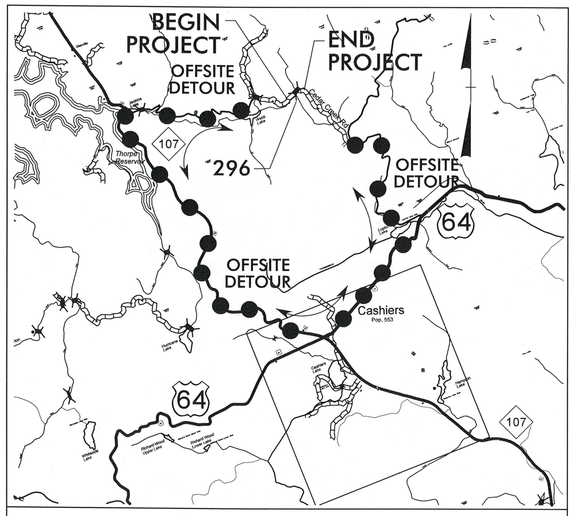
09/09/99

TIP PROJECT: 17BP.14.R.14

CONTRACT: DN00147

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols



VICINITY MAP

DETOUR ROUTE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

JACKSON COUNTY

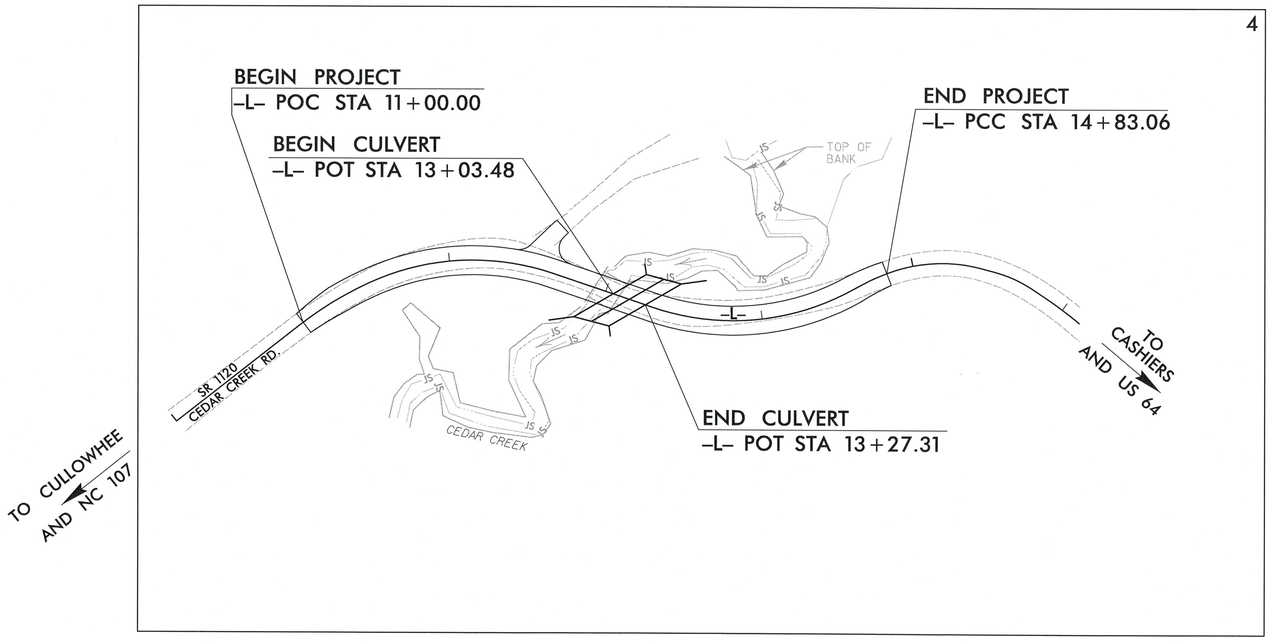
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.14.R.14	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
17BP.14.R.14		PE, R/W, UTIL, CONST.

LOCATION: BRIDGE NO. 296 OVER CEDAR CREEK ON SR 1120 (CEDAR CREEK RD)

TYPE OF WORK: GRADING, DRAINAGE, AND CULVERT

NAD 83/ NSRS 2007



GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2012 = 930 VPD
V = 25 MPH

FUNC CLASS = LOCAL
SUB-REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY STATE PROJECT 17BP.14.R.14 = 0.068 MILES
LENGTH STRUCTURES STATE PROJECT 17BP.14.R.14 = 0.005 MILES
TOTAL LENGTH STATE PROJECT 17BP.14.R.14 = 0.073 MILES

NCDOT CONTACT: JOSHUA DEYTON, PE
PROJECT ENGINEER

Prepared In the Office of:
AECOM
NC FIRM LICENSE No: F-0342
701 Corporate Center Drive, Suite 475
Raleigh, NC 27607
(919) 854-6200 - (919) 854-6259(FAX)

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JUNE 15, 2012

LETTING DATE: JUNE 25, 2013

LEN HILL, PE
PROJECT ENGINEER

PAUL SCHRUM, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 19110 ENGINEER JOHN M. KAMPRATH

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 018172 ENGINEER PAUL T. SCHRUM, JR.

SIGNATURE: *P.E.*

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

P.E.
STATE HIGHWAY DESIGN ENGINEER

3:57:34 PM
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schrump

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.14	1-A

ROADWAY DESIGN ENGINEER

INDEX OF SHEETS, LIST OF STANDARD DRAWINGS & GENERAL NOTES

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARDS
1-B	CONVENTIONAL SYMBOLS
1-C	SURVEY CONTROL SHEETS
1-D	CENTERLINE COORDINATE LIST
2	TYPICAL SECTION AND PAVEMENT SCHEDULE
3	SUMMARY OF QUANTITIES
3-A	SUMMARY OF DRAINAGE QUANTITIES, SUMMARY OF GUARDRAIL, AND EARTHWORK SUMMARY
4	PLAN AND PROFILE SHEET
TMP-1 THRU TMP-4	TRANSPORTATION MANAGEMENT PLANS
EC-1 THRU EC-3	EROSION CONTROL PLANS
X-1A	CROSS-SECTION SUMMARY SHEET
X-1 THRU X-4	CROSS-SECTIONS
TS-01	STRUCTURE PLANS TITLE SHEET
S-01 THRU S-05	STRUCTURE PLANS
SN	STRUCTURE PLANS - STANDARD NOTES SHEET

GENERAL NOTES:

2012 SPECIFICATIONS
EFFECTIVE: 01-17-12
REVISED: 07/30/12

GRADE LINE:
GRADING AND SURFACING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED 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.

CLEARING:

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

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.

SUBSURFACE PLANS:

NO SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS.

RIGHT-OF-WAY MARKERS:

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

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 January, 2012 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.03	Method of Clearing - Method III
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
310.10	Driveway Pipe Construction
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.01	Rip Rap in Channels
876.04	Drainage Ditches with Class 'B' Rip Rap

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.14	1-B

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
- Known Soil Contamination: Boundary or Site
- Potential Soil Contamination: Boundary or Site

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 Drainage / Utility Easement — DUE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Aerial Utility Easement — AUE
- 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 Curb Ramp — CR
- Curb Cut Future Ramp — CCFR
- 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
- 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
- Underground Storage Tank, Approx. Loc.
- A/G Tank; Water, Gas, Oil
- Geoenvironmental Boring
- U/G Test Hole (S.U.E.*)
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.14	1-C
Location and Surveys	

SURVEY CONTROL SHEET 49-0296

-FINAL-

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	BL-1	536631.2970	778200.1290	3950.78	10+49.62	20.18 LT
2	BL-2	536624.6160	778406.2490	3944.85	12+46.95	19.85 LT
3	BL-3	536534.7757	778475.7391	3945.81	13+54.96	6.34 RT
4	BL-4	536510.1289	778676.1812	3956.08	15+51.78	17.37 LT

.....

BM1 ELEVATION - 3958.22
N 536488 E 778697
L STATION 15+77.00 17 LEFT
8" SPIKE SET IN BASE OF A 24" RED OAK
TREE

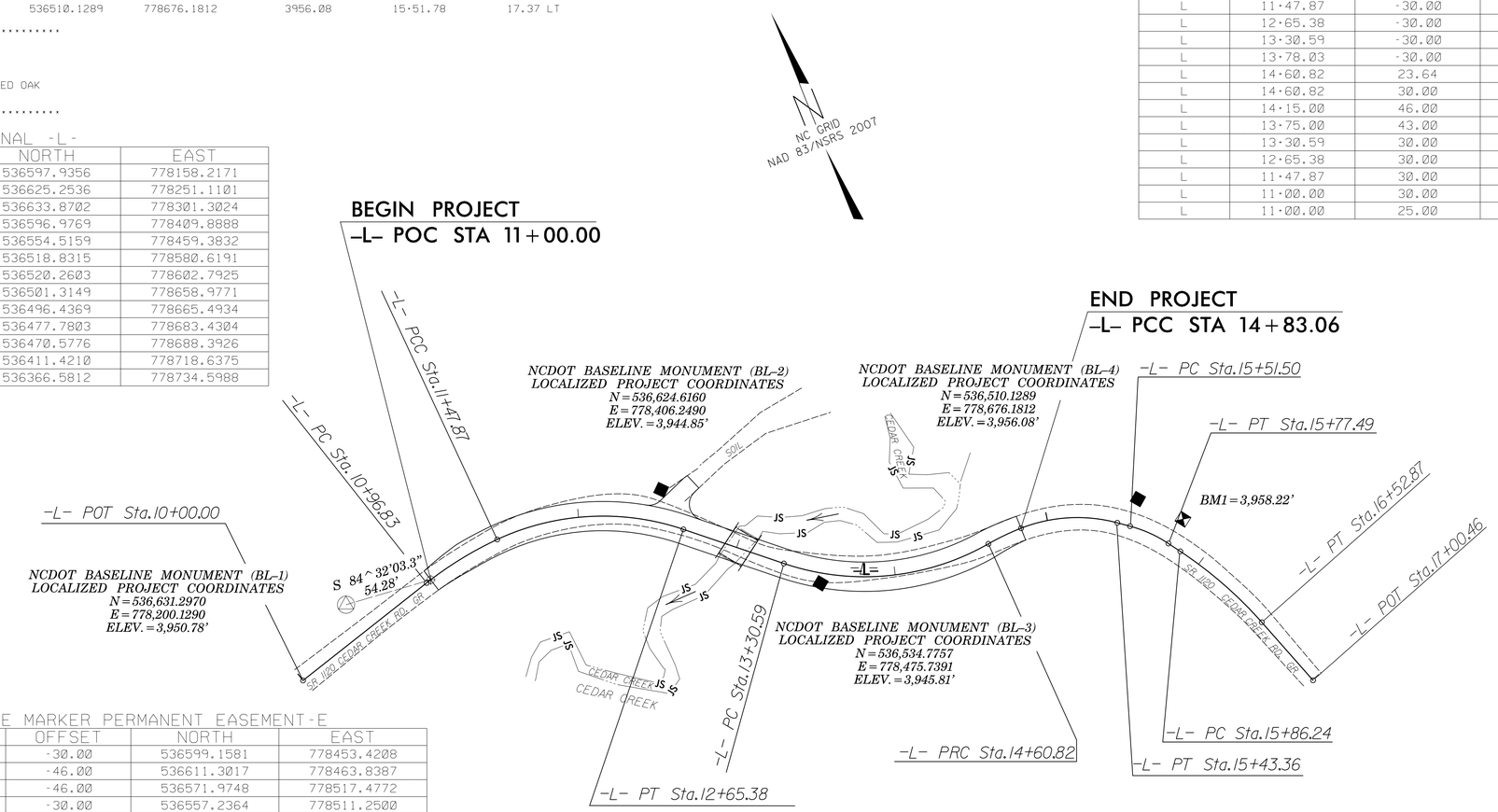
.....

FINAL -L-

TYPE	STATION	NORTH	EAST
POT	10+00.00	536597.9356	778158.2171
PC	10+96.83	536625.2536	778251.1101
PCC	11+47.87	536633.8702	778301.3024
PT	12+65.38	536596.9769	778409.8888
PC	13+30.59	536554.5159	778459.3832
PRC	14+60.82	536518.8315	778580.6191
PCC	14+83.06	536520.2603	778602.7925
PT	15+43.36	536501.3149	778658.9771
PC	15+51.50	536496.4369	778665.4934
PT	15+77.49	536477.7803	778683.4304
PC	15+86.24	536470.5776	778688.3926
PT	16+52.87	536411.4210	778718.6375
POT	17+00.46	536366.5812	778734.5988

-FINAL- ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	11+00.00	-25.00	536650.2106	778247.4543
L	11+00.00	-30.00	536655.0273	778246.1130
L	11+47.87	-30.00	536663.8265	778299.6828
L	12+65.38	-30.00	536619.7461	778429.4224
L	13+30.59	-30.00	536577.2852	778478.9168
L	13+78.03	-30.00	536557.2364	778511.2500
L	14+60.82	23.64	536495.4116	778583.8371
L	14+60.82	30.00	536489.1108	778584.7029
L	14+15.00	46.00	536473.9833	778527.6024
L	13+75.00	43.00	536491.5759	778479.2009
L	13+30.59	30.00	536531.7467	778439.8496
L	12+65.38	30.00	536574.2077	778390.3552
L	11+47.87	30.00	536603.9140	778302.9220
L	11+00.00	30.00	536597.2266	778262.2089
L	11+00.00	25.00	536602.0433	778260.8676



-FINAL- PDE MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	12+97.00	-30.00	536599.1581	778453.4208
L	12+97.00	-46.00	536611.3017	778463.8387
L	13+78.00	-46.00	536571.9748	778517.4772
L	13+78.03	-30.00	536557.2364	778511.2500
L	12+45.00	30.00	536584.0386	778377.2305
L	12+45.00	75.00	536546.3171	778352.6931
L	13+40.00	75.00	536488.8144	778421.4378
L	13+40.00	31.33	536523.6328	778447.7957

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "490296 (BL-1)"
WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF
NORTHING: 536631.2970(ft) EASTING: 778200.1290(ft)
ELEVATION: 3950.78(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999689762
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "490296 (BL-1)" TO -L- STATION 11+00.00 IS
S 84°32'03.3" E 54.28'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

GEOID MODEL - G09NC
NOTE: DRAWING NOT TO SCALE

NOTES:

1. *THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:*
   HTTPS://CONNECT.NCDOT.GOV/RESOURCES/LOCATION/

   THE FILES TO BE FOUND ARE AS FOLLOWS:
   490296_LS_CONTROL.TXT

   SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.

PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

8/17/99

REVISIONS

USER: gchrump
DATE: 6/5/2013
TIME: 2:02:03 PM
DGN: R:\Roadway\Proj\49-0296_rdy_sht01.dgn

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.14	1–D
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 18172 ENGINEER JAMES T. SCHRUM, JR.

12-17-12

Prepared in the Office of: AECOM
NC FIRM LICENSE No: F-0342
701 Corporate Center Drive, Suite 475
Raleigh, NC 27610
(919) 854-6200 - (919) 854-6259 (FAX)

CENTERLINE COORDINATE LIST

Point #	Chain	Station	Northing (Y)	Easting (X)
1	L	10+00.00	536597.9356	778158.2171
2	L	11+00.00	536626.1269	778254.1610
3	L	12+00.00	536627.9039	778352.8421
4	L	13+00.00	536574.4355	778436.1641
5	L	14+00.00	536522.5094	778520.3090
6	L	15+00.00	536518.6207	778619.6351
7	L	16+00.00	536459.0383	778695.8916
8	L	17+00.00	536367.0161	778734.4440
9	L	17+00.46	536366.5812	778734.5988

Point #	Chain	Station	Northing (Y)	Easting (X)

Point #	Chain	Station	Northing (Y)	Easting (X)

Point #	Chain	Station	Northing (Y)	Easting (X)

Point #	Chain	Station	Northing (Y)	Easting (X)

REVISIONS

8/17/99

USER: sstrong
DATE: 12/13/2012
TIME: 7:14:41 PM
DGN: R:\Roadway\Proj\49-02295_rdy_ps4010.dgn

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.14	2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 18172 ENGINEER RALPH T. SCHRUM, JR. 12-17-12

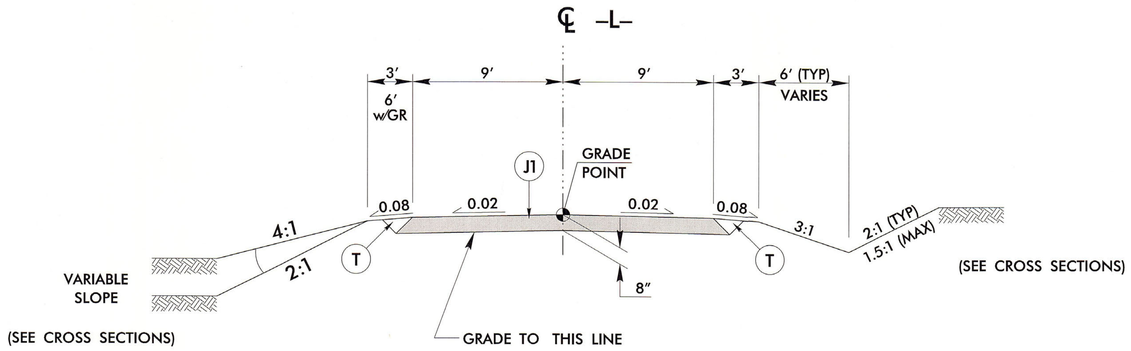
Prepared in the Office of: AECOM NC FIRM LICENSE No: F-0342 701 Corporate Center Drive, Suite 475 Raleigh, NC 27607 (919) 854-6200 - (919) 854-6259(FAX)

PAVEMENT SCHEDULE

(PRELIMINARY PAVEMENT DESIGN)

J1	8" AGGREGATE BASE COURSE.
T	EARTH MATERIAL.

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



TYPICAL SECTION NO. 1

-L- (CEDAR CREEK RD)

USE TYPICAL SECTION NO. 1

-L- STA 11+00.00 TO STA 14+83.06

USER: scbruno
DATE: 12/13/2012
TIME: 2:24:51 PM
DGN: R:\Roadway\Proj\49-0295_rdy_typ.dgn

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.14	3
R/W SHEET NO.	

Prepared in the Office of: AECOM NC FIRM LICENSE No: F-0342 701 Corporate Center Drive, Suite 475 Raleigh, NC 27607 (919) 854-6200 - (919) 854-6259(FAX)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF QUANTITIES

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT – DN00147

ITEM NUMBER	SEC #	QUANTITY	UNIT	DESCRIPTION
0000100000-N	800	Lump Sum		MOBILIZATION
0000400000-N	801	Lump Sum		CONSTRUCTION SURVEYING
0008000000-E	200	1	ACR	SUPPLEMENTARY CLEARING & GRUBBING
0043000000-N	226	Lump Sum		GRADING
		400	CY	UNCLASSIFIED EXCAVATION
		0	CY	BORROW EXCAVATION
		760	SY	FINE GRADING
		30	CY	SHOULDER BORROW
0057000000-E	226	50	CY	UNDERCUT EXCAVATION
0134000000-E	240	66	CY	DRAINAGE DITCH EXCAVATION
0195000000-E	265	50	CY	SELECT GRANULAR MATERIAL
0196000000-E	270	50	SY	GEOTEXTILE FOR SOIL STABILIZATION
0318000000-E	300	4	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES
0320000000-E	300	50	SY	FOUNDATION CONDITIONING GEOTEXTILE
0343000000-E	310	36	LF	15" SIDE DRAIN PIPE
0995000000-E	340	29	LF	PIPE REMOVAL
1099700000-E	505	50	TON	CLASS IV SUBGRADE STABILIZATION
1121000000-E	520	414	TON	AGGREGATE BASE COURSE
1220000000-E	545	50	TON	INCIDENTAL STONE BASE
3030000000-E	862	225	LF	STEEL BM GUARDRAIL
3150000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS
3165000000-N	SP	4	EA	GUARDRAIL ANCHOR UNITS, TYPE 350 (TL-2)
3649000000-E	876	4	TON	RIP RAP, CLASS B
3635000000-E	876	180	TON	RIP RAP, CLASS II
3656000000-E	876	1715	SY	GEOTEXTILE FOR DRAINAGE
0196000000-E	270	200	SY	GEOTEXTILE FOR SOIL STABILIZATION
3656000000-E	876	150	SY	GEOTEXTILE FOR DRAINAGE
6000000000-E	1605	440	LF	TEMPORARY SILT FENCE
6006000000-E	1610	60	Ton	EROSION CONTROL STONE, CLASS A
6009000000-E	1610	25	Ton	EROSION CONTROL STONE, CLASS B

ITEM NUMBER	SEC #	QUANTITY	UNIT	DESCRIPTION
6012000000-E	1610	10	Ton	SEDIMENT CONTROL STONE
6015000000-E	1615	0.5	Acres	TEMPORARY MULCHING
6018000000-E	1620	50	LB	SEED FOR TEMPORARY SEEDING
6021000000-E	1620	0.25	Ton	FERTILIZER FOR TEMPORARY SEEDING
6024000000-E	1622	100	LF	TEMPORARY SLOPE DRAINS
6029000000-E	SP	100	LF	SAFETY FENCE
6030000000-E	1630	40	CY	SILT EXCAVATION
6036000000-E	1631	2,500	SY	MATTING FOR EROSION CONTROL
6069000000-E	1638	65	CY	STILLING BASINS
6071020000-E	SP	15	LBS	POLYACRYLAMIDE (PAM)
6071030000-E	1640	75	LF	COIR FIBER BAFFLE
6084000000-E	1660	0.7	Acres	SEEDING AND MULCHING
6090000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
6093000000-E	1661	0.25	Ton	FERTILIZER FOR REPAIR SEEDING
6096000000-E	1662	50	LB	SEED FOR SUPPLEMENTAL SEEDING
6108000000-E	1665	0.25	Ton	FERTILIZER TOPDRESSING
6111000000-E	SP	120	LF	IMPERVIOUS DIKE
6117000000-N	SP	15	EA	RESPONSE FOR EROSION CONTROL
6120000000-E	SP	70	CY	CULVERT DIVERSION CHANNEL
6123000000-E	1670	0.1	ACR	REFORESTATION
4400000000-E	1110	340	SF	WORK ZONE SIGNS (STATIONARY)
4410000000-E	1110	20	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
4445000000-E	1145	36	LF	BARRICADES (TYPE III)
8035000000-N	402	Lump Sum		REMOVAL OF EXISTING STRUCTURE, STA 13+15.39
8126000000-N	414	Lump Sum		CULVERT EXCAV, STA 13+15.39
8133000000-E	414	56.4	Tons	FOUNDATION CONDITIONING MATERIAL, BOX CULVE
8196000000-E	420	108.2	CY	CL A CONC (CULVERT)
8245000000-E	425	15,286	LBS	REINFORCING STEEL (CULVERT)

REVISIONS

8/17/99

USER: sdrump
DATE: 6/10/2013
TIME: 3:36:51 PM
DGN: R:\Roadway\Proj\49-0296_rdy_sd013.dgn

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.14	3-A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Prepared in the Office of: AECOM
NC FIRM LICENSE No: F-0342
701 Corporate Center Drive, Suite 475
Raleigh, NC 27607
(919) 854-6200 - (919) 854-6259(FAX)

SUMMARY OF EARTHWORK

LINE	Station	Station	Uncl. Excav.	Embank. +%	Borrow	Waste
L	11+00.00	14+80.00	372	328	0	44
TOTAL			**372**	**328**	**0**	**44**
ADJUSTMENTS DUE TO						
Est. Loss Due To Clearing And Grubbing			0		0	
Shoulder Material				0	0	
Rock Waste To Replace Borrow						
Adjust For Rock Swell That Replaces Borrow						
Eliminate Shrinkage For Mat'l That Is Now Rock						
Earth Waste to Replace Borrow					0	0
PROJECT TOTAL			**372**	**328**	**0**	**44**
Est. 5% to Replace Topsoil in Borrow Pits					0	
GRAND TOTAL			**372**		**0**	
SAY			**400**		**0**	
Est. Drainage Ditch Excav.		**66 CY**				
Select Granular Material		**50 CY**				
Estimate Undercut		**50 CY**				

Approximate quantities only. Unclassified excavation, borrow excavation, shoulder borrow, fine grading, clearing and grubbing, breaking of existing pavement and removal of existing pavement will be paid for at the lump sum price for "Grading".

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Note: Invert Elevations indicated 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 INCHES & UNDER)

| STATION / SIZE / THICKNESS OR GAUGE | LOCATION (LT, RT, OR CL)' | STRUCTURE NO. FROM | STRUCTURE NO. TO | TOP ELEVATION | INVERT ELEVATION | INVERT ELEVATION | SLOPE CRITICAL | DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12" | 15" | 18" | 24" | 30" | 36" | 42" | 48" | DO NOT USE RCP | DO NOT USE CSP | DO NOT USE CAAP | DO NOT USE HDPE | C.S. PIPE 12" | 15" | 18" | 24" | 30" | 36" | 42" | 48" | R.C. PIPE CLASS III 12" | 15" | 18" | 24" | 30" | 36" | 42" | 48" | R.C. PIPE CLASS IV 12" | 15" | 18" | 24" | 30" | 36" | 42" | 48" | *** R.C. PIPE (CLASS V) | **** RC PIPE CULVERTS, CONTRACTOR DESIGN | ***** RC PIPE CULVERTS, CONTRACTOR DESIGN | 15" SIDE DRAIN PIPE | 18" SIDE DRAIN PIPE | ENDWALLS STD. 838.01 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YARDS | QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0') | LIN. FT. A 5.0' THRU 10.0' | LIN. FT. B 10.0' AND ABOVE | *TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL. 'B') | 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 DROP INLET | CATCH BASIN | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND GRATE STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR 840.26 | G.D.I. TYPE "B" STD. 840.18 OR 840.27 | G.D.I. TYPE "D" STD. 840.19 OR 840.28 | G.D.I. FRAME WITH GRATE STD. 840.20 | G.D.I. FRAME WITH TWO GRATES STD. 840.22 | G.D.I. FRAME WITH GRATE STD. 840.24 | G.D.I. (N.S.) FRAME WITH GRATE STD. 840.24 | G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24 | J.B. STD. 840.31 OR 840.32 | DRAINAGE PIPE ELBOWS NO. & SIZE | CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71 | CONC. COLLARS CL. "B" C.Y. STD. 840.72 | PIPE REMOVAL LIN. FT. | REMARKS |
|---|---|---|---|---|---|---

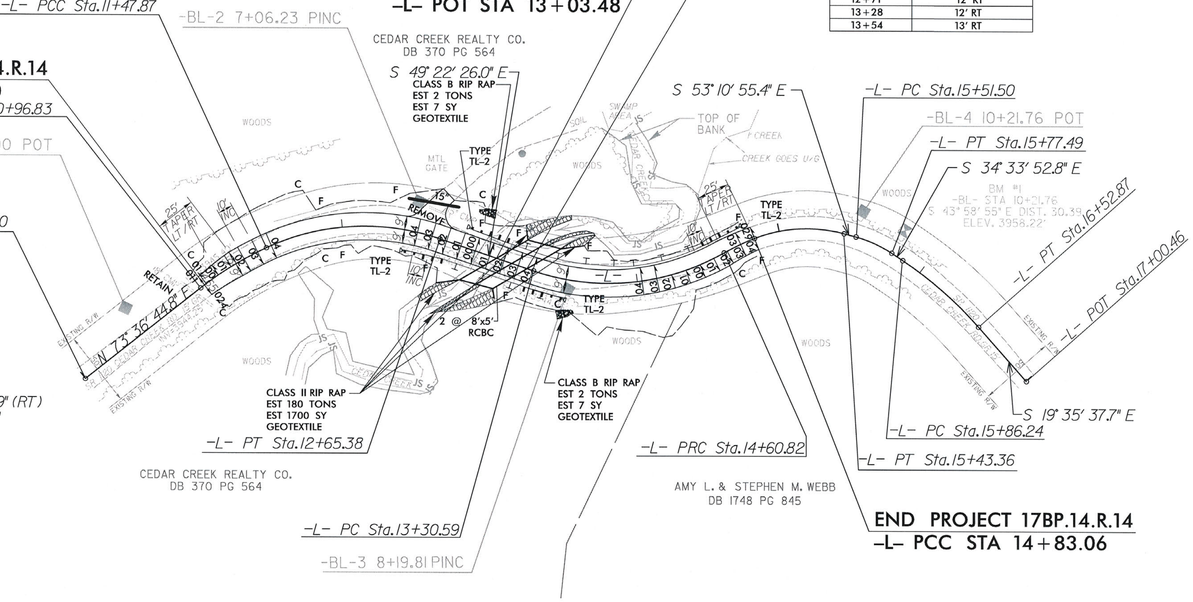
PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.14	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Prepared in the Office of: AECOM — NC FIRM LICENSE No: F-0342, 701 Corporate Center Drive, Suite 475, Raleigh, NC 27607, (919) 854-6200 - (919) 854-6259 (FAX)

NAD 83/2007
NSRS

GUARDRAIL OFFSETS

-L- STATION	OFFSET TO GR FACE
12+81	13' LT
13+09	12' LT
13+75	12' LT
13+95	10.6' LT
14+50	10.6' LT
14+77	12' LT
12+42	13' RT
12+71	12' RT
13+28	12' RT
13+54	13' RT



-L-

PI Sta 11+22.46
Δ = 13° 17' 34.3" (RT)
D = 26° 02' 36.7"
L = 51.04'
T = 25.64'
R = 220.00'

PI Sta 12+09.65
Δ = 43° 43' 14.9" (RT)
D = 37° 12' 18.2"
L = 117.51'
T = 61.78'
R = 154.00'

PI Sta 13+99.88
Δ = 48° 26' 59.4" (LT)
D = 37° 12' 18.2"
L = 130.22'
T = 69.29'
R = 154.00'

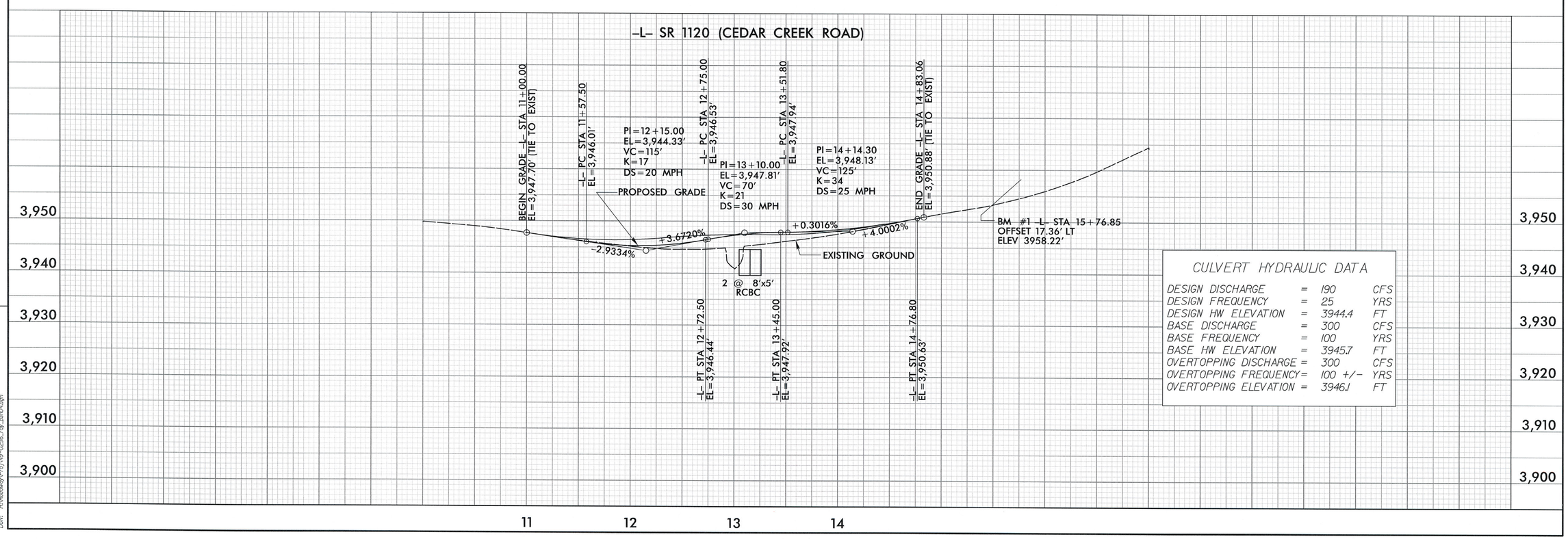
PI Sta 14+71.96
Δ = 8° 16' 26.1" (RT)
D = 37° 12' 18.2"
L = 22.24'
T = 11.14'
R = 154.00'

PI Sta 15+14.26
Δ = 36° 22' 03.9" (RT)
D = 60° 18' 40.8"
L = 60.30'
T = 31.20'
R = 95.00'

PI Sta 15+64.61
Δ = 18° 37' 02.7" (RT)
D = 71° 37' 11.0"
L = 25.99'
T = 13.11'
R = 80.00'

PI Sta 16+19.74
Δ = 14° 58' 15.1" (RT)
D = 22° 28' 08.2"
L = 66.63'
T = 33.51'
R = 255.00'

SEE SHEETS S-1 THRU S-5
FOR CULVERT DESIGN



CULVERT HYDRAULIC DATA

DESIGN DISCHARGE	=	190	CFS
DESIGN FREQUENCY	=	25	YRS
DESIGN HW ELEVATION	=	3944.4	FT
BASE DISCHARGE	=	300	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	3945.7	FT
OVERTOPPING DISCHARGE	=	300	CFS
OVERTOPPING FREQUENCY	=	100 +/-	YRS
OVERTOPPING ELEVATION	=	3946.1	FT

REVISIONS

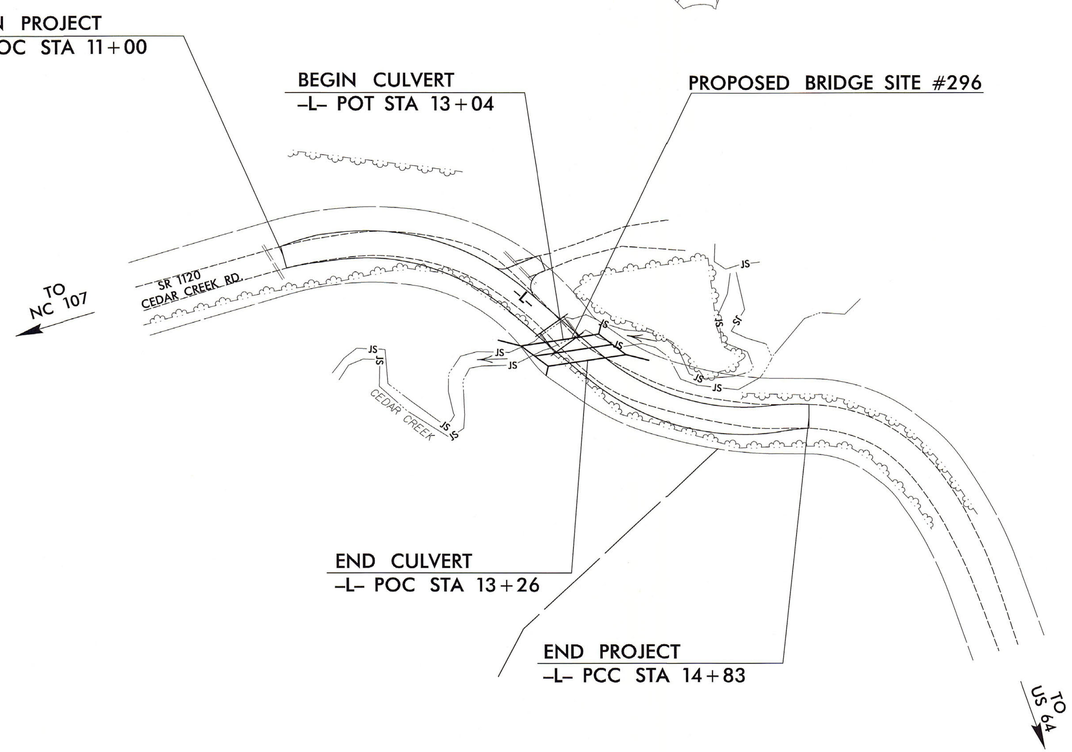
8/17/99

USER: gshrump
DATE: 5/30/2013
TIME: 10:32:07 AM
DGN: R:\Roadway\Proj\v8-0286_rdy_psh04.dgn

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

JACKSON COUNTY



INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET, AND INDEX OF SHEETS
TMP-1A	GENERAL NOTES
TMP-2	TEMPORARY TRAFFIC CONTROL PHASE I DETAIL
TMP-3	TEMPORARY TRAFFIC CONTROL OFFSITE DETOUR ROUTE
TMP-4	SIGN DESIGN

NOTE: WRITTEN PHASING FOR THE TRAFFIC CONTROL PLAN APPEARS ON THE OVERVIEW SHEETS

ROADWAY STANDARD DRAWINGS

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

STD.NO.	TITLE
1101.01	WORK ZONE WARNING SIGNS
1101.03	TEMPORARY ROAD CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1145.01	BARRICADES

SHEET NO.
TMP-1

17BP.14.R.14

TIP PROJECT:

WORK ZONE SAFETY & MOBILITY
"from the MOUNTAINS to the COAST"

N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561
750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY)
PHONE: (919) 773-2800 FAX: (919) 771-2745

J. S. BOURNE, PE — STATE TRAFFIC MANAGEMENT ENGINEER
K.J. VAN METRE, PE — TRAFFIC CONTROL PROJECT ENGINEER
T.E. HILDEBRAND, PE — TRAFFIC CONTROL PROJECT DESIGN ENGINEER
_____ — TRAFFIC CONTROL DESIGN ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

AECOM
NC Firm License No.: F-0342
701 Corporate Center Drive
Suite 475 Raleigh, NC 27607
Phone: 919-854-6200

APPROVED: _____
DATE: _____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 38501 ENGINEER THOMAS E. HILDEBRAND

10:44:04 AM
R:\Traffic\TrafficControl\TCP\49-0296_tcp_tsh.dgn
hildebrandt

GENERAL NOTES

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.

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.

TIME RESTRICTIONS

A) DO NOT CLOSE OR NARROW TRAVEL LANES AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
CEDAR CREEK RD	N/A (OFF SITE DETOUR)

B) DO NOT CLOSE OR NARROW TRAVEL LANES DURING HOLIDAYS AND SPECIAL EVENTS AS FOLLOWS:

CEDAR CREEK RD

TO BE DETERMINED BY DIVISION PERSONNEL.

LANE AND SHOULDER CLOSURE REQUIREMENTS

C) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.

D) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

E) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.

F) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

G) PROVIDE TRAFFIC CONTROL FOR APPROPRIATE LANE CLOSURES FOR SURVEYING DONE BY THE DEPARTMENT.

PAVEMENT EDGE DROP OFF REQUIREMENTS

H) BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS AN EDGE OF PAVEMENT DROP-OFF AS FOLLOWS:

BACKFILL DROP-OFFS THAT EXCEED 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.

BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.

BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.

I) DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) 100 FT IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

K) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

L) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.

PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRAFFIC CONTROL PLANS.

M) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.

COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.

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

O) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

TRAFFIC BARRIER

P) INSTALL TEMPORARY BARRIER ACCORDING TO THE TRANSPORTATION MANAGEMENT PLANS A MAXIMUM OF TWO (2) WEEKS PRIOR TO BEGINNING WORK IN ANY LOCATION. ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION PROCEED IN A CONTINUOUS MANNER TO COMPLETE THE PROPOSED WORK IN THAT LOCATION UNLESS OTHERWISE STATED IN THE TRANSPORTATION MANAGEMENT PLANS OR AS DIRECTED BY THE ENGINEER.

DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE.

ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION AND NO WORK IS PERFORMED BEHIND THE TEMPORARY BARRIER FOR A PERIOD LONGER THAN TWO (2) MONTHS, REMOVE / RESET TEMPORARY BARRIER AT NO COST TO THE DEPARTMENT UNLESS OTHERWISE STATED IN THE TRANSPORTATION MANAGEMENT PLANS, TEMPORARY BARRIER IS PROTECTING A HAZARD, OR AS DIRECTED BY THE ENGINEER.

INSTALL TEMPORARY BARRIER WITH THE TRAFFIC FLOW BEGINNING WITH THE UPSTREAM SIDE OF TRAFFIC. REMOVE TEMPORARY BARRIER AGAINST THE TRAFFIC FLOW BEGINNING WITH THE DOWNSTREAM SIDE OF TRAFFIC.

INSTALL AND SPACE DRUMS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH) TO CLOSE OR KEEP THE SECTION OF THE ROADWAY CLOSED UNTIL THE TEMPORARY BARRIER CAN BE PLACED OR AFTER THE TEMPORARY BARRIER IS REMOVED.

Q) PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER AT ALL TIMES DURING THE INSTALLATION AND REMOVAL OF THE BARRIER BY EITHER A TRUCK MOUNTED ATTENUATOR (MAXIMUM 72 HOURS) OR A TEMPORARY CRASH CUSHION.

PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER FROM ONCOMING TRAFFIC AT ALL TIMES BY A TEMPORARY CRASH CUSHION UNLESS THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER IS OFFSET FROM ONCOMING TRAFFIC AS FOLLOWS OR AS SHOWN IN THE PLANS: (SEE ALSO 1101.05)

POSTED SPEED LIMIT	MINIMUM OFFSET
40 OR LESS	15 FT
45 - 50	20 FT
55	25 FT
60 MPH or HIGHER	30 FT

TRAFFIC CONTROL DEVICES

R) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

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

T) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.

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

MISCELLANEOUS

V) IN THE EVENT A TIE-IN CANNOT BE MADE IN ONE DAY'S TIME, BRING THE TIE-IN AREA TO AN APPROPRIATE ROADWAY ELEVATION AS DETERMINED BY THE ENGINEER. PLACE BLACK ON ORANGE "LOOSE GRAVEL" SIGNS (W8-7) AND BLACK ON ORANGE "PAVEMENT ENDS" SIGNS (W8-3) 50 FT AND 100 FT RESPECTIVELY IN ADVANCE OF THE UNEVEN AREAS. USE DRUMS TO DELINEATE THE EDGE OF ROADWAY ALONG UNPAVED AREAS.

AECOM
NC Firm License No.: F-0342
701 Corporate Center Drive
Suite 475 Raleigh, NC 27607
Phone: 919-854-6200

APPROVED: _____ DATE: _____

NORTH CAROLINA PROFESSIONAL SEAL 3850 ENGINEER THOMAS E. HILDERBRAND

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

GENERAL NOTES

SCALE:	
DATE:	12/13/2012
DWG. BY:	TEH
DESIGN BY:	KJV
REVIEWED BY:	

REVISIONS

CADD FILE

10:44:06 AM
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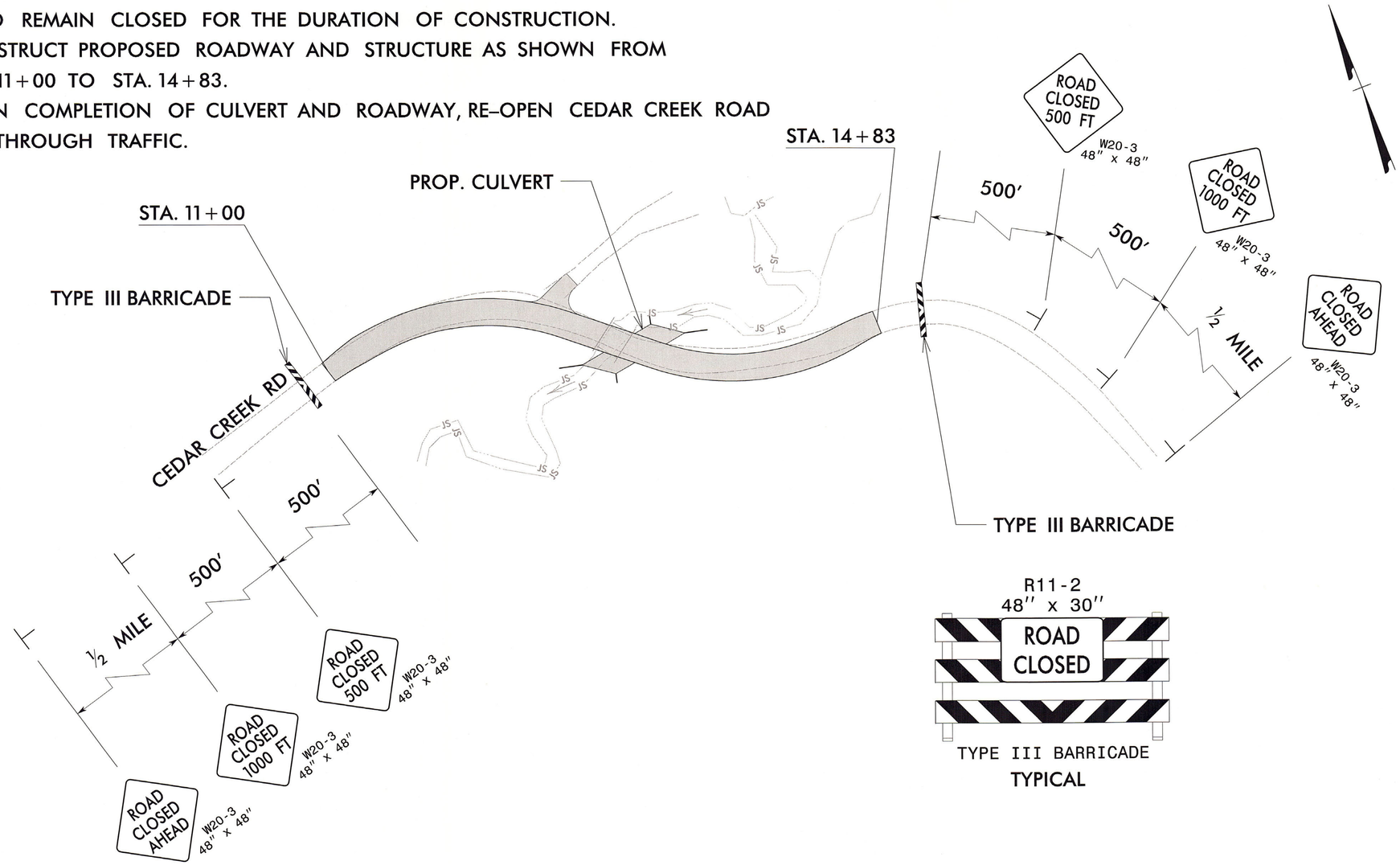
hilderbrand

PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.14	TMP-2

PHASING NOTES:

1. INSTALL OFF SITE DETOUR ROUTE SIGNS.
2. INSTALL ADVANCE WARNING SIGNS AND TYPE III BARRICADES AND ROUTE TRAFFIC THROUGH OFFSITE DETOUR. ROADWAY IS TO REMAIN CLOSED FOR THE DURATION OF CONSTRUCTION.
3. CONSTRUCT PROPOSED ROADWAY AND STRUCTURE AS SHOWN FROM STA. 11+00 TO STA. 14+83.
4. UPON COMPLETION OF CULVERT AND ROADWAY, RE-OPEN CEDAR CREEK ROAD TO THROUGH TRAFFIC.



TYPE III BARRICADE
TYPICAL

LEGEND

EXISTING ROADWAY

PROPOSED CONSTRUCTION

COMPLETED ROADWAY

GRAPHIC SCALE
40 20 0 40 80
PLANS

AECOM
NC Firm License No.: F-0342
701 Corporate Center Drive
Suite 475 Raleigh, NC 27607
Phone: 919-854-6200

APPROVED: _____ DATE: _____

NORTH CAROLINA PROFESSIONAL SEAL 38501 ENGINEER THOMAS E. HILDEBRAND

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

PHASE I DETAIL

SCALE:	REVISIONS
DATE: 12/13/2012	
DWG. BY: TEH	
DESIGN BY: KJV	
REVIEWED BY:	CADD FILE

10:44:07 AM
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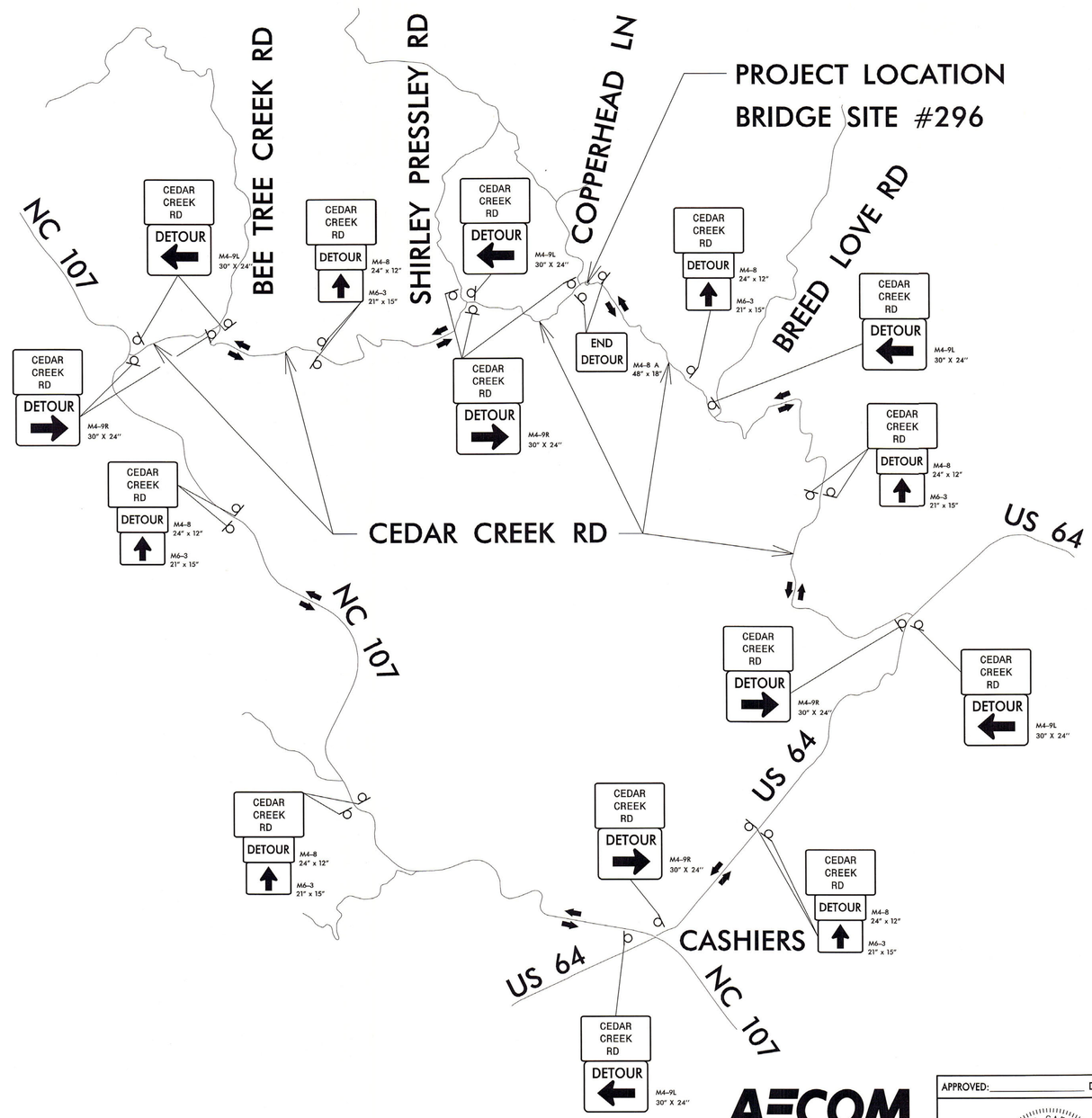
hildebrandt

PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.14	TMP-3



AECOM
NC Firm License No.: F-0342
701 Corporate Center Drive
Suite 475 Raleigh, NC 27607
Phone: 919-854-6200

APPROVED: _____ DATE: _____

NORTH CAROLINA PROFESSIONAL SEAL 38501 ENGINEER THOMAS E. HILDEBRAND

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

DETOUR

SCALE:	
DATE:	12/13/2012
DWG. BY:	TEH
DESIGN BY:	KJV
REVIEWED BY:	

REVISIONS

CADD FILE

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hildebrandt

PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.14	TMP-4

SIGN DESIGN

SIGN NUMBER: CEDAR CREEK ROAD
TYPE: D
QUANTITY: 1

SIGN WIDTH: 2'-0"
HEIGHT: 2'-6"
TOTAL AREA: 5.0 Sq.Ft.

BORDER TYPE: FLUSH
RECESS: 0.47"
WIDTH: 0.63"
RADII: 1.5"

NO. Z BARS:
LENGTH:

BACKG COLOR: Orange
COPY COLOR: Black

MAJ. COPY SERIES: Ground

ROUTE MARKERS:

ARROW TYPES:

MAT'L: 0.063" ALUMINUM

LETTER POSITIONS

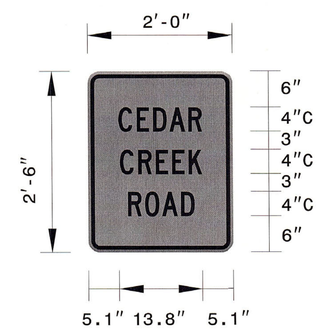
C	E	D	A	R	
5.1	8.1	10.8	13.6	16.7	13.8
C	R	E	E	K	
5.3	8.3	11.2	14	16.7	13.6
R	O	A	D		
6.6	9.4	12.3	15.4		11

Letter positions are to the lower left corners

USE NOTES: 1,3,4,6

1. Legend and border shall be direct applied encapsulated lens reflective sheeting.
2. Legend and border shall be direct applied enclosed lens reflective sheeting.
3. Shields shall be encapsulated lens reflective sheeting on 0.8mm aluminum and demountable.
4. Background shall be encapsulated lens reflective sheeting.
5. Background shall be enclosed lens reflective sheeting.
6. Center arrows vertically on sign.

DESIGN BY:
PROJECT ID:
CHECKED BY:
DIV:
STD #:
DATE: Dec 10, 2012



NORTH CAROLINA D.O.T. SIGN DETAIL

AECOM
NC Firm License No.: F-0342
701 Corporate Center Drive
Suite 475 Raleigh, NC 27607
Phone: 919-854-6200

APPROVED: _____ DATE: _____

NORTH CAROLINA PROFESSIONAL SEAL 38501 ENGINEER WILLIAM E. HILDEBRAND

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

SIGN DESIGN

SCALE:	
DATE:	12/13/2012
DWG. BY:	TEH
DESIGN BY:	KJV
REVIEWED BY:	

REVISIONS

CADD FILE

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RDU-TPC
hilderandt
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EROSION CONTROL PLAN

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.14	EC-1

Prepared in the Office of: AECOM — NC FIRM LICENSE No: F-0342, 701 Corporate Center Drive, Suite 475, Raleigh, NC 27607, (919) 854-6200 F (919) 854-6259(FAX)

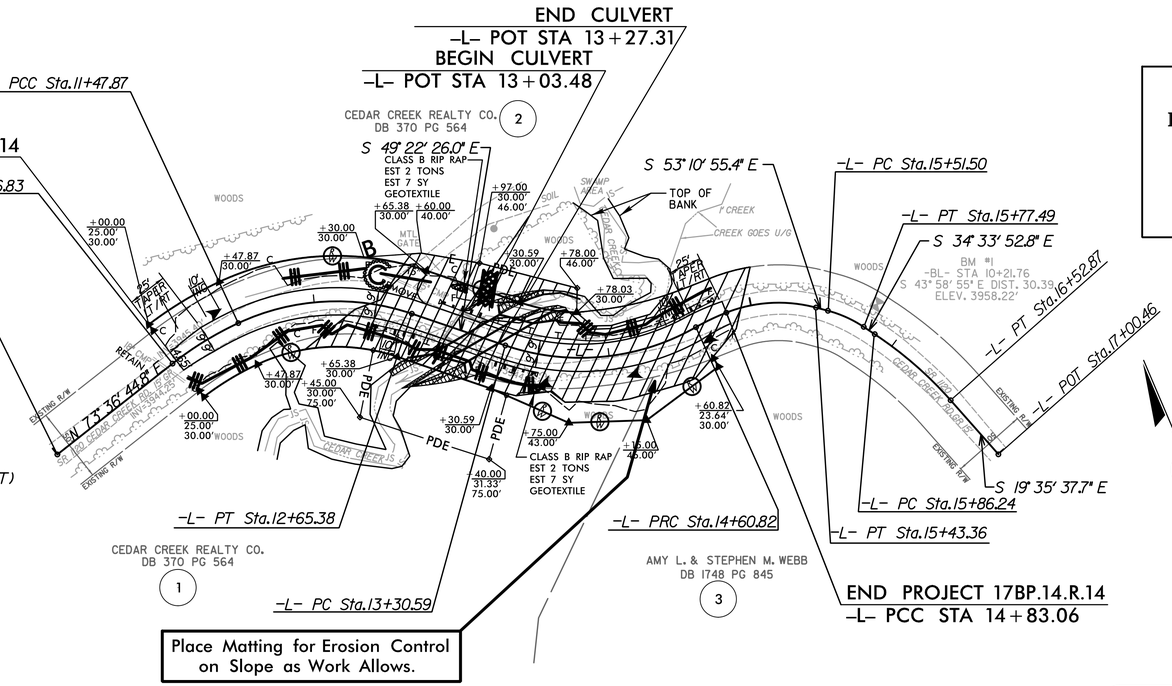
ROADSIDE ENVIRONMENTAL UNIT
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

2012 STANDARD SPECIFICATIONS

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT

Refer To E. C. Special Provisions for Special Considerations.



Place Matting for Erosion Control on Slope as Work Allows.

-L-

PI Sta 11+22.46 Δ = 13° 17' 34.3" (RT) D = 26° 02' 36.7" L = 51.04' T = 25.64' R = 220.00'	PI Sta 12+09.65 Δ = 43° 43' 14.9" (RT) D = 37° 12' 18.2" L = 117.51' T = 61.78' R = 154.00'
PI Sta 13+99.88 Δ = 48° 26' 59.4" (LT) D = 37° 12' 18.2" L = 130.22' T = 69.29' R = 154.00'	PI Sta 14+71.96 Δ = 8° 16' 26.1" (RT) D = 37° 12' 18.2" L = 22.24' T = 11.14' R = 154.00'
PI Sta 15+14.26 Δ = 36° 22' 03.9" (RT) D = 60° 18' 40.8" L = 60.30' T = 31.20' R = 95.00'	
PI Sta 15+64.61 Δ = 18° 37' 02.7" (RT) D = 71° 37' 11.0" L = 25.99' T = 13.11' R = 80.00'	PI Sta 16+19.74 Δ = 14° 58' 15.1" (RT) D = 22° 28' 08.2" L = 66.63' T = 33.51' R = 255.00'

ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

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

Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1630.03	Temporary Silt Ditch	TSD
1630.05	Temporary Diversion	TD
1630.04	Stilling Basin	
1632.03	Rock Inlet Sediment Trap Type C	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
1633.02	Temporary Rock Silt Check Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-B	

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.

Rene Remy
LEVEL III NAME

3135
LEVEL III CERTIFICATION NO.

GRAPHIC SCALE
25 0 50
PLANS

2012 STANDARD DRAWINGS

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

REVISIONS

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.14	EC-2

Prepared in the Office of: AECOM
NC FIRM LICENSE No: F-0342
701 Corporate Center Drive, Suite 475
Raleigh, NC 27607
(919) 854-6200 (919) 854-6259(FAX)

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

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

REVISIONS

8/17/99

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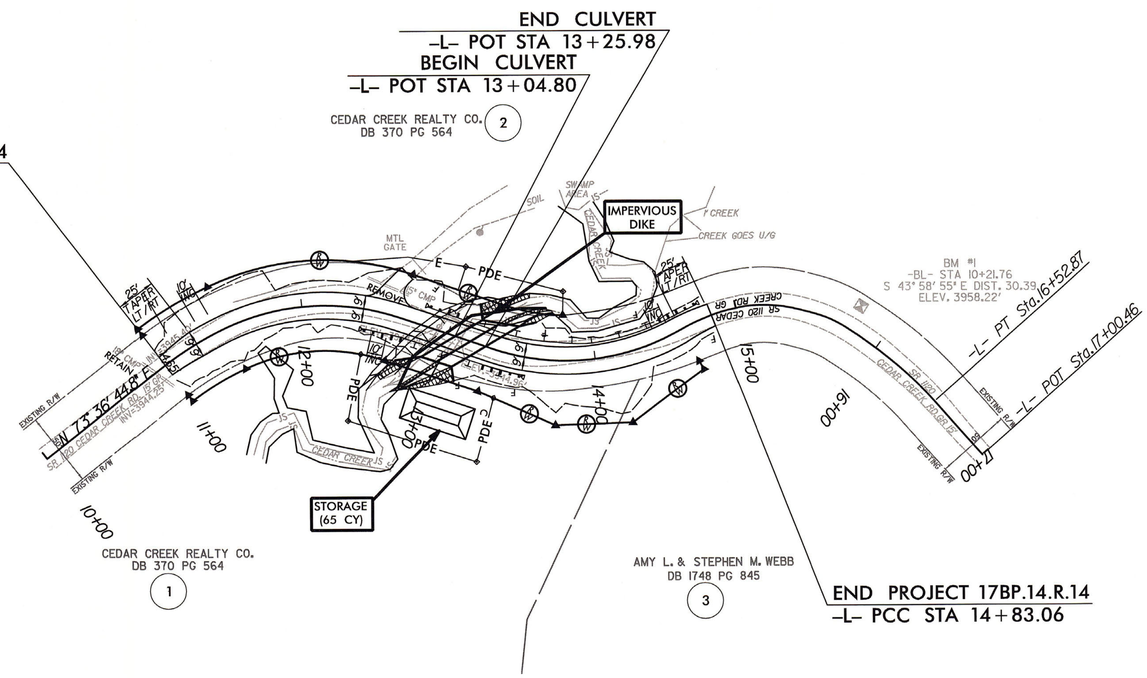
PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.14	EC-3

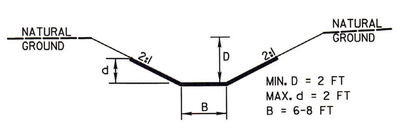
Prepared in the Office of: AECOM NC FIRM LICENSE No: F-0342 701 Corporate Center Drive, Suite 475 Raleigh, NC 27610 (919) 854-6200 - (919) 854-6259 FAX

CONSTRUCTION SEQUENCE



TEMPORARY DIVERSION CHANNEL

(NOT TO SCALE)



MIN. D = 2 FT
MAX. d = 2 FT
B = 6-8 FT

TYPE OF LINER = PSRM

GRAPHIC SCALE

25 0 50

PLANS

CONSTRUCTION SEQUENCE

1. CONSTRUCT STILLING BASIN. MINIMUM VOLUME REQUIRED = 65 CY
2. CONSTRUCT TEMPORARY DIVERSION CHANNEL AND IMPERVIOUS DIKE AND DIVERT FLOW INTO DIVERSION CHANNEL
3. CONSTRUCT 2 @ 8'X5' RCBC WHILE PUMPING EFFULENT INTO STILLING BASIN
4. CONSTRUCT INLET AND OUTLET CHANNEL AT LEFT BARREL AND STABILIZE
5. REMOVE IMPERVIOUS DIKES AND DIVERT FLOW THROUGH CULVERT
6. CONSTRUCT INLET AND OUTLET CHANNEL AT RIGHT BARREL AND STABILIZE
7. REMOVE DIVERSION CHANNEL AND STILLING BASIN
8. COMPLETE ROADWAY

REVISIONS 8/17/99

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PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.14	X-1A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT

CROSS-SECTION SUMMARY

Note: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Shoulder Borrow, 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."

Station L	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
11+00.00		
11+20.00	24	0
11+40.00	35	1
11+60.00	37	1
11+80.00	31	1
12+00.00	19	1
12+20.00	10	1
12+40.00	5	2
12+60.00	1	9
12+80.00	4	29
13+00.00	4	69
13+20.00	0	66
13+40.00	0	39
13+60.00	1	32
13+80.00	25	14
14+00.00	64	4
14+20.00	61	2
14+40.00	26	2
14+60.00	12	1
14+80.00	14	0

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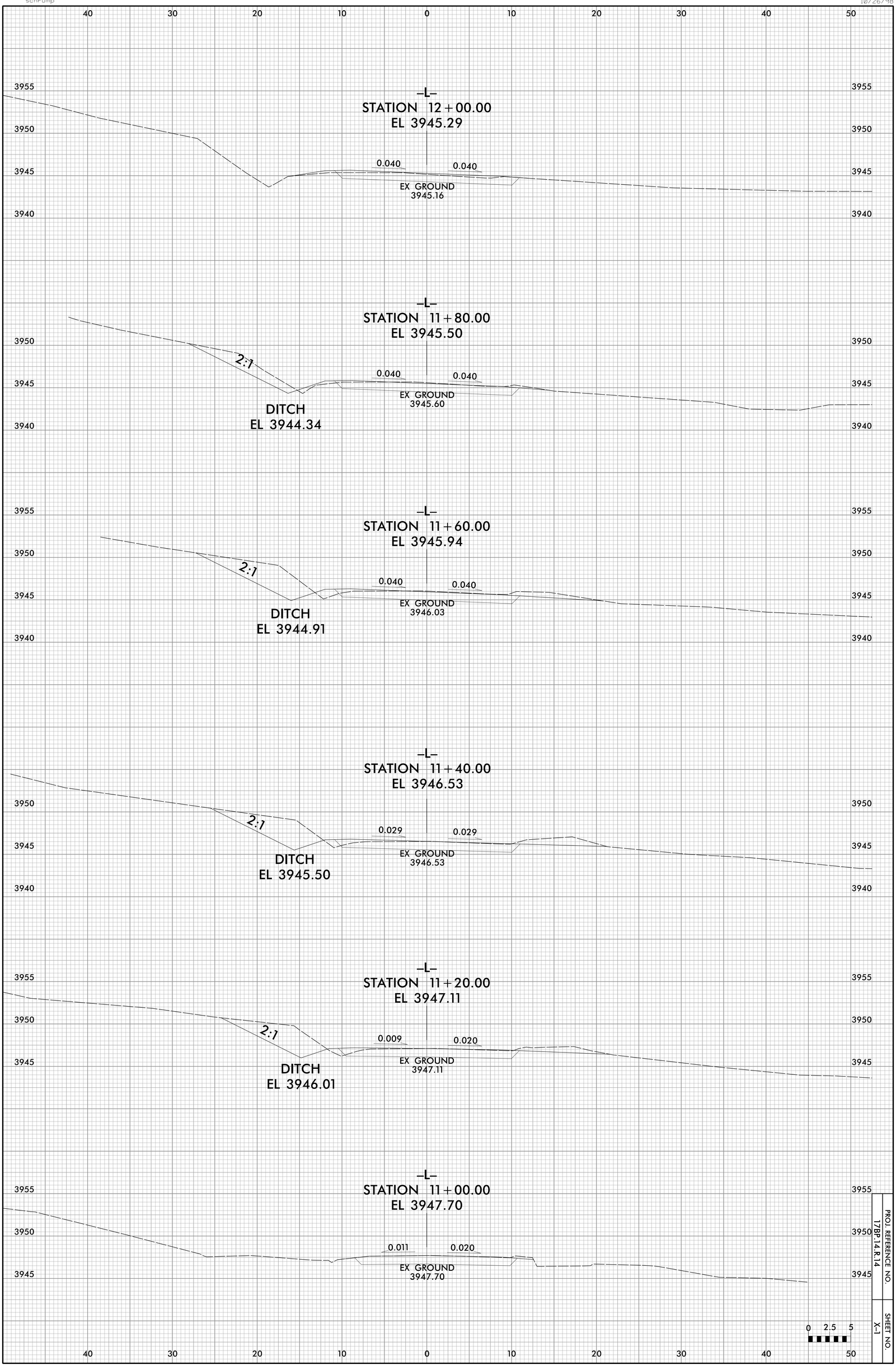
schrump

10/26/98



PROJ. REFERENCE NO.
17BP.14.R.14

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X-1

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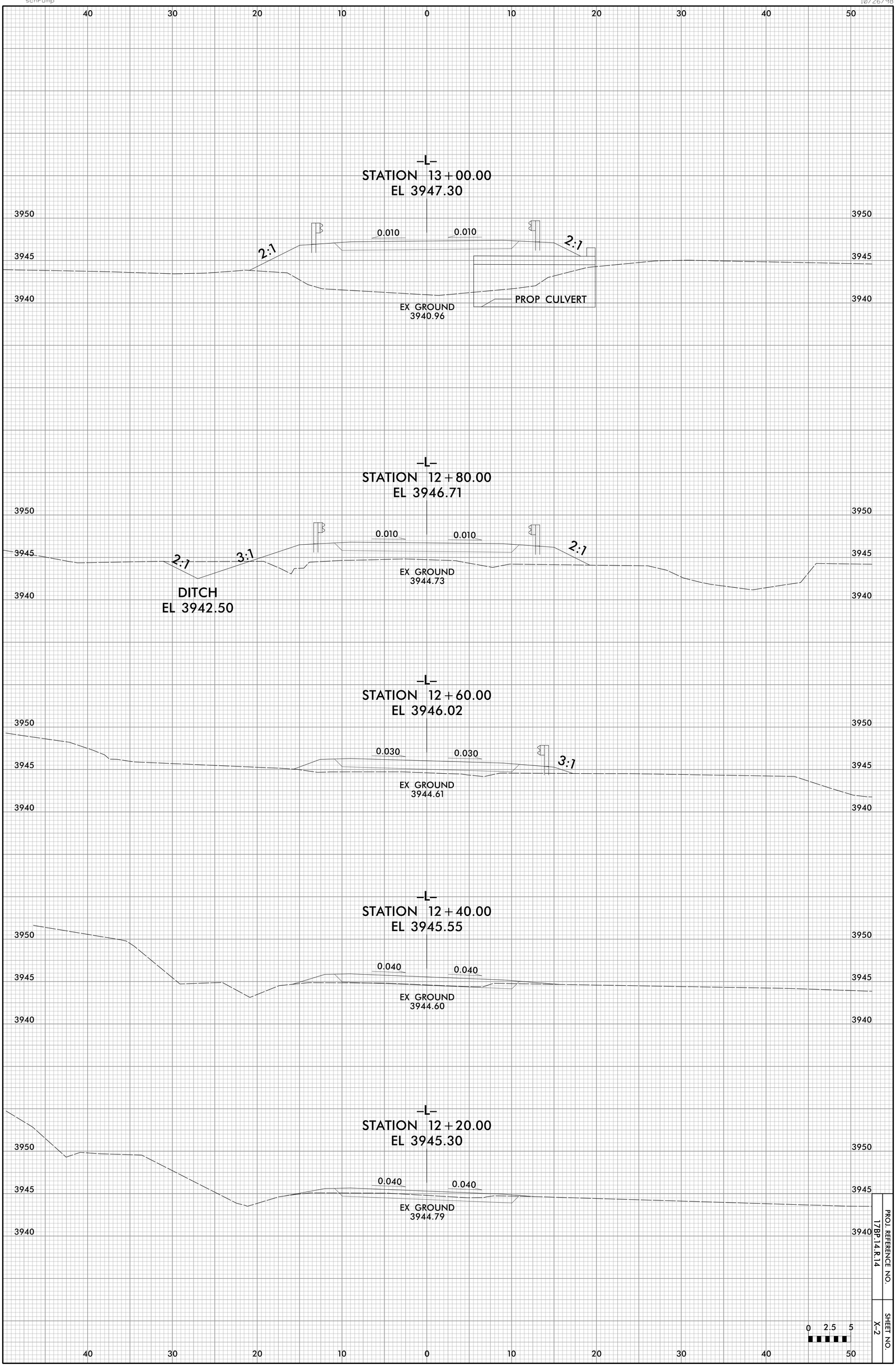
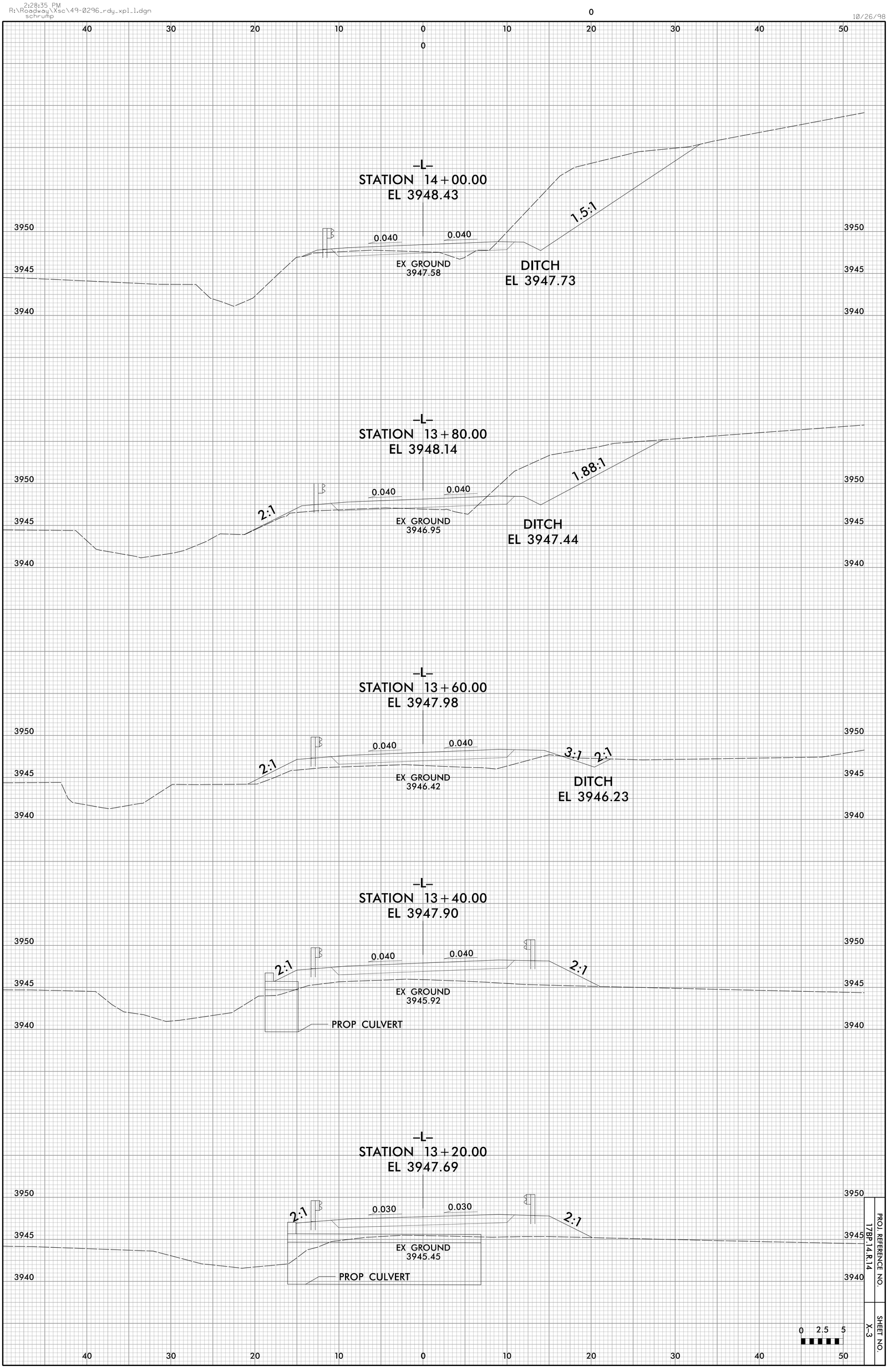
schrump

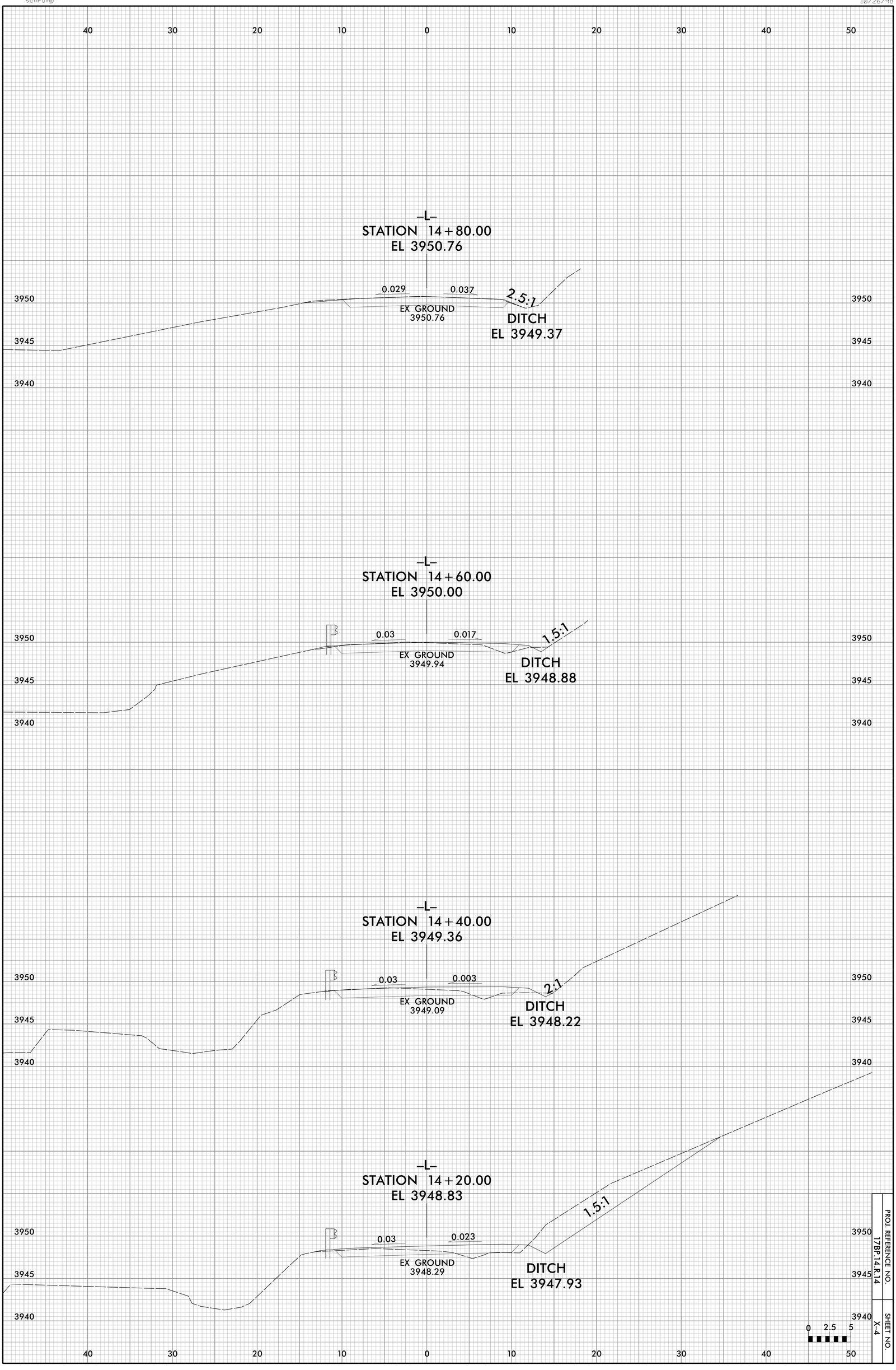
10/26/98



PROJ. REFERENCE NO.
17BP.14.R.14

SHEET NO.
X-2


–L–
STATION 14+00.00
EL 3948.43
1.5:1
0.040
0.040
EX GROUND
3947.58
DITCH
EL 3947.73
–L–
STATION 13+80.00
EL 3948.14
1.88:1
2:1
0.040
0.040
EX GROUND
3946.95
DITCH
EL 3947.44
–L–
STATION 13+60.00
EL 3947.98
2:1
0.040
0.040
3:1
2:1
EX GROUND
3946.42
DITCH
EL 3946.23
–L–
STATION 13+40.00
EL 3947.90
2:1
0.040
0.040
2:1
EX GROUND
3945.92
PROP CULVERT
–L–
STATION 13+20.00
EL 3947.69
2:1
0.030
0.030
2:1
EX GROUND
3945.45
PROP CULVERT
3950
3945
3940
40
30
20
10
0
10
20
30
40
50
0
2.5
5
PROJ. REFERENCE NO.
17BP.14.R.14
SHEET NO.
X-3


–L–
STATION 14+80.00
EL 3950.76
0.029
0.037
2.5:1
EX GROUND
3950.76
DITCH
EL 3949.37
–L–
STATION 14+60.00
EL 3950.00
0.03
0.017
1.5:1
EX GROUND
3949.94
DITCH
EL 3948.88
–L–
STATION 14+40.00
EL 3949.36
0.03
0.003
2:1
EX GROUND
3949.09
DITCH
EL 3948.22
–L–
STATION 14+20.00
EL 3948.83
0.03
0.023
1.5:1
EX GROUND
3948.29
DITCH
EL 3947.93
3950
3945
3940
40
30
20
10
0
10
20
30
40
50
0 2.5 5
PROJ. REFERENCE NO.
17BP.14.R.14
SHEET NO.
X-4

TIP PROJECT: 17BP.14.R.14

CONTRACT:

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

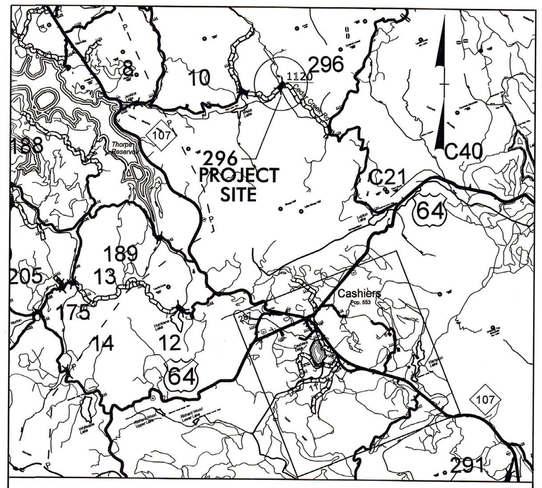
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.14.R.14	TS-01	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
17BP.14.R.14		PE, R/W, UTIL

JACKSON COUNTY

LOCATION: BRIDGE NO. 296 OVER CEDAR CREEK ON SR 1120 (CEDAR CREEK RD)

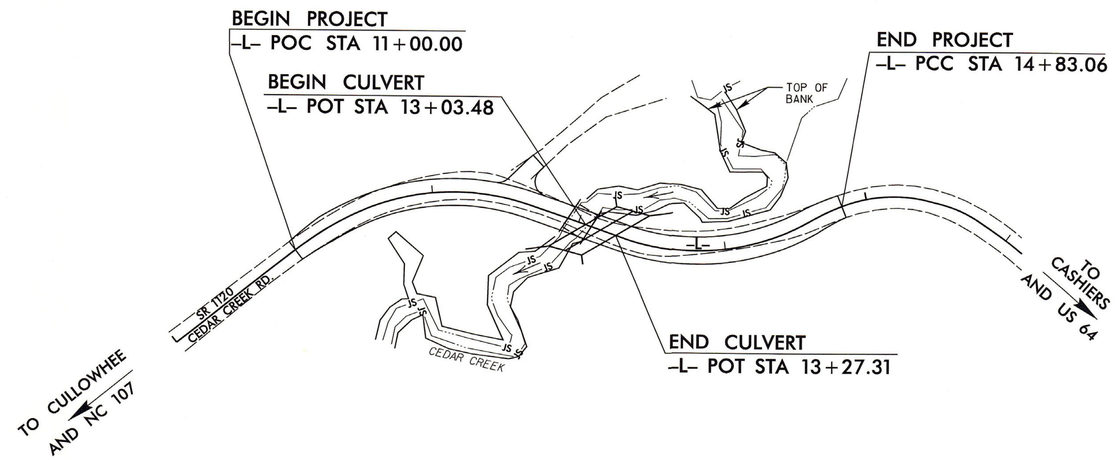
TYPE OF WORK: GRADING, DRAINAGE, AND CULVERT



VICINITY MAP

NAD 83/ NSRS 2007

CULVERT



CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

DESIGN DATA

ADT 2012 = 930 VPD
V = 25 MPH
FUNC CLASS = LOCAL
SUB-REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY STATE PROJECT 17BP.14.R.14 = 0.069 MILES
LENGTH STRUCTURES STATE PROJECT 17BP.14.R.14 = 0.004 MILES
TOTAL LENGTH STATE PROJECT 17BP.14.R.14 = 0.073 MILES

NCDOT CONTACT: JOSHUA DEYTON, PE
PROJECT ENGINEER

Prepared In the Office of:
AECOM
NC FIRM LICENSE No: F-0342
701 Corporate Center Drive, Suite 475
Raleigh, NC 27607
(919) 854-6200 - (919) 854-6259(FAX)

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JUNE 15, 2012

LETTING DATE: FY 2013

LEN HILL, PE
PROJECT ENGINEER

PAUL SCHRUM, PE
PROJECT DESIGN ENGINEER

BRIDGE ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 030474 ENGINEER JOHN C. MORRISON
12/13/12

SIGNATURE: *P.E.*

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

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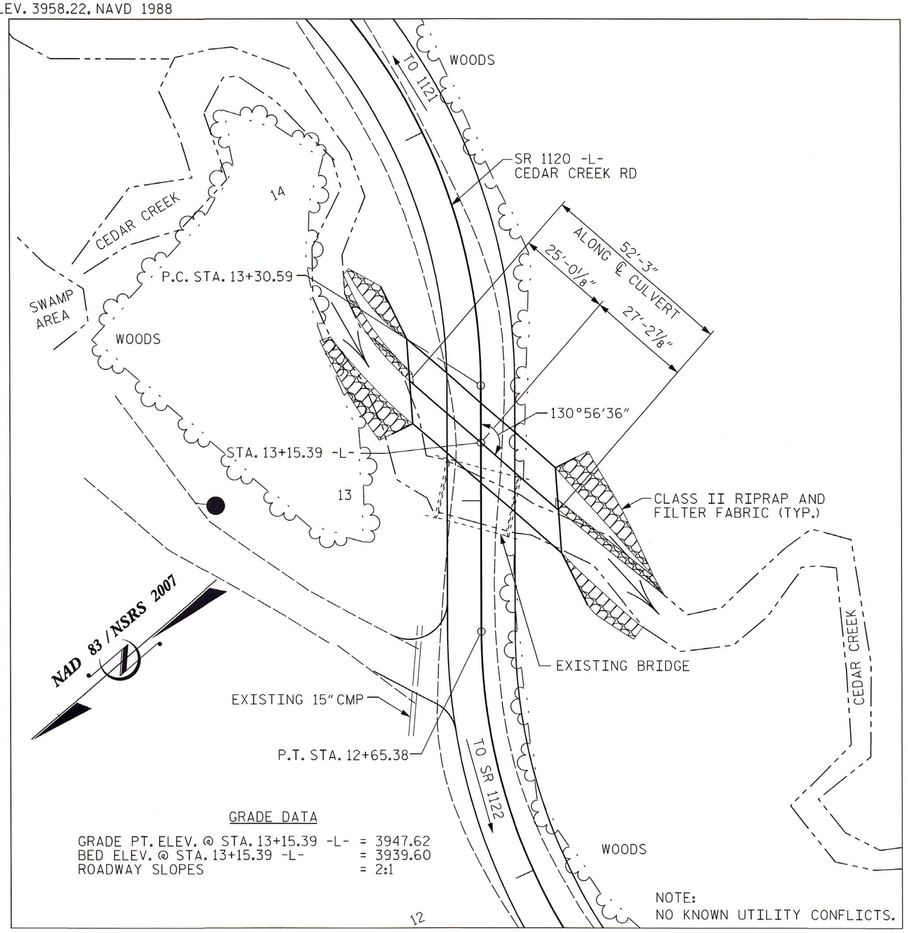
belisiem

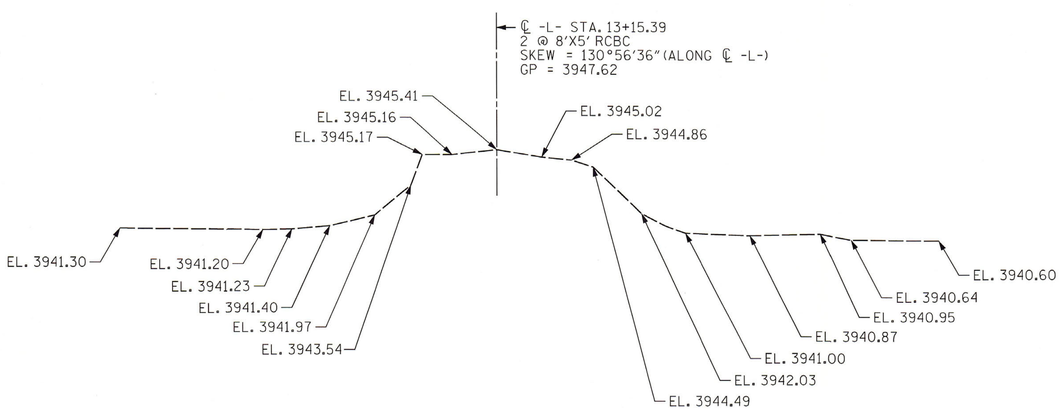
BENCH MARK: BM#1 - 8"SPIKE SET IN BASE OF A 24"OAK TREE,
-L- STA. 15+76.85, 17.36' LEFT
(-BL- STA. 10+21.76, S 43°58'55"E, 30.39' LEFT)
ELEV. 3958.22, NAVD 1988



GRADE DATA

GRADE PT. ELEV. @ STA. 13+15.39 -L- = 3947.62
BED ELEV. @ STA. 13+15.39 -L- = 3939.60
ROADWAY SLOPES = 2:1

LOCATION SKETCH



PROFILE ALONG ℄ CULVERT

HYDRAULIC DATA	
DESIGN DISCHARGE	190 CFS
FREQUENCY OF DESIGN FLOOD	25 YR.
DESIGN HIGH WATER ELEVATION	3944.40
DRAINAGE AREA	0.48 SQ. MI.
BASIC DISCHARGE (Q 100)	300 CFS
BASIC HIGH WATER ELEVATION	3945.70

OVERTOPPING FLOOD DATA	
OVERTOPPING DISCHARGE	300 CFS
FREQUENCY OF OVERTOPPING FLOOD	100+/- YR.
OVERTOPPING FLOOD ELEVATION	3946.10

I HEARBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

NOTES:

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

DESIGN FILL---------- 2.0 FT.

THE EXISTING STRUCTURE CONSISTING OF 1 @ 16'-6"SPAN, 19'± CLEAR ROADWAY WIDTH, TIMBER FLOOR ON TIMBER JOIST, ON TIMBER CAPS W/ TIMBER POSTS AND SILLS AND LOCATED AT EXISTING CROSSING FOR PROPOSED STRUCTURE, SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESNTLY POSTED BELOW THE LEGAL LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE FURTHER DETERIORATE, THIS LOAD LIMITATION MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

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

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 135° 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 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.

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. THIS OPTION WILL BE AT NO ADDITIONAL COST TO THE DEPARTMENT. FOR PRECAST REINFORCED CONCRETE BOX CULVERT, SEE SPECIAL PROVISIONS.

EXCAVATE 1 FOOT BELOW THE BARREL AND FOOTINGS AND REPLACE WITH FOUNDATION CONDITIONING MATERIAL.

BACKFILL BOTH BARRELS WITH NATIVE BED MATERIAL SIMILAR IN SIZE TO CLASS 'B' RIP RAP. SUBSIDIZE WITH CLASS 'B' RIP RAP IF NEEDED.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR CULVERT DIVERSION DETAILS, SEE EROSION CONRTOL PLANS.

TOTAL STRUCTURE QUANTITIES

CLASS A CONCRETE				
BARREL @	1.638	CY/FT	85.6	C.Y.
WING ETC.			22.6	C.Y.
TOTAL			108.2	C.Y.
REINFORCING STEEL				
BARREL			14364	LBS.
WINGS ETC.			922	LBS.
TOTAL			15286	LBS.
FOUNDATION CONDITIONING MATERIAL			56.4	TONS
CULVERT EXCAVATION			LUMP	SUM

PROJECT NO. 17BP.14.R.14

JACKSON COUNTY

STATION: 13+15.39 -L-

REPLACES BRIDGE NO. 296

AECOM
AECOM TECHNICAL SERVICES, INC.
701 CORPORATE CENTER DRIVE, SUITE 475
RALEIGH, NC 27607
(919) 854-6200 www.aecom.com
AECOM License No. F-0342

NORTH CAROLINA PROFESSIONAL SEAL 030474 ENGINEER JOHN C. MORRISON
12/13/12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SR 1120 OVER CEDAR CREEK

DOUBLE 8 FT. X 5 FT.
CONCRETE BOX CULVERT
131° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-01
						TOTAL SHEETS

DRAWN BY : SGS DATE : 12/12
CHECKED BY : JCM DATE : 12/12

DATE: 12/14/2012
TIME: 4:03:41 PM

USER: bellsem
DGN: GI5023877 2x100_Tech_Info_Disc_Files\450_NCDOT Staff\DesFiles\GRG_296\Structures\S296_Location.dgn

LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR REINFORCED CONCRETE BOX CULVERTS

LEVEL		VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING (#)	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE									COMMENT NUMBER
							LIVE-LOAD FACTORS (γ_{LL})	MOMENT				SHEAR				
								RATING FACTOR	BOX NO.	ELEMENT TYPE	DISTANCE FROM LEFT END OF ELEMENT (ft)	RATING FACTOR	BOX NO.	ELEMENT TYPE	DISTANCE FROM LEFT END OF ELEMENT (ft)	
DESIGN LOAD RATING		HL-93 (INVENTORY)	N/A	1	1.10	--	1.75	1.33	1	TOP SLAB	8.50	1.10	1	BOTT. SLAB	0.83	
		HL-93 (OPERATING)	N/A		1.42	--	1.35	1.73	1	TOP SLAB	8.50	1.42	1	BOTT. SLAB	0.83	
		HS-20 (INVENTORY)	36.000	2	1.14	41.04	1.75	1.40	1	TOP SLAB	8.50	1.14	1	BOTT. SLAB	0.83	
		HS-20 (OPERATING)	36.000		1.47	52.92	1.35	1.79	1	TOP SLAB	8.50	1.47	1	BOTT. SLAB	0.83	
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		1.64	22.14	1.40	1.77	1	TOP SLAB	8.50	1.64	1	BOTT. SLAB	0.83	
		SNGARBS2	20.000		1.62	32.40	1.40	1.73	1	TOP SLAB	8.50	1.62	1	BOTT. SLAB	0.83	
		SNAGRIS2	22.000		1.69	37.18	1.40	1.77	1	TOP SLAB	8.50	1.69	1	BOTT. SLAB	0.83	
		SNCOTTS3	27.250	3	1.27	34.61	1.40	1.47	1	TOP SLAB	8.50	1.27	1	BOTT. SLAB	0.83	
		SNAGGRS4	34.925		1.51	52.74	1.40	1.63	1	TOP SLAB	8.50	1.51	1	BOTT. SLAB	0.83	
		SNS5A	35.550		1.53	54.39	1.40	1.58	1	TOP SLAB	8.50	1.53	1	BOTT. SLAB	0.83	
		SNS6A	39.950		1.55	61.92	1.40	1.62	1	TOP SLAB	8.50	1.55	1	BOTT. SLAB	0.83	
		SNS7B	42.000		1.55	65.10	1.40	1.62	1	TOP SLAB	8.50	1.55	1	BOTT. SLAB	0.83	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.62	53.46	1.40	1.83	1	TOP SLAB	8.50	1.62	1	BOTT. SLAB	0.83	
		TNT4A	33.075		1.46	48.29	1.40	1.65	1	TOP SLAB	8.50	1.46	1	BOTT. SLAB	0.83	
		TNT6A	41.600		1.44	59.90	1.40	1.58	1	TOP SLAB	8.50	1.44	1	BOTT. SLAB	0.83	
		TNT7A	42.000		1.54	64.68	1.40	1.58	1	TOP SLAB	8.50	1.54	1	BOTT. SLAB	0.83	
		TNT7B	42.000		1.42	59.64	1.40	1.62	1	TOP SLAB	8.50	1.42	1	BOTT. SLAB	0.83	
		TNAGRIT4	43.000		1.48	63.64	1.40	1.71	1	TOP SLAB	8.50	1.48	1	BOTT. SLAB	0.83	
		TNAGT5A	45.000		1.48	66.60	1.40	1.71	1	TOP SLAB	8.50	1.48	1	BOTT. SLAB	0.83	
		TNAGT5B	45.000		1.48	66.60	1.40	1.70	1	TOP SLAB	8.50	1.48	1	BOTT. SLAB	0.83	

LOAD FACTORS:

DESIGN LOAD RATING FACTORS

LOAD TYPE	MAX FACTOR	MIN FACTOR
DC	1.25	0.90
DW	1.50	0.65
EV	1.30	0.90
EH	1.35	0.90
ES	1.35	0.90
LS	1.75	--
WA	1.00	--

NOTE:

RATING FACTORS ARE BASED ON THE STRENGTH I LIMIT STATE.

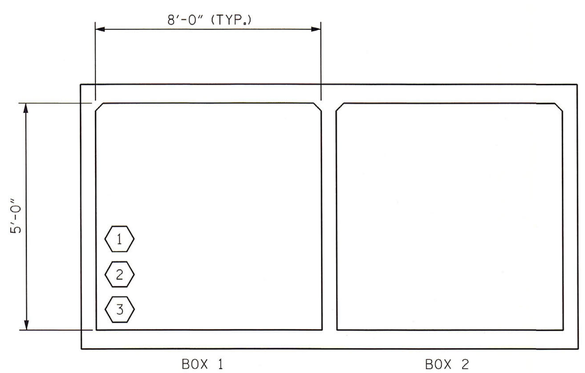
(#) CONTROLLING LOAD RATING

(1) DESIGN LOAD RATING (HL-93)

(2) DESIGN LOAD RATING (HS-20)

(3) LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE



LRFR SUMMARY

(LOOKING DOWNSTREAM)

PROJECT NO. 17BP.14.R.14

JACKSON COUNTY

STATION: 13+15.39 -L-

REPLACES BRIDGE NO. 296

AECOM

AECOM TECHNICAL SERVICES, INC.
701 CORPORATE CENTER DRIVE, SUITE 475
RALEIGH, NC 27607
(919) 854-6200 www.aecom.com
AECOM License No. F-0342

NORTH CAROLINA PROFESSIONAL SEAL 030474 ENGINEER JOHN C. MORRISON

12/13/12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

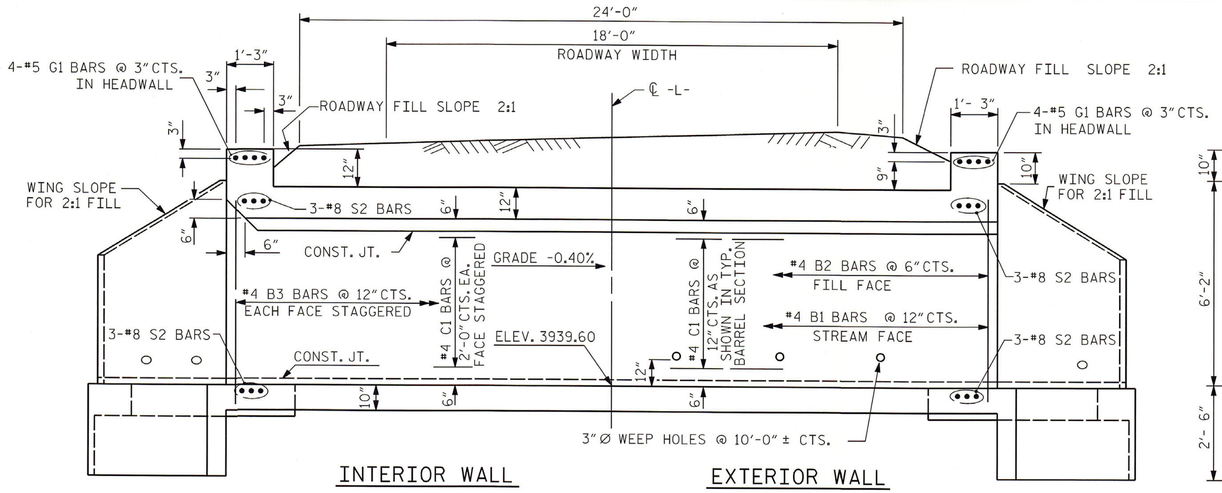
LRFR SUMMARY FOR REINFORCED CONCRETE BOX CULVERTS (NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-02
1			3			TOTAL SHEETS
2			4			

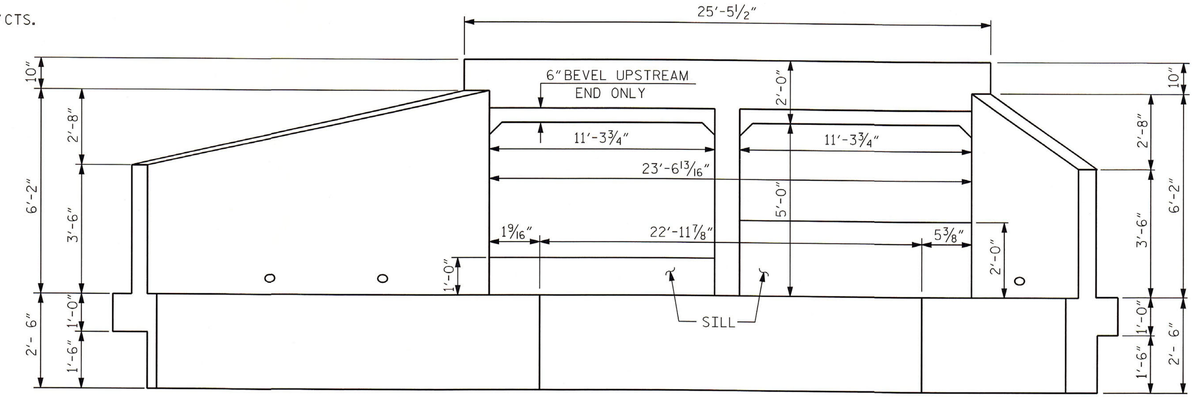
STD. NO. LRFR5

ASSEMBLED BY : MTB		DATE : 12/12	
CHECKED BY : JCM		DATE : 12/12	
DRAWN BY : WMC 7/11	REV. 10/1/11	MAA/GM	
CHECKED BY : GM 7/11			

DATE: 12/4/2012
TIME: 4:03:50 PM
USER: bellsten
DGN: G:\5023972\400_Tech_Info_Disc_Files\450_NCDOT Std Tech Docs Files\DRC_296\Structures\296_Lrfr5_12.dgn

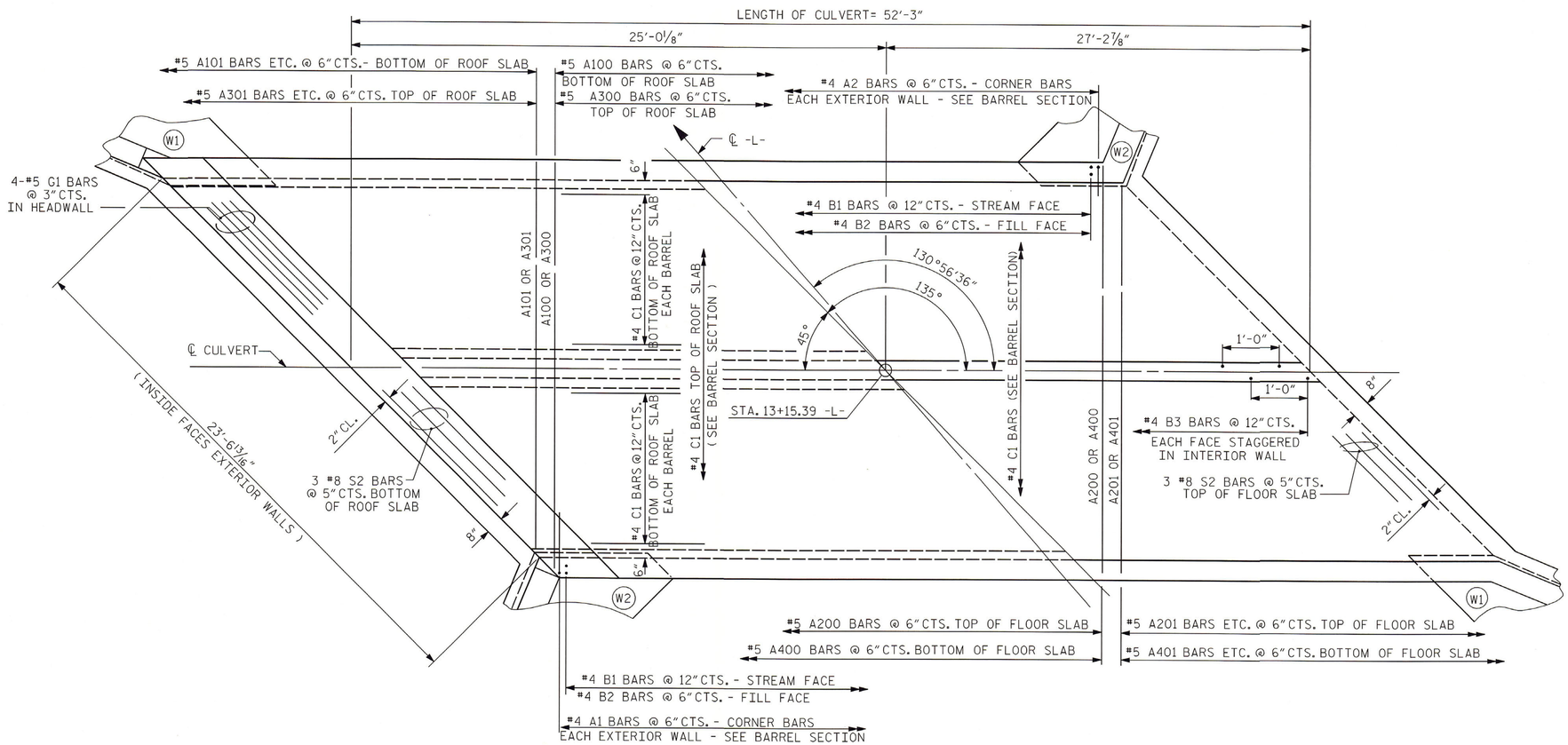


CULVERT SECTION NORMAL TO ROADWAY



END ELEVATION NORMAL TO SKEW

(LOOKING UPSTREAM)



PART PLAN - ROOF SLAB

PART PLAN - FLOOR SLAB

PROJECT NO. 17BP.14.R.14

JACKSON COUNTY

STATION: 13+15.39 -L-

REPLACES BRIDGE NO. 296

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NORTH CAROLINA PROFESSIONAL SEAL 030474 ENGINEER JOHN C. MORRICON
12/13/12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BARREL STANDARD

DOUBLE 8 FT. X 5 FT. CONCRETE BOX CULVERT WITH VERTICAL CLEARANCE OF LESS THAN 8 FT. 135° SKEW

1972

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-03
1			3			TOTAL SHEETS
2			4			

ASSEMBLED BY : MTB DATE : 12/12		SPECIAL
CHECKED BY : JCM DATE : 12/12		
DRAWN BY : RALPH D. UNDERWOOD DATE : APR. 1972		STANDARD
CHECKED BY : HASON A. JUDEH DATE : MAY 1972		

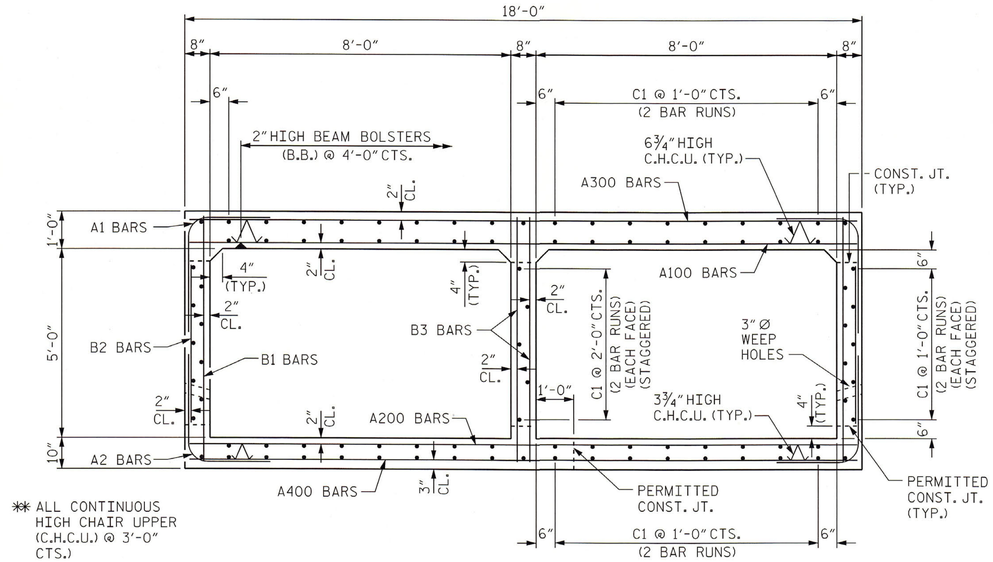
REVISED 11-19-99 BY M.M. CHECKED BY R.W.W. REDRAWN NOV.1990 BY D.P.D. CHECKED BY M.A.J.

STD. NO. CB442

USER: bellijm
DGN: C:\SUP2\STT2\400_Tech_Info_Files\450_NCDOT Std Tech Def Files\BRG_296\Structures\B296_Culvert.dgn
DATE: 12/4/2012
TIME: 4:24:05 PM

REINFORCING STEEL SCHEDULE

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A1	202	#4	1	5'-0"	675	A300	69	#5	STR	17'-8"	1271
A2	202	#4	1	4'-9"	641	A301	2	#5	STR	17'-2"	36
						A302	2	#5	STR	16'-8"	35
						A303	2	#5	STR	16'-2"	34
A100	69	#5	STR	17'-8"	1271	A304	2	#5	STR	15'-8"	33
A101	2	#5	STR	17'-2"	36	A305	2	#5	STR	15'-2"	32
A102	2	#5	STR	16'-8"	35	A306	2	#5	STR	14'-8"	31
A103	2	#5	STR	16'-2"	34	A307	2	#5	STR	14'-2"	30
A104	2	#5	STR	15'-8"	33	A308	2	#5	STR	13'-8"	29
A105	2	#5	STR	15'-2"	32	A309	2	#5	STR	13'-2"	27
A106	2	#5	STR	14'-8"	31	A310	2	#5	STR	12'-8"	26
A107	2	#5	STR	14'-2"	30	A311	2	#5	STR	12'-2"	25
A108	2	#5	STR	13'-8"	29	A312	2	#5	STR	11'-8"	24
A109	2	#5	STR	13'-2"	27	A313	2	#5	STR	11'-2"	23
A110	2	#5	STR	12'-8"	26	A314	2	#5	STR	10'-8"	22
A111	2	#5	STR	12'-2"	25	A315	2	#5	STR	10'-2"	21
A112	2	#5	STR	11'-8"	24	A316	2	#5	STR	9'-8"	20
A113	2	#5	STR	11'-2"	23	A317	2	#5	STR	9'-2"	19
A114	2	#5	STR	10'-8"	22	A318	2	#5	STR	8'-8"	18
A115	2	#5	STR	10'-2"	21	A319	2	#5	STR	8'-2"	17
A116	2	#5	STR	9'-8"	20	A320	2	#5	STR	7'-8"	16
A117	2	#5	STR	9'-2"	19	A321	2	#5	STR	7'-2"	15
A118	2	#5	STR	8'-8"	18	A322	2	#5	STR	6'-8"	14
A119	2	#5	STR	8'-2"	17	A323	2	#5	STR	6'-2"	13
A120	2	#5	STR	7'-8"	16	A324	2	#5	STR	5'-8"	12
A121	2	#5	STR	7'-2"	15	A325	2	#5	STR	5'-2"	11
A122	2	#5	STR	6'-8"	14	A326	2	#5	STR	4'-8"	10
A123	2	#5	STR	6'-2"	13	A327	2	#5	STR	4'-2"	9
A124	2	#5	STR	5'-8"	12	A328	2	#5	STR	3'-8"	8
A125	2	#5	STR	5'-2"	11	A329	2	#5	STR	3'-2"	7
A126	2	#5	STR	4'-8"	10	A330	2	#5	STR	2'-8"	6
A127	2	#5	STR	4'-2"	9	A331	2	#5	STR	2'-2"	5
A128	2	#5	STR	3'-8"	8	A332	2	#5	STR	1'-8"	3
A129	2	#5	STR	3'-2"	7						
A130	2	#5	STR	2'-8"	6	A400	69	#5	STR	17'-8"	1271
A131	2	#5	STR	2'-2"	5	A401	2	#5	STR	17'-2"	36
A132	2	#5	STR	1'-8"	3	A402	2	#5	STR	16'-8"	35
						A403	2	#5	STR	16'-2"	34
A200	69	#5	STR	17'-8"	1271	A404	2	#5	STR	15'-8"	33
A201	2	#5	STR	17'-2"	36	A405	2	#5	STR	15'-2"	32
A202	2	#5	STR	16'-8"	35	A406	2	#5	STR	14'-8"	31
A203	2	#5	STR	16'-2"	34	A407	2	#5	STR	14'-2"	30
A204	2	#5	STR	15'-8"	33	A408	2	#5	STR	13'-8"	29
A205	2	#5	STR	15'-2"	32	A409	2	#5	STR	13'-2"	27
A206	2	#5	STR	14'-8"	31	A410	2	#5	STR	12'-8"	26
A207	2	#5	STR	14'-2"	30	A411	2	#5	STR	12'-2"	25
A208	2	#5	STR	13'-8"	29	A412	2	#5	STR	11'-8"	24
A209	2	#5	STR	13'-2"	27	A413	2	#5	STR	11'-2"	23
A210	2	#5	STR	12'-8"	26	A414	2	#5	STR	10'-8"	22
A211	2	#5	STR	12'-2"	25	A415	2	#5	STR	10'-2"	21
A212	2	#5	STR	11'-8"	24	A416	2	#5	STR	9'-8"	20
A213	2	#5	STR	11'-2"	23	A417	2	#5	STR	9'-2"	19
A214	2	#5	STR	10'-8"	22	A418	2	#5	STR	8'-8"	18
A215	2	#5	STR	10'-2"	21	A419	2	#5	STR	8'-2"	17
A216	2	#5	STR	9'-8"	20	A420	2	#5	STR	7'-8"	16
A217	2	#5	STR	9'-2"	19	A421	2	#5	STR	7'-2"	15
A218	2	#5	STR	8'-8"	18	A422	2	#5	STR	6'-8"	14
A219	2	#5	STR	8'-2"	17	A423	2	#5	STR	6'-2"	13
A220	2	#5	STR	7'-8"	16	A424	2	#5	STR	5'-8"	12
A221	2	#5	STR	7'-2"	15	A425	2	#5	STR	5'-2"	11
A222	2	#5	STR	6'-8"	14	A426	2	#5	STR	4'-8"	10
A223	2	#5	STR	6'-2"	13	A427	2	#5	STR	4'-2"	9
A224	2	#5	STR	5'-8"	12	A428	2	#5	STR	3'-8"	8
A225	2	#5	STR	5'-2"	11	A429	2	#5	STR	3'-2"	7
A226	2	#5	STR	4'-8"	10	A430	2	#5	STR	2'-8"	6
A227	2	#5	STR	4'-2"	9	A431	2	#5	STR	2'-2"	5
A228	2	#5	STR	3'-8"	8	A432	2	#5	STR	1'-8"	3
A229	2	#5	STR	3'-2"	7						
A230	2	#5	STR	2'-8"	6	B1	104	#4	STR	6'-5"	446
A231	2	#5	STR	2'-2"	5	B2	208	#4	STR	4'-2"	579
A232	2	#5	STR	1'-8"	3	B3	104	#4	STR	6'-5"	446
						C1	186	#4	STR	26'-10"	3334
						D1	8	#6	STR	1'-5"	17
						D2	8	#6	STR	2'-5"	29
						G1	8	#5	STR	24'-11"	208
						S2	6	#8	STR	24'-11"	399
						TOTAL REINFORCING STEEL					14364

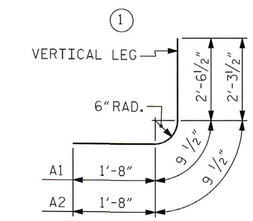


✱✱ ALL CONTINUOUS HIGH CHAIR UPPER (C.H.C.U.) @ 3'-0" CTS.)

RIGHT ANGLE SECTION OF BARREL

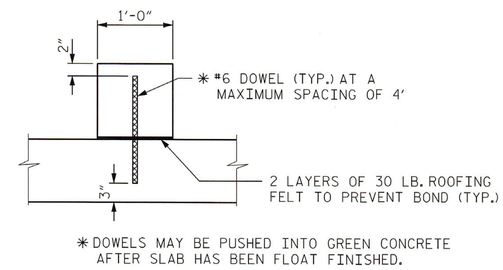
(THERE ARE 93 "C" BARS IN SECTION OF BARREL)

SPLICE LENGTH CHART	
BAR SIZE	SPLICE LENGTH
#4	1'-9"
#5	2'-2"
#6	2'-9"
#8	4'-11"



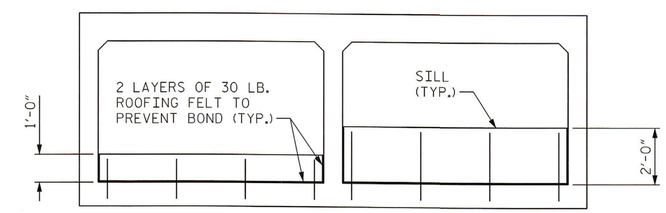
BAR TYPE

BAR DIMENSIONS ARE OUT TO OUT

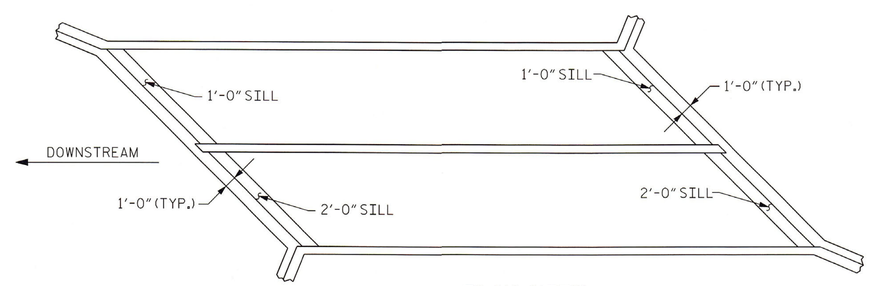


✱ DOWELS MAY BE PUSHED INTO GREEN CONCRETE AFTER SLAB HAS BEEN FLOAT FINISHED.

SECTION THROUGH SILL



ELEVATION - LOOKING UPSTREAM



PLAN VIEW

CULVERT SILL DETAILS

PROJECT NO. 17BP.14.R.14

JACKSON **COUNTY**

STATION: 13+15.39 -L-

REPLACES BRIDGE NO. 296

AECOM
AECOM TECHNICAL SERVICES, INC.
701 CORPORATE CENTER DRIVE, SUITE 475
RALEIGH, NC 27607
(919) 854-6200
www.aecom.com
AECOM License No. F-0342

NORTH CAROLINA PROFESSIONAL SEAL 030474 ENGINEER JOHN C. MORRICON
12/13/12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SR 1120 OVER CEDAR CREEK

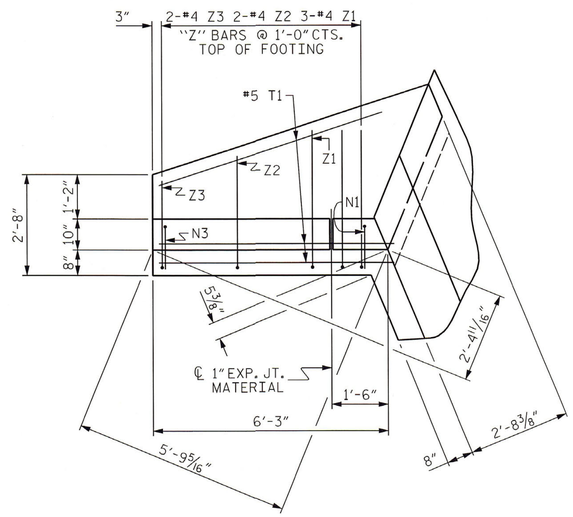
DOUBLE 8 FT. X 5 FT.
CONCRETE BOX CULVERT
135° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-04
						TOTAL SHEETS

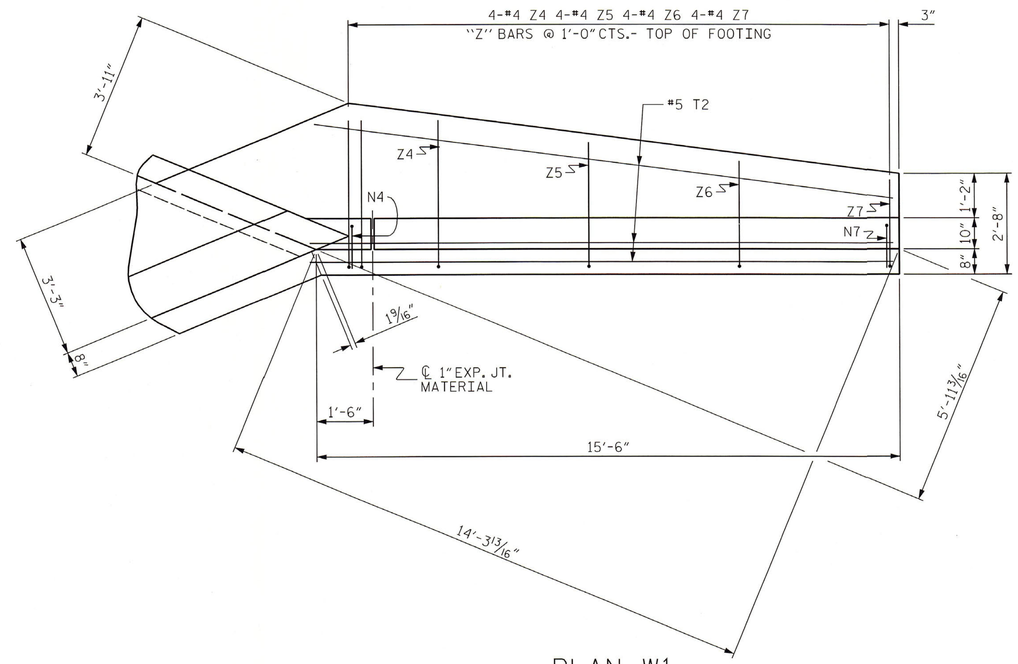
DRAWN BY : MTB DATE : 12/12
CHECKED BY : JCM DATE : 12/12

DATE: 12/13/2012
TIME: 12:23:53 PM

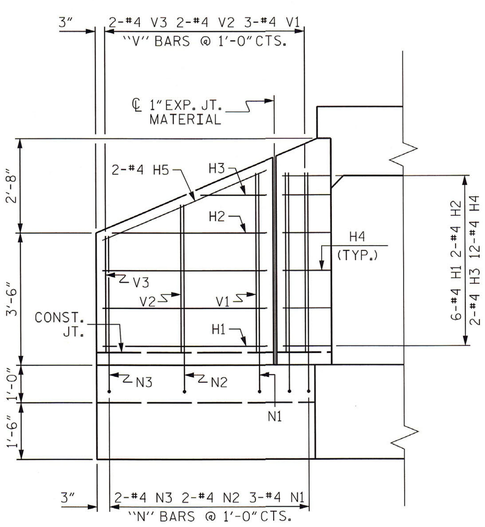
USER: bellsjam
DGN: C:\SDCE3877\2400_Tech_Info_Disc_Files\450_NCDOT Std Details\BRG_290-Structures\B296_Sectionsdgn



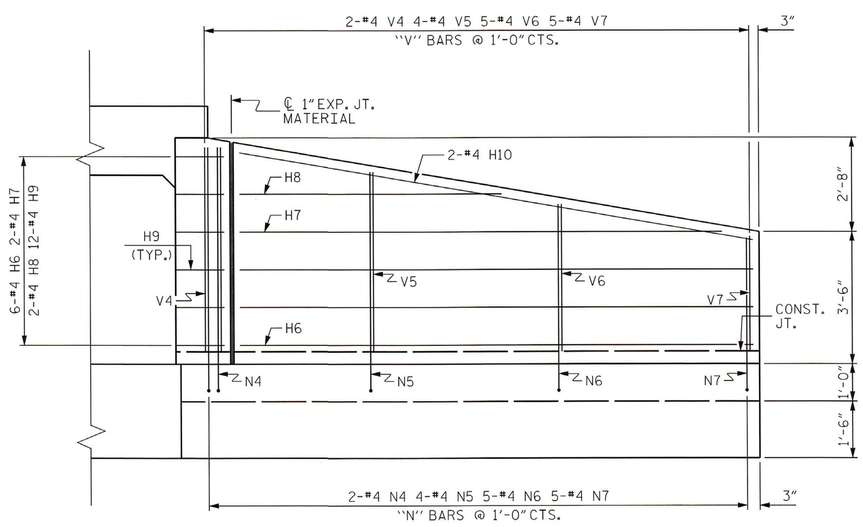
PLAN W2



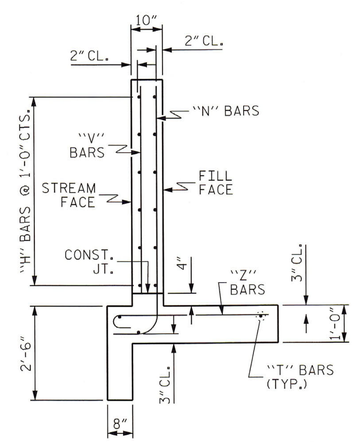
PLAN W1



ELEVATION W2



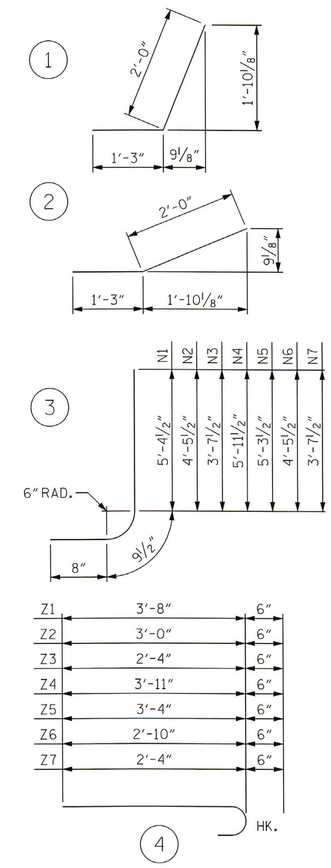
ELEVATION W1



TYPICAL WING SECTION

BAR TYPES

ALL BAR DIMENSIONS ARE OUT TO OUT.



BILL OF MATERIAL

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
H1	12	#4	STR	4'-4"	35
H2	4	#4	STR	4'-1"	11
H3	4	#4	STR	1'-9"	5
H4	24	#4	1	3'-3"	52
H5	4	#4	STR	4'-9"	13
H6	12	#4	STR	13'-7"	109
H7	4	#4	STR	12'-9"	34
H8	4	#4	STR	6'-11"	18
H9	24	#4	2	3'-3"	52
H10	4	#4	STR	13'-9"	37
N1	6	#4	3	6'-10"	27
N2	4	#4	3	5'-11"	16
N3	4	#4	3	5'-1"	14
N4	4	#4	3	7'-5"	20
N5	8	#4	3	6'-9"	36
N6	10	#4	3	5'-11"	40
N7	10	#4	3	5'-1"	34
T1	6	#5	STR	6'-3"	39
T2	6	#5	STR	15'-6"	97
V1	6	#4	STR	4'-9"	19
V2	4	#4	STR	3'-11"	10
V3	4	#4	STR	3'-1"	8
V4	4	#4	STR	5'-5"	14
V5	8	#4	STR	4'-9"	25
V6	10	#4	STR	3'-10"	26
V7	10	#4	STR	3'-0"	20
Z1	6	#4	4	4'-2"	17
Z2	4	#4	4	3'-6"	9
Z3	4	#4	4	2'-10"	8
Z4	8	#4	4	4'-5"	24
Z5	8	#4	4	3'-10"	20
Z6	8	#4	4	3'-4"	18
Z7	8	#4	4	2'-10"	15

REINFORCING STEEL FOR 4 WINGS 922 LBS

CLASS A CONCRETE

4 WINGS	14.8	CY
2 HEADWALLS	2.4	CY
2 END CURTAIN WALLS	2.9	CY
4 SILLS	2.5	CY
TOTAL	22.6	CY

PROJECT NO. 17BP.14.R.14

JACKSON COUNTY

STATION: 13+15.39 -L-

REPLACES BRIDGE NO. 296

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NORTH CAROLINA PROFESSIONAL SEAL 030474 ENGINEER JOHN C. MORRISON
12/13/12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD WINGS FOR CONCRETE BOX CULVERT

H = 5'-0" SLOPE = 2:1
45° OR 135° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-05
1			3			TOTAL SHEETS
2			4			

STD. NO. CW4505

ASSEMBLED BY :	MTB	DATE :	12/12
CHECKED BY :	JCM	DATE :	12/12
DRAWN BY :	CCJ		01/00
CHECKED BY :	RWW		03/00

DATE: 12/11/2012
TIME: 4:07:56 PM

USER: bellsjem
DGN: G:\B23387\2400_Tech_Info_Dsc_Files\450_NCDOT Std Tech\Bxs\Files\BR5_296\Structure\B296_CulvWing.dgn

STANDARD NOTES

DESIGN DATA:

SPECIFICATIONS	A.A.S.H.T.O. (CURRENT)
LIVE LOAD	SEE PLANS
IMPACT ALLOWANCE	SEE A.A.S.H.T.O.
STRESS IN EXTREME FIBER OF	
STRUCTURAL STEEL - AASHTO M270 GRADE 36	20,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50W	27,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50	27,000 LBS. PER SQ. IN.
REINFORCING STEEL IN TENSION	
GRADE 60	24,000 LBS. PER SQ. IN.
CONCRETE IN COMPRESSION	1,200 LBS. PER SQ. IN.
CONCRETE IN SHEAR	SEE A.A.S.H.T.O.
STRUCTURAL TIMBER - TREATED OR	
UNTREATED - EXTREME FIBER STRESS	1,800 LBS. PER SQ. IN.
COMPRESSION PERPENDICULAR TO GRAIN OF TIMBER	375 LBS. PER SQ. IN.
EQUIVALENT FLUID PRESSURE OF EARTH	30 LBS. PER CU. FT. (MINIMUM)

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2012 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

STEEL SHEET PILING FOR PERMANENT OR TEMPORARY APPLICATIONS SHALL BE HOT ROLLED.

CONCRETE:

UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF ALL STRUCTURES WITH THE EXCEPTION THAT: CLASS AA CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURES, ABUTMENT BACKWALLS, AND APPROACH SLABS; AND CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP.

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED 3/4" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1-1/2" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A 1/4" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A 1/4" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 12" INTO THE OLD CONCRETE AND GROUTED INTO PLACE WITH 1:2 CEMENT MORTAR.

ALLOWANCE FOR DEAD LOAD DEFLECTION, SETTLEMENT, ETC. IN CASTING SUPERSTRUCTURES:

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.

ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.

IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.

WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 7/8" Ø SHEAR STUDS FOR THE 3/4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16 INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.

METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

GENERALLY, IN CASE OF DISCREPANCY, THIS STANDARD SHEET OF NOTES SHALL GOVERN OVER THE SPECIFICATIONS, BUT THE REMAINDER OF THE PLANS SHALL GOVERN OVER NOTES HEREON, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE SPECIFICATIONS ARTICLE 105-4.

ENGLISH

JANUARY, 1990

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

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