




STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

March 20, 2019

ADDENDUM # 1

To: Plan Holders 
From: Wes Jamsion
Division Project Manager

RE: **Bid Item Changes & Plan Sheet Revisions**
Contract ID: DN00294
County: Transylvania
Letting Date: April 9, 2019

The above contract has experienced the following revisions:

The 25' sections of clear span guardrail have been removed and replaced with a moment slab and anchored guardrail. Changes to the bid items and plan sheets have been made.

I. Bid Item Changes

The quantities to the following items have been changed:

0016 3030000000-E STEEL BEAM GUARDRAIL

0017 3045000000-E STEEL BEAM GUARDRAIL, SHOP CURVED

The following item has been deleted:

0018 3140000000-E 25' CLEAR SPAN GUARDRAIL SECTIONS

The following items have been added:

0065 8175000000-E CLASS AA CONCRETE (BRIDGE)

0066 8248000000-E EPOXY COATED REINFORCING STEEL (CULVERT)

See attached Bid Item Sheets showing these revisions.

II. Plan Sheet Revisions

The following plan sheets have been revised as a result of the moment slab addition:

Sheet 1

Sheet 1A

Sheet 3B-1

Sheet 4

Sheet C-1

Sheet C-2

Sheet C-3

Sheet SN

See attached revised plan sheets.

Please access ebs addenda files on Bid Express®.

Thank you for your attention to this matter.

County : Transylvania

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
ROADWAY ITEMS						
0001	0000100000-N	800	MOBILIZATION	Lump Sum	L.S.	
0002	0000400000-N	801	CONSTRUCTION SURVEYING	Lump Sum	L.S.	
0003	0043000000-N	226	GRADING	Lump Sum	L.S.	
0004	0050000000-E	226	SUPPLEMENTARY CLEARING & GRUB-BING	0.25 ACR		
0005	0057000000-E	226	UNDERCUT EXCAVATION	50 CY		
0006	0195000000-E	265	SELECT GRANULAR MATERIAL	50 CY		
0007	0196000000-E	270	GEOTEXTILE FOR SOIL STABILIZATION	50 SY		
0008	0318000000-E	300	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES	10 TON		
0009	0320000000-E	300	FOUNDATION CONDITIONING GEO-TEXTILE	20 SY		
0010	0372000000-E	310	18" RC PIPE CULVERTS, CLASS III	36 LF		
0011	0594000000-E	310	24" CS PIPE CULVERTS, 0.064" THICK	24 LF		
0012	1220000000-E	545	INCIDENTAL STONE BASE	50 TON		
0013	1491000000-E	610	ASPHALT CONC BASE COURSE, TYPE B25.0C	220 TON		
0014	1523000000-E	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5C	115 TON		
0015	1575000000-E	620	ASPHALT BINDER FOR PLANT MIX	20 TON		
0016	3030000000-E	862	STEEL BEAM GUARDRAIL	162.5 LF		
0017	3045000000-E	862	STEEL BEAM GUARDRAIL, SHOP CURVED	87.5 LF		
0019	3150000000-N	862	ADDITIONAL GUARDRAIL POSTS	5 EA		
0020	3195000000-N	862	GUARDRAIL END UNITS, TYPE AT-1	3 EA		

County : Transylvania

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0021	3288000000-N	SP	GUARDRAIL END UNITS, TYPE TL-2	1 EA		
0022	3649000000-E	876	RIP RAP, CLASS B	7 TON		
0023	3656000000-E	876	GEOTEXTILE FOR DRAINAGE	115 SY		
0024	4400000000-E	1110	WORK ZONE SIGNS (STATIONARY)	219 SF		
0025	4410000000-E	1110	WORK ZONE SIGNS (BARRICADE MOUNTED)	94 SF		
0026	4430000000-N	1130	DRUMS	30 EA		
0027	4445000000-E	1145	BARRICADES (TYPE III)	64 LF		
0028	4455000000-N	1150	FLAGGER	4 DAY		
0029	4810000000-E	1205	PAINT PAVEMENT MARKING LINES (4")	2,400 LF		
0030	6000000000-E	1605	TEMPORARY SILT FENCE	585 LF		
0031	6006000000-E	1610	STONE FOR EROSION CONTROL, CLASS A	30 TON		
0032	6009000000-E	1610	STONE FOR EROSION CONTROL, CLASS B	10 TON		
0033	6012000000-E	1610	SEDIMENT CONTROL STONE	80 TON		
0034	6015000000-E	1615	TEMPORARY MULCHING	0.5 ACR		
0035	6018000000-E	1620	SEED FOR TEMPORARY SEEDING	100 LB		
0036	6021000000-E	1620	FERTILIZER FOR TEMPORARY SEEDING	0.5 TON		
0037	6024000000-E	1622	TEMPORARY SLOPE DRAINS	200 LF		
0038	6029000000-E	SP	SAFETY FENCE	200 LF		
0039	6030000000-E	1630	SILT EXCAVATION	80 CY		
0040	6036000000-E	1631	MATTING FOR EROSION CONTROL	400 SY		

County : Transylvania

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0041	6037000000-E	SP	COIR FIBER MAT	100		
					SY	
0042	6042000000-E	1632	1/4" HARDWARE CLOTH	210		
					LF	
0043	6045000000-E	SP	*** TEMPORARY PIPE (24)	110		
					LF	
0044	6070000000-N	1639	SPECIAL STILLING BASINS	2		
					EA	
0045	6071012000-E	SP	COIR FIBER WATTLE	90		
					LF	
0046	6071020000-E	SP	POLYACRYLAMIDE (PAM)	5		
					LB	
0047	6084000000-E	1660	SEEDING & MULCHING	0.5		
					ACR	
0048	6087000000-E	1660	MOWING	0.5		
					ACR	
0049	6090000000-E	1661	SEED FOR REPAIR SEEDING	50		
					LB	
0050	6093000000-E	1661	FERTILIZER FOR REPAIR SEEDING	0.25		
					TON	
0051	6096000000-E	1662	SEED FOR SUPPLEMENTAL SEEDING	50		
					LB	
0052	6108000000-E	1665	FERTILIZER TOPDRESSING	0.25		
					TON	
0053	6111000000-E	SP	IMPERVIOUS DIKE	48		
					LF	
0054	6114500000-N	1667	SPECIALIZED HAND MOWING	10		
					MHR	
0055	6117000000-N	SP	RESPONSE FOR EROSION CONTROL	9		
					EA	
0056	6117500000-N	SP	CONCRETE WASHOUT STRUCTURE	1		
					EA	

CULVERT ITEMS

0057	8035000000-N	402	REMOVAL OF EXISTING STRUCTURE AT STATION ***** (11+58.00 -L-)	Lump Sum	L.S.	
0058	8065000000-N	SP	ASBESTOS ASSESSMENT	Lump Sum	L.S.	

County : Transylvania

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0059	8126000000-N	414	CULVERT EXCAVATION, STA ***** (11+58.00 -L-)	Lump Sum	L.S.	
0060	8133000000-E	414	FOUNDATION CONDITIONING MATERIAL, BOX CULVERT	45 TON		
0061	8590000000-E	876	RIP RAP, CLASS ** (I)	76 TON		
0062	8622000000-E	876	GEOTEXTILE FOR DRAINAGE	97 SY		
0063	8804000000-N	SP	GENERIC CULVERT ITEM (36'-0" x 16'-4" x 5'-11" ALUM INUM BOX CULVERT)	Lump Sum	L.S.	
0064	8804000000-N	SP	GENERIC CULVERT ITEM (CHANNEL SUBSTRATE MATERIAL)	Lump Sum	L.S.	
0065	8175000000-E	420	CLASS AA CONCRETE (BRIDGE)	17 CY		
0066	8248000000-E	425	EPOXY COATED REINFORCING STEEL (CULVERT)	1,666 LB		

0907/Mar20/Q8118.75/D305073532000/E65

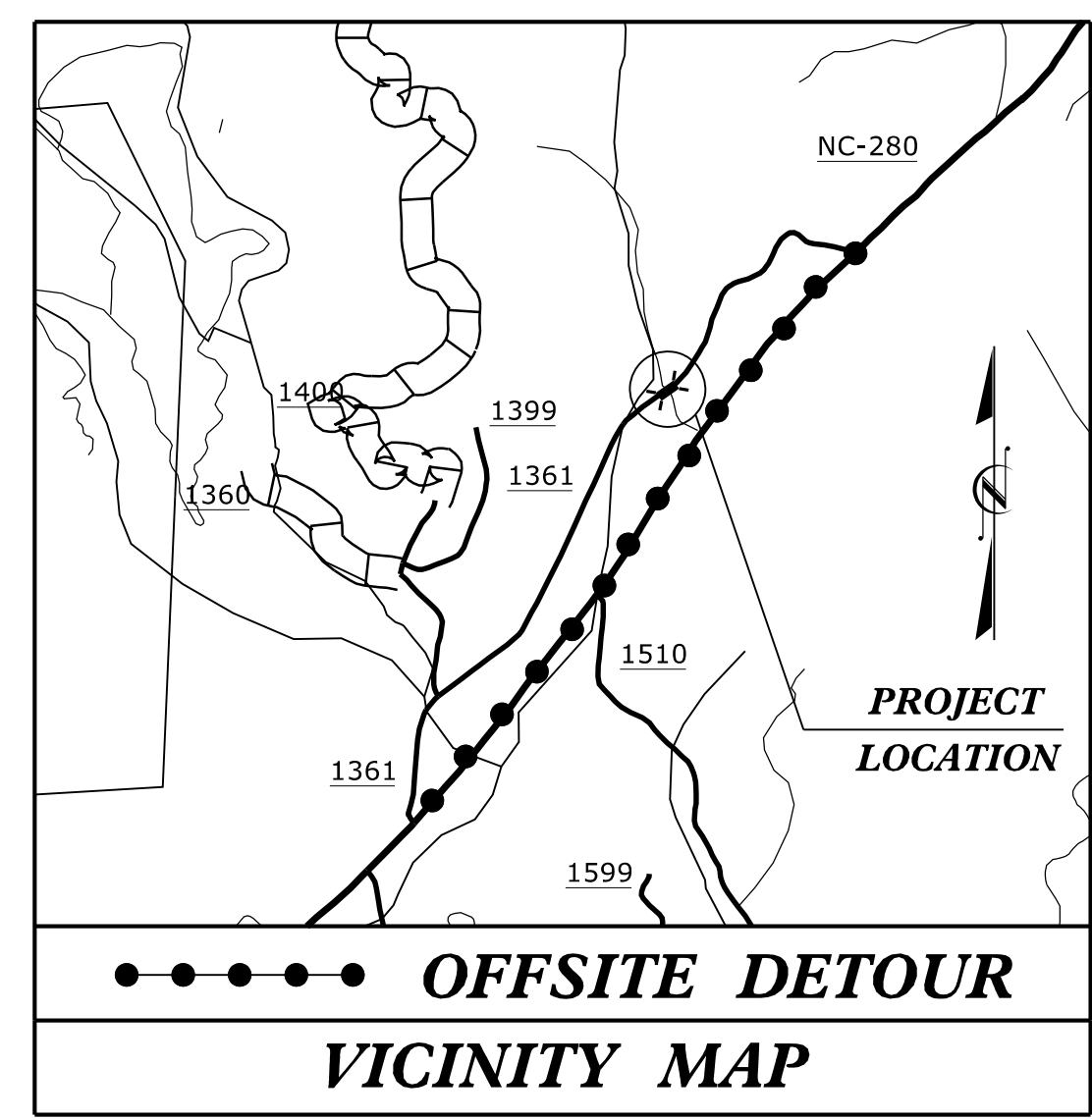
Total Amount Of Bid For Entire Project :

09_02B/219

TIP: B-6024

CONTRACT: DN00294

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols



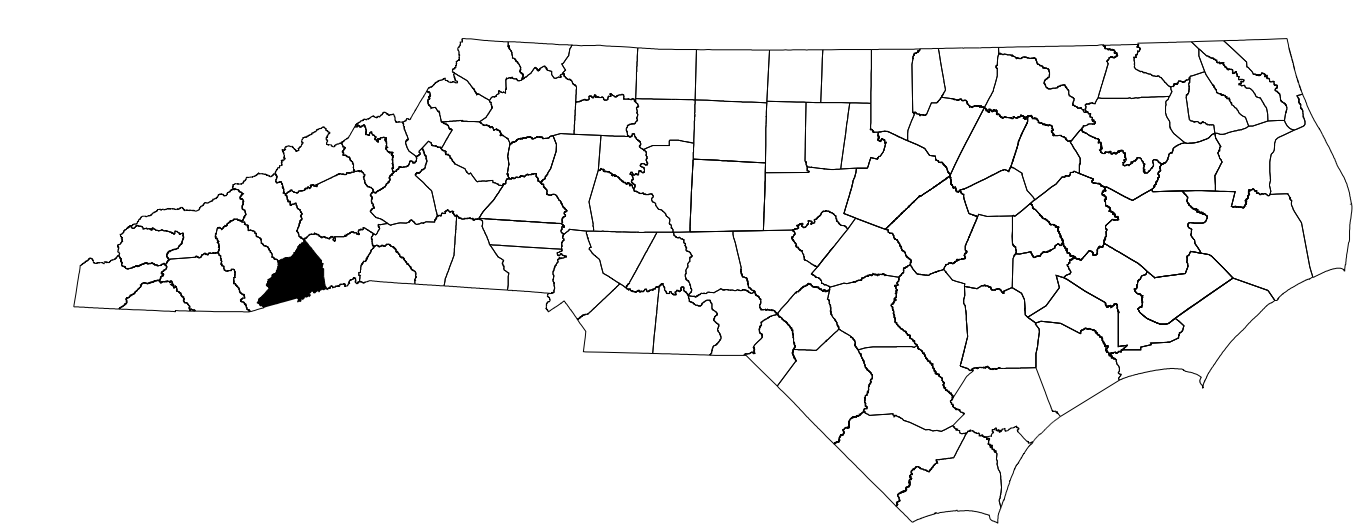
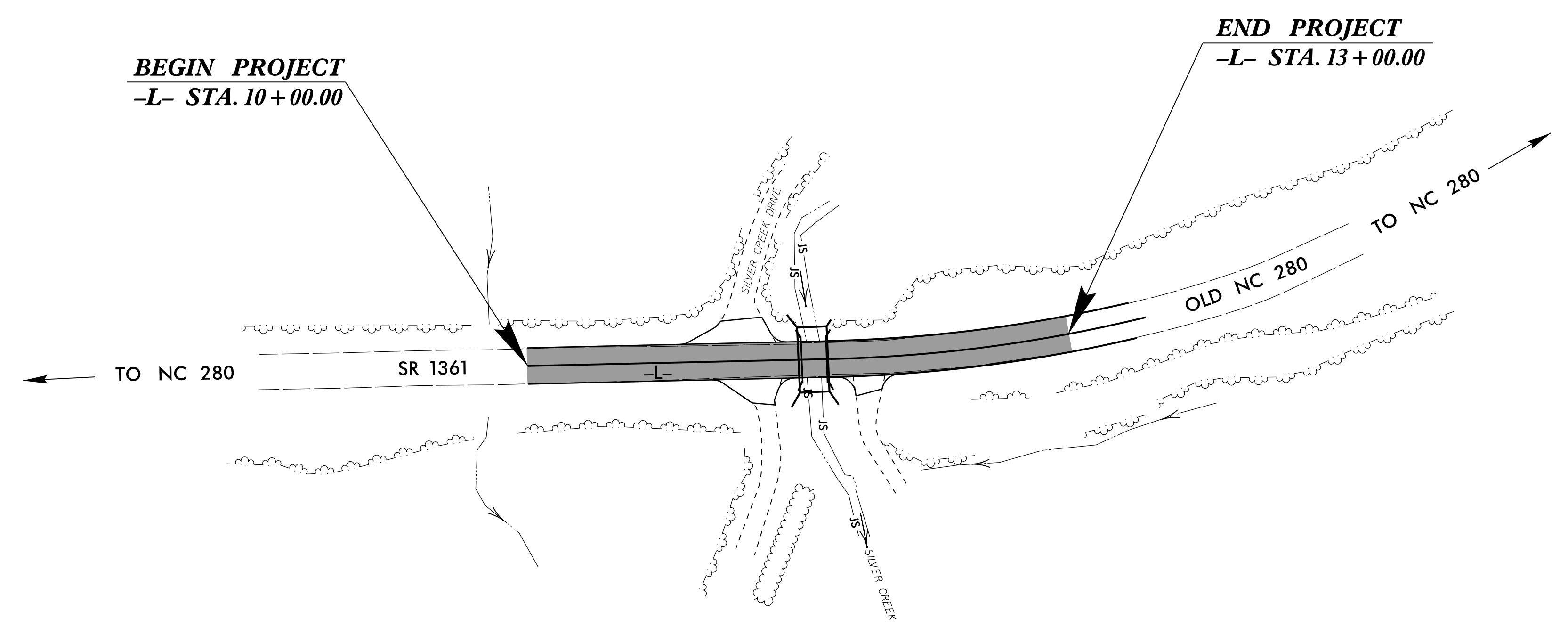
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSYLVANIA COUNTY

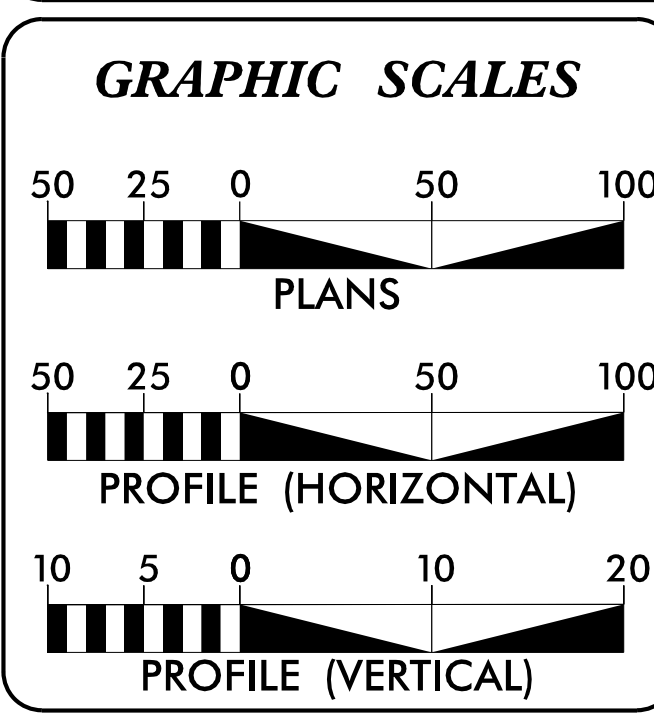
**LOCATION: BRIDGE No. 870162 ON SR 1361 (OLD NC HWY. 280)
OVER SILVER CREEK**

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND CULVERT

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-6024	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.14.R.126	-	PE	
17BP.14.R.126	-	RW, UTIL.	
48219.3.1	BRZ-1361(011)	CONST.	



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UNLESS ALL SIGNATURES COMPLETED



DESIGN DATA
ADT 2009 = 400

T = 6 %
V = 35 MPH

FUNC CLASS =
LOCAL
SUBREGIONAL

PROJECT LENGTH

TOTAL LENGTH = 0.057 MILES

Prepared In the Office of:
RS&H
ARCHITECTS-ENGINEERS-PLANNERS, INC.
1520 SOUTH BOULEVARD, SUITE 200
CHARLOTTE, NC 28203

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JULY 24, 2014

LETTING DATE:
APRIL 9, 2019

JENNIFER FARINO, PE
PROJECT ENGINEER

CHARLES YOUNG, PE
PROJECT DESIGN ENGINEER

ADAM DOCKERY
NCDOT CONTACT

HYDRAULICS ENGINEER

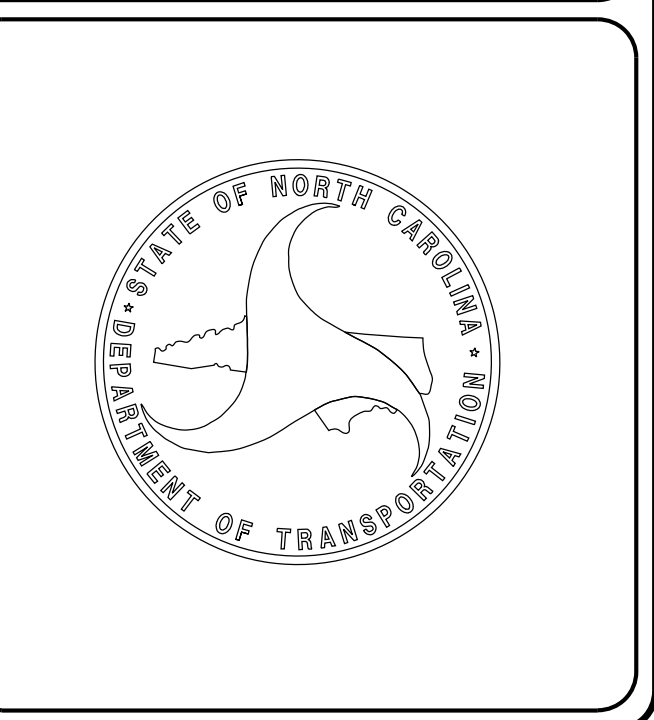
3/19/2019

P.E.

ROADWAY DESIGN ENGINEER

3/19/2019

P.E.



19-MAR-2019 09:43
R:\Roadway\Proj\870162_Rdy_rsh.dgn
\$\$\$\$\$SERVNAME\$\$\$\$\$



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

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
1C	SURVEY CONTROL SHEET
2A-1	PAVEMENT SCHEDULE, TYPICAL SECTIONS
2C-1	W-BEAM RAIL SECTION
2C-2	GUARDRAIL AT-1 END UNIT
3B-1	SUMMARY OF DRAINAGE QUANTITIES SUMMARY OF GUARDRAIL, EARTHWORK SUMMARY, AND PAVEMENT REMOVAL SUMMARY
4	PLAN AND PROFILE SHEET
TMP-1 THRU TMP-4	TRANSPORTATION MANAGEMENT PLAN
PMP-1 THRU PMP-2	PAVEMENT MARKING PLAN
EC-1 THRU EC-5	EROSION CONTROL PLAN
UO-1 THRU UO-2	UTILITY BY OTHERS PLAN
X-1A	CROSS SECTION SUMMARY SHEET
X-1 THRU X-4	CROSS SECTIONS
C-1 THRU C-3	CULVERT PLANS
SN	STRUCTURE STANDARD NOTES SHEET

GENERAL NOTES

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 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.

UTILITIES:
UTILITY OWNERS ON THIS PROJECT ARE DUKE ENERGY
ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

RIGHT-OF-WAY MARKERS:
ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY CONTRACT IN ACCORDANCE WITH SECTION 801 OF THE 2018 NORTH CAROLINA STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.

STANDARD DRAWINGS

2018 ROADWAY ENGLISH STANDARD DRAWINGS EFF. 01-16-2018
REV.

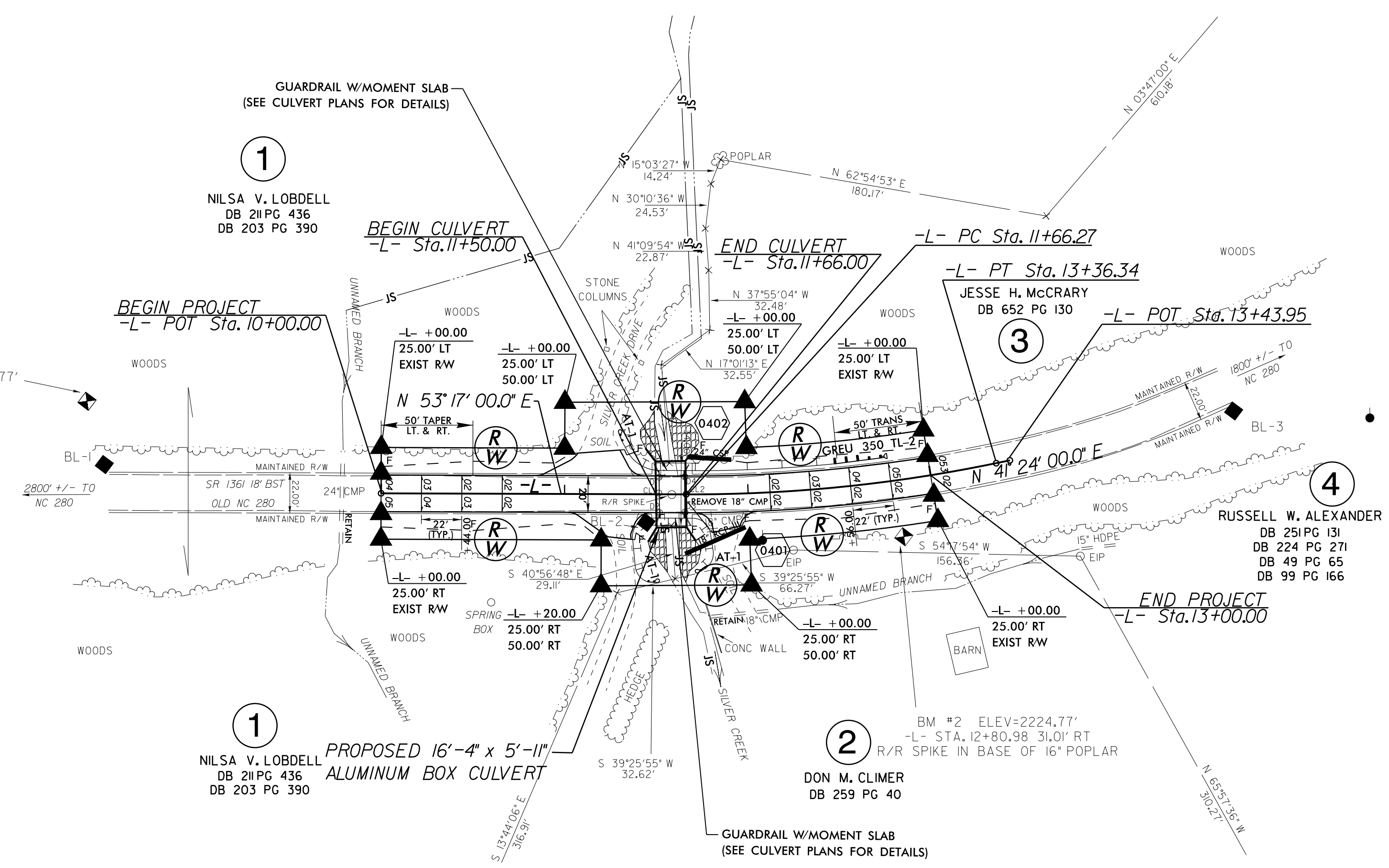
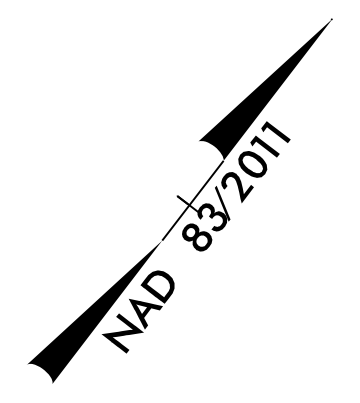
The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January, 2018 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superlevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
862.01	Guardrail Placement
862.02	Guardrail Installation
876.01	Rip Rap in Channels

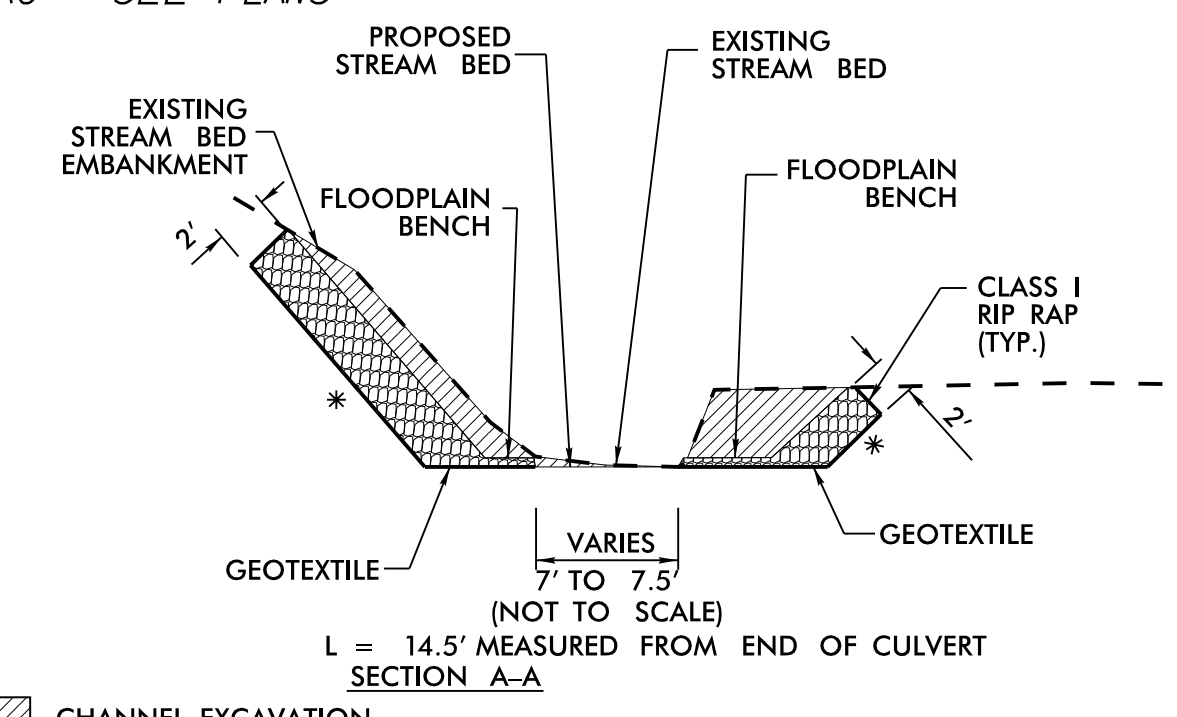
8.17.19

BRIDGE NO. 870162

PROJECT REFERENCE NO. B-6024	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

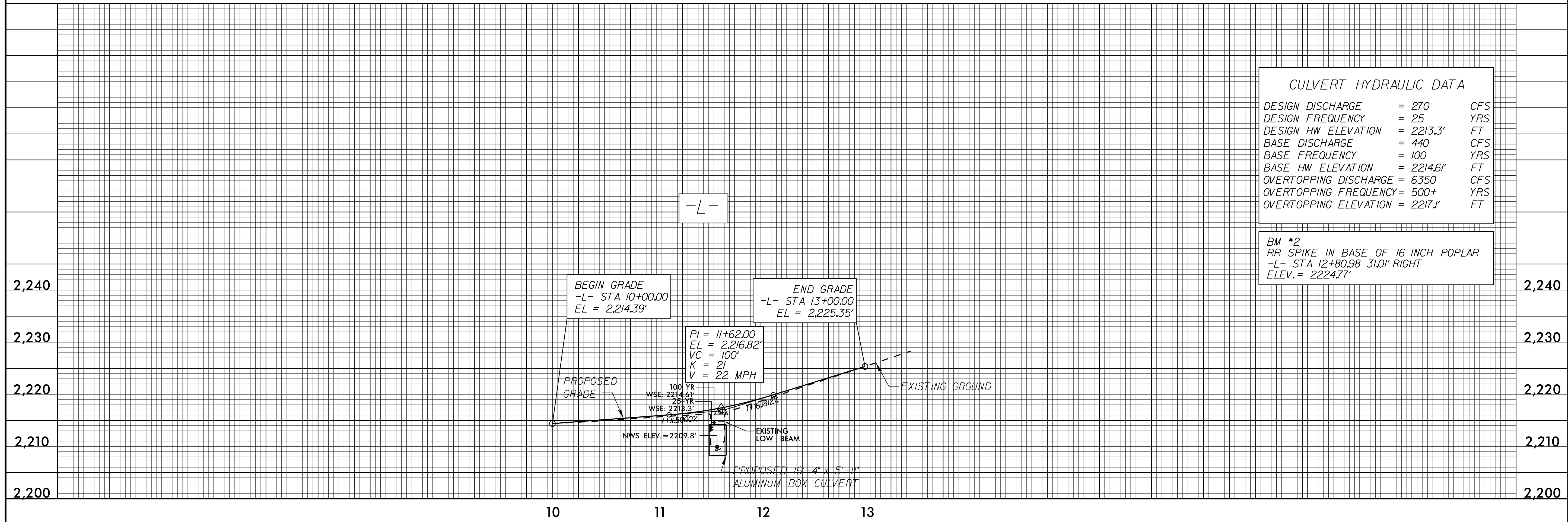


-L- CURVE DATA
 PI Sta 12+51.61
 $\Delta = 11^\circ 53' 00.0''$ (LT)
 $D = 6' 59'' 14.2''$
 $L = 170.07'$
 $T = 85.34'$
 $R = 820.00'$
 $e = .06$
 $V = 30$ MPH
 $RO = \text{SEE PLANS}$



- NOTES:**
- SEE CULVERT SURVEY REPORT FOR CHANNEL SHAPING AND TIE INS AROUND CULVERT.
 - DESIGN SPEED FOR VERTICAL ALIGNMENT BASED ON 20MPH PER SRTG.

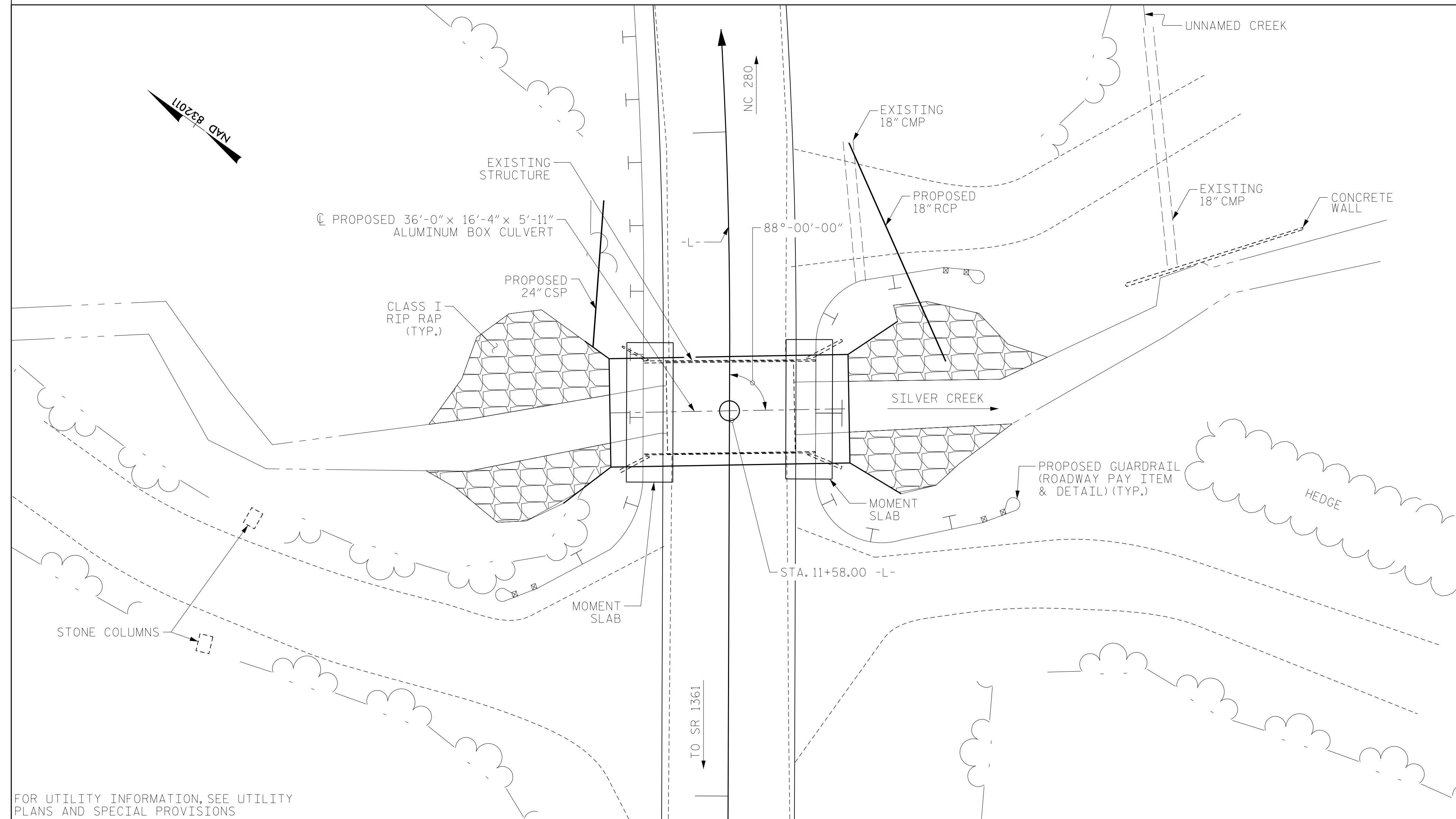
NOTE: 10' RADII USED AT DRIVEWAYS
 FOR CULVERT PLANS, SEE SHEET C-1 THRU C-3



DESIGN DISCHARGE	= 270	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 2213.3'	FT
BASE DISCHARGE	= 440	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 2214.6'	FT
OVERTOPPING DISCHARGE	= 6350	CFS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	= 2217.1'	FT

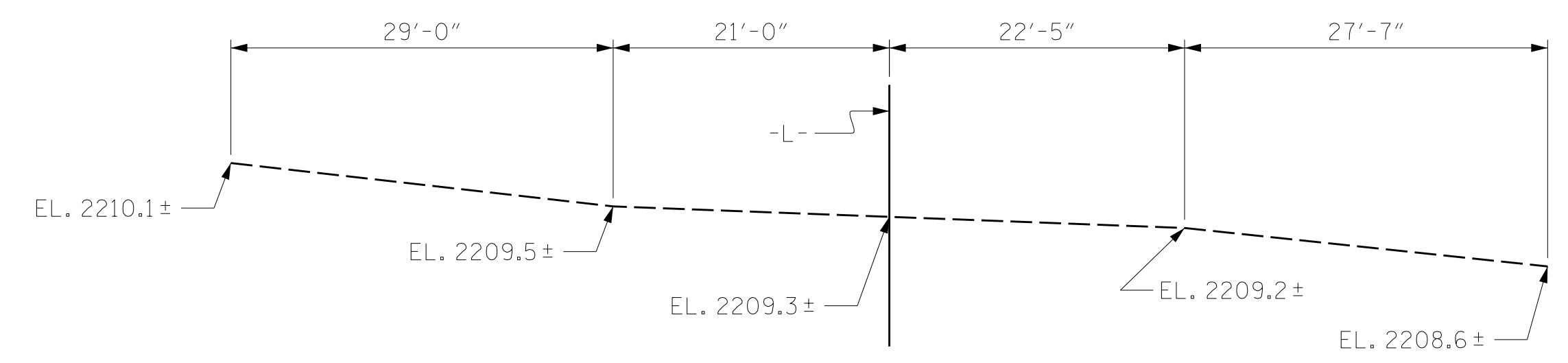
BM #2
 RR SPIKE IN BASE OF 16 INCH POPLAR
 -L- STA 12+80.98 31.01' RIGHT
 ELEV. = 2224.77'

BENCHMARK #2: RAILROAD SPIKE IN BASE OF 16" POPLAR 31.01' RT. OF -L- STA. 12+80.98 EL. 2224.77'



LOCATION SKETCH

FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS



PROFILE ALONG CULVERT

TOTAL STRUCTURE QUANTITIES	
REMOVAL OF STRUCTURE AT STA. 11+58.00 -L- LUMP SUM	
CULVERT EXCAVATION AT STA. 11+58.00 -L- LUMP SUM	
ALUMINUM BOX CULVERT AT STA. 11+58.00 -L- LUMP SUM	
RIP RAP, CLASS I	76 TONS
GEOTEXTILE FOR DRAINAGE	97 SQ. YDS.
FOUNDATION CONDITIONING MATERIAL	45 TONS
ASBESTOS ASSESSMENT	LUMP SUM
* EPOXY COATED REINFORCING STEEL	1,666 LBS.
* CLASS AA CONCRETE	17.0 C.Y.
* CLASS II TYPE I SELECT MATERIAL	12 TONS
* PAYMENT FOR MOMENT SLAB	

GRADE DATA	
GRADE POINT ELEV. @ STA. 11+58.00 -L- BED ELEV.	= 2217.25
ROADWAY SLOPES	= 2208.10
	= VARIES

HYDRAULIC DATA	
DESIGN DISCHARGE	= 270 CFS
FREQUENCY OF DESIGN FLOOD	= 25 YRS
DESIGN HIGH WATER ELEVATION	= 2213.3
DRAINAGE AREA	= 0.67 SQ. MI.
BASE DISCHARGE (Q100)	= 440 CFS
BASE HIGH WATER ELEVATION	= 2214.61

OVERTOPPING FLOOD DATA	
OVERTOPPING DISCHARGE	= 6350 CFS
FREQUENCY OF OVERTOPPING FLOOD	= 500 YRS+
OVERTOPPING FLOOD ELEVATION	= 2217.1

DRAWN BY : MAL DATE : 08/2014
 CHECKED BY : TRP DATE : 08/2014
 DESIGN ENGINEER OF RECORD : RLB DATE : 08/2014

NOTES

- ASSUMED LIVE LOAD= HL-93 OR ALTERNATE LOADING.
- CULVERT IS TO BE DESIGNED FOR A MINIMUM FILL DEPTH OF 2.83 FT. AND A MAXIMUM FILL DEPTH OF 3.25 FT.
- THE RESIDENT ENGINEER SHALL CHECK THE LENGTH OF CULVERT BEFORE STAKING IT OUT TO MAKE CERTAIN THAT IT WILL PROPERLY TAKE CARE OF THE FILL.
- FOR ALUMINUM BOX CULVERT, SEE SPECIAL PROVISIONS.
- ALL MATERIALS SHALL MEET THE REQUIREMENTS OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES DATED JANUARY 2018.
- THE DETAILS SHOWN ARE FOR GENERAL LAYOUT ONLY. THE SUPPLIER SHALL PROVIDE DESIGNS AND DETAILS FOR REVIEW AND APPROVAL THAT MEET THE REQUIREMENTS OF AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12, AND ARE SEALED BY A NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER.
- GUARDRAIL POST LOCATIONS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER TO ENSURE ADEQUATE COVER FOR INSTALLATION.
- THE EXISTING STRUCTURE CONSISTING OF 1 SPAN @ 14'-6", TIMBER FLOOR ON TIMBER JOISTS SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED FOR LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE DETERIORATE DURING CONSTRUCTION OF THE PROPOSED CULVERT, A LOAD LIMIT MAY BE POSTED AND MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.
- REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.
- THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.
- EXCAVATE ONE FOOT BELOW CULVERT AND FOOTING AND REPLACE WITH FOUNDATION CONDITIONING MATERIAL IN ACCORDANCE WITH SECTION 414 OF THE STANDARD SPECIFICATIONS.
- THE BOX CULVERT MAY BE DESIGNED FOR A FACTORED RESISTANCE OF UP TO 1.3 TSF AND BEARING ON ALLUVIAL SOILS. CHECK FIELD CONDITIONS FOR THE REQUIRED NOMINAL BEARING RESISTANCE OF 2.9 TSF JUST BEFORE PLACING CONCRETE.
- FOR EROSION CONTROL MEASURES, CULVERT DIVERSION DETAILS AND PAY ITEM, SEE EROSION CONTROL PLANS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.
- FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.
- THIS STRUCTURE SHALL BE DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
- THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH "HEC 18-EVALUATING SCOUR AT BRIDGES."
- NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE STREAM BED AT THE PROJECT SITE DURING CULVERT CONSTRUCTION. NATIVE MATERIAL IS SUBJECT TO APPROVAL BY THE ENGINEER AND MAY BE SUBJECT TO PERMIT CONDITIONS.
- THE 24" Ø PIPE THROUGH THE WINGWALL OF THE CULVERT SHALL BE LOCATED BY THE ENGINEER.
- FOR ASBESTOS ASSESSMENT, SEE SPECIAL PROVISIONS.

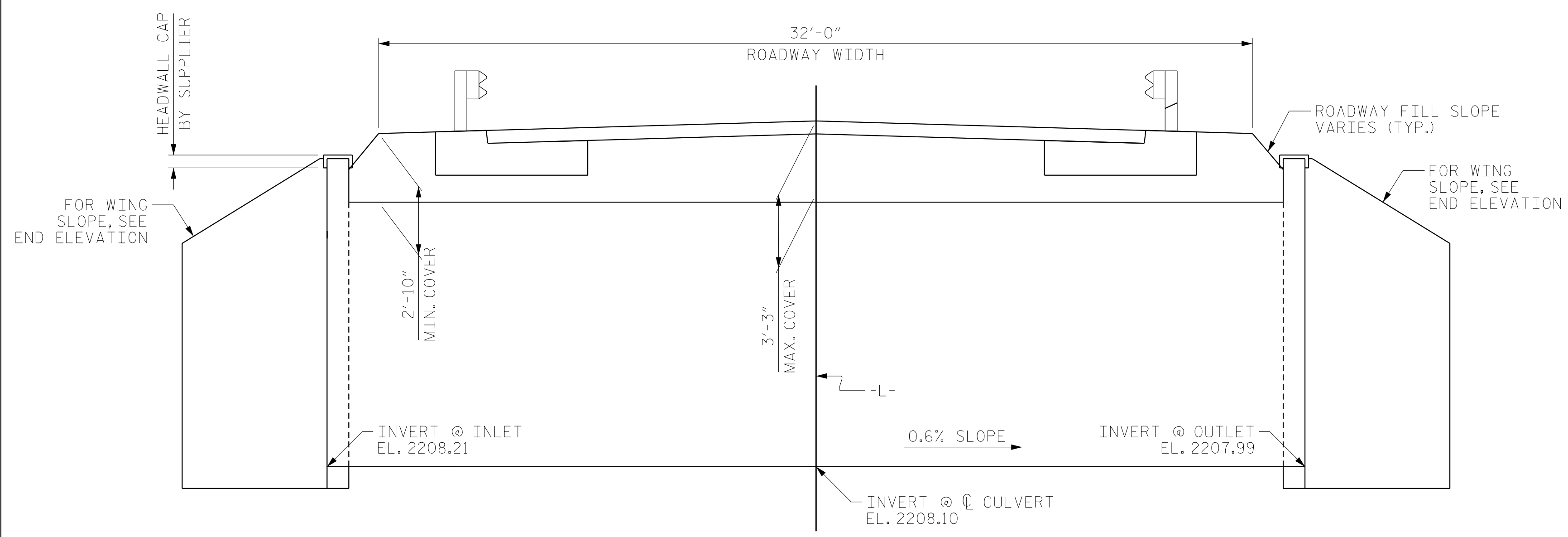
PROJECT NO. B-6024
TRANSYLVANIA COUNTY
 STATION: 11+58.00 -L-

SHEET 1 OF 3 REPLACES BRIDGE NO. 162

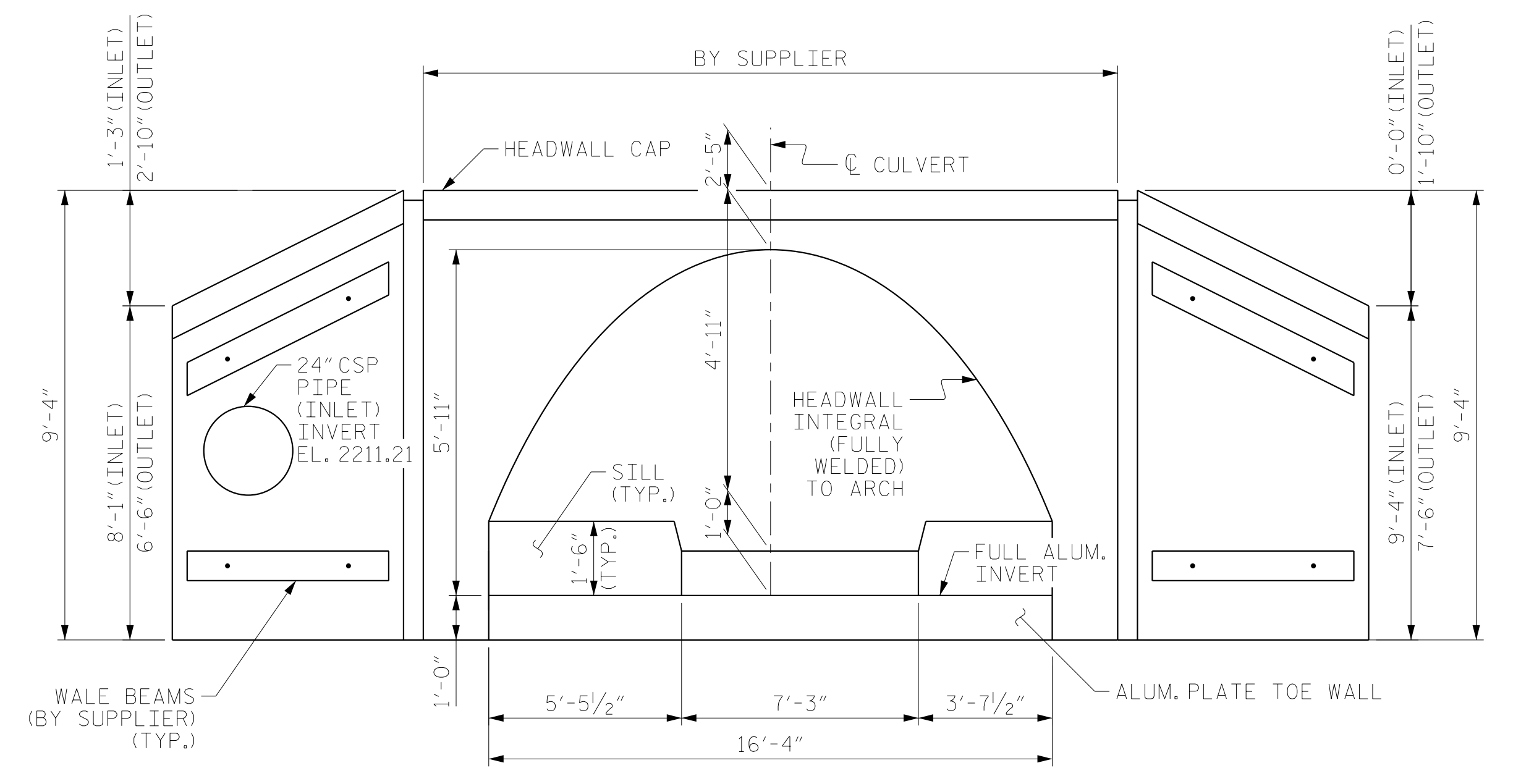


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SINGLE 16'-4" X 5'-11" ALUMINUM BOX CULVERT
 FOR CULVERT OVER SILVER CREEK ON SR 1361 BETWEEN NC 280 AND SR 1361

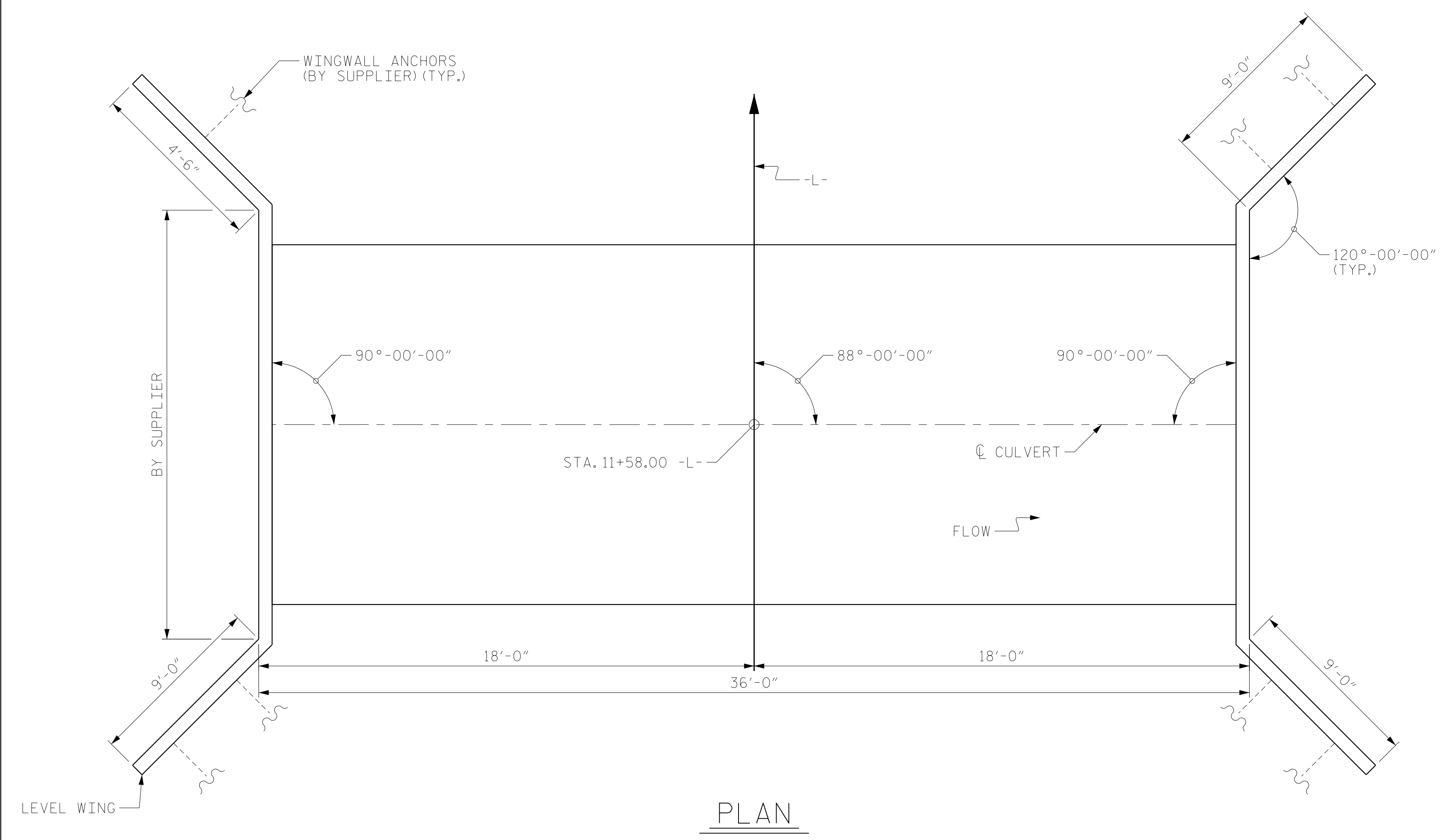
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-1
1	RLB	11/09/18	3			TOTAL SHEETS
2			4			3



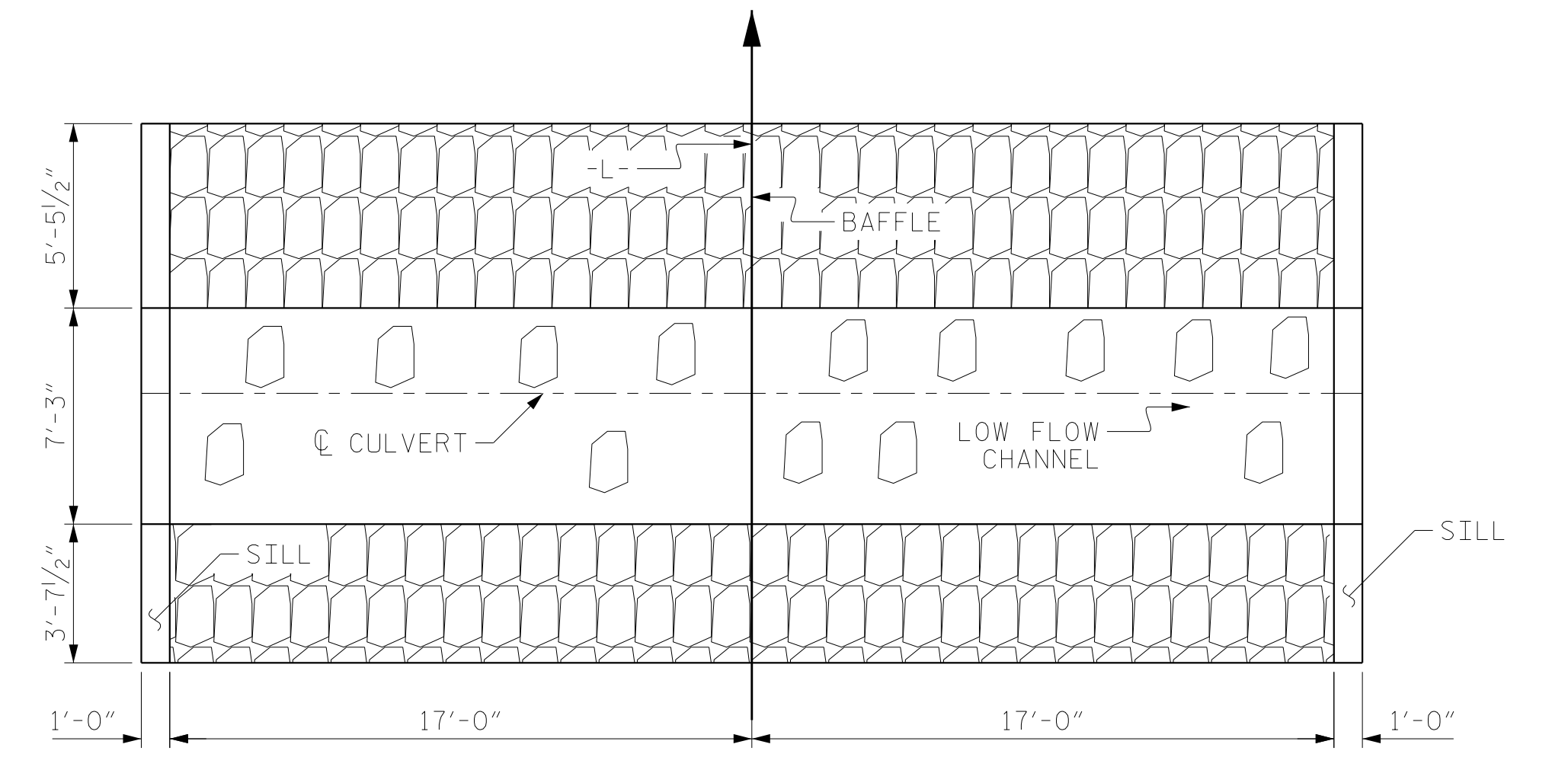
CULVERT SECTION NORMAL TO ROADWAY



END ELEVATION



PLAN



PLAN OF FLOOR SILL LAYOUT

BACKFILL WITH NATIVE BED MATERIAL TO SILL HEIGHT

PROJECT NO. B-6024
TRANSYLVANIA COUNTY
 STATION: 11+58.00 -L-
 SHEET 2 OF 3



RS&H
 RS&H Architects-Engineers-Planners, Inc.

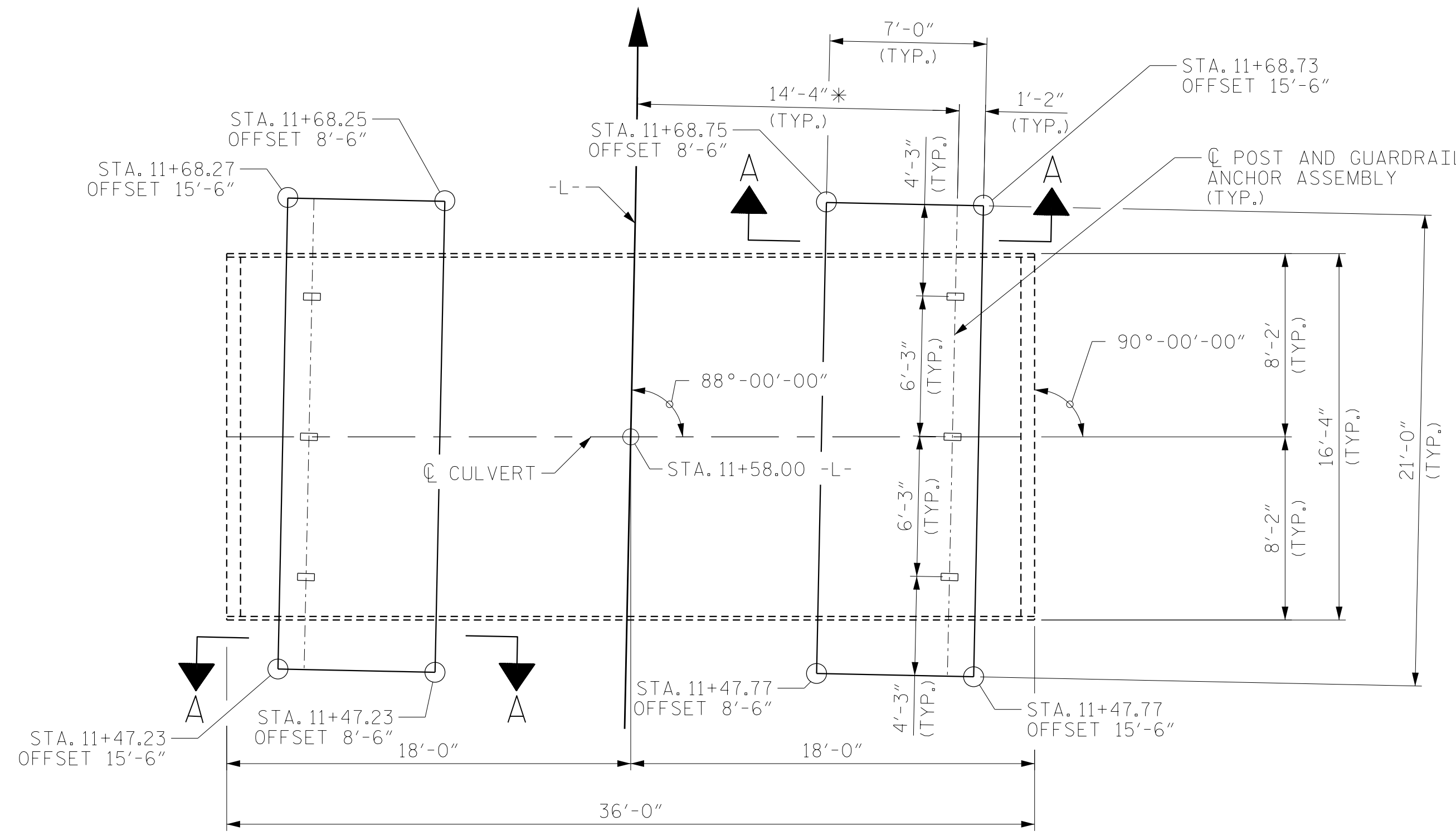
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SINGLE 16'-4" X 5'-11"
ALUMINUM BOX CULVERT
 FOR CULVERT OVER SILVER
 CREEK ON SR 1361 BETWEEN
 NC 280 AND SR 1361

DRAWN BY : MAL DATE : 08/2014
 CHECKED BY : TRP DATE : 08/2014
 DESIGN ENGINEER OF RECORD : RLB DATE : 08/2014

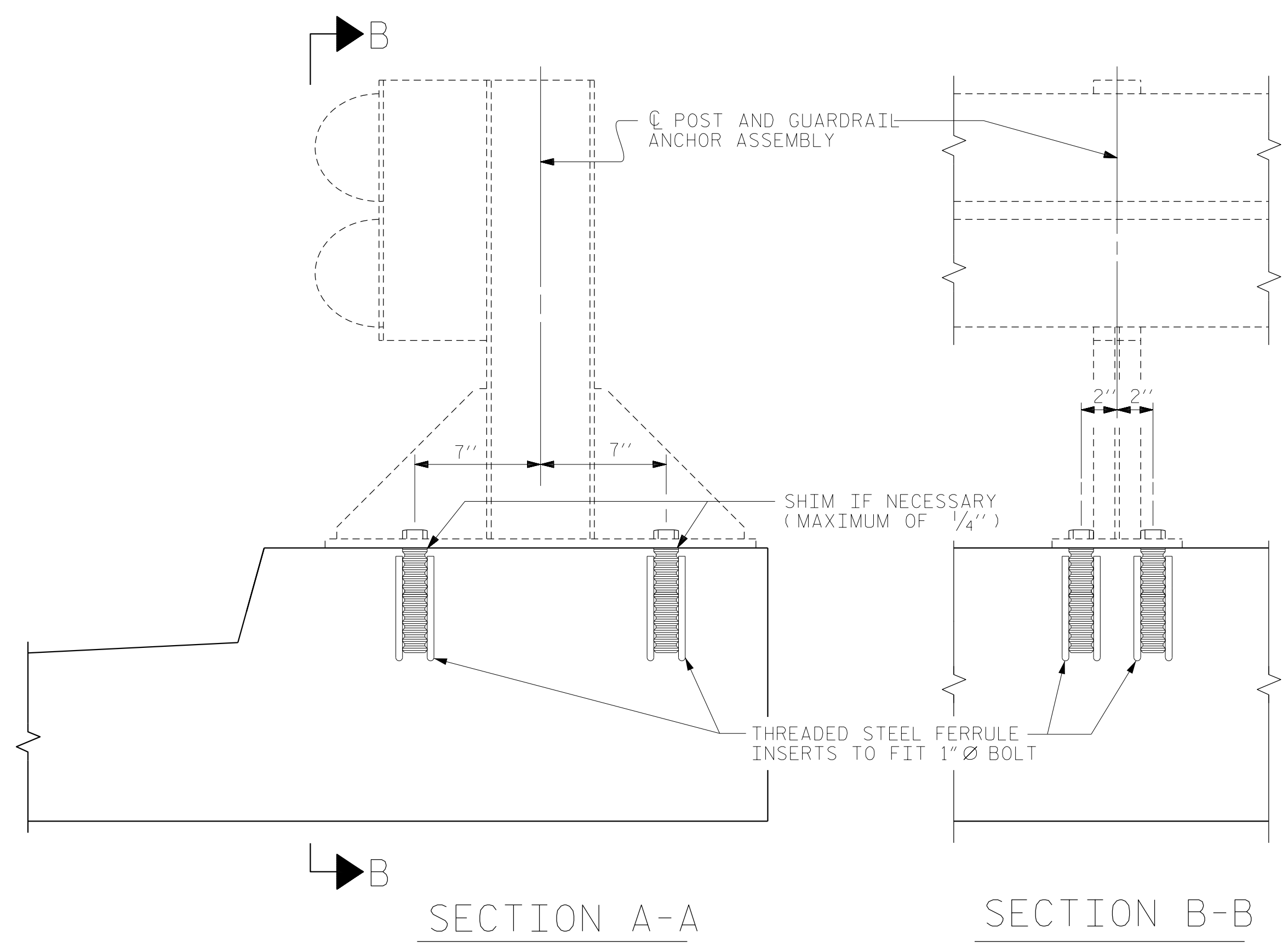
DOCUMENT NOT CONSIDERED
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-2
1	RLB	11/09/18	3			TOTAL SHEETS
2			4			3

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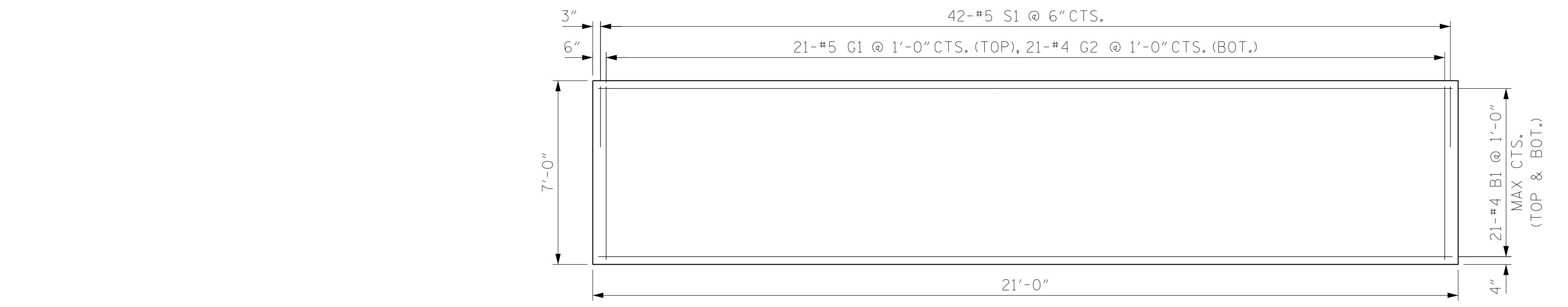


PLAN OF GUARDRAIL POST SPACING & MOMENT SLAB LAYOUT
 * THIS DIMENSION TO BE CONFIRMED BY THE ENGINEER IN THE FIELD.

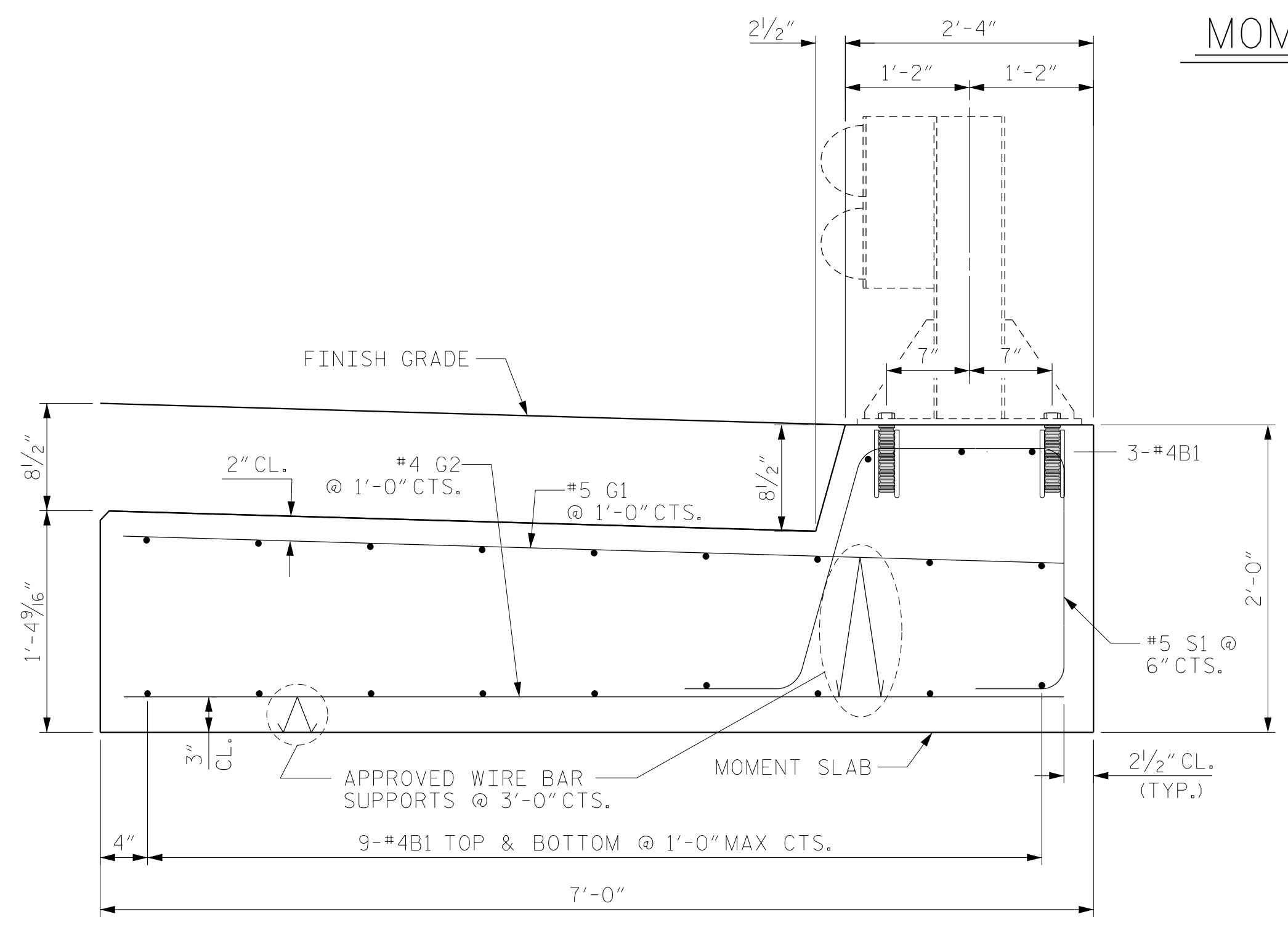


SECTION A-A

SECTION B-B



MOMENT SLAB PLAN



TYPICAL SECTION THROUGH MOMENT SLAB

LOOKING UPSTATION

NOTES

FERRULES SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF AASHTO M169, GRADE 12L14 AND SHALL HAVE A MINIMUM LENGTH OF THREADS OF 2 1/2".

ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE 1" Ø AND MEET THE REQUIREMENTS OF ASTM A325. BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED.

PAYMENT FOR GUARDRAIL, POSTS, ADHESIVELY ANCHORED ANCHOR BOLTS AND POST BASE PLATES IS INCLUDED IN ROADWAY PAY ITEMS.

THE GUARDRAIL POSTS SHALL NOT BE ATTACHED UNTIL THE MOMENT SLAB HAS ATTAINED AN AGE OF THREE CURING DAYS OR A MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI. IN ADDITION, NO FILL MATERIAL, ASPHALT, OR CONSTRUCTION EQUIPMENT IS ALLOWED ON THE MOMENT SLAB PRIOR TO SATISFYING THE MINIMUM CONCRETE CURING AND STRENGTH REQUIREMENTS.

ALL REINFORCING STEEL IN THE MOMENT SLAB SHALL BE EPOXY COATED.

THE CONTRACT PRICE FOR "CLASS AA CONCRETE" AND "EPOXY COATED REINFORCING STEEL" WILL BE FULL COMPENSATION FOR SUBMITTALS, LABOR, TOOLS, EQUIPMENT, MOMENT SLAB MATERIALS, EXCAVATING, BACKFILLING, HAULING AND REMOVING EXCAVATED MATERIALS, AND SUPPLYING ANY INCIDENTALS NECESSARY TO CONSTRUCT THE CONCRETE MOMENT SLAB.

FOR GUARDRAIL ANCHORAGE DETAILS, SEE STANDARD DRAWING 862.03 SHEET 7 OF 7.

PLACE CONCRETE SLAB ON 6" MINIMUM (3" MINIMUM ABOVE TOP OF CULVERTS) OF COMPACTED CLASS II TYPE I SELECT MATERIAL.

BAR TYPE					
ALL BAR DIMENSIONS ARE OUT TO OUT.					
BILL OF MATERIAL FOR ONE MOMENT SLAB					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	21	#4	STR	20'-8"	290
G1	21	#5	STR	6'-7"	144
G2	21	#4	STR	6'-7"	92
S1	42	#5	1	7'-0"	307
EPOXY COATED REINFORCING STEEL					833 LBS.
CLASS AA CONCRETE MOMENT SLAB					8.5 C.Y.

PROJECT NO. B-6024
TRANSYLVANIA COUNTY
 STATION: 11+58.00 -L-

SHEET 3 OF 3



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SINGLE 16'-4" X 5'-11" ALUMINUM BOX CULVERT
 FOR CULVERT OVER SILVER CREEK ON SR 1361 BETWEEN NC 280 AND SR 1361

DRAWN BY : TWL DATE : 03/2019
 CHECKED BY : JMR DATE : 03/2019
 DESIGN ENGINEER OF RECORD : RLB DATE : 03/2019

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-3
1			3			TOTAL SHEETS
2			4			3

STANDARD NOTES

DESIGN DATA:

SPECIFICATIONS	- - - - -	A.A.S.H.T.O. (CURRENT)
LIVE LOAD	- - - - -	SEE PLANS
IMPACT ALLOWANCE	- - - - -	SEE A.A.S.H.T.O.
STRESS IN EXTREME FIBER OF STRUCTURAL STEEL - AASHTO M270 GRADE 36	- -	20,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50W	- -	27,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50	- -	27,000 LBS. PER SQ. IN.
REINFORCING STEEL IN TENSION - GRADE 60	- - -	24,000 LBS. PER SQ. IN.
CONCRETE IN COMPRESSION	- - - - -	1,200 LBS. PER SQ. IN.
CONCRETE IN SHEAR	- - - - -	SEE A.A.S.H.T.O.
STRUCTURAL TIMBER - TREATED OR UNTREATED EXTREME FIBER STRESS	- - -	1,800 LBS. PER SQ. IN.
COMPRESSION PERPENDICULAR TO GRAIN OF TIMBER	- - - - -	375 LBS. PER SQ. IN.
EQUIVALENT FLUID PRESSURE OF EARTH	- - - - -	30 LBS. PER CU. FT. (MINIMUM)

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2018 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N.C. DEPARTMENT OF TRANSPORTATION.

STEEL SHEET PILING FOR PERMANENT OR TEMPORARY APPLICATIONS SHALL BE HOT ROLLED.

CONCRETE:

UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF ALL STRUCTURES WITH THE EXCEPTION THAT: CLASS AA CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURES, ABUTMENT BACKWALLS, AND APPROACH SLABS; AND CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP.

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED $\frac{3}{4}$ " WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO $1\frac{1}{2}$ " RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A $\frac{1}{4}$ " FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A $\frac{1}{4}$ " RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 12" INTO THE OLD CONCRETE AND GROUTED INTO PLACE WITH 1:2 CEMENT MORTAR.

ALLOWANCE FOR DEAD LOAD DEFLECTION, SETTLEMENT, ETC. IN CASTING SUPERSTRUCTURES:

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.

ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.

IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.

WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE $\frac{7}{8}$ " \emptyset SHEAR STUDS FOR THE $\frac{3}{4}$ " \emptyset STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - $\frac{7}{8}$ " \emptyset STUDS FOR 4 - $\frac{3}{4}$ " \emptyset STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF $\frac{7}{8}$ " \emptyset STUDS ALONG THE BEAM AS SHOWN FOR $\frac{3}{4}$ " \emptyset STUDS BASED ON THE RATIO OF 3 - $\frac{7}{8}$ " \emptyset STUDS FOR 4 - $\frac{3}{4}$ " \emptyset STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST $\frac{3}{16}$ " IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY $\frac{1}{16}$ INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.

METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

GENERALLY, IN CASE OF DISCREPANCY, THIS STANDARD SHEET OF NOTES SHALL GOVERN OVER THE SPECIFICATIONS, BUT THE REMAINDER OF THE PLANS SHALL GOVERN OVER NOTES HEREON, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE SPECIFICATIONS ARTICLE 105-4.

ENGLISH

JANUARY, 1990

STD. NO. SN