

TIP PROJECT: P-5201

C203255

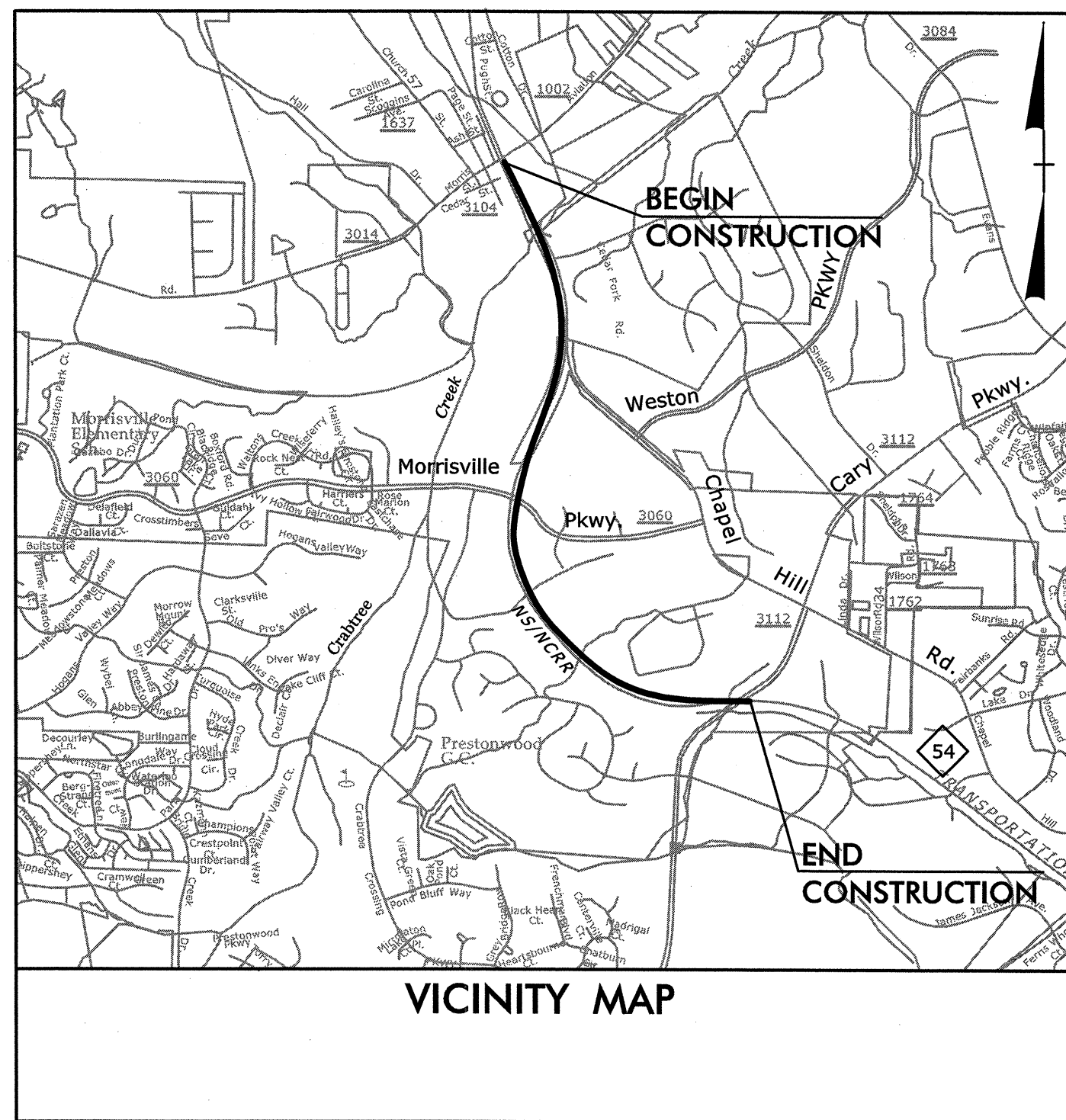
CONTRACT:

STATE OF NORTH CAROLINA
NCDOT RAIL DIVISION

WAKE COUNTY

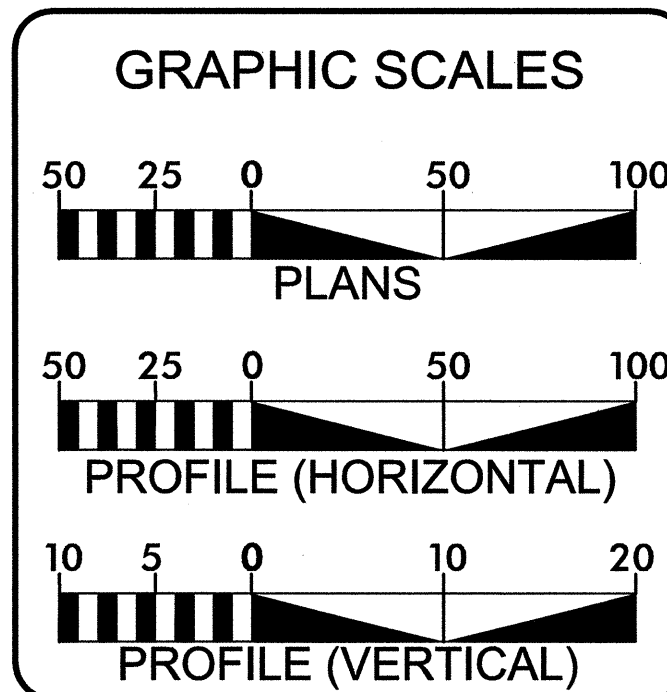
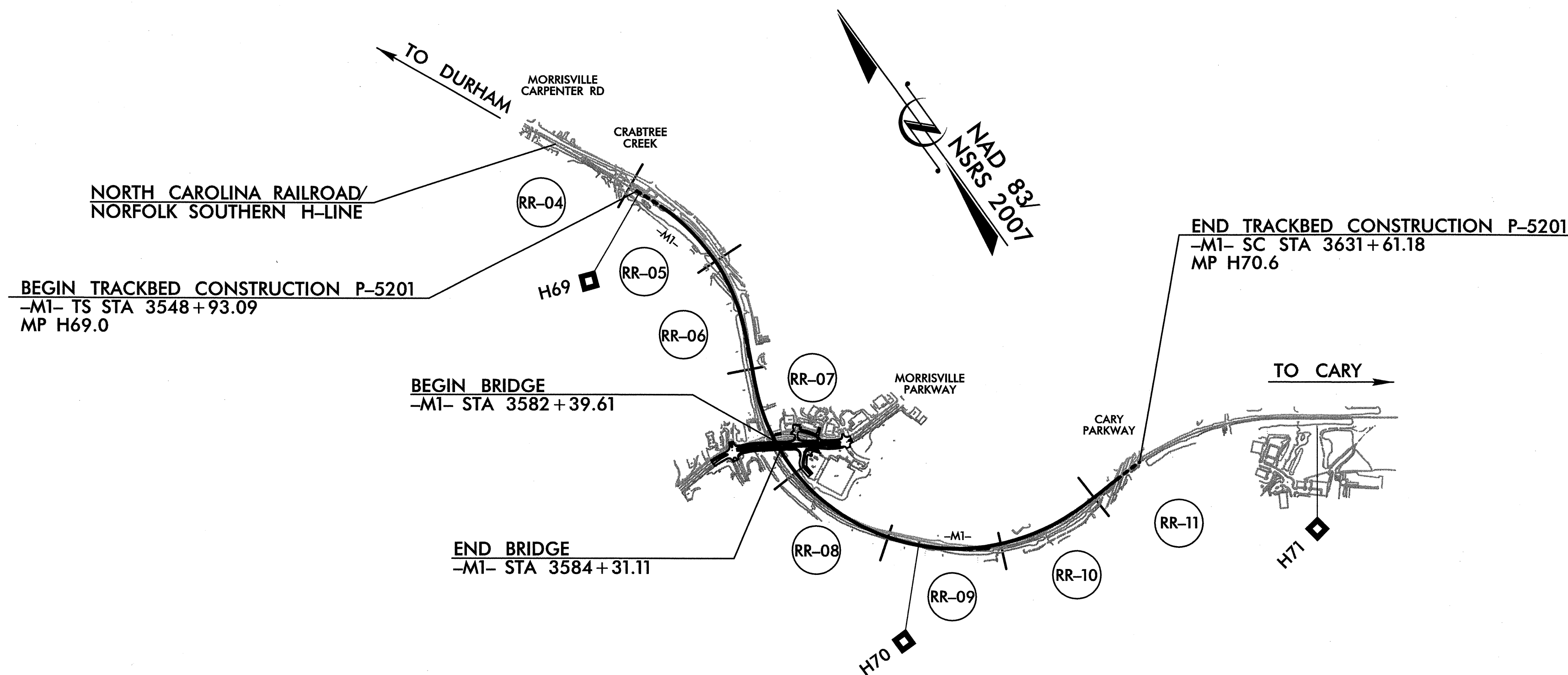


STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	P-5201	RR1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
52100.1.STR03T1B		UTIL PE, PE	
43219.2.STR05P5201		RW	
52100.3.STR01T4		UTIL CONST	
52100.3.STR01T4	FR-HSR-0006-10-01-00	CONST	



**LOCATION: FROM EAST OF CRABTREE CREEK (MP H69.0)
TO EAST OF NW CARY PARKWAY (MP H70.6)
ON THE NORTH CAROLINA RAILROAD /
NORFOLK SOUTHERN H-LINE**

**TYPE OF WORK: RAIL TRACKBED CONSTRUCTION FOR RAILROAD
CURVE IMPROVEMENTS AND TRACKBED WIDENING
FOR FUTURE SECOND MAIN LINE TRACK.
(INCLUDES GRADING, DRAINAGE, PAVING, STRUCTURES,
WALLS, SIGNALS AND TRACKBED)**



PROJECT LENGTH

LENGTH OF RAIL TIP PROJECT P-5201	=	1.528 MILES
LENGTH OF STRUCTURE	=	0.037 MILES
TOTAL LENGTH OF MAIN TRACK	=	1.565 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:
SEPTEMBER 2012

LETTING DATE:
NOVEMBER 19, 2013

RILEY BIRMINGHAM, PE RAIL PROJECT ENGINEER
TOM HILDEBRAND, PE ROADWAY PROJECT ENGINEER
MARK KAMPFRATH, PE HYDRAULICS PROJECT ENGINEER
MARK PEARSON, PE STRUCTURE PROJECT ENGINEER
SANDRA STEPNEY, PE NCDOT PROJECT MANAGER

RAIL ENGINEER

9/16/13
Riley W. Birmingham P.E.
SIGNATURE:

HYDRAULICS ENGINEER

9/16/13
John M. Kampfrath P.E.
SIGNATURE:

NC DEPARTMENT OF
TRANSPORTATION
RAIL DIVISION

0422DEL_P19
0001ADD_P19

PROJECT REFERENCE NO. P-5201	SHEET NO. RR1-A
R/W SHEET NO.	
RAIL DESIGN ENGINEER 12/11/13	HYDRAULICS ENGINEER 12/11/13
Prepared in the Office of: AECOM NC FIRM LICENSE No. F-0342 701 Corporate Center, Suite 415 Raleigh, NC 27603 (919) 854-8200 (919) 854-8250 FAX	

INDEX OF DRAWINGS AND GENERAL NOTES

SHEET NUMBER

DRAWING TITLE

GENERAL NOTES:

RR1
RR1-A
RR1-B
RR1-C
RR1-D THRU RR1-E

COVER SHEET
INDEX OF DRAWINGS AND GENERAL NOTES
CONVENTIONAL PLAN SYMBOLS
STANDARD ABBREVIATIONS
SURVEY CONTROL SHEETS

1. THIS CONTRACT INCLUDES ALL WORK REQUIRED TO CONSTRUCT THE RAILROAD ROADBED, UP TO TOP OF SUBBALLAST LAYER.
2. ALL TRACKWORK, INCLUDING BALLAST AND SIGNAL WORK, TO BE DONE BY OTHERS AND IS SHOWN IN PLANS FOR REFERENCE ONLY.
3. THE PROPOSED GRADE LINES (PGL) SHOWN INDICATE THE TOP OF LOW RAIL ELEVATION.
4. ALL RAILWAY ALIGNMENT CURVE DATA IS BASED ON CHORD DEFINITION. ALL ROADWAY ALIGNMENT CURVE DATA IS BASED ON THE ARC DEFINITION.
5. THE CONTRACTOR SHALL COORDINATE OBTAINING ANY TEMPORARY CONSTRUCTION ENTRANCES AND DRIVEWAYS WITH LOCAL AND/OR STATE AGENCIES.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY LOCAL CONSTRUCTION PERMITS THAT MAY BE REQUIRED TO CONSTRUCT THIS PROJECT.
7. 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.

RR2 THRU RR2-D
RR2-E
RR2-F
RR2-G
RR2-H
RR2-I
RR2-J
RR2-K
RR-03

TYPICAL SECTIONS (RAIL)
DRAINAGE DETAILS
TEMPORARY DRAINAGE DITCH DETAILS
HORIZONTAL CURVE GEOMETRY
PROPOSED TRACK GEOMETRY (M1, A1 AND A2)
FUTURE TRACK #1 GEOMETRY
FUTURE TRACK #2 GEOMETRY
BLIND DRAIN DETAIL
MORRISVILLE PARKWAY CROSSING CLOSURE DETAIL

RR-4 THRU RR-11
RR-12

PLAN & PROFILE - MAIN TRACK #1
PROFILE - TEMPORARY TIE-INS (A1 AND A2)

RAILROAD OPERATIONS:

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

RR-13 THRU RR-21

PHASING PLANS

X-31 THRU X-43
X-44 THRU X-85

PIPE PROFILE SHEETS
CROSS SECTIONS (RAIL)

USER: birmingham
DATE: 12/6/2013
TIME: 5:01:44 PM
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Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA RAIL DIVISION

Table with Project Reference No. (P-5201), Sheet No. (RR1-B), and AECOM logo.

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 R/W 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:

Table listing symbols for 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.

CONVENTIONAL PLAN SHEET SYMBOLS (cont'd) AND ABBREVIATIONS

RAILROADS:

Existing Track to be Shifted	
Existing Track to be Removed	
Proposed Detour Track	
Proposed Track	
Future Track	
Proposed Turnout	
Turnout Label	
Curve Label	
Curve Information	
Profile Grade Line	
Milepost	

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 on 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

MISCELLANEOUS:

ABS	Absolute
AVE	Avenue
AH	Ahead
BK	Back
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
NCRR	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

SURVEY CONTROL SHEET P-5201

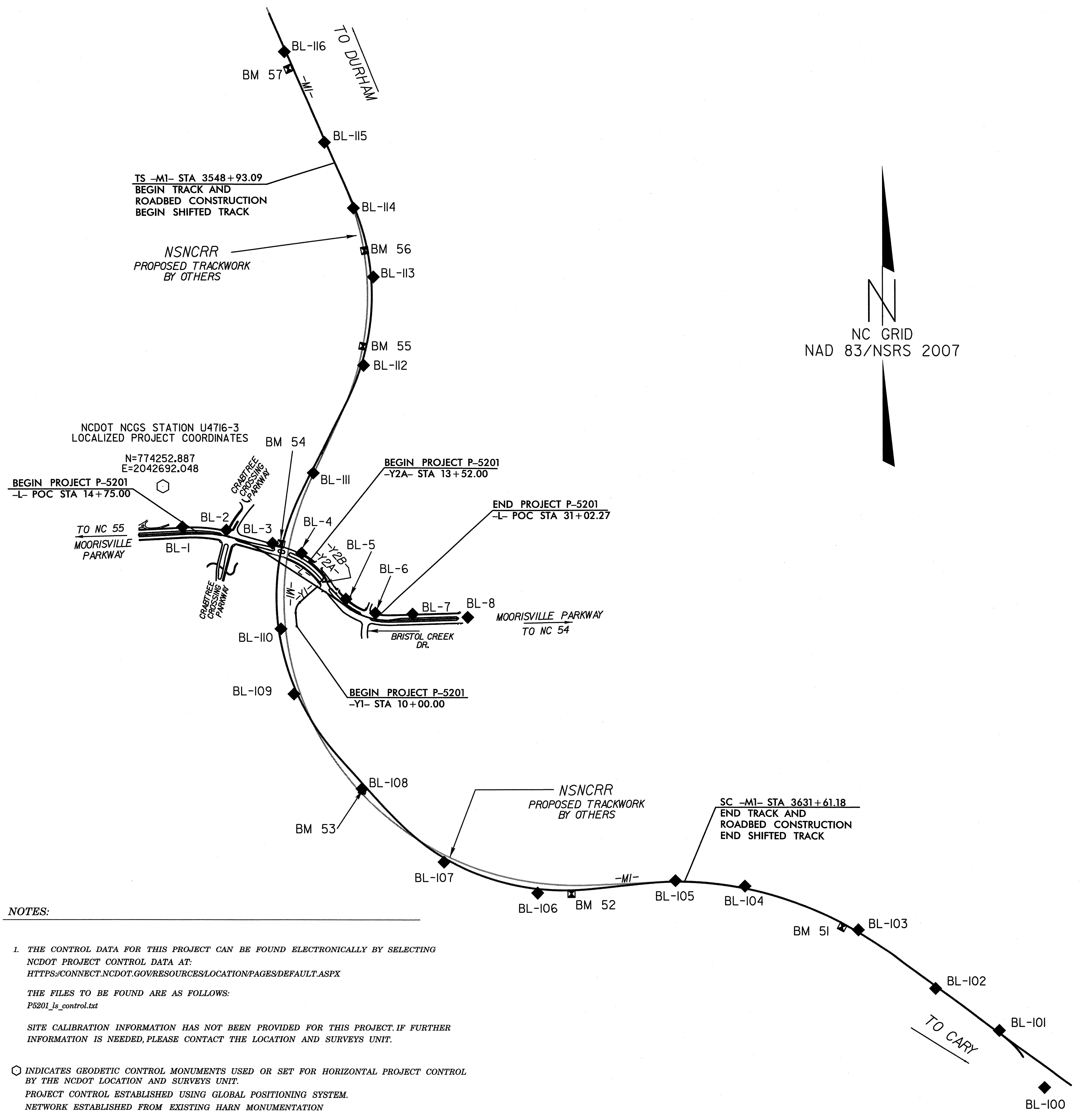
DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "U4716-3" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 774252.887(±) EASTING: 2042692.048(±) ELEVATION: 396.067(±)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99991814

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "U4716-3" TO -L- STATION 14+75.00 IS S 19°33'13.3" E 25377.81'

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88



BL POINT	DESC.	NORTH	EAST	ELEV	L STATION	OFFSET
1	BL-1	750384.3280	2051063.5070	298.24	13+55.21	47.96 LT
2	BL-2	750358.4600	2051420.1230	307.61	17+01.28	47.84 LT
3	BL-3	750251.2810	2051794.5660	336.55	20+63.35	98.18 LT
4	BL-4	750171.4470	2052029.1940	343.20	23+03.05	161.16 LT
5	BL-5	749794.0190	2052387.1010	356.15	28+09.85	44.11 LT
6	BL-6	749683.5590	2052626.7930	368.78	30+93.61	48.52 LT
7	BL-7	749676.5120	2052929.4580	373.03	34+08.52	46.29 LT
8	BL-8	749650.3010	2053377.0200	381.91	OUTSIDE PROJECT LIMITS	

RRBL POINT	DESC.	NORTH	EAST	ELEV	M1 STATION	OFFSET
100	BL-100	745831.4740	2058049.4130	413.76	OUTSIDE PROJECT LIMITS	
101	BL-101	746297.8370	2057683.2330	414.64	OUTSIDE PROJECT LIMITS	
102	BL-102	746635.5496	2057166.9950	405.75	OUTSIDE PROJECT LIMITS	
103	BL-103	747117.5800	2056541.2976	399.78	OUTSIDE PROJECT LIMITS	
104	BL-104	747467.2349	2055622.5241	389.88	3636+53.08	20.77 LT
105	BL-105	747509.5474	2055057.5716	387.05	3630+88.83	10.63 LT
106	BL-106	747411.6257	2053938.9827	376.78	3619+79.13	80.62 RT
107	BL-107	747667.0424	2053179.1881	366.22	3611+96.49	53.85 RT
108	BL-108	748263.0572	2052515.0791	366.93	3603+07.53	27.73 LT
109	BL-109	749027.2340	2051964.7353	347.79	3593+67.33	50.60 RT
110	BL-110	749555.0855	2051860.3702	343.44	3588+38.51	37.24 RT
A3	BL-3	750251.2810	2051794.5660	336.55	581+69.06	135.41 RT
111	BL-111	750824.5785	2052126.1869	330.52	3575+36.52	4.82 RT
112	BL-112	751897.6445	2052536.2313	323.04	3565+76.58	38.04 LT
113	BL-113	752414.6310	2052616.8729	316.03	3558+66.30	51.24 LT
114	BL-114	752974.4570	2052456.8020	309.85	3552+91.24	0.51 RT
115	BL-115	753510.2540	2052222.9150	302.06	3547+06.16	10.34 RT
116	BL-116	754234.0530	2051899.4120	298.93	3539+13.36	12.16 RT

NOTES:

- THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING NCDOT PROJECT CONTROL DATA AT:
[HTTPS://CONNECT.NCDOT.GOV/RESOURCES/LOCATION/PAGES/DEFAULT.ASPX](https://connect.ncdot.gov/resources/location/pages/default.aspx)
 THE FILES TO BE FOUND ARE AS FOLLOWS:
 P5201_ls_control.txt
 SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
 INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
 PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
 NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTATION

NOTE: DRAWING NOT TO SCALE

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7:10:38 AM
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SURVEY CONTROL SHEET P-5201

PROJECT REFERENCE NO.	SHEET NO.
P-5201	RR1-E
Location and Surveys	

L

TYPE	STATION	NORTH	EAST
POT	10+00.00	750317.7945	2050711.3030
PC	13+74.61	750337.4550	2051085.4016
PCC	17+32.61	750304.7332	2051440.6557
PT	20+37.76	750183.5549	2051719.0264
PC	28+83.75	749716.4437	2052424.3603
PT	32+24.84	749624.5995	2052747.2813
POT	37+75.79	749641.5350	2053297.9750

M1

TYPE	STATION	NORTH	EAST
POT	3535+38.95	754581.1653	2051758.5379
TS	3548+93.09	753343.6198	2052308.2424
SC	3552+34.09	753028.6805	2052438.7626
CS	3568+31.78	751463.9641	2052422.2100
ST	3571+72.78	751151.8568	2052285.0555
TS	3574+41.92	750908.2584	2052170.6215
SC	3577+82.92	750596.1512	2052033.4670
CS	3598+77.01	748585.8233	2052233.4742
SC	3599+39.01	748533.7939	2052267.1895
CS	3622+14.32	747473.2327	2054183.6282
ST	3625+55.32	747479.6071	2054524.4913
TS	3628+20.18	747490.8608	2054789.1124
SC	3631+61.18	747498.4746	2055129.9719
PT	3636+85.95	747440.3654	2055650.7739

Y1

TYPE	STATION	NORTH	EAST
POT	10+00.00	749577.0095	2051988.8547
PC	11+07.65	749684.3008	2051980.0423
PT	12+00.52	749767.3993	2052013.4640
POT	13+91.42	749893.8552	2052156.4704

Y2A

TYPE	STATION	NORTH	EAST
PC	10+00.00	749837.8352	2052309.8818
PT	11+44.69	749953.8520	2052229.2989
PC	11+44.69	749953.8520	2052229.2989
PT	11+82.00	749987.2622	2052213.3560
PC	11+82.00	749987.2622	2052213.3560
PT	13+52.00	750105.8328	2052092.2412

Y2B

TYPE	STATION	NORTH	EAST
PC	10+00.00	749932.3666	2052167.1402
PT	10+99.06	750007.7984	2052196.6470

ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	16+00.00	66.01	750263.3643	2051301.8029
L	16+00.00	50.32	750278.9236	2051303.8253
L	16+40.00	-68.04	750390.1827	2051360.8294
L	16+40.00	-49.49	750371.8685	2051357.8454
L	16+70.85	-55.89	750372.6040	2051390.6264
L	16+70.91	-67.44	750383.9472	2051392.8363
L	16+86.88	74.73	750241.3604	2051381.2060
L	17+06.18	-92.47	750400.9822	2051434.6129
L	17+15.58	-89.50	750395.9040	2051443.8112
L	17+84.31	85.97	750208.9088	2051465.5123
L	17+92.66	-82.52	750367.4096	2051523.2752
L	18+12.69	55.00	750230.3872	2051499.8408
L	18+18.18	-52.84	750330.5962	2051540.0587
L	21+08.66	55.00	750098.5511	2051747.7710
L	23+32.66	55.00	749974.8712	2051934.5266
L	27+28.00	55.00	749756.5826	2052264.1404
L	27+72.81	-58.00	749826.0515	2052363.8971
L	28+11.27	-58.00	749804.8165	2052395.9618
L	28+28.00	65.00	749693.0301	2052341.9933
L	29+10.81	-47.42	749742.8198	2052471.5030
L	29+63.86	65.00	749618.3819	2052466.4142

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	18+10.00	-110.00	750387.5769	2051550.0807
L	18+50.00	-115.00	750376.9048	2051594.2238
L	18+50.00	-53.05	750319.1529	2051571.8002
L	20+20.00	55.00	750146.7479	2051674.6883
L	20+20.00	85.00	750121.4046	2051658.6348
L	21+15.00	68.38	750083.8955	2051745.6674
L	23+65.00	55.00	749957.0136	2051961.4914
L	23+65.00	111.73	749909.7125	2051930.1660

ROW MARKER PERMANENT EASEMENT -E-

ALIGN	STATION	OFFSET	NORTH	EAST
M1	3605+50.00	56.52	748032.1049	2052629.9870
M1	3605+50.00	95.00	748003.3326	2052604.4415
M1	3607+00.00	115.04	747887.7122	2052711.9201
M1	3607+00.00	75.96	747918.5071	2052735.9800
M1	3579+50.00	-58.98	750421.0779	2052036.3496
M1	3578+50.00	-100.00	750500.3153	2052104.9992
M1	3578+10.00	-100.00	750536.3227	2052117.8568
M1	3577+29.88	-71.10	750618.7788	2052118.7750

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "U4716-3" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 774252.887(ft) EASTING: 2042692.048(ft) ELEVATION: 396.067(ft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99991814

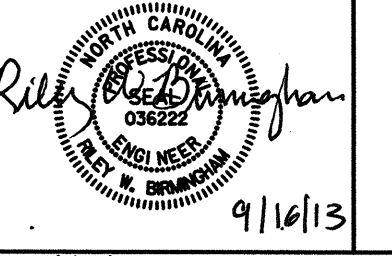
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "U4716-3" TO -L- STATION 14+75.00 IS S 19°33'13.3" E 25377.81'

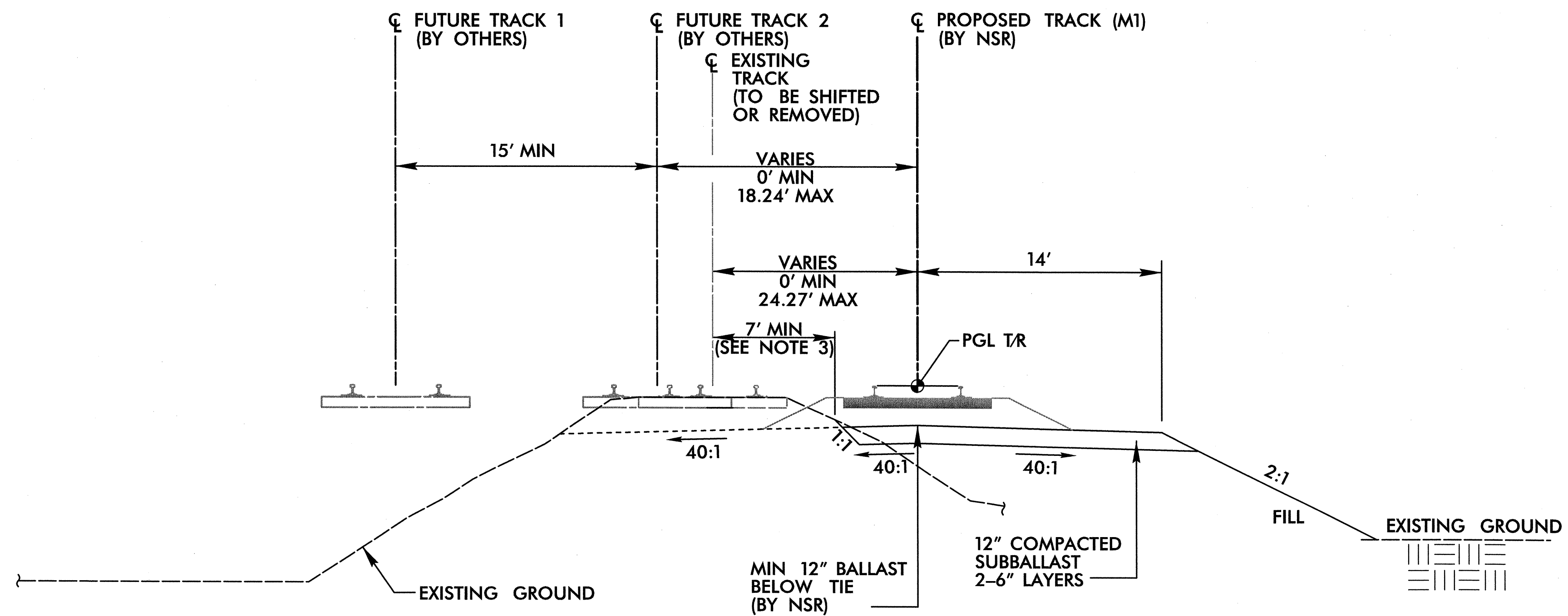
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

NOTES:

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING NCDOT PROJECT CONTROL DATA AT:
[HTTPS://CONNECT.NCDOT.GOV/RESOURCES/LOCATION/PAGES/DEFAULT.ASPX](https://connect.ncdot.gov/resources/location/pages/default.aspx)
- THE FILES TO BE FOUND ARE AS FOLLOWS:
P5201_ls_control.txt
- SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
- ⊕ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTATION

PROJECT REFERENCE NO. P-5201	SHEET NO. RR2
RW SHEET NO.	
RAIL DESIGN ENGINEER	
	
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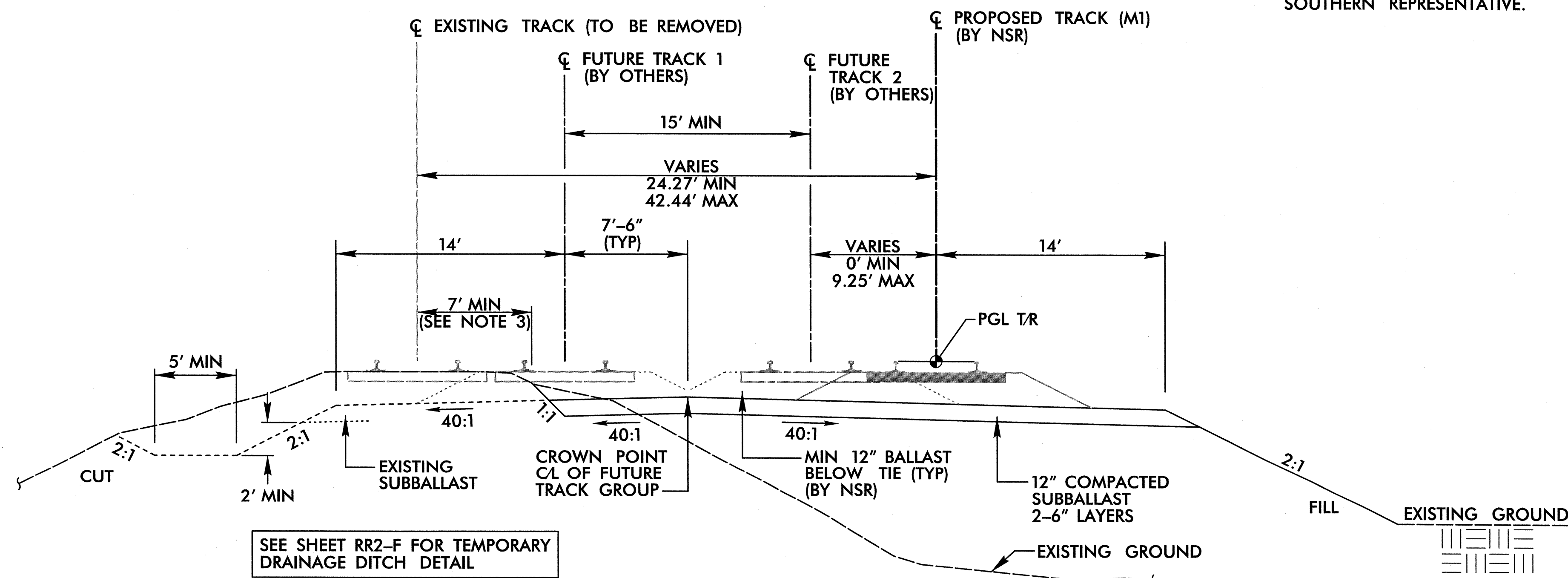
TYPICAL SECTION NO. 1

-M1- STA. 3548+93 TO STA. 3555+25

LEGEND	
—	BY OTHERS
---	PHASE 8 GRADING AFTER EX. TRACK HAS BEEN SHIFTED OR REMOVED (BY NCDOT CONTRACTOR)

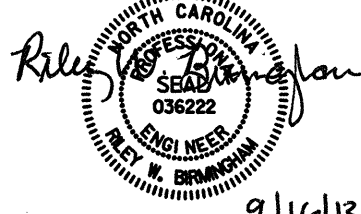
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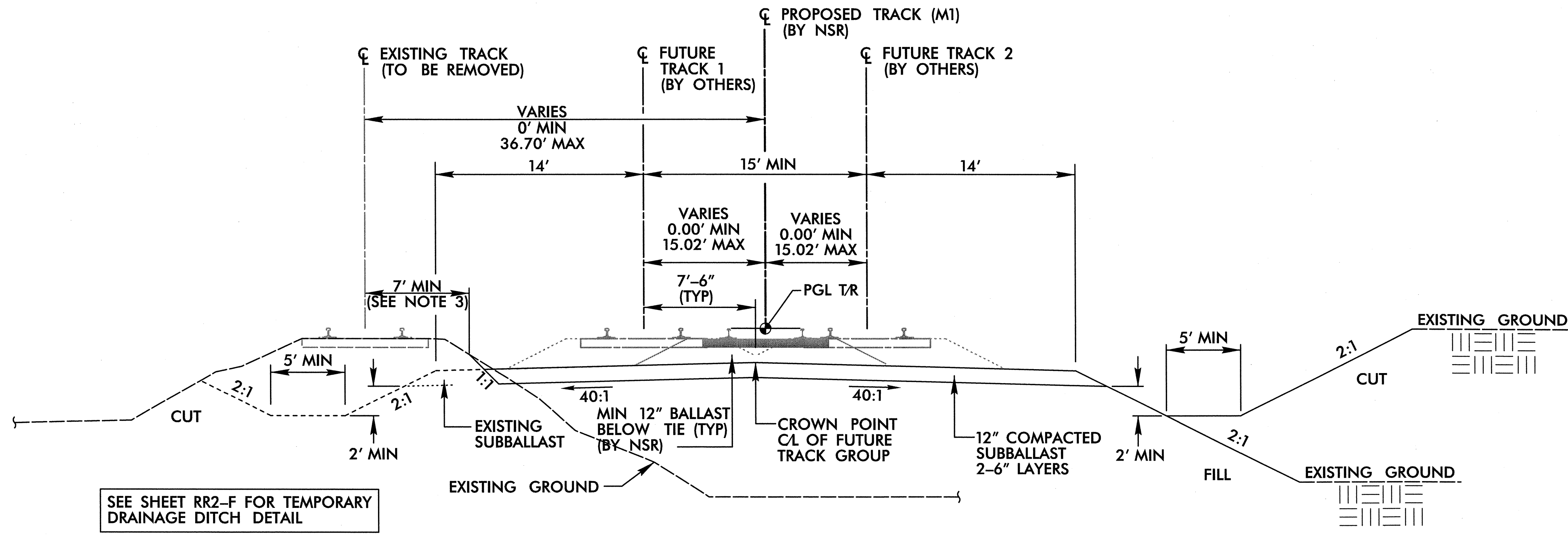
1. TRACK CONSTRUCTION, INCLUDING BALLAST, TIE AND RAIL INSTALLATION, BY NSR.
2. TOP OF SUB-GRADE IS TO BE CROWNED.
3. ACTUAL LOCATION OF EXCAVATION IS TO BE BASED ON FIELD CONDITIONS AS DETERMINED BY THE NORFOLK SOUTHERN REPRESENTATIVE.



TYPICAL SECTION NO. 2

-M1- STA. 3555+25 TO STA. 3559+93
-M1- STA. 3596+24 TO STA. 3600+00

PROJECT REFERENCE NO. P-5201	SHEET NO. RR2-A
RW SHEET NO.	
RAIL DESIGN ENGINEER	
	
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Prepared in the Office of: AECOM	
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LEGEND

— BY OTHERS

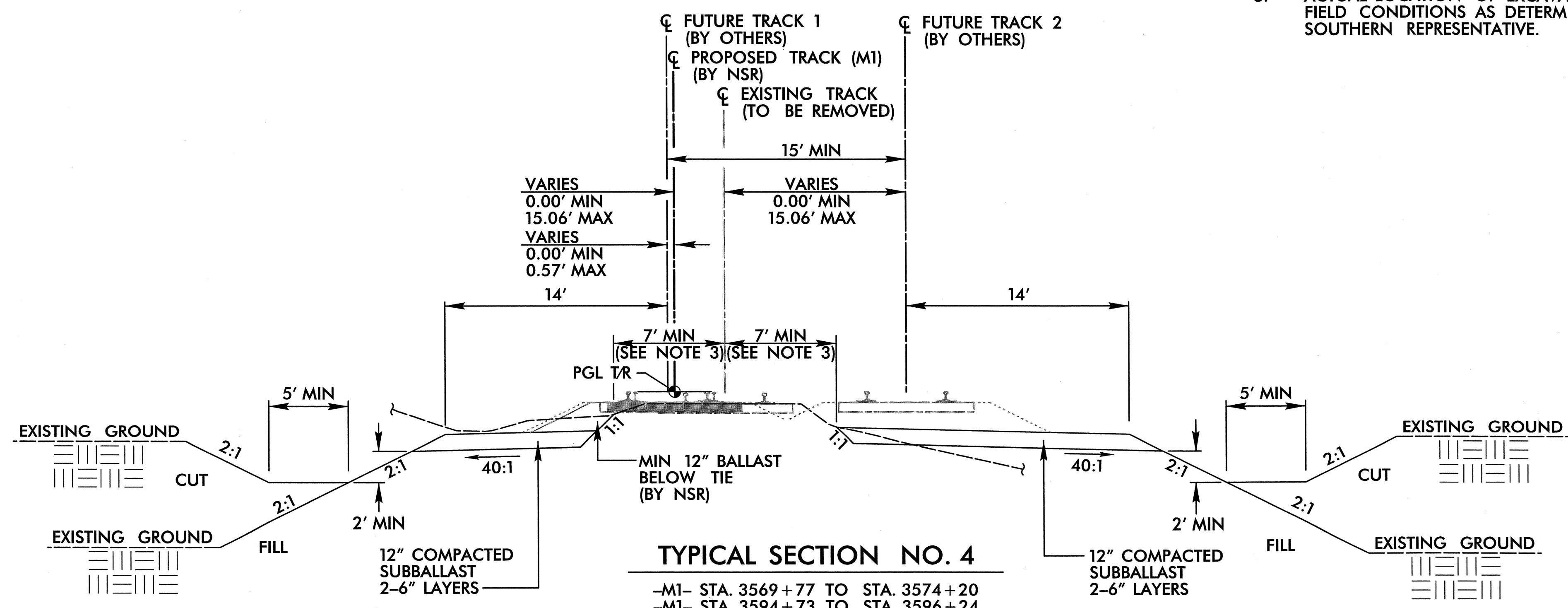
--- PHASE 8 GRADING AFTER EX. TRACK HAS BEEN SHIFTED OR REMOVED (BY NCDOT CONTRACTOR)

TYPICAL SECTION NO. 3

-M1- STA. 3559+93 TO STA. 3569+77
 -M1- STA. 3607+00 TO STA. 3609+24

NOTES

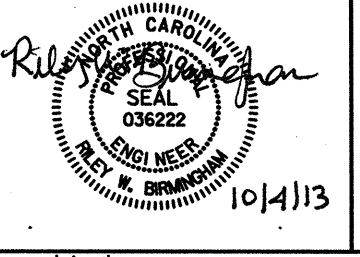
1. TRACK CONSTRUCTION, INCLUDING BALLAST, TIE AND RAIL INSTALLATION, BY NSR.
2. TOP OF SUB-GRADE IS TO BE CROWNED.
3. ACTUAL LOCATION OF EXCAVATION IS TO BE BASED ON FIELD CONDITIONS AS DETERMINED BY THE NORFOLK SOUTHERN REPRESENTATIVE.



TYPICAL SECTION NO. 4

-M1- STA. 3569+77 TO STA. 3574+20
 -M1- STA. 3594+73 TO STA. 3596+24
 -M1- STA. 3609+24 TO STA. 3610+69

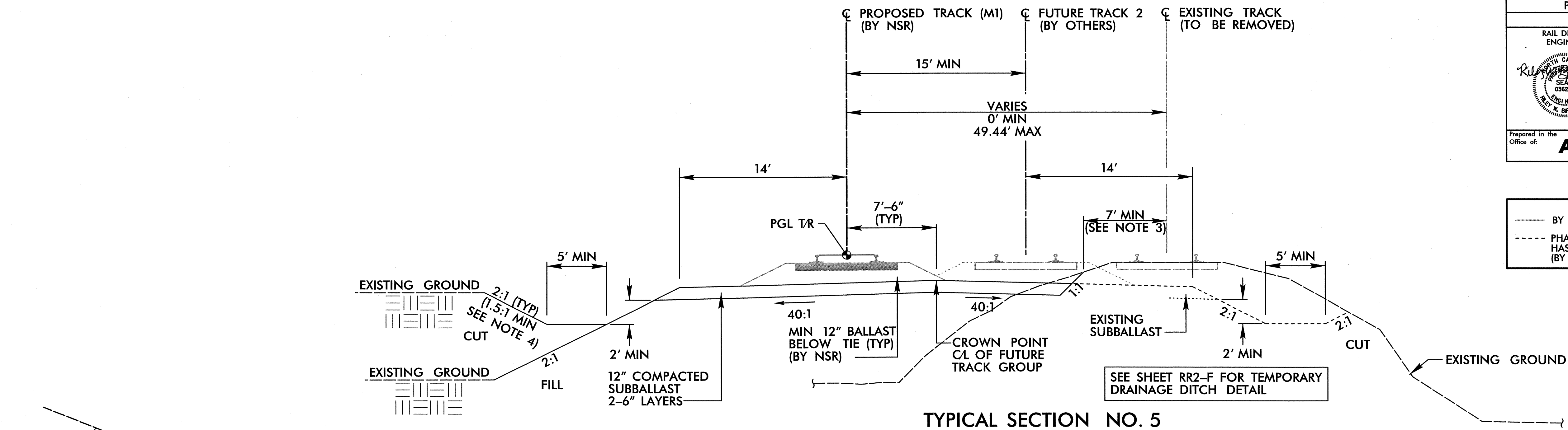
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PROJECT REFERENCE NO.	SHEET NO.
P-5201	RR2-B
RW SHEET NO.	
RAIL DESIGN ENGINEER	
	
Prepared in the Office of:	NC FIRM LICENSE No. F-0342 701 Corporate Center, Suite 415 919 854-2200 AECOM

LEGEND

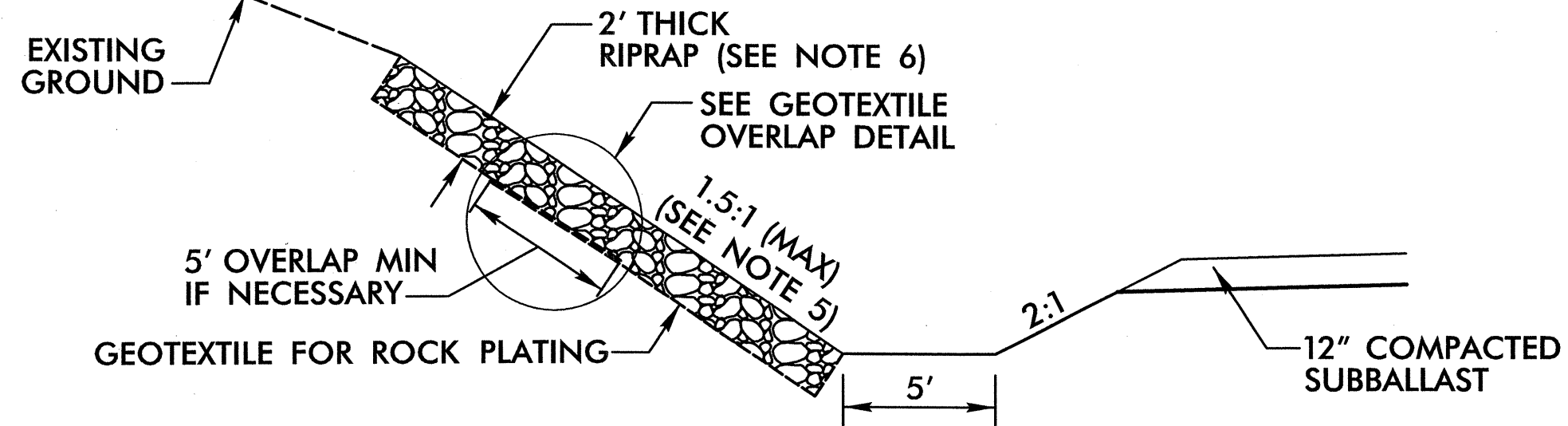
— BY OTHERS

--- PHASE 8 GRADING AFTER EX. TRACK HAS BEEN SHIFTED OR REMOVED (BY NCDOT CONTRACTOR)



TYPICAL SECTION NO. 5

- M1- STA. 3574+20 TO STA. 3581+00
- M1- STA. 3590+50 TO STA. 3594+73
- M1- STA. 3610+69 TO STA. 3614+00
- M1- STA. 3624+00 TO STA. 3627+10

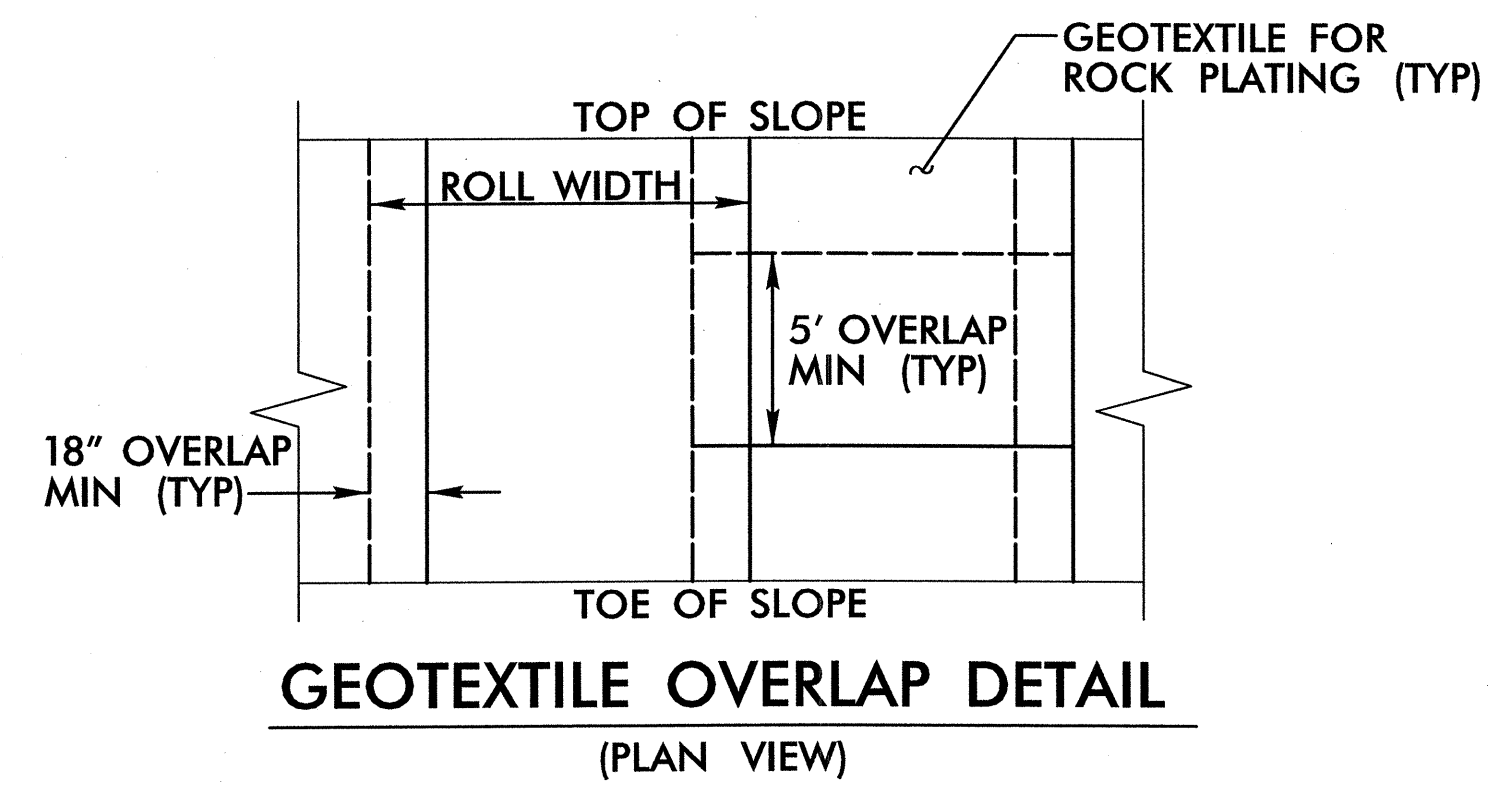


ROCK PLATING DETAIL

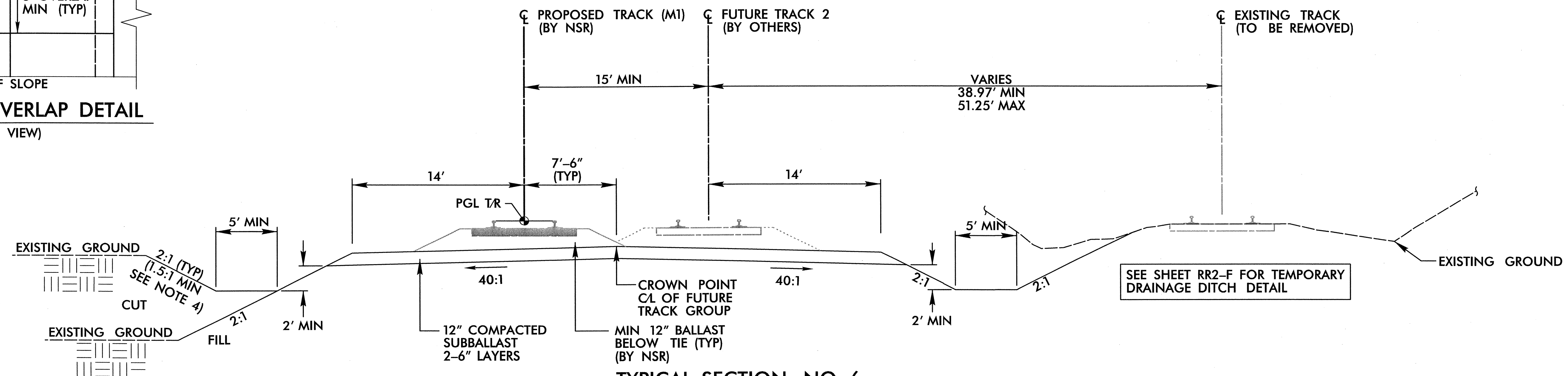
- M1- STA. 3580+30 TO STA. 3582+00
- M1- STA. 3584+72 TO STA. 3589+50
- M1- STA. 3614+20 TO STA. 3617+50

NOTES

1. TRACK CONSTRUCTION, INCLUDING BALLAST, TIE AND RAIL INSTALLATION, BY NSR.
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4. ROCK PLATING IS REQUIRED ON SLOPES AS INDICATED ON ROCK PLATING DETAIL (SEE ROCK PLATING DETAIL ON THIS SHEET).
5. 50' SLOPE TRANSITION WITH ROCK PLATING SHALL BE PROVIDED FROM 1.5:1 TO 2:1 SLOPE.
6. USE CLASS I, II OR B RIPRAP.



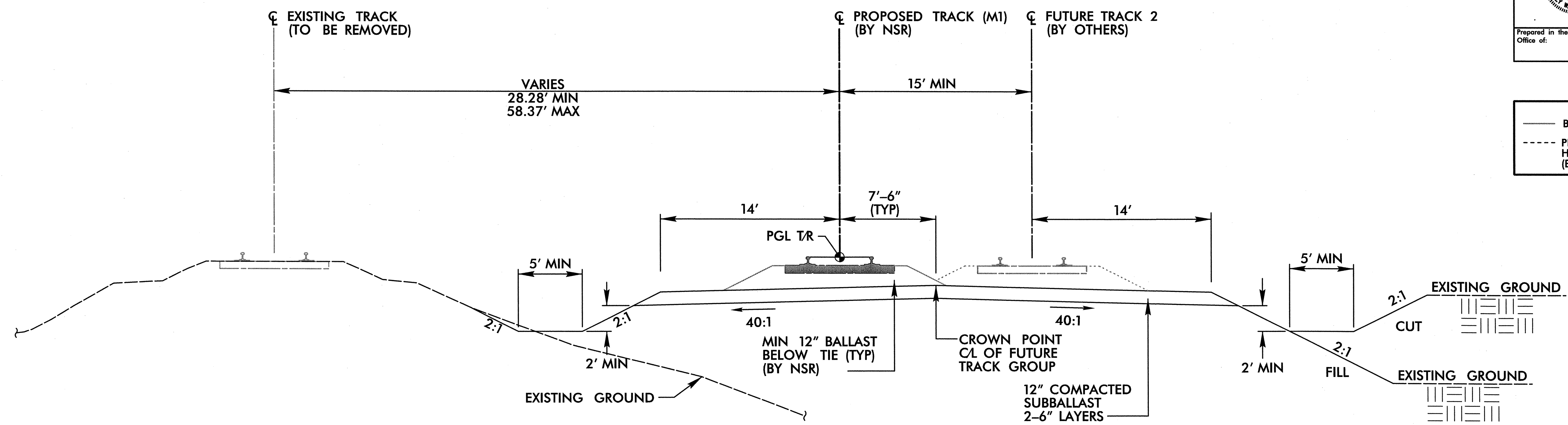
GEOTEXTILE OVERLAP DETAIL
(PLAN VIEW)



TYPICAL SECTION NO. 6

- M1- STA. 3581+00 TO STA. 3582+40
- M1- STA. 3584+31 TO STA. 3590+50
- M1- STA. 3614+00 TO STA. 3624+00

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TYPICAL SECTION NO. 7
-M1- STA. 3600+00 TO STA. 3607+00

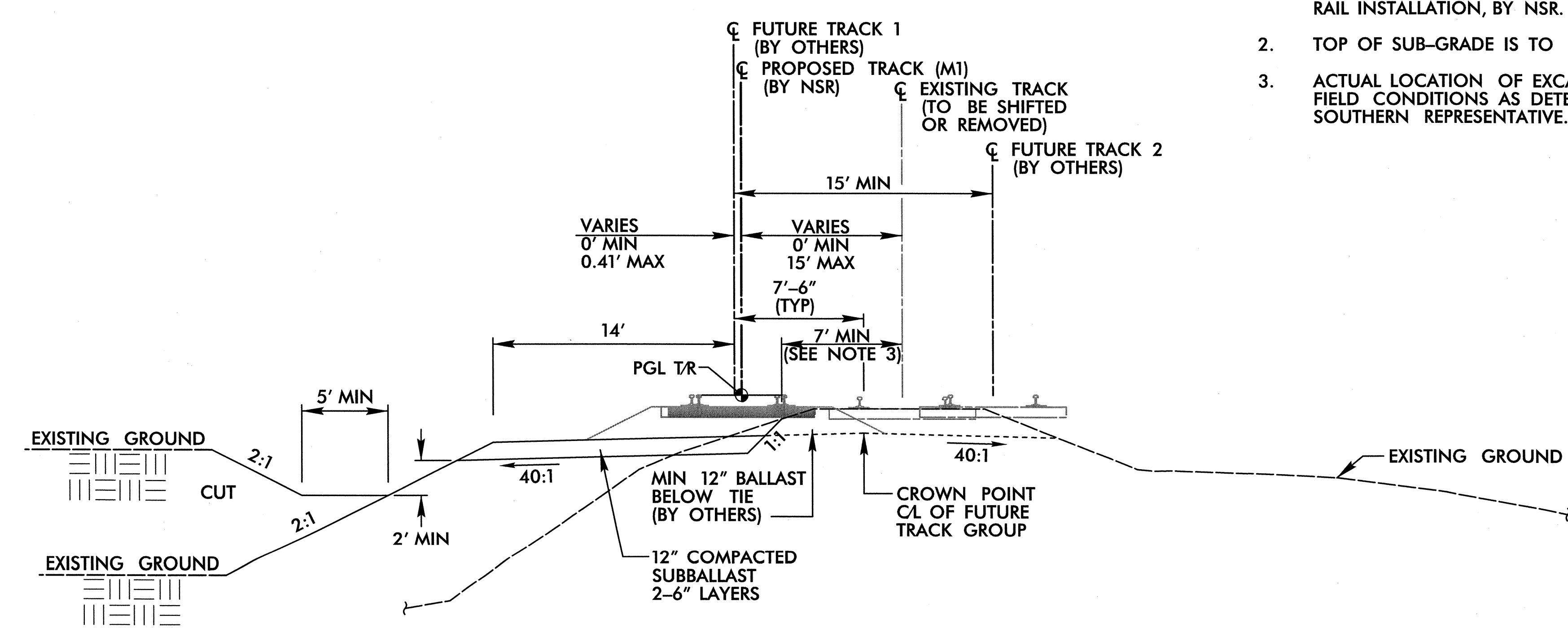
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— BY OTHERS

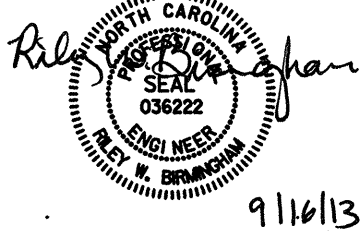
--- PHASE 8 GRADING AFTER EX. TRACK HAS BEEN SHIFTED OR REMOVED (BY NCDOT CONTRACTOR)

NOTES

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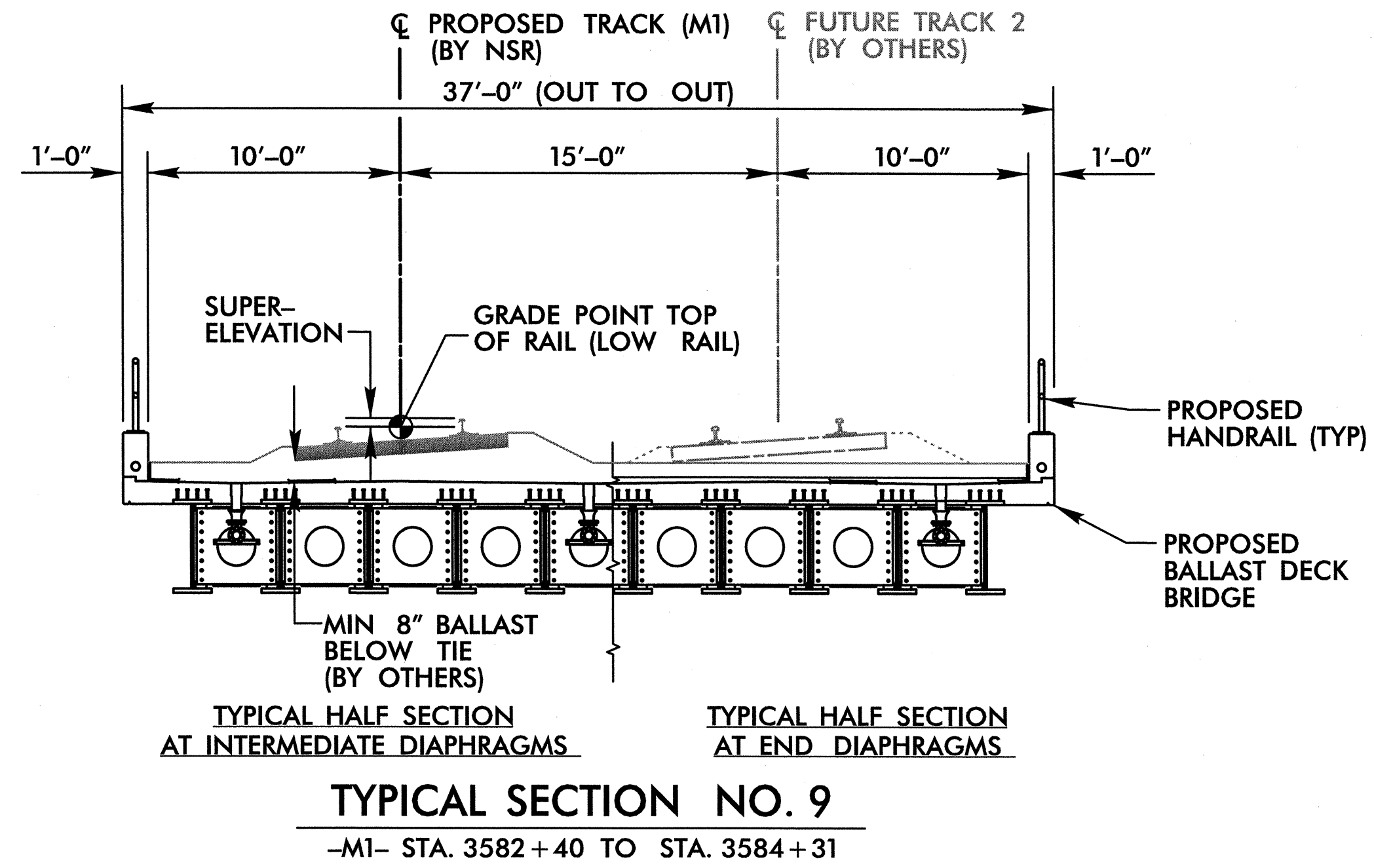


TYPICAL SECTION NO. 8
-M1- STA. 3627+10 TO STA. 3631+61

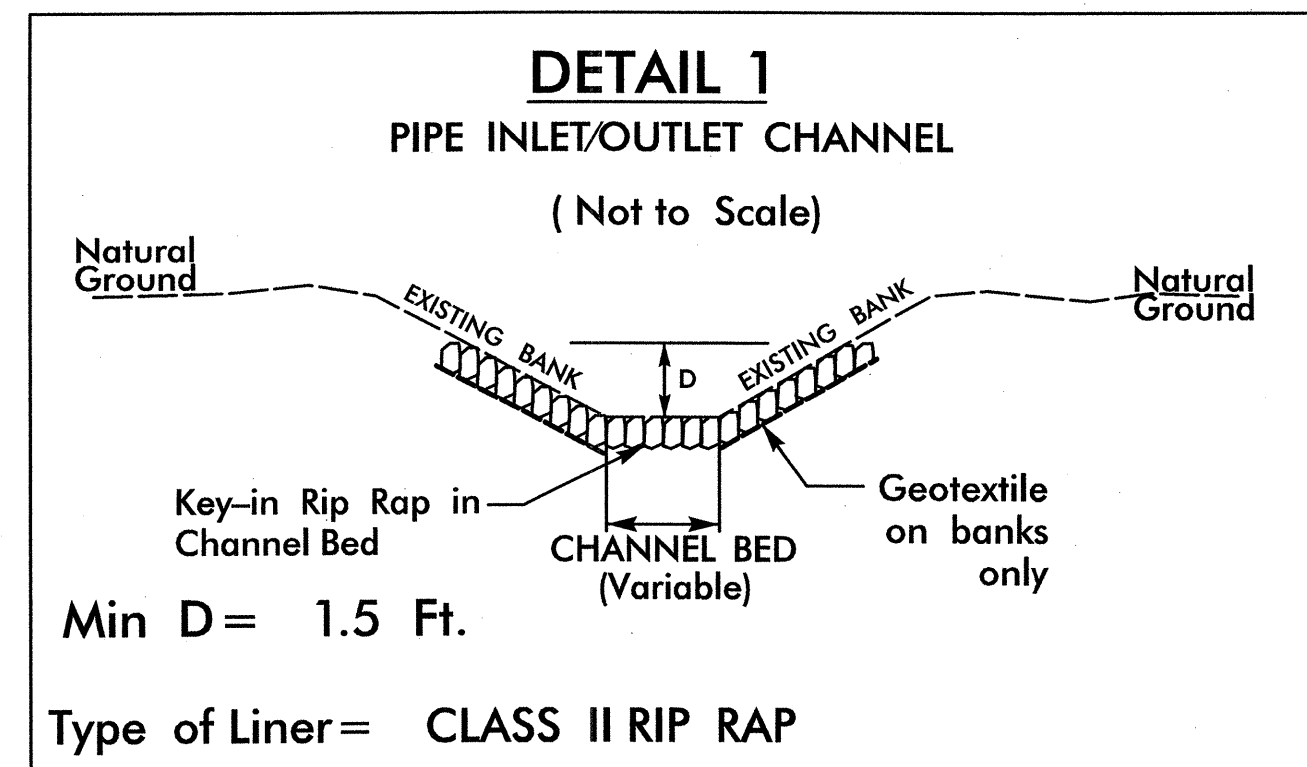
PROJECT REFERENCE NO. P-5201	SHEET NO. RR2-D
RW SHEET NO.	
RAIL DESIGN ENGINEER	
	
9/16/13	
Prepared in the Office of: AECOM	
<small>NC FIRM LICENSE No F-0342 701 Corporate Center, Durham, Suite 475 (919) 854-6200 • (919) 854-6259 FAX</small>	

NOTE

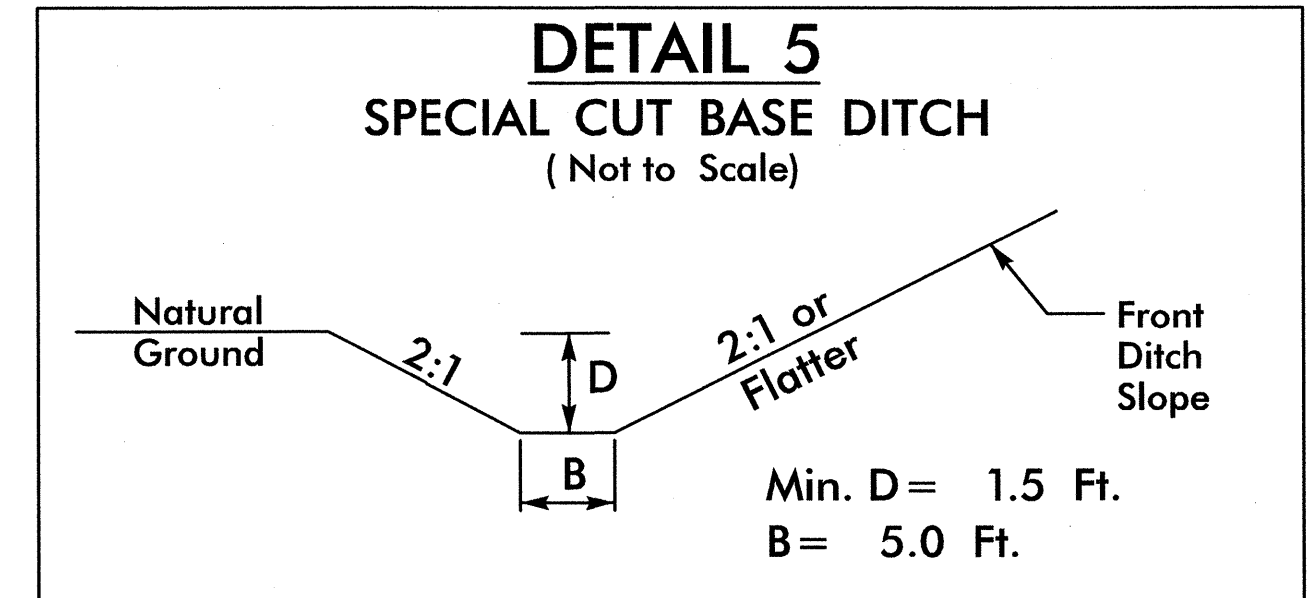
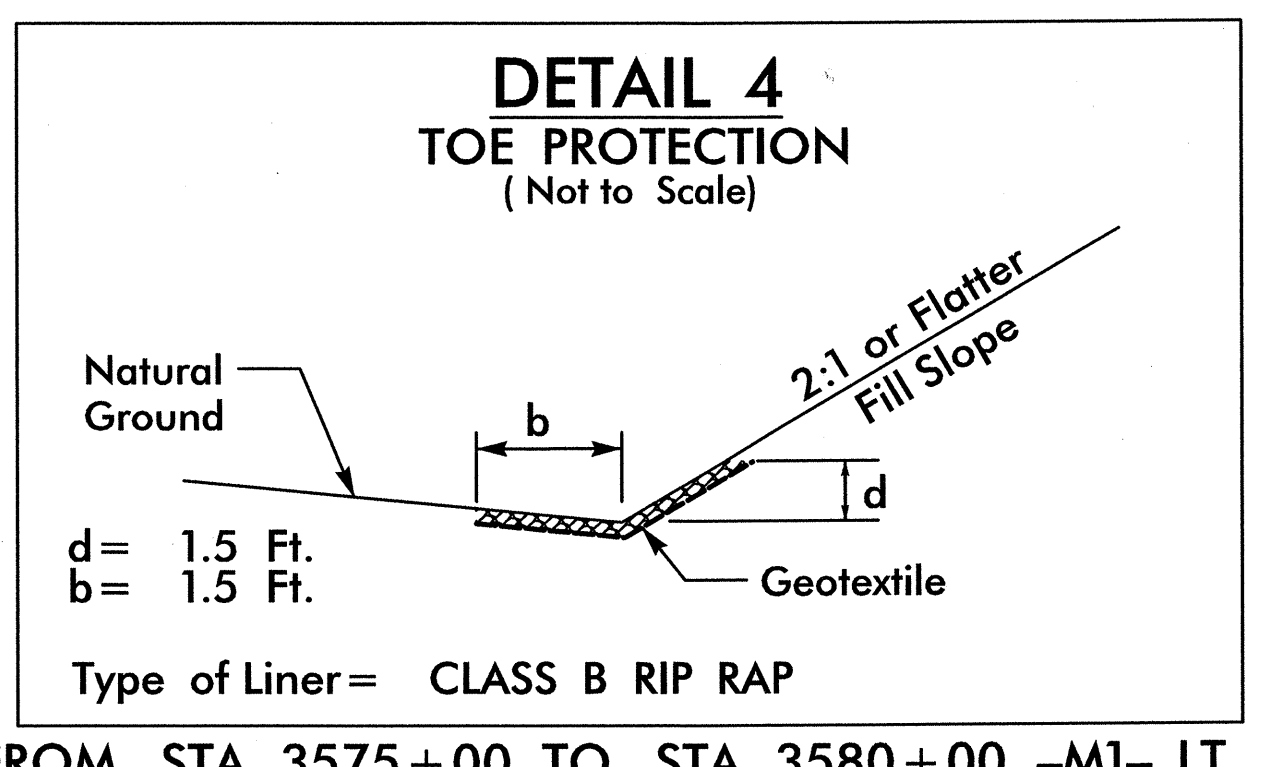
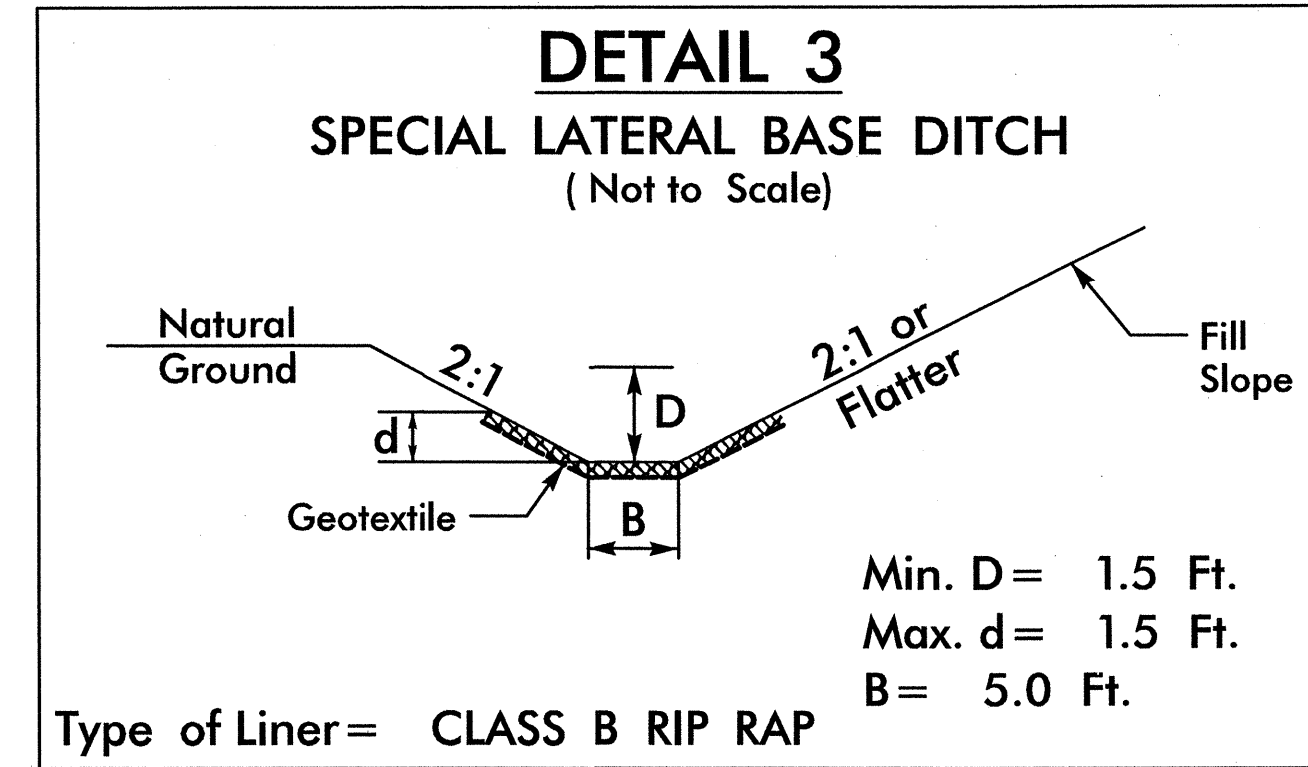
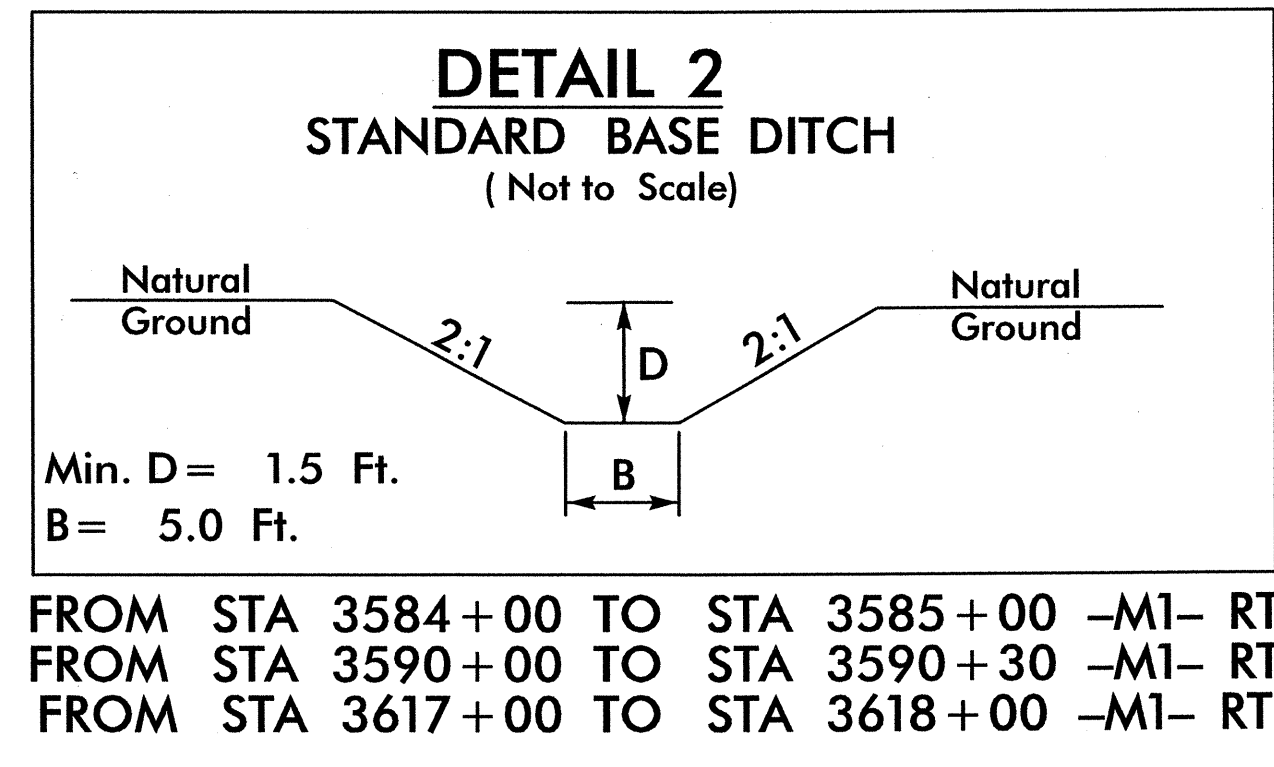
1. TRACK CONSTRUCTION, INCLUDING BALLAST, TIE AND RAIL INSTALLATION, BY NSR.



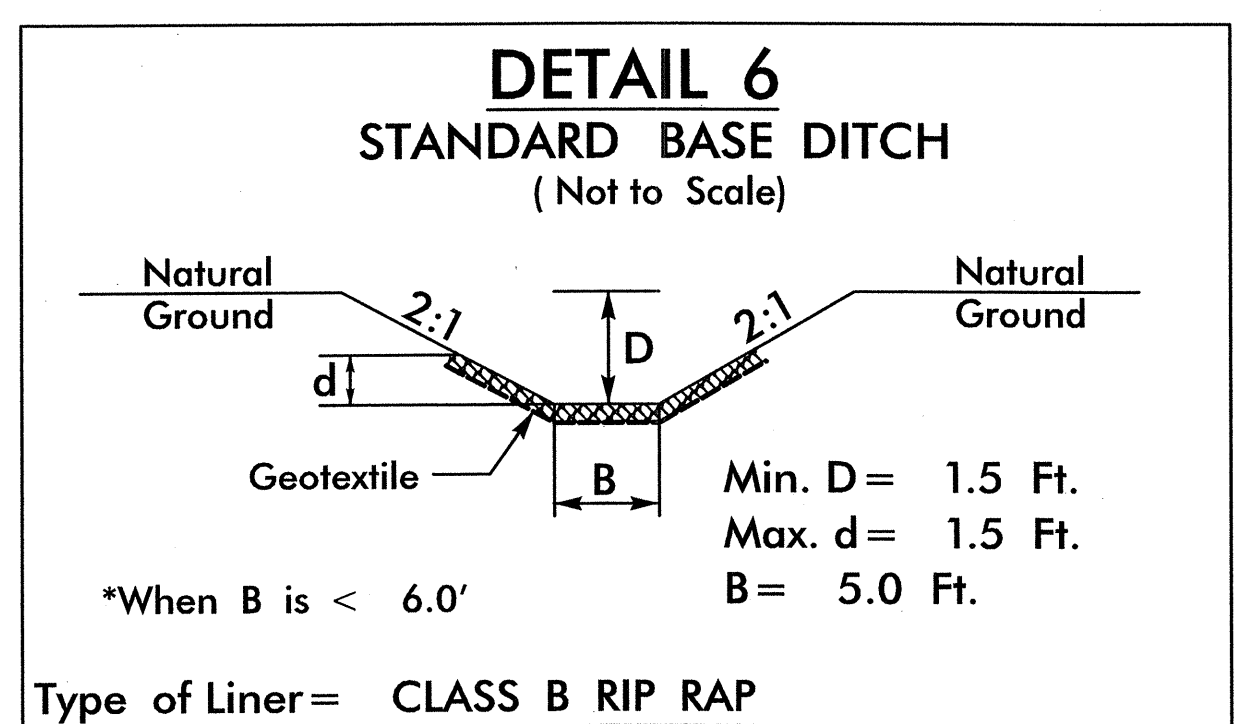
LEGEND
 — BY OTHERS



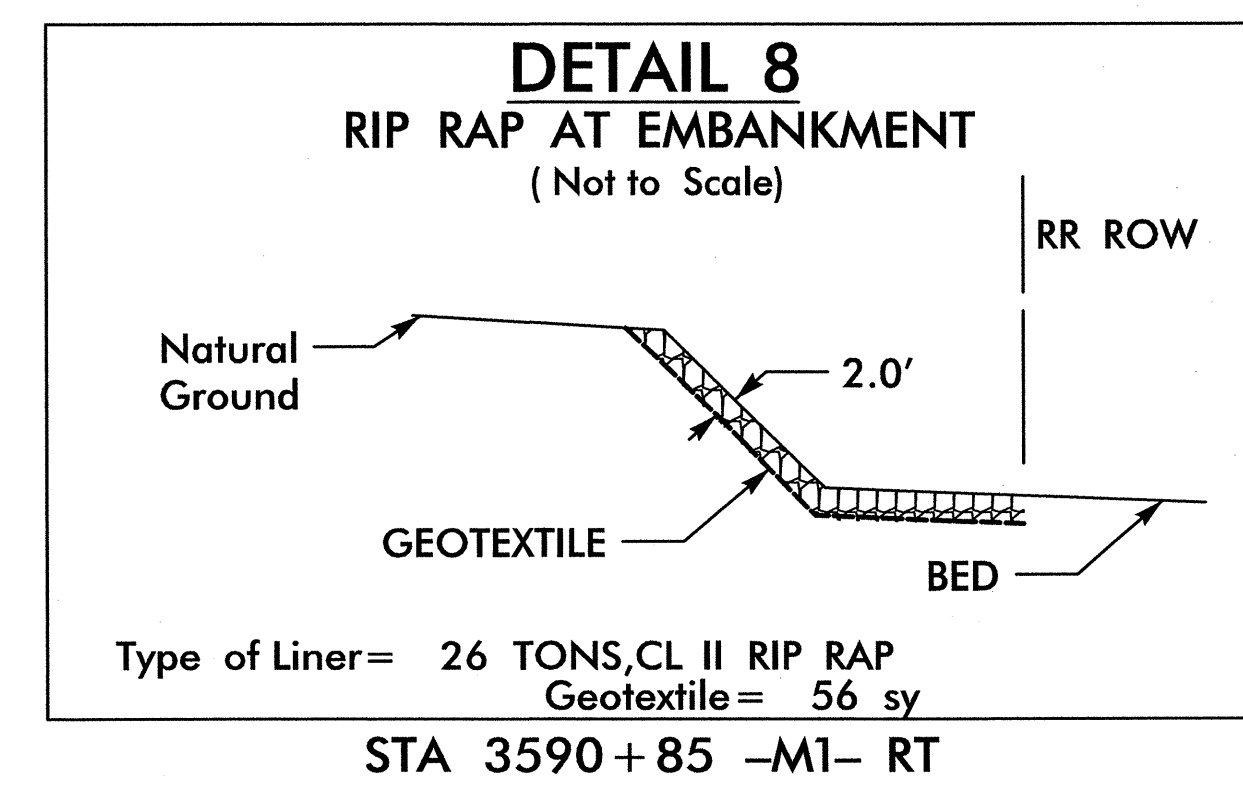
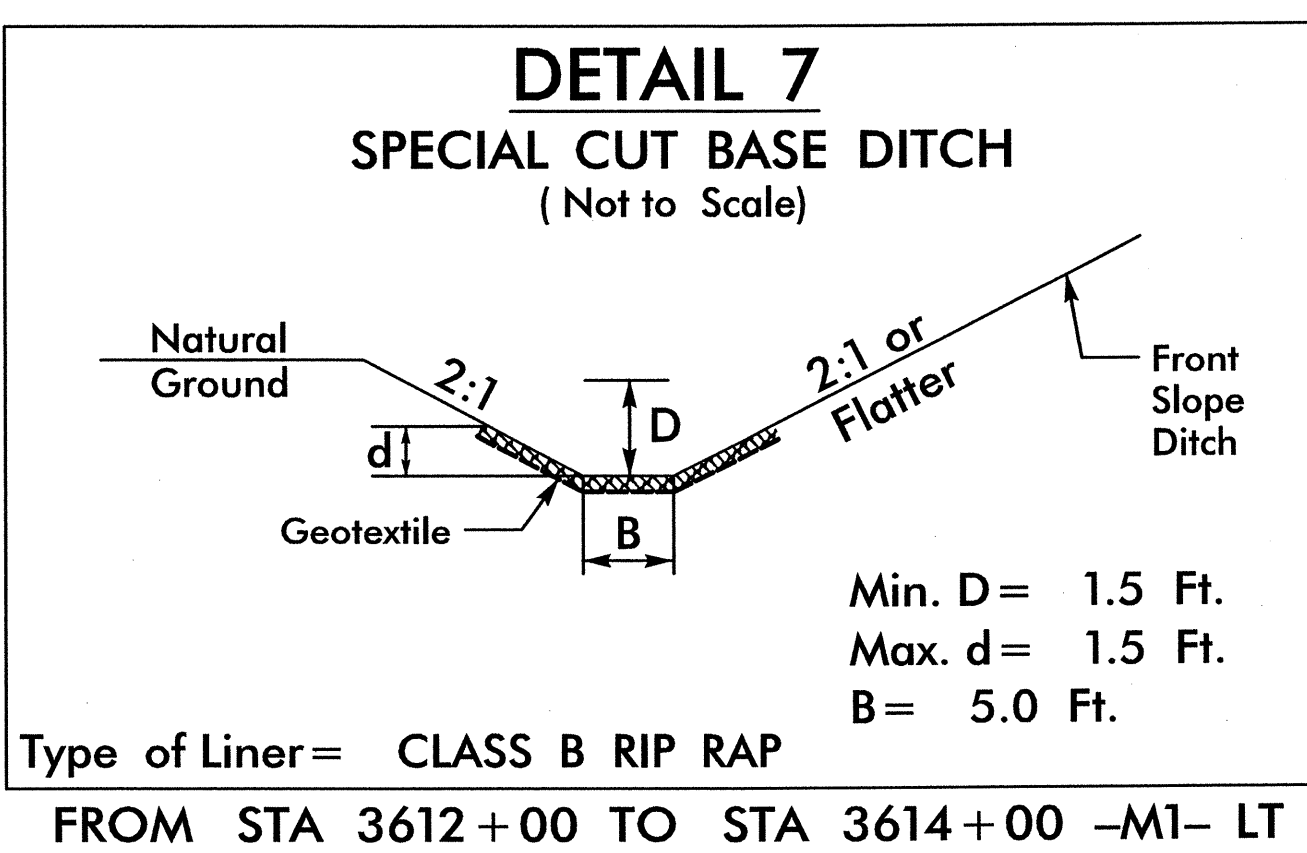
- STA 3562+29 -M1- RT
- STA 3567+21 -M1- RT
- STA 3567+39 -M1- LT
- STA 3578+25 -M1- RT
- STA 3578+36 -M1- LT
- STA 3595+34 -M1- LT
- STA 3596+00 -M1- RT
- FROM STA 3605+92 TO STA 3606+60 -M1- LT
- STA 3606+44 -M1- RT
- FROM STA 3612+50 TO STA 3612+90 -M1- RT
- STA 3613+04 -M1- LT
- STA 3618+20 -M1- LT
- STA 3618+05 -M1- RT
- STA 3623+77 -M1- RT
- STA 3627+50 -M1- LT



- FROM STA 3568+50 TO STA 3570+00 -M1- LT
- FROM STA 3573+00 TO STA 3575+58 -M1- LT
- FROM STA 3584+48 TO STA 3586+00 -M1- RT
- FROM STA 3584+72 TO STA 3586+00 -M1- LT
- FROM STA 3587+00 TO STA 3589+00 -M1- LT
- FROM STA 3587+00 TO STA 3590+00 -M1- RT
- FROM STA 3603+00 TO STA 3604+50 -M1- LT
- FROM STA 3603+00 TO STA 3604+50 -M1- RT
- FROM STA 3614+00 TO STA 3616+50 -M1- LT
- FROM STA 3616+50 TO STA 3618+18 -M1- LT
- FROM STA 3622+00 TO STA 3623+63 -M1- RT
- FROM STA 3622+00 TO STA 3623+00 -M1- RT

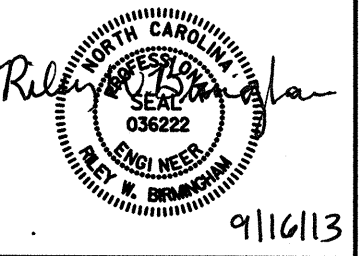



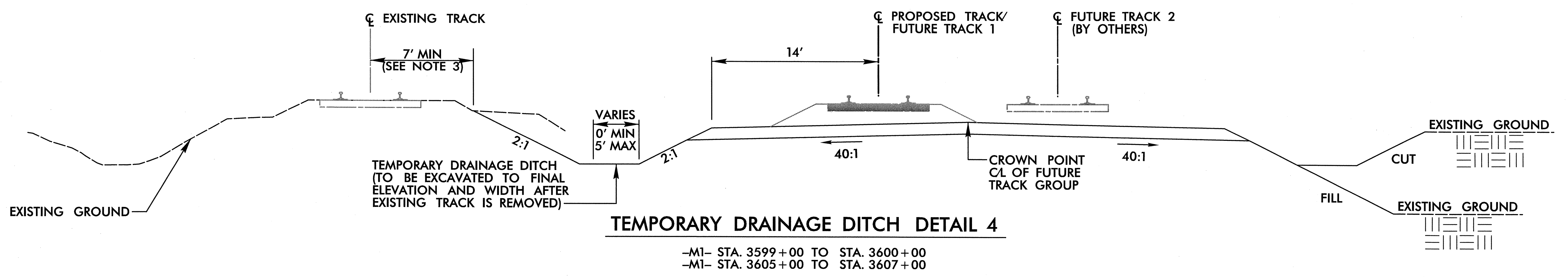
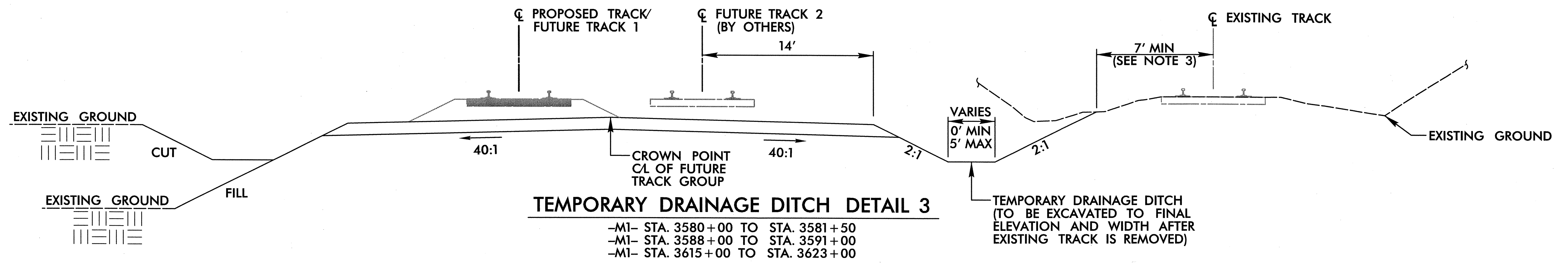
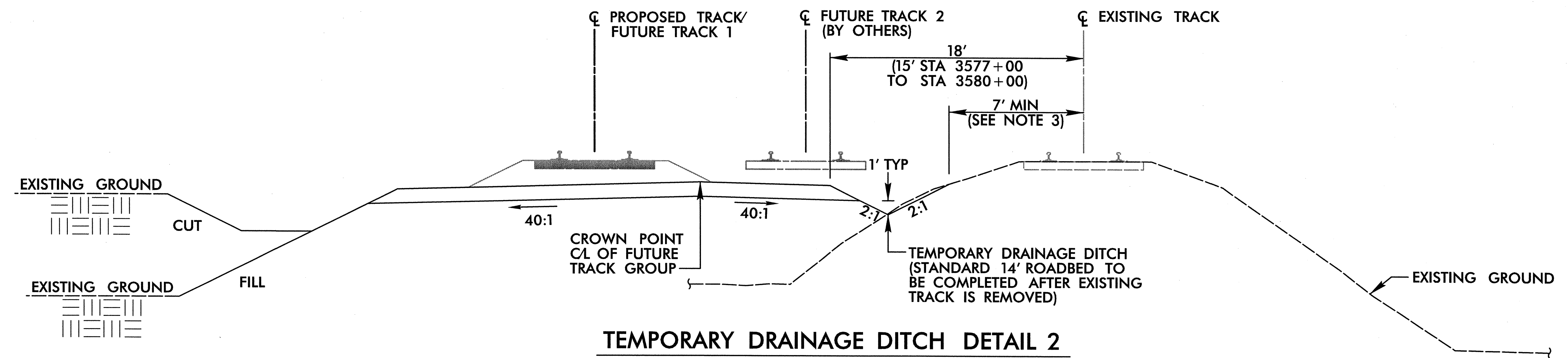
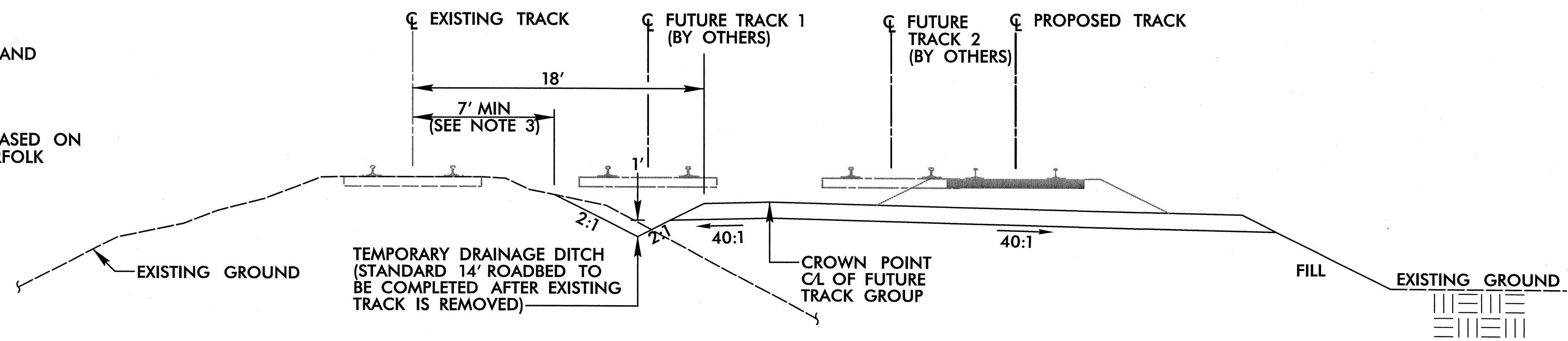
- FROM STA 3567+22 TO STA 3567+50 -M1- RT
- FROM STA 3595+35 TO STA 3596+70 -M1- LT
- FROM STA 3612+90 TO STA 3614+00 -M1- RT
- FROM STA 3618+15 TO STA 3619+00 -M1- RT
- FROM STA 3623+00 TO STA 3623+20 -M1- RT
- FROM STA 3623+63 TO STA 3625+00 -M1- LT



NOTES

1. TRACK CONSTRUCTION, INCLUDING BALLAST, TIE AND RAIL INSTALLATION, 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.

PROJECT REFERENCE NO. P-5201	SHEET NO. RR2-F
RW SHEET NO.	
RAIL DESIGN ENGINEER	
	
911613	
Prepared in the Office of:	NC FIRM LICENSE No. P-0342
	
701 Corporate Center, Drive, Suite 475 Raleigh, NC 27601 (919) 854-8200 • (919) 854-6259(FAX)	



LEGEND
BY OTHERS

USER: wjch
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HORIZONTAL CURVE GEOMETRY

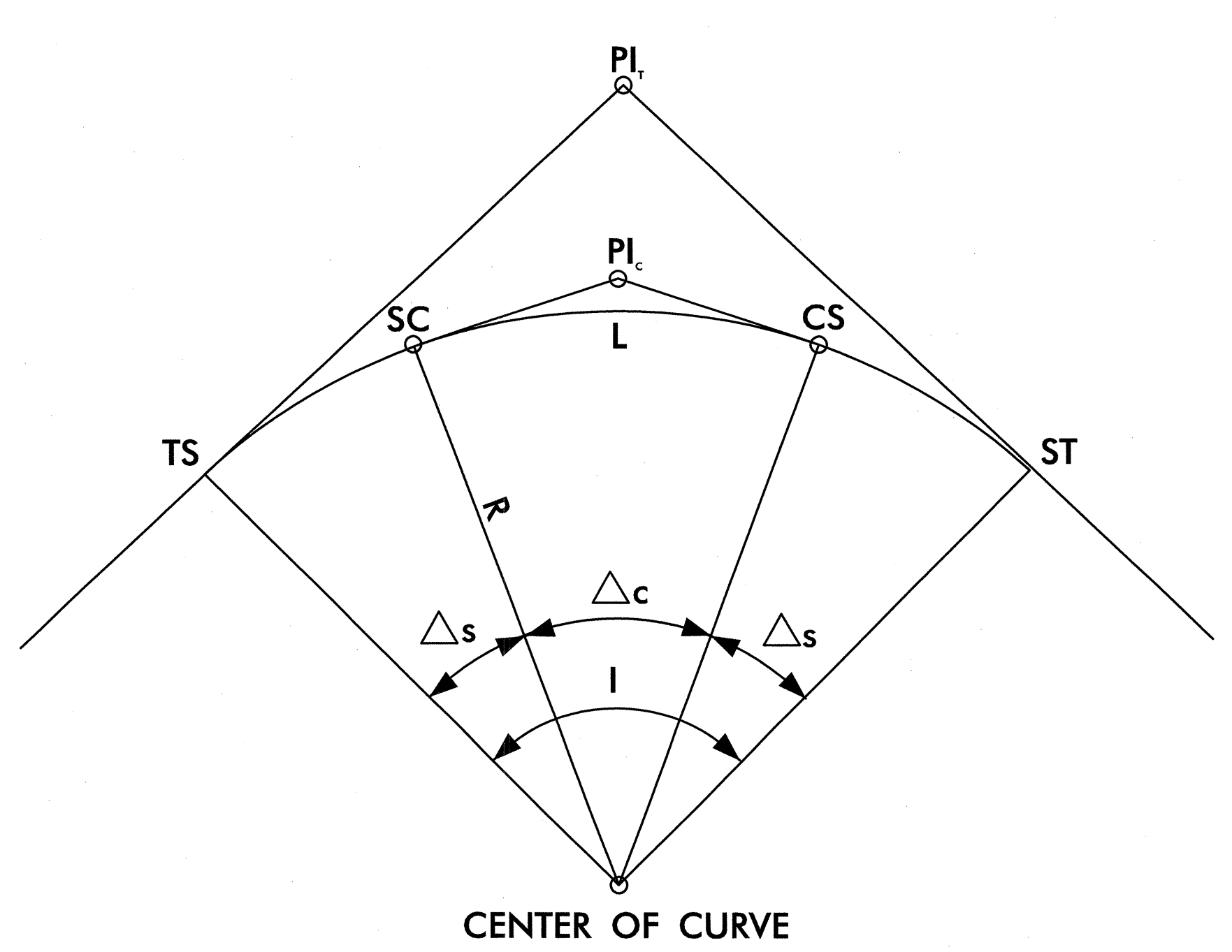


FIGURE A
CIRCULAR CURVE WITH SPIRAL TRANSITION CURVES

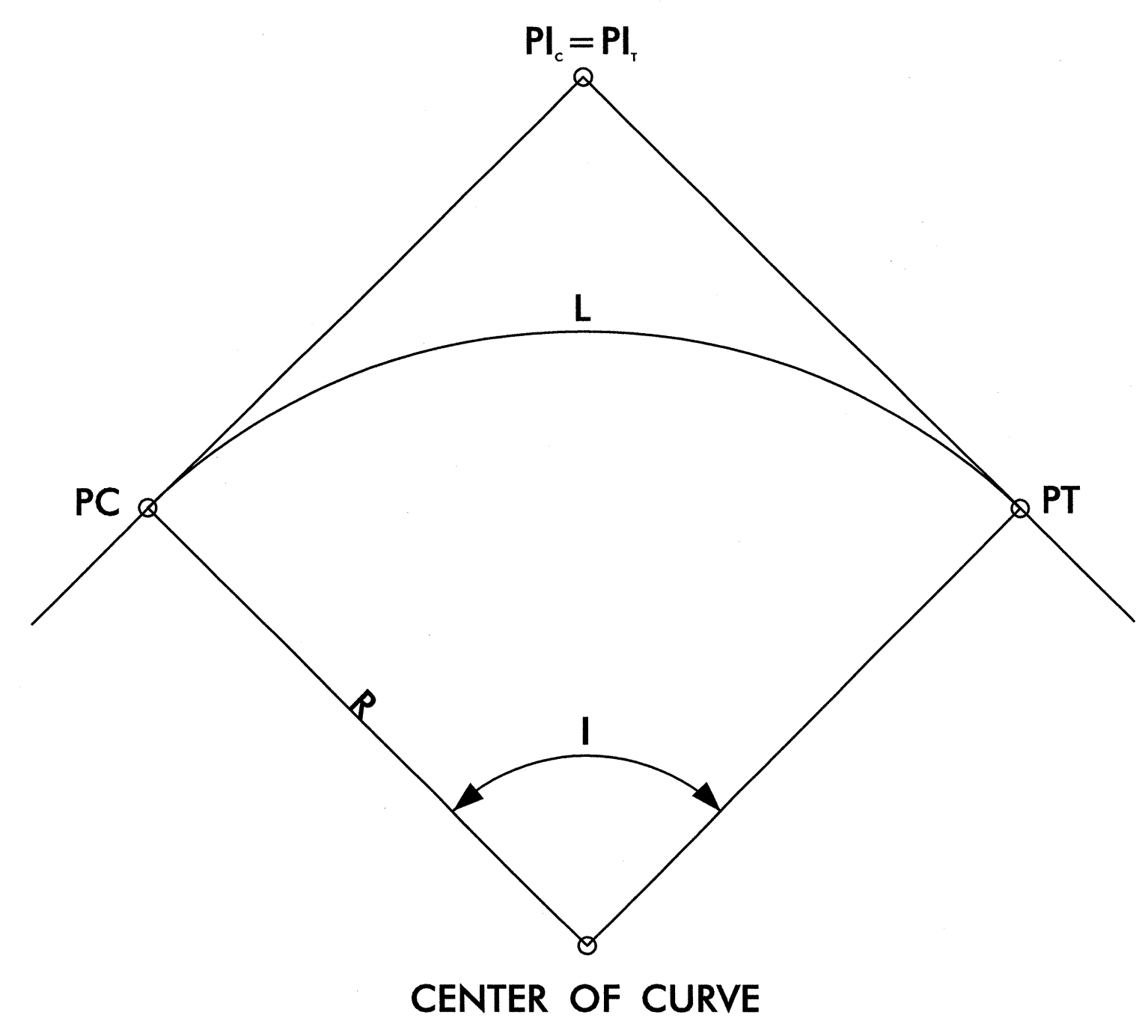


FIGURE B
SIMPLE CIRCULAR CURVE

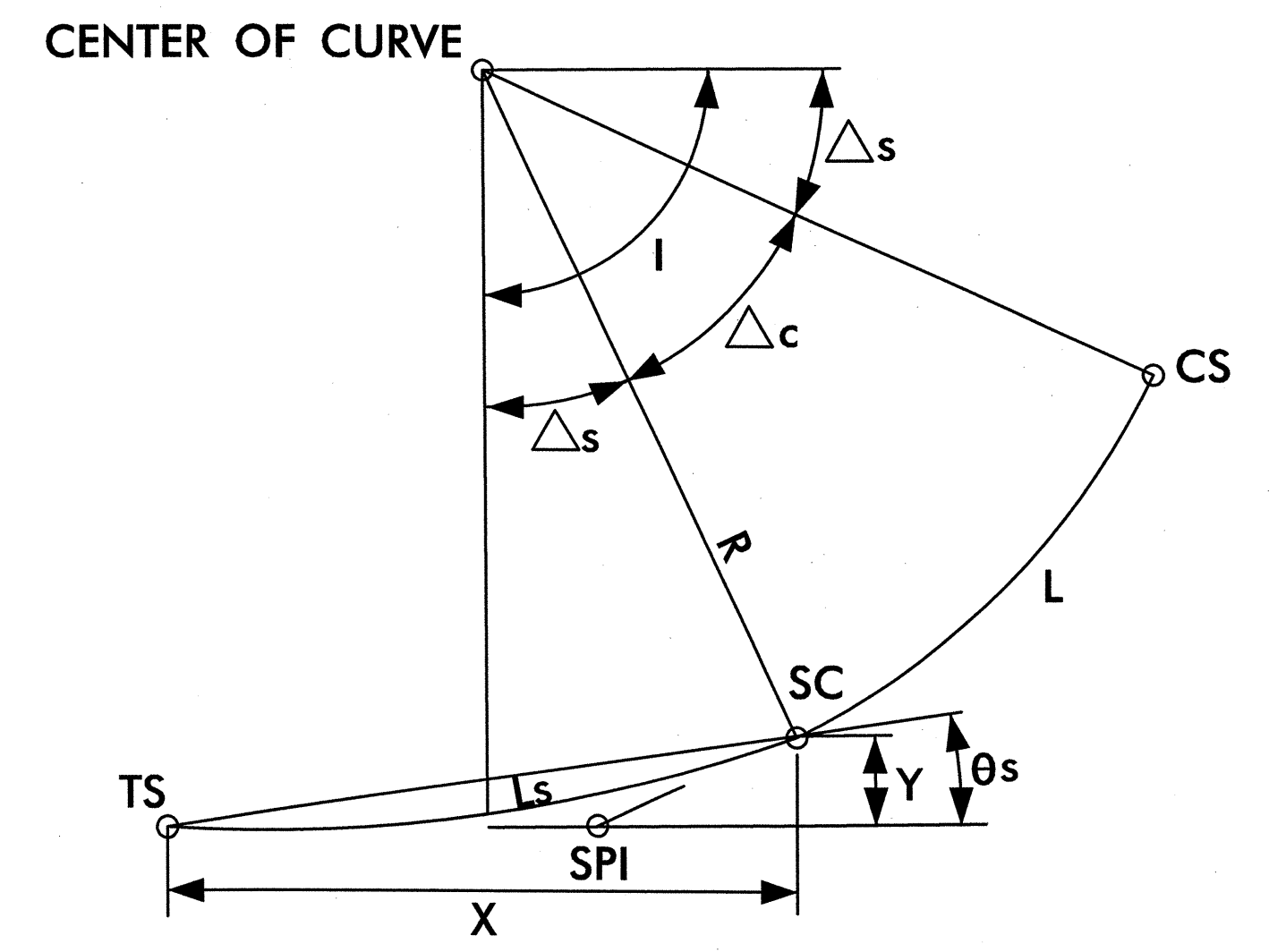
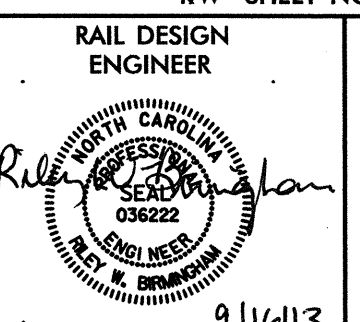


FIGURE C
SPIRAL TRANSITION CURVE

- | | | | |
|----------------|-------------------------------------|-----------------|--|
| R | RADIUS OF CURVATURE | PI _c | POINT OF INTERSECTION (CIRCULAR CURVE) |
| D _c | DEGREE OF CURVATURE (CHORD DEFINED) | PI _t | POINT OF INTERSECTION (TANGENT) |
| L | LENGTH OF CURVE (CHORD DEFINED) | SPI | 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 |

PROJECT REFERENCE NO. P-5201	SHEET NO. RR2-H
RW SHEET NO.	
RAIL DESIGN ENGINEER  9/16/13	
Prepared in the Office of: AECOM <small>NC FIRM LICENSE No. F-0342 701 Corporate Center Drive, Suite 475 (919) 854-5000 • Fax (919) 854-5299</small>	

TRACK GEOMETRY DATA
PROPOSED TRACK #1 (M1)

FEATURE NO.	DESC	STATION	NORTHING	EASTING	BEARING	DISTANCE	R(ft)	Dc	L(ft)	I	DELTA(CURVE)	DELTA(SPIRAL)	THETA	Ls(ft)	X(ft)	Y(ft)	Ea(in)	V(MPH)			
																		FREIGHT PLAN7-2	INTERMODAL PLAN7-2	PASSENGER PLAN7-2	PASSENGER FUTURE 4"CD
	POT	3535+38.95	754581.1653	2051758.5379	S 23°57' 01.01" E	1354.1396															
	TS	3548+93.09	753343.6198	2052308.2424	BEGIN TRACK CONSTRUCTION - TIE TO EXISTING TRACK																
	SC	3552+34.09	753028.6807	2052438.7633								4°19' 08.33" (RT)	1°26' 22.53"	341.00	340.8063	8.5648					
M1C690	Plc	3560+67.97	752243.2711	2052718.9186			2261.8597	2°32' 00.00"	1597.6906	49°06' 46.05" (RT)	40°28' 29.39" (RT)						4.0	50	60	60 Eu=2.38"	65 Eu=3.49"
	CS	3568+31.78	751463.9641	2052422.2100								4°19' 08.33" (RT)	1°26' 22.53"	341.00	340.8063	8.5648					
	ST	3571+72.78	751151.8568	2052285.0555																	
	TS	3574+41.92	750908.2584	2052170.6215	S 25°09' 45.04" W	269.1381															
	SC	3577+82.92	750596.1512	2052033.4670								4°19' 08.33" (RT)	1°26' 22.53"	341.00	340.8063	8.5648					
M1C695	Plc	3589+11.88	749541.0724	2051631.7627			2261.8597	2°32' 00.00"	2094.0932		53°03' 01.30" (LT)						4.0	50	60	60 Eu=2.38"	65 Eu=3.49"
	CS	3598+77.01	748585.8233	2052233.4742								1°31' 45.17" (LT)	0°45' 27.79"	62.00	N/A	N/A					
	SC	3599+39.01	748533.7939	2052267.1895																	
	Plr	3599+53.01	747307.5680	2050479.1418						117°35' 51.70" (LT)											
M1C699	Plc	3611+71.49	747508.8606	2052951.6670			2387.4987	2°24' 00.00"	2275.3099		54°36' 26.78" (LT)						4.0	50	60	60 Eu=2.05"	65 Eu=3.10"
	CS	3622+14.32	747473.2327	2054183.6282								4°05' 30.12" (LT)	1°21' 49.83"	341.00	340.8261	8.1144					
	ST	3625+55.32	747479.6071	2054524.4913																	
	TS	3628+20.18	747490.8608	2054789.1124	N 87°33' 53.33" E	264.8603															
	SC	3631+61.18	747498.4750	2055129.9719	END TRACK CONSTRUCTION - TIE TO EXISTING TRACK																
M1C705	Plc	3634+24.34	747493.7378	2055393.0862			2817.9731	2°02' 00.00"	524.7642	14°08' 12.69" (RT)	10°40' 12.74" (RT)						4.0	50	60	60 Eu=1.12"	65 Eu=2.01"
	PT	3636+85.95	747440.3654	2055650.7739																	

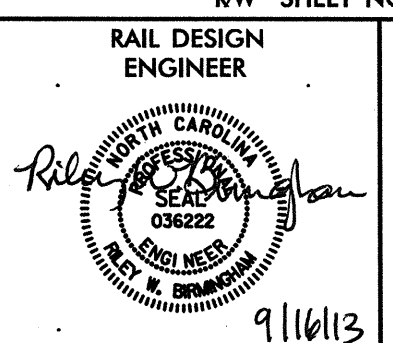
PROPOSED TEMPORARY TRACK (A1)

	CS	3566+00.27	751684.1799	2052493.3771	BEGIN TEMPORARY TIE-IN - TIE TO CURVE M1C690																
	SC	3566+62.27	751624.5204	2052476.5105								1° 38' 15.68" (RT)	0° 48' 27.55"	62.00	N/A	N/A					
A1C690	Plc	3567+64.39	751526.6589	2052447.3062			2083.6829	2° 45' 00.00"	204.0695	11°56' 16.44" (RT)	5° 36' 42.88" (RT)						4.0	50	60	60 Eu=2.93"	
	CS	3568+66.34	751432.1224	2052408.6720								4° 41' 17.88" (RT)	1° 33' 45.64"	341.00	340.7718	9.2965					
	ST	3572+07.34	751124.0593	2052262.6961	TIE TO EXISTING TRACK																
					S 26° 54' 59.91" W																

PROPOSED TEMPORARY TRACK (A2)

	CS	3605+89.90	748048.1322	2052697.5726	BEGIN TEMPORARY TIE-IN - TIE TO CURVE M1C699																
	SC	3606+51.90	748008.2870	2052745.0722								1° 12' 32.16" (LT)	0° 33' 28.70"	62.00	N/A	N/A					
A2C699	Plc	3608+84.37	747860.6265	2052924.6214			3819.8277	1° 30' 00.00"	464.3507	9°34' 08.67" (LT)	6° 57' 54.94" (LT)						3.5	50	60	60 Eu=0.28"	
	CS	3611+16.25	747735.8292	2053120.7518								1° 23' 41.57" (LT)	0° 37' 11.84"	62.00	N/A	N/A					
	SC	3611+78.25	747703.1141	2053173.4162	TIE TO EXISTING TRACK																

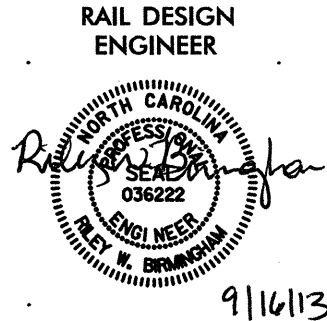
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 DSN: R:\Rail\Share\WCDOT\1-5301-RR-TK0240p

PROJECT REFERENCE NO. P-5201	SHEET NO. RR2-1
RW SHEET NO.	
RAIL DESIGN ENGINEER	
 911613	
Prepared in the Office of: AECOM	

TRACK GEOMETRY DATA

FUTURE TRACK #1 (F1)

FEATURE NO.	DESC	STATION	NORTHING	EASTING	BEARING	DISTANCE	R(ft)	Dc	L(ft)	I	DELTA(CURVE)	DELTA(SPIRAL)	THETA	Ls(ft)	X(ft)	Y(ft)	Ea(in)	V(MPH)				
																		FREIGHT PLAN7-2	INTERMODAL PLAN7-2	PASSENGER PLAN7-2	PASSENGER FUTURE 4"CD	
	POT	3535+24.93	754581.1653	2051758.5379																		
					S 23° 57' 01.01" E	193.5253																
FIC688	TS	3537+18.46	754404.3029	2051837.0983																		
	SC	3538+11.46	754319.3616	2051874.9660								0° 13' 57.00" (LT)	0° 04' 39.00"	93.00	92.9998	0.1258						
	Plc	3539+68.33	754176.2518	2051939.2304			11459.1923	0° 30' 00.00"	313.7330	02°02' 01.19" (LT)	1° 34' 07.19" (LT)						1.0	50	60	60 Eu=0.26"	65 Eu=0.48"	
	CS	3541+25.19	754034.9549	2052007.3883																		
	ST	3542+18.19	753951.3006	2052048.0203									0° 13' 57.00" (LT)	0° 04' 39.00"	93.00	92.9998	0.1258					
					S 25° 59' 02.20" E	528.4656																
FIC690	TS	3547+46.66	753476.2540	2052279.5512																		
	SC	3550+87.66	753166.2117	2052421.3199								4° 14' 04.02" (RT)	1° 24' 41.10"	341.00	340.8138	8.3973						
	Plc	3559+88.92	752329.1043	2052755.2833			2307.0130	2° 29' 01.47"	1718.2761	51° 08' 47.24" (RT)	42° 40' 39.20" (RT)						4.0	50	60	60 Eu=2.26"	65 Eu=3.35"	
	CS	3568+05.93	751487.2951	2052433.3552																		
	ST	3571+46.93	751175.2523	2052296.0459									4° 14' 04.02" (RT)	1° 24' 41.10"	341.00	340.8138	8.3973					
					S 25° 09' 45.04" W	294.9865																
FIC695	TS	3574+41.92	750908.2584	2052170.6215																		
	SC	3577+82.92	750596.1512	2052033.4670								4°19' 08.33" (RT)	1°26' 22.53"	341.00	340.8063	8.5648						
	Plc	3589+11.88	749541.0724	2051631.7627			2261.8597	2°32' 00.00"	2094.0932		53°03' 01.30" (LT)						4.0	50	60	60 Eu=2.38"	65 Eu=3.49"	
	CS	3598+77.01	748585.8233	2052233.4742																		
	SC	3599+39.01	748533.7939	2052267.1895									1°31' 45.17" (LT)	0°45' 27.79"	62.00							
	Plr	3599+53.01	747307.5680	2050479.1418							117°35' 51.70" (LT)											
FIC699	Plc	3611+71.49	747508.8606	2052951.6670			2387.4987	2°24' 00.00"	2275.3099		54°36' 26.78" (LT)						4.0	50	60	60 Eu=2.05"	65 Eu=3.10"	
	CS	3622+14.32	747473.2327	2054183.6282																		
	ST	3625+55.32	747479.6071	2054524.4913									4°05' 30.12" (LT)	1°21' 49.83"	341.00	340.8261	8.1144					
					N 87°33' 53.33" E	271.2444																
FIC705	TS	3628+26.57	747491.1321	2054795.4908																		
	SC	3631+67.57	747498.7826	2055136.3501																		
	Plc	3639+76.37	747484.4821	2055945.0226			2832.9731	2° 01' 21.24"	1575.5991	38° 45' 50.86" (RT)	31° 52' 03.12" (RT)						4.0	50	60	60 Eu=1.10"	65 Eu=1.98"	
	CS	3647+43.17	747045.3926	2056624.2547																		
	ST	3650+84.17	746848.9603	2056902.9264									3° 26' 53.87" (RT)	1° 08' 57.83"	341.00	340.8765	6.8392					
					S 53° 40' 15.81" E																	

PROJECT REFERENCE NO. P-5201	SHEET NO. RR2-J
RW SHEET NO.	
	
91613	
Prepared in the Office of: AECOM <small>NC FIRM LICENSE No. F-0342 700 Corporate Center Drive, Suite 475 Raleigh, NC 27607 (919) 854-8200 • (919) 854-5259 FAX</small>	

TRACK GEOMETRY DATA

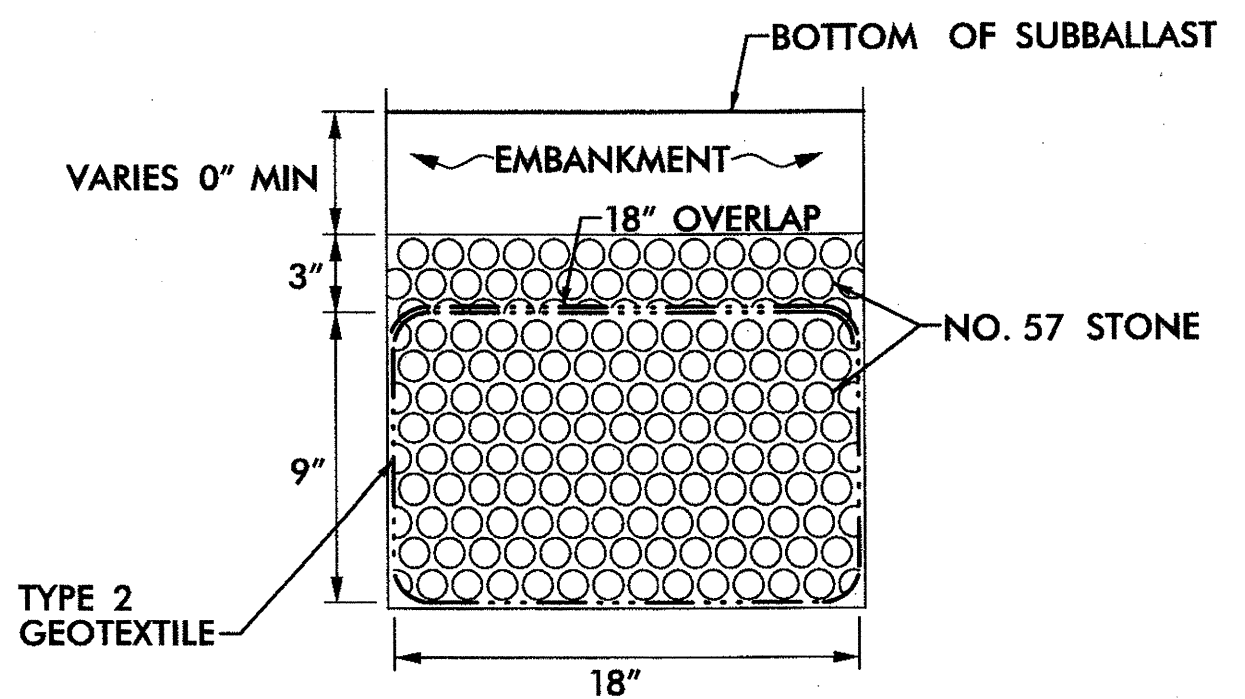
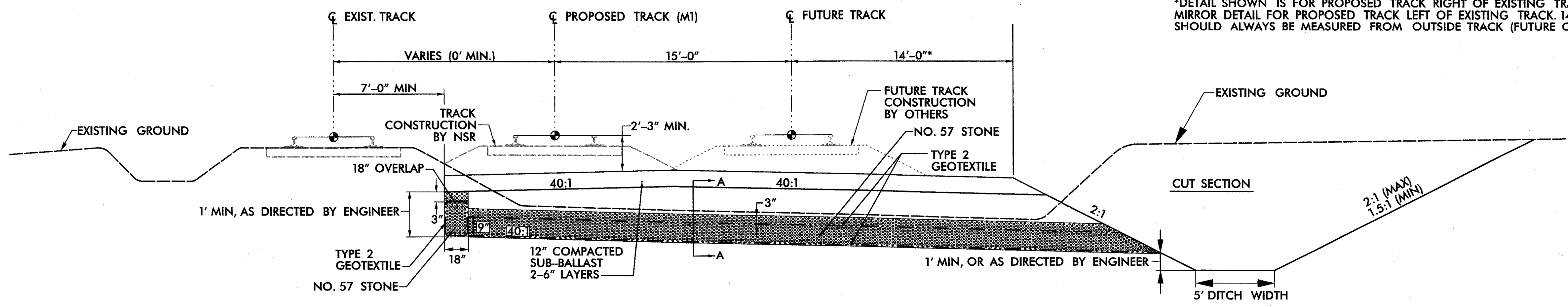
FUTURE TRACK #2 (F2)

FEATURE NO.	DESC	STATION	NORTHING	EASTING	BEARING	DISTANCE	R(ft)	Dc	L(ft)	I	DELTA(CURVE)	DELTA(SPIRAL)	THETA	Ls(ft)	X(ft)	Y(ft)	Ea(in)	V(MPH)				
																		FREIGHT PLAN7-2	INTERMODAL PLAN7-2	PASSENGER PLAN7-2	PASSENGER FUTURE 4"CD	
	POT	3535+24.93	754575.0762	2051744.8294																		
					S 23°57' 01.01" E	193.5253																
F2C688	TS	3537+18.46	754398.2138	2051823.3898																		
	SC	3538+11.46	754313.2724	2051861.2573								0°13' 55.90" (LT)	0°04' 38.63"	93.00	92.9998	0.1256						
	Plc	3539+68.60	754169.9194	2051925.6300			11474.1923	0°29' 57.65"	314.2654	02°02' 01.18" (LT)	1°34' 09.38" (LT)						1.0	50	60	60 Eu=0.26"	65 Eu=0.48"	
	CS	3541+25.72	754028.3830	2051993.9044																		
	ST	3542+18.72	753944.7289	2052034.5365									0°13' 55.90" (LT)	0°04' 38.63"	93.00	92.9998	0.1256					
					S 25°59' 02.20" E	528.4595																
F2C690	TS	3547+47.18	753469.6877	2052266.0648																		
	SC	3550+88.18	753159.6236	2052407.7830								4°15' 43.78" (RT)	1°25' 14.35"	341.00	340.8113	8.4522						
	Plc	3559+82.31	752328.9854	2052738.6999			2292.0130	2°30' 00.00"	1704.8853	51°08' 47.24" (RT)	42°37' 19.68" (RT)						4.0	50	60	60 Eu=2.30"	65 Eu=3.39"	
	CS	3567+93.07	751493.6885	2052419.7252																		
	ST	3571+34.07	751181.6245	2052282.4667									4°15' 43.78" (RT)	1°25' 14.35"	341.00	340.8113	8.4522					
					S 25°09' 45.04" W	295.0471																
F2C695	TS	3574+29.11	750914.5758	2052157.0165																		
	SC	3577+70.11	750602.4902	2052019.8099																		
	Plc	3589+07.93	749539.3392	2051614.4276			2276.8597	2°30' 59.91"	2110.1690			53°06' 19.36" (LT)										
	CS	3598+80.28	748576.8807	2052221.3037																		
	SC	3599+42.28	748524.8640	2052255.0386																		
	Plr	3599+55.56	747291.5292	2050455.0347									117°35' 51.72" (LT)									
F2C699	Plc	3611+82.74	747493.4984	2052944.2477			2402.4987	2°23' 06.05"	2289.9762			54°36' 58.47" (LT)										
	CS	3622+32.26	747458.1927	2054184.1985																		
	ST	3625+73.26	747464.6178	2054525.0616																		
					N 87°33' 53.33" E	271.3086																
F2C705	TS	3628+44.57	747476.1455	2054796.1252																		
	SC	3631+85.57	747483.7597	2055136.9846																		
	Plc	3639+89.11	747469.2947	2055940.3948			2817.9731	2°02' 00.00"	1565.4504	38°45' 50.86" (RT)	31°49' 50.97" (RT)											
	CS	3647+51.02	747033.2763	2056615.3503																		
	ST	3650+92.02	746836.8741	2056894.0425																		
					S 53°40' 15.81" E																	

0422DEL_P19
0001ADD_P19

PROJECT REFERENCE NO. P-5201	SHEET NO. RR2-K
RW SHEET NO.	
RAIL DESIGN ENGINEER	
12/9/13	
Prepared in the Office of: AECOM NC FIRM LICENSE No. F-0342 701 Corporate Center Drive, Suite 415 Raleigh, NC 27603 (919) 854-5200 • (919) 854-6259 FAX	

BLIND DRAIN DETAIL

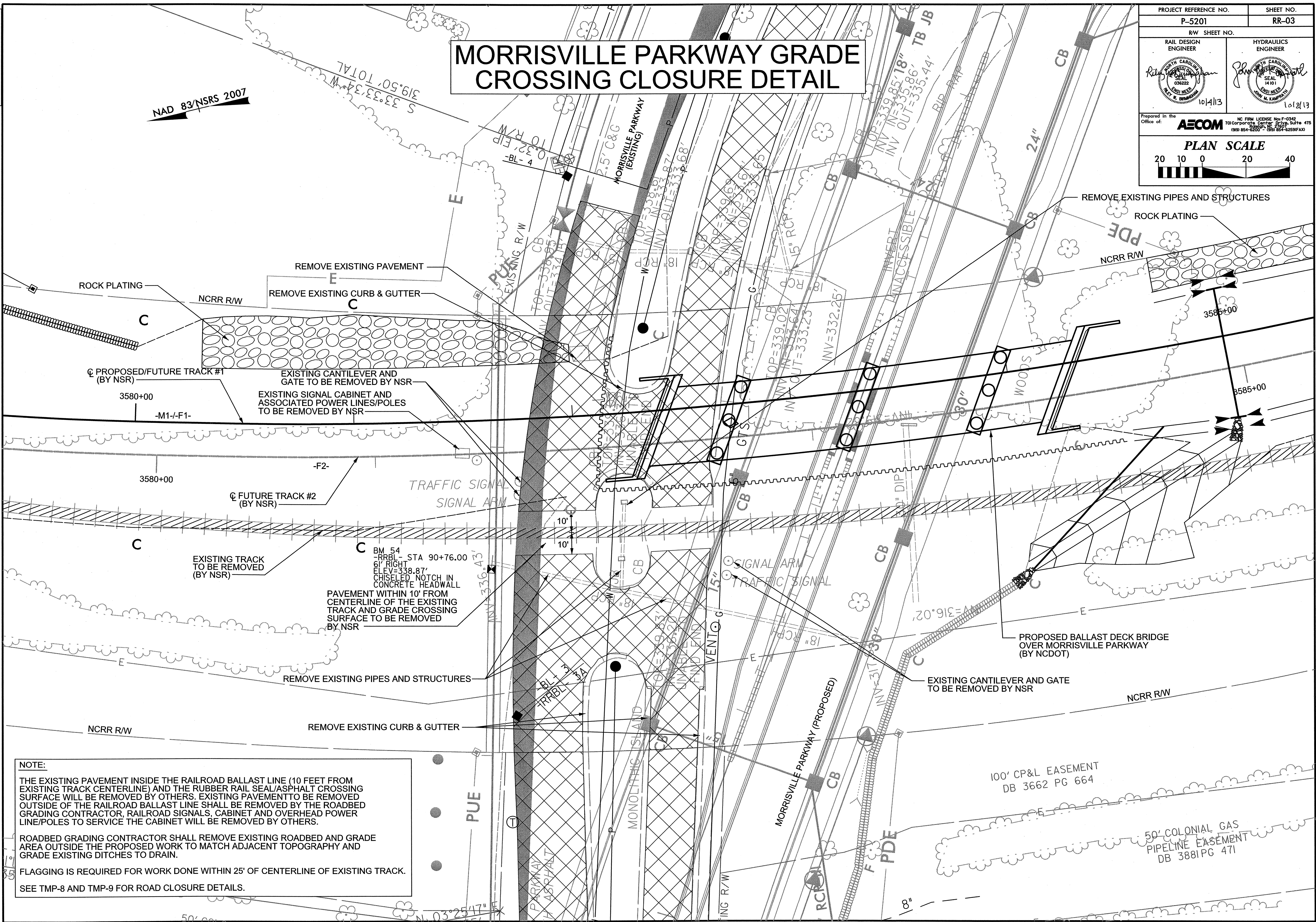


SECTION A-A

USER: birmingham
DATE: 12/6/2013
TIME: 4:25:05 PM
JOB: P:\2013\RR2-K\001\Technical\Information\Drawings\Rail\Sheet\KCDOT\RR-5201-RR-RR02K.dwg

MORRISVILLE PARKWAY GRADE CROSSING CLOSURE DETAIL

PROJECT REFERENCE NO. P-5201	SHEET NO. RR-03
RW SHEET NO.	
RAIL DESIGN ENGINEER	HYDRAULICS ENGINEER
Prepared in the Office of:	
AECOM	
PLAN SCALE	



NOTE:
THE EXISTING PAVEMENT INSIDE THE RAILROAD BALLAST LINE (10 FEET FROM EXISTING TRACK CENTERLINE) AND THE RUBBER RAIL SEAL/ASPHALT CROSSING SURFACE WILL BE REMOVED BY OTHERS. EXISTING PAVEMENT TO BE REMOVED OUTSIDE OF THE RAILROAD BALLAST LINE SHALL BE REMOVED BY THE ROADBED GRADING CONTRACTOR, RAILROAD SIGNALS, CABINET AND OVERHEAD POWER LINE/POLES TO SERVICE THE CABINET WILL BE REMOVED BY OTHERS.
ROADBED GRADING CONTRACTOR SHALL REMOVE EXISTING ROADBED AND GRADE AREA OUTSIDE THE PROPOSED WORK TO MATCH ADJACENT TOPOGRAPHY AND GRADE EXISTING DITCHES TO DRAIN.
FLAGGING IS REQUIRED FOR WORK DONE WITHIN 25' OF CENTERLINE OF EXISTING TRACK.
SEE TMP-8 AND TMP-9 FOR ROAD CLOSURE DETAILS.

0422DEL_P19

USER: wachal
DATE: 3/24/13
TIME: 3:40:45 PM
JOB: RR03/RR03/VIC001/P-5201_RR-RR03/Design

0422DEL_P19

TO DURHAM

TO CARY

NAD 83/NSRS 2007

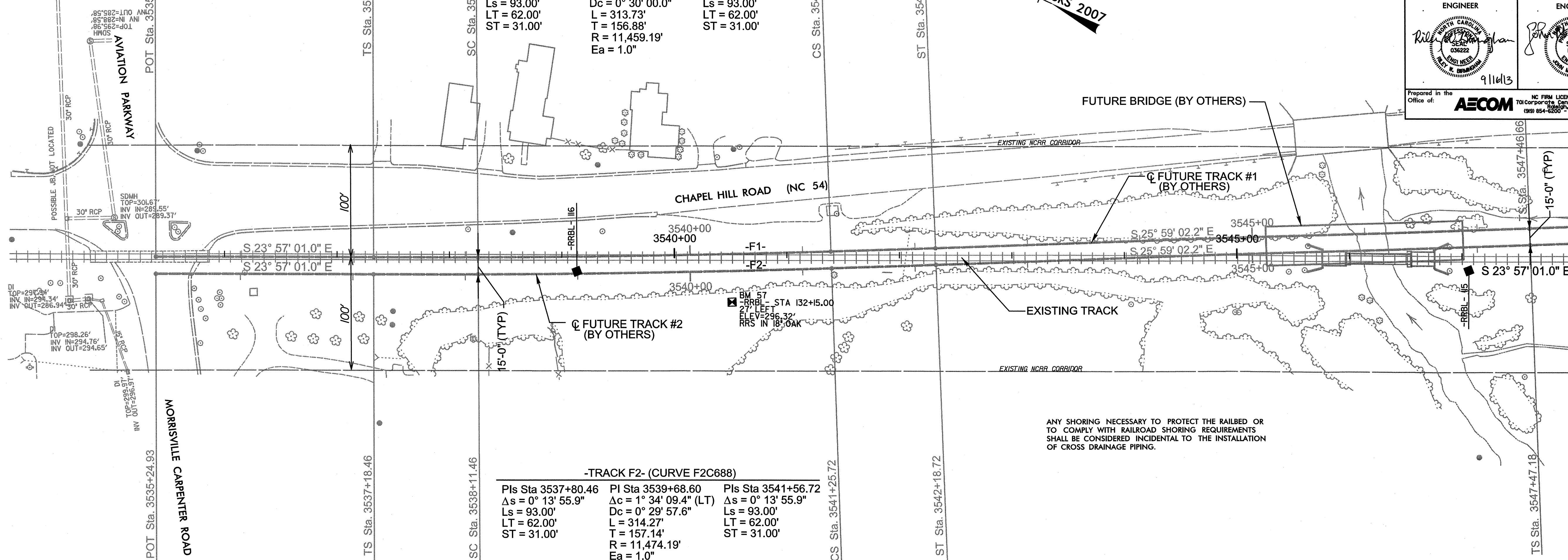
PROJECT REFERENCE NO. P-5201	SHEET NO. RR-04
RW SHEET NO.	
RAIL DESIGN ENGINEER <i>Rick ...</i>	HYDRAULICS ENGINEER <i>John ...</i>
Prepared in the Office of: AECOM	

-TRACK F1- (CURVE F1C688)

Pls Sta 3537+80.46 Δs = 0° 13' 57.0" Ls = 93.00' LT = 62.00' ST = 31.00'	PI Sta 3539+68.33 Δc = 1° 34' 07.2" (LT) Dc = 0° 30' 00.0" L = 313.73' T = 156.88' R = 11,459.19' Ea = 1.0"	Pls Sta 3541+56.19 Δs = 0° 13' 57.0" Ls = 93.00' LT = 62.00' ST = 31.00'
--	---	--

-TRACK F2- (CURVE F2C688)

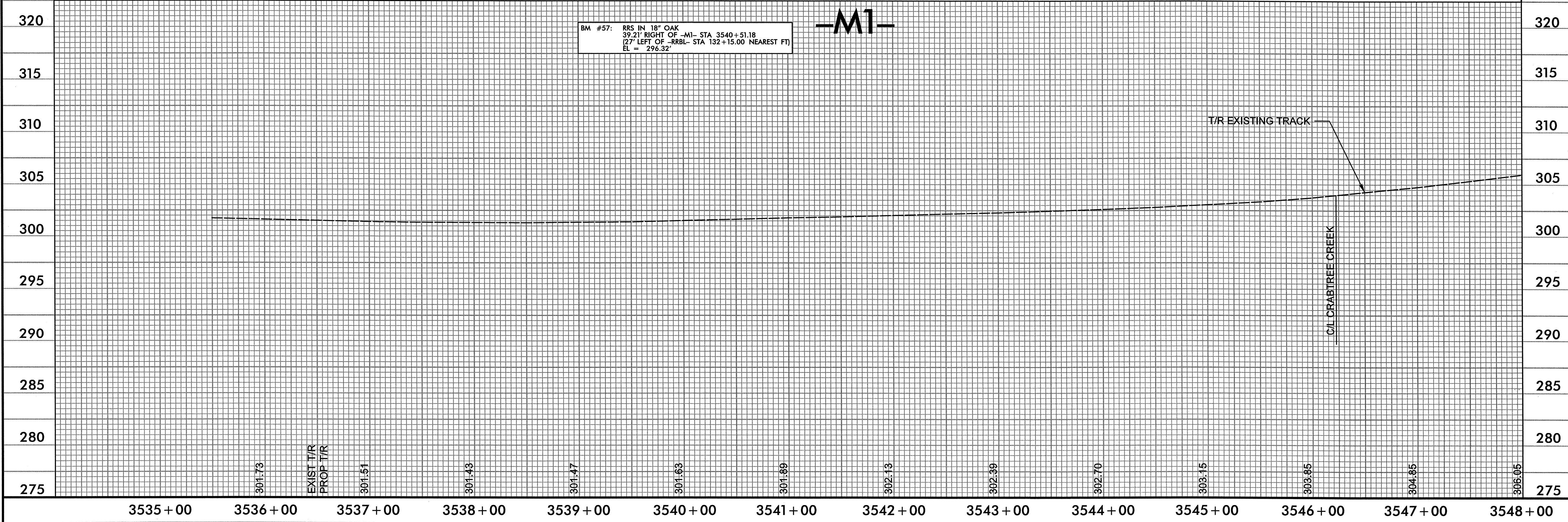
Pls Sta 3537+80.46 Δs = 0° 13' 55.9" Ls = 93.00' LT = 62.00' ST = 31.00'	PI Sta 3539+68.60 Δc = 1° 34' 09.4" (LT) Dc = 0° 29' 57.6" L = 314.27' T = 157.14' R = 11,474.19' Ea = 1.0"	Pls Sta 3541+56.72 Δs = 0° 13' 55.9" Ls = 93.00' LT = 62.00' ST = 31.00'
--	---	--



ANY SHORING NECESSARY TO PROTECT THE RAILBED OR TO COMPLY WITH RAILROAD SHORING REQUIREMENTS SHALL BE CONSIDERED INCIDENTAL TO THE INSTALLATION OF CROSS DRAINAGE PIPING.

BM #57: RRS IN 18" OAK
39.21' RIGHT OF -M1- STA 3540+51.18
(27' LEFT OF -RRBL- STA 132+13.00 NEAREST FT)
EL = 296.32

-M1-

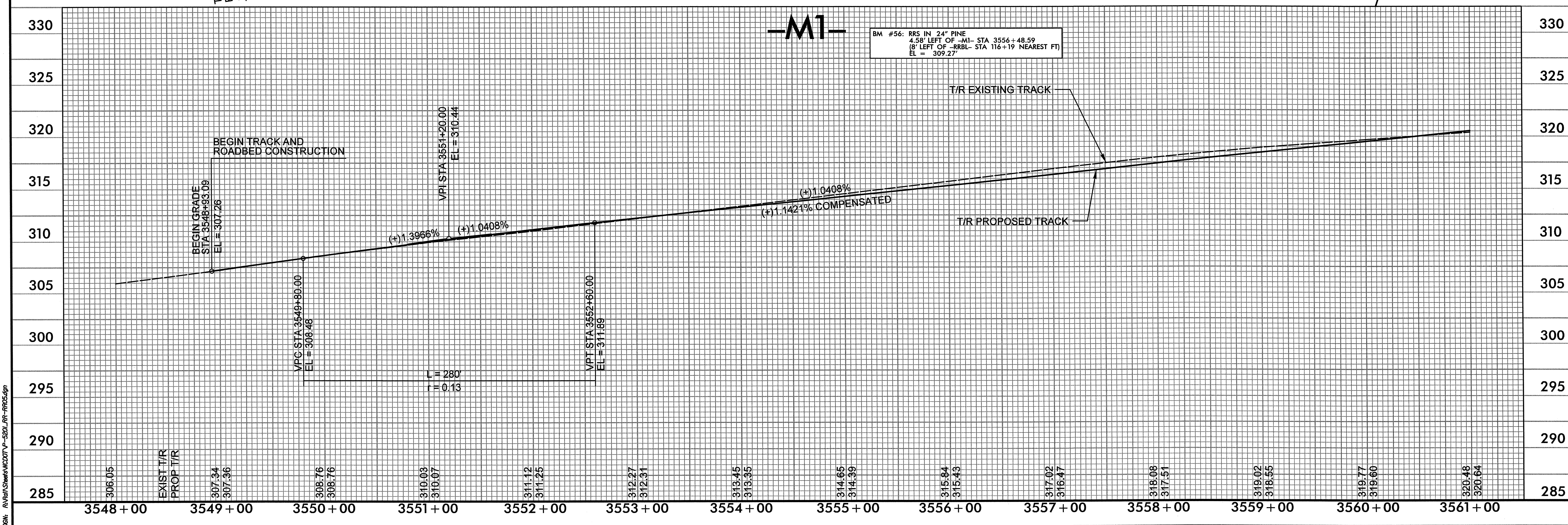
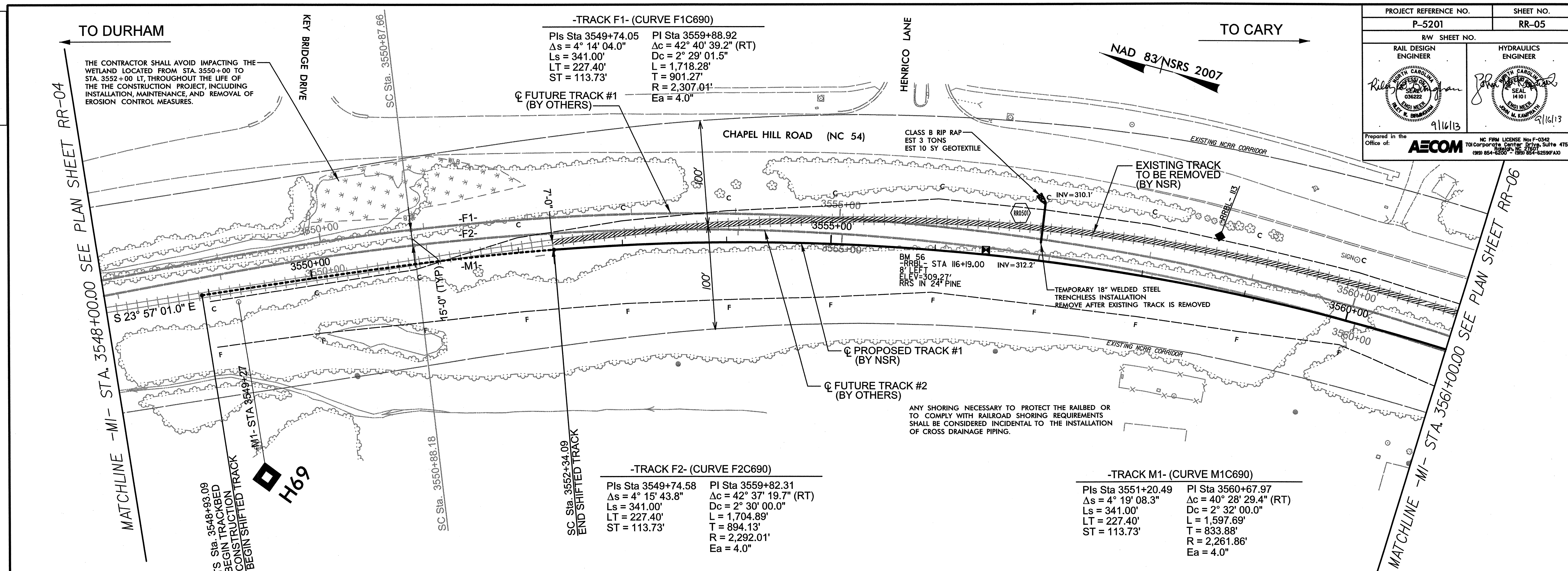


USER: wwhm
DATE: 9/16/13
TIME: 10:23
DRAWN: RICK ...

MATCHLINE -M1- STA. 3548+00.00 SEE PLAN SHEET RR-05

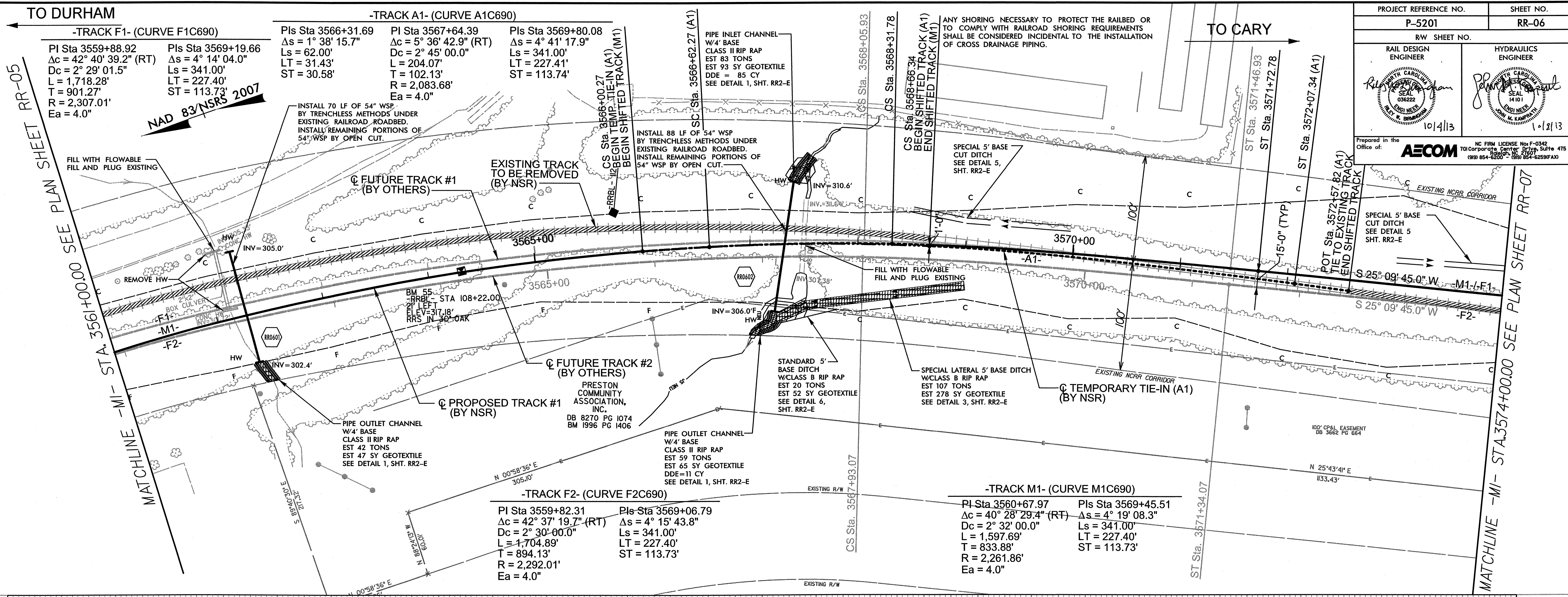
0422DEL_P19

PROJECT REFERENCE NO. P-5201	SHEET NO. RR-05
RW SHEET NO.	
RAIL DESIGN ENGINEER <i>[Signature]</i>	HYDRAULICS ENGINEER <i>[Signature]</i>
9/16/13	
Prepared in the Office of: AECOM	



USER: weeml
 DATE: 9/16/2013
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0422DEL_P19



PROJECT REFERENCE NO. P-5201 SHEET NO. RR-06

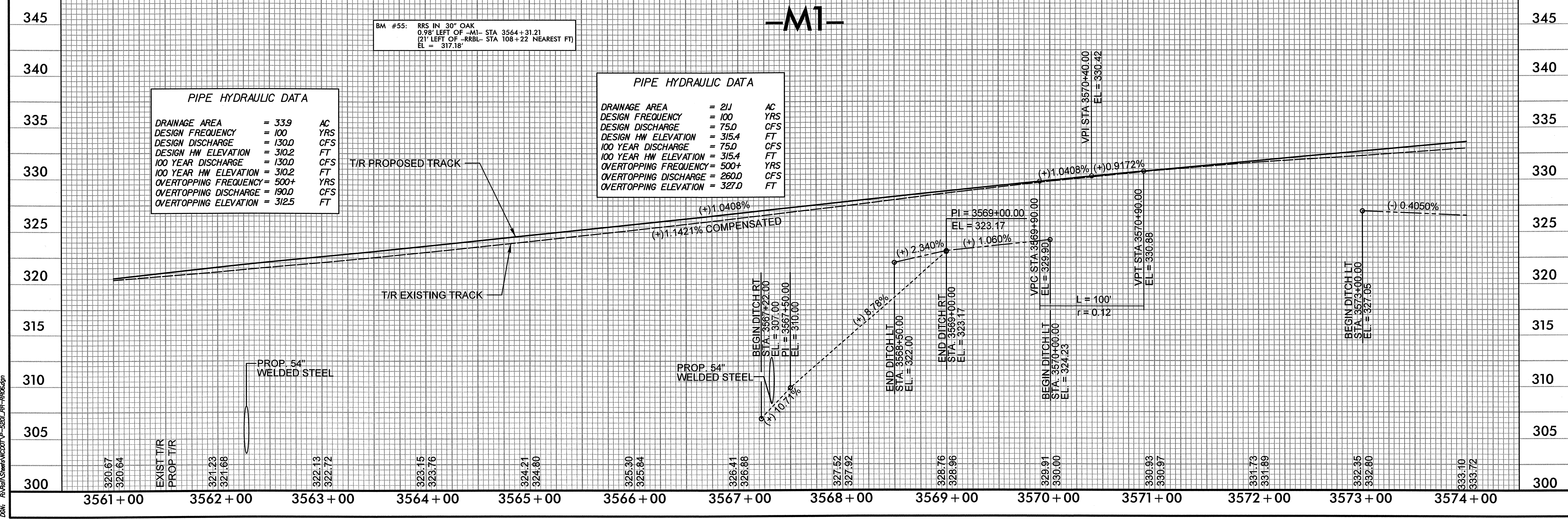
RW SHEET NO.

RAIL DESIGN ENGINEER: [Signature]

HYDRAULICS ENGINEER: [Signature]

Prepared in the Office of: **AECOM**

NC FIRM LICENSE No. F-0342
 TOI Corporation, 20000 Rte. 101, Suite 415
 (919) 854-9200, Fax: (919) 854-9299



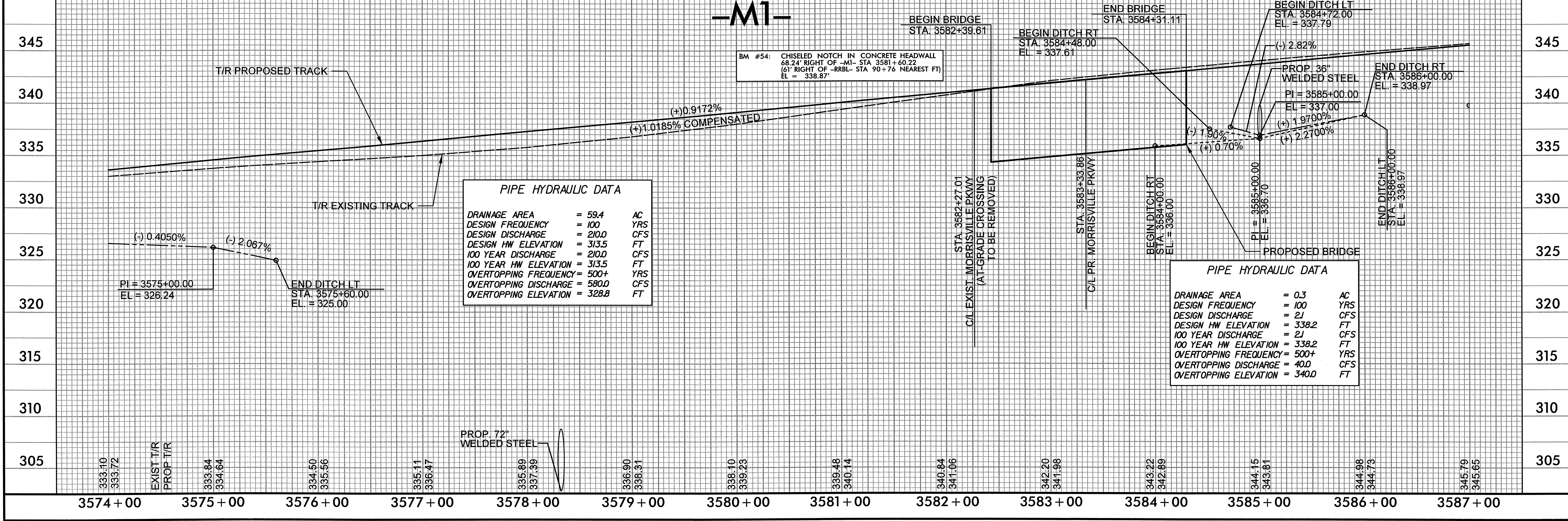
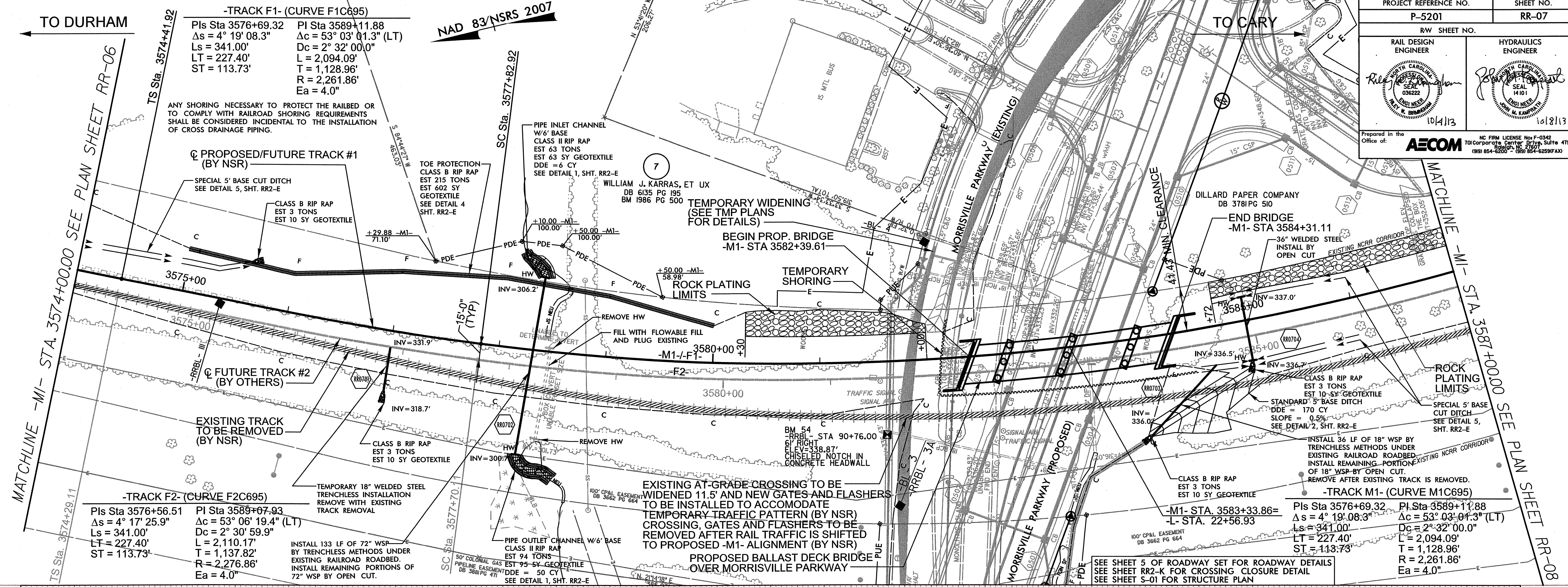
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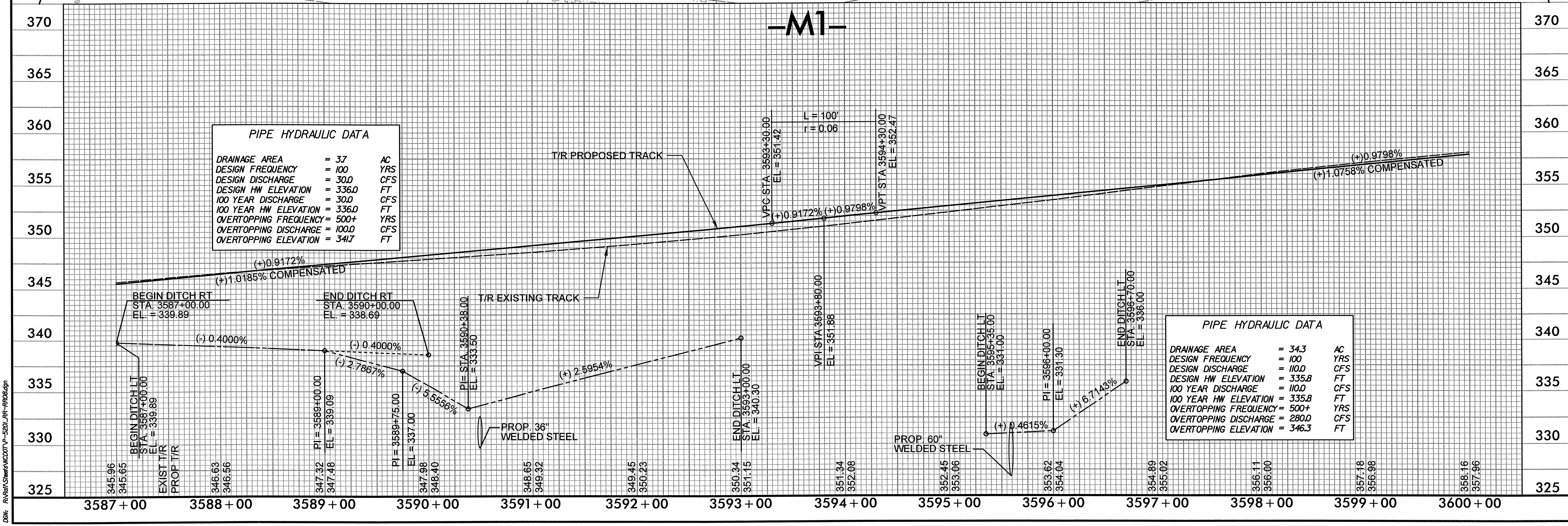
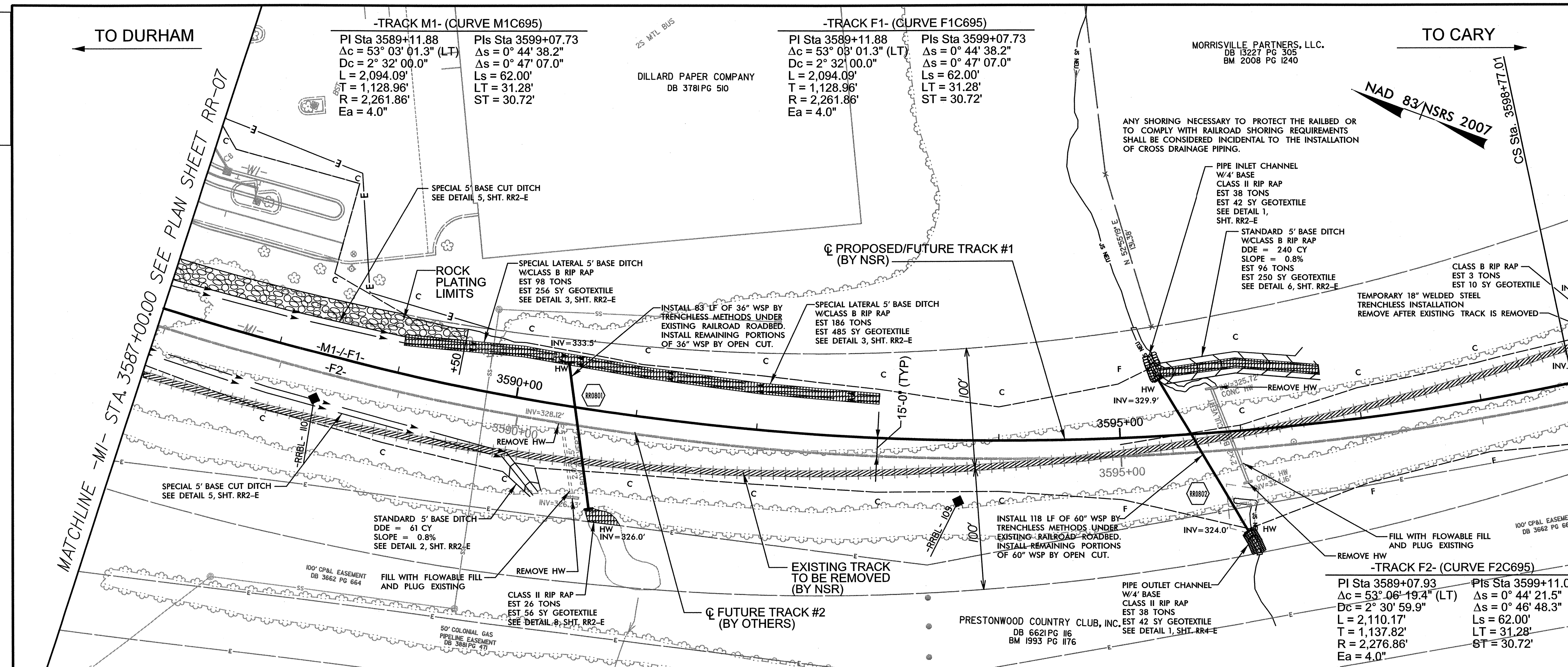
TO DURHAM

TO CARY

PROJECT REFERENCE NO. P-5201	SHEET NO. RR-07
RW SHEET NO.	HYDRAULICS ENGINEER
RAIL DESIGN ENGINEER	SEAL 14101
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) 854-6250/FAX

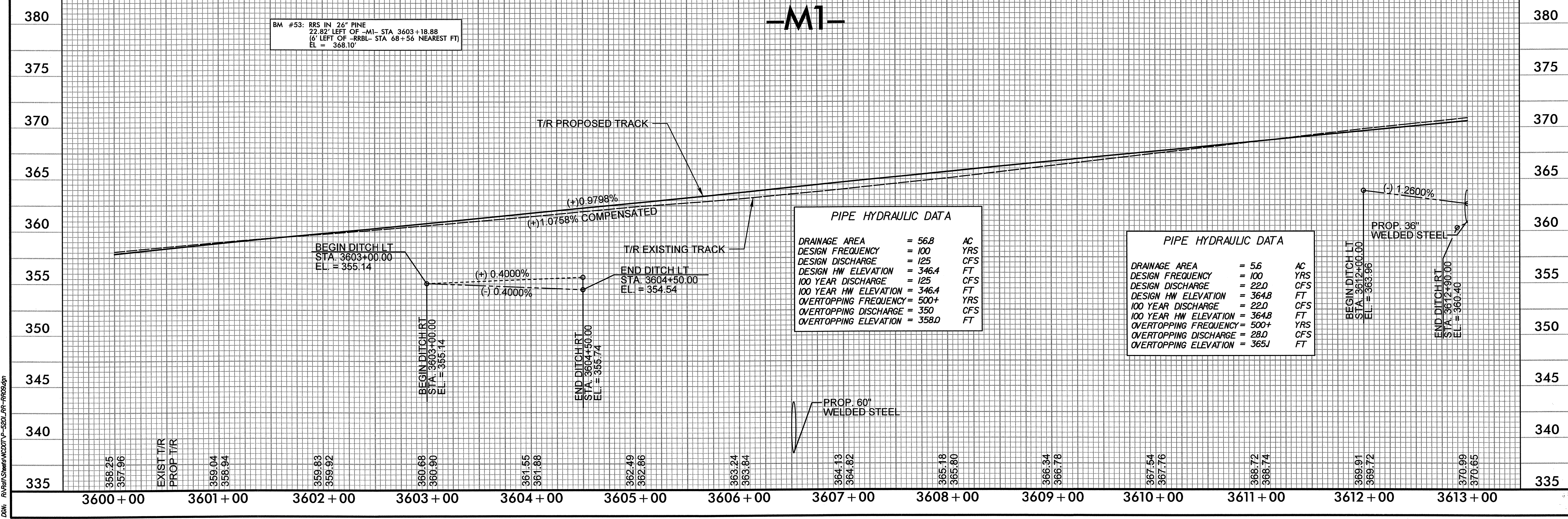
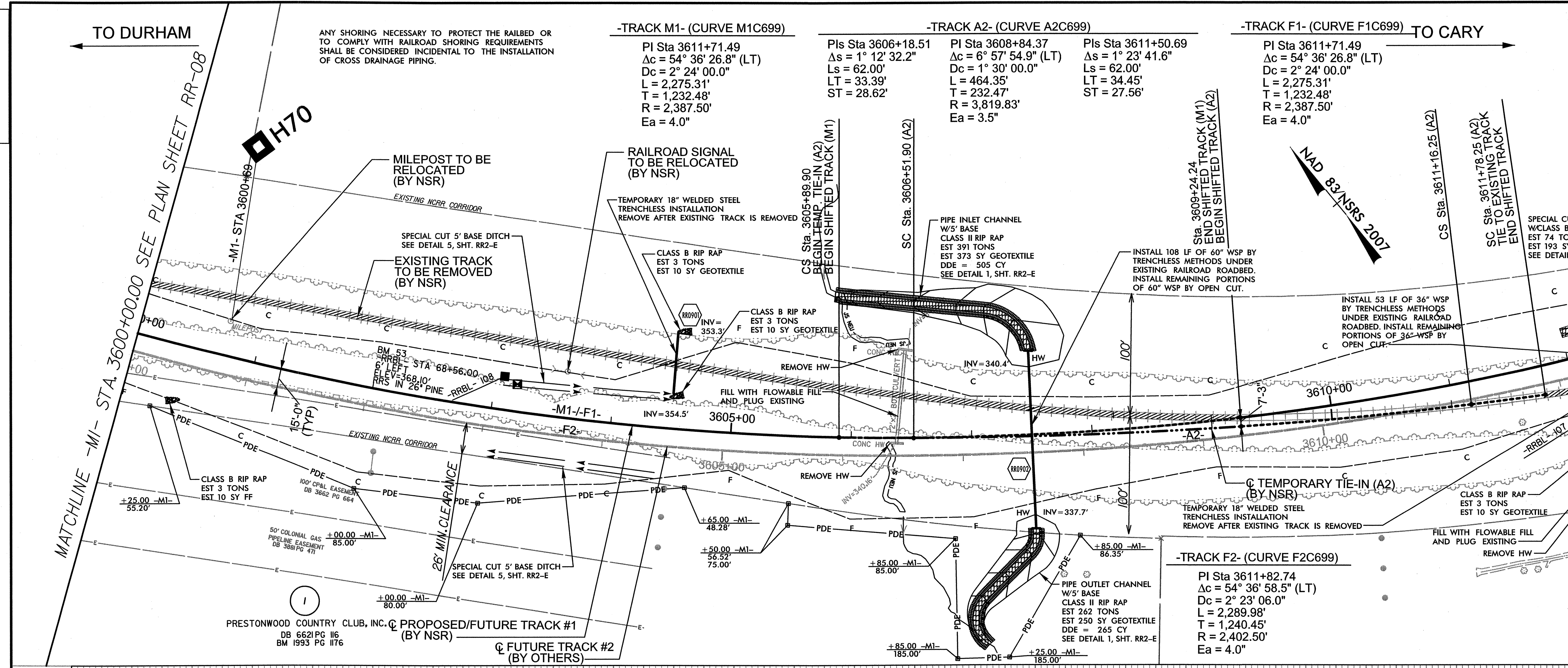


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0422DEL_P19

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 TIME: 10:17:11 AM
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0422DEL_P19

TO DURHAM

TO CARY

MATCHLINE -M1- STA. 3600+00.00 SEE PLAN SHEET RR-08

MATCHLINE -M1- STA. 3613+00.00 SEE PLAN SHEET RR-10

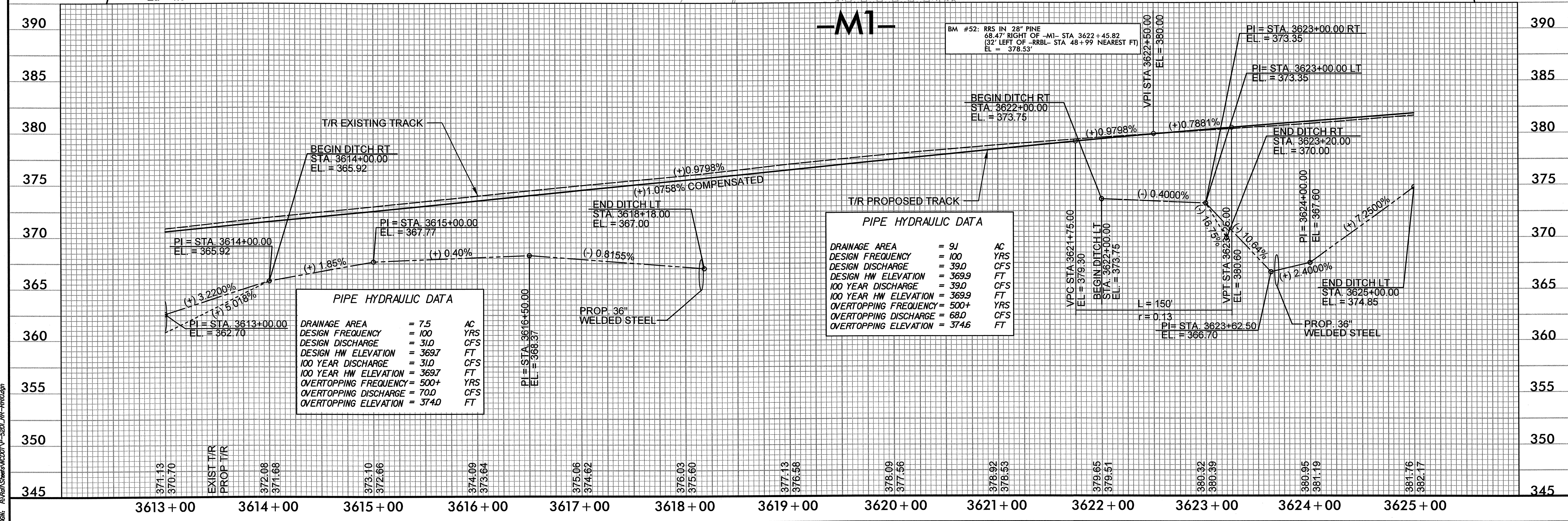
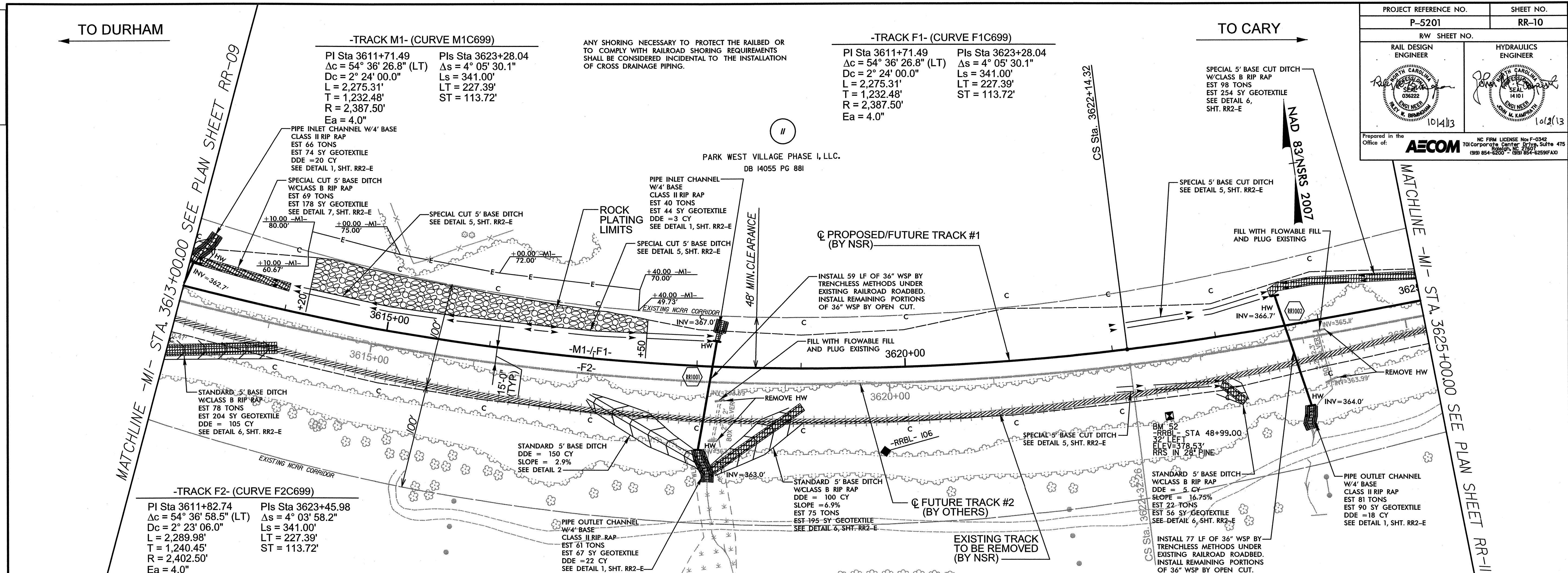
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0422DEL_P19

TO DURHAM

TO CARY

PROJECT REFERENCE NO. P-5201	SHEET NO. RR-10
RW SHEET NO.	
RAIL DESIGN ENGINEER 	HYDRAULICS ENGINEER
Prepared in the Office of: AECOM NC FIRM LICENSE No. F-0342 701 Corporate Center Drive, Suite 475 (919) 854-6200 • Fax (919) 854-6299	

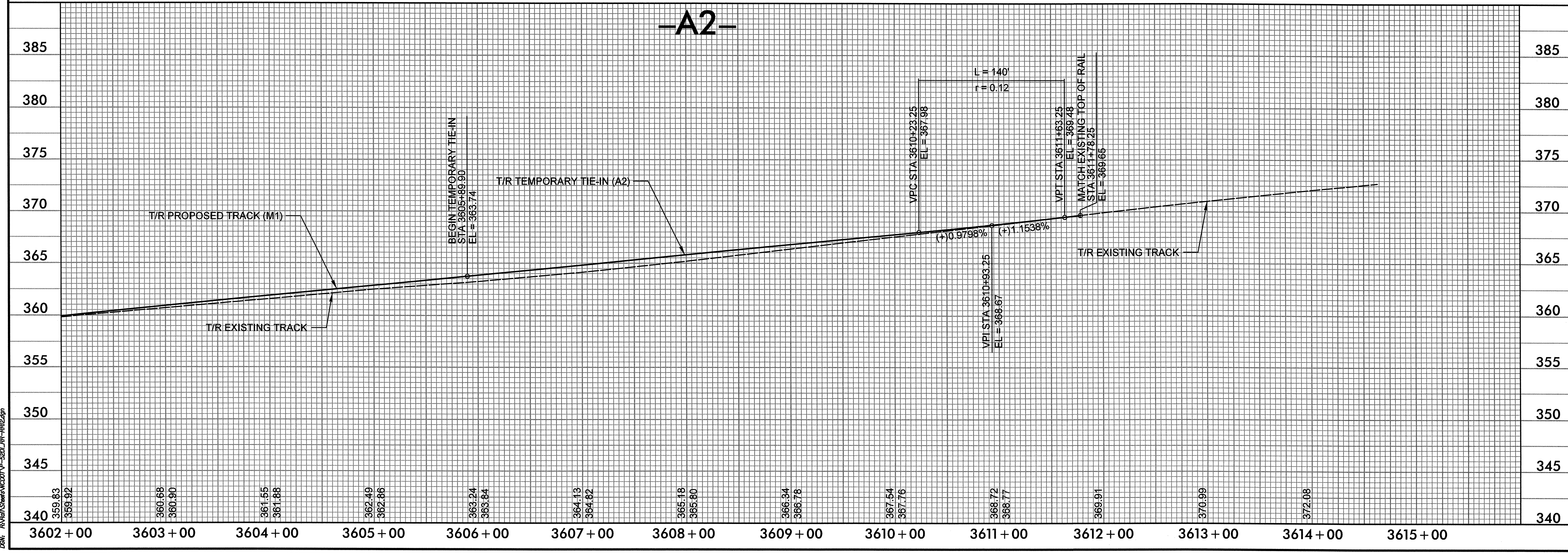
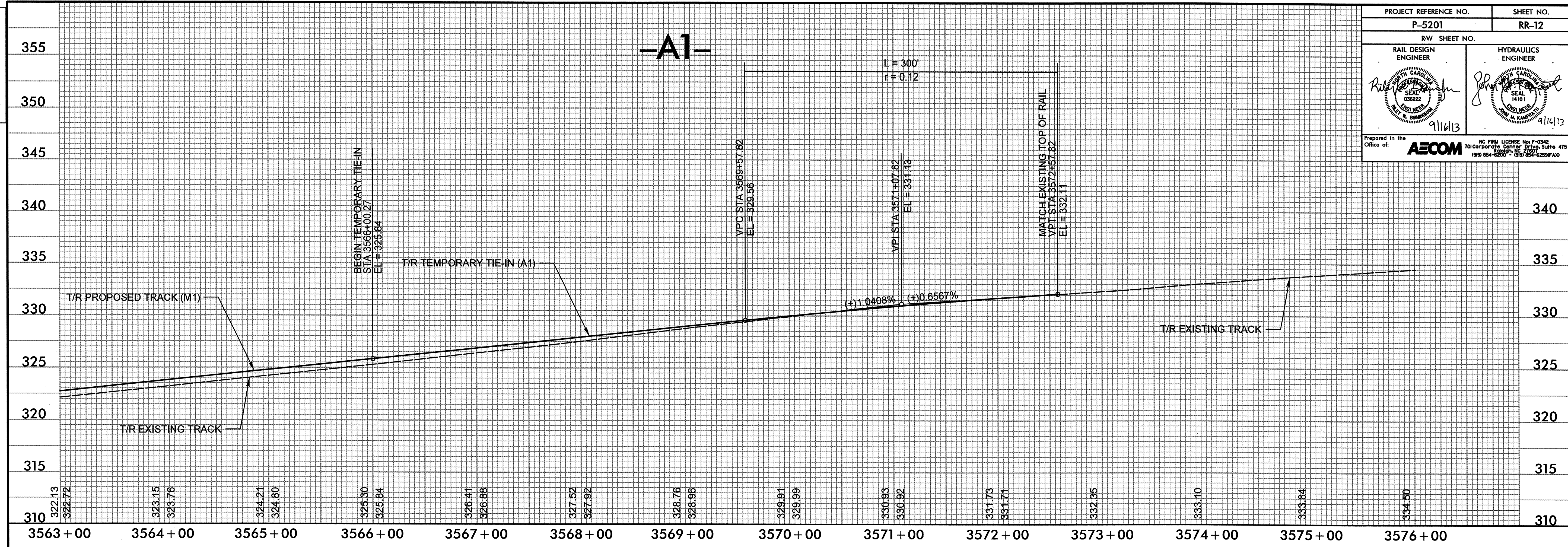


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0422DEL_P19

USER: vsm/mtl
DATE: 9/16/2013
TIME: 7:10:55 AM
DSN: R:\Rail\SW\5\NC\DOT\5-5801_RR-RR12.dgn

PROJECT REFERENCE NO. P-5201	SHEET NO. RR-12
RW SHEET NO.	
RAIL DESIGN ENGINEER <i>R. [Signature]</i>	HYDRAULICS ENGINEER <i>J. [Signature]</i>
9/16/13	9/16/13
Prepared in the Office of: AECOM	
NC FIRM LICENSE No. F-0342 101 Corporate Center Drive, Suite 475 Raleigh, NC 27603 (919) 854-2200 • (919) 854-6299 (FAX)	





0422DEL_P19

TO DURHAM ←

TO CARY →

SUGGESTED CONSTRUCTION PHASING EXISTING CONDITIONS

PROJECT REFERENCE NO. P-5201	SHEET NO. RR-13
RW SHEET NO.	
RAIL DESIGN ENGINEER 	
9/11/13	
Prepared in the Office of:	 NO. FPM LICENSE No. F-0342 701 Corporate Center, Suite 475 Cary, NC 27513 (919) 854-2200 • (919) 854-2299 FAX

3540+00 AVIATION PKWY (SR 3014) | 3550+00 VAL STA 3546+92 | 3560+00 | 3570+00 | 3580+00 MORRISVILLE PKWY

CRABTREE CREEK BRIDGE (No. 068.90)

SEE MATCH LINE 3590+00

3600+00

VAL STA 3598+95

3610+00

3620+00

3630+00

NW CARY PKWY

SEE MATCH LINE 3590+00

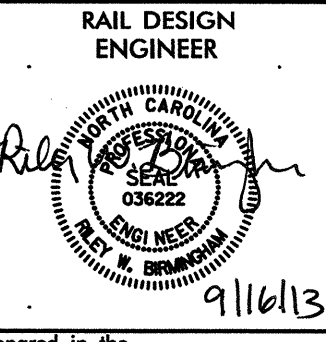
ITEM DESCRIPTION	EXISTING	EXISTING (BEING REMOVED)	PROPOSED	COMPLETED
TRACK	————	————	————
ROADBED			-----	
GRADE CROSSING	↑ ↑	↑ ↑	↑	
BRIDGE(ROADWAY) (OVERHEAD OF UNDERGRADE)				
BRIDGE(RAILROAD) (OVERHEAD OF UNDERGRADE)				

0422DEL_P19

TO DURHAM ←

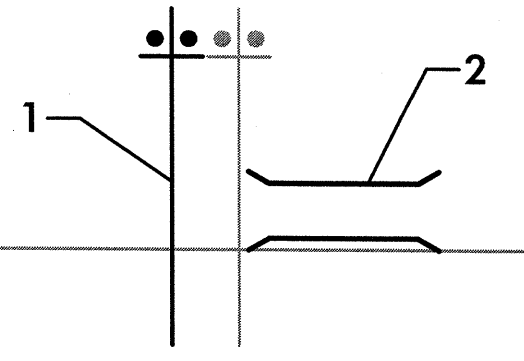
TO CARY →

SUGGESTED CONSTRUCTION PHASING
PHASE 1

PROJECT REFERENCE NO. P-5201	SHEET NO. RR-14
RW SHEET NO.	
RAIL DESIGN ENGINEER  9/16/13	
Prepared in the Office of: AECOM <small>NC FIRM LICENSE No F-0342 700 Corporate Center Drive, Suite 475 Raleigh, NC 27607 (919) 854-2200 • (919) 854-2250 FAX</small>	

3540+00 AVIATION PKWY (SR 3014) | 3550+00 VAL STA 3546+92 | 3560+00 | 3570+00 | 3580+00 MORRISVILLE PKWY

CRABTREE CREEK BRIDGE (No. 068.90)



PHASE I
CONSTRUCTION OF PROPOSED STRUCTURE

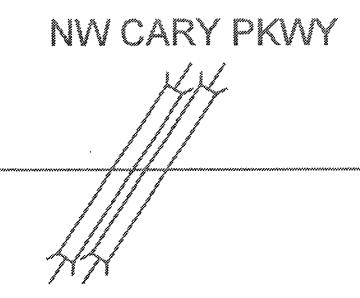
1. RECONSTRUCT AND WIDEN EXISTING GRADE CROSSING AND INSTALL GATES AND SIGNALS FOR TEMPORARY TWO-WAY, TWO LANE TRAFFIC PATTERN TO ALLOW CONSTRUCTION OF RAILROAD BRIDGE (NS CONTRACTOR)
2. BEGIN CONSTRUCTION OF RAILROAD BRIDGE OVER MORRISVILLE PARKWAY (NCDOT CONTRACTOR)

ITEM DESCRIPTION	EXISTING	EXISTING (BEING REMOVED)	PROPOSED	COMPLETED
TRACK	—————	—————	—————
ROADBED			-----	
GRADE CROSSING				
BRIDGE(ROADWAY) (OVERHEAD OF UNDERGRADE)				
BRIDGE(RAILROAD) (OVERHEAD OF UNDERGRADE)				

SEE MATCH LINE 3590+00

3600+00 | 3610+00 | 3620+00 | 3630+00

-MJ- 3603+60 VAL STA 3598+95 H70



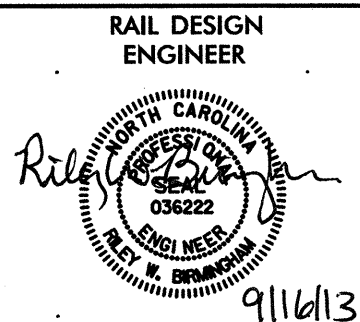

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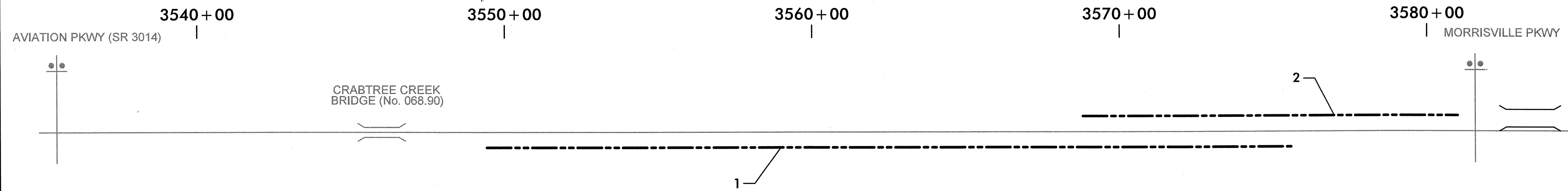
0422DEL_P19

TO DURHAM ←

TO CARY →






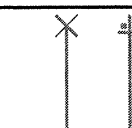
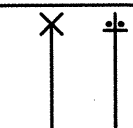

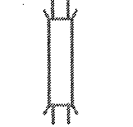
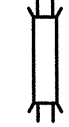
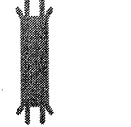
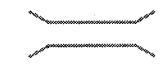
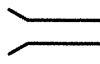

PROJECT REFERENCE NO. P-5201	SHEET NO. RR-15
R/W SHEET NO.	
RAIL DESIGN ENGINEER	
	
9/16/13	
Prepared in the Office of:	
<small>NC FIRM LICENSE No. F-0342 701 Corporate Center Drive, Suite 475 Raleigh, NC 27607 (919) 854-5200 • (919) 854-5299(FAX)</small>	

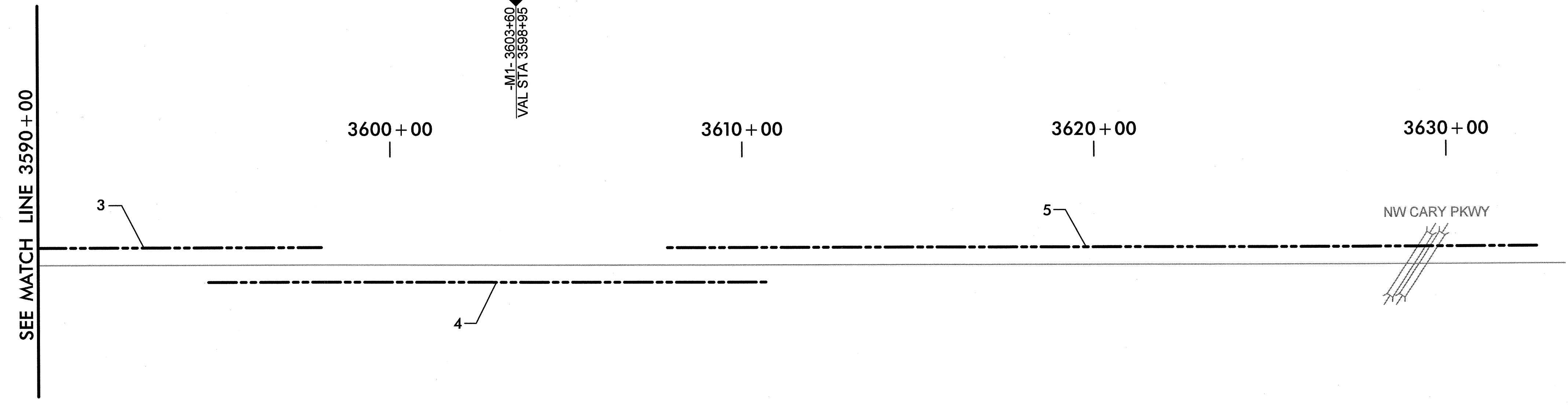
SUGGESTED CONSTRUCTION PHASING PHASE 2



PHASE 2
CONSTRUCT RAILROAD ROADBED (INCLUDING TEMPORARY DRAINAGE DITCHES)
(NCDOT CONTRACTOR)

1. STA. 3548+93 TO STA. 3574+20 -M1-
2. STA. 3569+77 TO STA. 3581+50 -M1-
3. STA. 3584+34 TO STA. 3596+24 -M1-
4. STA. 3594+72 TO STA. 3610+69 -M1-
5. STA. 3609+24 TO STA. 3631+61 -M1-

ITEM DESCRIPTION	EXISTING	EXISTING (BEING REMOVED)	PROPOSED	COMPLETED
TRACK				
ROADBED				
GRADE CROSSING				
BRIDGE(ROADWAY) (OVERHEAD OF UNDERGRADE)				
BRIDGE(RAILROAD) (OVERHEAD OF UNDERGRADE)				



SEE MATCH LINE 3590+00

USER: wst/ml
 DATE: 9/16/2013
 TIME: 10:58:00
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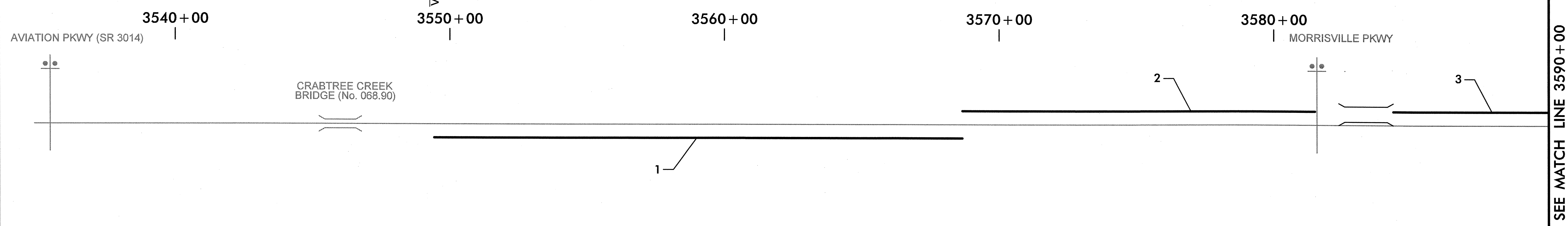
0422DEL_P19

TO DURHAM

TO CARY

PROJECT REFERENCE NO. P-5201	SHEET NO. RR-16
RW SHEET NO.	
Prepared in the Office of: AECOM <small>NC FIRM LICENSE No. F-0342 701 Corporate Center Drive, Suite 475 Raleigh, NC 27607 (919) 854-5200 • (919) 854-2299 FAX</small>	

SUGGESTED CONSTRUCTION PHASING PHASE 3



PHASE 3
 CONSTRUCT TRACK (NS CONTRACTOR)
 *CONSTRUCT SKELETON TRACK THAT IS TO BE THROWN TO FINAL CONFIGURATION IN LATER PHASES (NS CONTRACTOR)

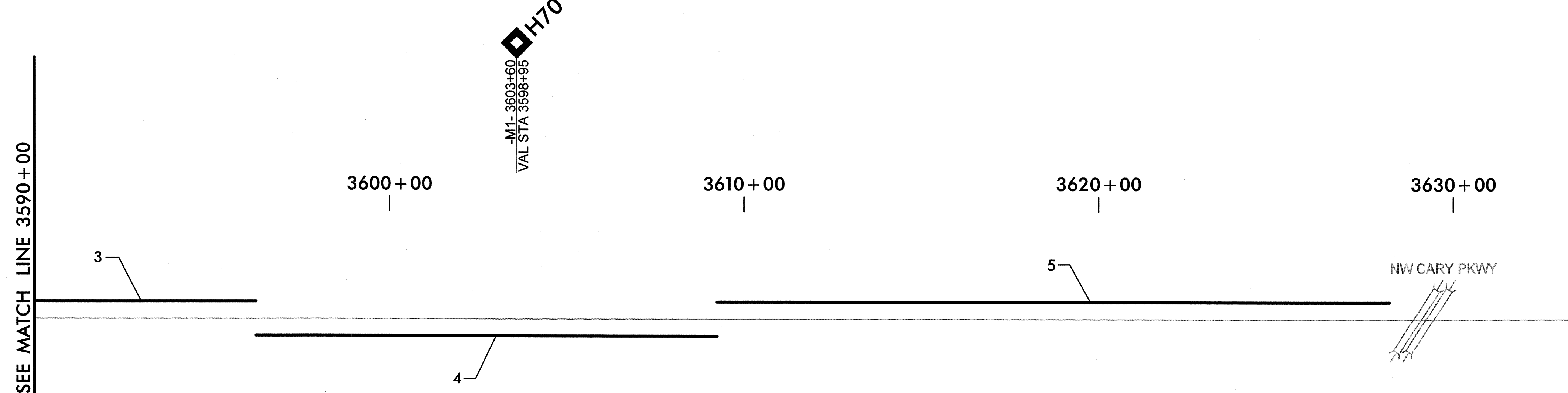
1. STA. 3552+33 TO STA. 3566+00 -M1-
 STA. 3566+00 TO STA. 3568+11 -A1-
 *STA. 3568+11 TO STA. 3568+66 -A1-
2. STA. 3572+58 TO STA. 3581+50 -M1-
 *STA. 3568+66 TO STA. 3572+58 -M1-
3. STA. 3584+34 TO STA. 3595+25 -M1-
 *STA. 3595+25 TO STA. 3596+24 -M1-
4. STA. 3597+13 TO STA. 3605+90 -M1-
 STA. 3605+90 TO STA. 3608+86 -A2-
 *STA. 3596+24 TO STA. 3597+13 -M1-
 *STA. 3608+86 TO STA. 3609+24 -A2-
5. STA. 3610+16 TO STA. 3628+20 -M1-
 *STA. 3609+24 TO STA. 3610+16 -M1-

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

ITEM DESCRIPTION	EXISTING	EXISTING (BEING REMOVED)	PROPOSED	COMPLETED
TRACK				
ROADBED				
GRADE CROSSING				
BRIDGE (ROADWAY) (OVERHEAD OF UNDERGRADE)				
BRIDGE (RAILROAD) (OVERHEAD OF UNDERGRADE)				

SEE MATCH LINE 3590+00

SEE MATCH LINE 3590+00



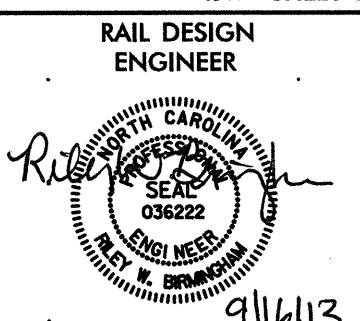
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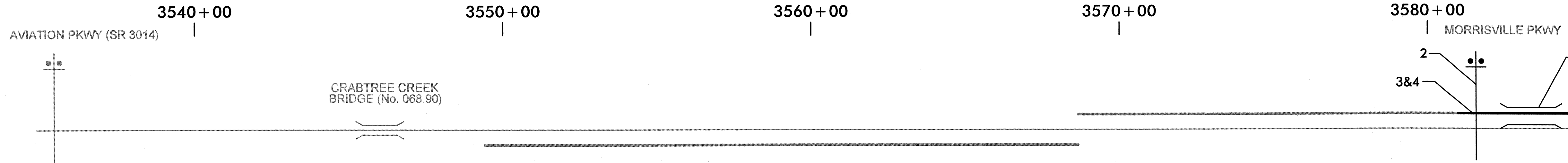
0422DEL_P19

TO DURHAM

TO CARY

SUGGESTED CONSTRUCTION PHASING
PHASE 4

PROJECT REFERENCE NO. P-5201	SHEET NO. RR-17
RW SHEET NO.	
	
Prepared in the Office of: AECOM	
<small>NC FIRM LICENSE No. F-0345 701 Corporate Center, Suite 415 919 854-5200 / 919 854-5259 (FAX)</small>	



SEE MATCH LINE 3590 + 00

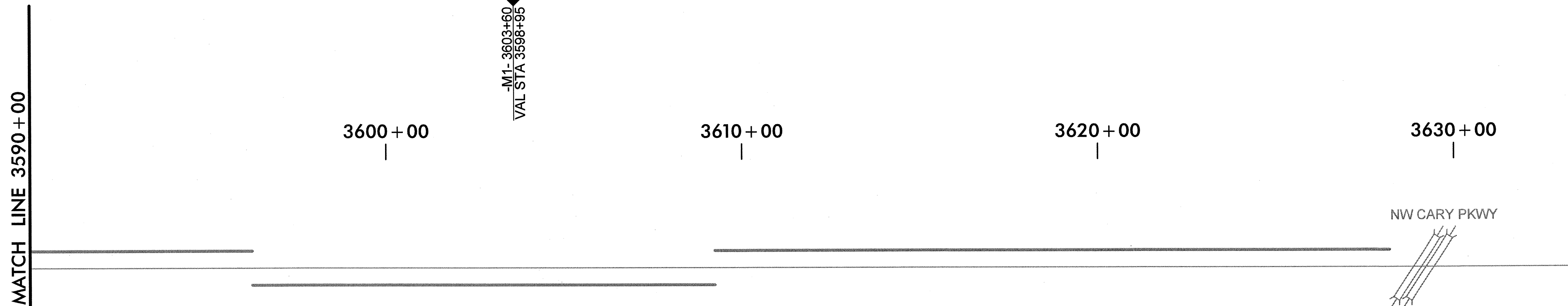
PHASE 4

COMPLETE RAILROAD BRIDGE OVER MORRISVILLE PARKWAY

1. COMPLETE RAILROAD BRIDGE OVER MORRISVILLE PARKWAY (NCDOT CONTRACTOR)
2. CLOSE MORRISVILLE PARKWAY (NCDOT CONTRACTOR)
3. CONSTRUCT ROADBED (NCDOT CONTRACTOR)
STA. 3581+50 TO STA. 3582+37 -M1-
4. CONSTRUCT TRACK (NS CONTRACTOR)
STA. 3581+50 TO STA. 3584+34 -M1-

ITEM DESCRIPTION	EXISTING	EXISTING (BEING REMOVED)	PROPOSED	COMPLETED
TRACK				
ROADBED				
GRADE CROSSING				
BRIDGE(ROADWAY) (OVERHEAD OF UNDERGRADE)				
BRIDGE(RAILROAD) (OVERHEAD OF UNDERGRADE)				

SEE MATCH LINE 3590 + 00



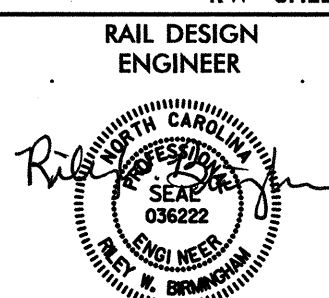
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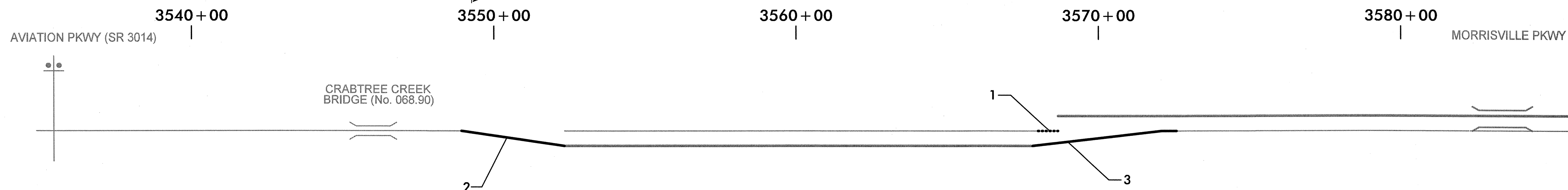
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TO DURHAM

TO CARY

SUGGESTED CONSTRUCTION PHASING PHASE 5

PROJECT REFERENCE NO. P-5201	SHEET NO. RR-18
RW SHEET NO.	
	
Prepared in the Office of: AECOM	
<small>NC FIRM LICENSE No. F-0342 101 Corporate Center Drive, Suite 415 Cary, NC 27513 (919) 854-5200 • (919) 854-5295(FAX)</small>	



PHASE 5

PHASE 5A - REMOVE EXISTING TRACK PANELS (NS CONTRACTOR)

- 1. STA. 3568+00 TO STA. 3568+66 -M1-

PHASE 5B - CUT, THROW, LINE AND SURFACE TRACK (NS CONTRACTOR)

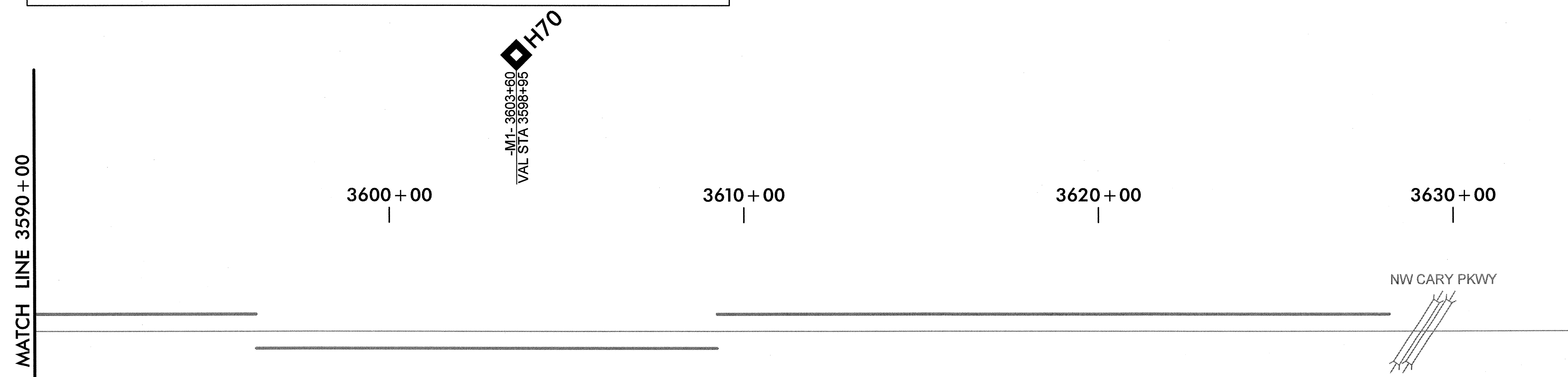
- 2. STA. 3548+93 TO STA. 3552+34 -M1-
- 3. STA. 3568+11 TO STA. 3572+58 -A1-

NOTE: UPON COMPLETION OF PHASE 5, TRAINS WILL OPERATE ON M1 ALIGNMENT FROM STA. 3548+93 TO STA. 3566+00 -M1-, A1 ALIGNMENT FROM STA. 3566+00 TO STA. 3572+58 -A1- AND EXISTING ALIGNMENT FROM STA. 3572+58 -A1- TO END OF PROJECT.

ITEM DESCRIPTION	EXISTING	EXISTING (BEING REMOVED)	PROPOSED	COMPLETED
TRACK				
ROADBED				
GRADE CROSSING				
BRIDGE(ROADWAY) (OVERHEAD OF UNDERGRADE)				
BRIDGE(RAILROAD) (OVERHEAD OF UNDERGRADE)				

SEE MATCH LINE 3590+00

SEE MATCH LINE 3590+00

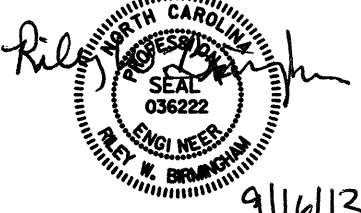


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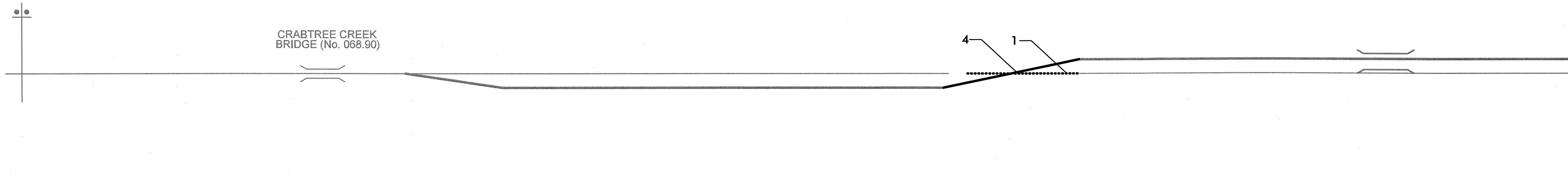
TO DURHAM

TO CARY

SUGGESTED CONSTRUCTION PHASING PHASE 6

PROJECT REFERENCE NO. P-5201	SHEET NO. RR-19
RW SHEET NO.	
RAIL DESIGN ENGINEER  9/16/13	
Prepared in the Office of: AECOM <small>NO. FIRM LICENSE No. F-0342 701 Corporate Center Drive, Suite 415 (919) 854-2200 • (919) 854-2259 (FAX)</small>	

3540+00 AVIATION PKWY (SR 3014) | 3550+00 VAL STA 3546+92 | 3560+00 | 3570+00 | 3580+00 MORRISVILLE PKWY



SEE MATCH LINE 3590+00

PHASE 6

PHASE 6A - REMOVE EXISTING TRACK PANELS (NS CONTRACTOR)

1. STA. 3568+66 TO STA. 3572+58 -A1-
2. STA. 3595+25 TO STA. 3597+13 -M1-
3. STA. 3608+41 TO STA. 3609+24 -M1-

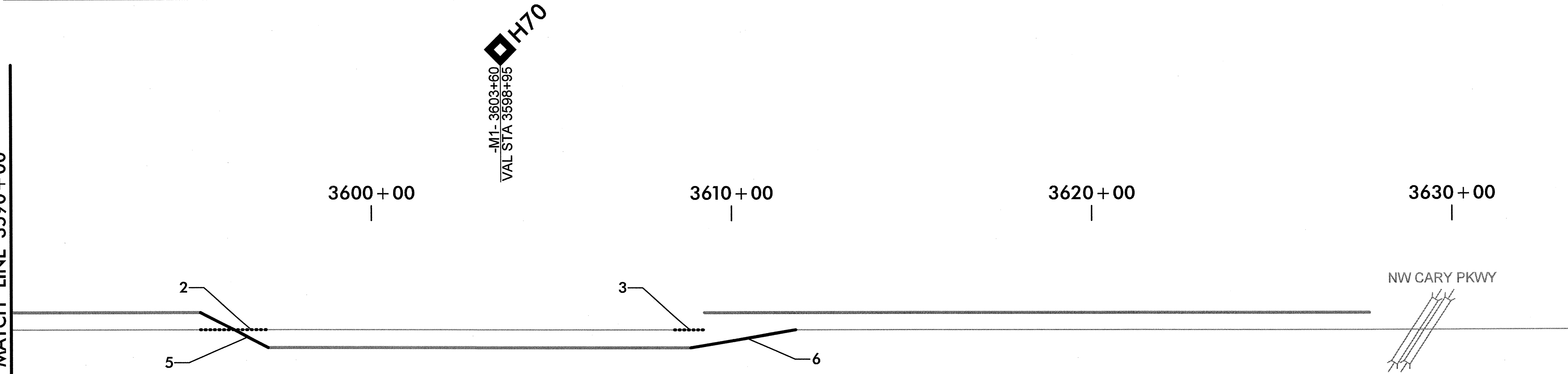
PHASE 6B - CUT, THROW, LINE AND SURFACE TRACK (NS CONTRACTOR)

4. STA. 3566+00 TO STA. 3572+58 -M1-
5. STA. 3595+25 TO STA. 3597+13 -M1-
6. STA. 3608+86 TO STA. 3611+78 -A2-

NOTE: UPON COMPLETION OF PHASE 6, TRAINS WILL OPERATE ON M1 ALIGNMENT FROM STA. 3548+93 TO STA. 3605+90 -M1-, A2 ALIGNMENT FROM STA. 3605+90 TO STA. 3611+78 -A2- AND EXISTING ALIGNMENT FROM STA. 3611+78 -A2- TO END OF PROJECT.

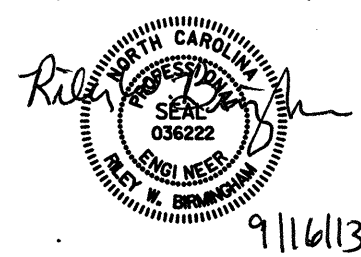
ITEM DESCRIPTION	EXISTING	EXISTING (BEING REMOVED)	PROPOSED	COMPLETED
TRACK				
ROADBED				
GRADE CROSSING				
BRIDGE(ROADWAY) (OVERHEAD OF UNDERGRADE)				
BRIDGE(RAILROAD) (OVERHEAD OF UNDERGRADE)				

SEE MATCH LINE 3590+00



USER: wwhh
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0422DEL_P19

PROJECT REFERENCE NO. P-5201	SHEET NO. RR-20
RW SHEET NO.	
RAIL DESIGN ENGINEER	
	
9/11/13	
Prepared in the Office of:	NC FIRM LICENSE No. F-0340 AECOM 701 Corporate Center Drive, Suite 415 Raleigh, NC 27607 (919) 854-9200 • (919) 854-5259 FAX

TO DURHAM ←

TO CARY →

SUGGESTED CONSTRUCTION PHASING PHASE 7

3540+00 AVIATION PKWY (SR 3014) | 3550+00 | 3560+00 | 3570+00 | 3580+00 MORRISVILLE PKWY

CRABTREE CREEK BRIDGE (No. 068.90)

H69
-M1- 3549+27
VAL STA 3546+92

PHASE 7
PHASE 7A - REMOVE EXISTING TRACK PANELS (NS CONTRACTOR)
 1. STA. 3609+24 TO STA. 3609+77 -M1-
PHASE 7B - CUT, THROW, LINE AND SURFACE TRACK (NS CONTRACTOR)
 1. STA. 3605+90 TO STA. 3610+16 -M1-
 2. STA. 3628+20 TO STA. 3631+61 -M1-
 NOTE: UPON COMPLETION OF PHASE 7, TRAINS WILL OPERATE ON M1 ALIGNMENT.

ITEM DESCRIPTION	EXISTING	EXISTING (BEING REMOVED)	PROPOSED	COMPLETED
TRACK				
ROADBED				
GRADE CROSSING				
BRIDGE (ROADWAY) (OVERHEAD OF UNDERGRADE)				
BRIDGE (RAILROAD) (OVERHEAD OF UNDERGRADE)				

SEE MATCH LINE 3590+00

SEE MATCH LINE 3590+00

3600+00

3610+00

3620+00

3630+00

H70
-M1- 3603+60
VAL STA 3598+95

NW CARY PKWY


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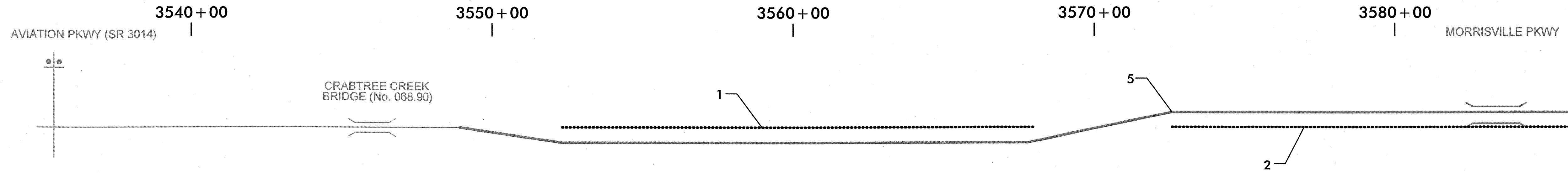
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TO DURHAM

TO CARY

SUGGESTED CONSTRUCTION PHASING
PHASE 8

PROJECT REFERENCE NO. P-5201	SHEET NO. RR-21
R/W SHEET NO.	
RAIL DESIGN ENGINEER	
	
Prepared in the Office of: AECOM	
<small>NC PERM LICENSE No. F-0342 701 Corporate Center Drive, Suite 475 Durham, NC 27603 (919) 854-6200 • (919) 854-6259 FAX</small>	



SEE MATCH LINE 3590+00






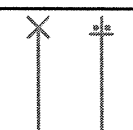
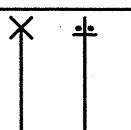
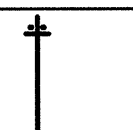
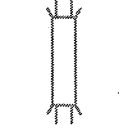
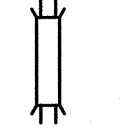
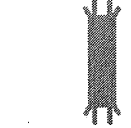
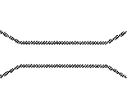
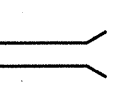
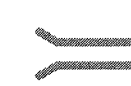
PHASE 8

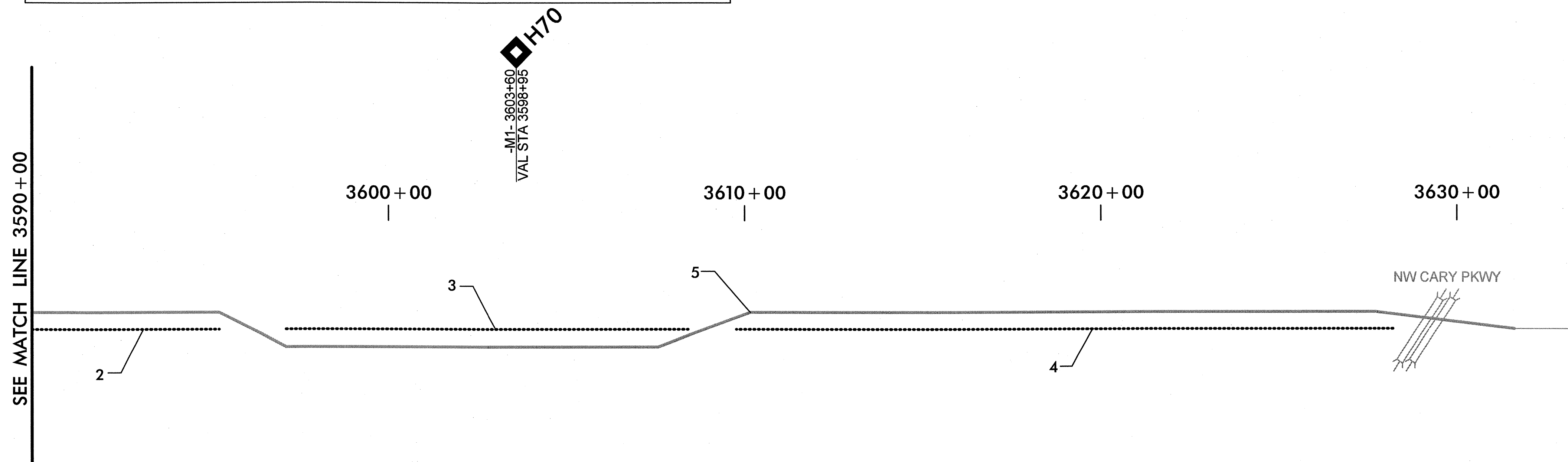
PHASE 8A - REMOVE EXISTING TRACK (NS CONTRACTOR)

1. STA. 3552+34 TO STA. 3568+00 -M1-
2. STA. 3572+58 TO STA. 3595+25 -M1-
3. STA. 3597+13 TO STA. 3608+41 -M1-
4. STA. 3609+77 TO STA. 3628+20 -M1-

PHASE 8B - REMOVE TEMPORARY DRAINAGE PIPES AND COMPLETE STANDARD 14' ROADBED CONSTRUCTION (NCDOT CONTRACTOR)

5. STA. 3548+93 TO STA. 3631+61 -M1-

ITEM DESCRIPTION	EXISTING	EXISTING (BEING REMOVED)	PROPOSED	COMPLETED
TRACK				
ROADBED				
GRADE CROSSING				
BRIDGE (ROADWAY) (OVERHEAD OF UNDERGRADE)				
BRIDGE (RAILROAD) (OVERHEAD OF UNDERGRADE)				



USER: wst/ml
DATE: 9/16/2013
TIME: 7:14:41 AM
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