

9/09/99

CONTRACT: C201477 TIP PROJECT: B-3189

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

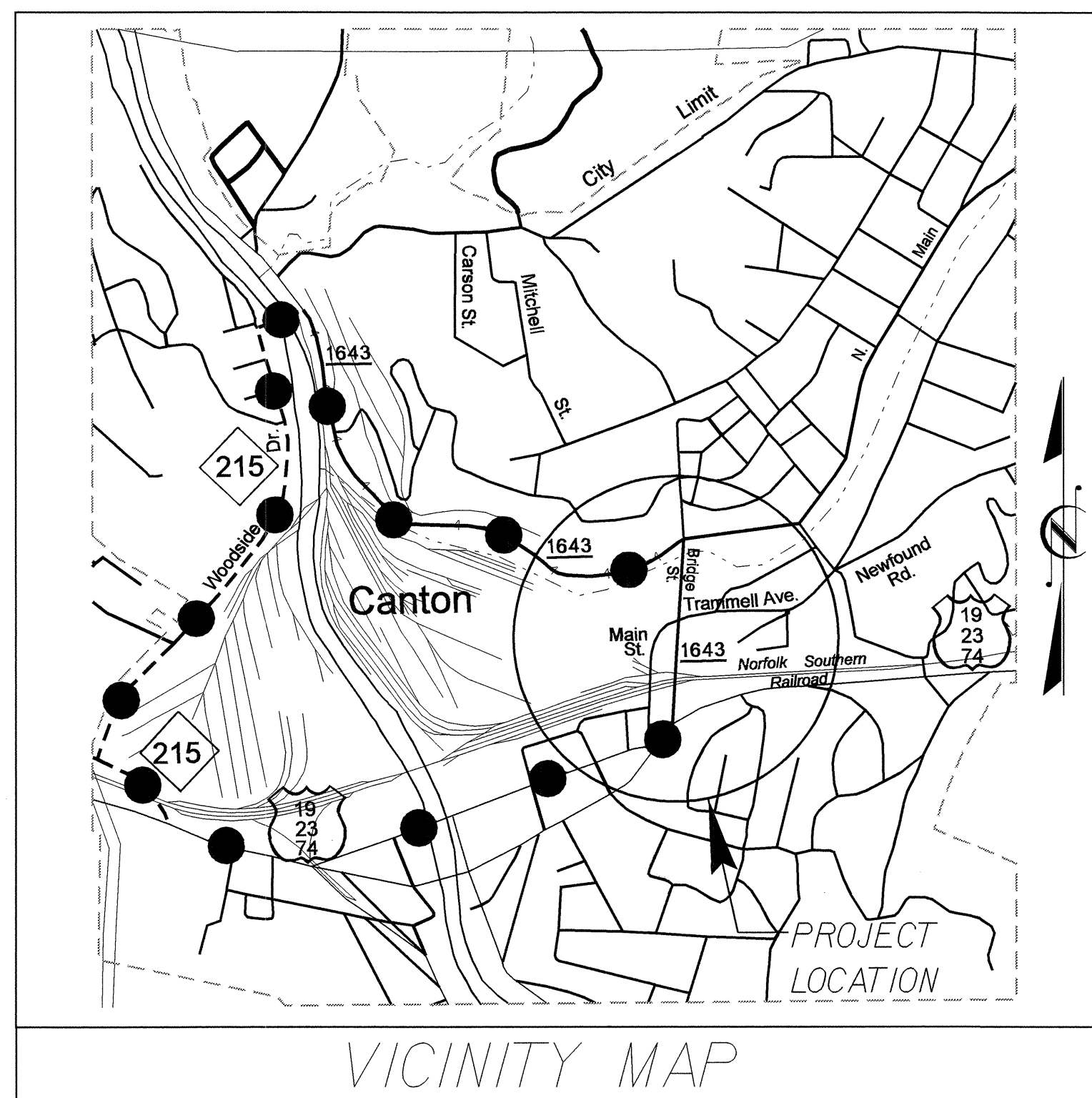
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# HAYWOOD COUNTY

**LOCATION: BRIDGE No. 272 on SR 1643 (BRIDGE STREET) OVER  
NORFOLK-SOUTHERN RAILROAD IN CANTON**

**TYPE OF WORK: GRADING, PAVING, RESURFACING, DRAINAGE, CURB & GUTTER,  
SIDEWALK, RETAINING WALLS AND STRUCTURE**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3189	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
32920.1.1	BRZ-1643 (1)	PE	
32920.2.2	BRZ-1643 (1)	R/W, UTIL	
32920.3.2	BRZ-1643 (2)	CONST	



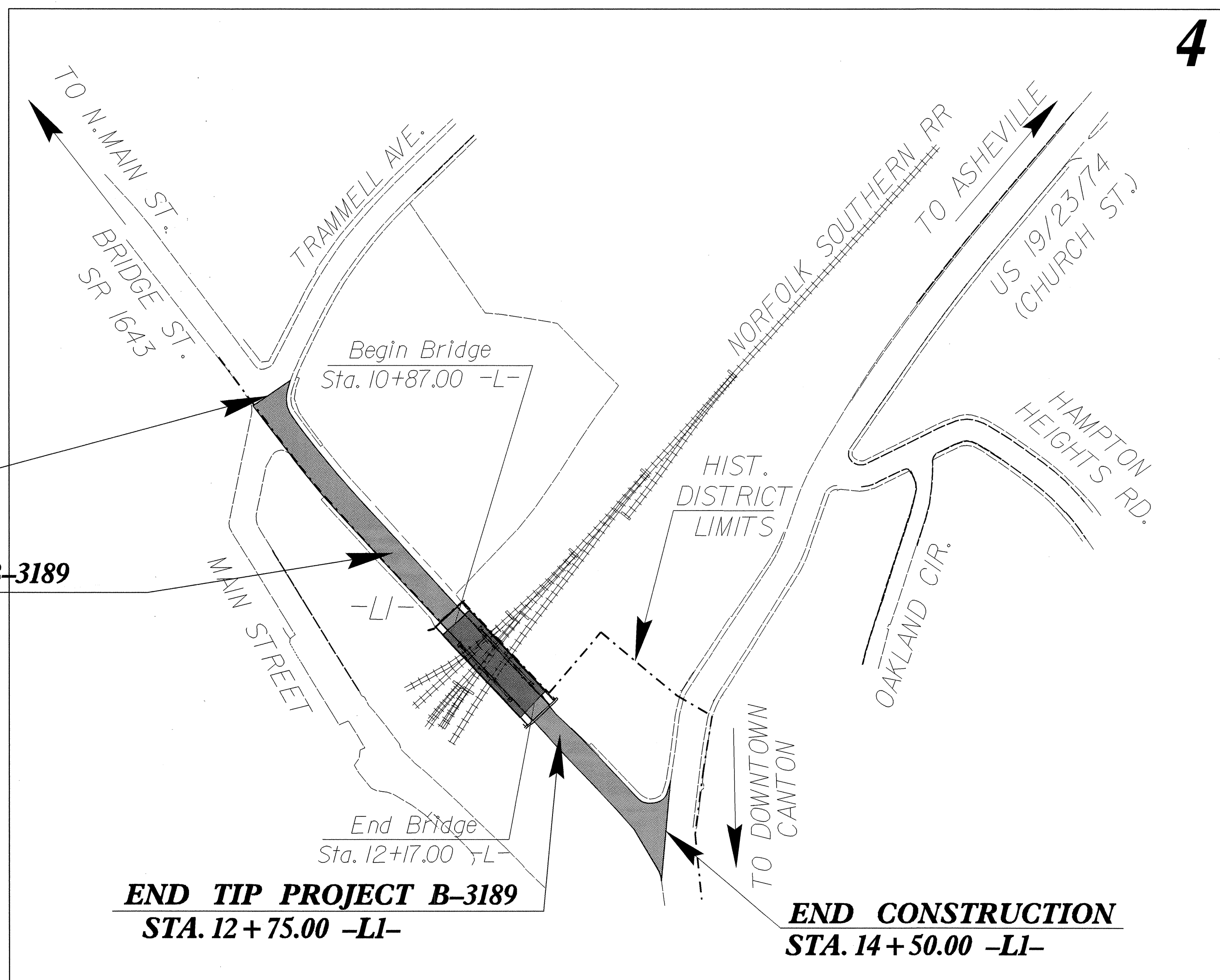
OFFSITE DETOUR ROUTE

**BEGIN CONSTRUCTION**  
STA. 7+90.00 -LI-

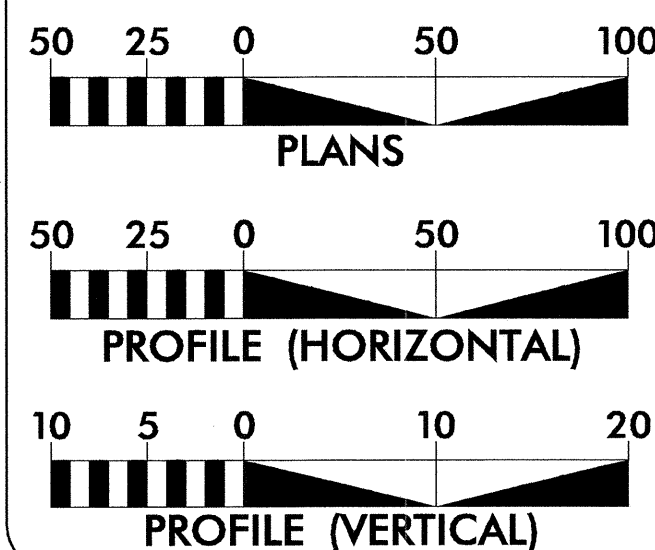
**BEGIN TIP PROJECT B-3189**  
STA. 10+00.00 -LI-

**END TIP PROJECT B-3189**  
STA. 12+75.00 -LI-

**END CONSTRUCTION**  
STA. 14+50.00 -LI-



**GRAPHIC SCALES**



**DESIGN DATA**

ADT 2005 = 7,160 VPD  
 ADT 2030 = 11,600 VPD  
 DHV = 11 %  
 D = 55 %  
 T = 4 % \*  
 V = 30 MPH  
 \*DUAL 3 % \* TTST 1 %

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT B-3189 = .027 MILES  
 LENGTH STRUCTURE TIP PROJECT B-3189 = .025 MILES  
 TOTAL LENGTH TIP PROJECT B-3189 = .052 MILES

Prepared in the Office of:

**DIVISION OF HIGHWAYS**

1000 Birch Ridge Dr., Raleigh, NC 27610

2006 STANDARD SPECIFICATIONS

**RIGHT OF WAY DATE:**  
April 27, 2004

**LETTING DATE:**  
May 15, 2007

**JAMES A. SPEER, PE**  
PROJECT ENGINEER

**JOHN C. LANSFORD, PE**  
PROJECT DESIGN ENGINEER

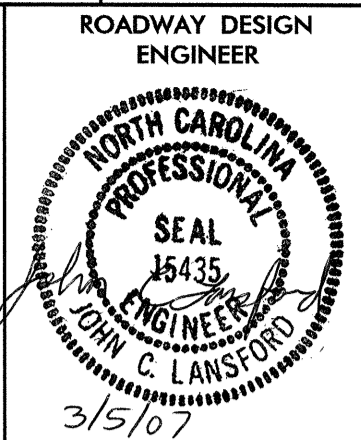
**HYDRAULICS ENGINEER**

SIGNATURE: \_\_\_\_\_  
**ROADWAY DESIGN**  
 PROFESSIONAL ENGINEER  
 SEAL 15435  
 JOHN C. LANSFORD  
 3/12/07 P.E.

**DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA**

STATE DESIGN ENGINEER  
**DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATIVE**  
 APPROVED  
 DIVISION ADMINISTRATOR

12-MAR-2007 09:47  
P:\PROJ\3189\15435\15435.DWG  
\$\$\$\$USE ENAMEL \$\$\$\$



INDEX OF SHEETS	
SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARDS
1-B	CONVENTIONAL SYMBOLS
1-C	SURVEY CONTROL SHEET
2	PAVEMENT SCHEDULE, DETAIL OF WEDGING, AND TYPICAL SECTIONS
2-A	CONCRETE STEPS WITH HANDRAIL
2-B	ANCHORAGE FOR FRAMES
3	SUMMARY OF QUANTITIES
3-A	LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER), SUMMARY OF EARTHWORK, AND SUMMARY OF PAVEMENT REMOVAL SHEET
4	PLAN SHEET
5	PROFILE
TCP-1 THRU TCP-3	TRAFFIC CONTROL PLANS
PM1	PAVEMENT MARKING PLAN
EC-1 THRU EC-4	EROSION CONTROL PLANS
SIGN-1 THRU SIGN-3	SIGNING PLANS
UC-1 THRU UC-9	UTILITY CONSTRUCTION PLANS
UD-1	UTILITY BY OTHERS PLANS
X-1	CROSS SECTION SUMMARY SHEET
X-2 THRU X-11	CROSS SECTIONS
S-1 THRU S-30	STRUCTURE PLANS
W-1 THRU W-3	RETAINING WALL PLANS

GENERAL NOTES: 2006 SPECIFICATIONS  
EFFECTIVE: 07-18-06  
REVISED: 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 11.

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 Progress Energy, Bell South  
Public Service Gas of N. C., Town of Canton (water)  
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 OTHERS.

WHEELCHAIR RAMPS:  
WHEELCHAIR RAMPS ARE SHOWN ON THE PLANS AT APPROXIMATE LOCATIONS. THE CONSTRUCTION OF ALL WHEELCHAIR RAMPS SHALL BE IN ACCORDANCE WITH DETAILS IN PLANS.

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
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation - Method 'A'
DIVISION 4 - MAJOR STRUCTURES	
422.10	Reinforced Bridge Approach Fills
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
550.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
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
840.29	Frame 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
840.54	Manhole Frame and Cover
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb & Gutter
848.01	Concrete Sidewalk
848.05	Wheelchair Ramp - Curb Cut
876.02	Guide for Rip Rap at Pipe Outlets
<b>1525.01</b>	<b>PRECAST SANITARY SEWER MANHOLE</b>

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# CONVENTIONAL SYMBOLS

\*S.U.E = SUBSURFACE UTILITY ENGINEER

## 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	-----T-----
Prop. Guardrail	-----T-----
Exist. Cable Guiderail	-----A-----
Prop. Cable Guiderail	-----A-----
Equality Symbol	-----⊕-----
Pavement Removal	-----X-----

## 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	-----C-----
Prop. Control of Access Line	-----C-----
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	-----
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	-----□-----
Cable TV Pedestal	-----□-----
Hydrant	-----⊕-----
Satellite Dish	-----
Exist. Water Valve	-----⊕-----
Sewer Clean Out	-----⊕-----
Power Manhole	-----⊕-----
Telephone Booth	-----□-----
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.*)	-----PUTL-----
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	-----ECM-----
Property Number	-----123-----
Parcel Number	-----6-----
Fence Line	-----X-----
Existing Wetland Boundaries	-----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

24-JAN-2007 06:48:30 USER:NAME

**NOTES**

1. 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/

THE FILES TO BE FOUND ARE AS FOLLOWS:

B3189\_LS\_CONTROL\_031030.TXT

**BENCHMARK DATA**

.....  
 BM1 ELEVATION = 2618.33  
 N 671846 E 858772  
 L1 STATION 5+00  
 N 38° 51' 25.6" W DIST 705.48  
 CHISLED SQUARE WITH 'X' IN CONC.  
 SIDEWALK ON THE NORTHWEST SIDE OF  
 INTERSECTION OF BRIDGE ST. AND MAIN STR.  
 .....

.....  
 BM2 ELEVATION = 2646.11  
 N 671905 E 859034  
 L1 STATION 5+00  
 N 16° 34' 11.7" W DIST 634.40  
 CHISLED SQUARE WITH 'X' IN CONC.  
 SIDEWALK ON THE NORTH SIDE OF MAIN STR.  
 POINT LOCATED +/- 72' EAST BACKLINE OF  
 BY6 STA. 5+00.00  
 .....

.....  
 BM3 ELEVATION = 2629.90  
 N 671394 E 858764  
 L1 STATION 7+01.415 RIGHT  
 POINT SET ON TOP OF THE 6TH METAL  
 RIVETED BOLT ON A I-BEAMTYPE GUARD-RAIL  
 ABOVE A METAL PLATE READING 'CAROLINA  
 STEEL & IRON COMPANY'.  
 .....

.....  
 BM4 ELEVATION = 2591.57  
 N 671479 E 859291  
 L1 STATION 5+00  
 N 22° 45' 45.5" E DIST 197.12  
 CHISLED SQUARE ON ROCK OUT CROP. POINT  
 IS LOCATED 8.2' FROM THE NORTH RAIL OF  
 THE NORFOLK SOUTHERN RR HEADING EAST  
 TOWARDS ASHEVILLE.  
 .....

.....  
 BM5 ELEVATION = 2627.71  
 N 671101 E 858732  
 L1 STATION 7+20  
 S 86° 14' 12.5" W DIST 347.42  
 CHISLED SQUARE WITH 'X' IN CONC.  
 SIDEWALK ON THE SOUTHEAST SIDE OF THE  
 INTERSECTION OF US 19/23/74 (CHURCH  
 STR.) AND SR-1643(BRIDGE ST.).  
 .....

.....  
 BM6 ELEVATION = 2659.52  
 N 671293 E 859155  
 L1 STATION 5+40.45 RIGHT  
 CHISLED SQUARE WITH 'X' IN CONC.  
 SIDEWALK ON THE SOUTHWEST SIDE OF THE  
 INTERSECTION OF US 19/23/74 (CHURCH ST  
 & HAMPTON HEIGHTS RD.  
 .....

.....  
 BM7 ELEVATION = 2690.47  
 N 671203 E 859347  
 L1 STATION 5+00  
 S 54° 40' 18.2" E DIST 161.67  
 CHISLED SQUARE WITH 'X' IN CONC.  
 SIDEWALK ON THE NORTHEAST SIDE OF  
 HAMPTON HEIGHTS RD. POINT IS LOCATED  
 53' FROM THE NORTHWEST CORNER OF A ONE  
 STORY FRAME DWELLING  
 .....

.....  
 BM8 ELEVATION = 2633.61  
 N 671352 E 859621  
 L1 STATION 5+00  
 N 82° 16' 56.7" E DIST 410.36  
 CHISLED SQUARE WITH 'X' IN CONC.  
 SIDEWALK ON THE SOUTH SIDE OF US  
 19/23/74 (CHURCH ST.). POINT IS LOCATED  
 455' DUE EAST OF INTERSECTION OF CHURCH  
 ST & HAMPTON HEIGHTS RD.  
 .....

.....  
 BM100 ELEVATION = 2603.33  
 N 671659 E 858624  
 L1 STATION 5+00.609 RIGHT  
 CHISLED SQUARE WITH 'X' IN CONC.  
 SIDEWALK ON THE SOUTHWEST SIDE OF MAIN  
 STR.  
 .....

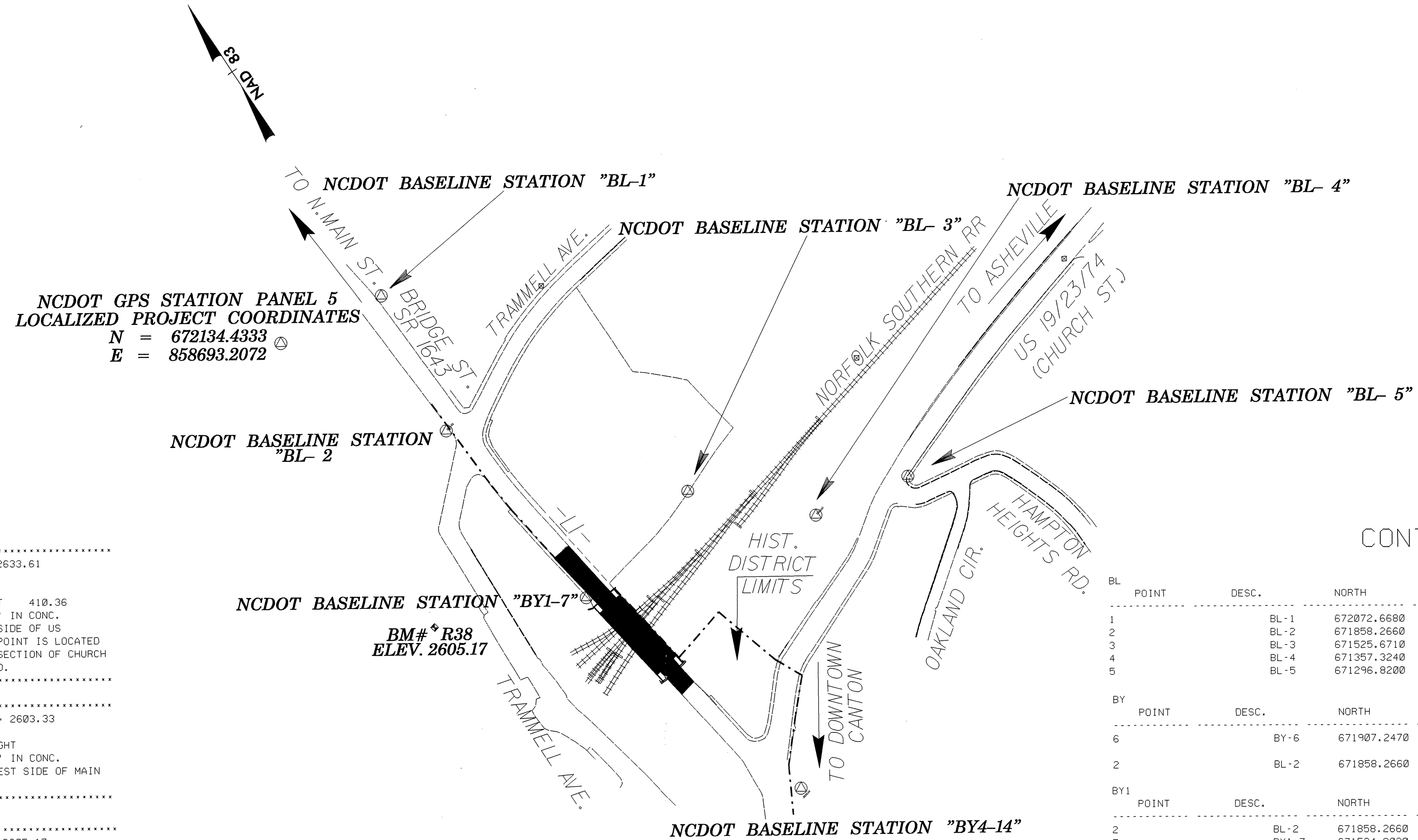
.....  
 R38 ELEVATION = 2605.17  
 N 671661 E 858541  
 L1 STATION 6+30.755 RIGHT  
 AT CANTON ON MAIN STR., DIRECTLY  
 OPPOSITE THE SOUTHERN RR STATION, 125'  
 FT NORTH OF THE TRACK. IN THE SOUTH  
 WALL OF THE BLUE RIDGE PAPER OFFICE  
 BUILDING OFFICE. 10' WEST OF THE STEPS.  
 OF THE ENTRANCE.  
 .....

**DATUM DESCRIPTION**

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT  
 IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY  
 NCDOT FOR MONUMENT "PANEL 5"  
 WITH NAD 83 STATE PLANE GRID COORDINATES OF  
 NORTHING: 672134.4333(f1) EASTING: 858693.2072(f1)  
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT  
 (GROUND TO GRID) IS: 0.99976478  
 THE N.C. LAMBERT GRID BEARING AND  
 LOCALIZED HORIZONTAL GROUND DISTANCE FROM  
 "PANEL 5" TO -L1- STATION 10+00.00 IS  
 S07°19'27.0"E 538.061  
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES  
 VERTICAL DATUM USED IS NGVD 29

**B-3189 SURVEY CONTROL SHEET**

PROJECT REFERENCE NO. SHEET NO.  
**B-3189 I-C**  
**LOCATION AND SURVEYS**



**CONTROL DATA**

BL POINT	DESC.	NORTH	EAST	ELEVATION	L1 STATION	OFFSET
1	BL-1	672072.6680	858852.2960	2623.54		OUTSIDE PROJECT LIMITS
2	BL-2	671858.2660	858772.9490	2619.00		OUTSIDE PROJECT LIMITS
3	BL-3	671524.9020	858736.3140	2626.68	10+77.27	20.81 RT
4	BL-4	671357.3240	859073.2610	2658.07	12+23.99	325.72 LT
5	BL-5	671296.8200	859214.7120	2663.76	12+75.76	470.60 LT
<b>BY POINT DATA</b>						
6	BY-6	671907.2470	858961.7550	2638.70		OUTSIDE PROJECT LIMITS
2	BL-2	671858.2660	858772.9490	2619.00		OUTSIDE PROJECT LIMITS
<b>BY1 POINT DATA</b>						
2	BL-2	671858.2660	858772.9490	2619.00		OUTSIDE PROJECT LIMITS
7	BY1-7	671524.9020	858736.3140	2626.68	10+77.27	20.81 RT
14	BY4-14	671083.9650	858754.1100	2639.54		OUTSIDE PROJECT LIMITS
<b>BY2 POINT DATA</b>						
2	BL-2	671858.2660	858772.9490	2619.00		OUTSIDE PROJECT LIMITS
8	BY2-8	671786.1770	858655.3690	2610.72		OUTSIDE PROJECT LIMITS
<b>BY3 POINT DATA</b>						
9	BY3-9	671443.2800	859292.3230	2590.37	11+24.84	539.14 LT
10	BY3-10	671436.9840	859016.9420	2595.10	11+47.92	264.65 LT
11	BY3-11	671399.2730	858699.5810	2597.84	12+04.91	49.82 RT
<b>BY4 POINT DATA</b>						
12	BY4-12	671384.0700	859564.9300	2637.99	11+67.32	814.85 LT
5	BL-5	671296.8200	859214.7120	2663.76	12+75.76	470.60 LT
13	BY4-13	671256.4280	858876.9920	2644.11	13+36.67	135.97 LT
14	BY4-14	671083.9650	858754.1100	2639.54		OUTSIDE PROJECT LIMITS
<b>BY5 POINT DATA</b>						
15	BY5-15	671210.7400	859352.3540	2689.46		OUTSIDE PROJECT LIMITS
5	BL-5	671296.8200	859214.7120	2663.76	12+75.76	470.60 LT
<b>BY6 POINT DATA</b>						
5	BL-5	671296.8200	859214.7120	2663.76	12+75.76	470.60 LT
16	BY6-16	671123.5640	859078.7260	2673.92		OUTSIDE PROJECT LIMITS

⊗ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.  
 PROJECT CONTROL ESTABLISHED UTILIZING GLOBAL POSITIONING SYSTEM.  
 NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTATION.

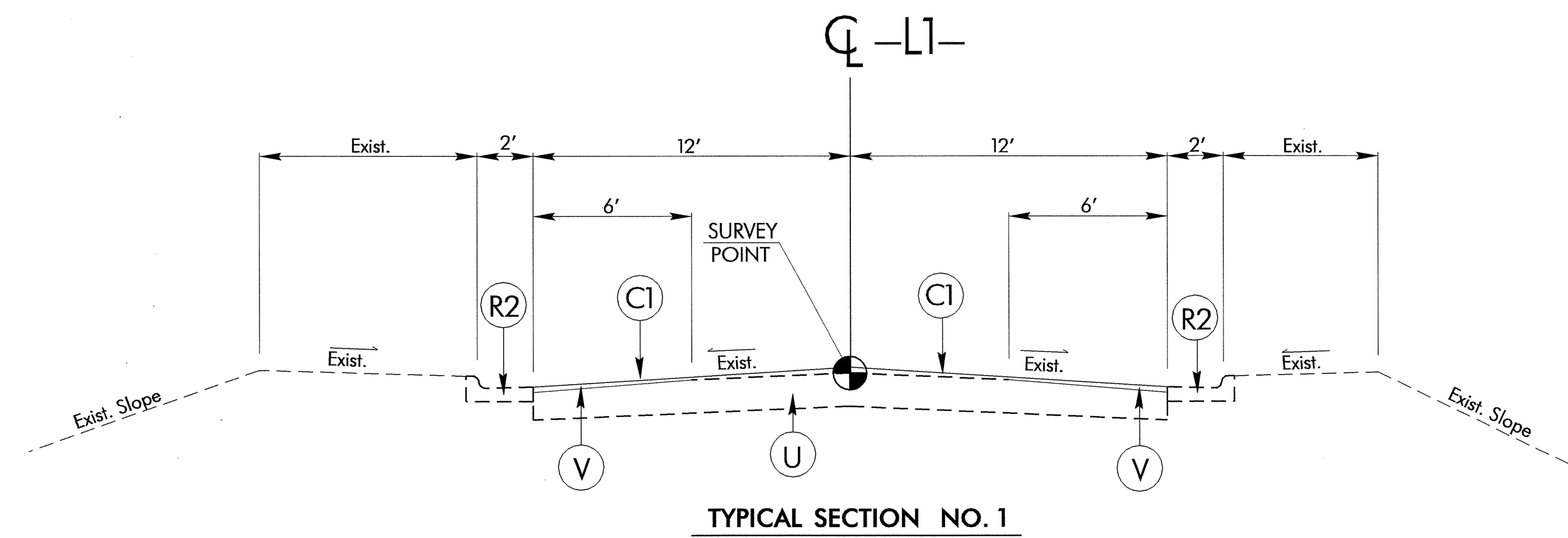
**NOTE: DRAWING NOT TO SCALE**

NOTE: ALL SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

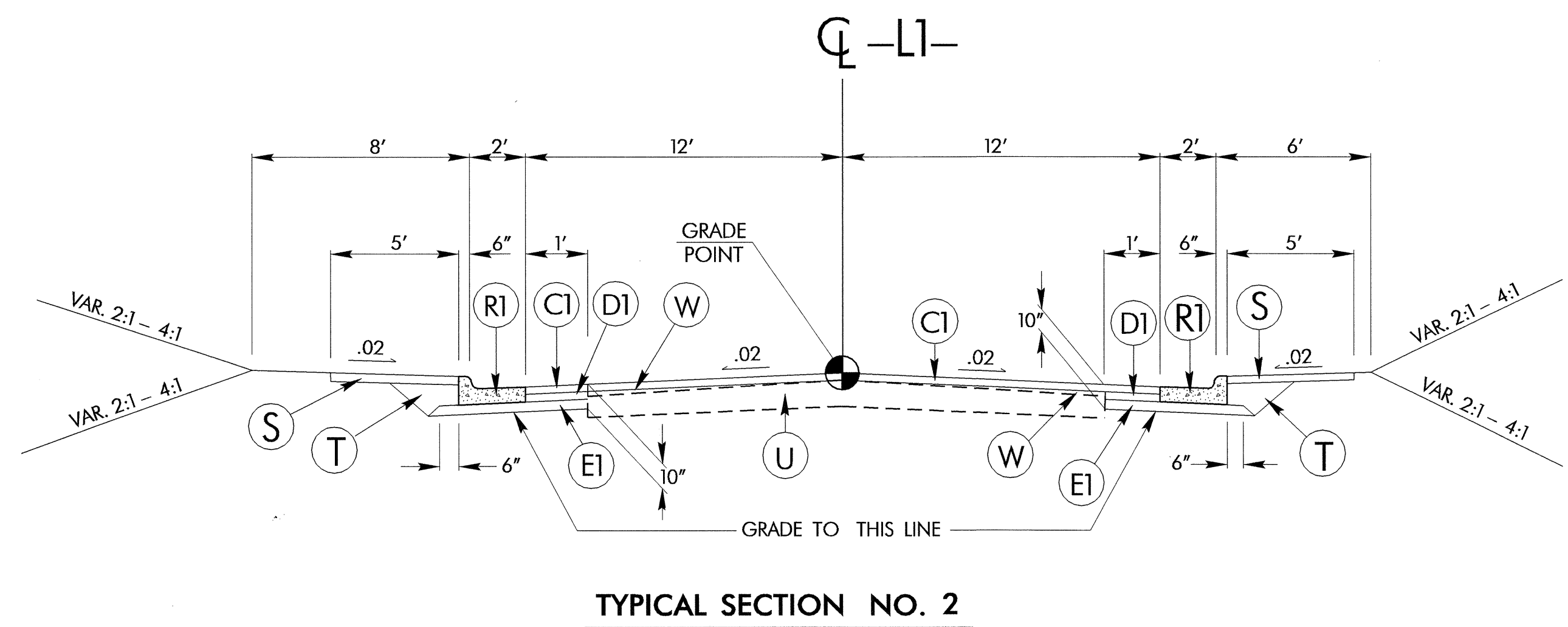
PAVEMENT SCHEDULE

C1	PROPOSED APPROX. 3" ASPHALT CONC. SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 168 lbs PER SQ YD IN EACH OF TWO LAYERS
C2	PROP. VAR. DEPTH ASPHALT CONC. SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 112 lbs PER SQ. YD. TO BE PLACED IN LAYERS NOT LESS THAN 1.5" OR GREATER THAN 2" IN DEPTH
D1	PROPOSED APPROX. 4" ASPHALT CONC. INTERMEDIATE COURSE TYPE I19.0B, AT AN AVERAGE RATE OF 456 lbs PER SQ YD
D2	PROP. VAR. DEPTH ASPHALT CONC. INTERMEDIATE COURSE TYPE I19.0B, AT AVERAGE RATE OF 114 lbs PER SQ. YD. TO BE PLACED IN LAYERS NOT LESS THAN 2.5" OR GREATER THAN 4" IN DEPTH
E1	PROPOSED APPROX. 3" ASPHALT CONC. BASE COURSE TYPE B25.0B, AT AN AVERAGE RATE OF 342 lbs PER SQ. YD
E2	PROP. VAR. DEPTH ASPHALT CONC. BASE COURSE TYPE B25.0B, AT AN AVERAGE RATE OF 114 lbs PER SQ. YD. TO BE PLACED IN LAYERS NOT LESS THAN 3" OR GREATER THAN 5.5" IN DEPTH
R1	PROPOSED 2'6" CONC. CURB AND GUTTER
R2	EXISTING 2'6" CONC. CURB AND GUTTER
S	PROPOSED 5' CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	MILLING BITUMINOUS PAVEMENT, 0"-3" DEPTH.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL)

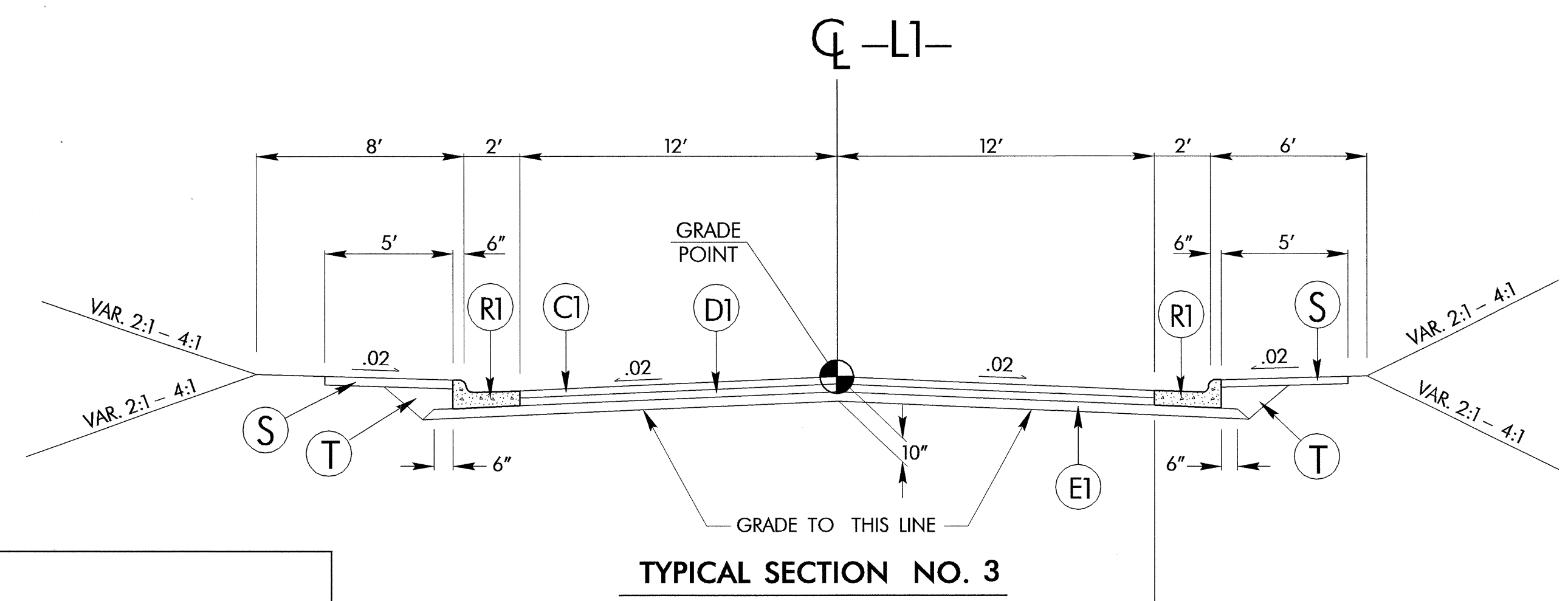
PROJECT REFERENCE NO. B-3189	SHEET NO. 2
ROADWAY DESIGN ENGINEER C. LANSFORD 3/8/07	PAVEMENT DESIGN ENGINEER ALAN R. FINGER 3/8/07



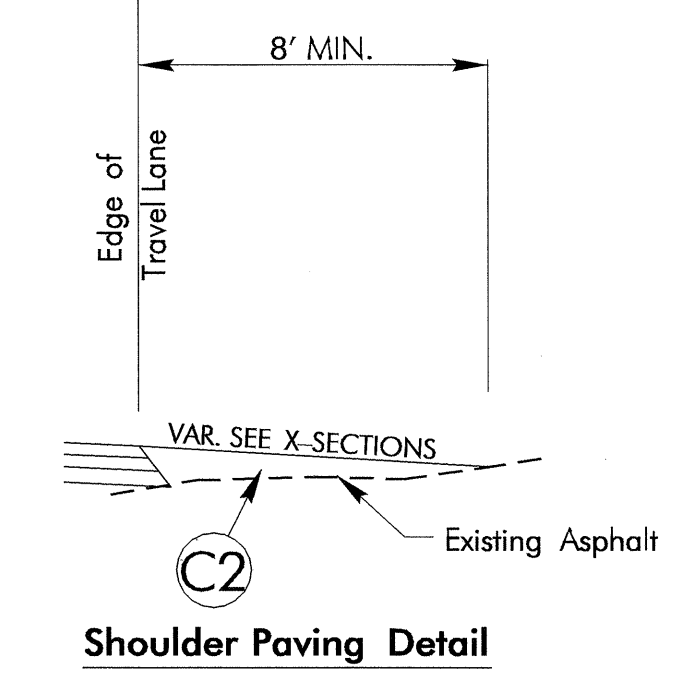
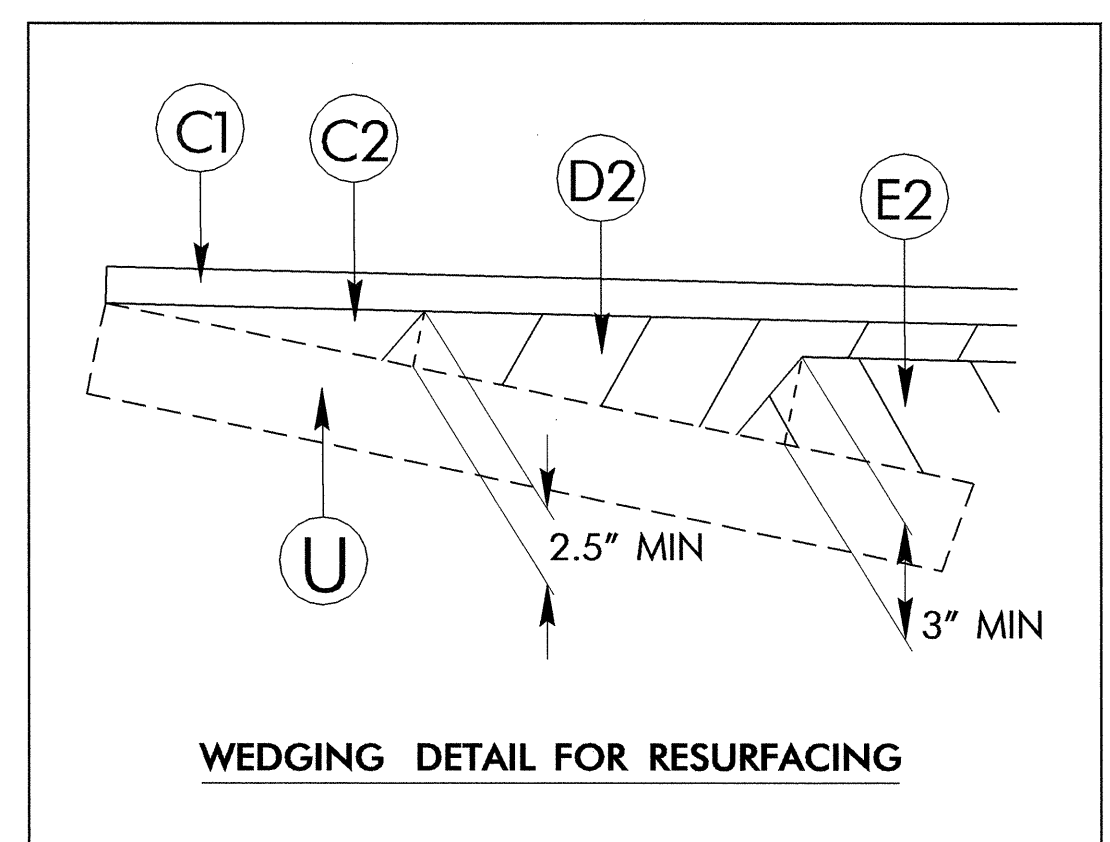
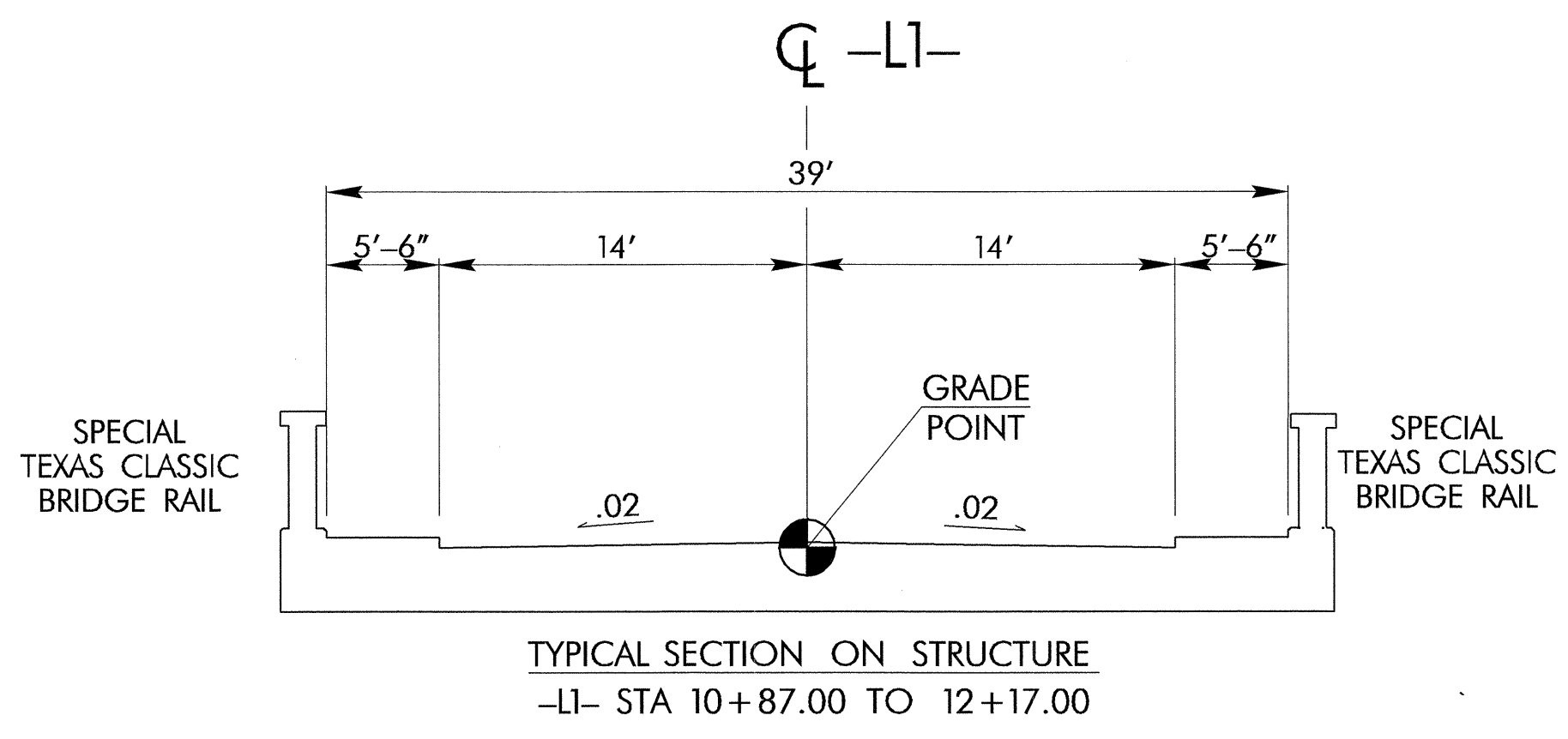
**USE TYPICAL SECTION NO. 1 FOR:**  
 -L1- STA 7+90.00 TO 10+00.00  
 -L1- STA 12+75.00 TO 14+50.00



**USE TYPICAL SECTION NO. 2 FOR:**  
 -L1- STA 10+00.00 TO 10+37.00



**USE TYPICAL SECTION NO. 3 FOR:**  
 -L1- 10+37.00 TO -L1- 10+63.00  
 -L1- 12+41.00 TO -L1- 12+75.00  
 (End curb & gutter @ Sta. 12+53.00.  
 See detail from -L1- 12+53 to -L1-12+75  
 LT & RT for shoulder paving)



**USE WITH TYPICAL SECTION NO. 3:**  
 -L1- 12+53.00 TO -L1- 12+75.00 LT. & RT.

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

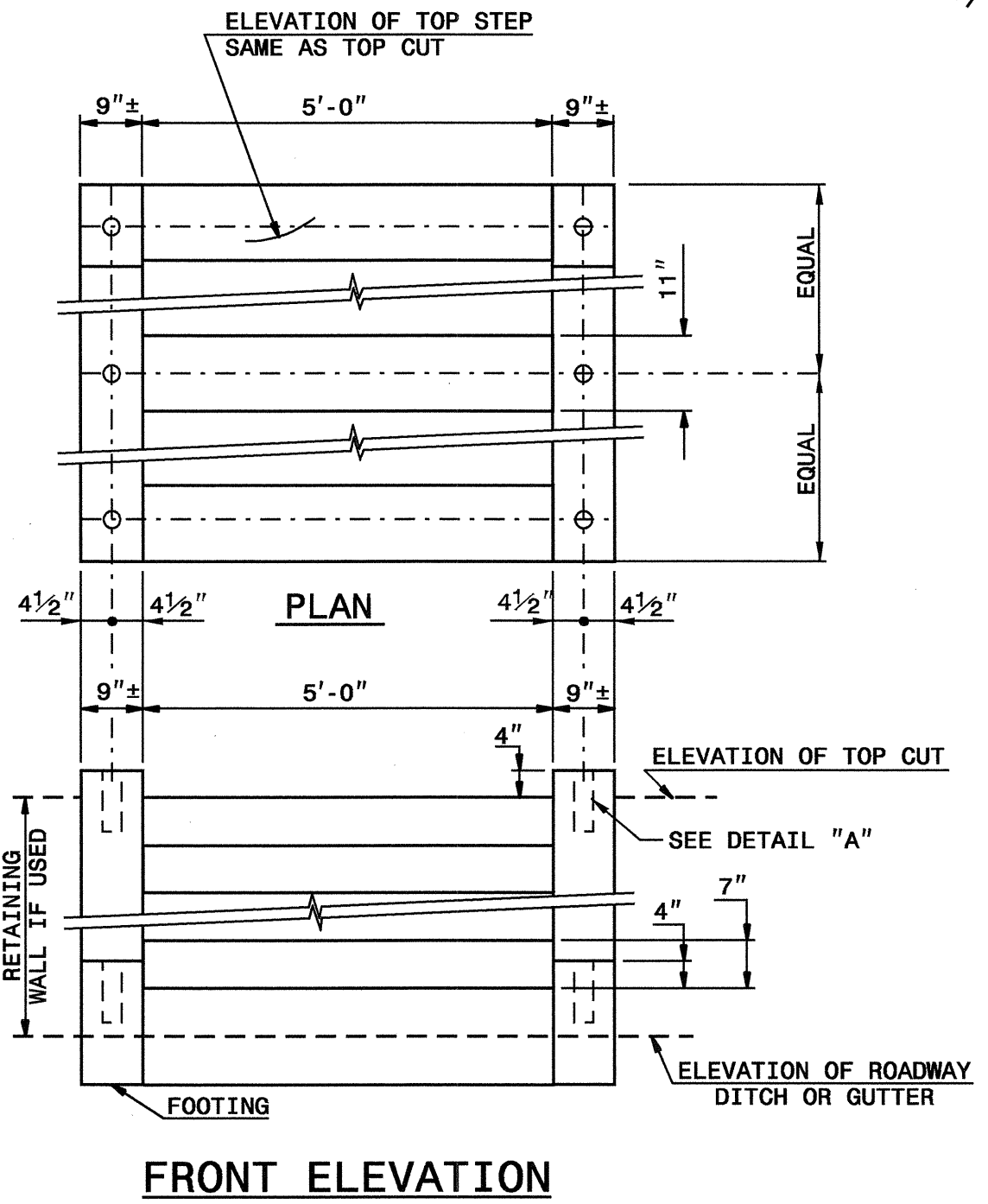
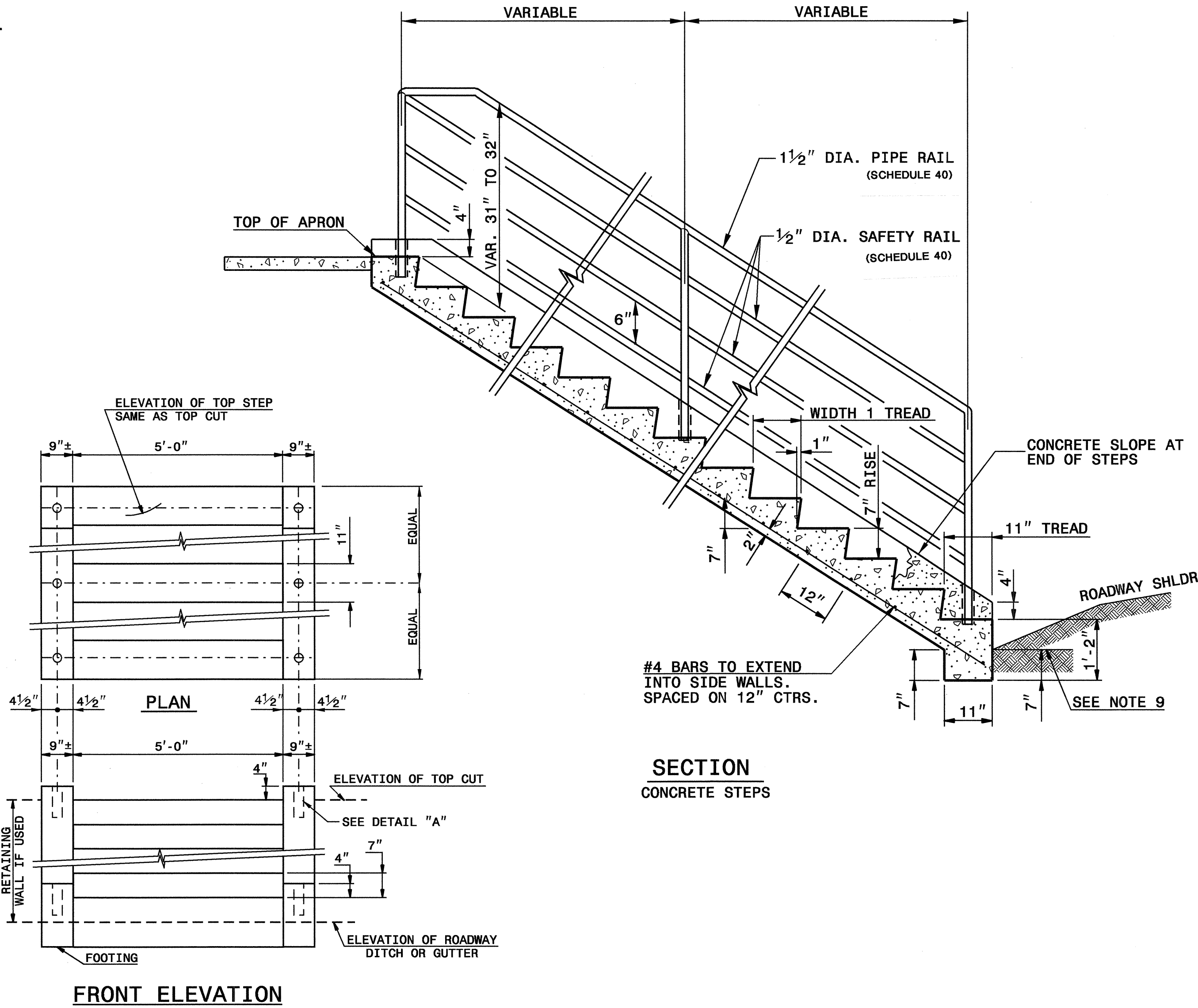
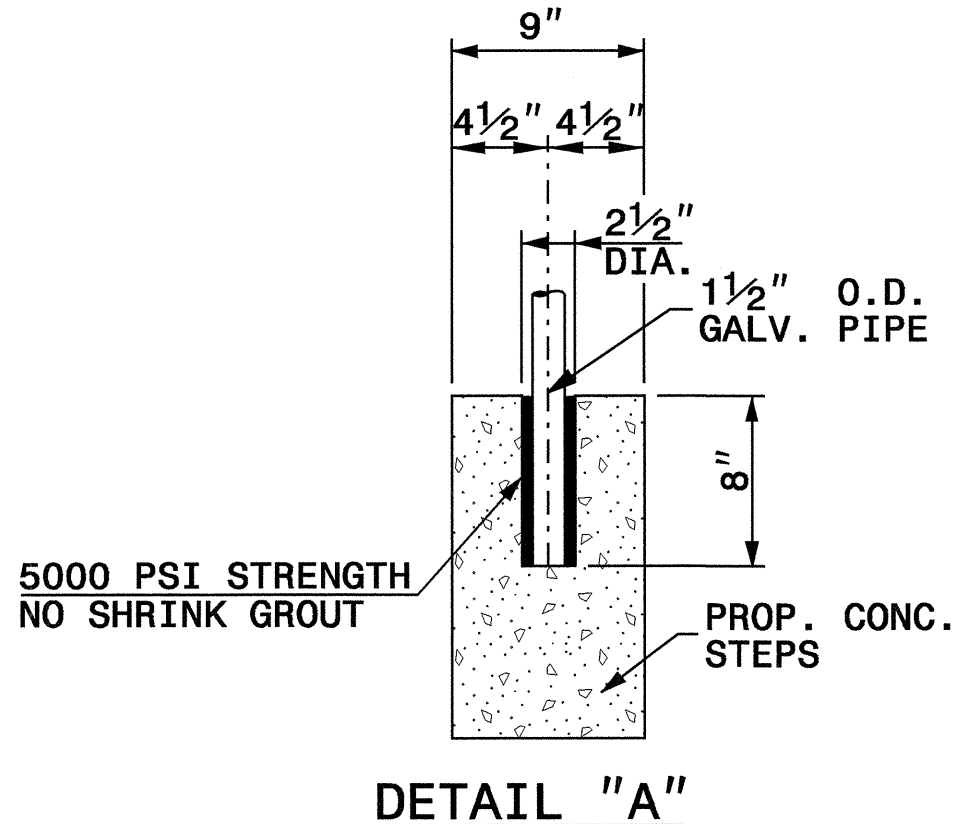
ENGLISH DETAIL DRAWING FOR  
**CONCRETE STEPS WITH HANDRAIL**

**GENERAL NOTES :**

- 1- CONSTRUCT PROPOSED STEEL PIPE RAIL OF 1 1/2" DIAMETER AS SHOWN ON DETAILS IN PLANS. IMBED PIPE RAIL 8" INTO PROPOSED STEPS WITH CHEMICAL OR CONCRETE GROUT ANCHORING SYSTEM AS DIRECTED BY THE ENGINEER. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD ROADWAY SPECIFICATIONS.
- 2- PRE-MEASURE AND CENTER THE PROPOSED RAILING ON TOP OF STEPS FOR POST SPACINGS. USE A ROTARY DRILL FOR DRILLING THE HOLES. NO IMPACT DRILLS ALLOWED, TO ELIMINATE ANY POSSIBILITY OF STRUCTURAL DAMAGES TO THE PROPOSED STEPS.
- 3- USE CHEMICAL ANCHORING APPLICATION WITH A MINIMUM OF 5,000 P.S.I. PULL OUT LOAD. USE CONCRETE GROUT WITH A MINIMUM OF 3,500 P.S.I. STRENGTH IN TWENTY EIGHT (28) CURING DAYS.
- 4- DESIGN IS A RECOMMENDED GUIDE TO THIS PIPE RAIL APPLICATION. FINAL ENGINEERING JUDGEMENT AT THE DISCRETION OF THE ENGINEER.
- 5- PAINT IN ACCORDANCE WITH SECTION 430 OF THE ROADWAY SPECIFICATIONS.
- 6- USE CLASS "B" CONCRETE THROUGHOUT FOR CONCRETE STEPS.
- 7- LOCATION AND QUANTITIES SHOWN ARE APPROXIMATE ONLY. EXACT LOCATION AND QUANTITIES WILL BE DETERMINED BY THE ENGINEER.
- 8- CONSTRUCT TOP OF CONCRETE STEPS EVEN WITH THE TOP OF CONCRETE APRON.
- 9- WHERE SIDEWALKS ARE PROPOSED OR EXISTING. THIS IS TO BE THE TOP OF THE SIDEWALK.

**CUBIC YARDS IN STANDARD CONCRETE STEPS**

NO. OF STEPS	4' WIDE	5' WIDE	6' WIDE	7' WIDE	ADDITIONAL CU. YDS. PER 1' WIDTH
2	0.4	0.5	0.5	0.6	0.1
3	0.6	0.7	0.8	0.9	0.1
4	0.8	0.9	1.0	1.2	0.1
5	1.0	1.2	1.3	1.4	0.1
6	1.2	1.4	1.5	1.7	0.2
7	1.4	1.6	1.8	2.0	0.2
8	1.6	1.8	2.0	2.3	0.2
9	1.8	2.0	2.3	2.6	0.3
10	2.0	2.3	2.5	2.8	0.3
ADDITIONAL STEP INCREMENT	0.2	0.2	0.2	0.3	0.1



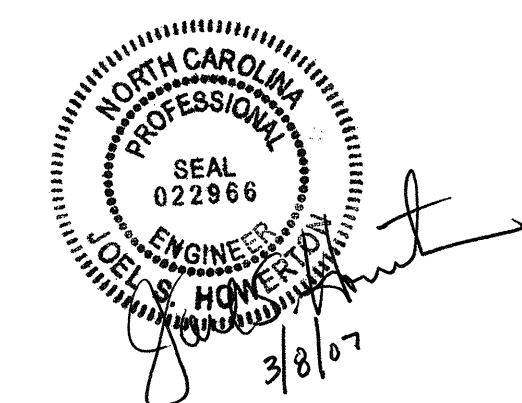
SHEET 1 OF 1  
**844D01**

SHEET 1 OF 1  
**844D01**

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

ENGLISH DETAIL DRAWING FOR  
**CONCRETE STEPS WITH HANDRAIL**

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

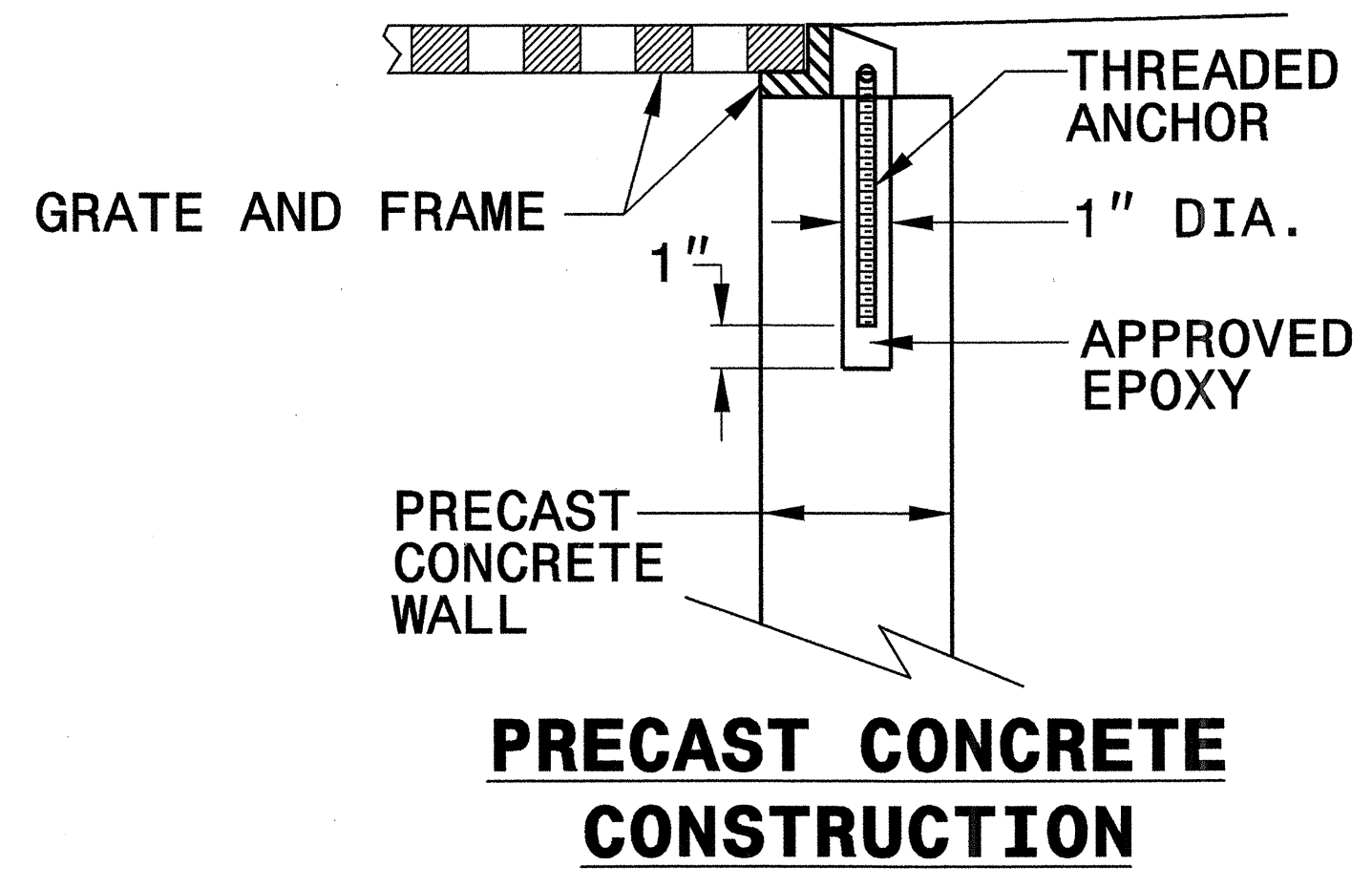
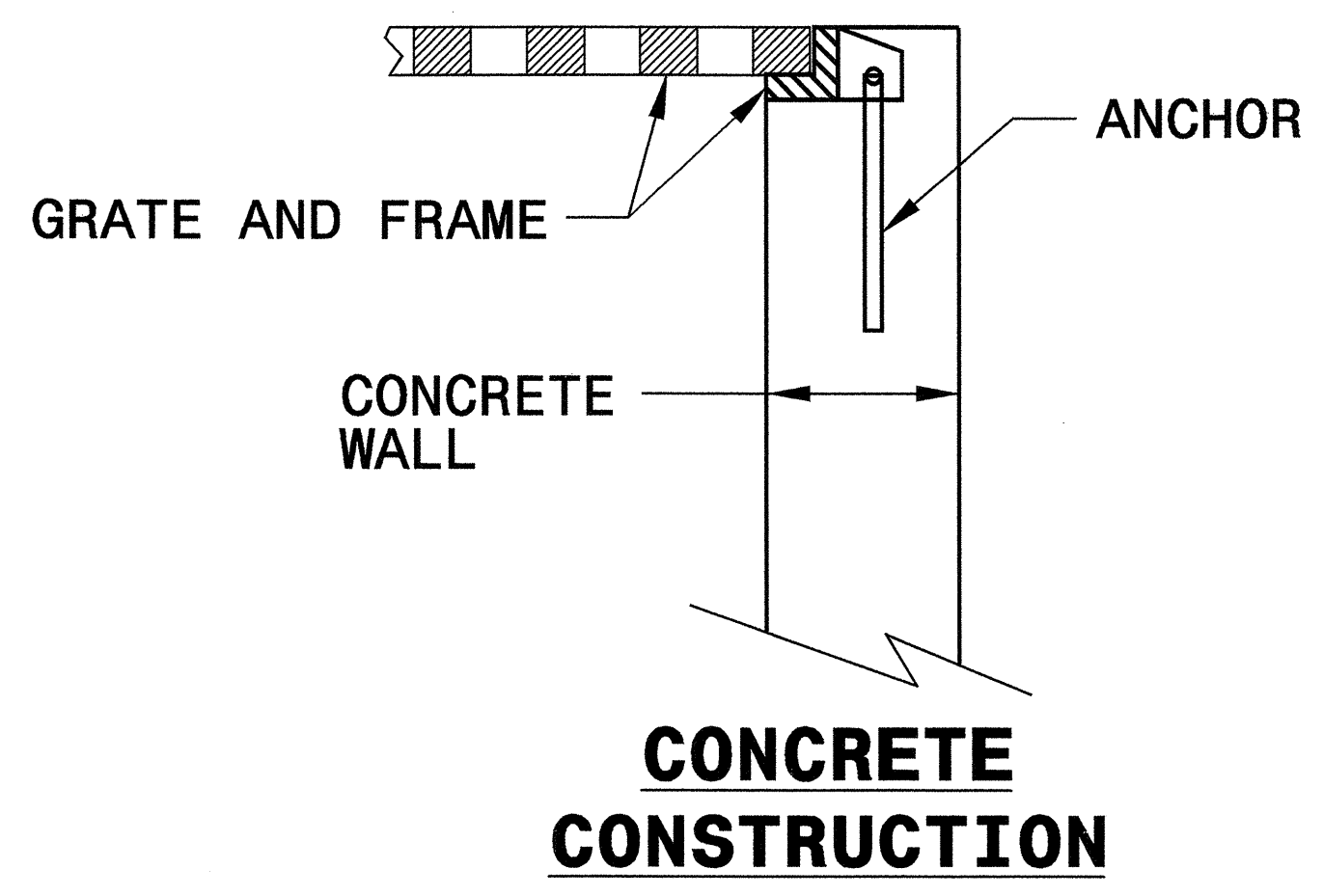
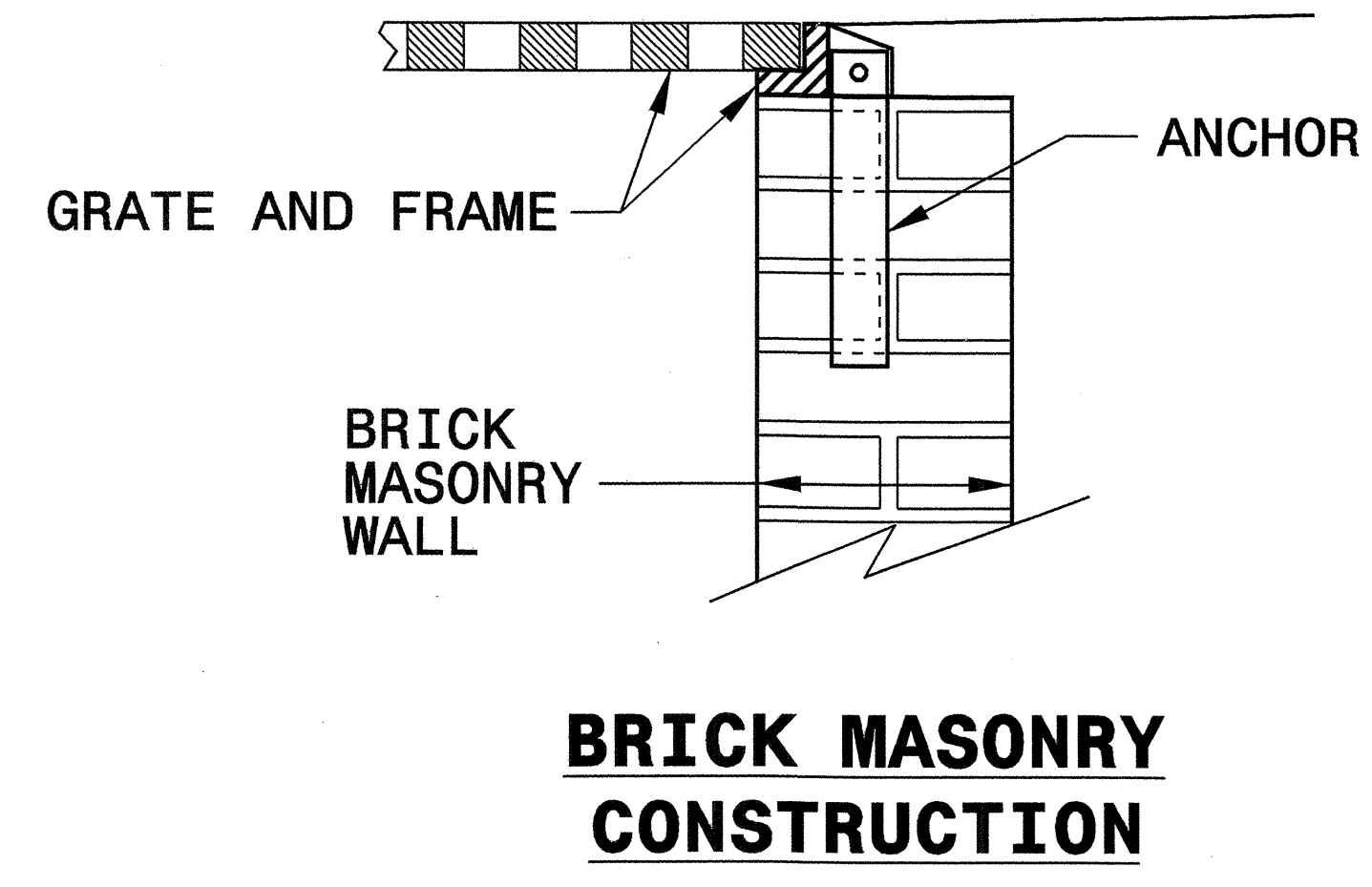
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MODIFIED BY: T.S. Spell DATE: Feb. 19, 2002  
CHECKED BY: [Signature] DATE: 2/12/07  
FILE SPEC.: s:\details\stand\844d01\_r1033a.dgn

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

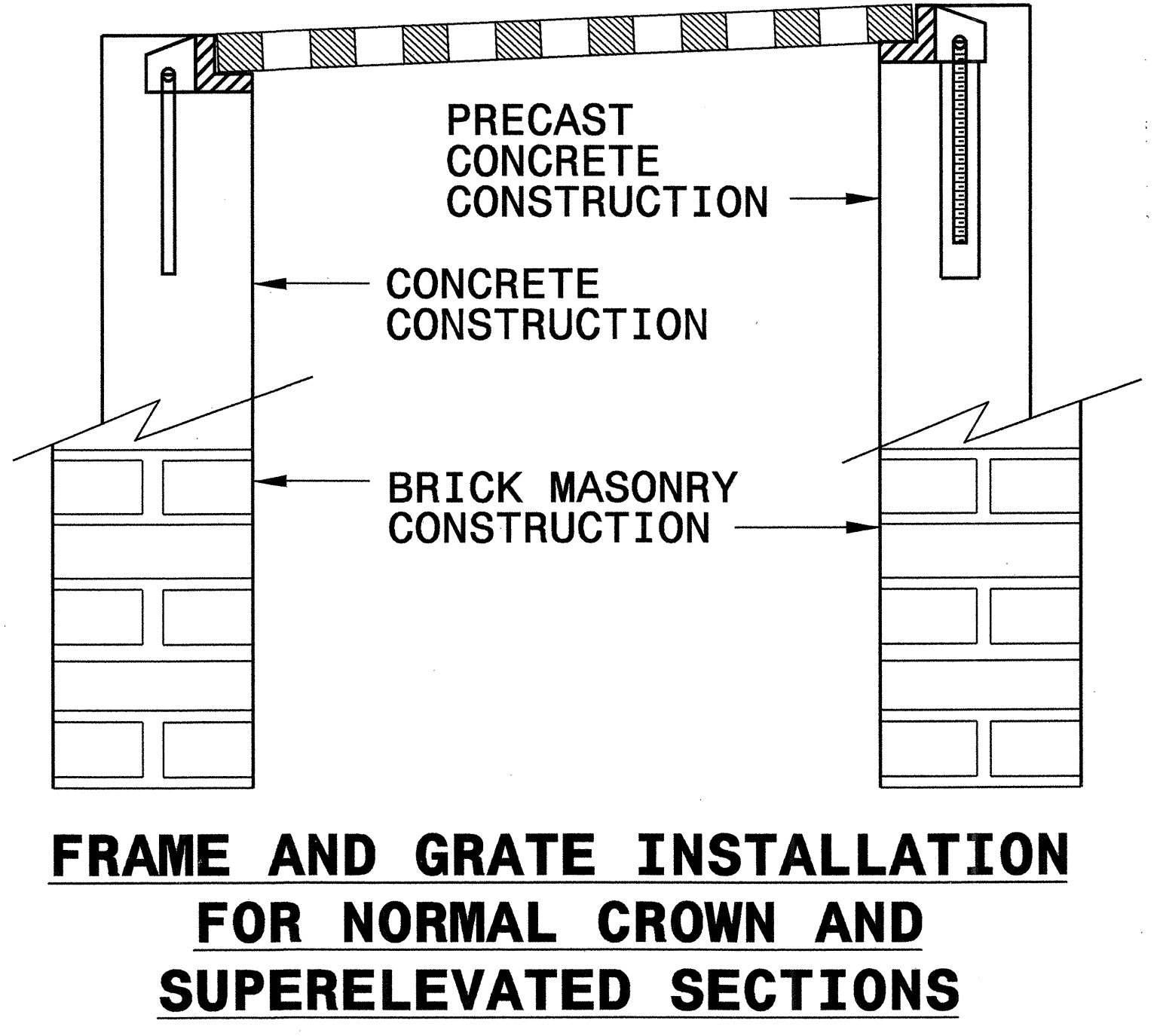
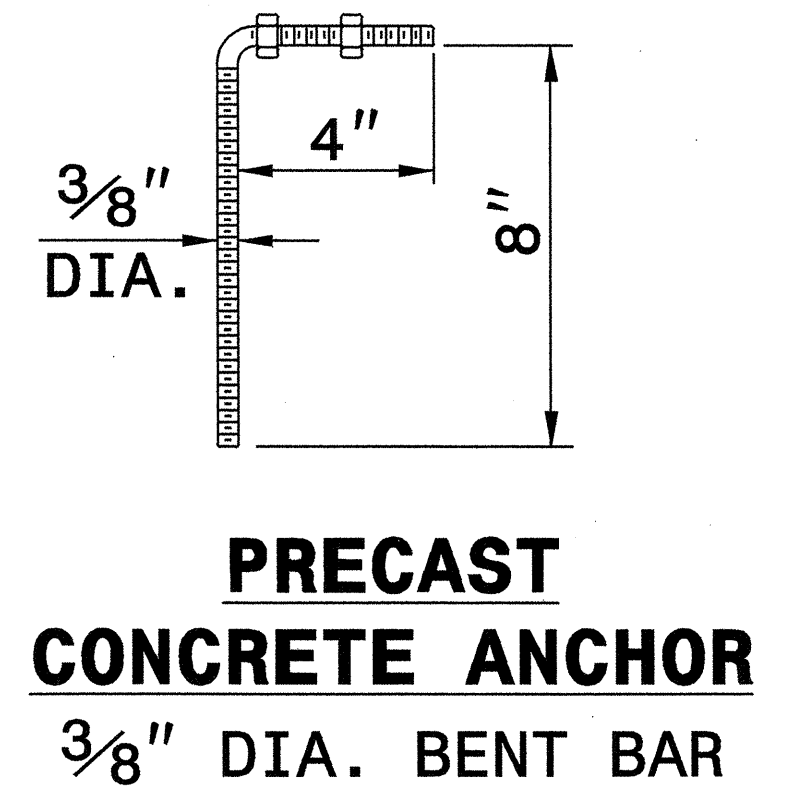
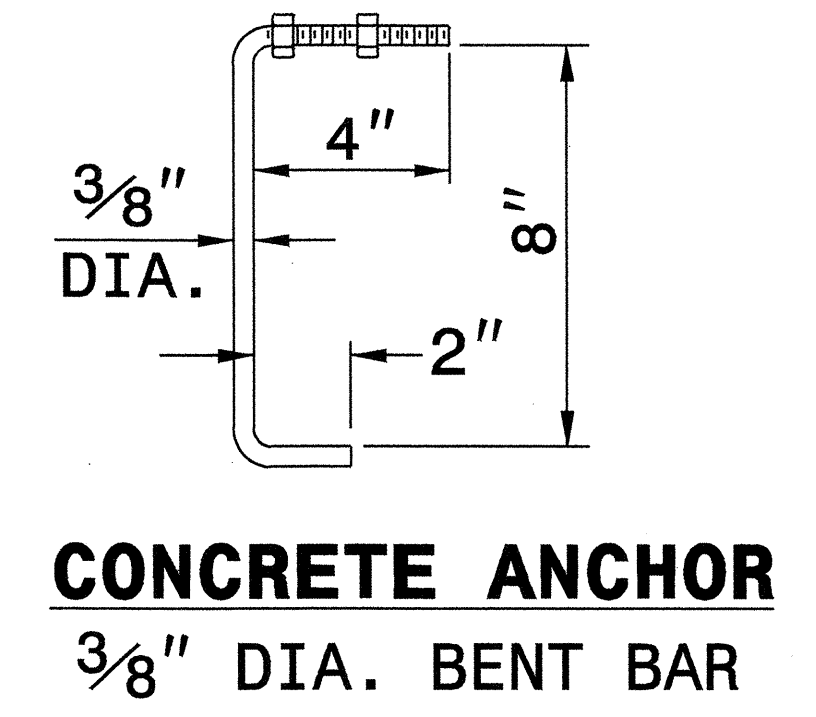
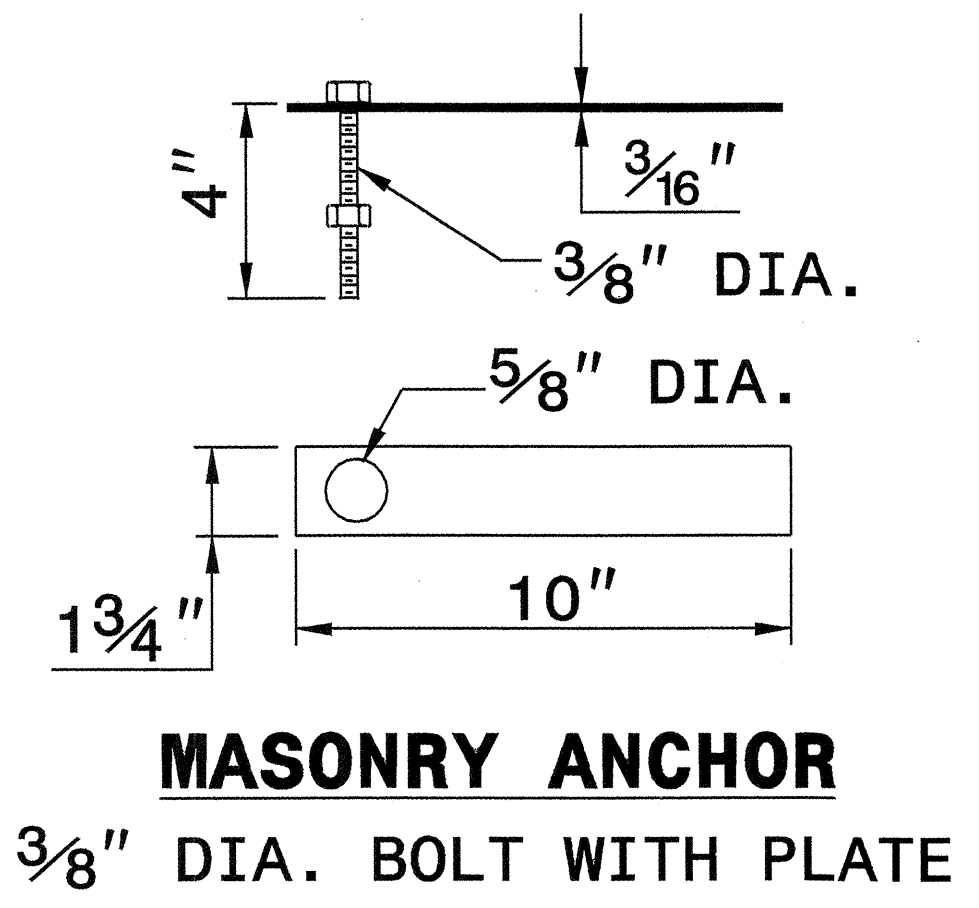
ENGLISH DETAIL DRAWING FOR  
**ANCHORAGE FOR FRAMES**  
BRICK/CONCRETE/PRECAST CONCRETE

SHEET 1 OF 1  
**840D25**



**DETAIL SHOWING ANCHORAGE OF FRAME FOR GRATED DROP INLET**

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



STATE OF  
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DIVISION OF HIGHWAYS  
RALEIGH, N.C.

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

SHEET 1 OF 1  
**840D25**

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J. S. HOWARD  
3017

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: *Kuls Hunt* DATE: 7/27/06  
FILE SPEC.: 1

**STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C201477**

ItemNumber	Sec #	Quantity	Unit	Description
000100000-N	800	Lump Sum		MOBILIZATION
000400000-N	801	Lump Sum		CONSTRUCTION SURVEYING
002900000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ***** (11+52.00-1-)
004300000-N	226	Lump Sum		GRADING
005000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB- BING
005700000-E	226	100	CY	UNDERCUT EXCAVATION
008000000-E	SP	100	TON	CLASS IV SUBGRADE STABILIZA- TION
019500000-E	265	100	CY	SELECT GRANULAR MATERIAL
019600000-E	270	100	SY	FABRIC FOR SOIL STABILIZATION
025500000-E	SP	10	TON	GENERIC GRADING ITEM DISPOSAL OF CONTAMINATED SOIL
031800000-E	300	30	TON	FOUNDATION CONDITIONING MATE- RIAL, MINOR STRS
037200000-E	310	108	LF	18" RC PIPE CULVERTS, CLASS III
098600000-E	SP	40	LF	GENERIC PIPE ITEM 24" PVC PIPE
099500000-E	340	82	LF	PIPE REMOVAL
122000000-E	545	100	TON	INCIDENTAL STONE BASE
130800000-E	607	520	SY	MILLING ASPHALT PAVEMENT, **** TO ***** DEPTH (0" TO 3")
148900000-E	610	40	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
149800000-E	610	40	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0B
151900000-E	610	145	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5B
156000000-E	620	13	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22
169300000-E	654	100	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR
202200000-E	815	45	CY	SUBDRAIN EXCAVATION
203300000-E	815	34	CY	SUBDRAIN FINE AGGREGATE
204400000-E	815	200	LF	6" PERFORATED SUBDRAIN PIPE
205500000-E	815	6	EA	6" SUBDRAIN PIPE WYES, TEES, & ELBOWS
206600000-N	815	1	EA	CONCRETE PAD FOR SUBDRAIN PIPE OUTLET
207700000-E	815	6	LF	6" OUTLET PIPE (SUBDRAINS)
228600000-N	840	5	EA	MASONRY DRAINAGE STRUCTURES
230800000-E	840	28	LF	MASONRY DRAINAGE STRUCTURES
236700000-N	840	3	EA	FRAME WITH TWO GRATES, STD 840.29
237400000-N	840	1	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (E)
239600000-N	840	1	EA	FRAME WITH COVER, STD 840.54
254900000-E	846	150	LF	2'-6" CONCRETE CURB & GUTTER
259100000-E	848	85	SY	4" CONCRETE SIDEWALK
260500000-N	848	2	EA	CONCRETE WHEELCHAIR RAMPS
364900000-E	876	3	TON	RIP RAP, CLASS B
365600000-E	876	161	SY	FILTER FABRIC FOR DRAINAGE
402500000-E	901	16.5	SF	CONTRACTOR FURNISHED, TYPE *** SIGN (E)
407200000-E	903	44	LF	SUPPORTS, 3-LB STEEL U-CHANNEL
410200000-N	904	4	EA	SIGN ERECTION, TYPE E
411610000-N	904	1	EA	SIGN ERECTION, RELOCATE, TYPE *** (GROUND MOUNTED) (E)
415500000-N	907	4	EA	DISPOSAL OF SIGN SYSTEM, U- CHANNEL
419200000-N	907	1	EA	DISPOSAL OF SUPPORT, U-CHANNEL
423800000-N	907	3	EA	DISPOSAL OF SIGN, D, E OR F
440000000-E	1110	208	SF	WORK ZONE SIGNS (STATIONARY)
440500000-E	1110	96	SF	WORK ZONE SIGNS (PORTABLE)
441000000-E	1110	116	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)

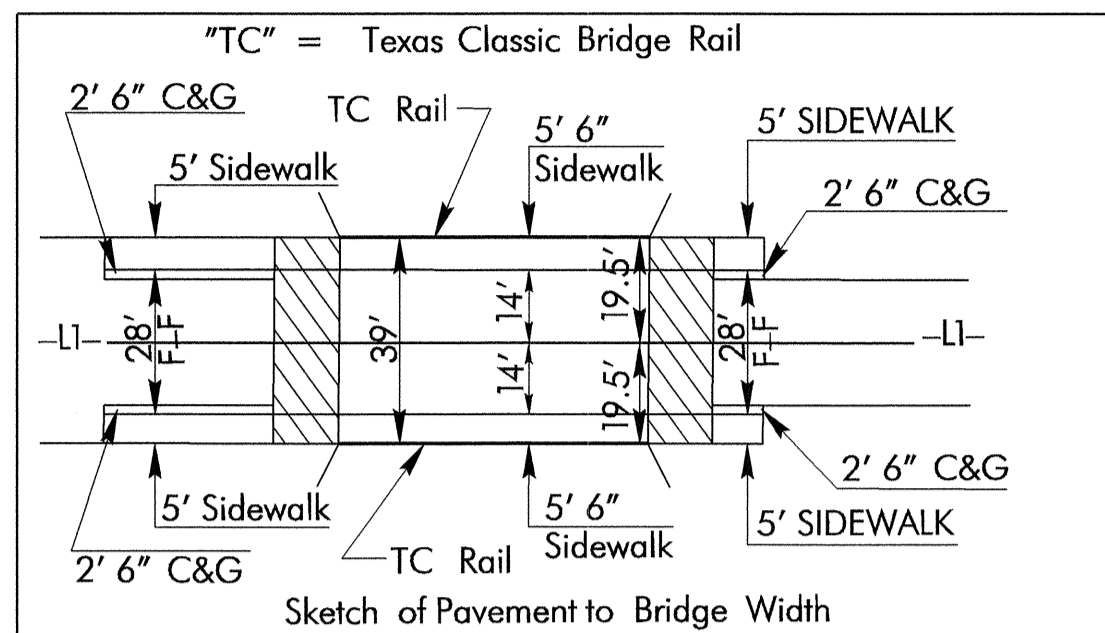
ItemNumber	Sec #	Quantity	Unit	Description
443000000-N	1130	15	EA	DRUMS
443500000-N	1135	15	EA	CONES
444500000-E	1145	140	LF	BARRICADES (TYPE III)
445000000-N	1150	100	HR	FLAGGER
451600000-N	1180	30	EA	SKINNY DRUM
468600000-E	1205	1,252	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)
469700000-E	1205	291	LF	THERMOPLASTIC PAVEMENT MARKING LINES (8", 120 MILS)
471000000-E	1205	108	LF	THERMOPLASTIC PAVEMENT MARKING LINES (24", 120 MILS)
532560000-E	1510	97	LF	6" WATER LINE
554000000-E	1515	1	EA	6" VALVE
567200000-N	1515	1	EA	RELOCATE FIRE HYDRANT
591200000-N	SP	Lump Sum		GENERIC UTILITY ITEM 6" DI RJ WATER MAIN ATTACHMENT
600000000-E	1605	335	LF	TEMPORARY SILT FENCE
600600000-E	1610	115	TON	STONE FOR EROSION CONTROL, CLASS A
600900000-E	1610	105	TON	STONE FOR EROSION CONTROL, CLASS B
601200000-E	1610	80	TON	SEDIMENT CONTROL STONE
601500000-E	1615	1	ACR	TEMPORARY MULCHING
601800000-E	1620	50	LB	SEED FOR TEMPORARY SEEDING
602100000-E	1620	0.25	TON	FERTILIZER FOR TEMPORARY SEED- ING
603000000-E	1630	85	CY	SILT EXCAVATION
603600000-E	1631	160	SY	MATting FOR EROSION CONTROL
608400000-E	1660	1	ACR	SEEDING & MULCHING
608700000-E	1660	0.5	ACR	MOWING
609000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
609300000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
609600000-E	1662	50	LB	SEED FOR SUPPLEMENTAL SEEDING
610800000-E	1665	0.75	TON	FERTILIZER TOPDRESSING
611400000-N	SP	2	HR	SPECIALIZED HAND MOWING
611700000-N	SP	4	EA	RESPONSE FOR EROSION CONTROL
689000000-E	SP	1	CY	CONCRETE STEPS





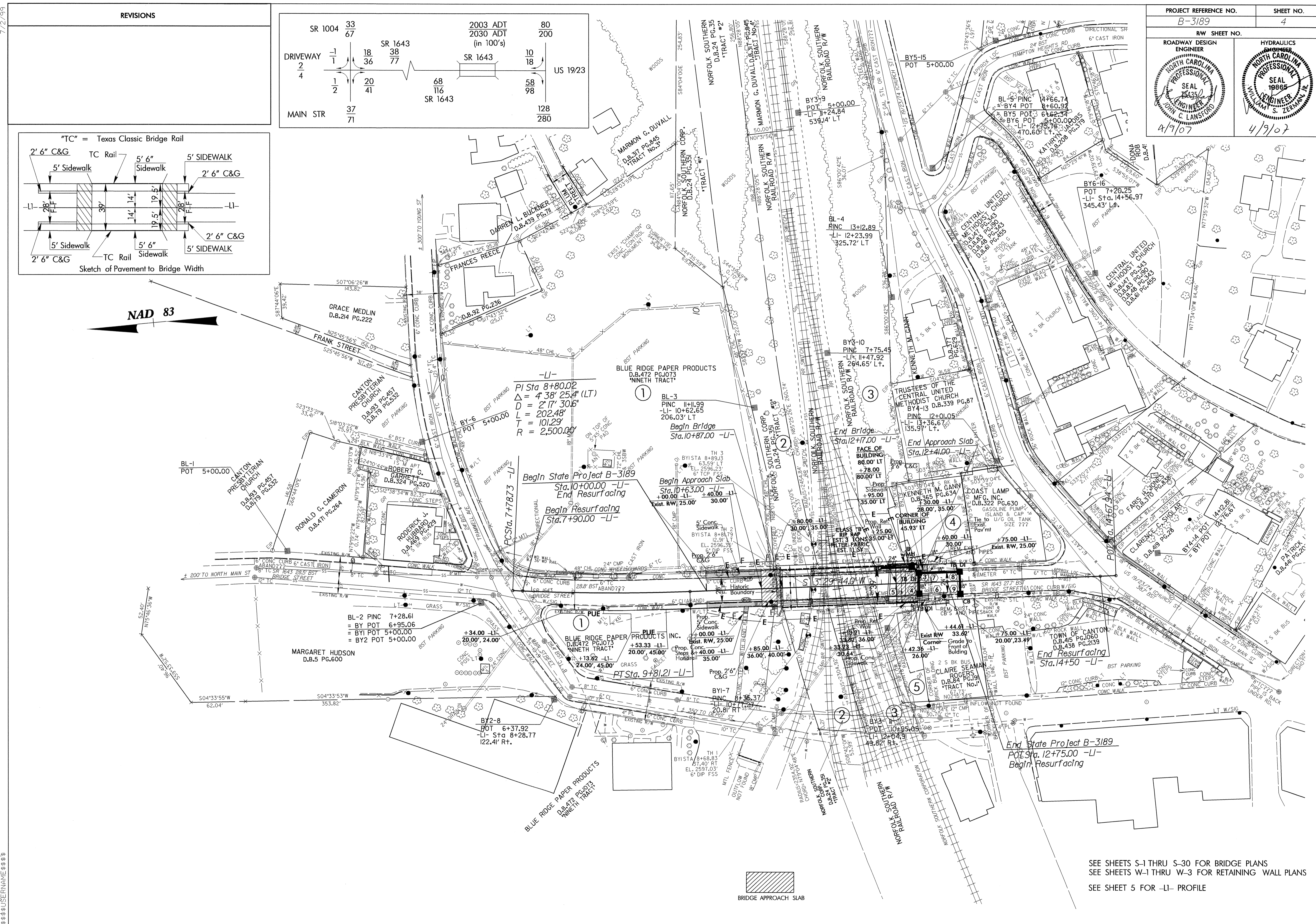
REVISIONS

SR 1004	33/67	2003 ADT	80/200
DRIVEWAY	1/4	18/36	10/18
	1/2	20/41	58/98
MAIN STR	37/71	68/116	128/280



NAD 83

PROJECT REFERENCE NO. B-3189	SHEET NO. 4
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL JOHN G. LANSFORD 4/9/07	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL WILLIAM S. ZEAMON, JR. 4/9/07

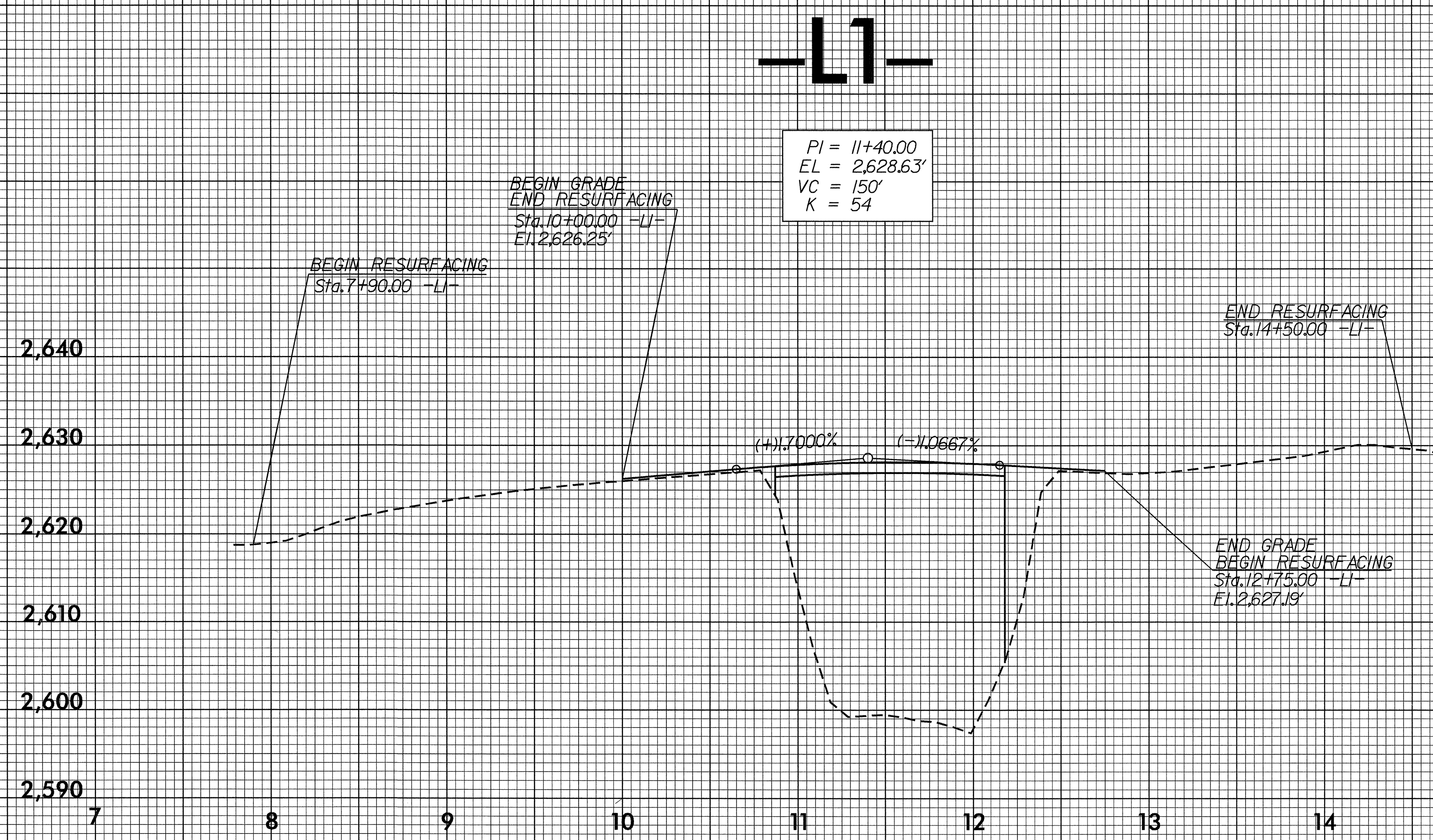


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SEE SHEETS S-1 THRU S-30 FOR BRIDGE PLANS  
 SEE SHEETS W-1 THRU W-3 FOR RETAINING WALL PLANS  
 SEE SHEET 5 FOR -LI- PROFILE

5/14/99

PROJECT REFERENCE NO. B-3189	SHEET NO. 5
ROADWAY DESIGN ENGINEER	



- BM3 ELEVATION = 2629.90  
N 671394 E 859764  
LI STATION 7+01.415 RIGHT  
POINT SET ON TOP OF THE 6TH METAL RIVETED BOLT ON A I-BEAMTYPE GUARD-RAIL ABOVE A METAL PLATE READING "CAROLINA STEEL & IRON COMPANY."
- BM4 ELEVATION = 2591.57  
N 671479 E 859291  
LI STATION 5+00  
N 22° 45' 45.5" E Dist 197.12  
CHISEL SQUARE ON ROCK OUT CROP. POINT IS LOCATED 8.2' FROM THE NORTH RAIL OF THE NORFOLK SOUTHERN RR HEADING EAST TOWARDS ASHEVILLE.
- BM6 ELEVATION = 2659.52  
N 671293 E 859155  
LI STATION 5+40 45 RIGHT  
CHISEL SQUARE WITH "X" IN CONC. SIDEWALK ON THE SOUTHWEST SIDE OF THE INTERSECTION OF US 192374 (CHURCH ST & HAMPTON HEIGHTS RD.
- BM8 ELEVATION = 2633.61  
N 671352 E 859621  
LI STATION 5+00  
N 82° 16' 56.7" E Dist 410.36  
CHISEL SQUARE WITH "X" IN CONC. SIDEWALK ON THE SOUTH SIDE OF US 192374 (CHURCH ST). POINT IS LOCATED 455' DUE EAST OF INTERSECTION OF CHURCH ST & HAMPTON HEIGHTS RD.

SEE SHEET 4 FOR -LI- LINE

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