

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3621	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33169.1.1	BRZ-1547(3)	PE	
33169.2.1	BRZ-1547(3)	RW & UTILITY	
33169.3.2	BRZ-1547(5)	CONST.	

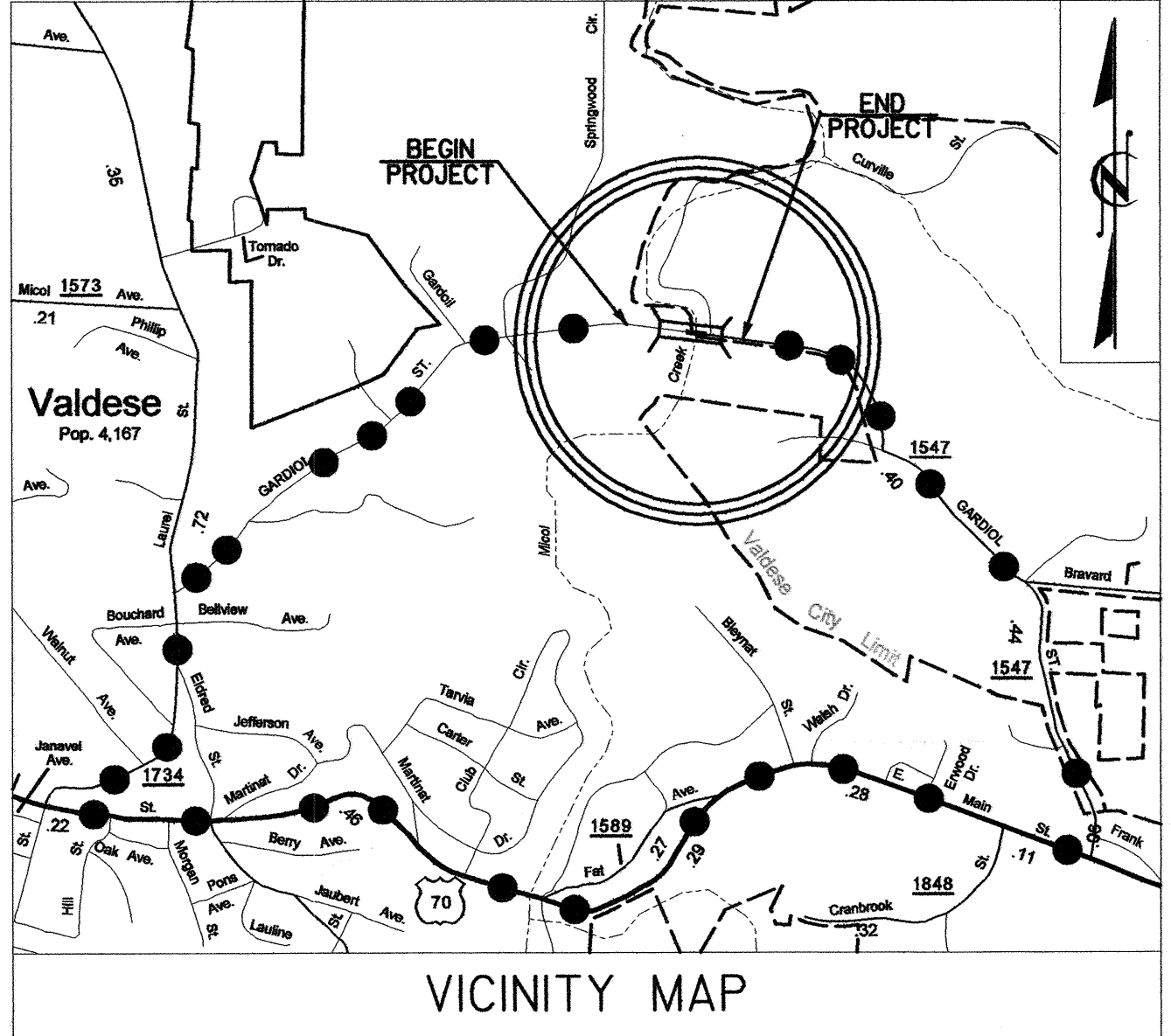
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BURKE COUNTY

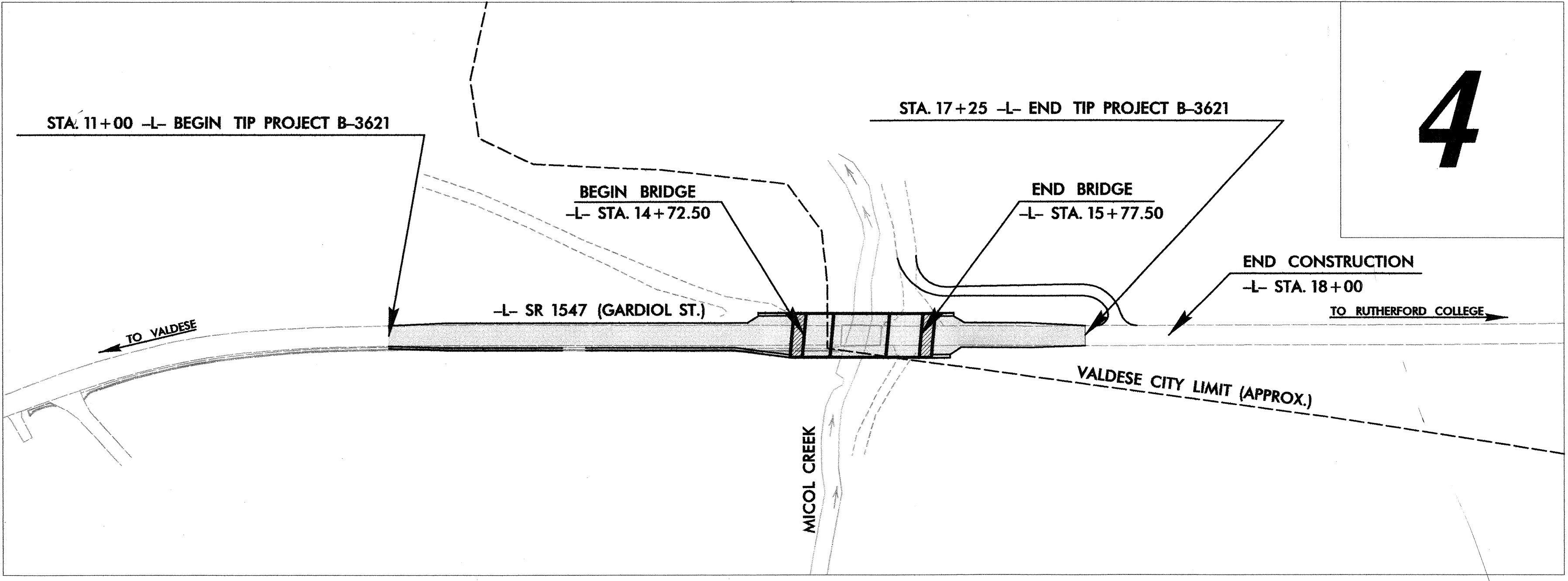
LOCATION: Bridge No. 148 over Micol Creek on SR 1547

TYPE OF WORK: Grading, Paving, Drainage, and Structure

See Sheet 1-A For Index of Sheets



●●●● DETOUR ROUTE



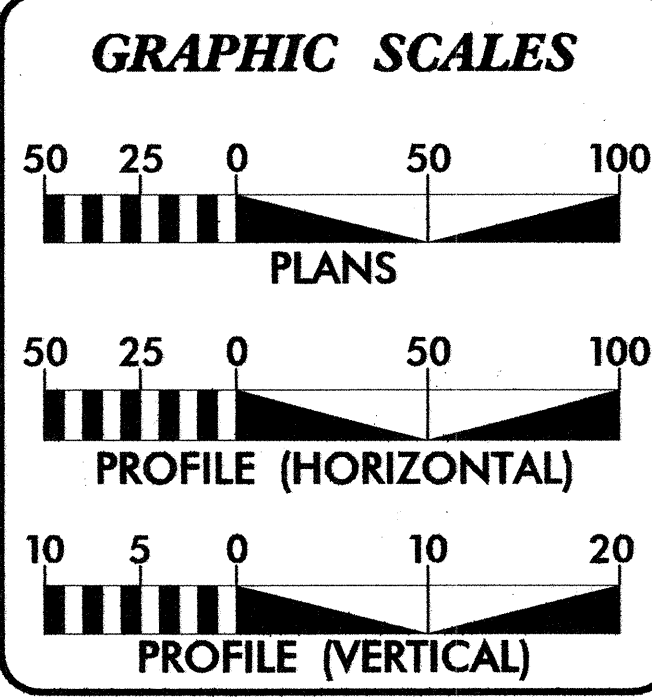
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NCDOT Contact: Doug Taylor, PE - Project Engineer - Roadway Design Unit

Prepared By:

Middlesboro, Kentucky 606-248-6600
 Greeneville, Tennessee 423-638-0071
 Asheville, North Carolina 828-253-2796



DESIGN DATA

ADT 2003 =	2250
ADT 2025 =	3600
DHV =	10 %
D =	60 %
T =	3 % *
V =	40 MPH **
* TTST 1%	DUAL 2%
** DESIGN EXCEPTION REQUIRED FOR SAG VERTICAL CURVES	

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-3621 =	0.098 MI
LENGTH STRUCTURE TIP PROJECT B-3621 =	0.020 MI
TOTAL LENGTH OF TIP PROJECT B-3621 =	0.118 MI

Prepared For:

DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., NC, 27610

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: February 26, 2003

LETTING DATE: APRIL 17, 2007

Jerry Carter, PE
PROJECT ENGINEER

Reece Schuler, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

10/31/06

Jerry A. Carter, P.E.

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DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

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STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

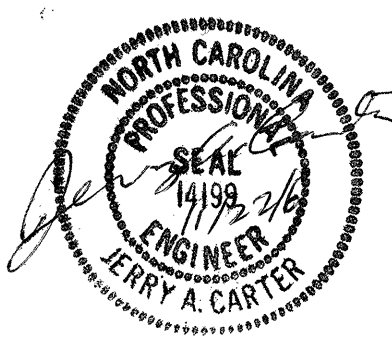
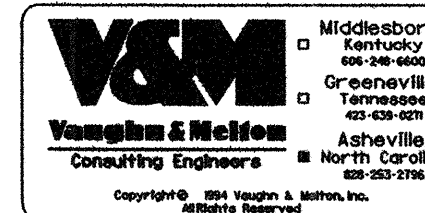
APPROVED DIVISION ADMINISTRATOR

DATE

CONTRACT: C201779 TIP PROJECT: B-3621

09/08/05

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
INDEX OF SHEETS



SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, LIST OF STANDARDS
1-B	CONVENTIONAL SYMBOLS
1-C THRU 1-D	SURVEY CONTROL SHEET
2	PAVEMENT SCHEDULE, TYPICAL SECTIONS
2-A	DETAIL OF PERFORMED SCOUR HOLE
2-B	DETAIL OF REINFORCED SLOPE
3	SUMMARY OF QUANTITIES
3-A	SUMMARY OF EARTHWORK
3-B	ROW AREA DATA, LIST OF PIPES, GUARDRAIL SUMMARY AND PAVEMENT REMOVAL SUMMARY
4	PLAN AND PROFILE SHEET
5	DRIVEWAY PROFILE SHEET
TCP-1 THRU TCP-3	TRAFFIC CONTROL PLANS
EC-1 THRU EC-5	EROSION CONTROL PLANS
UC-1 THRU UC-5	UTILITY CONSTRUCTION PLANS
UO-1 THRU UO-2	UTILITIES BY OTHERS
X-1A	CROSS SECTION SUMMARY
X-1 THRU X-7	CROSS SECTIONS
S-1 THRU S-17	STRUCTURE PLANS

GENERAL NOTES:
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 II.

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 AND EARTH 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.

DRIVEWAYS:
 DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.02 USING 3' RADII OR RADII AS SHOWN ON THE PLANS. LOCATIONS OF DRIVES WILL BE AS SHOWN ON THE PLANS OR AS 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 DUKE POWER, CENTEL/SPRINT TELEPHONE, AND THE TOWN OF VALDESE WATER AND SEWER. ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS EXCEPT AS NOTED ON THE PLANS.

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

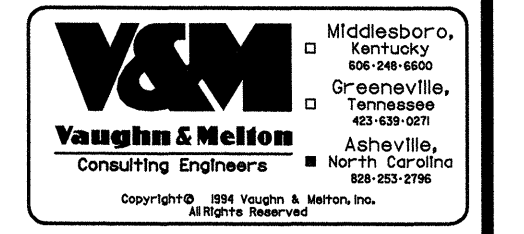
ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated July 16, 2006 are applicable to this project and by reference hereby are considered a part of these plans:

STD. NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation - Method 'A'
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	
806.01	Concrete Right-of-Way Marker
806.02	Granite Right of Way Marker
840.00	Concrete Base Pad for Drainage Structures
840.01	Brick Catch Basin - 12" thru 54" Pipe
840.02	Concrete Catch Basin - 12" thru 54" Pipe
840.03	Frame, Grates and Hood - for Use on Standard Catch Basin
840.18	Concrete Median Drop Inlet Type 'B' - 12" thru 36" Pipe
840.24	Frames and Narrow Slot Sag Grates
840.25	Anchorage for Frames - Brick or Concrete
840.27	Brick Median Drop Inlet Type 'B' - 12" thru 36" Pipe
840.29	Frames and Narrow Slot Flat Grates
840.31	Concrete Junction Box - 12" thru 66" Pipe
840.32	Brick Junction Box - 12" thru 66" Pipe
840.45	Precast Drainage Structure
840.54	Manhole Frame and Cover
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
848.02	Driveway Turnout - Radius Type
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
866.03	Woven Wire Fence - with Steel Post
422.10	REINFORCED BRIDGE APPROACH FILLS
876.02	Guide for Rip Rap at Pipe Outlets
866.02	Woven Wire Fence - with Wood Post

10/26/06

5/28/99



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

*S.U.E = SUBSURFACE UTILITY ENGINEER

CONVENTIONAL SYMBOLS

ROADS & RELATED ITEMS

Edge of Pavement	-----
Curb	-----
Prop. Slope Stakes Cut	----- C -----
Prop. Slope Stakes Fill	----- F -----
Prop. Woven Wire Fence	○-----○
Prop. Chain Link Fence	□-----□
Prop. Barbed Wire Fence	◇-----◇
Prop. Wheelchair Ramp	○-----○ WCR
Curb Cut for Future Wheelchair Ramp	○-----○ CCFR
Exist. Guardrail	-----
Prop. Guardrail	-----
Equality Symbol	⊕
Pavement Removal	▣

RIGHT OF WAY

Baseline Control Point	◆
Existing Right of Way Marker	△
Exist. Right of Way Line w/Marker	△-----
Prop. Right of Way Line with Proposed	-----
RW Marker (Iron Pin & Cap)	▲
Prop. Right of Way Line with Proposed	-----
(Concrete or Granite) RW Marker	⊙
Exist. Control of Access Line	⊙-----
Prop. Control of Access Line	⊙-----
Exist. Easement Line	----- E -----
Prop. Temp. Construction Easement Line	----- E -----
Prop. Temp. Drainage Easement Line	----- TDE -----
Prop. Perm. Drainage Easement Line	----- PDE -----

HYDROLOGY

Stream or Body of Water	-----
River Basin Buffer	----- RBB -----
Flow Arrow	→
Disappearing Stream	-----
Spring	○
Swamp Marsh	-----
Shoreline	-----
Falls, Rapids	-----
Prop Lateral, Tail, Head Ditches	-----

STRUCTURES

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

MINOR	
Head & End Wall	----- CONC HW -----
Pipe Culvert	-----
Footbridge	-----
Drainage Boxes	□ CB
Paved Ditch Gutter	-----

UTILITIES

Exist. Pole	●
Exist. Power Pole	○
Prop. Power Pole	○
Exist. Telephone Pole	○
Prop. Telephone Pole	○
Exist. Joint Use Pole	○
Prop. Joint Use Pole	○
Telephone Pedestal	⊕
U/G Telephone Cable Hand Hold	⊕
Cable TV Pedestal	⊕
U/G TV Cable Hand Hold	⊕
U/G Power Cable Hand Hold	⊕
Hydrant	⊕
Satellite Dish	⊕
Exist. Water Valve	⊕
Sewer Clean Out	⊕
Power Manhole	⊕
Telephone Booth	⊕
Cellular Telephone Tower	⊕
Water Manhole	⊕
Light Pole	⊕
H-Frame Pole	⊕
Power Line Tower	⊕
Pole with Base	⊕
Gas Valve	⊕
Gas Meter	⊕
Telephone Manhole	⊕
Power Transformer	⊕
Sanitary Sewer Manhole	⊕
Storm Sewer Manhole	⊕
Tank; Water, Gas, Oil	⊕
Water Tank With Legs	⊕
Traffic Signal Junction Box	⊕
Fiber Optic Splice Box	⊕
Television or Radio Tower	⊕
Utility Power Line Connects to Traffic Signal Lines Cut Into the Pavement	----- TS -----

Recorded Water Line	----- W -----
Designated Water Line (S.U.E.*)	----- W -----
Sanitary Sewer	----- SS -----
Recorded Sanitary Sewer Force Main	----- FSS -----
Designated Sanitary Sewer Force Main(S.U.E.*)	----- FSS -----
Recorded Gas Line	----- G -----
Designated Gas Line (S.U.E.*)	----- G -----
Storm Sewer	----- S -----
Recorded Power Line	----- P -----
Designated Power Line (S.U.E.*)	----- P -----
Recorded Telephone Cable	----- T -----
Designated Telephone Cable (S.U.E.*)	----- T -----
Recorded U/G Telephone Conduit	----- TC -----
Designated U/G Telephone Conduit (S.U.E.*)	----- TC -----
Unknown Utility (S.U.E.*)	----- ?UTL -----
Recorded Television Cable	----- TV -----
Designated Television Cable (S.U.E.*)	----- TV -----
Recorded Fiber Optics Cable	----- FO -----
Designated Fiber Optics Cable (S.U.E.*)	----- FO -----
Exist. Water Meter	⊕
U/G Test Hole (S.U.E.*)	⊕
Abandoned According to U/G Record	ATTUR
End of Information	E.O.I.

BOUNDARIES & PROPERTIES

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Property Line Symbol	⊕
Exist. Iron Pin	⊕
Property Corner	⊕
Property Monument	⊕
Property Number	⊕
Parcel Number	⊕
Fence Line	----- X X X X -----
Existing Wetland Boundaries	----- WW & ISBW -----
High Quality Wetland Boundary	----- WLB -----
Medium Quality Wetland Boundaries	----- HQ WLB -----
Low Quality Wetland Boundaries	----- LQ WLB -----
Proposed Wetland Boundaries	----- WLB -----
Existing Endangered Animal Boundaries	----- EAB -----
Existing Endangered Plant Boundaries	----- EPB -----

BUILDINGS & OTHER CULTURE

Buildings	-----
Foundations	-----
Area Outline	-----
Gate	-----
Gas Pump Vent or U/G Tank Cap	-----
Church	-----
School	-----
Park	-----
Cemetery	-----
Dam	-----
Sign	-----
Well	-----
Small Mine	-----
Swimming Pool	-----

TOPOGRAPHY

Loose Surface	-----
Hard Surface	-----
Change in Road Surface	-----
Curb	-----
Right of Way Symbol	R/W
Guard Post	⊕ GP
Paved Walk	-----
Bridge	-----
Box Culvert or Tunnel	-----
Ferry	-----
Culvert	-----
Footbridge	-----
Trail, Footpath	-----
Light House	-----

VEGETATION

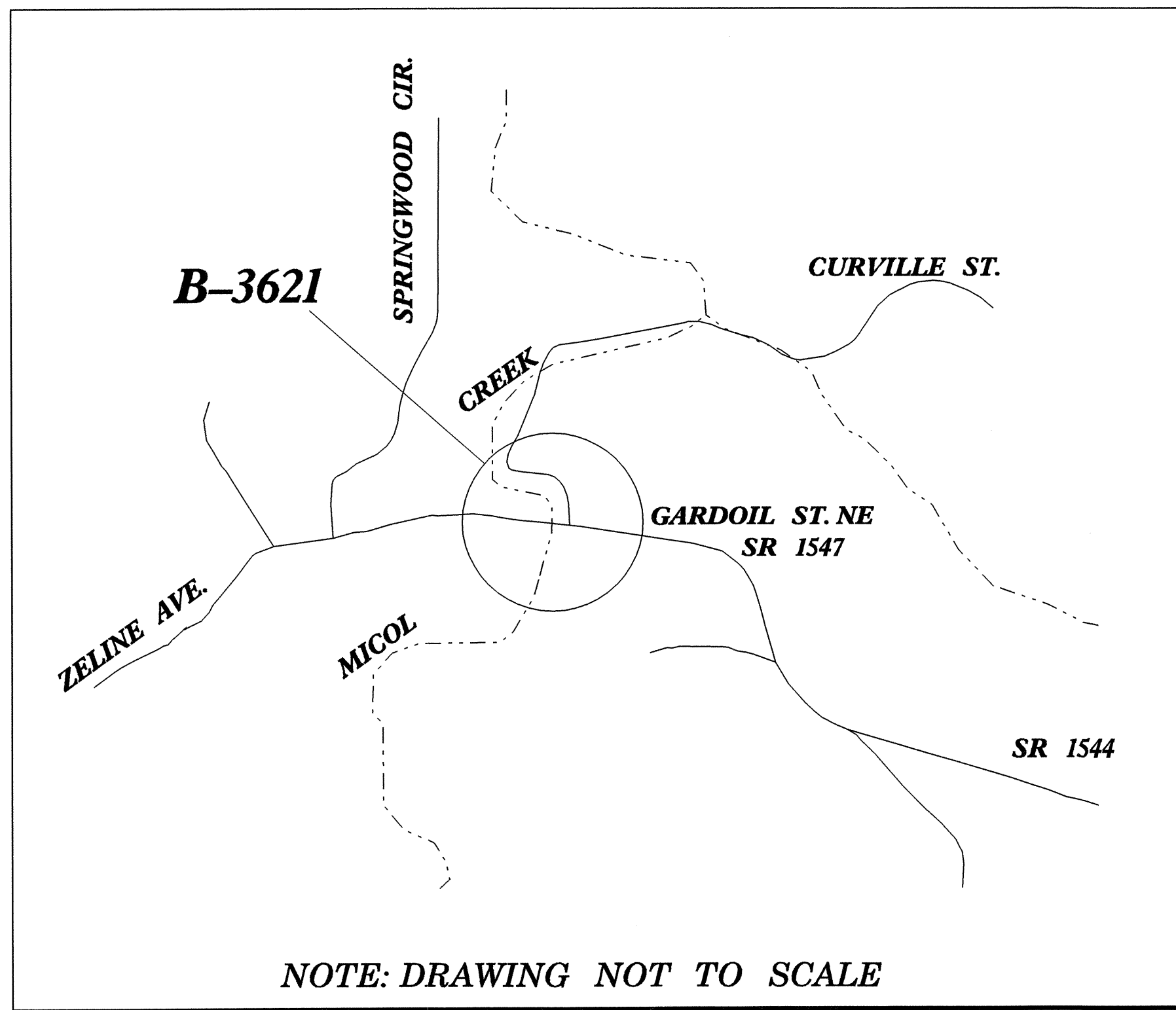
Single Tree	-----
Single Shrub	-----
Hedge	-----
Woods Line	-----
Orchard	-----
Vineyard	-----

RAILROADS

Standard Gauge	-----
RR Signal Milepost	-----
Switch	-----

5/28/99

SURVEY CONTROL SHEET B-3621



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B3621-1" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 738013.504(11) EASTING: 124476.1628(11) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999866592 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B3621-1" TO -L- STATION 10+00.00 IS S 33°45'30" E 23.68'

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NGVD 29

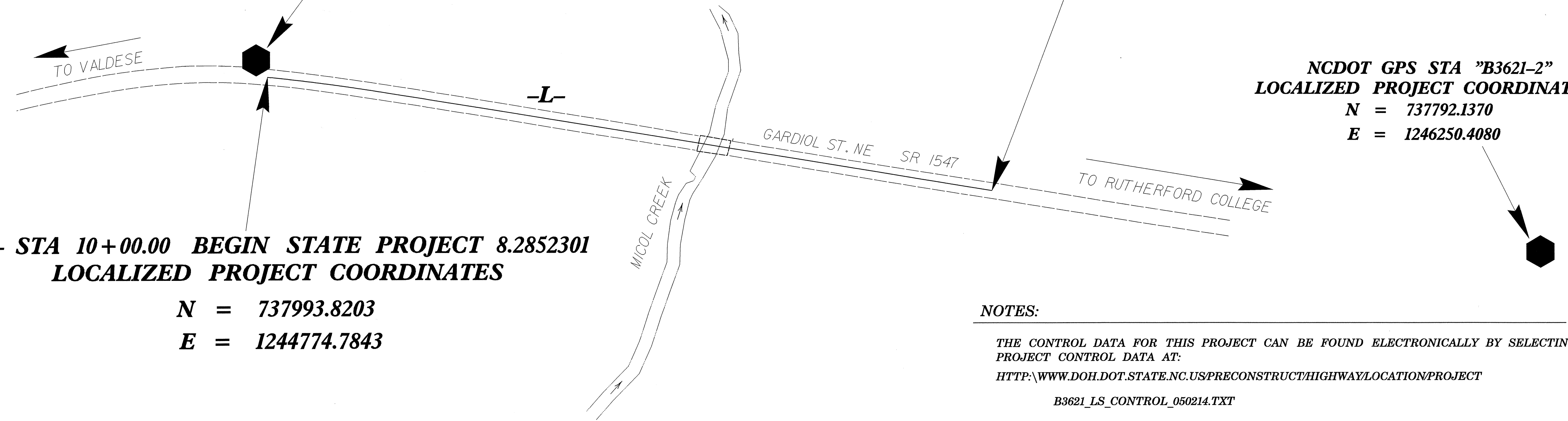


NCDOT GPS STA "B3621-1"
LOCALIZED PROJECT COORDINATES
N = 738013.5040
E = 1244761.6280

-L- STA 18+50.00 END STATE PROJECT 8.2852301
LOCALIZED PROJECT COORDINATES
N = 737861.9541
E = 1245614.4298

NCDOT GPS STA "B3621-2"
LOCALIZED PROJECT COORDINATES
N = 737792.1370
E = 1246250.4080

-L- STA 10+00.00 BEGIN STATE PROJECT 8.2852301
LOCALIZED PROJECT COORDINATES
N = 737993.8203
E = 1244774.7843



NOTES:

THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/B3621_LS_CONTROL_050214.TXT](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project/B3621_LS_CONTROL_050214.TXT)

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

NOTE: DRAWING NOT TO SCALE

SURVEY CONTROL SHEET B-3621

PROJECT REFERENCE NO. B-3621	SHEET NO. 1 D
Location and Surveys	

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT
 IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY
 NCDOT FOR MONUMENT "B3621-1"
 WITH NAD 83 STATE PLANE GRID COORDINATES OF
 NORTHING: 738013.5040(E) EASTING: 1244761.6280(E)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
 (GROUND TO GRID) IS: 0.999866592
 THE N.C. LAMBERT GRID BEARING AND
 LOCALIZED HORIZONTAL GROUND DISTANCE FROM
 "B3621-1" TO "L" STATION 10+00.00 IS
 S 33°45'30" E 2368'
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
 VERTICAL DATUM USED IS NGVD 29

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1		BL-1	737972.0300	1244452.6910	1152.54	OUTSIDE PROJECT LIMITS	
2		B3621	738013.5040	1244761.6280	1130.09	OUTSIDE PROJECT LIMITS	
3		BL-3	737920.9830	1245333.1540	1086.42	15+62.91	13.39 LT
4		BL-4	737839.4320	1245831.4350	1133.80	OUTSIDE PROJECT LIMITS	
5		BL-5	737736.6460	1246245.2580	1161.12	OUTSIDE PROJECT LIMITS	
6		BL-6	737472.3610	1246380.7680	1178.48	OUTSIDE PROJECT LIMITS	

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.....
BM1      ELEVATION = 1146.68
N 738007      E 1244383
L STATION 10+00
N 88° 07' 04.8" W DIST 391.76
SPIKE IN BASE OF 17" SYCAMORE
.....
BM2      ELEVATION = 1084.12
N 737860      E 1245281
L STATION 15+21 55 RIGHT
SPIKE IN BASE OF 22" OAK
.....
BM3      ELEVATION = 1178.25
N 737860      E 1246275
L STATION 18+50
S 89° 48' 45.4" E DIST 660.17
SPIKE IN BASE OF 35" MAPLE
.....
  
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NOTES:

THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:

[HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project)

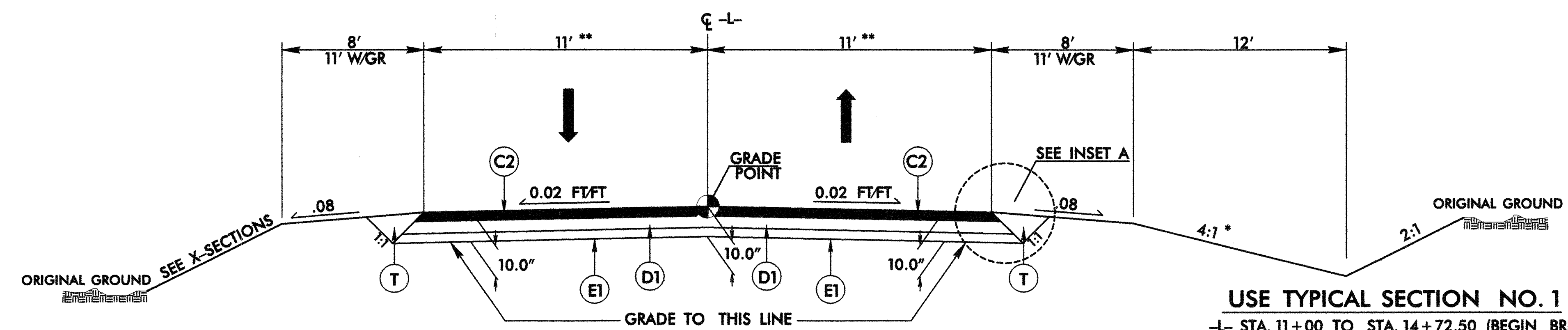
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● INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.

PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

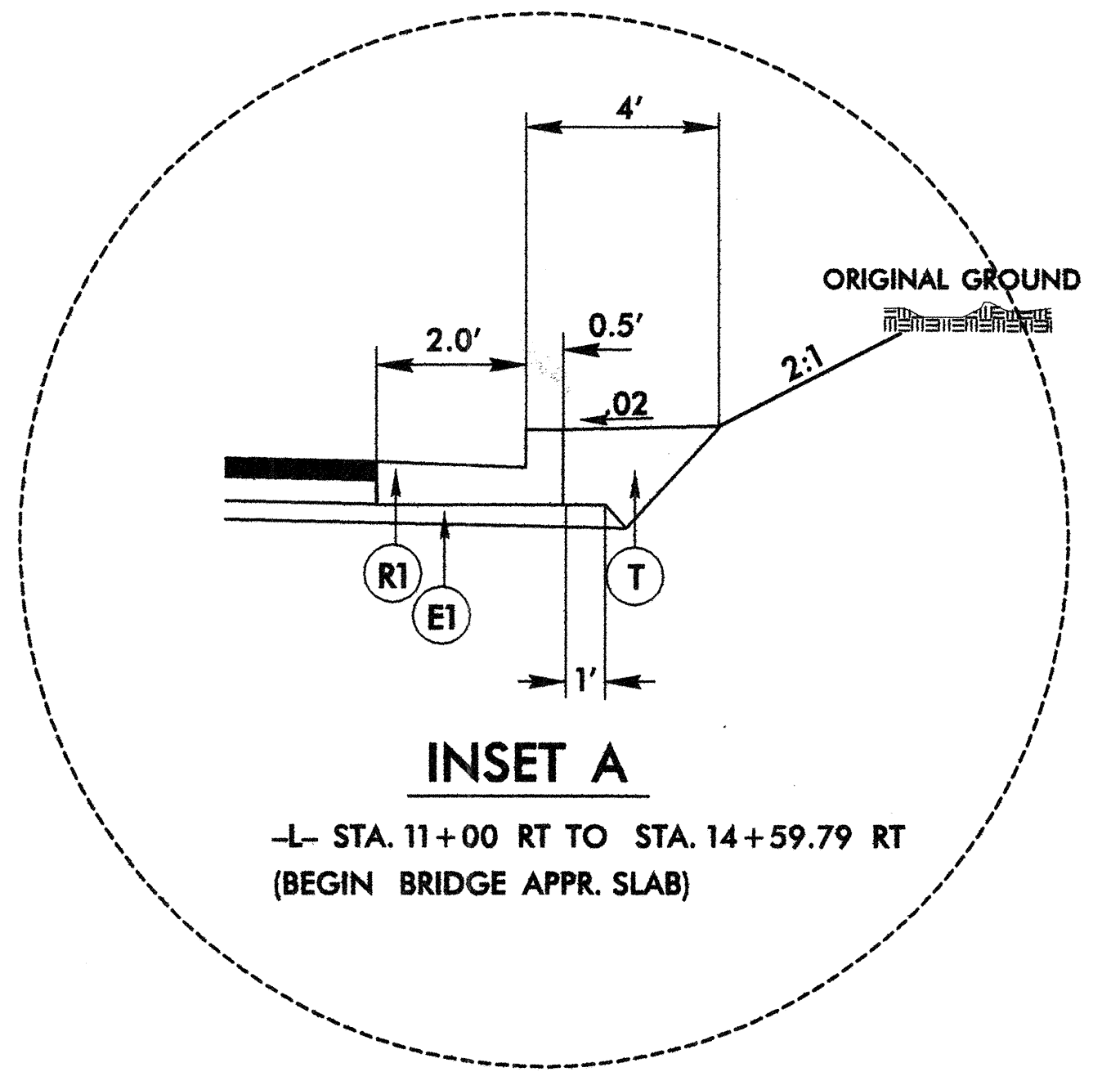
SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT.

IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

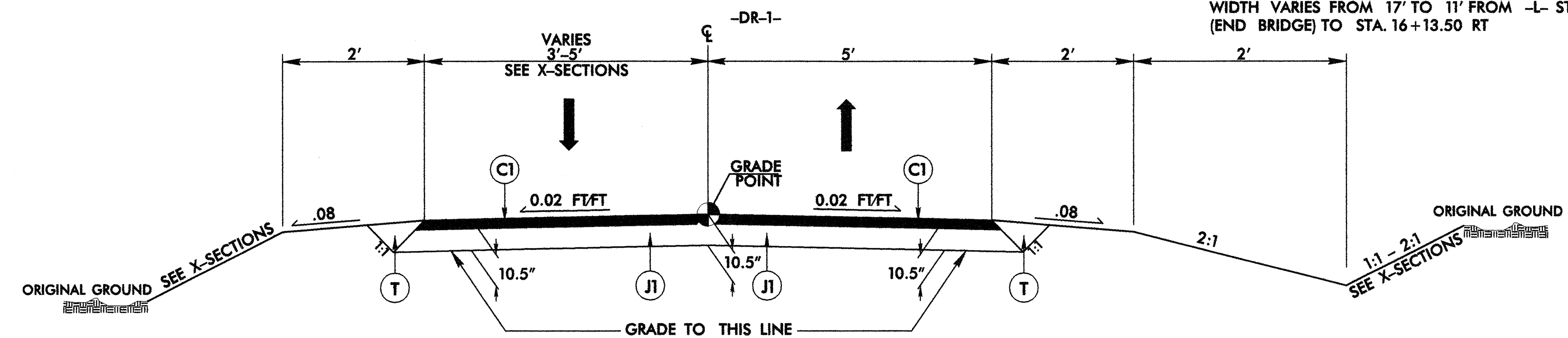


TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1
 -L- STA. 11+00 TO STA. 14+72.50 (BEGIN BRIDGE)
 -L- STA. 15+77.50 (END BRIDGE) TO STA. 17+25
 * SLOPE VARIES FROM FROM -L- STA. 15+77.50 (END BRIDGE) LT TO STA. 16+50 LT (SEE X-SECTIONS)
 ** WIDTH VARIES FROM 11' TO 17' FROM -L- STA. 14+21 LT TO STA. 14+72.50 LT (BEGIN BRIDGE)
 WIDTH VARIES FROM 11' TO 17.5' FROM -L- STA. 14+09.79 RT TO STA. 14+72.50 RT (BEGIN BRIDGE)
 WIDTH VARIES FROM 17' TO 11' FROM -L- STA. 15+77.50 LT (END BRIDGE) TO STA. 16+17 LT
 WIDTH VARIES FROM 17' TO 11' FROM -L- STA. 15+77.50 RT (END BRIDGE) TO STA. 16+13.50 RT

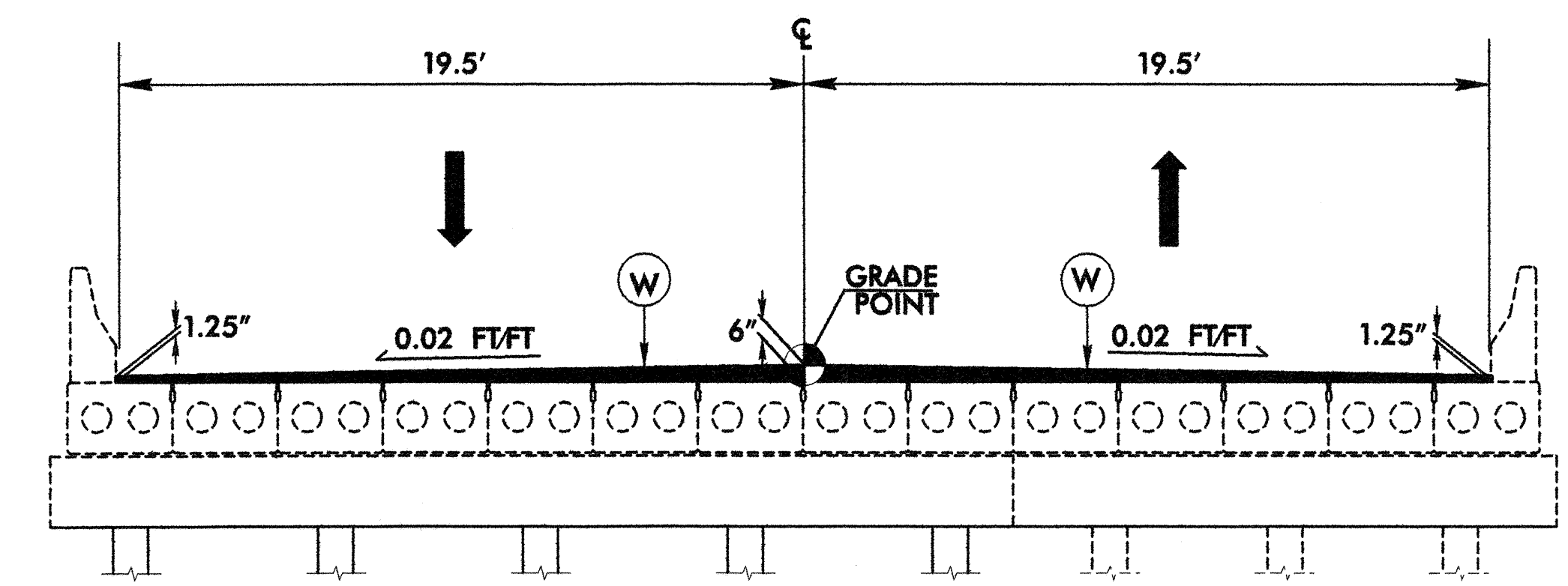


INSET A
 -L- STA. 11+00 RT TO STA. 14+59.79 RT (BEGIN BRIDGE APPR. SLAB)



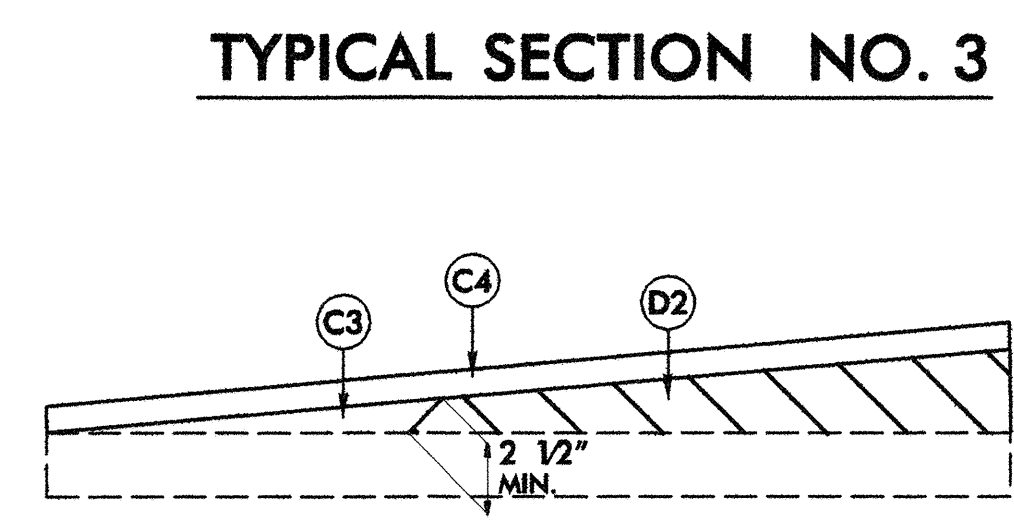
TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2
 -DR-1- STA. 10+00 TO STA. 12+19.81



Detail of Asphalt Wearing Surface on Cored Slab Bridge

USE TYPICAL SECTION NO. 3
 -L- 14+72.50 (BEGIN BRIDGE) TO 15+77.50 (END BRIDGE)



Wedging Detail

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 2 1/2" ASPHALT CONCRETE SURFACE COURSE TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" IN DEPTH.
C4	PROP. APPROX. 1 1/4" ASPHALT CONCRETE SURFACE COURSE TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
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 2 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 3" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
J1	8" AGGREGATE BASE COURSE.
R1	2'-6" CONCRETE CURB AND GUTTER.
T	EARTH MATERIAL.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL FOR RESURFACING).

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

6/2/99

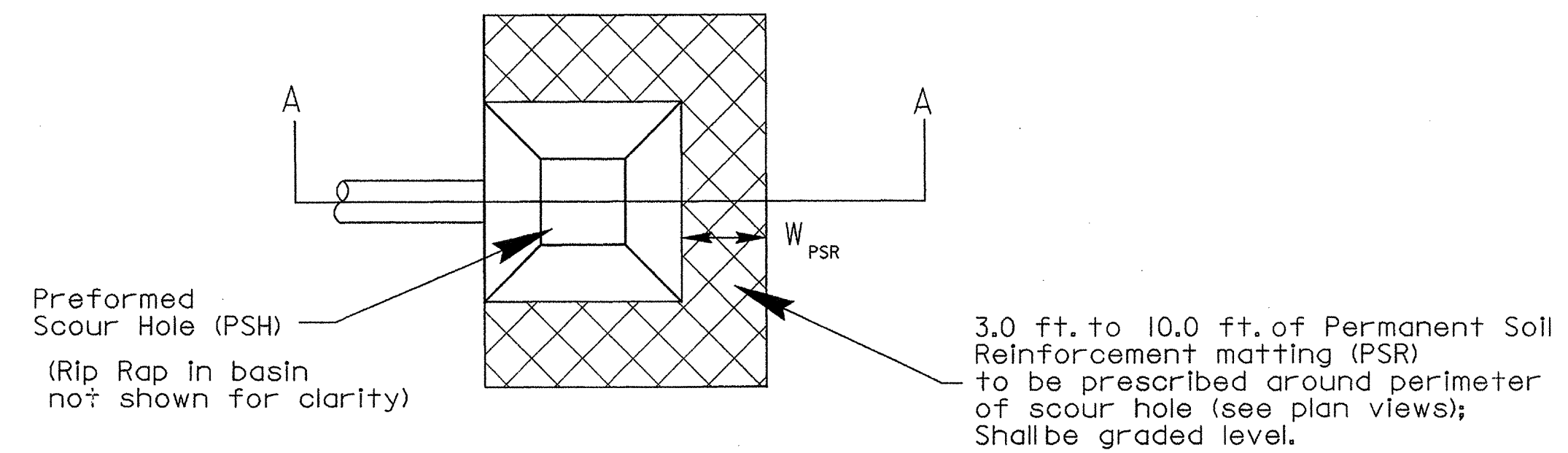
7/2/99

REVISIONS

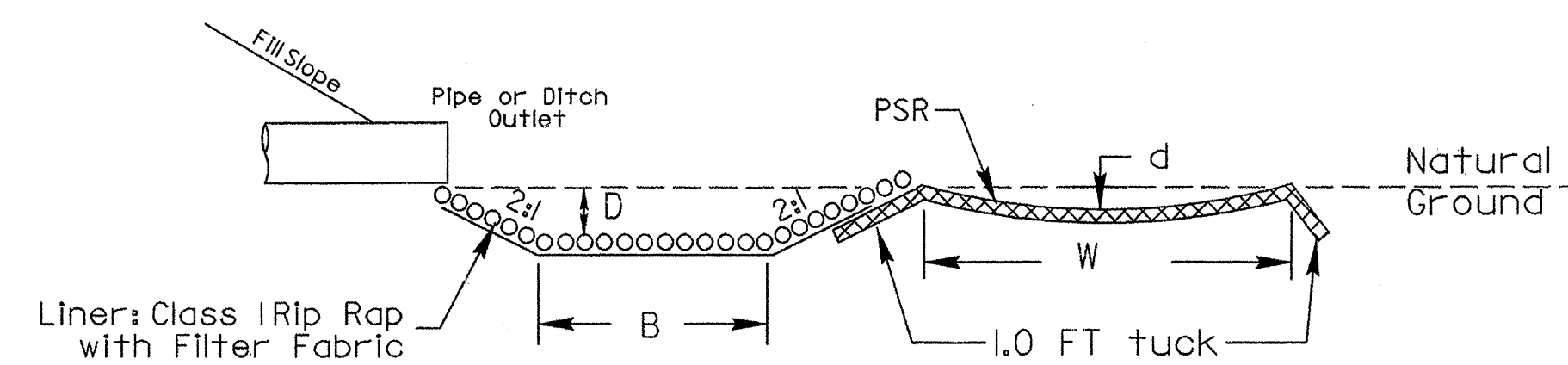
PROJECT REFERENCE NO. B-3621	SHEET NO. 2-A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PREFORMED SCOUR HOLE

(Not to scale)



Section A-A



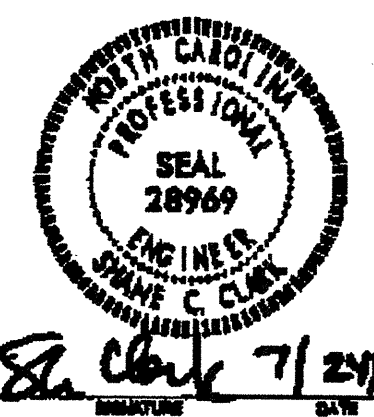
NOTE: "B" denotes size of basin;
For example: 5.0ft.x 5.0ft. PSH, B=1.5

NOTE: The Permanent Soil Reinforcement matting (PSR) shall be seeded with native grasses at installation.

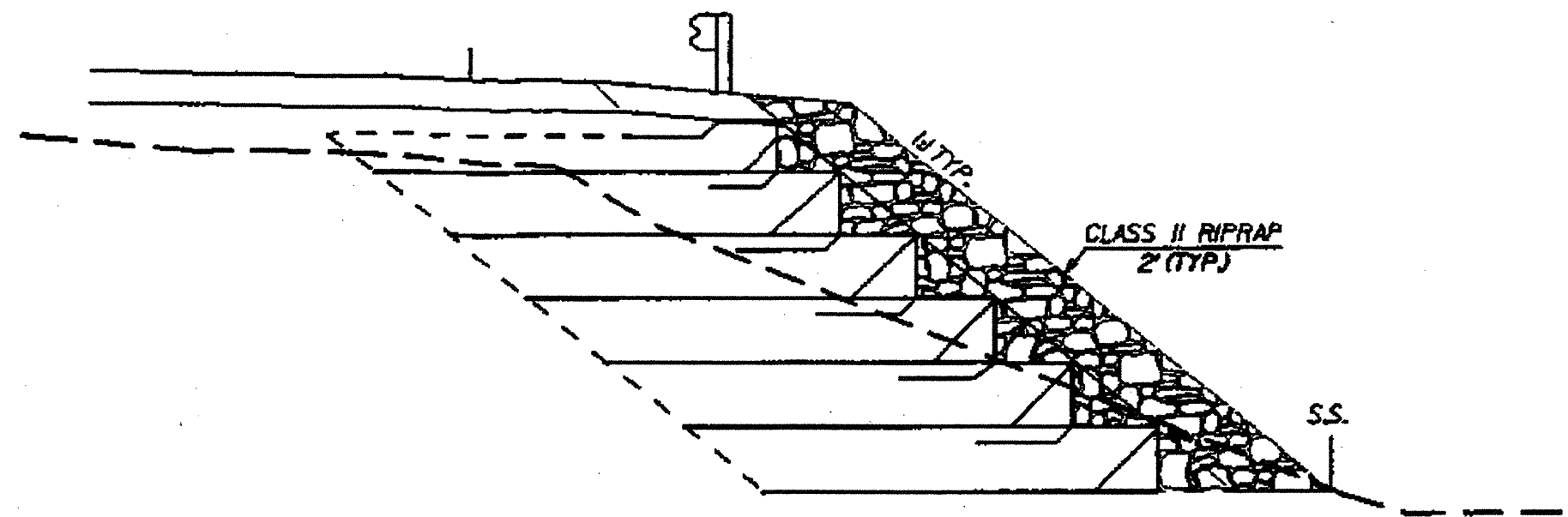
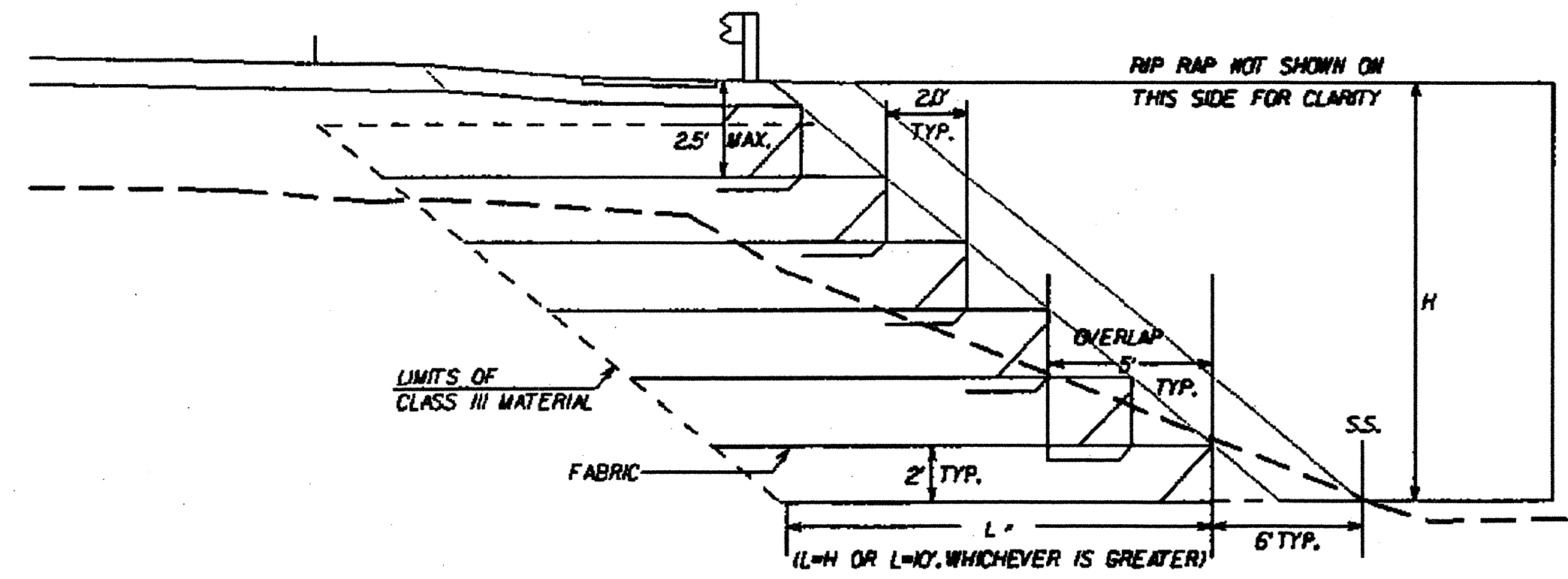
STATION	B FT.	D FT.	W_{PSR} FT.	d FT.	CLASS I RIP RAP TONS	DDE (CU YD)	FILTER FABRIC (SQ YD)
14+36 -L- LT	4.5	1.0	4	0.5	22	17	11.5

11/2/03
 W. HENRY WELLS
 PROFESSIONAL ENGINEER
 SEAL 9334
 9/2/03

GEOTECHNICAL ENGINEER



S.C. Clark 7/25/06

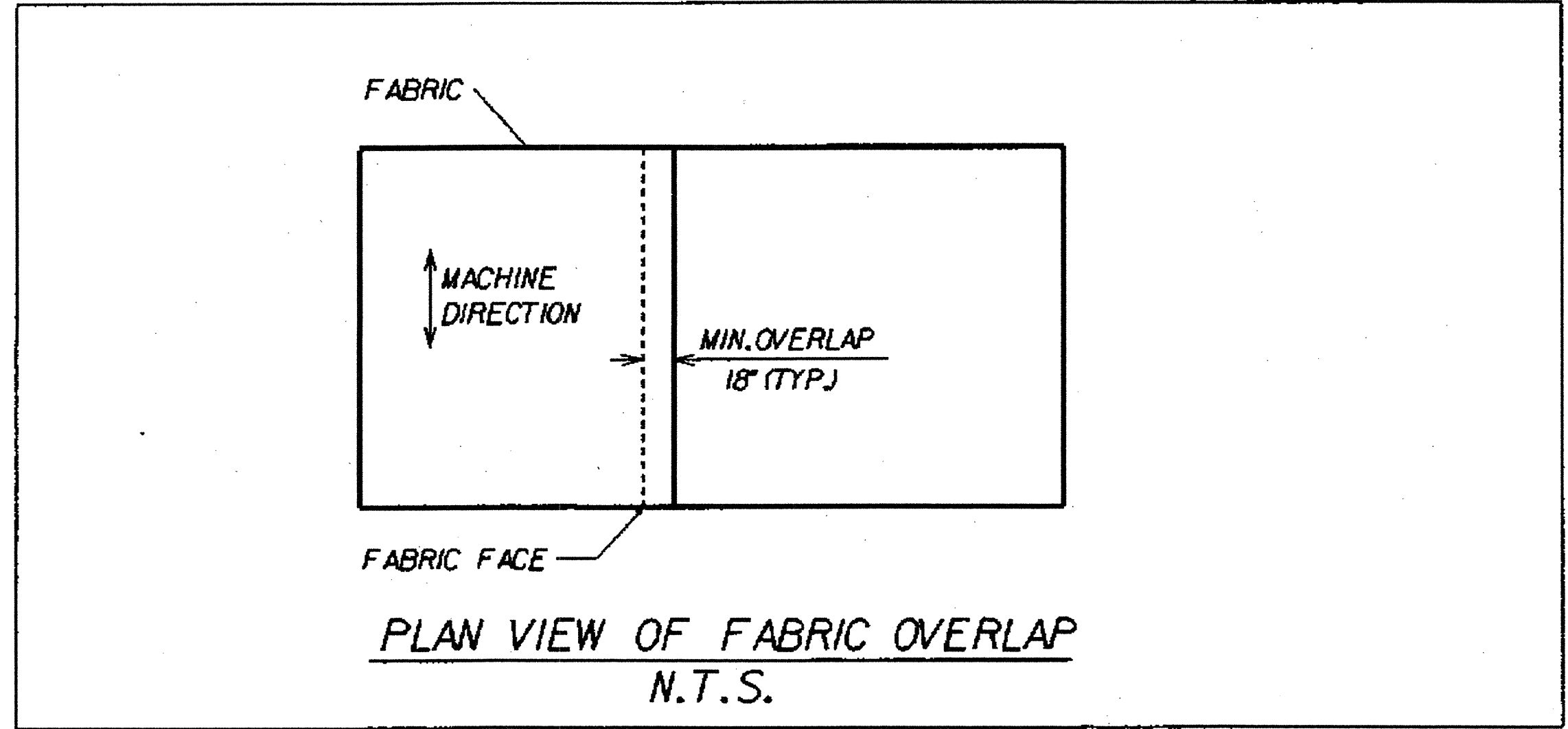
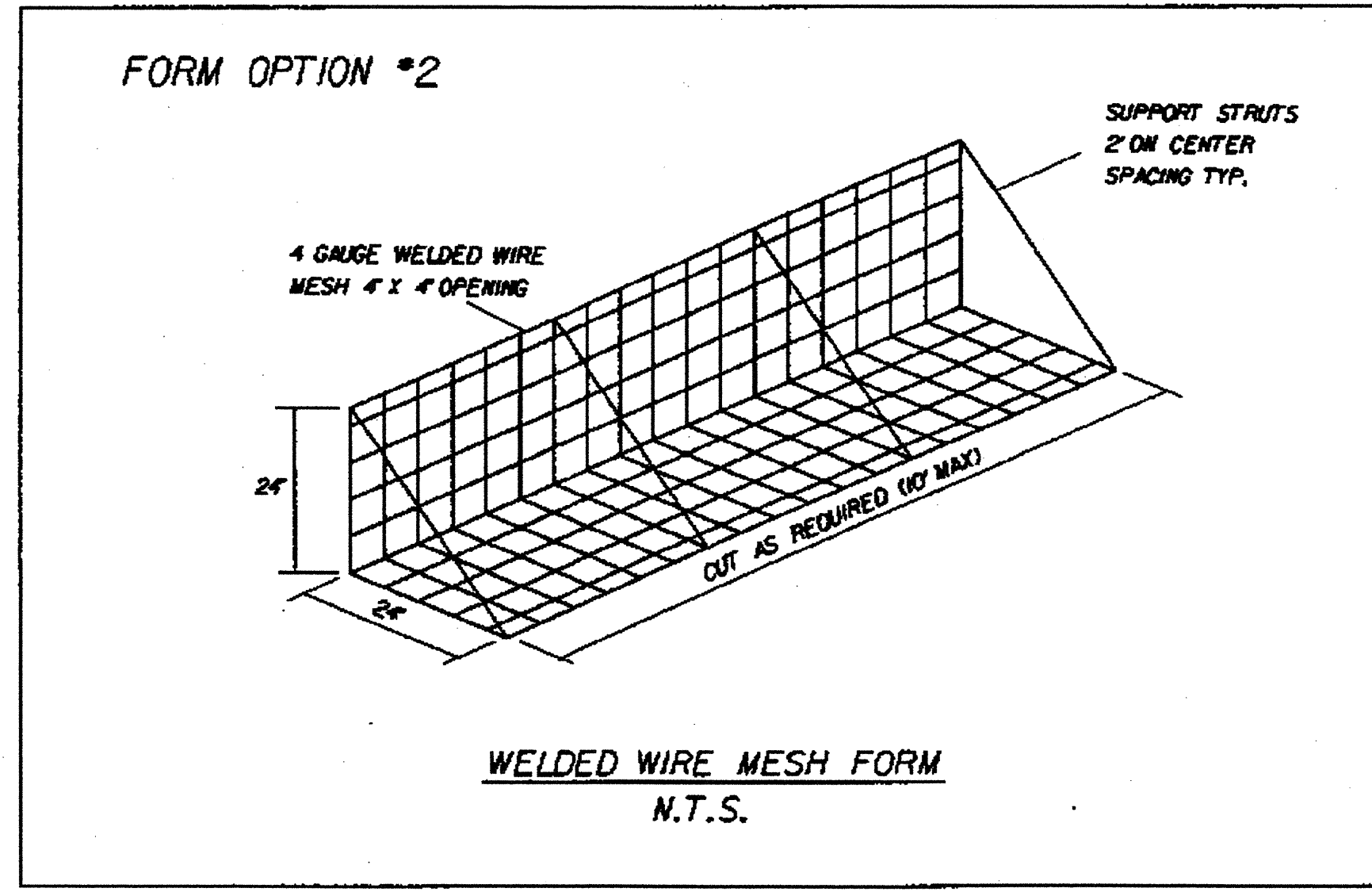
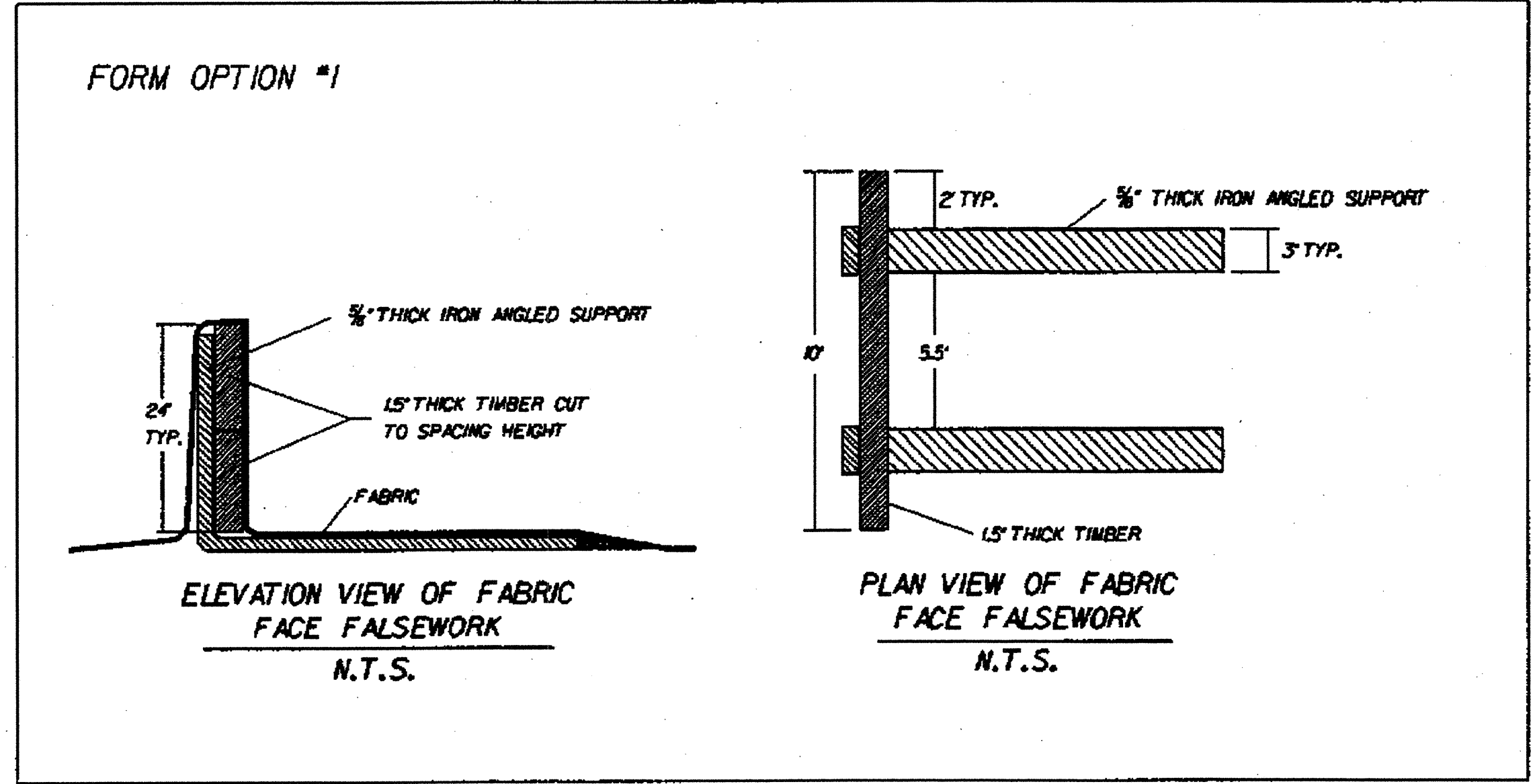


* ALL SUBSEQUENT LAYERS EQUAL TO L

TYPICAL SECTION
15+70 -L- TO 17+00 -L-
N.T.S.

NOTES:

1. THE FABRIC SHALL HAVE A MINIMUM WIDE WIDTH TENSILE STRENGTH OF 1000 LB/FT IN THE MACHINE DIRECTION (BASED ON ASTM-D4595) AT 5% ELONGATION AND A MINIMUM ULTIMATE WIDE WIDTH TENSILE STRENGTH OF 2200 LB/FT. IN THE MACHINE DIRECTION.
2. FOR REINFORCED SLOPE, SEE SPECIAL PROVISIONS.
3. LOCATIONS AND QUANTITIES PROVIDED ARE ONLY APPROXIMATE. EXACT LOCATIONS AND QUANTITIES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.
4. THE REINFORCED SLOPE SHALL BE BENCHED INTO THE SIDE OF THE EXCAVATION WHERE APPLICABLE AND AS DIRECTED BY THE ENGINEER.
5. SELECT MATERIAL SHALL BE CLASS III IN ACCORDANCE WITH SECTION 106 OF THE NCDOT STANDARD SPECIFICATIONS.
6. THE CONTRACTOR MAY ELECT TO USE A FORMING SYSTEM TO CONSTRUCT THE FABRIC FACE OTHER THAN THE FALSEWORK OR WIRE MESH FORM OPTIONS SHOWN IN THESE PLANS, HOWEVER, THE ALTERNATE METHOD MUST BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL.
7. LAYERS OF FABRIC MAY NEED TO BE ADDED OR SUBTRACTED AT THE TOP OF THE SLOPE AS THE EMBANKMENT HEIGHT VARIES THROUGH THE REINFORCED SECTION.
8. UNCLASSIFIED EXCAVATION TO BE PAID FOR WILL BE THE ACTUAL NUMBER OF CUBIC YARDS OF EXCAVATED MATERIAL TO THE LIMITS OF THE REINFORCEMENT SHOWN AND ACCORDING TO SECTION 225-3 OF THE NCDOT STANDARDS SPECIFICATIONS.



ESTIMATED QUANTITIES

PLAIN RIP RAP, CLASS II	150 TONS
FABRIC FOR REINFORCED SLOPE	1000 SQ.YDS.
SELECT MATERIAL CLASS III	375 CU.YDS.

GEOTECHNICAL ENGINEERING UNIT

EASTERN REGIONAL OFFICE

WESTERN REGIONAL OFFICE

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

REINFORCED SLOPE

REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

STATE OF NORTH CAROLINA SUMMARY OF QUANTITIES

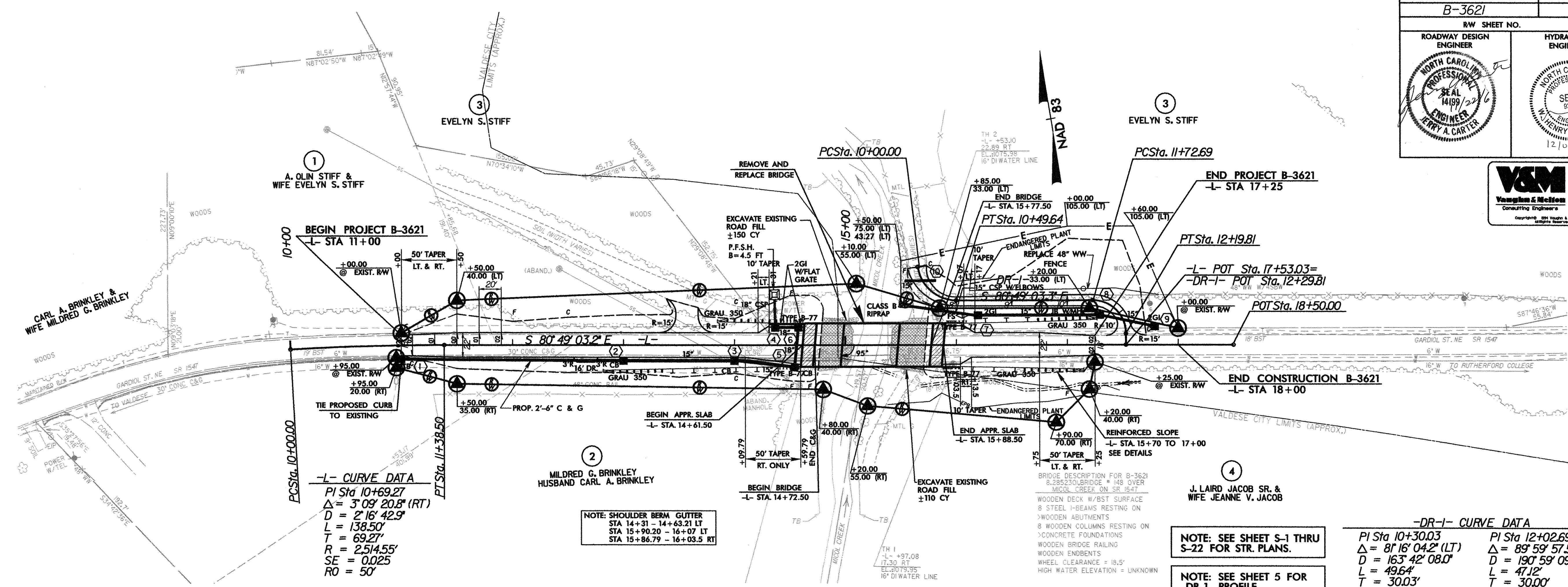
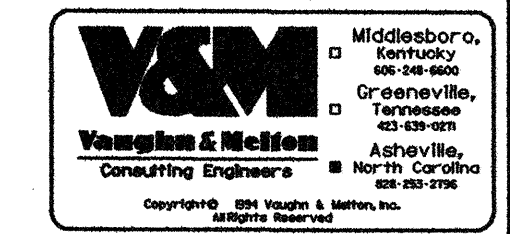
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C201779

ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description
000100000-N	800	Lump Sum		MOBILIZATION	156000000-E	620	45	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22	444500000-E	1145	56	LF	BARRICADES (TYPE III)	608700000-E	1660	2.5	ACR	MOWING
002200000-E	225	3,800	CY	UNCLASSIFIED EXCAVATION	200000000-N	806	14	EA	RIGHT OF WAY MARKERS	481000000-E	1205	5,000	LF	PAINT PAVEMENT MARKING LINES (4")	609000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
002900000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ***** (15+25.00)	228600000-N	840	9	EA	MASONRY DRAINAGE STRUCTURES	532560000-E	1510	709	LF	6" WATER LINE	609300000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
005000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB-BING	236600000-N	840	2	EA	FRAME WITH TWO GRATES, STD 840.24	532660000-E	1510	116	LF	16" WATER LINE	609600000-E	1662	100	LB	SEED FOR SUPPLEMENTAL SEEDING
006300000-N	SP	Lump Sum		GRADING	236700000-N	840	2	EA	FRAME WITH TWO GRATES, STD 840.29	554000000-E	1515	2	EA	6" VALVE	610800000-E	1665	3	TON	FERTILIZER TOPDRESSING
013400000-E	240	20	CY	DRAINAGE DITCH EXCAVATION	237400000-N	840	1	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (E)	555860000-E	1515	1	EA	16" VALVE	611400000-N	SP	2	HR	SPECIALIZED HAND MOWING
023400000-E	SP	375	CY	GENERIC GRADING ITEM SELECT MATERIAL, CLASS III	237400000-N	840	3	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (F)	580200000-E	1530	229	LF	ABANDON 10" UTILITY PIPE	611700000-N	SP	8	EA	RESPONSE FOR EROSION CONTROL
024100000-E	SP	1,000	SY	GENERIC GRADING ITEM FABRIC FOR REINFORCED SLOPE	237400000-N	840	3	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (F)	581000000-E	1530	114	LF	ABANDON 16" UTILITY PIPE					
025500000-E	SP	150	TON	GENERIC GRADING ITEM PLAIN RIP RAP, CLASS II	239600000-N	840	1	EA	FRAME WITH COVER, STD 840.54	581600000-N	1530	2	EA	ABANDON UTILITY MANHOLE					
031800000-E	300	120	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRS	254900000-E	846	345	LF	2'-6" CONCRETE CURB & GUTTER	587140000-E	1550	198	LF	TRENCHLESS INSTALLATION OF 6" IN SOIL					
034300000-E	310	28	LF	15" SIDE DRAIN PIPE	255600000-E	846	70	LF	SHOULDER BERM GUTTER	587141000-E	1550	198	LF	TRENCHLESS INSTALLATION OF 6" NOT IN SOIL					
037200000-E	310	40	LF	18" RC PIPE CULVERTS, CLASS III	261200000-E	848	10	SY	6" CONCRETE DRIVEWAY	600000000-E	1605	710	LF	TEMPORARY SILT FENCE					
070800000-E	310	60	LF	15" BIT COAT CS PIPE CULVERTS, TYPE B 0.064" THICK	303000000-E	862	237.5	LF	STEEL BM GUARDRAIL	600600000-E	1610	75	TON	STONE FOR EROSION CONTROL, CLASS A					
071400000-E	310	24	LF	18" BIT COAT CS PIPE CULVERTS, TYPE B 0.064" THICK	315000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS	600900000-E	1610	125	TON	STONE FOR EROSION CONTROL, CLASS B					
080600000-E	310	2	EA	15" BIT COAT CS PIPE ELBOWS, TYPE B 0.064" THICK	327000000-N	SP	4	EA	GUARDRAIL ANCHOR UNITS, TYPE 350	601200000-E	1610	350	TON	SEDIMENT CONTROL STONE					
080700000-E	310	2	EA	18" BIT COAT CS PIPE ELBOWS, TYPE B 0.064" THICK	331700000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE B-77	601500000-E	1615	4	ACR	TEMPORARY MULCHING					
099500000-E	340	24	LF	PIPE REMOVAL	350300000-E	866	220	LF	WOVEN WIRE FENCE, 47" FABRIC	601800000-E	1620	150	LB	SEED FOR TEMPORARY SEEDING					
112100000-E	520	180	TON	AGGREGATE BASE COURSE	350900000-E	866	14	EA	4" TIMBER FENCE POSTS, 7'-6" LONG	602100000-E	1620	0.75	TON	FERTILIZER FOR TEMPORARY SEEDING					
122000000-E	545	200	TON	INCIDENTAL STONE BASE	351500000-E	866	3	EA	5" TIMBER FENCE POSTS, 8'-0" LONG	602900000-E	SP	200	LF	SAFETY FENCE					
148900000-E	610	270	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B	364900000-E	876	5	TON	RIP RAP, CLASS B	603000000-E	1630	305	CY	SILT EXCAVATION					
149800000-E	610	320	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0B	365600000-E	876	20	SY	FILTER FABRIC FOR DRAINAGE	603600000-E	1631	355	SY	MATting FOR EROSION CONTROL					
152500000-E	610	275	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A	365900000-N	SP	1	EA	PREFORMED SCOUR HOLES WITH LEVEL SPREADER APRON	603800000-E	SP	125	SY	PERMANENT SOIL REINFORCEMENT MAT					
					440000000-E	1110	274	SF	WORK ZONE SIGNS (STATIONARY)	604200000-E	1632	160	LF	1/4" HARDWARE CLOTH					
					441000000-E	1110	70	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)	607000000-N	SP	12	EA	SPECIAL STILLING BASINS					
										607103000-E	SP	125	LF	COIR FIBER BAFFLES					
										608400000-E	1660	2.5	ACR	SEEDING & MULCHING					

***** BEGIN SCHEDULE AA *****
***** (3 ALTERNATES) *****

036600000-E AA1	310	504	LF	15" RC PIPE CULVERTS, CLASS III
*** OR ***				
036600000-E AA2	310	392	LF	15" RC PIPE CULVERTS, CLASS III
053600000-E AA2	SP	112	LF	**** HDPE PIPE CULVERTS (15")
*** OR ***				
036600000-E AA3	310	392	LF	15" RC PIPE CULVERTS, CLASS III
054000000-E AA3	SP	112	LF	**** ALUMINIZED CORRUGATED STEEL PIPE CULVERTS, **** THICK (15", 0.064")

***** END SCHEDULE AA *****



-L- CURVE DATA
 PI Sta 10+69.27
 $\Delta = 3^{\circ} 09' 20.8''$ (RT)
 $D = 2^{\circ} 16' 42.9''$
 $L = 138.50'$
 $T = 69.27'$
 $R = 2,514.55'$
 $SE = 0.025$
 $RO = 50'$

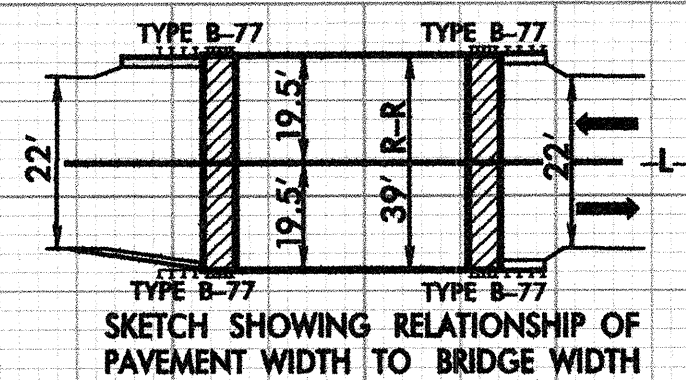
NOTE: SHOULDER BERM GUTTER
 STA 14+31 - 14+63.21 LT
 STA 15+90.20 - 16+07 LT
 STA 15+86.79 - 16+03.5 RT

NOTE: SEE SHEET S-1 THRU S-22 FOR STR. PLANS.

NOTE: SEE SHEET 5 FOR -DR-1- PROFILE.

-DR-1- CURVE DATA

PI Sta 10+30.03 $\Delta = 81^{\circ} 16' 04.2''$ (LT) $D = 163^{\circ} 42' 08.0''$ $L = 49.64'$ $T = 30.03'$ $R = 35.00'$	PI Sta 12+02.69 $\Delta = 89^{\circ} 59' 57.5''$ (RT) $D = 190^{\circ} 59' 09.4''$ $L = 47.12'$ $T = 30.00'$ $R = 30.00'$
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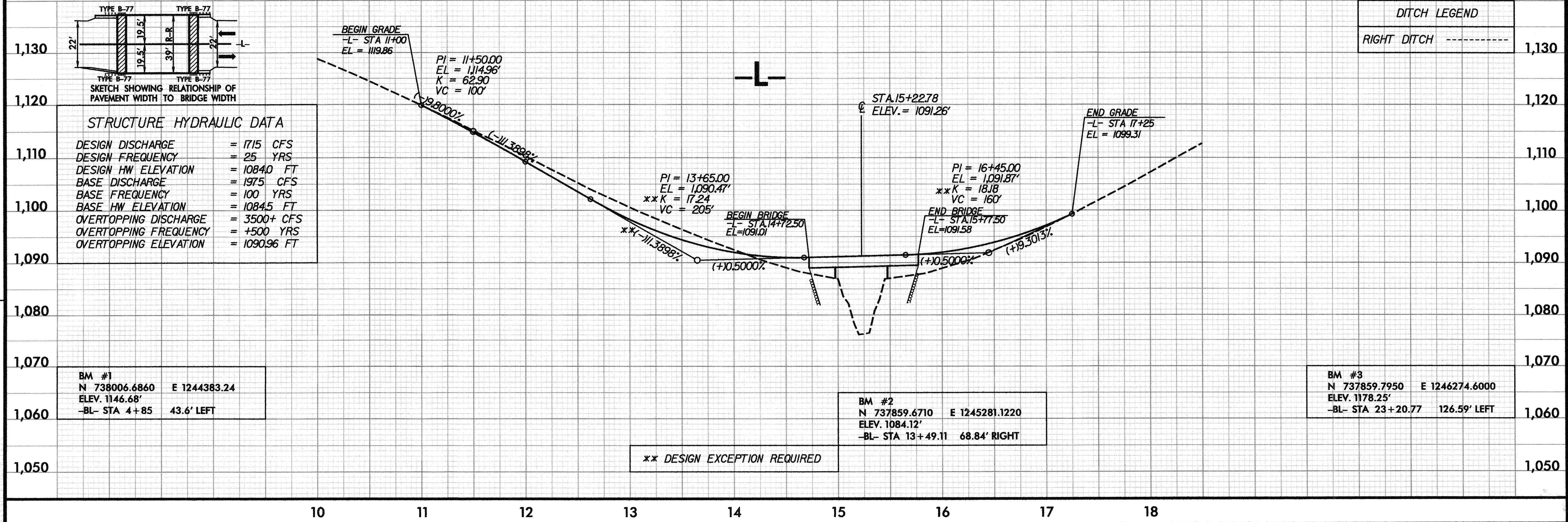


STRUCTURE HYDRAULIC DATA

DESIGN DISCHARGE	= 1715 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 1084.0 FT
BASE DISCHARGE	= 1975 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 1084.5 FT
OVERTOPPING DISCHARGE	= 3500+ CFS
OVERTOPPING FREQUENCY	= +500 YRS
OVERTOPPING ELEVATION	= 1090.96 FT

DITCH LEGEND

RIGHT DITCH	-----	1,130
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BM #1
 N 738006.6860 E 1244383.24
 ELEV. 1146.68'
 -BL- STA 4+85 43.6' LEFT

BM #2
 N 737859.6710 E 1245281.1220
 ELEV. 1084.12'
 -BL- STA 13+49.11 68.84' RIGHT

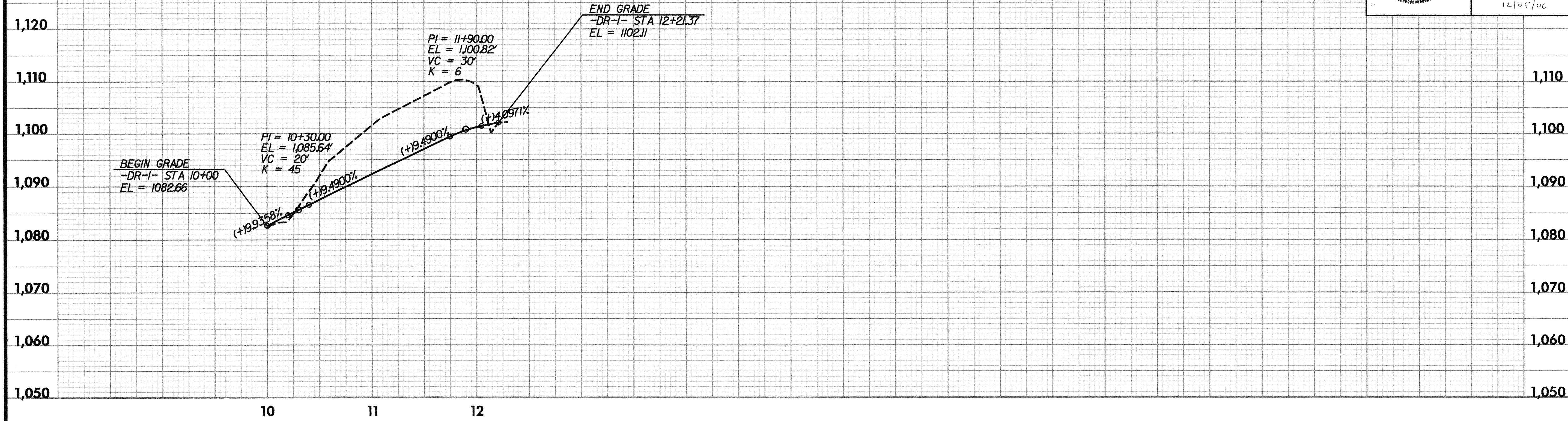
BM #3
 N 737859.7950 E 1246274.6000
 ELEV. 1178.25'
 -BL- STA 23+20.77 126.59' LEFT

** DESIGN EXCEPTION REQUIRED

REVISIONS

5/28/99

-DR-1-



PROJECT REFERENCE NO. B-3621	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

5/28/99