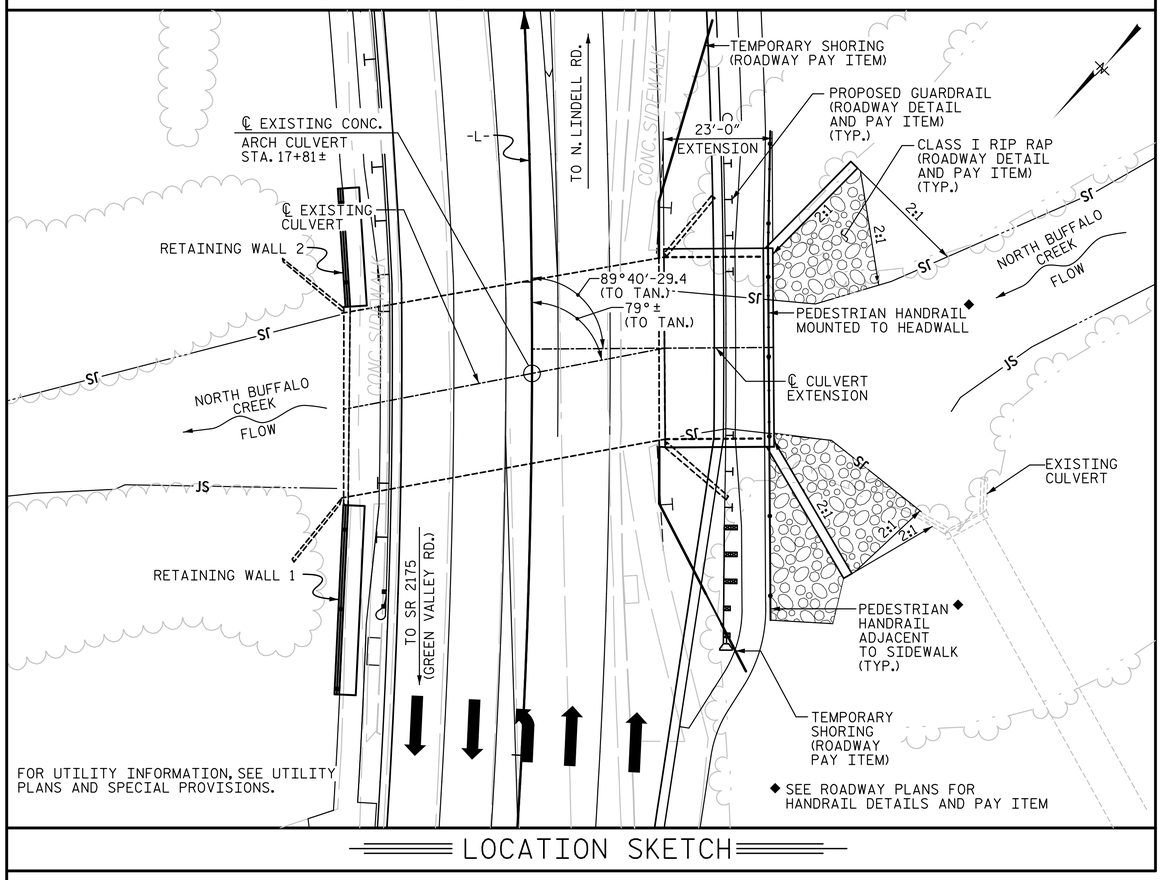
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LOCATION SKETCH

ROADWAY DATA

GRADE POINT ELEV. @ STA. 17+81± -L-	=	776.93
BED ELEV. @ STA. 17+81± -L-	=	555.6±
ROADWAY SLOPES @ STA. 17+81± -L-	=	2:1

HYDRAULIC DATA

DESIGN DISCHARGE	=	2,380 CFS
FREQUENCY OF DESIGN FLOOD	=	25 YRS.
DESIGN HIGH WATER ELEVATION	=	766.2 FT.
DRAINAGE AREA	=	4.8 SQ. MI.
BASE DISCHARGE (Q100)	=	2,850 CFS
BASE HIGH WATER ELEVATION	=	767.2 FT.

W.S. EL. TAKEN @ RIVER STATION 76628

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	=	5,800 CFS
FREQUENCY OF OVERTOPPING FLOOD	=	500+ YRS.
OVERTOPPING FLOOD ELEVATION	=	776.3 FT.

OVERTOPPING OCCURS AT -L- STA. 16+89 AT ELEV. 776.3

TOTAL STRUCTURE QUANTITIES

FOUNDATION EXCAVATION	135.0 C.Y.
UNCLASSIFIED STRUCTURE EXCAVATION	LUMP SUM
CIP GRAVITY RETAINING WALLS	211.3 S.F.
CLASS A CONCRETE ▲	
ARCH @ 3.955 CY/FT	83.1 C.Y.
WINGS ETC.	194.3 C.Y.
TOTAL	277.4 C.Y.
REINFORCING STEEL ▲	
ARCH	24,209 LBS.
WINGS ETC.	9,428 LBS.
TOTAL	33,637 LBS.
ASBESTOS ASSESMENT	LUMP SUM

NOTES:

ASSUMED LIVE LOAD ---------- HL-93 OR ALTERNATE LOADING.

DESIGN FILL---------- 2'-6" MIN., 3'-6" MAX.

FOR OTHER DESIGN DATA AND NOTES SEE STANDARD NOTE 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, 4" OF THE WINGS, AND ARCH FOOTINGS INCLUDING 4" OF THE ARCH WALLS.

2. THE REMAINING PORTIONS OF THE ARCH, WINGS, AND HEADWALLS.

THE RESIDENT ENGINEER SHALL CHECK THE LENGTH OF CULVERT EXTENSION 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 THE ARCH ARE SHOWN ON WING SHEET.

TEMPORARY SHORING MAY BE REQUIRED TO SUPPORT THE EXISTING CULVERT AND/OR THE ROADWAY EMBANKMENT DURING UNDERCUTTING AND BACKFILLING OPERATIONS. IF TEMPORARY SHORING IS REQUIRED, THE CONTRACTOR SHALL SUBMIT DESIGN CALCULATIONS, CONSTRUCTION METHODS, AND DETAILED DRAWINGS, ALL OF WHICH SHALL BE SEALED BY A NORTH CAROLINA PROFESSIONAL ENGINEER, TO THE ENGINEER FOR APPROVAL 21 DAYS BEFORE CONSTRUCTION OF THE SHORING WALL. PAYMENT FOR THE DESIGN AND INSTALLATION OF TEMPORARY SHORING IS CONSIDERED INCIDENTAL TO UNCLASSIFIED STRUCURE EXCAVATION AND SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR "UNCLASSIFIED STRUCTURE EXCAVATION".

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

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

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.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

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

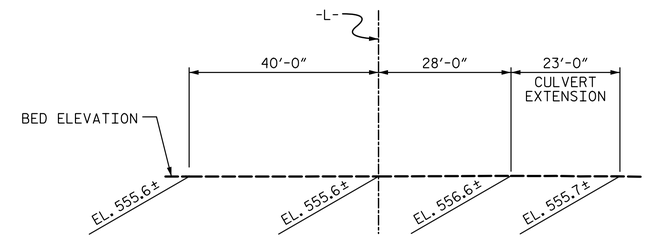
DETAILED DRAWINGS FOR FALSEWORK AND FORMS FOR THIS ARCH CULVERT SHALL BE SUBMITTED. SEE STANDARD NOTES SHEET.

THE CONTRACTOR SHALL INSPECT THE EXISTING ARCH CULVERT PRIOR TO CONSTRUCITON. DAMAGE PRIOR TO OR DURING CONSTRUCTION SHALL BE REPAIRED BY THE CONTRACTOR.

EXISTING WING WALLS AND FOOTINGS AT CULVERT EXTENSION SHALL BE REMOVED TO AVOID CONFLICT WITH PROPOSED FOOTINGS.

FOR ASBESTOS ASSESMENT FOR BRIDGE DEMOLITION AND RENOVATION ACTIVITIES, SEE SPECIAL PROVISIONS.

▲ THE CULVERT EXTENSION DIMENSIONS ARE BASED ON THE BEST AVAILABLE INFORMATION FOR THE EXISTING STRUCTURE. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND ALIGNMENT OF THE END OF THE EXISTING ARCH. IF THE LOCATION AND ALIGNMENT OF THE EXISTING ARCH IS DIFFERENT THAN WHAT IS SHOWN ON THE PLANS, THE CONTRACTOR SHALL ADJUST THE CONCRETE AND REINFORCING STEEL QUANTITIES FOR THE CULVERT EXTENSION AS NECESSARY.



PROFILE ALONG ℄ CULVERT

FOUNDATIONS RECOMMENDATIONS

THE SPREAD FOOTINGS FOR THE BOTTOMLESS CONCRETE ARCH CULVERT AT STATION 17+81 ARE DESIGNED FOR A FACTORED RESISTANCE OF 5 TSF. CHECK FIELD CONDITIONS FOR THE REQUIRED RESISTANCE OF 12 TSF JUST BEFORE PLACING CONCRETE.

KEY IN FOOTINGS FOR THE BOTTOMLESS CONCRETE ARCH CULVERT AT STATION 17+81 AT LEAST 12" INTO WEATHERED ROCK OR ROCK WITH A MINIMUM THICKNESS AS SHOWN IN THE PLANS.

THE SCOUR CRITICAL ELEVATION FOR THE BOTTOMLESS CONCRETE ARCH CULVERT AT STATION 17+81 IS THE BOTTOM OF FOOTING ELEVATION. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

Signed by: Jason T. Griscom
Engineering Firm No. P-0991
NORTH CAROLINA PROFESSIONAL SEAL 029429 ENGINEER JASON T. GRISCOM
11/11/2026

PROJECT NO. U-5841
GUILFORD COUNTY
STATION: 17+81.00 -L-
SHEET 1 OF 7 BRIDGE NO. 117

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CONCRETE ARCH CULVERT EXTENSION

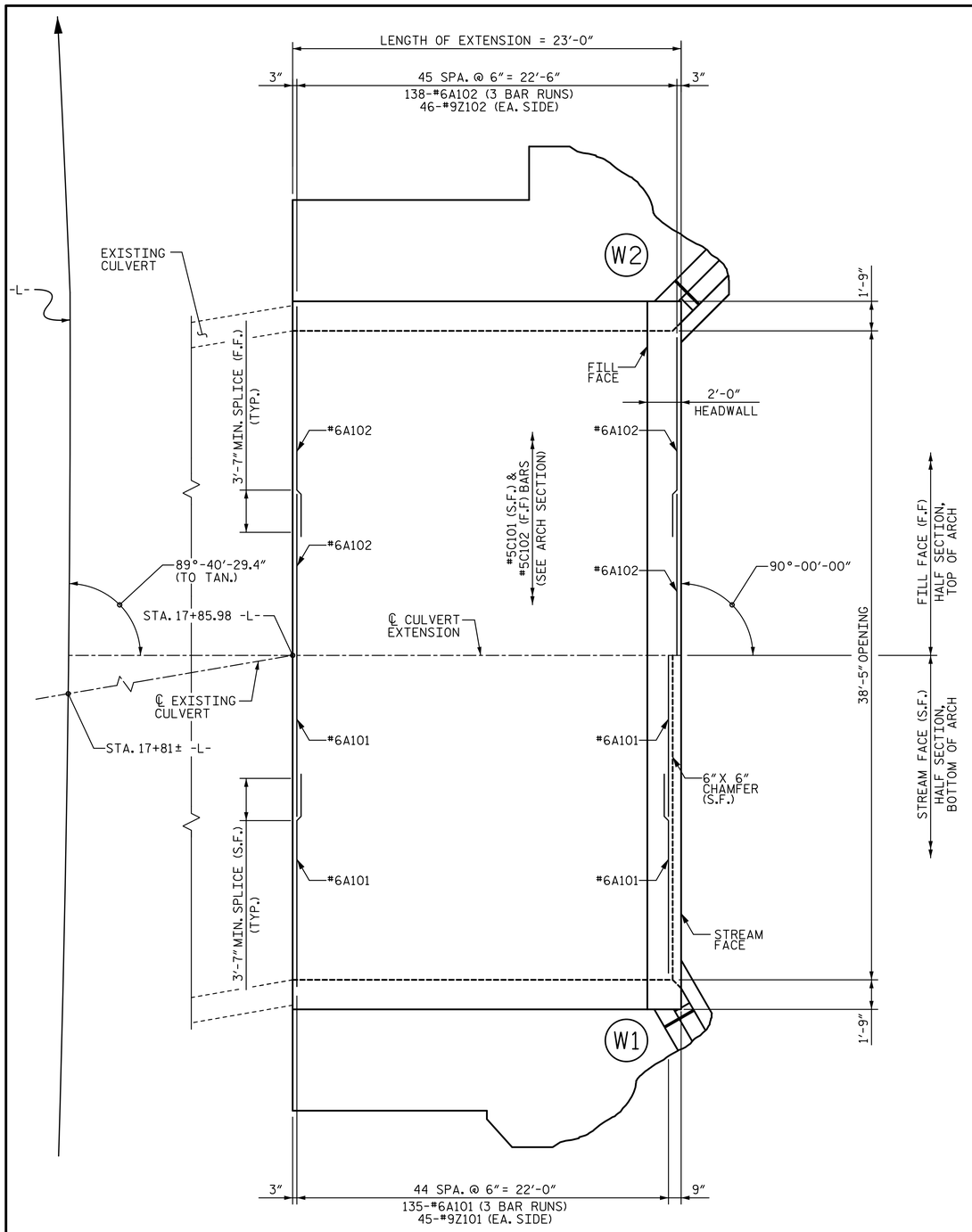
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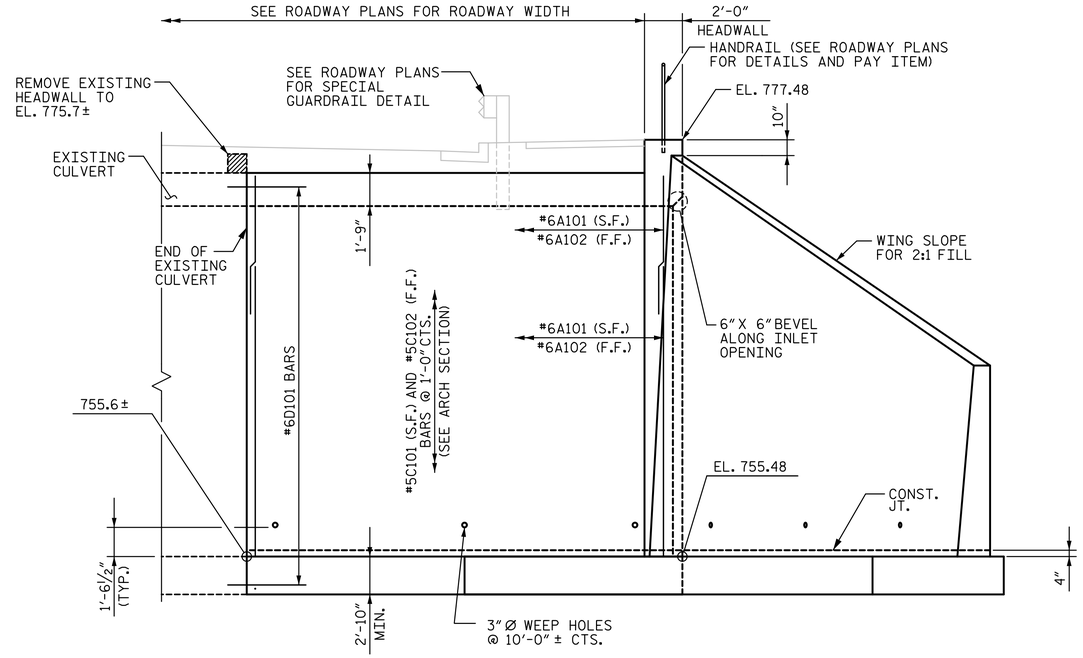
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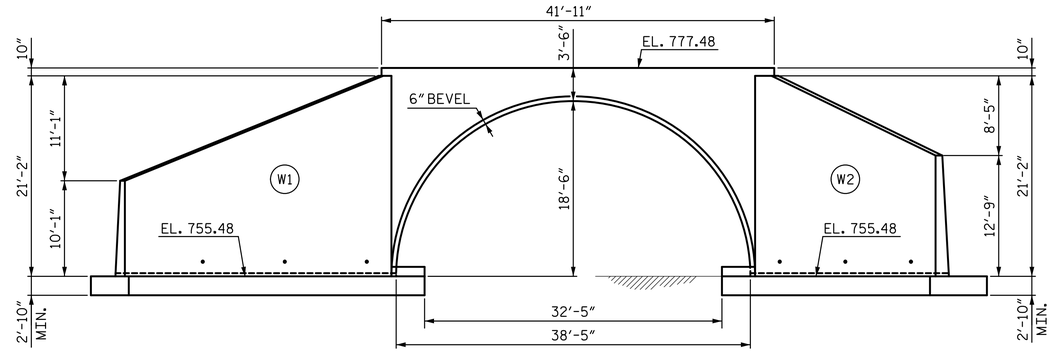


PLAN-ARCH SLAB

(Z101 & Z102 NOT SHOWN, SEE "FOOTING SECTION" FOR DETAILS)



CULVERT EXTENSION SECTION NORMAL TO ROADWAY



INLET EXTENSION END ELEVATION

PROJECT NO. U-5841

GUILFORD COUNTY

STATION: 17+81.00 -L-

SHEET 2 OF 7

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DEPARTMENT OF TRANSPORTATION
RALEIGH

CONCRETE ARCH CULVERT EXTENSION SECTIONS & DETAILS

Signed by: Jason Griscom
E-mail: jgriscom@stvinc.com

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 029429 JASON T. GRISCOM

11/11/2026

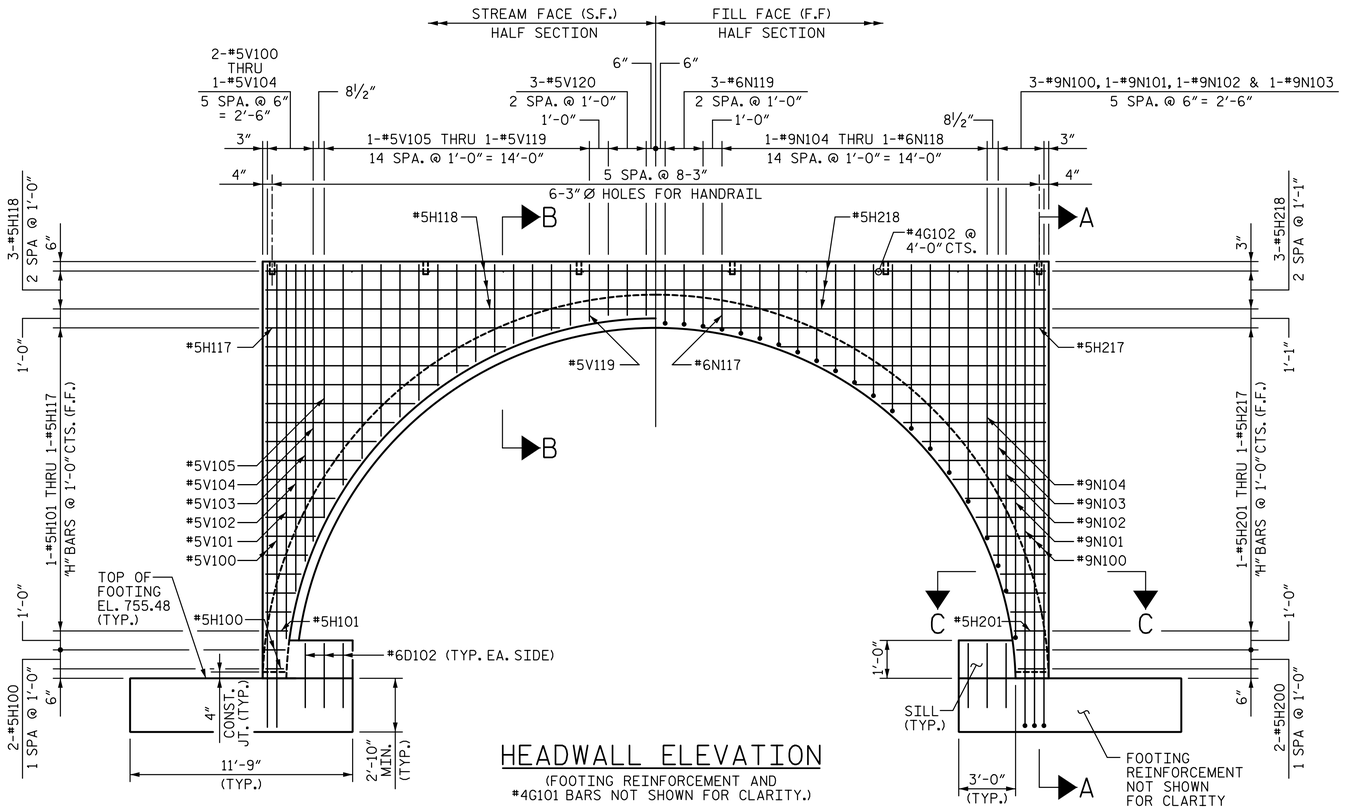
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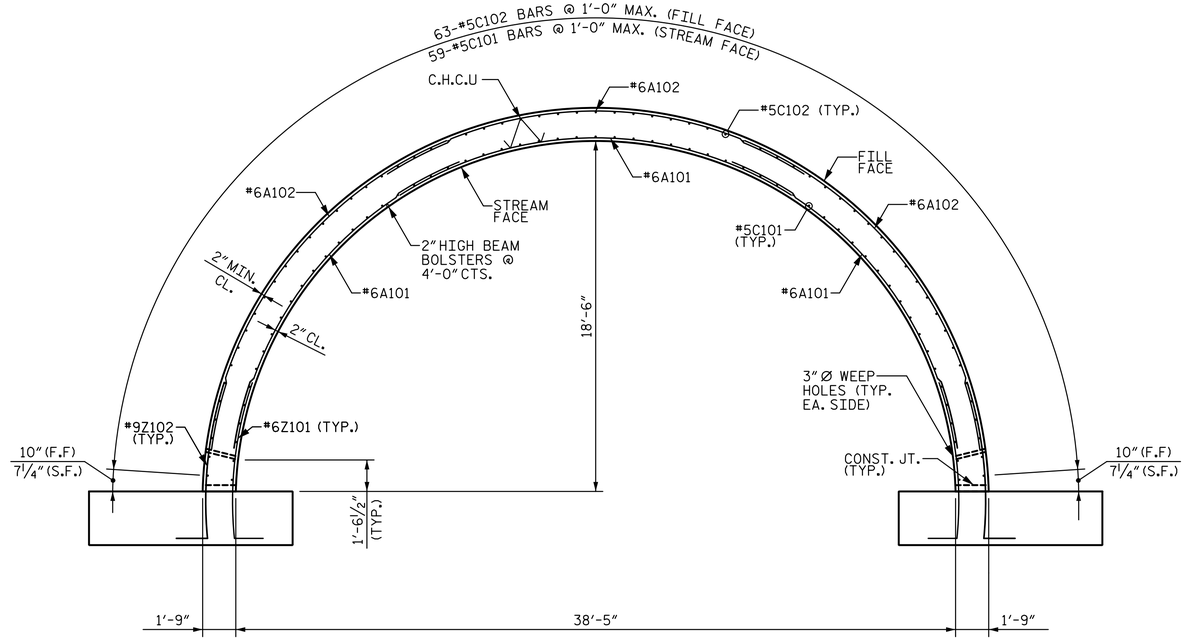
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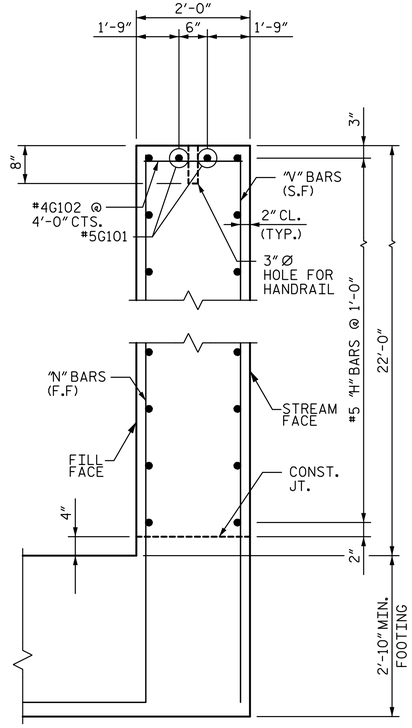
HEADWALL ELEVATION

(FOOTING REINFORCEMENT AND #4G101 BARS NOT SHOWN FOR CLARITY.)



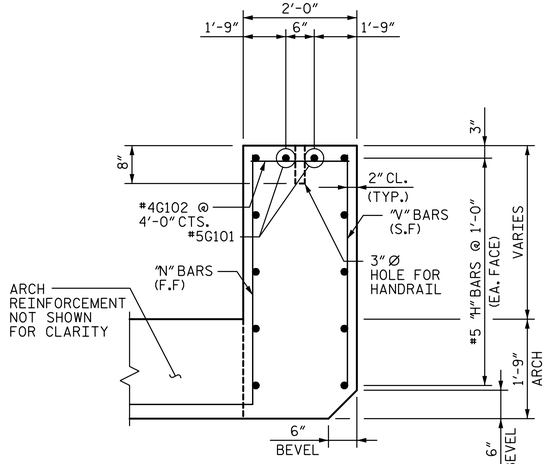
ARCH SECTION

FOR FOOTING REINFORCEMENT, SEE SHEET 4 OF 7.



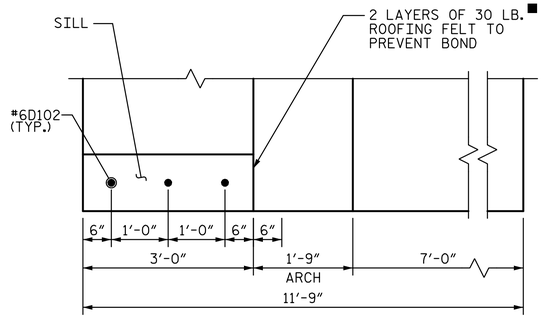
SECTION A-A

HANDRAIL NOT SHOWN FOR CLARITY.



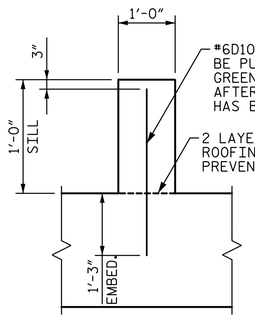
SECTION B-B

HANDRAIL NOT SHOWN FOR CLARITY.



VIEW C-C

RIGHT SIDE SILL SHOWN, LEFT SIDE SIMILAR



SECTION THROUGH SILL

■ THE COST OF ROOFING FELT IS INCIDENTAL AND SHALL BE INCLUDED IN THE VARIOUS PAY ITEMS

PROJECT NO. U-5841

GUILFORD COUNTY

STATION: 17+81.00 -L-

SHEET 3 OF 7

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RALEIGH

CONCRETE ARCH CULVERT EXTENSION SECTIONS & DETAILS

Signed by: Jason T. Griscom
NORTH CAROLINA PROFESSIONAL SEAL 029429 ENGINEER JASON T. GRISCOM
11/11/2026

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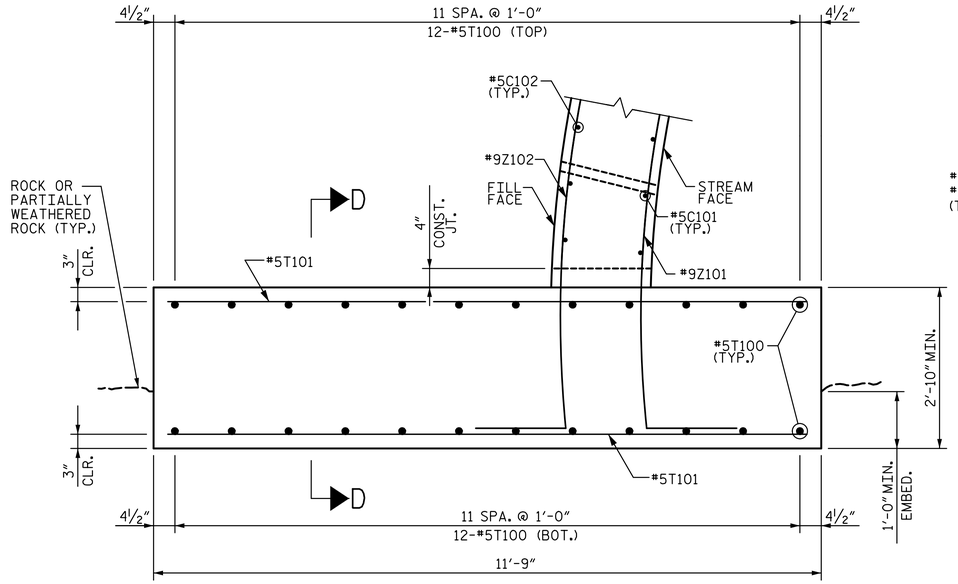
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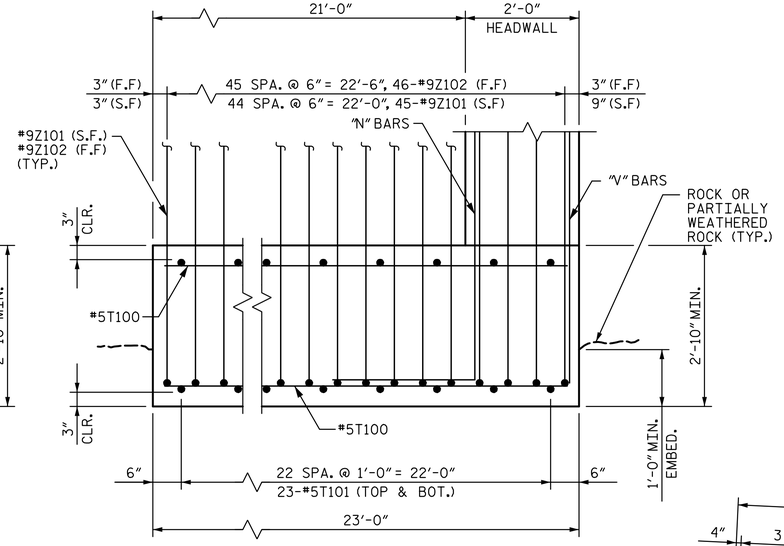
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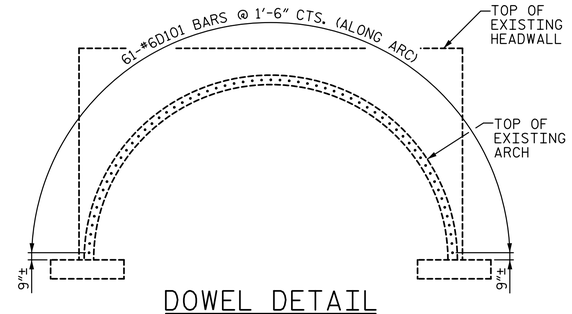
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FOOTING SECTION



SECTION D-D

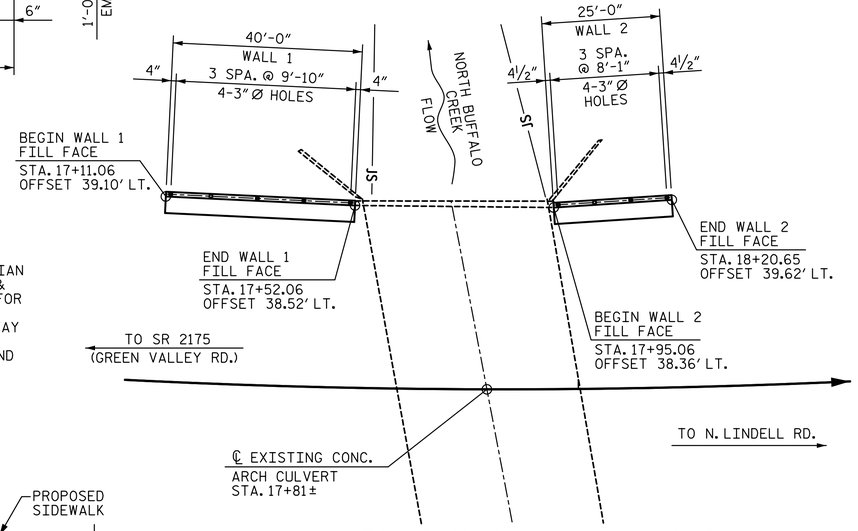


DOWEL DETAIL

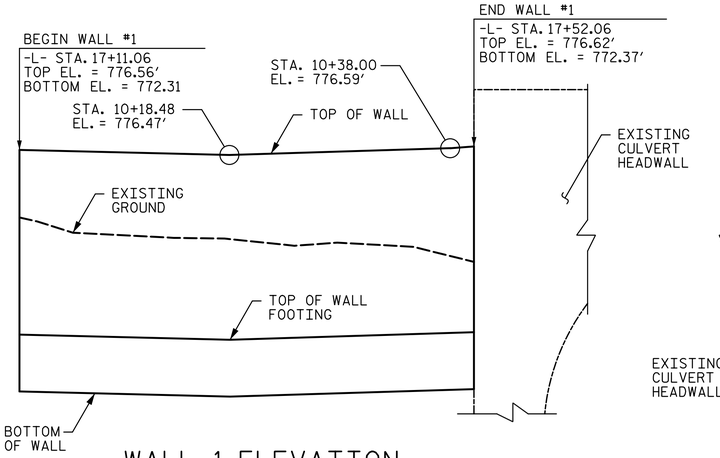
(EXISTING CULVERT INLET END SHOWN.)

D1 BARS SHALL BE EMBEDDED 1'-0" INTO EXISTING CULVERT.

DOWELS SHALL BE CENTERED HORIZONTALLY IN THE EXISTING ARCH.

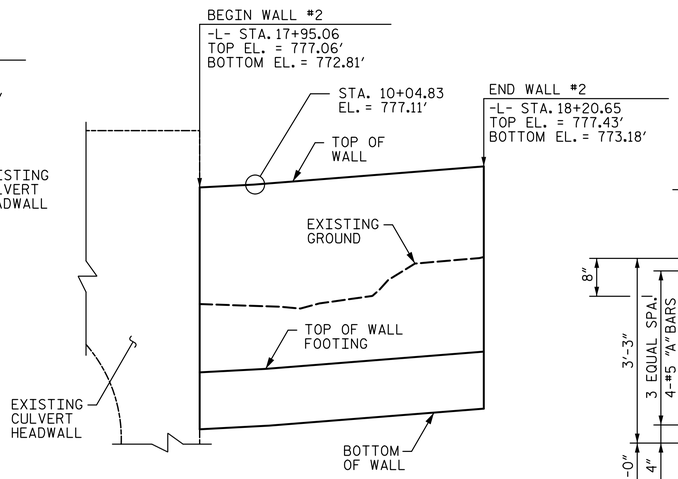


RETAINING WALL LAYOUT



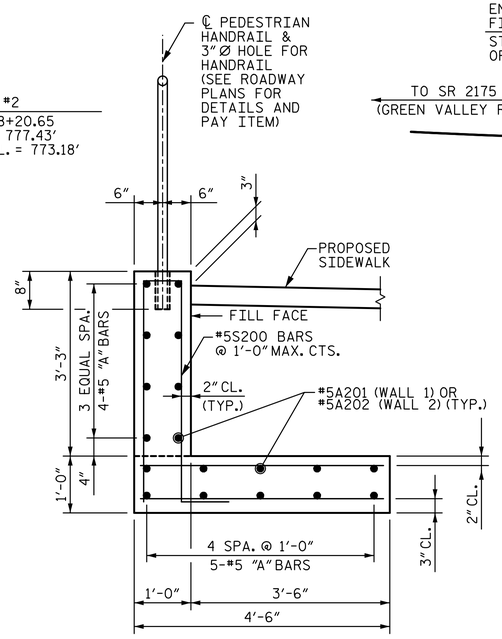
WALL 1 ELEVATION

(HANDRAIL NOT SHOWN FOR CLARITY)



WALL 2 ELEVATION

(HANDRAIL NOT SHOWN FOR CLARITY)



RETAINING WALL DETAIL FOR OUTLET END

(SEE ROADWAY PLANS FOR HANDRAIL DETAILS AND PAY ITEM)

PROJECT NO. U-5841

GUILFORD COUNTY

STATION: 17+81.00 -L-

SHEET 4 OF 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CONCRETE ARCH CULVERT EXTENSION SECTIONS & DETAILS

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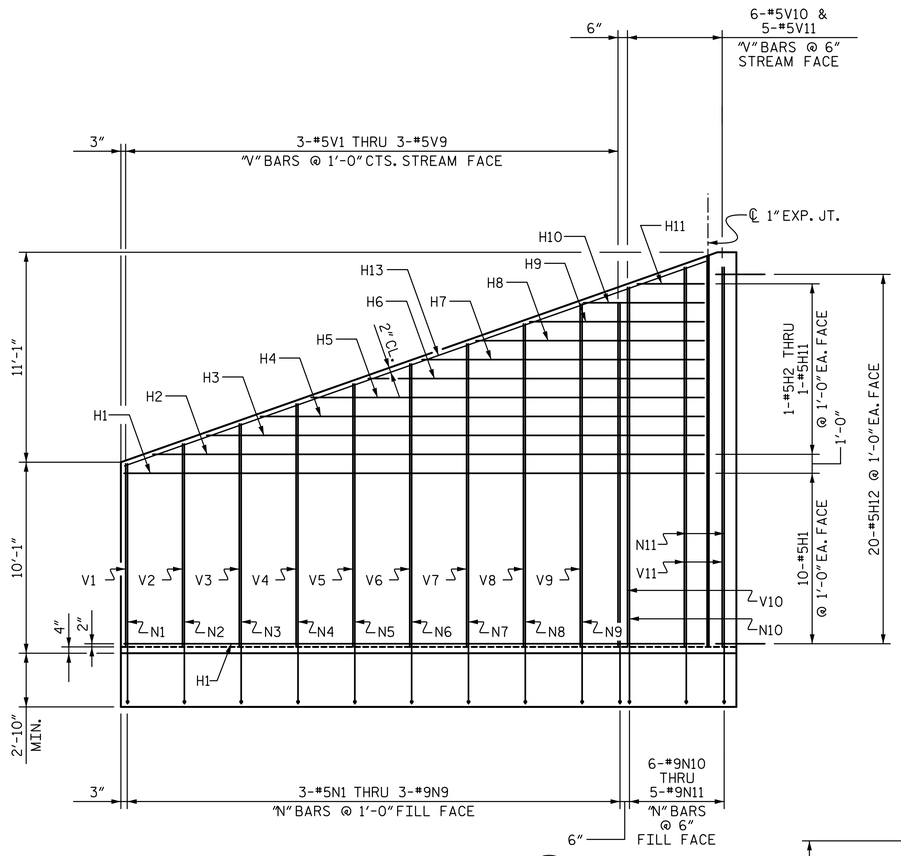
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Engineering, PLLC
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 029429 JASON T. GRISCOM
11/11/2026

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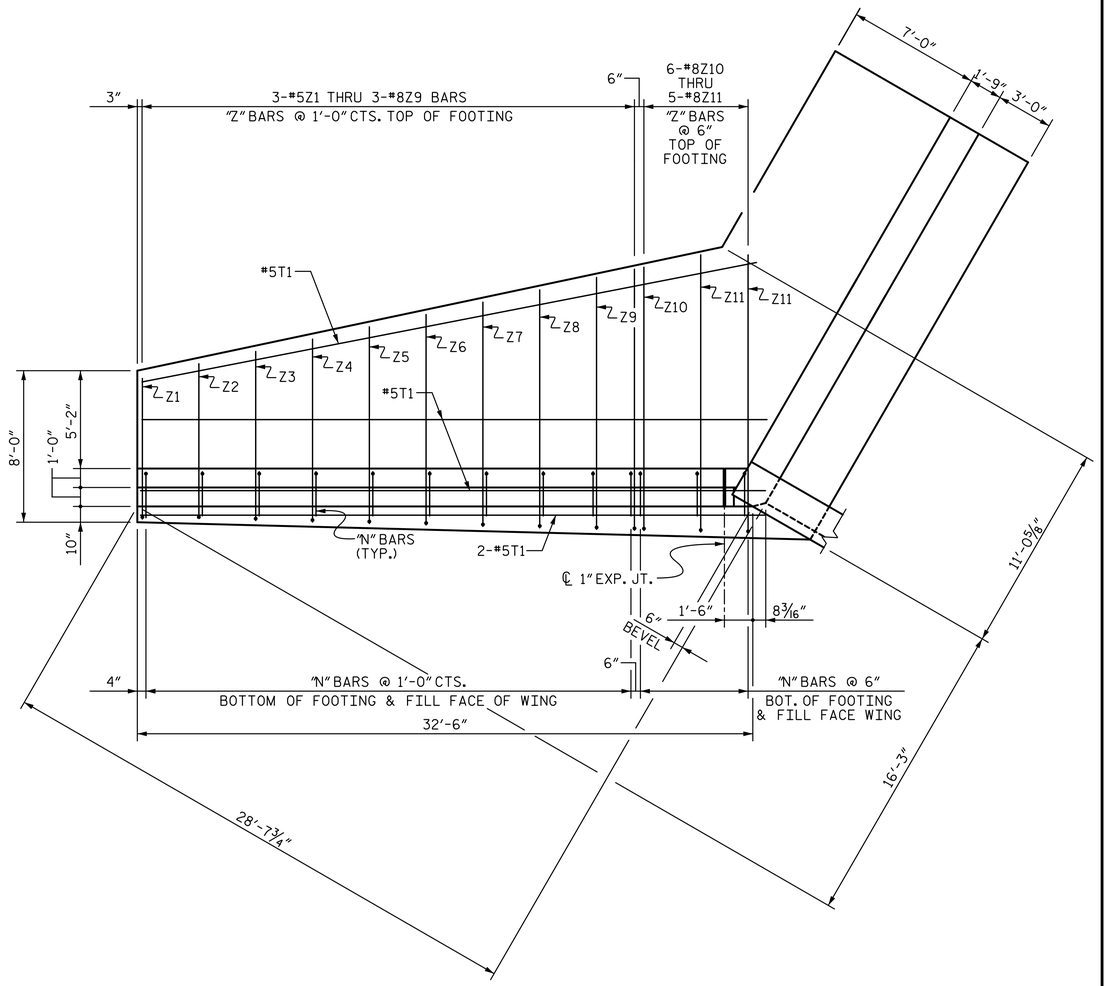
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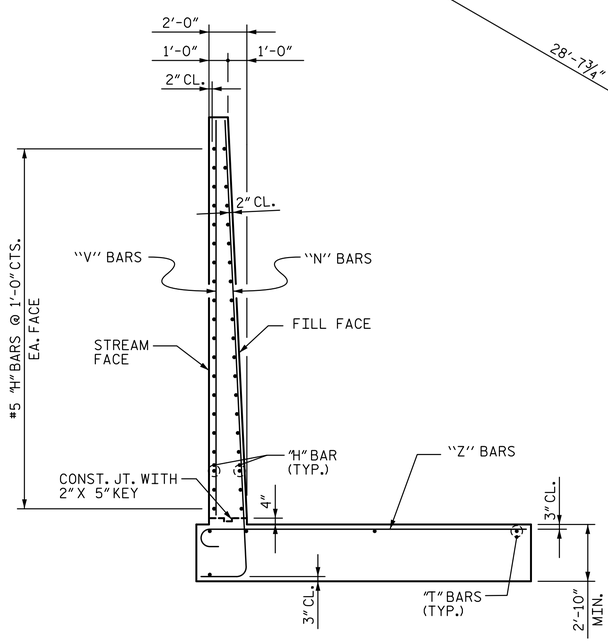
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ELEVATION (W1)



PLAN (W1)



TYPICAL WING SECTION

PROJECT NO. U-5841

GUILFORD COUNTY

STATION: 17+81.00 -L-

SHEET 5 OF 7

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RALEIGH

CONCRETE ARCH CULVERT EXTENSION WING WALL 1

Signed by: Jason T. Griscom
Email: jgriscom@stvinc.com
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 029429 JASON T. GRISCOM
11/11/2026

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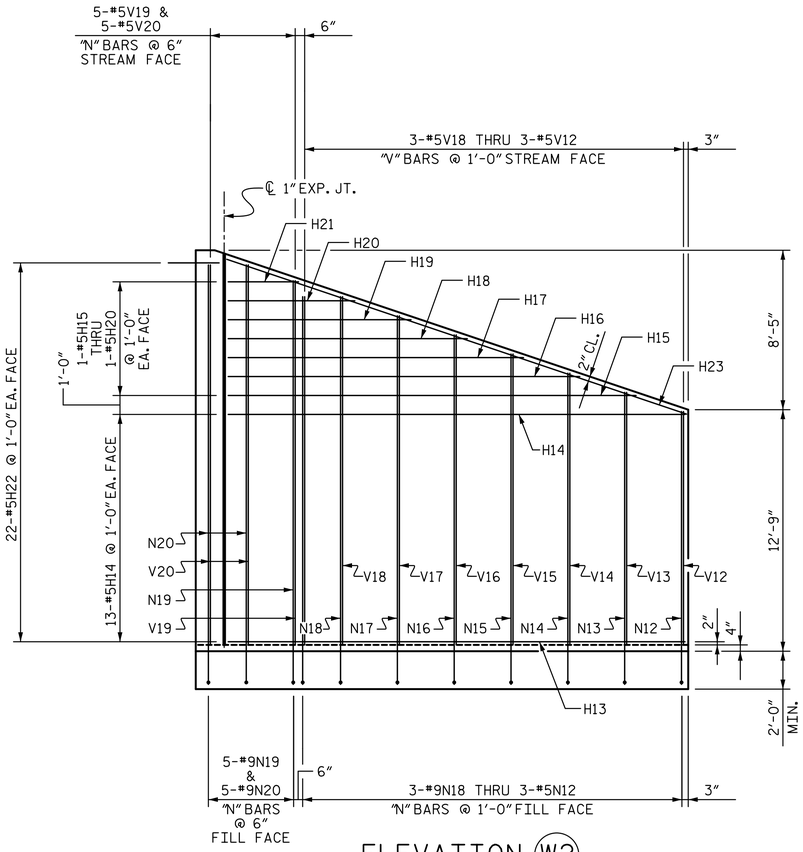
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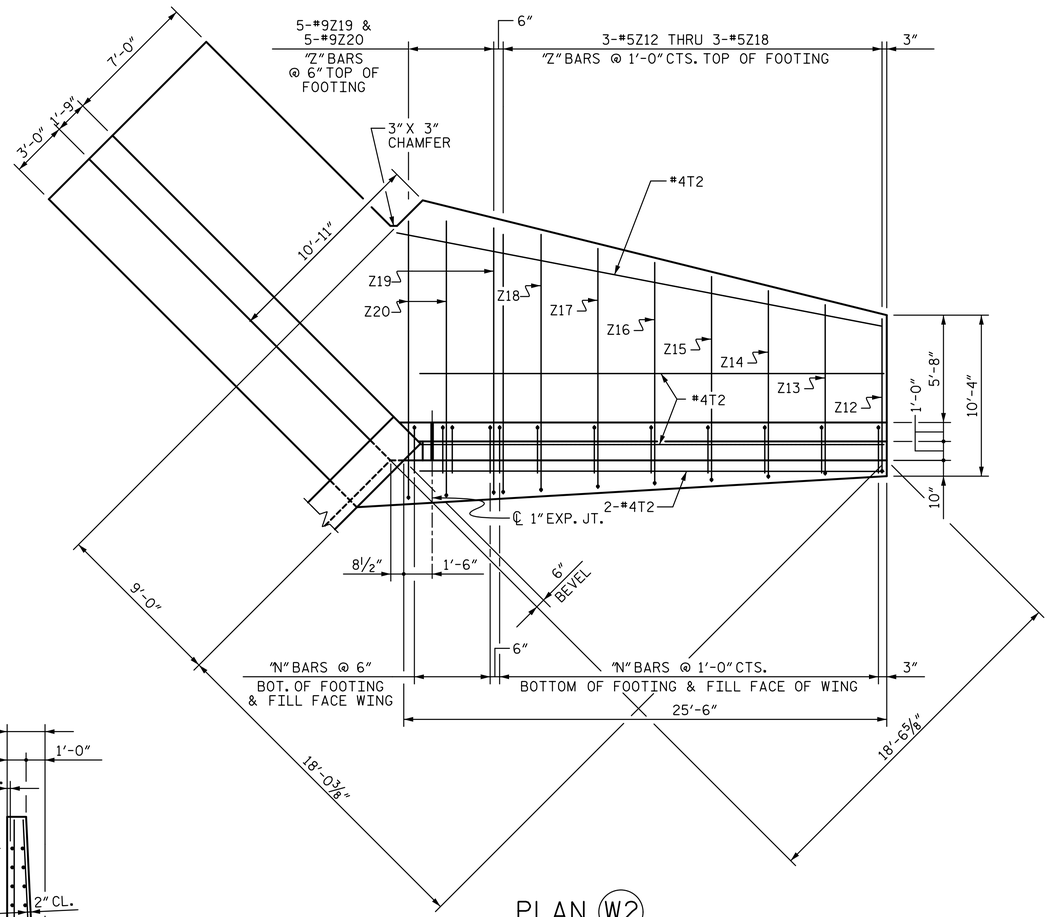
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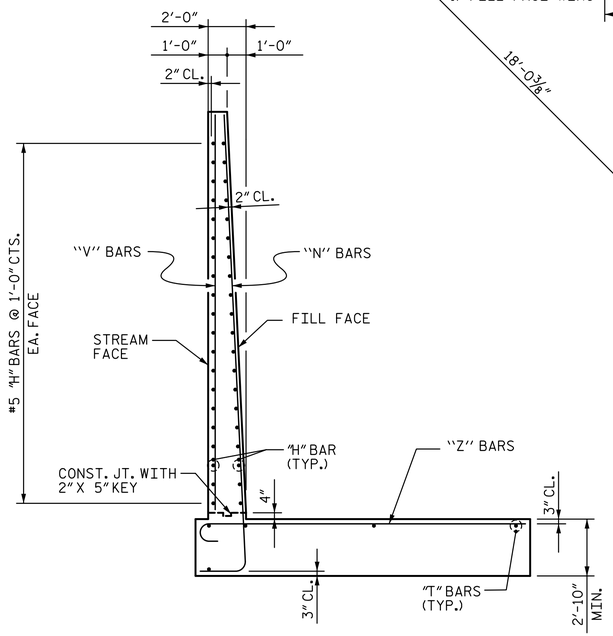
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ELEVATION (W2)



PLAN (W2)



TYPICAL WING SECTION

PROJECT NO. U-5841

GUILFORD COUNTY

STATION: 17+81.00 -L-

SHEET 6 OF 7

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CONCRETE ARCH CULVERT EXTENSION WING WALL 2

Signed by: Jason T. Griscom
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 029429 JASON T. GRISCOM
11/11/2026

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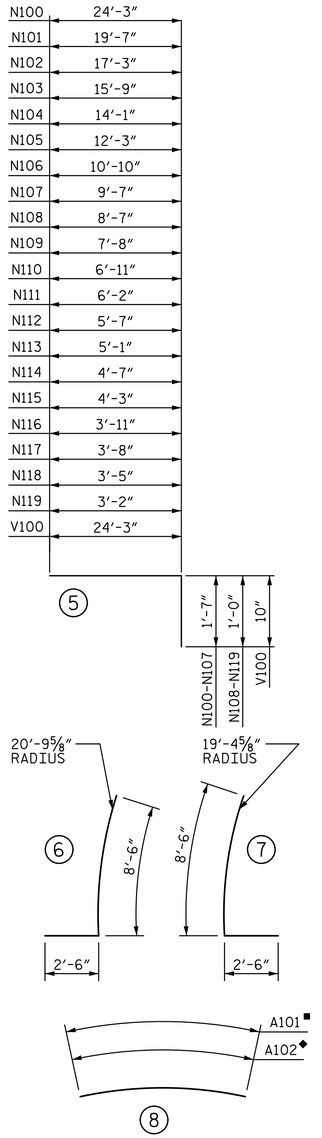
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ARCH, HEADWALL, AND ARCH FOOTINGS REINFORCEMENT

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

REINFORCING STEEL BAR SCHEDULE

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A101	135	#6	⑧	22'-0"	4,461
A102	138	#6	⑧	23'-4"	4,836
C101	59	#5	STR	22'-2"	1,364
C102	63	#5	STR	22'-8"	1,489
D101	61	#6	STR	2'-6"	229
D102	6	#6	STR	2'-0"	18
G101	2	#5	STR	41'-7"	87
G102	11	#5	STR	1'-8"	19
H100	4	#5	STR	11"	4
H101	2	#5	STR	1'-1"	2
H102	2	#5	STR	1'-3"	3
H103	2	#5	STR	1'-6"	3
H104	2	#5	STR	1'-10"	4
H105	2	#5	STR	2'-2"	5
H106	2	#5	STR	2'-7"	5
H107	2	#5	STR	3'-1"	6
H108	2	#5	STR	3'-8"	8
H109	2	#5	STR	4'-4"	9
H110	2	#5	STR	5'-0"	10
H111	2	#5	STR	5'-10"	12
H112	2	#5	STR	6'-9"	14
H113	2	#5	STR	7'-11"	17
H114	2	#5	STR	9'-2"	19
H115	2	#5	STR	10'-9"	22
H116	2	#5	STR	12'-8"	26
H117	2	#5	STR	15'-7"	33
H118	3	#5	STR	41'-7"	130
H200	4	#5	STR	1'-5"	6
H201	2	#5	STR	1'-7"	3
H202	2	#5	STR	1'-10"	4
H203	2	#5	STR	2'-0"	4
H204	2	#5	STR	2'-4"	5
H205	2	#5	STR	2'-8"	6
H206	2	#5	STR	3'-1"	6
H207	2	#5	STR	3'-8"	8
H208	2	#5	STR	4'-3"	9
H209	2	#5	STR	4'-11"	10
H210	2	#5	STR	5'-8"	12
H211	2	#5	STR	6'-7"	14
H212	2	#5	STR	7'-7"	16
H213	2	#5	STR	8'-8"	18
H214	2	#5	STR	10'-0"	21
H215	2	#5	STR	11'-10"	25
H216	2	#5	STR	14'-1"	29
H217	2	#5	STR	18'-0"	38
H218	3	#5	STR	41'-7"	130

REINFORCING STEEL BAR SCHEDULE

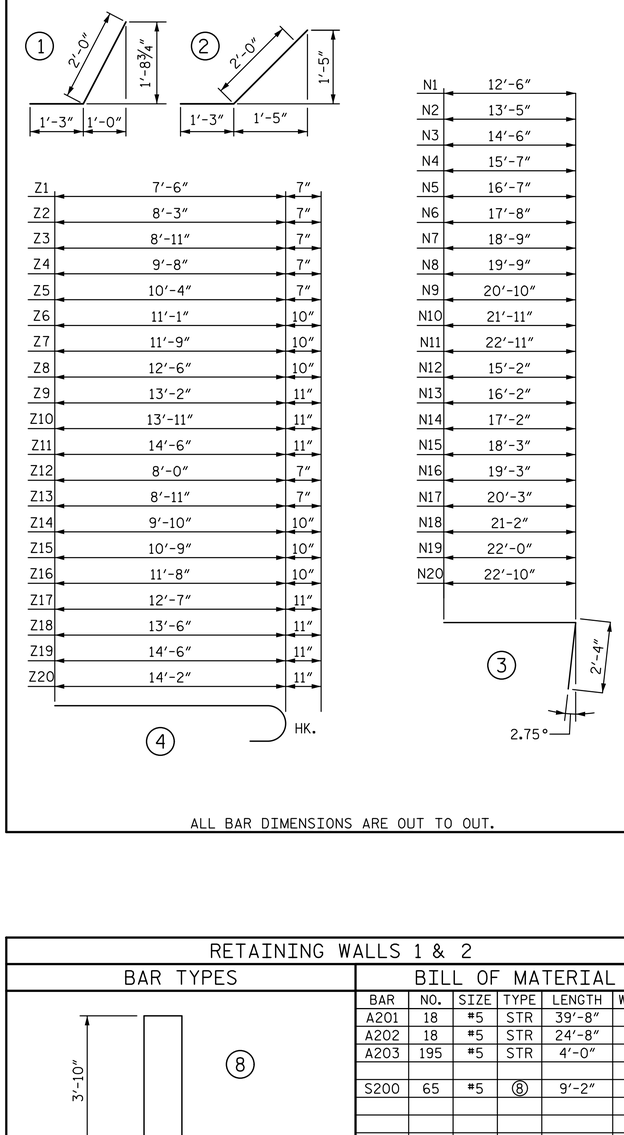
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
N100	6	#9	⑤	25'-10"	527
N101	2	#9	⑤	21'-2"	144
N102	2	#9	⑤	18'-10"	128
N103	2	#9	⑤	17'-4"	118
N104	2	#9	⑤	15'-8"	107
N105	2	#9	⑤	13'-10"	94
N106	2	#9	⑤	12'-5"	84
N107	2	#9	⑤	11'-2"	76
N108	2	#6	⑤	9'-7"	29
N109	2	#6	⑤	8'-8"	26
N110	2	#6	⑤	7'-11"	24
N111	2	#6	⑤	7'-2"	22
N112	2	#6	⑤	6'-7"	20
N113	2	#6	⑤	6'-1"	18
N114	2	#6	⑤	5'-7"	17
N115	2	#6	⑤	5'-3"	16
N116	2	#6	⑤	4'-11"	15
N117	2	#6	⑤	4'-8"	14
N118	2	#6	⑤	4'-5"	13
N119	6	#6	⑤	4'-2"	38
T100	48	#5	STR	22'-6"	1,126
T101	92	#5	STR	11'-3"	1,080
V100	4	#5	⑤	25-1"	105
V101	2	#5	STR	19'-8"	41
V102	2	#5	STR	17'-2"	36
V103	2	#5	STR	15'-7"	33
V104	2	#5	STR	14'-6"	30
V105	2	#5	STR	13'-1"	27
V106	2	#5	STR	11'-5"	24
V107	2	#5	STR	10'-1"	21
V108	2	#5	STR	8'-11"	19
V109	2	#5	STR	7'-11"	17
V110	2	#5	STR	7'-1"	15
V111	2	#5	STR	6'-3"	13
V112	2	#5	STR	5'-8"	12
V113	2	#5	STR	5'-1"	11
V114	2	#5	STR	4'-6"	9
V115	2	#5	STR	4'-1"	9
V116	2	#5	STR	3'-9"	8
V117	2	#5	STR	3'-5"	7
V118	2	#5	STR	3'-2"	7
V119	2	#5	STR	2'-11"	6
V120	6	#5	STR	2'-8"	17
Z101	90	#9	⑦	11'-0"	3,366
Z102	92	#9	⑥	11'-0"	3,441
TOTAL REINFORCING STEEL					24,209 LBS

■ 19'-4⅝" RADIUS

◆ 20'-9⅝" RADIUS

WINGWALL REINFORCEMENT

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

REINFORCING STEEL BAR SCHEDULE

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
H1	20	#5	STR	30'-7"	638
H2	2	#5	STR	29'-1"	61
H3	2	#5	STR	26'-3"	55
H4	2	#5	STR	23'-5"	49
H5	2	#5	STR	20'-6"	43
H6	2	#5	STR	17'-8"	37
H7	2	#5	STR	14'-10"	31
H8	2	#5	STR	12'-0"	25
H9	2	#5	STR	9'-2"	19
H10	2	#5	STR	6'-4"	13
H11	2	#5	STR	3'-6"	7
H12	40	#5	①	3'-3"	136
H13	2	#5	STR	32'-5"	68
H14	26	#5	STR	23'-7"	640
H15	2	#5	STR	21'-1"	44
H16	2	#5	STR	18'-2"	38
H17	2	#5	STR	15'-3"	32
H18	2	#5	STR	12'-4"	26
H19	2	#5	STR	9'-5"	20
H20	2	#5	STR	6'-6"	14
H21	2	#5	STR	3'-7"	7
H22	42	#5	②	3'-3"	142
H23	2	#5	STR	24'-11"	52
N1	3	#5	③	14'-10"	46
N2	3	#5	③	15'-9"	49
N3	3	#5	③	16'-10"	53
N4	3	#6	③	17'-11"	81
N5	3	#7	③	18'-11"	116
N6	3	#8	③	20'-0"	160
N7	3	#8	③	21'-1"	169
N8	3	#9	③	22'-1"	225
N9	3	#9	③	23'-2"	236
N10	6	#9	③	24'-3"	495
N11	5	#9	③	25'-3"	429
N12	3	#5	③	17'-6"	55
N13	3	#6	③	18'-6"	83
N14	3	#6	③	19'-6"	88
N15	3	#7	③	20'-7"	126
N16	3	#8	③	21'-7"	173
N17	3	#8	③	22'-7"	182
N18	3	#9	③	23'-6"	240
N19	6	#9	③	24'-4"	496
N20	5	#9	③	25'-2"	428
T1	5	#5	STR	33'-0"	172
T2	5	#5	STR	26'-1"	136

REINFORCING STEEL BAR SCHEDULE

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
V1	3	#5	STR	9'-7"	30
V2	3	#5	STR	10'-9"	34
V3	3	#5	STR	11'-9"	37
V4	3	#5	STR	12'-10"	40
V5	3	#5	STR	13'-11"	44
V6	3	#5	STR	14'-11"	47
V7	3	#5	STR	15'-11"	50
V8	3	#5	STR	17'-0"	53
V9	3	#5	STR	18'-1"	57
V10	6	#5	STR	19'-1"	119
V11	5	#5	STR	20'-2"	105
V12	3	#5	STR	12'-3"	38
V13	3	#5	STR	13'-4"	42
V14	3	#5	STR	14'-4"	45
V15	3	#5	STR	15'-5"	48
V16	3	#5	STR	16'-5"	51
V17	3	#5	STR	17'-5"	54
V18	3	#5	STR	18'-4"	57
V19	5	#5	STR	19'-2"	100
V20	5	#5	STR	20'-0"	104
Z1	3	#5	④	8'-1"	25
Z2	3	#5	④	8'-10"	28
Z3	3	#5	④	9'-6"	30
Z4	3	#5	④	10'-3"	32
Z5	3	#5	④	10'-11"	34
Z6	3	#7	④	11'-11"	73
Z7	3	#7	④	12'-7"	77
Z8	3	#7	④	13'-4"	82
Z9	3	#8	④	14'-1"	113
Z10	6	#8	④	14'-10"	238
Z11	5	#8	④	15'-5"	206
Z12	3	#5	④	8'-7"	27
Z13	3	#5	④	9'-6"	30
Z14	3	#7	④	10'-8"	65
Z15	3	#7	④	11'-7"	71
Z16	3	#7	④	12'-6"	77
Z17	3	#8	④	13'-6"	108
Z18	3	#8	④	14'-5"	115
Z19	5	#8	④	15'-5"	206
Z20	5	#8	④	15'-1"	201

RETAINING WALLS 1 & 2

BAR TYPES

ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A201	18	#5	STR	39'-8"	745
A202	18	#5	STR	24'-8"	463
A203	195	#5	STR	4'-0"	814
S200	65	#5	⑧	9'-2"	621
TOTAL REINFORCING STEEL					2,643 LBS
TOTAL CLASS A CONCRETE					18.7 CY

WING WALLS QUANTITIES

REINFORCING STEEL FOR 2 WINGS	9,428 LBS
CLASS A CONCRETE	
2 WINGS	50.5 CY
1 HEADWALL	19.1 CY
2 FOOTINGS	124.5 CY
2 SILLS	0.2 CY
TOTAL	194.3 CY

PROJECT NO. U-5841

GUILFORD COUNTY

STATION: 17+81.00 -L-

SHEET 7 OF 7

Signed by: [illegible]
E-SIGNATURE

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 029429 JASON T. GRISCOM

11/11/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CONCRETE ARCH CULVERT EXTENSION

DRAWN BY :	BMC	DATE :	3-20
CHECKED BY :	JTG	DATE :	3-20
DESIGN ENGINEER OF RECORD :	JTG	DATE :	11-26

STV 100 Years
STV ENGINEERS, INC.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO. C-7

TOTAL SHEETS 7

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STANDARD NOTES

DESIGN DATA:

SPECIFICATIONS	AASHTO (CURRENT)
LIVE LOAD	SEE PLANS
IMPACT ALLOWANCE	SEE AASHTO
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 AASHTO
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 2024 "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 ¾" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1½" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A ¼" 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 ¼" 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 ⅞" ∅ SHEAR STUDS FOR THE ¾" ∅ STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - ⅞" ∅ STUDS FOR 4 - ¾" ∅ STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF ⅞" ∅ STUDS ALONG THE BEAM AS SHOWN FOR ¾" ∅ STUDS BASED ON THE RATIO OF 3 - ⅞"∅ STUDS FOR 4 - ¾" ∅ 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.