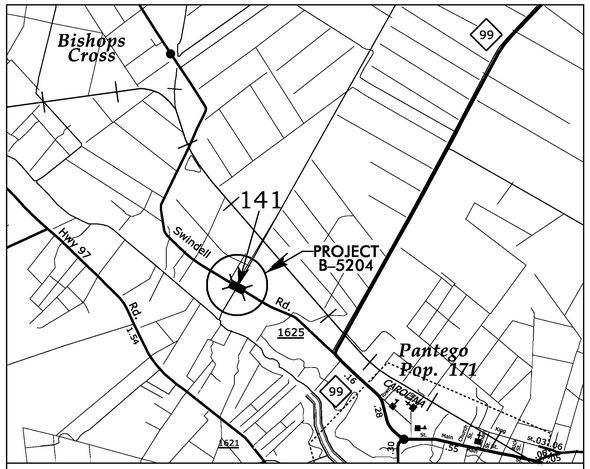
09/08/99

TIP PROJECT: B-5204

CONTRACT:

See Sheet 1-A For Index of Sheets



VICINITY MAP
(NOT TO SCALE)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BEAUFORT COUNTY

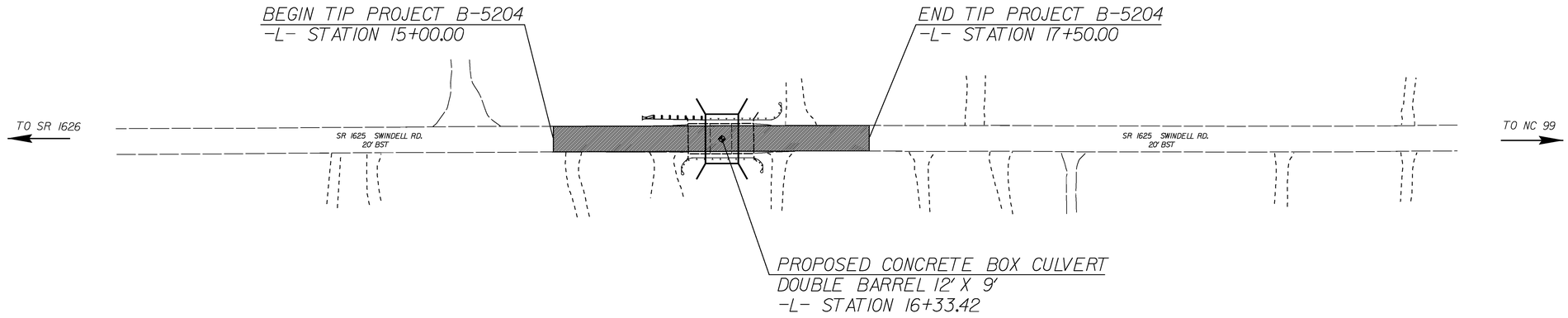
LOCATION: SR 1625 (SWINDELL RD), BRIDGE NO. 141 OVER PANTEGO DRAINAGE DISTRICT CANAL #14

TYPE OF WORK: REPLACE EXISTING BRIDGE WITH BOX CULVERT, PAVING, GRADING AND DRAINAGE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5204	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
45302.1.1	BRZ-1625(4)	PE
45302.2.1	BRZ-1625(4)	RW
45302.3.1	BRZ-1625(4)	CONST

NC GRID
NAD 83/NSRS 2007



GRAPHIC SCALES

30 15 0 30 60
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-5204 = 0.047 MILE

TOTAL LENGTH OF TIP PROJECT B-5204 = 0.047 MILE

Prepared In the Office of:
DIVISION OF HIGHWAYS
105 Pactolus Hwy, Greenville NC, 27835

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:

DWAYNE H. ALLIGOOD
PROJECT ENGINEER

LETTING DATE:
APRIL 2012

LANG JONES
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER DWAYNE H. ALLIGOOD

Dwayne H. Alligood P.E.
SIGNATURE: 04/09/2012

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER DWAYNE H. ALLIGOOD

Dwayne H. Alligood P.E.
SIGNATURE: 04/09/2012

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION *

P.E.
STATE HIGHWAY DESIGN ENGINEER

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PROJECT REFERENCE NO.	SHEET NO.
B-5204	1A

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
2	TYPICAL SECTIONS
3	SUMMARY OF QUANTITIES
3A	SUMMARY OF DRAINAGE, GUARDRAIL AND EARTHWORK QUANTITIES
4	PLAN SHEET
5	PROFILE SHEET
TCP1-TCP2	TRAFFIC CONTROL PLANS
EC1-EC3	EROSION CONTROL SHEETS
P1	PERMIT DRAWINGS
UC1-UC4	UTILITY CONSTRUCTION PLANS
UO1	UTILITIES BY OTHERS PLANS
X1A	CROSS-SECTION SUMMARY
X1-X2	CROSS-SECTIONS
C1-C5	DOUBLE BARREL CONCRETE BOX CULVERT PLANS

GENERAL NOTES:

2012 SPECIFICATIONS
EFFECTIVE: 01-17-12
REVISED: 11-01-11

GRADING AND SURFACING OR RESURFACING AND WIDENING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

GRADING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED OR FUTURE SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01.

SIDE ROADS:

THE CONTRACTOR WILL BE REQUIRED TO DO ALL NECESSARY WORK TO PROVIDE SUITABLE CONNECTIONS WITH ALL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PARTICULAR ITEMS INVOLVED.

GUARDRAIL:

THE GUARDRAIL LOCATIONS SHOWN ON THE PLANS MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHOULD CONSULT WITH THE ENGINEER PRIOR TO ORDERING GUARDRAIL MATERIAL.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE BEAUFORT COUNTY WATER, TOWN OF BELHAVEN SEWER, CENTURYLINK, TRI-COUNTY MEMBERSHIP CORP AND TIDELAND ELECTRIC MEMBERSHIP CORP. ALL EXISTING UTILITIES SHOWN ON PLANS ARE APPROXIMATE.

CENTURYLINK LINES SHALL BE RELOCATED PRIOR TO THIS PROJECT.
CONTACT: CECELIA PRICE (TEL#: 252-321-9401)

TRICOUNTY LINES SHALL BE RELOCATED PRIOR TO THIS PROJECT.
CONTACT: CECIL WALKER (TEL#: 252-964-8021)

WATER LINE RELOCATION SHALL BE COORDINATED WITH BEAUFORT COUNTY WATER DEPARTMENT. CONTACT: CURTIS JETT (TEL#: 252-944-5047)

SEWER LINE RELOCATION SHALL BE COORDINATED WITH TOWN OF BELHAVEN SEWER. CONTACT: STEVE HALL (TEL#: 252-943-1400)

RIGHT-OF-WAY MARKERS:

ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY OTHERS.

EFF. 07-18-06
REV. 01-02-07

2012 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated July 18, 2006 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation - Method 'A'
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
840.14	Concrete Drop Inlet - 12" thru 30" Pipe
840.29	Frames and Narrow Slot Flat Grates
862.03	Structure Anchor Units

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PROJECT REFERENCE NO.	SHEET NO.
B-5204	1B

Note: Not to Scale

****S.U.E. = Subsurface Utility Engineering***

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign — S
- Well — W
- Small Mine
- Foundation
- Area Outline
- Cemetery
- Building
- School
- Church
- Dam

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- Jurisdictional Stream — JS
- Buffer Zone 1 — BZ 1
- Buffer Zone 2 — BZ 2
- Flow Arrow
- Disappearing Stream
- Spring
- Wetland
- Proposed Lateral, Tail, Head Ditch — FLOW
- False Sump

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY:

- Baseline Control Point
- Existing Right of Way Marker
- Existing Right of Way Line
- Proposed Right of Way Line — RW
- Proposed Right of Way Line with Iron Pin and Cap Marker — RW
- Proposed Right of Way Line with Concrete or Granite Marker — RW
- Existing Control of Access — CA
- Proposed Control of Access — CA
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Permanent Easement with Iron Pin and Cap Marker

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Wheel Chair Ramp — WCR
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard — Vineyard

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert — CONC
- Bridge Wing Wall, Head Wall and End Wall — CONC WW

MINOR:

- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — S
- Storm Sewer — S

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole — HH
- H-Frame Pole
- Recorded U/G Power Line — P
- Designated U/G Power Line (S.U.E.*) — P

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Booth
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- Recorded U/G Telephone Cable — T
- Designated U/G Telephone Cable (S.U.E.*) — T
- Recorded U/G Telephone Conduit — TC
- Designated U/G Telephone Conduit (S.U.E.*) — TC
- Recorded U/G Fiber Optics Cable — T FO
- Designated U/G Fiber Optics Cable (S.U.E.*) — T FO

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- Recorded U/G Water Line — W
- Designated U/G Water Line (S.U.E.*) — W
- Above Ground Water Line — A/G Water

TV:

- TV Satellite Dish
- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- Recorded U/G TV Cable — TV
- Designated U/G TV Cable (S.U.E.*) — TV
- Recorded U/G Fiber Optic Cable — TV FO
- Designated U/G Fiber Optic Cable (S.U.E.*) — TV FO

GAS:

- Gas Valve
- Gas Meter
- Recorded U/G Gas Line — G
- Designated U/G Gas Line (S.U.E.*) — G
- Above Ground Gas Line — A/G Gas

SANITARY SEWER:

- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- Recorded SS Forced Main Line — FSS
- Designated SS Forced Main Line (S.U.E.*) — FSS

MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line — ?UTL
- U/G Tank; Water, Gas, Oil
- A/G Tank; Water, Gas, Oil
- U/G Test Hole (S.U.E.*)
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

PROJECT REFERENCE NO.	SHEET NO.
B-5204	2
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 26710 ENGINEER DWAYNE H. ALLIGOOD

04/05/2012

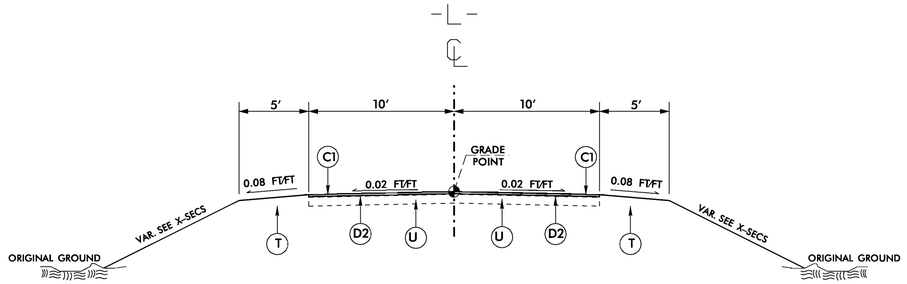
PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 26710 ENGINEER DWAYNE H. ALLIGOOD

04/05/2012

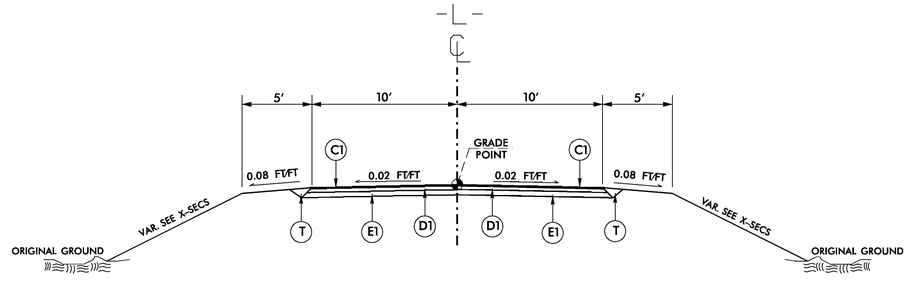
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ.YD. IN EACH OF TWO LAYERS.
D1	PROP. APPROX. 2 ½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROPOSED VARIABLE DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH.
E1	PROP. APPROX. 5½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



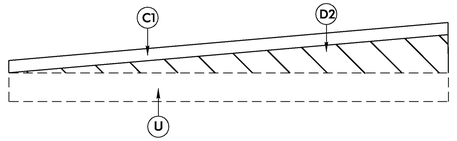
USE TYPICAL SECTION #1 (NTS)

-L- 15+00.00 - 16+06.70
-L- 16+58.64 - 17+50.00



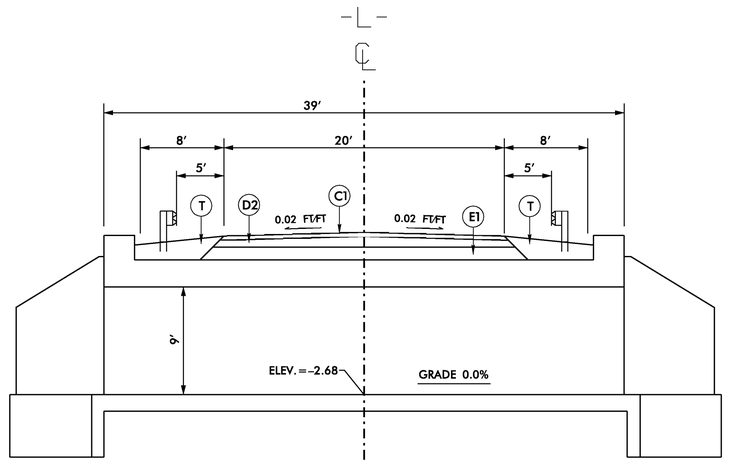
USE TYPICAL SECTION #2 (NTS)

-L- 16+06.70 - 16+20.42
-L- 16+46.42 - 16+58.64



WEDGING DETAIL

NOT TO SCALE



TYPICAL BOX CULVERT SECTION (NTS)

SEE SHEETS C1-C4 FOR BOX CULVERT DETAILS

REVISIONS

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PROJECT REFERENCE NO.	SHEET NO.
B-5204	3

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
SUMMARY OF QUANTITIES

ITEM	SECT	QUANTITY	UNIT	ITEM DESCRIPTION
1	800	1	LS	MOBILIZATION
2	801	1	LS	CONSTRUCTION SURVEYING
3	226	1	LS	GRADING
4	226	200	CY	UNDERCUT EXCAVATION
5	300	30	TON	FOUNDATION CONDITIONING MATERIAL,MINOR STRUCTURES
6	300	100	SY	FOUNDATION CONDITIONING GEOTEXTILE
7	310	66	LF	15" R.C.PIPE CULVERTS,CLASS III
8	310	206	LF	18" R.C.PIPE CULVERTS,CLASS III
9	340	155	LF	PIPE REMOVAL
10	545	15	TON	INCIDENTAL STONE BASE
11	610	11	TON	ASPHALT CONCRETE BASE COURSE,TYPE B25.0B
12	610	66	TON	ASPHALT CONCRETE INTERMEDIATE COURSE,TYPE I19.0B
13	610	55	TON	ASPHALT CONCRETE SURFACE COURSE,TYPE S9.5B
14	SP	10	TON	ASPHALT BINDER FOR PLANT MIX
15	840	4	EA	MASONRY DRAINAGE STRUCTURES
16	840	4	EA	FRAME WITH GRATE,STD 840.29
17	862	97	LF	STEEL BEAM GUARDRAIL
18	862	36	LF	STEEL BEAM GUARDRAIL,SHOP CURVED
19	862	1	EA	GUARDRAIL ANCHOR UNITS,TYPE 350
20	862	3	EA	GUARDRAIL ANCHOR UNITS,CAT-I
21	SP	1	LS	RELOCATE EXISTING 2" SANITARY FORCE MAIN
22	SP	1	LS	RELOCATE EXISTING 6" WATER MAIN
23	1605	400	LF	TEMPORARY SILT FENCE
24	1610	5	TON	STONE FOR EROSION CONTROL,CLASS B
25	1610	5	TON	SEDIMENT CONTROL STONE
26	1615	1	ACRE	TEMPORARY MULCHING
27	1620	50	LB	SEED FOR TEMPORARY SEEDING
28	1620	0.2	TON	FERTILIZER FOR TEMPORARY SEEDING
29	1622	200	LF	TEMPORARY SLOPE DRAINS
30	SP	350	LF	SAFETY FENCE
31	1630	10	CY	SILT EXCAVATION
32	1631	430	SY	MATTING FOR EROSION CONTROL
33	1632	144	LF	1/4" HARDWARE CLOTH

ITEM	SECT	QUANTITY	UNIT	ITEM DESCRIPTION
34	1639	1	EA	SPECIAL STILLING BASIN
35	1660	1	ACRE	SEEDING AND MULCHING
36	1661	50	LB	SEED FOR REPAIR SEEDING
37	1661	0.2	TON	FERTILIZER FOR REPAIR SEEDING
38	402	1	LS	REMOVAL OF EXISTING STRUCTURE AT -L- STA 16+33.42
39	414	1	LS	CULVERT EXCAVATION, -L- STA.16+33.42
40	414	110	TON	FOUNDATION CONDITIONING MATERIAL,BOX CULVERT
41	420	128.3	CY	CLASS A CONCRETE (BOX CULVERT)
42	425	21680	LB	REINFORCING STEEL (BOX CULVERT)

REVISIONS

8/17/99

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CHECKED BY: LJ	DATE: 3-15-11

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NOTE: Invert Elevations are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL
-L- 15+50.00	LT	1		4.80	2.00		
-L- 15+50.00	RT	2		5.80	1.80		
-L- 17+31.16	LT	3		5.25	2.25		
-L- 17+10.50	RT	4		4.65	1.65		
-L- 22+19.54	LT	1	OUT		2.00	1.32	0.010
-L- 22+71.78	RT	2	OUT		1.80	1.32	0.007
-L- 23+22.16	LT	3	OUT		2.25	1.32	0.012
-L- 23+64.01	RT	4	OUT		1.65	1.32	0.006
TOTALS							

STATION	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC)												CORRUGATED ALUMINUM PIPE						
SIZE	12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	12"	15"	18"	24"	36"	42"	48"
THICKNESS OR GAUGE													.064	.064	.064	.064	.079	.109	.109
-L- 15+50.00																			
-L- 15+50.00																			
-L- 17+31.16																			
-L- 17+10.50																			
-L- 22+19.54																			
-L- 22+71.78																			
-L- 23+22.16																			
-L- 23+64.01																			
TOTALS																			

STATION	R.C. PIPE (CLASS III)							R.C. PIPE (CLASS IV)							
SIZE	15"	18"	24"	30"	36"	42"	48"	12"	15"	18"	24"	30"	36"	42"	48"
-L- 15+50.00															
-L- 15+50.00															
-L- 17+31.16															
-L- 17+10.50															
-L- 22+19.54	66														
-L- 22+71.78		66													
-L- 23+22.16	80														
-L- 23+64.01	60														
TOTALS	206	66													

STATION	**" R. C. PIPE (CLASS V)	**" R. C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE	**" R. C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	ENDWALLS CU. YDS. C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	* TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. *FT. A 5.0' THRU 10.0'	LIN. *FT. B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G		CONCRETE TRANSITIONAL SECTION CATCH BASIN	CONCRETE TRANSITIONAL SECTION DROP INLET
-L- 15+50.00								1									
-L- 15+50.00								1									
-L- 17+31.16								1									
-L- 17+10.50								1									
-L- 22+19.54																	
-L- 22+71.78																	
-L- 23+22.16																	
-L- 23+64.01																	
TOTALS								4									

STATION	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH GRATE STD. 840.29	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
-L- 15+50.00	1			1							NEW DROP INLET
-L- 15+50.00	1			1							NEW DROP INLET
-L- 17+31.16	1			1							NEW DROP INLET
-L- 17+10.50	1			1							NEW DROP INLET
-L- 22+19.54										62	NEW 15" R.C. PIPE
-L- 22+71.78										55	NEW 18" R.C. PIPE
-L- 23+22.16											NEW 15" R.C. PIPE
-L- 23+64.01										38	NEW 15" R.C. PIPE
TOTALS	4			4						155	

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.
TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH (WITH ANCHOR DEDUCTIONS) STRAIGHT	SHOP CURVED	DOUBLE FACED	WARRANT POINT APPROACH END	WARRANT POINT TRAILING END	"N" DIST. FROM E.O.L.	TOTAL SHOULDER WIDTH
-L-	16+01.42	16+65.42	RT	46	24		16+01.42	16+65.42	5	8
-L-	16+80.42	15+70.42	LT	51	12		16+80.42	15+70.42	5	8
TOTAL				97	36					

SURVEY LINE	FLARE LENGTH APPROACH END	FLARE LENGTH TRAILING END	W APPROACH END	W TRAILING END	ANCHORS TYPE 350	TYPE III	CAT-1							IMPACT ATTENUATOR TYPE 350 NO.	PERMITTED G	PERMITTED NG	SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
-L-							2													SEE SHEET C-3 FOR GUARDRAIL ANCHOR ASSEMBLY
-L-					1		1													SEE SHEET C-3 FOR GUARDRAIL ANCHOR ASSEMBLY
TOTAL					1		3													

SUMMARY OF EARTHWORK
IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT+%	BORROW	WASTE
-L- 15+32.60 - 16+20.42	0	0	147	147	0
-L- 16+46.42 - 17+32.60	0	0	195	195	0
UNDERCUT (CONTINGENCY)		200	240	240	200
CULVERT EXCAVATION	160	0	0	0	160
SUB TOTAL	160	200	582	582	360
SAY	160	200	590	590	360

NOTE:

APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, CULVERT EXCAVATION, BORROW EXCAVATION, FINE GRADING, CLEARING AND GRUBBING, BREAKING OF EXISTING PAVEMENT AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING."

8/17/99

REVISIONS

RIGHT OF WAY AREA SUMMARY

PARCEL NO.	PROPERTY OWNER NAME	LOCATION	TOTAL PARCEL AREA [ACRES]	AREA TO BE DEDICATED (CONST. EASEMENT) [ACRES]	AREA TO BE PURCHASED (RIGHT OF WAY) [ACRES]	PARCEL AREA REMAINING [ACRES]
1	COASTAL AGROBUSINESS, INC	LT	15.51	0.015		15.50
3	TAFT ALLEN, JR.	RT	5.06	0.026		5.03
5	IRENE GRIFFIN	RT	0.49	0.004		0.486
6	LEROY GRIFFIN	LT	5.31	0.016		5.29
7	WILLIAM E. JONES	RT	0.33	0.004		0.326

NAD 83/NSRS 2007

PROJECT REFERENCE NO.	SHEET NO.
B-5204	4
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER WAYNE H. ALLIGOOD — 04/05/2012

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER WAYNE H. ALLIGOOD — 04/05/2012

30 15 0 30 60
SCALE

15

20

PI Sta 15+19.12 -L-
△ = 0° 20' 29.7" (RT)
D = 0° 06' 14.7"
L = 328.19'
T = 164.10'
R = 55,050.00'

PC Sta. 13+55.02 -L-
N=680819.7241 E=2691244.2326

PT Sta. 16+83.22 -L-
N=680649.5826 E=2691524.8771

PC Sta. 20+42.09 -L-
N=680462.6201 E=2691831.2042

BEGIN RESURFACING
-L- STATION 15+00.00

END RESURFACING
-L- STATION 17+50.00

BL-2
-L- STA. 15+99.50
21.35' LT
N= 680711.3837
E= 2691464.4789
ELEV.= 7.58

BM#1
-L- STA 15+98.73
111' LT
ELEV=10.44'

PROPOSED CONCRETE BOX CULVERT DOUBLE BARREL 12' X 9' 16+33.42 -L-

1
09016511
COASTAL AGROBUSINESS, INC
PO BOX 856
GREENVILLE, NC 27835
DB 1377 PG 635
15.51 AC
TRACT #1

6
09020016
LEROY GRIFFIN, ET UX
365 SWINDELL RD
PANTEGO, NC 27860
DB 1377 PG 635
5.31 AC

12
09020518
CHARLIE SELBY HEIRS
1349 EAST 100TH STREET
BROOKLYN, NY 11236
DB 346 PG 450
3.89 AC

9
09016870
REDDEN GRIFFIN HEIRS
365 SWINDELL RD
PANTEGO, NC 27860
DB 243 PG 218
0.45 AC

S 58°56'39.7" E

SR 1625 | SWINDELL RD
20' BST

S 58°36'10.0" E

BRIDGE #141

REMOVE

PROP. 15" RCP

PROP. 18" RCP

TYPE 350

CAT-1 SHOP CURVE (TYP.)

JS

15" RCP

12" RCP

12" CONC

8' SOIL

10' SOIL

14' SOIL

15' GR.

8' GR.

CONC

2
09022957
REBECCA F. GRIFFIN
PO BOX 213
PANTEGO, NC 27860
DB 1210 PG 718
0.25 AC

3
09009148
TAFT ALLEN, JR., ET AL
1295 5TH AVE #10-D
NEW YORK, NY 10029
DB 351 PG 281
5.06 AC

4
09006690
LUTITIA ALLEN
PO BOX 69
PANTEGO, NC 27860
DB 1264 PG 527
DB 646 PG 95
0.47 AC

5
09001819
IRENE GRIFFIN
471 SWINDELL RD
PANTEGO, NC 27860
DB 1377 PG 303
0.49 AC

3
09009148
TAFT ALLEN, JR., ET AL
1295 5TH AVE #10-D
NEW YORK, NY 10029
DB 351 PG 281
5.06 AC

PANTEGO DRAINAGE DISTRICT CANAL #14

20' RESERVED RIGHT OF WAY BY ALLEN

7
09001529
WILLIAM E. JONES, ET UX
PO BOX 172
PANTEGO, NC 27860
DB 601 PG 593
0.33 AC

8
09019204
FLOSSIE M. MOORE
435 SWINDELL RD
PANTEGO, NC 27860
DB 994 PG 682
0.33 AC

10
09019205
FLOSSIE MOORE
435 SWINDELL RD
PANTEGO, NC 27860
DB 994 PG 685
0.15 AC

11
09000037
DANIEL MASON WEBSTER
405 SWINDELL RD
PANTEGO, NC 27860
DB 940 PG 210
3.02 AC

13
09020014
LEROY GRIFFIN, ET UX
365 SWINDELL RD
PANTEGO, NC 27860
DB 371 PG 521
4.1 AC

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "BL-1"
WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 680995.393(ft) EASTING: 2690886.159(ft)
ELEVATION: 7.55(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99989633
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "BL-1" TO -L- STATION 15+00.00 IS S 62°32'08" E 543.4157
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

EXISTING BRIDGE # 141
WOOD- SEATS,BENTS,PILINGS,BEAMS,HW,WW
CONC- DECK,GUARD RAIL
STEEL I- BEAM REINFORCEMENT

REMOVE EXISTING STRUCTURE
-L- 16+06.71 - 16+58.64

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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
B-5204	5

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER DWAYNE H. ALLIGOOD

04/05/2012

HYDRAULICS ENGINEER

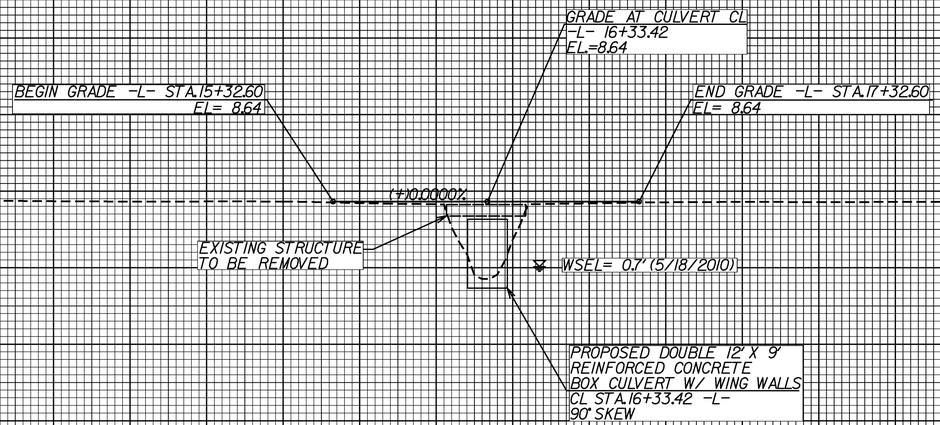
NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER DWAYNE H. ALLIGOOD

04/05/2012

BM-1
-L- STA. 15+98.73
111.33' LT
N= 680788.6606
E= 2691510.5854
ELEV.= 10.44

BL-2
-L- STA. 15+99.50
21.35' LT
N= 680711.3837
E= 2691464.4789
ELEV.= 7.58

BL-3
-L- STA. 22+65.95
27.93' LT
N= 680371.7969
E= 2692037.5314
ELEV.= 8.19



-L- PROFILE
SCALE: 1"=50' HORIZ.
1"=10' VERT.

HYDRAULIC DATA
(c.f.s.)

	Q	EXIST.	PROP.
10-YR	219	2.2	1.7
25-YR	307	2.8	2.2
50-YR	386	3.2	2.6
100-YR	474	3.7	3.0
500-YR	682	4.6	4.0
O.T.	>682	4.6	>4.0

*NOTE: ELEVATIONS FROM HEC-RAS RS 4

10 0 -10 -20

10 11 12 13 14 15 16 17 18 19 20 21 22

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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE PROJECT REFERENCE NO.	SHEET NO.
B-5204	TCP-1

PLAN FOR PROPOSED TRAFFIC CONTROL

BEAUFORT COUNTY

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS"-HIGHWAY DESIGN BRANCH-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
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES (TYPE III)

INDEX OF SHEETS

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- NORTH ARROW
- PROPOSED PVMT. --------- EXIST. PVMT.
- WORK AREA
- REMOVAL OF EXISTING PAVEMENT

TRAFFIC CONTROL DEVICES

- TYPE I BARRICADE
- TYPE II BARRICADE
- TYPE III BARRICADE
- CONE
- DRUM SKINNY DRUM
- FLASHING ARROW PANEL (TYPE C)
- STATIONARY SIGN
- PORTABLE SIGN
- STATIONARY OR PORTABLE SIGN
- CRASH CUSHION
- CHANGEABLE MESSAGE SIGN
- TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)
- POLICE
- FLAGGER

PROJECT: B-5204

APPROVED: Dwayne H. Alligood
DATE: 04/05/2012

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER DWAYNE H. ALLIGOOD

PLAN PREPARED BY: N.C.D.O.T. DIVISION 2 DDC UNIT

D. H. ALLIGOOD, PE	TRAFFIC CONTROL ENGINEER
D. H. ALLIGOOD, PE	TRAFFIC CONTROL PROJECT ENGINEER
LANG JONES	TRAFFIC CONTROL PROJECT DESIGN ENGINEER
V. TRAN	TRAFFIC CONTROL DESIGN ENGINEER / TECHNICIAN

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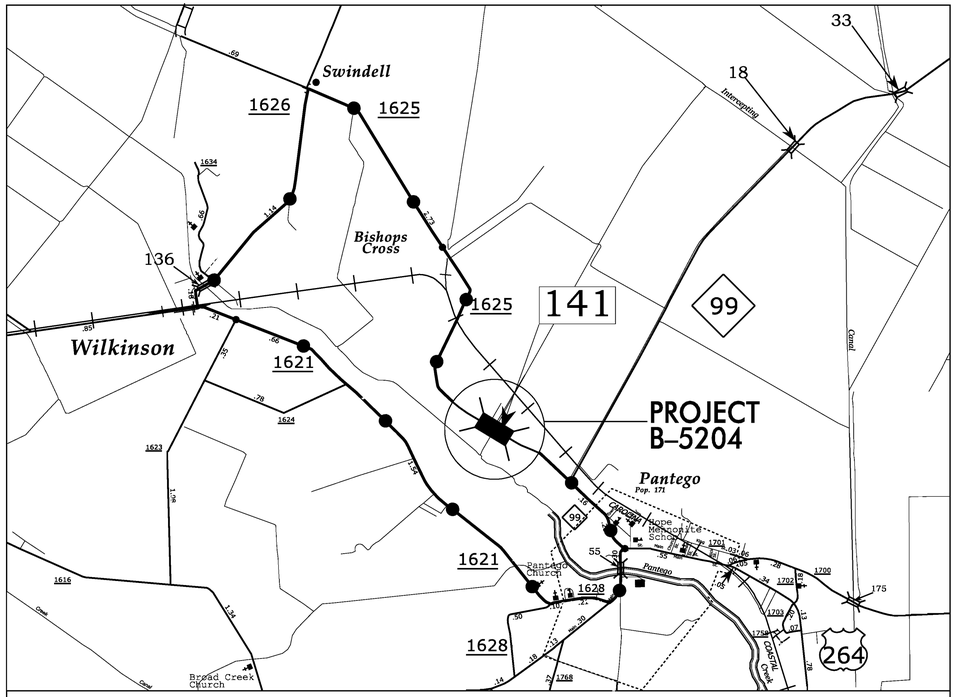
PROJ. REFERENCE NO.	SHEET NO.
B-5204	TCP-2

GENERAL NOTES

IMPLEMENT TRAFFIC CONTROL IN ACCORDANCE WITH THE ROADWAY STANDARD DRAWINGS LISTED ON TCP-1.

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD 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.

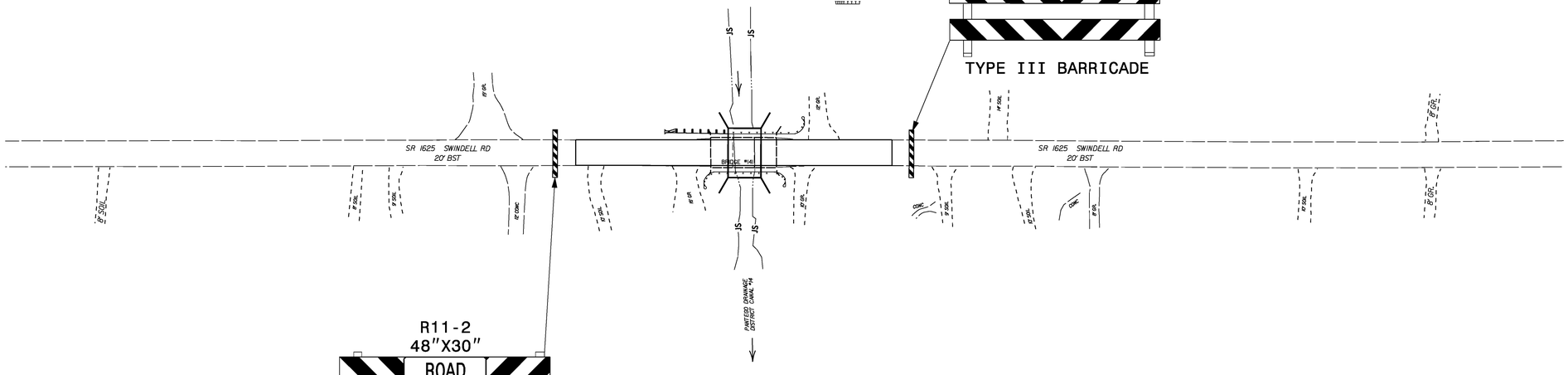
STATE FORCES WILL INSTALL AND MAINTAIN THE PROJECT DETOUR AND THE TYPE III BARRICADES AT THE PROJECT LIMITS.
STATE FORCES WILL INSTALL PAINT AND MARKERS ON THE FINISHED PROJECT.
CALL JIM EVANS AT 252-830-3493 FOR COORDINATION.



DETOUR MAP
(NOT TO SCALE)
DETOUR ROUTE

NAD 83/NSRS 2007

R11-2
48"X30"
ROAD CLOSED
TYPE III BARRICADE



R11-2
48"X30"
ROAD CLOSED
TYPE III BARRICADE

APPROVED Dwayne H. Alligood DATE: 04/05/2012

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER DWAYNE H. ALLIGOOD

PROJECT NOTES

SCALE:	NONE
DATE:	4/17/11
DWG. BY:	LJ
DESIGN BY:	LJ
REVIEWED BY:	BB

REVISIONS

CADD FILE

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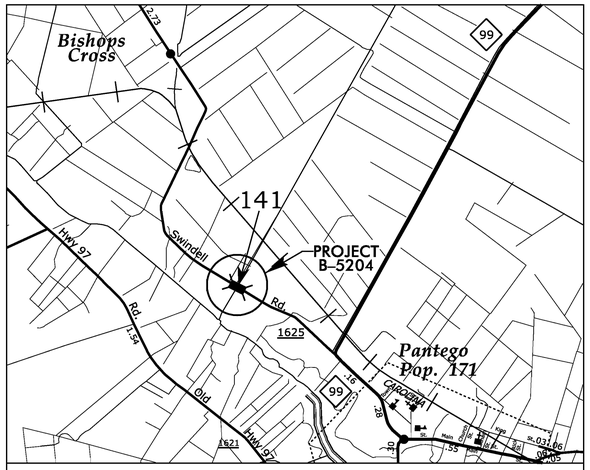
09/08/99

TIP PROJECT: B-5204

CONTRACT:

See Sheet 1-A For Index of Sheets



VICINITY MAP
(NOT TO SCALE)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BEAUFORT COUNTY

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5204	EC1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
45302.1.1	BRZ-1625(4)	PE
45302.2.1	BRZ-1625(4)	RW
45302.3.1	BRZ-1625(4)	CONST

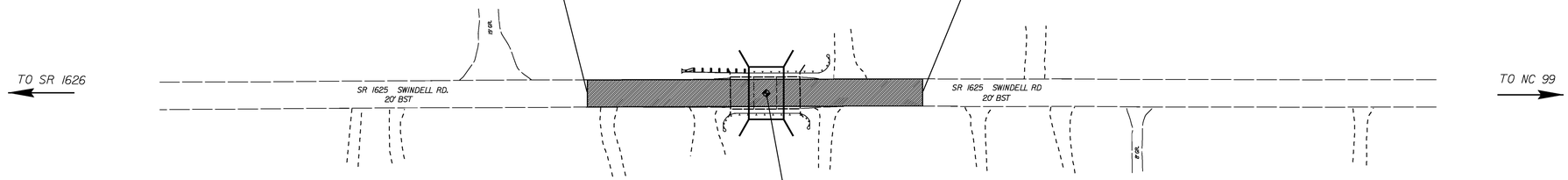
Std. #	Description	Symbol
1605.01	High Vis Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1630.06	Silt Bag (Special Stilling Basin)	
1632.03	Rock Inlet Sediment Trap, C	

THIS PROJECT CONTAINS EROSION CONTROL PLANS FOR CLEARING AND GRUBBING PHASE OF CONSTRUCTION.

ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT

BEGIN TIP PROJECT B-5204
-L- STATION 15+00.00

END TIP PROJECT B-5204
-L- STATION 17+50.00



PROPOSED CONCRETE BOX CULVERT
DOUBLE BARREL 12' X 9'
-L- STATION 16+33.42

GRAPHIC SCALES

30 15 0 30 60
PLANS

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-5204 = 0.047 MILE

TOTAL LENGTH OF TIP PROJECT B-5204 = 0.047 MILE

Prepared In the Office of:

DIVISION OF HIGHWAYS

105 Pactolus Hwy, Greenville NC, 27835

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:

LETTING DATE:
APRIL 2012

DWAYNE H. ALLIGOOD
PROJECT ENGINEER

LANG JONES (#276)
PROJECT DESIGN ENGINEER

Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"– Roadway Design Unit – N. C. Department of Transportation – Raleigh, N. C., dated January 2012 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

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

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PROJECT REFERENCE NO.	SHEET NO.
B-5204	EC2

8/17/99

REVISIONS

LEGEND:

High Visibility Temporary Silt Fence.....

Special Sediment Control Fence.....

Silt Bag (Std. Dwg. 1630.06).....

Sheet Piling.....

Pump with Inlet / Outlet Pipe.....

Diffuser Barrel.....

Rock Inlet Sediment Trap, Type C.....

Diffused Flow.....

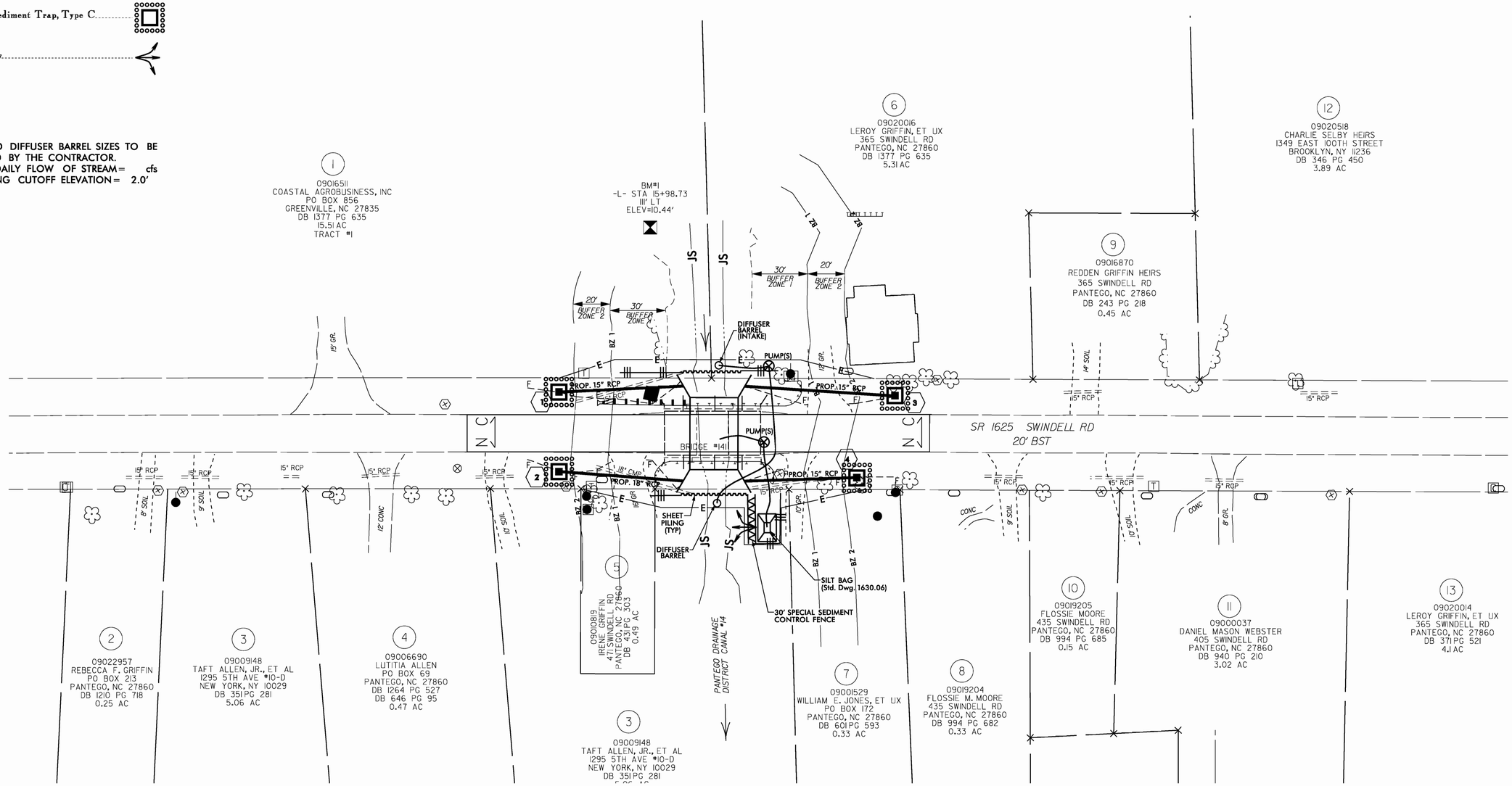
NOTES:

1. PUMPS AND DIFFUSER BARREL SIZES TO BE DETERMINED BY THE CONTRACTOR.
2. AVERAGE DAILY FLOW OF STREAM = cfs
3. SHEET PILING CUTOFF ELEVATION = 2.0'

NAD 83/NSRS 2007

30 15 0 30 60

SCALE



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PROJECT REFERENCE NO.	SHEET NO.
B-5204	EC3

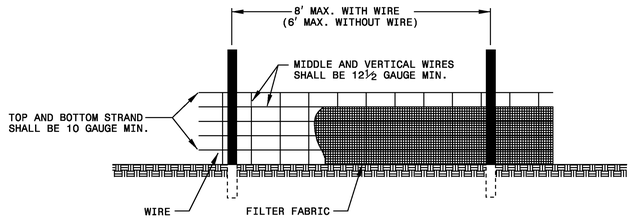
8/17/99

REVISIONS

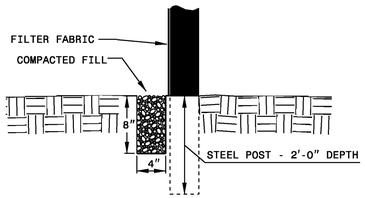
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR **TEMPORARY SILT FENCE**

SHEET 1 OF 1 **1605.01**



NOTES
USE WIRE A MINIMUM OF 32" IN WIDTH AND WITH A MINIMUM OF 6 LINE WIRES WITH 12" STAY SPACING.
USE FILTER FABRIC A MINIMUM OF 36" IN WIDTH AND FASTEN ADEQUATELY TO THE WIRE AS DIRECTED BY THE ENGINEER.
PROVIDE 5'-0" STEEL POST OF THE SELF-FASTENER ANGLE STEEL TYPE.



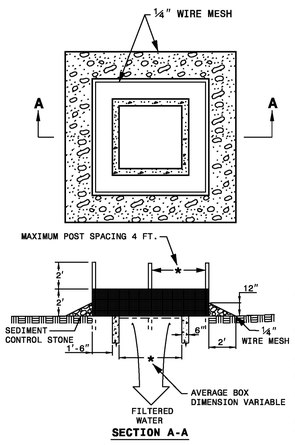
EXTENSION OF FABRIC AND WIRE INTO TRENCH

NOT TO SCALE

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR **ROCK INLET SEDIMENT TRAP TYPE 'C'**

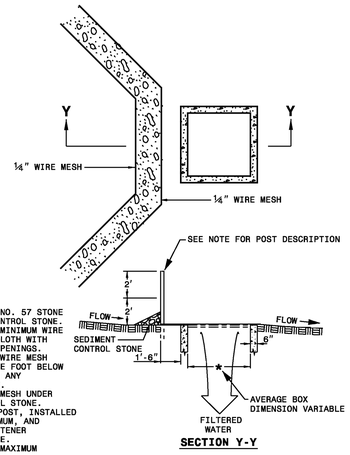
SHEET 1 OF 1 **1632.03**



SECTION A-A

MULTI-DIRECTIONAL FLOW

NOTE
USE NO. 5 OR NO. 57 STONE FOR SEDIMENT CONTROL STONE.
USE 24 GAUGE MINIMUM WIRE MESH HARDWARE CLOTH WITH 1/4 INCH MESH OPENINGS.
PLACE TOP OF WIRE MESH A MINIMUM OF ONE FOOT BELOW THE SHOULDER OR ANY DIVERSION POINT.
INSTALL WIRE MESH UNDER SEDIMENT CONTROL STONE.
USE 5' STEEL POST, INSTALLED 1.5' DEEP MINIMUM, AND OF THE SELF-FASTENER ANGLE STEEL TYPE.
SPACE POST A MAXIMUM OF 4'.



SECTION Y-Y

SINGLE-DIRECTIONAL FLOW

NOT TO SCALE

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR **SPECIAL SEDIMENT CONTROL FENCE**

SHEET 1 OF 1 **1606.01**

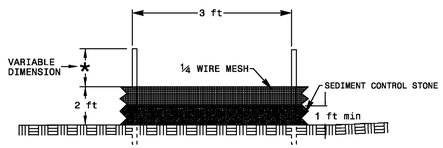
GENERAL NOTES:

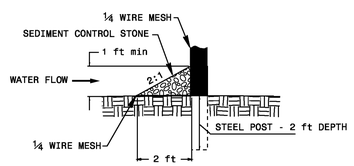
USE NO. 5 OR NO. 57 STONE FOR SEDIMENT CONTROL STONE.

USE HARDWARE CLOTH 24 GAUGE WIRE MESH WITH 1/4 INCH MESH OPENINGS.

INSTALL 5 FT. SELF FASTENER ANGLE STEEL POST 2 FT. DEEP MINIMUM.

SPACE POST A MAXIMUM OF 3 FT.



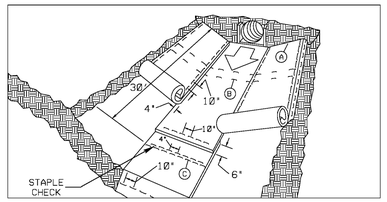


STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

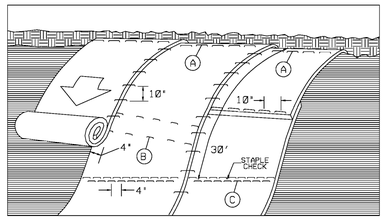
ENGLISH STANDARD DRAWING FOR **SPECIAL SEDIMENT CONTROL FENCE**

SHEET 1 OF 1 **1606.01**

MATTING INSTALLATION DETAIL



MATTING IN DITCHES



MATTING ON SLOPES

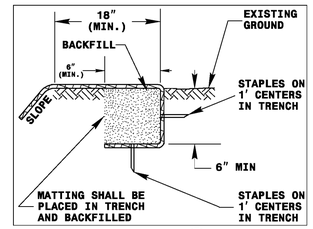


DIAGRAM (A)

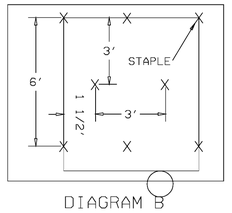


DIAGRAM (B)

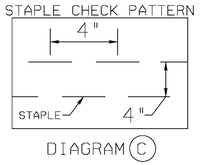


DIAGRAM (C)

NOTES:

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

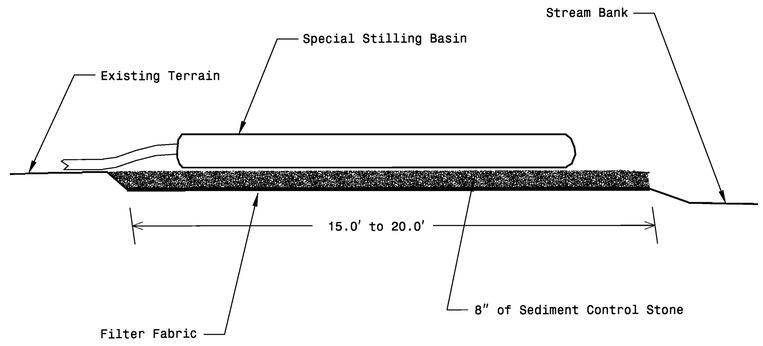
STAPLES SHALL BE NO. 11 GAUGE STEEL WIRE FORMED INTO A "U" SHAPE WITH A MINIMUM THROAT WIDTH OF 1 INCH AND NOT LESS THAN 6 INCHES IN LENGTH.

NOT TO SCALE

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR **SPECIAL STILLING BASIN**

SHEET 1 OF 1 **1630.06**



Note: Provide Stabilized Outlet to Streambank
Not To Scale

NOT TO SCALE

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR **SPECIAL STILLING BASIN**

SHEET 1 OF 1 **1630.06**

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REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
B-5204	P1

NCDOT
B-5204 BEAUFORT COUNTY
REPLACE BRIDGE NO.141
SR 1625 (SWINDELL RD)
OVER PANTEGO DISTRICT CANAL #14
BETWEEN SR 1626 AND NC 99
RGP 31, NWP 12, AND BUFFER
AUTHORIZATION APPLICATION
WBS ELEMENT NUMBER 45302.1.1

SCALE: 1"=30' (FULL-SIZE 22"X34")
SCALE: 1"=60' (HALF-SIZE 11"X17")
JULY 20, 2011
FOR PERMITTING ONLY:
NOT FOR CONSTRUCTION

30 15 0 30 60
SCALE

TOTALS
404 WETLAND IMPACTS = 0 Sq.Ft.
BUFFER ZONE 1 IMPACTS = 3745 Sq.Ft.
BUFFER ZONE 2 IMPACTS = 2025 Sq.Ft.
PERMANENT STREAM IMPACTS = 70 LINEAR FEET
TEMPORARY STREAM IMPACTS = 10 LINEAR FEET

EXISTING 53' LONG BY 24' WIDE REINFORCED CONCRETE FLOOR ON TIMBER PILES BRIDGE

PROPOSED 12' x 9' DOUBLE BARREL CONCRETE BOX CULVERT

PI Sta 15+19.12 -L-
Δ = 0° 20' 29.7" (RT)
D = 0° 06' 14.7"
L = 328.19'
T = 164.10'
R = 55,050.00'

PC Sta. 13+55.02 -L-

PT Sta. 16+83.22 -L-

PC Sta. 20+42.09 -L-

(1) 09016511
COASTAL AGROBUSINESS, INC
PO BOX 856
GREENVILLE, NC 27835
DB 1377 PG 635
15.51 AC
TRACT #1

(6) 09020016
LEROY GRIFFIN, ET UX
365 SWINDELL RD
PANTEGO, NC 27860
DB 1377 PG 635
5.31 AC

(12) 09020518
CHARLIE SELBY HEIRS
1349 EAST 100TH STREET
BROOKLYN, NY 11236
DB 346 PG 450
3.89 AC

(9) 09016870
REDDEN GRIFFIN HEIRS
365 SWINDELL RD
PANTEGO, NC 27860
DB 243 PG 218
0.45 AC

BM#1
-L- STA 15+98.73
111' LT
ELEV=10.44'

B1
W1 404 WETLAND IMPACTS = 0 Sq.Ft.
B1 BUFFER ZONE 1 IMPACTS = 905 Sq.Ft.
BUFFER ZONE 2 IMPACTS = 520 Sq.Ft.
PERMANENT STREAM IMPACTS = 35 LINEAR FEET
S1 TEMPORARY STREAM IMPACTS = 0 LINEAR FEET

B2
W2 404 WETLAND IMPACTS = 0 Sq.Ft.
BUFFER ZONE 1 IMPACTS = 920 Sq.Ft.
B2 BUFFER ZONE 2 IMPACTS = 545 Sq.Ft.
PERMANENT STREAM IMPACTS = 0 LINEAR FEET
S2 TEMPORARY STREAM IMPACTS = 5 LINEAR FEET

PROPOSED CONCRETE BOX CULVERT DOUBLE BARREL 12' X 9' 16+33.42 -L-

30' BUFFER ZONE 1
20' BUFFER ZONE 2
5' OFF EASEMENT
DIFFUSER BARREL (INTAKE)
PUMP(S)
NEW TEL. PED 2' OFF R/W
PROP. 15" RCP
PROP. 18" RCP
REMOVE
SHEET PILING (TYP)
DIFFUSER BARREL
SILT BAG (Std. Dwg. 1630.06)
CATV PED
BRIDGE #141
PROPOSED 4" HDPE (AWWA CERTIFIED) SANITARY FORCE MAIN BY DIRECTIONAL DRILL
2' OFF R/W
PROPOSED 8" HDPE (AWWA C906) WATER MAIN BY DIRECTIONAL DRILL
EXIST. 2" PVC SAN. FORCE MAIN
EXIST. 6" WATER MAIN
SR 1625 SWINDELL RD
20' BST
6' 39.7" E
S 58° 36' 10.0" E
15" RCP
18" RCP
FSS
JS
PZ 1
PZ 2
CONC
8' SOIL
6' SOIL
10' SOIL
14' SOIL
15' GR.
8' GR.

(2) 09022957
REBECCA F. GRIFFIN
PO BOX 213
PANTEGO, NC 27860
DB 1210 PG 718
0.25 AC

(3) 09009148
TAFT ALLEN, JR., ET AL
1295 5TH AVE #10-D
NEW YORK, NY 10029
DB 351 PG 281
5.06 AC

(4) 09006690
LUTITIA ALLEN
PO BOX 69
PANTEGO, NC 27860
DB 1264 PG 527
DB 646 PG 95
0.47 AC

(5) 09001819
IRENE GRIFFIN
471 SWINDELL RD
PANTEGO, NC 27860
DB 431 PG 303
0.49 AC

(3) 09009148
TAFT ALLEN, JR., ET AL
1295 5TH AVE #10-D
NEW YORK, NY 10029
DB 351 PG 281
5.06 AC

PANTEGO DRAINAGE DISTRICT CANAL #14

(7) 09001529
WILLIAM E. JONES, ET UX
PO BOX 172
PANTEGO, NC 27860
DB 601 PG 593
0.33 AC

(8) 09019204
FLOSSIE M. MOORE
435 SWINDELL RD
PANTEGO, NC 27860
DB 994 PG 682
0.33 AC

(10) 09019205
FLOSSIE MOORE
435 SWINDELL RD
PANTEGO, NC 27860
DB 994 PG 685
0.15 AC

(11) 09000037
DANIEL MASON WEBSTER
405 SWINDELL RD
PANTEGO, NC 27860
DB 940 PG 210
3.02 AC

(13) 09020014
LEROY GRIFFIN, ET UX
365 SWINDELL RD
PANTEGO, NC 27860
DB 371 PG 521
4.1 AC

B4
W4 404 WETLAND IMPACTS = 0 Sq.Ft.
B4 BUFFER ZONE 1 IMPACTS = 770 Sq.Ft.
BUFFER ZONE 2 IMPACTS = 440 Sq.Ft.
PERMANENT STREAM IMPACTS = 35 LINEAR FEET
S4 TEMPORARY STREAM IMPACTS = 0 LINEAR FEET

B3
404 WETLAND IMPACTS = 0 Sq.Ft.
BUFFER ZONE 1 IMPACTS = 1150 Sq.Ft.
BUFFER ZONE 2 IMPACTS = 520 Sq.Ft.
PERMANENT STREAM IMPACTS = 0 LINEAR FEET
TEMPORARY STREAM IMPACTS = 5 LINEAR FEET

W3
B3
S3

BUFFER ZONE 1 IMPACTS

BUFFER ZONE 2 IMPACTS

NOTES:

(1) B-5204 IS ON THE PANTEGO USGS QUAD MAP AND SHEET NUMBER 9 OF THE SOILS SURVEY OF BEAUFORT COUNTY

(2) FIRM PANEL 6688 J, MAP NUMBER 3720668800 J

(3) B-5204 IS IN THE TAR-PAMLICO RIVER BASIN
PANTEGO CREEK: C; Sw; NSW
HUC CODE 03020104

(4) NO MORATORIUM AS PER TRAVIS WILSON, NCWRC NOVEMBER 19, 2009

(5) CAMA: NON-JURISDICTIONAL AS PER STEPHEN LANE, NCDCM DECEMBER 11, 2009

LEGEND:

- High Visibility Temporary Silt Fence
- Special Sediment Control Fence
- Silt Bag (Std. Dwg. 1630.06)
- Sheet Piling
- Pump with Inlet / Outlet Pipe
- Diffuser Barrel
- Diffuser Barrel with Gravel Pad
- Rock Inlet Sediment Trap, Type C
- Diffused Flow

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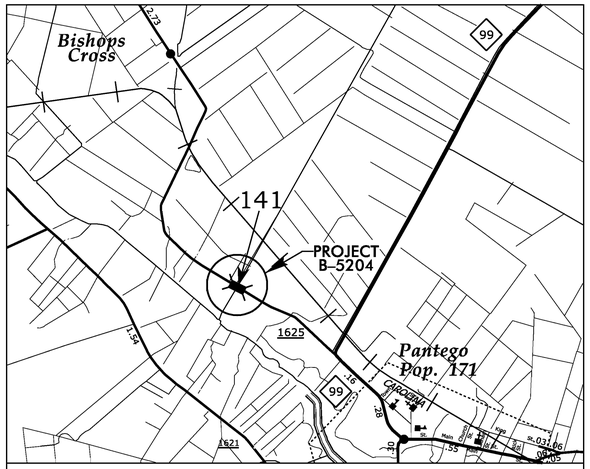
TIP PROJECT: B-5204

CONTRACT:

See Sheet 1-A For Index of Sheets



VICINITY MAP
(NOT TO SCALE)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BEAUFORT COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5204	UC1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
45302.1.1	BRZ-1625(4)	PE
45302.2.1	BRZ-1625(4)	RW
45302.3.1	BRZ-1625(4)	CONST

LOCATION: SR 1625 (SWINDELL RD), BRIDGE NO. 141 OVER PANTEGO DISTRICT CANAL #14

TYPE OF WORK: WATER AND SEWER MAIN RELOCATION

UTILITY OWNERS: BEAUFORT COUNTY WATER & TOWN OF BELHAVEN SEWER

NC GRID NAD 83 NSRS 2007

BEGIN TIP PROJECT B-5204
-L- STATION 15+00.00

END TIP PROJECT B-5204
-L- STATION 17+50.00

TO SR 1626

SR 1625 SWINDELL RD. 20' BST

SR 1625 SWINDELL RD. 20' BST

TO NC 99

PROPOSED CONCRETE BOX CULVERT
DOUBLE BARREL 12' X 9'
-L- STATION 16+33.42

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-5204 = 0.047 MILE

TOTAL LENGTH OF TIP PROJECT B-5204 = 0.047 MILE

Prepared In the Office of:
DIVISION OF HIGHWAYS
105 Pactolus Hwy, Greenville NC, 27835

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:

LETTING DATE:
APRIL 2012

DWAYNE H. ALLIGOOD
PROJECT ENGINEER

LANG JONES
PROJECT DESIGN ENGINEER

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER DWAYNE H. ALLIGOOD

09/12/2011

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

P.E.
STATE HIGHWAY DESIGN ENGINEER

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8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
B-5204	UC2

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER DWAYNE H. ALLIGOOD

09/12/2011

UTILITY CONSTRUCTION

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
SUMMARY OF QUANTITIES

SANITARY FORCE MAIN	QUANTITY	UNIT	ITEM DESCRIPTION
	40	LF	2" DI PIPE
	455	LF	4" HDPE PIPE DR9 (AWWA C906)
	2	EA	2" GATE VALVE
	2	EA	DI PIPE TO HDPE TRANSITION
	2	EA	CONCRETE THRUST COLLAR
	1	EA	AIR RELEASE VALVE
	0.50	ACRE	SEEDING AND MULCHING
	125	LF	TEMPORARY SILT FENCE
	500	LF	ABANDON 2" TO 3" UTILITY PIPE

WATER MAIN	QUANTITY	UNIT	ITEM DESCRIPTION
	40	LF	6" DI PIPE
	320	LF	8" HDPE PIPE DR9 (AWWA C906)
	2	EA	6" GATE VALVE
	2	EA	DI PIPE TO HDPE TRANSITION
	2	EA	CONCRETE THRUST COLLAR
	1	EA	RELOCATE WATER METER
	2	EA	RECONNECT WATER METER
	0.50	ACRE	SEEDING AND MULCHING
	125	LF	TEMPORARY SILT FENCE
	363	LF	ABANDON 6" UTILITY PIPE

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8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
B-5204	UC3

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER DWAYNE H. ALLIGOOD
09/12/2011

UTILITY CONSTRUCTION

NAD 83/NSRS 2007

50 25 0 50 100
GRAPHIC SCALE

NOTES:

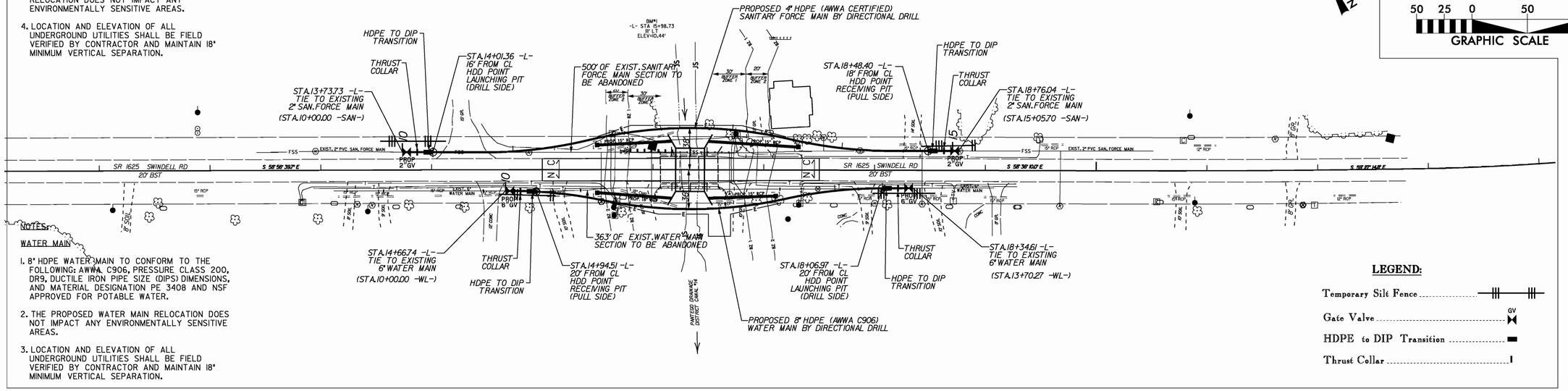
SEWER FORCE MAIN

1. AIR RELEASE VALVES SHALL BE PROVIDED IN ACCORDANCE WITH 15A NCAC 2T .0305(H)(5).
2. RECONNECT ALL SANITARY SEWER SERVICE LINES AS NECESSARY.
3. THE PROPOSED SEWER FORCE MAIN RELOCATION DOES NOT IMPACT ANY ENVIRONMENTALLY SENSITIVE AREAS.
4. LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES SHALL BE FIELD VERIFIED BY CONTRACTOR AND MAINTAIN 18" MINIMUM VERTICAL SEPARATION.

NOTES:

WATER MAIN

1. 8" HDPE WATER MAIN TO CONFORM TO THE FOLLOWING: AWWA C906, PRESSURE CLASS 200, DR9, DUCTILE IRON PIPE SIZE (DIPS) DIMENSIONS, AND MATERIAL DESIGNATION PE 3408 AND NSF APPROVED FOR POTABLE WATER.
2. THE PROPOSED WATER MAIN RELOCATION DOES NOT IMPACT ANY ENVIRONMENTALLY SENSITIVE AREAS.
3. LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES SHALL BE FIELD VERIFIED BY CONTRACTOR AND MAINTAIN 18" MINIMUM VERTICAL SEPARATION.


HDPE TO DIP TRANSITION
THRUST COLLAR
STA.13+73.73 -L- TIE TO EXISTING 2" SAN.FORCE MAIN (STA.10+00.00 -SAN-)
STA.14+01.36 -L- 16' FROM CL HDD POINT LAUNCHING PIT (DRILL SIDE)
500' OF EXIST.SANITARY FORCE MAIN SECTION TO BE ABANDONED
PROPOSED 4" HDPE (AWWA CERTIFIED) SANITARY FORCE MAIN BY DIRECTIONAL DRILL
STA.18+48.40 -L- 18' FROM CL HDD POINT RECEIVING PIT (PULL SIDE)
HDPE TO DIP TRANSITION
THRUST COLLAR
STA.18+76.04 -L- TIE TO EXISTING 2" SAN.FORCE MAIN (STA.15+05.70 -SAN-)
SR 1625 SWINDELL RD
20' BST
S 58°58'39.7"E
S 58°58'39.7"E
S 58°57'48.8"E
PROP 2" GV
PROP 6" GV
PROP 8" GV
STA.14+66.74 -L- TIE TO EXISTING 6" WATER MAIN (STA.10+00.00 -WL-)
THRUST COLLAR
HDPE TO DIP TRANSITION
STA.14+94.51 -L- 20' FROM CL HDD POINT RECEIVING PIT (PULL SIDE)
363' OF EXIST.WATER MAIN SECTION TO BE ABANDONED
PROPOSED 8" HDPE (AWWA C906) WATER MAIN BY DIRECTIONAL DRILL
STA.18+06.97 -L- 20' FROM CL HDD POINT LAUNCHING PIT (DRILL SIDE)
THRUST COLLAR
HDPE TO DIP TRANSITION
STA.18+34.61 -L- TIE TO EXISTING 6" WATER MAIN (STA.13+70.27 -WL-)
EXIST. 6" WATER MAIN
EXIST. 2" PVC SAN. FORCE MAIN
FSS
SS
W
15" RCP
18" RCP
24" RCP
12" RCP
STRUCT. #1
STRUCT. #2
STRUCT. #3
STRUCT. #4
STRUCT. #5
STRUCT. #6
STRUCT. #7
STRUCT. #8
STRUCT. #9
STRUCT. #10
STRUCT. #11
STRUCT. #12
STRUCT. #13
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STRUCT. #15
STRUCT. #16
STRUCT. #17
STRUCT. #18
STRUCT. #19
STRUCT. #20
STRUCT.

8/17/99

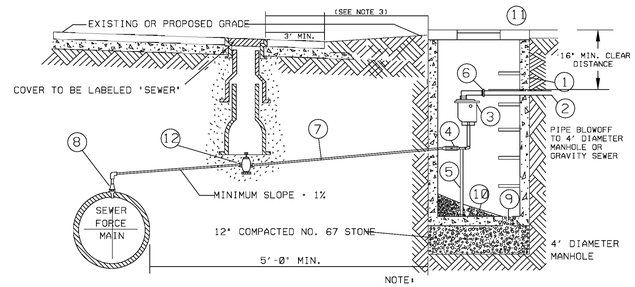
REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
B-5204	UC4

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER DWAYNE H. ALLIGOOD
09/12/2011

UTILITY CONSTRUCTION DETAIL SHEET

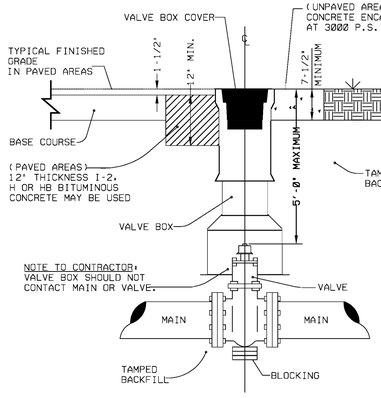


BILL OF MATERIALS	
1	PRECAST MANHOLE W\ FLAT TOP
2	BLOW OFF PIPE SCD 80 PVC
3	2" AIR RELEASE VALVE
4	2"-SS BALL VALVE
5	PIPE STAND SUPPORT SS
6	2" UNION SCD 80 PVC
7	2" TYPE 'K', SOFT COPPER WITH FLARED ELBOW
8	CORPORATION COCK
9	6" DIAMETER DRAIN
10	GROUT, 1/8" TO 1'-0" MIN. SLOPE TO DRAIN
11	36" X 30" HALLIDAY HATCH, ALUM.
12	2"-GATE VALVE W/ BOX

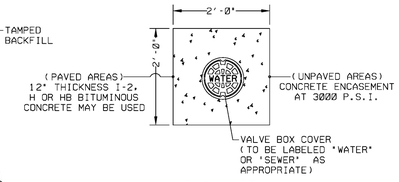
NOTE:
1. AIR RELEASE/VACUUM VALVE TO BE A.R.I. FLOW CONTROL MODEL SAAR SHORT VERSION D-025
2. THE AIR RELEASE MANHOLE SHALL BE INSTALLED IN THE SHOULDER OR AS DIRECTED BY THE ENGINEER.
3. FOR MAINS LOCATED OUTSIDE OF STREET RIGHT-OF-WAYS THE MAXIMUM DISTANCE BETWEEN THE MANHOLE AND THE VALVE BOX SHOULD BE THREE (3) FEET.
4. MAIN SHALL BE DEEP ENOUGH TO ACCOMODATE INSTALLATION AS SHOWN
5. ALL ITEMS LISTED IN THE BILL OF MATERIALS WILL BE PAID FOR AT THE CONTRACT PRICE FOR "PER EACH AIR RELEASE VALVE".

TYPICAL SEWER FORCE MAIN AIR RELEASE VALVE

NTS



SECTION VIEW

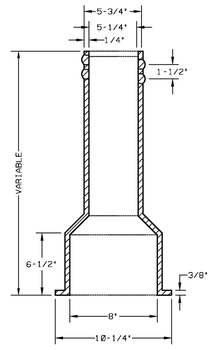


PLAN VIEW

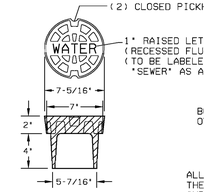
NOTES:
1. ONLY MANUFACTURED VALVE BOX EXTENSIONS SHALL BE ALLOWED.
2. VALVE OPERATING NUT MUST BE EXTENDED SO THAT THE DEPTH IS NO GREATER THAN 5' (FT.) FROM THE SURFACE USING A MANUFACTURER APPROVED EXTENSION KIT.
3. PRECAST CONCRETE ENCASEMENT IS ALLOWED OUTSIDE OF PAVED AREAS.

TYPICAL VALVE BOX

NTS



BOTTOM SECTION



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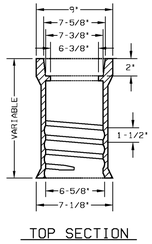
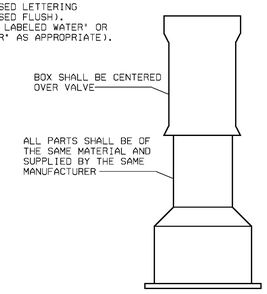


TOP SECTION

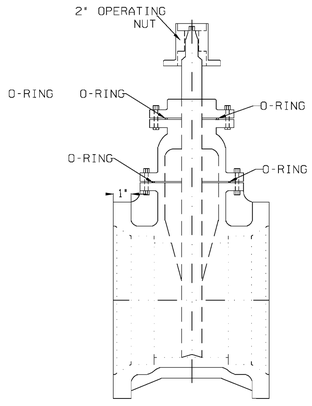


COMPLETE BOX

NOTES:
1. VALVE BOX COVER SHALL WEIGH A MINIMUM 26 LBS.
2. ENTIRE VALVE BOX ASSEMBLY & COVER SHALL BE CAST FROM CLASS 35 GRAY IRON.
3. ASSEMBLY SHALL BE DOMESTICALLY MADE AND MANUFACTURED IN THE U.S.A.

TYPICAL VALVE BOX

NTS



TYPICAL RESILIENT MECHANCIAL JOINT GATE VALVE DETAIL

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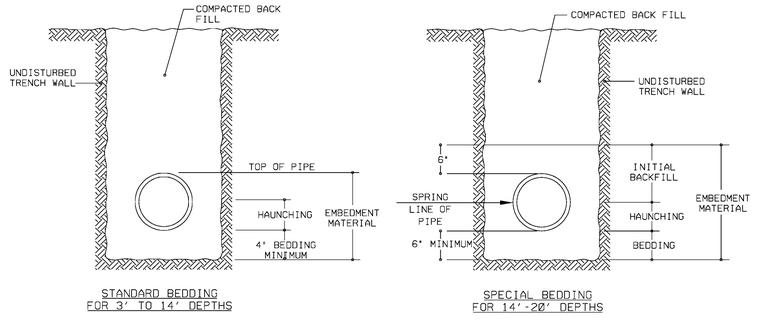
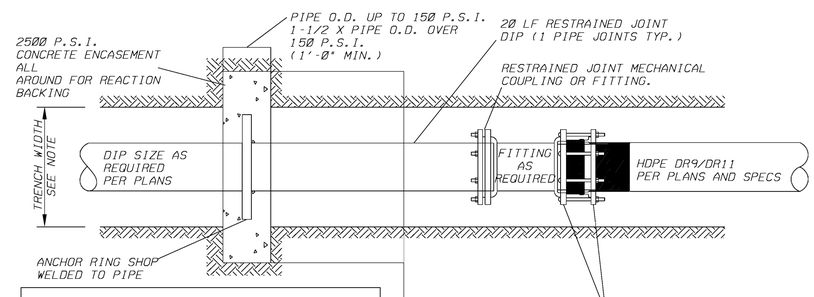


NOTES:

1. EMBEDMENT MATERIAL MUST BE CLASS I (NO. 67 OR NO. 78M WASHED STONE IS TYPICALLY USED).
2. EMBEDMENT MATERIAL SHALL BE COMPACTED TO A MINIMUM 95% STANDARD PROCTOR DENSITY FOR CLASS I MATERIAL.
3. STANDARD BEDDING SHALL BE UTILIZED FOR ALL CASES WHERE TRENCH BOTTOMS ARE UNSTABLE DUE TO SOIL TYPE, OR MOISTURE CONDITIONS.

TYPICAL BEDDING FOR FLEXIBLE & SEMI-RIGID PIPE

NTS



ANCHOR RING DIMENSIONS		
NOMINAL PIPE SIZE	O.D. OF RINGS	THICKNESS
4" - 12"	PIPE O.D. + 6"	1/2"
16" - 24"	PIPE O.D. + 7"	3/4"
30" & 36"	PIPE O.D. + 8"	1"

TYPICAL DIP TO HDPE TRANSITION DETAIL WITH THRUST COLLAR

NTS

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PROJECT REFERENCE NO.	SHEET NO.
B-5204	U01

UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS

UTILITY OWNERS ON PROJECT

(1) TRI-COUNTY – CATV
(2) CENTURYLINK – TELEPHONE

NOTE: PROPOSED UTILITY WORK SHOWN ARE APPROXIMATE AND PER TRICOUNTY AND CENTURYLINK.

NC GRID
NAD 83/NSRS 2007

30 15 0 30 60
SCALE

15

20

(1) 09016511
COASTAL AGROBUSINESS, INC
PO BOX 856
GREENVILLE, NC 27835
DB 1377 PG 635
15.51 AC
TRACT #1

BM#1
-L- STA 15+98.73
111' LT
ELEV=10.44'

(6) 09020016
LEROY GRIFFIN, ET UX
365 SWINDELL RD
PANTEGO, NC 27860
DB 1377 PG 635
5.31 AC

(12) 09020518
CHARLIE SELBY HEIRS
1349 EAST 100TH STREET
BROOKLYN, NY 11236
DB 346 PG 450
3.89 AC

(9) 09016870
REDDEN GRIFFIN HEIRS
365 SWINDELL RD
PANTEGO, NC 27860
DB 243 PG 218
0.45 AC

JACK AND BORE UNDER ROAD
NEW TEL PED 2' OFF R/W
PROP. 15" RCP 66-LF
PROP. 18" RCP 166-LF
PROP. 15" RCP 80-LF
5' OFF EASEMENT
PROPOSED TELEPHONE CABLE DIRECTIONAL BORE APPROX. 510' AT A MINIMUM OF 10-FT BELOW CREEK BED
TIE INTO EXISTING CATV PED
PROPOSED CATV
70'
18' MIN.
PROPOSED TELEPHONE CABLE
2' OFF R/W
TIE INTO EXISTING TEL PED
TIE INTO EXISTING CATV
PROPOSED CATV
30'
EXISTING AERIAL CATV TO REMAIN IN PLACE
NOTE: MOVE EXIST. PED 12' DIG & SWING CATV INTO NEW PED LOCATION
JACK AND BORE UNDER ROAD
BRIDGE #141
SR 1625 | SWINDELL RD
20' BST
S 58° 56' 39.7" E
S 58° 36' 10.0" E
15" RCP
18" CMP
12" CONC
8" GR.
15" GR.
FSS
JS
BZ 1
BZ 2
C1
C2

(2) 09022957
REBECCA F. GRIFFIN
PO BOX 213
PANTEGO, NC 27860
DB 1210 PG 718
0.25 AC

(3) 09009148
TAFT ALLEN, JR., ET AL
1295 5TH AVE #10-D
NEW YORK, NY 10029
DB 351 PG 281
5.06 AC

(4) 09006690
LUTITIA ALLEN
PO BOX 69
PANTEGO, NC 27860
DB 1264 PG 527
DB 646 PG 95
0.47 AC

(5) 09010819
IRENE GRIFFIN
4150 SWINDELL RD
PANTEGO, NC 27860
DB 431 PG 303
0.49 AC

(3) 09009148
TAFT ALLEN, JR., ET AL
1295 5TH AVE #10-D
NEW YORK, NY 10029
DB 351 PG 281
5.06 AC

PANTEGO DRAINAGE DISTRICT CANAL 14

20' RESERVED RIGHT OF WAY BY ALLEN

(7) 09001529
WILLIAM E. JONES, ET UX
PO BOX 172
PANTEGO, NC 27860
DB 601 PG 593
0.33 AC

(8) 09019204
FLOSSIE M. MOORE
435 SWINDELL RD
PANTEGO, NC 27860
DB 994 PG 682
0.33 AC

(10) 09019205
FLOSSIE MOORE
435 SWINDELL RD
PANTEGO, NC 27860
DB 994 PG 685
0.15 AC

(11) 09000037
DANIEL MASON WEBSTER
405 SWINDELL RD
PANTEGO, NC 27860
DB 940 PG 210
3.02 AC

(13) 09020014
LEROY GRIFFIN, ET UX
365 SWINDELL RD
PANTEGO, NC 27860
DB 371 PG 521
4.1 AC

EXISTING BRIDGE # 141
WOOD- SEATS,BENTS,PILINGS,BEAMS,HW,WW
CONC- DECK,GUARD RAIL
STEEL I- BEAM REINFORCEMENT

REVISIONS
8/17/99

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Rev. 3/6/01

PROJ. REFERENCE NO.	SHEET NO.
B-5204	X-1A

NOTE: Approximate quantities only. Unclassified excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing, Removal of Existing Pavement and Breaking of Existing Pavement will be paid for at the contract Lump Sum price for "Grading".

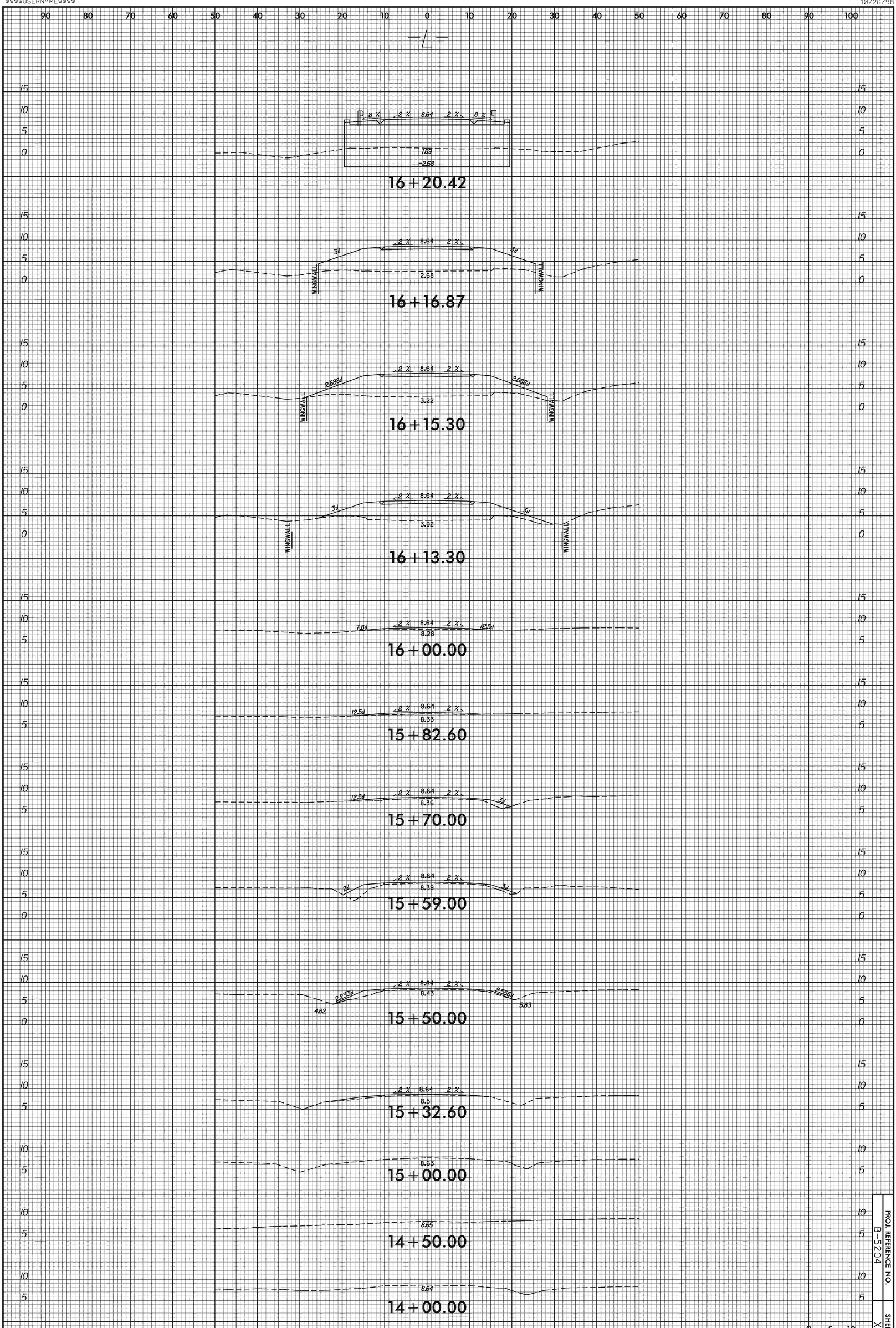
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

CROSS–SECTION SUMMARY

IN CUBIC YARDS

NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT.

LOCATION (–L–)	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBANKMENT
15+32.60	*0*	*0*	*0*
15+50.00	*0*	*0*	*5*
15+59.00	*0*	*0*	*5*
15+70.00	*0*	*0*	*6*
15+82.60	*0*	*0*	*2*
16+00.00	*0*	*0*	*1*
16+13.30	*0*	*0*	*38*
16+15.30	*0*	*0*	*13*
16+16.87	*0*	*0*	*12*
16+20.42	*0*	*0*	*30*
	BOX CULVERT		
16+46.42	*0*	*0*	*0*
16+50.00	*0*	*0*	*27*
16+82.60	*0*	*0*	*111*
16+90.85	*0*	*0*	*2*
17+00.00	*0*	*0*	*3*
17+10.00	*0*	*0*	*2*
17+32.60	*0*	*0*	*6*



PROJ. REFERENCE NO. B-5204

SHEET NO. X-1

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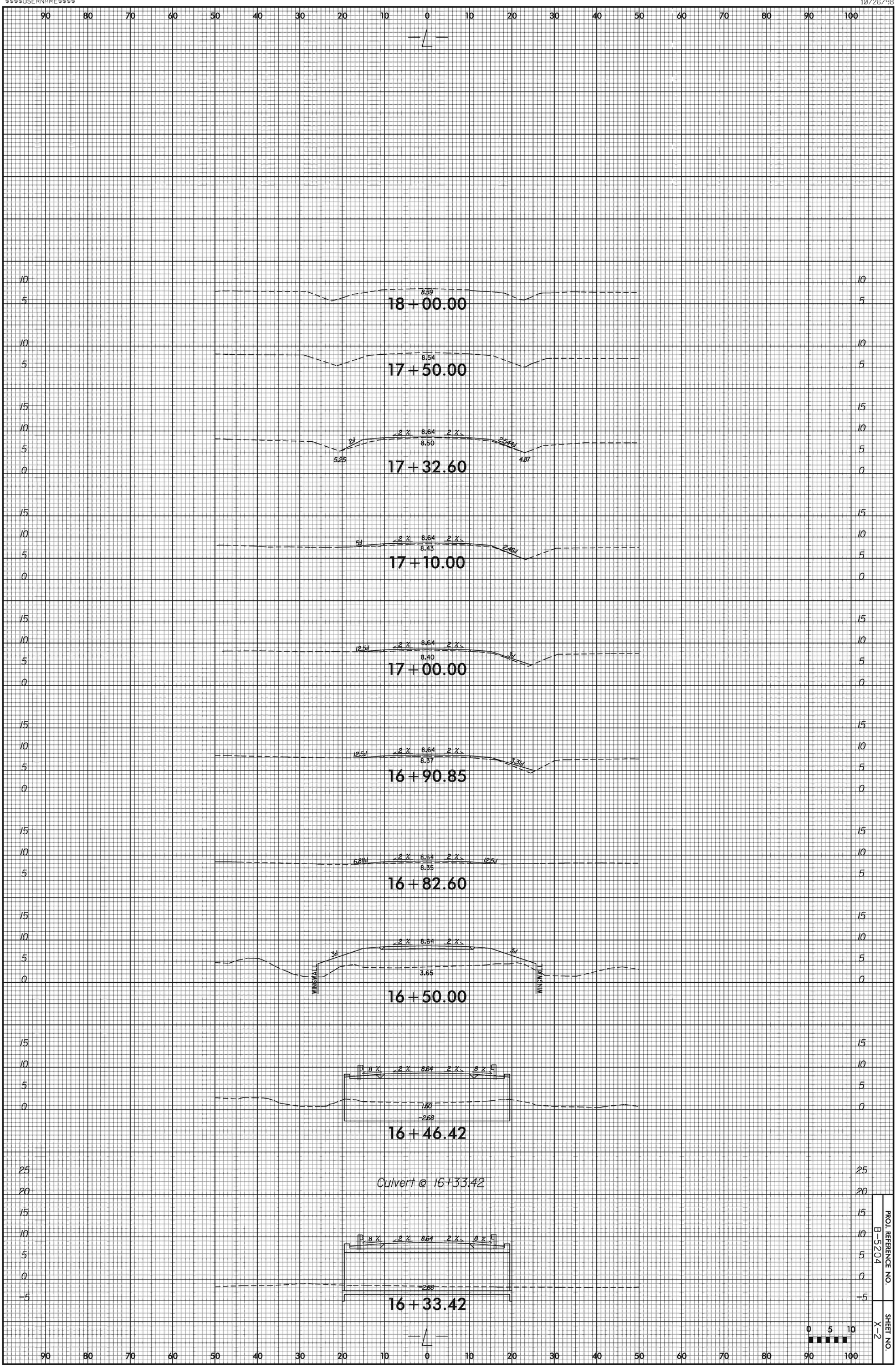

PROJ. REFERENCE NO. B-5204

SHEET NO. X-2

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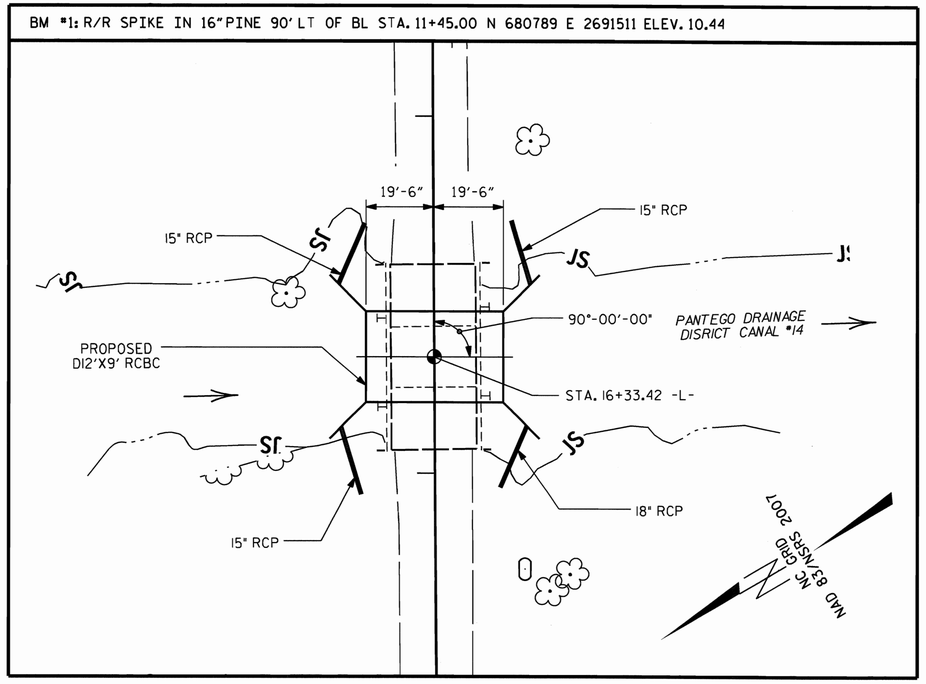


GRADE POINT ELEV. @ 16+33 -L- = 8.64
BED ELEV. @ STA. 16+33.42 -L- = -2.68
ROADWAY SLOPES = 2:1

HYDRAULIC DATA

DESIGN DISCHARGE	= 307 C.F.S.
FREQUENCY OF DESIGN FLOOD	= 25 YR.
DESIGN HIGH WATER ELEVATION	= 2.2
DRAINAGE AREA	= 1.45 SQ. MI.
BASIC DISCHARGE (Q100)	= 474 C.F.S.
BASIC HIGH WATER ELEVATION	= 3.0

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= >682 C.F.S.
FREQUENCY OF OVERTOPPING FLOOD	= >500 YR.
OVERTOPPING FLOOD ELEVATION	= >4.0

TOTAL STRUCTURE QUANTITIES

CLASS A CONCRETE		
BARREL @ 2.512 CY/FT	98.0	C.Y.
WING ETC.	30.3	C.Y.
TOTAL	128.3	C.Y.
REINFORCING STEEL		
BARREL	19610	LBS.
WINGS ETC.	2070	LBS.
TOTAL	21680	LBS.
CULVERT EXCAVATION	LUMP SUM	
FOUNDATION CONDITIONING MATERIAL	110	TONS
REMOVAL OF EXISTING STRUCTURE	LUMP SUM	

NOTES

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

DESIGN FILL---------- 1.58'

FOR OTHER DESIGN DATA AND NOTES SEE STANDARD NOTE SHEET.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR CURING CONCRETE, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

3" Ø WEEP HOLES INDICATED TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.

CONCRETE IN CULVERTS TO BE POURED IN THE FOLLOWING ORDER:

1. WING FOOTINGS AND FLOOR SLAB INCLUDING 4" OF ALL VERTICAL WALLS.
2. THE REMAINING PORTIONS OF THE WALLS AND WINGS FULL HEIGHT FOLLOWED BY ROOF SLAB AND HEADWALLS.

THE RESIDENT ENGINEER SHALL CHECK THE LENGTH OF CULVERT BEFORE STAKING IT OUT TO MAKE CERTAIN THAT IT WILL PROPERLY TAKE CARE OF THE FILL.

THIS BARREL STANDARD TO BE USED ONLY ON CULVERT ON 90° SKEW AND TO BE USED WITH STANDARD WING SHEET WITH THE SAME SKEW AND VERTICAL CLEARANCE.

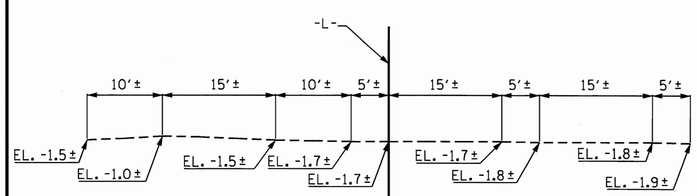
DIMENSIONS FOR WING LAYOUT AS WELL AS ADDITIONAL REINFORCING STEEL EMBEDDED IN BARREL ARE SHOWN ON WING SHEET.

STEEL IN THE BOTTOM SLAB MAY BE SPLICED AT THE PERMITTED CONSTRUCTION JOINT AT THE CONTRACTOR'S OPTION. EXTRA WEIGHT OF STEEL DUE TO THE SPLICES SHALL BE PAID FOR BY THE CONTRACTOR.

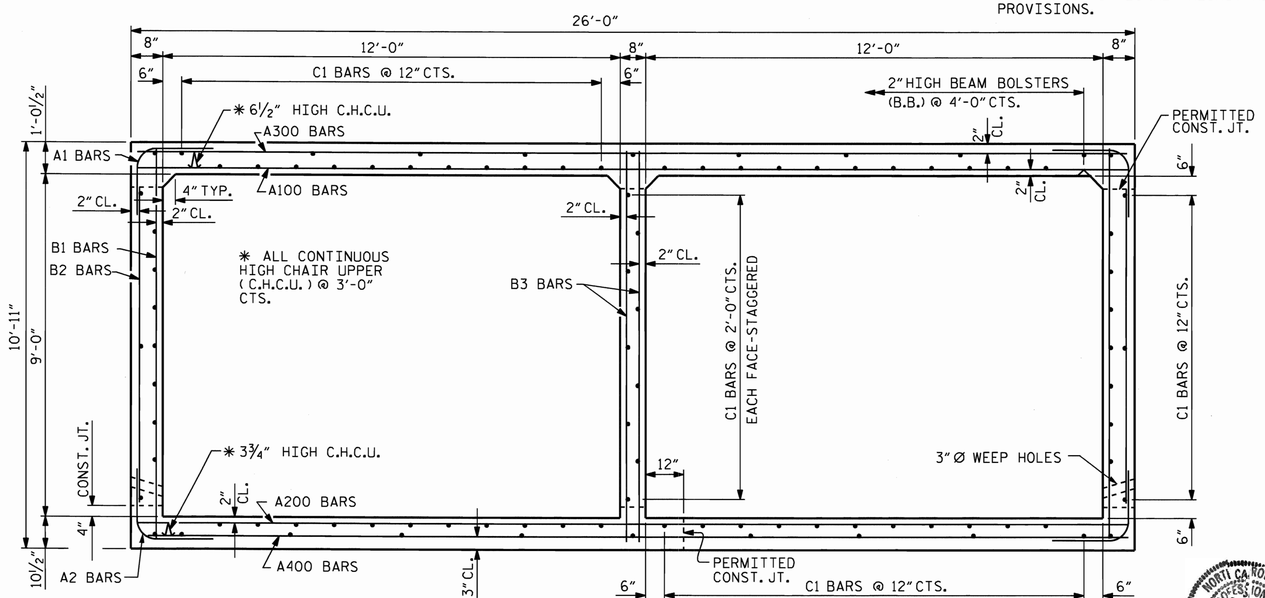
AT THE CONTRACTOR'S OPTION, HE MAY SPLICE THE VERTICAL REINFORCING STEEL IN THE INTERIOR FACE OF EXTERIOR WALL AND BOTH FACES OF INTERIOR WALLS ABOVE LOWER WALL CONSTRUCTION JOINT. THE SPLICE LENGTH SHALL BE AS PROVIDED IN THE SPLICE LENGTH CHART SHOWN ON THE PLANS. EXTRA WEIGHT OF STEEL DUE TO THE SPLICES SHALL BE PAID FOR BY THE CONTRACTOR.

THE EXISTING STRUCTURE CONSISTS OF 6 SPANS @ 9' WITH A CLEAR ROADWAY WIDTH OF 24'. THE SUPERSTRUCTURE HAS A REINFORCED CONCRETE DECK ON TIMBER JOISTS. THE SUBSTRUCTURE CONSISTS OF TIMBER CAPS, TIMBER PILES AND STEEL CRUTCH BENTS. THE EXISTING STRUCTURE SHALL BE REMOVED.

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.



PROFILE ALONG ℄ CULVERT



RIGHT ANGLE SECTION OF BARREL

THERE ARE 95 "C" BARS IN SECTION OF BARREL.

NORTH CAROLINA PROFESSIONAL SEAL 14091 ENGINEER BUCK CHARLES HUNT
3/24/11

PROJECT NO. B-5204
BEAUFORT COUNTY
STATION: 16+33.42 -L-

REPLACES BRIDGE NO. 141

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BARREL STANDARD DOUBLE 12 FT. X 9 FT. CONCRETE BOX CULVERT 90° SKEW

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

ASSEMBLED BY : M. D. IVY	DATE : 3/22/11	SPECIAL
CHECKED BY : B. C. HUNT	DATE : 3/23/11	
DRAWN BY : R.W. WRIGHT	DATE : JULY, 1990	STANDARD
CHECKED BY : D.A. GLADDEN	DATE : JULY, 1990	

ADDED NOV. 1, 1990

STD. NO. CB12A

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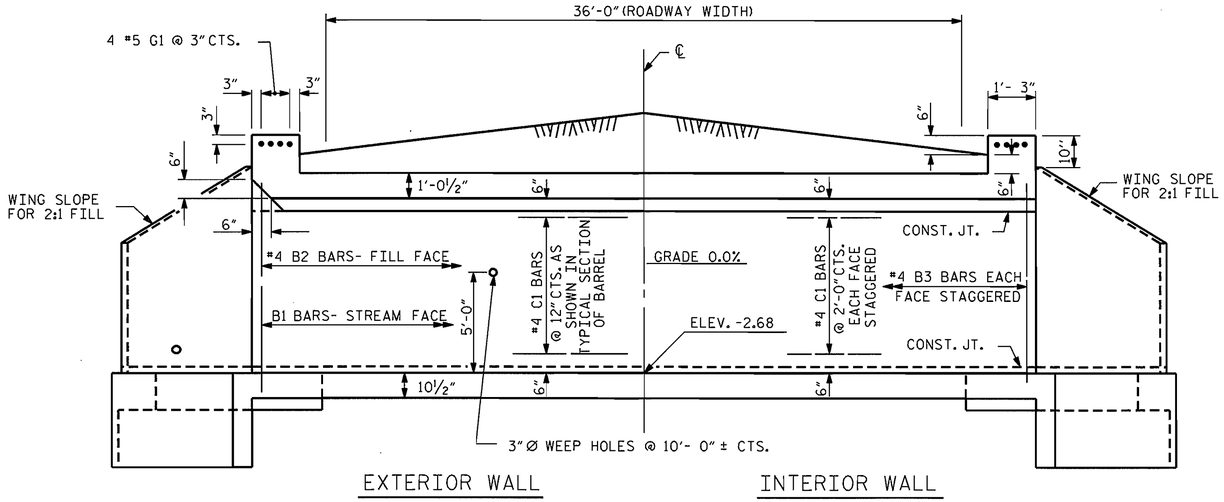
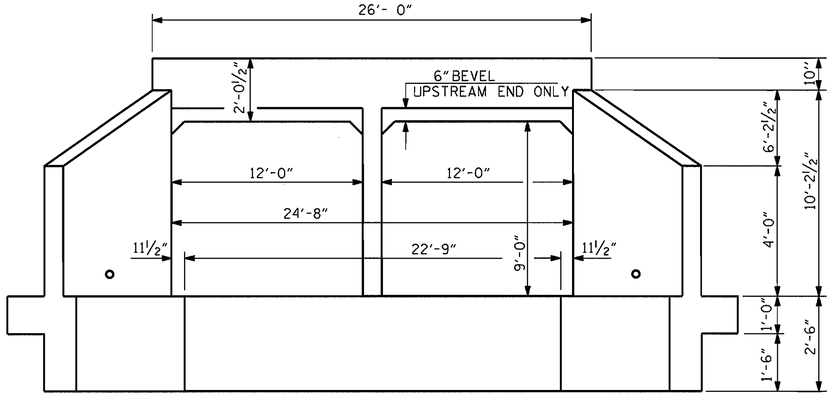
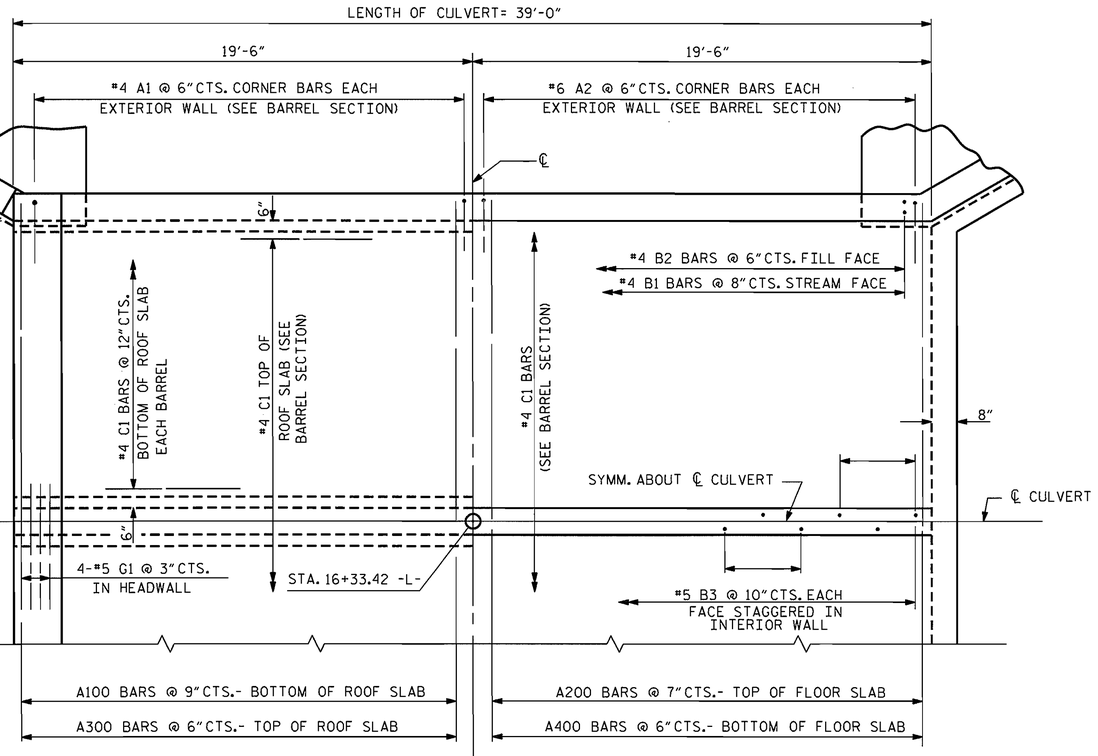


CULVERT SECTION NORMAL TO ROADWAY



END ELEVATION



PART PLAN-ROOF SLAB

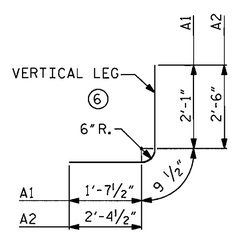
PART PLAN-FLOOR SLAB

BILL OF MATERIAL

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A100	52	#7	STR.	25'-7"	2719
A200	67	#5	STR.	25'-7"	1788
A300	78	#7	STR.	25'-7"	4079
A400	78	#7	STR.	25'-7"	4079
A1	156	#4	6	4'-6"	469
A2	156	#6	6	5'-8"	1328
B1	118	#4	STR.	10'-5"	821
B2	156	#4	STR.	8'-4"	868
B3	94	#4	STR.	10'-5"	654
C1	190	#4	STR.	20'-5"	2591
G1	8	#5	STR.	25'-8"	214
TOTAL REINFORCING STEEL					19610 LBS.

SPLICE CHART

BAR	SIZE	LENGTH
A200	#5	1'-9"
A400	#7	3'-1"
B1	#4	1'-9"
B3	#4	1'-9"
C1	#4	1'-11"



BAR TYPE

BAR DIMENSIONS ARE OUT TO OUT

PROJECT NO. B-5204

BEAUFORT COUNTY

STATION: 16+33.42 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BARREL STANDARD DOUBLE 12 FT. X 9 FT. CONCRETE BOX CULVERT 90° SKEW

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

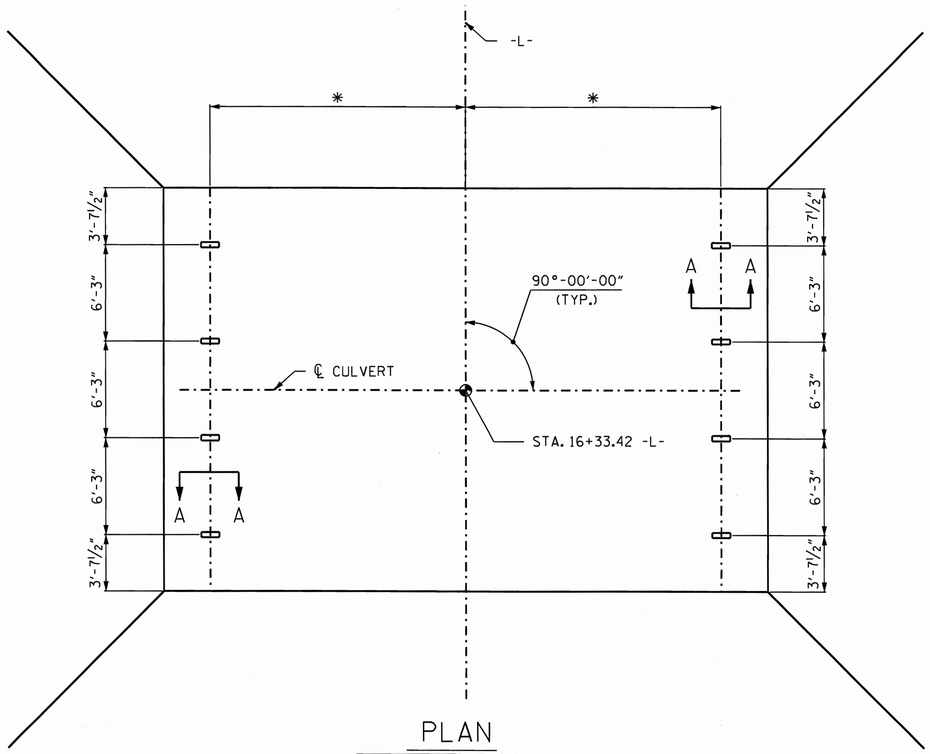
STD. NO. CB12

ASSEMBLED BY : M. D. IVY	DATE : 3/22/11	SPECIAL	
CHECKED BY : B. C. HUNT	DATE : 3/23/11		
DRAWN BY : RALPH D. UNDERWOOD	DATE : MAY 1971	STANDARD	
CHECKED BY : JOEL A. JOHNSON	DATE : JULY 1971		

REVISED 11-19-99 BY M.M. CHECKED BY R.W.W.
REDRAWN NOV. 1990 BY TSS CHECKED BY ARB

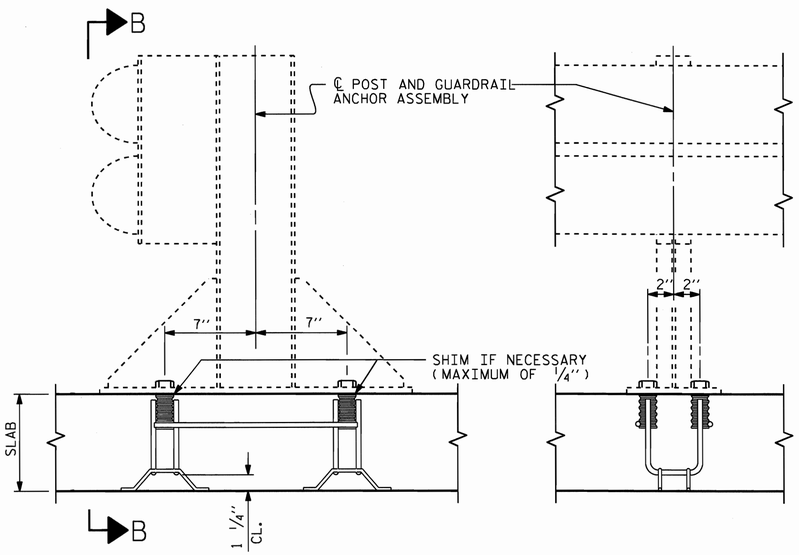
NORTH CAROLINA PROFESSIONAL SEAL 030015 ENGINEER BUCK CHARLES HUNT
4/4/11

✱ THIS DENOTES TO BE FURNISHED BY THE ENGINEER



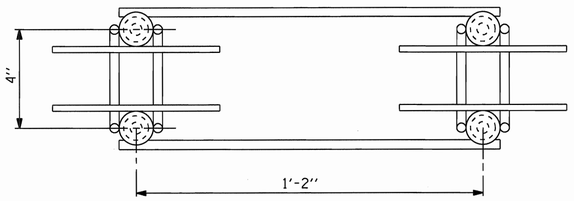
PLAN

SHOWING : GUARDRAIL ANCHOR ASSEMBLY SPACING.

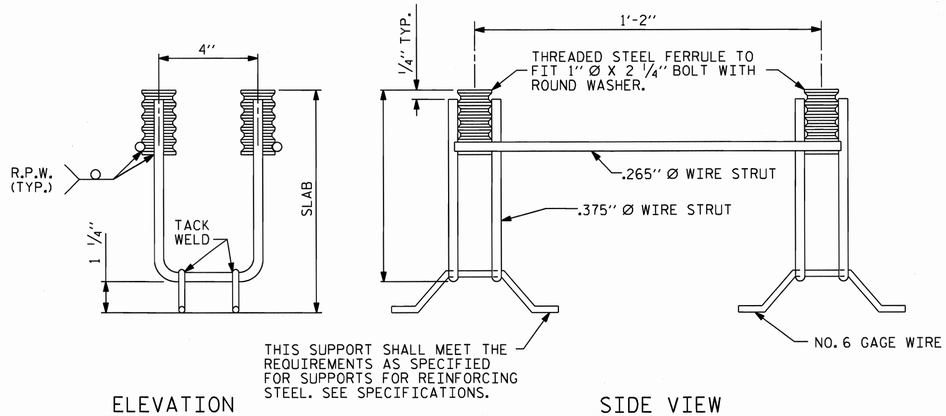


SECTION A-A

SECTION B-B



PLAN



ELEVATION

SIDE VIEW

GUARDRAIL ANCHOR ASSEMBLY FOR CULVERTS

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY FOR CULVERTS SHALL CONSIST OF THE FOLLOWING COMPONENTS :

A. FERRULES SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF AASHTO M169, GRADE 12L14 AND SHALL HAVE A MINIMUM LENGTH OF THREADS OF 2½".

B. 4 - 1" Ø X 2 1/4" BOLTS WITH WASHERS, BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 1" Ø X 2 1/4" GALVANIZED BOLTS 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.)

C. WIRE STRUTS SHOWN IN THE GUARDRAIL ANCHOR ASSEMBLY FOR CULVERTS DETAIL ARE MINIMUM ALLOWABLE SIZE AND SHALL HAVE A MINIMUM TENSILE STRENGTH OF 100,000 P.S.I. AS AN OPTION, A 7/16" Ø WIRE STRUT WITH A MINIMUM TENSILE STRENGTH OF 90,000 PSI IS ACCEPTABLE.

GUARDRAIL ANCHOR ASSEMBLY WITH BOLTS SHALL BE ASSEMBLED IN THE SHOP. BOLT THREADS MAY BE RECUT AS NECESSARY TO INSURE FIT.

THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY FOR CULVERTS COMPLETE IN PLACE, SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CLASS "A" CONCRETE.

FERRULES TO BE PLUGGED DURING POURING OF SLAB AS RECOMMENDED BY THE MANUFACTURER.

AT THE CONTRACTOR'S OPTION, FERRULES WITH OPEN OR CLOSED ENDS MAY BE USED.

PAYMENT FOR GUARDRAIL, POSTS, AND POST BASE PLATES IS INCLUDED IN ROADWAY PAY ITEMS.

SLAB REINFORCING STEEL MAY BE SHIFTED AS NECESSARY TO CLEAR GUARDRAIL ANCHOR ASSEMBLY. CARE SHOULD BE TAKEN TO KEEP THE SHIFTING OF REINFORCING STEEL TO A MINIMUM.

THE CONTRACTOR MAY USE ADHESIVELY ANCHORED ANCHOR BOLTS IN PLACE OF GUARDRAIL ANCHOR ASSEMBLY. LEVEL TWO FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 1" Ø BOLT IS 21.8 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE SPECIAL PROVISIONS.

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER CHARLES HUNT 3/23/11

PROJECT NO. B-5204

BEAUFORT COUNTY

STATION: 16+33.42 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

ANCHORAGE DETAILS FOR GUARDRAIL ANCHOR ASSEMBLY FOR CULVERTS

ASSEMBLED BY : M. D. IVY	DATE : 3/22/11
CHECKED BY : B. C. HUNT	DATE : 3/23/11
DRAWN BY : FCJ 6/88	REV. 7/10/01 LES/RDR
CHECKED BY : ARB 6/88	REV. 5/7/03 RWW/JTE
	REV. 5/1/06R KMM/GM

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

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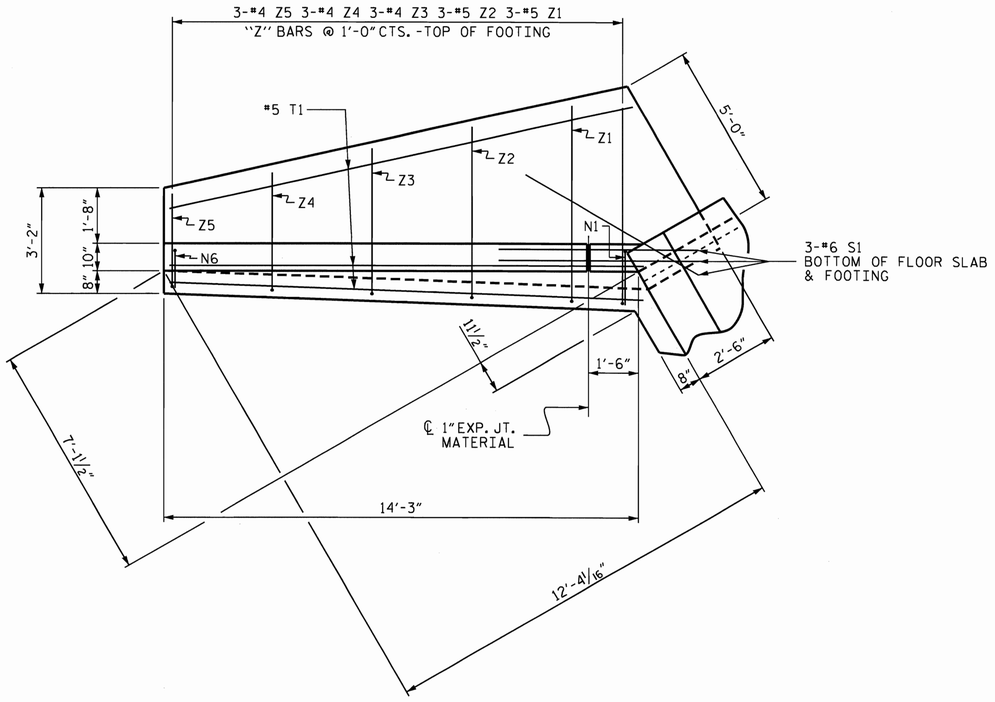
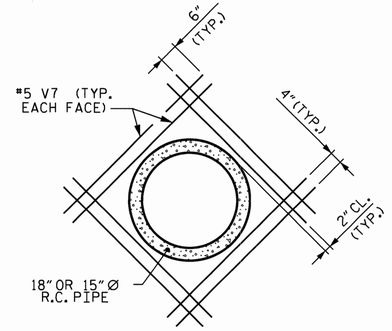


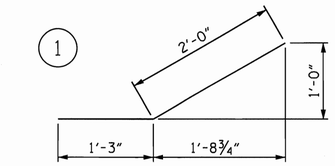
PLAN

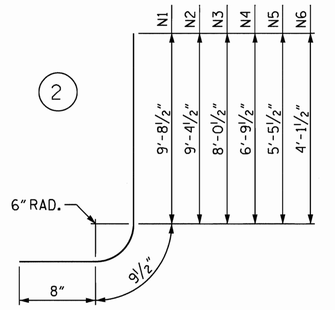


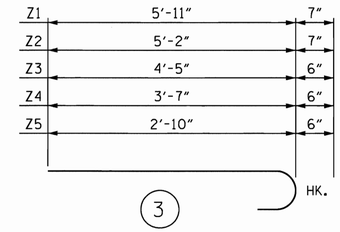
DETAIL OF REINFORCING AROUND PIPE

BAR TYPES

ALL BAR DIMENSIONS ARE OUT TO OUT.





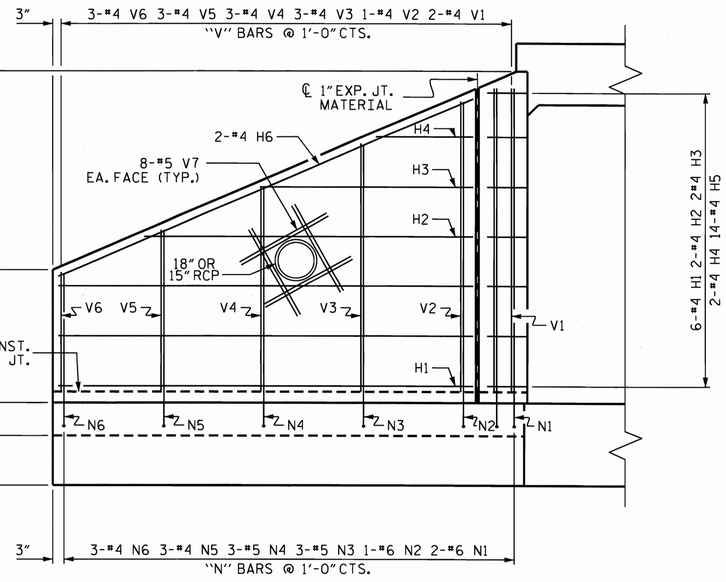


BILL OF MATERIAL

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
H1	24	#4	STR	12'-5"	199
H2	8	#4	STR	9'-10"	53
H3	8	#4	STR	6'-5"	34
H4	8	#4	STR	2'-11"	16
H5	56	#4	1	3'-3"	122
H6	8	#4	STR	13'-6"	72
N1	8	#6	2	11'-2"	134
N2	4	#6	2	10'-10"	65
N3	12	#5	2	9'-6"	119
N4	12	#5	2	8'-3"	103
N5	12	#4	2	6'-11"	55
N6	12	#4	2	5'-7"	45
S1	12	#6	STR	6'-0"	108
T1	12	#5	STR	14'-3"	178
V1	8	#4	STR	9'-2"	49
V2	4	#4	STR	8'-9"	23
V3	12	#4	STR	7'-5"	59
V4	12	#4	STR	6'-2"	49
V5	12	#4	STR	4'-10"	39
V6	12	#4	STR	3'-7"	29
V7	64	#5	STR	4'-0"	267
Z1	12	#5	3	6'-6"	81
Z2	12	#5	3	5'-9"	72
Z3	12	#4	3	4'-11"	39
Z4	12	#4	3	4'-1"	33
Z5	12	#4	3	3'-4"	27

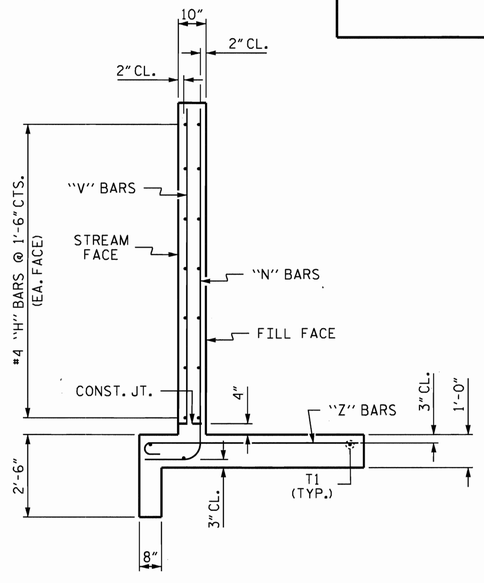
REINFORCING STEEL
FOR 4 WINGS 2070 LBS

CLASS A CONCRETE
4 WINGS 26.2 CY
2 HEADWALLS 2.4 CY
2 END CURTAIN WALLS 1.7 CY
TOTAL 30.3 CY



ELEVATION

V BARS & H BARS MAY BE SHIFTED AS NECCESSARY TO AVOID INTERFERENCE WITH PIPE THROUGH WING



TYPICAL WING SECTION

PROJECT NO. B-5204
BEAUFORT COUNTY
STATION: 16+33.42 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD WINGS FOR CONCRETE BOX CULVERT

H = 9'-0" SLOPE = 2:1
90° SKEW

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

STD. NO. CW9009

ASSEMBLED BY :	M. D. IVY	DATE : 3/22/11
CHECKED BY :	B. C. HUNT	DATE : 3/23/11
DRAWN BY : CCJ	10/99	
CHECKED BY : RWW	03/00	

NORTH CAROLINA PROFESSIONAL SEAL 14001 ENGINEER BRIAN C. HUNT CHARLES 3/23/11

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 2006 "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 ω RGW REV. 5-7-03 RWW ω JTE
REV. 8-16-99 RWW ω LES REV. 5-1-06 TLA ω GM

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