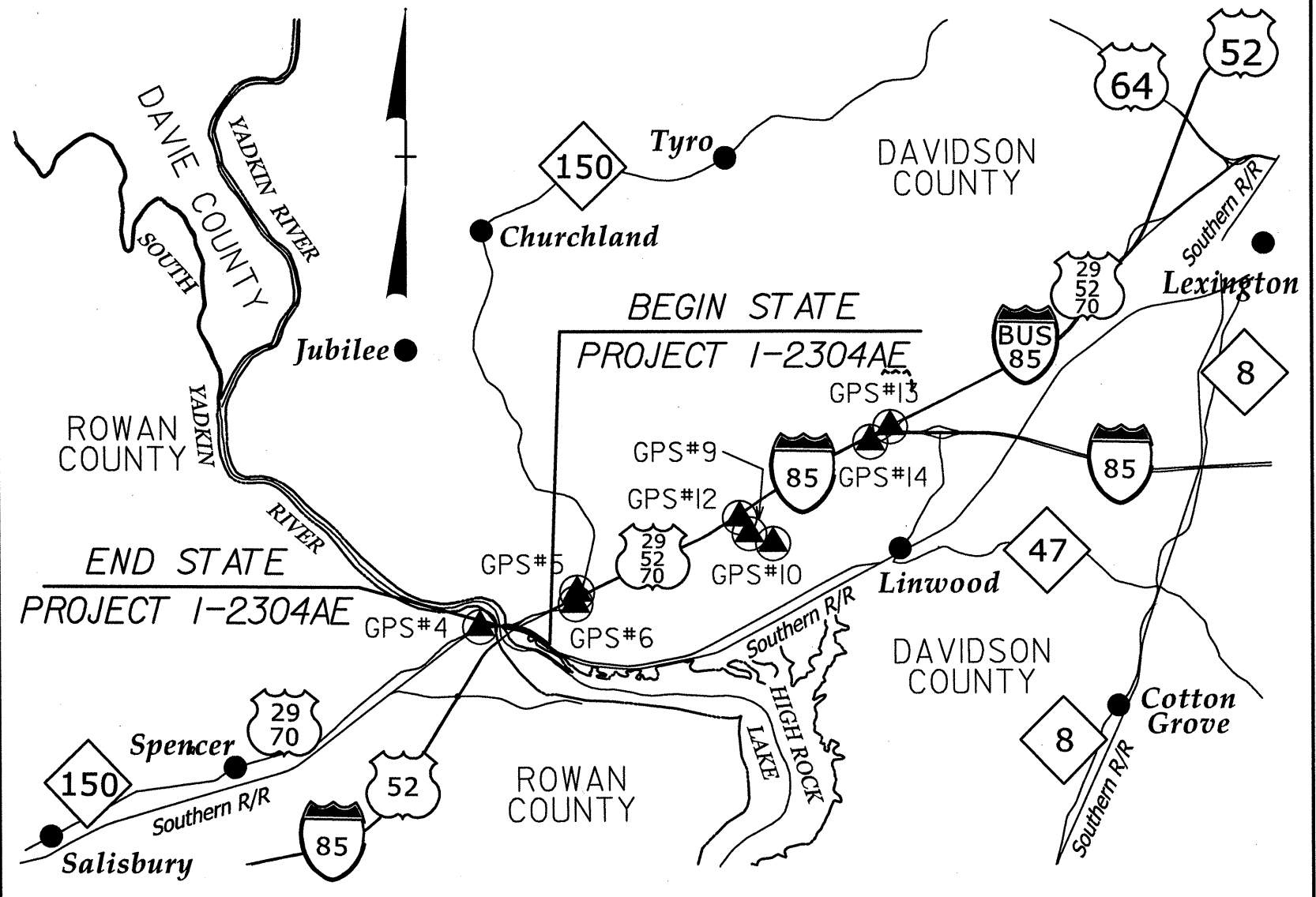


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TIP PROJECT: I-2304AE
CONTRACT: C203210



VICINITY MAP
(NOT TO SCALE)

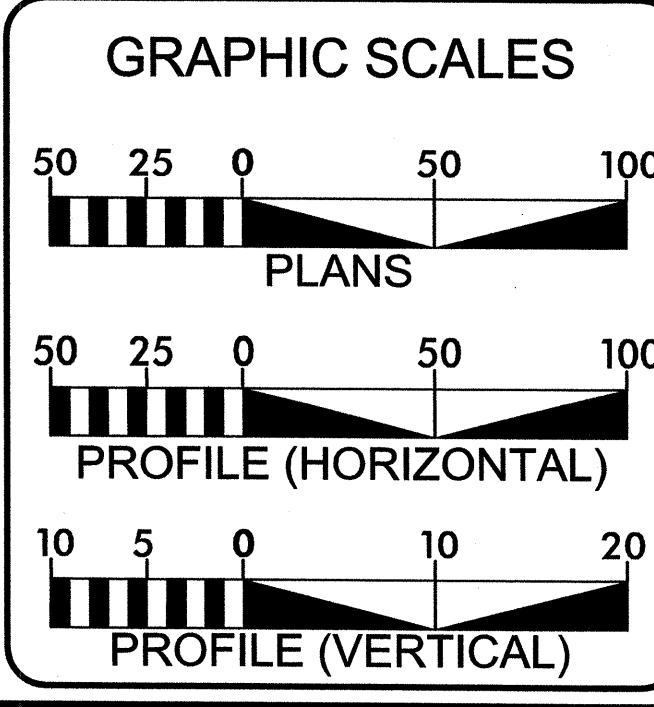
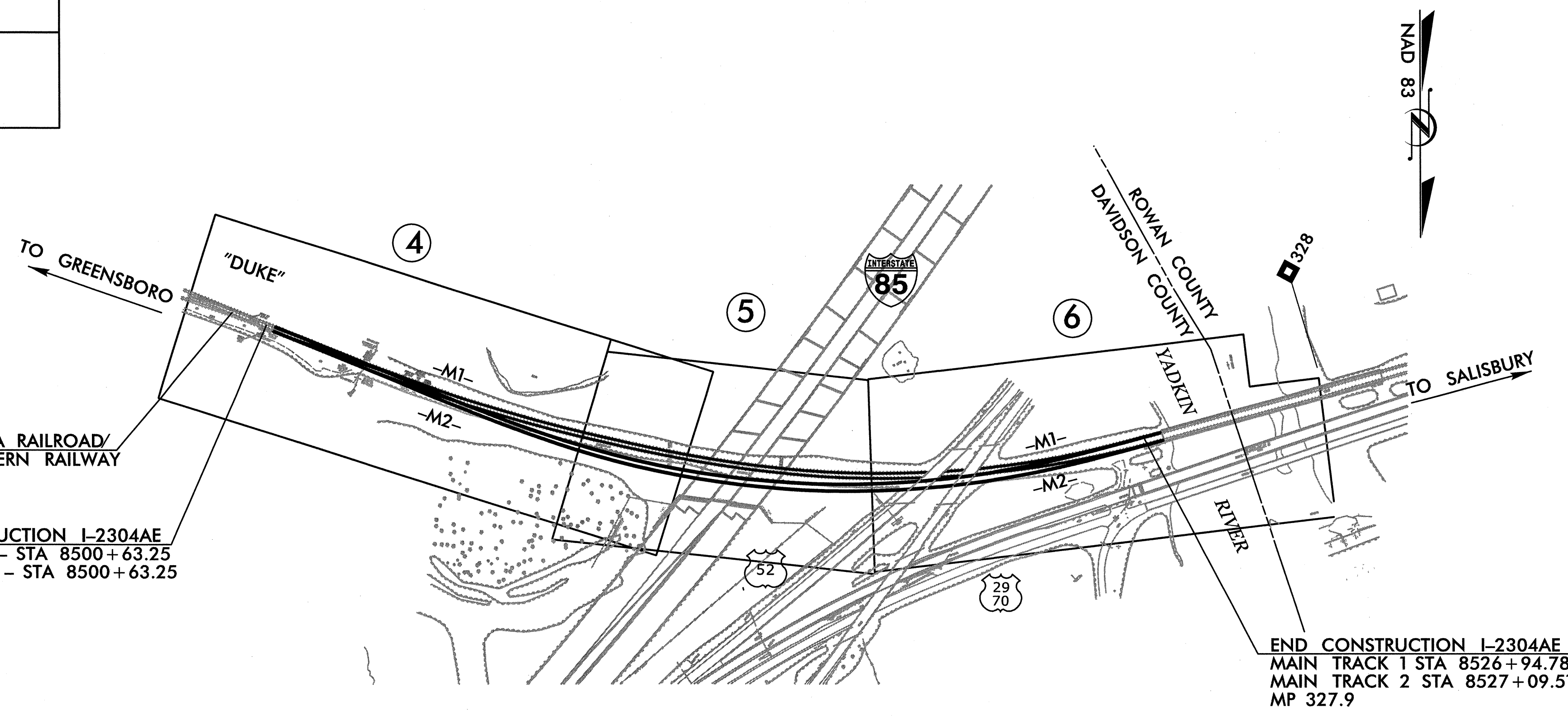
STATE OF NORTH CAROLINA
 NCDOT RAIL DIVISION
DAVIDSON COUNTY

**LOCATION: NORTH CAROLINA RAILROAD MAIN LINE CURVE REALIGNMENT
 (MP 327.3 TO MP 327.9) NORTH OF THE YADKIN RIVER**

TYPE OF WORK: RAILROAD ROADBED, GRADING AND DRAINAGE



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-2304AE	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
53000.1.STRO1T1B		PE	
53000.3.STRO1T4	FRA-FR-HSR-0006-10-01-00	CONST, CONST UTIL	



PROJECT LENGTH

LENGTH OF RAIL TIP PROJECT	= 0.501 MILES
LENGTH OF STRUCTURE TIP PROJECT	= 0.000 MILES
TOTAL LENGTH OF TIP PROJECT	= 0.501 MILES

Prepared In the Office of:

AECOM
 NC FIRM LICENSE No: F-0342
 701 Corporate Center Drive, Suite 475
 Raleigh, NC 27607
 (919) 854-6200 - (919) 854-6259(FAX)

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
 NOVEMBER 2012

LETTING DATE:
 MAY 21, 2013

RILEY BIRMINGHAM, PE
 RAIL PROJECT ENGINEER

MARK KAMPFRATH, PE
 HYDRAULICS PROJECT ENGINEER

JASON ORTHNER, PE
 NCDOT PROJECT MANAGER

RAIL ENGINEER

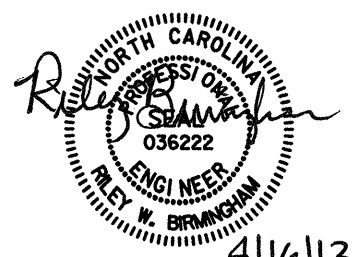

Riley Birmingham 4/16/13
 SIGNATURE: P.E.

HYDRAULICS ENGINEER

Mark Kampfrath 4/16/13
 SIGNATURE: P.E.

NC DEPARTMENT OF TRANSPORTATION
RAIL DIVISION
 PLANNING AND DEVELOPMENT

1:33:45 PM
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PROJECT REFERENCE NO. I-2304AE	SHEET NO. 1-A
RW SHEET NO.	
RAIL ENGINEER 	HYDRAULICS ENGINEER 
Prepared in the Office of: AECOM <small>701 Corporate Center, Suite 475 (919) 854-2200, (919) 854-2250(FAX)</small>	

INDEX OF DRAWINGS AND GENERAL NOTES

SHEET NUMBER

DRAWING TITLE

1
1-A
1-B
1-C

COVER SHEET
INDEX OF DRAWINGS AND GENERAL NOTES
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STANDARD ABBREVIATIONS

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2-B
2-C
2-D
2-E

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DRAINAGE DETAILS
HORIZONTAL CURVE GEOMETRY
PROPOSED TRACK #1 & #2 GEOMETRY
RIGHT OF WAY GATE DETAIL

3
3-A THRU 3-B
3-C

SUMMARY OF QUANTITIES
DRAINAGE SUMMARY
EARTHWORK SUMMARY

4 THRU 6
7 & 8

PLAN & PROFILE - MAIN TRACK #1 & #2
PROFILE - MAIN TRACK #2

9 THRU 14

PHASING PLAN - MAIN TRACK #1 & #2

EC-1
EC-02 THRU EC-02B
EC-3
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EC-04 THRU EC-09

EROSION CONTROL TITLE SHEET
EROSION CONTROL DETAILS
SOIL STABILIZATION TIMEFRAME
SOIL STABILIZATION SUMMARY
EROSION CONTROL PLAN SHEETS

XS
XS-1A
XS-1
XS-2 THRU XS-14

CROSS SECTIONS INDEX
CROSS SECTIONS SUMMARY
PIPE PROFILES
CROSS SECTIONS

2012 ROADWAY ENGLISH STANDARD DRAWINGS

EFF. 01-17-2012
REV. 10-30-2012

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

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.03	Method of Clearing - Method III
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
DIVISION 8 - INCIDENTALS	
838.01	Concrete Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
838.33	Reinforced Concrete Endwall - for Single 66" Pipe 90 Skew
838.45	Notes for Reinforced Concrete Endwall - Std. Dwg 838.21 thru 838.40
840.31	Concrete Junction Box - 12" thru 66" Pipe
840.54	Manhole Frame and Cover
876.04	Drainage Ditches with Class 'B' Rip Rap
838.11	Brick Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
840.32	Brick Junction Box - 12" thru 66" Pipe 90 Skew

GENERAL NOTES:

- THIS CONTRACT INCLUDES ALL WORK REQUIRED TO CONSTRUCT THE RAILROAD ROADBED, UP TO TOP OF SUBBALLAST LAYER.
- ALL TRACKWORK, INCLUDING BALLAST AND SIGNAL WORK, TO BE DONE BY NSR AND IS SHOWN IN PLANS FOR REFERENCE ONLY.
- THE PROPOSED GRADE LINES (PGL) SHOWN DEPICT THE FINAL ELEVATION OF THE PROPOSED TOP OF LOW RAIL AT THE CENTERLINE OF TRACK, AS SHOWN ON THE TYPICAL SECTIONS. WHERE NO PROPOSED GRADE LINES ARE SHOWN, THE PROFILES SHOWN DEPICT THE EXISTING TOP OF LOW RAIL.
- ALL RAILWAY ALIGNMENT CURVE DATA IS BASED ON CHORD DEFINITION.
- THE CONTRACTOR SHALL COORDINATE OBTAINING ANY TEMPORARY CONSTRUCTION ENTRANCES AND DRIVEWAYS WITH LOCAL AND/OR STATE AGENCIES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY LOCAL CONSTRUCTION PERMITS THAT MAY BE REQUIRED TO CONSTRUCT THIS PROJECT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INVESTIGATION, LOCATION, SUPPORT, PROTECTION AND RESTORATION OF ALL EXISTING UTILITIES WHETHER SHOWN ON THESE PLANS OR NOT. THE CONTRACTOR SHALL VERIFY LOCATIONS WITH THE UTILITY COMPANIES AND/OR CALL THE NORTH CAROLINA ONE-CALL CENTER, INC 1-800-632-4949 NOT LESS THAN 48 HOURS BEFORE STARTING EXCAVATION ACTIVITIES.
- THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES DURING CONSTRUCTION.
- ALL 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".
- NO SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS

RAILROAD OPERATIONS

- THE CONTRACTOR SHALL NOT ENTER ONTO RAILROAD RIGHT OF WAY WITHOUT PERMISSION FROM NCRR AND AN APPOINTED NORFOLK SOUTHERN FLAGMAN ON DUTY.
- THE CONTRACTOR SHALL NOT INTERRUPT THE OPERATIONS OF THE RAILROAD WITHOUT PRIOR APPROVAL OF THE RAILROAD REPRESENTATIVE.

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA RAIL DIVISION

PROJECT REFERENCE NO. 1-2304AE SHEET NO. 1-B

0331DEL_P13

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

Table listing symbols for boundaries and property: State Line, County Line, Township Line, City Line, Reservation Line, Property Line, Existing Iron Pin, Property Corner, Property Monument, Parcel/Sequence Number, Existing Fence Line, Proposed Woven Wire Fence, Proposed Chain Link Fence, Proposed Barbed Wire Fence, Existing Wetland Boundary, Proposed Wetland Boundary, Existing Endangered Animal Boundary, Existing Endangered Plant Boundary, Known Soil Contamination: Area or Site, Potential Soil Contamination: Area or Site.

BUILDINGS AND OTHER CULTURE:

Table listing symbols for buildings and other culture: Gas Pump Vent or U/G Tank Cap, Sign, Well, Small Mine, Foundation, Area Outline, Cemetery, Building, School, Church, Dam.

HYDROLOGY:

Table listing symbols for hydrology: Stream or Body of Water, Hydro, Pool or Reservoir, Jurisdictional Stream, Buffer Zone 1, Buffer Zone 2, Flow Arrow, Disappearing Stream, Spring, Wetland, Proposed Lateral, Tail, Head Ditch, False Sump.

RAILROADS:

Table listing symbols for railroads: Existing Track, Proposed Track, RR Signal Milepost, Switch, RR Abandoned, RR Dismantled.

RIGHT OF WAY:

Table listing symbols for right of way: Baseline Control Point, Existing Right of Way Marker, Existing Right of Way Line, Proposed Right of Way Line, Proposed Right of Way Line with Iron Pin and Cap Marker, Proposed Right of Way Line with Concrete or Granite RW Marker, Proposed Control of Access Line with Concrete CA Marker, Existing Control of Access, Proposed Control of Access, Existing Easement Line, Proposed Temporary Construction Easement, Proposed Temporary Drainage Easement, Proposed Permanent Drainage Easement, Proposed Permanent Drainage / Utility Easement, Proposed Permanent Utility Easement, Proposed Temporary Utility Easement, Proposed Aerial Utility Easement, Proposed Permanent Easement with Iron Pin and Cap Marker.

ROADS AND RELATED FEATURES:

Table listing symbols for roads and related features: Existing Edge of Pavement, Existing Curb, Proposed Slope Stakes Cut, Proposed Slope Stakes Fill, Proposed Curb Ramp, Existing Metal Guardrail, Proposed Guardrail, Existing Cable Guiderail, Proposed Cable Guiderail, Equality Symbol, Pavement Removal, VEGETATION: Single Tree, Single Shrub, Hedge, Woods Line.

Table listing symbols for orchard and vineyard.

EXISTING STRUCTURES:

Table listing symbols for existing structures: MAJOR: Bridge, Tunnel or Box Culvert, Bridge Wing Wall, Head Wall and End Wall; MINOR: Head and End Wall, Pipe Culvert, Footbridge, Drainage Box: Catch Basin, DI or JB, Paved Ditch Gutter, Storm Sewer Manhole, Storm Sewer.

UTILITIES:

Table listing symbols for 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, Recorded U/G Power Line, Designated U/G Power Line (S.U.E.*); TELEPHONE: Existing Telephone Pole, Proposed Telephone Pole, Telephone Manhole, Telephone Booth, Telephone Pedestal, Telephone Cell Tower, U/G Telephone Cable Hand Hole, Recorded U/G Telephone Cable, Designated U/G Telephone Cable (S.U.E.*), Recorded U/G Telephone Conduit, Designated U/G Telephone Conduit (S.U.E.*), Recorded U/G Fiber Optics Cable, Designated U/G Fiber Optics Cable (S.U.E.*).

WATER:

Table listing symbols for water: Water Manhole, Water Meter, Water Valve, Water Hydrant, Recorded U/G Water Line, Designated U/G Water Line (S.U.E.*), Above Ground Water Line.

TV:

Table listing symbols for TV: TV Satellite Dish, TV Pedestal, TV Tower, U/G TV Cable Hand Hole, Recorded U/G TV Cable, Designated U/G TV Cable (S.U.E.*), Recorded U/G Fiber Optic Cable, Designated U/G Fiber Optic Cable (S.U.E.*).

GAS:

Table listing symbols for gas: Gas Valve, Gas Meter, Recorded U/G Gas Line, Designated U/G Gas Line (S.U.E.*), Above Ground Gas Line.

SANITARY SEWER:

Table listing symbols for sanitary sewer: Sanitary Sewer Manhole, Sanitary Sewer Cleanout, U/G Sanitary Sewer Line, Above Ground Sanitary Sewer, Recorded SS Forced Main Line, Designated SS Forced Main Line (S.U.E.*).

MISCELLANEOUS:

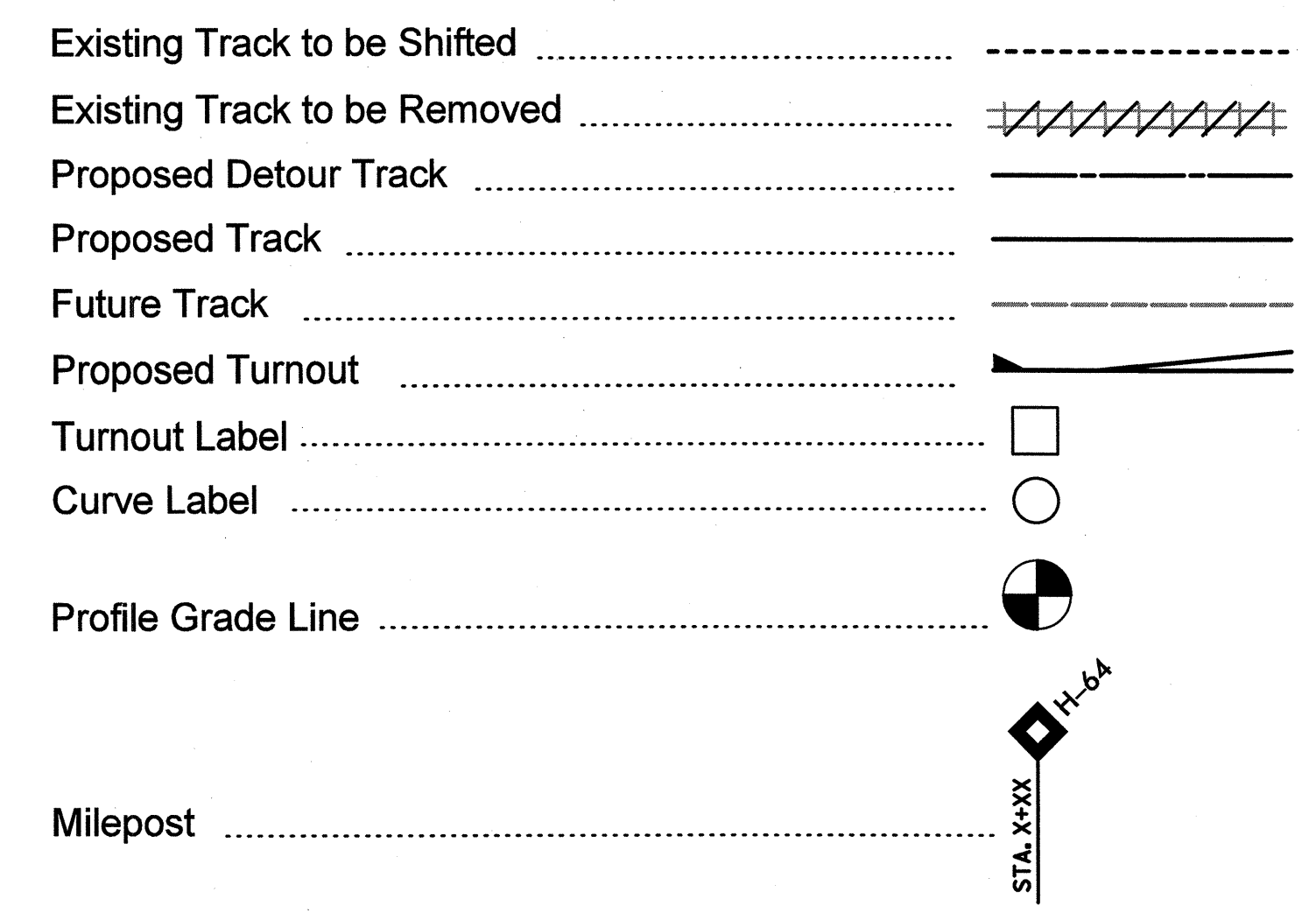
Table listing symbols for miscellaneous: Utility Pole, Utility Pole with Base, Utility Located Object, Utility Traffic Signal Box, Utility Unknown U/G Line, U/G Tank; Water, Gas, Oil, Underground Storage Tank, Approx. Loc., A/G Tank; Water, Gas, Oil, Geoenvironmental Boring, U/G Test Hole (S.U.E.*), Abandoned According to Utility Records, End of Information.

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CONVENTIONAL PLAN SHEET SYMBOLS (cont'd) AND ABBREVIATIONS

RAILROADS:



ABBREVIATIONS:

TRACK ALIGNMENT - HORIZONTAL:

CD	Cant Deficiency
CS	Curve to Spiral
Dc	Degree of Curvature
Ea	Actual Superelevation (Inches)
Eu	Unbalance Elevation (Inches)
I	Curve Intersection Angle
L	Length of Curve
Ls	Length of Spiral
PC	Point of Curvature
PI	Point of Intersection
PI/TO	Point of Intersection / Turnout
POL	Point on Line
PS	Point of Switch
PT	Point of Tangent
R	Radius
SC	Spiral to Curve
ST	Spiral to Tangent
TO	Turnout
TS	Tangent to Spiral
X	Spiral Tangent Length to Offset
Y	Spiral Tangent Offset

TRACK ALIGNMENT - VERTICAL:

EL	Elevation
L	Vertical Curve Length
R	Rate of Change
T/R	Top of Rail
VPC	Vertical Point of Curve
VPI	Vertical Point of Intersection
VPT	Vertical Point of Tangent

ROAD ALIGNMENT - HORIZONTAL

PINC	Point of Intersection No Curve
POT	Point on Tangent
POC	Point on Curve
POS	Point on Spiral

DRAINAGE:

CIP	Cast Iron Pipe
BCCMP	Bituminous Coated Corrugated Metal Pipe
INV	Invert
RCB	Reinforced Concrete Box Culvert
RCP	Reinforced Concrete Pipe
SCP	Steel Casing Pipe
STB	Stone Box Culvert
SYFF	Square Yards Filter Fabric
WSP	Welded Steel Pipe

MISCELLANEOUS:

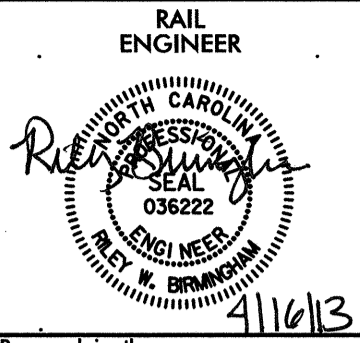
ABS	Absolute
AVE	Avenue
AH	Ahead
BK	Back
B	Baseline
BLDG	Building
BLVD	Boulevard
CB	Catch Basin
CL	Centerline
CLR	Clear
CONC	Concrete
DWG	Drawing
E	East
EL	Elevation
ESMT	Easement
EXIST	Existing
EB	East Bound
FT	Feet
FND	Foundation
GRD	Ground
HW	Headwall
HORIZ	Horizontal
LT	Left
LH	Lefthand
MIN	Minimum
MOW	Maintenance of Way
MP	Milepost
MPH	Miles Per Hour
N	North
N/A	Not Applicable
NB	North Bound
NO	Number
NCR	North Carolina Railroad
NS	Norfolk Southern Railway
PAVT	Pavement
PGL	Profile Grade Line
PROP	Proposed
RD	Road
RT	Right
RR	Railroad
RH	Righthand
R/W	Right-of-Way
REQ'D	Required
S	South
SEG	Segment
STA	Station
SR	State Route
SHLDR	Shoulder
SHT	Sheet
SWM	Storm Water Management
TRK	Track
V	Velocity (MPH)
VERT	Vertical
W	West
W/	With
WB	West Bound

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NOTES

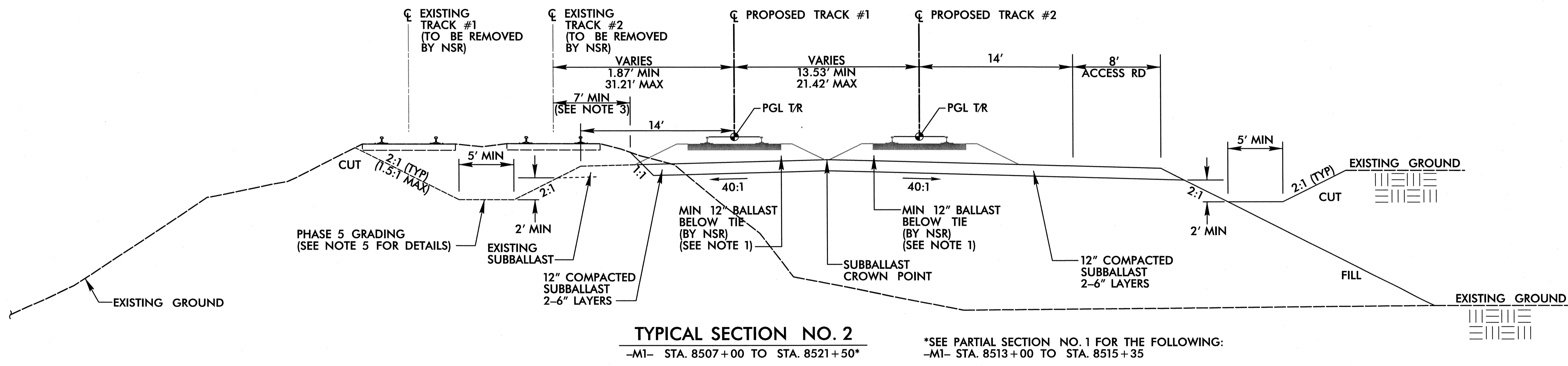
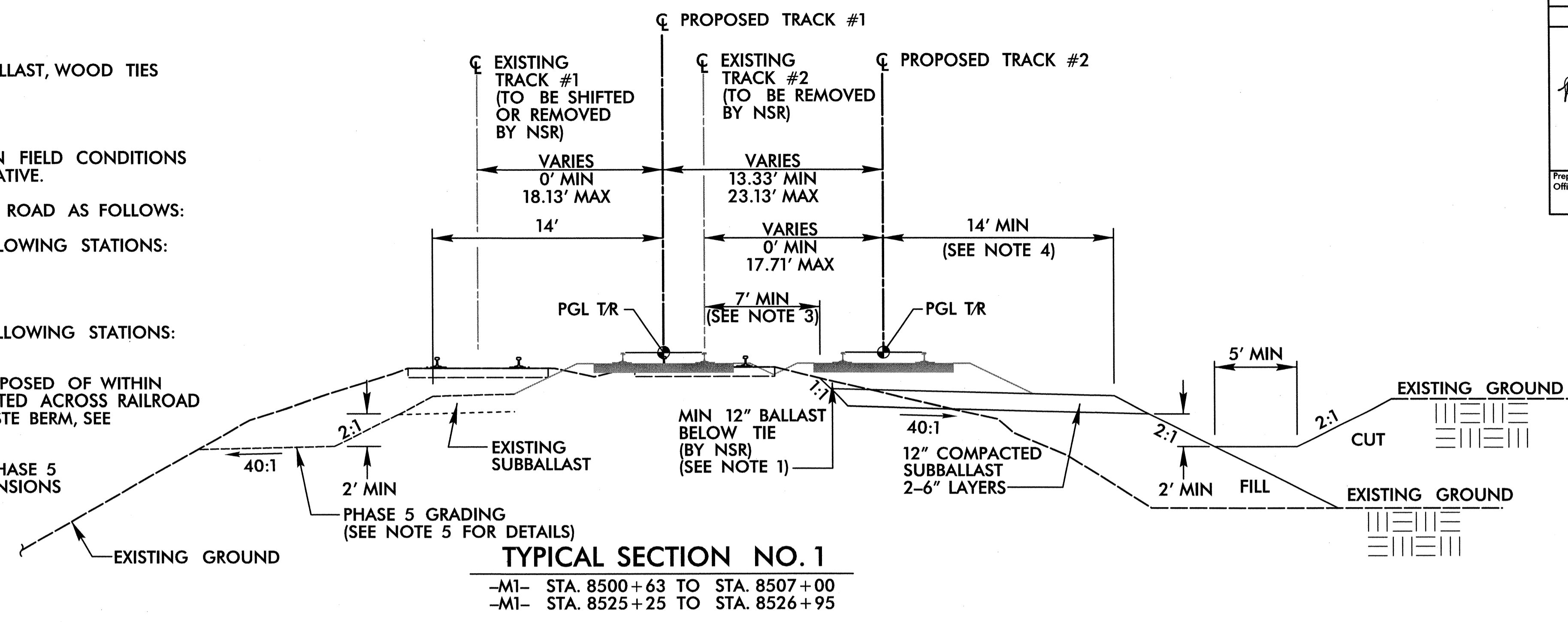
1. TRACK CONSTRUCTION, INCLUDING INSTALLATION OF BALLAST, WOOD TIES AND 136 RE RAIL, BY NSR.
2. TOP OF SUB-GRADE IS TO BE CROWNED.
3. ACTUAL LOCATION OF EXCAVATION IS TO BE BASED ON FIELD CONDITIONS AS DETERMINED BY THE NORFOLK SOUTHERN REPRESENTATIVE.
4. ADDITIONAL ROADBED WIDTH IS PROPOSED FOR ACCESS ROAD AS FOLLOWS:
 22' ROADBED, INCLUDING 8' ACCESS ROAD FOR THE FOLLOWING STATIONS:
 -M1- STA 8503+05 TO STA 8505+00
 -M1- STA 8505+30 TO STA 8507+00
 -M1- STA 8525+25 TO STA 8526+60

 27' ROADBED, INCLUDING 13' ACCESS ROAD FOR THE FOLLOWING STATIONS:
 -M1- STA 8505+00 TO STA 8505+30
5. WASTE MATERIAL FROM PHASE 5 GRADING IS TO BE DISPOSED OF WITHIN RAILROAD RIGHT OF WAY AND SHALL NOT BE TRANSPORTED ACROSS RAILROAD TRACKS. FOR APPROXIMATE LOCATION AND SIZE OF WASTE BERM, SEE "WASTE MATERIAL BERM DETAIL" BELOW.
6. WASTE MATERIAL BERM IS TO BE CONSTRUCTED WITH PHASE 5 GRADING WASTE MATERIAL ONLY. LOCATION AND DIMENSIONS ARE APPROXIMATE.

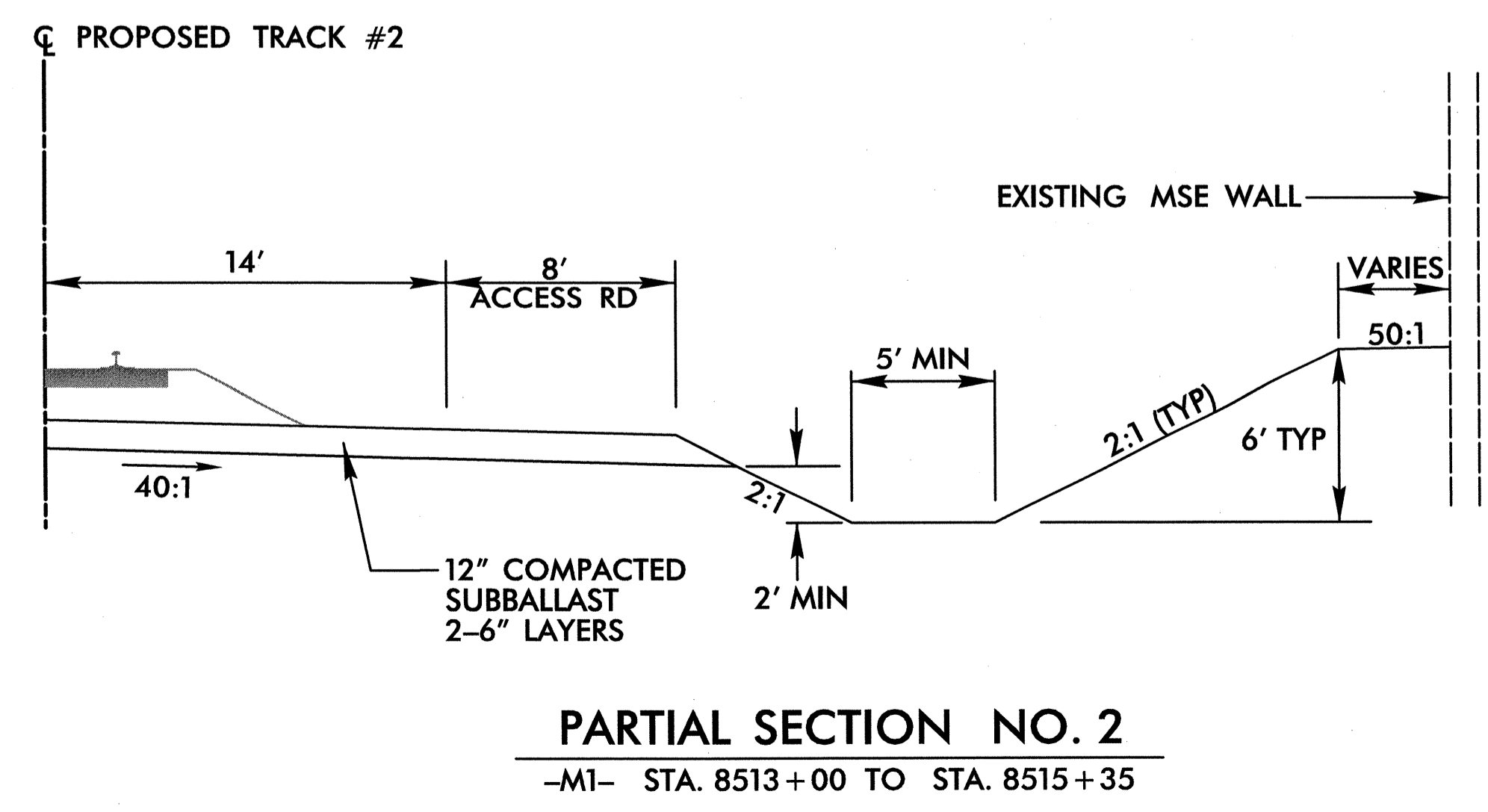
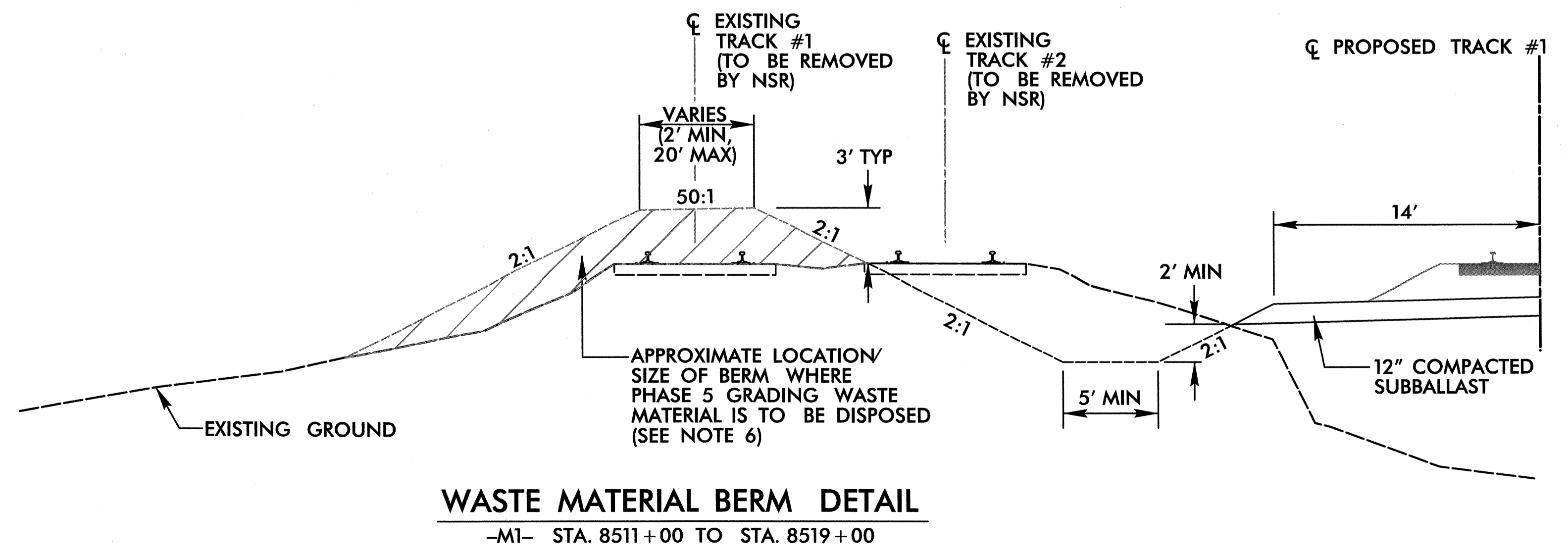
PROJECT REFERENCE NO.	SHEET NO.
I-2304AE	2
RW SHEET NO.	
RAIL ENGINEER	
	
Prepared in the Office of: AECOM	
<small>NC FIRM LICENSE No. F-0342 701 Corporate Center Drive, Suite 475 Raleigh, NC 27607 (919) 854-2200 • (919) 854-2250(FAX)</small>	

LEGEND

- TRACKWORK BY NSR
- PHASE 1 GRADING
- PHASE 5 GRADING
- WASTE MATERIAL



*SEE PARTIAL SECTION NO. 1 FOR THE FOLLOWING:
 -M1- STA. 8513+00 TO STA. 8515+35



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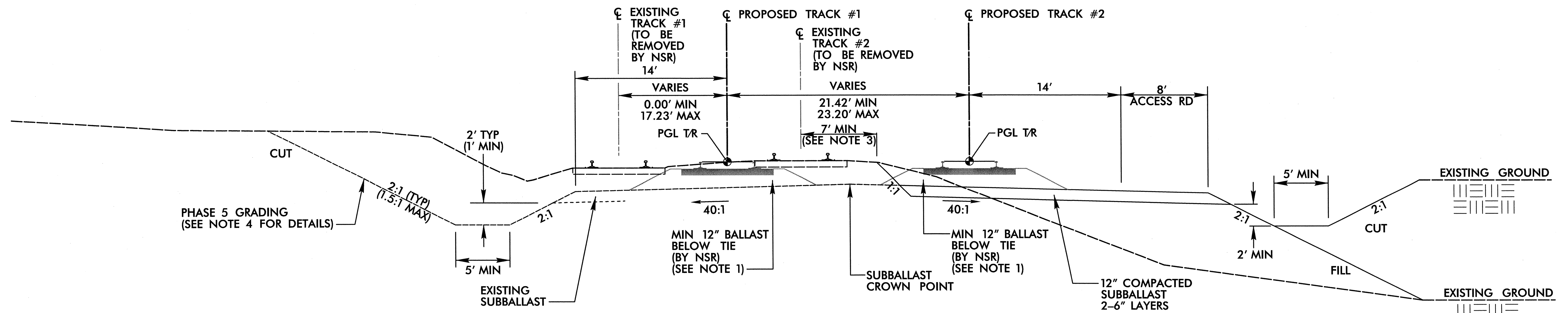
0331DEL_P13

NOTES

1. TRACK CONSTRUCTION, INCLUDING INSTALLATION OF BALLAST, WOOD TIES AND 136 RE RAIL, NOT IN CONTRACT.
2. TOP OF SUB-GRADE IS TO BE CROWNED.
3. ACTUAL LOCATION OF EXCAVATION IS TO BE BASED ON FIELD CONDITIONS AS DETERMINED BY THE NORFOLK SOUTHERN REPRESENTATIVE.
4. WASTE MATERIAL FROM PHASE 5 GRADING IS TO BE DISPOSED OF WITHIN RAILROAD RIGHT OF WAY AND SHALL NOT BE TRANSPORTED ACROSS RAILROAD TRACKS. FOR APPROXIMATE LOCATION AND SIZE OF WASTE BERM, SEE "WASTE MATERIAL BERM DETAIL" ON SHEET 2.

PROJECT REFERENCE NO. I-2304AE	SHEET NO. 2-A
RW SHEET NO.	
RAIL ENGINEER	
Prepared in the Office of: AECOM	
<small>NC FIRM LICENSE No. F-0342 Tol Corporate Center, Suite 475 Raleigh, NC 27607 (919) 854-6200 • (919) 854-6259 FAX</small>	

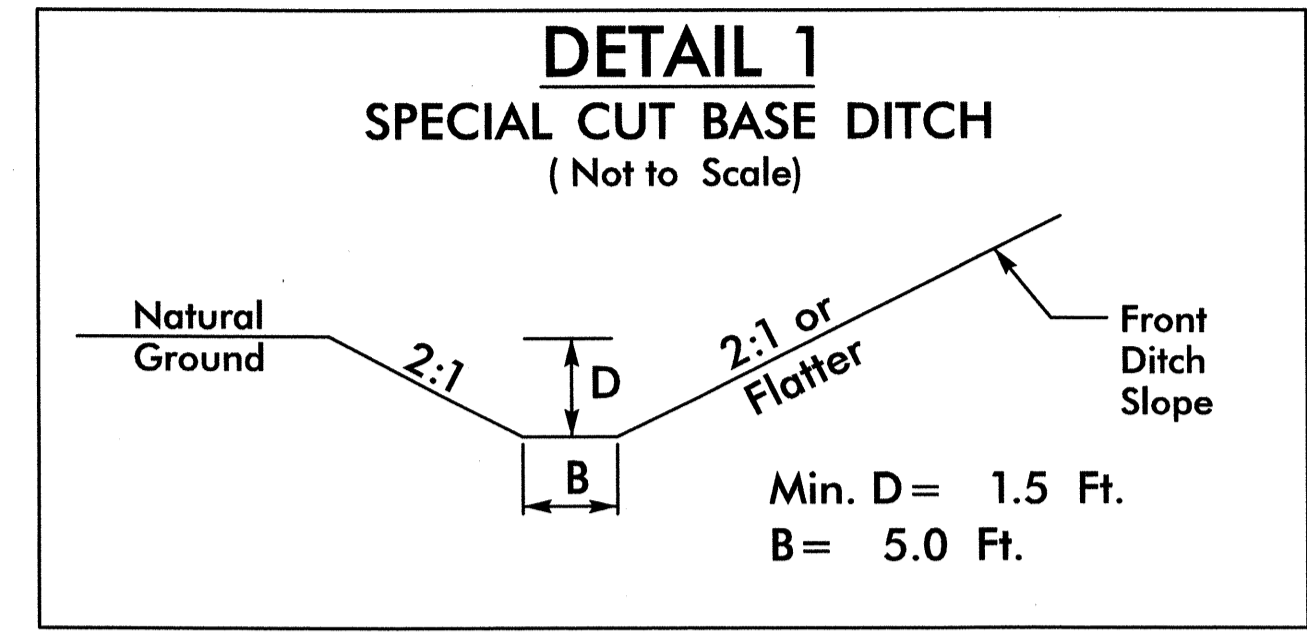
LEGEND	
	TRACKWORK BY NSR
	PHASE 1 GRADING
	PHASE 5 GRADING



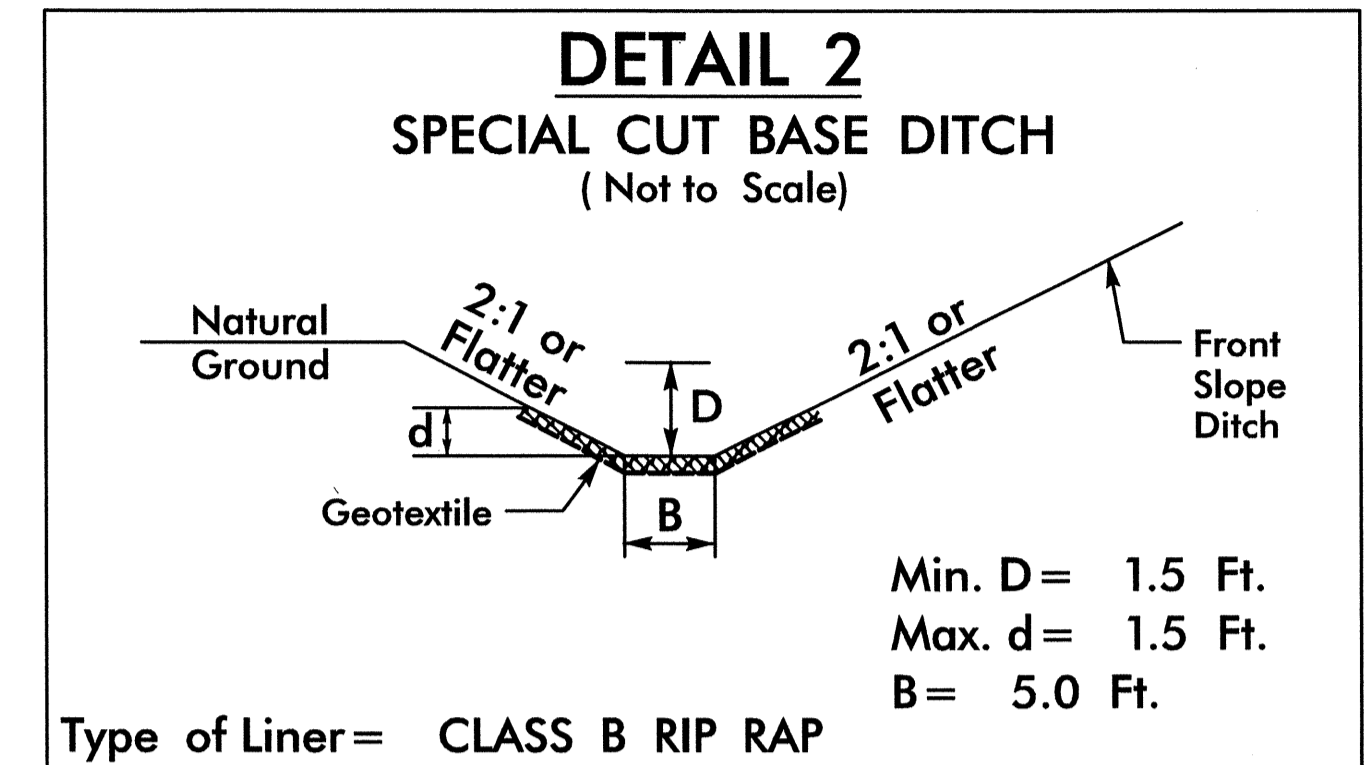
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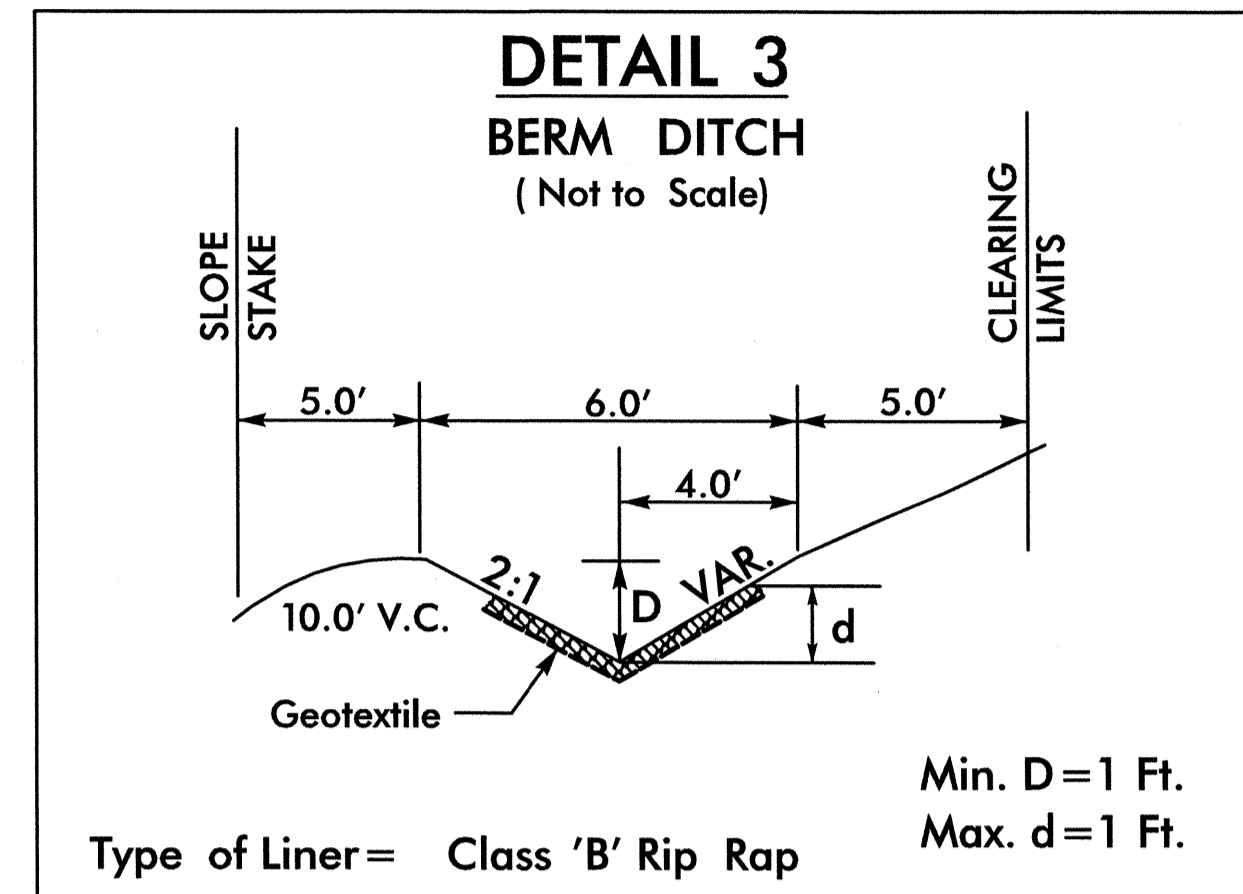


FROM STA 8514+00 TO STA 8526+00 -M1- RT
FROM STA 8517+00 TO STA 8524+00 -M1- LT

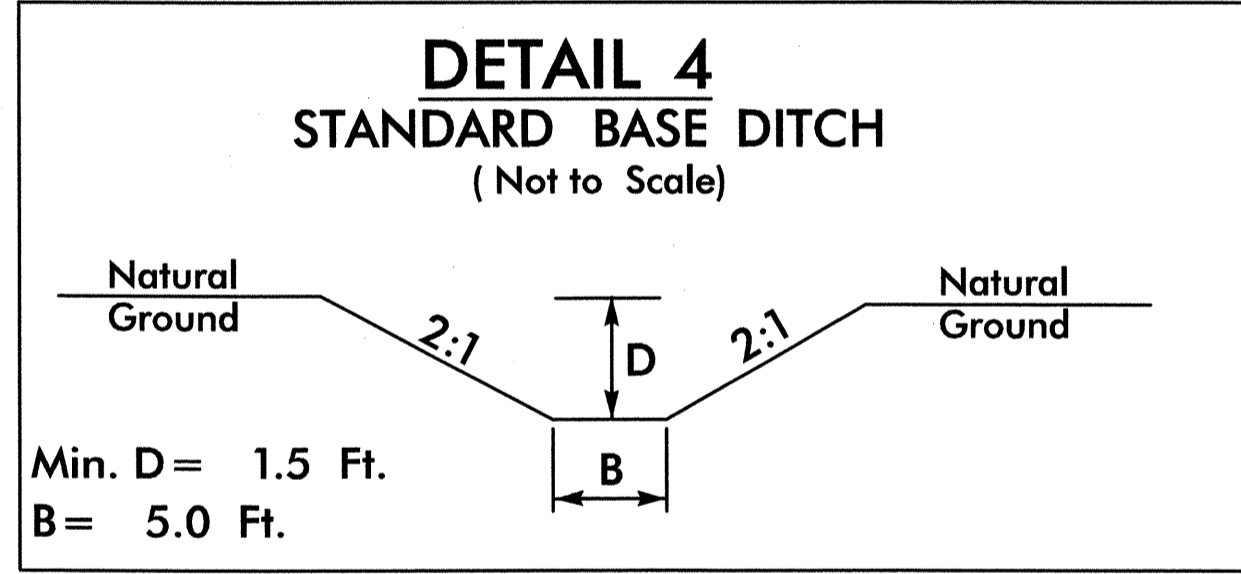


FROM STA 8506+00 TO STA 8509+00 -M1- RT
FROM STA 8510+00 TO STA 8514+00 -M1- RT

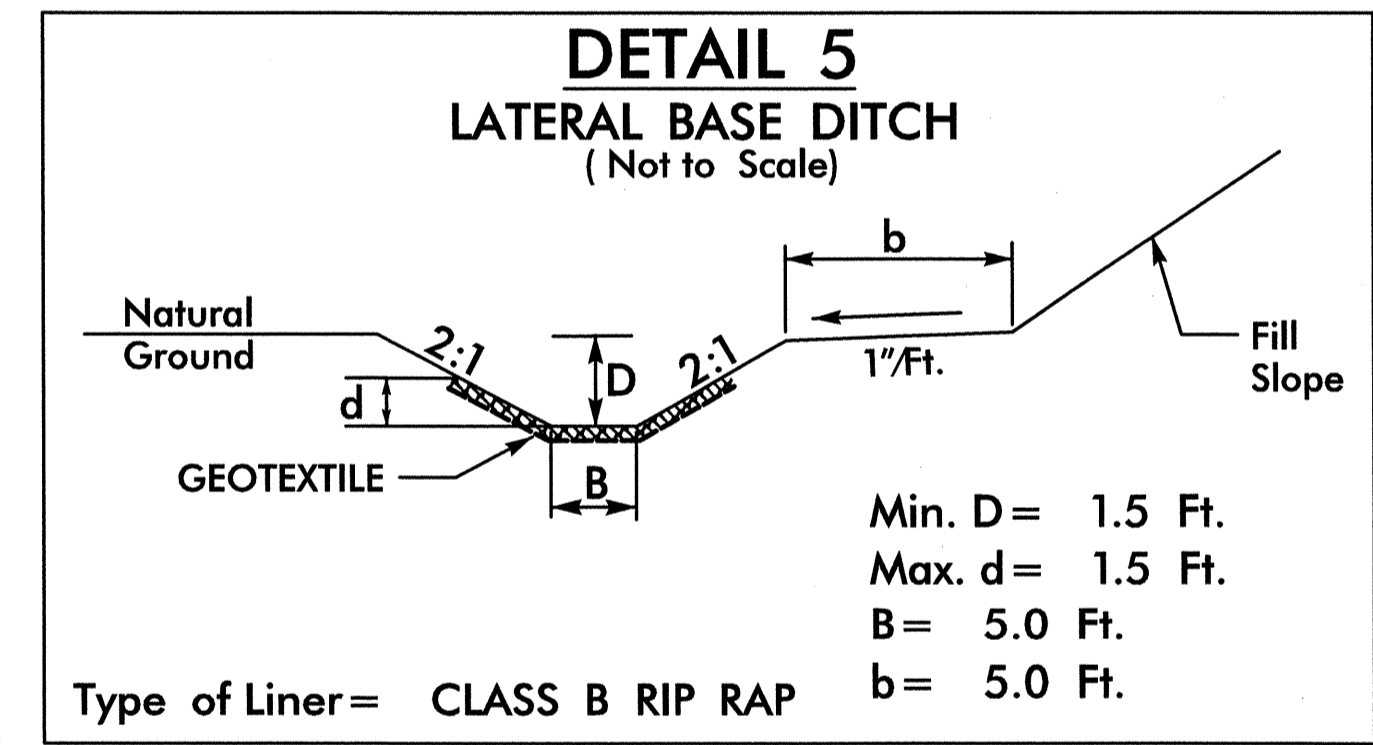
*FROM STA 8512+00 TO STA 8513+00 USE VARIABLE BACKSLOPE TO TIE TO EXISTING FILL SLOPE FROM I-85.



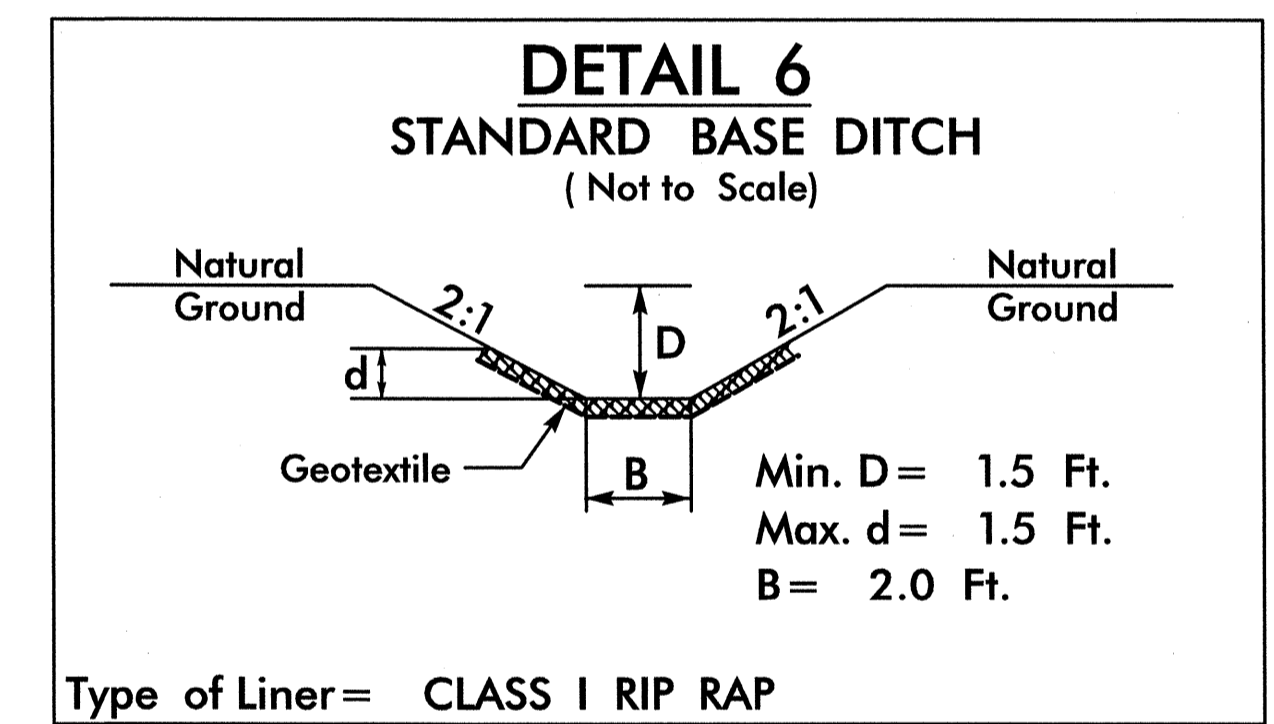
FROM STA 8516+00 TO STA 8520+00 RT.



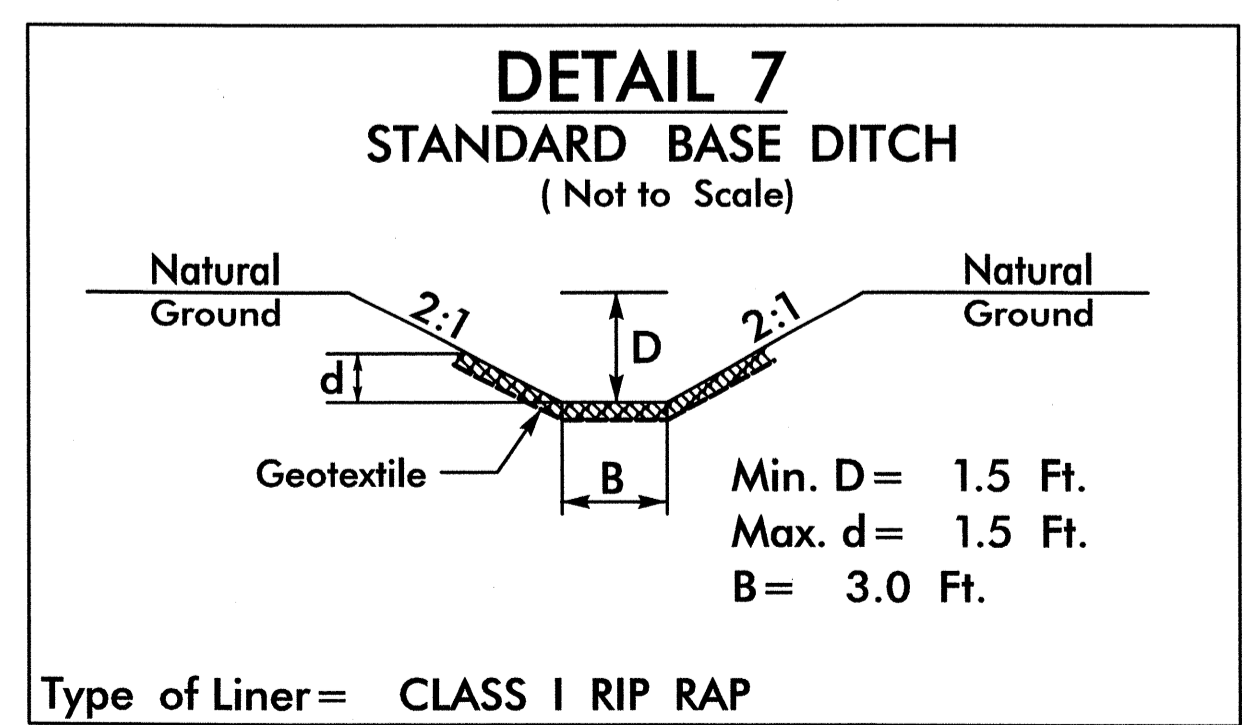
STA 8503+43 -M1- RT
STA 8503+70 -M1- LT
STA 8512+37 -M1- LT



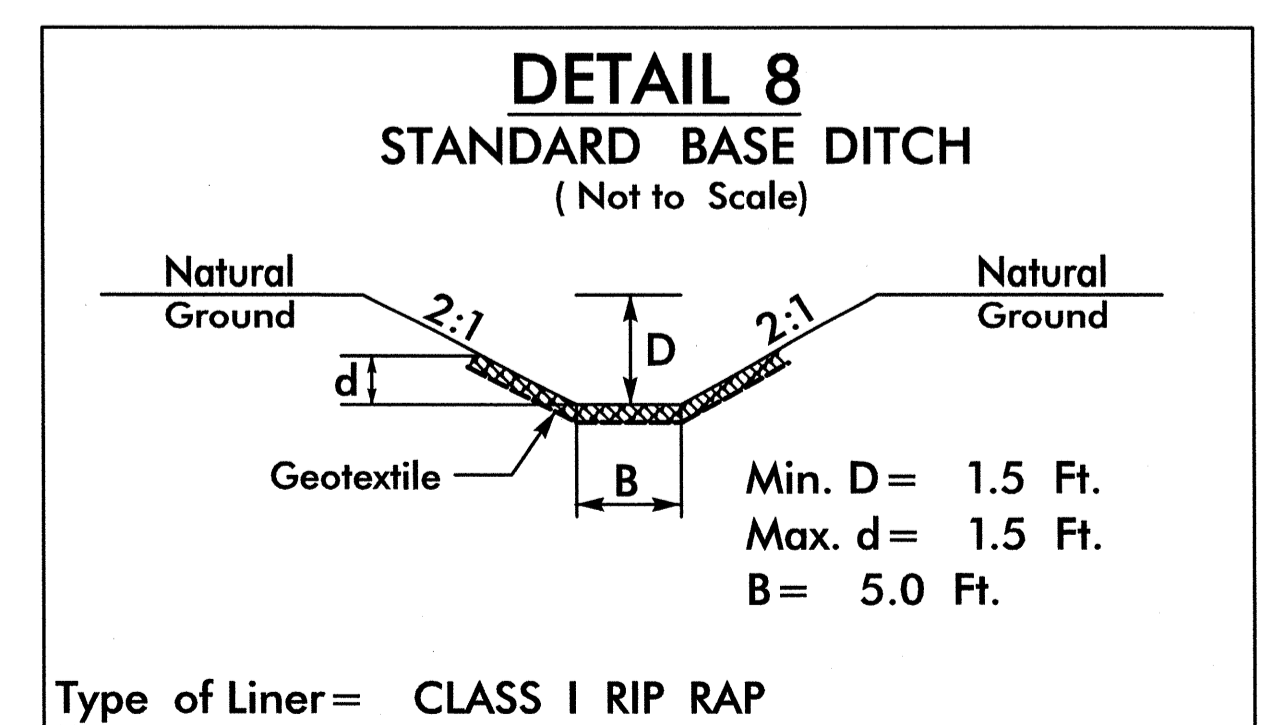
FROM STA 8503+45 TO STA 8506+00 -M1- RT



STA 8516+00 -M1- RT



STA 8512+00 -M1- RT



FROM STA 8503+70 TO STA 8507+00 -M1- LT

HORIZONTAL CURVE GEOMETRY

0331DEL_P13

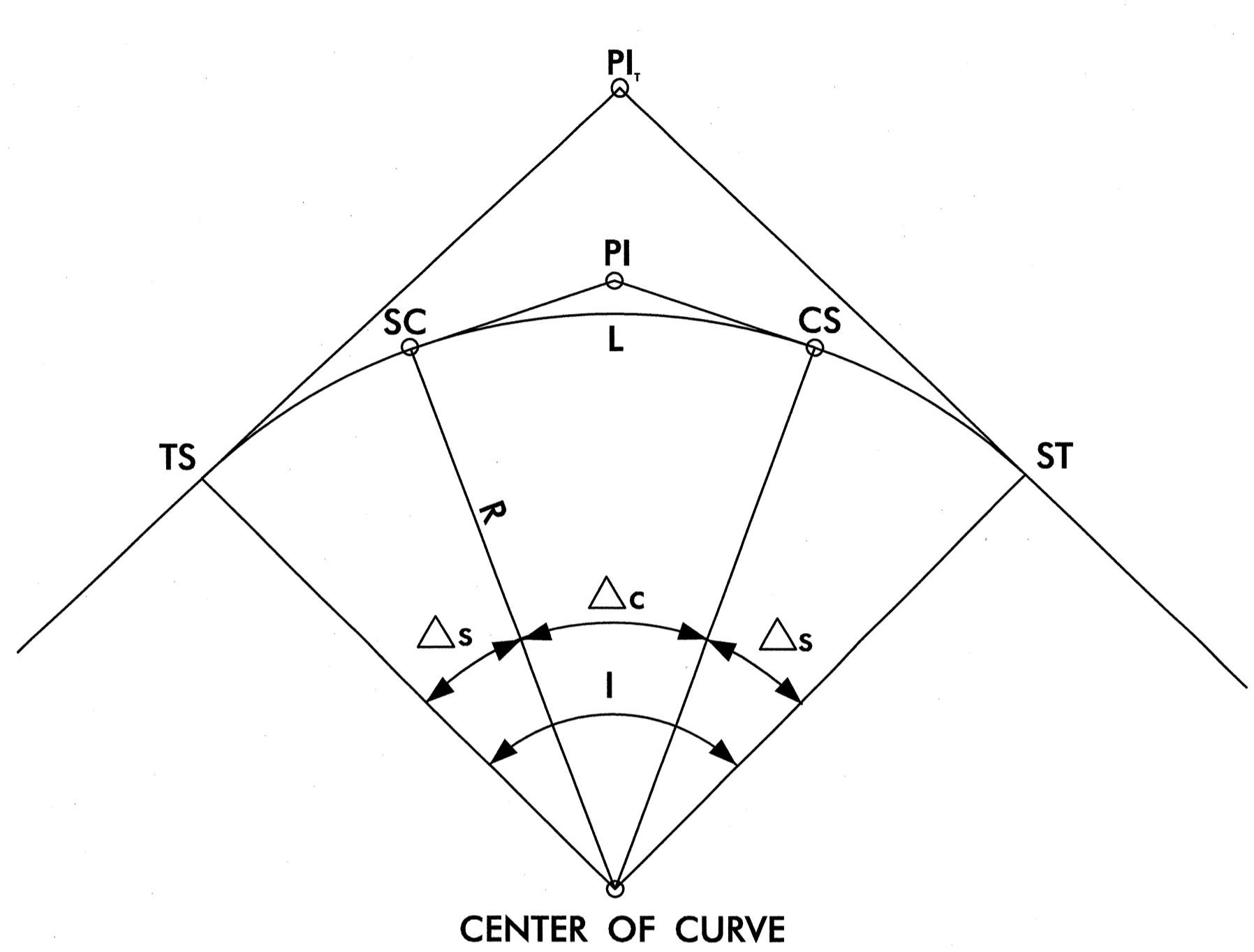


FIGURE A
CIRCULAR CURVE WITH SPIRAL TRANSITION CURVES

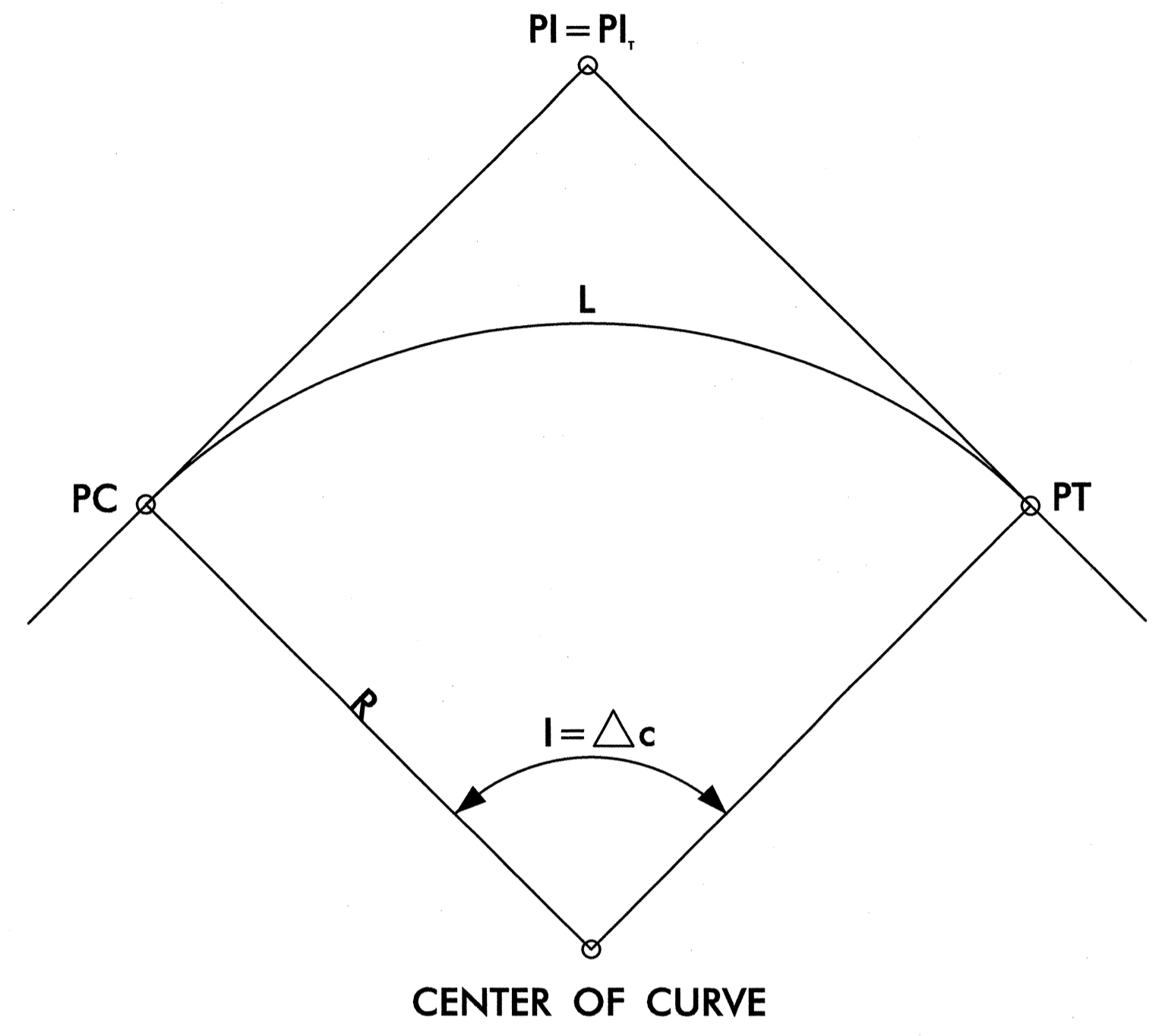


FIGURE B
SIMPLE CIRCULAR CURVE

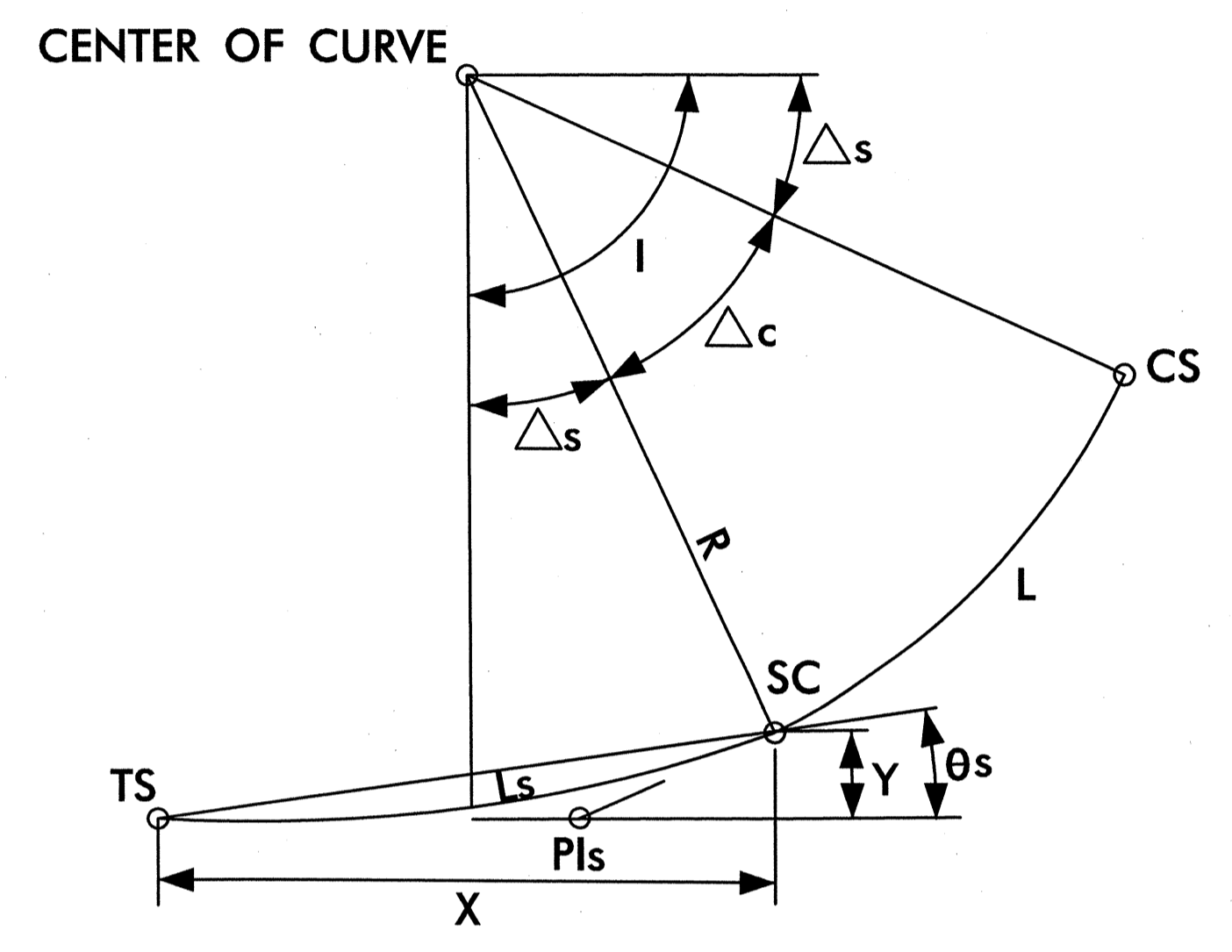
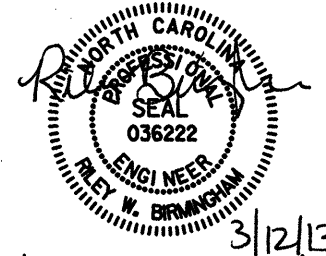


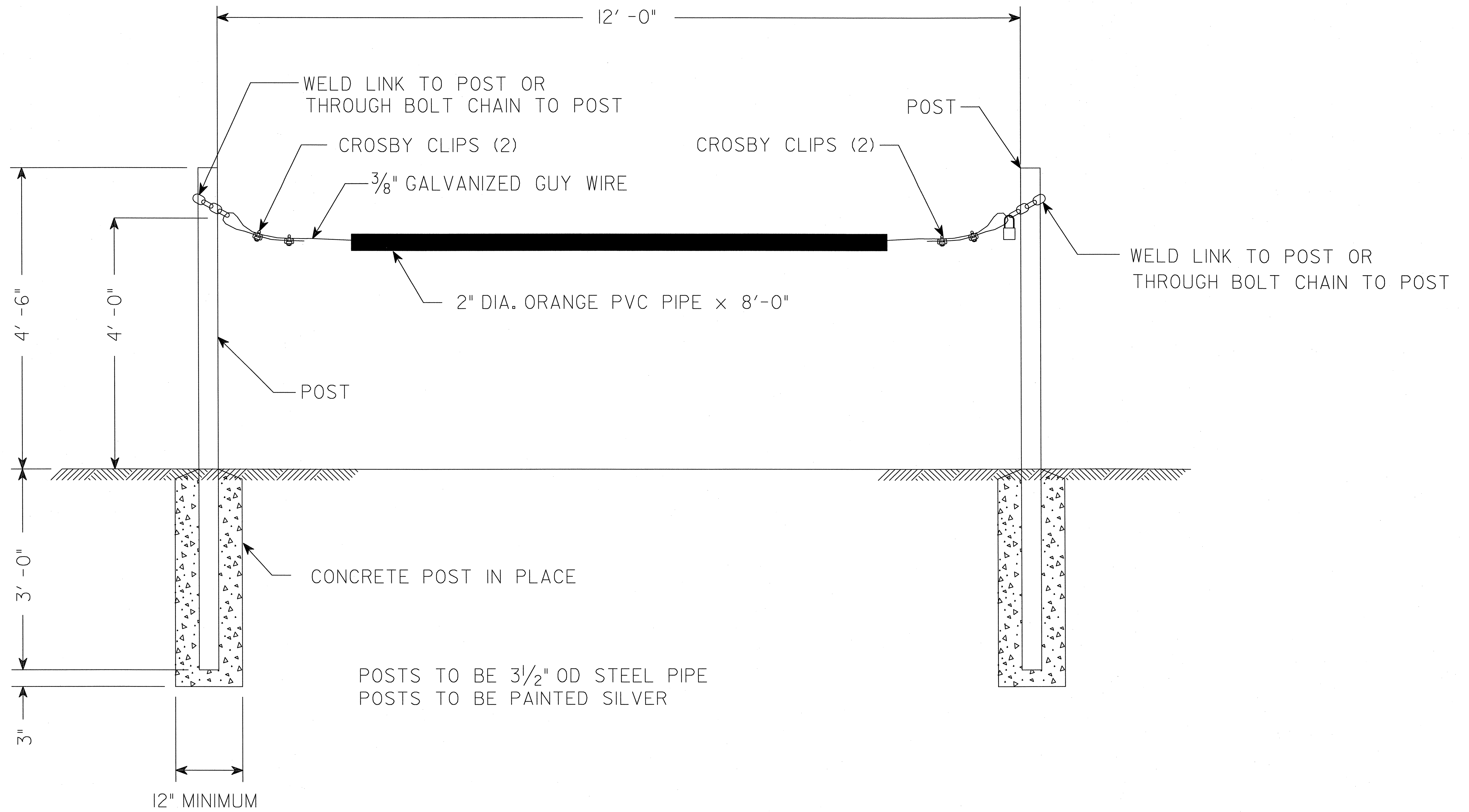
FIGURE C
SPIRAL TRANSITION CURVE

- | | | | |
|----------------|-------------------------------------|-----------------|--|
| R | RADIUS OF CURVATURE | PI | POINT OF INTERSECTION (CIRCULAR CURVE) |
| Dc | DEGREE OF CURVATURE (CHORD DEFINED) | PI _t | POINT OF INTERSECTION (TANGENT) |
| L | LENGTH OF CURVE (CHORD DEFINED) | PI _s | POINT OF INTERSECTION (SPIRAL) |
| I | TOTAL INTERSECTION ANGLE | PC | TANGENT TO CIRCULAR CURVE |
| Δ _c | CURVE ANGLE | PT | CIRCULAR CURVE TO TANGENT |
| Δ _s | SPIRAL ANGLE | TS | TANGENT TO SPIRAL |
| θ _s | SPIRAL DEFLECTION | SC | SPIRAL TO CIRCULAR CURVE |
| L _s | LENGTH OF SPIRAL | CS | CIRCULAR CURVE TO SPIRAL |
| X | SPIRAL TANGENT LENGTH TO OFFSET | ST | SPIRAL TO TANGENT |
| Y | SPIRAL TANGENT OFFSET | PINC | POINT OF INTERSECTION NO CURVE |

0331DEL_P13

PROJECT REFERENCE NO.	SHEET NO.
I-2304AE	2-E
RAW SHEET NO.	
RAIL ENGINEER	HYDRAULICS
	
Prepared in the Office of: AECOM	
NC FIRM LICENSE No. F-0342 701 CORPORATE CENTER, FIFTH FLOOR, SUITE 475 1901 BSA BLVD., RALEIGH, NC 27601	

RIGHT OF WAY GATE DETAIL



USER: wmfml
DATE: 3/12/2013
TIME: 3:58:35 PM
JOB: RAIL/STATE/NC/0331-2304AE-RL-DT04dgn

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C203210

ItemNumber	Sec #	Quantity	Unit	Description
000100000-N	800	Lump Sum		MOBILIZATION
000400000-N	801	Lump Sum		CONSTRUCTION SURVEYING
004300000-N	226	Lump Sum		GRADING
005000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB-BING
005700000-E	226	600	CY	UNDERCUT EXCAVATION
013400000-E	240	1,350	CY	DRAINAGE DITCH EXCAVATION
014100000-E	240	400	LF	BERM DITCH CONSTRUCTION
024800000-N	SP	Lump Sum		GENERIC GRADING ITEM EXISTING BRIDGE BENT AND FOOTING REMOVAL
031800000-E	300	40	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES
032000000-E	300	120	SY	FOUNDATION CONDITIONING GEOTEXTILE
044830000-E	310	40	LF	18" RC PIPE CULVERTS, CLASS IV
057600000-E	310	44	LF	*** CS PIPE CULVERTS, ***** THICK (36", 0.079")
063600000-E	310	2	EA	*** CS PIPE ELBOWS, ***** THICK (36", 0.079")
098600000-E	SP	20	LF	GENERIC PIPE ITEM 18" WELDED STEEL PIPE, 0.5" THICK, GRADE B IN SOIL
098600000-E	SP	20	LF	GENERIC PIPE ITEM 18" WELDED STEEL PIPE, 0.5" THICK, GRADE B NOT IN SOIL
098600000-E	SP	36	LF	GENERIC PIPE ITEM 42" WELDED STEEL PIPE, 0.625" THICK, GRADE B IN SOIL
098600000-E	SP	36	LF	GENERIC PIPE ITEM 42" WELDED STEEL PIPE, 0.625" THICK, GRADE B NOT IN SOIL
098600000-E	SP	72	LF	GENERIC PIPE ITEM 42" WELDED STEEL PIPE, 0.625" THICK, GRADE B OPEN CUT
098600000-E	SP	44	LF	GENERIC PIPE ITEM 66" WELDED STEEL PIPE, 0.875" THICK, GRADE B IN SOIL

SUMMARY OF QUANTITIES - I-2304AE

ItemNumber	Sec #	Quantity	Unit	Description
098600000-E	SP	44	LF	GENERIC PIPE ITEM 66" WELDED STEEL PIPE, 0.875" THICK, GRADE B NOT IN SOIL
098600000-E	SP	31	LF	GENERIC PIPE ITEM 66" WELDED STEEL PIPE, 0.875" THICK, GRADE B OPEN CUT
099500000-E	340	228	LF	PIPE REMOVAL
220900000-E	838	12.4	CY	ENDWALLS
222000000-E	838	13.2	CY	REINFORCED ENDWALLS
227500000-E	SP	67	CY	FLOWABLE FILL
228600000-N	840	1	EA	MASONRY DRAINAGE STRUCTURES
239600000-N	840	1	EA	FRAME WITH COVER, STD 840.54
357800000-N	SP	1	EA	GENERIC FENCING ITEM RIGHT OF WAY GATE
362800000-E	876	170	TON	RIP RAP, CLASS I
364900000-E	876	830	TON	RIP RAP, CLASS B
365600000-E	876	3,400	SY	GEOTEXTILE FOR DRAINAGE
388500000-E	SP	6,265	TON	GENERIC TRACKWORK ITEM SUB-BALLAST
440500000-E	1110	32	SF	WORK ZONE SIGNS (PORTABLE)
600000000-E	1605	1,800	LF	TEMPORARY SILT FENCE
600600000-E	1610	140	TON	STONE FOR EROSION CONTROL, CLASS A
600900000-E	1610	480	TON	STONE FOR EROSION CONTROL, CLASS B
601200000-E	1610	210	TON	SEDIMENT CONTROL STONE
601500000-E	1615	12.5	ACR	TEMPORARY MULCHING
601800000-E	1620	450	LB	SEED FOR TEMPORARY SEEDING
602100000-E	1620	2.75	TON	FERTILIZER FOR TEMPORARY SEEDING
602400000-E	1622	450	LF	TEMPORARY SLOPE DRAINS
602900000-E	SP	100	LF	SAFETY FENCE
603000000-E	1630	800	CY	SILT EXCAVATION
603600000-E	1631	7,135	SY	MATting FOR EROSION CONTROL

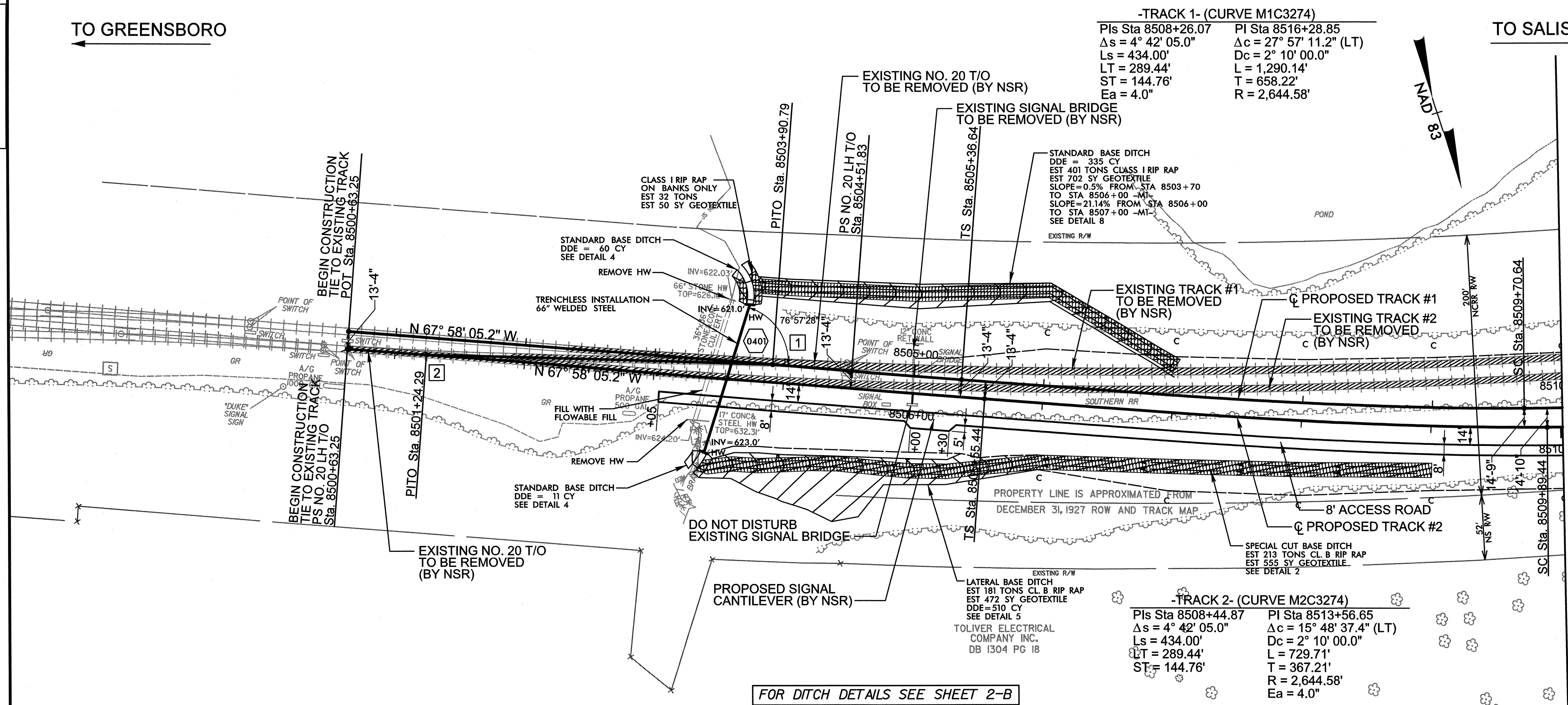
ItemNumber	Sec #	Quantity	Unit	Description
603700000-E	SP	10	SY	COIR FIBER MAT
607101000-E	SP	300	LF	WATTLE
607101200-E	SP	1,100	LF	COIR FIBER WATTLE
607102000-E	SP	100	LB	POLYACRYLAMIDE (PAM)
607103000-E	1640	250	LF	COIR FIBER BAFFLE
607105000-E	SP	1	EA	*** SKIMMER (1-1/2")
608400000-E	1660	15	ACR	SEEDING & MULCHING
608700000-E	1660	9	ACR	MOWING
609000000-E	1661	150	LB	SEED FOR REPAIR SEEDING
609300000-E	1661	0.5	TON	FERTILIZER FOR REPAIR SEEDING
609600000-E	1662	350	LB	SEED FOR SUPPLEMENTAL SEEDING
610800000-E	1665	10.25	TON	FERTILIZER TOPDRESSING
611100000-E	SP	50	LF	IMPERVIOUS DIKE
611450000-N	1667	30	MHR	SPECIALIZED HAND MOWING
611700000-N	SP	19	EA	RESPONSE FOR EROSION CONTROL
613200000-N	SP	5	EA	GENERIC EROSION CONTROL ITEM SUPPLEMENTAL RESPONSE FOR EROSION CONTROL

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TO GREENSBORO

TO SALISBURY

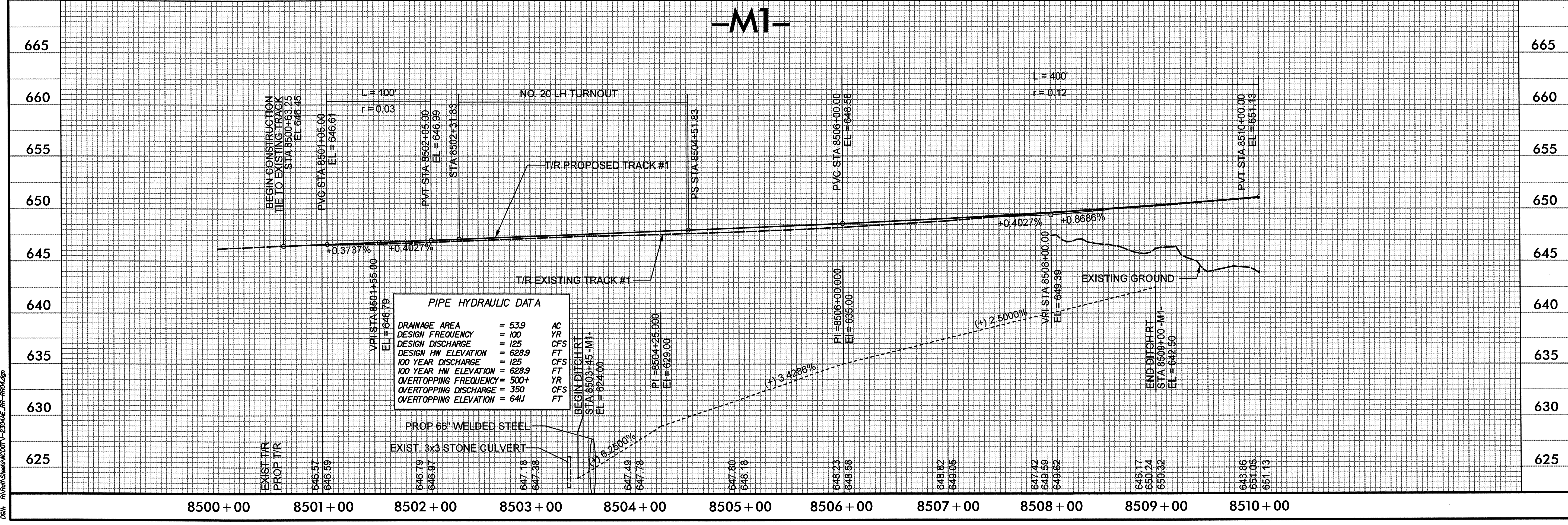
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Prepared in the Office of: AECOM	
NC FIRM LICENSE No F-0342 701 Corporate Center Drive, Suite 475 Raleigh, NC 27603 (919) 854-6200 • (919) 854-6259 FAX	



FOR DITCH DETAILS SEE SHEET 2-B

MATCHLINE -M1- STA. 8510+00.00 SEE PLAN SHEET 5

-M1-



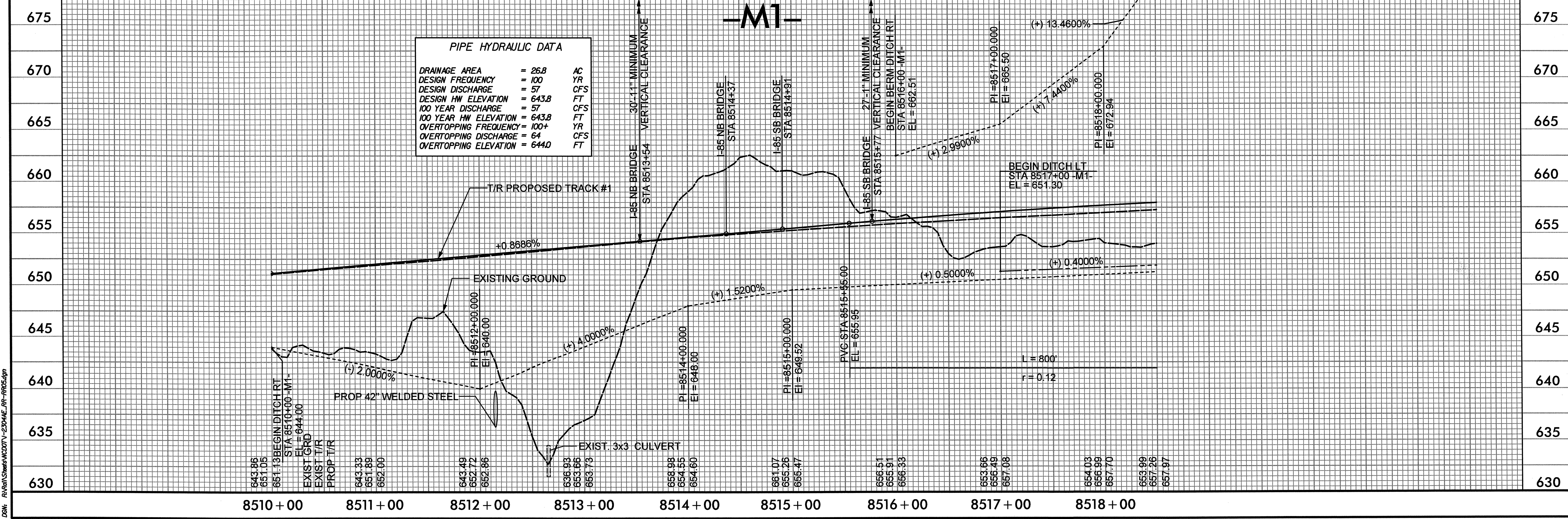
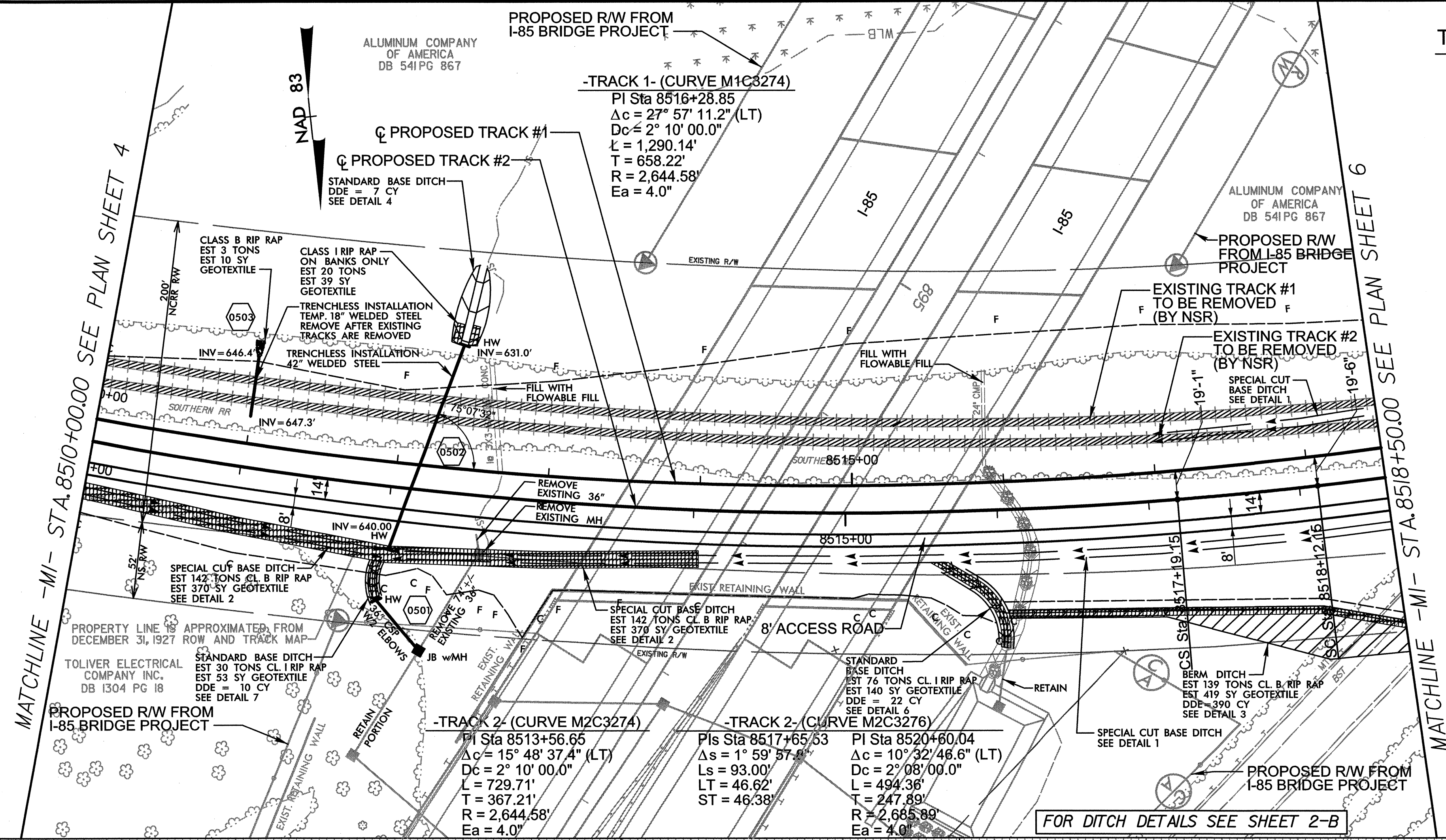
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PROJECT REFERENCE NO. I-2304AE		SHEET NO. 5	
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Prepared in the Office of:		NC FIRM LICENSE No. F-0342 701 Corporate Center Drive, Suite 415 Raleigh, NC 27601 (919) 854-8200 • (919) 854-8299(FAX)	



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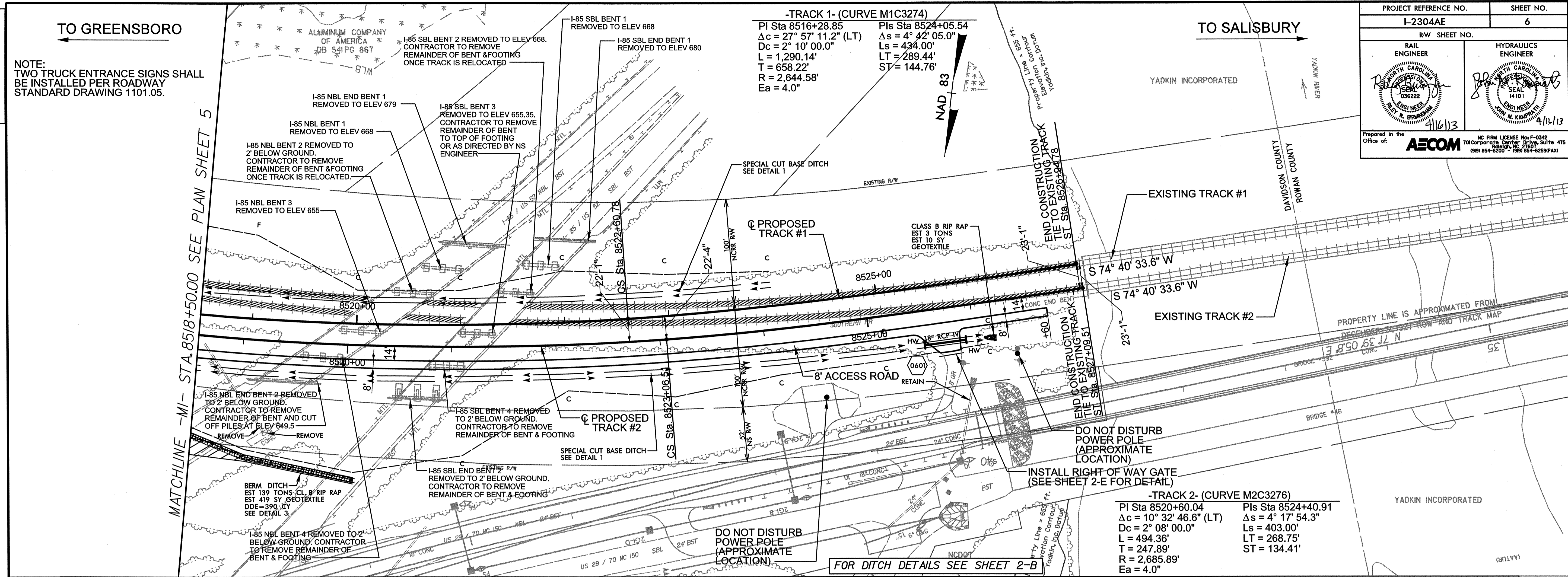
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TO SALISBURY

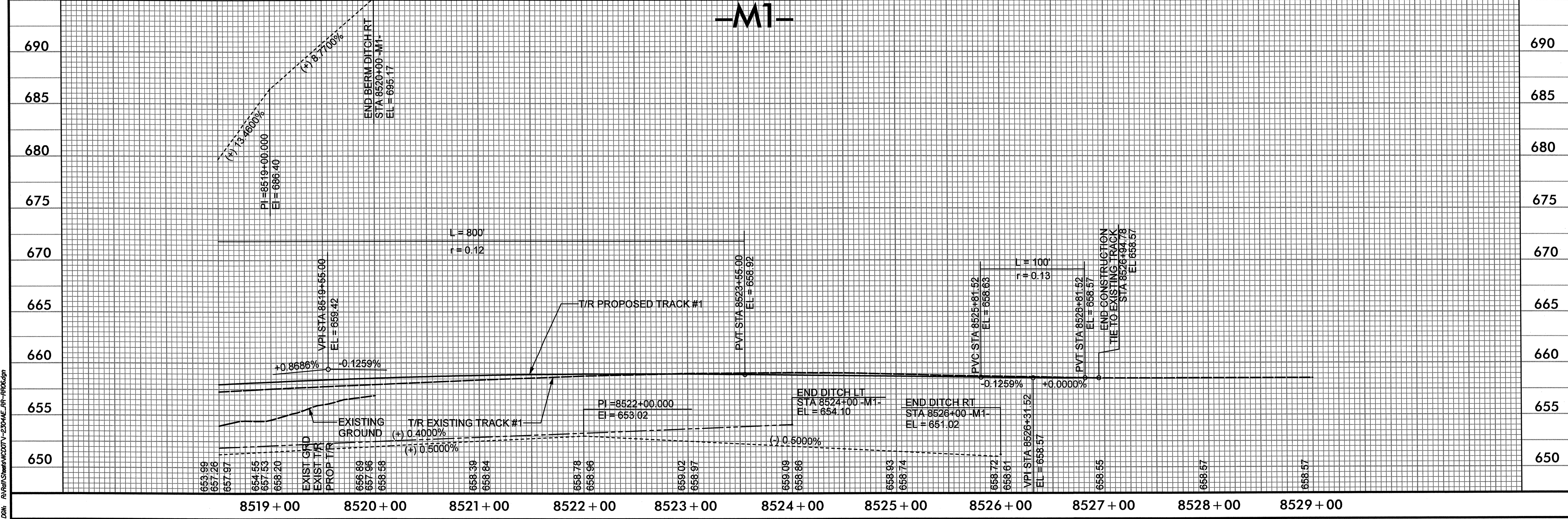
NOTE: TWO TRUCK ENTRANCE SIGNS SHALL BE INSTALLED PER ROADWAY STANDARD DRAWING 1101.05.

PROJECT REFERENCE NO. I-2304AE	SHEET NO. 6
RW SHEET NO.	
RAIL ENGINEER 	HYDRAULICS ENGINEER
Prepared in the Office of: AECOM	
NC FIRM LICENSE No. F-0342 701 Corporate Center Drive, Suite 475 Raleigh, NC 27603 (919) 854-6200 • (919) 854-6299(FAX)	

MATCHLINE -M1- STA. 8518+50.00 SEE PLAN SHEET 5



-M1-

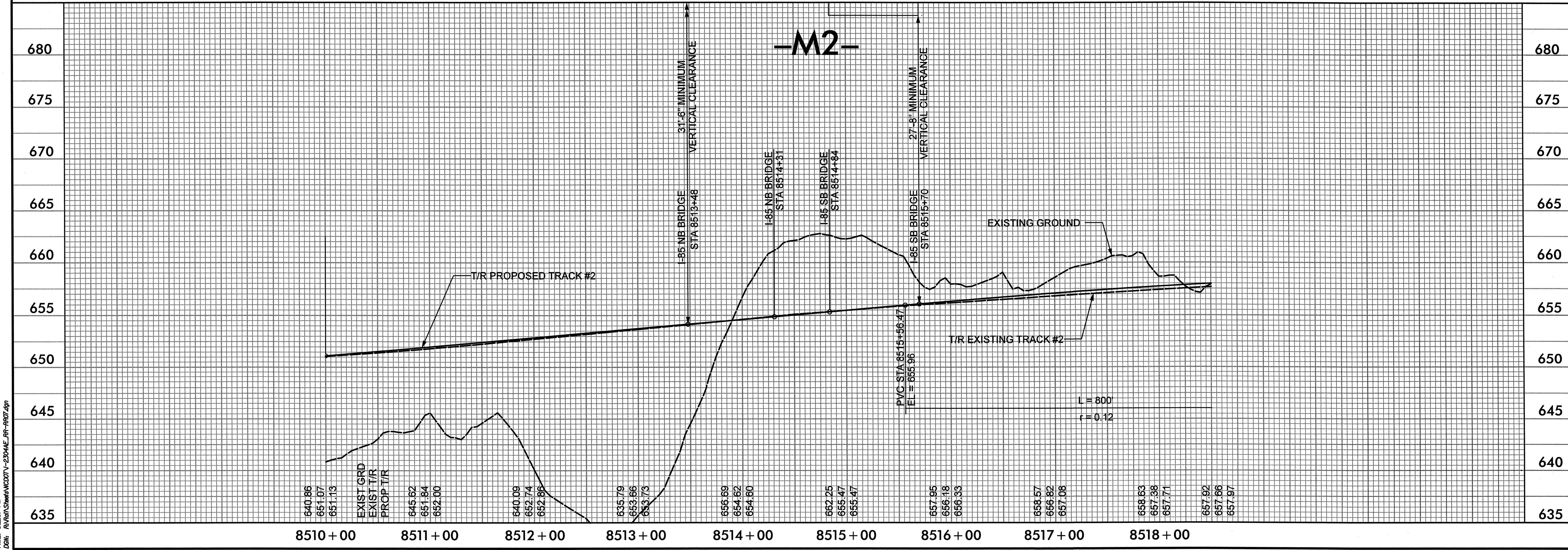
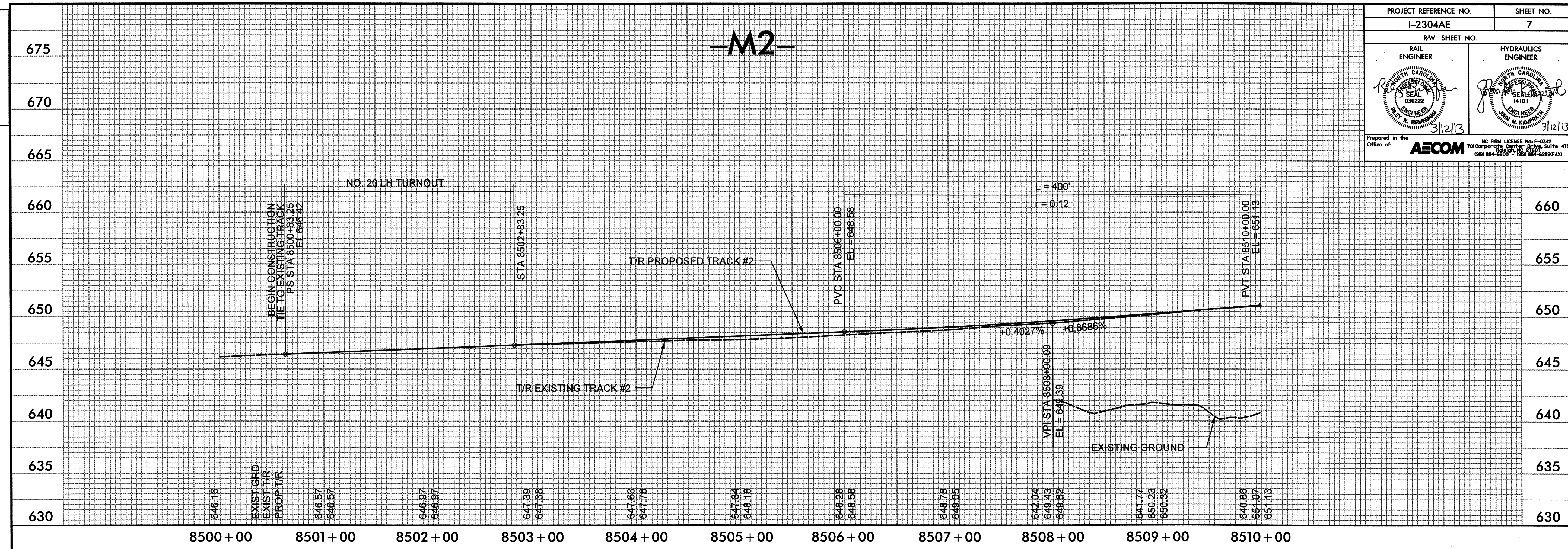


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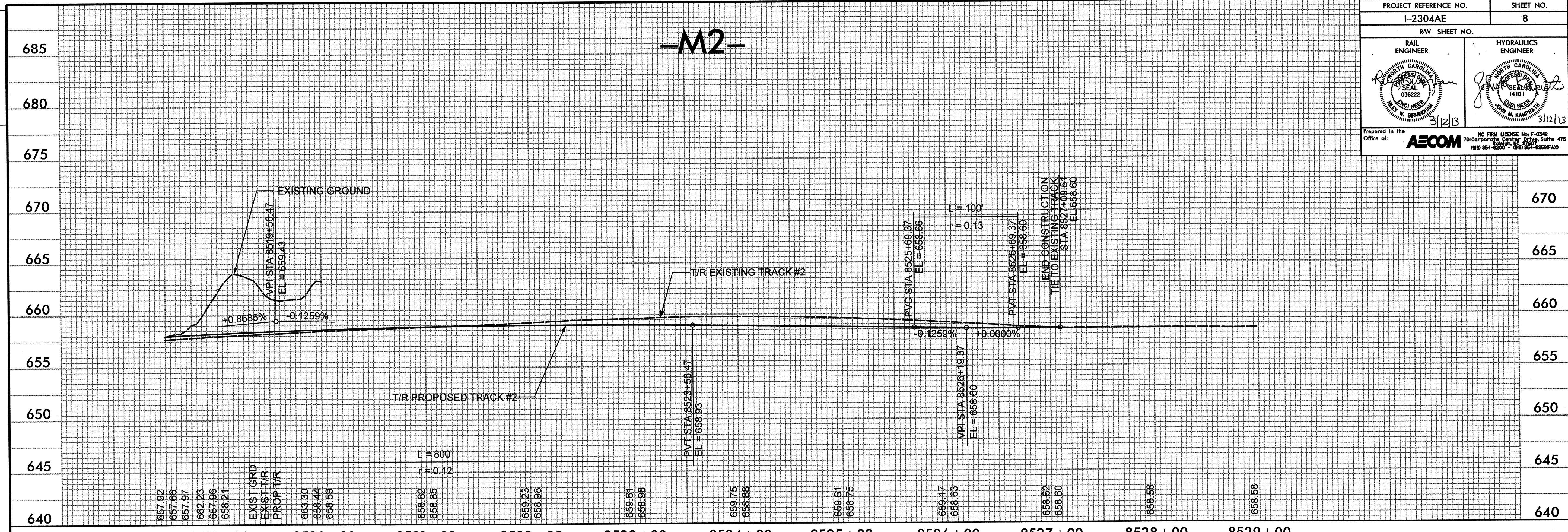
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PROJECT REFERENCE NO. I-2304AE		SHEET NO. 7
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Prepared in the Office of:		NC FIRM LICENSE No. F-0342
AECOM		701 Corporate Center Drive, Suite 475 Raleigh, NC 27603 (919) 854-2200 • (919) 854-2299 FAX



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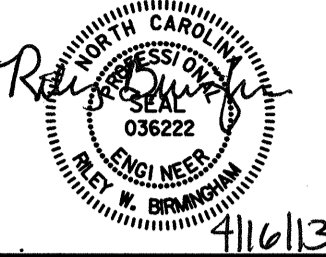
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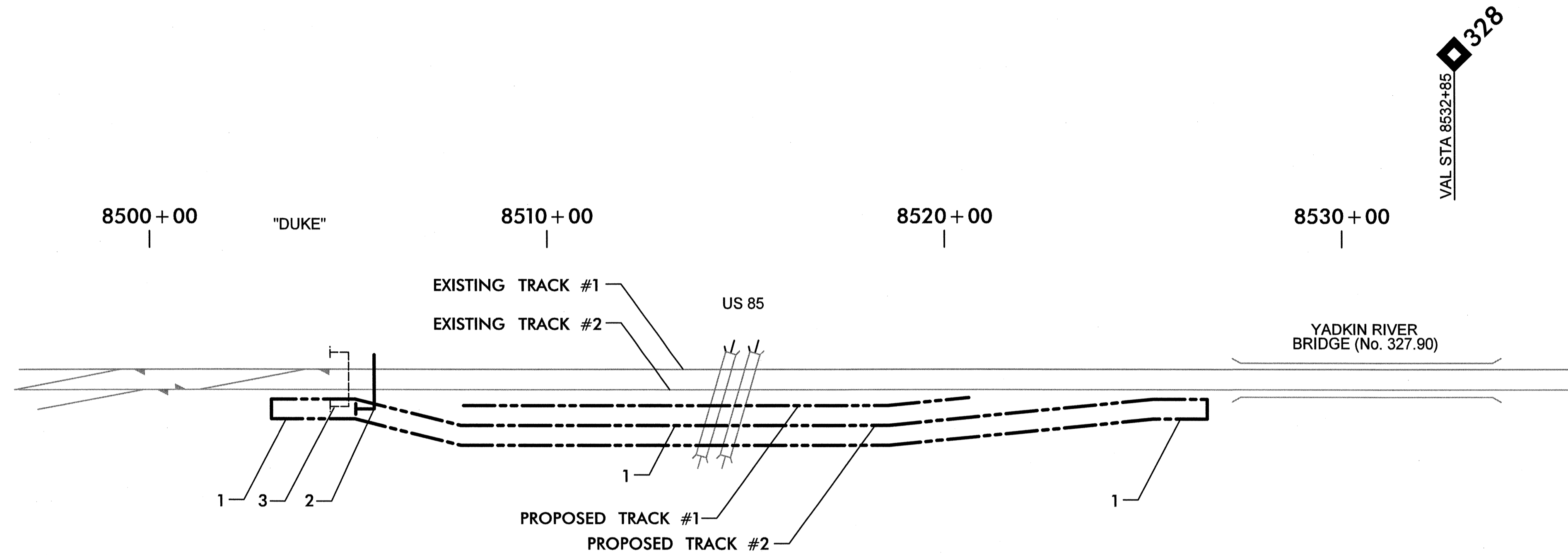
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TO GREENSBORO

TO SALISBURY

SUGGESTED CONSTRUCTION PHASING PHASE 1

PROJECT REFERENCE NO. I-2304AE	SHEET NO. 10
R/W SHEET NO.	
RAIL ENGINEER	
	
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<small>NC FIRM LICENSE No. F-0542 701 Corporate Center Drive, Suite 475 Raleigh, NC 27601 (919) 854-6200 (919) 854-6259 FAX</small>	








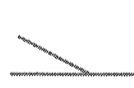
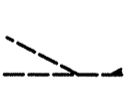

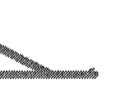


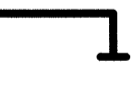
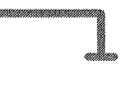



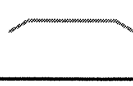
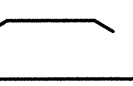
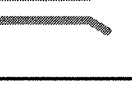
PHASE 1

PHASE 1A - CONSTRUCT RAILROAD ROADBED, INCLUDING ACCESS ROAD, UP TO 7' (OR DISTANCE SPECIFIED BY NORFOLK SOUTHERN REPRESENTATIVE) FROM EXISTING TRACK (NCDOT CONTRACTOR)

1. STA. 8507+80 TO STA. 8519+85 -M1-
- STA. 8503+05 TO STA. 8526+60 -M2-

PHASE 1B - SIGNAL CONSTRUCTION (NS CONTRACTOR)

2. INSTALL SIGNAL CANTILEVER
3. REMOVE EXISTING SIGNAL BRIDGE

ITEM DESCRIPTION	EXISTING	EXISTING (BEING REMOVED)	PROPOSED	COMPLETED
TRACK				
ROADBED				
TURNOUT				
SIGNAL BRIDGE				
SIGNAL CANTILEVER				
BRIDGE(ROADWAY) (OVERHEAD OF UNDERGRADE)				
BRIDGE(RAILROAD) (OVERHEAD OF UNDERGRADE)				

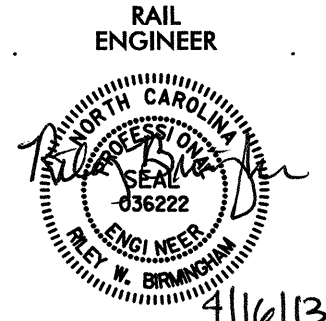
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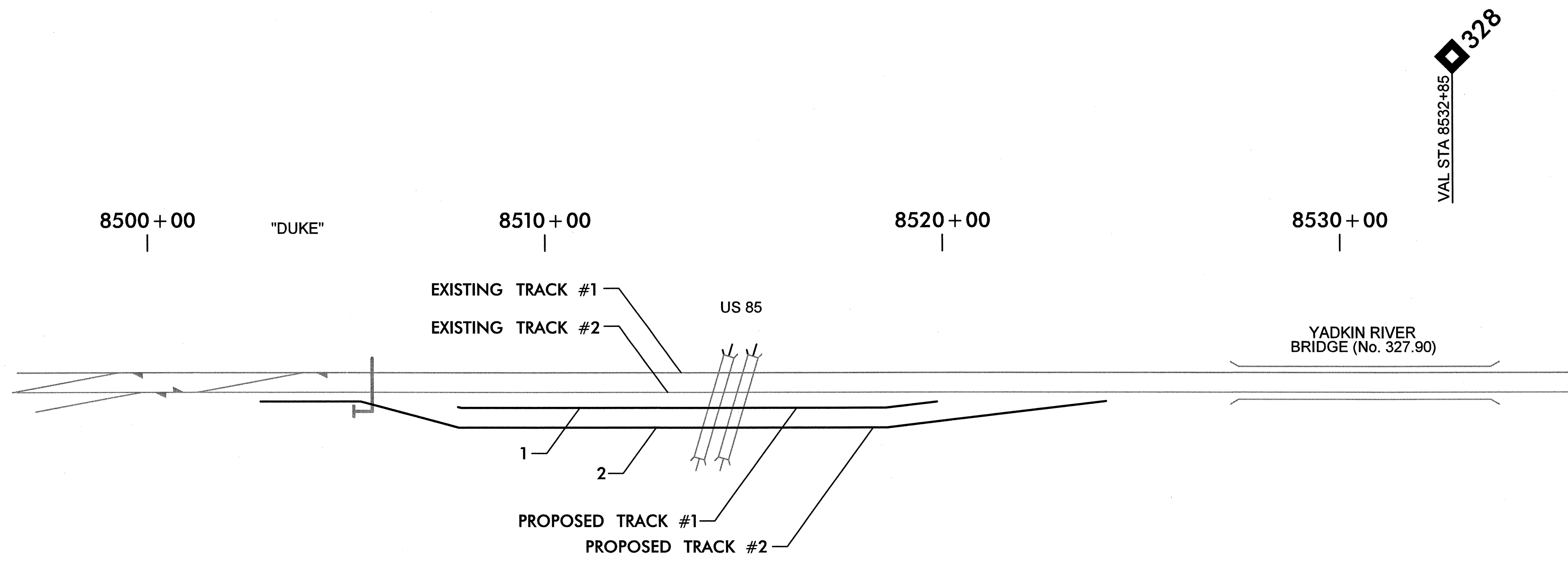
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← TO GREENSBORO

TO SALISBURY →

SUGGESTED CONSTRUCTION PHASING PHASE 2

PROJECT REFERENCE NO. I-2304AE	SHEET NO. 11
RW SHEET NO.	
	
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PHASE 2 – CONSTRUCT TRACK (NS CONTRACTOR)

*CONSTRUCT SKELETON TRACK THAT IS TO BE THROWN TO FINAL CONFIGURATION IN PHASE 3

1. STA. 8507+80 TO STA. 8519+85 –M1–
2. *STA. 8502+83 TO STA. 8505+90 –M2–
STA. 8505+90 TO STA. 8524+10 –M2–

NOTE: 10' BETWEEN TRACK CENTERS SHOULD BE MAINTAINED BETWEEN EXISTING TRACK #2 AND TRACK BEING CONSTRUCTED TO AVOID OVERLAPPING TIES.

ITEM DESCRIPTION	EXISTING	EXISTING (BEING REMOVED)	PROPOSED	COMPLETED
TRACK				
ROADBED				
TURNOUT				
SIGNAL BRIDGE				
SIGNAL CANTILEVER				
BRIDGE(ROADWAY) (OVERHEAD OF UNDERGRADE)				
BRIDGE(RAILROAD) (OVERHEAD OF UNDERGRADE)				

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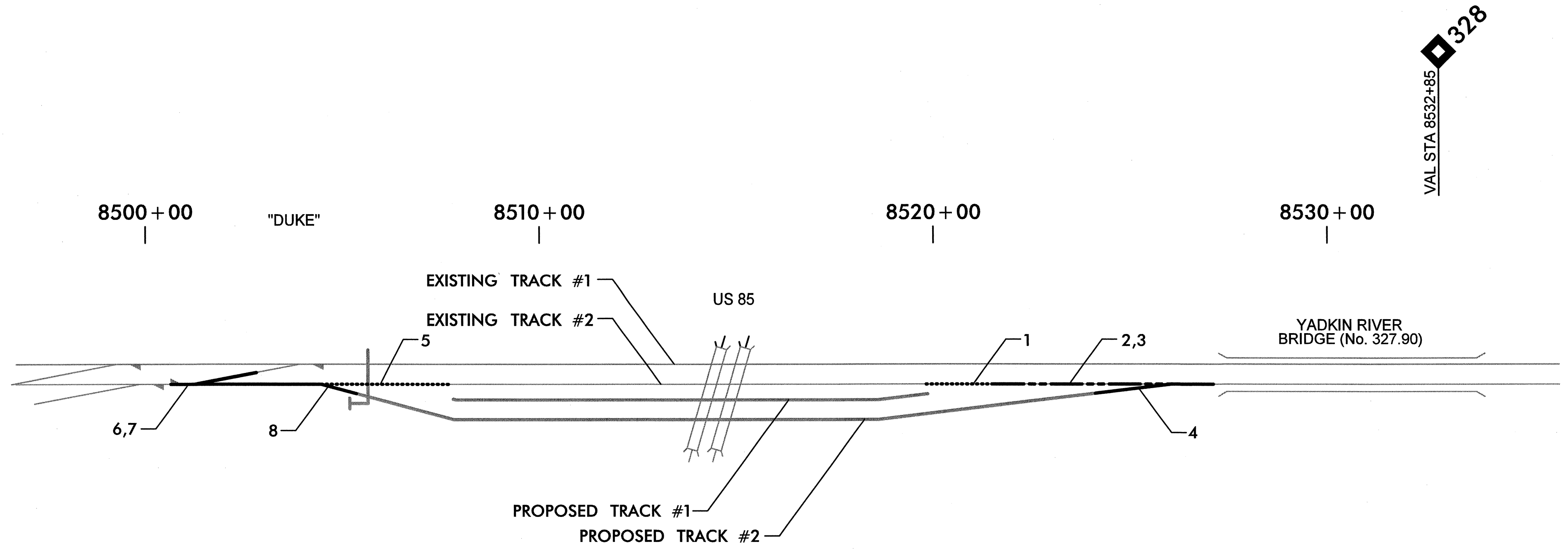
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SUGGESTED CONSTRUCTION PHASING PHASE 3

PROJECT REFERENCE NO. I-2304AE	SHEET NO. 12
RW SHEET NO.	
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- PHASE 3 – CONSTRUCT PROPOSED TRACK 2 TIE-INS**
- PHASE 3A – CONSTRUCT SOUTH TIE-IN (NS CONTRACTOR)**
1. REMOVE EXISTING TRACK 2 STA. 8519+80 TO STA. 8527+09 –M2–
 2. UNDERCUT STA. 8521+50 TO STA. 8526+50 –M2–
 3. RE-CONSTRUCT ROADBED STA. 8521+50 TO STA. 8526+50 –M2–
 4. CONSTRUCT TRACK STA. 8524+10 TO STA. 8527+09 –M2–
- PHASE 3B – CONSTRUCT NORTH TIE-IN (NS CONTRACTOR)**
5. REMOVE EXISTING TRACK – STA 8502+83 TO STA 8507+75 –M2–
 6. REMOVE EXISTING NO. 20 TURNOUT
 7. INSTALL NEW NO. 20 TURNOUT
 8. THROW SKELETON TRACK TO FINAL CONFIGURATION – STA. 8502+83 TO STA. 8505+90
- NOTE: UPON COMPLETION OF PHASE 3, TRAINS WILL OPERATE ON EXISTING TRACK 1 ALIGNMENT AND PROPOSED TRACK 2 ALIGNMENT**

ITEM DESCRIPTION	EXISTING	EXISTING (BEING REMOVED)	PROPOSED	COMPLETED
TRACK	————	————	————
ROADBED			— · — · — ·	
TURNOUT				
SIGNAL BRIDGE				
SIGNAL CANTILEVER				
BRIDGE(ROADWAY) (OVERHEAD OF UNDERGRADE)				
BRIDGE(RAILROAD) (OVERHEAD OF UNDERGRADE)				

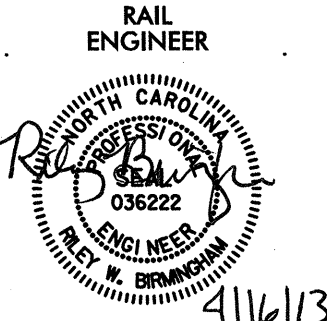
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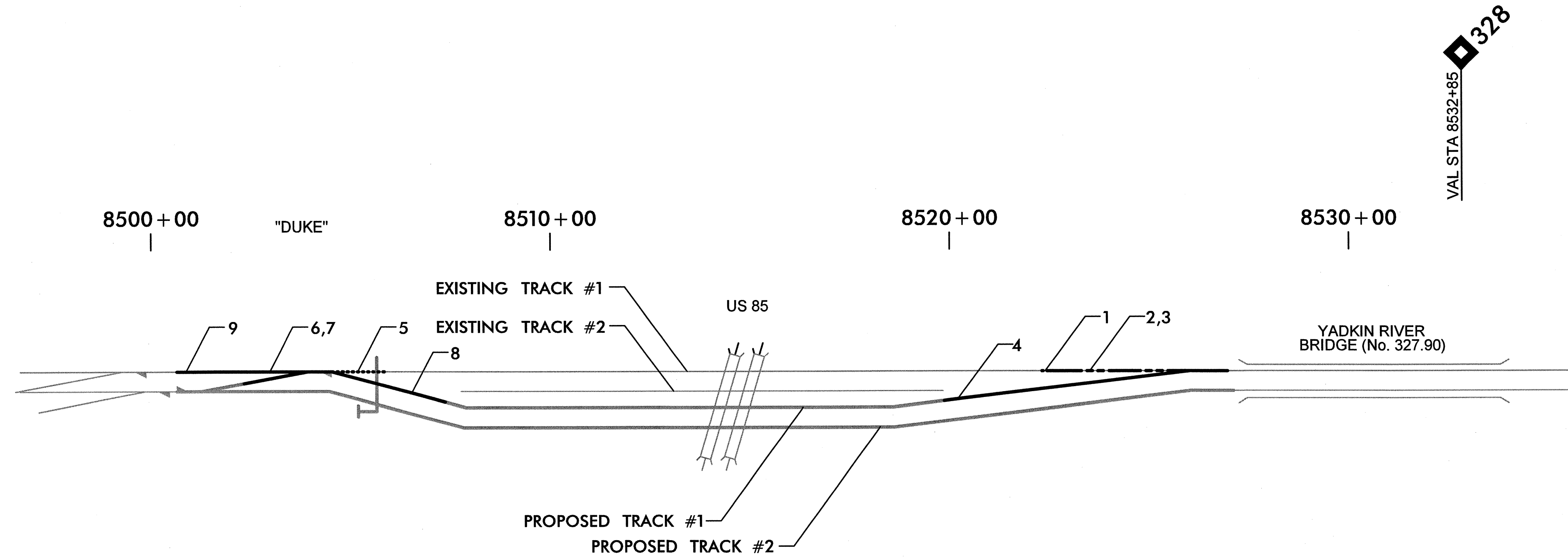
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TO GREENSBORO

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SUGGESTED CONSTRUCTION PHASING PHASE 4

PROJECT REFERENCE NO. I-2304AE	SHEET NO. 13
RW SHEET NO.	
RAIL ENGINEER 	
Prepared in the Office of: AECOM <small>NC FIRM LICENSE No. F-0342 701 Corporate Center Drive, Suite 415 Raleigh, NC 27617 (919) 854-6200 • (919) 854-6296(FAX)</small>	



- PHASE 4 - CONSTRUCT PROPOSED TRACK 1 TIE-INS**
- PHASE 4A - CONSTRUCT SOUTH TIE-IN**
1. REMOVE EXISTING TRACK - STA. 8522+30 TO STA. 8526+95 -M1- (NS CONTRACTOR)
 2. UNDERCUT STA. 8522+50 TO STA. 8526+95 -M1- (NS CONTRACTOR)
 3. RE-CONSTRUCT ROADBED STA. 8522+50 TO STA. 8526+95 -M1- (NS CONTRACTOR)
 4. CONSTRUCT TRACK - STA. 8519+85 TO STA. 8526+95 -M1- (NS CONTRACTOR)
- PHASE 4B - CONSTRUCT NORTH TIE-IN (NS CONTRACTOR)**
5. REMOVE EXISTING TRACK - STA 8504+52 TO STA 8505+85 -M1-
 6. REMOVE EXISTING NO. 20 TURNOUT
 7. INSTALL NEW NO. 20 TURNOUT
 8. CONSTRUCT TRACK - STA. 8504+52 TO STA. 8507+80
 9. LINE AND SURFACE TRACK - STA. 8500+63 TO STA. 8502+32
- NOTE: UPON COMPLETION OF PHASE 4, TRAINS WILL OPERATE ON PROPOSED TRACK 1 ALIGNMENT AND PROPOSED TRACK 2 ALIGNMENT**

ITEM DESCRIPTION	EXISTING	EXISTING (BEING REMOVED)	PROPOSED	COMPLETED
TRACK				
ROADBED				
TURNOUT				
SIGNAL BRIDGE				
SIGNAL CANTILEVER				
BRIDGE(ROADWAY) (OVERHEAD OF UNDERGRADE)				
BRIDGE(RAILROAD) (OVERHEAD OF UNDERGRADE)				

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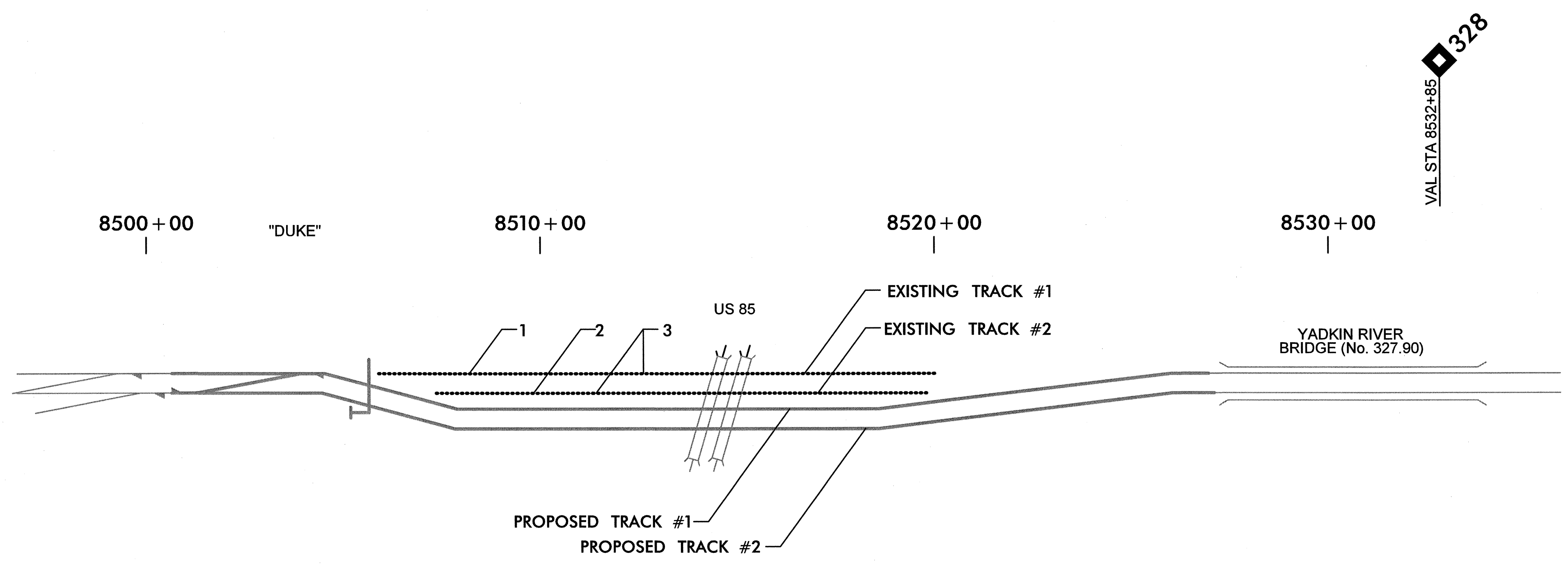
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TO GREENSBORO

TO SALISBURY

SUGGESTED CONSTRUCTION PHASING PHASE 5

PROJECT REFERENCE NO. I-2304AE	SHEET NO. 14
RW SHEET NO.	
Prepared in the Office of: AECOM	



PHASE 5 - REMOVE EXISTING TRACK AND SIGNAL BRIDGE AND FINAL GRADING

PHASE 5A - REMOVE EXISTING TRACK
(NS CONTRACTOR)

1. STA. 8505+85 TO STA. 8522+30 -M1-
2. STA. 8507+75 TO STA. 8519+80 -M2-

PHASE 5B

3. FINAL GRADING TO ACHIEVE STANDARD 14' ROADBED SECTION.
(WASTE MATERIAL IS TO BE DISPOSED OF WITHIN RAILROAD RIGHT OF WAY.
SEE TYPICAL SECTIONS.)
(NCDOT CONTRACTOR)

ITEM DESCRIPTION	EXISTING	EXISTING (BEING REMOVED)	PROPOSED	COMPLETED
TRACK				
ROADBED				
TURNOUT				
SIGNAL BRIDGE				
SIGNAL CANTILEVER				
BRIDGE(ROADWAY) (OVERHEAD OF UNDERGRADE)				
BRIDGE(RAILROAD) (OVERHEAD OF UNDERGRADE)				

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