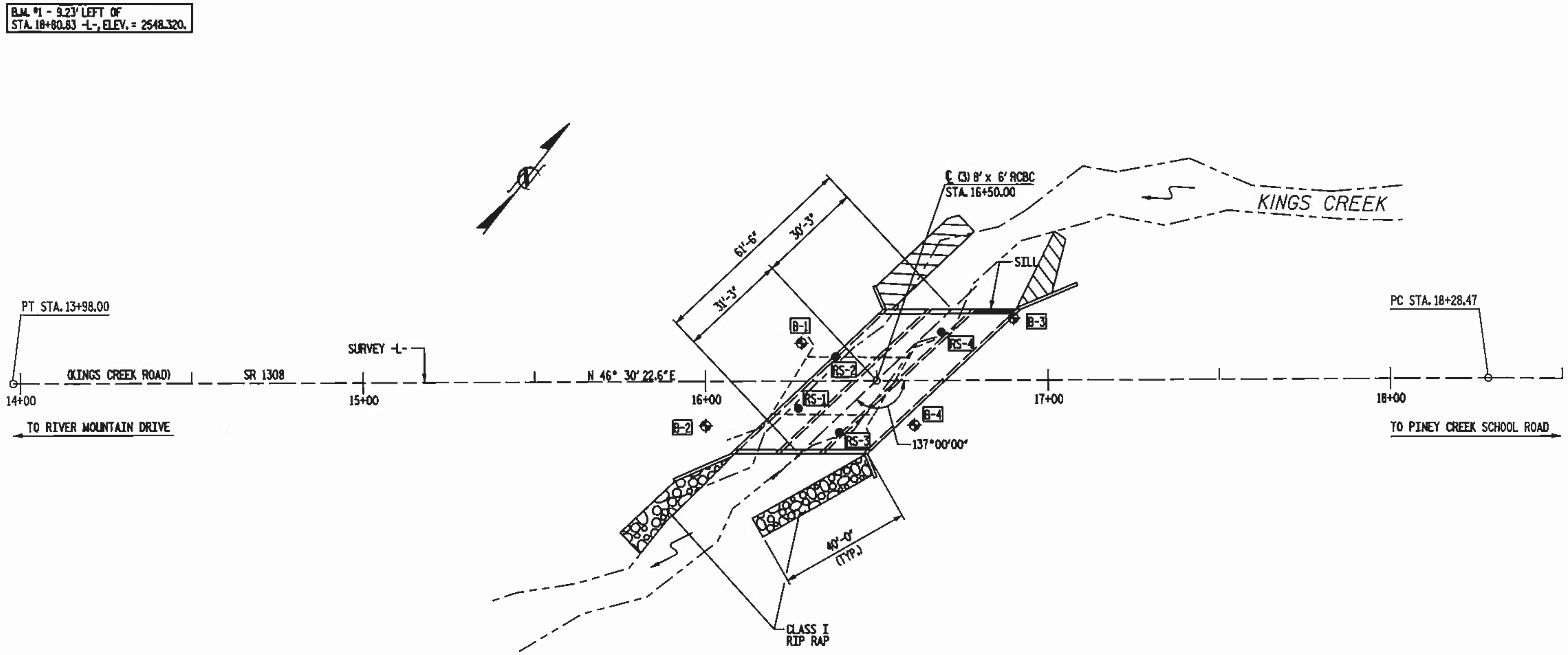
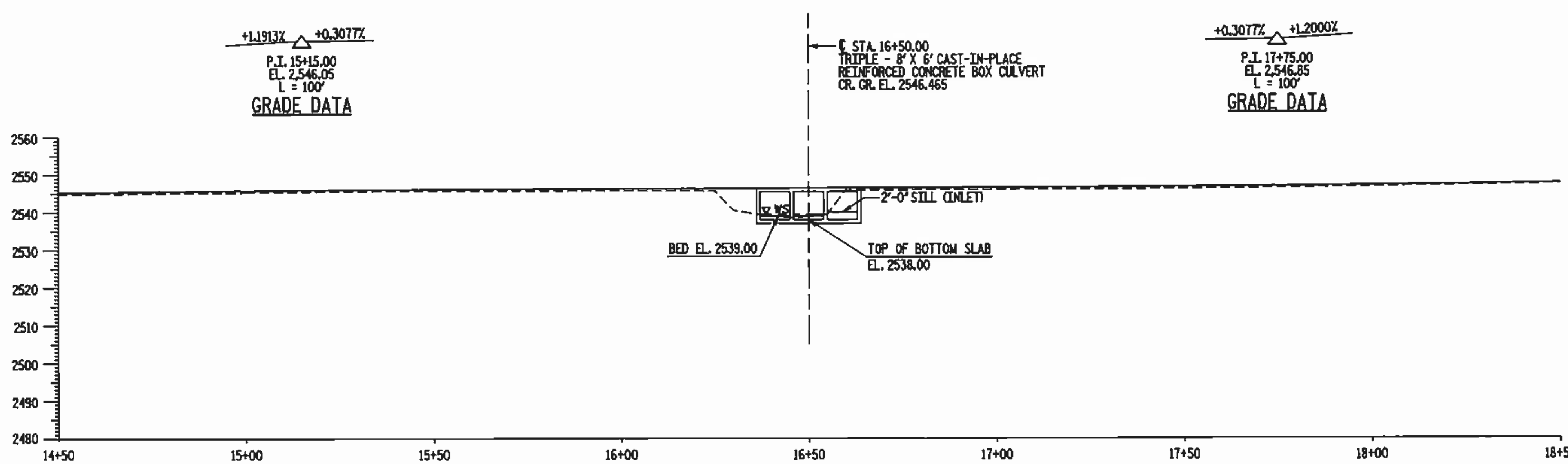
PROJ. NO. BK-5116

115 ALLEGHANY COUNTY



PLAN

SCALE: 1" = 20'-0"



PROFILE ALONG ℄ SURVEY

SCALE: 1" = 20'-0"

NOTES

1. ASSUMED LIVE LOAD ---------- HS25 OR ALTERNATE LOADING.
2. DESIGN FILL ---------------- 2.5'.
3. FOR OTHER DESIGN DATA AND NOTES SEE STANDARD NOTE SHEET.
4. 3" DIAMETER WEEP HOLES INDICATED TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.
5. CONCRETE IN CULVERTS TO BE POURED IN THE FOLLOWING ORDER:
   1. WING FOOTINGS AND FLOOR SLAB INCLUDING 3 1/2" OF VERTICAL WALLS.
   2. THE REMAING PORTIONS OF THE WALLS AND WINGS FULL HEIGHT FOLLOWED BY ROOF SLAB AND HEADWALLS.
6. THE ENGINEER SHALL CHECK THE LENGTH OF CULVERT BEFORE STAKING IT OUT TO MAKE CERTAIN THAT IT WILL PROPERLY TAKE CARE OF THE FILL.
7. AT THE CONTRACTOR'S OPTION, HE MAY SPLICE THE VERTICAL REINFORCING STEEL IN THE INTERIOR FACE OF EXTERIOR WALL AND BOTH FACES OF INTERIOR WALLS ABOVE LOWER WALL CONSTRUCTION JOINT. THE SPLICE LENGTH SHALL BE AS PROVIDED IN THE SPLICE LENGTH CHART SHOWN ON THE PLANS. EXTRA WEIGHT OF STEEL DUE TO THE SPLICES SHALL BE PAID FOR BY THE CONTRACTOR.
8. AT THE CONTRACTOR'S OPTION HE MAY SUBMIT TO THE ENGINEER FOR APPROVAL DESIGN AND DETAIL DRAWINGS FOR A PRECAST REINFORCED CONCRETE BOX CULVERT IN LIEU OF THE CAST-IN-PLACE CULVERT SHOWN ON THE PLANS. THE DESIGN SHALL PROVIDE THE SAME SIZE AND NUMBER OF BARRELS AS USED ON THE CAST-IN-PLACE DESIGN. FOR OPTIONAL PRECAST REINFORCED CONCRETE BOX CULVERT, SEE SPECIAL PROVISIONS.
9. THE CONTRACTOR SHALL EXCAVATE TO THE DEPTH 1' BELOW THE BOTTOM OF THE BARREL AND WINGWALL FOOTING AND BACKFILL WITH FOUNDATION CONDITIONING MATERIAL AS DIRECTED BY THE ENGINEER. FOUNDATION CONDITIONING MATERIAL SHALL BE PLACED UNDER AND TO ONE(1) FOOT OUTSIDE THE LIMITS OF THE BARREL AND FOOTING.
10. STEEL IN THE BOTTOM SLAB MAY BE SPLICED AT THE PERMITTED CONSTRUCTION JOINT AT THE CONTRACTOR'S OPTION. EXTRA WEIGHT OF STEEL DUE TO THE SPLICES WILL BE PAID FOR BY THE CONTRACTOR.
11. THE EXISTING BRIDGE SHALL BE REMOVED BY SAWING AND/OR NON SHATTERING METHODS SUCH THAT DEBRIS WILL NOT FALL INTO THE WATER.
12. THE QUANTITY OF RIP RAP TO BE PAID FOR WILL BE THE ACTUAL NUMBER OF TONS OF CLASS I RIP RAP WHICH HAS BEEN INCORPORATED INTO THE COMPLETED AND ACCEPTED WORK. THE RIP RAP WILL BE MEASURED BY BEING WEIGHED IN TRUCKS ON CERTIFIED PLATFORM SCALES OR OTHER CERTIFIED WEIGHING DEVICES. THE QUANTITY OF RIP RAP WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER TON.

	PLAIN RIP RAP CLASS I (1'-6" THICK)	FILTER FABRIC
DOWNSTREAM	60 TONS	80 SQUARE YARDS

⌖ GEOTECH BORE HOLES LOCATION

● SOUNDING ROD

ADT = 410 FOR YEAR 2009

HYDRAULIC DATA

DESIGN DISCHARGE	=	750	CFS
FREQUENCY OF DESIGN FLOOD	=	25	YRS
DESIGN HIGH WATER ELEVATION	=	2544.85	FT
DRAINAGE AREA	=	2.06	SQ MILES
BASIC DISCHARGE (Q_{100})	=	1200	CFS
BASIC HIGH WATER ELEVATION	=	2546.37	FT

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	=	1000	CFS
FREQUENCY OF OVERTOPPING FLOOD	=	50+	YRS
OVERTOPPING FLOOD ELEVATION	=	2546.36	FT

DESCRIPTION OF EXISTING BRIDGE

1 SPAN @ 31'-1"; 3" ASPHALT WEARING SURFACE ON 4" x 8" TIMBER FLOOR ON I-BEAMS; TIMBER CAP END BENTS ON TIMBER POST AND SILLS; 19'-1" CLEAR ROADWAY WIDTH SHALL BE REMOVED.

PROJECT NO. 42567
COUNTY: ALLEGHANY
STATION: 16+50.00
REPLACES BRIDGE NO. 115

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

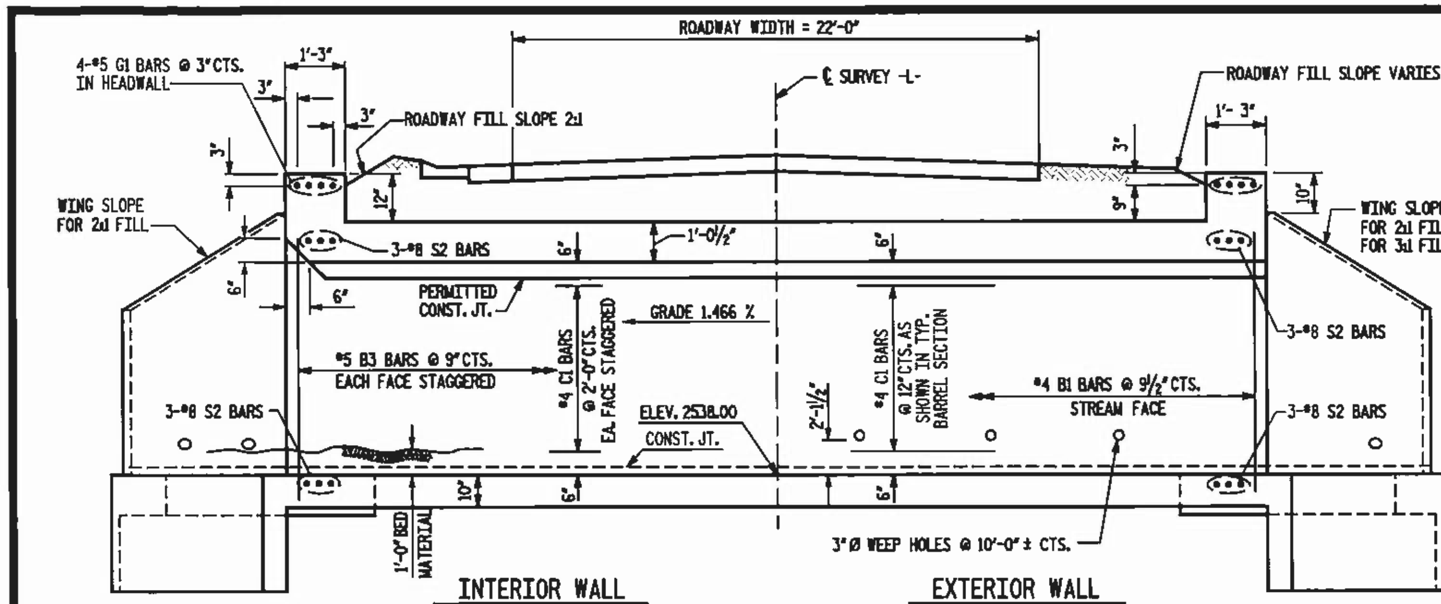
CULVERT ON SR 1308
OVER KINGS CREEK

Florence & Hutcheson
CONSULTING ENGINEERS
5121 Kingdom Way, Suite 100 Raleigh, NC 27607
NC License No. F-0958

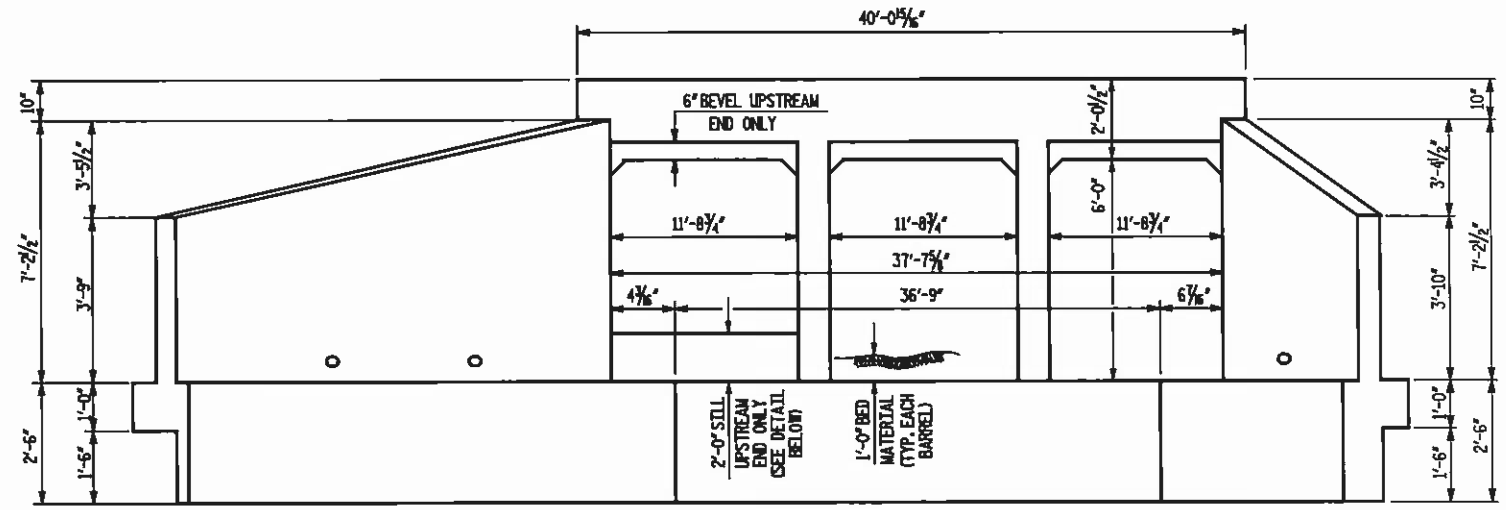
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL — JAMES E. MONDOLFI
8-16-10

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	1
1			3			TOTAL SHEETS
2			4			19

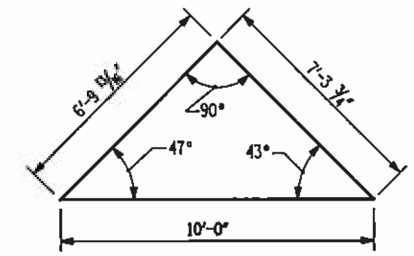
DRAWN BY: K.M. MOBLEY DATE: JUNE 2009
CHECKED BY: J.E. MONDOLFI DATE: JUNE 2009



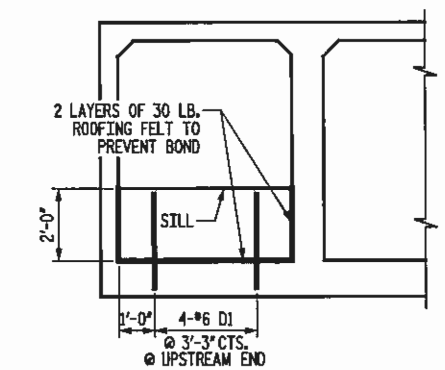
CULVERT SECTION NORMAL TO ROADWAY



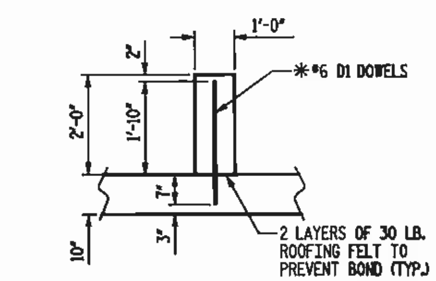
END ELEVATION NORMAL TO SKEW



SKEW TRIANGLE



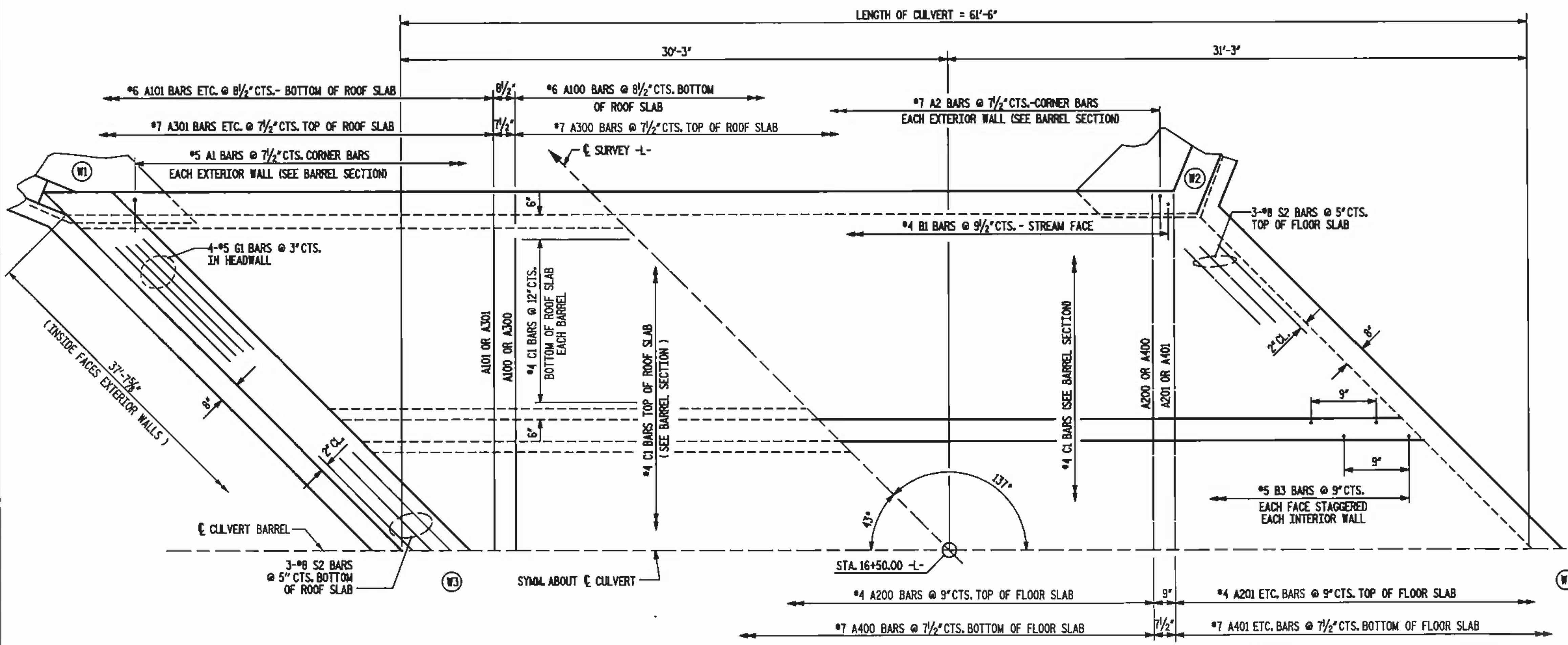
ELEVATION



✱DOWELS MAY BE PUSHED INTO GREEN CONCRETE AFTER SLAB HAS BEEN FLOAT FINISHED.

SECTION THROUGH SILL

CULVERT SILL DETAILS



PART PLAN - ROOF SLAB

(CONCRETE ANCHORS FOR GUARDRAIL ANCHORAGE REQUIRED, SEE SHEET NO. 5 FOR DEALS.)

PART PLAN - FLOOR SLAB

NOT TO SCALE

PROJECT NO. 42567
COUNTY: ALLEGHANY
STATION: 16+50.00
REPLACES BRIDGE NO. 115

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

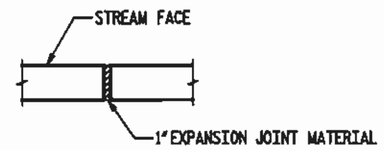
TRIPLE 8 FT. X 6 FT. CONCRETE BOX CULVERT 137°00'00" SKEW

Florence & Hutcheson
CONSULTING ENGINEERS
NC License No. F-0266

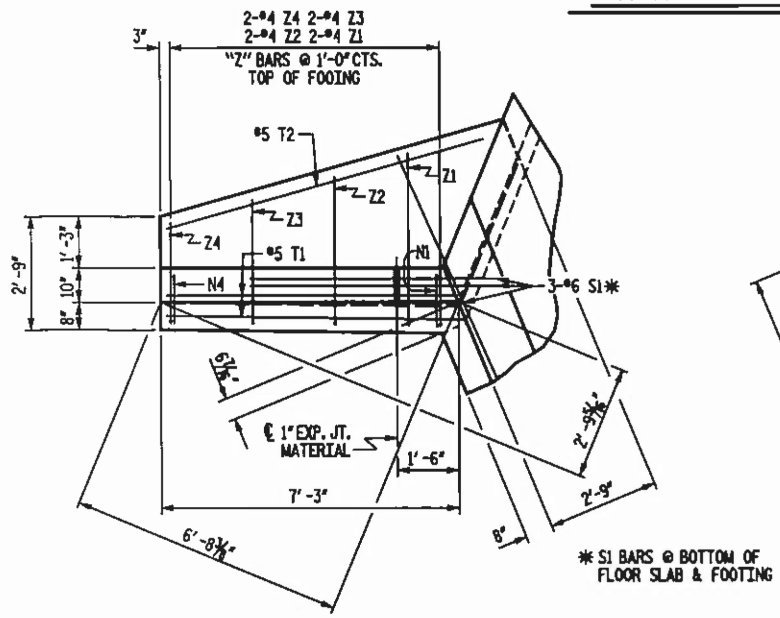
NORTH CAROLINA PROFESSIONAL SEAL ENGINEER JAMES E. MONDOLFI
8-16-10

REVISIONS							SHEET NO.
NO.	BY	DATE	NO.	BY	DATE		2
1			3				TOTAL SHEETS
2			4				19

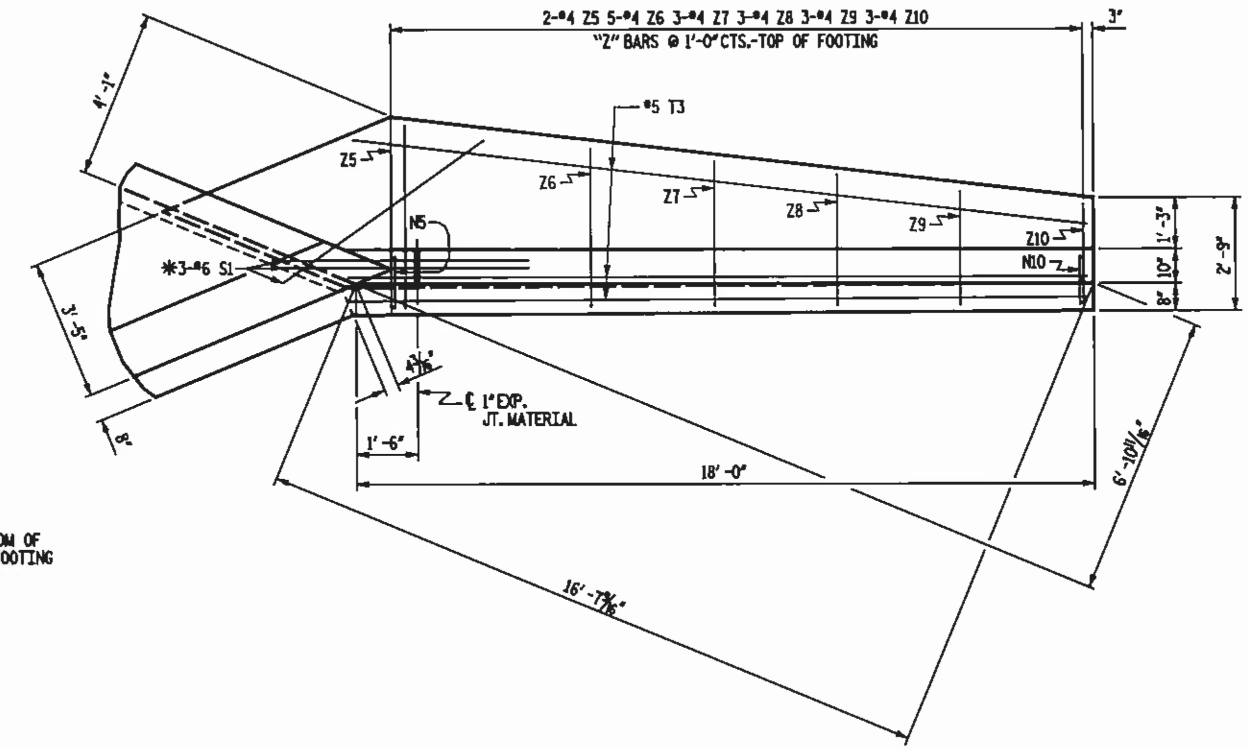
DRAWN BY: K.M. MOBLEY DATE: JUNE 2009
CHECKED BY: J.E. MONDOLFI DATE: JUNE 2009



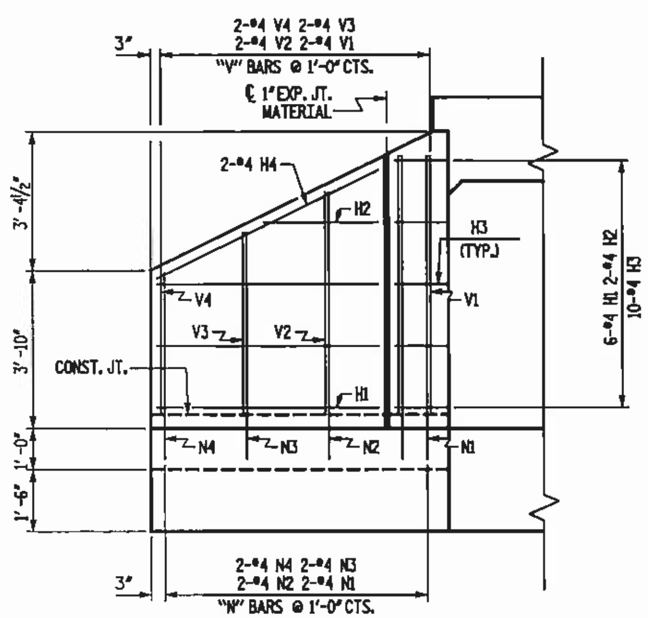
EXPANSION JOINT DETAIL



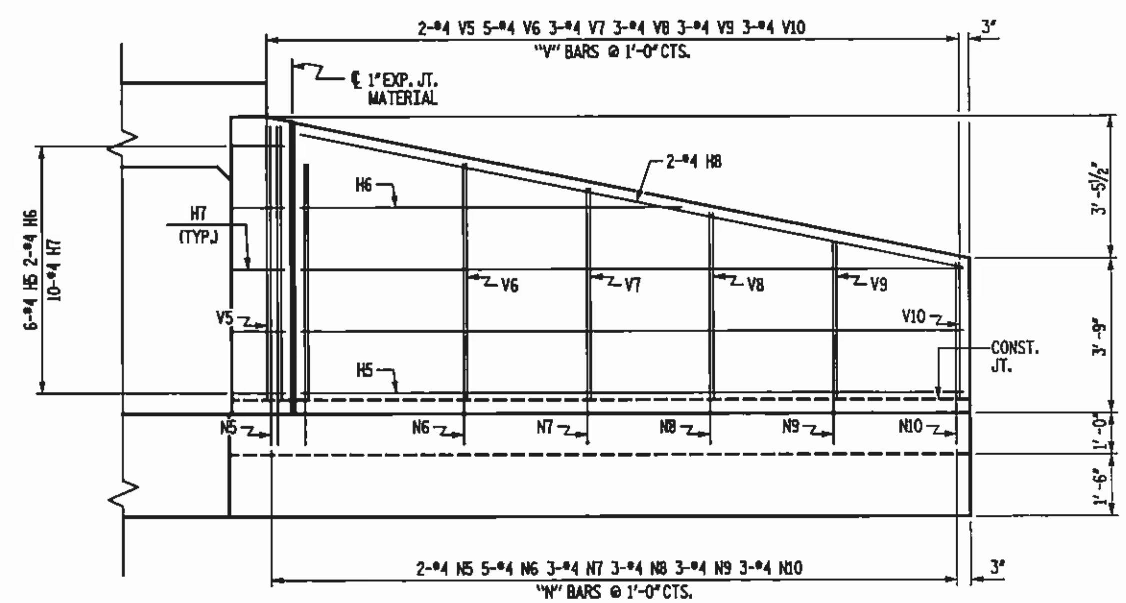
PLAN W2



PLAN W1



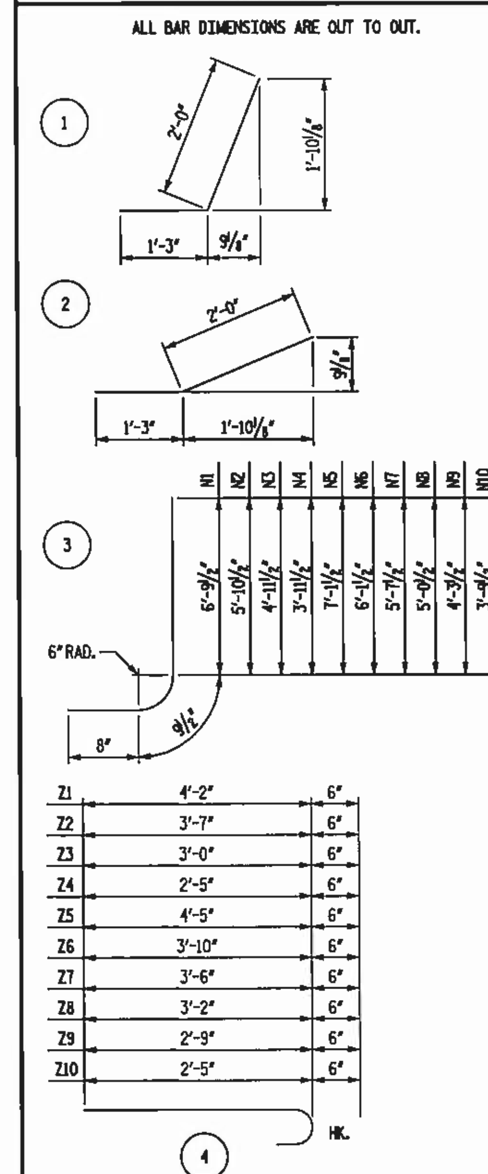
ELEVATION W2



ELEVATION W1

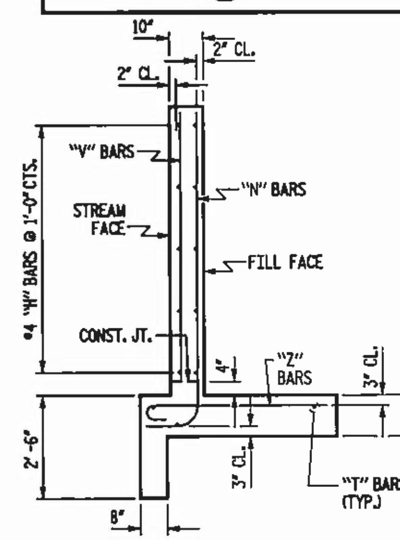
BAR TYPES

ALL BAR DIMENSIONS ARE OUT TO OUT.



BILL OF MATERIAL

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
H1	6	#4	STR	5'-4"	21
H2	2	#4	STR	2'-9"	4
H3	10	#4	1	3'-3"	22
H4	2	#4	STR	5'-11"	8
H5	6	#4	STR	16'-1"	64
H6	2	#4	STR	9'-3"	12
H7	10	#4	2	3'-3"	22
H8	2	#4	STR	16'-5"	22
N1	2	#4	3	8'-3"	11
N2	2	#4	3	7'-4"	10
N3	2	#4	3	6'-5"	9
N4	2	#4	3	5'-5"	7
N5	2	#4	3	8'-7"	11
N6	5	#4	3	7'-7"	25
N7	3	#4	3	7'-1"	14
N8	3	#4	3	6'-6"	13
N9	3	#4	3	5'-9"	12
N10	3	#4	3	5'-3"	11
S1	6	#6	STR	6'-0"	54
T1	2	#5	STR	7'-3"	15
T2	1	#5	STR	8'-0"	8
T3	3	#5	STR	18'-0"	56
V1	2	#4	STR	6'-3"	9
V2	2	#4	STR	5'-4"	7
V3	2	#4	STR	4'-5"	6
V4	2	#4	STR	3'-5"	5
V5	2	#4	STR	6'-7"	8
V6	5	#4	STR	5'-8"	18
V7	3	#4	STR	5'-1"	10
V8	3	#4	STR	4'-6"	9
V9	3	#4	STR	3'-9"	8
V10	3	#4	STR	3'-3"	7
Z1	2	#4	4	4'-8"	6
Z2	2	#4	4	4'-1"	5
Z3	2	#4	4	3'-6"	5
Z4	2	#4	4	2'-11"	4
Z5	2	#4	4	4'-11"	7
Z6	5	#4	4	4'-4"	15
Z7	3	#4	4	4'-0"	8
Z8	3	#4	4	3'-8"	7
Z9	3	#4	4	3'-3"	7
Z10	3	#4	4	2'-11"	6
REINFORCING STEEL FOR 2 WINGS				588	LBS
CLASS A CONCRETE					
2 WINGS				9.3	CY
1 HEADWALLS				1.9	CY
1 END CURTAIN WALLS				2.3	CY
1 SILL				1.0	CY
TOTAL				14.5	CY



TYPICAL WING SECTION

PROJECT NO. 42567
COUNTY: ALLEGHANY
STATION: 16+50.00
REPLACES BRIDGE NO. 115

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD WINGS FOR CONCRETE BOX CULVERT
H = 6'-0" SLOPE = 2:1
137°00'00" SKEW

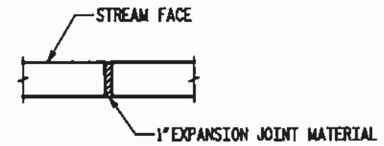
Florence & Hutcheson
CONSULTING ENGINEERS
5121 Kingdom Way, Suite 100 Raleigh, NC 27607
NC License No: F-0266

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER JAMES E. MONDOLFI
8-16-10

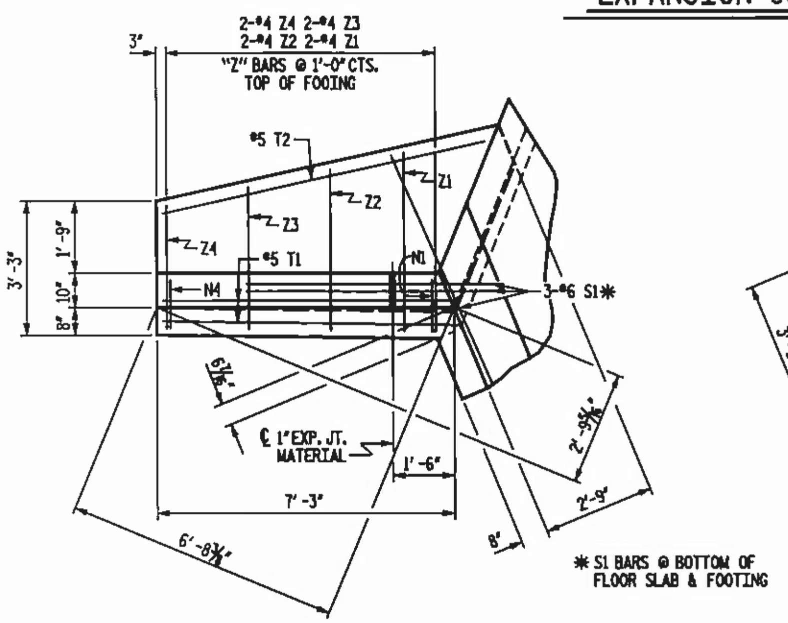
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	3
1			3			TOTAL SHEETS
2			4			19

DRAWN BY: K.M. MOBLEY DATE: JUNE 2009
CHECKED BY: J.E. MONDOLFI DATE: JUNE 2009

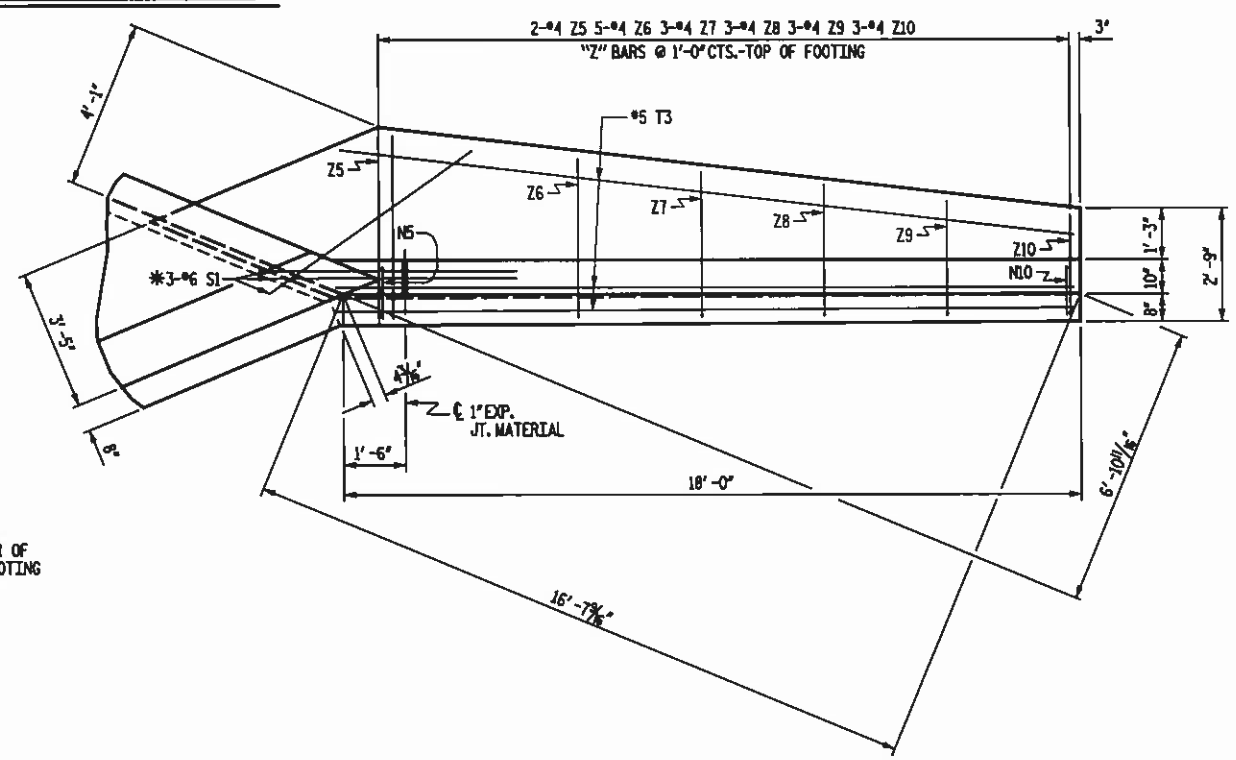
NOT TO SCALE



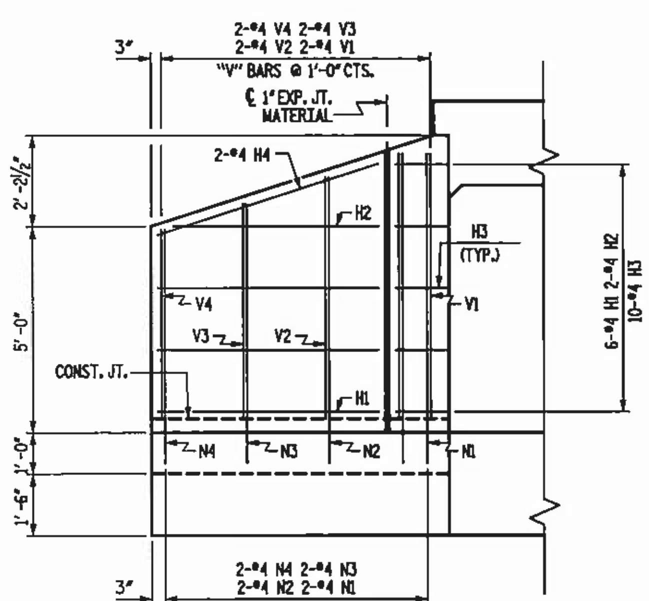
EXPANSION JOINT DETAIL



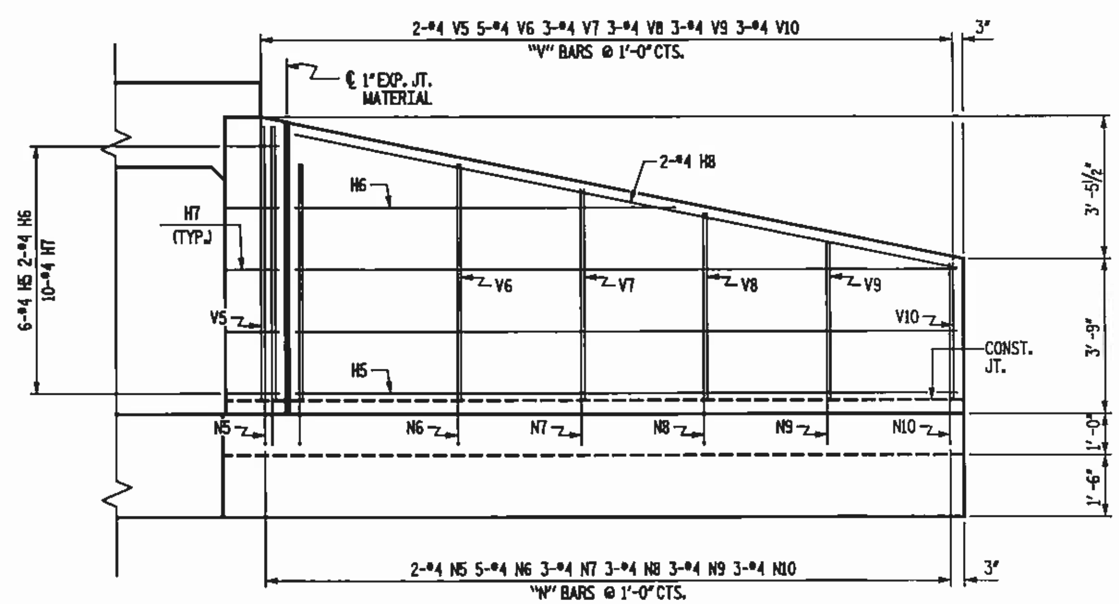
PLAN W3



PLAN W4



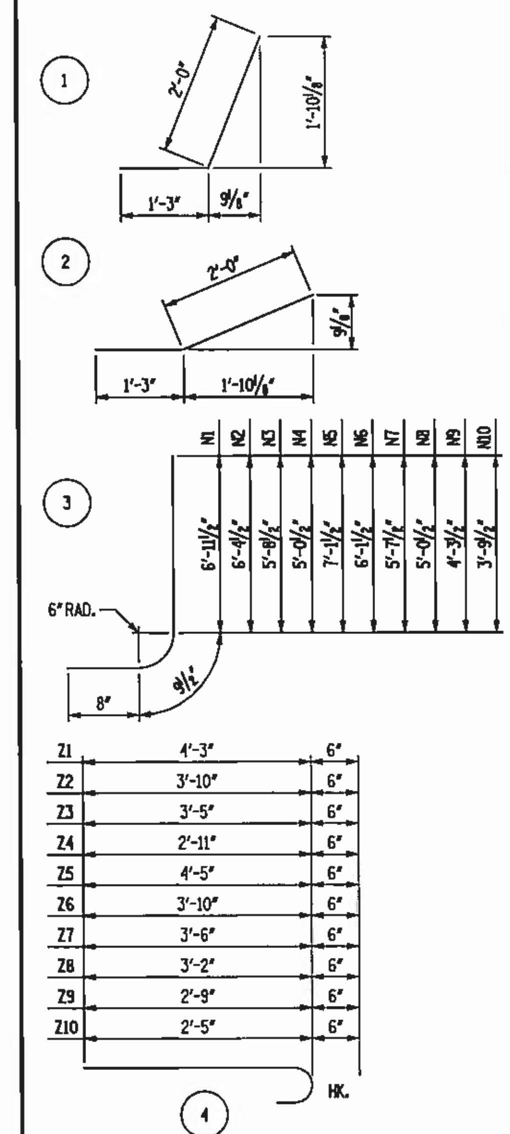
ELEVATION W3



ELEVATION W4

BAR TYPES

ALL BAR DIMENSIONS ARE OUT TO OUT.



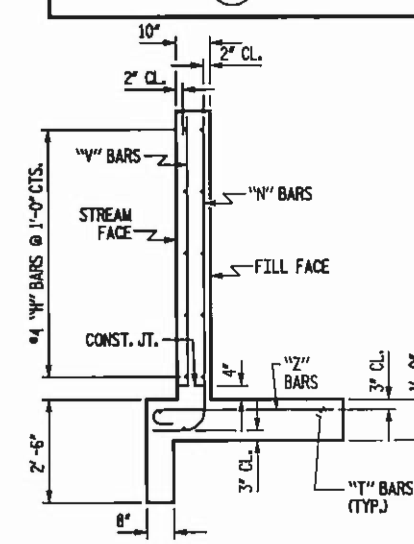
Z1	4'-3"	6"
Z2	3'-10"	6"
Z3	3'-5"	6"
Z4	2'-11"	6"
Z5	4'-5"	6"
Z6	3'-10"	6"
Z7	3'-6"	6"
Z8	3'-2"	6"
Z9	2'-9"	6"
Z10	2'-5"	6"

BILL OF MATERIAL

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
H1	6	#4	STR	5'-4"	21
H2	2	#4	STR	4'-11"	7
H3	10	#4	1	3'-3"	22
H4	2	#4	STR	5'-7"	7
H5	6	#4	STR	16'-1"	64
H6	2	#4	STR	9'-3"	12
H7	10	#4	2	3'-3"	22
H8	2	#4	STR	16'-5"	22
N1	2	#4	3	8'-5"	11
N2	2	#4	3	7'-10"	10
N3	2	#4	3	7'-2"	10
N4	2	#4	3	6'-6"	9
N5	2	#4	3	8'-7"	11
N6	5	#4	3	7'-7"	25
N7	3	#4	3	7'-1"	14
N8	3	#4	3	6'-6"	13
N9	3	#4	3	5'-9"	12
N10	3	#4	3	5'-3"	11
S1	6	#6	STR	6'-0"	54
T1	2	#5	STR	7'-3"	15
T2	1	#5	STR	8'-0"	8
T3	3	#5	STR	18'-0"	56
V1	2	#4	STR	6'-5"	9
V2	2	#4	STR	5'-10"	8
V3	2	#4	STR	5'-2"	7
V4	2	#4	STR	4'-6"	6
V5	2	#4	STR	6'-7"	8
V6	5	#4	STR	5'-8"	18
V7	3	#4	STR	5'-1"	10
V8	3	#4	STR	4'-6"	9
V9	3	#4	STR	3'-9"	8
V10	3	#4	STR	3'-3"	7
Z1	2	#4	4	4'-9"	6
Z2	2	#4	4	4'-4"	6
Z3	2	#4	4	3'-11"	5
Z4	2	#4	4	3'-5"	5
Z5	2	#4	4	4'-11"	7
Z6	5	#4	4	4'-4"	15
Z7	3	#4	4	4'-0"	8
Z8	3	#4	4	3'-8"	7
Z9	3	#4	4	3'-3"	7
Z10	3	#4	4	2'-11"	6

REINFORCING STEEL FOR 2 WINGS — 598 LBS

CLASS A CONCRETE
- 2 WINGS — 9.6 CY
- 1 HEADWALLS — 1.9 CY
- 1 END CURTAIN WALLS — 2.3 CY
- TOTAL — 13.8 CY



TYPICAL WING SECTION

PROJECT NO. 42567
COUNTY: ALLEGHANY
STATION: 16+50.00
REPLACES BRIDGE NO. 115

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD WINGS FOR CONCRETE BOX CULVERT
H = 6'-0" SLOPE = 2:1 (3:1)
137°00'00" SKEW

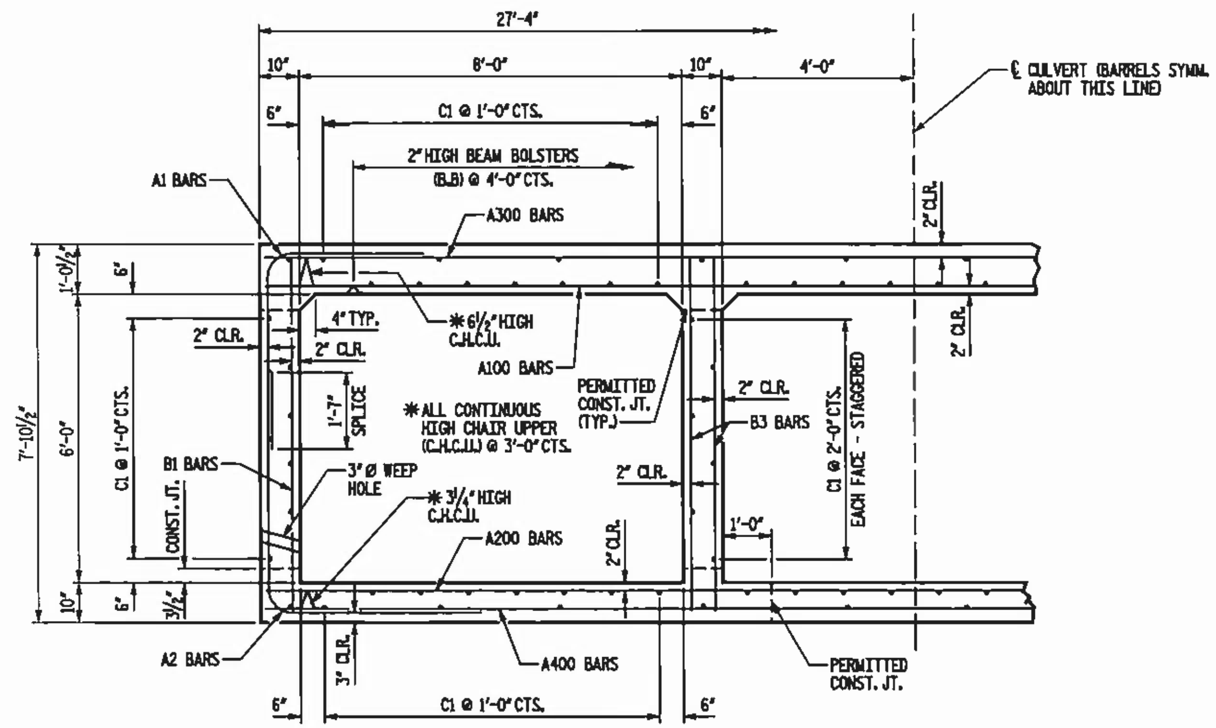
Florence & Hutcheson
CONSULTING ENGINEERS
3121 Kingston Way, Suite 100 Raleigh, NC 27607
NC License No: F-0258

8-16-10

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	4
1			3			TOTAL SHEETS
2			4			19

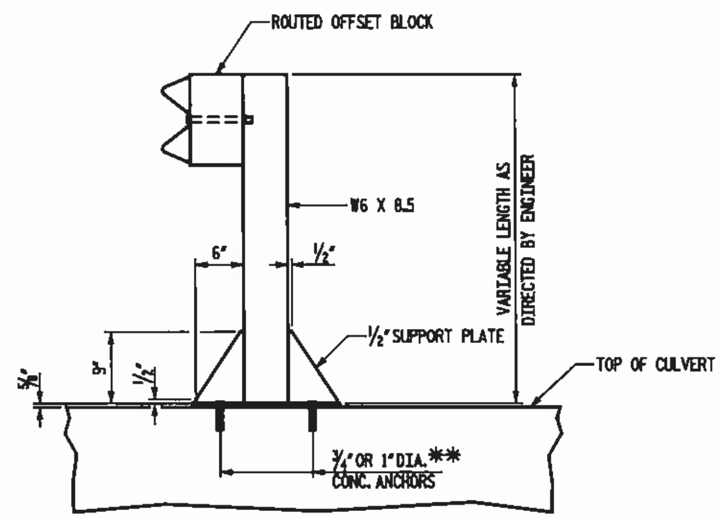
NOT TO SCALE

DRAWN BY: D.H. CARTER DATE: JUNE 2009
CHECKED BY: J.E. MONDOLFI DATE: JUNE 2009

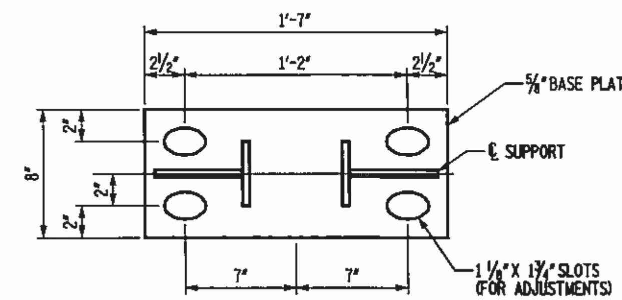


RIGHT ANGLE SECTION OF BARREL

THERE ARE 94 "C" BARS IN SECTION OF BARREL.



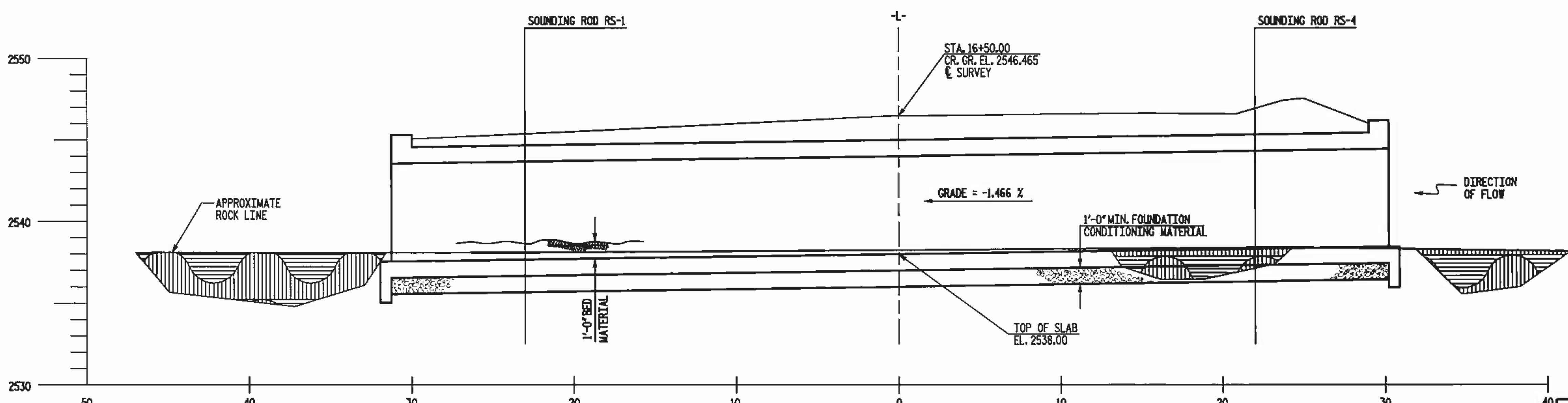
ELEVATION



PLAN

ANCHORAGE FOR GUARDRAIL

✱✱LOCATION OF CONCRETE ANCHORS FOR GUARDRAIL ANCHORAGE SHALL BE VERIFIED BY FIELD ENGINEER.



ROCK PROFILE ALONG ℄ CULVERT

(LOOKING BACK STATION)

NOT TO SCALE

PROJECT NO. 42567
COUNTY: ALLEGHANY
STATION: 16+50.00
REPLACES BRIDGE NO. 115

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TRIPLE 8 FT. X 6 FT. CONCRETE BOX CULVERT 137°00'00" SKEW

Florence & Hutcheson
CONSULTING ENGINEERS
5121 Kingston Way, Suite 100 Raleigh, NC 27607
NC License No: F-0258

8-16-10

REVISIONS							SHEET NO.
NO.	BY	DATE	NO.	BY	DATE		5
1			3				TOTAL SHEETS
2			4				19

DRAWN BY: K.M. MOBLEY DATE: JUNE 2009
CHECKED BY: B.E. ATKINSON DATE: JUNE 2009

TOTAL STRUCTURE QUANTITIES

CLASS A CONCRETE				
BARREL @	2.626	CY/FT	161.5	C.Y.
WING ETC.			28.3	C.Y.
TOTAL			189.8	C.Y.
REINFORCING STEEL				
BARREL			29,829	LBS.
WINGS ETC.			1,186	LBS.
TOTAL			30,015	LBS.
CULVERT EXCAVATION & FOUNDATION CONDITIONING MATERIAL			------ LUMP SUM	

REINFORCING STEEL BAR SCHEDULE

LOCATION		BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	H LEG	V LEG
TOP SLAB POSV	MAIN	A100	46	6	STR	26'-11"	1860		
TOP SLAB POSV	CUTS	A101	2	6	STR	26'-5"	79		
		A102	4	6	STR	25'-1"	151		
		A103	4	6	STR	23'-9"	143		
		A104	4	6	STR	22'-5"	135		
		A105	4	6	STR	21'-1"	127		
		A106	4	6	STR	19'-9"	119		
		A107	4	6	STR	18'-6"	111		
		A108	4	6	STR	17'-2"	103		
		A109	4	6	STR	15'-10"	95		
		A110	4	6	STR	14'-6"	87		
		A111	4	6	STR	13'-2"	79		
		A112	4	6	STR	11'-10"	71		
		A113	4	6	STR	10'-6"	63		
		A114	4	6	STR	9'-3"	56		
		A115	4	6	STR	7'-11"	48		
		A116	4	6	STR	6'-7"	40		
		A117	4	6	STR	5'-3"	32		
		A118	4	6	STR	3'-11"	24		
		A119	4	6	STR	2'-7"	16		
BOT SLAB POSV	MAIN	A200	43	4	STR	26'-11"	935		
BOT SLAB POSV	CUTS	A201	2	4	STR	25'-5"	34		
		A202	4	4	STR	25'-0"	67		
		A203	4	4	STR	23'-7"	63		
		A204	4	4	STR	22'-2"	59		
		A205	4	4	STR	20'-9"	55		
		A206	4	4	STR	19'-5"	52		
		A207	4	4	STR	18'-0"	48		
		A208	4	4	STR	16'-7"	44		
		A209	4	4	STR	15'-2"	41		
		A210	4	4	STR	13'-10"	37		
		A211	4	4	STR	12'-5"	33		
		A212	4	4	STR	11'-0"	29		
		A213	4	4	STR	9'-7"	26		
		A214	4	4	STR	8'-2"	22		
		A215	4	4	STR	6'-10"	18		
		A216	4	4	STR	5'-5"	14		
		A217	4	4	STR	4'-0"	11		
		A218	4	4	STR	2'-7"	7		

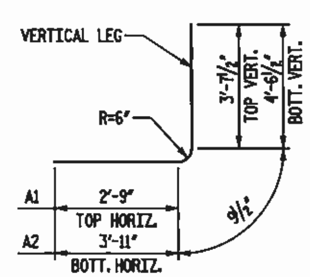
REINFORCING STEEL BAR SCHEDULE

LOCATION		BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	H LEG	V LEG
TOP SLAB NEGV	MAIN	A300	52	7	STR	26'-11"	2861		
TOP SLAB NEGV	CUTS	A301	2	7	STR	26'-5"	108		
		A302	4	7	STR	25'-4"	207		
		A303	4	7	STR	24'-2"	198		
		A304	4	7	STR	23'-0"	188		
		A305	4	7	STR	21'-10"	179		
		A306	4	7	STR	20'-8"	169		
		A307	4	7	STR	19'-6"	159		
		A308	4	7	STR	18'-4"	150		
		A309	4	7	STR	17'-2"	140		
		A310	4	7	STR	16'-0"	131		
		A311	4	7	STR	14'-10"	121		
		A312	4	7	STR	13'-8"	112		
		A313	4	7	STR	12'-6"	102		
		A314	4	7	STR	11'-4"	93		
		A315	4	7	STR	10'-2"	83		
		A316	4	7	STR	9'-0"	74		
		A317	4	7	STR	7'-10"	64		
		A318	4	7	STR	6'-8"	55		
		A319	4	7	STR	5'-6"	45		
		A320	4	7	STR	4'-4"	35		
		A321	4	7	STR	3'-2"	26		
BOT SLAB NEGV	MAIN	A400	52	7	STR	26'-11"	2971		
BOT SLAB NEGV	CUTS	A401	2	7	STR	26'-10"	110		
		A402	4	7	STR	25'-8"	210		
		A403	4	7	STR	24'-6"	200		
		A404	4	7	STR	23'-4"	191		
		A405	4	7	STR	22'-2"	181		
		A406	4	7	STR	21'-0"	172		
		A407	4	7	STR	19'-10"	162		
		A408	4	7	STR	18'-8"	153		
		A409	4	7	STR	17'-6"	143		
		A410	4	7	STR	16'-4"	134		
		A411	4	7	STR	15'-2"	124		
		A412	4	7	STR	14'-0"	114		
		A413	4	7	STR	12'-10"	105		
		A414	4	7	STR	11'-8"	95		
		A415	4	7	STR	10'-6"	86		
		A416	4	7	STR	9'-4"	76		
		A417	4	7	STR	8'-2"	67		
		A418	4	7	STR	7'-0"	57		
		A419	4	7	STR	5'-10"	48		
		A420	4	7	STR	4'-8"	38		
		A421	4	7	STR	3'-6"	29		
CORNER (TOP)		A1	196	5	6	7'-2"	1390	2'-9"	3'-7½"
CORNER (BOTTOM)		A2	196	7	6	9'-3"	3517	3'-11"	4'-6½"
EXTWALL IN		B1	156	4	STR	7'-5"	773		
INTWALL		B3	328	5	STR	7'-5"	2537		
LONGTD (3)		C1	282	4	STR	21'-9"	4097		
HEADWL (1)		G1	8	5	STR	39'-7"	330		
ENDS (1)		S2	12	8	STR	39'-7"	1268		
SILL (1)		O1	4	6	STR	2'-5"	15		

REINFORCING STEEL 29,829 LBS.

SPLICE LENGTH CHART

BAR	SIZE	SPLICE LENGTH
A200	4	1'-9"
A400	6	2'-4"
B1	4	1'-9"
B3	5	1'-9"
C1	4	1'-11"



BAR TYPE 6

BAR DIMENSIONS ARE OUT TO OUT

PROJECT NO. 42567
COUNTY: ALLEGHANY
STATION: 16+50.00
REPLACES BRIDGE NO. 115

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TRIPLE 8 FT. X 6 FT. CONCRETE BOX CULVERT
137°00'00" SKEW

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

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 20532 JAMES E. MONDOLFI
8-16-10

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	6
1			3			TOTAL SHEETS
2			4			19

DRAWN BY: D.H. CARTER DATE: JUNE 2009
CHECKED BY: J.E. MONDOLFI DATE: JUNE 2009

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
BK-5116	
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 19686 ENGINEER ALLEN WILLIS — 8/11/2010

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 19732 ENGINEER HSINCHEN FUH — 8-16-2010

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "GPS-1"
WITH NAD 83 STATE PLANE GRID COORDINATES OF
NORTHING: 1019112.8870(ft) EASTING: 1315278.3980(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.00011127583
THE NC LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS-1" TO -L- STATION 13+50 IS
N 55° 57' 32.2" E 310.83'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

PI Sta 10+58.47
Δ = 7° 35' 34.4" (LT)
D = 6° 30' 09.7"
L = 116.77'
T = 58.47'
R = 881.11'

PI Sta 13+05.49
Δ = 13° 18' 43.4" (LT)
D = 7° 09' 43.1"
L = 185.87'
T = 93.36'
R = 800.00'

PI Sta 19+61.57
Δ = 22° 48' 11.4" (RT)
D = 8° 40' 52.2"
L = 262.67'
T = 133.10'
R = 660.00'

PI Sta 21+68.73
Δ = 5° 10' 46.5" (RT)
D = 4° 13' 34.7"
L = 122.56'
T = 61.32'
R = 1,355.69'

NC GRID NAD 83

PT Sta. 11+16.77

PC Sta. 12+12.13

PT Sta. 13+98.00

BEGIN CONSTRUCTION
-L- STA 13+50

EST. 2 TONS CLASS 'A' RIPRAP
EST. 7 SY. FILTER FABRIC

GLENN J. BARE LIVING TRUST and ALMAREA G. BARE LIVING TRUST
D.B. 250 PG. 1056

-BL- 3 PINC 11+87.28 =
-L- 17+23.38, 9.17' LT

SIDNEY W. STURGILL
D.B. 64 PG. 236

-BL- 4 PINC 14+72.00 =
-L- STA 20+06.21, 12.22' LT

EXPRESSWAY GUTTER
STA 14+00 TO STA 16+95 LT

GLENN STEVEN BARE
D.B. 186 PG. 160

TO RIVER MOUNTAIN DRIVE

KINGS CREEK ROAD SR 1308

N 59° 49' 06.0" E

N 46° 30' 28.0" E

N 69° 18' 33.9" E

KINGS CREEK

PINEY CREEK SCHOOL ROAD

-BL- 1 PINC 5+00.00 =
-L- STA 10+40.18, 12.44' RT

-BL- 2 PINC 7+59.36 =
-L- STA 12+97.25 13.80' RT

END CONSTRUCTION
-L- STA 18+50

PC Sta. 18+28.47

PT Sta. 20+91.14

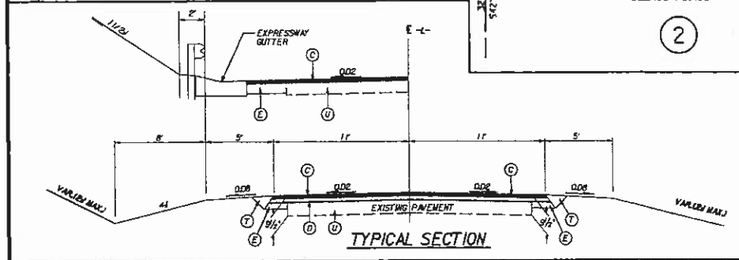
PC Sta. 21+07.41

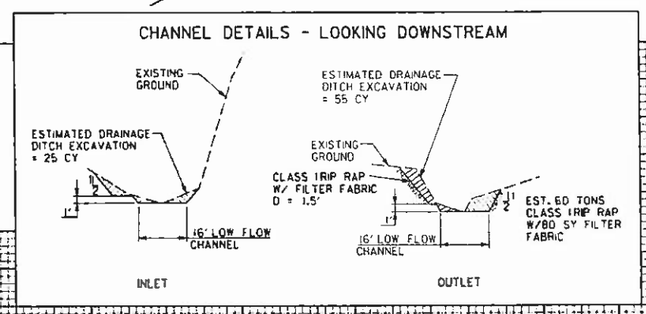
PT Sta. 22+29.97

BM # 1
-L- STA. 18+80.83, 9.23' LT
EL. 2548.32

PAVEMENT SCHEDULE

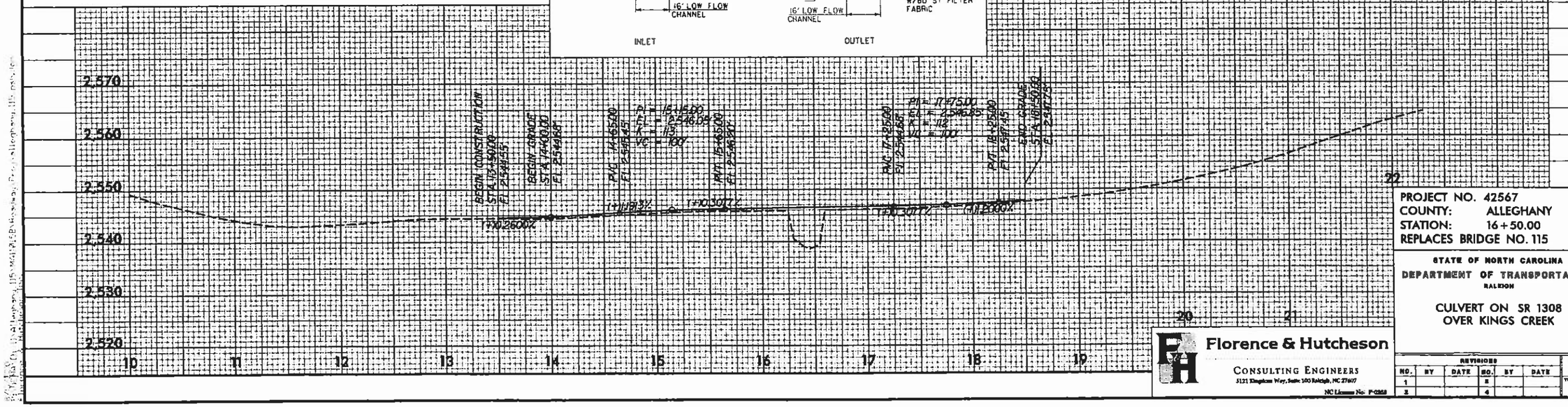
(C)	3" SURFACE COURSE, TYPE S9.5B
(D)	2½" INTERMEDIATE COURSE, TYPE I19.0B
(E)	4" BASE COURSE, TYPE B25.0B
(T)	EARTH MATERIAL
(U)	EXISTING PAVEMENT





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	GLENN J. BARE and ALMAREA G. BARE LIVING TRUST					0.16 AC	562 S.F.	
2	GLENN STEVEN BARE					0.11 AC	940 S.F.	



PROJECT NO. 42567
COUNTY: ALLEGHANY
STATION: 16+50.00
REPLACES BRIDGE NO. 115

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CULVERT ON SR 1308
OVER KINGS CREEK

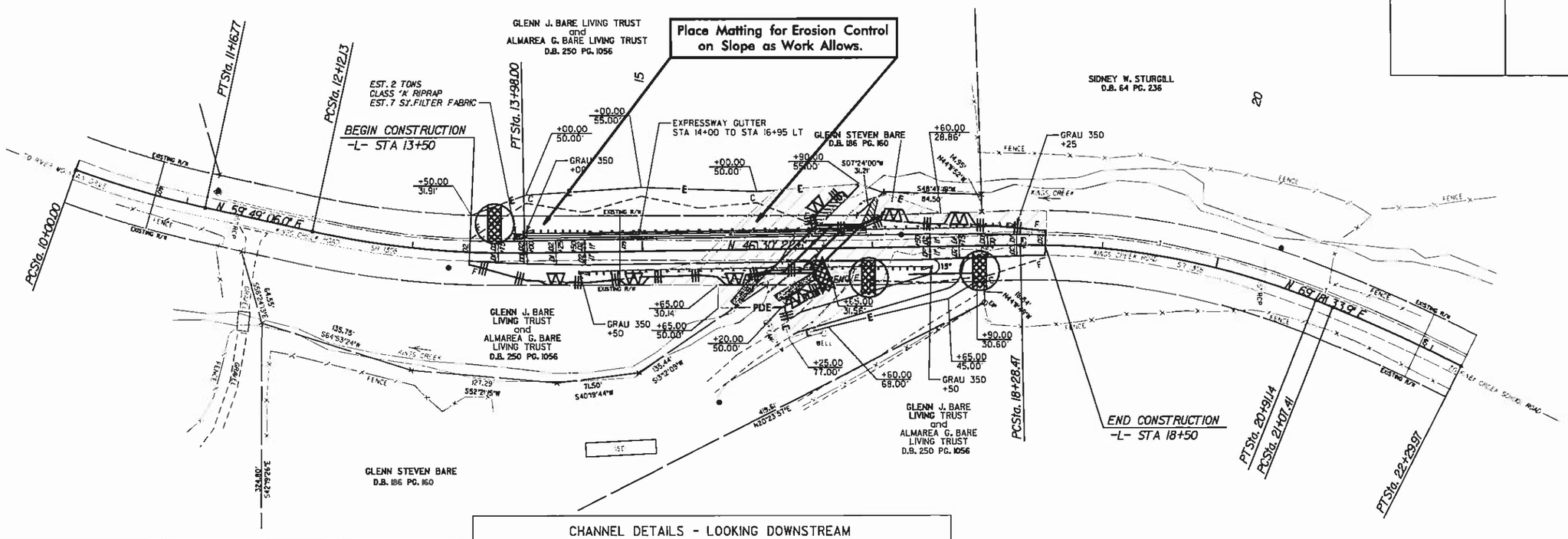
Florence & Hutcheson
CONSULTING ENGINEERS
3121 Kingdom Way, Suite 100 Raleigh, NC 27607
NC License No. P-0268

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	7
1			3			TOTAL SHEETS
2			4			19

8/17/94

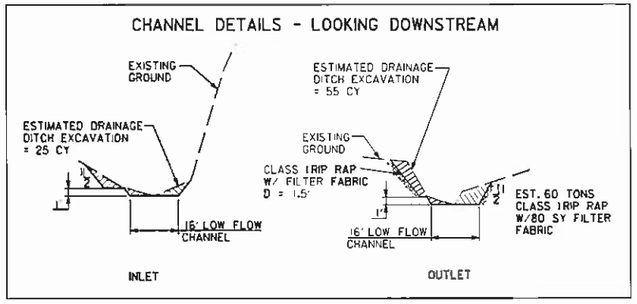
EROSION CONTROL PLAN

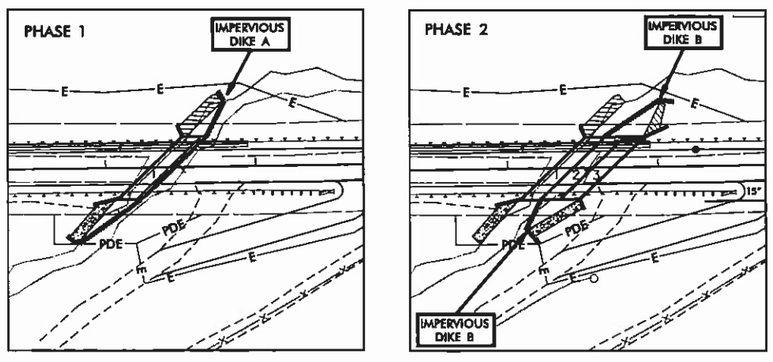
PROJECT REFERENCE NO.	SHEET NO.
BK-5116	EC-1
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	

CHANNEL DETAILS - LOOKING DOWNSTREAM





CULVERT CONSTRUCTION SEQUENCE

PHASE 1

1. UTILIZE SPECIAL STILLING BASIN(S) AS NEEDED THROUGHOUT CULVERT CONSTRUCTION.
2. CONSTRUCT IMPERVIOUS DIKE A.
3. CONSTRUCT CULVERT BARREL 1.

PHASE 2

4. REMOVE IMPERVIOUS DIKE A.
5. CONSTRUCT IMPERVIOUS DIKES B, DIVERTING FLOW INTO BARREL 1.
6. CONSTRUCT CULVERT BARRELS 2 AND 3.
7. REMOVE IMPERVIOUS DIKES B AND SPECIAL STILLING BASIN(S).
8. COMPLETE INLET/OUTLET CHANNEL IMPROVEMENTS.
9. COMPLETE ROADWAY.

ENVIRONMENTALLY SENSITIVE AREA
PLEASE SEE HIGH QUALITY WATERS SPECIAL PROVISION

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

2006 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.

EROSION CONTROL PLAN AND DETAILS ARE PROVIDED BY THE NCDOT ROADSIDE ENVIROMENTAL UNIT

PROJECT NO. 42567
COUNTY: ALLEGHANY
STATION: 16+50.00
REPLACES BRIDGE NO. 115

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CULVERT ON SR 1308
OVER KINGS CREEK

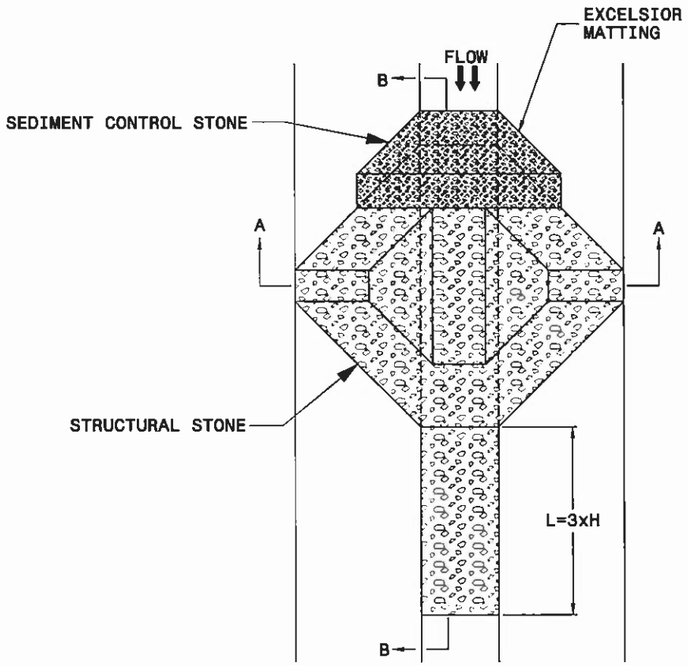
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	8
1			3			TOTAL SHEETS
2			4			19

5/17/24

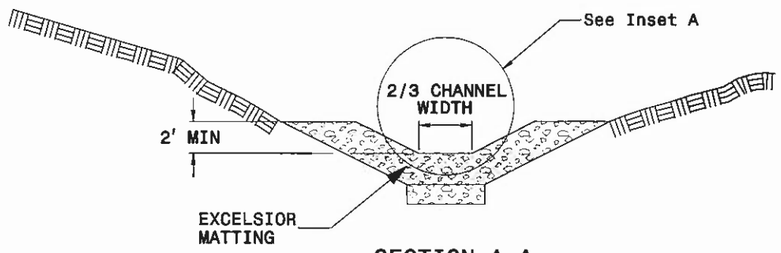
PROJECT REFERENCE NO.	SHEET NO.
BK-5116	EC-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

EROSION CONTROL PLAN

TEMPORARY ROCK SILT CHECK TYPE 'A' WITH EXCELSIOR MATTING AND POLYACRYLAMIDE (PAM)



PLAN



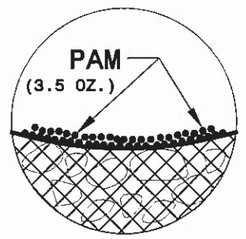
SECTION A-A

NOTES

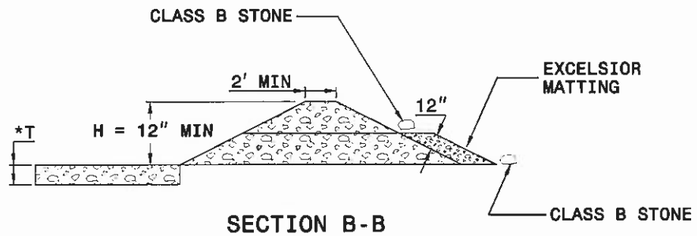
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH ROCK SILT CHECK.

INITIALLY APPLY 3.5 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION B-B

*T = 12" MIN., 18" MAX.

NOT TO SCALE

EROSION CONTROL PLAN AND DETAILS ARE PROVIDED BY THE NCDOT ROADSIDE ENVIROMENTAL UNIT

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

2006 STANDARD SPECIFICATIONS

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PROJECT NO. 42567
COUNTY: ALLEGHANY
STATION: 16+50.00
REPLACES BRIDGE NO. 115

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CULVERT ON SR 1308
OVER KINGS CREEK

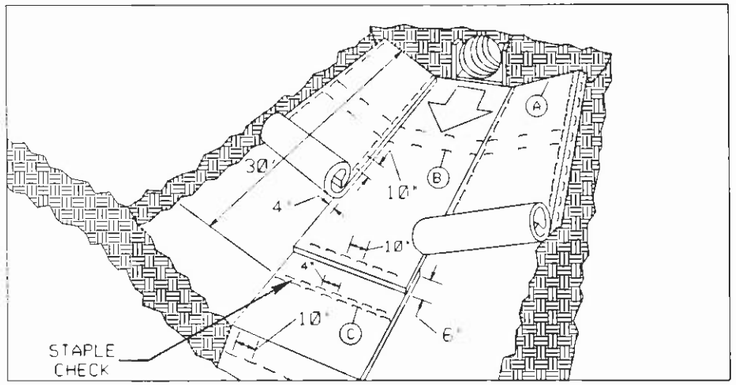
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	9
1			3			TOTAL SHEETS
2			4			19

8/1/99

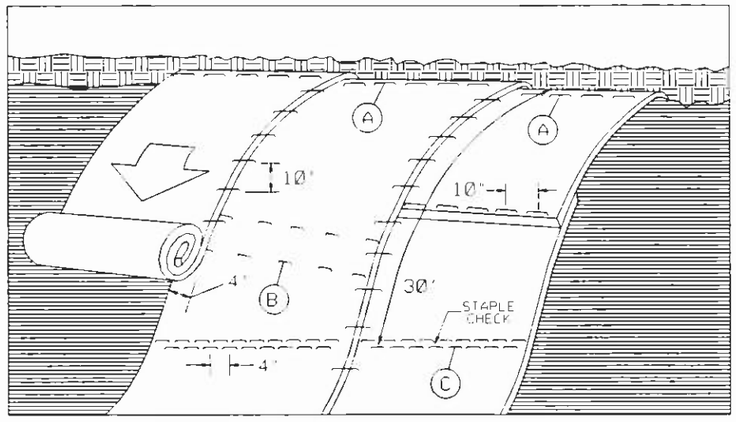
PROJECT REFERENCE NO.	SHEET NO.
BK-5116	EC-3
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

EROSION CONTROL PLAN

MATTING INSTALLATION DETAIL



MATTING IN DITCHES



MATTING ON SLOPES

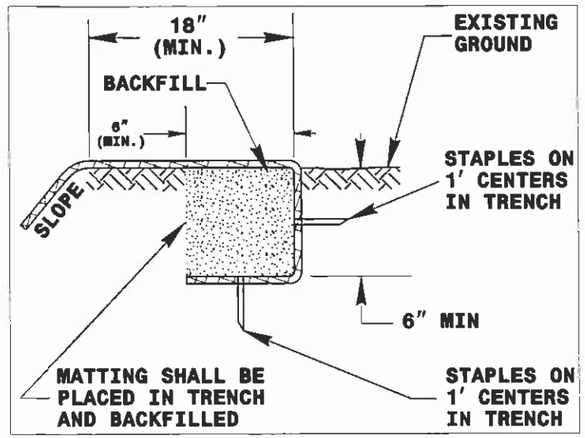


DIAGRAM (A)

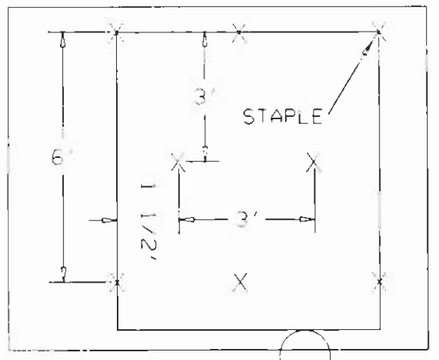


DIAGRAM (B)

STAPLE CHECK PATTERN

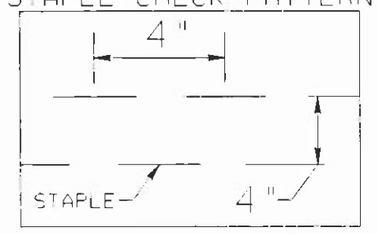


DIAGRAM (C)

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

2006 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.

NOTES:

THIS DETAIL APPLIES TO STRAW, EXCELSIOR, AND PERMANENT SOIL REINFORCEMENT MAT (PSRM) INSTALLATION.

STAPLES SHALL BE NO. 11 GAUGE STEEL WIRE FORMED INTO A "U" SHAPE WITH A MINIMUM THROAT WIDTH OF 1 INCH AND NOT LESS THAN 6 INCHES IN LENGTH.

NOT TO SCALE

EROSION CONTROL PLAN AND DETAILS ARE PROVIDED BY THE NCDOT ROADSIDE ENVIROMENTAL UNIT

PROJECT NO. 42567
COUNTY: ALLEGHANY
STATION: 16+50.00
REPLACES BRIDGE NO. 115

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CULVERT ON SR 1308
OVER KINGS CREEK

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	10
1			3			TOTAL SHEETS
2			4			19

PROJECT REFERENCE NO.	SHEET NO.
42567	
R/W SHEET NO.	

NORTH CAROLINA PROFESSIONAL SEAL 15876 ENGINEER MICHAEL W. HUTCHESON
8-16-10

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 JULY 2008 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
1145.01	BARRICADES
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE & MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	PAVEMENT MARKER SPACING
1251.01	RAISED PAVEMENT MARKERS (TEMPORARY & PERMANENT)
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) PROVIDE PERMANENT SIGNING.

C) PROVIDE DETOUR SIGNING WITHIN AND OFF THE PROJECT LIMITS.

D) COVER OR REMOVE ALL DETOUR SIGNS WITHIN AND OFF THE PROJECT LIMITS WHEN A DETOUR IS NOT IN OPERATION.

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

TRAFFIC CONTROL DEVICES

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

PAVEMENT MARKINGS AND MARKERS

G) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

ROAD NAME	MARKING
1. SR 1308 (KINGS CREEK RD.)	PAINT

H) PLACE AT LEAST TWO APPLICATIONS OF PAINT PAVEMENT MARKINGS ON THE FINAL WEARING SURFACE ON NEW ASPHALT PAVEMENT. PLACE ADDITIONAL APPLICATIONS OF PAINT UPON SUFFICIENT DRYING TIME, AS DETERMINED BY THE ENGINEER.

I) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

PHASE I

STEP 1: - USING ROADWAY STANDARD DRAWING NUMBER 1101.04, SHEET 1 OF 1, INSTALL ALL DETOUR SIGNING KEEPING SIGNS COVERED (SEE SHEET 11).

WORKING IN A CONTINUOUS MANNER, COMPLETE THE FOLLOWING WORK IN PHASE I, STEP 2.

STEP 2: - USING ROADWAY STANDARD DRAWING NUMBER 1101.03, SHEET 1 OF 9, CLOSE SR 1308 (KINGS CREEK RD.) TO TRAFFIC, UNCOVER ALL DETOUR SIGNING AND SHIFT TRAFFIC TO DETOUR (SEE SHEET 11).

STEP 3: - DISMANTLE AND REMOVE EXISTING BRIDGE NUMBER 115.

STEP 4: - COMPLETE CONSTRUCTION OF PROPOSED STRUCTURE, APPROACH ROADWAY TIE-INS, AND ASSOCIATED ITEMS.

STEP 5: - PLACE FINAL PAVEMENT MARKINGS (PAINT) ON SR 1308 (KINGS CREEK RD.).

WORKING IN A CONTINUOUS MANNER, COMPLETE THE FOLLOWING WORK IN PHASE I, STEP 6.

STEP 6: - USING ROADWAY STANDARD DRAWING NUMBER 1101.04, SHEET 1 OF 1, REMOVE ALL DETOUR SIGNING, ALL TRAFFIC CONTROL DEVICES AND OPEN SR 1308 (KINGS CREEK 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	2,000 LF		
PI	YELLOW DOUBLE CENTER LINE 2X	2,000 LF		
			TOTAL	4,000 LF

PROJECT NO. 42567
COUNTY: ALLEGHANY
STATION: 16+50.00
REPLACES BRIDGE NO. 115

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CULVERT ON SR 1308
OVER KINGS CREEK

Florence & Hutcheson
CONSULTING ENGINEERS
5131 Kingdom Way, Suite 100 Raleigh, NC 27607
NC License No. P-0334

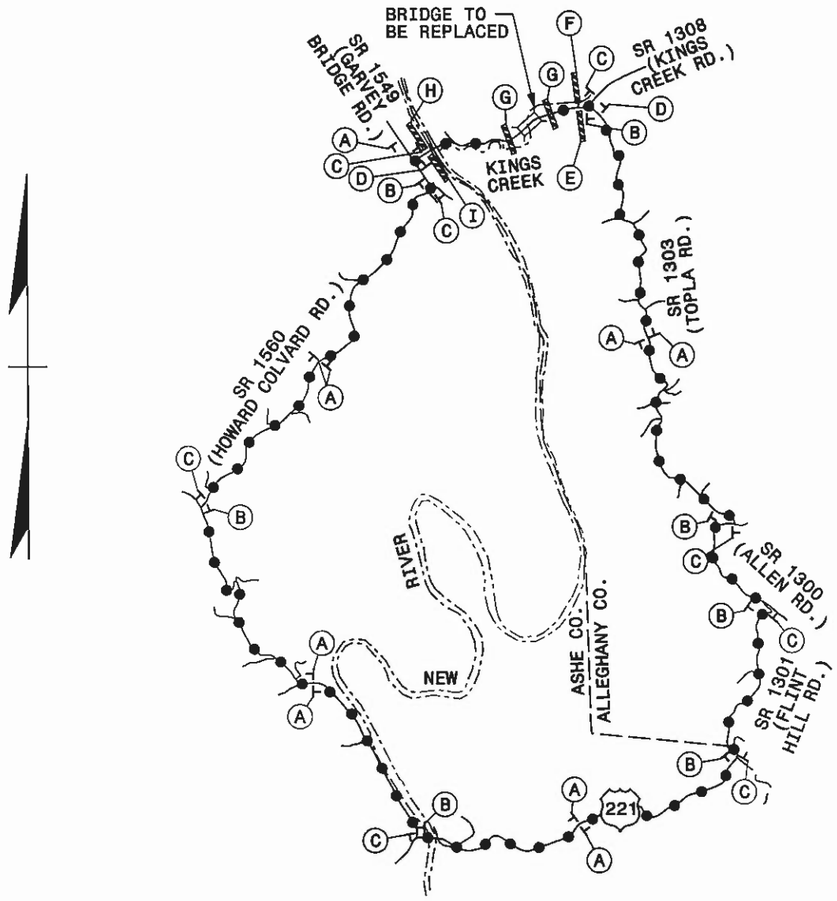
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	11
1			3			TOTAL SHEETS
2			4			19

8/16/2010
P:\MDA\Dyd1\Alleghany_115\MAU1058\TrafficControl\TCP\TCP1.dgn
Florence & Hutcheson, Inc.

PROJECT REFERENCE NO.	SHEET NO.
42567	
R/W SHEET NO.	

NORTH CAROLINA PROFESSIONAL SEAL 15876 ENGINEER MICHAEL LATEPKA
8-16-10

INDICATED DETOUR ROUTE IS TAKEN FROM THE COUNTY MAP. IT SHOULD BE EVALUATED BY THE DIVISION TRAFFIC PERSONNEL FOR BRIDGE POSTINGS, PAVEMENT CONDITIONS, SHOULDER CONDITIONS, ETC.. NOTIFY THE ENGINEER FOLLOWING THIS 90% REVIEW AS THE ACCEPTANCE OF THIS DETOUR ROUTE OR ANY CHANGES THAT NEED TO BE IMPLEMENTED.



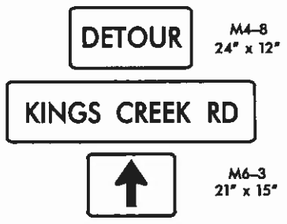
SIGN NUMB:
TYPE: B or D
QUANTITY:
SIGN WIDTH: 84 INCHES
HEIGHT: 16 INCHES
TOTAL AREA:(S.F.) 9.33
BORDR TYPE: FLUSH
RECESS: 0.00 INCHES
WIDTH: 0.75 INCHES
RADII: 3.00 INCHES
NO. Z BARS: #N/A VHB:
LENGTH: #N/A INCHES
BACKG COLOR: ORANGE
COPY COLOR: BLACK
MAJOR COPY SERIES: D
MAT'L: 0.125 " ALUMINUM
DESIGN BY: BLM
PROJECT ID: 42567
CK BY:
DIV: 11
STD #: 196
DATE: ########

USE NOTES: 1,4
1.Legend and border shall be direct applied Type III reflective sheeting.
2.Legend and border shall be direct applied Type I reflective sheeting.
3.Shields shall be Type III reflective sheeting on .032" aluminum and demountable.
4.Background shall be Type III refl. shtg.
5.Background shall be Type I refl. sheeting.
6.Center arrow(s) vertically on sign.

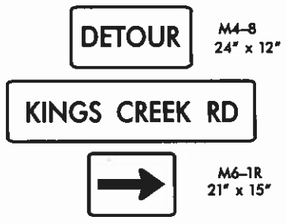
KINGS CREEK RD

VERTICAL SPACING	INCHES	[y]
	5.00	SPACE
	6.00	LINE 1
	D	11.0
	5.00	SPACE
	0.00	
	0.00	
	0.00	
	0.00	
	0.00	
	0.00	
	0.00	
	0.00	
	0.00	
TOTAL:	16	0.00

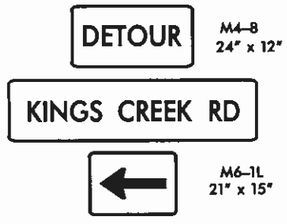
SIZE/	SERIES	LT MARGIN	SIGN COPY														RT MARGIN
CHAR:	6.00 INCH		K	I	N	O	S	C	R	E	E	K		R	D		
TYPE:	D	8.57	5.25	2.34	5.44	5.16	4.03	5.46	5.16	5.44	4.78	4.78	4.12	5.46	5.44	4.03	
#/LC:	0.00 INCH	[x]	8.57	13.81	19.15	24.59	28.74	34.76	39.24	44.39	49.83	54.61	58.39	63.51	68.67	72.40	
SPCE:	1.00 FACTOR																
	LINE 1		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.57
			75.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00



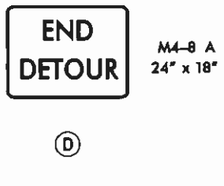
(A)



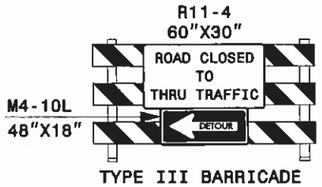
(B)



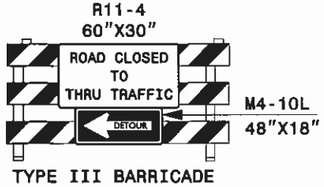
(C)



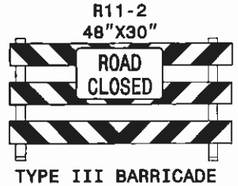
(D)



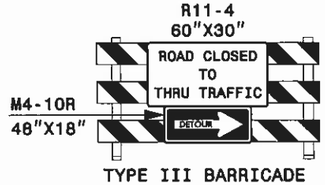
TYPE III BARRICADE
(E)



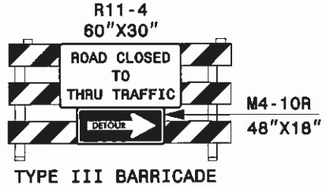
TYPE III BARRICADE
(F)



TYPE III BARRICADE
(G)



TYPE III BARRICADE
(H)



TYPE III BARRICADE
(I)

LEGEND
DETOUR ROUTE

PROJECT NO. 42567
COUNTY: ALLEGHANY
STATION: 16+50.00
REPLACES BRIDGE NO. 115

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CULVERT ON SR 1308
OVER KINGS CREEK

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CONSULTING ENGINEERS
5121 Kingdom Way, Suite 100 Raleigh, NC 27607
NC License No. P-0258

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	12
1			3			TOTAL SHEETS
2			4			19

8/16/2010
R:\Projects\Div-11-Alleghany_115\Mail\115B\TrafficControl\TCP\DETOUR.dgn
Florence & Hutcheson, pac

PROJ. REFERENCE NO.	SHEET NO.
BK-5116	13

0 10

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

2590
2580
2570
2560
2550
2540

2541.25

EP EP

13+50.00

13+00.00

8/23/99

9/10/2010
F:\NFMA\Dvill\Allegheny_115\MA115B\Roadway\Xsec\Allegheny_115_1.xpl.dgn

PROJ. REFERENCE NO.	SHEET NO.
BK-5116	14

0 10

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

2590
2580
2570
2560
2550
2540

14150.00

2544.34

2545.28

EP

EP

14100.00

2544.68

EP

EP

PROJ. REFERENCE NO.	SHEET NO.
BK-5116	15

0 10

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

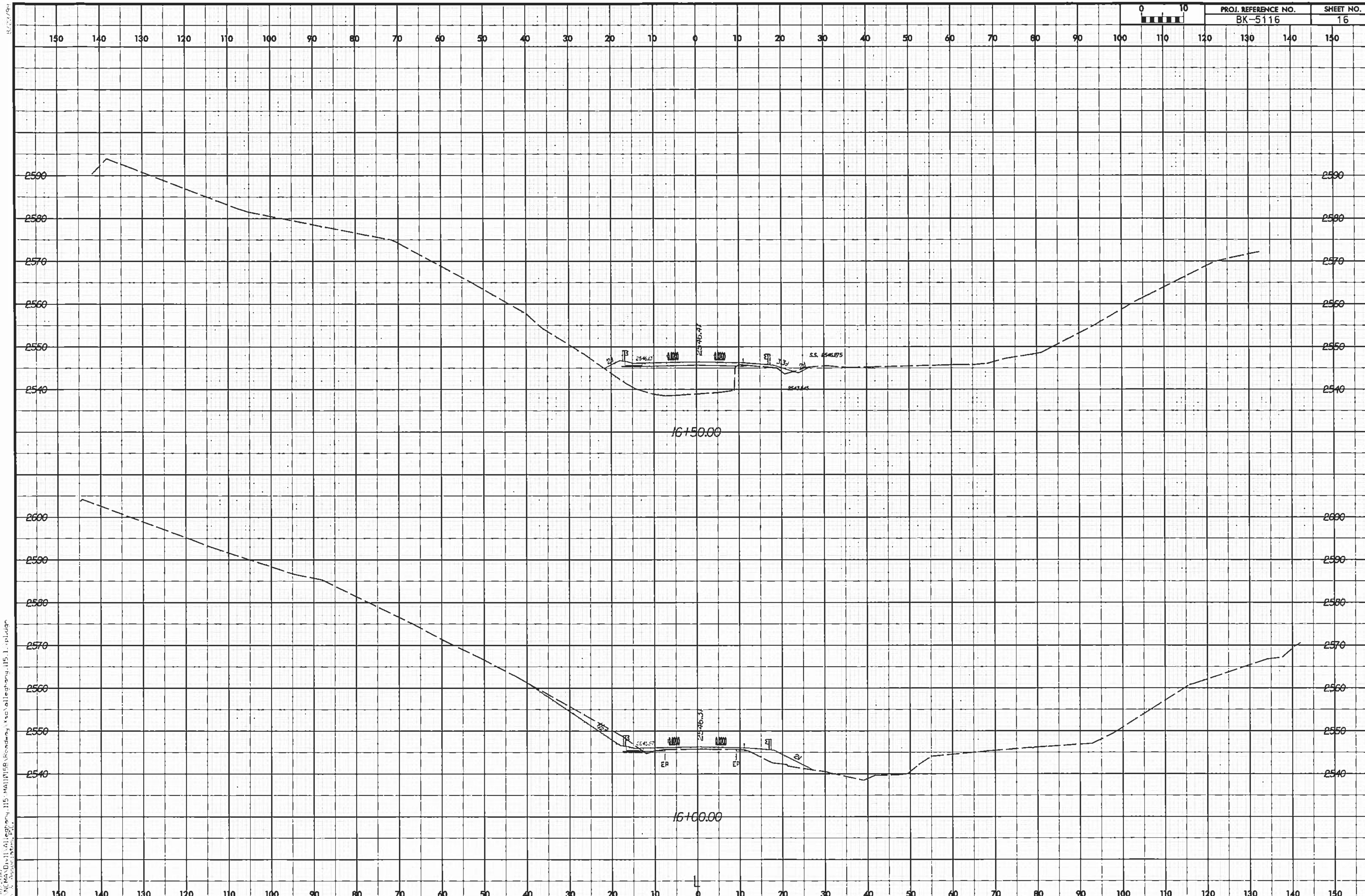
2600 2590 2580 2570 2560 2550 2540

EP EP

15+50.00

15+00.00

PROJ. REFERENCE NO.	SHEET NO.
BK-5116	16



PROJ. REFERENCE NO.	SHEET NO.
BK-5116	17

0 10

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

2580 2570 2560 2550 2540

23+46.20

SS. 2547.57E

EP EP

2541.81

17+50.00

2570 2560 2550 2540

23+46.62

SS. 2546.82D

EP EP

2541.92

17+00.00

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

9/10/2015
F:\NEMA\Civil\Allegheny_115 Mall\2156\Roadway\Xsc_Allegheny_115_1_pldgn

PROJ. REFERENCE NO.	SHEET NO.
BK-5116	18

0 10

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

2590
2580
2570
2560
2550

2547.75
EP
EP

18+50.00

2590
2580
2570
2560
2550

2547.18
EP
EP
S.S. 2548.339
2545.15

18+00.00

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

8/19/2016
P:\NEMA\Drill\Allegheny_115\Mailing\SB\Roadway\xsc_allegheny_115_1_sht.dgn

PROJ. REFERENCE NO.	SHEET NO.
BK-5116	19