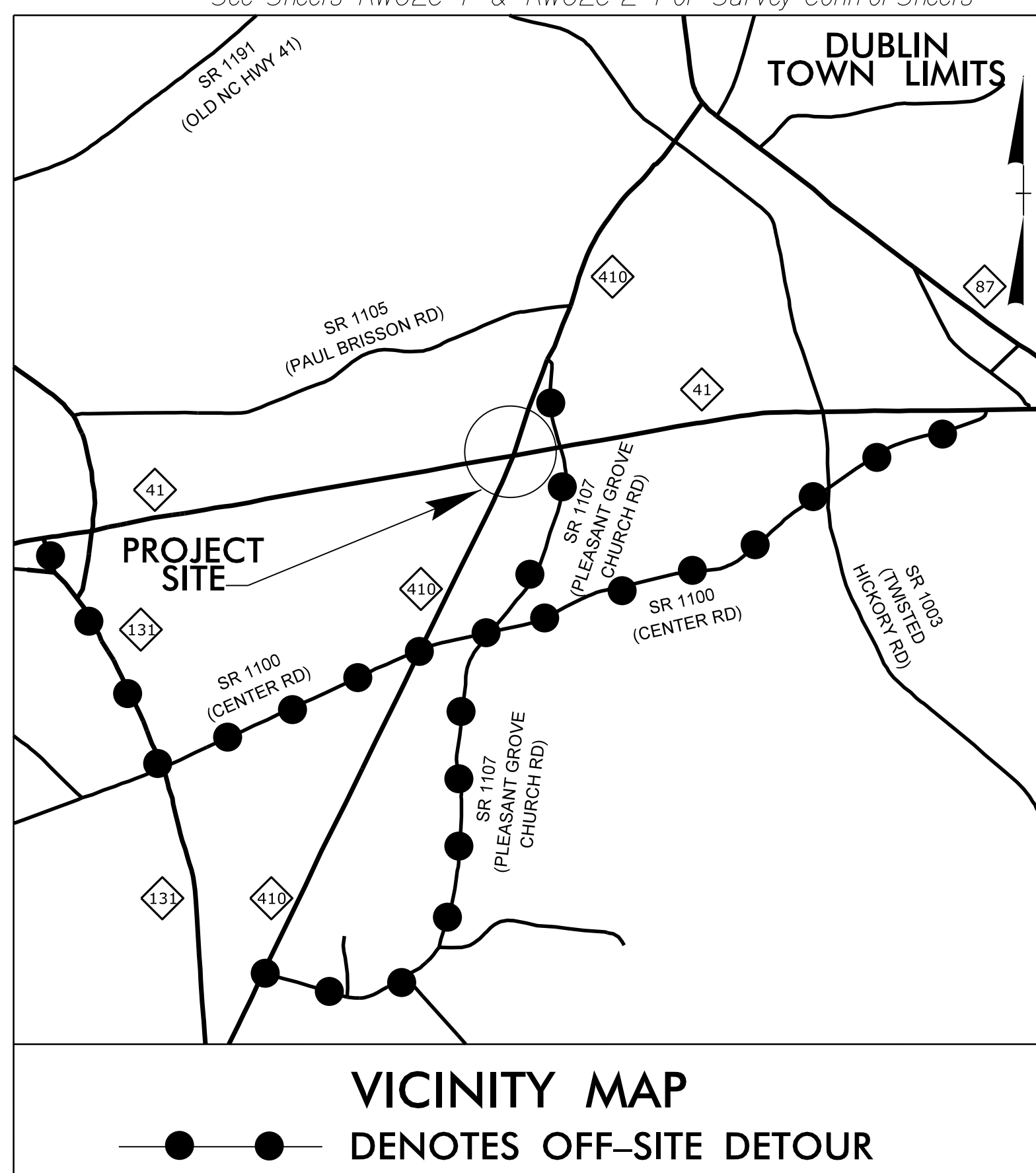


09_08/2019

TIP PROJECT: W-5706C

CONTRACT: DF00258

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols
See Sheets RW02C-1 & RW02C-2 For Survey Control Sheets



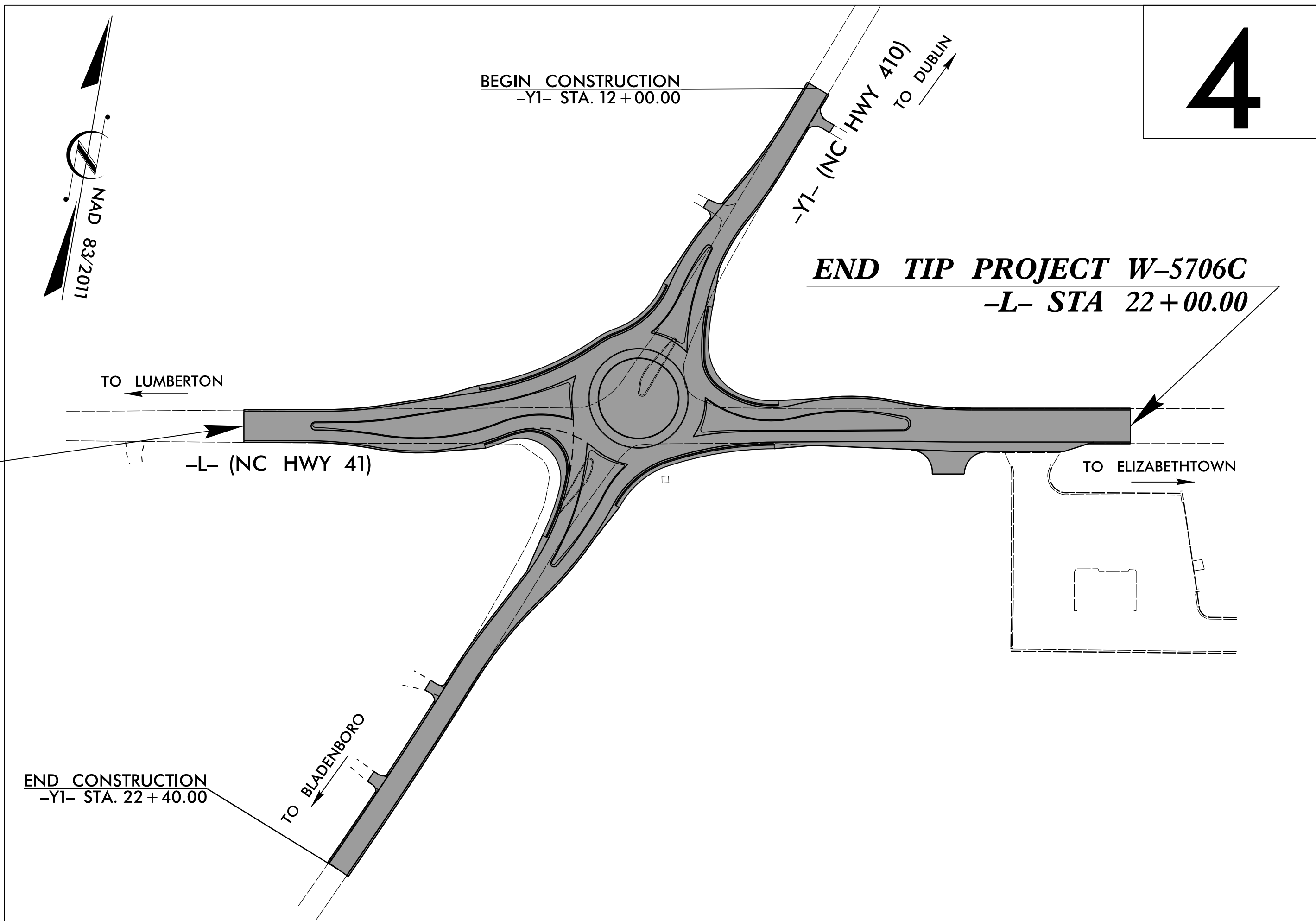
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BLADEN COUNTY

LOCATION: ROUNDABOUT AT INTERSECTION OF NC 41 AND NC 410

TYPE OF WORK: GRADING, DRAINAGE, PAVING, SIGNING, AND PAVEMENT MARKING

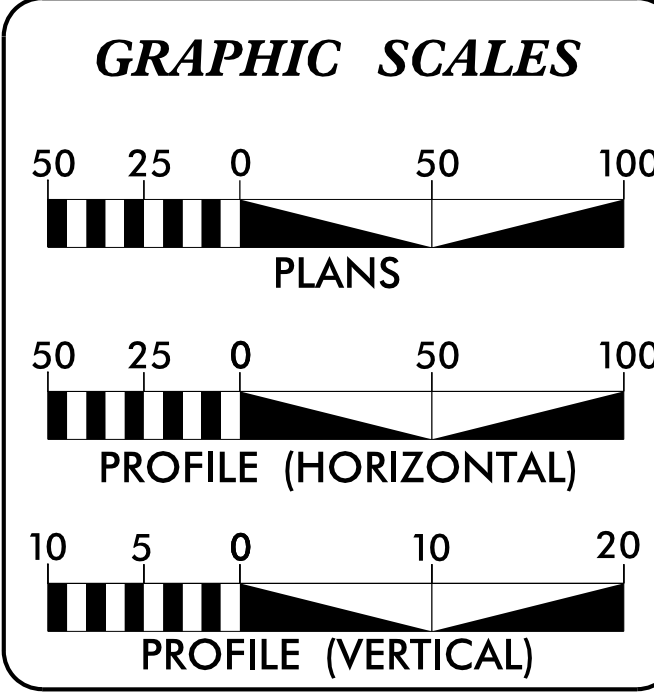
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5706C	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
44852.1.3	HSIP-0041(110)	PE	
44852.2.3	HSIP-0041(110)	ROW	
44852.3.3	HSIP-0041(110)	CONST	



**BEGIN TIP PROJECT W-5706C
-L- STA 12+00.00**

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

NCDOT CONTACT: JASON HATFIELD - DIVISION PROJECT ENGINEER



DESIGN DATA

ADT 2016 = 4,900
V = 50 MPH
DHV = 10%
D = 65%
T = 4% *
* TTST = 1% DUAL = 3%
FUNC CLASS = RURAL MINOR COLLECTOR STATEWIDE TIER

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT W-5706C = 0.189 MILES
TOTAL LENGTH OF TIP PROJECT W-5706C = 0.189 MILES

Prepared for the North Carolina Department of Transportation in the office of:

PARSONS SUNGATE DESIGN GROUP, P.A.

2018 STANDARD SPECIFICATIONS

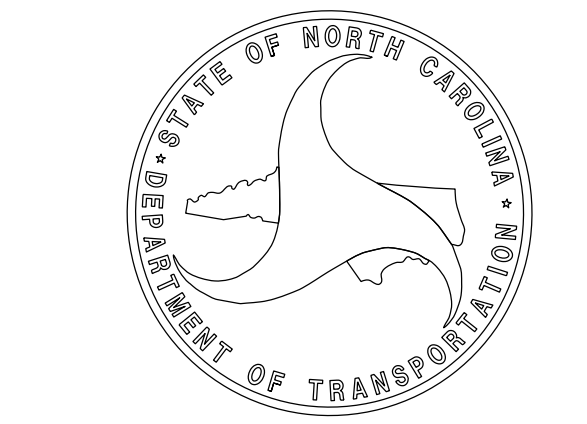
RIGHT OF WAY DATE: MARCH 30, 2018	DAVID L. WILVER, PE PROJECT ENGINEER
LETTING DATE: APRIL 17, 2019	J. MATTHEW PICKENS, PE PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

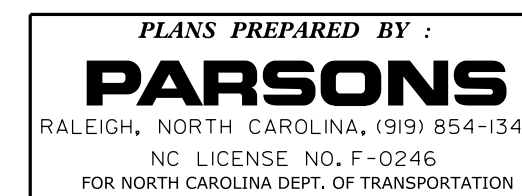
DocuSigned by:
Johanna G. Dalton
SIGNATURE: [Signature]

DocuSigned by:
Jason M. Pickens
SIGNATURE: [Signature]

ROADWAY DESIGN ENGINEER



28-JAN-2019 08:47 J:\W-5706C\Roadway\Proj\W-5706C-LRDY-TSHL_01.dgn \$\$\$USERNAME\$\$\$



PROJECT REFERENCE NO. <i>W-5706C</i>	SHEET NO. <i>1A</i>
ROADWAY DESIGN ENGINEER	

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

SHEET NUMBER	INDEX OF SHEETS SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
RW02C-1 & RW02C-2	SURVEY CONTROL SHEETS
2A-1	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2B-1	ROUNDBOUT DETAIL SHEET
2C-1	MODIFIED CONCRETE FLUME DETAIL
3B-1	ROADWAY SUMMARIES
3D-1	DRAINAGE SUMMARIES
3G-1	GEOTECHNICAL SUMMARIES
4	PLAN SHEET
5 & 6	PROFILE SHEETS
TMP-1 THRU TMP-4	TRAFFIC MANAGEMENT PLANS
PMP-1 THRU PMP-4	PAVEMENT MARKING PLANS
EC-1 THRU EC-5	EROSION CONTROL PLANS
SIGN-1 THRU SIGN-4A	SIGNING PLANS
UC-1 THRU UC-9	UTILITIES CONSTRUCTION PLANS
UO-1 & UO-2	UTILITIES BY OTHERS PLANS
X-1A THRU X-1B	CROSS-SECTION TITLE & SUMMARY SHEETS
X-1 THRU X-11	CROSS-SECTIONS

GENERAL NOTES:

2018 SPECIFICATIONS
EFFECTIVE: 01-16-2018
REVISED:

GRADING AND SURFACING OR RESURFACING AND WIDENING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:

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

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.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE WATER - BLADEN COUNTY WATER (RANDY GARNER), PHONE - CENTURLINK, PHONE - STAR TELEPHONE (KENNETH MELVIN), SEWER - TOWN OF DUBLIN (JANE STARNES), GAS - PIEDMONT NATURAL GAS

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

RIGHT-OF-WAY MARKERS:

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

2018 ROADWAY ENGLISH STANDARD DRAWINGS

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

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.03	Method of Clearing - Method III
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
310.03	Cross Pipe End Section - Precast Concrete Section for 18" to 30" Pipe
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
806.02	Granite Right-of-Way Marker
838.01	Concrete Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
838.11	Brick Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
840.00	Concrete Base Pad for Drainage Structures
840.14	Concrete Drop Inlet - 12" thru 30" Pipe
840.15	Brick Drop Inlet - 12" thru 30" Pipe
840.16	Drop Inlet Frame and Grates - for use with Std. Dwg 840.14 and 840.15
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb & Gutter
852.01	Concrete Islands
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

EFF. 01-16-2018
REV.

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

12/2/2016

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	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	----- WLB
Proposed Wetland Boundary	----- WLB
Existing Endangered Animal Boundary	----- EAB
Existing Endangered Plant Boundary	----- EPB
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	-----
False Sump	▽

RAILROADS:

Standard Gauge	-----
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 Easement 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	----- R/W
New Right of Way Line with Pin and Cap	----- R/W ▲
New Right of Way Line with Concrete or Granite R/W Marker	----- R/W ▲
New Control of Access Line with Concrete C/A Marker	----- C/A
Existing Control of Access	----- C/A
New Control of Access	----- C/A
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	☼

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

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	⊕
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	⊕
Telephone Pedestal	⊠
Telephone Cell Tower	⊠
U/G Telephone Cable Hand Hole	-----
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	⊕
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
U/G Water Line LOS B (S.U.E.*)	-----
U/G Water Line LOS C (S.U.E.*)	-----
U/G Water Line LOS D (S.U.E.*)	-----
Above Ground Water Line	----- A/G Water

TV:

TV Pedestal	⊕
TV Tower	⊗
U/G TV Cable Hand Hole	-----
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

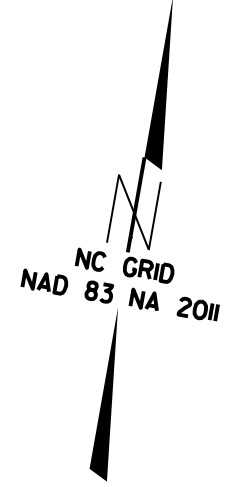
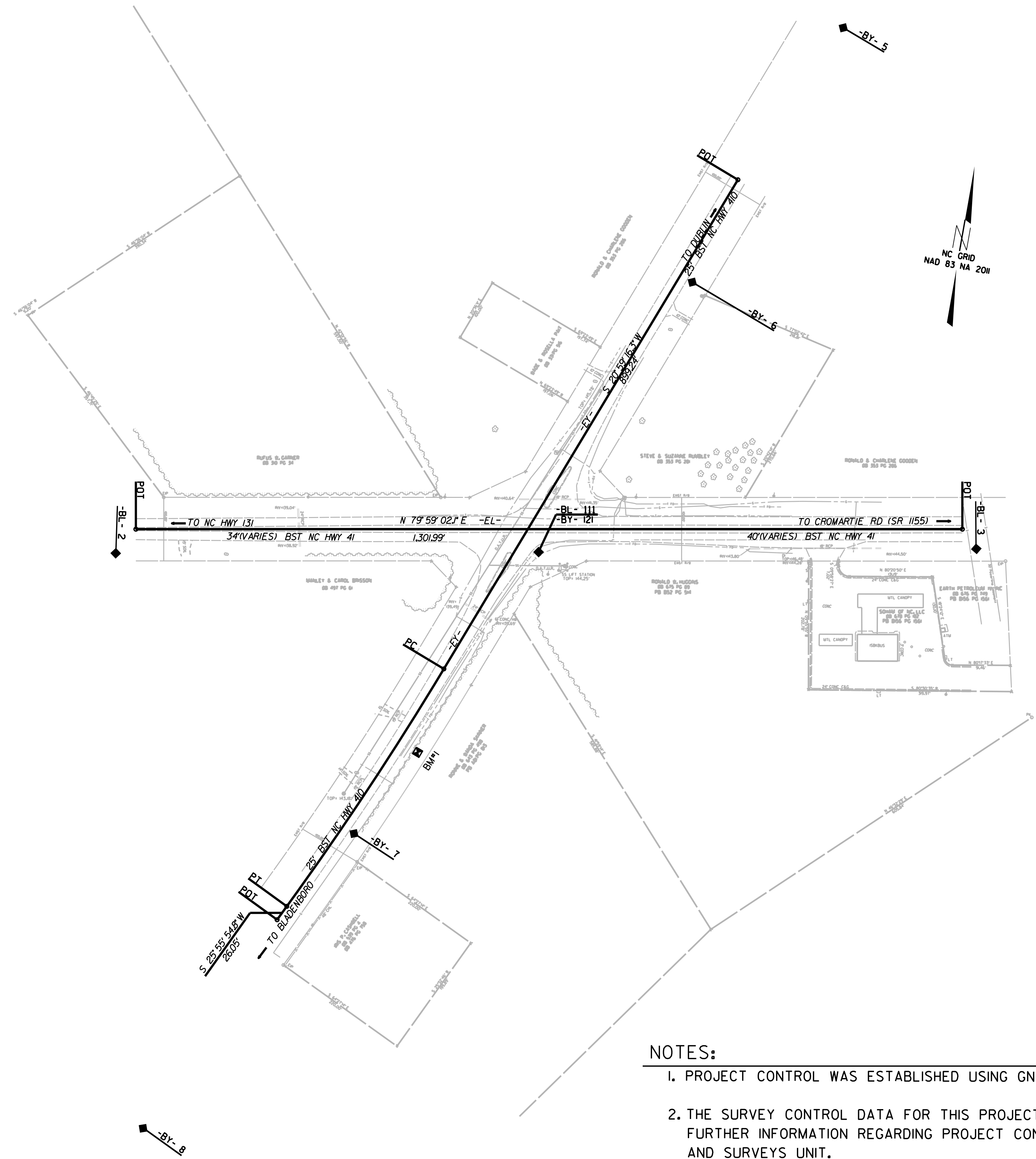
MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	⊠
Utility Unknown U/G Line LOS B (S.U.E.*)	----- 7UTL
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	⊕
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.

PROJECT REFERENCE NO.	SHEET NO.
W-5706C	RW02C-1
Location and Surveys	
NCDOT	

SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION



NOTES:

1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
2. THE SURVEY CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

REVISIONS

6/2/09

26-NOV-2018 14:01
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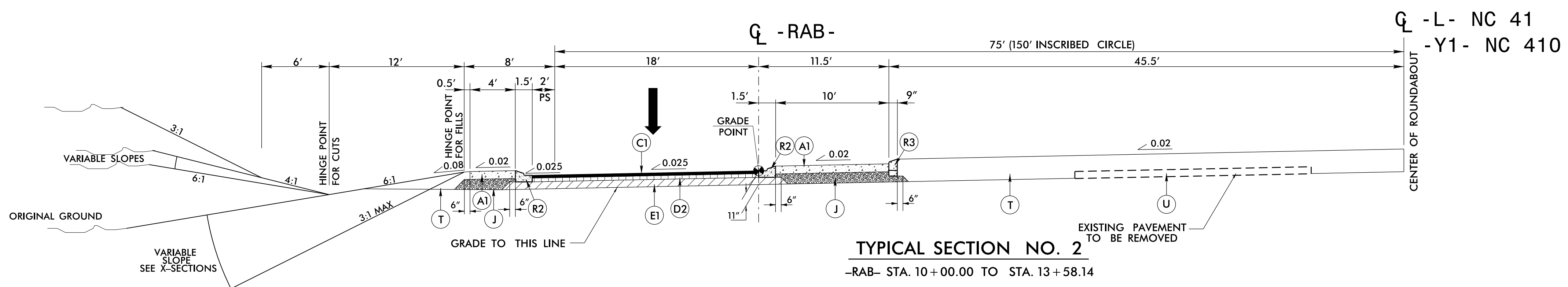
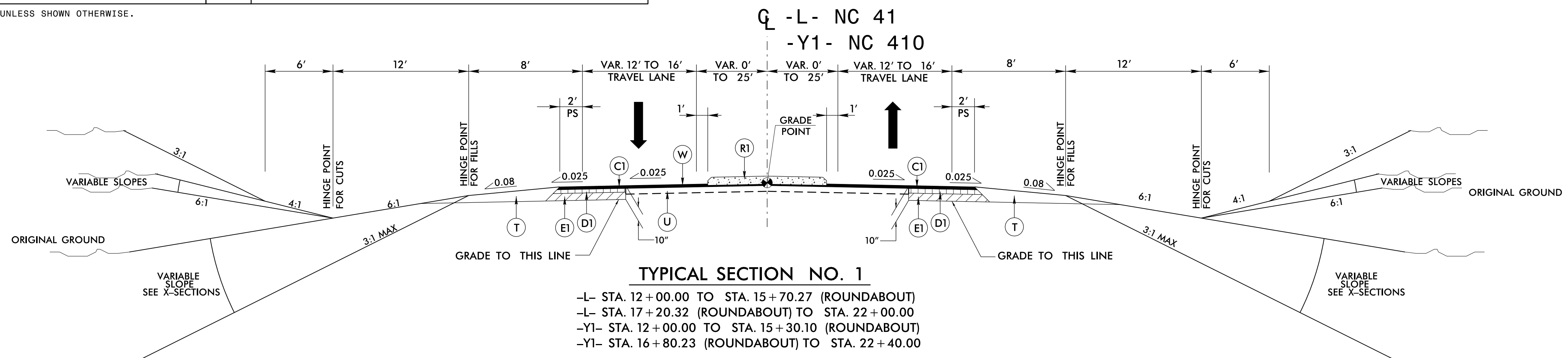
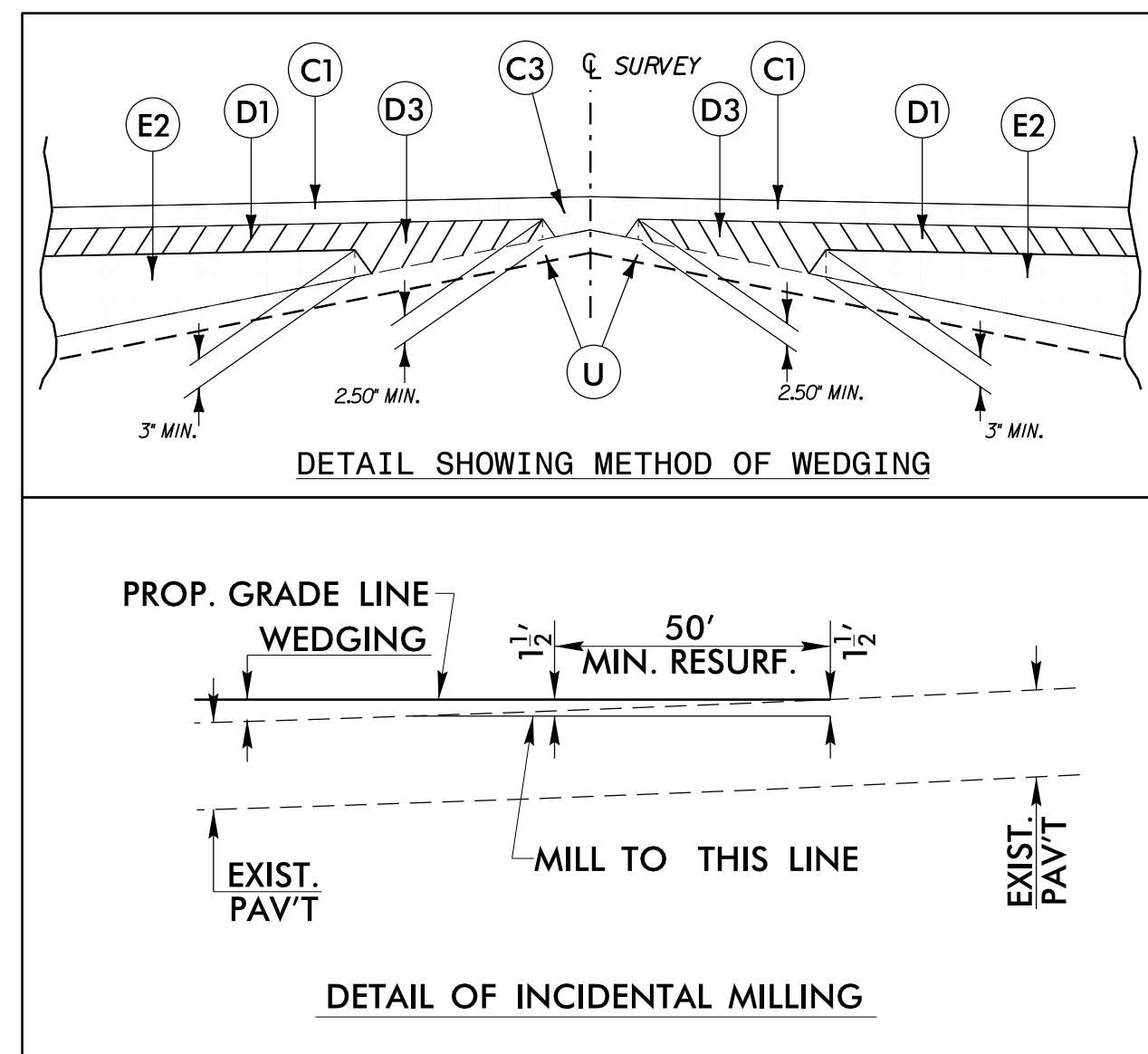
PLANS PREPARED BY:
PARSONS
 RALEIGH, NORTH CAROLINA, (919) 854-1345
 NC LICENSE NO. F-0246
 FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

PROJECT REFERENCE NO. W-5706C	SHEET NO. 2A-1
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

FINAL PAVEMENT SCHEDULE

CODE	DESCRIPTION	CODE	DESCRIPTION	CODE	DESCRIPTION
A1	8" PORTLAND CONCRETE APRON W/ WELDED WIRE MESH (EITHER 4x4 W3.5xW3.5 OR 6x6 W5xW5)	D3	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.	R3	9"x18" CONCRETE CURB
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	T	EARTH MATERIAL.
C2	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 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 4" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.	U	EXISTING PAVEMENT
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1" IN DEPTH OR GREATER THAN 1 1/2" IN DEPTH.	J	PROP. 8" AGGREGATE BASE COURSE	V	MILLING ASPHALT PAVEMENT, 1 1/2" DEPTH
D1	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.	R1	5" MONOLITHIC CONCRETE ISLAND (KEYED IN)	W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL ON THIS SHEET).
D2	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	R2	1'-6" CURB AND GUTTER		

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

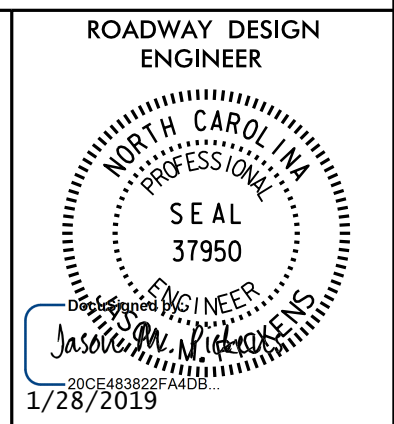


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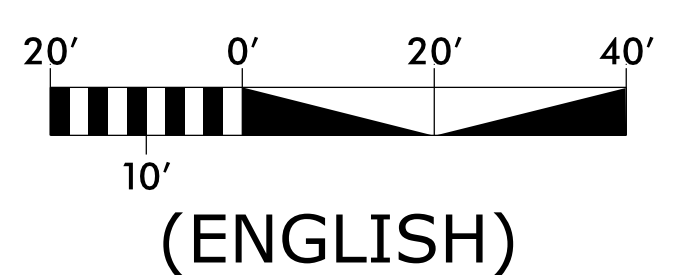
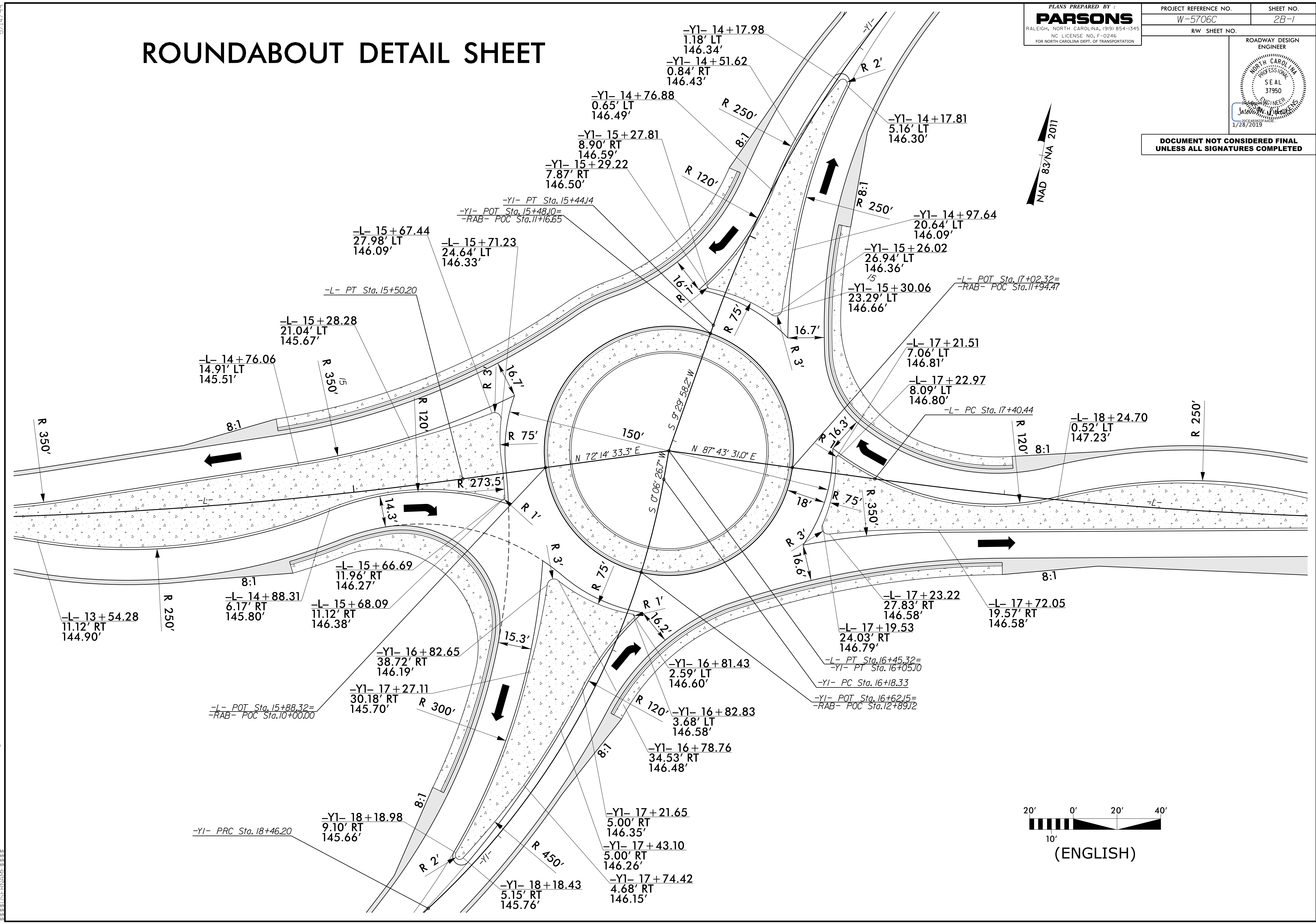
ROUNDBABOUT DETAIL SHEET

PLANS PREPARED BY:
PARSONS
RALEIGH, NORTH CAROLINA, (919) 854-1345
NC LICENSE NO. F-0246
FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

PROJECT REFERENCE NO. W-5706C	SHEET NO. 2B-1
RW SHEET NO.	



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



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STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK

STATION	STATION	UNCL. EXCAV.	UNDERCUT	EMBANK.	BORROW	WASTE
-L- 12+00.00	-L- 15+70.27	439		981	542	
-L- 17+20.32	-L- 22+00.00	272	150	534	262	150
-YI- 12+00.00	-YI- 15+30.10	493		229		264
-YI- 16+80.23	-YI- 22+40.00	524		891	367	
-RAB- 10+00.00	-RAB- 13+58.00	10		2,961	2,951	
SUBTOTALS:		1,738	150	5,596	4,122	414
PROJECT TOTALS:		1,738	150	5,596	4,122	414
LOSS DUE TO CLEARING & GRUBBING (PER GEOTECH REPORT)		-100			100	
WASTE IN LIEU OF BORROW					-264	-264
EST. SHOULDER MATERIAL				625	625	
PROJECT TOTAL		1,638	150	6,221	4,583	150
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT					229	
GRAND TOTALS:		1,638	150	6,221	4,812	150
SAY:		1,640			4,820	

UNCLASSIFIED EXCAVATION - ACCEPTABLE, BUT NOT TO BE IN THE TOP 3' OF EMBANKMENT OR BACKFILL
 -L- 17+35 TO 19+75 (150 CY) PER GEOTECH

- UNDERCUT CONTINGENCY PER GEOTECH RECS: 400 CY
- GRADE POINT UNDERCUT CONTINGENCY PER GEOTECH RECS: 50 CY
- SELECT GRANULAR MATERIAL CONTINGENCY PER GEOTECH RECS: 200 CY
- GEOTEXTILE FOR SOIL STABILIZATION PER GEOTECH RECS: 575 SY
- GEOTEXTILE FOR SOIL STABILIZATION CONTINGENCY PER GEOTECH RECS: 600 SY
- SHALLOW UNDERCUT CONTINGENCY PER GEOTECH RECS: 100 CY
- CLASS IV SUBGRADE STABILIZATION PER GEOTECH RECS: 300 TONS
- CLASS IV SUBGRADE STABILIZATION CONTINGENCY PER GEOTECH RECS: 100 TONS

Note: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Removal of Existing Asphalt Pavement, and Clearing and Grubbing will be paid for at the contract lump sum price for "Grading."

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

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD ²
-YI-	13+00	14+94	LT	273.47
TOTAL:				273.47
SAY:				280

5/28/99
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STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

SUMMARY OF SUBSURFACE DRAINAGE

LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
-L-	12+00	22+00	LT/RT	SD	2000
-Y1-	12+00	22+40	LT/RT	SD	2080
CONTINGENCY					500
TOTAL LF:					4580

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

SUMMARY OF GEOTEXTILE FOR PAVEMENT STABILIZATION

LINE	Station	Station	Geotextile for Pavement Stabilization SY	Class IV Subgrade Stabilization TONS
CONTINGENCY				
TOTAL SY/TONS:			0	0*

*Total tons of "Class IV Subgrade Stabilization" is only the estimated quantity for pavement stabilization and may only represent a portion of the subgrade stabilization quantity shown in the Item Sheets of the Proposal.

SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION

LINE	Station	Station	Aggregate Type* ASU(1/2)/AST	Aggregate Thickness INCHES [8" for ASU(2)]	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Soil Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
-L-	17+35	20+25	ASU (1)	12	150	300	575		
CONTINGENCY			ASU (1)	12	100	100	200		
TOTAL CY/TONS/SY:					250	400**	775**	0	0

*ASU(1/2) = Aggregate Subgrade (Type 1 or 2)
 *AST = Aggregate Stabilization
 **Total tons of "Class IV Subgrade Stabilization" and total square yards of "Geotextile for Soil Stabilization" are only the estimated quantities for ASU(1/2)/AST and may only represent a portion of the subgrade stabilization and geotextile quantities shown in the Item Sheets of the Proposal.

SUMMARY OF ROCK PLATING

LINE	Beginning Slope (H:V)	Approx. Station	Ending Slope (H:V)	Approx. Station	Location LT/RT	Rock Plating Detail No. 1/2/3/4	Riprap Class* 1/2/B	Rock Plating SY
TOTAL SY:								0

*Use Class 1, 2 or B riprap if riprap class is not shown for rock plating location.

SUMMARY OF REINFORCED SOIL SLOPES AND SLOPE EROSION CONTROL

LINE	Beginning Slope/ RSS (H:V)	Approx. Station	Ending Slope/ RSS (H:V)	Approx. Station	Location LT/RT	Reinforced Soil Slope (RSS) SY	Geocells SY	Coir Fiber Mat SY	Matting for Erosion Control SY	
TOTAL SY:							0	0	0*	0**

*Total square yards of "Coir Fiber Mat" is only the estimated quantity for slopes steeper than 2:1 (H:V) and may only represent a portion of the coir fiber mat quantity shown in the Item Sheets of the Proposal.
 **Total square yards of "Matting for Erosion Control" is only the estimated quantity for RSS and may only represent a portion of the matting quantity shown in the Item Sheets of the Proposal.

SUMMARY OF PRE-SPLITTING OF ROCK

LINE	Beginning Rock Cut Slope (H:V)	Approx. Station	Ending Rock Cut Slope (H:V)	Approx. Station	Location LT/RT	Pre-splitting of Rock SY
TOTAL SY:						0

SUMMARY OF SURCHARGES AND SURCHARGE WAITING PERIODS

LINE	Station	Station	Surcharge Height FT	MONTHS	
TOTAL MONTHS:					0

SUMMARY OF SETTLEMENT GAUGES

Gauge No.	LINE and Station	Offset		
		Distance FT	Direction LT/RT	
TOTAL GAUGES (EACH):				0

SUMMARY OF EMBANKMENT WAITING PERIODS

LINE	Station	Station	MONTHS	
-L-	14+75	16+05	1	
TOTAL MONTHS:				1

SUMMARY OF BRIDGE WAITING PERIODS

Bridge Description	End Bent/ Bent No.	MONTHS	
TOTAL MONTHS:			0

5/28/99

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5/28/19

PLANS PREPARED BY :

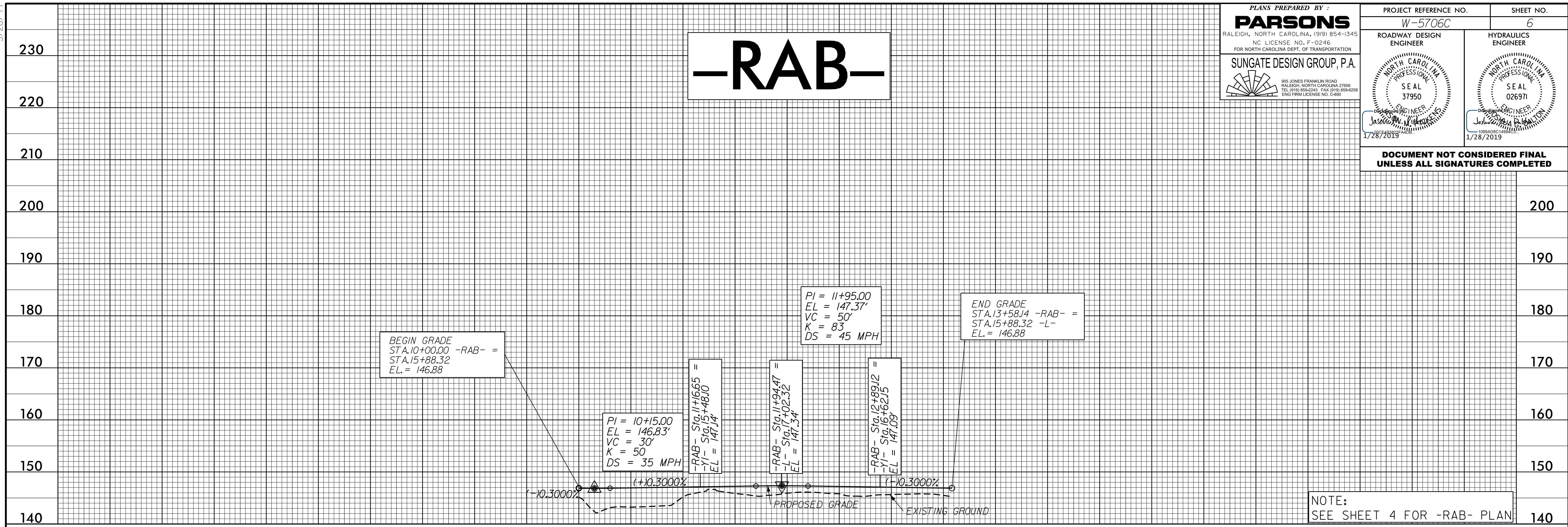
PARSONS
RALEIGH, NORTH CAROLINA, (919) 854-1345
 NC LICENSE NO. F-0246
 FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

SUNGATE DESIGN GROUP, P.A.
815 JONES FRANKLIN ROAD
 RALEIGH, NORTH CAROLINA 27606
 TEL (919) 859-2243 FAX (919) 854-0258
 ENG. REG. LICENSE NO. C490

PROJECT REFERENCE NO. <i>W-5706C</i>	SHEET NO. <i>6</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

-RAB-

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NOTE:
SEE SHEET 4 FOR -RAB- PLAN

25 JAN 2019 13:29
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5/28/19

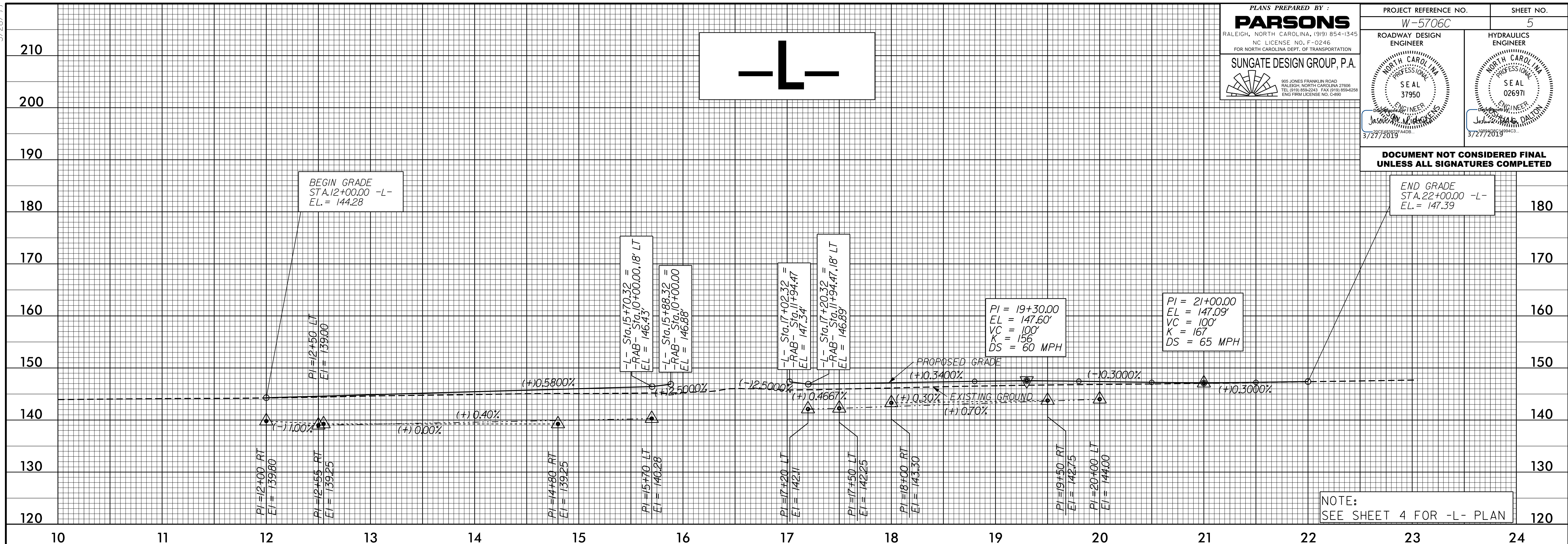
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PARSONS
 RALEIGH, NORTH CAROLINA, (919) 854-1345
 NC LICENSE NO. F-0246
 FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

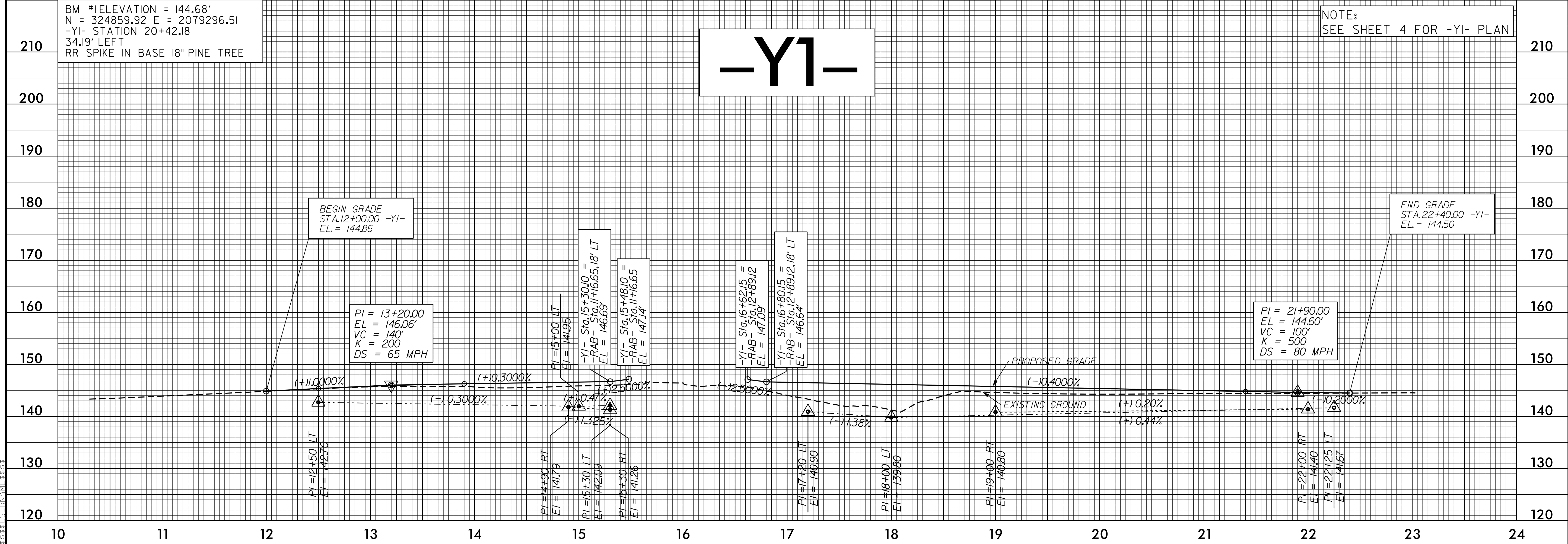
SUNGATE DESIGN GROUP, P.A.
 805 JONES FRANKLIN ROAD
 RALEIGH, NORTH CAROLINA 27606
 TEL: (919) 856-2243 FAX: (919) 856-0258
 ENG. REG. LICENSE NO. 5490

PROJECT REFERENCE NO. W-5706C	SHEET NO. 5
ROADWAY DESIGN ENGINEER JASON M. NICHOLS SEAL 37950 3/27/2019	HYDRAULICS ENGINEER JASON M. NICHOLS SEAL 026971 3/27/2019

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NOTE: SEE SHEET 4 FOR -L- PLAN



NOTE: SEE SHEET 4 FOR -YI- PLAN

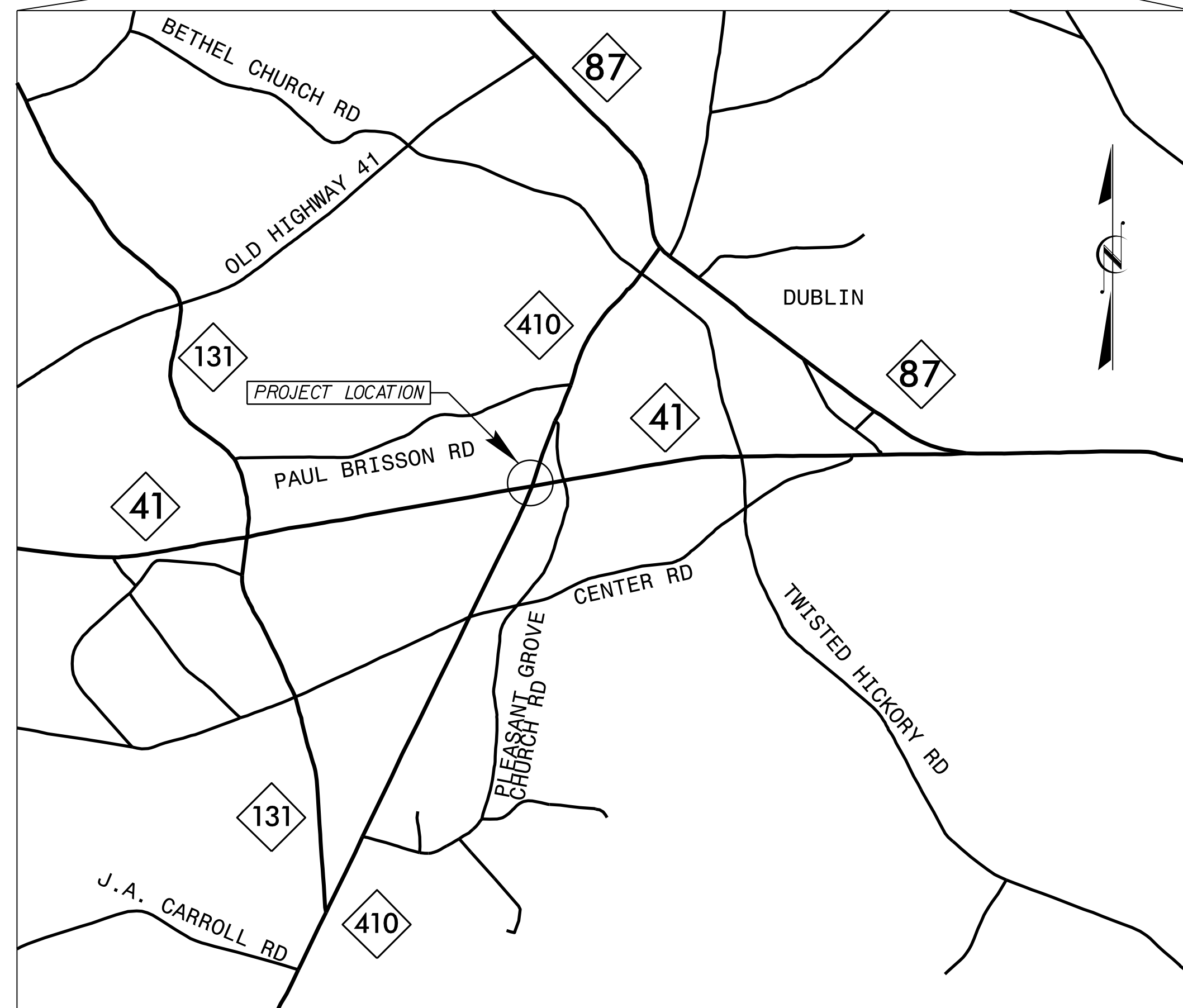
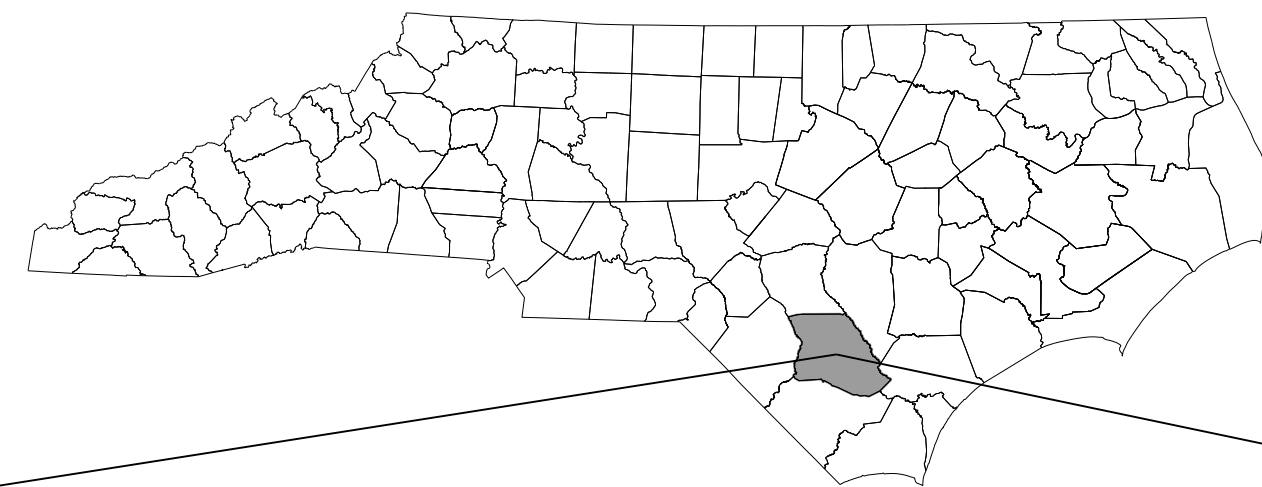
BM #1 ELEVATION = 144.68'
N = 324859.92 E = 2079296.51
-YI- STATION 20+42.18
34.19' LEFT
RR SPIKE IN BASE 18" PINE TREE

I:\Projects\2018\13229\13229.dwg
 W:\5706C\13229.dwg
 P:\01\W-5706C-ROD\PEL_05.dwg
 5/28/19 10:58:58 AM
 JMN

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

BLADEN COUNTY



INDEX OF SHEETS

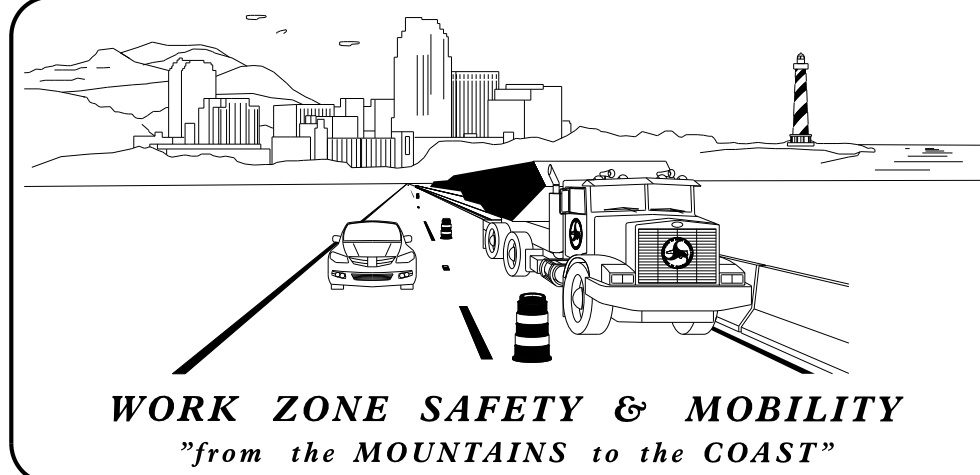
SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND
TMP-1B	TRANSPORTATION OPERATIONS PLAN: GENERAL NOTES
TMP-2	NC 41 DETOUR
TMP-2A	NC 410 DETOUR
TMP-3	PHASING
TMP-4	PHASE 1 DETAIL SHEET

SHEET NO.
TMP-1

W-5706C

TIP PROJECT:

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PLANS PREPARED BY:

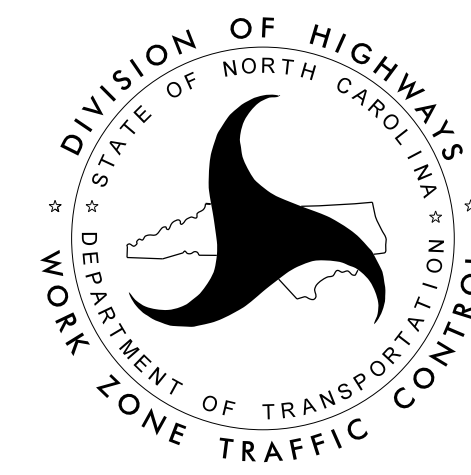
DAVID L. WILVER, P.E.
PROJECT ENGINEER

J. MATTHEW PICKENS, P.E.
PROJECT DESIGN ENGINEER

NCDOT CONTACTS:

PROJECT ENGINEER

PROJECT DESIGN ENGINEER

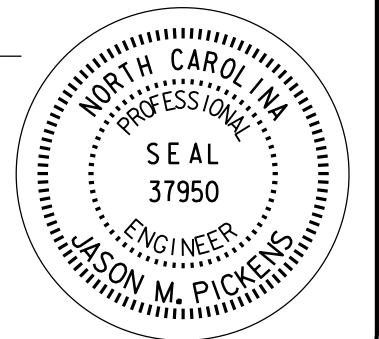


PLANS PREPARED BY:
PARSONS
5540 CENTERVIEW DR., SUITE 217
RALEIGH, NORTH CAROLINA 27606
NC LICENSE NO: F-0246
FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

APPROVED: *Jason M. Pickens*
200CE483822FAADB

DATE: 1/28/2019

SEAL






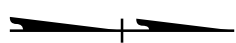


ROADWAY STANDARD DRAWINGS

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












STD.NO.	TITLE
1101.01	WORK ZONE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES

LEGEND




GENERAL

-  DIRECTION OF TRAFFIC FLOW
-  DIRECTION OF PEDESTRIAN TRAFFIC FLOW
-  EXIST. PVMT.
-  NORTH ARROW
-  PROPOSED PVMT.
-  WORK AREA

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

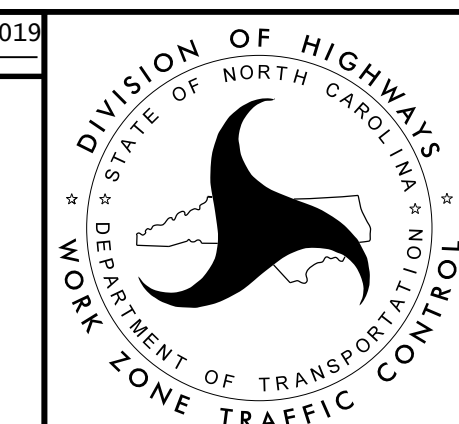
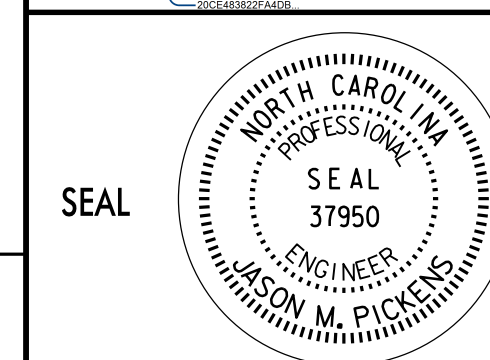
-  PORTABLE SIGN
-  STATIONARY SIGN
-  STATIONARY OR PORTABLE SIGN

PAVEMENT MARKINGS

-  EXISTING LINES

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APPROVED:  DATE: 1/28/2019



TRANSPORTATION
MANAGEMENT PLAN

**ROADWAY STANDARD
DRAWINGS & LEGENDS**

PLANS PREPARED BY:
PARSONS
2540 CENTERVIEW DRIVE, SUITE 207
RALEIGH, NORTH CAROLINA 27606
NC LICENSE NO. F-0246
FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

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 UNDESIRABLE OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

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

TIME RESTRICTIONS

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

ROAD NAME	DAY AND TIME RESTRICTIONS
NC 41 (-L-)	MONDAY-FRIDAY
NC 410 (-Y1-)	6:00AM TO 9:00AM 4:00PM TO 6:00PM

B) DO NOT CLOSE ROADS AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
NC 41 (-L-)	
NC 410 (-Y1-)	

C) DO NOT CONDUCT ANY HAULING OPERATIONS AGAINST THE FLOW OF TRAFFIC OF AN OPEN TRAVELWAY UNLESS THE HAULING OPERATION IS PROTECTED BY BARRIER OR GUARDRAIL OR AS DIRECTED BY THE ENGINEER.

LANE AND SHOULDER CLOSURE REQUIREMENTS

D) 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.

E) 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.

F) 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.

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

H) 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.

PAVEMENT EDGE DROP OFF REQUIREMENTS

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

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

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

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

J) DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) 500 FT IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

K) NOTIFY THE ENGINEER THIRTY (30) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

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

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

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

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

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

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

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

TRAFFIC CONTROL DEVICES

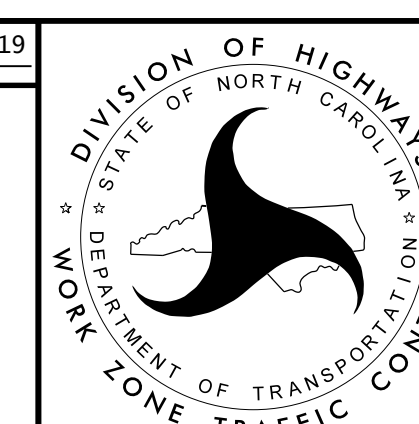
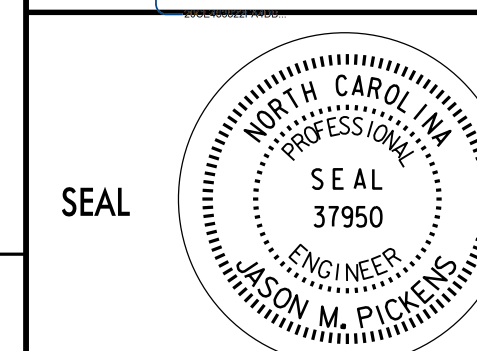
Q) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135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

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

**DOCUMENT NOT CONSIDERED FINAL
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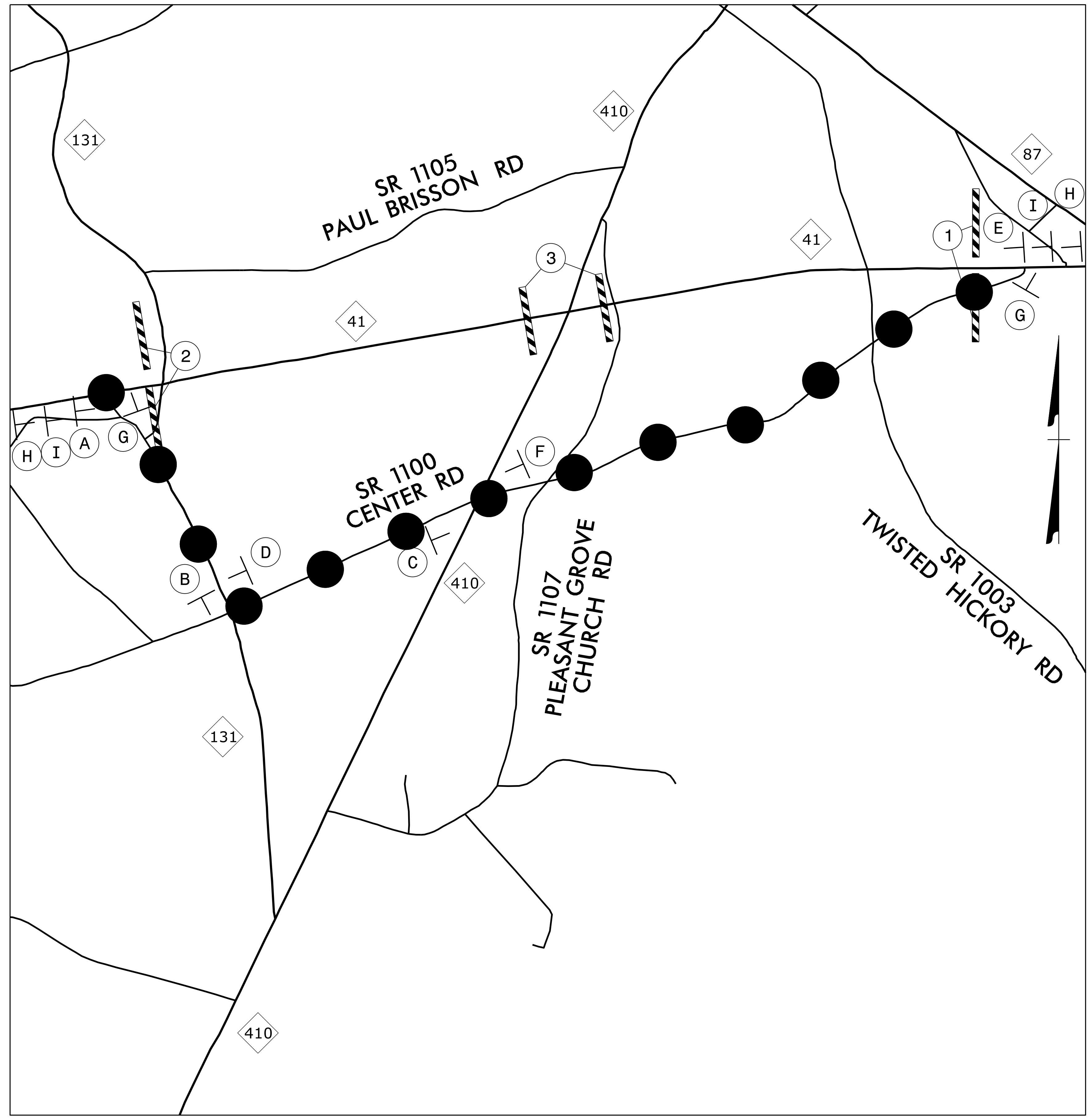
APPROVED: Jason M. Pickens DATE: 1/28/2019



TRANSPORTATION
MANAGEMENT PLAN

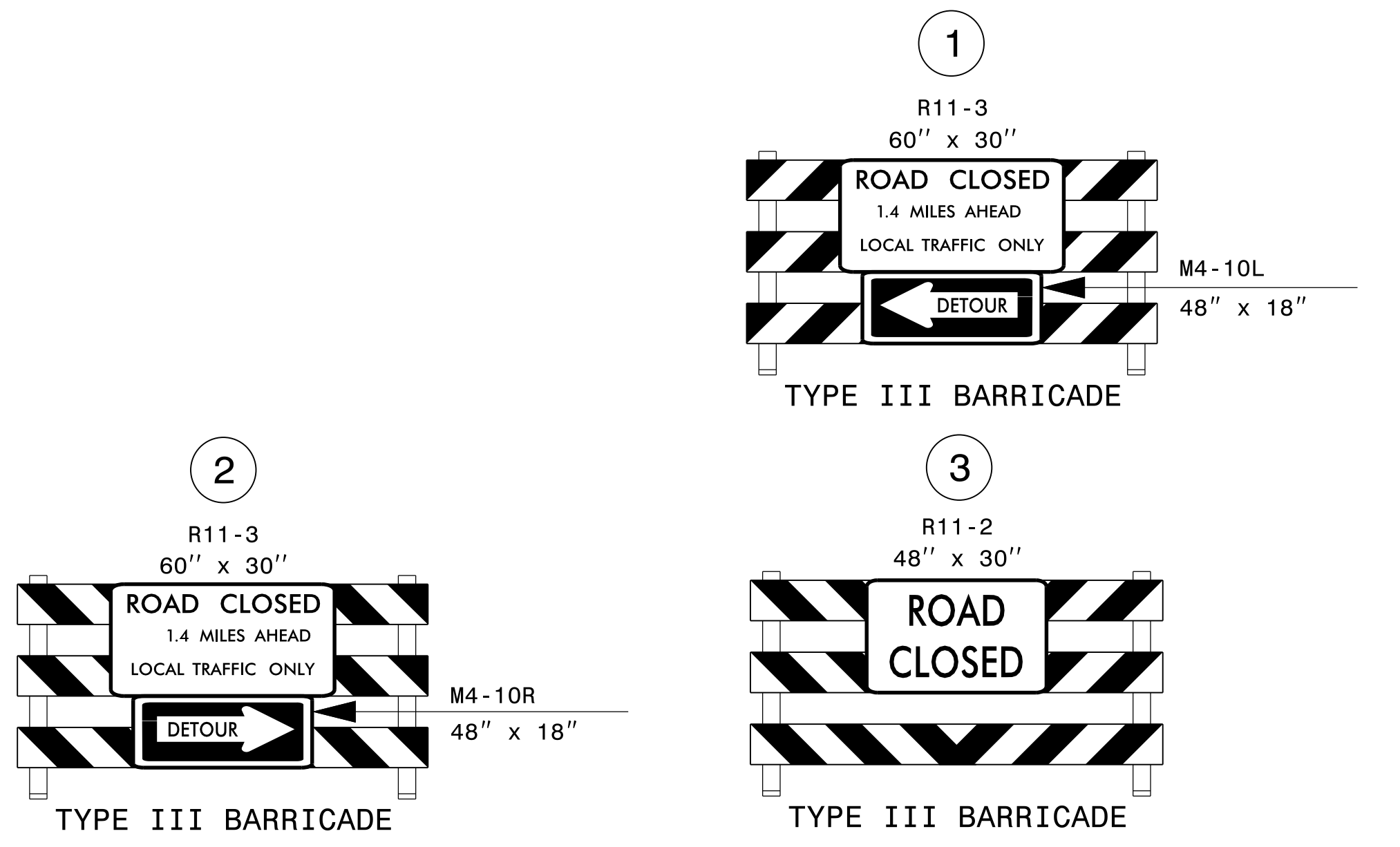
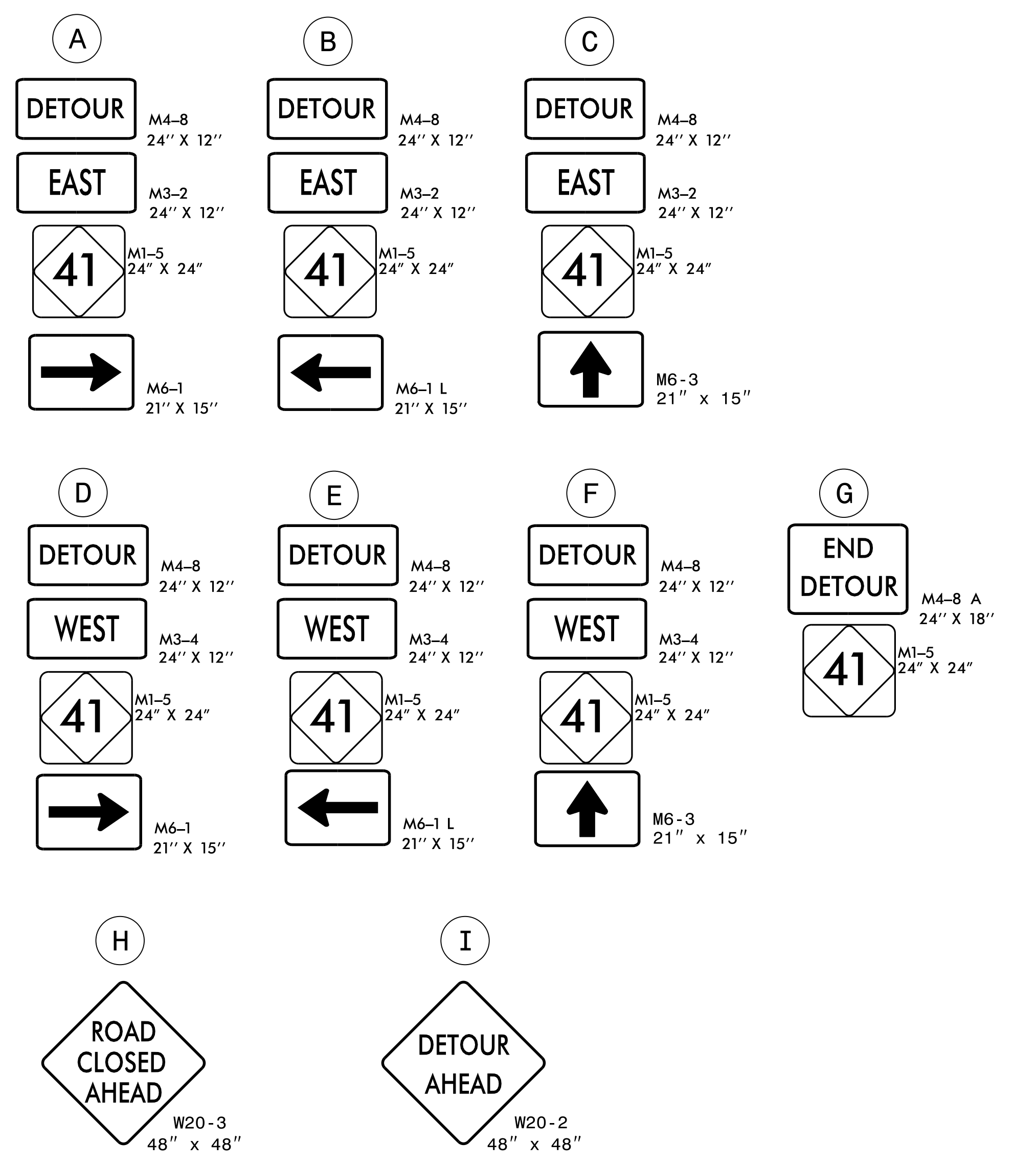
GENERAL NOTES

PLANS PREPARED BY:
PARSONS
2540 CENTERVIEW DR., SUITE 207
RALEIGH, NORTH CAROLINA 27606
NC LICENSE NO. F-0246
FOR NORTH CAROLINA DEPT. OF TRANSPORTATION



● ● ● DETOUR ROUTE (3.5 MILES)

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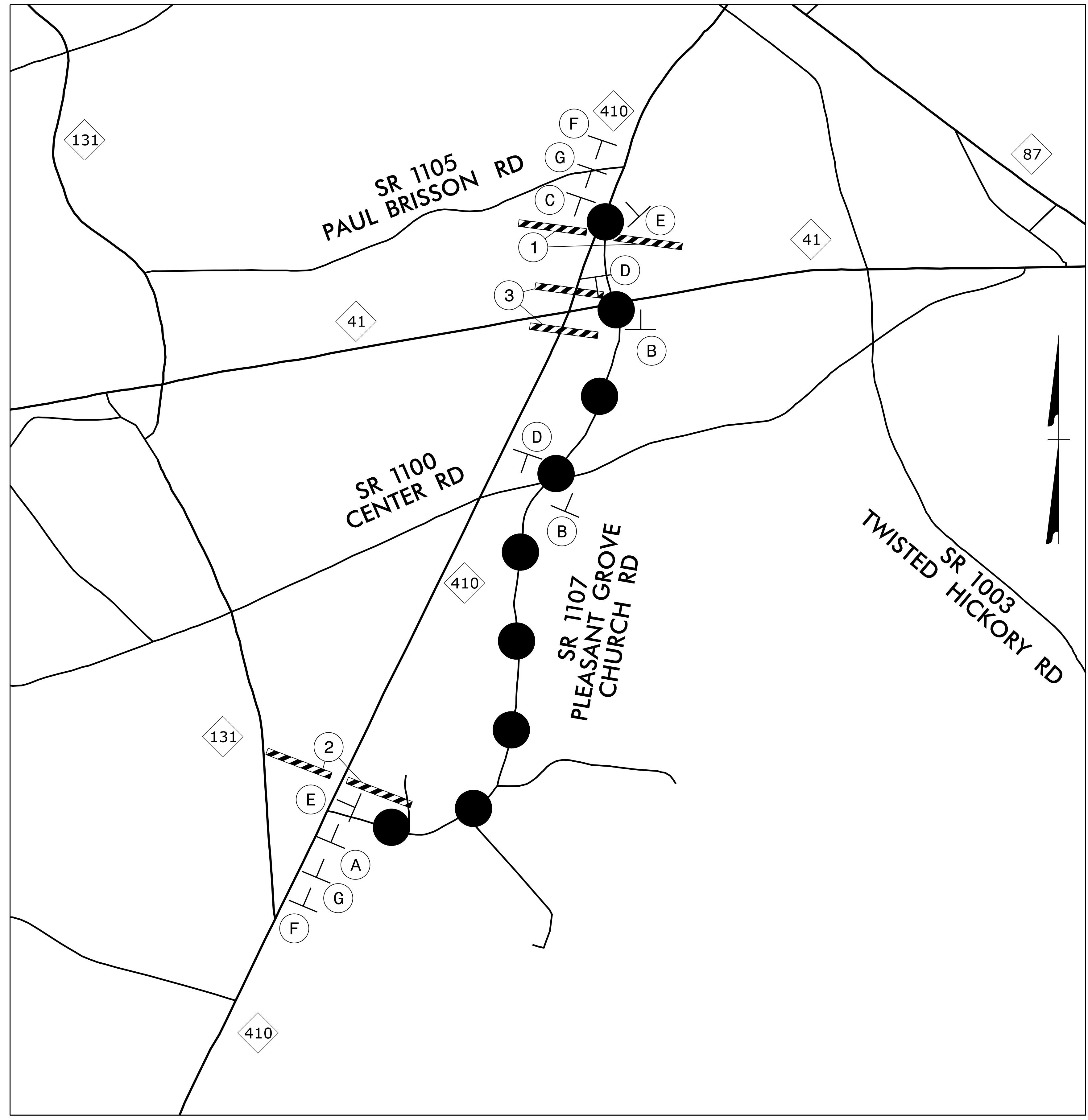


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 RALEIGH, NORTH CAROLINA, (919) 854-1345
 NC LICENSE NO. F-0246
 FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

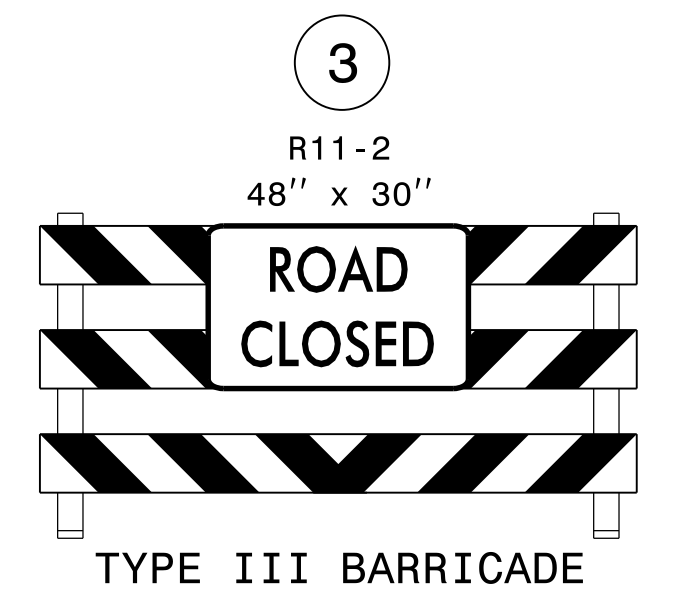
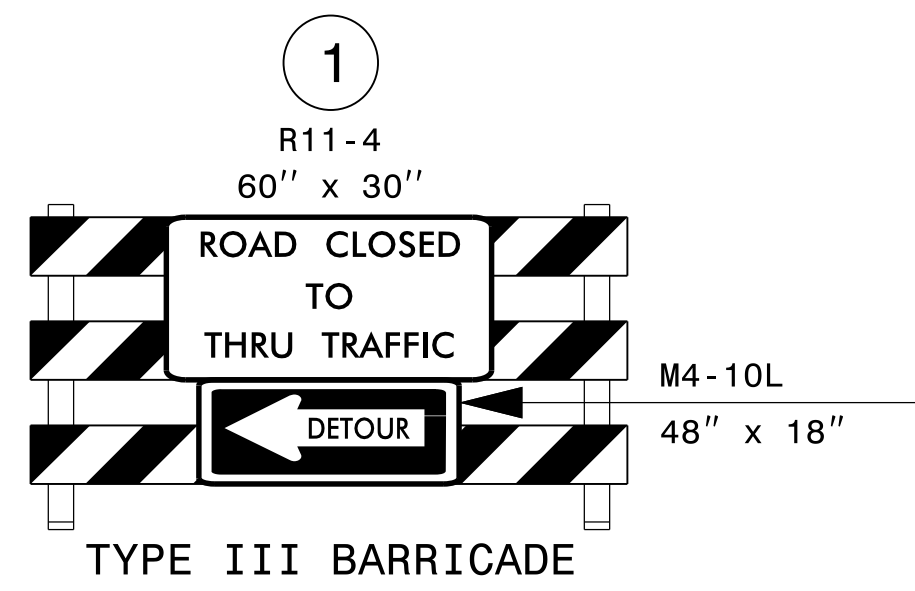
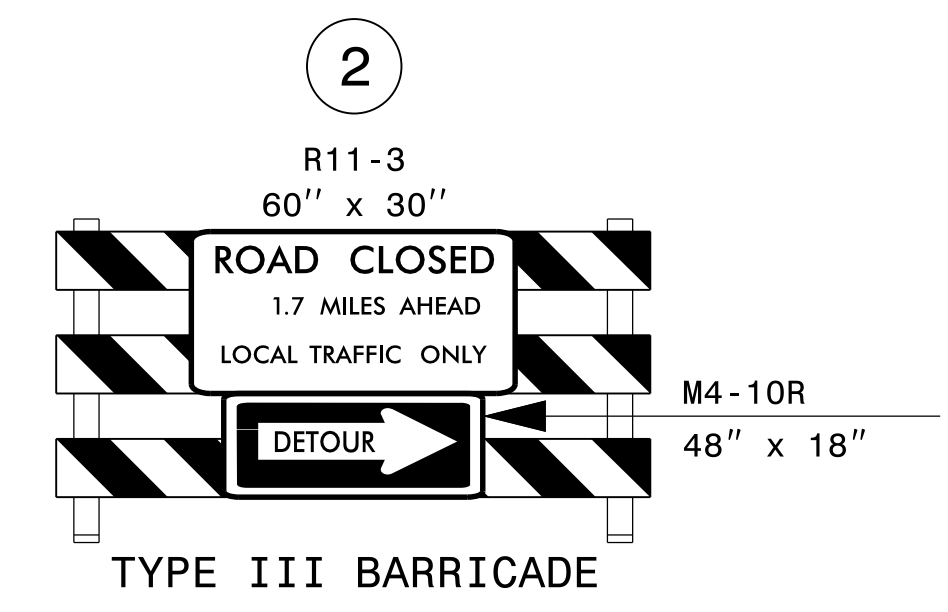
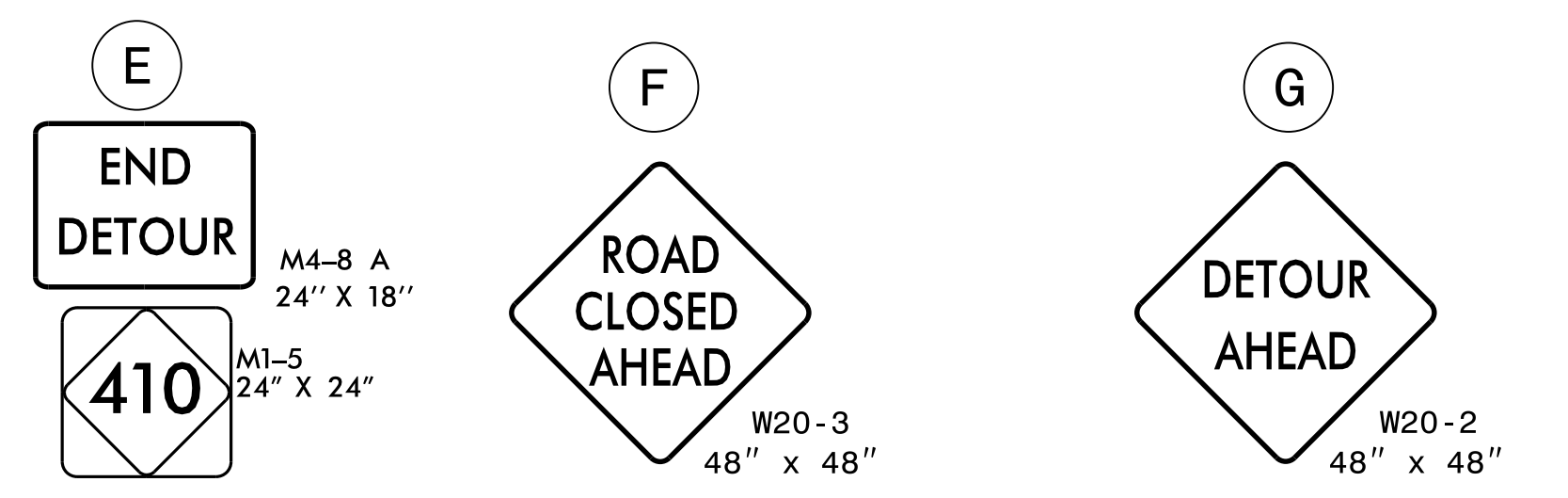
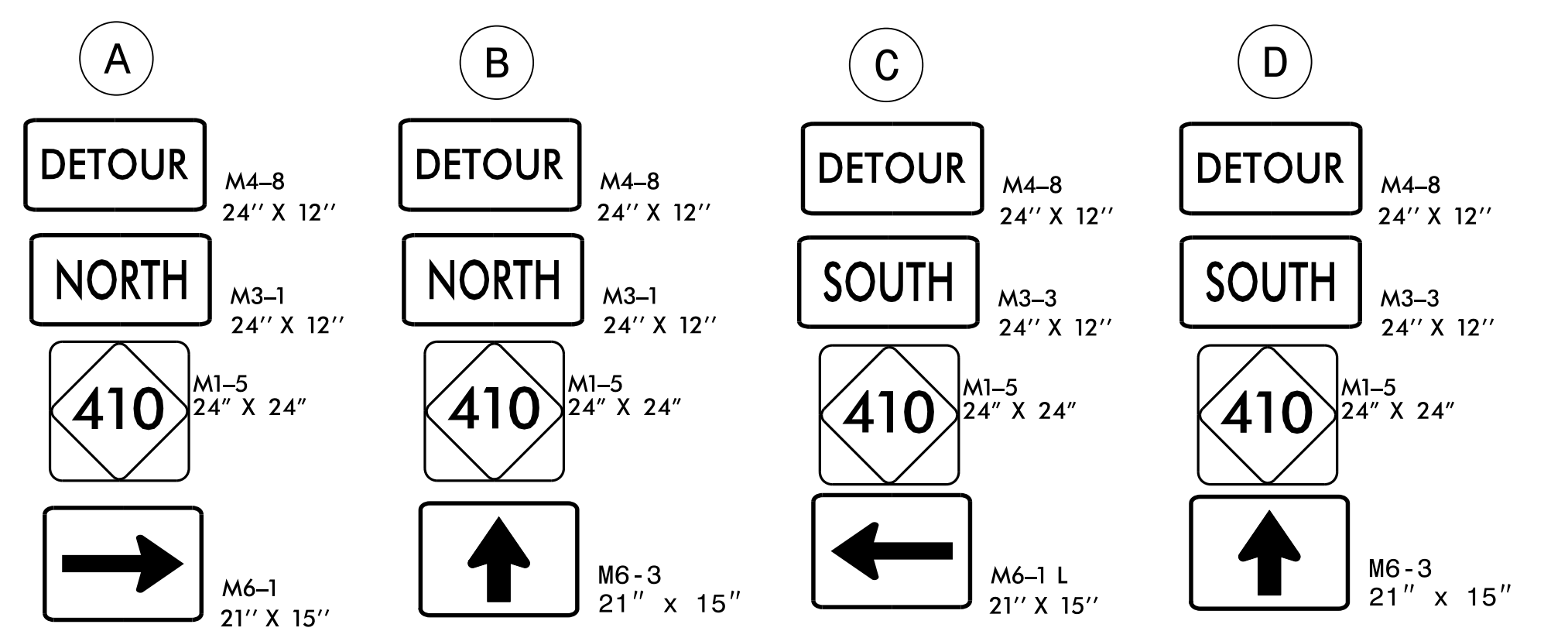
SEAL
 NORTH CAROLINA
 PROFESSIONAL ENGINEER
 SEAL 37950
 12/28/2019

NC 41 OFF-SITE DETOUR			REVISIONS
SCALE: NONE	DATE: 9/2018		
DWG. BY: JMP	DESIGN BY: JMP		
REVIEWED BY: DLW			



● ● ● DETOUR ROUTE (2.5 MILES)

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PLANS PREPARED BY:
PARSONS
 RALEIGH, NORTH CAROLINA, (919) 854-1345
 NC LICENSE NO. F-0246
 FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

SEAL
 NORTH CAROLINA
 PROFESSIONAL
 ENGINEER
 37950
 12/28/2019

NC 410 OFF-SITE DETOUR		REVISIONS
SCALE: NONE	DATE: 9/2018	
DWG. BY: JMP	DESIGN BY: JMP	
REVIEWED BY: DLW		

PHASING

NOTES:

REPLACE MARKINGS AND RETURN TRAFFIC TO THE CURRENT TRAFFIC PATTERN AT THE END OF EACH WORK PERIOD UNLESS OTHERWISE NOTED IN THE PHASING OR DIRECTED BY THE ENGINEER.

COMPLETE ANY PROPOSED WIDENING IN SUCH A MANNER THAT PONDING OF WATER WILL NOT OCCUR IN THE TRAVEL LANE.

MAINTAIN VEHICULAR ACCESS TO ALL RESIDENCES AND BUSINESSES DURING THE LIFE OF THE CONTRACT UNLESS OTHERWISE NOTED IN THE PHASING OR DIRECTED BY THE ENGINEER.

WEDGING OPERATIONS SHOULD BE DONE IN SUCH A MANNER THAT SMOOTH TRANSITIONS ARE PROVIDED AT THE END OF EACH DAY BETWEEN TRAVEL LANES AND AT TIE-INS WITH EXISTING PAVEMENT.

THE TERM RSD DENOTES ROADWAY STANDARD DRAWINGS.

PHASE I

STEP 1: INSTALL ADVANCE WORK ZONE WARNING SIGNS ACCORDING TO RSD 1101.01 (SHEET 3 OF 3).

STEP 2: INSTALL AND COVER OFF-SITE DETOUR SIGNS AS SHOWN ON TMP-2 AND TMP-2A.

STEP 3: UNCOVER OFF-SITE DETOUR SIGNS AND CLOSE -L- AND -Y1- TO TRAFFIC.

STEP 4: USING RSD 1101.02 (SHEET 1 OF 14) AS NEEDED CONSTRUCT THE FOLLOWING INCLUDING THE FINAL LAYER OF SURFACE COURSE AS SHOWN ON TMP-4:

- * -L- FROM STA. 12+00 +/- TO STA. 22+00 +/-
- * -Y1- FROM STA. 12+00 +/- TO STA. 22+40 +/-

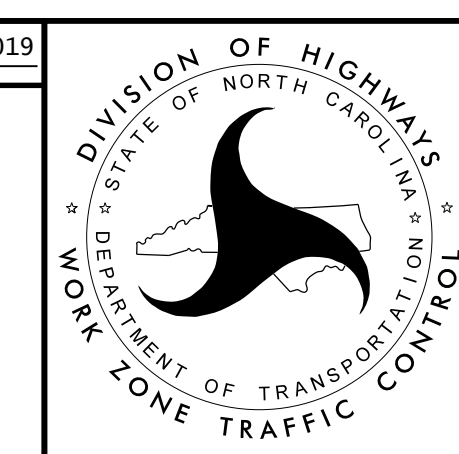
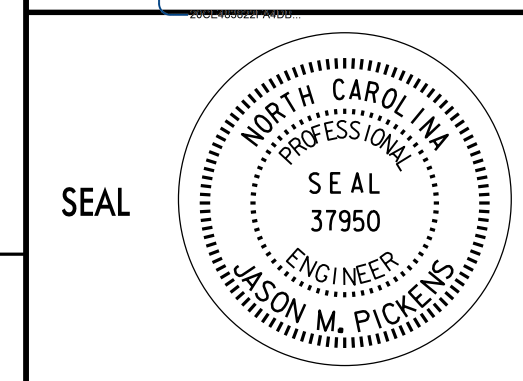
STEP 5: PLACE FINAL PAVEMENT MARKINGS AS SHOWN IN THE PAVEMENT MARKING PLANS.

STEP 6: UPON APPROVAL OF ENGINEER, REMOVE TEMPORARY TRAFFIC CONTROL DEVICES, COVER AND REMOVE OFF-SITE DETOUR SIGNS, AND OPEN ALL ROADS AND ALL LANES TO TRAFFIC.

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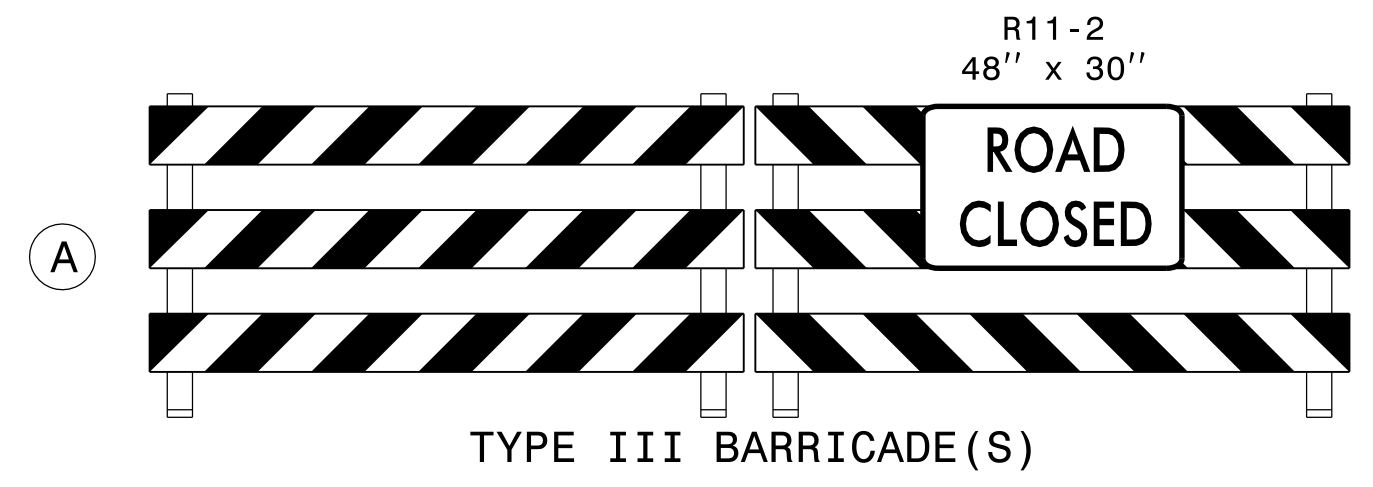
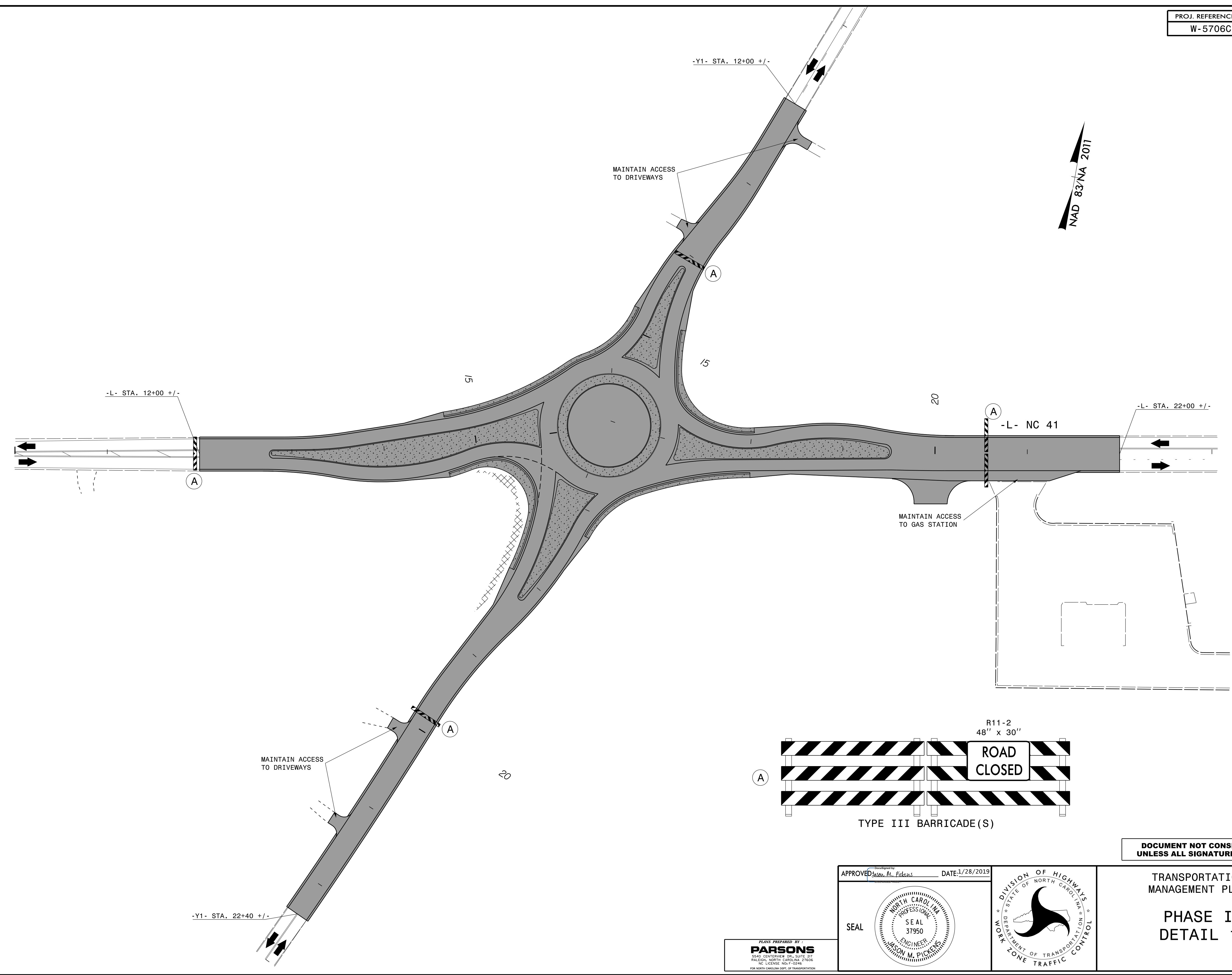
APPROVED: *Jason M. Perkins* DATE: 1/28/2019



TRANSPORTATION
MANAGEMENT PLAN

PHASING

PLANS PREPARED BY:
PARSONS
2540 CENTERVIEW DR., SUITE 207
RALEIGH, NORTH CAROLINA 27606
NC LICENSE NO. F-0246
FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

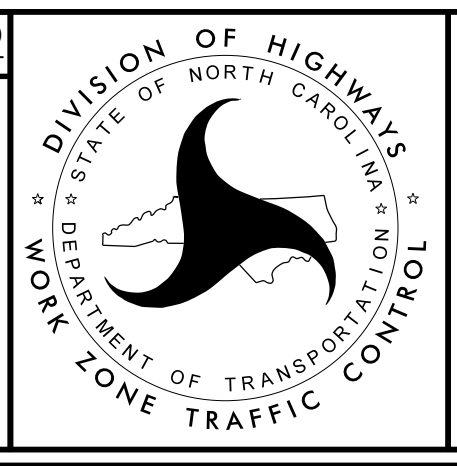


DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

25-JAN-2019 13:39
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\$\$\$\$\$USERNAME\$\$\$\$\$

PLANS PREPARED BY:
PARSONS
2540 CENTERVIEW DR., SUITE 207
RALEIGH, NORTH CAROLINA 27606
NC LICENSE NO. F-0246
FOR NORTH CAROLINA STATE OF TRANSPORTATION

APPROVED: *Jason M. Pickens* DATE: 1/28/2019
SEAL
NORTH CAROLINA
PROFESSIONAL
ENGINEER
SEAL 37950
JASON M. PICKENS



TRANSPORTATION
MANAGEMENT PLAN

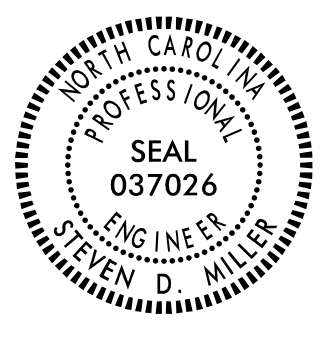
PHASE I
DETAIL 1

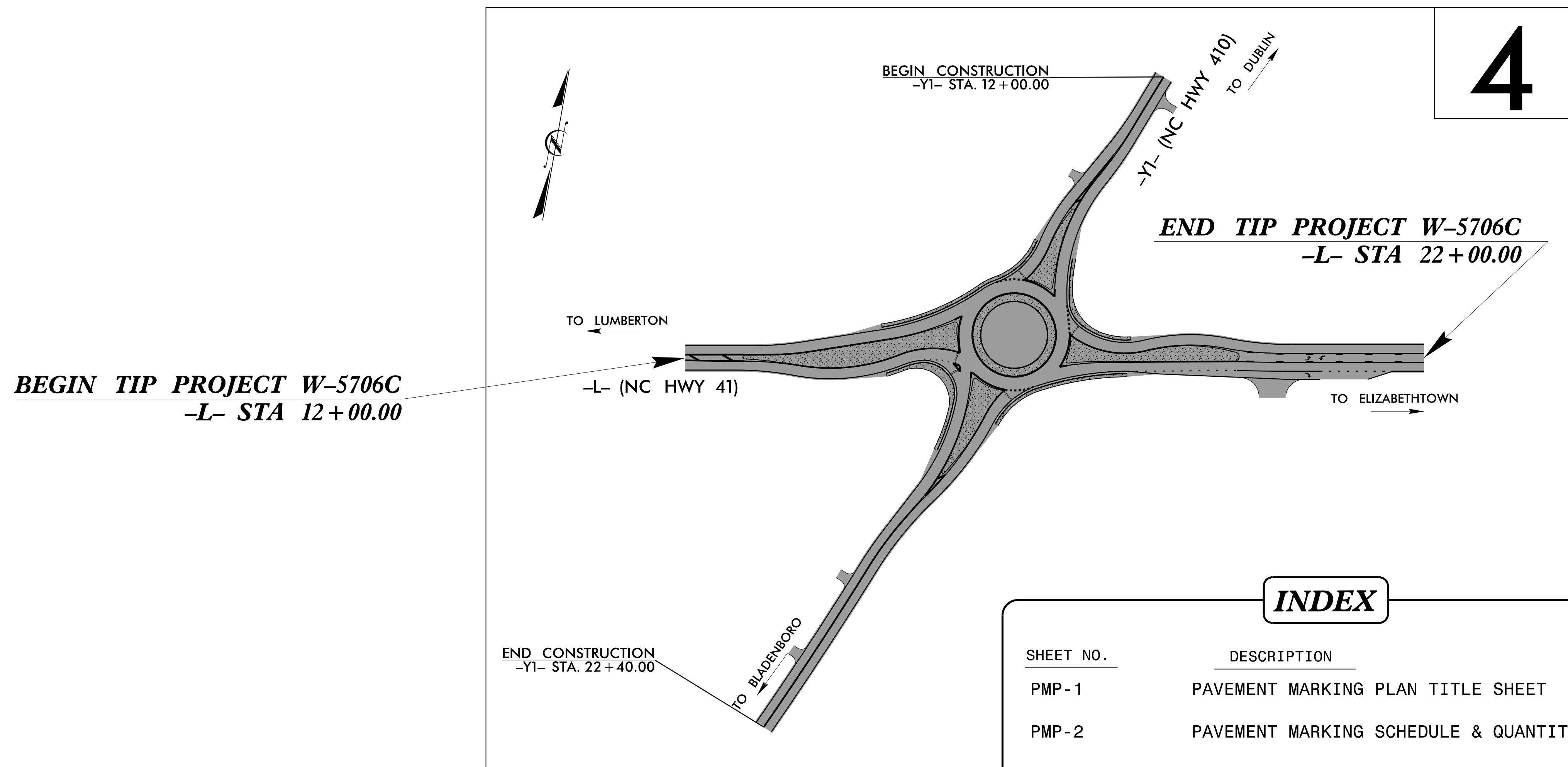
TIP PROJECT: W-5706C

**STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION**

**PAVEMENT MARKING PLAN
BLADEN COUNTY**

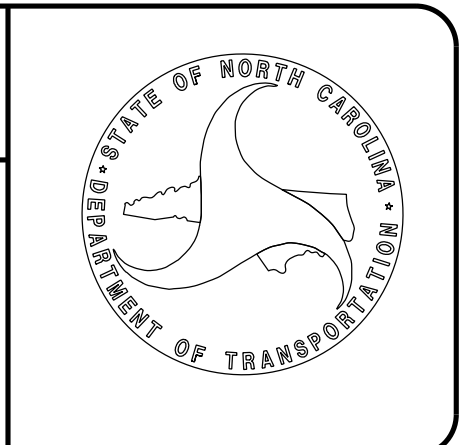
**LOCATION: ROUNDABOUT AT INTERSECTION OF NC 41
AND NC 410**

TIP NO. W-5706C	SHEET NO. PMP - 1
DocuSigned by: APPROVED: <u>Steve Miller</u> <small>9F0C8C15CEEB48E...</small>	
DATE: 3/27/2019	
	
SEAL DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



INDEX	
SHEET NO.	DESCRIPTION
PMP-1	PAVEMENT MARKING PLAN TITLE SHEET
PMP-2	PAVEMENT MARKING SCHEDULE & QUANTITIES
PMP-3	GENERAL NOTES & ROADWAY STANDARD DRAWINGS
PMP-4	PAVEMENT MARKING DETAILS

N.C.D.O.T. CONTACT INFORMATION	
<u>Ayman I. Alqudwah, PE</u>	SIGNING AND DELINEATION REGIONAL ENGINEER
<u>D. Mitchell Eaton, PE</u>	SIGNING AND DELINEATION PROJECT DESIGN ENGINEER

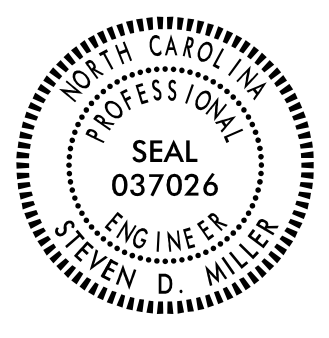


PLAN PREPARED BY: SEPI ENGINEERING & CONSTRUCTION	
<u>Steve Miller, PE</u>	PROJECT MANAGER
<u>Robert Screws, EI</u>	DESIGN ENGINEER

SEPI

ENGINEERING &
CONSTRUCTION

1025 Wade Avenue
Raleigh, NC 27605
Tel: 919-789-9977
Fax: 919-789-9591
License: C-2197

TIP NO. W-5706C	SHEET NO. PMP - 2
DocuSigned by: APPROVED: <i>Steve Miller</i> DATE: 3/27/2019	
	
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PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION
	<u>THERMOPLASTIC (4", 90 MILS)</u>
T8	2 FT. - 6 FT./SP WHITE MINISKIP
TA	WHITE EDGE LINE
TB	YELLOW EDGE LINE
TD	3 FT. - 9 FT./SP WHITE MINISKIP
TE	WHITE SOLID LANE LINE
TF	10 FT. YELLOW SKIP
TH	YELLOW SINGLE CENTER
TI	YELLOW DOUBLE CENTER
	<u>THERMOPLASTIC (8", 90 MILS)</u>
TN	WHITE GORE LINE
TP	YELLOW DIAGONAL
	<u>THERMOPLASTIC (12", 90 MILS)</u>
T10	3 FT. - 3 FT./SP WHITE MINISKIP
TV	YELLOW DIAGONAL
	<u>THERMOPLASTIC PAVEMENT MARKING SYMBOLS (90 MILS)</u>
UA	LEFT TURN ARROW
UB	RIGHT TURN ARROW
UN	24" YIELD LINE TRIANGLE
	<u>RAISED PAVEMENT MARKERS - SNOWPLOWABLE</u>
ME	YELLOW & YELLOW
MF	CRYSTAL & RED

SUMMARY OF QUANTITIES

ITEM NO.		ITEM DESCRIPTION	QUANTITY	UNIT
DESC. NO.	SECT. NO.			
4685000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)	8230	LF
4695000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (8", 90 MILS)	320	LF
4700000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (12", 90 MILS)	95	LF
4725000000-E	1205	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)	73	EA
4905000000-N	1253	PERMANENT RAISED PAVEMENT MARKERS - SNOWPLOWABLE	50	EA

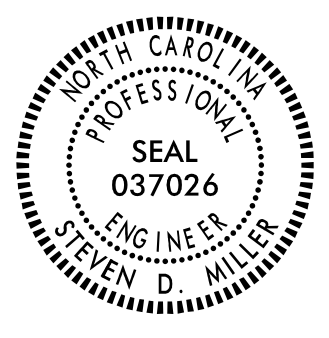
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ENGINEERING & CONSTRUCTION

1025 Wade Avenue
Raleigh, NC 27605
Tel: 919-789-9977
Fax: 919-789-9591
License: C-2197

PAVEMENT MARKING SCHEDULE & SUMMARY OF QUANTITIES

TIP NO.	SHEET NO.
W-5706C	PMP - 3
DocuSigned by: APPROVED: <i>Steve Miller</i>	
DATE: 3/27/2019	
SEAL 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

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
NC 41 / 410	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.

ROADWAY STANDARD DRAWINGS

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
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTILANE ROADWAYS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1205.14	PAVEMENT MARKINGS - ROUNDABOUTS
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1253.01	RAISED PAVEMENT MARKERS - SNOWPLOWABLE

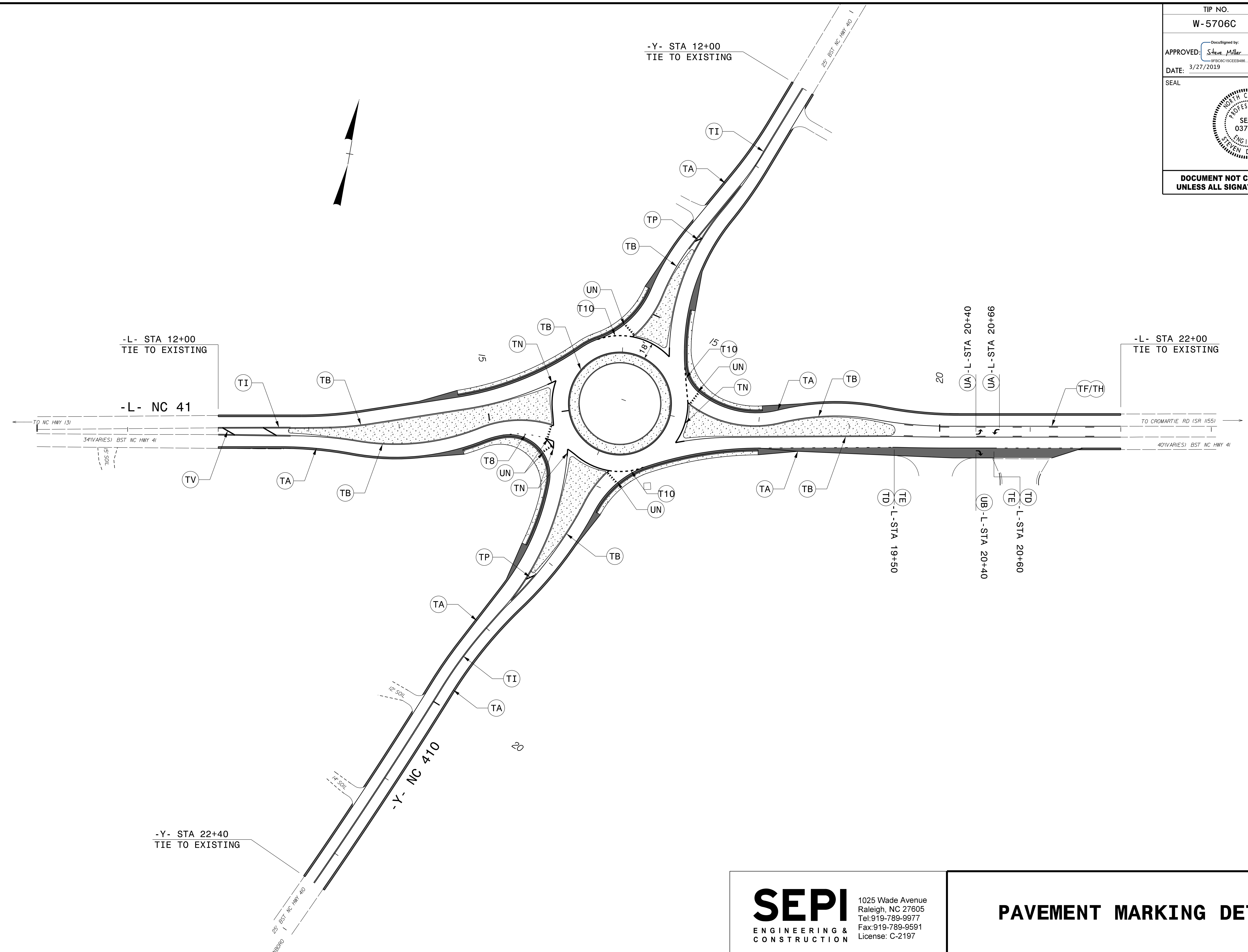
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ENGINEERING & CONSTRUCTION

1025 Wade Avenue
Raleigh, NC 27605
Tel: 919-789-9977
Fax: 919-789-9591
License: C-2197

**GENERAL NOTES AND ROADWAY
STANDARD DRAWINGS**

TIP NO. W-5706C	SHEET NO. PMP - 4
Approved by: <u>Steve Miller</u> DATE: 3/27/2019	
	
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CONSTRUCTION

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Tel: 919-789-9977
Fax: 919-789-9591
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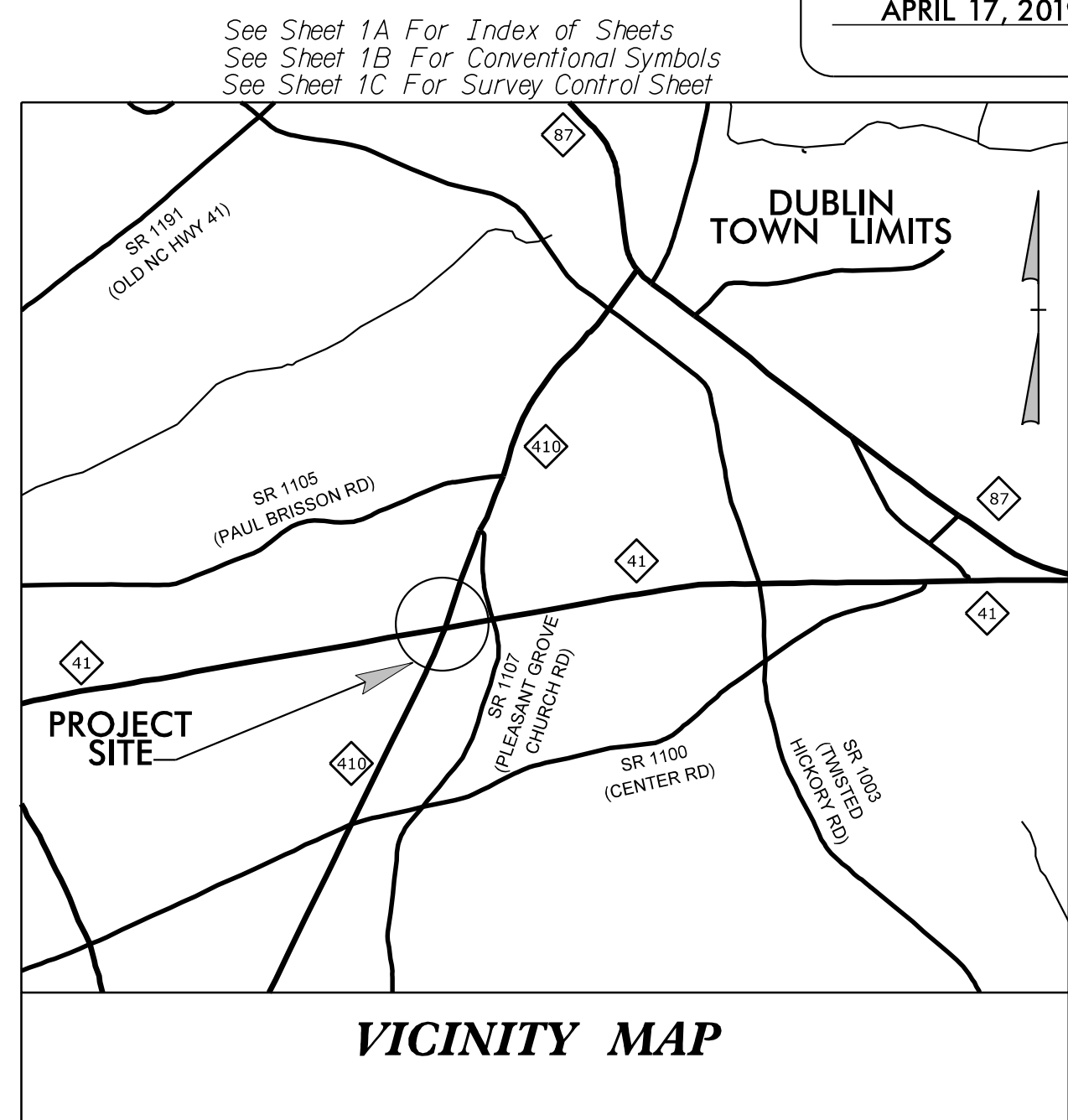
PAVEMENT MARKING DETAIL

TIP PROJECT: W-5706C

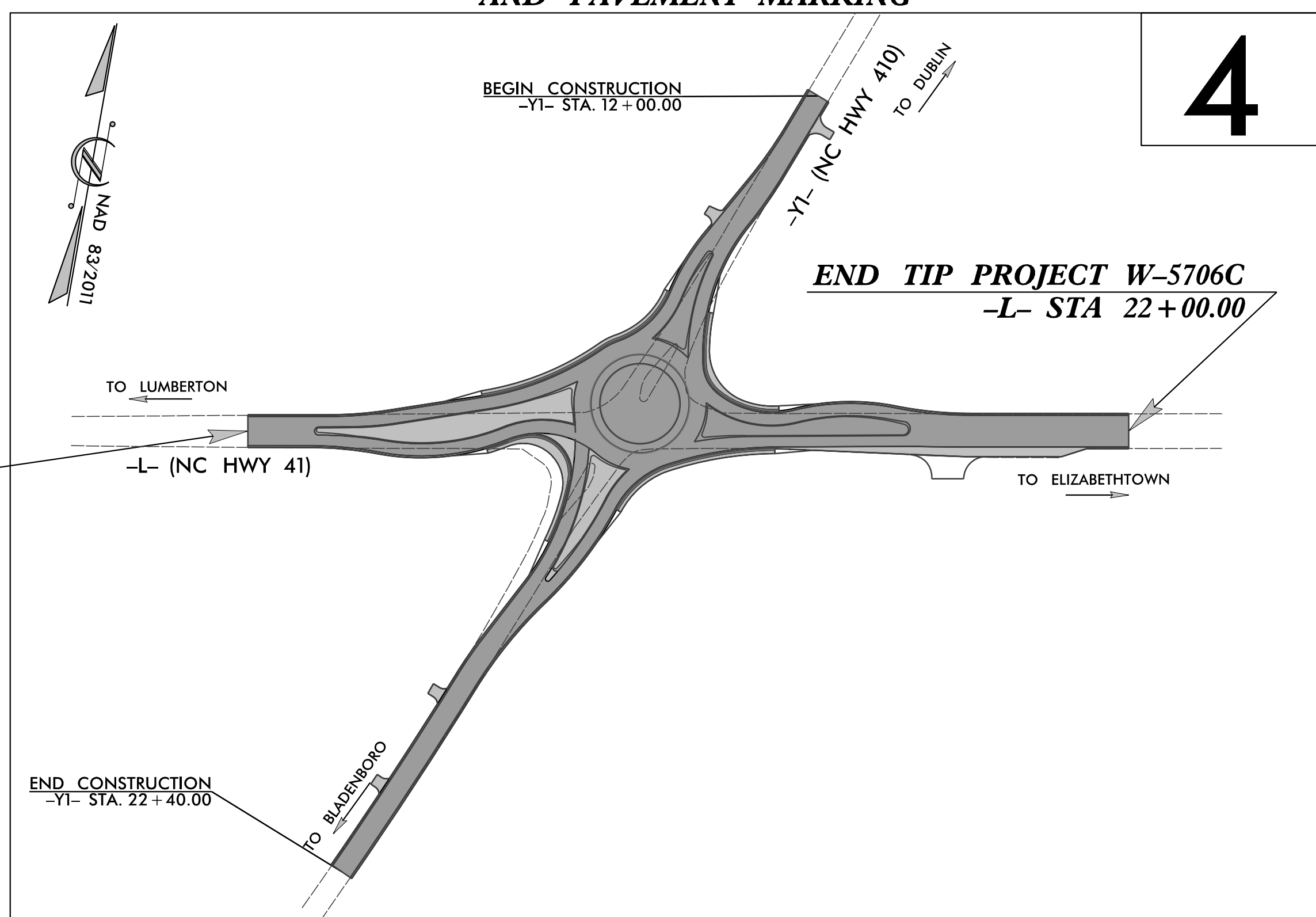
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
**PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL**
BLADEN COUNTY

**LOCATION: ROUNDABOUT AT INTERSECTION OF NC 41
AND NC 410**

**TYPE OF WORK: GRADING, DRAINAGE, PAVING, SIGNING,
AND PAVEMENT MARKING**



2018 STANDARD SPECIFICATIONS
RIGHT OF WAY DATE:
MARCH 30, 2018
LETTING DATE:
APRIL 17, 2019

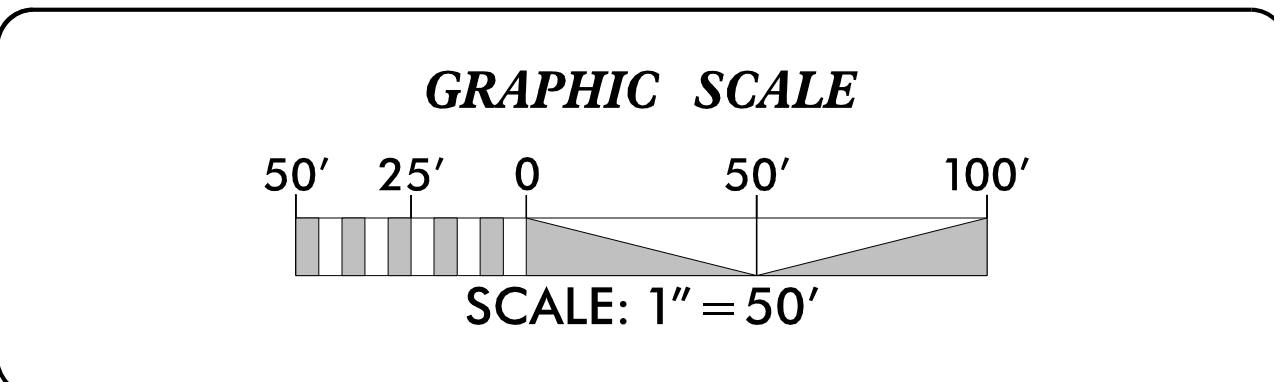


STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5706C	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
44852.3.3	HSIP-0041(110)	CONST	

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	TSF
1606.01	Special Sediment Control Fence	SSCF
1622.01	Temporary Berms and Slope Drains	TBSD
1630.02	Silt Basin Type B	SBS
1633.01	Temporary Rock Silt Check Type-A	TRSCA
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	TRSCA-PAM
1633.02	Temporary Rock Silt Check Type-B	TRSCB
	Wattle / Coir Fiber Wattle	W/CFW
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	W/CFW-PAM
1634.01	Temporary Rock Sediment Dam Type-A	TRSDA
1634.02	Temporary Rock Sediment Dam Type-B	TRSDA-B
1635.01	Rock Pipe Inlet Sediment Trap Type-A	RPISTRA
1635.02	Rock Pipe Inlet Sediment Trap Type-B	RPISTRB
1630.04	Stilling Basin	SB
1630.06	Special Stilling Basin	SSB
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	SKB
	Tiered Skimmer Basin	TSKB
	Infiltration Basin	IB

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



**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 ENVIRONMENTAL
QUALITY DIVISION OF WATER RESOURCES.**

Prepared in the Office of:

SUNGATE DESIGN GROUP, P.A.

905 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243
ENG FIRM LICENSE NO. C-890

Designed by:

MATTHEW C. EDWARDS, EI 3992

NAME LEVEL III CERTIFICATION NO.

Reviewed in the Office of:

ROADSIDE ENVIRONMENTAL UNIT

1 South Wilmington St.
Raleigh, NC 27611

2018 STANDARD SPECIFICATIONS

Reviewed by:

XXXX XXXX

Roadway Standard Drawings

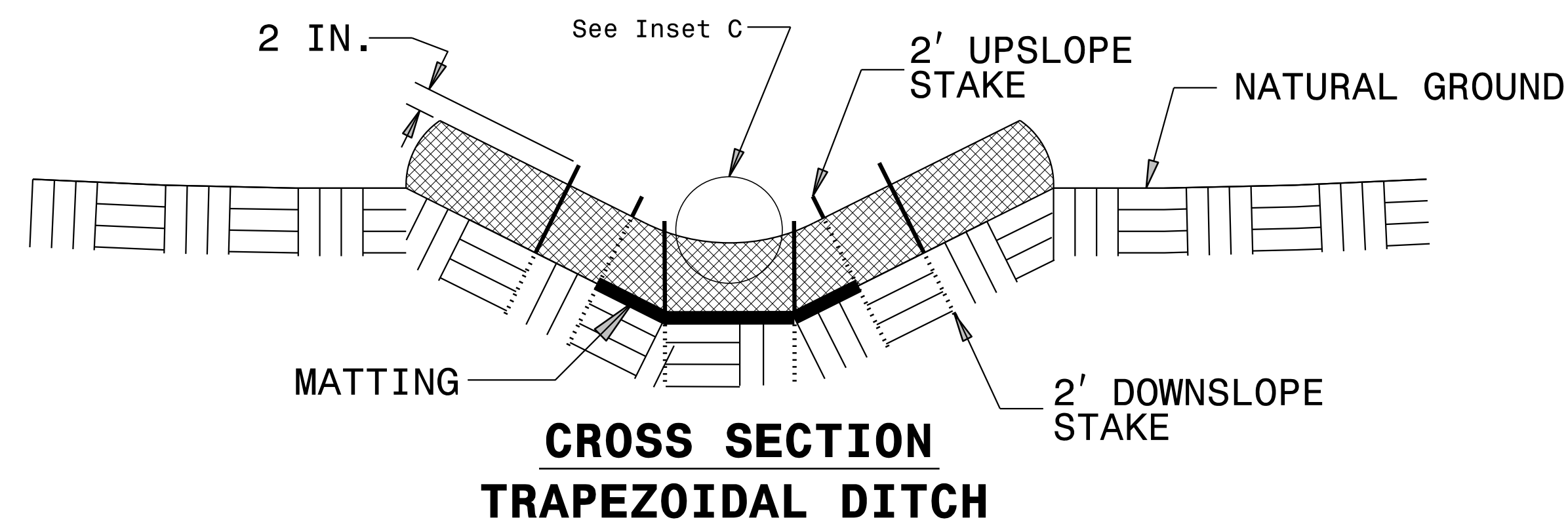
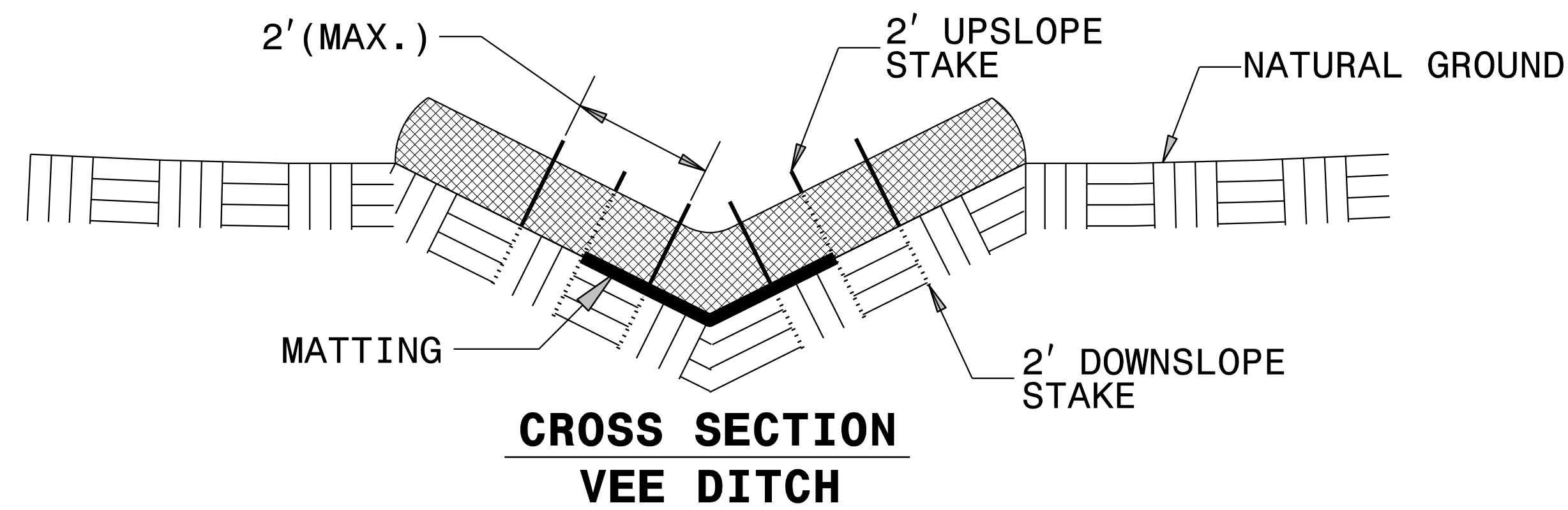
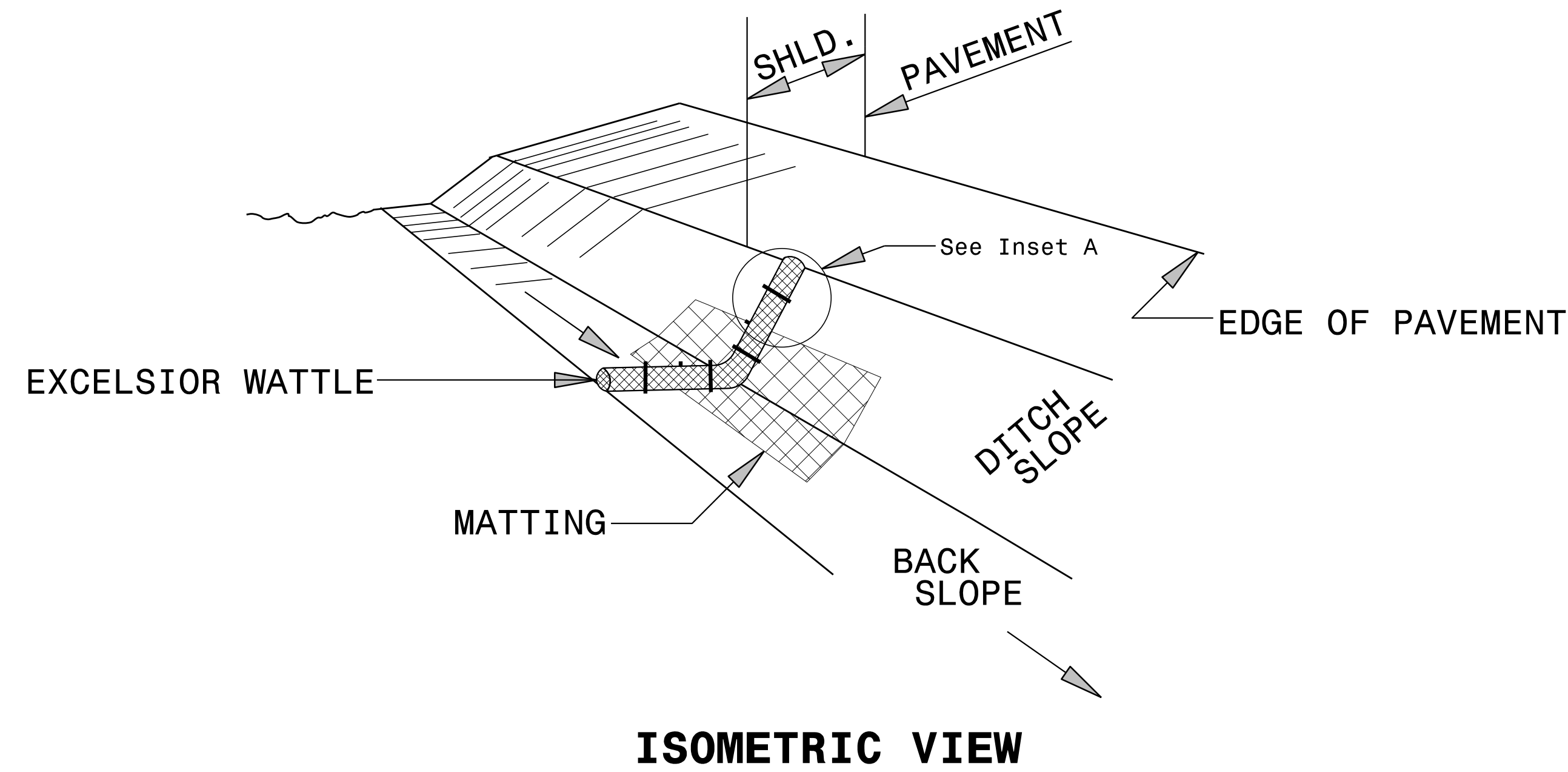
The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2018 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

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	

1/27/2019 EC-dsm-psh_01.dgn
ME:000005

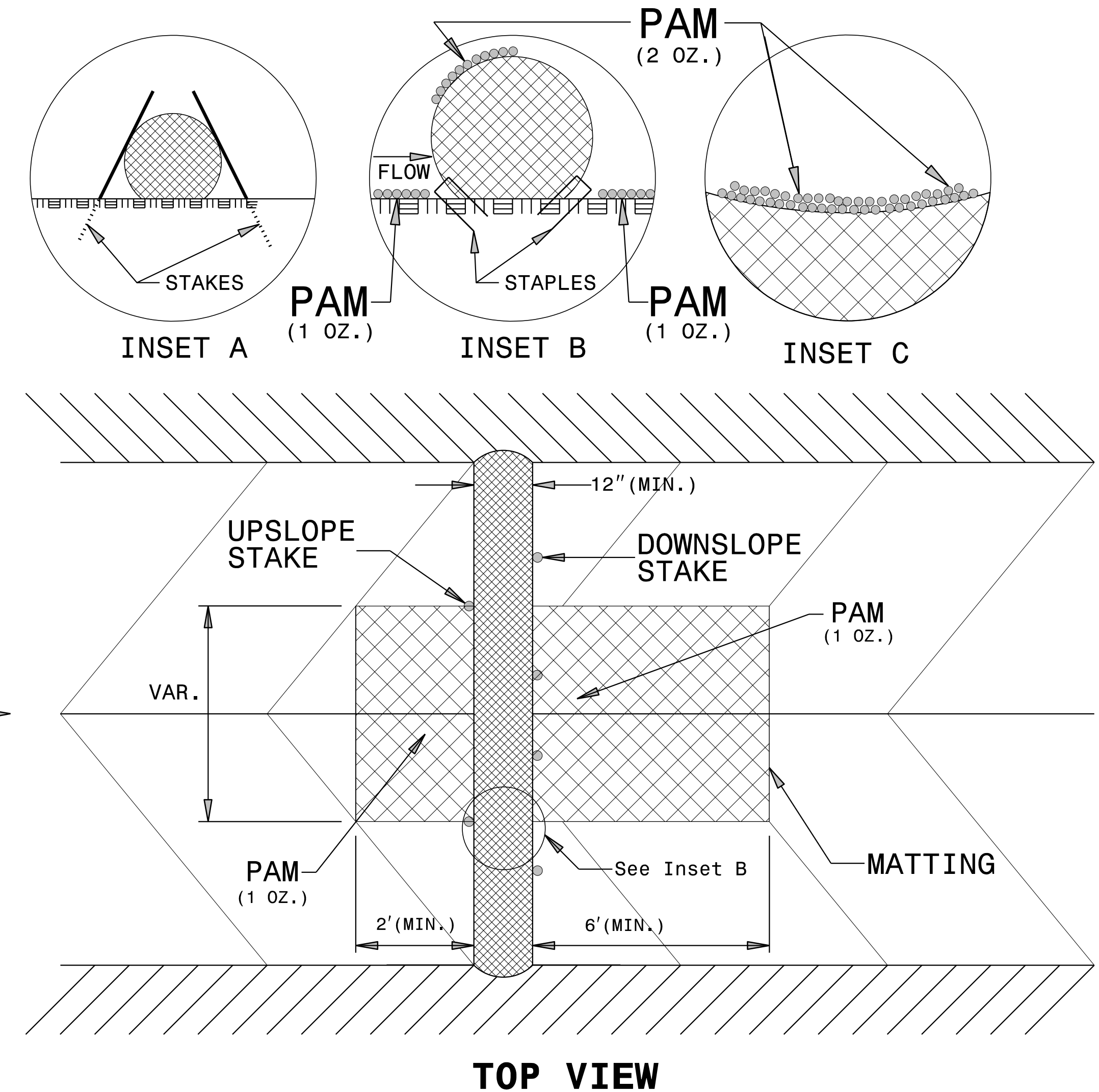
PROJECT REFERENCE NO. W-5706C	SHEET NO. EC-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



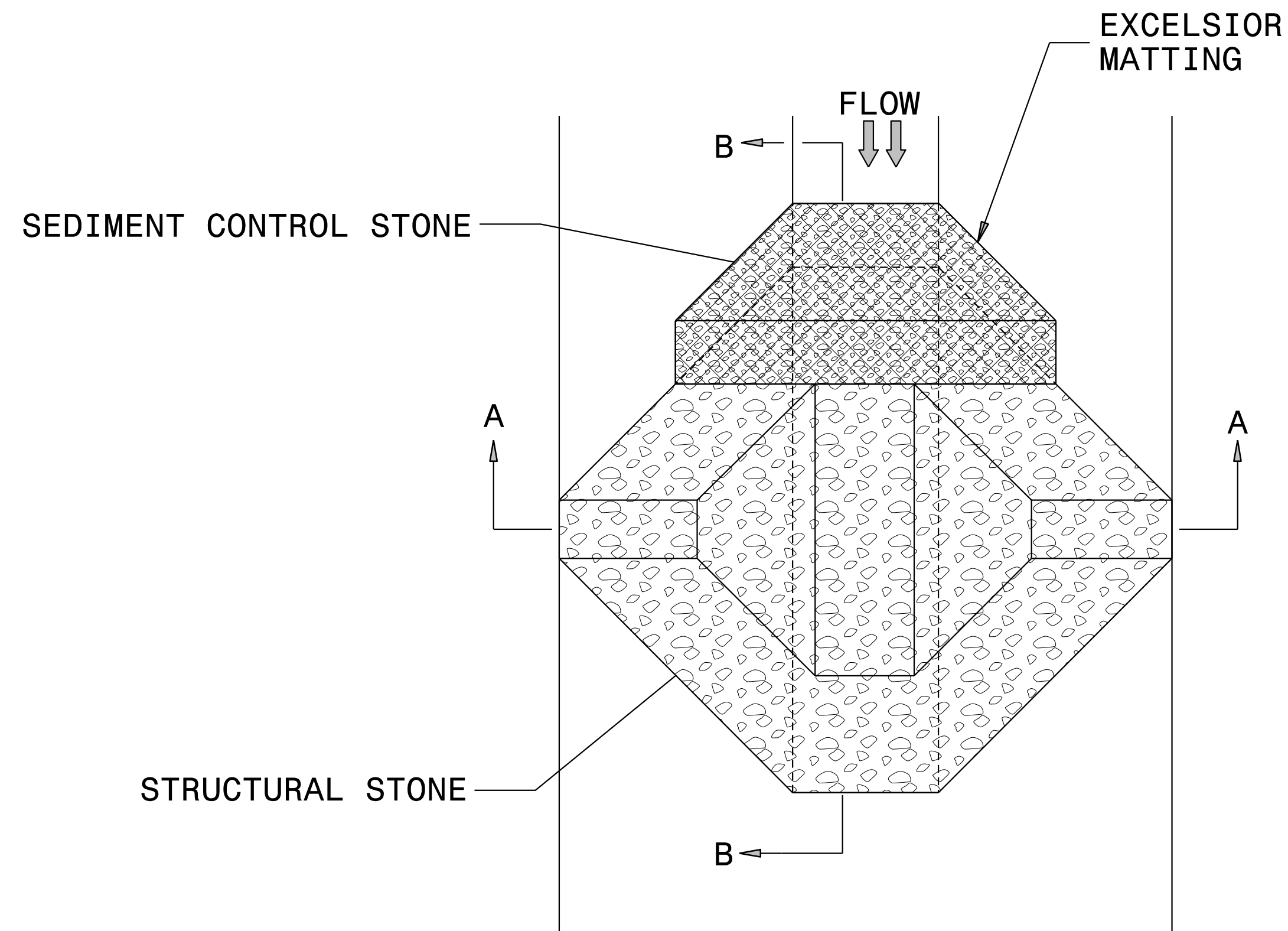
NOTES:

- 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 EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.

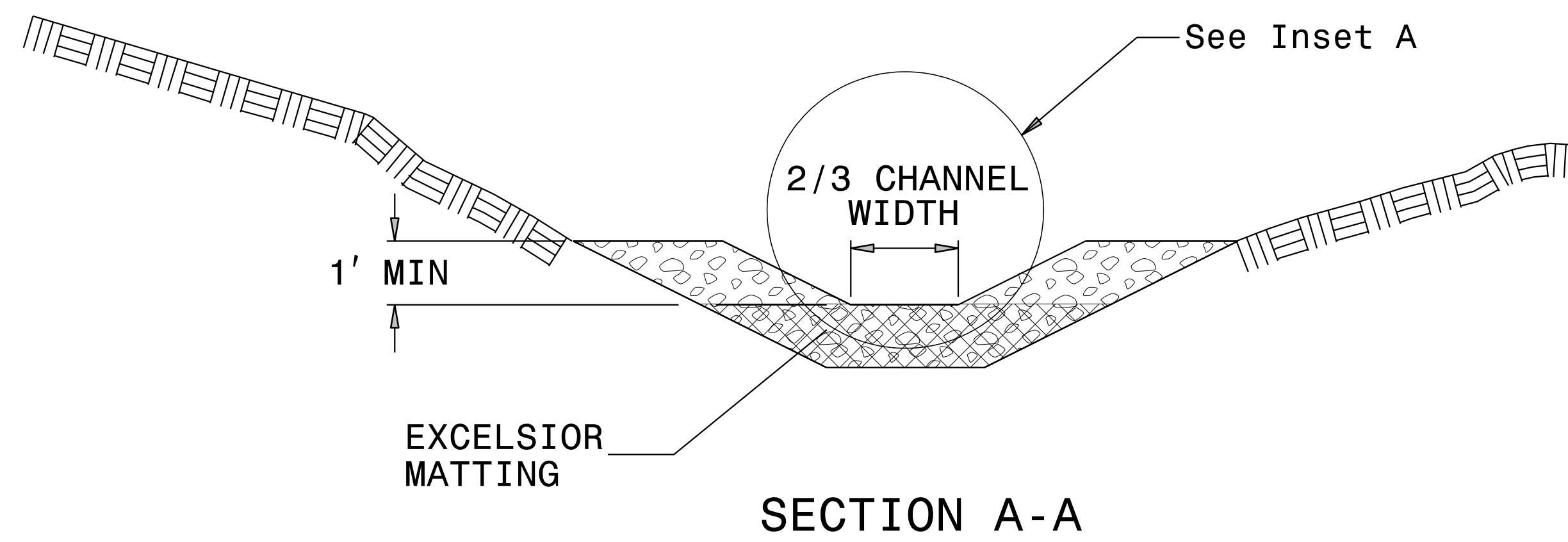


PROJECT REFERENCE NO. W-5706C	SHEET NO. EC-2A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



PLAN



SECTION A-A

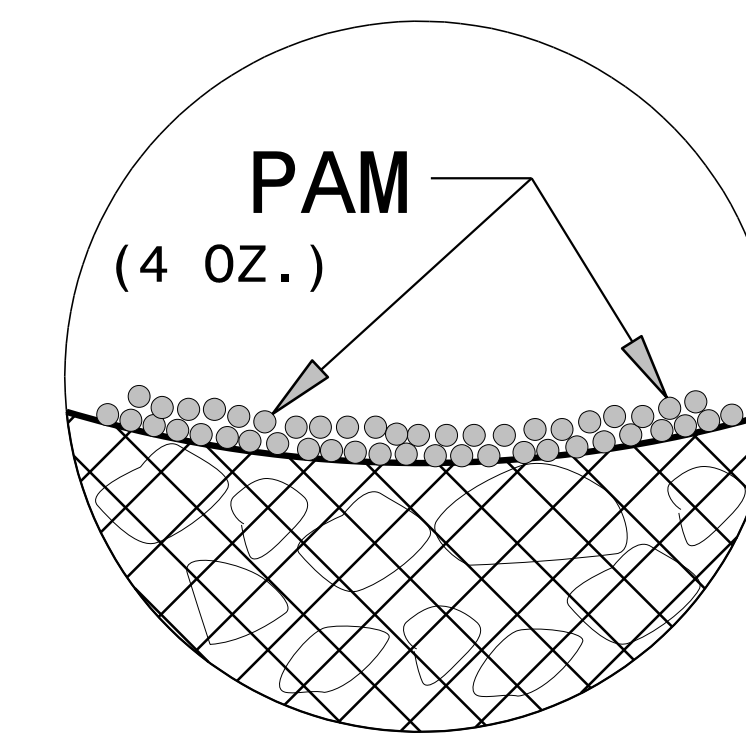
NOTES:

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

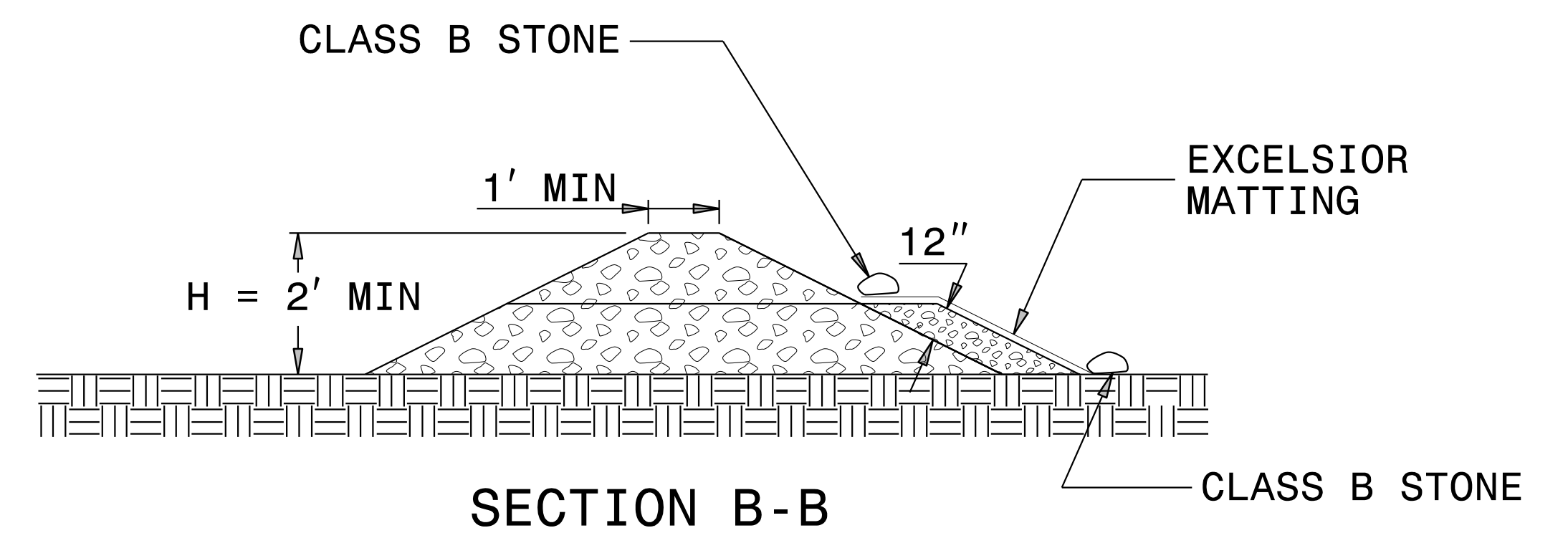
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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 B-B

NOT TO SCALE

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO. <i>W-5706C</i>	SHEET NO. <i>EC-3A</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SOIL STABILIZATION TIMEFRAMES

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

PROJECT REFERENCE NO. W-5706C	SHEET NO. EC-04/CONST.04
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 04

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

-RAB-

PI Sta 10+57.00 Δ = 90° 00' 00.0" (RT) D = 100' 31' 08.1" L = 89.54' T = 57.00' R = 57.00'	PI Sta 11+46.54 Δ = 90° 00' 00.0" (RT) D = 100' 31' 08.1" L = 89.54' T = 57.00' R = 57.00'
PI Sta 12+36.07 Δ = 90° 00' 00.0" (RT) D = 100' 31' 08.1" L = 89.54' T = 57.00' R = 57.00'	PI Sta 13+25.61 Δ = 90° 00' 00.0" (RT) D = 100' 31' 08.1" L = 89.54' T = 57.00' R = 57.00'

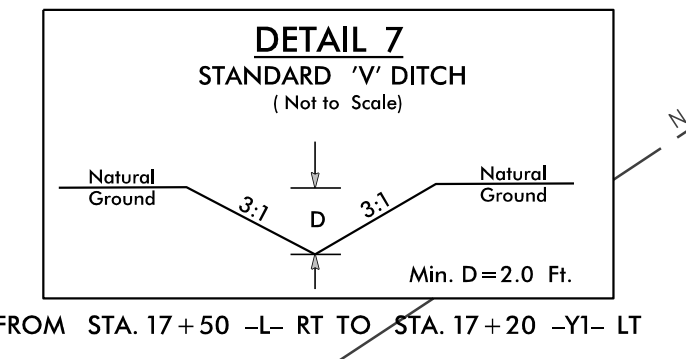
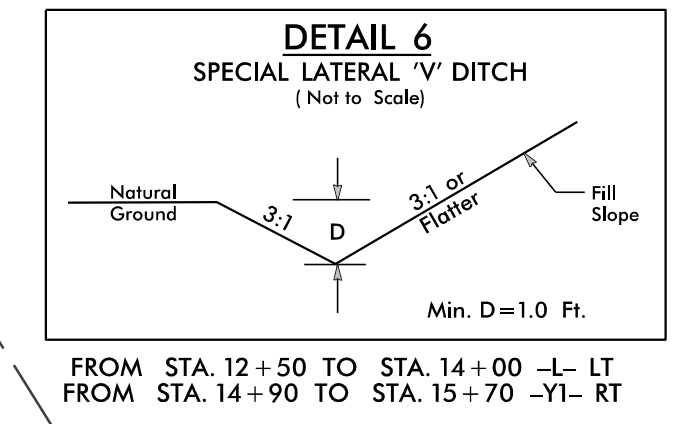
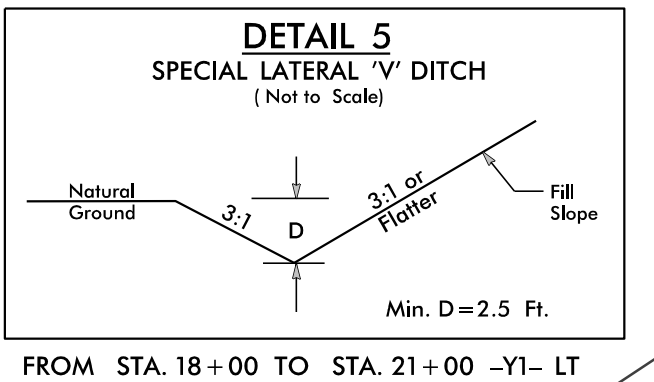
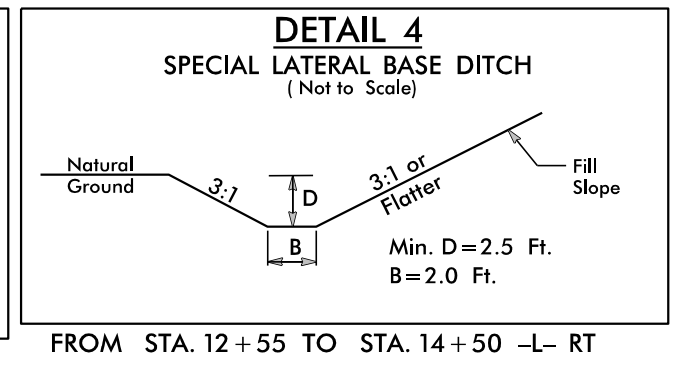
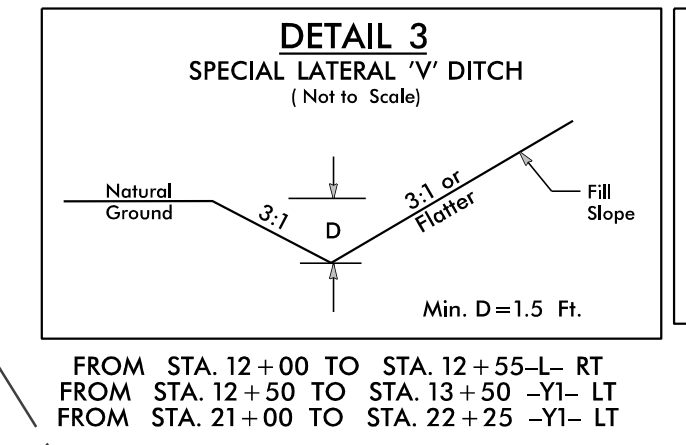
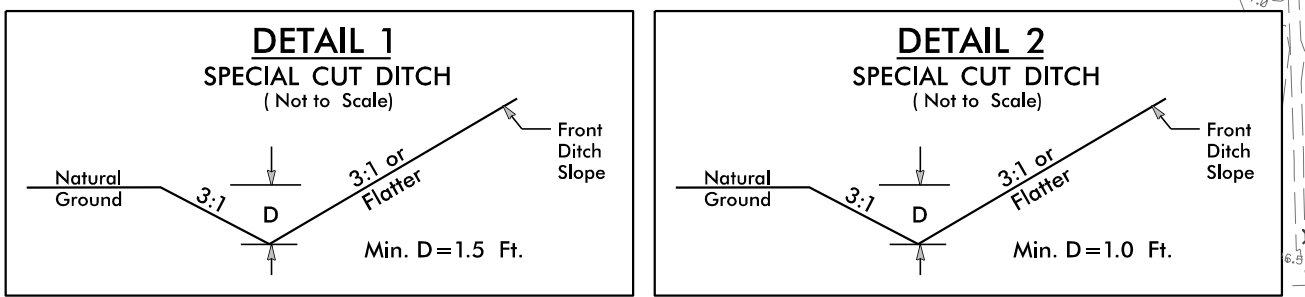
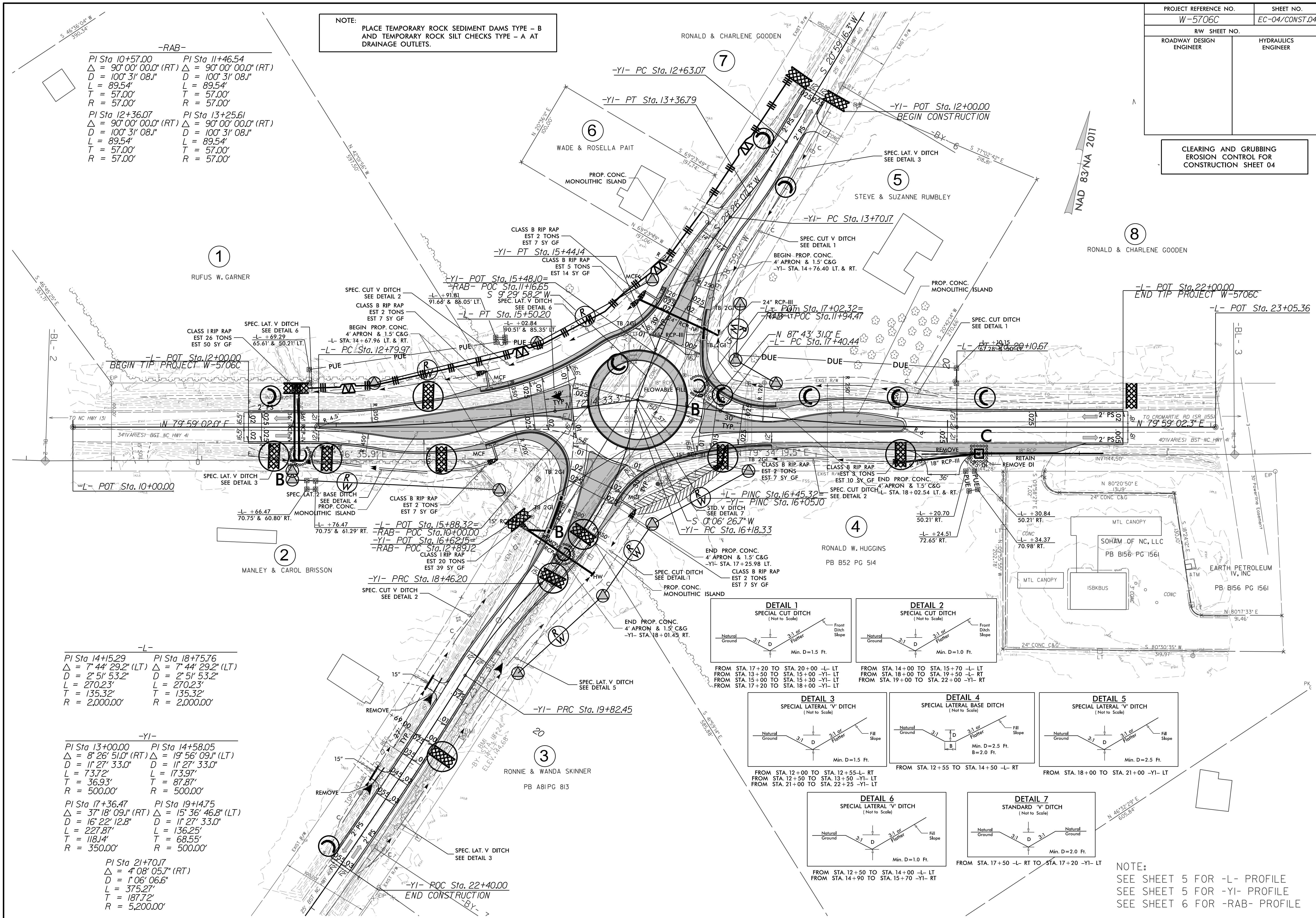
-L-

PI Sta 14+15.29 Δ = 7° 44' 29.2" (LT) D = 2' 51' 53.2" L = 270.23' T = 135.32' R = 2,000.00'	PI Sta 18+75.76 Δ = 7° 44' 29.2" (LT) D = 2' 51' 53.2" L = 270.23' T = 135.32' R = 2,000.00'
---	---

-YI-

PI Sta 13+00.00 Δ = 8° 26' 51.0" (RT) D = 11' 27' 33.0" L = 73.72' T = 36.93' R = 500.00'	PI Sta 14+58.05 Δ = 19° 56' 09.1" (LT) D = 11' 27' 33.0" L = 173.97' T = 87.87' R = 500.00'
PI Sta 17+36.47 Δ = 37° 18' 09.1" (RT) D = 16' 22' 12.8" L = 227.87' T = 118.14' R = 350.00'	PI Sta 19+14.75 Δ = 15° 36' 46.8" (LT) D = 11' 27' 33.0" L = 136.25' T = 68.55' R = 500.00'

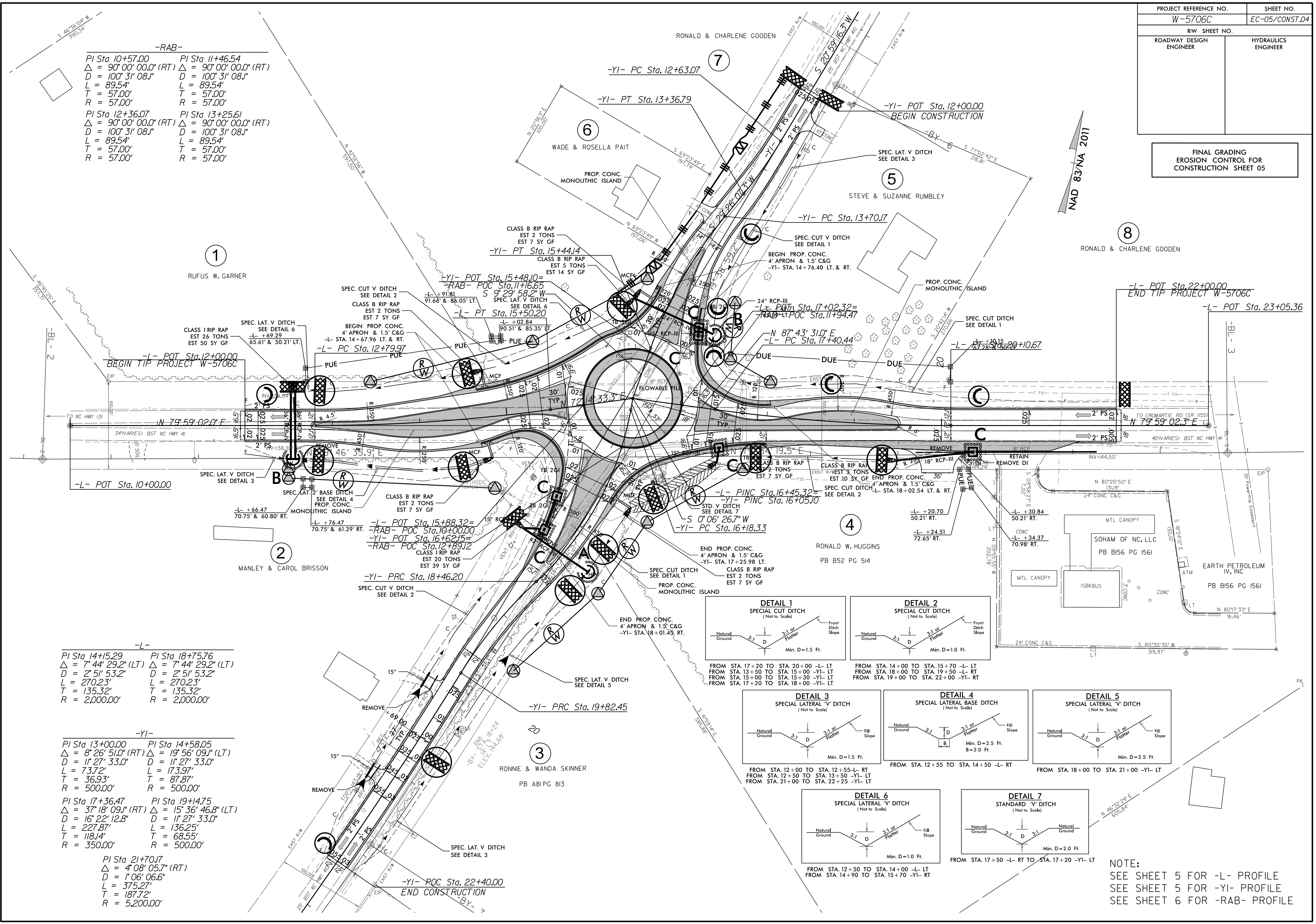
PI Sta 21+70.17
Δ = 4° 08' 05.7" (RT)
D = 1' 06' 06.6"
L = 375.27'
T = 187.72'
R = 5,200.00'



NOTE:
SEE SHEET 5 FOR -L- PROFILE
SEE SHEET 5 FOR -YI- PROFILE
SEE SHEET 6 FOR -RAB- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
W-5706C	EC-05/CONST.04
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

FINAL GRADING
EROSION CONTROL FOR
CONSTRUCTION SHEET 05



-RAB-

PI Sta 10+57.00	PI Sta 11+46.54
$\Delta = 90^{\circ} 00' 00.0''$ (RT)	$\Delta = 90^{\circ} 00' 00.0''$ (RT)
D = 100' 31' 08.1"	D = 100' 31' 08.1"
L = 89.54'	L = 89.54'
T = 57.00'	T = 57.00'
R = 57.00'	R = 57.00'
PI Sta 12+36.07	PI Sta 13+25.61
$\Delta = 90^{\circ} 00' 00.0''$ (RT)	$\Delta = 90^{\circ} 00' 00.0''$ (RT)
D = 100' 31' 08.1"	D = 100' 31' 08.1"
L = 89.54'	L = 89.54'
T = 57.00'	T = 57.00'
R = 57.00'	R = 57.00'

-L-

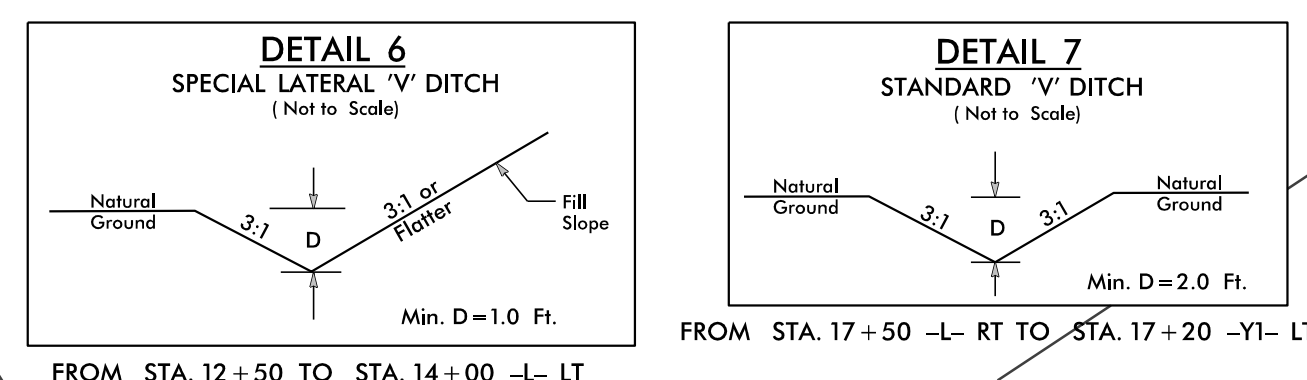
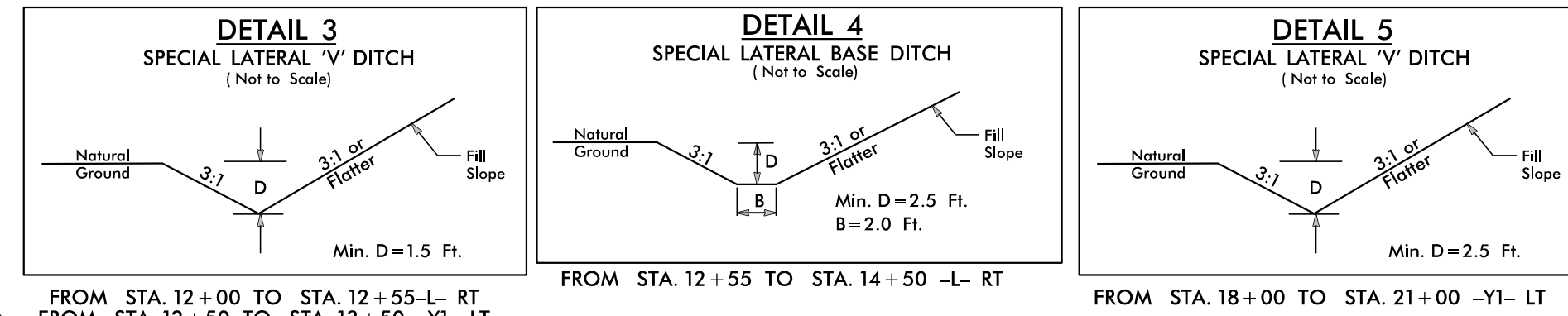
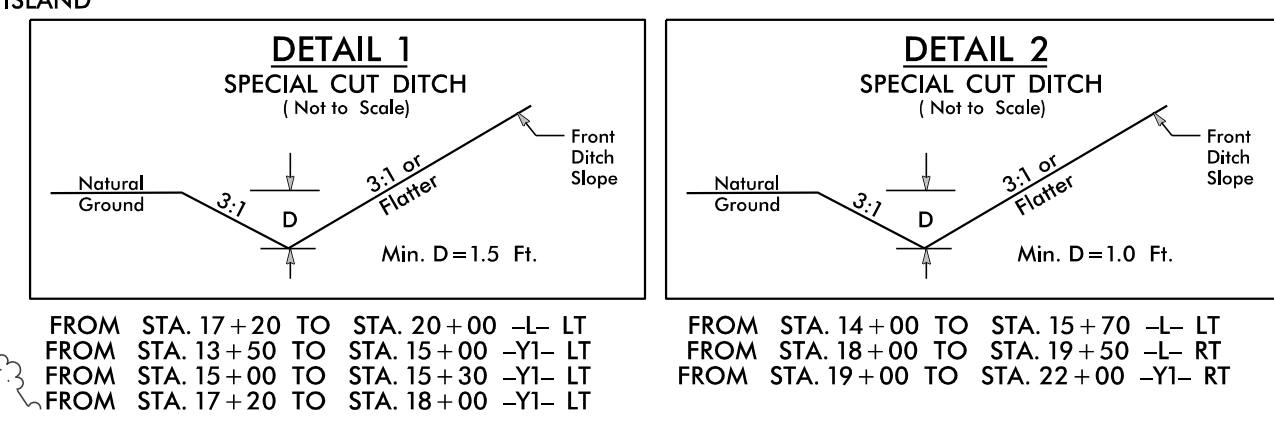
PI Sta 14+15.29	PI Sta 18+75.76
$\Delta = 7^{\circ} 44' 29.2''$ (LT)	$\Delta = 7^{\circ} 44' 29.2''$ (LT)
D = 2' 51' 53.2"	D = 2' 51' 53.2"
L = 270.23'	L = 270.23'
T = 135.32'	T = 135.32'
R = 2,000.00'	R = 2,000.00'

-YI-

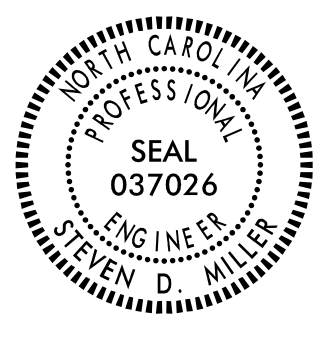
PI Sta 13+00.00	PI Sta 14+58.05
$\Delta = 8^{\circ} 26' 51.0''$ (RT)	$\Delta = 19^{\circ} 56' 09.1''$ (LT)
D = 11' 27' 33.0"	D = 11' 27' 33.0"
L = 73.72'	L = 173.97'
T = 36.93'	T = 87.87'
R = 500.00'	R = 500.00'

PI Sta 17+36.47	PI Sta 19+14.75
$\Delta = 37^{\circ} 18' 09.1''$ (RT)	$\Delta = 15^{\circ} 36' 46.8''$ (LT)
D = 16' 22' 12.8"	D = 11' 27' 33.0"
L = 227.87'	L = 136.25'
T = 118.14'	T = 68.55'
R = 350.00'	R = 500.00'

PI Sta 21+70.17
$\Delta = 4^{\circ} 08' 05.7''$ (RT)
D = 1' 06' 06.6"
L = 375.27'
T = 187.72'
R = 5,200.00'



NOTE:
SEE SHEET 5 FOR -L- PROFILE
SEE SHEET 5 FOR -YI- PROFILE
SEE SHEET 6 FOR -RAB- PROFILE

TIP NO. W-5706C	SHEET NO. SIGN-1
APPROVED: <u>Steve Miller</u> DATE: 1/28/2019	
SEAL 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

**STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION**

**SIGNING PLAN
BLADEN COUNTY**

**LOCATION: ROUNDABOUT AT INTERSECTION OF NC 41
AND NC 410**

TIP PROJECT: W-5706C

CONTRACT: -

ROADWAY STANDARD DRAWINGS

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
901.50	ARROWS AND SHIELDS
904.10	ORIENTATION OF GROUND MOUNTED SIGNS
904.50	MOUNTING OF TYPE 'D', 'E' AND 'F' SIGNS ON 'U' CHANNEL POSTS
910.40	SINGLE LANE ROUNDABOUT SIGNING

PROJECT NOTES

- DISPOSAL OF SIGN SYSTEM, U-CHANNEL

GENERAL NOTES

- SIGNS FURNISHED BY STATE
- 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.

SUMMARY OF QUANTITIES

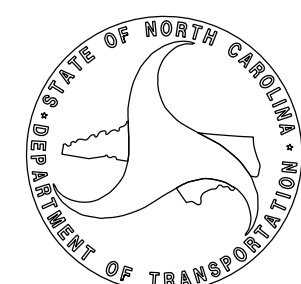
ITEM NO.		ITEM DESCRIPTION	QUANTITY	UNIT
DESC. NO.	SECT. NO.			
4072000000	903	SUPPORTS, 3 LB STEEL U-CHANNEL	666	LF
4096000000	904	SIGN ERECTION, TYPE D	6	EA
4102000000	904	SIGN ERECTION, TYPE E	24	EA
4108000000	904	SIGN ERECTION, TYPE F	4	EA
4116100000	904	SIGN ERECTION, RELOCATE SIGN TYPE E	2	EA
4155000000	907	DISPOSAL OF SIGN SYSTEM, U-CHANNEL	23	EA

INDEX

SHEET NO.	DESCRIPTION
SIGN-1	SIGNING PLAN TITLE SHEET
SIGN-2,2A	TYPE D SIGNS
SIGN-3	TYPE E & F SIGNS
SIGN-4	PROPOSED SIGNS
SIGN-4A	EXISTING SIGNS

N.C.D.O.T. CONTACT INFORMATION

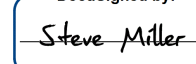
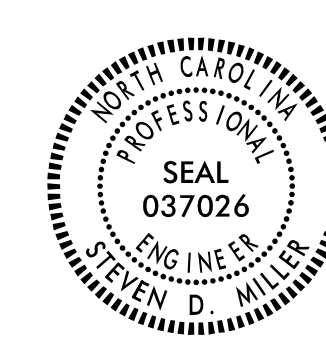
Ayman I. Alqudwah, PE SIGNING AND DELINEATION REGIONAL ENGINEER
D. Mitchell Eaton, PE SIGNING AND DELINEATION PROJECT DESIGN ENGINEER



**PLAN PREPARED BY:
SEPI ENGINEERING & CONSTRUCTION**

Steve Miller, PE PROJECT MANAGER
Robert Screws, EI DESIGN ENGINEER

SEPI
ENGINEERING & CONSTRUCTION
 1025 Wade Avenue
 Raleigh, NC 27605
 Tel: 919-789-9977
 Fax: 919-789-9591
 License: C-2197

TIP NO.	SHEET NO.
W-5706C	SIGN-2
APPROVED:  Steve Miller DATE: 1/28/2019	
SEAL 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

SIGN NUMBER: 301
TYPE: D
QUANTITY: 1
SIGN WIDTH: 5'-6"
HEIGHT: 2'-6"
TOTAL AREA: 13.75 Sq.Ft.

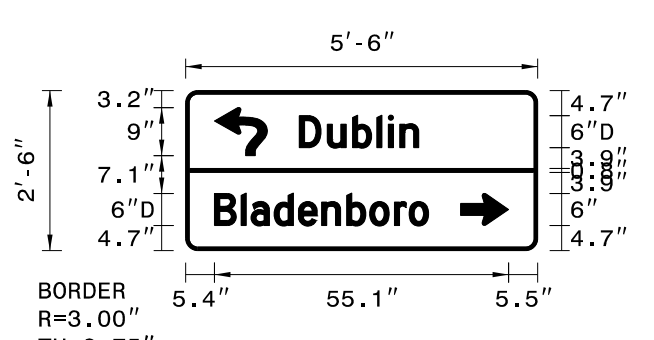
BACKG COLOR: Green
COPY COLOR: White

SYMBOL	X	Y	WID	HT
AR_FISHHOOK	5.4	17.8	9.9	9
AR_Type D	51.5	4.7	6	9

BORDER TYPE: FLUSH
RECESS: 0"
WIDTH: 0.75"
RADIUS: 3"

NO. Z BARS: 1
LENGTH: 13.75

DESIGN BY: RDS
PROJECT ID: W-5706C
CHECKED BY: SDM
LOCATION: BLADEN COUNTY
DATE: Nov 23, 2018
DIVISION: 06



1. Legend and border(except those that are colored black) shall be direct applied Grade C sheeting.
2. Background shall be Grade C reflective sheeting.
3.
4.

Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter

Letter	D	u	b	l	i	n	Series/Size
Text Length	21.3	5.2	4.7	4.6	2.2	2.2	D/6"
B l a d e n b o r o	5.4	5	1.9	4.3	4.6	4.4	D/6"
							40.1

FILENAME: W-5706C_PROPOSED_SIGNS_A B D
NORTH CAROLINA D.O.T. SIGN DETAIL

SIGN NUMBER: 303
TYPE: D
QUANTITY: 1
SIGN WIDTH: 5'-6"
HEIGHT: 2'-6"
TOTAL AREA: 13.75 Sq.Ft.

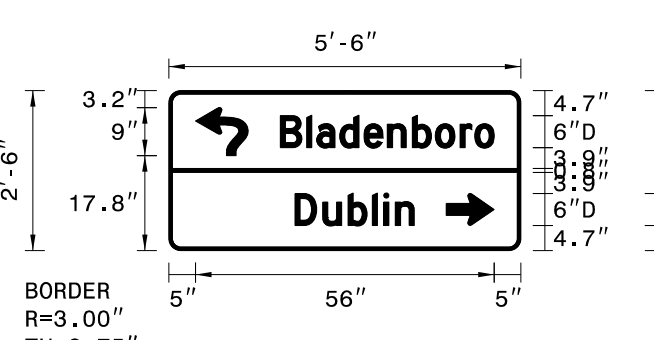
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COPY COLOR: White

SYMBOL	X	Y	WID	HT
AR_FISHHOOK	5	17.8	9.9	9
AR_Type D	52	4.7	6	9

BORDER TYPE: FLUSH
RECESS: 0"
WIDTH: 0.75"
RADIUS: 3"

NO. Z BARS: 1
LENGTH: 13.75

DESIGN BY: RDS
PROJECT ID: W-5706C
CHECKED BY: SDM
LOCATION: BLADEN COUNTY
DATE: Nov 23, 2018
DIVISION: 06



1. Legend and border(except those that are colored black) shall be direct applied Grade C sheeting.
2. Background shall be Grade C reflective sheeting.
3.
4.

Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter

Letter	B	l	a	d	e	n	b	o	r	o	Series/Size
Text Length	20.9	5	1.9	4.3	4.6	4.4	4.7	4.3	4.6	2.8	D/6"
D u b l i n	23.6	5.2	4.7	4.6	2.2	2.2	3.5	20			D/6"
											22.4

FILENAME: W-5706C_PROPOSED_SIGNS_A B D
NORTH CAROLINA D.O.T. SIGN DETAIL

SIGN NUMBER: 302
TYPE: D
QUANTITY: 1
SIGN WIDTH: 5'-6"
HEIGHT: 2'-6"
TOTAL AREA: 13.75 Sq.Ft.

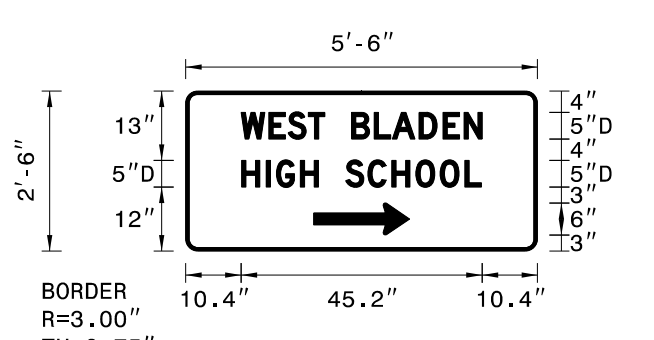
BACKG COLOR: Green
COPY COLOR: White

SYMBOL	X	Y	WID	HT
AR_Type D	23.9	3	6	18

BORDER TYPE: FLUSH
RECESS: 0"
WIDTH: 0.75"
RADIUS: 3"

NO. Z BARS: 1
LENGTH: 13.75

DESIGN BY: RDS
PROJECT ID: W-5706C
CHECKED BY: SDM
LOCATION: BLADEN COUNTY
DATE: Nov 23, 2018
DIVISION: 06



1. Legend and border(except those that are colored black) shall be direct applied Grade C sheeting.
2. Background shall be Grade C reflective sheeting.
3.
4.

Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter

Letter	W	E	S	T	B	L	A	D	E	N	Series/Size
Text Length	10.4	5.2	3.6	3.8	3.1	5	4.3	3.4	5	4.5	D/5"
H I G H S C H O O L	10.5	4.6	1.9	4.5	3.4	5.1	4.1	4.5	4.5	4.6	D/5"
											45

FILENAME: W-5706C_PROPOSED_SIGNS_A B D
NORTH CAROLINA D.O.T. SIGN DETAIL

SIGN NUMBER: 304
TYPE: D
QUANTITY: 1
SIGN WIDTH: 5'-6"
HEIGHT: 2'-6"
TOTAL AREA: 13.75 Sq.Ft.

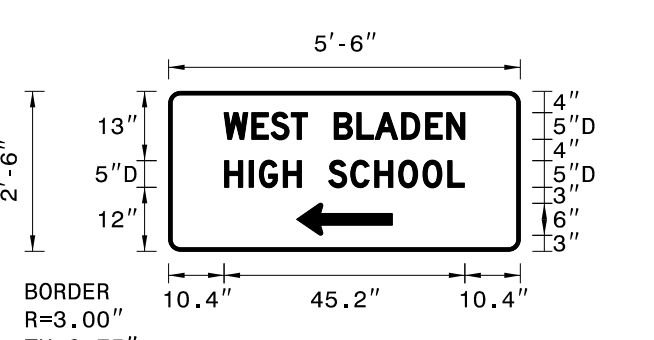
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COPY COLOR: White

SYMBOL	X	Y	WID	HT
AR_Type D	23.9	3	6	18

BORDER TYPE: FLUSH
RECESS: 0"
WIDTH: 0.75"
RADIUS: 3"

NO. Z BARS: 1
LENGTH: 13.75

DESIGN BY: RDS
PROJECT ID: W-5706C
CHECKED BY: SDM
LOCATION: BLADEN COUNTY
DATE: Nov 23, 2018
DIVISION: 06



1. Legend and border(except those that are colored black) shall be direct applied Grade C sheeting.
2. Background shall be Grade C reflective sheeting.
3.
4.

Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter

Letter	W	E	S	T	B	L	A	D	E	N	Series/Size
Text Length	10.4	5.2	3.6	3.8	3.1	5	4.3	3.4	5	4.5	D/5"
H I G H S C H O O L	10.5	4.6	1.9	4.5	3.4	5.1	4.1	4.5	4.5	4.6	D/5"
											45

FILENAME: W-5706C_PROPOSED_SIGNS_A B D
NORTH CAROLINA D.O.T. SIGN DETAIL

1/28/2019 11:51:13 AM W-5706C-SIGN-2.dgn

	1025 Wade Avenue Raleigh, NC 27605 Tel: 919-789-9977 Fax: 919-789-9591 License: C-2197	<h1>SIGN DESIGNS</h1>

SIGN NUMBER: 305
 TYPE: D
 QUANTITY: 1
 SIGN WIDTH: 6'-6"
 HEIGHT: 2'-6"
 TOTAL AREA: 16.25 Sq.Ft.
 BORDER TYPE: FLUSH
 RECESS: 0"
 WIDTH: 0.75"
 RADII: 3"
 NO. Z BARS: 1
 LENGTH:

BACKG COLOR: Green
 COPY COLOR: White

SYMBOL	X	Y	WID	HT
AR_FISHOOK	6	17.8	9.9	9
AR_Type D	63	4.7	6	9

DESIGN BY: RDS
 PROJECT ID: W-5706C
 CHECKED BY: SDM
 LOCATION: BLADEN COUNTY
 DATE: Nov 23, 2018
 DIVISION: 06

MAT'L: 0.125" (3.2 mm) ALUMINUM

BORDER R=3.00" TH=0.75"

Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter

Series/Size	Text Length
D/6"	38.4
D/6"	49.9

FILENAME: W-5706C_PROPOSED_SIGNS_A B D
 NORTH CAROLINA D.O.T. SIGN DETAIL

SIGN NUMBER: 306
 TYPE: D
 QUANTITY: 1
 SIGN WIDTH: 6'-6"
 HEIGHT: 2'-6"
 TOTAL AREA: 16.25 Sq.Ft.
 BORDER TYPE: FLUSH
 RECESS: 0"
 WIDTH: 0.75"
 RADII: 3"
 NO. Z BARS: 1
 LENGTH:

BACKG COLOR: Green
 COPY COLOR: White

SYMBOL	X	Y	WID	HT
AR_FISHOOK	6	17.8	9.9	9
AR_Type D	63	4.7	6	9

DESIGN BY: RDS
 PROJECT ID: W-5706C
 CHECKED BY: SDM
 LOCATION: BLADEN COUNTY
 DATE: Nov 23, 2018
 DIVISION: 06

MAT'L: 0.125" (3.2 mm) ALUMINUM

BORDER R=3.00" TH=0.75"

Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter

Series/Size	Text Length
D/6"	49.9
D/6"	38.4

FILENAME: W-5706C_PROPOSED_SIGNS_A B D
 NORTH CAROLINA D.O.T. SIGN DETAIL

TIP NO. W-5706C
 SHEET NO. SIGN-2A

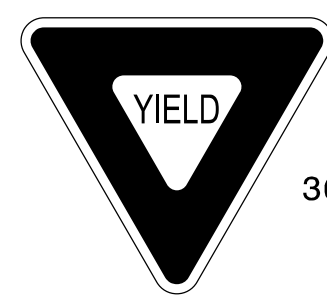


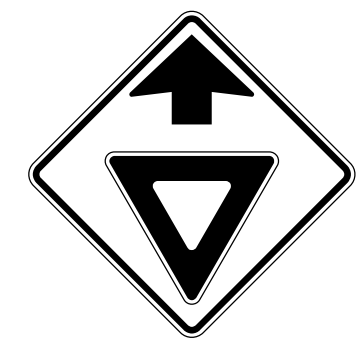
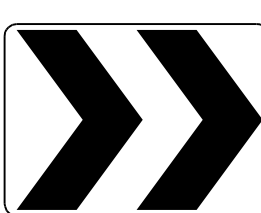
APPROVED: Steve Miller
 DATE: 1/28/2019

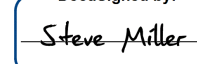
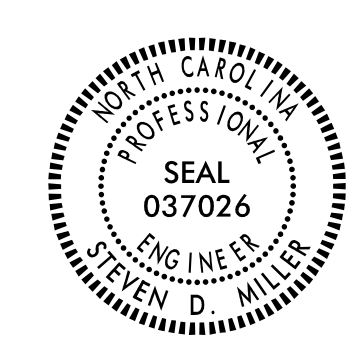
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DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

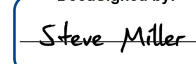
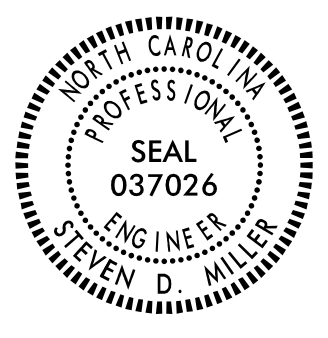
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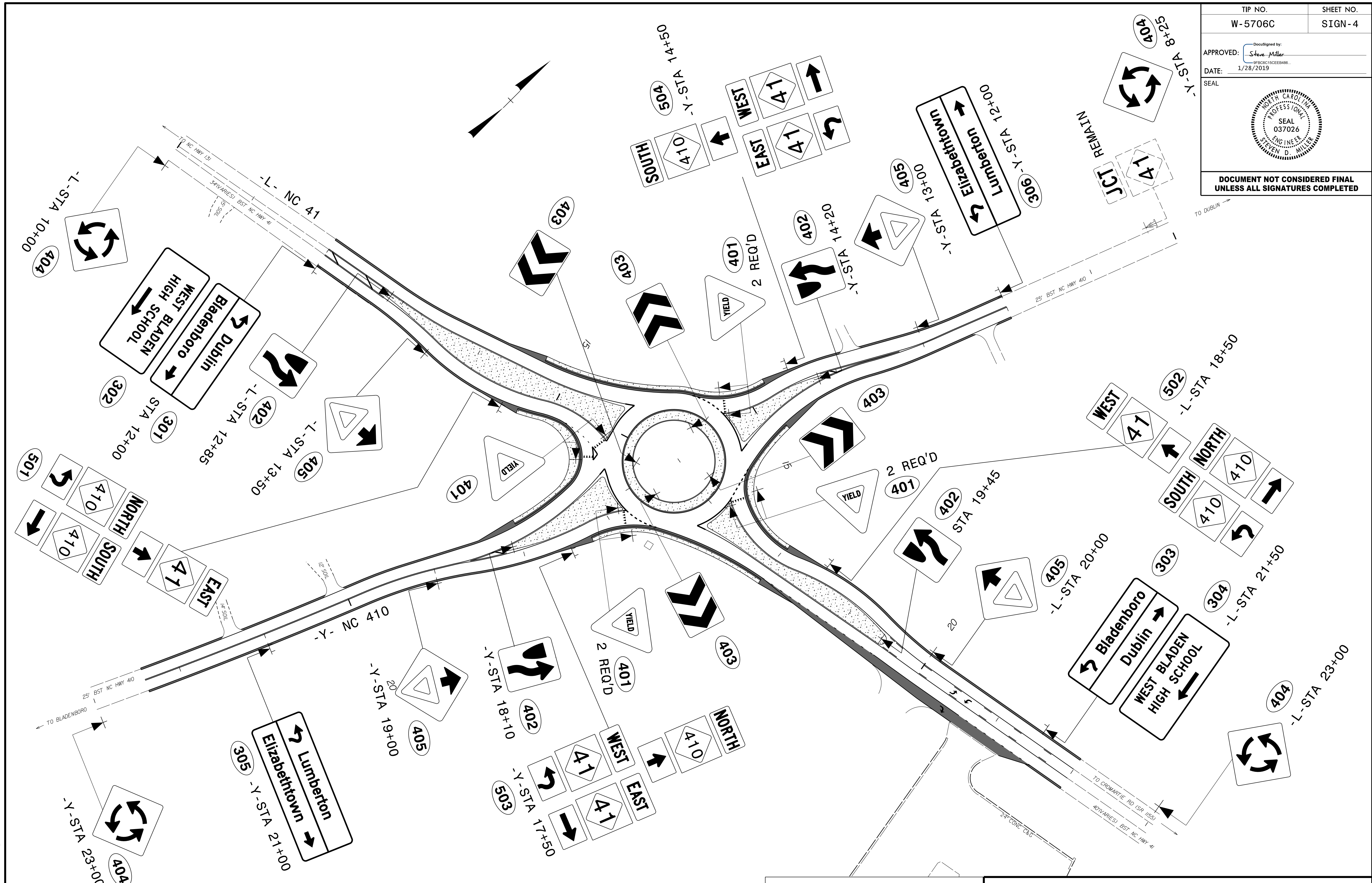
<p>SEPI ENGINEERING & CONSTRUCTION</p>	<p>1025 Wade Avenue Raleigh, NC 27605 Tel: 919-789-9977 Fax: 919-789-9591 License: C-2197</p>	SIGN DESIGNS
---	---	--------------

<p>401 QUANTITY REQ'D <u>8</u></p>  <p>R1-2 36" X 36" X 36"</p> <p>ONE "U" POST PER SIGN</p>	<p>404 QUANTITY REQ'D <u>4</u></p>  <p>W2-6 30" X 30"</p> <p>ONE "U" POST PER SIGN</p>		<p>501</p> <p>EAST 1- 24" x 12"</p> <p>41 1- 24" x 24"</p> <p>↑ 1- 21" x 15"</p> <p>NORTH SOUTH 2- 24" x 12"</p> <p>410 410 2- 24" x 24"</p> <p>↶ ↷ 2- 21" x 15"</p> <p>TWO "U" POST REQ'D</p>	<p>504</p> <p>SOUTH 1- 24" x 12"</p> <p>410 1- 24" x 24"</p> <p>↑ 1- 21" x 15"</p> <p>EAST WEST 2- 24" x 12"</p> <p>41 41 2- 24" x 24"</p> <p>↶ ↷ 2- 21" x 15"</p> <p>TWO "U" POST REQ'D</p>	
<p>402 QUANTITY REQ'D <u>4</u></p>  <p>R4-7 24" X 30"</p> <p>ONE "U" POST PER SIGN</p>	<p>405 QUANTITY REQ'D <u>4</u></p>  <p>W3-2 30" X 30"</p> <p>ONE "U" POST PER SIGN</p>				
<p>403 QUANTITY REQ'D <u>4</u></p>  <p>R6-4 30" X 24"</p> <p>ONE "U" POST PER SIGN</p>			<p>502</p> <p>WEST 1- 24" x 12"</p> <p>41 1- 24" x 24"</p> <p>↑ 1- 21" x 15"</p> <p>SOUTH NORTH 2- 24" x 12"</p> <p>410 410 2- 24" x 24"</p> <p>↶ ↷ 2- 21" x 15"</p> <p>TWO "U" POST REQ'D</p>	<p>503</p> <p>NORTH 1- 24" x 12"</p> <p>410 1- 24" x 24"</p> <p>↑ 1- 21" x 15"</p> <p>WEST EAST 2- 24" x 12"</p> <p>41 41 2- 24" x 24"</p> <p>↶ ↷ 2- 21" x 15"</p> <p>TWO "U" POST REQ'D</p>	

TIP NO. W-5706C	SHEET NO. SIGN-3
APPROVED:  Steve Miller DATE: 1/28/2019	
SEAL 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

1/28/2019 11:51:13 AM W-5706C_SIGN-3.dgn
 I:\Projects\W-5706C_SIGN-3.dgn

TIP NO. W-5706C	SHEET NO. SIGN-4
APPROVED:  <small>DocuSigned by: Steve Miller ID: F93F1C70-8F6C-4829-AD22-103E5FE6180C</small>	
DATE: 1/28/2019	
SEAL 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



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


1/28/2019 11:58:13 AM W-5706C_SIGN-4.dgn

SEPI
ENGINEERING & CONSTRUCTION

1025 Wade Avenue
Raleigh, NC 27605
Tel: 919-789-9977
Fax: 919-789-9591
License: C-2197


PROPOSED SIGNS

UTILITY CONSTRUCTION



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

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO. W-5706C	SHEET NO. UC-3
DESIGNED BY: CDB	
DRAWN BY: JNA	
CHECKED BY: CLS	
APPROVED BY: CDB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

GENERAL NOTES:

1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2018.

2. THE EXISTING UTILITIES BELONG TO DUBLIN AND BLADEN COUNTY. THE CONTACT PERSON FOR THE TOWN OF DUBLIN IS JONATHAN WARD WHO CAN BE REACHED AT 910-862-4301 AND BLADEN COUNTY KIP McCLARY WHO CAN BE REACHED AT 910-862-6785.

3. ALL WATER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER RESOURCES, PUBLIC WATER SUPPLY SECTION. ALL SEWER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT QUALITY, DIVISION OF WATER RESOURCES, WATER QUALITY SECTION. PERFORM ALL WORK IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODES.

4. THE UTILITY OWNER OWNS THE EXISTING UTILITY FACILITIES AND WILL OWN THE NEW UTILITY FACILITIES AFTER ACCEPTANCE BY THE DEPARTMENT. THE DEPARTMENT OWNS THE CONSTRUCTION CONTRACT AND HAS ADMINISTRATIVE AUTHORITY. COMMUNICATIONS AND DECISIONS BETWEEN THE CONTRACTOR AND UTILITY OWNER ARE NOT BINDING UPON THE DEPARTMENT OR THIS CONTRACT UNLESS AUTHORIZED BY THE ENGINEER. AGREEMENTS BETWEEN THE UTILITY OWNER AND CONTRACTOR FOR THE WORK THAT IS NOT PART OF THIS CONTRACT OR IS SECONDARY TO THIS CONTRACT ARE ALLOWED, BUT ARE NOT BINDING UPON THE DEPARTMENT.

5. PROVIDE ACCESS FOR THE DEPARTMENT PERSONNEL AND THE OWNER'S REPRESENTATIVES TO ALL PHASES OF CONSTRUCTION. NOTIFY DEPARTMENT PERSONNEL AND THE UTILITY OWNER TWO WEEKS PRIOR TO COMMENCEMENT OF ANY WORK AND ONE WEEK PRIOR TO SERVICE INTERRUPTION. KEEP UTILITY OWNERS' REPRESENTATIVES INFORMED OF WORK PROGRESS AND PROVIDE OPPORTUNITY FOR INSPECTION OF CONSTRUCTION AND TESTING.

6. THE PLANS DEPICT THE BEST AVAILABLE INFORMATION FOR THE LOCATION, SIZE, AND TYPE OF MATERIAL FOR ALL EXISTING UTILITIES. MAKE INVESTIGATIONS FOR DETERMINING THE EXACT LOCATION, SIZE, AND TYPE MATERIAL OF THE EXISTING FACILITIES AS NECESSARY FOR THE CONSTRUCTION OF THE PROPOSED UTILITIES AND FOR AVOIDING DAMAGE TO EXISTING FACILITIES. REPAIR ANY DAMAGE INCURRED TO EXISTING FACILITIES TO THE ORIGINAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE DEPARTMENT.

7. MAKE FINAL CONNECTIONS OF THE NEW WORK TO THE EXISTING SYSTEM WHERE INDICATED ON THE PLANS, AS REQUIRED TO FIT THE ACTUAL CONDITIONS, OR AS DIRECTED.

8. MAKE CONNECTIONS BETWEEN EXISTING AND PROPOSED UTILITIES AT TIMES MOST CONVENIENT TO THE PUBLIC, WITHOUT ENDANGERING THE UTILITY SERVICE, AND IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS. MAKE CONNECTIONS ON WEEKENDS, AT NIGHT, AND ON HOLIDAYS IF NECESSARY.

9. ALL UTILITY MATERIALS SHALL BE APPROVED PRIOR TO DELIVERY TO THE PROJECT. SEE 1500-7, " SUBMITTALS AND RECORDS" IN SECTION 1500 OF THE STANDARD SPECIFICATIONS.

PROJECT SPECIFIC NOTES:

1. CONTRACTOR'S ATTENTION IS DIRECTED TO SECTIONS 102, 107, AND 1550 OF THE STANDARD SPECIFICATIONS CONCERNING TRENCHLESS INSTALLATION. IT IS CONTRACTOR'S RESPONSIBILITY TO HAVE BORE DESIGNED AND SEALED BY A LICENSED NORTH CAROLINA PROFESSIONAL ENGINEER. NO DAMAGE IS ALLOWED TO RIVER, WETLANDS, OR BUFFER ZONES.

2. CONTRACTOR SHALL COORDINATE THE 2" AND 4" FORCE MAINS SHUTDOWN TIMES WITH THE TOWN OF DUBLIN. THE FORCE MAINS SHALL BE SHUTDOWN AT THE MOST CONVENIENT TIME FOR THE TOWN OF DUBLIN. THE CONTRACTOR SHALL MEET WITH THE TOWN OF DUBLIN TO DISCUSS HOW THE FORCE MAINS WILL BE SHUTDOWN DURING THE TIE-INS. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO WORK OUT A SUITABLE PLAN WITH THE TOWN OF DUBLIN TO MAKE THE PROPOSED FORCE MAIN TIE-INS.

LIST OF STANDARD DRAWINGS

- 1515.01 WATER METER
- 1515.02 FIRE HYDRANT

UTILITY CONSTRUCTION

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PROJECT TYPICAL DETAILS

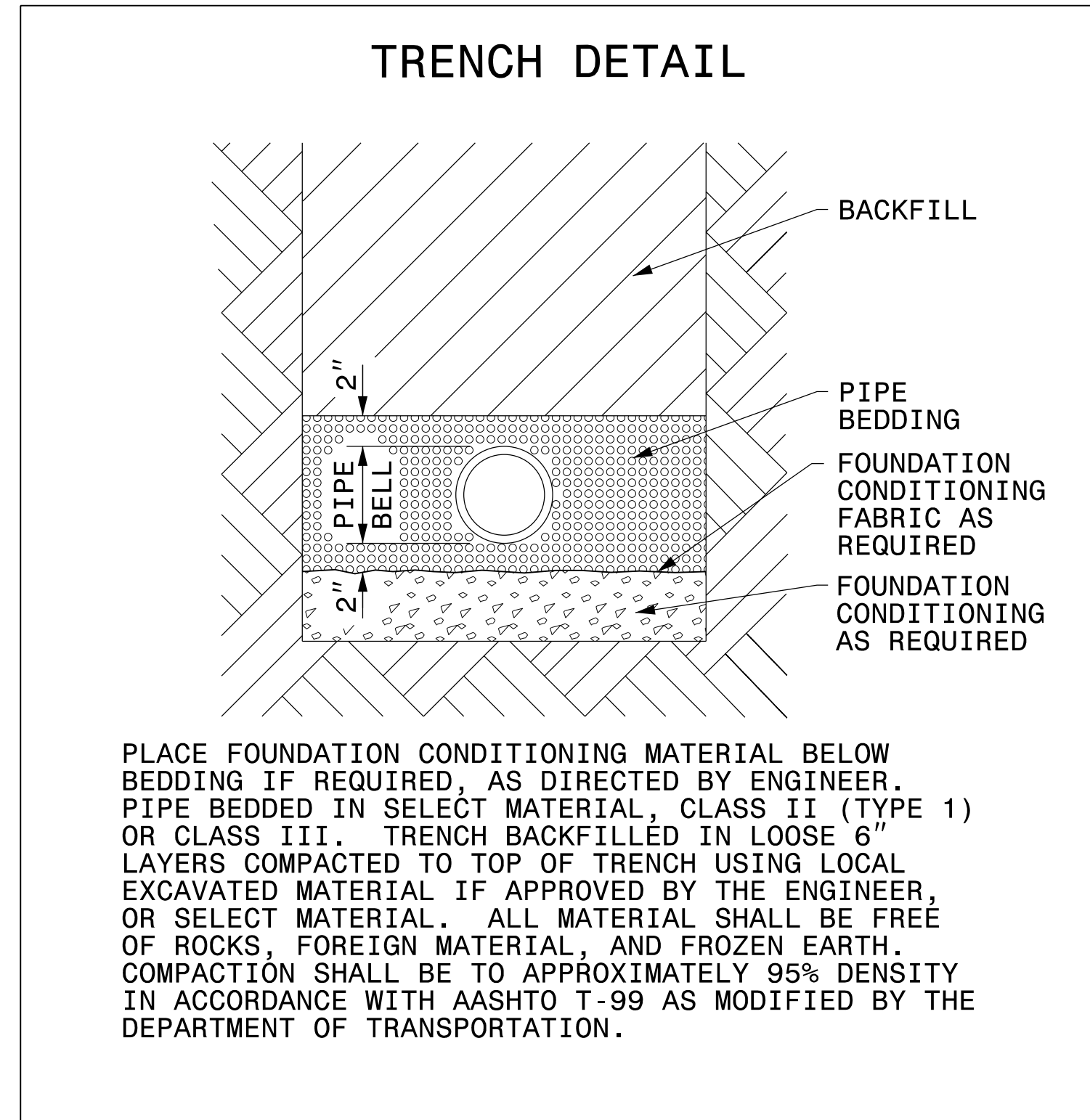
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UNLESS ALL SIGNATURES COMPLETED**

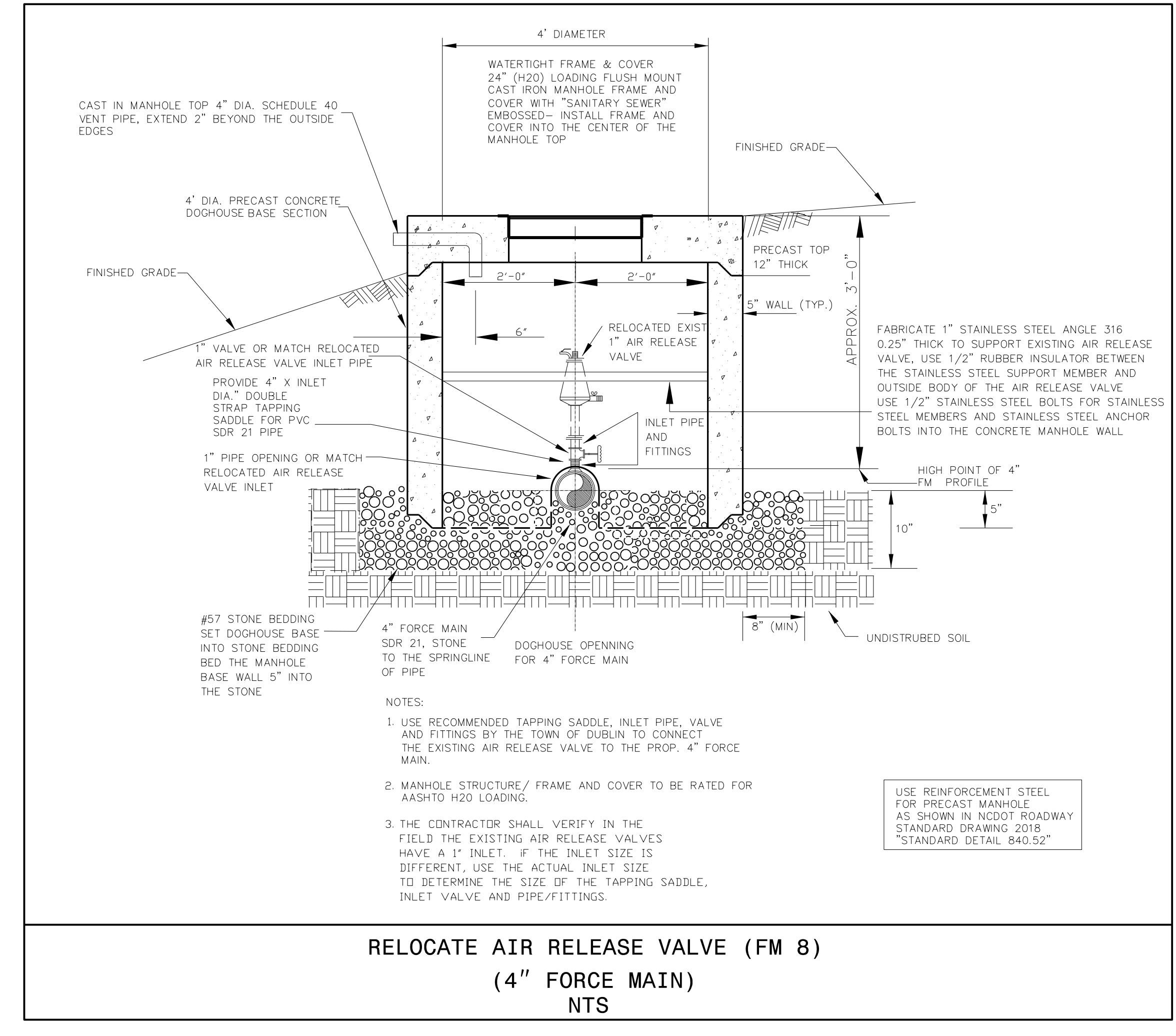
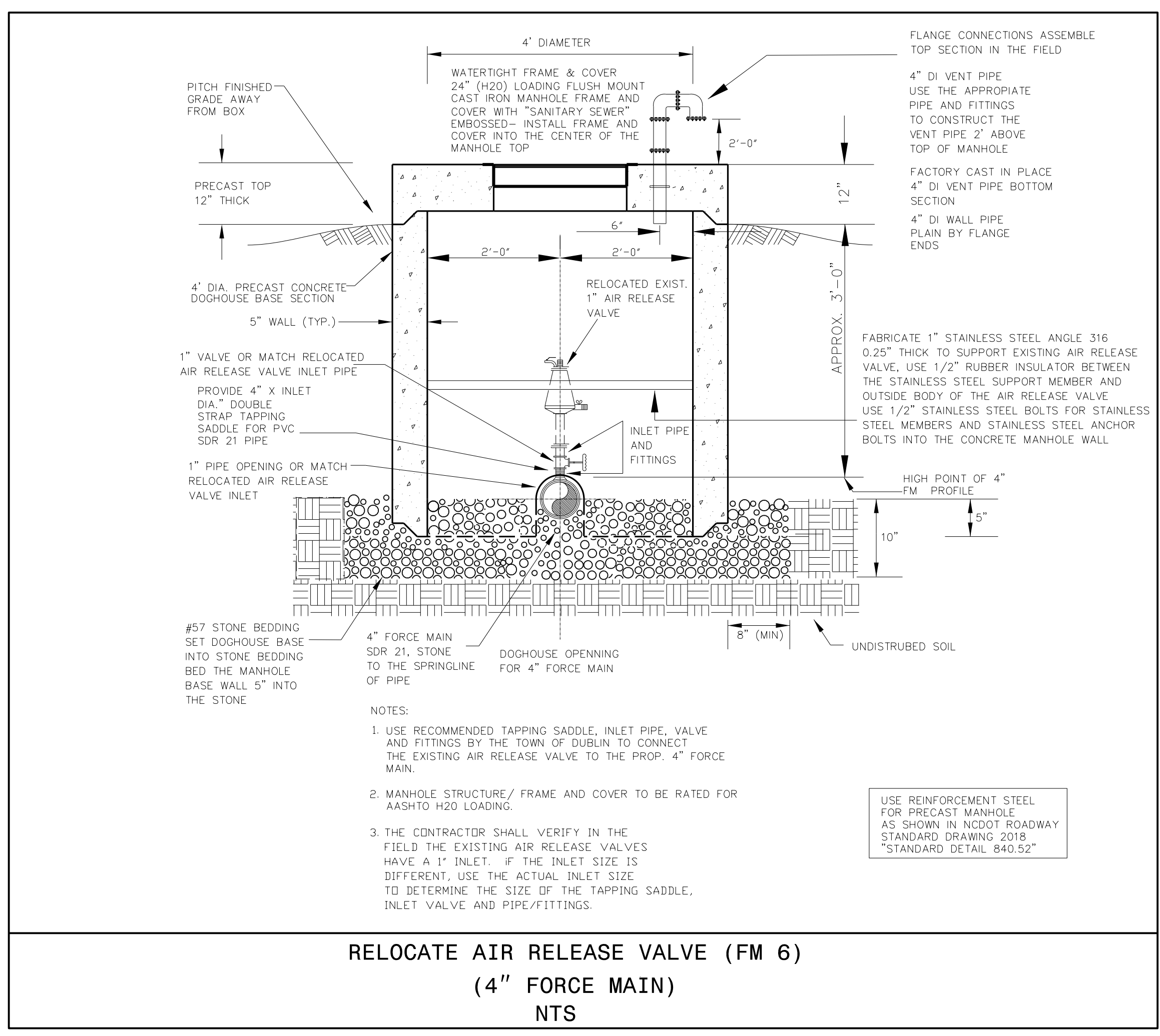
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DESIGNED BY: CDB	
DRAWN BY: JNA	
CHECKED BY: CLS	
APPROVED BY: CDB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION

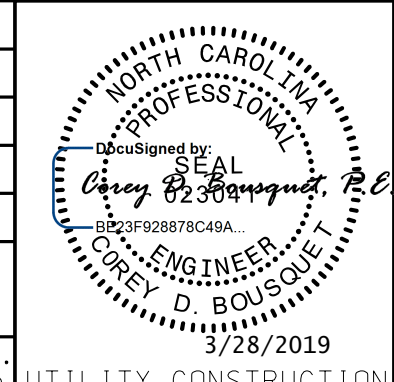


MAXIMUM TRENCH WIDTH AT TOP OF PIPE

NOMINAL PIPE SIZE (INCHES)	TRENCH WIDTH (INCHES)	NOMINAL PIPE SIZE (INCHES)	TRENCH WIDTH (INCHES)
4	28	20	44
6	30	24	48
8	32	30	54
10	34	36	60
12	36	42	66
14	38	48	72
16	40	54	78
18	42		

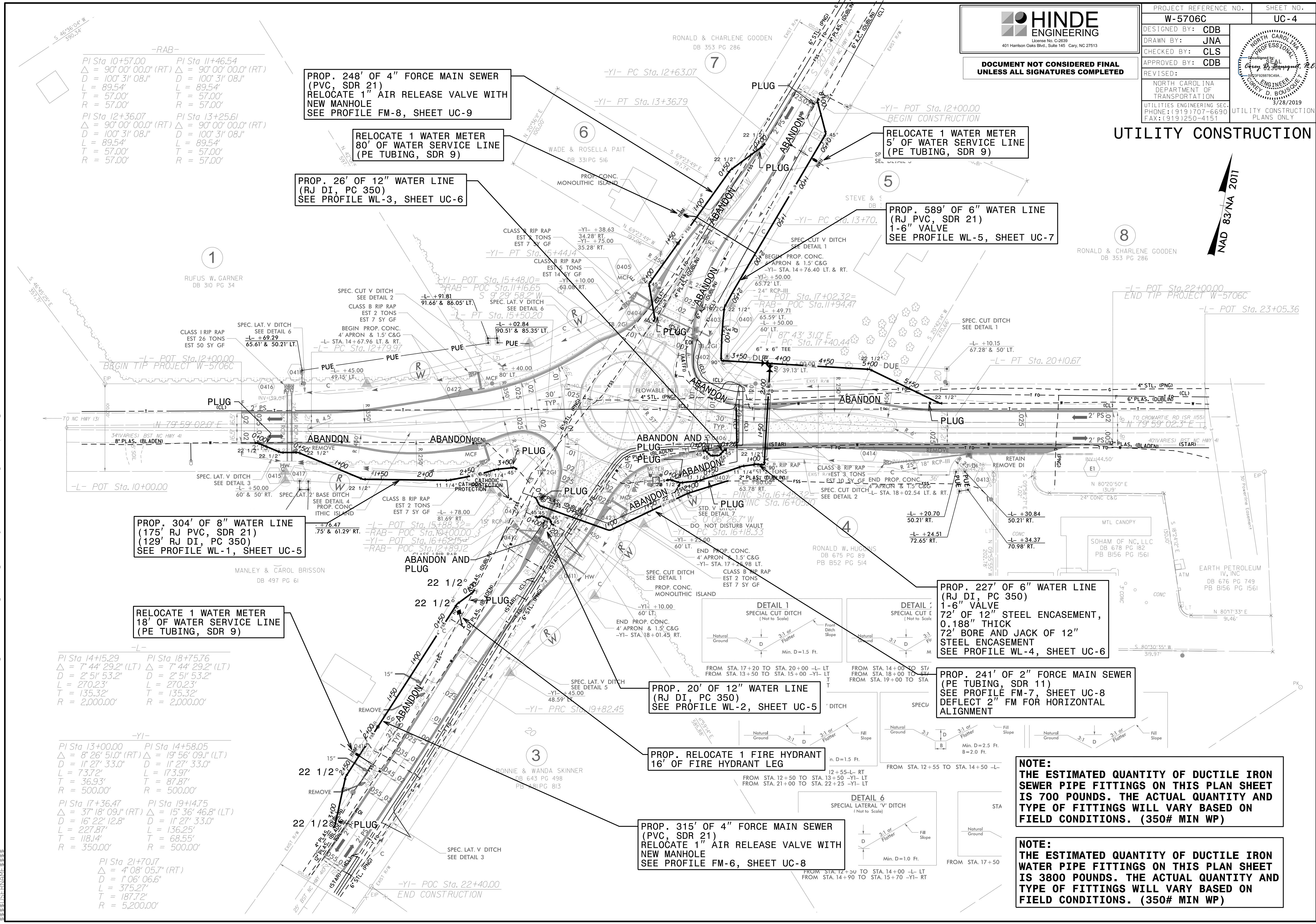


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UTILITY CONSTRUCTION

NAD 83/NA 2011



-RAB-

PI Sta 10+57.00 Δ = 90° 00' 00.0" (RT) D = 100' 3' 08.1" L = 89.54' T = 57.00' R = 57.00'	PI Sta 11+46.54 Δ = 90° 00' 00.0" (RT) D = 100' 3' 08.1" L = 89.54' T = 57.00' R = 57.00'
PI Sta 12+36.07 Δ = 90° 00' 00.0" (RT) D = 100' 3' 08.1" L = 89.54' T = 57.00' R = 57.00'	PI Sta 13+25.61 Δ = 90° 00' 00.0" (RT) D = 100' 3' 08.1" L = 89.54' T = 57.00' R = 57.00'

**PROP. 248' OF 4" FORCE MAIN SEWER (PVC, SDR 21)
 RELOCATE 1" AIR RELEASE VALVE WITH NEW MANHOLE
 SEE PROFILE FM-8, SHEET UC-9**

RELOCATE 1 WATER METER 80' OF WATER SERVICE LINE (PE TUBING, SDR 9)

**PROP. 26' OF 12" WATER LINE (RJ DI, PC 350)
 SEE PROFILE WL-3, SHEET UC-6**

RELOCATE 1 WATER METER 5' OF WATER SERVICE LINE (PE TUBING, SDR 9)

**PROP. 589' OF 6" WATER LINE (RJ PVC, SDR 21)
 1-6" VALVE
 SEE PROFILE WL-5, SHEET UC-7**

**PROP. 304' OF 8" WATER LINE (175' RJ PVC, SDR 21)
 (129' RJ DI, PC 350)
 SEE PROFILE WL-1, SHEET UC-5**

RELOCATE 1 WATER METER 18' OF WATER SERVICE LINE (PE TUBING, SDR 9)

**PROP. 227' OF 6" WATER LINE (RJ DI, PC 350)
 1-6" VALVE
 72' OF 12" STEEL ENCASUREMENT, 0.188" THICK
 72' BORE AND JACK OF 12" STEEL ENCASUREMENT
 SEE PROFILE WL-4, SHEET UC-6**

**PROP. 241' OF 2" FORCE MAIN SEWER (PE TUBING, SDR 11)
 SEE PROFILE FM-7, SHEET UC-8
 DEFLECT 2" FM FOR HORIZONTAL ALIGNMENT**

**PROP. 20' OF 12" WATER LINE (RJ DI, PC 350)
 SEE PROFILE WL-2, SHEET UC-5**

PROP. RELOCATE 1 FIRE HYDRANT 16' OF FIRE HYDRANT LEG

**PROP. 315' OF 4" FORCE MAIN SEWER (PVC, SDR 21)
 RELOCATE 1" AIR RELEASE VALVE WITH NEW MANHOLE
 SEE PROFILE FM-6, SHEET UC-8**

-L-

PI Sta 14+15.29 Δ = 7° 44' 29.2" (LT) D = 2° 5' 53.2" L = 270.23' T = 135.32' R = 2,000.00'	PI Sta 18+75.76 Δ = 7° 44' 29.2" (LT) D = 2° 5' 53.2" L = 270.23' T = 135.32' R = 2,000.00'
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-YI-

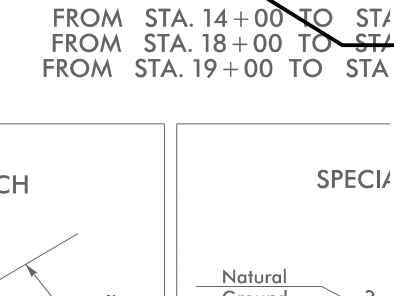
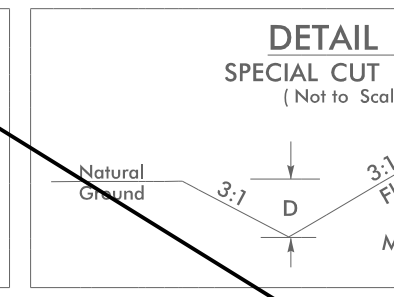
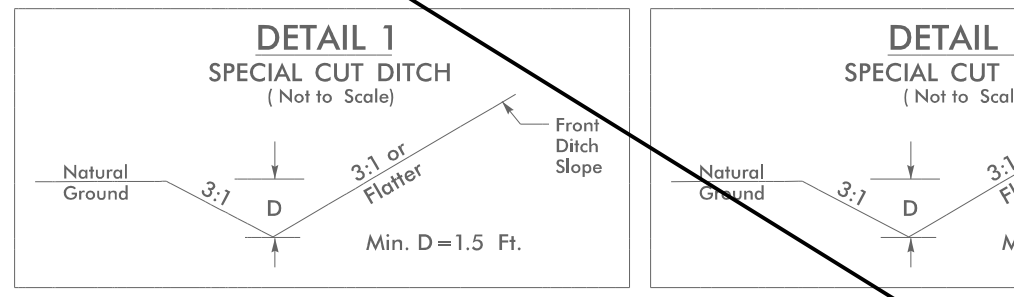
PI Sta 13+00.00 Δ = 8° 26' 51.0" (RT) D = 1' 27' 33.0" L = 73.72' T = 36.93' R = 500.00'	PI Sta 14+58.05 Δ = 19° 56' 09.1" (LT) D = 1' 27' 33.0" L = 173.97' T = 87.87' R = 500.00'
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-YI-

PI Sta 17+36.47 Δ = 37° 18' 09.1" (RT) D = 16° 22' 12.8" L = 227.87' T = 118.14' R = 350.00'	PI Sta 19+14.75 Δ = 15° 36' 46.8" (LT) D = 1' 27' 33.0" L = 136.25' T = 68.55' R = 500.00'
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-YI-

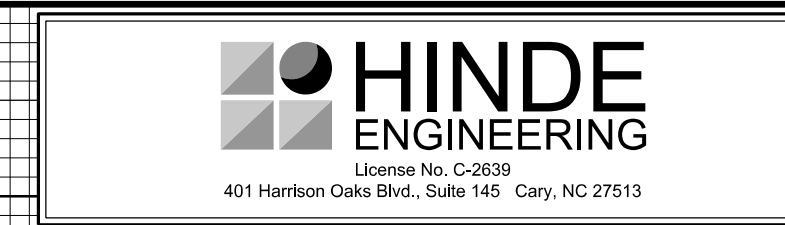
PI Sta 21+70.17 Δ = 4° 08' 05.7" (RT) D = 1° 06' 06.6" L = 375.27' T = 187.72' R = 5,200.00'



**NOTE:
 THE ESTIMATED QUANTITY OF DUCTILE IRON SEWER PIPE FITTINGS ON THIS PLAN SHEET IS 700 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS. (350# MIN WP)**

**NOTE:
 THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 3800 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS. (350# MIN WP)**

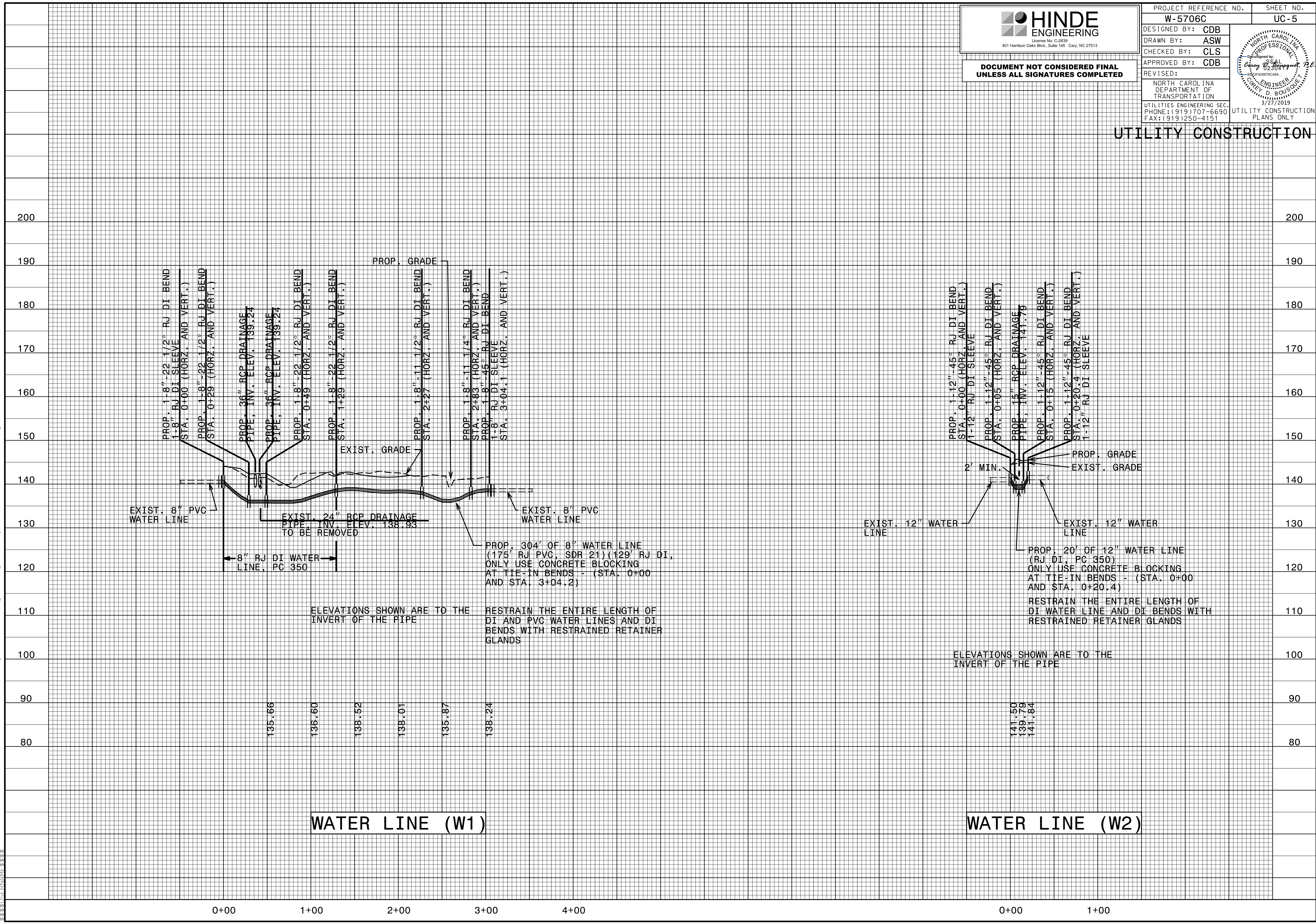
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PROJECT REFERENCE NO. W-5706C	SHEET NO. UC-5
DESIGNED BY: CDB	
DRAWN BY: ASW	
CHECKED BY: CLS	
APPROVED BY: CDB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY

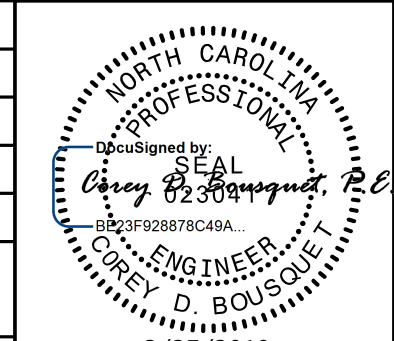
UTILITY CONSTRUCTION



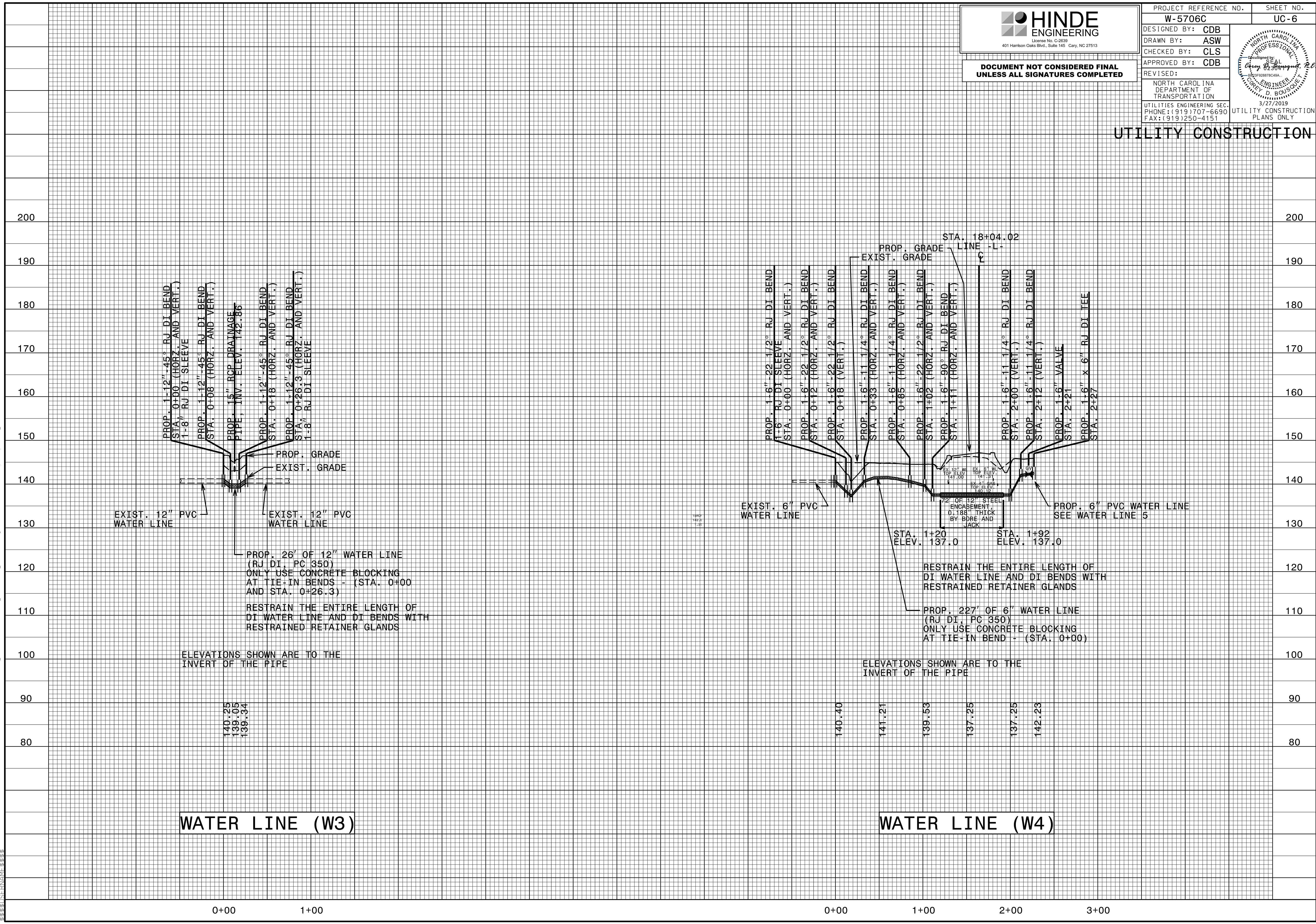
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 License No. C-2639
 401 Harrison Oaks Blvd., Suite 145 Cary, NC 27513

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PROJECT REFERENCE NO. W-5706C	SHEET NO. UC-6
DESIGNED BY: CDB	
DRAWN BY: ASW	
CHECKED BY: CLS	
APPROVED BY: CDB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	3/27/2019 UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION



WATER LINE (W3)

WATER LINE (W4)

PROP. 26' OF 12" WATER LINE (RJ DI, PC 350) ONLY USE CONCRETE BLOCKING AT TIE-IN BENDS - (STA. 0+00 AND STA. 0+26.3)

RESTRAIN THE ENTIRE LENGTH OF DI WATER LINE AND DI BENDS WITH RESTRAINED RETAINER GLANDS

PROP. 227' OF 6" WATER LINE (RJ DI, PC 350) ONLY USE CONCRETE BLOCKING AT TIE-IN BEND - (STA. 0+00)

RESTRAIN THE ENTIRE LENGTH OF DI WATER LINE AND DI BENDS WITH RESTRAINED RETAINER GLANDS

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ELEVATIONS SHOWN ARE TO THE INVERT OF THE PIPE

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139.05
139.34

140.40
141.21
139.53
137.25
137.25
142.23

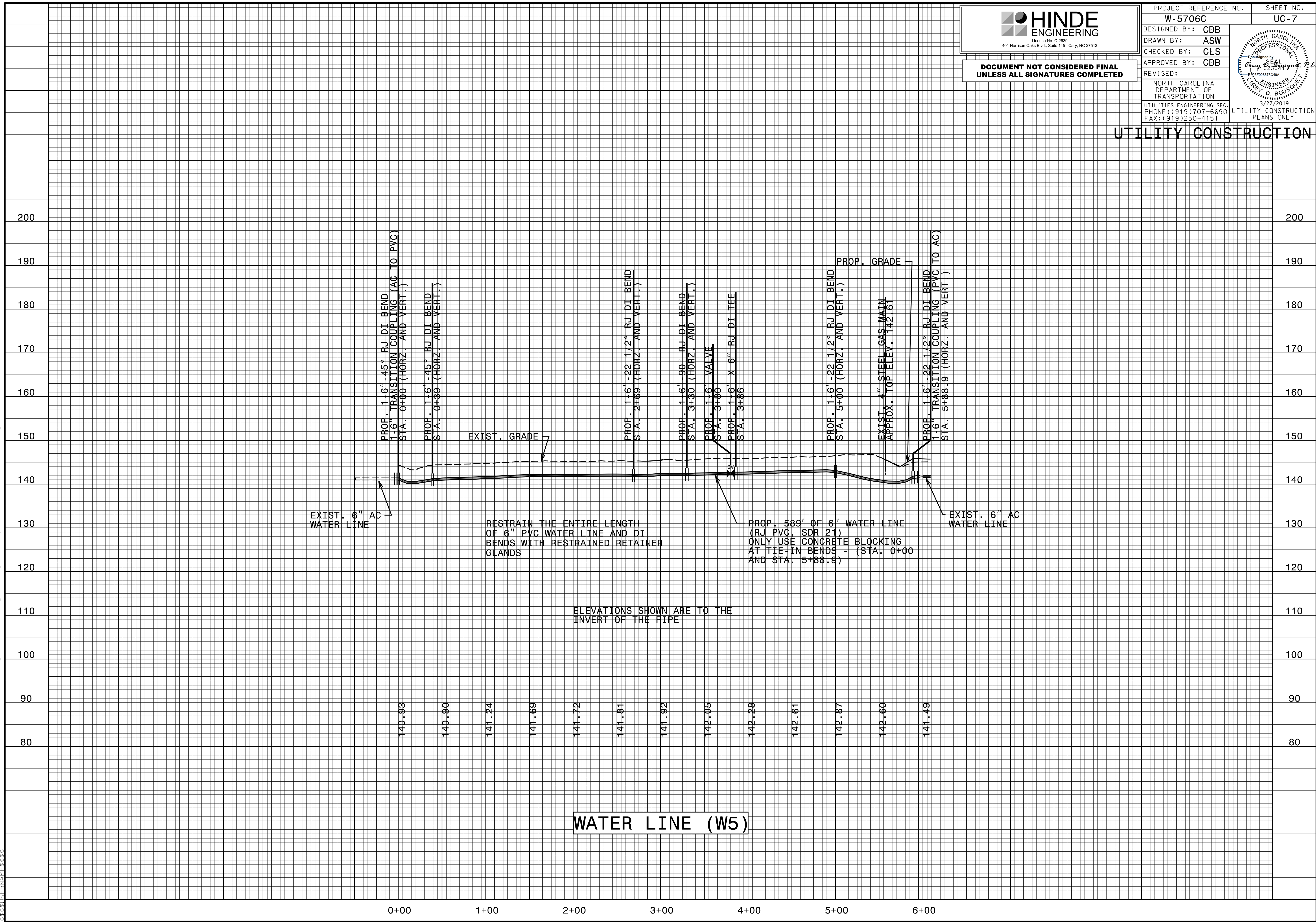
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PROJECT REFERENCE NO. W-5706C	SHEET NO. UC-7
DESIGNED BY: CDB	
DRAWN BY: ASW	
CHECKED BY: CLS	
APPROVED BY: CDB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION 3/27/2019 UTILITY ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
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UTILITY CONSTRUCTION



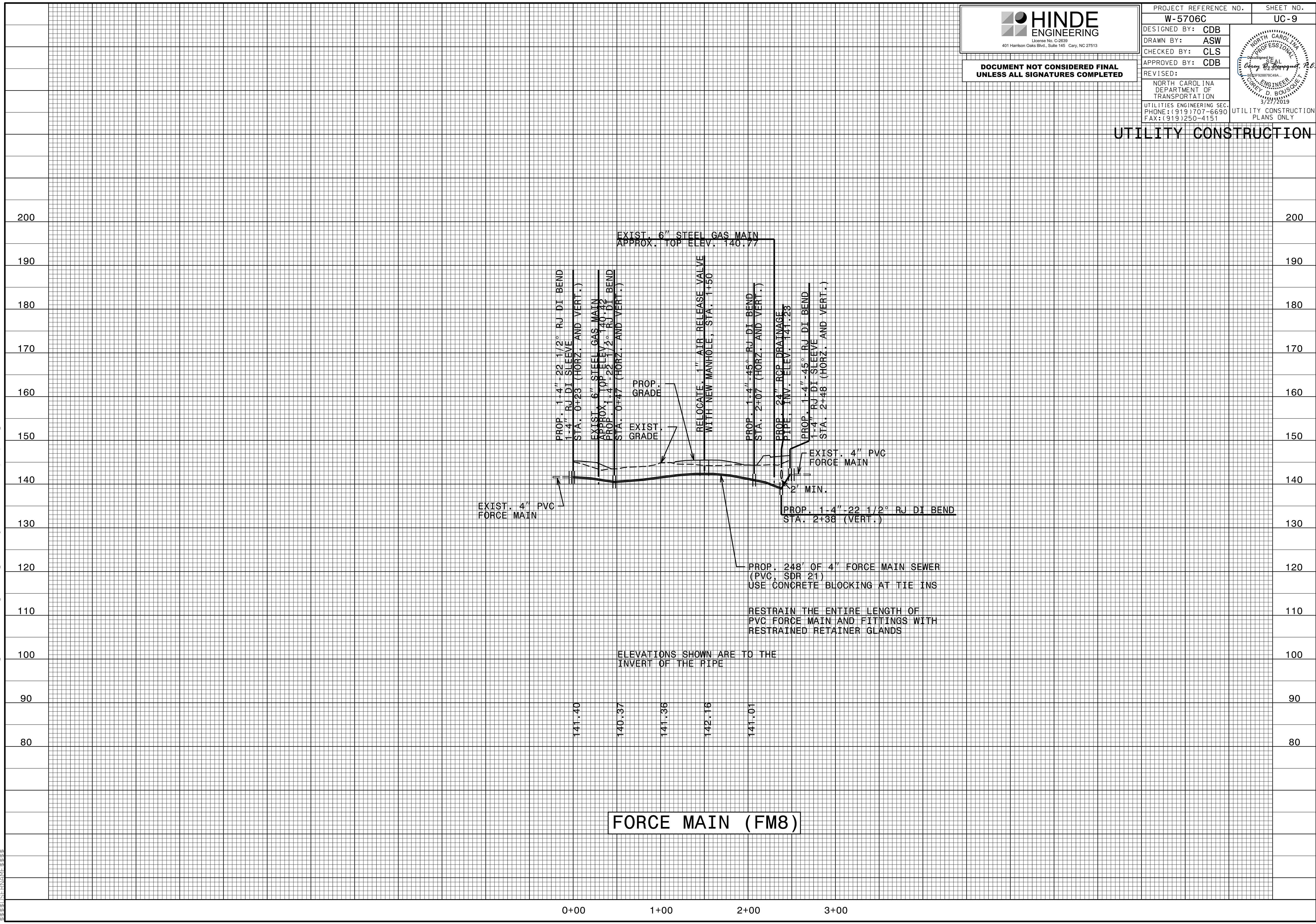
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DESIGNED BY: CDB	
DRAWN BY: ASW	
CHECKED BY: CLS	
APPROVED BY: CDB	
REVISED:	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY

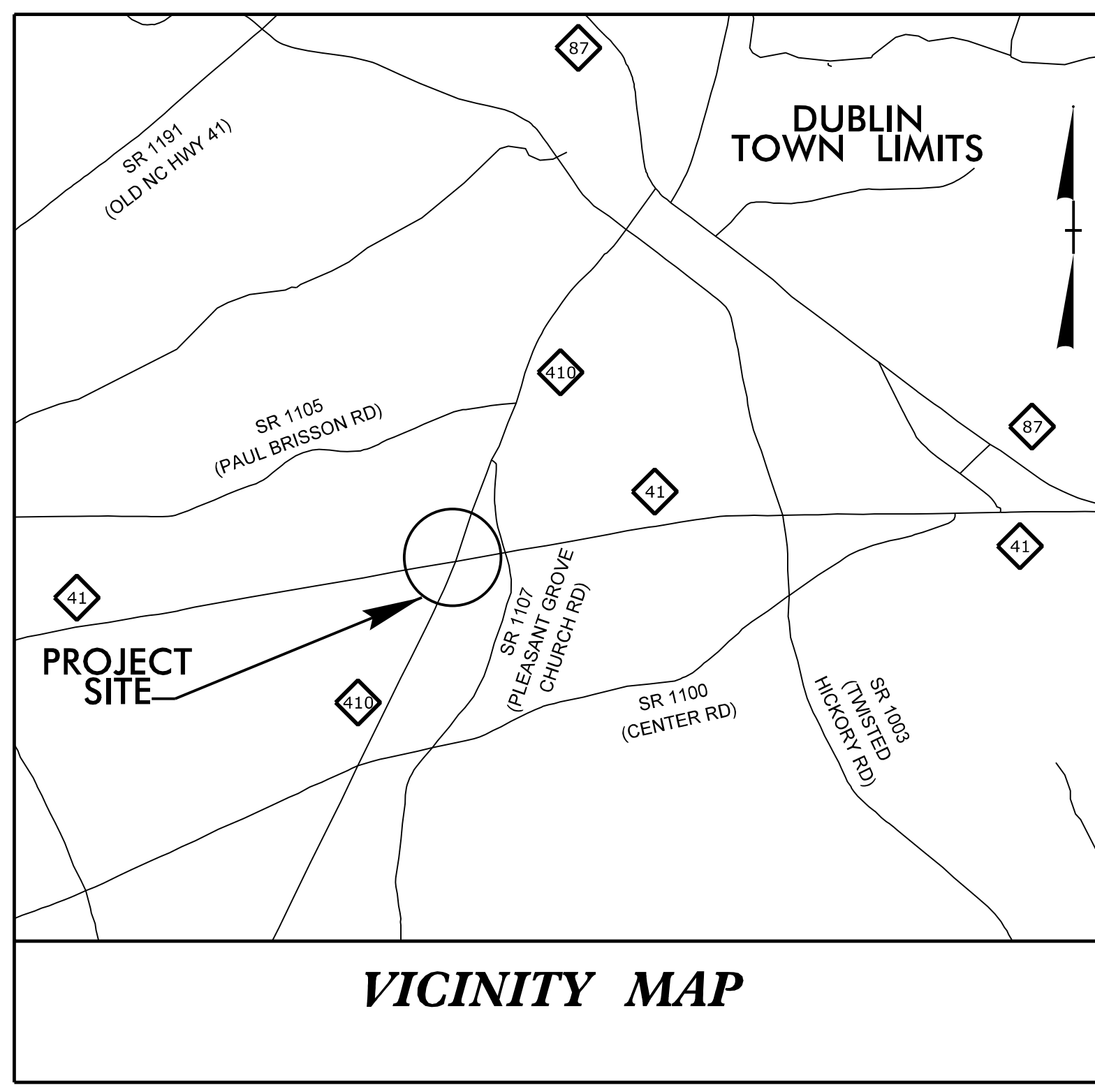
UTILITY CONSTRUCTION



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09/08/99

TIP PROJECT: W-5706C



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

**UTILITIES BY OTHERS PLANS
BLADEN COUNTY**

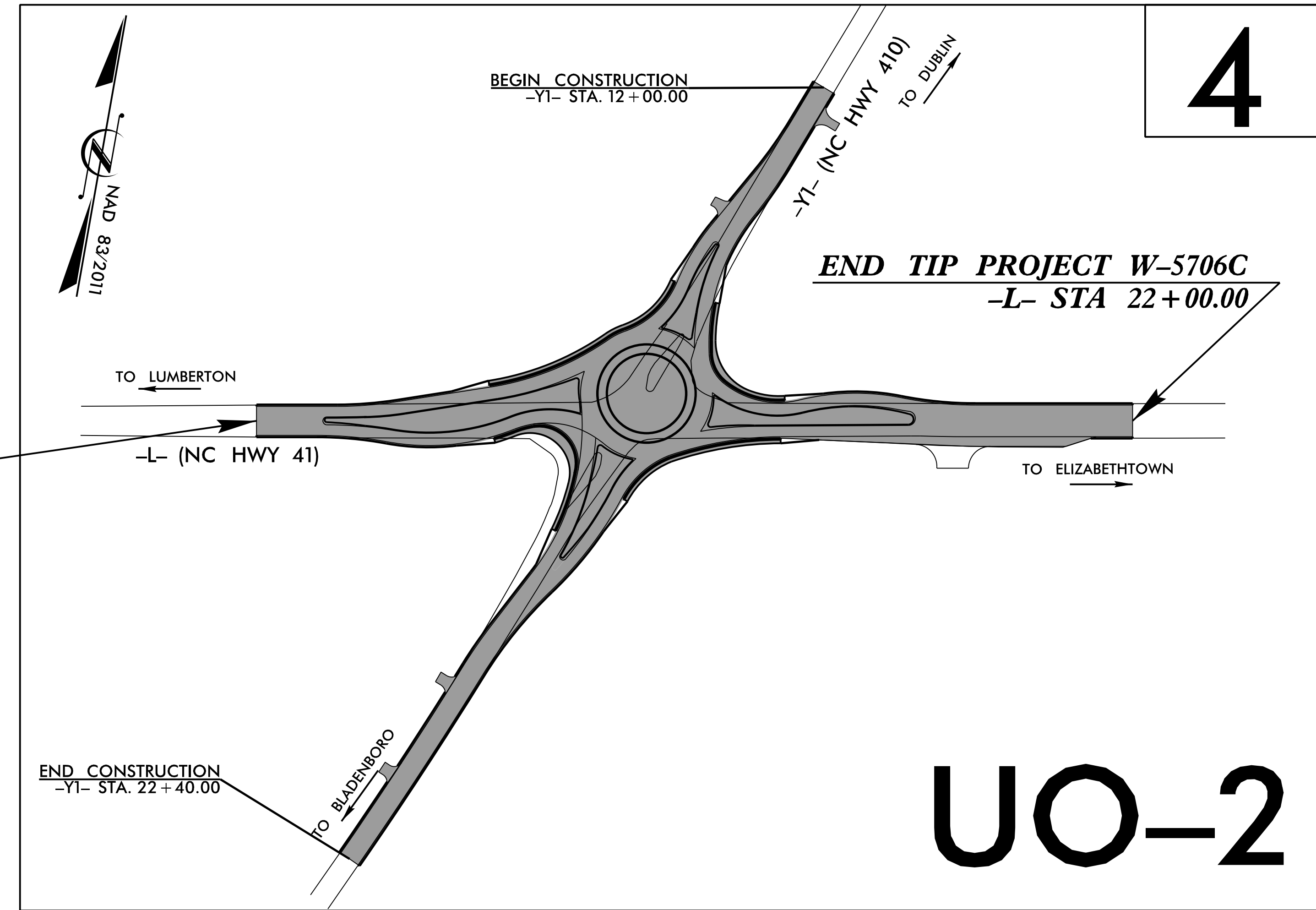
T.I.P. NO.	SHEET NO.
W-5706C	UO-1

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

**LOCATION: ROUNDABOUT AT INTERSECTION OF
NC 41 AND NC 410**

TYPE OF WORK: POWER (DISTRIBUTION) AND COMMUNICATIONS

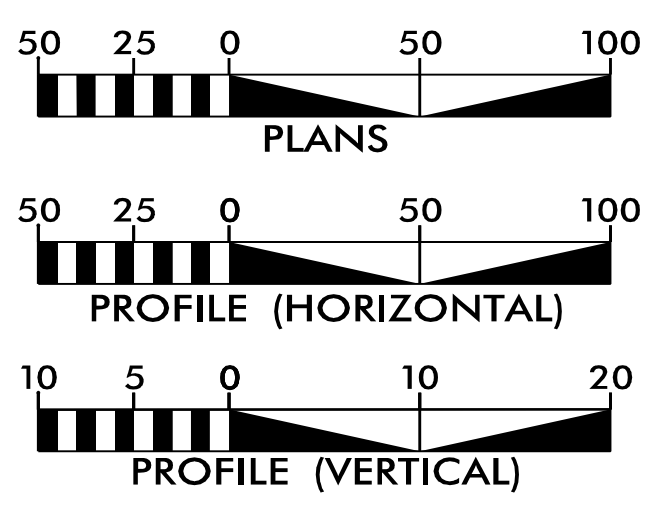
**BEGIN TIP PROJECT W-5706C
-L- STA 12+00.00**



UO-2

CONTRACT:

GRAPHIC SCALES



INDEX OF SHEETS

SHEET NO.:	DESCRIPTION:
UO-1	TITLE SHEET
UO-2	UBO PLAN SHEET

UTILITY OWNERS WITH CONFLICTS

- (A) POWER (DISTRIBUTION) - FOUR COUNTY EMC
- (B) COMMUNICATIONS - CENTURYLINK
- (C) COMMUNICATIONS - STAR COMMUNICATIONS

PREPARED IN THE OFFICE OF:

SO-DEEP | SAM NC
A SAM COMPANY

SO-DEEP | SAM NC, Inc.
2800-154 Sumner Boulevard, Raleigh, NC 27616 Tel 919-878-7466

Keith Garry **UTILITY PROJECT MANAGER**

Zaki Wafa **PROJECT UTILITY COORDINATOR**

**DIVISION OF HIGHWAYS
DIVISION 06**

DIV ADDRESS
558 Gillespie Street
Fayetteville, NC 28301

Jason Hatfield **DIVISION CONTACT #1**

Rick Handlin **DIVISION CONTACT #2**

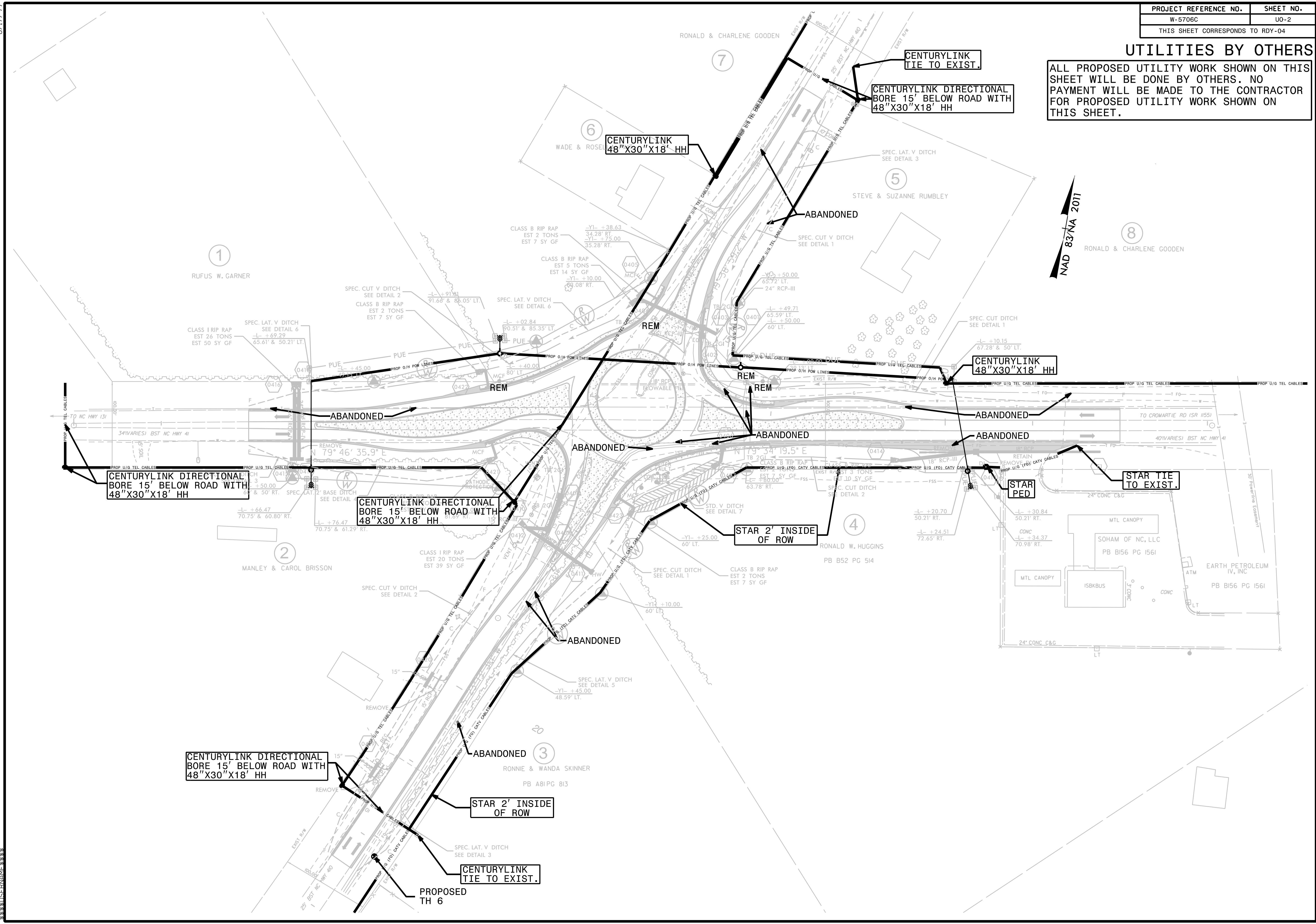
John Walters **DIVISION CONTACT #3**

\$\$\$\$\$ SYSTEM \$\$\$\$\$\$
\$\$\$\$\$ DDN \$\$\$\$\$\$
\$\$\$\$\$ USERNAME \$\$\$\$\$\$

UTILITIES BY OTHERS

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.

NAD 83/NA 2011



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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

Quantities are approximate only. The Resident Engineer will re-cross-section the work accurately when the project is staked out. These cross-section notes will be used in computing the final quantities for which the contractor will be paid.

CROSS-SECTION SUMMARY

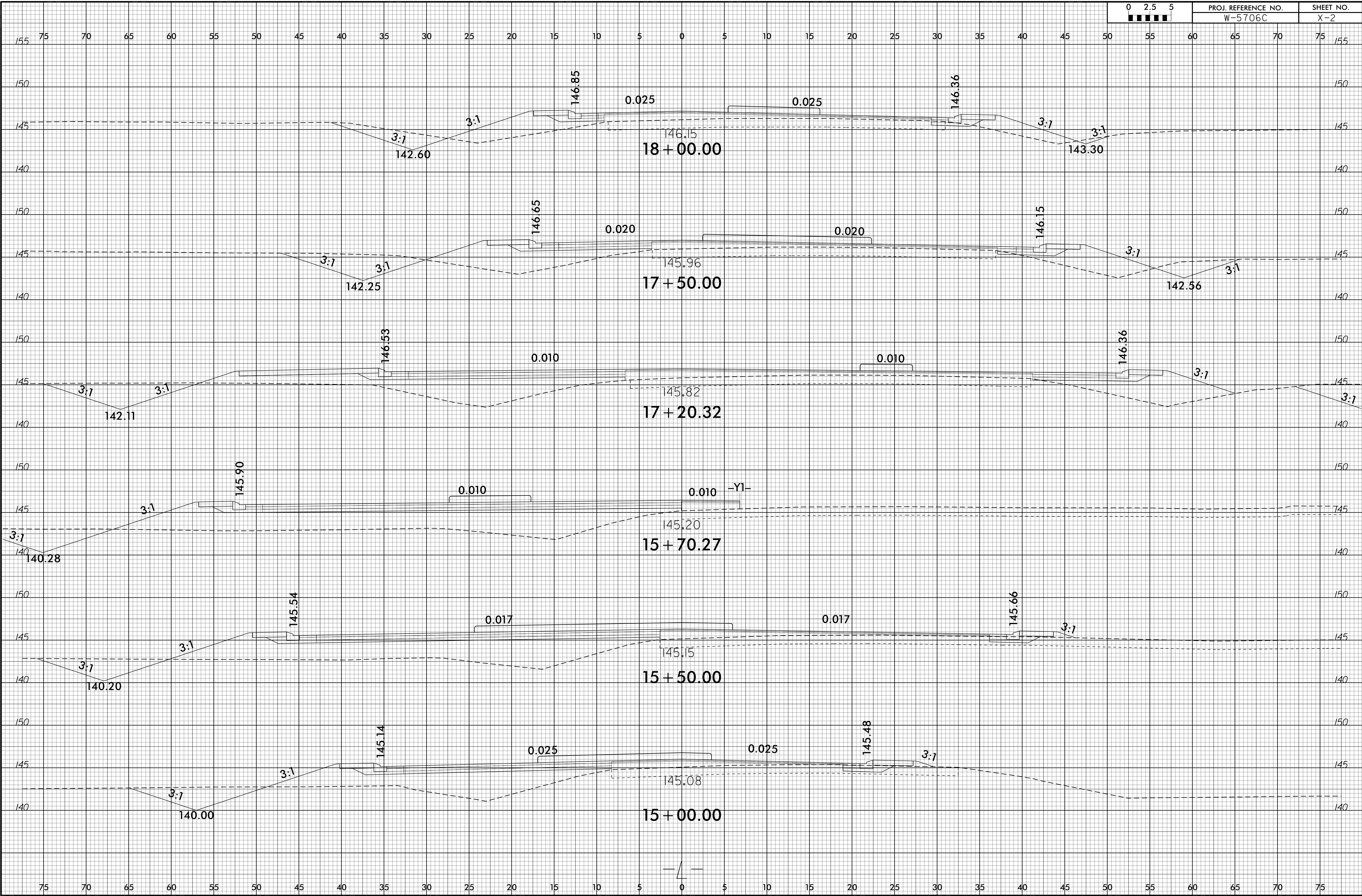
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-L-	(cu. yd.)	(cu. yd.)	-Y1-	(cu. yd.)	(cu. yd.)	-RAB-	(cu. yd.)	(cu. yd.)		(cu. yd.)	(cu. yd.)		(cu. yd.)	(cu. yd.)		(cu. yd.)	(cu. yd.)
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12+50.00	21	14	12+50.00	19	3	10+25.00	0	190									
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19+00.00	49	66	19+00.00	38	88	13+25.00	0	125									
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22+00.00	8	0	22+00.00	24	16												
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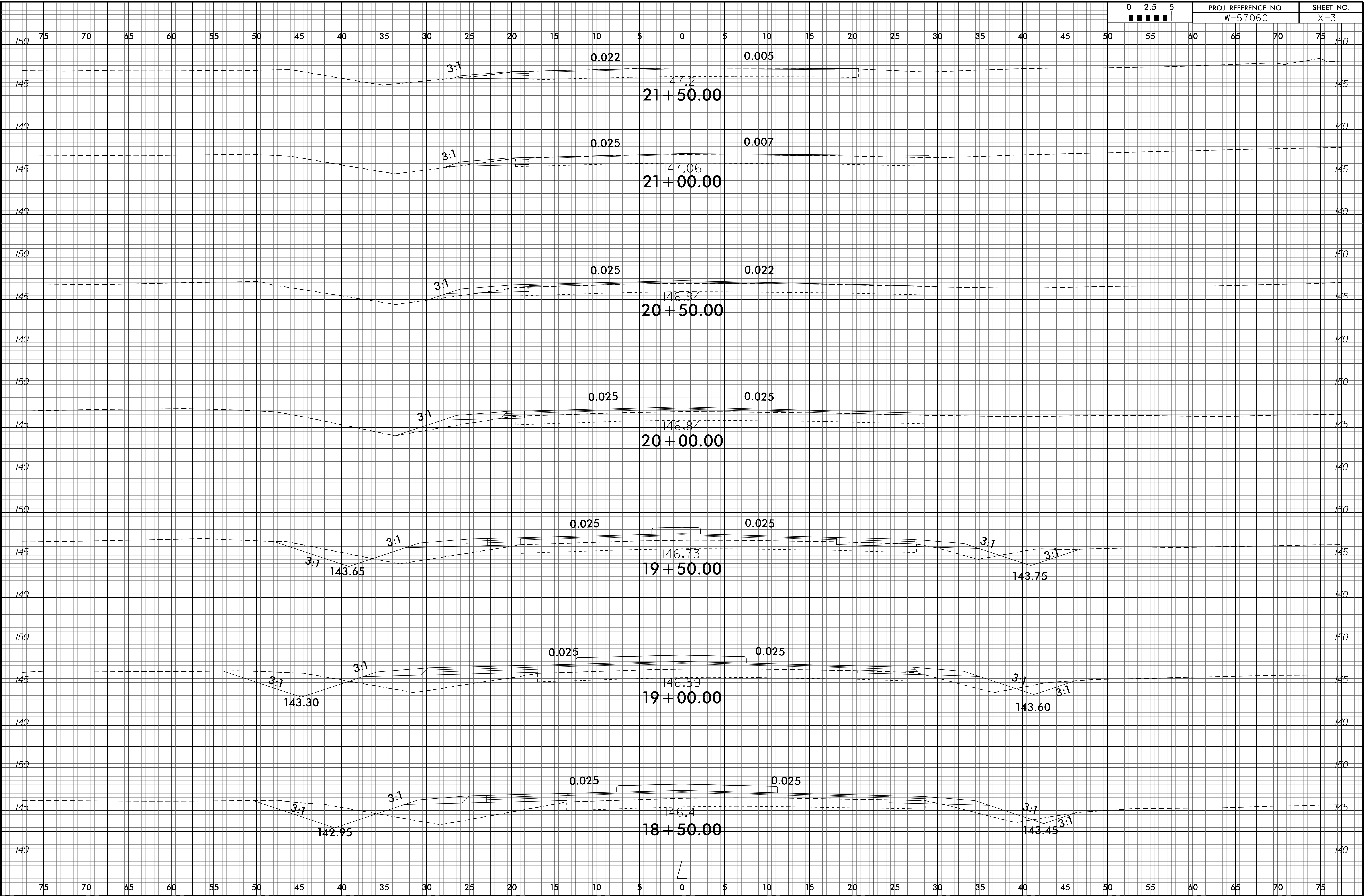
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6/23/16



PROJ. REFERENCE NO.
W-5706C

SHEET NO.
X-3



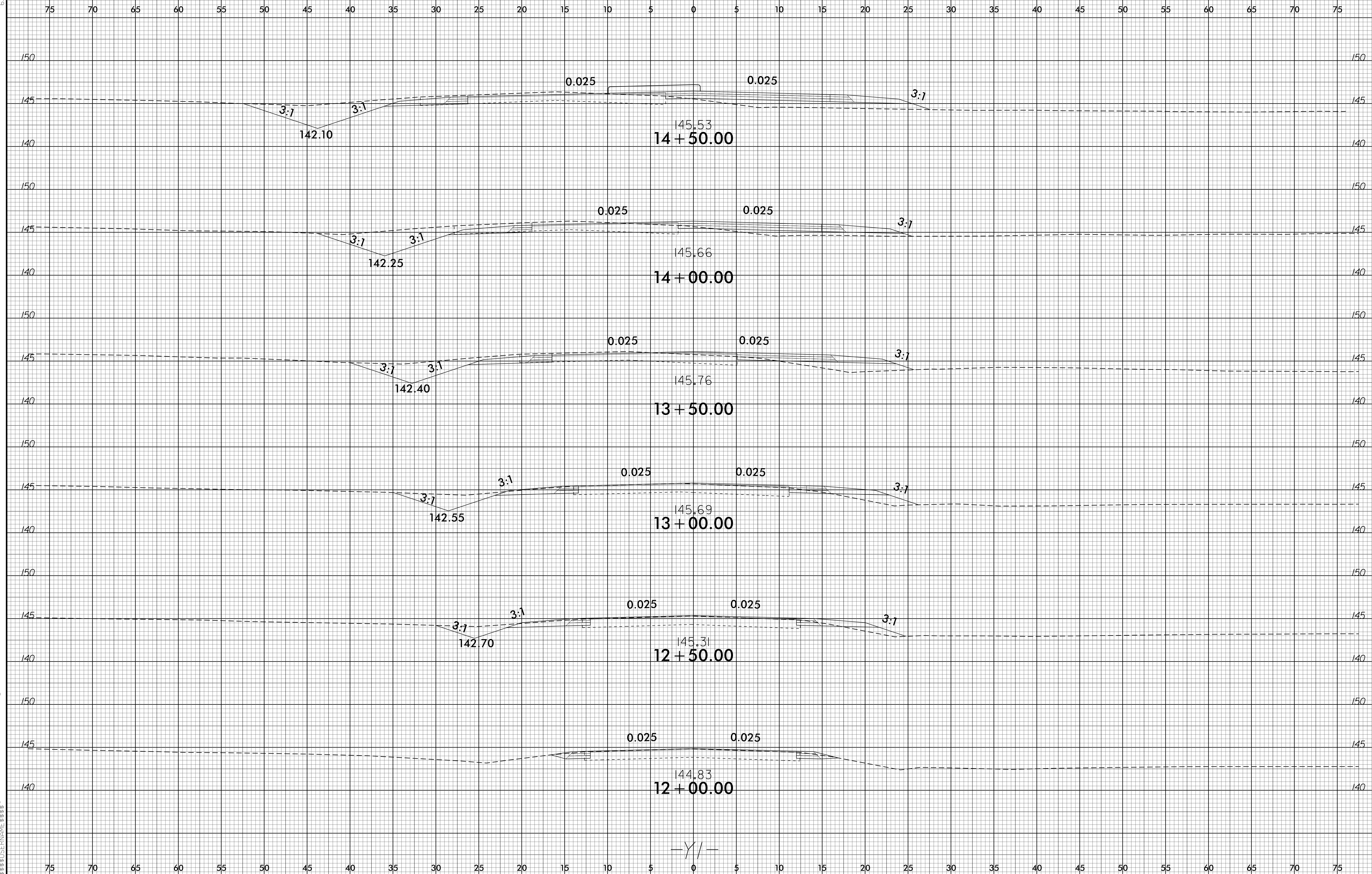
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6/23/16



PROJ. REFERENCE NO.
W-5706C

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X-5



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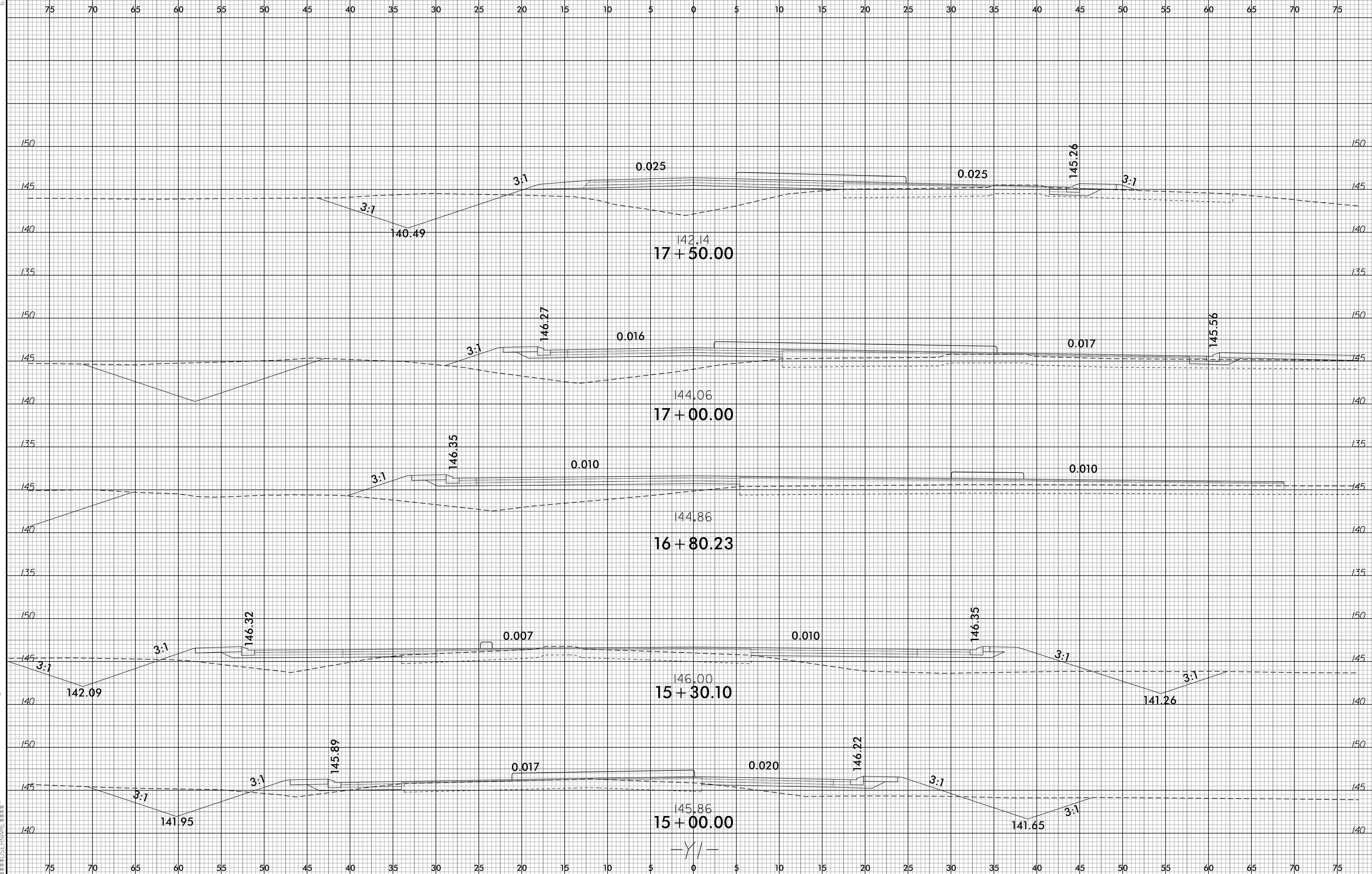
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6/23/16



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SHEET NO.
X-6



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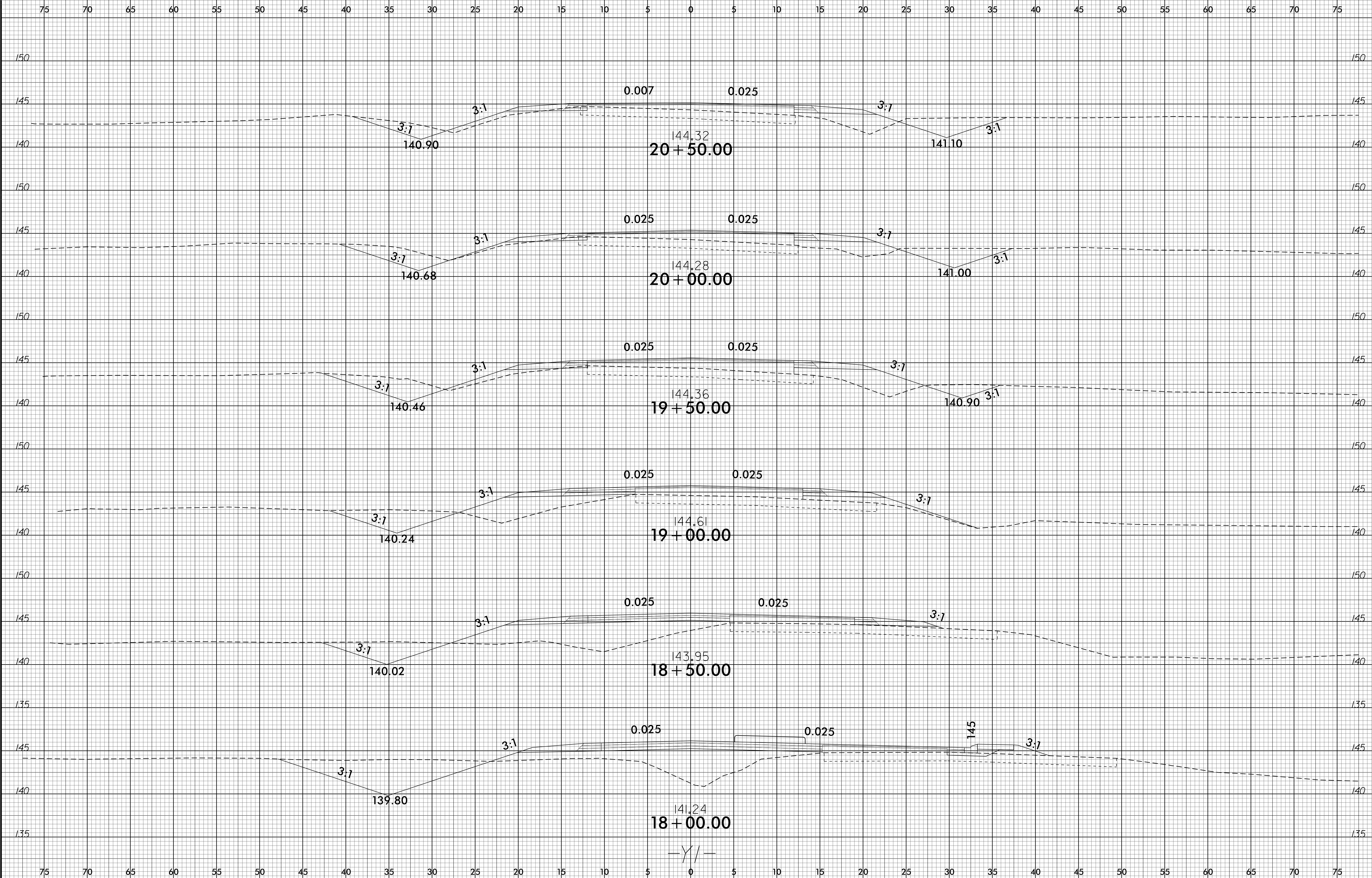
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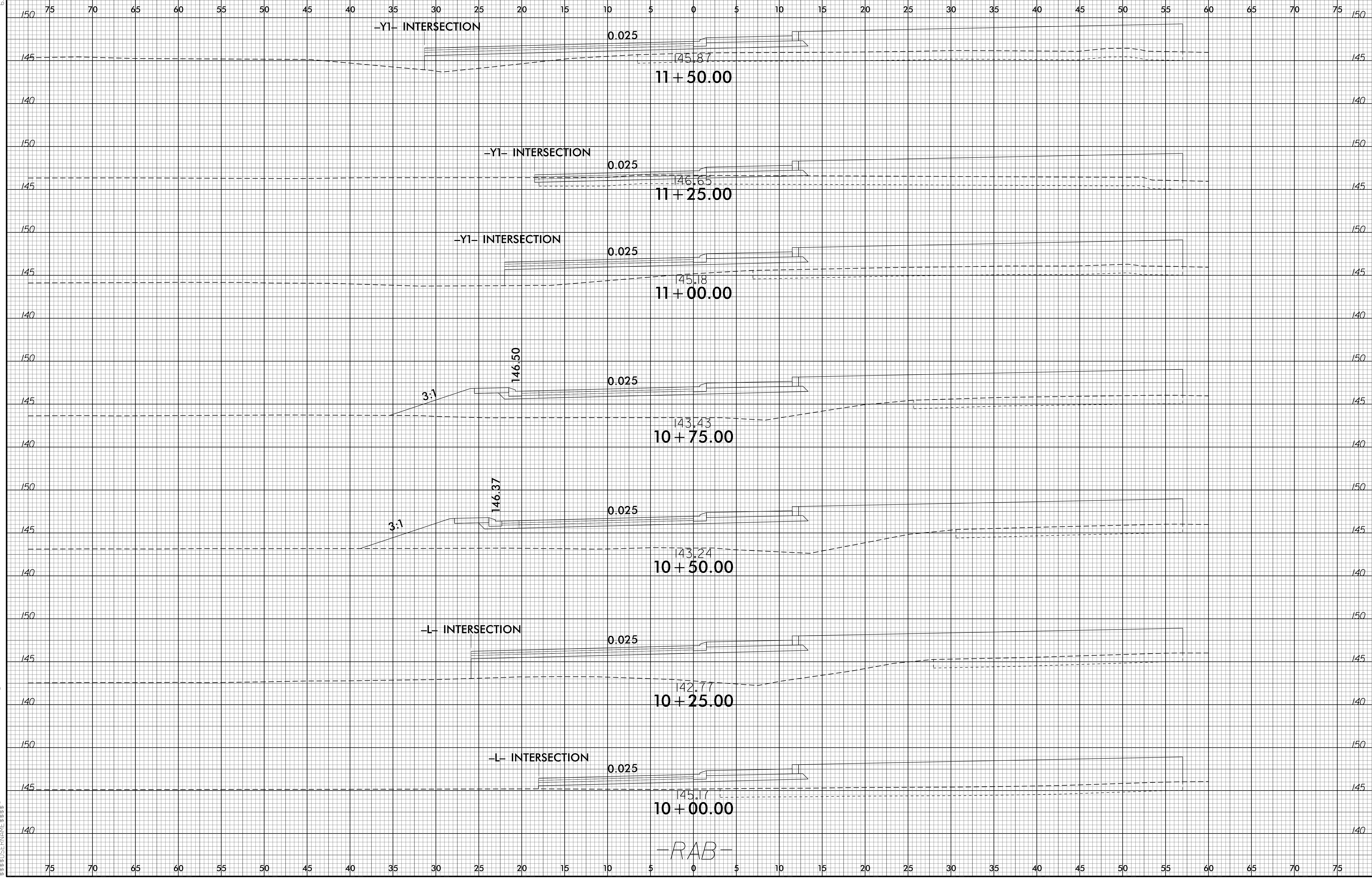
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6/23/16



PROJ. REFERENCE NO.
W-5706C

SHEET NO.
X-9



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11 + 50.00

-Y1- INTERSECTION

0.025

146.65

11 + 25.00

-Y1- INTERSECTION

0.025

145.8

11 + 00.00

3:1

146.50

0.025

143.43

10 + 75.00

3:1

146.37

0.025

143.24

10 + 50.00

-L- INTERSECTION

0.025

142.77

10 + 25.00

-L- INTERSECTION

0.025

145.17

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-RAB-

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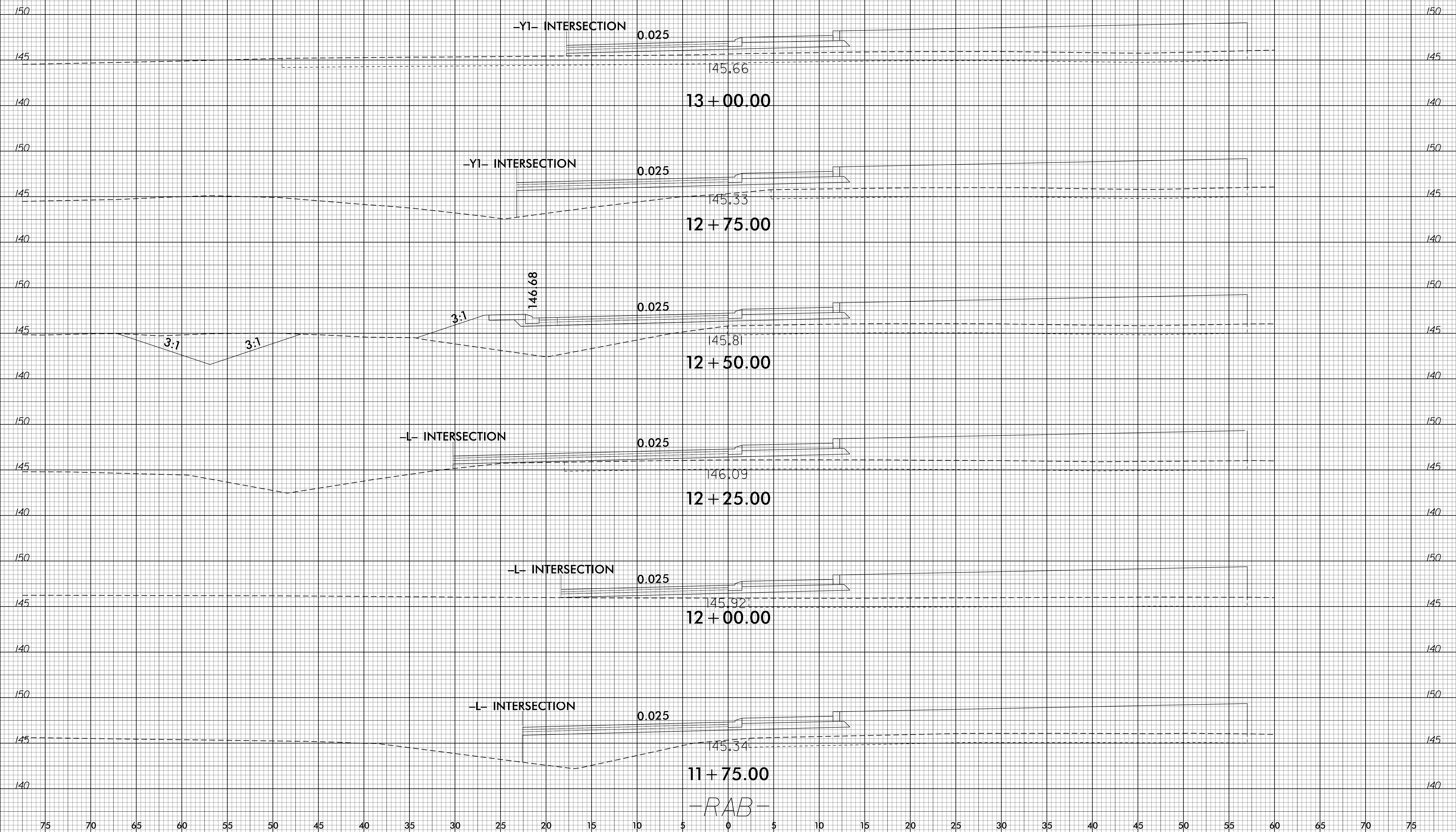
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PROJ. REFERENCE NO.
W-5706C

SHEET NO.
X-10

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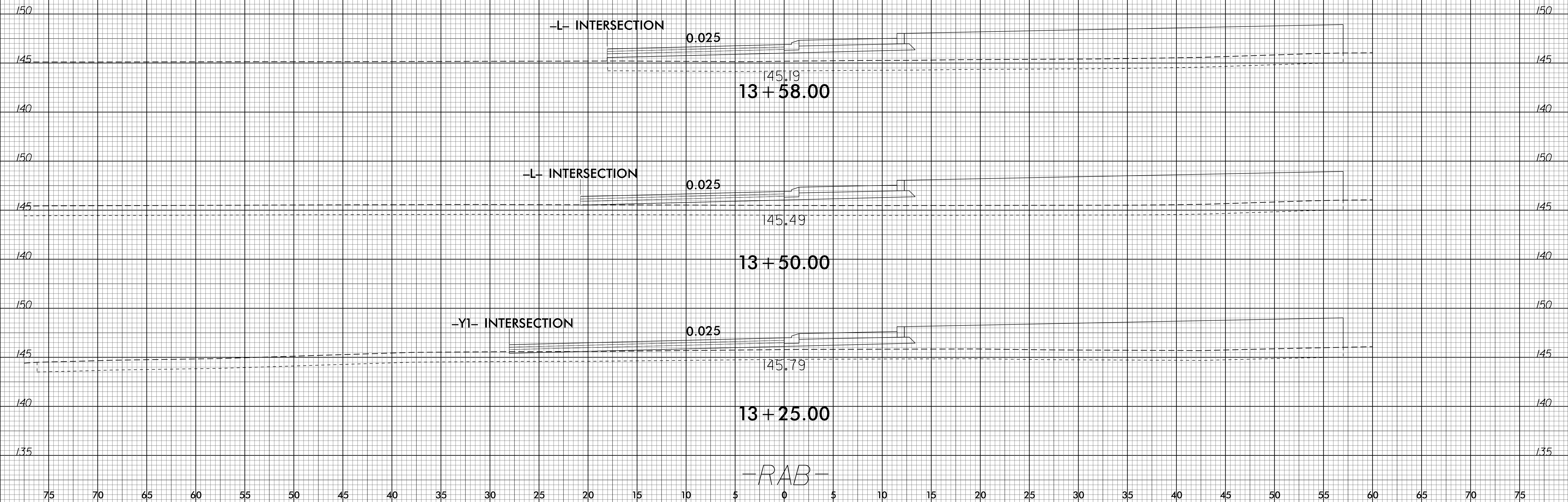
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PROJ. REFERENCE NO.
W-5706C

SHEET NO.
X-11

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