

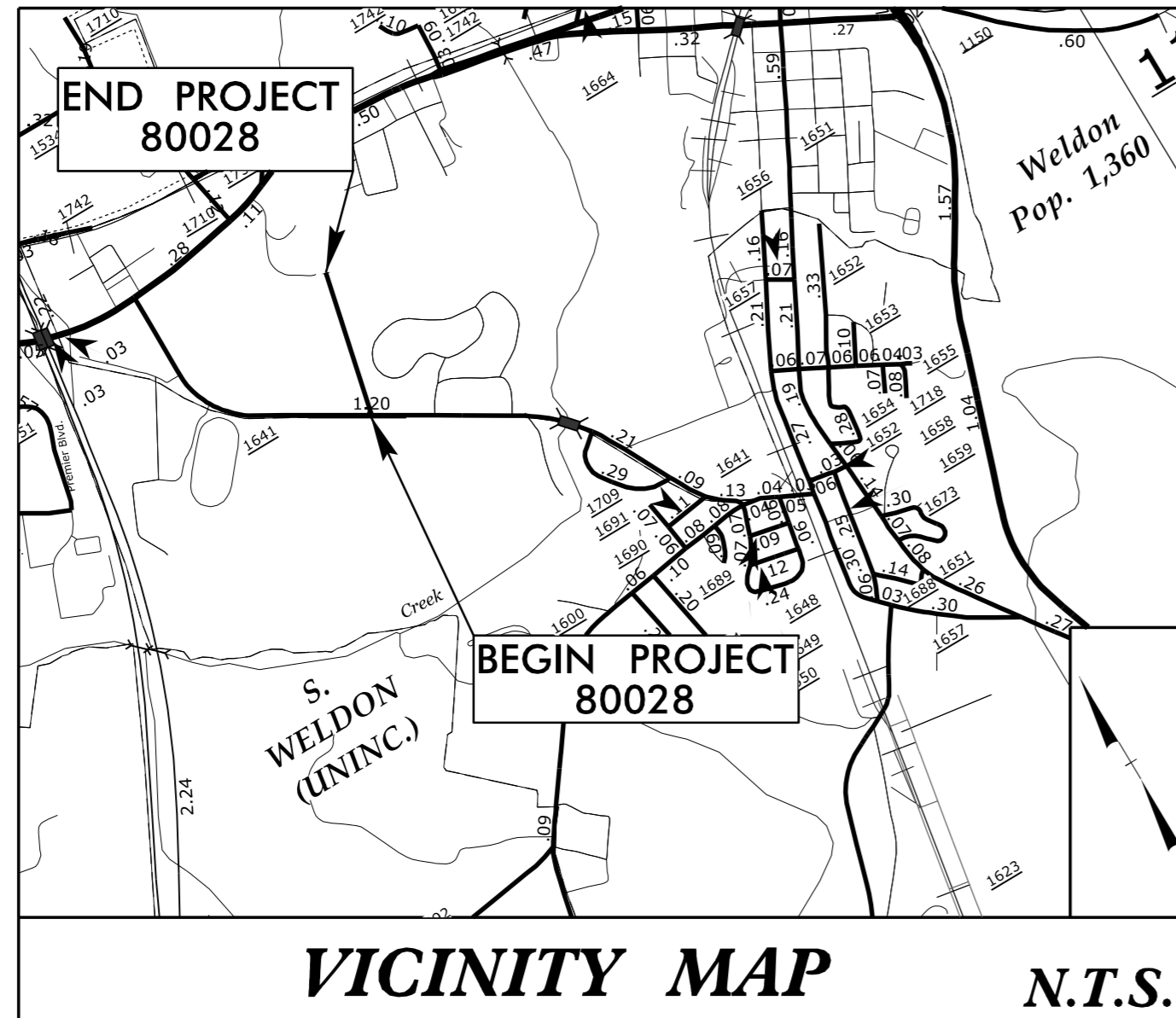
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09/08/99

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

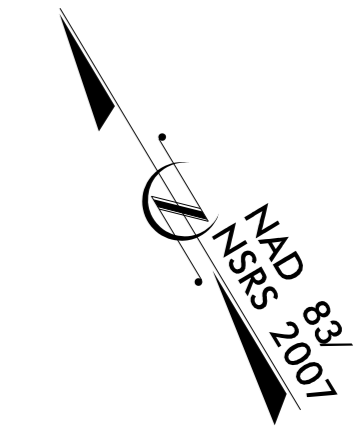
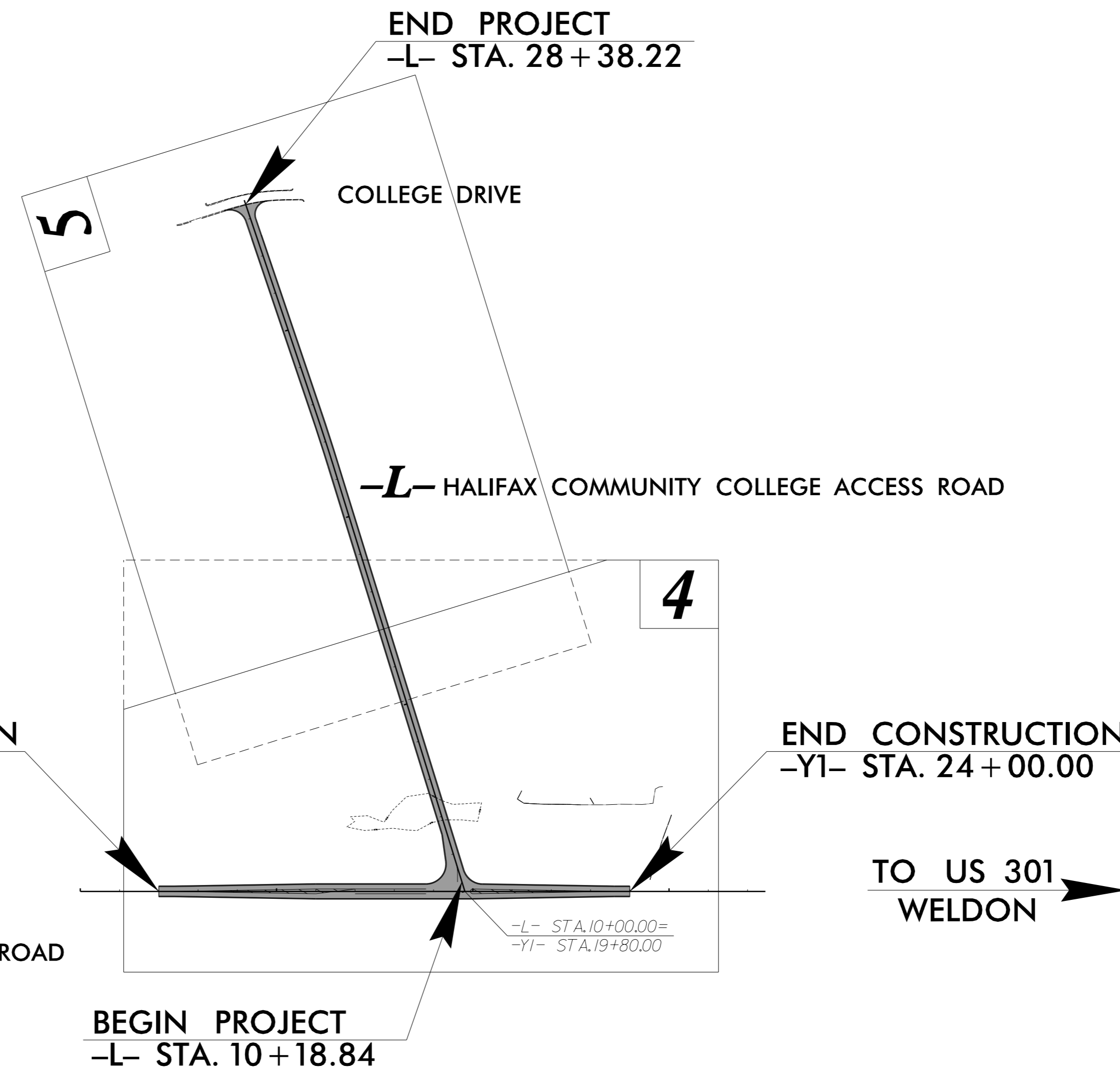
HALIFAX COUNTY

LOCATION: PROPOSED HALIFAX COMMUNITY COLLEGE ACCESS ROAD FROM SR 1641 (COUNTRY CLUB ROAD) TO COLLEGE DRIVE

TYPE OF WORK: GRADING, DRAINAGE AND PAVING

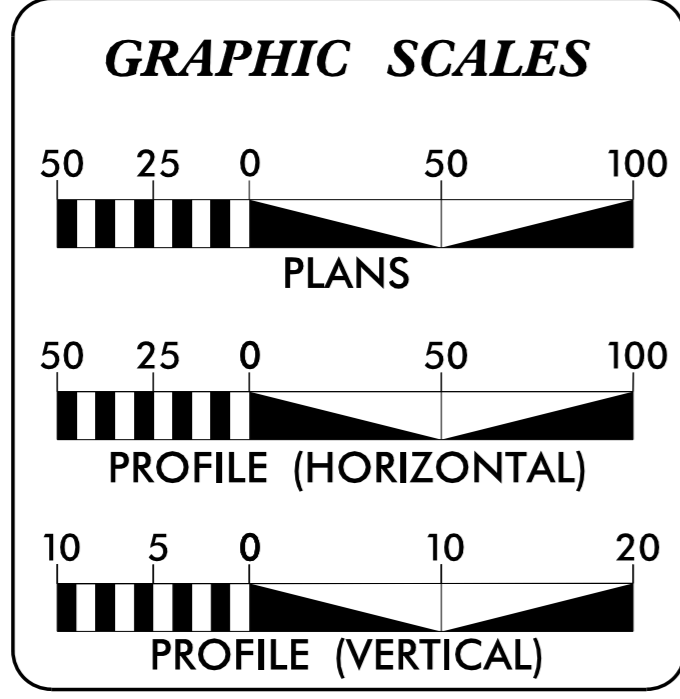
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	80028	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

TIP PROJECT: 80028



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

CONTRACT:



DESIGN DATA

ADT 2018 =	
ADT 2038 =	
DHV =	
D =	
T =	
V =	40 MPH
FUNC CLASS =	LOCAL

PROJECT LENGTH

SECTION 1:		
LENGTH ROADWAY TIP PROJECT 80028	=	0.345 MILES
TOTAL LENGTH TIP PROJECT 80028	=	0.345 MILES

Prepared in the Office of:
CDM Smith
CDM Smith Inc.
5400 Glenwood Avenue
Suite 400
Raleigh, NC 27612-3228
NC CDA No. F-1255

FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: MAY 2017	DAVID Z. KEISER, P.E. PROJECT ENGINEER
LETTING DATE: MAY 2017	ADAM M. CONRAD, P.E. PROJECT DESIGN ENGINEER
	FRANZ ENDERS, P.E. NCDOT CONTACT

HYDRAULICS ENGINEER

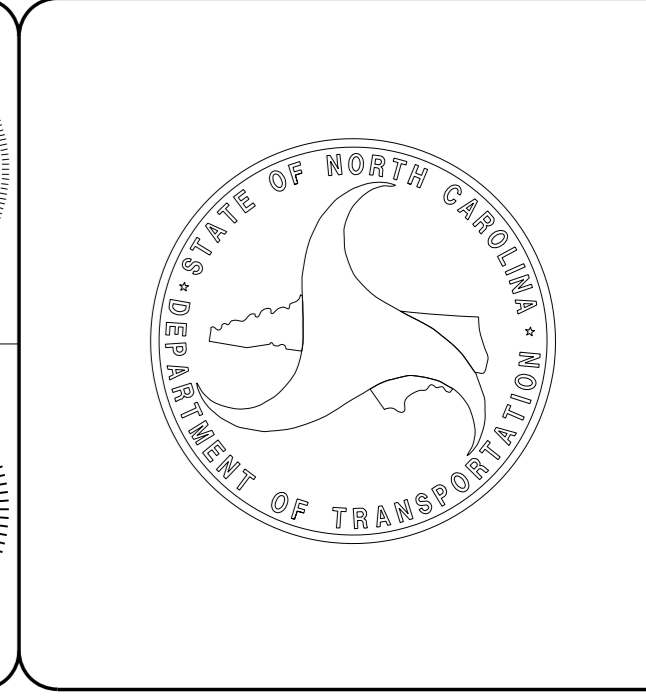
5/18/2017

DocuSigned by:
A. T. Nottingham
SIGNATURE:

ROADWAY DESIGN ENGINEER

5/18/2017

DocuSigned by:
David Z. Keiser
SIGNATURE:



Invalid expression
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USER: CONRADAM

8/17/99

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UNLESS ALL SIGNATURES COMPLETED**

ROADWAY DESIGN
ENGINEER

David E. Keiser

CDM Smith Inc.
2407 Glenwood Avenue
Suite 400
Raleigh, NC 27612-3228
NC CDA No. F-1285

INDEX OF SHEETS:

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
2A-1	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2B-1	ROADWAY DETAILS
3B-1	ROADWAY SUMMARIES
3D-1	DRAINAGE SUMMARIES
4 THRU 7	PLAN AND PROFILE SHEETS
TMP-1 THRU TMP-2	TRANSPORTATION MANAGEMENT PLANS
PMP-1 THRU PMP-2	PAVEMENT MARKING AND SIGNING PLANS
EC-1 THRU EC-7	EROSION CONTROL PLANS
X-1 THRU X-21	CROSS SECTIONS

GENERAL NOTES:

2012 SPECIFICATIONS
EFFECTIVE: 01-17-2012
REVISED: 01-24-2017

2012 ROADWAY ENGLISH STANDARD DRAWINGS

GRADE LINE:
GRADING AND SURFACING:

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

CLEARING:

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

SIDE ROADS:

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

SUBSURFACE PLANS:

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

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE

RIGHT-OF-WAY MARKERS:

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

EFF. 01-17-2012
REV. 02-29-2016

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

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.06	Method of Grading Sight Distance at Intersections
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
DIVISION 8 - INCIDENTALS	
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
838.80	Precast Endwalls - 12" thru 72" 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
840.17	Concrete Grated Drop Inlet Type 'A' - 12" thru 72" Pipe
840.26	Brick Grated Drop Inlet Type 'A' - 12" thru 72" Pipe
840.29	Frames and Narrow Slot Flat Grates
840.45	Precast Drainage Structure
846.01	Concrete Curb, Gutter and Curb & Gutter
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

04/05/15

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EIP
Property Corner	-----
Property Monument	□ EDM
Parcel/Sequence Number	(23)
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	----- RLB
Proposed Wetland Boundary	----- RLB
Existing Endangered Animal Boundary	----- EAB
Existing Endangered Plant Boundary	----- EPB
Existing Historic Property Boundary	----- HPB

Known Contamination Area: Soil	☠
Potential Contamination Area: Soil	☠
Known Contamination Area: Water	☠
Potential Contamination Area: Water	☠
Contaminated Site: Known or Potential	☠ ?

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○
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:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	----- R/W
Proposed Right of Way Line with Iron Pin and Cap Marker	----- R/W ▲
Proposed Right of Way Line with Concrete or Granite R/W Marker	----- R/W ▲
Proposed Control of Access Line with Concrete CA Marker	----- C/A

Existing Control of Access	----- C/A
Proposed Control of Access	----- C/A
Existing Easement Line	----- E
Proposed Temporary Construction Easement	----- E
Proposed Temporary Drainage Easement	----- TDE
Proposed Permanent Drainage Easement	----- PDE
Proposed Permanent Drainage / Utility Easement	----- DUE
Proposed Permanent Utility Easement	----- PUE
Proposed Temporary Utility Easement	----- TUE
Proposed Aerial Utility Easement	----- AUE

Proposed Permanent Easement with Iron Pin and Cap Marker	◆
--	---

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	----- C
Proposed Slope Stakes Fill	----- F
Proposed Curb Ramp	----- CR
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	-----

VEGETATION:

Single Tree	☼
Single Shrub	☼
Hedge	-----
Woods Line	-----

Orchard	☼ ☼ ☼ ☼
Vineyard	□ Vineyard

EXISTING STRUCTURES:

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

UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	⊕
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.*)	----- W
U/G Water Line LOS C (S.U.E.*)	----- W
U/G Water Line LOS D (S.U.E.*)	----- W
Above Ground Water Line	----- A/G Water

TV:

TV Pedestal	⊠
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.*)	----- ?UTL
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	⊠ UST
A/G Tank; Water, Gas, Oil	□
Geoenvironmental Boring	⊕
U/G Test Hole LOS A (S.U.E.*)	○
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

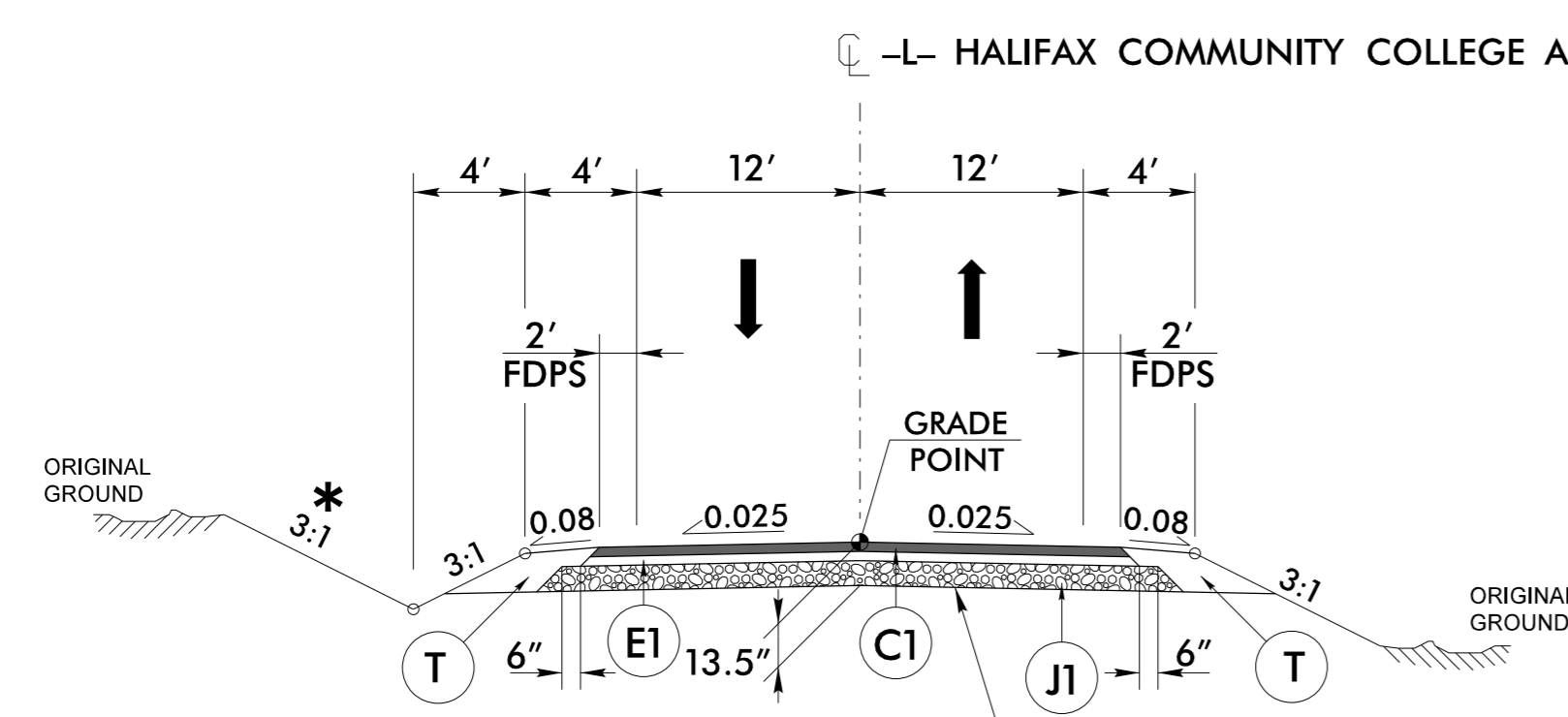
5/14/99

PAVEMENT SCHEDULE
FINAL PAVEMENT DESIGN

C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.	J1	PROP. 8" AGGREGATE BASE COURSE	U	EXIST. PAVEMENT
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1.5" IN DEPTH.	R1	2'x6" CONCRETE CURB AND GUTTER.	V	MILLING BITUMINOUS PAVEMENT, 0" - 1.5"
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	T	EARTH MATERIAL	W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL)
E2	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.				

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

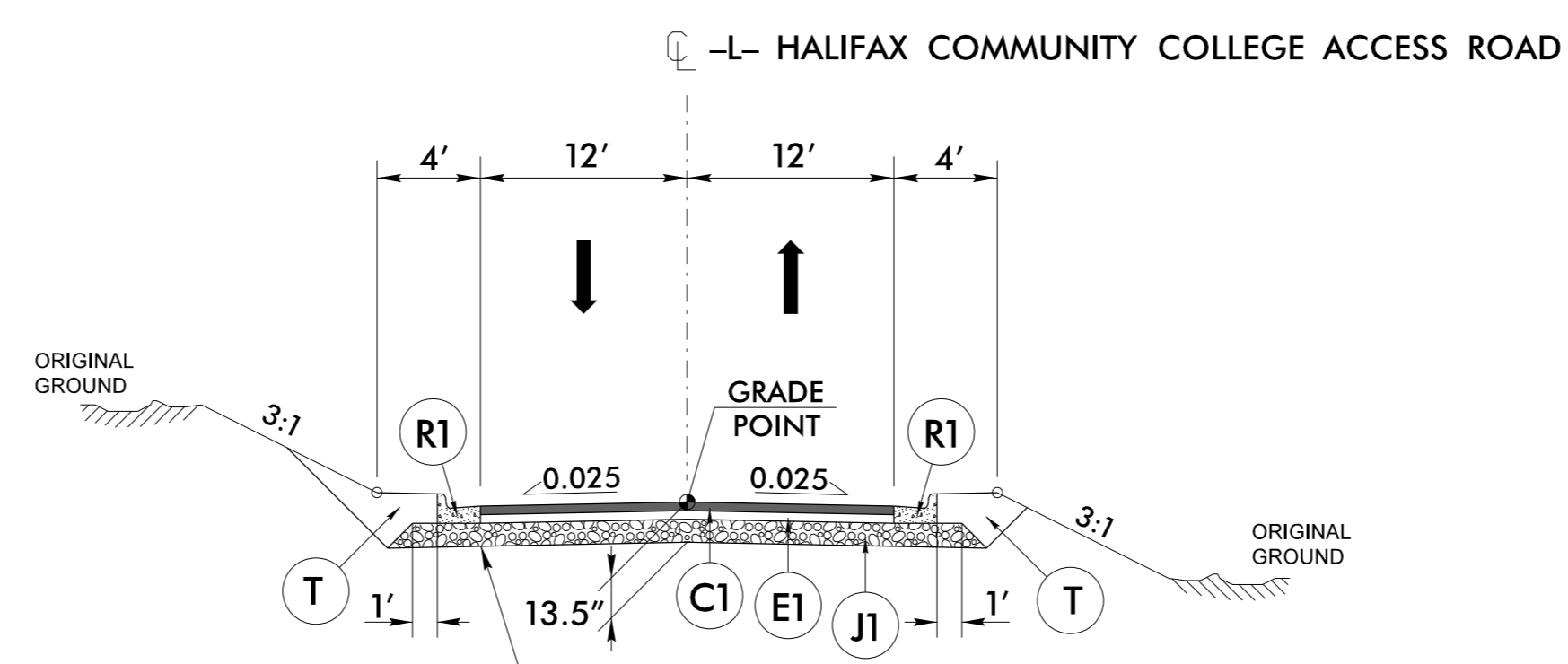
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ROADWAY DESIGN ENGINEER DAVID Z. KEESER	PAVEMENT DESIGN ENGINEER
	<small>CDM Smith Inc. 5400 Glenwood Avenue Suite 400 Raleigh, NC 27612-3228 NC CDA No. F-1250</small>
<small>NC DEPARTMENT OF TRANSPORTATION PAVEMENT MANAGEMENT UNIT 1400 MAIL SERVICE CENTER RALEIGH, NC 27699-1550</small>	
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TYPICAL SECTION NO. 1

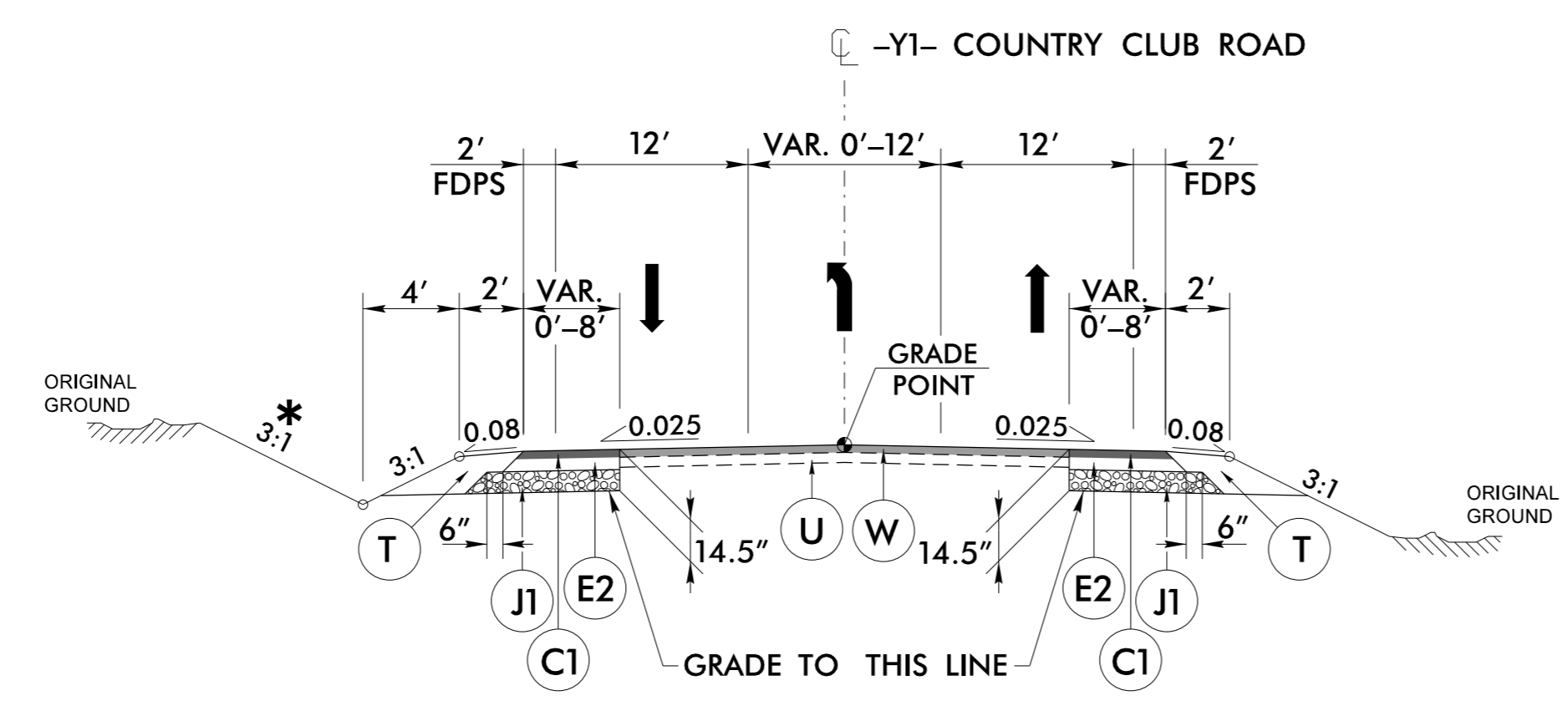
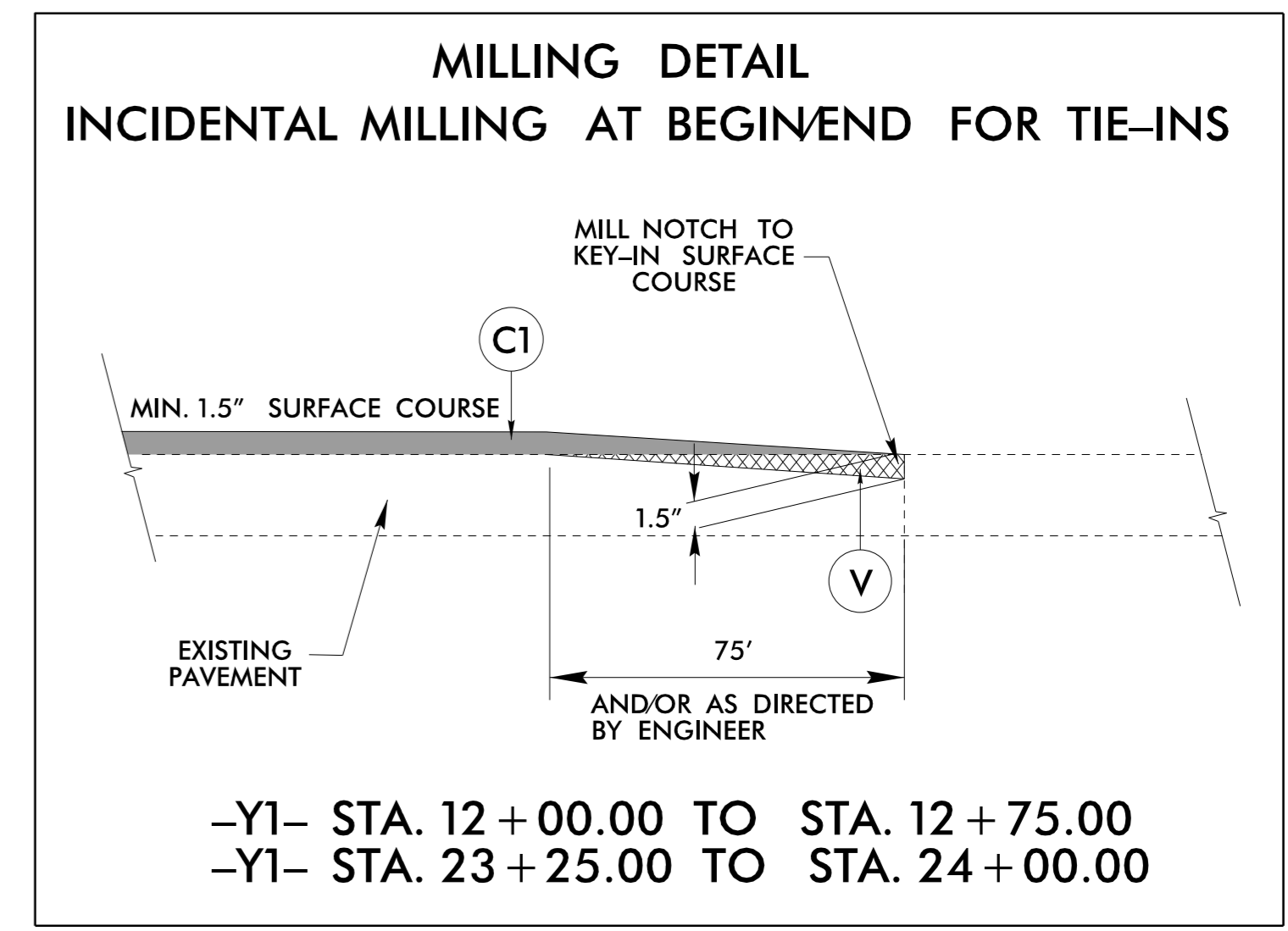
USE TYPICAL SECTION NO. 1
-L- STA. 10+18.84 TO STA. 27+50.00

* USE 2:1 BACKSLOPE FROM STA. 11+50 (RT)
TO STA. 13+00 (RT)



TYPICAL SECTION NO. 2

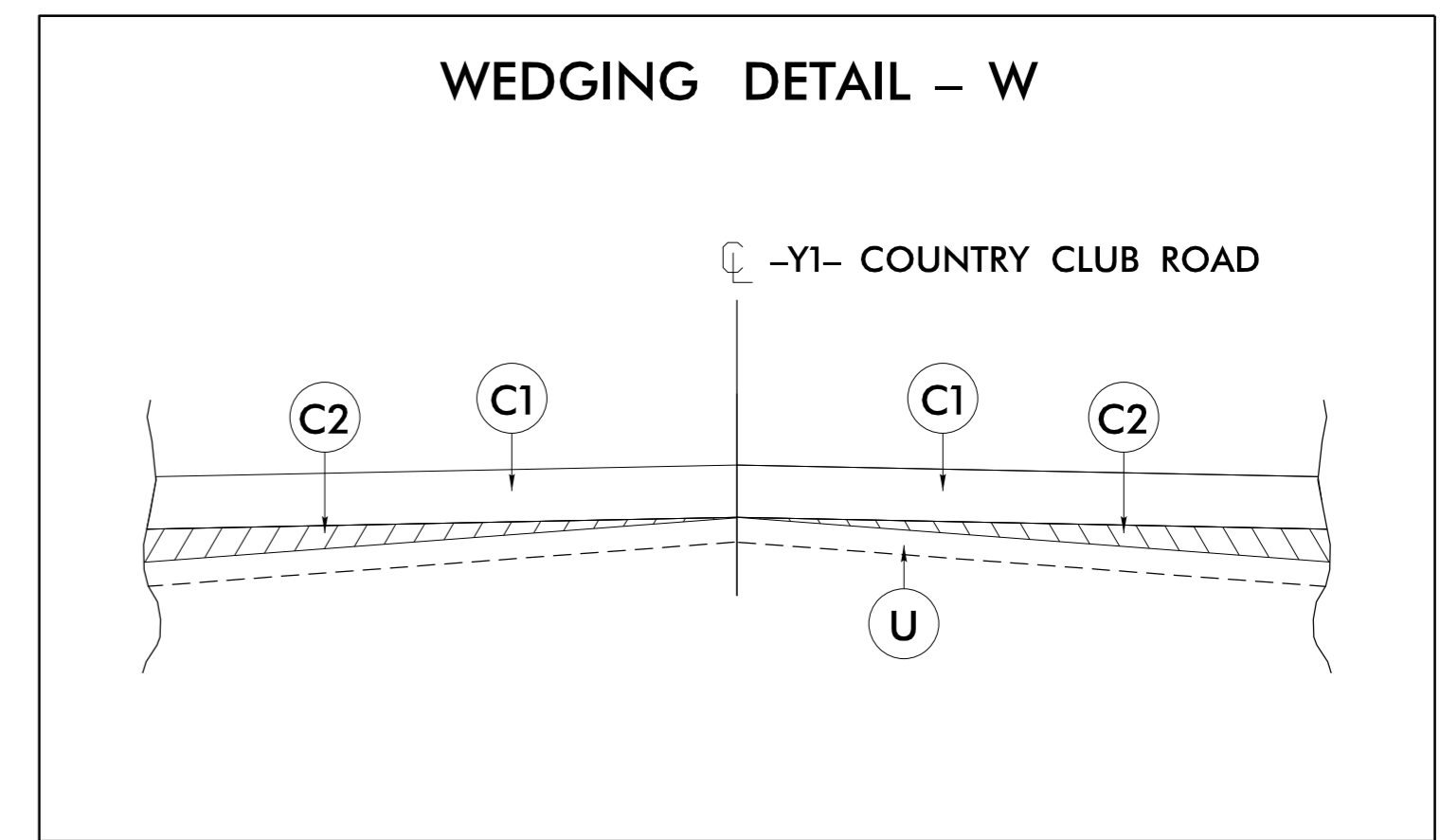
USE TYPICAL SECTION NO. 2
-L- STA. 27+50.00 TO STA. 28+38.22



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3
-Y1- STA. 12+00.00 TO STA. 24+00.00

* USE 2:1 BACKSLOPE FROM STA. 20+50 (RT)
TO STA. 24+00 (RT)



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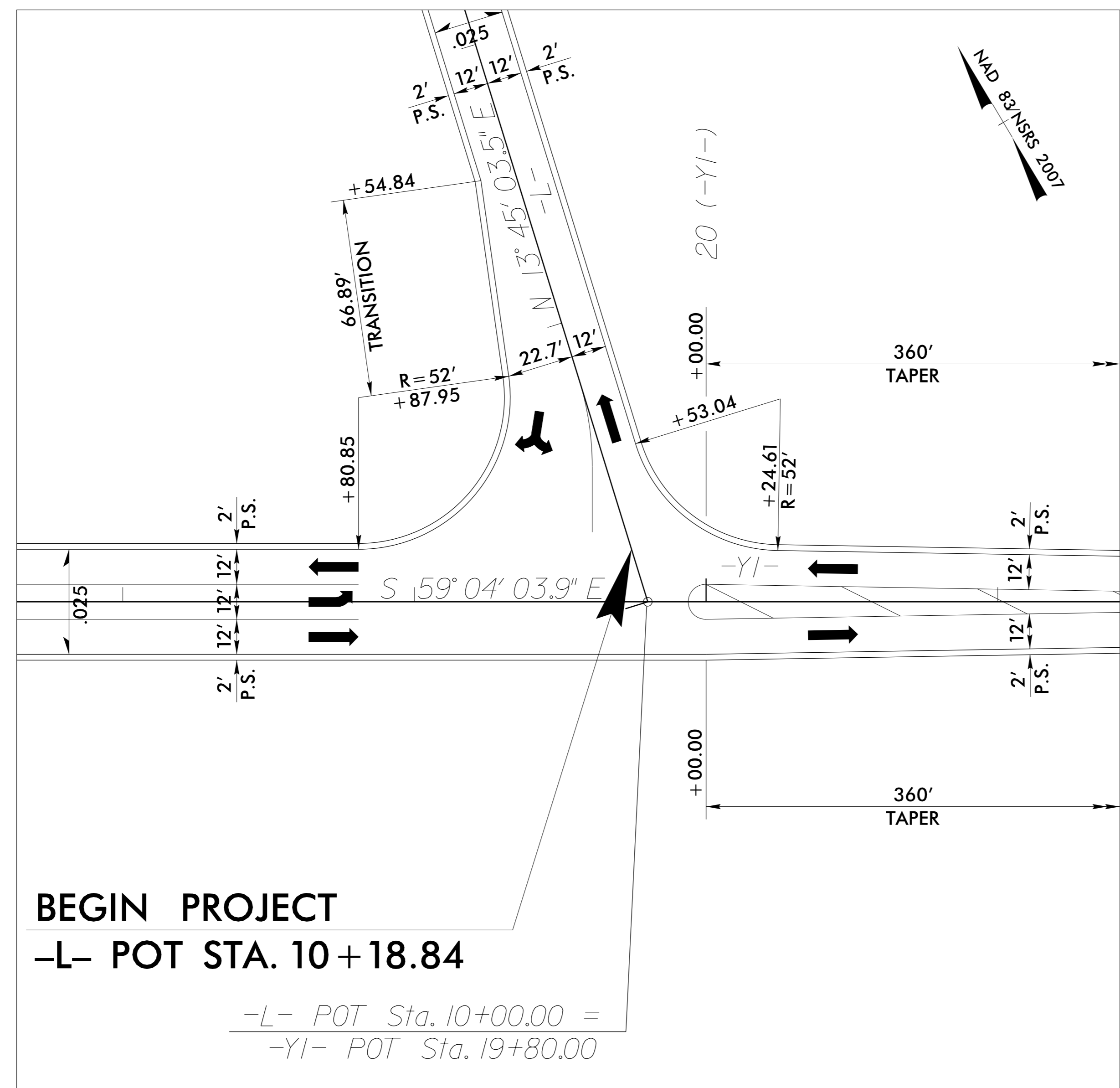
PROJECT REFERENCE NO.	SHEET NO.
80028	2B-1
R/W SHEET NO.	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

ROADWAY DESIGN
ENGINEER

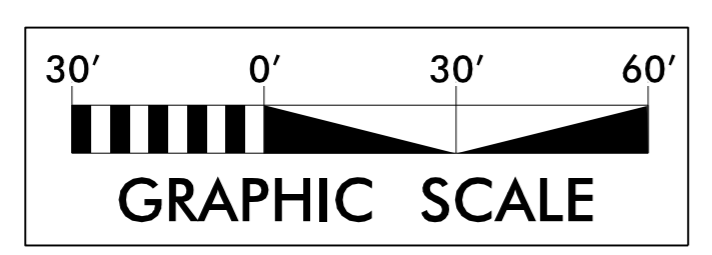
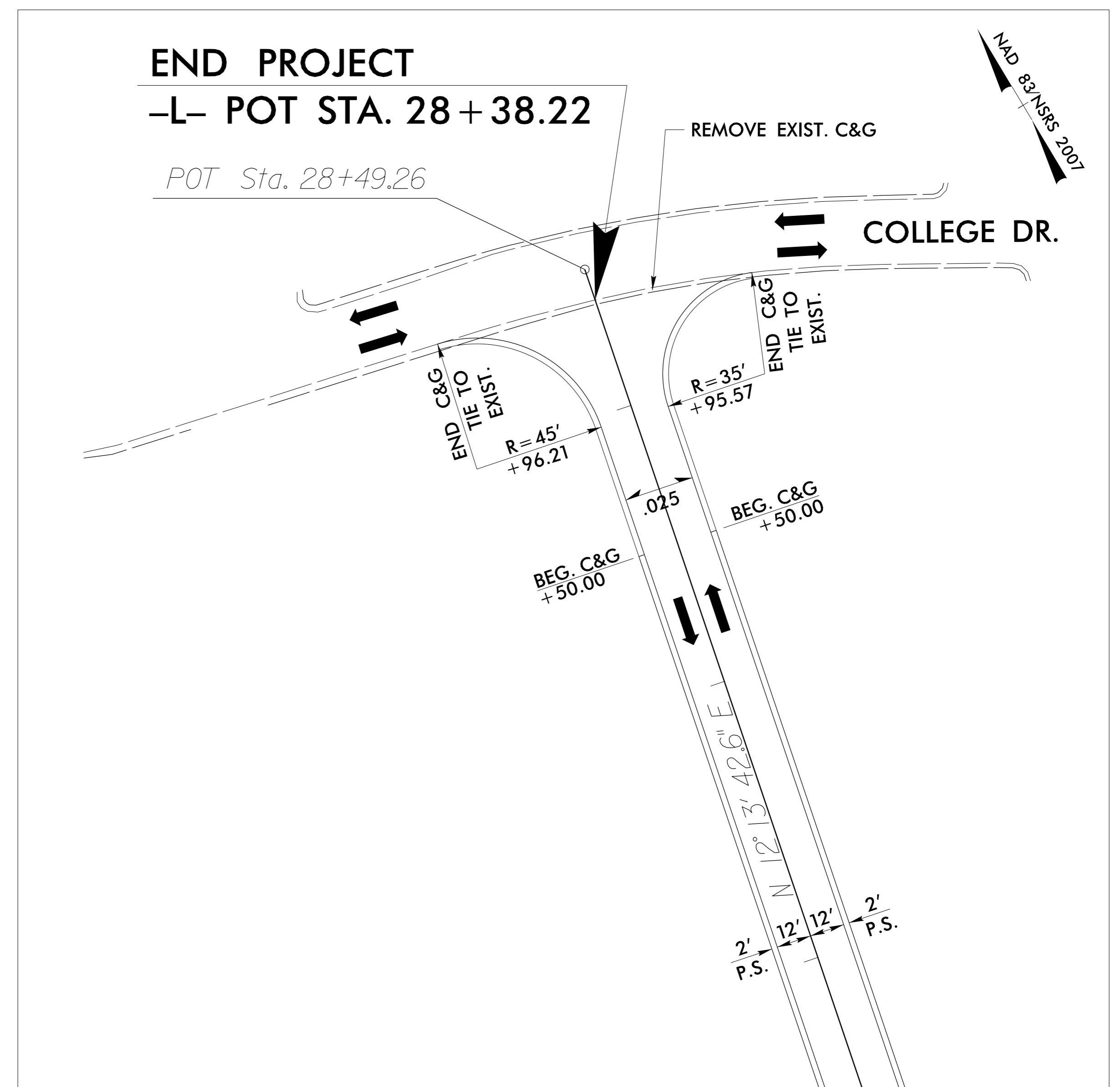
David E. Keiser
ENGINEER

CDM Smith Inc.
5400 Glenwood Avenue
Suite 400
Raleigh, NC 27612-3229
NC COA No. F-1255

**INTERSECTION DETAIL
-Y1--L-**



**INTERSECTION DETAIL
-L-/COLLEGE DR.**



SEE SHEETS 4 & 5 FOR PLAN VIEW

12/06/07

COMPUTED BY: AMC DATE: 5/19/17
 CHECKED BY: DZK DATE: 5/19/17

PROJECT REFERENCE NO. SHEET NO.
 80028 3B-1

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK

STATION	STATION	UNCL. EXCAV.	EMBANK. +%	BORROW	WASTE
-L- 10+18.84	28+38.22	2,562	469		1,976
-Y1- 12+00.00	24+00.00	939	341		598
SUBTOTALS:		3,501	927		2,573
TOTALS:		3,501	927		2,573
MATERIAL FOR SHOULDER CONSTRUCTION			813	813	
WASTE IN LUE OF BORROW				-813	-813
PROJECT TOTALS:		3,501	1,739		1,760
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT					
GRAND TOTALS:		3,501	1,749		1,740
SAY:		3,600	1,800		1,800

EST. DDE = 210 CY

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

Approx. Quantities Only: Clearing and Grubbing, Unclassified Excavation, Shoulder Borrow, and Fine Grading will be paid for at the contract lump sum price for "Grading".

12/06/07

MANGUYEN0312

COMPUTED BY: MOCN DATE: 05/12/2017
CHECKED BY: ATN DATE: 05/12/2017

PROJECT NO. 80028 SHEET NO. 3D-1

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

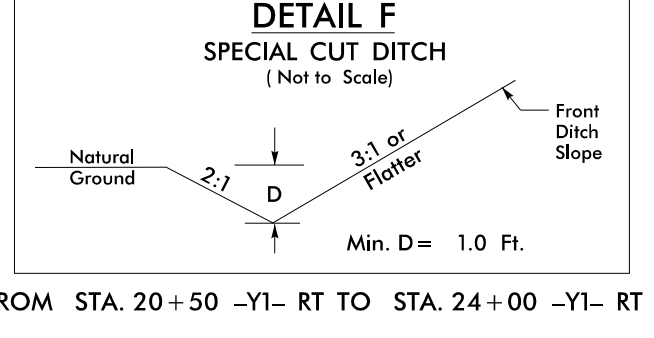
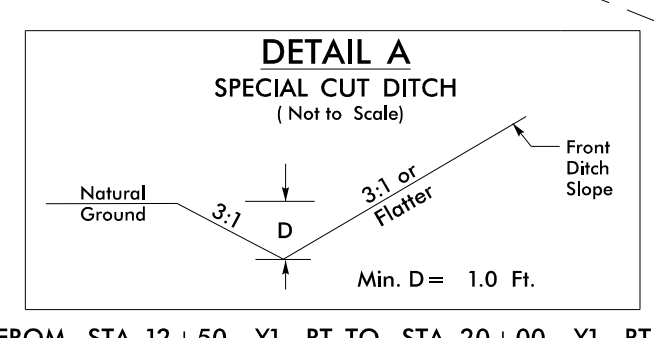
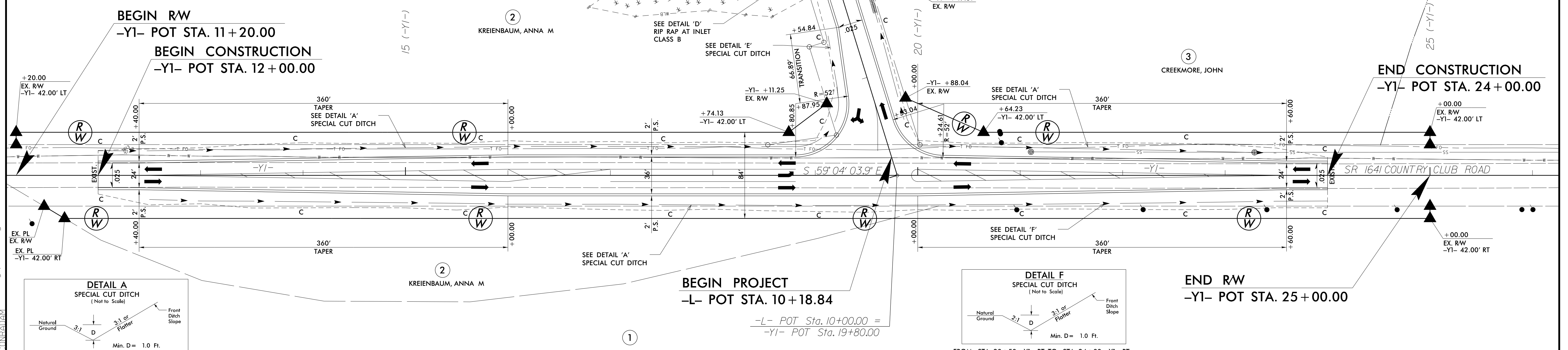
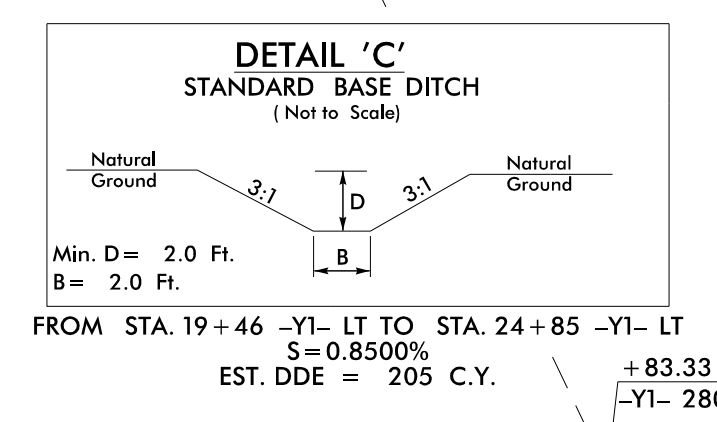
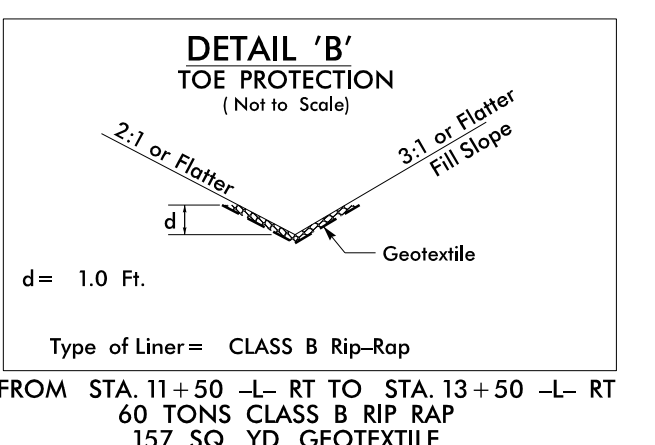
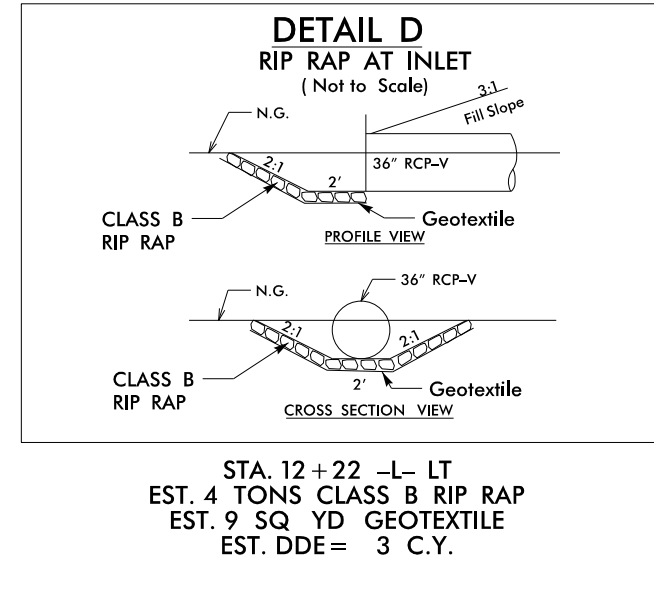
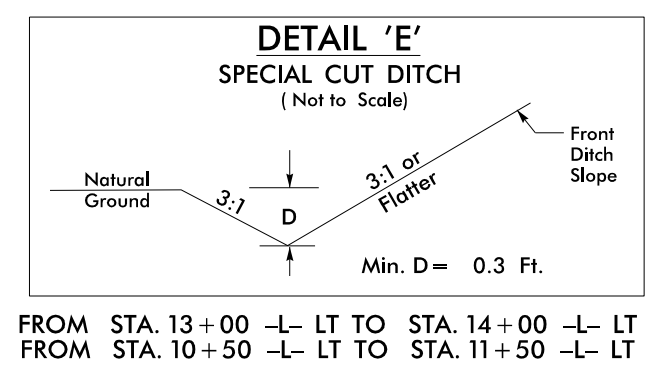
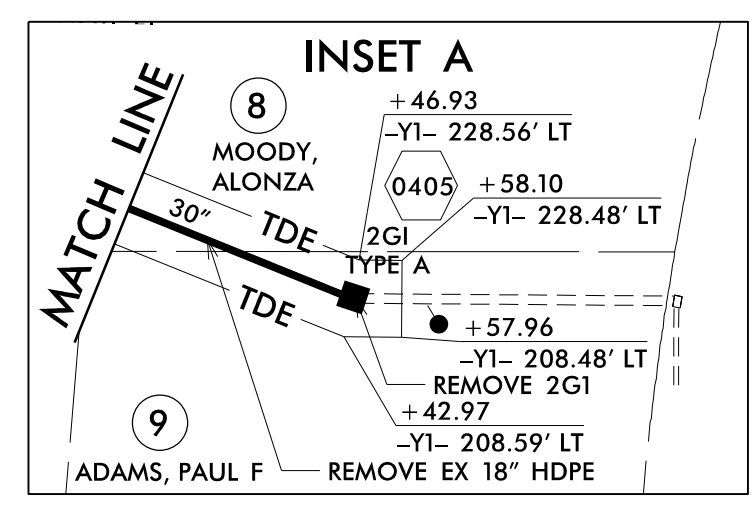
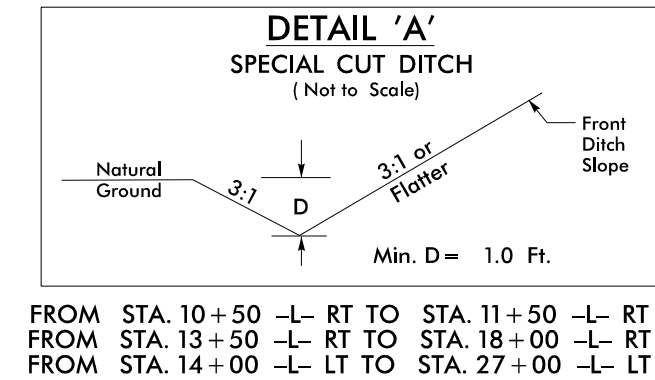
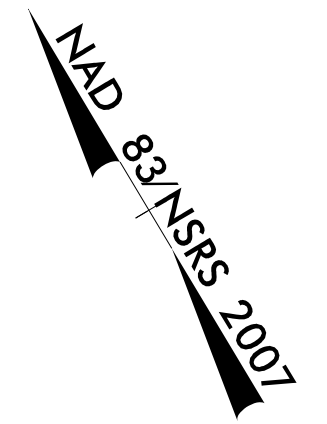
LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

Main data table with columns for Line & Station, Offset, Structure Number, Invert Elevation, Drainage Pipe, R.C. Pipe Class IV, R.C. Pipe Class V, Endwalls, Reinforced Endwalls, Drainage Structure, Quantities for Drainage Structures, Frame, Grates, and Hood, Concrete Transitional Section, and Pipe Removal. Includes summary rows for SHEET TOTALS and PROJECT TOTALS.

ABBREVIATIONS table listing codes for materials like CORRUGATED ALUMINIUM ALLOY, CATCH BASIN, CORRUGATED STEEL, etc.

REMARKS column for project notes and observations.

PROJECT REFERENCE NO. 80028	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DESIGN NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



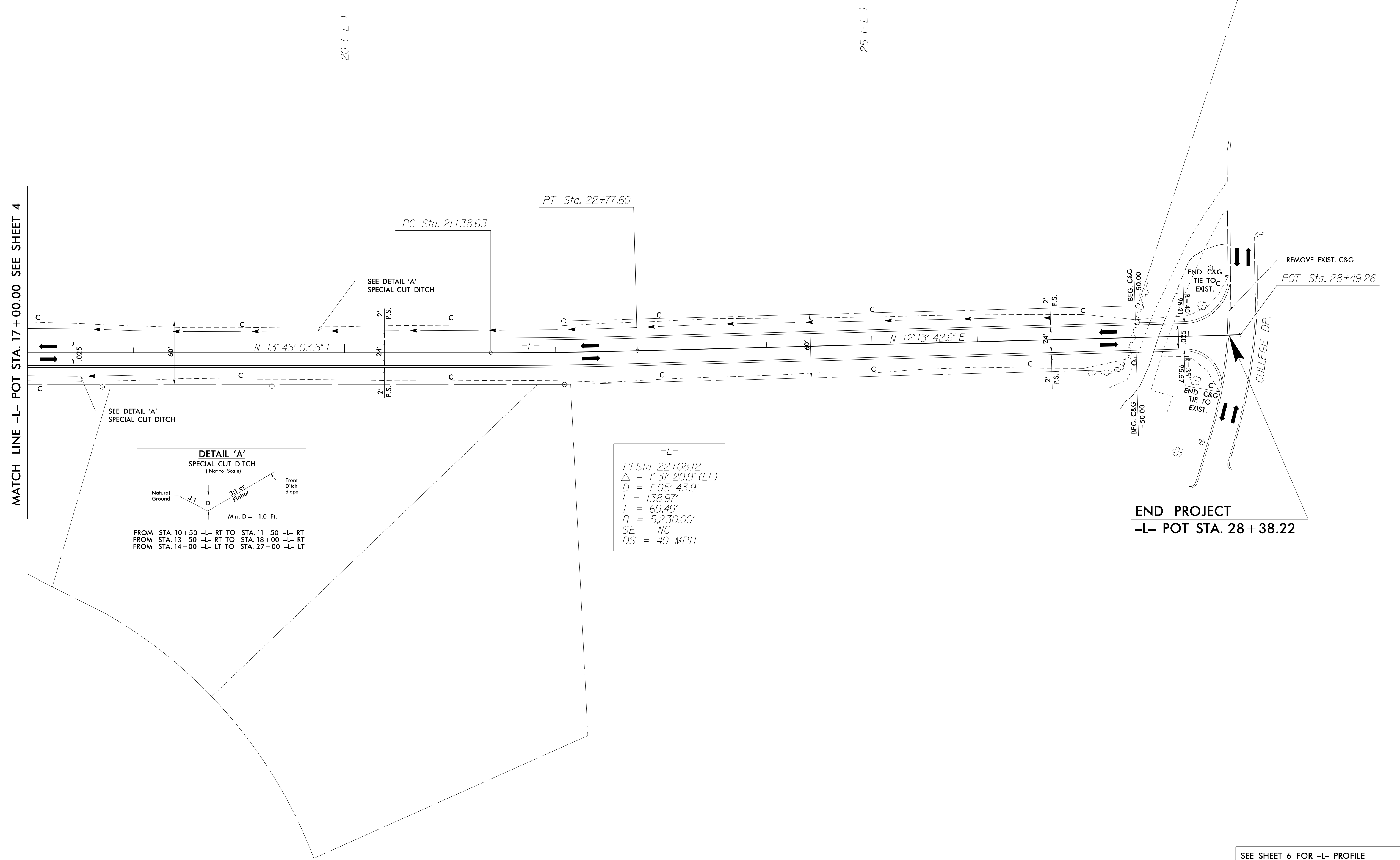
SEE SHEET 6 FOR -L- PROFILE
SEE SHEET 7 FOR -Y1- PROFILE
SEE SHEET 2B-1 FOR INTERSECTION DETAILS

Invalid expression for Rd_Poly.shp_04.dgn
USER: DORISBAY

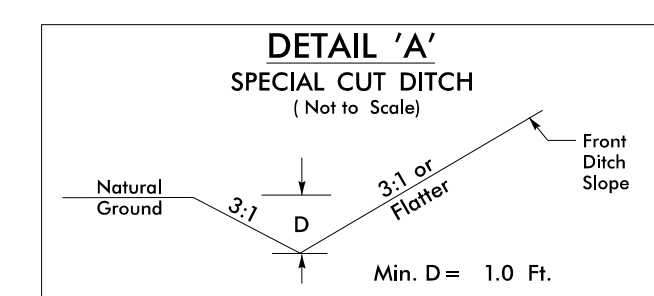
5/14/99

PROJECT REFERENCE NO. 80028		SHEET NO. 5	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
David E. Keiser		A. T. Nottingham	
<small>CDM Smith Inc. 5401 Glenwood Avenue Suite 400 Raleigh, NC 27612-3228 NC CDA No. F-1255</small>		<small>M Engineering, PLLC 1011 Schubb Drive Suite 100 Raleigh, NC 27608 NC CDA No.</small>	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

NAD 83/NSRS 2007



MATCH LINE -L- POT STA. 17 + 00.00 SEE SHEET 4



FROM STA. 10+50 -L- RT TO STA. 11+50 -L- RT
 FROM STA. 13+50 -L- RT TO STA. 18+00 -L- RT
 FROM STA. 14+00 -L- LT TO STA. 27+00 -L- LT

-L-
PI Sta 22+08.12
Δ = 1° 31' 20.9" (LT)
D = 1° 05' 43.9"
L = 138.97'
T = 69.49'
R = 5,230.00'
SE = NC
DS = 40 MPH

END PROJECT
-L- POT STA. 28 + 38.22

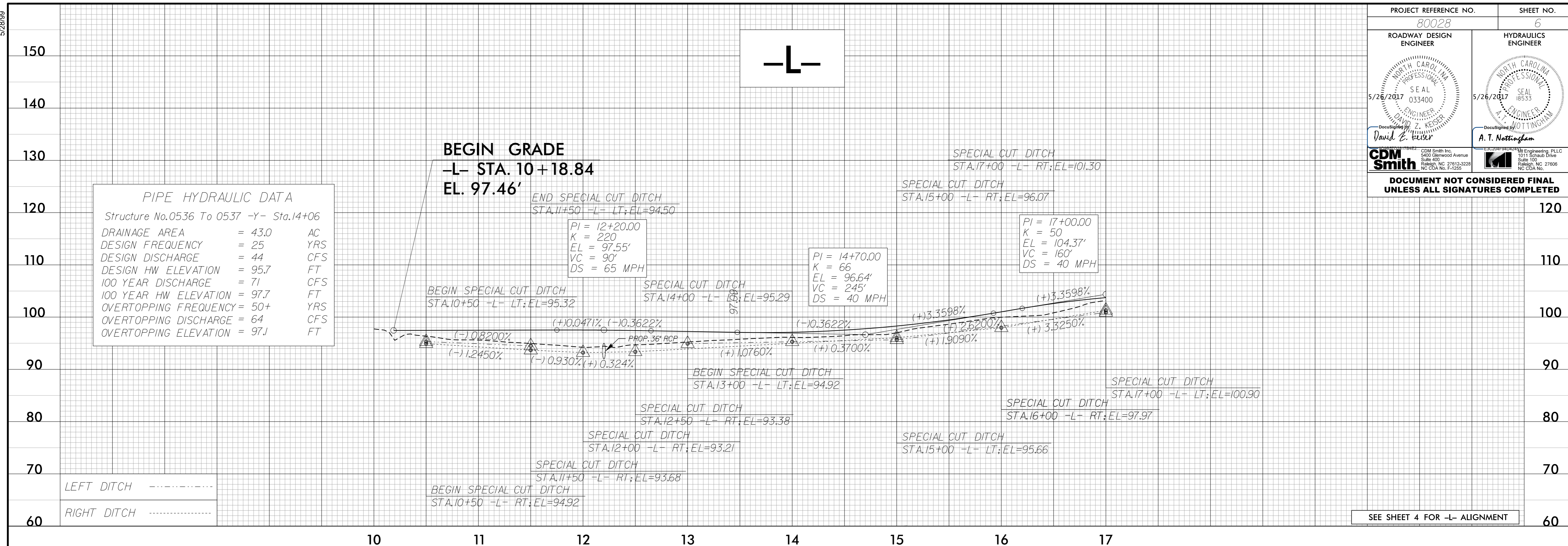
SEE SHEET 6 FOR -L- PROFILE
SEE SHEET 2B-1 FOR INTERSECTION DETAILS

PROJECT REFERENCE NO. 80028	SHEET NO. 6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
David E. Kesser	A. T. Nottingham
CDM Smith Inc. 5400 Glenwood Avenue Suite 400 Raleigh, NC 27612-3228 NC CDA No. F-1250	Engineering, PLLC 1011 Schaub Drive Suite 100 Raleigh, NC 27608 NC CDA No.
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

PIPE HYDRAULIC DATA

Structure No.0536 To 0537 -Y- Sta.14+06

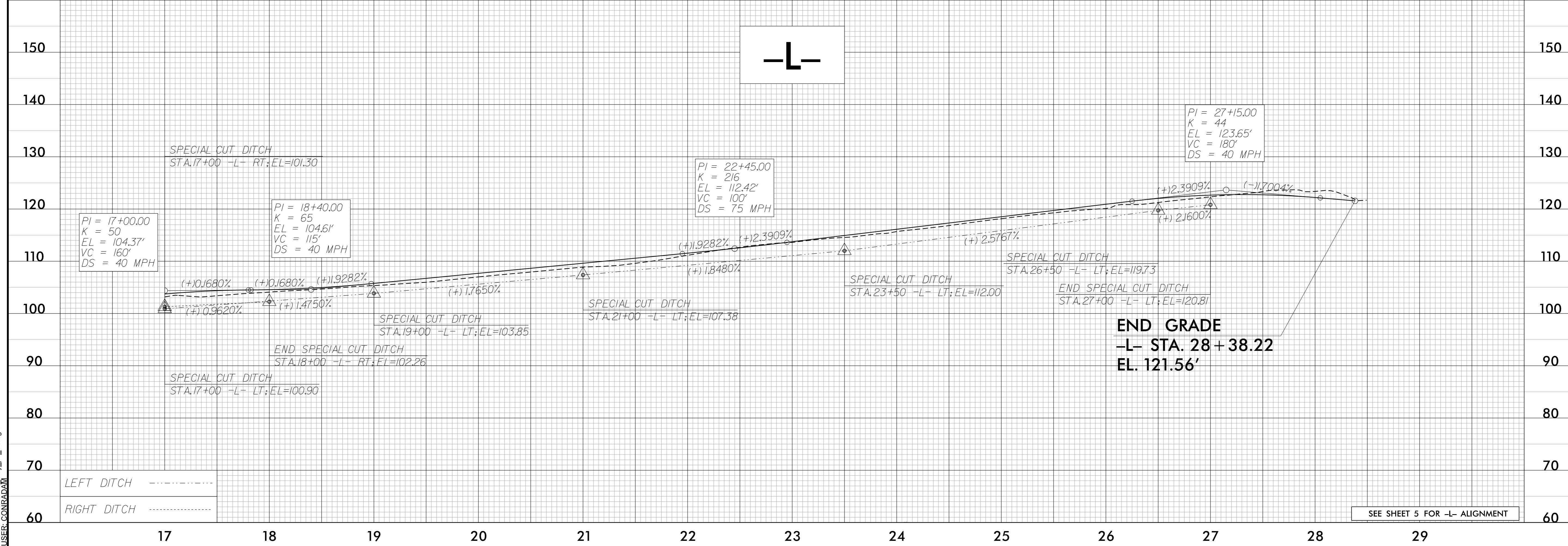
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DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 44	CFS
DESIGN HW ELEVATION	= 95.7	FT
100 YEAR DISCHARGE	= 71	CFS
100 YEAR HW ELEVATION	= 97.7	FT
OVERTOPPING FREQUENCY	= 50+	YRS
OVERTOPPING DISCHARGE	= 64	CFS
OVERTOPPING ELEVATION	= 97.1	FT



LEFT DITCH -----

RIGHT DITCH -----

SEE SHEET 4 FOR -L- ALIGNMENT



LEFT DITCH -----

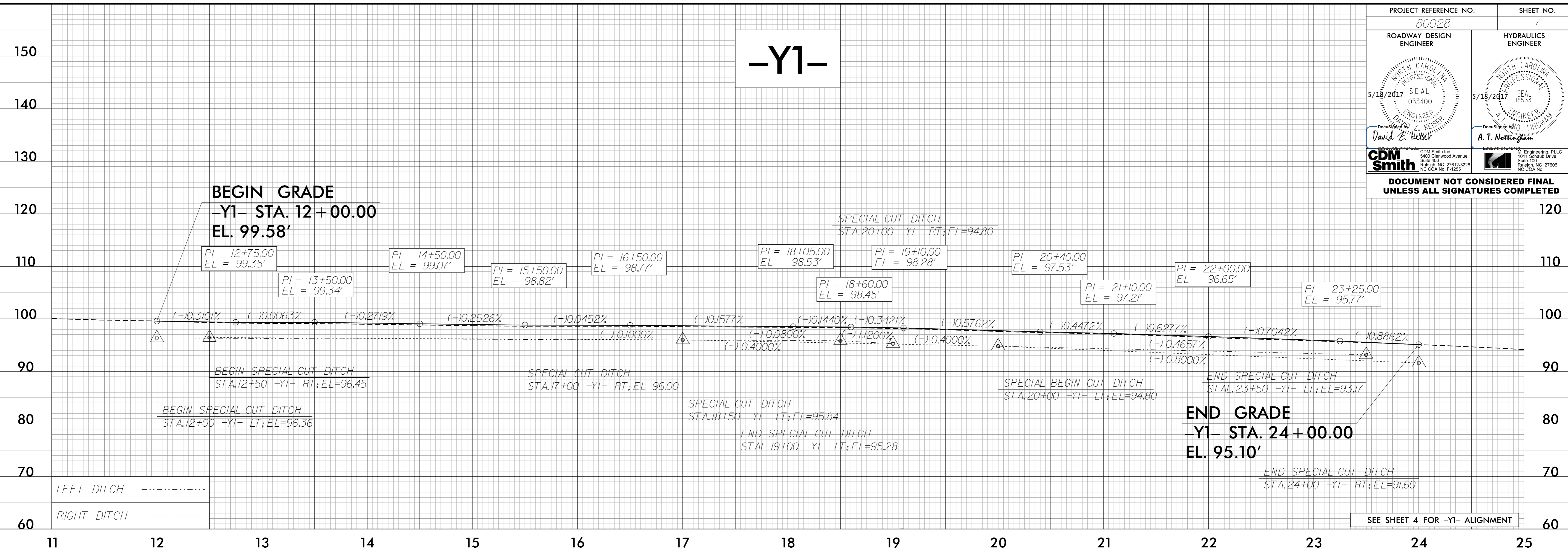
RIGHT DITCH -----

SEE SHEET 5 FOR -L- ALIGNMENT

Invalid expression
USER: CONRAD

PROJECT REFERENCE NO. 80028	SHEET NO. 7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
David E. Kester	A. T. Nottingham
<small>CDM Smith Inc. 5400 Glenwood Avenue Suite 400 Raleigh, NC 27612-3228 NC CDA No. F-1256</small>	<small>M Engineering, PLLC 1011 Schaub Drive Suite 100 Raleigh, NC 27608 NC CDA No.</small>
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5/28/99



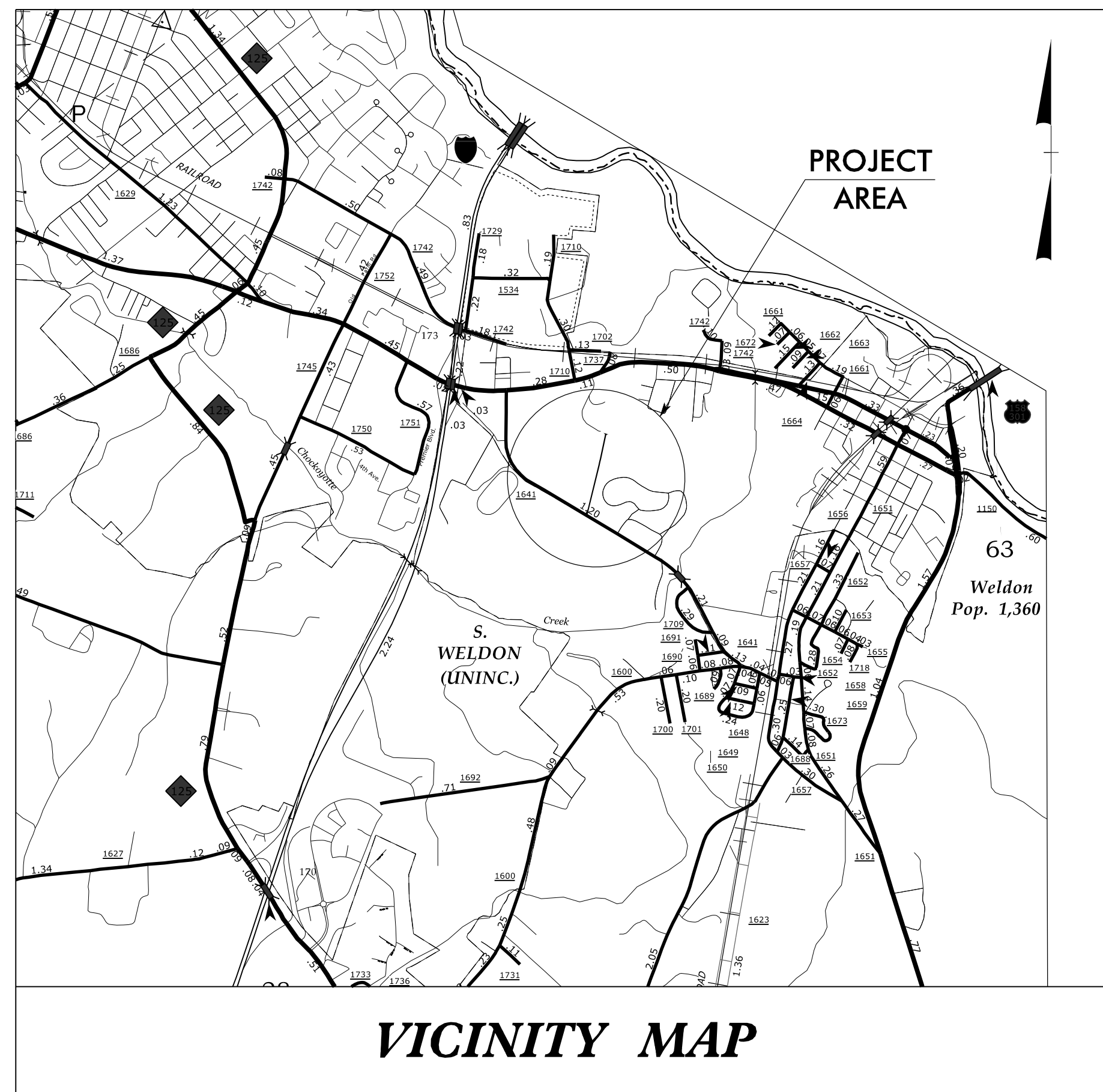
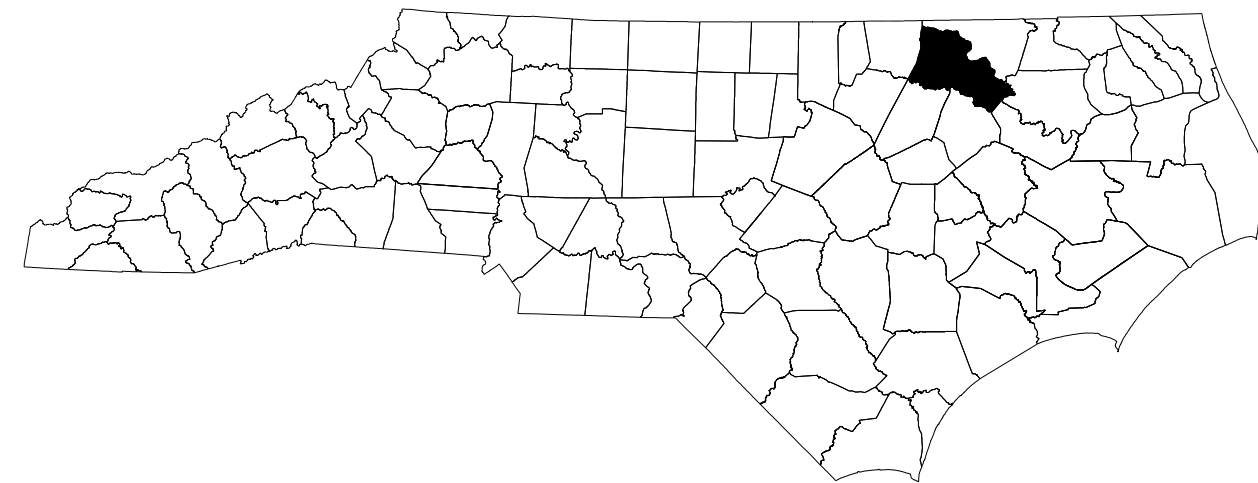
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USER: CONRAD.M...

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

HALIFAX COUNTY



**LOCATION: PROPOSED HALIFAX COMMUNITY COLLEGE
ACCESS ROAD FROM SR 1641 (COUNTRY
CLUB ROAD) TO COLLEGE DRIVE**

TYPE OF WORK: GRADING, DRAINAGE AND PAVING

INDEX OF SHEETS

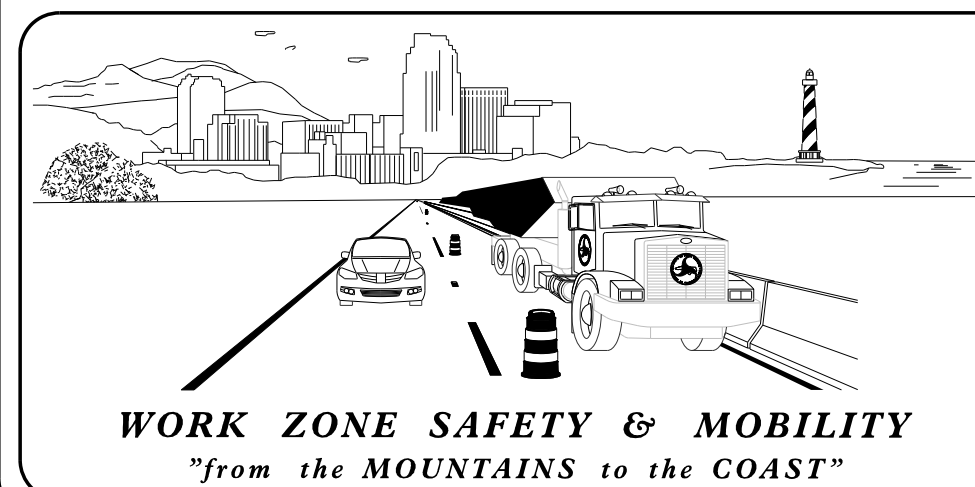
SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS AND LEGEND
TMP-1B	TRANSPORTATION OPERATIONS PLAN: (GENERAL NOTES)
TMP-1C	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES AND PHASING)
TMP-2	TEMPORARY TRAFFIC CONTROL PHASE 1 AND 2 DETAIL

SHEET NO.

TMP-1

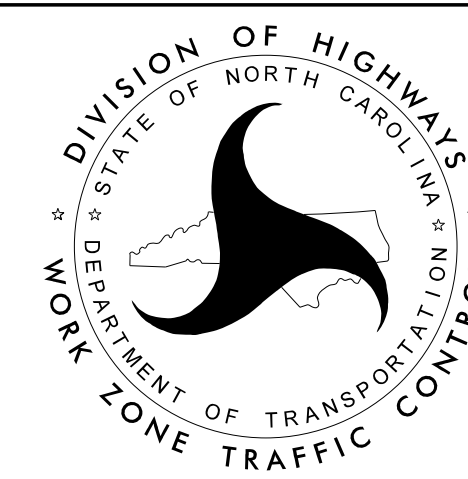
TIP PROJECT: 80028

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



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

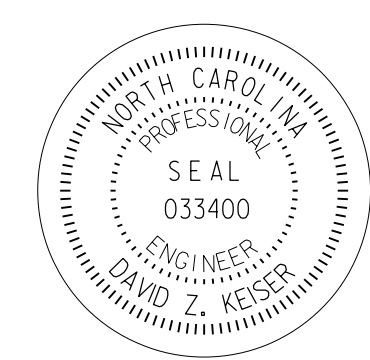
J. S. BOURNE, P.E. STATE TRAFFIC MANAGEMENT ENGINEER
D. Z. KEISER, P.E. TRAFFIC CONTROL PROJECT ENGINEER
K. A. PERSIANI, P.E. TRAFFIC CONTROL PROJECT DESIGN ENGINEER
A. M. CONRAD, P.E. TRAFFIC CONTROL DESIGN ENGINEER



CDM Smith
CDM Smith Inc.
5400 Glenwood Avenue
Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

APPROVED: *David Z. Keiser*
DATE: 5/18/2017

SEAL



ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURE
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1130.01	DRUM
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1165.01	WORK VEHICLE LIGHTING SYSTEMS AND TMA DELINEATION
1180.01	SKINNY-DRUM

LEGEND

GENERAL

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

- WORK AREA
- REMOVAL
- TEMPORARY PAVEMENT
- WEDGING AND OVERLAY

SIGNALS

- EXISTING
- PROPOSED
- TEMPORARY

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

TRAFFIC CONTROL DEVICES

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

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

PAVEMENT MARKERS

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

PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

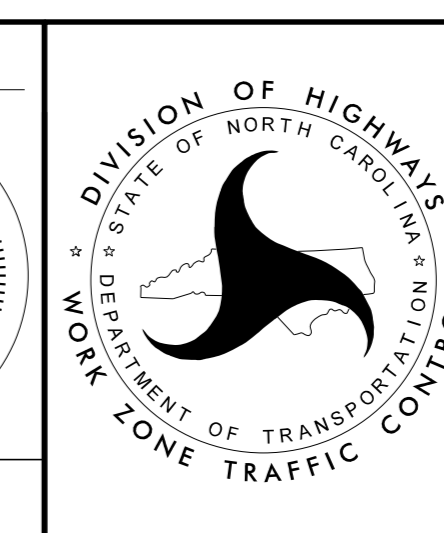
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CDM Smith
 CDM Smith Inc.
 5400 Glenwood Avenue
 Suite 400
 Raleigh, NC 27612-3228
 NC COA No. F-1255

APPROVED:
 DATE: 5/18/2017

SEAL

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**ROADWAY STANDARD
 DRAWINGS & LEGEND**

GENERAL NOTES

PROJ. REFERENCE NO.	SHEET NO.
80028	TMP-1B

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 UNDESIRE 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 DURING HOLIDAYS AND SPECIAL EVENTS AS FOLLOWS:

ROAD NAME

ALL ROADS

HOLIDAY

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

IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 4:00 P.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 6:00 A.M. THE TUESDAY AFTER INDEPENDENCE DAY.

6. FOR LABOR DAY, BETWEEN THE HOURS OF 4:00 P.M. FRIDAY AND 6:00 A.M. TUESDAY.
7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 4:00 P.M. TUESDAY TO 6:00 A.M. MONDAY.
8. FOR CHRISTMAS, BETWEEN THE HOURS OF 4:00 P.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 6:00 A.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

B) 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

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

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

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

WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

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

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

PAVEMENT EDGE DROP OFF REQUIREMENTS

H) 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.

I) 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) 100 FT IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

K) 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.

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

M) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) 100 FT IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

TRAFFIC CONTROL DEVICES

N) 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.

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

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

PAVEMENT MARKINGS AND MARKERS

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

ROAD NAME	MARKING	MARKER
ALL ROADS	PAINT	NONE

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

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

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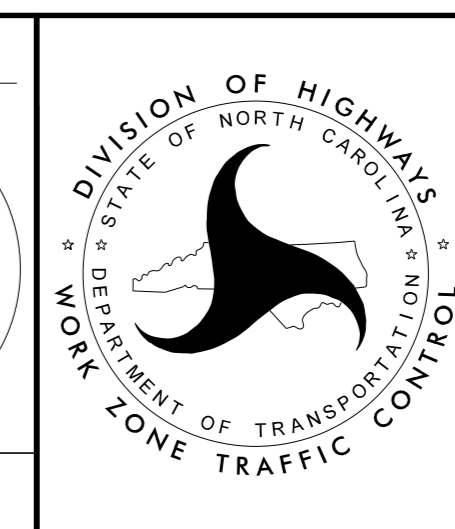


APPROVED: *David E. Keiser*
DocuSigned by: David E. Keiser 9086570281784E2

DATE: 5/18/2017

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TRANSPORTATION OPERATIONS PLAN

PROJ. REFERENCE NO.	SHEET NO.
80028	TMP-1C

PHASING

PHASE 1: AWAY FROM TRAFFIC, CONSTRUCT -L- FROM STA. 10+20+/- TO STA. 28+40+/- -L-. SEE SHEET TMP-2 FOR DETAILS ON TYING TO EXISTING COLLEGE DRIVE.

PHASE 2 - STEP 1: USING RSD 1101.02 (SHEET 1 OF 15), UTILIZE FLAGGERS AND LANE CLOSURES TO CONSTRUCT THE PHASE 2 - STEP 1 WIDENING, WEDGING, AND OVERLAY.

PHASE 2 - STEP 2: USING RSD 1101.02 (SHEET 1 OF 15), UTILIZE FLAGGERS AND LANE CLOSURES TO CONSTRUCT THE PHASE 2 - STEP 2 WIDENING, WEDGING, AND OVERLAY.

MANAGEMENT STRATEGIES

- 1- CONSTRUCT WIDENING ON SR 1641 (COUNTRY CLUB ROAD) THROUGH FLAGGING OPERATIONS IN CONJUNCTION WITH LANE CLOSURES.
- 2- LOCAL ACCESS TO ALL RESIDENCES AND BUSINESSES WILL BE MAINTAINED BETWEEN CLOSURE POINTS AT ALL TIMES DURING CONSTRUCTION.

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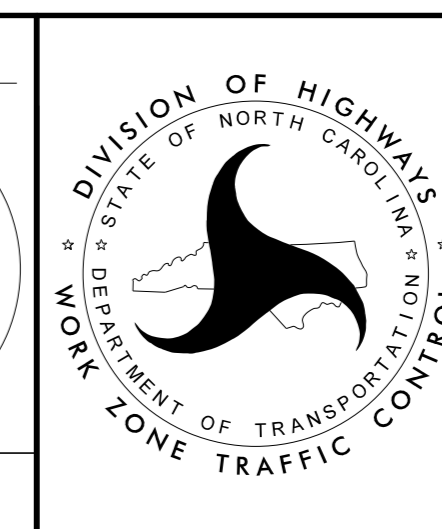


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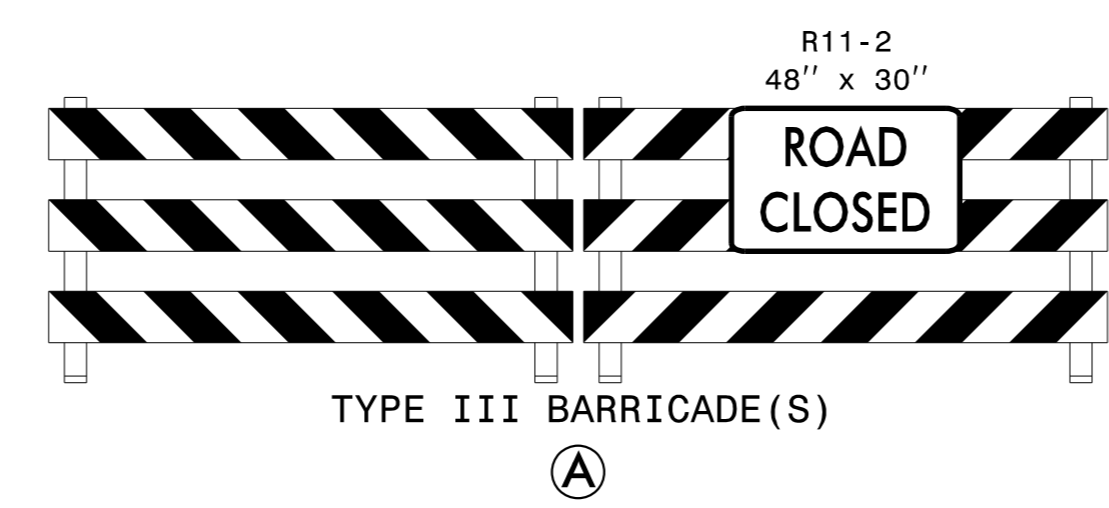
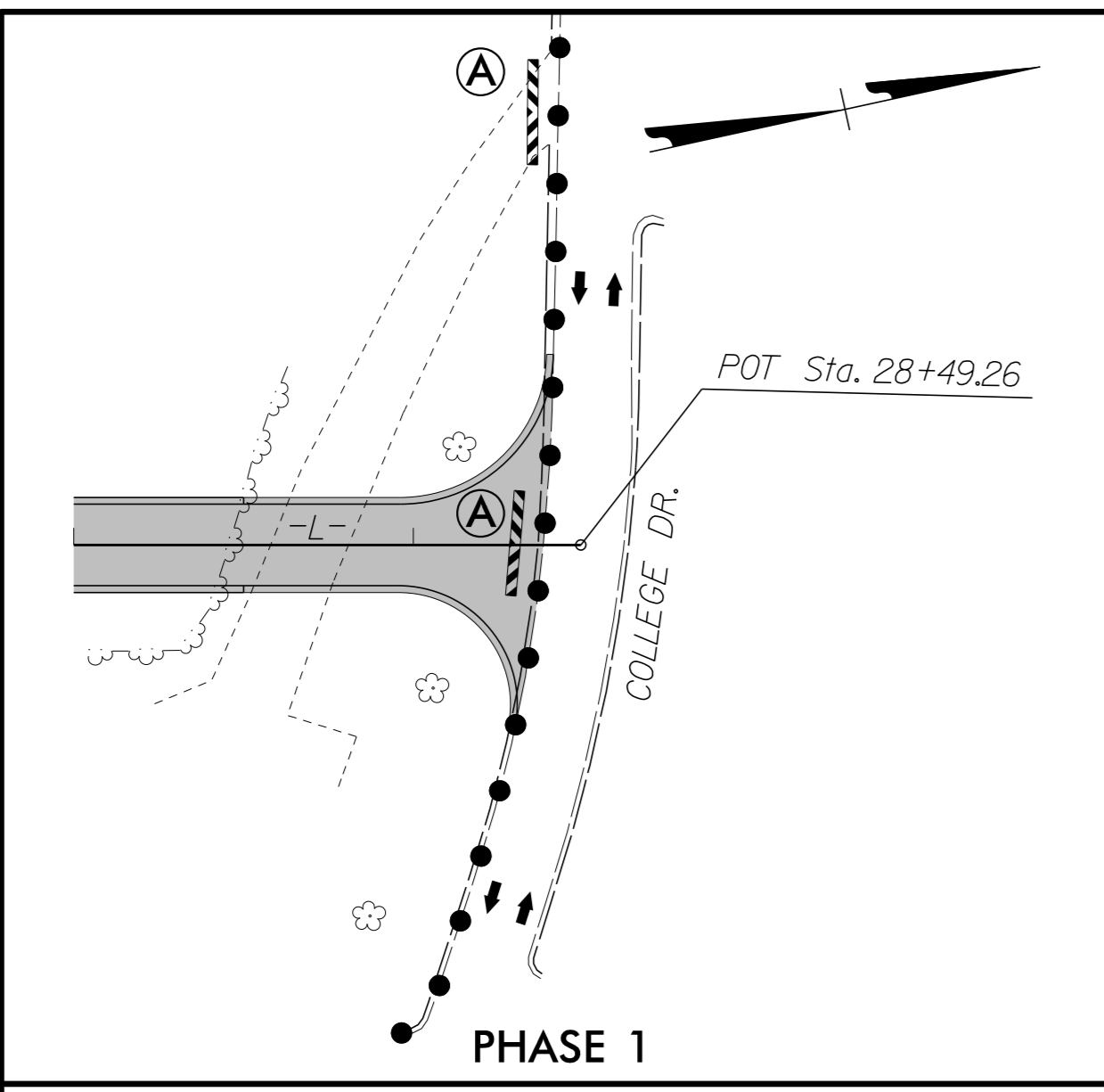
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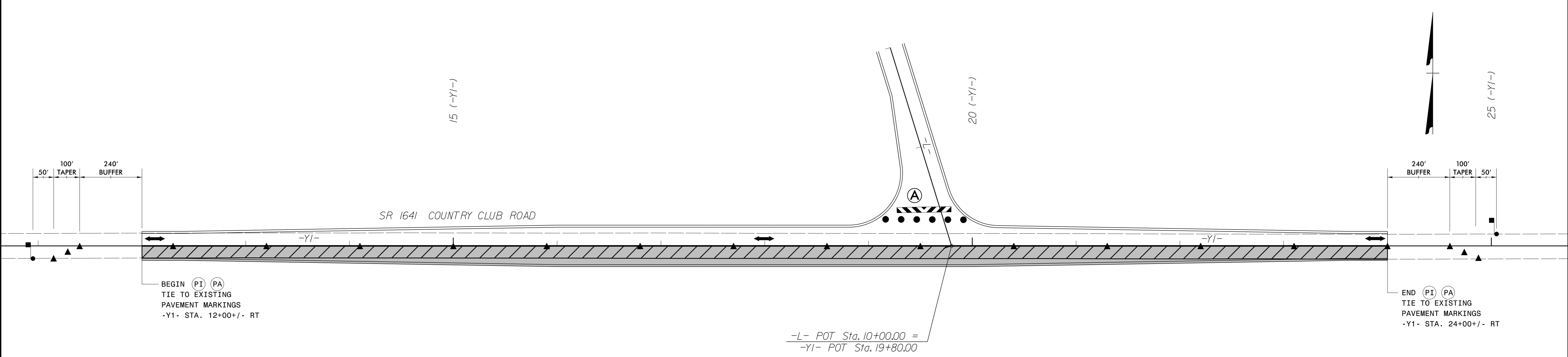
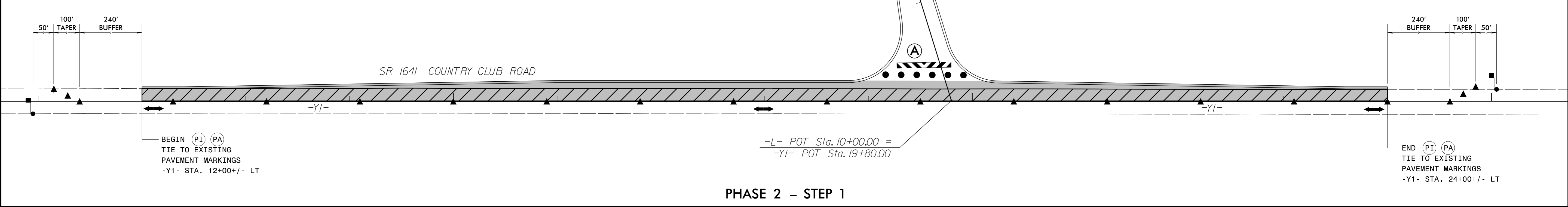
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TRANSPORTATION OPERATIONS PLAN



TEMPORARY PAVEMENT MARKING SCHEDULE		
SYMBOL	DESCRIPTION	
PA	PAINT (4")	WHITE EDGELINE
PI		YELLOW DOUBLE CENTER



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CDM Smith
CDM Smith Inc.
5400 Glenwood Avenue
Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

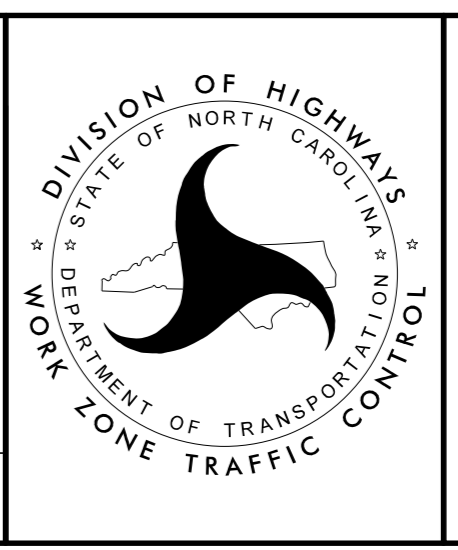
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DATE: 5/18/2017

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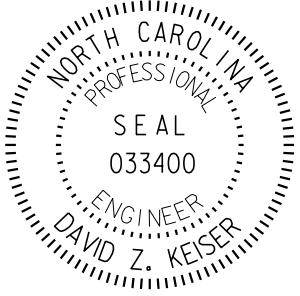
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TEMPORARY TRAFFIC CONTROL PHASE 1 AND 2 DETAIL

TIP NO.	SHEET NO.
80028	PMP - 1
APPROVED:  DocuSigned by: David Z. Keiser ID: 2016070281784E2	
DATE: 5/18/2017	
SEAL 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

**STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION**

**PAVEMENT MARKING AND SIGNING PLAN
HALIFAX COUNTY**

**LOCATION: PROPOSED HALIFAX COMMUNITY COLLEGE ACCESS ROAD
FROM SR 1641 (COUNTRY CLUB ROAD) TO COLLEGE DRIVE**

T.I.P.: 80028

ROADWAY STANDARD DRAWING

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
904.10	ORIENTATION OF GROUND MOUNTED SIGNS
904.50	MOUNTING OF TYPE 'D', 'E' AND 'F' SIGNS ON 'U' CHANNEL POSTS
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTILANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS

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
HALIFAX COMM. COLL. ACCESS	PAINT	NONE
SR 1641 (COUNTRY CLUB ROAD)	PAINT	NONE
- B) PLACE TWO APPLICATIONS OF PAINT PAVEMENT MARKINGS ON THE FINAL WEARING SURFACE. PLACE THE SECOND APPLICATION OF PAINT UPON SUFFICIENT DRYING TIME OF THE FIRST.
- C) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- D) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.
- E) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.
- F) STOP BAR LOCATION AT NON-SIGNALIZED INTERSECTIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER.
- G) SIGNS FURNISHED BY STATE.
- H) CONFIRM IN WRITING AT LEAST 4 MONTHS IN ADVANCE, THE ACTUAL DATE THE DEPARTMENT FURNISHED SIGNS WILL BE REQUIRED.
- I) IF REMOVAL OR RELOCATION OF SIGNS ON PRIVATE STREET (NON-STATE MAINTAINED) IS REQUIRED DUE TO CONSTRUCTION, THE CONTRACTOR SHALL INFORM THE ENGINEER. THE WORK WILL BE COMPLETED BY OTHERS.
- J) WHEN NOT STATIONED OR DIMENSIONED ON PLANS, ALL 'E' AND 'F' SIGNS SHALL BE FIELD LOCATED BY THE ENGINEER.
- K) ALL EXISTING SIGNS ON "U" CHANNEL POST WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND DISPOSED OF UNLESS OTHERWISE NOTED ON PLANS.
- L) WHEN EXISTING SIGNS ARE REMOVED AND INSTALLED ON NEW SUPPORTS, THE RE-ERECTION SHALL IMMEDIATELY FOLLOW THE REMOVAL.
- M) THE BACKGROUND FOR TYPE E & F SIGNS SHALL BE TYPE C REFLECTIVE SHEETING.

SUMMARY OF QUANTITIES

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT
4026000000	DEPARTMENT FURNISHED, TYPE E SIGN	35	S.F.
4072000000	SUPPORTS, 3 LB STEEL U-CHANNEL	67	L.F.
4102000000	SIGN ERECTION, TYPE E	6	EA.
4116100000	SIGN ERECTION, RELOCATE SIGN TYPE E (GROUND MOUNTED)	2	EA.
4158000000	DISPOSAL OF SIGN SYSTEM, WOOD	1	EA.
4810000000	PAINT PAVEMENT MARKING LINES (4")	31,092	L.F.
4820000000	PAINT PAVEMENT MARKING LINES (8")	500	L.F.
4835000000	PAINT PAVEMENT MARKING LINES (24")	140	L.F.
4845000000	PAINT PAVEMENT MARKING SYMBOL	4	EA.

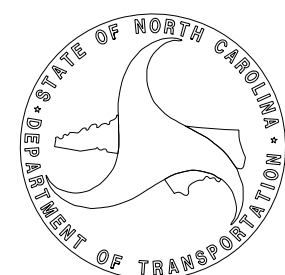
PLAN PREPARED BY: CDM SMITH, INC.

DAVID Z. KEISER, P. E. PROJECT MANAGER
KIT A. PERSIANI, P. E. PROJECT DESIGN ENGINEER



PLAN REVIEWED BY: N.C.D.O.T. DIVISION 4

ANDY BROWN, P. E. DIVISION TRAFFIC ENGINEER
WENDI O. JOHNSON, P. E. DIVISION CONSTRUCTION ENGINEER



INDEX

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

CONTRACT:

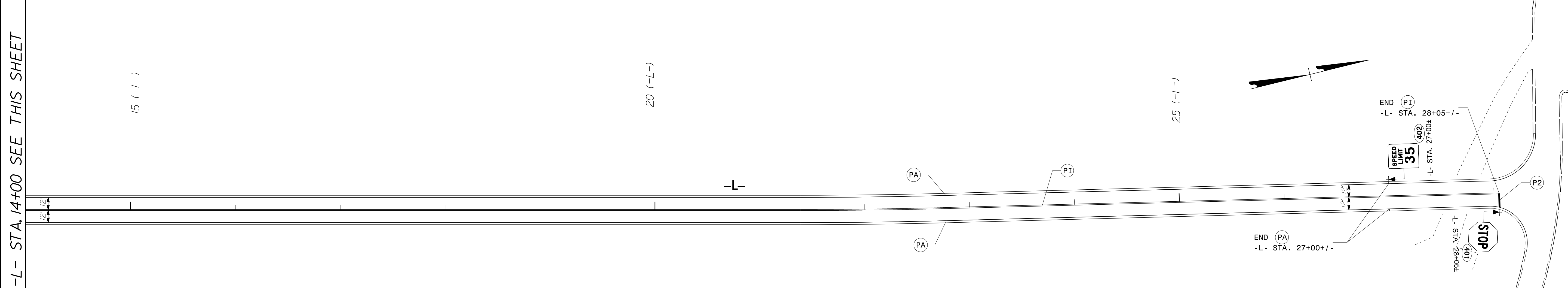
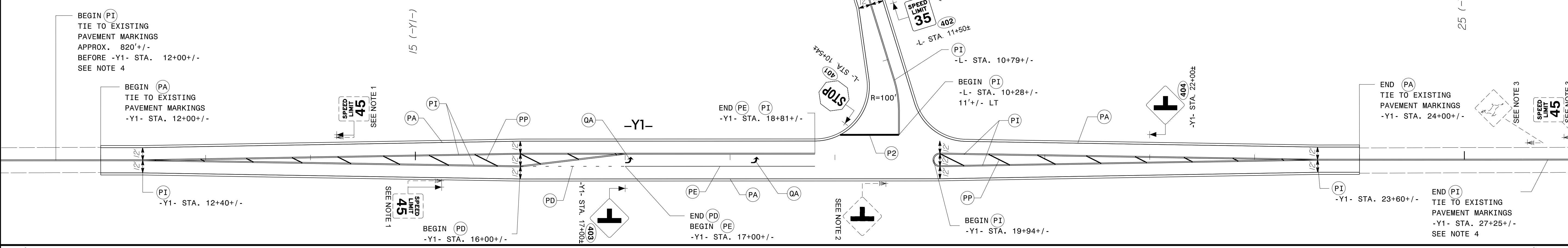
TIP NO. 80028	SHEET NO. PMP - 2
APPROVED: <i>David Z. Keiser</i> DATE: 5/18/2017	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

CDM Smith Inc.
5400 Glenwood Avenue
Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

PAVEMENT MARKING SCHEDULE		
SYMBOL		DESCRIPTION
P2	PAINT (24")	WHITE STOPBAR
PA	PAINT (4")	WHITE EDGELINE
PD		3 FT./9 FT./SP WHITE MINISKIP
PE		WHITE SOLID LANE LINE
PI		YELLOW DOUBLE CENTER
PP	PAINT (8")	YELLOW DIAGONAL
QA	PAINT MARKING SYMBOLS	LEFT TURN ARROW

MATCHLINE -L- STA. 14+00 SEE THIS SHEET

- NOTE:
1. RELOCATE SIGN, TYPE E
 2. DISPOSAL OF SIGN SYSTEM, WOOD
 3. RETAIN SIGN, TYPE E
 4. EXTEND DOUBLE YELLOW TO ELIMINATE PASSING ZONES.

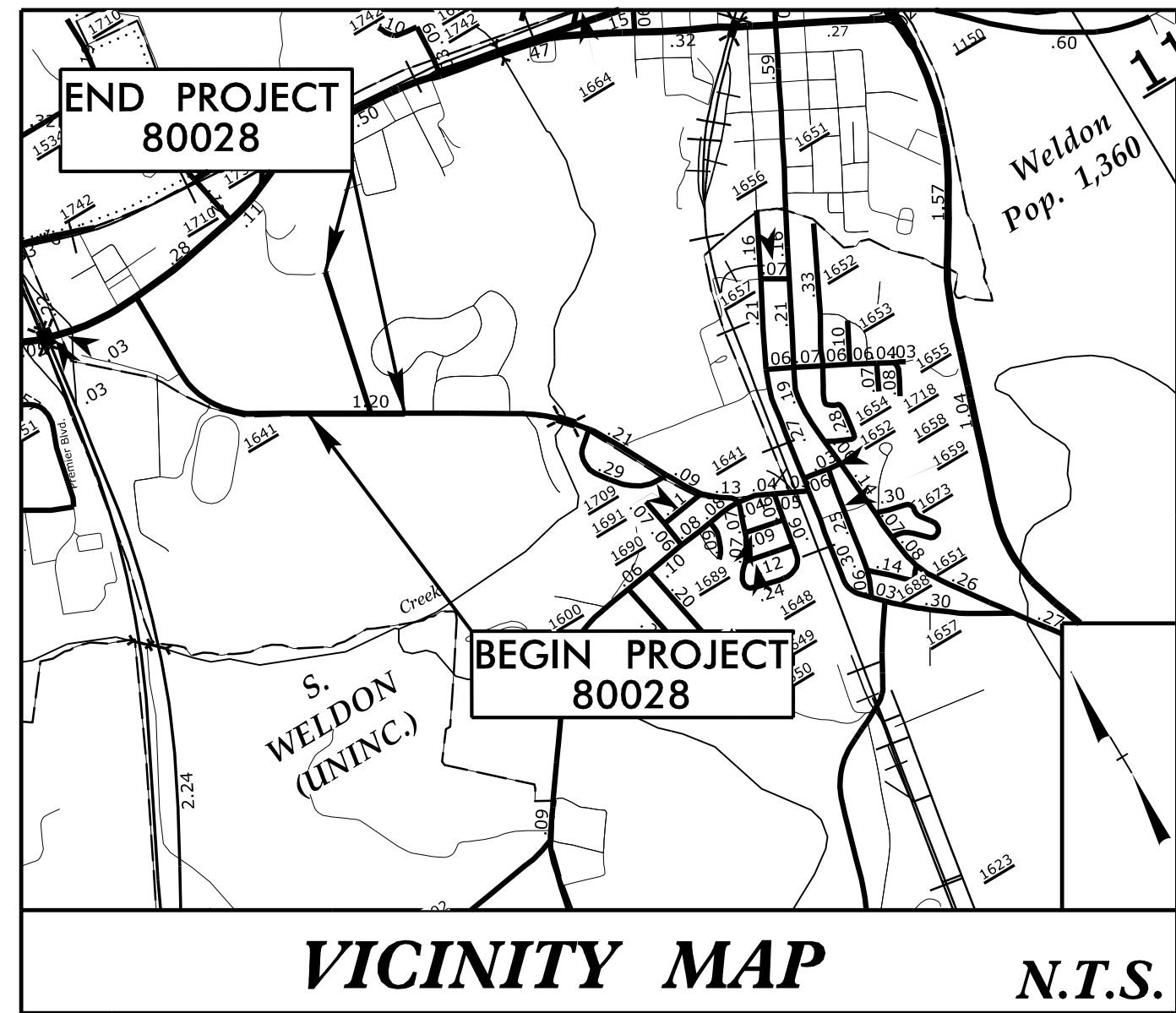


MATCHLINE -L- STA. 14+00 SEE THIS SHEET

TYPE "E" SIGNS			
(401) QUANTITY REQ'D <u>2</u> 30 X 30 R1-1 ONE "U" POST PER SIGN	(402) QUANTITY REQ'D <u>2</u> 24 X 30 R2-1 TWO "U" POSTS PER SIGN	(403) QUANTITY REQ'D <u>1</u> 30 X 30 W2-2 ONE "U" POST PER SIGN	(404) QUANTITY REQ'D <u>1</u> 30 X 30 W2-2 ONE "U" POST PER SIGN

PAVEMENT MARKING AND SIGNING DETAIL

TIP PROJECT: 80028



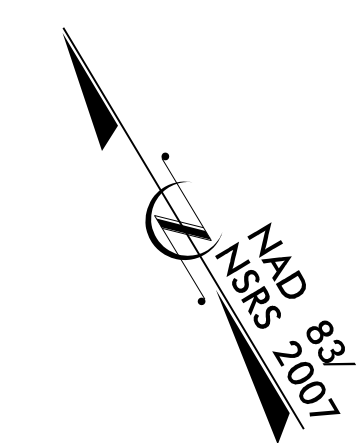
VICINITY MAP N.T.S.

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

HALIFAX COUNTY

LOCATION: PROPOSED HALIFAX COMMUNITY COLLEGE ACCESS ROAD FROM SR 1641 (COUNTRY CLUB ROAD) TO COLLEGE DRIVE

TYPE OF WORK: GRADING, DRAINAGE AND PAVING

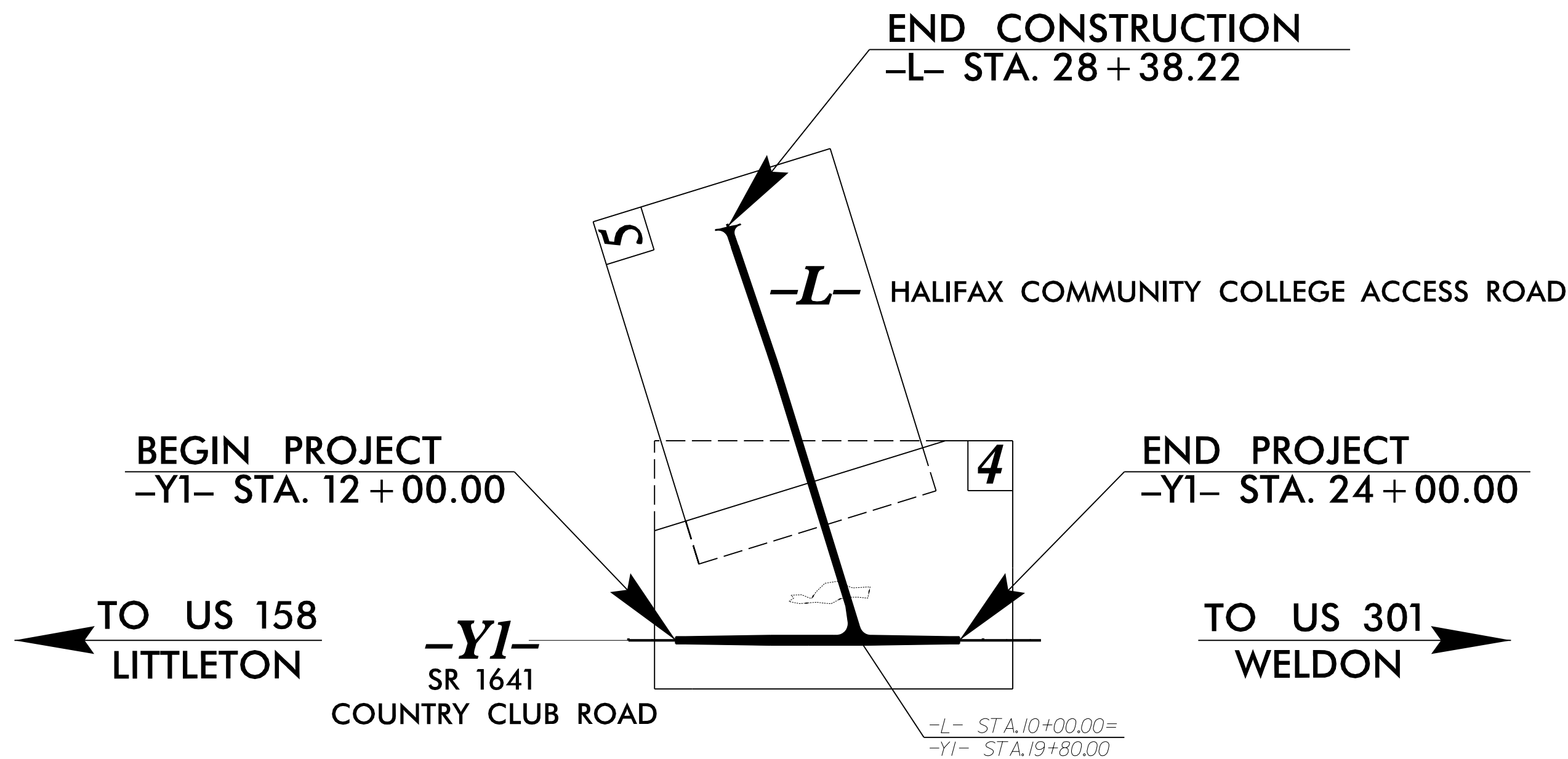


STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	80028	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

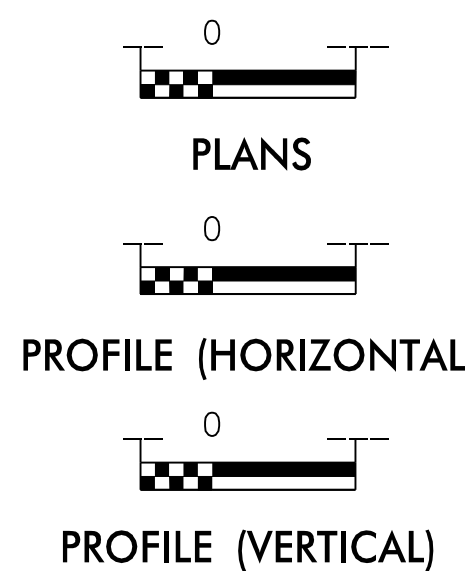
EROSION AND SEDIMENT CONTROL MEASURES

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

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

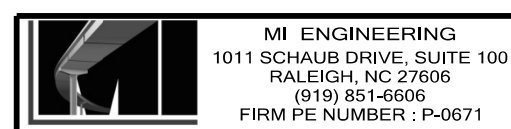


GRAPHIC SCALE



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

Prepared in the Office of:
MI-ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606



Designed by:

MELANIE NGUYEN, PE 3223
NAME LEVEL III CERTIFICATION NO.

Reviewed in the Office of:
ROADSIDE ENVIRONMENTAL UNIT
1 South Wilmington St.
Raleigh, NC 27611
2012 STANDARD SPECIFICATIONS

Reviewed by:

XXX XXX

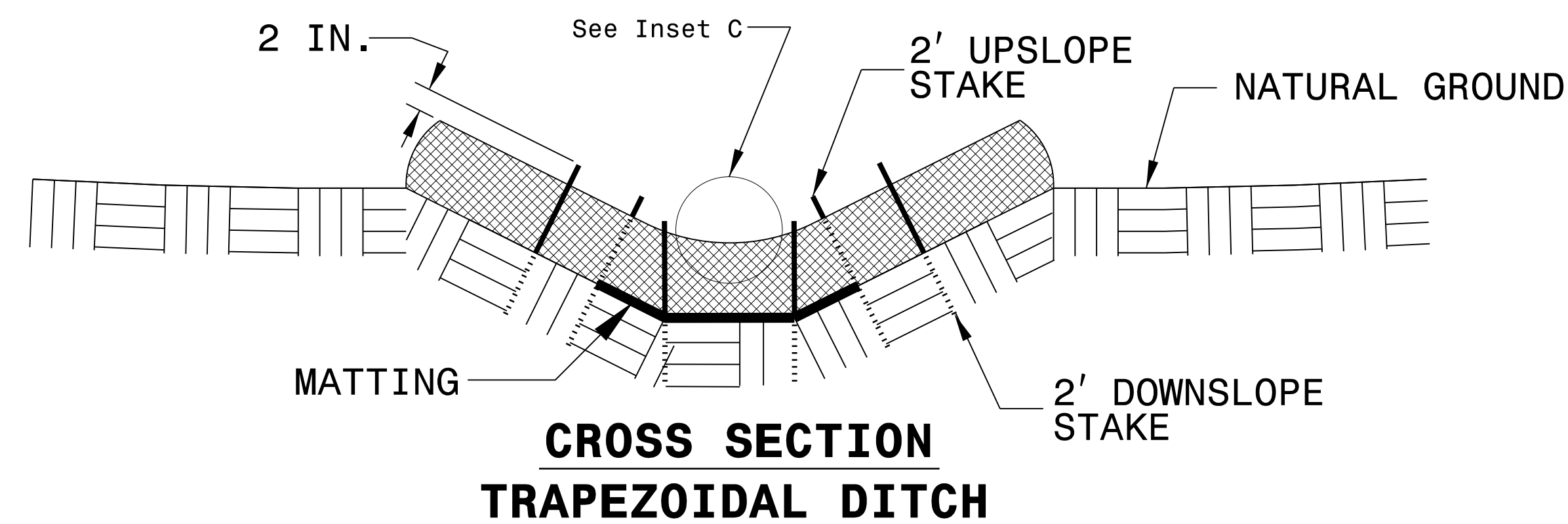
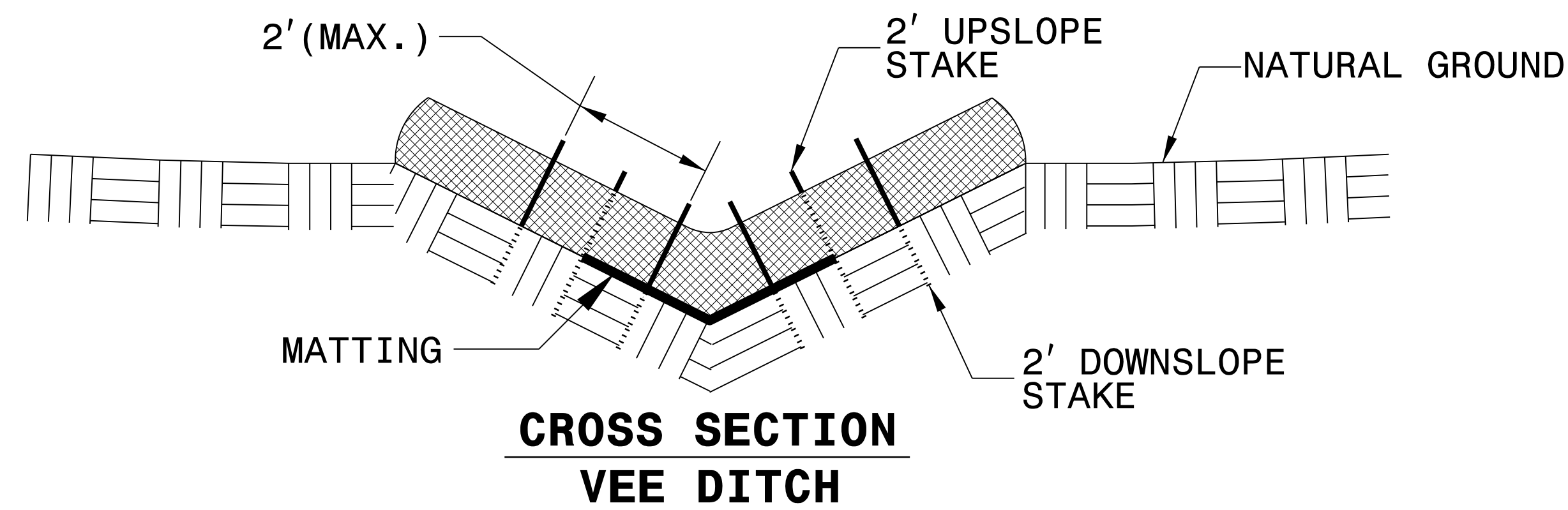
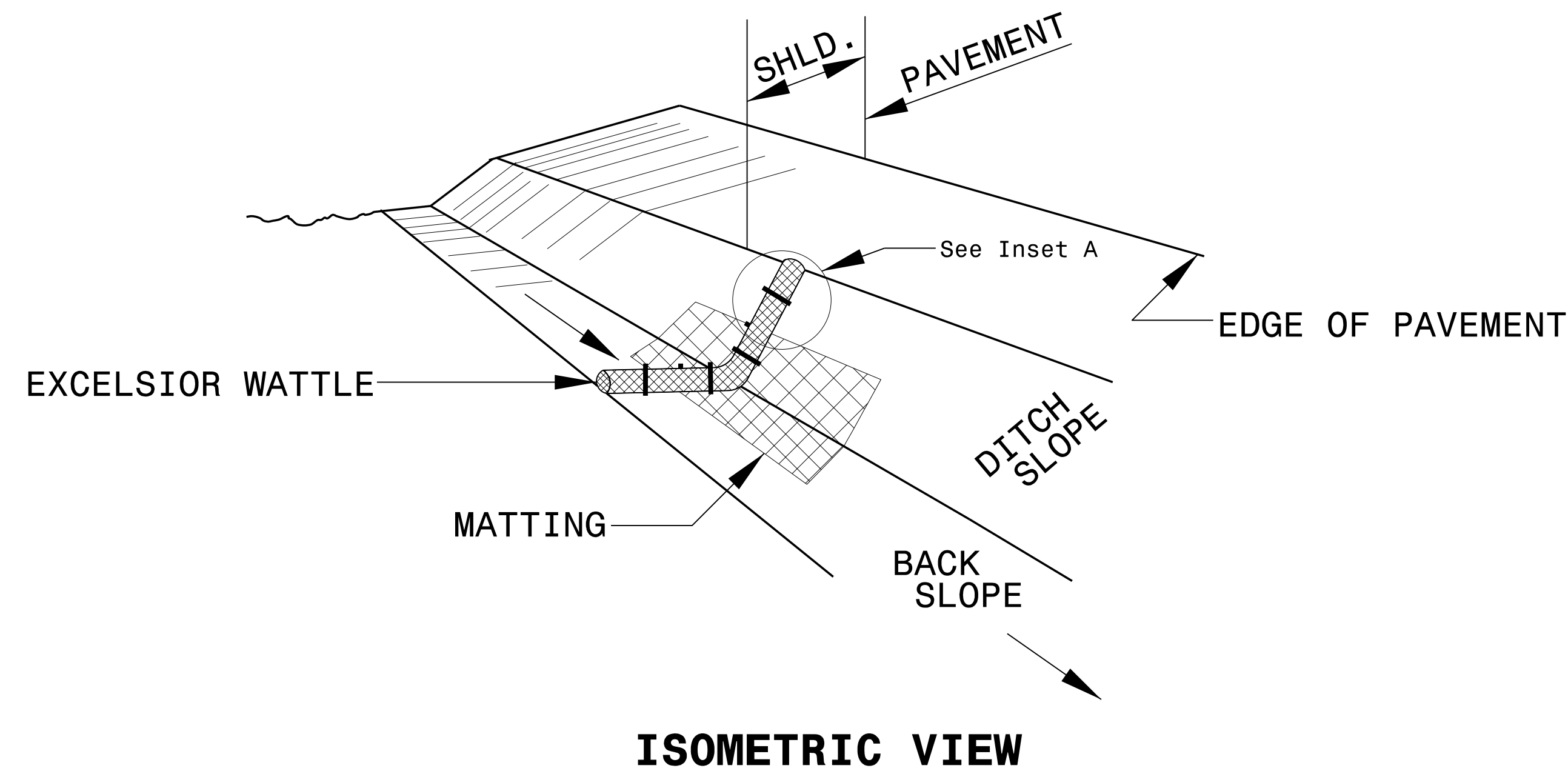
Highway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2012 and the latest 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	

PROJECT REFERENCE NO. 80028	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.

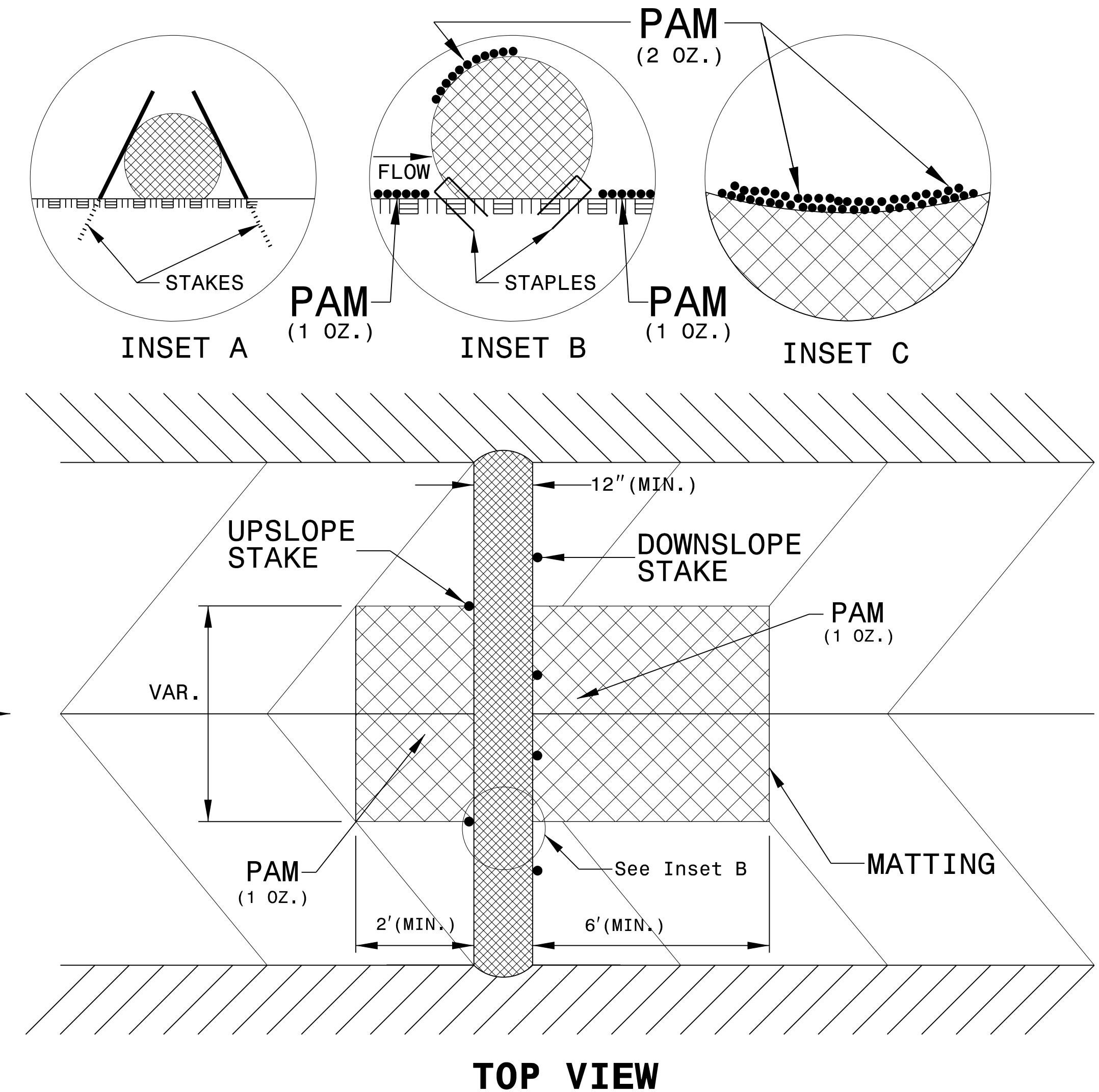
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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.

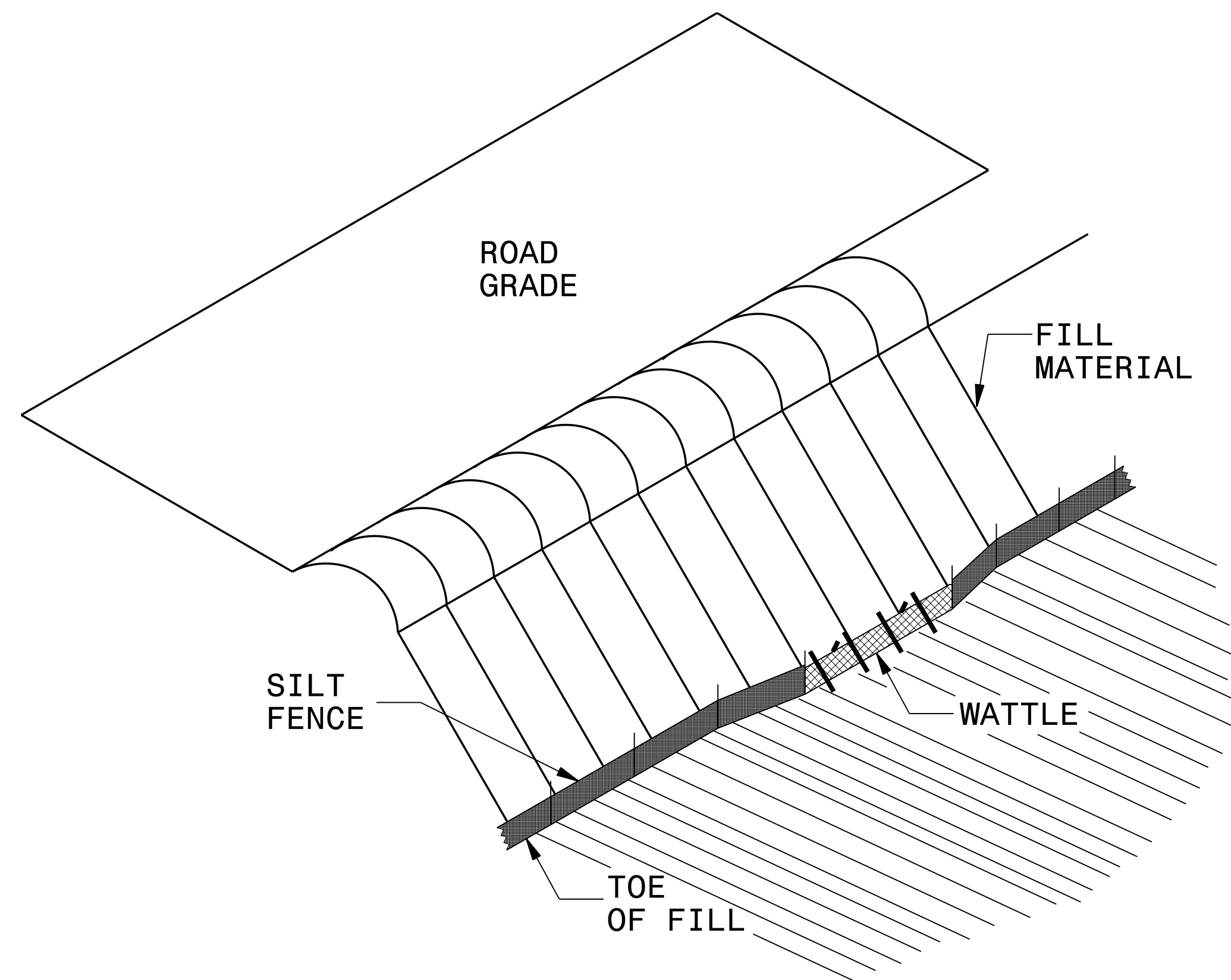
PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

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.

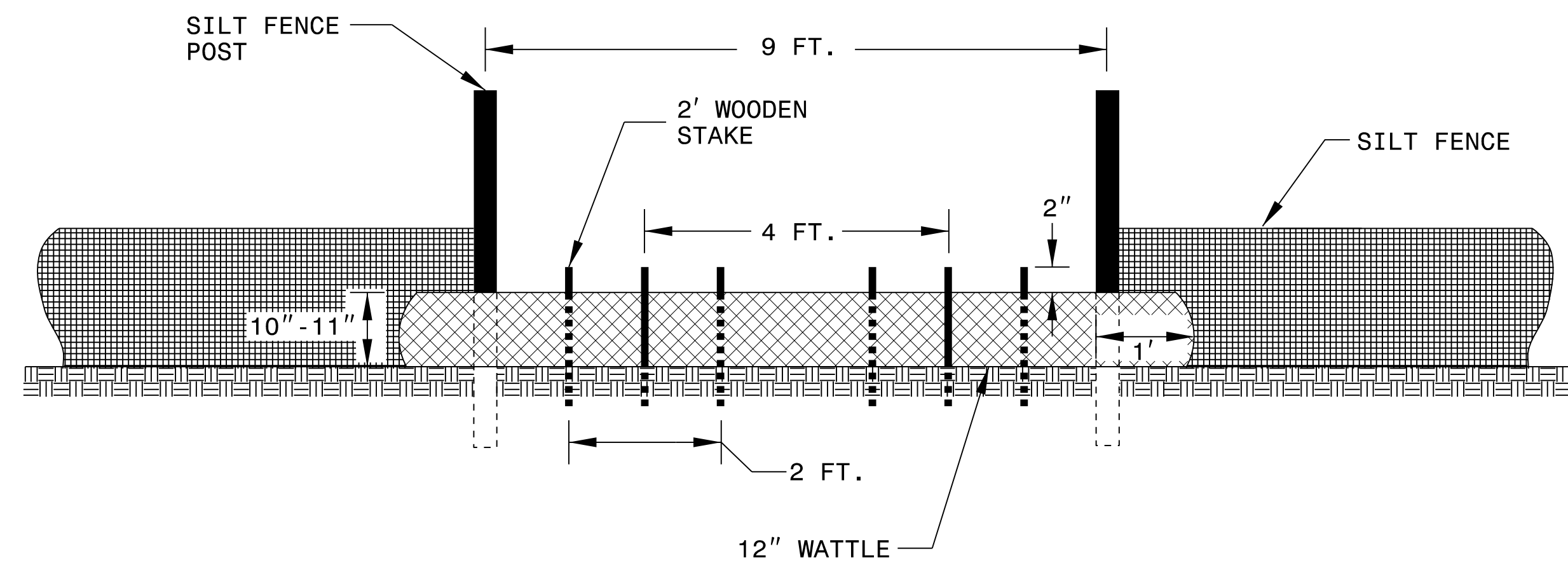


PROJECT REFERENCE NO.	SHEET NO.
80028	EC-2A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SILT FENCE WATTLE BREAK DETAIL



ISOMETRIC VIEW

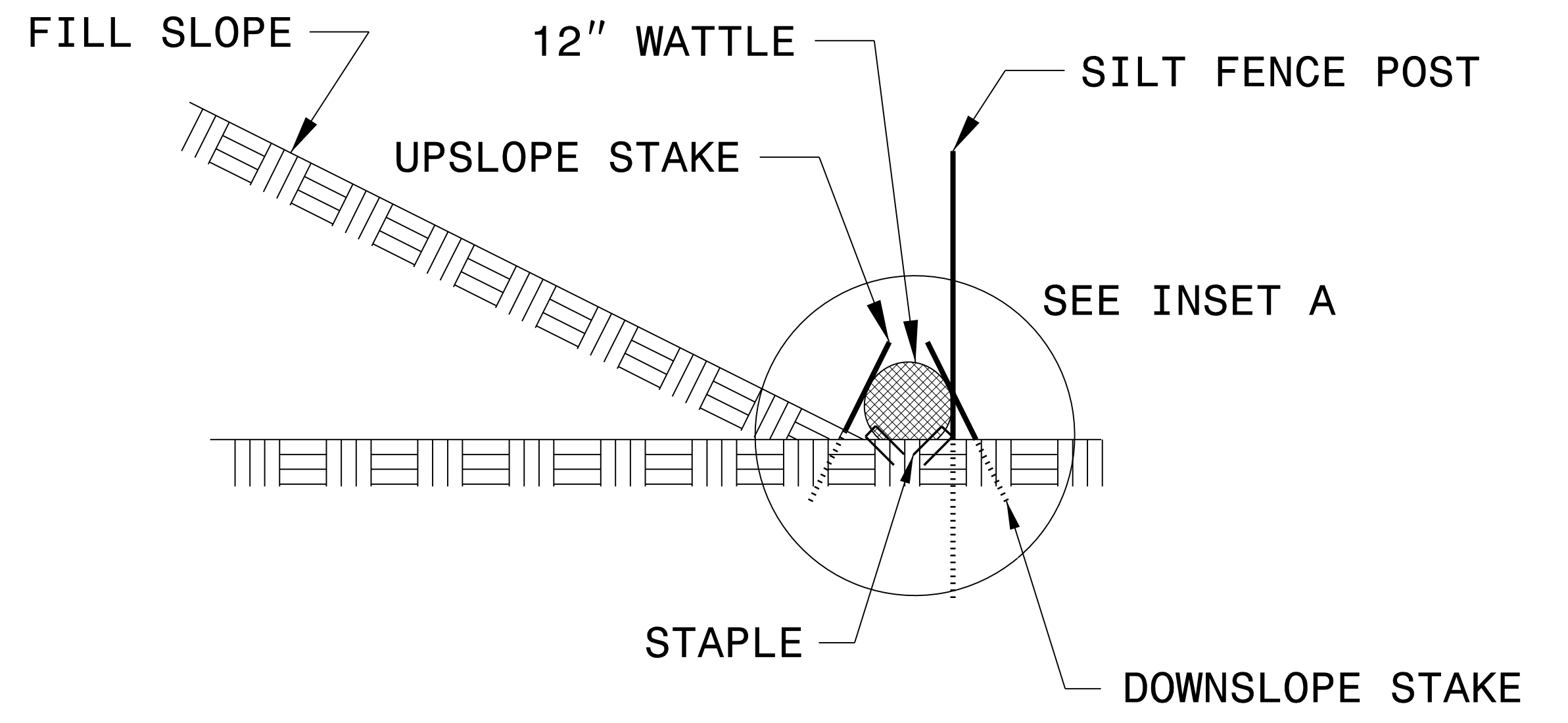
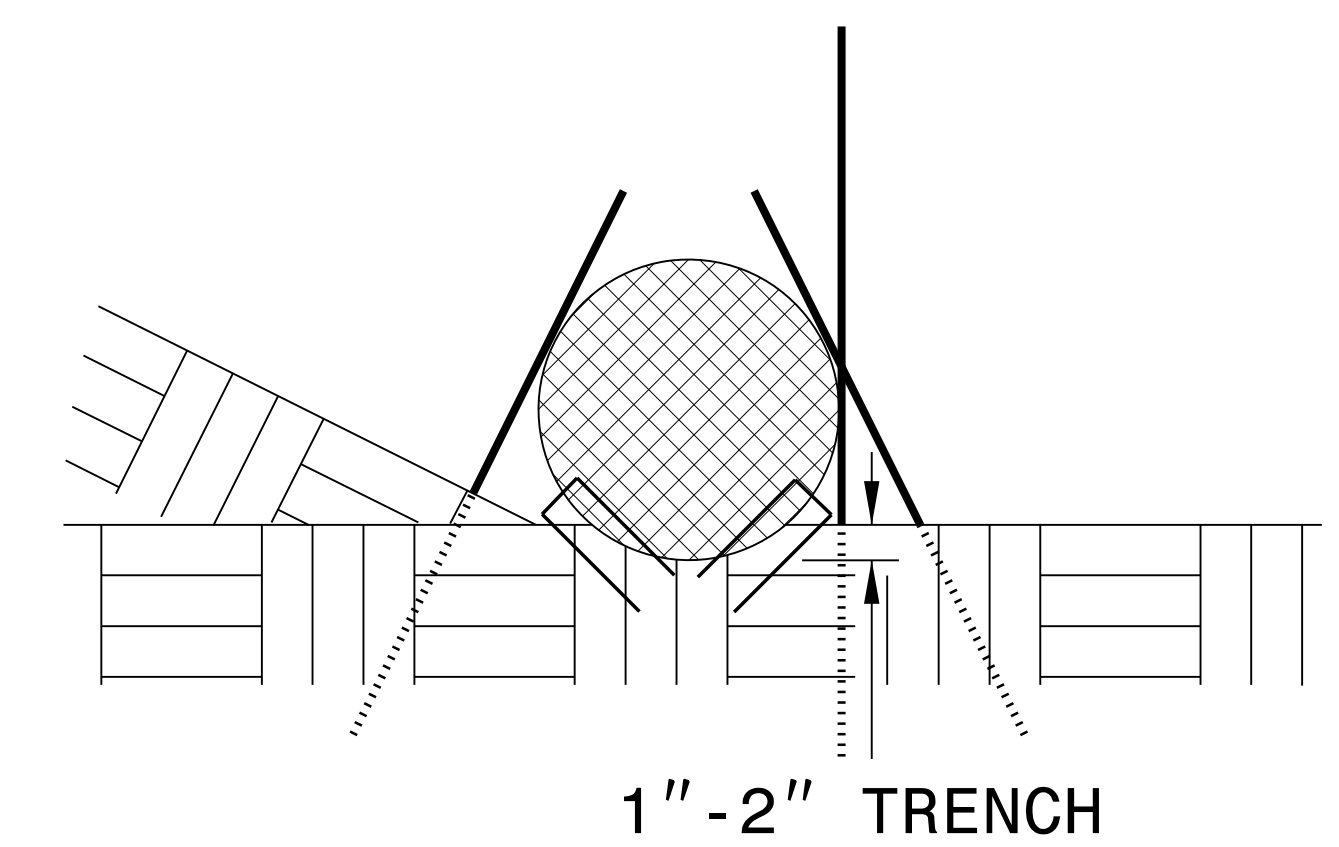


VIEW FROM SLOPE

NOTES:

- USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE AND LENGTH OF 10 FT.
- EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.
- DO NOT PLACE WATTLE ON TOE OF SLOPE.
- USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.
- INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.
- PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.
- INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.
- WATTLE INSTALLATION CAN BE ON OUTSIDE OF THE SILT FENCE AS DIRECTED.
- INSTALL TEMPORARY SILT FENCE IN ACCORDANCE WITH SECTION 1605 OF THE STANDARD SPECIFICATIONS.

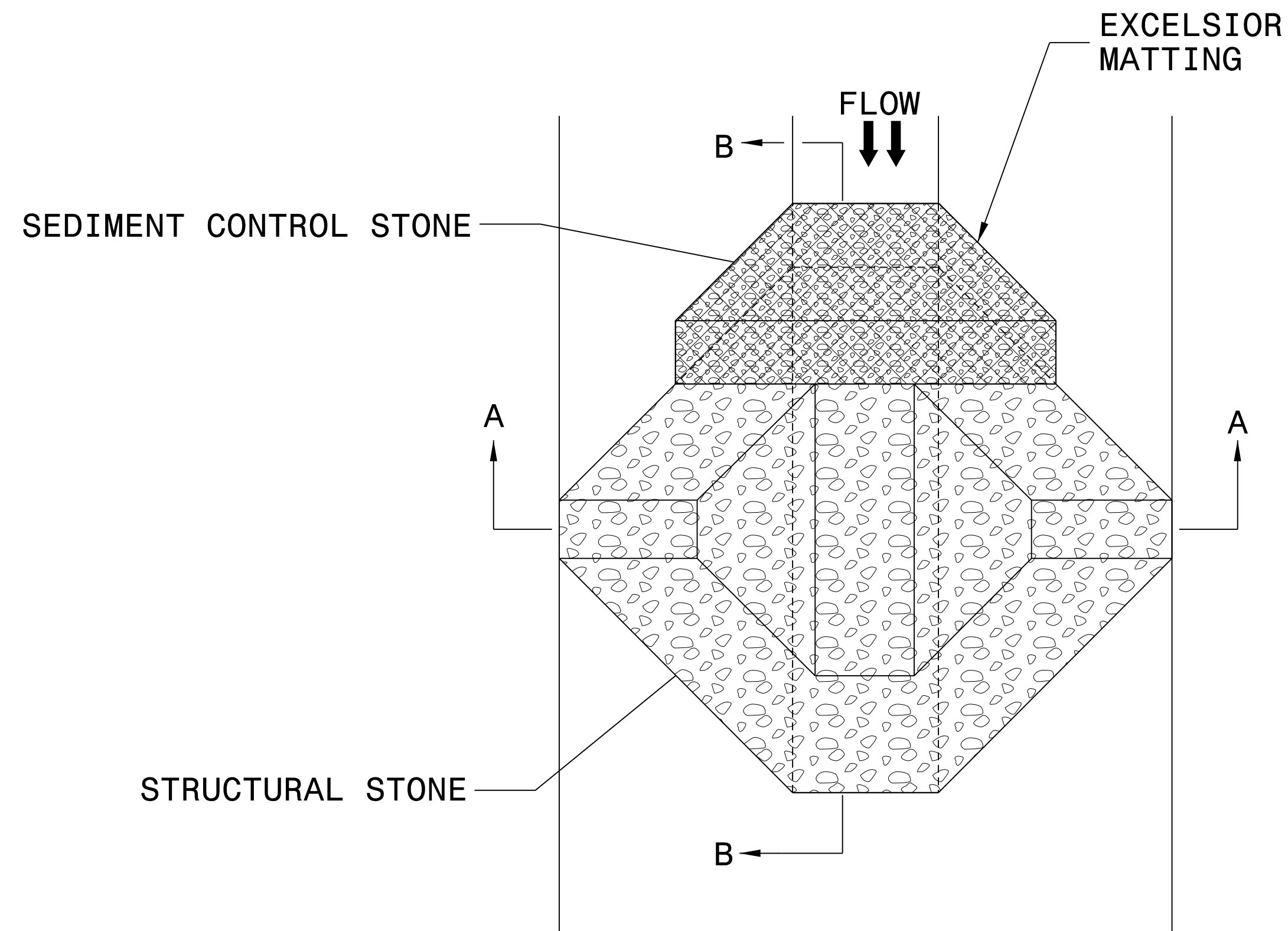
INSET A



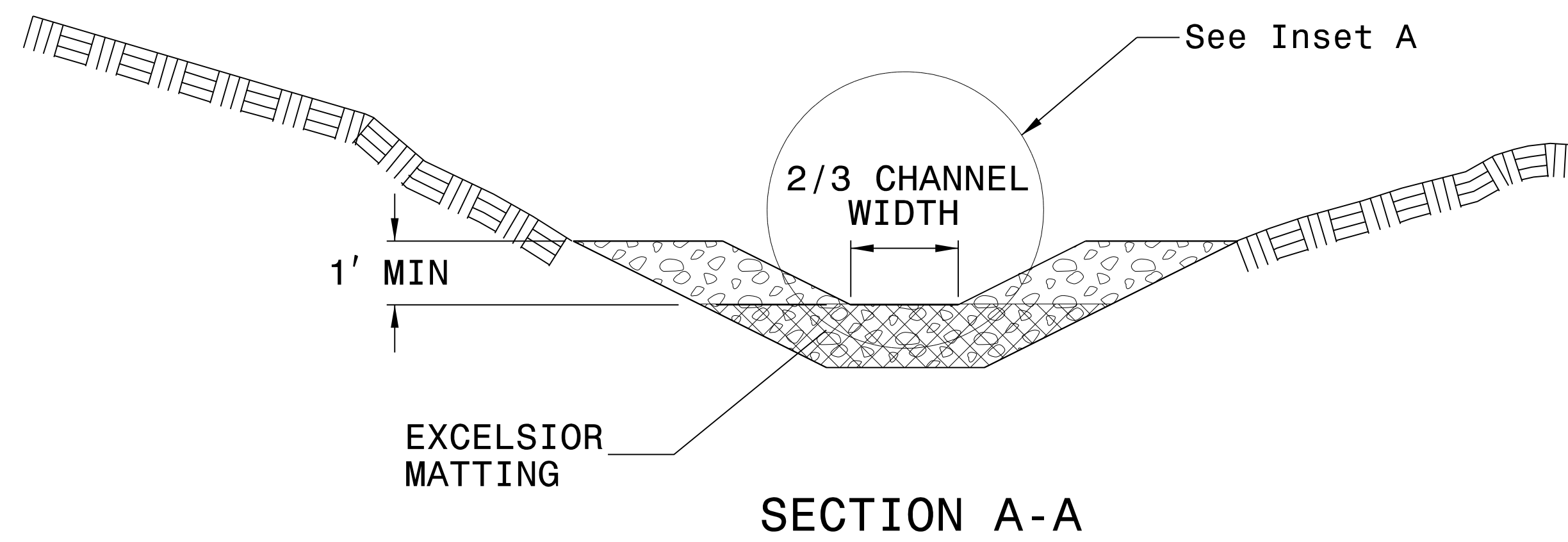
SIDE VIEW

PROJECT REFERENCE NO. 80028	SHEET NO. EC-2B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



PLAN



SECTION A-A

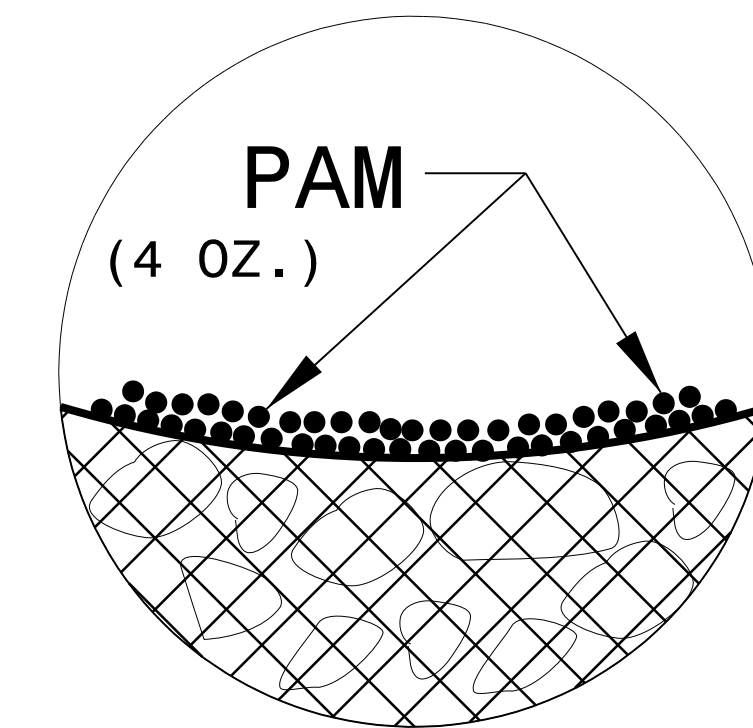
NOTES:

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

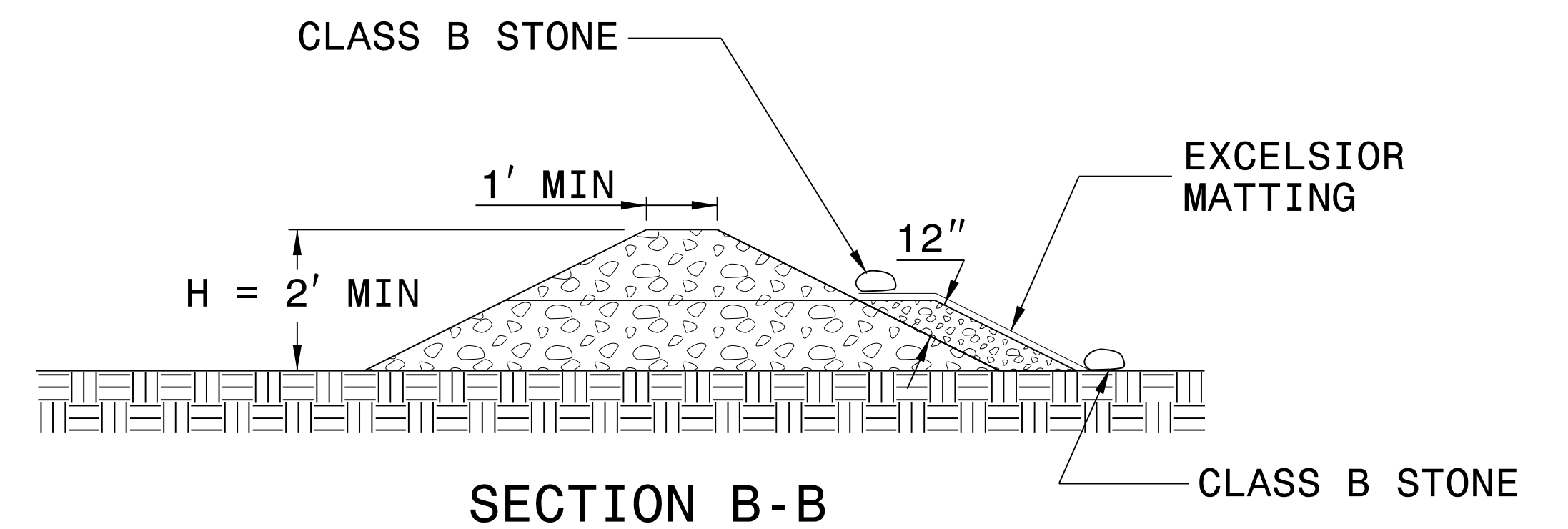
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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

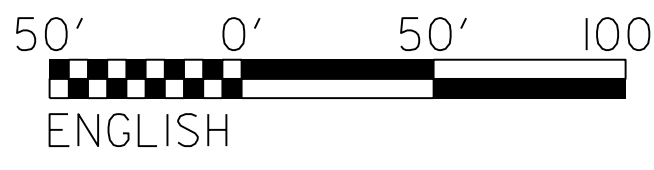
PROJECT REFERENCE NO.	SHEET NO.
80028	EC-3A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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.

CLEARING & GRUBBING PLAN

PROJECT REFERENCE NO. 80028	SHEET NO. EC-04/CONST.04
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CDM Smith 400 Glenwood Avenue Suite 400 Raleigh, NC 27612-3228 NC CDA No. F-0412	M Engineering, PLLC 1011 Schum Drive Suite 100 Raleigh, NC 27604 NC CDA No. P-0671



NAD 83/NRS 2007

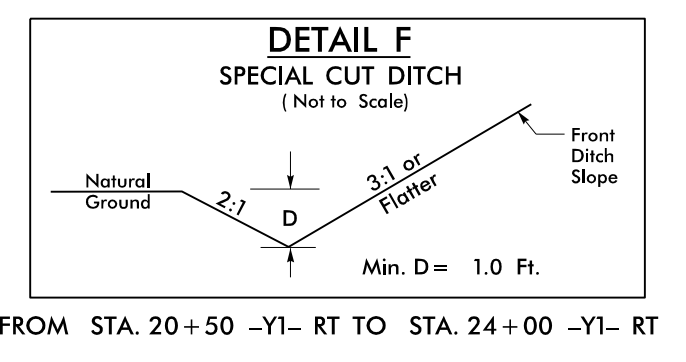
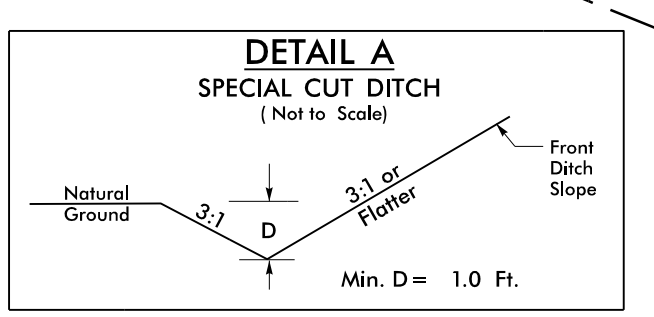
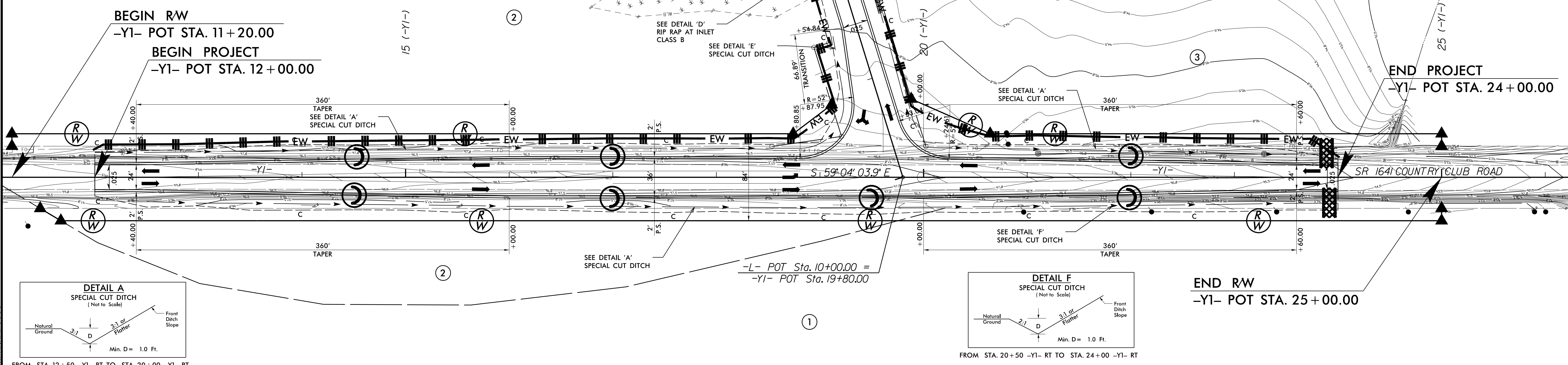
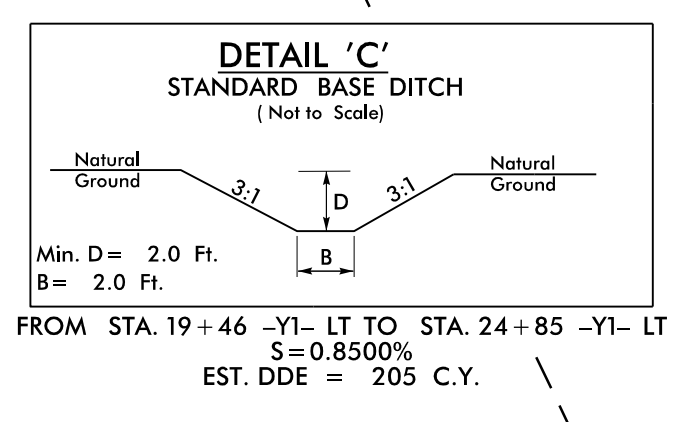
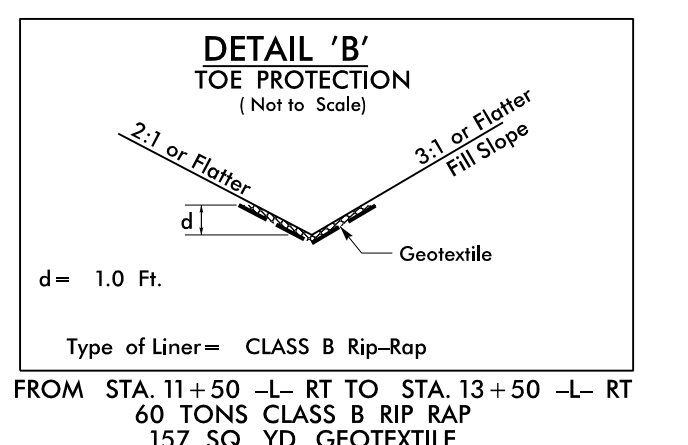
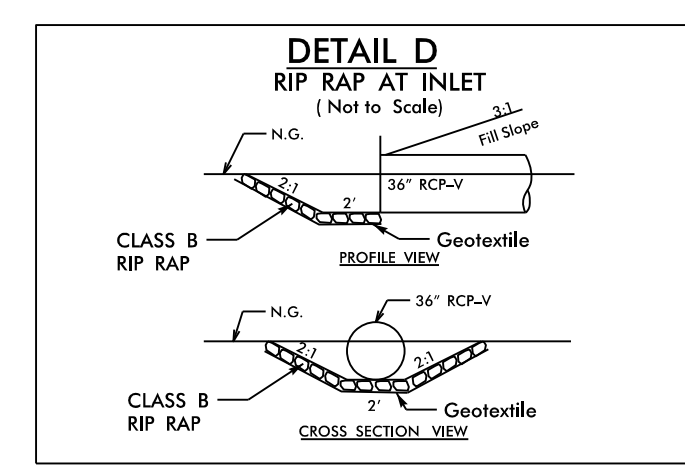
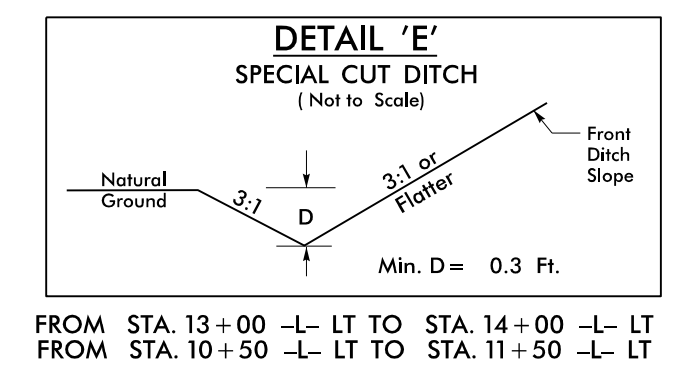
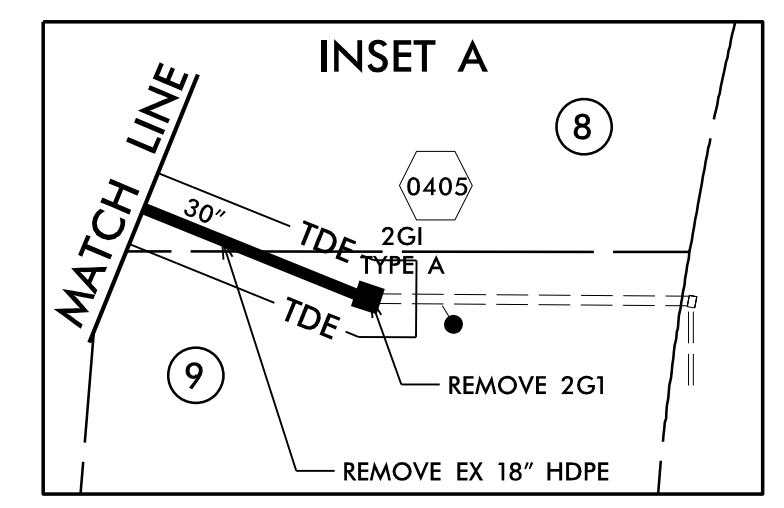
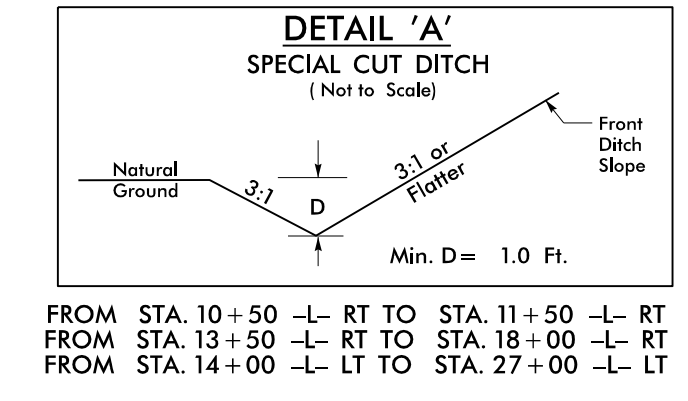
NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

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

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 04

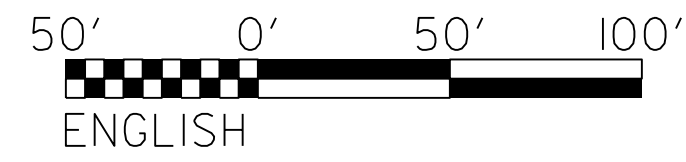
MATCH LINE -L- POT STA. 17+00.00 SEE SHEET 5



END RW
-Y1- POT STA. 25+00.00

5/14/09

CLEARING & GRUBBING PLAN



NAD 83/NSRS 2007

PROJECT REFERENCE NO. 80028		SHEET NO. EC-05/CONST.05	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
CDM Smith 5400 Glenwood Avenue Suite 400 Raleigh, NC 27612-3228 NC CDA No. F-0412		M Engineering, PLLC 1311 Schaub Drive Suite 100 Raleigh, NC 27608 NC CDA No. P-0671	

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

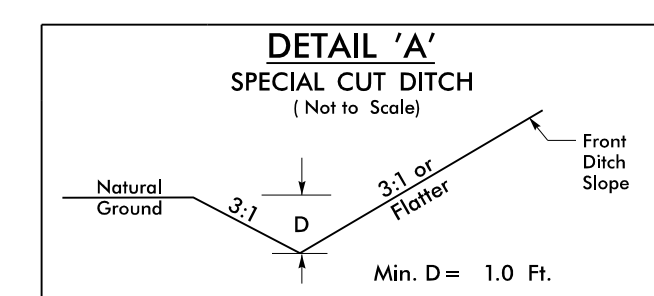
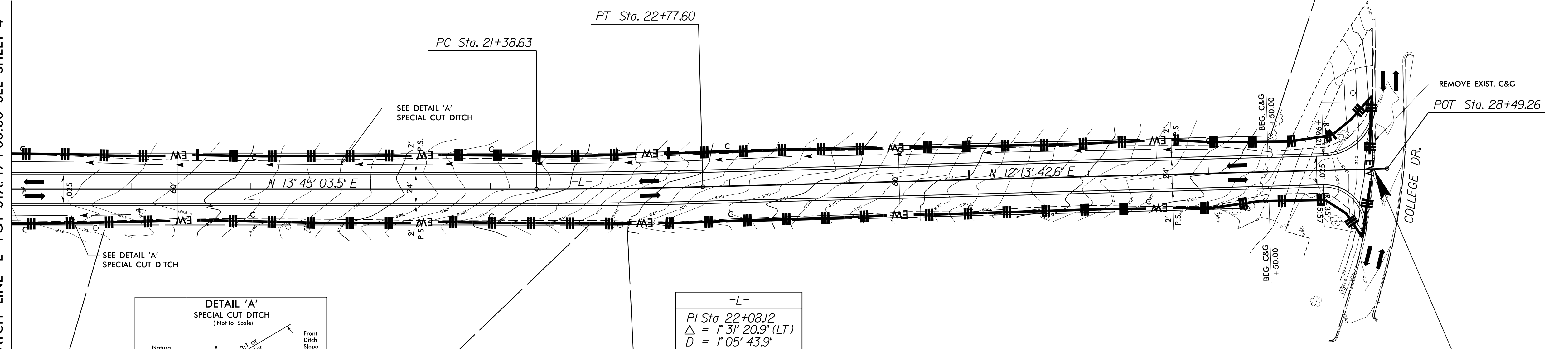
NOTE: PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 05

20 (-L-)

25 (-L-)

MATCH LINE -L- POT STA. 17 + 00.00 SEE SHEET 4



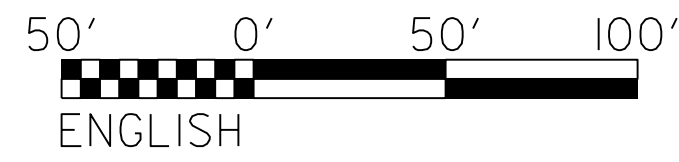
FROM STA. 10+50 -L- RT TO STA. 11+50 -L- RT
 FROM STA. 13+50 -L- RT TO STA. 18+00 -L- RT
 FROM STA. 14+00 -L- LT TO STA. 27+00 -L- LT

-L-
 PI Sta 22+08.12
 $\Delta = 1^{\circ}31'20.9''$ (LT)
 $D = 1^{\circ}05'43.9''$
 $L = 138.97'$
 $T = 69.49'$
 $R = 5,230.00'$
 $SE = NC$
 $DS = 40$ MPH

END CONSTRUCTION
 -L- POT STA. 28 + 38.22

5/14/99

FINAL GRADE PLAN



NAD 83/NSRS 2007

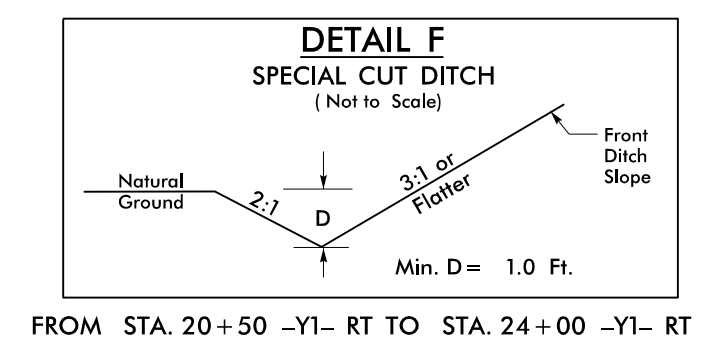
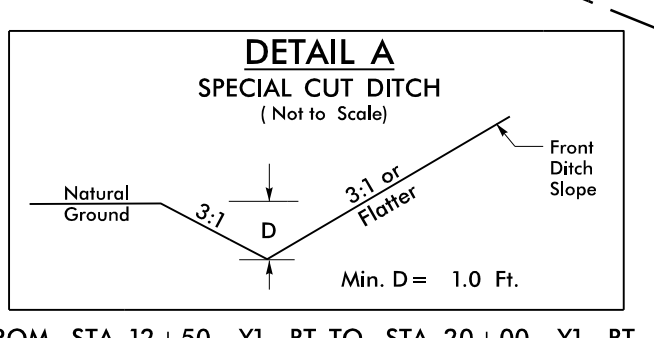
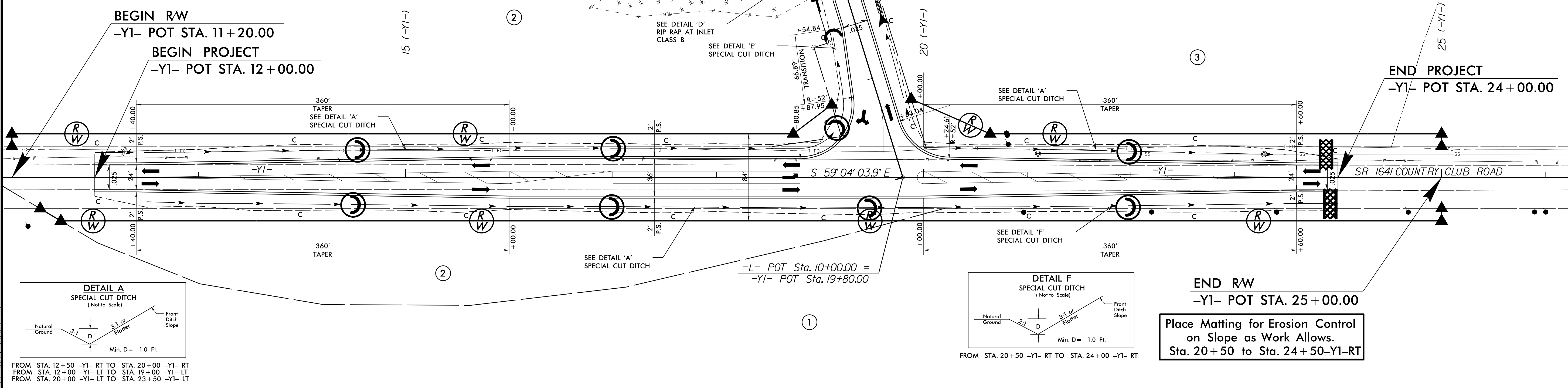
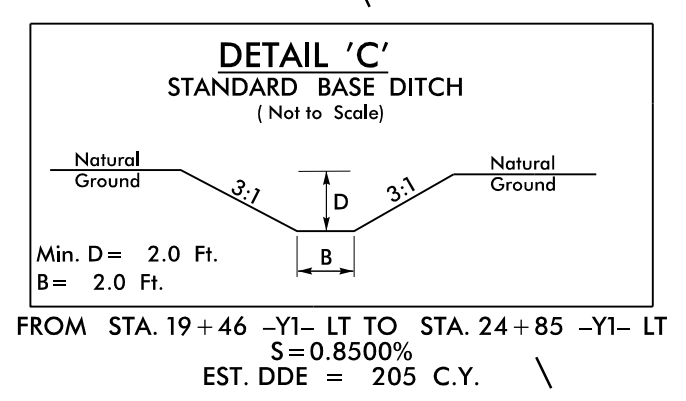
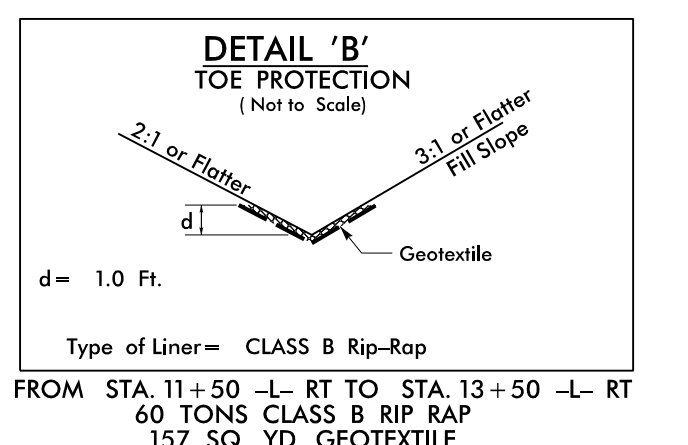
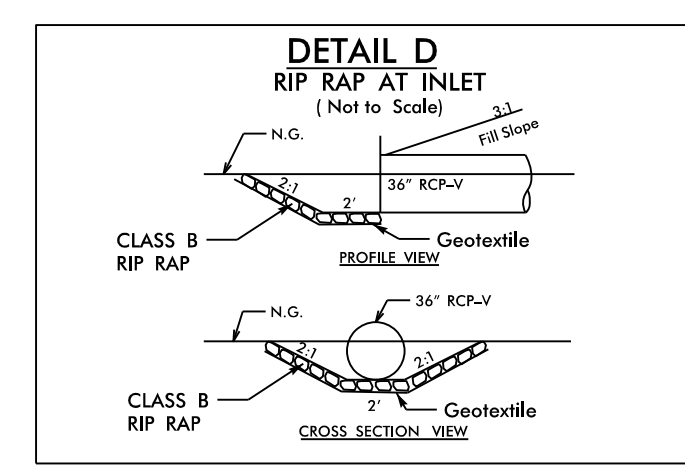
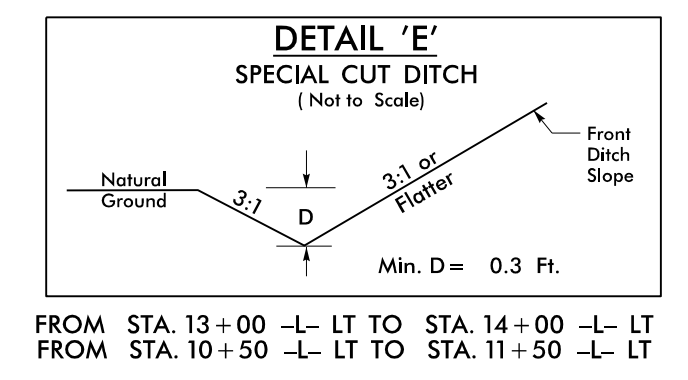
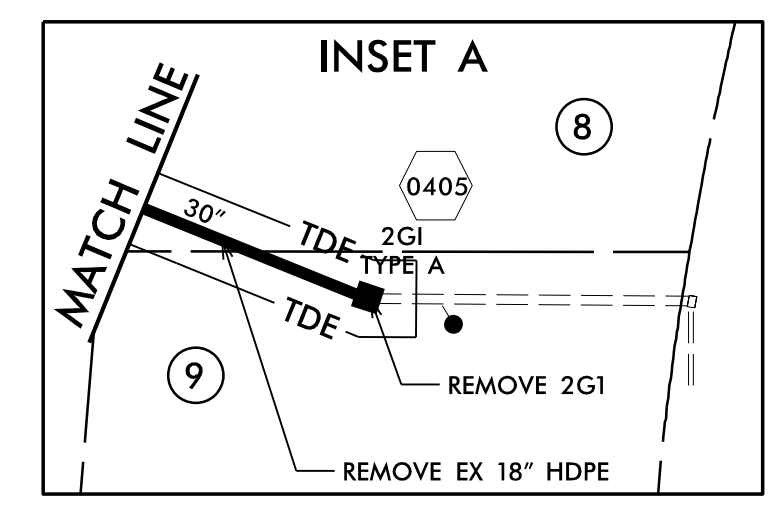
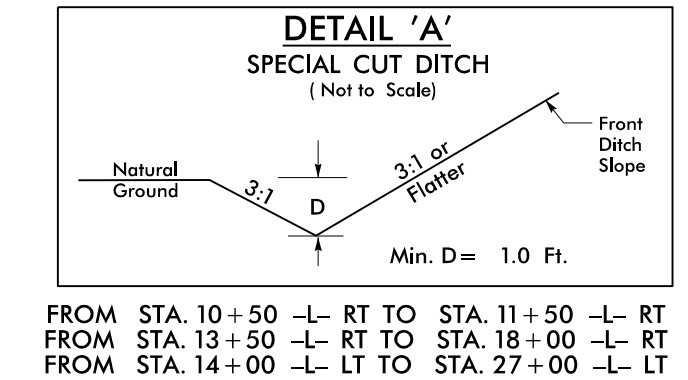
PROJECT REFERENCE NO. 80028	SHEET NO. EC-06/CONST.04
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CDM Smith 4000 Glenwood Avenue Suite 400 Raleigh, NC 27612-3228 NC CDA No. F-0412	M Engineering, PLLC 1011 Schum Drive Suite 100 Raleigh, NC 27604 NC CDA No. P-0671

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

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

MATCH LINE -L- POT STA. 17+00.00 SEE SHEET 5

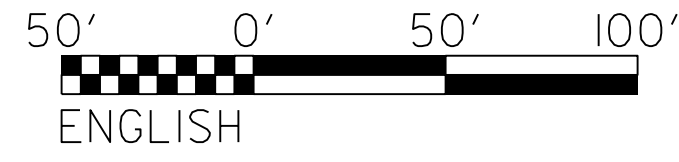


END RW
-Y1- POT STA. 25+00.00

Place Matting for Erosion Control on Slope as Work Allows.
Sta. 20+50 to Sta. 24+50 -Y1-RT

5/14/09

FINAL GRADE PLAN



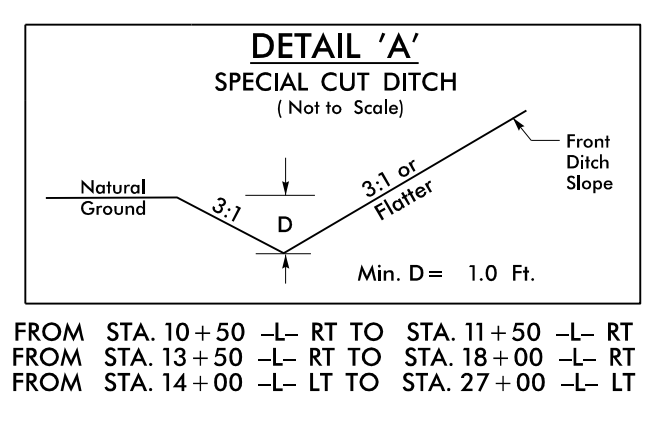
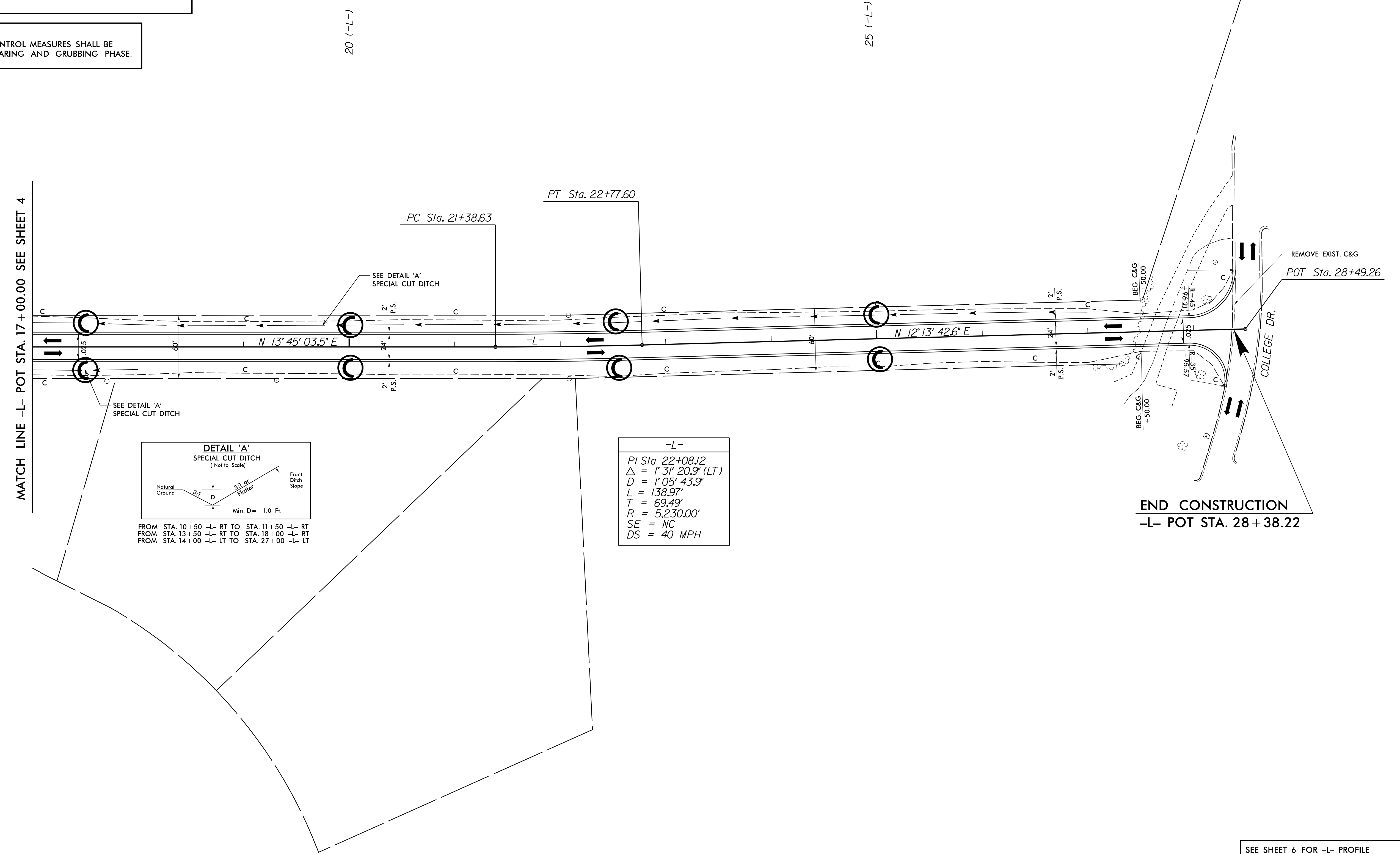
NAD 83/NSRS 2007

PROJECT REFERENCE NO. 80028		SHEET NO. EC-07/CONST.05	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
CDM Smith 400 Glenwood Avenue Suite 400 Raleigh, NC 27612-3228 NC CDA No. F-0412		M Engineering, PLLC 1011 Schum Drive Suite 100 Raleigh, NC 27604 NC CDA No. P-0671	

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

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



-L-
PI Sta. 22+08.12
Δ = 1° 31' 20.9" (LT)
D = 1° 05' 43.9"
L = 138.97'
T = 69.49'
R = 5,230.00'
SE = NC
DS = 40 MPH

SEE SHEET 6 FOR -L- PROFILE
SEE SHEET 28-1 FOR INTERSECTION DETAILS

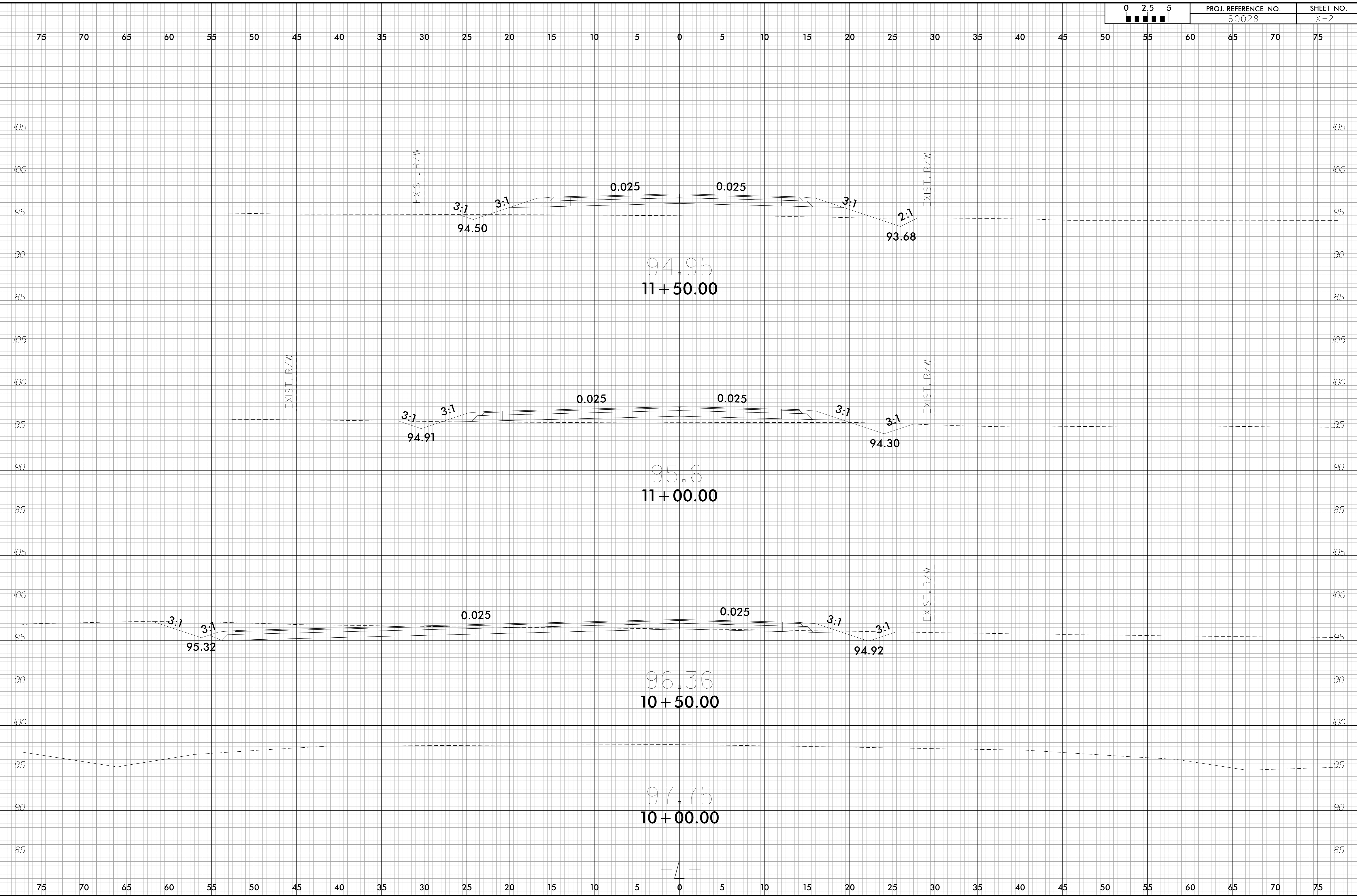
5/14/09

CROSS SECTION INDEX

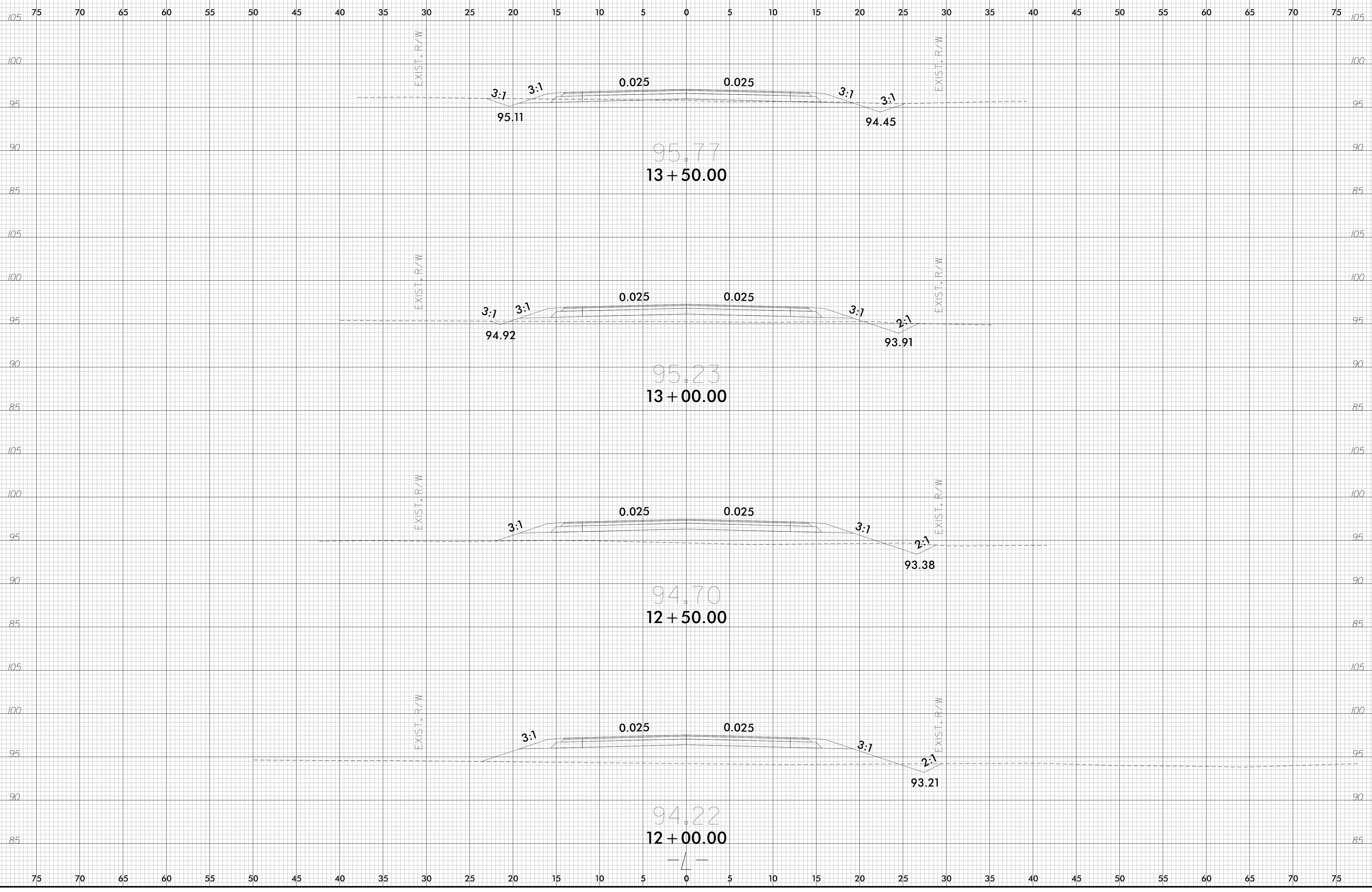
X-1 CROSS SECTION INDEX
X-2 THRU X-12 -L-
X-13 THRU X-21 -Y1-

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

6/23/16

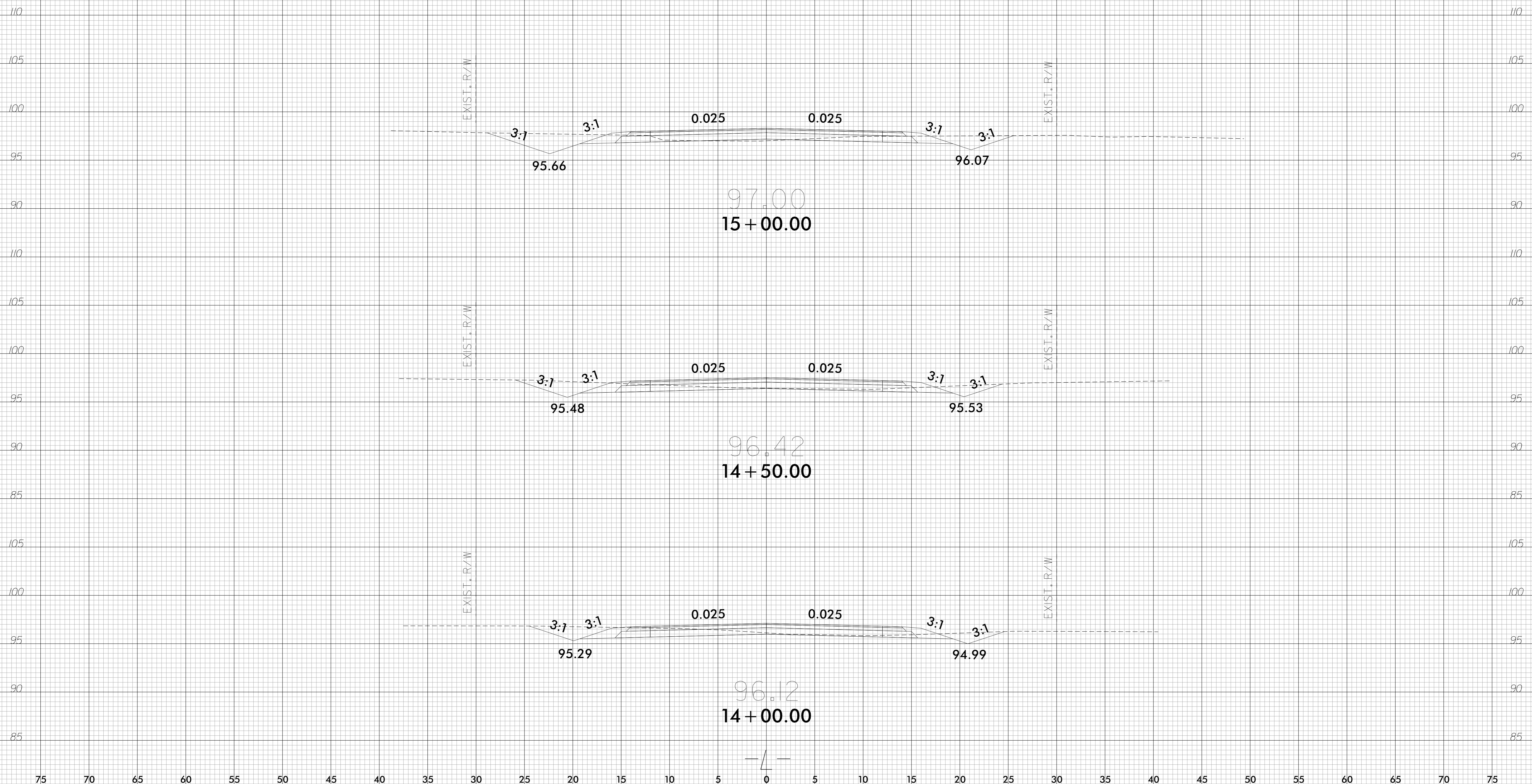


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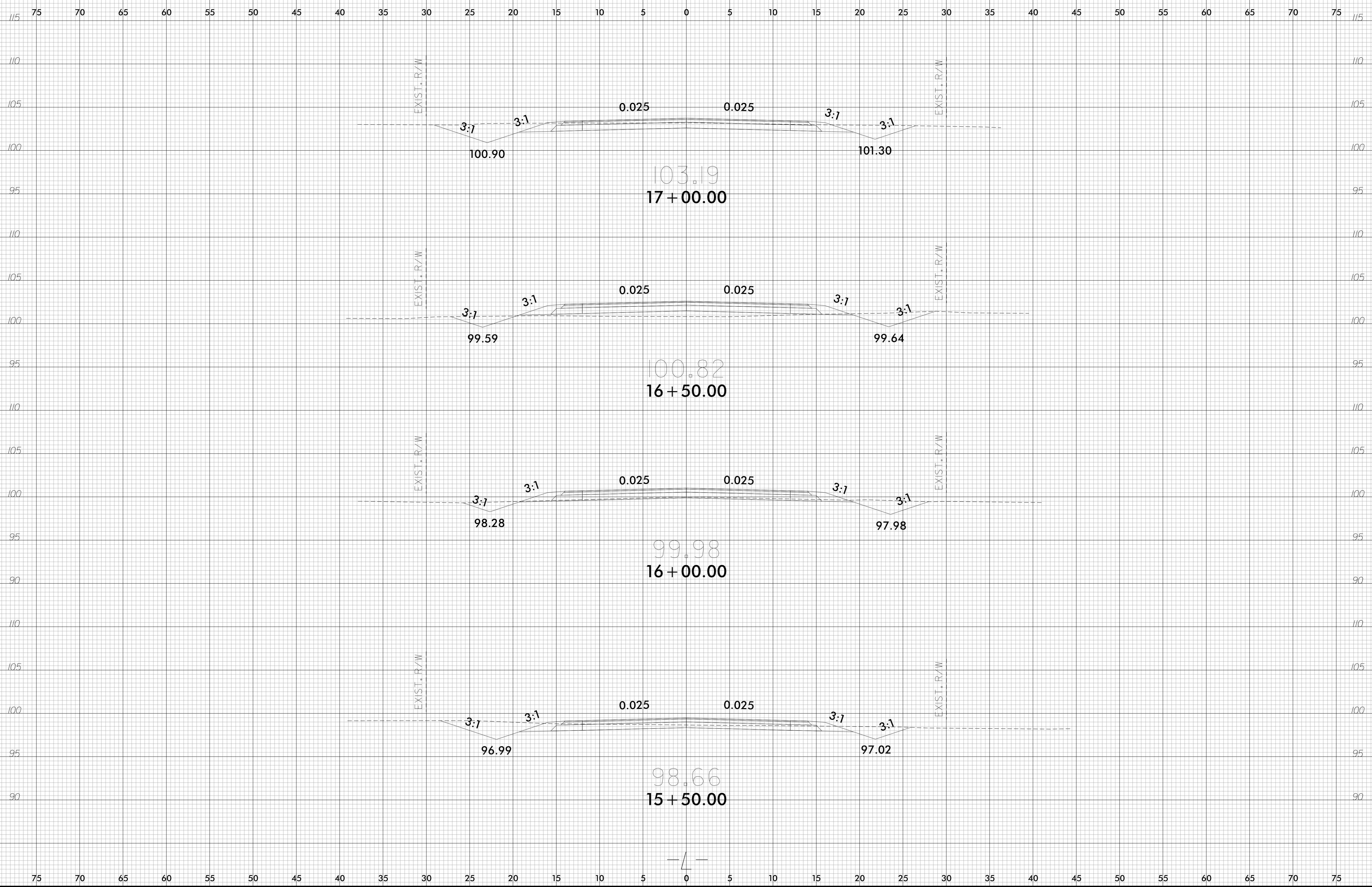
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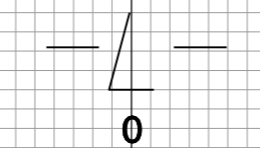
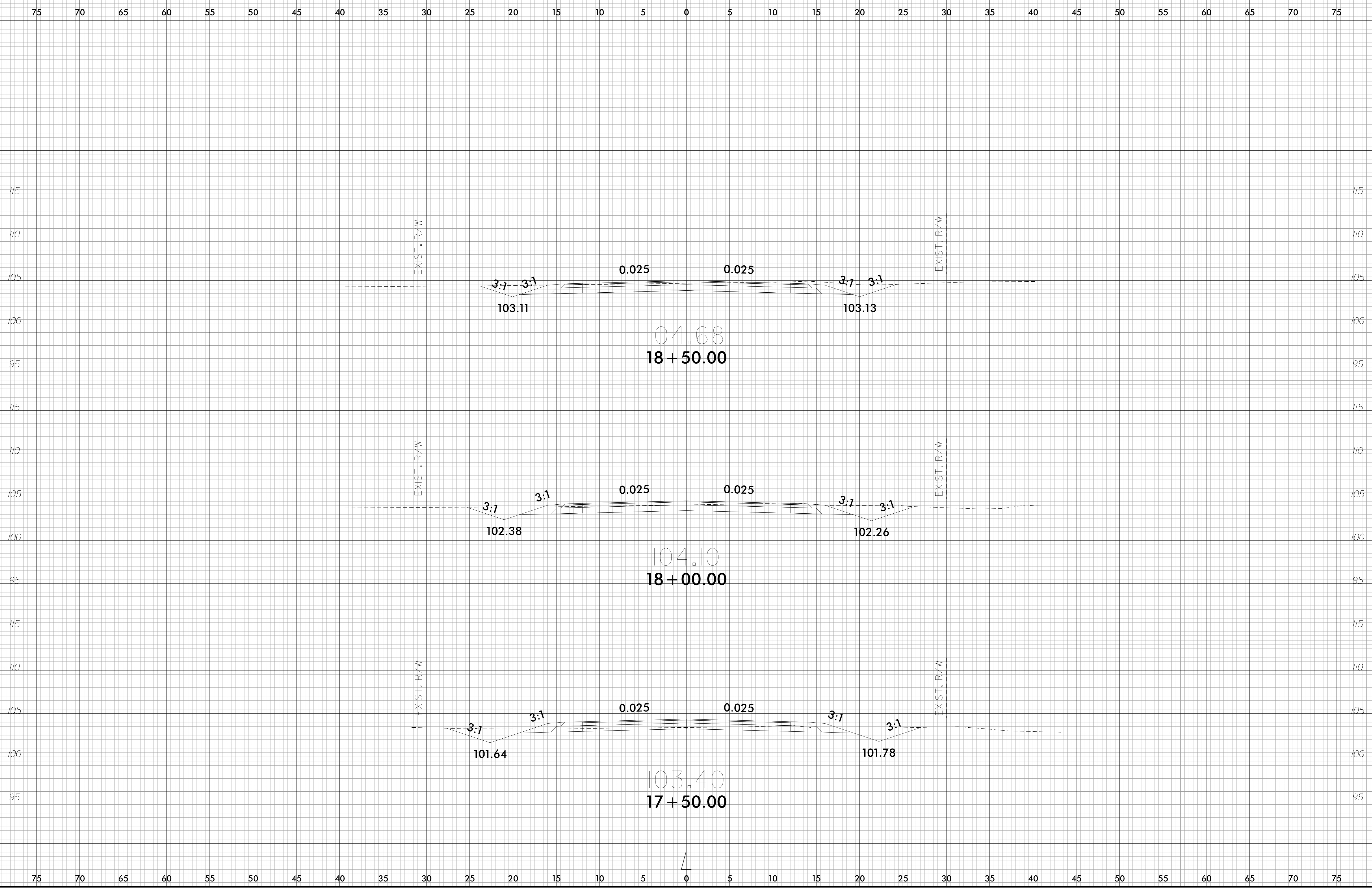
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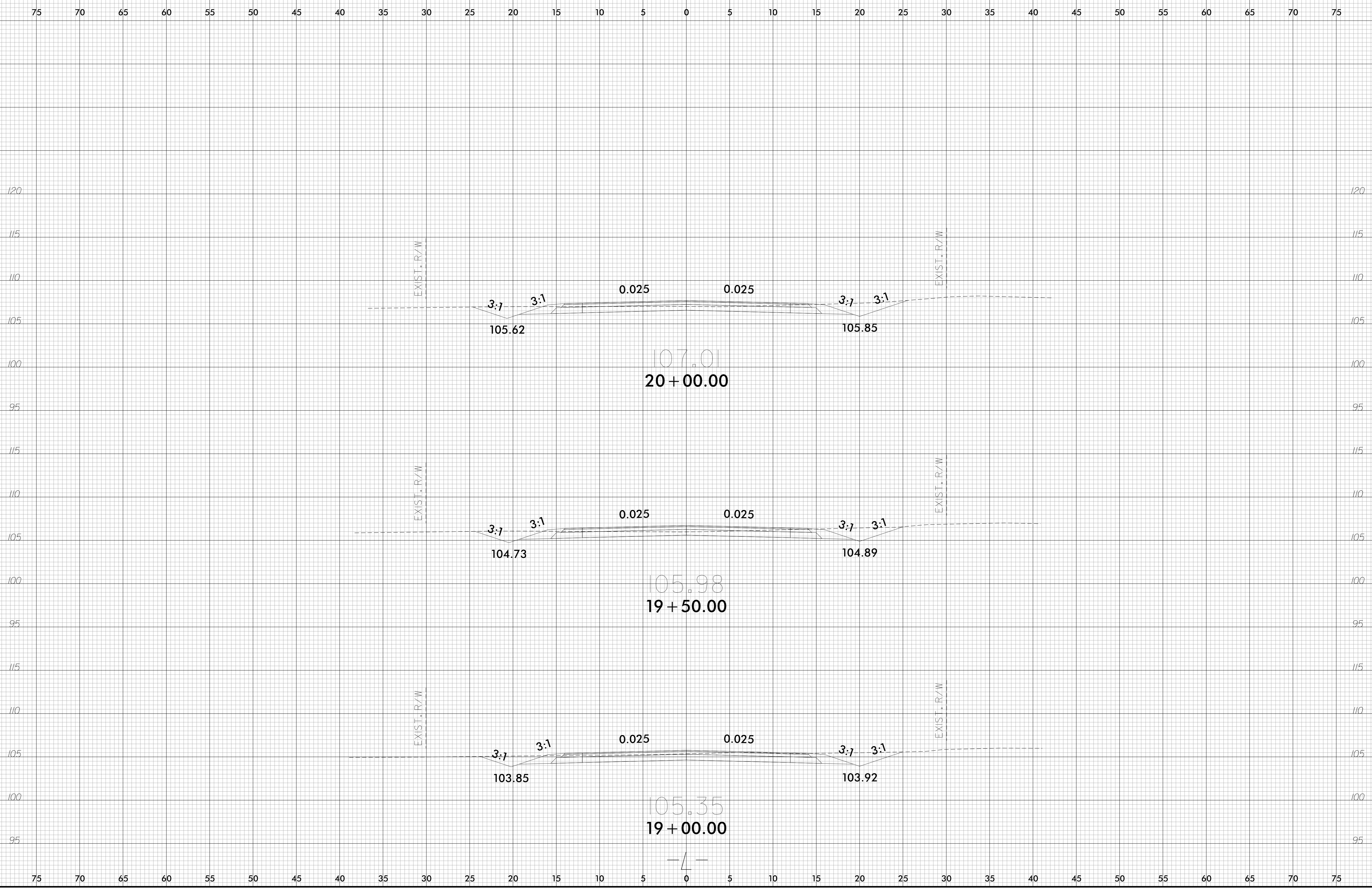
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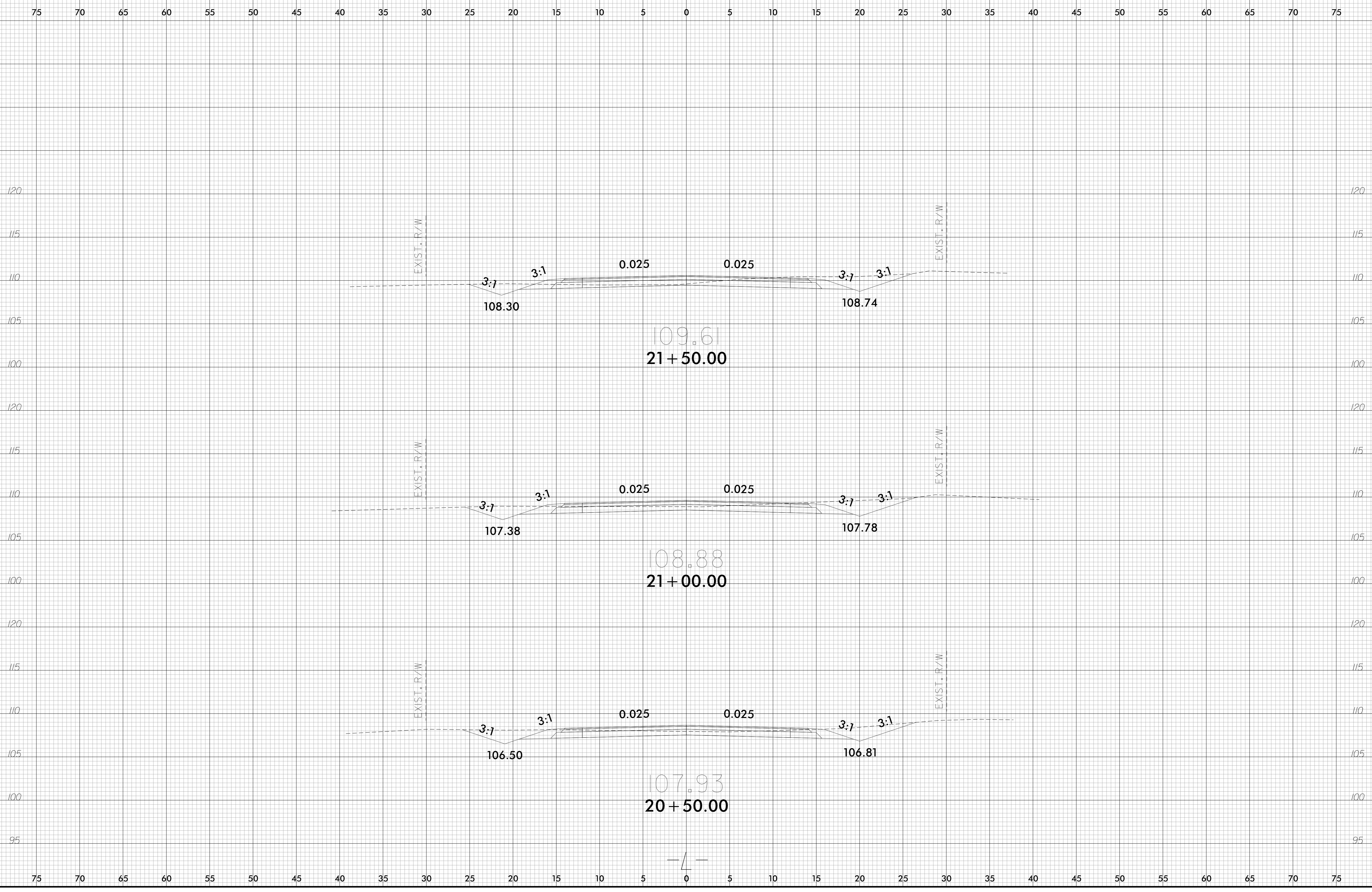


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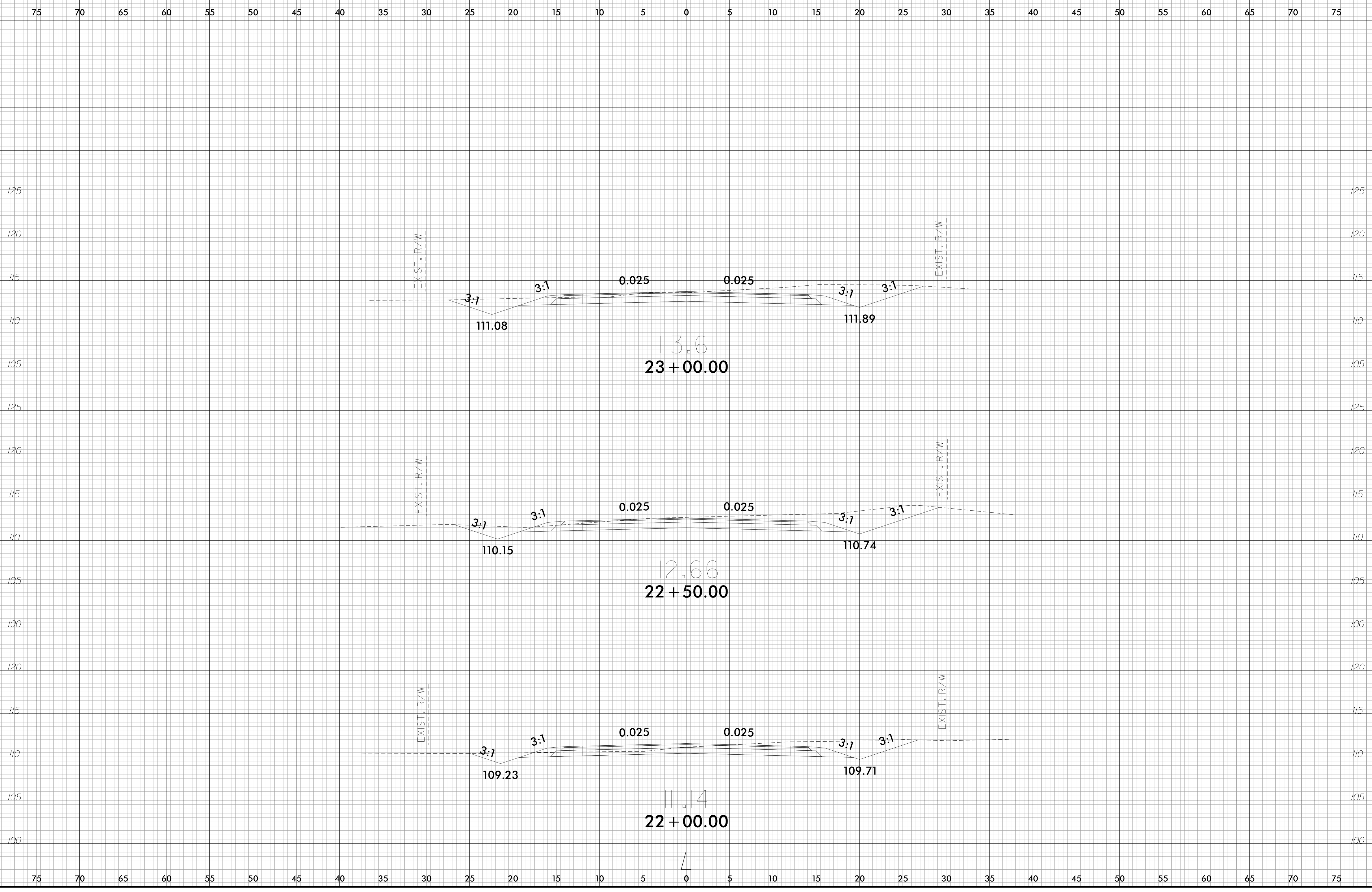
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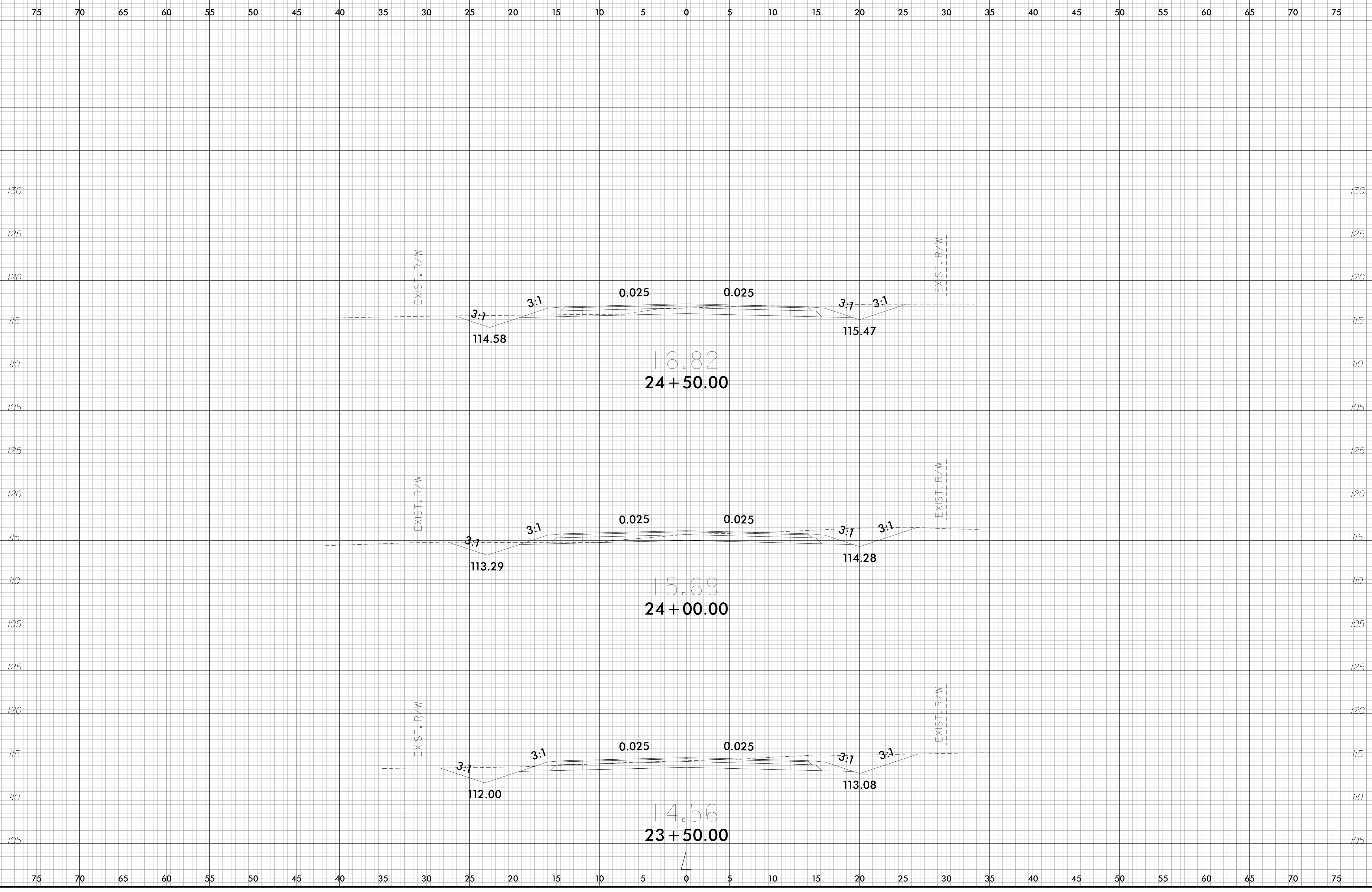
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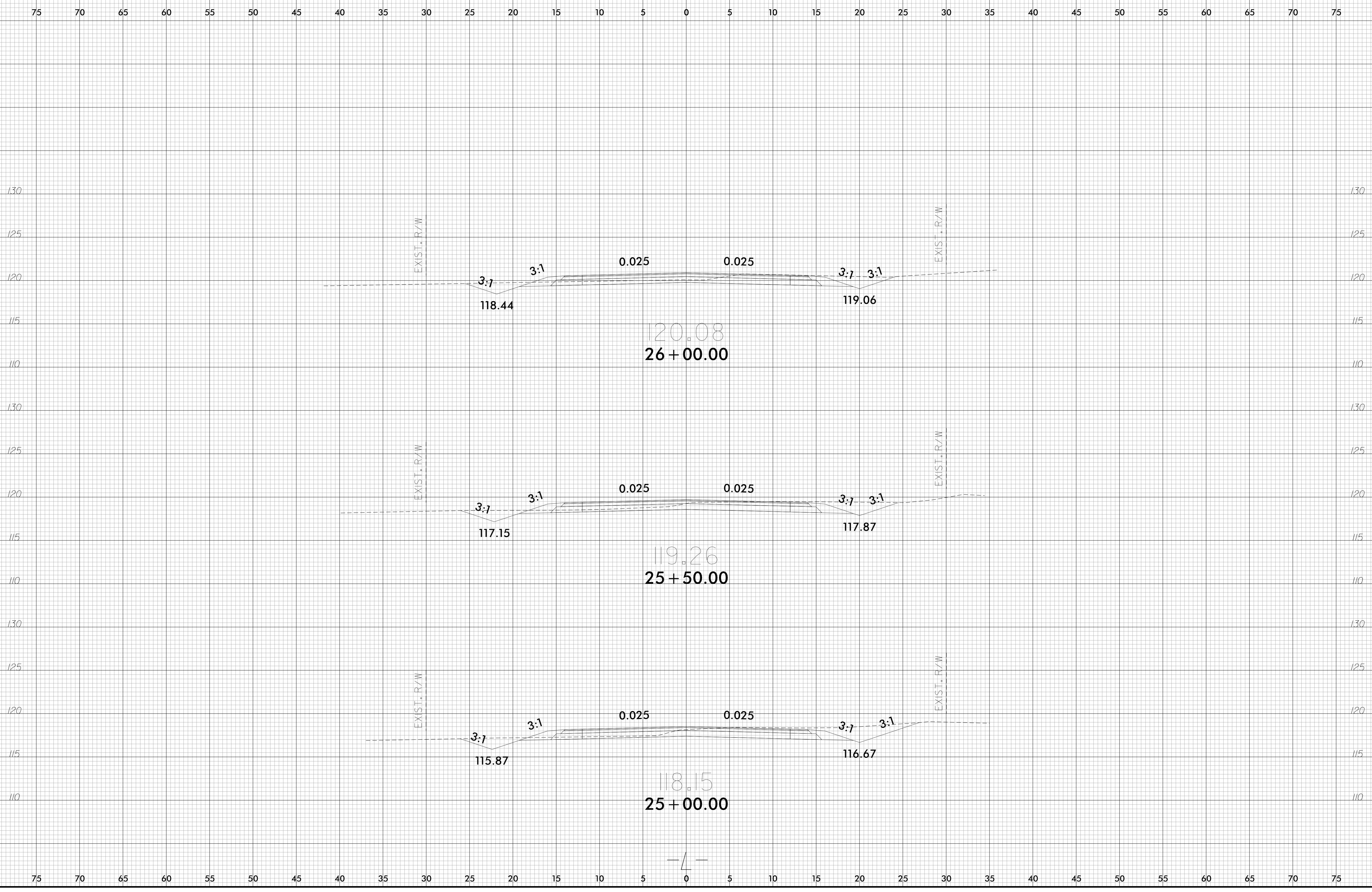
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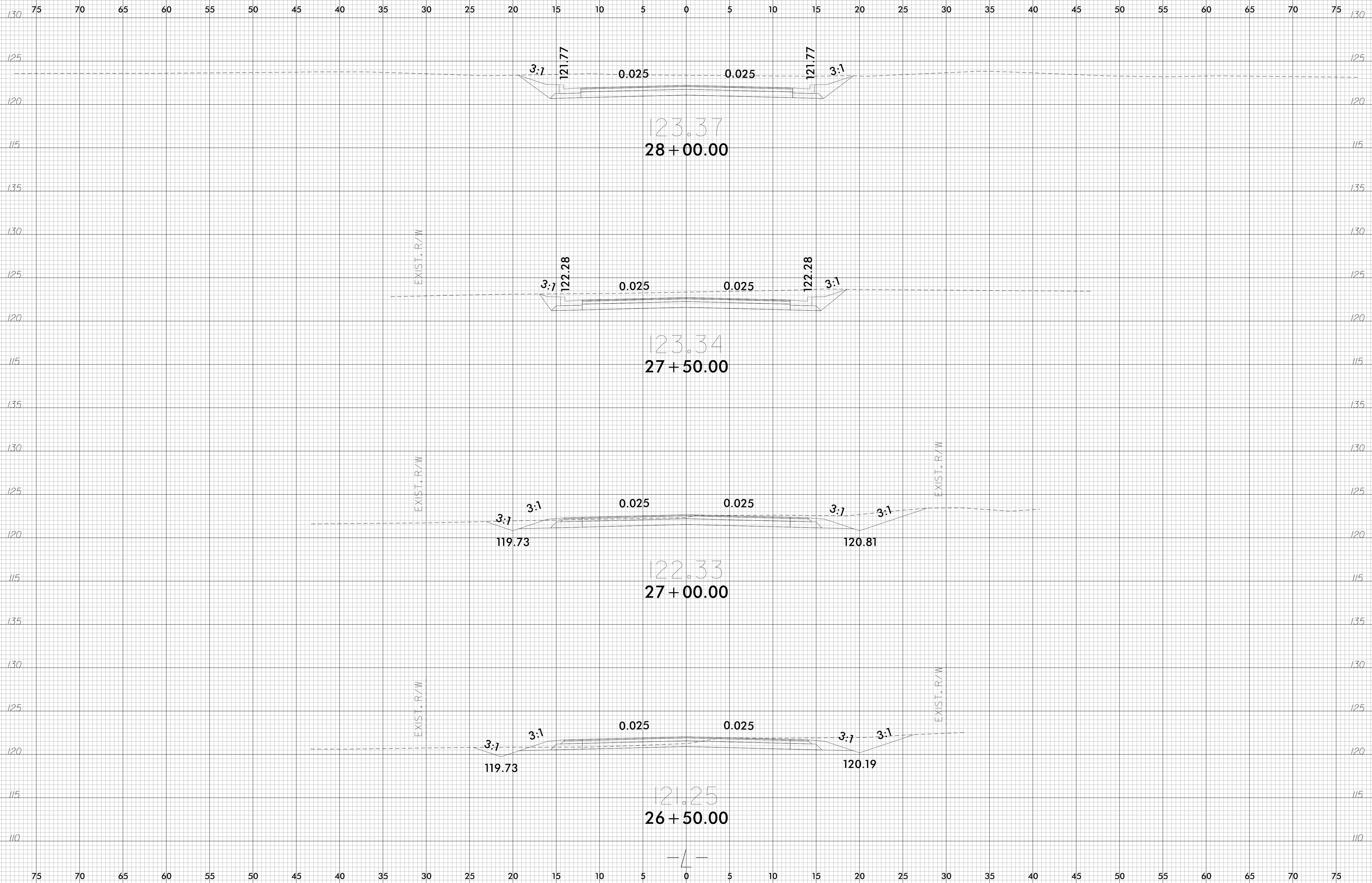


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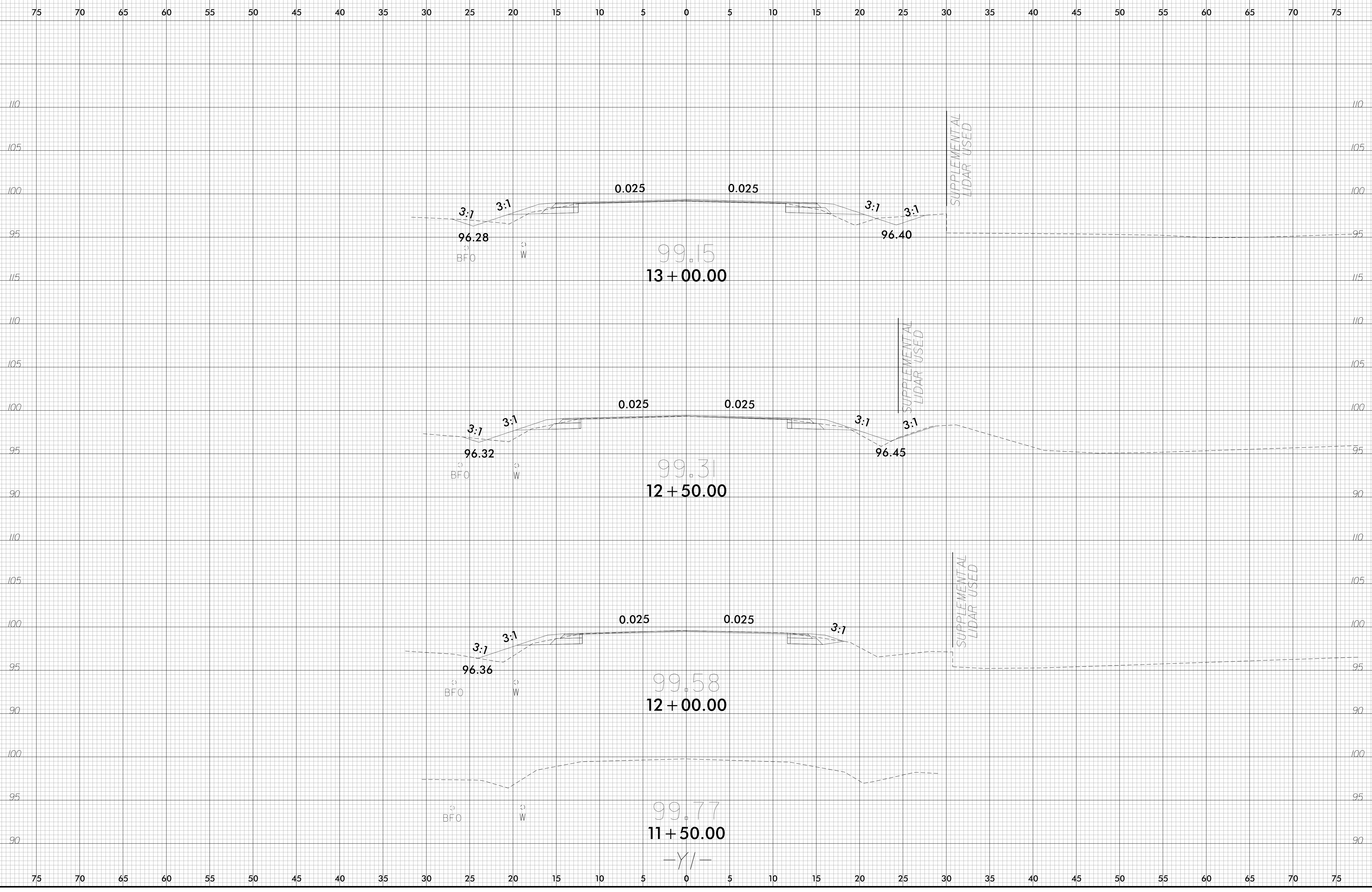
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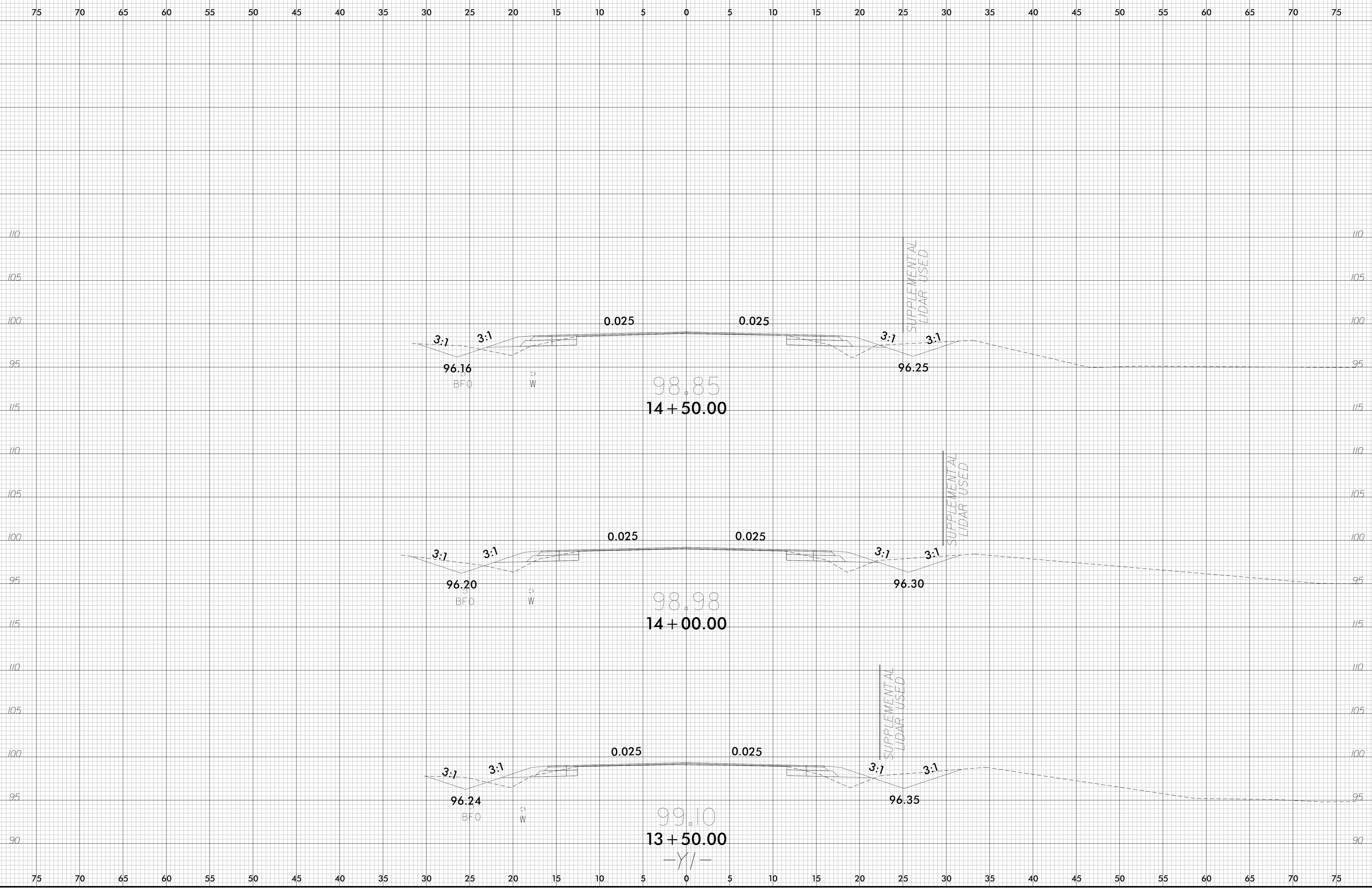


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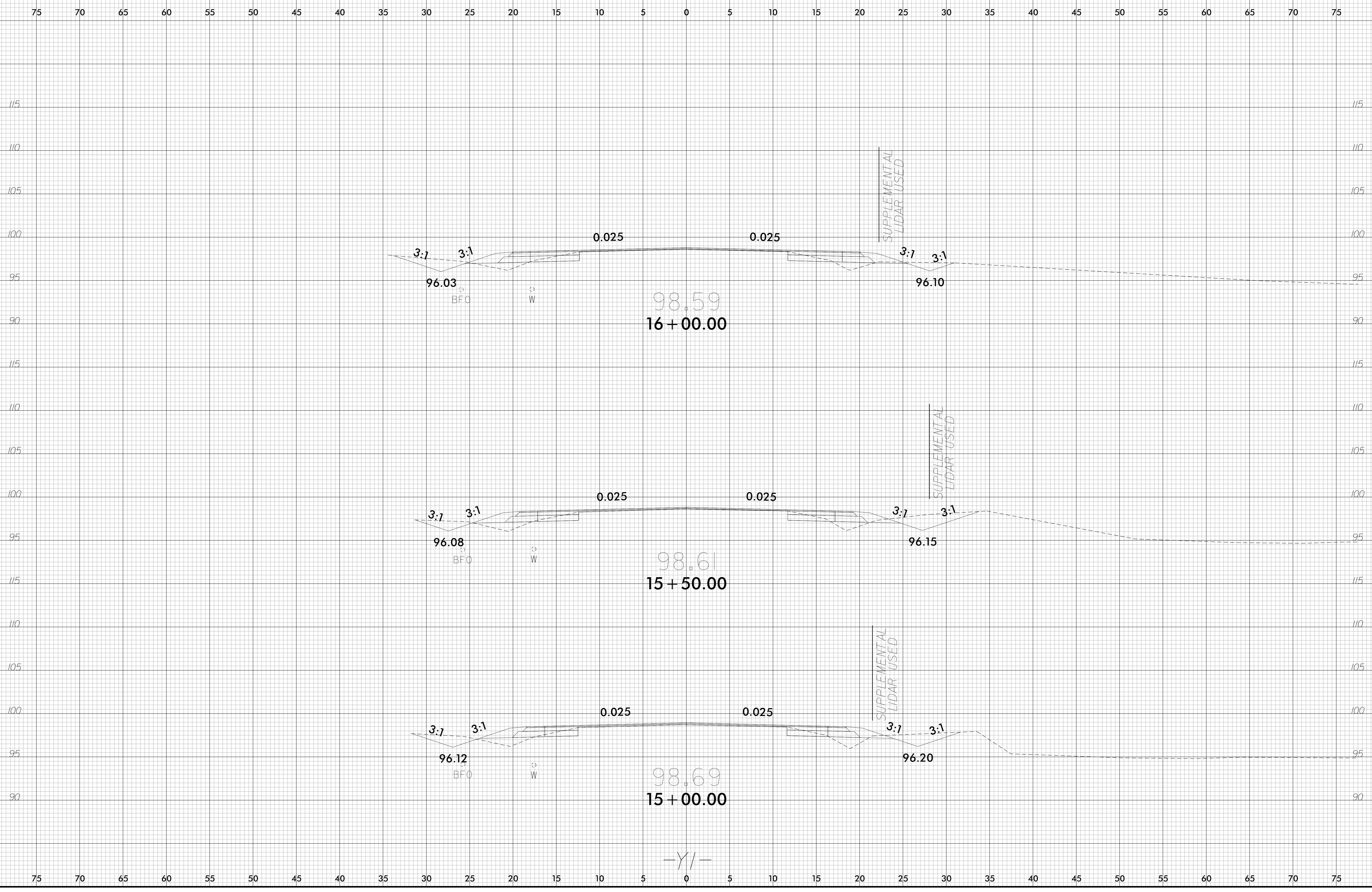
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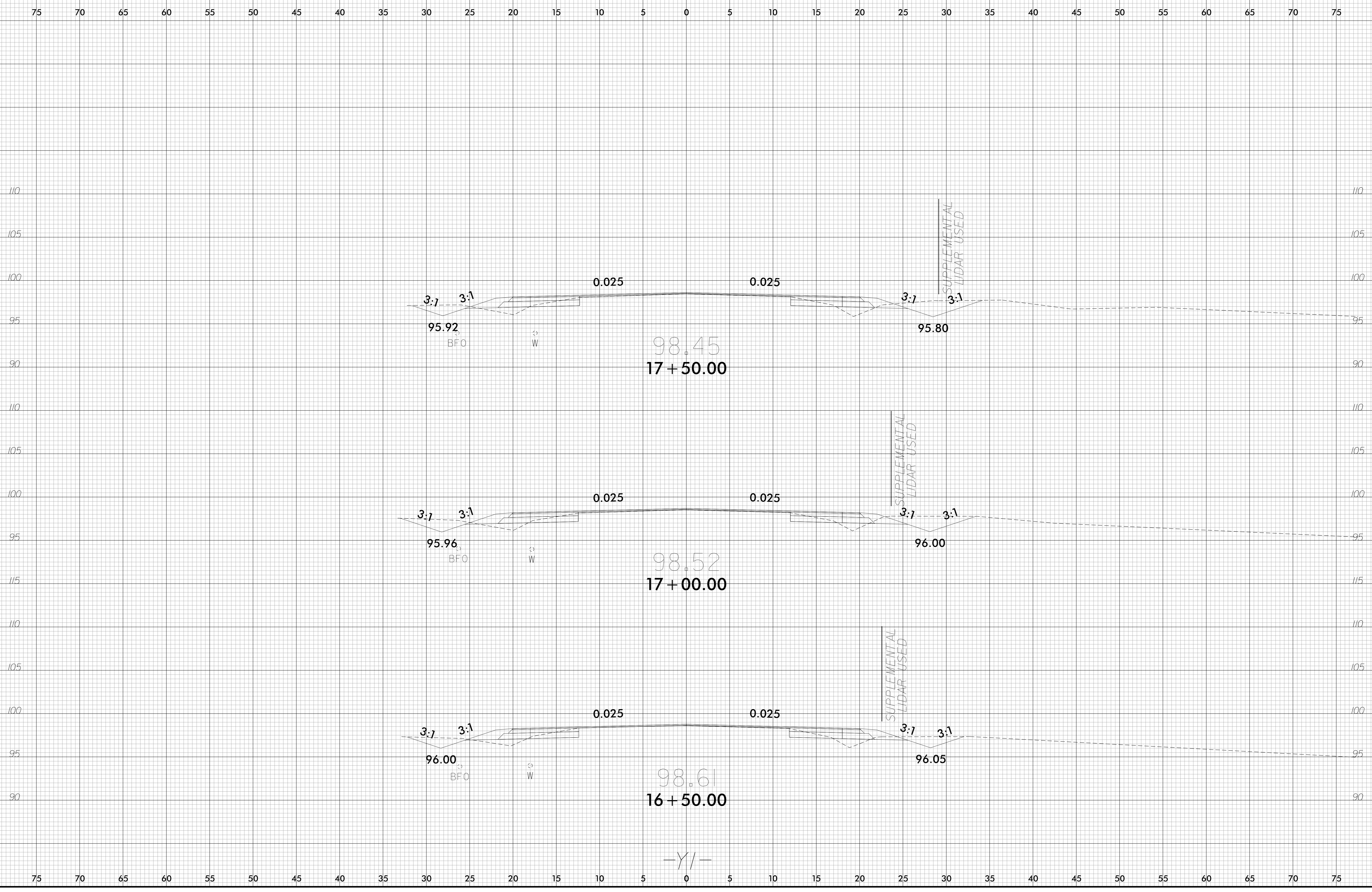
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-Y/-

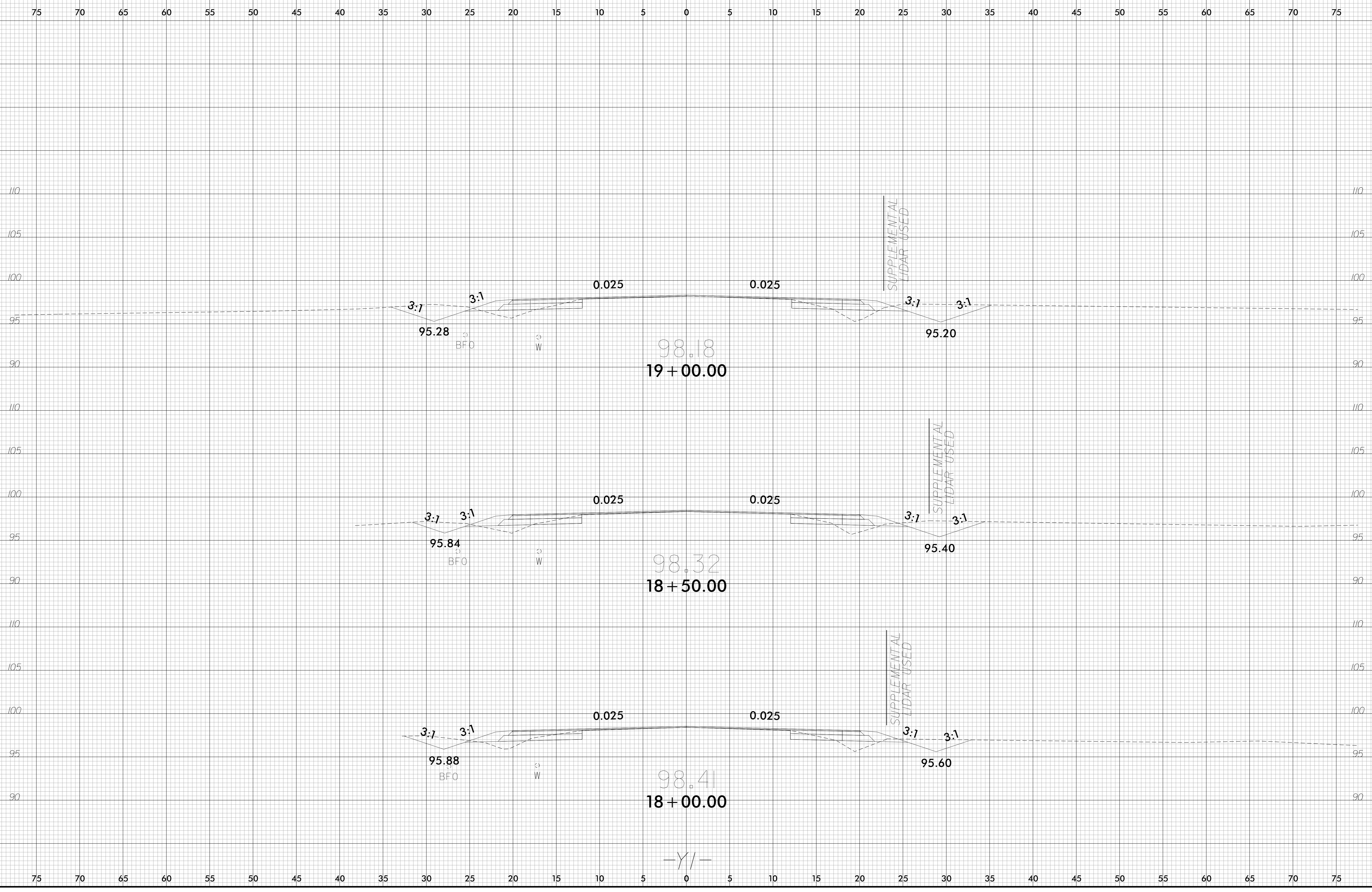
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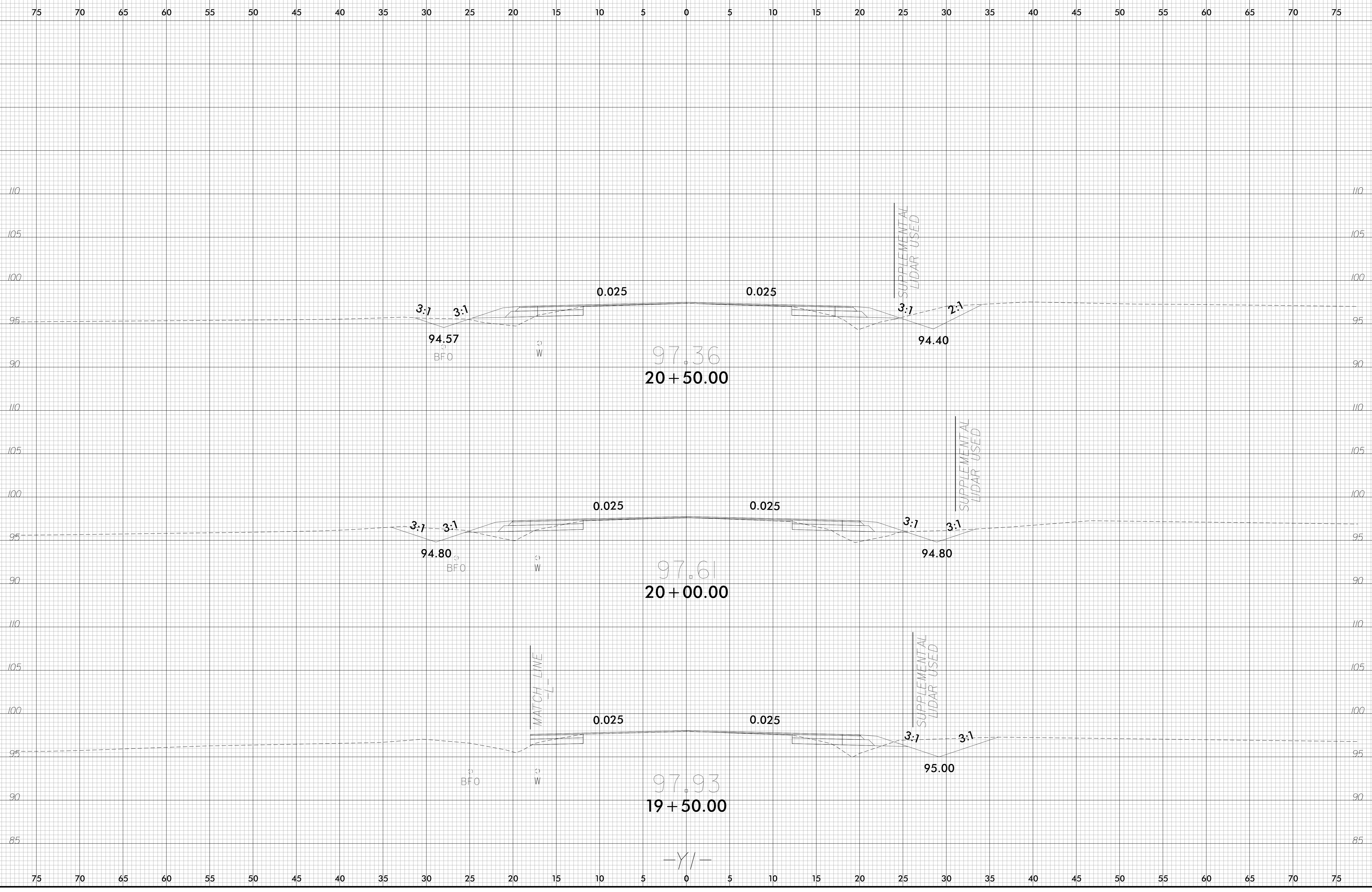
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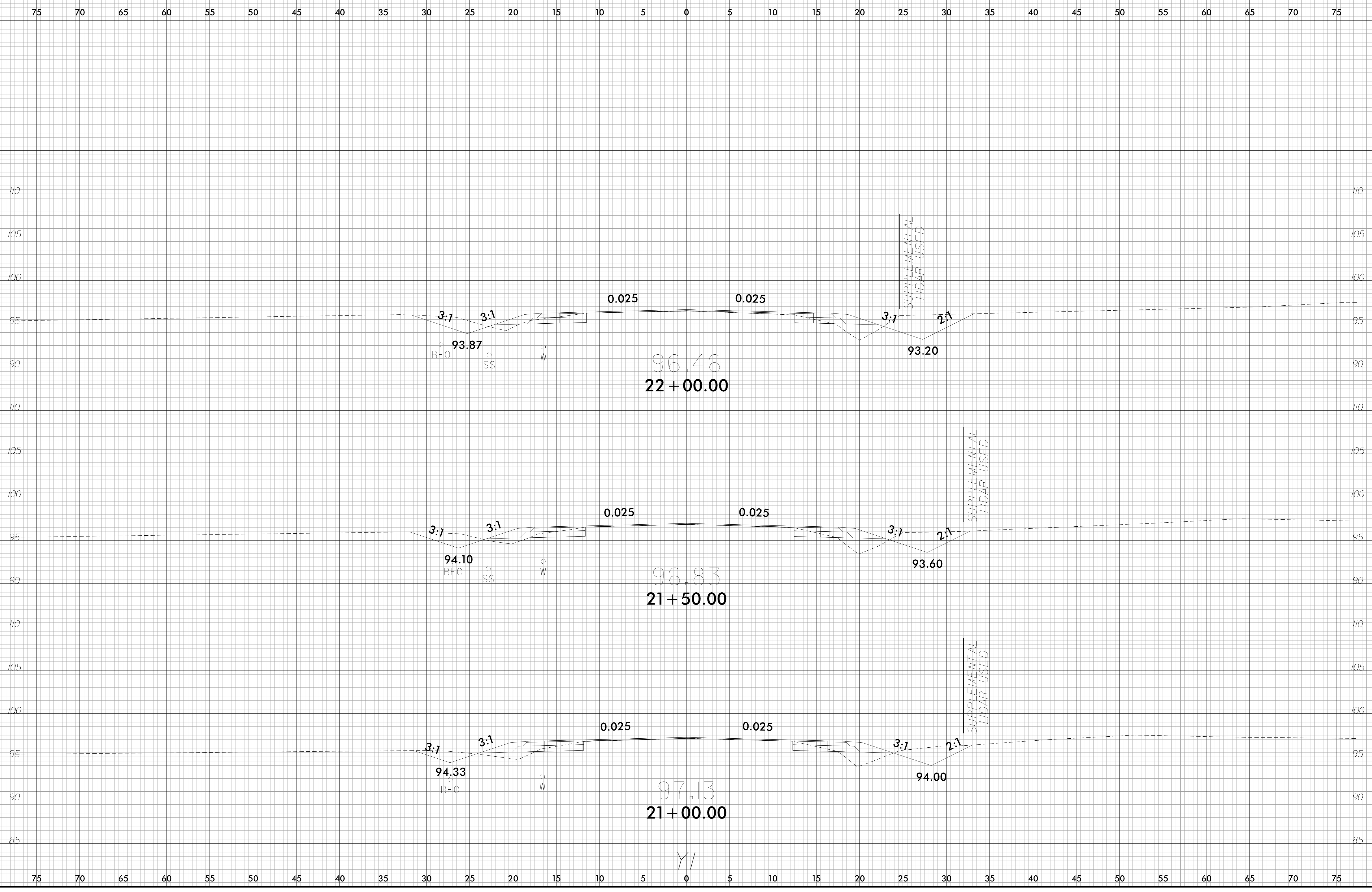
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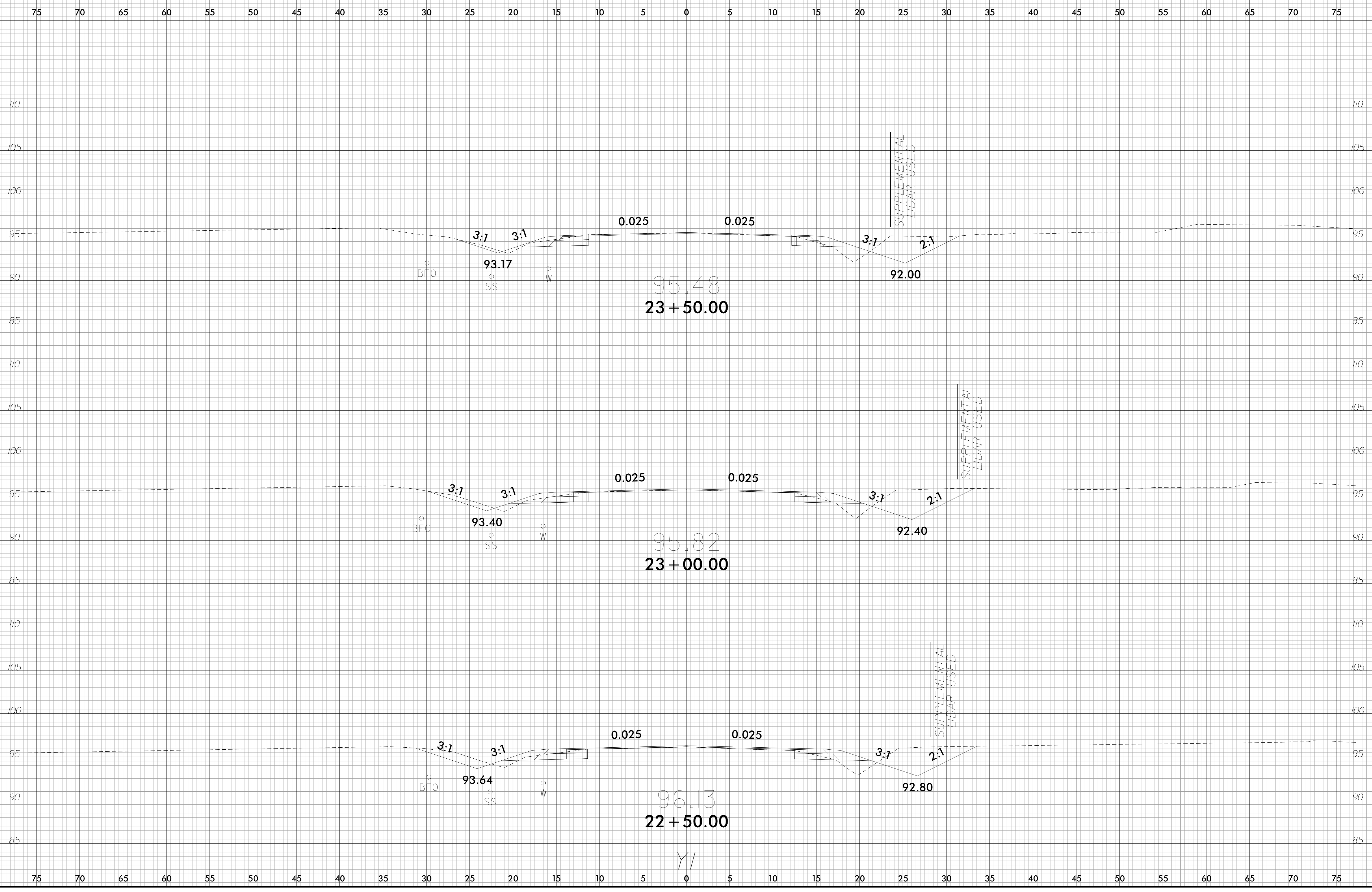
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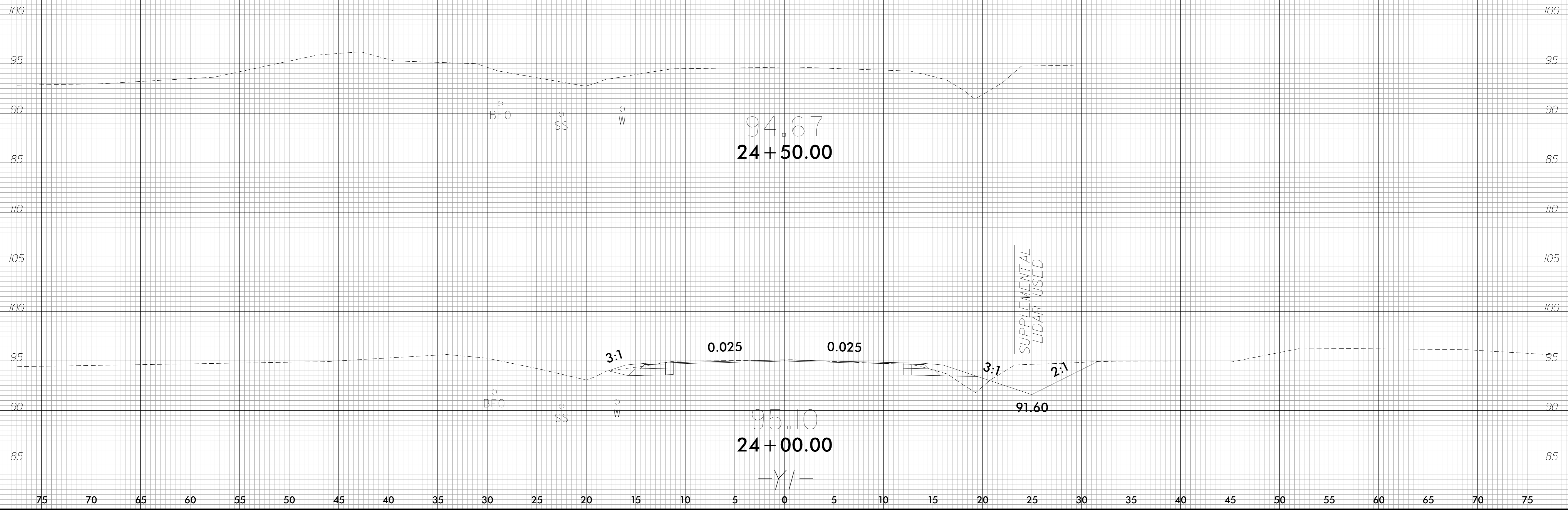
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