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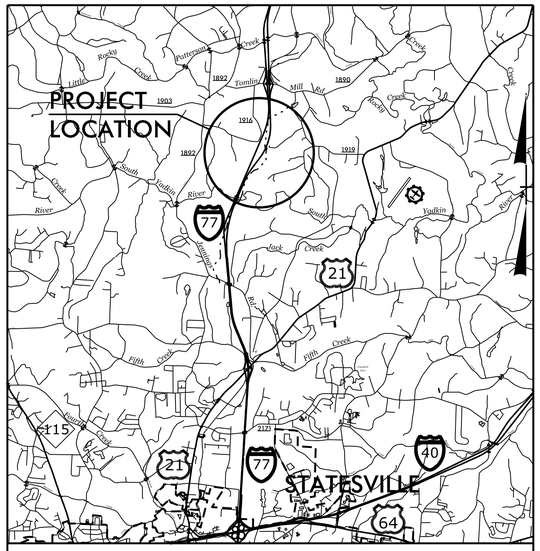
TIP PROJECT: K–4908

CONTRACT: C203566



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

IREDELL COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	K–4908		

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
39894.1.1	IMS–77–1(177)39	PE
39894.2.FS1	IMS–77–1(177)39	R/W & UTIL
39894.3.FS1	IMS–77–1(177)39	CONST.

LOCATION: I–77 REST AREA ON NEW LOCATION AT MILE MARKER #58

TYPE OF WORK: GRADING, DRAINAGE, PAVING, TRAFFIC CONTROL, SIGNING, LIGHTING, REST AREA AND FACILITIES CULVERTS

NAD 83

BEGIN TIP PROJECT K–4908
STA. 10+00.00 –LNB–

END TIP PROJECT K–4908
STA. 93+00.00 –LNB–

CULVERTS

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

DESIGN DATA

ADT 2015 = 35,200
ADT 2040 = 56,200
DHV = 10 %
D = 60 %
T = 14 %
V = 70 MPH

FUNC CLASS = INTERSTATE

STATEWIDE TIER

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT K–4908 = 1.572 MILES

TOTAL LENGTH OF TIP PROJECT K–4908 = 1.572 MILES

Prepared In the Office of:
DIVISION OF HIGHWAYS
STRUCTURE MANAGEMENT UNIT
1000 Birch Ridge Dr., Raleigh NC, 27610

2012 STANDARD SPECIFICATIONS

LETTING DATE:
APRIL 21, 2015

L. E. SUTTON, PE
PROJECT ENGINEER

D.R. SMITH, JR PE
PROJECT DESIGN ENGINEER

03-FEB-2015 08:59
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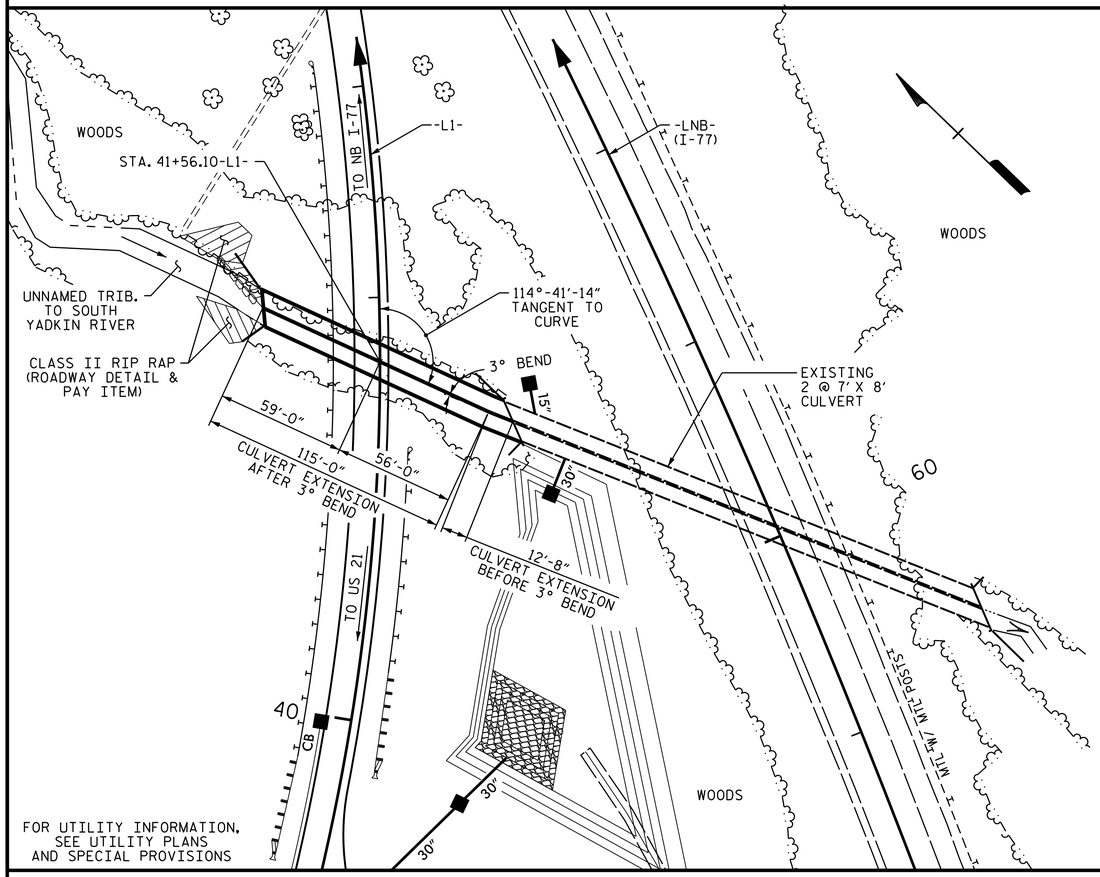
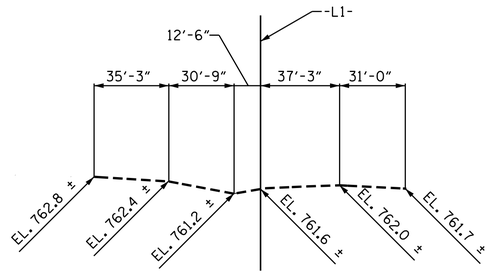
jdhawk

BM4: R/R SPIKE SET IN ROOT OF 12" OAK, 591' RIGHT STA. 71+25.00-LSB-, EL. 808.20



LOCATION SKETCH



PROFILE ALONG ℄ CULVERT

F.A. PROJECT NO. IMS-77-1(177)39

NOTES

ASSUMED LIVE LOAD ---------- HS20-44 OR ALTERNATE LOADING.

DESIGN FILL---------- 17.78'.

FOR OTHER DESIGN DATA AND NOTES, SEE SHEET SN.

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 RESIDENT 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 THE WING SHEET.

TRANSVERSE CONSTRUCTION JOINTS SHALL BE USED IN THE BARREL, SPACED TO LIMIT THE POURS TO A MAXIMUM OF 70 FT. LOCATION OF JOINTS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.

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 CONTRACTOR.

AT THE CONTRACTOR'S OPTION, HE MAY SPLICE THE VERTICAL REINFORCING STEEL IN THE INTERIOR FACE OF EXTERIOR WALL AND BOTH FACES OF INTERIOR WALL 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.

DOWELS SHALL BE USED TO CONNECT THE CULVERT EXTENSION TO THE EXISTING CULVERT AS SHOWN. FOR NOTES REGARDING SETTING OF DOWELS, SEE SHEET SN.

IF APPROVED BY THE ENGINEER, THE CONTRACTOR MAY USE THE EXISTING WINGS AS TEMPORARY SHORING FOR THE CONSTRUCTION OF THE CULVERT EXTENSION. IN THIS CASE, THE BOTTOM SLAB OF THE EXTENSION SHALL BE POURED AT LEAST 72 HOURS PRIOR TO CUTTING THE WINGS. THE WINGS MAY BE CUT EARLIER PROVIDED THE SLAB CONCRETE STRENGTH HAS REACHED A MINMUM COMPRESSIVE STRENGTH OF 1,500 PSI.

THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 400 TONS OF REINFORCING STEEL, ONE 30 INCH SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 400 TONS OF REINFORCING STEEL, TWO 30 INCH SAMPLES OF EACH SIZE BAR USED. THE BARS FROM WHICH THE SAMPLES ARE TAKEN MUST THEN BE SPLICED WITH REPLACEMENT BARS OF THE SIZE AND LENGTH OF THE SAMPLE, PLUS A MINIMUM LAP SPLICE OF THIRTY BAR DIAMETERS. PAYMENT FOR THE SAMPLES OF REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.

THE REINFORCED CONCRETE BOX CULVERT SHALL BE PLACED ON THE STANDARD 1.0 FOOT BLANKET OF FOUNDATION CONDITIONING MATERIAL. SEE SECTION 414 OF THE STANDARD SPECIFICATIONS.

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

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.

NO PRECAST REINFORCED BOX CULVERT OPTION WILL BE ALLOWED.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

THE 30"AND 15"DIA. PIPES THROUGH THE SIDEWALL OF THE EXISTING CULVERT SHALL BE LOCATED BY THE ENGINEER. SEE ROADWAY PLANS.

ROADWAY DATA

GRADE POINT ELEV. @ STA. 41+56.10-L1-	= 786.96
BED ELEV. @ STA. 41+56.10-L1-	= 761.95
ROADWAY SLOPE LEFT @ STA. 41+56.10-L1-	= 2 :1
ROADWAY SLOPE RIGHT @ STA. 41+56.10-L1-	= 4 :1

HYDRAULIC DATA

DESIGN DISCHARGE	= 800 C.F.S.
FREQUENCY OF DESIGN FLOOD	= 50 YEARS
DESIGN HIGH WATER ELEVATION	= 769.8
DRAINAGE AREA	= 1.32 SQ. MI.
BASE DISCHARGE (Q100)	= 900 C.F.S.
BASE HIGH WATER ELEVATION	= 770.4

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= >1,300 C.F.S.
FREQUENCY OF OVERTOPPING FLOOD	= 500+ YEARS
OVERTOPPING FLOOD ELEVATION	= 785.2 ✱

✱ OT OCCURS @ SAG -L1- STA. 43+74.88. OT ELEV. REPRESENTS GRADE POINT OF SUPERELEVATED ACCELERATION LANE.

TOTAL STRUCTURE QUANTITIES

CLASS A CONCRETE		
BARREL @ 1.773 CY/FT	226.4	C.Y.
WINGS, ETC.	15.6	C.Y.
TOTAL	242.0	C.Y.
REINFORCING STEEL		
BARREL	28,235	LBS.
WINGS, ETC.	833	LBS.
TOTAL	29,068	LBS.
CULVERT EXTENSION EXCAVATION	LUMP SUM	
FOUNDATION CONDITIONING MAT'L.	220 TONS	

DRAWN BY : P.S. ADKINS DATE : 8/26/14
CHECKED BY : K.D. LAYNE DATE : 10/2/14
DESIGN ENGINEER OF RECORD: R.L. CHESSON DATE : 1/12/15

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jdhawk

NORTH CAROLINA PROFESSIONAL SEAL 21638 ENGINEER LAURA E. SUTTON
DocuSigned by: Laura C. Sutton AE3E3E3E7726DC... 2/3/2015

NORTH CAROLINA PROFESSIONAL SEAL 031480 ENGINEER DONALD R. SMITH, JR.
DocuSigned by: Donald R. Smith, Jr EDC877D71E8D0... 2/3/2015

PROJECT NO. K-4908
IREDELL COUNTY
STATION: 41+56.10 -L1-
SHEET 1 OF 4 WIDENING OF BRIDGE NO. C-196

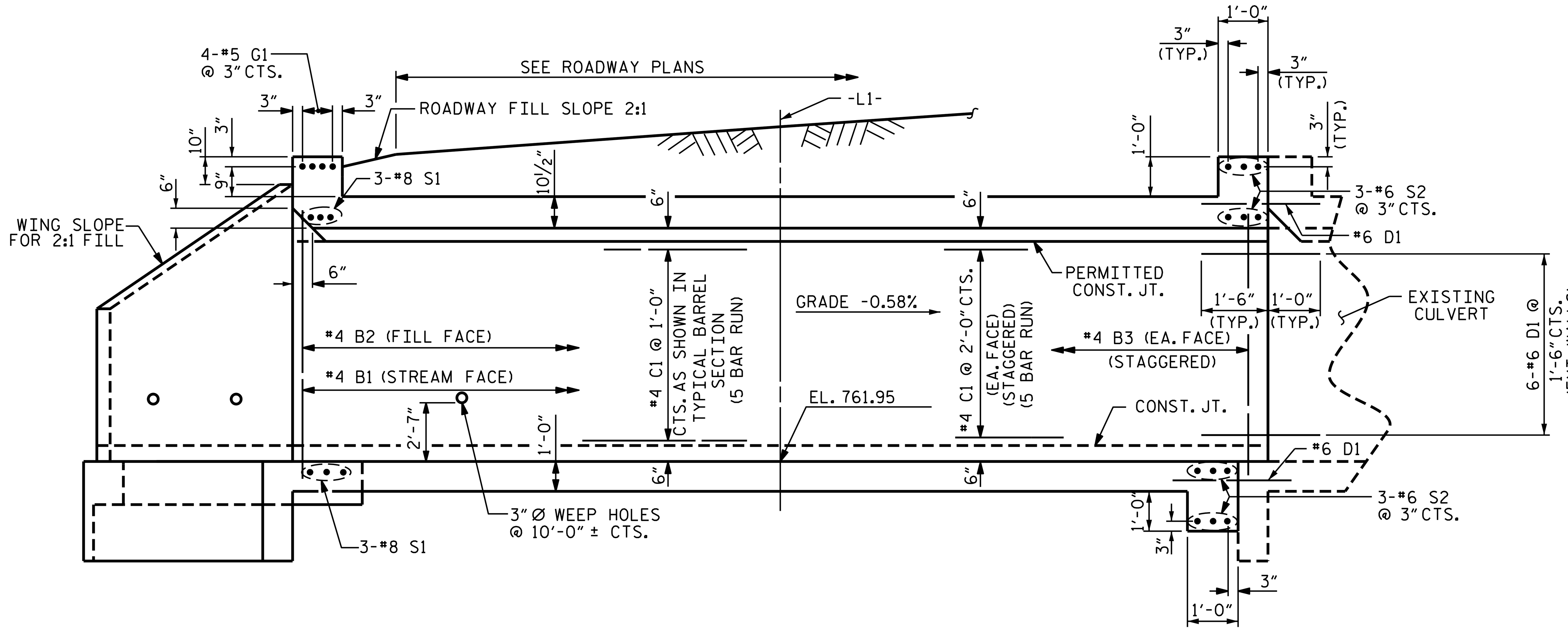
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DOUBLE 7 FT. X 8 FT. CONCRETE BOX CULVERT 114°-41'-14" SKEW

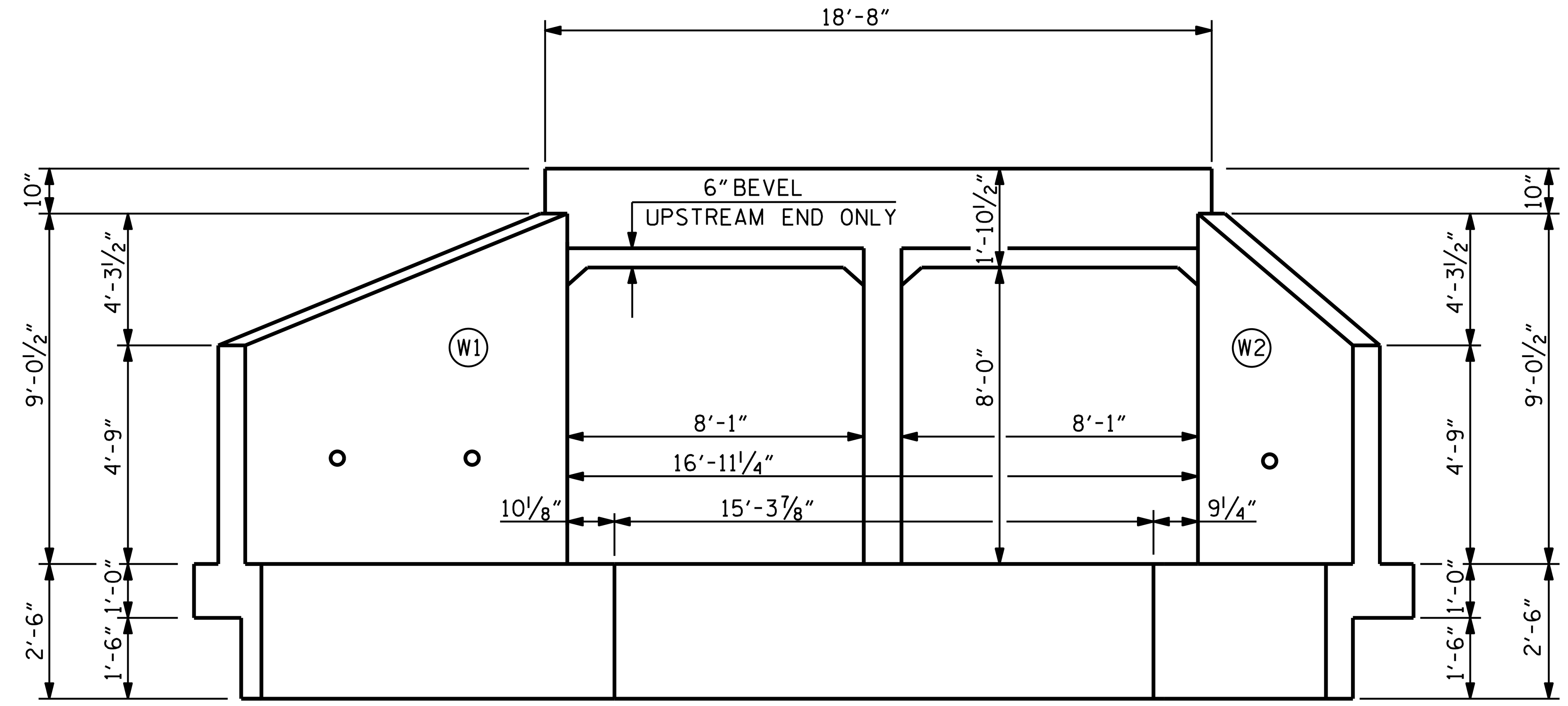
(120° HEADWALL)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-1
1			3			TOTAL SHEETS
2			4			8

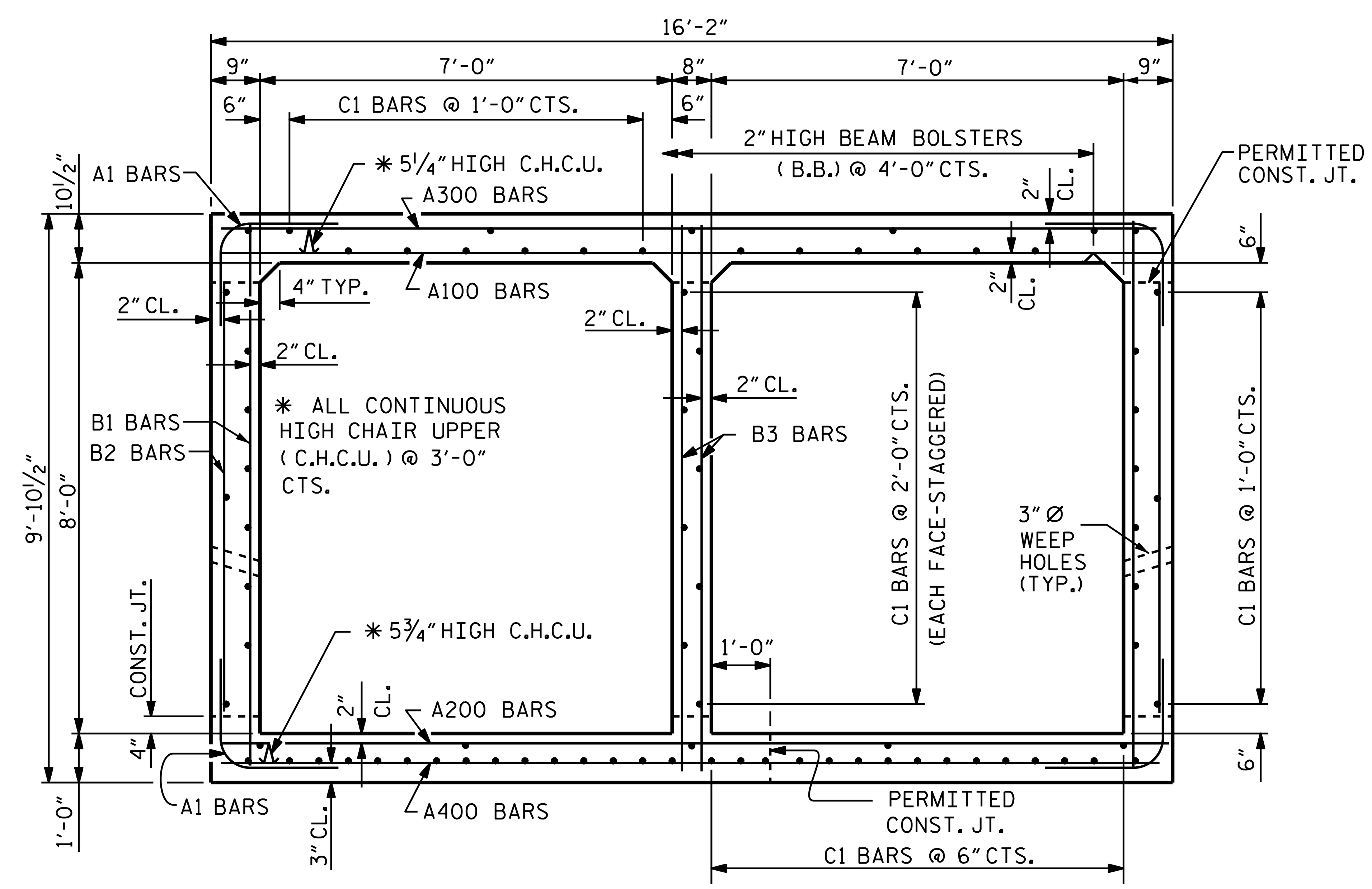
STR. #1



CULVERT SECTION NORMAL TO ROADWAY



INLET END ELEVATION - NORMAL TO SKEW



RIGHT ANGLE SECTION OF BARREL

THERE ARE 80 "C" BARS IN SECTION OF BARREL.
"C" BARS MAY BE FIELD BENT AS NECESSARY.

PROJECT NO. K-4908
IREDELL COUNTY
STATION: 41+56.10 -L1-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DOUBLE 7 FT. X 8 FT.
CONCRETE BOX CULVERT
114°-41'-14" SKEW
(120° HEADWALL)

NORTH CAROLINA PROFESSIONAL SEAL 031480 ENGINEER DONALD R. SMITH, JR.

REVISIONS								SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:			C-2
1			3					TOTAL SHEETS
2			4					8

STR. #1

DRAWN BY : P.S. ADKINS DATE : 8/26/14
CHECKED BY : K.D. LAYNE DATE : 10/2/14
DESIGN ENGINEER OF RECORD: R.L. CHESSON DATE : 1/12/15

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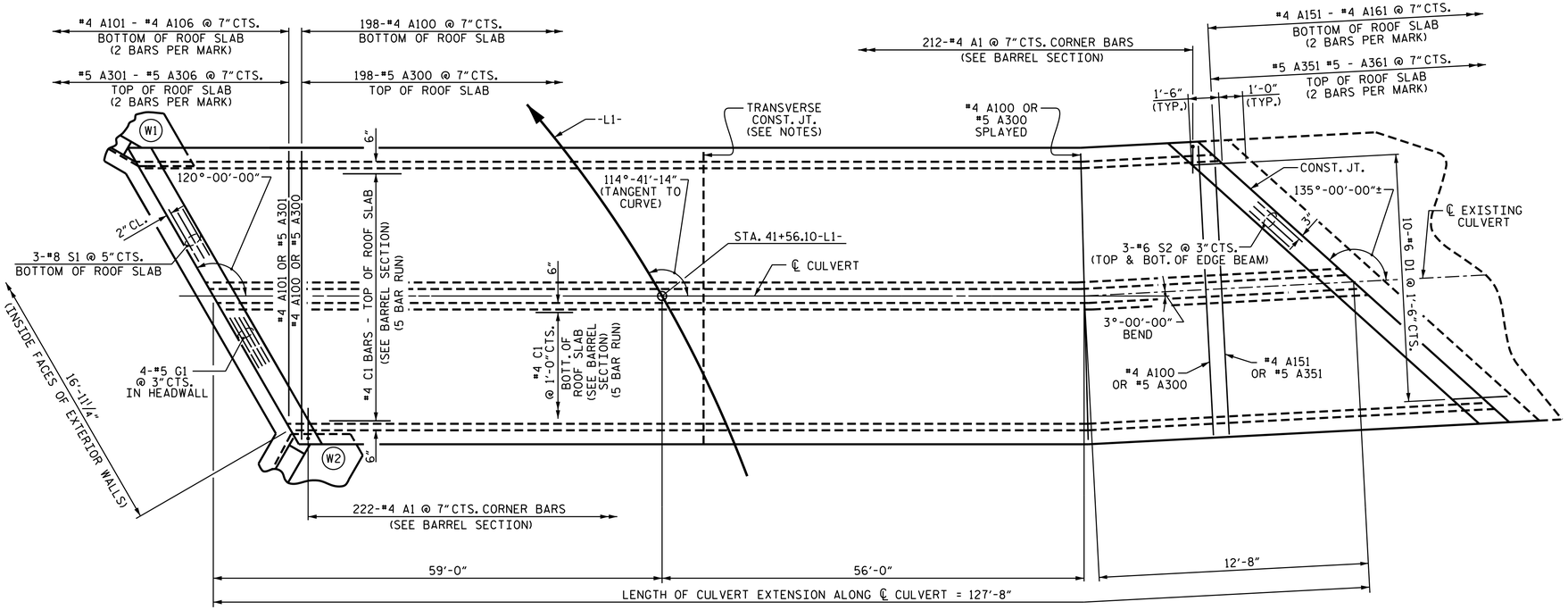
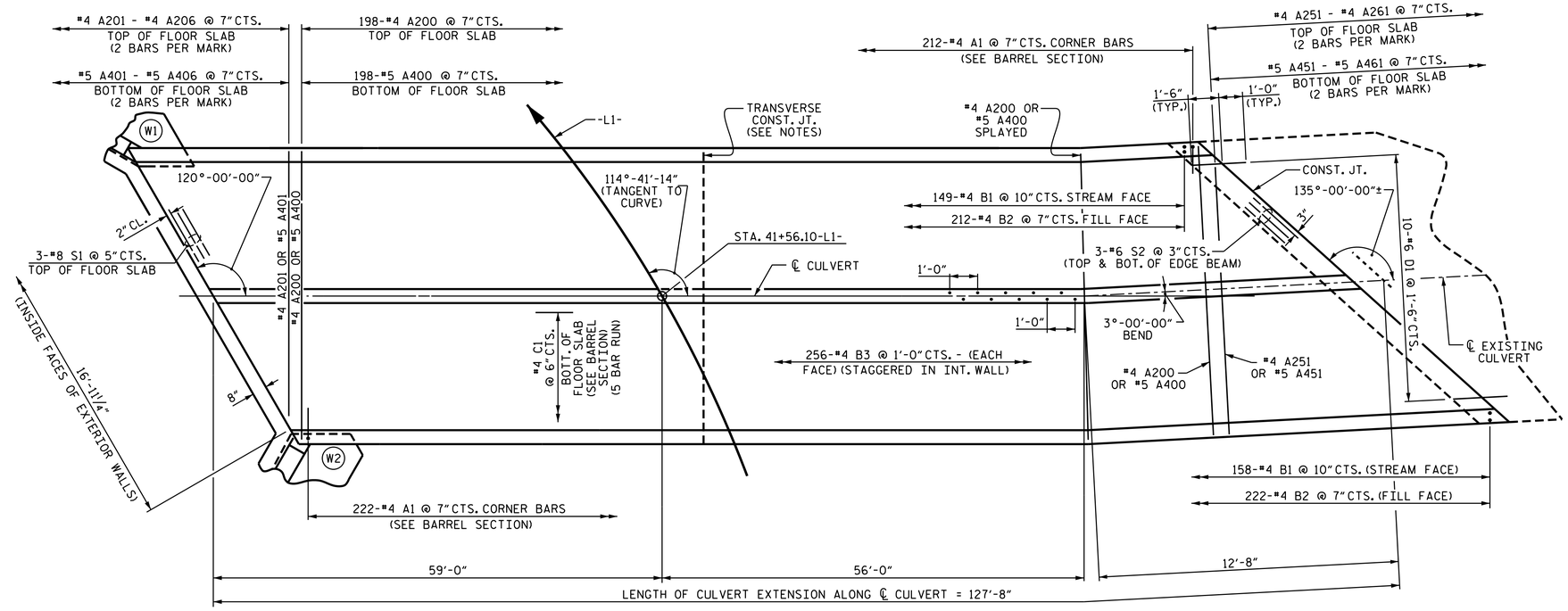


ROOF SLAB

SPLAY BARS IN AREA OF BEND

FIELD BEND #4 "C" BARS AS NECESSARY



FLOOR SLAB

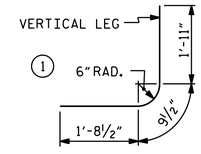
SPLAY BARS IN AREA OF BEND

BILL OF MATERIAL

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A1	868	#4	1	4'-5"	2,561	A357	2	#5	STR	7'-9"	16
						A358	2	#5	STR	6'-7"	14
A100	198	#4	STR	15'-9"	2,083	A359	2	#5	STR	5'-5"	11
A101	2	#4	STR	13'-11"	19	A360	2	#5	STR	4'-3"	9
A102	2	#4	STR	11'-11"	16	A361	2	#5	STR	3'-1"	6
A103	2	#4	STR	9'-11"	13						
A104	2	#4	STR	7'-11"	11	A400	198	#5	STR	15'-9"	3,253
A105	2	#4	STR	5'-11"	8	A401	2	#5	STR	13'-11"	29
A106	2	#4	STR	3'-10"	5	A402	2	#5	STR	11'-11"	25
A151	2	#4	STR	14'-9"	20	A403	2	#5	STR	9'-11"	21
A152	2	#4	STR	13'-7"	18	A404	2	#5	STR	7'-11"	17
A153	2	#4	STR	12'-5"	17	A405	2	#5	STR	5'-11"	12
A154	2	#4	STR	11'-3"	15	A406	2	#5	STR	3'-10"	8
A155	2	#4	STR	10'-1"	13	A451	2	#5	STR	14'-9"	31
A156	2	#4	STR	8'-11"	12	A452	2	#5	STR	13'-7"	28
A157	2	#4	STR	7'-9"	10	A453	2	#5	STR	12'-5"	26
A158	2	#4	STR	6'-7"	9	A454	2	#5	STR	11'-3"	23
A159	2	#4	STR	5'-5"	7	A455	2	#5	STR	10'-1"	21
A160	2	#4	STR	4'-3"	6	A456	2	#5	STR	8'-11"	19
A161	2	#4	STR	3'-1"	4	A457	2	#5	STR	7'-9"	16
						A458	2	#5	STR	6'-7"	14
A200	198	#4	STR	15'-9"	2,083	A459	2	#5	STR	5'-5"	11
A201	2	#4	STR	13'-11"	19	A460	2	#5	STR	4'-3"	9
A202	2	#4	STR	11'-11"	16	A461	2	#5	STR	3'-1"	6
A203	2	#4	STR	9'-11"	13						
A204	2	#4	STR	7'-11"	11	B1	307	#4	STR	9'-4"	1,914
A205	2	#4	STR	5'-11"	8	B2	434	#4	STR	7'-4"	2,126
A206	2	#4	STR	3'-10"	5	B3	256	#4	STR	9'-4"	1,596
A251	2	#4	STR	14'-9"	20						
A252	2	#4	STR	13'-7"	18	C1	400	#4	STR	27'-10"	7,437
A253	2	#4	STR	12'-5"	17						
A254	2	#4	STR	11'-3"	15	D1	32	#6	STR	2'-6"	120
A255	2	#4	STR	10'-1"	13						
A256	2	#4	STR	8'-11"	12	G1	4	#5	STR	18'-3"	76
A257	2	#4	STR	7'-9"	10						
A258	2	#4	STR	6'-7"	9	S1	6	#8	STR	18'-3"	292
A259	2	#4	STR	5'-5"	7	S2	12	#6	STR	22'-4"	403
A260	2	#4	STR	4'-3"	6						
A261	2	#4	STR	3'-1"	4						
						TOTAL REINFORCING STEEL				LBS.	28,235
A300	198	#5	STR	15'-9"	3,253						
A301	2	#5	STR	13'-11"	29						
A302	2	#5	STR	11'-11"	25						
A303	2	#5	STR	9'-11"	21						
A304	2	#5	STR	7'-11"	17						
A305	2	#5	STR	5'-11"	12						
A306	2	#5	STR	3'-10"	8						
A351	2	#5	STR	14'-9"	31						
A352	2	#5	STR	13'-7"	28						
A353	2	#5	STR	12'-5"	26						
A354	2	#5	STR	11'-3"	23						
A355	2	#5	STR	10'-1"	21						
A356	2	#5	STR	8'-11"	19						

NOTE: "A" BARS ARE PERPENDICULAR TO THE CULVERT CENTERLINE.

BAR TYPE



BAR DIMENSIONS ARE OUT TO OUT

SPLICE LENGTHS CHART

BAR	SIZE	SPLICE LENGTH
B1	4	1'-9"
B3	4	1'-9"
A200	4	1'-9"
A400	5	1'-9"
C1	4	1'-11"

PROJECT NO. K-4908

IREDELL COUNTY

STATION: 41+56.10 -L1-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DOUBLE 7 FT. X 8 FT. CONCRETE BOX CULVERT 114°-41'-14" SKEW

(120° HEADWALL)

NORTH CAROLINA PROFESSIONAL SEAL 031480 ENGINEER DONALD R. SMITH, JR.

DocuSigned by: Donald R. Smith, Jr EDC877B7174B490... 2/3/2015

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-3
1			3			TOTAL SHEETS
2			4			8

STR. #1

DRAWN BY : P.S. ADKINS DATE : 8/26/14
CHECKED BY : K.D. LAYNE DATE : 10/2/14
DESIGN ENGINEER OF RECORD: R.L. CHESSON DATE : 1/12/15

03-FEB-2015 08:59
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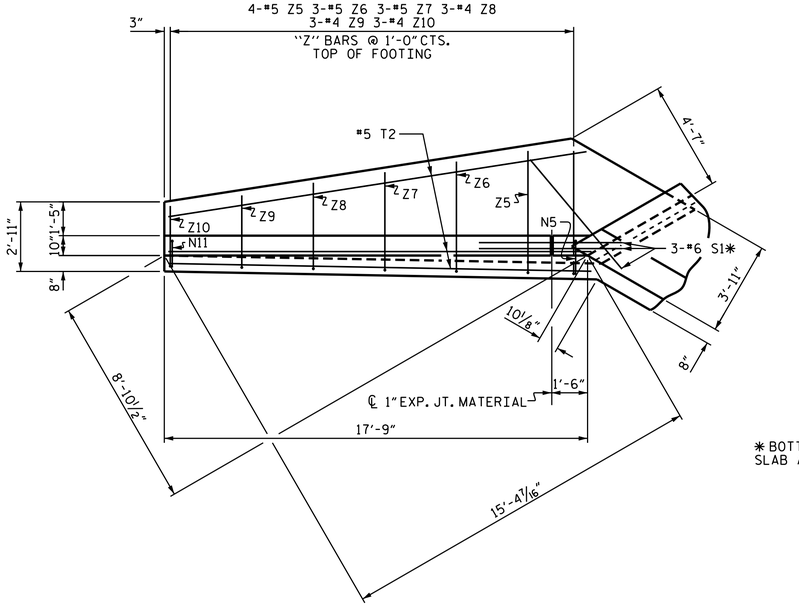
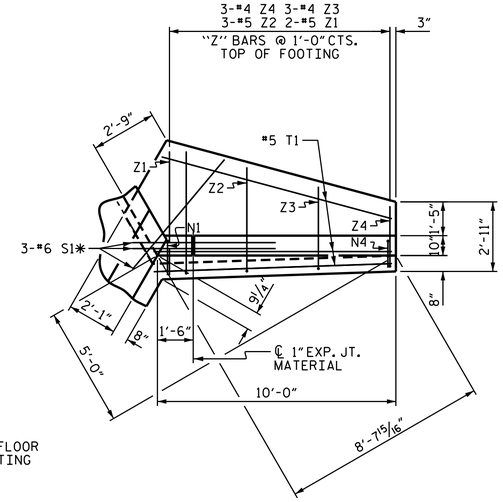
jdhawk

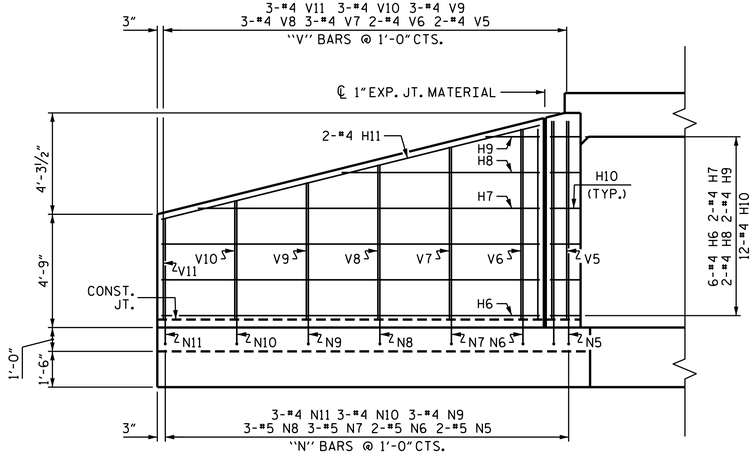


PLAN W1

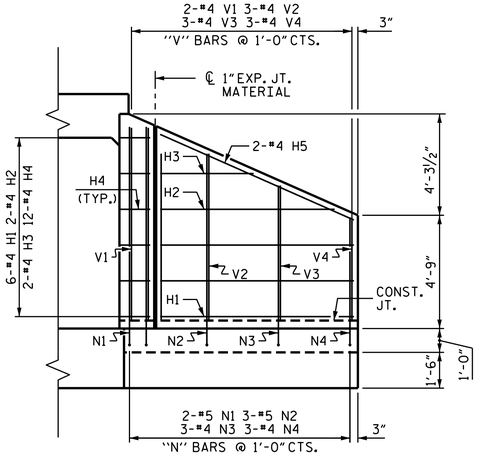


* BOTTOM OF FLOOR SLAB AND FOOTING

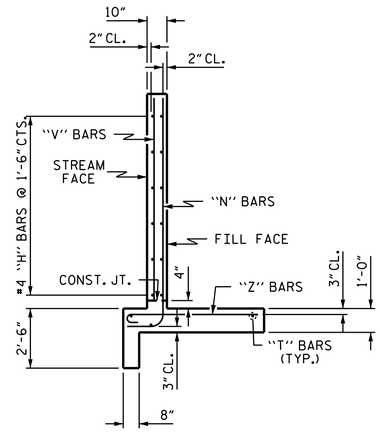
PLAN W2



ELEVATION W1



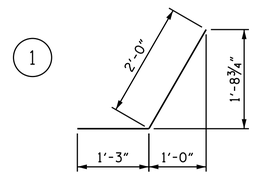
ELEVATION W2

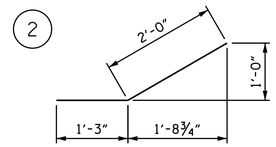


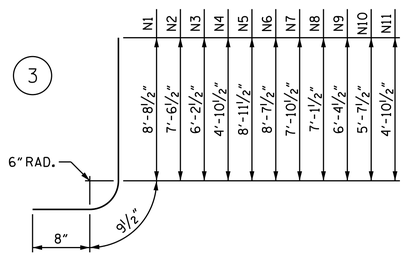
TYPICAL WING SECTION

BAR TYPES

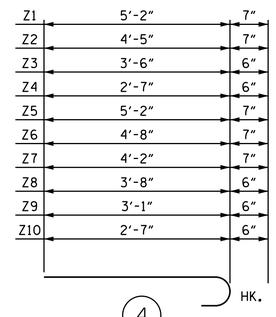
ALL BAR DIMENSIONS ARE OUT TO OUT.







Z1	5'-2"	7"
Z2	4'-5"	7"
Z3	3'-6"	6"
Z4	2'-7"	6"
Z5	5'-2"	7"
Z6	4'-8"	7"
Z7	4'-2"	7"
Z8	3'-8"	6"
Z9	3'-1"	6"
Z10	2'-7"	6"



BILL OF MATERIAL

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
H1	6	#4	STR	8'-1"	32
H2	2	#4	STR	7'-3"	10
H3	2	#4	STR	3'-11"	5
H4	12	#4	1	3'-3"	26
H5	2	#4	STR	8'-10"	12
H6	6	#4	STR	15'-10"	63
H7	2	#4	STR	14'-4"	19
H8	2	#4	STR	8'-3"	11
H9	2	#4	STR	2'-3"	3
H10	12	#4	2	3'-3"	26
H11	2	#4	STR	16'-4"	22
N1	2	#5	3	10'-2"	21
N2	3	#5	3	9'-0"	28
N3	3	#4	3	7'-8"	15
N4	3	#4	3	6'-4"	13
N5	2	#5	3	10'-5"	22
N6	2	#5	3	10'-1"	21
N7	3	#5	3	9'-4"	29
N8	3	#5	3	8'-7"	27
N9	3	#4	3	7'-10"	16
N10	3	#4	3	7'-1"	14
N11	3	#4	3	6'-4"	13
S1	6	#6	STR	6'-0"	54
T1	3	#5	STR	10'-0"	31
T2	3	#5	STR	17'-9"	56
V1	2	#4	STR	8'-1"	11
V2	3	#4	STR	7'-0"	14
V3	3	#4	STR	5'-8"	11
V4	3	#4	STR	4'-4"	9
V5	2	#4	STR	8'-4"	11
V6	2	#4	STR	8'-0"	11
V7	3	#4	STR	7'-3"	15
V8	3	#4	STR	6'-6"	13
V9	3	#4	STR	5'-9"	12
V10	3	#4	STR	5'-0"	10
V11	3	#4	STR	4'-3"	9
Z1	2	#5	4	5'-9"	12
Z2	3	#5	4	5'-0"	16
Z3	3	#4	4	4'-0"	8
Z4	3	#4	4	3'-1"	6
Z5	4	#5	4	5'-9"	24
Z6	3	#5	4	5'-3"	16
Z7	3	#5	4	4'-9"	15
Z8	3	#4	4	4'-2"	8
Z9	3	#4	4	3'-7"	7
Z10	3	#4	4	3'-1"	6

REINFORCING STEEL FOR 2 WINGS	LBS.	833
CLASS A CONCRETE		
2 WINGS	CY	12.1
1 HEADWALL	CY	0.9
1 END CURTAIN WALL	CY	0.9
2 EDGE BEAMS	CY	1.7
TOTAL	CY	15.6

PROJECT NO. K-4908

IREDELL COUNTY

STATION: 41+56.10 -L1-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD WINGS FOR CONCRETE BOX CULVERT

H = 8'-0" SLOPE = 2:1

120° SKEW

NORTH CAROLINA PROFESSIONAL SEAL 031480 ENGINEER DONALD R. SMITH, JR.

DocuSigned by: Donald R. Smith, Jr. EDC877B71E6D0... 2/3/2015

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-4
1			3			TOTAL SHEETS
2			4			8

STR. #1

STD. NO. CW6008

ASSEMBLED BY :	P.S. ADKINS	DATE :	8/26/14
CHECKED BY :	K.D. LAYNE	DATE :	10/22/14
DRAWN BY :	CCJ 11/99		
CHECKED BY :	RWW 03/00		

03-FEB-2015 08:59
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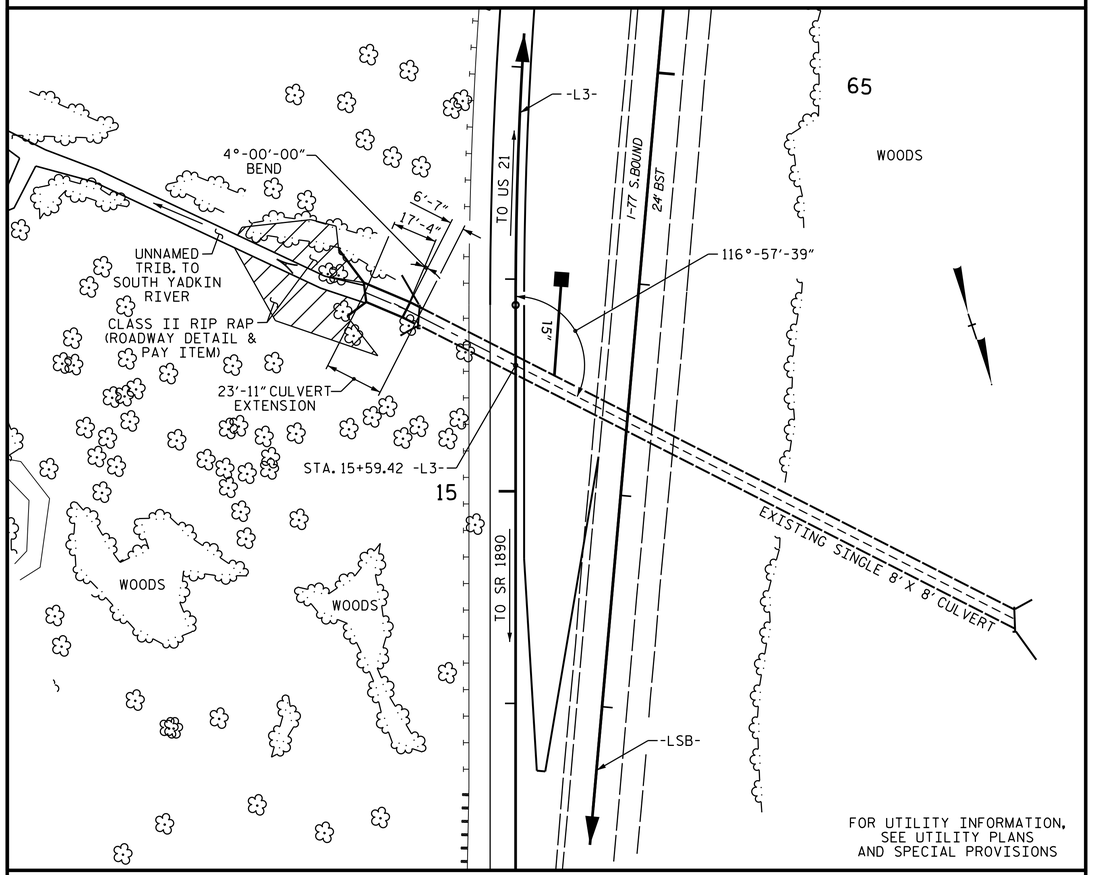
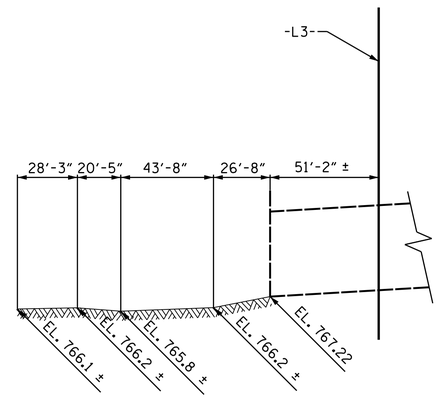
jdnawk

BM5: R/R SPIKE SET IN BASE OF 18" ELM, 70' LEFT STA. 60+70.00 -LSB-, EL. 812.65



LOCATION SKETCH



PROFILE ALONG ℄ CULVERT

ROADWAY DATA

GRADE POINT ELEV. @ STA. 15+59.42 -L3-	= 795.80
BED ELEV. @ STA. 15+59.42 -L3-	= 767.82
ROADWAY SLOPE LEFT @ STA. 15+59.42 -L3-	= 2 :1

HYDRAULIC DATA

DESIGN DISCHARGE	= 500 C.F.S.
FREQUENCY OF DESIGN FLOOD	= 50 YEARS
DESIGN HIGH WATER ELEVATION	= 779.2
DRAINAGE AREA	= 0.64 SQ. MI.
BASE DISCHARGE (Q100)	= 600 C.F.S.
BASE HIGH WATER ELEVATION	= 780.31

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= >850 C.F.S.
FREQUENCY OF OVERTOPPING FLOOD	= 500 YEARS +
OVERTOPPING FLOOD ELEVATION	= 789.2 *

* OVERTOPPING OCCURS AT SAG ON SR 1916. SEE ROADWAY PROFILE FOR LOCATION.

TOTAL STRUCTURE QUANTITIES

CLASS A CONCRETE

8X8 BARREL @	1.004 CY/FT	6.6	C.Y.
8X9 BARREL @	1.053 CY/FT	18.3	C.Y.
STEP DROP		0.2	C.Y.
WINGS, ETC.		16.8	C.Y.
TOTAL		41.9	C.Y.

REINFORCING STEEL

BARREL	4,933	LBS.
WINGS, ETC.	1,074	LBS.
TOTAL	6,007	LBS.

CULVERT EXTENSION EXCAVATION LUMP SUM

FOUNDATION CONDITIONING MAT'L. 16 TONS

F.A. PROJECT NO. IMS-77-1(177)39

NOTES

ASSUMED LIVE LOAD ---------- HS20-44 OR ALTERNATE LOADING.

DESIGN FILL---------- 21.17'

FOR OTHER DESIGN DATA AND NOTES, SEE SHEET SN.

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 RESIDENT 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 THE WING SHEET.

AT THE CONTRACTOR'S OPTION, HE MAY SPLICE THE VERTICAL REINFORCING STEEL IN THE INTERIOR FACE OF EXTERIOR 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.

DOWELS SHALL BE USED TO CONNECT THE CULVERT EXTENSION TO THE EXISTING CULVERT AS SHOWN. FOR NOTES REGARDING SETTING OF DOWELS, SEE SHEET SN.

IF APPROVED BY THE ENGINEER, THE CONTRACTOR MAY USE THE EXISTING WINGS AS TEMPORARY SHORING FOR THE CONSTRUCTION OF THE CULVERT EXTENSION. IN THIS CASE, THE BOTTOM SLAB OF THE EXTENSION SHALL BE POURED AT LEAST 72 HOURS PRIOR TO CUTTING THE WINGS. THE WINGS MAY BE CUT EARLIER PROVIDED THE SLAB CONCRETE STRENGTH HAS REACHED A MINMUM COMPRESSIVE STRENGTH OF 1,500 PSI.

THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 400 TONS OF REINFORCING STEEL, ONE 30 INCH SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 400 TONS OF REINFORCING STEEL, TWO 30 INCH SAMPLES OF EACH SIZE BAR USED. THE BARS FROM WHICH THE SAMPLES ARE TAKEN MUST THEN BE SPLICED WITH REPLACEMENT BARS OF THE SIZE AND LENGTH OF THE SAMPLE, PLUS A MINIMUM LAP SPLICE OF THIRTY BAR DIAMETERS. PAYMENT FOR THE SAMPLES OF REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.

THE REINFORCED CONCRETE BOX CULVERT SHALL BE PLACED ON THE STANDARD 1.0 FOOT BLANKET OF FOUNDATION CONDITIONING MATERIAL. SEE SECTION 414 OF THE STANDARD SPECIFICATIONS.

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

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.

NO PRECAST REINFORCED BOX CULVERT OPTION WILL BE ALLOWED.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

THE 15"DIA. PIPE THROUGH THE SIDEWALL OF THE EXISTING CULVERT SHALL BE LOCATED BY THE ENGINEER. SEE ROADWAY PLANS.

PROJECT NO. K-4908

IREDELL COUNTY

STATION: 15+59.42 -L3-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SINGLE 8 FT. X 9 FT. CONCRETE BOX CULVERT 116°-57'-39" SKEW

(120° HEADWALL)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-5
1			3			TOTAL SHEETS
2			4			8

STR. #2

NORTH CAROLINA PROFESSIONAL SEAL 21638 ENGINEER LAURA E. SUTTON
DocuSigned by: Laura E. Sutton AE3E3EB7726A4C... 2/3/2015

NORTH CAROLINA PROFESSIONAL SEAL 031480 ENGINEER DONALD R. SMITH JR.
DocuSigned by: Donald R. Smith, Jr EDC877B71B1B4D5... 2/3/2015

DRAWN BY :	P.S. ADKINS	DATE :	8/19/14
CHECKED BY :	K.D. LAYNE	DATE :	10/8/14
DESIGN ENGINEER OF RECORD:	R.L. CHESSON	DATE :	11/20/14

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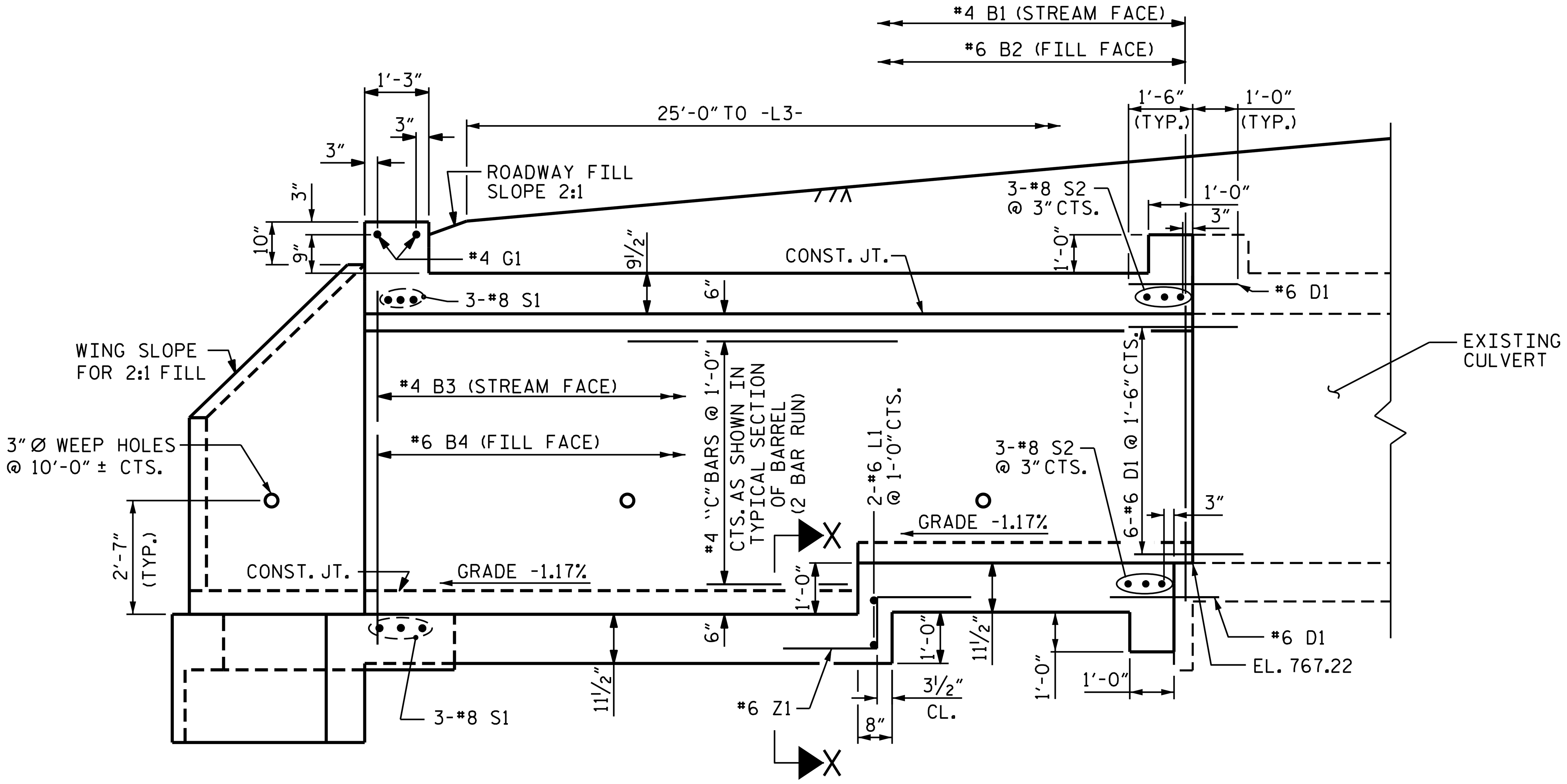
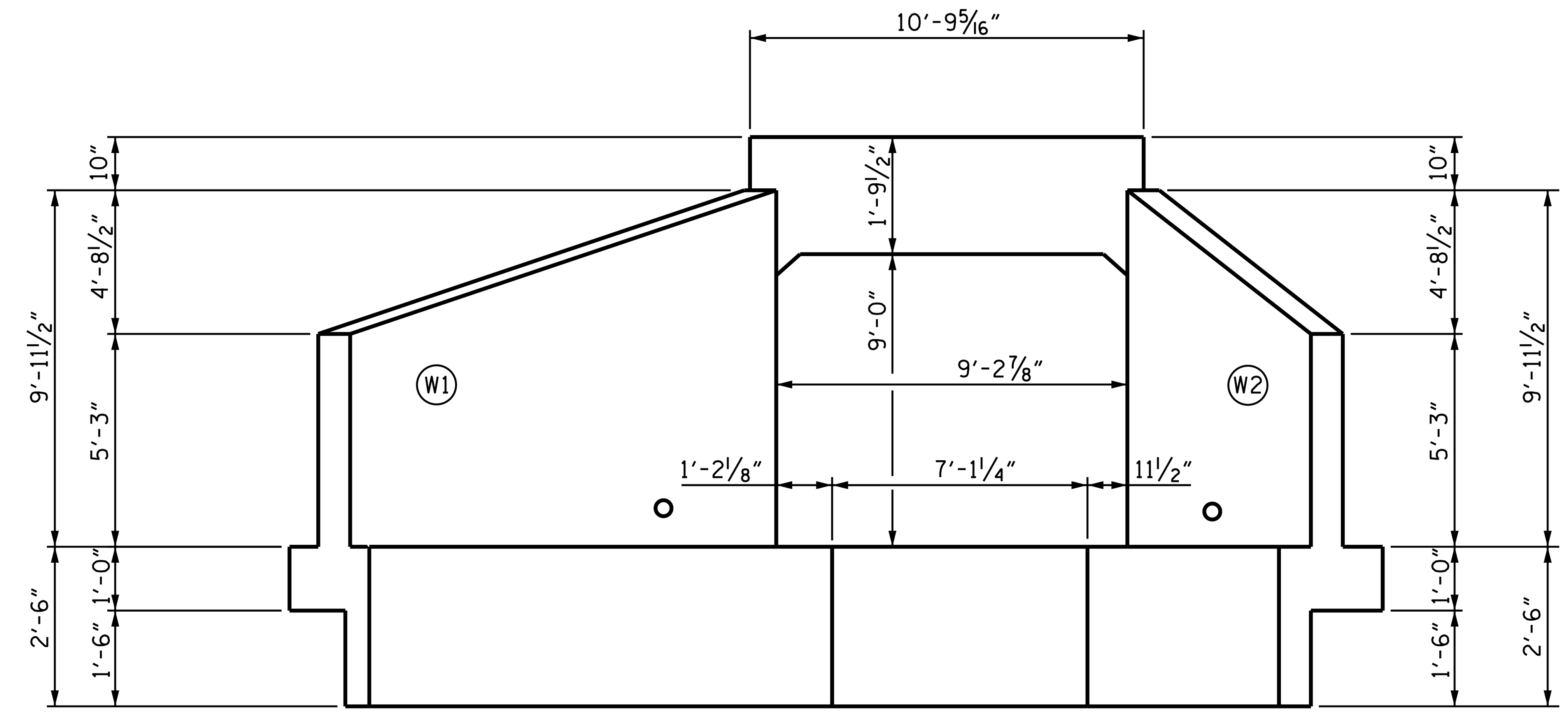
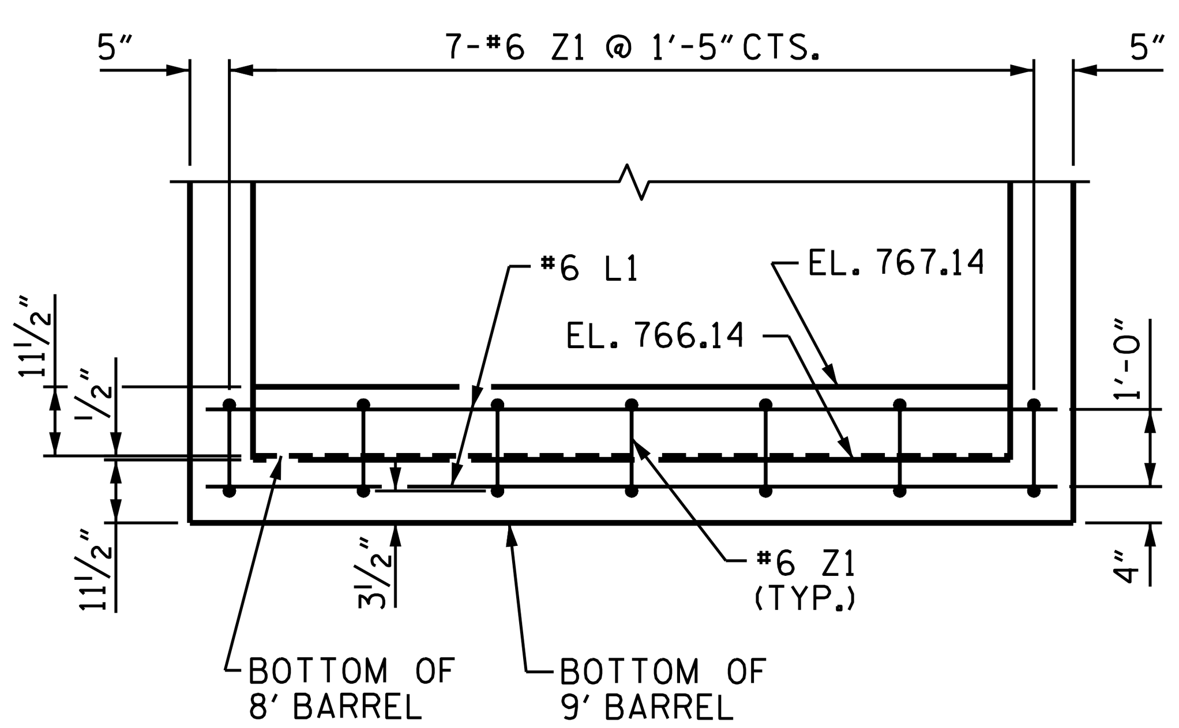
jdhawk



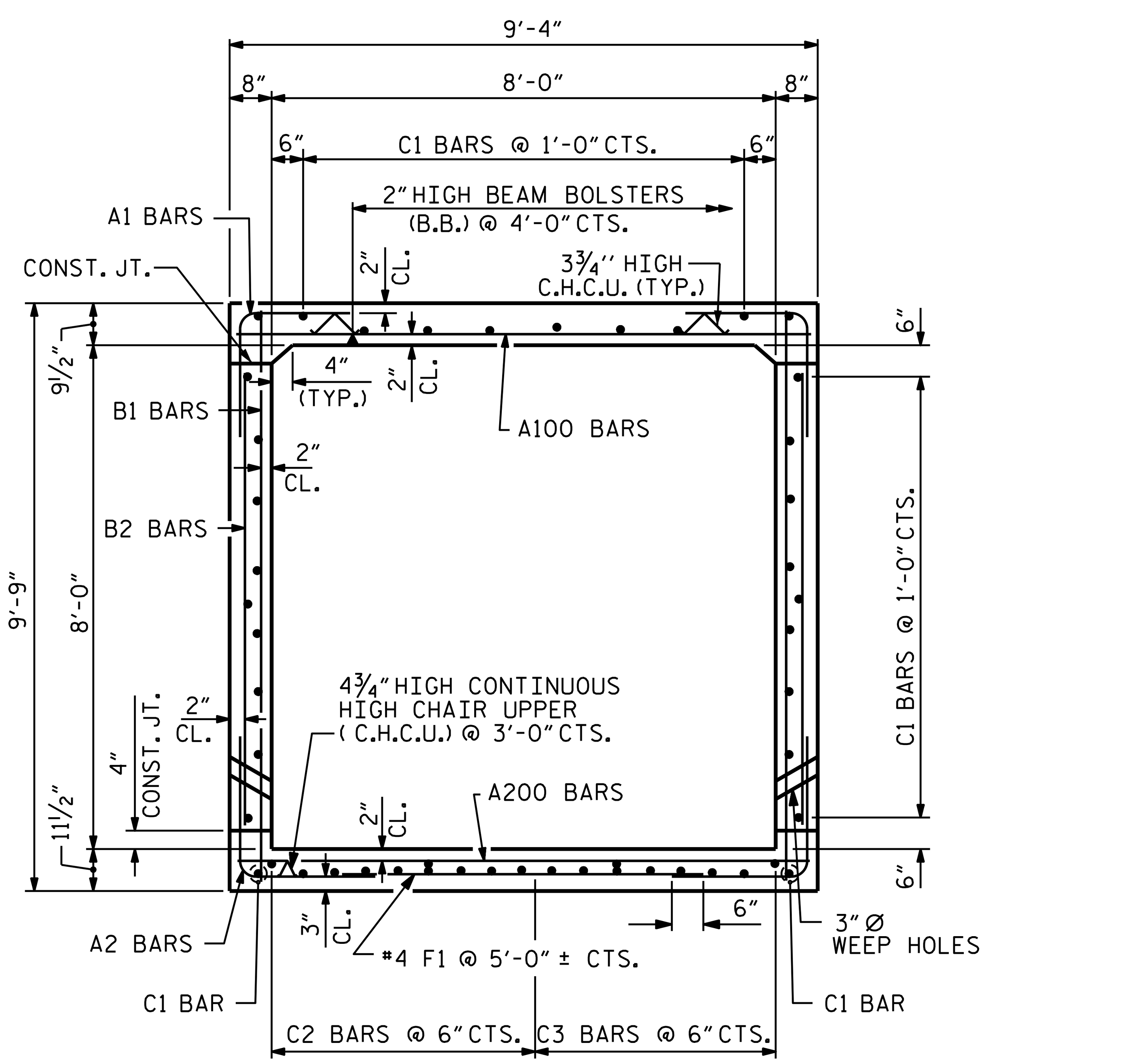
CULVERT SECTION NORMAL TO ROADWAY



OUTLET END ELEVATION - NORMAL TO SKEW

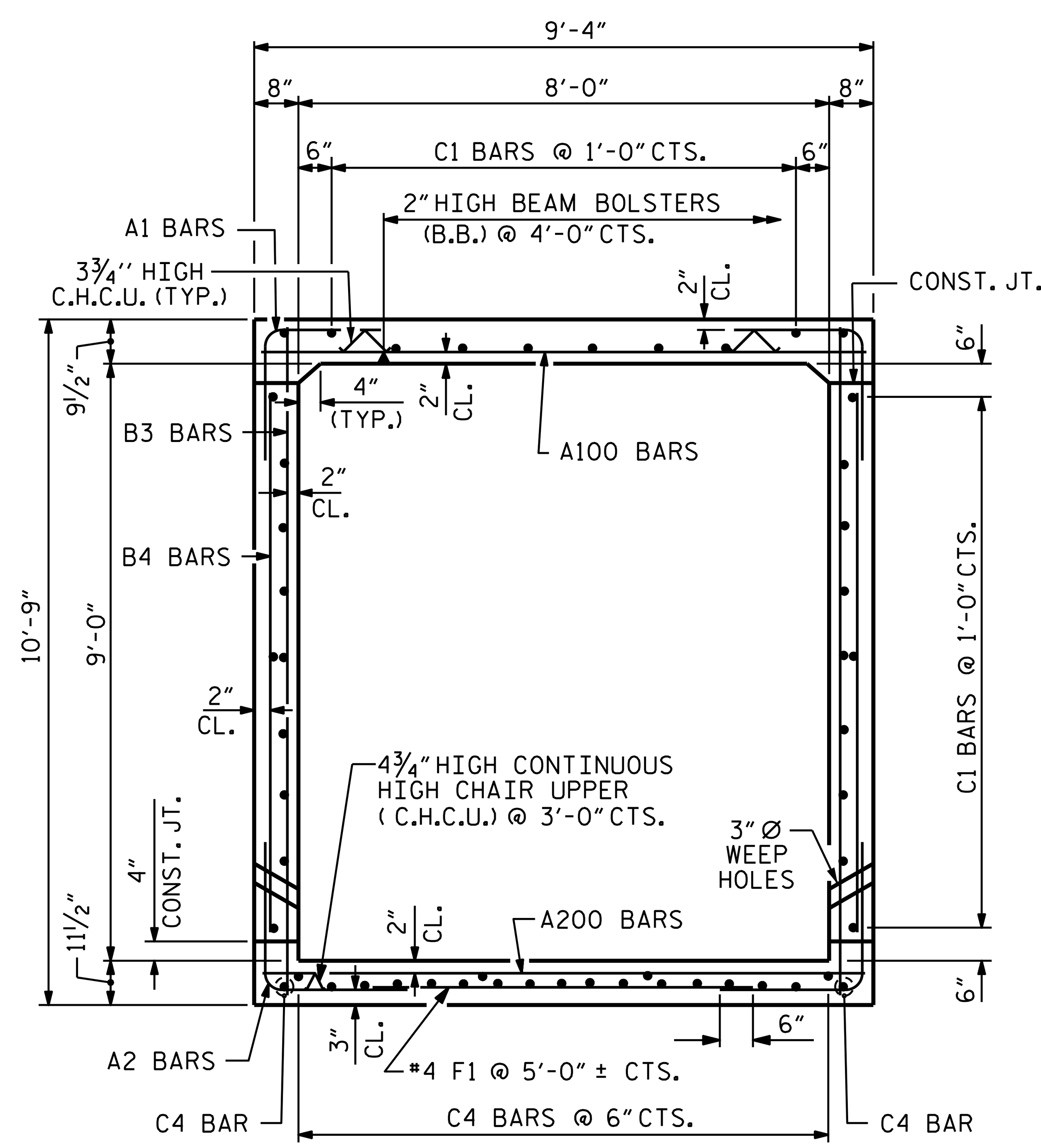


SECTION X-X



RIGHT ANGLE SECTION OF BARREL

THERE ARE 49 "C" BARS IN SECTION OF BARREL. "C" BARS MAY BE FIELD BENT AS NECESSARY.



RIGHT ANGLE SECTION OF BARREL

THERE ARE 51 "C" BARS IN SECTION OF BARREL.
"C" BARS MAY BE FIELD BENT AS NECESSARY.

PROJECT NO. K-4908

IREDELL COUNTY

STATION: 15+59.42 -L3-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SINGLE 8 FT. X 9 FT. CONCRETE BOX CULVERT 116°-57'-39" SKEW

(120° HEADWALL)

NORTH CAROLINA PROFESSIONAL SEAL 031480 ENGINEER DONALD R. SMITH, JR

DocuSigned by: Donald R. Smith, Jr 2/3/2015

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-6
1			3			TOTAL SHEETS
2			4			8

STR. #2

DRAWN BY: P.S. ADKINS DATE: 8/19/14
CHECKED BY: K.D. LAYNE DATE: 10/8/14
DESIGN ENGINEER OF RECORD: R.L. CHESSON DATE: 11/20/14

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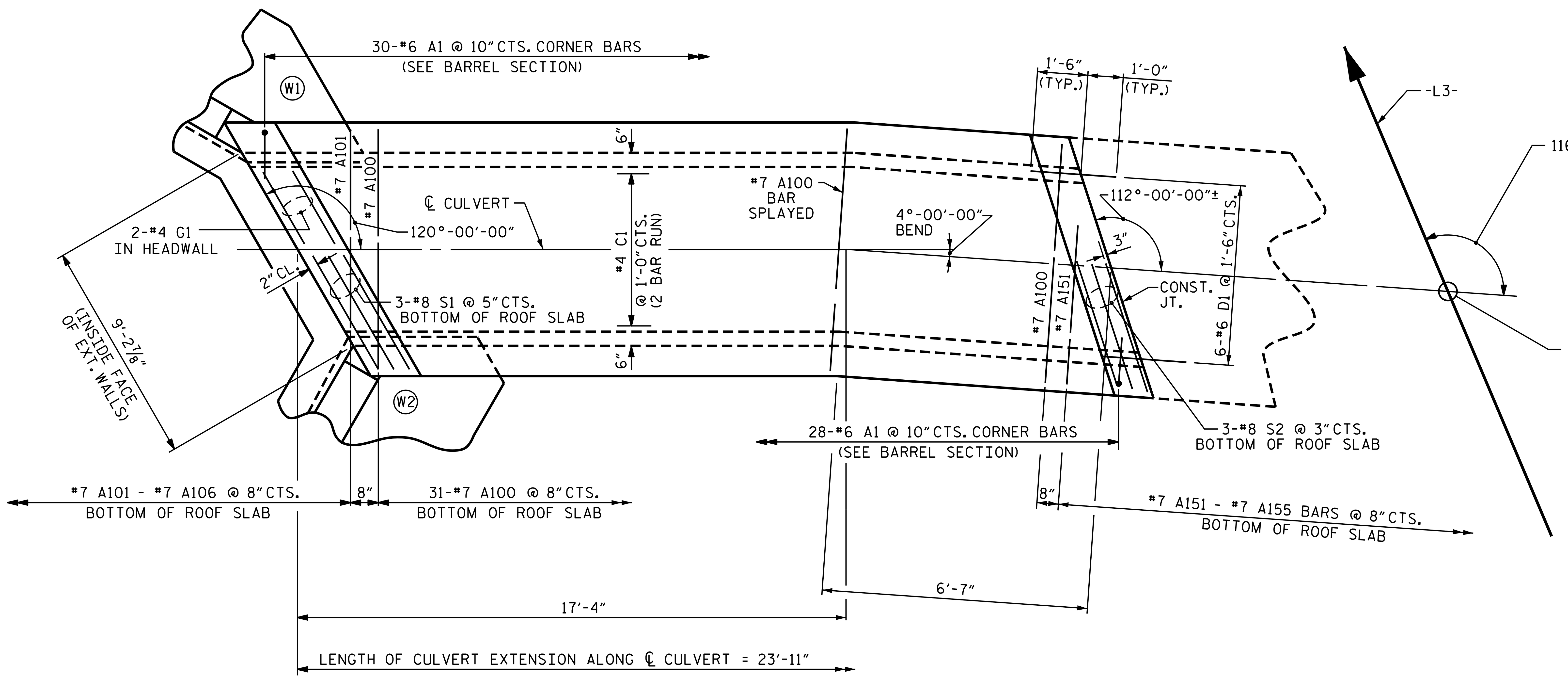
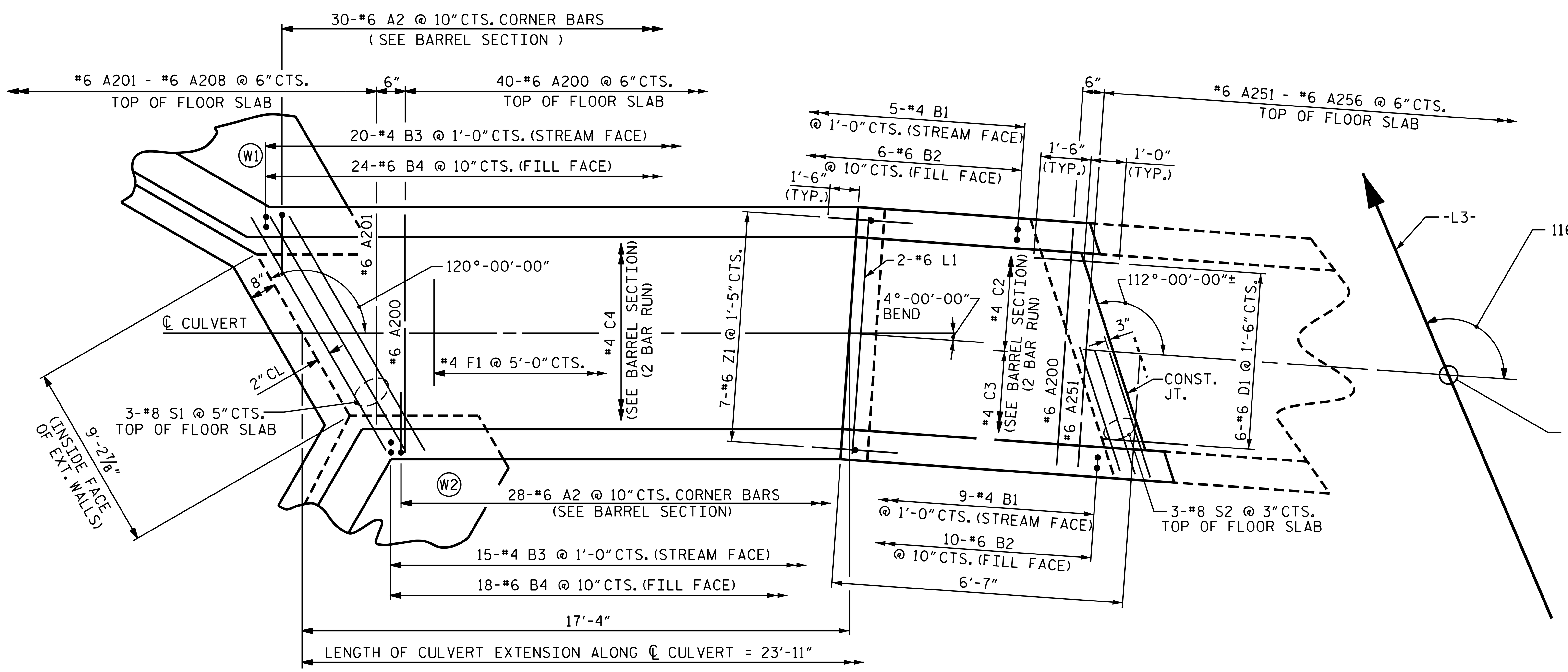
jdhawk



PART PLAN - ROOF SLAB

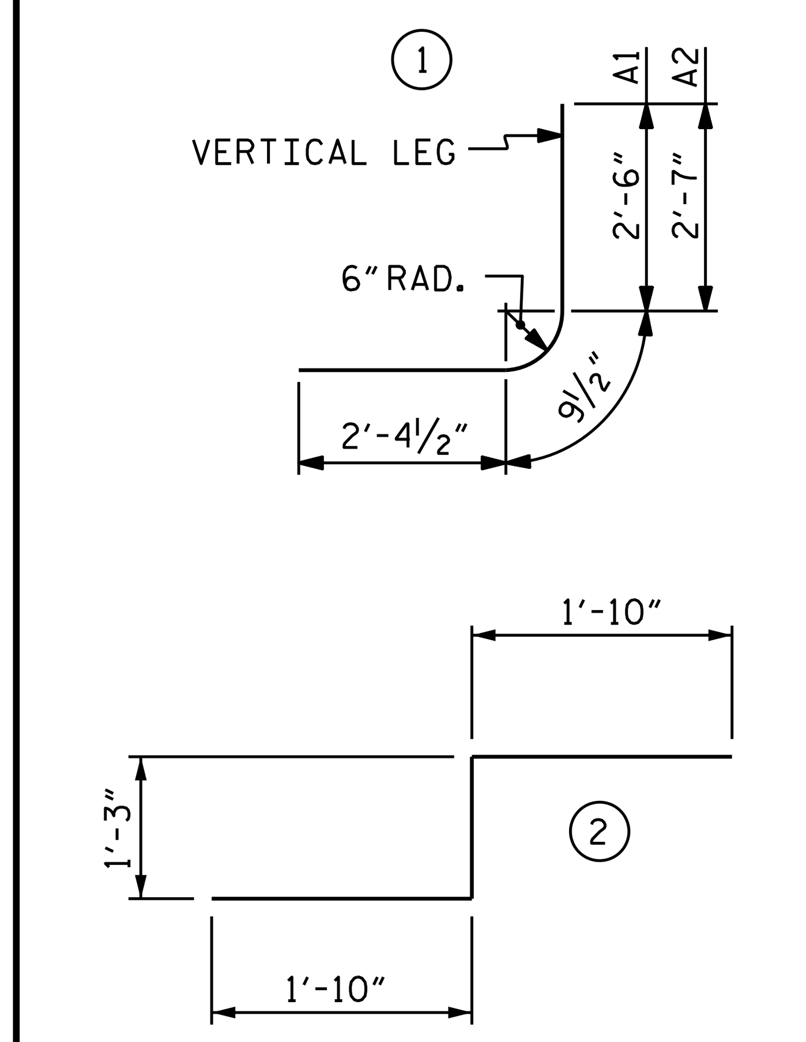
SPLAY BAR IN AREA OF BEND.

FIELD BEND #4 "C" BARS AS NECESSARY



PART PLAN - FLOOR SLAB

BAR TYPE



BAR DIMENSIONS ARE OUT TO OUT.

SPLICE LENGTHS CHART

BAR	SIZE	SPLICE LENGTH
"C"	4	1'-11"
B1	4	1'-9"

NOTE: "A" BARS ARE PERPENDICULAR TO THE CULVERT CENTERLINE.

BILL OF MATERIAL

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A1	58	#6	1	5'-8"	494
A2	58	#6	1	5'-9"	501
A100	31	#7	STR	8'-11"	565
A101	1	#7	STR	7'-8"	16
A102	1	#7	STR	6'-7"	13
A103	1	#7	STR	5'-5"	11
A104	1	#7	STR	4'-3"	9
A105	1	#7	STR	3'-1"	6
A106	1	#7	STR	1'-11"	4
A151	1	#7	STR	7'-11"	16
A152	1	#7	STR	6'-3"	13
A153	1	#7	STR	4'-8"	10
A154	1	#7	STR	3'-0"	6
A155	1	#7	STR	1'-4"	3
A200	40	#6	STR	8'-11"	536
A201	1	#6	STR	8'-0"	12
A202	1	#6	STR	7'-2"	11
A203	1	#6	STR	6'-3"	9
A204	1	#6	STR	5'-5"	8
A205	1	#6	STR	4'-6"	7
A206	1	#6	STR	3'-8"	6
A207	1	#6	STR	2'-10"	4
A208	1	#6	STR	1'-11"	3
A251	1	#6	STR	8'-4"	13
A252	1	#6	STR	7'-1"	11
A253	1	#6	STR	5'-10"	9
A254	1	#6	STR	4'-8"	7
A255	1	#6	STR	3'-5"	5
A256	1	#6	STR	2'-2"	3
B1	14	#4	STR	9'-3"	87
B2	16	#6	STR	7'-4"	176
B3	35	#4	STR	10'-3"	240
B4	42	#6	STR	8'-4"	526
C1	72	#4	STR	13'-5"	645
C2	20	#4	STR	4'-1"	55
C3	18	#4	STR	5'-0"	60
C4	42	#4	STR	11'-1"	311
D1	24	#6	STR	2'-6"	90
F1	5	#4	STR	5'-3"	18
G1	2	#4	STR	10'-4"	14
L1	2	#6	STR	8'-11"	27
S1	6	#8	STR	10'-4"	166
S2	6	#8	STR	9'-8"	155
Z1	7	#6	2	4'-11"	52
REINFORCING STEEL					LBS. 4,933

PROJECT NO. K-4908

IREDELL COUNTY

STATION: 15+59.42 -L3-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SINGLE 8 FT. X 9 FT. CONCRETE BOX CULVERT 116°-57'-39" SKEW

(120° HEADWALL)

DocuSigned by: Donald R. Smith, Jr
2/3/2015

REVISIONS								SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:			C-7
1			3					TOTAL SHEETS
2			4					8

STR. #2

DRAWN BY : P.S. ADKINS DATE : 8/19/14
CHECKED BY : K.D. LAYNE DATE : 10/8/14
DESIGN ENGINEER OF RECORD: R.L. CHESSON DATE : 11/20/14

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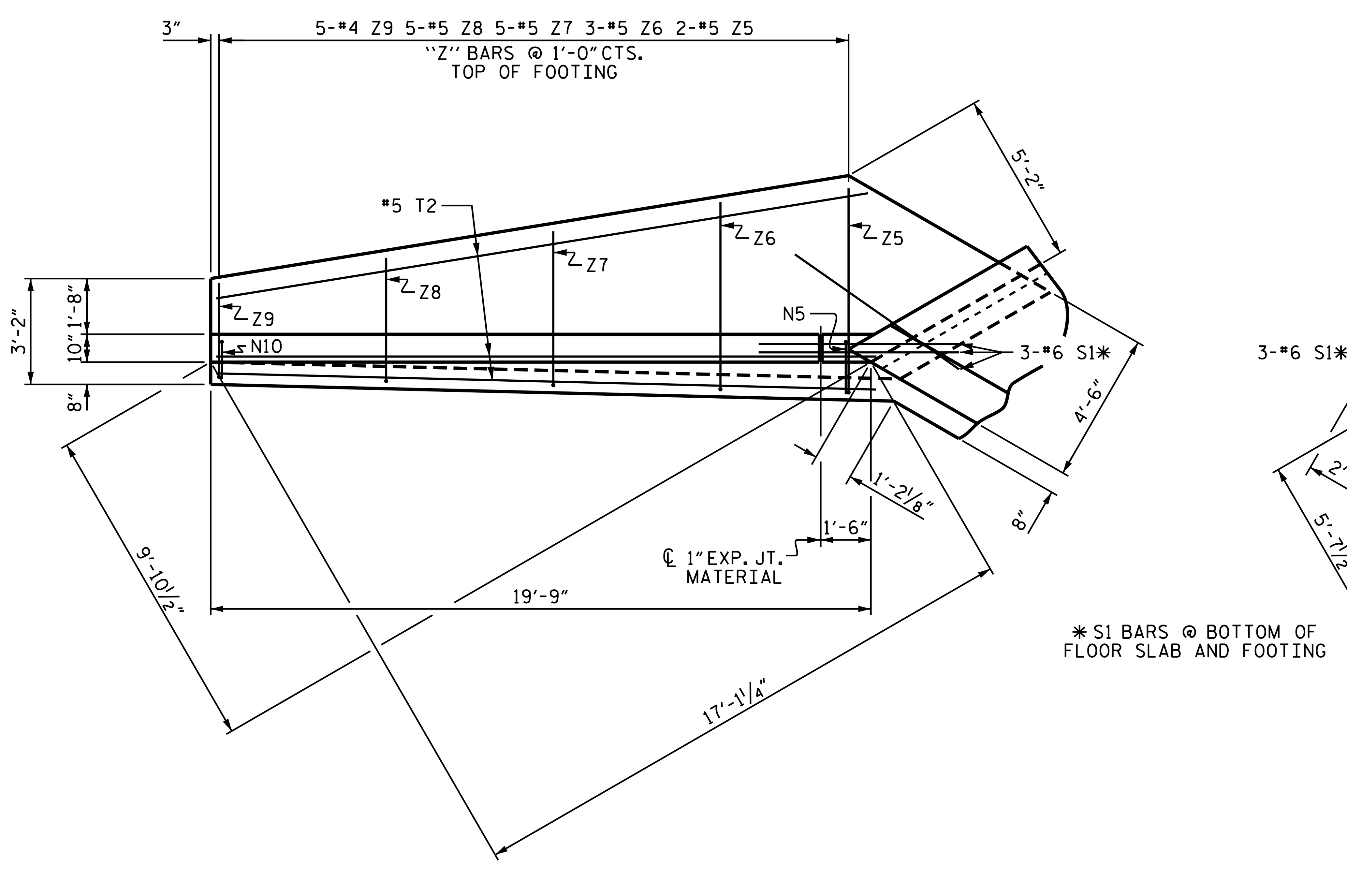
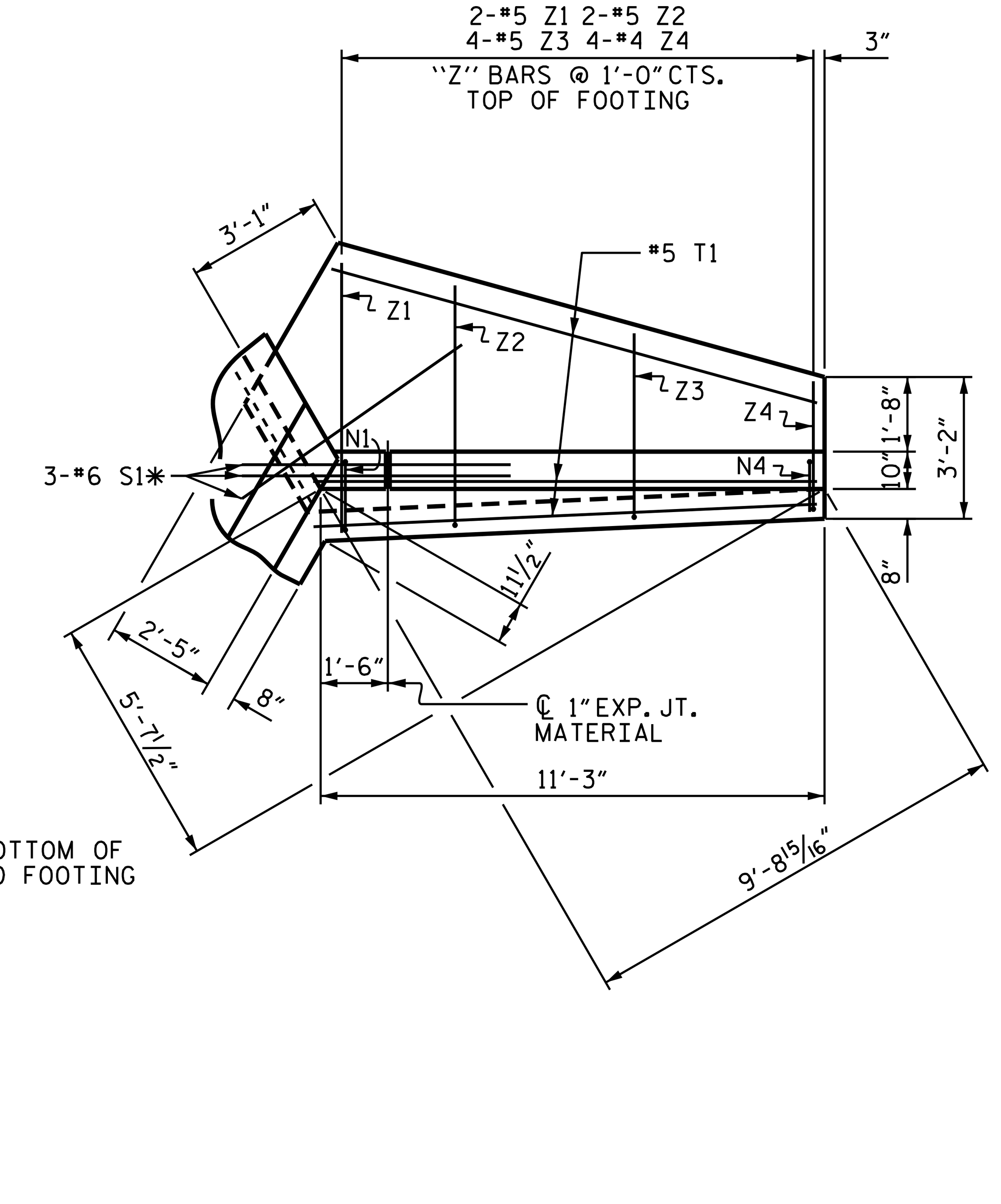
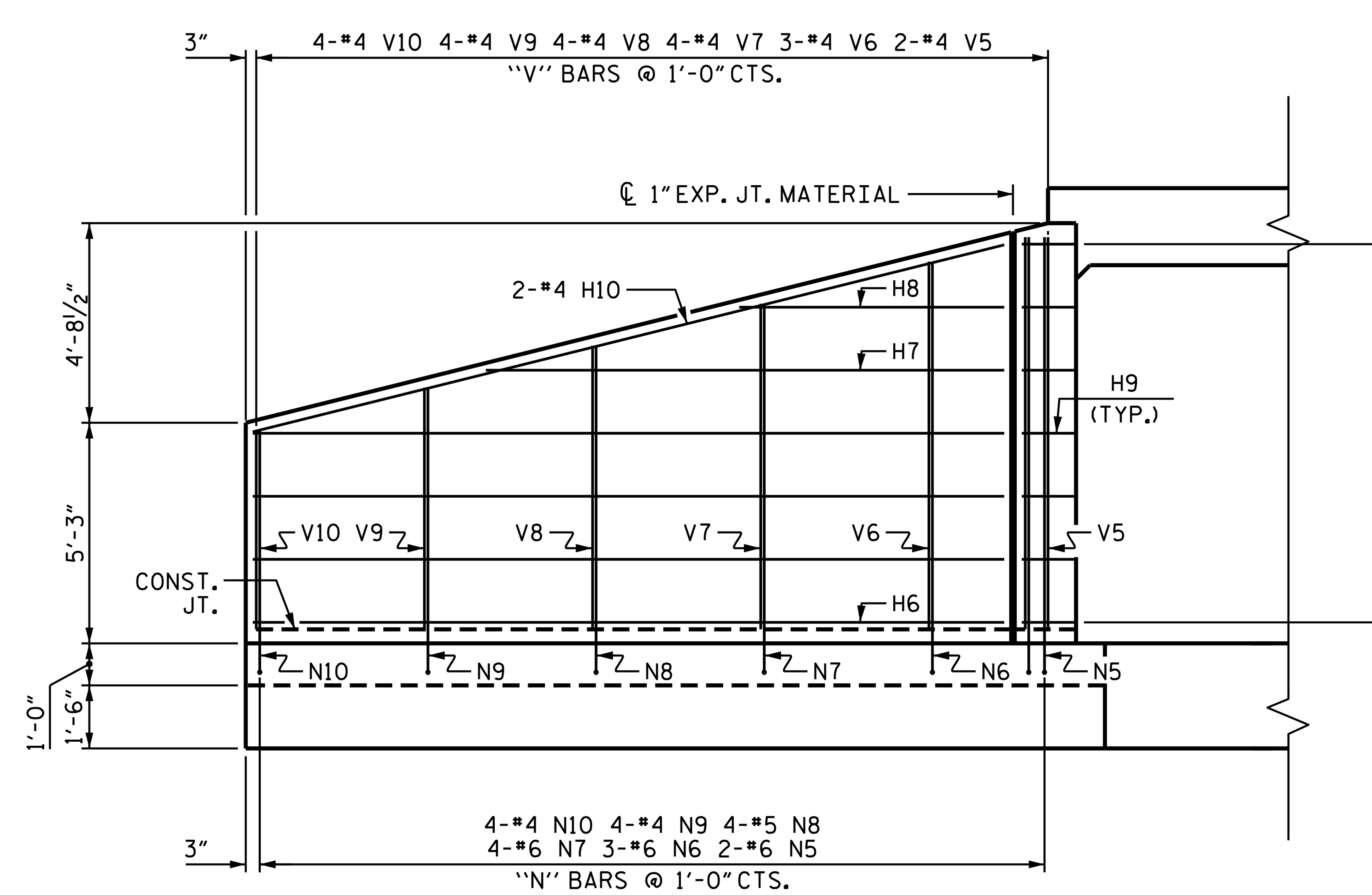


PLAN W1

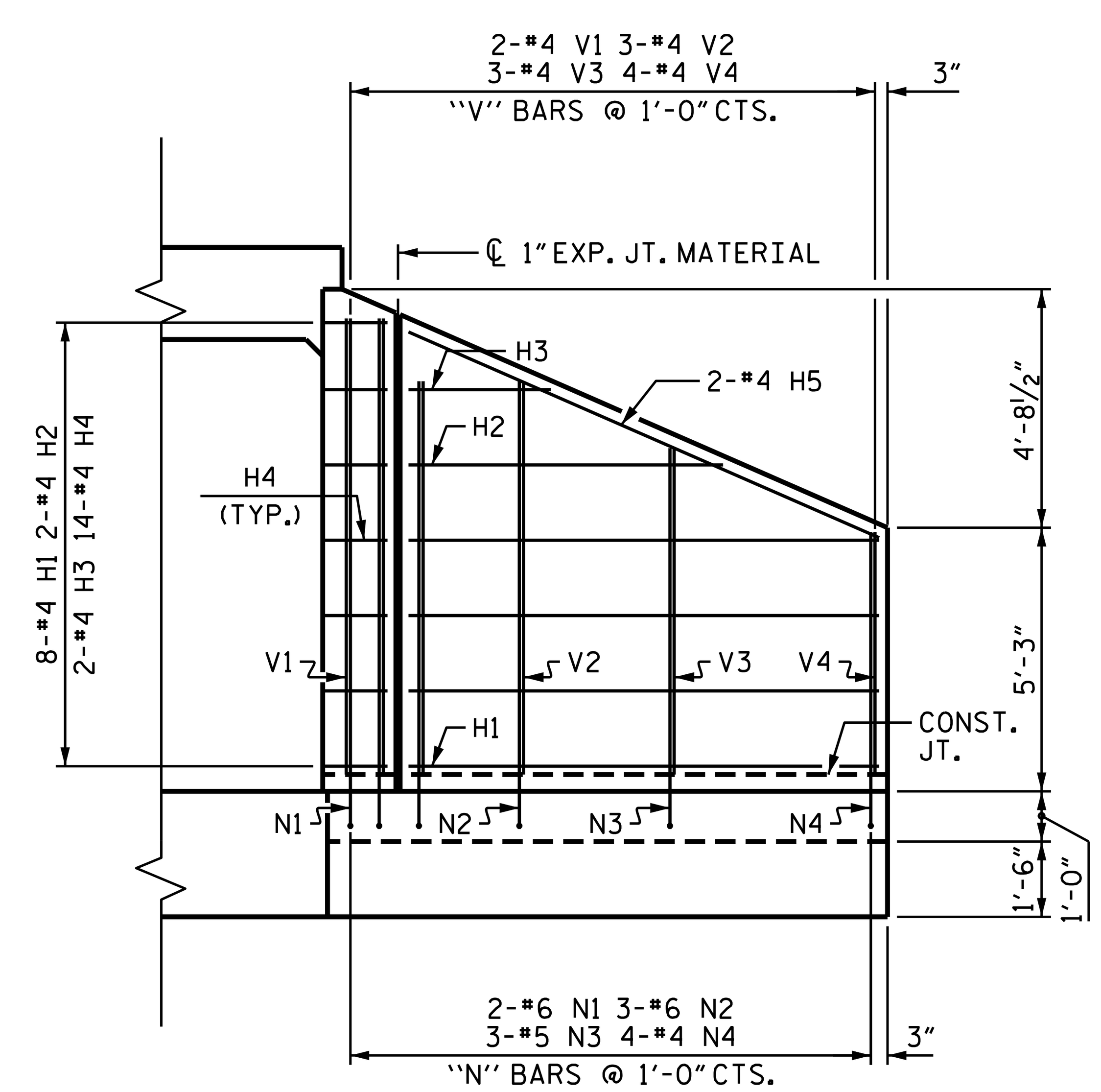


✱ S1 BARS @ BOTTOM OF FLOOR SLAB AND FOOTING

PLAN W2



ELEVATION W1



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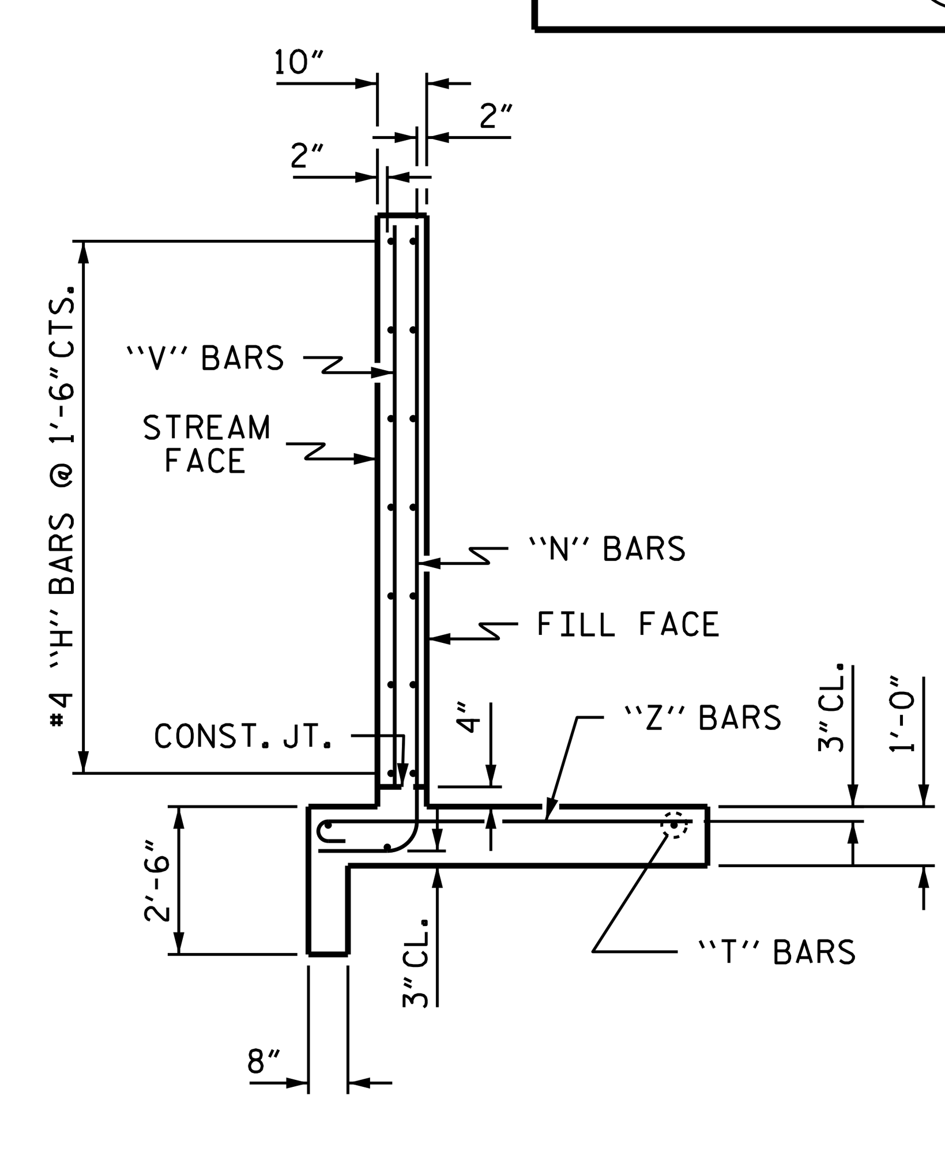
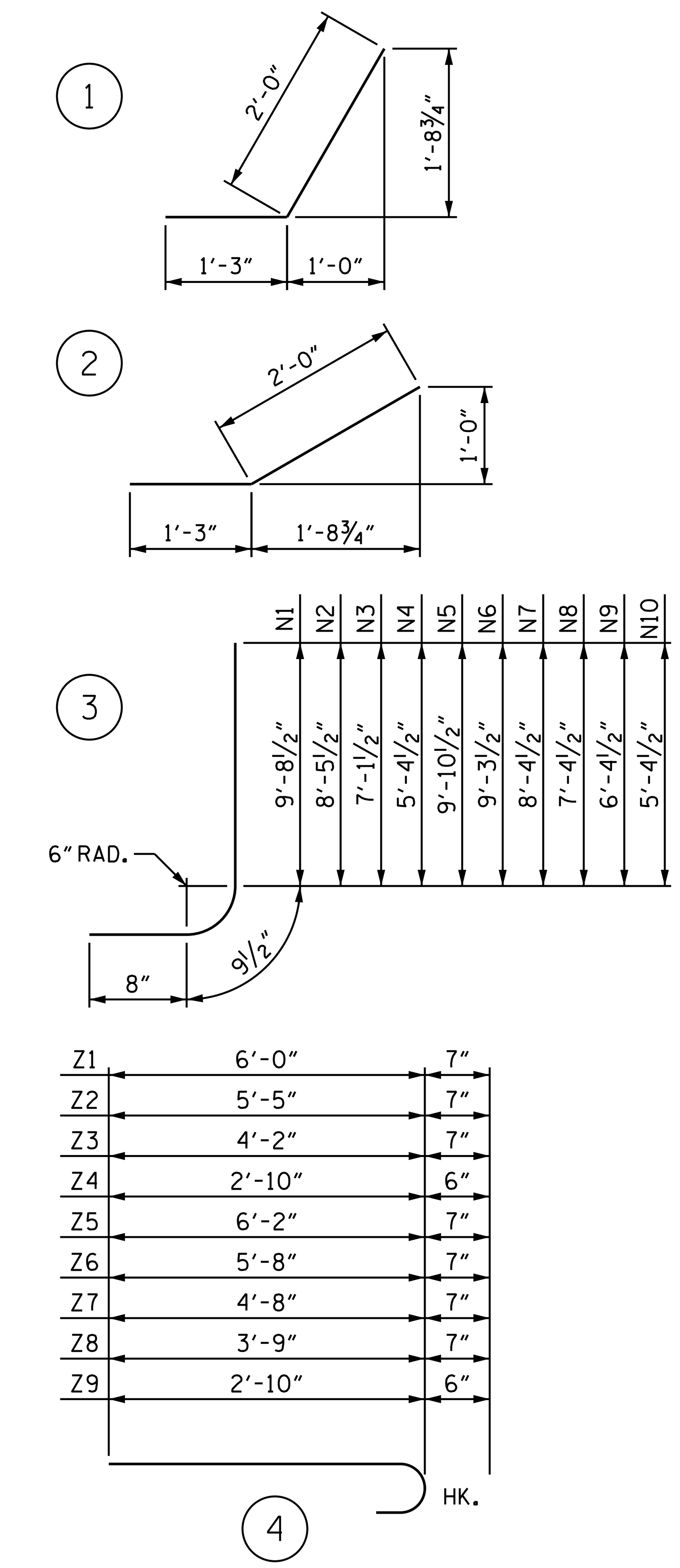


TYPICAL WING SECTION

BAR TYPES

ALL BAR DIMENSIONS ARE OUT TO OUT.



BILL OF MATERIAL

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
H1	8	#4	STR	9'-4"	50
H2	2	#4	STR	6'-3"	8
H3	2	#4	STR	2'-10"	4
H4	14	#4	1	3'-3"	30
H5	2	#4	STR	10'-2"	14
H6	8	#4	STR	17'-10"	95
H7	2	#4	STR	12'-4"	16
H8	2	#4	STR	6'-3"	8
H9	14	#4	2	3'-3"	30
H10	2	#4	STR	18'-5"	25
N1	2	#6	3	11'-2"	34
N2	3	#6	3	9'-11"	45
N3	3	#5	3	8'-7"	27
N4	4	#4	3	6'-10"	18
N5	2	#6	3	11'-4"	34
N6	3	#6	3	10'-9"	48
N7	4	#6	3	9'-10"	59
N8	4	#5	3	8'-10"	37
N9	4	#4	3	7'-10"	21
N10	4	#4	3	6'-10"	18
S1	6	#6	STR	6'-0"	54
T1	3	#5	STR	11'-3"	35
T2	3	#5	STR	19'-9"	62
V1	2	#4	STR	9'-1"	12
V2	3	#4	STR	7'-10"	16
V3	3	#4	STR	6'-6"	13
V4	4	#4	STR	4'-10"	13
V5	2	#4	STR	9'-4"	12
V6	3	#4	STR	8'-9"	18
V7	4	#4	STR	7'-9"	21
V8	4	#4	STR	6'-9"	18
V9	4	#4	STR	5'-9"	15
V10	4	#4	STR	4'-9"	13
Z1	2	#5	4	6'-7"	14
Z2	2	#5	4	6'-0"	13
Z3	4	#5	4	4'-9"	20
Z4	4	#4	4	3'-4"	9
Z5	2	#5	4	6'-9"	14
Z6	3	#5	4	6'-3"	20
Z7	5	#5	4	5'-3"	27
Z8	5	#5	4	4'-4"	23
Z9	5	#4	4	3'-4"	11
REINFORCING STEEL FOR 2 WINGS				LBS.	1,074
CLASS A CONCRETE					
2 WINGS				CY	15.1
1 HEADWALL				CY	0.5
1 END CURTAIN WALL				CY	0.4
2 EDGE BEAMS				CY	0.8
TOTAL				CY	16.8

PROJECT NO. K-4908

IREDELL COUNTY

STATION: 15+59.42 -L3-

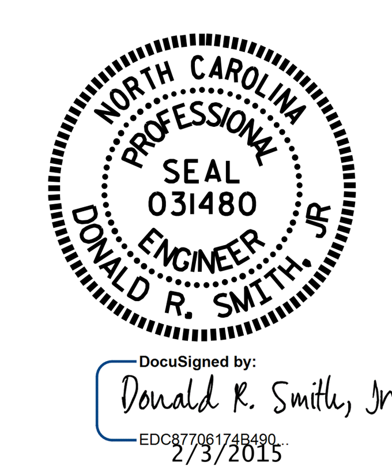
SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD WINGS FOR CONCRETE BOX CULVERT

H = 9'-0" SLOPE = 2:1

120° SKEW



REVISIONS								SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:			C-8
1			3					TOTAL SHEETS
2			4					8

ASSEMBLED BY : P.S. ADKINS DATE : 8/21/14
CHECKED BY : K.D. LAYNE DATE : 10/8/14

DRAWN BY : CCJ 12/99
CHECKED BY : RWW 03/00

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jdhawk

STR. #2

STD. NO. CW6009

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 1-1/2" 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.

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

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