

LOCATION SKETCH

TOTAL STRUCTURE QUANTITIES	
CLASS A CONCRETE	520.0 C.Y.
REINFORCING STEEL	50163 LBS.
FOUNDATION CONDITIONING MATERIAL	200 TONS
SHOTCRETE REPAIRS	10 CU. FT.
REMOVAL OF EXISTING STRUCTURES	LUMP SUM
CULVERT EXCAVATION	LUMP SUM

NOTES

ASSUMED LIVE LOAD----- HL-93 OR ALTERNATE LOADING.
 DESIGN FILL ----- 50.0± FT.
 FOR OTHER DESIGN DATA AND NOTES, SEE STANDARD NOTES SHEET.
 3" Ø WEEP HOLES INDICATED TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.
 CONCRETE IN CULVERT TO BE POURED IN THE FOLLOWING ORDER:
 1. FLOOR SLAB INCLUDING 4" OF VERTICAL WALLS.
 2. THE REMAINING PORTIONS OF WALLS FOLLOWED BY ROOF SLAB.

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

FOR LIMITS OF TEMPORARY SHORING, SEE TEMPORARY SHORING PLANS.
 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.

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.

NO PRECAST REINFORCED BOX CULVERT OPTION WILL BE ALLOWED.

THE EXISTING 96" Ø CORRUGATED METAL PIPE SHALL BE REMOVED TO APPROXIMATELY STATION 3+05 -CENTERLINE-, OR AS DIRECTED BY THE ENGINEER. ALL WORK, MATERIALS, EQUIPMENT, AND INCIDENTALS REQUIRED FOR THE REMOVAL AND DISPOSAL OF THE EXISTING 96" Ø CORRUGATED METAL PIPE SHALL BE INCLUDED IN THE PRICE BID FOR "REMOVAL OF EXISTING STRUCTURES".

NO SURFACE DRAINAGE HAS BEEN DESIGNED OR ESTIMATED.
 FINISHED GROUND ELEVATION IS APPROXIMATELY 1020±.

THE PROPOSED CULVERT LENGTH AND QUANTITIES ARE BASED ON THE BEST INFORMATION AVAILABLE OF THE EXISTING CONDITIONS. THE CONTRACTOR SHALL ADJUST THE PROPOSED CULVERT LENGTH AS NECESSARY TO CONNECT THE EXISTING 8'x7' CONCRETE BOX CULVERT WITH THE 96" DIA. CORRUGATED METAL PIPE.

DUE TO THE NATURE OF THE UNKNOWN CONDITIONS OF THE EXISTING CULVERT AND EXISTING 96" DIA. CORRUGATED METAL PIPE, THE BILL OF MATERIAL QUANTITIES OF THE PROPOSED CULVERT REFLECT AN ADDITIONAL 10 FEET OF CULVERT LENGTH.

DETAILED DRAWINGS FOR FALSEWORK AND FORMS FOR THIS CULVERT SHALL BE SUBMITTED. SEE SHEET SN.

DOWELS SHALL BE USED TO CONNECT THE PROPOSED CULVERT TO THE EXISTING CULVERT WALLS AND FLOOR SLAB AS DETAILED IN THE PLANS. FOR NOTE REGARDING SETTING OF DOWELS, SEE SHEET SN.

SEE ROADWAY PLANS FOR ESTIMATED EXCAVATION QUANTITIES.
 FOR UTILITY INFORMATION, SEE UTILITY PLANS.

THE INVERT ELEVATIONS SHOWN FOR THE EXISTING CULVERT & THE EXISTING 96" DIA. CORRUGATED METAL PIPE ARE FROM THE BEST INFORMATION AVAILABLE. THE CONTRACTOR SHALL VERIFY THE INVERT ELEVATIONS PRIOR TO CONSTRUCTION OF THE CULVERT. ADJUSTMENTS TO THE CULVERT GRADE ARE SUBJECT TO THE APPROVAL OF THE ENGINEER.

WBS NO. 12.101811
 CATAWBA COUNTY

SHEET 1 OF 6



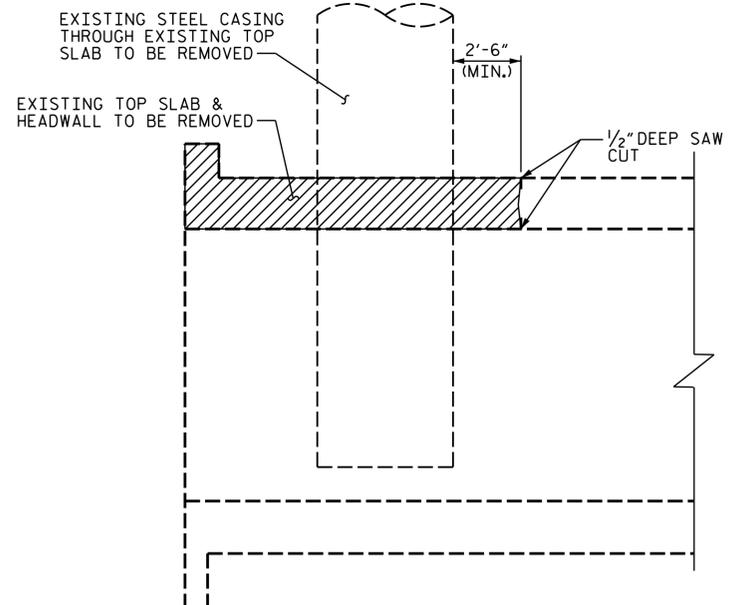
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

CONCRETE BOX
 CULVERT EXTENSION

DRAWN BY : O. PUIGCERVER DATE : 7/16
 CHECKED BY : M.G. CHEEK DATE : 8/16

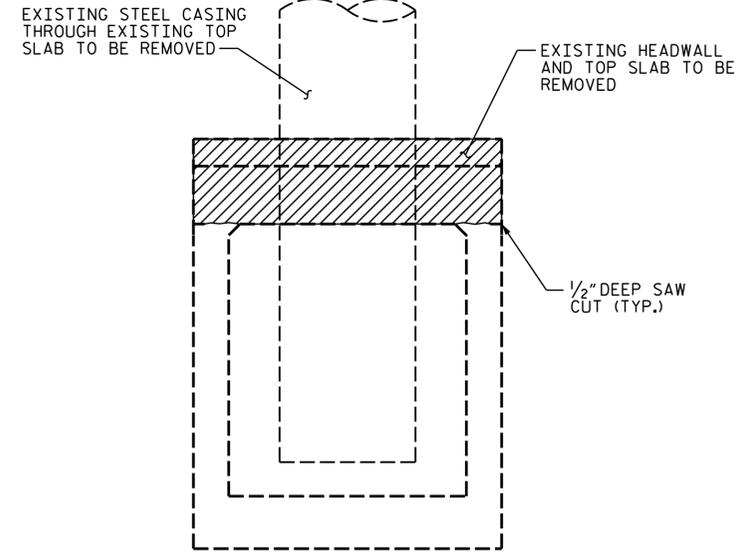
DOCUMENT NOT CONSIDERED
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 SIGNATURES COMPLETED

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

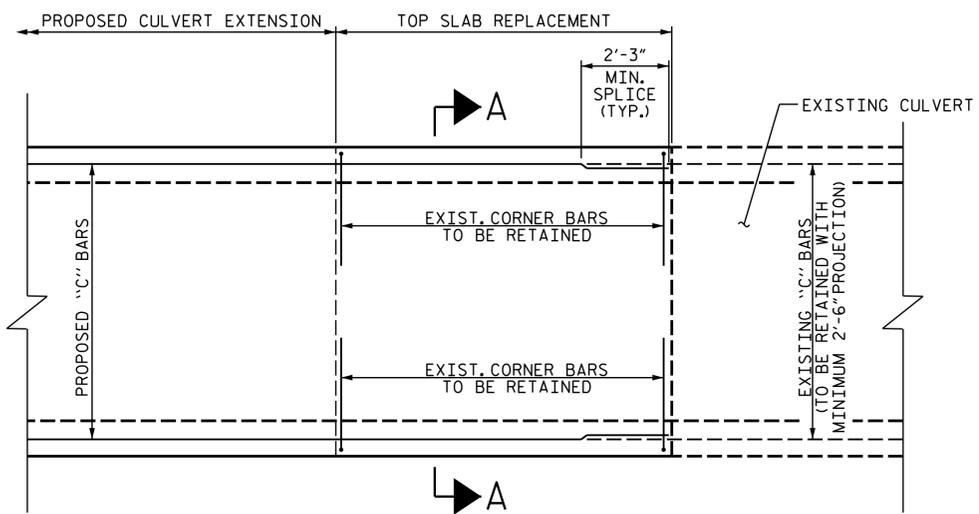


PARTIAL SECTION THROUGH EXISTING CULVERT

NOTE: THE CONDITIONS SHOWN ARE FROM THE BEST INFORMATION AVAILABLE OF THE EXISTING CULVERT.

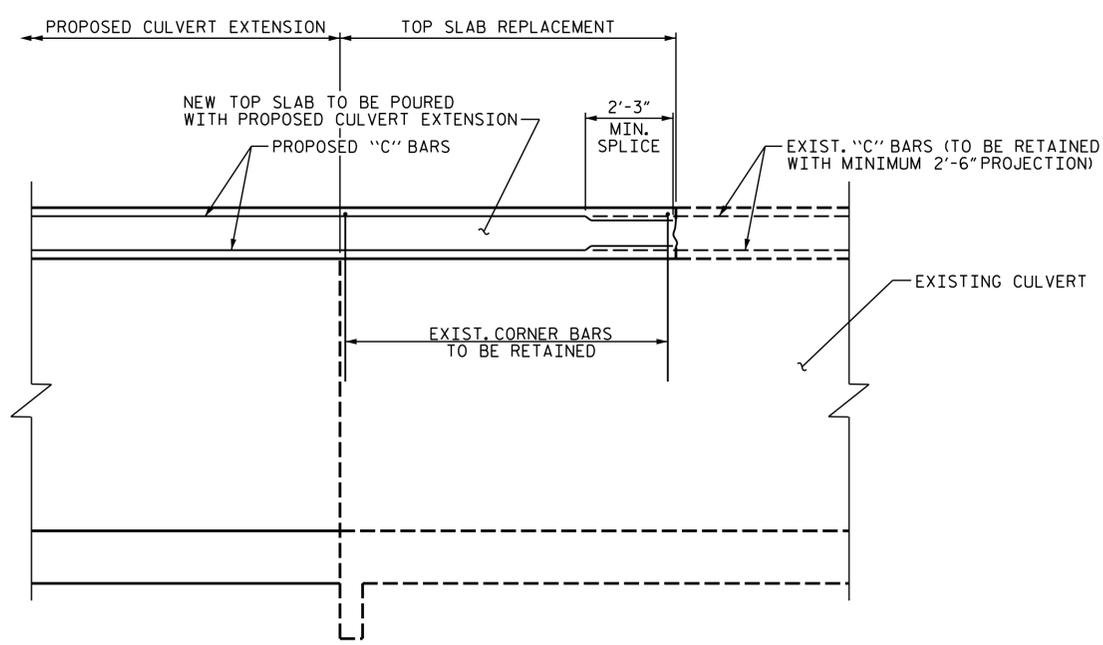


EXISTING BARREL SECTION



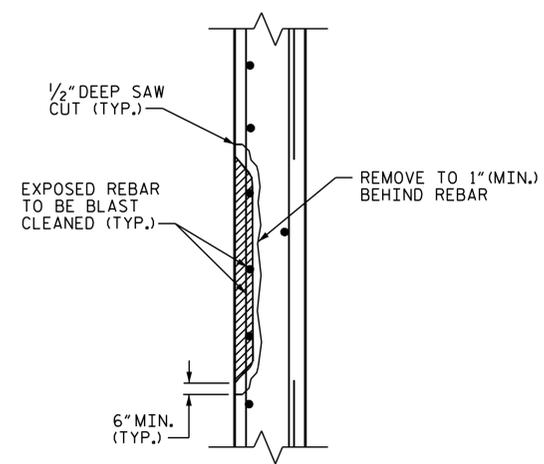
PARTIAL PLAN OF ROOF SLAB

FOR SPACING OF A100 BARS, SEE "PLAN OF ROOF SLAB", SHEET 5 OF 6.



PARTIAL SECTION THROUGH PROPOSED EXTENSION/EXISTING CULVERT

'C' BARS IN PROPOSED CULVERT EXTENSION TO BE SPLICED WITH EXISTING 'C' BARS

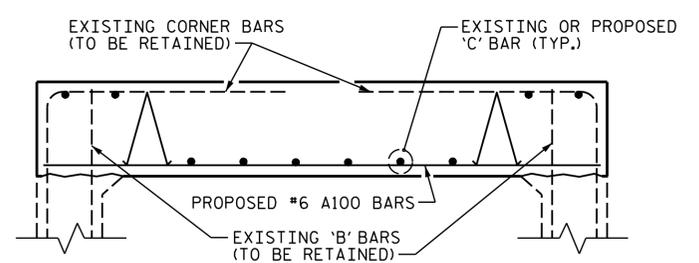


TYPICAL SHOTCRETE REPAIR

ON EXISTING SLAB OR WALLS

NOTES

- THE CONTRACTOR SHALL SAW CUT TO A NOMINAL DEPTH OF 1/2" BUT REINFORCING STEEL SHALL NOT BE DAMAGED.
- THE CONTRACTOR SHALL VERIFY THAT REBAR COVER IS OF SUFFICIENT DEPTH PRIOR TO SAW CUTTING.
- THE STEEL CASING THROUGH THE TOP SLAB OF THE EXISTING CULVERT SHALL BE REMOVED. THE EXISTING TOP SLAB SHALL BE REMOVED AS SHOWN ON THE PLANS OR AT THE DIRECTION OF THE ENGINEER.
- CARE SHALL BE TAKEN DURING THE PARTIAL REMOVAL OF THE TOP SLAB OF THE EXISTING BOX CULVERT TO NOT DAMAGE AREAS OUTSIDE THE PLAN REMOVAL LIMITS. EXISTING CORNER BARS SHALL BE RETAINED. IN ADDITION TO A MINIMUM PROJECTION LENGTH OF 2'-6" FOR THE 'C' BARS. ANY DAMAGE TO RETAINED CULVERT SLABS, WALLS AND REINFORCING STEEL SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE DEPARTMENT. THE METHOD OF REPAIR SHALL BE SUBJECT TO APPROVAL BY THE ENGINEER.
- ALL WORK, MATERIALS, EQUIPMENT, AND INCIDENTALS REQUIRED FOR THE PARTIAL REMOVAL AND DISPOSAL OF THE TOP SLAB SHALL BE INCLUDED IN THE PRICE BID FOR "REMOVAL OF EXISTING STRUCTURES".
- FOR BONDING OF NEW CONCRETE TO OLD, THE OLD CONCRETE SHALL BE THOROUGHLY ROUGHENED, CLEANED OF LOOSE MATERIAL, AND WETTED FOR A MINIMUM OF 2 HOURS PRIOR TO PLACING NEW CONCRETE. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE CONTRACT PRICE BID FOR "CLASS A CONCRETE".
- THE LOCATION AND EXTENT OF THE REPAIRS TO THE EXISTING CONCRETE BOX CULVERT SHOWN ARE GENERAL IN NATURE. THE ENGINEER SHALL DETERMINE THE EXTENT OF THE REPAIRS IN THE FIELD.
- CONCRETE REPAIRS MAY BE SUBSTITUTED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.
- FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.



SECTION A-A

WBS NO. 12.101811
 CATAWBA COUNTY

SHEET 2 OF 6



8/23/2016

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

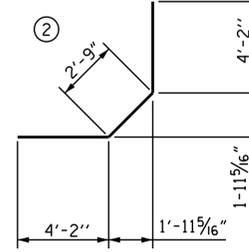
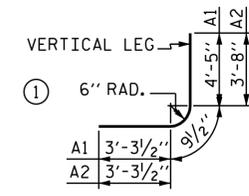
CONCRETE BOX CULVERT EXTENSION

DRAWN BY :	W.J. HARRIS	DATE :	7/16
CHECKED BY :	M.G. CHEEK	DATE :	8/16
DESIGN ENGINEER OF RECORD :	O. PUIGSERVER	DATE :	8/16

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

BAR TYPES



BAR DIMENSIONS ARE OUT TO OUT

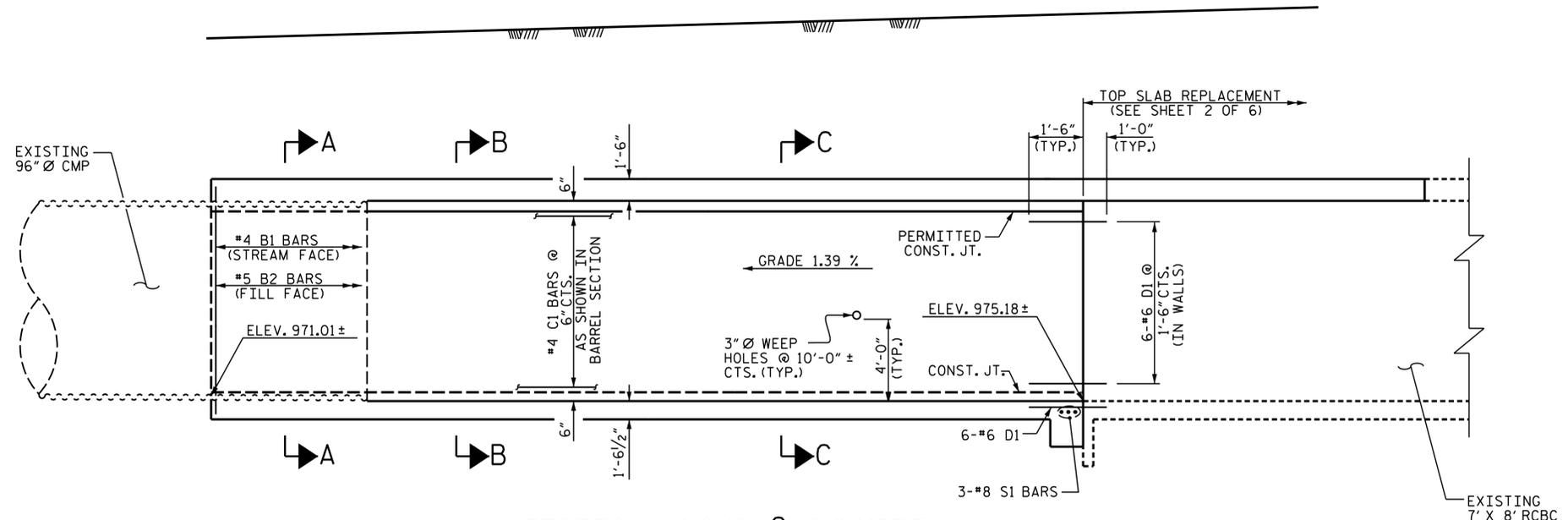
SPLICE LENGTH CHART

BAR	SIZE	SPLICE LENGTH
B1	4	1'-5"
C1	4	1'-11"

BAR SCHEDULE

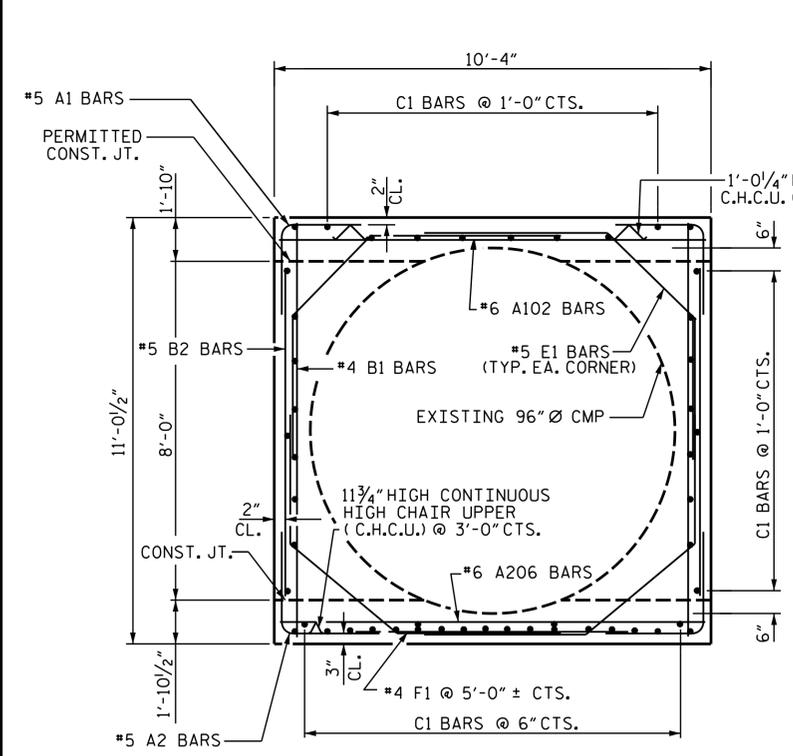
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A1	678	#5	1	8'-6"	6011
A2	678	#5	1	7'-9"	5480
A100	623	#6	STR	8'-8"	8110
A101	4	#6	STR	7'-3"	44
A102	10	#6	STR	9'-11"	149
A103	2	#6	STR	9'-10"	30
A104	2	#6	STR	9'-7"	29
A105	2	#6	STR	9'-3"	28
A106	2	#6	STR	9'-0"	27
A107	2	#6	STR	8'-9"	26
A200	593	#6	STR	8'-8"	7719
A201	4	#6	STR	7'-3"	44
A202	2	#6	STR	6'-10"	21
A203	2	#6	STR	5'-0"	15
A204	2	#6	STR	3'-2"	10
A205	2	#6	STR	2'-3"	7
A206	10	#6	STR	9'-11"	149
A207	2	#6	STR	9'-10"	30
A208	2	#6	STR	9'-7"	29
A209	2	#6	STR	9'-3"	28
A210	2	#6	STR	9'-0"	27
A211	2	#6	STR	8'-9"	26
B1	678	#4	STR	10'-6"	4755
B2	678	#5	STR	7'-4"	5186
C1	588	#4	STR	29'-0"	11391
D1	18	#6	STR	2'-6"	68
E1	40	#5	2	11'-1"	462
F1	62	#4	STR	4'-5"	183
S1	3	#8	STR	9'-11"	79

REINFORCING STEEL 50163 LBS.



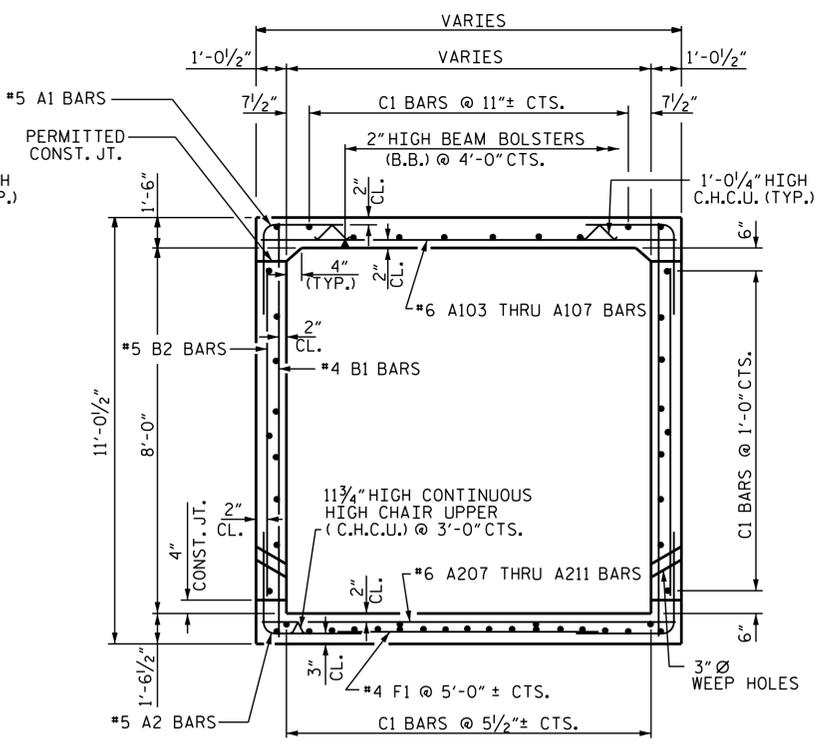
SECTION ALONG CULVERT

FOR REMOVAL OF EXISTING STEEL CASING THROUGH EXISTING TOP SLAB, AND FOR REMOVAL OF EXISTING TOP SLAB, SEE SHEET 2 OF 6.



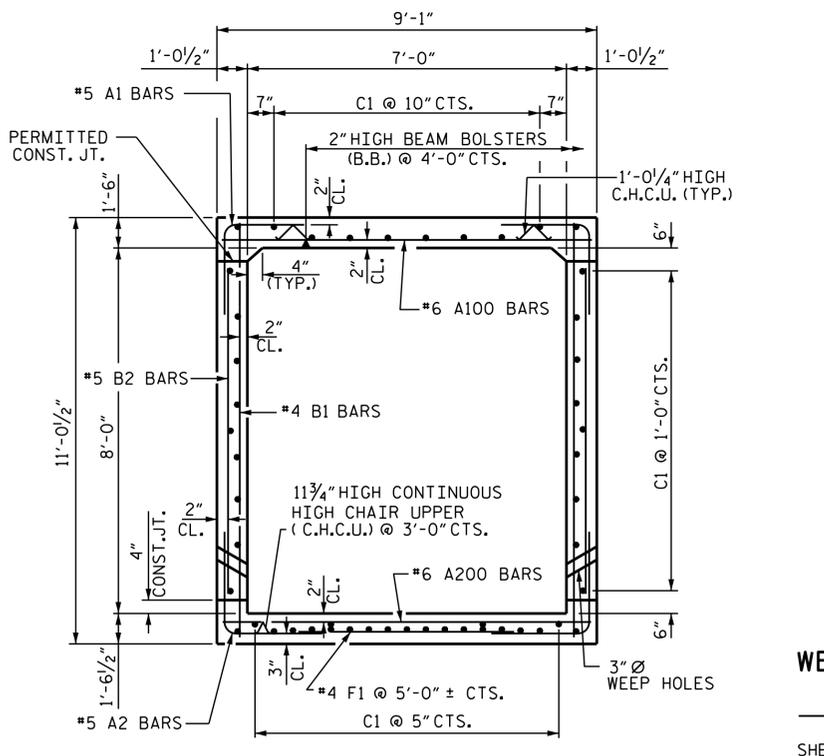
RIGHT ANGLE SECTION OF BARREL
THERE ARE 49 "C" BARS IN SECTION OF BARREL

SECTION A-A
THRU 96" Ø CMP ENCLOSURE



RIGHT ANGLE SECTION OF BARREL
THERE ARE 49 "C" BARS IN SECTION OF BARREL

SECTION B-B
THRU 5'-0" TRANSITION



RIGHT ANGLE SECTION OF BARREL
THERE ARE 49 "C" BARS IN SECTION OF BARREL

SECTION C-C
THRU 7'x8' RCBC

DRAWN BY : O. PUIGCERVER DATE : 7/16
 CHECKED BY : D. SHACKELFORD DATE : 8/16
 DESIGN ENGINEER OF RECORD : O. PUIGCERVER DATE : 7/16

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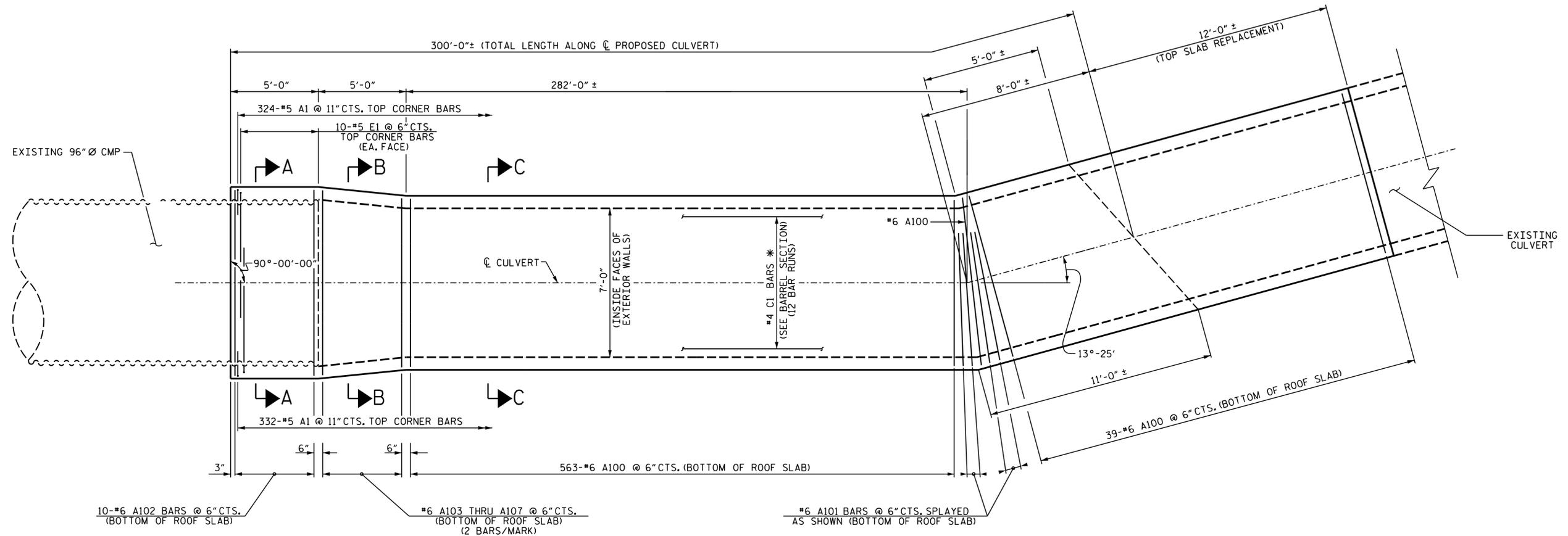
WBS NO. 12.101811
 CATAWBA COUNTY

SHEET 3 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**CONCRETE BOX
 CULVERT EXTENSION**

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

* "C" BARS TO BE FIELD BENT AS NECESSARY.



PLAN - ROOF SLAB

NOTE: THE DIMENSIONS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE OF THE EXISTING CONDITIONS, THE CONTRACTOR SHALL ADJUST THESE DIMENSIONS AS NECESSARY. ALL ADJUSTMENTS ARE SUBJECT TO APPROVAL BY THE ENGINEER.

WBS NO. 12.101811
CATAWBA COUNTY

SHEET 5 OF 6



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**CONCRETE BOX
 CULVERT EXTENSION**

DRAWN BY : O. PUIGCERVER DATE : 7/16
 CHECKED BY : D. SHACKELFORD DATE : 8/16
 DESIGN ENGINEER OF RECORD: O. PUIGCERVER DATE : 7/16

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

LOAD AND RESISTANCE FACTOR RATING (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		
						MOMENT				SHEAR						
						LIVE-LOAD FACTORS (γ _L)	RATING FACTOR	BOX NO.	ELEMENT TYPE	DISTANCE FROM LEFT END OF ELEMENT (FT)	RATING FACTOR	BOX NO.	ELEMENT TYPE		DISTANCE FROM LEFT END OF ELEMENT (FT)	
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	①	4.23	--	1.75	4.82	1	EXTERIOR WALL	4.62	4.23	1	EXTERIOR WALL	7.99		
	HL-93 (OPERATING)	N/A		5.48	--	1.35	6.25	1	EXTERIOR WALL	4.62	5.48	1	EXTERIOR WALL	7.99		
	HS-20 (INVENTORY)	36.000	②	4.23	152.19	1.75	4.82	1	EXTERIOR WALL	4.62	4.23	1	EXTERIOR WALL	7.99		
	HS-20 (OPERATING)	36.000		5.48	197.28	1.35	6.25	1	EXTERIOR WALL	4.62	5.48	1	EXTERIOR WALL	7.99		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SN5H	13.500	③	5.28	71.34	1.40	6.02	1	EXTERIOR WALL	4.62	5.28	1	EXTERIOR WALL	7.99	
		SNGARBS2	20.000		5.28	105.69	1.40	6.02	1	EXTERIOR WALL	4.62	5.28	1	EXTERIOR WALL	7.99	
		SNAGRIS2	22.000		5.28	116.26	1.40	6.02	1	EXTERIOR WALL	4.62	5.28	1	EXTERIOR WALL	7.99	
		SNCOTTS3	27.250		5.28	144.00	1.40	6.02	1	EXTERIOR WALL	4.62	5.28	1	EXTERIOR WALL	7.99	
		SNAGGRS4	34.925		5.28	184.56	1.40	6.02	1	EXTERIOR WALL	4.62	5.28	1	EXTERIOR WALL	7.99	
		SNS5A	35.550		5.28	187.86	1.40	6.02	1	EXTERIOR WALL	4.62	5.28	1	EXTERIOR WALL	7.99	
		SNS6A	39.950		5.28	211.11	1.40	6.02	1	EXTERIOR WALL	4.62	5.28	1	EXTERIOR WALL	7.99	
		SNS7B	42.000		5.28	221.94	1.40	6.02	1	EXTERIOR WALL	4.62	5.28	1	EXTERIOR WALL	7.99	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		5.28	174.38	1.40	6.02	1	EXTERIOR WALL	4.62	5.28	1	EXTERIOR WALL	7.99	
		TNT4A	33.075		5.28	174.78	1.40	6.02	1	EXTERIOR WALL	4.62	5.28	1	EXTERIOR WALL	7.99	
		TNT6A	41.600		5.28	219.83	1.40	6.02	1	EXTERIOR WALL	4.62	5.28	1	EXTERIOR WALL	7.99	
		TNT7A	42.000		5.28	221.94	1.40	6.02	1	EXTERIOR WALL	4.62	5.28	1	EXTERIOR WALL	7.99	
		TNT7B	42.000		5.28	221.94	1.40	6.02	1	EXTERIOR WALL	4.62	5.28	1	EXTERIOR WALL	7.99	
		TNAGRIT4	43.000		5.28	227.23	1.40	6.02	1	EXTERIOR WALL	4.62	5.28	1	EXTERIOR WALL	7.99	
TNAGT5A	45.000		5.28	237.80	1.40	6.02	1	EXTERIOR WALL	4.62	5.28	1	EXTERIOR WALL	7.99			
TNAGT5B	45.000		5.28	237.80	1.40	6.02	1	EXTERIOR WALL	4.62	5.28	1	EXTERIOR WALL	7.99			

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	--

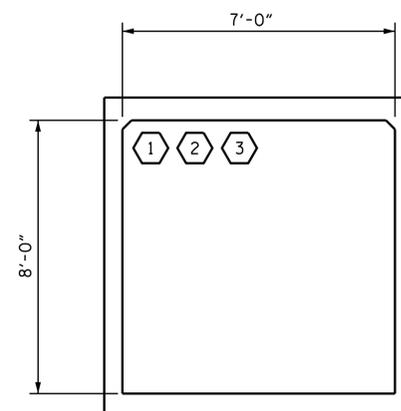
NOTE:

RATING FACTORS ARE BASED ON THE STRENGTH I LIMIT STATE.

COMMENTS:

- 1.
- 2.
- 3.
- 4.

#	CONTROLLING LOAD RATING
①	DESIGN LOAD RATING (HL-93)
②	DESIGN LOAD RATING (HS-20)
③	LEGAL LOAD RATING **
** SEE CHART FOR VEHICLE TYPE	



LRFR SUMMARY

WBS NO. 12.101811

CATAWBA COUNTY

SHEET 6 OF 6



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
LRFR SUMMARY FOR
REINFORCED CONCRETE
BOX CULVERTS
(NON-INTERSTATE TRAFFIC)

ASSEMBLED BY : OPUIGCERVER DATE : 8/16
CHECKED BY : D. SHACKELFORD DATE : 8/16
DRAWN BY : WMC 7/11
CHECKED BY : GM 7/11

REV. 10/1/11 MAA/GM

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

STD. NO. LRFR5

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.

ENGLISH

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