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STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5772	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
45728.1.2		P.E.	
45728.2.1	1724002	ROW	
45728.2.2	1724002	UTILITIES	
45728.3.1	1724002	CONST.	

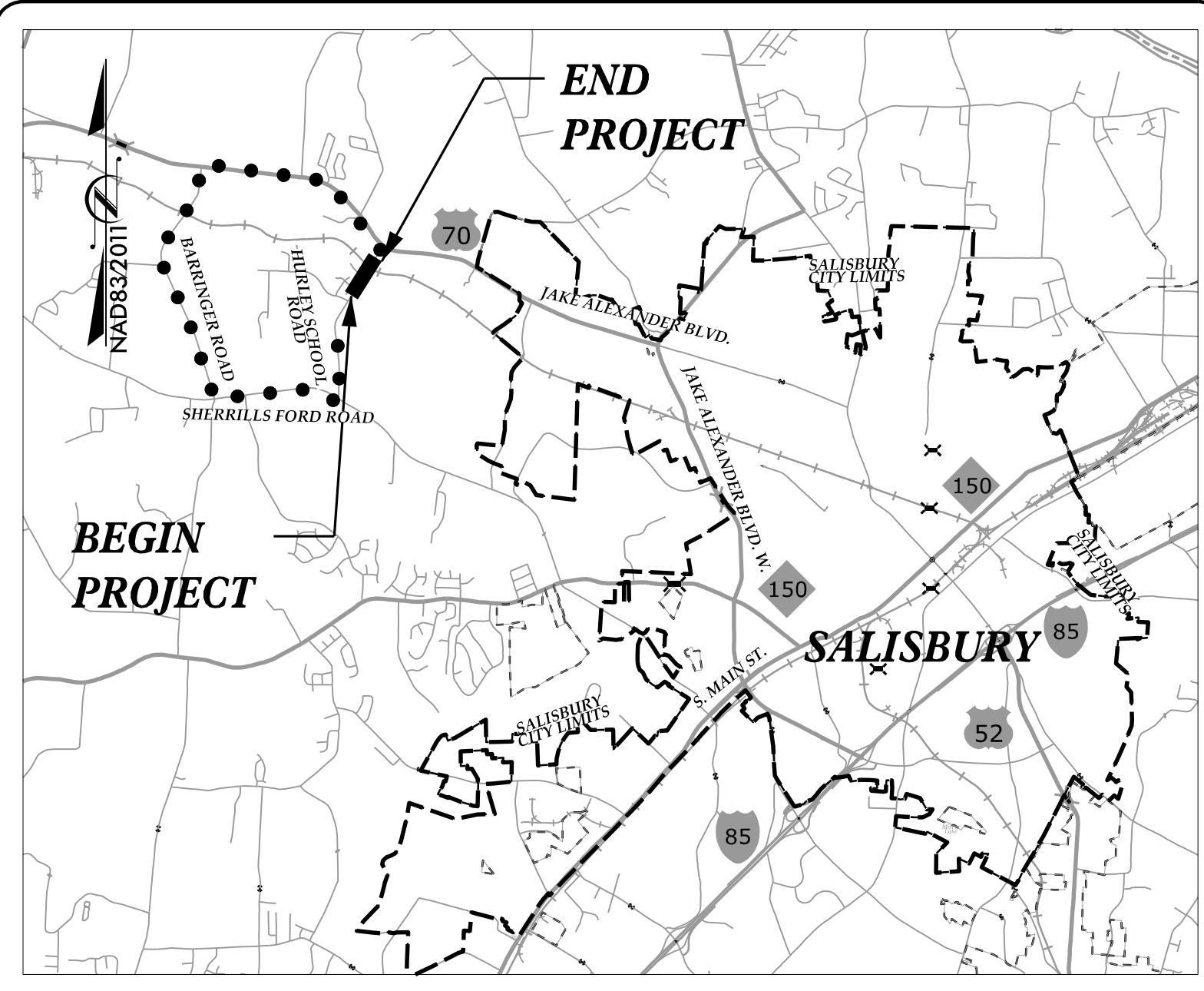
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# ROWAN COUNTY

**LOCATION: BRIDGE NO. 66 ON SR 1724 (HURLEY SCHOOL ROAD)  
OVER NORFOLK SOUTHERN RAILROAD**

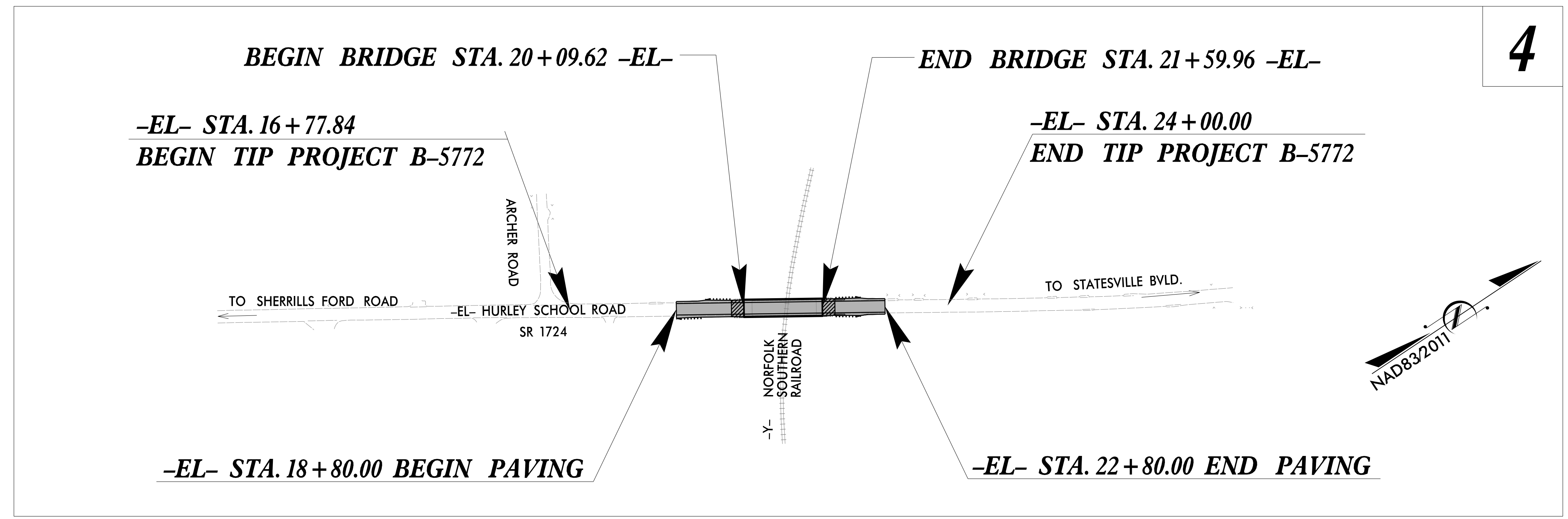
**TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE**

**TIP PROJECT: B-5772**



**VICINITY MAP**

OFF SITE DETOUR ●●●●●●

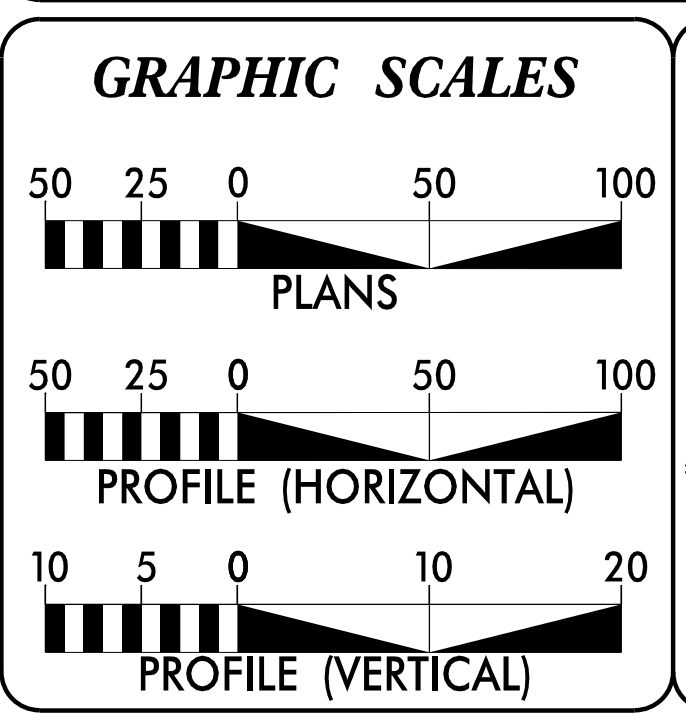


**4**

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

3:52:59 PM 04/16/2022 11:16:09 AM \*NCDOT\*B5772\*HurleySchDESI\GN03\CADD\B5772\Roadway\Pr o j\B5772\*Rdy\*TSH.dgn USER: PEEK

**CONTRACT: C204718**



**DESIGN DATA**

ADT 2021 =	4300
ADT 2040 =	5600
K =	11 %
D =	55 %
T =	8 % *
V =	50 MPH
* (TTST = 1% + DUAL = 7%)	
FUNC CLASS =	LOCAL
SUB-REGIONAL TIER	

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT B-5772 =	0.109 MILES
LENGTH STRUCTURE TIP PROJECT B-5772 =	0.028 MILES
TOTAL LENGTH OF TIP PROJECT B-5772 =	0.137 MILES

**DAVENPORT**  
119 BROOKSTOWN AVENUE, SUITE PH1  
WINSTON-SALEM, NC 27101  
336.744.1838 www.davenportworld.com  
NCBELS FIRM LICENSE NO. C-2522

**SEPI**  
Engineering & Construction, Inc.  
1 Glenwood Avenue  
Raleigh, NC 27603  
Tel: 919.366.8977  
Fax: 919.786.9591  
License: C-2197

2018 STANDARD SPECIFICATIONS

**RIGHT OF WAY DATE:**  
SEPT 7, 2021

**LETTING DATE:**  
JUNE 21, 2022

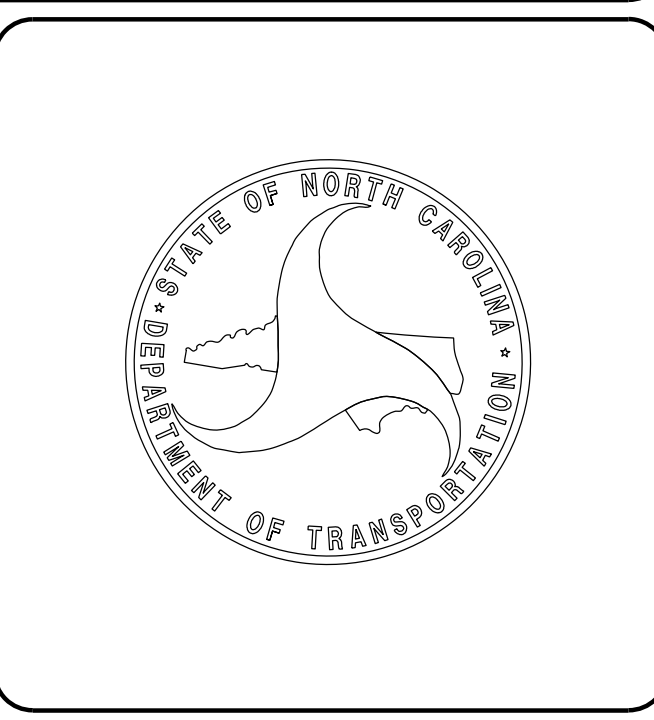
EDITH G. PETERS, PE PROJECT ENGINEER
PAUL M. HEFFERNAN, PE PROJECT DESIGN ENGINEER
KRISHNA SEDAI, PE NCDOT CONTACT

**HYDRAULICS ENGINEER**

DocuSigned by:  
Andrew M. Peters  
04/18/2022 09:44:00  
SIGNATURE: \_\_\_\_\_ P.E.

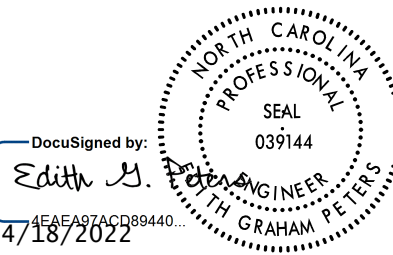

**ROADWAY DESIGN ENGINEER**

DocuSigned by:  
Edith G. Peters  
04/18/2022 09:44:00  
SIGNATURE: \_\_\_\_\_ P.E.



# STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

## INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARDS

PROJECT REFERENCE NO.	SHEET NO.
B-5772	1A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	
	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	
 <b>DAVENPORT</b> <small>HOME OFFICE: 119 BROOKTOWN AVE, SUITE 101 WINSTON-SALEM, NC 27101 336.734.1232 www.davenportinc.com NORTH CAROLINA LICENSE NO. C-1332</small>	

SHEET	DESCRIPTION
1	TITLE SHEET
1A	INDEX OF SHEETS / NOTES / STANDARDS
1B	CONVENTIONAL SYMBOLS
2A-1	TYPICAL SECTIONS
2C-1	SPECIAL DETAIL - TYPE III ANCHOR UNITS
2C-2	SPECIAL DETAIL - W-BEAM RAIL SECTION
3B-1	EARTHWORK SUMMARY
3D-1	DRAINAGE SUMMARY
3G-1	GEOTECHNICAL SUMMARY
4	ROADWAY PLAN
5	ROADWAY PROFILE
RW01 - RW05	RIGHT-OF-WAY PLANS
TMP-1 - TMP-2	TRANSPORTATION MANAGEMENT PLANS
PMP-1	PAVEMENT MARKING PLANS
EC-1 - EC-4	EROSION CONTROL PLANS
SIGN-1 - SIGN-3	SIGNING PLANS
SIG 1.0 - SIG 3.5	SIGNAL PLANS
UC-1 - UC-6C	UTILITY CONSTRUCTION PLANS
UO-1 - UO-2	UTILITY BY OTHERS PLANS
X-1 - X-5	CROSS SECTIONS
S-1 - S-25	STRUCTURE PLANS

**GENERAL NOTES: (CONTINUED)**

**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  
 POWER - DUKE ENERGY  
 COMMUNICATIONS - AT&T  
 COMMUNICATIONS - CONTERRA  
 COMMUNICATIONS/CATV - SPECTRUM  
 GAS - PIEDMONT NATURAL GAS  
 GAS TRANSMISSION - PIEDMONT NATURAL GAS  
 WATER & SANITARY SEWER - SALISBURY/ROWAN UTILITIES (SRU)

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

**RIGHT-OF-WAY MARKERS:**

RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY CONTRACT IN ACCORDANCE WITH DESIGNATED SYMBOLS.

**GENERAL NOTES:**

2018 SPECIFICATIONS  
 EFFECTIVE: 01-16-2018  
 REVISED:

**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 III.

**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

**SUBSURFACE DRAINS:**

SUBSURFACE DRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.02 AT LOCATIONS DIRECTED BY THE ENGINEER.

EFF. 01-16-2018  
 REV.

**2018 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, 2018 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
<b>DIVISION 2 - EARTHWORK</b>	
200.03	Method of Clearing - Method III
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
<b>DIVISION 3 - PIPE CULVERTS</b>	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
<b>DIVISION 4 - MAJOR STRUCTURES</b>	
422.01	Bridge Approach Fills - Type I Standard Approach Fill
<b>DIVISION 5 - SUBGRADE, BASES AND SHOULDERS</b>	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
<b>DIVISION 8 - INCIDENTALS</b>	
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
815.02	Subsurface Drain
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
862.03	Structure Anchor Units
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

# STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

## CONVENTIONAL PLAN SHEET SYMBOLS

12/2/2016

### BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ ETP
Computed 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	--- FLOW ---
False Sump	▽

### RAILROADS:

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

### RIGHT OF WAY & PROJECT CONTROL:

Secondary Horiz and Vert Control Point	◆
Primary Horiz Control Point	○
Primary Horiz and Vert Control Point	◆
Exist Permanent Easement Pin and Cap	◇
New Permanent Easement Pin and Cap	◆
Vertical Benchmark	▲
Existing Right of Way Marker	△
Existing Right of Way Line	-----
New Right of Way Line	○ R W
New Right of Way Line with Pin and Cap	○ R W ▲
New Right of Way Line with Concrete or Granite R/W Marker	▲ R W
New Control of Access Line with Concrete C/A Marker	△ R W
Existing Control of Access	△
New Control of Access	△
Existing Easement Line	--- E ---
New Temporary Construction Easement	--- E ---
New Temporary Drainage Easement	--- TDE ---
New Permanent Drainage Easement	--- PDE ---
New Permanent Drainage / Utility Easement	--- DUE ---
New Permanent Utility Easement	--- PUE ---
New Temporary Utility Easement	--- TUE ---
New Aerial Utility Easement	--- AUE ---

### 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	--- T ---
Proposed Guardrail	--- T ---
Existing Cable Guiderail	--- T ---
Proposed Cable Guiderail	--- T ---
Equality Symbol	⊕
Pavement Removal	⊗

### VEGETATION:

Single Tree	○
Single Shrub	○

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

Hedge	-----
Woods Line	-----
Orchard	○
Vineyard	□ Vineyard

### EXISTING STRUCTURES:

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

### UTILITIES:

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

### TELEPHONE:

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

### WATER:

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

### TV:

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

### GAS:

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

### SANITARY SEWER:

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

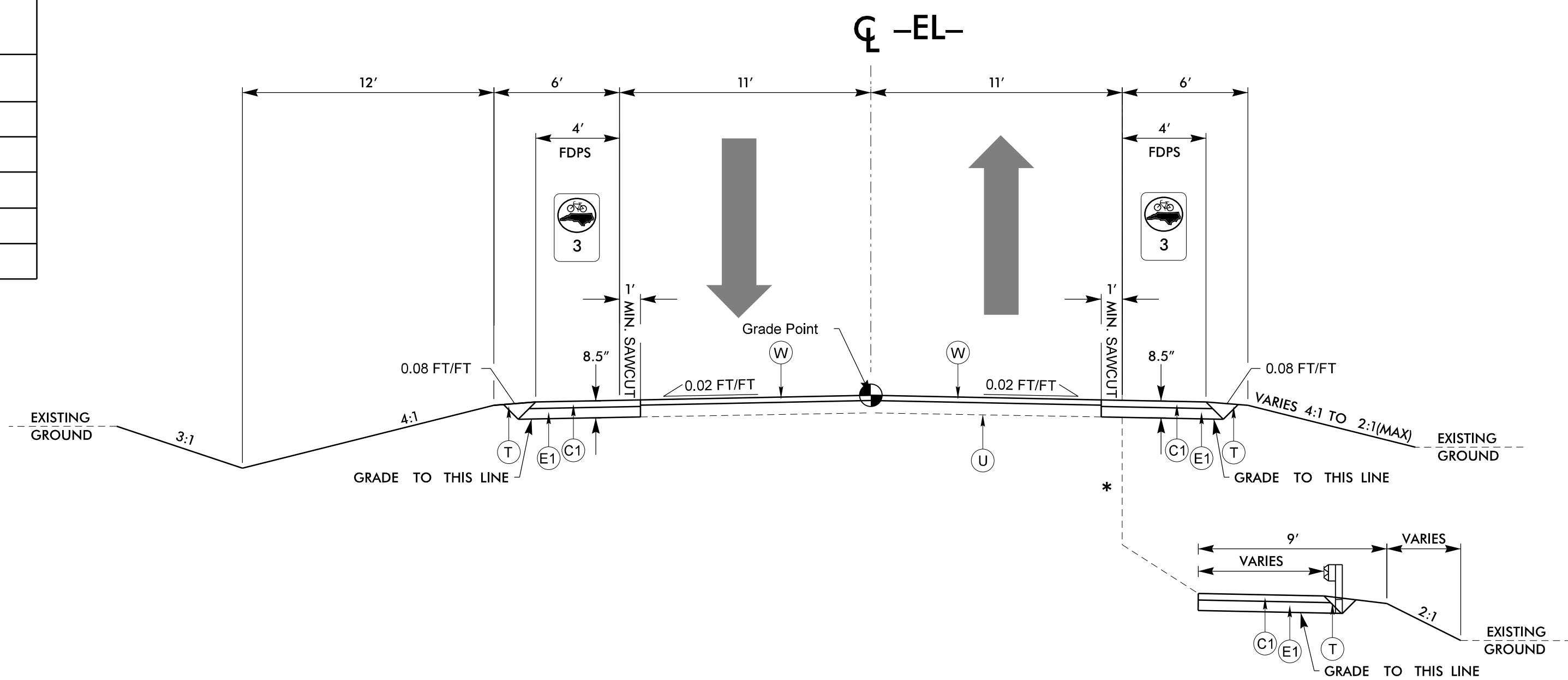
### MISCELLANEOUS:

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

PROJECT REFERENCE NO. B-5772	SHEET NO. 2A-1
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	NCDOT PAVEMENT DESIGN ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	
119 BROOKSTOWN AVENUE, SUITE PH1 WINSTON-SALEM, NC 27101 336.744.1636 www.davenportworld.com NCBELS FIRM LICENSE NO. C-2622	

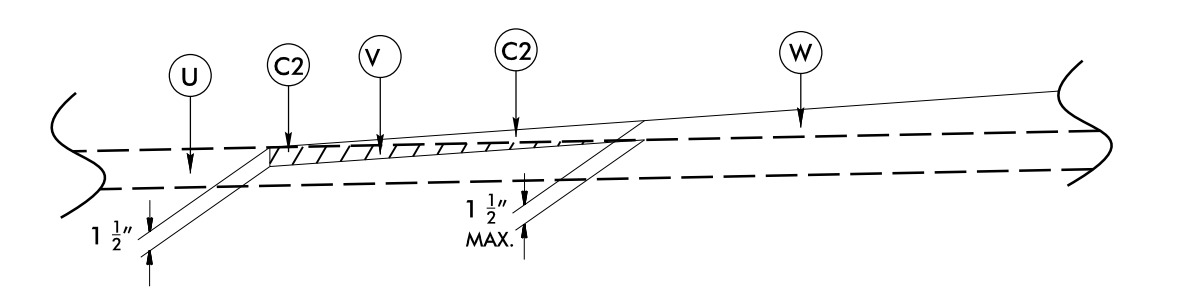
PAVEMENT SCHEDULE	
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. TO BE PLACED IN TWO LIFTS 1.5" DEPTH EACH.
C2	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT EXCEEDING 1.5"
E1	PROP. APPROX. 5.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
R	SHOULDER BERM GUTTER
T	EARTH MATERIAL.
U	EXISTING PAVEMENT
V	VAR. DEPTH ASPHALT MILLING (0" TO 1.5")
W	ASPHALT WEDGING

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

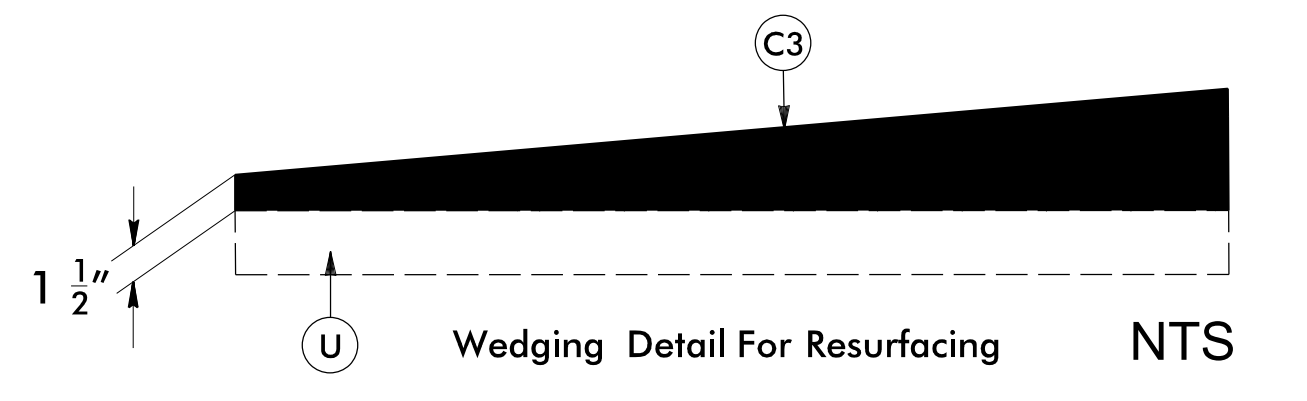


**TYPICAL SECTION NO. 1**  
 - EL - STA. 18+80.00 TO - EL - STA. 19+45.00  
 - EL - STA. 22+23.00 TO - EL - STA. 22+80.00

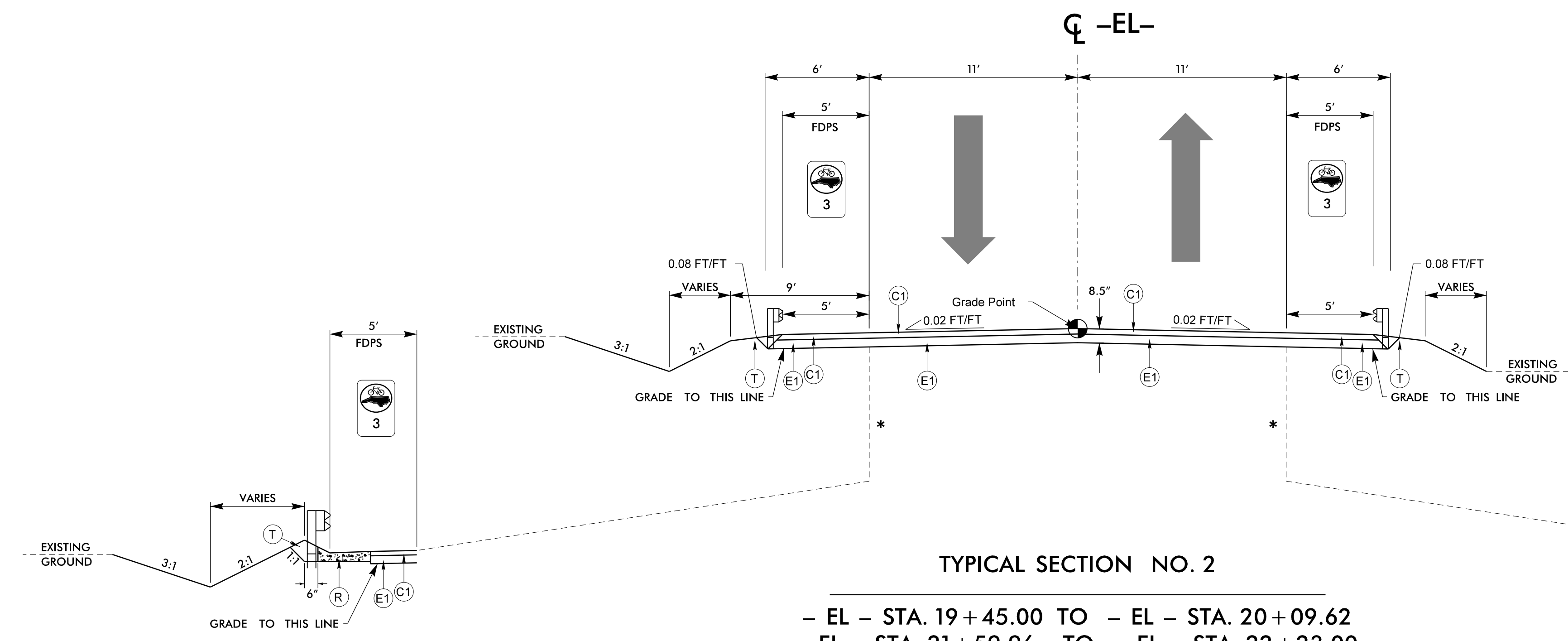
NOTE: SR 1724 (HURLEY SCHOOL ROAD) IS ON REGIONAL BIKE ROUTE 3.  
 \* SEE STRUCTURES PLANS FOR BRIDGE APPROACH SLAB, LOCATION AND DETAILS



**DETAIL OF MILLING AT PAVEMENT TIE-INS**



**DETAIL SHOWING METHOD OF WEDGING**

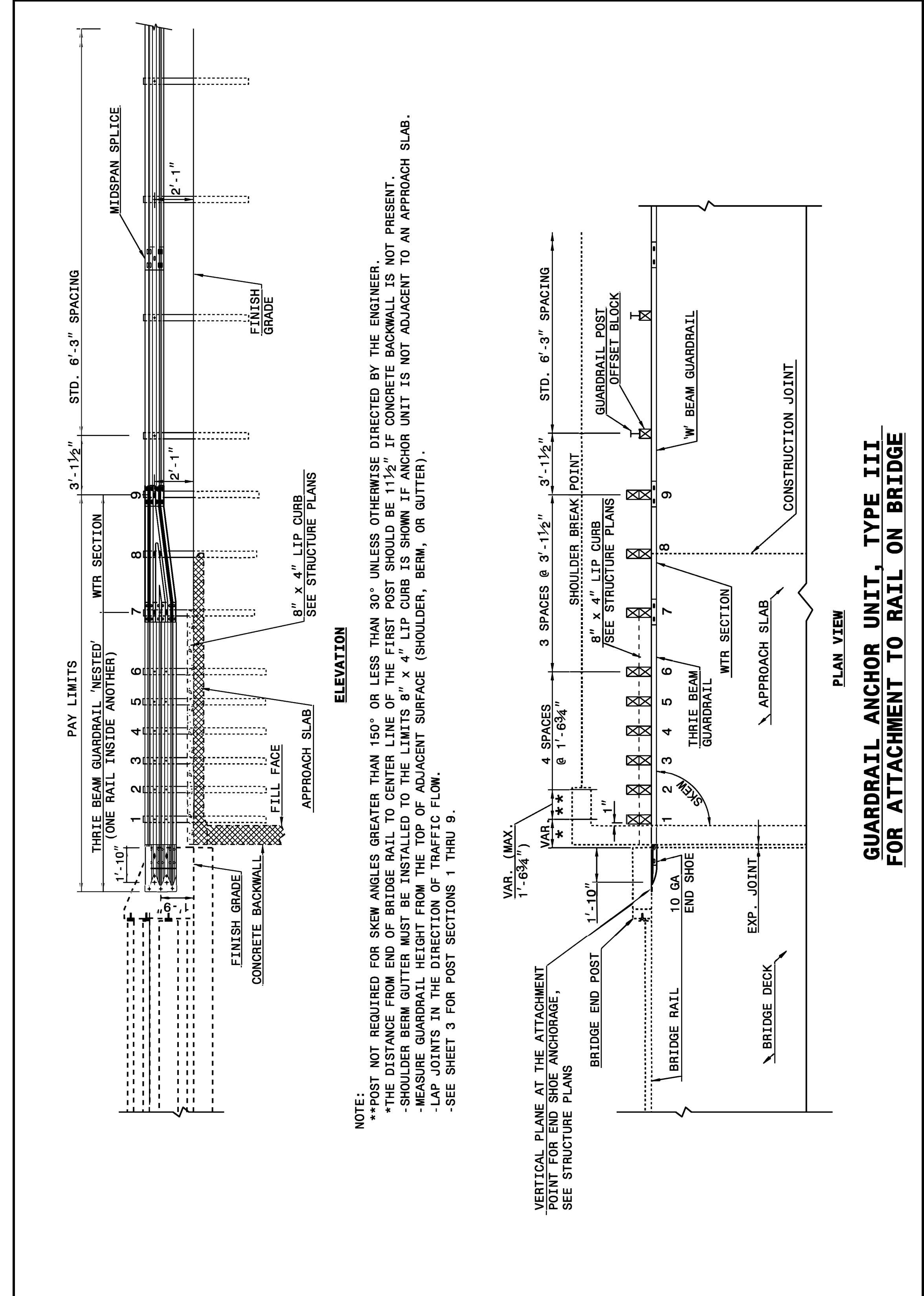


**TYPICAL SECTION NO. 2**  
 - EL - STA. 19+45.00 TO - EL - STA. 20+09.62  
 - EL - STA. 21+59.96 TO - EL - STA. 22+23.00  
 - EL - STA. 21+83.96 TO - EL - STA. 22+03.00

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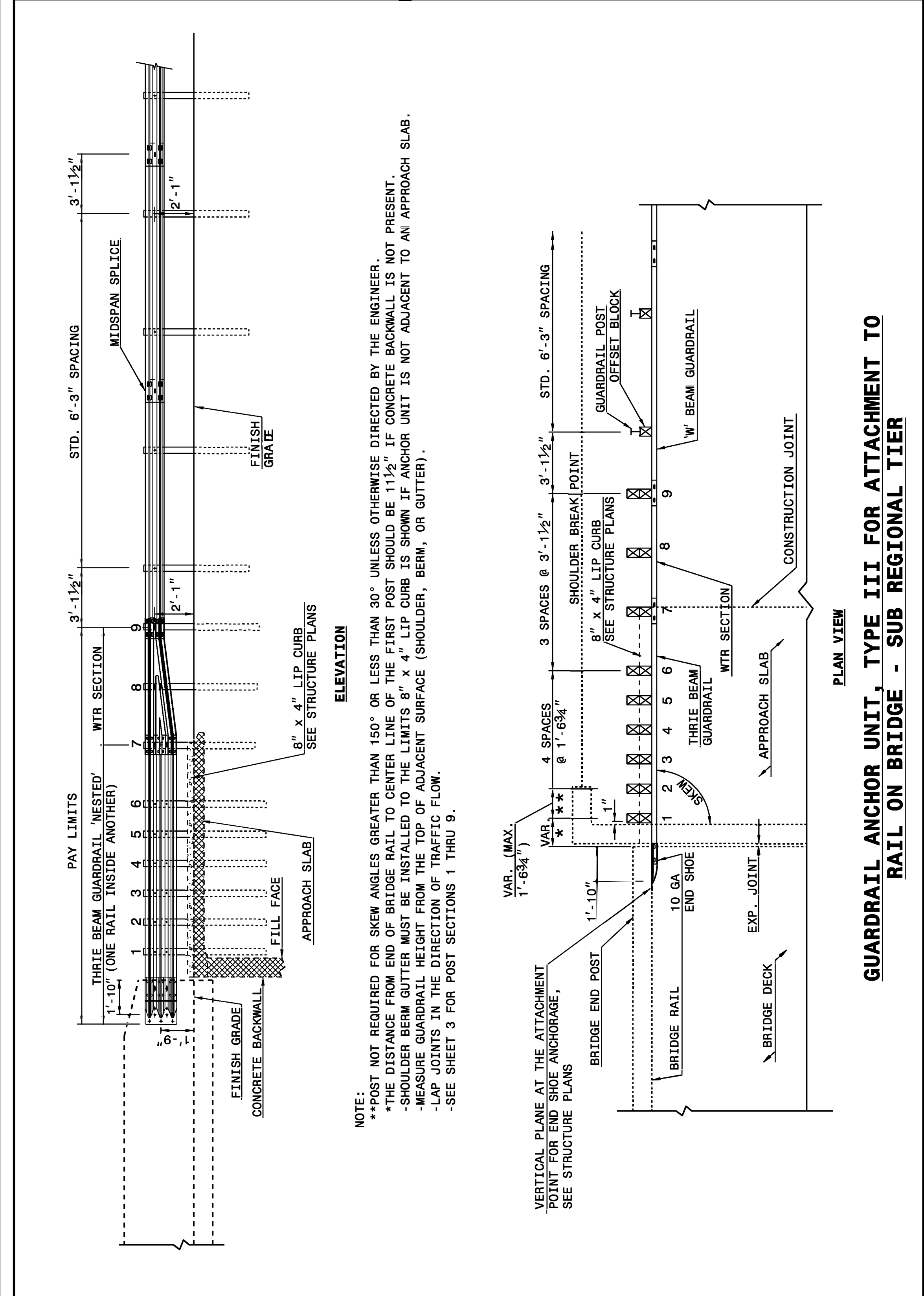
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STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.  
ROADWAY DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE  
SHEET 1 OF 7 862D03



**NOTE:**  
 \*\*POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.  
 \*THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11 1/2" IF CONCRETE BACKWALL IS NOT PRESENT.  
 -SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.  
 -MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).  
 -LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.  
 -SEE SHEET 3 FOR POST SECTIONS 1 THRU 9.

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



**NOTE:**  
 \*\*POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.  
 \*THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11 1/2" IF CONCRETE BACKWALL IS NOT PRESENT.  
 -SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.  
 -MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).  
 -LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.  
 -SEE SHEET 3 FOR POST SECTIONS 1 THRU 9.

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.  
ROADWAY DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE  
SHEET 1 OF 7 862D03

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



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**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.:

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

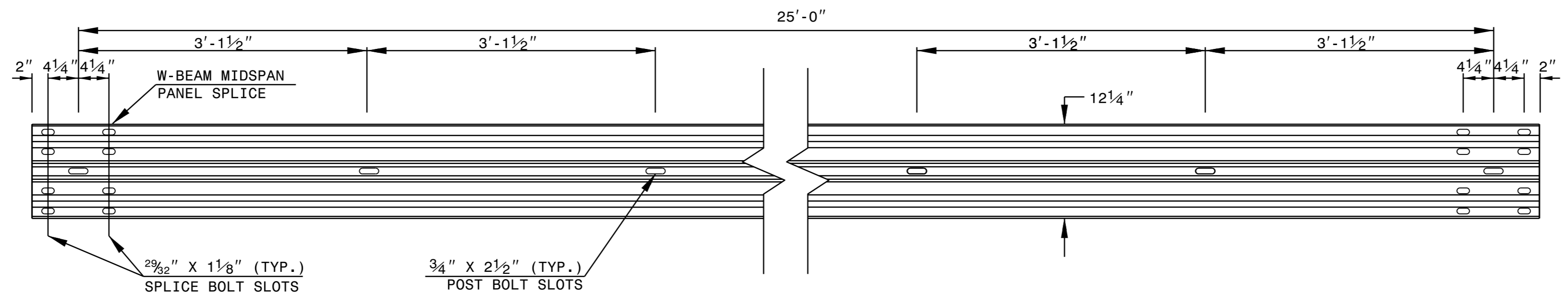
ROADWAY DETAIL DRAWING FOR  
**GUARDRAIL INSTALLATION**

SHEET 6 OF 8  
**862D02**

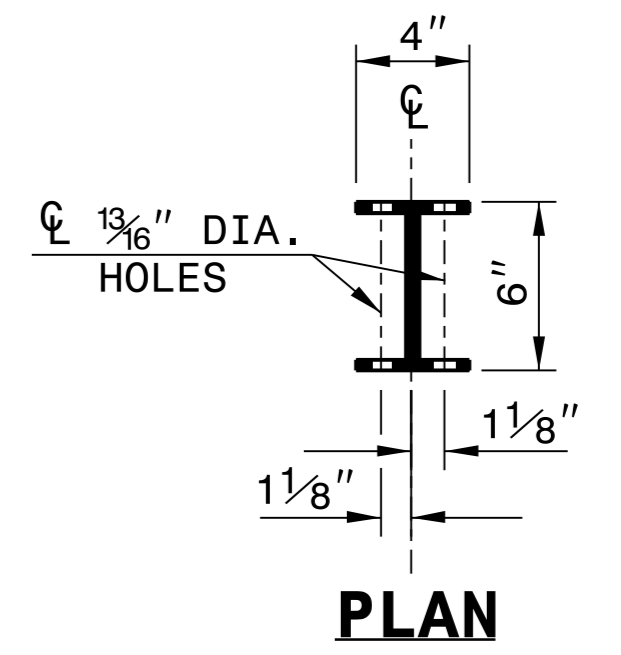
STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR  
**GUARDRAIL INSTALLATION**

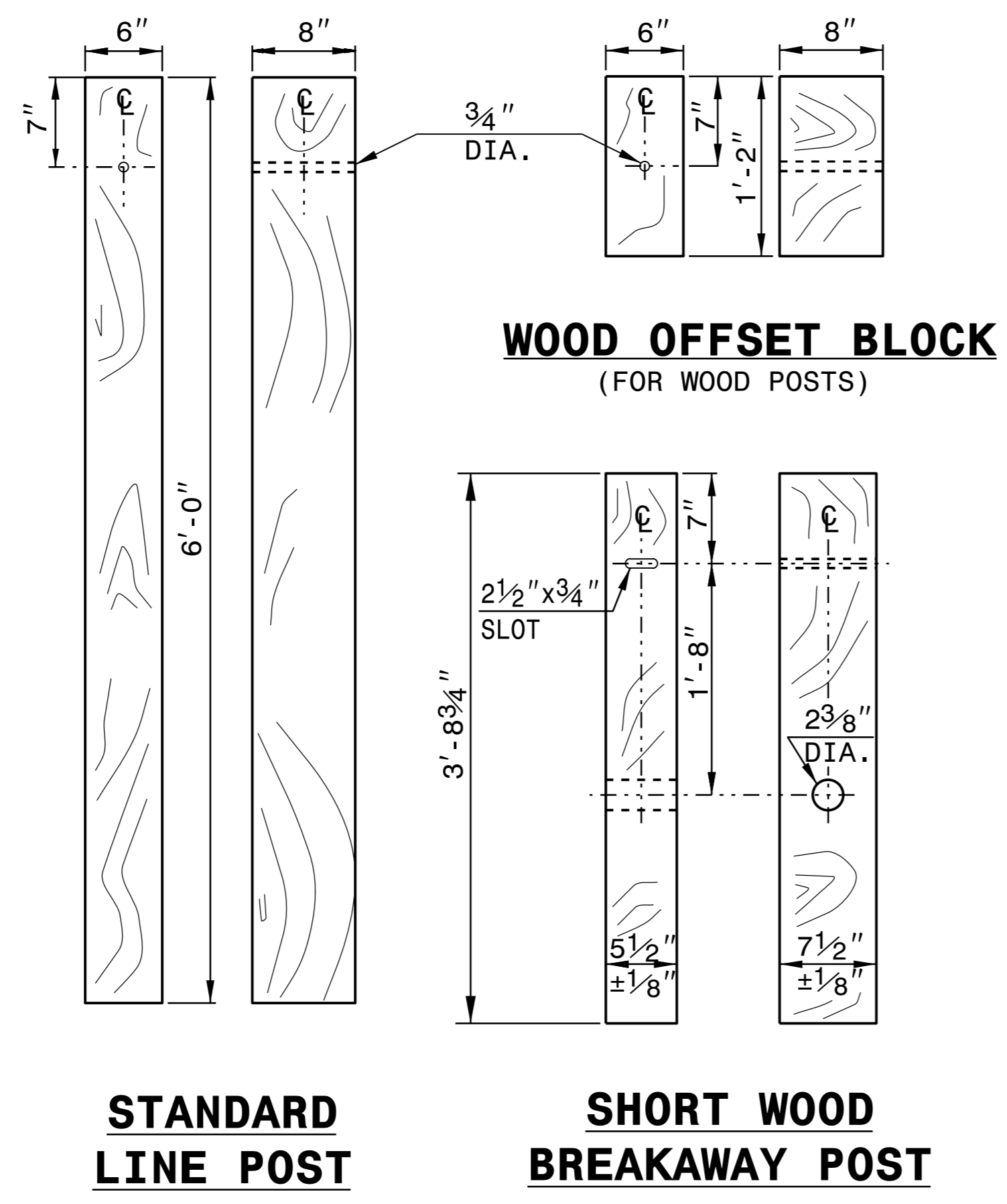
SHEET 6 OF 8  
**862D02**



**STANDARD W-BEAM GUARDRAIL**



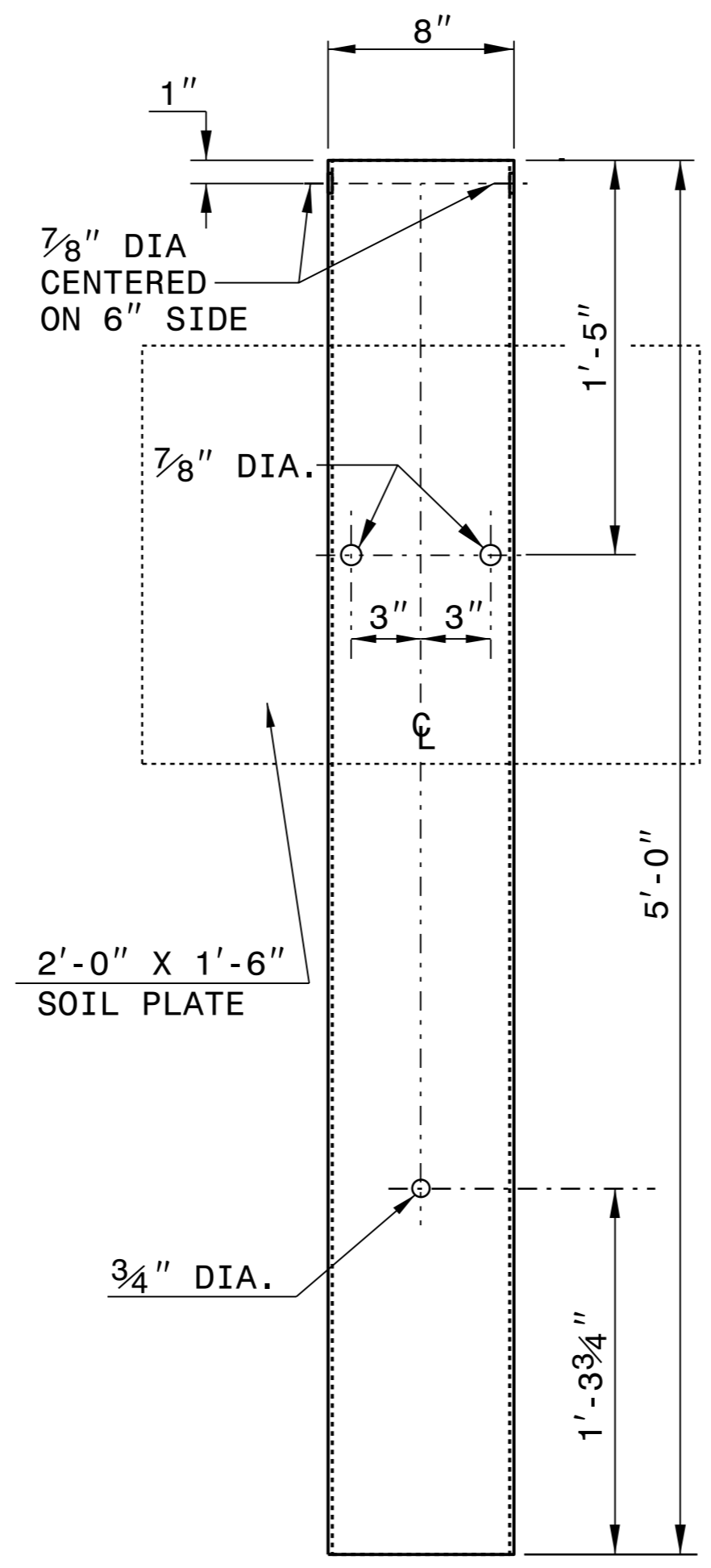
**PLAN**



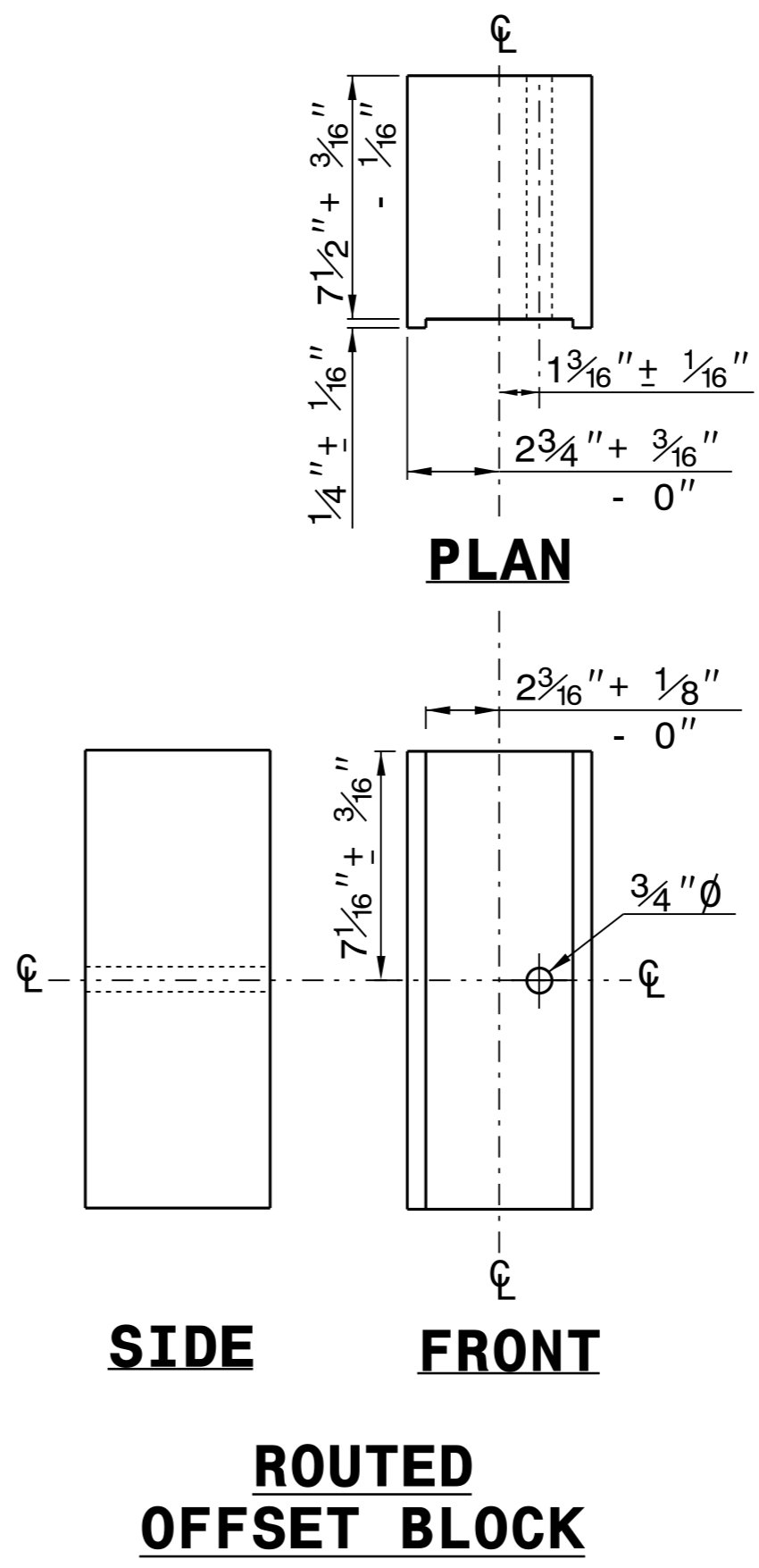
**WOOD OFFSET BLOCK  
(FOR WOOD POSTS)**

**STANDARD  
LINE POST**

**SHORT WOOD  
BREAKAWAY POST**



**STEEL TUBE  
TS 6"x8"x0.1875"**

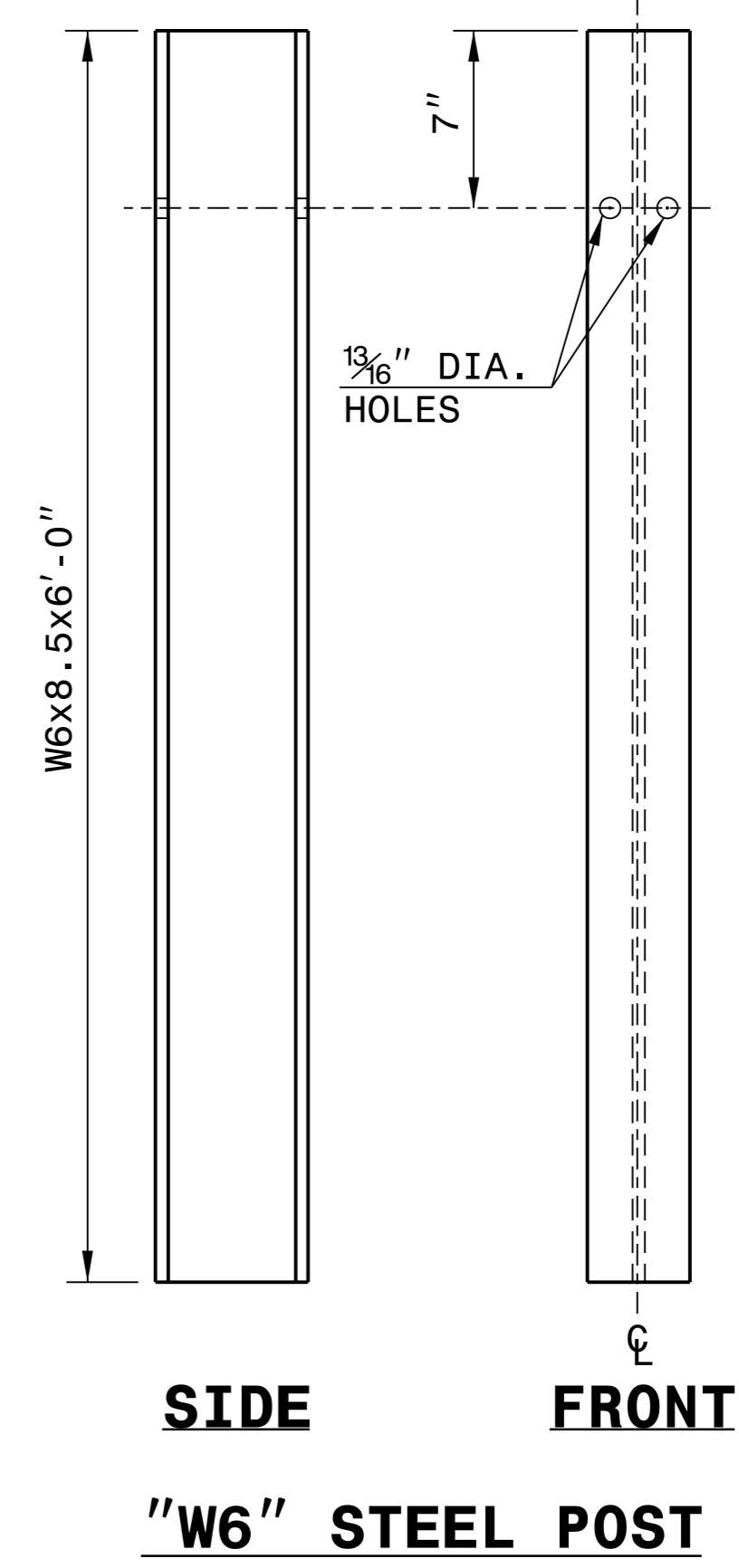


**PLAN**

**SIDE**

**FRONT**

**ROUTED  
OFFSET BLOCK**



**SIDE**

**FRONT**

**"W6" STEEL POST**

**SYSTEM PARTS**



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

**SEE TITLE BLOCK**

ORIGINAL BY: J. HOWERTON	DATE: 3-7-2018
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC.:	

PROJECT REFERENCE NO. <i>B-5772</i>	SHEET NO. <i>3B-1</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	
119 BROOKSTOWN AVENUE, SUITE PH1 WINSTON-SALEM, NC 27101 336.744.1636 www.davenportworld.com NCBELS FIRM LICENSE NO. C-2622	

### SUMMARY OF EARTHWORK (IN CUBIC YARDS)

STATION	STATION	UNCL. EXCAV.	EMBANK. + %	BORROW	WASTE
18+80.00 -EL-	20+09.62 -EL-	86	89	3	
21+59.96 -EL-	22+80.00 -EL-	196	69		127
SUBTOTALS:		282	158	3	127
WASTE IN LIEU OF BORROW:				-3	-3
GRAND TOTALS:		282	158	0	124
SAY:		285			
EST. DDE = 60 CU. YD.					
EST. CONTINGENCY UNDERCUT = 250 CU. YD.					
EST. CONTINGENCY SELECT GRANULAR MATERIAL = 200 CU. YD.					

NOTE: Approximate quantities only. Unclassified Excavation, Fine Grading, Clearing and Grubbing, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

### ASPHALT PAVEMENT REMOVAL SUMMARY

STATION	STATION	LOCATION	AREA SQ FT	AREA SQ YD
19+45 ± -EL-	20+25 ± -EL-	ALL	1972	219
21+48 ± -EL-	22+23 ± -EL-	ALL	1817	202
SUBTOTAL:				421
SAY:				425

### SHOULDER BERM GUTTER SUMMARY (IN LINEAR FEET)

SURVEY LINE	STATION	STATION	LOCATION	LENGTH
-EL-	21+83.96	22+03.00	LT	19.04
-EL-	21+83.96	22+03.00	RT	19.04
TOTAL:				38.08
SAY:				40

### GUARDRAIL SUMMARY (IN LINEAR FEET)

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.  
 TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.  
 FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.  
 W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.  
 G = GATING IMPACT ATTENUATOR TYPE 350  
 NG = NON-GATING IMPACT ATTENUATOR TYPE 350

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH		W		ANCHORS								IMPACT ATTENUATOR TYPE 350			SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS							
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	XI MOD	XI	GREU TL-3	M-350	III	CAT-1	VI MOD	BIC	AT-1	EA	G					NG						
-EL-	18+78.62	20+09.62 (Bridge)	RT	131.25			20+09.62 (Bridge)		4.8	5	50		1																							
-EL-	19+41.12	20+09.62 (Bridge)	LT	68.75				20+09.62 (Bridge)	4.8	5	50			1																						
-EL-	21+59.96 (Bridge)	22+33.00	RT	75				21+59.96 (Bridge)	4.8	5	50				1																					
-EL-	21+59.96 (Bridge)	22+33.00	LT	75				21+59.96 (Bridge)	4.8	5	50		1																							
SUBTOTAL				350																																
LESS ANCHOR DEDUCTIONS (4 GRAU, 4 TL-3)				-275																																
TOTAL				75																																

NOTE: Additional guardrail posts - 5 EA

8:31:01 AM  
 2:\2016\160911\NC00T\_B5772\_Hur\_Lej5ch\DESIGN\03\_CADD\B5772\_Roadway\Proc\B5772\_Rdjr\_PSH\_3B-1.dgn  
 15:58:00





COMPUTED BY: Charles R. Lavender, III, PG E 3-Aug-20  
 CHECKED BY: Michael Stephens, PE DATE: 3-Aug-20

(12-17-19)

PROJECT NO. B-5772 SHEET NO. 3G-1

**STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS**

**SUMMARY OF SUBSURFACE DRAINAGE**

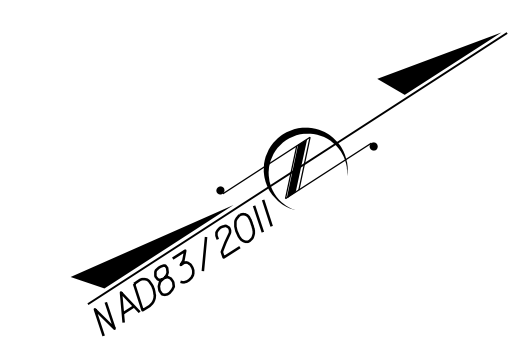
LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
CONTINGENCY				SD	100
				<b>TOTAL LF:</b>	100

\*UD = Underdrain  
 \*BD = Blind Drain  
 \*SD = Subsurface Drain

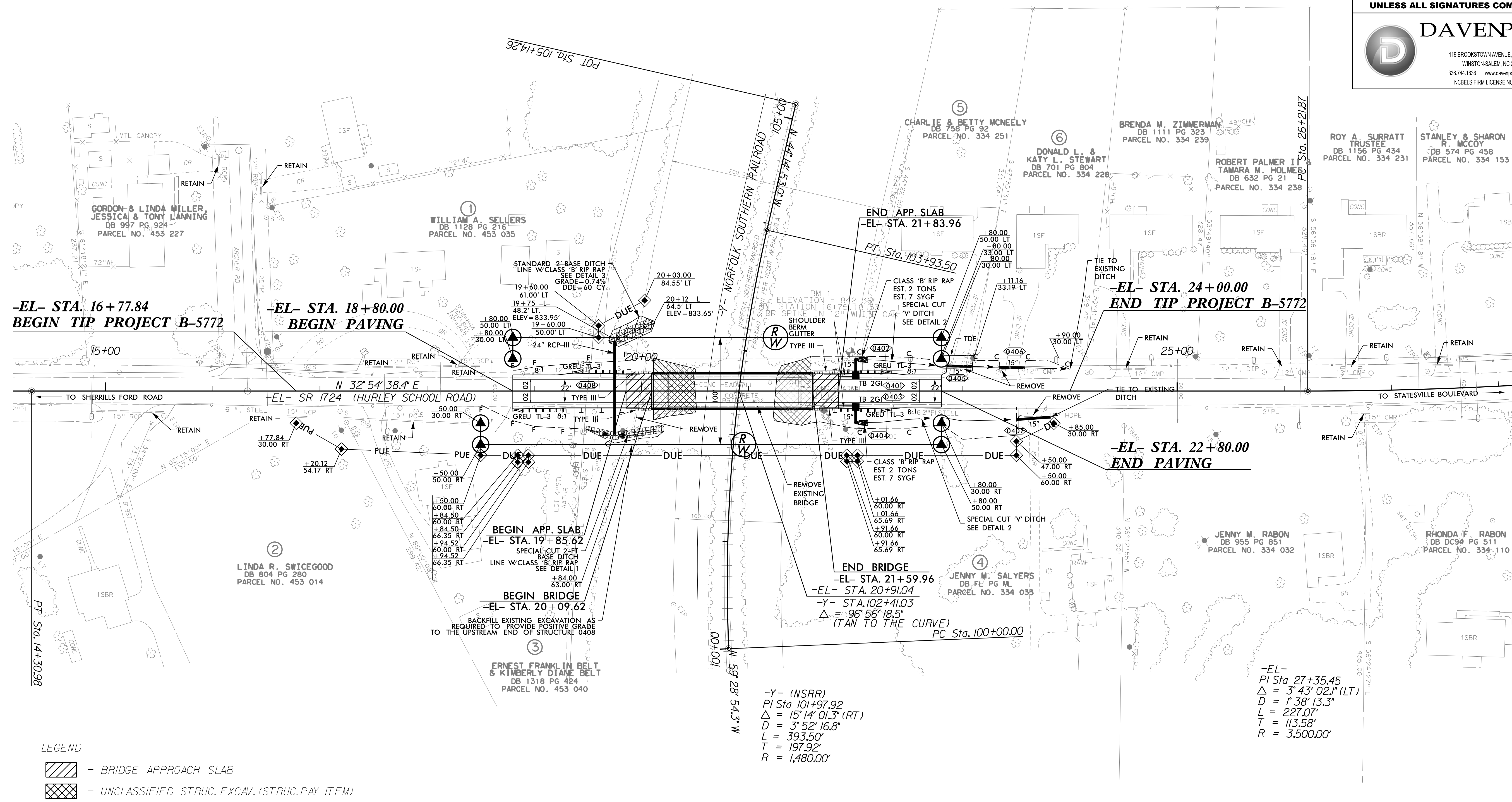
**SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION**

LINE	Station	Station	Aggregate Type* ASU(1/2)/ AST	Aggregate Thickness INCHES [8" for ASU(2)]	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Soil Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
CONTINGENCY			ASU(1)	12	50	100	250		
					<b>TOTAL CY/TONS/SY:</b>	50	100**	250**	0

\*ASU(1/2) = Aggregate Subgrade (Type 1 or 2)  
 \*AST = Aggregate Stabilization  
 \*\*Total tons of "Class IV Subgrade Stabilization" and total square yards of "Geotextile for Soil Stabilization" are only the estimated quantities for ASU(1/2)/AST and may only represent a portion of the subgrade stabilization and geotextile quantities shown in the Item Sheets of the Proposal.

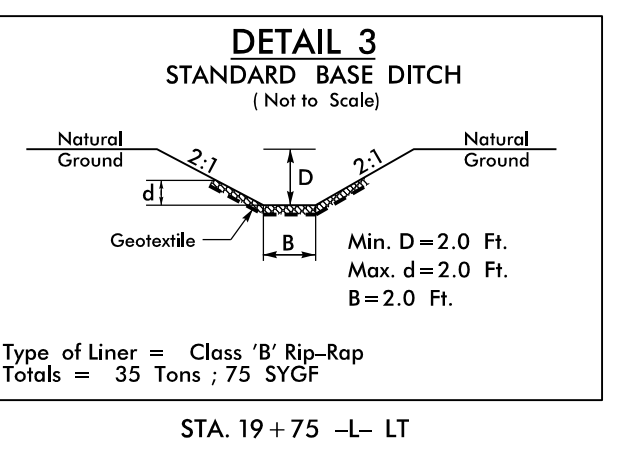
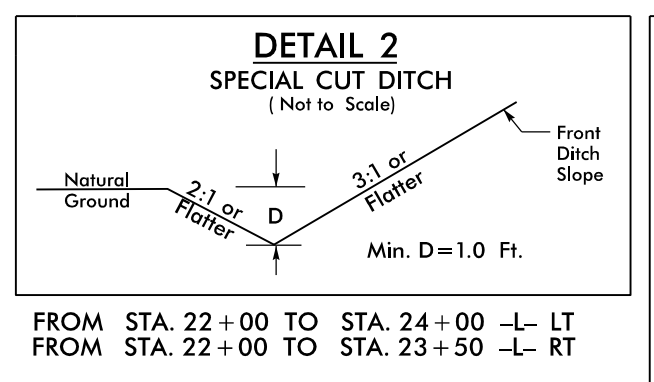
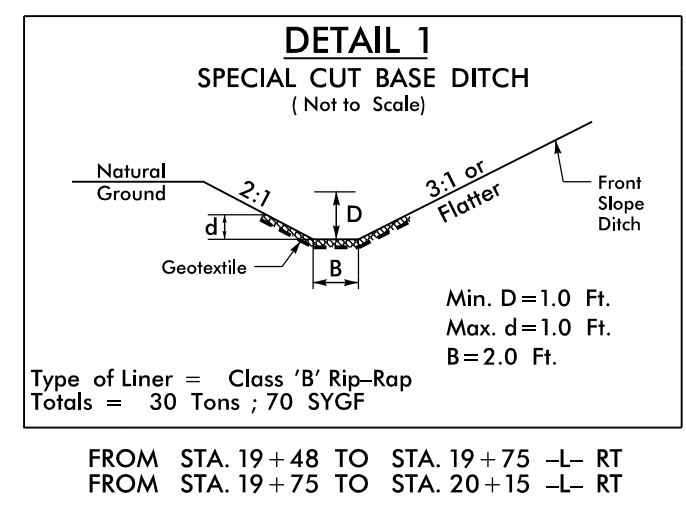


PROJECT REFERENCE NO. <b>B-5772</b>		SHEET NO. <b>04</b>	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<b>SEPI</b> Engineering & Construction, Inc.			
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>			
<b>DAVENPORT</b>			
119 BROOKSTOWN AVENUE, SUITE PH1 WINSTON-SALEM, NC 27101 336.744.1636 www.davenportworld.com NCBELS FIRM LICENSE NO. C-2622			



**LEGEND**

- BRIDGE APPROACH SLAB
- UNCLASSIFIED STRUC. EXCAV. (STRUC. PAY ITEM)



SEE SHEET 5 FOR -EL- PROFILE

SEE SHEETS S-1 THRU S-25 FOR STRUCTURE PLANS

5:57:28 PM 2/1/2016 15:16:09 \\115-RR-EP-111-NC001-B5772-HurleySch\DESIGN\03-CADD\B5772-Roadway\Proj\B5772-Rd.dwg\_PSH\_01.dgn



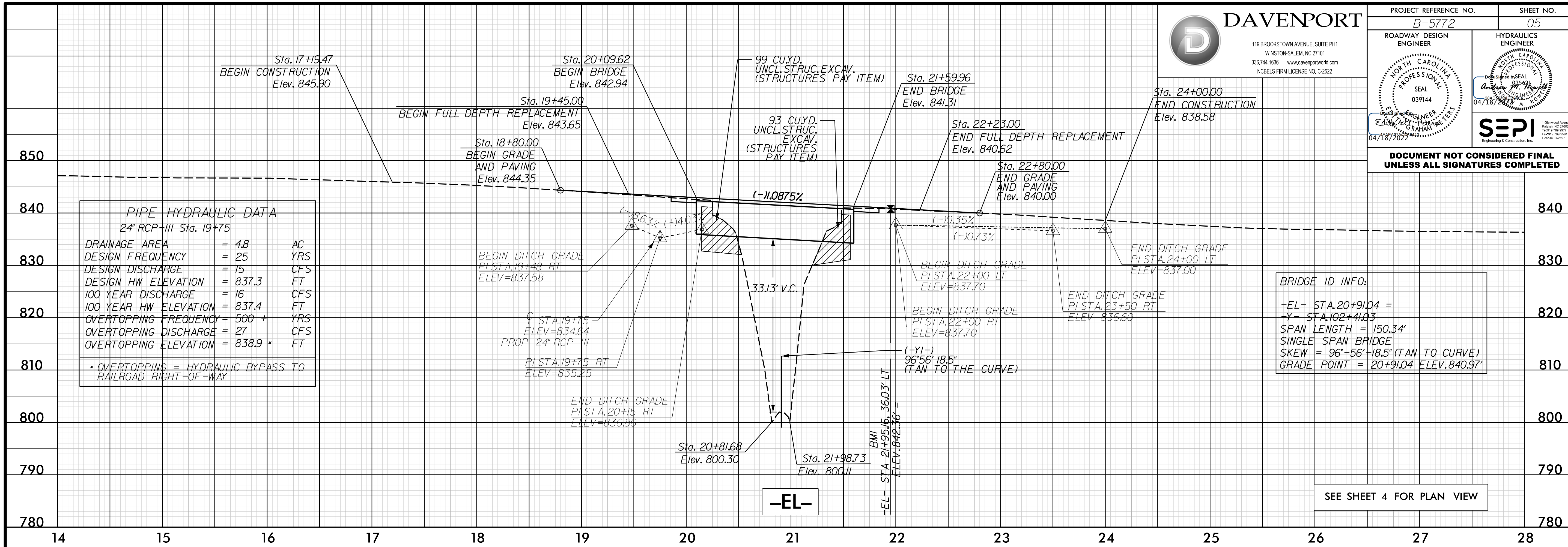
119 BROOKSTOWN AVENUE, SUITE PH1  
WINSTON-SALEM, NC 27101  
336.744.1636 www.davenportworld.com  
NCBELS FIRM LICENSE NO. C-2522

PROJECT REFERENCE NO. B-5772	SHEET NO. 05
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	

PIPE HYDRAULIC DATA	
24" RCP-III Sta. 19+75	
DRAINAGE AREA	= 4.8 AC
DESIGN FREQUENCY	= 25 YRS
DESIGN DISCHARGE	= 15 CFS
DESIGN HW ELEVATION	= 837.3 FT
100 YEAR DISCHARGE	= 16 CFS
100 YEAR HW ELEVATION	= 837.4 FT
OVERTOPPING FREQUENCY	= 500 YRS
OVERTOPPING DISCHARGE	= 27 CFS
OVERTOPPING ELEVATION	= 838.9 FT
* OVERTOPPING = HYDRAULIC BYPASS TO RAILROAD RIGHT-OF-WAY	

**BRIDGE ID INFO:**  
 -EL- STA.20+91.04 =  
 -Y- STA.102+41.03  
 SPAN LENGTH = 150.34'  
 SINGLE SPAN BRIDGE  
 SKEW = 96°-56'-18.5" (TAN TO CURVE)  
 GRADE POINT = 20+91.04 ELEV.840.97'

3:53:30 PM 2/20/16 16:09:11 NCDOT\_B5772\_HurleySch\DESIGN\03\_CADD\B5772\_Roadway\Proc\B5772\_Rdwy\_PFL\_01.dgn



-EL-

SEE SHEET 4 FOR PLAN VIEW