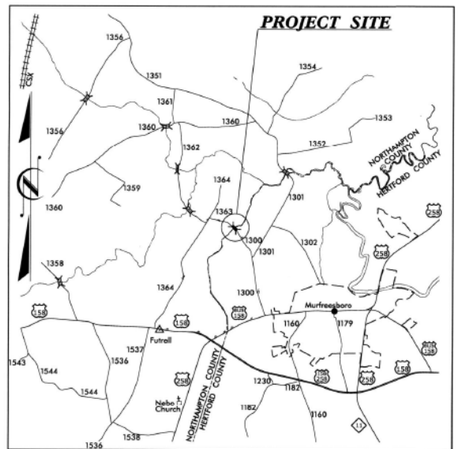
CONTRACT: DA00217 WBS ELEMENT: 17BP.1.R.57

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



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

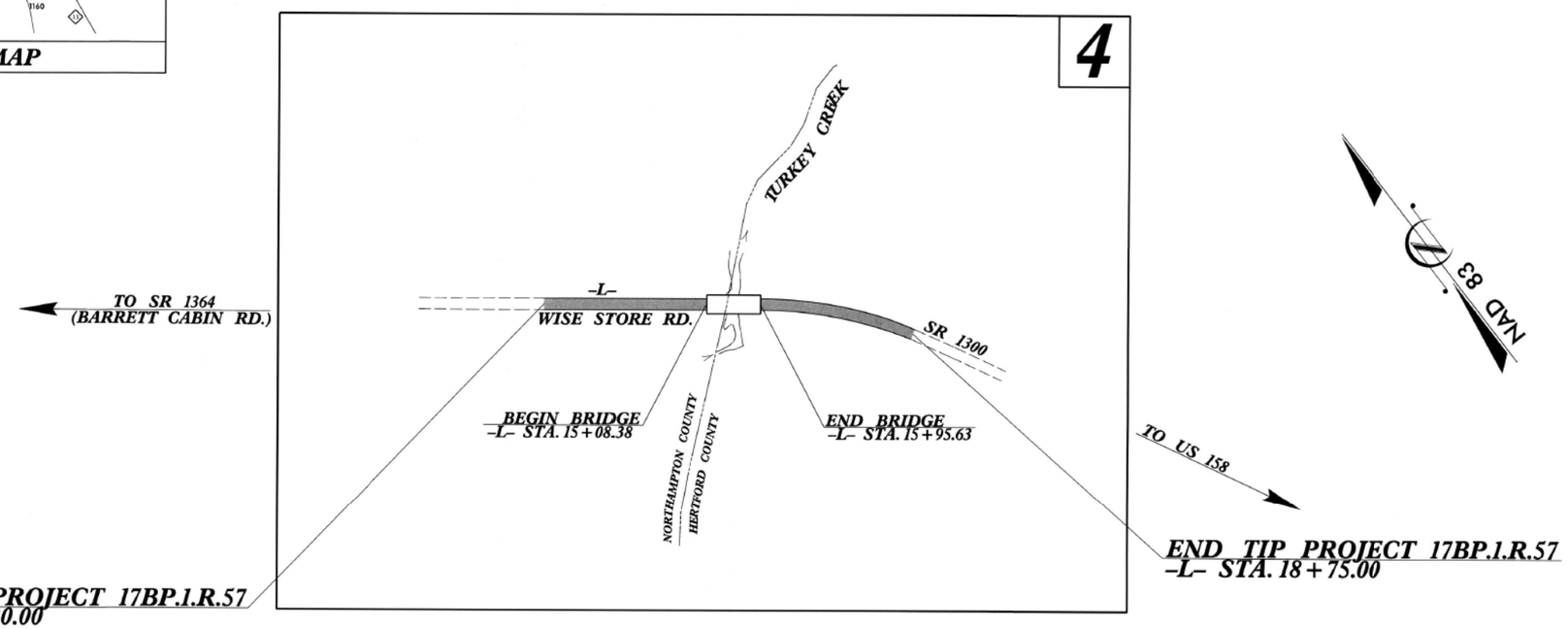
HERTFORD COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.1.R.57	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
17BP.1.R.57		PE
17BP.1.R.57		UTIL., R/W
17BP.1.R.57		CONST.

LOCATION: BRIDGE NO. 13 OVER TURKEY CREEK ON SR 1300 (WISE STORE RD.)

TYPE OF WORK: GRADING, DRAINAGE, PAVING & STRUCTURE



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 2011 = 270
ADT 2034 = 535
DHV = 10 %
D = 60 %
T = 6 % *
V = 55 MPH
* TTST = 2% DUAL 4%
FUNC CLASS = LOCAL
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY PROJECT 17BP.1.R.57	=	0.107 MILES
LENGTH STRUCTURE PROJECT 17BP.1.R.57	=	0.017 MILES
TOTAL LENGTH PROJECT 17BP.1.R.57	=	0.124 MILES

WETHERILL ENGINEERING

Prepared for the North Carolina Department of Transportation in the Office of:
559 JONES FRANKLIN ROAD
SUITE 164
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8007

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JANUARY 2, 2014

LETTING DATE:

EDWARD G. WETHERILL, PE
PROJECT ENGINEER

BOB A. MAY, PE
PROJECT DESIGN ENGINEER

NCDOT CONTACT: JOHN S. ABEL, JR.
DIVISION 1 BRIDGE PROGRAM MANAGER

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 023993 ENGINEER MAX S. PRICE
SIGNATURE: 4/8/14 P.E.

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 21116 ENGINEER BOB A. MAY
SIGNATURE: 4/8/14 P.E.

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

4/1/2014
2:14:04 PM
P:\2013\3130.01Her 1 for d #13\Roadway\Proj\17BP.1.R.57_Rdy_tsh.dgn

09/08/99

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21116 ENGINEER BOB A. MAY

GENERAL NOTES: 2012 SPECIFICATIONS

EFFECTIVE: 01-17-2012
REVISED: 07-30-2012

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.

CLEARING:

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

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 AND/OR STD. NO. 225.05 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 AND/OR STD. NO. 560.02

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.

UNDERDRAINS:

UNDERDRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.03 AT LOCATIONS DIRECTED BY THE ENGINEER.

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.

TEMPORARY SHORING:

SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.

SUBSURFACE PLANS:

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

END BENTS:

THE ENGINEER SHALL CHECK THE STRUCTURE END BENT PLANS, DETAILS, AND CROSS-SECTION PRIOR TO SETTING OF THE SLOPE STAKES FOR THE EMBANKMENT OR EXCAVATION APPROACHING A BRIDGE.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE DOMINION RESOURCES, INC. AND CENTURY LINK.

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

EFF. 01-17-2012
REV. 10-30-2012

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

200.02 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

DIVISION 4 – MAJOR STRUCTURES

422.11 Reinforced Bridge Approach Fills – Sub Regional Tier

DIVISION 5 – SUBGRADE, BASES AND SHOULDERS

560.01 Method of Shoulder Construction – High Side of Superelevated Curve – Method I

DIVISION 8 – INCIDENTALS

815.03 Pipe Underdrain and Blind Drain
840.00 Concrete Base Pad for Drainage Structures
840.29 Frames and Narrow Slot Flat Grates
840.35 Traffic Bearing Grated Drop Inlet – for Cast Iron Double Frame and Grates
840.46 Traffic Bearing Precast Drainage Structure
846.01 Concrete Curb, Gutter and Curb & Gutter
862.01 Guardrail Placement
862.02 Guardrail Installation
876.02 Guide for Rip Rap at Pipe Outlets
876.04 Drainage Ditches with Class 'B' Rip Rap

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
2	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAIL
2-A	DETAIL FOR STRUCTURE ANCHOR UNIT, TYPE III
3	SUMMARY OF QUANTITIES
3-A	SUMMARY OF DRAINAGE QUANTITIES, SUMMARY OF GUARDRAIL, EARTHWORK SUMMARY, AND ASPHALT PAVEMENT REMOVAL SUMMARY
4	PLAN SHEET & PROFILE SHEET
TCP-1	TRAFFIC CONTROL PLANS
EC-1 THRU EC-5	EROSION CONTROL PLANS
RF-1	REFORESTATION PLANS
X-1A	CROSS-SECTION SUMMARY
X-1 THRU X-6	CROSS-SECTIONS
S-1 THRU S-15	STRUCTURE PLANS
	STANDARD STRUCTURE NOTES

8/17/99
4/7/2014 1:35:53 PM
A:\2013\3130.01 Hertford #13\Roadway\Proj\17BP.1.R.57_Rdy_tab.dgn

12/05/11

PROJECT REFERENCE NO.	SHEET NO.
17BPJ.R.57	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: Area or Site
- Potential Soil Contamination: Area 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 R/W Marker — RW
- Proposed Control of Access Line with Concrete C/A Marker — CA
- 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
- 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
- Designated U/G Water Line (S.U.E.*)
- 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. — UST
- 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.1.R.57	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21116 ENGINEER BOB A. MAY 4/7/14

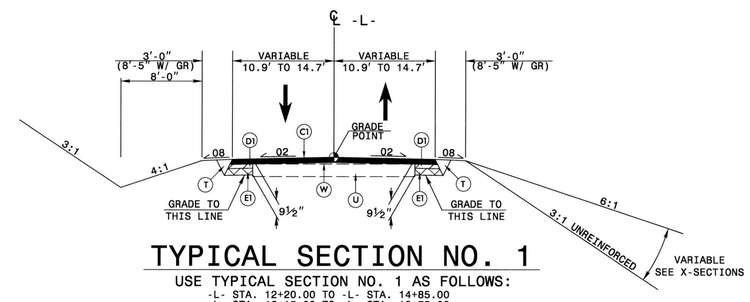
WETHERILL ENGINEERING
559 Jones Franklin Rd. Suite 164
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

PAVEMENT SCHEDULE

C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.	T	EARTH MATERIAL.
D1	PROP. APPROX. 2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	U	EXISTING PAVEMENT.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.	W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL)
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.		

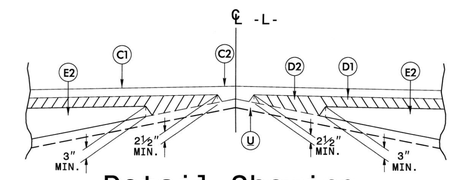
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

NOTE: UTILIZE INCIDENTAL MILLING TO MAKE PAVEMENT TIE-INS
-L- STA. 12+20.00 TO -L- STA. 13+18.06
-L- STA. 18+17.36 TO -L- STA. 18+75.00

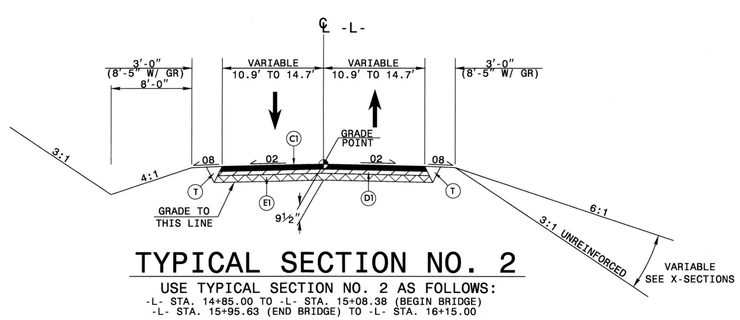


TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1 AS FOLLOWS:
-L- STA. 12+20.00 TO -L- STA. 14+85.00
-L- STA. 16+15.00 TO -L- STA. 18+75.00

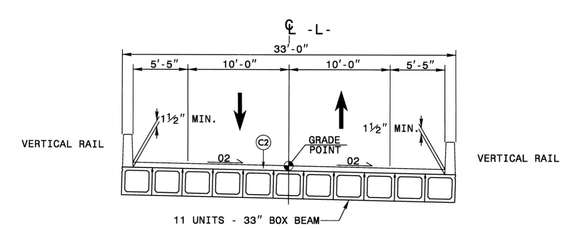


Detail Showing Method of Wedging



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2 AS FOLLOWS:
-L- STA. 14+85.00 TO -L- STA. 15+08.38 (BEGIN BRIDGE)
-L- STA. 15+95.63 (END BRIDGE) TO -L- STA. 16+15.00



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3 AS FOLLOWS:
-L- STA. 15+08.38 TO -L- STA. 15+95.63

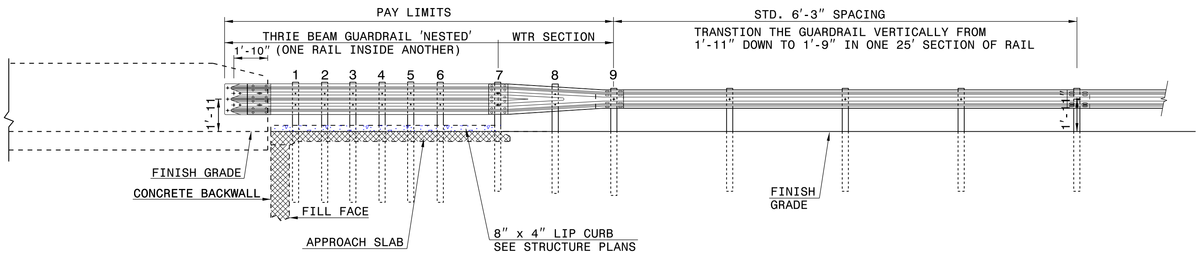
6/2/99
4/4/2014 2:42:27 PM
B:\2013\13130.01 Hertford #13\Roadway\Proj\17BP.1.R.57_Rdy_typ.dgn

$$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

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

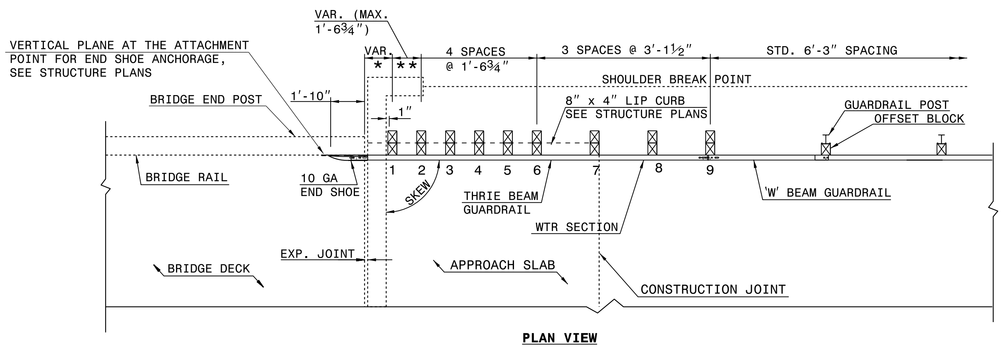
ENGLISH DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE - SUB REGIONAL TIER

SHEET 2 OF 7
862d03



ELEVATION

NOTE:
**POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
*THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11½" IF CONCRETE BACKWALL IS NOT PRESENT.
-SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.
-MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
-LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
-SEE SHEET 5 FOR POST SECTIONS 1 THRU 9.



PLAN VIEW

GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE - SUB REGIONAL TIER

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

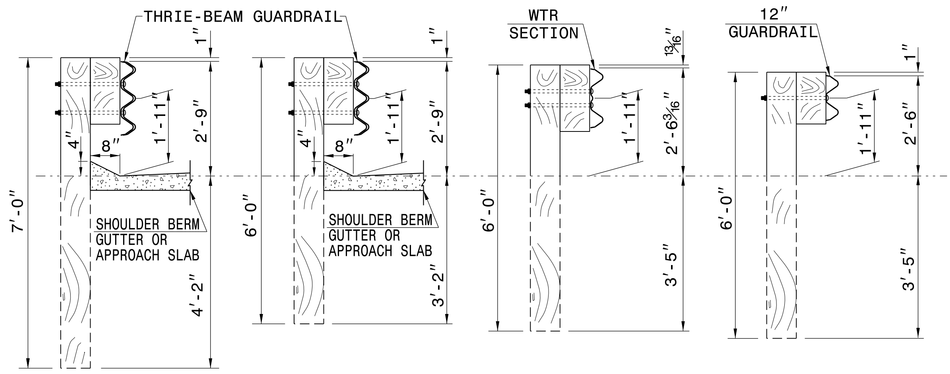
ENGLISH DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE - SUB REGIONAL TIER

SHEET 2 OF 7
862d03

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

ENGLISH DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III

SHEET 3 OF 7
862d03

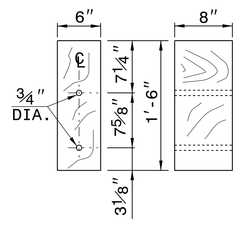


SECTION OF THRIE BEAM POSTS 1 THRU 6

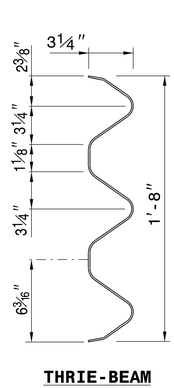
SECTION OF THRIE BEAM POST 7

SECTION OF WTR BEAM POST 8

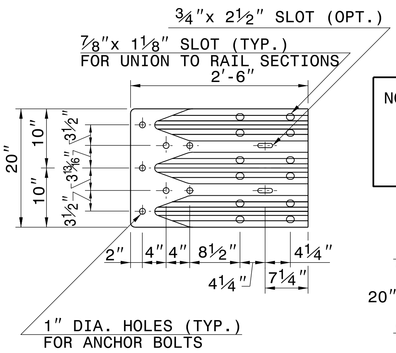
SECTION OF 'W' BEAM POST 9



THRIE BEAM OFFSET BLOCK

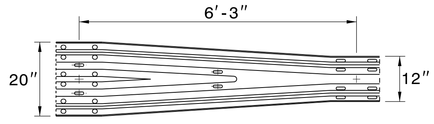


THRIE-BEAM SECTION

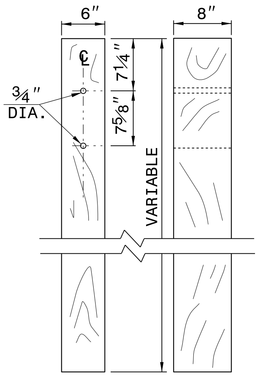


END SHOE

NOTE: THE MID POST AND OFFSET BLOCK OF THE WTR SECTION WILL REQUIRE SPECIAL BOLT HOLE DRILLING IN THE THRIE BEAM OFFSET BLOCK AND LINE POST.



WTR SECTION
ELEVATION VIEW



THRIE BEAM LINE POST

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

ENGLISH DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III

SHEET 3 OF 7
862d03

CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

ORIGINAL BY: J. HOWERTON DATE: 06-22-12
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.:

PROJECT REFERENCE NO. 17BP.1.R.57
SHEET NO. 2-A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF QUANTITIES

ITEM #	SECT. #	DESCRIPTION	QUANTITY	UNIT
0000100000–N	800	Mobilization	1.00	LS
0000400000–N	801	Construction Surveying	1.00	LS
0043000000–N	226	Grading	1.00	LS
0030000000–N	SP	Reinfirced Bridge Approach Fill–Sub Regional, Station 15+52.00	1.00	LS
0050000000–E	226	Supplemental Clearing & Grubbing	1.00	AC
0057000000–E	226	Undercut Excavation	50.00	CY
0195000000–E	265	Select Granular Material	70.00	CY
0196000000–E	270	Geotextile for Soil Stabilization	175.00	SY
0318000000–E	300	Foundation Conditioning Material	10.00	TON
0320000000–E	300	Foundation Conditioning Geotextile	30.00	SY
0335200000–E	305	15" Drainage Pipe	92.00	LF
1330000000–E	607	Incidental Milling	115.00	SY
1489000000–E	610	Apshalt Conc. Base Course, Type B25.0B	210.00	TON
1498000000–E	610	Asphalt Conc. Intermediate Course, Type I19.0B	180.00	TON
1519000000–E	610	Asphalt Conc. Surface Course, Type S9.5B	310.00	TON
1575000000–E	620	Asphalt Binder for Plant Mix	37.00	TON
2022000000–E	815	Subdrain Excavation	23.00	CY
2026000000–E	815	Geotextile for Subsurface Drains	100.00	SY
2033000000–E	815	Subdrain Fine Aggregate	17.00	CY
2044000000–E	815	6" Perforated Subdrain Pipe	100.00	LF
2070000000–N	815	Subdrain Pipe Outlet	1.00	EACH
2077000000–E	815	6" Outlet Pipe	6.00	LF
2286000000–N	840	Masonry Drainage Structures	2.00	EACH
2308000000–E	840	Masonry Drainage Structures	3.00	LF
2367000000–N	840	Frame w/Two Grates, STD. 840.29	2.00	EACH
2556000000–E	846	Shoulder Berm Gutter	75.00	LF
3030000000–E	862	Steel Bm Guardrail	50.00	LF
3150000000–N	862	Additional Guardrail Posts	5.00	EACH
3215000000–N	862	Guardrail Anchor Unit. Type III	4.00	EACH
3270000000–N	SP	Guardrail Anchor Unit, Type 350 TL–3	4.00	EACH
3649000000–E	876	Class B Rip Rap	31.00	TON
3656000000–E	876	Geotextile for Drainage	285.00	SY
4400000000–E	1110	Work Zone Signs (Stationary)	343.00	SF
4405000000–E	1110	Work Zone Signs (Portable)	32.00	SF
4410000000–E	1110	Work Zone Signs (Barricade Mounted)	77.00	SF
4435000000–E	1135	Cones	10.00	EACH
4445000000–E	1145	Barricades (Type III)	64.00	LF
4685000000–E	1205	Thermoplastic Pavement Marking (4", 90 mils)	1310.00	LF
4686000000–E	1205	Thermoplastic Pavement Marking (4", 120 mils)	1310.00	LF
6000000000–E	1605	Temporary Silt Fence	1550.00	LF
6006000000–E	1610	Stone for Erosion Control, Class A	75.00	TON
6009000000–E	1610	Stone for Erosion Control, Class B	5.00	TON
6012000000–E	1610	Sediment Control Stone	15.00	TON
6015000000–E	1615	Temporary Mulching	0.50	ACRE
6018000000–E	1620	Seed for Temporary Seeding	100.00	LB
6021000000–E	1620	Fertilizer for Temporary Seeding	0.50	TON
6024000000–E	1622	Temporary Slope Drains	200.00	LF
6029000000–E	SP	Safety Fence	200.00	LF
6030000000–E	1630	Silt Excavation	10.00	CY
6036000000–E	1631	Matting for Erosion Control	1875.00	SY
6037000000–E	SP	Coir Fiber Mat	100.00	SY
6042000000–E	1632	1/4" Hardware Cloth	50.00	LF
6071010000–E	SP	Wattle	125.00	LF
6084000000–E	1660	Seeding & Mulching	0.50	ACRE
6087000000–E	1660	Mowing	0.50	ACRE
6090000000–E	1661	Seed for Repair Seeding	50.00	LB
6093000000–E	1661	Fertilizer for Repair Seeding	0.25	TON
6096000000–E	1662	Seed for Supplemental Seeding	50.00	LB
6108000000–E	1665	Fertilizer Topdressing	0.50	TON
6111000000–E	SP	Impervious Dike	60.00	LF
6114000000–N	1667	Specialized Hand Mowing	10.00	HR
6117000000–N	SP	Response for Erosion Control	13.00	EACH
6123000000–E	1670	Reforestation	0.10	ACRE
8021000000–N	SP	Removal of Exist. Structure at Sta. 15+52.00	1.00	LS
8112730000–N	450	PDA Testing	2.00	EACH
8121000000–N	412	Unclassified Structure Exc. at Sta. 15+52.00	1.00	LS
8182000000–E	420	Class A Concrete (Bridge)	51.20	CY
8210000000–N	422	Bridge Approach Slabs, Station 15+52.00	1.00	LS
8217000000–E	425	Reinforcing Steel (Bridge)	7164.00	LBS
8364000000–E	450	HP 12x53 Steel Piles	875.00	LF
8393000000–N	450	Pile Redrives	8.00	EACH
8505000000–E	460	Vertical Conc. Barrier Rail	170.00	LF
8608000000–E	876	Rip Rap Class II (2'–0" Thick)	225.00	TON
8622000000–E	876	Geotextile for Drainage	250.00	SY
8657000000–N	430	Elastomeric Bearings	1.00	LS
8753100000–E	430	3'–0"x2'–9" Prestressed Conc. Box Beams	935.00	LF

5/28/99
4/4/2014
9:35:50 AM
P:\2013\13130.01 Hertford #13\Roadway\Proj\17BP.1.R.57 Rdy sum.dgn

COMPUTED BY: bam DATE: 3/19/14
CHECKED BY: DATE:

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
17BP.JR.57	3-A

SUMMARY OF EARTHWORK

STATION	STATION	UNCL. EXCAV.	EMBANK. +%	BORROW	WASTE
-L- 12+20.00	-L- 15+08.38	5	174	169	
SUBTOTALS:		5	174	169	
-L- 12+48.13	-L- 13+23.81	6	156	150	
SUBTOTALS:		6	156	150	
PROJECT SUBTOTALS:		11	330	319	
LOSS DUE TO CLEARING & GRUBBING					
PROJECT TOTALS:		11	330	319	
5% TO REPLACE TOPSOIL ON BORROW PIT				16	
GRAND TOTALS:		11	-	335	
SAY:		50		350	

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."

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD²
-L-	14+85.00	15+34.39	CL	109.90
-L-	15+74.97	16+15.00	CL	81.77
			TOTAL:	191.67
			SAY:	200.00

SHOULDER BERM GUTTER SUMMARY

SURVEY LINE	STATION	STATION	LENGTH
-L- RT.	14+23.75	14+97.38	73.63
		TOTAL:	73.63
		SAY:	75.00

RIGHT OF WAY AREA DATA

PARCEL NO.	PROPERTY OWNERS NAMES	TOTAL ACREAGE	AREA TAKEN	AREA REMAINING RT.	AREA REMAINING LT.	CONST. EASE.	PERM. DRAIN. EASE.	TEMP. DRAIN. EASE.
1	WATSON & JOHNSON FARM, LLP.		4,067.25 SF					
2	HARRY EUGENE VAUGHAN		1,319.81 SF					
3	WILLIAM STEVENS		1,252.99 SF					

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".

SUB-REGIONAL & REGIONAL 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 | 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" .064 | 15" .064 | 18" .064 | 24" .064 | 36" .079 | 42" .109 | 48" .109 | R.C. PIPE (CLASS III) 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) | *** 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. | C.S.P. | QUANTITIES FOR DRAINAGE STRUCTURES * TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. "A" + (1.3 X COL. B') PER EACH (0' THRU 5.0') | 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 | DROP INLET | G.D.I. TYPE "B" STD. 840.18 OR 840.27 | G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24 | T.B.D.I. STD. 840.35 | G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29 | M.H. FRAME & COVER STD. 840.54 | 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 |
|---|---|---|---|---|---|---|---|---

PROJECT REFERENCE NO.	SHEET NO.
17BP.1.R.57	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21116 ENGINEER ROB A. MAY 4/7/14

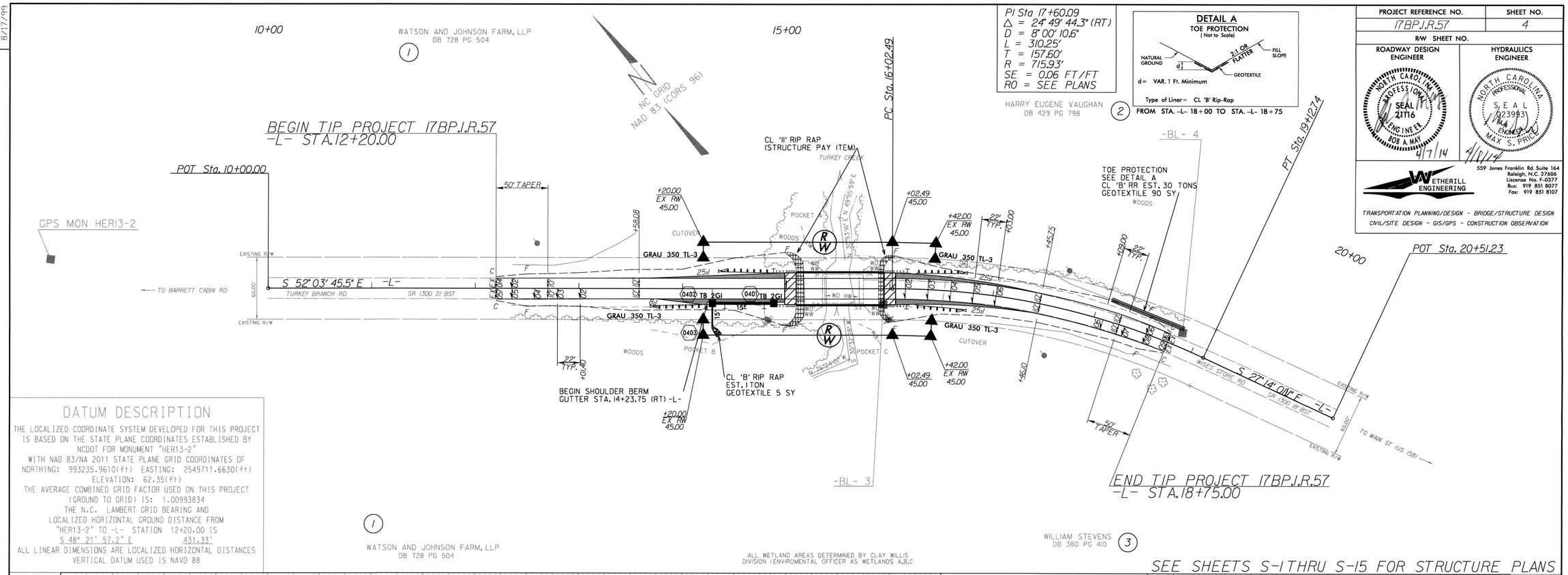
NORTH CAROLINA PROFESSIONAL SEAL 023943 ENGINEER MAX S. PRICE 4/8/14

WETHERILL ENGINEERING
559 Jones Franklin Rd. Suite 164
Raleigh, N.C. 27606
Liscense No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

8/17/99

REVISIONS



DETAIL A
TOE PROTECTION
(Not to Scale)

d = VAR. 1 Ft. Minimum

Type of Liner = CL 'B' Rip-Rap

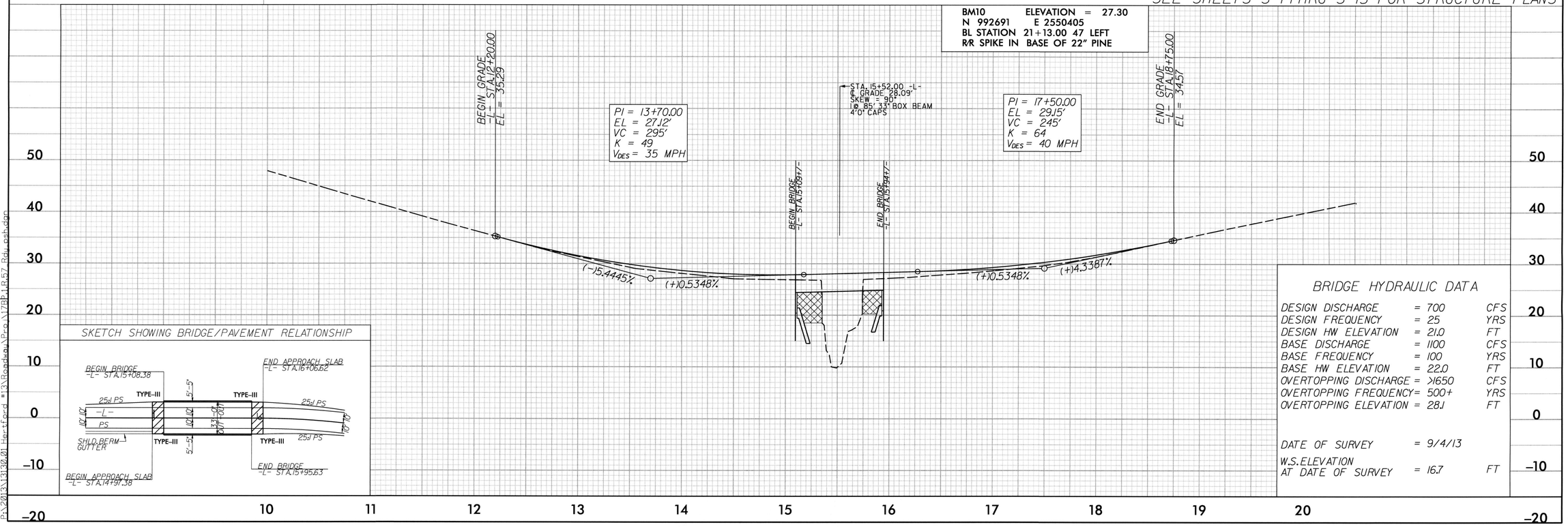
FROM STA. -L- 18+00 TO STA. -L- 18+75

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "HER13-2"
WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF
NORTHING: 993235.9610(ft) EASTING: 2549711.6630(ft)
ELEVATION: 62.35(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.00993834
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "HER13-2" TO -L- STATION 12+20.00 IS
S 48° 21' 57.2" E 431.33'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

SEE SHEETS S-1 THRU S-15 FOR STRUCTURE PLANS

BM10 ELEVATION = 27.30
N 992691 E 2550405
BL STATION 21+13.00 47 LEFT
R/R SPIKE IN BASE OF 22" PINE



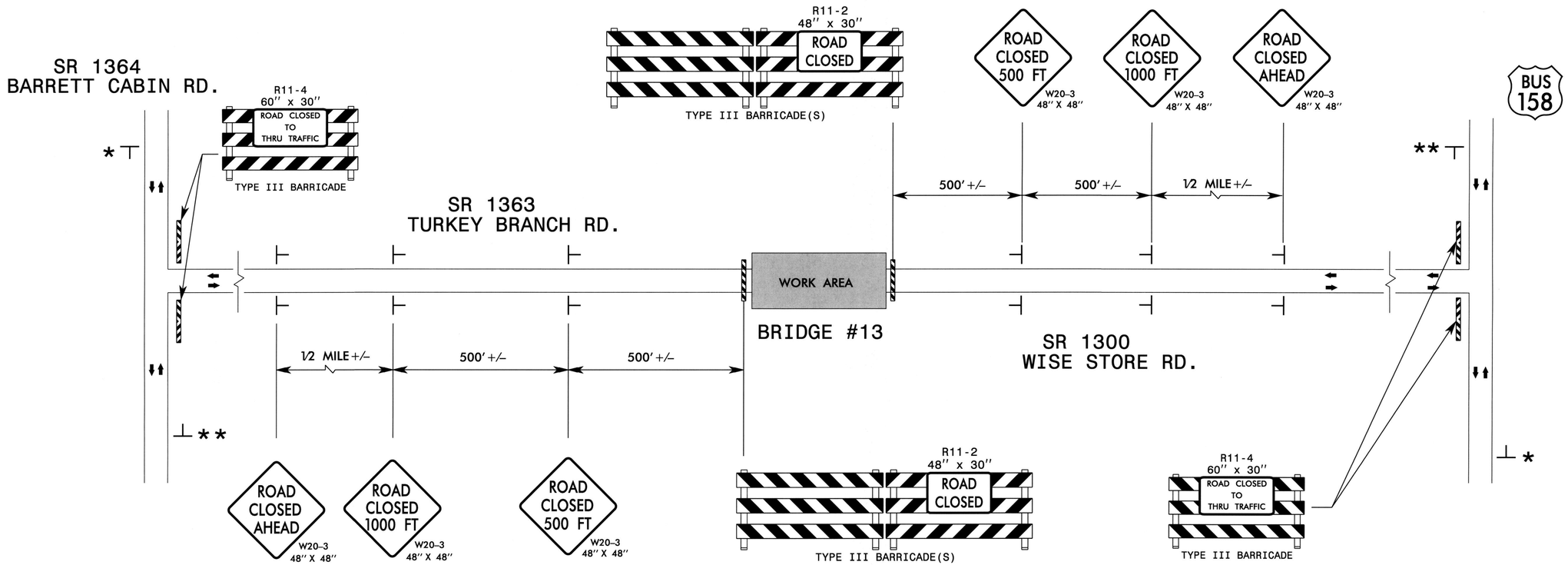
SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP

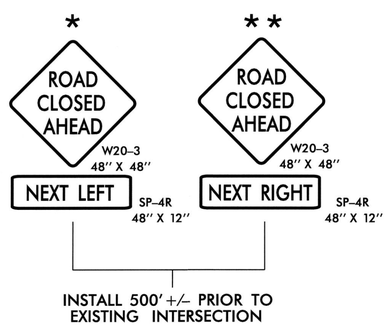
BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 700	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 21.0	FT
BASE DISCHARGE	= 1100	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 22.0	FT
OVERTOPPING DISCHARGE	= >1650	CFS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	= 28.1	FT
DATE OF SURVEY	= 9/4/13	
W.S. ELEVATION AT DATE OF SURVEY	= 16.7	FT

4/2/2014
8:24:20 AM
R:\2013\13130.01 Hertford #13\Roadway\Proj\17BP.1.R.57_Rdwy_esh.dgn

PROJ. REFERENCE NO.	SHEET NO.
17BP.1.R.57	TCP-1





GENERAL NOTES

1. INSTALLATION OF TEMPORARY ROUTE MARKERS, DESTINATION SIGNS, AND ANY NECESSARY MODIFICATIONS TO EXISTING OR PROPOSED REGULATORY OR WARNING SIGNS WILL BE MADE BY OTHERS (STATE OR CITY FORCES) UNLESS OTHERWISE DESIGNATED IN PLANS. PROVIDE A MINIMUM 21 CALENDAR DAY NOTICE TO STATE FORCES BEFORE A ROADWAY IS CLOSED TO TRAFFIC SUCH THAT THE NECESSARY PROVISIONS CAN BE MADE TO INFORM LOCAL EMERGENCY AND LAW ENFORCEMENT PERSONNEL, SCHOOLS OR ANY OTHER PARTIES AFFECTED BY THE ROAD CLOSURE.
2. INSTALL SIGNS BEFORE THE BARRICADES WHEN CLOSING THE ROADWAY TO TRAFFIC. REMOVE BARRICADES BEFORE SIGNS WHEN OPENING THE ROADWAY TO TRAFFIC. INSTALL/REMOVE SIGNS AND BARRICADES WITHIN THE SAME CALENDAR DAY.
3. POSITION WING BARRICADES ON THE SHOULDERS AND SLOPE THE STRIPES DOWNWARD IN THE DIRECTION TOWARD WHICH TRAFFIC MUST TURN IN DETOURING.
4. USE ADDITIONAL TYPE III BARRICADES IN STAGGERED LOCATIONS SUPPLEMENTED WITH SIGN R11-4 "ROAD CLOSED TO THRU TRAFFIC" IN THE EVENT THAT TRAFFIC MUST BE MAINTAINED BEYOND THE DETOUR POINT.
5. SEE STANDARD SPECIFICATION 1089-1 FOR WORK ZONE SIGNS.
6. SEE STANDARD SPECIFICATION 1089-2 FOR WORK ZONE SIGN SUPPORTS.

LEGEND

- DIRECTION OF TRAFFIC FLOW
- BARRICADE (TYPE III)
- STATIONARY MOUNTED SIGN

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN 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
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1135.01	CONES
1145.01	BARRICADES
904.10	ORIENTATION OF GROUND MOUNTED SIGNS

WETHERILL ENGINEERING
559 Jones Franklin Rd. Suite 164
Raleigh, N.C. 27606
Liscense No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: DATE: 4/7/14

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 21116 ENGINEER BOB A. MAY

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

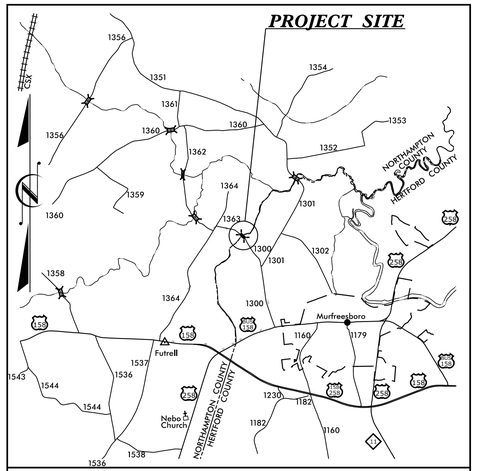
ROAD CLOSURE SR 1300 (WISE STORE RD.)

4/3/2014
10:23:43 AM
P:\2013\13130.01Hertford #13\Traffic\TrafficControl\TCP\17BP.1.R.57_TC.BTCP.dgn

TIP PROJECT: 17BP.1.R.57

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.1.R.57	EC-1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



VICINITY MAP

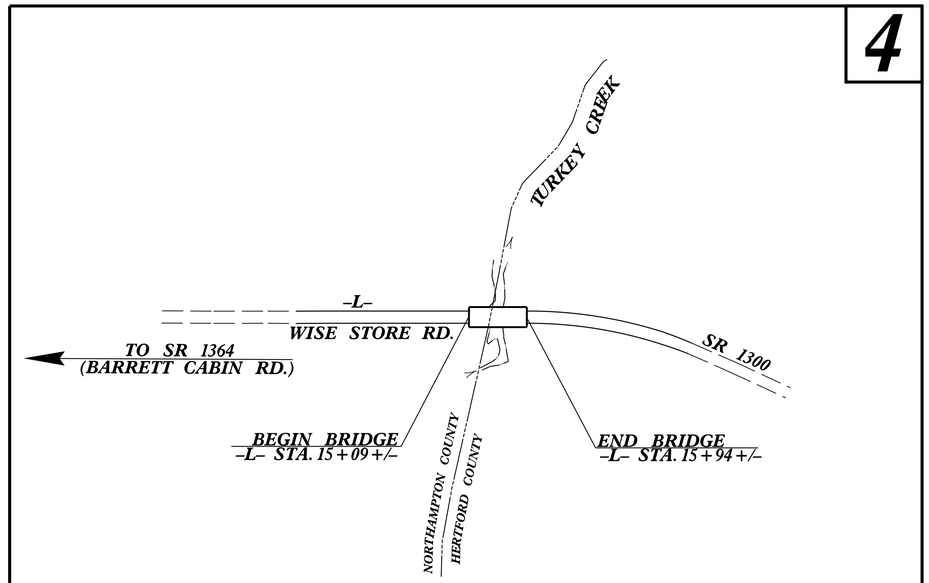
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

HERTFORD COUNTY

LOCATION: BRIDGE NO. 13 OVER TURKEY CREEK ON SR 1300 (WISE STORE RD.)

TYPE OF WORK: GRADING, DRAINAGE, PAVING & STRUCTURE



EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TSD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
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	
	Wattle / Coir Fiber Wattle	EW CFW
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	
1634.01	Temporary Rock Sediment Dam Type-A	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	
1635.02	Rock Pipe Inlet Sediment Trap Type-B	
1630.04	Stilling Basin	
1630.06	Special Stilling Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	
	Tiered Skimmer Basin	
	Infiltration Basin	

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

ANNE D. GAMBER
LEVEL IIIA NAME

3022
LEVEL IIIA CERTIFICATION NO.

GRAPHIC SCALE

0 50
PLANS

0 50
PROFILE (HORIZONTAL)

0 10
PROFILE (VERTICAL)

STATE OF NORTH CAROLINA - DEPARTMENT OF TRANSPORTATION

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.

WETHERILL ENGINEERING

Prepared for the North Carolina Department of Transportation in the Office of:
559 JONES FRANKLIN ROAD
SUITE 164
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JANUARY 2, 2014

LETTING DATE: MAY 21, 2014

NCDOT CONTACT:

EDWARD G. WETHERILL, PE
PROJECT ENGINEER

BOB A. MAY, PE
PROJECT DESIGN ENGINEER

JOHN S. ABEL, JR.
DIVISION 1 BRIDGE PROGRAM MANAGER

Roadway Standard Drawings

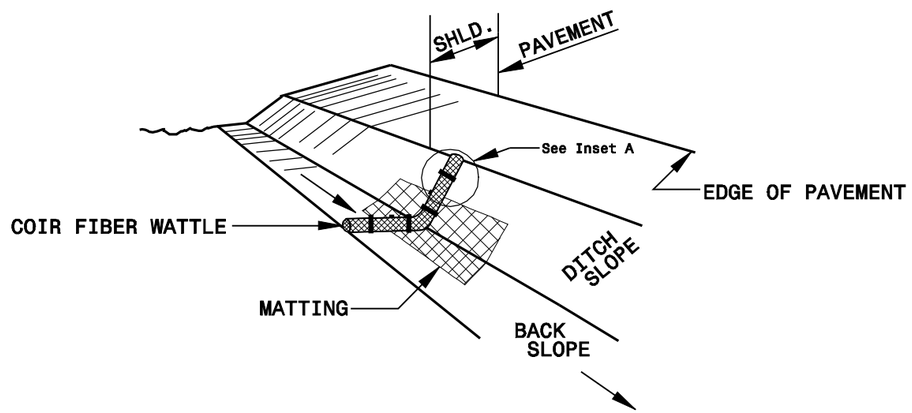
The following roadway english standards as appear in "Roadway Standard Drawings"– Roadway Design Unit – N. C. Department of Transportation – Raleigh, N. C., dated January 2012 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

1604.01	Railroad Erosion Control Detail	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		

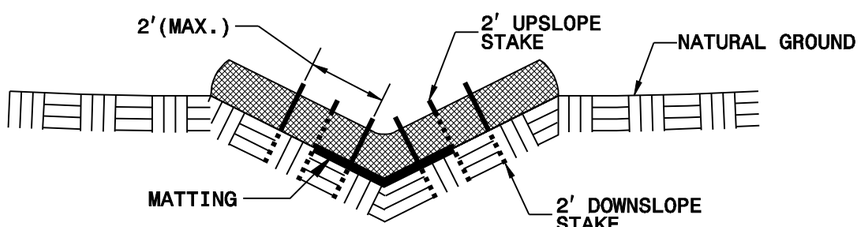
$$$

PROJECT REFERENCE NO.	SHEET NO.
17BP.1.R.57	EC-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

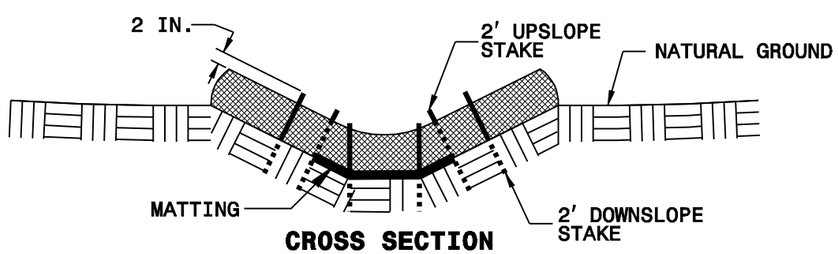
COIR FIBER WATTLE DETAIL



ISOMETRIC VIEW



CROSS SECTION VEE DITCH



CROSS SECTION TRAPEZOIDAL DITCH

NOTES:

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

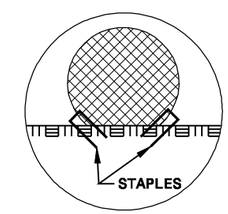
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

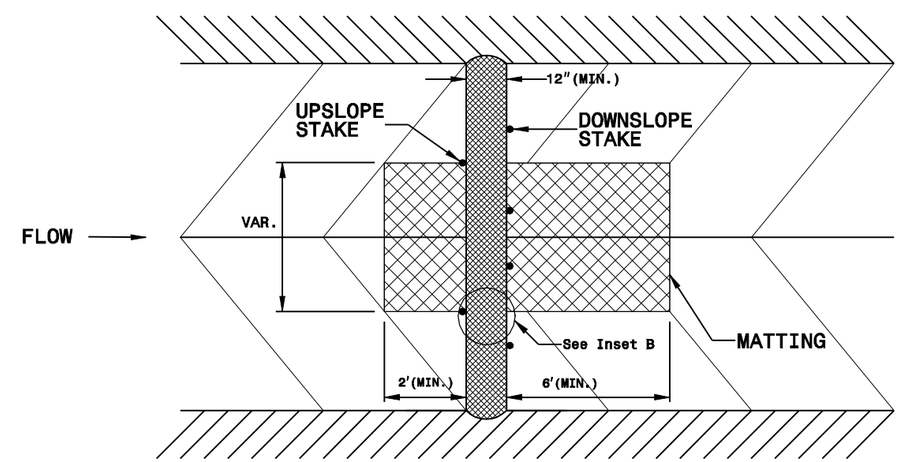
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.

INSET A



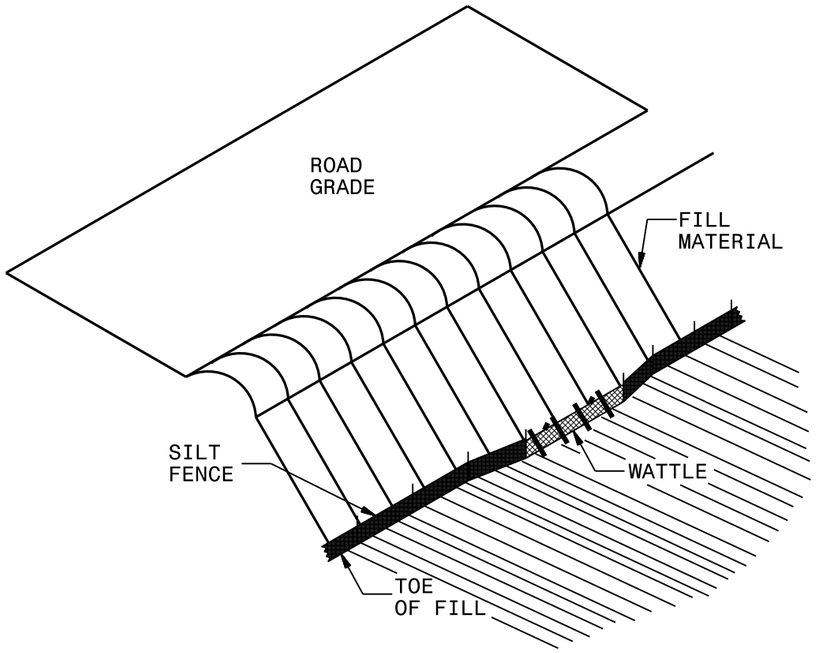
INSET B



TOP VIEW

PROJECT REFERENCE NO.	SHEET NO.
17BP.1.R.57	EC-2G
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SILT FENCE COIR FIBER WATTLE BREAK DETAIL



ISOMETRIC VIEW

NOTES:

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE AND LENGTH OF 10 FT.

EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.

DO NOT PLACE WATTLE ON TOE OF SLOPE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.

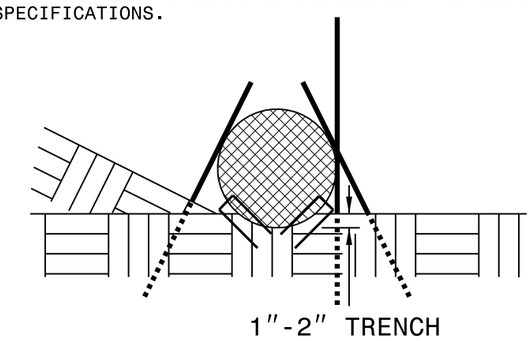
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

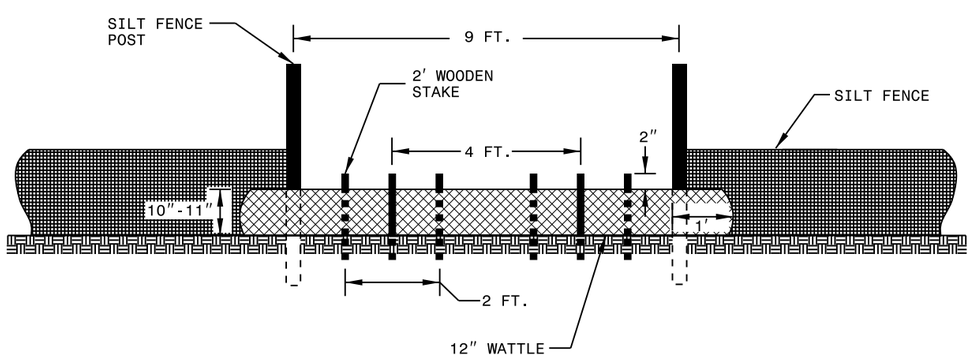
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

WATTLE INSTALLATION CAN BE ON OUTSIDE OF THE SILT FENCE AS DIRECTED.

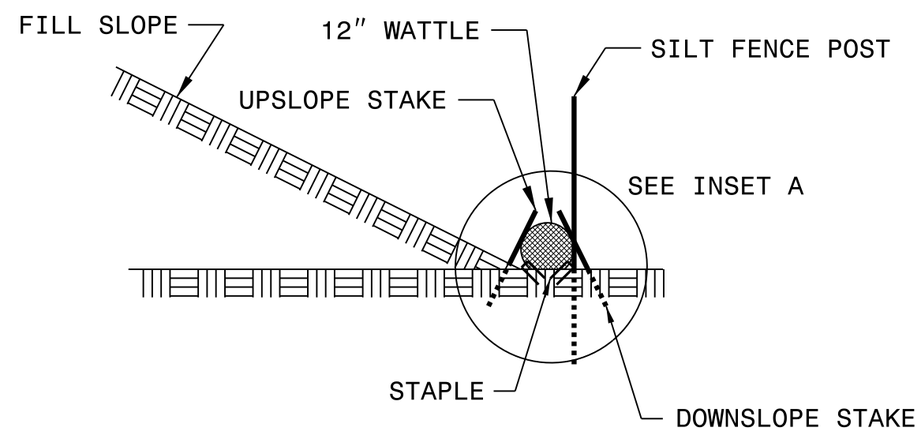
INSTALL TEMPORARY SILT FENCE IN ACCORDANCE WITH SECTION 1605 OF THE STANDARD SPECIFICATIONS.

INSET A





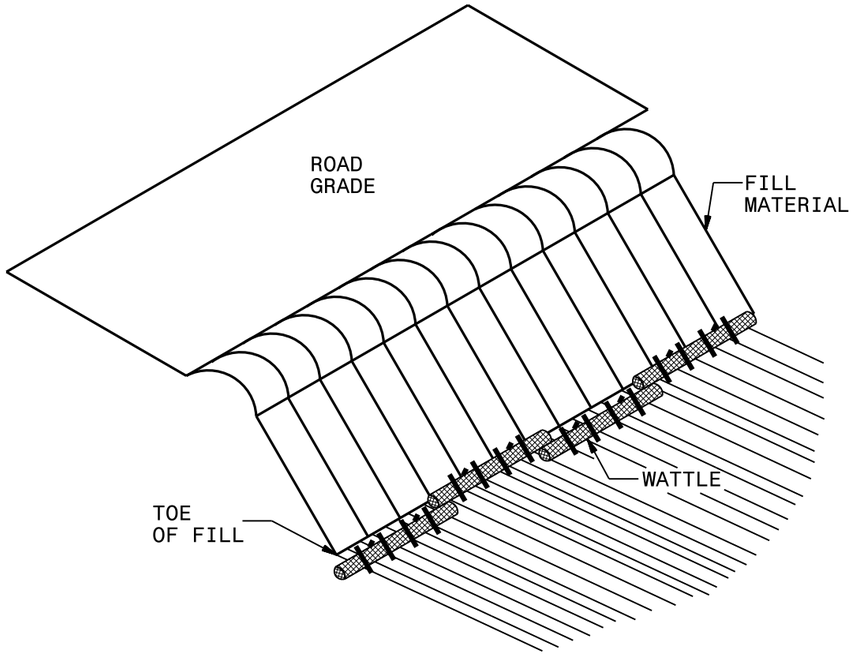
VIEW FROM SLOPE



SIDE VIEW

PROJECT REFERENCE NO.	SHEET NO.
17BP.1.R.57	EC-2H
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

COIR FIBER WATTLE BARRIER DETAIL



ISOMETRIC VIEW

NOTES:

USE MINIMUM 18 IN. NOMINAL DIAMETER COIR FIBER (COCONUT) WATTLE AND LENGTH OF 10 FT.

EXCAVATE A 2 TO 3 INCH TRENCH FOR WATTLE TO BE PLACED.

DO NOT PLACE WATTLES ON TOE OF SLOPE.

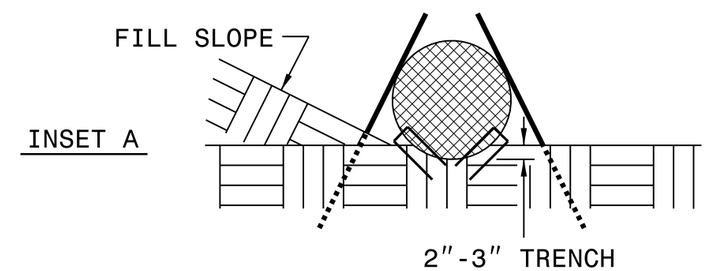
USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

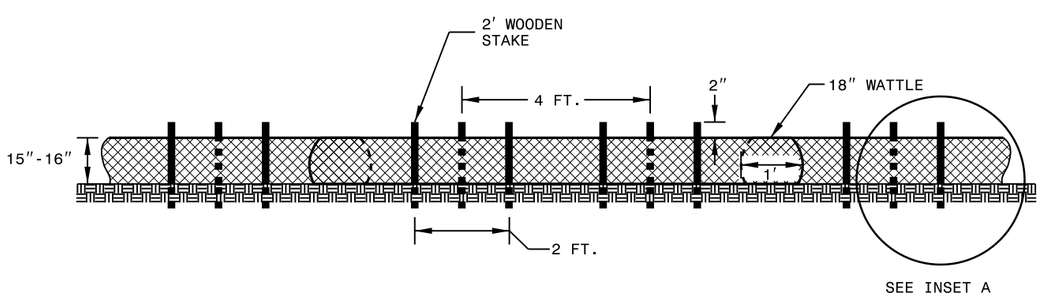
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.

PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

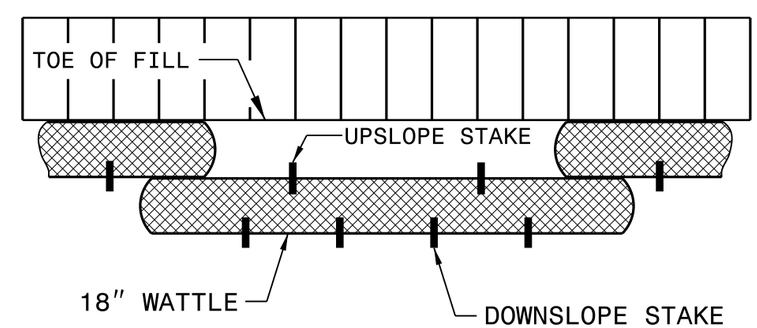
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

FOR BREAKS ALONG LARGE SLOPES, USE MAXIMUM SPACING OF 20 FT.





FRONT VIEW



TOP VIEW

PROJECT REFERENCE NO.	SHEET NO.
17BP.1.R.57	EC-3

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L-	12+50	15+04	LT.	309
4	-L-	15+99	18+75	LT.	342
4	-L-	12+50	15+04	RT.	260
4	-L-	15+99	18+75	RT.	270
4	-L- END BENT 1	*EXCAVATED BENCH*			150
4	-L- END BENT 2	*EXCAVATED BENCH*			144
				SUBTOTAL	1475
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					1475
				TOTAL	1475
				SAY	1500

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)

PROJECT REFERENCE NO.	SHEET NO.
17BP.1.R.57	EC-3A

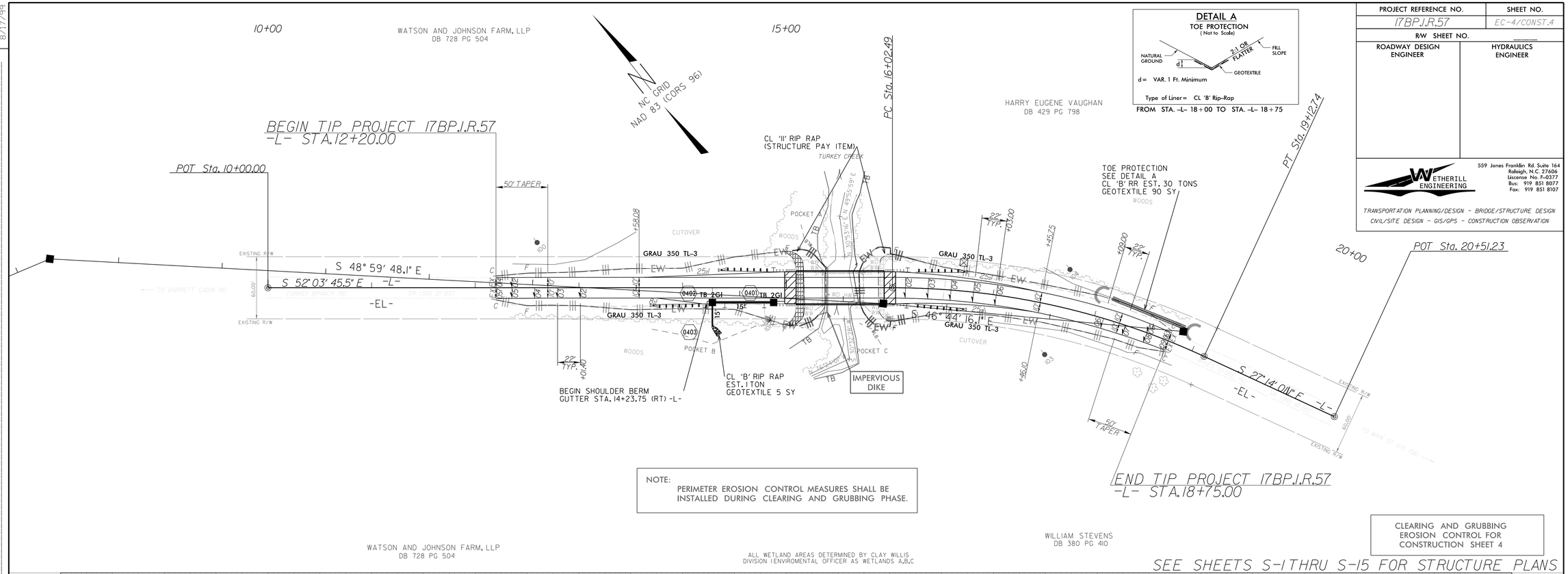
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

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.

PROJECT REFERENCE NO.	SHEET NO.
17BP.1.R.57	EC-4/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

WETHERILL ENGINEERING
559 Jones Franklin Rd. Suite 164
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION



DETAIL A
TOE PROTECTION
(Not to Scale)

d = VAR. 1 Ft. Minimum

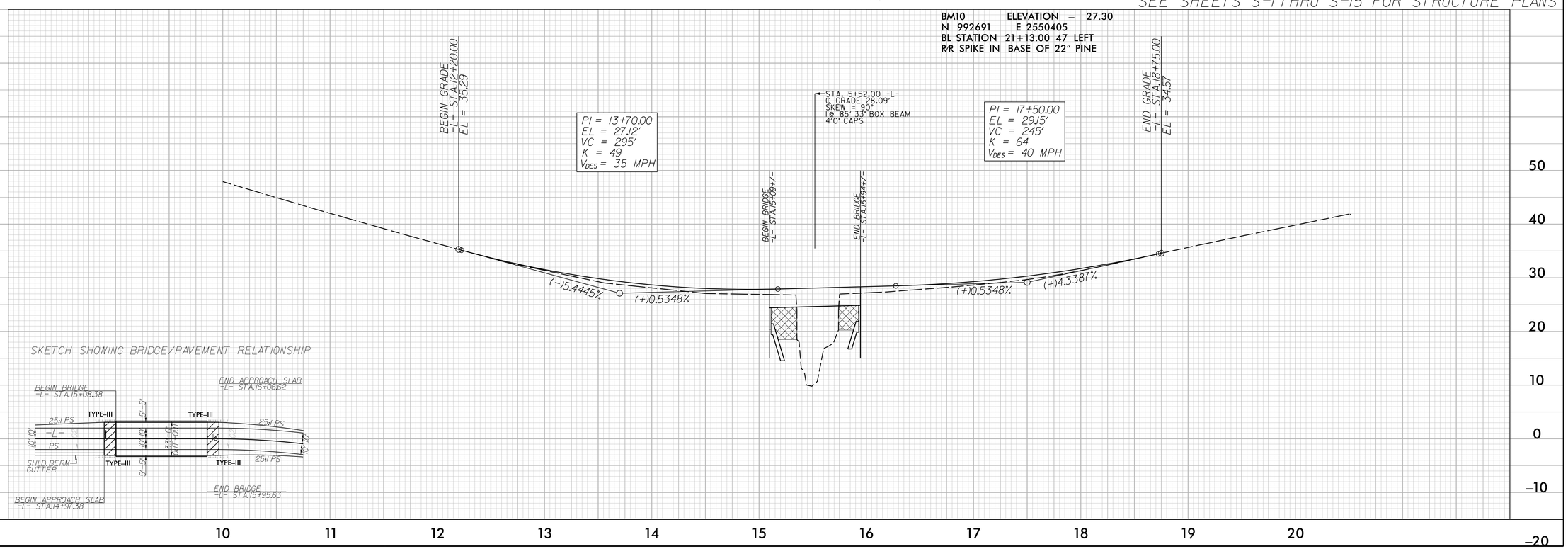
Type of Liner = CL 'B' Rip-Rap

FROM STA. -L- 18+00 TO STA. -L- 18+75

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

SEE SHEETS S-1 THRU S-15 FOR STRUCTURE PLANS



REVISIONS

8/17/99

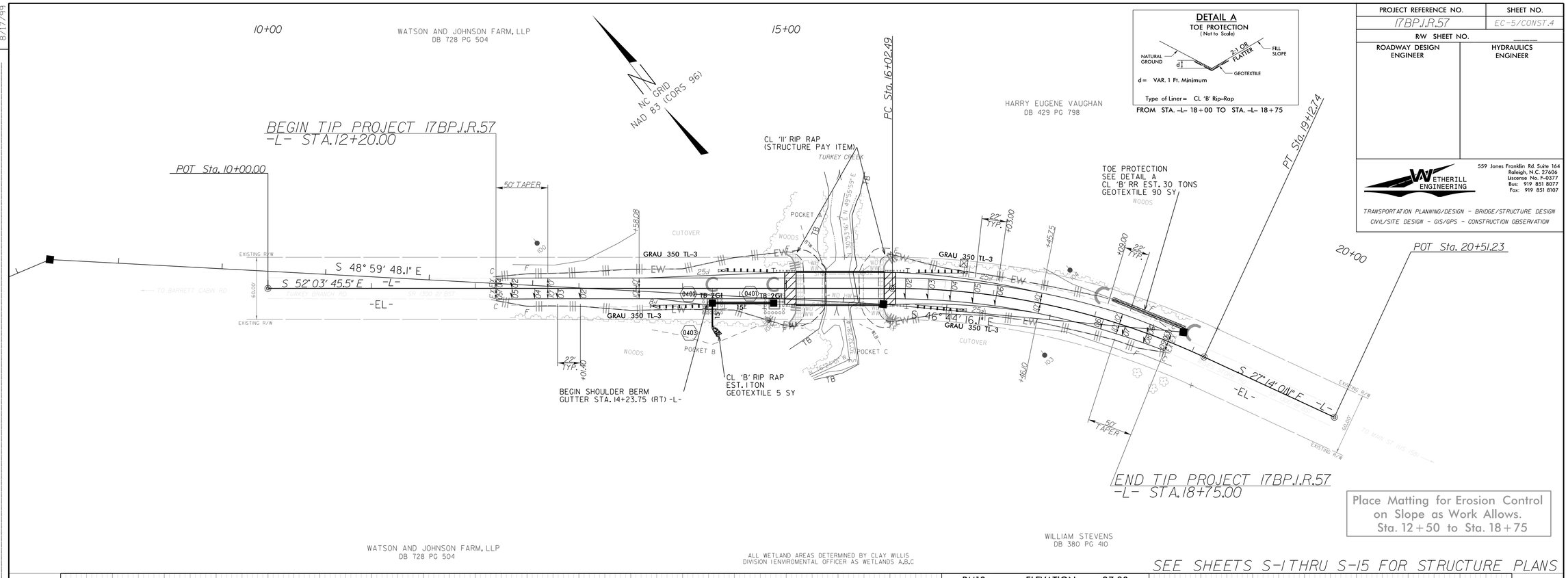
4/7/2014
1:50:09 PM
P:\2013\13.30.01 Hertford #13\Erosion Control\EF 45002-3 EC dgn C & Gudgn

PROJECT REFERENCE NO.	SHEET NO.
17BP.1.R.57	EC-5/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

WETHERILL ENGINEERING
559 Jones Franklin Rd. Suite 164
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

REVISIONS

8/17/99



DETAIL A
TOE PROTECTION
(Not to Scale)

d = VAR. 1 Ft. Minimum

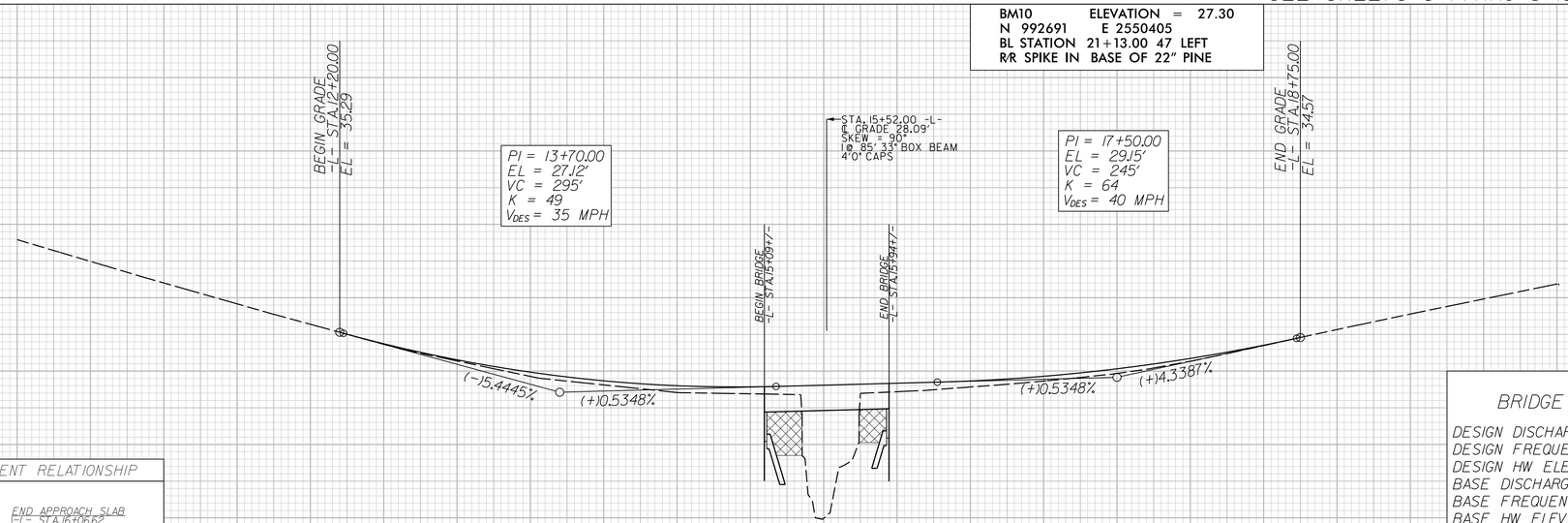
Type of Liner = CL 'B' Rip-Rap

FROM STA. -L- 18+00 TO STA. -L- 18+75

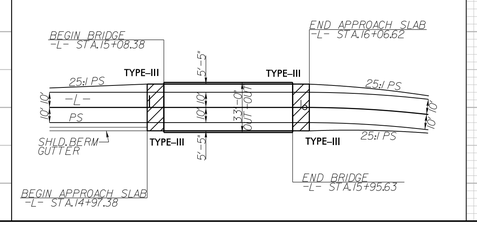
Place Matting for Erosion Control
on Slope as Work Allows.
Sta. 12+50 to Sta. 18+75

SEE SHEETS S-1 THRU S-15 FOR STRUCTURE PLANS

BM10 ELEVATION = 27.30
N 992691 E 2550405
BL STATION 21+13.00 47 LEFT
R/R SPIKE IN BASE OF 22" PINE



SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP



BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 700	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 21.0	FT
BASE DISCHARGE	= 1100	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 22.0	FT
OVERTOPPING DISCHARGE	= >1650	CFS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	= 28.1	FT
DATE OF SURVEY	= 9/4/13	
W.S. ELEVATION AT DATE OF SURVEY	= 16.7	FT

4/9/2014
1:49:50 PM
P:\2013\31.30.01 Hertford #13\Erosion Control\EF 45202-3 EC dgn Finaldgn

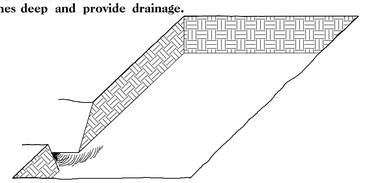
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.1.R.57	RF-1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	

PLANTING DETAILS

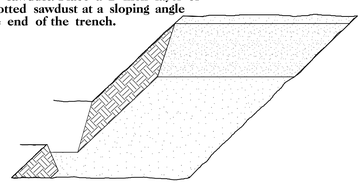
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

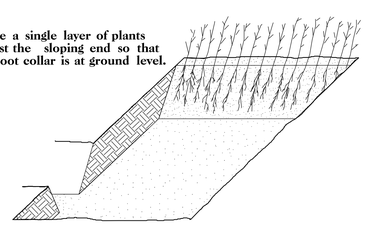
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



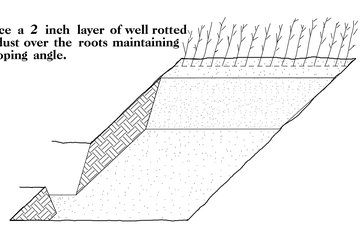
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



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

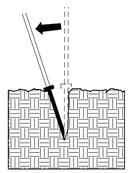


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

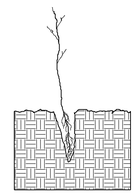


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

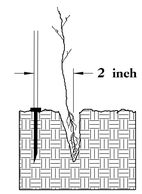
DIBBLE PLANTING METHOD
USING THE KBC PLANTING BAR



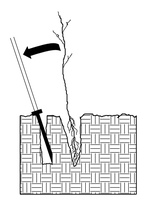
1. Insert planting bar as shown and pull handle toward planter.



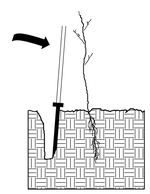
2. Remove planting bar and place seedling at correct depth.



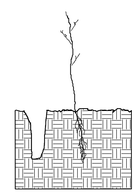
3. Insert planting bar 2 inches toward planter from seedling.



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



5. Push handle forward firming soil at top.



6. Leave compaction hole open. Water thoroughly.

PLANTING NOTES:

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

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

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

REFORESTATION

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

REFORESTATION

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

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

REFORESTATION DETAIL SHEET

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

PROJ. REFERENCE NO.	SHEET NO.
17BP.1.R.57	X-1A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT

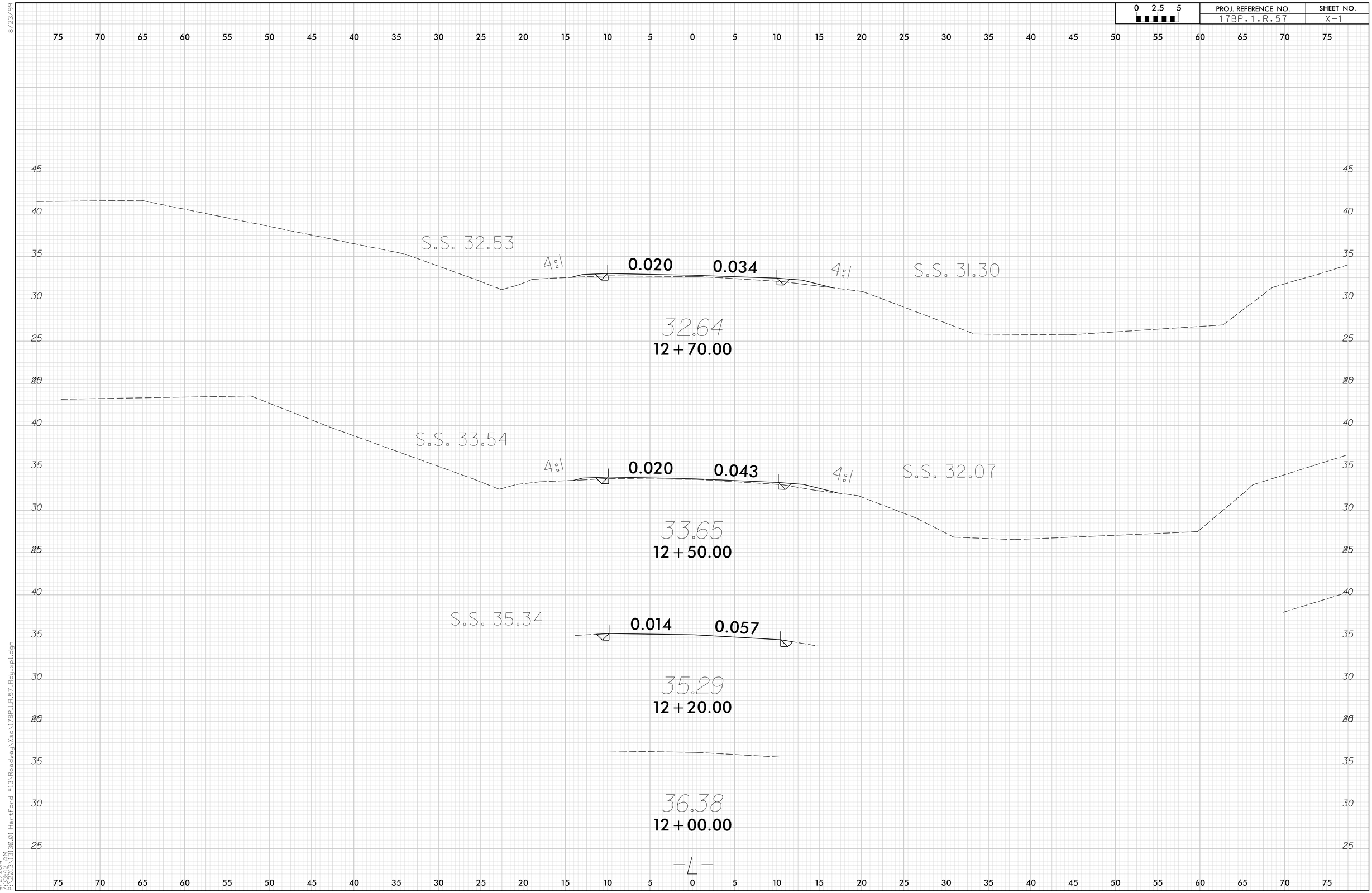
CROSS-SECTION SUMMARY

Station L	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
12+20.00	0	0
12+50.00	2	1
12+70.00	1	2
13+00.00	1	3
13+50.00	1	13
14+00.00	0	19
14+50.00	0	36
15+00.00	0	55
15+08.38	0	10

Station L	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
15+95.63	0	0
16+02.49	0	8
16+50.00	0	46
17+00.00	0	30
17+50.00	0	18
18+00.00	1	14
18+25.00	1	5
18+50.00	2	3
18+75.00	2	1

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".

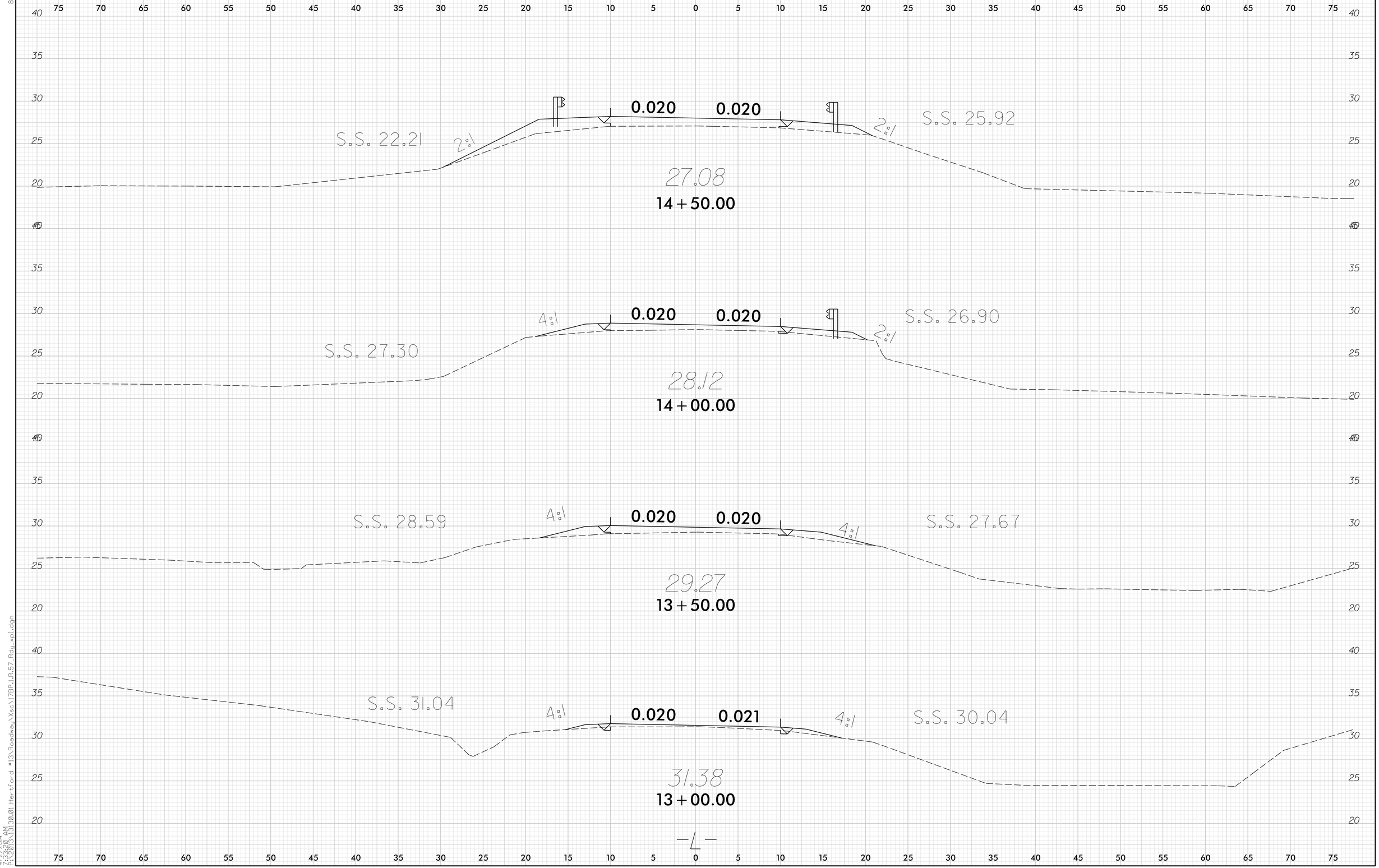
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	17BP.1.R.57	X-1



8/23/99

4/2/2014
7:33:42 AM
P:\2013\131300.01 Hertford #13\Roadway\Xsec\17BP.1.R.57_Rdy_xpl.dgn

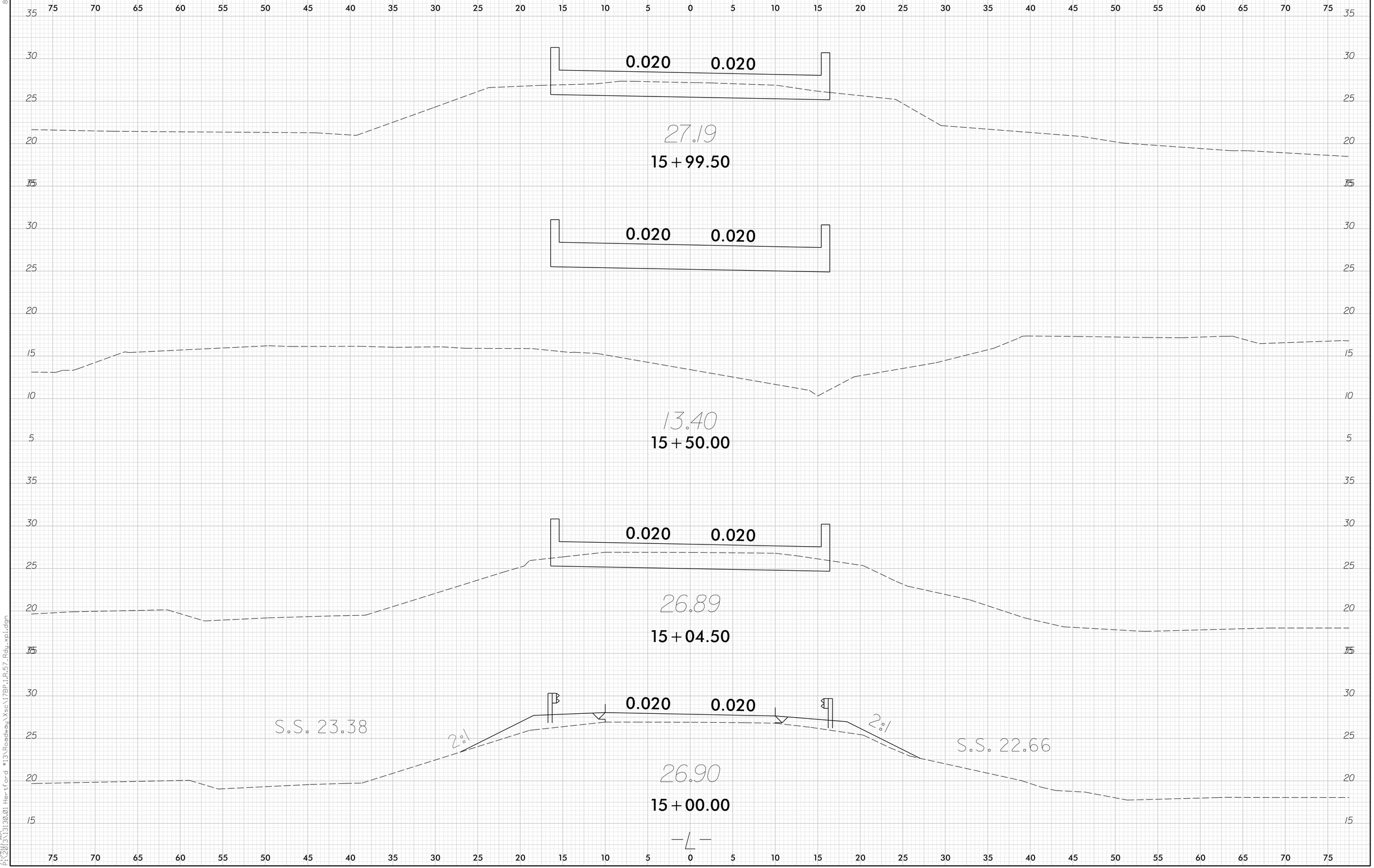
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	17BP.1.R.57	X-2



8/23/99

4/2/2014
7:33:20 AM
P:\2013\13130.01 Hertford #13\Roadway\Xsc\17BP.1.R.57_Rdy_xpl.dgn

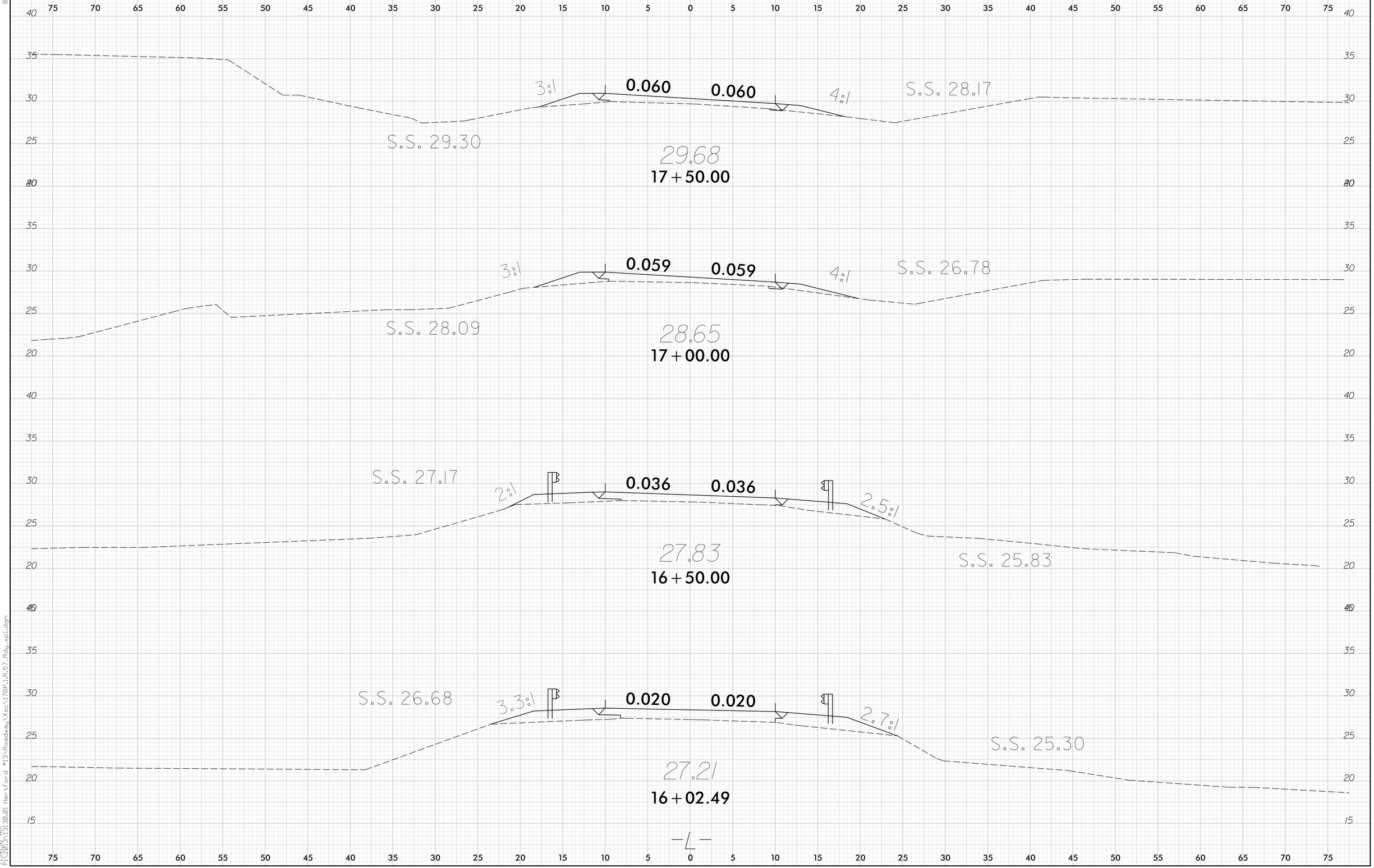
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	17BP.1.R.57	X-3



8/23/99

4/2/2014
7:24:10 AM
P:\2013\13130.01 Hertford #13\Roadway\Xsc\17BP.1.R.57_Rdy_xpl.dgn

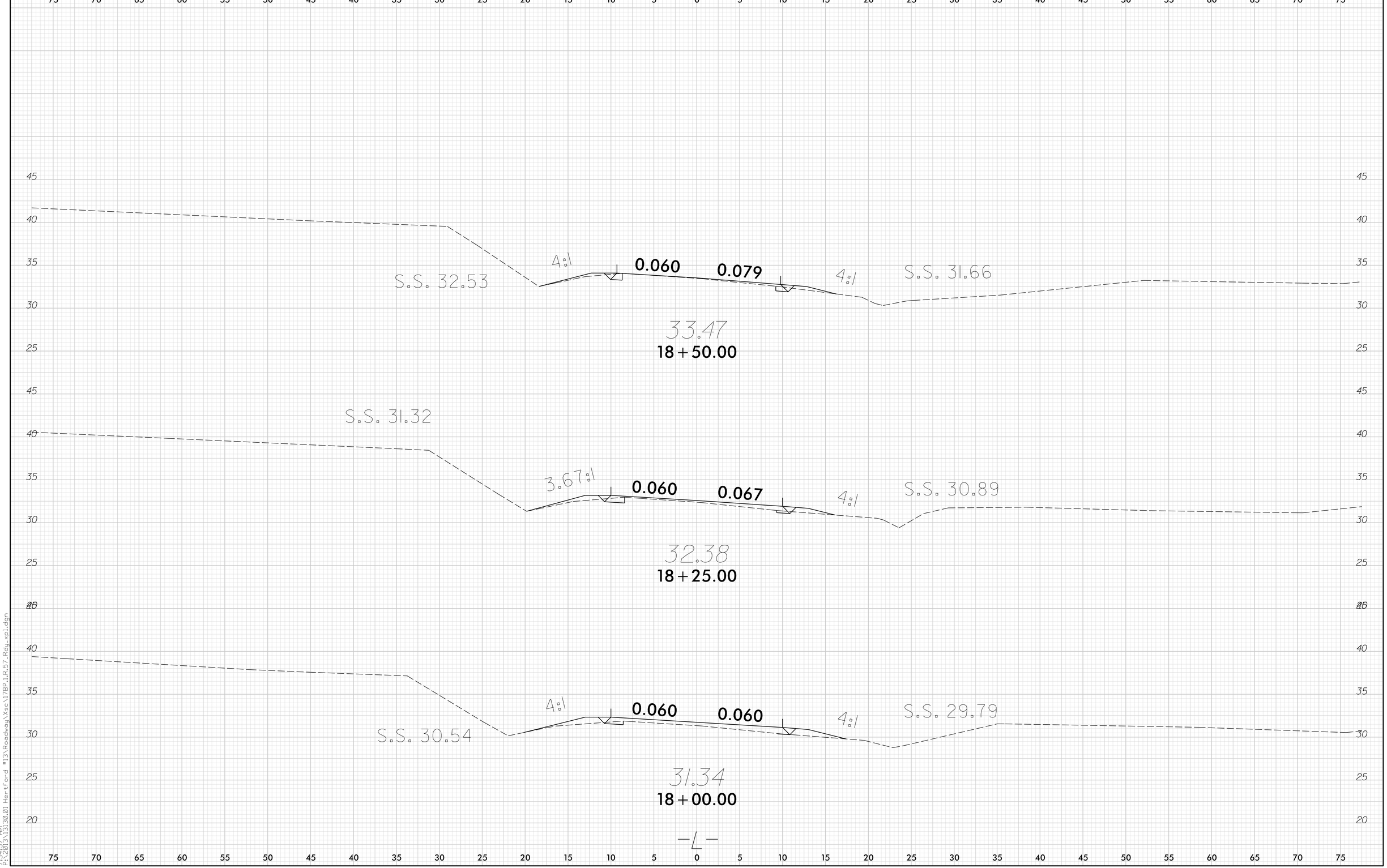
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	17BP.1.R.57	X-4



8/23/99

4/2/2014
7:34:36 AM
P:\2013\13130.01 Hertford #13\Roadway\Xsc\17BP.1.R.57_Rdy_xpl.dgn

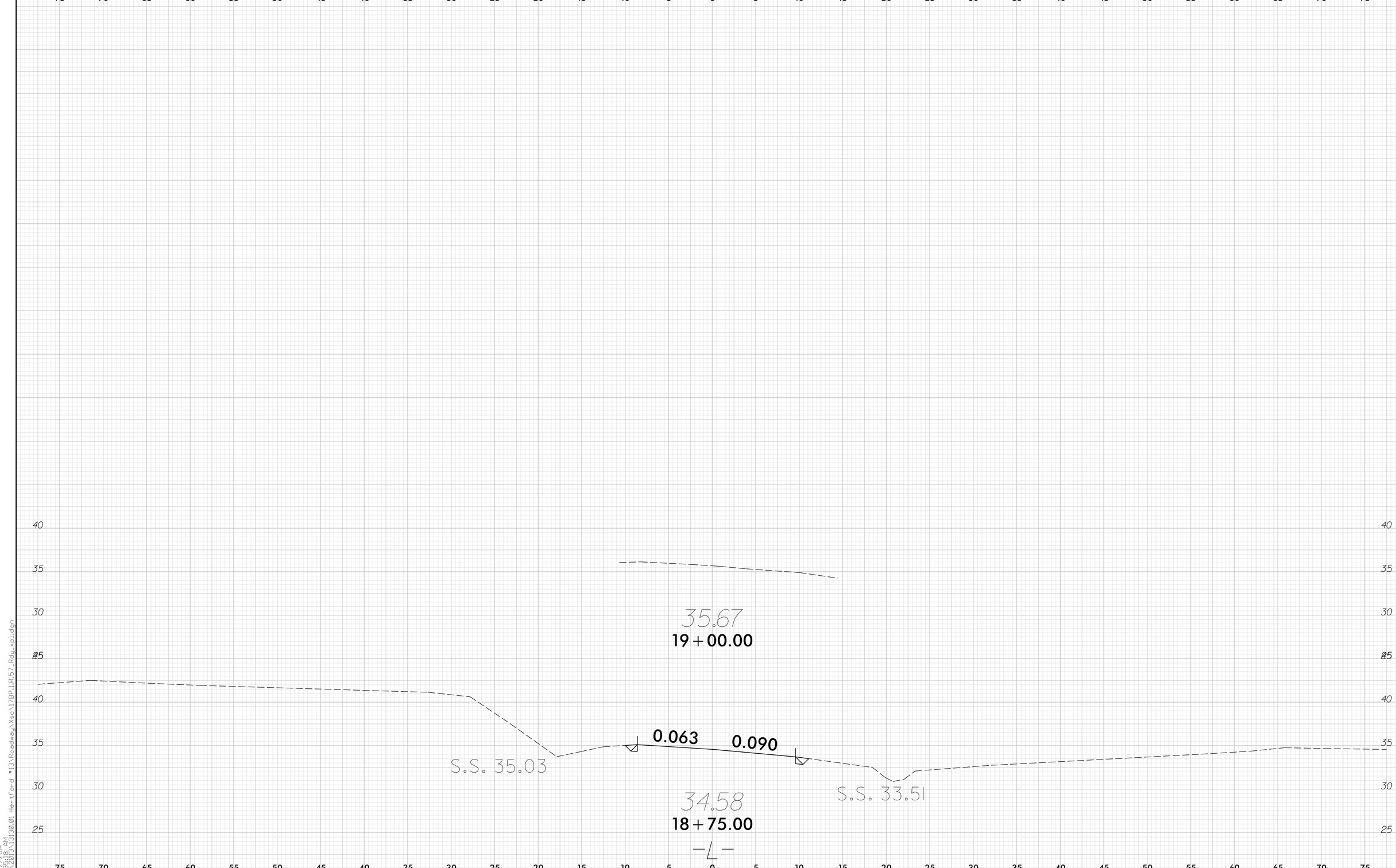
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	17BP.1.R.57	X-5



8/23/99

4/2/2014
7:34:57 AM
P:\2013\13130.01 Hertford "13\Roadway\Xsc\17BP.1.R.57_Rdy_xpl.dgn

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	17BP.1.R.57	X-6

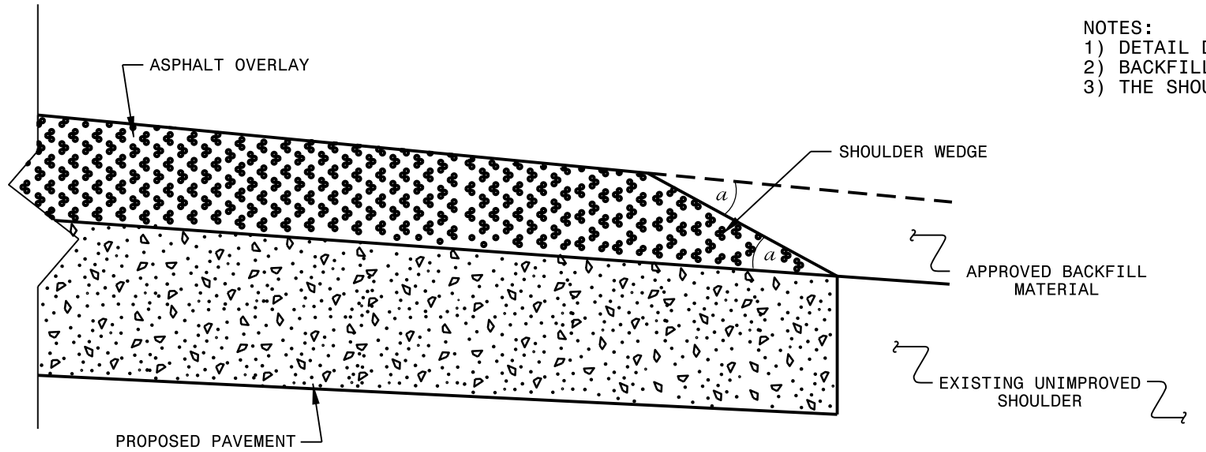


8/23/99

4/2/2014
7:36:18 AM
P:\2013\13130.01 Hertford #13\Roadway\Xsc\17BP.1.R.57_Rdy_xp1.dgn

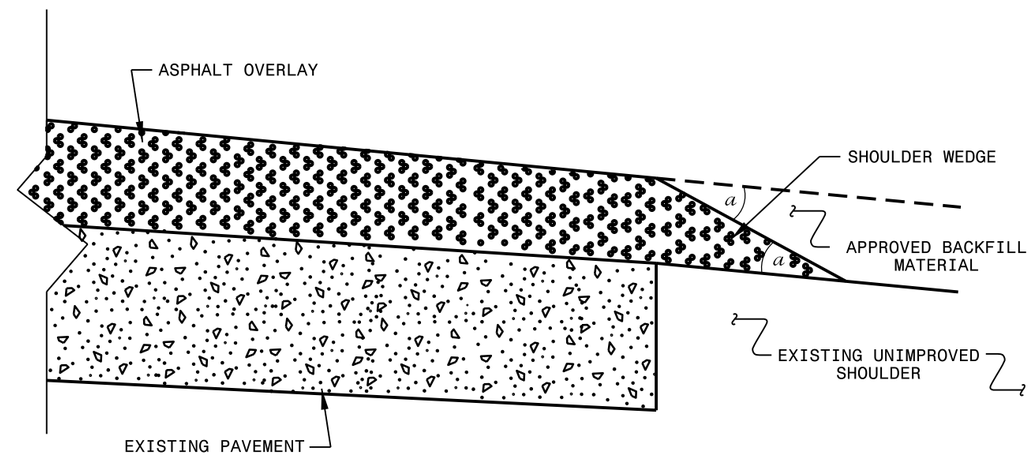
PROJECT REFERENCE NO.	SHEET NO.
17BP.1.R.57	

NOTES:
1) DETAIL DOES NOT APPLY TO OGAFC AND ULTRA-THIN BONDED WEARING COURSE.
2) BACKFILL SHOULDER WITH APPROVED MATERIAL.
3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS AND SIDE STREETS.



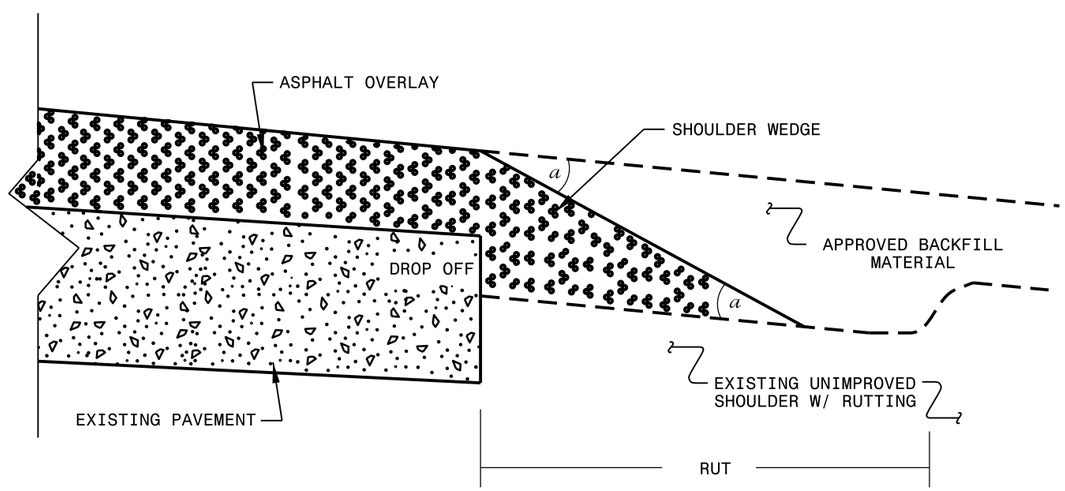
SHOULDER WEDGE DETAIL

(Resurfacing Projects w/ Widening or with Existing Paved Shoulder having no dropoffs)



SHOULDER WEDGE DETAIL

(Resurfacing Projects w/ NO Widening)



SHOULDER WEDGE DETAIL

(Resurfacing Adjacent to Rutted Shoulder)

- SHOULDER WEDGE ANGLE = 30°

CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

SHOULDER WEDGE DETAILS

ORIGINAL BY:	T.SPELL	DATE:	7-19-11
MODIFIED BY:		DATE:	10/16/12
CHECKED BY:		DATE:	
FILE SPEC.:	$:usr/details/stand/shoulderwedgedetail.dgn		

$$$$$$SYSTIME$$$$$$
$$$$$$USERNAME$$$$$$