

09/08/99

See Sheet 1-A For Index of Sheets

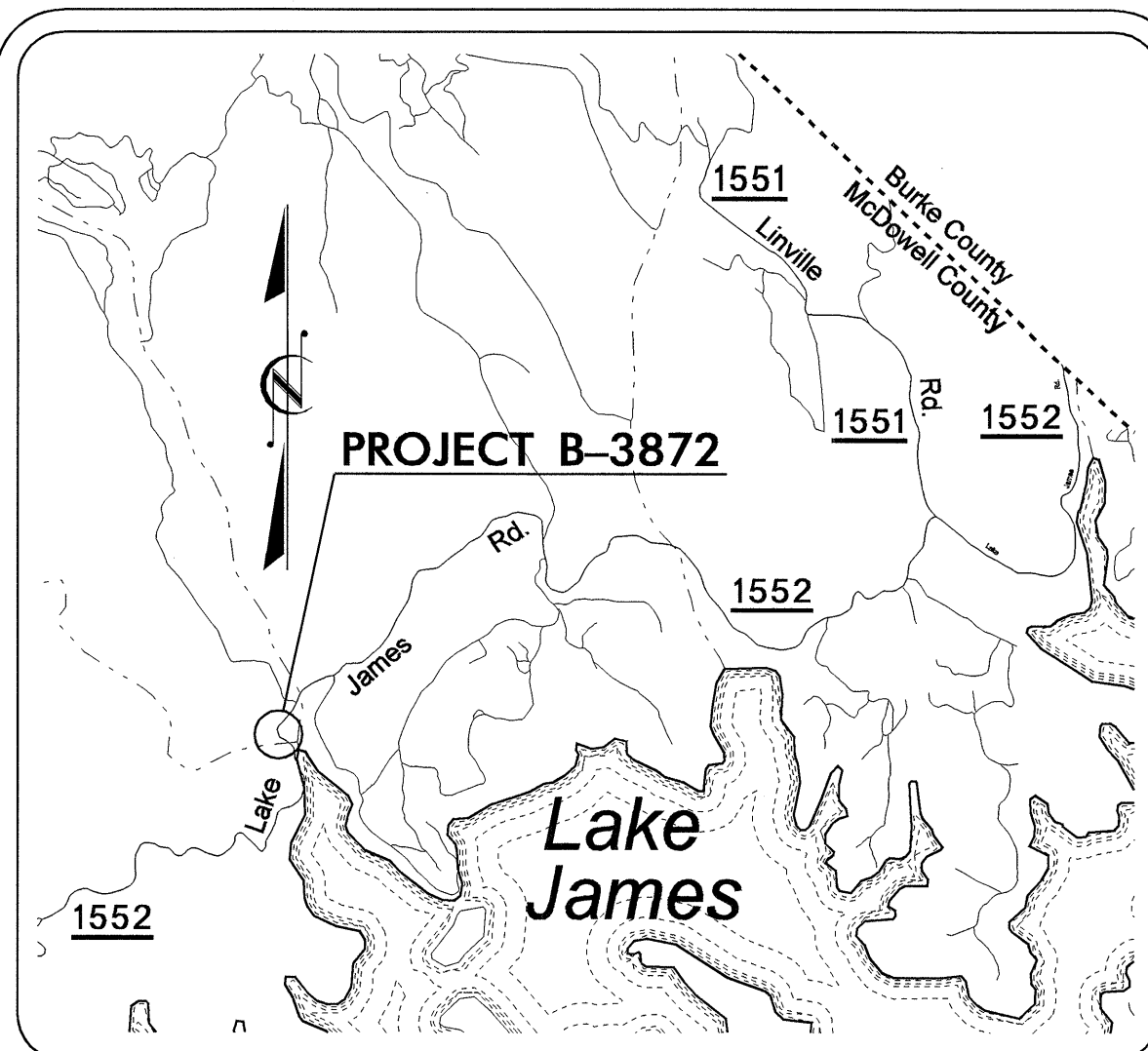
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

McDOWELL COUNTY

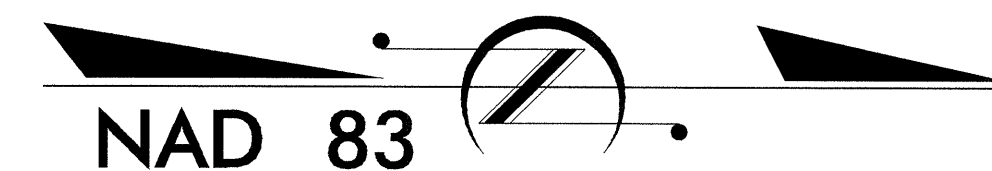
**LOCATION: BRIDGE NO. 195 ON SR 1552
OVER BEAR CREEK**

**TYPE OF WORK: GRADING, DRAINAGE, PAVING, SIGNALS
AND STRUCTURE**

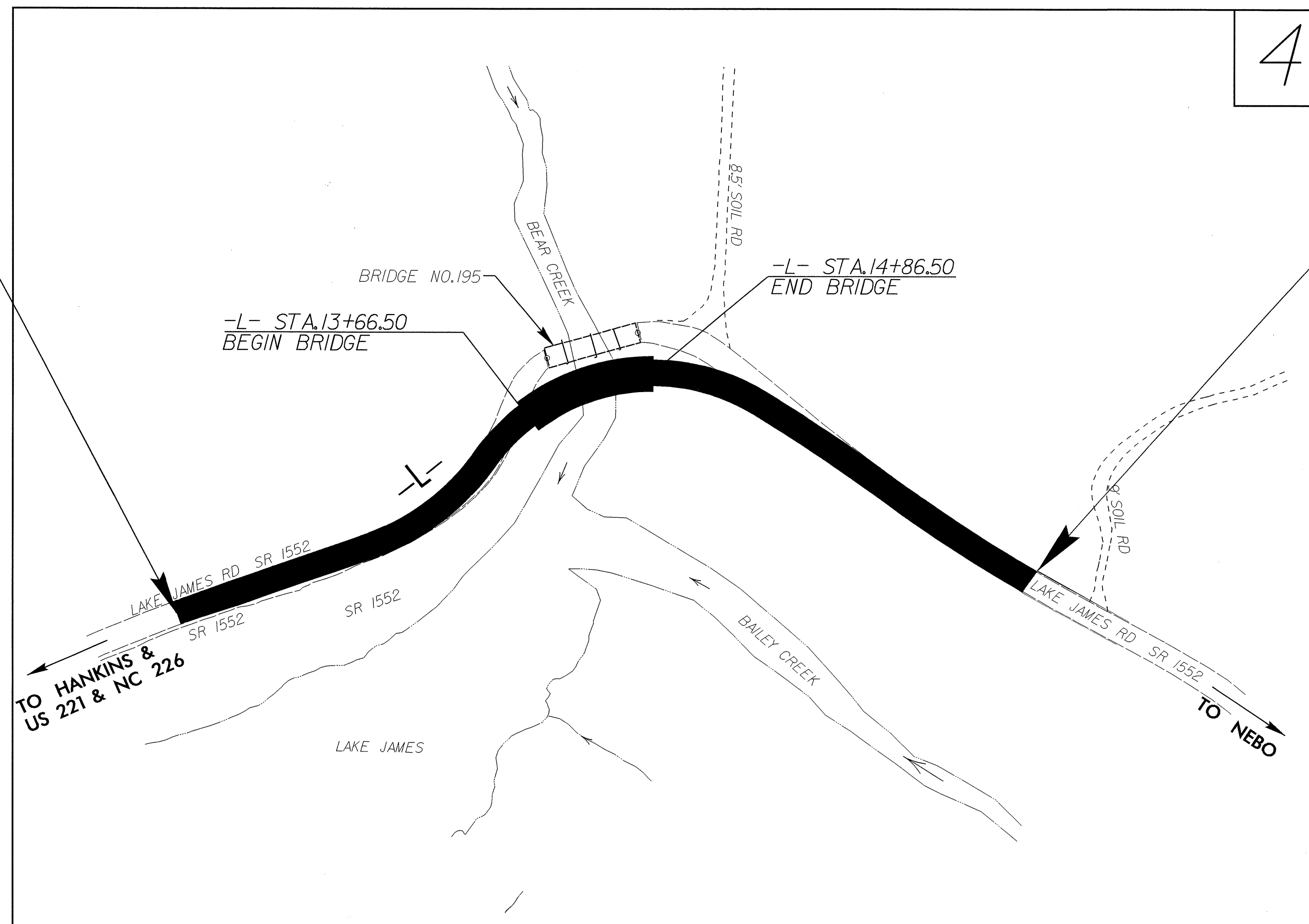
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3872	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33316.1.1	BRZ-1552(8)	PE	
33316.2.2	BRZ-1552(8)	RW, UTIL	
33316.3.1	BRZ-1552(10)	CONST	



VICINITY MAP



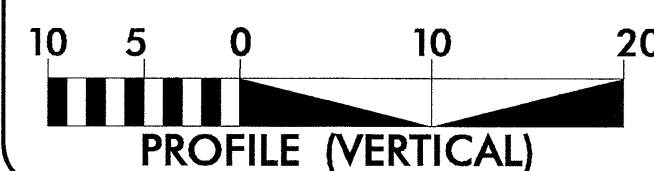
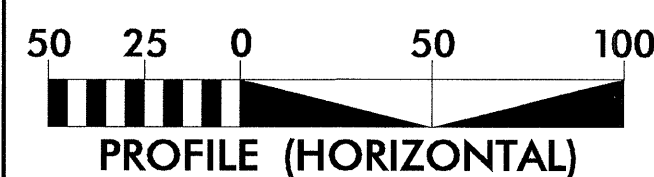
STA. 10+00.00 -L- BEGIN TIP PROJECT B-3872



STA. 18+00.00 -L- END TIP PROJECT B-3872

** DESIGN EXCEPTION REQUIRED FOR DESIGN SPEED.

GRAPHIC SCALES



DESIGN DATA

ADT 2007 = 250
 ADT 2027 = 567
 DHV = 10 %
 D = 60 %
 T = 3 % *
 **V = 20 MPH
 FUNC CLASS = RURAL LOCAL
 * TTST 1% DUAL 2%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-3872 = 0.129 MILES
 LENGTH STRUCTURE TIP PROJECT B-3872 = 0.023 MILES
 TOTAL LENGTH OF TIP PROJECT B-3872 = 0.152 MILES

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
 NOVEMBER 29, 2004

LETTING DATE:
 AUGUST 21, 2007

G. E. BREW, PE
 PROJECT ENGINEER

W. T. BEST
 PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

Paul Atkins
 5/15/07
 PAUL ATKINSON
 P.E.

SIGNATURE:

ROADWAY DESIGN ENGINEER

Gregory E. Brew
 5-15-07
 GREGORY E. BREW
 P.E.

SIGNATURE:

DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA

Out McMillan
 P.E.

STATE DESIGN ENGINEER
 DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION

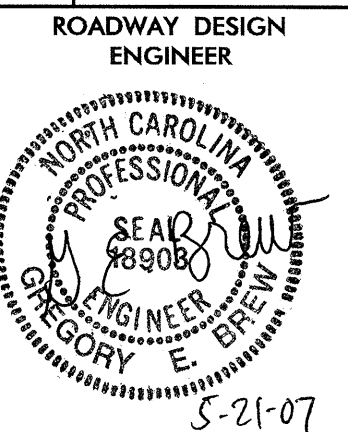
APPROVED
 DIVISION ADMINISTRATOR

DATE

15-MAY-2007 09:01
 r:\roadway\proj\1503872_rdy_tsh.dgn
 \$\$\$USERNAME\$\$\$

TIP PROJECT: B-3872

CONTRACT: C201363



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
INDEX OF SHEETS

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C THRU 1-D	SURVEY CONTROL SHEETS
2 THRU 2-A	PAVEMENT SCHEDULE, TYPICAL SECTIONS, WEDGING DETAIL
2-B	DETAIL FOR ANCHORAGE FOR FRAMES - BRICK OR CONCRETE
3	SUMMARY OF QUANTITIES
3-A	SUMMARY OF DRAINAGE QUANTITIES, SUMMARY OF GUARDRAIL
3-B	EARTHWORK SUMMARY, AND REMOVAL OF ASPHALT PAVEMENT SUMMARY
4 THRU 6	PLAN AND PROFILE SHEETS
TCP-1 THRU TCP-10	TRAFFIC CONTROL PLANS
EC-1 THRU EC-5	EROSION CONTROL PLANS
RF-1	REFORESTATION PLANS
SIG-1 THRU SIG-4	SIGNAL PLANS
UO-1	UTILITIES BY OTHERS PLANS
X-1A	CROSS-SECTION SUMMARY SHEET
X-1 THRU X-27	CROSS-SECTION SHEETS
S-1 THRU S-36	STRUCTURE PLANS
W-1 THRU W-3	RETAINING WALL PLANS

GENERAL NOTES: 2006 SPECIFICATIONS EFFECTIVE: 07-18-06

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 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.

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 NOT SHOWN ON THE PLANS WILL BE PAID FOR AT THE CONTRACT PRICE FOR "TEMPORARY SHORING" OR "TEMPORARY SHORING-BARRIER SUPPORTED" DEPENDING UPON THE LOCATION OF THE SHORING.

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:
THE ONLY UTILITY OWNER ON THIS PROJECT IS VERIZON SOUTH. ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

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

2006 ROADWAY STANDARD DRAWINGS EFF. 07-18-06

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

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement

DIVISION 3 - PIPE CULVERTS	
300.02	Method of Pipe Installation - Method 'B'

DIVISION 4 - MAJOR STRUCTURES	
422.10	Reinforced Bridge Approach Fills

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
815.03	Pipe Underdrain and Blind Drain
816.04	Markers for Drainage Structure and Concrete Pad
840.00	Concrete Base Pad for Drainage Structures
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.24	Frames and Narrow Slot Sag Grates
840.27	Brick Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.45	Precast Drainage Structure
840.46	Traffic Bearing Precast Drainage Structure
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb & Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.02	Guide for Rip Rap at Pipe Outlets

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

Table listing symbols for boundaries and property: State Line, County Line, Township Line, City Line, Reservation Line, Property Line, Existing Iron Pin, Property Corner, Property Monument, Parcel/Sequence Number, Existing Fence Line, Proposed Woven Wire Fence, Proposed Chain Link Fence, Proposed Barbed Wire Fence, Existing Wetland Boundary, Proposed Wetland Boundary, Existing High Quality Wetland Boundary, Existing Endangered Animal Boundary, Existing Endangered Plant Boundary.

BUILDINGS AND OTHER CULTURE:

Table listing symbols for buildings and other culture: Gas Pump Vent or U/G Tank Cap, Sign, Well, Small Mine, Foundation, Area Outline, Cemetery, Building, School, Church, Dam.

HYDROLOGY:

Table listing symbols for hydrology: Stream or Body of Water, Hydro, Pool or Reservoir, River Basin Buffer, Flow Arrow, Disappearing Stream, Spring, Swamp Marsh, Proposed Lateral, Tail, Head Ditch, False Sump.

RAILROADS:

Table listing symbols for railroads: Standard Gauge, RR Signal Milepost, Switch, RR Abandoned, RR Dismantled.

RIGHT OF WAY:

Table listing symbols for 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 Utility Easement.

ROADS AND RELATED FEATURES:

Table listing symbols for roads and related features: Existing Edge of Pavement, Existing Curb, Proposed Slope Stakes Cut, Proposed Slope Stakes Fill, Proposed Wheel Chair Ramp, Curb Cut for Future Wheel Chair Ramp, Existing Metal Guardrail, Proposed Guardrail, Existing Cable Guiderail, Proposed Cable Guiderail, Equaility Symbol, Pavement Removal.

VEGETATION:

Table listing symbols for vegetation: Single Tree, Single Shrub, Hedge, Woods Line, Orchard, Vineyard.

EXISTING STRUCTURES:

Table listing symbols for 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, Paved Ditch Gutter, Storm Sewer Manhole, Storm Sewer.

UTILITIES:

Table listing symbols for 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:

Table listing symbols for 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:

Table listing symbols for 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:

Table listing symbols for gas: Gas Valve, Gas Meter, Recorded U/G Gas Line, Designated U/G Gas Line (S.U.E.*), Above Ground Gas Line.

SANITARY SEWER:

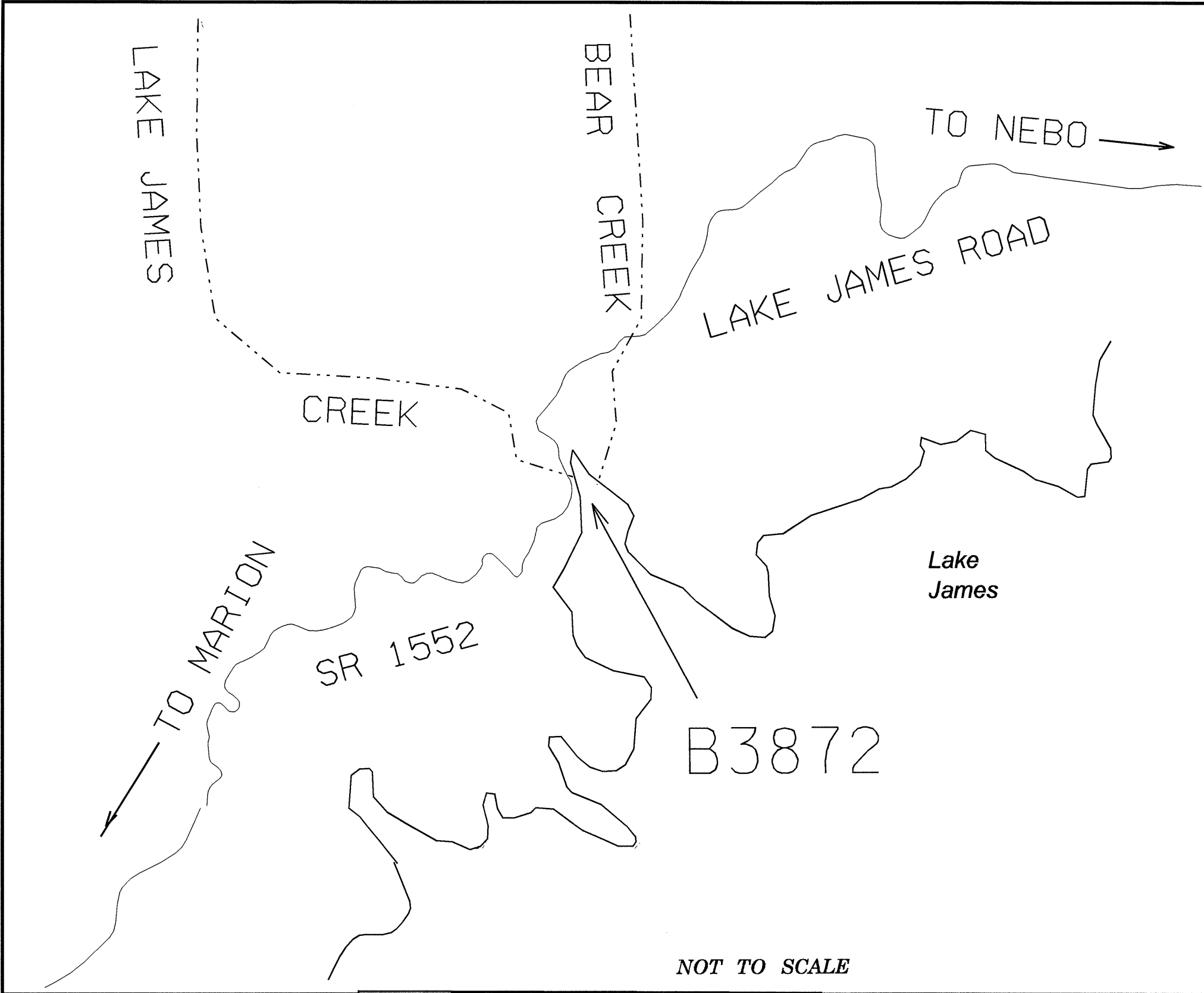
Table listing symbols for sanitary sewer: Sanitary Sewer Manhole, Sanitary Sewer Cleanout, U/G Sanitary Sewer Line, Above Ground Sanitary Sewer, Recorded SS Forced Main Line, Designated SS Forced Main Line (S.U.E.*).

MISCELLANEOUS:

Table listing symbols for 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, A/G Tank; Water, Gas, Oil, U/G Test Hole (S.U.E.*), Abandoned According to Utility Records, End of Information.

SURVEY CONTROL SHEET

PROJECT REFERENCE NO.	SHEET NO.
B-3872	1-C
LOCATION AND SURVEY	



NOTES

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/B3872_LS_CONTROL_050107.TXT](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project/B3872_LS_CONTROL_050107.TXT)

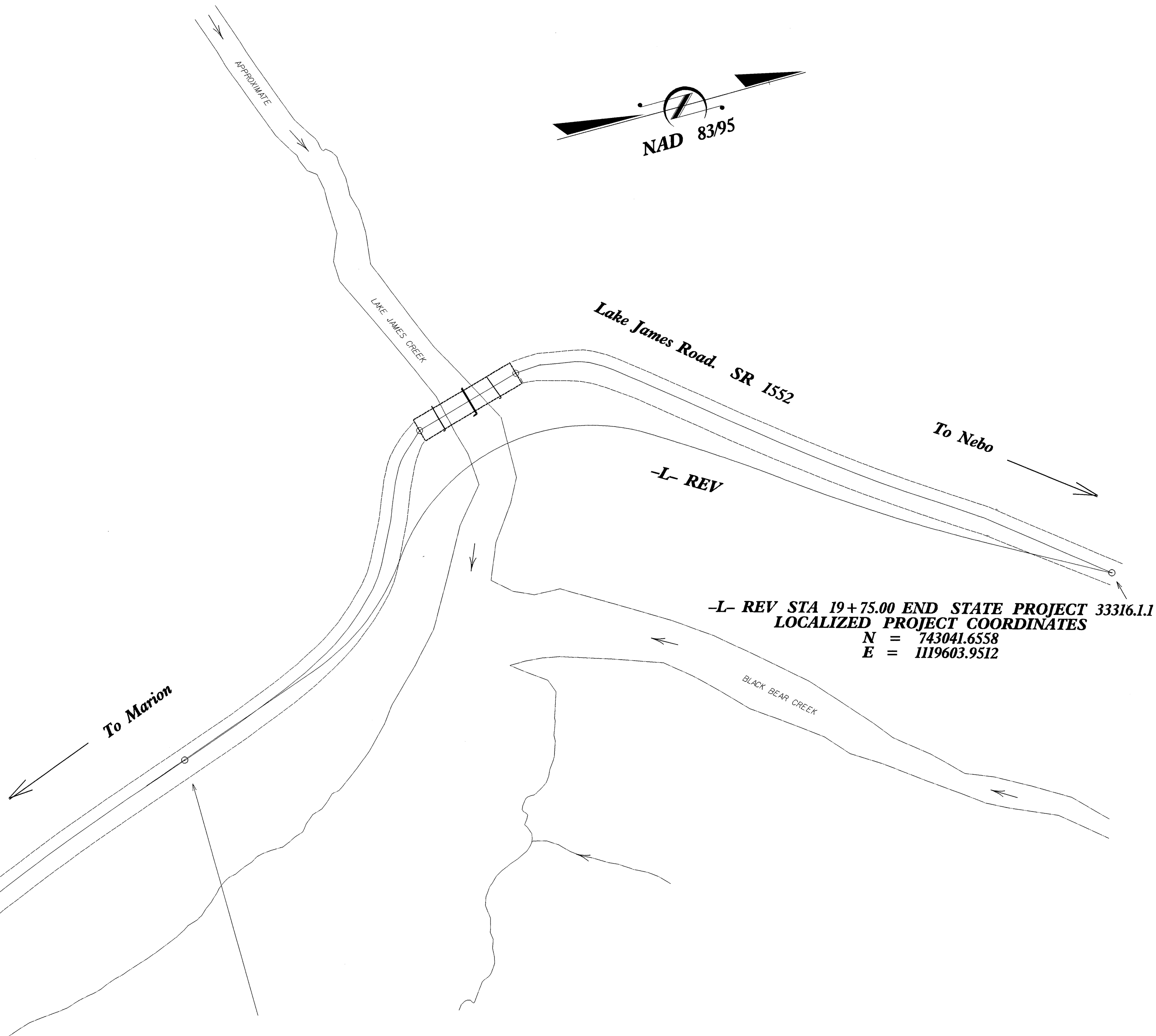
SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

- 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)

NCDOT GPS STATION B3872-2
 LOCALIZED PROJECT COORDINATES
 N = 741477.5740
 E = 1119421.8280

NCDOT GPS STATION B3872-1
 LOCALIZED PROJECT COORDINATES
 N = 740563.5976
 E = 1119411.2290



-L- REV STA 19+75.00 END STATE PROJECT 33316.1.1
 LOCALIZED PROJECT COORDINATES
 N = 743041.6558
 E = 1119603.9512

-L- REV STA 10+00.00 BEGIN STATE PROJECT 33316.1.1
 LOCALIZED PROJECT COORDINATES
 N = 742194.5948
 E = 1119564.3898

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B3872-1" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 740563.5976(1) EASTING: 111941.2290(1) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998690 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B3872-1" TO -L- R STATION 10+00.00 IS N 5 21 52.79 E 1638.17' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

05-AUG-2005 08:30 r:\cagw\4\proj\B3872-1\1s-1c-050107.dgn

SURVEY CONTROL SHEET B-3872

PROJECT REFERENCE NO.	SHEET NO.
B-3872	1-D
Location and Surveys	

BL	POINT	DESC.	NORTH	EAST	ELEVATION	LREV STATION	OFFSET
	101	B3872-1	740563.5976	1119411.2290	1238.41	Ø	OUTSIDE PROJECT LIMITS
	2	B3872-2	741477.5740	1119421.8280	1264.25	Ø	OUTSIDE PROJECT LIMITS
	3		741832.9950	1119683.2280	1233.28	Ø	OUTSIDE PROJECT LIMITS
	4		742297.0590	1119549.3800	1220.88	11+01.67	19.71 RT
	5		742595.1000	1119313.6870	1214.33	14+61.70	46.18 LT
	6		742992.1460	1119561.9990	1222.13	19+11.45	13.13 LT
	7		743261.4890	1119851.2550	1219.01	Ø	OUTSIDE PROJECT LIMITS

.....
 BM 1 ELEVATION = 1318.79
 N 740965 E 1119176
 LREV STATION 10+00
 S 17° 32' 25.3" W DIST 1289.73

.....
 BM 2 ELEVATION = 1210.53
 N 742622 E 1119282
 LREV STATION 14+80 79 LEFT

.....
 BM 3 ELEVATION = 1220.64
 N 743305 E 1120108
 LREV STATION 12+88 1085 RIGHT

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT
 IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY
 NCDOT FOR MONUMENT "B3872-1"
 WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF
 NORTHING: 740563.5976(ft) EASTING: 1119411.2290(ft)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
 (GROUND TO GRID) IS: 0.9998690
 THE N.C. LAMBERT GRID BEARING AND
 LOCALIZED HORIZONTAL GROUND DISTANCE FROM
 "B3872-1" TO L-R STATION 10+00.00 IS
 N 5 21 52.79 E 1638.17'
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
 VERTICAL DATUM USED IS NAVD 88

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
 B3872_LS_CONTROL_050107.TXT](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project/B3872_LS_CONTROL_050107.TXT)

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

PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING USER SERVICE (OPUS)

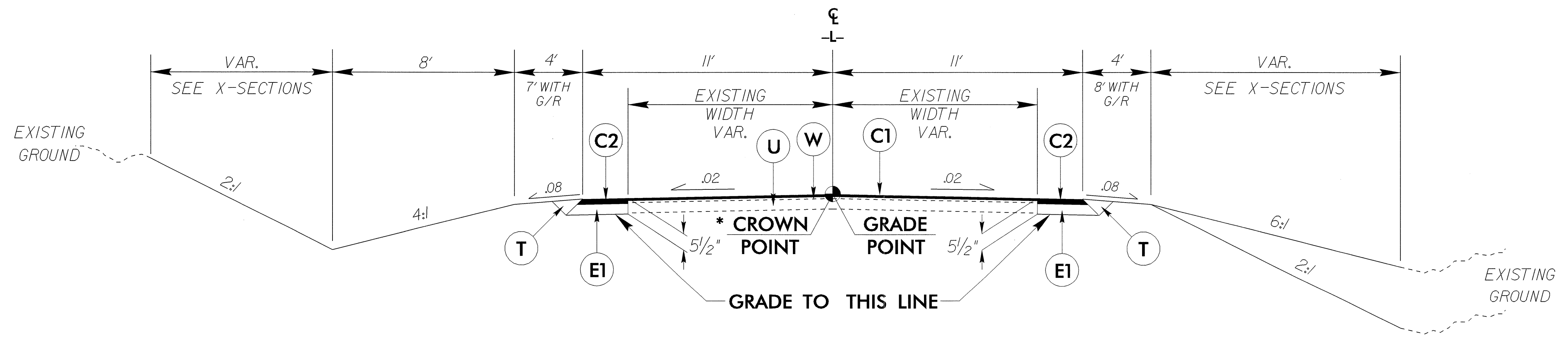
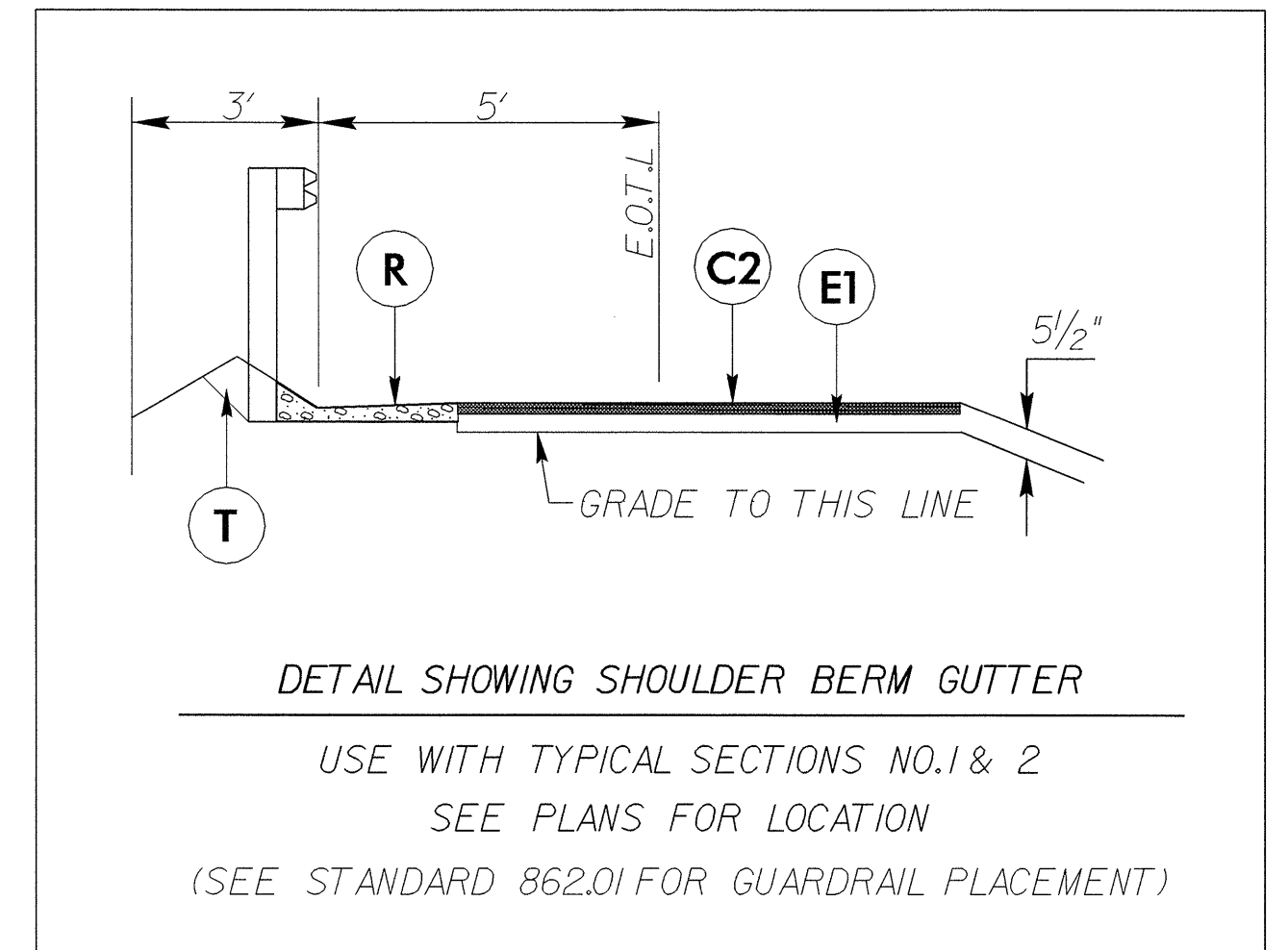
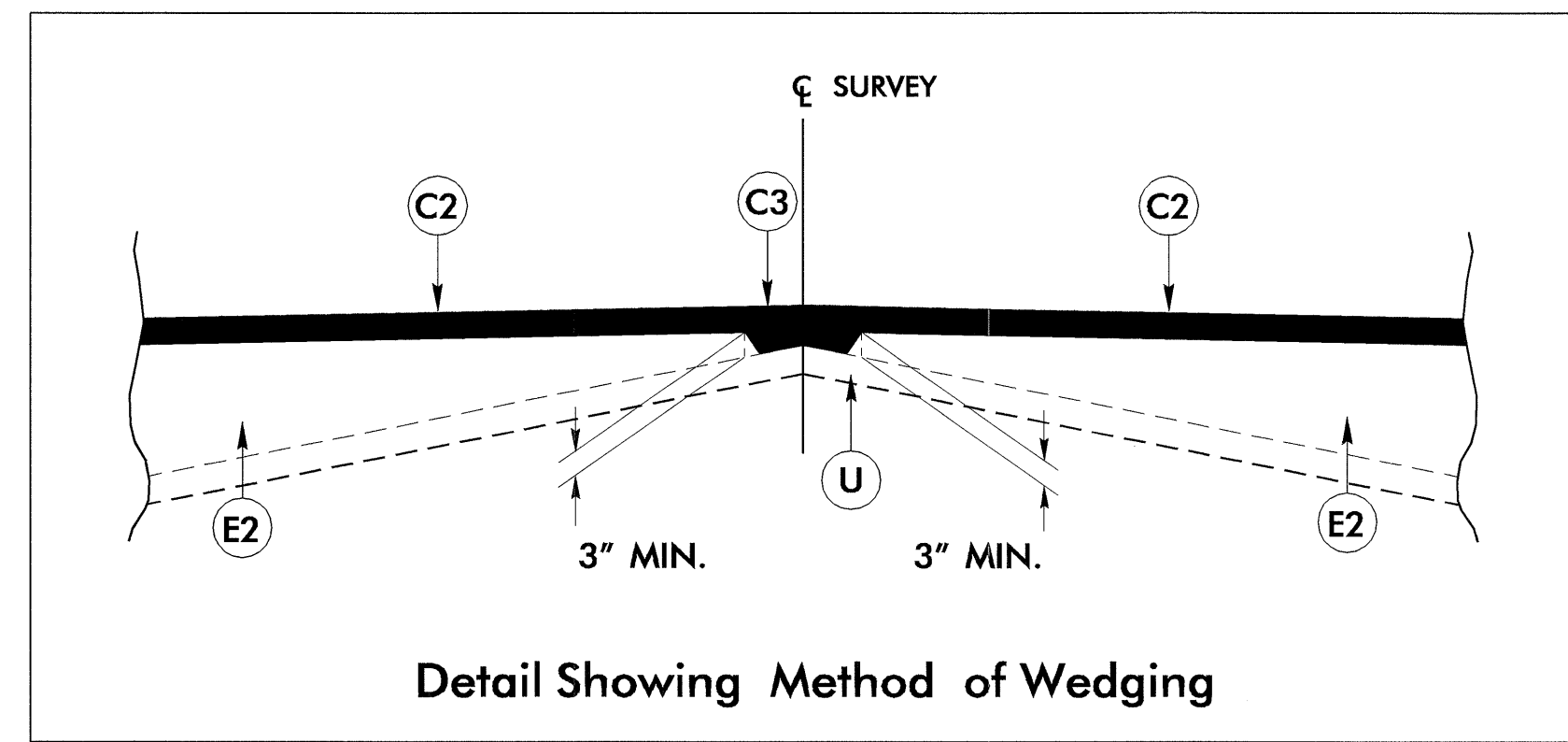
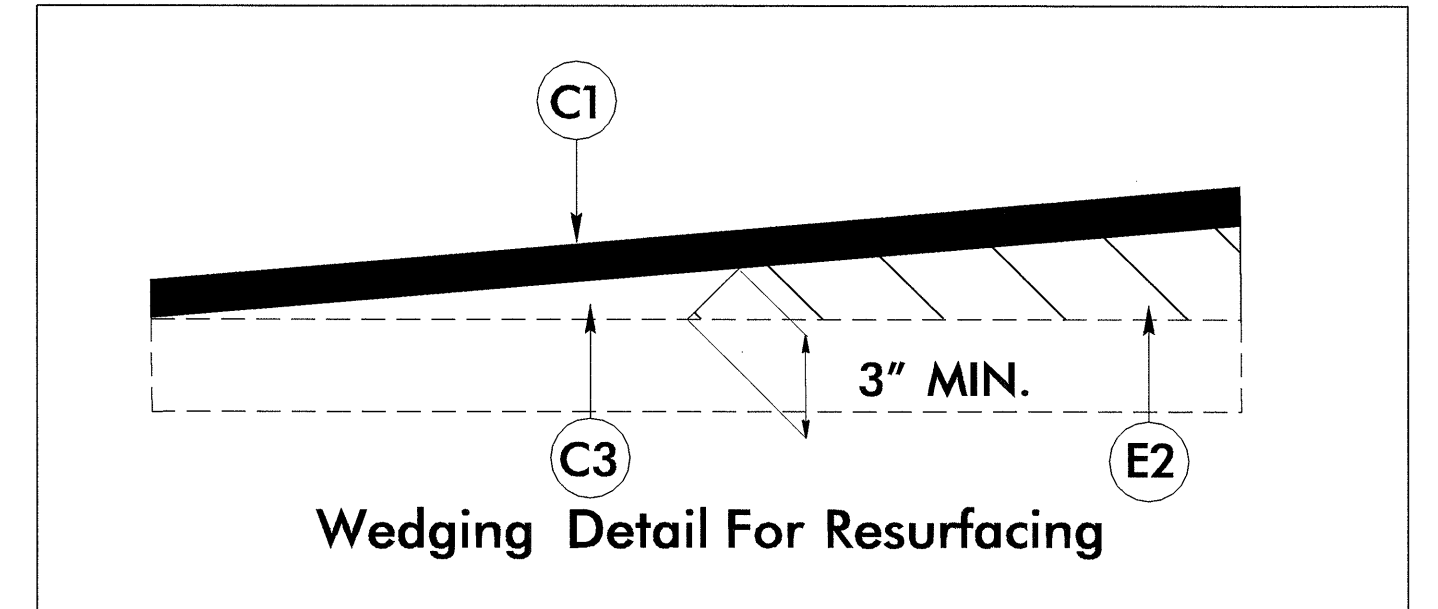
BY THE NCDOT LOCATION AND SURVEYS UNIT.

6/2/99

PROJECT REFERENCE NO. B-3872	SHEET NO. 2
ROADWAY DESIGN ENGINEER GREGORY E. BLEW	PAVEMENT DESIGN ENGINEER CLYDE S. MORRISON

FINAL PAVEMENT SCHEDULE	
C1	Prop. Approx. 1 1/4" Asphalt Concrete Surface Course, Type SF9.5A, at an Average Rate of 137.5 lbs. per SQ. YD.
C2	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.
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 greater than 3" or less than 1" in depth
E1	Prop. Approx. 3" Asphalt Concrete Base Course, Type B25.0B, at an Average Rate of 342 lbs. per SQ. YD.
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 greater than 5 1/2" or less than 3" in depth
J	6" AGGREGATE BASE COURSE
P	Prime Coat
R	Shoulder Berm Gutter
T	Earth Material
U	Existing Pavement
W	Variable Depth Asphalt Pavement (see Wedging Detail this sheet)

NOTE: Pavement edge slopes are 1:1 unless shown otherwise



TYPICAL SECTION No. 1

USE TYPICAL SECTION No. 1 AT:

- L- FROM STA.10+00.00 TO STA.10+50.00, TRANSITION FROM EXISTING TO T.S.NO.1
- L- FROM STA.10+50.00 TO STA.12+00.00
- L- FROM STA.15+66.00 TO STA.16+25.00
- *-L- FROM STA.16+25.00 TO STA.17+50.00
- *-L- FROM STA.17+50.00 TO STA.18+00.00, TRANSITION FROM T.S.NO.1 TO EXISTING

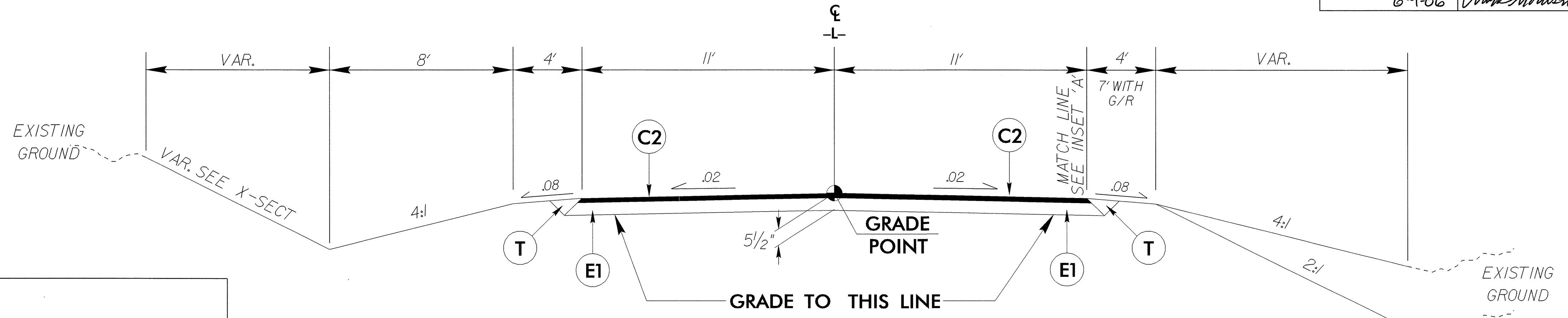
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6/2/99

FINAL PAVEMENT SCHEDULE	
C1	1 1/4" Type SF9.5A
C2	2 1/2" Type SF9.5A
C3	Var. Depth Type SF9.5A
E1	3" Type B25.0B
E2	Var. Depth Type B25.0B
J	6" ABC
P	Prime Coat
R	Shoulder Berm Gutter
T	Earth Material
U	Existing Pavement
W	Variable Depth Asphalt Pavement

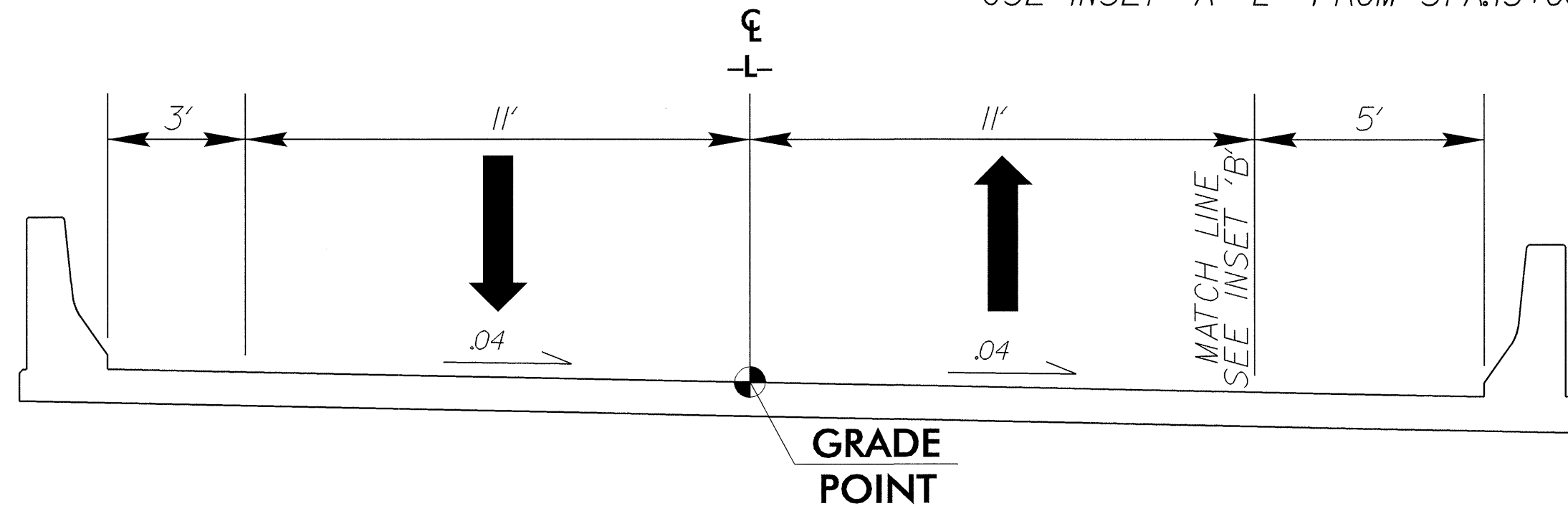
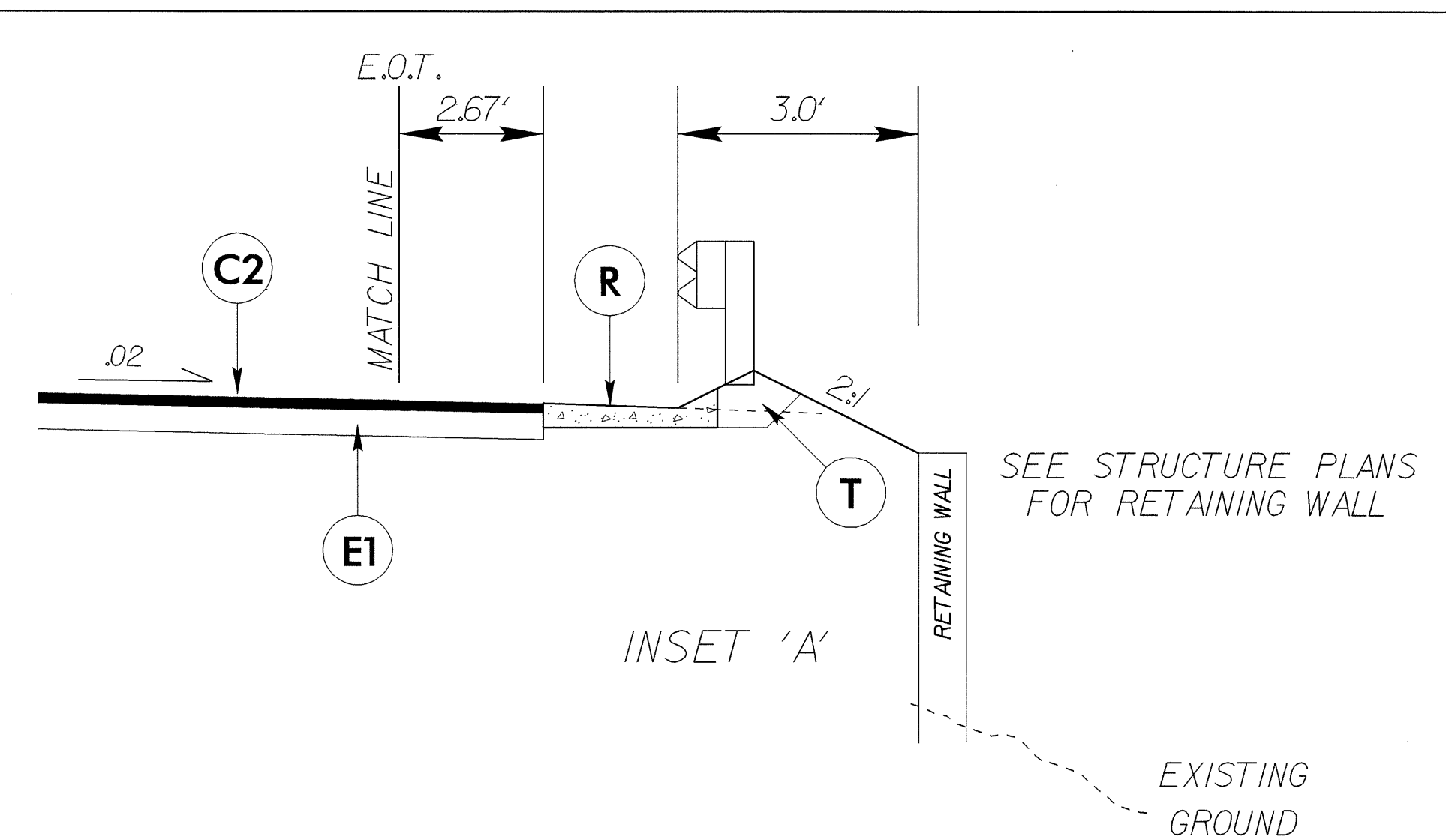
NOTE: Pavement edge slopes are 1:1 unless shown otherwise

PROJECT REFERENCE NO. B-3872	SHEET NO. 2-A
ROADWAY DESIGN ENGINEER GREGORY E. BREW NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 22896 6-9-06	PAVEMENT DESIGN ENGINEER CLARK S. MORRISON NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 22896 6-7-06



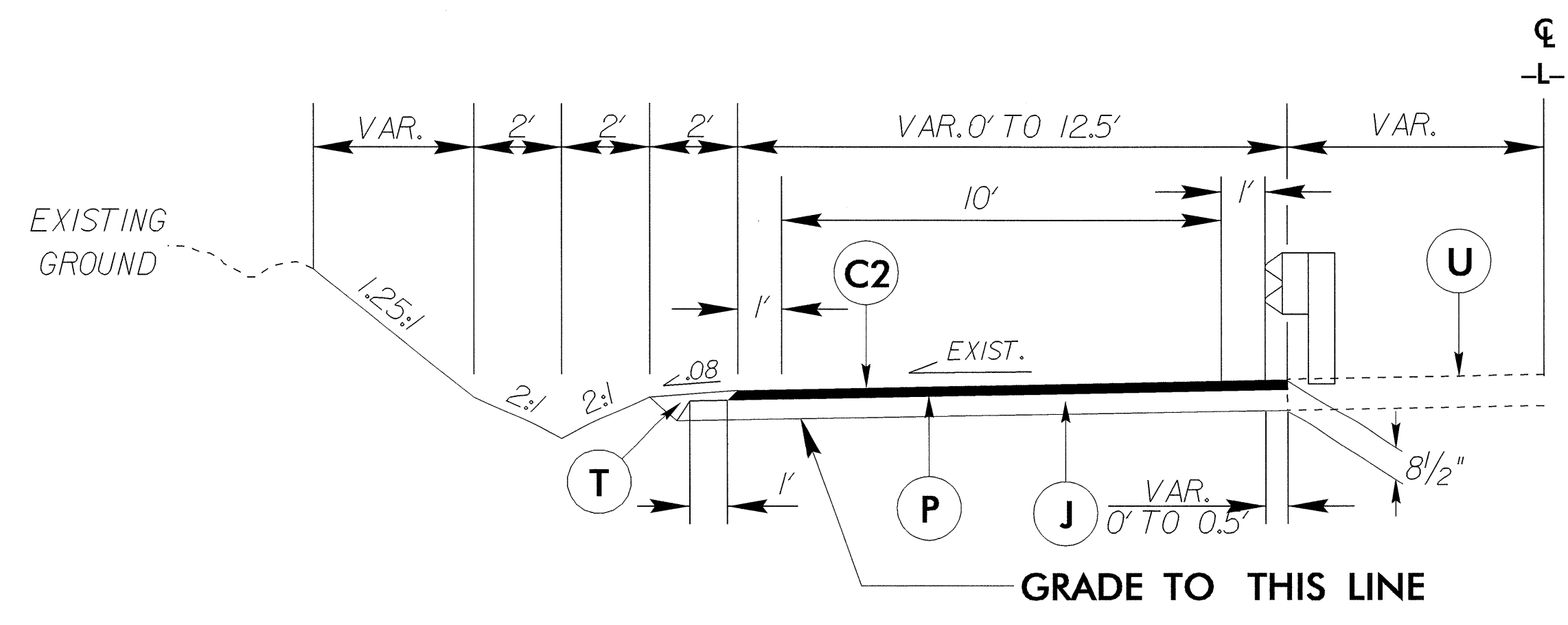
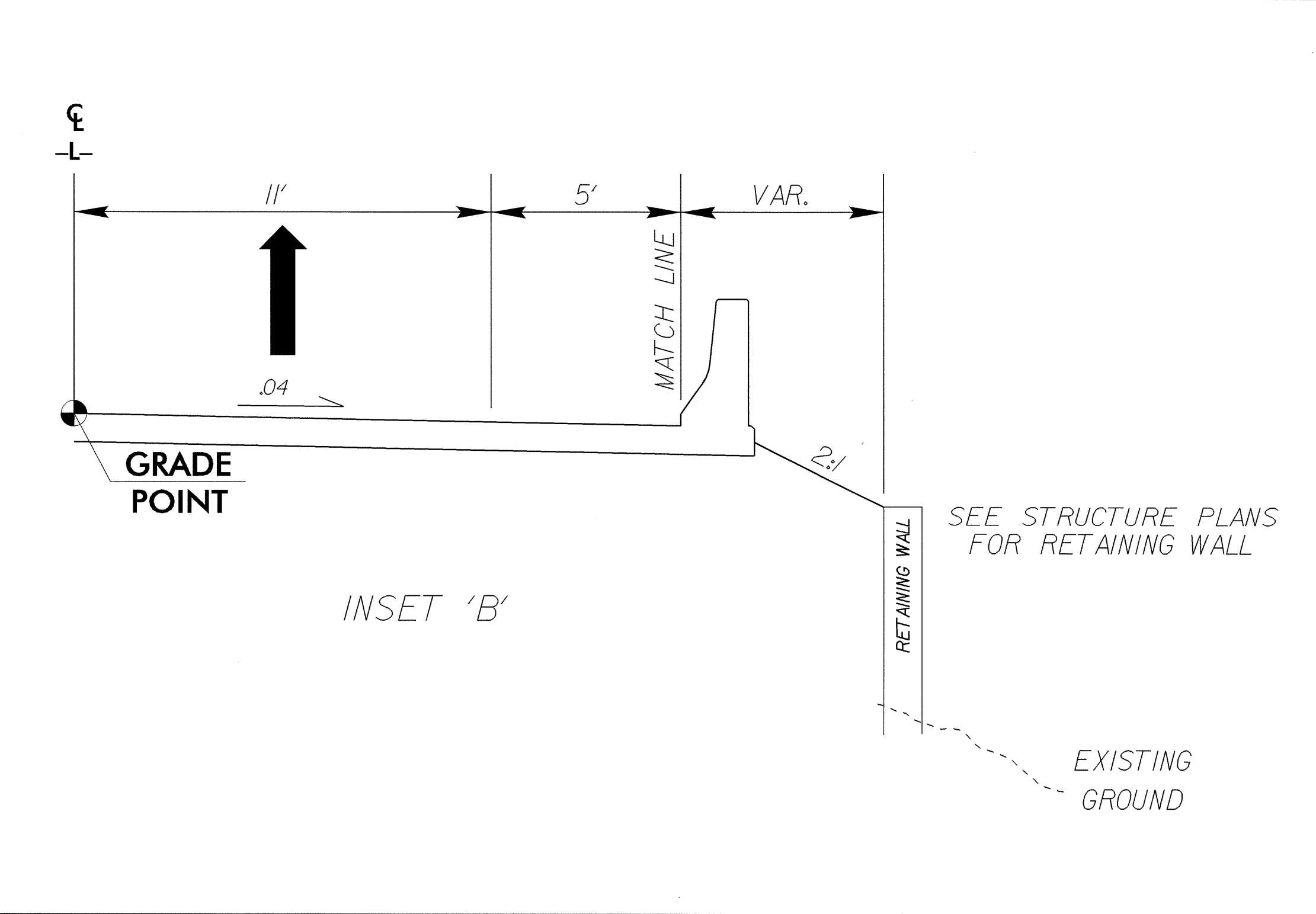
TYPICAL SECTION No. 2

USE TYPICAL SECTION No. 2 AT:
 -L- FROM STA.12+00.00 TO STA.13+66.50 (BEGIN BRIDGE)
 -L- FROM STA.14+86.50 (END BRIDGE) TO STA.15+66.00
 USE INSET 'A' -L- FROM STA.13+00.00 TO STA.13+54.50



TYPICAL SECTION ON STRUCTURE

-L- FROM STA.13+66.50 TO STA.14+86.50
 USE INSET 'B' -L- FROM STA.13+54.50 TO STA.13+73.50



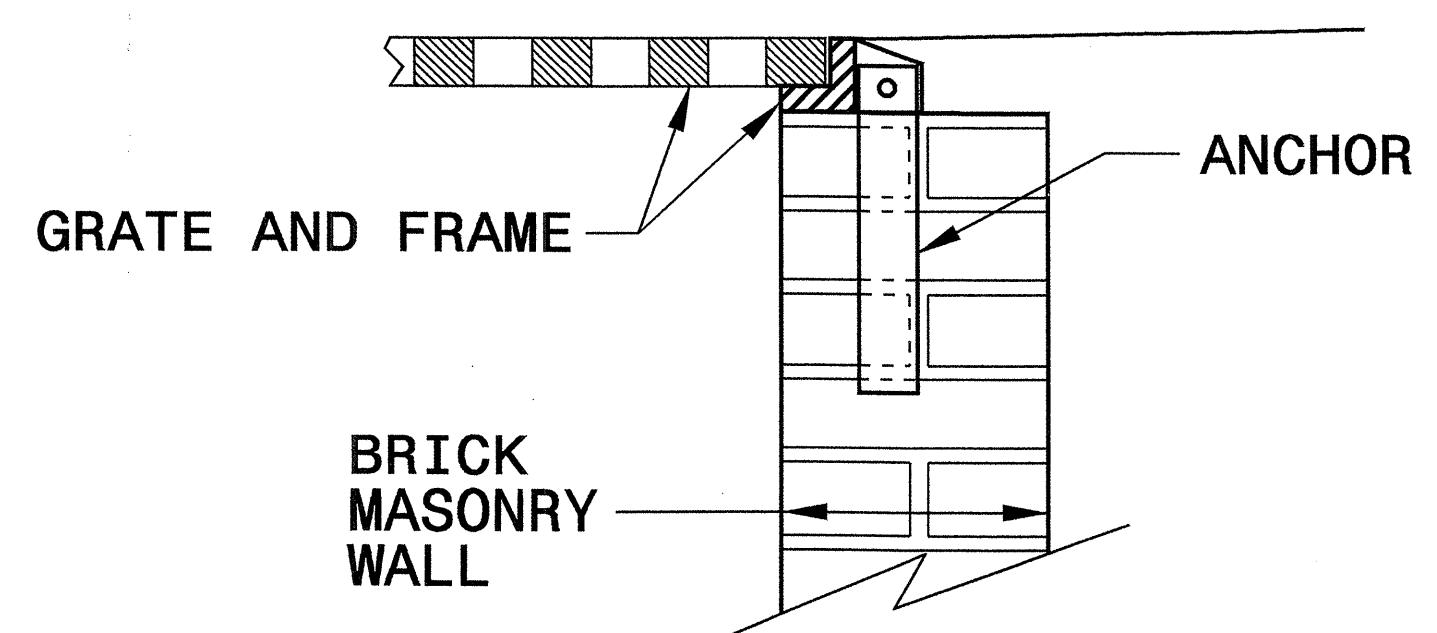
TYPICAL SECTION No. 3

USE TYPICAL SECTION No. 3 AT:
 -L- FROM STA.11+58.84 TO STA.13+74.51 (LT. SIDE)
 -L- FROM STA.14+74.12 TO STA.14+91.46 (LT. SIDE)
 -L- FROM STA.15+58.89 TO STA.16+50.00 (LT. SIDE)

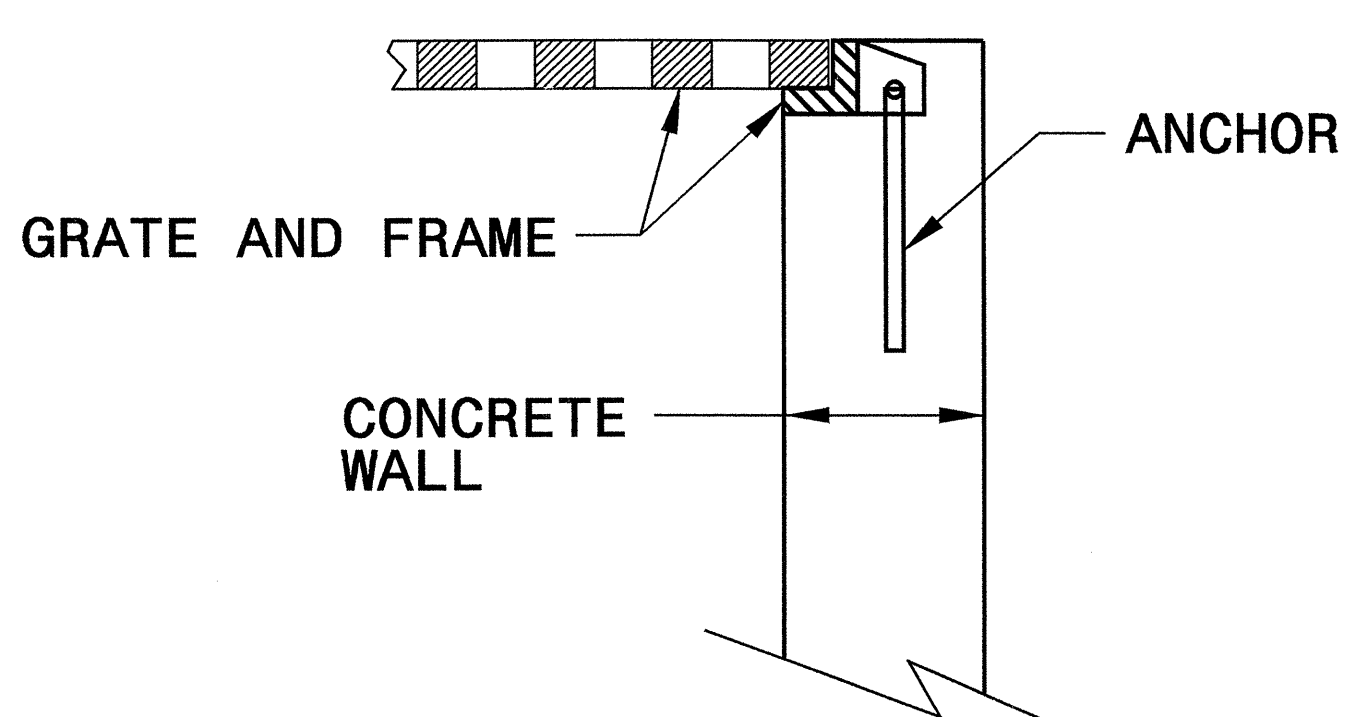
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STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

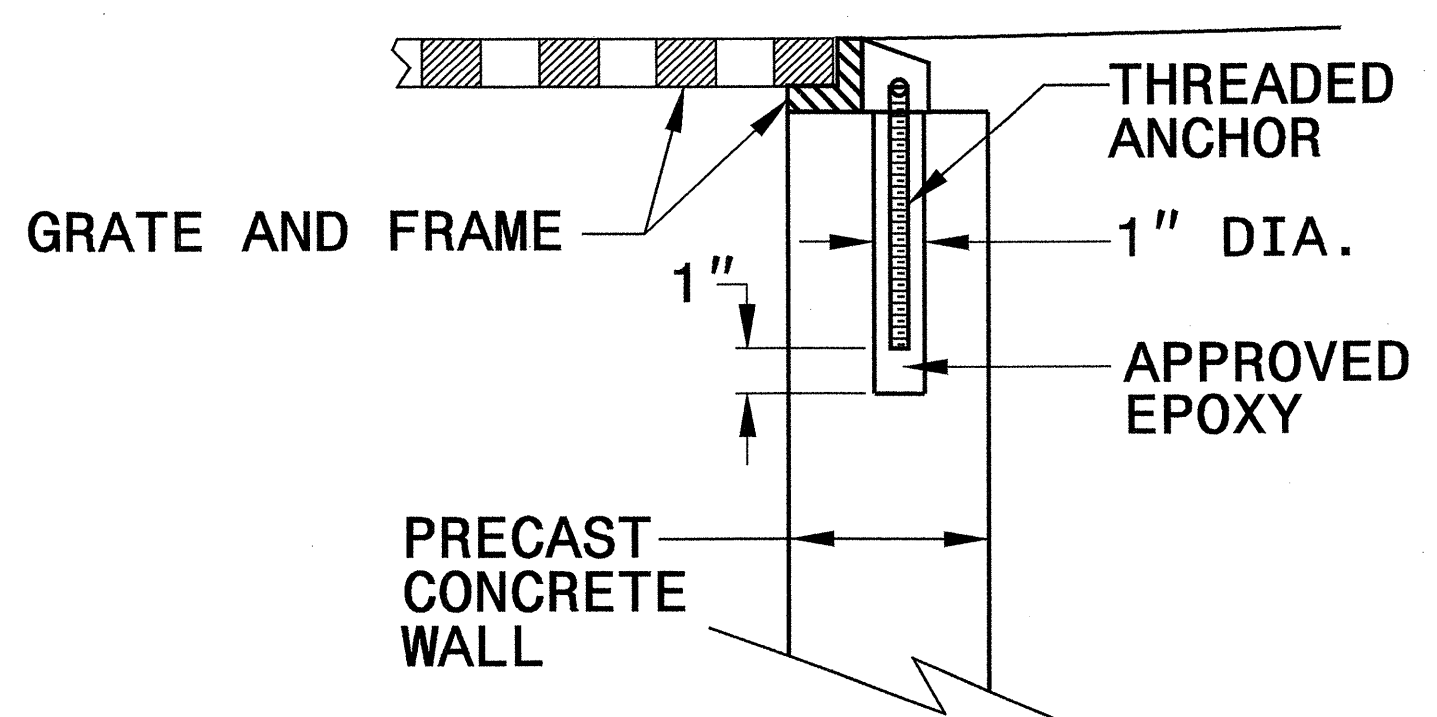
ENGLISH DETAIL DRAWING FOR
ANCHORAGE FOR FRAMES
BRICK/CONCRETE/PRECAST CONCRETE



BRICK MASONRY CONSTRUCTION



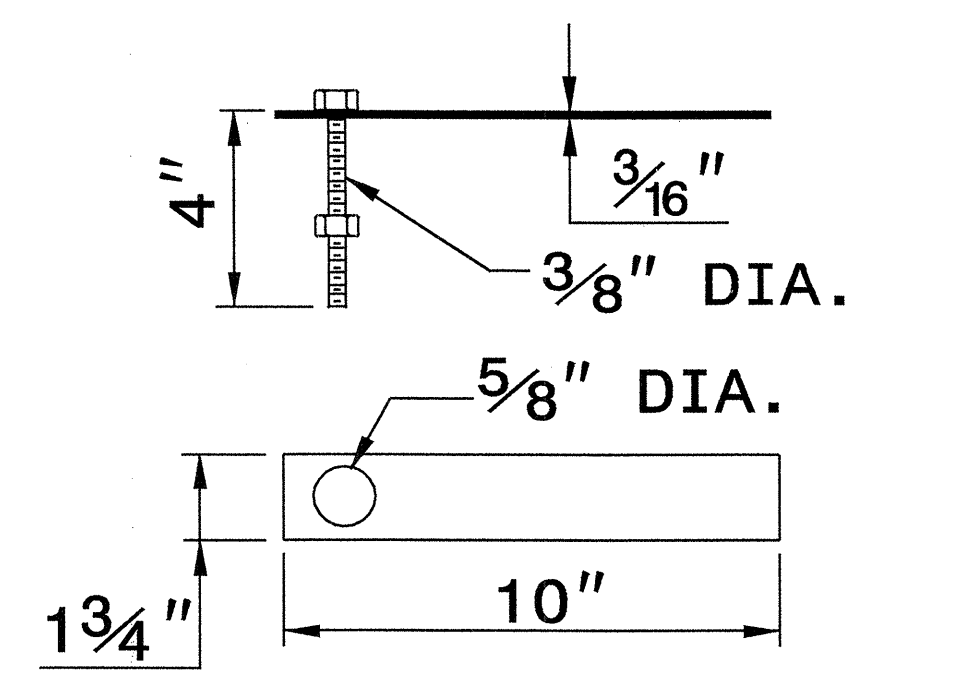
CONCRETE CONSTRUCTION



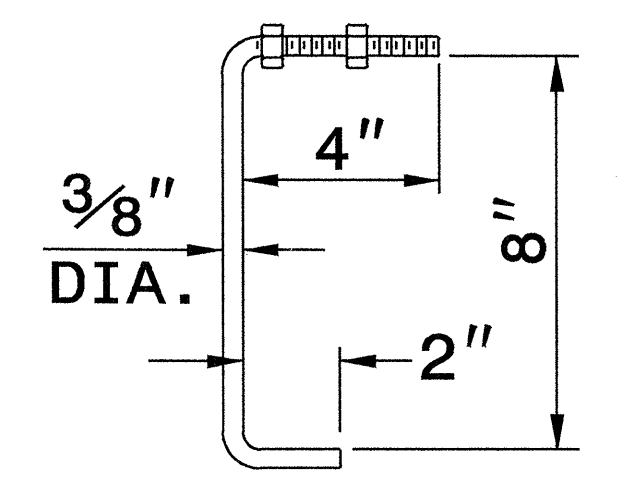
PRECAST CONCRETE CONSTRUCTION

DETAIL SHOWING ANCHORAGE OF FRAME FOR GRATED DROP INLET

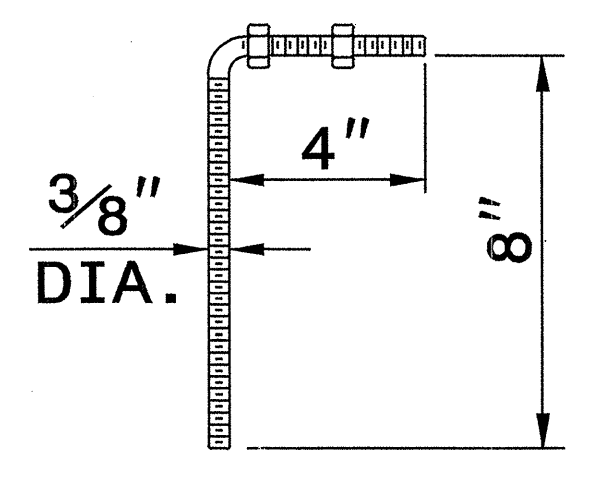
NOTE:
CONSTRUCT GRATED DROP INLET TO COINCIDE WITH NORMAL OR SUPERELEVATED SHOULDER OR PAVEMENT SLOPE.



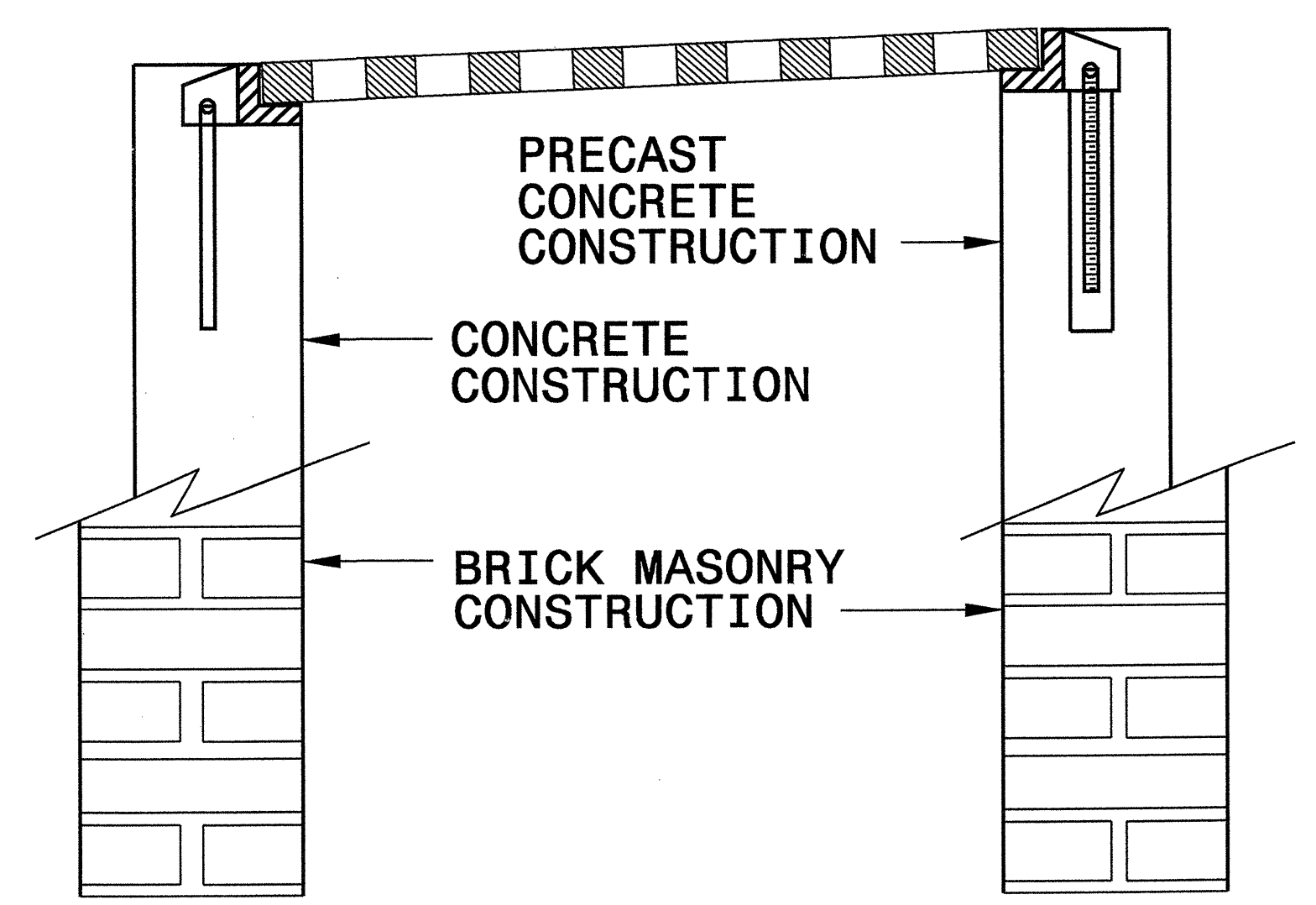
MASONRY ANCHOR
3/8" DIA. BOLT WITH PLATE



CONCRETE ANCHOR
3/8" DIA. BENT BAR



PRECAST CONCRETE ANCHOR
3/8" DIA. BENT BAR



FRAME AND GRATE INSTALLATION FOR NORMAL CROWN AND SUPERELEVATED SECTIONS

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

ENGLISH DETAIL DRAWING FOR
ANCHORAGE FOR FRAMES
BRICK/CONCRETE/PRECAST CONCRETE

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**PROJECT SERVICES UNIT
STANDARDS AND SPECIAL DESIGN**
Office 919-250-4128 FAX 919-250-4119

SEE PLATE FOR TITLE

ORIGINAL BY: 2006 STD 840.25 DATE: 07/18/06
MODIFIED BY: E.E. WARD DATE: 9/25/06
CHECKED BY: DATE:
FILE SPEC.:

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
SUMMARY OF QUANTITIES

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C201363

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
0022000000-E	225	5,200	CY	UNCLASSIFIED EXCAVATION
0029000000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ***** (14+26.50)
0050000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB- BING
0057000000-E	226	500	CY	UNDERCUT EXCAVATION
0063000000-N	SP	Lump Sum		GRADING
0080000000-E	SP	1,200	TON	CLASS IV SUBGRADE STABILIZA- TION
0195000000-E	265	1,000	CY	SELECT GRANULAR MATERIAL
0196000000-E	270	1,000	SY	FABRIC FOR SOIL STABILIZATION
0199000000-E	SP	275	SF	TEMPORARY SHORING
0318000000-E	300	18	TON	FOUNDATION CONDITIONING MATE- RIAL, MINOR STRS
0708000000-E	310	36	LF	15" BIT COAT CS PIPE CULVERTS, TYPE B 0.064" THICK
0806000000-E	310	2	EA	15" BIT COAT CS PIPE ELBOWS, TYPE B 0.064" THICK
1121000000-E	520	102	TON	AGGREGATE BASE COURSE
1220000000-E	545	50	TON	INCIDENTAL STONE BASE
1275000000-E	600	100	GAL	PRIME COAT
1489000000-E	610	185	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
1525000000-E	610	360	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A
1560000000-E	620	32	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22
2000000000-N	806	20	EA	RIGHT OF WAY MARKERS
2022000000-E	815	120	CY	SUBDRAIN EXCAVATION
2033000000-E	815	90	CY	SUBDRAIN FINE AGGREGATE
2044000000-E	815	500	LF	6" PERFORATED SUBDRAIN PIPE
2055000000-E	815	15	EA	6" SUBDRAIN PIPE WYES, TEES, & ELBOWS
2066000000-N	815	1	EA	CONCRETE PAD FOR SUBDRAIN PIPE OUTLET
2077000000-E	815	6	LF	6" OUTLET PIPE (SUBDRAINS)
2286000000-N	840	3	EA	MASONRY DRAINAGE STRUCTURES
2366000000-N	840	1	EA	FRAME WITH TWO GRATES, STD 840.24
2367000000-N	840	2	EA	FRAME WITH TWO GRATES, STD 840.29
2556000000-E	846	190	LF	SHOULDER BERM GUTTER
3030000000-E	862	400	LF	STEEL BM GUARDRAIL
3150000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS
3215000000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE III
3270000000-N	SP	4	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
3380000000-E	862	300	LF	TEMPORARY STEEL BM GUARDRAIL
3382000000-E	862	100	LF	TEMPORARY STEEL BM GUARDRAIL (SHOP CURVED)
3389100000-N	SP	2	EA	GUARDRAIL ANCHOR UNITS, TYPE 350 TEMPORARY
3635000000-E	876	3	TON	RIP RAP, CLASS II
3649000000-E	876	2	TON	RIP RAP, CLASS B
3656000000-E	876	524	SY	FILTER FABRIC FOR DRAINAGE
3659000000-N	SP	1	EA	PREFORMED SCOUR HOLES WITH LEVEL SPREADER APRON
4400000000-E	1110	181	SF	WORK ZONE SIGNS (STATIONARY)
4405000000-E	1110	170	SF	WORK ZONE SIGNS (PORTABLE)
4410000000-E	1110	20	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
4430000000-N	1130	27	EA	DRUMS
4435000000-N	1135	27	EA	CONES
4445000000-E	1145	30	LF	BARRICADES (TYPE III)
4450000000-N	1150	400	HR	FLAGGER
4465000000-N	1160	2	EA	TEMPORARY CRASH CUSHIONS

ItemNumber	Sec #	Quantity	Unit	Description
4485000000-E	1170	260	LF	PORTABLE CONCRETE BARRIER
4490000000-E	1170	170	LF	PORTABLE CONCRETE BARRIER (ANCHORED)
4650000000-N	1251	64	EA	TEMPORARY RAISED PAVEMENT MARKERS
4770000000-E	1205	288	LF	COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE ** (4")
4810000000-E	1205	10,464	LF	PAINT PAVEMENT MARKING LINES (4")
4835000000-E	1205	44	LF	PAINT PAVEMENT MARKING LINES (24")
4850000000-E	1205	288	LF	REMOVAL OF PAVEMENT MARKING LINES (4")
6000000000-E	1605	865	LF	TEMPORARY SILT FENCE
6006000000-E	1610	75	TON	STONE FOR EROSION CONTROL, CLASS A
6009000000-E	1610	175	TON	STONE FOR EROSION CONTROL, CLASS B
6012000000-E	1610	255	TON	SEDIMENT CONTROL STONE
6015000000-E	1615	1.5	ACR	TEMPORARY MULCHING
6018000000-E	1620	50	LB	SEED FOR TEMPORARY SEEDING
6021000000-E	1620	0.25	TON	FERTILIZER FOR TEMPORARY SEED- ING
6024000000-E	1622	35	LF	TEMPORARY SLOPE DRAINS
6027000000-N	1622	1	EA	INLET PROTECTION AT TEMPORARY SLOPE DRAINS
6029000000-E	SP	500	LF	SAFETY FENCE
6030000000-E	1630	750	CY	SILT EXCAVATION
6036000000-E	1631	700	SY	MATting FOR EROSION CONTROL
6042000000-E	1632	40	LF	1/4" HARDWARE CLOTH
6070000000-N	SP	8	EA	SPECIAL STILLING BASINS
6071030000-E	SP	175	LF	COIR FIBER BAFFLES
6084000000-E	1660	2	ACR	SEEDING & MULCHING
6087000000-E	1660	1	ACR	MOWING

ItemNumber	Sec #	Quantity	Unit	Description
6090000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
6093000000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
6096000000-E	1662	50	LB	SEED FOR SUPPLEMENTAL SEEDING
6108000000-E	1665	1.25	TON	FERTILIZER TOPDRESSING
6114000000-N	SP	1.5	HR	SPECIALIZED HAND MOWING
6117000000-N	SP	8	EA	RESPONSE FOR EROSION CONTROL
6123000000-E	1670	0.25	ACR	REFORESTATION
7060000000-E	1705	720	LF	SIGNAL CABLE
7120000000-E	1705	4	EA	VEHICLE SIGNAL HEAD (12", 3 SECTION)
7252000000-E	1710	600	LF	MESSENGER CABLE (1/4")
7264000000-E	1710	80	LF	MESSENGER CABLE (3/8")
7300000000-E	1715	120	LF	UNPAVED TRENCHING (***** (1, 2))
7360000000-N	1720	7	EA	WOOD POLE
7372000000-N	1721	6	EA	GUY ASSEMBLY
7408000000-E	1722	1	EA	1" RISER WITH WEATHERHEAD
7420000000-E	1722	2	EA	2" RISER WITH WEATHERHEAD
7444000000-E	1725	270	LF	INDUCTIVE LOOP SAWCUT
7456000000-E	1726	880	LF	LEAD-IN CABLE (***** (18-2))
7768000000-N	1751	1	EA	CONTROLLER WITH CABINET (TYPE 2070L, POLE MOUNTED)
7780000000-N	1751	1	EA	DETECTOR CARD (TYPE 2070L)

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

0366000000-E AA1	310	116	LF	15" RC PIPE CULVERTS, CLASS III
*** OR ***				
0366000000-E AA2	310	60	LF	15" RC PIPE CULVERTS, CLASS III
0536000000-E AA2	SP	56	LF	*** HDPE PIPE CULVERTS (15")
*** OR ***				
0366000000-E AA3	310	60	LF	15" RC PIPE CULVERTS, CLASS III
0540000000-E AA3	SP	56	LF	*** ALUMINIZED CORRUGATED STEEL PIPE CULVERTS, **** THICK (15", 0.064")

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

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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK
IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT +%	BORROW	WASTE
11+75.00 TO 13+75.00 -L- LT. SIDE	4526		3	0	4523
15+40.00 TO 16+35.00 -L- LT. SIDE	614		8	0	606
10+00.00 TO 13+66.50 -L- RT. SIDE	42		293	251	0
14+86.50 TO 18+00.00 -L- RT. SIDE	4		1536	1532	0
10+00.00 TO 13+66.50 -L- LT. SIDE	75		160	85	0
14+86.50 TO 18+00.00 -L- LT. SIDE	16		24	8	0
SUMMARIES TOTAL	5277		2024	1876	5129
DEDUCTION FOR CLEARING & GRUBBING	-120			120	-120
ROCK WASTE TO BE USED IN LIEU OF BORROW				-1103	-1103
ADJUSTMENT FOR ROCK WASTE			-276	-276	
SUITABLE WASTE TO BE USED IN LIEU OF BORROW				-617	-617
PROJECT TOTALS	5157		1748	0	3289
SAY	5200				
ESTIMATED UNDERCUT = 500CY					

SUMMARY OF ASPHALT PAVEMENT REMOVAL
IN SQUARE YARDS

LOCATION	ASPHALT REMOVAL
12+06.00 TO 13+76.16 -L- RT. SIDE	297.14
12+06.00 TO 13+86.67 -L- LT. SIDE	142.93
14+56.23 TO 15+66.00 -L- LT. SIDE	297.65
15+66.00 TO 16+64.11 -L- LT. SIDE	38.65
TOTAL	776.37
SAY	800

Note: Quantities are approximate only. Borrow excavation, fine grading, clearing & grubbing and removal of existing asphalt pavement will be paid for at the contract lump sum price for "Grading".

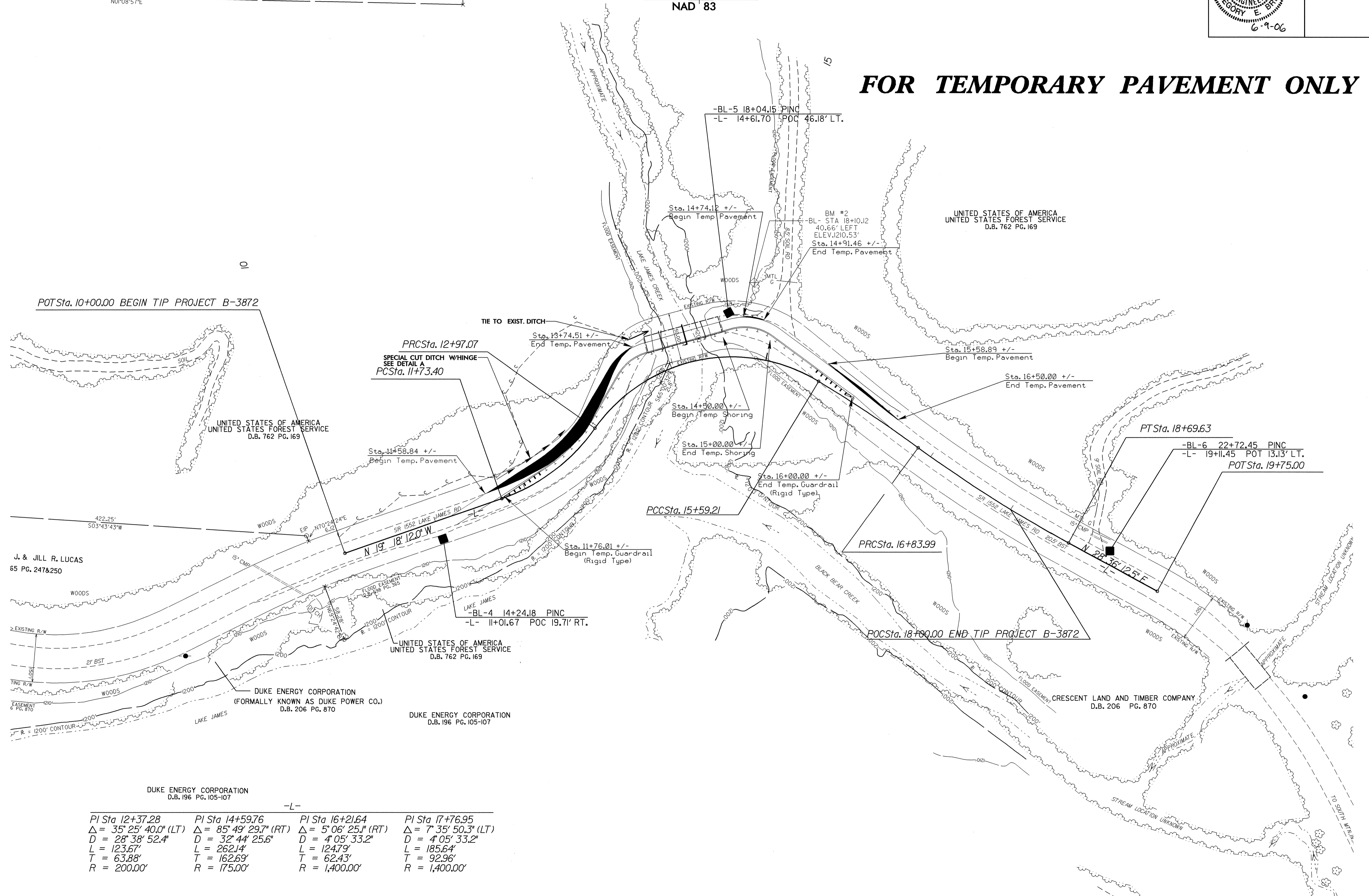
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704.44'
N0°08'57"E

NAD 83

FOR TEMPORARY PAVEMENT ONLY



DUKE ENERGY CORPORATION
D.B. 196 PG. 105-107

-L-

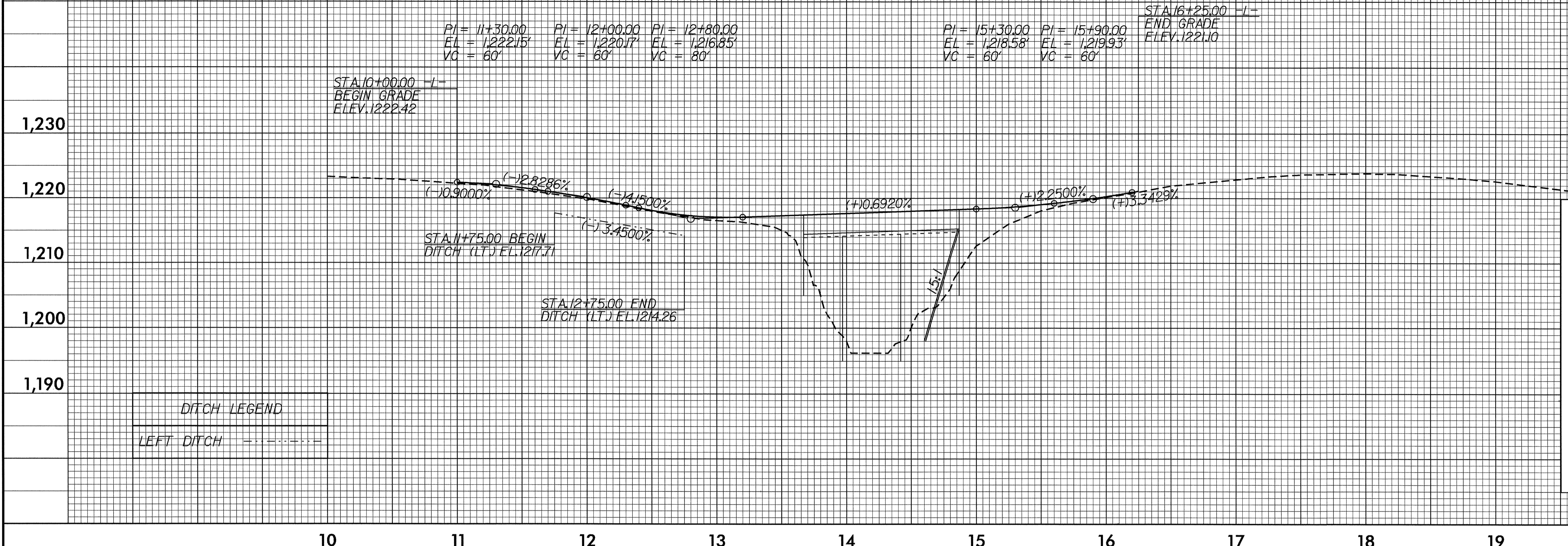
PI Sta 12+37.28 Δ = 35' 25" 40.0" (LT) D = 28' 38" 52.4" L = 123.67' T = 63.88' R = 200.00'	PI Sta 14+59.76 Δ = 85' 49" 29.7" (RT) D = 32' 44" 25.6" L = 262.14' T = 162.63' R = 175.00'	PI Sta 16+21.64 Δ = 5' 06" 25.1" (RT) D = 4' 05" 33.2" L = 124.79' T = 62.43' R = 1,400.00'	PI Sta 17+76.95 Δ = 7' 35" 50.3" (LT) D = 4' 05" 33.2" L = 185.64' T = 92.96' R = 1,400.00'
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5/28/99

BM *2 -BL- STA.18+0.12 8" NAIL SET IN
BASE OF POPLAR TREE LOCATED
40.66' LEFT. ELEV.1210.53

PROJECT REFERENCE NO. B-3872	SHEET NO. 6
ROADWAY DESIGN ENGINEER GREGORY E. BREW NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 18903	HYDRAULICS ENGINEER PAUL ATKINSON NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 18660



DITCH LEGEND	
LEFT DITCH	-----

BRIDGE HYDRAULIC DATA		
DESIGN DISCHARGE	=	CFS
DESIGN FREQUENCY	=	YRS
DESIGN HW ELEVATION	=	FT
BASE DISCHARGE	=	1300 CFS
BASE FREQUENCY	=	100 YRS
BASE HW ELEVATION	=	1202.3FT
OVERTOPPING DISCHARGE	=	CFS
OVERTOPPING FREQUENCY	=	YRS
OVERTOPPING ELEVATION	=	FT
DATE OF SURVEY	=	7/8/03
W.S.ELEVATION AT DATE OF SURVEY	=	1200.4FT

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