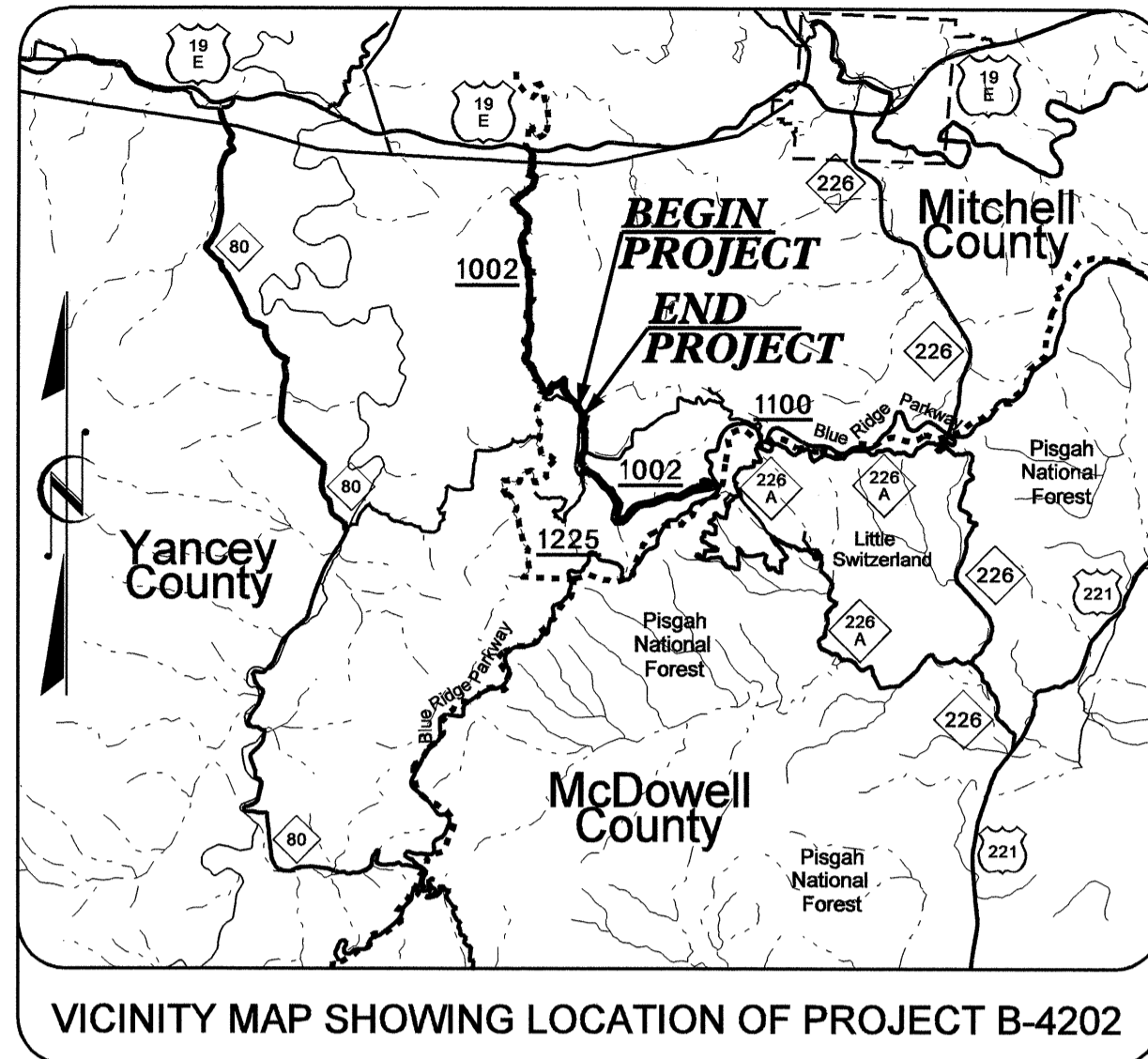


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

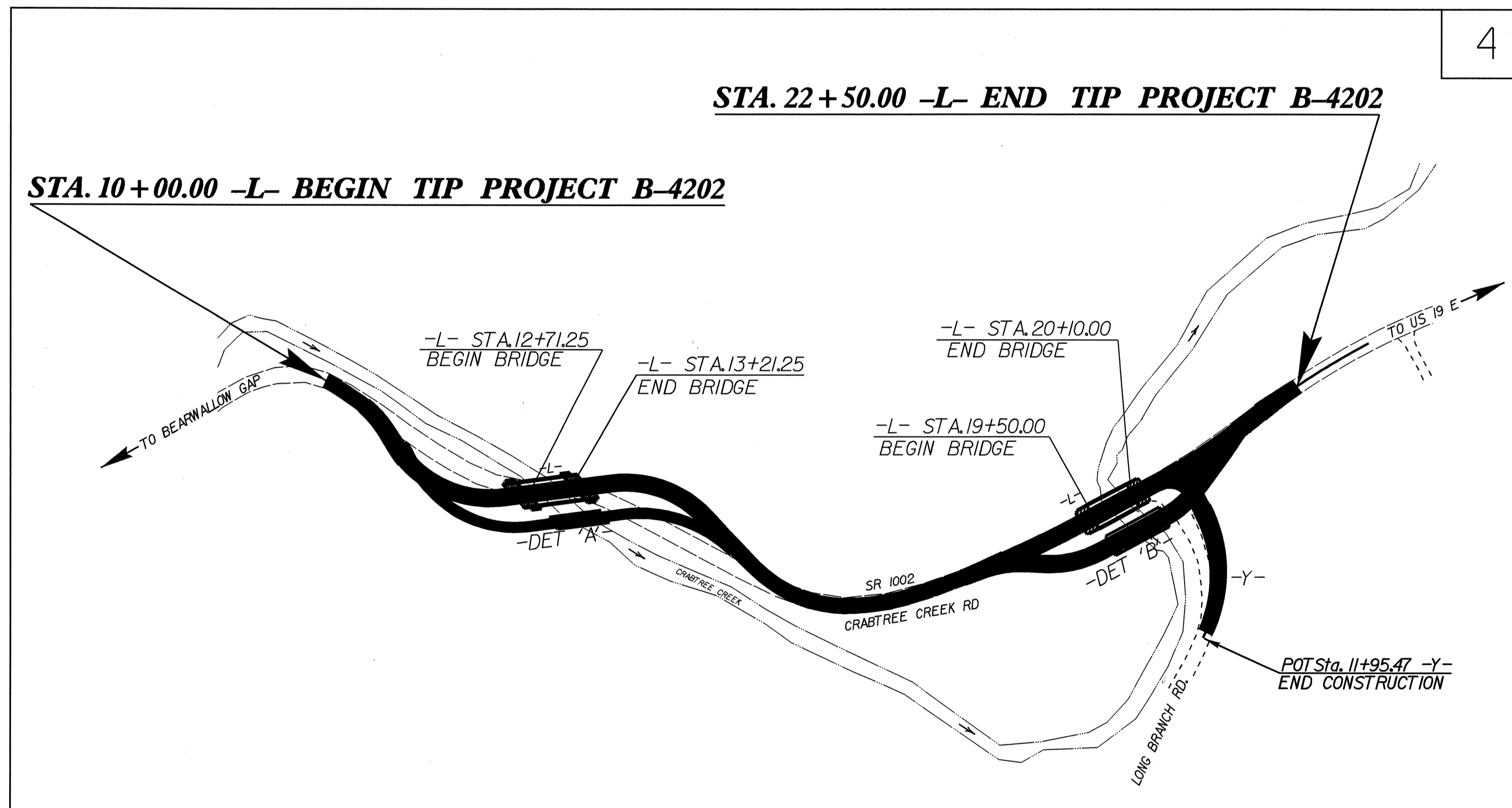
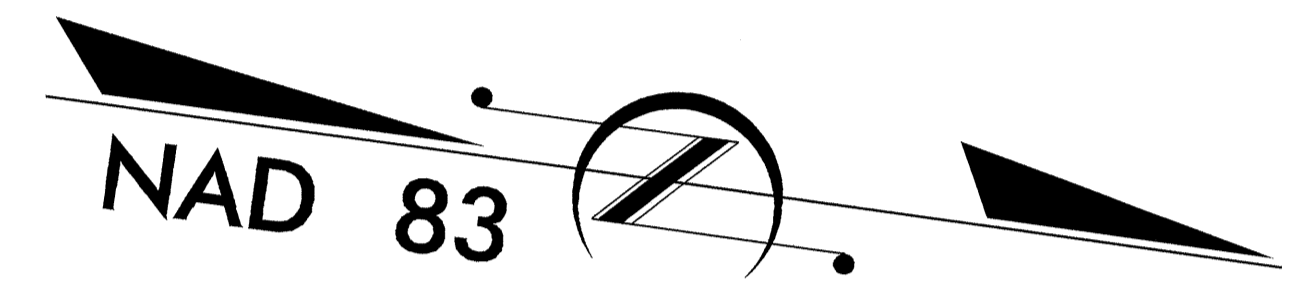
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4202	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33549.1.1	BRZ-1002(9)	PE	
33549.2.1	BRZ-1002(9)	R/W, UTIL.	
33549.3.1	BRZ-1002(9)	CONST	

MITCHELL COUNTY

LOCATION: REPLACEMENT OF BRIDGE NO. 109 AND BRIDGE NO. 110 ON SR 1002 (CRABTREE CREEK ROAD) OVER CRABTREE CREEK
TYPE OF WORK: GRADING, PAVING, DRAINAGE, STRUCTURES AND TEMPORARY SIGNALS

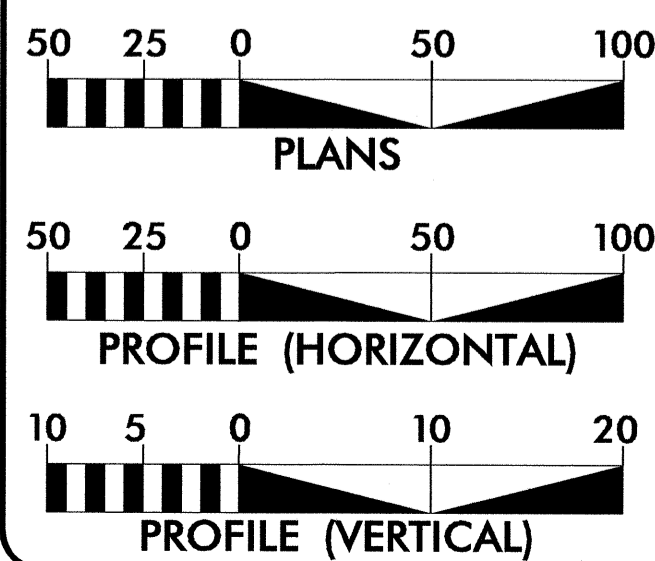


VICINITY MAP SHOWING LOCATION OF PROJECT B-4202



** DESIGN SPEED EXCEPTION WILL BE REQUIRED

GRAPHIC SCALES



DESIGN DATA

ADT 2007 = 375
ADT 2025 = 600
DHV = 12 %
D = 65 %
T = 3 % *
**V = 20 MPH
* (TTST 1% + DUAL 2%)
FUNC.CLASS. = RURAL LOCAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4202 = 0.216 MI
LENGTH STRUCTURES TIP PROJECT B-4202 = 0.021 MI
TOTAL LENGTH TIP PROJECT B-4202 = 0.237 MI

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JUNE 30, 2006

LETTING DATE:
JUNE 17, 2008

G. E. BREW, PE
PROJECT ENGINEER

W. T. BEST
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

4-08
[Signature]
[Professional Seal: G. E. Brew, No. 020460]

ROADWAY DESIGN ENGINEER

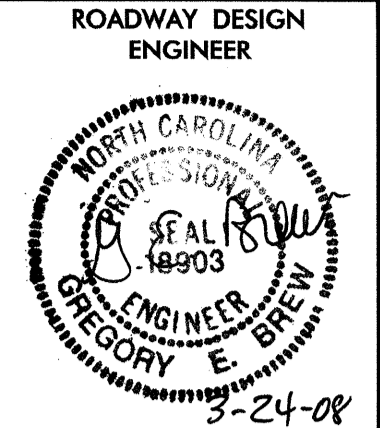
3-24-08
[Signature]
[Professional Seal: W. T. Best, No. 18903]

**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

[Signature]
STATE DESIGN ENGINEER

TIP PROJECT: B-4202

CONTRACT: C201852



SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C	SURVEY CONTROL SHEET
2 THRU 2-B	PAVEMENT SCHEDULE, TYPICAL SECTIONS, MISCELLANEOUS DETAILS, AND WEDGING DETAILS
2-C	DETAIL FOR TRAFFIC BEARING JUNCTION BOX WITH MANHOLE FOR 54" AND OVER PIPES
2-D	DETAIL FOR ANCHORAGE FOR FRAMES - BRICK, CONCRETE, OR PRECAST
2-E	DETAIL FOR STANDARD TEMPORARY SHORING
3	SUMMARY OF QUANTITIES
3A THRU 3-C	SUMMARY OF DRAINAGE QUANTITIES SUMMARY OF GUARDRAIL, EARTHWORK SUMMARY, AND ASPHALT PAVEMENT REMOVAL SUMMARY
4 THRU 5	PLAN SHEET
6 THRU 7	PROFILE SHEET
TCP-1 THRU TCP-7	TRAFFIC CONTROL PLANS
PM-1	PAVEMENT MARKING PLANS
RF-1	REFORESTATION PLANS
EC-1 THRU EC-6	EROSION CONTROL PLANS
SIG-1 THRU SIG-8	SIGNAL PLANS
UO-1	UTILITIES BY OTHERS PLANS
X-1A	CROSS-SECTION SUMMARY SHEET
X-1 THRU X-21	CROSS-SECTIONS
S-1 THRU S-34	STRUCTURE 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.

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:

UTILITY OWNERS ON THIS PROJECT ARE FRENCH BOARD EMC, AT&T, AND COUNTY CABLEVISION

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 ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated July 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 11
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation - Method 'A'
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 1
DIVISION 8 - INCIDENTALS	
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
815.03	Pipe Underdrain and Blind Drain
838.21	Reinforced Concrete Endwall - for Single 54" Pipe 90 Skew
838.45	Notes for Reinforced Concrete Endwall - Std. Dwg 838.21 thru 838.40
838.51	Reinforced Brick Endwall - for Single 54" Pipe 90 Skew
838.75	Notes for Reinforced Brick Endwall - Std. Dwg 838.51 thru 838.70
838.80	Precast Endwalls - 12" thru 72" Pipe 90 Skew
840.00	Concrete Base Pad for Drainage Structures
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.46	Traffic Bearing Precast Drainage Structure
840.54	Manhole Frame and Cover
840.66	Drainage Structure Steps
840.71	Concrete and Brick Pipe Plug
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
862.04	Anchoring End of Guardrail - B-77 and B-83 Anchor Units
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets

EFF. 07-18-06
REV. 01-02-07

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EIP
Property Corner	-----
Property Monument	□ ECM
Parcel/Sequence Number	⑫③
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	----- WLB
Proposed Wetland Boundary	----- WLB
Existing High Quality Wetland Boundary	----- HO WLB
Existing Endangered Animal Boundary	----- EAB
Existing Endangered Plant Boundary	----- EPB

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○ S
Well	○ W
Small Mine	⊗
Foundation	□
Area Outline	□
Cemetery	⊕
Building	□
School	□
Church	□
Dam	-----

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	-----
River Basin Buffer	-----
Flow Arrow	-----
Disappearing Stream	-----
Spring	○
Swamp Marsh	-----
Proposed Lateral, Tail, Head Ditch	-----
False Sump	-----

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○ MILEPOST 35
Switch	□ SWITCH
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	-----
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	----- E
Proposed Temporary Construction Easement	----- E
Proposed Temporary Drainage Easement	----- TDE
Proposed Permanent Drainage Easement	----- PDE
Proposed Permanent Utility Easement	----- PUE

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	----- C
Proposed Slope Stakes Fill	----- F
Proposed Wheel Chair Ramp	----- WCR
Curb Cut for Future Wheel Chair Ramp	----- CCFR
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	-----

VEGETATION:

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

EXISTING STRUCTURES:

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

UTILITIES:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

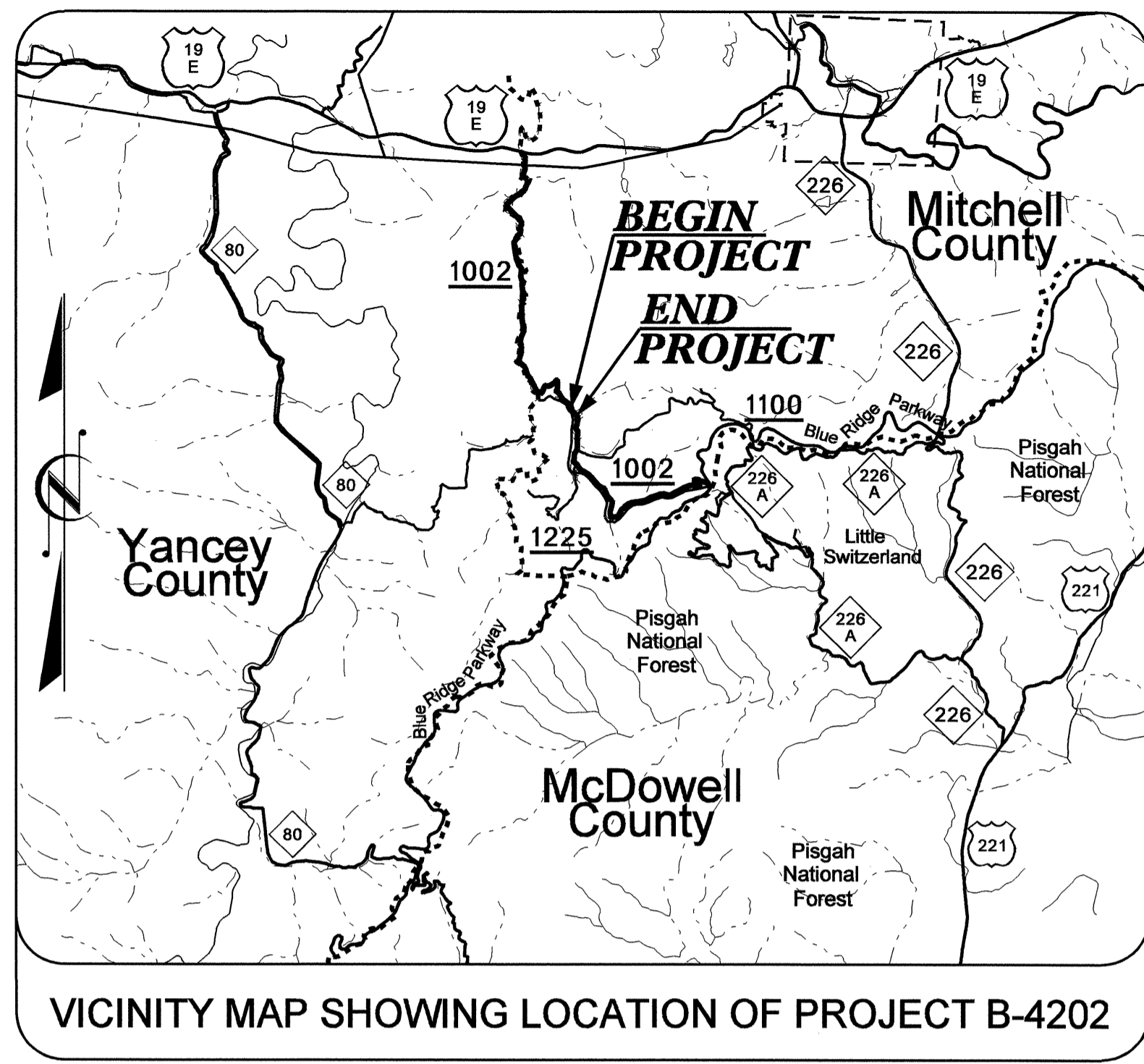
SANITARY SEWER:

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

MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	⊕
Utility Unknown U/G Line	----- 7UL
U/G Tank; Water, Gas, Oil	-----
A/G Tank; Water, Gas, Oil	-----
U/G Test Hole (S.U.E.*)	⊕
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

SURVEY CONTROL SHEET B-4202



VICINITY MAP SHOWING LOCATION OF PROJECT B-4202

NOTE: DRAWING NOT TO SCALE

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
GPS1	B4202-1	778473.7859	1071871.6768	2966.17	23+16.71	2286.25 RT
3	BL-3	778755.5569	1071947.4228	2961.48	23+16.71	2015.53 RT
GPS2	B4202-2	779110.9221	1071858.0777	2961.99	23+16.71	1651.37 RT
4	BL-4	779184.3754	1071972.8485	2954.66	23+16.71	1597.34 RT
5	BL-5	779481.7373	1071933.0101	2949.25	23+16.71	1298.16 RT
6	BL-6	779667.5303	1071883.2324	2946.05	10+56.43	7.33 RT
7	BL-7	779955.4799	1071954.4813	2943.43	13+64.17	34.12 RT
8	BL-8	780302.4169	1072005.3301	2937.75	17+48.09	11.32 RT
9	BL-9	780566.1775	1071801.0527	2930.77	20+81.59	14.08 LT
10	BL-10	780801.7328	1071606.6101	2927.36	23+16.71	70.85 LT
11	BL-11	781127.9374	1071506.7339	2930.25	23+16.71	406.14 RT

..... BM1 ELEVATION = 2951.19 N 779509 E 1071957 L STATION 23+17 1277 LEFT RR SPIKE IN 24" OAK BM4 ELEVATION = 2935.91 N 780411 E 1071896 L STATION 18+99 29 LEFT RR SPIKE IN 48" HEMLOCK
..... BM2 ELEVATION = 2943.33 N 780004 E 1071980 L STATION 14+47 58 RIGHT RR SPIKE IN 36" POPLAR BM5 ELEVATION = 2925.94 N 780943 E 1071527 L STATION 23+17 232 LEFT RR SPIKE IN 14" MAPLE
..... BM3 ELEVATION = 2938.84 N 780220 E 1072056 L STATION 16+63 37 RIGHT RR SPIKE IN 36" OAK	

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4202-1" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 778473.7859(ft) EASTING: 1071871.6768(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99980016 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4202-1" TO -L- STATION 10+00.00 IS S 0°59'47" E 1147.88'

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

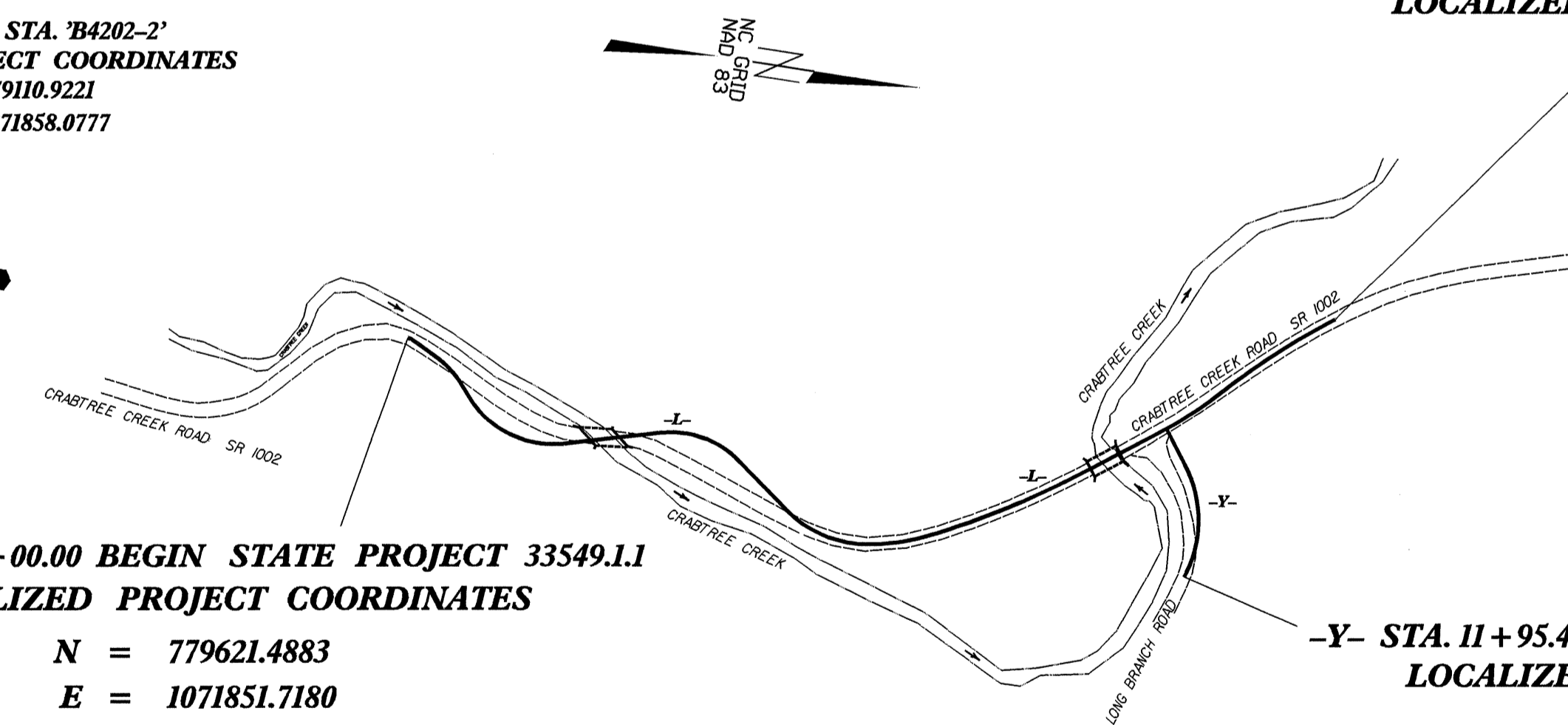
NCDOT GPS STA. 'B4202-1'
 LOCALIZED PROJECT COORDINATES
 N = 778473.7859
 E = 1071871.6768

NCDOT GPS STA. 'B4202-2'
 LOCALIZED PROJECT COORDINATES
 N = 779110.9221
 E = 1071858.0777

-L- STA. 23+16.71 END STATE PROJECT 33549.1.1
 LOCALIZED PROJECT COORDINATES
 N = 780749.7187
 E = 1071851.7180

-L- STA. 10+00.00 BEGIN STATE PROJECT 33549.1.1
 LOCALIZED PROJECT COORDINATES
 N = 779621.4883
 E = 1071851.7180

-Y- STA. 11+95.47 END STATE PROJECT 33549.1.1
 LOCALIZED PROJECT COORDINATES
 N = 780613.7895
 E = 1071999.6818



NOTES:

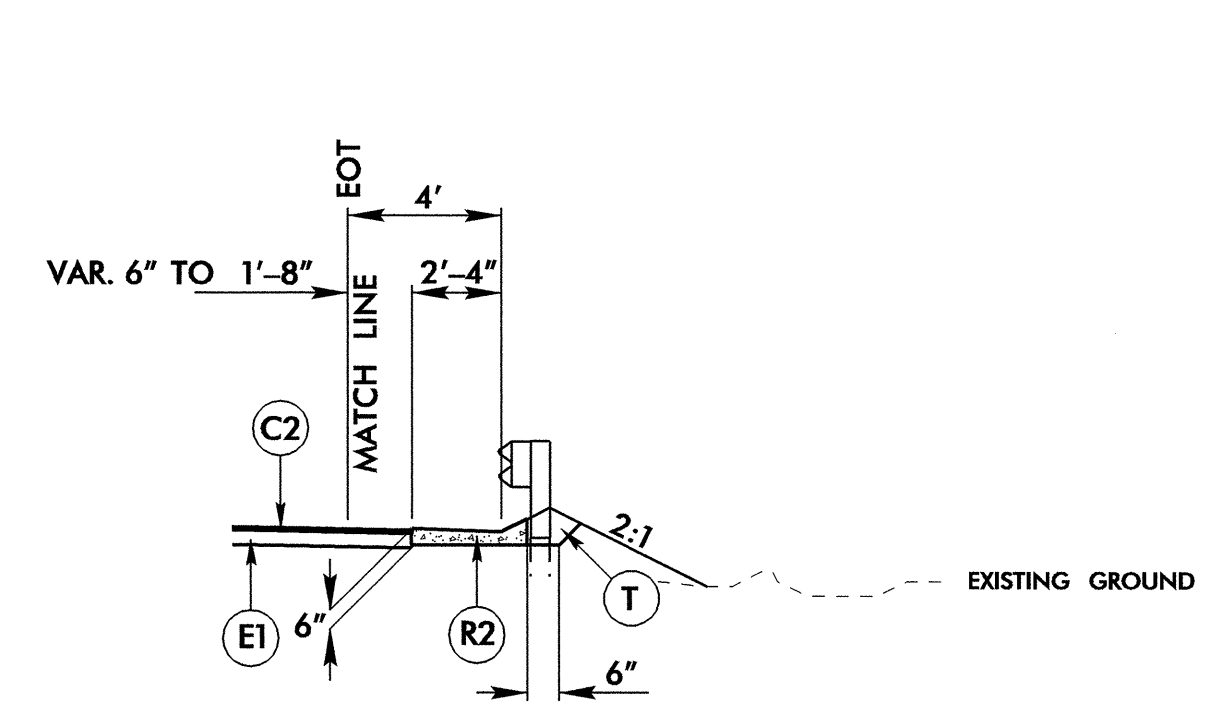
- THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project/)
 THE FILES TO BE FOUND ARE AS FOLLOWS:
 B4202_LS_CONTROL_060221.TXT
 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.

6/2/99
 04-MAR-2008 11:44 1:4202_1s_1c_060221.dgn

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)

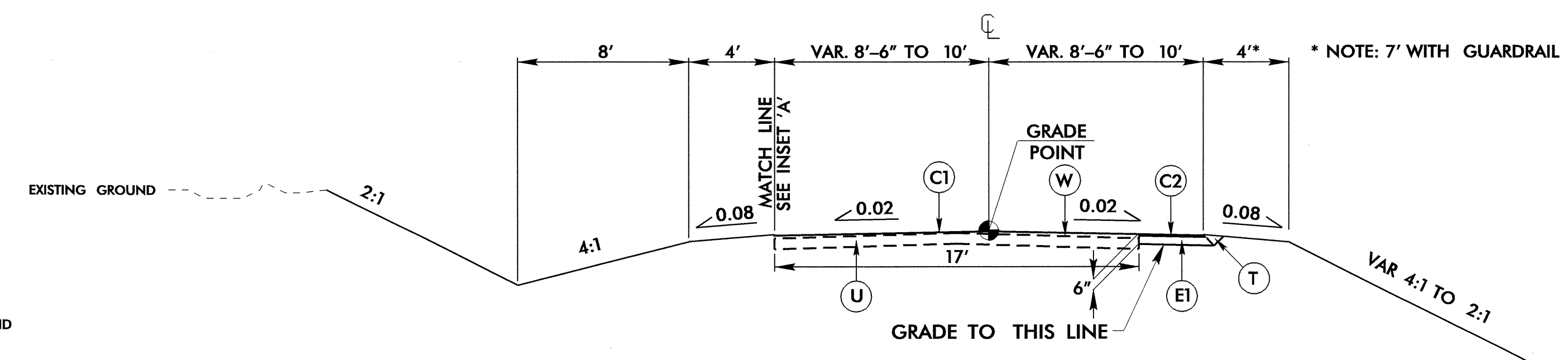
C1	PROP. APPROX. 1" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD.	J1	PROP. 6" AGGREGATE BASE COURSE
C2	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. IN EACH OF TWO LAYERS	R1	CONCRETE VALLEY GUTTER
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH	R2	CONCRETE SHOULDER BERM GUTTER
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 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 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH	U	EXISTING PAVEMENT
		W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL SHT 2-B)

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



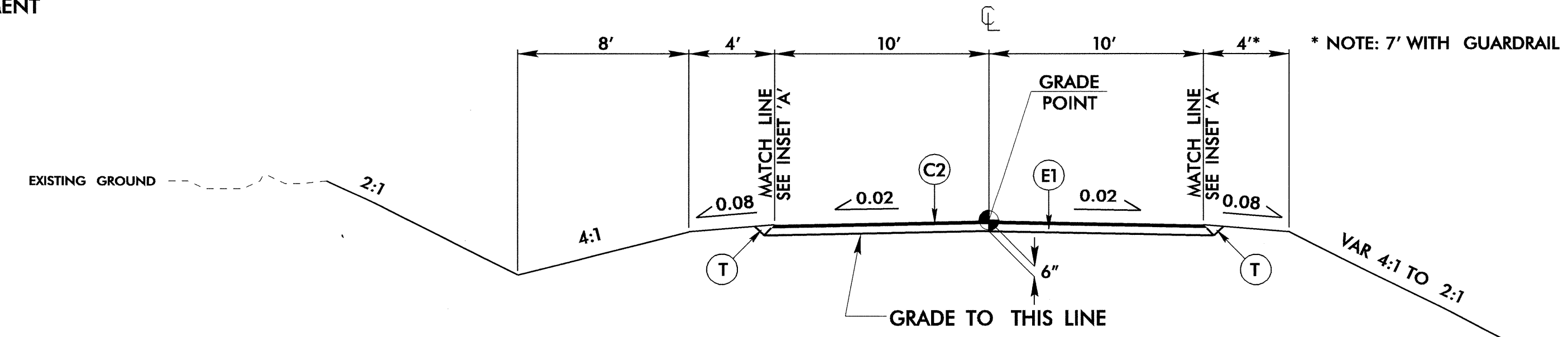
INSET 'A'

- USE INSET 'A' IN CONJUNCTION WITH TYPICAL SECTION NO. 1 AND TYPICAL SECTION NO. 2
- L- FROM STA. 13+28.08 TO STA. 13+54.75 ON LEFT EDGE OF PAVEMENT
 - L- FROM STA. 13+45.78 TO STA. 13+54.75 ON RIGHT EDGE OF PAVEMENT
 - L- FROM STA. 20+23.00 TO STA. 21+54.78 ON LEFT EDGE OF PAVEMENT



TYPICAL SECTION NO. 1

- USE TYPICAL SECTION NO. 1
- L- FROM STA. 10+00.00 TO STA. 10+50.00, TRANSITION FROM EXISTING TO TYP. SECT. NO. 1
 - L- FROM STA. 10+50.00 TO STA. 11+02.82
 - L- FROM STA. 20+33.00 TO STA. 21+75.00
 - L- FROM STA. 21+75.00 TO STA. 22+25.00, TRANSITION FROM TYP. SECT. NO. 1 TO EXISTING

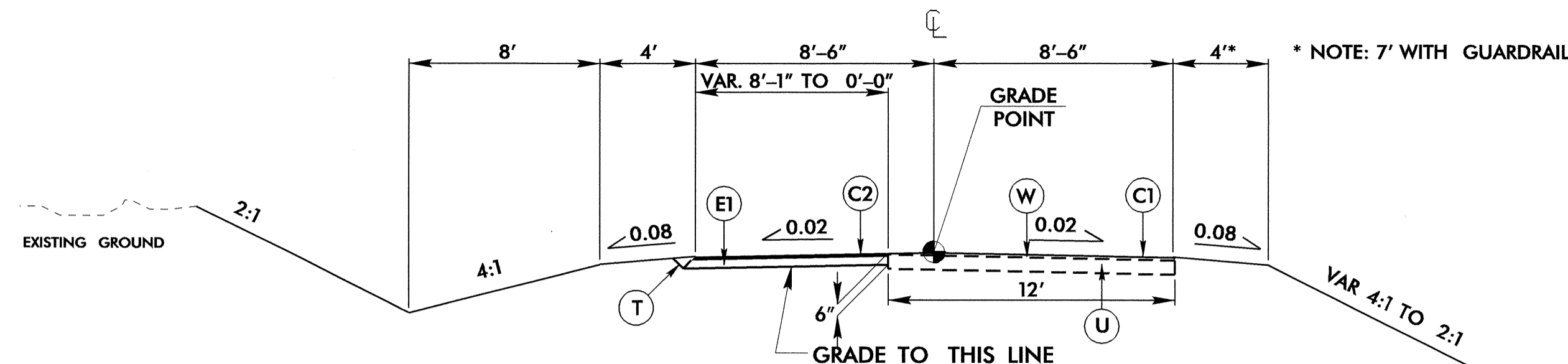


TYPICAL SECTION NO. 2

- USE TYPICAL SECTION NO. 2
- L- FROM STA. 11+02.82 TO STA. 12+73.00 +/- (BEGIN BRIDGE)
 - L- FROM STA. 13+23.00 +/- (END BRIDGE) TO STA. 15+33.19
 - L- FROM STA. 19+33.00 TO STA. 19+48.00 +/- (BEGIN BRIDGE)
 - L- FROM STA. 20+08.00 +/- (END BRIDGE) TO STA. 20+33.00
 - Y- FROM STA. 10+30.67 TO STA. 10+49.91
 - Y- FROM STA. 10+49.91 TO STA. 11+88.75, TRANSITION FROM TYP. SECT. NO. 2 TO EXISTING

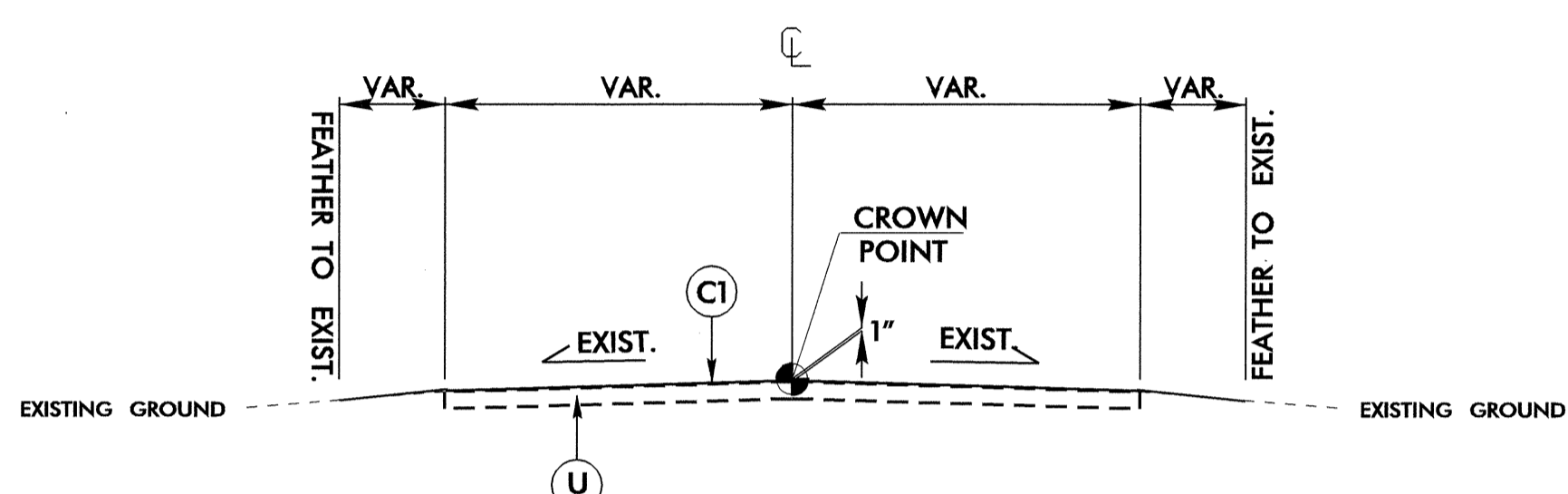
6/2/09 26-MAR-2008 11:22 C:\pav\proj\pav\pav_b4202_r.dwg tjp:dgm

FINAL PAVEMENT DESIGN	
C1	PROP. APPROX. 1" , TYPE SF9.5A
C2	PROP. APPROX. 2" , TYPE SF9.5A
E1	PROP. APPROX. 4" , TYPE B25.0B
R1	CONCRETE VALLEY GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VAIRABLE DEPTH ASPHALT PAVEMENT



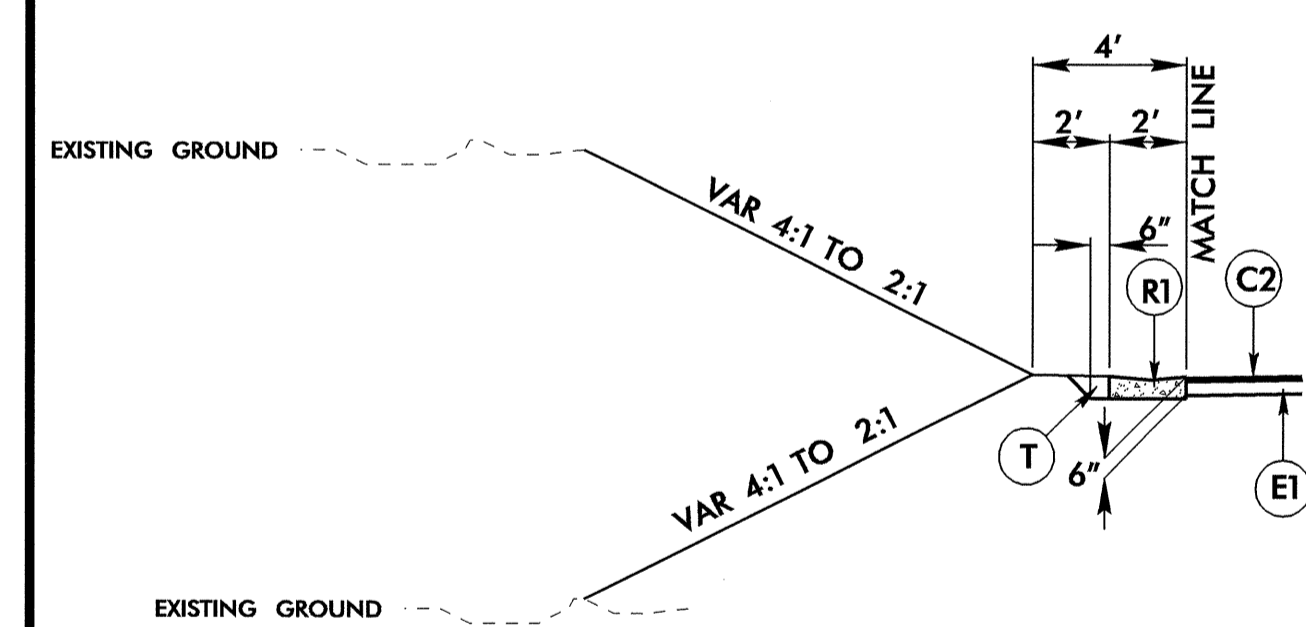
TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3
-L- FROM STA. 15+33.19 TO STA. 16+68.52



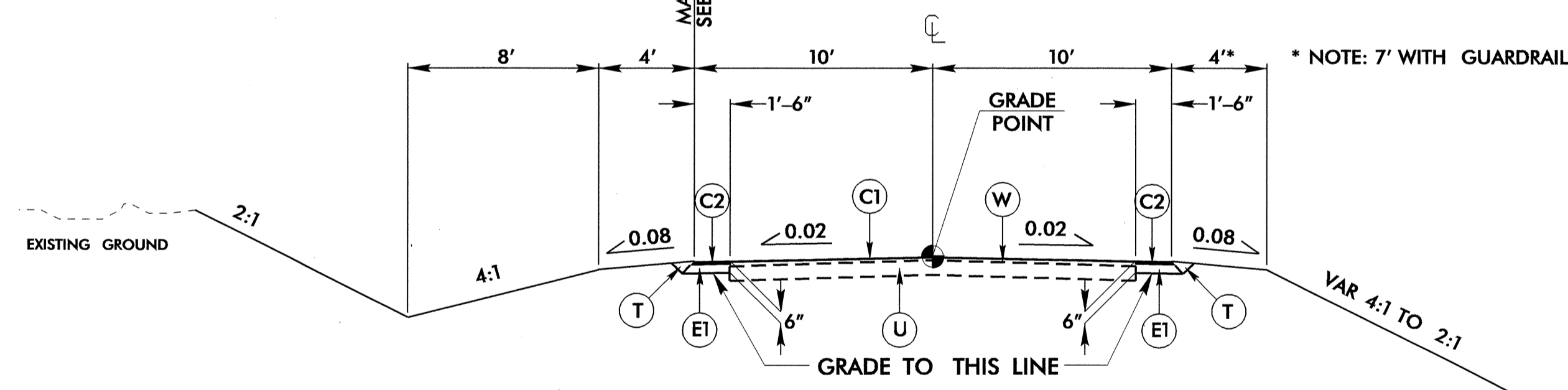
TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4
-L- FROM STA. 16+68.52 TO STA. 18+00.00



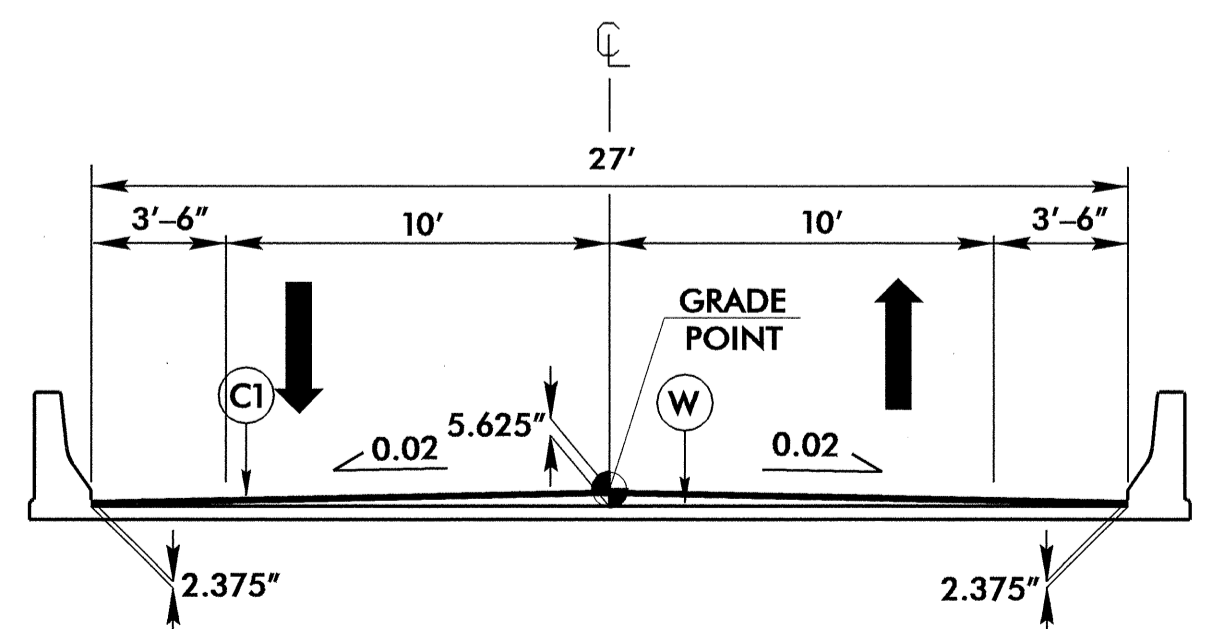
INSET 'B'

USE INSET 'B' IN CONJUNCTION WITH
TYPICAL SECTION NO. 4
-L- FROM STA. 18+08.22 TO STA. 18+57.42 ON LEFT EDGE OF PAVEMENT



TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5
-L- FROM STA. 18+00.00 TO STA. 18+50.00, TRANSITION FROM
EXISTING TO TYP. SECT. NO. 5
-L- FROM STA. 18+50.00 TO STA. 19+33.00



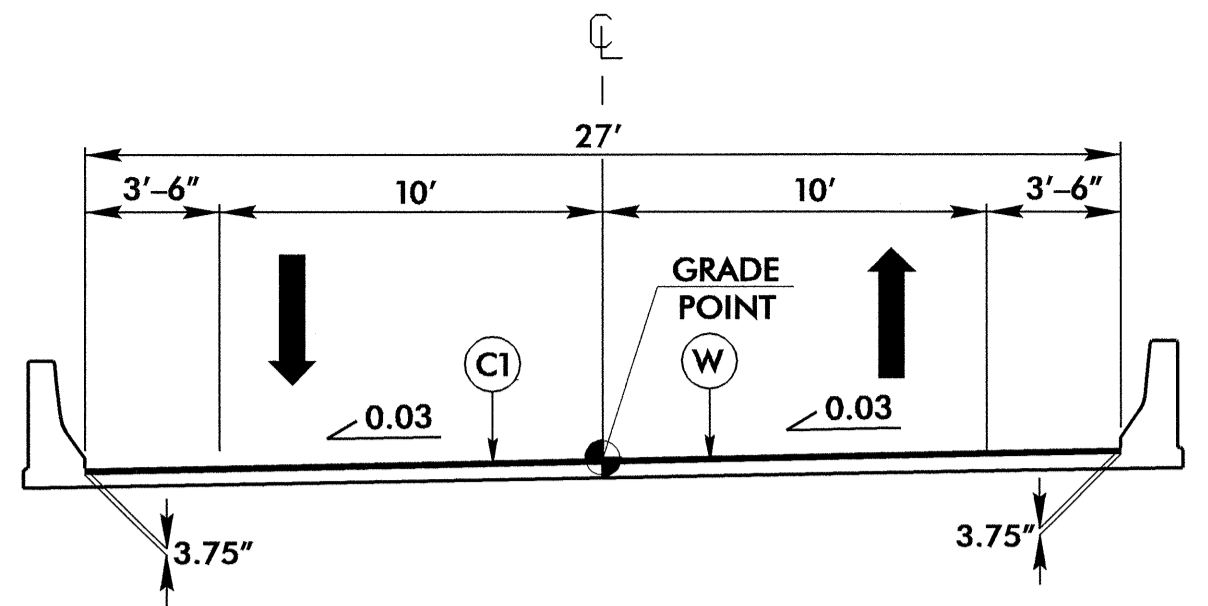
TYPICAL SECTION NO. 6
ON STRUCTURE

USE TYPICAL SECTION NO. 6
-L- FROM STA. 12+73.00 +/- TO STA. 13+23.00 +/-

6/2/99

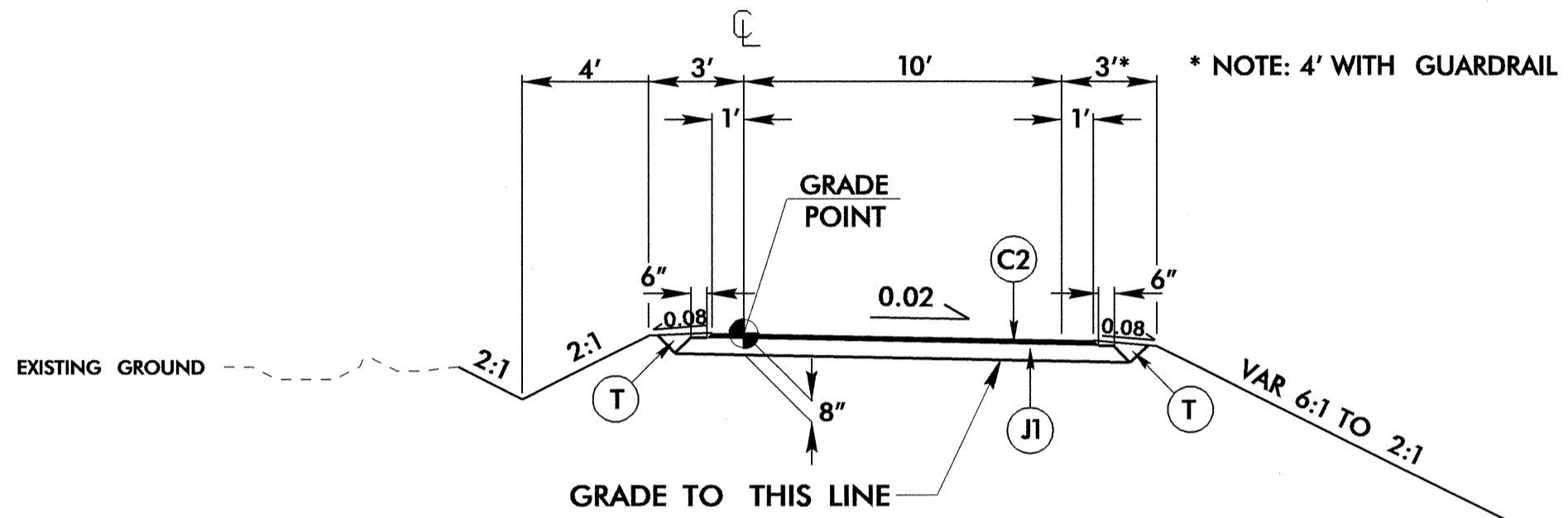
PROJECT REFERENCE NO. B-4202	SHEET NO. 2-B
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER

FINAL PAVEMENT DESIGN	
C1	PROP. APPROX. 1" , TYPE SF9.5A
C2	PROP. APPROX. 2" , TYPE SF9.5A
C3	PROP. VAR. DEPTH, TYPE SF9.5A
E2	PROP. VAR. DEPTH, TYPE B25.0B
J1	PROP. 6" AGGREGATE BASE COURSE
T	EARTH MATERIAL
U	EXISTING PAVEMENT



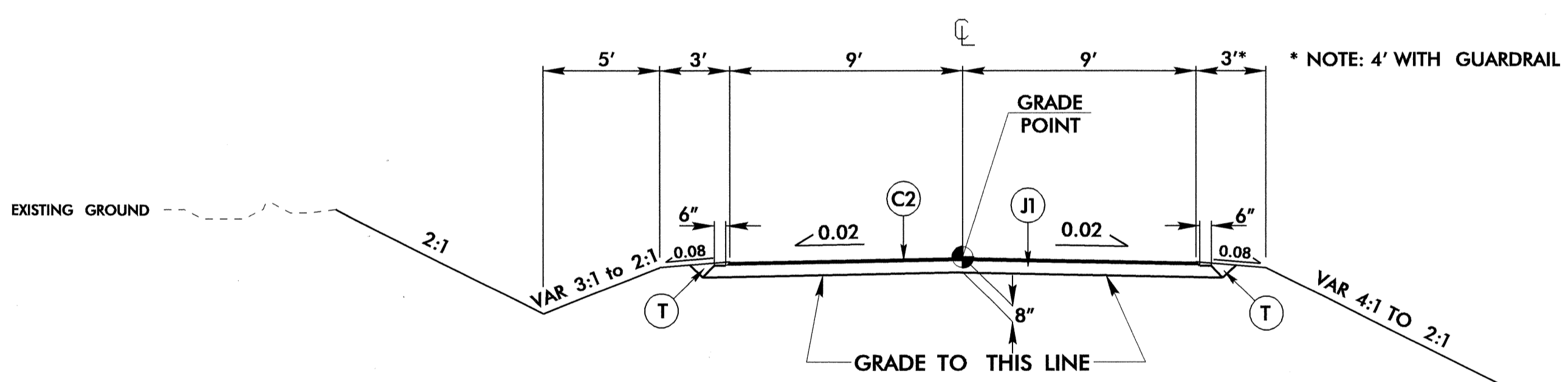
TYPICAL SECTION NO. 7
ON STRUCTURE

USE TYPICAL SECTION NO. 7
-L- FROM STA. 19+48.00 +/- TO STA. 20+08.00 +/-



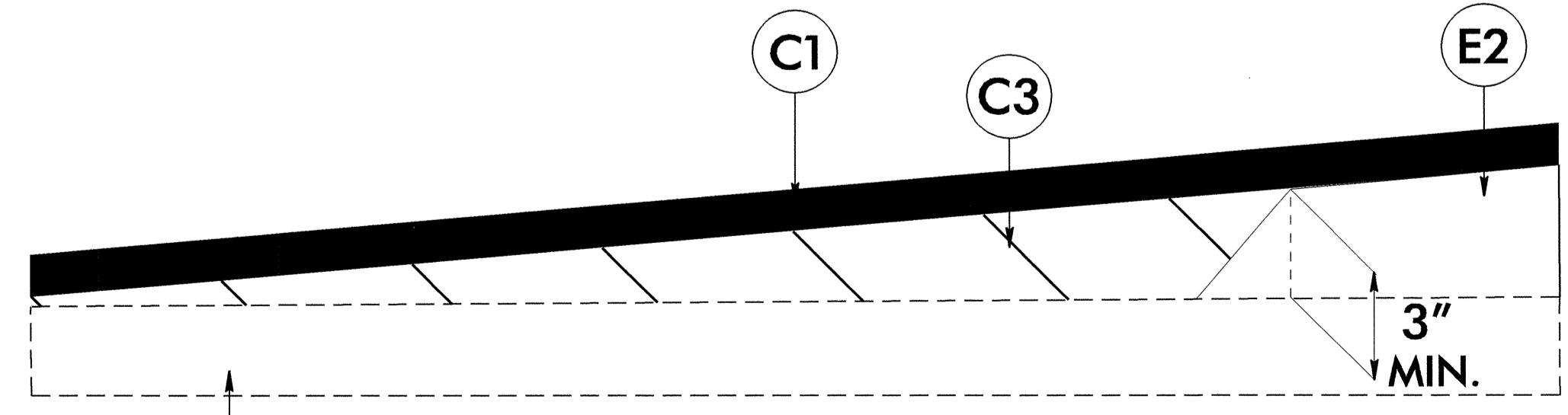
TYPICAL SECTION NO. 8

USE TYPICAL SECTION NO. 8
-DET 'A'- FROM STA. 10+50.00 TO STA. 11+15.27, TRANSITION FROM EXISTING TO TYP. SECT. NO. 8
-DET 'A'- FROM STA. 11+15.27 TO STA. 13+10.00 +/- (BEGIN BRIDGE)
-DET 'A'- FROM STA. 13+80.00 +/- (END BRIDGE) TO STA. 15+27.46
-DET 'A'- FROM STA. 15+27.46 TO STA. 15+65.88, TRANSITION FROM TYP. SECT. NO. 8 TO EXISTING



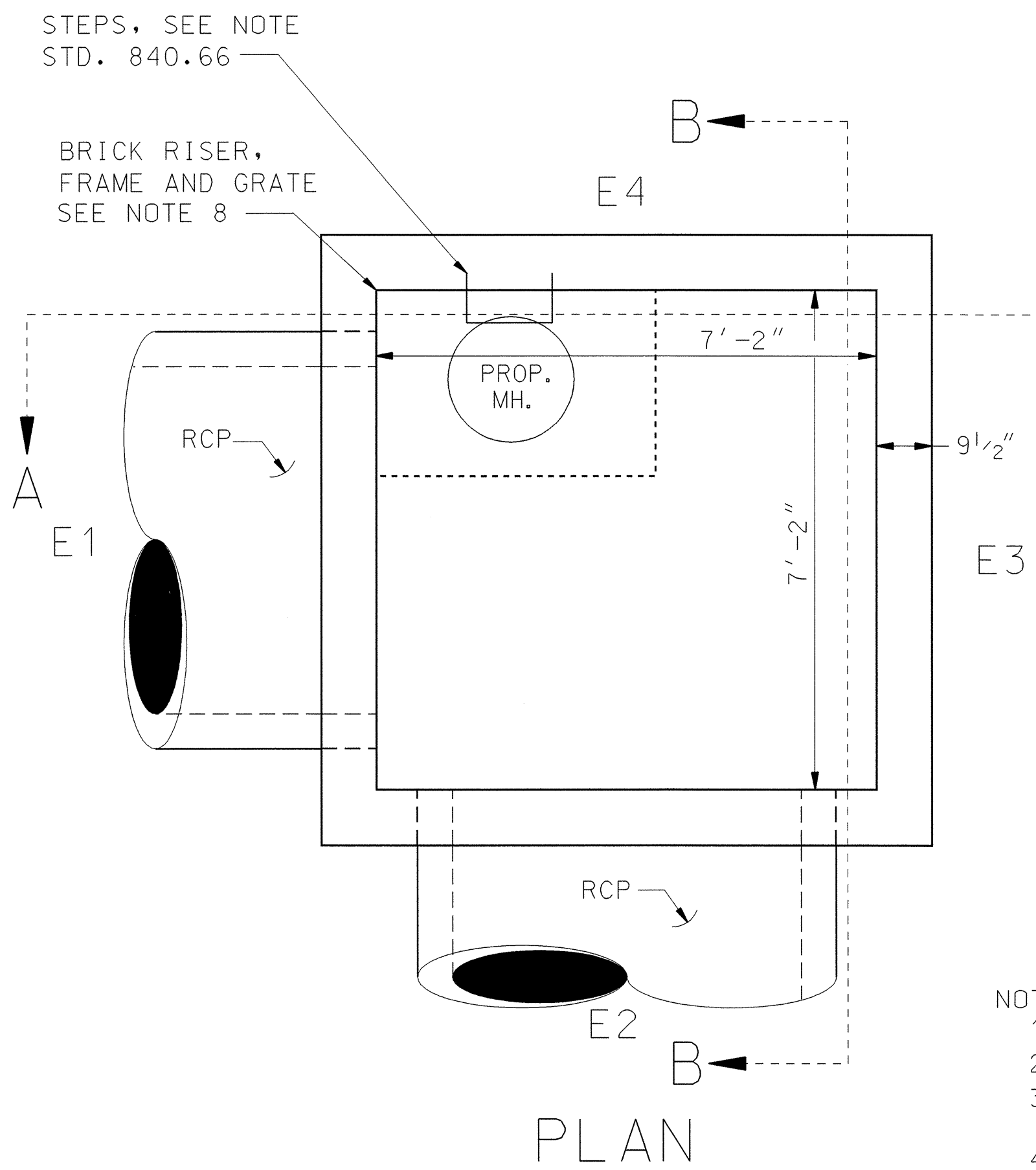
TYPICAL SECTION NO. 9

USE TYPICAL SECTION NO. 9
-DET 'B'- FROM STA. 18+20.26 TO STA. 18+82.66, TRANSITION FROM EXISTING TO TYP. SECT. NO. 9
-DET 'B'- FROM STA. 18+82.66 TO STA. 19+75.00 +/- (BEGIN BRIDGE)
-DET 'B'- FROM STA. 20+35.00 +/- (END BRIDGE) TO STA. 21+19.33
-DET 'B'- FROM STA. 21+19.33 TO STA. 21+87.16, TRANSITION FROM TYP. SECT. NO. 9 TO EXISTING



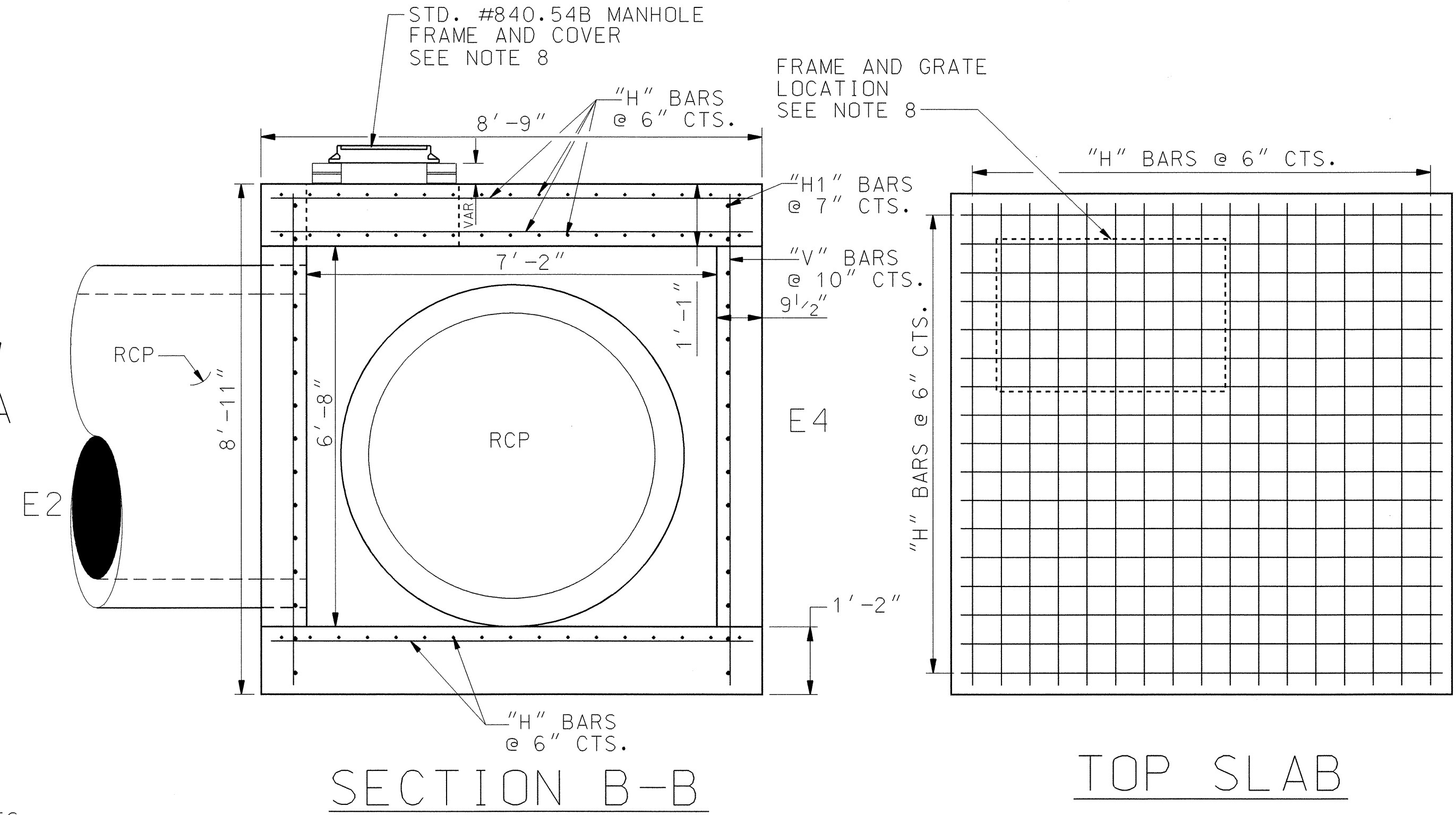
U Wedging Detail For Resurfacing

04-MAR-2008 11:44
S:\3187\PROJECTS\B-4202-rdy-tpy.dgn



PLAN

STD. #840.54B MANHOLE FRAME AND COVER SEE NOTE 8



SECTION B-B

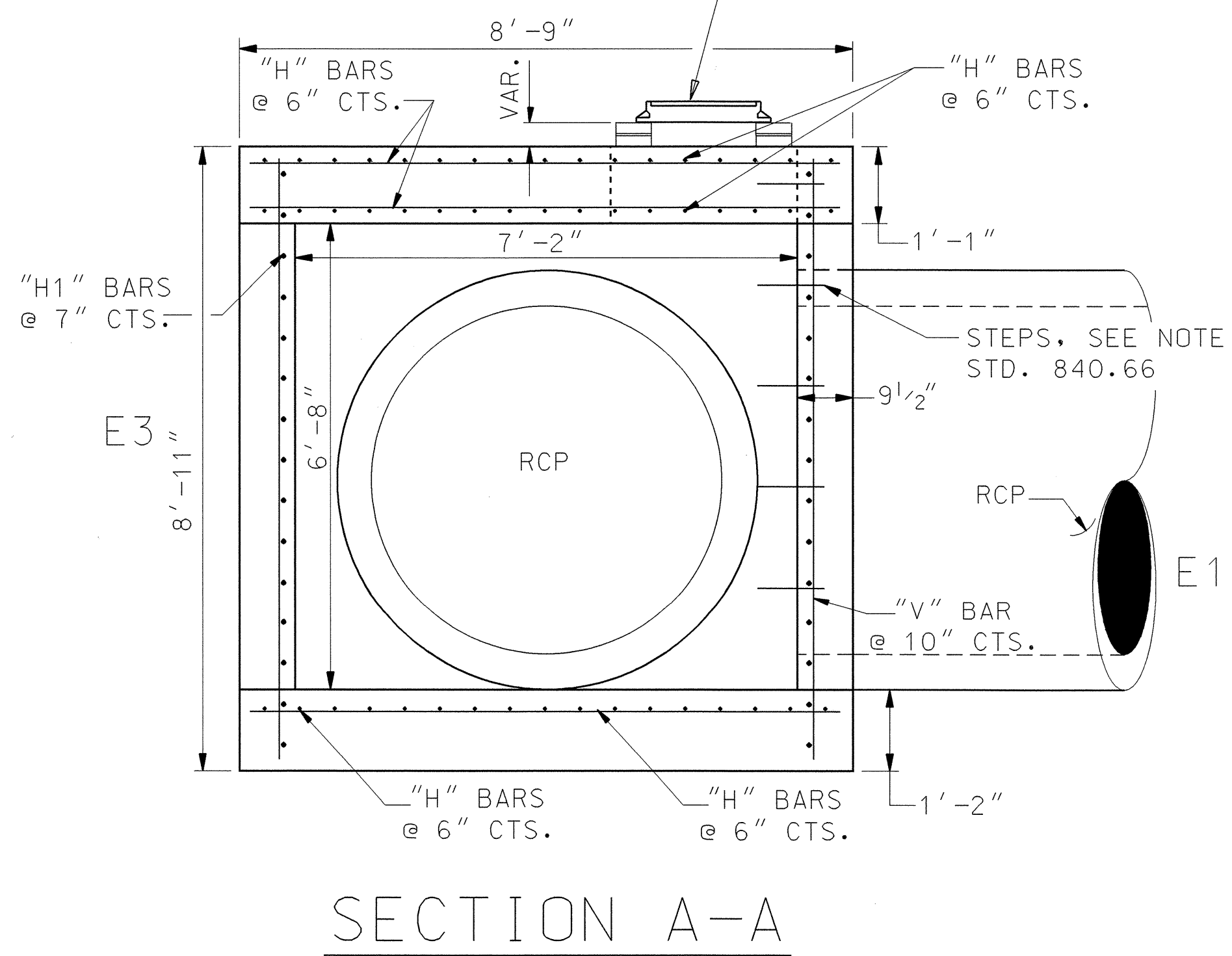
TOP SLAB

NOTES:

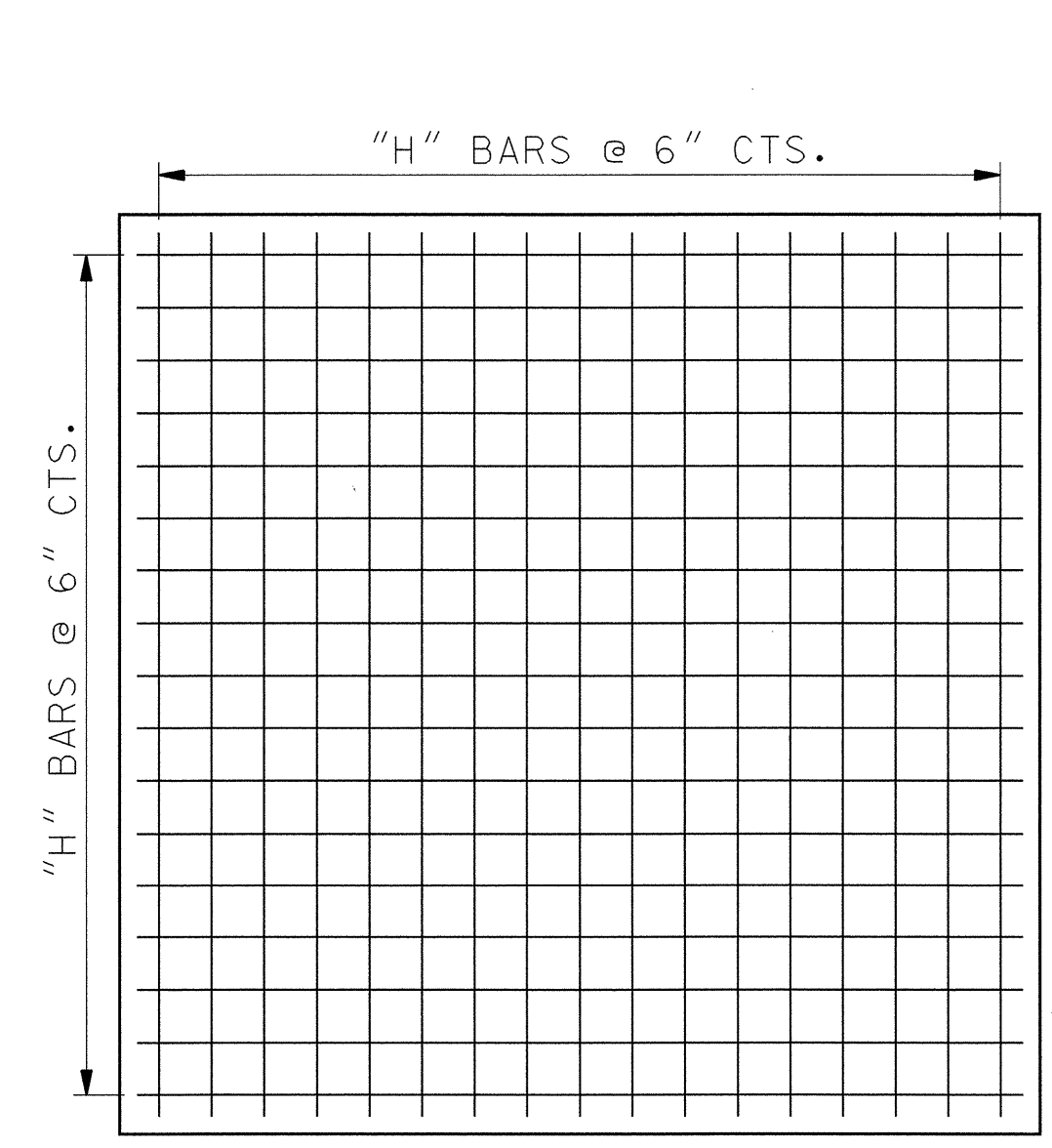
1. QUANTITIES TO BE PAID FOR AT THE UNIT PRICE BID PER EACH.
2. CLASS "B" CONCRETE TO BE USED THROUGHOUT.
3. CONCRETE BOX SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 825 OF THE STANDARD SPECIFICATIONS AND MAY BE ADJUSTED TO FIT PIPE CONDITION.
4. FORMS ARE TO BE USED FOR CONSTRUCTION OF THE BOTTOM SLAB.
5. ADJUST LENGTH OF STEEL BARS AS NEEDED TO COMPENSATE FOR PIPES AND FRAME AND GRATE OPENINGS.
6. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60.
7. CUT OR BEND STEEL BARS AS NEEDED TO PROVIDE 2" CLEARANCE AROUND PIPES OR AS DIRECTED BY THE ENGINEER.
8. FRAME AND GRATE SHALL BE LOCATED AS FIELD CONDITIONS DICTATE AND DIRECTED BY THE ENGINEER.
9. PROVIDE ALL STRUCTURES OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66

BILL OF MATERIALS				
BAR	NO.	SIZE	LENGTH	WEIGHT
H	102	#5	8'-5"	895.43
V	88	#4	8'-7"	504.56
H1	60	#6	8'-5"	758.51
Z	8	#4	3'-0"	16.03
TOTAL REINF. STEEL (LBS.)				2,174.53
TOTAL CONC. (CU. YDS.)				12.60
DEDUCTIONS FOR ONE PIPE				
15" RCP (CU. YDS.)				.064
18" RCP (CU. YDS.)				.089
24" RCP (CU. YDS.)				.152
30" RCP (CU. YDS.)				.230
36" RCP (CU. YDS.)				.349
42" RCP (CU. YDS.)				.464
48" RCP (CU. YDS.)				.596
54" RCP (CU. YDS.)				.744

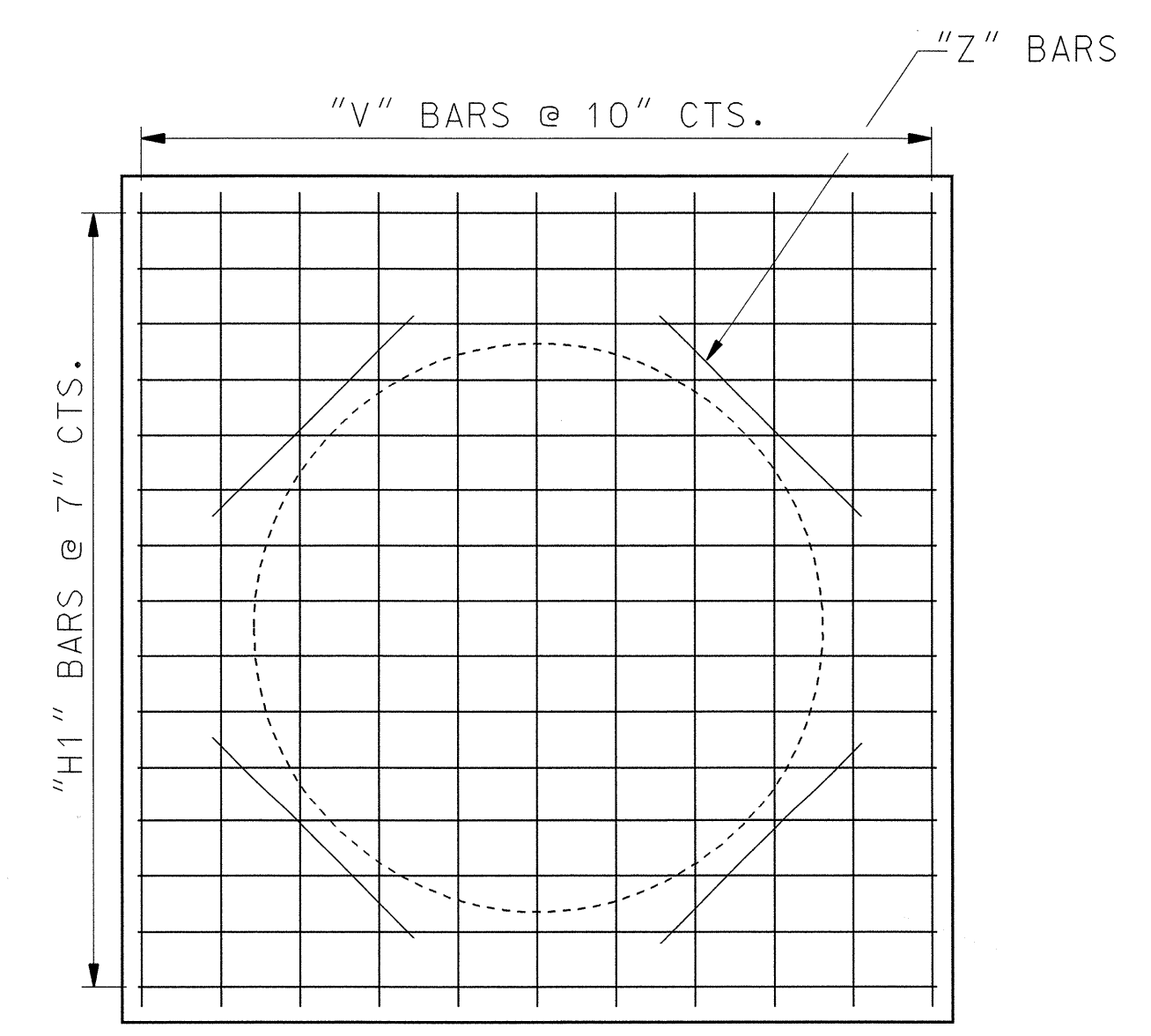
NO DEDUCTIONS HAVE BEEN MADE TO ACCOMMODATE PIPES OR DROP INLET OPENING.
* 0.30 CU. YDS. PER FOOT OF RISER HEIGHT



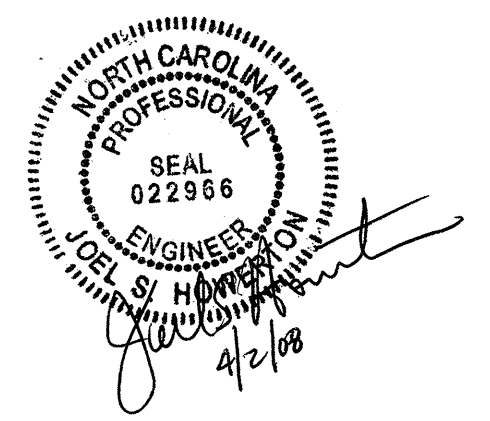
SECTION A-A



BOTTOM SLAB



E1, E2, E3 & E4



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

**DETAIL OF TRAFFIC BEARING
JUNCTION BOX WITH MANHOLE
FRAME AND COVER**

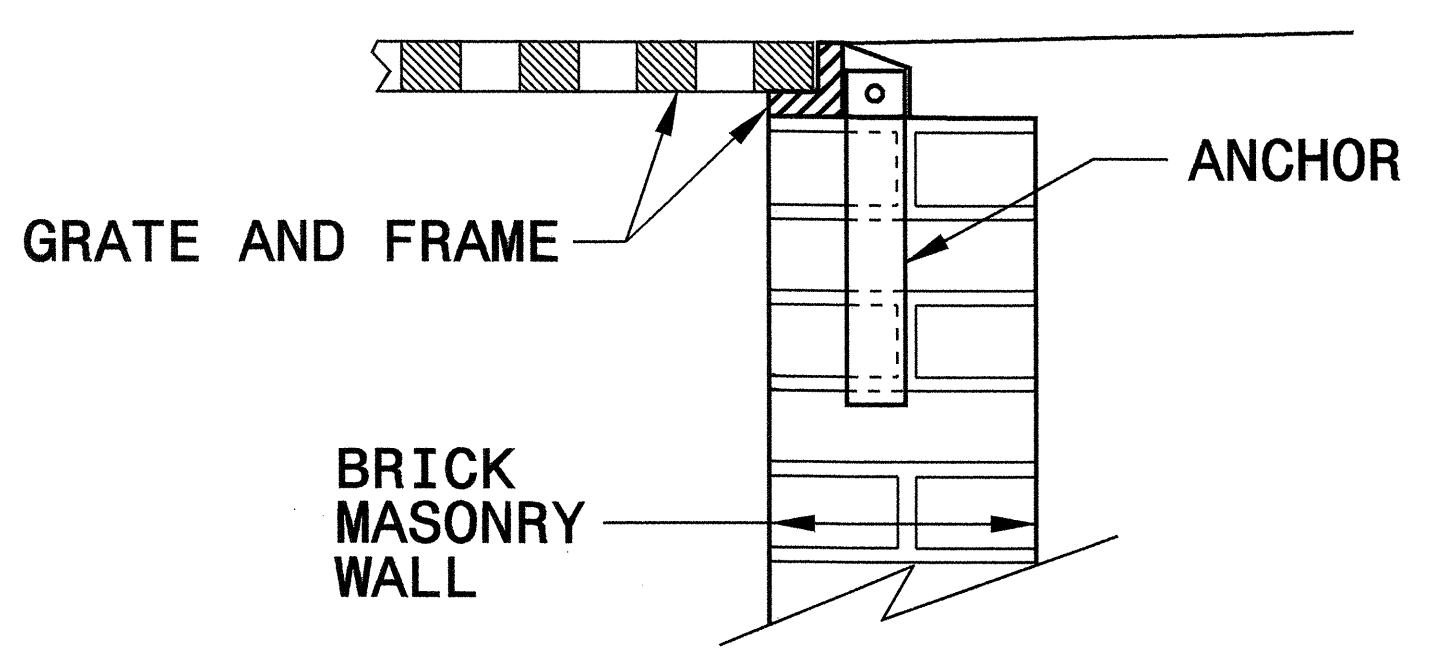
ORIGINAL BY:	DATE:
MODIFIED BY: nbritt	DATE: 05-04-07
CHECKED BY:	DATE:
FILE SPEC: details/nbritt/english/hrdro/r4071 54 tjb_mh.dgn	

SYTIME\$\$\$\$
DESIGN\$\$\$\$
USERNAME\$\$\$\$

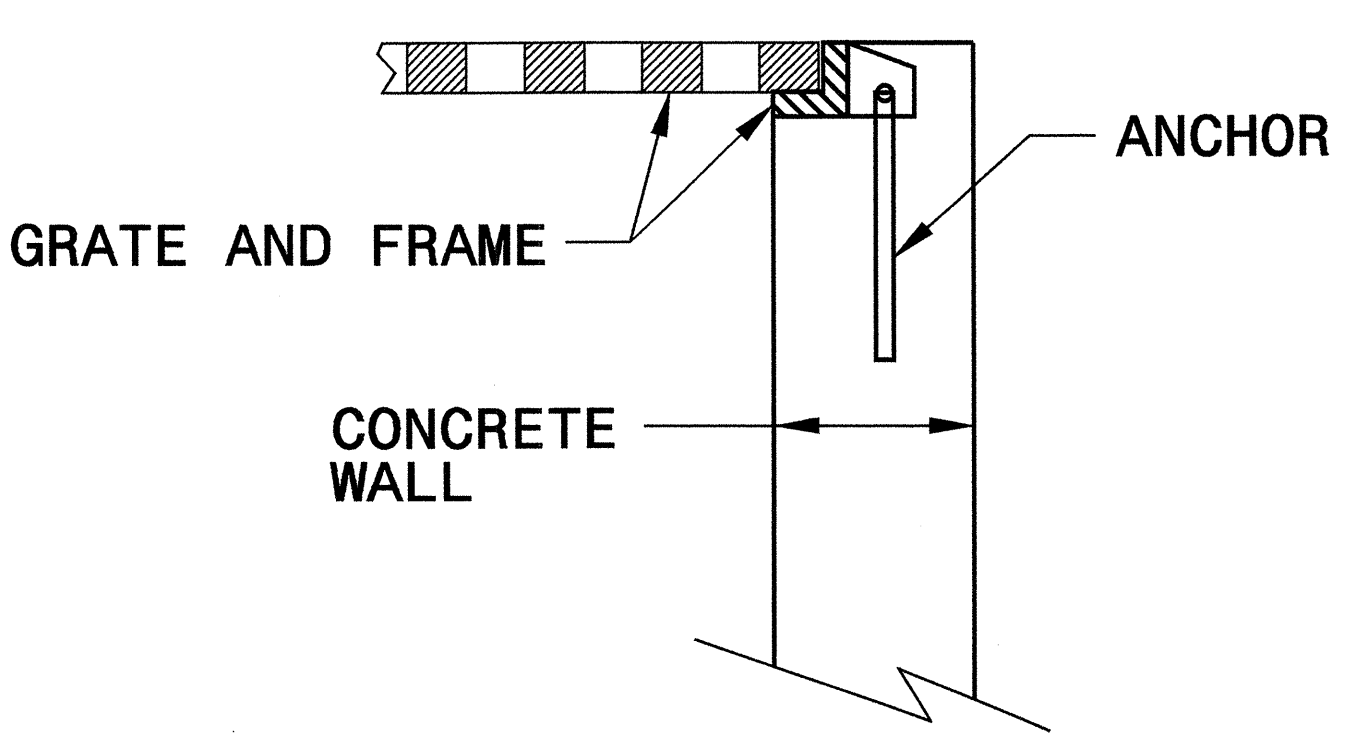
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

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

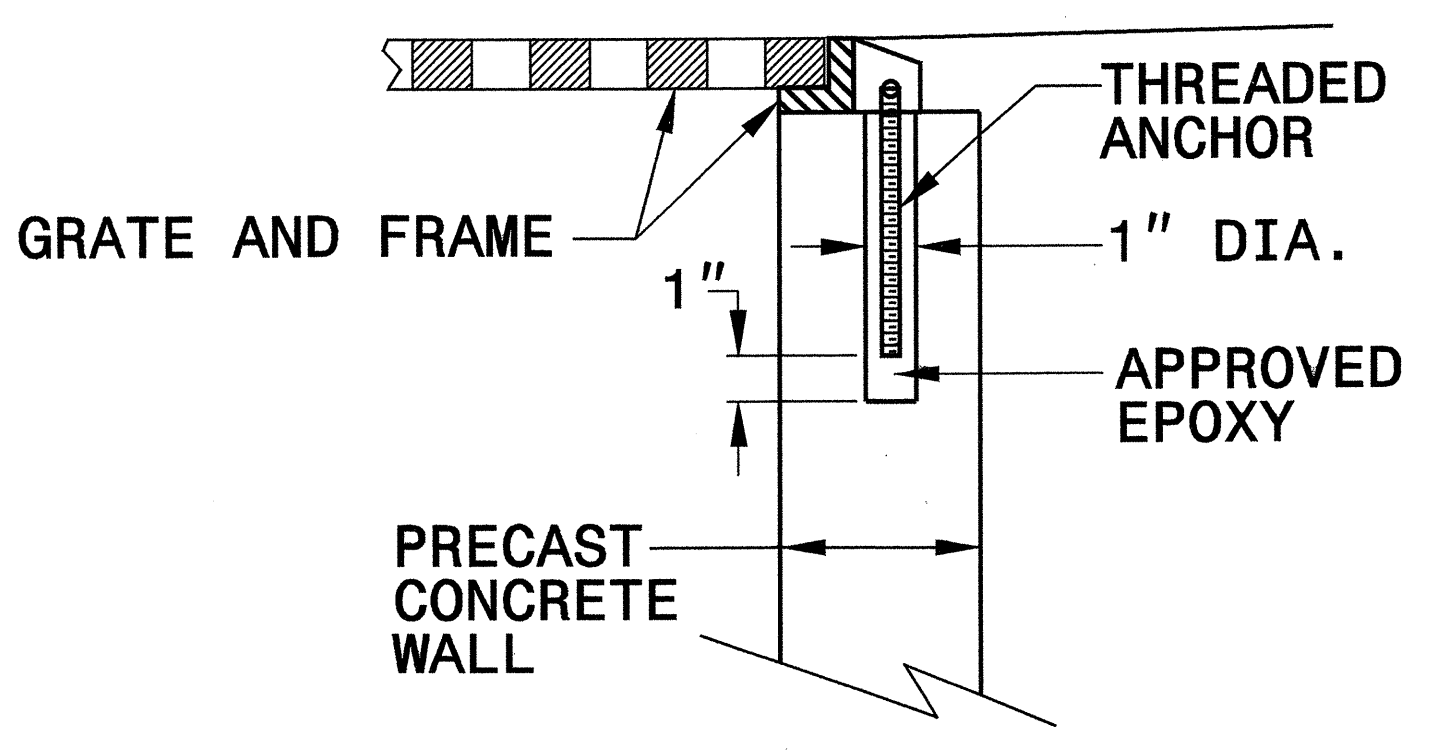
SHEET 1 OF 1
840D25



BRICK MASONRY CONSTRUCTION



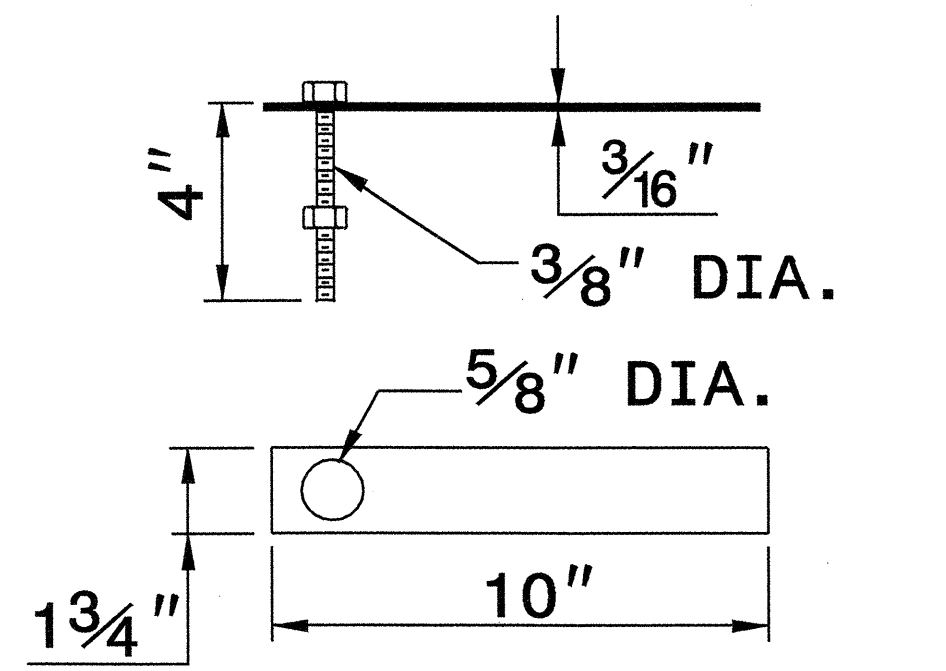
CONCRETE CONSTRUCTION



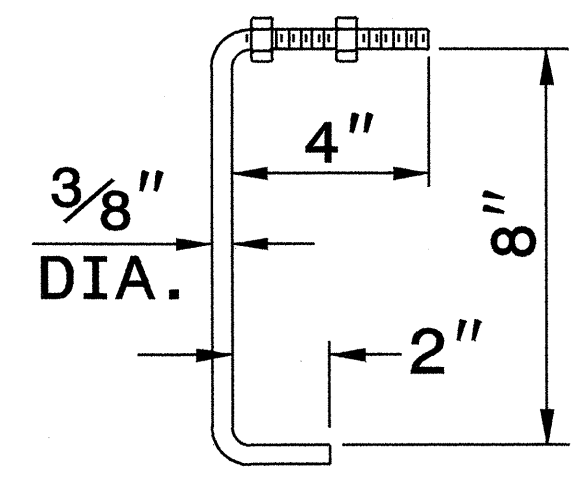
PRECAST CONCRETE CONSTRUCTION

DETAIL SHOWING ANCHORAGE OF FRAME FOR GRATED DROP INLET

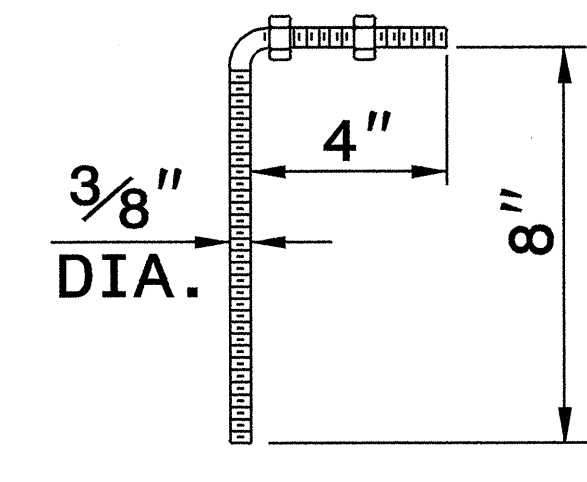
NOTE:
CONSTRUCT GRATED DROP INLET TO COINCIDE WITH NORMAL OR SUPERELEVATED SHOULDER OR PAVEMENT SLOPE.



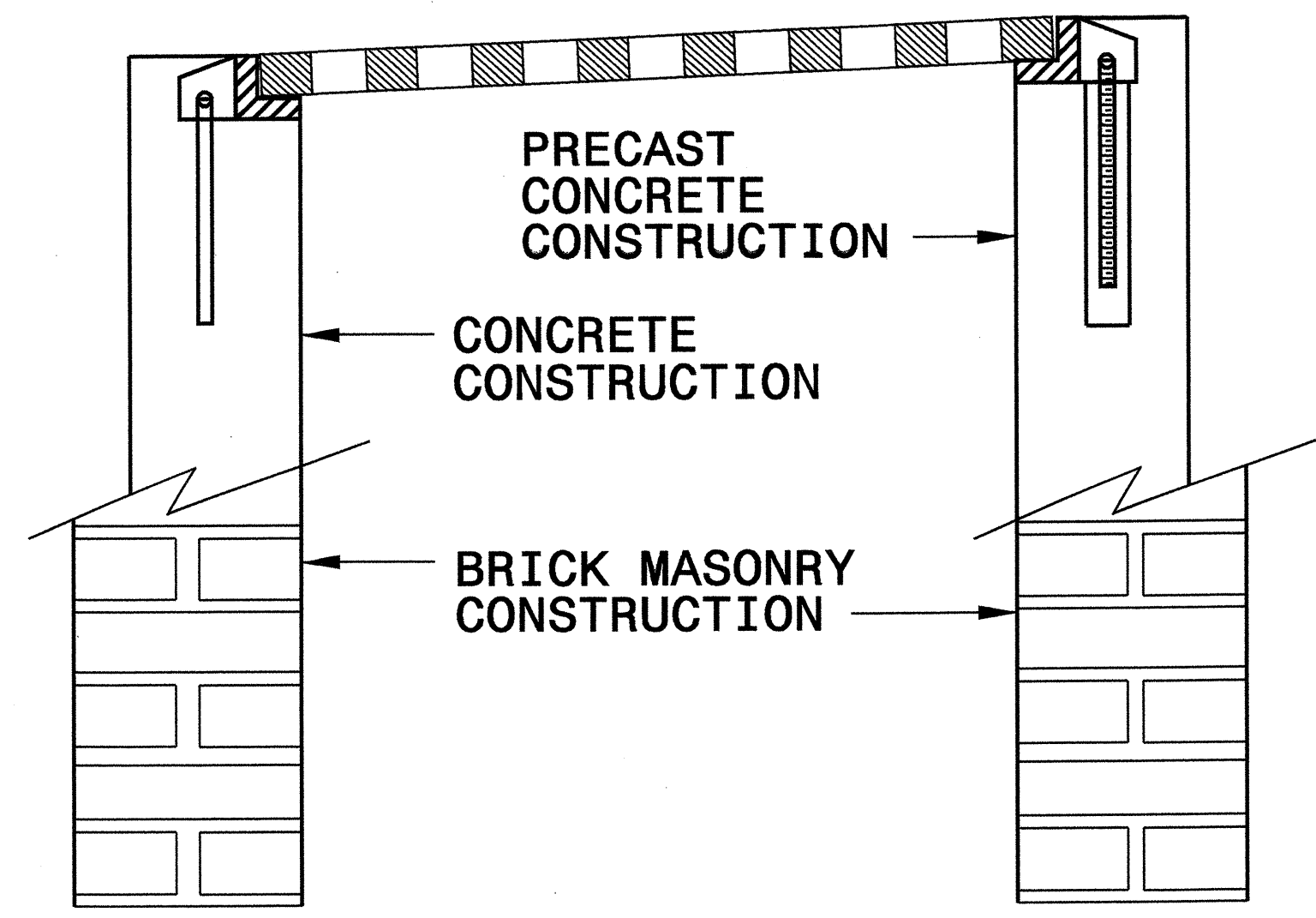
MASONRY ANCHOR
3/8" DIA. BOLT WITH PLATE



CONCRETE ANCHOR
3/8" DIA. BENT BAR



PRECAST CONCRETE ANCHOR
3/8" DIA. BENT BAR



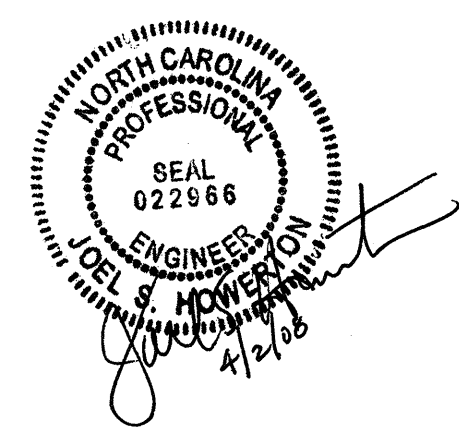
FRAME AND GRATE INSTALLATION FOR NORMAL CROWN AND SUPERELEVATED SECTIONS

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

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

SHEET 1 OF 1
840D25

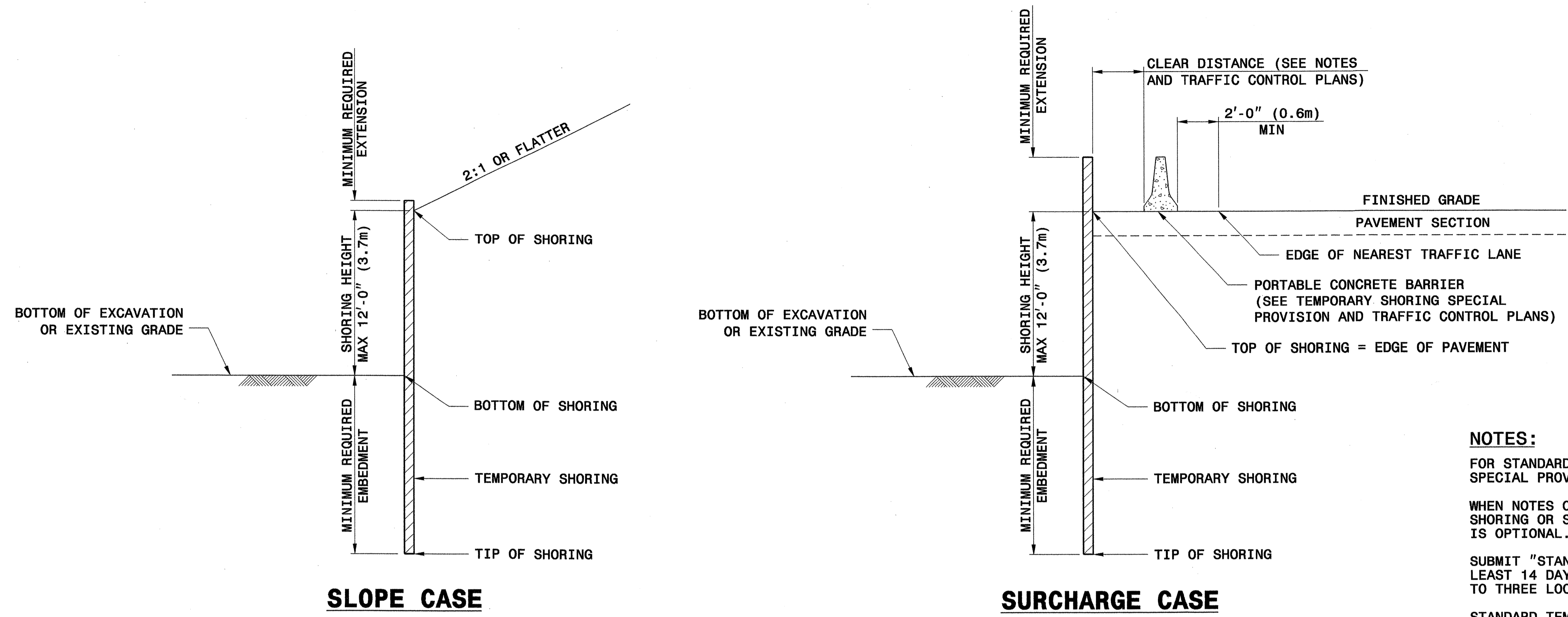
01-MAR-2007 09:04 C:\mnt\projects\special_details\entwrd\stds\06\stds to special_details\84025 anchorage for frames\0840d25.dgn shoverton



**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.:



NOTES:

FOR STANDARD TEMPORARY SHORING, SEE TEMPORARY SHORING SPECIAL PROVISION.

WHEN NOTES ON PLANS DO NOT PROHIBIT STANDARD TEMPORARY SHORING OR STANDARD SHORING, STANDARD TEMPORARY SHORING IS OPTIONAL.

SUBMIT "STANDARD TEMPORARY SHORING SELECTION FORM" AT LEAST 14 DAYS BEFORE BEGINNING SHORING CONSTRUCTION. UP TO THREE LOCATIONS MAY BE INCLUDED ON EACH SELECTION FORM.

STANDARD TEMPORARY SHORING IS BASED ON THE FOLLOWING CONDITIONS:

- 1) MAXIMUM SHORING HEIGHT IS 12'-0" (3.7m).
- 2) TRAFFIC SURCHARGE IS 240 PSF (11.5 KPA) MAXIMUM OR BACKSLOPE IS 2:1 (H:V) OR FLATTER.
- 3) BOTTOM OF EXCAVATION OR EXISTING GRADE IN FRONT OF SHORING IS 6:1 (H:V) SLOPE OR FLATTER.
- 4) H PILE SPACING IS 6'-0" (1.8m).
- 5) H PILE EMBEDMENT DEPTHS ARE FOR DRIVEN PILES.
- 6) TIMBER LAGGING IS A MINIMUM OF 3" (75mm) THICK.

STANDARD TEMPORARY SHORING IS BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:

TOTAL UNIT WEIGHT = 120 PCF (18.8 KN/M³)
 FRICTION ANGLE = 30 DEGREES
 COHESION = 0 PSF (0 KPA)
 GROUNDWATER IS ASSUMED TO BE BELOW BOTTOM OF SHORING.

DO NOT USE STANDARD TEMPORARY SHORING WHEN THE ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE OR GROUNDWATER IS ABOVE THE BOTTOM OF SHORING.

DO NOT USE STANDARD TEMPORARY SHORING WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS PRESENT WITHIN THE EMBEDMENT DEPTH.

VERIFY GROUNDWATER ELEVATION BEFORE BEGINNING SHORING CONSTRUCTION.

IF THE CLEAR DISTANCE AVAILABLE IS LESS THAN THE MINIMUM REQUIRED IN ACCORDANCE WITH THE TRAFFIC CONTROL PLANS, SET THE BARRIER AGAINST THE TRAFFIC SIDE OF THE SHORING AND USE THE "SURCHARGE CASE WITH TRAFFIC IMPACT".

AT THE CONTRACTOR'S OPTION, H PILE EMBEDMENT DEPTHS FOR PILES SET IN DRILLED HOLES MAY BE REDUCED BY 25%. FOR PILE EXCAVATION, SEE TEMPORARY SHORING SPECIAL PROVISION.

CONTROL DRAINAGE DURING CONSTRUCTION IN THE VICINITY OF THE SHORING. COLLECT AND DIRECT RUNOFF AWAY FROM SHORING.

CONTACT THE ENGINEER IF MINIMUM REQUIRED EMBEDMENT IS NOT ACHIEVED.

GROUNDWATER CONDITION	SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT						SURCHARGE CASE WITH TRAFFIC IMPACT					
	SHORING HEIGHT FT (m)	SHEET PILES		H PILES WITH TIMBER LAGGING			MINIMUM REQUIRED EMBEDMENT FT (m)	SHEET PILES		H PILES WITH TIMBER LAGGING		
		MINIMUM REQUIRED EMBEDMENT FT (m)	MINIMUM REQUIRED SECTION MODULUS IN ³ /FT (cm ³ /m)	MINIMUM REQUIRED EMBEDMENT FT (m)				MINIMUM REQUIRED SECTION MODULUS IN ³ /FT (cm ³ /m)	MINIMUM REQUIRED EMBEDMENT FT (m)			
				HP 10x42 (HP 250x62)	HP 12x53 (HP 310x79)	HP 14x73 (HP 360x108)			HP 10x42 (HP 250x62)	HP 12x53 (HP 310x79)	HP 14x73 (HP 360x108)	
GROUNDWATER ELEVATION BELOW TIP OF SHORING	< 6 (1.8)	7.5 (2.3)	3.0 (161)	8.0 (2.4)	8.0 (2.4)	8.0 (2.4)	11.0 (3.4)	10.0 (538)	9.5 (2.9)	9.5 (2.9)	9.5 (2.9)	
	7 (2.1)	8.5 (2.6)	4.5 (242)	9.5 (2.9)	9.5 (2.9)	9.5 (2.9)	12.0 (3.7)	12.0 (645)	10.5 (3.2)	10.5 (3.2)	10.5 (3.2)	
	8 (2.4)	10.0 (3.0)	6.5 (349)	10.5 (3.2)	10.5 (3.2)	10.5 (3.2)	12.5 (3.8)	14.0 (753)	11.5 (3.5)	11.5 (3.5)	11.5 (3.5)	
	9 (2.7)	11.0 (3.4)	9.5 (511)	--	12.0 (3.7)	12.0 (3.7)	13.5 (4.1)	16.5 (887)	--	12.5 (3.8)	12.5 (3.8)	
	10 (3.0)	12.5 (3.8)	13.0 (699)	--	--	13.5 (4.1)	14.0 (4.3)	19.5 (1048)	--	13.5 (4.1)	13.5 (4.1)	
	11 (3.4)	13.5 (4.1)	17.0 (914)	--	--	14.5 (4.4)	15.0 (4.6)	22.5 (1210)	--	--	14.5 (4.4)	
	12 (3.7)	15.0 (4.6)	21.5 (1156)	--	--	16.0 (4.9)	16.0 (4.9)	25.5 (1371)	--	--	15.5 (4.7)	
GROUNDWATER ELEVATION BETWEEN BOTTOM OF SHORING AND TIP OF SHORING	< 6 (1.8)	11.5 (3.5)	4.5 (242)	11.5 (3.5)	11.5 (3.5)	11.5 (3.5)	16.0 (4.9)	12.0 (645)	13.0 (4.0)	13.0 (4.0)	13.0 (4.0)	
	7 (2.1)	13.0 (4.0)	7.0 (376)	13.0 (4.0)	13.0 (4.0)	13.0 (4.0)	17.0 (5.2)	14.5 (780)	14.5 (4.4)	14.5 (4.4)	14.5 (4.4)	
	8 (2.4)	15.0 (4.6)	10.0 (538)	--	15.0 (4.6)	15.0 (4.6)	18.0 (5.5)	17.0 (914)	--	15.5 (4.7)	15.5 (4.7)	
	9 (2.7)	17.0 (5.2)	14.0 (753)	--	17.0 (5.2)	17.0 (5.2)	19.0 (5.8)	20.0 (1075)	--	17.0 (5.2)	17.0 (5.2)	
	10 (3.0)	18.5 (5.6)	19.5 (1048)	--	--	18.5 (5.6)	20.0 (6.1)	23.5 (1263)	--	--	18.5 (5.6)	
	11 (3.4)	20.5 (6.3)	26.0 (1398)	--	--	--	21.0 (6.4)	28.0 (1505)	--	--	20.0 (6.1)	
	12 (3.7)	22.5 (6.9)	33.0 (1774)	--	--	--	22.0 (6.7)	33.0 (1774)	--	--	21.5 (6.6)	

NOTE: MINIMUM REQUIRED EXTENSION IS 6" (150mm) FOR "SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT" AND 32" (800 mm) FOR "SURCHARGE CASE WITH TRAFFIC IMPACT".

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C201852

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
0029000000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ***** (12+97.15)
0029000000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ***** (19+80.00)
0043000000-N	226	Lump Sum		GRADING
0050000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB-BING
0057000000-E	226	100	CY	UNDERCUT EXCAVATION
0080000000-E	SP	200	TON	CLASS IV SUBGRADE STABILIZATION
0195000000-E	265	500	CY	SELECT GRANULAR MATERIAL
0196000000-E	270	500	SY	FABRIC FOR SOIL STABILIZATION
0199000000-E	SP	625	SF	TEMPORARY SHORING
0318000000-E	300	30	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRS
0343000000-E	310	64	LF	15" SIDE DRAIN PIPE
0408000000-E	310	40	LF	54" RC PIPE CULVERTS, CLASS III
0576000000-E	310	44	LF	*** CS PIPE CULVERTS, ***** THICK (48", 0.109")
0995000000-E	340	118	LF	PIPE REMOVAL
1121000000-E	520	340	TON	AGGREGATE BASE COURSE
1220000000-E	545	30	TON	INCIDENTAL STONE BASE
1489000000-E	610	400	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
1525000000-E	610	430	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A
1560000000-E	620	46	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22
2000000000-N	806	41	EA	RIGHT OF WAY MARKERS
2022000000-E	815	50	CY	SUBDRAIN EXCAVATION
2033000000-E	815	40	CY	SUBDRAIN FINE AGGREGATE
2044000000-E	815	200	LF	6" PERFORATED SUBDRAIN PIPE
2055000000-E	815	6	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)
2220000000-E	838	5	CY	REINFORCED ENDWALLS
2264000000-E	840	1	CY	PIPE PLUGS
2275000000-E	SP	3	CY	FLOWABLE FILL
2286000000-N	840	4	EA	MASONRY DRAINAGE STRUCTURES
2297000000-E	840	22.4	CY	MASONRY DRAINAGE STRUCTURES
2367000000-N	840	4	EA	FRAME WITH TWO GRATES, STD 840.29
2396000000-N	840	1	EA	FRAME WITH COVER, STD 840.54
2556000000-E	846	175	LF	SHOULDER BERM GUTTER
2580000000-E	846	50	LF	CONCRETE VALLEY GUTTER
3030000000-E	862	375	LF	STEEL BM GUARDRAIL
3045000000-E	862	50	LF	STEEL BM GUARDRAIL, SHOP CURVED
3150000000-N	862	10	EA	ADDITIONAL GUARDRAIL POSTS
3165000000-N	SP	1	EA	GUARDRAIL ANCHOR UNITS, TYPE ***** (TL-2)
3195000000-N	862	1	EA	GUARDRAIL ANCHOR UNITS, TYPE AT-1
3270000000-N	SP	6	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
3317000000-N	862	8	EA	GUARDRAIL ANCHOR UNITS, TYPE B-77
3380000000-E	862	325	LF	TEMPORARY STEEL BM GUARDRAIL
3382000000-E	862	50	LF	TEMPORARY STEEL BM GUARDRAIL (SHOP CURVED)
3387000000-N	862	1	EA	GUARDRAIL ANCHOR UNITS, TYPE ***** TEMPORARY (AT-1)
3387000000-N	862	8	EA	GUARDRAIL ANCHOR UNITS, TYPE ***** TEMPORARY (III)

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS SUMMARY OF QUANTITIES

ItemNumber	Sec #	Quantity	Unit	Description
3389100000-N	SP	7	EA	GUARDRAIL ANCHOR UNITS, TYPE 350 TEMPORARY
3649000000-E	876	33	TON	RIP RAP, CLASS B
3656000000-E	876	324	SY	FILTER FABRIC FOR DRAINAGE
4400000000-E	1110	316	SF	WORK ZONE SIGNS (STATIONARY)
4405000000-E	1110	112	SF	WORK ZONE SIGNS (PORTABLE)
4410000000-E	1110	82	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
4430000000-N	1130	66	EA	DRUMS
4435000000-N	1135	52	EA	CONES
4445000000-E	1145	104	LF	BARRICADES (TYPE III)
4450000000-N	1150	420	HR	FLAGGER
4480000000-N	1165	2	EA	TMIA
4507000000-E	SP	310	LF	WATER FILLED BARRIER
4516000000-N	1180	82	EA	SKINNY DRUM
4650000000-N	1251	256	EA	TEMPORARY RAISED PAVEMENT MARKERS
4810000000-E	1205	29,340	LF	PAINT PAVEMENT MARKING LINES (4")
4835000000-E	1205	80	LF	PAINT PAVEMENT MARKING LINES (24")
4850000000-E	1205	2,500	LF	REMOVAL OF PAVEMENT MARKING LINES (4")
6000000000-E	1605	2,390	LF	TEMPORARY SILT FENCE
6006000000-E	1610	220	TON	STONE FOR EROSION CONTROL, CLASS A
6009000000-E	1610	570	TON	STONE FOR EROSION CONTROL, CLASS B
6012000000-E	1610	250	TON	SEDIMENT CONTROL STONE
6015000000-E	1615	32	ACR	TEMPORARY MULCHING
6018000000-E	1620	1,150	LB	SEED FOR TEMPORARY SEEDING
6021000000-E	1620	5.5	TON	FERTILIZER FOR TEMPORARY SEEDING
6029000000-E	SP	700	LF	SAFETY FENCE

ItemNumber	Sec #	Quantity	Unit	Description
6030000000-E	1630	1,960	CY	SILT EXCAVATION
6036000000-E	1631	1,100	SY	MATTING FOR EROSION CONTROL
6037000000-E	SP	10	SY	COIR FIBER MAT
6038000000-E	SP	90	SY	PERMANENT SOIL REINFORCEMENT MAT
6042000000-E	1632	80	LF	1/4" HARDWARE CLOTH
6071030000-E	SP	540	LF	COIR FIBER BAFFLES
6071050000-E	SP	1	EA	*** SKIMMER (1-1/2")
6084000000-E	1660	31	ACR	SEEDING & MULCHING
6087000000-E	1660	19	ACR	MOWING
6090000000-E	1661	400	LB	SEED FOR REPAIR SEEDING
6093000000-E	1661	0.75	TON	FERTILIZER FOR REPAIR SEEDING
6096000000-E	1662	775	LB	SEED FOR SUPPLEMENTAL SEEDING
6108000000-E	1665	22.75	TON	FERTILIZER TOPDRESSING
6114000000-N	SP	2	HR	SPECIALIZED HAND MOWING
6117000000-N	SP	27	EA	RESPONSE FOR EROSION CONTROL
6123000000-E	1670	0.5	ACR	REFORESTATION
7060000000-E	1705	800	LF	SIGNAL CABLE
7120000000-E	1705	4	EA	VEHICLE SIGNAL HEAD (12", 3 SECTION)
7264000000-E	1710	720	LF	MESSENGER CABLE (3/8")
7360000000-N	1720	7	EA	WOOD POLE
7372000000-N	1721	4	EA	GUY ASSEMBLY
7408000000-E	1722	1	EA	1" RISER WITH WEATHERHEAD
7420000000-E	1722	3	EA	2" RISER WITH WEATHERHEAD
7444000000-E	1725	355	LF	INDUCTIVE LOOP SAWCUT
7456000000-E	1726	760	LF	LEAD-IN CABLE (***** (14-2))
7768000000-N	1751	1	EA	CONTROLLER WITH CABINET (TYPE 2070L, POLE MOUNTED)
7780000000-N	1751	2	EA	DETECTOR CARD (TYPE 2070L)

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

0366000000-E	310	44	LF	15" RC PIPE CULVERTS, CLASS III
AA1				
0372000000-E	310	84	LF	18" RC PIPE CULVERTS, CLASS III
AA1				
*** OR ***				
0366000000-E	310	36	LF	15" RC PIPE CULVERTS, CLASS III
AA2				
0372000000-E	310	72	LF	18" RC PIPE CULVERTS, CLASS III
AA2				
0536000000-E	SP	8	LF	*** HDPE PIPE CULVERTS (15")
AA2				
0536000000-E	SP	12	LF	*** HDPE PIPE CULVERTS (18")
AA2				
*** OR ***				
0366000000-E	310	36	LF	15" RC PIPE CULVERTS, CLASS III
AA3				
0372000000-E	310	72	LF	18" RC PIPE CULVERTS, CLASS III
AA3				
0540000000-E	SP	8	LF	*** ALUMINIZED CORRUGATED STEEL PIPE CULVERTS, ***** THICK (15", 0.064")
AA3				
0540000000-E	SP	12	LF	*** ALUMINIZED CORRUGATED STEEL PIPE CULVERTS, ***** THICK (18", 0.064")
AA3				

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

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DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA

SUMMARY OF EARTHWORK

IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
SUMMARY NO. 1 (PHASE 1)					
10+50.00 TO 13+01.59 -DET. A-	680		17		663
13+53.59 TO 14+03.48 -DET. A-	9		7		2
18+00.00 TO 19+66.28 -DET. B-	14		426	412	
20+25.00 TO 21+70.06 -DET. B-	36		308	272	
10+25.00 TO 11+75.00 -Y-	48		55	7	
TOTAL SUMMARY NO. 1	787		813	691	665
SUMMARY NO. 2 (PHASE 2)					
10+00.00 TO 12+73.00 -L-	275		317	42	
13+00.00 TO 16+50.00 -L-	752		392		360
18+00.00 TO 19+50.00 -L-	22		29	7	
20+10.00 TO 22+25.00 -L-	54		51		3
TOTAL SUMMARY NO. 2	1103		789	49	363
SUMMARY NO. 3 (PHASE 3)					
12+00.00 TO 12+73.00 -L- RT. SIDE	156		94		62
13+83.59 TO 16+50.00 -L- RT. SIDE	7		52	45	
18+00.00 TO 19+50.00 -L- RT. SIDE	283				283
20+25.00 TO 22+25.00 -L- RT. SIDE	123		39		84
10+25.00 TO 11+75.00 -Y- RT. SIDE	23		22		1
TOTAL SUMMARY NO. 3	592		207	45	430
SUMMARY TOTALS	2482		1809	785	1458
LOSS DUE TO CLEARING AND GRUBBING	-50			50	
WASTE TO BE USED IN LIEU OF BORROW				-759	-759
PROJECT TOTAL	2432			76	699
EST. 5% FOR REPLACING TOPSOIL AT BORROW PIT				4	
GRAND TOTAL	2432			80	
SAY	2500			100	
GRADE POINT UNDERCUT	100 CU. YDS				
CLASS IV SUBGRADE STABILIZATION MATERIAL	200 TONS				

SUMMARY OF ASPHALT REMOVAL

IN SQUARE YARDS

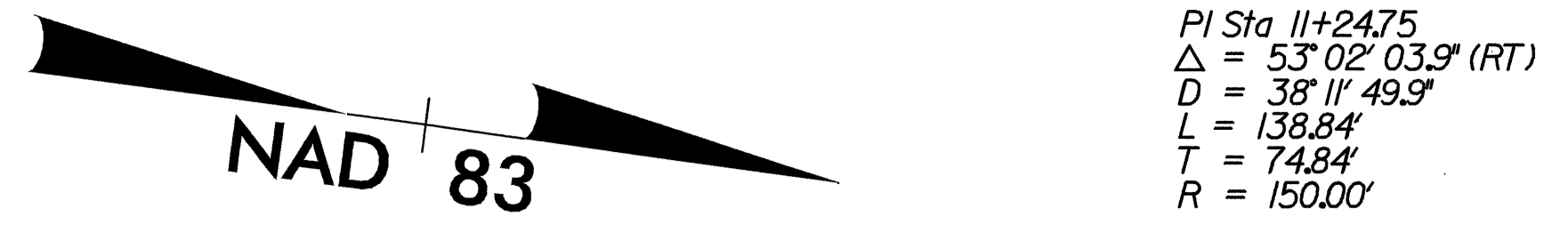
STATION TO STATION	LOCATION	ASPHALT REMOVAL
10+00.00 TO 12+73.00 -L-	CENTERLINE	355
10+00.00 TO 12+73.00 -L-	CENTERLINE	435
10+00.00 TO 12+73.00 -L-	CENTERLINE	51
10+00.00 TO 12+73.00 -L-	CENTERLINE	54
10+50.00 TO 13+01.59 -DET. A-	LT. SIDE	5
10+50.00 TO 13+01.59 -DET. A-	RT. SIDE	11
10+50.00 TO 13+01.59 -DET. A-	CENTERLINE	66
10+50.00 TO 13+01.59 -DET. A-	CENTERLINE	21
20+25.00 TO 21+70.06 -DET. B-	CENTERLINE	19
20+25.00 TO 21+70.06 -DET. B-	CENTERLINE	168
20+25.00 TO 21+70.06 -DET. B-	CENTERLINE	63
20+25.00 TO 21+70.06 -DET. B-	CENTERLINE	78
	TOTAL	1326
	SAY	1330

Note: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

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.

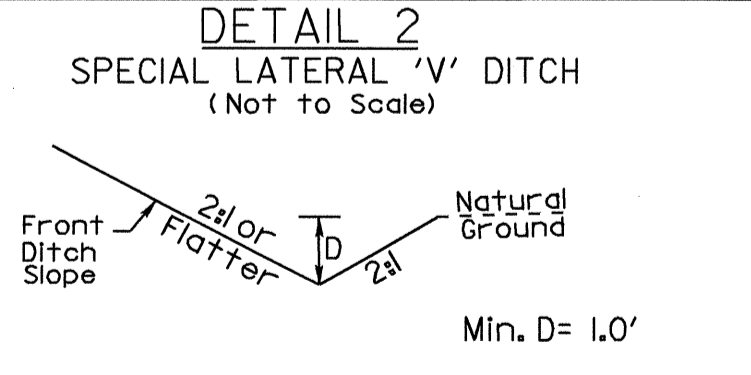
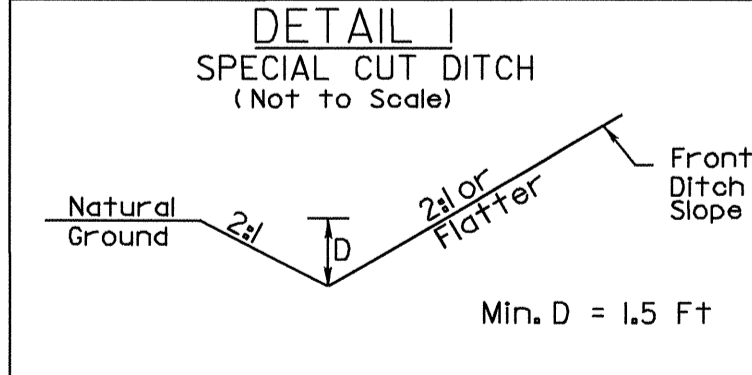
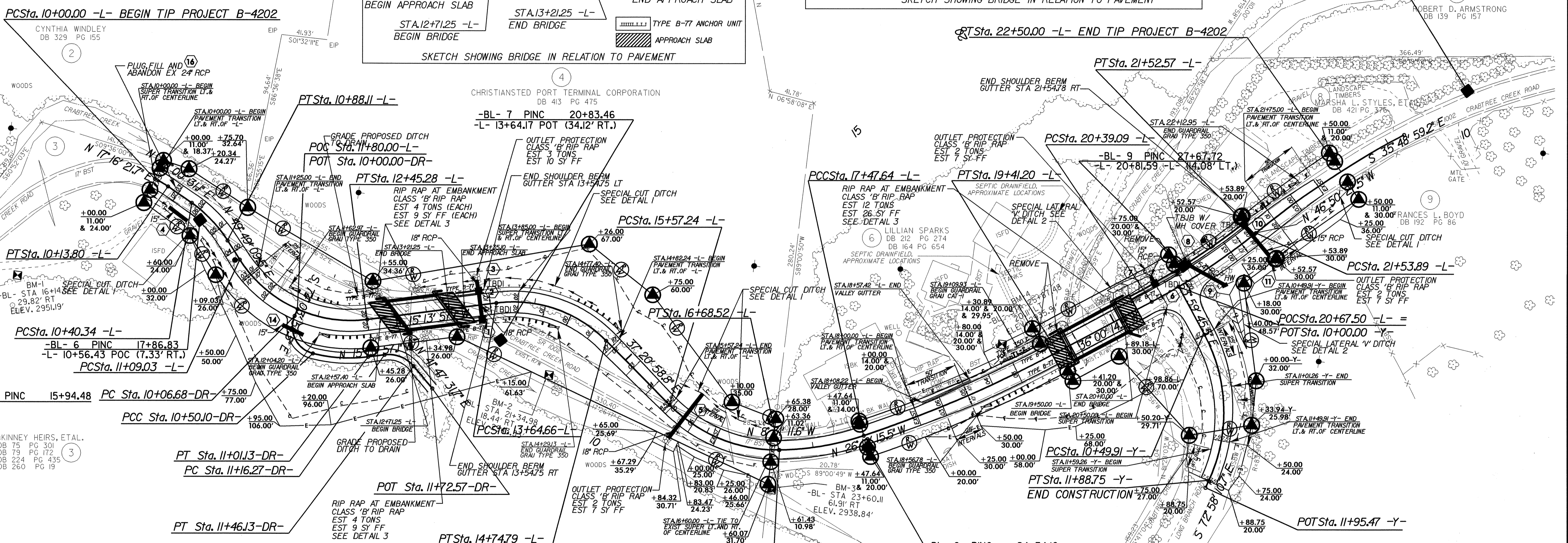
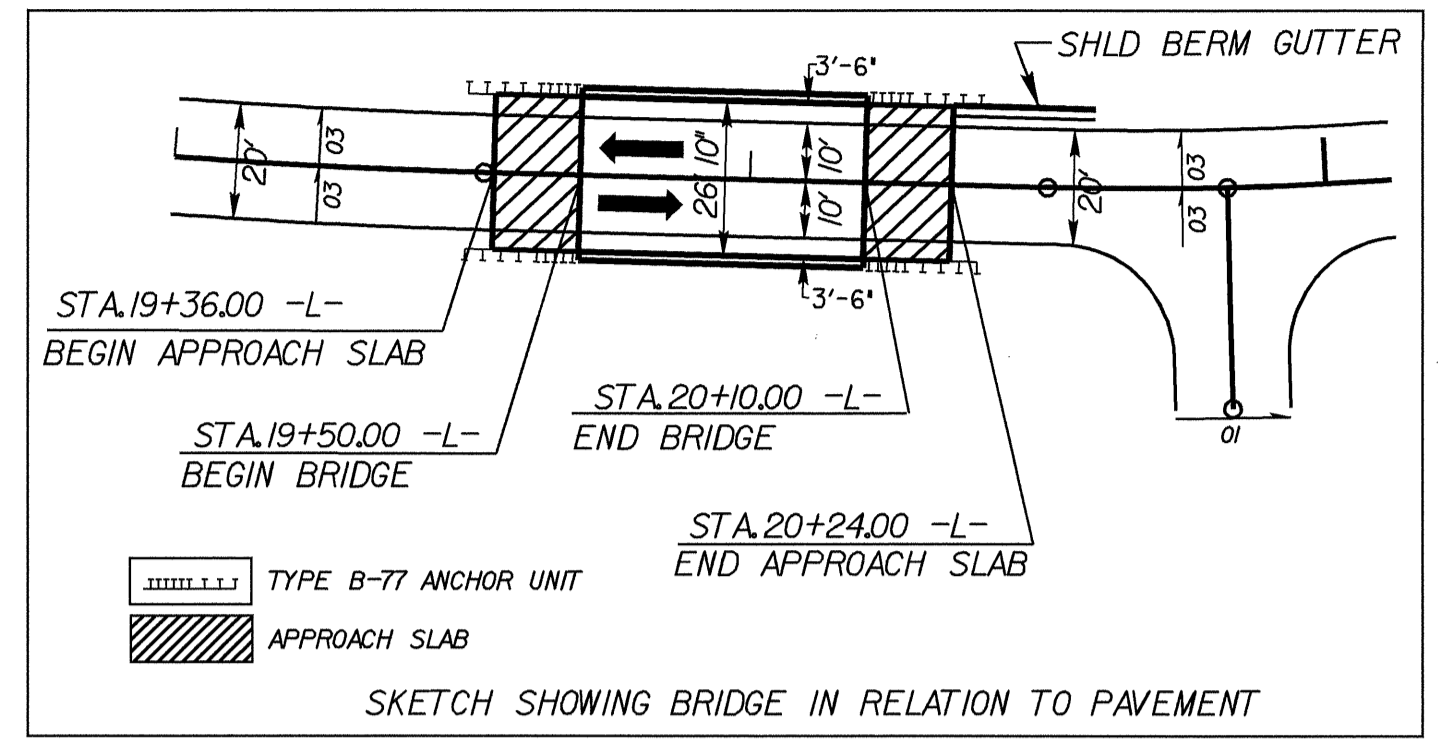
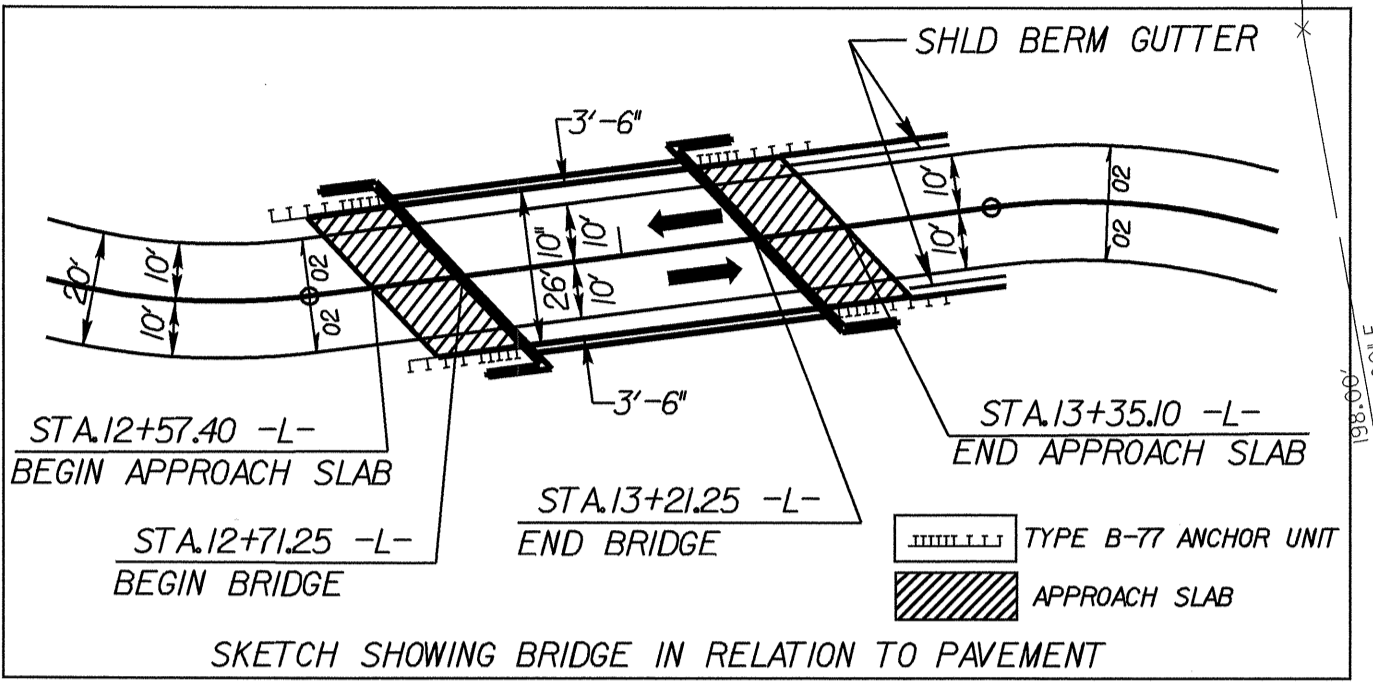
5/19/06
04-MAR-2008 11:44 b4202_rdlj_sum.dgn

PI Sta 10+06.92 Δ = 9° 44' 09.5" (RT) D = 70' 32' 00.3" L = 13.80' T = 6.92' R = 81.23'	PI Sta 11+85.56 Δ = 65° 03' 06.7" (LT) D = 47' 44' 47.3" L = 136.24' T = 76.52' R = 120.00'	PI Sta 16+16.06 Δ = 45° 52' 10.3" (LT) D = 41' 13' 11.9" L = 111.28' T = 58.82' R = 39.90'	PI Sta 17+08.61 Δ = 17° 39' 03.9" (LT) D = 22' 25' 44.9" L = 78.70' T = 39.66' R = 255.45'	PI Sta 22+35.55 Δ = 11° 01' 28.3" (RT) D = 6' 46' 15.1" L = 162.82' T = 81.66' R = 846.21'
PI Sta 10+64.54 Δ = 22° 48' 38.4" (RT) D = 47' 44' 47.3" L = 47.77' T = 24.21' R = 120.00'	PI Sta 14+23.95 Δ = 52° 34' 55.9" (RT) D = 47' 44' 47.3" L = 110.33' T = 59.28' R = 120.00'	PI Sta 18+44.66 Δ = 9° 49' 59.0" (LT) D = 5' 04' 48.2" L = 193.56' T = 97.02' R = 1127.86'	PI Sta 20+96.00 Δ = 10° 50' 12.9" (LT) D = 9' 32' 57.5" L = 113.48' T = 56.91' R = 600.00'	



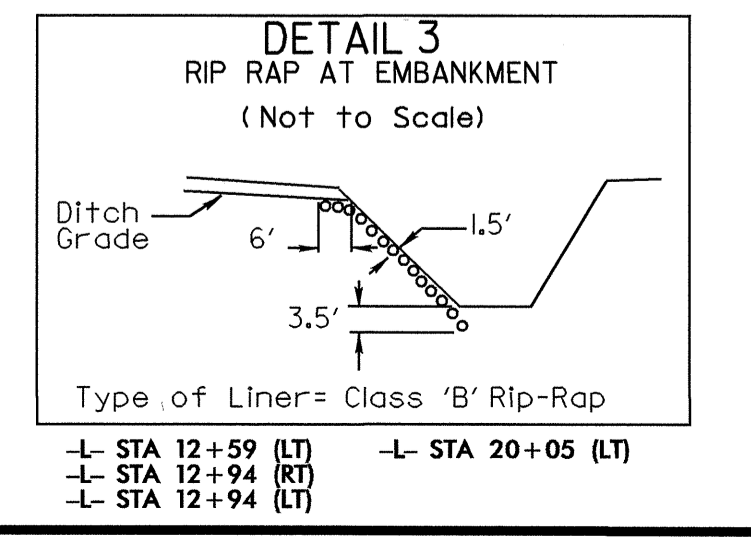
NOTE: SEE SHEET 6 FOR -L- PROFILE
SEE SHEET 6 FOR -DRIVE- PROFILE
SEE SHEET 7 FOR -Y- PROFILE
FOR STRUCTURES SEE SHEETS S-1 THRU S-34

PI Sta 10+36.21 Δ = 99° 30' 29.6" (LT) D = 229° 10' 59.2" L = 43.42' T = 29.54' R = 25.00'	PI Sta 11+32.57 Δ = 57° 01' 28.8" (RT) D = 190° 59' 09.4" L = 29.86' T = 16.30' R = 30.00'	PI Sta 10+75.92 Δ = 21° 39' 31.0" (LT) D = 42° 26' 28.7" L = 51.03' T = 25.82' R = 135.00'
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- L- STA. 10+00 TO STA. 11+25 (RT)
- L- STA. 12+91 TO STA. 14+50 (LT)
- L- STA. 15+75 TO STA. 16+50 (LT)
- L- STA. 15+50 TO STA. 15+75 (LT)
- L- STA. 21+75 TO STA. 22+50 (RT)

- Y- STA. 10+25 TO STA. 10+75 (LT)
- L- STA. 20+08 TO STA. 20+50 (LT)

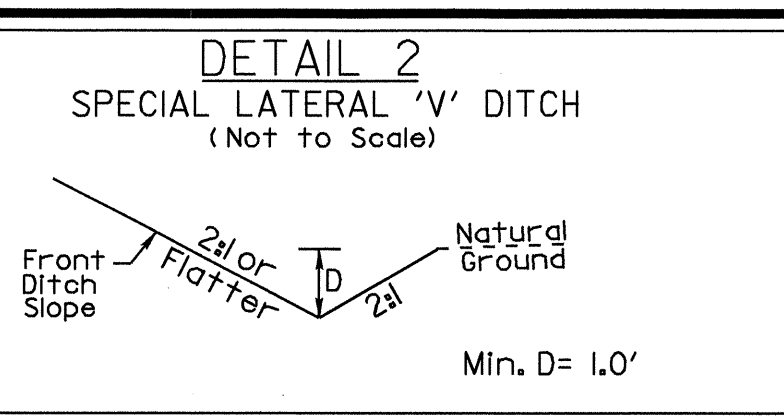
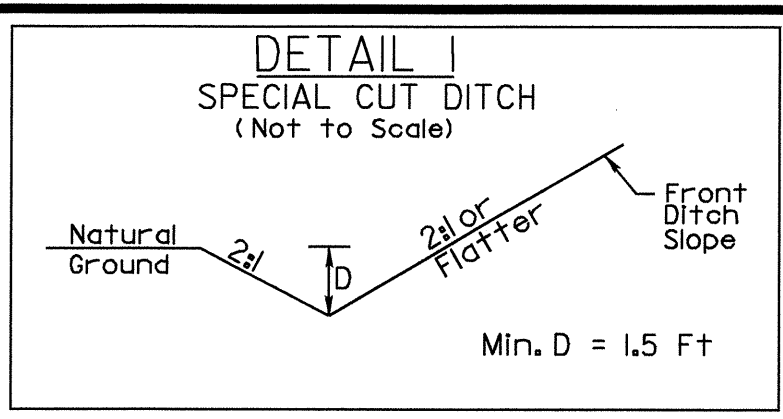


- L- STA. 12+59 (LT)
- L- STA. 12+94 (RT)
- L- STA. 12+94 (LT)
- L- STA. 20+05 (LT)

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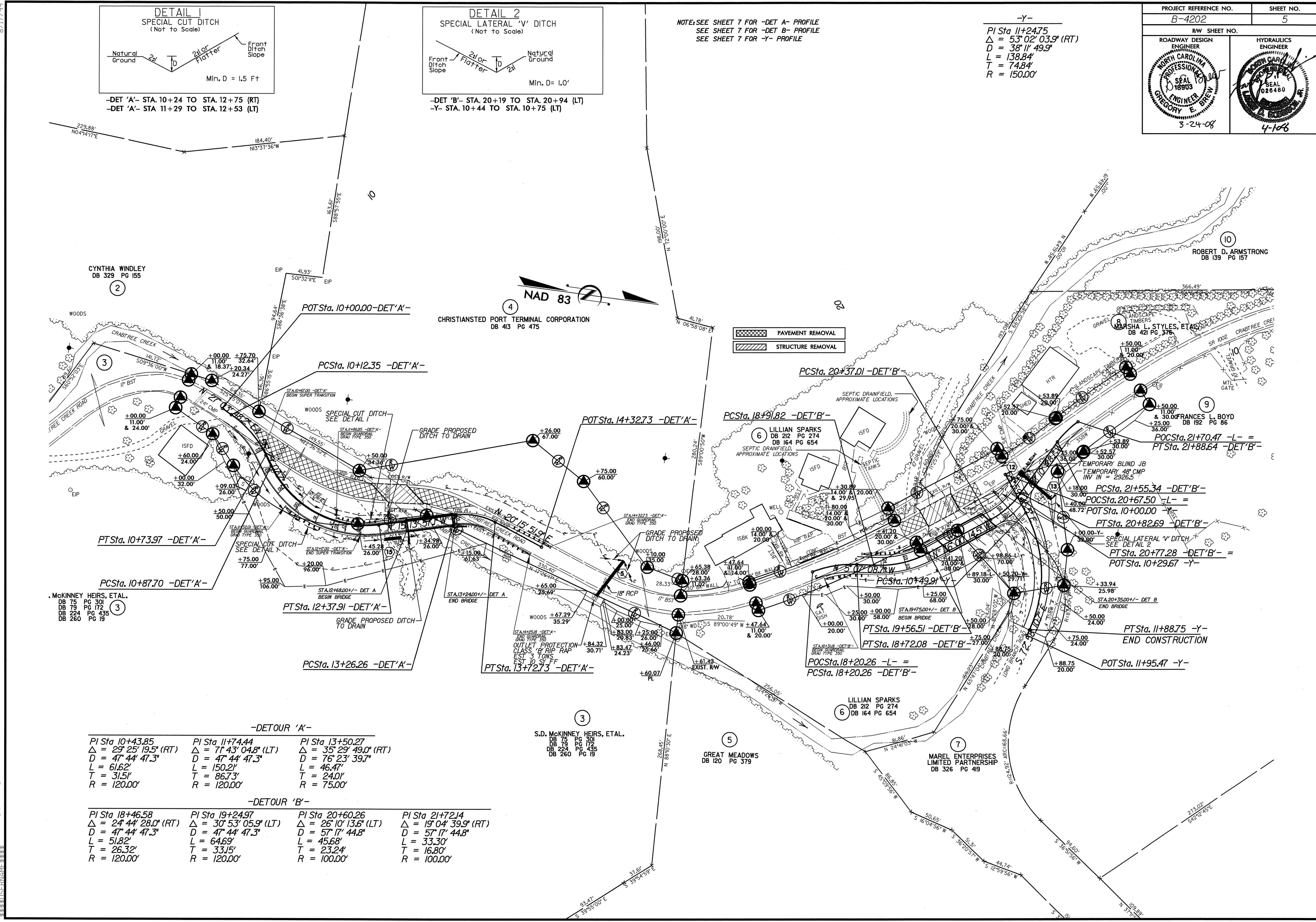
-Y-
 PI Sta 11+24.75
 $\Delta = 53^{\circ}02'03.9"$ (RT)
 $D = 38^{\circ}11'49.9"$
 $L = 138.84'$
 $T = 74.84'$
 $R = 150.00'$

NOTE: SEE SHEET 7 FOR -DET A- PROFILE
 SEE SHEET 7 FOR -DET B- PROFILE
 SEE SHEET 7 FOR -Y- PROFILE



-DET 'A'- STA. 10+24 TO STA. 12+75 (RT)
 -DET 'A'- STA. 11+29 TO STA. 12+53 (LT)

-DET 'B'- STA. 20+19 TO STA. 20+94 (LT)
 -Y- STA. 10+44 TO STA. 10+75 (LT)



-DETOUR 'A'-

PI Sta 10+43.85 $\Delta = 29^{\circ}25'19.5"$ (RT) $D = 47^{\circ}44'47.3"$ $L = 61.62'$ $T = 31.51'$ $R = 120.00'$	PI Sta 11+74.44 $\Delta = 71^{\circ}43'04.8"$ (LT) $D = 47^{\circ}44'47.3"$ $L = 150.21'$ $T = 86.73'$ $R = 120.00'$	PI Sta 13+50.27 $\Delta = 35^{\circ}29'49.0"$ (RT) $D = 76^{\circ}23'39.7"$ $L = 46.47'$ $T = 24.01'$ $R = 75.00'$
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-DETOUR 'B'-

PI Sta 18+46.58 $\Delta = 24^{\circ}44'28.0"$ (RT) $D = 47^{\circ}44'47.3"$ $L = 51.82'$ $T = 26.32'$ $R = 120.00'$	PI Sta 19+24.97 $\Delta = 30^{\circ}53'05.9"$ (LT) $D = 47^{\circ}44'47.3"$ $L = 64.69'$ $T = 33.15'$ $R = 120.00'$	PI Sta 20+60.26 $\Delta = 26^{\circ}10'13.6"$ (LT) $D = 57^{\circ}17'44.8"$ $L = 45.68'$ $T = 23.24'$ $R = 100.00'$	PI Sta 21+72.14 $\Delta = 19^{\circ}04'39.9"$ (RT) $D = 57^{\circ}17'44.8"$ $L = 33.30'$ $T = 16.80'$ $R = 100.00'$
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8/17/99

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5/28/99

BM*1 - BL - 16#15
RR SPIKE LOCATED 30' RT.
IN BASE OF 2" OAK
ELEV. 2938.19
N 779509 F 1071957

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 1000 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 2942.3 FT
BASE DISCHARGE	= 1600 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 2944.6 FT
OVERTOPPING DISCHARGE	= 2400 CFS
OVERTOPPING FREQUENCY	= 500 YRS
OVERTOPPING ELEVATION	= 2945.5 FT
DATE OF SURVEY	= 01/09/2006
W.S. ELEVATION AT DATE OF SURVEY	= 2938.0 FT

BM*2 - BL - STA. 21#35
RR SPIKE LOCATED 18' RT.
IN BASE OF 36" POPLAR
ELEV. 2943.33
N 780004 F 1071980

PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO. 5 18" PIPE

DRAINAGE AREA	= 0.85 AC
DESIGN FREQUENCY	= 25 YRS
DESIGN DISCHARGE	= 1.3 CFS
DESIGN HW ELEVATION	= 2936.11 FT
100 YEAR DISCHARGE	= 1.5 CFS
100 YEAR HW ELEVATION	= 2936.16 FT
OVERTOPPING FREQUENCY	= YRS
OVERTOPPING DISCHARGE	= CFS
OVERTOPPING ELEVATION	= FT

BM*3 - BL - 23#60
RR SPIKE LOCATED 62' RT.
IN BASE OF 36" OAK
ELEV. 2938.84
N 780220 F 1072056

PIPE HYDRAULIC DATA

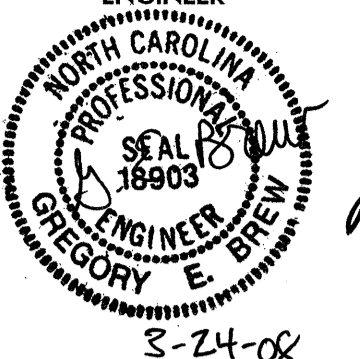
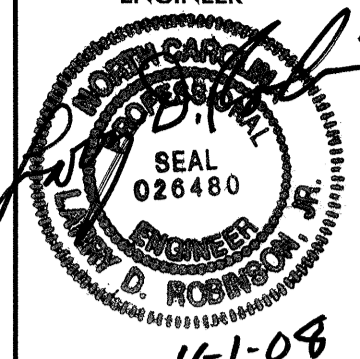
DRAINAGE STRUCTURE NO. 9 54" PIPE

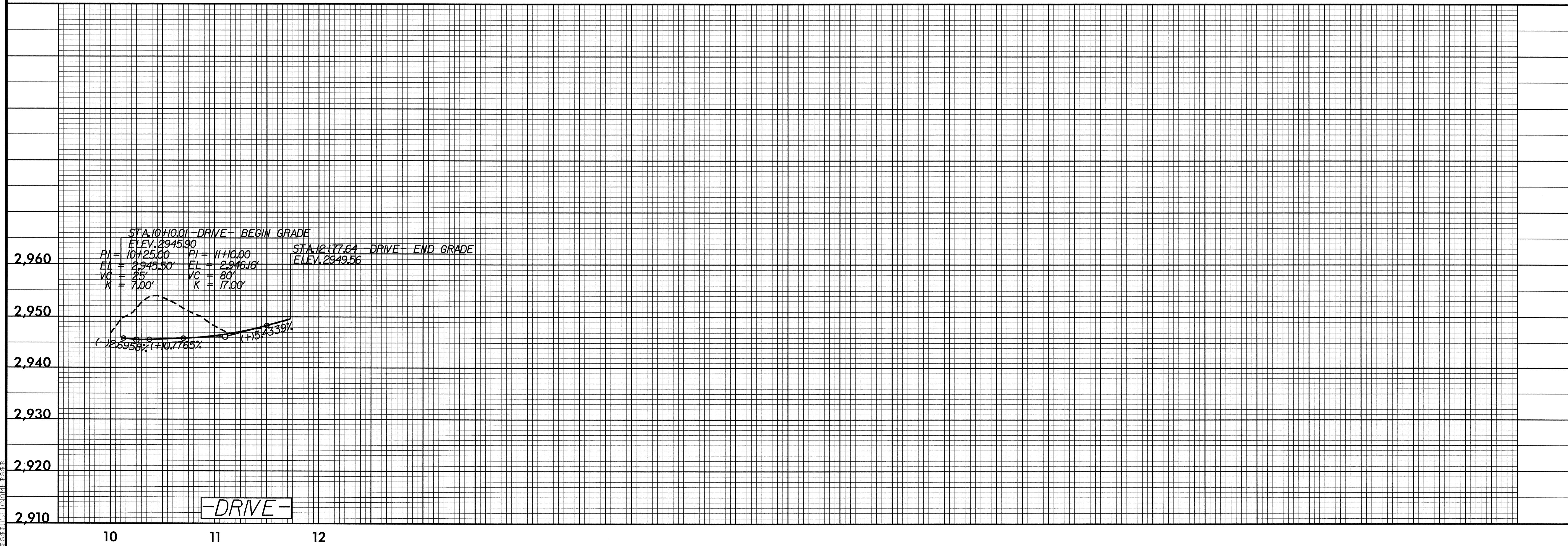
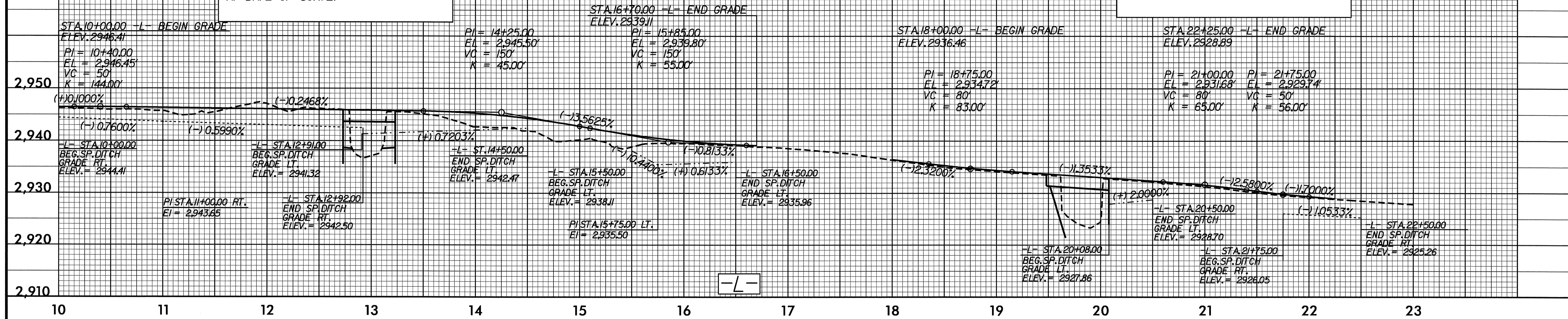
DRAINAGE AREA	= 2.00 AC
DESIGN FREQUENCY	= 25 YRS
DESIGN DISCHARGE	= 5.3 CFS
DESIGN HW ELEVATION	= 2925.11 FT
100 YEAR DISCHARGE	= 6.5 CFS
100 YEAR HW ELEVATION	= 2925.2 FT
OVERTOPPING FREQUENCY	= YRS
OVERTOPPING DISCHARGE	= CFS
OVERTOPPING ELEVATION	= FT

BM*4 - BL - 25#87
RR SPIKE LOCATED 20' LT.
IN BASE OF 48" HEMLOCK
ELEV. 2935.91
N 780411 F 1071896

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 1500 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 2930.6 FT
BASE DISCHARGE	= 2300 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 2931.9 FT
OVERTOPPING DISCHARGE	= <1100 CFS
OVERTOPPING FREQUENCY	= <10 YRS
OVERTOPPING ELEVATION	= 2927.0 FT
*OVERTOPPING OCCURS AT EXISTING LOWPOINT 250' UP STATION OF PROPOSED BRIDGE FT	
DATE OF SURVEY	= 01/09/2006
W.S. ELEVATION AT DATE OF SURVEY	= 2924.4 FT

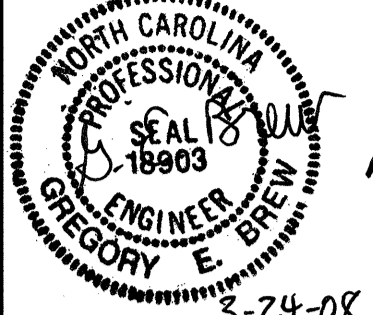
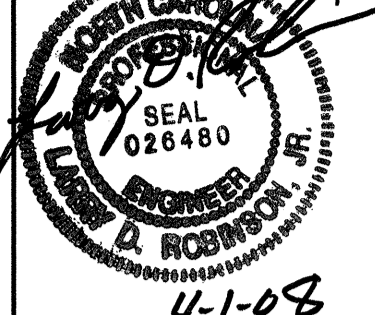
PROJECT REFERENCE NO.	B-4202	SHEET NO.	6
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
3-24-08		4-1-08	

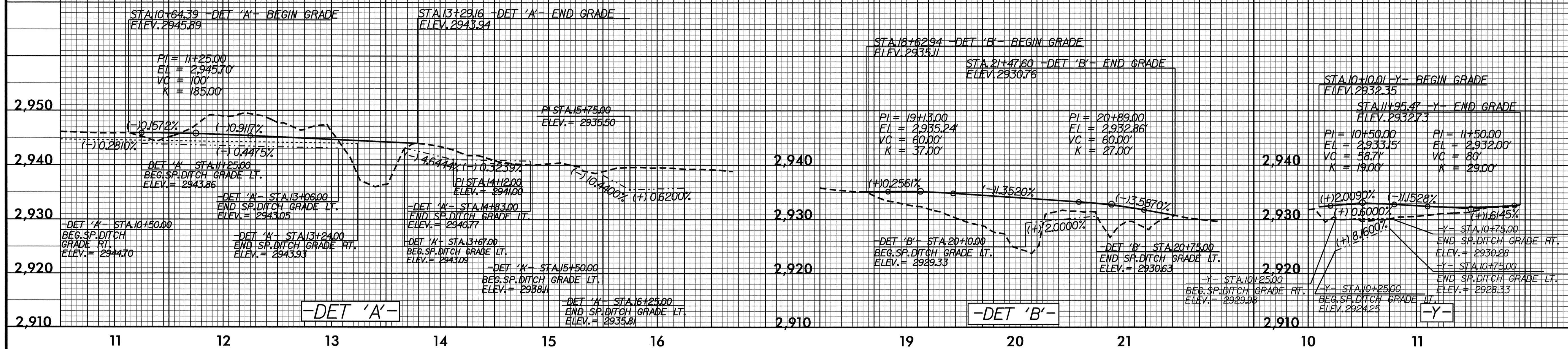


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5/28/99

DITCH LEGEND	
LEFT DITCH	-----
RIGHT DITCH	-----

PROJECT REFERENCE NO. B-4202	SHEET NO. 7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
	
3-24-08	4-1-08



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