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See Sheet 1A For Index of Sheets

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

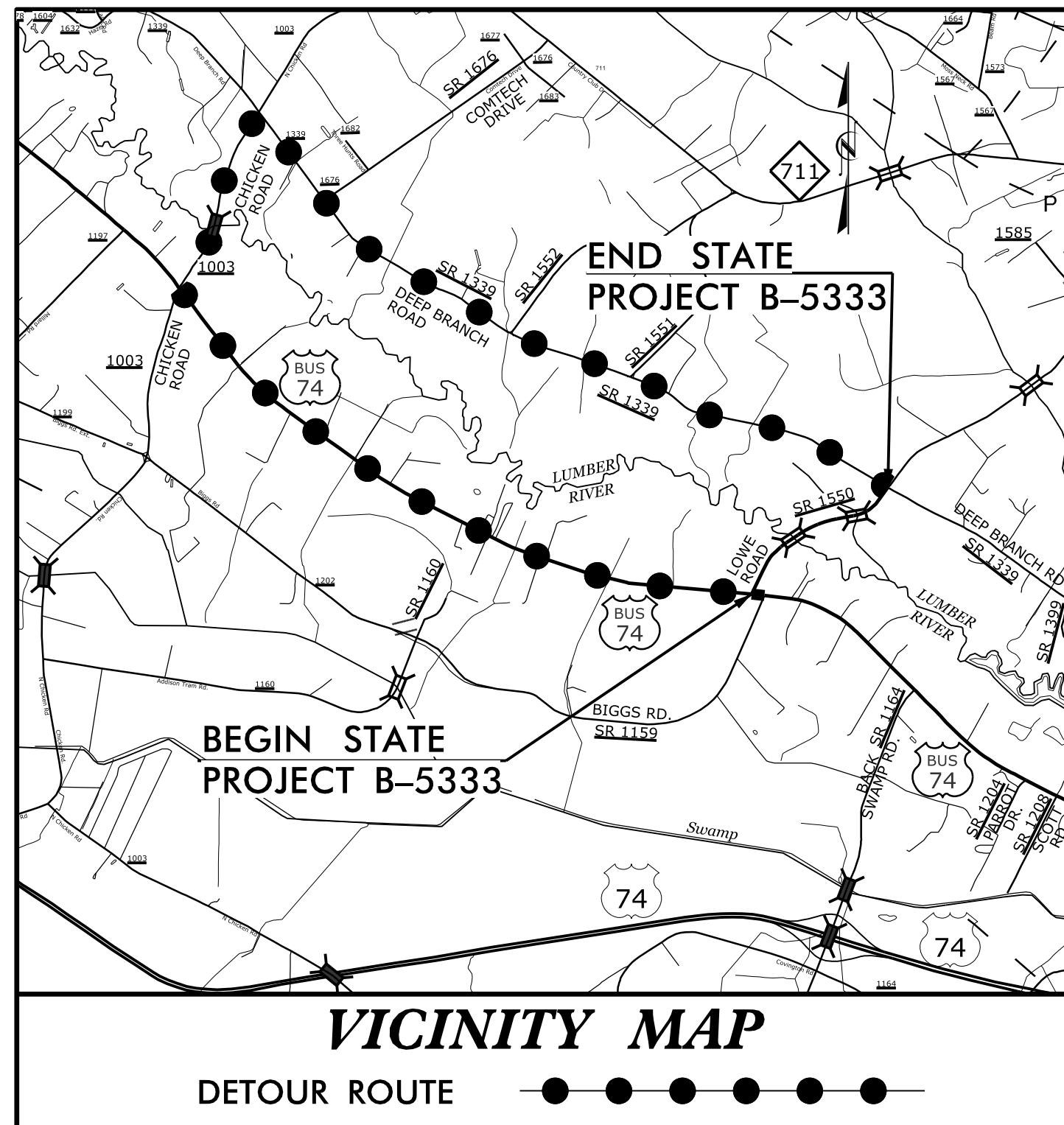
ROBESON COUNTY

**LOCATION: BRIDGE NO. 173 OVER LUMBER RIVER AND
BRIDGE NO. 174 OVER OVERFLOW ON SR 1550 (LOWE ROAD)**

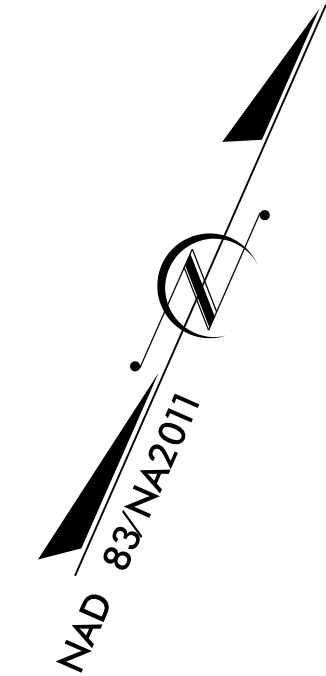
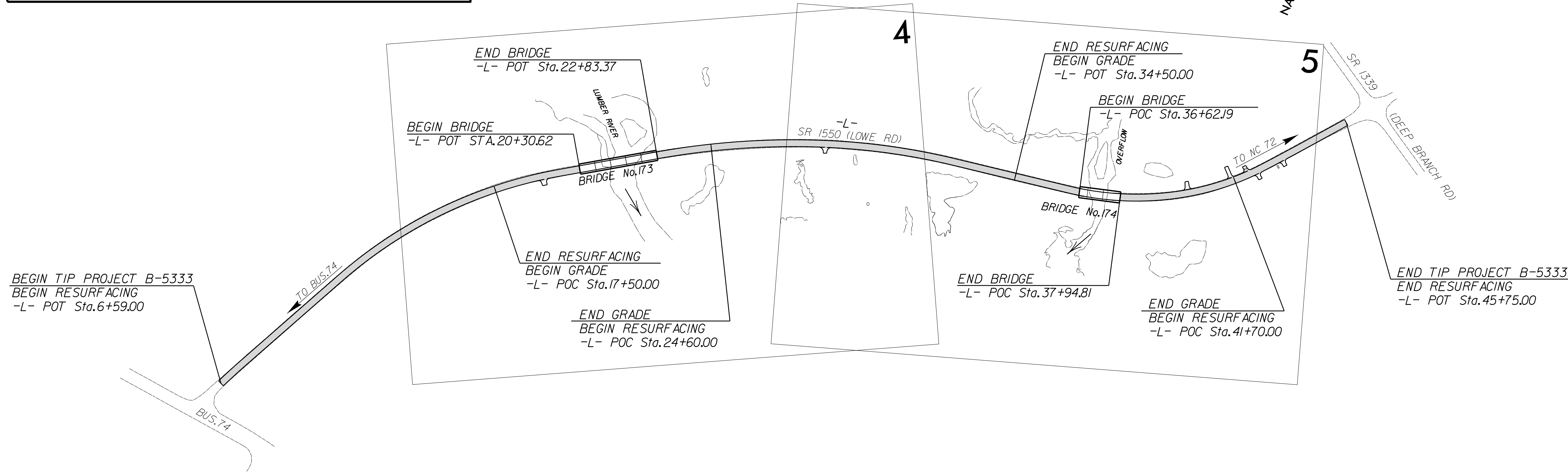
**TYPE OF WORK: GRADING, PAVING, DRAINAGE,
AND STRUCTURES**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5333	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
46047.1.1	BRZ-1550(2)	P.E.	
46047.2.1	BRZ-1550(2)	RW & UTIL	
46047.3.1	BRZ-1550(2)	CONST.	

TIP PROJECT: B-5333

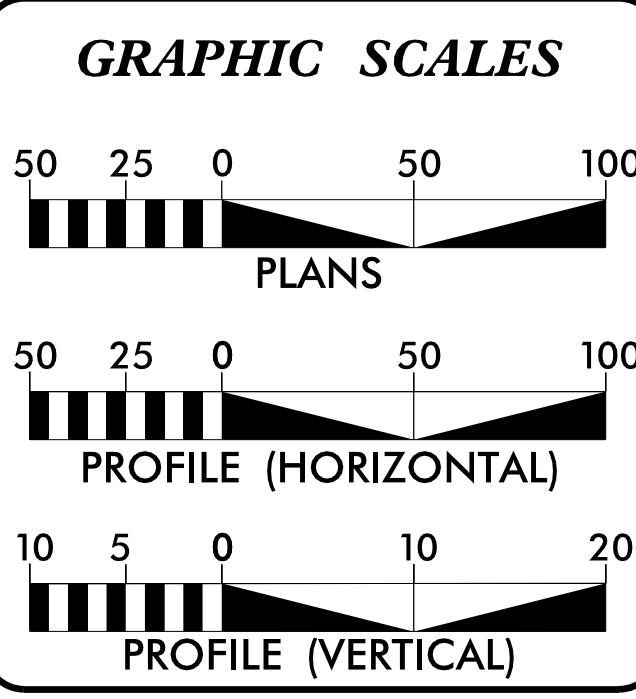


CONTRACT: C203877



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

NCDOT CONTACT: GARY LOVERING, PE



DESIGN DATA

ADT 2017 =	1,700
ADT 2037 =	2,300
K =	9 %
D =	60 %
T =	6 % *
V =	60 MPH
* TTST = 1% DUAL 5%	
FUNC CLASS =	
MINOR COLLECTOR	
SUB REGIONAL TIER	

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-5333 =	0.669 MILES
LENGTH STRUCTURE TIP PROJECT B-5333 =	0.073 MILES
TOTAL LENGTH TIP PROJECT B-5333 =	0.742 MILES

PLANS PREPARED FOR NCDOT BY:

2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9939
NC COA No. F-0929

2012 STANDARD SPECIFICATIONS

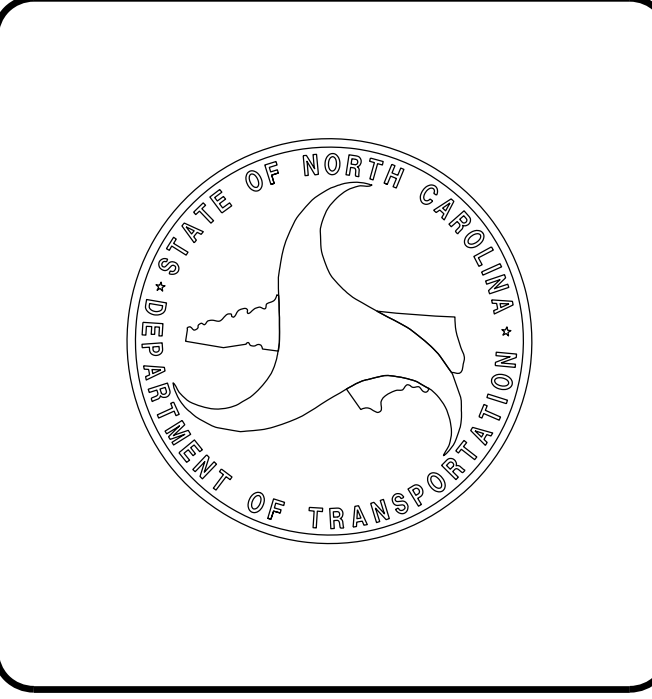
RIGHT OF WAY DATE:	DENNIS J. MORY, PE PROJECT ENGINEER
LETTING DATE:	CHAD D. BOBROWSKI, PE PROJECT DESIGN ENGINEER

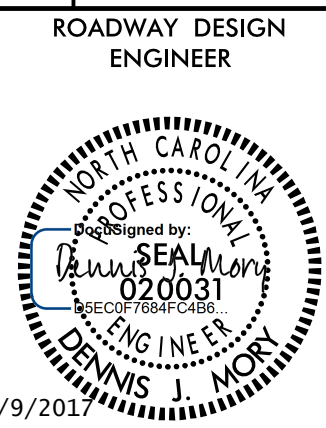
HYDRAULICS ENGINEER

DocuSigned by:
Cameron Long
2/9/2017
SIGNATURE:

ROADWAY DESIGN ENGINEER

DocuSigned by:
Dennis J. Mory
2/9/2017
SIGNATURE:





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

TIP B-5333
SHEET NUMBER
1
1A
1B
1C-1
2A-1 THRU 2A-2
2C-1
2C-2
3B-1
3D-1
3P-1
4 THRU 7
TMP-1 THRU TMP-4
PMP-1 THRU PMP-3
EC-1 THRU EC-7
SIGN-1
UC-1 THRU UC-6
UO-1 THRU UO-3
X-1A
X-1 THRU X-9
S01-1 THRU S01-24
S02-1 THRU S02-23

INDEX OF SHEETS
SHEET
TITLE SHEET
INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
CONVENTIONAL SYMBOLS
SURVEY CONTROL SHEET
PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND PAVEMENT WEDGE DETAILS
STRUCTURE ANCHOR UNIT DETAILS
SHOULDER WEDGE DETAILS
GUARDRAIL SUMMARY, SUMMARY OF EARTHWORK, SHOULDER BERM GUTTER SUMMARY, AND PAVEMENT REMOVAL SUMMARY
SUMMARY OF DRAINAGE QUNATITIES
PARCEL INDEX SHEET
PLAN AND PROFILE SHEETS
TRANSPORTATION MANAGEMENT PLANS
PAVEMENT MARKING PLANS
EROSION CONTROL PLANS
SIGNING PLANS
UTILITY CONSTRUCTION PLANS
UTILITIES BY OTHERS PLANS
CROSS-SECTION SUMMARY SHEET AND INDEX
CROSS-SECTIONS
STRUCTURE PLANS - BRIDGE 173
STRUCTURE PLANS - BRIDGE 174

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 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
DIVISION 4 - MAJOR STRUCTURES	
422.10	Reinforced Bridge Approach Fills
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
840.00	Concrete Base Pad for Drainage Structures
840.25	Anchorage for Frames - Brick or Concrete or Precast
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.46	Traffic Bearing Precast Drainage Structure
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
876.02	Guide for Rip Rap at Pipe Outlets

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

GENERAL NOTES: 2012 SPECIFICATIONS

EFFECTIVE: 01-17-2012
REVISED: 10-31-2014

GRADING AND SURFACING OR RESURFACING AND WIDENING:

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

CLEARING:

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

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01

SIDE ROADS:

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

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.

TEMPORARY SHORING:

SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.

END BENTS:

THE ENGINEER SHALL CHECK THE STRUCTURE END BENT PLANS, DETAILS, AND CROSS-SECTION PRIOR TO SETTING OF THE SLOPE STAKES FOR THE EMBANKMENT OR EXCAVATION APPROACHING A BRIDGE.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE LUMBEE RIVER EMC
ROBERSON COUNTY WATER DEPARTMENT, TIME WARNER CABLE DUKENET

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

RIGHT-OF-WAY MARKERS:

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

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

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

04/06/15

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EIP
Property Corner	-----
Property Monument	□ ECM
Parcel/Sequence Number	①23
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	--- WLB ---
Proposed Wetland Boundary	--- WLB ---
Existing Endangered Animal Boundary	--- EAB ---
Existing Endangered Plant Boundary	--- EPB ---
Existing Historic Property Boundary	--- HPB ---
Known Contamination Area: Soil	☠-S-☠
Potential Contamination Area: Soil	☠-S-☠
Known Contamination Area: Water	☠-W-☠
Potential Contamination Area: Water	☠-W-☠
Contaminated Site: Known or Potential	☠☠

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○ S
Well	○ W
Small Mine	✕
Foundation	□
Area Outline	□
Cemetery	□
Building	□
School	□
Church	□
Dam	▬

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	-----
Jurisdictional Stream	--- JS ---
Buffer Zone 1	--- BZ 1 ---
Buffer Zone 2	--- BZ 2 ---
Flow Arrow	←
Disappearing Stream	→
Spring	○
Wetland	--- WLB ---
Proposed Lateral, Tail, Head Ditch	-----
False Sump	▽

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○ MILEPOST 35
Switch	□ SWITCH
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	-----
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 C/A 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:

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

VEGETATION:

Single Tree	☀
Single Shrub	☀
Hedge	-----
Woods Line	-----

Orchard	☀☀☀☀
Vineyard	□ Vineyard

EXISTING STRUCTURES:

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

UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	○ P
Power Line Tower	□
Power Transformer	▣
U/G Power Cable Hand Hole	○
H-Frame Pole	●
U/G Power Line LOS B (S.U.E.*)	-----
U/G Power Line LOS C (S.U.E.*)	-----
U/G Power Line LOS D (S.U.E.*)	-----

TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	○ T
Telephone Pedestal	□
Telephone Cell Tower	⌵
U/G Telephone Cable Hand Hole	○ TH
U/G Telephone Cable LOS B (S.U.E.*)	-----
U/G Telephone Cable LOS C (S.U.E.*)	-----
U/G Telephone Cable LOS D (S.U.E.*)	-----
U/G Telephone Conduit LOS B (S.U.E.*)	-----
U/G Telephone Conduit LOS C (S.U.E.*)	-----
U/G Telephone Conduit LOS D (S.U.E.*)	-----
U/G Fiber Optics Cable LOS B (S.U.E.*)	-----
U/G Fiber Optics Cable LOS C (S.U.E.*)	-----
U/G Fiber Optics Cable LOS D (S.U.E.*)	-----

WATER:

Water Manhole	○ W
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
U/G Water Line LOS B (S.U.E.*)	-----
U/G Water Line LOS C (S.U.E.*)	-----
U/G Water Line LOS D (S.U.E.*)	-----
Above Ground Water Line	-----

TV:

TV Pedestal	□
TV Tower	⊗
U/G TV Cable Hand Hole	○ TH
U/G TV Cable LOS B (S.U.E.*)	-----
U/G TV Cable LOS C (S.U.E.*)	-----
U/G TV Cable LOS D (S.U.E.*)	-----
U/G Fiber Optic Cable LOS B (S.U.E.*)	-----
U/G Fiber Optic Cable LOS C (S.U.E.*)	-----
U/G Fiber Optic Cable LOS D (S.U.E.*)	-----

GAS:

Gas Valve	◇
Gas Meter	⊕
U/G Gas Line LOS B (S.U.E.*)	-----
U/G Gas Line LOS C (S.U.E.*)	-----
U/G Gas Line LOS D (S.U.E.*)	-----
Above Ground Gas Line	-----

SANITARY SEWER:

Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	-----
Above Ground Sanitary Sewer	-----
SS Forced Main Line LOS B (S.U.E.*)	-----
SS Forced Main Line LOS C (S.U.E.*)	-----
SS Forced Main Line LOS D (S.U.E.*)	-----

MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	□
Utility Unknown U/G Line LOS B (S.U.E.*)	-----
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	□
A/G Tank; Water, Gas, Oil	□
Geoenvironmental Boring	⊕
U/G Test Hole LOS A (S.U.E.*)	○
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

SURVEY CONTROL SHEET B-5333

PRELIMINARY ROW MARKER IRON PIN AND CAP-E

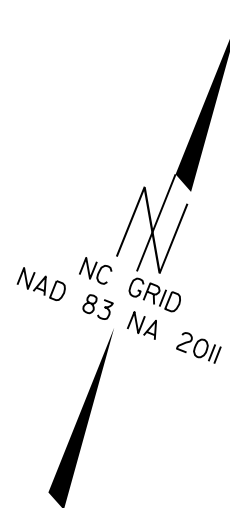
ALIGN	STATION	OFFSET	NORTH	EAST
L	19+64.34	-60.00	317584.3028	1958814.3882
L	24+60.00	-28.82	317830.6637	1959248.2993
L	24+00.00	30.96	317748.7099	1959226.9950
L	22+84.21	65.41	317658.5906	1959149.8432
L	18+50.00	30.00	317443.5793	1958774.1445
L	35+20.00	31.80	318094.8400	1960271.2882
L	36+30.03	70.00	318076.7764	1960386.3521
L	35+00.03	-28.34	318150.4742	1960240.9608
L	39+50.00	-53.00	318301.0915	1960646.3523
L	40+14.89	50.00	318248.1774	1960755.8576
L	41+50.00	30.07	318351.8747	1960853.9223
L	41+40.00	-29.95	318389.1028	1960805.7902
L	36+30.03	-53.00	318197.8237	1960364.5221
L	38+50.00	61.03	318154.1136	1960608.4185
L	22+84.21	-60.00	317762.6911	1959079.9023
L	40+50.00	-48.00	318348.4906	1960728.0616
L	19+64.34	60.00	317484.6962	1958881.3099
L	18+50.00	-30.00	317490.6241	1958736.9050
L	24+00.00	64.68	317719.8693	1959244.4718
L	41+20.00	-55.00	318395.1062	1960774.9327

TYPE	STATION	NORTH	EAST
POT	5+32.86	316357.3729	1958076.8282
PC	6+30.63	316448.4107	1958112.4980
PT	7+52.88	316560.7234	1958160.7037
PC	11+70.10	316938.6595	1958337.4452
PT	19+64.34	317534.4995	1958847.8490
PC	22+84.21	317712.8878	1959113.3631
PCC	28+34.52	317966.8864	1959608.3890
PT	32+42.70	318076.9083	1959992.7448
PC	36+30.03	318145.6654	1960373.9303
PCC	40+14.89	318289.6109	1960727.8707
PCC	42+69.23	318461.1945	1960914.3252
PT	44+18.42	318578.4712	1961006.5403
POT	46+73.75	318780.8696	1961162.1931

PRELIMINARY ROW MARKER PERMANENT EASEMENT-E

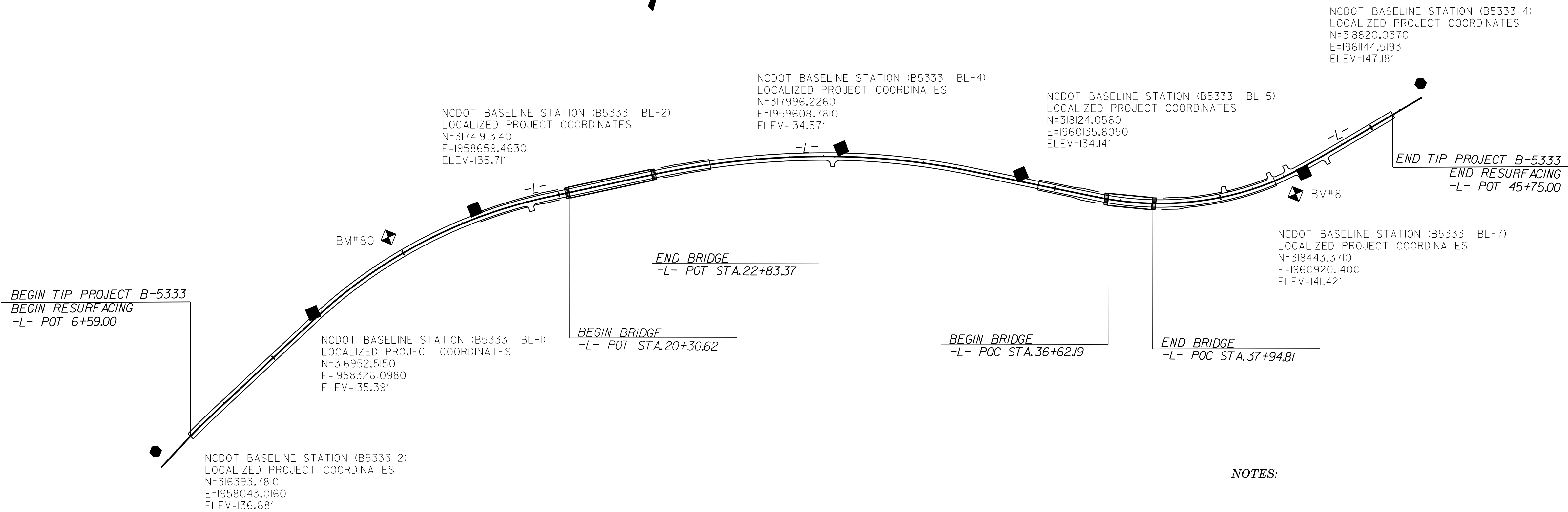
ALIGN	STATION	OFFSET	NORTH	EAST
L	42+30.00	60.00	318391.4857	1960934.0264
L	42+30.00	30.07	318411.2927	1960911.5932
L	39+70.00	80.00	318197.0101	1960731.5915
L	18+25.00	45.00	317416.6166	1958764.5832
L	18+25.00	30.00	317428.2174	1958755.0741
L	26+30.00	30.99	317857.2032	1959426.4348
L	26+30.00	50.00	317840.1013	1959434.7356
L	33+45.00	30.63	318064.9209	1960098.8608
L	33+45.00	45.00	318050.7830	1960101.4110

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	B-5333	BL-1	316952.5150	1958326.0980	135.39	11+77.76	16.17 LT
2	B-5333	BL-2	317419.3140	1958659.4630	135.71	17+46.75	25.85 LT
3	B-5333	BL-3	317734.0950	1959108.7190	137.36	22+92.12	20.21 LT
4	B-5333	BL-4	317996.2260	1959608.7810	134.57	28+52.81	24.59 LT
5	B-5333	BL-5	318124.0560	1960135.8050	134.14	33+91.85	21.00 LT
6	B-5333	BL-6	318173.4390	1960544.2110	135.43	38+00.07	18.78 RT
7	B-5333	BL-7	318443.3710	1960920.1400	141.42	42+59.17	15.76 RT



.....
 BM80 ELEVATION = 132.74
 N 317247 E 1958451
 BL STATION 8+12.00 69 LEFT
 4021

.....
 BM81 ELEVATION = 149.16
 N 318374 E 1960921
 BL STATION 35+63.00 57 RIGHT
 4021



NOTES:

- THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTPS://CONNECT.NCDOT.GOV/RESOURCES/LOCATION/](https://connect.ncdot.gov/resources/location/)
 THE FILES TO BE FOUND ARE AS FOLLOWS:
 B-5333_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.


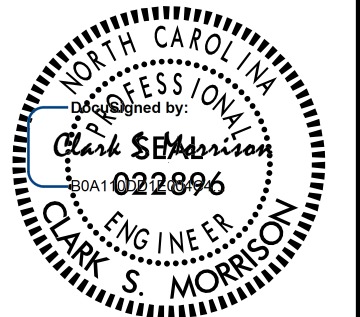

© INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
 PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
 NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTATION
 SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B5333-2"
 WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF
 NORTHING: 316393.7810(ft) EASTING: 1958043.0160(ft)
 ELEVATION: 136.6800(ft)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99993085
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B5333-2" TO -L- STATION BL-1 IS
 N26°52'08.42"E 626.35
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
 VERTICAL DATUM USED IS NAVD 88

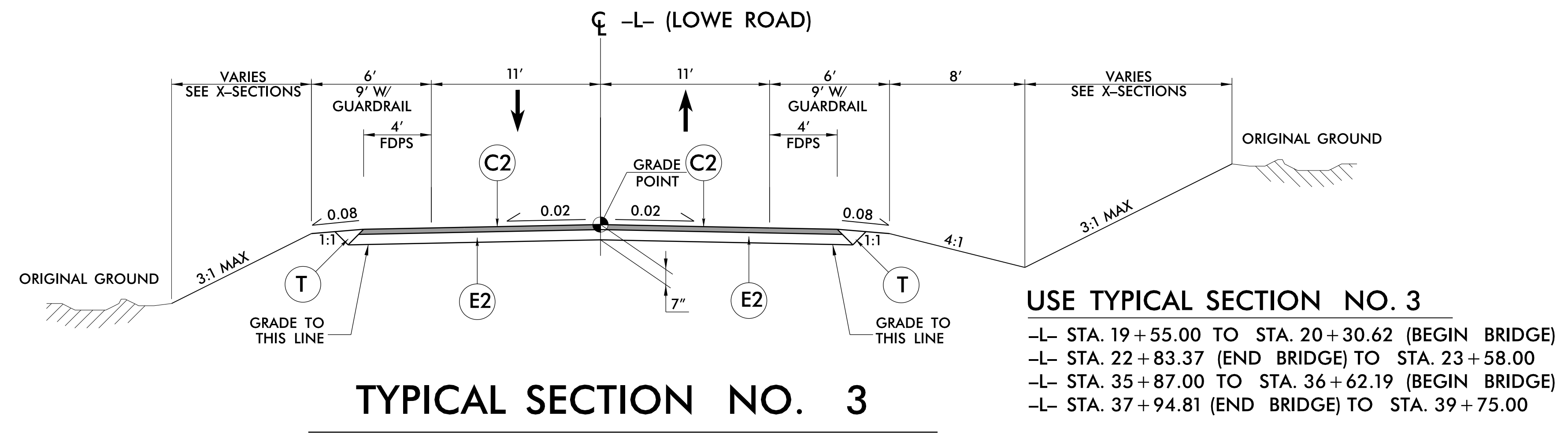
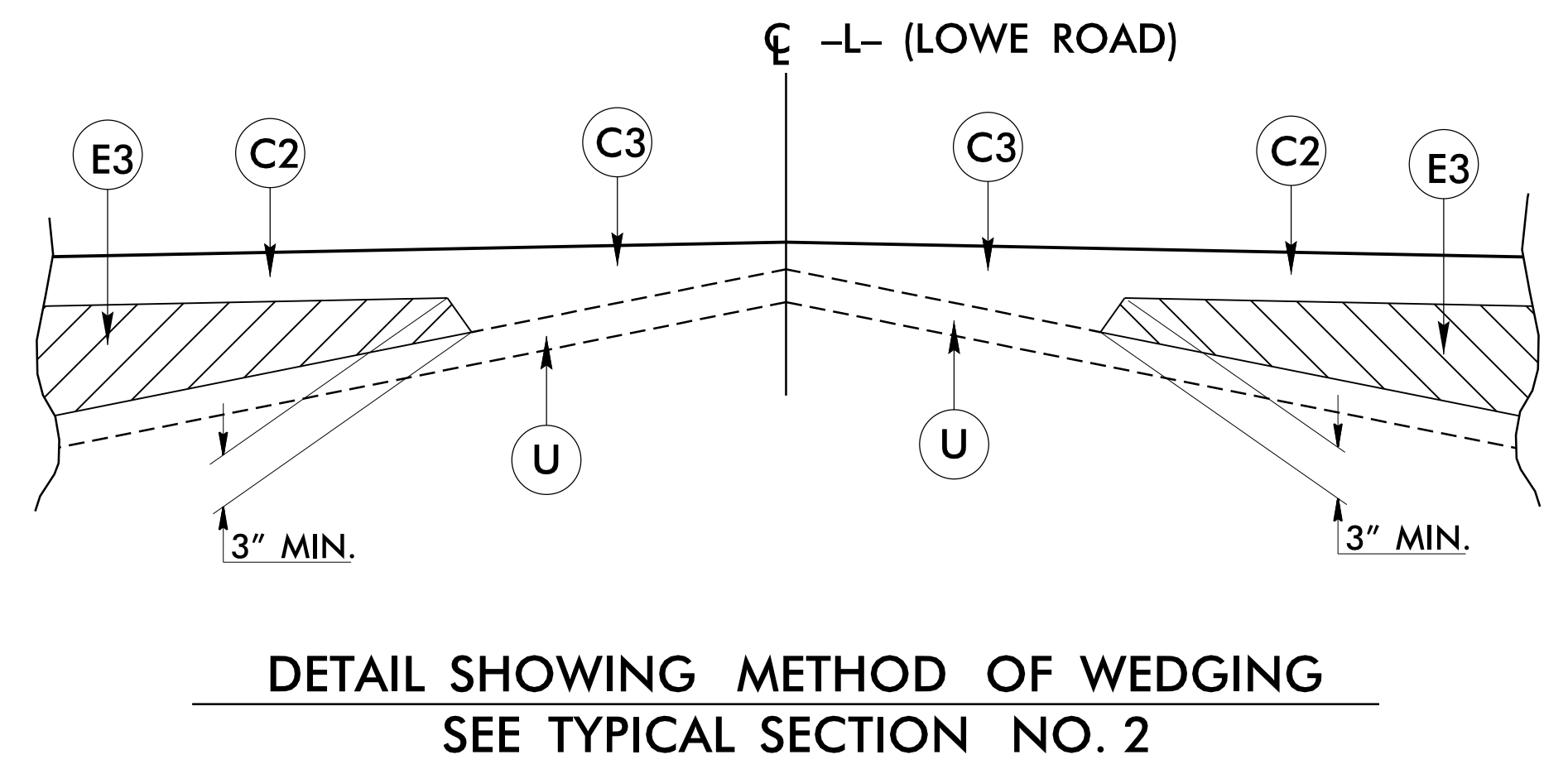
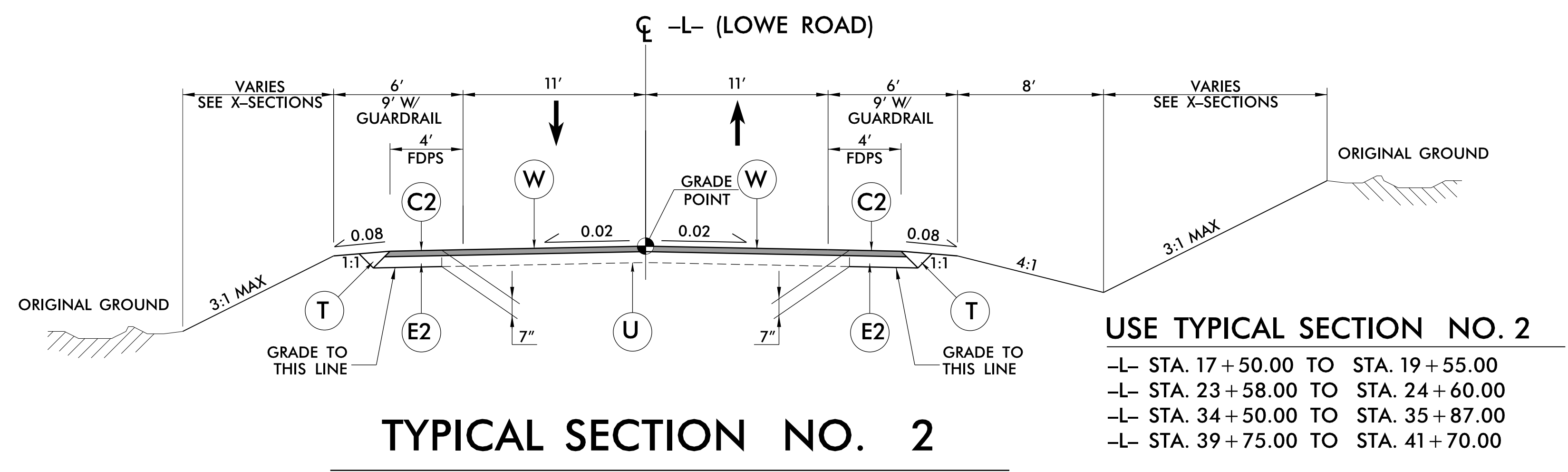
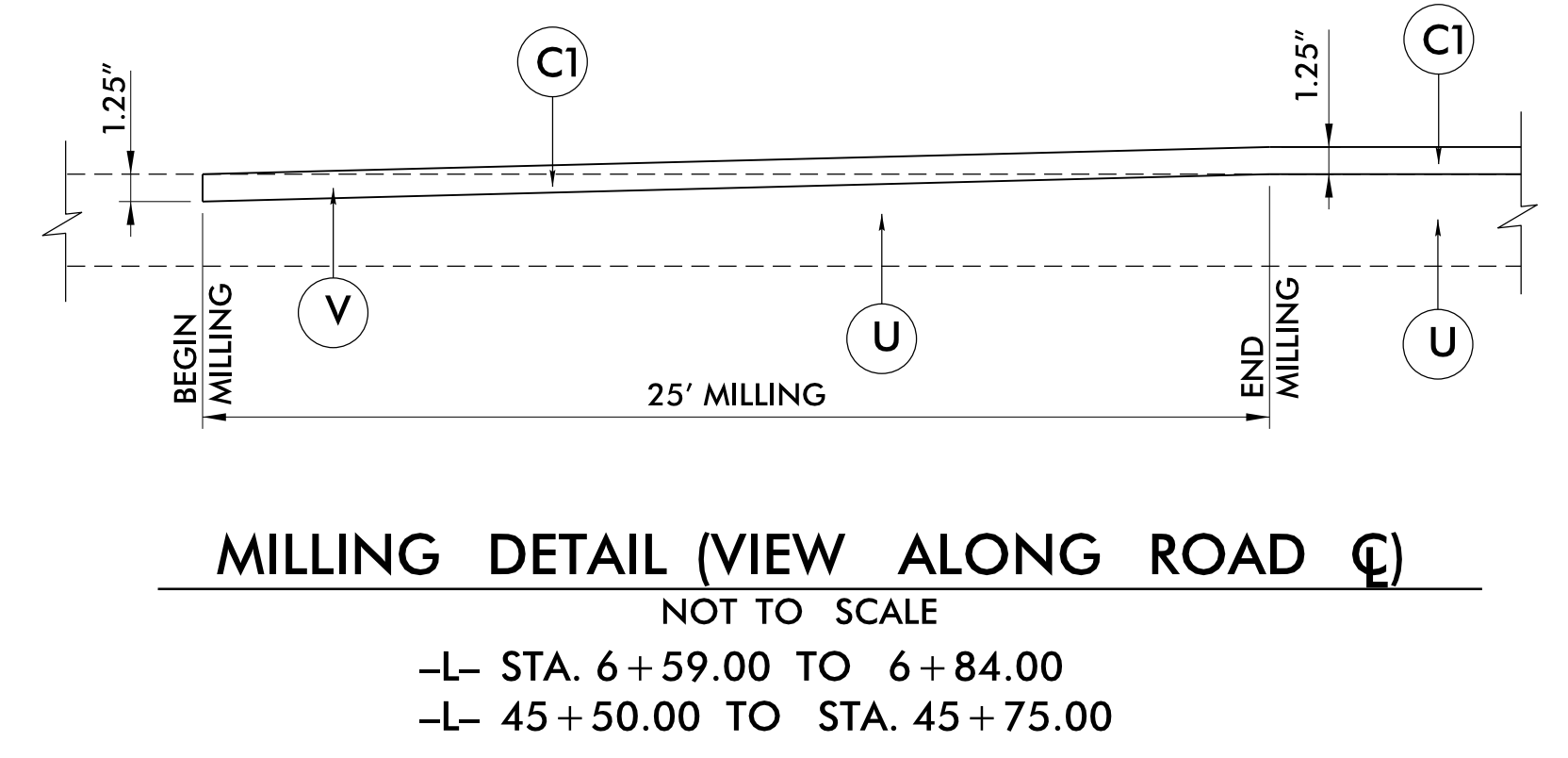
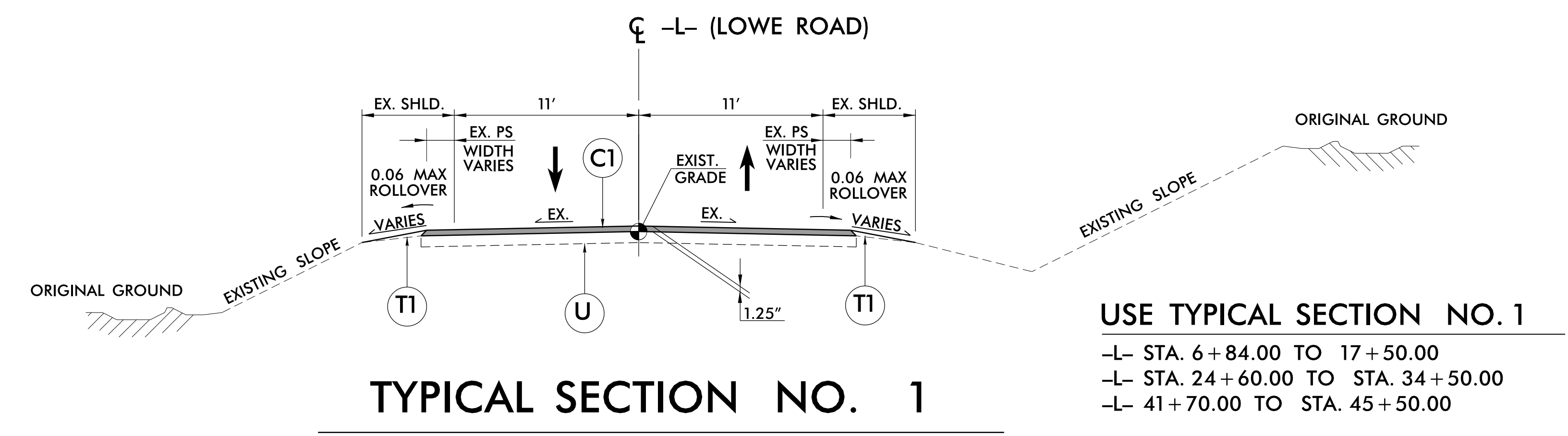
NOTE: DRAWING NOT TO SCALE

FINAL PAVEMENT SCHEDULE

PROJECT REFERENCE NO. B-5333	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER 
2/7/2017	2/7/2017
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
 Dewberry	
NC DEPARTMENT OF TRANSPORTATION PAVEMENT MANAGEMENT UNIT 1593 MAIL SERVICE CENTER RALEIGH, NC 27699-1593	

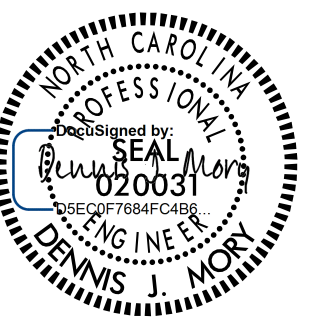


ITEM	DESCRIPTION	ITEM	DESCRIPTION	ITEM	DESCRIPTION
C1	PROPOSED APPROXIMATE 1.25" ASPHALT CONC. SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.50 LBS. PER SQ. YARD.	E2	PROP. APPROX. 4.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YARD.	T1	AGGREGATE SHOULDER BORROW
C2	PROPOSED APPROXIMATE 2.5" ASPHALT CONC. SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.50 LBS. PER SQ. YARD IN EACH OF TWO LAYERS.	E3	PROP. VAR. DEPTH ASPHALT CONC. BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT GREATER THAN 5.5" IN DEPTH OR LESS THAN 3" IN DEPTH.	U	EXISTING PAVEMENT
C3	PROP. VAR. DEPTH ASPHALT CONC. SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YARD PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 1.5" IN DEPTH.	R1	SHOULDER BERM GUTTER	V	MILLING (SEE MILLING DETAIL ON THIS SHEET)
E1	PROP. APPROX. 4.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD.	T	EARTH MATERIAL	W	WEDGING (SEE WEDGE DETAIL ON THIS SHEET)

NOTE: PAVEMENT EDGES ARE 1:1 UNLESS OTHERWISE NOTED.



6/2/2017 8:45:04 AM TYP_02A-1.dgn
 2/6/2017 8:45:04 AM TYP_02A-1.dgn
 11:55:33 AM TYP_02A-1.dgn

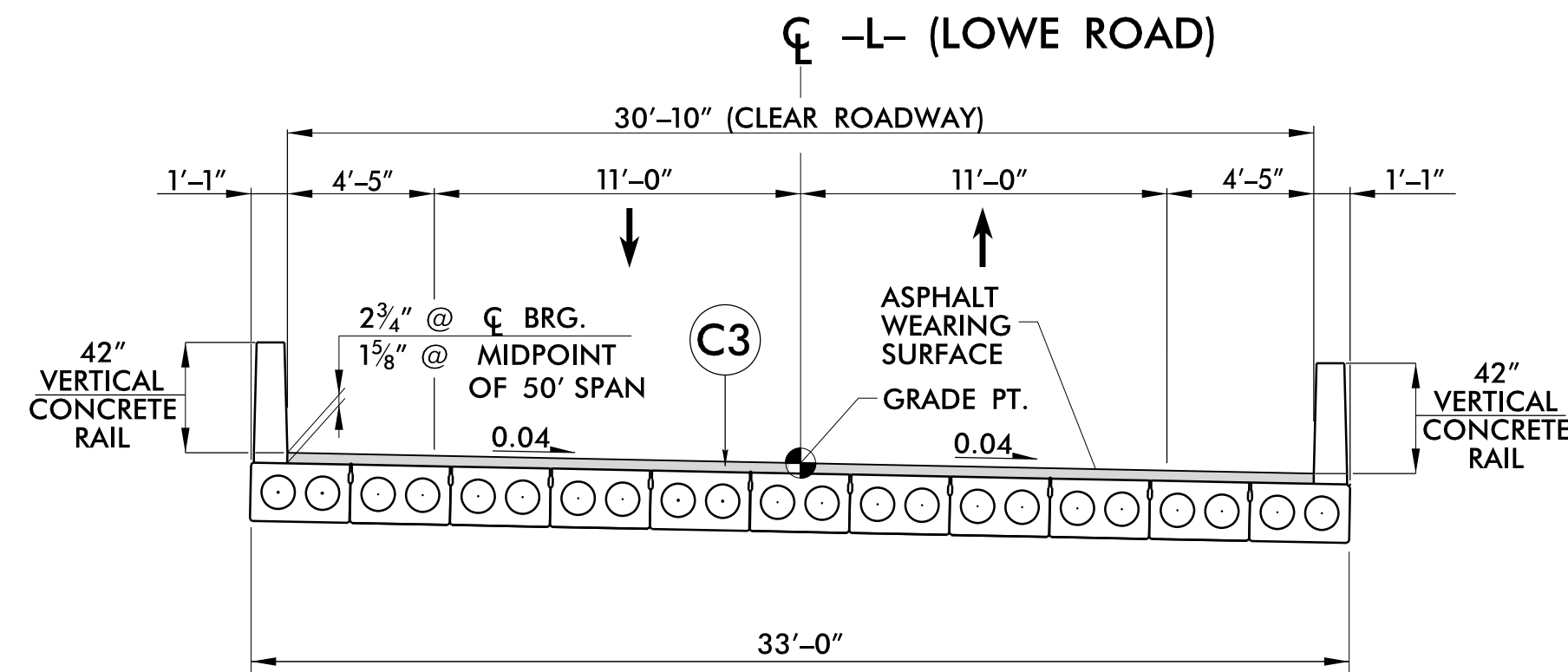
6/2/2017

PROJECT REFERENCE NO. B-5333	SHEET NO. 2A-2
ROADWAY DESIGN ENGINEER  DENNIS J. MORRIS 2/7/2017	PAVEMENT DESIGN ENGINEER  CLARK S. MORRIS 2/7/2017
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
 Dewberry	
<small>NC DEPARTMENT OF TRANSPORTATION PAVEMENT MANAGEMENT UNIT 1593 MAIL SERVICE CENTER RALEIGH, NC 27699-1593</small>	

FINAL PAVEMENT SCHEDULE

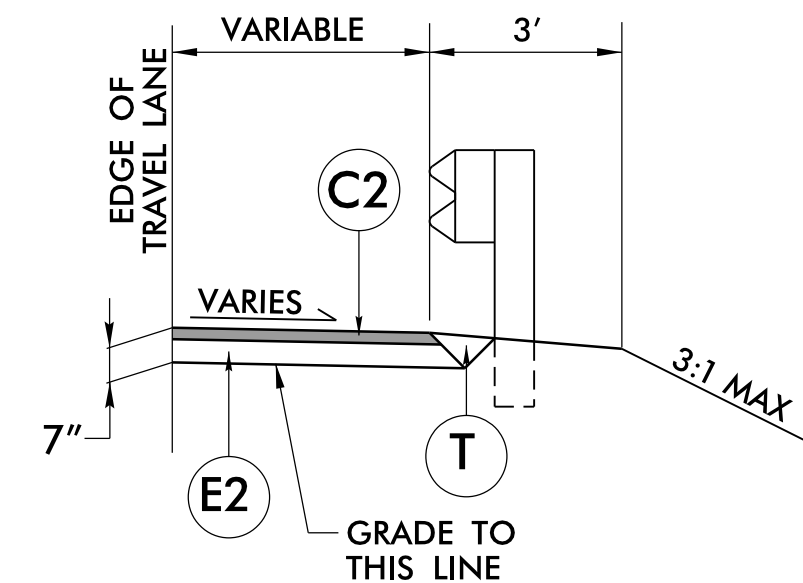
ITEM	DESCRIPTION	ITEM	DESCRIPTION	ITEM	DESCRIPTION
(C1)	PROPOSED APPROXIMATE 1.25" ASPHALT CONC. SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.50 LBS. PER SQ. YARD.	(E2)	PROP. APPROX. 4.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YARD.	(TI)	AGGREGATE SHOULDER BORROW
(C2)	PROPOSED APPROXIMATE 2.5" ASPHALT CONC. SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.50 LBS. PER SQ. YARD IN EACH OF TWO LAYERS.	(E3)	PROP. VAR. DEPTH ASPHALT CONC. BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT GREATER THAN 5.5" IN DEPTH OR LESS THAN 3" IN DEPTH.	(U)	EXISTING PAVEMENT
(C3)	PROP. VAR. DEPTH ASPHALT CONC. SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YARD PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 1.5" IN DEPTH.	(R1)	SHOULDER BERM GUTTER	(V)	MILLING (SEE MILLING DETAIL ON THIS SHEET)
(E1)	PROP. APPROX. 4.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD.	(T)	EARTH MATERIAL	(W)	WEDGING (SEE WEDGE DETAIL ON THIS SHEET)

NOTE: PAVEMENT EDGES ARE 1:1 UNLESS OTHERWISE NOTED.



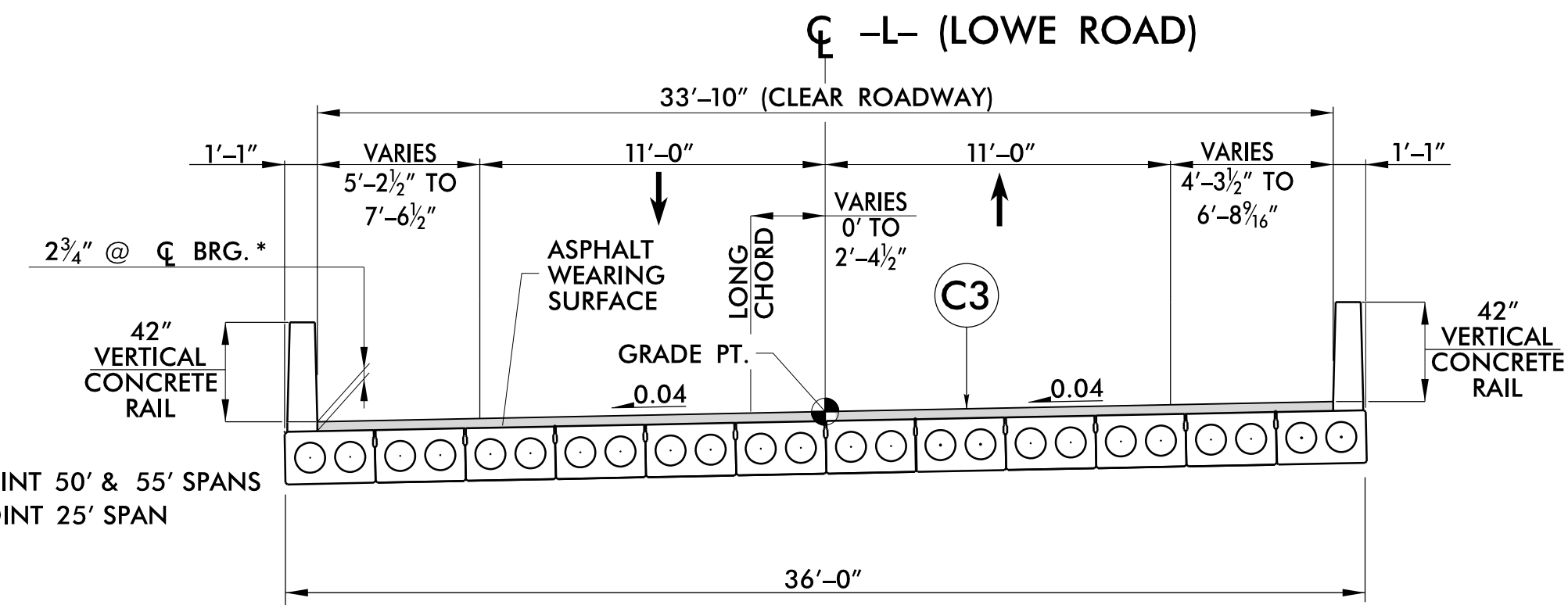
TYPICAL SECTION ON STRUCTURE (BRIDGE 173)

-L- STA. 20+30.62 (BEGIN BRIDGE) TO STA. 22+83.37 (END BRIDGE)



FULL DEPTH PAVED SHOULDER DETAIL

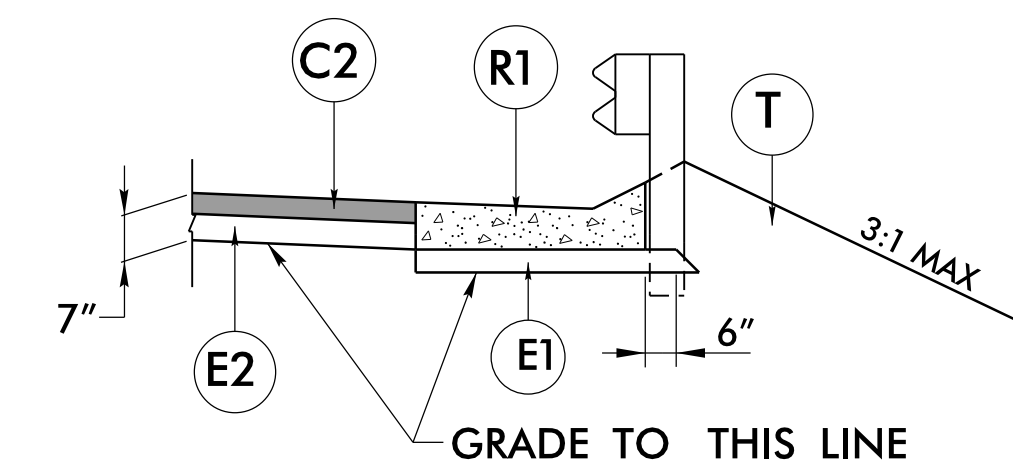
NOT TO SCALE



* 1 1/8" @ MIDPOINT 50' & 55' SPANS
2 3/8" @ MIDPOINT 25' SPAN

TYPICAL SECTION ON STRUCTURE (BRIDGE 174)

-L- STA. 36+62.19 (BEGIN BRIDGE) TO STA. 37+94.81 (END BRIDGE)



DETAIL SHOWING SHOULDER BERM GUTTER (SBG) ON TOP OF SUBGRADE

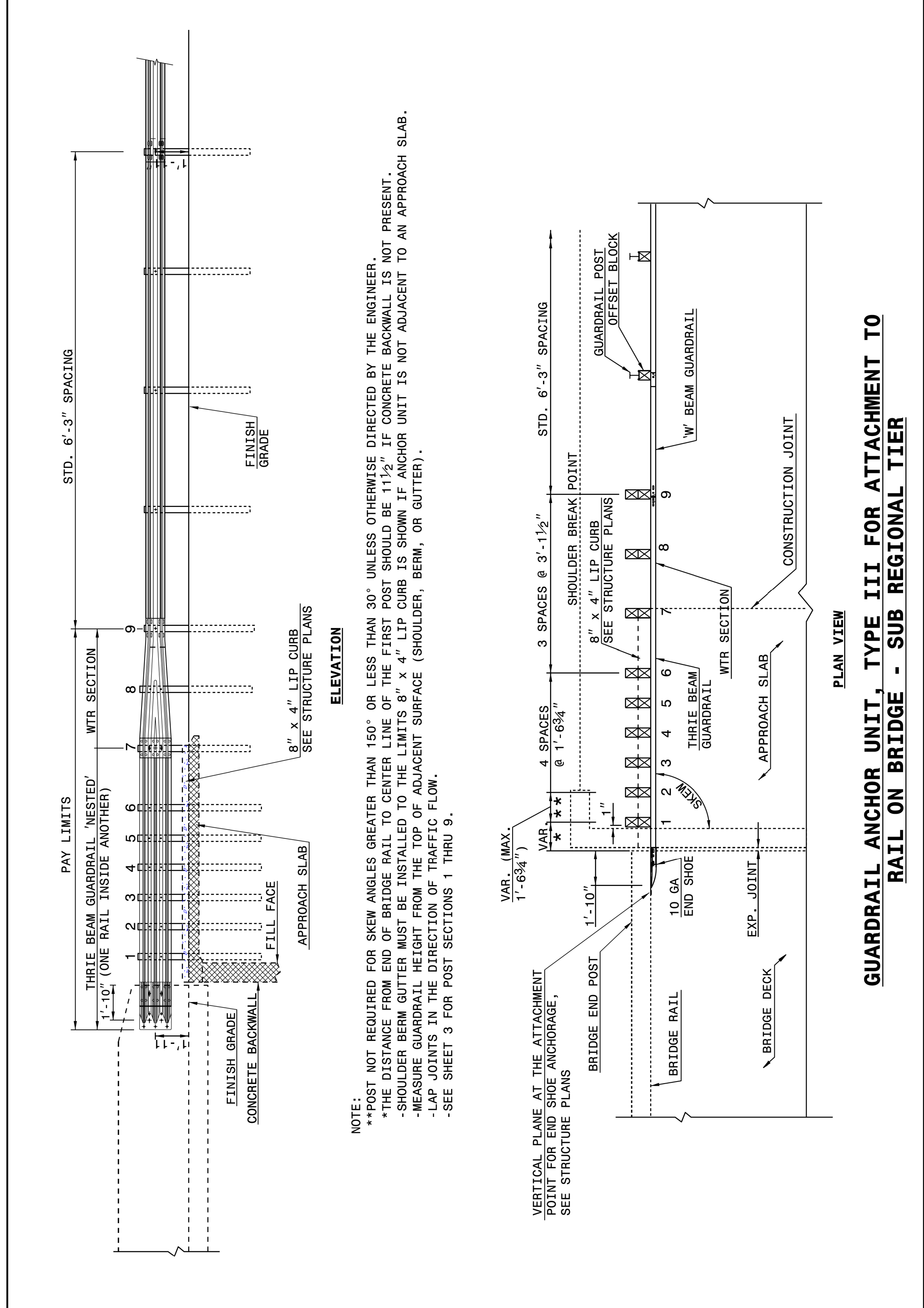
-L- STA. 20+00.00 TO -L- STA. 20+19.64 - RT.
-L- STA. 22+94.58 TO STA. 23+14.00 - RT.
-L- STA. 36+30.00 TO -L- STA. 36+49.93 - LT.

2/6/2017 8:46:06 AM \\TYP_02A-2.dgn

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO
RAIL ON BRIDGE - SUB REGIONAL TIER

SHEET 2 OF 7
862d03



STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

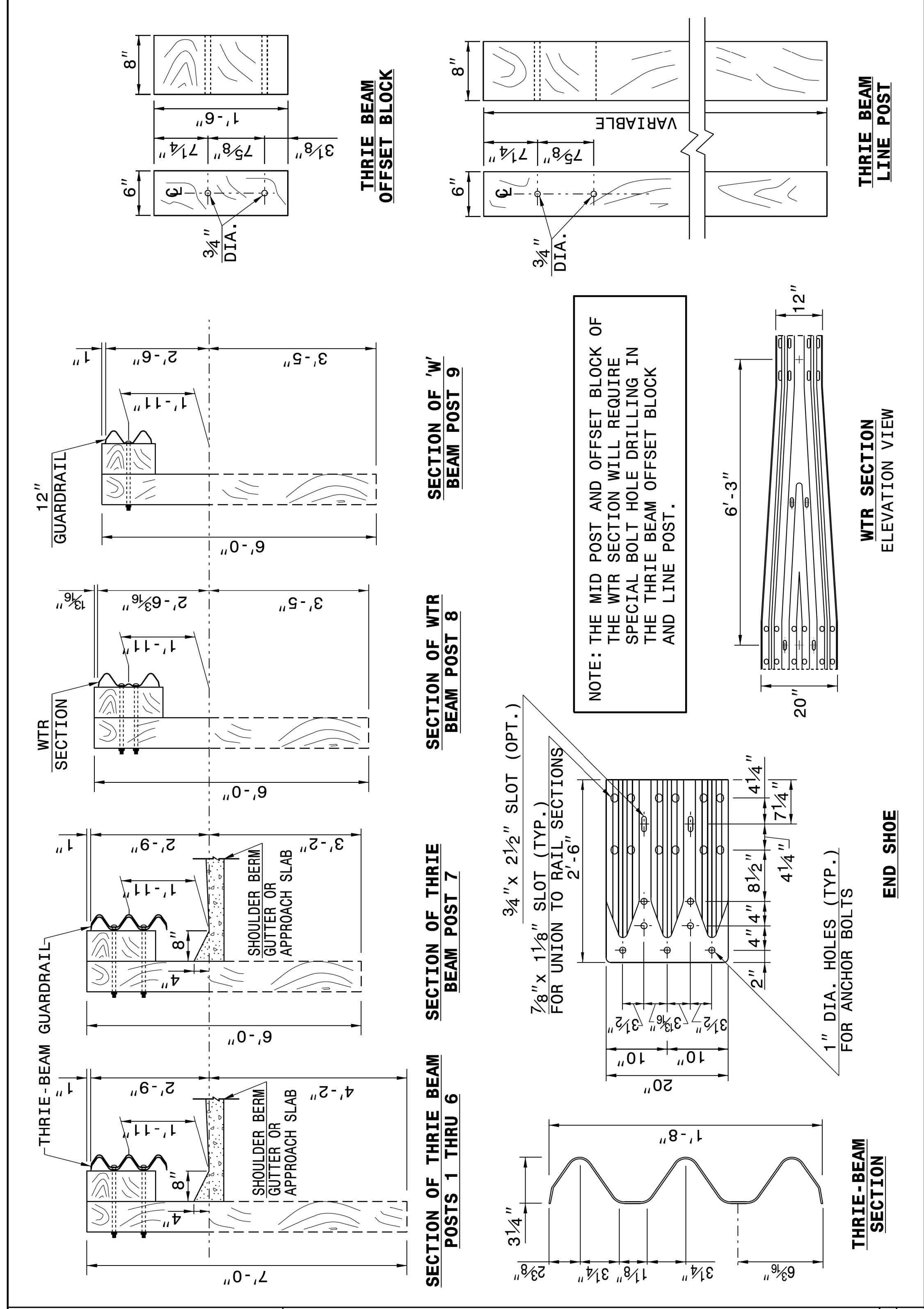
ENGLISH DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO
RAIL ON BRIDGE - SUB REGIONAL TIER

SHEET 2 OF 7
862d03

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III

SHEET 3 OF 7
862d03

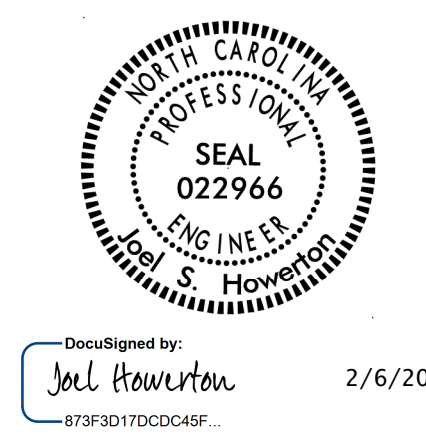


STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III

SHEET 3 OF 7
862d03

2/6/2017 8:46:08 AM
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USER: ebobrowski



DocuSigned by:
Joel Howerton
2/6/2017

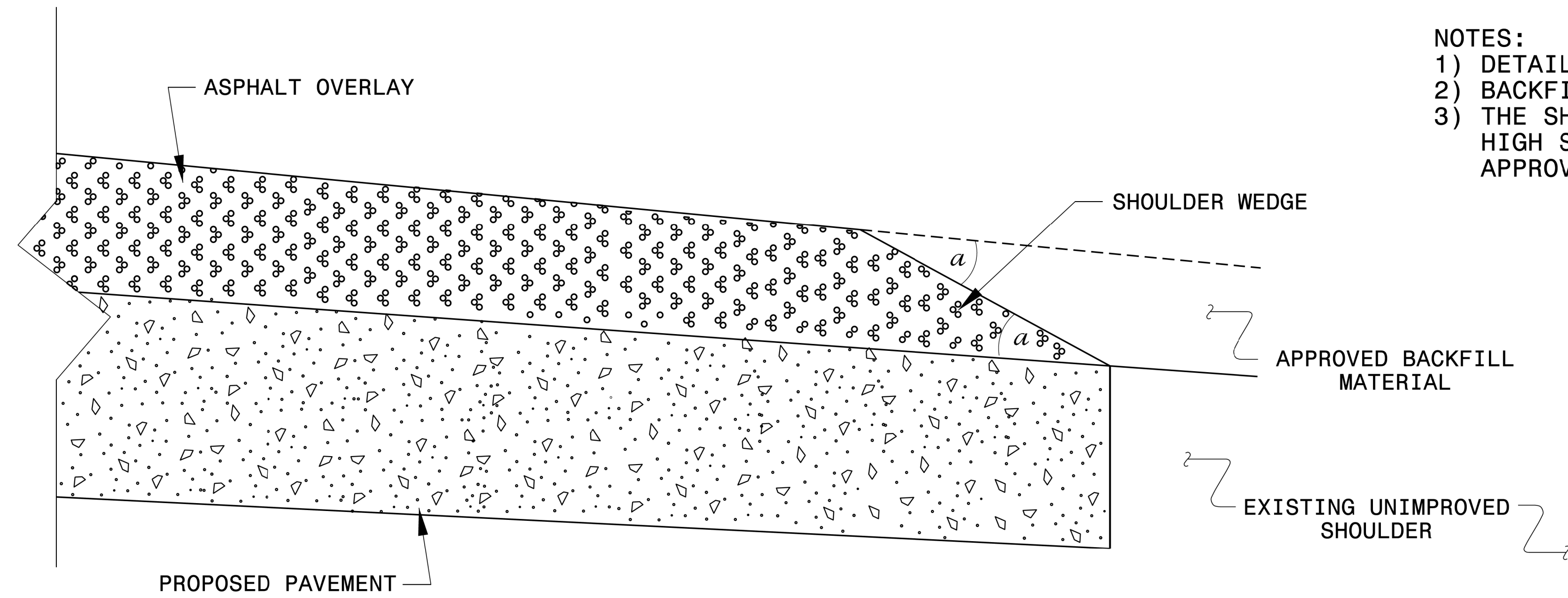
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

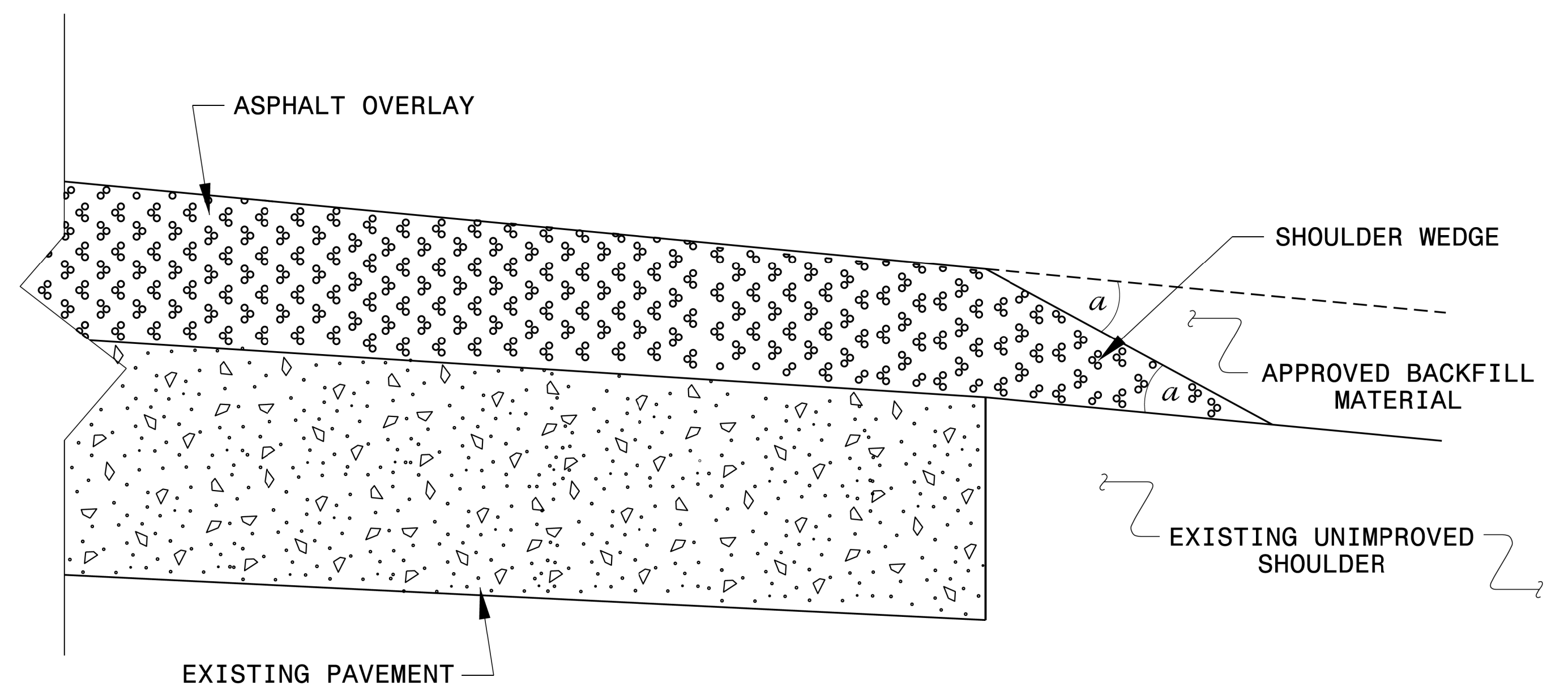
SEE TITLE BLOCK

ORIGINAL BY: J. HOWERTON DATE: 06-22-12
 MODIFIED BY: DATE:
 CHECKED BY: DATE:
 FILE SPEC.: DATE:

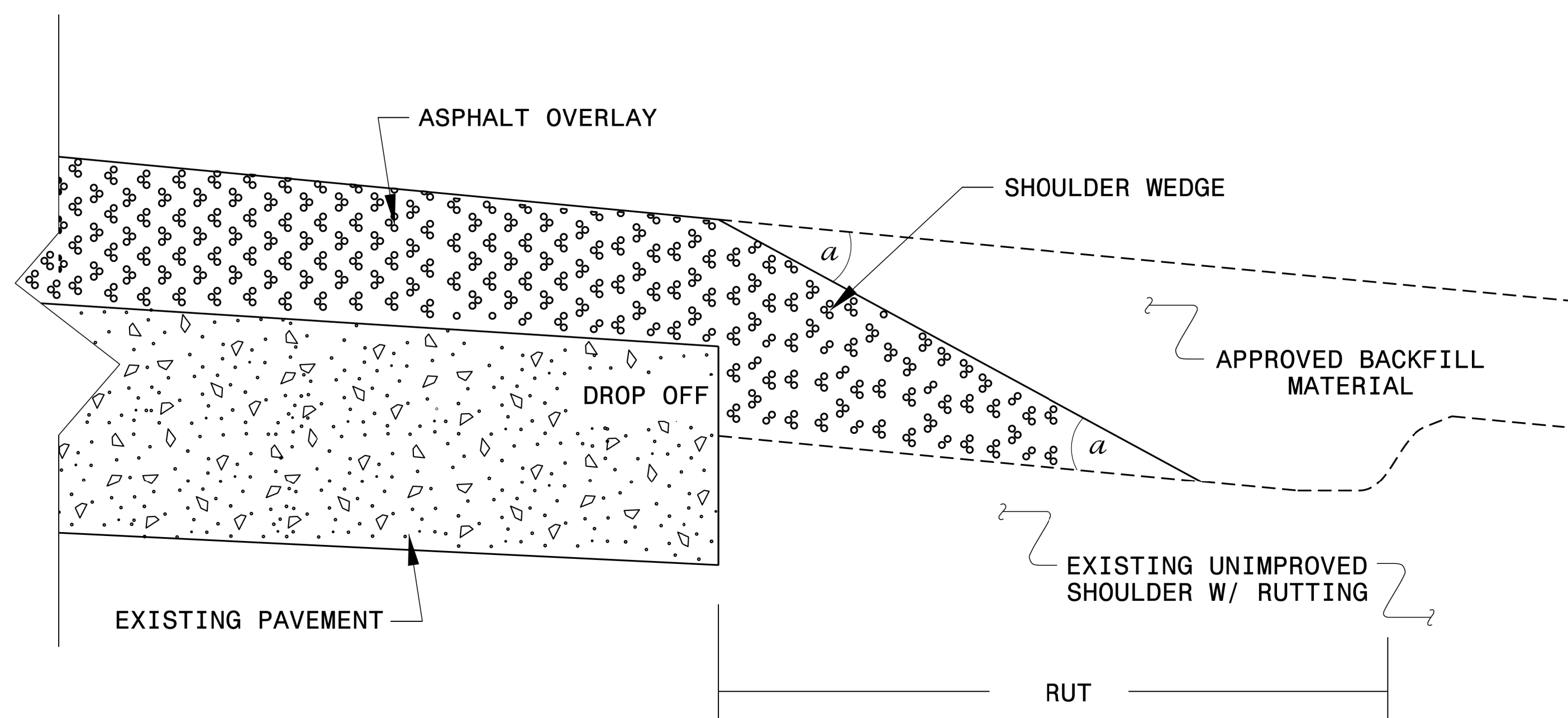
- NOTES:
- 1) DETAIL DOES NOT APPLY TO OGAFIC AND ULTRA-THIN BONDED WEARING COURSE.
 - 2) BACKFILL SHOULDER WITH APPROVED MATERIAL.
 - 3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS, SIDE STREETS, HIGH SHOULDERS, AND OTHER LOCATIONS NOT FEASIBLE TO CONSTRUCT AS APPROVED BY THE ENGINEER.



SHOULDER WEDGE DETAIL
(Resurfacing Projects w/ Widening or with Existing Paved Shoulder having no dropoffs)

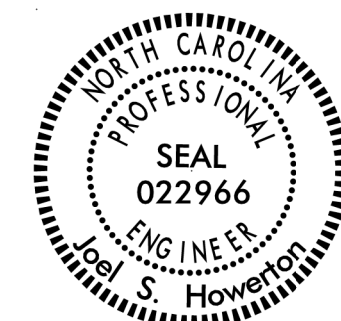


SHOULDER WEDGE DETAIL
(Resurfacing Projects w/ NO Widening)



SHOULDER WEDGE DETAIL
(Resurfacing Adjacent to Rutted Shoulder)

- SHOULDER WEDGE ANGLE = 30°



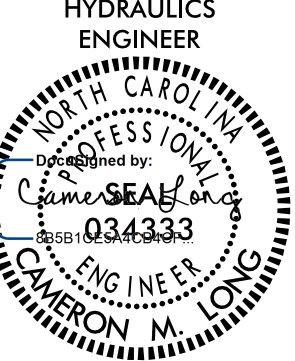
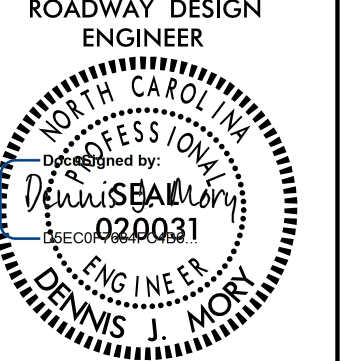
DocuSigned by:
Joel Howerton
873F3D17DC0C4F... 2/6/2017

CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

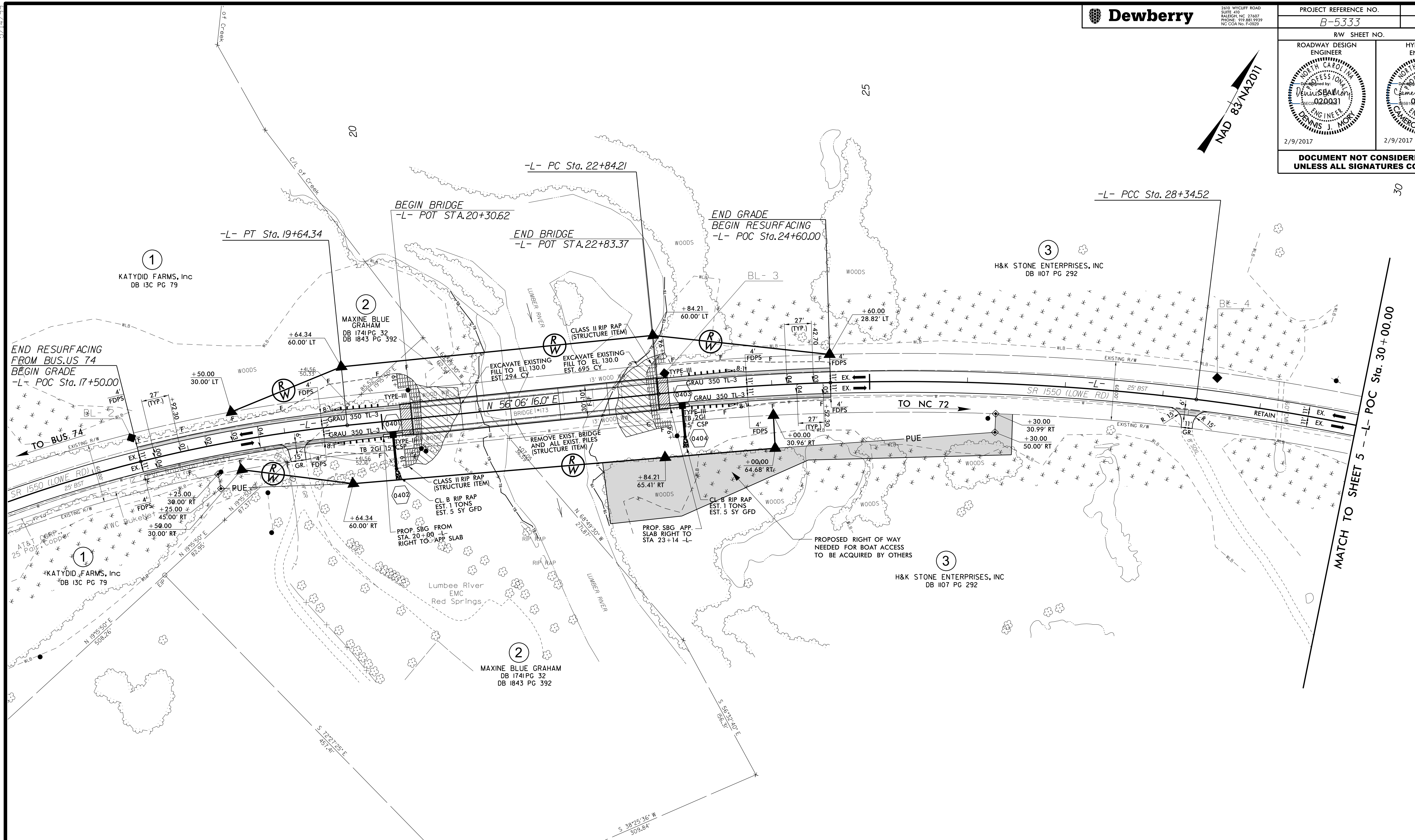
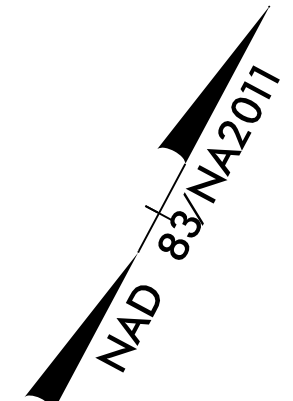
SHOULDER WEDGE DETAILS

ORIGINAL BY: T.SPELL	DATE: 7-19-11
MODIFIED BY:	DATE: 2/2/16
CHECKED BY:	DATE:
FILE SPEC.: s:usr/details/stand/shoulderwedge/detail.dgn	

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

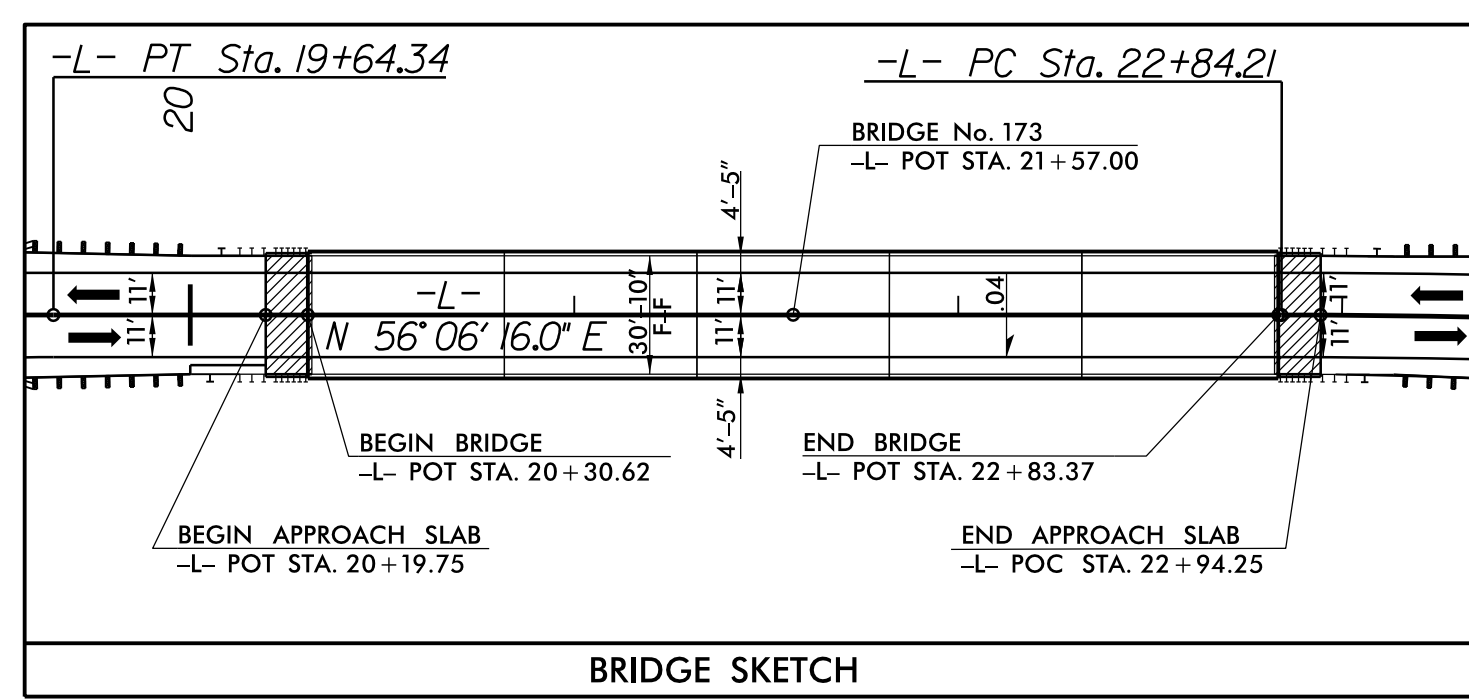


**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**



CURVE DATA FOR -L-

PI Sta	Δ	D	L	T	R	SE
6+91.78	3° 40' 02.1" (RT)	3° 00' 00.0"	122.24'	61.4'	1,909.86'	MATCH EXIST.
15+77.22	3° 02' 28.8" (RT)	3° 54' 29.9"	794.24'	407.13'	1,466.00'	.04
25+60.50	12° 44' 21.9" (RT)	2° 18' 53.9"	550.30'	276.29'	2,475.00'	.04
30+39.23	10° 55' 52.5" (RT)	2° 40' 40.9"	408.18'	204.71'	2,139.47'	MATCH EXIST.



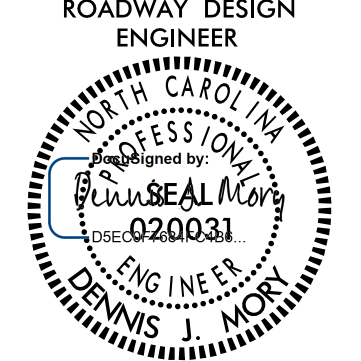
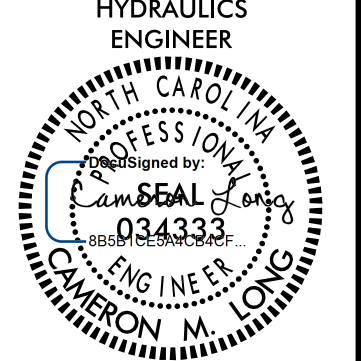
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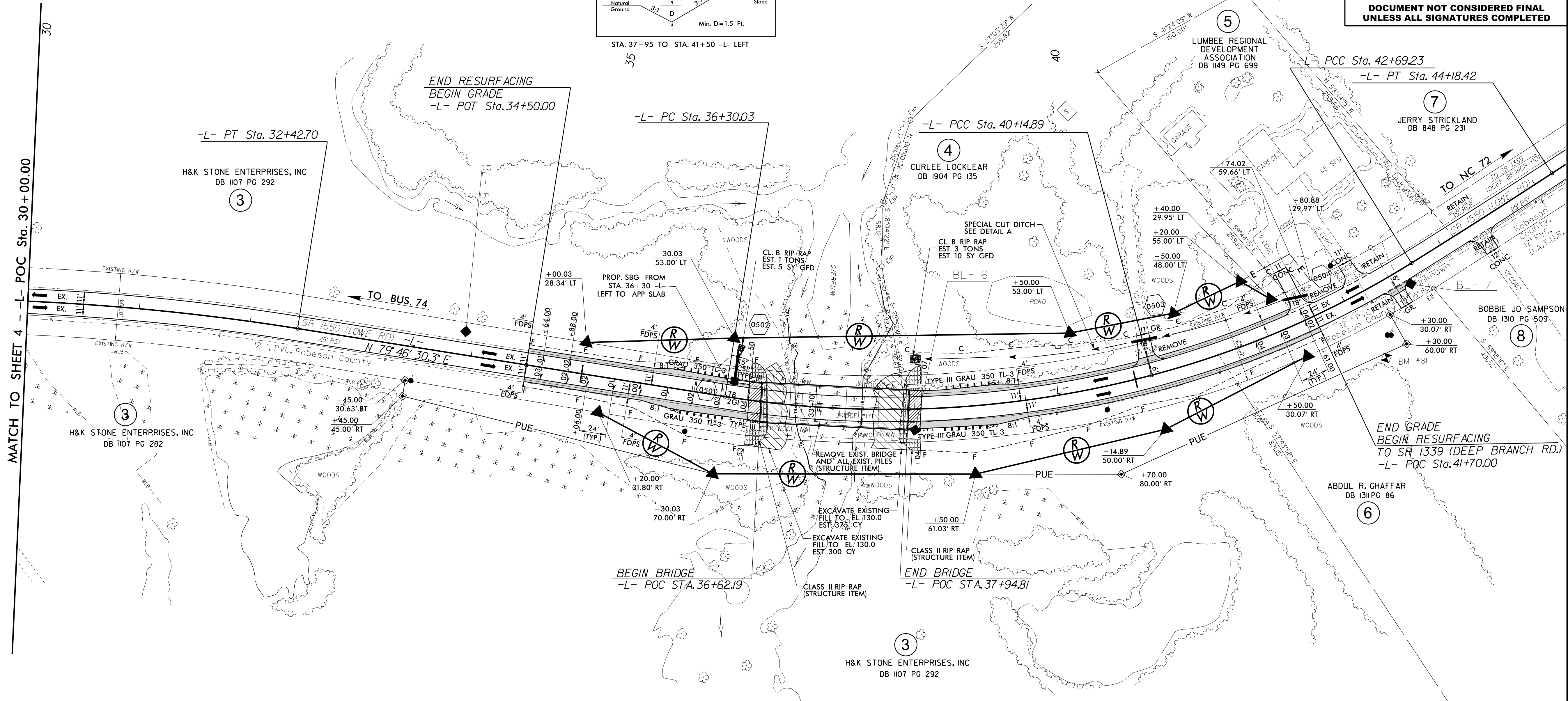
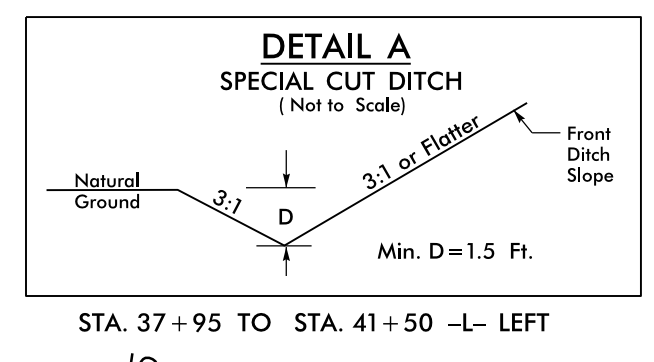
- FIELD ADJUSTMENT AS NEEDED FOR TYPE III ANCHOR UNITS.
- ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED.

UNCLASSIFIED STRUCTURE EXCAVATION

SEE SHEET 6 FOR -L- PROFILE
SEE SHEETS S01-1 THRU S01-24 FOR STRUCTURE PLANS

2/6/2017 8:47:16 AM Rdy_psh_04.dgn

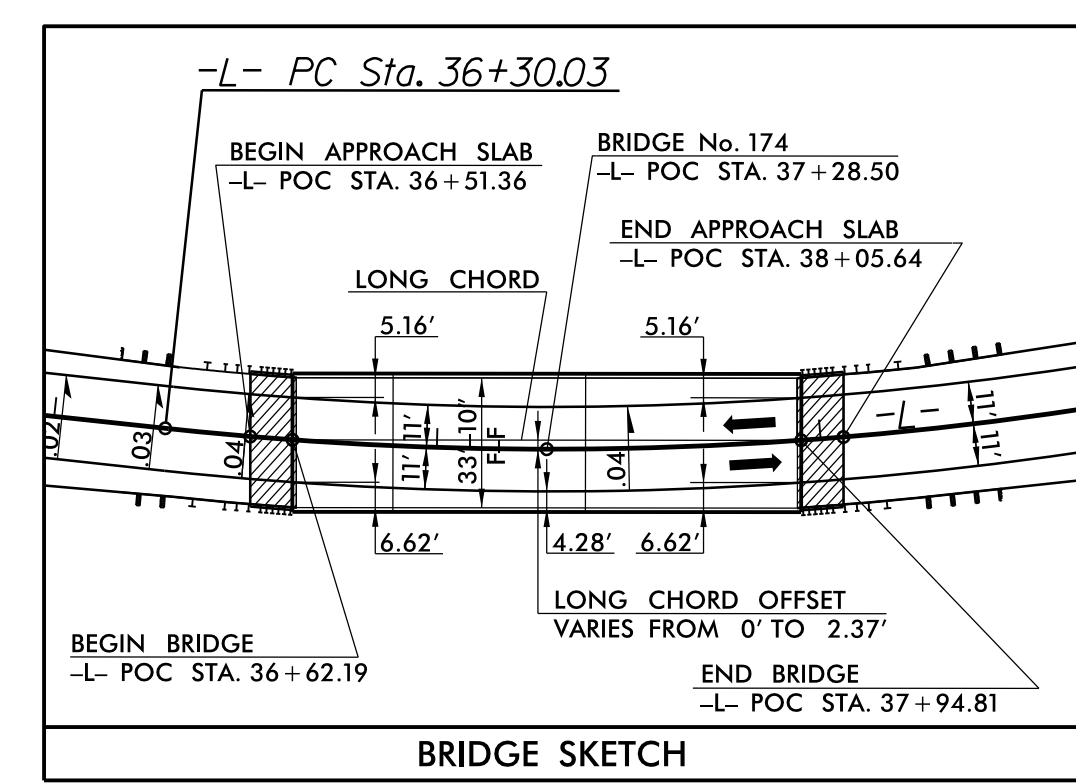
PROJECT REFERENCE NO. B-5333	SHEET NO. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER 
2/9/2017	2/9/2017
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



MATCH TO SHEET 4 -L- POC Sta. 30+00.00


CURVE DATA FOR -L-

PI Sta 30+39.23 Δ = 10° 55' 52.5" (RT) D = 2' 40' 40.9" L = 408.18' T = 204.71' R = 2,139.47' SE = MATCH EXIST.	PI Sta 38+25.28 Δ = 23° 48' 45.9" (LT) D = 6' 11' 14.8" L = 384.86' T = 195.25' R = 926.00' (50 MPH) SE = .04 RUNOFF = 96.00'	PI Sta 41+43.02 Δ = 17° 10' 04.6" (LT) D = 6' 45' 00.0" L = 254.34' T = 128.13' R = 848.83' (EX. -45 MPH) SE = .04 RUNOFF = 96.00'	PI Sta 43+43.83 Δ = 1° 13' 57.4" (LT) D = 0' 49' 34.3" L = 149.19' T = 74.60' R = 6,934.92' SE = MATCH EXIST.
---	--	---	---


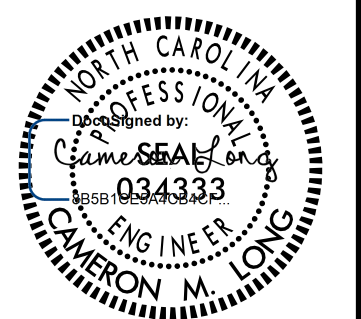


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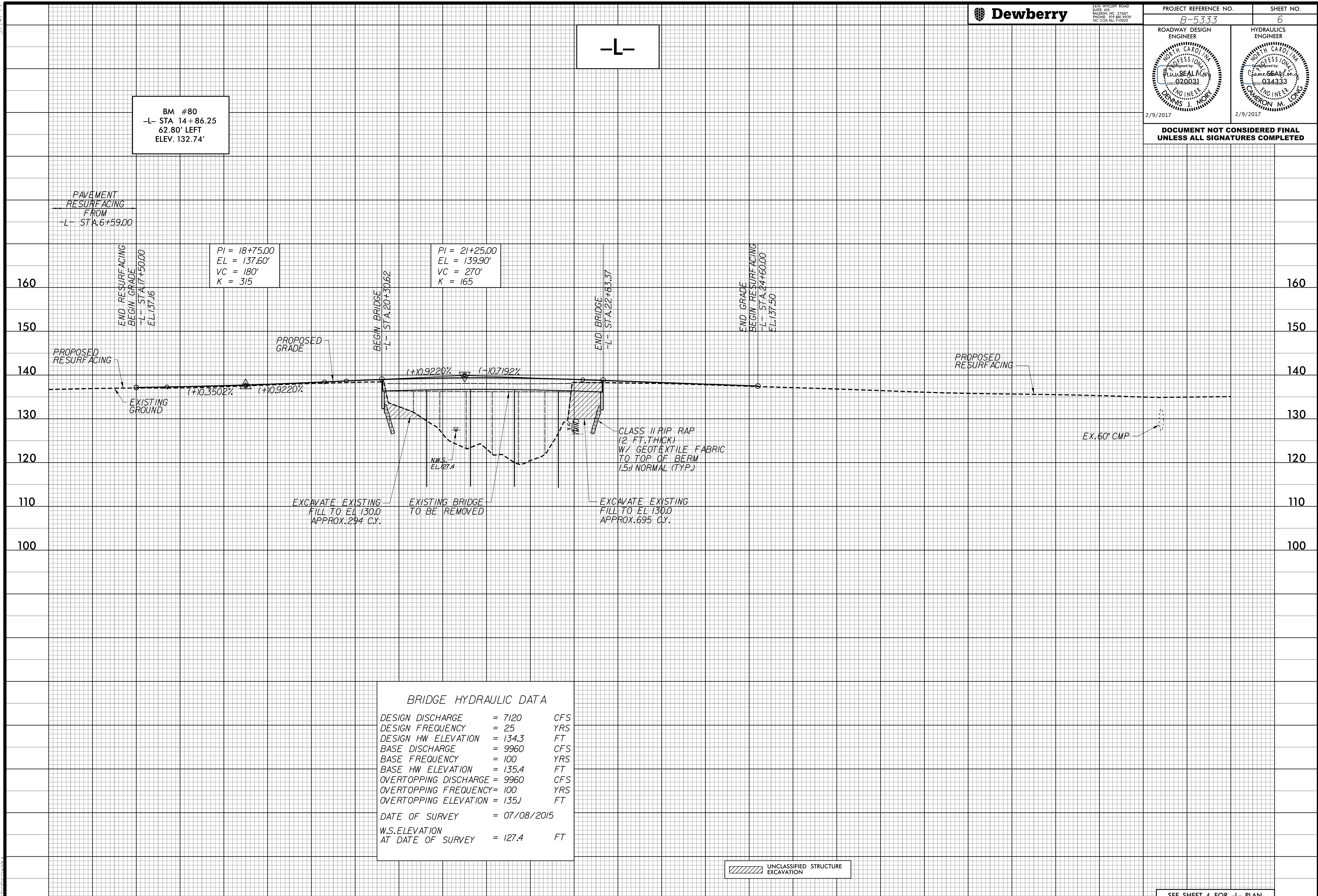
- FIELD ADJUSTMENT AS NEEDED FOR TYPE III ANCHOR UNITS.
- ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED.

UNCLASSIFIED STRUCTURE EXCAVATION 

SEE SHEET 7 FOR -L- PROFILE
SEE SHEETS S02-1 THRU S02-23 FOR STRUCTURE PLANS

PROJECT REFERENCE NO. B-5333	SHEET NO. 6
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER 
2/9/2017	2/9/2017

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



BM #80
-L- STA 14+86.25
62.80' LEFT
ELEV. 132.74'

PAVEMENT
RESURFACING
FROM
-L- STA. 6+59.00

END RESURFACING
BEGIN GRADE
-L- STA. 17+50.00
E.L. 137.16

PI = 18+75.00
EL = 137.60'
VC = 180'
K = 315

PI = 21+25.00
EL = 139.90'
VC = 270'
K = 165

BEGIN BRIDGE
-L- STA. 20+30.62

END BRIDGE
-L- STA. 22+83.37

END GRADE
BEGIN RESURFACING
-L- STA. 24+60.00
E.L. 137.50

PROPOSED
RESURFACING

PROPOSED
GRADE

PROPOSED
RESURFACING

EXISTING
GROUND

(+10.9220%) (-10.7192%)

(+10.3502%) (+10.9220%)

CLASS II RIP RAP
(2 FT. THICK)
W/ GEOTEXTILE FABRIC
TO TOP OF BERM
1.5:1 NORMAL (TYP.)

EX. 60' CMP

EXCAVATE EXISTING
FILL TO EL. 130.0
APPROX. 294 C.Y.

EXISTING BRIDGE
TO BE REMOVED

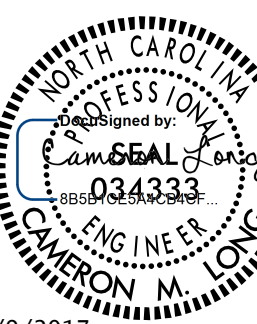
EXCAVATE EXISTING
FILL TO EL. 130.0
APPROX. 695 C.Y.

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 7120	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 134.3	FT
BASE DISCHARGE	= 9960	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 135.4	FT
OVERTOPPING DISCHARGE	= 9960	CFS
OVERTOPPING FREQUENCY	= 100	YRS
OVERTOPPING ELEVATION	= 135.4	FT
DATE OF SURVEY	= 07/08/2015	
W.S. ELEVATION AT DATE OF SURVEY	= 127.4	FT

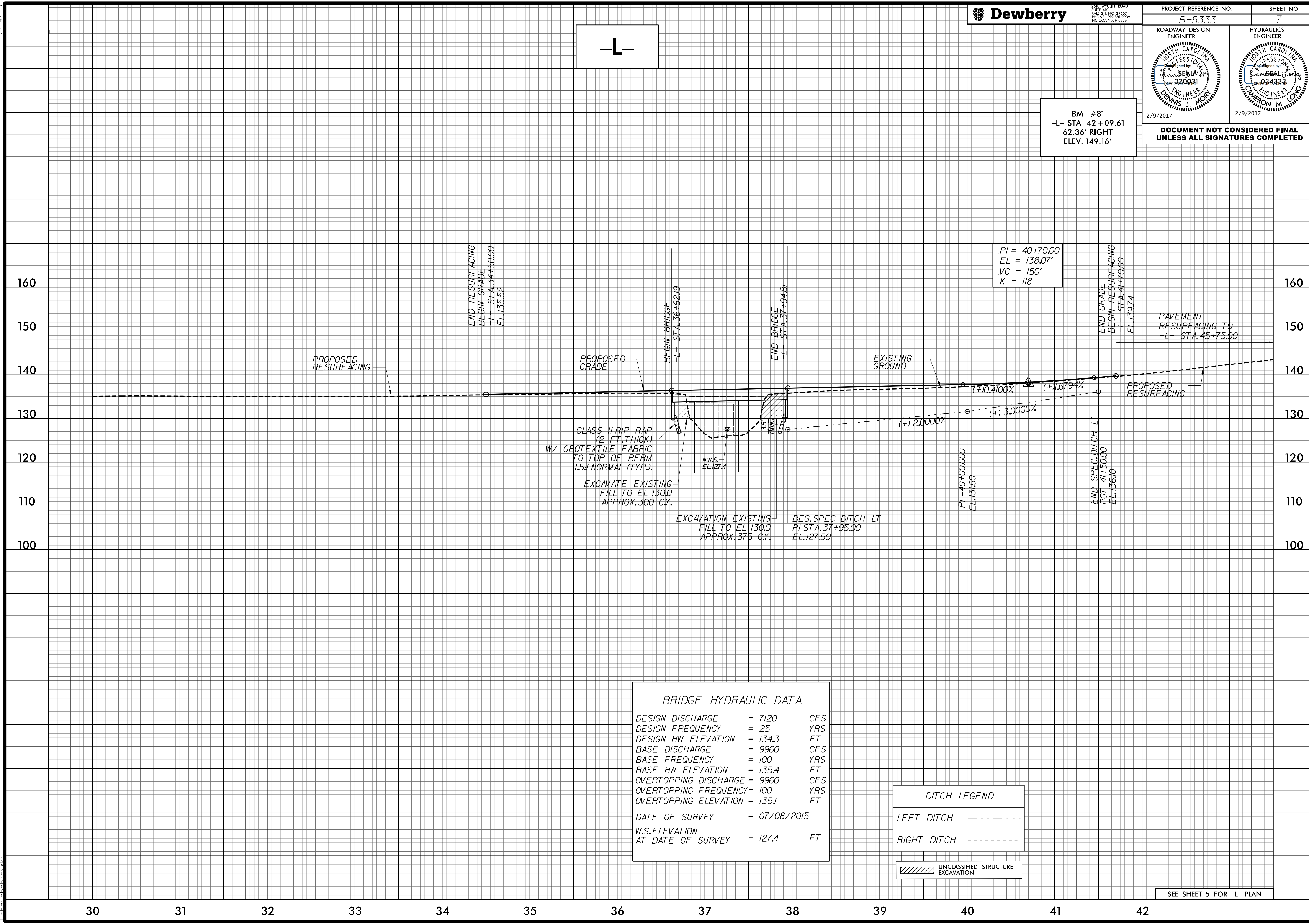
 UNCLASSIFIED STRUCTURE
EXCAVATION

SEE SHEET 4 FOR -L- PLAN



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

BM #81
-L- STA 42+09.61
62.36' RIGHT
ELEV. 149.16'



BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 7120	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 134.3	FT
BASE DISCHARGE	= 9960	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 135.4	FT
OVERTOPPING DISCHARGE	= 9960	CFS
OVERTOPPING FREQUENCY	= 100	YRS
OVERTOPPING ELEVATION	= 135J	FT
DATE OF SURVEY	= 07/08/2015	
W.S. ELEVATION AT DATE OF SURVEY	= 127.4	FT

DITCH LEGEND

LEFT DITCH - - - - -

RIGHT DITCH - - - - -

UNCLASSIFIED STRUCTURE EXCAVATION

SEE SHEET 5 FOR -L- PLAN