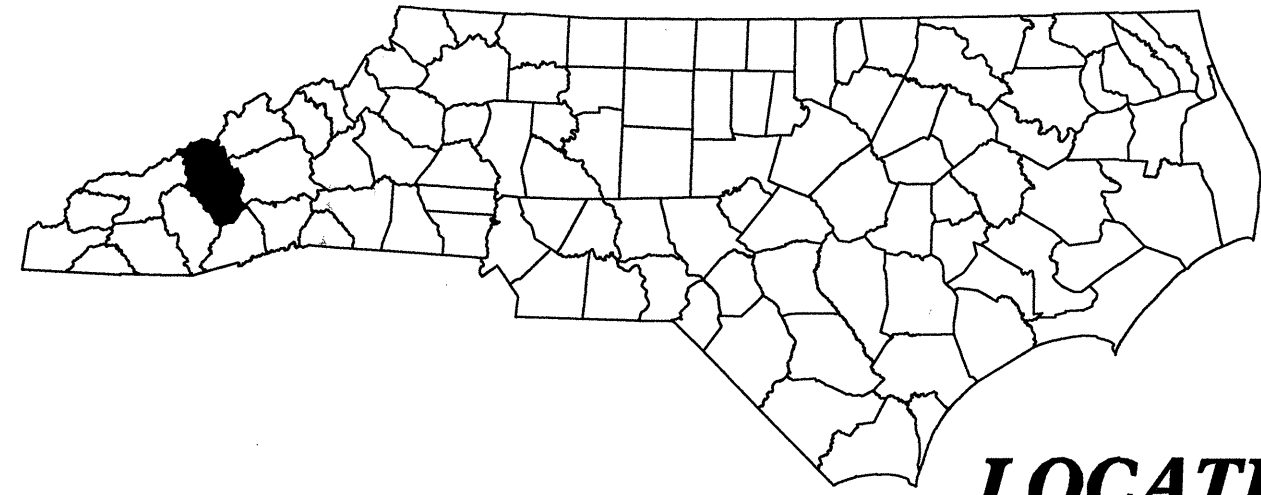


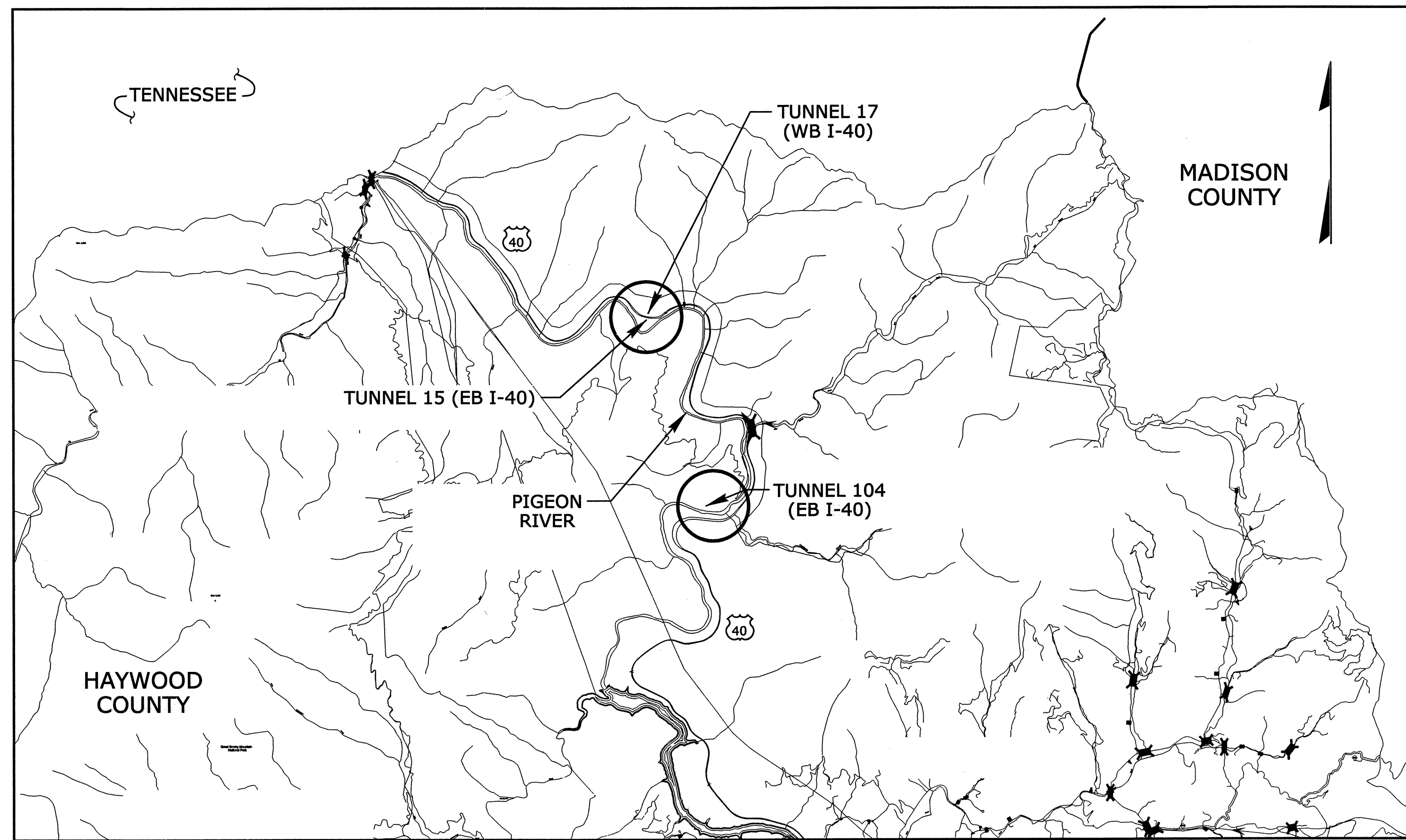
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STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.14.P.10		P.E.	
50136.3.FS1	NHPIM-040-1(260)	CONST.	

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS
HAYWOOD COUNTY



LOCATION: TUNNEL 15, TUNNEL 17 AND TUNNEL 104 ON I-40 BETWEEN THE TENNESSEE STATE LINE AND SR 1338 (FINES CREEK ROAD - EXIT 15)

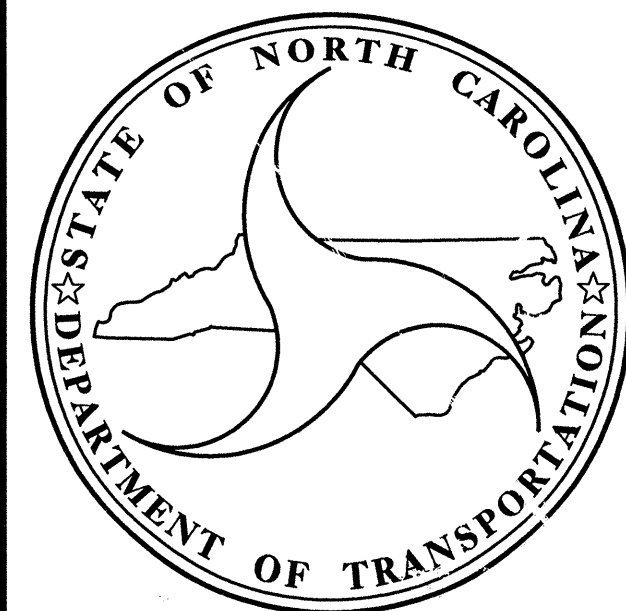
TYPE OF WORK: GRADING, DRAINAGE, PAVING AND TUNNEL REPAIR



TIP I-5512

CONTRACT: C203620

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DESIGN DATA

TUNNEL #15	ADT = 9500 IN 2009
TUNNEL #17	ADT = 9500 IN 2009
TUNNEL #104	ADT = 9500 IN 2009

PROJECT LENGTH

LENGTH ROADWAY OF PROJECT =	0.05 MILES
LENGTH STRUCTURE OF PROJECT =	0.624 MILES
TOTAL LENGTH OF STATE PROJECT =	0.674 MILES

STRUCTURES MANAGEMENT UNIT
 1000 BIRCH RIDGE DR.
 RALEIGH, N.C. 27610

2012 STANDARD SPECIFICATIONS

LETTING DATE :
 DECEMBER 16, 2014

MATTHEW MOYER, P.E. PROJECT ENGINEER
JOSHUA DEYTON, P.E. PROJECT ENGINEER

Prepared In the Office of:
HDR HDR Engineering, Inc. of the Carolinas
 3733 National Drive, Suite 207 Raleigh, N.C. 27612
 N.C.B.E.L.S. License Number: F-0116

MATTHEW MOYER, P.E.
 PROJECT DESIGN ENGINEER

P.E.
 BRIDGE DESIGN ENGINEER

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	TIP I-5512	1A	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.14.P.10		P.E.	
50136.3.FS1	NHPIM-040-1(260)	CONST.	

TIP I-5512

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

HAYWOOD COUNTY

**LOCATION: TUNNEL 15, TUNNEL 17 AND TUNNEL 104 ON I-40 BETWEEN
 THE TENNESSEE STATE LINE AND SR 1338
 (FINES CREEK ROAD - EXIT 15)**

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND TUNNEL REPAIR

CONTRACT: C203620

INDEX OF SHEETS

DWG. #	DESCRIPTION
1	TITLE SHEET
1A	INDEX OF SHEETS
3A	GUARDRAIL SUMMARY
4 THRU 7	ROADWAY PLANS
TMP-1 THRU TMP-4	TRANSPORTATION MANAGEMENT PLANS
E-001 THRU E-025	ELECTRICAL PLANS
EC-1 THRU EC-2	EROSION CONTROL PLANS
S-001 THRU S-110	STRUCTURE PLANS

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

GENERAL NOTES:

2012 SPECIFICATIONS
 EFFECTIVE: 01-17-2012
 REVISED: 07-30-2012

GUARDRAIL:

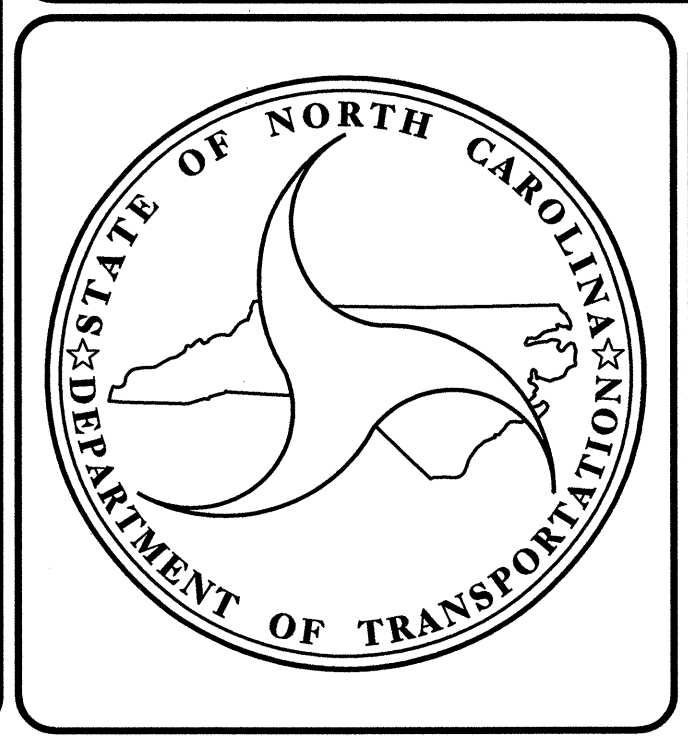
THE GUARDRAIL LOCATIONS SHOWN ON THE PLANS MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHOULD CONSULT WITH THE ENGINEER PRIOR TO ORDERING GUARDRAIL MATERIAL.

2012 ROADWAY ENGLISH STANDARD DRAWINGS

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

STD.NO.	TITLE
DIVISION 3 - PIPE CULVERTS	
310.01	Method of Pipe Installation
DIVISION 8 - INCIDENTALS	
846.01	Concrete Curb, Gutter and Curb & Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units

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STRUCTURES MANAGEMENT UNIT
 1000 BIRCH RIDGE DR.
 RALEIGH, N.C. 27610

2012 STANDARD SPECIFICATIONS

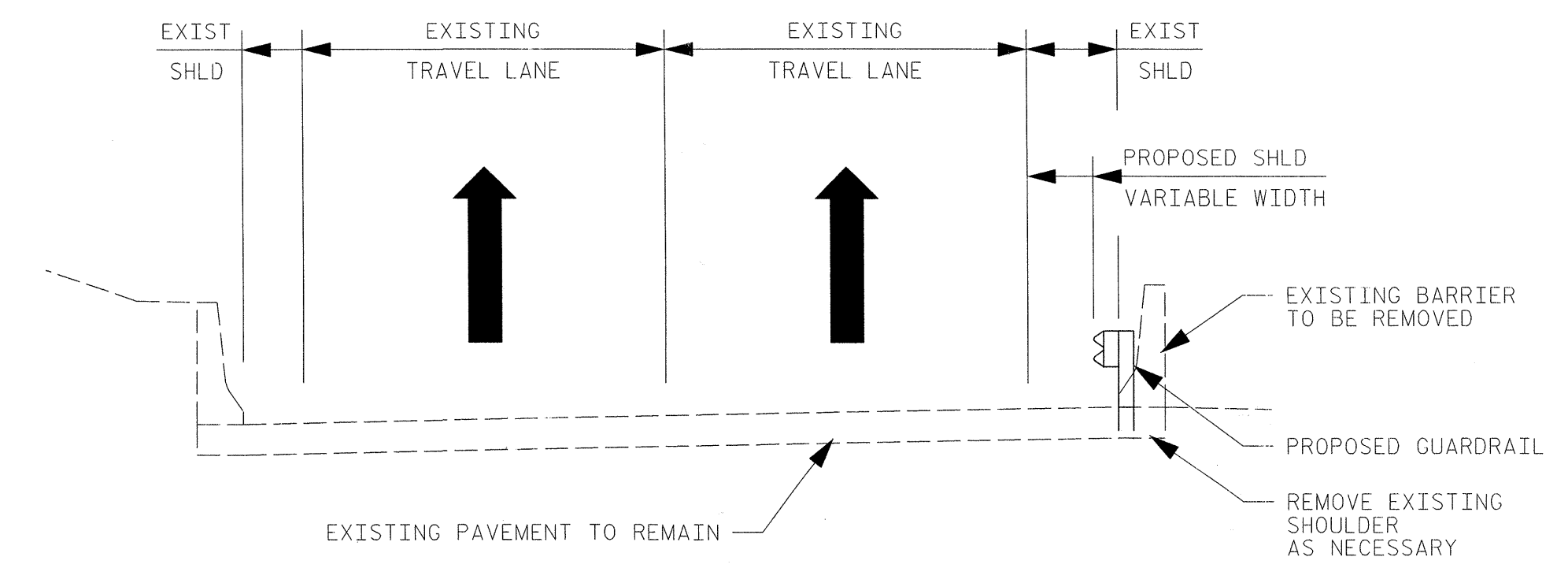
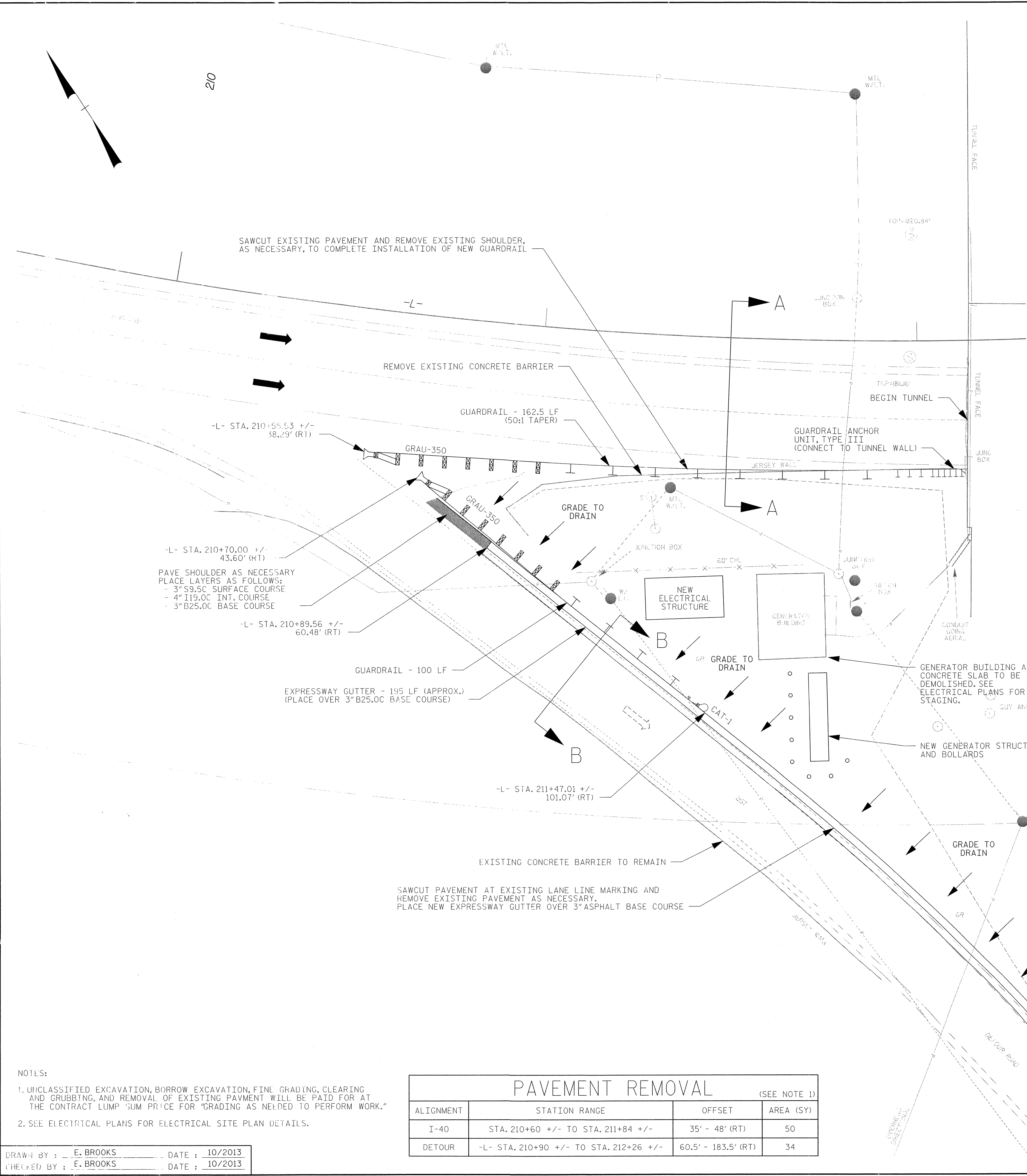
LETTING DATE :
 DECEMBER 16, 2014

MATTHEW MOYER, P.E. PROJECT ENGINEER
JOSHUA DEYTON, P.E. PROJECT ENGINEER

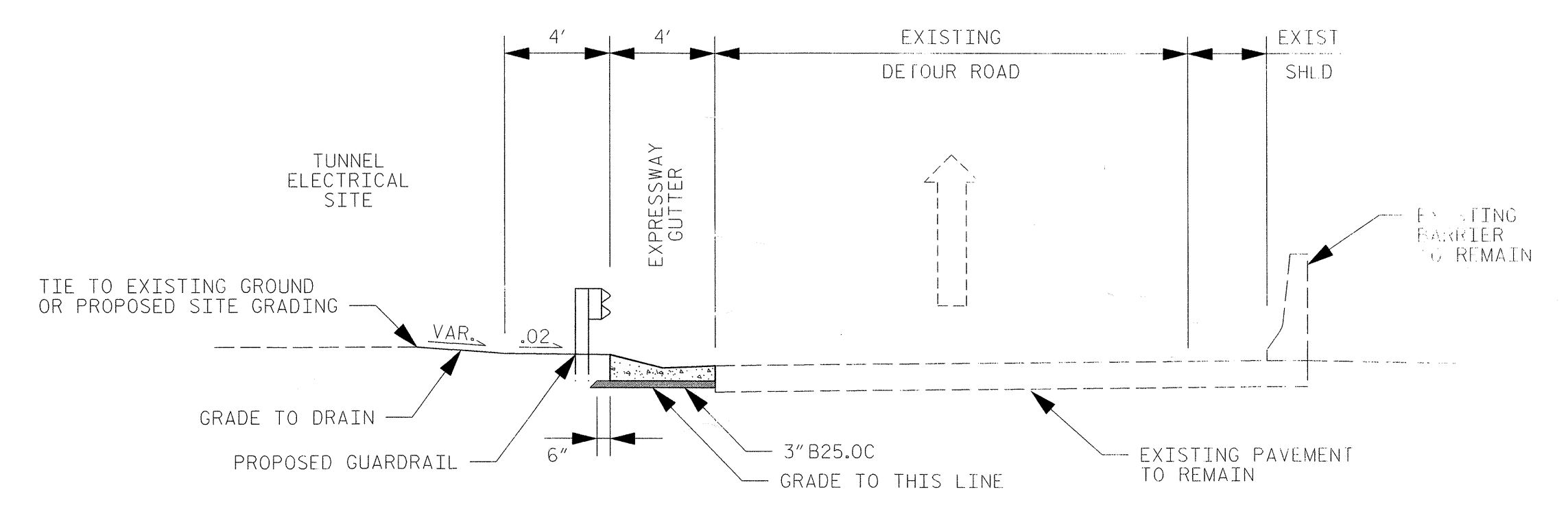
Prepared In the Office of:
HDR HDR Engineering, Inc. of the Carolinas
 3733 National Drive, Suite 207 Raleigh, N.C. 27612
 N.C.B.E.L.S. License Number: F-0116

MATTHEW MOYER, P.E.
PROJECT DESIGN ENGINEER

7-29-14
 P.E.
 BRIDGE DESIGN ENGINEER



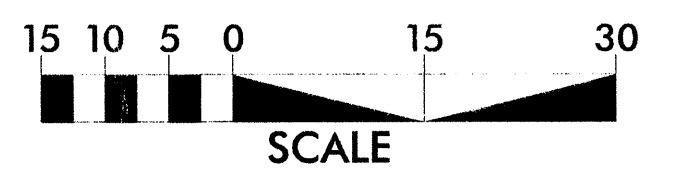
SECTION A-A



SECTION B-B

ASPHALT PAVEMENT SCHEDULE & NOTES:

- PLACE 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS PER SY YD IN EACH OF TWO LAYERS
- PLACE 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS PER SY YD
- PLACE 3" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 342 LBS PER SY YD.



PROJECT NO. I-5512, 50136.3.FS1
 HAYWOOD COUNTY
 STATION: 211+50 -L- (EB I-40)

- NOTES:
- UNCLASSIFIED EXCAVATION, BORROW EXCAVATION, FINE GRADING, CLEARING AND GRUBBING AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING AS NEEDED TO PERFORM WORK."
 - SEE ELECTRICAL PLANS FOR ELECTRICAL SITE PLAN DETAILS.

PAVEMENT REMOVAL (SEE NOTE 1)			
ALIGNMENT	STATION RANGE	OFFSET	AREA (SY)
I-40	STA. 210+60 +/- TO STA. 211+84 +/-	35' - 48' (RT)	50
DETOUR	-L- STA. 210+90 +/- TO STA. 212+26 +/-	60.5' - 183.5' (RT)	34

DRAWN BY : E. BROOKS DATE : 10/2013
 CHECKED BY : E. BROOKS DATE : 10/2013

PAVEMENT DESIGN ENGINEER
 NORTH CAROLINA PROFESSIONAL SEAL
 024964
 JOSEPH T. HOLDING
 8/15/14

ROADWAY DESIGN ENGINEER
 NORTH CAROLINA PROFESSIONAL SEAL
 032584
 R. SKRINE BROOKS
 8/11/14

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

TUNNEL 15
 ROADWAY PLAN

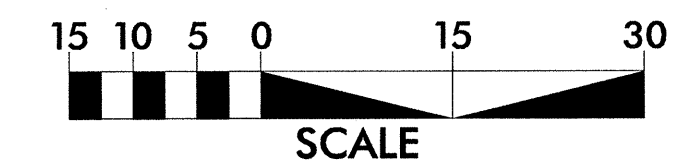
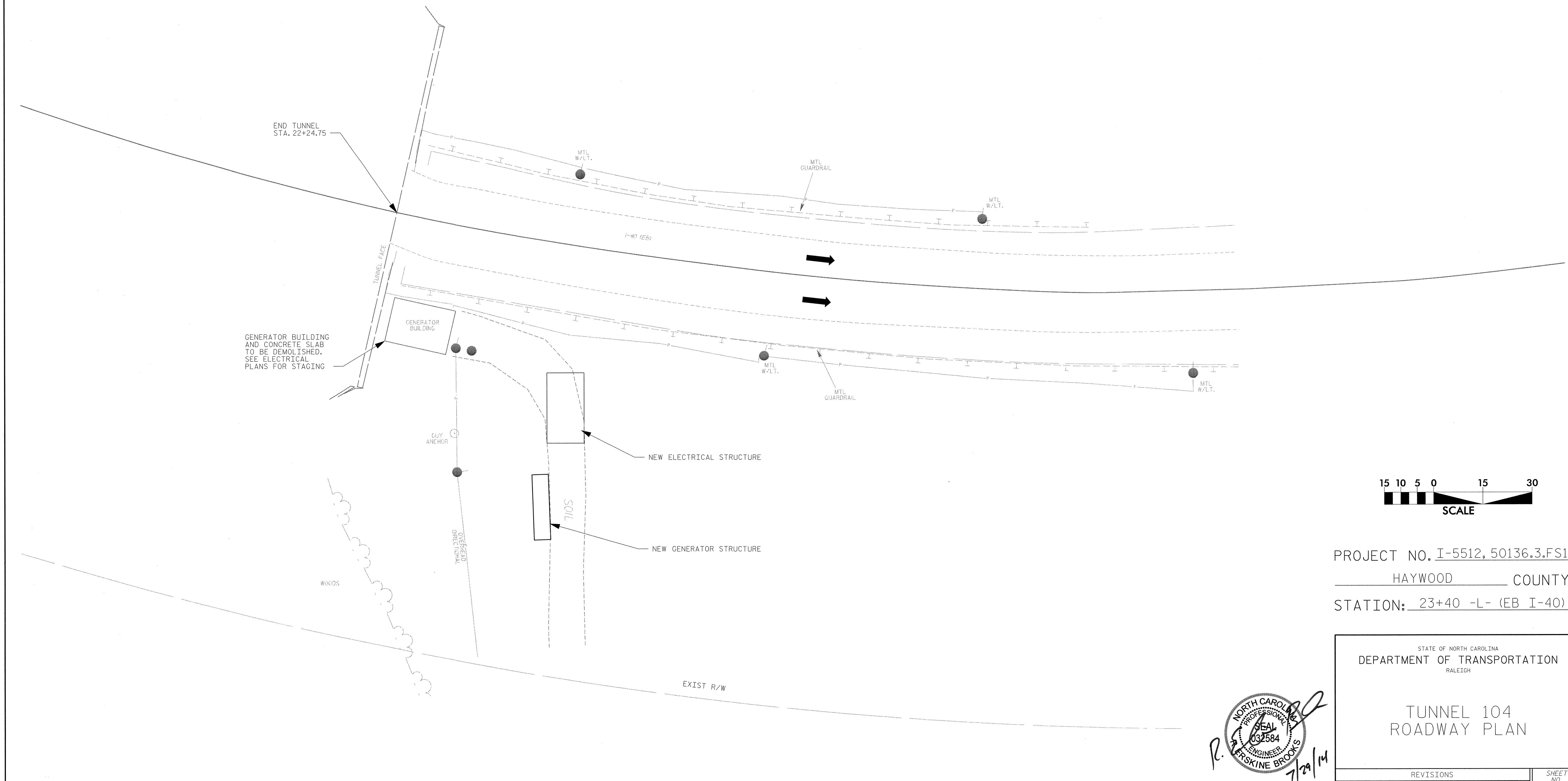
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2	--	--	4	--	--

SHEET NO. 4
 TOTAL SHEETS

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 USER: erbrooks DATE: 8/11/2014
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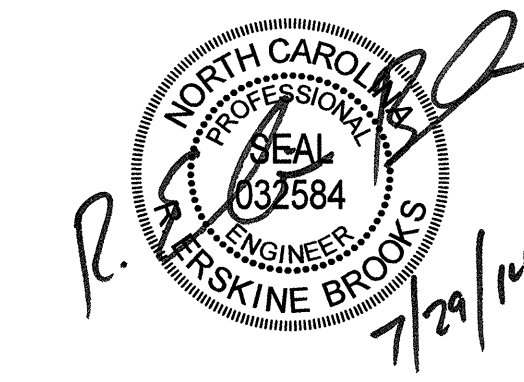
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 FILE: ...TUNNEL 104 ROADWAY WORK



PROJECT NO. I-5512, 50136.3.FS1
 HAYWOOD COUNTY
 STATION: 23+40 -L- (EB I-40)

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

TUNNEL 104
 ROADWAY PLAN

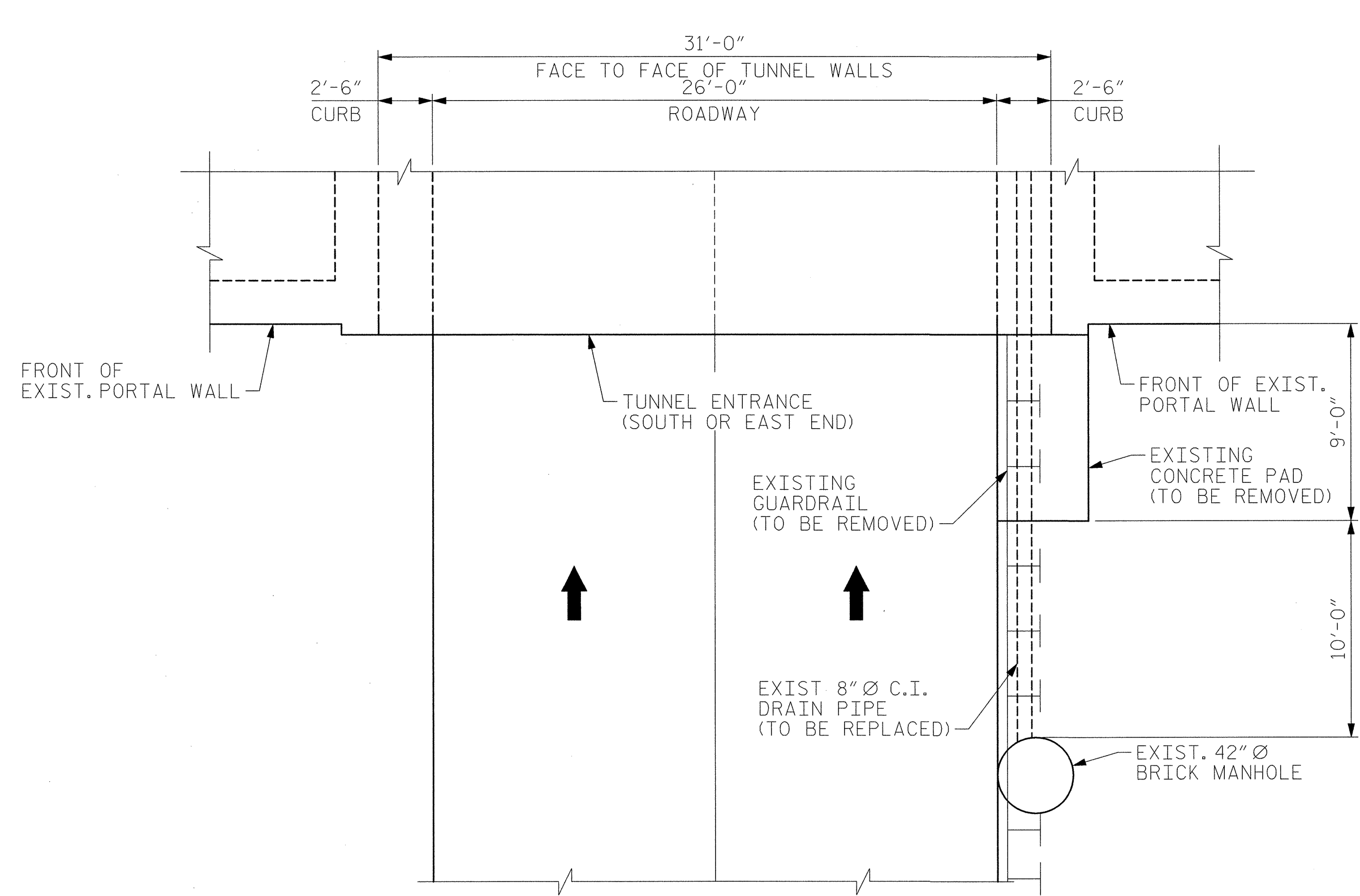


DRAWN BY : E. BROOKS DATE : 10/2013
 CHECKED BY : E. BROOKS DATE : 10/2013

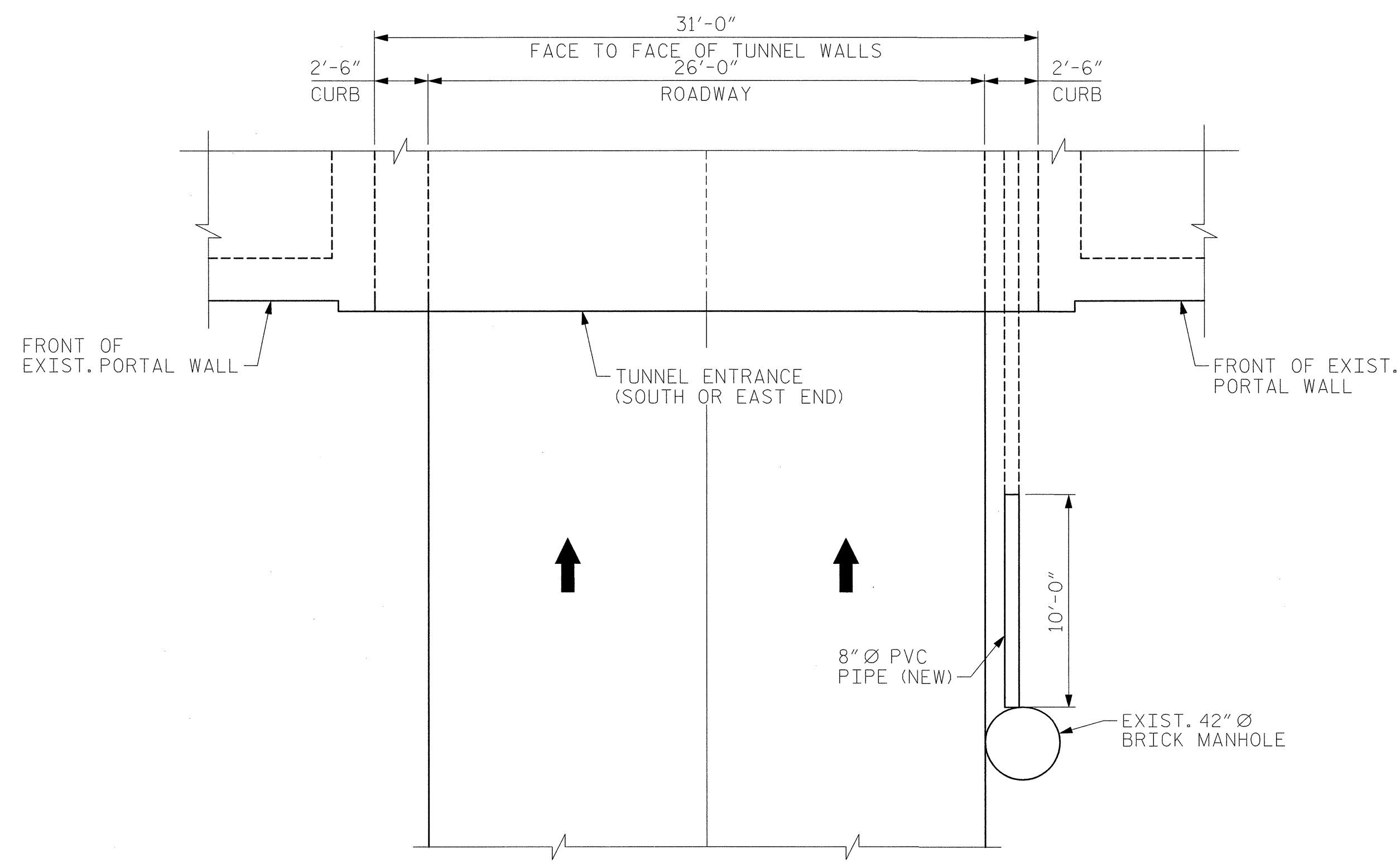
NOTE: SEE ELECTRICAL PLANS FOR ELECTRICAL SITE PLAN DETAILS.

HDR Engineering, Inc. of the Carolinas
 3733 National Drive, Suite 207 Raleigh, N.C. 27612
 N.C.E.L.S. License Number: F-4016

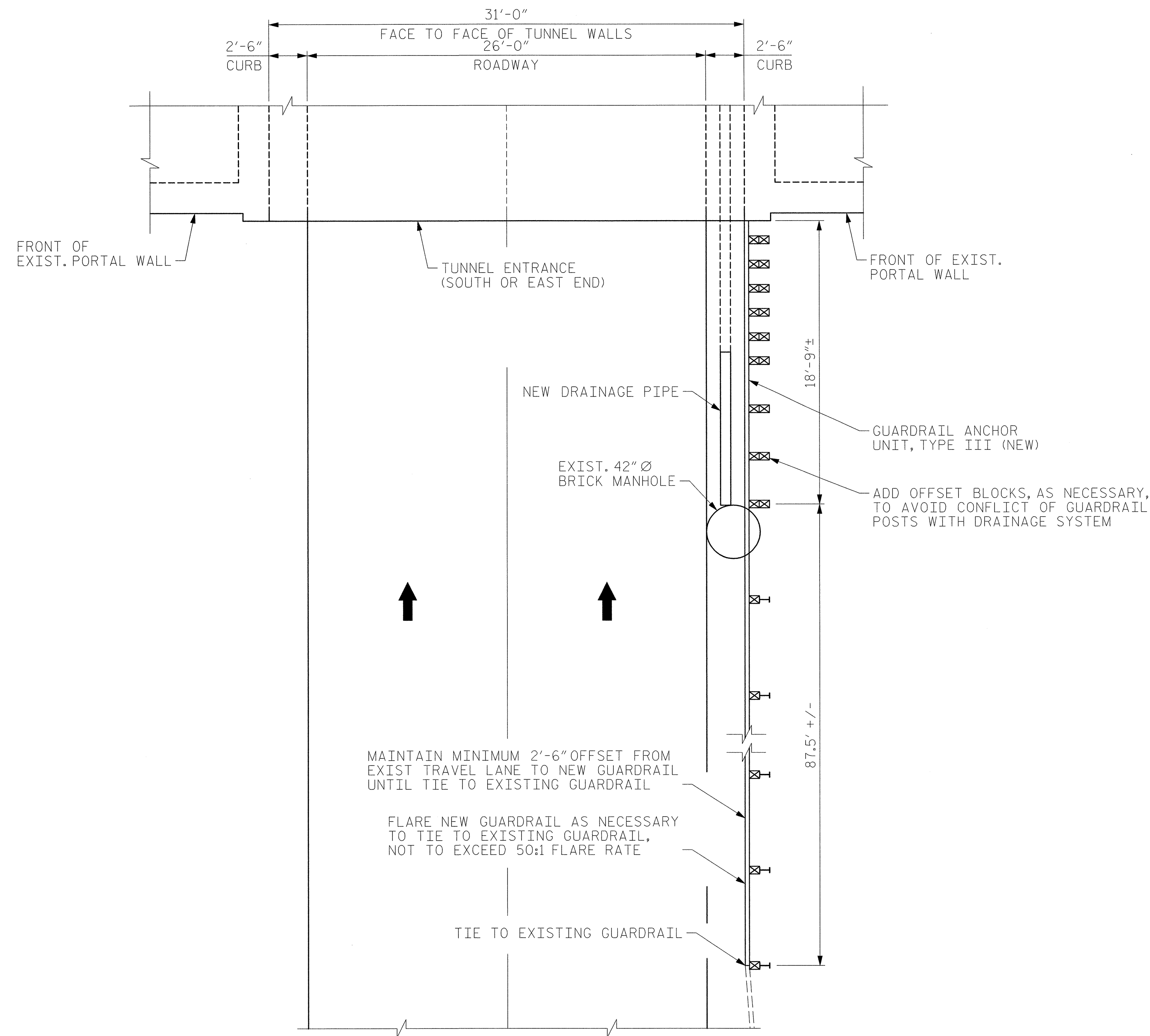
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EXISTING PLAN OF TUNNEL ENTRANCE



DRAINAGE PIPE REPLACEMENT AT TUNNEL ENTRANCE

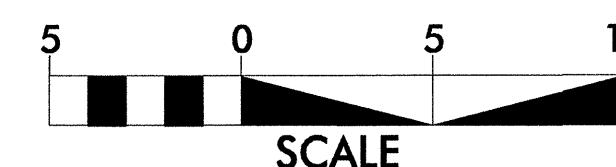
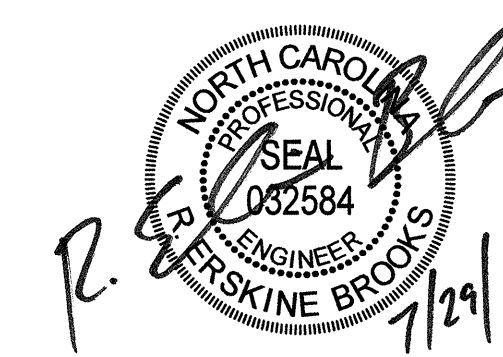


GUARDRAIL REPLACEMENT AND ANCHORAGE AT TUNNEL ENTRANCE

PROJECT NO. I-5512, 50136.3.FS1
HAYWOOD COUNTY
 STATION: _____

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

TUNNEL 104
 DRAINAGE PIPE
 REPAIR



DRAWN BY : E. BROOKS DATE : 10/2013
 CHECKED BY : E. BROOKS DATE : 10/2013

REVISIONS						SHEET NO. 6
NO.	BY:	DATE:	NO.	BY:	DATE:	
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HDR Engineering, Inc. of the Carolinas
 3733 National Drive, Suite 207 Raleigh, N.C. 27612
 N.C.E.L.S. License Number: F-0116

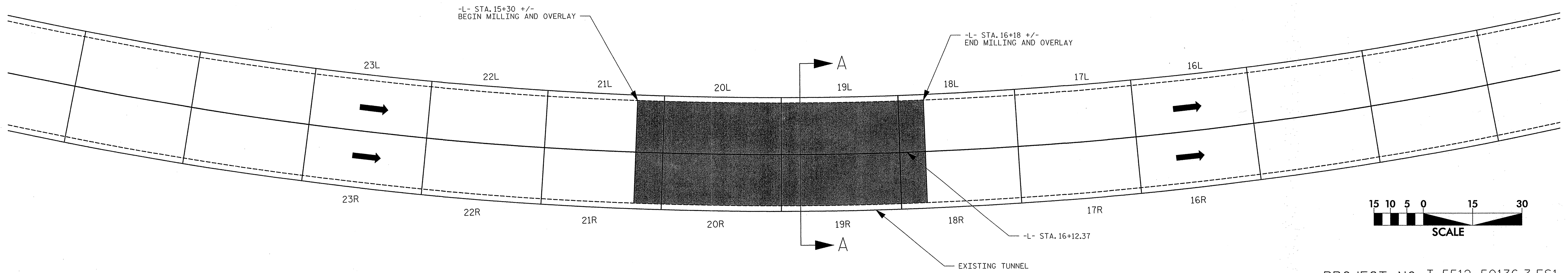
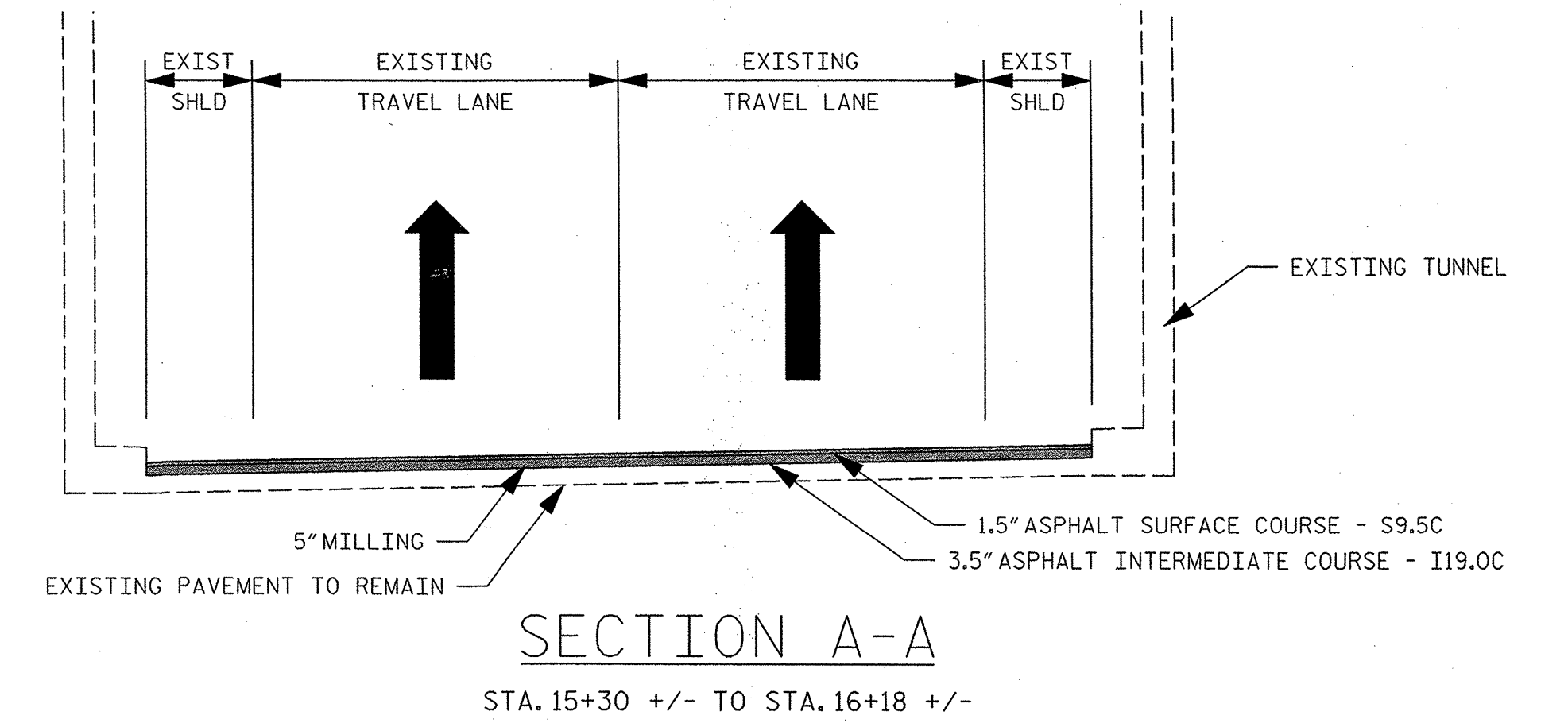
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ASPHALT PAVEMENT SCHEDULE & NOTES:

PLACE 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS PER SY YD.

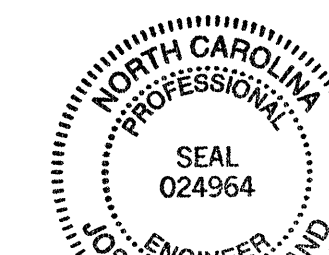
PLACE 3.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 399 LBS PER SY YD.

AS NECESSARY AND AS DIRECTED BY THE ENGINEER, REPAIR EXISTING ASPHALT BASE COURSE AND SUBGRADE BY PLACING ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS PER SY YD PER 1" IN DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH.



PROJECT NO. I-5512, 50136.3.FS1
HAYWOOD COUNTY
 STATION: 15+80 -L- (EB I-40)

PAVEMENT DESIGN ENGINEER



Joseph T. Holland 8/15/14

ROADWAY DESIGN ENGINEER



Joseph T. Skinske Brooks 7/29/14

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

TUNNEL 104
 ASPHALT OVERLAY

REVISIONS

NO.	BY:	DATE:	NO.	BY:	DATE:
1	--	--	3	--	--
2	--	--	4	--	--

SHEET NO. 7
 TOTAL SHEETS

DRAWN BY : E. BROOKS DATE : 10/2013
 CHECKED BY : E. BROOKS DATE : 10/2013

HDR Engineering, Inc. of the Carolinas
 3733 National Drive, Suite 207 Raleigh, N.C. 27612
 N.C.E.L.S. License Number: F-4016

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