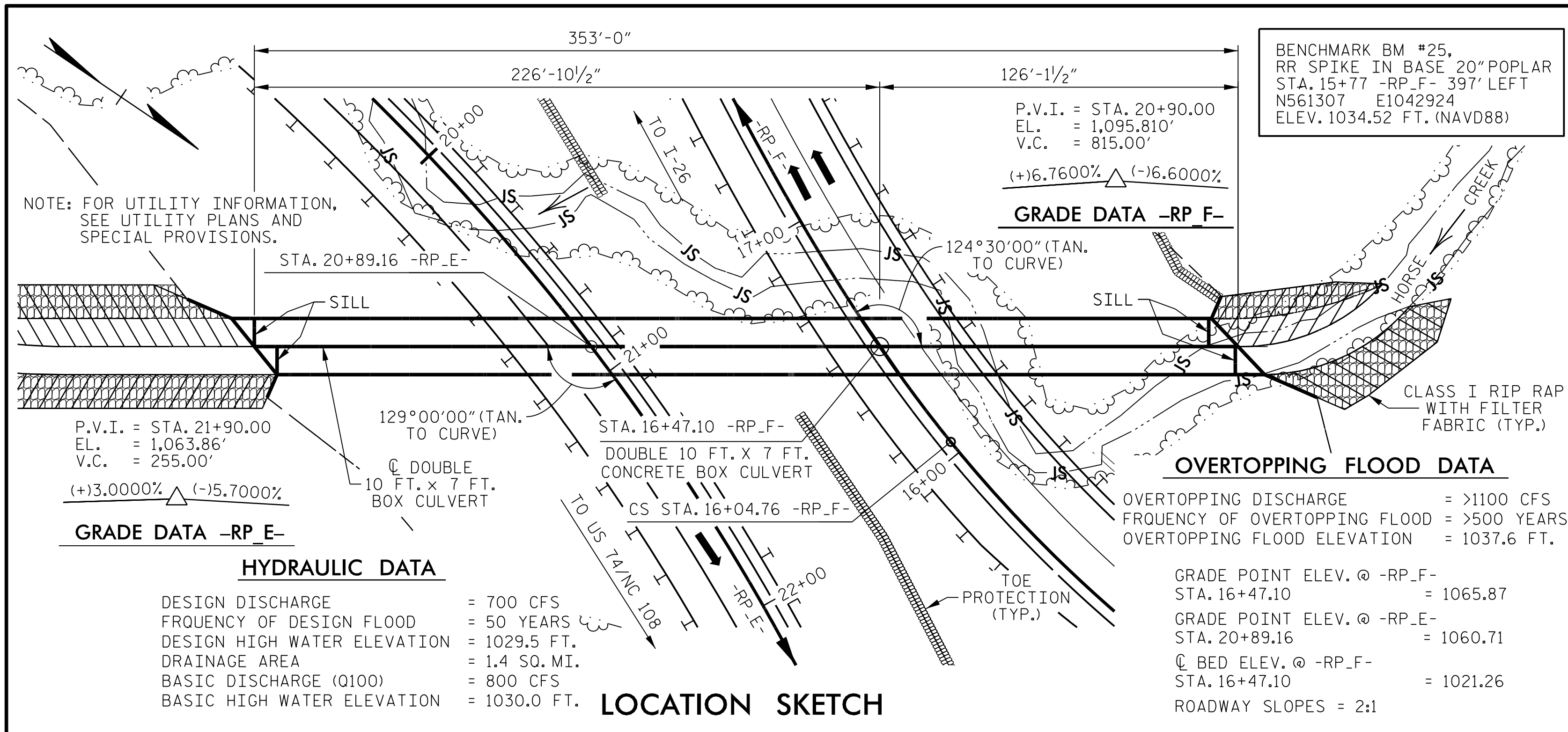


**This electronic collection of documents is provided
for the convenience of the user
and is Not a Certified Document –**

**The documents contained herein were originally issued
and sealed by the individuals whose names and license
numbers appear on each page, on the dates appearing
with their signature on that page.**

**This file or an individual page
shall not be considered a certified document.**



BENCHMARK BM #25,
RR SPIKE IN BASE 20" POPLAR
STA. 15+77 -RP_F- 397' LEFT
N561307 E1042924
ELEV. 1034.52 FT. (NAVD88)

NOTE: FOR UTILITY INFORMATION,
SEE UTILITY PLANS AND
SPECIAL PROVISIONS.

P.V.I. = STA. 21+90.00
EL. = 1,063.86'
V.C. = 255.00'
(+3.0000% (-)5.7000%)

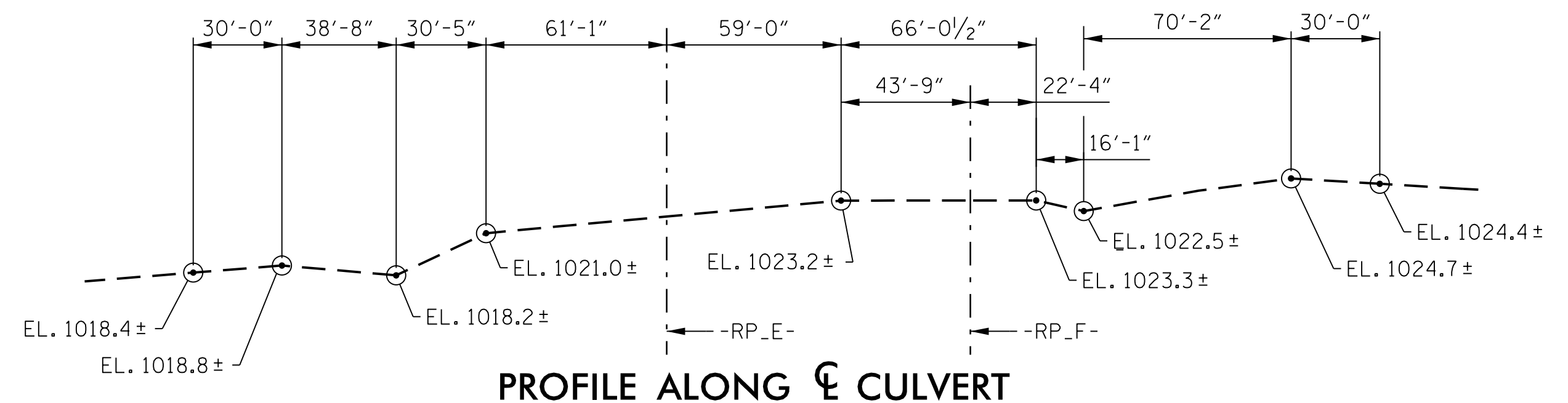
GRADE DATA -RP_E-
HYDRAULIC DATA

DESIGN DISCHARGE = 700 CFS
FREQUENCY OF DESIGN FLOOD = 50 YEARS
DESIGN HIGH WATER ELEVATION = 1029.5 FT.
DRAINAGE AREA = 1.4 SQ. MI.
BASIC DISCHARGE (Q100) = 800 CFS
BASIC HIGH WATER ELEVATION = 1030.0 FT.

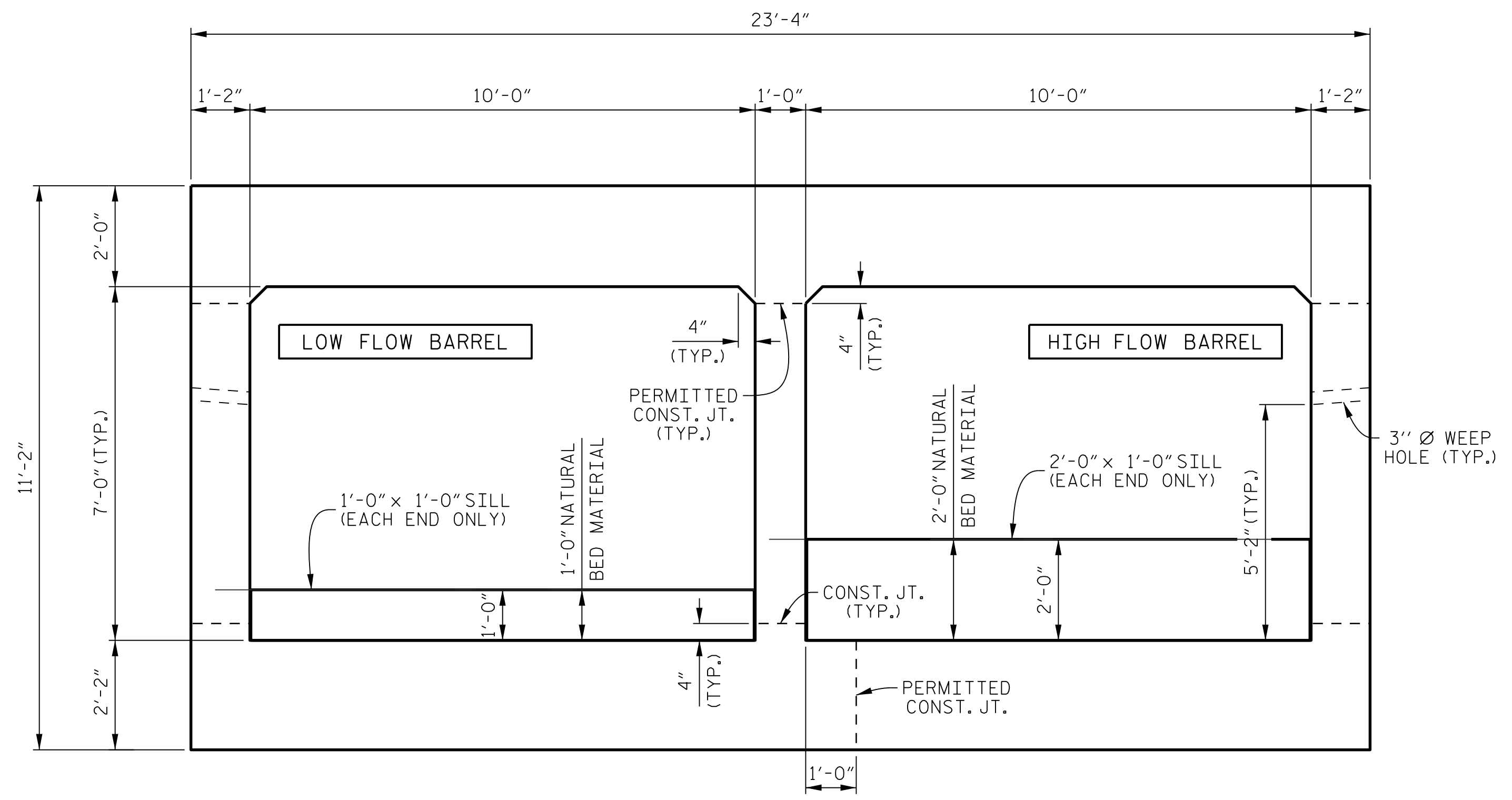
LOCATION SKETCH

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE = >1100 CFS
FREQUENCY OF OVERTOPPING FLOOD = >500 YEARS
OVERTOPPING FLOOD ELEVATION = 1037.6 FT.
GRADE POINT ELEV. @ -RP_F- STA. 16+47.10 = 1065.87
GRADE POINT ELEV. @ -RP_E- STA. 20+89.16 = 1060.71
@ BED ELEV. @ -RP_F- STA. 16+47.10 = 1021.26
ROADWAY SLOPES = 2:1



PROFILE ALONG CULVERT



TYPICAL BARREL SECTION

(RIGHT ANGLE SECTION, LOOKING DOWNSTREAM)

NOTES

- ASSUMED LIVE LOAD -----HL93 OR ALTERNATE LOADING.
- DESIGN FILL----- 40.0 FEET.
- FOR OTHER DESIGN DATA AND NOTES, SEE "STANDARD NOTES" SHEET.
- 3" Ø WEEP HOLES INDICATED TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.
- CONCRETE IN CULVERTS TO BE POURED IN THE FOLLOWING ORDER:
1. WING FOOTINGS AND FLOOR SLAB INCLUDING 4" OF ALL VERTICAL WALLS.
2. THE REMAINING PORTIONS OF THE WALLS AND WINGS FULL HEIGHT, FOLLOWED BY ROOF SLAB AND HEADWALLS.
- THE ENGINEER SHALL CHECK THE LENGTH OF CULVERT BEFORE STAKING IT OUT TO MAKE CERTAIN THAT IT WILL PROPERLY TAKE CARE OF THE FILL.
- DIMENSIONS FOR WING LAYOUT AS WELL AS ADDITIONAL REINFORCING STEEL EMBEDDED IN BARREL ARE SHOWN ON WING SHEET.
- TRANSVERSE CONSTRUCTION JOINTS SHALL BE USED IN THE BARREL, SPACED TO LIMIT THE POURS TO A MAXIMUM OF 70 FEET. LOCATION OF JOINTS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.
- AT THE CONTRACTOR'S OPTION, HE MAY SPLICE THE VERTICAL REINFORCING STEEL IN THE INTERIOR FACE OF EXTERIOR WALL AND BOTH FACES OF INTERIOR WALLS ABOVE LOWER WALL CONSTRUCTION JOINT. THE SPLICE LENGTH SHALL BE AS PROVIDED IN THE SPLICE LENGTH CHART SHOWN ON THE PLANS. EXTRA WEIGHT OF STEEL DUE TO THE SPLICES SHALL BE PAID FOR BY THE CONTRACTOR.
- NO SEPARATE PAYMENT WILL BE MADE FOR THE 30 LB. ROOFING FELT. THE 30 LB. ROOFING FELT SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR THE "CLASS A CONCRETE".
- A 3 FOOT STRIP OF FILTER FABRIC SHALL BE ATTACHED TO THE FILL FACE OF THE WING COVERING THE ENTIRE LENGTH OF THE EXPANSION JOINT.
- DOWELS MAY BE SHIFTED SLIGHTLY AS NECESSARY TO CLEAR REINFORCING STEEL IN THE FLOOR SLAB.
- ALL REINFORCING STEEL SHALL BE GRADE 60.
- STEEL IN THE BOTTOM SLAB MAY BE SPLICED AT THE PERMITTED CONSTRUCTION JOINT AT THE CONTRACTOR'S OPTION. EXTRA WEIGHT OF STEEL DUE TO THE SPLICES SHALL BE PAID FOR BY THE CONTRACTOR.
- FOR HYDRAULIC AND DRAINAGE INFORMATION, SEE ROADWAY AND DRAINAGE PLANS.
- UNDERCUT OF SOFT FOUNDATION SOILS UNDER THE CULVERT MAY BE REQUIRED AT THE DISCRETION OF THE RESIDENT ENGINEER'S OFFICE. THE LIMITS OF THIS UNDERCUT EXCAVATION SHALL BE AT LEAST THE LIMITS OF THE BOX CULVERT INCLUDING THE WINGS. NO SEPARATE PAYMENT WILL BE MADE FOR ANY TEMPORARY SHEETING, UNDERCUT, OR UNSUITABLE MATERIAL REPLACEMENT AS REQUIRED TO CONSTRUCT THE PROPOSED CULVERT. PAYMENT IS INCLUDED IN THE LUMP SUM PRICE FOR CULVERT EXCAVATION.
- DETAILED DRAWINGS FOR FALSEWORK AND FORMS FOR THIS CULVERT SHALL BE SUBMITTED. SEE SHEET C-6.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
- FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

SEE SECTION 414 OF STANDARD SPECIFICATIONS FOR CULVERT EXCAVATION AND BACKFILLING.

EXCAVATE 1 FOOT BELOW CULVERT AND FOOTING, AND REPLACE WITH FOUNDATION CONDITIONING MATERIAL IN ACCORDANCE WITH ARTICLE 414-4 OF THE STANDARD SPECIFICATIONS.

CONSTRUCT THE REINFORCED CONCRETE BOX CULVERT AT STA. 20+89.16 -RP_E- WITH 8" OF CAMBER AND STA. 16+47.2 -RP_F- WITH 6" OF CAMBER TO ACCOUNT FOR ANTICIPATED SETTLEMENT.

BACKFILL WITH SELECT MATERIAL, CLASS VI MEETING THE REQUIREMENTS OF SECTION 1016 OF THE STANDARD SPECIFICATIONS.

DEWATERING MAY BE REQUIRED DURING CONSTRUCTION.

ISOLATED AREAS OF WITH WEAK SOILS MAY REQUIRE EXCAVATION MORE THAN 1 FOOT BELOW THE BOTTOM OF THE CULVERT AND FOOTINGS.

SUBGRADE NEEDS TO BE VERIFIED BY THE ENGINEER OR THERE REPRESENTATIVE PROP TO PLACING FOUNDATION CONDITIONING MATERIAL.

USE TYPE 2 GEOTEXTILE UNDER RIP-RAP FOR BANK STABILIZATION MEETING SECTION 1056 OF THE NC DOT STANDARD SPECIFICATIONS.

FOR CULVERT DIVERSION DETAILS AND PAY ITEMS, SEE EROSION CONTROL PLANS.

NATIVE MATERIAL BETWEEN SILLS IN THE CULVERT SHALL PROVIDE A CONTINUOUS LOW FLOW CHANNEL. NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE STREAM OR FLOOD-PLAIN AT THE PROJECT SITE DURING CONSTRUCTION. ONLY MATERIAL THAT IS EXCAVATED FROM THE STREAM BED MAY BE USED TO LINE THE LOW FLOW CULVERT BARREL. RIP-RAP MAY BE USED TO SUPPLEMENT THE NATIVE MATERIAL IN THE HIGH FLOW CULVERT BARRELS. IF RIP-RAP IS USED TO LINE THE HIGH FLOW CULVERT BARREL, NATIVE MATERIAL SHOULD BE PLACED ON TOP TO FILL VOIDS AND PROVIDE A FLAT SURFACE FOR ANIMAL PASSAGE. NATIVE MATERIAL IS SUBJECT TO APPROVAL BY THE ENGINEER AND MAY BE SUBJECT TO PERMIT CONDITIONS.

SILLS ARE TO BE 1.0 FT WIDE, CAST SEPARATELY AND ATTACHED BY DOWELS.

TOP OF LOW FLOW SILLS SHOULD MATCH STREAM BED ELEVATION IN LOW CHANNEL OF STREAM (THALWEG).

DO NOT SET ELEVATION OF HIGH SILLS ABOVE BANK FULL.

COIR FIBER MATTING SHALL BE SECURED ON THE BENCHES AND PLACED BEHIND RIP RAP TO PREVENT WASHOUT OF SEDIMENT THROUGH GAPS.

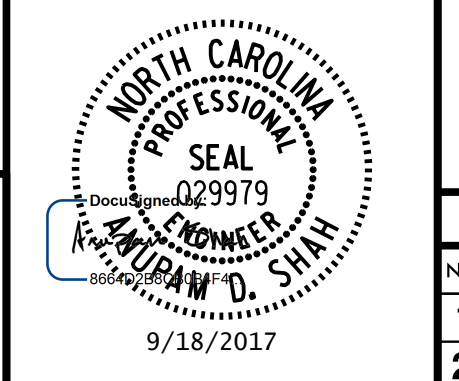
PRECAST REINFORCED BOX CULVERT OPTION WILL BE ALLOWED. SPECIAL CARE SHALL BE TAKEN TO ENSURE THAT ALL PRECAST SEGMENTS ARE PROPERLY MATCH CAST, DRY FIT AND MATCH MARKED IN ORDER TO ACCOMMODATE THE REQUIRED CAMBERS AS NOTED.

IF A PRECAST BOX CULVERT IS USED, THE CONTRACTOR MUST SUBMIT A PRECAST CULVERT DESIGN AND OBTAIN APPROVAL PRIOR TO CONSTRUCTION. PRECAST UNITS SHALL BE ABLE TO DEFLECT AND ROTATE WITHOUT CAUSING DAMAGE TO JOINTS BETWEEN ABUTTING SEGMENTS AS STRUCTURAL FILL IS PLACED ON TOP OF IT AT ANY PHASE OF CONSTRUCTION. THE SUBMITTAL SHALL INCLUDE PHASING OF WORK AND THE ANTICIPATED DEFLECTION OF THE CULVERT, ALONG THE CULVERT PROFILE, AT EACH PHASE OF THE BACKFILLING PROCESS. DETAILS FOR THE WINGWALL ATTACHMENTS SHALL BE INCLUDED. SUBMISSION OF STRUCTURAL DETAILS DOES NOT ASSURE PRECAST CULVERT WILL BE APPROVED FOR THE PROJECT. PRECAST CULVERT SHALL BE DESIGNED AND SUBMITTED FOR REVIEW IN ACCORDANCE WITH THE "PRECAST REINFORCED CONCRETE BOX CULVERT AT STATION 16+47.10 -RP_F-" SPECIAL PROVISION.

TOTAL STRUCTURE QUANTITIES	
FOUNDATION CONDITIONING MATERIAL BOX CULVERT	656 TONS
CULVERT EXCAVATION	LUMP SUM
CLASS A CONCRETE	1613.3 CU. YDS.
REINFORCING STEEL	153,914 LBS.

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



PROJECT NO. I-4729A

POLK COUNTY

STATION: 16 + 47.10 -RP_F-

SHEET 1 OF 6 BRIDGE No. 740231

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DOUBLE 10 FT. X 7 FT.
CONCRETE BOX CULVERT
124° 30' 00" SKEW

REVISIONS						SHEET No. C-1
No.	BY:	DATE:	No.	BY:	DATE:	
1	SHAH	09-18-17	3			TOTAL SHEETS 6
2			4			STR. #3

REVISED NOTES.

DRAWN BY : T. DETMERS DATE : 7-17
CHECKED BY : D. WHONG DATE : 7-17
DESIGN ENGINEER : S. T. PHAN DATE : 7-17

PLANS PREPARED BY :
PARSONS
5540 CenterView Drive, Suite 217
Raleigh, NC 27606-3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

CHECKED _____ DATE _____
 BACK CHECKED _____ DATE _____
 CORRECTED _____ DATE _____
 VERIFIED _____ DATE _____
CHECK PRINT
 DRAWING CHECKED AGAINST CALCULATIONS
 AND CALCULATION CHECK CONFIRMED.
 BY _____ DATE 8/10/2017
 P005774g

LOAD AND RESISTANCE FACTOR RATING (LRFR) LRFR SUMMARY FOR REINFORCED CONCRETE BOX CULVERTS

LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING #	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE										COMMENT NUMBER
						LIVE-LOAD FACTORS (γ _{LL})	MOMENT				SHEAR					
							RATING FACTOR	BOX NUMBER	ELEMENT TYPE	DISTANCE FROM LEFT END OF ELEMENT (ft.)	RATING FACTOR	BOX NUMBER	ELEMENT TYPE	DISTANCE FROM LEFT END OF SPAN (ft.)		
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	N/A	N/A	--	1.75	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	
	HL-93 (OPERATING)	N/A	N/A	N/A	--	1.35	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	
	HS-20 (INVENTORY)	36.000	N/A	N/A	N/A	1.75	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	
	HS-20 (OPERATING)	36.000	N/A	N/A	N/A	1.35	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SH	12.500	N/A	N/A	N/A	1.40	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	
		S3C	21.500	N/A	N/A	N/A	1.40	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	
		S3A	22.750	N/A	N/A	N/A	1.40	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	
		S4A	26.750	N/A	N/A	N/A	1.40	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	
		S5A	30.500	N/A	N/A	N/A	1.40	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	
		S6A	34.500	N/A	N/A	N/A	1.40	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	
		S7B	38.500	N/A	N/A	N/A	1.40	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	
	S7A	40.000	N/A	N/A	N/A	1.40	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1		
	TRUCK TRACTOR SEMI-TRAILER (TTST)	T4A	28.250	N/A	N/A	N/A	1.40	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	
		T5B	32.000	N/A	N/A	N/A	1.40	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	
		T6A	36.000	N/A	N/A	N/A	1.40	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	
		T7A	40.000	N/A	N/A	N/A	1.40	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	
		T7B	40.000	N/A	N/A	N/A	1.40	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	
	PERMANENT LOADS		N/A	4	1.00	N/A	N/A	1.00	1	T	10.5	1.04	1	T	10	2

LOAD FACTORS

DESIGN LOAD RATING FACTORS

LOAD TYPE	MAX. FACTOR	MIN. FACTOR
DC	1.25	0.90
DW	1.50	0.65
EV	1.30	0.90
EH	1.35	0.90
ES	1.35	0.90
LS	1.75	--
WA	1.00	--

NOTES

RATING FACTORS ARE BASED ON THE STRENGTH I LIMIT STATE.

COMMENTS

- EFFECTS OF LIVE LOAD MAY BE NEGLECTED ACCORDING TO AASHTO LRFD 3.6.1.2.6A (DESIGN FILL = 40.0')
- CULVERTS WITH DEEP FILLS SHOULD BE EVALUATED FOR THE EFFECTS OF PERMANENT LOADS ONLY ACCORDING TO "THE MANUAL FOR BRIDGE EVALUATION 6A.5.12.10.3A".

CONTROLLING LOAD RATING

1 DESIGN LOAD RATING (HL-93)

2 DESIGN LOAD RATING (HS-20)

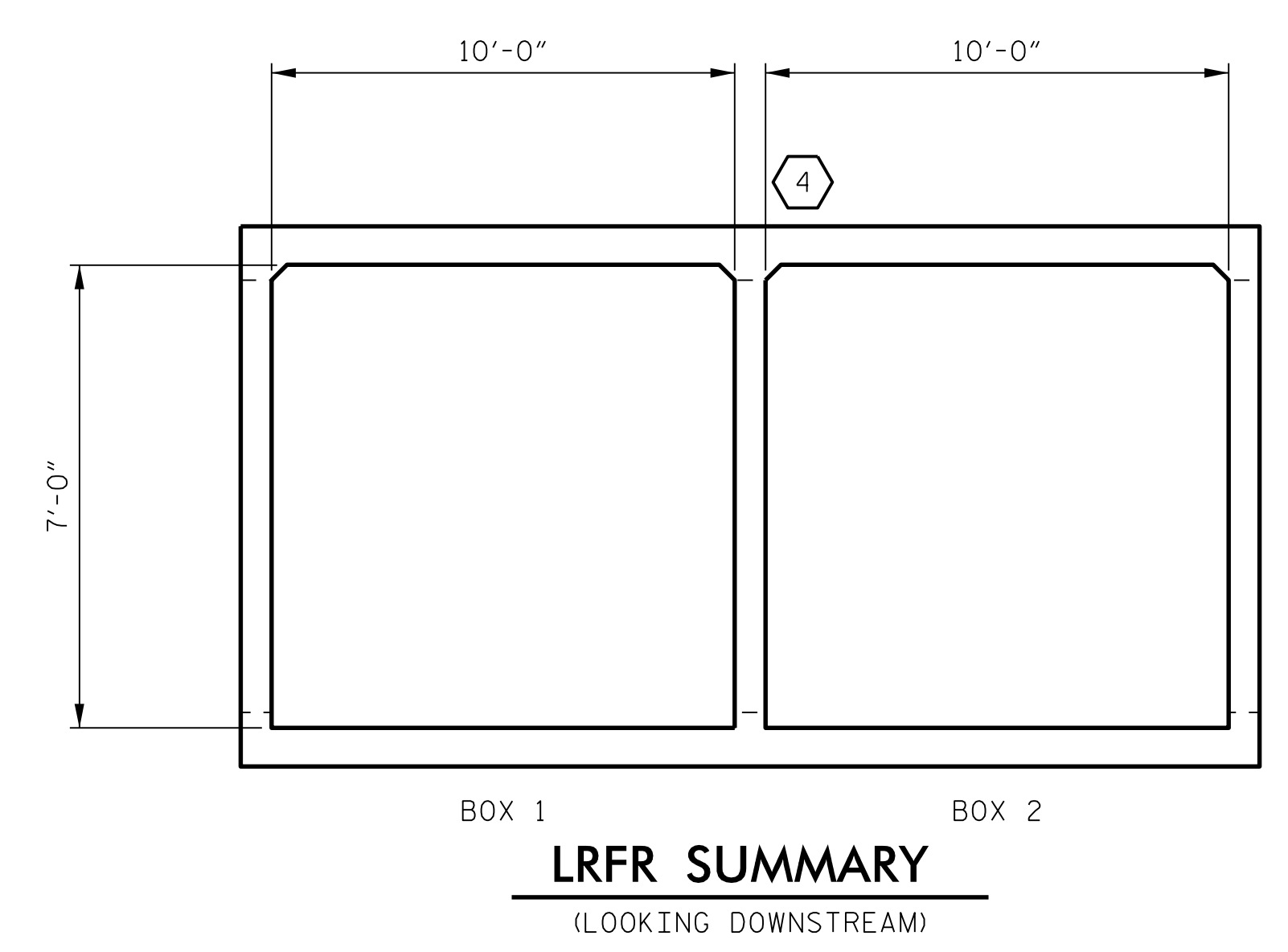
3 LEGAL LOAD RATING **

4 PERMANENT LOAD RATING

** SEE CHART FOR VEHICLE TYPE

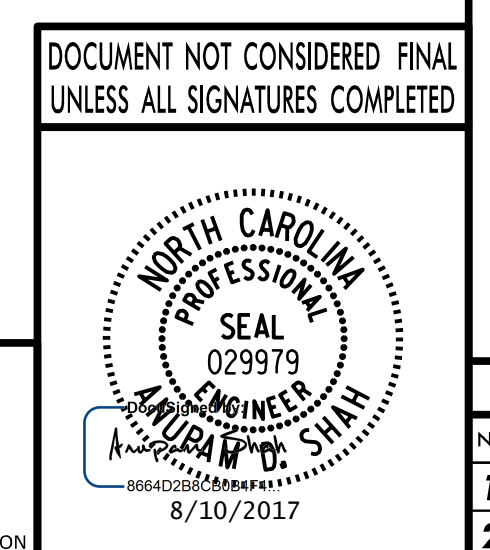
ELEMENT TYPE

T - TOP OF SLAB
B - BOTTOM OF SLAB



PROJECT NO. I-4729A
POLK COUNTY
 STATION: 16 + 47.10 -RP_F-

SHEET 2 OF 6



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

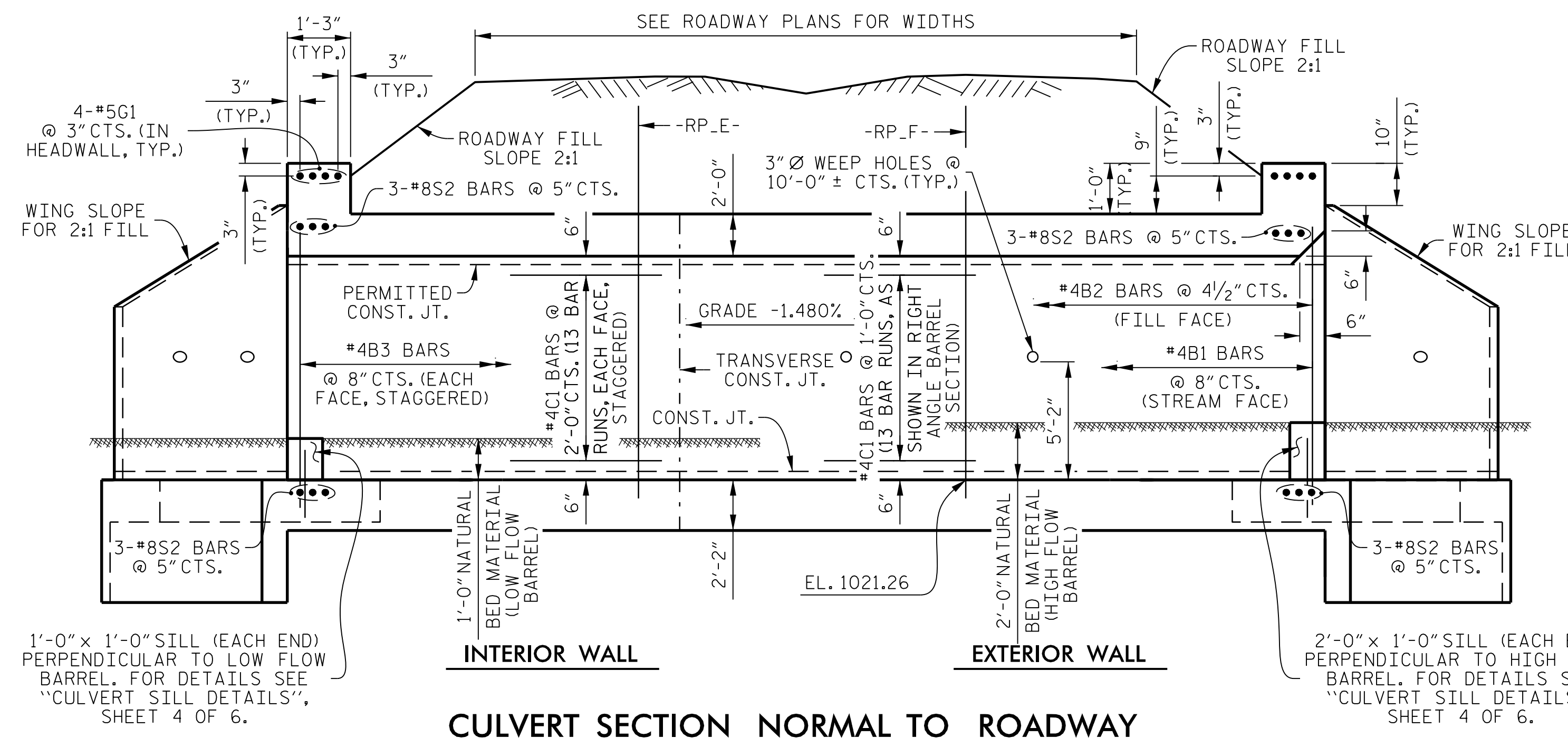
**STANDARD
 LRFR SUMMARY FOR
 REINFORCED CONCRETE
 BOX CULVERTS
 (INTERSTATE TRAFFIC)**

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	C-2
1			3			TOTAL SHEETS
2			4			6

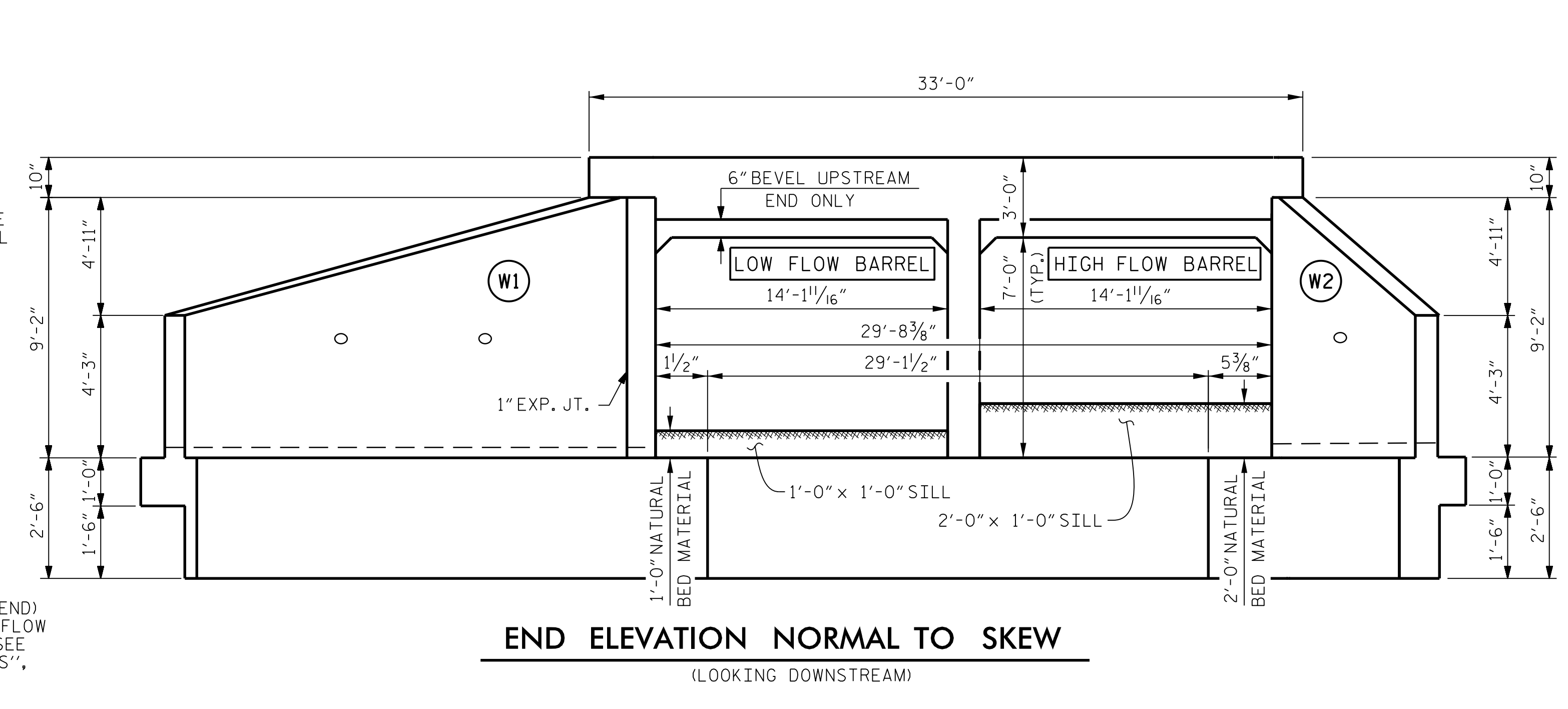
ASSEMBLED BY : K. E. LOFTON DATE : 7-17
 CHECKED BY : D. WHONG DATE : 7-17
 DRAWN BY : WMC 7/11 REV. 10/1/11 MAA/GM
 CHECKED BY : GM 7/11

DRAWN BY : K. E. LOFTON DATE : 7-17
 CHECKED BY : D. WHONG DATE : 7-17
 DESIGN ENGINEER : S. T. PHAN DATE : 7-17

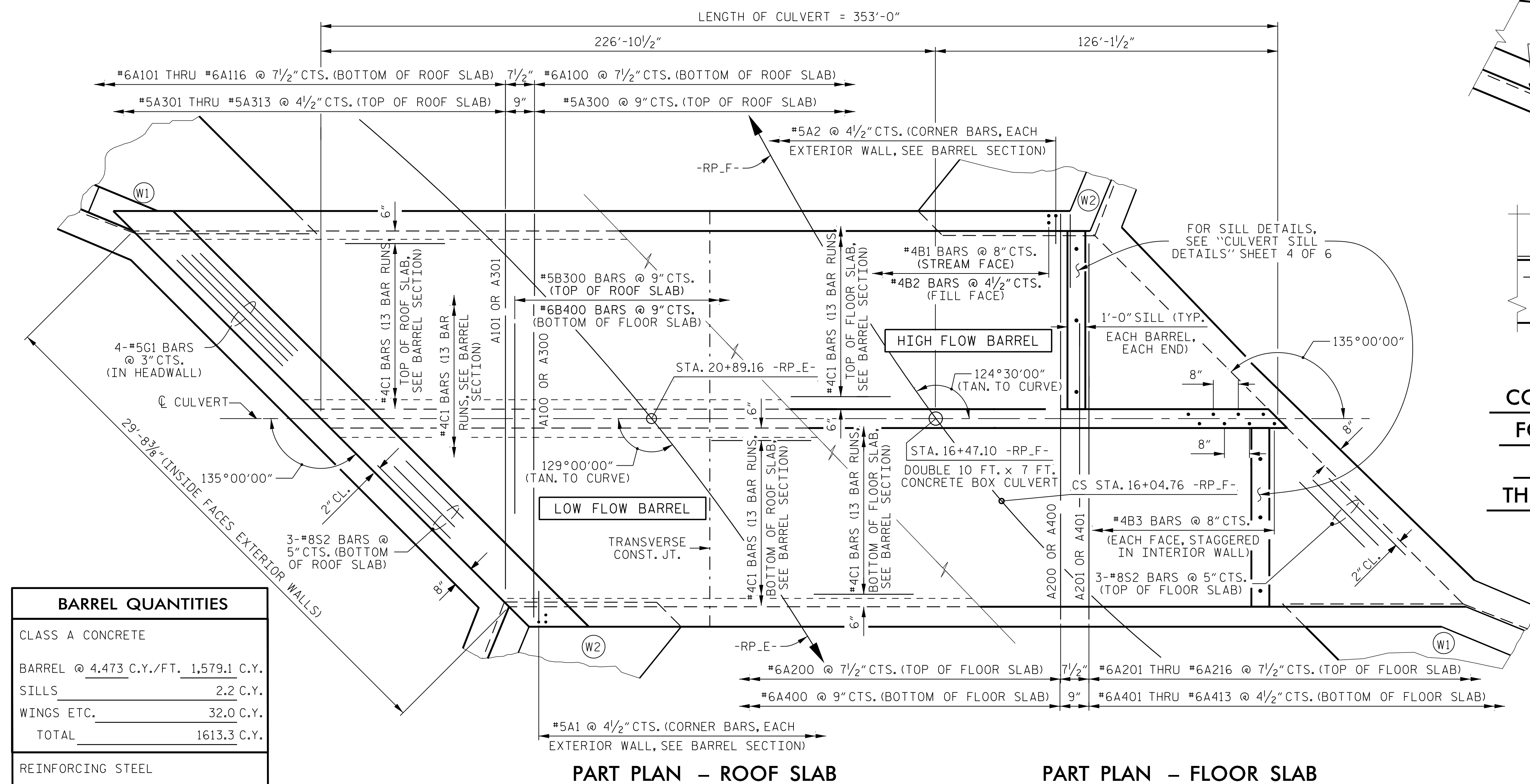
PLANS PREPARED BY :
PARSONS
 5540 CenterView Drive, Suite 217
 Raleigh, NC 27606-3386
 NC LICENSE No. F-0246
 FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION



CULVERT SECTION NORMAL TO ROADWAY

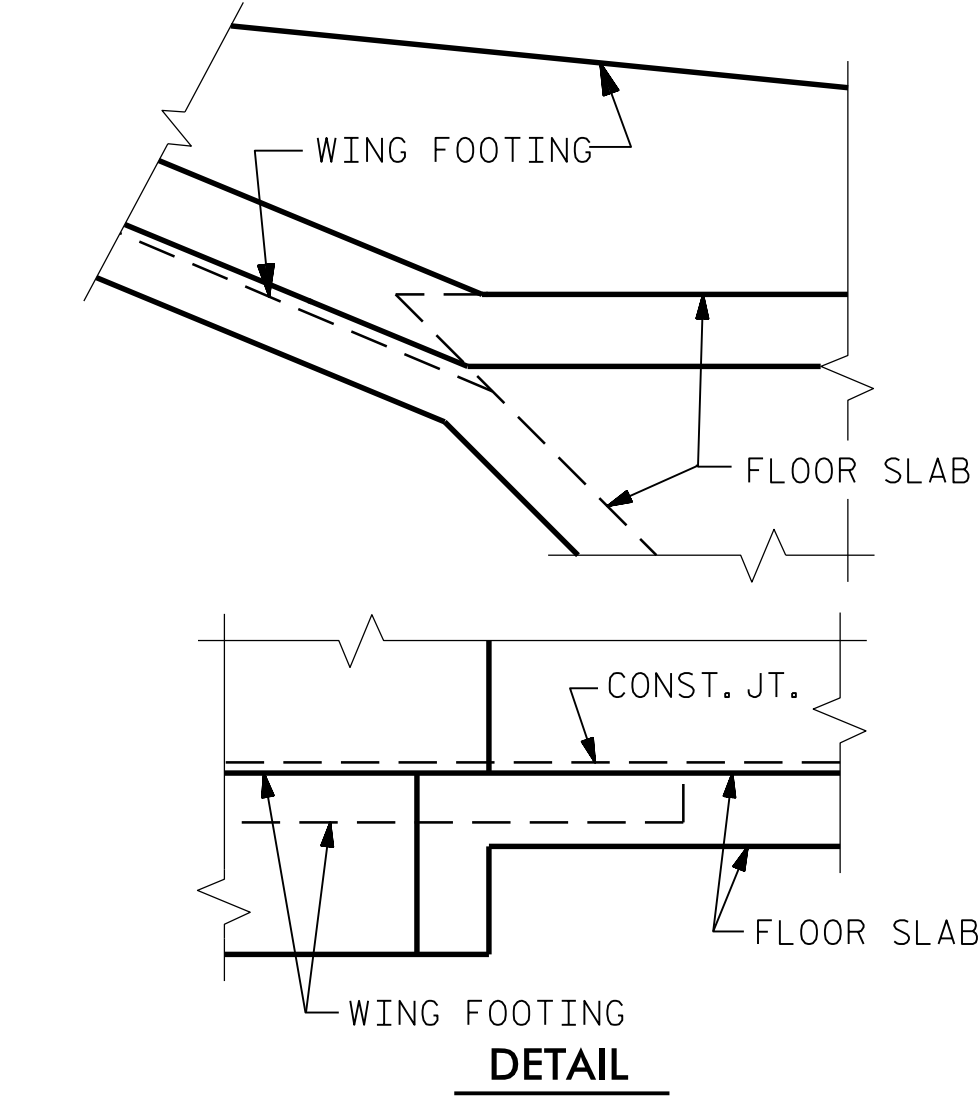


END ELEVATION NORMAL TO SKEW
(LOOKING DOWNSTREAM)

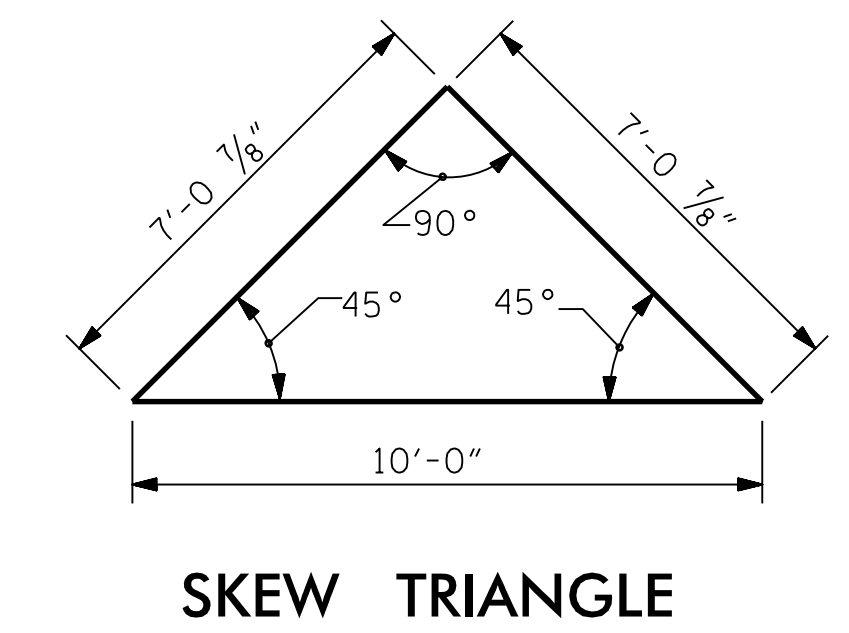


PART PLAN - ROOF SLAB

PART PLAN - FLOOR SLAB

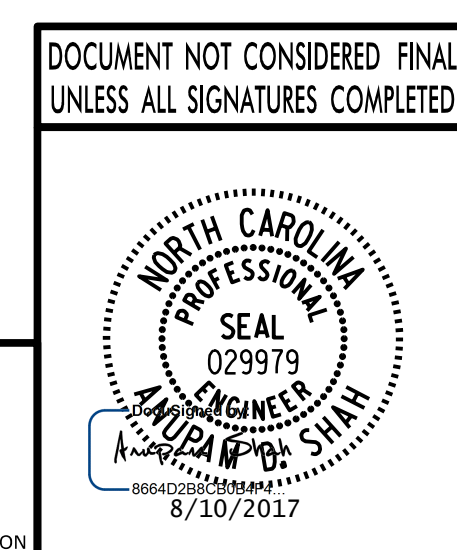


CONNECTION OF WING FOOTING AND FLOOR SLAB WHEN SLAB IS THICKER THAN FOOTING



SKEW TRIANGLE

BARREL QUANTITIES	
CLASS A CONCRETE	
BARREL @ 4.473 C.Y./FT.	1,579.1 C.Y.
SILLS	2.2 C.Y.
WINGS ETC.	32.0 C.Y.
TOTAL	1613.3 C.Y.
REINFORCING STEEL	
BARREL AND SILLS	152,313 LBS.
WINGS ETC.	1,601 LBS.
TOTAL	153,914 LBS.



PLANS PREPARED BY:
PARSONS
5540 CenterView Drive, Suite 217
Raleigh, NC 27606-3386
NC LICENSE No. F-0246

DRAWN BY: T. DETMERS DATE: 7-17
CHECKED BY: D. WHONG DATE: 7-17
DESIGN ENGINEER: S. T. PHAN DATE: 7-17

PROJECT NO. **I-4729A**
POLK COUNTY
STATION: **16+47.10 -RP_F-**

SHEET 3 OF 6

REVISIONS						SHEET No. C-3
No.	BY:	DATE:	No.	BY:	DATE:	
1			3			TOTAL SHEETS 6
2			4			STR. #3

CHECK PRINT
DRAWING CHECKED AGAINST CALCULATIONS AND CALCULATION CHECK CONFIRMED.
NO. DATE CHECKED BACK CHECKED CORRECTED VERIFIED
BY: P0058746 DATE: 8/10/2017

FILE: J:\Projects\shenandoah\shen\final\14-429A_smu_and_cad.dgn
DATE: 8/10/2017 12:29:43 PM

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 2012 "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 3/4" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1/2" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A 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 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 1'-0" 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 7/8" Ø SHEAR STUDS FOR THE 3/4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø 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 5/16" 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 1/16" 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.

CHECKED _____ DATE _____
 BACK CHECKED _____ DATE _____
 CORRECTED _____ DATE _____
 VERIFIED _____ DATE _____
 NO. _____
CHECK PRINT
 DRAWING CHECKED AGAINST CALCULATIONS
 AND CALCULATION CHECK COVERED.
 BY _____ DATE 8/10/2017

PROJECT NO. I-4729A
POLK COUNTY
 STATION: 16 + 47.10 -RP_F-

SHEET 6 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD NOTES

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	C-6
1			3			TOTAL SHEETS
2			4			6

ENGLISH

JANUARY, 1990

PLANS PREPARED BY :

PARSONS

5540 Centerview Drive, Suite 217
 Raleigh, NC 27606-3386
 NC LICENSE No. F-0246

FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

FILE: \\c:\p20\shah\mch\ch\ch\final\std\I-4729A_smu_std_cadd.dgn
 DATE: 8/10/2017 12:30:04 PM