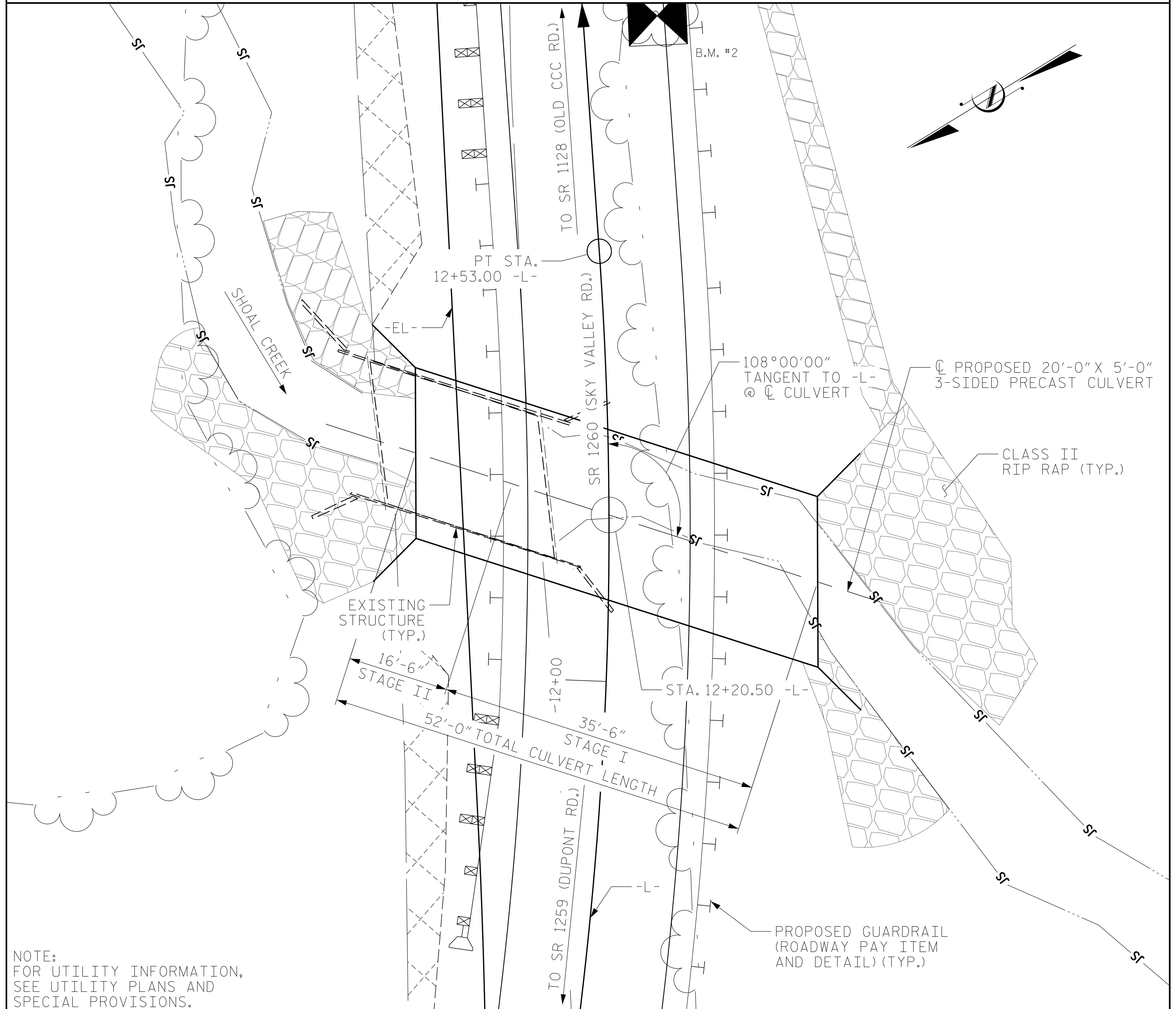
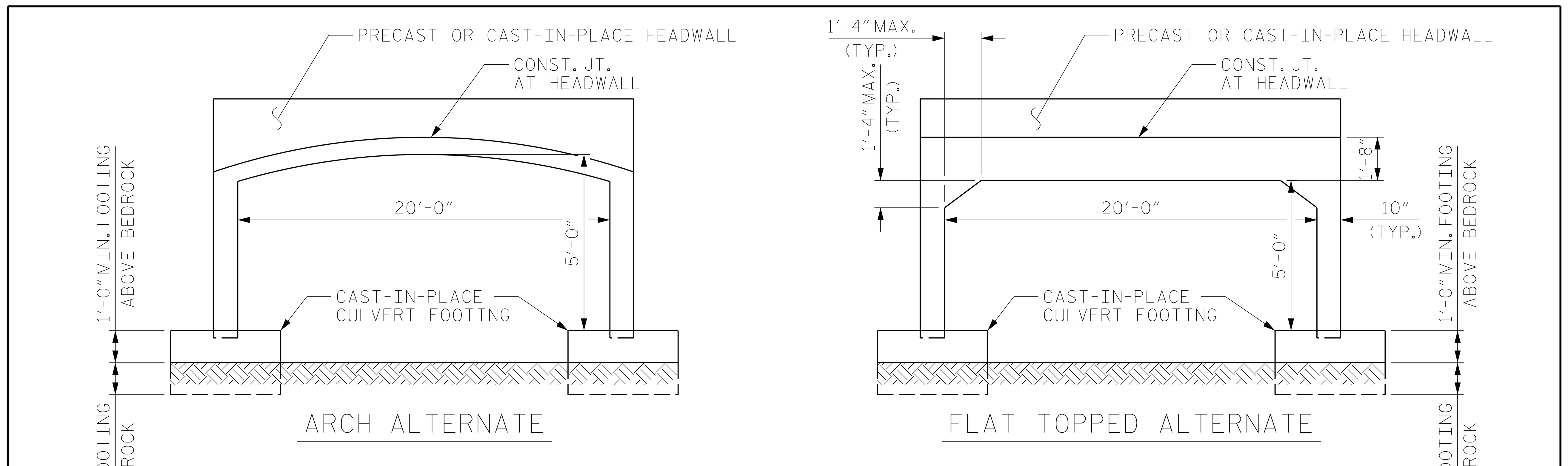
BM #2 - BENCH TIE IN BASE OF 8" TULIP POPLAR 9.14' RT. OF -L- STA. 12+81.42, EL. 2,512.60



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

LOCATION SKETCH



RIGHT ANGLE SECTION OF 3-SIDED
PRECAST CONCRETE BOX CULVERT

NOTES

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING

THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH "HEC 18 - EVALUATING SCOUR AT BRIDGES".

THE RESIDENT ENGINEER SHALL CHECK THE LENGTH OF THE CULVERT BEFORE STAKING IT OUT TO MAKE CERTAIN THAT IT WILL PROPERLY TAKE CARE OF THE FILL.

AFTER SERVING AS A TEMPORARY STRUCTURE THE EXISTING STRUCTURE CONSISTING OF 1 SPAN @ 18'-6" TIMBER FLOOR ON TIMBER JOISTS WITH TIMBER CAPS, POSTS, AND SILLS AT VARIOUS CENTERS SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY NOT POSTED FOR LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE DETERIORATE DURING CONSTRUCTION OF THE PROPOSED STRUCTURE, 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 IN A MANNER THAT PREVENTS DEBRIS FROM FALLING INTO THE WATER. THE CONTRACTOR SHALL SUBMIT DEMOLITION PLANS FOR REVIEW AND REMOVE THE BRIDGE IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

THE STRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. 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 STRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

THE DETAILS SHOWN ARE FOR GENERAL LAYOUT ONLY. THE SUPPLIER SHALL PROVIDE DESIGNS AND DETAILS FOR REVIEW AND APPROVAL THAT MEET THE REQUIREMENTS OF THE AASHTO LRFD DESIGN SPECIFICATIONS AND ARE SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN NORTH CAROLINA.

CULVERT IS TO BE DESIGNED FOR A MAXIMUM FILL DEPTH OF 4.46 FT AND A MINIMUM FILL DEPTH OF 2.20 FT.

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.

A THREE FOOT STRIP OF FILTER FABRIC SHALL BE ATTACHED TO THE FILL FACE OF THE WING COVERING THE ENTIRE LENGTH OF THE EXPANSION JOINT.

THE SCOUR CRITICAL ELEVATION IS THE BOTTOM OF THE FOOTING ELEVATIONS. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFETIME OF THE STRUCTURE.

THE SPREAD FOOTINGS ARE DESIGNED FOR A FACTORED RESISTANCE OF UP TO 6.5 TSF. CHECK FIELD CONDITIONS FOR THE REQUIRED NOMINAL BEARING RESISTANCE OF 14.5 TSF JUST BEFORE PLACING CONCRETE.

KEY IN SPREAD FOOTINGS AT LEAST 12 IN. INTO WEATHERED ROCK OR CRYSTALLINE ROCK WITH MINIMUM THICKNESS SHOWN ON THE PLANS.

CONCRETE FOR ALL CAST-IN-PLACE COMPONENTS SHALL BE CLASS "A" AS PER THE STANDARD SPECIFICATIONS.

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

FOR CONSTRUCTION SEQUENCE, SEE EROSION CONTROL PLANS.

FOR MAINTENANCE OF TRAFFIC, SEE TRANSPORTATION MANAGEMENT PLAN.

FOR PRECAST REINFORCED CONCRETE THREE SIDED CULVERT, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE OVERHEAD UTILITY IN THE AREA OF THE PROPOSED CULVERT. A DEDICATED SPOTTER IS REQUIRED DURING CRANE OPERATIONS. FOR MORE INFORMATION AND FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR ASBESTOS ASSESSMENT, SEE SPECIAL PROVISIONS.

FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.

GRADE DATA -L-

GRADE POINT EL. @ STA. 12+20.50 -L-	= 2,514.66
BED EL. @ STA. 12+20.50 -L-	= 2,503.20
ROADWAY SLOPES	= 2:1
TOP OF FOOTING ELEVATION	= 2,504.20

HYDRAULIC DATA

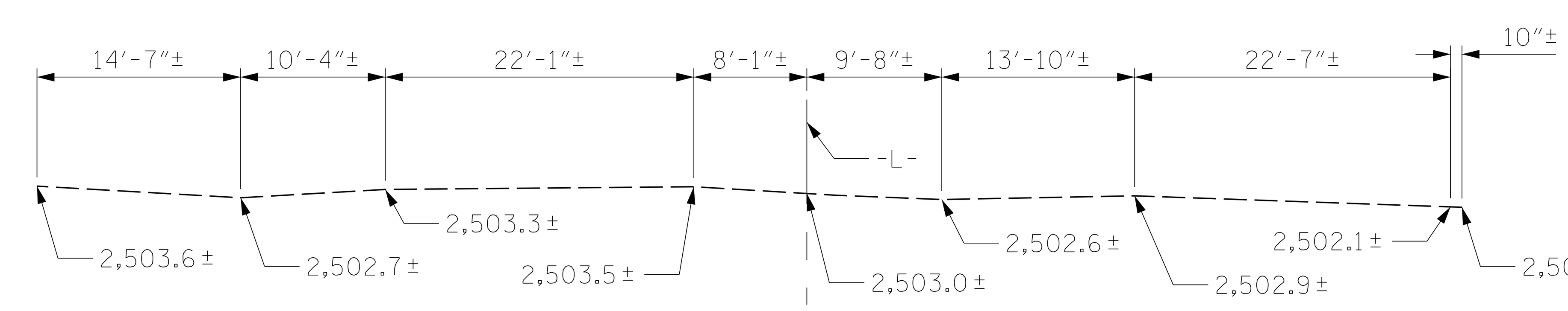
DESIGN DISCHARGE	= 340 CFS
FREQUENCY OF DESIGN DISCHARGE	= 25 YR
DESIGN HIGH WATER ELEVATION	= 2,507.50
DRAINAGE AREA	= 0.79 SQ MI
BASE DISCHARGE (Q100)	= 490 CFS
BASE HIGH WATER ELEVATION	= 2,508.20

-L- PROFILE DATA

PI = 12+13.00
EL = 2,513.57
VC = 190'
K = 50
G1 = 0.4896%
G2 = 4.2994%

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= 1,730 CFS
FREQUENCY OF OVERTOPPING	= 500+ YR
△ OVERTOPPING ELEVATION	= 2,515.70
△ STA. 11+69.00 -L- ROADWAY OVERTOPPING EL.	= 2,513.50



PROFILE ALONG ℄ CULVERT

TOTAL STRUCTURE QUANTITIES

ASBESTOS ASSESSMENT	LUMP SUM
REMOVAL OF EXISTING STRUCTURE	LUMP SUM
FOUNDATION EXCAVATION	13.5 CY
UNCLASSIFIED STRUCTURE EXCAVATION	LUMP SUM
3-SIDED PRECAST BOX CULVERT @ STA. 12+20.50 -L-	LUMP SUM
CLASS II RIP RAP	150 TONS
GEOTEXTILE FOR DRAINAGE	159 SY

PROJECT NO. 17BP.14.R.179
HENDERSON COUNTY
STATION: 12+20.50 -L-

SHEET 1 OF 6 REPLACES BRIDGE NO. 247

NORTH CAROLINA PROFESSIONAL SEAL 18442 ENGINEER RICHARD LEON BOLLINGER
12/15/2020

RS&H
RS&H Architects-Engineers-Planners, Inc.
8601 Six Forks Road, Suite 260
Raleigh, NC 27615
919-926-4100 FAX 919-846-9080
www.rsandh.com
North Carolina License Nos. 50073 * F-0493 * C-28

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SINGLE 20'-0" X 5'-0"
3-SIDED PRECAST
BOX CULVERT
FOR SHOAL CREEK ON SR 1260
(SKY VALLEY RD.) BETWEEN
SR 1259 (DUPONT RD.) AND
SR 1128 (OLD CCC RD.)

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

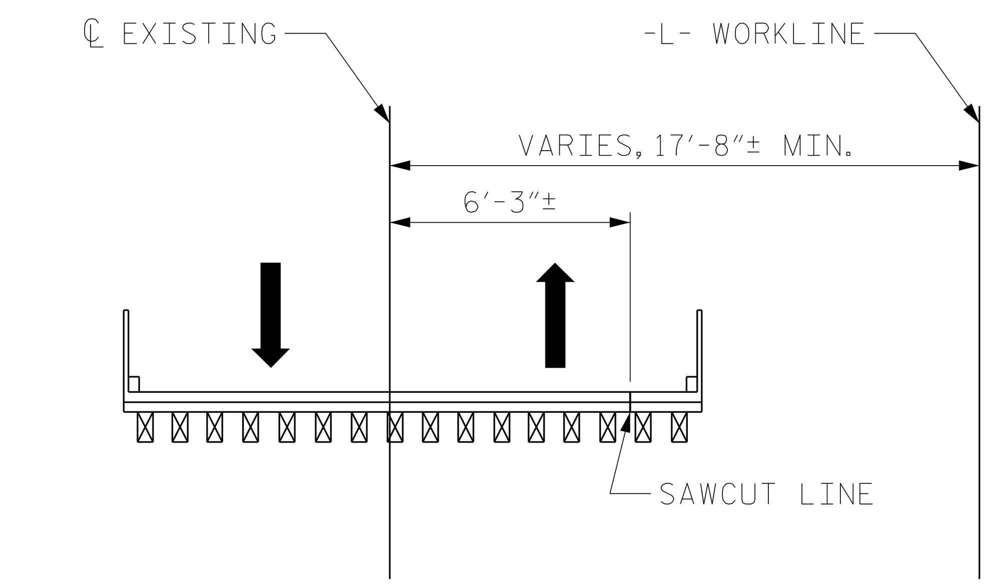
DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

DRAWN BY :	PDS	DATE :	09/2017
CHECKED BY :	TLC	DATE :	09/2017
DESIGN ENGINEER OF RECORD:	PDS	DATE :	09/2017

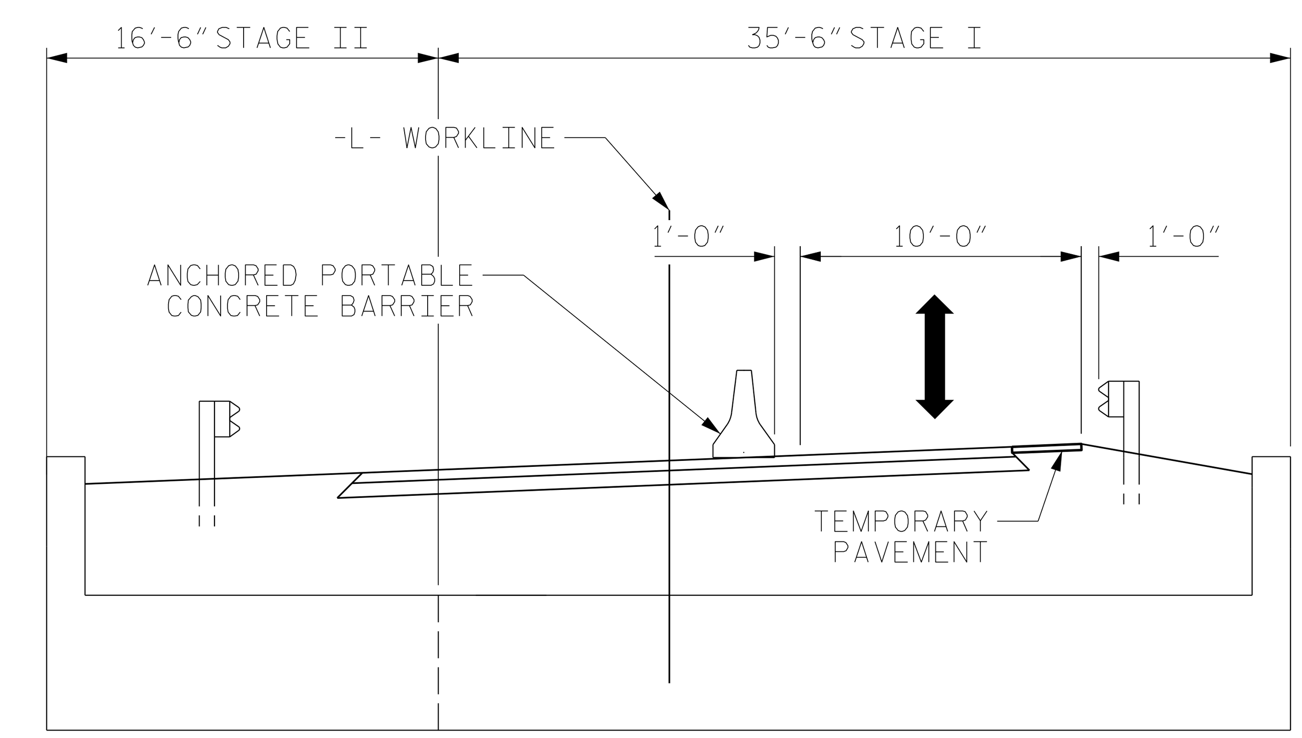
12/7/2020
\\cltfile01\transportation\P\1030014001_Div 14 Bridges_2016\1030014004_R.179 440247\Design\Structures\Working DGN\247_001_17BP.14.R.179_SMU_C01.dgn
LynnT

NOTES

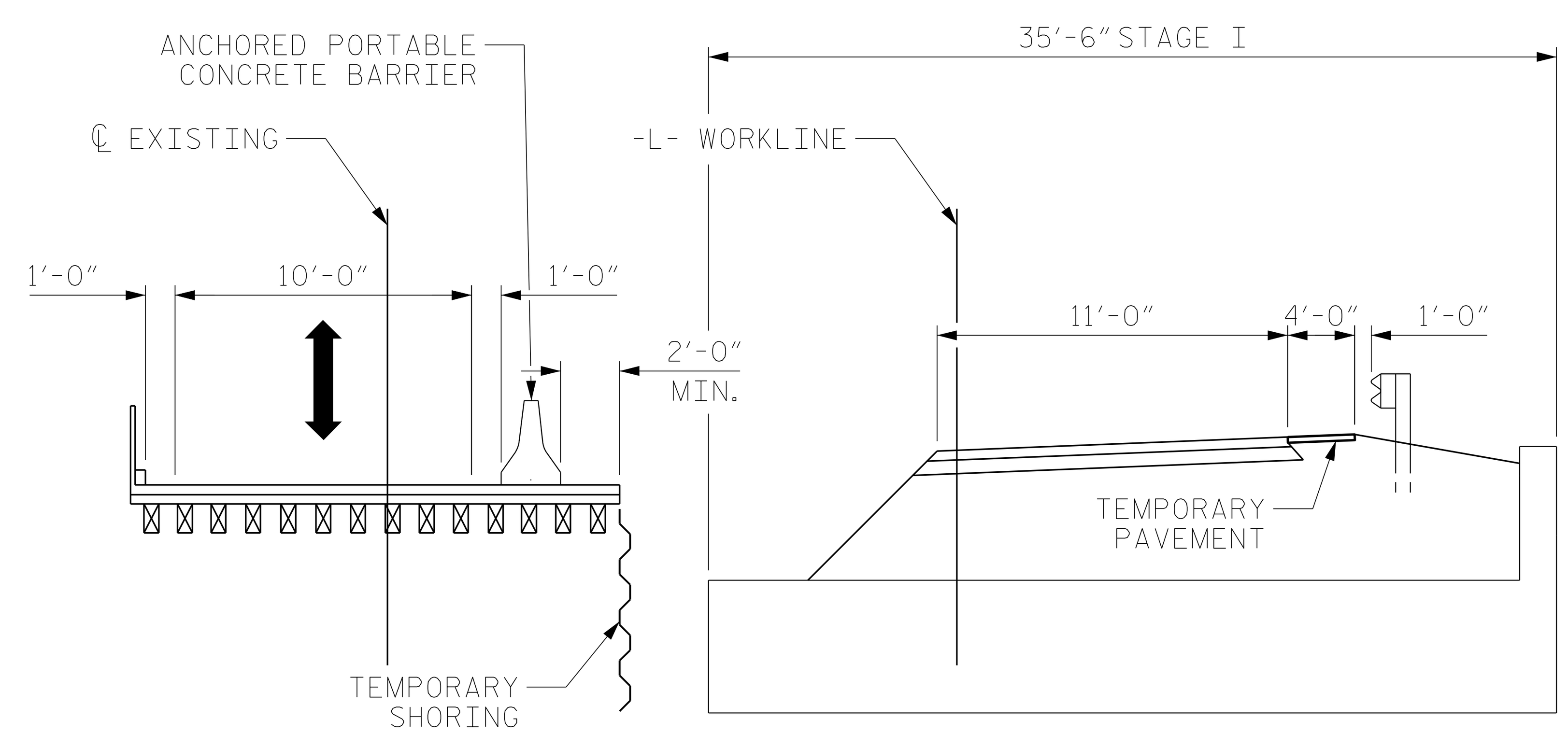
FOR CONSTRUCTION SEQUENCE, SEE EROSION CONTROL PLANS.



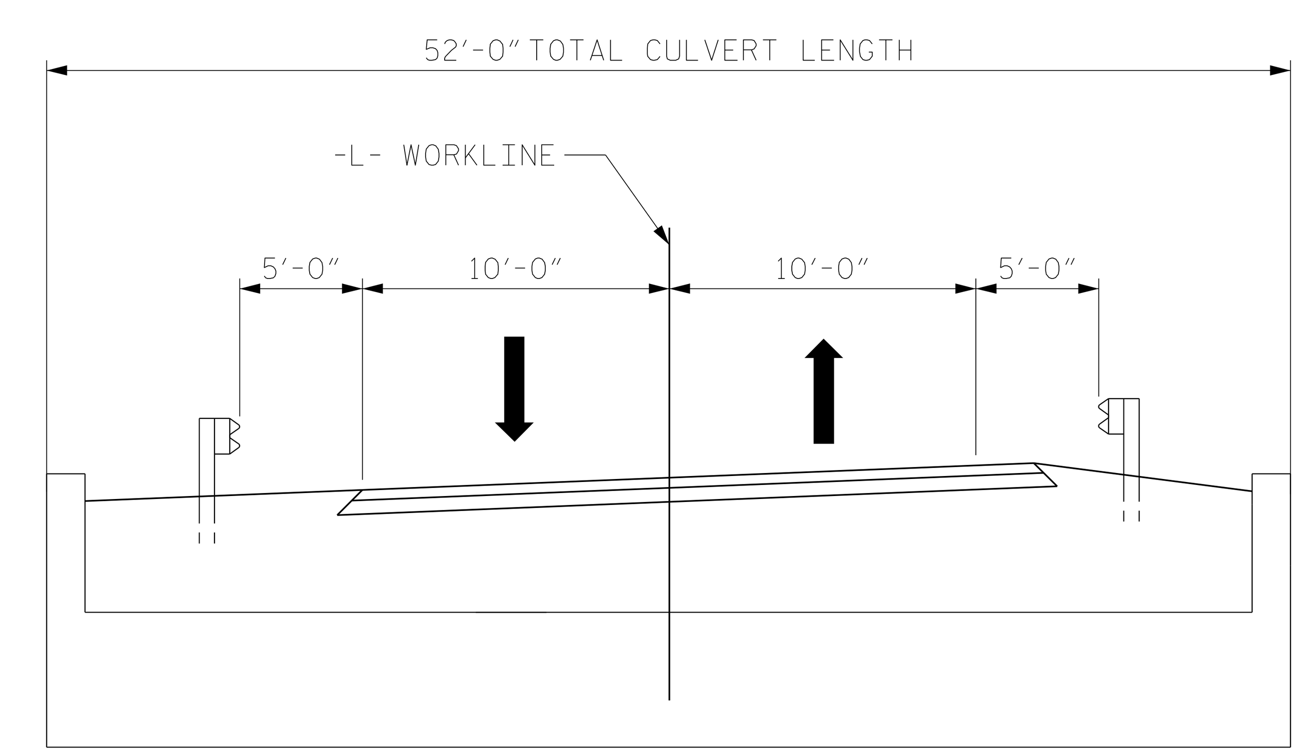
INITIAL CONSTRUCTION



STAGE II CONSTRUCTION



STAGE I CONSTRUCTION



FINAL CONDITION

PROJECT NO. 17BP.14.R.179

HENDERSON COUNTY

STATION: 12+20.50 -L-

SHEET 2 OF 6

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 18442 RICHARD LEON BOLLINGER JR.

12/15/2020

RS&H

RS&H Architects-Engineers-Planners, Inc.
8601 Six Forks Road, Suite 260
Raleigh, NC 27615
919-926-4100 FAX 919-846-9080
www.rsandh.com
North Carolina License Nos. 50073 * F-0493 * C-28

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SINGLE 20'-0" X 5'-0"
3-SIDED PRECAST
BOX CULVERT
FOR SHOAL CREEK ON SR 1260
(SKY VALLEY RD.) BETWEEN
SR 1259 (DUPONT RD.) AND
SR 1128 (OLD CCC RD.)

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

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

DRAWN BY : PDS DATE : 09/2017
CHECKED BY : TLC DATE : 09/2017
DESIGN ENGINEER OF RECORD: PDS DATE : 09/2017

12/7/2020
\\cltfile01\transportation\P\1030014001_Div 14 Bridges_2016\1030014004_R.179 440247\Design\Structures\Working DGN\247_003_17BP.14.R.179_SMU_C02.dgn
LynnT

NOTES

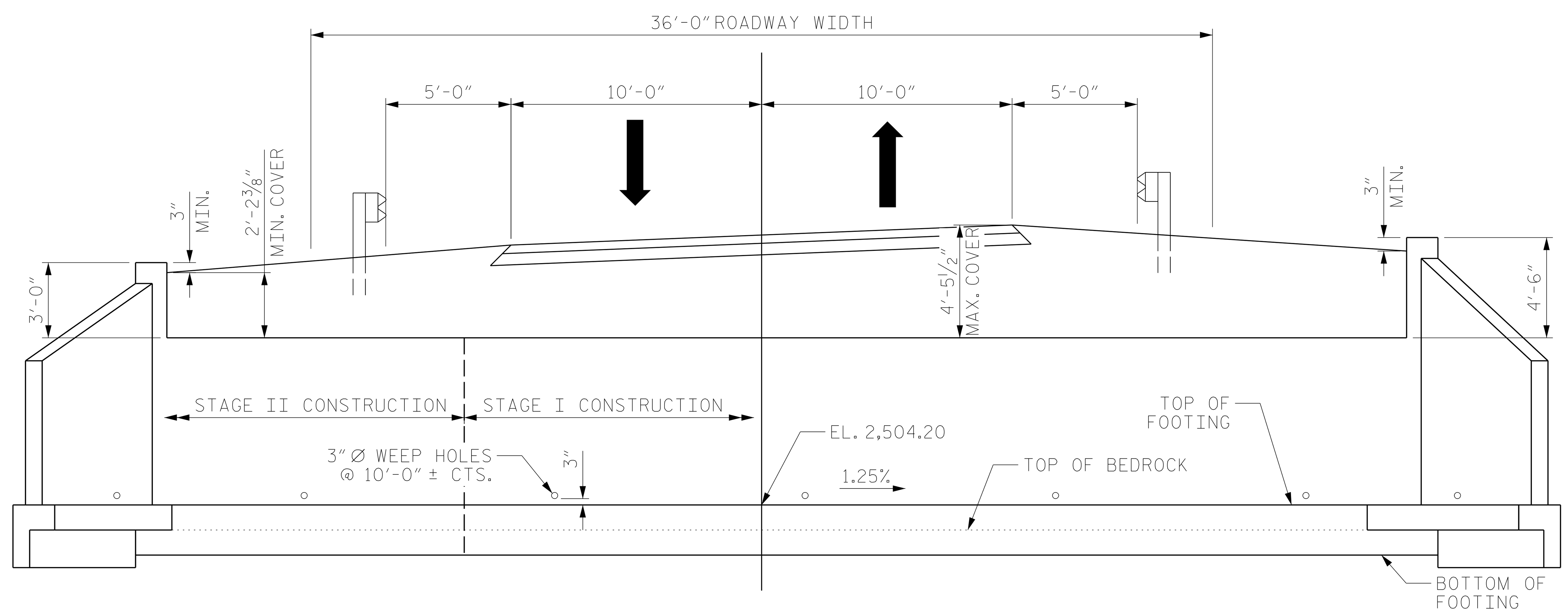
REINFORCEMENT SHOWN IS FOR BIDDING PURPOSES ONLY. THE CONTRACTOR SHALL PROVIDE REINFORCEMENT DETAILS TO THE ENGINEER FOR REVIEW AND APPROVAL.

THE PRECAST CULVERT SECTIONS AND WINGS SHALL BE DESIGNED FOR FULL DEPTH HYDROSTATIC PRESSURE IF WEEP HOLES ARE NOT PROVIDED. IF PROVIDED, WEEP HOLES SHALL BE LOCATED A MINIMUM OF 6" ABOVE THE NORMAL FLOW LINE AND HAVE A MAXIMUM SPACING OF 10 FEET.

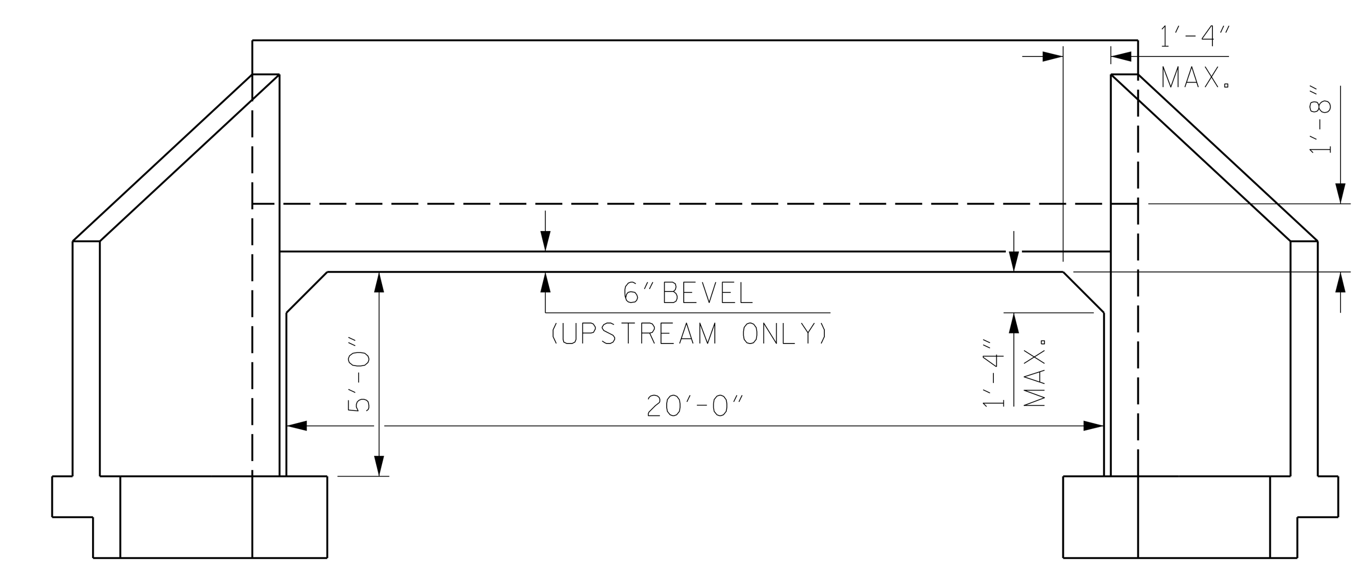
SCOUR PROTECTION IS REQUIRED FOR SPREAD FOOTINGS.

THE CONTRACTOR SHALL SUBMIT THE FOOTING DESIGN TO THE ENGINEER FOR REVIEW AND APPROVAL.

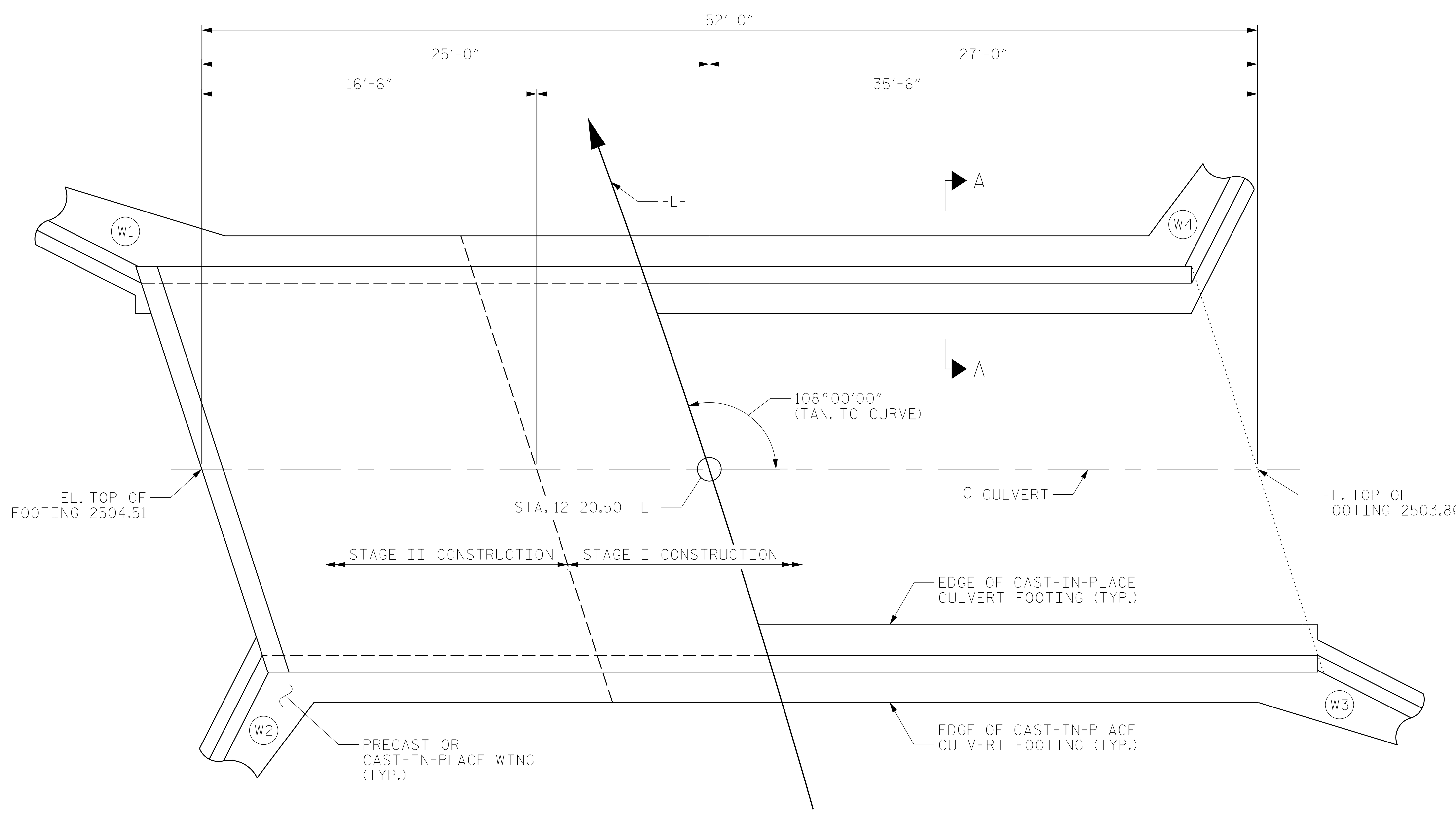
THE CONTRACTOR SHALL SUBMIT THE HEADWALL DESIGN TO THE ENGINEER FOR REVIEW AND APPROVAL.



CULVERT SECTION NORMAL TO ROADWAY

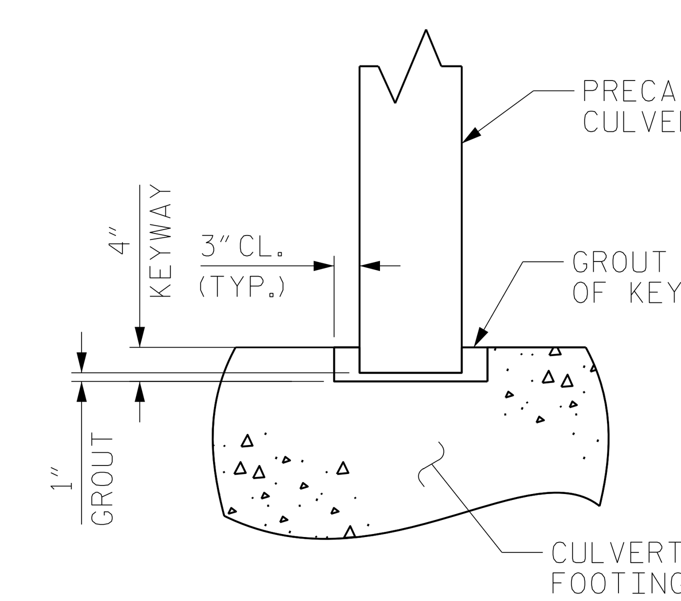


END ELEVATION



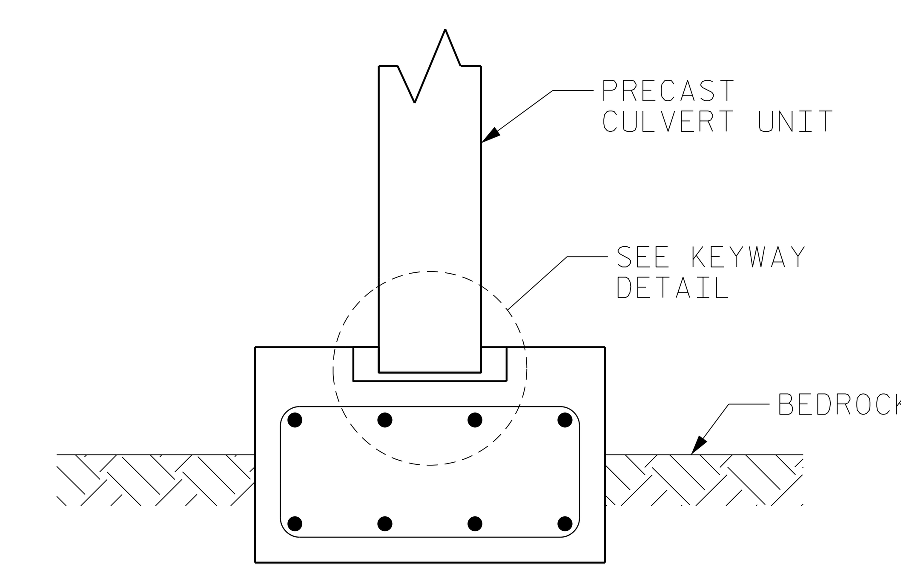
PART PLAN ROOF SLAB

PART PLAN FLOOR SLAB



KEYWAY DETAIL

FILL ENTIRE KEYWAY INCLUDING NOMINAL 1" VOID BETWEEN BOTTOM OF KEYWAY AND PRECAST CULVERT UNIT WITH NON-SHRINK GROUT.



SECTION A-A

SIDES OF FOOTING SHALL BE IN CONTACT WITH UNDISTURBED MATERIAL FOR MINIMUM DIMENSION SHOWN.

PROJECT NO. 17BP.14.R.179

HENDERSON COUNTY

STATION: 12+20.50 -L-

SHEET 3 OF 6

SEAL 18442 — NORTH CAROLINA PROFESSIONAL ENGINEER — RICHARD LEON BOLLINGER JR.

12/15/2020

RS&H

RS&H Architects-Engineers-Planners, Inc.
8601 Six Forks Road, Suite 260
Raleigh, NC 27615
919-926-4100 FAX 919-846-9080
www.rsandh.com
North Carolina License Nos. 50073 * F-0493 * C-28

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SINGLE 20'-0" X 5'-0" 3-SIDED PRECAST BOX CULVERT

FOR SHOAL CREEK ON SR 1260 (SKY VALLEY RD.) BETWEEN SR 1259 (DUPONT RD.) AND SR 1128 (OLD CCC RD.)

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

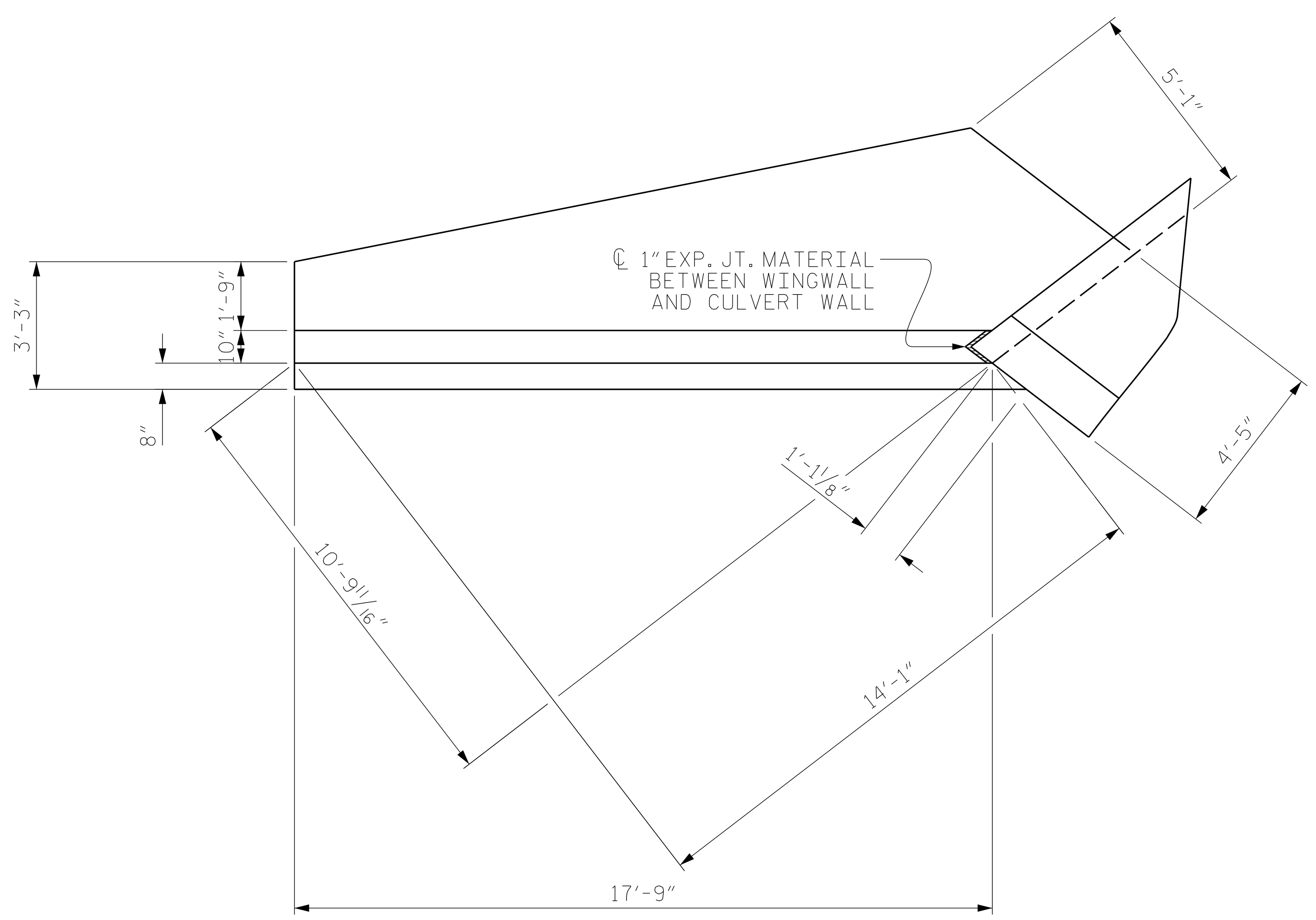
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DRAWN BY :	PDS	DATE : 09/2017
CHECKED BY :	TLC	DATE : 09/2017
DESIGN ENGINEER OF RECORD:	PDS	DATE : 09/2017

12/7/2020
\\cltfile01\transportation\P\1030014001_Div 14 Bridges_2016\1030014004_R.179 440247\Design\Structures\Working DGN\247_005_17BP.14.R.179_SMU_C03.dgn
LynnT

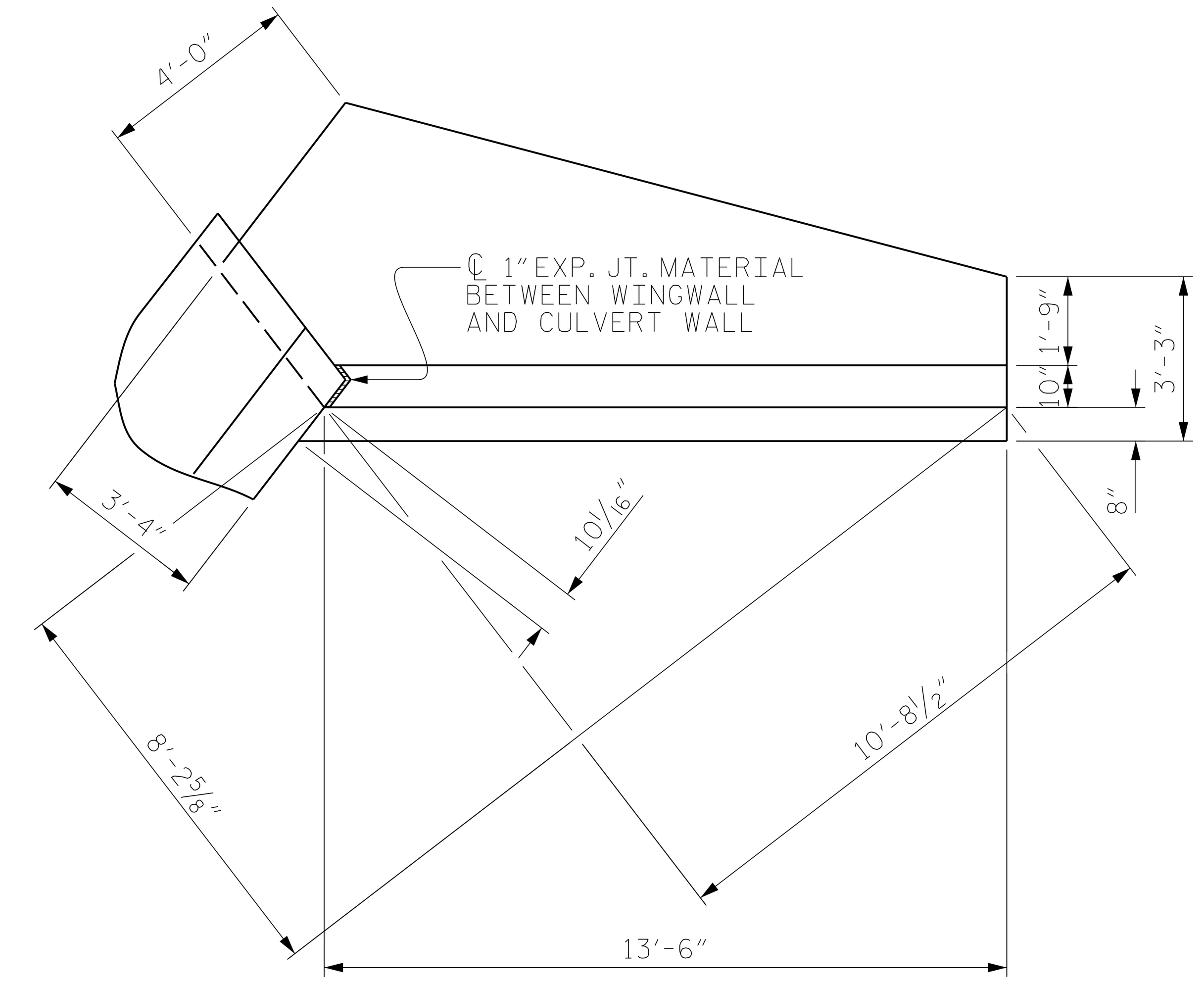
NOTES

PRECAST OR CAST-IN-PLACE WINGS WILL BE ALLOWED. THE CONTRACTOR SHALL SUBMIT WING DESIGN TO THE ENGINEER FOR REVIEW AND APPROVAL. THE ENTIRE COST TO CONSTRUCT THE CULVERT WINGS AND FOOTINGS WILL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR "3-SIDED PRECAST BOX CULVERT @ STA. 12+20.50 -L-".



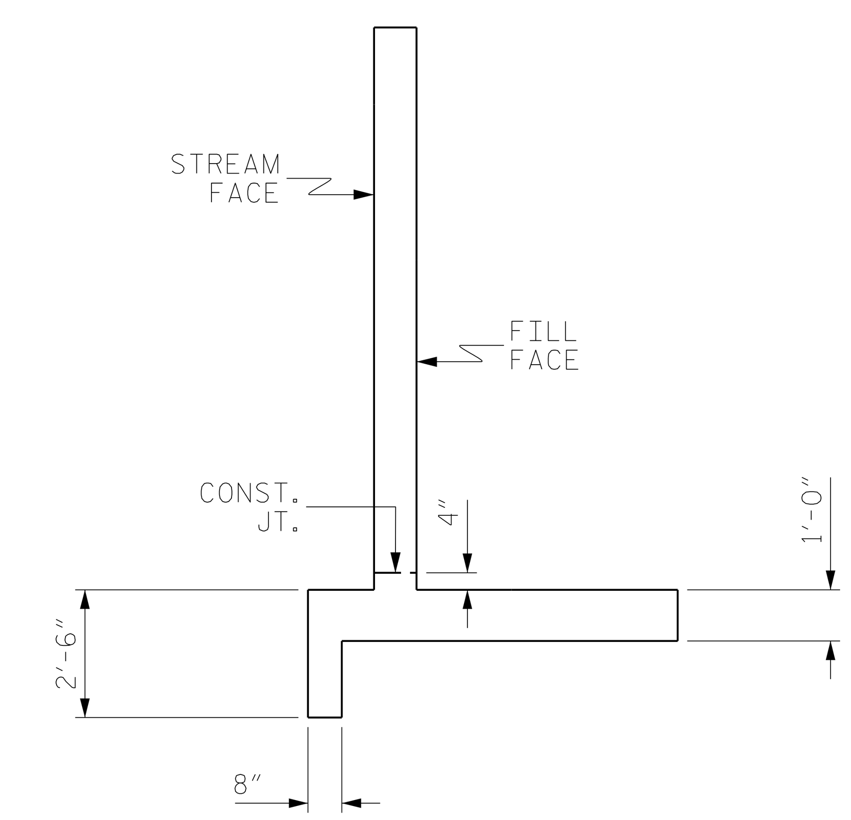
PLAN W1

CULVERT FOOTINGS
NOT SHOWN FOR CLARITY

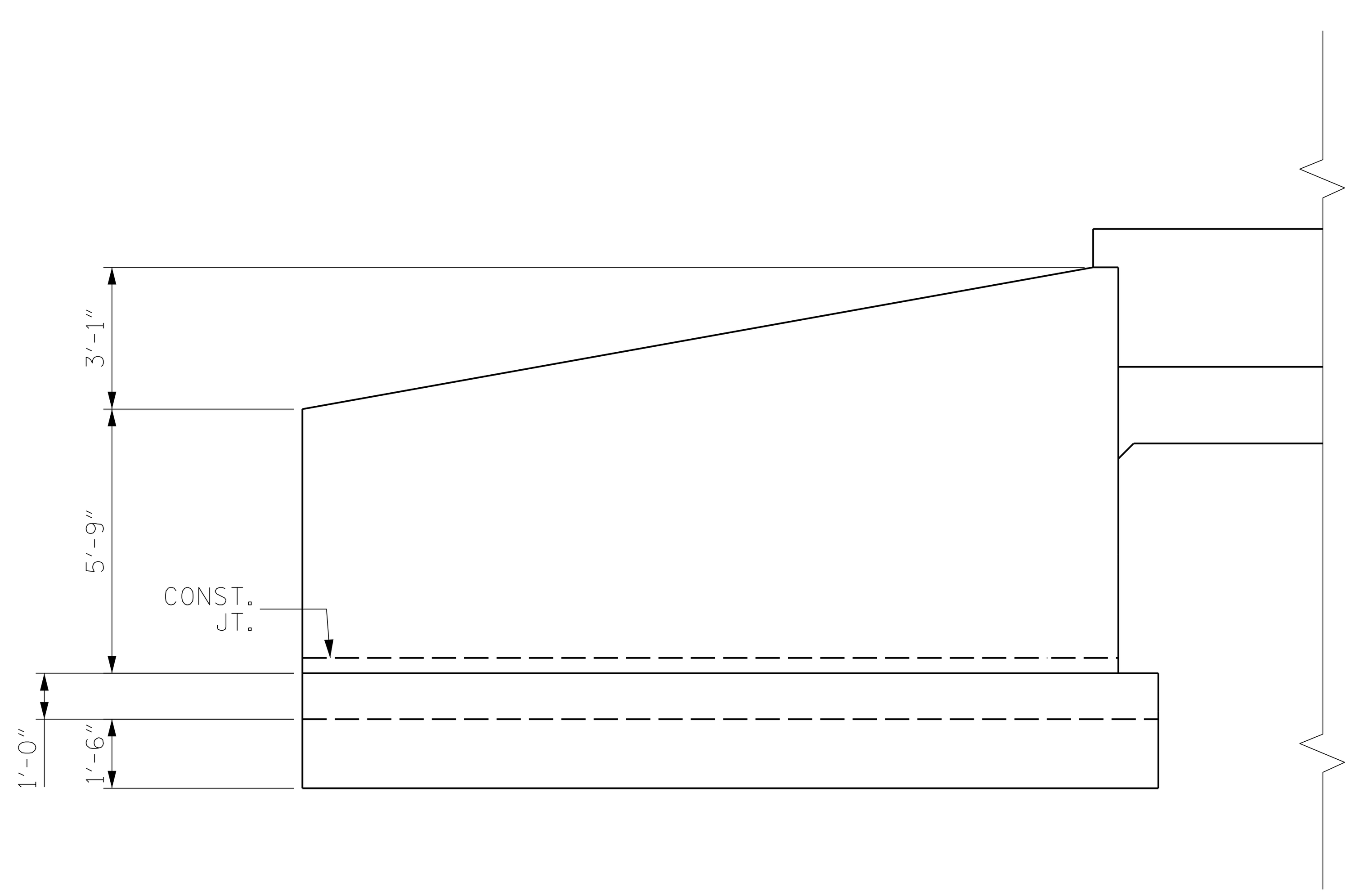


PLAN W2

CULVERT FOOTINGS
NOT SHOWN FOR CLARITY

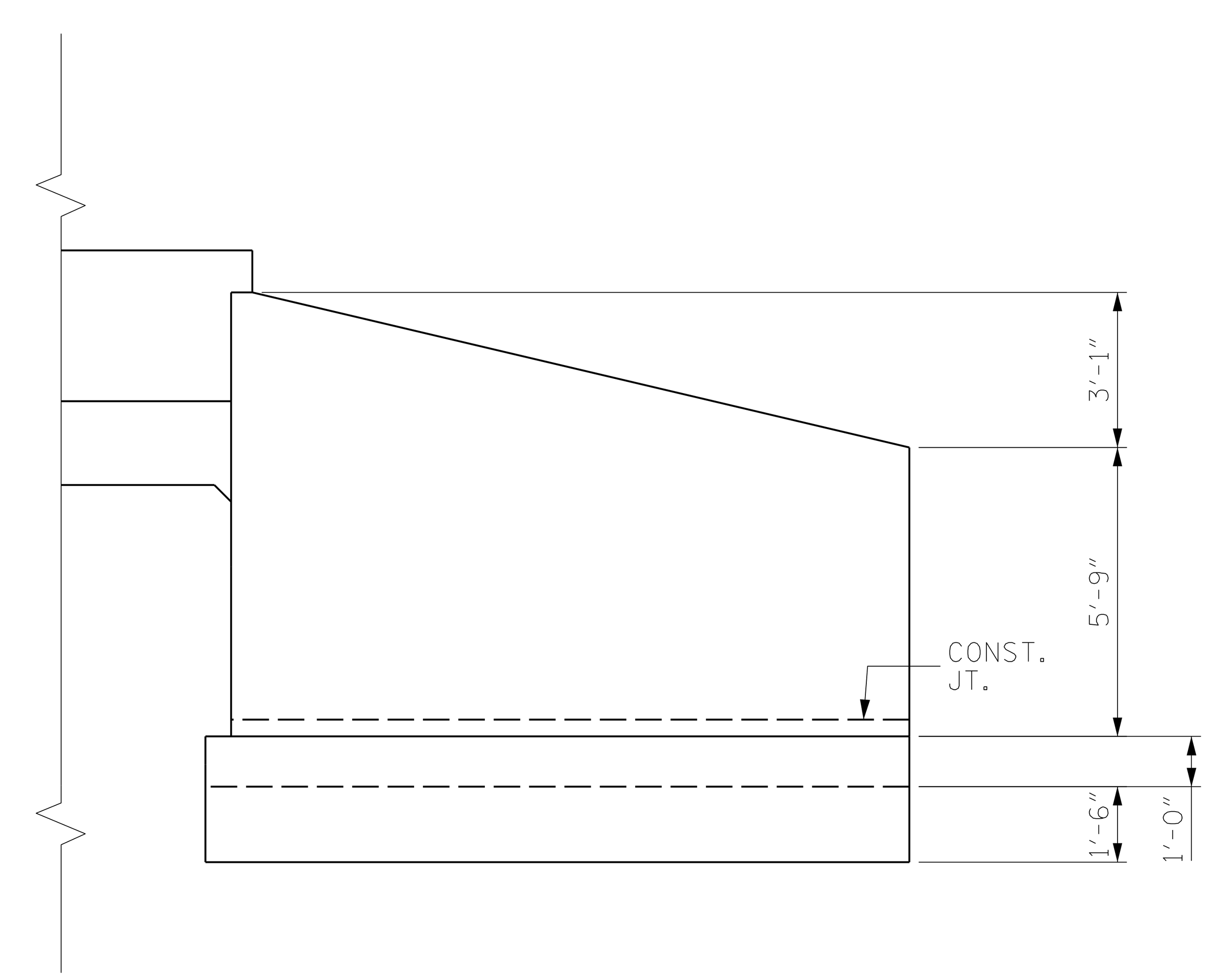


TYPICAL WING
SECTION



ELEVATION W1

CULVERT FOOTINGS
NOT SHOWN FOR CLARITY



ELEVATION W2

CULVERT FOOTINGS
NOT SHOWN FOR CLARITY

PROJECT NO. 17BP.14.R.179
HENDERSON COUNTY
STATION: 12+20.50 -L-

NORTH CAROLINA PROFESSIONAL SEAL 18442 ENGINEER RICHARD LEON BOLLINGER, JR.
12/15/2020

RS&H
RS&H Architects-Engineers-Planners, Inc.
8601 Six Forks Road, Suite 260
Raleigh, NC 27615
919-926-4100 FAX 919-846-9080
www.rsandh.com
North Carolina License Nos. 50073 * F-0493 * C-28

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SINGLE 20'-0" X 5'-0"
3-SIDED PRECAST
BOX CULVERT
FOR SHOAL CREEK ON SR 1260
(SKY VALLEY RD.) BETWEEN
SR 1259 (DUPONT RD.) AND
SR 1128 (OLD CCC RD.)

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

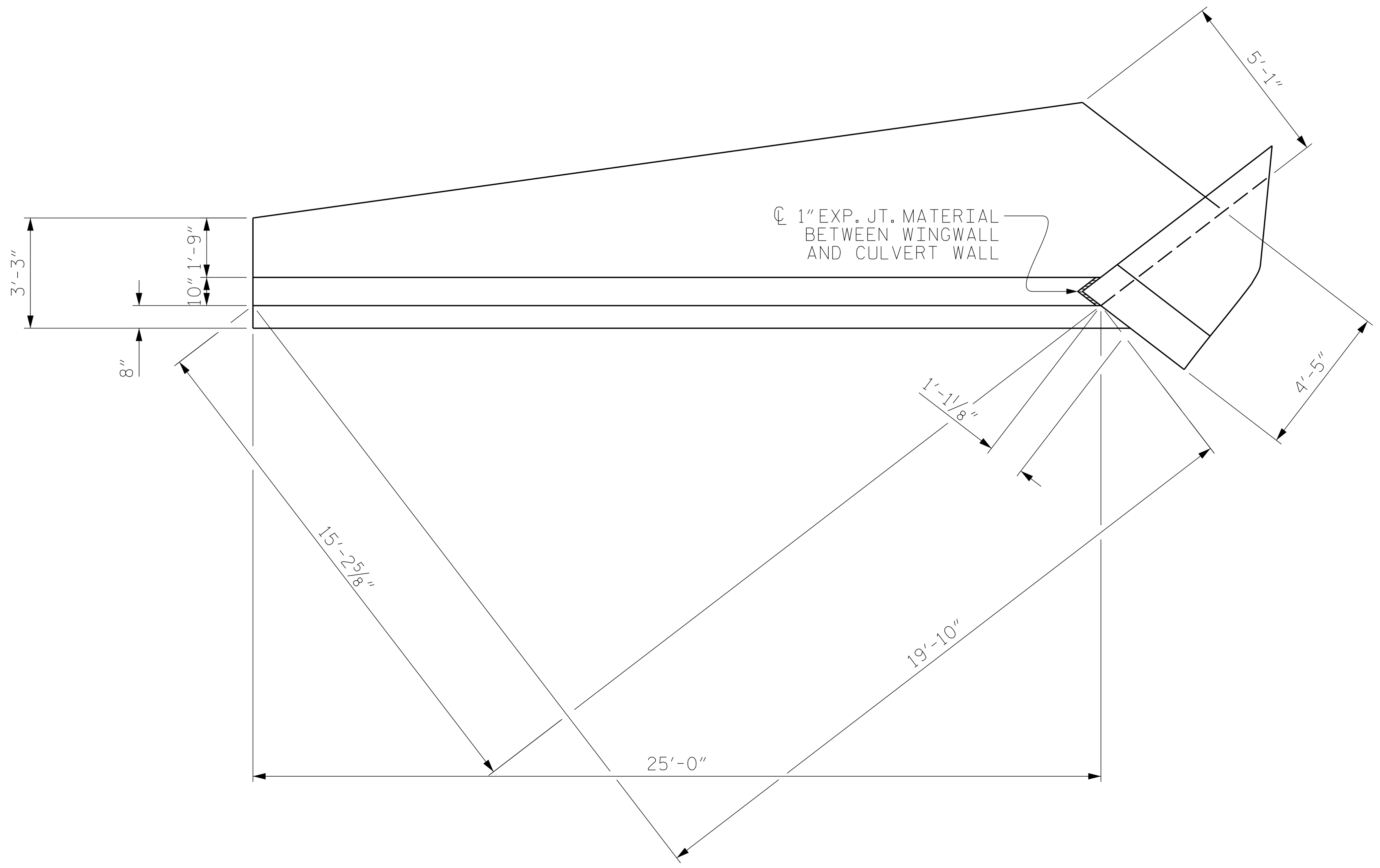
DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

DRAWN BY :	PDS	DATE :	09/2017
CHECKED BY :	TLC	DATE :	09/2017
DESIGN ENGINEER OF RECORD:	PDS	DATE :	09/2017

12/7/2020
\\cltfile01\transportation\P\1030014001_Div 14 Bridges_2016\1030014004_R.179 440247\Design\Structures\Working DGN\247_007_17BP.14.R.179_SMU_C04.dgn
LynnT

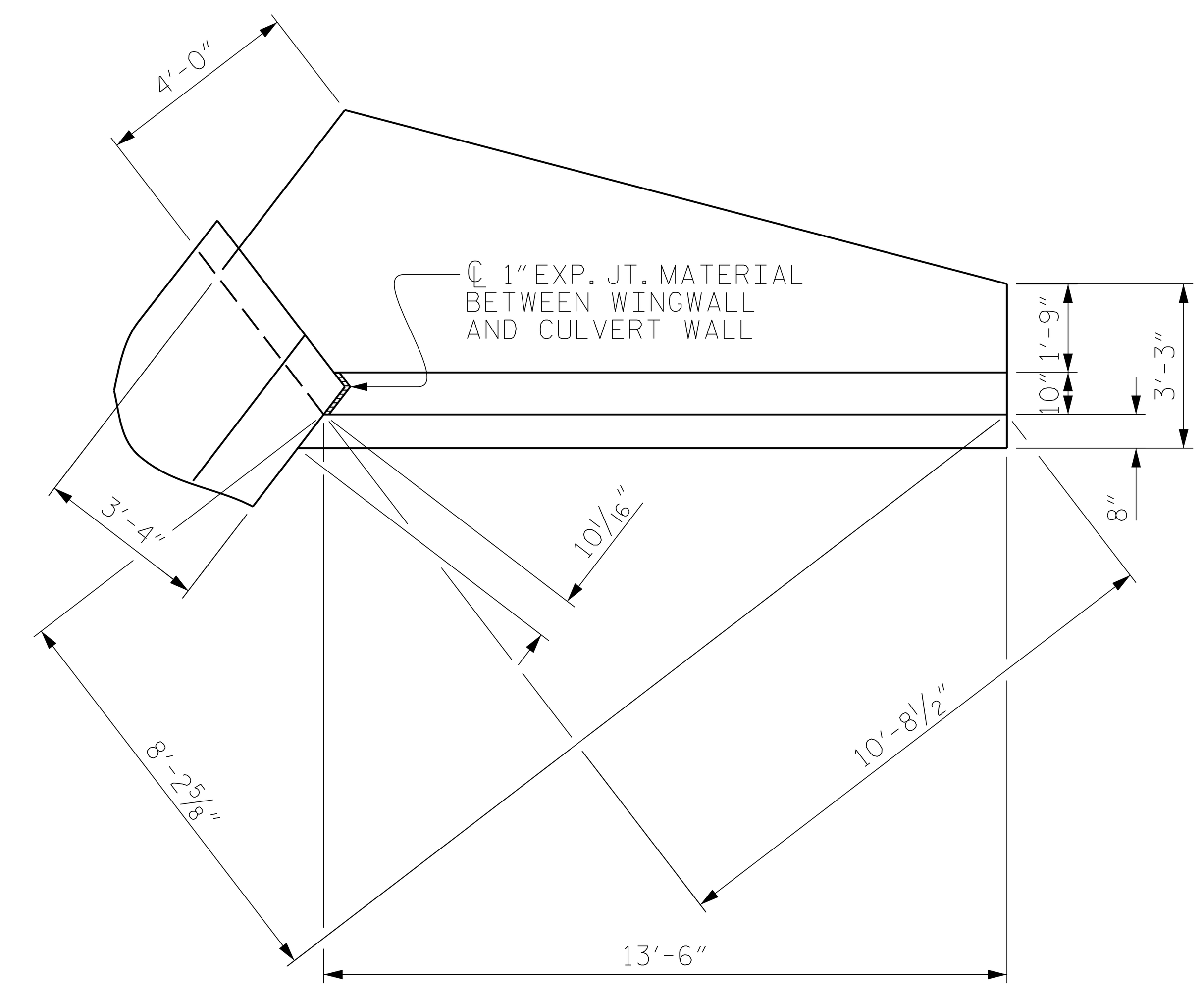
NOTES

PRECAST OR CAST-IN-PLACE WINGS WILL BE ALLOWED. THE CONTRACTOR SHALL SUBMIT WING DESIGN TO THE ENGINEER FOR REVIEW AND APPROVAL. THE ENTIRE COST TO CONSTRUCT THE CULVERT WINGS AND FOOTINGS WILL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR "3-SIDED PRECAST BOX CULVERT @ STA. 12+20.50 -L-".



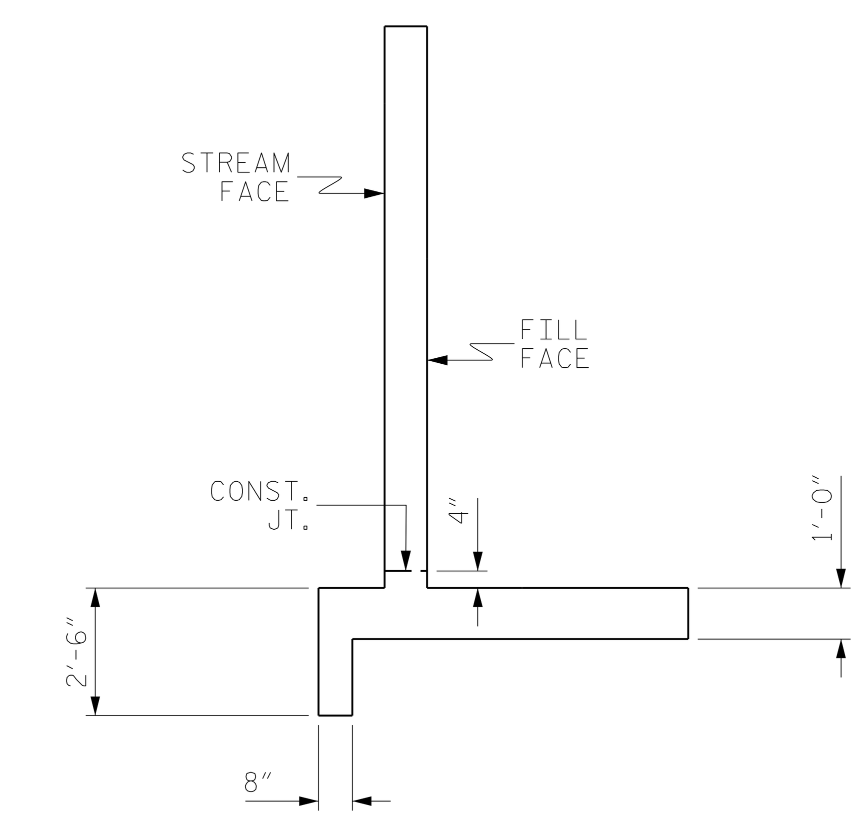
PLAN W3

CULVERT FOOTINGS NOT SHOWN FOR CLARITY

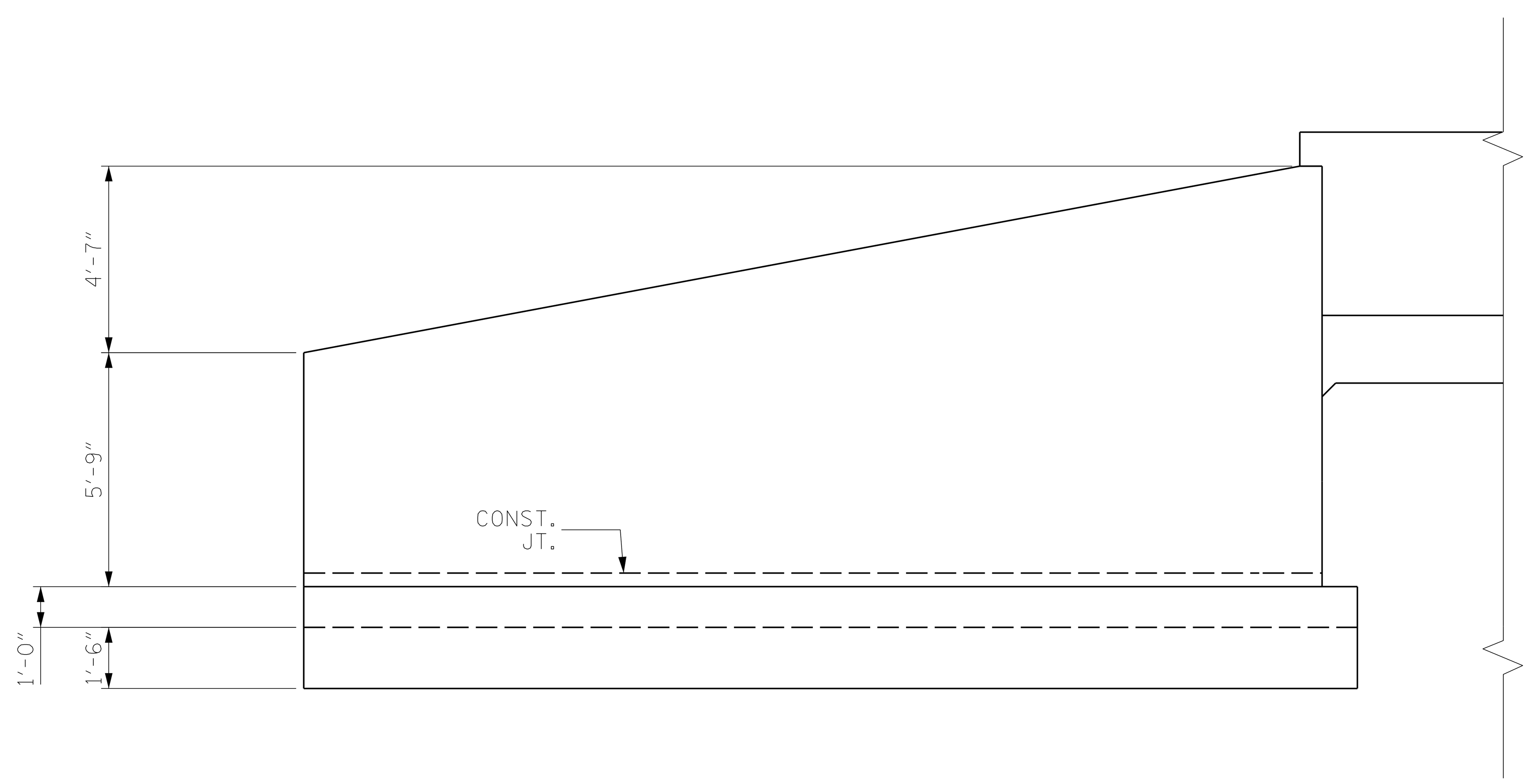


PLAN W4

CULVERT FOOTINGS NOT SHOWN FOR CLARITY

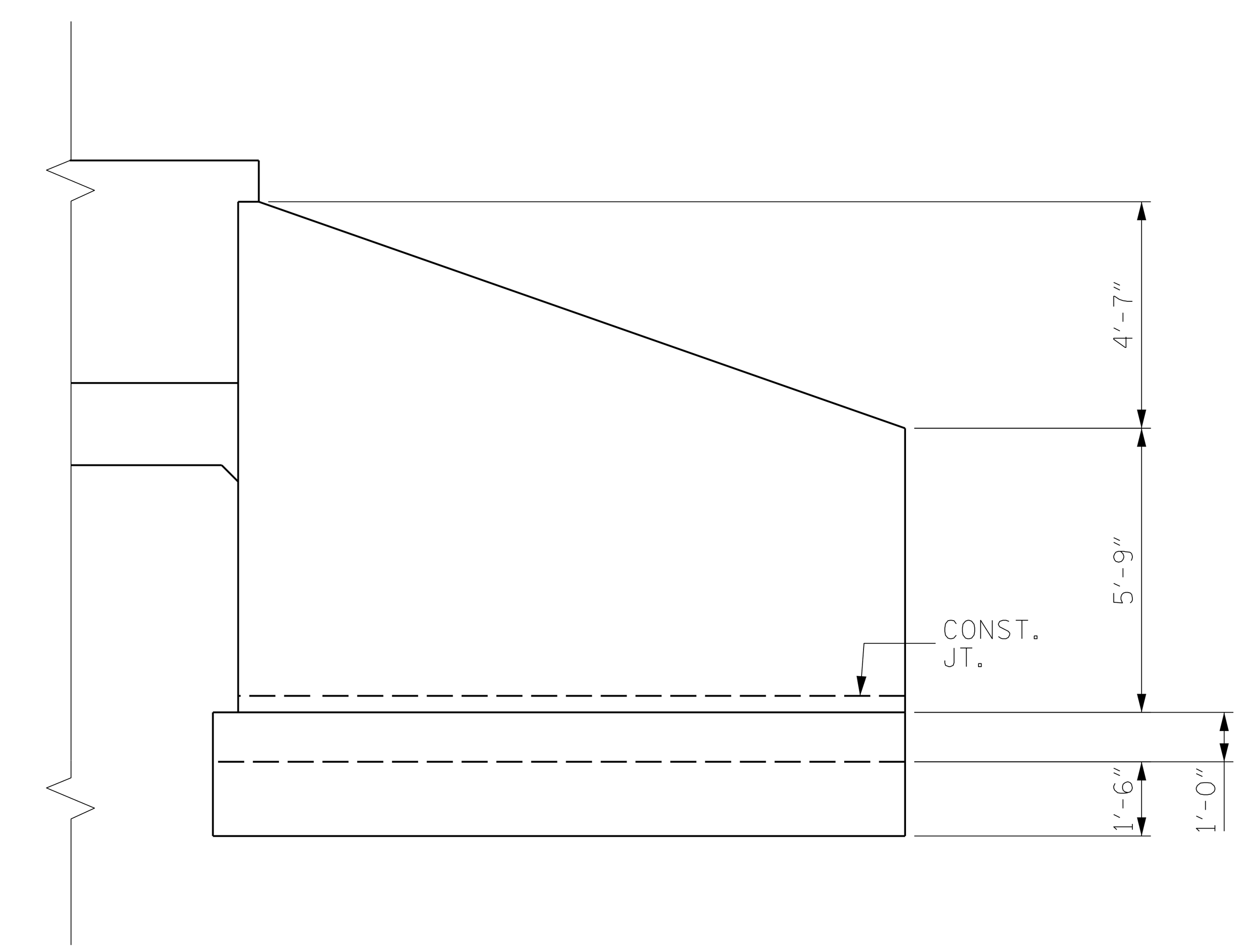


TYPICAL WING SECTION



ELEVATION W3

CULVERT FOOTINGS NOT SHOWN FOR CLARITY



ELEVATION W4

CULVERT FOOTINGS NOT SHOWN FOR CLARITY

PROJECT NO. 17BP.14.R.179

HENDERSON COUNTY

STATION: 12+20.50 -L-

SHEET 5 OF 6

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 18442 RICHARD LEON BOLLINGER, JR.

12/15/2020

RS&H

RS&H Architects-Engineers-Planners, Inc.
8601 Six Forks Road, Suite 260
Raleigh, NC 27615
919-926-4100 FAX 919-846-9080
www.rsandh.com
North Carolina License Nos. 50073 * F-0493 * C-28

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SINGLE 20'-0" X 5'-0" 3-SIDED PRECAST BOX CULVERT

FOR SHOAL CREEK ON SR 1260 (SKY VALLEY RD.) BETWEEN SR 1259 (DUPONT RD.) AND SR 1128 (OLD CCC RD.)

REVISIONS								SHEET NO.
NO.	BY:	DATE:		NO.	BY:	DATE:		C-5
1				3				TOTAL SHEETS
2				4				6

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DRAWN BY : PDS DATE : 09/2017
CHECKED BY : TLC DATE : 09/2017
DESIGN ENGINEER OF RECORD: PDS DATE : 09/2017

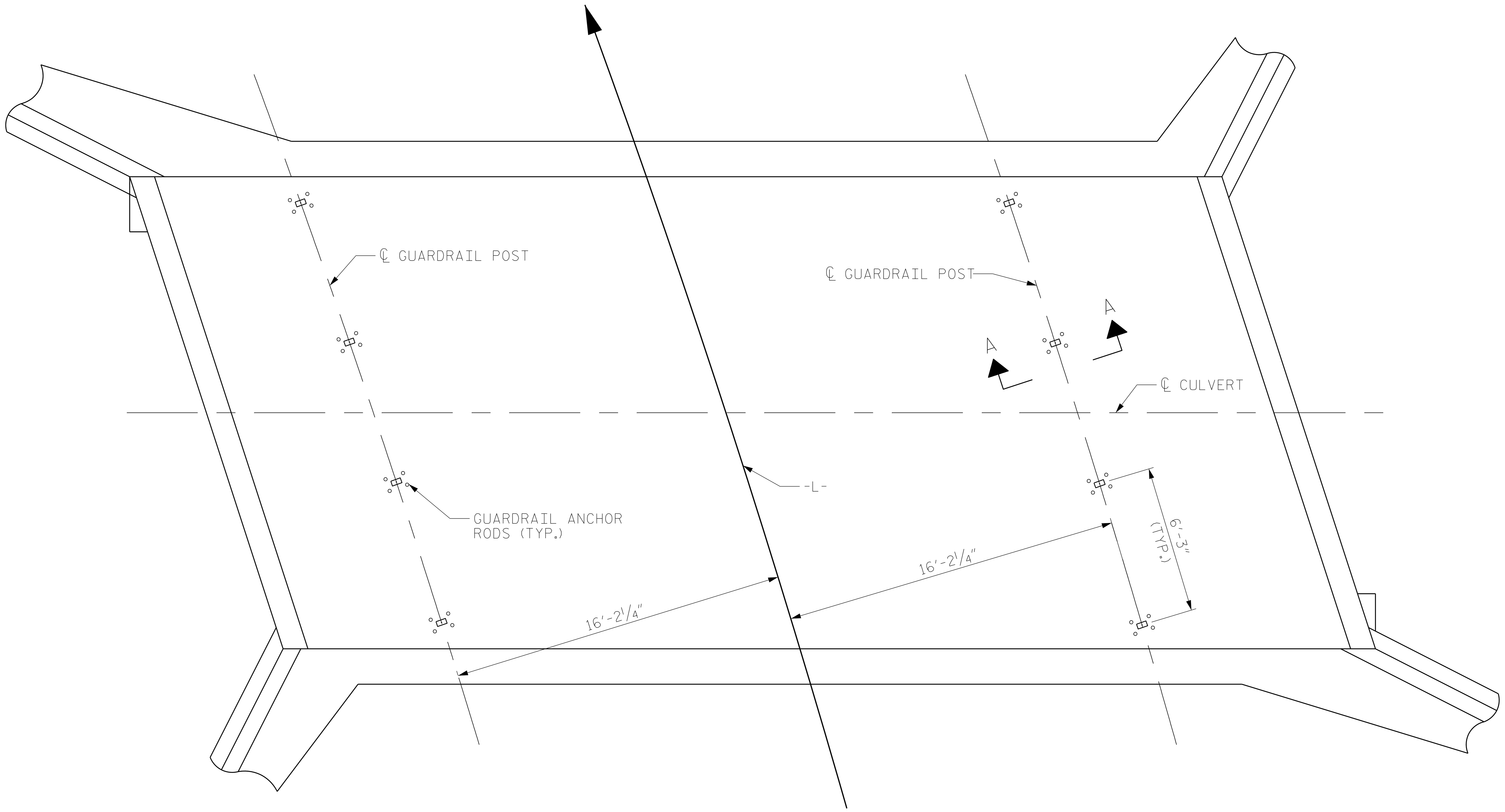
12/7/2020
\\cltfile01\transportation\P\1030014001_Div 14 Bridges_2016\1030014004_R.179 440247\Design\Structures\Working DGN\247_009_17BP.14.R.179_SMU_C05.dgn
LynnT

NOTES

ALL GUARDRAIL ATTACHMENTS SHALL BE MADE USING ADHESIVELY ANCHORED ANCHOR BOLTS. LEVEL TWO FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE $\frac{3}{4}''\varnothing$ BOLT IS 12.8 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE STANDARD SPECIFICATIONS.

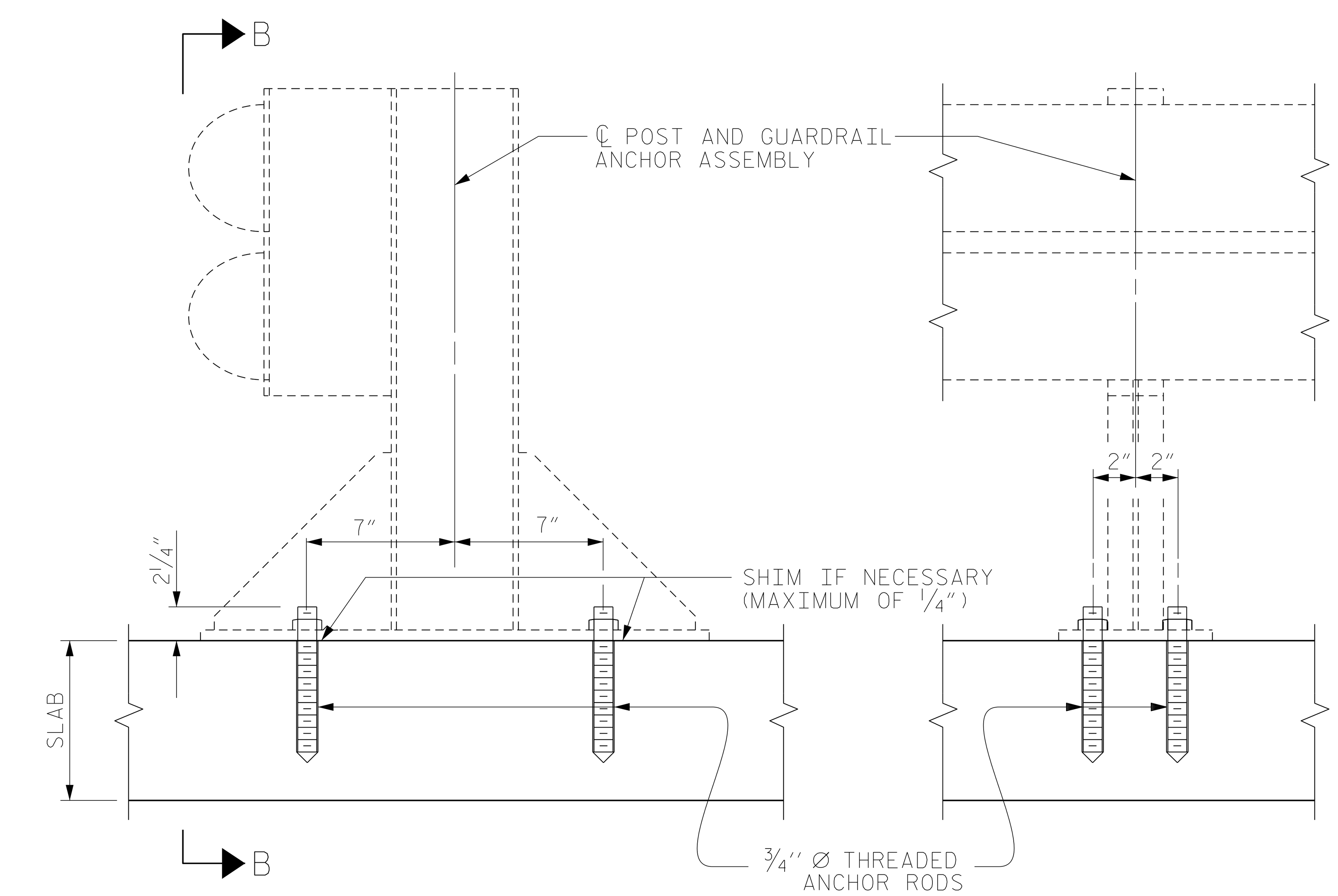
ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE $\frac{3}{4}''\varnothing$ AND MEET THE REQUIREMENTS OF ASTM A325. BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED.

PAYMENT FOR GUARDRAIL, POST, AND POST BASE PLATES IS INCLUDED IN ROADWAY PAY ITEMS.



PLAN OF PRECAST CULVERT GUARDRAIL ANCHOR ASSEMBLY SPACING

NOTE: GUARDRAIL POSTS PLACEMENT AS SHOWN. GUARDRAIL POSTS AND THREADED ANCHOR RODS MUST CLEAR ALL JOINTS OF PRECAST CONCRETE CULVERT UNITS.



SECTION A-A

SECTION B-B

PROJECT NO. 17BP.14.R.179

HENDERSON COUNTY

STATION: 12+20.50 -L-

SHEET 6 OF 6

SEAL 18442 — NORTH CAROLINA PROFESSIONAL ENGINEER — RICHARD LEON BOLLINGER JR.

12/15/2020

RS&H

RS&H Architects-Engineers-Planners, Inc.
8601 Six Forks Road, Suite 260
Raleigh, NC 27615
919-926-4100 FAX 919-846-9080
www.rsandh.com
North Carolina License Nos. 50073 * F-0493 * C-28

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

ANCHORAGE DETAILS FOR GUARDAIL ATTACHMENTS FOR PRECAST CULVERTS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

ASSEMBLED BY :	TWL	DATE :	12/2020
CHECKED BY :	MAL	DATE :	12/2020

DRAWN BY : FCJ	6/88	REV. 10/1/11	MAA/GM
CHECKED BY : ARB	6/88	REV. 12/17	MAA/THC
		REV. 6/19	MAA/THC

12/7/2020
\\cltfile01\transportation\P\1030014001_Div 14 Bridges_2016\1030014004_R.179 440247\Design\Structures\Working DGN\247_011_17BP.14.R.179_SMU_C06.dgn
LynnT

STD. NO. GRA1 (SHT 2)

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 3/4" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1 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 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 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 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

REV. 6-16-95 EEM (✓) RGW REV. 5-7-03 RWW (✓) JTE REV. 10-1-11 MAA (✓) GM
REV. 8-16-99 RWW (✓) LES REV. 5-1-06 TLA (✓) GM REV. 12-17 MAA (✓) THC

12/7/2020
$$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$
LynnT