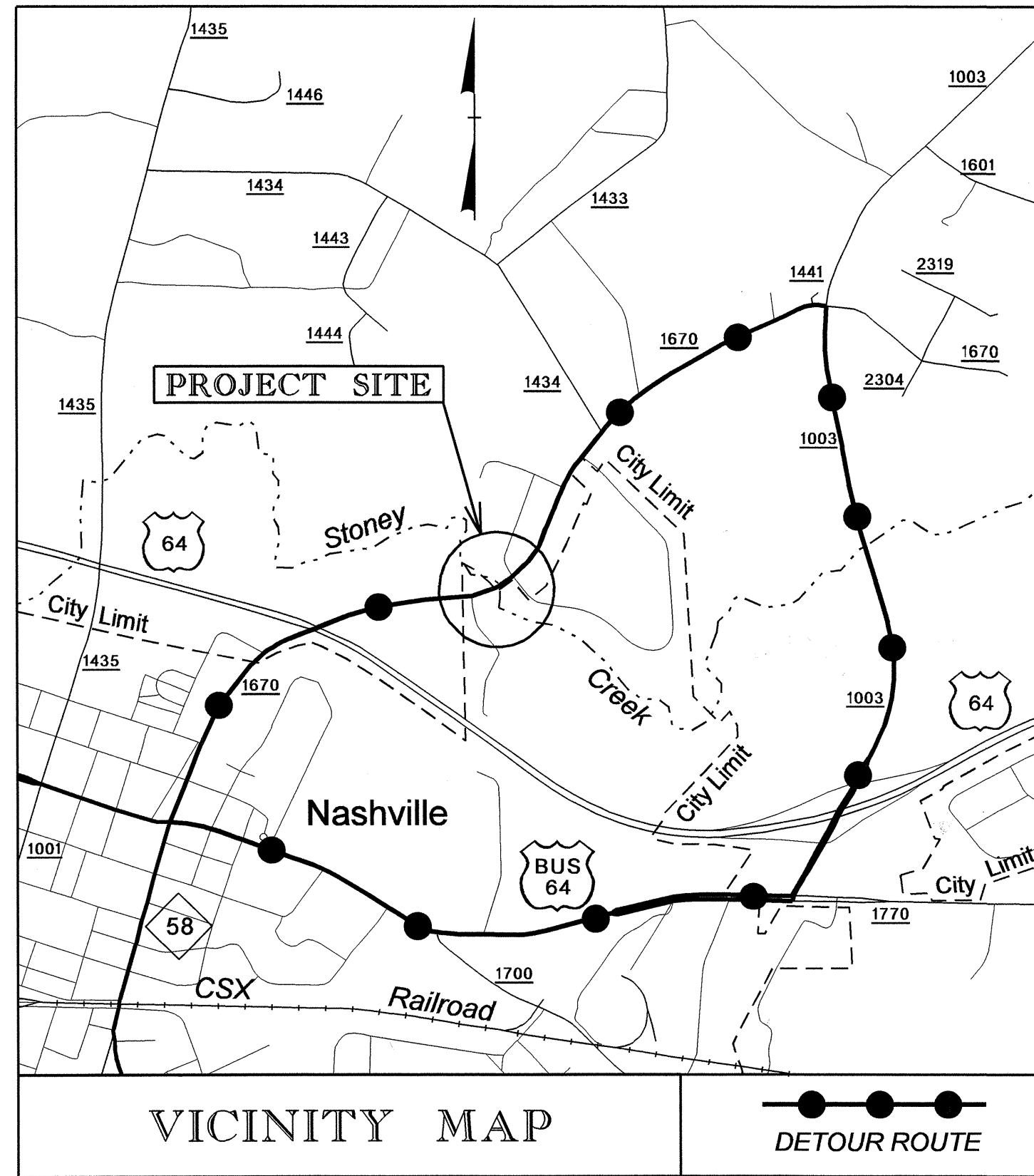


**TIP PROJECT: B-4588**

**CONTRACT: C202749**

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

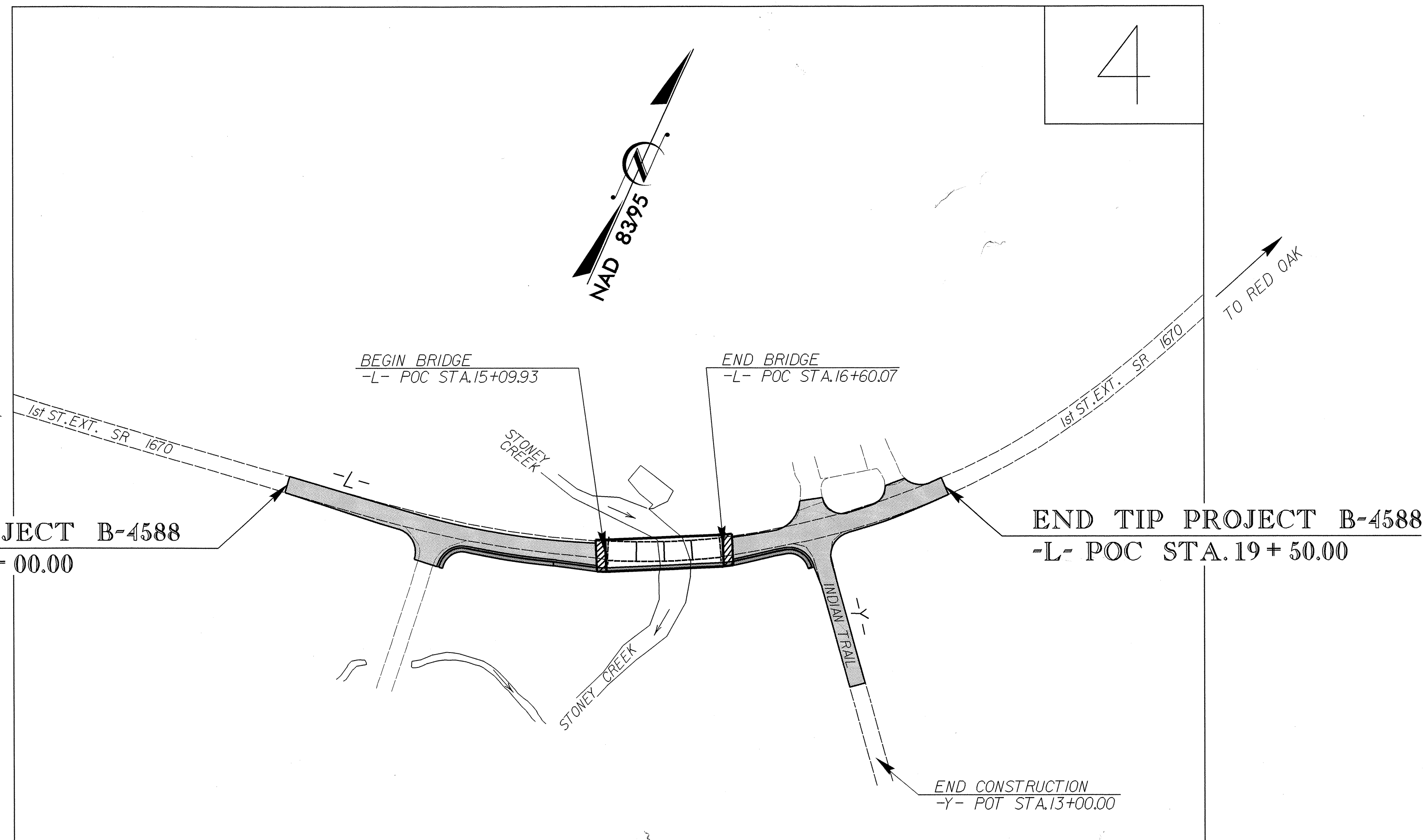


STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
**NASH COUNTY**

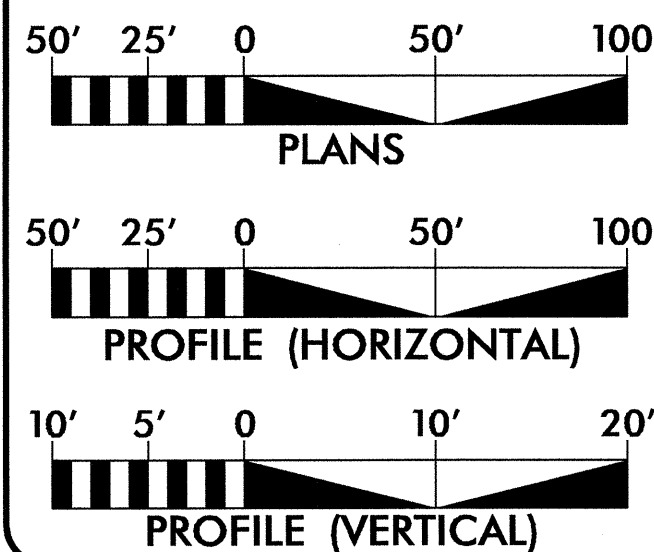
**LOCATION: BRIDGE NO.1 OVER STONEY CREEK ON SR 1670**

**TYPE OF WORK: GRADING, DRAINAGE, PAVING, & STRUCTURE**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	<b>B-4588</b>	<b>1</b>	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33788.1.1	BRZ-1670(1)	PE	
33788.2.1	BRZ-1670(1)	RW & UTIL.	
33788.3.1	BRZ-1670(1)	CONST.	



**GRAPHIC SCALES**



**DESIGN DATA**

ADT 2012 = 4,400  
ADT 2032 = 6,845  
DHV = 10 %  
D = 60 %  
T = 3 % \*  
V = 50 MPH  
FUNC. CLASS. = LOCAL  
\* TTST 1 % DUAL 2 %  
SUBREGIONAL TIER

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT B-4588 = 0.133 MI.  
LENGTH STRUCTURE TIP PROJECT B-4588 = 0.028 MI.  
TOTAL LENGTH OF TIP PROJECT B-4588 = 0.161 MI.

Prepared In the Office of:  
**DIVISION OF HIGHWAYS**  
1000 Birch Ridge Dr.  
Raleigh, NC 27610

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:  
JANUARY 4, 2011

LETTING DATE:  
JANUARY 17, 2012

REKHA PATEL, P.E.  
PROJECT ENGINEER

MICHAEL W. LITTLE, P.E.  
PROJECT DESIGN ENGINEER

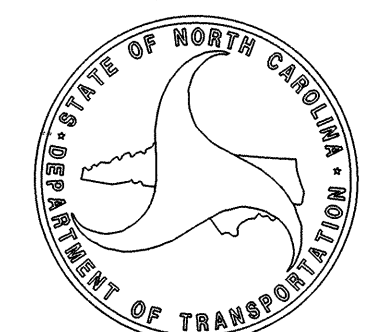
**HYDRAULICS ENGINEER**

*[Signature]*  
10/19/11  
SEAL 9334  
HENRY WELLS, JR.  
P.E.

**ROADWAY DESIGN ENGINEER**

*[Signature]*  
10/17/12  
SEAL 2257  
MICHAEL W. LITTLE  
P.E.

**DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA**



*[Signature]*  
STATE HIGHWAY DESIGN ENGINEER

3/15/06

# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C, 1-D	SURVEY CONTROL SHEET
2 THRU 2-A	TYPICAL SECTIONS
3	SUMMARY OF QUANTITIES
3-A	LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER) SUMMARIES OF GUARDRAIL
3-B	SUMMARIES OF 2'-6" CONCRETE CURB AND GUTTER, SHOULDER BERM GUTTER AND PAVEMENT REMOVAL
3-C	EARTHWORK
4	PLAN SHEET
5	PROFILE SHEET
TMP-1 THRU TMP-2	TRANSPORTATION MANAGEMENT PLANS
SD-1	SPECIAL SIGN DESIGN
PMP-1 THRU PMP-2	PAVEMENT MARKING PLANS
EC-1 THRU EC-5	EROSION CONTROL PLANS
RF-1	REFORESTATION SHEET
SIGN-1 THRU SIGN-4	SIGNING PLANS
UC-1 THRU UC-6	UTILITY CONSTRUCTION PLANS
UO-1 THRU UO-2	UTILITIES BY OTHERS PLANS
X-1A	CROSS-SECTION SUMMARY SHEET
X-1 THRU X-11	CROSS-SECTIONS
S-1 THRU S-31	STRUCTURE PLANS

GENERAL NOTES: 2012 SPECIFICATIONS  
EFFECTIVE: 01-17-12  
REVISED: 08/31/11

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

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.

STREET TURNOUT:  
STREET RETURNS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 848.04 USING THE RADII NOTED ON PLANS.

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:  
TOWN OF NASHVILLE - WATER  
CENTURY LINK - TELEPHONE  
UC SYNERGETIC (PROGRESS ENERGY) - POWER  
SUDDENLINK - CABLE  
ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.


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

CURB RAMPS:  
CURB RAMPS ARE SHOWN ON THE PLANS AT APPROXIMATE LOCATIONS. CONSTRUCT ALL CURB RAMPS ACCORDANCE WITH STD. NO. 848.05 AND 848.06.

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 Super-elevation - 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 Super-elevated Curve - Method I
DIVISION 8 - INCIDENTALS	
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
840.25	Anchorage for Frames - Brick or Concrete
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
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
848.01	Concrete Sidewalk
848.04	Street Turnout
848.05	Curb Ramp - Proposed Curb & Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.02	Guide for Rip Rap at Pipe Outlets

  
 M. W. Little  
 10/17/11

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

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

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EP
Property Corner	-----
Property Monument	□ ECM
Parcel/Sequence Number	⑫③
Existing Fence Line	-x-x-x-
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	○
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	▬
False Sump	▽

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○
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	-----
Proposed Right of Way Line with Iron Pin and Cap Marker	-----
Proposed Right of Way Line with Concrete or Granite Marker	-----
Existing Control of Access	○
Proposed Control of Access	○
Existing Easement Line	-----
Proposed Temporary Construction Easement	-----
Proposed Temporary Drainage Easement	-----
Proposed Permanent Drainage Easement	-----
Proposed Permanent Drainage / Utility Easement	-----
Proposed Permanent Utility Easement	-----
Proposed Temporary Utility Easement	-----
Proposed Aerial Utility Easement	-----

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	-----

EXISTING STRUCTURES:

MAJOR: Bridge, Tunnel or Box Culvert	-----
Bridge Wing Wall, Head Wall and End Wall	-----
MINOR: Head and End Wall	-----
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	□ CB
Paved Ditch Gutter	-----
Storm Sewer Manhole	○
Storm Sewer	-----

UTILITIES:

POWER: Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	⊕
Power Line Tower	⊗
Power Transformer	⊗
U/G Power Cable Hand Hole	□
H-Frame Pole	●
Recorded U/G Power Line	-----
Designated U/G Power Line (S.U.E.*)	-----

TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊕
Telephone Booth	□
Telephone Pedestal	□
Telephone Cell Tower	⊗
U/G Telephone Cable Hand Hole	□
Recorded U/G Telephone Cable	-----
Designated U/G Telephone Cable (S.U.E.*)	-----
Recorded U/G Telephone Conduit	-----
Designated U/G Telephone Conduit (S.U.E.*)	-----
Recorded U/G Fiber Optics Cable	-----
Designated U/G Fiber Optics Cable (S.U.E.*)	-----

WATER:

Water Manhole	⊕
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
Recorded U/G Water Line	-----
Designated U/G Water Line (S.U.E.*)	-----
Above Ground Water Line	-----

TV:

TV Satellite Dish	⊗
TV Pedestal	□
TV Tower	⊗
U/G TV Cable Hand Hole	□
Recorded U/G TV Cable	-----
Designated U/G TV Cable (S.U.E.*)	-----
Recorded U/G Fiber Optic Cable	-----
Designated U/G Fiber Optic Cable (S.U.E.*)	-----

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	⊕
Utility Unknown U/G Line	-----
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.



6/2/09

PROJECT REFERENCE NO.	SHEET NO.
B-4588	I-C
Location and Surveys	

# SURVEY CONTROL SHEET B-4588

### BENCHMARK DATA

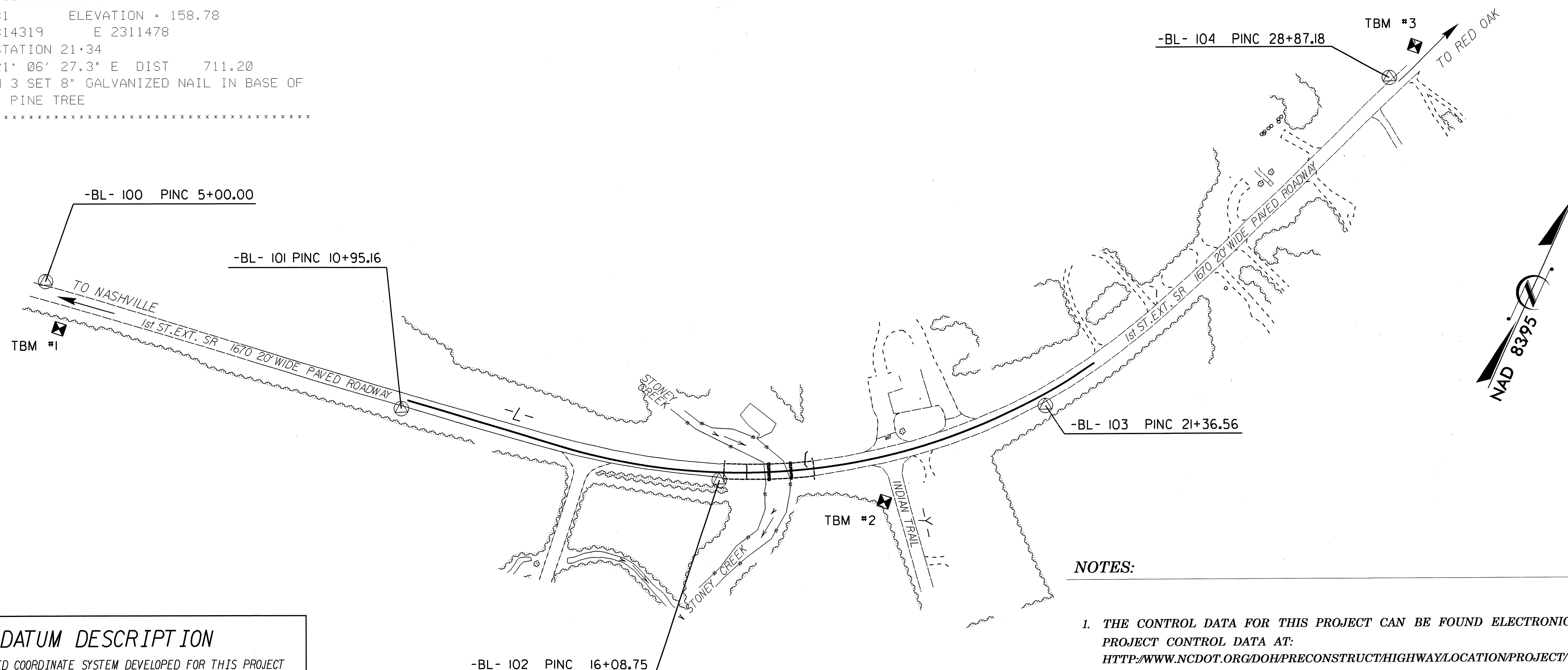
\*\*\*\*\*  
 1159 ELEVATION = 134.33  
 N 813032 E 2309712  
 L STATION 10+00  
 S 77° 16' 08.5" W DIST 560.41  
 TBM 1 SET RAILROAD SPIKE IN BASE OF 18"  
 TWIN ELM TREE  
 \*\*\*\*\*

\*\*\*\*\*  
 1332 ELEVATION = 136.01  
 N 813320 E 2311010  
 L STATION 17+53 70 RIGHT  
 TBM 2 CHISELED "X" IN TOP FLANGE BOLT  
 OF FIRE HYDRANT  
 \*\*\*\*\*

\*\*\*\*\*  
 1331 ELEVATION = 158.78  
 N 814319 E 2311478  
 L STATION 21+34  
 N 21° 06' 27.3" E DIST 711.20  
 TBM 3 SET 8" GALVANIZED NAIL IN BASE OF  
 28" PINE TREE  
 \*\*\*\*\*

### BASELINE DATA

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
	100	-BL- 100	813090.6930	2309662.4440	135.94	OUTSIDE PROJECT LIMITS	
	101	-BL- 101	813139.1300	2310255.6260	134.81	OUTSIDE PROJECT LIMITS	
	102	-BL- 102	813243.6460	2310758.4730	137.47	15+06.78	12.04 RT
	103	-BL- 103	813562.1830	2311179.3270	136.74	20+33.13	16.65 RT
	104	-BL- 104	814257.6870	2311461.6410	155.99	OUTSIDE PROJECT LIMITS	



### DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "B-4588 GPS-1"  
 WITH NAD 83/95 STATE PLANE GRID COORDINATES OF  
 NORTHING: 812698.863 (FT) EASTING: 2308504.149 (FT)  
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99995124  
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B-4588 GPS-1" TO L- STATION 10+00.00 IS  
 N 75°25'14.41" E 1812.98 FT  
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES  
 VERTICAL DATUM USED IS NAVD 88

### NOTES:

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:  
[HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.ncdot.org/doh/preconstruct/highway/location/project/)  
 THE FILES TO BE FOUND ARE AS FOLLOWS:  
 B4588\_LS\_CONTROL\_081031.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.  
 NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING USER SERVICE (OPUS)

NOTE: DRAWING NOT TO SCALE

REC-20111335  
B-4588-1s-1c.dgn

6/22/99

# SURVEY CONTROL SHEET B-4588

PROJECT REFERENCE NO.	SHEET NO.
B-4588	I-D
Location and Surveys	
FINAL	

### ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	11+00.00	50.00	813119.0630	2310364.5455
L	11+00.00	30.00	813138.8830	2310361.8683
L	11+00.00	-30.00	813198.3430	2310353.8367
L	11+00.00	-50.00	813218.1630	2310351.1595
L	12+52.89	50.00	813139.5282	2310516.0553
L	12+52.89	-50.00	813238.6282	2310502.6694
L	16+14.00	50.00	813256.9965	2310874.5533
L	16+14.00	28.96	813275.4729	2310864.4830

### ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	17+69.00	-50.00	813425.0413	2310949.8909
L	17+69.00	-30.77	813409.7961	2310961.6155

### DESIGN ALIGNMENTS

L

TYPE	STATION	NORTH	EAST
POT	10+00.00	813155.2271	2310258.7525
PC	12+52.89	813189.0782	2310509.3624
PT	19+19.14	813485.5938	2311092.0043
PC	19+25.23	813489.9893	2311096.2118
PT	21+33.65	813655.7207	2311221.8470

Y

TYPE	STATION	NORTH	EAST
POT	10+00.00	813390.0755	2310986.3948
POT	13+05.00	813156.3588	2311182.3577

### PERMANENT UTILITY EASEMENT

ALIGN	STATION	OFFSET	NORTH	EAST
Y	11+30.00	-34.26	813312.4678	2311096.1694
Y	12+00.00	-56.00	813272.7987	2311157.8070
Y	12+98.00	-56.00	813197.7029	2311220.7721
Y	12+98.00	-36.17	813184.9599	2311205.5757

### TEMPORARY CONSTRUCTION EASEMENT

ALIGN	STATION	OFFSET	NORTH	EAST
L	12+60.00	60.00	813130.6550	2310524.8677
L	12+60.00	50.00	813140.5552	2310523.4579
L	14+00.00	-60.00	813277.1263	2310636.4099
L	14+00.00	-50.00	813267.5237	2310639.2009
L	17+35.00	60.00	813316.3572	2310987.9932
L	17+69.00	-60.00	813432.9682	2310943.7947
L	18+10.02	50.00	813372.7392	2311044.4542
L	19+19.14	50.00	813451.0194	2311128.1236
L	19+19.14	29.99	813464.8534	2311113.6715
L	19+19.14	-50.00	813520.1683	2311055.8850
L	19+25.23	-50.00	813524.5638	2311060.0924
L	19+50.00	-50.00	813541.6928	2311076.0463
L	19+50.00	-30.00	813528.2628	2311090.8663
ALIGN	STATION	OFFSET	NORTH	EAST
Y	12+00.00	24.95	813220.7873	2311095.7751

### NOTES:

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:  
[HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.ncdot.org/DOH/Preconstruct/Highway/Location/Project/)

THE FILES TO BE FOUND ARE AS FOLLOWS:  
 B4588\_LS\_CONTROL\_081031.TXT

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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.  
 NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING USER SERVICE (OPUS)

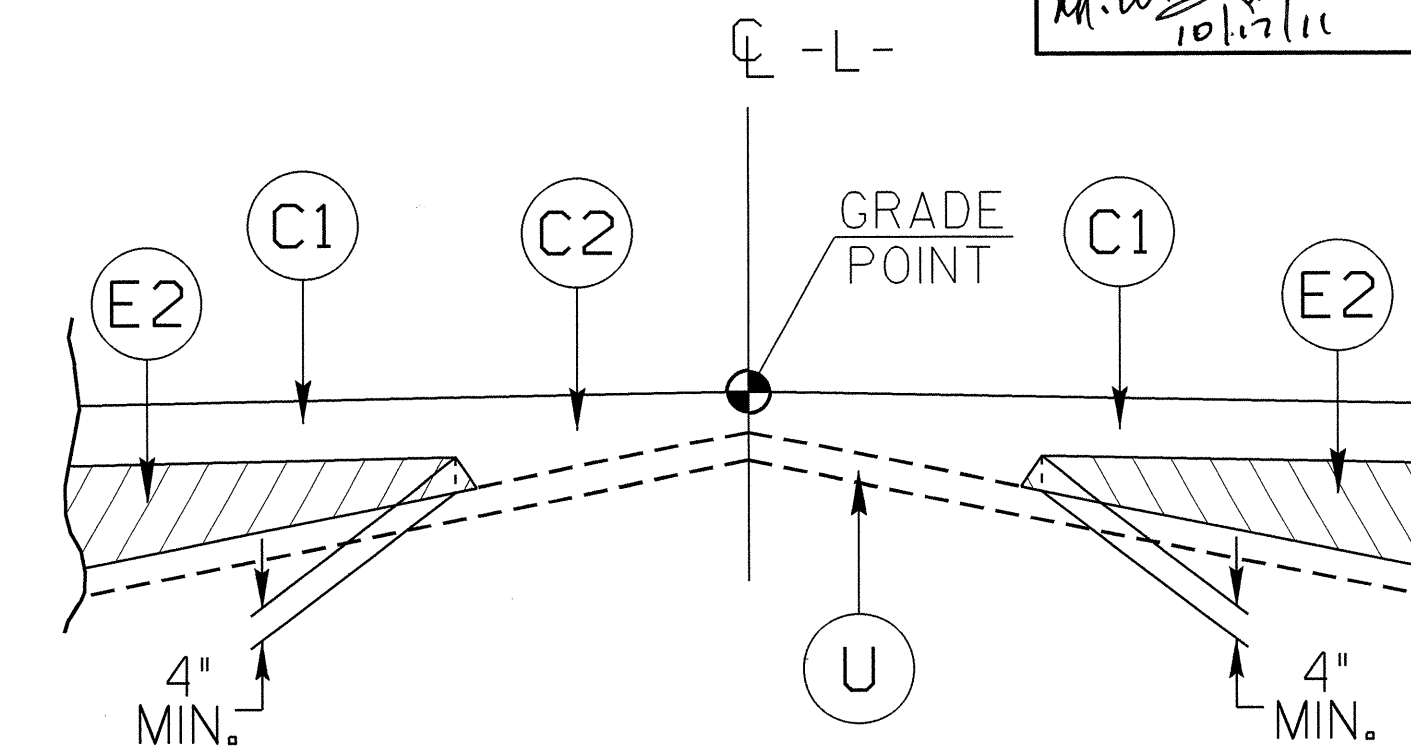
### DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "B-4588 GPS-1"  
 WITH NAD 83/95 STATE PLANE GRID COORDINATES OF  
 NORTHING: 812698.863 (FT) EASTING: 2308504.149 (FT)  
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 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES  
 VERTICAL DATUM USED IS NAVD 88

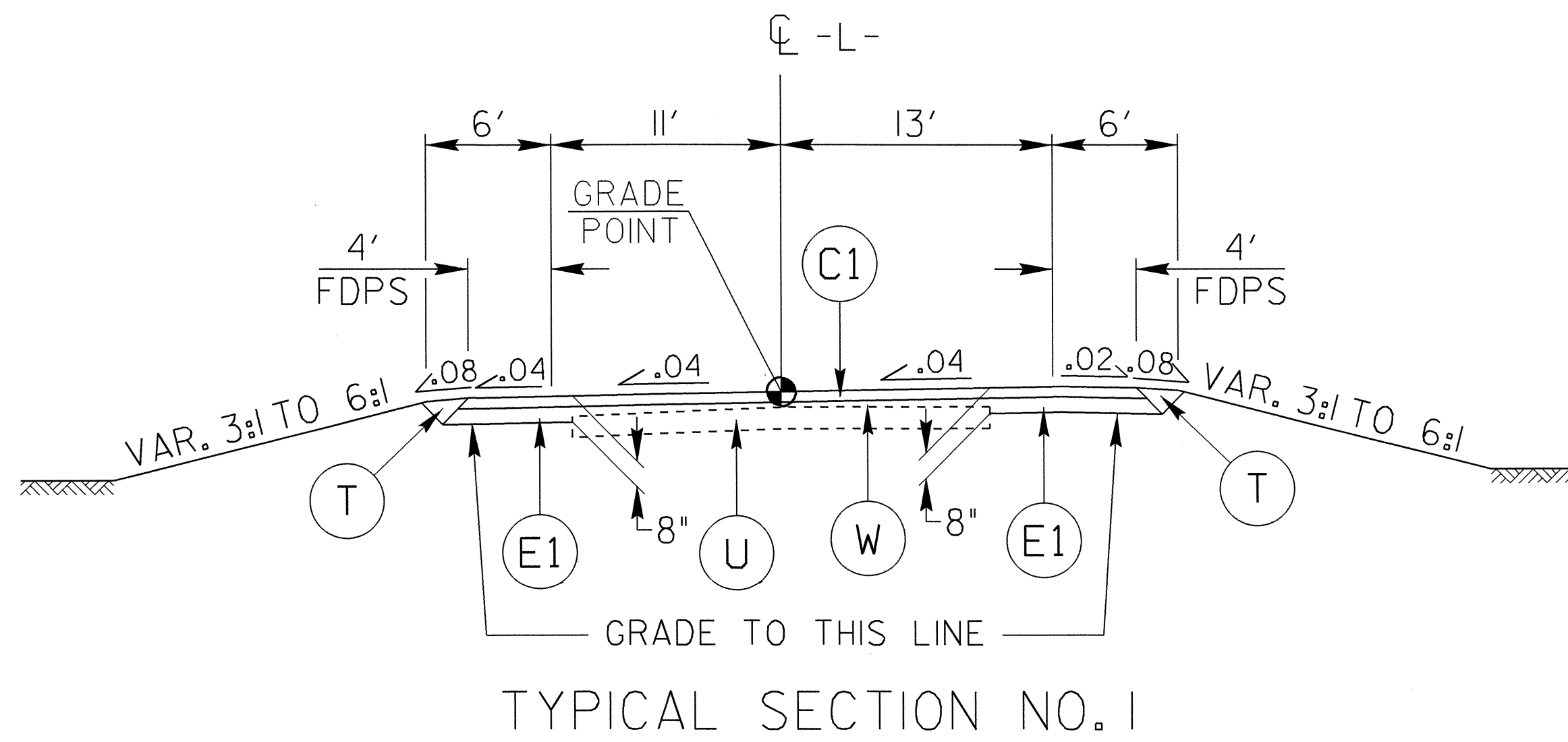
I:\2001\12\35  
 R:\Roadway\Info\B4588\ls\_1.dgn  
 6/22/99 10:51:51 AM

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.	R2	SHOULDER BERM GUTTER
C2	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.	S	4" CONCRETE SIDEWALK
E1	PROP. APPROX. 5 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.	T	EARTH MATERIAL
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 4" OR GREATER THAN 5 1/2" IN DEPTH.	U	EXISTING PAVEMENT
R1	2'-6" CONCRETE CURB AND GUTTER	W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL).

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



DETAIL SHOWING METHOD OF WEDGING



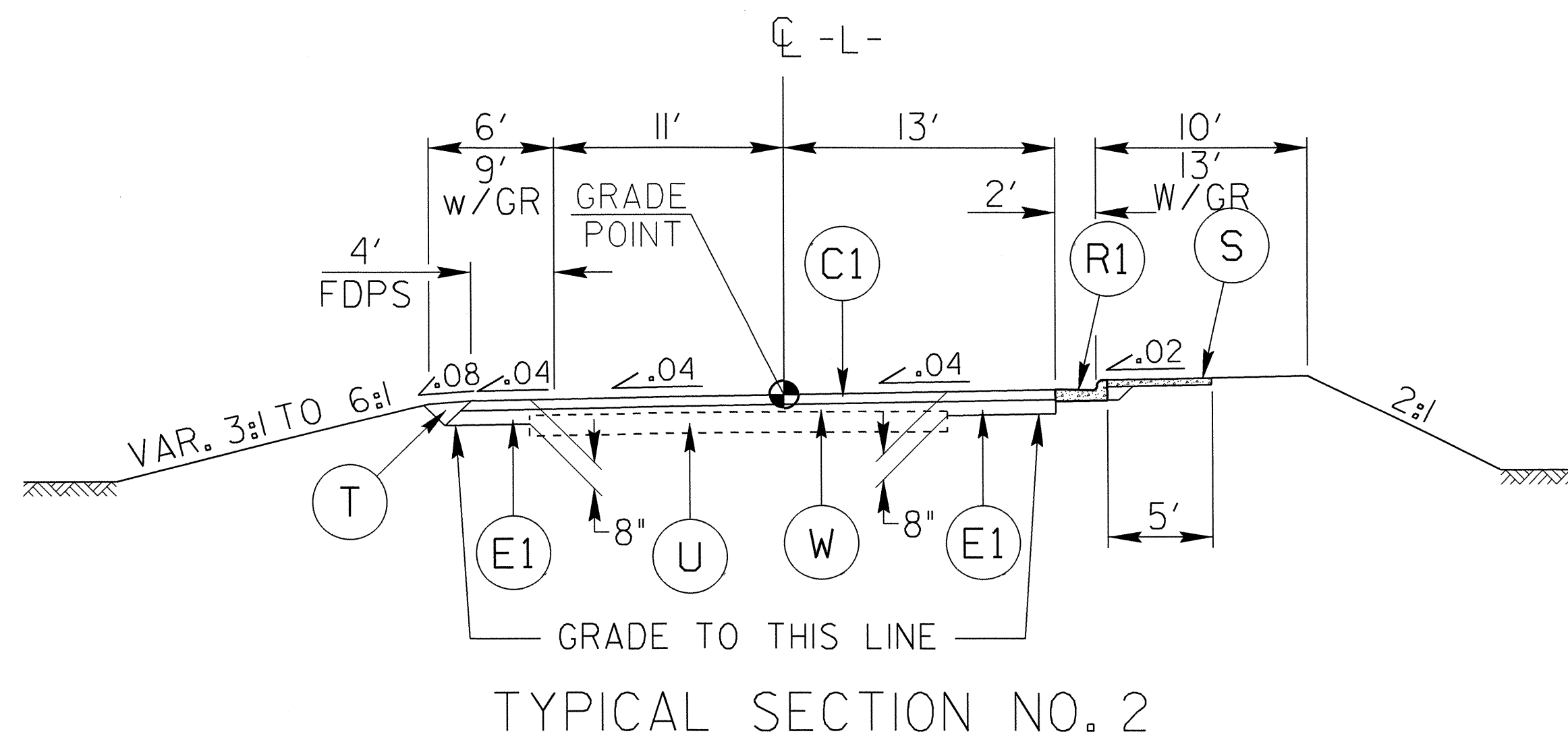
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1 FOR:

- L- STA. 12+25.00 TO -L- STA. 13+25.00
- L- STA. 17+60.00 TO -L- STA. 18+70.00

NOTES:

- TRANSITION FROM EXISTING TO T.S. NO. 1
- L- STA. 11+00.00 TO -L- STA. 12+25.00
- TRANSITION FROM T.S. NO. 1 TO EXISTING
- L- STA. 18+70.00 TO -L- STA. 19+50.00



TYPICAL SECTION NO. 2

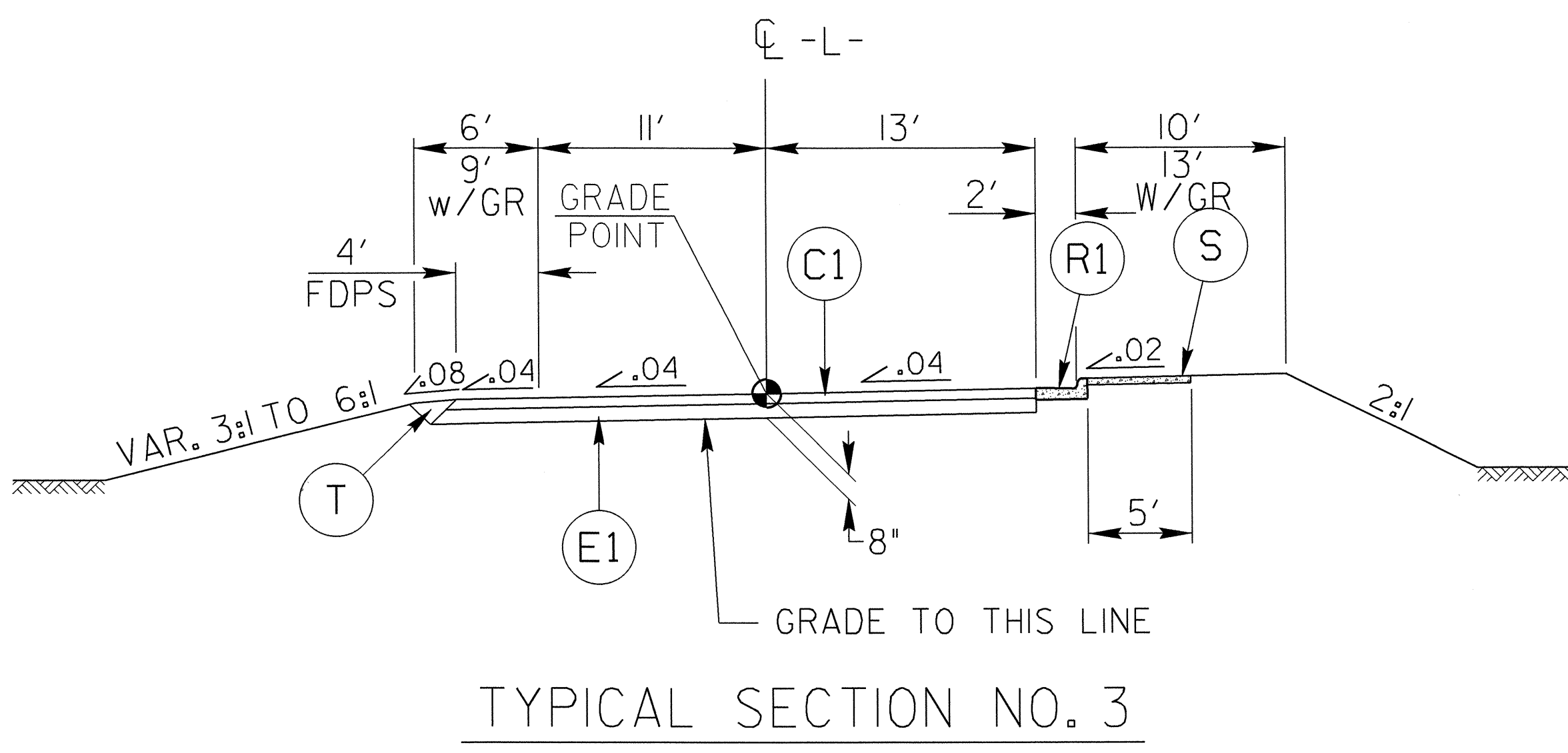
USE TYPICAL SECTION NO. 2 FOR:

- L- STA. 13+25.00 TO -L- STA. 13+50.00
- L- STA. 17+20.00 TO -L- STA. 17+60.00

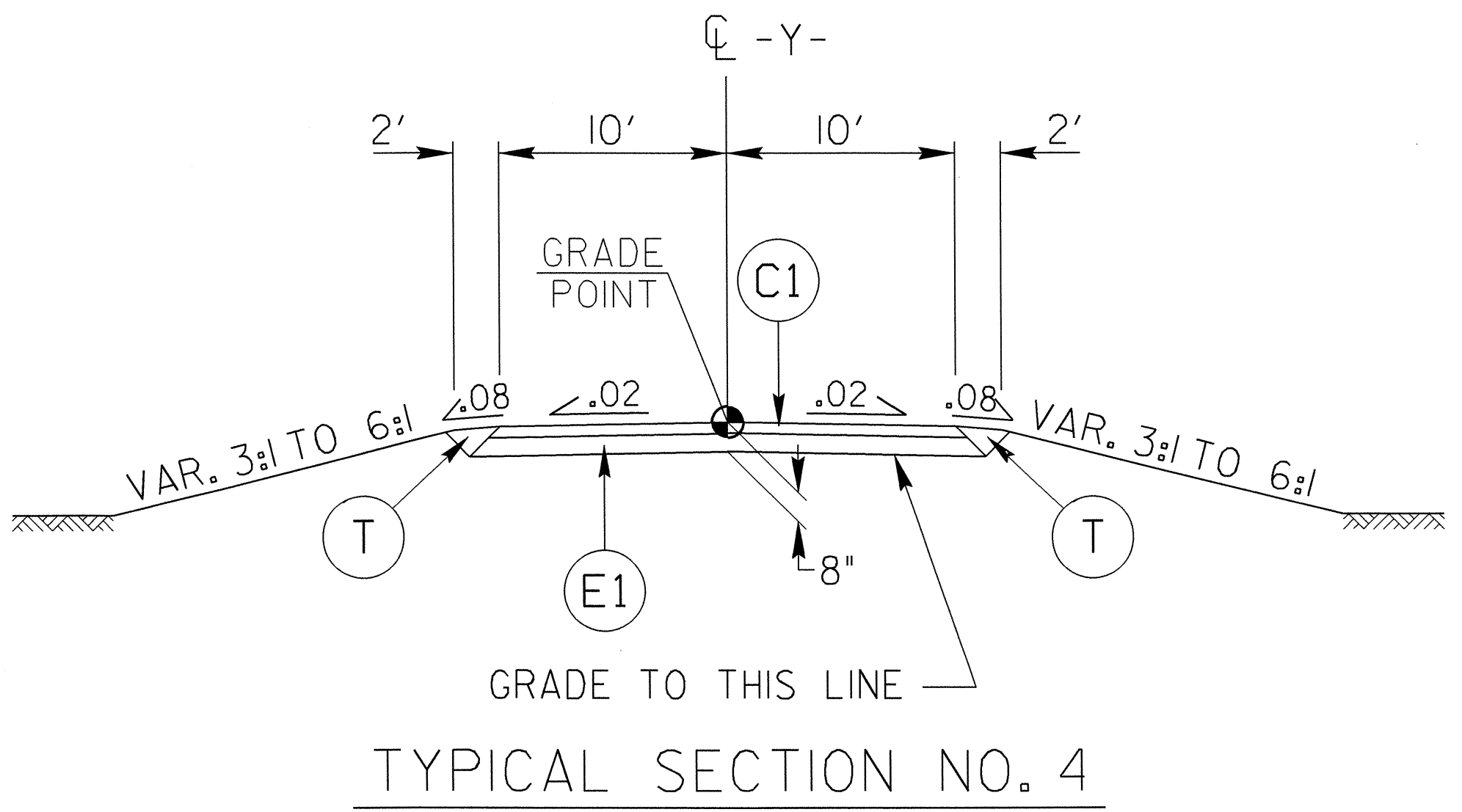
6/22/99

PROJECT REFERENCE NO. B-4588	SHEET NO. 2-A
ROADWAY DESIGN ENGINEER MICHAEL W. LITTLE SEAL 22887	PAVEMENT DESIGN ENGINEER CLARK S. MORRISON SEAL 22898

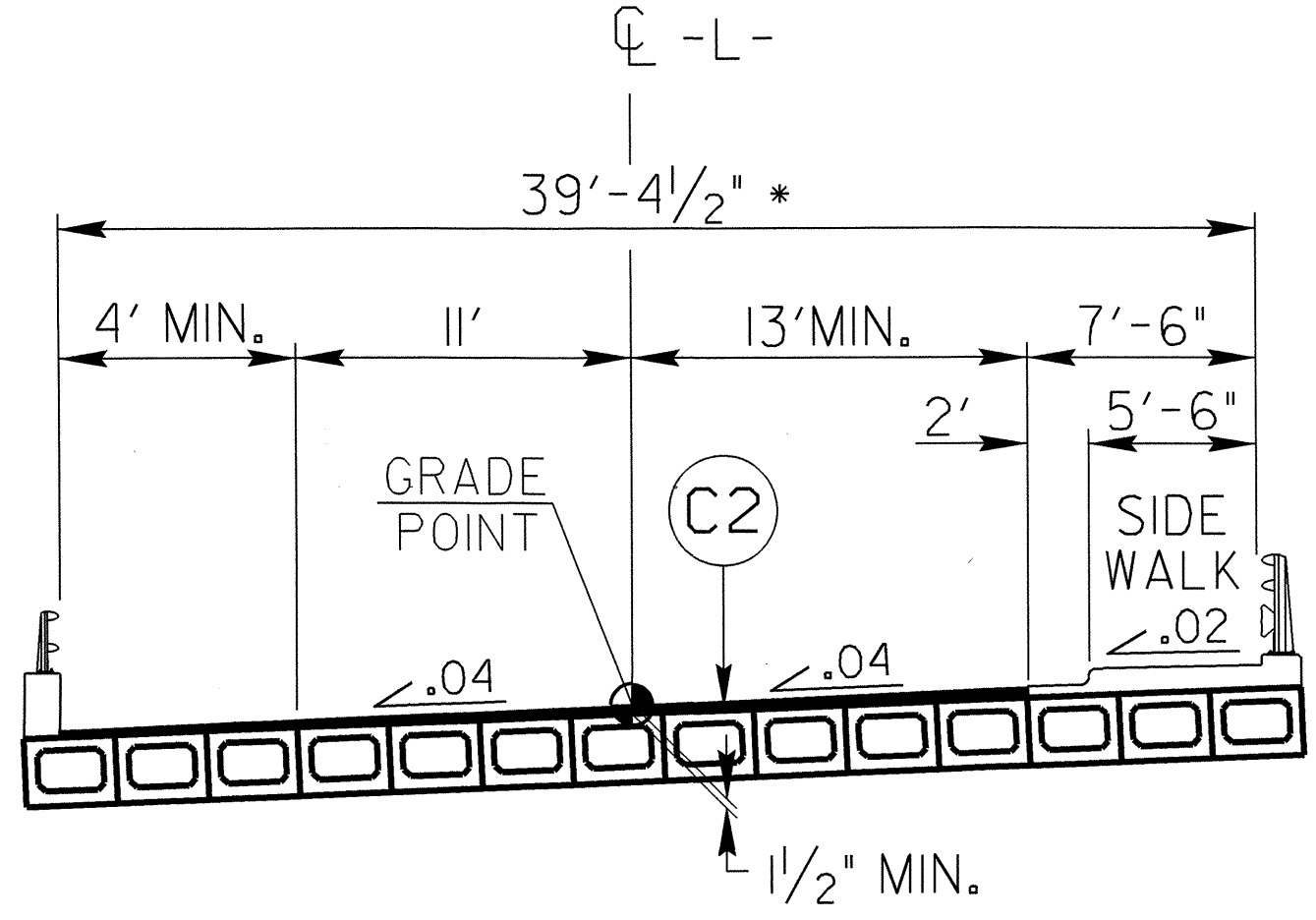
C1	2 1/2" ASPHALT CONC. SURFACE COURSE, TYPE SF9.5A
C2	VAR. DEPTH ASPHALT CONC. SURFACE COURSE, TYPE SF9.5A
E1	5 1/2" ASPHALT CONC. BASE COURSE, TYPE B25.0B
E2	VAR. DEPTH ASPHALT CONC. BASE COURSE, TYPE B25.0B
R1	2'-6" CONC. CURB AND GUTTER
R2	SHOULDER BERM GUTTER
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL



USE TYPICAL SECTION NO. 3 FOR:  
 -L- STA. 13+50.00 TO -L- STA. 15+09.93 (BEGIN BRIDGE)  
 -L- STA. 16+60.07 (END BRIDGE) TO -L- STA. 17+20.00

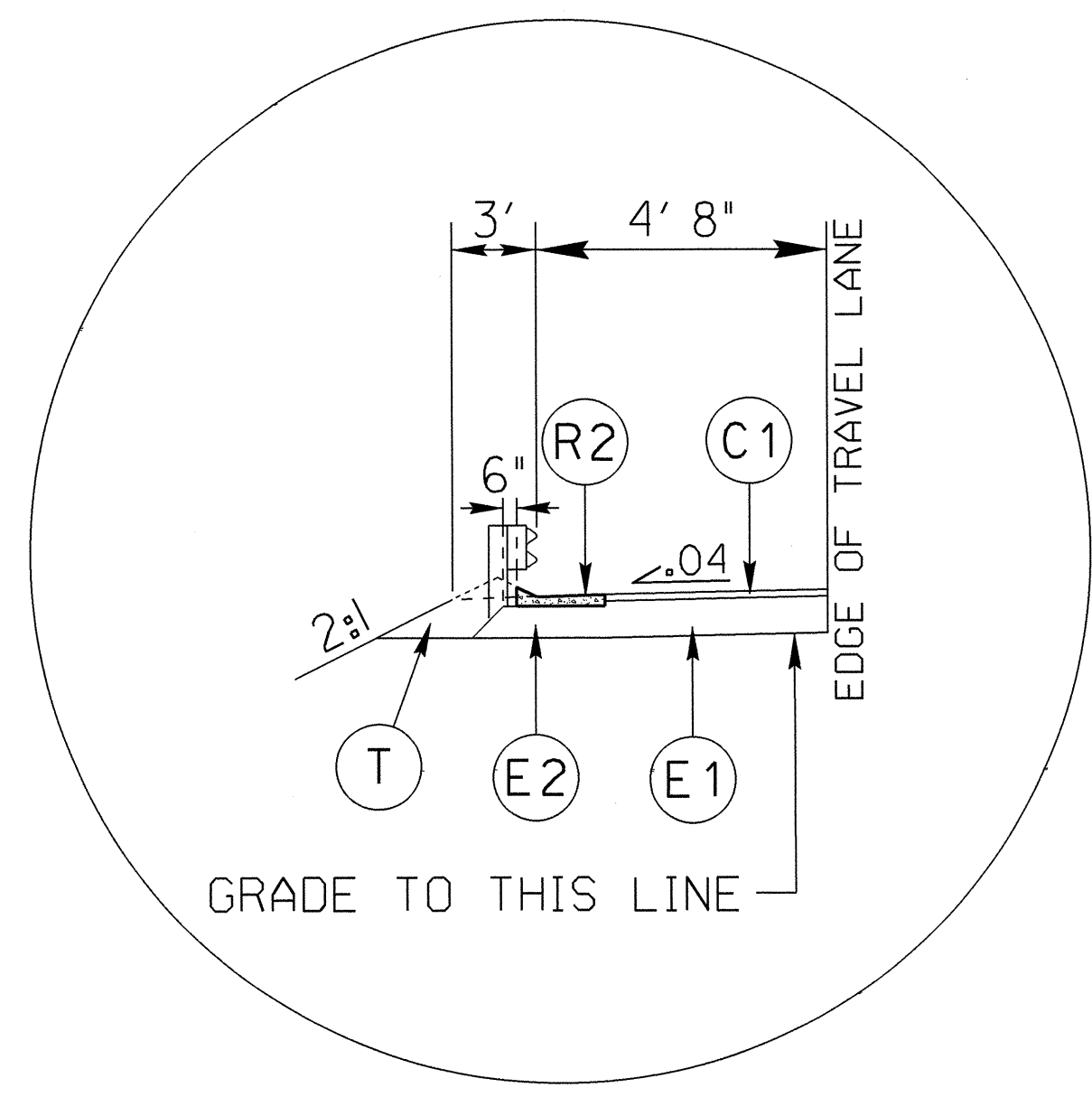


USE TYPICAL SECTION NO. 4 FOR:  
 -Y- STA. 10+68.57 TO -Y- STA. 11+75.00  
 NOTE:  
 TRANSITION FROM T.S. NO. 4 TO EXISTING  
 -Y- STA. 11+75.00 TO -Y- STA. 12+00.00



NOTE:  
 BICYCLE SAFE RAIL REQUIRED ACROSS BRIDGE

DETAIL SHOWING ASPHALT WEARING SURFACE ON BOX BEAM BRIDGE  
 -L- STA. 15+09.93 TO -L- STA. 16+60.07  
 \*EXTRA WIDTH REQUIRED TO ACCOMMODATE CURVE ON BRIDGE  
 SEE STRUCTURE PLANS



INSET NO. 1  
 Use with Typical Section No. 3  
 USE INSET NO. 1 AT THE FOLLOWING LOCATIONS:  
 -L- STA. 16+72.25 (LT.) TO -L- STA. 16+89.75 (LT.)

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STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# SUMMARY OF QUANTITIES

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C202749

ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description
000100000-N	800	Lump Sum		MOBILIZATION	304500000-E	862	37.5	LF	STEEL BM GUARDRAIL, SHOP CURVED	600600000-E	1610	305	TON	STONE FOR EROSION CONTROL, CLASS A
003000000-N	SP	Lump Sum		BRIDGE APPROACH FILL - SUB REGIONAL TIER, STATION ***** (15+85)	315000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS	600900000-E	1610	75	TON	STONE FOR EROSION CONTROL, CLASS B
005000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUBBING	319500000-N	862	1	EA	GUARDRAIL ANCHOR UNITS, TYPE AT-1	601200000-E	1610	325	TON	SEDIMENT CONTROL STONE
005700000-E	226	200	CY	UNDERCUT EXCAVATION	321500000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE III	601500000-E	1615	2.5	ACR	TEMPORARY MULCHING
006300000-N	SP	Lump Sum		GRADING	327000000-N	SP	3	EA	GUARDRAIL ANCHOR UNITS, TYPE 350	601800000-E	1620	100	LB	SEED FOR TEMPORARY SEEDING
010600000-E	230	2,600	CY	BORROW EXCAVATION	364900000-E	876	2	TON	RIP RAP, CLASS B	602100000-E	1620	1.5	TON	FERTILIZER FOR TEMPORARY SEEDING
019500000-E	265	200	CY	SELECT GRANULAR MATERIAL	365600000-E	876	1,010	SY	GEOTEXTILE FOR DRAINAGE	602400000-E	1622	200	LF	TEMPORARY SLOPE DRAINS
019600000-E	270	1,110	SY	GEOTEXTILE FOR SOIL STABILIZATION	407200000-E	903	95	LF	SUPPORTS, 3-LB STEEL U-CHANNEL	602900000-E	SP	700	LF	SAFETY FENCE
031800000-E	300	37	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES	409600000-N	904	2	EA	SIGN ERECTION, TYPE D	603000000-E	1630	170	CY	SILT EXCAVATION
032000000-E	300	10	SY	FOUNDATION CONDITIONING GEOTEXTILE	410200000-N	904	1	EA	SIGN ERECTION, TYPE E	603600000-E	1631	2,400	SY	MATting FOR EROSION CONTROL
033520000-E	305	24	LF	15" DRAINAGE PIPE	411610000-N	904	1	EA	SIGN ERECTION, RELOCATE, TYPE **** (GROUND MOUNTED) (E)	603700000-E	SP	30	SY	COIR FIBER MAT
033585000-E	305	2	EA	*** DRAINAGE PIPE ELBOWS (15")	415500000-N	907	6	EA	DISPOSAL OF SIGN SYSTEM, U-CHANNEL	604200000-E	1632	800	LF	1/4" HARDWARE CLOTH
112100000-E	520	50	TON	AGGREGATE BASE COURSE	415800000-N	907	2	EA	DISPOSAL OF SIGN SYSTEM, WOOD	604800000-E	SP	45	SY	FLOATING TURBIDITY CURTAIN
122000000-E	545	50	TON	INCIDENTAL STONE BASE	419200000-N	907	1	EA	DISPOSAL OF SUPPORT, U-CHANNEL	607000000-N	1639	6	EA	SPECIAL STILLING BASINS
148900000-E	610	700	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B	440000000-E	1110	465	SF	WORK ZONE SIGNS (STATIONARY)	607101000-E	SP	50	LF	WATTLE
152500000-E	610	520	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A	441000000-E	1110	94	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)	607102000-E	SP	10	LB	POLYACRYLAMIDE (PAM)
157500000-E	620	70	TON	ASPHALT BINDER FOR PLANT MIX	441000000-E	1110	94	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)	607103000-E	1640	100	LF	COIR FIBER BAFFLE
200000000-N	806	10	EA	RIGHT OF WAY MARKERS	444500000-E	1145	64	LF	BARRICADES (TYPE III)	607105000-E	SP	3	EA	*** SKIMMER (1-1/2")
228600000-N	840	1	EA	MASONRY DRAINAGE STRUCTURES	481000000-E	1205	6,176	LF	PAINT PAVEMENT MARKING LINES (4")	608400000-E	1660	2.5	ACR	SEEDING & MULCHING
236700000-N	840	1	EA	FRAME WITH TWO GRATES, STD 840.29	532560000-E	1510	657	LF	6" WATER LINE	608700000-E	1660	2.5	ACR	MOWING
254900000-E	846	330	LF	2'-6" CONCRETE CURB & GUTTER	554000000-E	1515	3	EA	6" VALVE	609000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
255600000-E	846	25	LF	SHOULDER BERM GUTTER	564900000-N	1515	1	EA	RECONNECT WATER METER	609300000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
259100000-E	848	180	SY	4" CONCRETE SIDEWALK	580000000-E	1530	588	LF	ABANDON 6" UTILITY PIPE	609600000-E	1662	50	LB	SEED FOR SUPPLEMENTAL SEEDING
260500000-N	848	2	EA	CONCRETE CURB RAMP	587140000-E	1550	155	LF	TRENCHLESS INSTALLATION OF 6" IN SOIL	610800000-E	1665	1.5	TON	FERTILIZER TOPDRESSING
303000000-E	862	200	LF	STEEL BM GUARDRAIL	587141000-E	1550	155	LF	TRENCHLESS INSTALLATION OF 6" NOT IN SOIL	611450000-N	1667	10	MHR	SPECIALIZED HAND MOWING
					600000000-E	1605	2,010	LF	TEMPORARY SILT FENCE	611700000-N	SP	16	EA	RESPONSE FOR EROSION CONTROL
										612300000-E	1670	0.15	ACR	REFORESTATION





STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS

**SUMMARY OF 2'-6" CURB AND GUTTER  
 IN FEET**

BEGIN STATION	END STATION	LOCATION	LENGTH
-L- STA. 13+07.00	-L- STA. 15+00.49	RT.	213.00
-L- STA. 16+69.68	-Y- STA. 10+43.57	RT.	113.75
TOTAL			326.75
SAY			330.00

**SUMMARY OF SHOULDER BERM GUTTER  
 IN FEET**

BEGIN STATION	END STATION	LOCATION	LENGTH
-L- STA. 14+90.69	-L- STA. 14+97.54	LT.	6.85
-L- STA. 16+72.25	-L- STA. 16+89.75	LT.	17.50
TOTAL			24.35
SAY			25.00

**SUMMARY OF PAVEMENT REMOVAL  
 IN SQUARE YARDS**

BEGIN STATION	END STATION	LOCATION	ASPHALT REMOVAL	ASPHALT BREAK-UP
-L- STA. 13+05.00	-L- STA. 13+50.00	LT.	5.00	
-L- STA. 13+50.00	-L- STA. 15+14.00	LT./RT.	364.00	
-L- STA. 16+55.00	-L- STA. 17+20.00	LT./RT.	144.00	
-Y- STA. 10+13.01	-Y- STA. 11+50.00	LT./RT.		355.00
-Y- STA. 11+50.00	-Y- STA. 11+75.00	LT./RT.	3.00	
TOTAL			516.00	355.00
SAY			520.00	360.00

NOTE: Approximate quantities only. Unclassified excavation, 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".

STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS

**SUMMARY OF EARTHWORK**  
 IN CUBIC YARDS

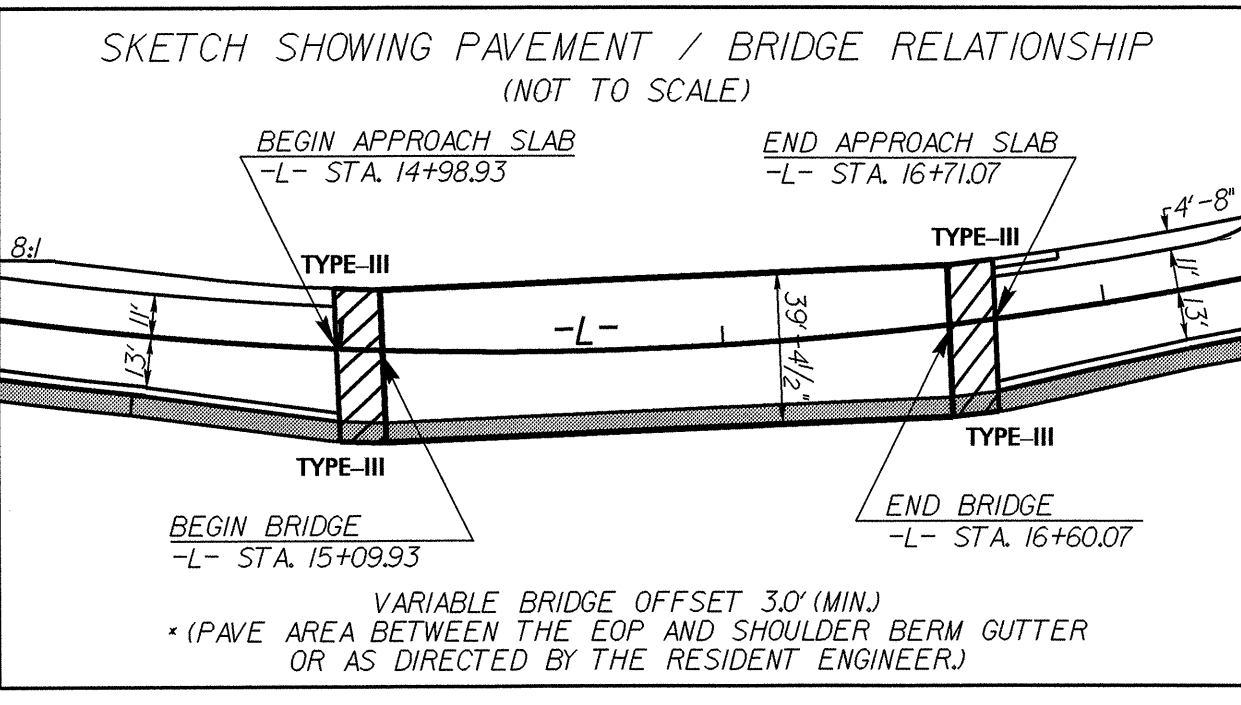
LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
-L- STA. 11+00.00 TO -L- STA. 15+09.93	29		1,406	1,377	
SUBTOTAL 1	29		1,406	1,377	
-L- STA. 16+60.07 TO -L- STA. 19+50.00	32		453	421	
-Y- STA. 10+13.01 TO -Y- STA. 12+00.00	0		541	541	
SUBTOTAL 2	32		994	962	
PROJECT SUBTOTAL	61		2,400	2,339	
PROJECT TOTAL	61		2,400	2,339	
EST. 5% TO REPLACE TOPSOIL ON BORROW PIT	0			117	
GRAND TOTAL	61		2,400	2,456	
SAY	100 CY			2,600 CY	

PER GEOTECH RECOMMENDATION, ESTIMATED 200 CUBIC YARDS OF UNDERCUT TO BE USED AT THE DISCRETION OF THE RESIDENT ENGINEER

NOTE: Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

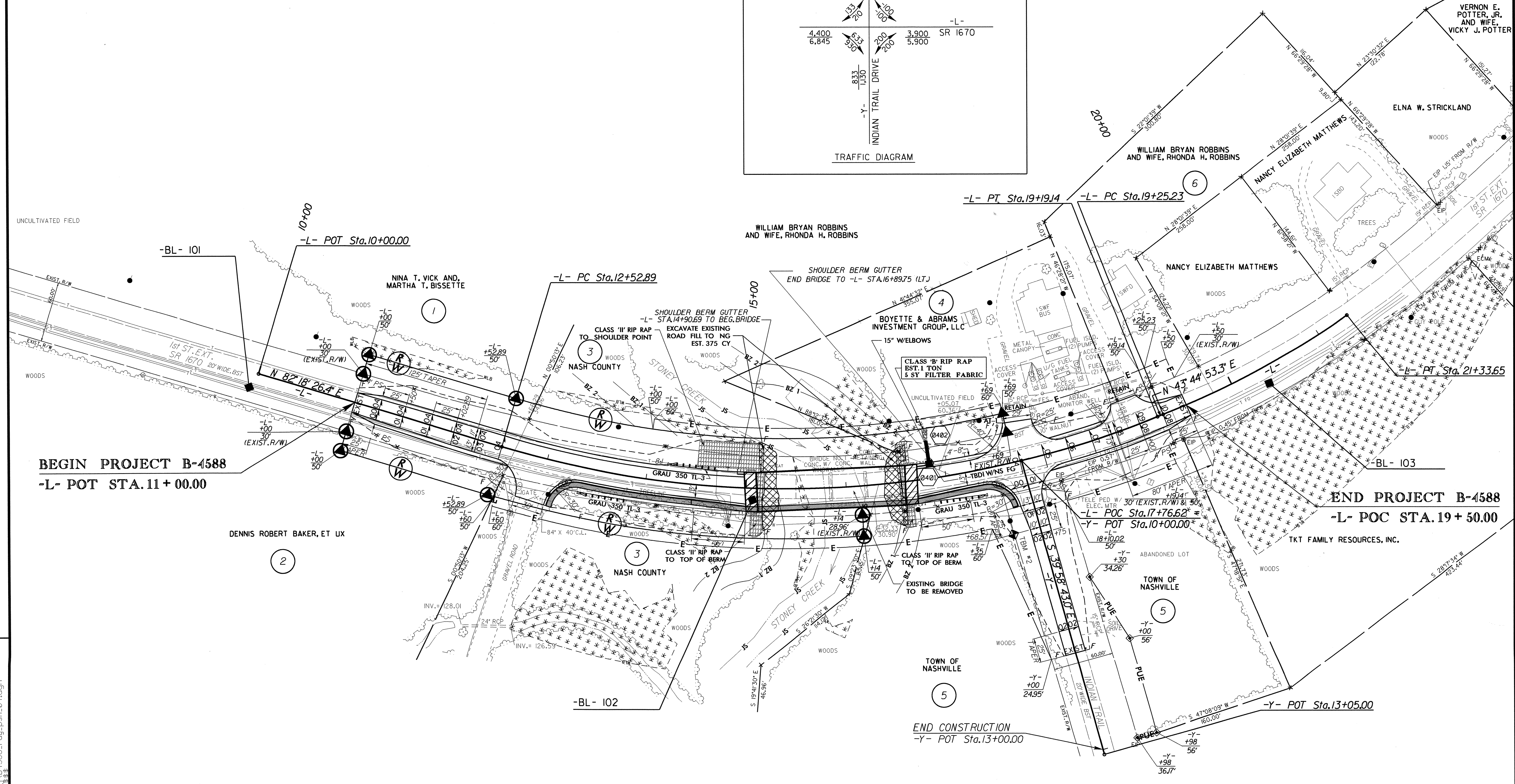
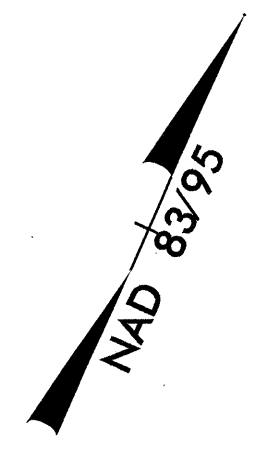
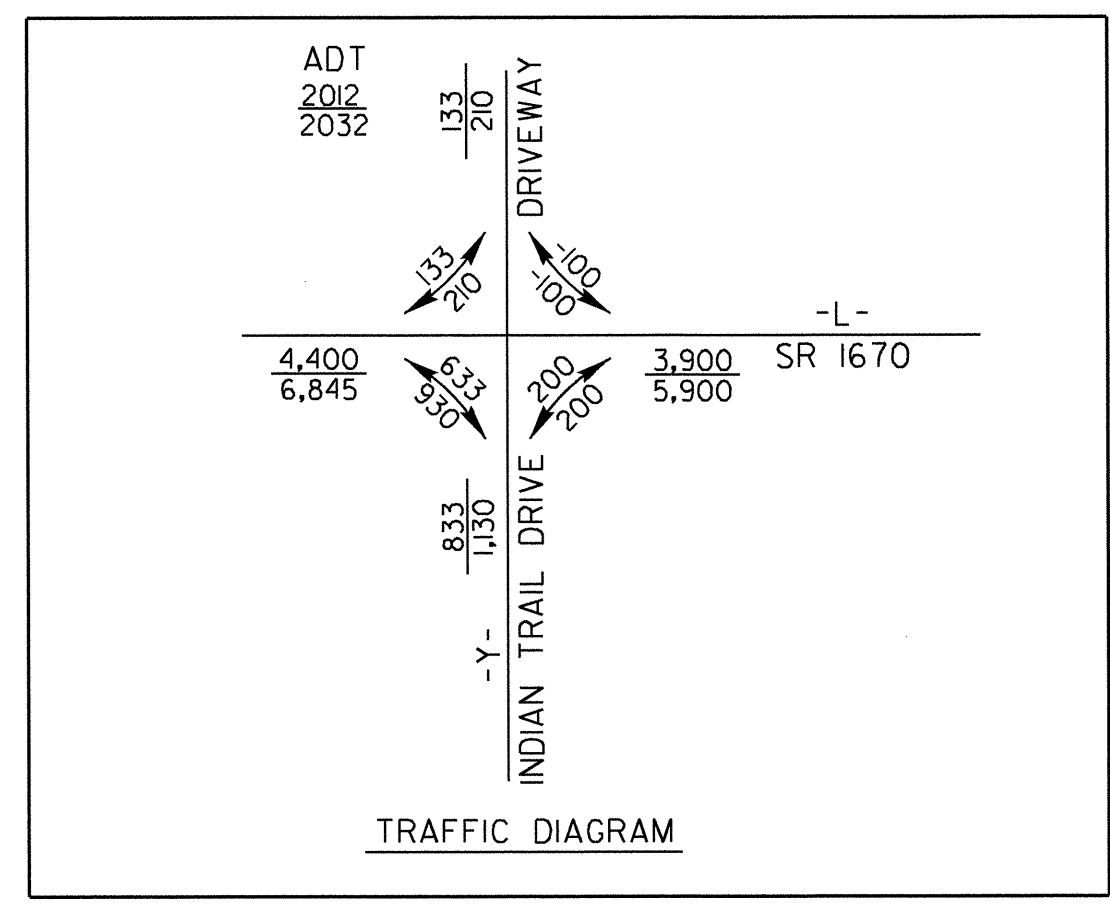
NOTE: Approximate quantities only. Unclassified excavation, fine grading, clearing and grubbing, breaking of existing pavement, and removal of existing pavement will be paid for at the lump sum price for "Grading".





-L- CURVE DATA

PI Sta 15+99.8	PI Sta 20+29.90
$\Delta = 38^{\circ} 33' 33.1''$ (LT)	$\Delta = 13^{\circ} 10' 02.1''$ (LT)
$D = 5^{\circ} 47' 14.8''$	$D = 6^{\circ} 19' 02.7''$
$L = 666.26'$	$L = 208.43'$
$T = 346.30'$	$T = 104.67'$
$R = 990.00'$	$R = 906.95'$
SE = SEE PLAN	SE = SEE PLAN



BEGIN PROJECT B-4588  
-L- POT STA. 11 + 00.00

END PROJECT B-4588  
-L- POC STA. 19 + 50.00

END CONSTRUCTION  
-Y- POT Sta. 13+00.00

NOTES: (1) SEE SHEET 5 FOR -L- & -Y- PROFILES  
(2) SEE SHEETS S-1 TO S-31 FOR STRUCTURE DETAILS

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MERRY WELLS, JR.



BM \*1 EL = 134.33  
SET RAILROAD SPIKE IN  
BASE OF 18" TWIN ELM TREE  
-BL- STA.5+45 (63' RT.)  
-L- STA.10+00 S 77° 16' 08.5" W DIST 560.41'

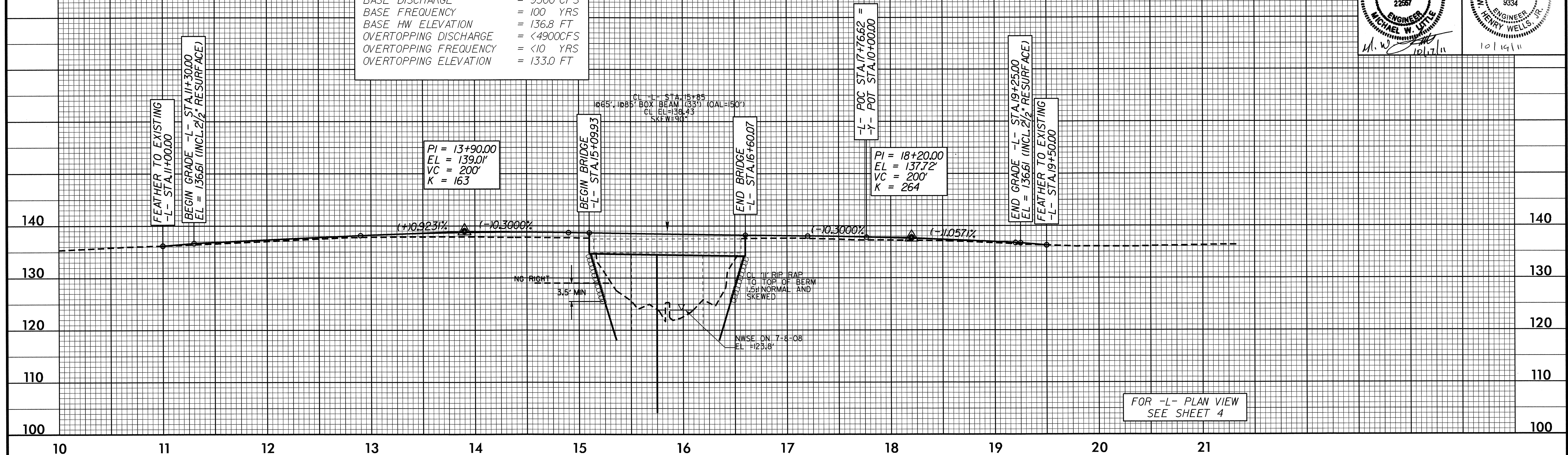
**STRUCTURE HYDRAULIC DATA**

DESIGN DISCHARGE = 6500 CFS  
DESIGN FREQUENCY = 25 YRS  
DESIGN HW ELEVATION = 136.0 FT  
BASE DISCHARGE = 9300 CFS  
BASE FREQUENCY = 100 YRS  
BASE HW ELEVATION = 136.8 FT  
OVERTOPPING DISCHARGE = <4900CFS  
OVERTOPPING FREQUENCY = <10 YRS  
OVERTOPPING ELEVATION = 133.0 FT

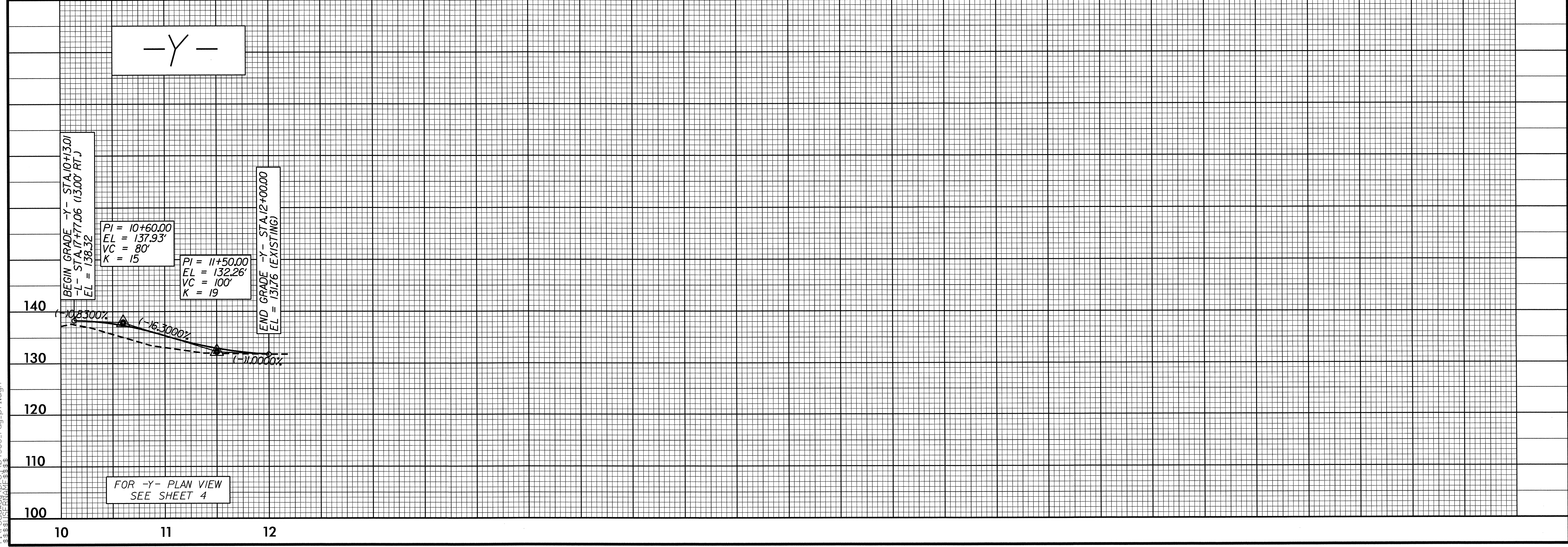
-L-

BM \*2 EL = 136.01  
CHISELED "X" IN TOP FLANGE  
BOLT OF FIRE HYDRANT  
-BL- STA.18+55 (9' RT.)  
-L- STA.17+53 (70' RT.)

BM \*3 EL = 158.78  
SET 8" GALVANIZED NAIL  
IN BASE OF 28" PINE TREE  
-BL- STA.28+87 N 14° 51' 39.4" E DIST 63.64'  
-L- STA.21+34 N 21° 06' 27.3" E DIST 711.20'



-Y-



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