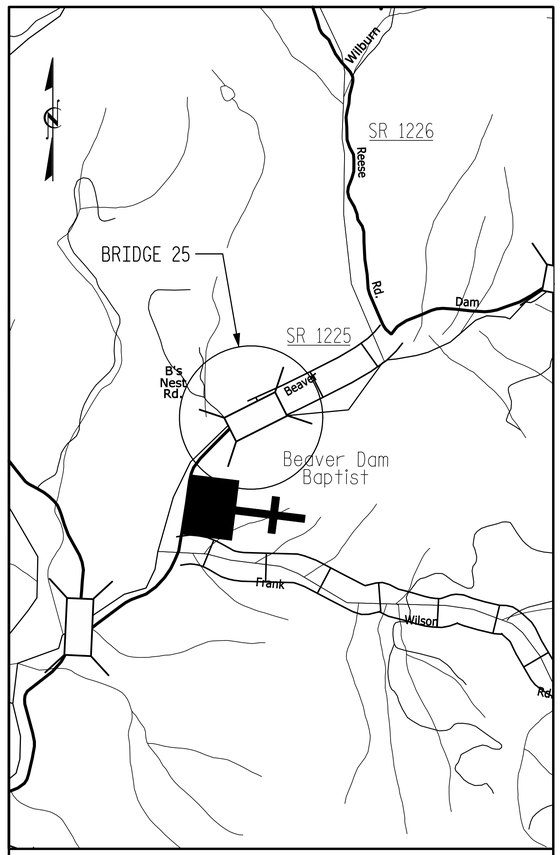
09/08/99

TIP PROJECT: BK-5119

CONTRACT: DK00087



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

WATAUGA COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BK-5119		28
WATAUGA COUNTY #25			
WBS PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
42570.1.1	BRZ-1225(4)	P.E.	
42570.3.1	BRZ-1225(4)	CONST	

LOCATION: BRIDGE NO. 25 ON SR 1225 OVER LITTLE BEAVERDAM CREEK

TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURE, GUARDRAIL, STRUCTURE, TRAFFIC CONTROL AND EROSION CONTROL

STRUCTURES

NORTH CAROLINA PROFESSIONAL SEAL 20532 ENGINEER JAMES E. MONDOLFI
5-10-13

PROJECT LENGTH

LENGTH ROADWAY STATE PROJECT BK-5119	=	0.095 MILES
LENGTH STRUCTURES STATE PROJECT BK-5119	=	0.009 MILES
TOTAL LENGTH STATE PROJECT BK-5119	=	0.104 MILES

Prepared In the Office of:
Florence & Hutcheson
An ICA Company
5121 Kingdom Way, Suite 100 Raleigh, NC 27607
NC Licensee No: P-0288
for the
DIVISION OF HIGHWAYS

2012 STANDARD SPECIFICATIONS

LETTING DATE: MAY 30, 2013

JAMES E. MONDOLFI, P.E.
PROJECT ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION ·

P.E.
STATE HIGHWAY DESIGN ENGINEER

5/9/2013
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15+00 +50 16+00 +50

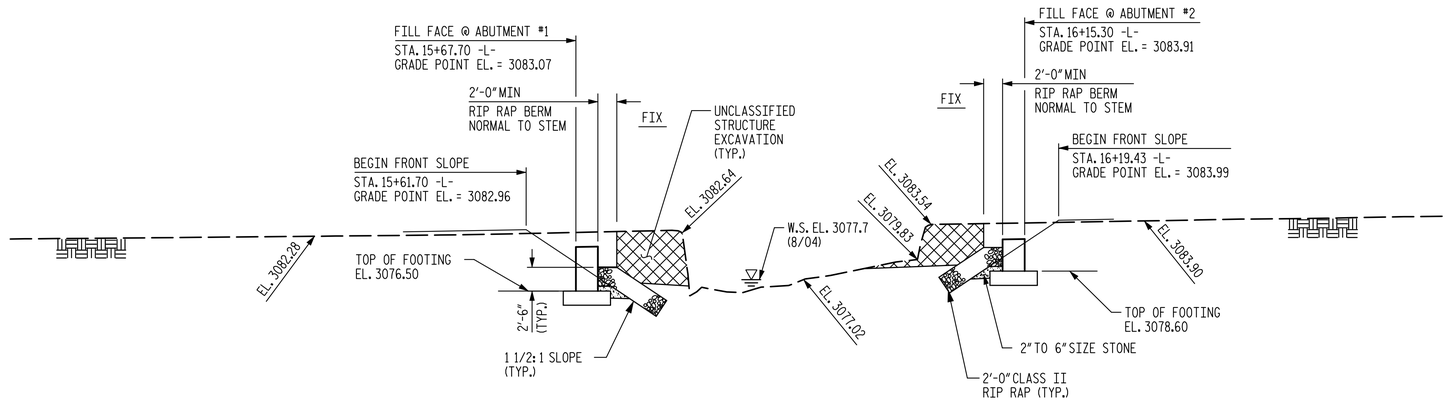
(+)0.8182% (+)1.7692%

GRADE DATA
P.I. = 15+10.00
ELEV. = 3,082.05'
VC = 80'

(+)1.7692% (+)2.1129%

GRADE DATA
P.I. = 16+40.00
ELEV. = 3,084.35'
VC = 60'

SPAN A



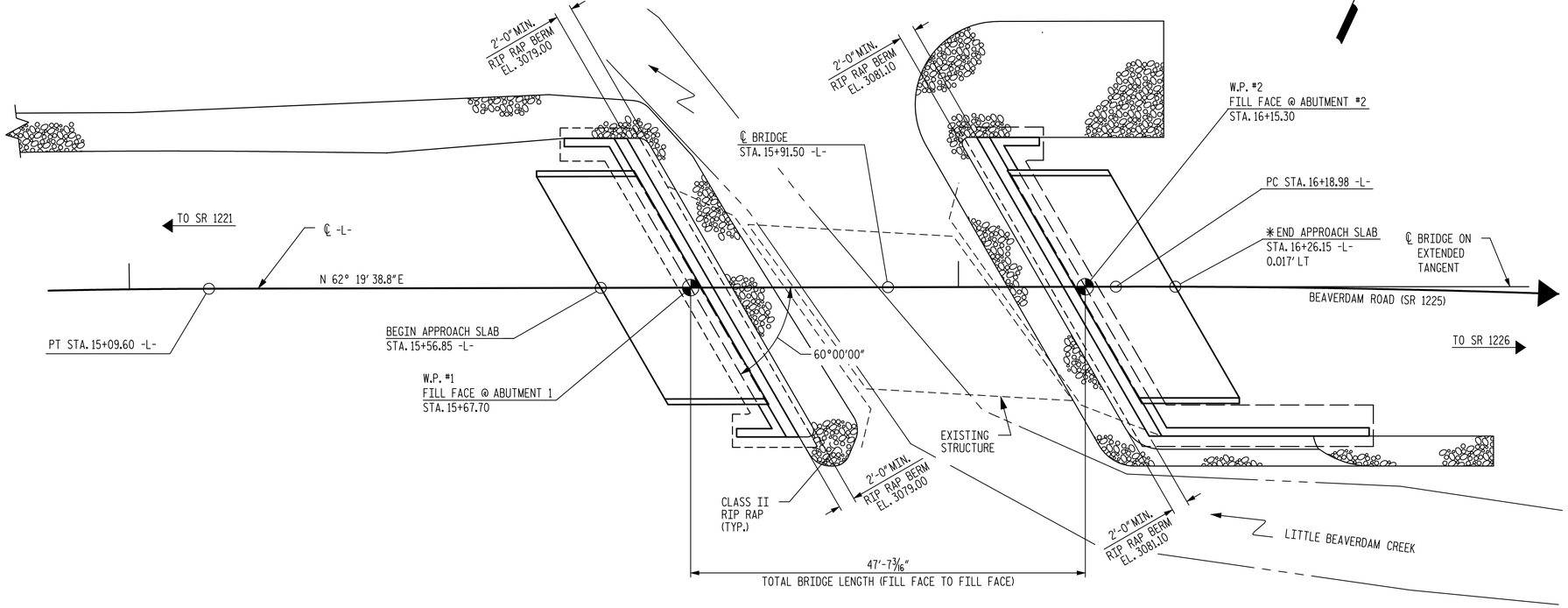
SECTION ALONG ℄ -L-

(ABUTMENTS ON SECTION AT RIGHT ANGLES TO ABUTMENTS)

HORIZONTAL CURVE DATA

P.I. = 14+24.63	P.I. = 16+76.33
△ = 9° 38' 03.8"(RT)	△ = 4° 35' 08.3"(RT)
D = 5° 39' 21.3"	D = 4° 00' 00.0"
L = 170.34'	L = 114.64'
T = 85.37'	T = 57.35'
R = 1,013.02'	R = 1,432.39'

NORTH



PLAN

✳POINT ON THE EXTENDED TANGENT

NOTES

ASSUMED LIVE LOAD = HS 20 OR ALTERNATE LOADING EXCEPT THAT BEAMS AHVE BEEN DESIGNED FOR HS 25.

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

THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE AASHTO LFD BRIDGE DESIGN SPECIFICATIONS.

THE EXISTING STRUCTURE CONSISTING OF ONE 26'-6"LONG STEEL BEAM SPAN; 19'-2" CLEAR ROADWAY; 2.5"ASPHALT WEARING SURFACE; 4"x 8"TIMBER FLOOR ON TIMBER POSTS AND SILLS SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED BELOW THE LEGAL LOAD LIMIT.

REMOVAL OF EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

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

THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH HEC 18, "EVALUATING SCOUR AT BRIDGE", MAY 2001.

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 LENTH OF THE SAMPLE, PLUS A MINIMUM LAP SPLICE OF THIRTY BAR DIAMETERS. PAYMENT FOR THE SAMPLES OF REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO THE VARIOUS PAY ITEMS.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 25 FT. EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.

INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTIONS IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COST RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT STA. 15+91.50."

THE REQUIRED BEARING CAPACITY OF THE SPREAD FOOTING(S) AT ABUTMENT NO. 1 IS 4 TSF, AND 4 TSF AT ABUTMENT NO. 2. THE REQUIRED BEARING CAPACITY SHALL BE VERIFIED.

TO PROVIDE PROTECTION FROM POSSIBLE SCOUR, THE FOOTING(S) SHALL NOT BE CONSTRUCTED AT AN ELEVATION HIGHER THAN SHOWN ON THE PLANS.

THE REQUIRED BEARING CAPACITY OF THE SPREAD FOOTINGS AT THE RETAINING WALL IS 1.5 TSF AT AN ELEVATION NO HIGHER THAN 3077.1 ± FEET. THE REQUIRED BEARING CAPACITY SHALL BE VERIFIED.

THE SCOUR CRITICAL ELEVATION FOR ABUTMENT NO. 1 AND ABUTMENT NO. 2 IS THE BOTTOM OF FOOTING. THE SCOUR CRITICAL ELEVATIONS ARE FOR USE BY MAINTENANCE FORCES TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

THE CONTRACTOR MAY BEGIN THE APPROACH FILL CONSTRUCTION AFTER COMPLETION OF ABUTMENT NO. 1 AND ABUTMENT NO. 2, NO OTHER WAITING PERIOD WILL BE REQUIRED FOR THE APPROACH SLAB CONSTRUCTION AT ABUTMENT NO. 1 AND ABUTMENT NO. 2.

FOOTINGS SHALL BE KEYED AT LEAST 12 INCHES INTO ROCK WITH MINIMUM THICKNESS AS SHOWN ON THE PLANS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR BRIDGE APPROACH FILL, SEE SPECIAL PROVISIONS.

PROJECT NO. 42570
COUNTY: WATAUGA
STATION: 15+91.50

SHEET 1 OF 2 REPLACES BRIDGE NO. 25

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
BRIDGE NO. 25 ON SR 1225
OVER LITTLE BEAVERDAM CREEK

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-1
1			3			TOTAL SHEETS
2			4			16

Florence & Hutcheson
An ICA Company
5121 Kingdom Way, Suite 100 Raleigh, NC 27607
NC License No: P-0288

NORTH CAROLINA PROFESSIONAL SEAL 20532 ENGINEER JAMES E. MONDOLFI
5-10-13

DRAWN BY : D. H. CARTER DATE : 4/13
CHECKED BY : J. E. MONDOLFI DATE : 4/13
DESIGN ENGINEER OF RECORD: J. E. MONDOLFI DATE : 4/13

5/9/2013
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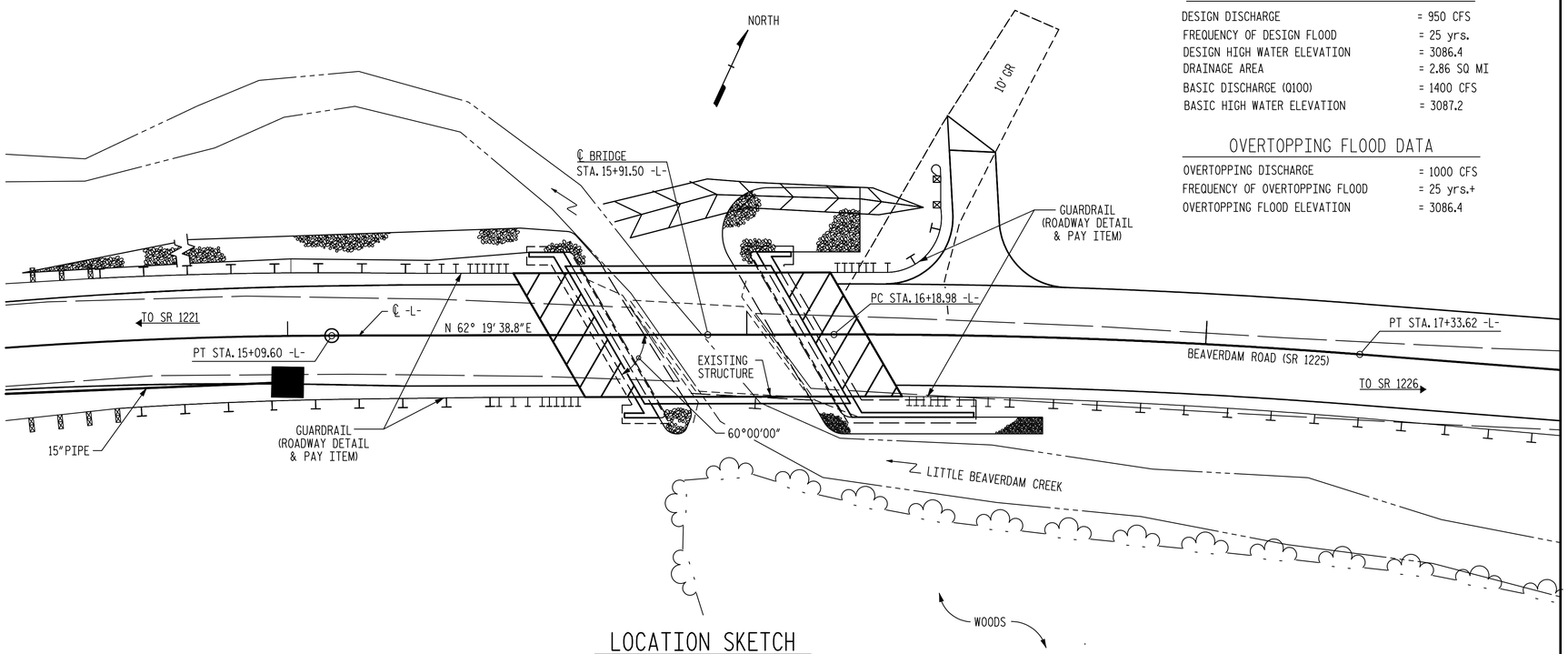
BENCH MARK : B.M. #1 - RR SPIKE IN EDGE OF PAVEMENT 10.0' LEFT OF STA. 13+30.00 -L-, EL. = 3080.70



LOCATION SKETCH

HYDRAULIC DATA

DESIGN DISCHARGE	= 950 CFS
FREQUENCY OF DESIGN FLOOD	= 25 yrs.
DESIGN HIGH WATER ELEVATION	= 3086.4
DRAINAGE AREA	= 2.86 SQ MI
BASIC DISCHARGE (Q100)	= 1400 CFS
BASIC HIGH WATER ELEVATION	= 3087.2

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= 1000 CFS
FREQUENCY OF OVERTOPPING FLOOD	= 25 yrs.+
OVERTOPPING FLOOD ELEVATION	= 3086.4

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE AT STA. 15+91.50	BRIDGE APPROACH FILL SUB-REGIONAL TIER AT STA. 15+91.50	UNCLASSIFIED STRUCTURE EXCAVATION AT STA. 15+91.50	FOUNDATION EXCAVATION	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	CONCRETE BARRIER RAIL	RIP RAP CLASS II	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS	
	LUMP SUM	LUMP SUM	LUMP SUM	CU. YDS.	CU. YDS.	LUMP SUM	LB.	LIN. FT.	TON	SQ. YD.	LUMP SUM	NO.	LIN. FT.
SUPERSTRUCTURE								90.0				10	450
ABUTMENT NO. 1				38	33.9		3728		136	151			
ABUTMENT NO. 2				68	38.6		4797		91	101			
TOTAL	LUMP SUM	LUMP SUM	LUMP SUM	106	72.5	LUMP SUM	8525	90.0	227	252	LUMP SUM	10	450

PROJECT NO. 42570
COUNTY: WATAUGA
STATION: 15+91.50
SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
BRIDGE NO. 25 ON SR 1225
OVER LITTLE BEAVERDAM CREEK

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-2
1			3			TOTAL SHEETS
2			4			16

Florence & Hutcheson
An ICA Company
5121 Kingdom Way, Suite 100 Raleigh, NC 27607
NC License No: P-0258

NORTH CAROLINA PROFESSIONAL SEAL 20532 ENGINEER JAMES E. MONDOLFI
5-10-13

DRAWN BY : D. H. CARTER DATE : 4/13
CHECKED BY : J. E. MONDOLFI DATE : 4/13
DESIGN ENGINEER OF RECORD: J. E. MONDOLFI DATE : 4/13

5/9/2013
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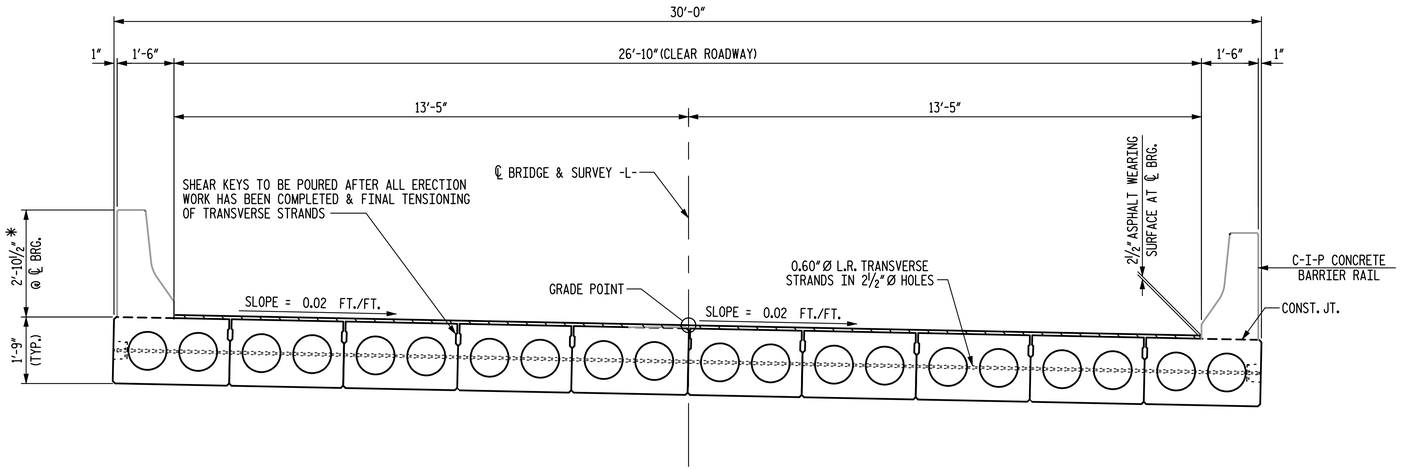
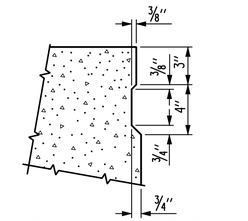


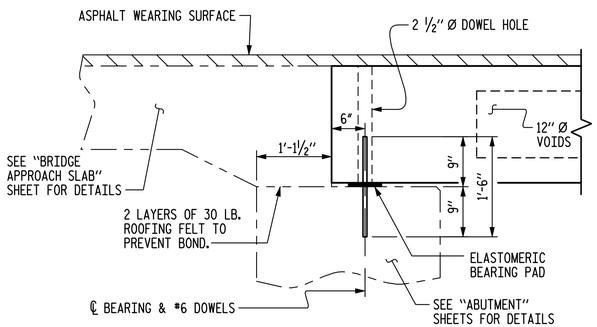
TYPICAL SECTION

*- THE MAXIMUM BARRIER RAIL HEIGHT AND ASPHALT THICKNESS IS SHOWN. THE HEIGHT OF THE BARRIER RAIL AND ASPHALT THICKNESS VARIES WHILE THE TOP OF THE BARRIER RAIL FOLLOWS THE PROFILE OF THE GUTTERLINE. FOR RAIL HEIGHT DETAILS AND ASPHALT THICKNESS SEE "BARRIER RAIL DETAILS".

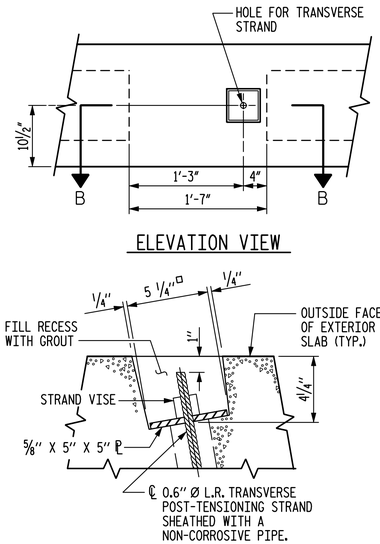


SHEAR KEY DETAIL

NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR CORED SLABS.



SECTION AT ABUTMENT

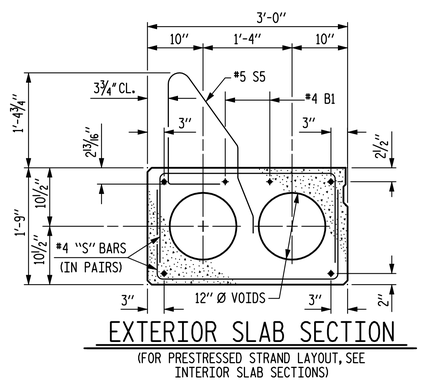


ELEVATION VIEW

SECTION B-B

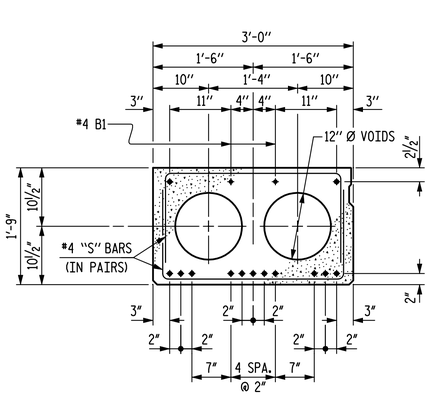
GROUTED RECESS DETAILS

GROUTED RECESS AT END OF POST-TENSIONED STRAND CORED SLABS



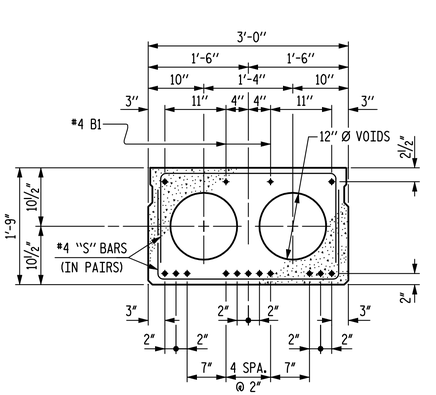
EXTERIOR SLAB SECTION

(FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTIONS)



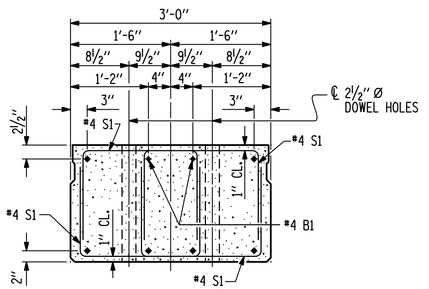
45' SPAN-EXTERIOR SLAB SECTION

13 - 0.60" Ø LOW RELAXATION STRANDS



45' SPAN-INTERIOR SLAB SECTION

13 - 0.60" Ø LOW RELAXATION STRANDS



END ELEVATION

SHOWING PLACEMENT OF DOUBLE STIRRUPS AND LOCATION OF DOWEL HOLES.
(STRAND LAYOUT NOT SHOWN.)
INTERIOR SLAB SECTION SHOWN, EXTERIOR SLAB SECTION SIMILAR EXCEPT SHEAR KEY LOCATION.

PROJECT NO. 42570
COUNTY: WATAUGA
STATION: 15+91.50

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

3'-0" X 1'-9" PRESTRESSED CORED SLAB UNIT 26'-10" CLEAR ROADWAY - 60° SKEW

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-3
1			3			TOTAL SHEETS
2			4			16

DRAWN BY : D. H. CARTER DATE : 4/13
CHECKED BY : J. E. MONDOLFI DATE : 4/13
DESIGN ENGINEER OF RECORD: J. E. MONDOLFI DATE : 4/13

Florence & Hutcheson
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5121 Kingdom Way, Suite 100 Raleigh, NC 27607
NC License No: P-0258

NORTH CAROLINA PROFESSIONAL SEAL 20532 ENGINEER JAMES E. MONDOLFI

5-10-13

5/9/2013
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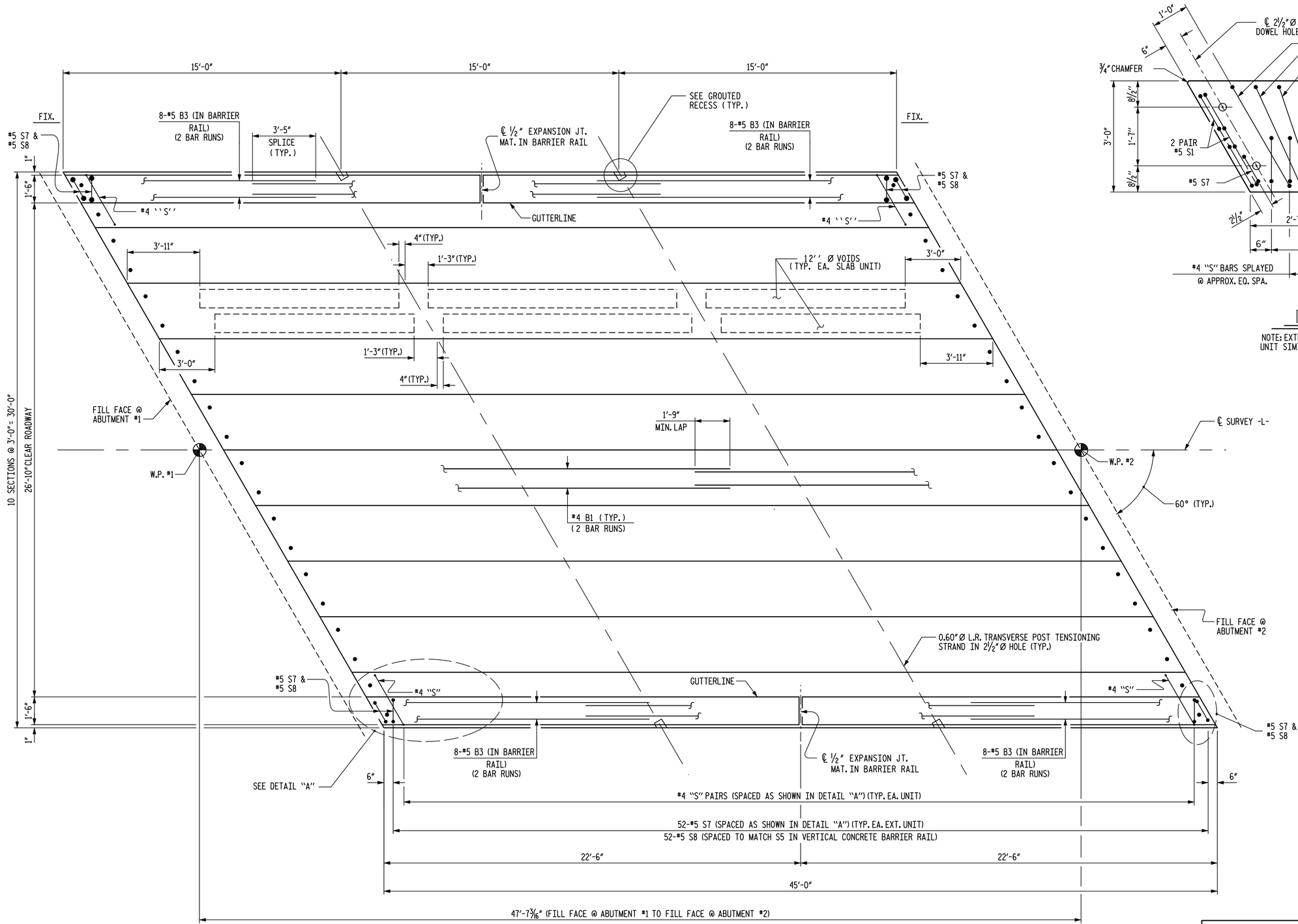
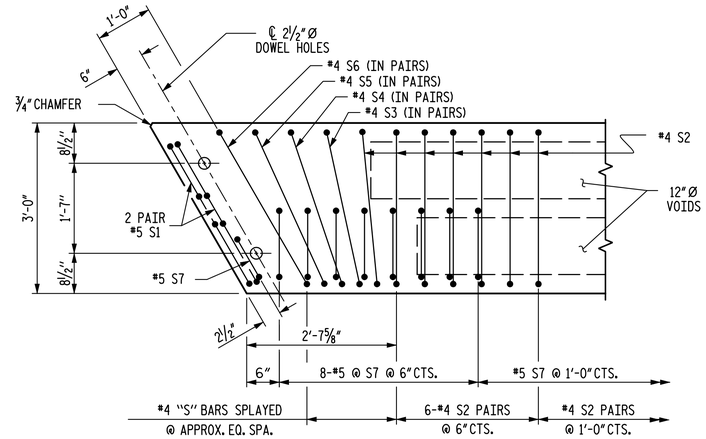


PLAN OF UNIT



DETAIL "A"

NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S7 BARS.

PROJECT NO. 42570
COUNTY: WATAUGA
STATION: 15+91.50

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF 45' UNIT
26'-10" CLEAR ROADWAY
60° SKEW

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-4
1			3			TOTAL SHEETS
2			4			16

DRAWN BY : D. H. CARTER DATE : 4/13
CHECKED BY : J. E. MONDOLFI DATE : 4/13
DESIGN ENGINEER OF RECORD: J. E. MONDOLFI DATE : 4/13

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NORTH CAROLINA PROFESSIONAL SEAL 20532 ENGINEER JAMES E. MONDOLFI
5-10-13

5/9/2013
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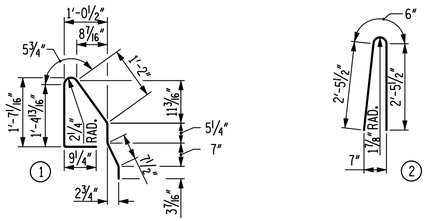
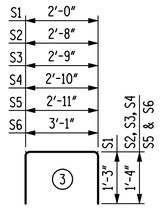
BAR TYPES





ALL BAR DIMENSIONS ARE OUT TO OUT.

DEAD LOAD DEFLECTION AND CAMBER

	3'-0" x 1'-9" CORED SLAB
	0.6"Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	1 7/16" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD **	3/16" ↓
FINAL CAMBER	1" ↑

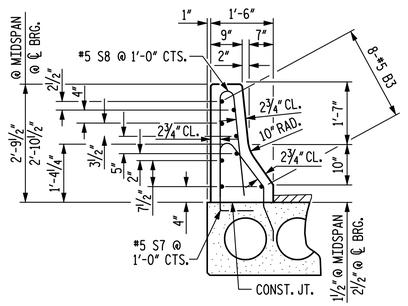
** INCLUDES FUTURE WEARING SURFACE

BILL OF MATERIAL FOR ONE 45'-0" INTERIOR CORED SLAB SECTION

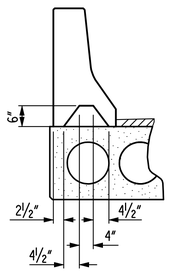
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#4	STR	23'-2"	62
S1	8	#5	3	4'-6"	38
S2	92	#4	3	5'-4"	328
S3	4	#4	3	5'-5"	14
S4	4	#4	3	5'-6"	15
S5	4	#4	3	5'-7"	15
S6	4	#4	3	5'-9"	15
REINFORCING STEEL				LBS.	487
5000 P.S.I. CONCRETE				C. Y.	6.6
0.6"Ø L.R. STRANDS				NO.	13

BILL OF MATERIAL FOR ONE 45'-0" EXTERIOR CORED SLAB SECTION

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#4	STR	23'-2"	62
S1	8	#5	3	4'-6"	38
S2	92	#4	3	5'-4"	328
S3	4	#4	3	5'-5"	14
S4	4	#4	3	5'-6"	15
S5	4	#4	3	5'-7"	15
S6	4	#4	3	5'-9"	15
* S7	54	#5	1	5'-2"	291
REINFORCING STEEL				LBS.	487
*EPOXY COATED REINFORCING STEEL				LBS.	291
5000 P.S.I. CONCRETE				C. Y.	6.6
0.6"Ø L.R. STRANDS				NO.	13



SECTION THRU RAIL



SECTION S-S
AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY WHEN SLIP FORM IS USED)

SUMMARY FOR EXTERIOR CORED SLAB SECTIONS

		45'-0" SPAN	TOTAL
REINFORCING STEEL	LBS.	974	974
*EPOXY COATED REINFORCING STEEL	LBS.	582	582
5000 P.S.I. CONCRETE	C. Y.	13.2	13.2
0.6"Ø L.R. STRANDS	NO.	26	26

SUMMARY FOR INTERIOR CORED SLAB SECTIONS

		45'-0" SPAN	TOTAL
REINFORCING STEEL	LBS.	3896	3896
*EPOXY COATED REINFORCING STEEL	LBS.		
5000 P.S.I. CONCRETE	C. Y.	52.8	52.8
0.6"Ø L.R. STRANDS	NO.	104	104

BILL OF MATERIAL FOR CONCRETE BARRIER RAIL

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B3	64	#5	STR	13'-2"	879
* S8	108	#5	2	5'-5"	610
*EPOXY COATED REINFORCING STEEL				LBS.	1,489
CLASS AA CONCRETE				C. Y.	9.8
TOTAL LIN. FT. OF CONCRETE BARRIER RAIL					90.0

GRADE 270 STRANDS

	0.6"Ø L.R.
AREA (SQUARE INCHES)	0.217
ULTIMATE STRENGTH (LBS. PER STRAND)	58,590
APPLIED PRESTRESS (LBS. PER STRAND)	43,950

NOTES

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO AASHTO M203 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ALL REINFORCING STEEL CAST WITH THE CORED SLAB SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE CORED SLABS.

RECESSES FOR TRANSVERSE STRANDS SHALL BE GROUTED AFTER THE TENSIONING OF THE STRANDS.

THE 2½"Ø DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH NON-SHRINK GROUT.

THE BACKER ROD SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER. SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS.

WHEN CORED SLABS ARE CAST, A POSITIVE HOLD-DOWN SYSTEM SHALL BE EMPLOYED TO PREVENT VOIDS FROM RISING OR MOVING SIDEWAYS. THIS SYSTEM SHALL BE DESIGNED TO BE LEFT IN PLACE UNTIL THE CONCRETE HAS REACHED RELEASE STRENGTH. AT LEAST THREE WEEKS PRIOR TO CASTING CORED SLABS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND COMMENT, DETAILED DRAWINGS OF THE PROPOSED HOLD-DOWN SYSTEM. IN ADDITION TO STRUCTURAL DETAILS, LOCATION AND SPACING OF THE HOLD-DOWNS SHALL BE INDICATED.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE CORED SLAB UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 4000 PSI.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

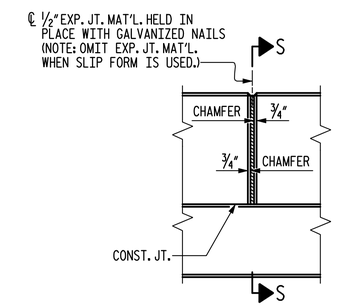
PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE CORED SLAB UNIT ENDS.

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

VERTICAL GROOVED CONTRACTION JOINTS, ½" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. A VERTICAL CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS.

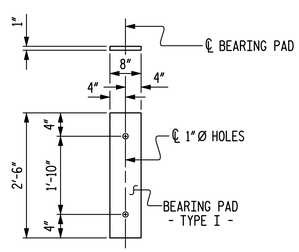
TRANSVERSE POST-TENSIONING OF THE CORED SLAB UNITS SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, EXCEPT THAT THE STRANDS SHALL BE 0.60Ø AND TENSIONED TO 43,950 POUNDS.

THE MINIMUM AND MAXIMUM HEIGHTS OF THE BARRIER RAIL ARE SHOWN. THE HEIGHT OF THE BARRIER RAIL VARIES WHILE THE TOP OF THE RAIL FOLLOWS THE PROFILE OF THE GUTTERLINE.



ELEVATION AT EXPANSION JOINTS

BARRIER RAIL DETAILS



FIXED END
(TYPE I - 20 REQ'D.)

ELASTOMERIC BEARING DETAILS

ELASTOMER IN BEARING PAD SHALL BE 50 DUROMETER HARDNESS

CORED SLABS REQUIRED

	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	2	45'-0"	90'-0"
INTERIOR C.S.	8	45'-0"	360'-0"

PROJECT NO. 42570
COUNTY: WATAUGA
STATION: 15+91.50

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BILL OF MATERIALS

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-5
1			3			TOTAL SHEETS
2			4			16

DRAWN BY : D. H. CARTER DATE : 4/13
CHECKED BY : J. E. MONDOLFI DATE : 4/13
DESIGN ENGINEER OF RECORD: J. E. MONDOLFI DATE : 4/13

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NC License No: P-0258

NORTH CAROLINA PROFESSIONAL SEAL 20532 ENGINEER JAMES E. MONDOLFI
5-10-13

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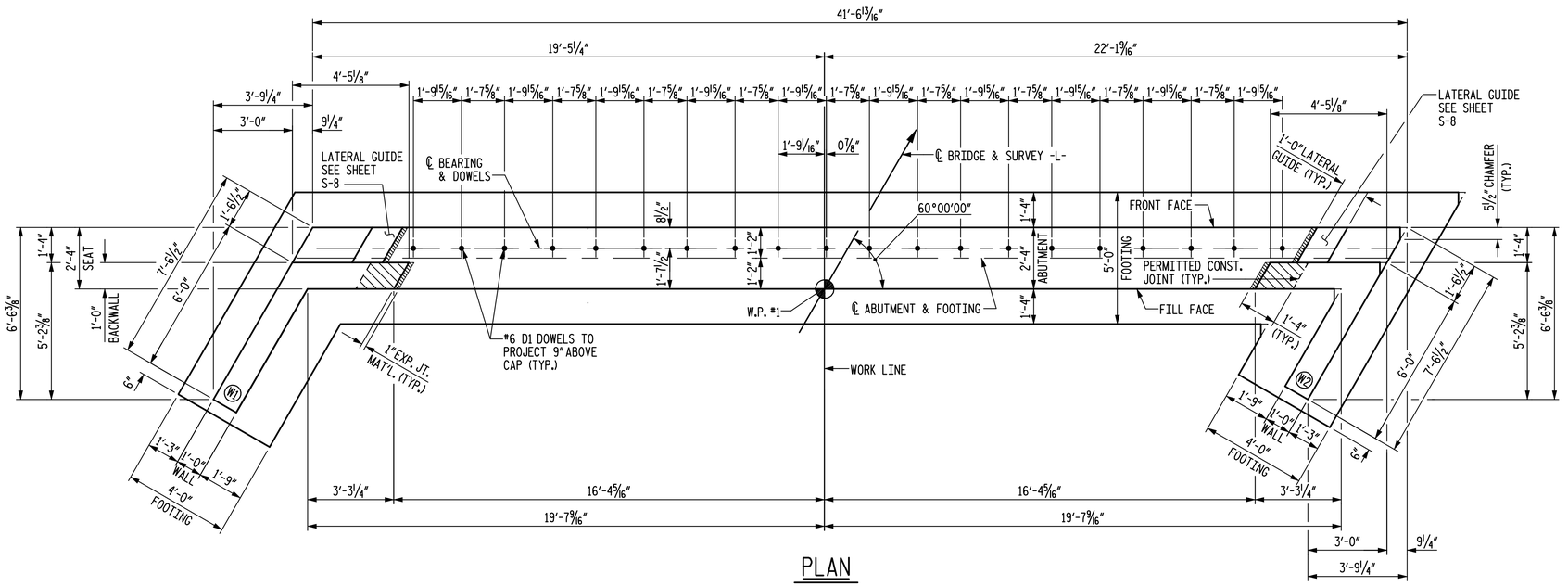
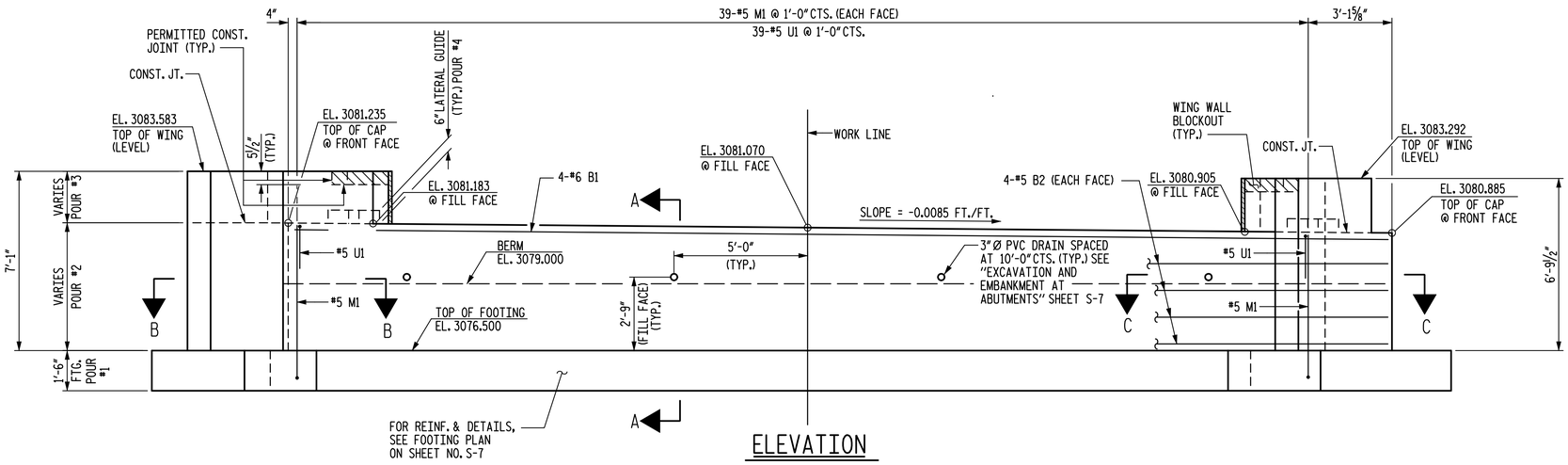
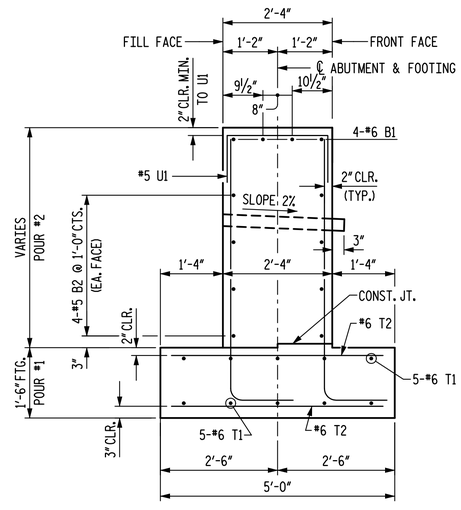


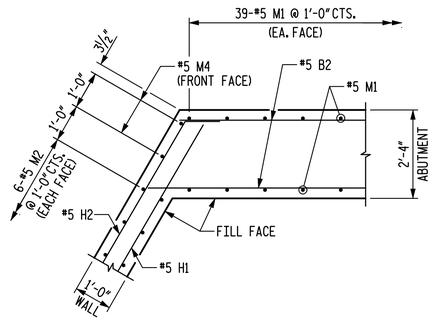
PLAN



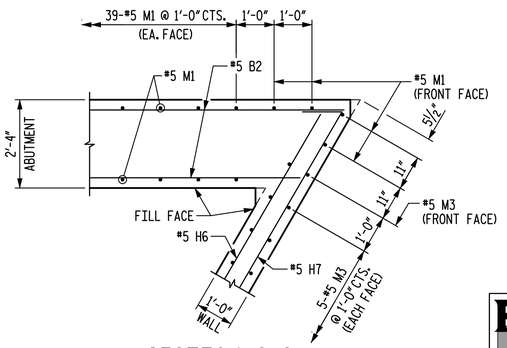
ELEVATION



SECTION A-A



SECTION B-B



SECTION C-C

NOTES:

STIRRUPS IN CAP MAY BE SHIFTED SLIGHTLY AS NECESSARY TO CLEAR DOWELS.

FOOTINGS SHALL NOT BE CONSTRUCTED AT AN ELEVATION HIGHER THAN SHOWN ON THE PLANS.

THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

FOR TEMPORARY DRAINAGE DETAILS, SEE SHEET S-8.

THE CONTRACTORS ATTENTION IS CALLED TO THE FACT THAT THE VERTICAL REINFORCING FOR THE STEM IS DETAILED WITH 3 FEET OF EXTRA LENGTH.

PROJECT NO. 42570
COUNTY: WATAUGA
STATION: 15+91.50

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
ABUTMENT #1
(SHEET 1 OF 3)

DRAWN BY : D. H. CARTER	DATE : 4/13
CHECKED BY : J. E. MONDOLFI	DATE : 4/13
DESIGN ENGINEER OF RECORD: J. E. MONDOLFI	DATE : 4/13

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NORTH CAROLINA PROFESSIONAL SEAL 20532 ENGINEER JAMES E. MONDOLFI
5-10-13

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-6
1			3			TOTAL SHEETS
2			4			16

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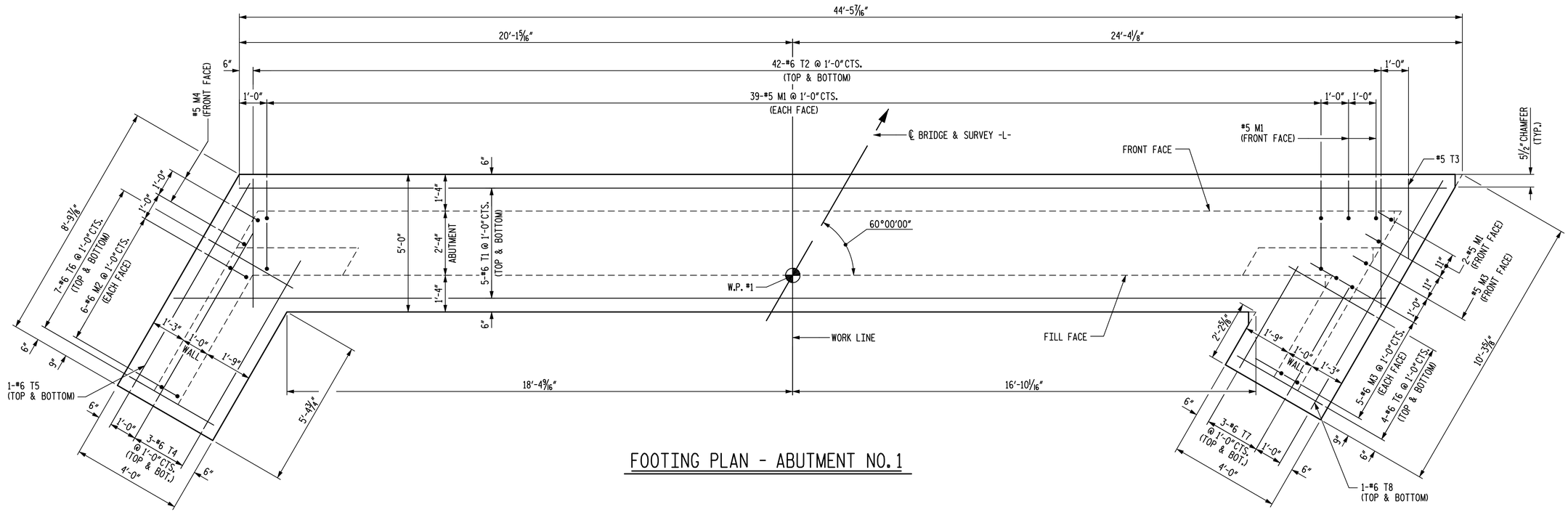
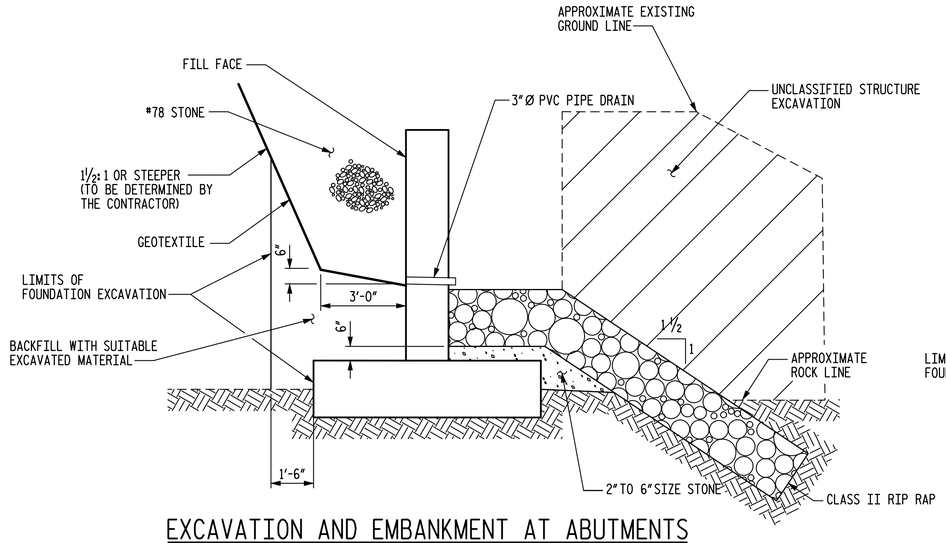
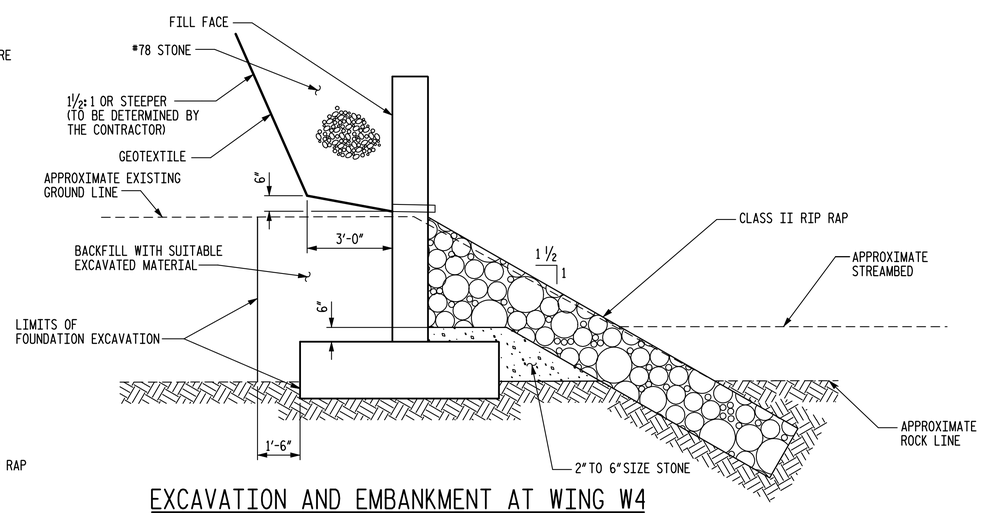


FOOTING PLAN - ABUTMENT NO.1



EXCAVATION AND EMBANKMENT AT ABUTMENTS



EXCAVATION AND EMBANKMENT AT WING W4

NOTES FOR SUBSTRUCTURE SCOUR PROTECTION

SUBSTRUCTURE SCOUR PROTECTION SHALL BE PROVIDED AS INDICATED IN THE PLANS. THE TWO TO SIX INCH SIZE STONE SHALL BE PLACED AFTER FOOTING FORMWORK HAS BEEN REMOVED. THE RIP RAP STONE SHALL BE PLACED BEFORE SHEETING IS REMOVED. WHEN NO SHEETING IS USED, EACH STONE TYPE SHALL BE PLACED TO THE REQUIRED THICKNESS AND SHALL EXTEND HORIZONTALLY TO THE UNDISTURBED MATERIAL.

THE TWO TO SIX INCH SIZE SCOUR PROTECTION STONE SHALL BE HARD AND DURABLE IN NATURE. WHILE NO SPECIFIC GRADATION IS REQUIRED THE VARIOUS SIZES OF STONE SHALL BE REASONABLY EQUALLY DISTRIBUTED WITHIN THE REQUIRED SIZE RANGE. THE STONE SHALL BE ESSENTIALLY CUBICAL IN SHAPE.

BASIS OF PAYMENT

THE ENTIRE COST OF THE ABOVE WORK INCLUDING THE TWO TO SIX INCH SIZE STONE, MATERIALS, EQUIPMENT, TOOLS, LABOR AND INCIDENTALS NECESSARY TO COMPLETE THE WORK SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR PLACEMENT OF SUBSTRUCTURE. CLASS II RIP RAP SHALL BE PAID FOR AT THE UNIT PRICE BID FOR CLASS II RIP RAP PER TON.

*78 STONE BACKFILL AND FABRIC SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR APPROACH SLABS.

DRAWN BY : D. H. CARTER DATE : 4/13
CHECKED BY : J. E. MONDOLFI DATE : 4/13
DESIGN ENGINEER OF RECORD: J. E. MONDOLFI DATE : 4/13

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NORTH CAROLINA PROFESSIONAL SEAL 20532 ENGINEER JAMES E. MONDOLFI
5-10-13

PROJECT NO. 42570
COUNTY: WATAUGA
STATION: 15+91.50

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
ABUTMENT #1
(SHEET 2 OF 3)

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-7
1			3			TOTAL SHEETS
2			4			16

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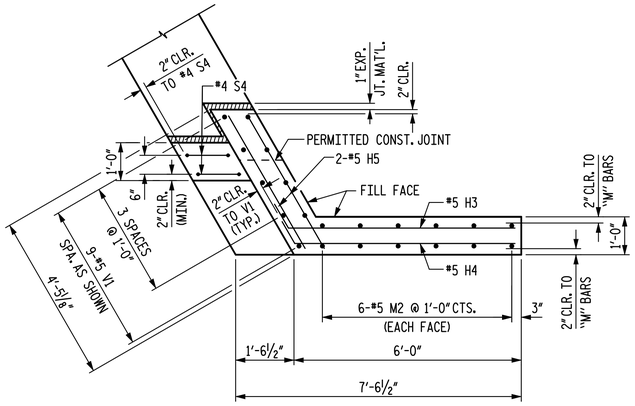
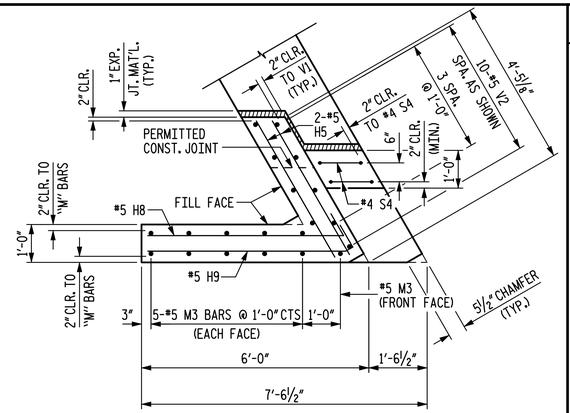
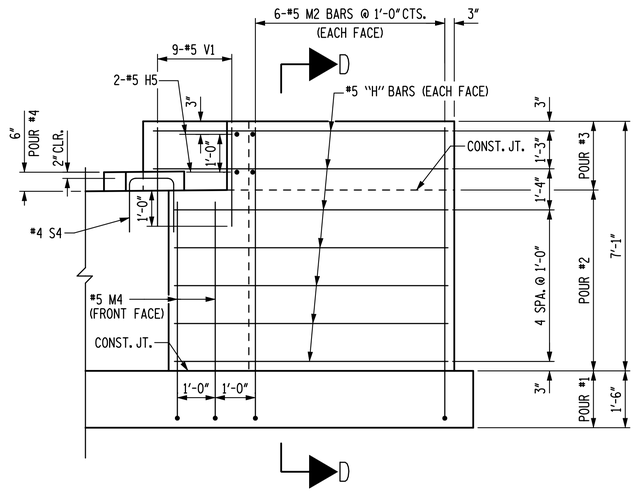


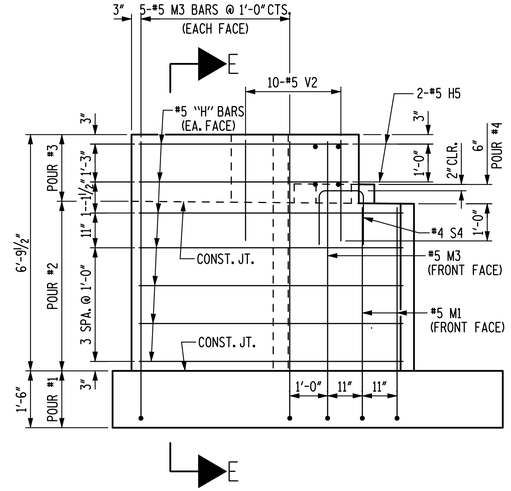
PLAN OF WING - W1



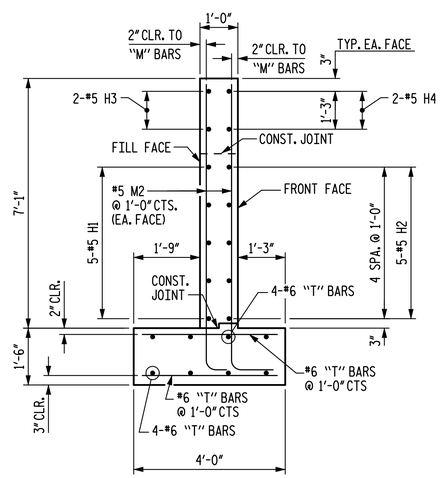
PLAN OF WING - W2



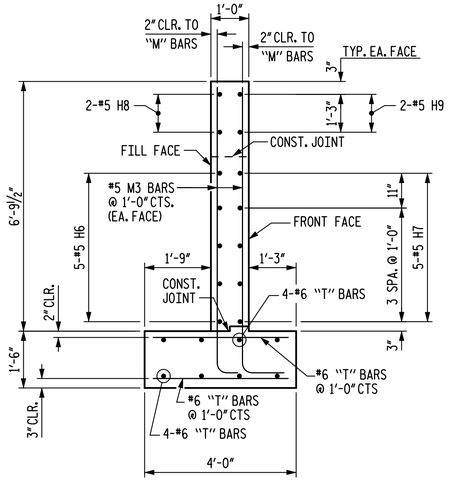
ELEVATION OF WING - W1



ELEVATION OF WING - W2



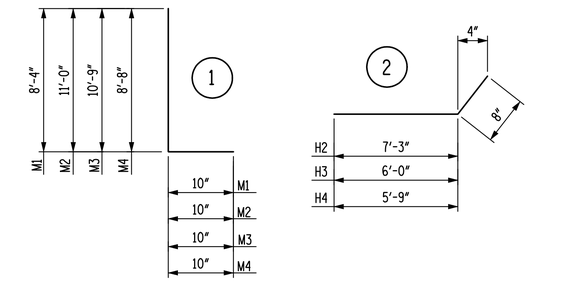
SECTION D-D



SECTION E-E

BAR TYPES

ALL BAR DIMENSIONS ARE OUT TO OUT.



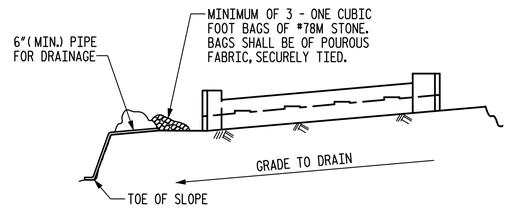
BILL OF MATERIAL

ABUTMENT #1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	6	STR	41'-0"	246
B2	8	5	STR	41'-0"	342
D1	20	6	STR	1'-6"	45
H1	5	5	STR	7'-7"	40
H2	5	5	2	7'-11"	41
H3	2	5	2	6'-8"	14
H4	2	5	2	6'-5"	13
H5	8	5	STR	4'-0"	33
H6	5	5	STR	6'-8"	35
H7	5	5	4	7'-8"	40
H8	2	5	3	5'-9"	12
H9	2	5	4	6'-1"	13
M1	82	5	1	9'-2"	784
M2	12	5	1	11'-10"	148
M3	11	5	1	11'-7"	121
M4	2	5	1	9'-6"	20
S4	4	4	5	4'-0"	11
T1	10	6	STR	43'-8"	656
T2	84	6	STR	4'-6"	568
T3	2	6	STR	2'-7"	8
T4	6	6	STR	7'-0"	63
T5	2	6	STR	8'-7"	26
T6	22	6	STR	3'-6"	116
T7	6	6	STR	4'-3"	38
T8	2	6	STR	9'-5"	28
U1	39	5	5	5'-0"	203
V1	9	5	STR	3'-3"	31
V2	10	5	STR	3'-2"	33

REINFORCING STEEL TOTAL LBS. 3,728

POUR #1 FOOTINGS	14.0 CY
POUR #2 CAP & BOTTOM OF WINGS	18.6 CY
POUR #3 TOP OF WINGS	1.2 CY
POUR #4 LATERAL GUIDES	0.1 CY
TOTAL	33.9 CY



BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR EFFECTIVENESS.

NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT ABUTMENT

(TYPICAL FOR ABUTMENT #2)

PROJECT NO. 42570
COUNTY: WATAUGA
STATION: 15+91.50

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
ABUTMENT #1
(SHEET 3 OF 3)

DRAWN BY : D. H. CARTER DATE : 4/13
CHECKED BY : J. E. MONDOLFI DATE : 4/13
DESIGN ENGINEER OF RECORD: J. E. MONDOLFI DATE : 4/13

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NORTH CAROLINA PROFESSIONAL SEAL 20532 ENGINEER JAMES E. MONDOLFI
5-10-13

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-8
1			3			TOTAL SHEETS
2			4			16

5/9/2013
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NOTES:

STIRRUPS MAY BE SHIFTED SLIGHTLY AS NECESSARY TO CLEAR DOWELS.

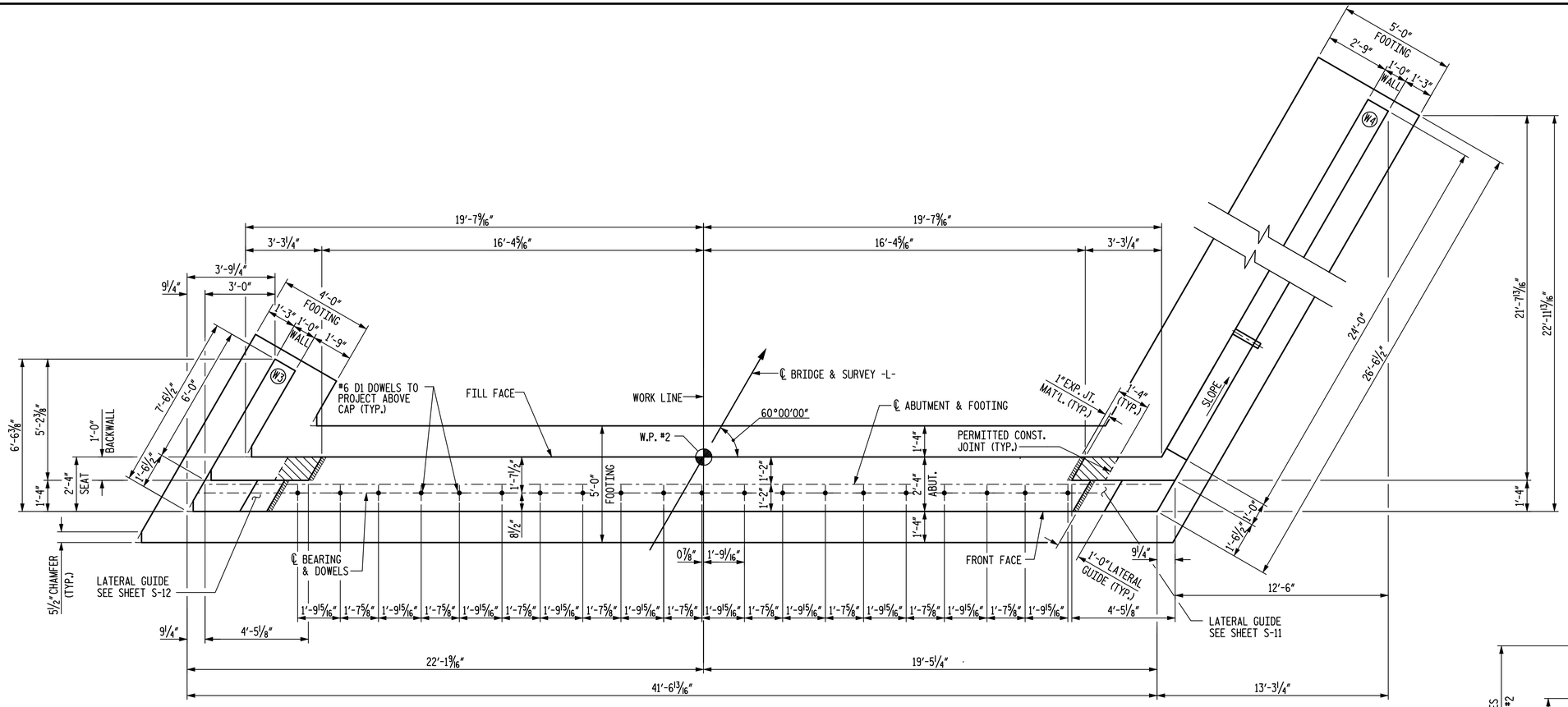
FOOTINGS SHALL NOT BE CONSTRUCTED AT AN ELEVATION HIGHER THAN SHOWN ON THE PLANS.

THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

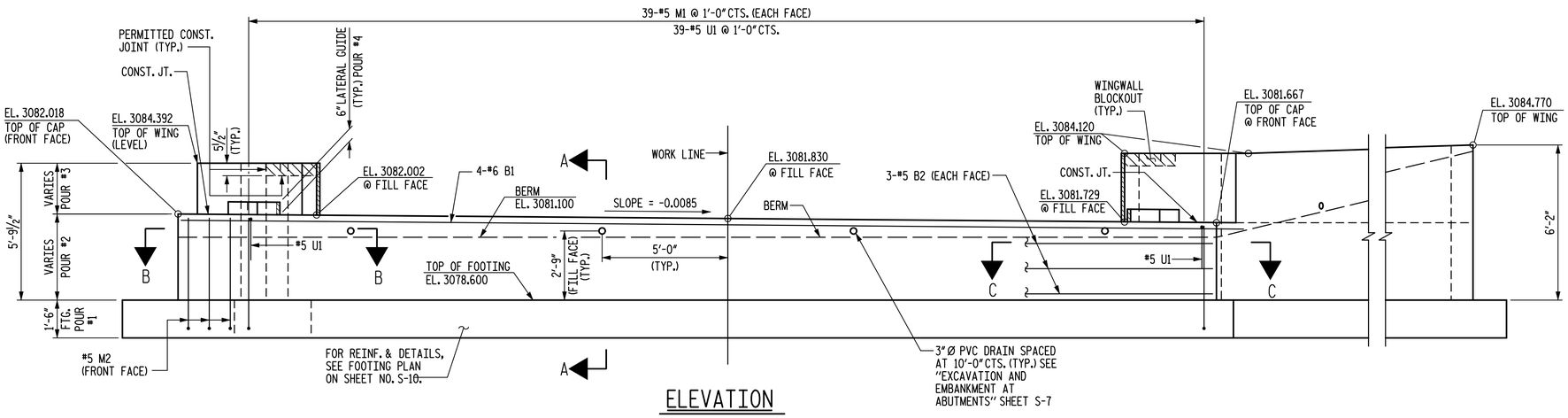
FOR TEMPORARY DRAINAGE DETAILS, SEE SHEET S-8.

FOR SECTIONS B-B AND C-C, SEE SHEET NO. S-12.

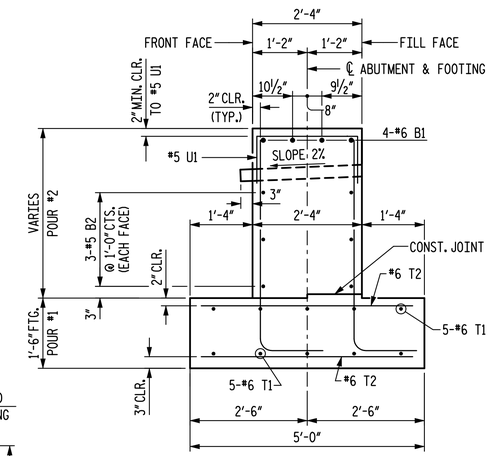
THE CONTRACTORS ATTENTION IS CALLED TO THE FACT THAT THE VERTICAL REINFORCING FOR THE STEM IS DETAILED WITH 3 FEET OF EXTRA LENGTH.



PLAN



ELEVATION



SECTION A-A

PROJECT NO. 42570
COUNTY: WATAUGA
STATION: 15+91.50

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
ABUTMENT #2
(SHEET 1 OF 4)

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-9
1			3			TOTAL SHEETS
2			4			16

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5-10-13

DRAWN BY :	D. H. CARTER	DATE :	4/13
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DESIGN ENGINEER OF RECORD:	J. E. MONDOLFI	DATE :	4/13

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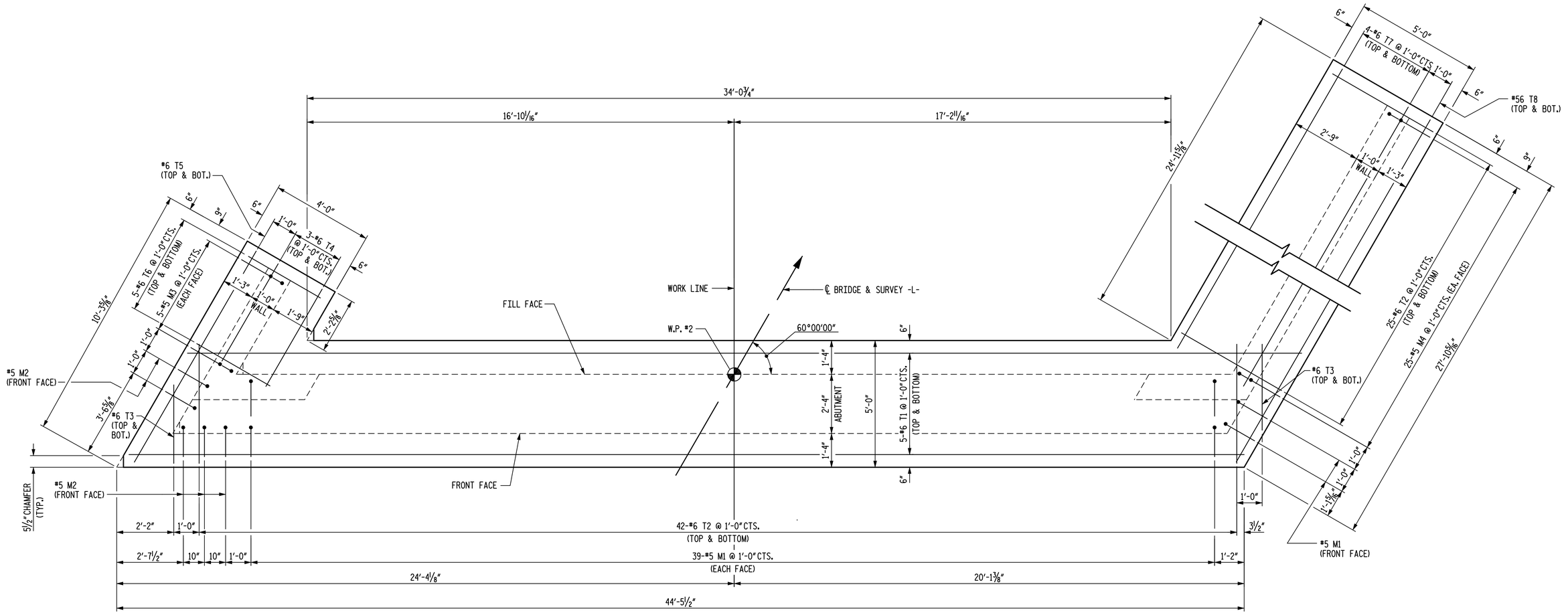
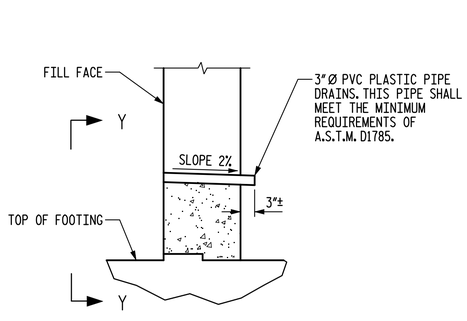
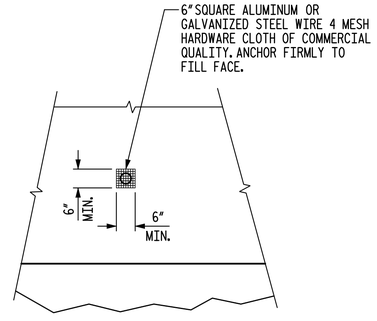


FOOTING PLAN - ABUTMENT NO. 2



SECTION THRU ABUTMENT STEM



VIEW Y-Y

NOTE:
NO SEPARATE PAYMENT WILL BE MADE FOR FURNISHING AND INSTALLING THE PVC PLASTIC PIPE DRAINS, HARDWARE CLOTH AND FASTENERS. THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE FOR THE SEVERAL PAY ITEMS.

PIPE DRAIN DETAILS

DRAWN BY : D. H. CARTER DATE : 4/13
CHECKED BY : J. E. MONDOLFI DATE : 4/13
DESIGN ENGINEER OF RECORD: J. E. MONDOLFI DATE : 4/13

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NORTH CAROLINA PROFESSIONAL SEAL 20532 ENGINEER JAMES E. MONDOLFI
5-10-13

PROJECT NO. 42570
COUNTY: WATAUGA
STATION: 15+91.50

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
ABUTMENT #2
(SHEET 2 OF 4)

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-10
1			3			TOTAL SHEETS
2			4			16

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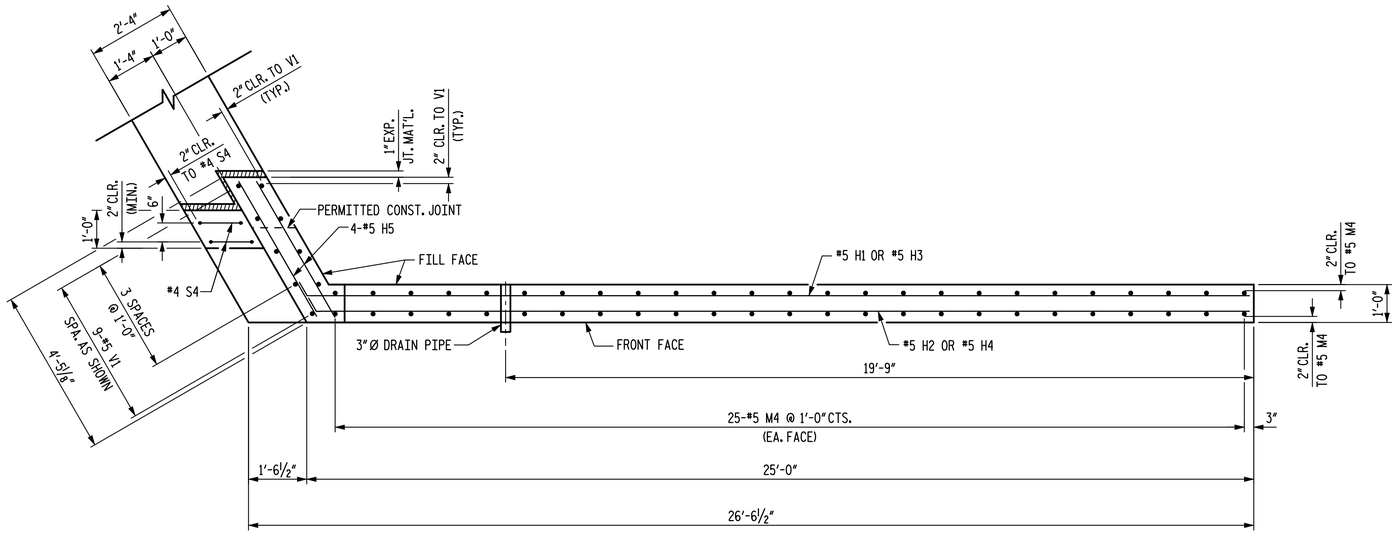
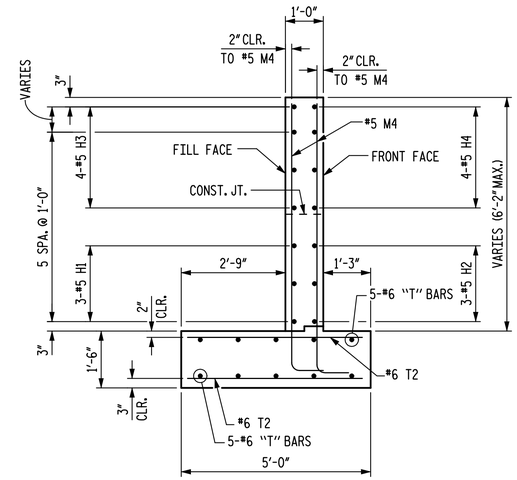
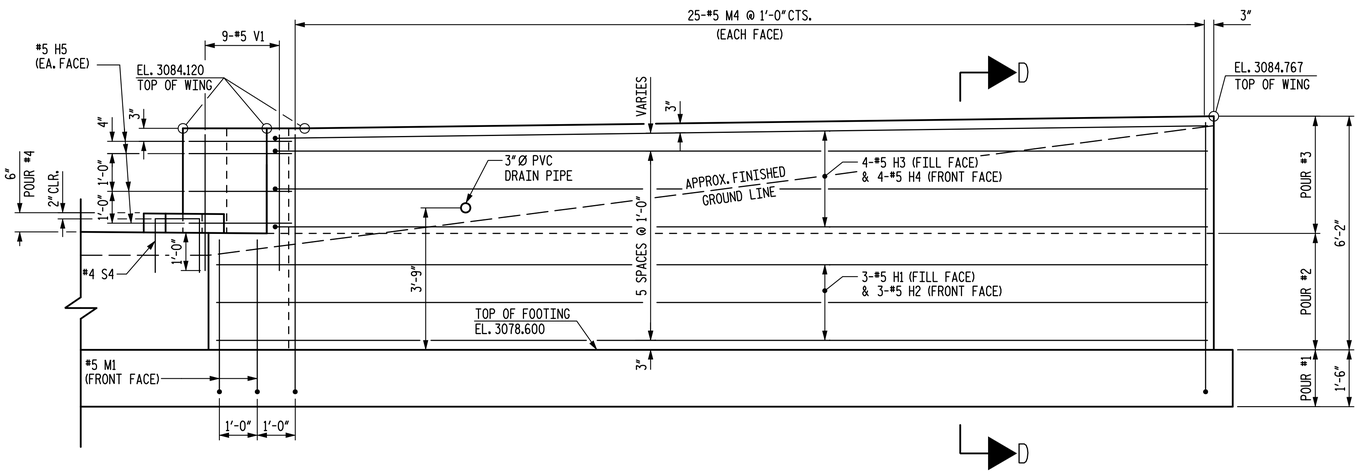


PLAN OF WING - W4



SECTION D-D



ELEVATION OF WING - W4

PROJECT NO. 42570
COUNTY: WATAUGA
STATION: 15+91.50

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
ABUTMENT #2
(SHEET 3 OF 4)

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-11
1			3			TOTAL SHEETS
2			4			16

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NORTH CAROLINA PROFESSIONAL SEAL 20532 ENGINEER JAMES E. MONDOLFI
5-10-13

DRAWN BY : D. H. CARTER DATE : 4/13
CHECKED BY : J. E. MONDOLFI DATE : 4/13
DESIGN ENGINEER OF RECORD: J. E. MONDOLFI DATE : 4/13

5/9/2013
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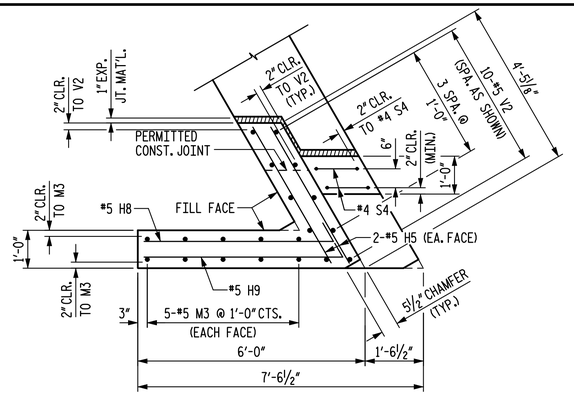
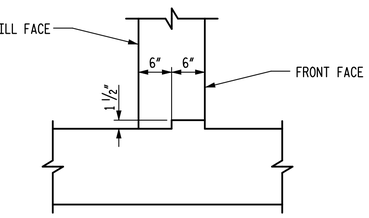
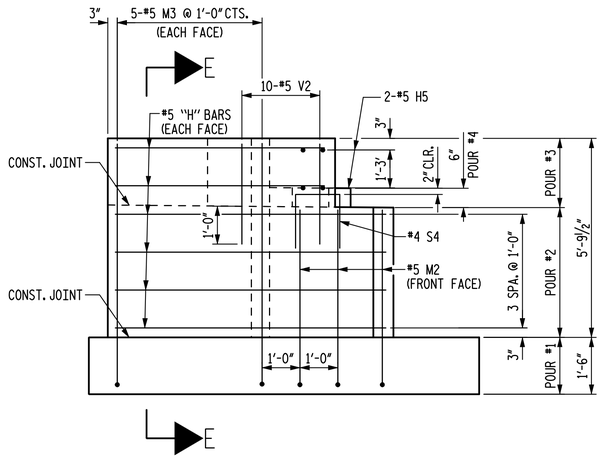


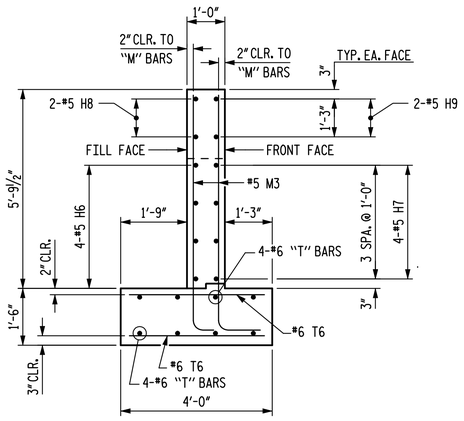
PLAN OF WING - W3



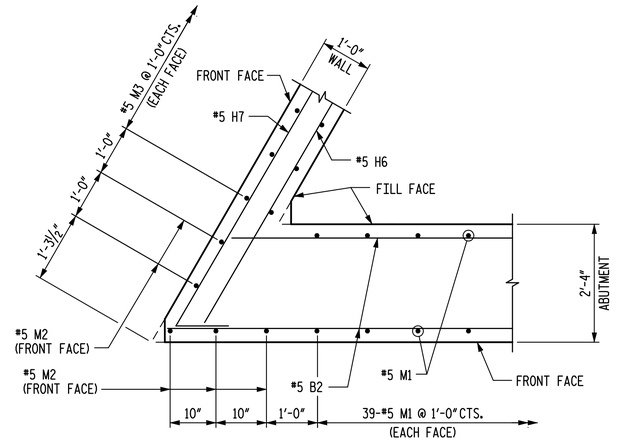
SHEAR KEY DETAIL AT BOTTOM OF STEM



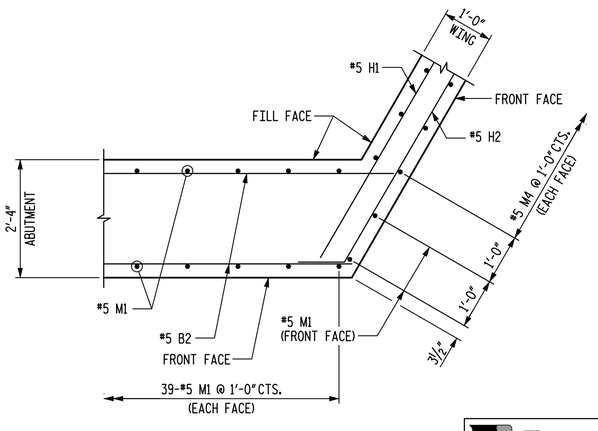
ELEVATION OF WING - W3



SECTION E-E



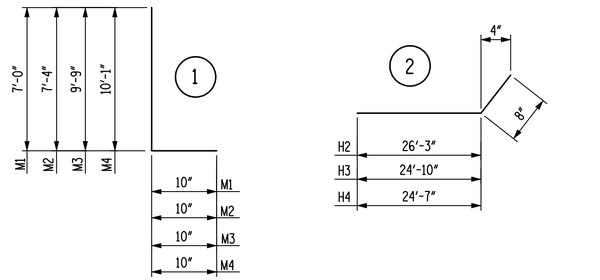
SECTION B-B



SECTION C-C

BAR TYPES

ALL BAR DIMENSIONS ARE OUT TO OUT.



BILL OF MATERIAL

ABUTMENT #2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	6	STR	41'-0"	246
B2	6	5	STR	41'-0"	257
D1	20	6	STR	1'-6"	45
H1	3	5	STR	26'-7"	83
H2	3	5	2	26'-11"	84
H3	4	5	2	25'-6"	106
H4	4	5	2	25'-3"	105
H5	12	5	STR	4'-0"	50
H6	4	5	STR	6'-8"	28
H7	4	5	4	7'-8"	32
H8	2	5	3	5'-9"	12
H9	2	5	4	6'-1"	13
M1	80	5	1	7'-10"	654
M2	5	5	1	8'-2"	43
M3	10	5	1	10-7"	110
M4	50	5	1	10'-11"	569
S4	4	4	5	4'-0"	11
T1	10	6	STR	43'-8"	656
T2	134	6	STR	4'-6"	906
T3	4	6	STR	3'-0"	18
T4	6	6	STR	4'-4"	39
T5	2	6	STR	9'-5"	28
T6	10	6	STR	3'-6"	53
T7	8	6	STR	25'-0"	300
T8	2	6	STR	27'-4"	82
U1	39	5	5	5'-0"	203
V1	9	5	STR	3'-3"	31
V2	10	5	STR	3'-2"	33

REINFORCING STEEL TOTAL LBS. 4,797

POUR #1 FOOTINGS	19.6	CY
POUR #2 CAP & BOTTOM OF WINGS	15.0	CY
POUR #3 TOP OF WINGS	3.9	CY
POUR #4 LATERAL GUIDES	0.1	CY
TOTAL	38.6	CY

PROJECT NO. 42570
COUNTY: WATAUGA
STATION: 15+91.50

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
ABUTMENT #2
(SHEET 4 OF 4)

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-12
1			3			TOTAL SHEETS
2			4			16

DRAWN BY : D. H. CARTER DATE : 4/13
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5-10-13

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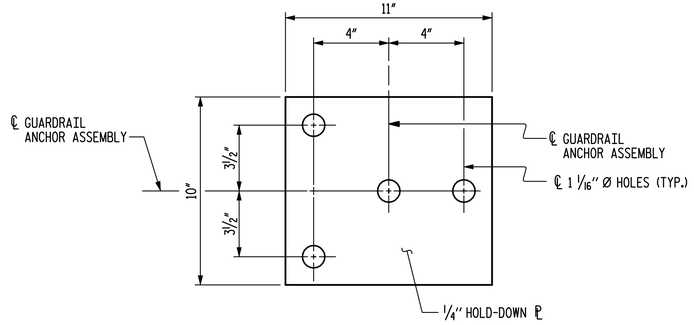
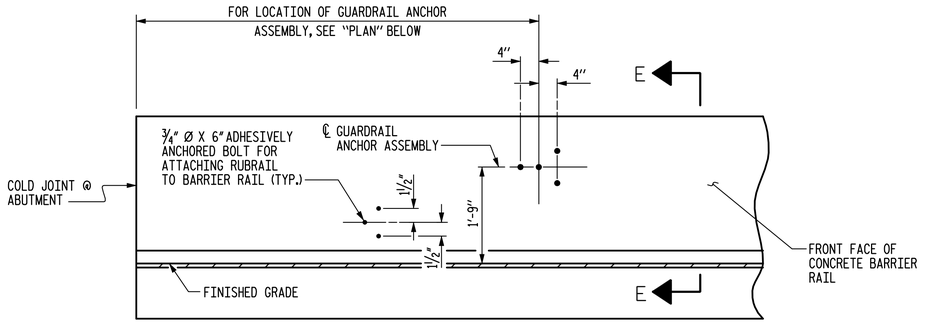
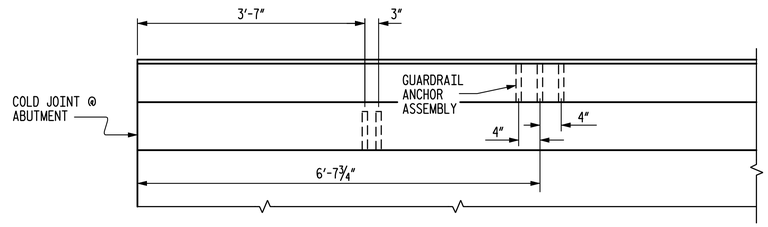


PLAN



ELEVATION

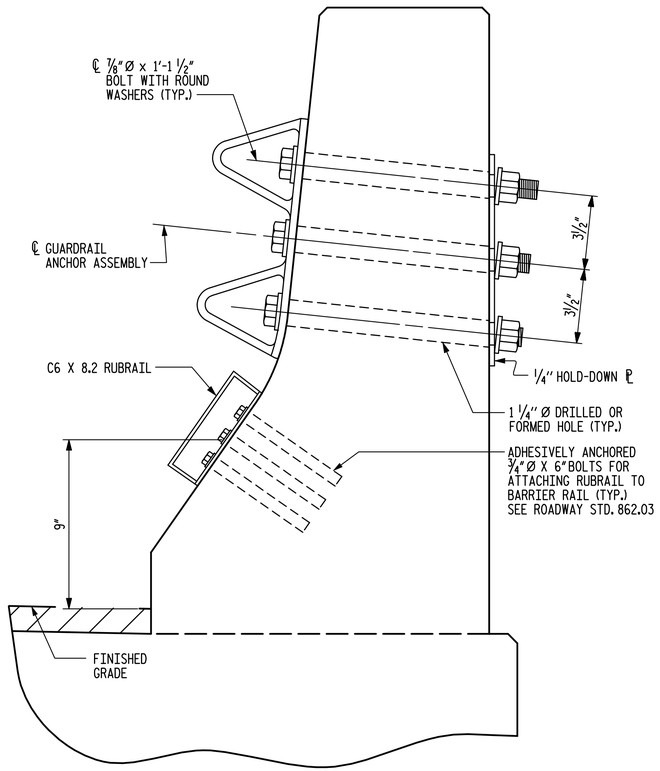
FOR LOCATION OF RUBRAIL, SEE ROADWAY STD. 862.03



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

FOR CONCRETE BARRIER RAIL ONLY
ABUTMENT #1 SHOWN, ABUTMENT #2 SIMILAR



SECTION E-E

GUARDRAIL ANCHOR ASSEMBLY DETAILS

FOR CONCRETE BARRIER RAIL ONLY
(FOR LOCATION OF GUARDRAIL ANCHOR ASSEMBLY, SEE THIS SHEET)

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A ¼" HOLD DOWN PLATE AND ⅞" Ø BOLTS WITH NUTS AND WASHERS, RUBRAIL, AND ADHESIVELY ANCHORED BOLTS.

THE HOLD-DOWN PLATE SHALL CONFORM TO AASHTO M270 GRADE 36. AFTER FABRICATION, THE HOLD-DOWN PLATE SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M111.

BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE ⅞" Ø GALVANIZED BOLTS, NUTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)

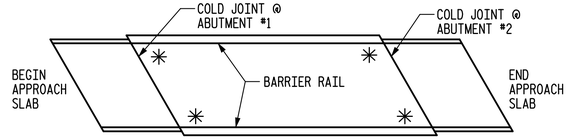
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF CONCRETE BARRIER RAIL OR CONCRETE END POSTS. FOR POINTS OF ATTACHMENT, SEE SKETCH.

AFTER INSTALLATION, THE EXPOSED THREAD OF THE BOLT SHALL BE BURRED WITH A SHARP POINTED TOOL.

THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CONCRETE BARRIER RAIL.

THE 1 ¼" Ø HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.

THE C6 X 8.2 RUBRAIL IS TO BE ADHESIVELY ANCHORED TO THE RAIL USING THREE ¾"Ø X 6" BOLTS WITH WASHERS. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE ¾"Ø BOLT IS 12 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE SPECIAL PROVISIONS. SEE ROADWAY STANDARD 862.03 FOR DETAILS AND LOCATION OF THE RUBRAIL.



SKETCH SHOWING POINTS OF ATTACHMENTS

✳ DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. 42570
COUNTY: WATAUGA
STATION: 15+91.50

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
GUARDRAIL ANCHORAGE DETAILS

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-13
1			3			TOTAL SHEETS
2			4			16

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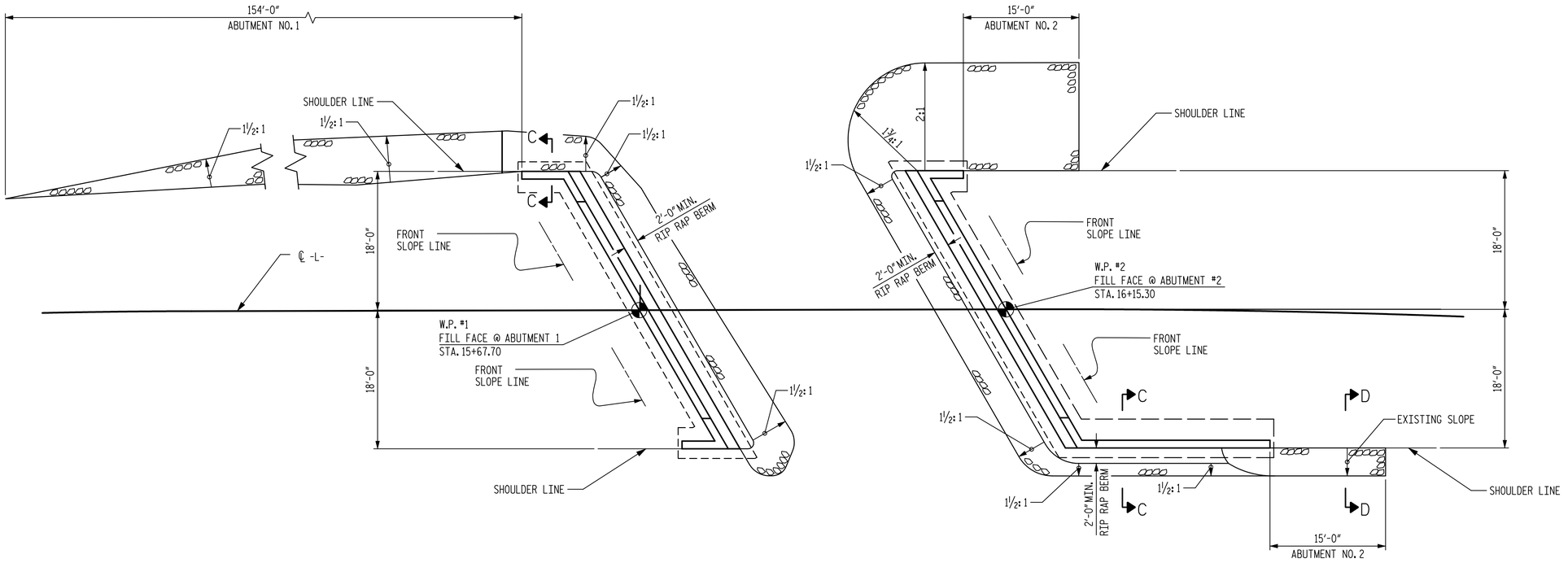
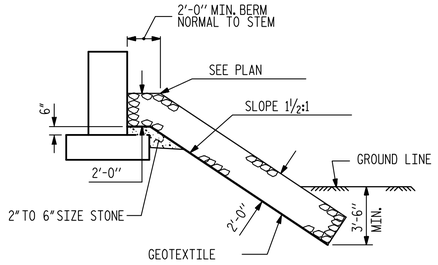
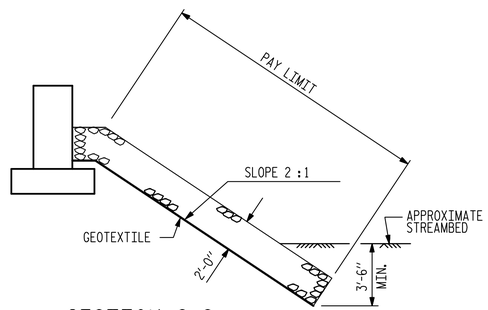
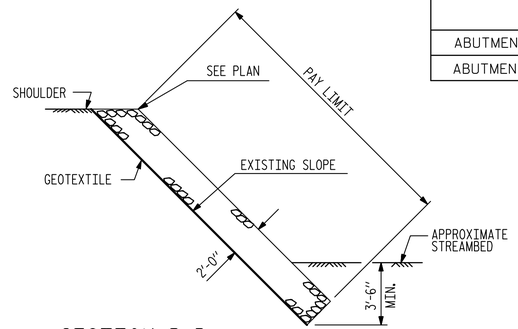




℄ SECTION
BERM RIP RAPPED



SECTION C-C



SECTION D-D

ESTIMATED QUANTITIES		
BRIDGE @ STA. 15+91.50 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
ABUTMENT 1	136	151
ABUTMENT 2	91	101

PROJECT NO. 42570
COUNTY: WATAUGA
STATION: 15+91.50

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

RIP RAP DETAILS

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-14
1			3			TOTAL SHEETS
2			4			16

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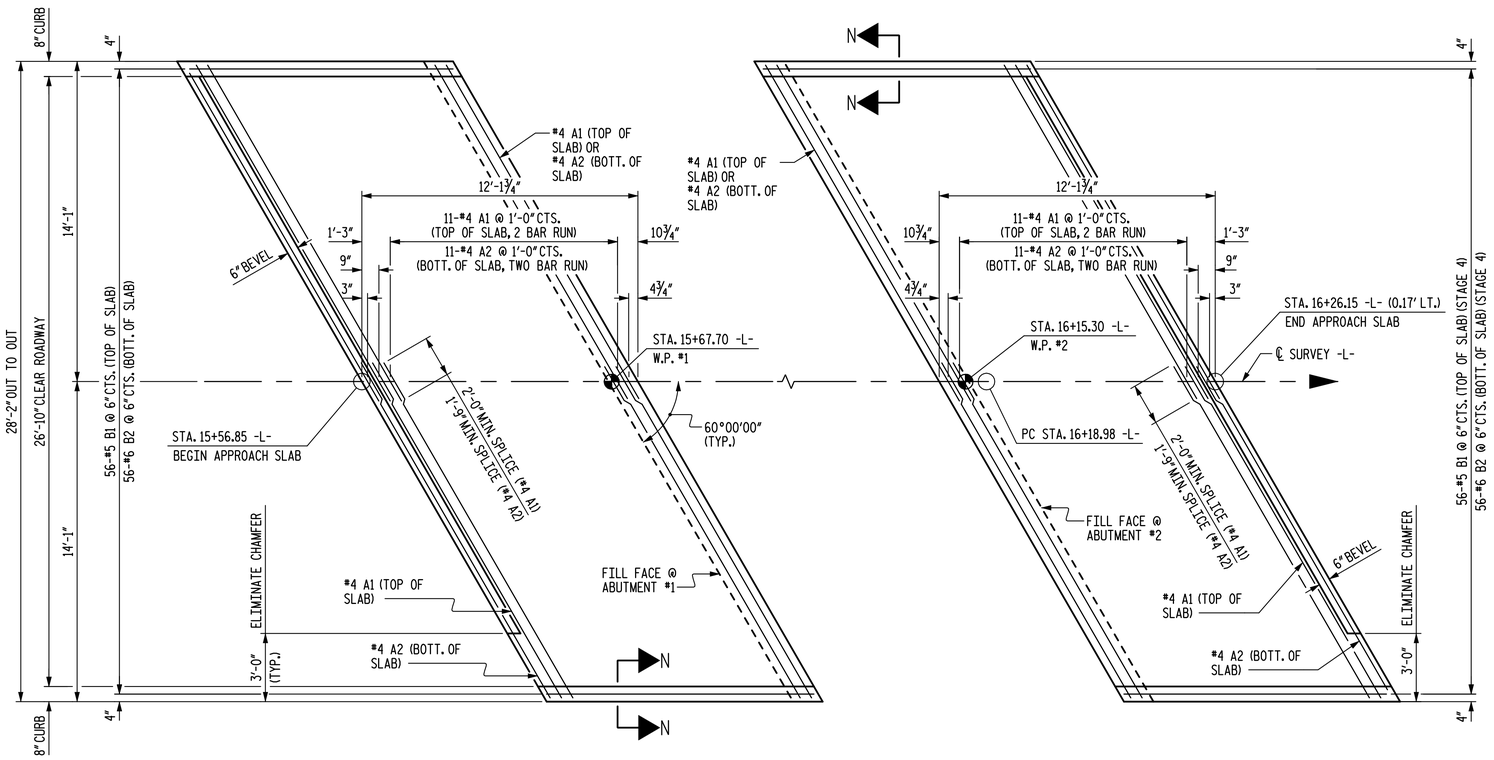
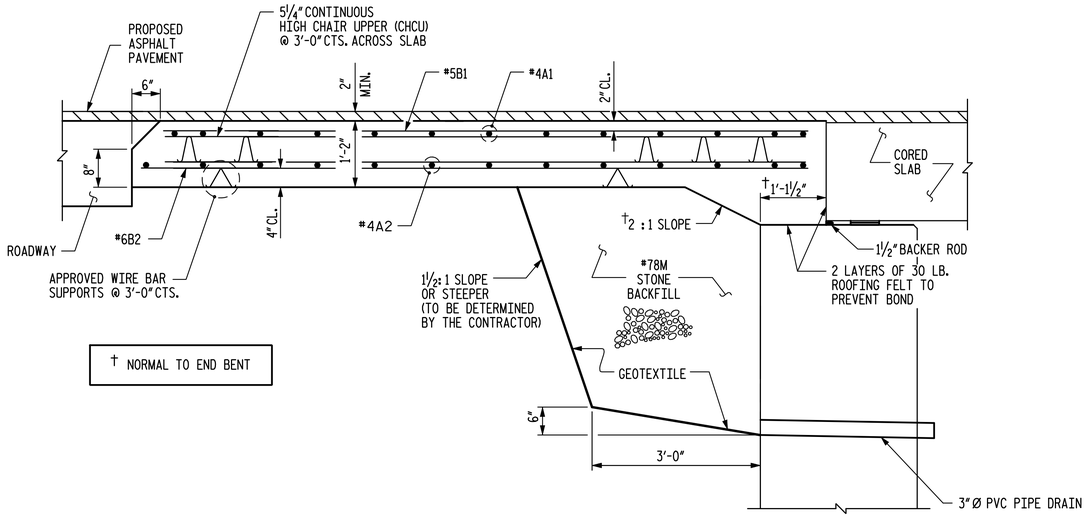


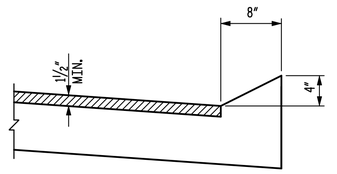
PLAN OF APPROACH SLABS

DIMENSIONS ARE TYPICAL FOR BOTH APPROACH SLABS

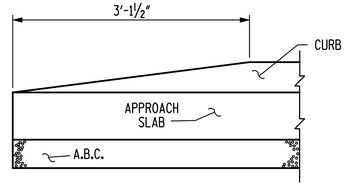


† NORMAL TO END BENT

SECTION THRU SLAB



SECTION N-N



END OF CURB WITHOUT SHOULDER BERM GUTTER

CURB DETAILS

NOTES

FOR BRIDGE APPROACH FILL INCLUDING FABRIC, AND *78M STONE BACKFILL, SEE ROADWAY STANDARD DRAWINGS.

APPROACH SLAB SHALL NOT BE CONSTRUCTED PRIOR TO INSTALLATION OF CORED SLABS.

GEOTEXTILE SHALL BE TYPE 1 FABRIC IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS SECTION 1056.

*78M STONE BACKFILL (CLASS V SELECT MATERIAL) SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 1016.

*78M STONE BACKFILL IS TO BE CONTINUOUS ALONG FILL FACE OF ABUTMENT FROM OUTSIDE EDGE TO OUTSIDE EDGE OF APPROACH SLAB.

*78 STONE BACKFILL AND GEOTEXTILE SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR APPROACH SLABS.

AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED.

APPROACH SLAB GROOVING IS NOT REQUIRED.

BILL OF MATERIAL

APPROACH SLAB AT ABUTMENT #1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
✳A1	26	#4	STR	17'-1"	297
A2	26	#4	STR	17'- 0"	295
✳B1	56	#5	STR	11'- 1"	647
B2	56	#6	STR	11'- 7"	974
REINFORCING STEEL				LBS.	1,269
✳ EPOXY COATED REINFORCING STEEL				LBS.	944
CLASS AA CONCRETE					
AT ABUTMENT #1				C.Y.	16.5

APPROACH SLAB AT ABUTMENT #2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
✳A1	26	#4	STR	17'-1"	297
A2	26	#4	STR	17'- 0"	295
✳B1	56	#5	STR	11'- 1"	647
B2	56	#6	STR	11'- 7"	974
REINFORCING STEEL				LBS.	1,269
✳ EPOXY COATED REINFORCING STEEL				LBS.	944
CLASS AA CONCRETE					
AT ABUTMENT #2				C.Y.	16.5

PROJECT NO. 42570
COUNTY: WATAUGA
STATION: 15+91.50

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

APPROACH SLAB
26'-10" CLEAR ROADWAY
60° SKEW
(SUB REGIONAL TIER)

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-15
1			3			TOTAL SHEETS
2			4			16

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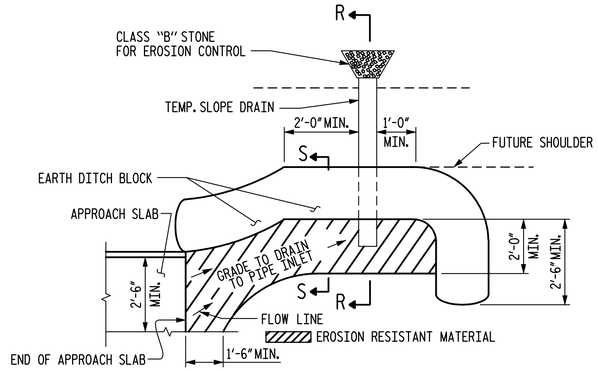
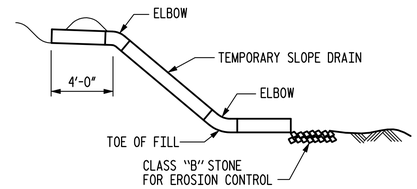
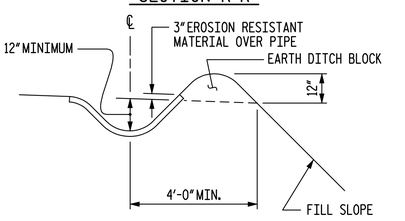


NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN. 2" DEPTH, 2) EROSION CONTROL MAT, OR 3) CONCRETE, AS DIRECTED BY THE ENGINEER. THE SLOPE DRAIN SHALL CONSIST OF A NON-PERFORATED TEMPORARY DRAINAGE PIPE, 12 INCHES IN DIAMETER.

PLAN VIEW



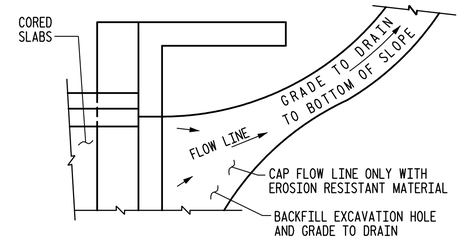
SECTION R-R



SECTION S-S

TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT TO THE STRUCTURE. THE CONTRACTOR WILL BE REQUIRED TO REMOVE THESE MATERIALS PRIOR TO CONSTRUCTION OF THE APPROACH SLAB.

TEMPORARY DRAINAGE DETAIL

PROJECT NO. 42570
COUNTY: WATAUGA
STATION: 15+91.50

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TEMPORARY DRAINAGE DETAILS

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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

JANUARY, 1990

STD. NO. SN

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

5/9/2013
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8/17/99

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "BL-3" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 951,262.763(ft) EASTING: 1,169,452.159(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998941948
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "BL-3" TO -L- STATION 14+00.00 IS S 57° 08' 07.8" W, 162.92'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

PI Sta 12+02.47
△ = 3° 06' 38.7" (RT)
D = 2° 01' 32.5"
L = 153.56'
T = 76.80'
R = 2,828.44'

PI Sta 13+09.28
△ = 6° 12' 50.7" (RT)
D = 10° 21' 11.7"
L = 60.02'
T = 30.04'
R = 553.41'

PI Sta 14+24.63
△ = 9° 38' 03.8" (RT)
D = 5° 39' 21.3"
L = 170.34'
T = 85.37'
R = 1,013.02'
SE = 0.06
V = 40 MPH

PI Sta 16+76.33
△ = 4° 35' 08.3" (RT)
D = 4° 00' 00.0"
L = 114.64'
T = 57.35'
R = 1,432.39'
SE = 0.04
V = 40 MPH

PI Sta 18+92.40
△ = 2° 08' 50.7" (LT)
D = 2° 00' 00.0"
L = 107.37'
T = 53.69'
R = 2,864.79'
SE = 0.04
V = 50 MPH

PI Sta 20+71.38
△ = 1° 03' 51.0" (LT)
D = 5° 48' 32.6"
L = 18.32'
T = 9.16'
R = 986.32'

PROJECT REFERENCE NO.	SHEET NO.
BK-5119	
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA — PROFESSIONAL SEAL 22606 — ENGINEER — DAVID C. WALLER — 5-10-13

HYDRAULICS ENGINEER — NORTH CAROLINA — PROFESSIONAL SEAL 19732 — ENGINEER — SHIHCHEN KUO — 5-10-13

DETAIL A
LATERAL 'V' DITCH (NOT TO SCALE)
NATURAL GROUND, 2H, D, 2H, b, FILL SLOPE, 1'/Ft.
Min. D = 1 Ft.
b = 2 Ft.

STATION - STATION SIDE
15+71- 16+38 LT

BEGIN PROJECT BK-5119
-L- STA. 14+00.00

-BL- 3 PINC 10+65.32
-L- 15+62.44 (LT 8.83')

① BRADLEY FAMILY TRUST
DB 202 PG 343

-BL- 1 POT 5+00.00
-L- 9+99.82 (LT 11.70')

-BL- 2 PINC 7+97.00
-L- 12+95.94 (LT 11.14')

POTSta. 10+00.00
PCCSta. 12+79.24
PCSta. 11+25.67
PCCSta. 13+39.26
PTSta. 15+09.60
PCSta. 16+18.98
PTSta. 17+33.62
PCSta. 18+38.71
PTSta. 19+46.08
POTSta. 21+94.87
PCSta. 20+62.22
PTSta. 20+80.54

BM #1
-BL- STA. 8+32.02
3.92' LT
EL=3080.70'

BM #2
-BL- STA. 14+31.81
9.39' LT
EL=3089.65'

LITTLE BEAVERDAM CREEK
SR 1225 BEAVERDAM ROAD
TO MOUNTAIN DALE ROAD
TO REESE ROAD
N 43° 22' 05.5" E
N 66° 54' 47" E
N 64° 45' 56.4" E
N 63° 42' 05.3" E
N 70° 04' 00" E 256.80'
S 24° 50' 25" E 122.86'

LAT V DITCH SEE DETAIL A
20 LF SHOP CURVED (R=12')
AT GRADE
ROCK
STEPS
OIL TANK
ISFD
SAT DISH
BARN
GR
WOODS
SHOULDER BERM GUTTER
REMOVE 4 FT. OF EXISTING PIPE
EXPRESSWAY GUTTER
48" WD RAIL EIP
18" CMP
15" RCP
2SBW TYPE "B"
TYPE B-77
2GI(B)
3SBW
GRAU -350 +00.53 -30
GRAU -350 +11.88
GRAU -347.45 +17.51

② SANDRA W. SWIFT
DB 1509 PG 112
PB 22 PG 291

SANDRA W. SWIFT
DB 1563 PG 577
PB 22 PG 291

SANDRA CORNELL & WILMA WINEBARGER
DB 728 PG 595

BEAVERDAM BAPTIST CHURCH
NO DEED

-BL- 4 POT 16+98.56
-L- 21+94.94 (RT 11.43')

END PROJECT BK-5119
-L- STA. 19+50.00

NC GRID NAD 83

RIGHT OF WAY AREA DATA

PARCEL NO.	PROPERTY OWNERS NAME	TOTAL ACREAGE	AREA TAKEN	AREA REMAINING RIGHT	AREA REMAINING LEFT	CONSTR. EASEMENT	PERMANENT DRAINAGE EASEMENT	TEMPORARY DRAINAGE EASEMENT
1	BRADLEY FAMILY TRUST		1699 sf			442 sf		
2	SANDRA W. SWIFT		705 sf			420 sf		

BRIDGE DESCRIPTION
TIMBER DECK WITH ASPHALT OVERLAY ON I-BEAMS
BRIDGE NO. 25 OVER LITTLE BEAVERDAM CREEK
ON SR 1225 BEAVERDAM ROAD
HIGH WATER ELEVATION = 3083.23'
LOW CHORD = 3081.23'

DENOTES APPROACH SLAB

	PAVEMENT SCHEDULE
(C)	3" SURFACE COURSE, TYPE S9.5B
(D)	2½" INTERMEDIATE COURSE, TYPE I19.0B
(E)	4" BASE COURSE, TYPE B25.0B
(T)	EARTH MATERIAL
(U)	EXISTING PAVEMENT

TYPICAL SECTION
8' 4' 12' 12' 4'
VAR.(2% MAX.) 4% 0.08 0.02 0.02 0.08 VAR.(2% MAX.)
EXISTING PAVEMENT
9%

BM # 1
-L- STA. 13+30, 10' LT
RR SPIKE IN EDGE OF PAVEMENT
EL. 3080.70

BM # 2
-L- STA. 19+29, 9' LT
RR SPIKE IN EDGE OF PAVEMENT
EL. 3089.65

PI = 15+10.00
EL = 3,082.05'
VC = 80'
K = 84
DS = 45 MPH

PI = 16+40.00
EL = 3,084.35'
VC = 60'
K = 17.5
DS = 45 MPH

BEGIN GRADE STA. 14+00.00 EL. 3,081.15
VPC STA. 14+70.00 EL. 3,081.72
VPT STA. 15+50.00 EL. 3,082.76
VPC STA. 16+00.00 EL. 3,083.82
VPT STA. 16+70.00 EL. 3,084.98
END GRADE STA. 19+50.00 EL. 3,090.90
+0.818%
+1.769%
+2.112%
3.5%
BEG. 15+71 RT EL. 3076.8
END 16+38 RT EL. 3080.4
LAT V DITCH RT

3,100 / 3,090 / 3,080 / 3,070 / 3,060
13 14 15 16 17 18 19

BEGIN BRIDGE -L- POT 15+67.70
END BRIDGE -L- POT 16+15.30
7' SHLD, 24' PVMT, 26.10' F-F, .02, 11' LL', 2'-5"
BEGIN APPROACH SLAB -L- POT 15+56.85
END APPROACH SLAB -L- POT 16+26.15

SKETCH SHOWING ROADWAY IN RELATION TO STRUCTURE

PROJECT NO. 42570
COUNTY: WATAUGA
STATION: 15+91.50

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE ON SR 1225
OVER LITTLE BEAVERDAM CREEK

Florence & Hutcheson
An ICA Company
5121 Kingdom Way, Suite 100 Raleigh, NC 27607
NC License No: F-0258

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	RD-1
1			3			TOTAL SHEETS
2			4			

REVISIONS
12-23-2009 Revised Existing ROW from 50' to 60' width.
4-14-2011 Revised Property Lines on Parcel 2 in accordance with DB 1509 PG 112.

5/9/2013
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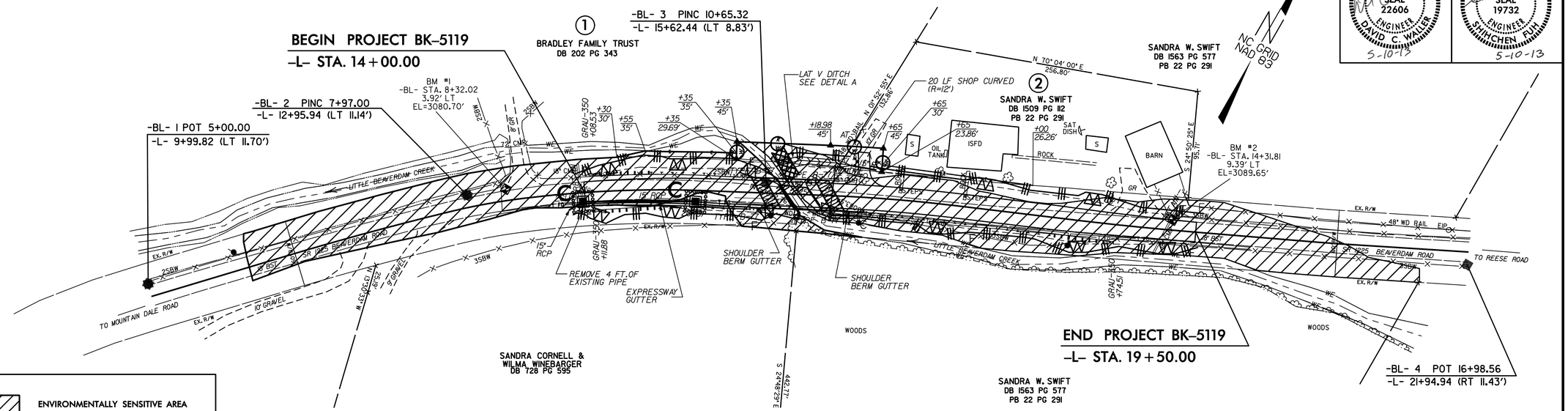
8/17/99

EROSION CONTROL PLAN

PROJECT REFERENCE NO.	SHEET NO.
BK-5119	EC-1
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 22606 ENGINEER DAVID C. WALLER — 5-10-13

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 19732 ENGINEER SHIHCHEN FUH — 5-10-13



ENVIRONMENTALLY SENSITIVE AREA
PLEASE SEE SPECIAL PROVISIONS

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER QUALITY.

NOTE:
UTILIZE SPECIAL STILLING BASIN WHERE APPLICABLE.

Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1607.01	Gravel Construction Entrance	
1622.01	Temporary Berms and Slope Drains	
1630.06	Special Stilling Basin	
1632.03	Rock Inlet Sediment Trap Type-C	C
1633.01	Temporary Rock Silt Check Type-A	

BM # 1
-L- STA. 13+30 ,10' LT
RR SPIKE IN EDGE OF PAVEMENT
EL. 3080.70

BM # 2
-L- STA. 19+29 ,9' LT
RR SPIKE IN EDGE OF PAVEMENT
EL. 3089.65

DENOTES APPROACH SLAB

2012 STANDARD DRAWINGS

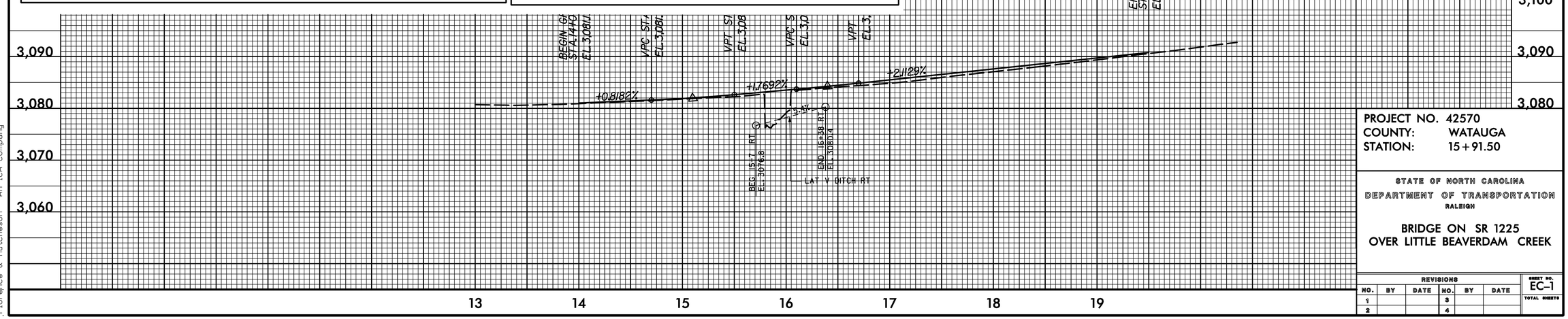
1604.01	Railroad Erosion Control Detail	1632.01	Rock Inlet Sediment Trap Type A
1605.01	Temporary Silt Fence	1632.02	Rock Inlet Sediment Trap Type B
1606.01	Special Sediment Control Fence	1632.03	Rock Inlet Sediment Trap Type C
1607.01	Gravel Construction Entrance	1633.01	Temporary Rock Silt Check Type A
1622.01	Temporary Berms and Slope Drains	1633.02	Temporary Rock Silt Check Type B
1630.01	Riser Basin	1634.01	Temporary Rock Sediment Dam Type A
1630.02	Silt Basin Type B	1634.02	Temporary Rock Sediment Dam Type B
1630.03	Temporary Silt Ditch	1635.01	Rock Pipe Inlet Sediment Trap Type A
1630.04	Stilling Basin	1635.02	Rock Pipe Inlet Sediment Trap Type B
1630.05	Temporary Diversion	1640.01	Coir Fiber Baffle
1630.06	Special Stilling Basin	1645.01	Temporary Stream Crossing
1631.01	Matting Installation		

ROADSIDE ENVIRONMENTAL UNIT
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

2012 STANDARD SPECIFICATIONS

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.



PROJECT NO. 42570
COUNTY: WATAUGA
STATION: 15+91.50

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE ON SR 1225
OVER LITTLE BEAVERDAM CREEK

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	EC-1
1			3			TOTAL SHEETS
2			4			

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PROJECT REFERENCE NO.	SHEET NO.
BK-5119	EC-2

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

ROADSIDE ENVIRONMENTAL UNIT
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.
2012 STANDARD SPECIFICATIONS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BK–5119	RF–1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	

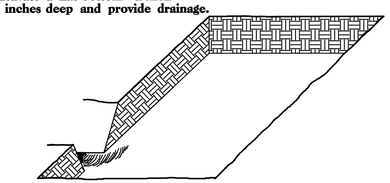
PLANTING DETAILS

SEEDLING / LINER BAREROOT PLANTING DETAIL

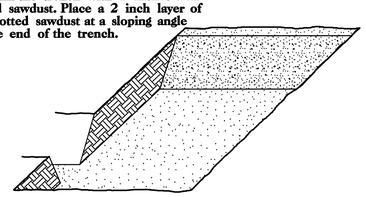
HEALING IN

1. Locate a healing–in site in a shady, well protected area.

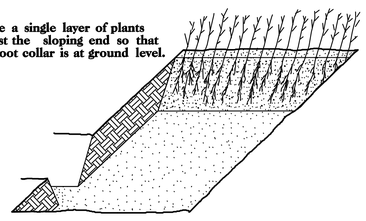
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



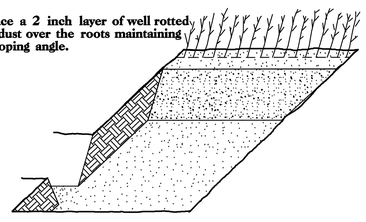
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



4. Place a single layer of plants against the sloping end so that the root collar is at ground level.

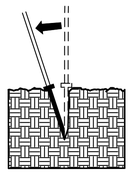


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

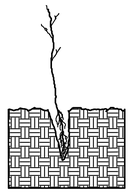


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

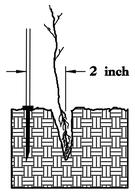
DIBBLE PLANTING METHOD
USING THE KBC PLANTING BAR



1. Insert planting bar as shown and pull handle toward planter.

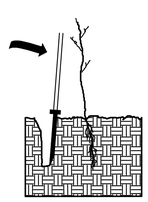


2. Remove planting bar and place seedling at correct depth.

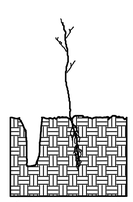


3. Insert planting bar 2 inches toward planter from seedling.

4. Pull handle of bar toward planter, firming soil at bottom.



5. Push handle forward firming soil at top.



6. Leave compaction hole open. Water thoroughly.

PLANTING NOTES:

PLANTING BAG
During planting, seedlings shall be kept in a moist canvas bag or similar container to prevent the root systems from drying.

KBC PLANTING BAR
Planting bar shall have a blade with a triangular cross section, and shall be 12 inches long, 4 inches wide and 1 inch thick at center.

ROOT PRUNING
All seedlings shall be root pruned, if necessary, so that no roots extend more than 10 inches below the root collar.

REFORESTATION

☐ TREE REFORESTATION SHALL BE PLANTED 6 FT. TO 10 FT. ON CENTER, RANDOM SPACING, AVERAGING 8 FT. ON CENTER, APPROXIMATELY 680 PLANTS PER ACRE.

REFORESTATION

MIXTURE, TYPE, SIZE, AND FURNISH SHALL CONFORM TO THE FOLLOWING:

25%	PLATANUS OCCIDENTALIS	SYCAMORE	12 in – 18 in BR
25%	FRAXINUS PENNSYLVANICA	GREEN ASH	12 in – 18 in BR
25%	BETULA NIGRA	RIVER BIRCH	12 in – 18 in BR

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

ROADSIDE ENVIRONMENTAL UNIT
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

2012 STANDARD SPECIFICATIONS

REFORESTATION DETAIL SHEET

N.C.D.O.T. - ROADSIDE ENVIRONMENTAL UNIT

7/2/99

PROJECT REFERENCE NO.	SHEET NO.
42570	
R/W SHEET NO.	

NORTH CAROLINA PROFESSIONAL SEAL 15876 ENGINEER MICHAEL T. RZEPKA
5-10-13

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS"-ROADWAY DESIGN UNIT-N.C. DEPARTMENT OF TRANSPORTATION-RALEIGH, N.C., DATED JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE & MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1261.01	GUARDRAIL & BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL & BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINEATION

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FEILD CONDITIONS OR RESULT IN DUPLICATE, OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING OR REMOVAL OF DEVICES, AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER.

TRAFFIC PATTERN ALTERATIONS

A) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

B) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC CONTROL DEVICES

C) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

LOCAL NOTES

1) CONTRACTOR TO MAINTAIN ACCESS TO ALL DRIVEWAYS, WITHIN THE PROJECT LIMITS, AT ALL TIMES.

PHASE I

WORKING IN A CONTINUOUS MANNER, COMPLETE THE FOLLOWING WORK IN PHASE I, STEP 1.

STEP 1: - USING ROADWAY STANDARD DRAWING NUMBER 1101.03, SHEET 1 OF 9, CLOSE SR 1225 (BEAVER DAM RD.) TO TRAFFIC AND SHIFT TRAFFIC TO DETOUR (SEE SHEET TC-2).

STEP 2: - DISMANTLE AND REMOVE EXISTING BRIDGE NUMBER 25.

STEP 3: - COMPLETE CONSTRUCTION OF PROPOSED STRUCTURE, APPROACH ROADWAY TIE-INS, AND ASSOCIATED ITEMS.

STEP 4: - NCDOT DIVISION FORCES SHALL PLACE FINAL PAVEMENT MARKINGS (PAINT) ON SR 1225 (BEAVER DAM RD.).

STEP 5: - REMOVE ALL TRAFFIC CONTROL DEVICES AND OPEN SR 1225 (BEAVER DAM RD.) TO TRAFFIC.

FINAL PAV'T MARKING SCHEDULE

SYMBOL	DESCRIPTION	QUANTITY BREAKDOWN	PAY ITEM	TOTAL QUANTITY
		PAVEMENT MARKING LINES	PAINT (4")	
PA	WHITE EDGELINE 2X	2,200 LF		
PI	YELLOW DOUBLE CENTER LINE 2X	2,200 LF		
			TOTAL	4,400 LF

PROJECT NO. 42570
COUNTY: WATAUGA
STATION: 15+91.50

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE NO. 25 ON SR 1225
OVER LITTLE BEAVERDAM CREEK

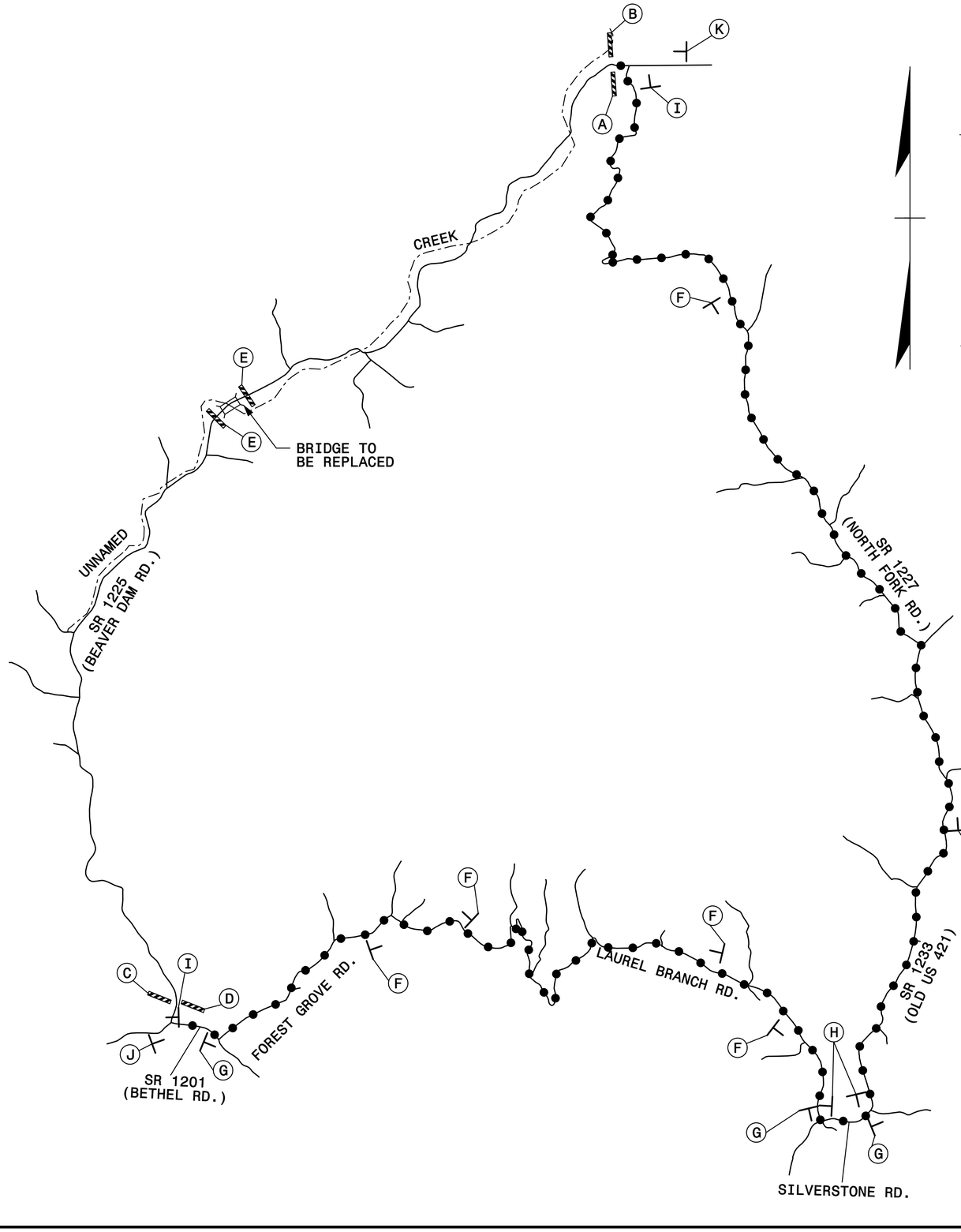
Florence & Hutcheson
An ICA Company
5121 Kingdom Way, Suite 100 Raleigh, NC 27607
NC License No: F-0258

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	TC-1
1			3			TOTAL SHEETS
2			4			2

PROJECT REFERENCE NO.	SHEET NO.
42570	
R/W SHEET NO.	

NORTH CAROLINA PROFESSIONAL SEAL 15876 ENGINEER MICHAEL T. KEENUM

Michael T. Keenum 5-10-13



R11-4
60"X30"
ROAD CLOSED TO THRU TRAFFIC
M4-10L
48"X18"
DETOUR
TYPE III BARRICADE
(A)

R11-4
60"X30"
ROAD CLOSED TO THRU TRAFFIC
M4-10L
48"X18"
DETOUR
TYPE III BARRICADE
(B)

R11-4
60"X30"
ROAD CLOSED TO THRU TRAFFIC
M4-10R
48"X18"
DETOUR
TYPE III BARRICADE
(C)

R11-4
60"X30"
ROAD CLOSED TO THRU TRAFFIC
M4-10R
48"X18"
DETOUR
TYPE III BARRICADE
(D)

R11-2
48"X30"
ROAD CLOSED
TYPE III BARRICADE
(E)

DETOUR M4-8 24" x 12"
M6-3 21" x 15"
(F)

DETOUR M4-8 24" x 12"
M6-1 21" x 15"
(G)

DETOUR M4-8 24" x 12"
M6-1 21" x 15"
(H)

END DETOUR M4-8 A 24" X 18"
(I)

ROAD CLOSED AHEAD W20-3 48" x 48"
NEXT LEFT SP-4L 42" X 12"
(J)

ROAD CLOSED AHEAD W20-3 48" x 48"
(K)

LEGEND
DETOUR ROUTE

PROJECT NO. 42570
COUNTY: WATAUGA
STATION: 15+91.50

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE NO. 25 ON SR 1225
OVER LITTLE BEAVERDAM CREEK

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NC License No: F-0258

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	TC-2
1			3			TOTAL SHEETS
2			4			2

5/9/2013
DETOUR100Z.dgn
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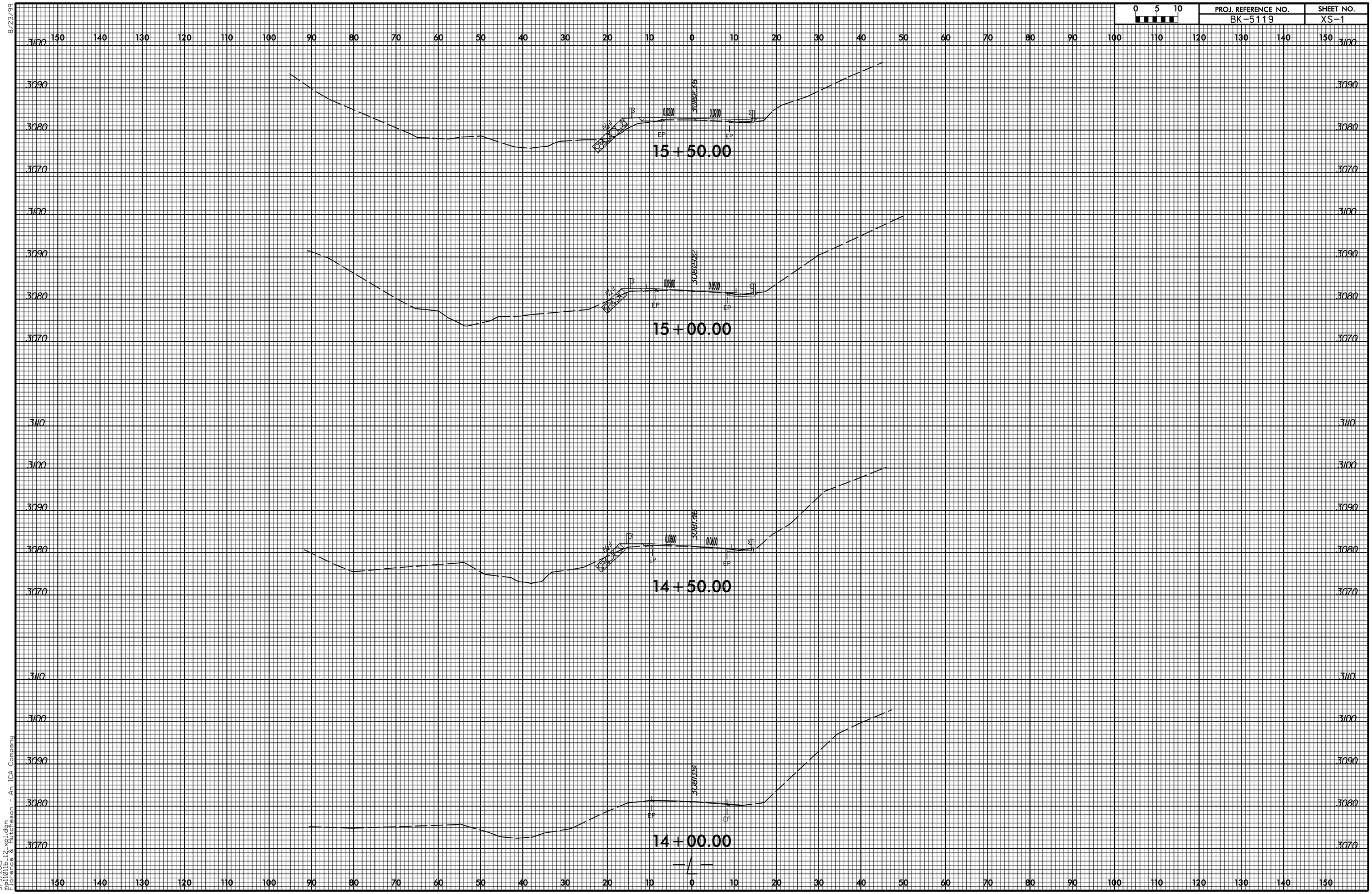
8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	BK-5119	XS-1



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8/23/99

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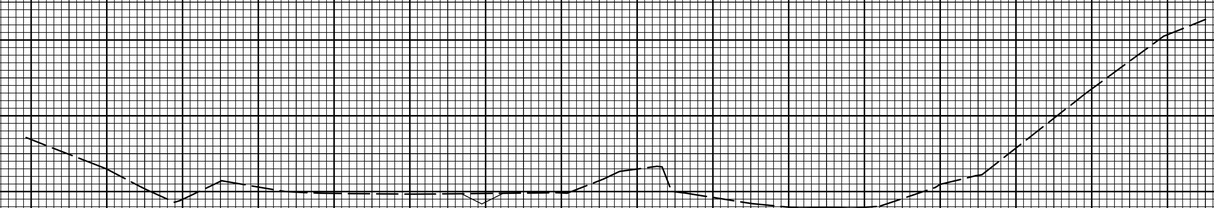
	BK-5119	XS-2

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

3140 3130 3120 3110 3100 3090 3080 3070

16+25.00

3060 3050 3040 3030 3020 3110 3100 3090 3080 3070



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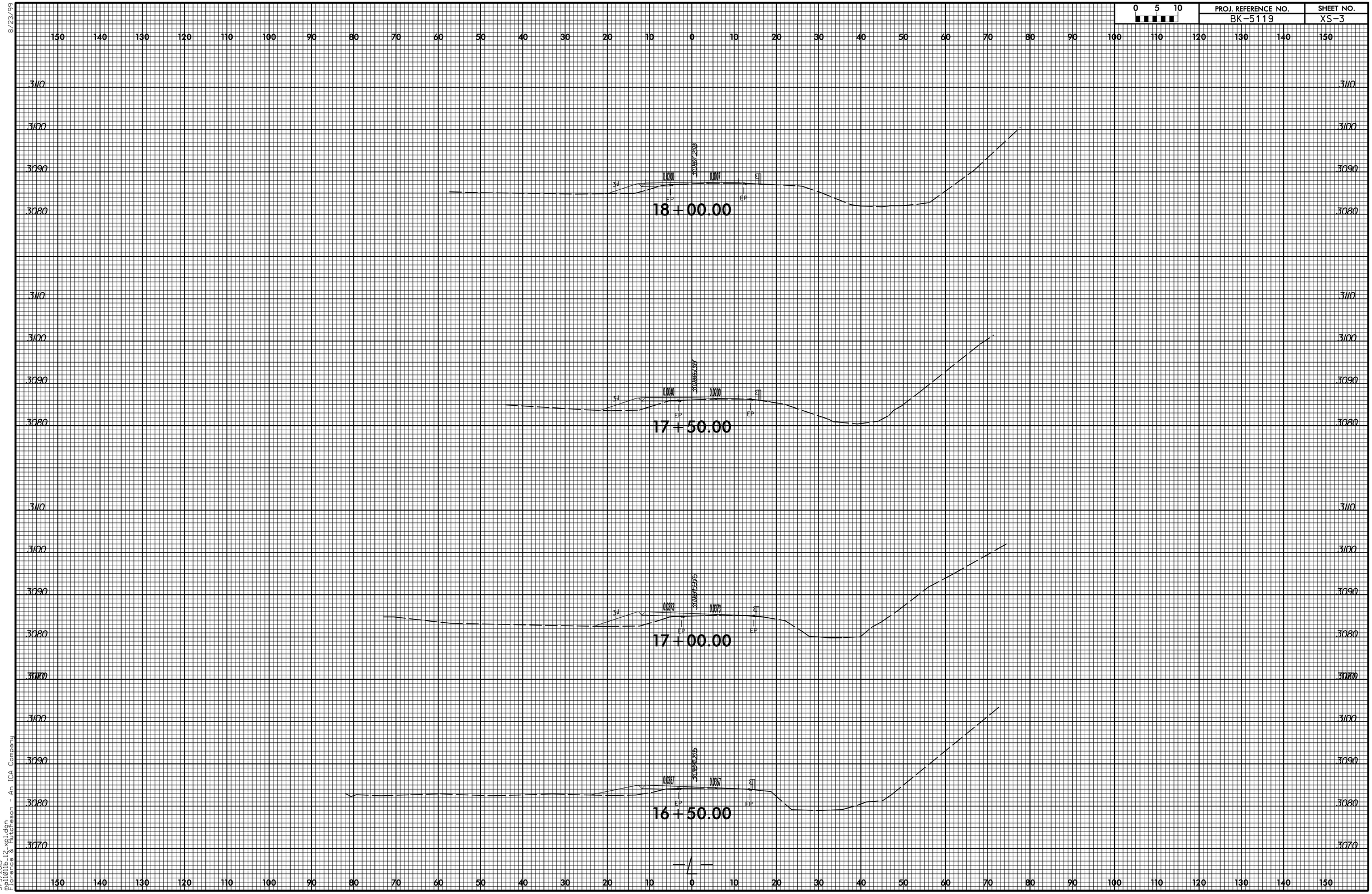
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	BK-5119	XS-3



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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	BK-5119	XS-4

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

3100
3090
3080

3090.77
EP
EP
19+50.00

3089.89
EP
EP
SS 3063.76
19+00.00

3088.89
EP
EP
18+50.00

3100
3090
3080
3070

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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