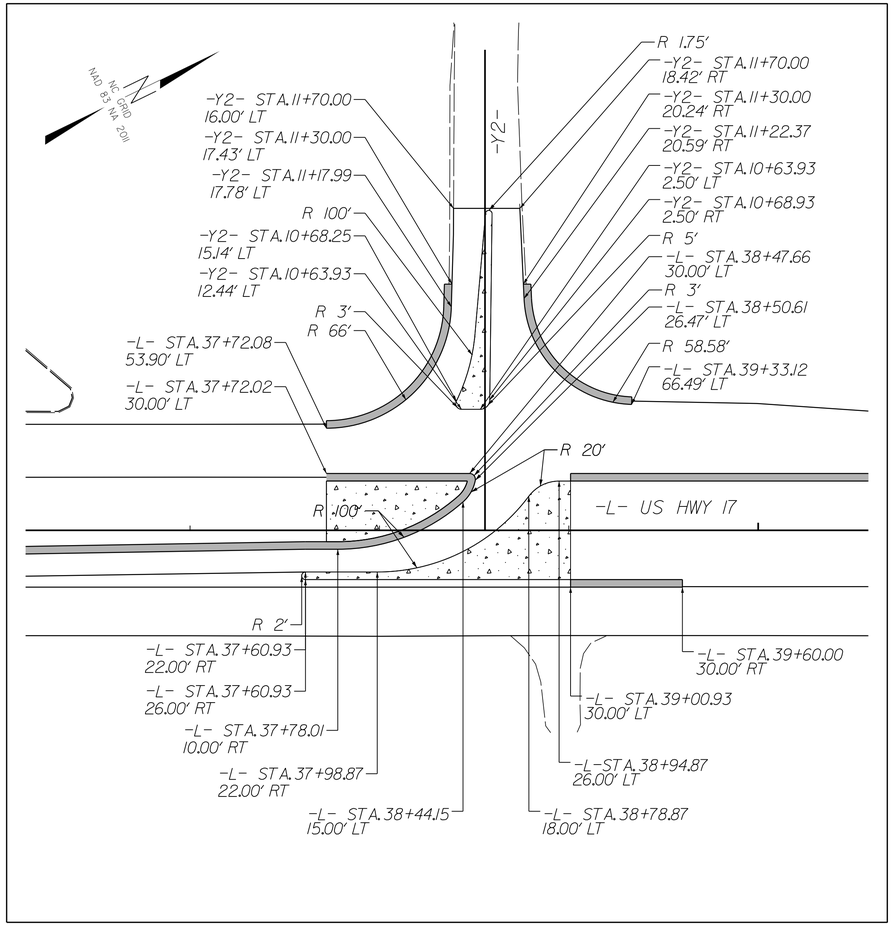
PROJECT REFERENCE NO.	SHEET NO.
W-5203Q	2B-1
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 15759 ENGINEER STEPHEN C. BRONDI
DocuSigned by: Stephen C. Brondi
3/31/2016

NORTH CAROLINA PROFESSIONAL SEAL 029984 ENGINEER DAVID P. BOUKER
DocuSigned by: David P. Bouker
3/31/2016



LEFT-TURN AT -L- STA. 23+29.12



LEFT-TURN AT -L- STA. 28+14.00

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COMPUTED BY: W. ALLEN	DATE: 2-5-16	PROJECT REFERENCE NO. W-5203Q	SHEET NO. 3D-1
CHECKED BY: J. BANKS	DATE: 2-5-16	R/W SHEET NO.	

8/17/99

REVISIONS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK

IN CUBIC YARDS

STATION	STATION	UNCL. EXCAV.	UNDERCUT	EMBANK. +%	BORROW	WASTE
-L- 18+79.56	-L- 44+26.56	1560	0	335		1225
PROJECT TOTALS:		1560	0	335		1225
GRAND TOTALS:		1560	0	335		1225
SAY:		1560	0	335		1225

EST. UNDERCUT CONTIGENCY: 700 CY
EST. SELECT GRANULAR MATERIAL: 700 CY
EST. GEOTEXTILE FOR SOIL STABILIZATION: 2600 SY
EST. SHALLOW UNDERCUT FOR AGGREGATE SUBGRADE: 150 CY
EST. SHALLOW UNDERCUT AS A CONTIGENCY ITEM: 500 CY
CLASS IV SUBGRADE STABILIZATION: 1150 TON

Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

Note: Approximate quantities only. Unclassified excavation, fine grading, clearing and grubbing, and removal of existing pavement will be paid for at the lump sum price for "Grading".

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

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	SIDE DRAIN PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	C.S. PIPE 12" .064	15" .064	18" .064	24" .064	36" .079	42" .109	48" .109	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"
-L- 23+77	RT	0401				33.23																											
-L- 23+77	LT	0401	0402			33.24																											
-L- 23+77	LT	0402		35.22																													
-L- 23+77	LT	0402	0403		34.96	33.23																											
-L- 25+10	LT	0403		38.51																													
-L- 25+10	LT	0403	0404		35.14	34.96																											
-L- 25+70	LT	0404		38.31																													
-L- 37+02	RT	0501				28.77																											
-L- 37+02	LT	0501	0502			30.99																											
-L- 37+02	LT	0502		33.40																													
-L- 37+02	LT	0502	0503		32.34	30.99																											
-L- 38+36	LT	0503		35.51																													
TOTAL																																	

STATION	R.C. PIPE (CLASS IV) 12"	15"	18"	24"	30"	36"	42"	48"	*** R. C. PIPE (CLASS V)	*** R. C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE	*** R. C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	* TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. *FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION CATCH BASIN	DROP INLET	D.I. FRAME & GRATE STD. 840.16	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH GRATE STD. 840.29				CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD. 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN. FT.	REMARKS
-L- 23+77																																			
-L- 23+77																																			RETAIN & CLEAN OUT EX. 15" RCP
-L- 23+77																1										1									
-L- 23+77		132																																	
-L- 25+10																1									1										
-L- 25+10		60																																	
-L- 25+70																1											1								
-L- 37+02																																			RETAIN EX. 15" RCP
-L- 37+02																																			
-L- 37+02																1										1									
-L- 37+02		132																																	
-L- 38+36																1											1								
TOTAL		324														5									1	2	2								

SIZE

THICKNESS OR GAUGE

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

3/31/2016
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COMPUTED BY: E. Stewart	DATE: 02-24-2016
CHECKED BY: J. Banks	DATE: 03-31-2016

(2-16-16)

PROJECT NO.	SHEET NO.
W-5203Q	3G-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF SUBSURFACE DRAINAGE

LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
CONTINGENCY					2300
				TOTAL LF:	2300

*UD = Underdrain
*BD = Blind Drain
*SD = Subsurface Drain

SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION

LINE	Station	Station	Aggregate Type* ASU/AST	Aggregate Thickness INCHES	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Soil Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
-L-	18+80	19+72			50	83	633		
-L-	24+43	24+57			50	83	633		
-L-	25+27	26+25			50	84	634		
CONTINGENCY					500	900	500		
			TOTAL CY/TONS/SY:		650	1150	2400**	0	0

*ASU = Aggregate Subgrade
*AST = Aggregate Stabilization
**Total square yards of "Geotextile for Soil Stabilization" is only the estimated quantity for ASU/AST and may only represent a portion of the geotextile quantity shown in the Item Sheets of the Proposal.

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PROJECT REFERENCE NO.	SHEET NO.
W-5203Q	4
R/W SHEET NO.	

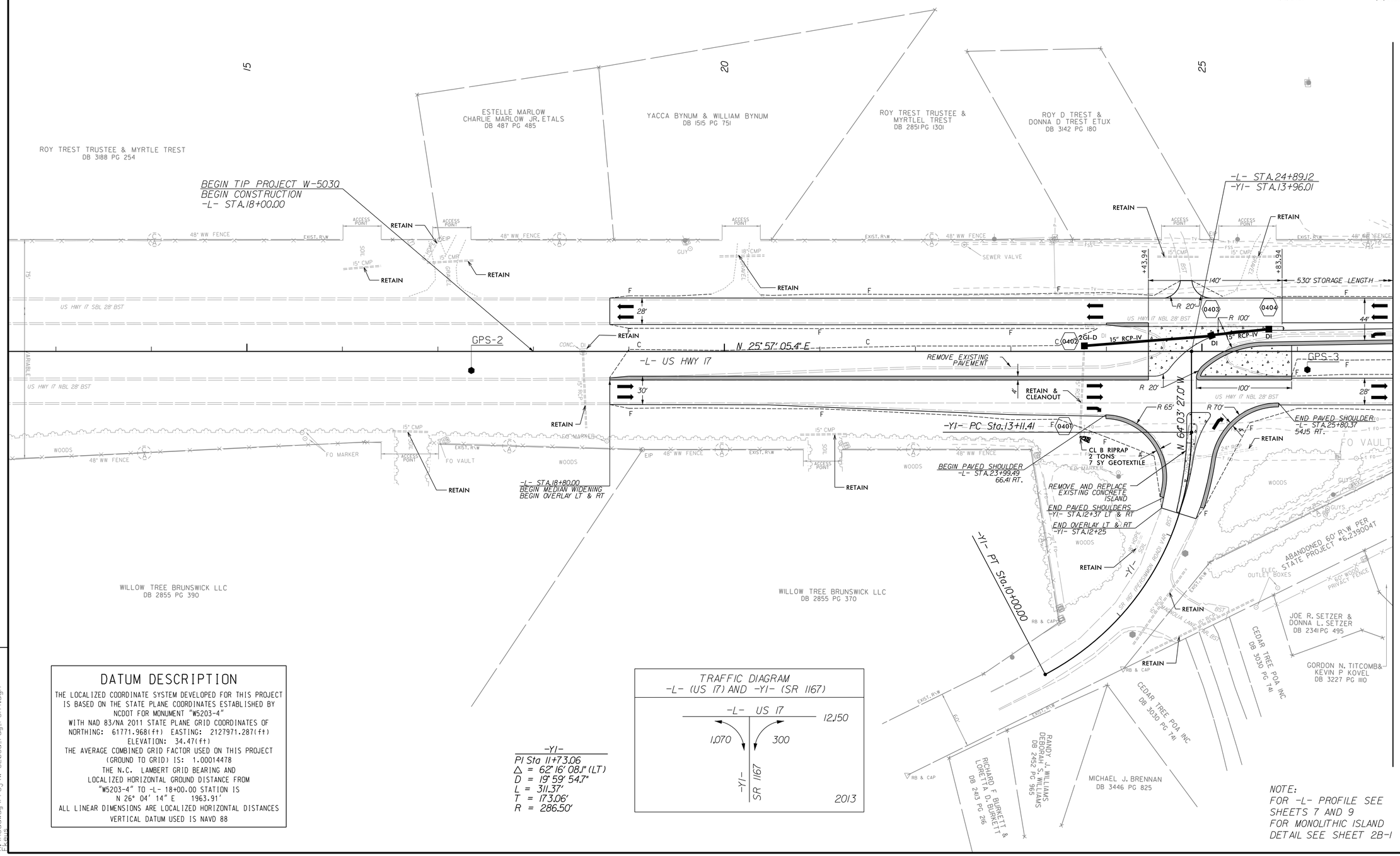
ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 5759 ENGINEER STEPHEN C. BROWN
DocuSigned by: Stephen C. Brown
4/1/2016

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 029984 ENGINEER DAVID P. BOKER
DocuSigned by: David P. Boker
4/1/2016

NAD 83/NA 2011

REVISIONS

8/17/99



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "W5203-4"
WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF
NORTHING: 61771.968(ft) EASTING: 2127971.287(ft)
ELEVATION: 34.47(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.00014478
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "W5203-4" TO -L- 18+00.00 STATION IS
N 26° 04' 14" E 1963.91'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

-Y1-
PI Sta 11+73.06
Δ = 62° 16' 08.1" (LT)
D = 19° 59' 54.7"
L = 311.37'
T = 173.06'
R = 286.50'

TRAFFIC DIAGRAM
-L- (US 17) AND -Y1- (SR 1167)

NOTE:
FOR -L- PROFILE SEE SHEETS 7 AND 9
FOR MONOLITHIC ISLAND DETAIL SEE SHEET 2B-1

4/1/2016
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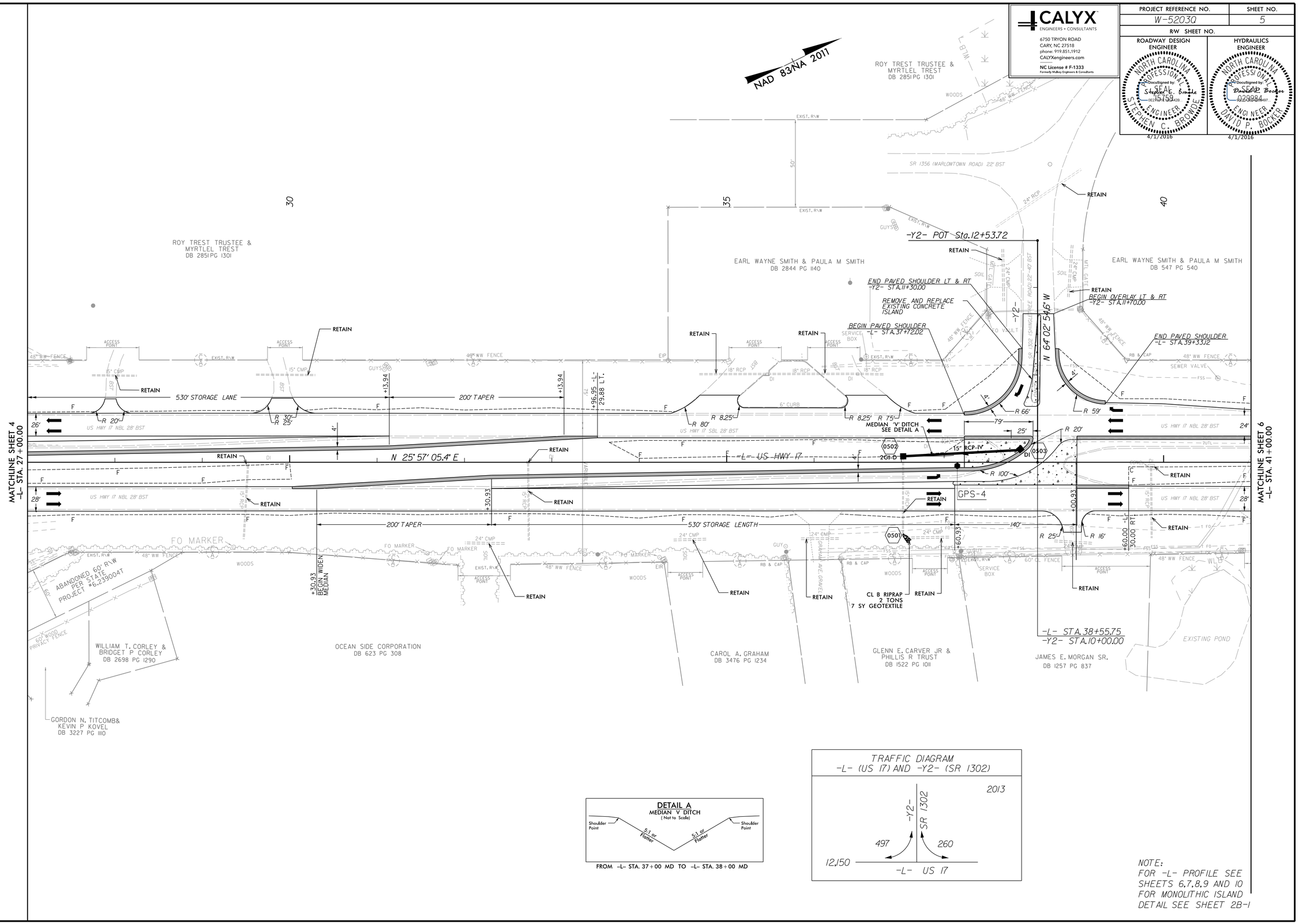
PROJECT REFERENCE NO.	SHEET NO.
W-5203Q	5
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 15759 ENGINEER STEPHEN C. BRONDE
DocuSigned by: Stephen C. Bronde
4/1/2016

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 023984 ENGINEER DAVID P. BOCKER
DocuSigned by: David P. Bocker
4/1/2016



NOTE:
FOR -L- PROFILE SEE SHEETS 6,7,8,9 AND 10
FOR MONOLITHIC ISLAND DETAIL SEE SHEET 2B-1

4/1/2016
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PROJECT REFERENCE NO.	SHEET NO.
W-5203Q	6
R/W SHEET NO.	

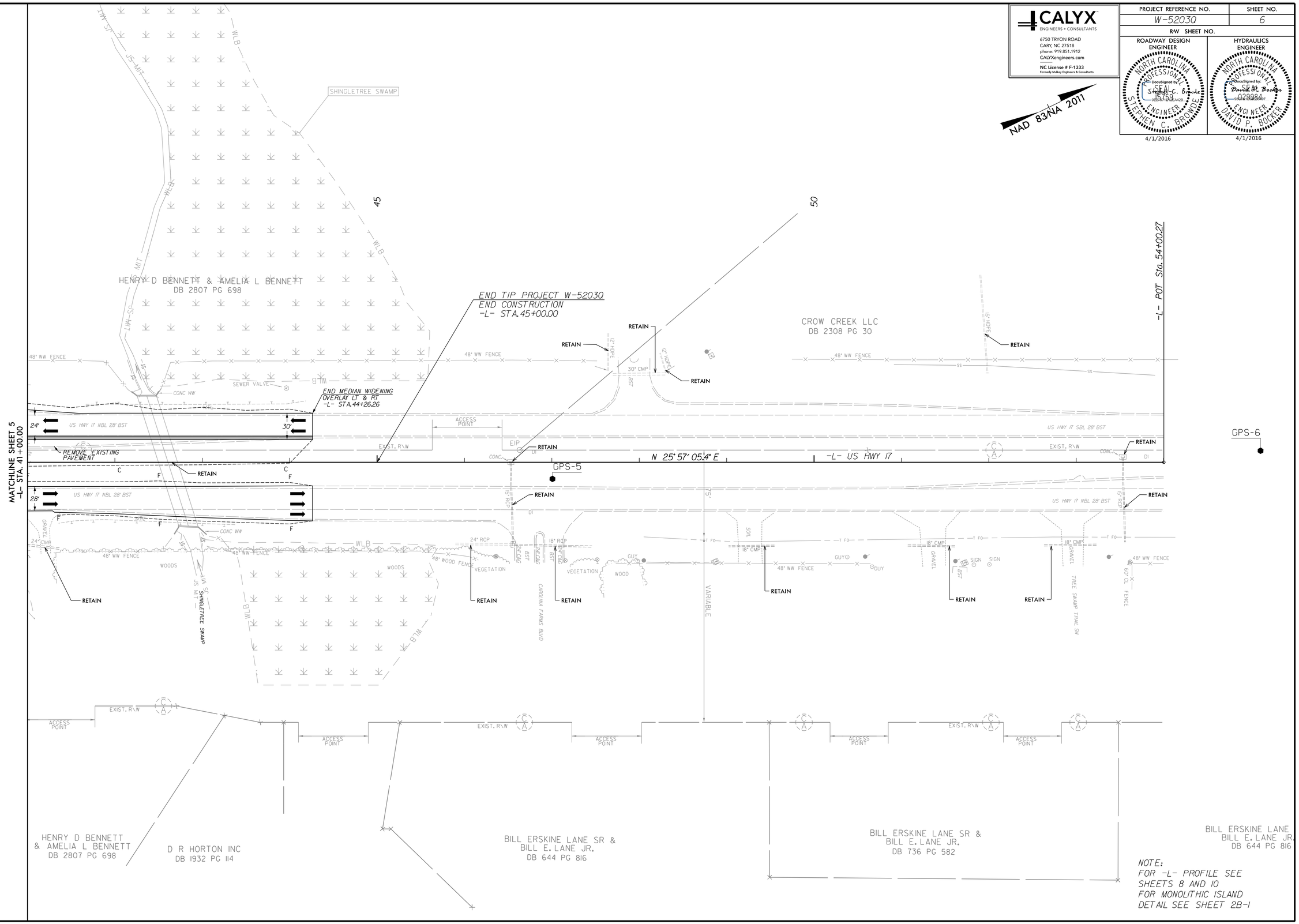
ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 5759 ENGINEER STEPHEN C. BRONDE
DocuSigned by: Stephen C. Bronde
4/1/2016

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 029984 ENGINEER DAVID P. BOKKER
DocuSigned by: David P. Bokker
4/1/2016

NAD 83/NA 2011

REVISIONS

8/17/99



NOTE:
FOR -L- PROFILE SEE SHEETS 8 AND 10
FOR MONOLITHIC ISLAND DETAIL SEE SHEET 2B-1

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kevin

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PROJECT REFERENCE NO.	SHEET NO.
W-5203Q	7

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 15125 ENGINEER STEPHEN C. BROWN
DocuSigned by: Stephen C. Brown 7E2E4A0FD3F4E1E...
3/30/2016

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 029986 ENGINEER DAVID P. BOCKELMAN
DocuSigned by: David P. Bockelman 8E4B0D0A4E0D4E0...
3/30/2016

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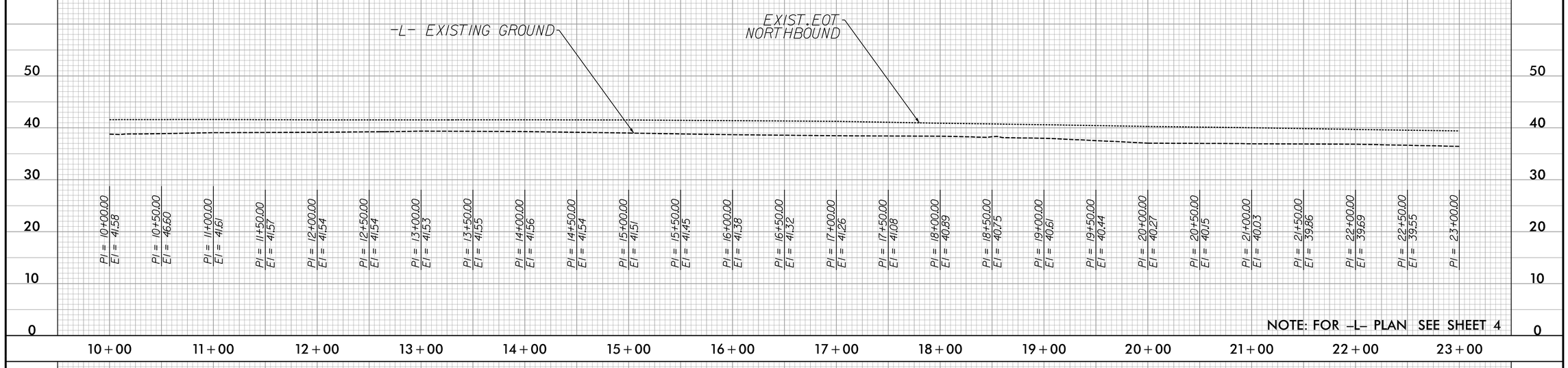

NOTE: FOR –L– PLAN SEE SHEET 4

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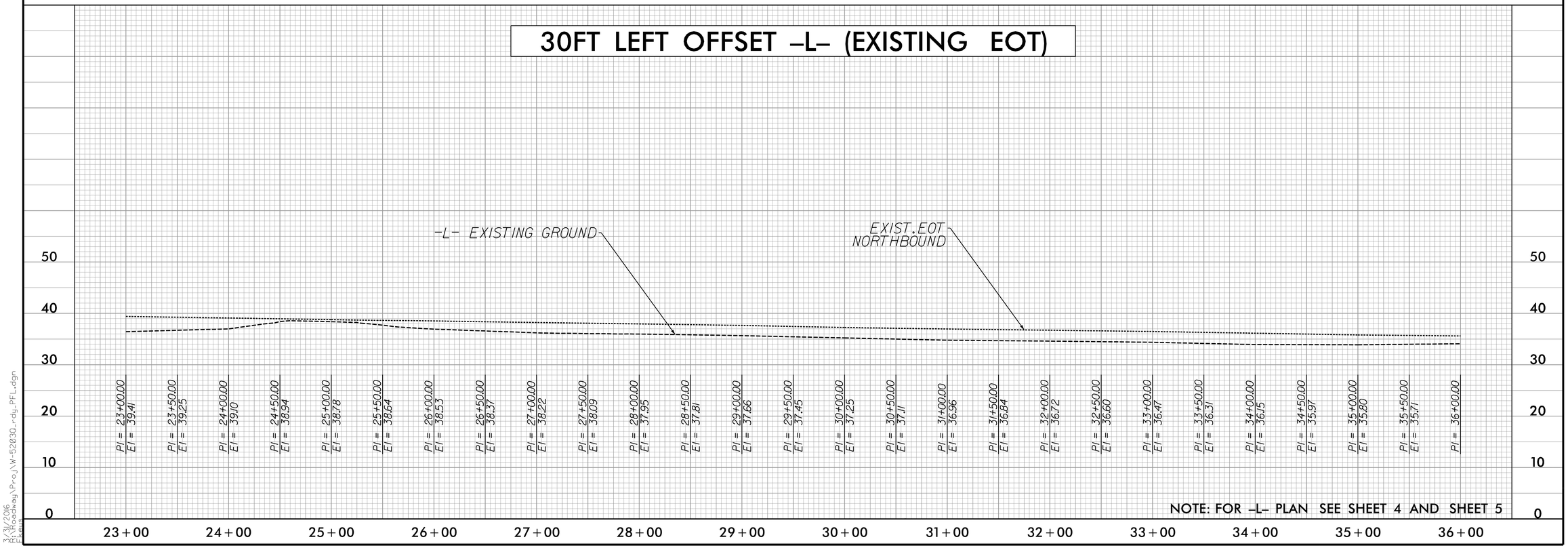

NOTE: FOR –L– PLAN SEE SHEET 4 AND SHEET 5

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PROJECT REFERENCE NO.	SHEET NO.
W-5203Q	8

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 15154 ENGINEER STEPHEN C. BRONDE
DocuSigned by: Stephen C. Bronde
3/31/2016

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 029994 ENGINEER DAVID P. BOCKELMAN
DocuSigned by: David P. Bockelman
3/31/2016

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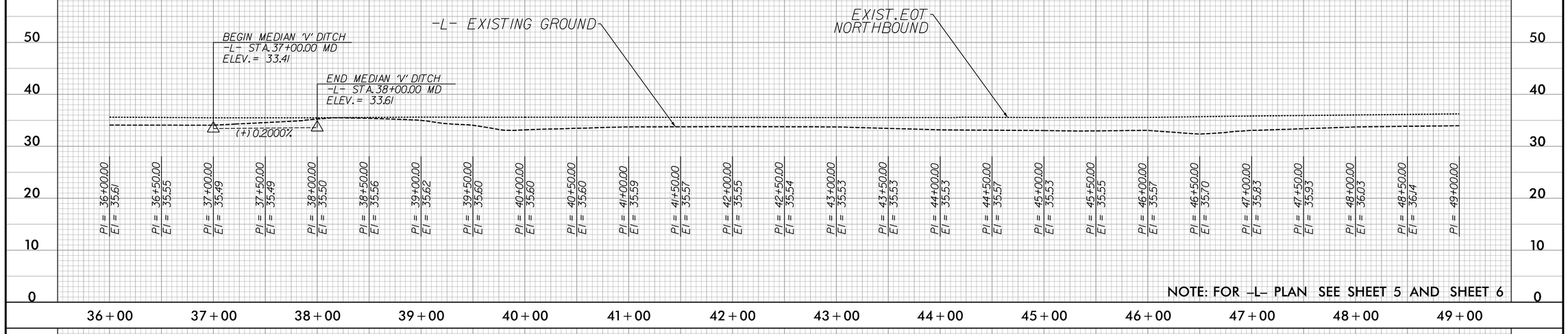

NOTE: FOR –L– PLAN SEE SHEET 5 AND SHEET 6

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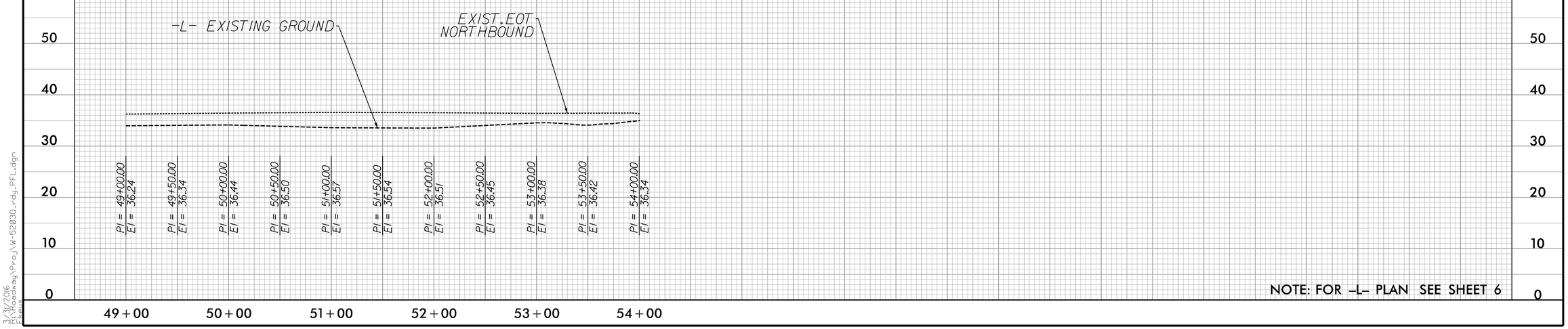

NOTE: FOR –L– PLAN SEE SHEET 6

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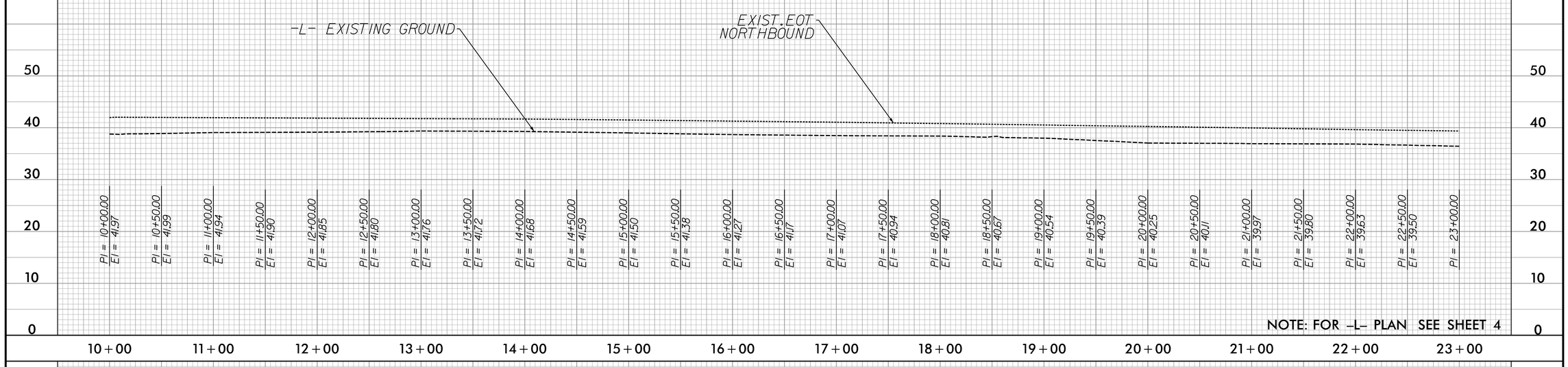
PROJECT REFERENCE NO.	SHEET NO.
W-5203Q	9

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 15162 ENGINEER STEPHEN C. BROWN
DocuSigned by: Stephen C. Brown
DC7A1A4E12EA4B1...
3/31/2016

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 009981 ENGINEER DAVID P. BOCKELMAN
DocuSigned by: David P. Bockelman
DC7A1A4E12EA4B1...
3/31/2016

30FT RIGHT OFFSET –L– (EXISTING EOT)



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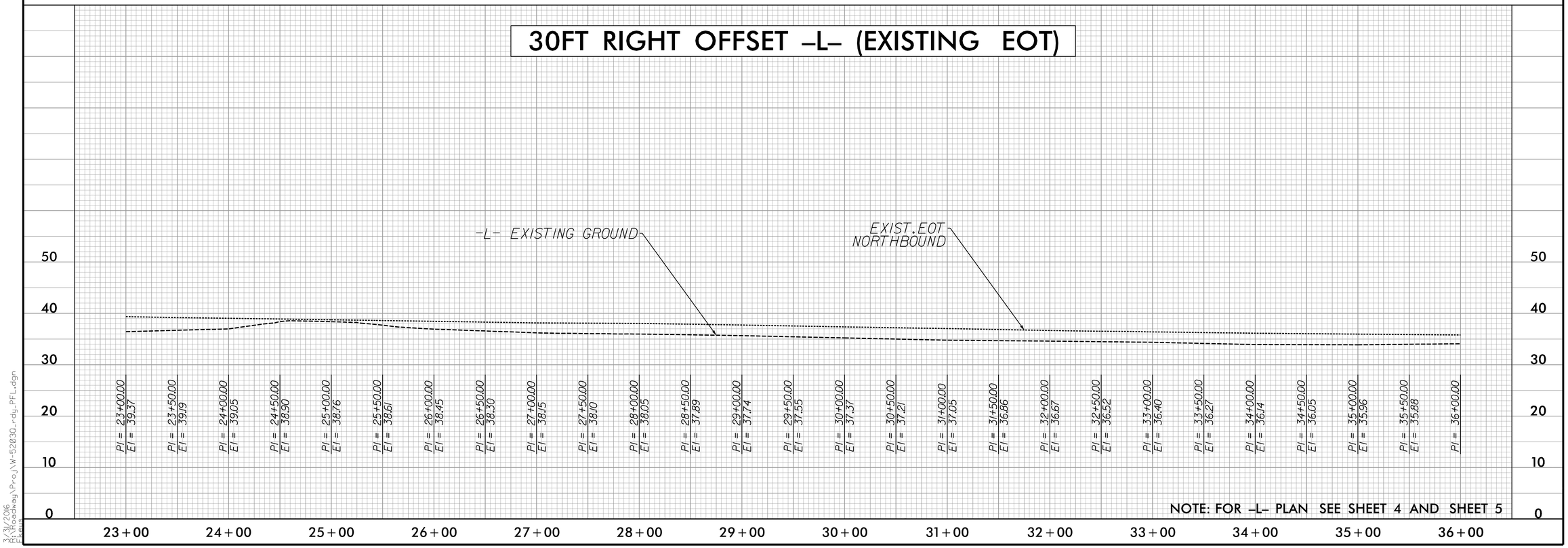

NOTE: FOR –L– PLAN SEE SHEET 4 AND SHEET 5

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30FT RIGHT OFFSET –L– (EXISTING EOT)

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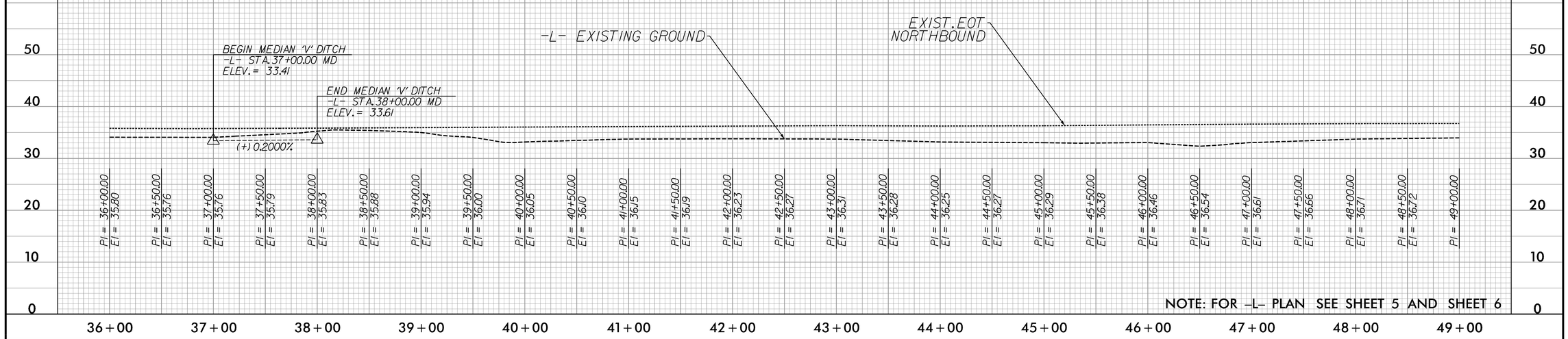
PROJECT REFERENCE NO.	SHEET NO.
W-5203Q	10

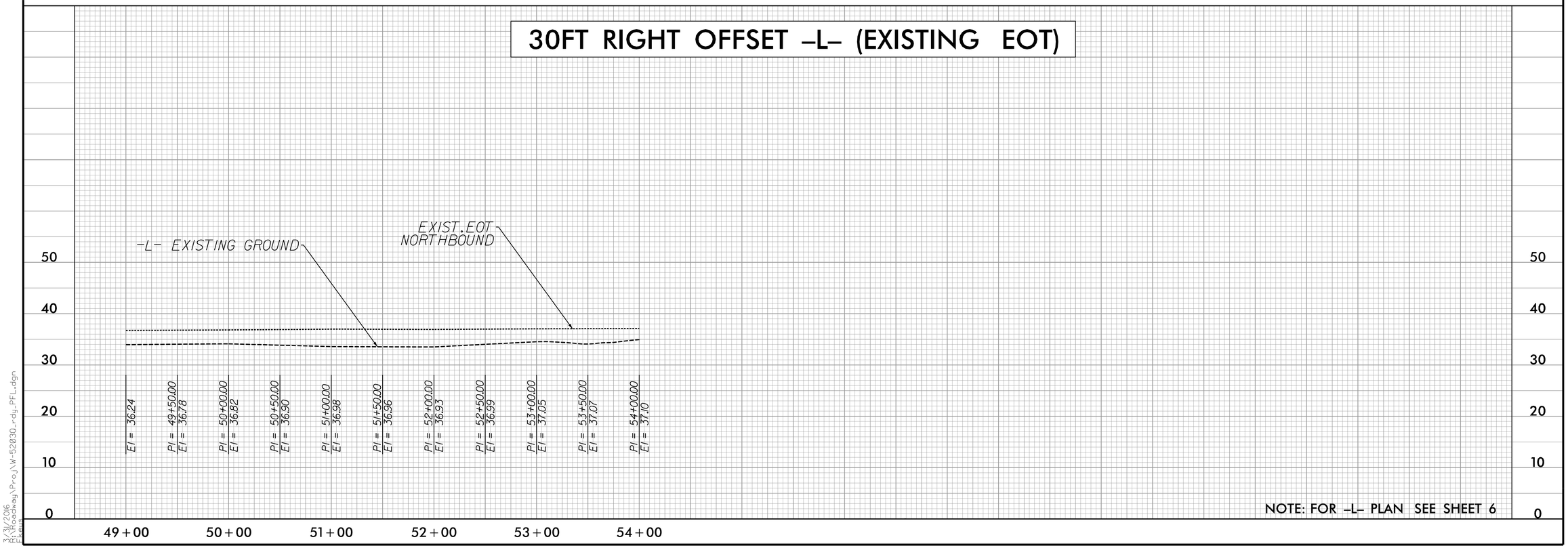
ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 15756 ENGINEER STEPHEN C. BROWNE
DocuSigned by: Stephen C. Browne 5/31/2016
3/31/2016

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 029984 ENGINEER DAVID P. BOCKELMAN
DocuSigned by: David P. Bockelman 5/31/2016
3/31/2016



NOTE: FOR –L– PLAN SEE SHEET 5 AND SHEET 6

30FT RIGHT OFFSET –L– (EXISTING EOT)



NOTE: FOR –L– PLAN SEE SHEET 6

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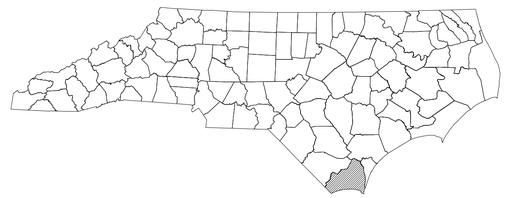
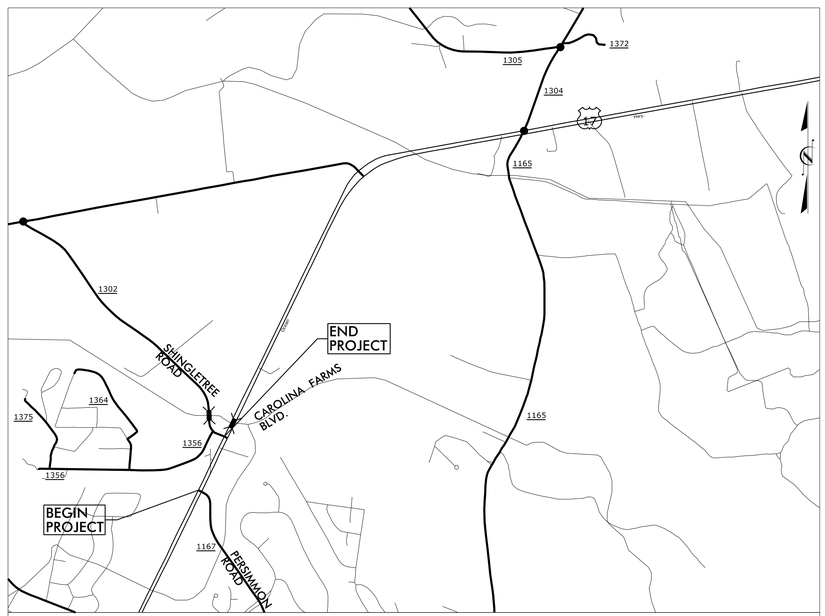
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

BRUNSWICK 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-2A-2B	TRANSPORTATION OPERATIONS PLAN: (GENERAL NOTES)
TMP-3	TEMPORARY TRAFFIC CONTROL PHASING
TMP-4-5	TEMPORARY TRAFFIC CONTROL PHASE I DETAIL
TMP-6-8	TEMPORARY TRAFFIC CONTROL PHASE II DETAIL

SHEET NO.
TMP-1

W-5203Q

TIP PROJECT:

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
STEVE KITE, P.E. — TRAFFIC CONTROL PROJECT ENGINEER
DON PARKER — TRAFFIC CONTROL PROJECT DESIGN ENGINEER
SHEENA GREEN — TRAFFIC CONTROL DESIGN ENGINEER

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

vhb
4000 WestChase Boulevard, Suite 530 Raleigh, NC 27607
NC License No. C-3705

JOSEPH LEWIS, PE
TRAFFIC CONTROL
PROJECT ENGINEER

A. MATTHEW THIGPEN, PE
TRAFFIC CONTROL
PROJECT DESIGN ENGINEER

APPROVED: DocuSigned by: A. Matthew Thigpen
DATE: 3/31/2016 DOCUSIGNED BY:

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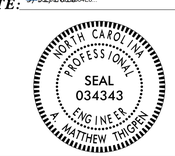

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W-5203Q	TMP-1A

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 JANUARY 2012 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
1101.05	WORK ZONE VEHICLE ACCESSES
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
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY

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

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 MARKING SYMBOLS

PAVEMENT MARKING SYMBOLS

TEMPORARY PAVEMENT MARKING

P9	2FT.-6FT./SP YELLOW MINISKIP	PAINT (4")
PA	WHITE EDGELINE	PAINT (4")
PB	YELLOW EDGELINE	PAINT (4")
PD	3FT.-9FT./SP WHITE MINISKIP	PAINT (4")
PI	YELLOW DOUBLE CENTER LINE	PAINT (4")
PN	WHITE GORELINE	PAINT (8")
PO	WHITE DIAGONAL	PAINT (8")
QA	LEFT TURN ARROW	PAINT
QB	RIGHT TURN ARROW	PAINT

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SEAL

NORTH CAROLINA PROFESSIONAL SEAL 034343 ENGINEER A. MATTHEW THIGPEN

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

ROADWAY STANDARD DRAWINGS & LEGEND

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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
ALL ROADS	MONDAY THRU FRIDAY 6:00 A.M. TO 9:00 A.M. AND 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
ALL ROADS

HOLIDAY

1. WEEKENDS FROM MEMORIAL DAY WEEKEND TO LABOR DAY WEEKEND, BETWEEN THE HOURS OF 6:00 AM FRIDAY TO 9:00 AM MONDAY.

2. FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.

3. FOR NEW YEAR'S, BETWEEN THE HOURS OF 6:00 A.M. DECEMBER 31st TO 6:00 P.M. JANUARY 3RD. IF NEW YEAR'S DAY IS ON A FRIDAY,SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 6:00 P.M. THE FOLLOWING TUESDAY.

4. FOR EASTER, BETWEEN THE HOURS OF 6:00 A.M. THURSDAY AND 6:00 P.M. TUESDAY.

5. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY TO 6:00 P.M. WEDNESDAY.

6. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 6:00 P.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 6:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.

7. FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY TO 6:00 P.M. WEDNESDAY.

8. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 A.M. TUESDAY AND 6:00 P.M. MONDAY.

9. FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 6:00 P.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.

   WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 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 TRANSPORTATION MANAGEMENT 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) DO NOT INSTALL MORE THAN ONE LANE CLOSURE IN ANY ONE DIRECTION ON US 17.

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

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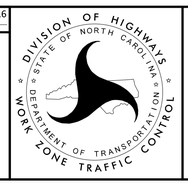

TRANSPORTATION OPERATIONS PLAN: (GENERAL NOTES)

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GENERAL NOTES CONTINUED

PAVEMENT EDGE DROP OFF REQUIREMENTS

J) 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.

K) 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) 500 FT IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

M) 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.

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

O) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) 500 FT IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

TRAFFIC CONTROL DEVICES

P) 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.

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

R) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES (DRUMS) PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.

PAVEMENT MARKINGS AND MARKERS

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

ROAD NAME	MARKING	MARKER
ALL ROADS	PAINT	TEMPORARY RAISED

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

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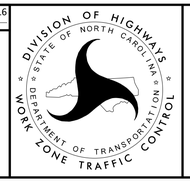

TRANSPORTATION OPERATIONS PLAN: (GENERAL NOTES)

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PROJ. REFERENCE NO.	SHEET NO.
W-5203Q	TMP-3

PHASING

THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL EXISTING DRIVEWAYS AS DIRECTED BY THE ENGINEER.

PHASE I

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

STEP 2
USING RSD 1101.02, SHEET 3 OF 15 WHEN NECESSARY, BEGIN CONSTRUCTION OF THE FOLLOWING UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE (SEE TMP-4 AND TMP-5).

*-L- FROM STA 24+00 +/- TO -Y1- STA 12+35 +/-
*-Y1- FROM STA 12+35 +/- TO -L- STA 25+80 +/-
*-L- FROM STA 25+25 +/- TO STA 33+52 +/-
*-L- FROM STA 30+03 +/- TO STA 38+18 +/-
*-L- FROM STA 37+72 +/- TO -Y2- STA 11+30 +/-
*-Y2- FROM STA 11+30 +/- TO -L- STA 39+33 +/-

PHASE II

STEP 1
CLOSE MEDIAN AT -Y- LINES AND INSTALL SIGNING AS SHOWN FOR RIGHT ONLY MOVEMENTS FROM -Y- LINES (SEE TMP-6 THRU TMP-7).

USING RSD 1101.02, SHEET 3 OF 15, COMPLETE ALL MEDIAN WORK INCLUDING LEFTOVER CHANNELIZATION AT -Y- LINE INTERSECTIONS. INSTALL CONES ALONG EDGE OF ISLANDS ADJACENT TO TRAFFIC WHILE CONCRETE CURES (SEE TMP-6 THRU TMP-8).

USING RSD 1101.02, SHEET 1 OF 15, COMPLETE RIGHT TURN ISLANDS AT ALL -Y- LINES. INSTALL CONES AROUND ISLAND AS SHOWN IN DETAIL A WHILE CONCRETE CURES. INSTALL TEMPORARY MARKINGS (PAINT) IN FINAL PATTERN AT ALL -Y- LINES (SEE TMP-6 THRU TMP-8).

STEP 2
AWAY FROM TRAFFIC AND USING RSD 1101.02, SHEET 1 AND 3 OF 15, AS NECESSARY, PERFORM THE FOLLOWING:

- PLACE FINAL LAYER OF SURFACE COURSE ON ALL LANES.
- PLACE TEMPORARY MARKINGS IN THE FINAL TRAFFIC PATTERN (SEE PAVEMENT MARKING PLANS).
- OPEN ALL LANES TO TRAFFIC.

STEP 3
USING RSD 1101.02, SHEETS 1 AND 3 OF 15, PLACE FINAL PAVEMENT MARKINGS AND MARKERS (SEE PAVEMENT MARKING PLANS).

STEP 4
REMOVE ALL REMAINING TRAFFIC CONTROL DEVICES.

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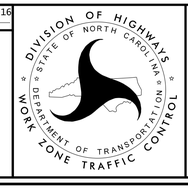

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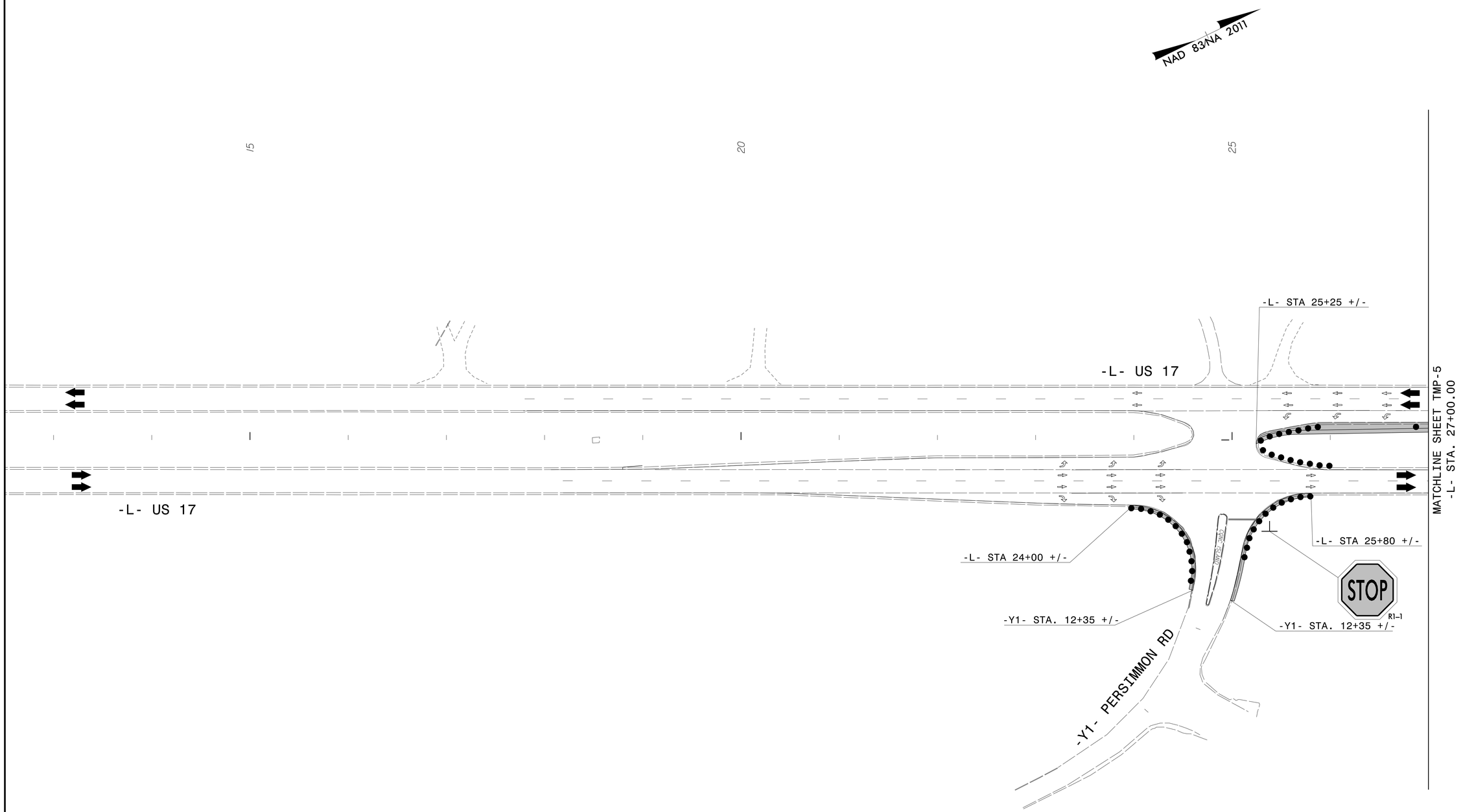
W-5203Q	TMP-4



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SEAL

NORTH CAROLINA PROFESSIONAL SEAL 034343 ENGINEER A. MATTHEW THIGPEN

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

PHASE I DETAIL

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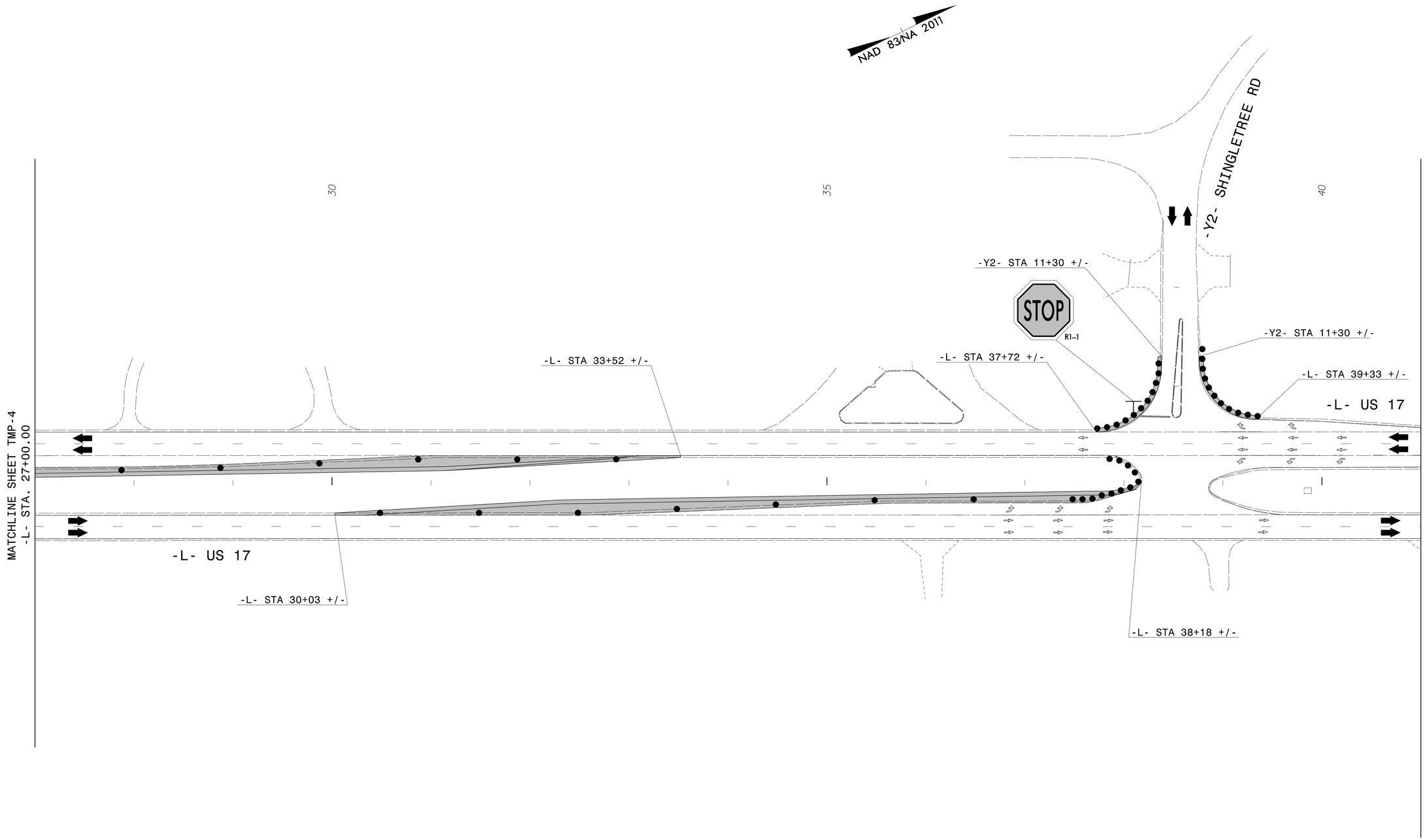

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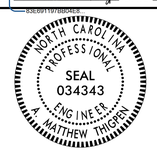

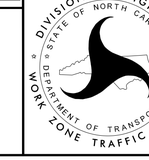

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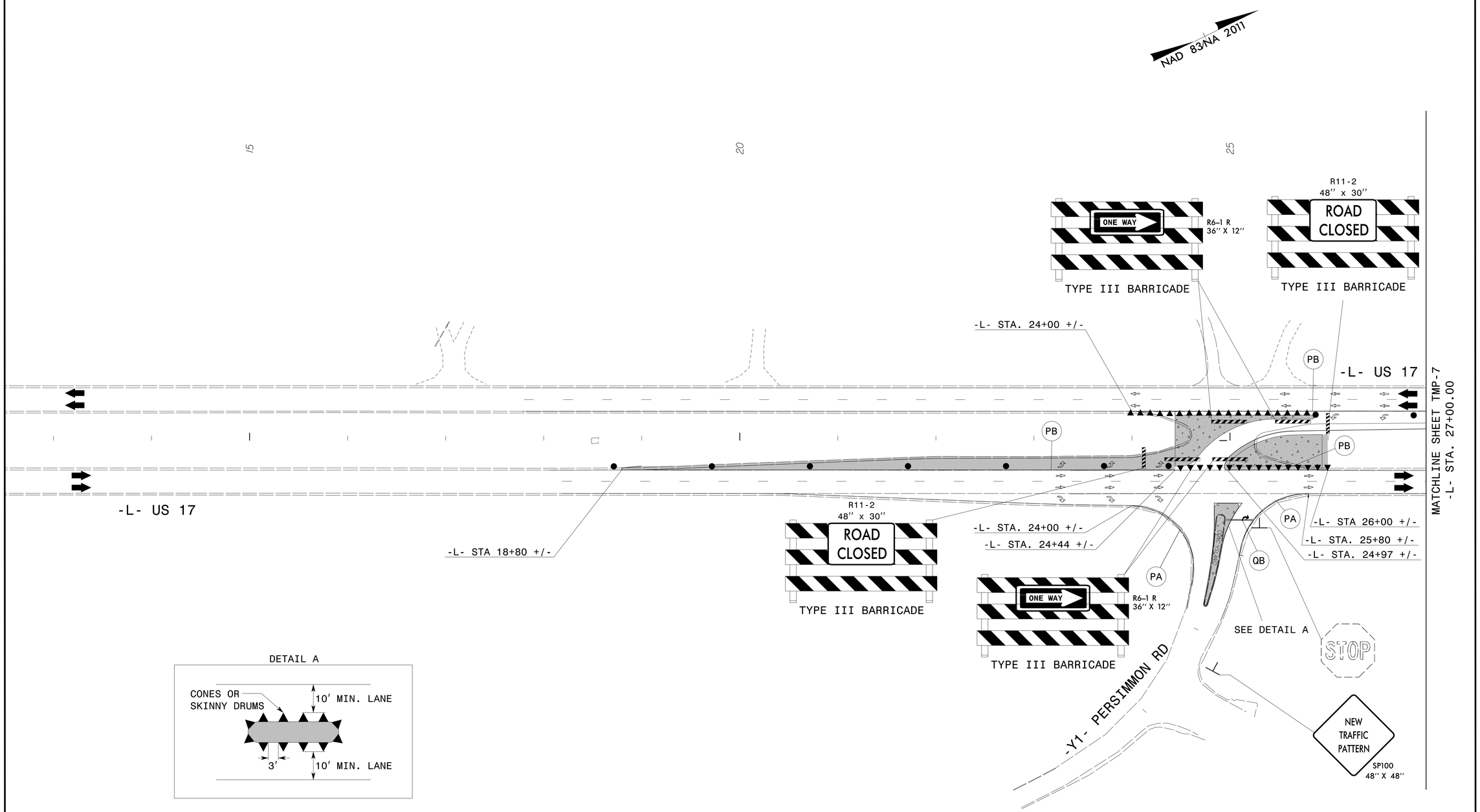
W-5203Q	TMP-6



DETAIL A

APPROVED: DocuSigned by: A. Matthew Thigpen DATE: 3/31/2016

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 034343 ENGINEER A. MATTHEW THIGPEN

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

PHASE II DETAIL

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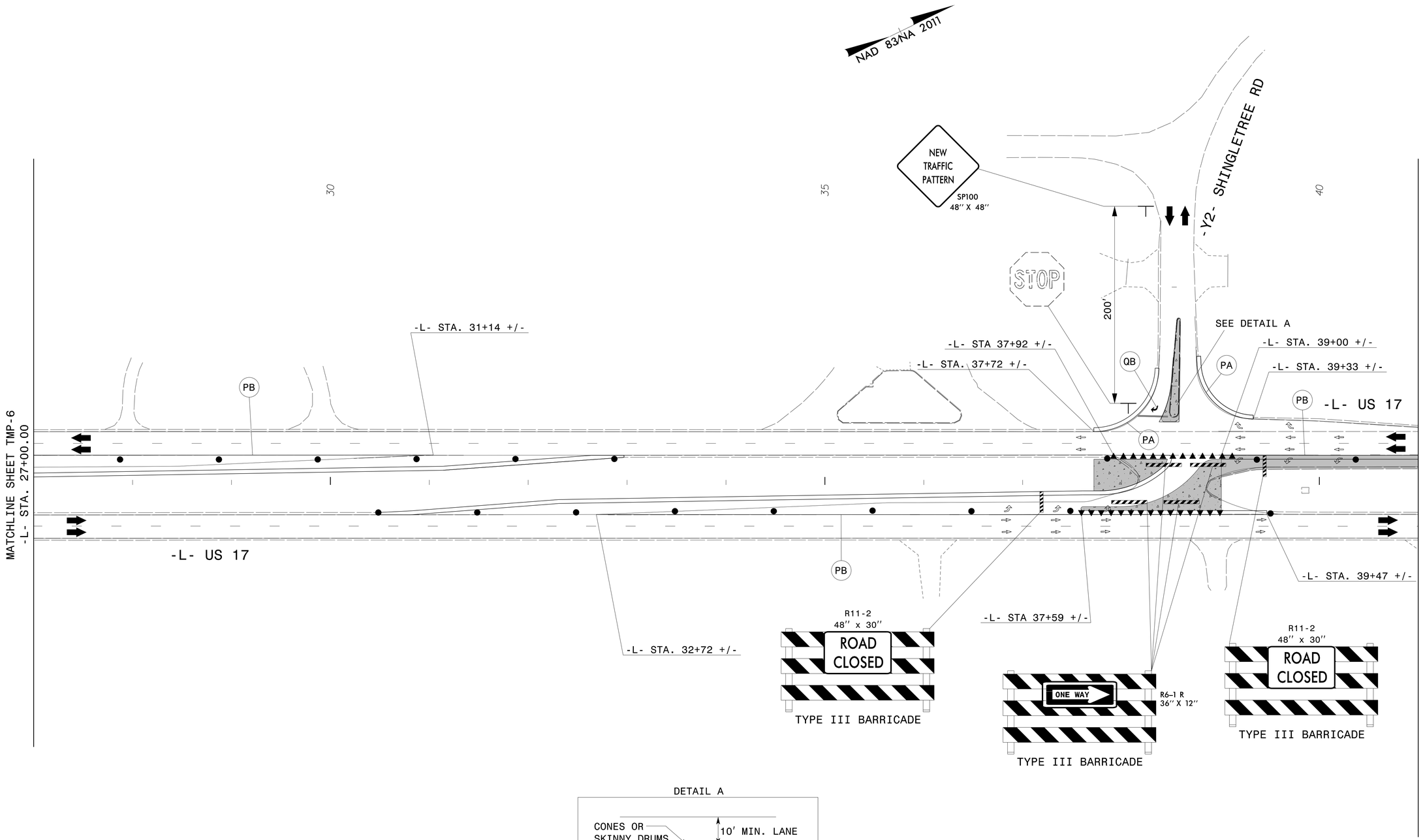

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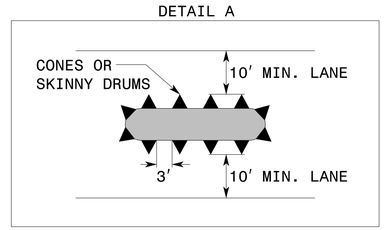

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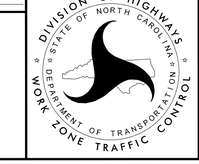

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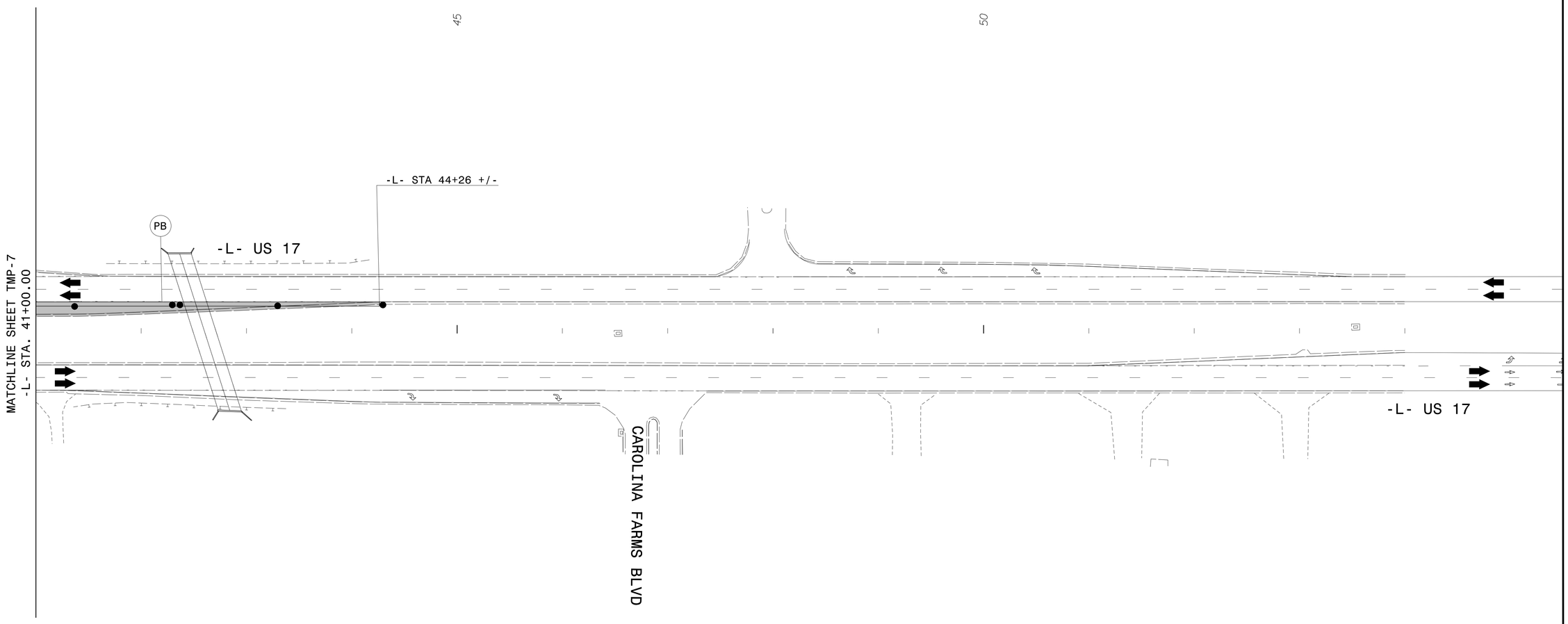
PROJ. REFERENCE NO.	SHEET NO.
W-5203Q	TMP-8



APPROVED: DocuSigned by: R. Matthew Thigpen DATE: 3/31/2016

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 034343 ENGINEER R. MATTHEW THIGPEN

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

PHASE II DETAIL

3/31/2016
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PROJECT REFERENCE NO.	SHEET NO.
W-5203Q	PMP-1

APPROVED: DocuSigned by: A. Matthew Thigpen 83E691197BB04E8...

DATE: 3/31/2016

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 034343 ENGINEER A. MATTHEW THIGPEN

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLAN
BRUNSWICK COUNTY
LOCATION: US 17 @ SR 1302 (SHINGLETREE RD.) & SR 1167 (PERSIMMON RD.)

T.I.P.: W-5203Q

CONTRACT: DC00143

INDEX

SHEET NO.	DESCRIPTION
PMP-1	PAVEMENT MARKING PLAN TITLE AND SCHEDULE SHEET
PMP-2-4	PAVEMENT MARKING DETAIL

PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION	TOTAL QUANTITY
	THERMOPLASTIC (4", 90 MILS)	TOTAL 10,824 LF
TA	WHITE EDGELINE	
TB	YELLOW EDGELINE	
	THERMOPLASTIC (4", 120 MILS)	TOTAL 1,779 LF
T9	2 FT. - 6 FT./SP YELLOW MINISKIP	
TD	3 FT. - 9 FT./SP WHITE MINISKIP	
TI	YELLOW DOUBLE CENTER	
	THERMOPLASTIC (8", 90 MILS)	TOTAL 2,210 LF
TN	WHITE GORELINE	
TO	WHITE DIAGONAL	
	THERMOPLASTIC PAVEMENT MARKING SYMBOLS (90 MILS)	TOTAL 22 EA
UA	LEFT TURN ARROW	
UB	RIGHT TURN ARROW	
	PERMANENT RAISED PAVEMENT MARKERS	TOTAL 184 EA
MA	YELLOW & YELLOW	
MB	CRYSTAL & RED	

ROADWAY STANDARD DRAWING

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - 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
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
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
1253.01	RAISED PAVEMENT MARKERS - SNOWPLOWABLE

GENERAL NOTES

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.

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

ROAD NAME	MARKING	MARKER
-L-	THERMOPLASTIC	SNOWPLOWABLE

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

C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.

D) STOP BAR LOCATION AT NON-SIGNALIZED INTERSECTIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER.

E) UNLESS OTHERWISE SPECIFIED, HEATED-IN-PLACE THERMOPLASTIC MAY BE USED IN LIEU OF EXTRUDED THERMOPLASTIC FOR STOP BARS, SYMBOLS, CHARACTERS AND DIAGONALS. IF HEATED-IN-PLACE IS USED, IT SHALL BE PAID FOR USING THE EXTRUDED THERMOPLASTIC PAY ITEM.

PLAN PREPARED FOR: N.C.D.O.T. SIGNING AND DELINEATION UNIT

_____ SIGNING & DELINEATION REGIONAL ENGINEER

_____ SIGNING & DELINEATION PROJECT DESIGN ENGINEER/TECHNICIAN

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PLAN PREPARED BY: VHB Engineering NC, P.C.

Joseph Lewis, PE — PROJECT ENGINEER

A. Matthew Thigpen, PE — PROJECT DESIGN ENGINEER

vhb 4000 WestChase Boulevard Suite 530 Raleigh, NC 27607 NC License No. C-3705

3/31/2016 K:\Proj\Raleigh\38369.03 NCDOT-MulkeyT03(W-5203Q)\cad\te\planset\Pavement Marking\Pavement Marking Seed.dgn jlewis@vhb.com

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PROJECT REFERENCE NO.	SHEET NO.
W-5203Q	PMP-2

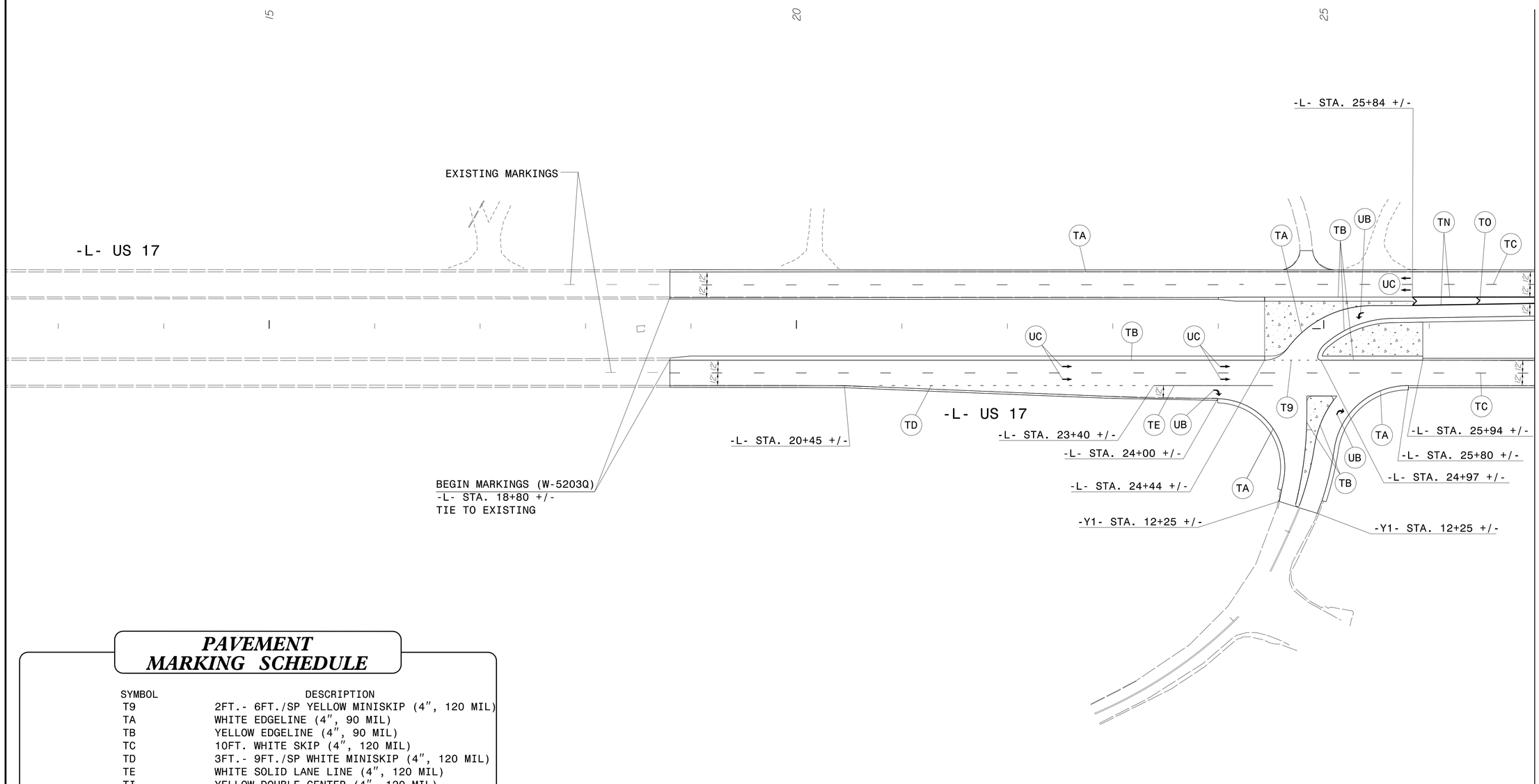
APPROVED: DocuSigned by: A. Matthew Thigpen 83E691197BB04EB...

DATE: 3/31/2016

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 034343 ENGINEER MATTHEW THIGPEN

NAD 83/NA 2011



PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION
T9	2FT.- 6FT./SP YELLOW MINISKIP (4″, 120 MIL)
TA	WHITE EDGELINE (4″, 90 MIL)
TB	YELLOW EDGELINE (4″, 90 MIL)
TC	10FT. WHITE SKIP (4″, 120 MIL)
TD	3FT.- 9FT./SP WHITE MINISKIP (4″, 120 MIL)
TE	WHITE SOLID LANE LINE (4″, 120 MIL)
TI	YELLOW DOUBLE CENTER (4″, 120 MIL)
TN	WHITE GORELINE (8″, 90 MIL)
TO	WHITE DIAGONAL (8″, 90 MIL)
UA	LEFT TURN ARROW (90 MIL)
UB	RIGHT TURN ARROW (90 MIL)
UC	STRAIGHT ARROW (90 MIL)

PAVEMENT MARKING DETAIL

3/31/2016
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jkeyes
thigpen

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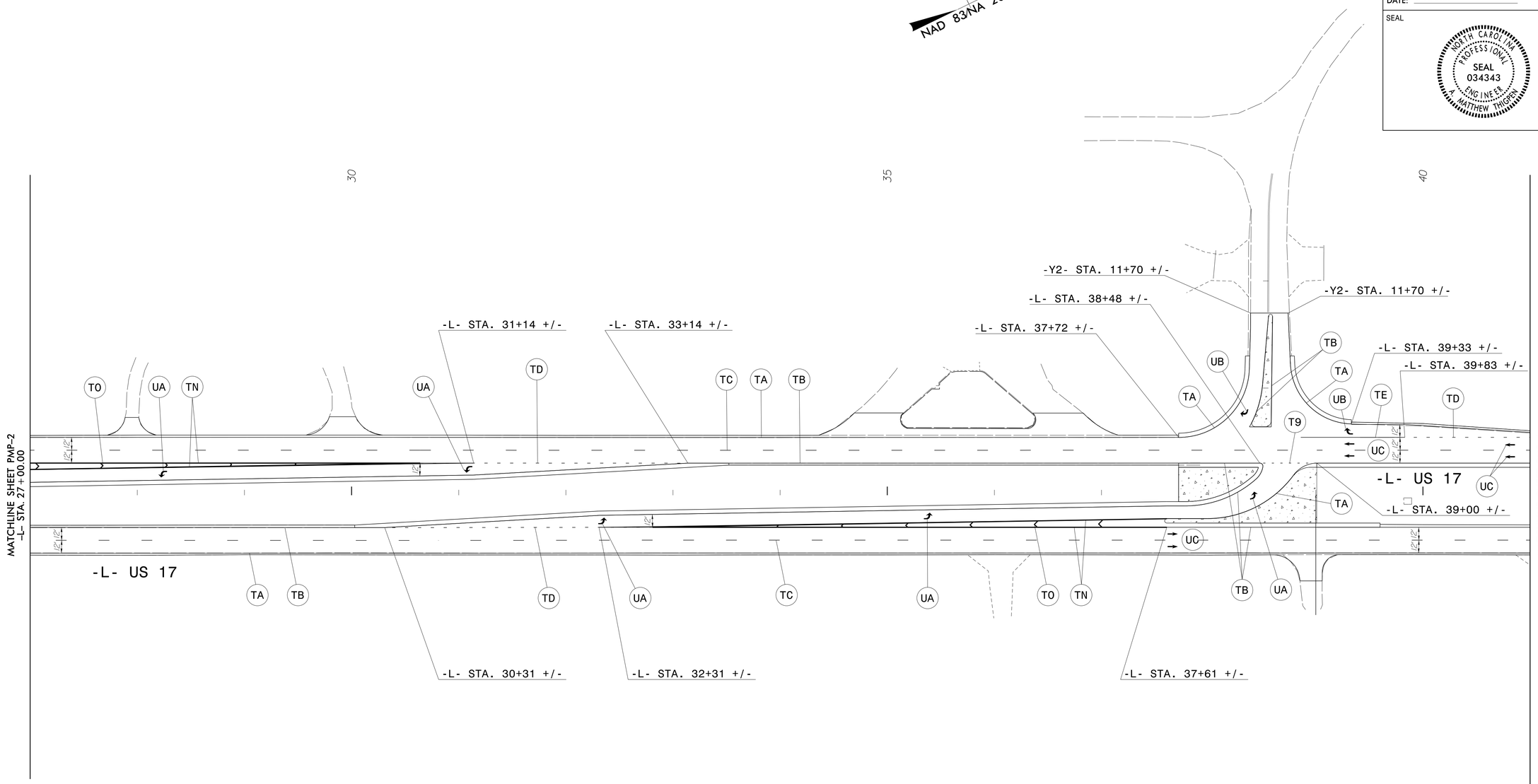
PROJECT REFERENCE NO.	SHEET NO.
W-5203Q	PMP-3

APPROVED: DocuSigned by: R. Matthew Thigpen 83E691197BB04E8...

DATE: 3/31/2016

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 034343 ENGINEER MATTHEW THIGPEN



PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION
T9	2FT.- 6FT./SP YELLOW MINISKIP (4", 120 MIL)
TA	WHITE EDGELINE (4", 90 MIL)
TB	YELLOW EDGELINE (4", 90 MIL)
TC	10FT. WHITE SKIP (4", 120 MIL)
TD	3FT.- 9FT./SP WHITE MINISKIP (4", 120 MIL)
TE	WHITE SOLID LANE LINE (4", 120 MIL)
TN	WHITE GORELINE (8", 90 MIL)
TO	WHITE DIAGONAL (8", 90 MIL)
UA	LEFT TURN ARROW (90 MIL)
UB	RIGHT TURN ARROW (90 MIL)
UC	STRAIGHT ARROW (90 MIL)

PAVEMENT MARKING DETAIL

3/31/2016
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jsearington

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PROJECT REFERENCE NO.	SHEET NO.
W-5203Q	PMP-4

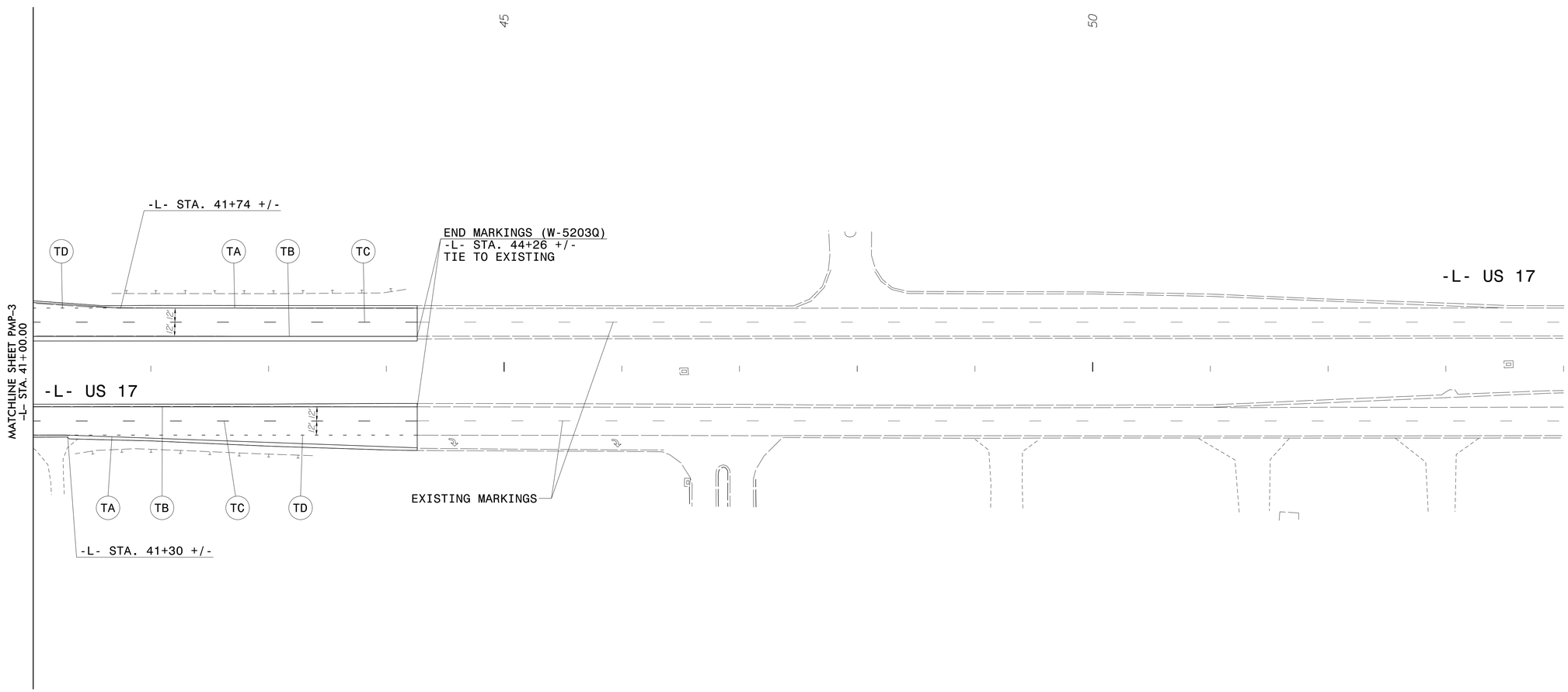
APPROVED: DocuSigned by: R. Matthew Thigpen 83E691197BB04E8...

DATE: 3/31/2016

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 034343 ENGINEER MATTHEW THIGPEN

NAD 83/NA 2011



PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION
TA	WHITE EDGELINE (4", 90 MIL)
TB	YELLOW EDGELINE (4", 90 MIL)
TC	10FT. WHITE SKIP (4", 120 MIL)
TD	3FT.- 9FT./SP WHITE MINISKIP (4", 120 MIL)

PAVEMENT MARKING DETAIL

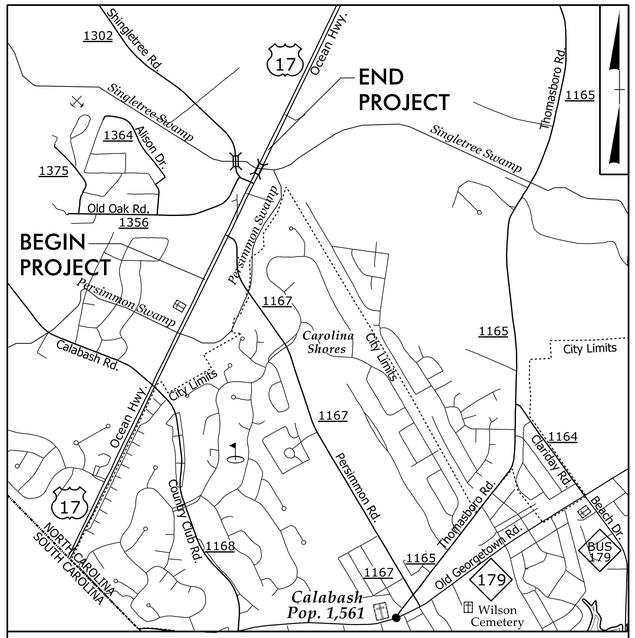
3/31/2016
10:15:50 a
User:mthigpen

09/08/99

TIP PROJECT: W-5203Q

CONTRACT:

See Sheet 1-A For Index of Sheets



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

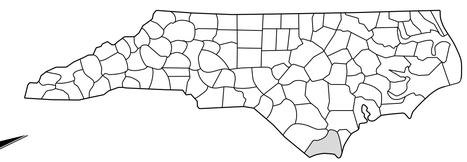
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

BRUNSWICK COUNTY

LOCATION: SUPERSTREET INTERSECTION MODIFICATIONS ON US 17 AT SR 1302 (SHINGLETREE RD) & SR 1167 (PERSIMMON RD)

TYPE OF WORK: GRADING, DRAINAGE, & PAVING

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

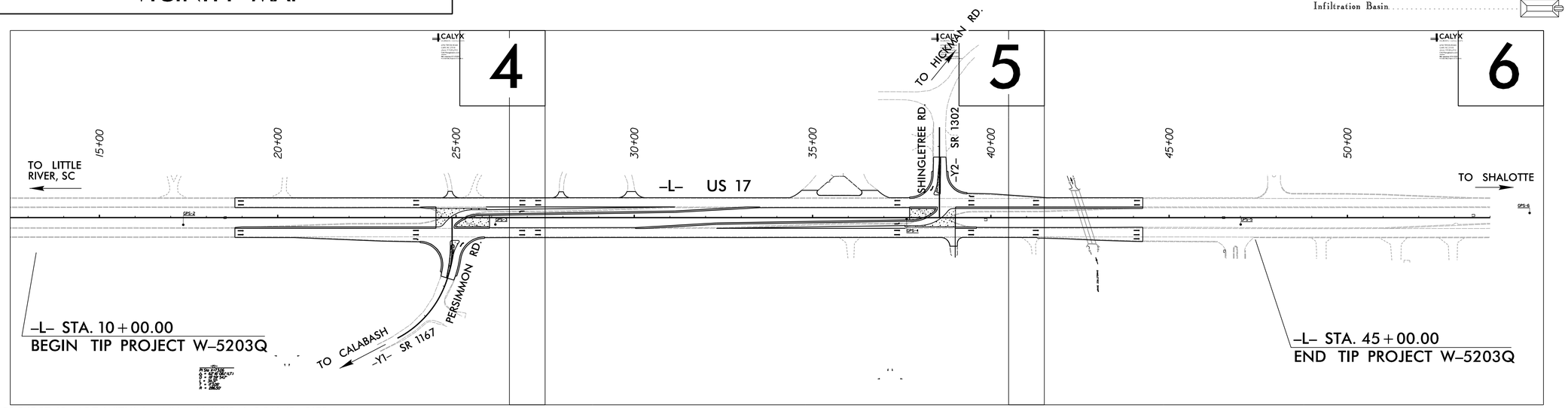


NAD 83/ NA 2011

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5203Q	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
45333.1.FS17	HSIP-0017(133)	PE	

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 IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.
THIS IS A PARTIAL-CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON THE PLANS.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD .

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER QUALITY.

Prepared in the Office of:

CALYX
ENGINEERS + CONSULTANTS
Formerly Mulkey Engineers & Consultants
7500 EAST INDEPENDENCE BOULEVARD, SUITE 100
CHARLOTTE, NC 28227
phone: 704.537.7300
CALYXengineers.com
NC License # F-1333

Designed by:

JAMES R. HOPSON, JR. — *NAME*

3736 — *LEVEL III CERTIFICATION NO.*

Reviewed in the Office of:

ROADSIDE ENVIRONMENTAL UNIT

1 South Wilmington St.
Raleigh, NC 27611

2012 STANDARD SPECIFICATIONS

Reviewed by:

JEREMY GOODWIN, PE, CPESC, CPSWQ

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		

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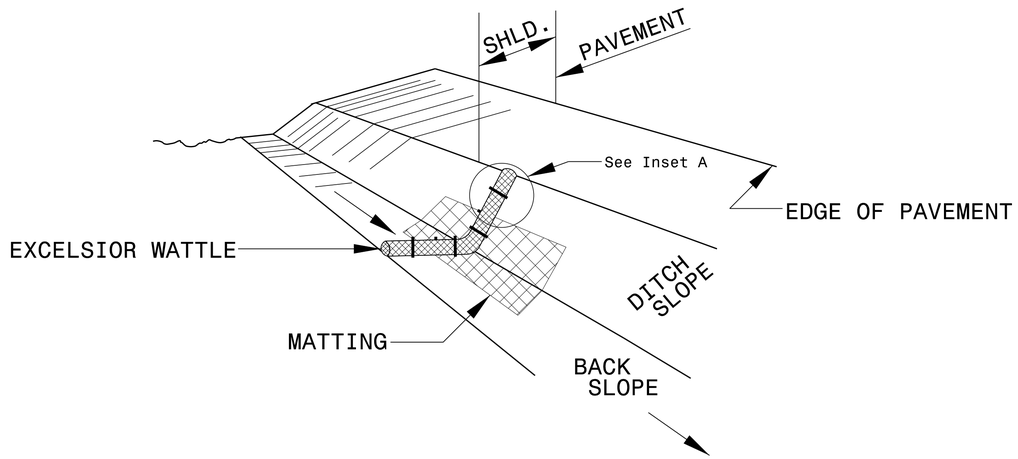
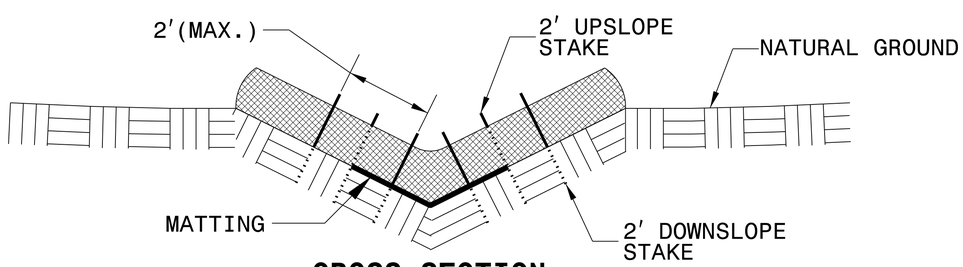
PROJECT REFERENCE NO.	SHEET NO.
W-5203Q	EC-02
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

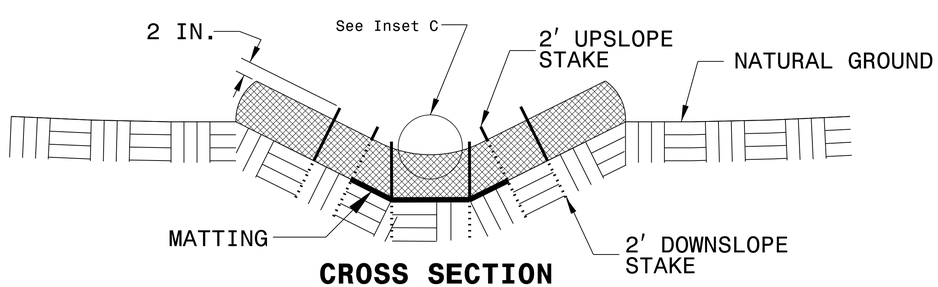
WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



ISOMETRIC VIEW



CROSS SECTION VEE DITCH



CROSS SECTION TRAPEZOIDAL DITCH

NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

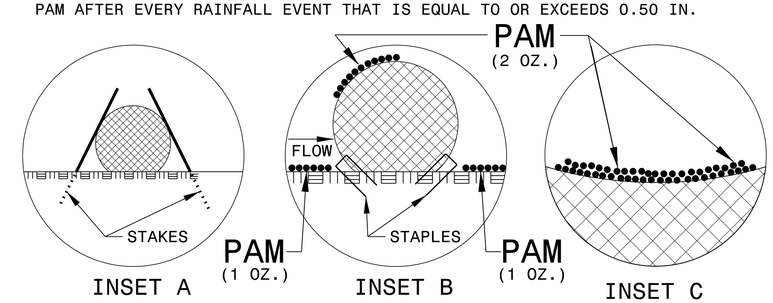
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

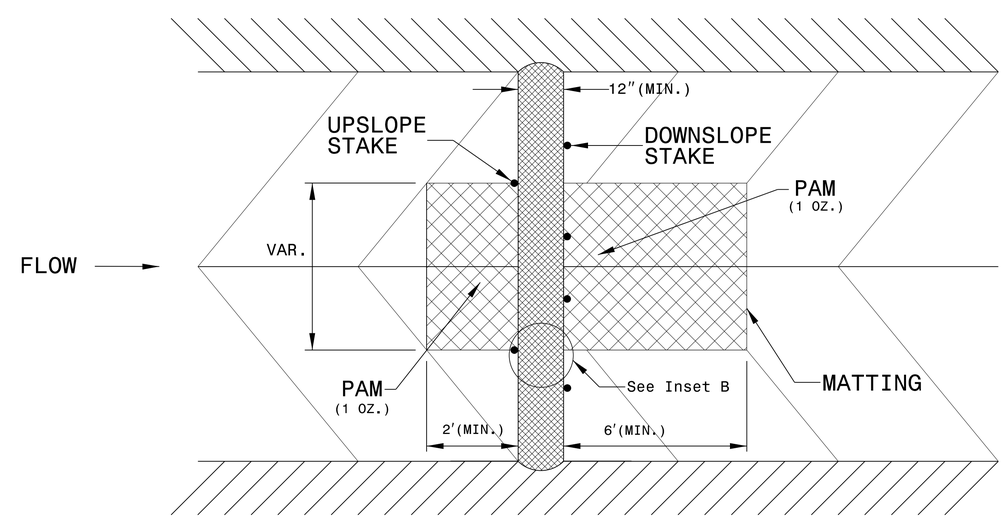
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.





TOP VIEW

REVISIONS

8/17/99

3/28/2016
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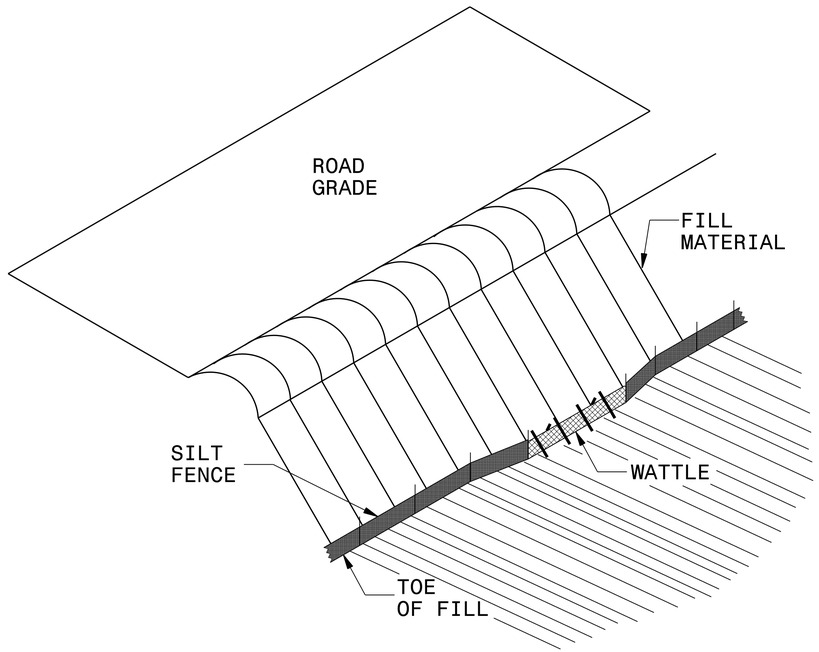
SILT FENCE COIR FIBER WATTLE BREAK DETAIL

PROJECT REFERENCE NO.	SHEET NO.
W-5203Q	EC-02A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



ISOMETRIC VIEW

NOTES:

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE AND LENGTH OF 10 FT.

EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.

DO NOT PLACE WATTLE ON TOE OF SLOPE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.

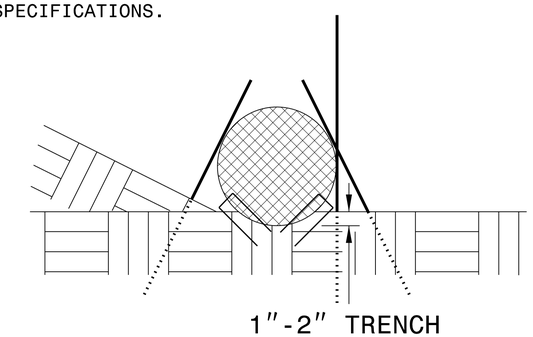
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

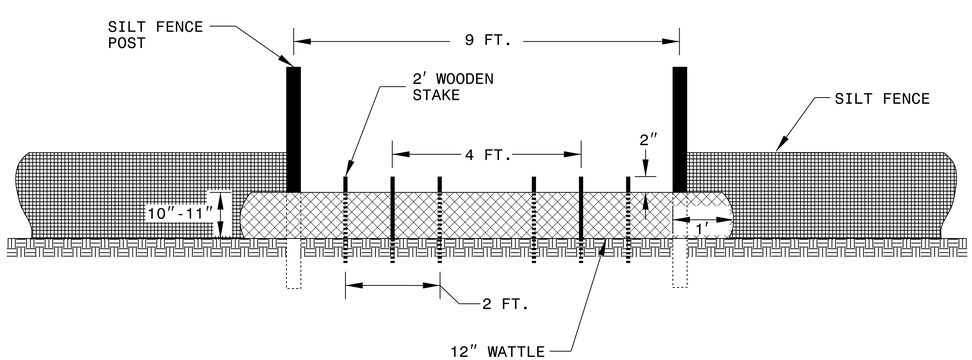
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

WATTLE INSTALLATION CAN BE ON OUTSIDE OF THE SILT FENCE AS DIRECTED.

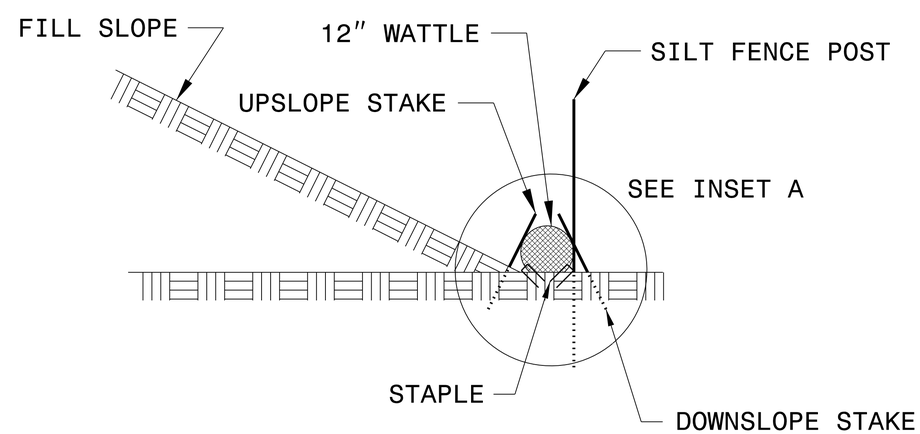
INSTALL TEMPORARY SILT FENCE IN ACCORDANCE WITH SECTION 1605 OF THE STANDARD SPECIFICATIONS.

INSET A





VIEW FROM SLOPE



SIDE VIEW

REVISIONS

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PROJECT REFERENCE NO.	SHEET NO.
W-5203Q	EC-03
R/W SHEET NO.	
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.

REVISIONS

8/17/99

3/28/2016
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PROJECT REFERENCE NO.	SHEET NO.
W-52030	EC-03A
R/W SHEET NO.	
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)
6	-L-	43+00	44+00	RT	190
				SUBTOTAL	190
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					
				TOTAL	190
				SAY	200

MATTING FOR EROSION CONTROL

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

REVISIONS

8/17/99

3/28/2016
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FLEWIS

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

CALYX
ENGINEERS + CONSULTANTS
6750 TRYON ROAD
CARY, NC 27518
phone: 919.851.1912
CALYXengineers.com
NC License # F-1333
Formerly Mulkey Engineers & Consultants

PROJECT REFERENCE NO.	SHEET NO.
W-5203Q	EC-04/CONST.04
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

8/17/99

NAD 83/NA 2011

ESTELLE MARLOW
CHARLIE MARLOW JR. ETALS
DB 487 PG 485

YACCA BYNUM & WILLIAM BYNUM
DB 1515 PG 751

ROY TREST TRUSTEE &
MYRTLEL TREST
DB 2851PG 1301

ROY D TREST &
DONNA D TREST ETUX
DB 3142 PG 180

ROY TREST TRUSTEE & MYRTLE TREST
DB 3188 PG 254

BEGIN TIP PROJECT W-5030
BEGIN CONSTRUCTION
-L- STA.18+00.00

-L- STA.24+89.92
-Y1- STA.13+96.01

48" WW FENCE
RETAIN
ACCESS POINT
EXIST. R/W
15" CMP
18" CMP
GUY
SEWER VALVE
CFW
+43.94
+83.94
530' STORAGE LENGTH
40'
R 20'
R 100'
0403
0404
US HWY 17 SBL 28' BST
US HWY 17 NBL 28' BST
28'
44'
GPS-2
NCDOT GPS
W5203-2
CONC. MON.
N 25° 57' 06.4" E
-L- US HWY 17
REMOVE EXISTING PAVEMENT
15" RCP-IV
DI
GPS-3
NCDOT GPS
W5203-3
30'
RETAIN & CLEANOUT
R 65'
R 70'
N 64° 03' 27.07" W
100'
15" RCP
FO MARKER
FO VAULT
WOODS
-L- STA.18+80.00
BEGIN MEDIAN WIDENING
BEGIN OVERLAY LT & RT
-Y1- PC Sta.13+11.11
BEGIN PAVED SHOULDER
-L- STA.23+99.49
66.41 RT.
END PAVED SHOULDER
-L- STA.25+80.37
54.15 RT.
24" RCP
1 B BIORAP
2 TONS
7 SY GEOTEXTILE
REMOVE AND REPLACE
EXISTING CONCRETE
ISLAND
END PAVED SHOULDERS
-Y1- STA.12+37 LT & RT
END OVERLAY LT & RT
-Y1- STA.12+25
-Y1- PT Sta.10+00.00
GUYS
ABANDONED 60' R/W PER
STATE PROJECT #6.239004
ELEC. OUTLET BOXES
6' WOOD PRIVACY FENCE
RB & CAP
EXIST. R/W
MATCHLINE SHEET 5
-L- STA. 27+00.00

WILLOW TREE BRUNSWICK LLC
DB 2855 PG 390

WILLOW TREE BRUNSWICK LLC
DB 2855 PG 370

JOE R. SETZER &
DONNA L. SETZER
DB 2341PG 495

GORDON N. TITCOMB&
KEVIN P KOVEL
DB 3227 PG 110

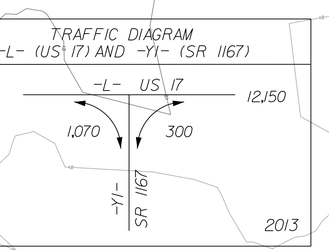
CEDAR TREE POA INC
DB 3030 PG 141

RANDY J. WILLIAMS
DEBORAH S. WILLIAMS
DB 2462 PG 585

RICHARD F BURKETT &
LORETTA D. BURKETT
DB 243 PG 216

MICHAEL J. BRENNAN
DB 3446 PG 825

TRAFFIC DIAGRAM
-L- (US 17) AND -Y1- (SR 1167)



-Y1-
PI Sta 11+73.06
Δ = 62° 16' 08.1" (LT)
D = 19° 59' 54.7"
L = 311.37'
T = 173.06'
R = 286.50'

NOTE:
FOR -L- PROFILE SEE
SHEETS 7 AND 9
FOR MONOLITHIC ISLAND
DETAIL SEE SHEET 2A

3/28/2016
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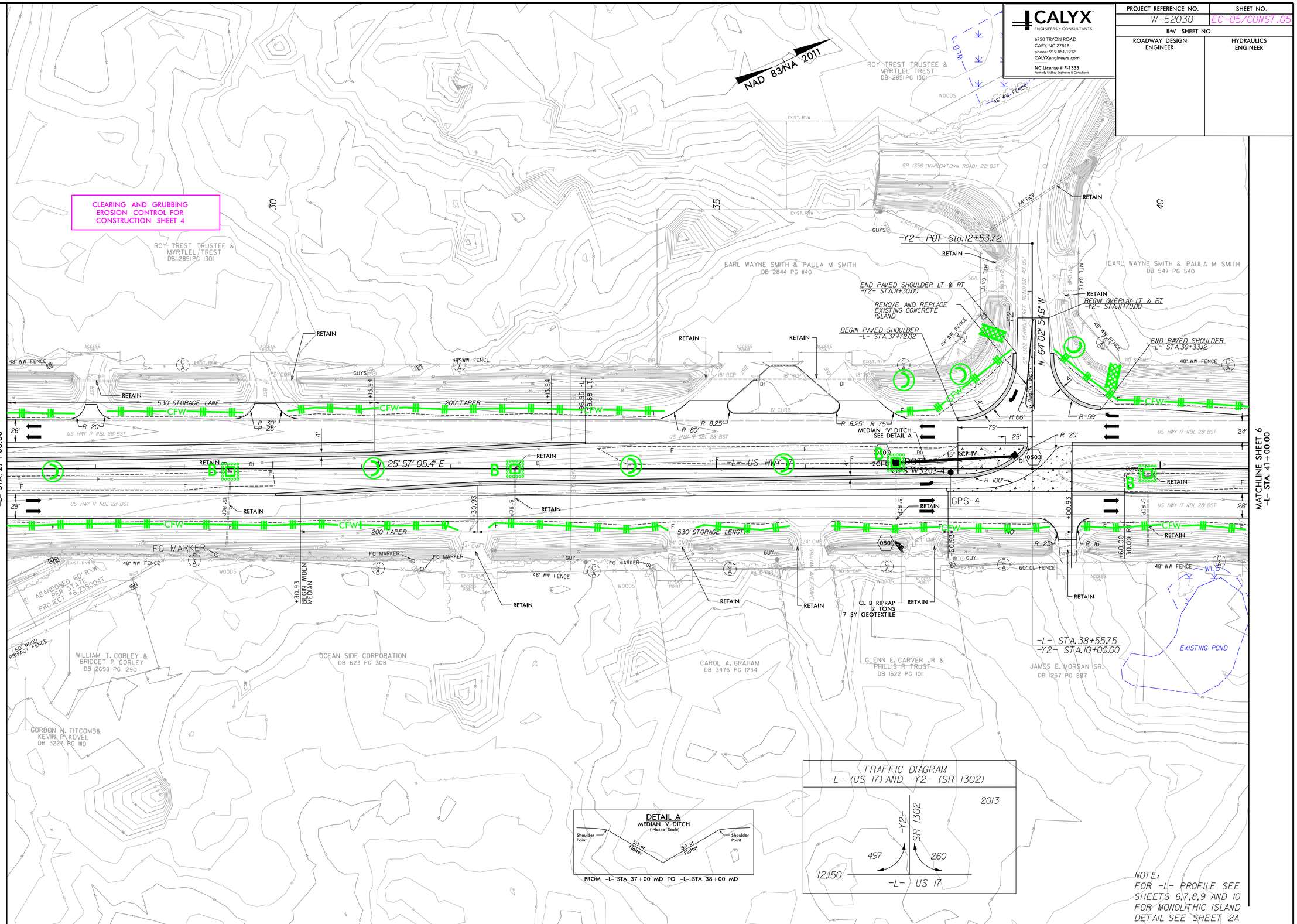
kbeg

PROJECT REFERENCE NO.	SHEET NO.
W-5203Q	EC-05/CONST.05
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CALYX
ENGINEERS + CONSULTANTS
6750 TRYON ROAD
CARY, NC 27518
phone: 919.851.1912
CALYXengineers.com
NC License # F-1333
Formerly Mulkey Engineers & Consultants



REVISIONS

8/17/99

3/28/2016
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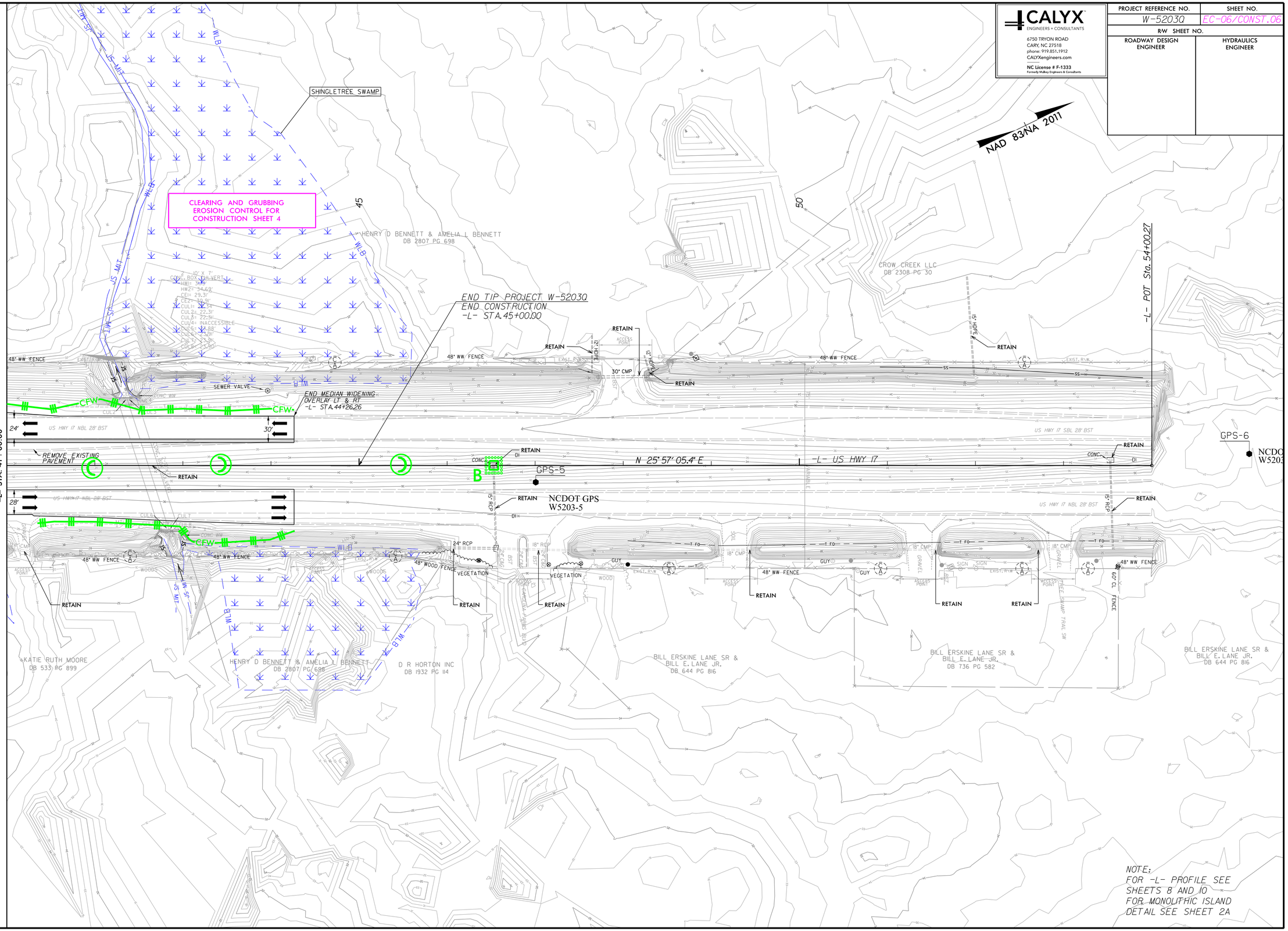
PROJECT REFERENCE NO.	SHEET NO.
W-5203Q	EC-06/CONST.06
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CALYX
ENGINEERS + CONSULTANTS
6750 TRYON ROAD
CARY, NC 27518
phone: 919.851.1912
CALYXengineers.com
NC License # F-1333
Formerly Mulkey Engineers & Consultants



REVISIONS

8/17/99

3/28/2016
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CALYX ENGINEERS + CONSULTANTS
6750 TRYON ROAD
CARY, NC 27518
phone: 919.851.1912
CALYXengineers.com
NC License # F-1333
Formerly Mulkey Engineers & Consultants

PROJECT REFERENCE NO.	SHEET NO.
W-5203Q	EC-07/CONST.04
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

8/17/99

REVISIONS

NAD 83/NA 2011

15 20 25

ESTELLE MARLOW
CHARLIE MARLOW JR. ETALS
DB 487 PG 485

YACCA BYNUM & WILLIAM BYNUM
DB 1515 PG 751

ROY TREST TRUSTEE &
MYRTLEL TREST
DB 2851PG 1301

ROY D TREST &
DONNA D TREST ETUX
DB 3142 PG 180

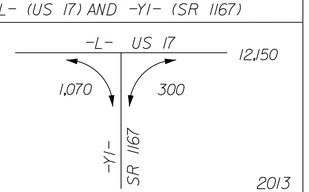
ROY TREST TRUSTEE & MYRTLE TREST
DB 3188 PG 254

BEGIN TIP PROJECT W-5030
BEGIN CONSTRUCTION
-L- STA.18+00.00

-L- STA.24+89.12
-Y1- STA.13+96.01

48" WW FENCE
EXIST. R/W
ACCESS POINT
RETAIN
8" HDPE
EIP
15" CMP
SOIL
GUY
18" CMP
SEWER VALVE
CFW
+43.94
+83.94
140'
530' STORAGE LENGTH
R 20'
R 100'
0403
0404
US HWY 17 SBL 28' BST
US HWY 17 NBL 28' BST
28'
44'
GPS-2
NCDOT GPS
W5203-2
N 25° 57' 06.4" E
-L- US HWY 17
REMOVE EXISTING PAVEMENT
15" RCP-IV
GPS-3
NCDOT GPS
W5203-3
30'
4'
RETAIN & CLEANOUT
15" RCP
R 20'
R 65'
R 70'
100'
N 64° 03' 27.0" W
-Y1- PC Sta.13+11.11
END PAVED SHOULDER
-L- STA.25+80.37
54.5 RT.
24" RCP
FO MARKER
FO VAULT
WOODS
BEGIN PAVED SHOULDER
-L- STA.23+99.49
66.41 RT.
-L- STA.18+80.00
BEGIN MEDIAN WIDENING
BEGIN OVERLAY LT & RT
REMOVE AND REPLACE
EXISTING CONCRETE
ISLAND
END PAVED SHOULDERS
-Y1- STA.12+37 LT & RT
END OVERLAY LT & RT
-Y1- STA.12+25
-Y1- PT Sta.10+00.00
GUYS
ABANDONED 60' R/W PER
STATE PROJECT #6.2390047
ELEC. OUTLET BOXES
60' WOOD PRIVACY FENCE
JOE R. SETZER &
DONNA L. SETZER
DB 2341PG 495
GORDON N. TITCOMB&
KEVIN P KOVEL
DB 3227 PG 110
CEDAR TREE POA INC
DB 3030 PG 741
CEDAR TREE POA INC
DB 3030 PG 741
MICHAEL J. BRENNAN
DB 3446 PG 825
RICHARD F. BURKETT &
LORETTA D. BURKETT
DB 2413 PG 216
RANDY J. WILLIAMS
DEBORAH S. WILLIAMS
DB 2482 PG 565
WILLOW TREE BRUNSWICK LLC
DB 2855 PG 390
WILLOW TREE BRUNSWICK LLC
DB 2855 PG 370
RB & CAP
15" RCP
MATCHLINE SHEET 5
-L- STA. 27+00.00

TRAFFIC DIAGRAM
-L- (US 17) AND -Y1- (SR 1167)



2013

-Y1-
PI Sta 11+73.06
Δ = 62° 16' 08.1" (LT)
D = 19° 59' 54.7"
L = 311.37'
T = 173.06'
R = 286.50'

NOTE:
FOR -L- PROFILE SEE SHEETS 7 AND 9
FOR MONOLITHIC ISLAND DETAIL SEE SHEET 2A

3/28/2016
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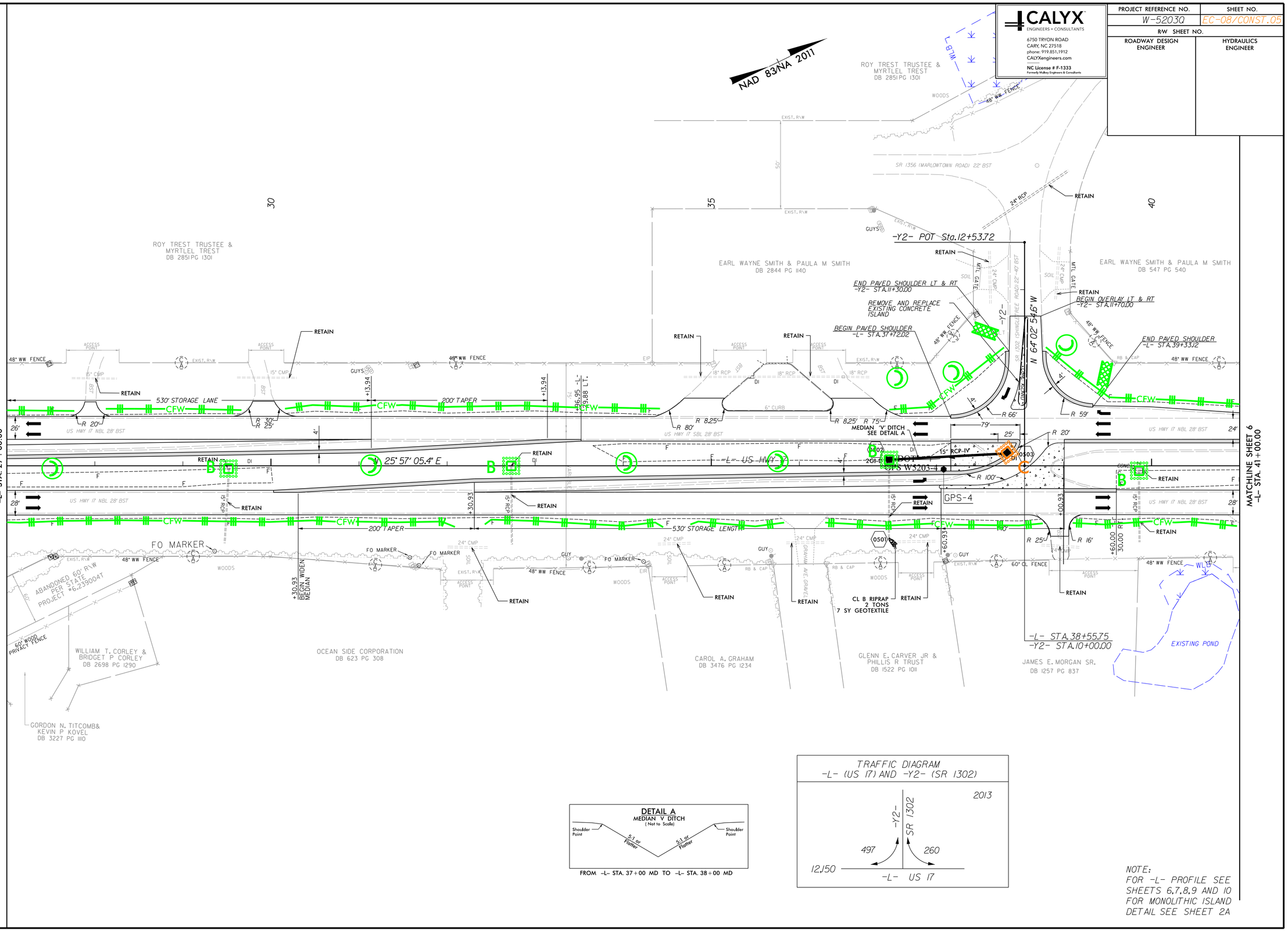
EC_kevis

PROJECT REFERENCE NO.	SHEET NO.
W-5203Q	EC-08/CONST.05
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CALYX ENGINEERS + CONSULTANTS
6750 TRYON ROAD
CARY, NC 27518
phone: 919.851.1912
CALYXengineers.com
NC License # F-1333
Formerly Mulkey Engineers & Consultants



REVISIONS

8/17/99

3/28/2016
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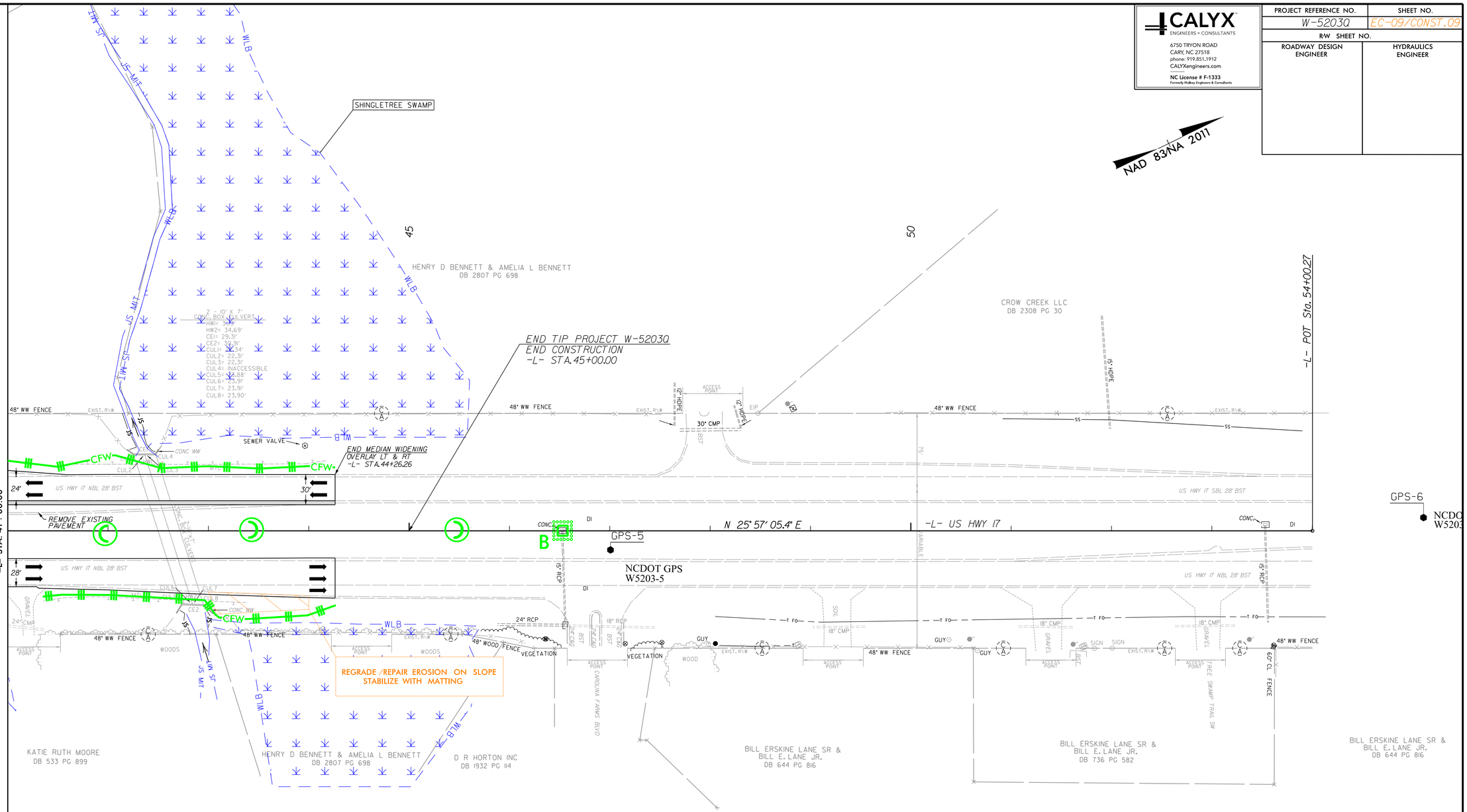
FLEWIS

PROJECT REFERENCE NO.	SHEET NO.
W-5203Q	EC-09/CONST.09
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CALYX
ENGINEERS + CONSULTANTS
6750 TRYON ROAD
CARY, NC 27518
phone: 919.851.1912
CALYXengineers.com
NC License # F-1333
Formerly Mulkey Engineers & Consultants



NOTE:
FOR -L- PROFILE SEE
SHEETS 8 AND 10
FOR MONOLITHIC ISLAND
DETAIL SEE SHEET 2A

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PROJECT REFERENCE NO.	SHEET NO.
W-5203Q	SIGN-1

APPROVED: DocuSigned by: A. Matthew Thigpen 83E691197BB04E8...

DATE: 3/31/2016

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 034343 ENGINEER A. MATTHEW THIGPEN

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

SIGNING PLAN
BRUNSWICK COUNTY

LOCATION: US 17 @ SR 1302 (SHINGLETREE RD.) & SR 1167 (PERSIMMON RD.)

T.I.P.: W-5203Q

CONTRACT: DC00143

ROADWAY STANDARD DRAWING

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - 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
904.10	ORIENTATION OF GROUND MOUNTED SIGNS
904.50	MOUNTING OF TYPE 'D', 'E' AND 'F' SIGNS ON 'U' CHANNEL POSTS

PROJECT NOTES

1. DISPOSAL OF SIGN SYSTEM, U-CHANNEL
2. SIGN ERECTION, RELOCATE SIGN TYPE D
3. DISPOSAL OF SUPPORT, U-CHANNEL

GENERAL NOTES

. SIGNS FURNISHED BY STATE

. IF REMOVAL OR RELOCATION OF SIGNS ON PRIVATE STREET (NON-STATE MAINTAINED) IS REQUIRED DUE TO CONSTRUCTION, THE CONTRACTOR SHALL INFORM THE ENGINEER. THE WORK WILL BE COMPLETED BY OTHERS.

. WHEN NOT STATIONED OR DIMENSIONED ON PLANS, ALL 'E' AND 'F' SIGNS SHALL BE FIELD LOCATED BY THE ENGINEER

. ALL EXISTING SIGNS ON "U" CHANNEL POST WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND DISPOSED OF UNLESS OTHERWISE NOTED ON PLANS.

. WHEN EXISTING SIGNS ARE REMOVED AND INSTALLED ON NEW SUPPORTS, THE RE-ERECTION SHALL IMMEDIATELY FOLLOW THE REMOVAL.

. THE BACKGROUND FOR TYPE E & F SIGNS SHALL BE TYPE C REFLECTIVE SHEETING.

SUMMARY OF QUANTITIES

ITEM NO. DESC. NO.	ITEM NO. SECT. NO.	ITEM DESCRIPTION	QUANTITY	UNIT
4072000000	903	SUPPORTS, 3 LB STEEL U-CHANNEL	471	L.F.
4102000000	904	SIGN ERECTION, TYPE E	18	EA.
4108000000	904	SIGN ERECTION, TYPE F	6	EA.
4116100000	904	SIGN ERECTION, RELOCATE SIGN TYPE D	1	EA.
4155000000	907	DISPOSAL OF SIGN SYSTEM, U-CHANNEL	15	EA.
4192000000	907	DISPOSAL OF SUPPORT, U-CHANNEL	2	EA.

INDEX

SHEET NO.	DESCRIPTION
SIGN-1	TITLE SHEET
SIGN-2	E AND F SIGNS
SIGN-3-5	SIGNING PLAN SHEETS

PLAN PREPARED FOR: N.C.D.O.T. SIGNING AND DELINEATION UNIT

_____ SIGNING & DELINEATION REGIONAL ENGINEER

_____ SIGNING & DELINEATION PROJECT DESIGN ENGINEER

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PLAN PREPARED BY: VHB Engineering NC, P.C.

Joseph Lewis, PE — PROJECT ENGINEER

A. Matthew Thigpen, PE — PROJECT DESIGN ENGINEER

vhb 4000 WestChase Boulevard Suite 530 Raleigh, NC 27607 NC License No. C-3705

3/31/2016 12:45:06 p:\Raleigh\38369.03 NCDOT-MulkeyT03\W-5203Q\cad\te\planset\Signing\Engseed.dgn User: thigpen

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PROJECT REFERENCE NO.	SHEET NO.
W-5203Q	SIGN-2

APPROVED: DocuSigned by: A. Matthew Thigpen 83E691197BB04E8...

DATE: 3/31/2016

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 034343 ENGINEER A. MATTHEW THIGPEN

(401) QUANTITY REQ'D 4

36" X 36"
R1-1

ONE "U" POST PER SIGN

MOUNT BELOW SIGN NO. 402
IN 2 INSTALLATIONS

(402) QUANTITY REQ'D 2

54" X 18"
R6-1 (R)

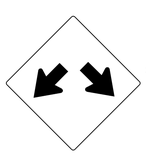
TWO "U" POSTS PER SIGN

(403) QUANTITY REQ'D 2

54" X 18"
R6-1 (L)

TWO "U" POSTS PER SIGN

(404) QUANTITY REQ'D 2



36" X 36"
W12-1

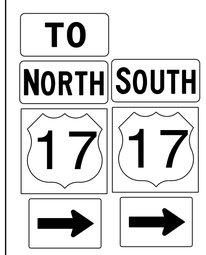
ONE "U" POST PER SIGN

(405) QUANTITY REQ'D 8

42" X 30"
R5-1a

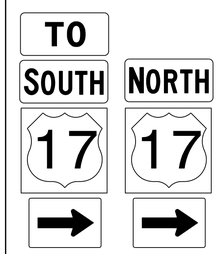
ONE "U" POST PER SIGN

(501)



1 - 24" X 12"
2 - 24" X 12"
2 - 24" X 24"
2 - 21" X 15"

(502)



1 - 24" X 12"
2 - 24" X 12"
2 - 24" X 24"
2 - 21" X 15"

(503)

1 - 24" X 12"
1 - 24" X 24"

(504)

1 - 24" X 12"
1 - 24" X 24"

(505)

1 - 24" X 12"
1 - 24" X 24"
1 - 21" X 15"

(506)

1 - 24" X 12"
1 - 24" X 24"
1 - 21" X 15"

TYPE "E" & "F" SIGNS

3/31/2016
3:16:09 pm
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User:mthigpen

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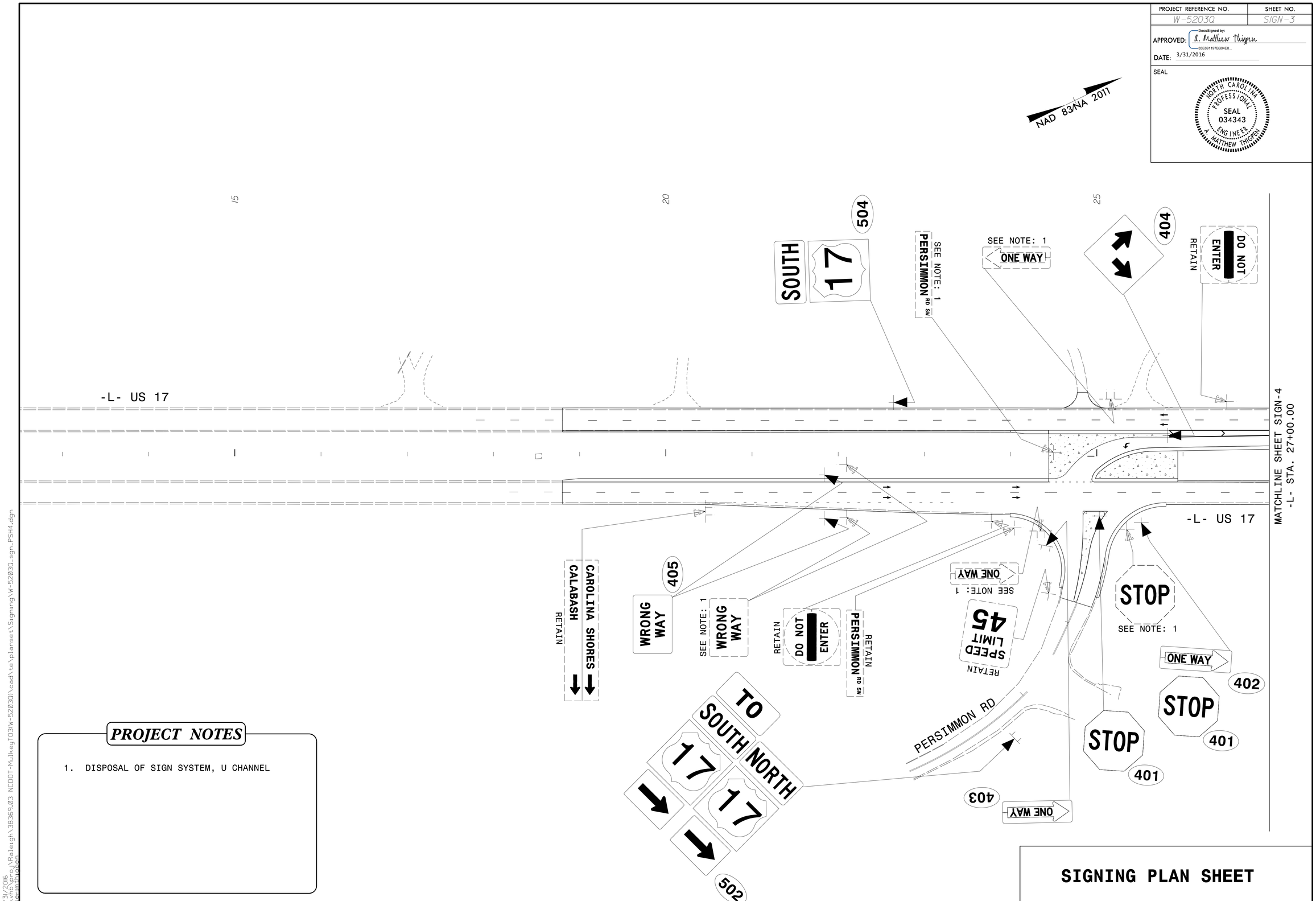
PROJECT REFERENCE NO.	SHEET NO.
W-5203Q	SIGN-3

APPROVED: DocuSigned by: R. Matthew Thigpen 83E691197BB04E8...

DATE: 3/31/2016

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 034343 ENGINEER MATTHEW THIGPEN



PROJECT NOTES

1. DISPOSAL OF SIGN SYSTEM, U CHANNEL

SIGNING PLAN SHEET

3/31/2016
\\hqcs\proj\Raleigh\38369.03 NCDOT-MulkeyTO3(W-5203Q)\cad\te\planset\Signing\W-5203Q_sgn_PSH4.dgn
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PROJECT REFERENCE NO.	SHEET NO.
W-5203Q	SIGN-4

APPROVED: DocuSigned by: A. Matthew Thigpen 83E691197BB04E8...

DATE: 3/31/2016

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 034343 ENGINEER MATTHEW THIGPEN

PROJECT NOTES

1. DISPOSAL OF SIGN SYSTEM, U CHANNEL
2. SIGN ERECTION, RELOCATE SIGN TYPE D
3. DISPOSAL OF SUPPORT, U-CHANNEL

SIGNING PLAN SHEET

3/31/2016
\\Vhqpw1\pw\Raleigh\38369.03 NCDOT-MulkeyTO3(W-5203Q)\cad\te\planset\Signing\W-5203Q_sgn_PSH5.dgn
thigpen

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PROJECT REFERENCE NO.	SHEET NO.
W-5203Q	SIGN-5

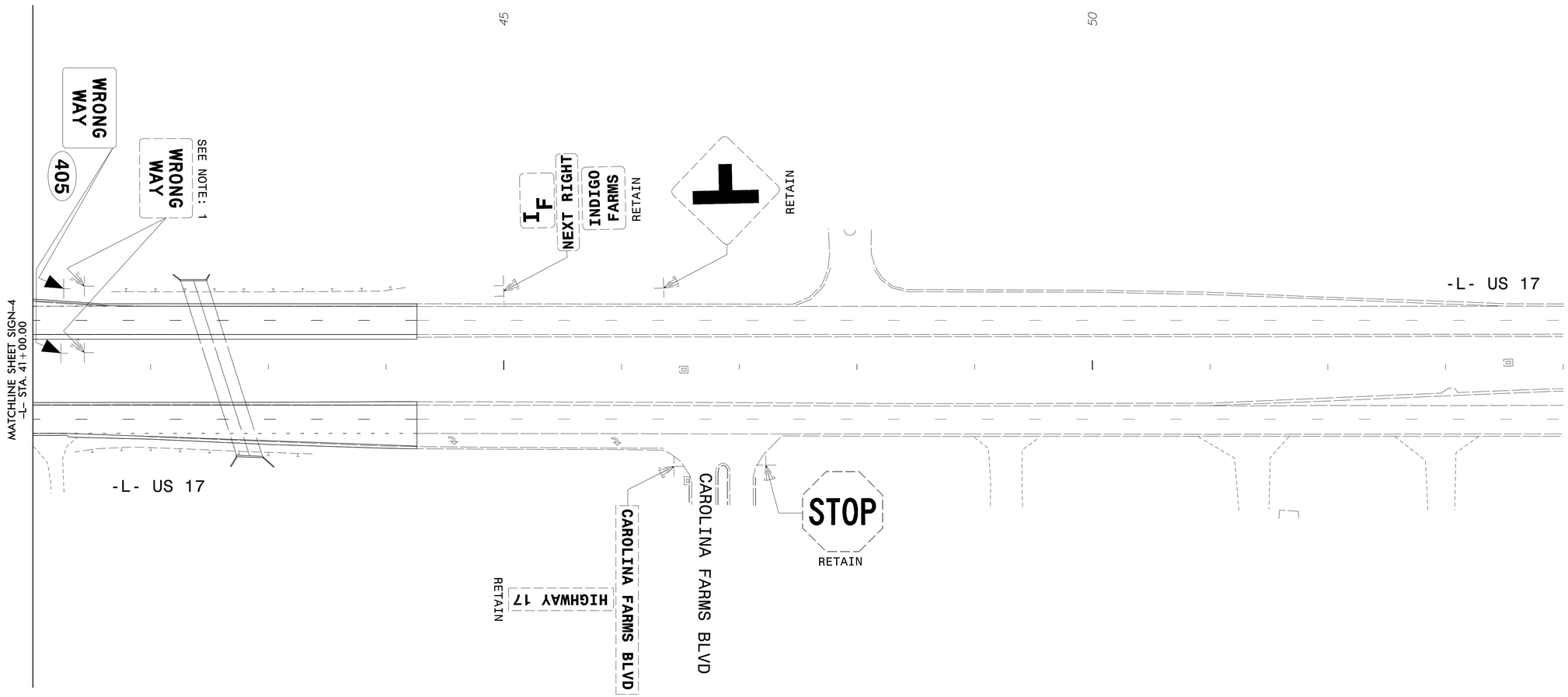
APPROVED: DocuSigned by: R. Matthew Thigpen 83E691197BB04E8...

DATE: 3/31/2016

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 034343 ENGINEER MATTHEW THIGPEN

NAD 83/NA 2011



PROJECT NOTES

1. DISPOSAL OF SIGN SYSTEM, U CHANNEL

SIGNING PLAN SHEET

3/31/2016
12:55:00 pm
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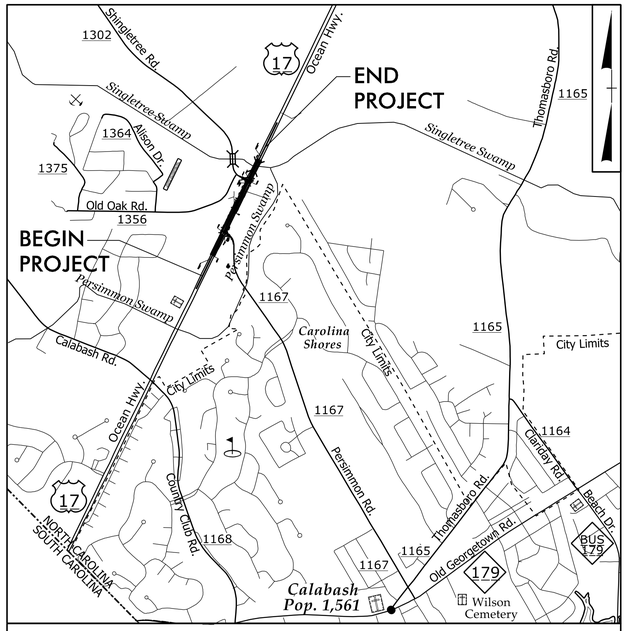
TIP PROJECT: W-5203Q

CONTRACT: DC00143

See Sheet 1-A For Index of Sheets



VICINITY MAP

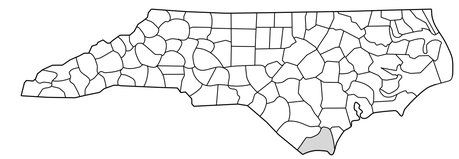
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

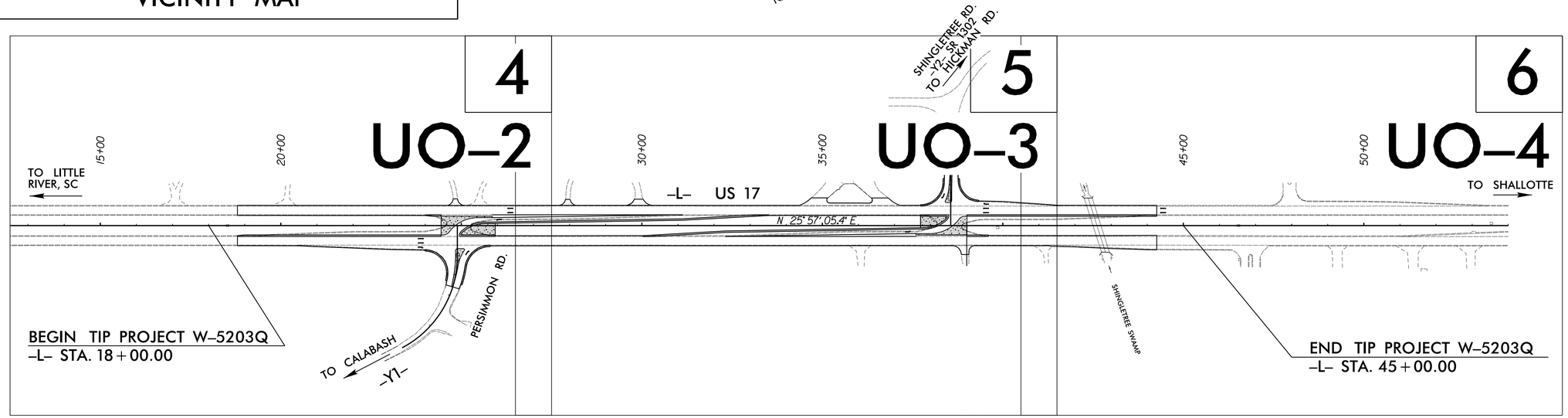
T.I.P. NO.	SHEET NO.
W-5203Q	UO-1

UTILITIES BY OTHERS PLANS
BRUNSWICK COUNTY

LOCATION: DIRECTIONAL CROSSOVERS AT THE INTERSECTION OF US 17 AND SR 1167 (PERSIMMON RD.) & SR 1302 (SHINGLETREE RD.)

TYPE OF WORK: UTILITIES





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

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

INDEX OF SHEETS

SHEET NO.	*DESCRIPTION*
UO-1	*TITLE SHEET*
UO-2 THRU UO-4	*UBO PLAN SHEETS*

UTILITY OWNERS ON PROJECT

(A) BRUNSWICK EMC (POWER DISTRIBUTION)
(B) ATLANTIC TELEPHONE CO-OP (COMMUNICATIONS)
(C) TIME WARNER CABLE (COMMUNICATIONS)
(D) H2GO (WATER & SEWER)
(E) BRUNSWICK WATER (WATER & SEWER)

PREPARED IN THE OFFICE OF:

HINDE ENGINEERING
License No. C-2639
401 Harrison Oaks Blvd., Suite 145 Cary, NC 27513

Michael E. Davis	*UTILITY COORDINATION PROJECT MANAGER*
Bill F. Black	*PROJECT UTILITY COORDINATOR*
Clint L. Stevens, PE	*PROJECT UTILITY DESIGNER*

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

30-MAR-2016 11:06
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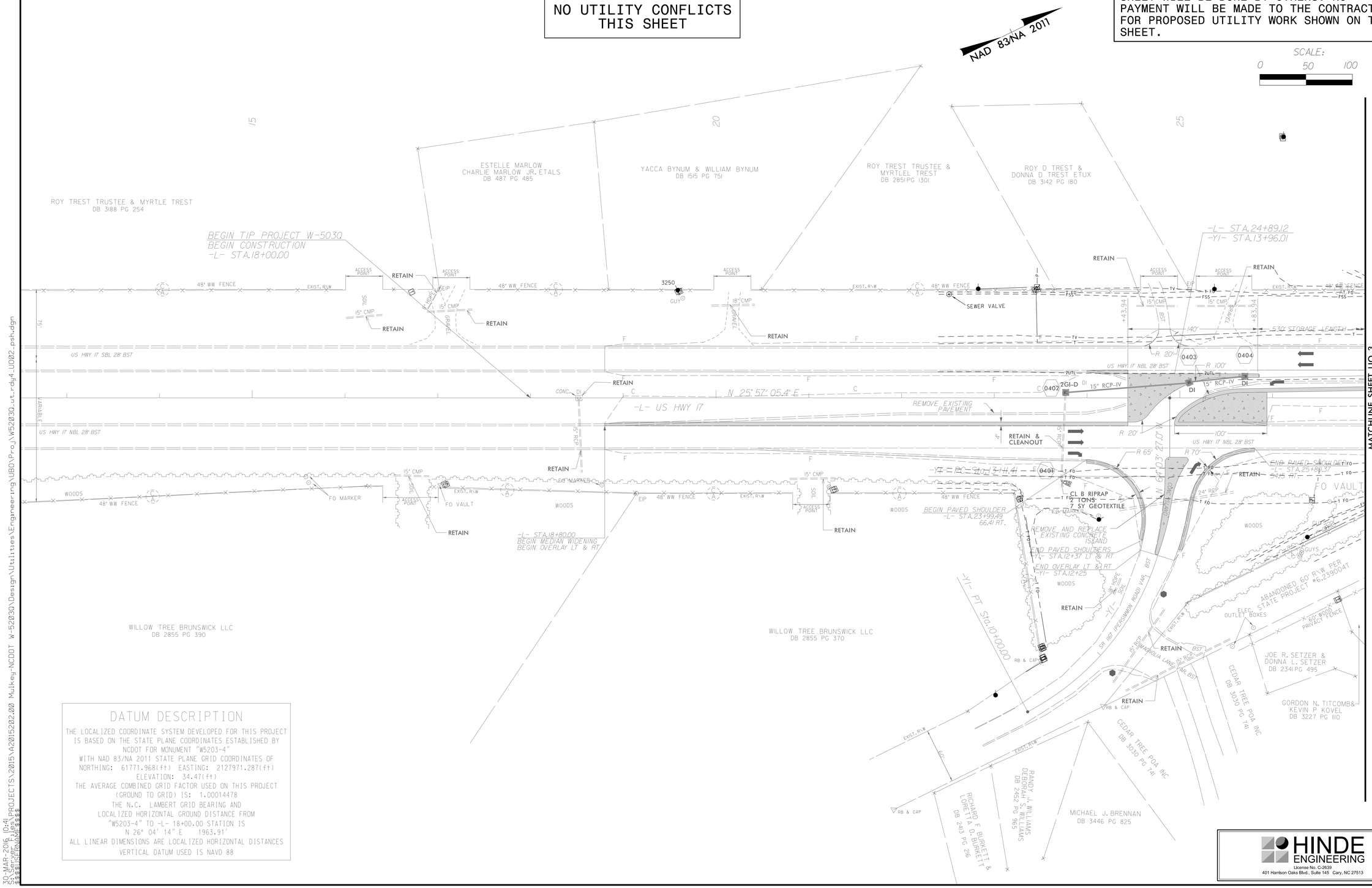
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
W-5203Q	U0-2

UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR PROPOSED UTILITY WORK SHOWN ON THIS SHEET.

NO UTILITY CONFLICTS
THIS SHEET



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "W5203-4"
WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF
NORTHING: 61771.968(ft) EASTING: 2127971.287(ft)
ELEVATION: 34.47(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.00014478
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "W5203-4" TO -L- 18+00.00 STATION IS
N 26° 04' 14" E 1963.91'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

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30-MAR-2016 10:41
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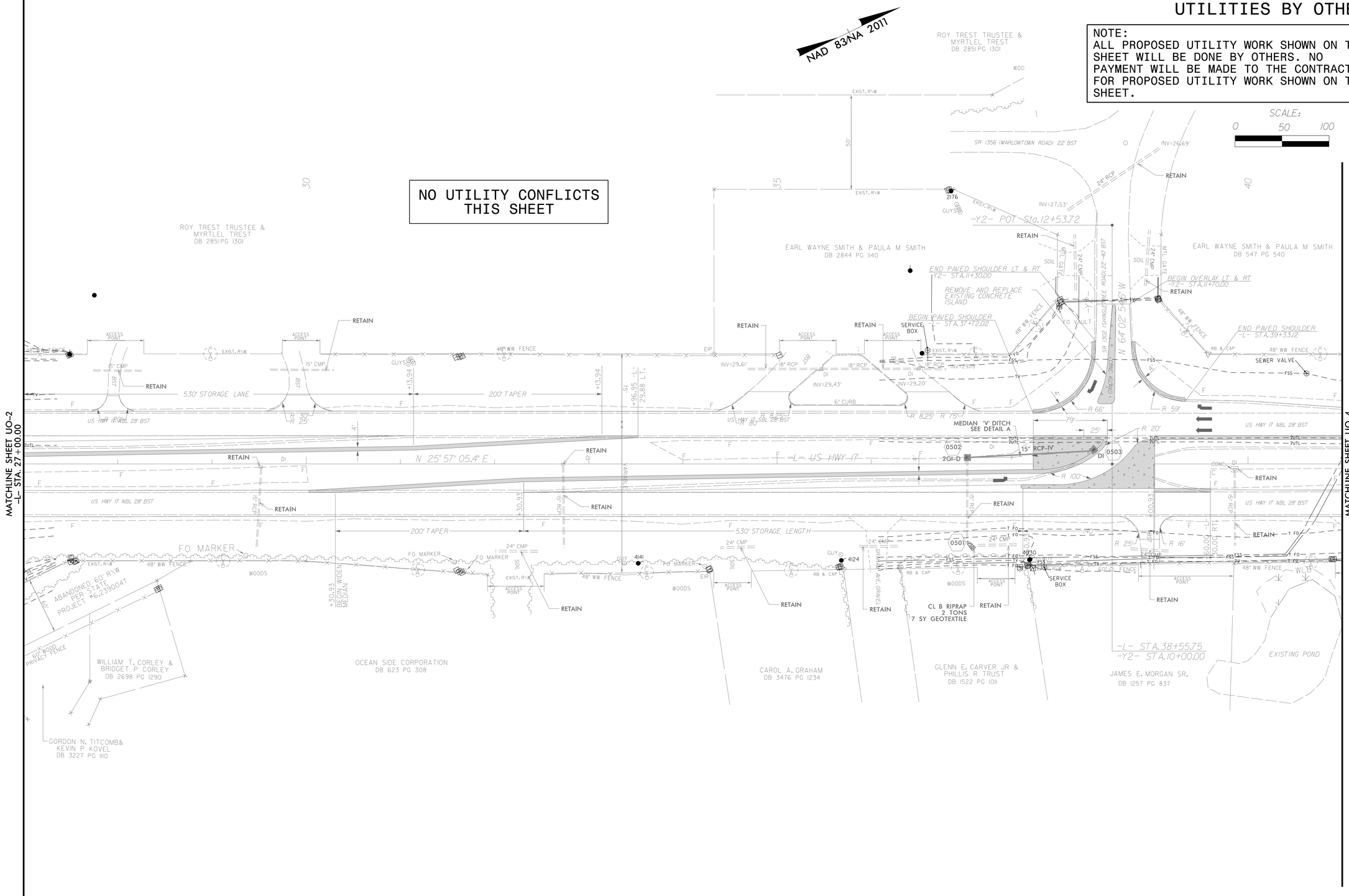
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
W-5203Q	U0-3

UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR PROPOSED UTILITY WORK SHOWN ON THIS SHEET.

NO UTILITY CONFLICTS THIS SHEET



HINDE ENGINEERING
License No. C-2639
401 Harrison Oaks Blvd., Suite 145 Cary, NC 27513

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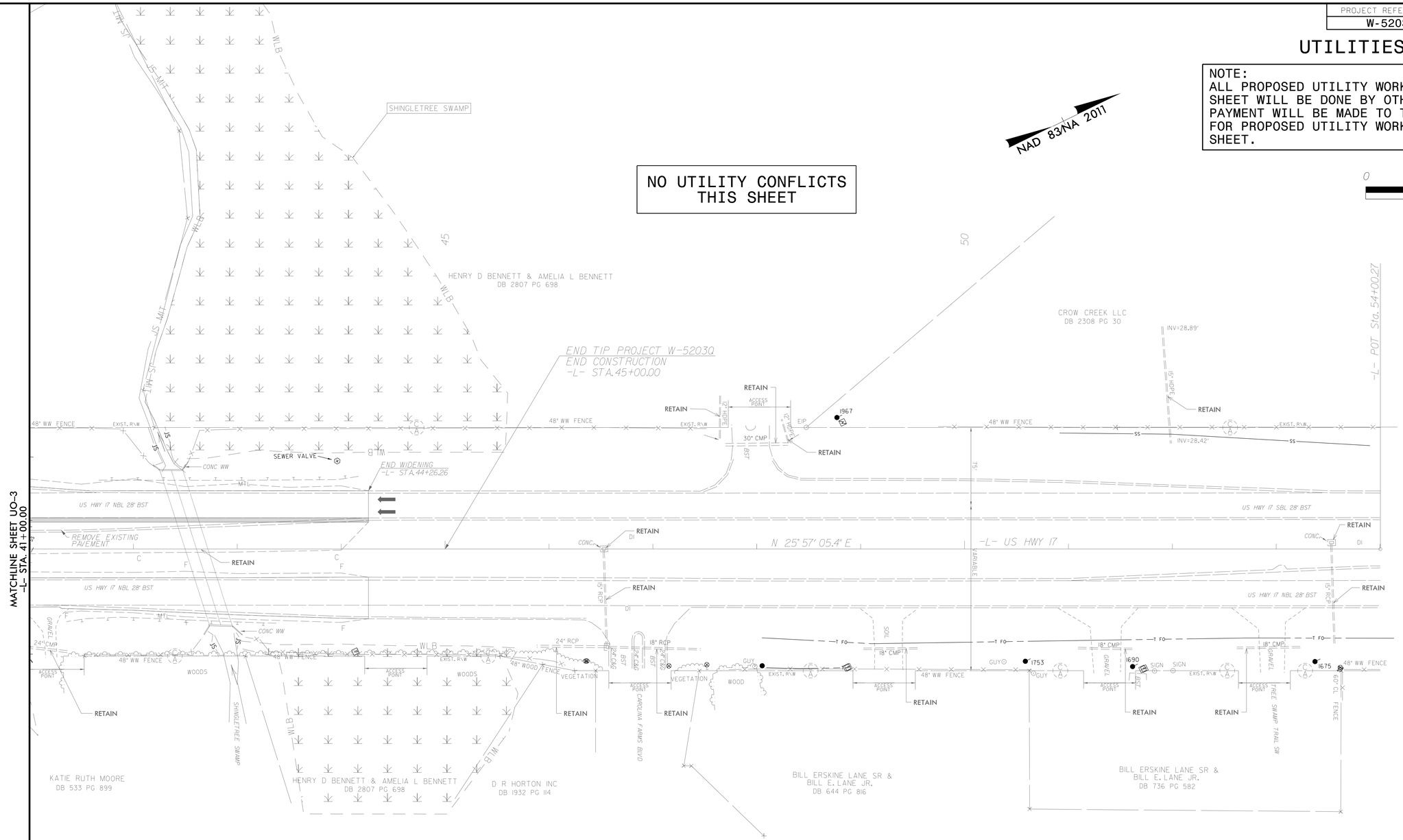
PROJECT REFERENCE NO.	SHEET NO.
W-5203Q	U0-4

UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR PROPOSED UTILITY WORK SHOWN ON THIS SHEET.

NO UTILITY CONFLICTS THIS SHEET



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License No. C-2639
401 Harrison Oaks Blvd., Suite 145 Cary, NC 27513

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PROJ. REFERENCE NO.	SHEET NO.
W-5203Q	X-1A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NOTE: EMBANKMENT COLUMN INCLUDES BACKFILL FOR UNDERCUT

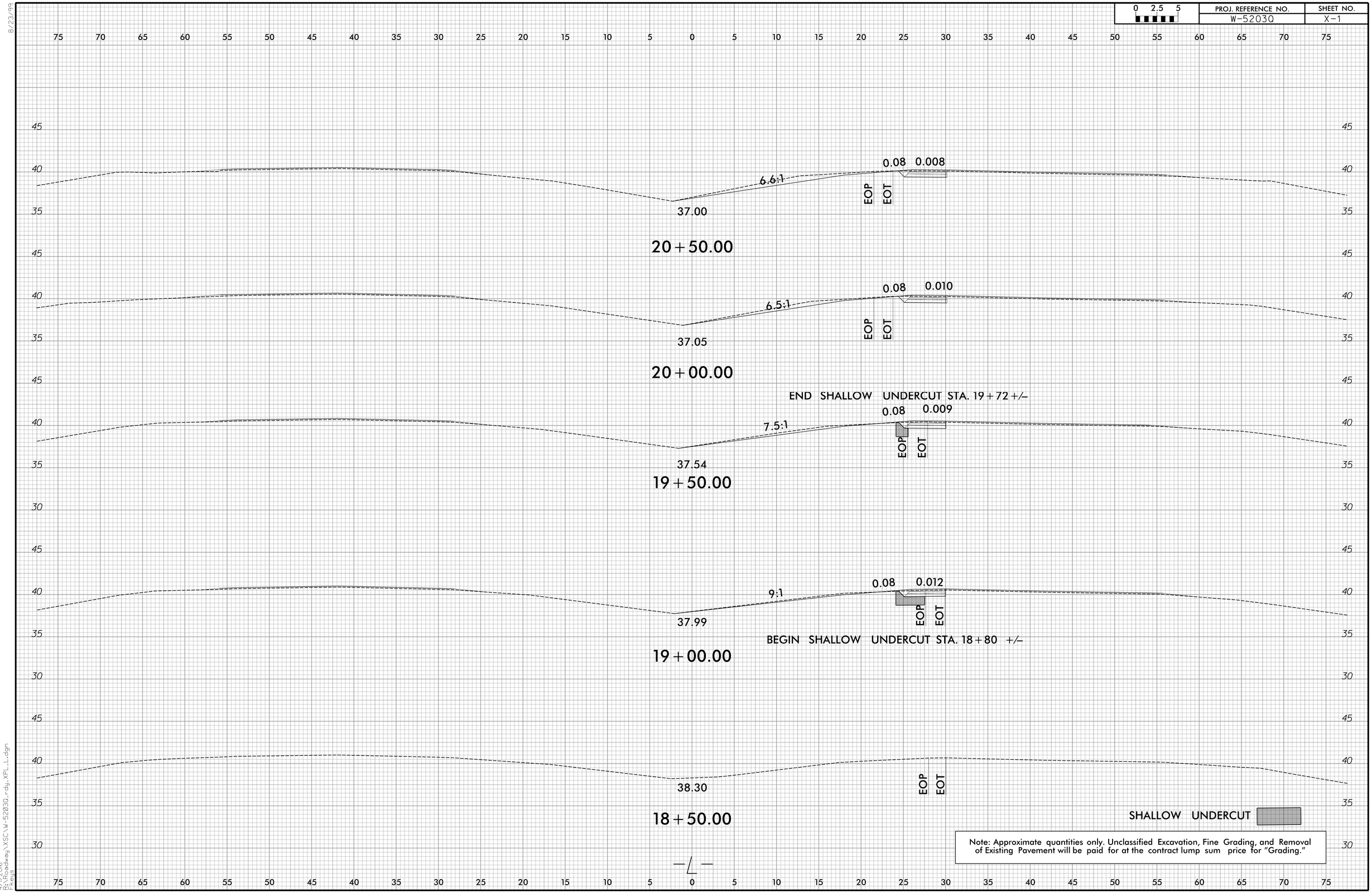
CROSS-SECTION SUMMARY

Station L	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
19+00.00000	0	0
19+50.00000	18	0
20+00.00000	21	0
20+50.00000	27	0
21+00.00000	31	0
21+50.00000	35	0
22+00.00000	40	0
22+50.00000	44	0
23+00.00000	45	0
23+50.00000	47	0
24+00.00000	47	0
24+50.00000	64	0
25+00.00000	80	0
25+50.00000	71	0
26+00.00000	41	4
26+50.00000	15	11
27+00.00000	12	18
27+50.00000	11	18
28+00.00000	12	12
28+50.00000	13	8
29+00.00000	13	6
29+50.00000	14	6
30+00.00000	16	6
30+50.00000	32	6
31+00.00000	54	4
31+50.00000	57	2
32+00.00000	47	1
32+50.00000	48	3
33+00.00000	37	10
33+50.00000	16	16
34+00.00000	15	17
34+50.00000	14	19
35+00.00000	12	21
35+50.00000	11	20
36+00.00000	10	18
36+50.00000	9	17
37+00.00000	10	14
37+50.00000	13	8
38+00.00000	43	3
38+50.00000	75	0
39+00.00000	67	0
39+50.00000	41	0
40+00.00000	30	0
40+50.00000	31	0
41+00.00000	28	0
41+50.00000	26	0
42+00.00000	26	0
42+50.00000	25	0
43+00.00000	23	0
43+50.00000	20	0
44+00.00000	16	0

Approximate quantities only. Unclassified excavation, fine grading, and removal of existing pavement will be paid for at the lump sum price for "Grading".

Embankment column does not include backfill for undercut.

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	W-5203Q	X-1



8/23/99

4/1/2016
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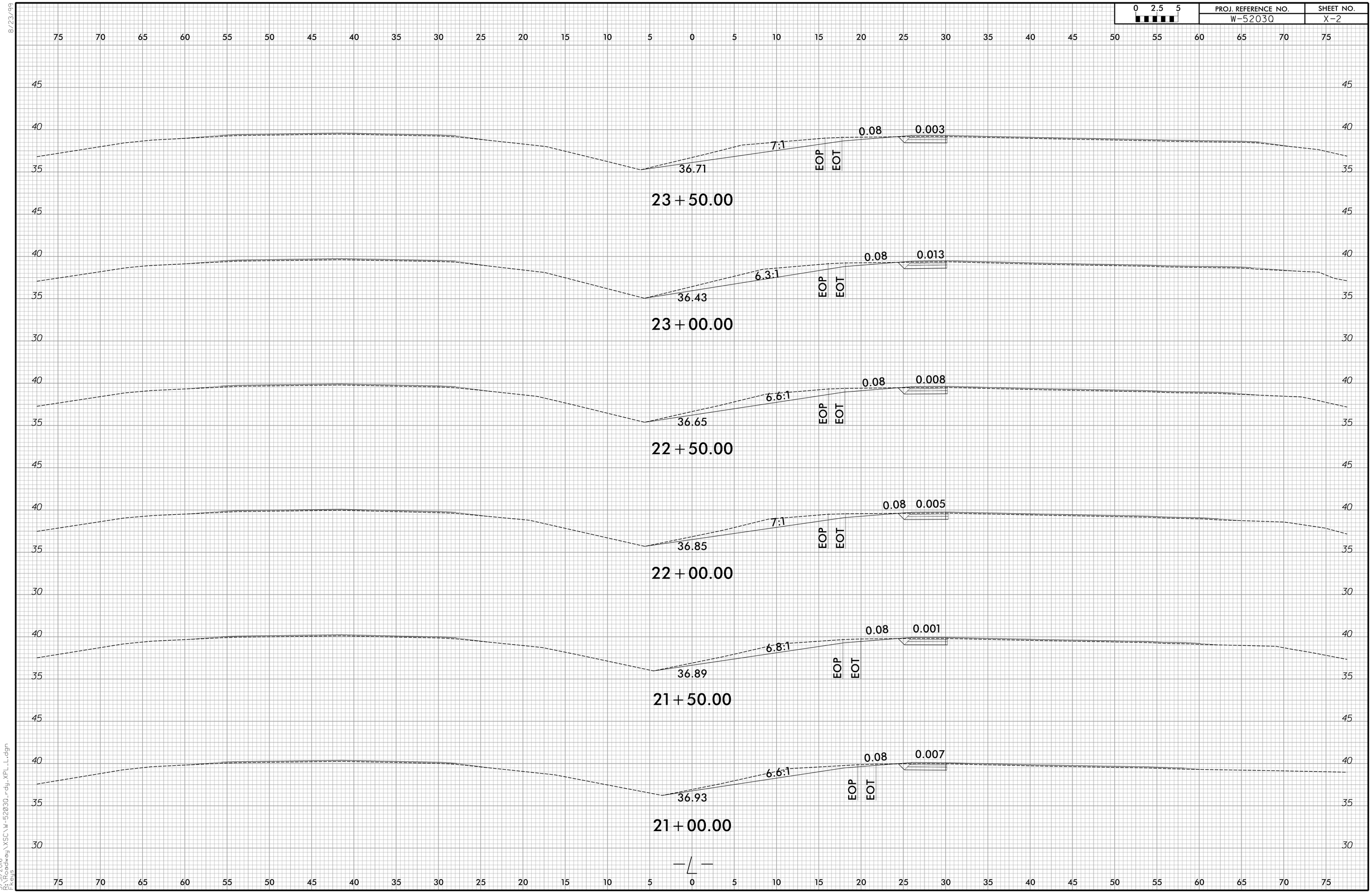

8/23/99

3/31/2016
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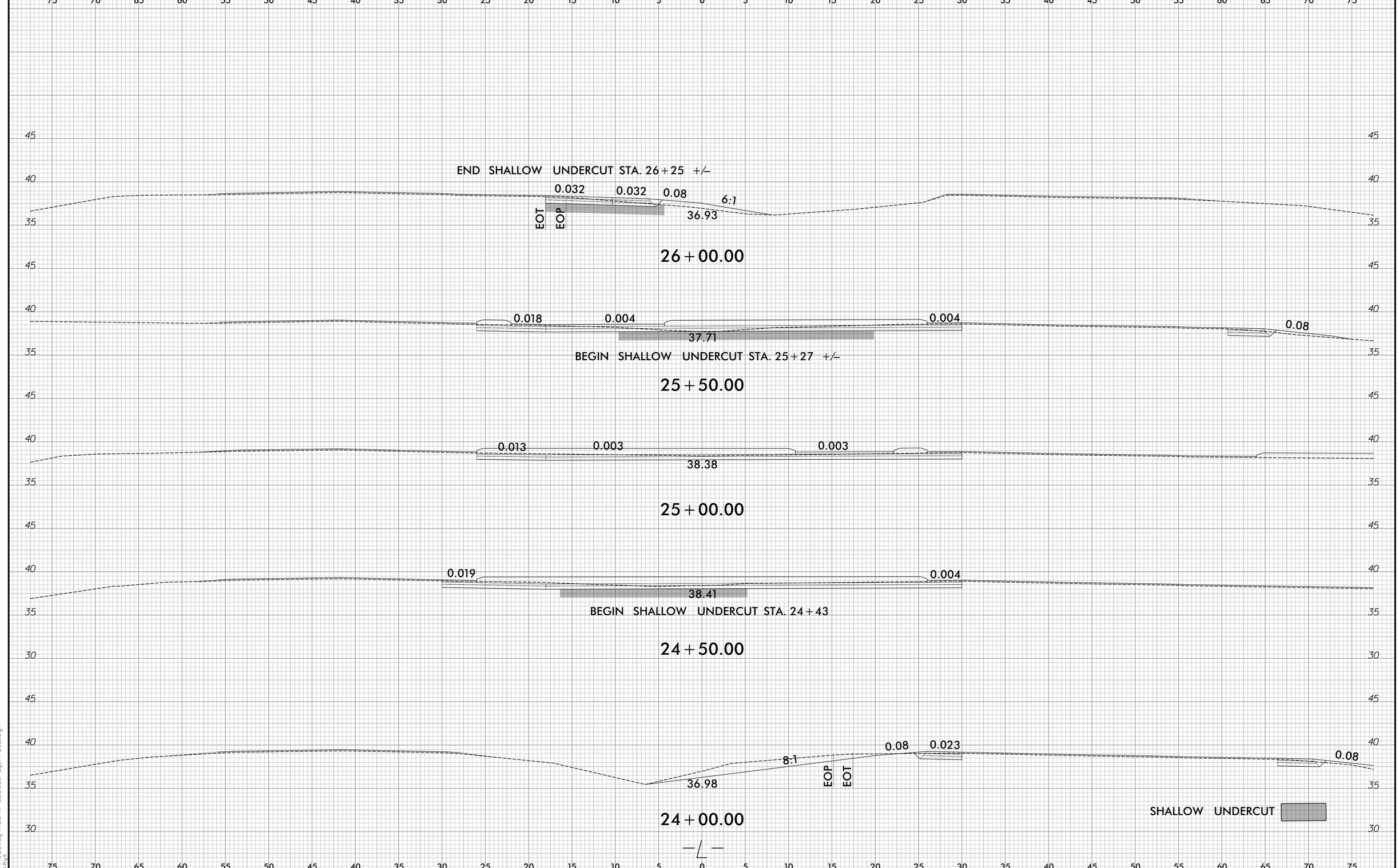
PROJ. REFERENCE NO.	SHEET NO.
W-5203Q	X-3

0 2.5 5



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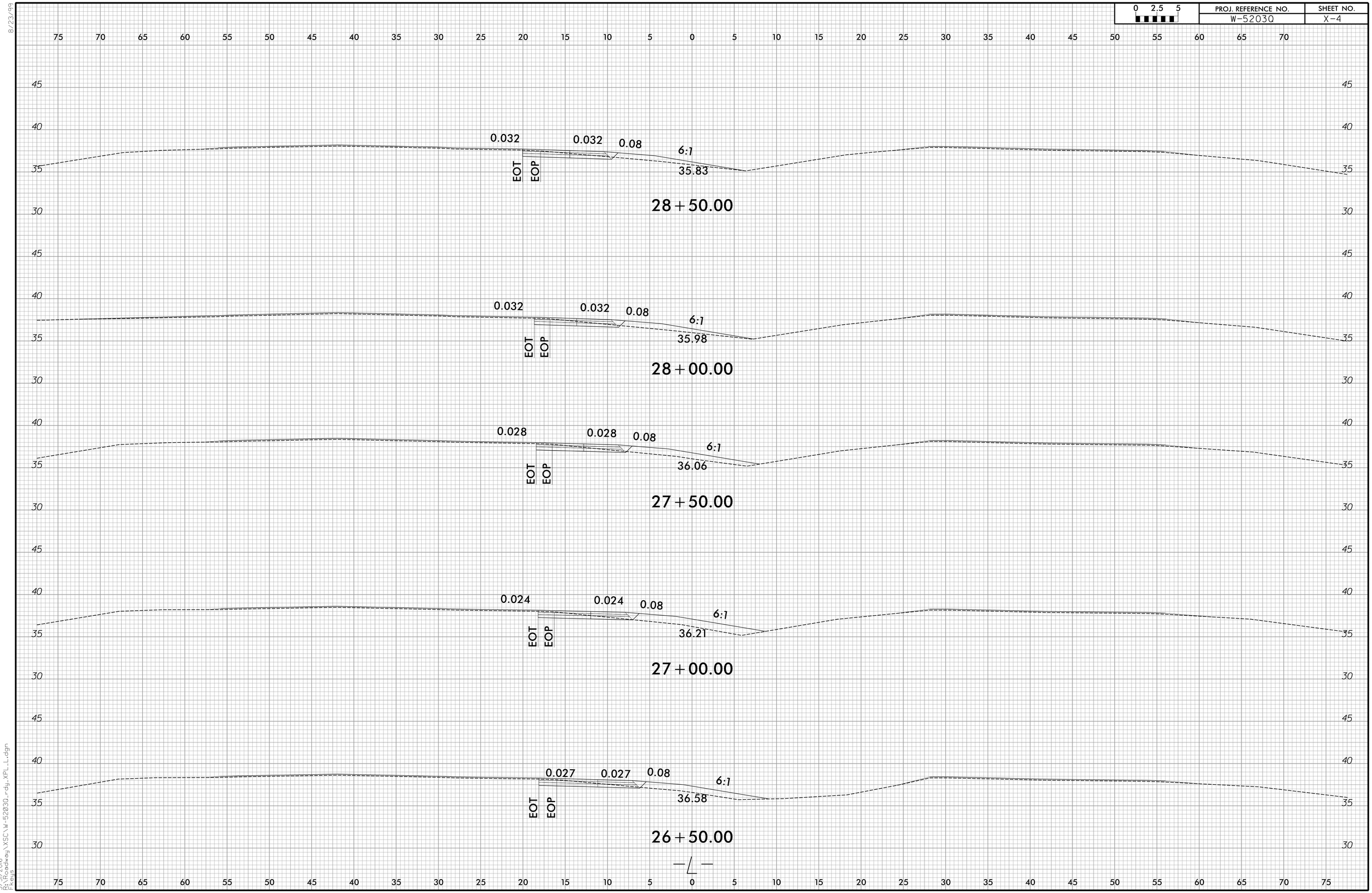
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	W-5203Q	X-4



8/23/99

3/31/2016
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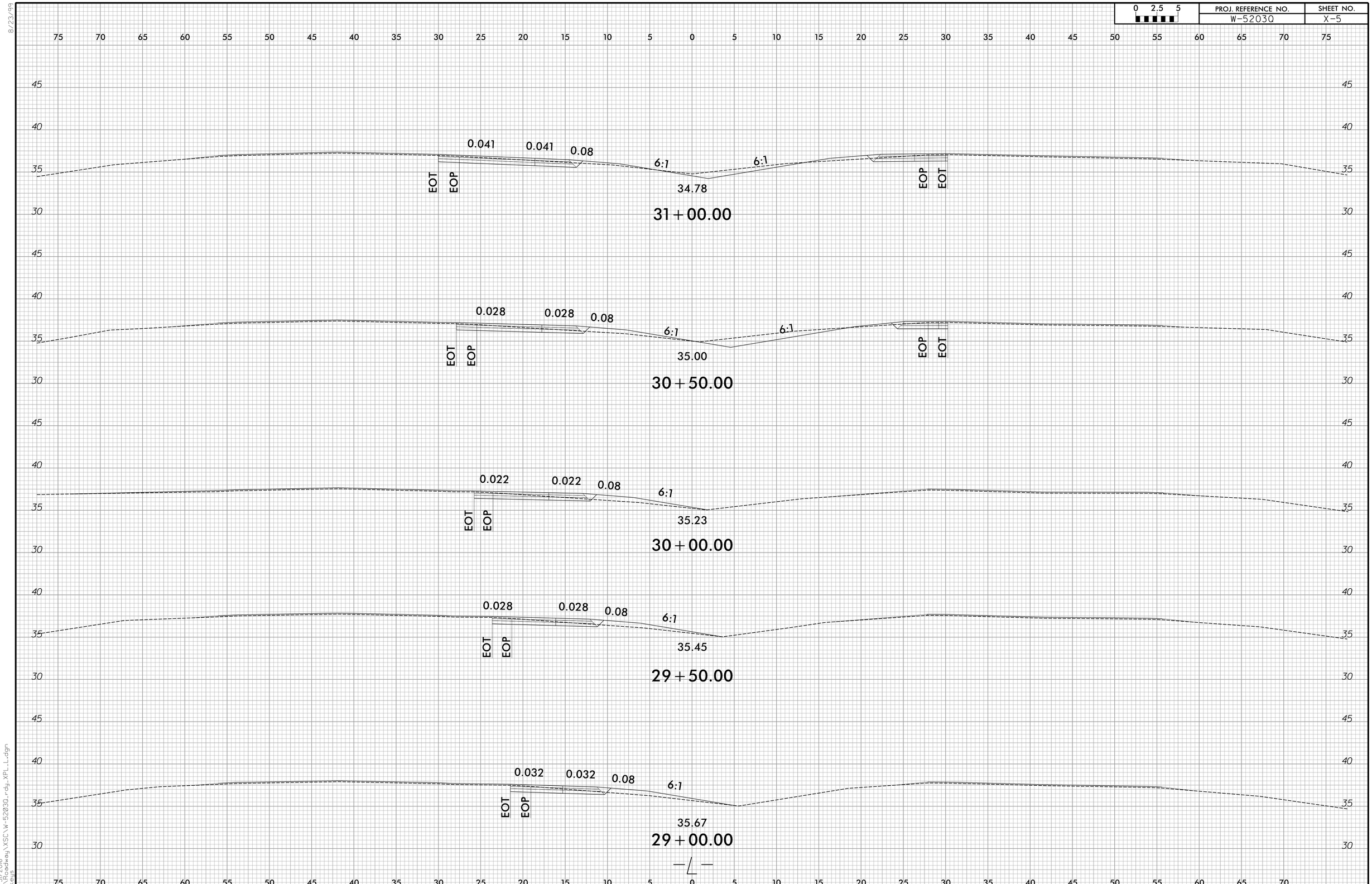
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	W-5203Q	X-5



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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
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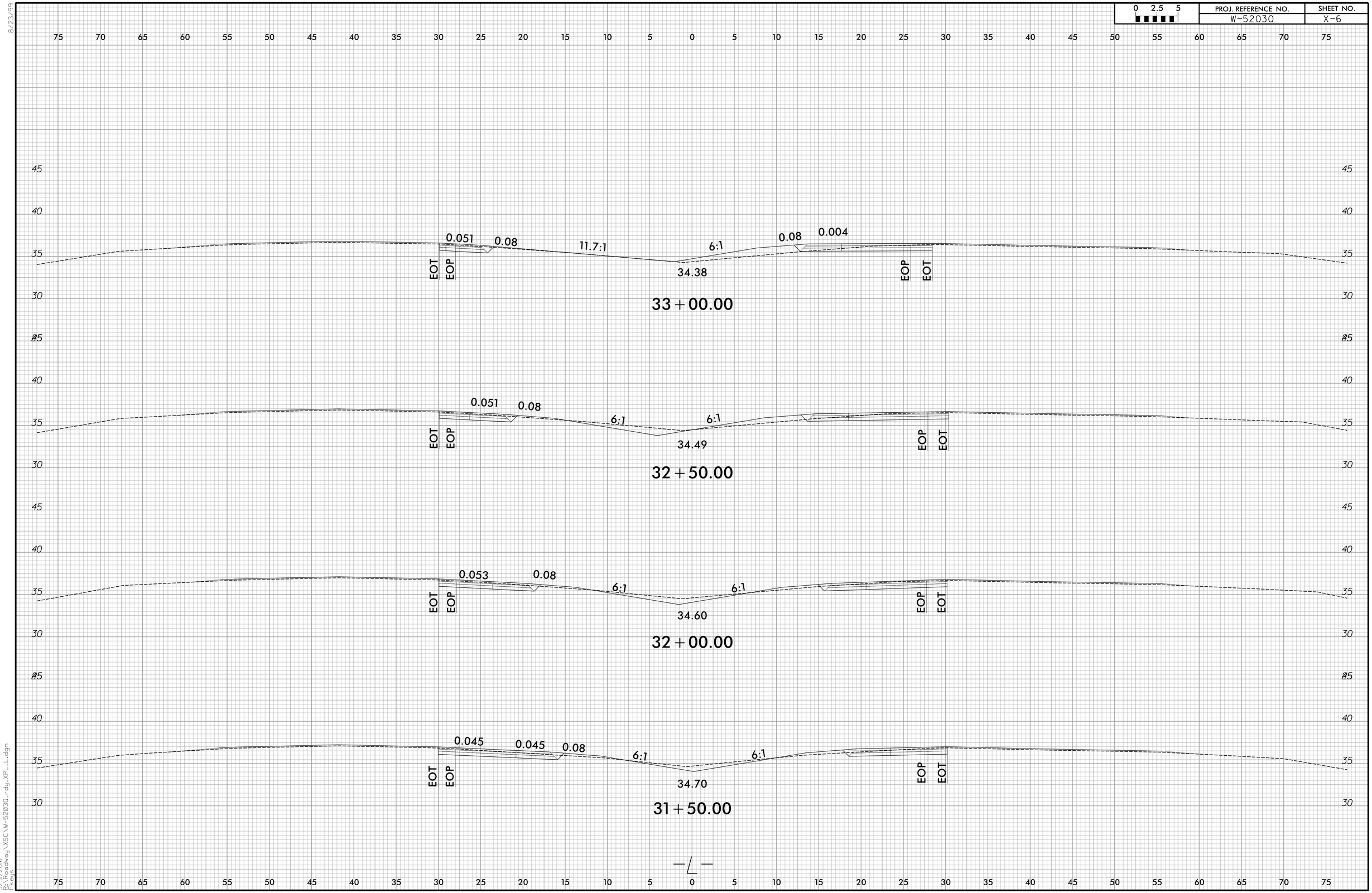

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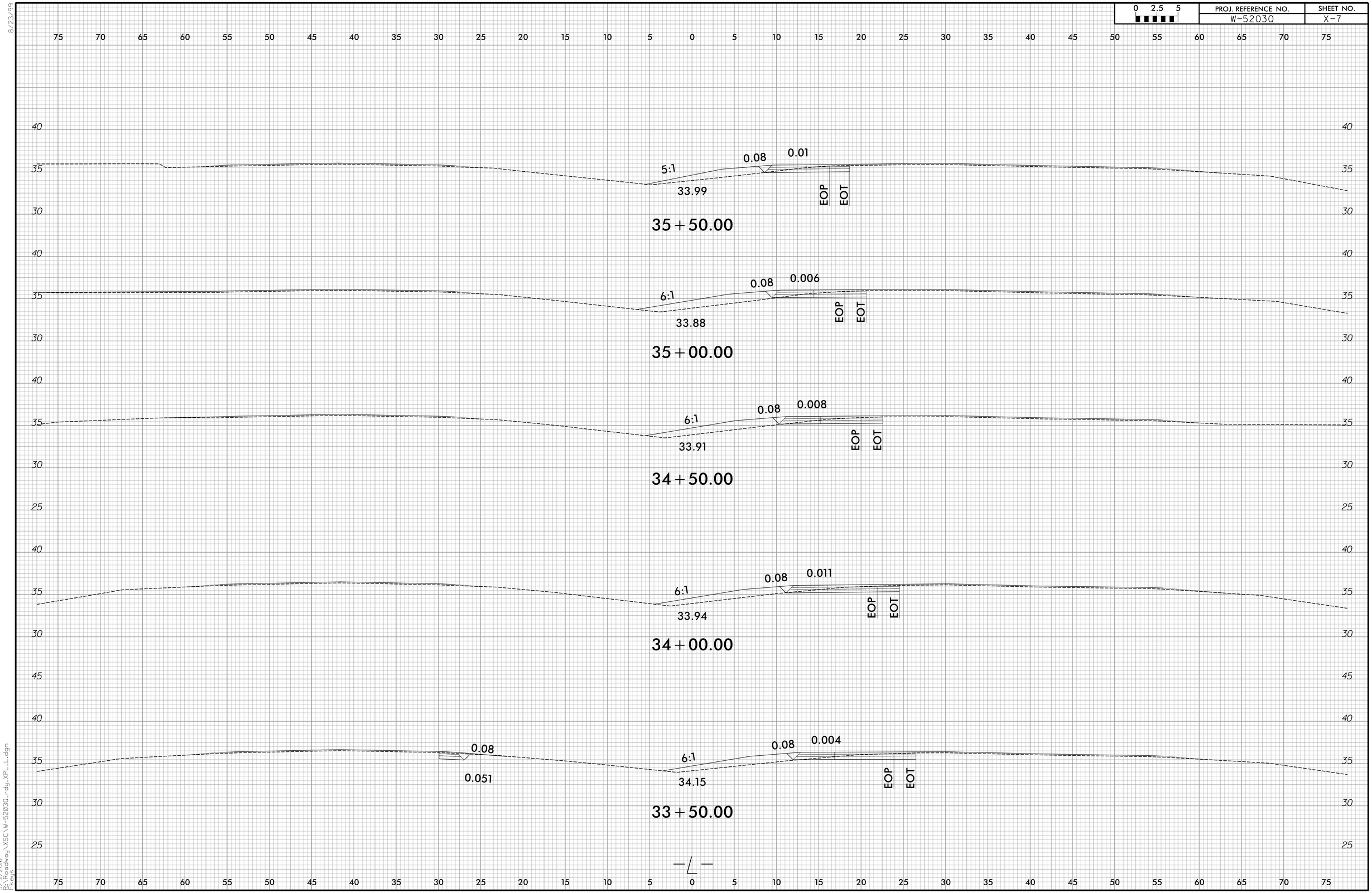

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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
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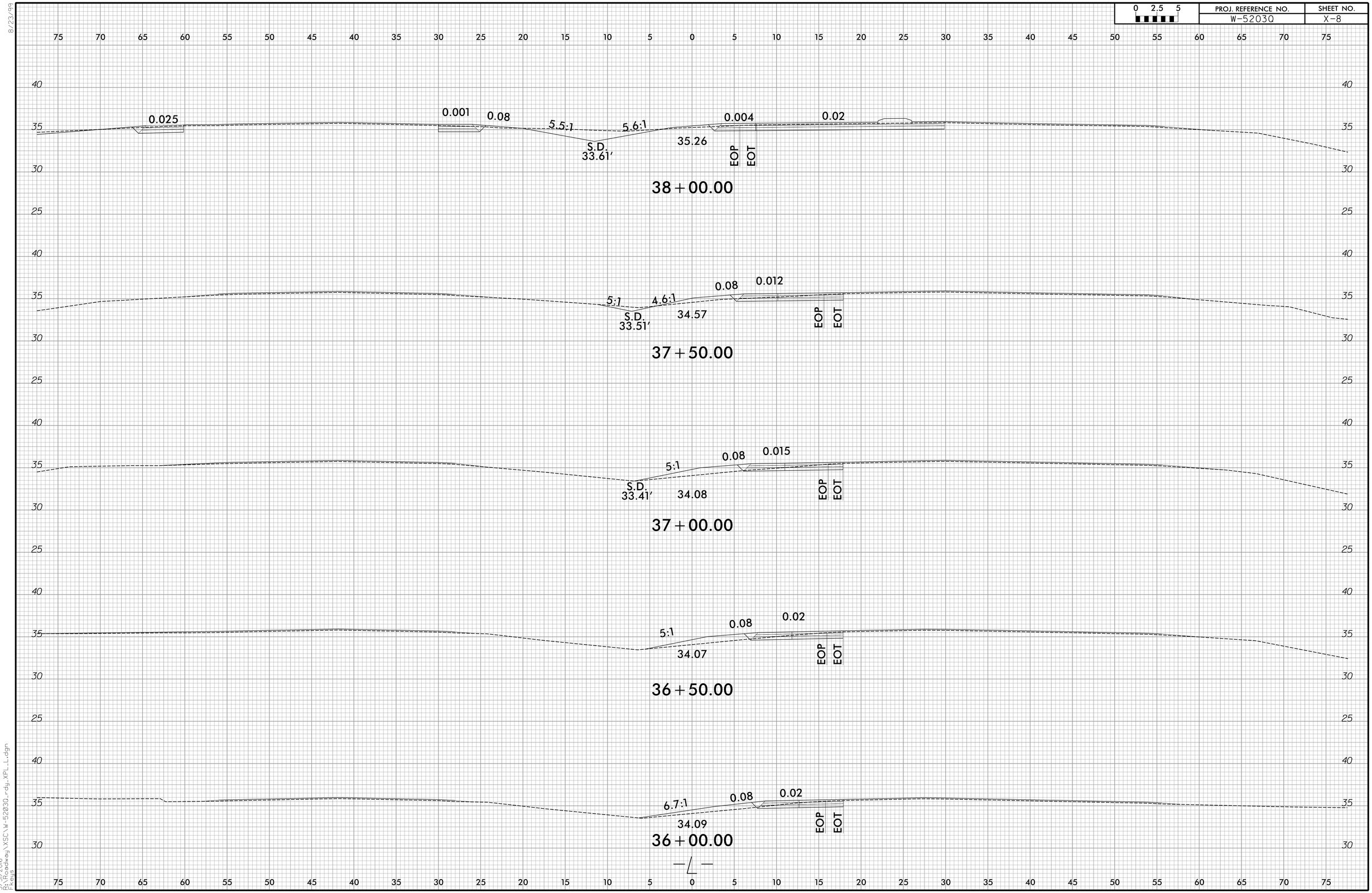

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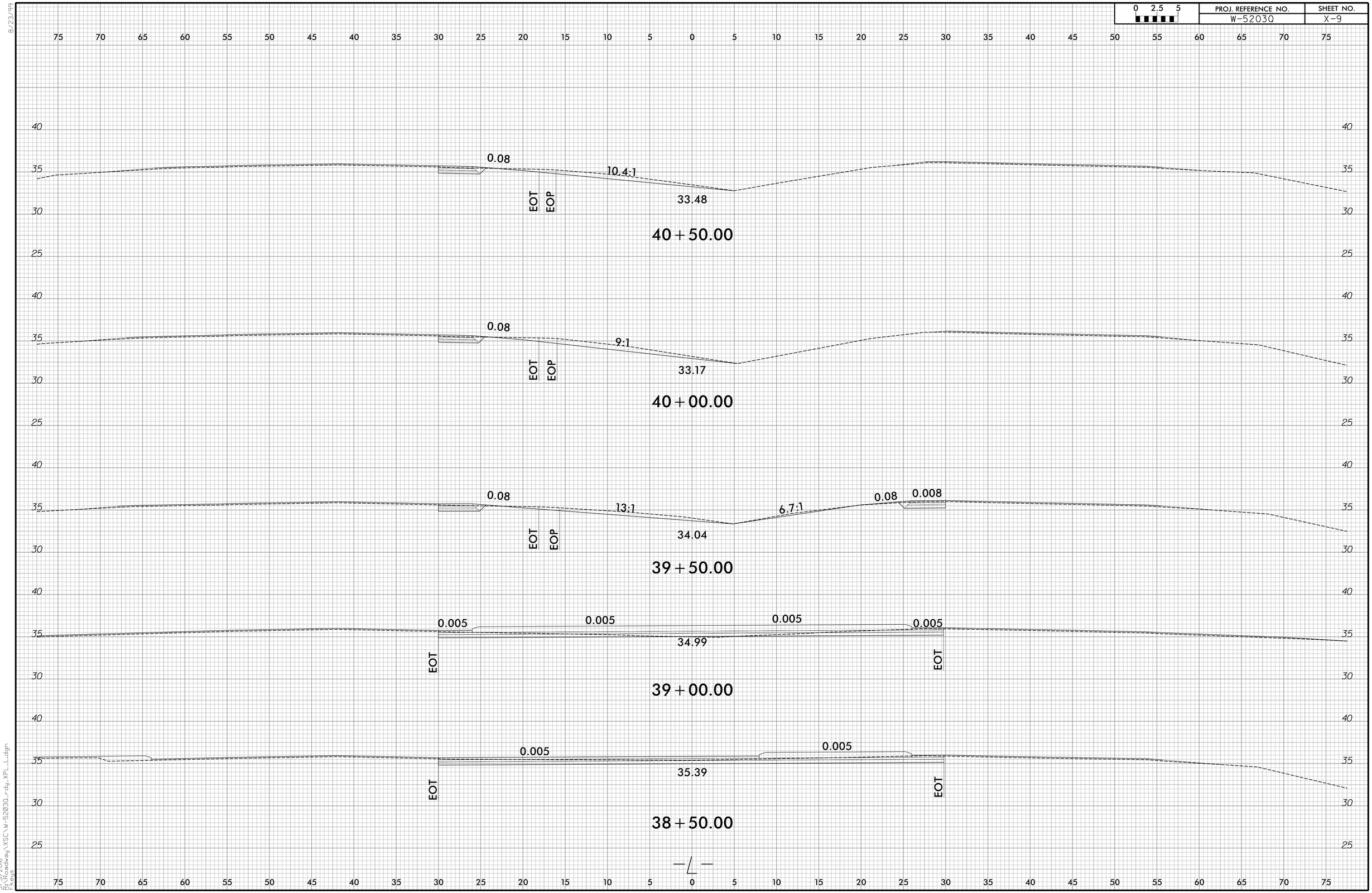
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	W-5203Q	X-9



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3/31/2016
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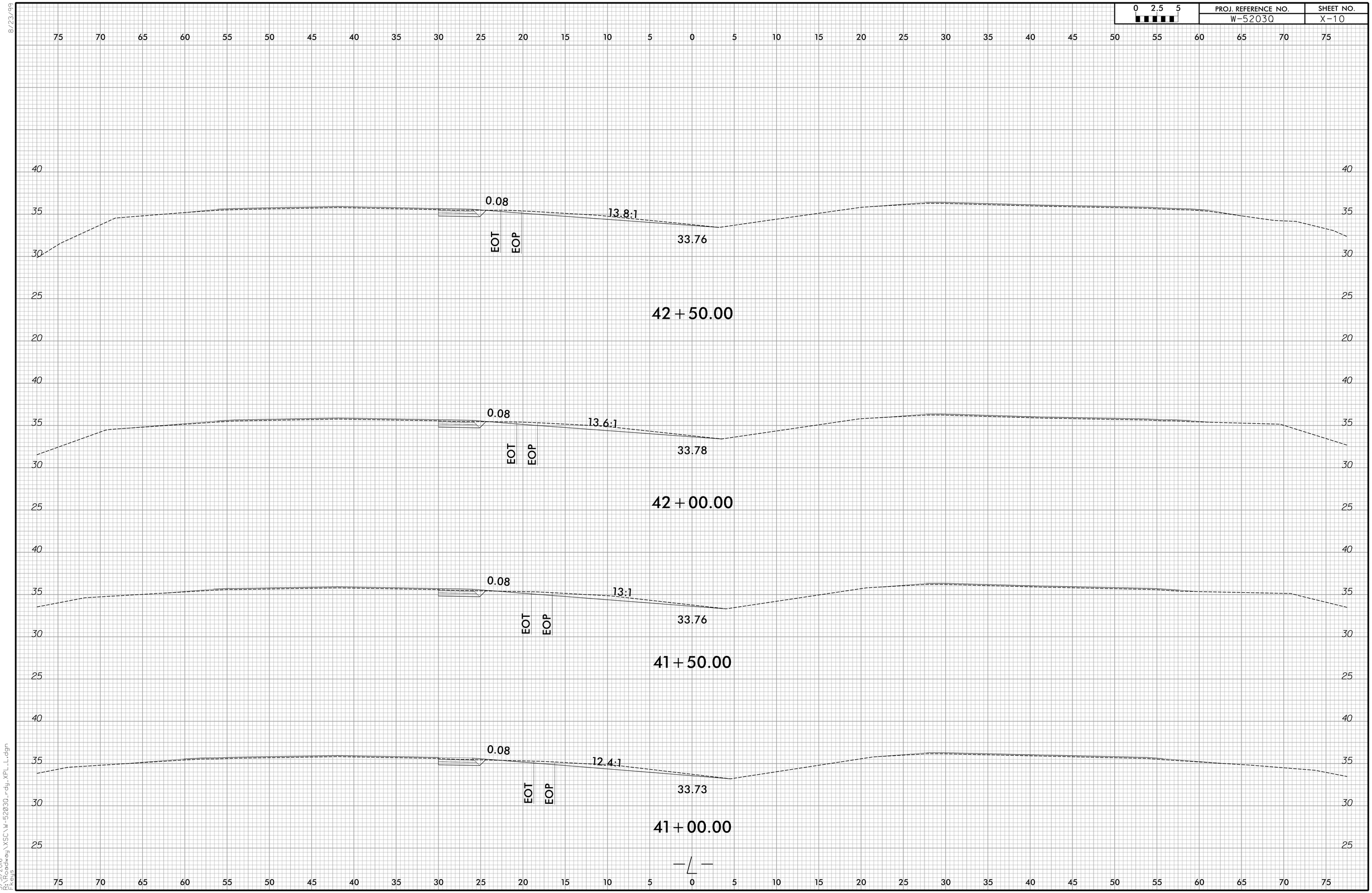
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	W-5203Q	X-10



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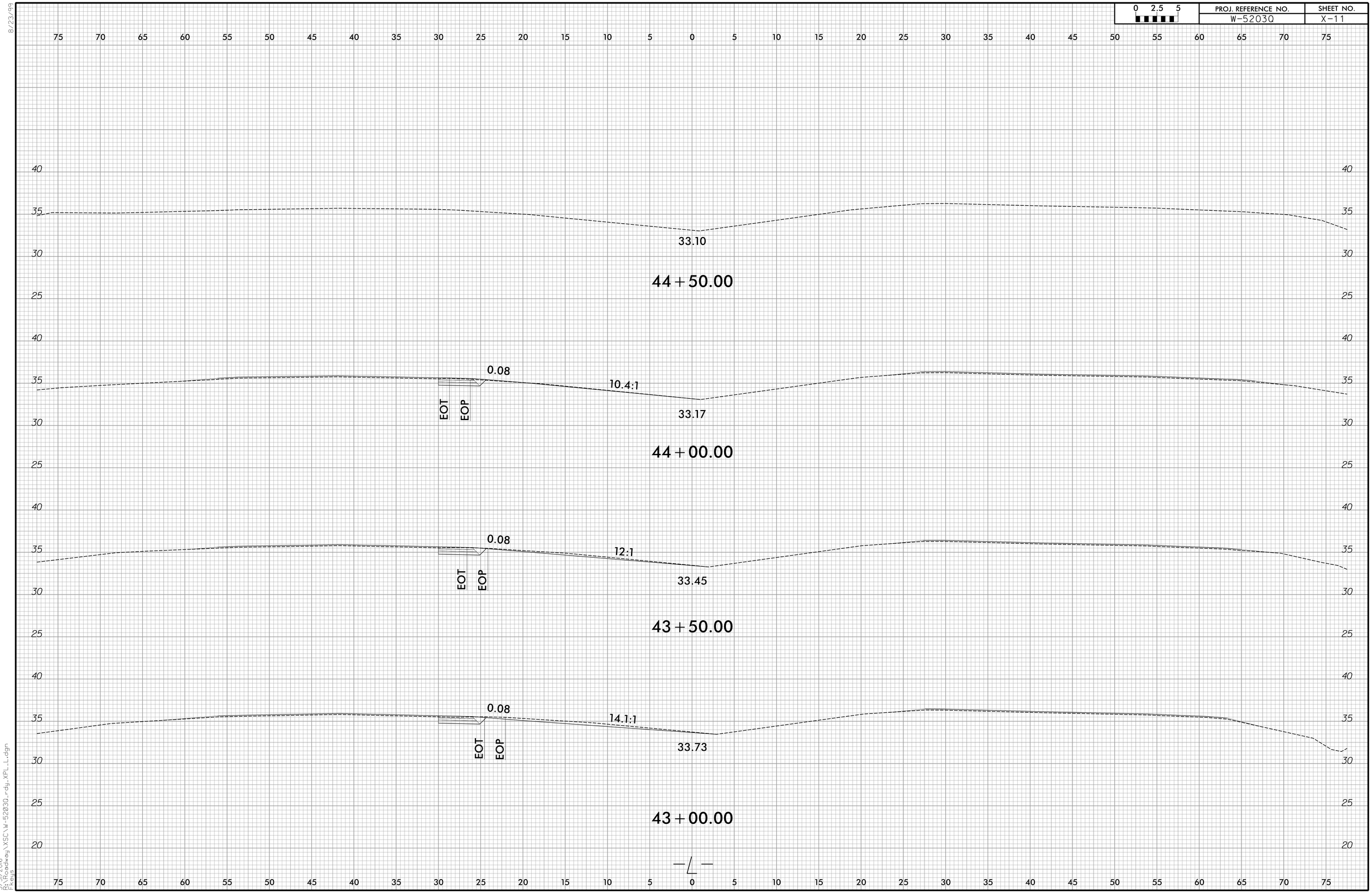
PROJ. REFERENCE NO.	SHEET NO.
W-5203Q	X-11

0 2.5 5



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