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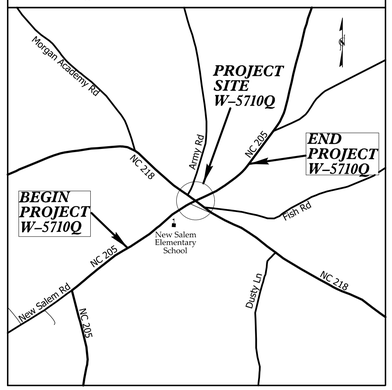
09/08/99

TIP PROJECT: W-5710Q

CONTRACT: DJ00351

See Sheet 1A For Index of Sheets

PROJECT VICINITY MAP



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

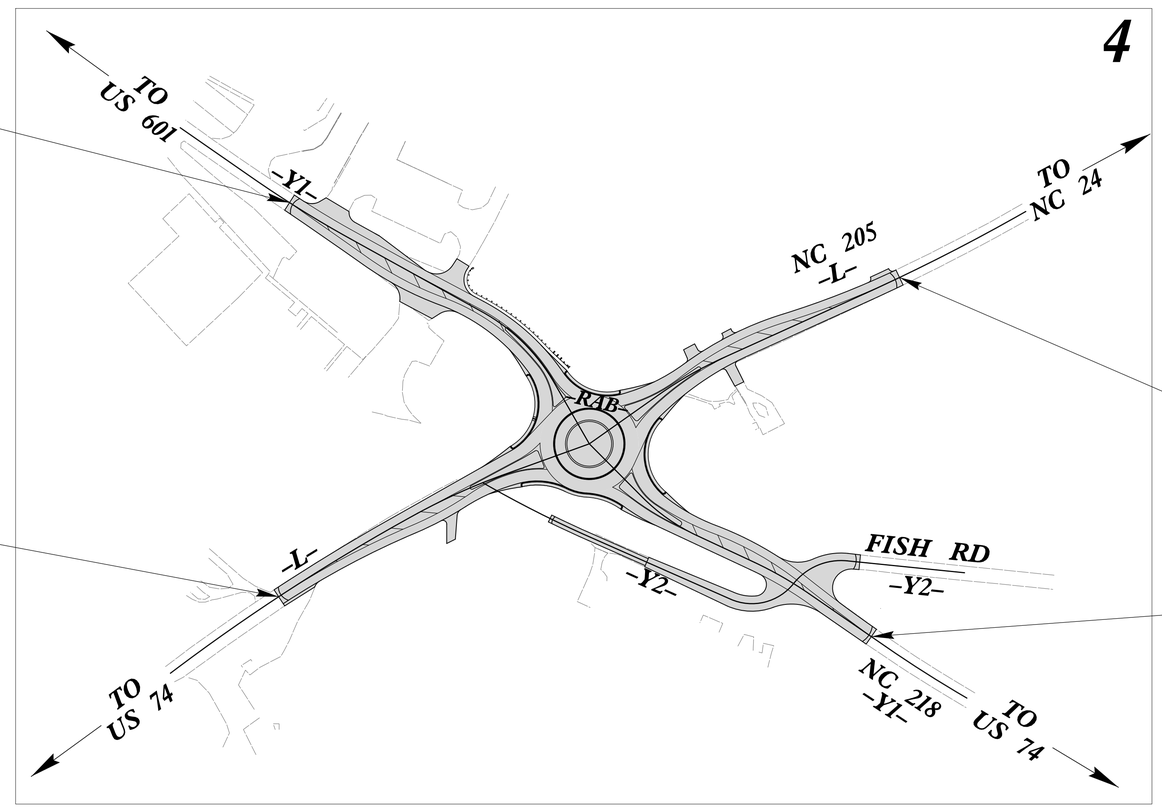
UNION COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5710Q	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
44856.1.17	HSIP-0205 (004)	P.E.
44856.2.17	HSIP-0205 (004)	R /W /UTILITY
44856.3.17	HSIP-0205 (004)	CONST.

LOCATION: INTERSECTION OF NC205 AND NC218

TYPE OF WORK: GRADING, PAVING, DRAINAGE, CONCRETE CURB & GUTTER, MONOLITHIC ISLANDS, AND PAVEMENT MARKINGS



BEGIN CONSTRUCTION -Y1- STA. 11+75.00

BEGIN TIP PROJECT W-5710Q -L- STA. 11+75.00

END TIP PROJECT W-5710Q -L- STA. 21+00.00

END CONSTRUCTION -Y1- STA. 21+50.00

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

25 12.5 0 25 50
PLANS

50 12.5 0 25 50
PROFILE (HORIZONTAL)

50 12.5 0 25 50
PROFILE (VERTICAL)

DESIGN DATA

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

TIER

PROJECT LENGTH

LENGTH OF -L- TIP PROJECT W-5710Q = 0.18 MILES

LENGTH OF -Y1- TIP PROJECT W-5710Q = 0.18 MILES

TOTAL LENGTH OF TIP PROJECT W-5710Q = 0.36 MILES

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

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: NOVEMBER 9, 2018

LETTING DATE: JULY 3, 2019

DAVID B. GOURLEY, P.E.
PROJECT ENGINEER

JENNIFER L. STARNES, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 032312 ENGINEER CHARLES W HEARFUER

DocuSigned by: Charles Hearfuer P.E.
58B32E85C450464...
SIGNATURE:
06-12-2019

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 30882 ENGINEER JENNIFER L STARNES

DocuSigned by: Jennifer L Starnes
93456E8148064C3...
P.E.
SIGNATURE:
06-12-2019

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

6/12/2019
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starnesjl

PROJECT REFERENCE NO.	SHEET NO.
W-5710Q	1-A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 30882 ENGINEER JENNIFER L. STARNES
6/12/2019

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

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1–A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1–B	CONVENTIONAL SYMBOLS
2A–1 THRU 2A–2	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2B–1	HORIZONTAL LAYOUT DETAIL SHEET
2C–1	PAVEMENT REMOVAL DETAIL SHEET
2D–1	RIGHT OF WAY DETAIL SHEET
3A–1 THRU 3A–2	EARTHWORK, PAVEMENT REMOVAL, CURB & GUTTER, GUARDRAIL, AND DRAINAGE SUMMARY SHEETS
4 THRU 6	PLAN AND PROFILE SHEETS
EC–1 THRU EC–5	EROSION CONTROL PLANS
TMP–1	DETOUR PLAN
PMP–1 THRU PMP–2	PAVEMENT MARKING PLANS
SIGN–1 THRU SIGN–4	SIGNING PLANS
X–1 THRU X–9	CROSS–SECTIONS

GENERAL NOTES: 2018 SPECIFICATIONS

EFFECTIVE: 01–16–2018
REVISED:

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

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

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

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

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

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

STREET TURNOUT:
STREET RETURNS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 848.04 USING THE RADII NOTED ON PLANS.

GUARDRAIL:
THE GUARDRAIL LOCATIONS SHOWN ON THE PLANS MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHOULD CONSULT WITH THE ENGINEER PRIOR TO ORDERING GUARDRAIL MATERIAL.

UTILITIES:
UTILITY OWNERS ON THIS PROJECT ARE:
UNION COUNTY PUBLIC WORKS, DUKE ENERGY, TIME WARNER CABLE, AND WINDSTREAM COMMUNICATIONS.
ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

RIGHT–OF–WAY MARKERS:
ALL RIGHT–OF–WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY CONTRACT.

2018 ROADWAY ENGLISH STANDARD DRAWINGS EFF. 01–16–2018

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch – N.C. Department of Transportation – Raleigh, N.C., Dated January, 2018 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 – EARTHWORK	
200.02	Method of Clearing – Method II
225.02	Guide for Grading Subgrade – Secondary and Local
225.04	Method of Obtaining Superelevation – Two Lane Pavement
DIVISION 3 – PIPE CULVERTS	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
DIVISION 5 – SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction – High Side of Superelevated Curve – Method I
DIVISION 8 – INCIDENTALS	
806.01	Concrete Right–of–Way Marker
840.18	Concrete Grated Drop Inlet Type 'B' – 12" thru 36" Pipe
840.24	Frames and Narrow Slot Sag Grates
840.27	Brick Grated Drop Inlet Type 'B' – 12" thru 36" Pipe
840.31	Concrete Junction Box – 12" thru 66" Pipe
840.32	Brick Junction Box – 12" thru 66" Pipe
840.51	Brick Manhole – 12" thru 36" Pipe
840.52	Precast Manhole – 4', 5' and 6' Diameter
840.53	Precast Manhole with Masonry Base – 12" thru 42" Pipe
840.54	Manhole Frame and Cover
840.71	Concrete and Brick Pipe Plug
840.72	Pipe Collar
846.01	Concrete Curb, Gutter and Curb & Gutter
848.02	Driveway Turnout – Radius Type
848.04	Street Turnout
852.01	Concrete Islands
862.01	Guardrail Placement
862.02	Guardrail Installation
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

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12/2/2016

PROJECT REFERENCE NO.	SHEET NO.
W-5710Q	1-B

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

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale **S.U.E. = Subsurface Utility Engineering*

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Computed 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
- Existing Historic Property Boundary — HPB
- Known Contamination Area: Soil — S
- Potential Contamination Area: Soil — S
- Known Contamination Area: Water — W
- Potential Contamination Area: Water — W
- Contaminated Site: Known or Potential

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 & PROJECT CONTROL:

- Secondary Horiz and Vert Control Point
- Primary Horiz Control Point
- Primary Horiz and Vert Control Point
- Exist Permanent Easment Pin and Cap
- New Permanent Easement Pin and Cap
- Vertical Benchmark
- Existing Right of Way Marker
- Existing Right of Way Line
- New Right of Way Line — RW
- New Right of Way Line with Pin and Cap — RW
- New Right of Way Line with Concrete or Granite R/W Marker — RW
- New Control of Access Line with Concrete C/A Marker — CA
- Existing Control of Access — CA
- New Control of Access — CA
- Existing Easement Line — E
- New Temporary Construction Easement — E
- New Temporary Drainage Easement — TDE
- New Permanent Drainage Easement — PDE
- New Permanent Drainage / Utility Easement — DUE
- New Permanent Utility Easement — PUE
- New Temporary Utility Easement — TUE
- New Aerial Utility Easement — AUE

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
- U/G Power Line LOS B (S.U.E.*) — P
- U/G Power Line LOS C (S.U.E.*) — P
- U/G Power Line LOS D (S.U.E.*) — P

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- U/G Telephone Cable LOS B (S.U.E.*) — T
- U/G Telephone Cable LOS C (S.U.E.*) — T
- U/G Telephone Cable LOS D (S.U.E.*) — T
- U/G Telephone Conduit LOS B (S.U.E.*) — TC
- U/G Telephone Conduit LOS C (S.U.E.*) — TC
- U/G Telephone Conduit LOS D (S.U.E.*) — TC
- U/G Fiber Optics Cable LOS B (S.U.E.*) — T FO
- U/G Fiber Optics Cable LOS C (S.U.E.*) — T FO
- U/G Fiber Optics Cable LOS D (S.U.E.*) — T FO

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- U/G Water Line LOS B (S.U.E.*) — W
- U/G Water Line LOS C (S.U.E.*) — W
- U/G Water Line LOS D (S.U.E.*) — W
- Above Ground Water Line — A/G Water

TV:

- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- U/G TV Cable LOS B (S.U.E.*) — TV
- U/G TV Cable LOS C (S.U.E.*) — TV
- U/G TV Cable LOS D (S.U.E.*) — TV
- U/G Fiber Optic Cable LOS B (S.U.E.*) — TV FO
- U/G Fiber Optic Cable LOS C (S.U.E.*) — TV FO
- U/G Fiber Optic Cable LOS D (S.U.E.*) — TV FO

GAS:

- Gas Valve
- Gas Meter
- U/G Gas Line LOS B (S.U.E.*) — G
- U/G Gas Line LOS C (S.U.E.*) — G
- U/G Gas Line LOS D (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
- SS Forced Main Line LOS B (S.U.E.*) — FSS
- SS Forced Main Line LOS C (S.U.E.*) — FSS
- SS Forced Main Line LOS D (S.U.E.*) — FSS

MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line LOS B (S.U.E.*) — ?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 LOS A (S.U.E.*)
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
W-5710Q	2A-1
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 30889 ENGINEER JENNIFER L. STEGALL

DocuSigned by:

06-12-2019

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wsp

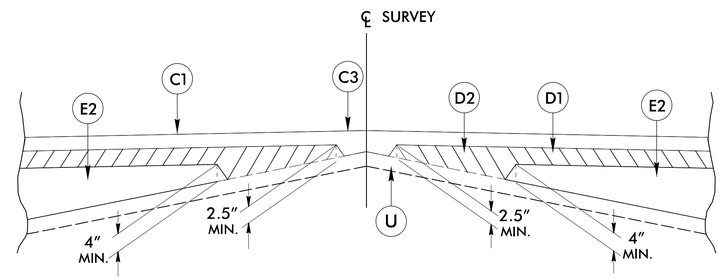
1001 Morehead Square Dr., Suite 610, Charlotte NC, 28203
NC LIC NO. F-0165

PAVEMENT SCHEDULE

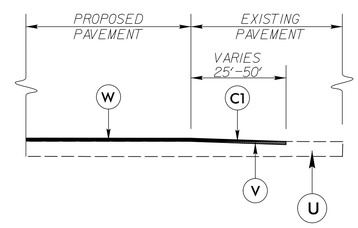
A1	7″ CLASS AA TRUCK MOUNTABLE CONCRETE APRON
A2	7″ CLASS AA TRUCK MOUNTABLE CONCRETE APRON (BLACK TINT)
C1	PROP. APPROX. 1.5″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1″ DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2″ IN DEPTH.
D1	PROP. APPROX. 4″ ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1″ DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2 1/2″ IN DEPTH OR GREATER THAN 4″ IN DEPTH.
E1	PROP. APPROX. 4″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1″ DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3″ IN DEPTH OR GREATER THAN 5 1/2″ IN DEPTH.
J1	6″ AGGREGATE BASE COURSE (ABC)
R1	2′-6″ CONCRETE CURB AND GUTTER (MODIFIED). SEE DETAIL FOR ROUNDABOUT
R2	1′-6″ CLASS AA CONCRETE CURB AND GUTTER.
R3	1′-6″ CLASS AA CONCRETE CURB AND GUTTER (BLACK TINT).
R4	5″ MONOLITHIC CONCRETE ISLAND
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	VARIABLE DEPTH MILLING
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL ON THIS SHEET)

NOTES:

1. TYPICAL SECTIONS SHOWN FOR TANGENT SECTIONS ONLY SEE PLANS FOR SUPERELEVATION DETAILS
2. ALL PAVEMENT SLOPES 1:1 UNLESS NOTED OTHERWISE

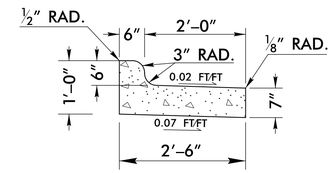


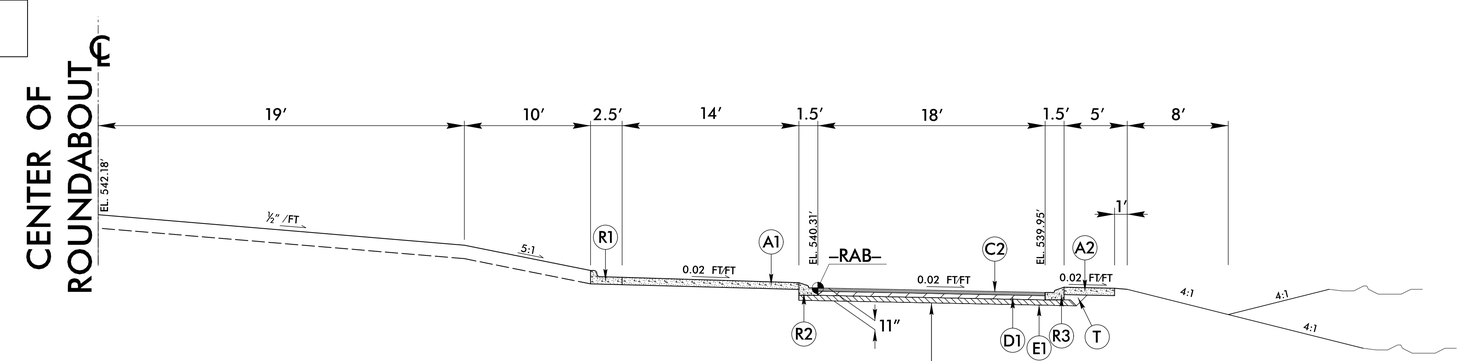
Detail Showing Method of Wedging



INCIDENTAL MILLING DETAIL
EXISTING ROAD TIE-IN
PROJECT TIE-INS

MODIFIED 2′-6″ C&G DETAIL





TYPICAL SECTION NO. 3

NC 205 /NC 218
–RAB– STA. 10+00.00 TO STA. 12+95.31

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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
W-5710Q	2A-2
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 30882 ENGINEER L. STARNES

DocuSigned by: 93456E8148064C3...

06-12-2019

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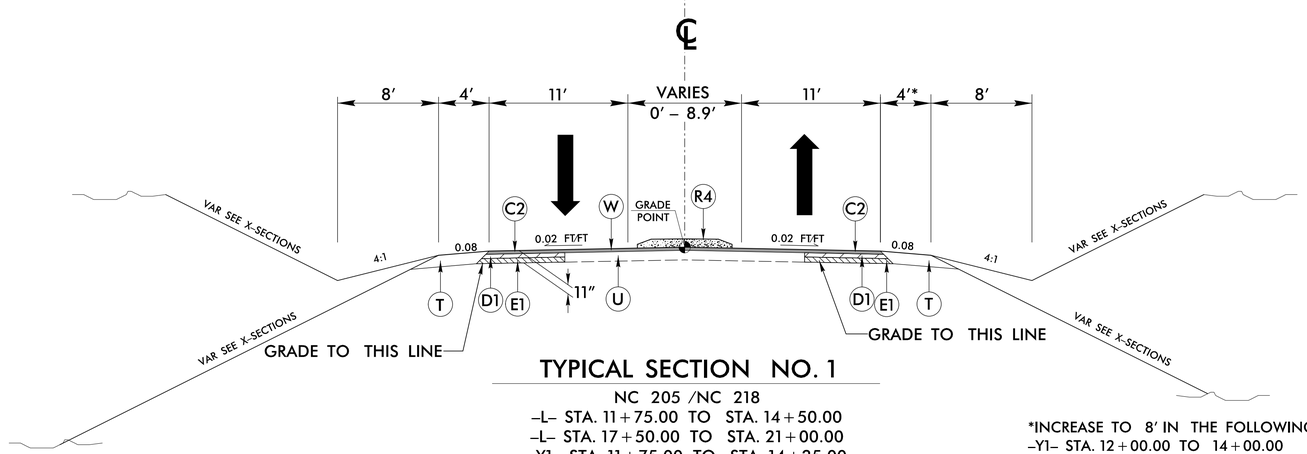
wsp

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

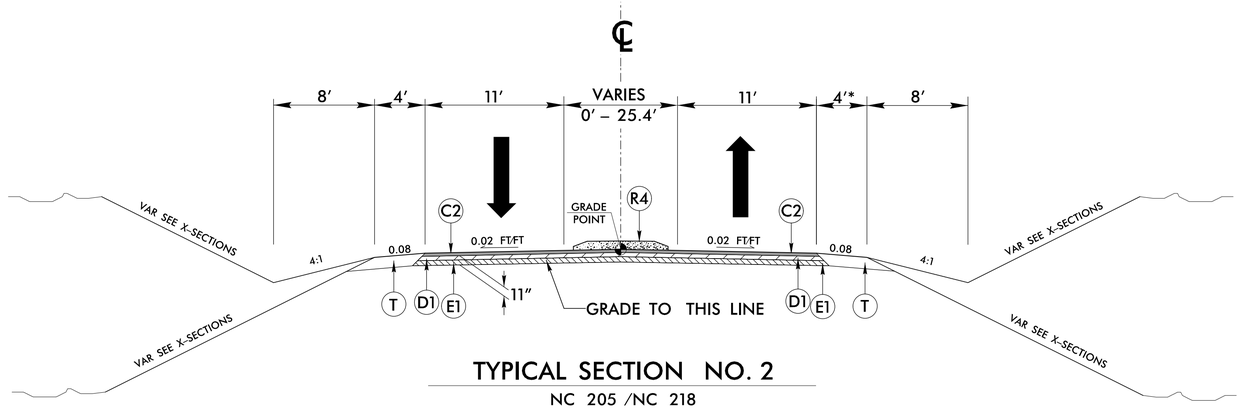
LEGEND	
A2	7″ CONCRETE APRON (TINTED)
C1	1.5″ S9.5C
C2	3″ S9.5C
D1	4″ I19.0C
E1	4″ B25.0C
J1	6″ ABC
R3	1′-6″ CONCRETE C & G (TINTED)
R4	5″ MCI
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING



TYPICAL SECTION NO. 1

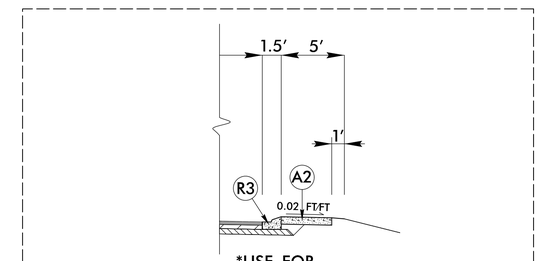
NC 205 /NC 218
–L– STA. 11+75.00 TO STA. 14+50.00
–L– STA. 17+50.00 TO STA. 21+00.00
–Y1– STA. 11+75.00 TO STA. 14+25.00
–Y1– STA. 18+75.00 TO STA. 21+50.00

*INCREASE TO 8′ IN THE FOLLOWING LOCATIONS:
–Y1– STA. 12+00.00 TO 14+00.00
–Y1– STA. 19+00.00 TO 20+00.00

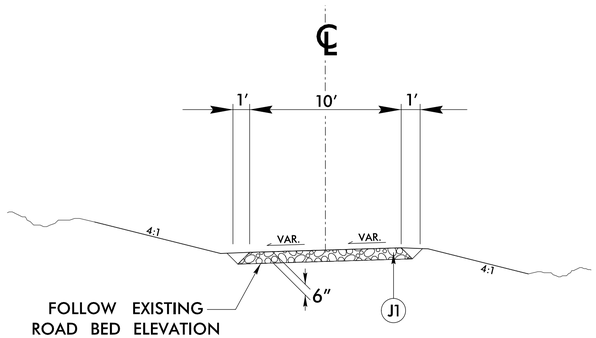


TYPICAL SECTION NO. 2

NC 205 /NC 218
–L– STA. 14+50.00 TO STA. 15+68.77
–L– STA. 16+98.77 TO STA. 17+50.00
–Y1– STA. 14+25.00 TO STA. 16+30.36
–Y1– STA. 17+60.36 TO STA. 18+75.00

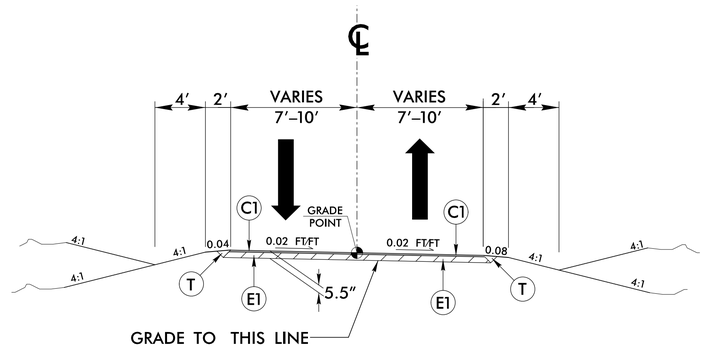


*USE FOR
–L– STA. 15+30.56 RT TO –Y1– STA. 17+85.90 RT
–L– STA. 15+35.18 LT TO –Y1– STA. 15+72.42 RT (MIRROR)
–Y1– STA. 15+97.67 LT TO –L– STA. 17+05.85 LT (MIRROR)
–Y1– STA. 18+14.78 LT TO –L– STA. 17+30.39 RT



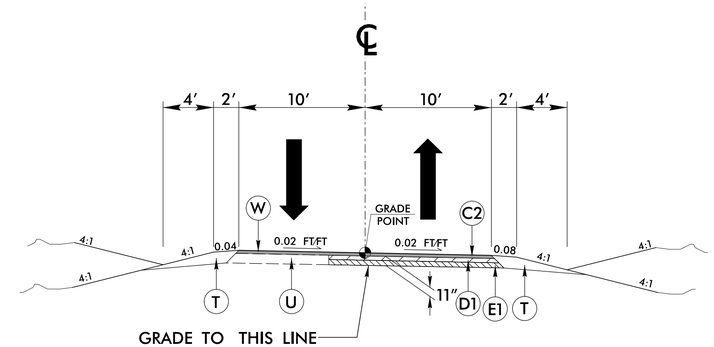
TYPICAL SECTION NO. 3

–Y2– STA. 9+00.00 TO 10+40.00



TYPICAL SECTION NO. 4

–Y2– STA. 10+40.00 TO STA. 12+41.90



TYPICAL SECTION NO. 5

FISH RD
–Y2– STA. 12+70.55 TO 13+50.00

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PROJECT REFERENCE NO.	SHEET NO.
W-5710Q	2B-1
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

Digitally signed by

NORTH CAROLINA PROFESSIONAL SEAL 08842 ENGINEER

06-12-2019

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

-Y1-

PI Sta 11+91.88	PI Sta 15+36.83	PI Sta 18+39.39	PI Sta 20+08.65	PI Sta 22+36.43
△ = 5° 50' 16.9" (LT)	△ = 31° 09' 13.2" (RT)	△ = 20° 05' 41.0" (LT)	△ = 9° 32' 37.8" (RT)	△ = 4° 17' 10.0" (LT)
D = 3° 49' 11.0"	D = 22° 55' 05.9"	D = 22° 55' 05.9"	D = 11° 27' 33.0"	D = 3° 22' 13.2"
L = 152.84'	L = 135.93'	L = 87.68'	L = 83.29'	L = 127.17'
T = 76.49'	T = 69.69'	T = 44.29'	T = 41.74'	T = 63.62'
R = 1,500.00'	R = 250.00'	R = 250.00'	R = 500.00'	R = 1,700.00'

-Y2-

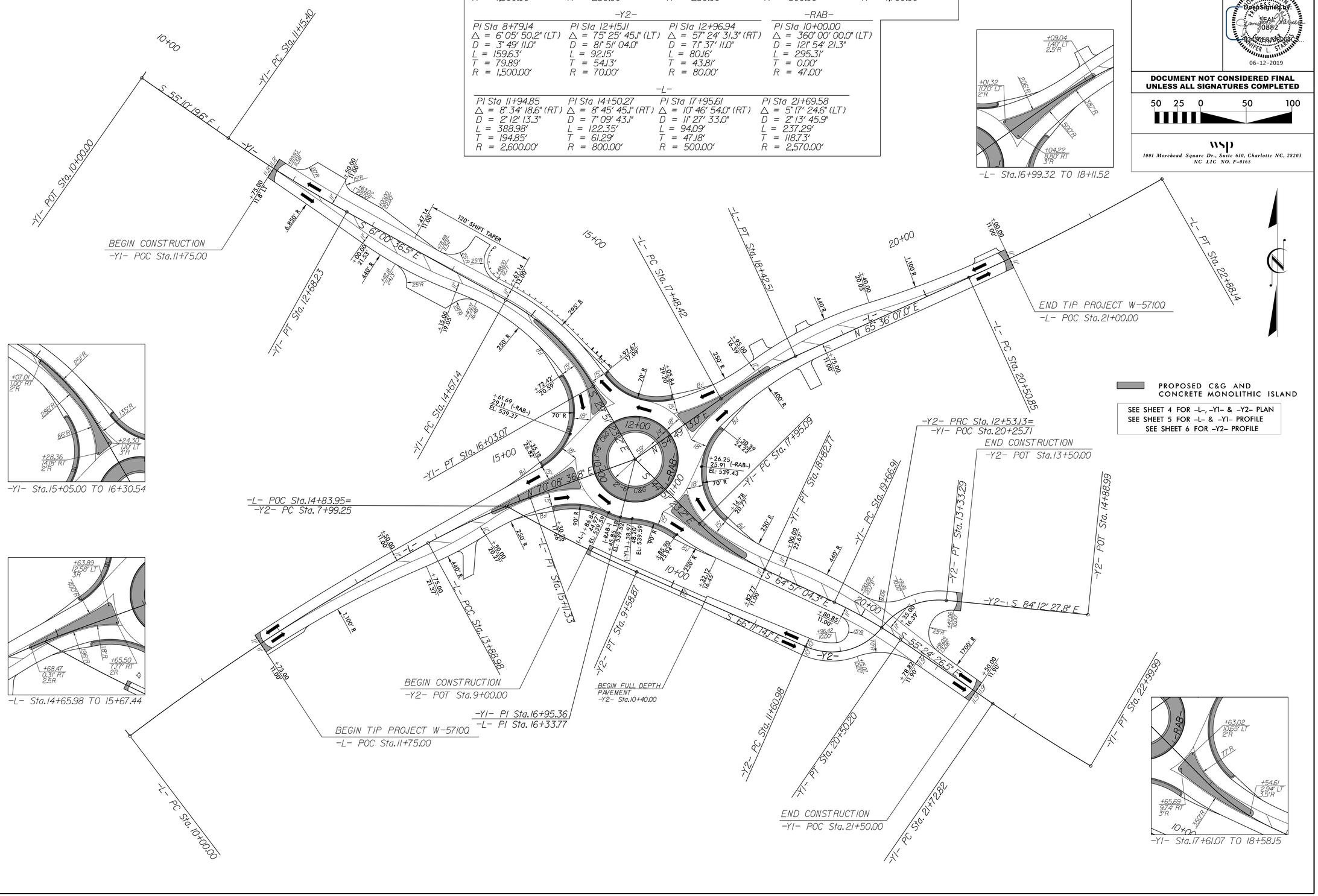
PI Sta 8+79.14	PI Sta 12+15.11	PI Sta 12+96.94
△ = 6° 05' 50.2" (LT)	△ = 75° 25' 45.1" (LT)	△ = 57° 24' 31.3" (RT)
D = 3° 49' 11.0"	D = 81° 51' 04.0"	D = 71° 37' 11.0"
L = 159.63'	L = 92.15'	L = 80.16'
T = 79.89'	T = 54.13'	T = 43.81'
R = 1,500.00'	R = 70.00'	R = 80.00'

-RAB-

PI Sta 10+00.00
△ = 360° 00' 00.0" (LT)
D = 121° 54' 21.3"
L = 295.31'
T = 0.00'
R = 47.00'

-L-

PI Sta 11+94.85	PI Sta 14+50.27	PI Sta 17+95.61	PI Sta 21+69.58
△ = 8° 34' 18.6" (RT)	△ = 8° 45' 45.1" (RT)	△ = 10° 46' 54.0" (RT)	△ = 5° 17' 24.6" (LT)
D = 2° 12' 13.3"	D = 7° 09' 43.1"	D = 11° 27' 33.0"	D = 2° 13' 45.9"
L = 388.98'	L = 122.35'	L = 94.09'	L = 237.29'
T = 194.85'	T = 61.29'	T = 47.18'	T = 118.73'
R = 2,600.00'	R = 800.00'	R = 500.00'	R = 2,570.00'



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PROJECT REFERENCE NO.	SHEET NO.
W-5710Q	2C-1
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036827 JENNIFER L. SUMNER

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06-12-2019

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NC LIC NO. F-0165

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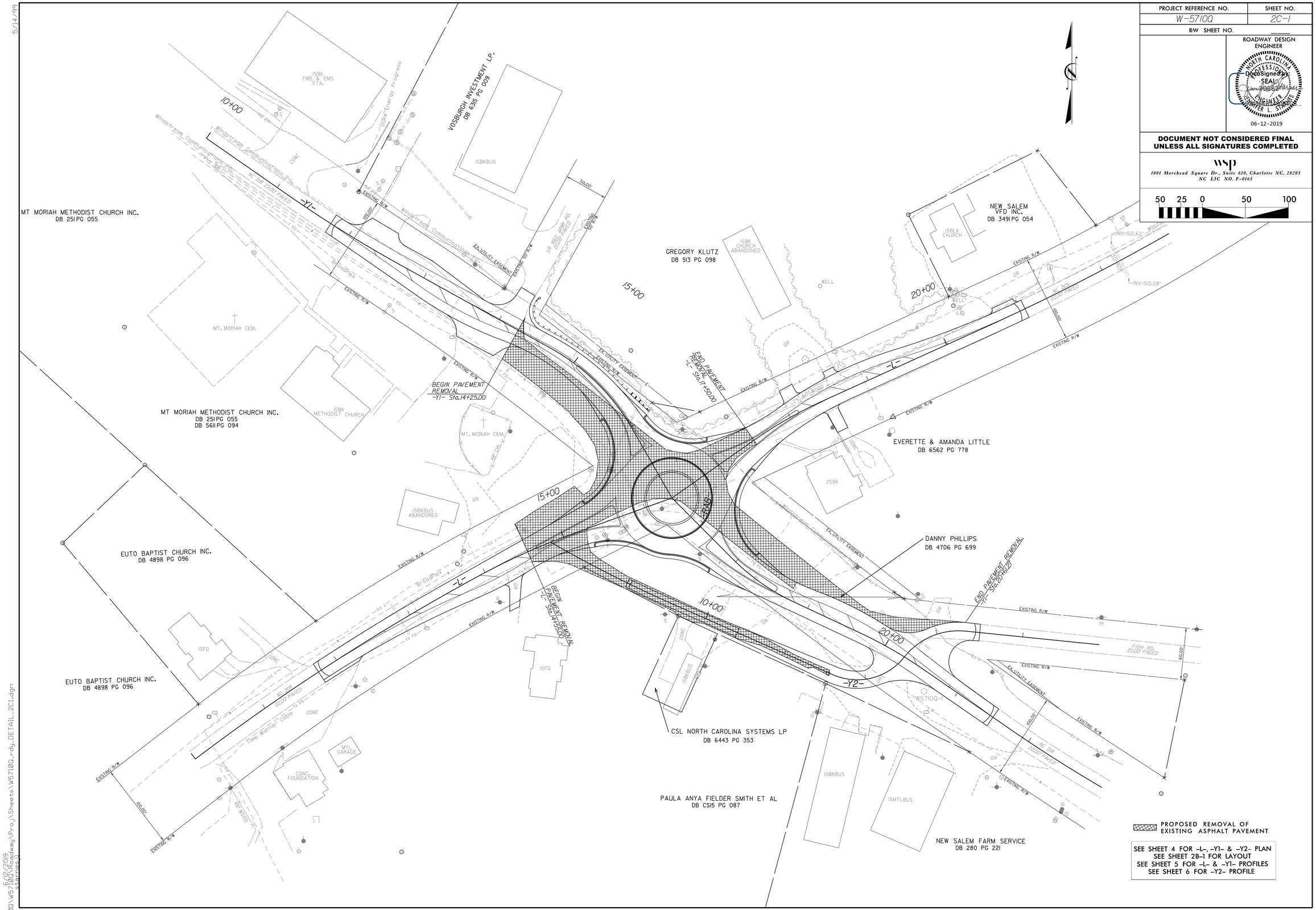

SEE SHEET 4 FOR -L-, -Y1- & -Y2- PLAN
SEE SHEET 2B-1 FOR LAYOUT
SEE SHEET 5 FOR -L- & -Y1- PROFILES
SEE SHEET 6 FOR -Y2- PROFILE

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RIGHT OF WAY AREA DATA

PARCEL NO.	PROPERTY OWNERS NAMES	TOTAL ACREAGE	AREA TAKEN	TEMP. CONST. EASE.	PERM. DRAIN. EASE.	PERM. UTILITY EASE.
1	Paula Anya Fielder Smith ET AL	*73.344		6,970.46		
2	CSL North Carolina Systems LP	0.1148				
3	Everette & Amanda Little	*8.23	112.09	459.06		841.37
4	Gregory Klutz	*4.73	721.32		5,081.04	2,210.16
5	Danny Phillips	0.7945	21,122.31			
6	New Salem Farm Service	*2.86		344.01		

*TOTAL ACREAGE FROM UNION COUNTY GIS

PROJECT REFERENCE NO.	SHEET NO.
W-5710Q	2D-1
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 30882 ENGINEER JENNIFER L. STANINE — DocuSigned by: 06-12-2019

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 032312 ENGINEER CHARLES W. HEDRICK — DocuSigned by: 06-12-2019

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

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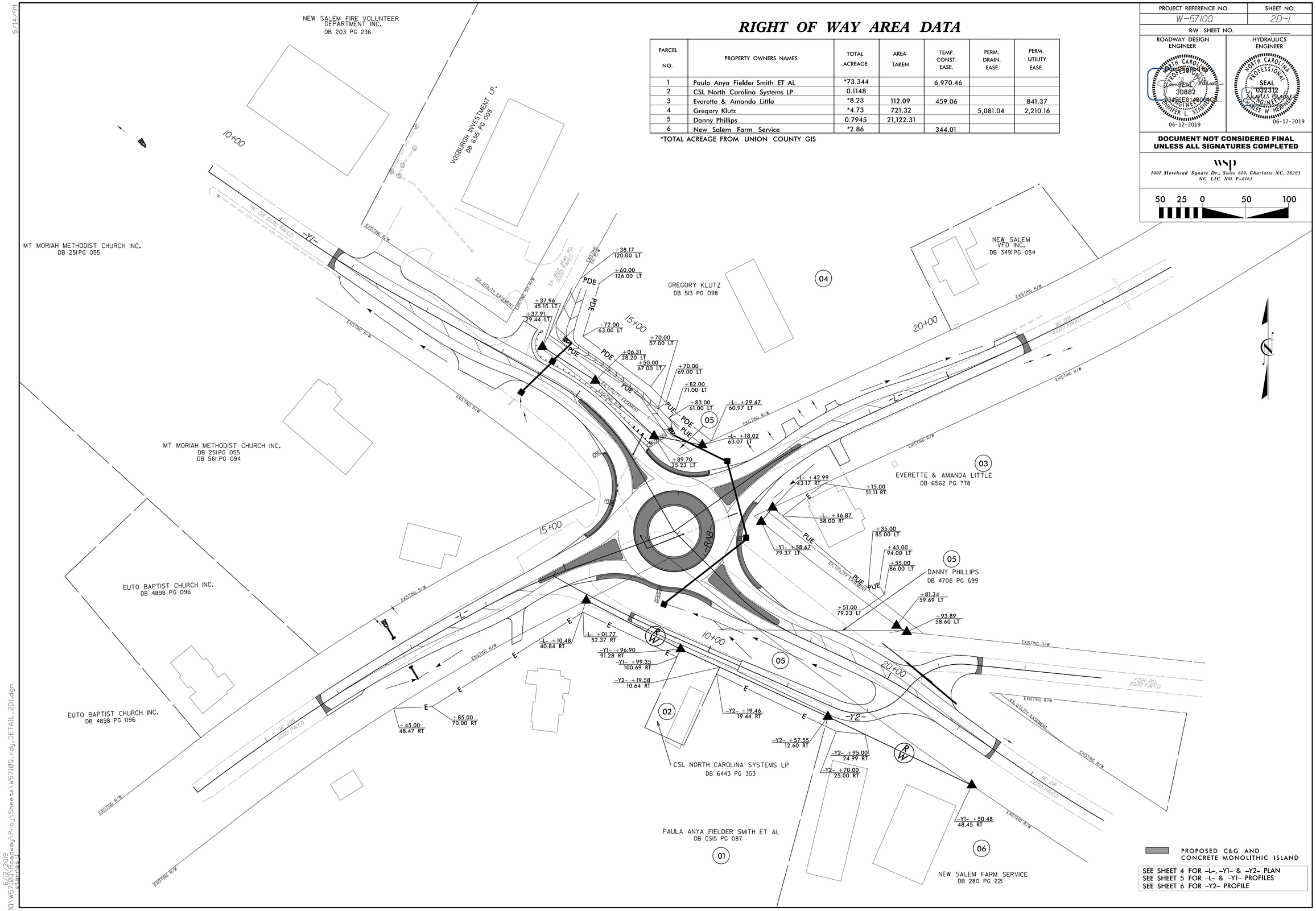

SEE SHEET 4 FOR -L-, -Y1- & -Y2- PLAN
SEE SHEET 5 FOR -L- & -Y1- PROFILES
SEE SHEET 6 FOR -Y2- PROFILE

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COMPUTED BY: AP	DATE: 6-11-19
CHECKED BY: JS	DATE: 6-11-19

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
W-5710Q	3A-1

SUMMARY OF EARTHWORK

STATION	STATION	UNCL. EXCAV.	EMBANK. +%	BORROW	WASTE
-L- 11+75.00	-L- 15+68.77	619	234		385
-L- 16+99.07	-L- 21+00.00	687	16		671
-Y1- 11+75.00	-Y1- 16+30.36	394	1,324	930	
-Y1- 17+60.36	-Y1- 21+50.00	302	46		256
-Y2- 10+40.00	-Y2- 13+50.00	68	73	5	
-RAB-		2	1,571	1,569	
SUBTOTAL		2,072	3,262	2,502	1,312
EARTH TO REPLACE BORROW				-1,312	-1,312
PROJECT TOTALS:		2,072	3,262	1,190	0
ESTIMATE 5% TOPSOIL FOR BORROW PITS				60	
GRAND TOTALS:		2,072	3,262	1,250	0
SAY:		2,100		1,300	0

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

SUMMARY OF EXISTING CONCRETE PAVEMENT REMOVAL

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD^2
-L-	17+71.03	18+00.35	RT	14
-L-	18+40.15	18+55.26	RT	39
			TOTAL:	53
			SAY:	55

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD^2
-L-	14+55.00	17+50.00	LT	1,336
-L-	14+55.00	17+50.00	RT	768
-Y1-	14+25.00	16+30.36	LT	44
-Y1-	14+25.00	16+30.36	RT	840
-Y1-	17+60.36	20+61.27	LT	663
-Y2-	10+40.00	11+55.41	LT	62
-Y2-	10+40.00	11+56.98	RT	46
			TOTAL:	3,759
			SAY:	3,800

CURB & GUTTER SUMMARY

SURVEY LINE	STATION	STATION	LENGTH
CLASS AA CONCRETE 1'-6" C&G (BLACK TINT)			
L /Y1	15+35.18 LT	15+72.42 RT	125.07
L /Y1	15+30.56 RT	17+85.90 RT	150.93
Y1 /L	15+97.67 LT	16+59.59 LT	94.39
Y1 /L	18+10.76 LT	17+30.39 RT	125.53
		TOTAL	495.92
		SAY	500'
CLASS AA CONCRETE 1'-6" C&G			
RAB	CENTRAL ISLAND		295.31
		TOTAL	295.31
		SAY	300'
MODIFIED CONCRETE 2'-6" C&G			
RAB	CENTRAL ISLAND		197.92
		TOTAL	197.92
		SAY	200'

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.
TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH		W		ANCHORS								IMPACT ATTENUATOR TYPE 350			SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	TL-2	XI	GRAU 350	M-350	XIII	CAT-1	VI MOD	BIC	AT-1	EA	G	NG				
-Y1-	14+26.67	15+95.85		130	36		14+45.00	15+80.00	4'	7'	6.25'	25'	4'	0.5'	1								1							

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COMPUTED BY:	AMP	DATE:	5/7/2019
CHECKED BY:	CWH	DATE:	5/7/2019

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
W-5710Q	3A-2

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

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

| LINE & STATION / SIZE / THICKNESS OR GAUGE | OFFSET | STRUCTURE NUMBER FROM | STRUCTURE NUMBER TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC) 12 | 15 | 18 | 24 | 30 | DO NOT USE RCP | DO NOT USE CSP | DO NOT USE CAAP | DO NOT USE HDPE | DO NOT USE PVC | C. S. PIPE 12 | 15 | 18 | 24 | 30 | R. C. PIPE CLASS III 12 | 15 | 18 | 24 | 30 | R. C. PIPE CLASS IV 12 | 15 | 18 | 24 | 30 | 15" SIDE DRAIN PIPE | 18" SIDE DRAIN PIPE | 24" SIDE DRAIN PIPE | | ENDWALLS STD. 826.01 OR STD. 826.11 (UNLESS NOTED OTHERWISE) CY | REINFORCED ENDWALLS CY | DRAINAGE STRUCTURE MASONRY CY | QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH | A 5' THRU 10' LIN. FT. | B 10' AND ABOVE LIN. FT. | C.B. STD. 840.01 OR STD. 840.02 | FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E | F | G | CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06 | C.B. STD. 852.05 | OPEN THROAT C.B. STD. 840.04 OR STD. 840.05 | CONCRETE BRIDGE APPROACH D.I. STD. 840.13 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND GRATES STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26 | G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27 | G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28 | G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20 | G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22 | G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | DRIVEWAY D.I. STD. 840.30 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | ANGLED VANE GRATES AND FRAMES STD. 840.33 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | T.B.D.I. FOR STEEL GRATES STD. 840.36 | STEEL FRAME WITH TWO GRATES STD. 840.37 | TEMP STEEL PLATE COVER MASONRY DRAINAGE | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | CONVERT EXISTING C.B. TO J.B. | CONVERT EXISTING C.B. TO D.I. | CONVERT EXISTING D.I. TO J.B. | CONVERT EXISTING J.B. TO D.I. | ADJUST C.B. | ADJUST D.I. | 15" C.S. ELBOW | 18" C.S. ELBOW | 24" C.S. ELBOW | 12" APRON DRAINAGE TROUGH | FLOWABLE FILL CY | CONCRETE COLLARS CL. "B" STD. 840.72 CY | CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY | PIPE REMOVAL LIN. FT. | REMARKS |
|---|---|---|---

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PROJECT REFERENCE NO.	SHEET NO.
W-5710Q	4
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 30862 ENGINEER — DocuSigned by: — 06-12-2019

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 032342 ENGINEER — DocuSigned by: — 06-12-2019

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NC LIC NO. F-0165

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-Y1-

PI Sta 11+91.88	PI Sta 15+36.83	PI Sta 18+39.39	PI Sta 20+08.65	PI Sta 22+36.43
Δ = 5° 50' 16.9" (LT)	Δ = 31° 09' 13.2" (RT)	Δ = 20° 05' 41.0" (LT)	Δ = 9° 32' 37.8" (RT)	Δ = 4° 17' 10.0" (LT)
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T = 76.49'	T = 69.69'	T = 44.29'	T = 41.74'	T = 63.62'
R = 1,500.00'	R = 250.00'	R = 250.00'	R = 500.00'	R = 1,700.00'

-Y2-

PI Sta 8+79.14	PI Sta 12+15.11	PI Sta 12+96.94	PI Sta 10+00.00
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-RAB-

-L-

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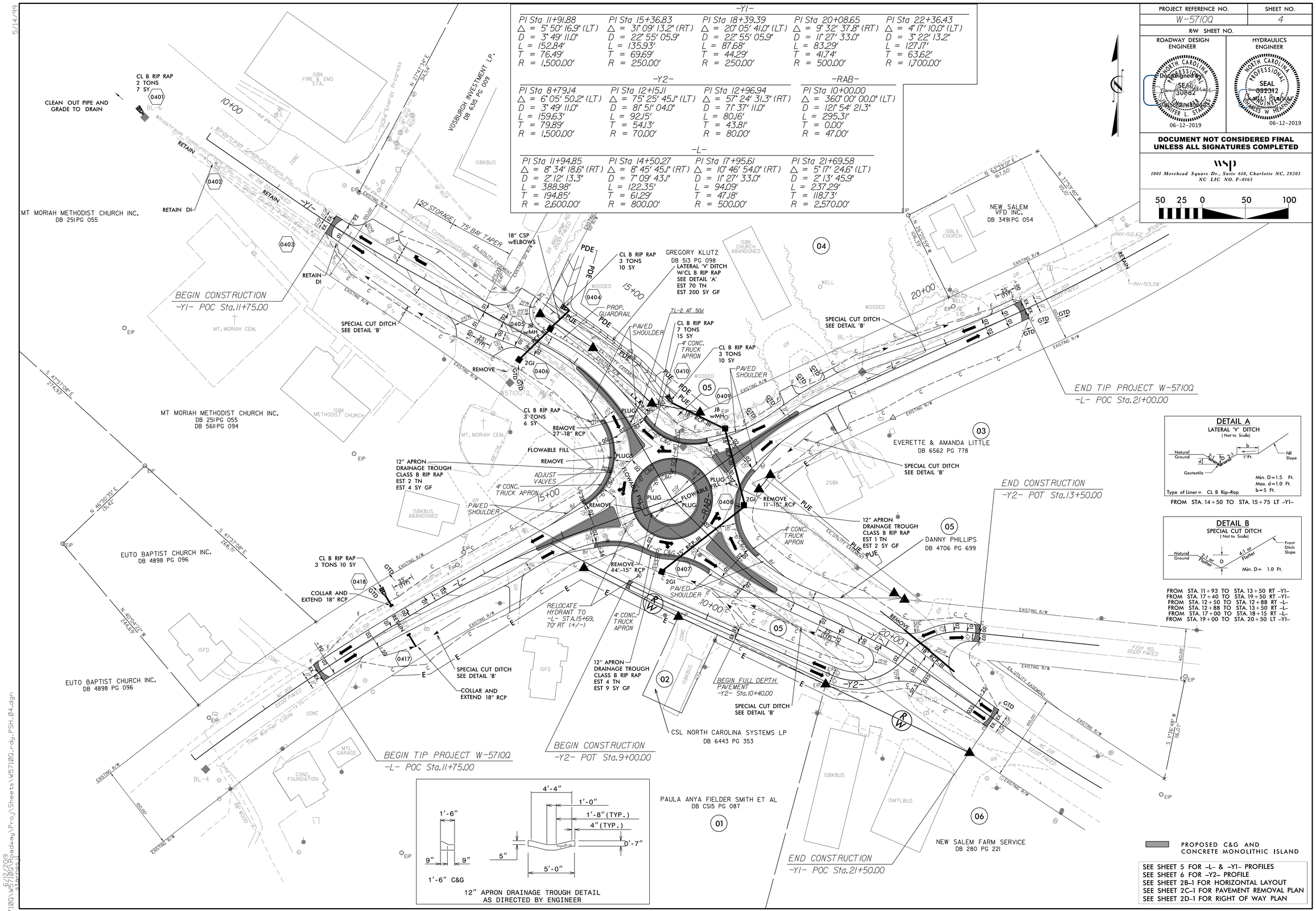

DETAIL A
LATERAL 'V' DITCH
(Not to Scale)

Natural Ground — 2:1 to 2:1 — d — b — 1'-Ft. — Fill Slope — Geotextile

Min. D=1.5 Ft.
Max. d=1.0 Ft.
b=5 Ft.

Type of Liner= CL B Rip-Rap

FROM STA. 14+50 TO STA. 15+75 LT -Y1-

DETAIL B
SPECIAL CUT DITCH
(Not to Scale)

Natural Ground — 2:1 or Flatter — D — 4:1 or Flatter — Front Ditch Slope

Min. D= 1.0 Ft.

FROM STA. 11+93 TO STA. 13+50 RT -Y1-
FROM STA. 17+40 TO STA. 19+50 RT -Y1-
FROM STA. 12+50 TO STA. 12+88 RT -L-
FROM STA. 12+88 TO STA. 13+50 RT -L-
FROM STA. 17+00 TO STA. 18+15 RT -L-
FROM STA. 19+00 TO STA. 20+50 LT -Y1-

SEE SHEET 5 FOR -L- & -Y1- PROFILES
SEE SHEET 6 FOR -Y2- PROFILE
SEE SHEET 2B-1 FOR HORIZONTAL LAYOUT
SEE SHEET 2C-1 FOR PAVEMENT REMOVAL PLAN
SEE SHEET 2D-1 FOR RIGHT OF WAY PLAN

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PROJECT REFERENCE NO.	SHEET NO.
W-5710Q	5

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 30582 ENGINEER JENNIFER L. STARNES 06-12-2019

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 032372 ENGINEER JAMES W. WEAVER 06-12-2019

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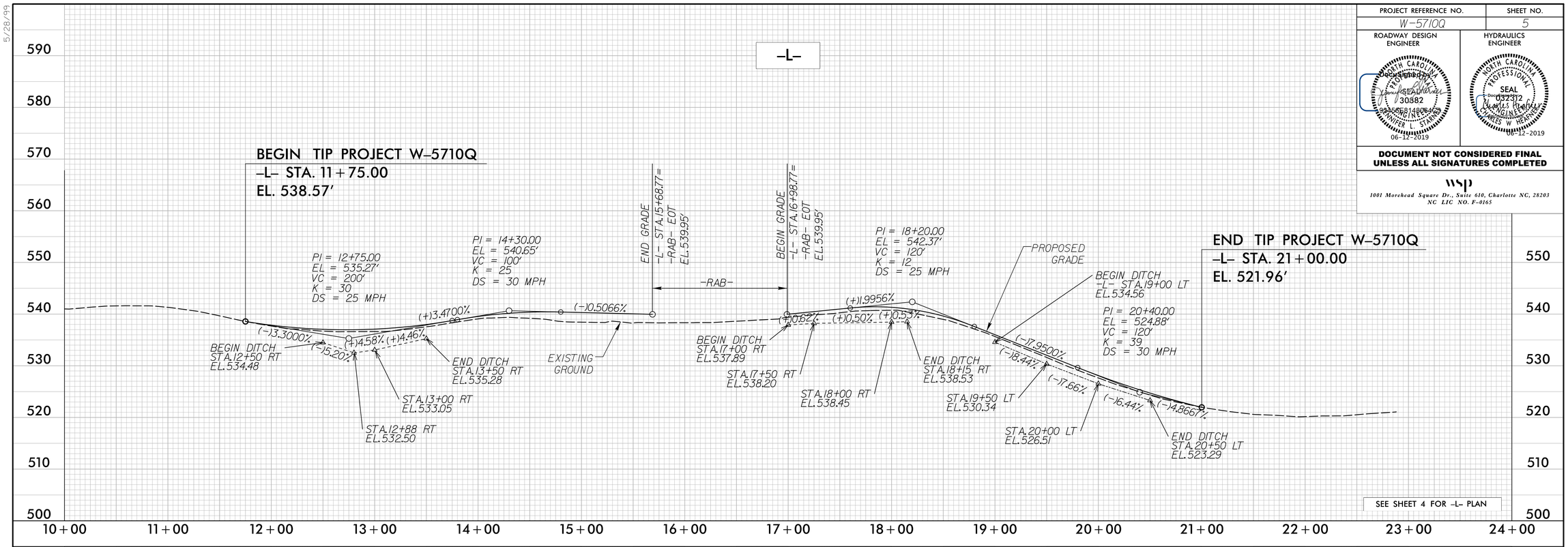

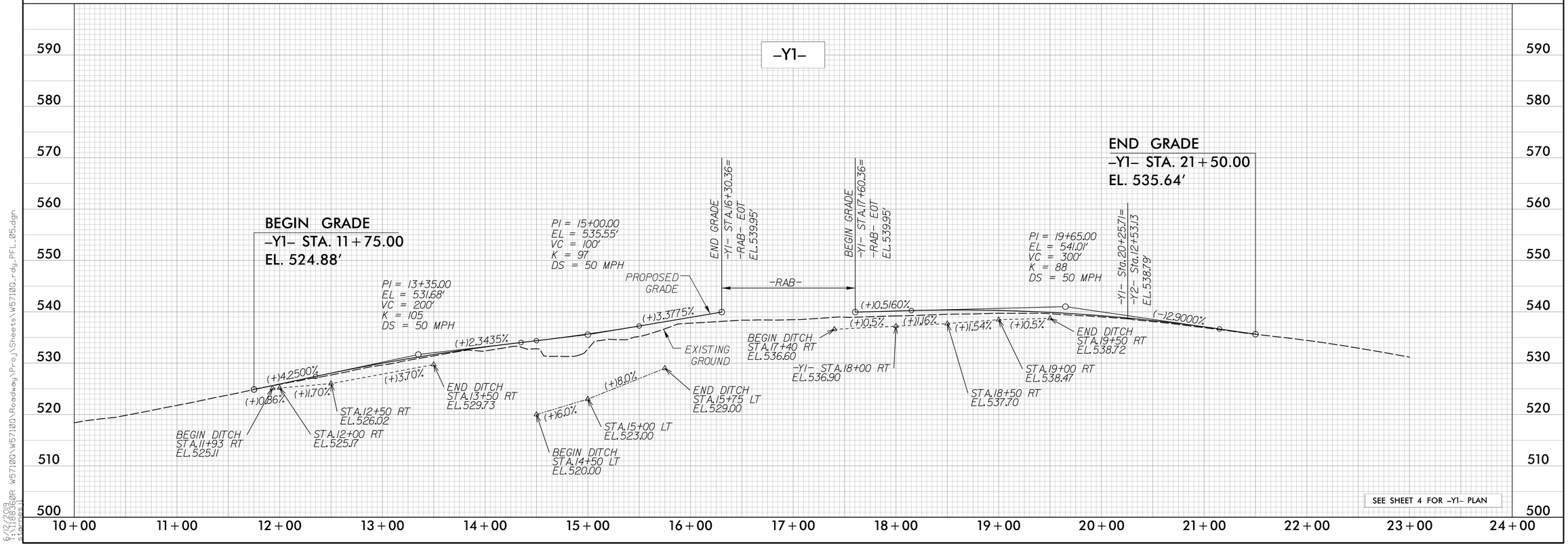

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PROJECT REFERENCE NO.	SHEET NO.
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ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 30882 ENGINEER JENNIFER L. STANNER
03456E814B8B4B7...
06-12-2019

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 032012 ENGINEER JAMES W. HAINES
06-12-2019

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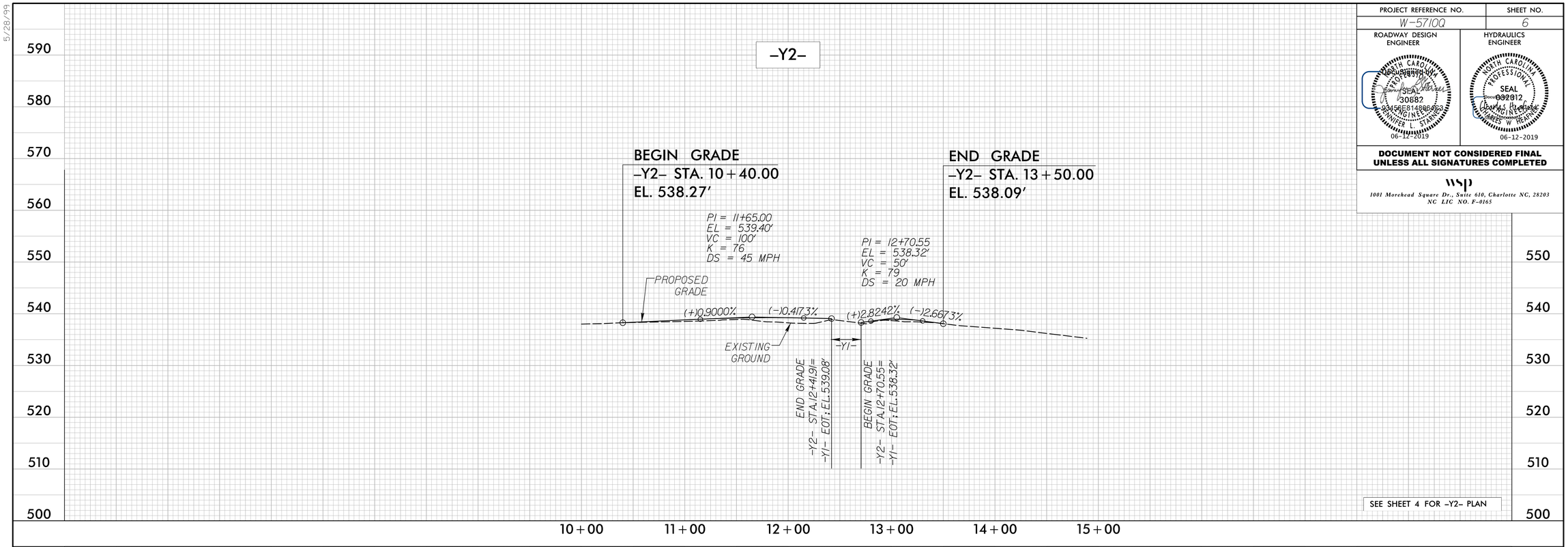

SEE SHEET 4 FOR -Y2- PLAN

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09/08/99

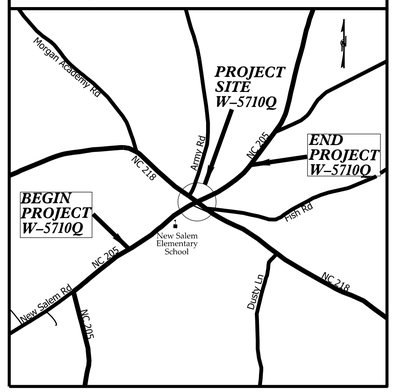
TIP PROJECT: W-5710Q

See Sheet 1A For Index of Sheets

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5710Q	EC-1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
44856.1.17	HSIP-0205 (004)	P.E.
44856.2.17	HSIP-0205 (004)	R /W /UTILITY
44856.3.17	HSIP-0205 (004)	CONST.

PROJECT VICINITY MAP



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

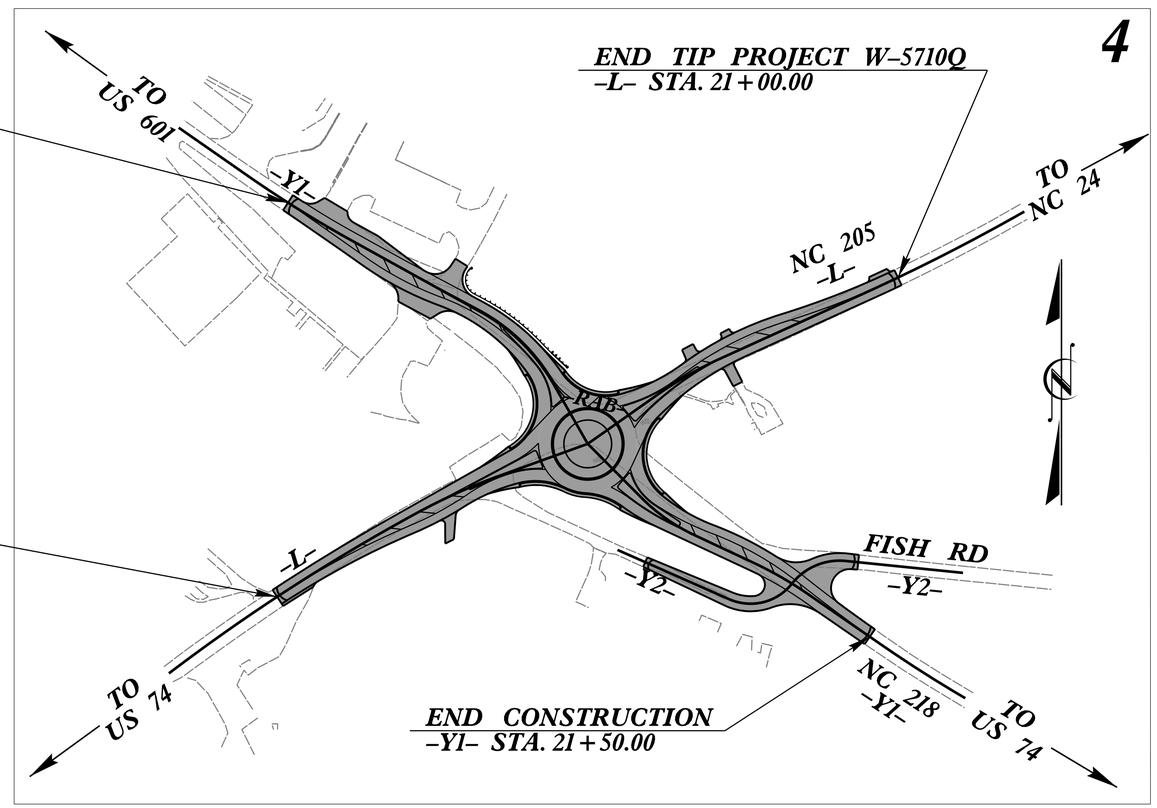
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

UNION COUNTY

LOCATION: INTERSECTION OF NC205 AND NC218
GRADING, PAVING, DRAINAGE, CONCRETE
CURB & GUTTER, MONOLITHIC ISLANDS,
AND PAVEMENT MARKINGS

BEGIN CONSTRUCTION
-Y1- STA. 11+75.00

END TIP PROJECT W-5710Q
-L- STA. 21+00.00



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

BEGIN TIP PROJECT W-5710Q
-L- STA. 11+75.00

END CONSTRUCTION
-Y1- STA. 21+50.00

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

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	SW CFW
	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	

GRAPHIC SCALES

25 12.5 0 25 50
PLANS

50 12.5 0 25 50
PROFILE (HORIZONTAL)

50 12.5 0 25 50
PROFILE (VERTICAL)

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 1, 2016 AND ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER RESOURCES.

Prepared in the Office of:

WSP

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

Designed by:

Charles Heafner, PE — *NAME*
3440 — *LEVEL III CERTIFICATION NO.*

Reviewed in the Office of:

ROADSIDE ENVIRONMENTAL UNIT

1 South Wilmington St.
Raleigh, NC 27611

2018 STANDARD SPECIFICATIONS

Reviewed by:

Thomas A. Smith, CPESC

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 2018 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		

5/22/2019
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PARSONS BRINCKERHOFF

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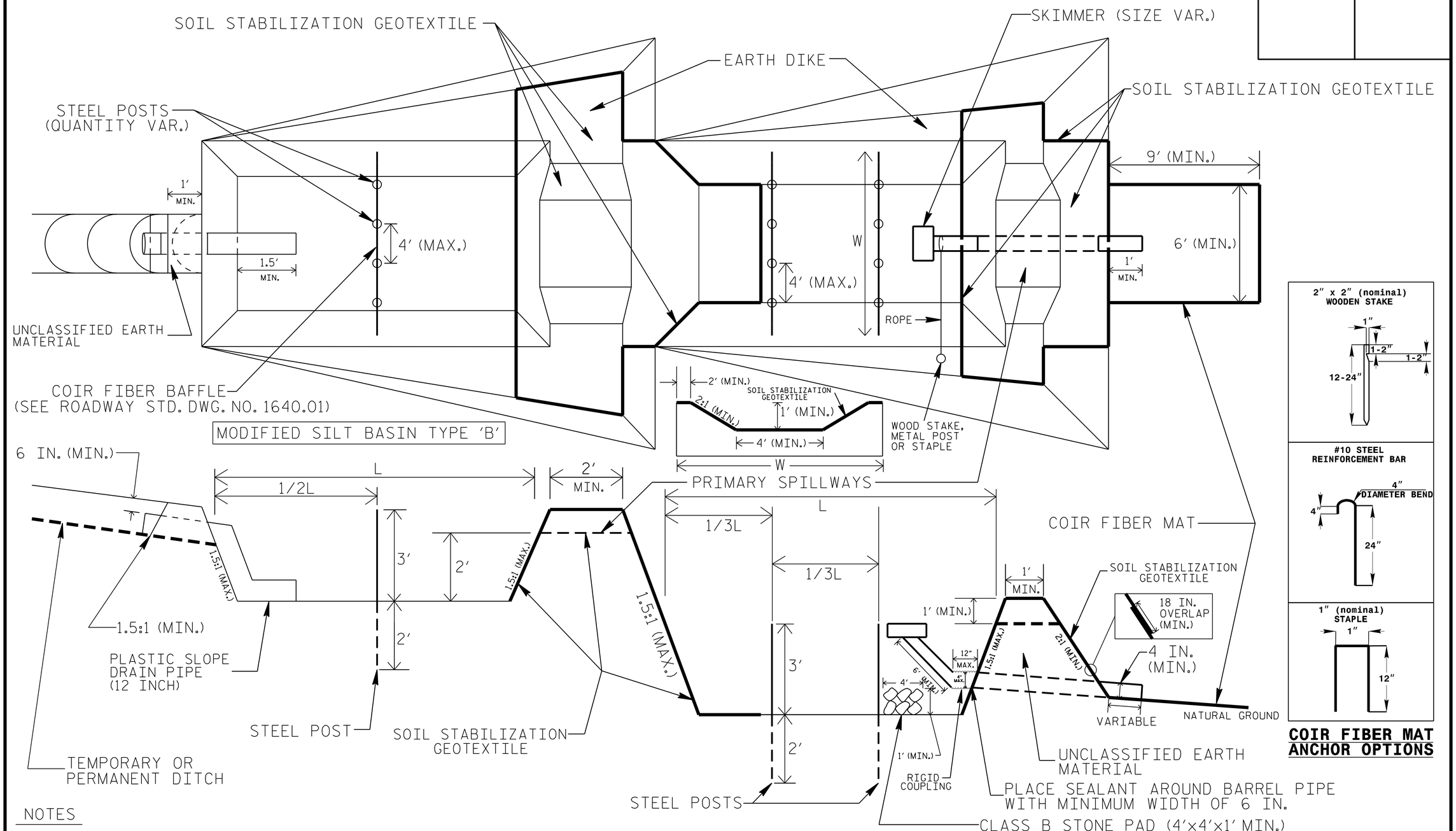
PROJECT REFERENCE NO.	SHEET NO.
W-5710Q	EC-2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TIERED SKIMMER BASIN DETAIL



COIR FIBER MAT ANCHOR OPTIONS

NOTES

1. SEED AND PLACE MATTING FOR EROSION CONTROL ON INTERIOR AND EXTERIOR SIDESLOPES OF BASINS.
2. LIMIT HEIGHT OF EARTH DIKES TO 5 FT.
3. ADDITIONAL MODIFIED SILT BASINS TYPE 'B' MAY BE NEEDED DEPENDING ON SLOPE.
4. FOR BASIN DEPTHS OF 3FT., THE MINIMUM BASIN WIDTHS SHALL BE 9 FT.
5. DETERMINE PRIMARY SPILLWAY WEIR LENGTHS (FT.) USING Q/0.8, WHERE Q IS FLOW RATE (CFS) INTO UPPER BASIN.
6. SOIL STABILIZATION GEOTEXTILE FOR PRIMARY SPILLWAYS SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18 IN. (MIN.).

NOT TO SCALE

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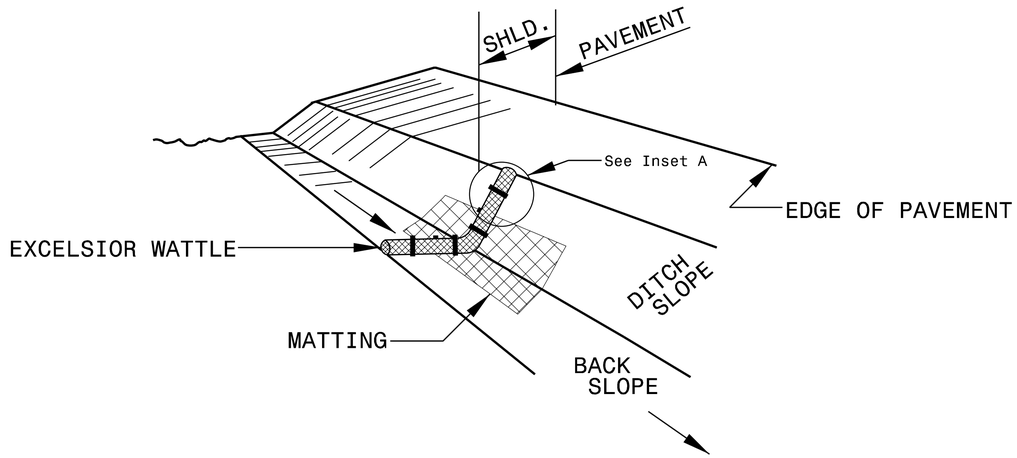
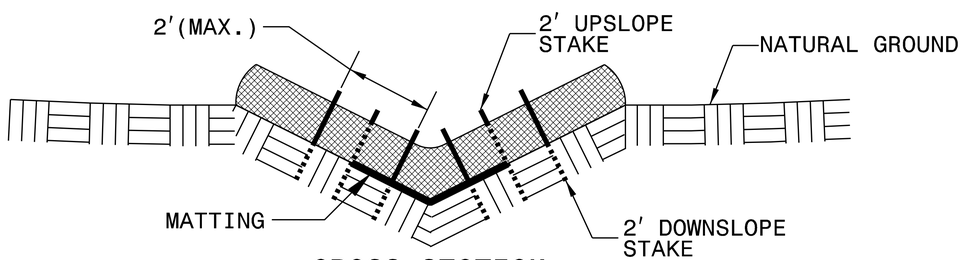
PROJECT REFERENCE NO.	SHEET NO.
W-5710Q	EC-2B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

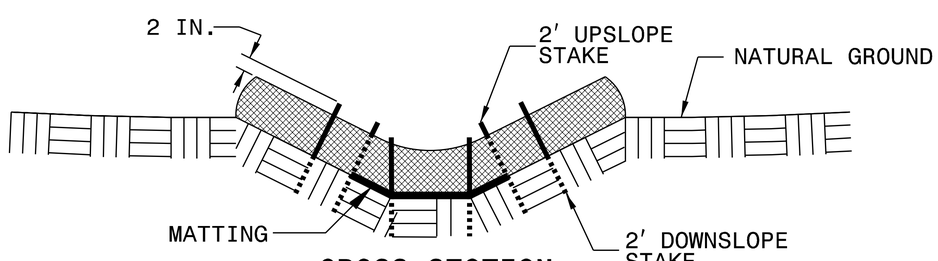
WATTLE DETAIL



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.

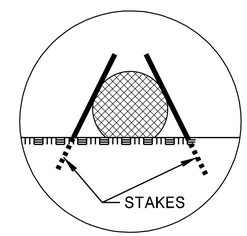
<u>ONLY</u> INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

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

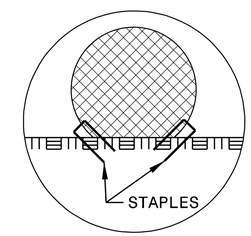
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

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

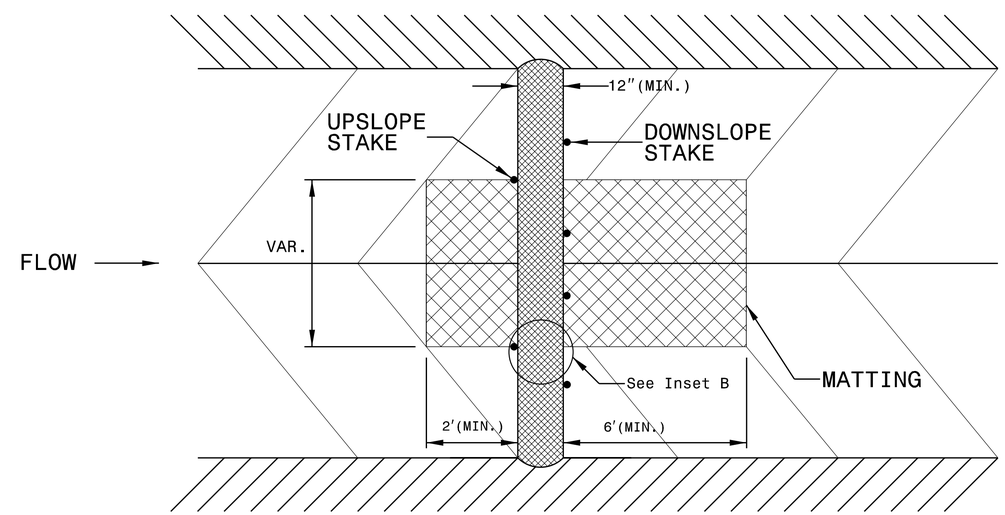
INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.



INSET A



INSET B



TOP VIEW

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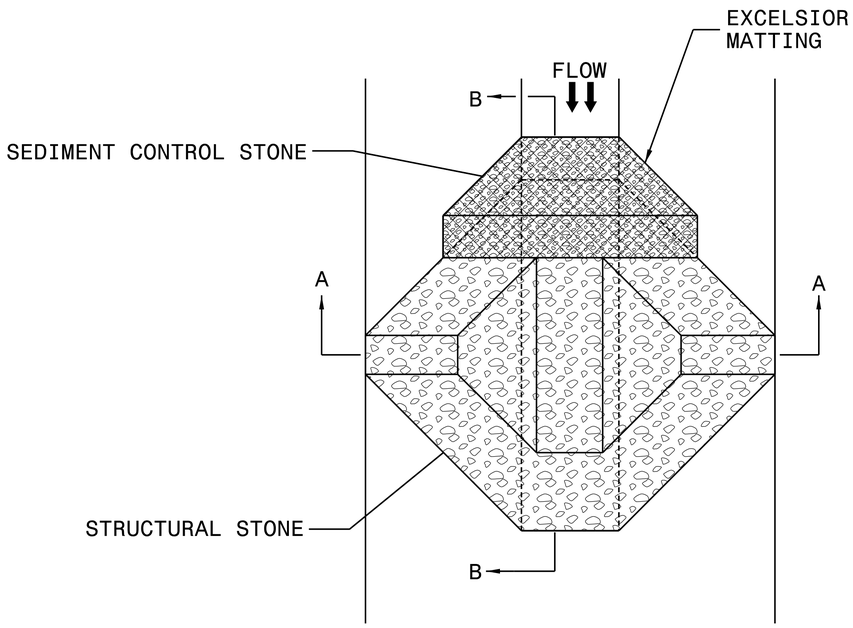
PROJECT REFERENCE NO.	SHEET NO.
W-57100	EC-2C
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TEMPORARY ROCK SILT CHECK TYPE 'A' WITH EXCELSIOR MATTING AND POLYACRYLAMIDE (PAM)



PLAN

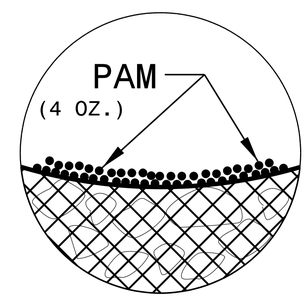
NOTES:

INSTALL TEMPORARY ROCK SILT CHECK TYPE A IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1633.01.

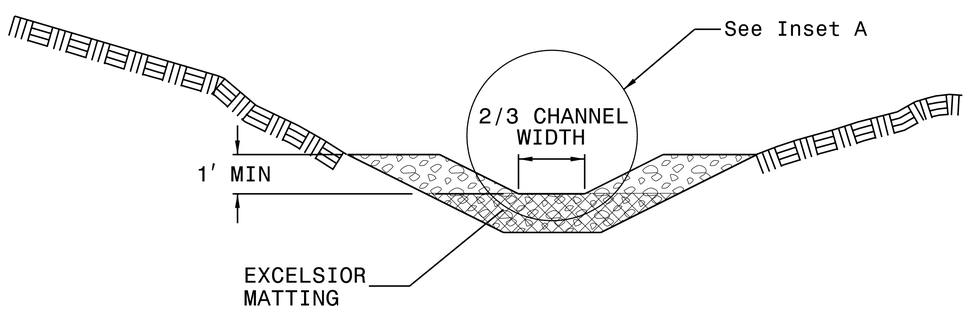
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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 ROCK SILT CHECK.

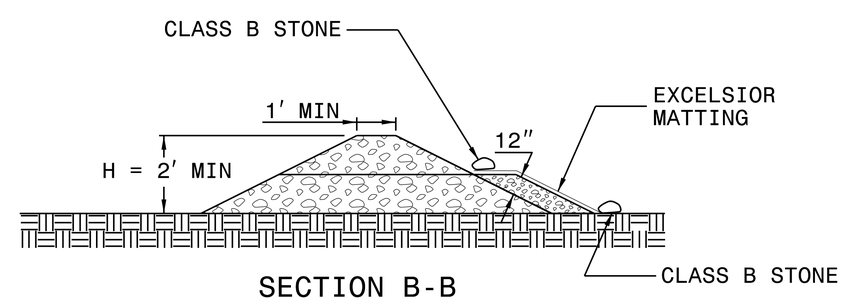
INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION A-A



SECTION B-B

NOT TO SCALE

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PROJECT REFERENCE NO.	SHEET NO.
W-5710Q	EC-3A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L-	13+50	14+00	RT	95
4	-L-	13+00	14+50	LT	275
4	-L-	18+60	20+75	RT	395
4	-L-	19+00	20+00	LT	70
4	-Y1-	8+90	9+10	RT	20
4	-Y1-	12+00	13+50	RT	210
4	-Y1-	14+15	16+00	RT	340
4	-Y1-	17+40	19+50	LT	150
				SUBTOTAL	1555
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					1400
				TOTAL	2955
				SAY	3000

PERMANENT SOIL REINFORCEMENT MAT

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L-	12+50	13+50	RT	185
				SUBTOTAL	185
		ADDITIONAL PSRM TO BE INSTALLED			0
				TOTAL	185
				SAY	200

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PROJECT REFERENCE NO.	SHEET NO.
W-5710Q	EC-3B
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.

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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
W-57100	EC-4/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

50 25 0 50 100

-Y1-

PI Sta 11+91.88	PI Sta 15+36.83	PI Sta 18+39.39	PI Sta 20+08.65	PI Sta 22+36.43
Δ = 5° 50' 16.9" (LT)	Δ = 31° 09' 13.2" (RT)	Δ = 20° 05' 41.0" (LT)	Δ = 9° 32' 37.8" (RT)	Δ = 4° 17' 10.0" (LT)
D = 3° 49' 11.0"	D = 22° 55' 05.9"	D = 22° 55' 05.9"	D = 11° 27' 33.0"	D = 3° 22' 13.2"
L = 152.84'	L = 135.93'	L = 87.68'	L = 83.29'	L = 127.17'
T = 76.49'	T = 69.69'	T = 44.29'	T = 41.74'	T = 63.62'
R = 1,500.00'	R = 250.00'	R = 250.00'	R = 500.00'	R = 1,700.00'

-Y2-

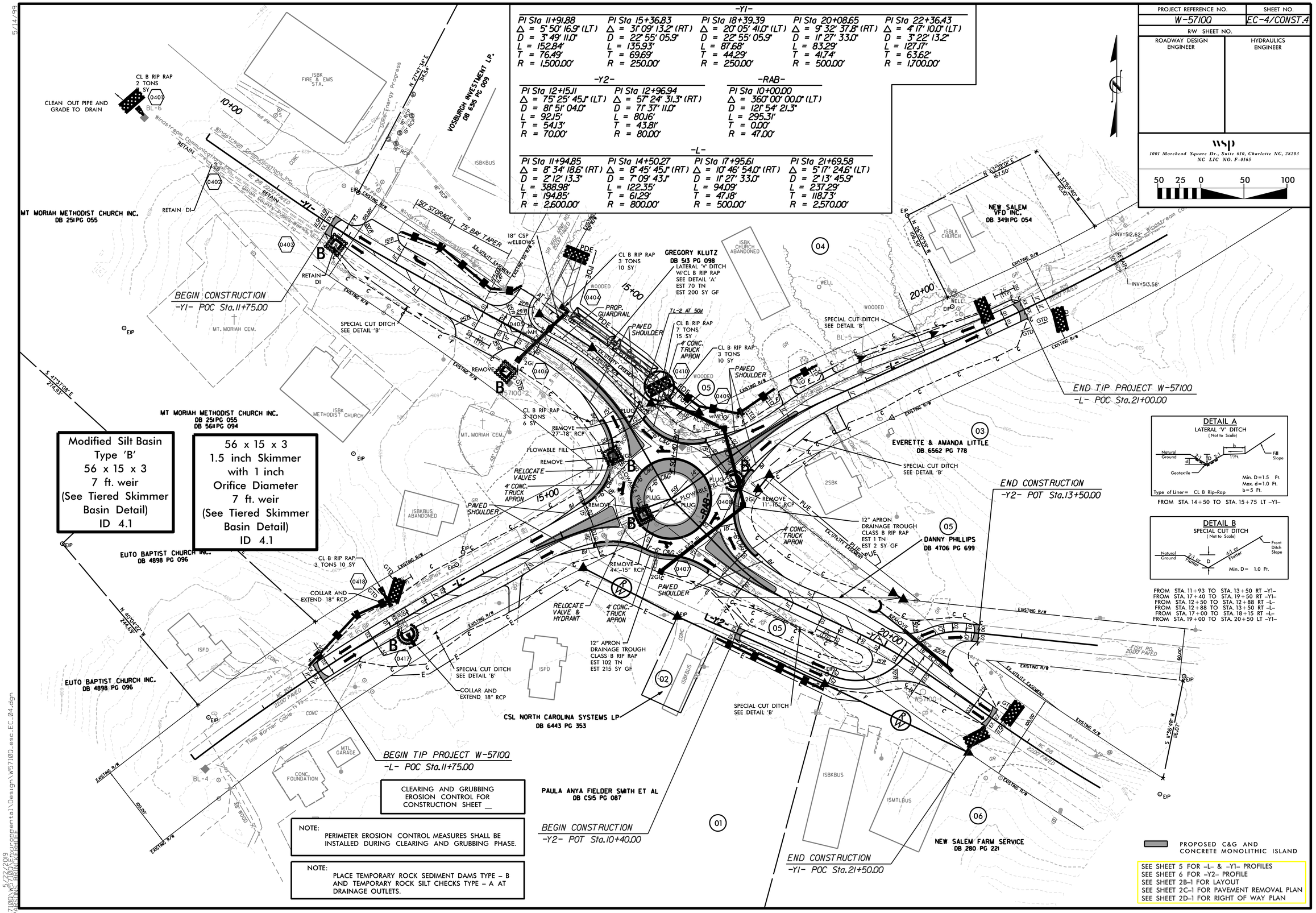
PI Sta 12+15.11	PI Sta 12+96.94
Δ = 75° 25' 45.1" (LT)	Δ = 57° 24' 31.3" (RT)
D = 81° 51' 04.0"	D = 71° 37' 11.0"
L = 92.15'	L = 80.16'
T = 54.13'	T = 43.81'
R = 70.00'	R = 80.00'

-RAB-

PI Sta 10+00.00
Δ = 360° 00' 00.0" (LT)
D = 121° 54' 21.3"
L = 295.31'
T = 0.00'
R = 47.00'

-L-

PI Sta 11+94.85	PI Sta 14+50.27	PI Sta 17+95.61	PI Sta 21+69.58
Δ = 8° 34' 18.6" (RT)	Δ = 8° 45' 45.1" (RT)	Δ = 10° 46' 54.0" (RT)	Δ = 5° 17' 24.6" (LT)
D = 2° 12' 13.3"	D = 7° 09' 43.1"	D = 11° 27' 33.0"	D = 2° 13' 45.9"
L = 388.98'	L = 122.35'	L = 94.09'	L = 237.29'
T = 194.85'	T = 61.29'	T = 47.18'	T = 118.73'
R = 2,600.00'	R = 800.00'	R = 500.00'	R = 2,570.00'



DETAIL A
LATERAL 'V' DITCH
(Not to Scale)

Natural Ground, 2:1, d, D, 2:1, b, 1'-Ft., Fill Slope, Geotextile

Min. D = 1.5 Ft.
Max. d = 1.0 Ft.
b = 5 Ft.

Type of Liner = CL B Rip-Rap

FROM STA. 14+50 TO STA. 15+75 LT -Y1-

DETAIL B
SPECIAL CUT DITCH
(Not to Scale)

Natural Ground, 2:1 or Flatter, D, 4:1 or Flatter, Front Ditch Slope

Min. D = 1.0 Ft.

FROM STA. 11+93 TO STA. 13+50 RT -Y1-
FROM STA. 17+40 TO STA. 19+50 RT -Y1-
FROM STA. 12+50 TO STA. 12+88 RT -L-
FROM STA. 12+88 TO STA. 13+50 RT -L-
FROM STA. 17+00 TO STA. 18+15 RT -L-
FROM STA. 19+00 TO STA. 20+50 LT -Y1-

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET __

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

SEE SHEET 5 FOR -L- & -Y1- PROFILES
SEE SHEET 6 FOR -Y2- PROFILE
SEE SHEET 2B-1 FOR LAYOUT
SEE SHEET 2C-1 FOR PAVEMENT REMOVAL PLAN
SEE SHEET 2D-1 FOR RIGHT OF WAY PLAN

5/23/2019
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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
W-57100	EC-5/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

50 25 0 50 100

-Y1-

PI Sta 11+91.88	PI Sta 15+36.83	PI Sta 18+39.39	PI Sta 20+08.65	PI Sta 22+36.43
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T = 76.49'	T = 69.69'	T = 44.29'	T = 41.74'	T = 63.62'
R = 1,500.00'	R = 250.00'	R = 250.00'	R = 500.00'	R = 1,700.00'

-Y2-

PI Sta 12+15.11	PI Sta 12+96.94
Δ = 75° 25' 45.1" (LT)	Δ = 57° 24' 31.3" (RT)
D = 81° 51' 04.0"	D = 71° 37' 11.0"
L = 92.15'	L = 80.16'
T = 54.13'	T = 43.81'
R = 70.00'	R = 80.00'

-RAB-

PI Sta 10+00.00
Δ = 360° 00' 00.0" (LT)
D = 121° 54' 21.3"
L = 295.31'
T = 0.00'
R = 47.00'

-L-

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Δ = 8° 34' 18.6" (RT)	Δ = 8° 45' 45.1" (RT)	Δ = 10° 46' 54.0" (RT)	Δ = 5° 17' 24.6" (LT)
D = 2° 12' 13.3"	D = 7° 09' 43.1"	D = 11° 27' 33.0"	D = 2° 13' 45.9"
L = 388.98'	L = 122.35'	L = 94.09'	L = 237.29'
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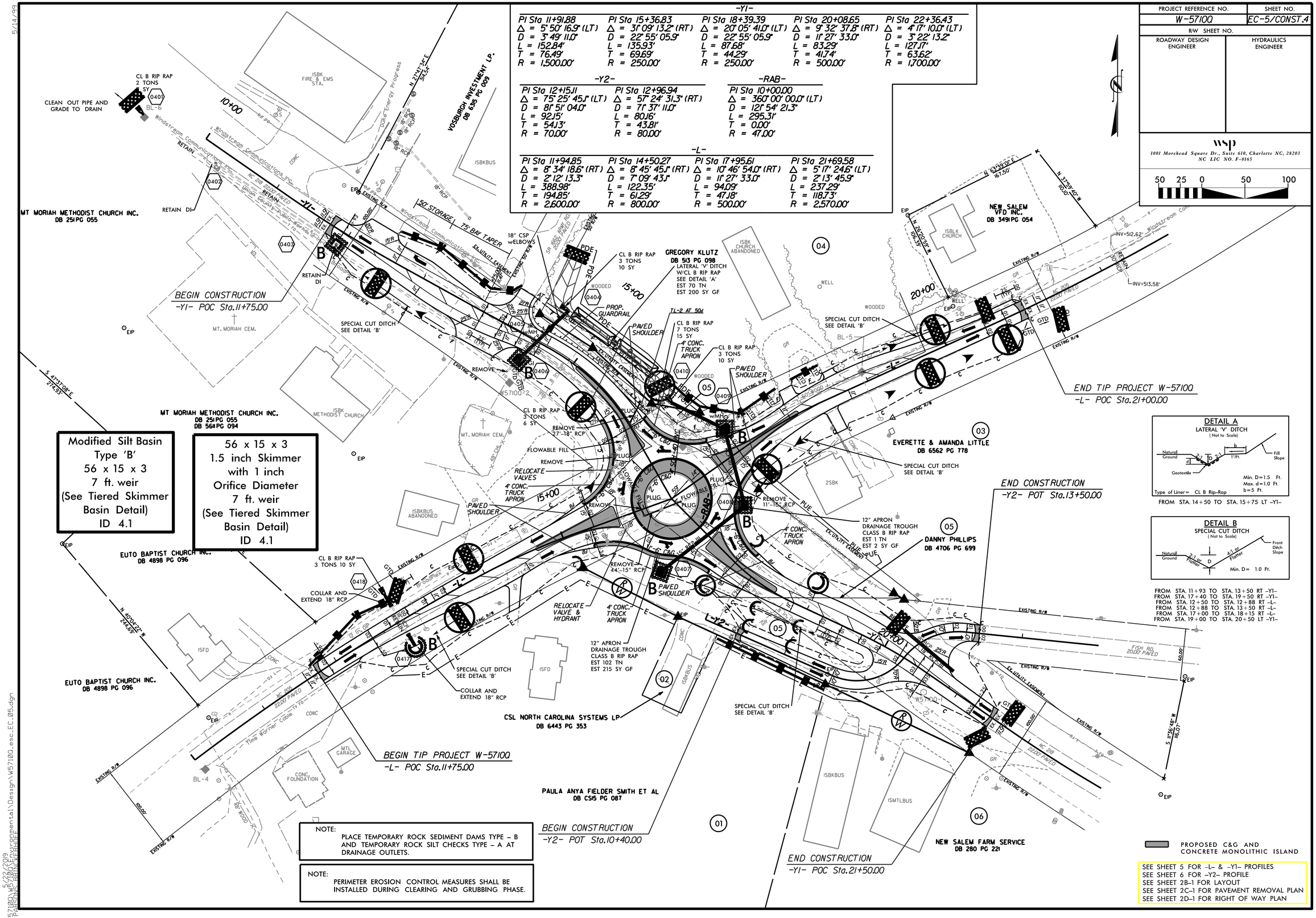
R = 2,600.00'	R = 800.00'	R = 500.00'	R = 2,570.00'



DETAIL A
LATERAL 'V' DITCH
(Not to Scale)
Natural Ground, Geotextile, Fill Slope, 1'/Ft.
Min. D=1.5 Ft.
Max. d=1.0 Ft.
b=5 Ft.
Type of Liner= CL B Rip-Rap

FROM STA. 14+50 TO STA. 15+75 LT -Y1-

DETAIL B
SPECIAL CUT DITCH
(Not to Scale)
Natural Ground, Front Ditch Slope, 2:1 or Flatter, 4:1 or Flatter
Min. D= 1.0 Ft.

FROM STA. 11+93 TO STA. 13+50 RT -Y1-
FROM STA. 17+40 TO STA. 19+50 RT -Y1-
FROM STA. 12+50 TO STA. 12+88 RT -L-
FROM STA. 12+88 TO STA. 13+50 RT -L-
FROM STA. 17+00 TO STA. 18+15 RT -L-
FROM STA. 19+00 TO STA. 20+50 LT -Y1-

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

SEE SHEET 5 FOR -L- & -Y1- PROFILES
SEE SHEET 6 FOR -Y2- PROFILE
SEE SHEET 2B-1 FOR LAYOUT
SEE SHEET 2C-1 FOR PAVEMENT REMOVAL PLAN
SEE SHEET 2D-1 FOR RIGHT OF WAY PLAN

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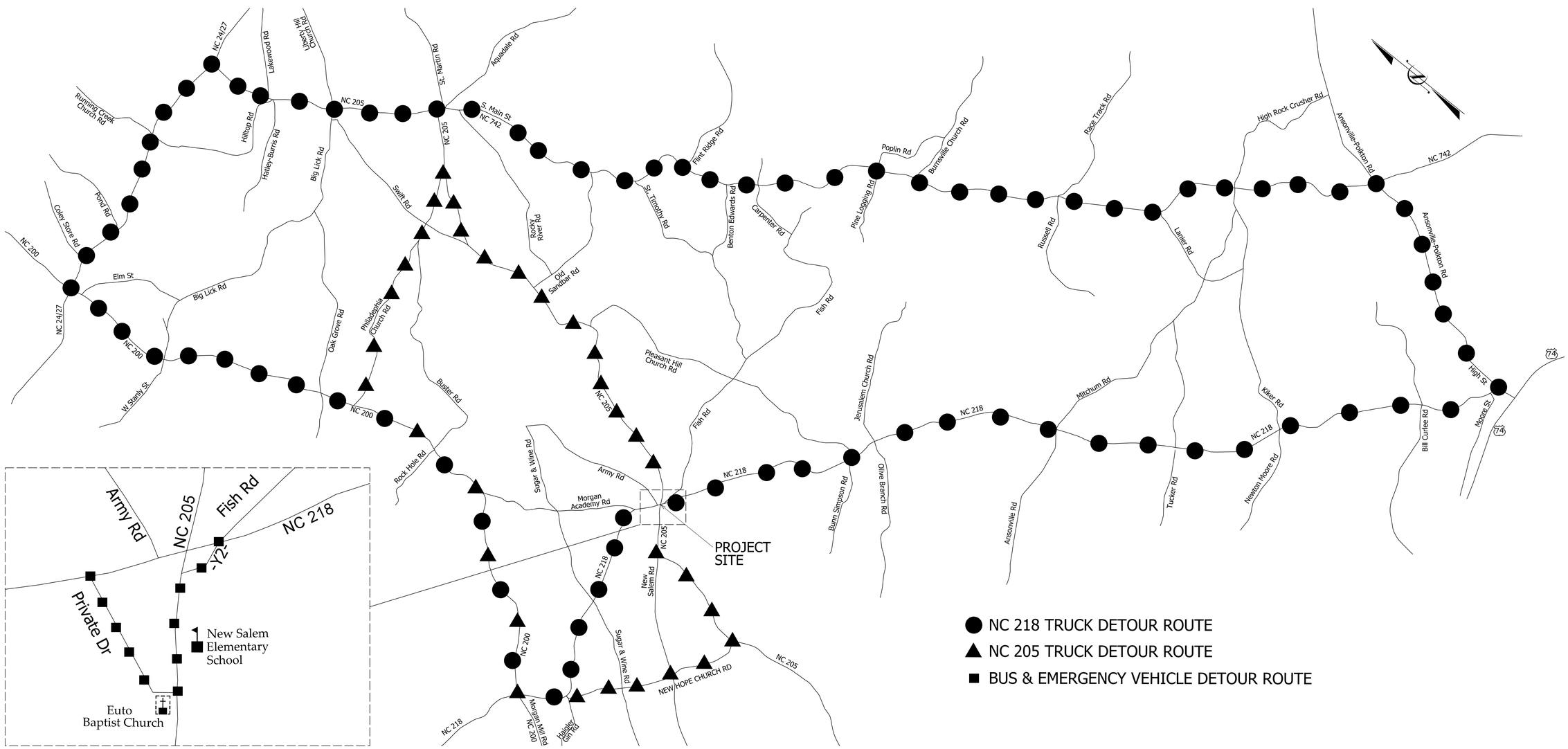
PROJECT REFERENCE NO.	SHEET NO.
W-5710Q	TMP-1

DETOUR ROUTES



5/14/99

6/12/2019
W5710Q\W5710Q\Roadway\Proj\Sheets\W5710Q_rdy_PSH_detour.dgn

TIP NO.	SHEET NO.
W-5710Q	PMP-1

APPROVED: Eric W. Bowman (DocuSigned by: AE8326DDCE18488...)

DATE: 06-12-2019

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 043754 ENGINEER ERIC W. BOWMAN

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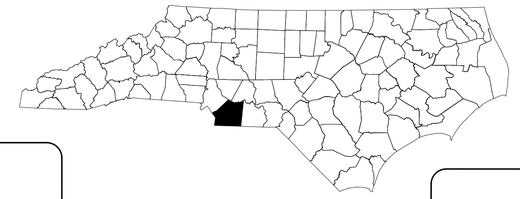
1001 Morehead Square Dr., Suite 610, Charlotte NC, 28203
NC LIC NO. F-0165

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING & SIGNING PLAN
UNION COUNTY



INDEX

SHEET NO.	DESCRIPTION
PMP-1	PAVEMENT MARKING / SIGNING TITLE SHEET
PMP-2	PAVEMENT MARKING PLAN
SIGN-1	EXISTING SIGNING PLAN
SIGN-2	PROPOSED SIGNING PLAN
SIGN-3	TYPE "D", "E" & "F" SIGNS
SIGN-4	SIGN DESIGNS

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 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
903.10	GROUND MOUNTED SIGN SUPPORTS
904.10	ORIENTATION OF GROUND MOUNTED SIGNS
904.50	MOUNTING OF TYPE 'D', 'E' AND 'F' SIGNS ON 'U' CHANNEL POSTS
910.40	SINGLE/TWO LANE ROUNDABOUT WITH PEDESTRIAN
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
1205.10	PAVEMENT MARKINGS - SCHOOL AREAS
1205.14	PAVEMENT MARKINGS - ROUNDABOUTS
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

GENERAL NOTES – SIGNING

- SIGNS FURNISHED BY STATE
- ALL TYPE 'D' SIGNS SHALL BE MOUNTED ON TWO U-CHANNEL POSTS UNLESS OTHERWISE INDICATED ON THE PLANS.
- 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.
- SEE ROADWAY PLANS FOR GUARD/GUIDE RAIL DETAILS.

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
ALL ROADS	THERMOPLASTIC	NONE

B) PLACE TWO APPLICATIONS OF PAINT PAVEMENT MARKINGS ON THE FINAL WEARING SURFACE. PLACE THE SECOND APPLICATION OF PAINT UPON SUFFICIENT DRYING TIME OF THE FIRST.

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

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

E) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.

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

G) 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.

H) ALL TYPE 'D' SIGNS SHALL BE MOUNTED ON TWO U-CHANNEL POSTS UNLESS OTHERWISE INDICATED ON THE PLANS.

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

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

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

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

M) SEE ROADWAY PLAN FOR GUARD/GUIDE RAIL DETAISL.

PLANS PREPARED BY:

ERIC W. BOWMAN, PE	*SR. TRAFFIC ENGINEER*
SARATH C. GORTHY, EI	*TRANSPORATION DESIGNER*
DUGGU SHASHANK	*TRANSPORATION DESIGNER*

wsp

T.I.P.: W-5710Q

06/12/19
11:19:26 AM
W5710Q\W5710Q\Traffic\Signing\CADD\Pavement Markings\W5710Q_pmp_PSH.dgn
USER04421

TIP NO.	SHEET NO.
W-5710Q	PMP-2

APPROVED: DocuSigned by: Eric W. Bowman AE8326DDCE18488...

DATE: 06-12-2019

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 043754 ENGINEER ERIC W. BOWMAN

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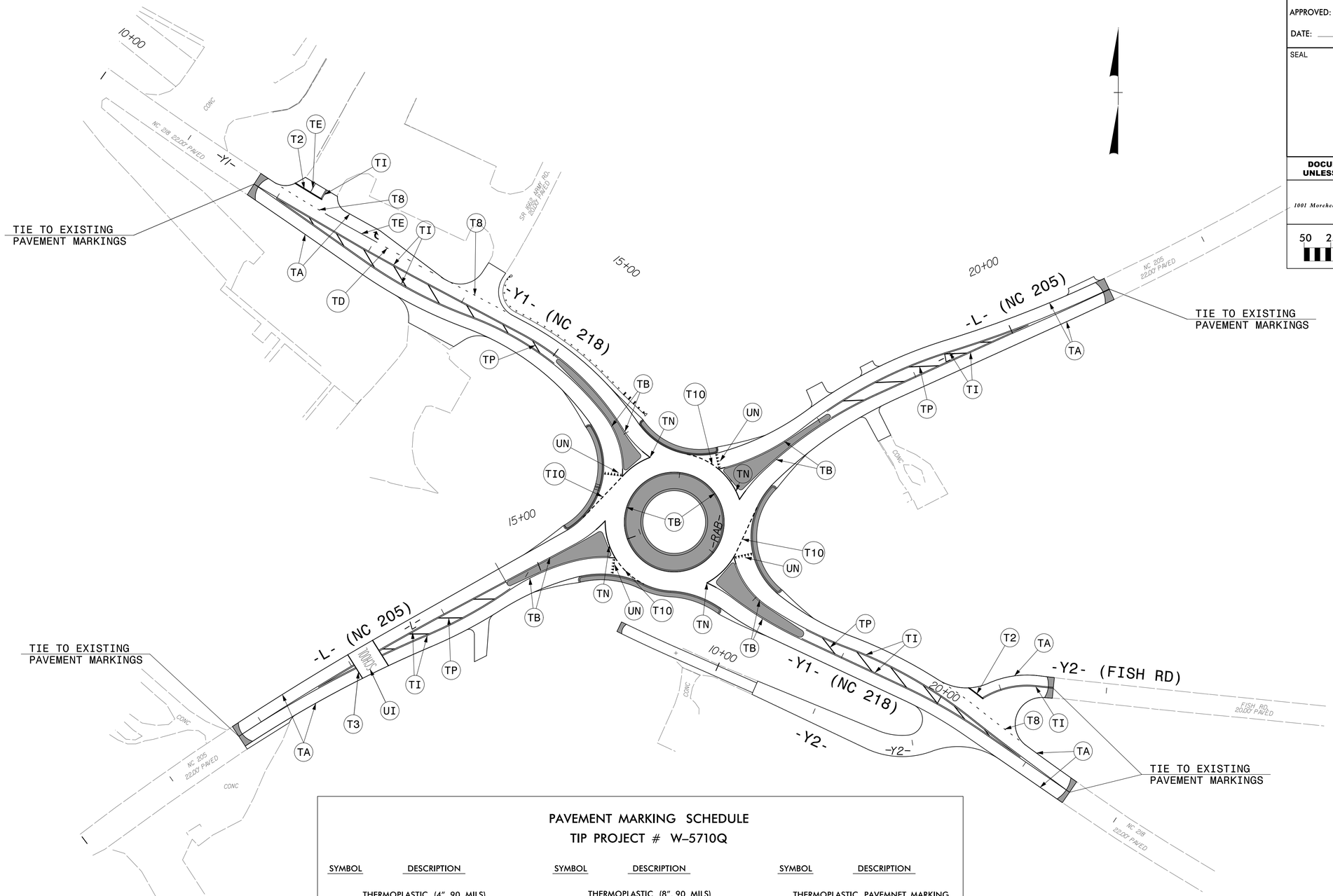

PAVEMENT MARKING SCHEDULE
TIP PROJECT # W-5710Q

SYMBOL	DESCRIPTION
	THERMOPLASTIC (4", 90 MILS)
TA	WHITE EDGELINE
TB	YELLOW EDGELINE
T8	2 FT – 6 FT WHITIE MINISKIP
TI	DOUBLE YELLOW CENTER
TD	3 FT – 9 FT WHITE MINISKIP
TE	WHITE SOLID LANE LINE

SYMBOL	DESCRIPTION
	THERMOPLASTIC (8", 90 MILS)
TN	WHITE GORELINE
TP	YELLOW DIAGONAL
	THERMOPLASTIC (24", 90 MILS)
T2	WHITE STOPBAR
T3	WHITE CROSSWALK LINE

SYMBOL	DESCRIPTION
	THERMOPLASTIC PAVEMNET MARKING CHARACTER (90 MILS)
UI	ALPHANUMERIC CHAR.
	THERMOPLASTIC PAVEMENT MARKING SYMBOLS (90 MILS)
UN	24" YIELD LINE TRIANGLE
	THERMOPLASTIC (12", 90 MILS)
T10	3 FT – 3 FT WHITE MINISKIP

PAVEMENT MARKING PLAN

06/12/19
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W5710Q 8360R
use0442

TIP NO.	SHEET NO.
W-5710Q	SIGN-1

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DATE: 06-12-2019

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NC LIC NO. F-0165

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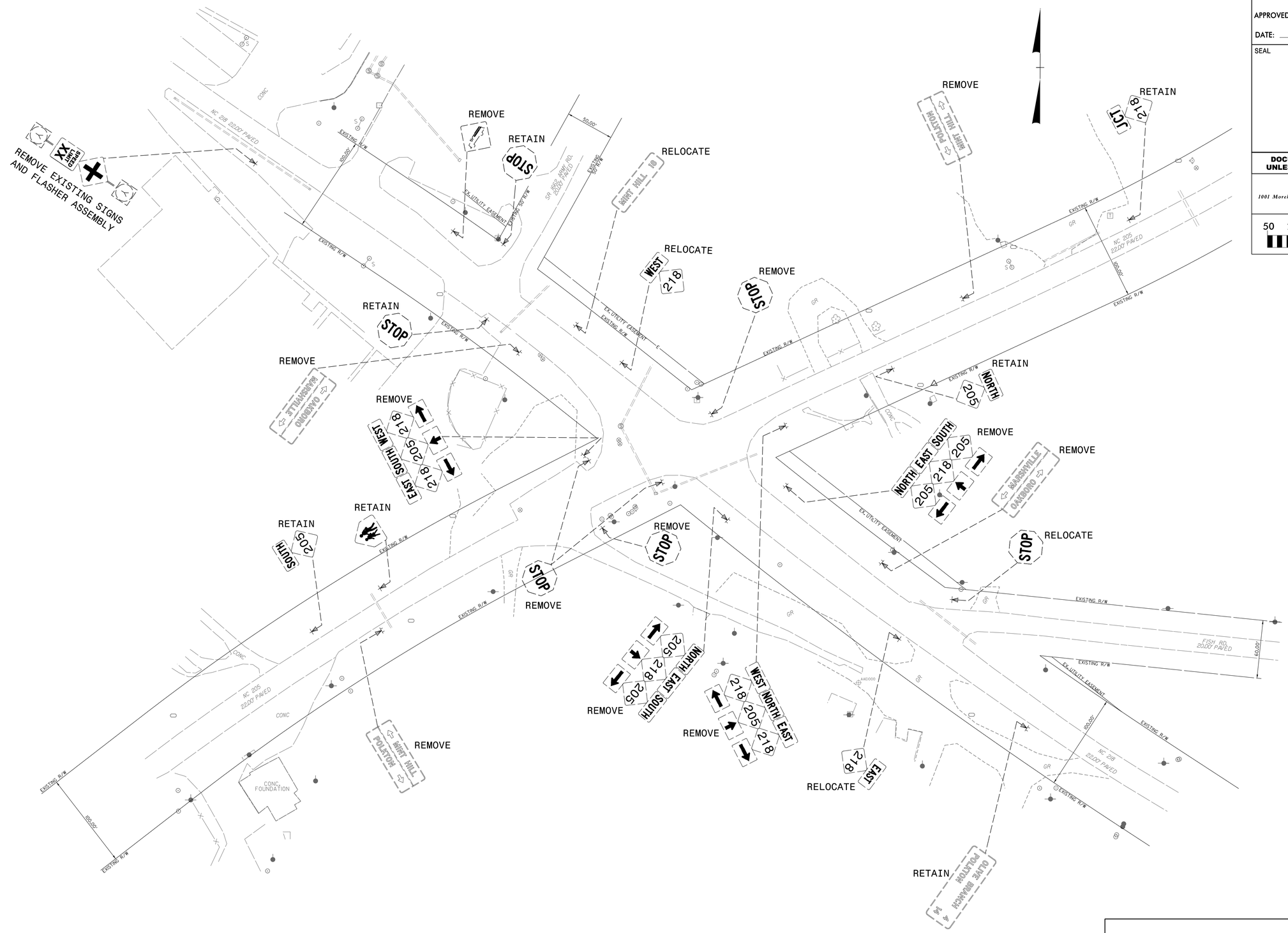

EXISTING SIGNING PLAN

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usab04421

TIP NO.	SHEET NO.
W-5710Q	SIGN-2

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DATE: 06-12-2019

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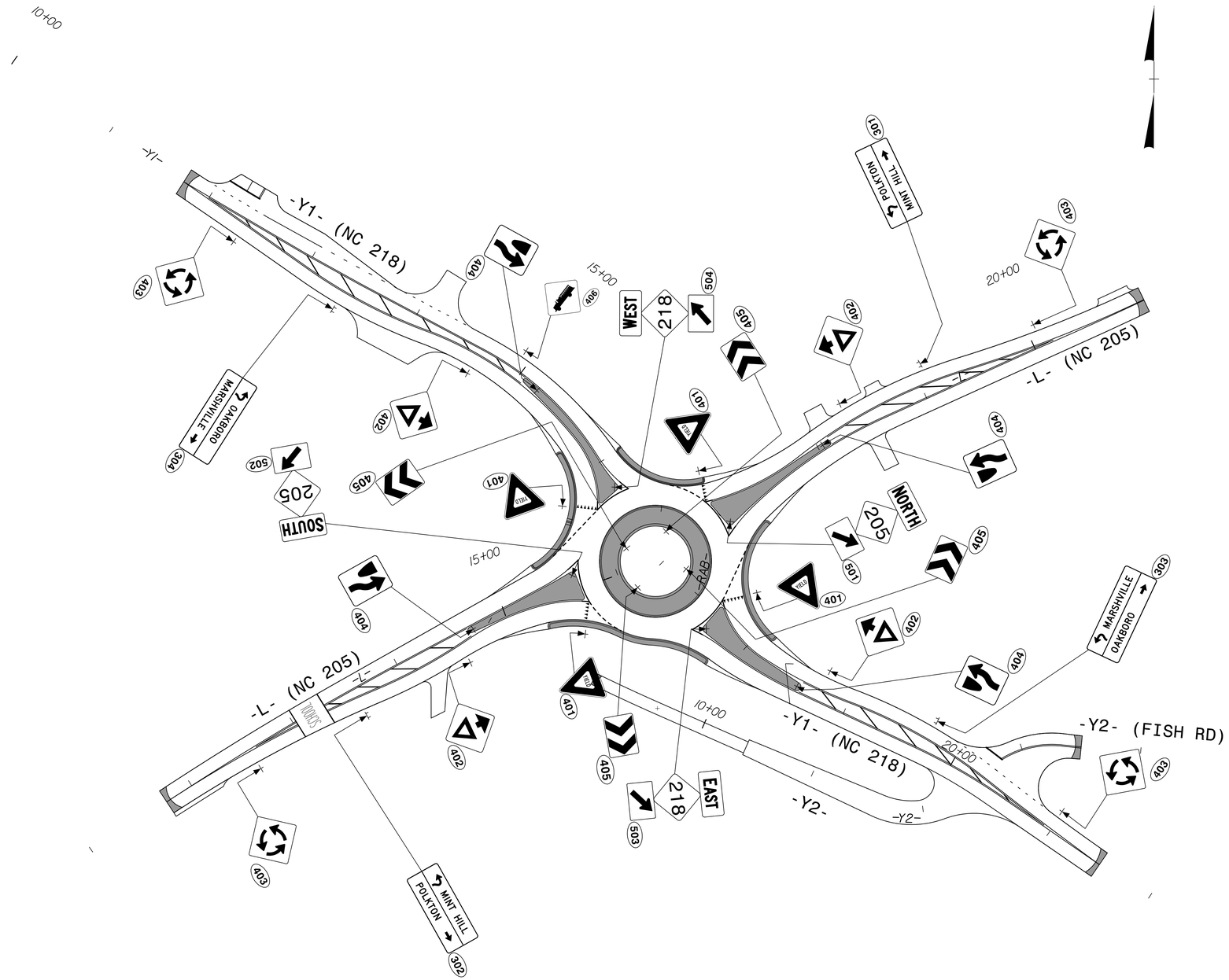
wsp

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

50 25 0 50 100



PROPOSED SIGNING PLAN

06/12/19
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usebc0442

TYPE "D" SIGNS

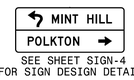
(301) QUANTITY REQ'D _1_

30" X 72"
D1-2D

SEE SHEET SIGN-4
FOR SIGN DESIGN DETAILS

TWO "U" POSTS PER SIGN

(302) QUANTITY REQ'D _1_

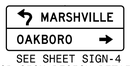


30" X 72"
D2-2D

SEE SHEET SIGN-4
FOR SIGN DESIGN DETAILS

TWO "U" POSTS PER SIGN

(303) QUANTITY REQ'D _1_

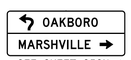


30" X 78"
D3-2D

SEE SHEET SIGN-4
FOR SIGN DESIGN DETAILS

TWO "U" POSTS PER SIGN

(304) QUANTITY REQ'D _1_



30" X 78"
D4-2D

SEE SHEET SIGN-4
FOR SIGN DESIGN DETAILS

TWO "U" POSTS PER SIGN

TYPE "E" SIGNS

(401) QUANTITY REQ'D _4_

36" X 36" X 36"
R1-2

ONE "U" POST PER SIGN

(402) QUANTITY REQ'D _4_

30" X 30"
W3-2

ONE "U" POST PER SIGN

(403) QUANTITY REQ'D _4_

30" X 30"
W2-6

ONE "U" POSTS PER SIGN

(404) QUANTITY REQ'D _4_

24" X 30"
R4-7

ONE "U" POST PER SIGN

(405) QUANTITY REQ'D _4_

30" X 24"
R6-4

ONE "U" POSTS PER SIGN

(406) QUANTITY REQ'D _1_

30" X 30"
W11-8

ONE "U" POST PER SIGN

TYPE "F" SIGNS

(501) QUANTITY REQ'D _1_

24" X 12"
M3-1

30" X 24"
M1-5

21" X 15"
M6-2

ONE "U" POST PER SIGN

(502) QUANTITY REQ'D _1_

24" X 12"
M3-2

30" X 24"
M1-5

21" X 15"
M6-2

ONE "U" POST PER SIGN

(503) QUANTITY REQ'D _1_

24" X 12"
M3-3

30" X 24"
M1-5

21" X 15"
M6-2

ONE "U" POST PER SIGN

(504) QUANTITY REQ'D _1_

24" X 12"
M3-4

30" X 24"
M1-5

21" X 15"
M6-2

ONE "U" POST PER SIGN

TIP NO.	SHEET NO.
W-5710Q	SIGN-3

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DATE:

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NC LIC NO. F-0165

TYPE "D,E,F" SIGNS

06/12/19
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usep0422

TIP NO.	SHEET NO.
W-5710Q	SIGN-4

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DATE: 06-12-2019

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wsp

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NC LIC NO. F-0165

SIGN NUMBER: 301
TYPE: D
QUANTITY: 1
SIGN WIDTH: 6'-0"
HEIGHT: 2'-6"
TOTAL AREA: 15.0 Sq.Ft.
BORDER TYPE: FLUSH
RECESS: 0"
WIDTH: 0.75"
RADII: 2.25"
NO. Z BARS:
LENGTH:

BACKG COLOR: Green
COPY COLOR: White

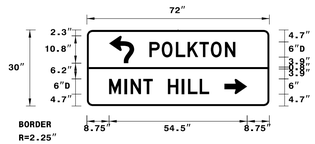
SYMBOL	X	Y	WID	HT
AR_FISHOOK	8.8	16.9	9.9	10.8
AR_Type D	54.2	4.7	6	9

MAT'L: 0.125" (3.2 mm) ALUMINUM

DESIGN BY: EWB
PROJECT ID: W-5710Q
CHECKED BY: RRH
LOCATION: UNION COUNTY
Jun 12, 2019
DIV: 10

USE NOTES:

1. Legend and border shall be direct applied Grade C reflective sheeting.
2. Background shall be Grade C reflective sheeting.



Panel Style: guide_con_destination.ssi
M.U.T.C.D.: 2009 Edition

Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter locations are panel edge to lower left corner

Text	Series/Size Text Length
P O L K T O N (24.7 29.5 35.1 39.7 44.4 48.9 54.5)	D 2000 33.9
M I N T H I L L (8.8 14.9 17.3 22.3 26 32 37.5 39.9 44.5)	D 2000 39.5

NORTH CAROLINA D.O.T. SIGN DETAIL

SIGN NUMBER: 302
TYPE: D
QUANTITY: 1
SIGN WIDTH: 6'-0"
HEIGHT: 2'-6"
TOTAL AREA: 15.0 Sq.Ft.
BORDER TYPE: FLUSH
RECESS: 0"
WIDTH: 0.75"
RADII: 2.25"
NO. Z BARS:
LENGTH:

BACKG COLOR: Green
COPY COLOR: White

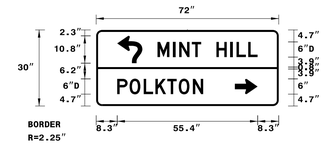
SYMBOL	X	Y	WID	HT
AR_FISHOOK	8.3	16.9	9.9	10.8
AR_Type D	54.7	4.7	6	9

MAT'L: 0.125" (3.2 mm) ALUMINUM

DESIGN BY: EWB
PROJECT ID: W-5710Q
CHECKED BY: RRH
LOCATION: UNION COUNTY
Jun 12, 2019
DIV: 10

USE NOTES:

1. Legend and border shall be direct applied Grade C reflective sheeting.
2. Background shall be Grade C reflective sheeting.



Panel Style: guide_con_destination.ssi
M.U.T.C.D.: 2009 Edition

Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter locations are panel edge to lower left corner

Text	Series/Size Text Length
M I N T H I L L (24.2 30.3 32.7 37.7 41.4 47.4 53 55.4 60)	D 2000 39.5
P O L K T O N (8.3 13.2 18.7 23.4 28 32.5 38.1)	D 2000 33.9

NORTH CAROLINA D.O.T. SIGN DETAIL

SIGN NUMBER: 303
TYPE: D
QUANTITY: 1
SIGN WIDTH: 6'-6"
HEIGHT: 2'-6"
TOTAL AREA: 16.3 Sq.Ft.
BORDER TYPE: FLUSH
RECESS: 0"
WIDTH: 0.75"
RADII: 2.25"
NO. Z BARS:
LENGTH:

BACKG COLOR: Green
COPY COLOR: White

SYMBOL	X	Y	WID	HT
AR_FISHOOK	7.5	16.9	9.9	10.8
AR_Type D	61.5	4.7	6	9

MAT'L: 0.125" (3.2 mm) ALUMINUM

DESIGN BY: EWB
PROJECT ID: W-5710Q
CHECKED BY: RRH
LOCATION: UNION COUNTY
Jun 12, 2019
DIV: 10

USE NOTES:

1. Legend and border shall be direct applied Grade C reflective sheeting.
2. Background shall be Grade C reflective sheeting.

Panel Style: guide_con_destination.ssi
M.U.T.C.D.: 2009 Edition

Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter locations are panel edge to lower left corner

Text	Series/Size Text Length
M A R S H V I L L E (23.4 29 35 39.6 44.7 49.7 55.2 57.6 62.2 66.8)	D 2000 47.2
O A K B O R O (7.5 12.5 18.5 23.7 28.7 34.3 39.3)	D 2000 36.1

NORTH CAROLINA D.O.T. SIGN DETAIL

SIGN NUMBER: 304
TYPE: D
QUANTITY: 1
SIGN WIDTH: 6'-6"
HEIGHT: 2'-6"
TOTAL AREA: 16.3 Sq.Ft.
BORDER TYPE: FLUSH
RECESS: 0"
WIDTH: 0.75"
RADII: 2.25"
NO. Z BARS:
LENGTH:

BACKG COLOR: Green
COPY COLOR: White

SYMBOL	X	Y	WID	HT
AR_FISHOOK	7.9	16.9	9.9	10.8
AR_Type D	61.1	4.7	6	9

MAT'L: 0.125" (3.2 mm) ALUMINUM

DESIGN BY: EWB
PROJECT ID: W-5710Q
CHECKED BY: RRH
LOCATION: UNION COUNTY
Jun 12, 2019
DIV: 10

USE NOTES:

1. Legend and border shall be direct applied Grade C reflective sheeting.
2. Background shall be Grade C reflective sheeting.

Panel Style: guide_con_destination.ssi
M.U.T.C.D.: 2009 Edition

Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter locations are panel edge to lower left corner

Text	Series/Size Text Length
O A K B O R O (23.8 28.9 34.9 40.1 45.1 50.6 55.6)	D 2000 36.1
M A R S H V I L L E (7.9 13.5 19.5 24.2 29.3 34.3 39.7 42.1 46.7 51.4)	D 2000 47.2

NORTH CAROLINA D.O.T. SIGN DETAIL

SIGN DESIGNS

06/12/19
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user0421

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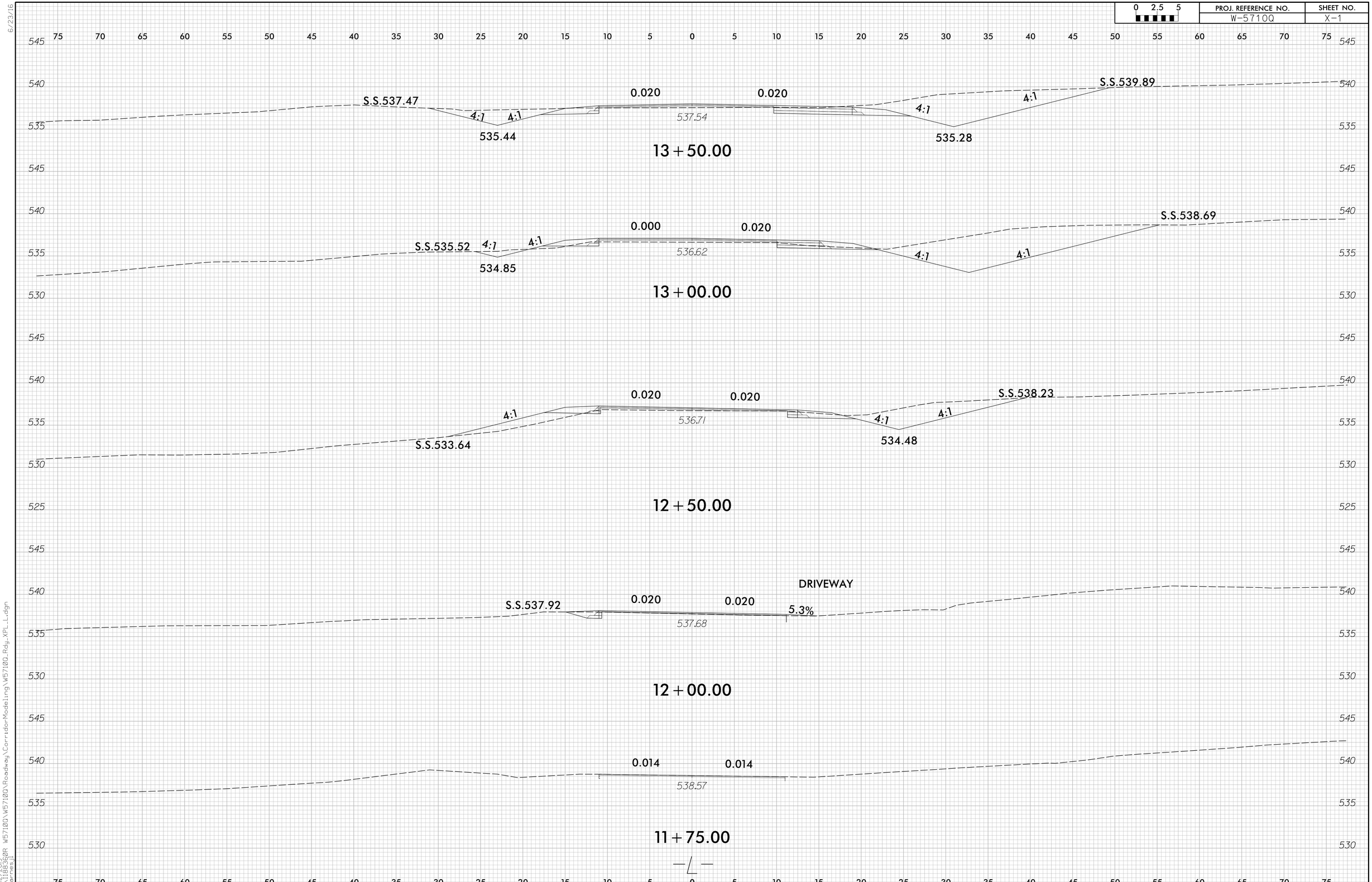
	W-5710Q	X-1



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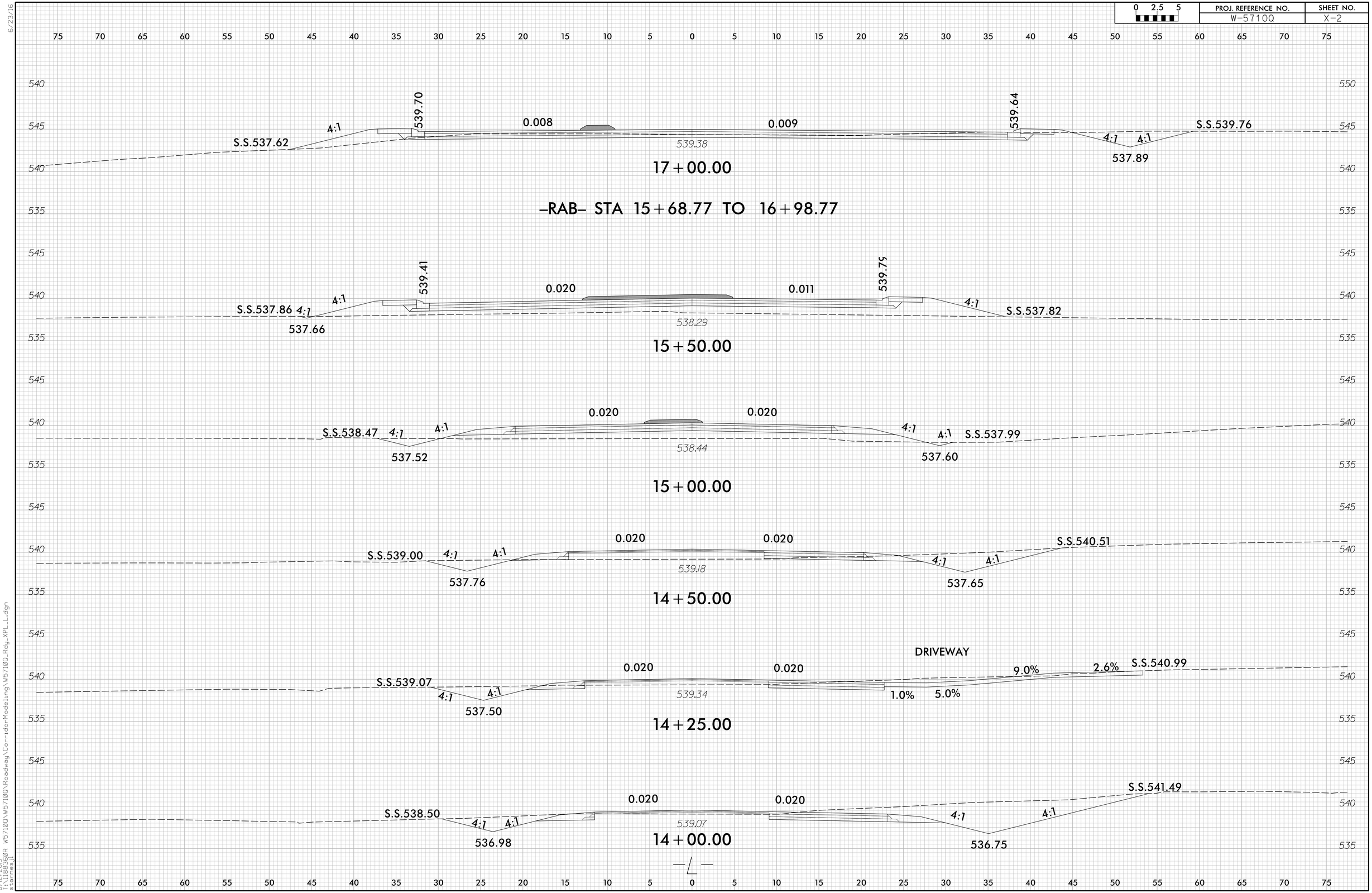
PROJ. REFERENCE NO.	SHEET NO.
W-5710Q	X-2



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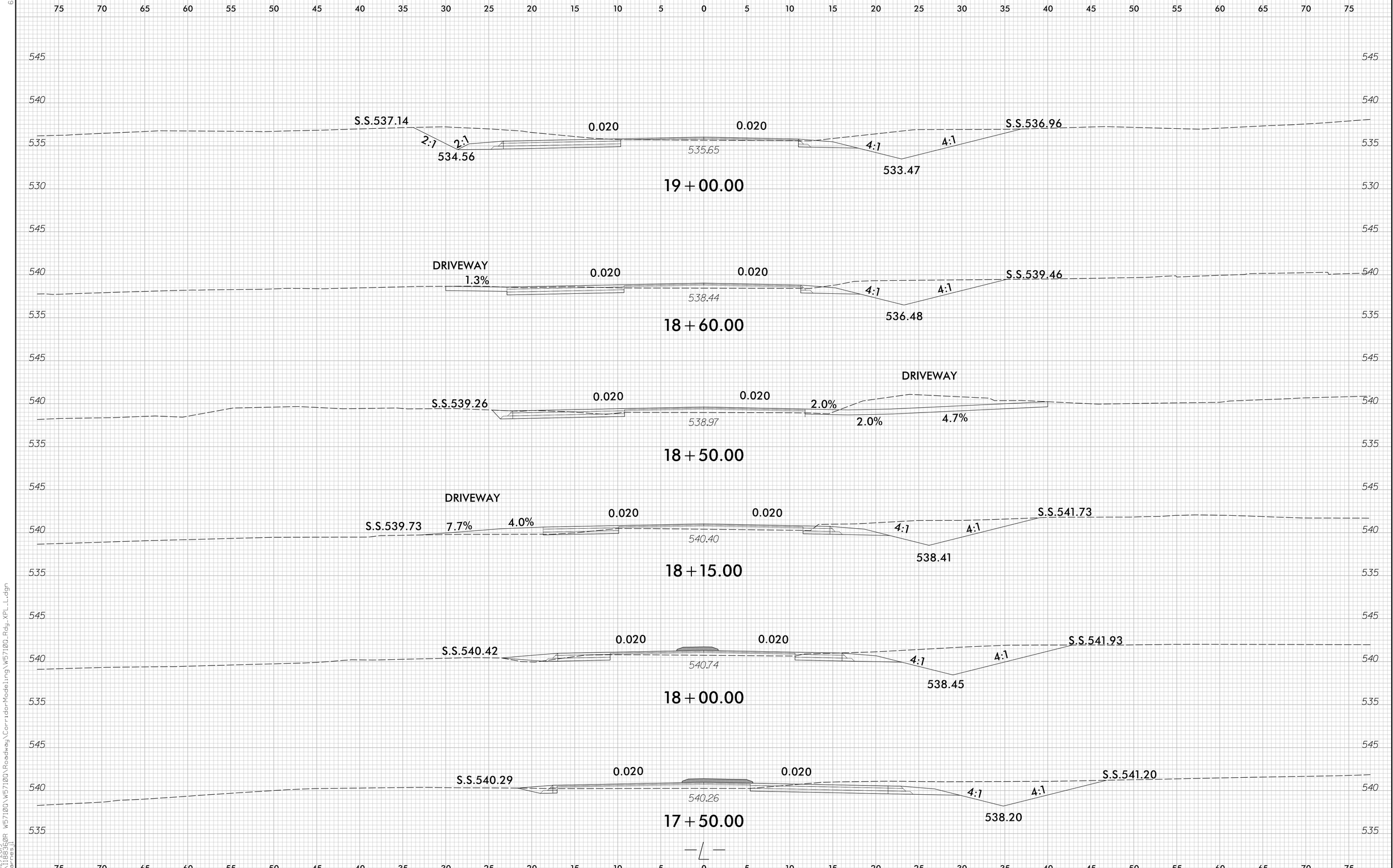

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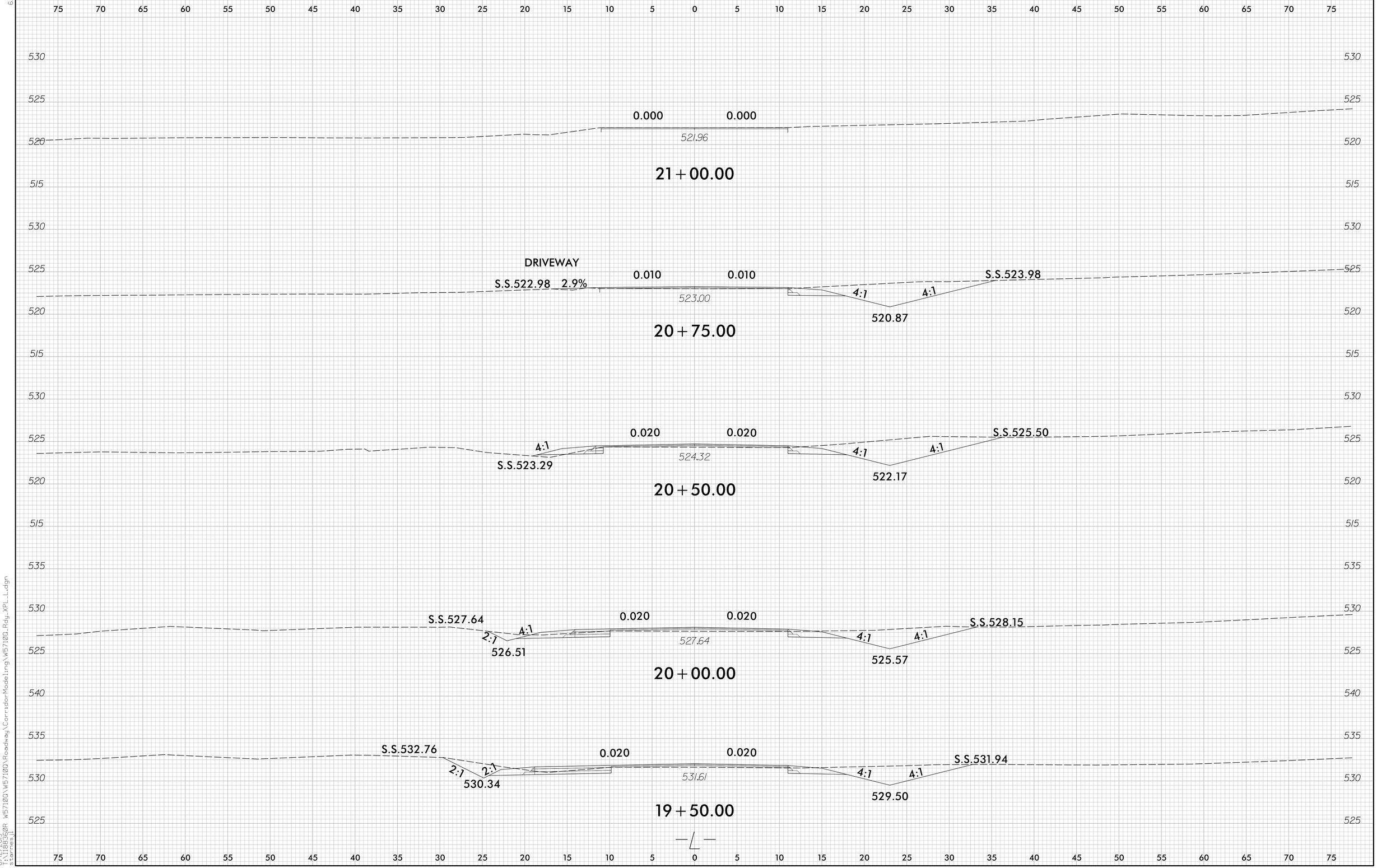
6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	W-5710Q	X-4



6/12/2019
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stamnes,jl

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6/23/16

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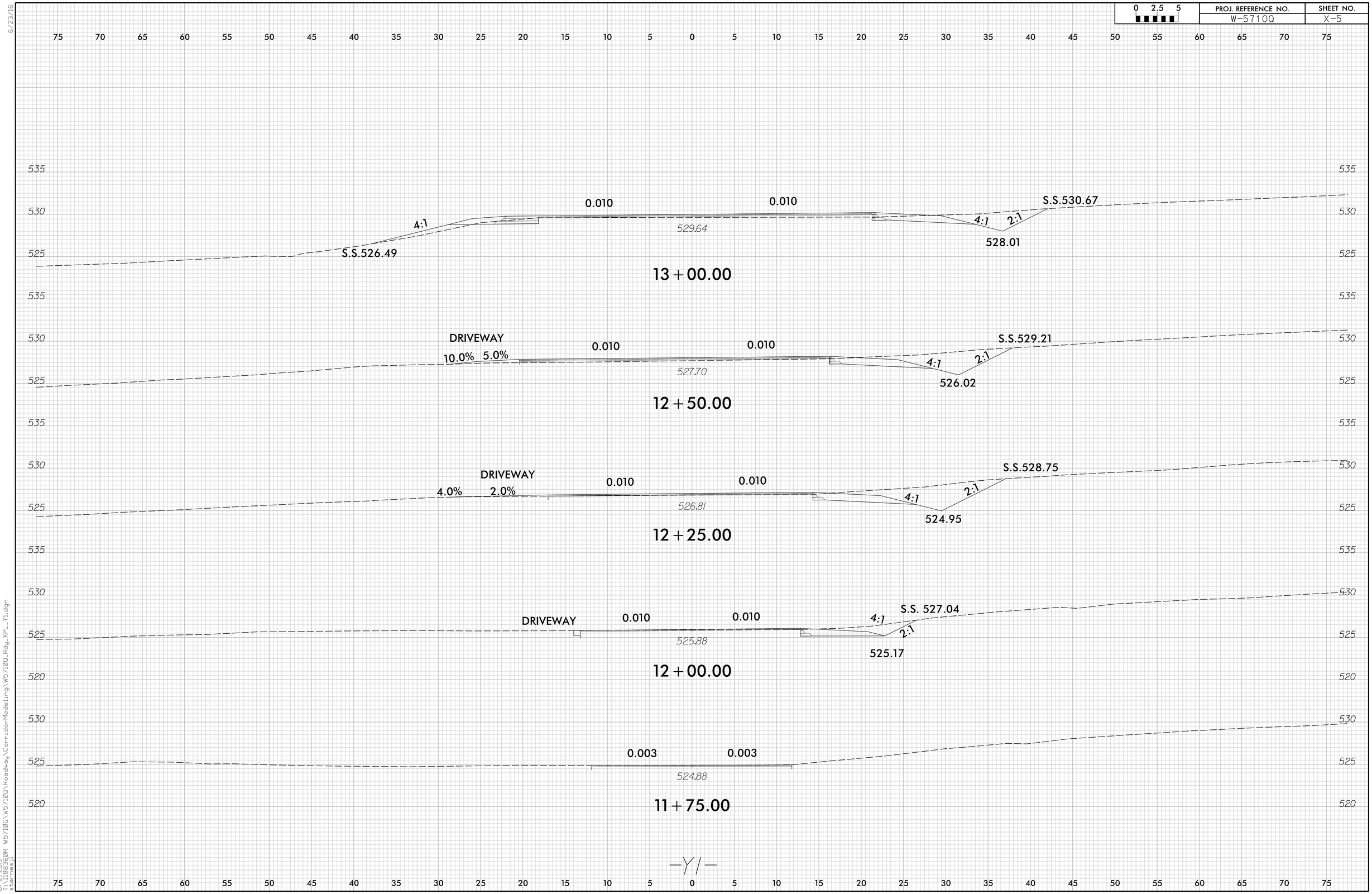

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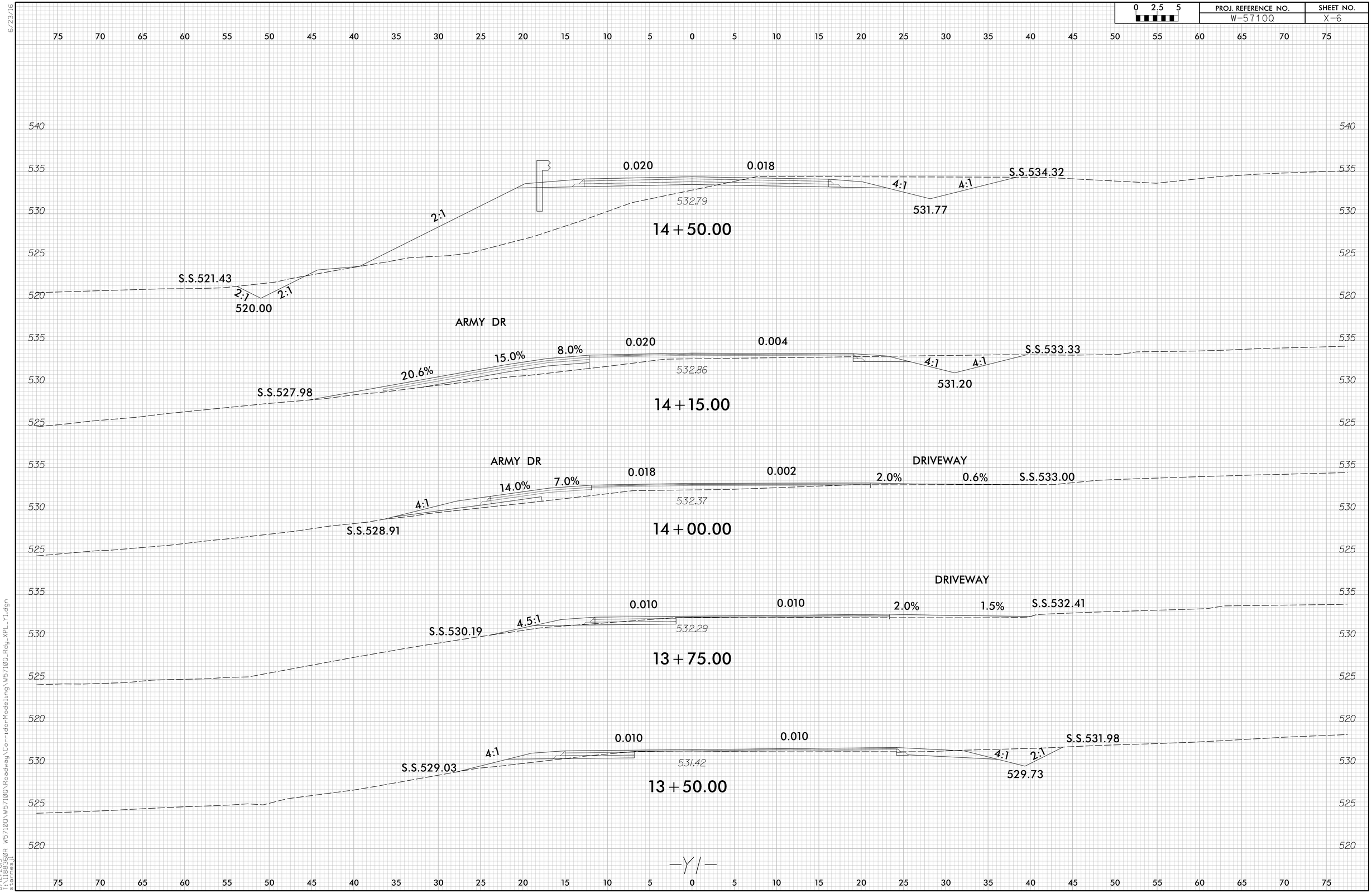

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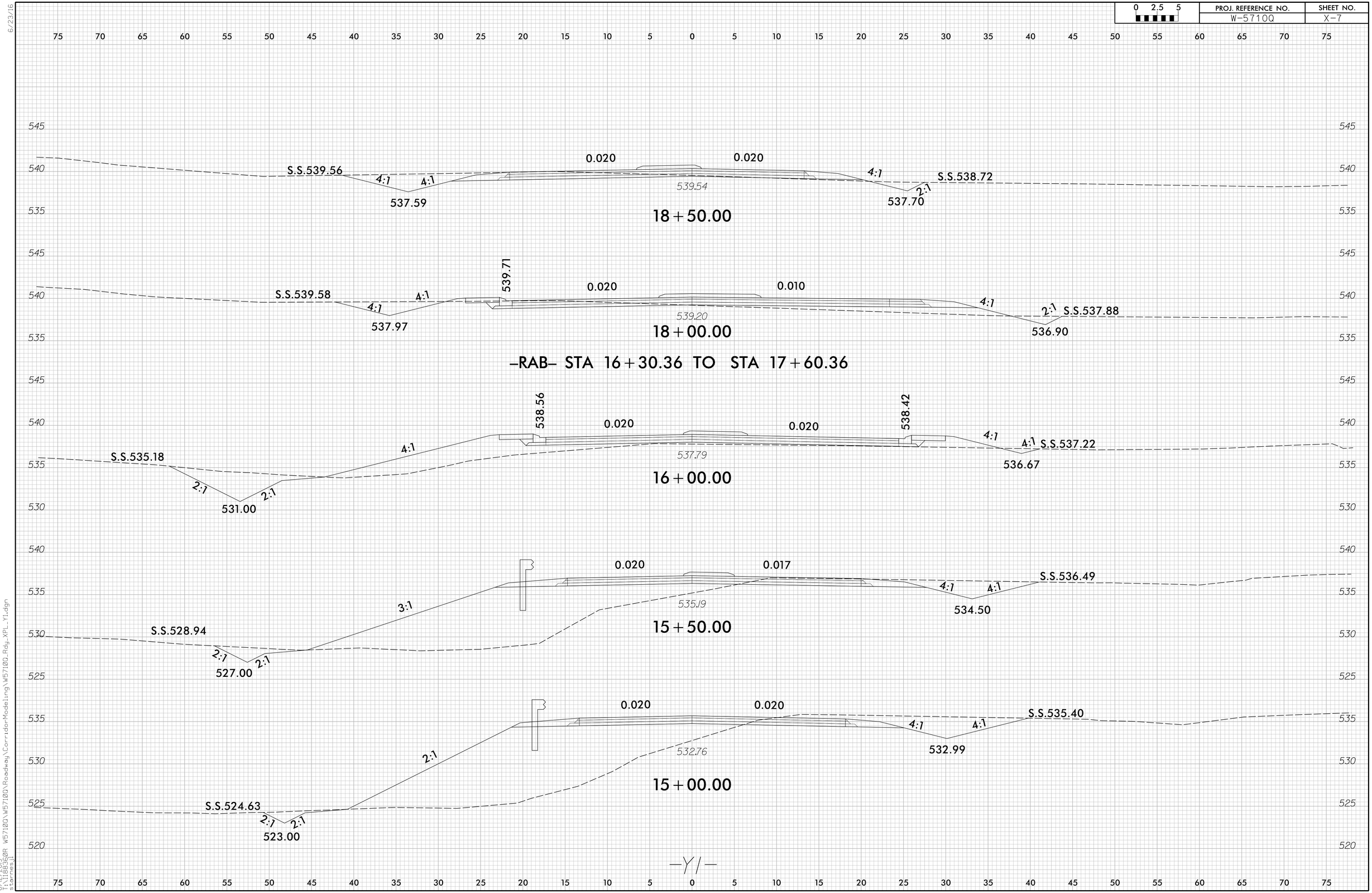

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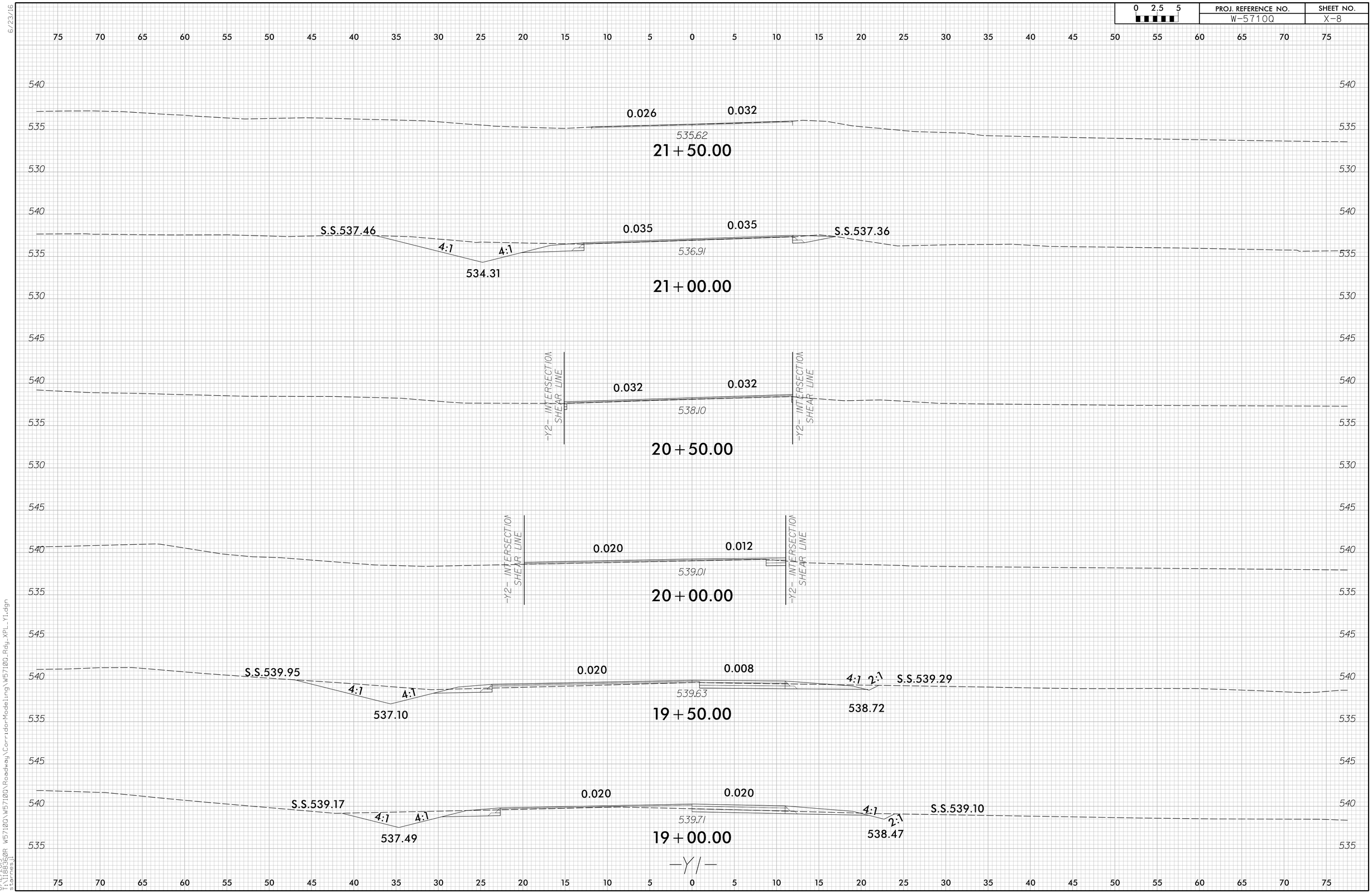

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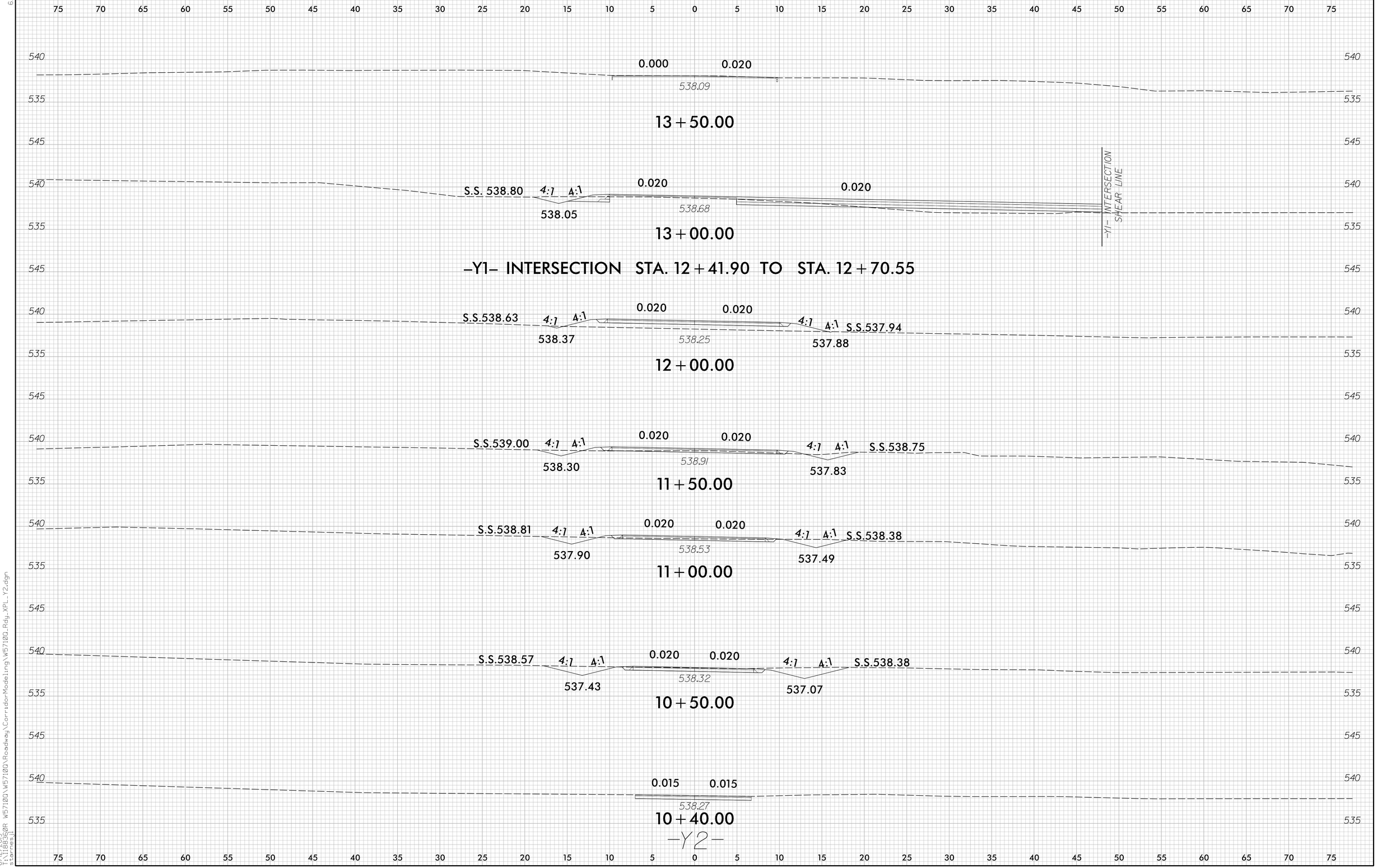

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