

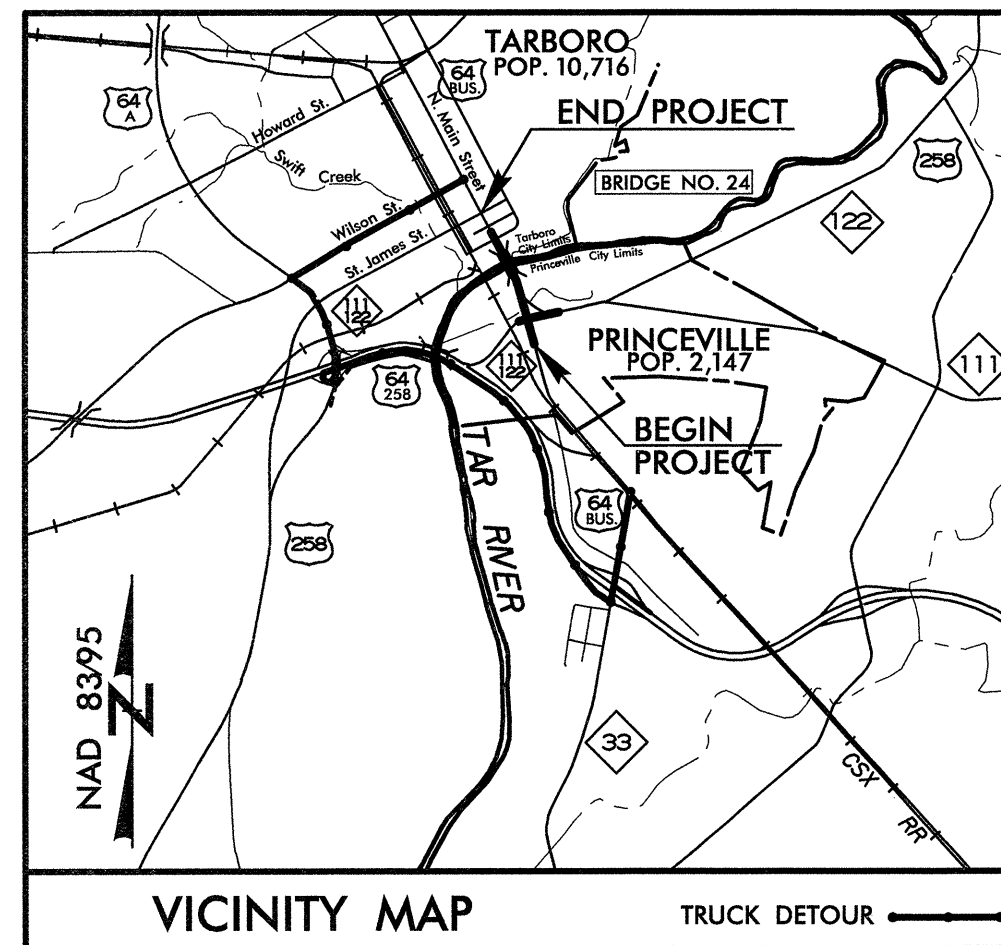
See Sheet 1-A For Index of Sheets

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**EDGEcombe COUNTY**

**LOCATION: BRIDGE NO. 24 OVER THE TAR RIVER ON  
US 64 BUSINESS /NC 33 (MAIN ST.) FROM US 258/NC III-122  
(MUTUAL BLVD) TO SR 1308 (ALBEMARLE AVE)**  
**TYPE OF WORK: GRADING, PAVING, DRAINAGE, SIGNALS,  
RETAINING WALL, AND STRUCTURE**

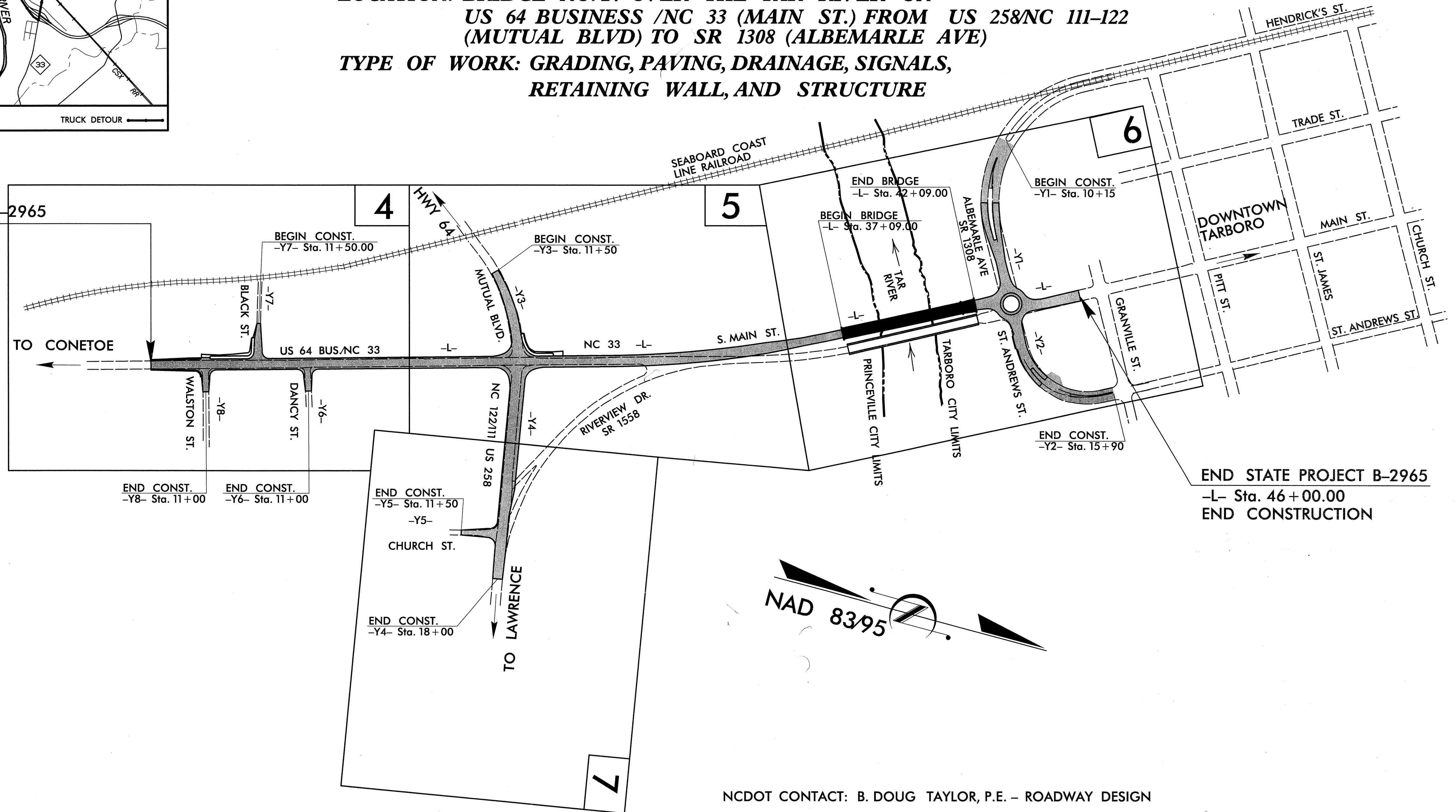
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-2965	1	
WBS NO.	F.A. PROJ. NO.	DESCRIPTION	
32782.1.1	BRSTP-064B(2)	P.E.	
32782.2.2	BRSTP-064B(2)	R.O.W./UTILITIES	
32782.3.1	BRSTP-064B(2)	CONST.	



TIP PROJECT: B-2965

CONTRACT: C202039

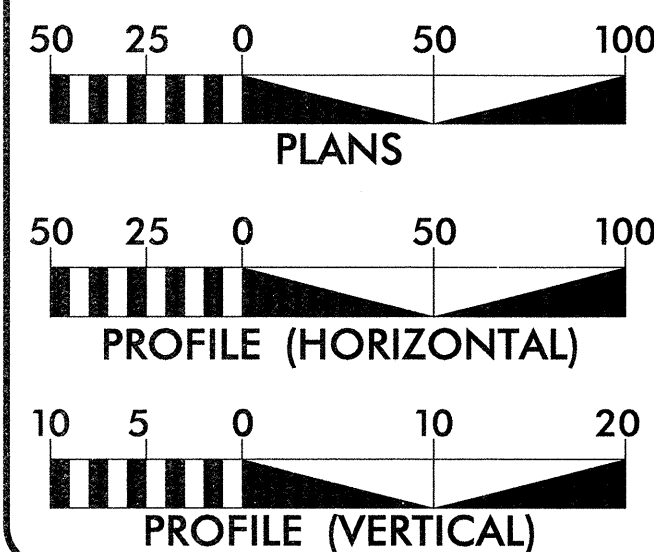
BEGIN STATE PROJECT B-2965  
-L- Sta. 11+50.00  
BEGIN CONSTRUCTION



END STATE PROJECT B-2965  
-L- Sta. 46+00.00  
END CONSTRUCTION

NCDOT CONTACT: B. DOUG TAYLOR, P.E. - ROADWAY DESIGN

**GRAPHIC SCALES**



**DESIGN DATA**

ADT 2008 = 13,350  
ADT 2028 = 17,950  
DHV = 10 %  
D = 60 %  
T = 5 % \*  
V = 40 MPH &  
25 MPH ON BRIDGE &  
NORTH INCLUDING  
ROUNDBOUT  
\* TTST 3 % DUAL 2 %  
FUNC CLASS: COLLECTOR

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT B-2965 = 0.559 MILES  
LENGTH STRUCTURE TIP PROJECT B-2965 = 0.095 MILES  
TOTAL LENGTH TIP PROJECT B-2965 = 0.654 MILES

Prepared In the Office of:  
**MULKEY**  
ENGINEERS & CONSULTANTS

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:  
DECEMBER 21, 2007

LETTING DATE:  
APRIL 21, 2009

TIM HAYES, P.E.  
PROJECT ENGINEER

JEFF RECK, P.E.  
HYDRAULICS ENGINEER

HYDRAULICS ENGINEER

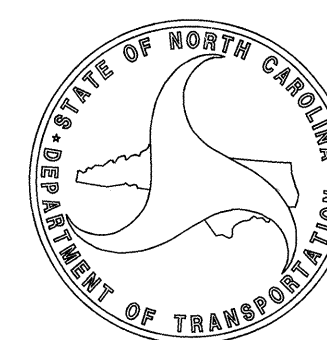
Professional Engineer Seal for Trenton J. Cornish, No. 34364, State of North Carolina, expires 10/10/08.

DESIGN

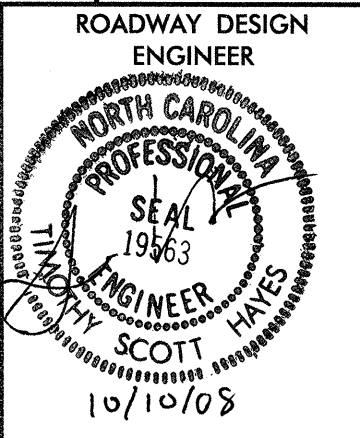
Professional Engineer Seal for Scott, No. 19583, State of North Carolina, expires 10/10/08.

SIGNATURE: \_\_\_\_\_ P.E.

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA



Professional Engineer Seal for [Signature], State Highway Design Engineer.



Sheet #	Description
1	Title Sheet
1-A	Index of Sheets, General Notes, & List of Standards
1-B	Conventional Symbols
1-C	Survey Control Sheet
2	Pavement Schedule, Wedging Detail & Typical Sections
2-A thru 2-D	Typical Sections
2-E	Roundabout Detail Sheet
2-F	Rock Plating Detail
2-G	Temporary Shoring Detail
2-H	Special Junction Box with Manhole Cover Detail
2-I	Detail of Junction Box Connecting Existing 4'x4' RCBC to 66" RCP
2-J	Anchor for Frames Detail
3 (2 SHEETS)	Summary of Quantities
3-A thru 3-C	List of Pipe, Endwalls, Etc. (For Pipe 48" & Under) & (For Pipe 54" & Over)
3-D	Guardrail Summary, Summary of Earthwork, Pavement Removal Summary & Summary of Breaking Existing Asphalt Pavement
3-E	Parcel Index Sheet
4 thru 7	Plans
8 thru 11	Profiles
TCP-1 thru TCP-21	Traffic Control Plans
PM-1 thru PM-4	Pavement Marking Plans
SD-1	Sign Design Plans
E-1 thru E-2	Electrical Plans
EC-1 thru EC-10	Erosion Control Plans
RF-1	Reforestation Detail Sheet
Sign-1 thru Sign-21	Signing Plans
Sig-1 thru Sig-18	Signal Plans
UC-1 thru UC-8	Utilities Construction Plans
UO-1 thru UO-5	Utilities by Others Plans
X-1	Cross Section Summary Sheet
X-2 thru X-27	Cross-Sections
W-1	RETAINING WALL
S-1 thru S-48	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 III.

**Superelevation:**  
All curves on this project shall be superelevated in accordance with Std. No. 225.04 using the rate of superelevation and runoff shown on the plans. Superelevation is to be revolved about the grade points shown on the typical sections.

**Shoulder Construction:**  
Asphalt, earth, and concrete shoulder construction on the high side of superelevated curves shall be in accordance with Std. No. 560.01.

**Side Roads:**  
The contractor will be required to do all necessary work to provide suitable connections with all roads, streets, and drives entering this project. This work will be paid for at the contract unit price for the particular items involved.

**Underdrains:**  
Underdrains shall be constructed in accordance with Std. No. 815.03 at locations directed by the engineer.

**Driveways:**  
Driveways shall be constructed in accordance with Std. 848.02 using 3' radii or radii as shown on the plans. Locations of drives will be as shown on the plans or as directed by the engineer.

**Street Turnout:**  
Street returns shall be constructed in accordance with Std. Nno. 848.04 using the radii noted on plans.

**Guardrail:**  
The guardrail locations shown on the plans may be adjusted during construction as directed by the engineer. The contractor should consult with the engineer prior to ordering guardrail material.

**Temporary Shoring:**  
Shoring required for the maintenance of traffic 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.

**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 Edgecombe/Martin EMC, Town of Tarboro, Town of Princeville, Embarq, and Piedmont Nat. Gas, Suddenlink CATV  
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 ENGLISH STANDARD DRAWINGS EFF. 07-18-06 REV. 01-02-07

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                     |   |
| 200.03                                     | Method of Clearing - Method III   |
| 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 I |
| DIVISION 6 - ASPHALT BASES AND PAVEMENTS   |   |
| 654.01                                     | Pavement Repairs  |
| DIVISION 8 - INCIDENTALS                   |   |
| 815.03                                     | Pipe Underdrain and Blind Drain   |
| 838.33                                     | Reinforced Concrete Endwall - for Single 66" Pipe 90 Skew                     |
| 838.45                                     | Notes for Reinforced Concrete Endwall - Std. Dwg 838.21 thru 838.40           |
| 838.63                                     | Reinforced Brick Endwall - for Single 66" 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                                     |
| 840.01                                     | 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                      |
| 840.14                                     | Concrete Drop Inlet - 12" thru 30" Pipe                                       |
| 840.15                                     | Brick Drop Inlet - 12" thru 30" Pipe  |
| 840.16                                     | Drop Inlet Frame and Grates - for use with Std. Dwg 840.14 and 840.15         |
| 840.29                                     | Frames and Narrow Slot Flat Grates  |
| 840.31                                     | Concrete Junction Box - 12" thru 66" Pipe                                     |
| 840.32                                     | Brick Junction Box - 12" thru 66" Pipe  |
| 840.34                                     | Traffic Bearing Junction Box - for Use with Pipes 42" and Under               |
| 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                                    |
| 840.54                                     | Manhole Frame and Cover   |
| 840.66                                     | Drainage Structure Steps  |
| 840.72                                     | Pipe Collar   |
| 846.01                                     | Concrete Curb, Gutter and Curb & Gutter                                       |
| 848.01                                     | Concrete Sidewalk   |
| 848.02                                     | Driveway Turnout - Radius Type  |
| 848.04                                     | Street Turnout  |
| 848.06                                     | Wheelchair Ramp - Retrofitting of Existing Curb                               |
| 852.01                                     | Concrete Islands  |
| 852.02                                     | Concrete Mountable Median - for Use with Rigid or Flexible Pavement           |
| 852.05                                     | Median Curb for Catch Basin - for Use with 1'-6" Curb and Gutter              |
| 852.06                                     | Method for Placement of Drop Inlets in Concrete Islands                       |
| 862.01                                     | Guardrail Placement   |
| 862.02                                     | Guardrail Installation  |
| 862.03                                     | Structure Anchor Units  |
| 866.01                                     | Chain Link Fence - 4', 5' and 6' High Fence                                   |
| 866.02                                     | Woven Wire Fence - with Wood Post   |

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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	⊙
Property Corner	⊠
Property Monument	⊠
Parcel/Sequence Number	(23)
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	-WLB-
Proposed Wetland Boundary	-WLB-
Existing Endangered Animal Boundary	-EAB-
Existing Endangered Plant Boundary	-EPB-

### 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:

Stream or Body of Water	_____
Hydro, Pool or Reservoir	▭
Jurisdictional Stream	-JS-
Buffer Zone 1	-BZ 1-
Buffer Zone 2	-BZ 2-
Flow Arrow	←
Disappearing Stream	→
Spring	⊙
Wetland	⊗
Proposed Lateral, Tail, Head Ditch	→
False Sump	▽

### RAILROADS:

Standard Gauge	_____
RR Signal Milepost	⊙
Switch	⊠
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	⊠
Existing Metal Guardrail	_____
Proposed Guardrail	_____
Existing Cable Guiderail	_____
Proposed Cable Guiderail	_____
Equality Symbol	⊙
Pavement Removal	▭

### VEGETATION:

Single Tree	⊙
Single Shrub	⊙
Hedge	_____
Woods Line	_____
Orchard	_____
Vineyard	_____

### EXISTING STRUCTURES:

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

### UTILITIES:

POWER:	
Existing Power Pole	⊙
Proposed Power Pole	⊙
Existing Joint Use Pole	⊙
Proposed Joint Use Pole	⊙
Power Manhole	⊙
Power Line Tower	⊠
Power Transformer	⊠
U/G Power Cable Hand Hole	⊠
H-Frame Pole	⊙
Recorded U/G Power Line	_____
Designated U/G Power Line (S.U.E.*)	_____

### TELEPHONE:

Existing Telephone Pole	⊙
Proposed Telephone Pole	⊙
Telephone Manhole	⊙
Telephone Booth	⊠
Telephone Pedestal	⊠
Telephone Cell Tower	⊙
U/G Telephone Cable Hand Hole	⊠
Recorded U/G Telephone Cable	_____
Designated U/G Telephone Cable (S.U.E.*)	_____
Recorded U/G Telephone Conduit	_____
Designated U/G Telephone Conduit (S.U.E.*)	_____
Recorded U/G Fiber Optics Cable	_____
Designated U/G Fiber Optics Cable (S.U.E.*)	_____

### WATER:

Water Manhole	⊙
Water Meter	⊙
Water Valve	⊙
Water Hydrant	⊙
Recorded U/G Water Line	_____
Designated U/G Water Line (S.U.E.*)	_____
Above Ground Water Line	_____

### TV:

TV Satellite Dish	⊙
TV Pedestal	⊠
TV Tower	⊙
U/G TV Cable Hand Hole	⊠
Recorded U/G TV Cable	_____
Designated U/G TV Cable (S.U.E.*)	_____
Recorded U/G Fiber Optic Cable	_____
Designated U/G Fiber Optic Cable (S.U.E.*)	_____

### GAS:

Gas Valve	⊙
Gas Meter	⊙
Recorded U/G Gas Line	_____
Designated U/G Gas Line (S.U.E.*)	_____
Above Ground Gas Line	_____

### SANITARY SEWER:

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

### MISCELLANEOUS:

Utility Pole	⊙
Utility Pole with Base	⊠
Utility Located Object	⊙
Utility Traffic Signal Box	⊠
Utility Unknown U/G Line	_____
U/G Tank; Water, Gas, Oil	_____
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-2965

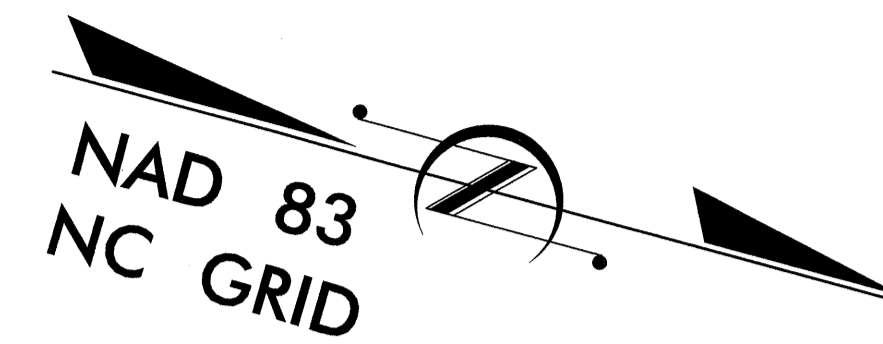
STATE PROJECT REFERENCE NO.	SHEET NO.
B-2965	1 C
<b>LOCATION &amp; SURVEYS</b>	

### CONTROL DATA

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
104	BL-104	781602.3840	2435308.7038	37.81'	20+16.57	31.54 RT
1	GPS B2965-1	782003.2470	2435088.4640	36.49'	24+61.87	72.86 LT
2	GPS B2965-2	782522.7070	2435054.8120	37.50'	29+70.14	37.05 RT
3	GPS B2965-3	783187.3639	2434830.3045	47.64'	36+60.89	81.78 RT
101	BL-101	783863.2429	2434405.3925	49.62'	44+61.00	34.59 RT

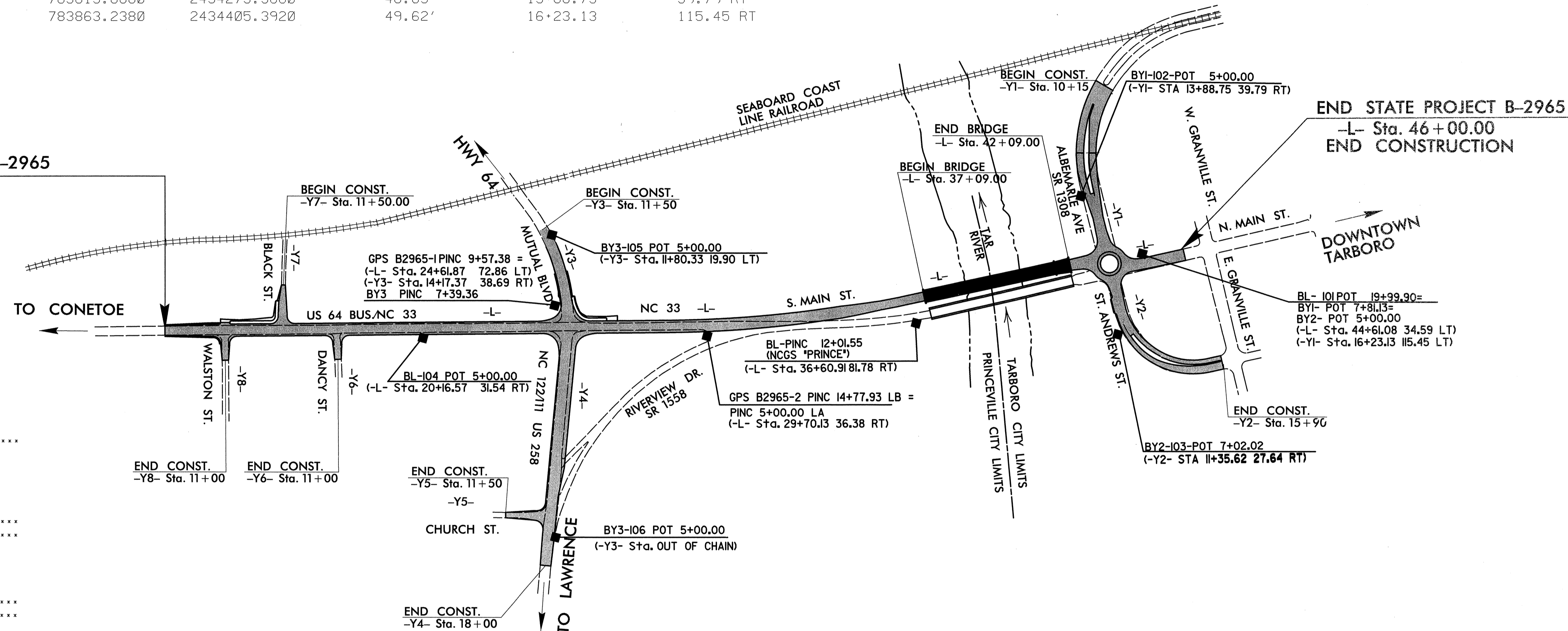
BY1 POINT	DESC.	NORTH	EAST	ELEVATION	Y1 STATION	OFFSET
102	BY1-102	783613.8680	2434275.5880	46.63'	13+88.75	39.79 RT
A101	BL-101	783863.2380	2434405.3920	49.62'	16+23.13	115.45 RT



**BEGIN STATE PROJECT B-2965**  
 -L- Sta. 11+50.00  
**BEGIN CONSTRUCTION**

### BENCHMARK DATA

.....  
 BM142 ELEVATION = 36.22'  
 N 782479.621 E 2435071.554  
 L STATION 29+24 40' RIGHT  
 RR SPIKE IN BASE OF POWER  
 POLE 46' SOUTH OF B2965-2  
 .....  
 BM141 ELEVATION = 32.80'  
 N 783168.165 E 2434986.882  
 L STATION 35+77 213' RIGHT  
 RR SPIKE IN BASE OF 36" PECAN  
 .....  
 BM140 ELEVATION = 49.57'  
 N 783697.651 E 2434475.116  
 L STATION 42+76 6' LEFT  
 RR SPIKE IN BASE OF 18" PINE  
 .....



BY2 POINT	DESC.	NORTH	EAST	ELEVATION	Y2 STATION	OFFSET
B101	BL-101	783863.2380	2434405.3920	49.62'	OUT OF CHAIN	
103	BY2-103	783807.1710	2434599.4790	49.27'	11+35.62	27.64 RT

BY3 POINT	DESC.	NORTH	EAST	ELEVATION	Y3 STATION	OFFSET
105	BY3-105	781931.7243	2434860.0402	40.37'	11+80.32	19.90 LT
A1	GPS B2965-1	782003.2470	2435088.4640	36.49'	14+17.37	38.69 RT
106	BY3-106	782204.9793	2435835.6294	37.85'	OUT OF CHAIN	

### DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "GPS B2965-1" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 782003.246(ft) EASTING: 2435088.463(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99993740 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS B3712-1" TO -L- STATION (-L- Sta. 11+50.00) IS 1313.98' 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/LOCATIONPROJECT](http://www.doh.dot.state.nc.us/preconstruct/highway/locationproject)  
 FILE : B2965\_LS\_CONTROL\_070204.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. CONTROL NETWORK FOR B3712 ESTABLISHED USING STATIC GPS FROM NCGS HARN MONUMENTATION.

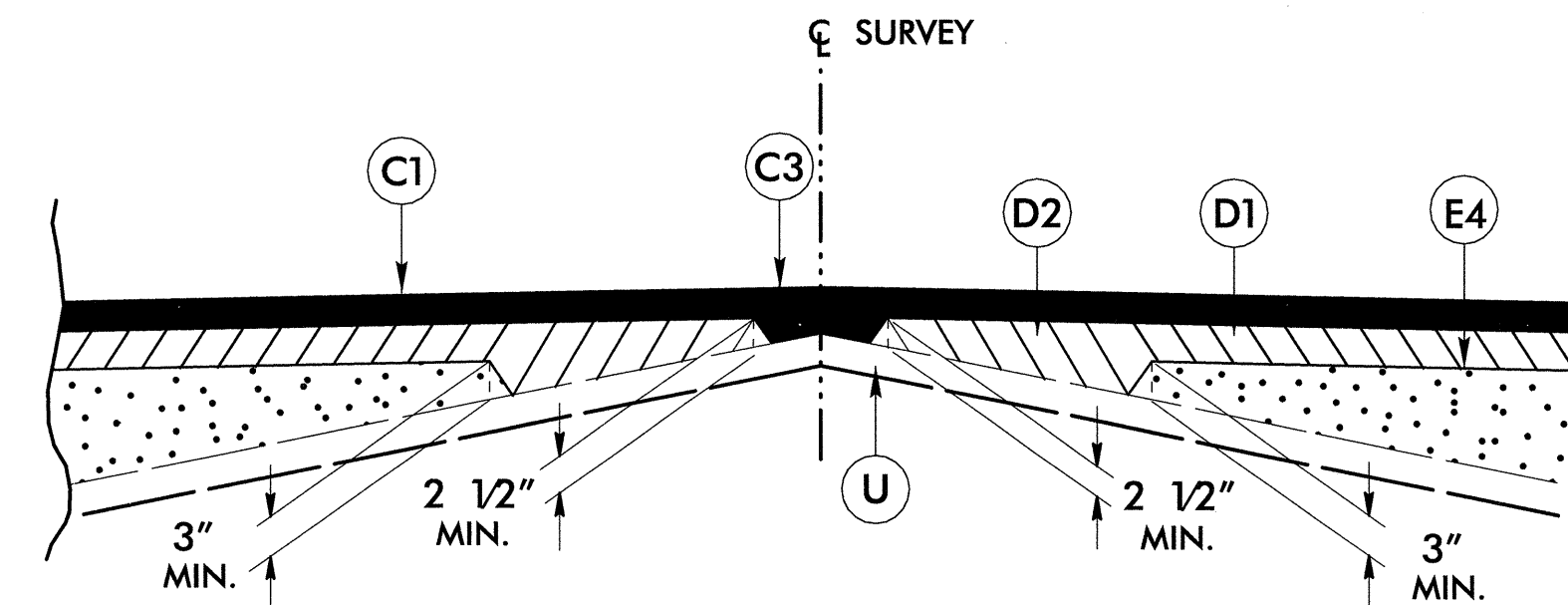
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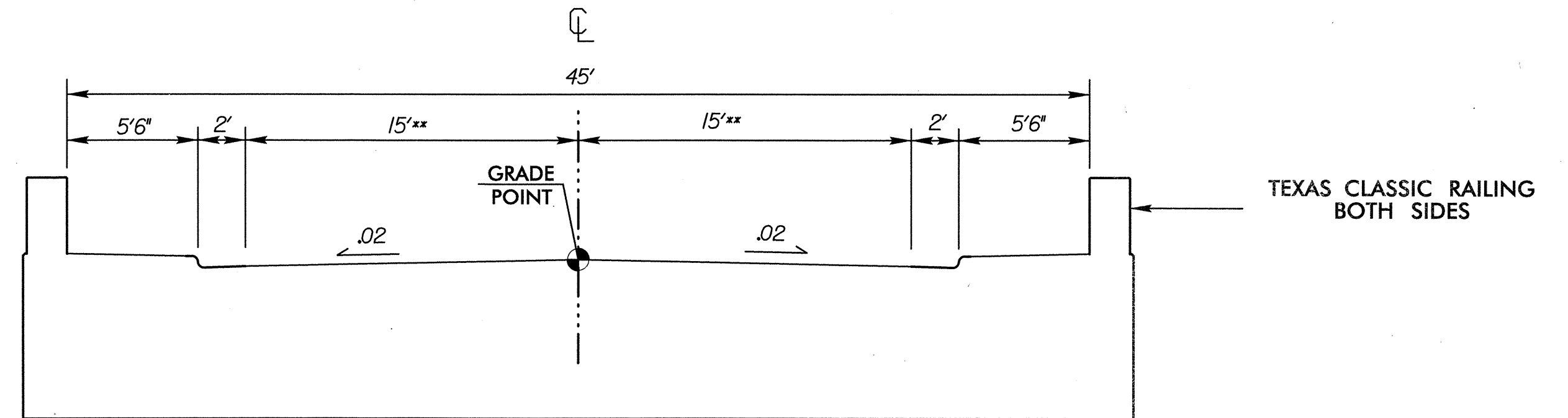
8/2/09

PROJECT REFERENCE NO. B-2965	SHEET NO. 2
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 19563 ROBY SCOTT 9/25/08	PAVEMENT DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 12398 DON-CHI CHEN 4/30/08

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
A1	7" PORTLAND CEMENT CONCRETE PAVEMENT.
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. APPROX. 8" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
E3	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 4" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
E4	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.
J1	PROP. 6" AGGREGATE BASE COURSE
R1	2'-6" CONCRETE CURB AND GUTTER.
R2	9"x18" CONCRETE CURB.
R3	1'-6" CONCRETE CURB AND GUTTER.
R4	5" MONOLITHIC CONCRETE ISLAND (KEYED IN).
S	4" CONCRETE SIDEWALK.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL).

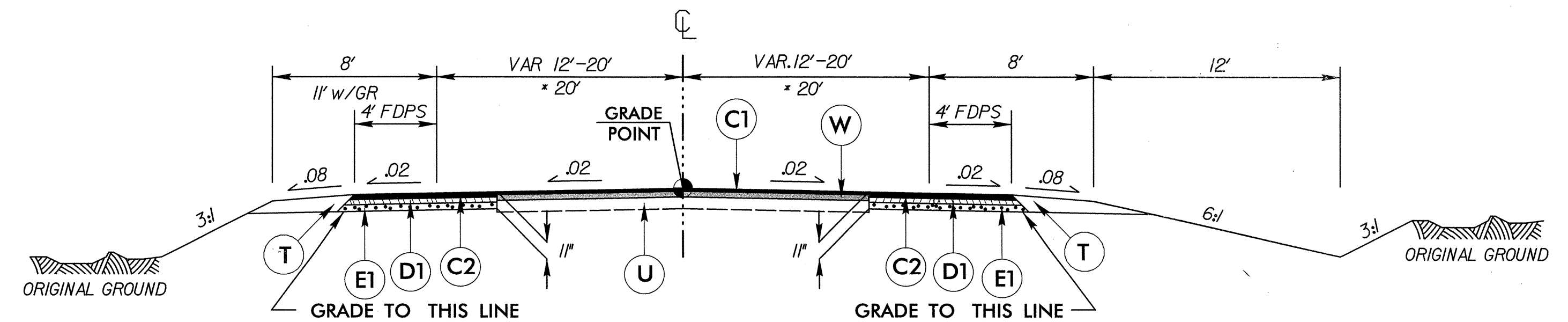


**STANDARD WEDGING DETAIL**



**TYPICAL SECTION ON STRUCTURE**

\*\* WIDENED AN ADDITIONAL 1' FOR HYDRAULIC SPREAD

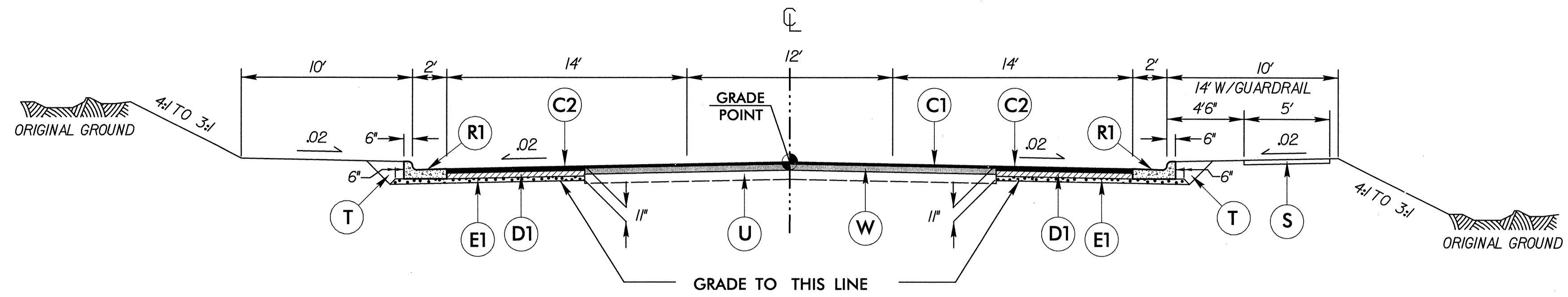


**TYPICAL SECTION NO. 1**

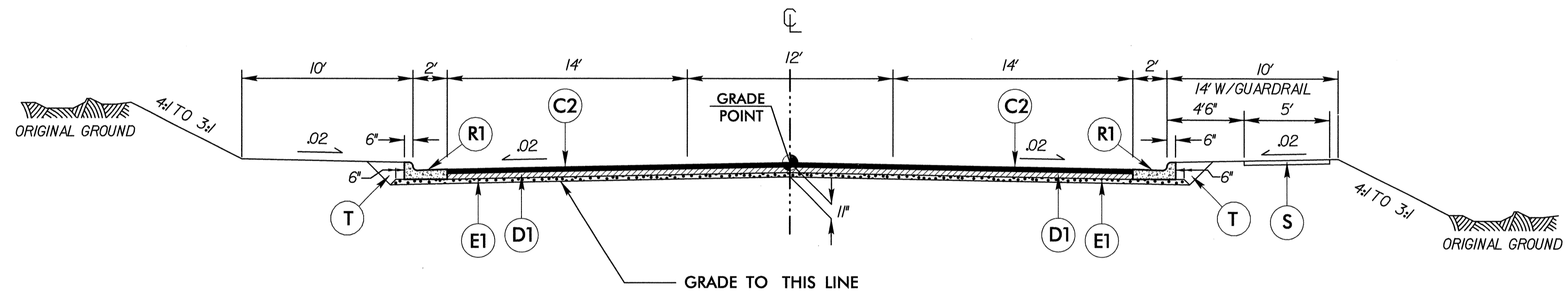
- L- STA. 11+50.00 TO 13+00.00
- \* -L- STA. 13+00.00 TO 13+59.00
- Y3- STA. 11+50.00 TO 13+90.00

NOTES:  
 1. SAWCUT AND REMOVE EXISTING ASPHALT PAVEMENT TO PROVIDE 1" MINIMUM WIDTH FULL DEPTH PAVEMENT.  
 2. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

9/25/2008  
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 10/21/08

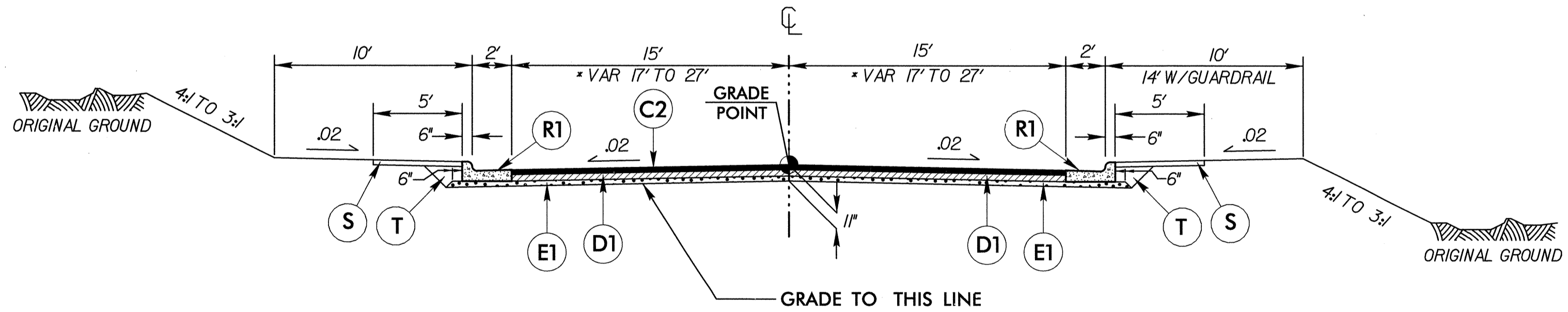


**TYPICAL SECTION NO. 2**  
-L- STA. 13+59.00 TO 31+84.04



**TYPICAL SECTION NO. 3**  
-L- STA. 31+84.04 TO 34+25.00

**TRANSITION FROM T.S. NO. 3 TO T.S. NO. 4**  
-L- STA. 34+25.00 TO 35+60.00



**TYPICAL SECTION NO. 4**  
-L- STA. 35+60.00 TO 37+09.00 (BEGIN BRIDGE)  
\* -L- STA. 42+09.00 (END BRIDGE) TO 42+84.19 (ROUNDBOUT)

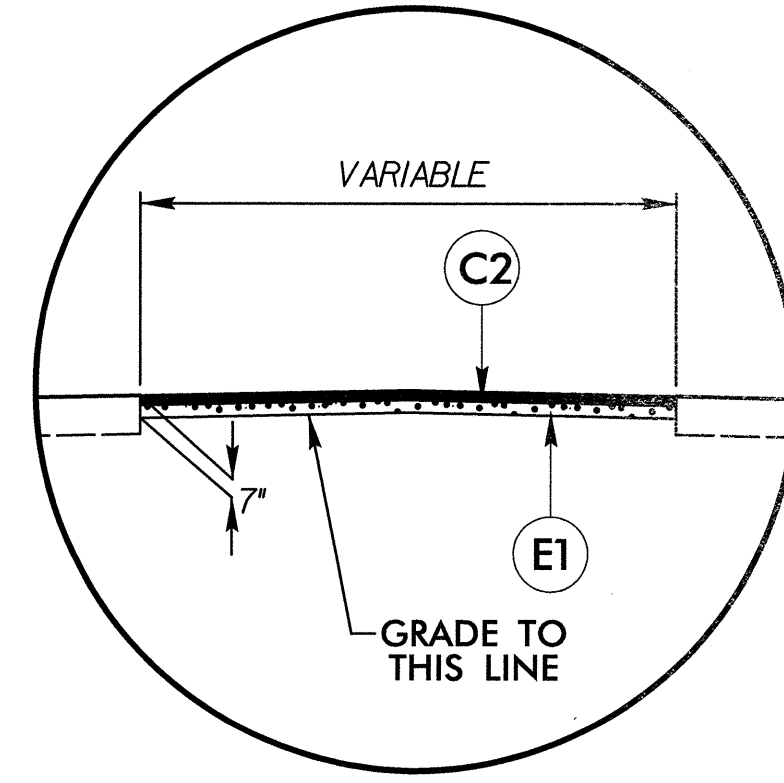
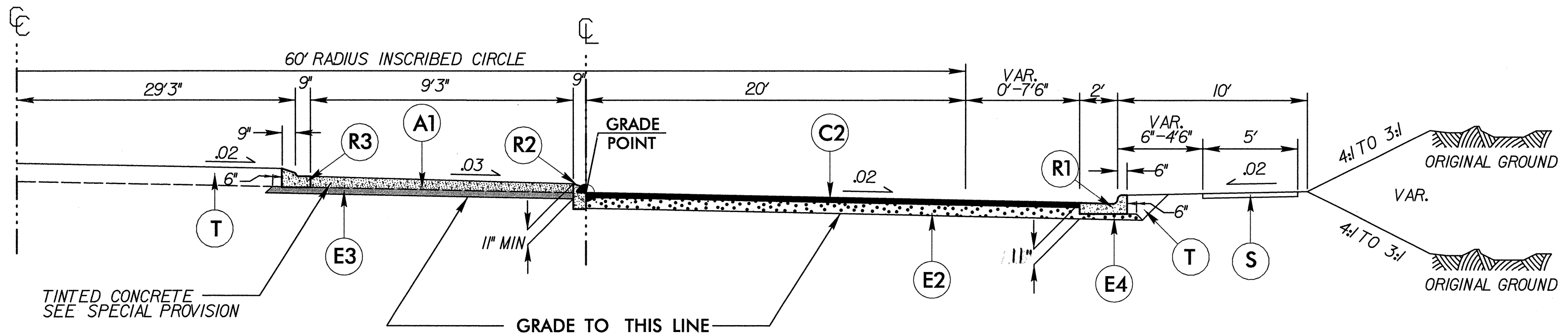
PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
A1	7" PCCP
C1	1 1/2" S9.5B
C2	3" S9.5B
C3	VAR. S9.5B
D1	4" I19.0B
D2	VAR. I19.0B
E1	4" B25.0B
E2	8" B25.0B
E3	VAR. B25.0B (4"min)
E4	VAR. B25.0B (3"min)
J1	6" ABC
R1	2'-6" C & G
R2	9"x18" CURB
R3	1'-6" C & G
R4	5" CONG. ISLAND
S	SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING

NOTES:  
1. SAWCUT AND REMOVE EXISTING ASPHALT PAVEMENT TO PROVIDE 1' MINIMUM WIDTH FULL DEPTH PAVEMENT.  
2. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

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6/2/09

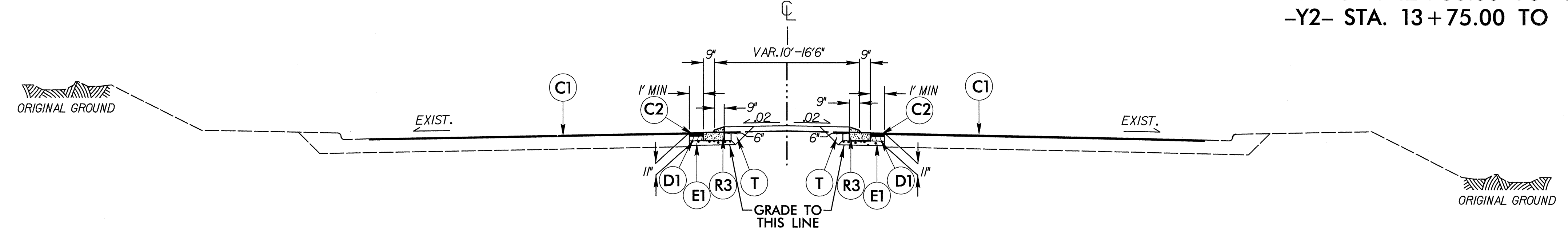
PROJECT REFERENCE NO. B-2965	SHEET NO. 2-B
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 19563 MATTHEW SCOTT 7/25/08	PAVEMENT DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 13288 CHANG-CHI CHEN 1/30/08



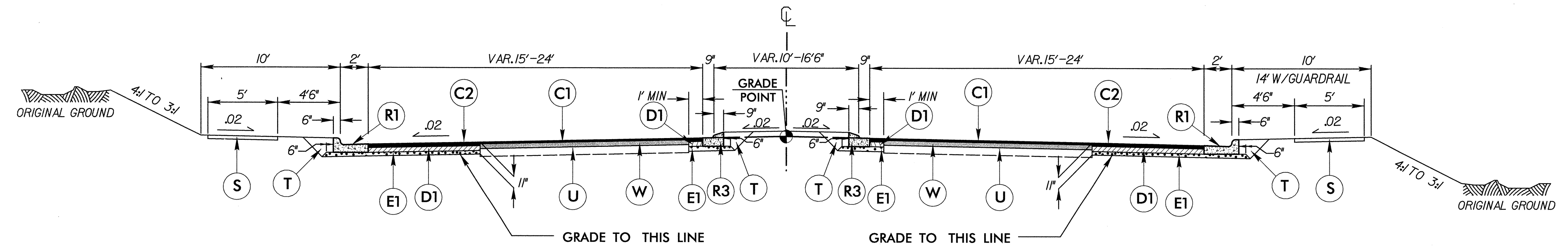
**TYPICAL SECTION NO. 5**  
-R- STA. 10+00.00 TO 12+51.33

**TEMPORARY PAVEMENT DETAIL**

- L- STA. 32+00.00 TO 33+50.00
- L- STA. 42+09.00 TO 42+30.00
- R- STA. 10+00.00 TO 12+51.00
- Y1- STA. 12+50.00 TO 13+87.74
- Y2- STA. 13+75.00 TO 14+27.47



**TYPICAL SECTION NO. 6**  
-Y1- STA. 10+15.00 TO 12+50.00  
-Y2- STA. 13+15.00 TO 15+90.00

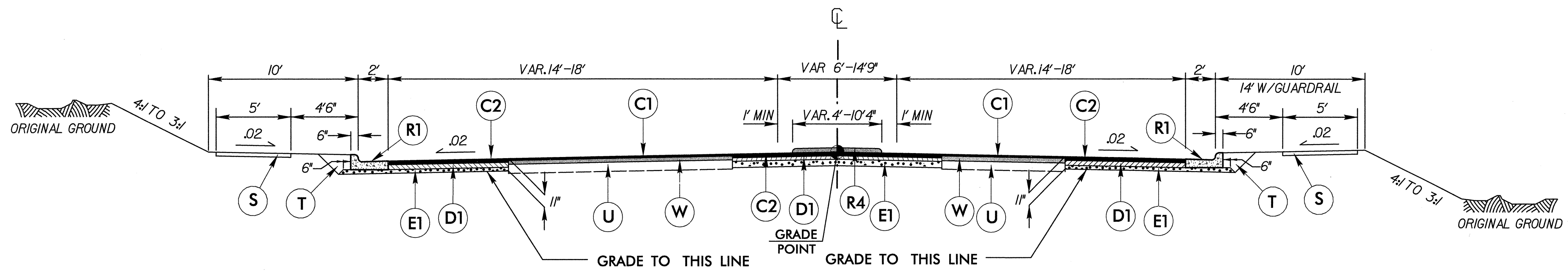


**TYPICAL SECTION NO. 7**  
-Y1- STA. 12+50.00 TO 13+87.58  
-Y2- STA. 12+50.65 TO 13+15.00

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
A1	7" PCCP
C1	1 1/2" S9.5B
C2	3" S9.5B
C3	VAR. S9.5B
D1	4" I19.0B
D2	VAR. I19.0B
E1	4" B25.0B
E2	8" B25.0B
E3	VAR. B25.0B (4" min)
E4	VAR. B25.0B (3" min)
J1	6" ABC
R1	2'-6" C & G
R2	9"x18" CURB
R3	1'-6" C & G
R4	5" CONC. ISLAND
S	SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING

- NOTES:
1. SAWCUT AND REMOVE EXISTING ASPHALT PAVEMENT TO PROVIDE 1' MINIMUM WIDTH FULL DEPTH PAVEMENT.
  2. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

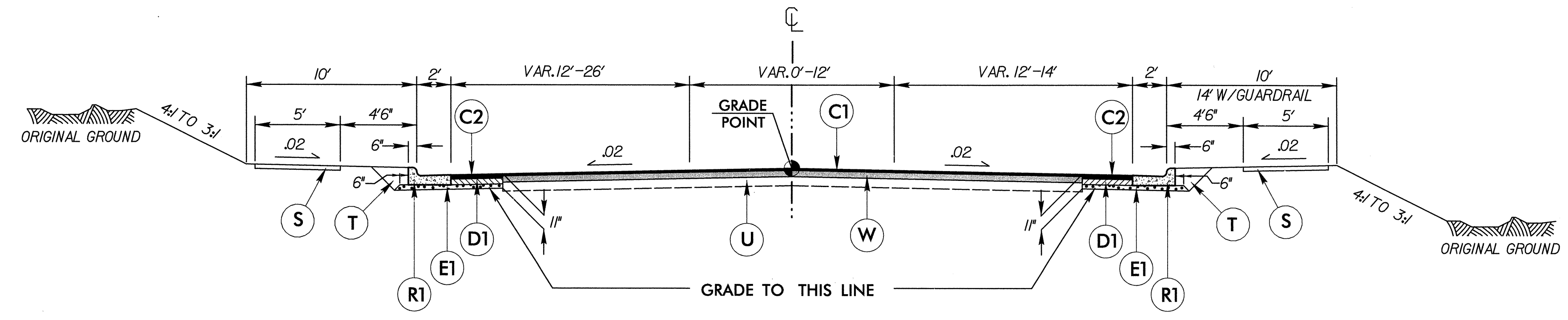
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### TYPICAL SECTION NO. 8

-Y1- STA. 13+87.58 TO 15+70.12 (ROUNDBOUT)  
 -Y2- STA. 10+60.00 (ROUNDBOUT) TO 12+50.65  
 TRANSITION FROM T.S. NO. 7 TO EXISTING  
 -L- STA. 44+04.34 (ROUNDBOUT) TO 46+00.00

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
A1	7" PCCP
C1	1 1/2" S9.5B
C2	3" S9.5B
C3	VAR. S9.5B
D1	4" I19.0B
D2	VAR. I19.0B
E1	4" B25.0B
E2	8" B25.0B
E3	VAR. B25.0B (4" min)
E4	VAR. B25.0B (3" min)
J1	6" ABC
R1	2'-6" C & G
R2	9" x 18" CURB
R3	1'-6" C & G
R4	5" CONC. ISLAND
S	SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING



### TYPICAL SECTION NO. 9

-Y3- STA. 13+90.00 TO 14+73.87  
 -Y4- STA. 10+20.11 TO 18+00.00

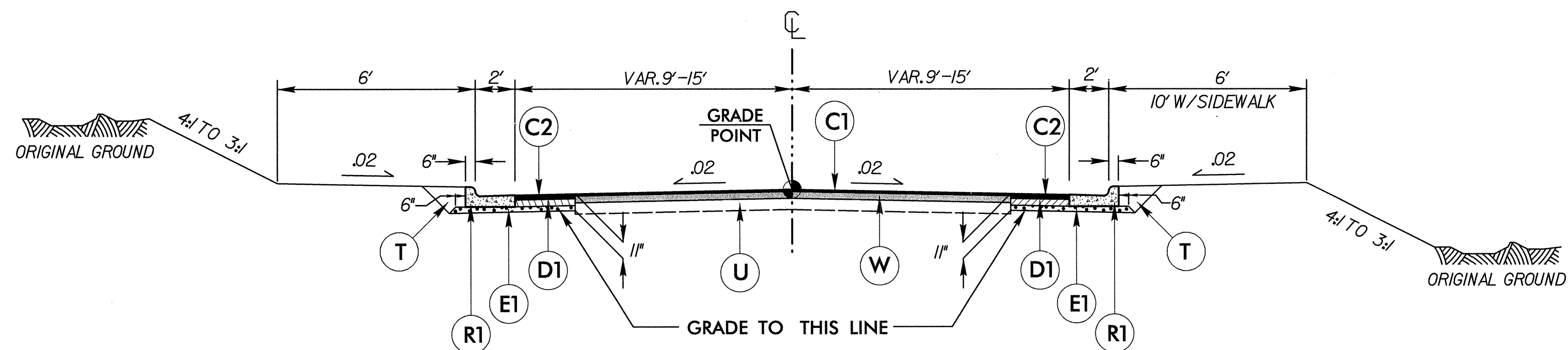
- NOTES:
1. SAWCUT AND REMOVE EXISTING ASPHALT PAVEMENT TO PROVIDE 1' MINIMUM WIDTH FULL DEPTH PAVEMENT.
  2. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

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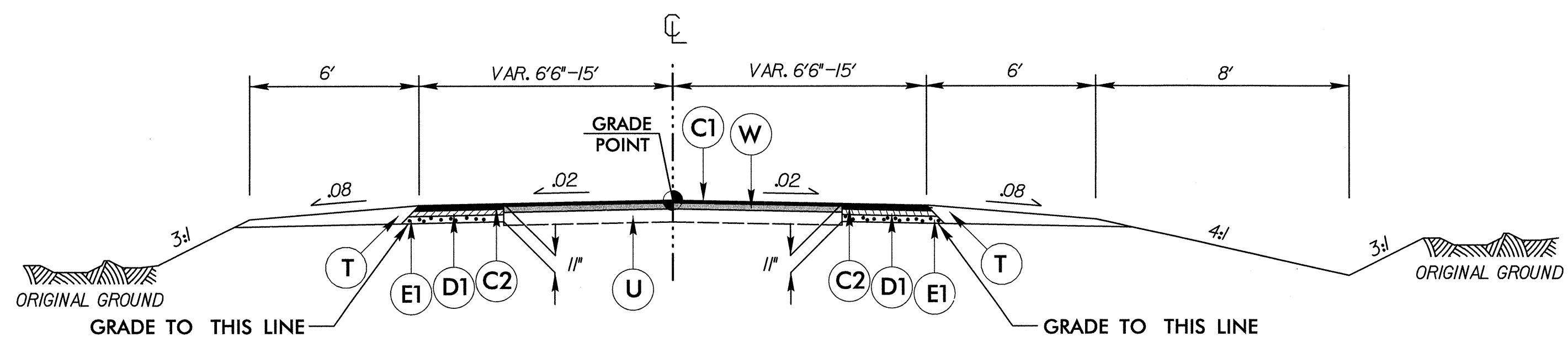
6/2/09

PROJECT REFERENCE NO. B-2965	SHEET NO. 2-D
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 1948 PHY SCOTT HINES 9/25/08	PAVEMENT DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 13308 JUN-CHI CHEN 9/30/08



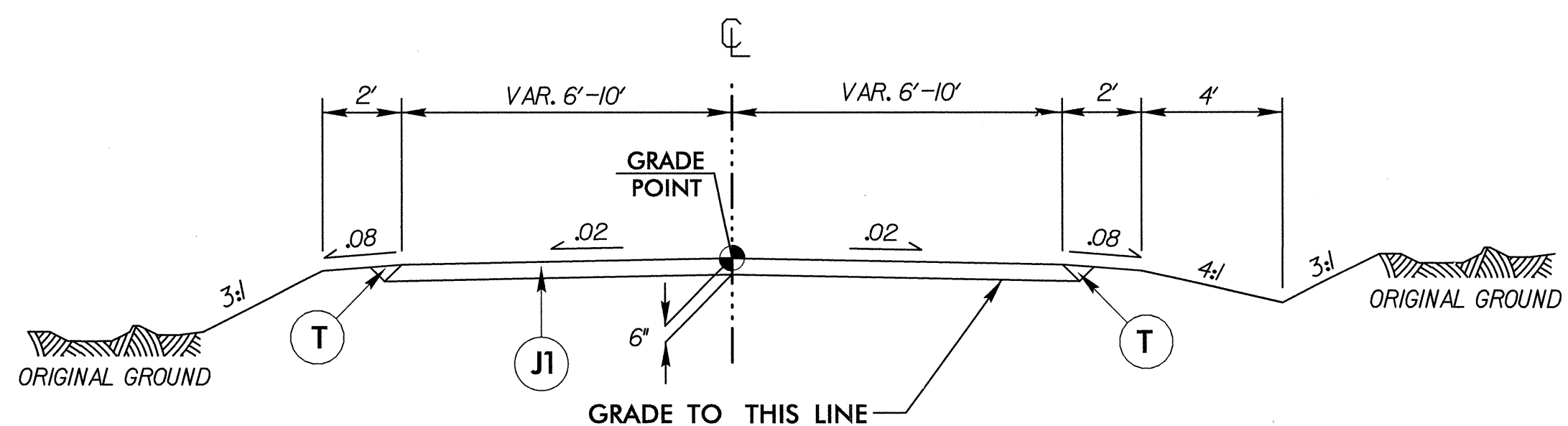
### TYPICAL SECTION NO. 10

- Y5- STA. 10 + 20.07 TO 11 + 50.00
- Y6- STA. 10 + 20.00 TO 10 + 46.40
- Y7- STA. 12 + 53.16 TO 12 + 80.00
- Y8- STA. 10 + 20.00 TO 10 + 44.94



### TYPICAL SECTION NO. 11

- Y6- STA. 10 + 46.40 TO 11 + 00.00
- Y7- STA. 11 + 50.00 TO 12 + 53.16
- Y8- STA. 10 + 44.94 TO 11 + 00.00



### TYPICAL SECTION NO. 12

- DRIVE- STA. 10 + 16.17 TO 12 + 30.00
- ACCESS ROAD

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
A1	7" PCCP
C1	1 1/2" S9.5B
C2	3" S9.5B
C3	VAR. S9.5B
D1	4" I19.0B
D2	VAR. I19.0B
E1	4" B25.0B
E2	8" B25.0B
E3	VAR. B25.0B (4"min)
E4	VAR. B25.0B (3"min)
J1	6" ABC
R1	2'-6" C & G
R2	9"x18" CURB
R3	1'-6" C & G
R4	5" CONC. ISLAND
S	SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING

NOTES:

1. SAWCUT AND REMOVE EXISTING ASPHALT PAVEMENT TO PROVIDE 1' MINIMUM WIDTH FULL DEPTH PAVEMENT.
2. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

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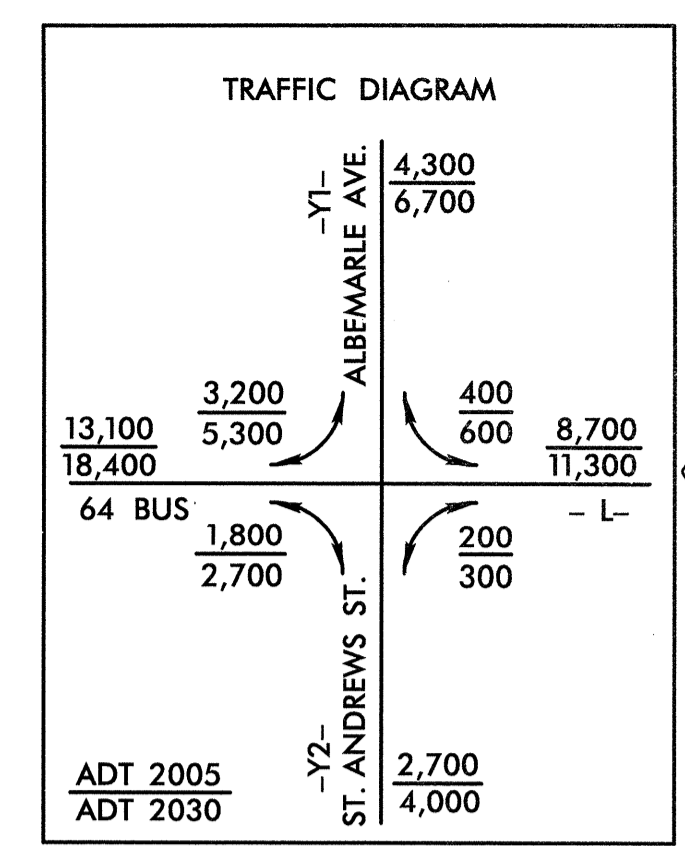
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 REVISIONS  
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-L-	
PI Sta 42+79.22	PI Sta 44+13.34
$\Delta = 21^{\circ} 33' 20.7''$ (RT)	$\Delta = 22^{\circ} 19' 38.7''$ (LT)
D = 16' 22' 12.8"	D = 16' 22' 15.3"
L = 131.68'	L = 136.38'
T = 66.63'	T = 69.07'
R = 350.00'	R = 349.99'
SE = 02	SE = 02
RO = SEE PLANS	RO = SEE PLANS

-R-	
PI Sta 10+57.10	PI Sta 11+04.80
$\Delta = 109^{\circ} 58' 15.1''$ (LT)	$\Delta = 70^{\circ} 01' 45.4''$ (LT)
D = 143' 14' 22.0"	D = 143' 14' 22.0"
L = 76.77'	L = 48.89'
T = 57.10'	T = 28.02'
R = 40.00'	R = 40.00'
SE = 02	SE = 02

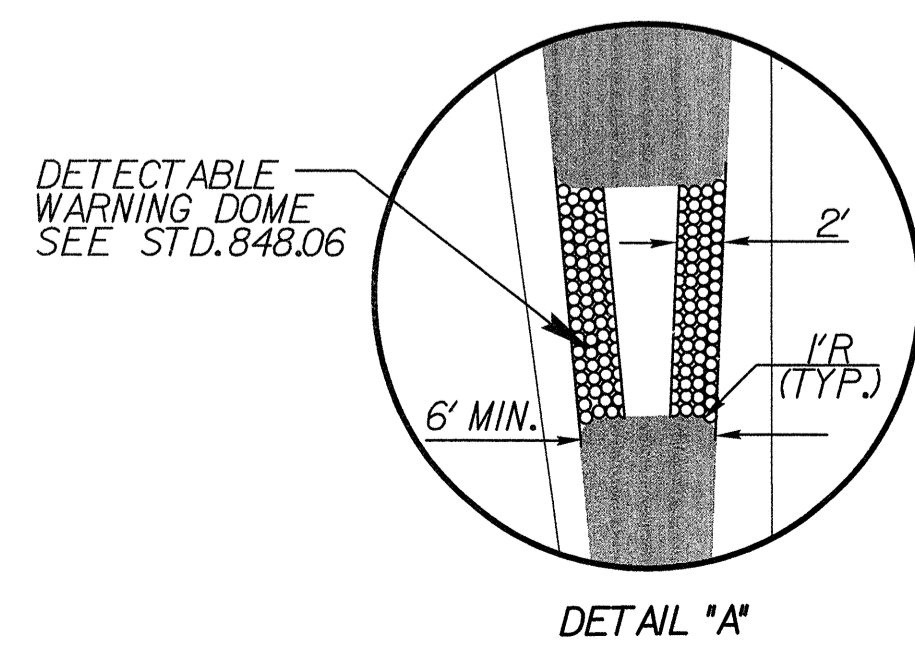
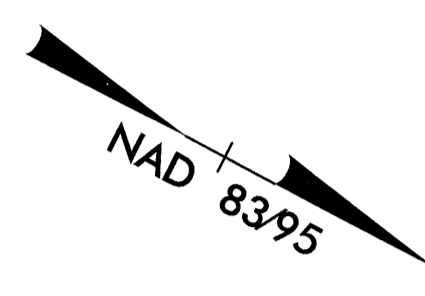
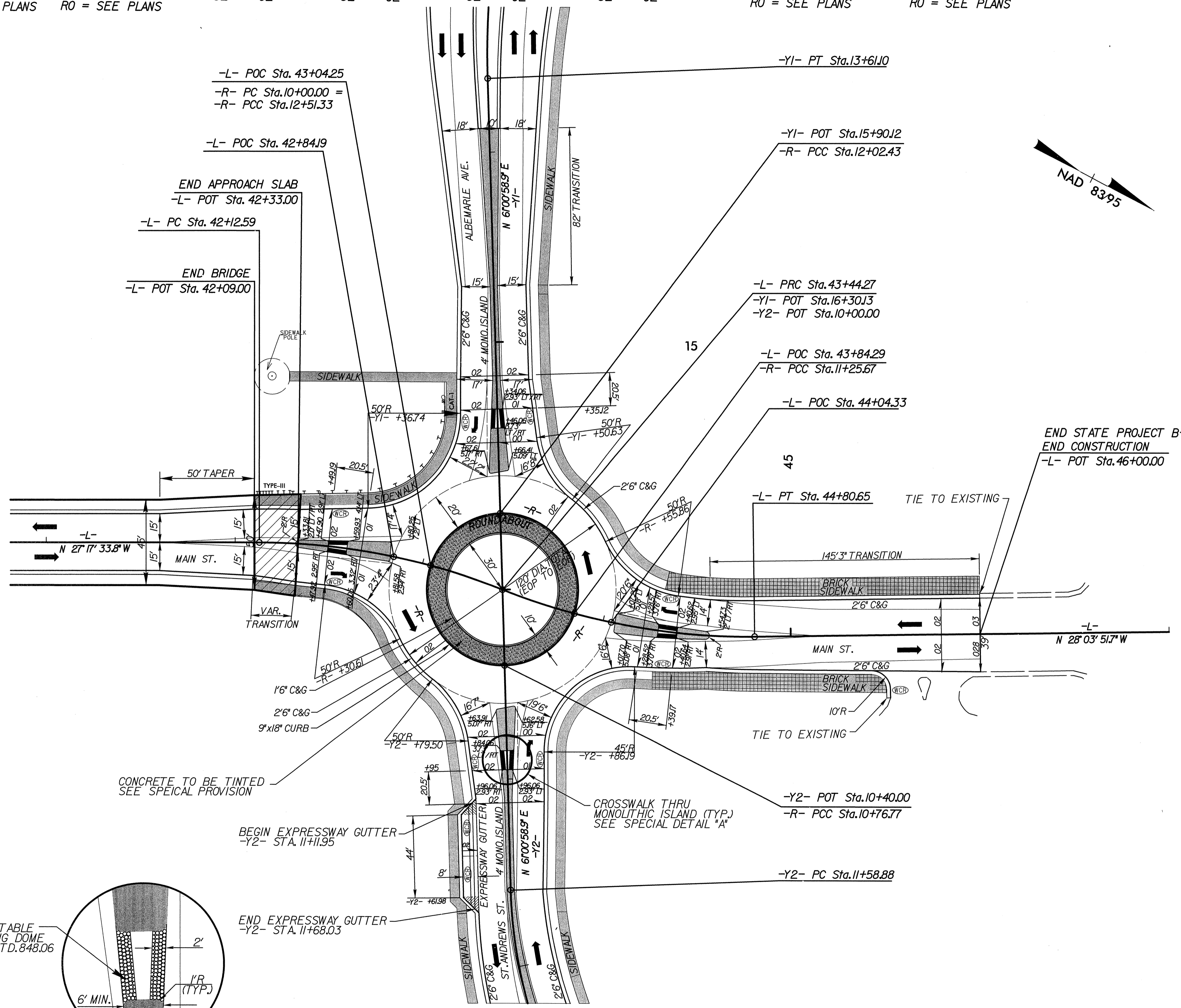
-Y1-	
PI Sta 11+82.76	PI Sta 12+30.46
$\Delta = 109^{\circ} 57' 56.8''$ (LT)	$\Delta = 70^{\circ} 02' 02.8''$ (LT)
D = 143' 14' 22.0"	D = 143' 14' 22.0"
L = 76.77'	L = 48.89'
T = 57.09'	T = 28.03'
R = 40.00'	R = 40.00'
SE = 02	SE = 02

-Y2-	
PI Sta 11+90.90	PI Sta 14+02.73
$\Delta = 45^{\circ} 58' 34.6''$ (LT)	$\Delta = 88^{\circ} 34' 24.5''$ (LT)
D = 12' 43' 56.8"	D = 22' 55' 05.9"
L = 361.10'	L = 386.47'
T = 190.90'	T = 243.85'
R = 450.00'	R = 250.00'
SE = NC	SE = NC
RO = SEE PLANS	RO = SEE PLANS



PROJECT REFERENCE NO. B-2965	SHEET NO. 2-E
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 19563 SCOTT HAYES 1-29-08	HYDRAULICS ENGINEER

FOR -L-, -R-, -Y1-, AND -Y2-  
 SEE PLANS SHEET 6  
 FOR -L- PROFILE SEE SHEET 9  
 FOR -R- PROFILE SEE SHEET 9  
 FOR -Y1- PROFILE SEE SHEET 10  
 FOR -Y2- PROFILE SEE SHEET 10  
 FOR SPECIAL DETAIL OF CROSSWALK  
 THRU MONOLITHIC ISLAND SEE SHEET 2-F  
 FOR STRUCTURE SEE SHEETS S-I THRU S-



- SIDEWALK
- BRICK SIDEWALK
- TINTED CONCRETE

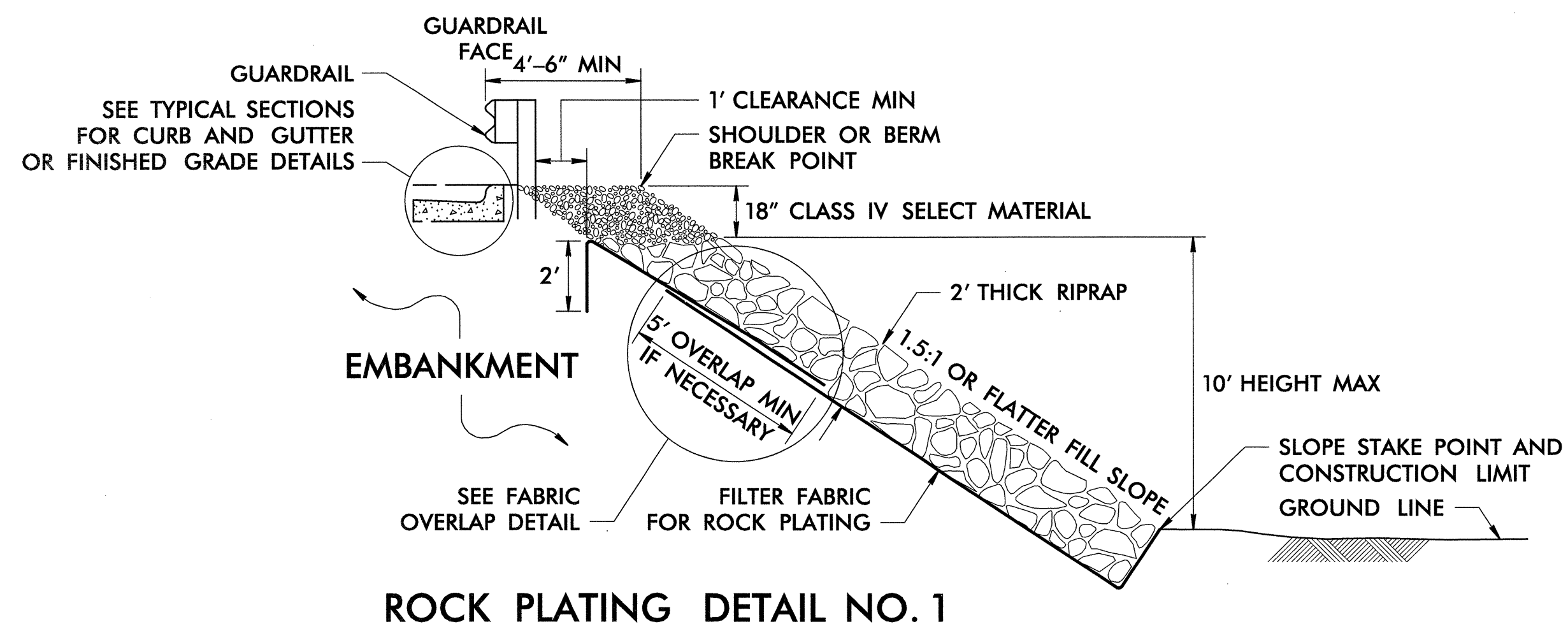
**-L- ROUNDABOUT  
 DETAIL SHEET**

GRAPHIC SCALES 1"=30'

PLANS

# ROCK PLATING DETAIL

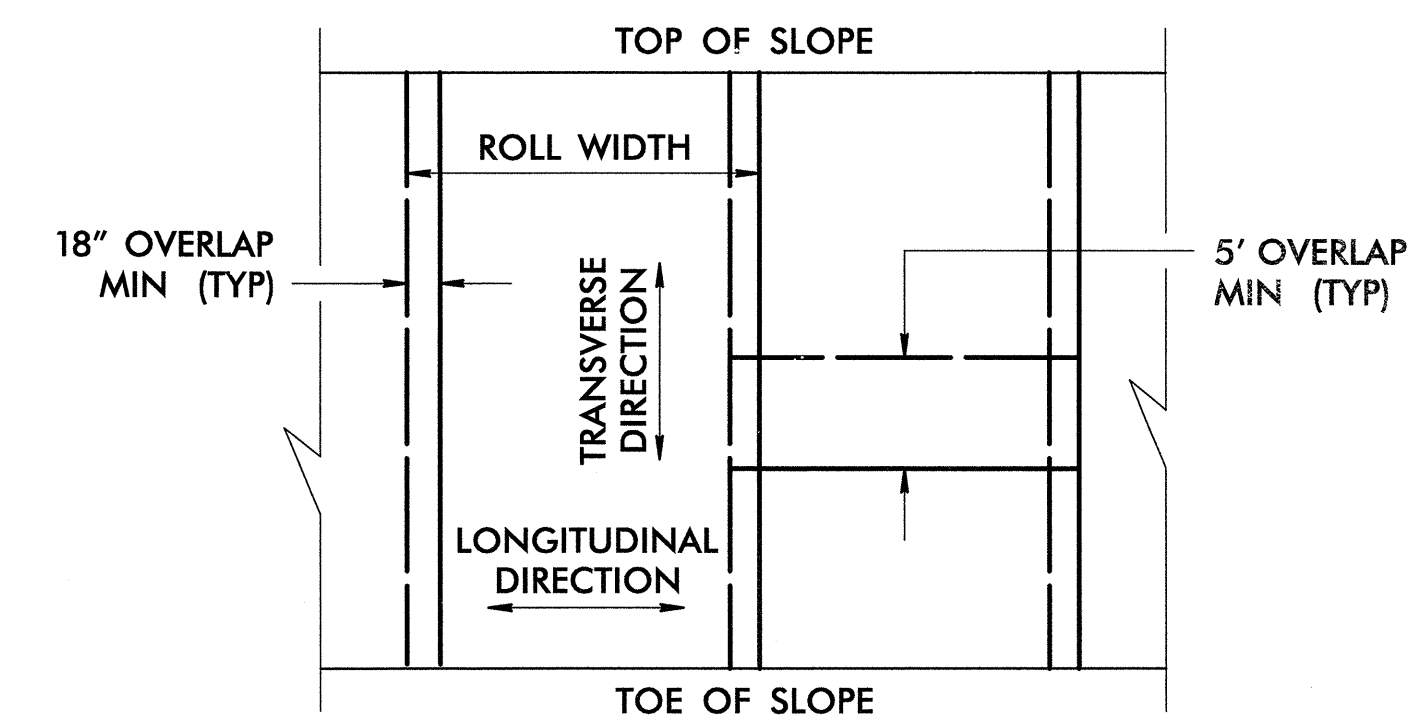
FOR ROCK PLATING,  
SEE ROCK PLATING SPECIAL PROVISION.



**ROCK PLATING DETAIL NO. 1**

USE ROCK PLATING DETAIL NO. 1  
AT THE FOLLOWING LOCATIONS:

- L- STA 26+70 ± TO -L- STA 29+25 ± LT
  - L- STA 26+70 ± TO -L- STA 29+00 ± RT
- EXTEND ROCK PLATING LIMITS TO 1.5 SLOPES.



**FABRIC OVERLAP DETAIL**  
(PLAN VIEW)

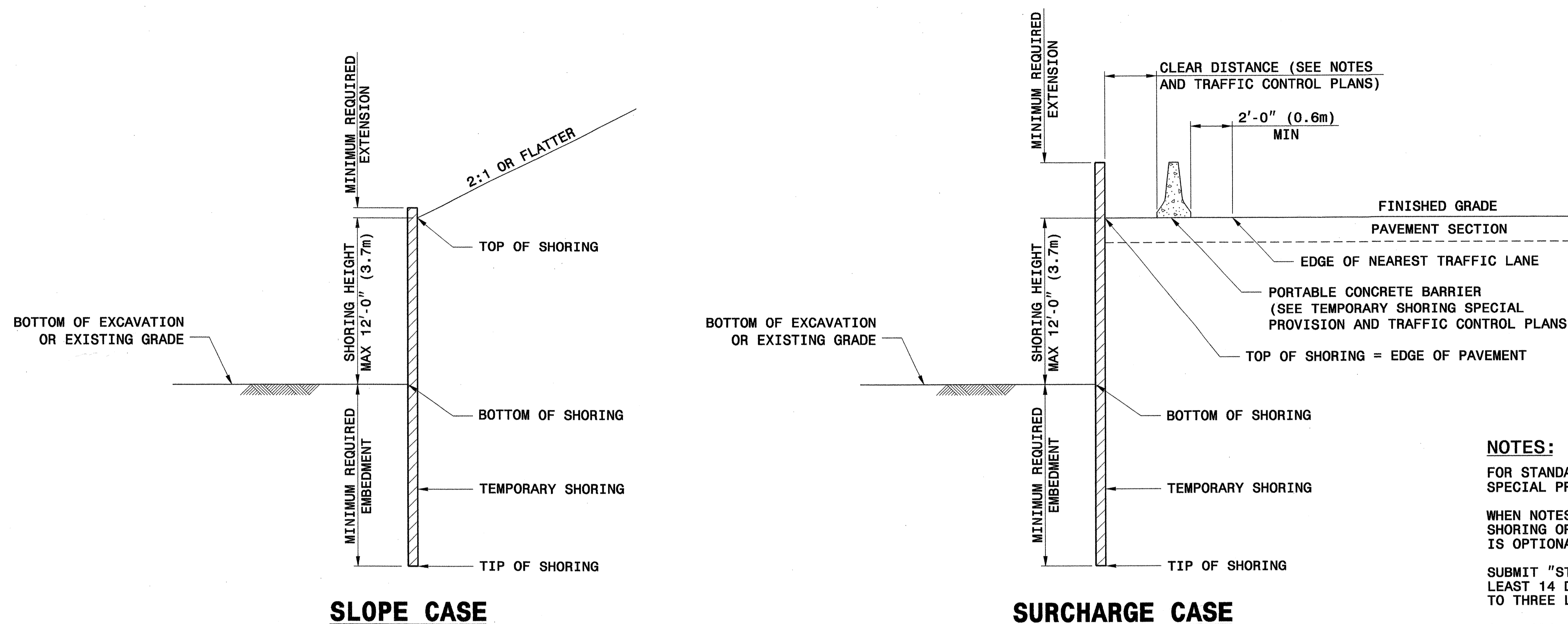
ROCK PLATING DETAIL(S) AND LOCATION(S) WERE PROVIDED THROUGH A SEALED DOCUMENT FROM THE GEOTECHNICAL ENGINEERING UNIT. THE DOCUMENT WAS SUBMITTED TO THE ROADWAY DESIGN UNIT ON JULY 9, 2008 AND SEALED BY A PROFESSIONAL ENGINEER, THEIN T. ZAN, PE, LICENSE # 30943.

ESTIMATED QUANTITIES:  
ROCK PLATING ----- 960 SQ. YD.

6/22/09  
9/25/2008  
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Signature: Scott A. Hadden 3/29/07 Date: DATE



**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/M<sup>3</sup>)  
 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".

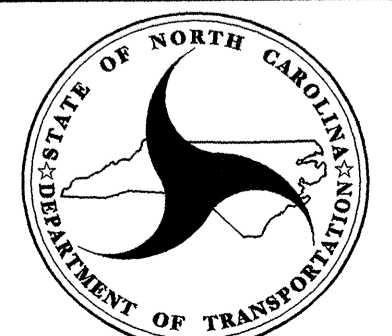
AT THE CONTRACTOR'S OPTION, H PILE EMBEDMENT DEPTHS FOR PILES SET IN DRILLED HOLES MAY BE REDUCED BY 25%. FOR PILE EXCAVATION, SEE TEMPORARY SHORING SPECIAL PROVISION.

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 <sup>3</sup> /FT (cm <sup>3</sup> /m)	MINIMUM REQUIRED EMBEDMENT FT (m)				MINIMUM REQUIRED SECTION MODULUS IN <sup>3</sup> /FT (cm <sup>3</sup> /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".



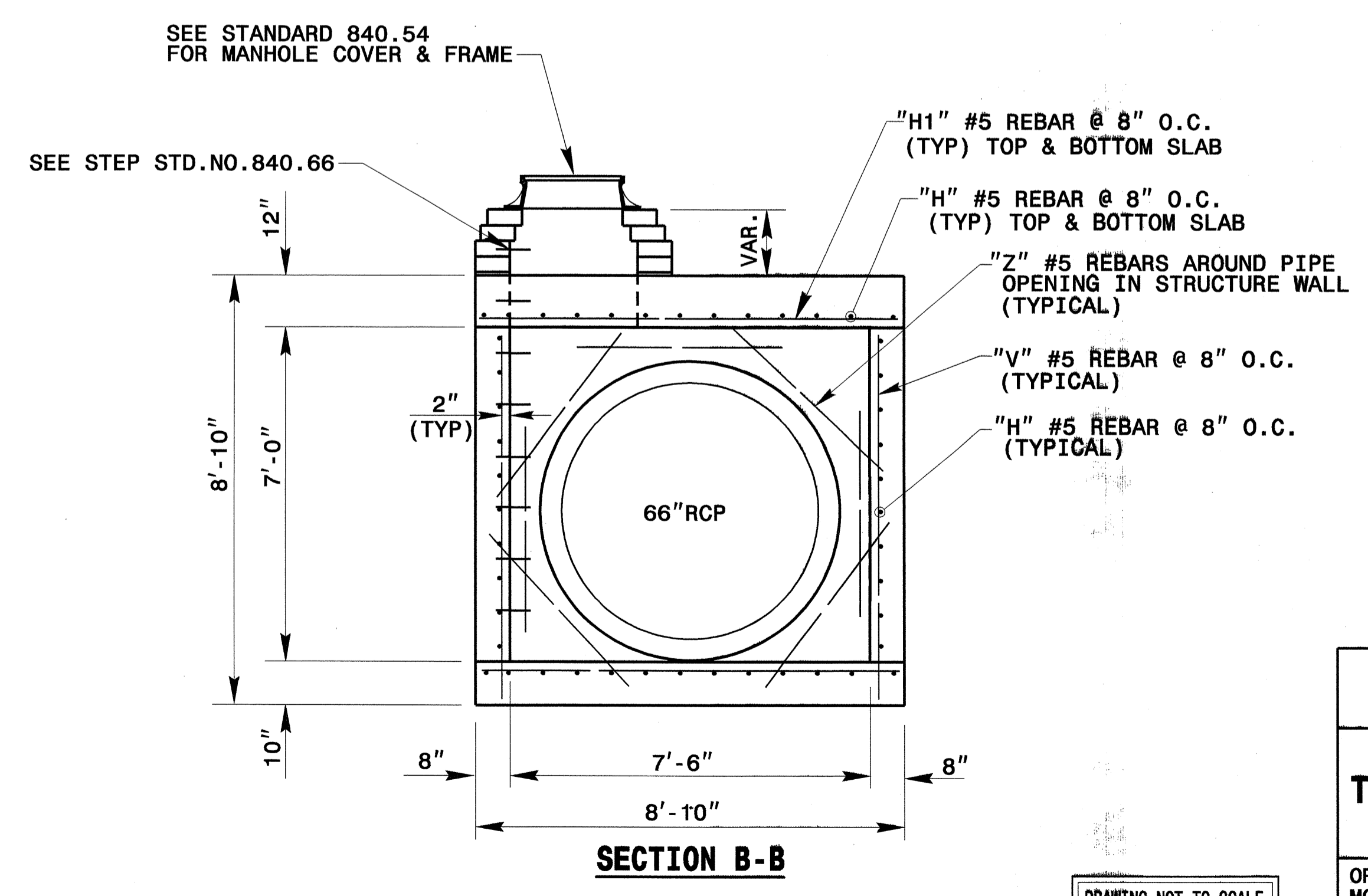
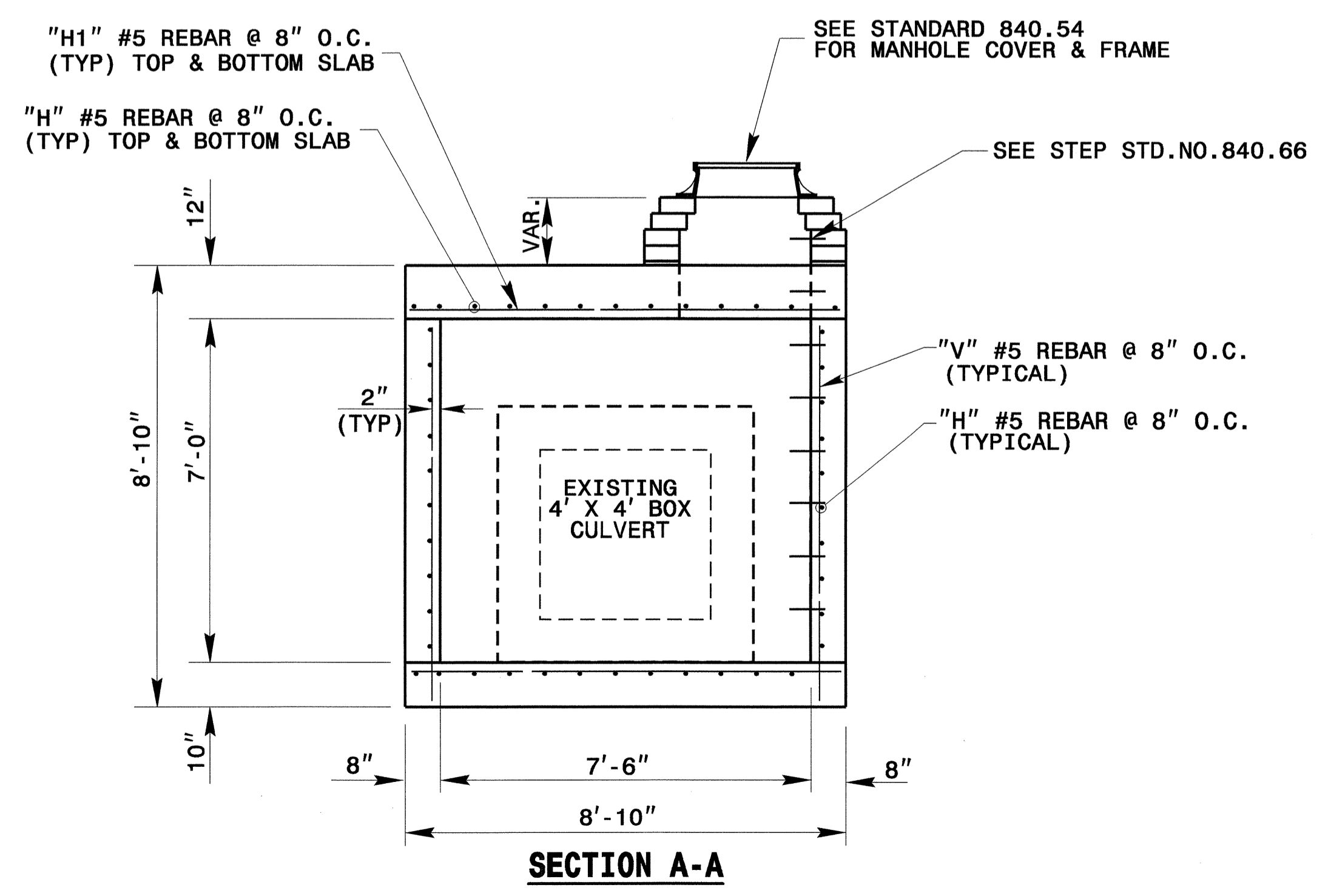
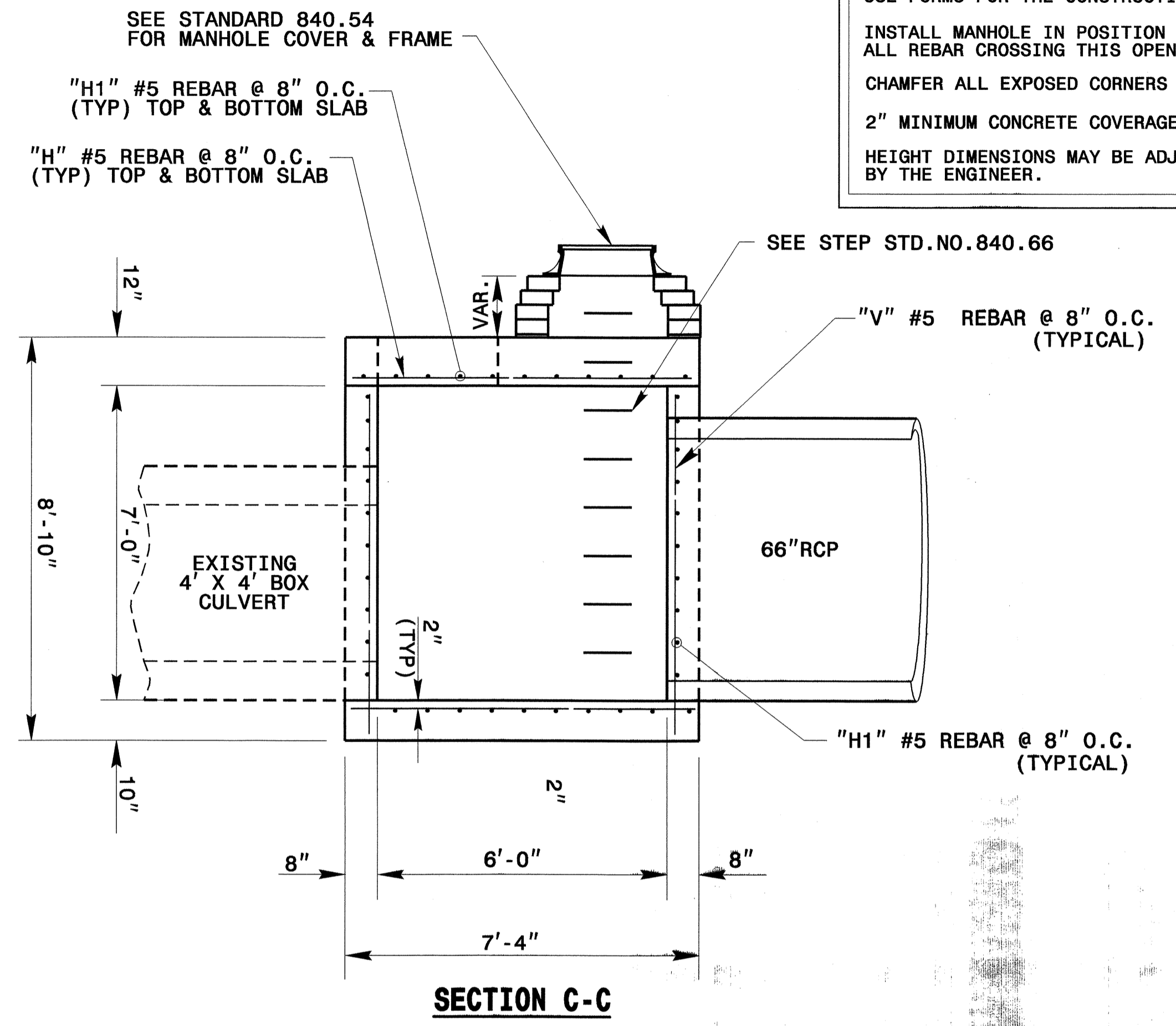
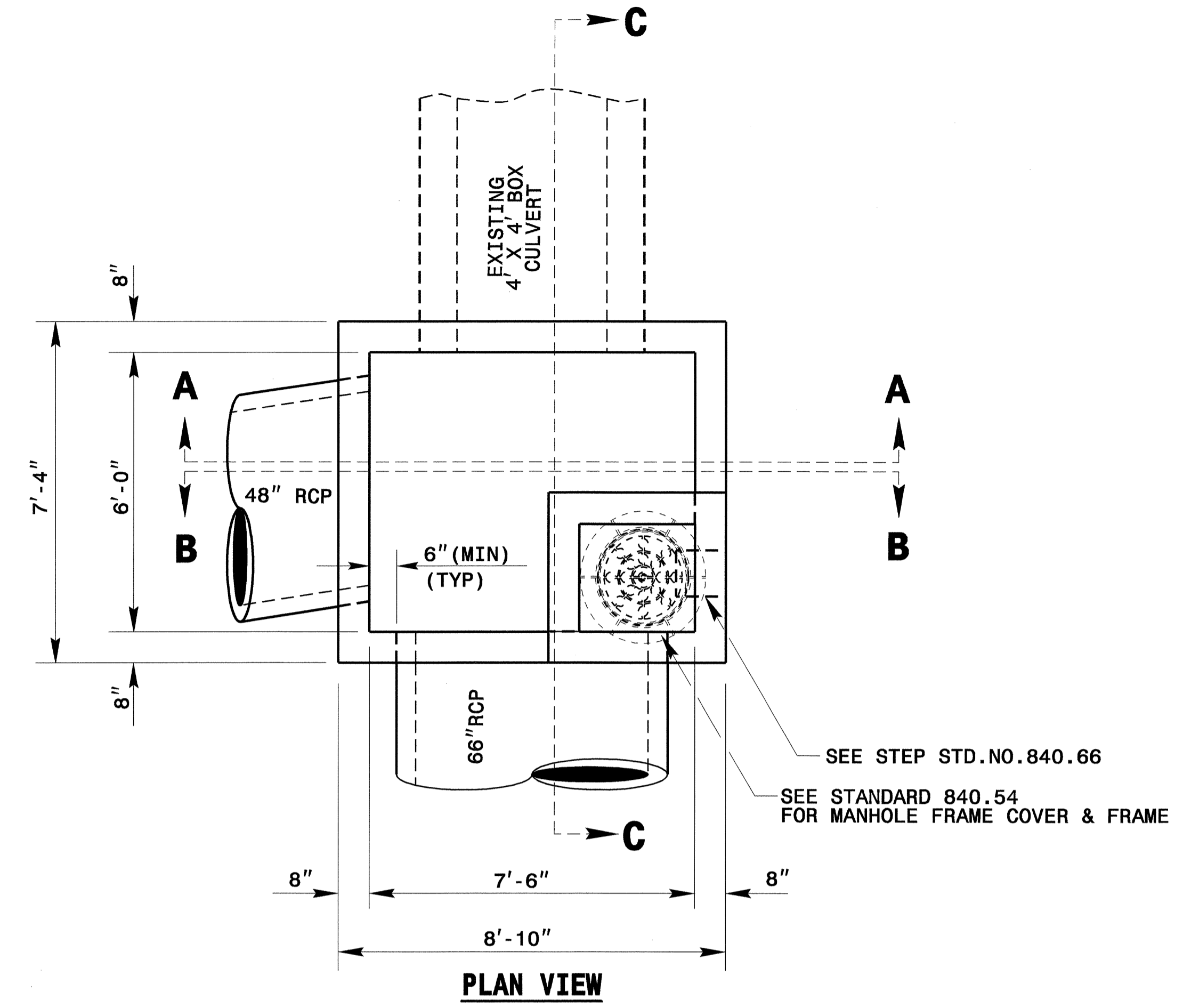
**GEOTECHNICAL ENGINEERING UNIT**  
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

STANDARD DRAWING NO. 1801.01

**STANDARD TEMPORARY SHORING**

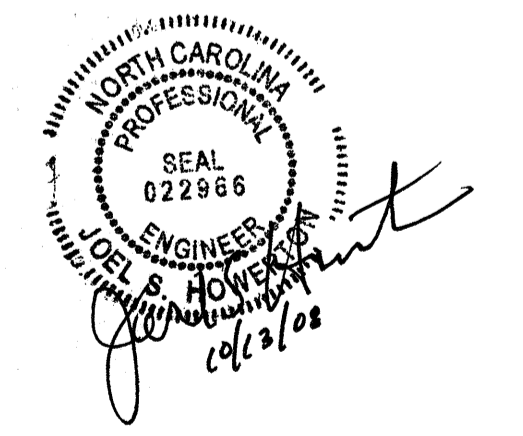
DATE: 2-20-07

**GENERAL NOTES:**  
 USE CLASS "B" CONCRETE THROUGHOUT.  
 PROVIDE ALL JUNCTION BOXES OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.  
 OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.  
 USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.  
 INSTALL MANHOLE IN POSITION AS DIRECTED BY THE ENGINEER. CUT AND BEND ALL REBAR CROSSING THIS OPENING TO ALLOW 2" MINIMUM CONCRETE COVERAGE.  
 CHAMFER ALL EXPOSED CORNERS 1".  
 2" MINIMUM CONCRETE COVERAGE ON ALL REBAR.  
 HEIGHT DIMENSIONS MAY BE ADJUSTED DOWN FOR SMALLER PIPES AS DIRECTED BY THE ENGINEER.



BILL OF MATERIALS				
BAR	NO.	SIZE	LENGTH	WEIGHT
H	46	#5	7'-0"	336
H1	42	#5	8'-6"	373
V	46	#5	7'-6"	360
Z	7	#5	4'-0"	30
TOTAL REINF. STEEL (LBS.)				1098
TOTAL CONC. (CU. YDS.)				9.6

\* 0.88 CU. YD. DEDUCTION FOR 1-66" RC PIPE  
 \* 0.30 CU. YD. PER FOOT OF RISER HEIGHT  
 \* NO DEDUCTION HAS BEEN MADE FOR PIPES



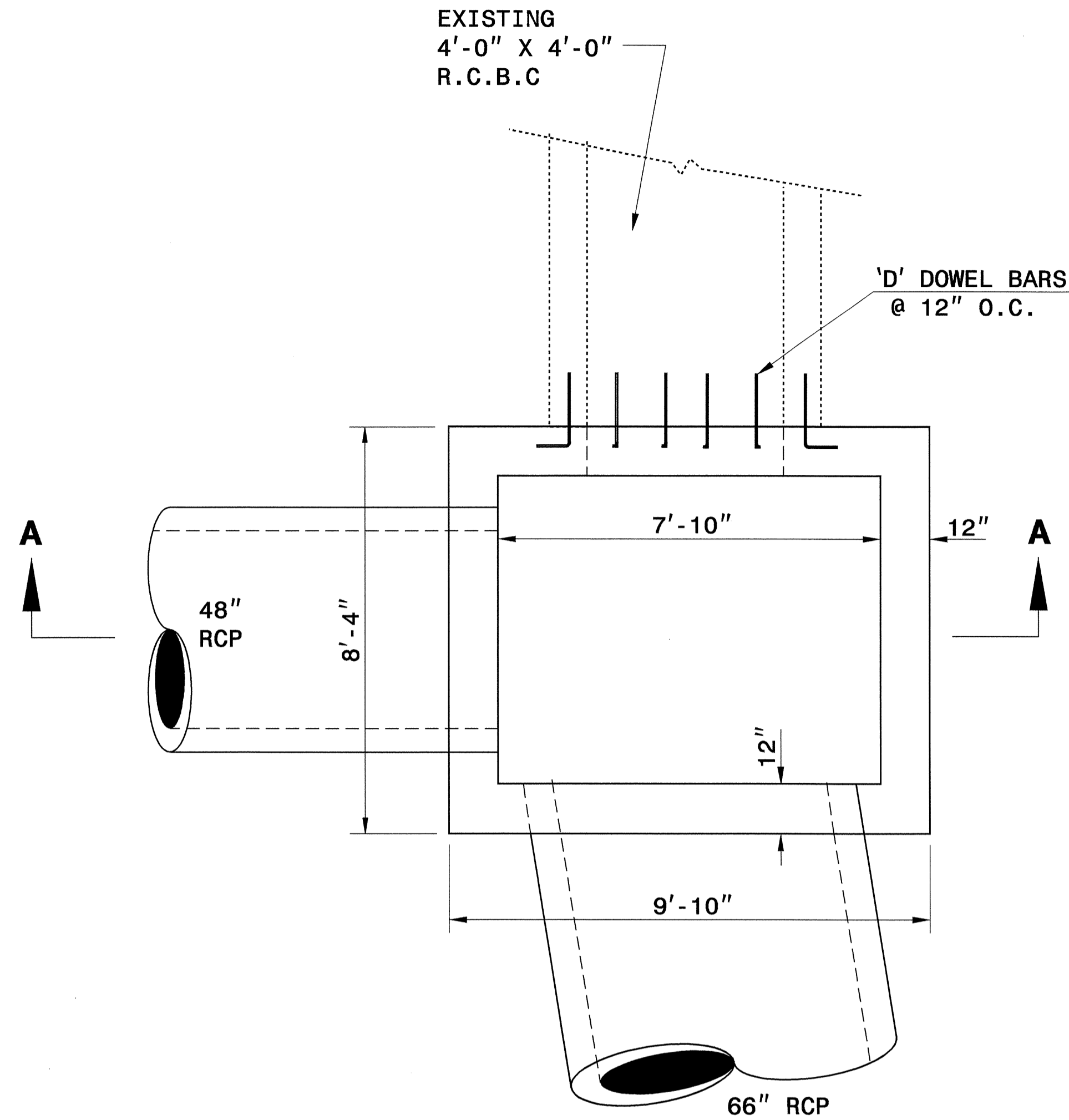
**PROJECT SERVICES UNIT  
 STANDARDS AND SPECIAL DESIGN**  
 Office 919-250-4128 FAX 919-250-4119

**TRAFFIC BEARING JUNCTION BOX**

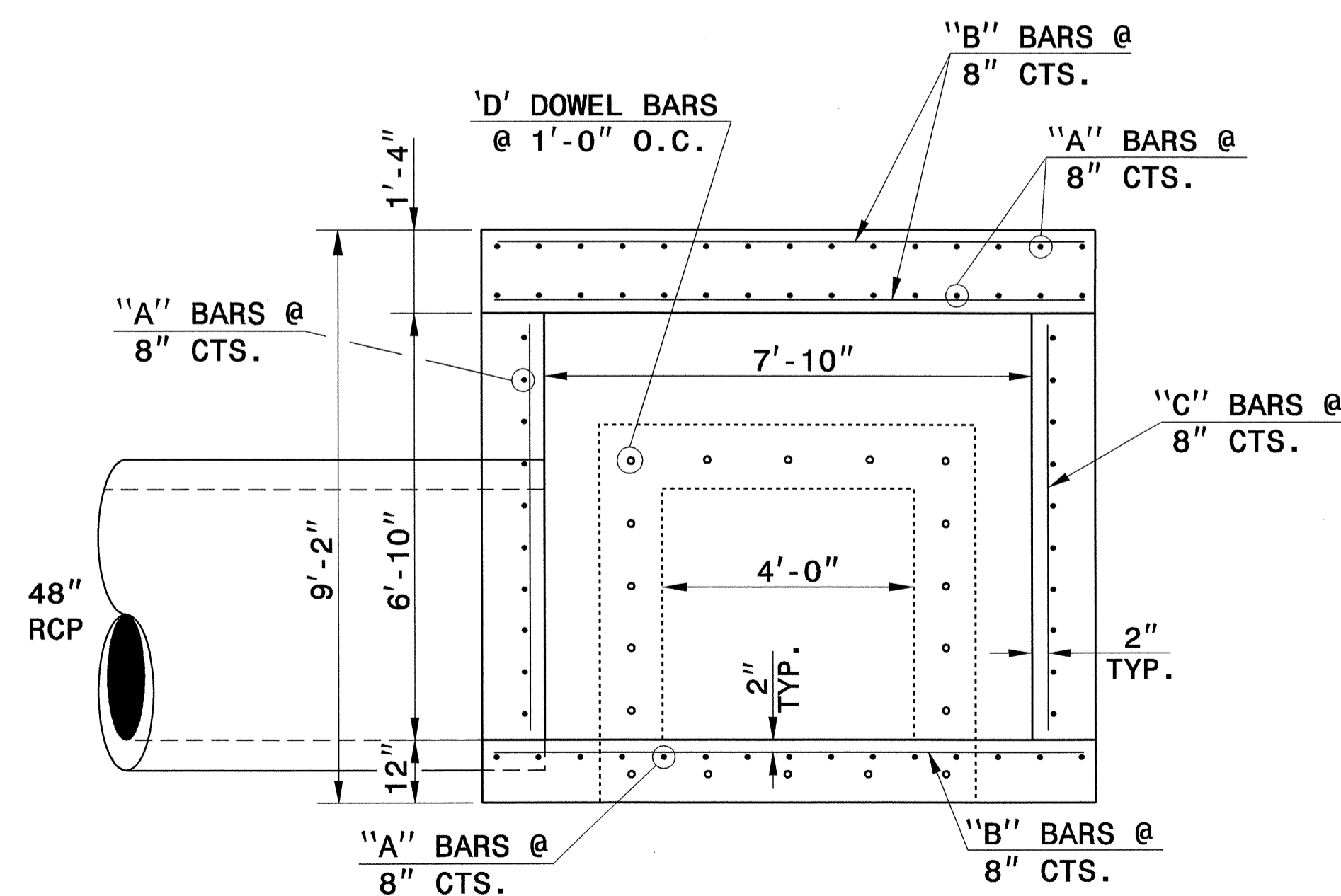
ORIGINAL BY: **KKEMPF** DATE: **07/22/08**  
 MODIFIED BY: **J. Howerton** DATE: **07/22/08**  
 CHECKED BY: **J. Howerton** DATE: **07/22/08**  
 FILE SPEC.: **detail/kkempf/english/66 4x4 7b.dgn**

DRAWING NOT TO SCALE

5/14/99  
 19-SEP-2008 09:35  
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 kkempf AT P5237485



**PLAN VIEW**



**SECTION A-A**

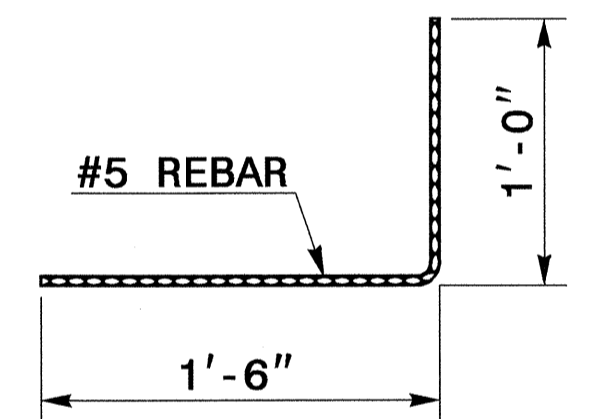
**GENERAL NOTES:**

- CONSTRUCT THE JUNCTION BOX WITH CLASS "B" OR BETTER CONCRETE.
- CHAMFER ALL EXPOSED CORNERS 1".
- DOWEL 'D' BARS SHALL BE IMBEDDED 1'-0" MINIMUM INTO THE CULVERT WALLS, TOP AND BOTTOM SLABS. DOWELS SHALL BE CHEMICALLY ANCHORED IN ACCORDANCE WITH STRUCTURE SPECIAL PROVISION "ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS". DOWEL 'D' BARS SHALL BE ROTATED TO VARIOUS ANGLES WHEN BEING ANCHORED TO OBTAIN GOOD ATTACHMENT BETWEEN THE CULVERT AND COLLAR.
- ALL DIMENSIONS SHOULD BE FIELD VERIFIED.
- CONSTRUCT CONCRETE BOX IN ACCORDANCE WITH SECTION 825 OF THE STANDARD SPECIFICATIONS.
- ADJUST LENGTH OF STEEL BARS AS NEEDED TO COMPENSATE FOR PIPES AND MANHOLE OPENINGS.
- REINFORCING STEEL SHALL CONFORM TO AASHTO M31 FOR GRADE 60.
- CUT OR BEND STEEL BARS AS NEEDED TO PROVIDE 2" CLEARANCE.
- PLACE STEPS 12" ON CENTERS IN ACCORDANCE WITH STD. 840.66.

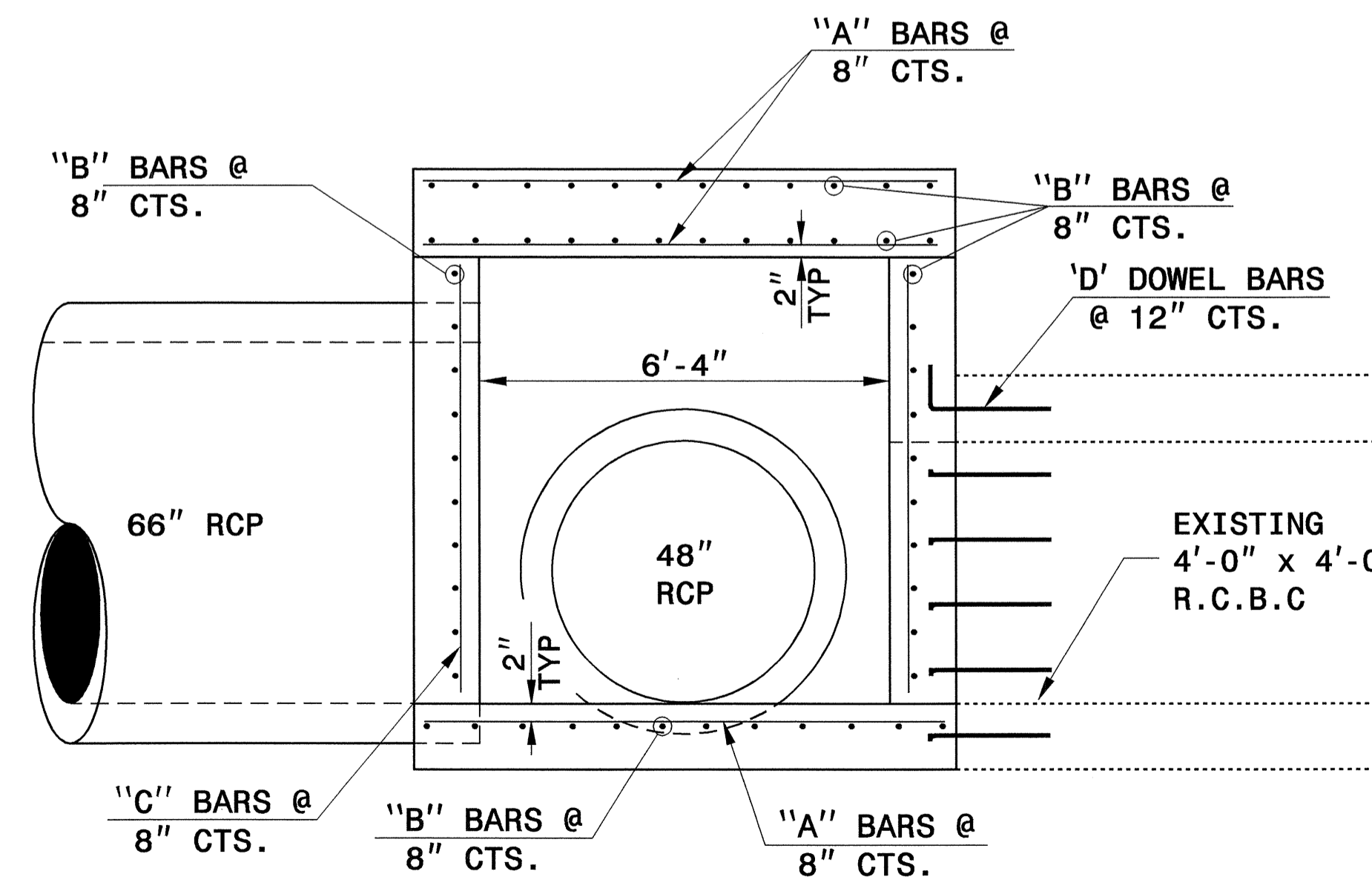
**BILL OF MATERIAL**

BAR	NO.	SIZE	LENGTH	WEIGHT
A	65	#5	8'-0"	362
B	56	#5	9'-6"	555
C	52	#5	6'-6"	352
D	22	#5	2'-6"	57
TOTAL REINF. STEEL (LBS.)				1326
CLASS "B" CONC. (C.Y.)				15.3

\* NO DEDUCTIONS MADE FOR 4'X 4' RCBC OR 66" RCP AND 48" RCP.  
 CONCRETE DEDUCTION  
 4'X 4' RCBC = 1.3 CU.YDS.  
 66" RCP = 0.9 CU.YDS.  
 48" RCP = 0.5 CU.YDS.



**DOWEL 'D'**



**ELEVATION**



STA. 27+76-L-(RT.)

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

**DETAIL OF JUNCTION BOX  
 CONNECTING EXISTING  
 4' x 4' RCBC TO 66" RCP**

ORIGINAL BY: T.Spell DATE: 9-8-08  
 MODIFIED BY: DATE:   
 CHECKED BY: DATE: 9/11/08  
 FILE SPEC.: spell1/stand/tbjb\_rcbc\_02965.dgn

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

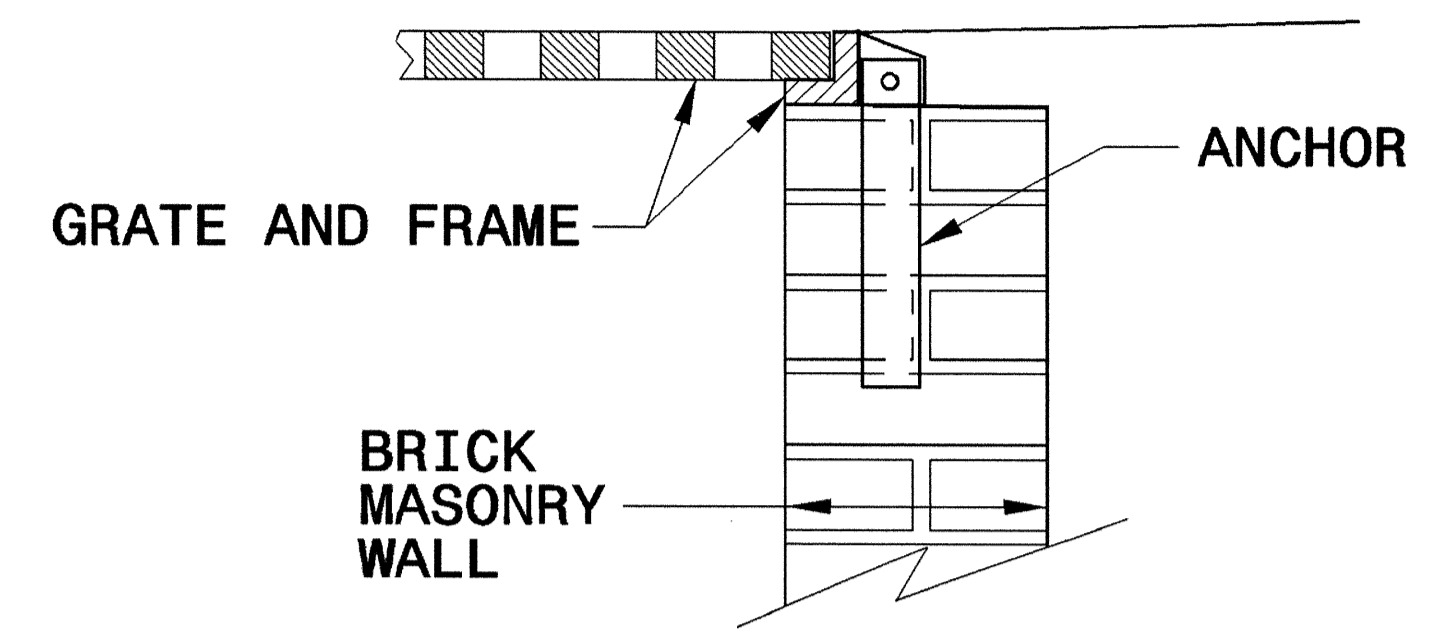
ENGLISH DETAIL DRAWING FOR  
**ANCHORAGE FOR FRAMES**  
BRICK/CONCRETE/PRECAST CONCRETE

SHEET 1 OF 1  
**840D25**

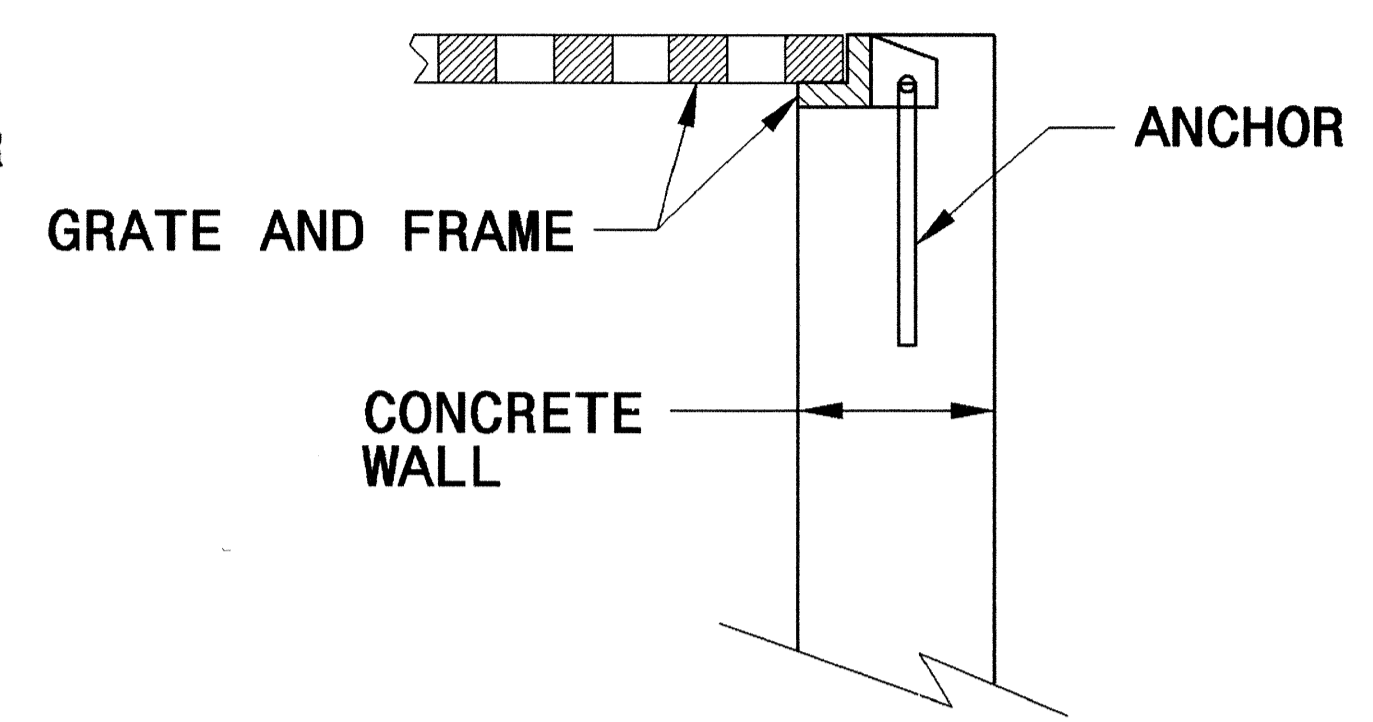
STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

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

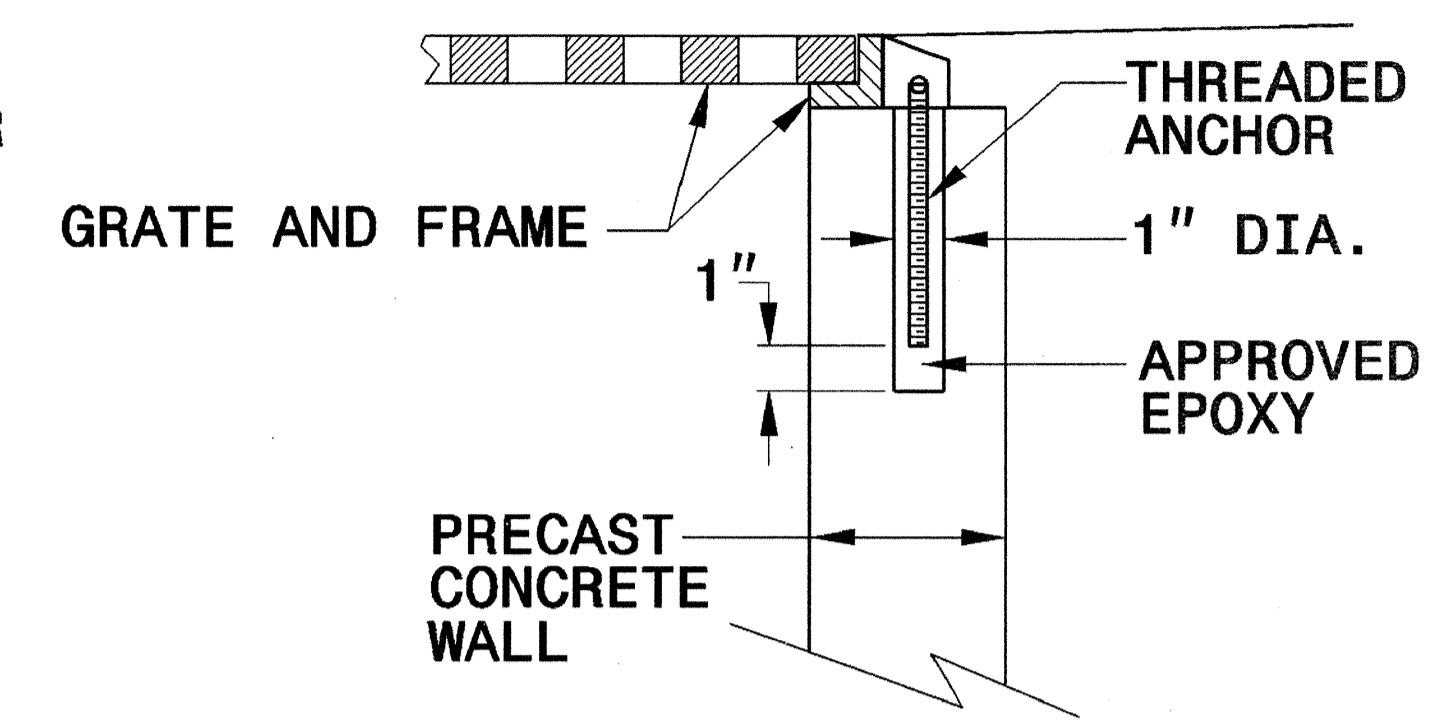
SHEET 1 OF 1  
**840D25**



**BRICK MASONRY CONSTRUCTION**



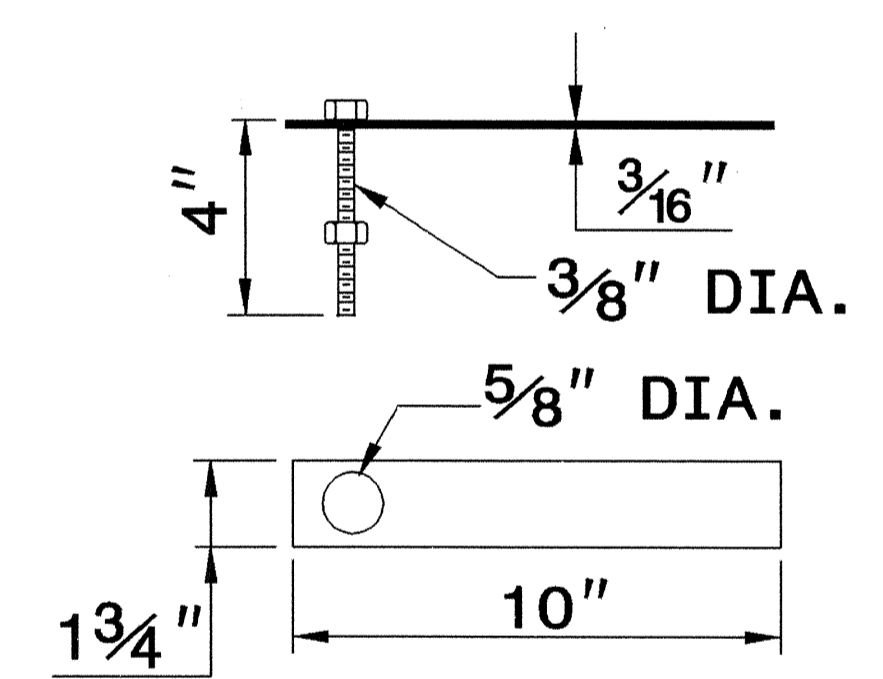
**CONCRETE CONSTRUCTION**



**PRECAST CONCRETE CONSTRUCTION**

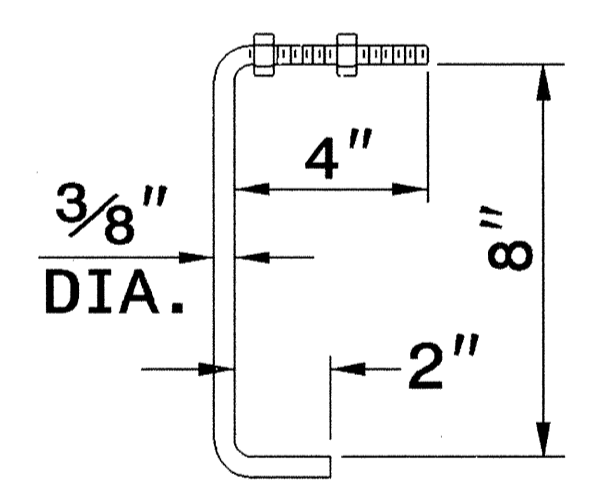
**DETAIL SHOWING ANCHORAGE OF FRAME FOR GRATED DROP INLET**

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



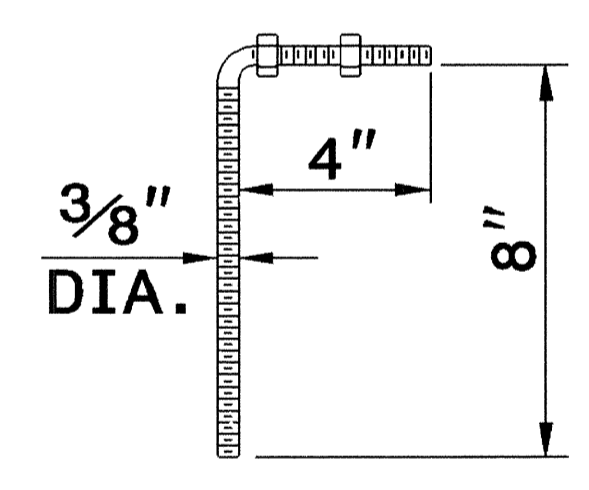
**MASONRY ANCHOR**

3/8" DIA. BOLT WITH PLATE



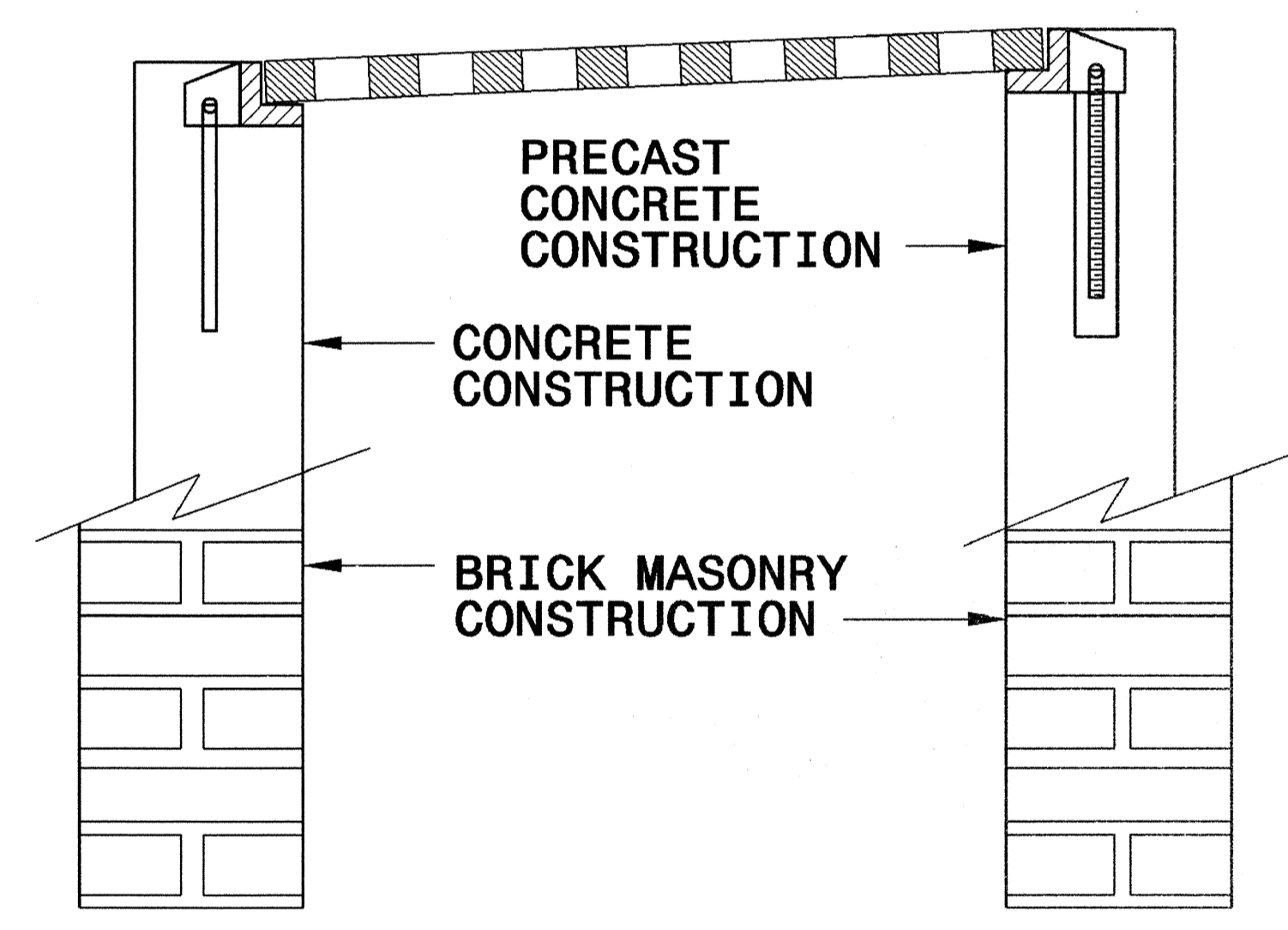
**CONCRETE ANCHOR**

3/8" DIA. BENT BAR

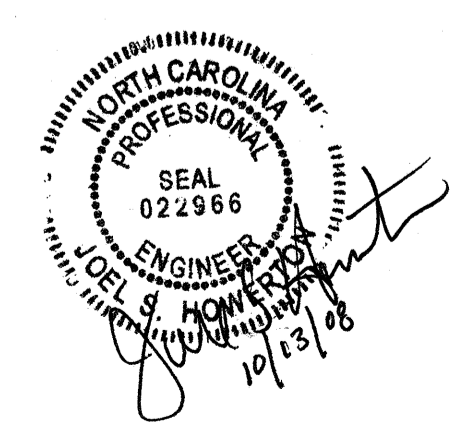


**PRECAST CONCRETE ANCHOR**

3/8" DIA. BENT BAR



**FRAME AND GRATE INSTALLATION FOR NORMAL CROWN AND SUPERELEVATED SECTIONS**



**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.:

27-SEP-2006 08:59  
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 attached

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C202039

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 ***** (39+60)
005000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB- BING
005700000-E	226	1,950	CY	UNDERCUT EXCAVATION
006300000-N	SP	Lump Sum		GRADING
010600000-E	230	18,000	CY	BORROW EXCAVATION
013400000-E	240	30	CY	DRAINAGE DITCH EXCAVATION
019500000-E	265	2,500	CY	SELECT GRANULAR MATERIAL
019900000-E	SP	3,200	SF	TEMPORARY SHORING
024100000-E	SP	960	SY	GENERIC GRADING ITEM ROCK PLATING
031800000-E	300	710	TON	FOUNDATION CONDITIONING MATE- RIAL, MINOR STRS
036600000-E	310	3,132	LF	15" RC PIPE CULVERTS, CLASS III
037200000-E	310	712	LF	18" RC PIPE CULVERTS, CLASS III
037800000-E	310	300	LF	24" RC PIPE CULVERTS, CLASS III
040200000-E	310	24	LF	48" RC PIPE CULVERTS, CLASS III
042000000-E	310	4	LF	66" RC PIPE CULVERTS, CLASS III
099500000-E	340	1,291	LF	PIPE REMOVAL
099600000-N	350	1	EA	PIPE CLEAN-OUT
112100000-E	520	330	TON	AGGREGATE BASE COURSE
122000000-E	545	150	TON	INCIDENTAL STONE BASE
133000000-E	607	100	SY	INCIDENTAL MILLING
148900000-E	610	3,490	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
149800000-E	610	4,120	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0B
151900000-E	610	3,370	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5B
156000000-E	620	550	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22
169300000-E	654	425	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR
189100000-E	SP	230	SY	GENERIC PAVING ITEM 7" TINTED PORTLAND CONCRETE APRON
202200000-E	815	23	CY	SUBDRAIN EXCAVATION
203300000-E	815	17	CY	SUBDRAIN FINE AGGREGATE
204400000-E	815	100	LF	6" PERFORATED SUBDRAIN PIPE
205500000-E	815	3	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)
222000000-E	838	7	CY	REINFORCED ENDWALLS
225300000-E	840	1.5	CY	PIPE COLLARS
227500000-E	SP	17	CY	FLOWABLE FILL
228600000-N	840	61	EA	MASONRY DRAINAGE STRUCTURES
230800000-E	840	33	LF	MASONRY DRAINAGE STRUCTURES
235200000-N	840	5	EA	FRAME WITH GRATE, STD 840.**** (840.16)
236700000-N	840	2	EA	FRAME WITH TWO GRATES, STD 840.29
237400000-N	840	13	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (E)
237400000-N	840	19	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (F)
237400000-N	840	20	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (G)
239600000-N	840	2	EA	FRAME WITH COVER, STD 840.54
253500000-E	846	340	LF	***X*** CONCRETE CURB (8" X 18")

# SUMMARY OF QUANTITIES

ItemNumber	Sec #	Quantity	Unit	Description
253500000-E	846	250	LF	***X*** CONCRETE CURB (9" X 18")
254200000-E	846	680	LF	1'-6" CONCRETE CURB & GUTTER
254900000-E	846	7,650	LF	2'-6" CONCRETE CURB & GUTTER
257700000-E	846	60	LF	CONCRETE EXPRESSWAY GUTTER
259100000-E	848	2,960	SY	4" CONCRETE SIDEWALK
260500000-N	848	39	EA	CONCRETE WHEELCHAIR RAMPS
261200000-E	848	2,130	SY	6" CONCRETE DRIVEWAY
265500000-E	852	470	SY	5" MONOLITHIC CONCRETE ISLANDS (KEYED IN)
273800000-E	SP	310	SY	GENERIC PAVING ITEM BRICK SIDEWALK
303000000-E	862	525	LF	STEEL BM GUARDRAIL
304500000-E	862	62.5	LF	STEEL BM GUARDRAIL, SHOP CURVED
315000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS
321000000-N	862	3	EA	GUARDRAIL ANCHOR UNITS, TYPE CAT-1
321500000-N	862	2	EA	GUARDRAIL ANCHOR UNITS, TYPE III
327000000-N	SP	3	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
353300000-E	866	172	LF	CHAIN LINK FENCE, *** FABRIC (72")
353900000-E	866	14	EA	METAL LINE POSTS FOR *** CHAIN LINK FENCE (72")
354500000-E	866	8	EA	METAL TERMINAL POSTS FOR *** CHAIN LINK FENCE (72")
356300000-E	SP	175	LF	TEMP *** WOVEN WIRE FENCE, COMPLETE W/POSTS (60")
365600000-E	876	1,200	SY	FILTER FABRIC FOR DRAINAGE
365900000-N	SP	1	EA	PREFORMED SCOUR HOLES WITH LEVEL SPREADER APRON
404800000-E	902	1	CY	REINFORCED CONCRETE SIGN FOUN- DATIONS
406600000-E	903	548	LB	SUPPORTS, SIMPLE STEEL BEAM

ItemNumber	Sec #	Quantity	Unit	Description
407200000-E	903	1,953	LF	SUPPORTS, 3-LB STEEL U-CHANNEL
409600000-N	904	9	EA	SIGN ERECTION, TYPE D
410200000-N	904	80	EA	SIGN ERECTION, TYPE E
410800000-N	904	19	EA	SIGN ERECTION, TYPE F
411000000-N	904	1	EA	SIGN ERECTION, TYPE *** (GROUND MOUNTED) (A)
411610000-N	904	2	EA	SIGN ERECTION, RELOCATE, TYPE **** (GROUND MOUNTED) (D)
411610000-N	904	1	EA	SIGN ERECTION, RELOCATE, TYPE **** (GROUND MOUNTED) (E)
415500000-N	907	66	EA	DISPOSAL OF SIGN SYSTEM, U- CHANNEL
415800000-N	907	13	EA	DISPOSAL OF SIGN SYSTEM, WOOD
419200000-N	907	4	EA	DISPOSAL OF SUPPORT, U-CHANNEL
440000000-E	1110	704	SF	WORK ZONE SIGNS (STATIONARY)
440500000-E	1110	160	SF	WORK ZONE SIGNS (PORTABLE)
441000000-E	1110	171	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
443000000-N	1130	46	EA	DRUMS
443500000-N	1135	50	EA	CONES
444500000-E	1145	328	LF	BARRICADES (TYPE III)
445000000-N	1150	640	HR	FLAGGER
448000000-N	1165	1	EA	TMIA
450700000-E	SP	130	LF	WATER FILLED BARRIER
451000000-N	SP	80	HR	POLICE
465000000-N	1251	213	EA	TEMPORARY RAISED PAVEMENT MARKERS
472500000-E	1205	75	EA	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)
481000000-E	1205	49,638	LF	PAINT PAVEMENT MARKING LINES (4")
482000000-E	1205	150	LF	PAINT PAVEMENT MARKING LINES (8")
483500000-E	1205	1,746	LF	PAINT PAVEMENT MARKING LINES (24")
484500000-N	1205	56	EA	PAINT PAVEMENT MARKING SYMBOL
484700000-E	1205	13,181	LF	POLYUREA PAVEMENT MARKING LINES (4", *****) (STANDARD GLASS BEADS)
484711000-E	1205	202	LF	POLYUREA PAVEMENT MARKING LINES (8", *****) (STANDARD GLASS BEADS)
484714000-E	1205	1,492	LF	POLYUREA PAVEMENT MARKING LINES (24", *****) (STANDARD GLASS BEADS)
485000000-E	1205	3,000	LF	REMOVAL OF PAVEMENT MARKING LINES (4")
490000000-N	1251	137	EA	PERMANENT RAISED PAVEMENT MARKERS
515500000-E	1409	80	LF	ELECTRICAL DUCT, TYPE BD, SIZE **** (2")
524000000-N	1411	2	EA	ELECTRICAL JUNCTION BOXES ***** (PC18)
532520000-E	1510	695	LF	2" WATER LINE
532560000-E	1510	1,180	LF	6" WATER LINE
532580000-E	1510	296	LF	8" WATER LINE
532600000-E	1510	130	LF	10" WATER LINE
532620000-E	1510	2,668	LF	12" WATER LINE
553600000-E	1515	4	EA	2" VALVE
554000000-E	1515	7	EA	6" VALVE
555800000-E	1515	5	EA	12" VALVE
557200000-E	1515	1	EA	10" TAPPING VALVE
564800000-N	1515	16	EA	RELOCATE WATER METER
564900000-N	1515	8	EA	RECONNECT WATER METER
567200000-N	1515	4	EA	RELOCATE FIRE HYDRANT
569140000-E	1520	60	LF	10" SANITARY GRAVITY SEWER
570930000-E	1520	264	LF	6" FORCE MAIN SEWER
577600000-E	1525	1	EA	5" DIA UTILITY MANHOLE

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STATE OF NORTH CAROLINA  
SUMMARY OF QUANTITIES

ItemNumber	Sec #	Quantity	Unit	Description
5782000000-E	1525	2	LF	UTILITY MANHOLE WALL, 5' DIA
5800000000-E	1530	1,100	LF	ABANDON 6" UTILITY PIPE
5801000000-E	1530	285	LF	ABANDON 8" UTILITY PIPE
5804000000-E	1530	2,932	LF	ABANDON 12" UTILITY PIPE
5882000000-N	SP	1	EA	GENERIC UTILITY ITEM 8" WATER METER AND METER VAULT
5882000000-N	SP	1	EA	GENERIC UTILITY ITEM ABANDON WATER METER VAULT
5912000000-N	SP	Lump Sum		GENERIC UTILITY ITEM TEMPORARY 10" WATER LINE
6000000000-E	1605	12,500	LF	TEMPORARY SILT FENCE
6006000000-E	1610	600	TON	STONE FOR EROSION CONTROL, CLASS A
6009000000-E	1610	820	TON	STONE FOR EROSION CONTROL, CLASS B
6012000000-E	1610	930	TON	SEDIMENT CONTROL STONE
6015000000-E	1615	19	ACR	TEMPORARY MULCHING
6018000000-E	1620	500	LB	SEED FOR TEMPORARY SEEDING
6021000000-E	1620	3	TON	FERTILIZER FOR TEMPORARY SEED- ING
6024000000-E	1622	50	LF	TEMPORARY SLOPE DRAINS
6027000000-N	1622	2	EA	INLET PROTECTION AT TEMPORARY SLOPE DRAINS
6029000000-E	SP	700	LF	SAFETY FENCE
6030000000-E	1630	2,300	CY	SILT EXCAVATION
6036000000-E	1631	1,400	SY	MATting FOR EROSION CONTROL
6037000000-E	SP	30	SY	COIR FIBER MAT
6042000000-E	1632	2,400	LF	1/4" HARDWARE CLOTH
6048000000-E	SP	620	SY	FLOATING TURBIDITY CURTAIN
6071030000-E	SP	300	LF	COIR FIBER BAFFLES
6071050000-E	SP	5	EA	*** SKIMMER (1-1/2")
6084000000-E	1660	21	ACR	SEEDING & MULCHING
6087000000-E	1660	12.5	ACR	MOWING

ItemNumber	Sec #	Quantity	Unit	Description
6090000000-E	1661	200	LB	SEED FOR REPAIR SEEDING
6093000000-E	1661	0.5	TON	FERTILIZER FOR REPAIR SEEDING
6096000000-E	1662	350	LB	SEED FOR SUPPLEMENTAL SEEDING
6108000000-E	1665	10	TON	FERTILIZER TOPDRESSING
6114000000-N	SP	5	HR	SPECIALIZED HAND MOWING
6117000000-N	SP	36	EA	RESPONSE FOR EROSION CONTROL
6123000000-E	1670	1	ACR	REFORESTATION
7000000000-E	1705	8	EA	PEDESTRIAN SIGNAL HEAD (**, ** SECTION) (16", 1 SECTION WITH COUNT- DOWN)
7060000000-E	1705	3,400	LF	SIGNAL CABLE
7120000000-E	1705	22	EA	VEHICLE SIGNAL HEAD (12", 3 SECTION)
7144000000-E	1705	2	EA	VEHICLE SIGNAL HEAD (12", 5 SECTION)
7264000000-E	1710	1,330	LF	MESSENGER CABLE (3/8")
7300000000-E	1715	260	LF	UNPAVED TRENCHING (***** (1, 2"))
7324000000-N	1716	4	EA	JUNCTION BOX (STANDARD SIZE)
7360000000-N	1720	8	EA	WOOD POLE
7372000000-N	1721	16	EA	GUY ASSEMBLY
7408000000-E	1722	2	EA	1" RISER WITH WEATHERHEAD
7420000000-E	1722	4	EA	2" RISER WITH WEATHERHEAD
7444000000-E	1725	1,580	LF	INDUCTIVE LOOP SAWCUT
7456000000-E	1726	3,000	LF	LEAD-IN CABLE (***** (14-2))
7484000000-N	SP	2	EA	MICROWAVE VEHICLE DETECTOR
7576000000-N	SP	4	EA	METAL STRAIN SIGNAL POLE
7613000000-N	SP	4	EA	SOIL TEST
7614100000-E	SP	24	CY	DRILLED PIER FOUNDATION
7684000000-N	1750	1	EA	SIGNAL CABINET FOUNDATION
7756000000-N	1751	1	EA	CONTROLLER WITH CABINET (TYPE 2070L, BASE MOUNTED)

ItemNumber	Sec #	Quantity	Unit	Description
7768000000-N	1751	1	EA	CONTROLLER WITH CABINET (TYPE 2070L, POLE MOUNTED)
7780000000-N	1751	8	EA	DETECTOR CARD (TYPE 2070L)
7901000000-N	1753	1	EA	CABINET BASE EXTENDER
7948000000-N	SP	1	EA	TRAFFIC SIGNAL REMOVAL
7960000000-N	SP	4	EA	METAL POLE FOUNDATION REMOVAL
7972000000-N	SP	4	EA	METAL POLE REMOVAL







DIVISION OF HIGHWAYS  
 STATE OF NORTH CAROLINA

**GUARDRAIL SUMMARY**

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL  
 TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.  
 FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.  
 W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.  
 G = GATING IMPACT ATTENUATOR TYPE 350  
 NG = NON-GATING IMPACT ATTENUATOR TYPE 350

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH		W		ANCHORS						IMPACT ATTENUATOR TYPE 350			REMARKS		
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	GRAU 350	TYPE III	CAT-I	EA	G	NG						
-L-	26+81.25	29+25.00	LT	243.75'			29+00.00	27+00.00	2'	10'					1		1									
-L-	26+50.75	29+07.00	RT	256.25'			27+00.00	28+50.00	2'	12'					1		1									
-L-	35+41.25	37+10.00	RT	168.75'			37+10.00		7.5'	12'					1	1										
-L-	42+10.00	-Y1- 15+27.00	LT	62.50'	62.50'		42+10.00		7.5'	12'							1	1								
LESS ANCHOR DEDUCTIONS																										
				GRAU-350 3 @ 50' =	- 150.00'																					
				TYPE III 2 @ 18.75' =	- 37.50'																					
				CAT-I 3 @ 6.25' =	- 18.75'																					
				TOTAL	525'	62.50'									3	2	3									
				SAY	525'	62.50'		(5 ADDITIONAL GUARDRAIL POSTS)																		

**SUMMARY OF EARTHWORK  
 IN CUBIC YARDS**

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
-L- 11+50.00 TO 37+10.00	541	546	14,813	14,272	546
-L- 42+10.00 TO 42+84.14	64	300	588	580	356
-L- 44+.04.34 TO 46+00.00	42		98	56	
-R- 10+00.00 TO 12+51.33	56		826	770	
-Y1- 10+85.00 TO 15+70.12	108		563	455	
-Y2- 10+60.00 TO 15+85.00	98		308	210	
-Y3- 11+50.00 TO 14+73.87	385		124		261
-Y4- 10+20.11 TO 18+00.00	1,067		584		483
-Y5- 10+20.07 TO 11+50.00	57		39		18
-Y6- 10+20.00 TO 11+00.00	49		8		41
-Y7- 11+50.00 TO 12+80.00	20		20	0	
-Y8- 10+20.00 TO 11+00.00	9		9	0	
<b>PROJECT TOTAL</b>	<b>2,496</b>	<b>846</b>	<b>17,980</b>	<b>16,343</b>	<b>1,705</b>
WASTE TO REPLACE BORROW				-803	-803
ADDITIONAL UNDERCUT		1,100	1,375	1,375	1,100
<b>PROJECT TOTAL</b>	<b>2,496</b>	<b>1,946</b>	<b>19,355</b>	<b>16,915</b>	<b>2,002</b>
5% TO REPLACE BORROW				850	
<b>GRAND TOTAL</b>	<b>2,496</b>	<b>1,946</b>		<b>17,765</b>	
SAY	2,600	1,950		18,000	

EST. DDE = 30 CY  
 EST. SELECT GRANULAR MATERIAL = 2,500 CY

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

NOTE: Approximate quantities only. Unclassified excavation, Fine Grading, Clearing and Grubbing, Breaking of Existing Pavement and Removal of Existing Pavement will be paid for at the contract Lump Sum price for "Grading".

**PAVEMENT REMOVAL SUMMARY**

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD <sup>2</sup>
-L-	30+00.00	Riverview Dr.	RT	2469
-L-	34+00.00	37+17.21	RT	668
-L-	42+08.20	43+24.52	RT	339
-L-	43+97.13	45+49.01	RT	67
-L-	44+55.61	46+00.00	LT	13
-Y1-	12+50.00	15+71.08	RT	344
-Y1-	12+50.00	15+80.16	LT	333
-Y2-	10+47.04	11+16.50	RT	35
-Y2-	10+47.28	13+02.65	LT	135
-Y2-	11+63.85	13+15.00	RT	54
-Y3-	13+88.96	14+30.61	RT	12
-Y3-	13+91.01	14+22.64	LT	8
-Y4-	15+31.69	17+35.43	LT	54
-Y4-	16+74.04	18+00.00	RT	8
-Y4-	17+41.89	18+00.00	LT	3
-Y5-	10+24.20	10+71.42	LT	10
-Y5-	11+33.31	11+50.00	RT	1
-Y5-	11+35.04	11+50.00	LT	1
-L- TEMP.	32+00.00	33+50.00	CL	8
-L- TEMP.	42+09.00	42+30.00	CL	116
-R- TEMP.	10+00.00	12+51.00	CL	587
-Y1- TEMP.	12+50.00	13+87.74	CL	271
-Y2- TEMP.	13+75.00	14+27.47	CL	88
<b>TOTAL:</b>				<b>5623</b>
<b>SAY:</b>				<b>5630</b>

**SUMMARY OF BREAKING  
 EXISTING ASPHALT PAVEMENT**

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD <sup>2</sup>
-L-	29+69	35+46	RT	1307
<b>TOTAL:</b>				<b>1307</b>
<b>SAY:</b>				<b>1310</b>

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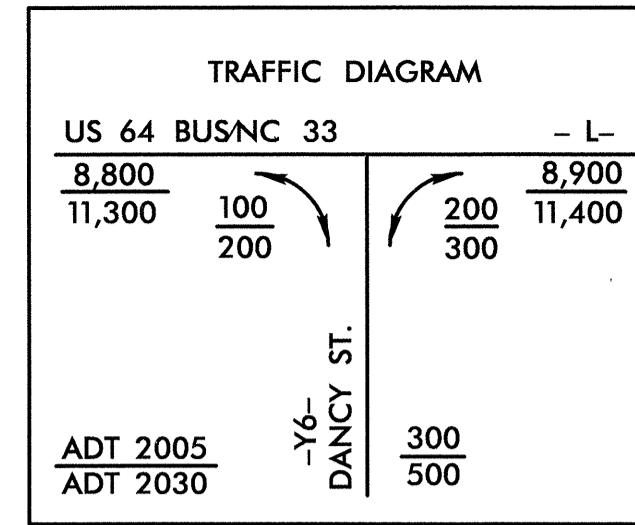
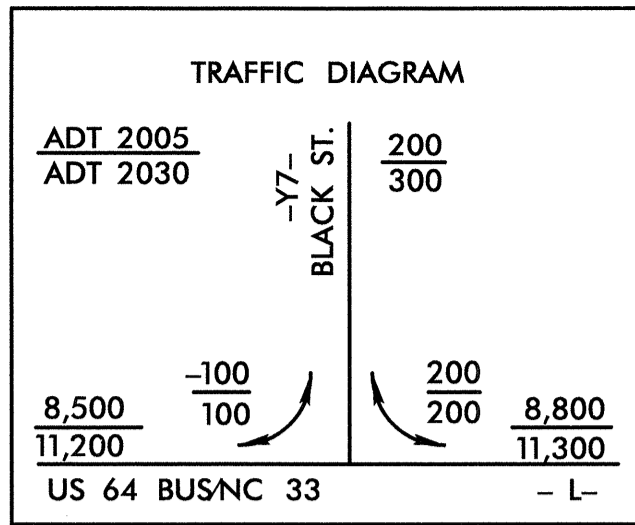
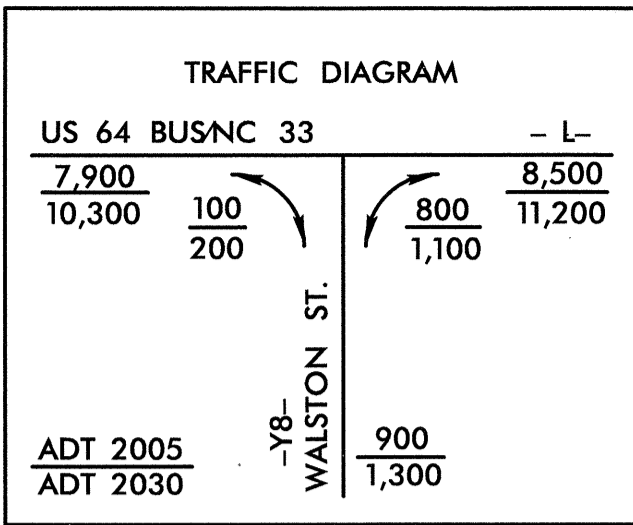
DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

**PARCEL INDEX SHEET**

PARCEL NO.	SHEET NO.	PROPERTY OWNERS NAME
1	4	JAMES H. COFIELD
2	4	L.B. REYNOLDS
3	4	ENOCH ARMFIELD
4	4	DENNIS TAYLOR
5, 5A	4	JAMES E. BRIDGERS, EU UX
6	4	MARY ELIZABETH BLACK
7	4	ELAINE BRIDGERS
8	4	GLENNIE MATTHEWSON
9	4	EMMA DANCY WILKINS
10	4	JAMES J. PARKER JR.
11, 11A, 11B	4,5	TOWN OF PRINCEVILLE
12	4	MILTON M. DAVIS
13	4	PRINCEVILLE CDC EAST TARBORO
14	4,5	FLORENCE WIGGINS TRUSTEE
15	5	MILTON MATTEWSON DAVIS
16	5	BOBBY JAMES ARMFIELD
17	5	NO OWNER INFO
18	5	MELVIN JOHNSON
19	5	DORTHY HARLEY
20	5	PAUL P. SHIRLEY
21	5	ESTHER JOHNSON
22	5	GLINNIE MATHEWSON, HEIRS
23	5	PAUL P. SHIRLEY
24	5	HILLERY GINNE
25	5,7	CATHERINE H. YARRELL

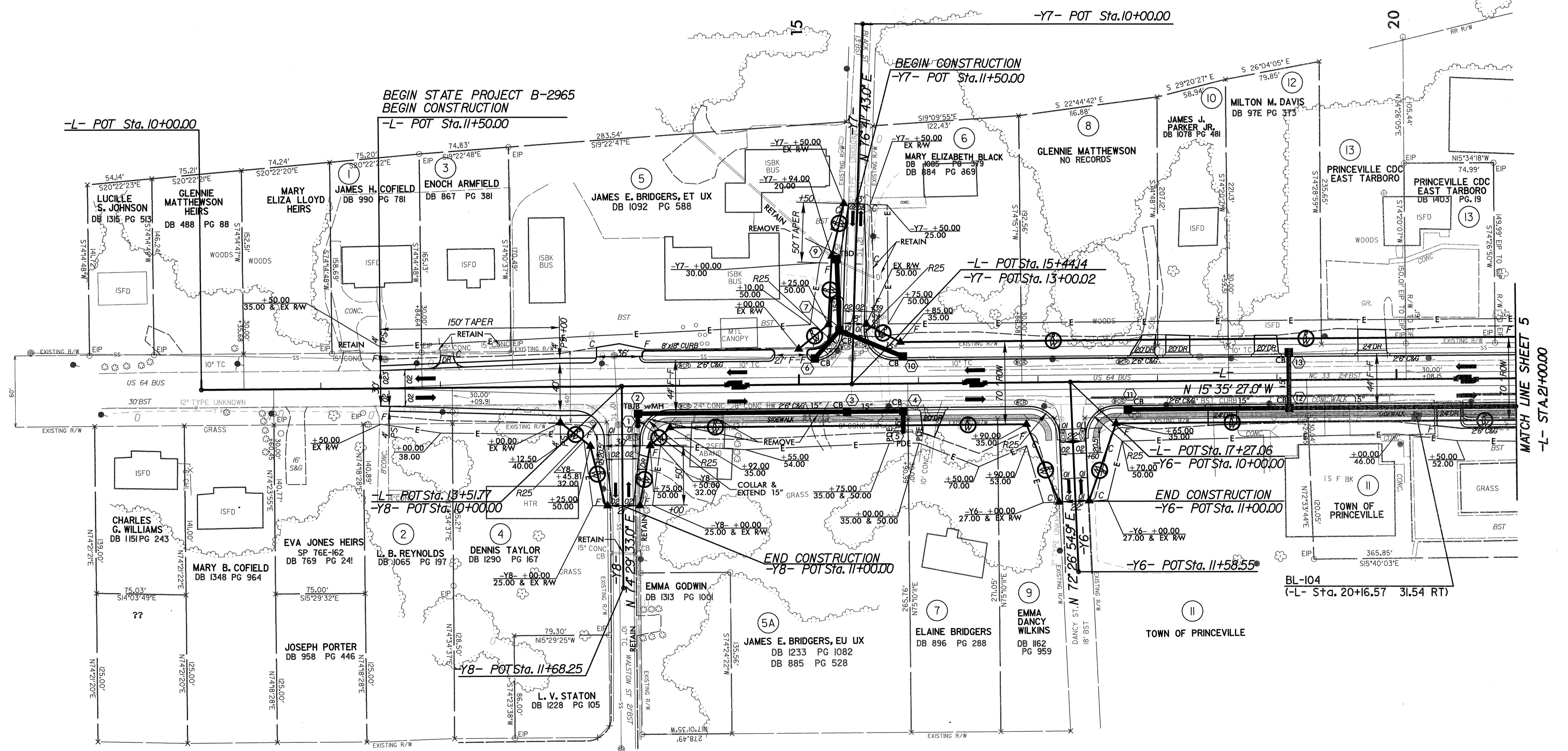
PARCEL NO.	SHEET NO.	PROPERTY OWNERS NAME
26	5,7	PRINCEVILLE BOARD OF COMM
27	5	MILTON J. MORNIMG
28	5	MELVIN RAY JOHNSON
29	5	WILLIAM SAVAGE
30	5	V.E. FOUNTAIN
31	5	WALTER L. WILLIAMS
32	5	BENJAMIN H. PHILLIPS (NO CLAIM)
33	5	C.E. PUTMAN AGENCY, INC.
34	5,6	E.J. POPE & SON, INC
35	5,6	PRINCEVILLE REDEVELOPMENT COMMISSION
37	6	EDGECOMBE COUNTY
39	6	THOMAS B. LANCASTER MEWBORN
40	6	TOWN OF TARBORO
41	6	GEORGE T. THORNE
42	6	FOUNTAIN ALEBERMARLE LIMITED PA.
43	6	MARIE S. WILLIAMS
44	7	PRINCEVILLE REDEVELOPMENT COMM
45	7	EDNA R. VINES, ET AL
47	7	GLORIA JOHNSON & HUSBAND, WALTER JOHNSON (NO CLAIM)
48	7	HENRY M. CHERRY
49	7	GLORIA JOHNSON & HUSBAND, WALTER JOHNSON (NO CLAIM)
50	7	MARTHA M. BARKER
51	7	JUANITA WHITE (NO CLAIM)

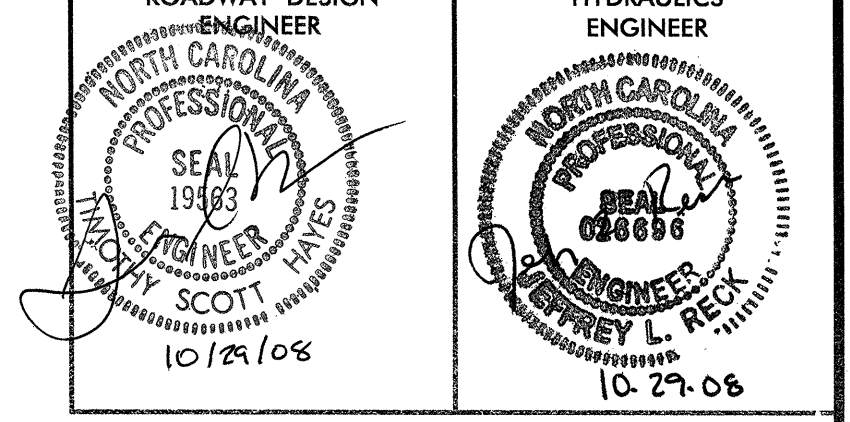
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 6/2/99



FOR -L- PROFILE SEE SHEET 8  
 FOR -Y6- PROFILE SEE SHEET 11  
 FOR -Y7- PROFILE SEE SHEET 11  
 FOR -Y8- PROFILE SEE SHEET 11

REVISIONS





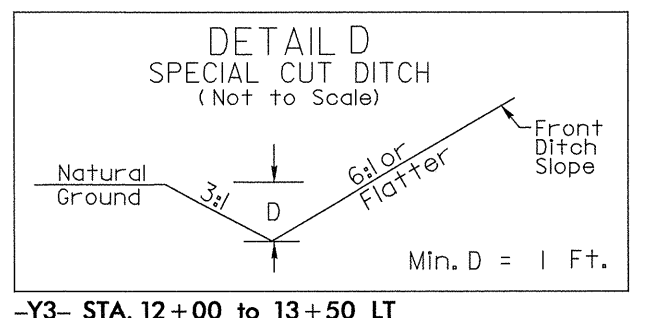
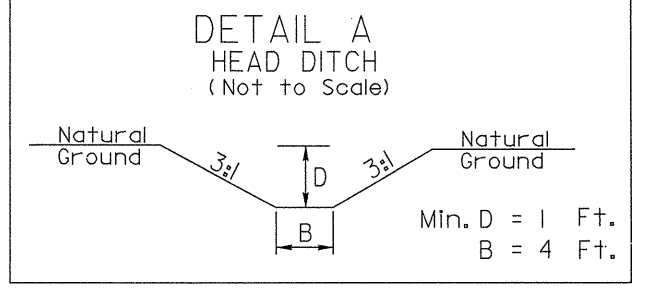
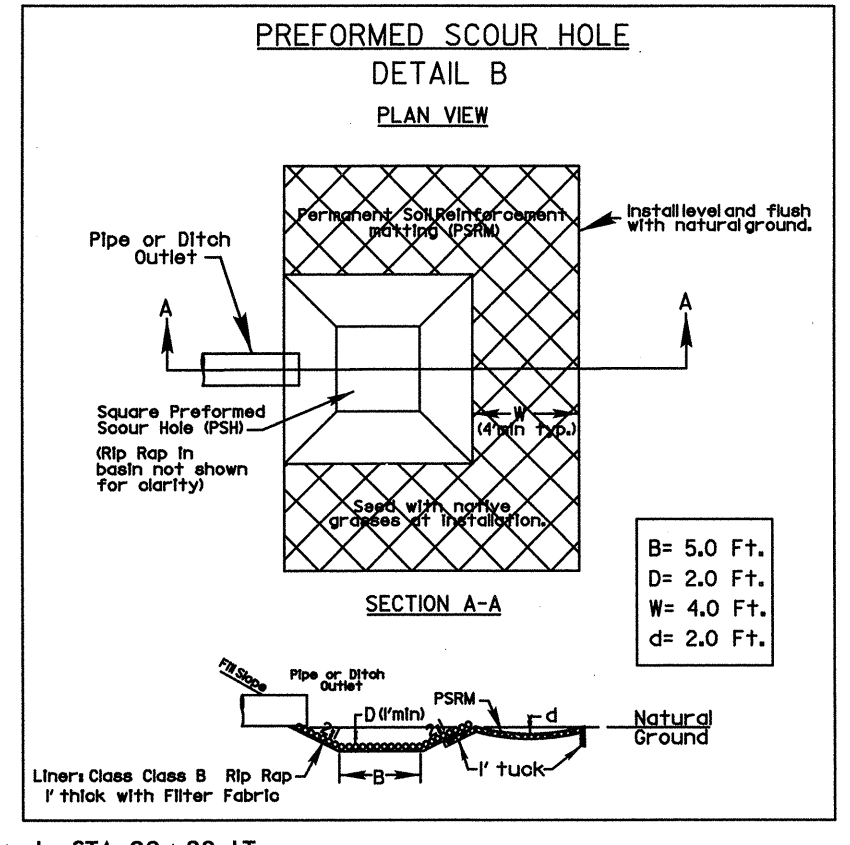
FOR -L- PROFILE SEE SHEET 8  
 FOR -Y3- PROFILE SEE SHEET 10  
 FOR -Y4- PROFILE SEE SHEET 10  
 SEE RETAINING WALL SHEET, W-1

TRAFFIC DIAGRAM

-Y3- NC 122	4,500	7,600
8,900	1,300	500
11,400	1,800	1,000
64 BUS	1,100	6,100
	1,600	9,400
ADT 2005		9,900
ADT 2030		15,800

**-L-**  
 PI Sta 32+52.79  
 $\Delta = 11' 42'' 06.8''$  (LT)  
 $D = 1' 25'' 56.6''$   
 $L = 816.95'$   
 $R = 409.90'$   
 $T = 4,000.00'$   
 $SE = RC$   
 $RO = 41'$

**-Y3-**  
 PI Sta 12+62.88  
 $\Delta = 35' 23'' 36.4''$  (RT)  
 $D = 8' 48'' 53.0''$   
 $L = 401.53'$   
 $T = 207.40'$   
 $R = 650.00'$   
 $SE = 04$   
 $RO = 41'$



NOTE: TEMPORARY SHORING MAY BE REQUIRED FOR UNDERCUT AT THE LOCATION OF EXISTING 4x4 BARREL AT APPROX. STA 27+10

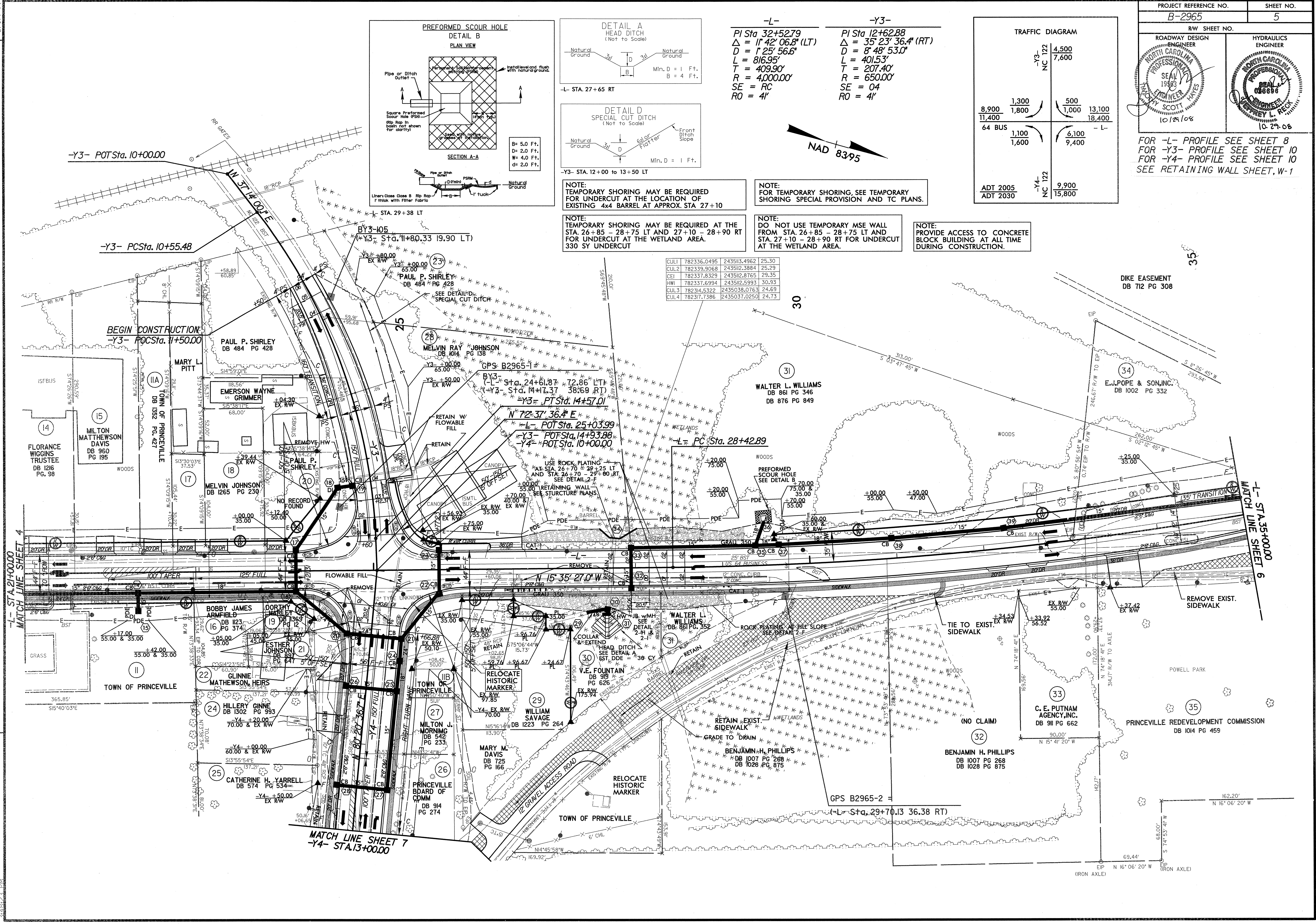
NOTE: FOR TEMPORARY SHORING, SEE TEMPORARY SHORING SPECIAL PROVISION AND TC PLANS.

NOTE: TEMPORARY SHORING MAY BE REQUIRED AT THE STA. 26+85 - 28+75 LT AND 27+10 - 28+90 RT FOR UNDERCUT AT THE WETLAND AREA. 330 SY UNDERCUT

NOTE: DO NOT USE TEMPORARY MSE WALL FROM STA. 26+85 - 28+75 LT AND STA. 27+10 - 28+90 RT FOR UNDERCUT AT THE WETLAND AREA.

NOTE: PROVIDE ACCESS TO CONCRETE BLOCK BUILDING AT ALL TIME DURING CONSTRUCTION.

CUL1	782336.0495	243513.4962	25.30
CUL2	782339.9068	243512.3884	25.29
CE1	782337.8329	243512.8765	29.35
HW1	782337.6994	243512.5993	30.93
CUL3	782314.5322	2435038.0763	24.69
CUL4	782317.7386	2435037.0250	24.73



REVISIONS

8/17/09

10/26/2008  
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ROADWAY DESIGN ENGINEER  
 NORTH CAROLINA PROFESSIONAL SEAL  
 JIMMY SCOTT  
 9/25/04

HYDRAULICS ENGINEER  
 NORTH CAROLINA PROFESSIONAL SEAL  
 JEFFREY L. RICK  
 9-25-06

-L-	-Y1-	-Y2-
PI Sta 32+52.79 Δ = 1° 42' 06.8" (LT) D = 1' 25' 56.6" L = 816.95' T = 409.90' R = 4,000.00' SE = RC RO = 4'	PI Sta 42+79.22 Δ = 2° 33' 20.7" (RT) D = 16' 22' 12.8" L = 136.38' T = 66.63' R = 350.00' SE = 02 RO = SEE PLANS	PI Sta 44+13.34 Δ = 22° 19' 38.7" (LT) D = 16' 22' 15.3" L = 136.10' T = 69.07' R = 349.99' SE = 02 RO = SEE PLANS
PI Sta 11+90.90 Δ = 45° 58' 34.6" (LT) D = 12' 43' 56.6" L = 361.10' T = 190.90' R = 450.00' SE = NC RO = SEE PLANS	PI Sta 14+02.73 Δ = 88° 34' 24.5" (LT) D = 22' 55' 05.9" L = 386.47' T = 243.85' R = 250.00' SE = NC RO = SEE PLANS	

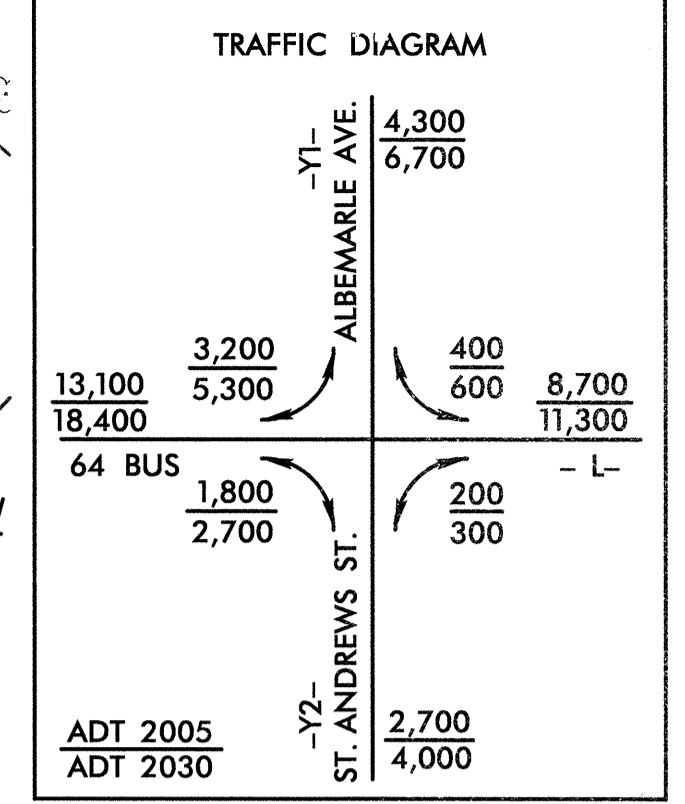
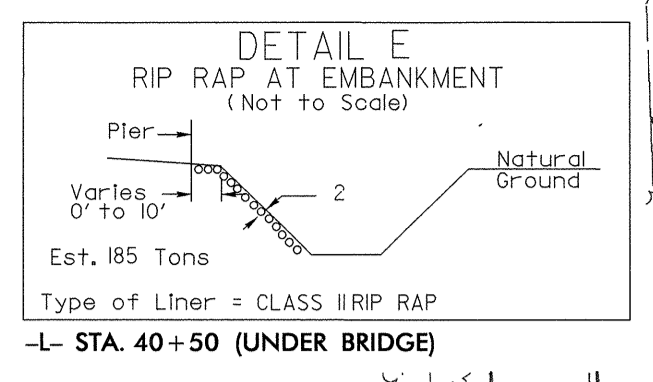
-R-			
PI Sta 10+57.10 Δ = 109° 58' 15.1" (LT) D = 143' 14' 22.0" L = 76.77' T = 57.10' R = 40.00' SE = 02	PI Sta 11+04.80 Δ = 70° 01' 45.4" (LT) D = 143' 14' 22.0" L = 48.89' T = 28.02' R = 40.00' SE = 02	PI Sta 11+82.76 Δ = 109° 57' 56.8" (LT) D = 143' 14' 22.0" L = 76.77' T = 57.09' R = 40.00' SE = 02	PI Sta 12+30.46 Δ = 70° 02' 02.8" (LT) D = 143' 14' 22.0" L = 48.89' T = 28.03' R = 40.00' SE = 02

-DRIVE-		
PI Sta 10+55.24 Δ = 84° 53' 14.7" (LT) D = 229' 10' 59.2" L = 37.04' T = 22.86' R = 25.00'	PI Sta 11+21.47 Δ = 3° 15' 10.2" (LT) D = 3° 07' 31.3" L = 104.08' T = 52.05' R = 1,833.25'	PI Sta 12+07.57 Δ = 107° 28' 09.2" (RT) D = 229' 10' 59.2" L = 46.89' T = 34.08' R = 25.00'

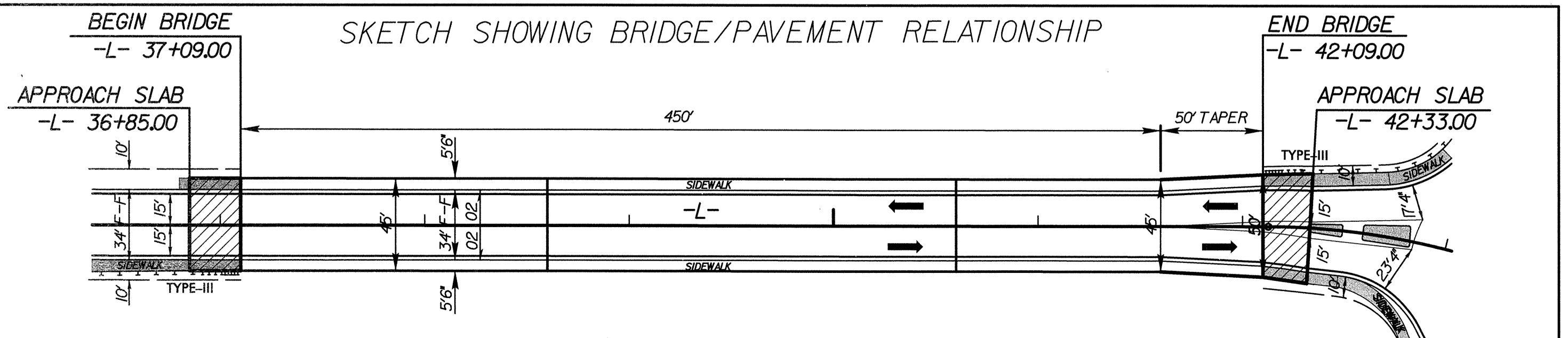
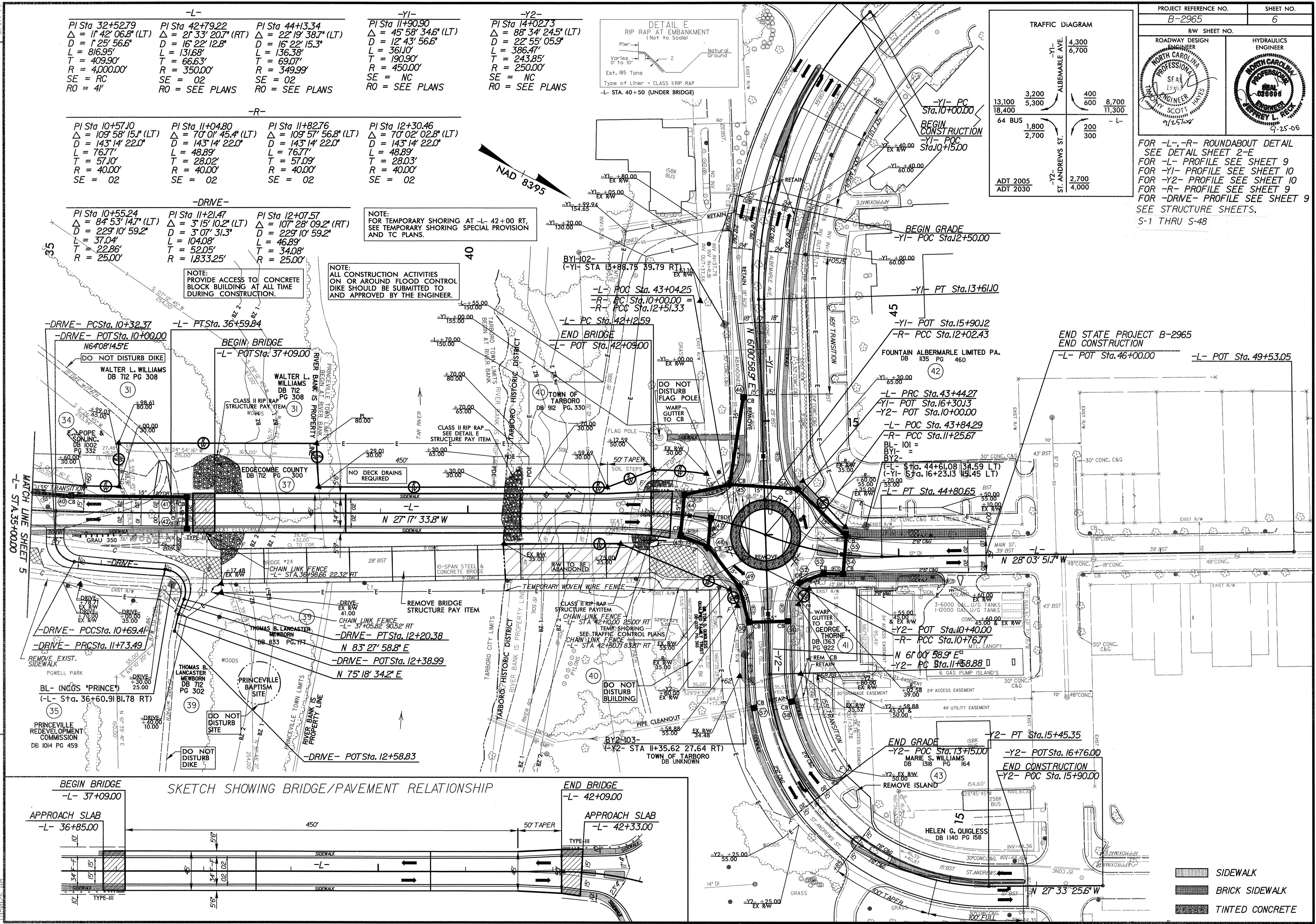
NOTE: FOR TEMPORARY SHORING AT -L- 42+00 RT, SEE TEMPORARY SHORING SPECIAL PROVISION AND TC PLANS.

NOTE: PROVIDE ACCESS TO CONCRETE BLOCK BUILDING AT ALL TIME DURING CONSTRUCTION.

NOTE: ALL CONSTRUCTION ACTIVITIES ON OR AROUND FLOOD CONTROL DIKE SHOULD BE SUBMITTED TO AND APPROVED BY THE ENGINEER.



FOR -L-, -R- ROUNDABOUT DETAIL SEE DETAIL SHEET 2-E  
 FOR -L- PROFILE SEE SHEET 9  
 FOR -Y1- PROFILE SEE SHEET 10  
 FOR -Y2- PROFILE SEE SHEET 10  
 FOR -R- PROFILE SEE SHEET 9  
 FOR -DRIVE- PROFILE SEE SHEET 9  
 SEE STRUCTURE SHEETS, S-1 THRU S-48

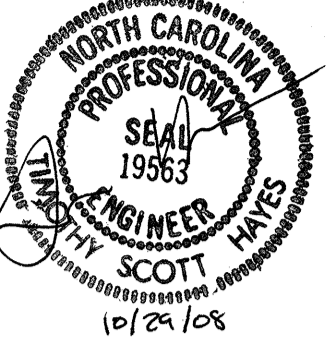
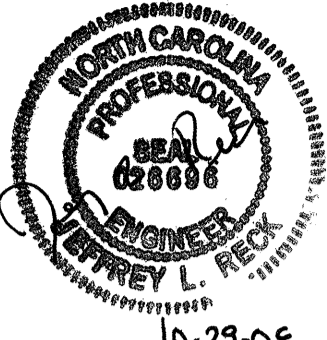


LEGEND:

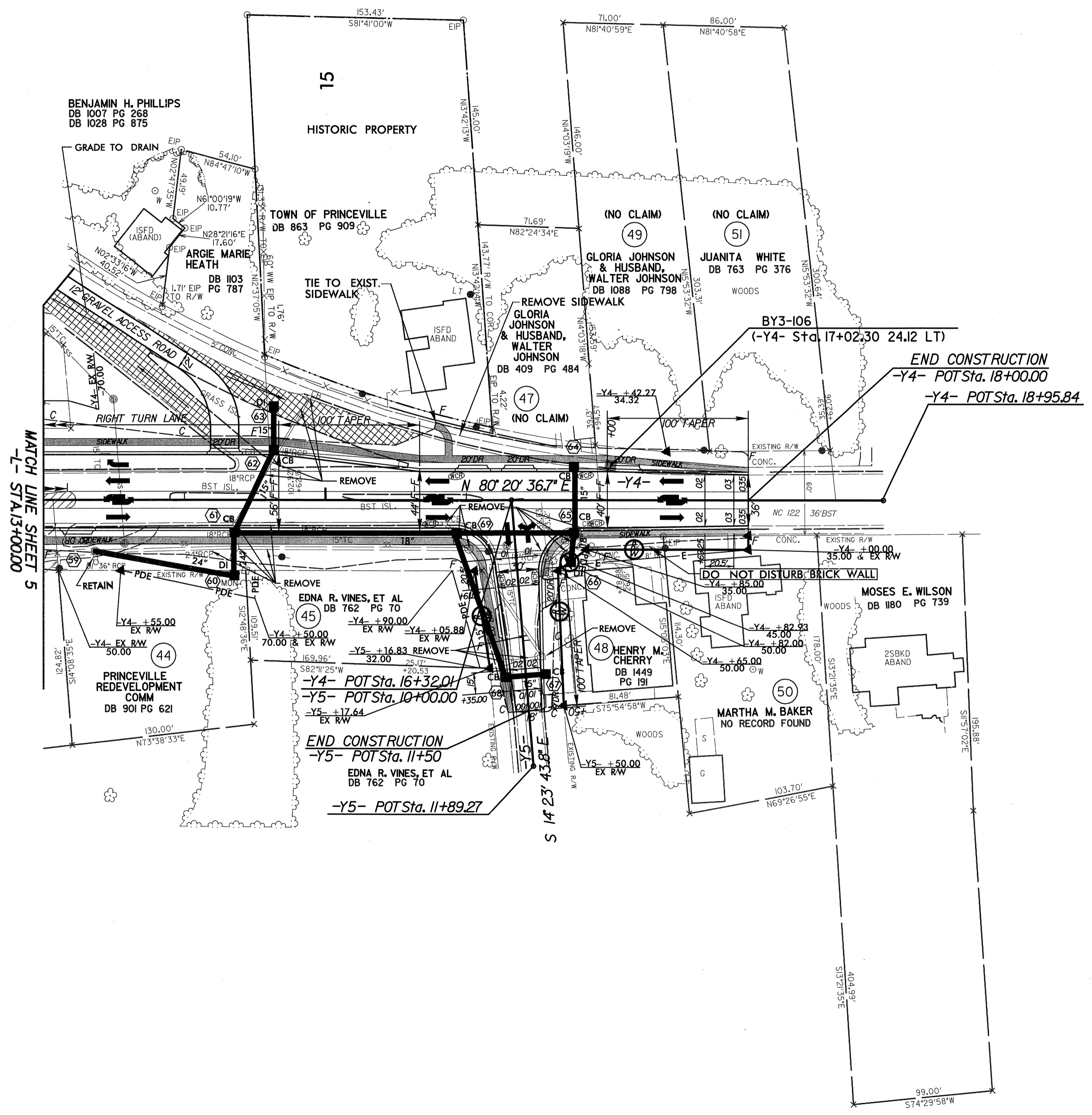
- SIDWALK
- BRICK SIDWALK
- TINTED CONCRETE

REVISIONS

9/25/2008  
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 11/15/2006

PROJECT REFERENCE NO. B-2965	SHEET NO. 7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
	

FOR -Y4- PROFILE SEE SHEET 10  
FOR -Y5- PROFILE SEE SHEET 11



REVISIONS

B.17/99

10/28/2008  
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345100

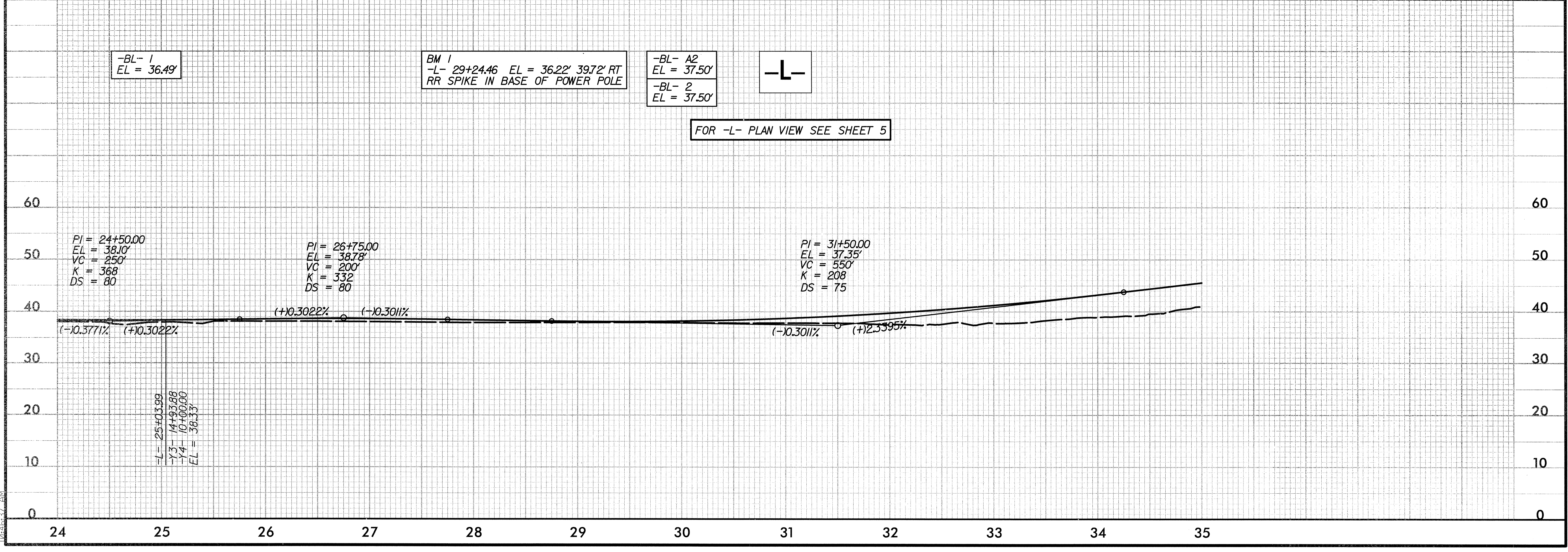
5/28/08



-L-

-BL- 104  
EL = 37.81'

FOR -L- PLAN VIEW SEE SHEET 4 & 5



-L-

FOR -L- PLAN VIEW SEE SHEET 5

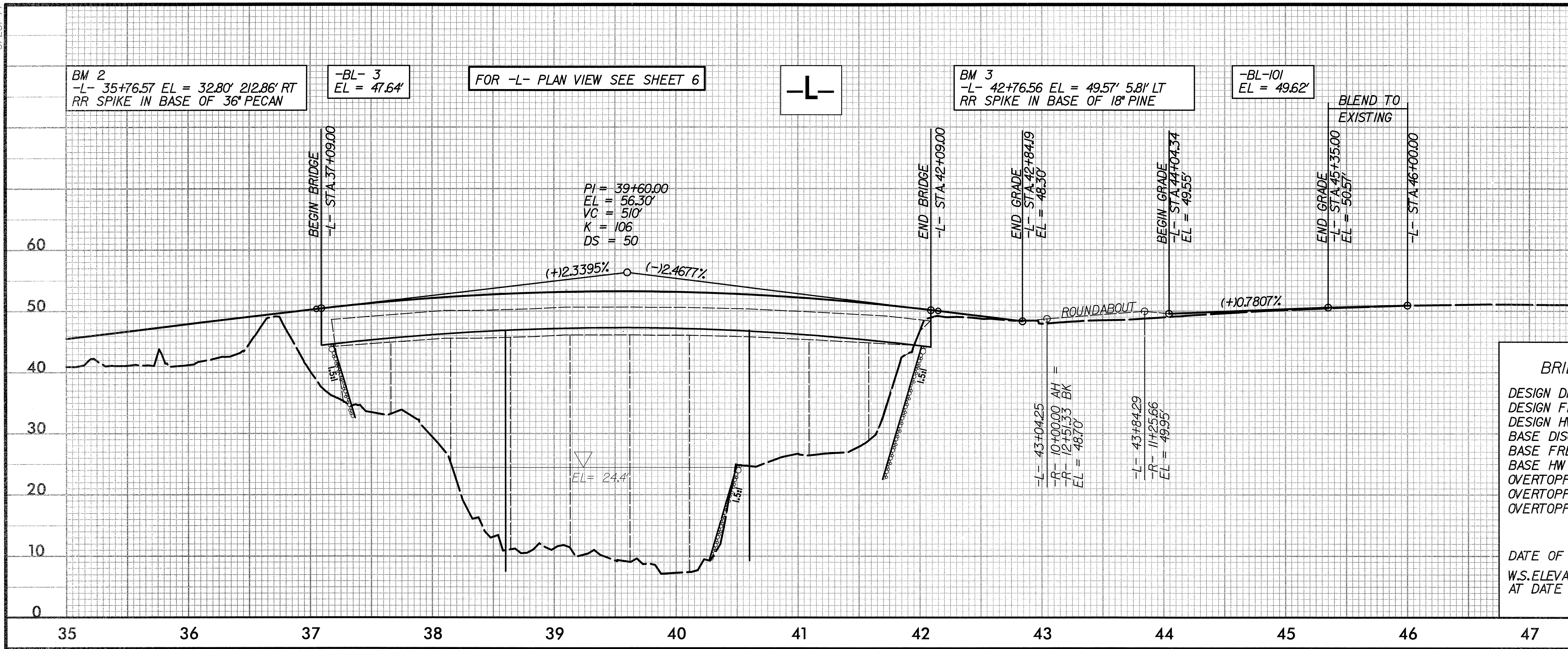
-BL- 1  
EL = 36.49'

BM 1  
-L- 29+24.46 EL = 36.22' 39.72' RT  
RR SPIKE IN BASE OF POWER POLE

-BL- A2  
EL = 37.50'

-BL- 2  
EL = 37.50'

8/25/2008  
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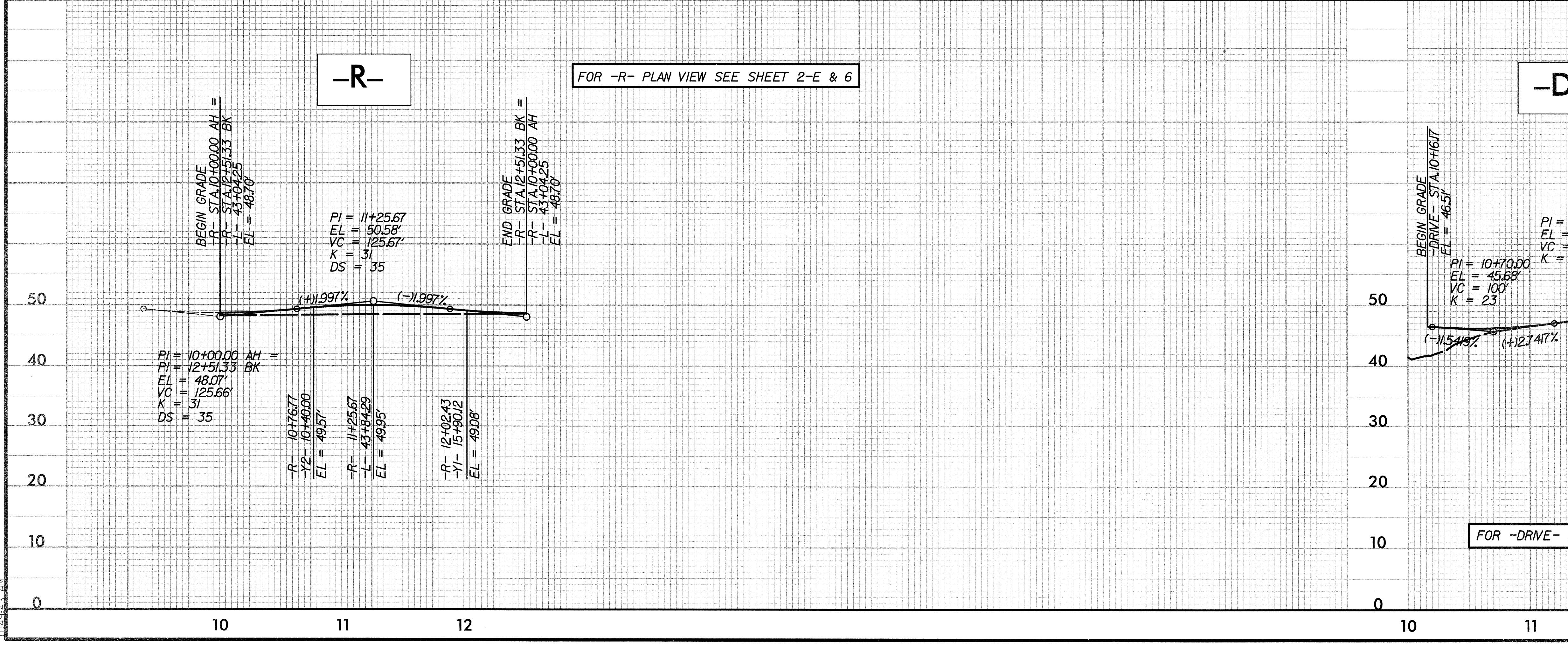


**BRIDGE HYDRAULIC DATA**

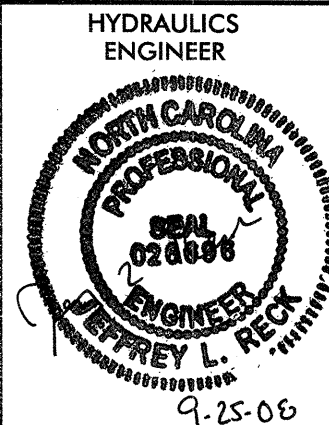
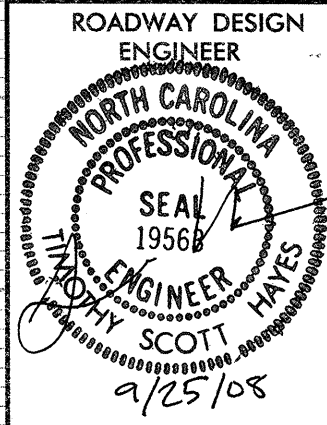
DESIGN DISCHARGE	= 40,000 CFS
DESIGN FREQUENCY	= 50 YRS
DESIGN HW ELEVATION	= 44.7 FT
BASE DISCHARGE	= 46,700 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 46.3 FT
OVERTOPPING DISCHARGE	= 57,800 CFS
OVERTOPPING FREQUENCY	= 200 YRS
OVERTOPPING ELEVATION	= 49.4 FT

DATE OF SURVEY = 12-20-05

W.S. ELEVATION AT DATE OF SURVEY = 24.4 FT



5/28/09  
8/25/2008  
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FOR -Y1- PLAN VIEW SEE SHEET 6

**-Y1-**

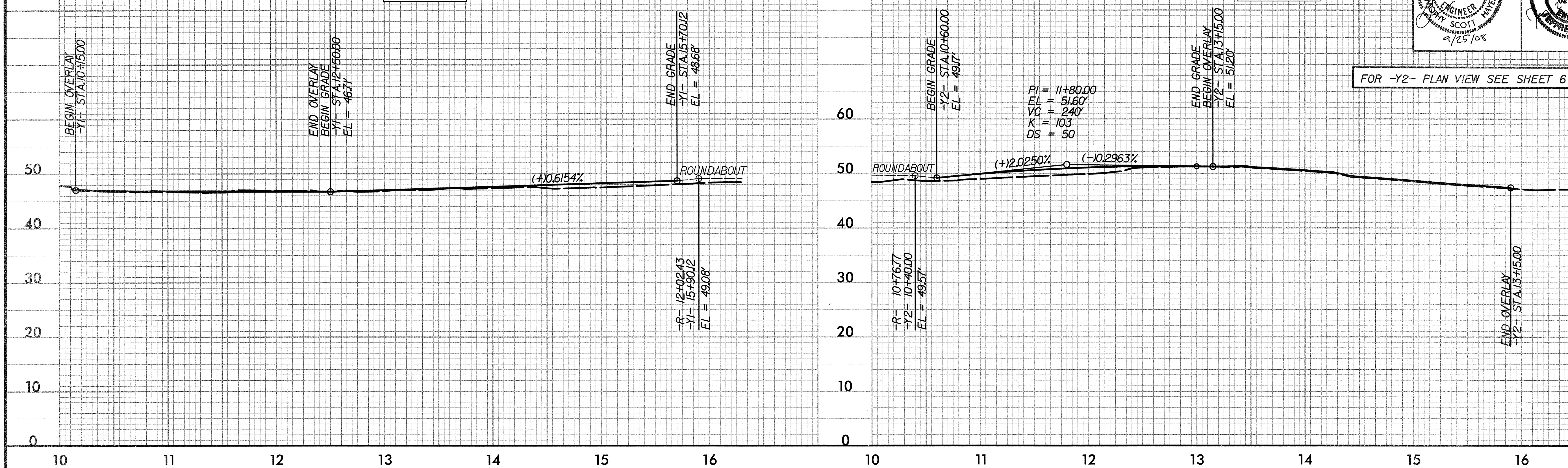
-BY1- 102  
EL = 46.63'

-BY1- A101  
EL = 49.62'

-BY2- 103  
EL = 49.27'

**-Y2-**

FOR -Y2- PLAN VIEW SEE SHEET 6



-BY3- 105  
EL = 40.37'

**-Y3-**

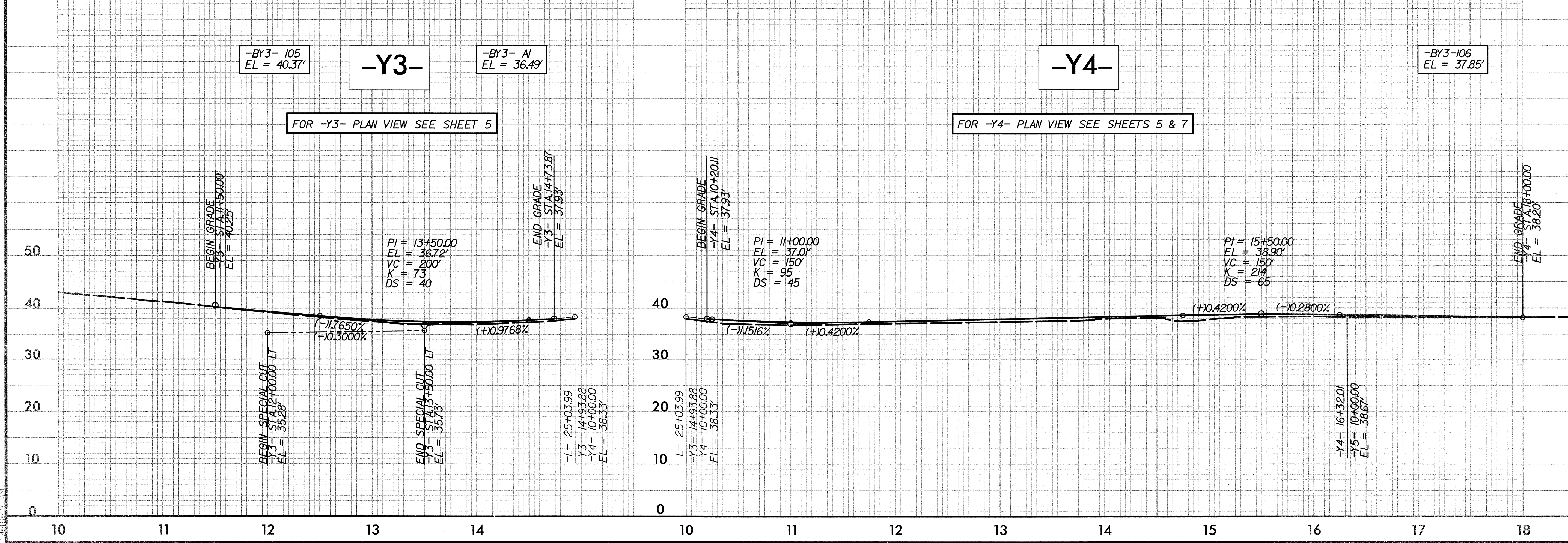
-BY3- A1  
EL = 36.49'

**-Y4-**

-BY3-106  
EL = 37.85'

FOR -Y3- PLAN VIEW SEE SHEET 5

FOR -Y4- PLAN VIEW SEE SHEETS 5 & 7



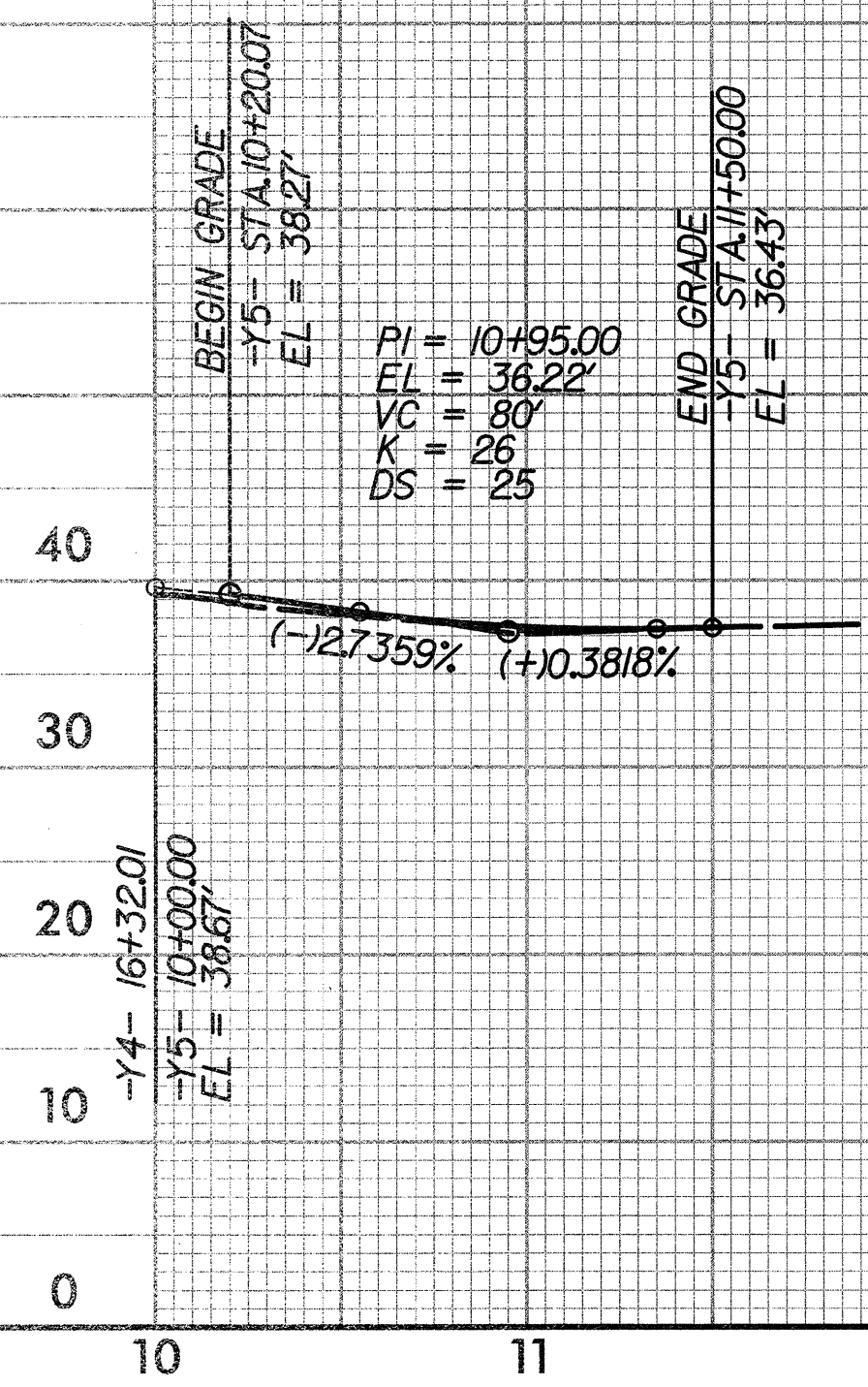
5/28/09

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10/16/08

5/28/09

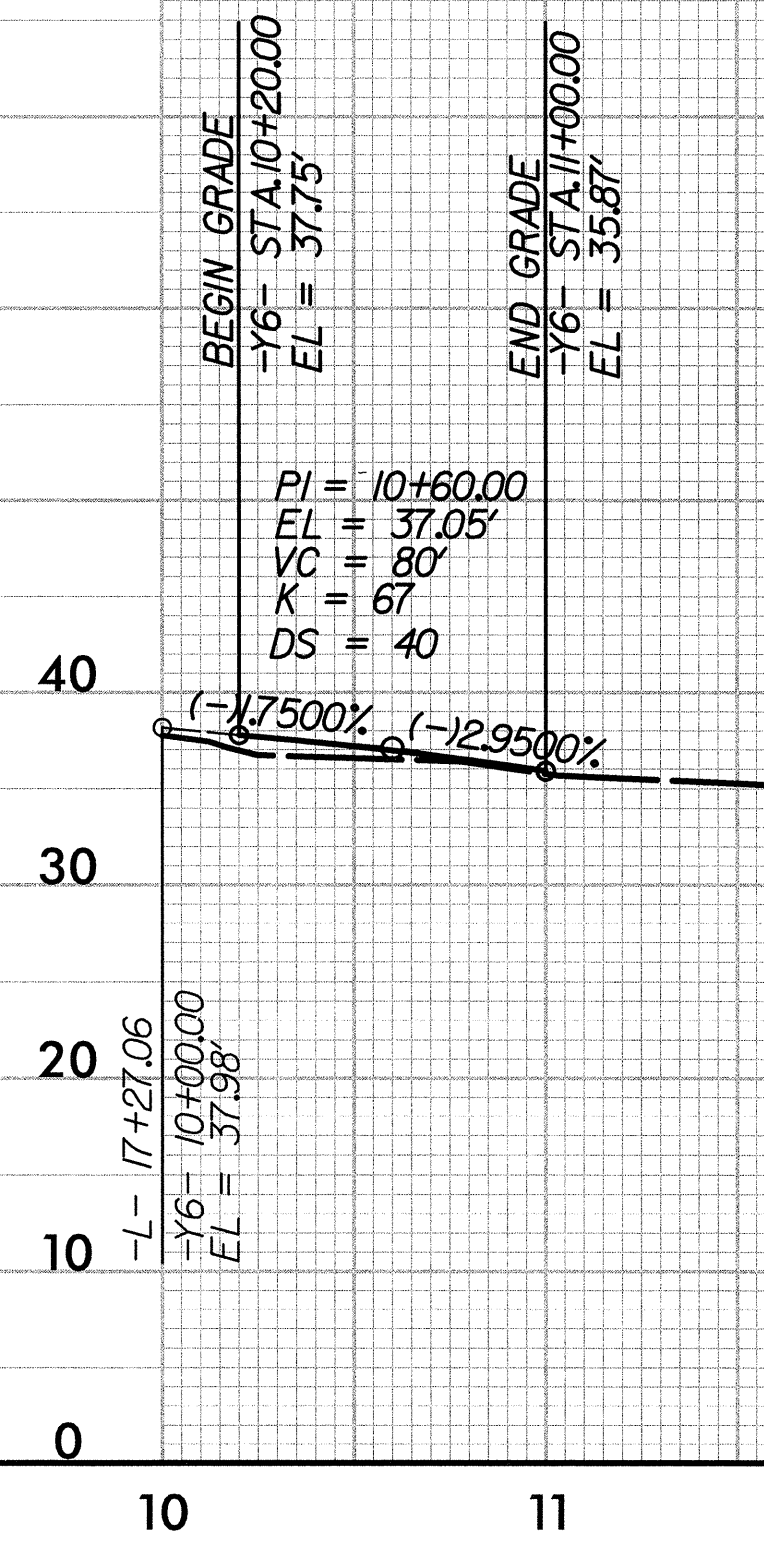
# -Y5-

FOR -Y5- PLAN VIEW SEE SHEET 7



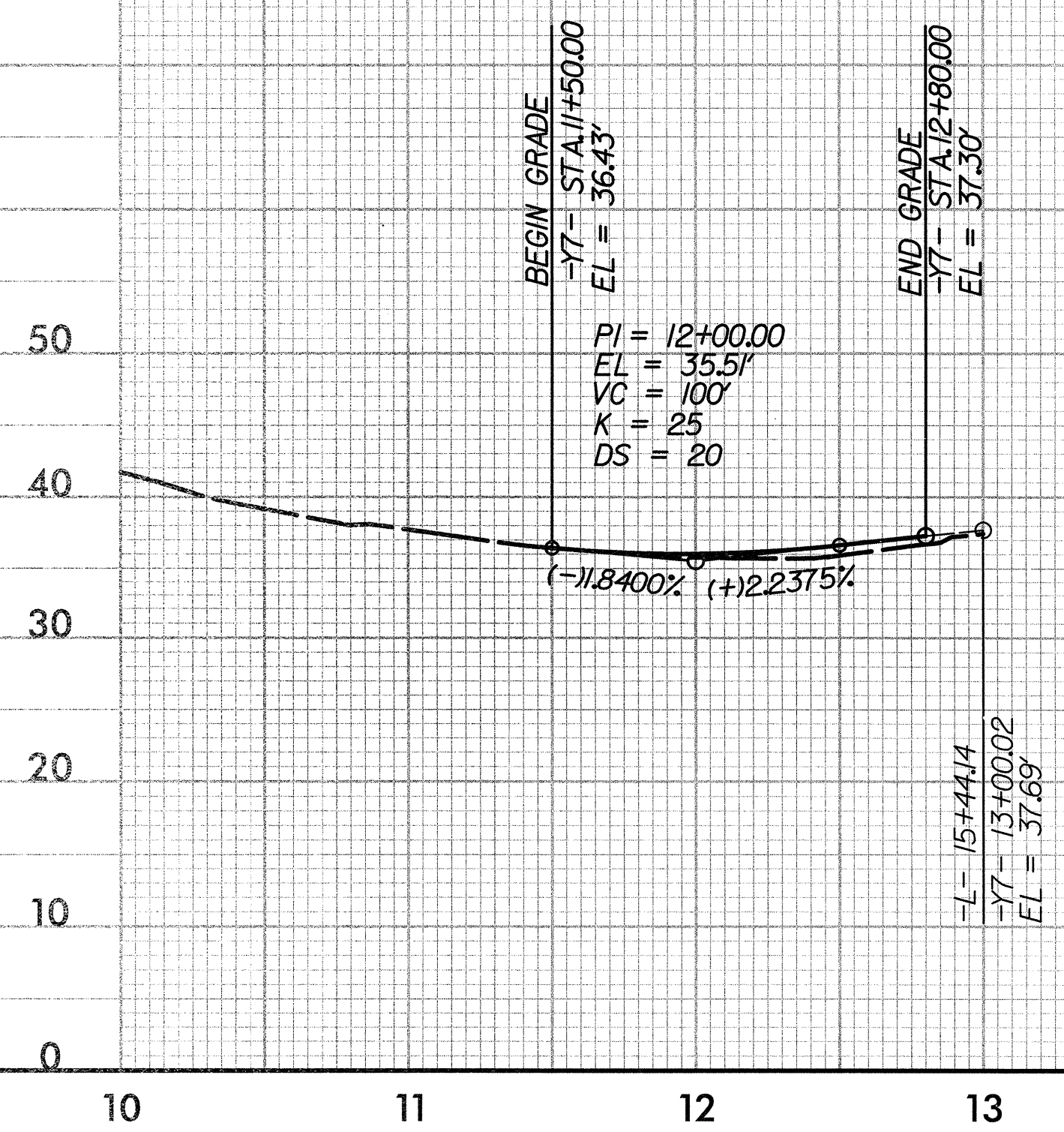
# -Y6-

FOR -Y6- PLAN VIEW SEE SHEET 4



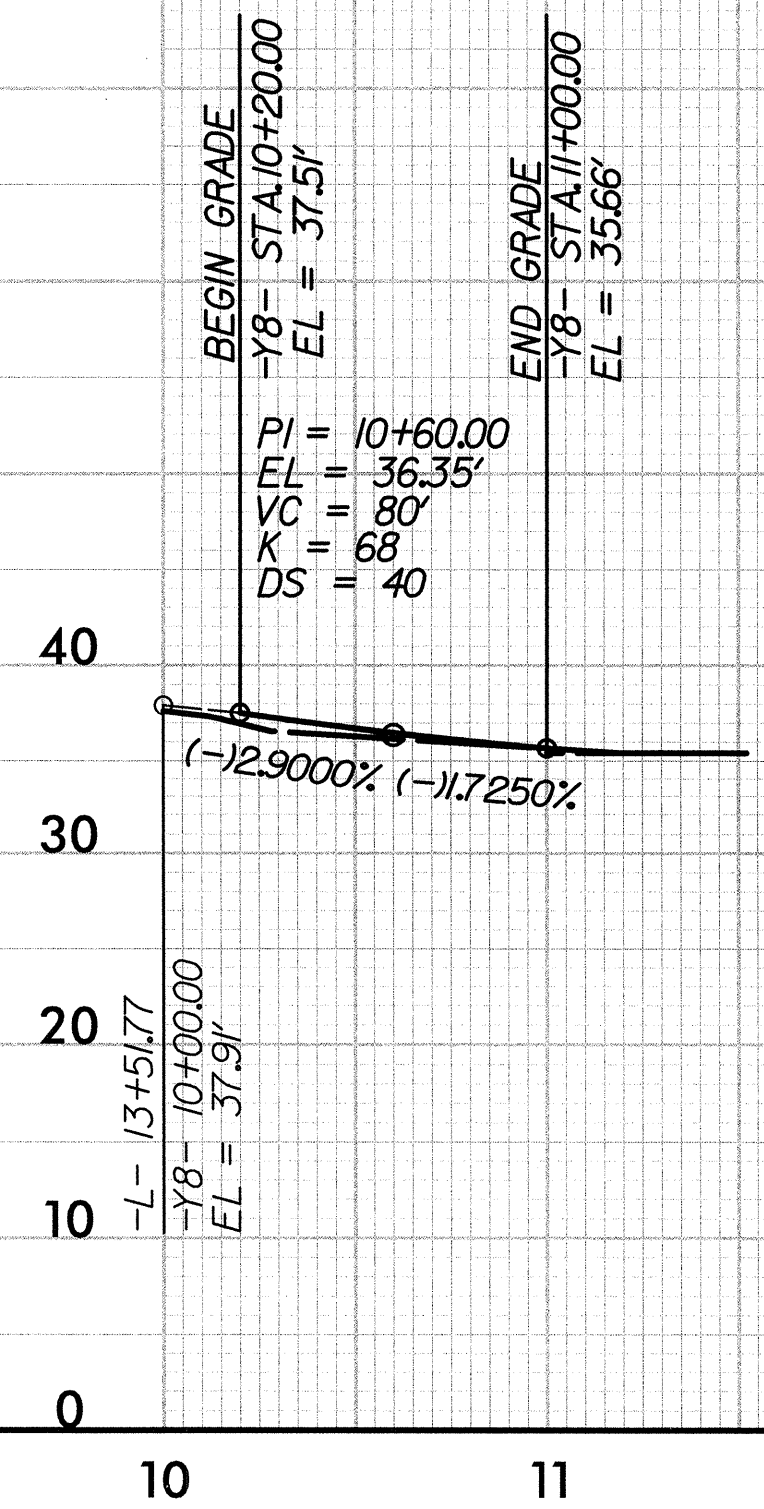
# -Y7-

FOR -Y7- PLAN VIEW SEE SHEET 4



# -Y8-

FOR -Y8- PLAN VIEW SEE SHEET 4



PROJECT REFERENCE NO. B-2965	SHEET NO. 11
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL ENGINEER 19563 SCOTT	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL ENGINEER 028886 JEFFREY L. RECK

8/25/08

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