

09/08/99

See Sheet 1-A For Index of Sheets

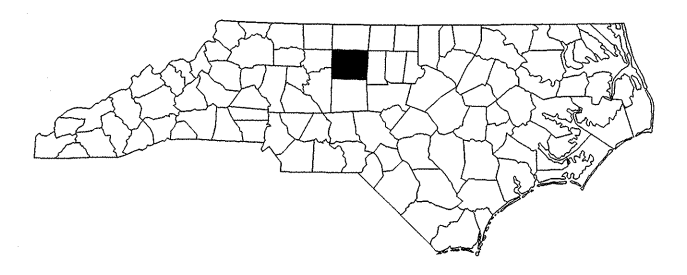
STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

GUILFORD COUNTY

**LOCATION: REPLACEMENT OF BRIDGE 77 ON SR 4053 (SURRETT DR)
OVER US 29 /US 70 /I-85 BUS**

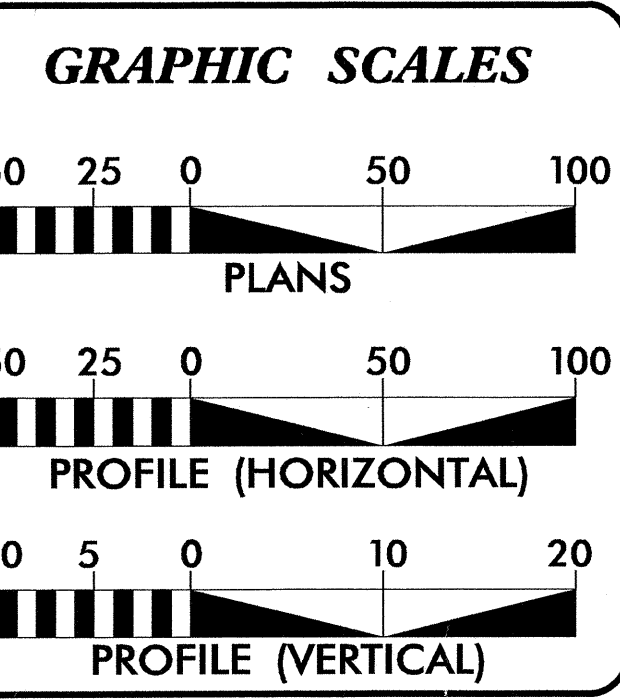
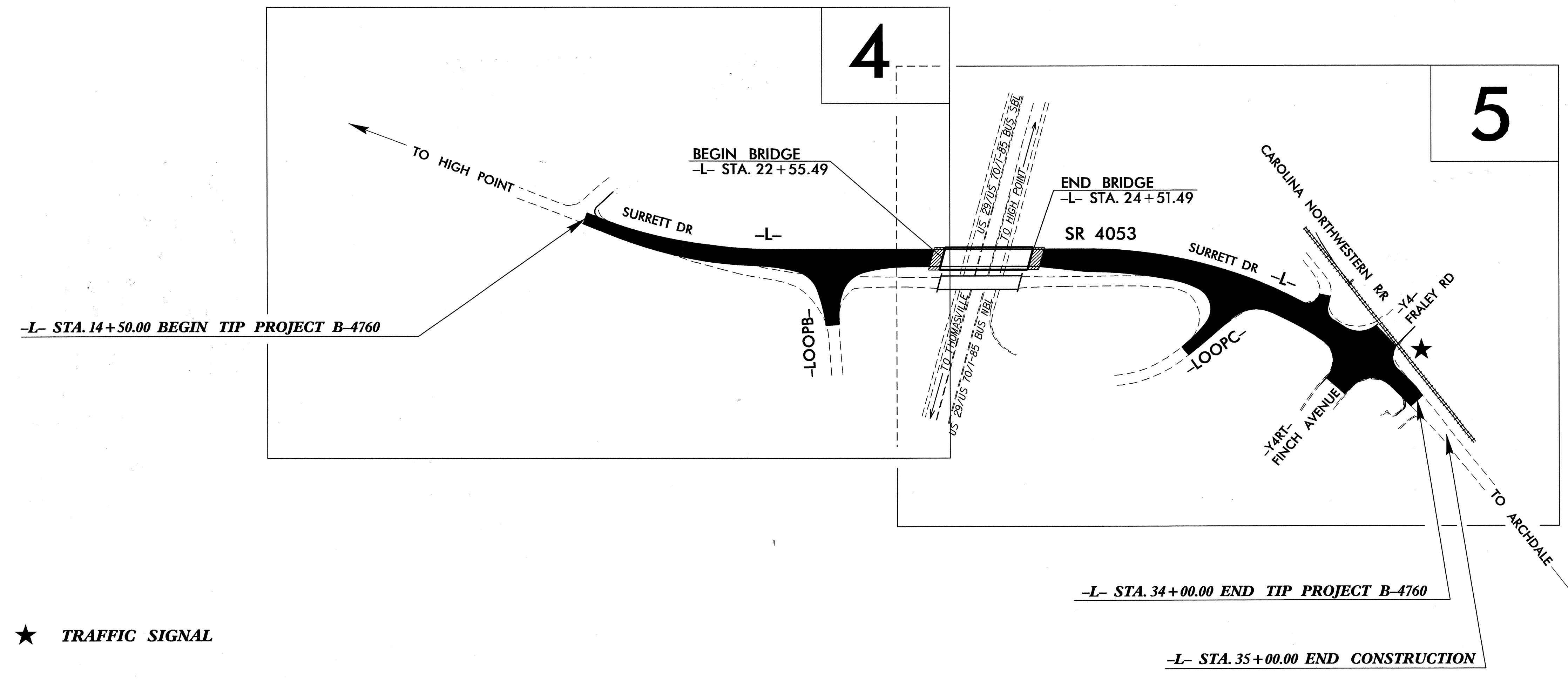
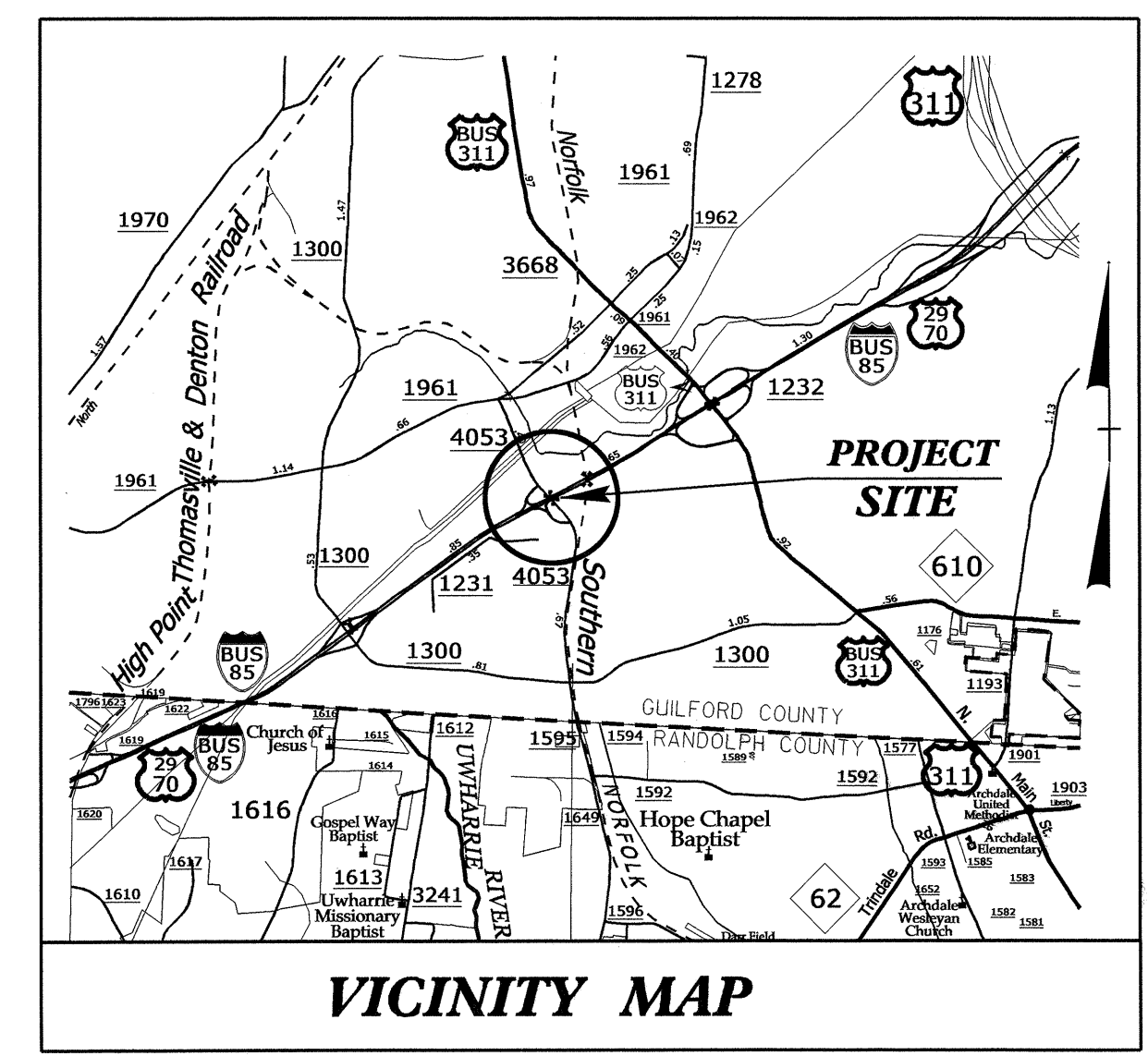
**TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURE
AND SIGNAL**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4760	1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
38532.1.1	BRZ-4053(I)	PE	
38532.2.1	BRZ-4053(I)	RW & UTIL	
38532.3.1	BRZ-4053(I)	CONST.	



TIP PROJECT: B-4760

CONTRACT: C202846



DESIGN DATA

ADT 2012 = 12,500
ADT 2035 = 17,600
DHV = 12 %
D = 55 %
T = 8 % *
V = 40 MPH
* TTST = 3% DUAL 5%
FUNC CLASS =
COLLECTOR
STATEWIDE TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4760 = 0.332 MILES

LENGTH STRUCTURE TIP PROJECT B-4760 = 0.037 MILES

TOTAL LENGTH TIP PROJECT B-4760 = 0.369 MILES

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JUNE 7, 2011

LETTING DATE: JULY 17, 2012

G.E. BREW, P.E.
PROJECT ENGINEER

I.T. YOUNIS
PROJECT DESIGN ENGINEER

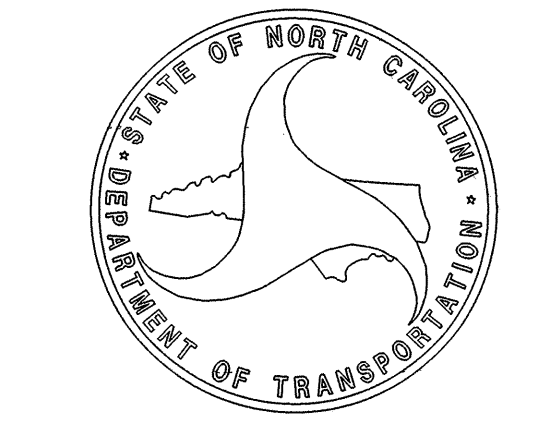
HYDRAULICS ENGINEER

ROADWAY DESIGN ENGINEER

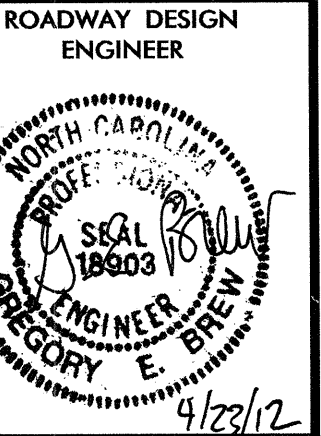
4/17/12 P.E.

4/23/12

Gregory E. Brew



19-APR-2012 08:57
R:\Roadway\Proj\B4760_Rdy_tsh.dgn
\$\$\$\$\$USERNAME\$\$\$\$\$



INDEX OF SHEETS

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
1-D	CENTERLINE COORDINATE LIST
2 THRU 2-B	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
2-C	DETAIL OF SPECIAL TRAFFIC BEARING JUNCTION BOX
2-D	DETAIL OF CONVERTING EXISTING D.I. OR C.B. TO J.B.
2-E	DETAIL OF CONVERTING EXISTING D.I. OR C.B. TO T.B.J.B.
2-F THRU 2-G	INTERSECTION DETAILS
2-H	DETAIL OF STANADARD TEMPORARY SHORING
3	SUMMARY OF QUANTITIES
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3-C	SUMMARY OF GUARDRAIL, EARTHWORK SUMMARY, AND ASPHALT PAVEMENT REMOVAL SUMMARY
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4 THRU 5	PLAN SHEET
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TMP-1 THRU TMP-9	TRANSPORTATION MANAGEMENT PLANS
PM-1 THRU PM-3	PAVEMENT MARKING PLANS
EC-1 THRU EC-08	EROSION CONTROL PLANS
RF-1	REFORESTATION PLANS
SIGN-1 THRU SIGN- 8	SIGNING PLANS
SD-1	SIGN DESIGN PLANS
SIG-1 THRU SIG-6	SIGNING PLANS
UC-1 THRU UC-10	UTILITIES CONSTRUCTION PLANS
UO-1 THRU UO-3	UTILITIES BY OTHERS PLANS
X-1A THRU X-15	CROSS-SECTIONS
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C-1 THRU C-6	CULVERT PLANS

GENERAL NOTES

#REF!
#REF!
GENERAL NOTES:

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

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

CLEARING:
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD 111.

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.

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

GUARDRAIL:
THE GUARDRAIL LOCATIONS SHOWN ON THE PLANS MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHOULD CONSULT WITH THE ENGINEER PRIOR TO ORDERING GUARDRAIL MATERIAL.

TEMPORARY SHORING:
SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC NOT SHOWN ON THE PLANS WILL BE PAID FOR AT THE CONTRACT PRICE FOR "TEMPORARY 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 City of High Point Power, North State Communications and CATV Provider. ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

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

Curb Ramps:
CURB RAMPS ARE SHOWN ON THE PLANS AT APPROXIMATE LOCATIONS. CONSTRUCT ALL CURB RAMPS ACCORDANCE WITH STD 848.05 AND 848.06.

LIST OF STANDARD DRAWINGS

2012 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January, 2012 are applicable to this project and by reference hereby are considered a part of these plans:

STD. NO.	TITLE
200.03	Method of Clearing - Method 111
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Super-elevation - Two Lane Pavement
300.01	Method of Pipe Installation
422.10	Reinforced Bridge Approach Fills
560.01	Method of Shoulder Construction - High Side of Super-elevated Curve - Method 1
610.03	Guide for Paving Shoulders Under Bridges - Method 111
654.01	Pavement Repairs
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
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
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.22	Frames and Wide Slot Sag Grates
840.24	Frames and Narrow Slot Sag Grates
840.25	Anchorage for Frames - Brick or Concrete
840.27	Brick Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
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
840.35	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
840.71	Concrete and Brick Pipe Plug
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
848.04	Street Turnout
848.05	Curb Ramp - Proposed Curb & Gutter
852.01	Concrete Islands
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
876.04	Drainage Ditches with Class 'B' Rip Rap

EFF. 01-17-12

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ 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 Endangered Animal Boundary	-EAB-
Existing Endangered Plant Boundary	-EPB-
Known Soil Contamination: Area or Site	☠ ☠
Potential Soil Contamination: Area or Site	?? ??

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○ CSX TRANSPORTATION 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	○ R/W
Proposed Right of Way Line with Iron Pin and Cap Marker	○ R/W ▲
Proposed Right of Way Line with Concrete or Granite Marker	○ R/W ▲
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 Drainage / Utility Easement	-DUE-
Proposed Permanent Utility Easement	-PUE-
Proposed Temporary Utility Easement	-TUE-
Proposed Aerial Utility Easement	-AUE-
Proposed Permanent Easement with Iron Pin and Cap Marker	◆

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	-C-
Proposed Slope Stakes Fill	-F-
Proposed Curb Ramp	○ CR
Existing Metal Guardrail	-T-T-T-
Proposed Guardrail	-T-T-T-
Existing Cable Guiderail	-P-P-P-
Proposed Cable Guiderail	-P-P-P-
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	▭ CB
Drainage Box: Catch Basin, DI or JB	▭ CB
Paved Ditch Gutter	-----
Storm Sewer Manhole	⊕
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	-?UTL-
U/G Tank; Water, Gas, Oil	▭
Underground Storage Tank, Approx. Loc.	⊕
A/G Tank; Water, Gas, Oil	▭
Geoenvironmental Boring	⊕
U/G Test Hole (S.U.E.*)	⊕
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

B-4760 SURVEY CONTROL SHEET

BENCHMARK DATA

.....
 BM1 ELEVATION = 836.74
 N 796690 E 1702661
 GPS B4760-1 TO GPS B4760-2
 N 21° 26' 30" W 894.46'
 GPS B4760-1

 BM2 ELEVATION = 855.68
 N 794960 E 1703029
 L STATION 19+90.40 404.43' RIGHT
 CHISELED SQUARE IN CONCRETE, MOST TIP
 OF PARKING LOT OF EAGLE
 SCREENPRINTING AND EMBROIDERY

 BM3 ELEVATION = 844.51
 N 794034 E 1703836
 L STATION 34+29.14 147.86' RIGHT
 CHISELED SQUARE IN CONCRETE ENTRANCE OF
 2100 SURRETT DRIVE

BASELINE DATA

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
2	GPS B4760-2	795857.3460	1702987.6260	832.83	12+70.52	25.27 LT
3	BL-3	795263.5634	1703204.2184	852.42	18+86.33	69.44 RT
4	BL-4	795019.6551	1703469.2409	860.26	22+45.31	40.13 RT
A100		794736.9488	1703712.7596	UNKNOWN	26+20.48	52.06 RT
5	BL-5	794403.7239	1703999.7942	850.21	30+53.31	48.51 LT
6	BL-6	793869.8140	1703945.3330	854.29	35+81.84	16.16 RT

BY1 POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
102		795857.3460	1702987.6260	832.83	12+70.52	25.27 LT
7	BY1-7	795867.2260	1702851.8740	839.35	12+10.74	97.01 RT

BY2 POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
8	BY2-8	795007.7300	1703771.9500	829.28	24+59.40	174.21 LT
A4		795019.6551	1703469.2409	860.26	22+45.31	40.13 RT
9	BY2-9	794811.6988	1703381.8812	848.22	23+38.87	245.38 RT

BY3 POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
10	BY3-10	794592.3480	1704095.5220	848.22	29+22.79	201.20 LT
105	BL-5	794403.7239	1703999.7942	850.21	30+53.31	48.51 LT

BY4 POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
11	BY4-11	794223.8830	1704222.5520	856.24	32+42.44	237.43 LT
A5		794403.7239	1703999.7942	850.21	30+53.31	48.51 LT
12	BY4-12	794170.1720	1703886.0420	851.06	32+72.01	101.91 RT

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	25+39.60	-206.00	794970.3574	1703849.7088
L	27+61.00	-99.00	794710.0257	1703919.2343
L	29+63.00	-41.26	794491.1865	1703963.7186
L	26+09.00	-118.00	794856.5501	1703834.2374

PERMANENT DRAINAGE EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	30+93.00	112.00	794326.8530	1703853.7809
L	30+75.00	112.00	794342.3835	1703850.0013
L	30+75.00	48.66	794357.9137	1703911.4047
L	30+93.00	47.63	794341.5099	1703916.4566

-L-

TYPE	STATION	NORTH	EAST
POT	10+00.00	796098.9440	1702863.3340
PC	15+10.29	795625.4332	1703053.5632
PT	18+73.70	795319.9410	1703246.6742
PC	25+77.31	794802.9224	1703723.9168
PT	34+75.28	793972.6811	1703977.4954
POT	35+96.17	793853.2015	1703959.1253

NOTES

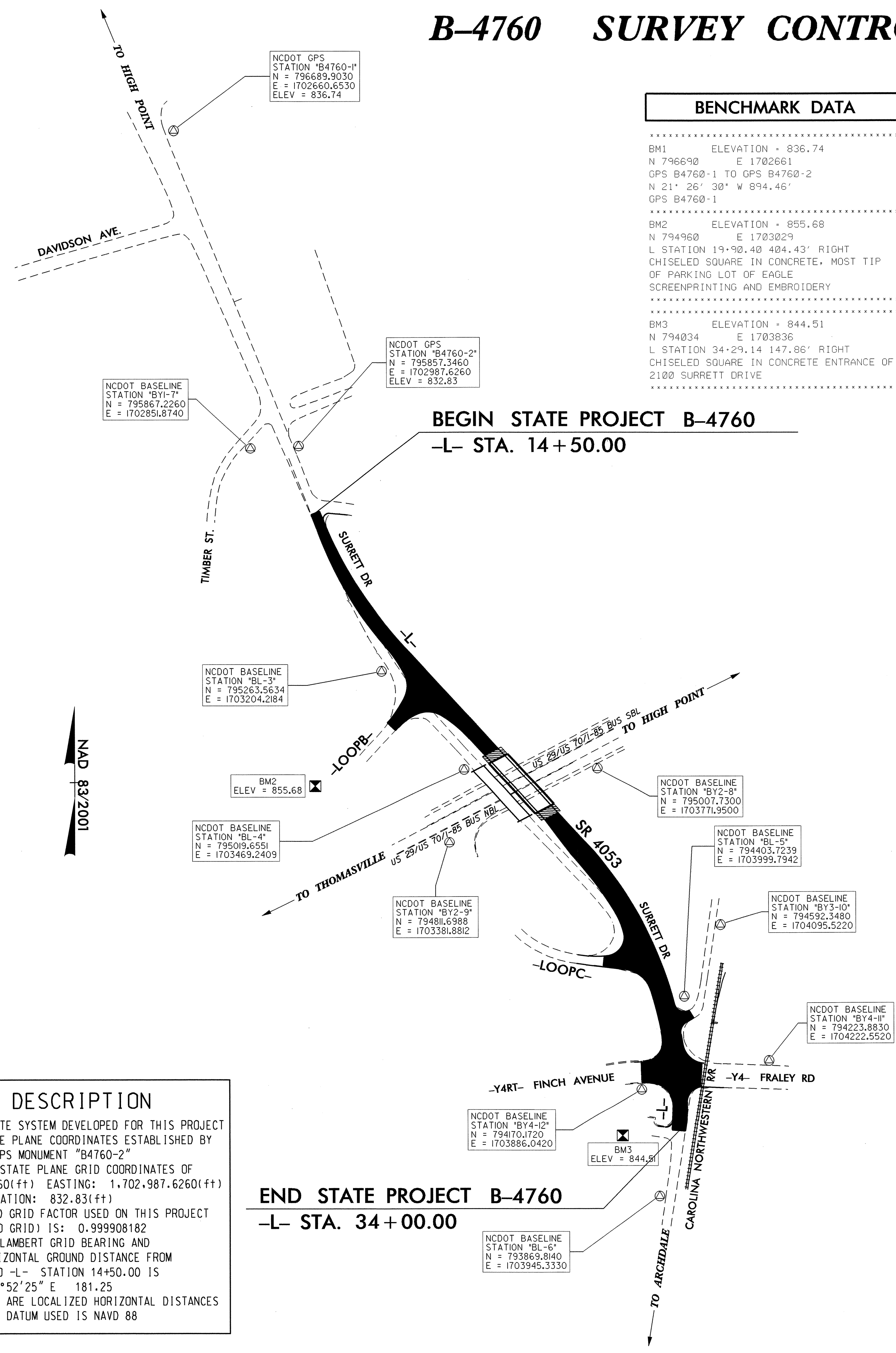
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[HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project/)
 THE FILES TO BE FOUND ARE AS FOLLOWS:
 b4760_ls_control.txt
 SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED 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.

NOTE: DRAWING NOT TO SCALE

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT GPS MONUMENT "B4760-2"
 WITH NAD 83/2001 STATE PLANE GRID COORDINATES OF
 NORTHING: 795,857.3460(ft) EASTING: 1,702,987.6260(ft)
 ELEVATION: 832.83(ft)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999908182
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4760-2" TO -L- STATION 14+50.00 IS
 S 13°52'25" E 181.25
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
 VERTICAL DATUM USED IS NAVD 88

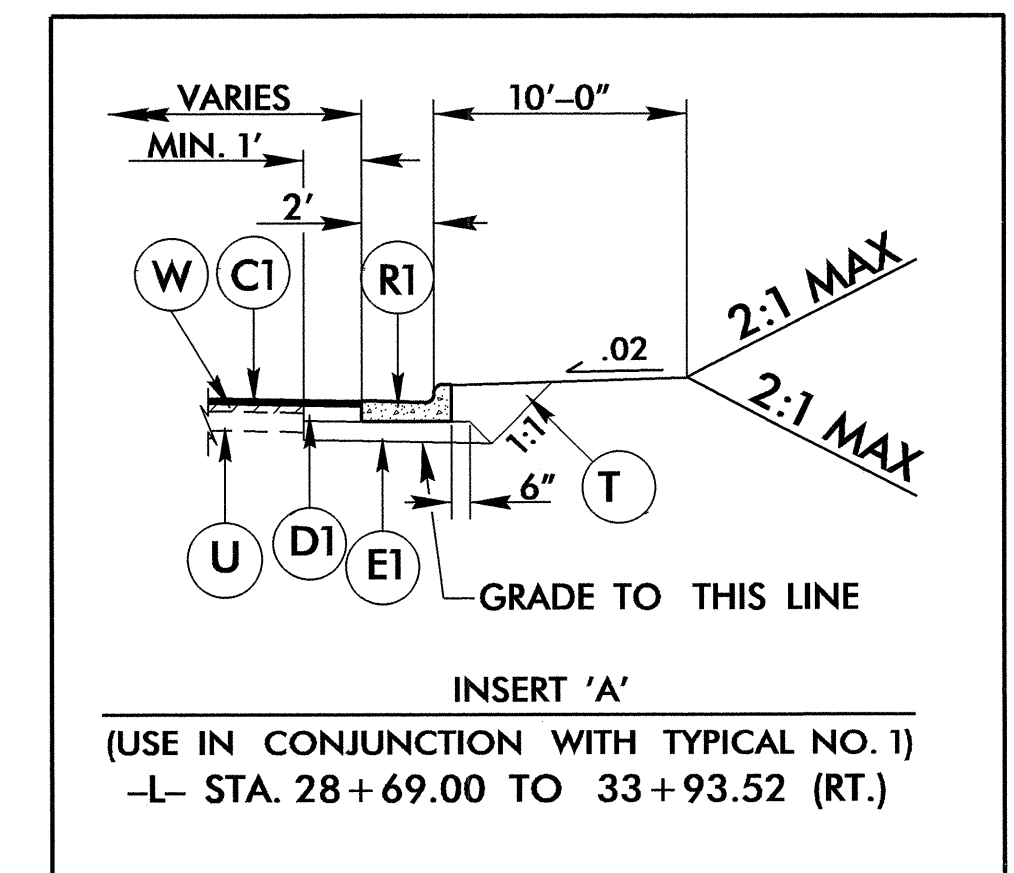
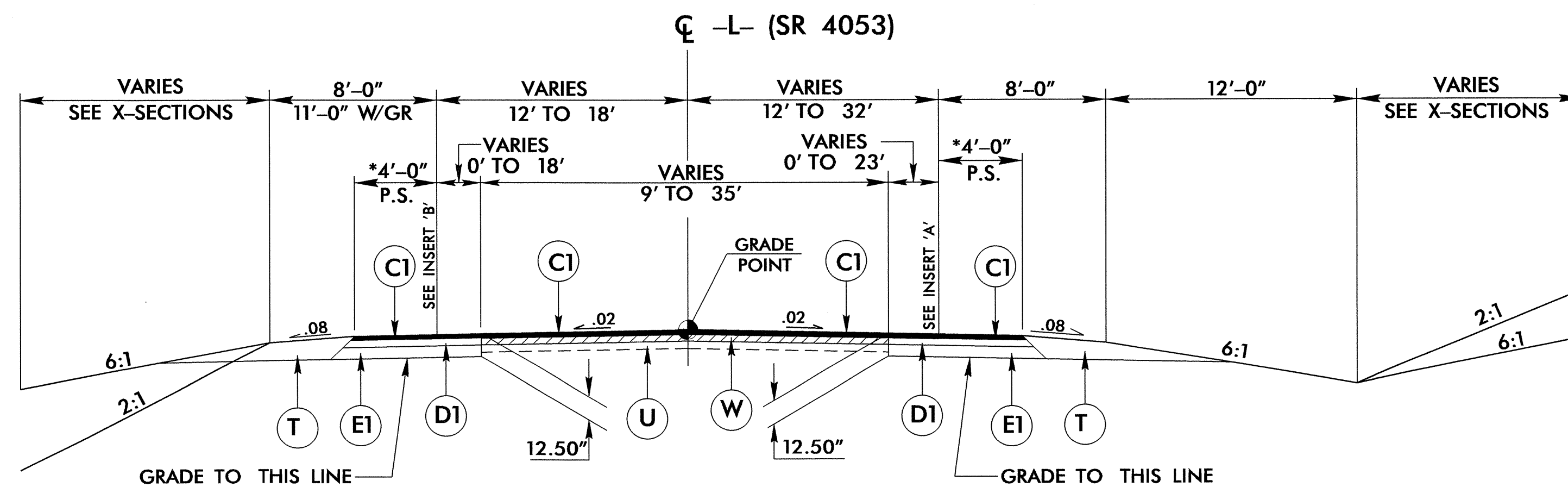
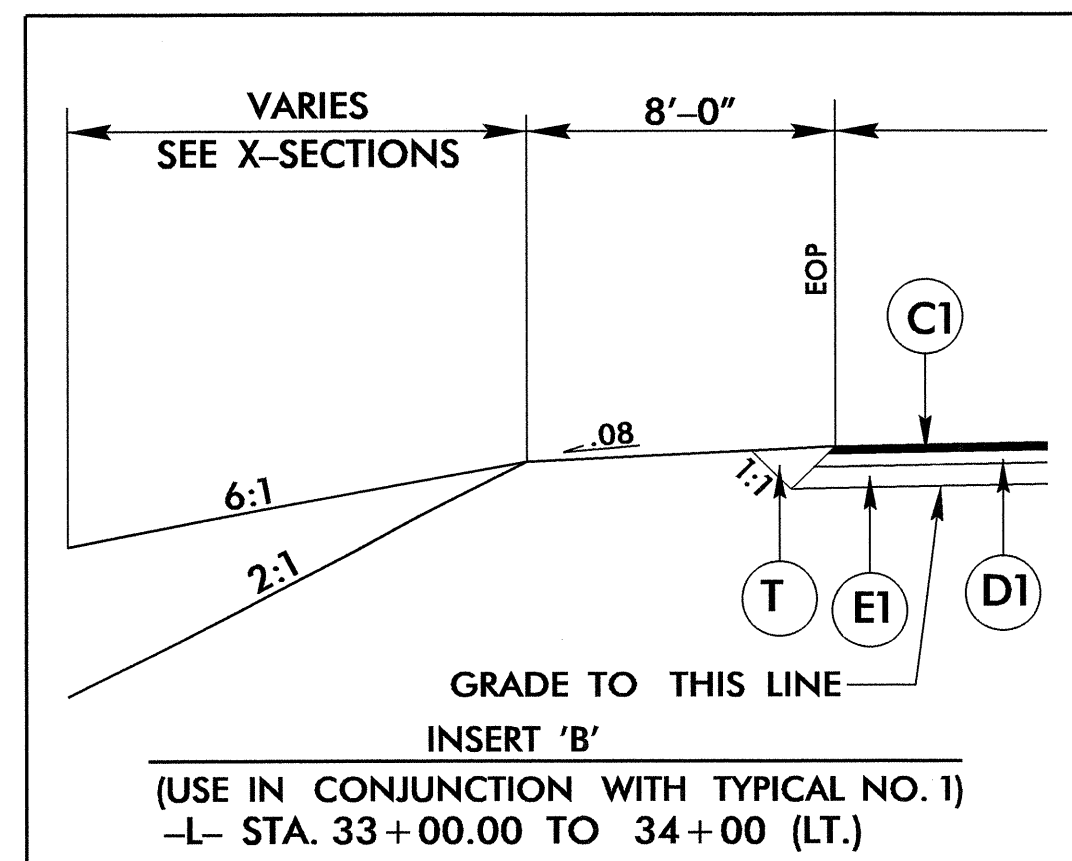
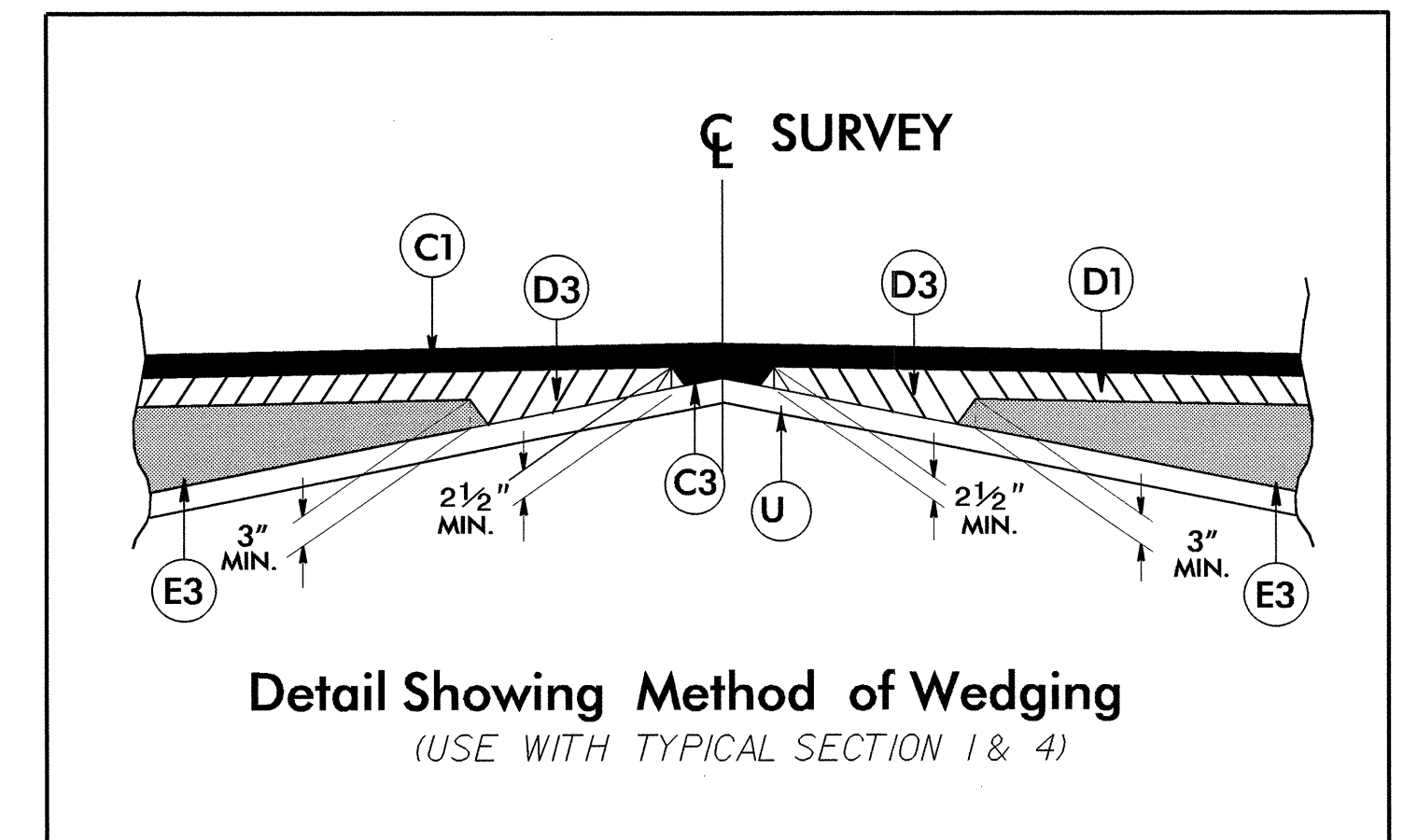
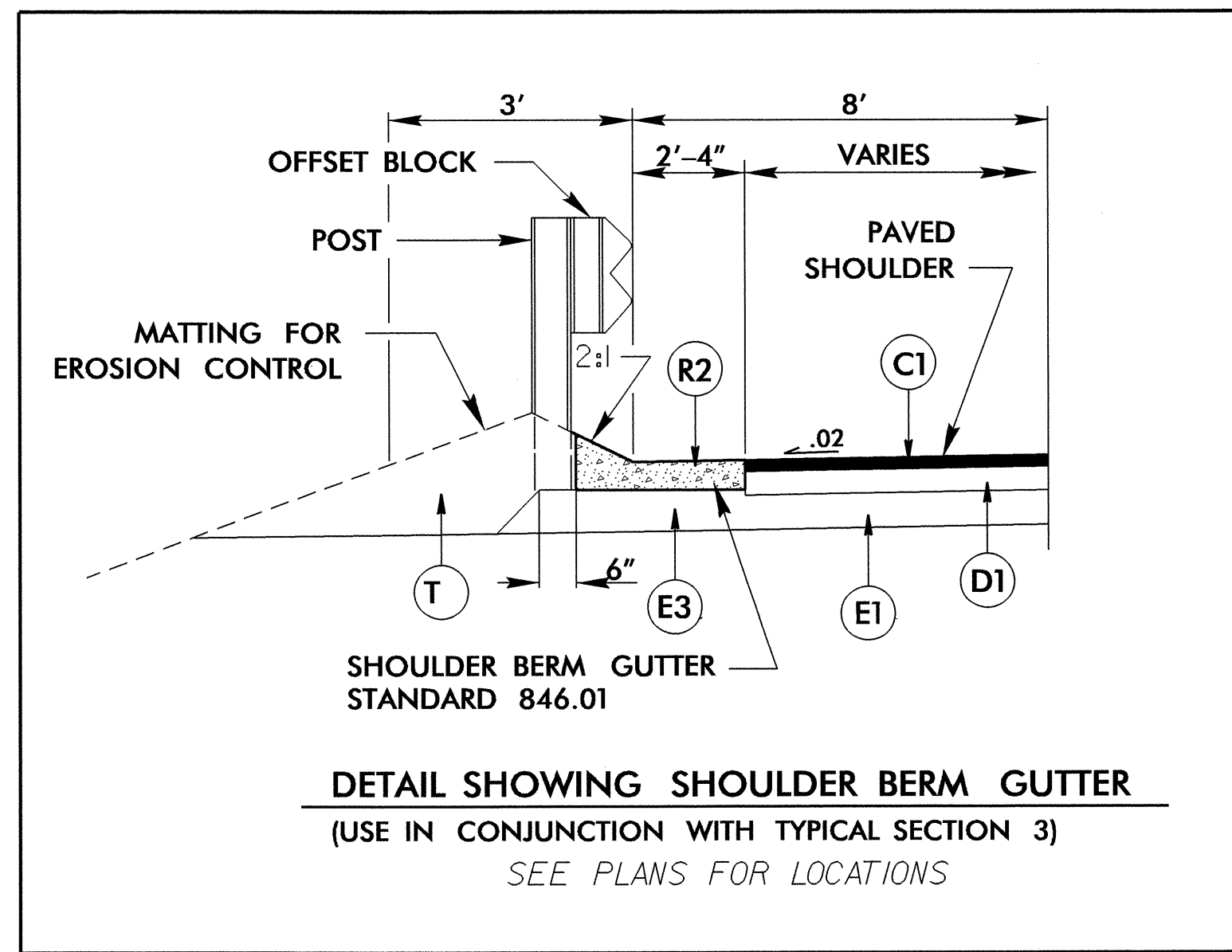
END STATE PROJECT B-4760
 -L- STA. 34 + 00.00



20-APR-2012 13:40 b4760_ls_1c.dgn

FINAL PAVEMENT SCHEDULE	
C1	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.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5C, 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 1 1/2" 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. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
D3	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 2 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 5 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
E2	PROP. APPROX. 11" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 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 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
R1	2'-6" CONCRETE CURB AND GUTTER.
R2	SHOULDER BERM GUTTER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL).

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

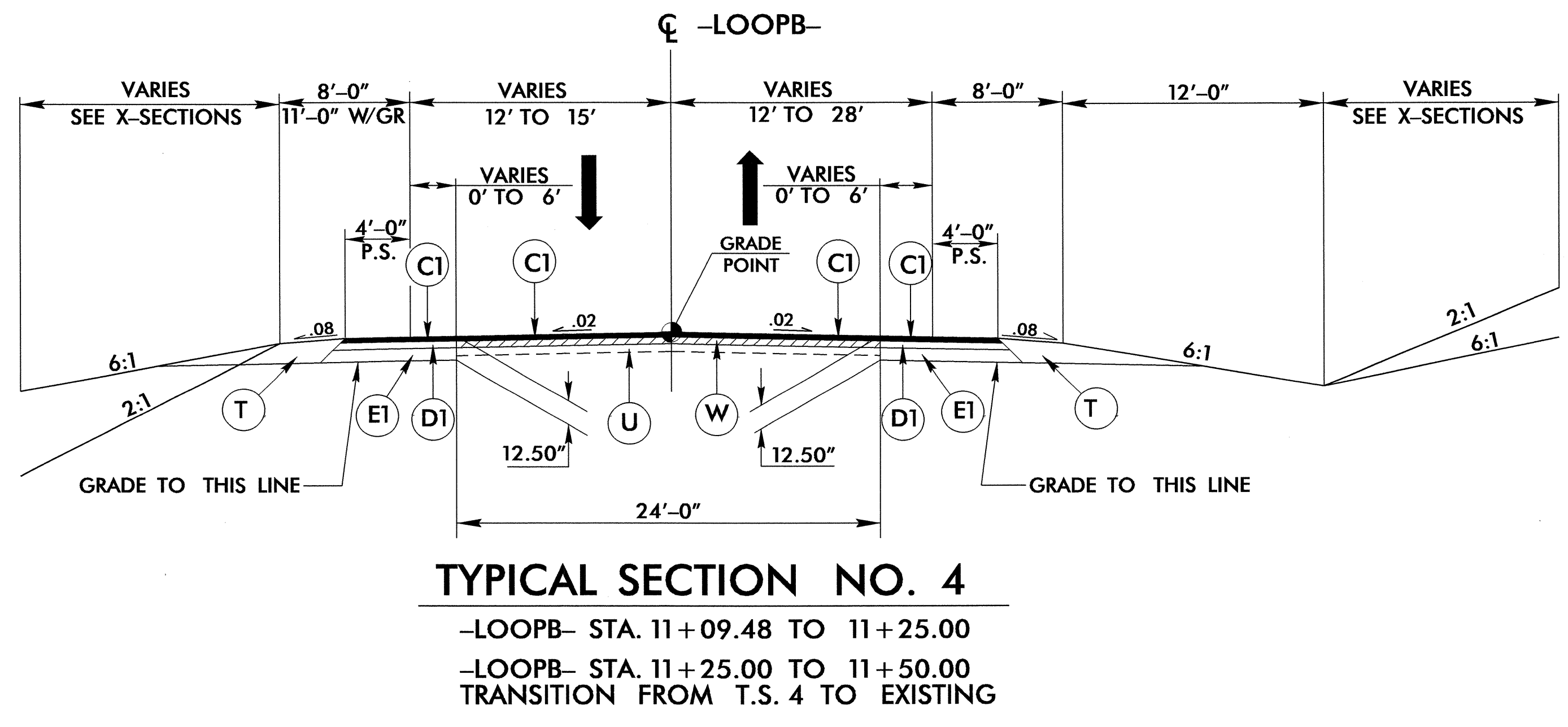
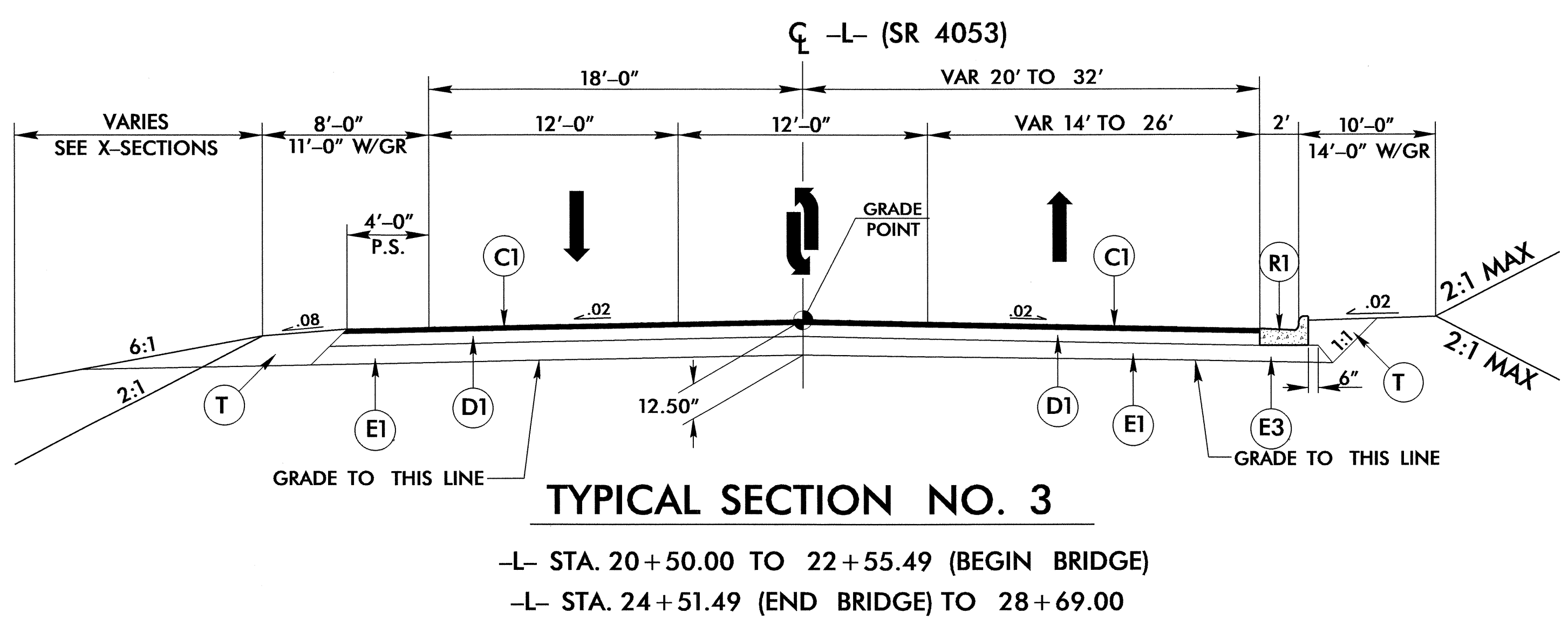
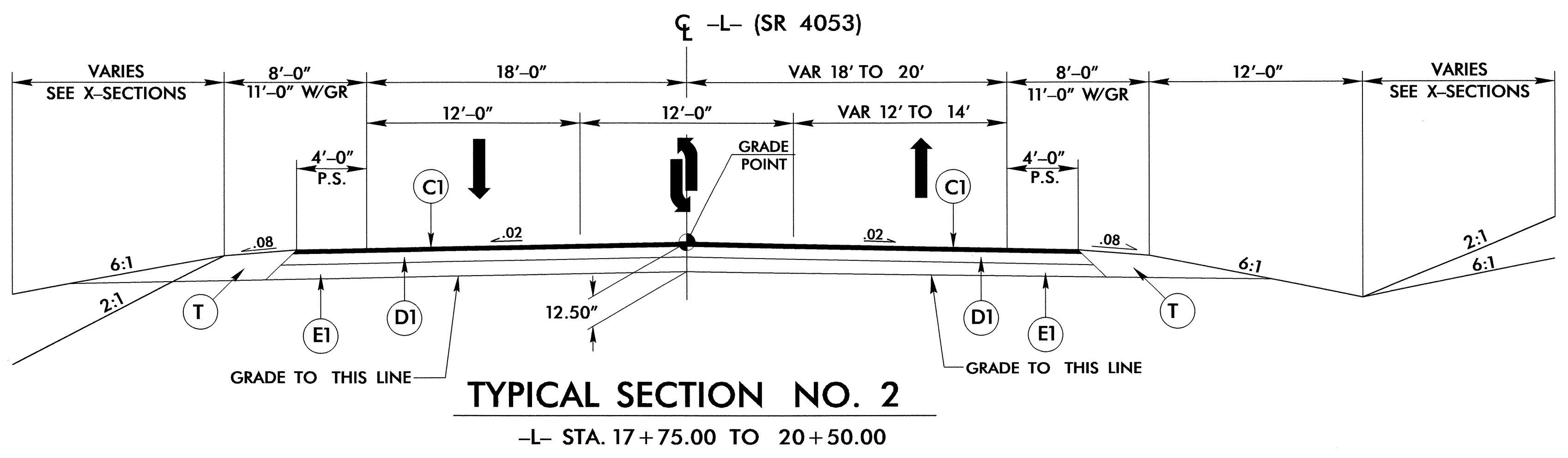


TYPICAL SECTION NO. 1

-L- STA. 14+50.00 TO 17+75.00
-L- STA. 28+69.00 TO 33+31.35

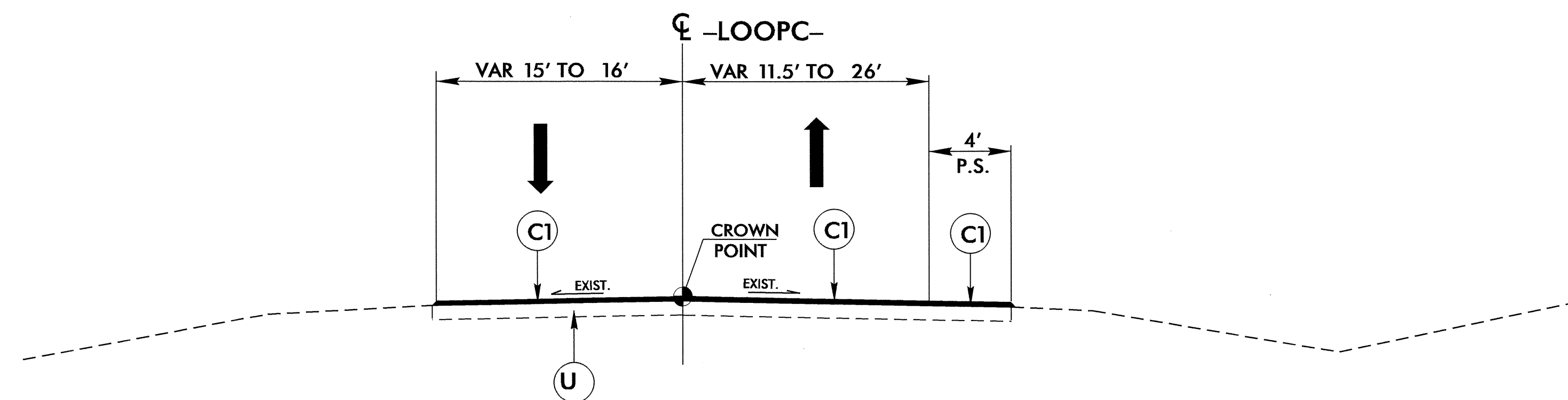
-L- STA. 33+31.35 TO 34+00, TRANSITION
FROM T.S. 1 TO EXISTING

PROJECT REFERENCE NO. B-4760		SHEET NO. 2-A	
ROADWAY DESIGN ENGINEER GREGORY E. BREYER SEAL 18903 4/23/12		PAVEMENT DESIGN ENGINEER CLAYTON S. MORRISON SEAL 22898 4/23/12	
FINAL PAVEMENT DESIGN			
C1	3.0" S9.5B		
C3	VAR. S9.5B		
D1	4.0" I19.0B		
D3	VAR. I19.0B		
E1	5.5" B25.0B		
E3	VAR. B25.0B		
R1	2'-6" CONC C&G		
T	EARTH MATERIAL		
U	EXIST PAVEMENT		
W	WEDGING		



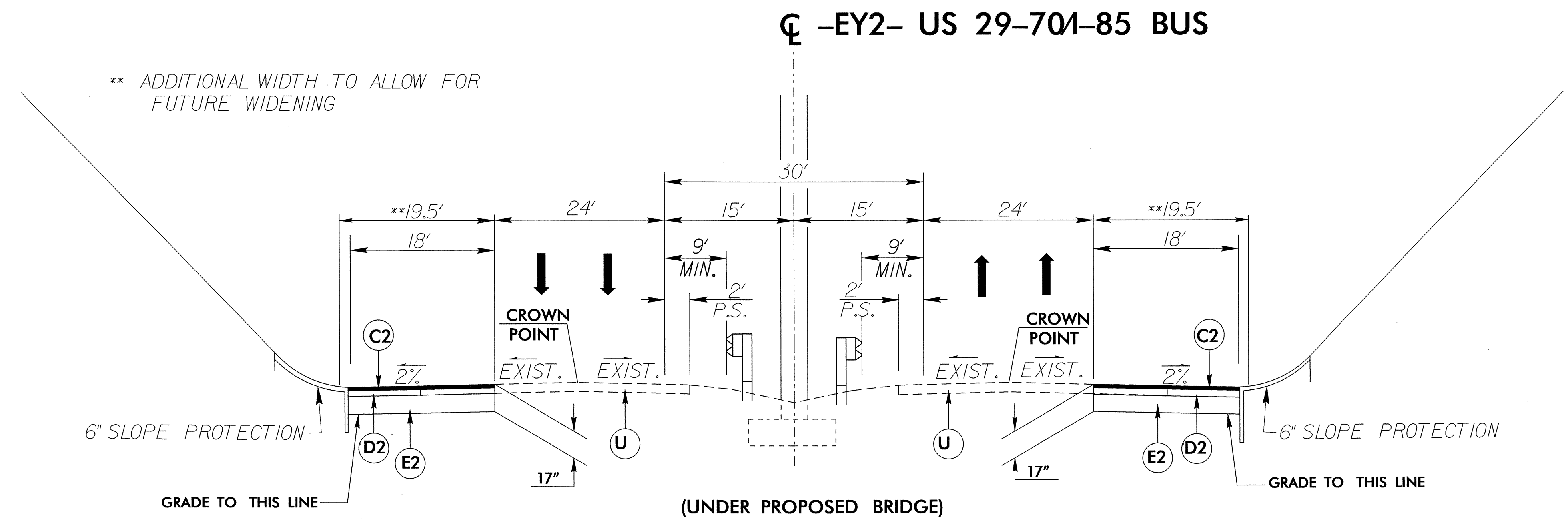
6/2/99

PROJECT REFERENCE NO. B-4760	SHEET NO. 2-B
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 18903 GREGORY E. BIRN	PAVEMENT DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 22886 CLYDE S. MORRISON
4/23/12	
FINAL PAVEMENT DESIGN	
C1	3.0" S9.5B
C2	3.0" S9.5C
C3	VAR. S9.5B
D1	4.0" I19.0B
D2	3.0" I19.0C
D3	VAR. I19.0B
E1	5.5" B25.0B
E2	11" B25.0C
E3	VAR. B25.0B
R1	2'-6" CONC C&G
T	EARTH MATERIAL
U	EXIST PAVEMENT
W	WEDGING



TYPICAL SECTION NO. 5

-LOOPC- STA. 11+30.00 TO 11+50.00
 -LOOPC- STA. 11+50.00 TO 12+00.00,
 TRANSITION FROM T.S. 4 TO EXISTING

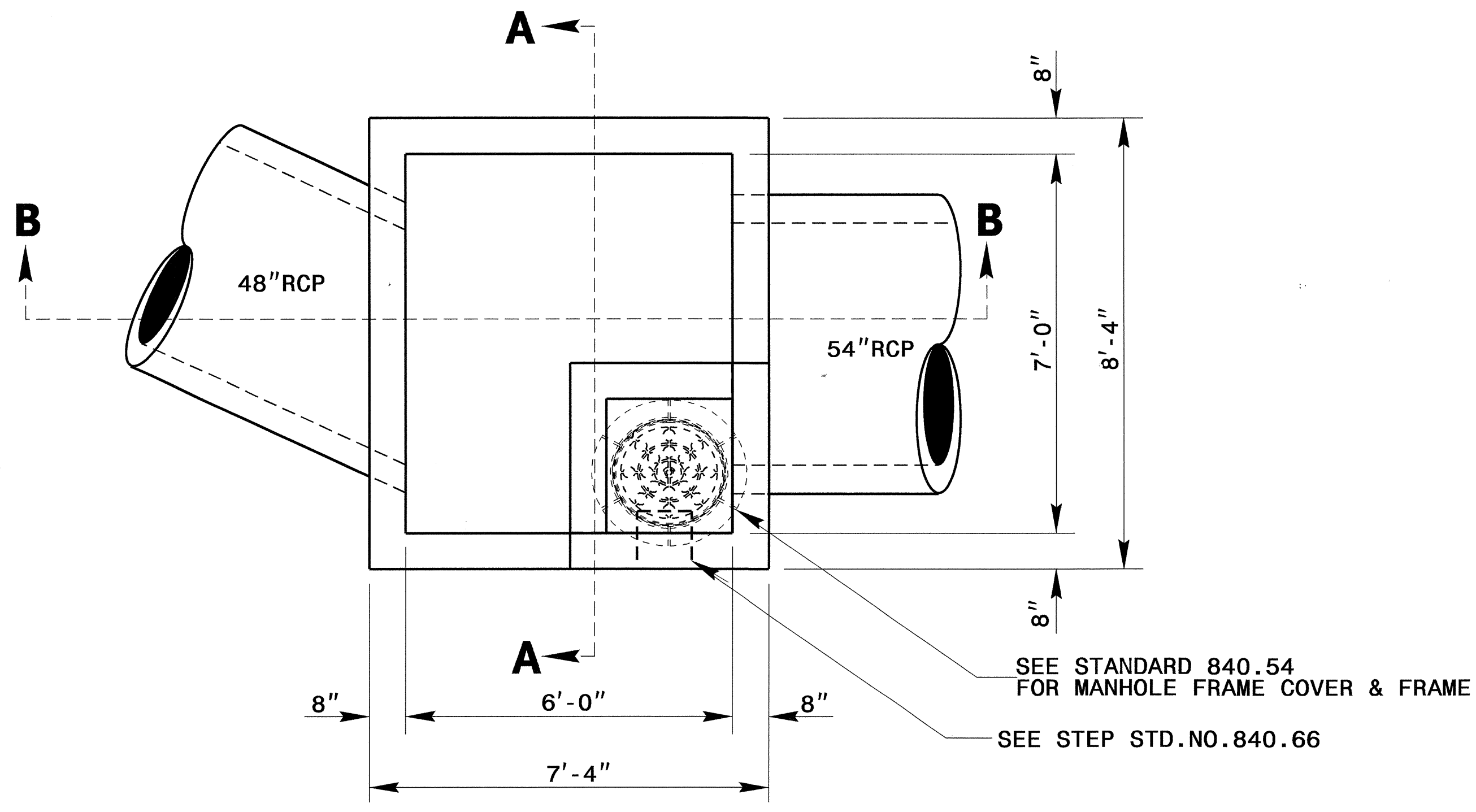


TYPICAL SECTION NO. 6

-EY2- RT STA. 11+23.12 TO 11+48.12
 TRANSITION FROM EXISTING TO T.S. 6
 -EY2- RT STA. 11+48.12 TO 12+49.39
 -EY2- RT STA. 12+49.39 TO 12+74.39
 TRANSITION FROM T.S. 6 TO EXISTING.
 -EY2- LT STA. 10+92.36 TO 11+17.36
 TRANSITION FROM EXISTING TO T.S. 6
 -EY2- LT STA. 11+17.36 TO 12+18.63
 -EY2- LT STA. 12+18.63 TO 12+43.63
 TRANSITION FROM T.S. 6 TO EXISTING.

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 \$\$\$\$USERNAME\$\$\$\$

GENERAL NOTES:
 USE CLASS "AA" 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.

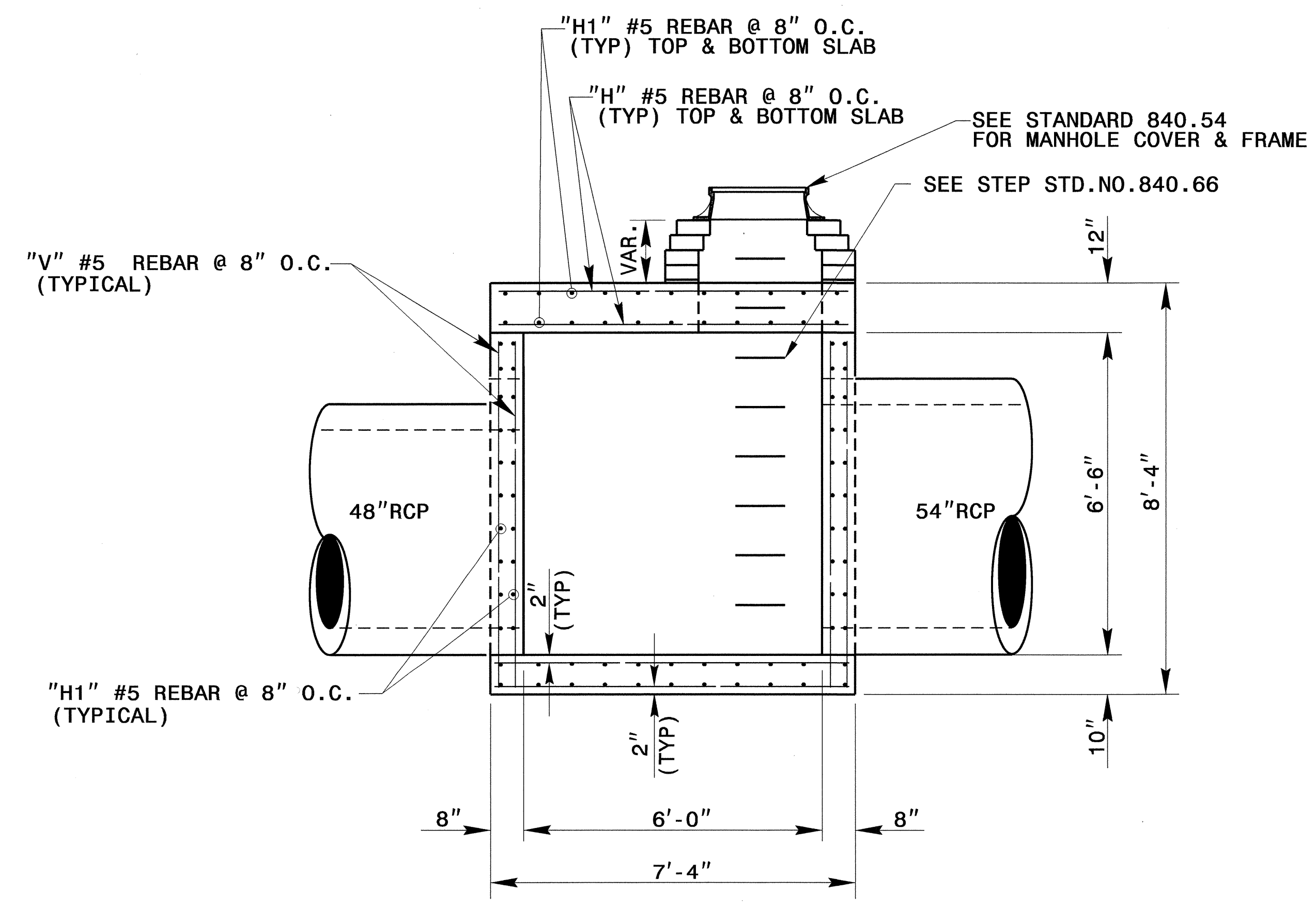


PLAN VIEW

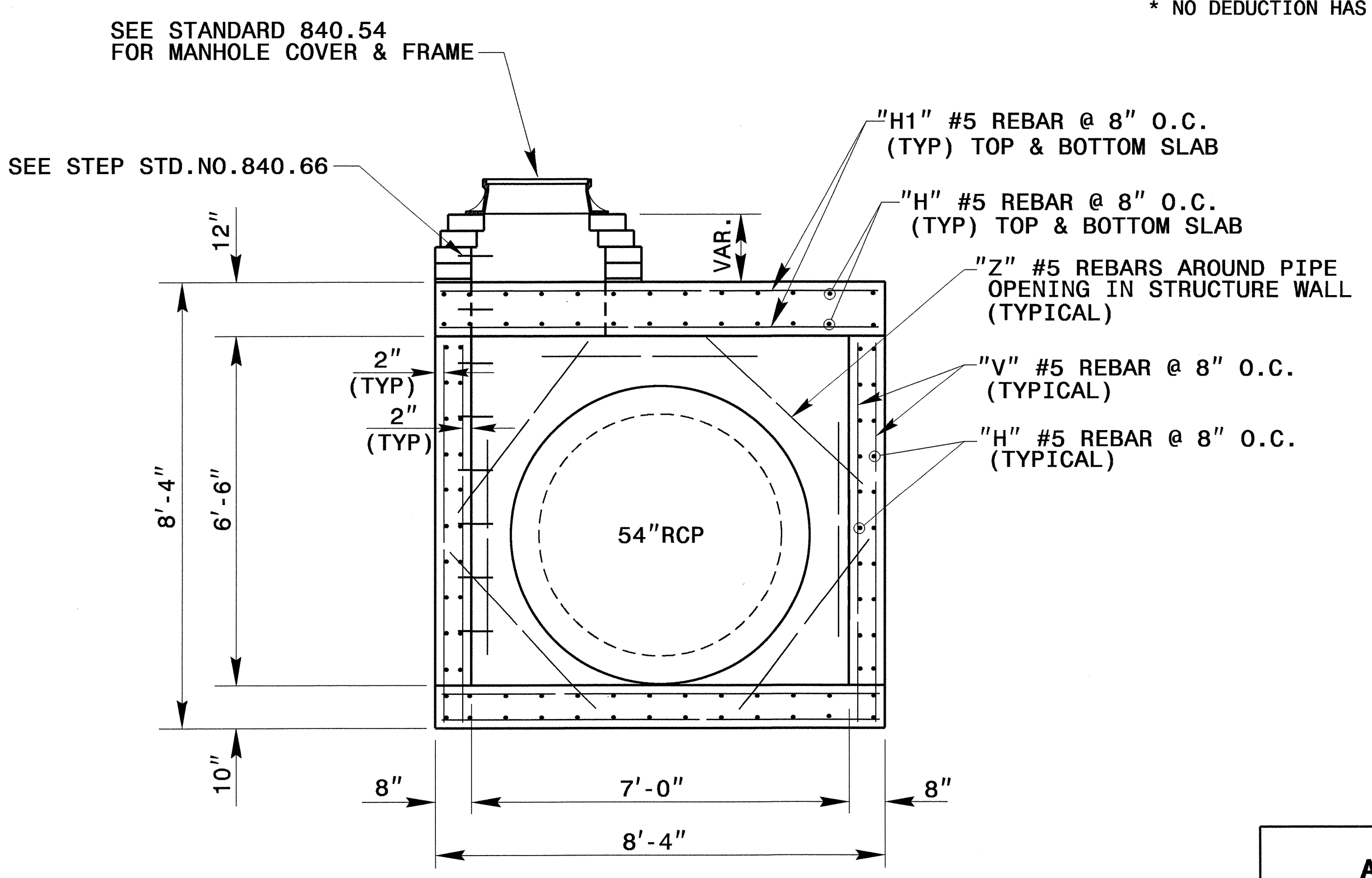
BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	WEIGHT
H	92	#5	7'-0"	672
H1	84	#5	8'-0"	701
V	84	#5	7'-0"	613
Z	14	#5	4'-0"	58
TOTAL REINF. STEEL (LBS.)				2044
TOTAL CL. "AA" CONG. (CU.YDS.)				11.6

* 0.60 CU. YD. DEDUCTION FOR 54" RC PIPE
 * 0.48 CU. YD. DEDUCTION FOR 48" RC PIPE
 * 0.30 CU. YD. PER FOOT OF RISER HEIGHT
 * NO DEDUCTION HAS BEEN MADE FOR PIPES



SECTION B-B



SECTION A-A

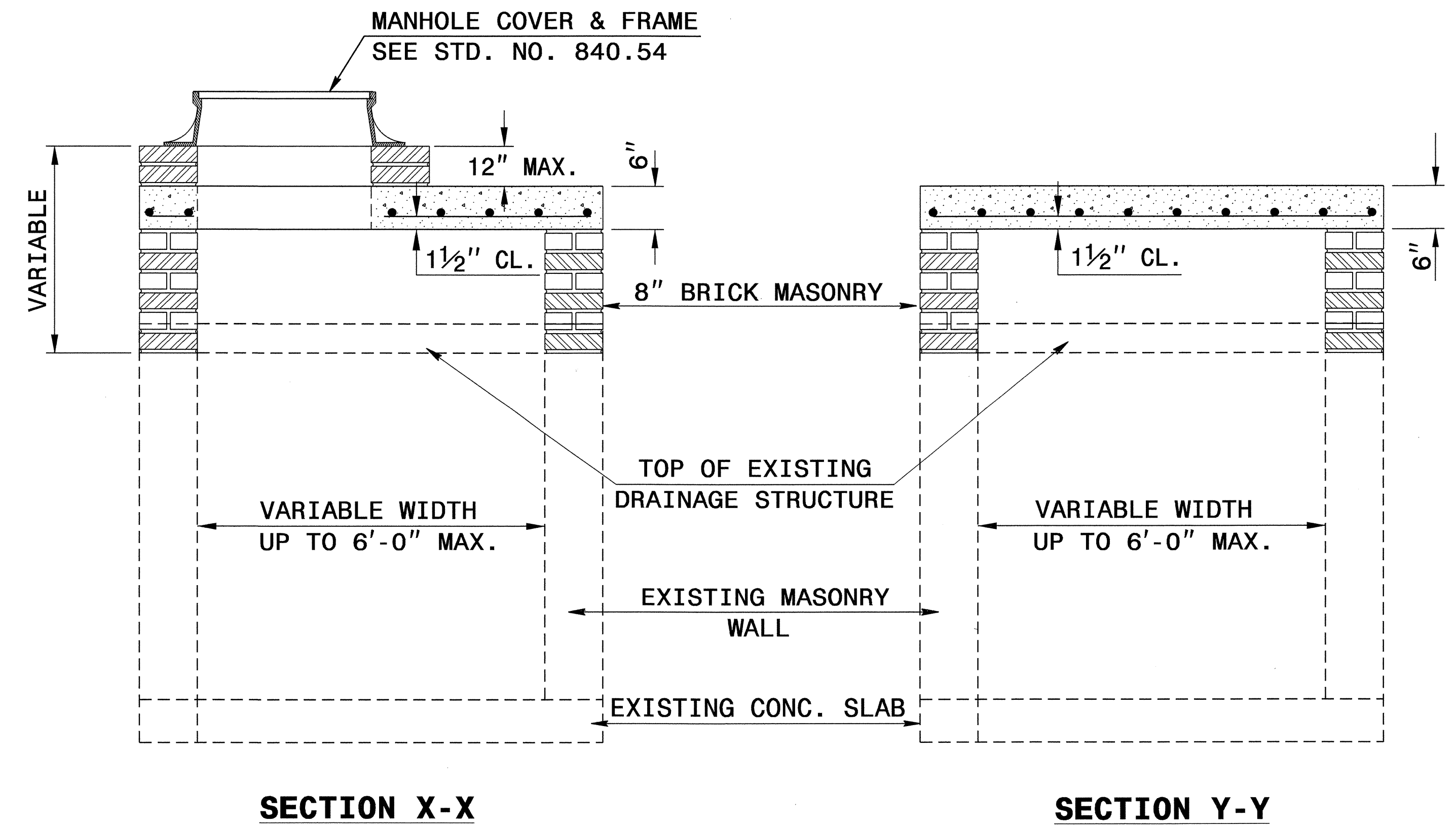
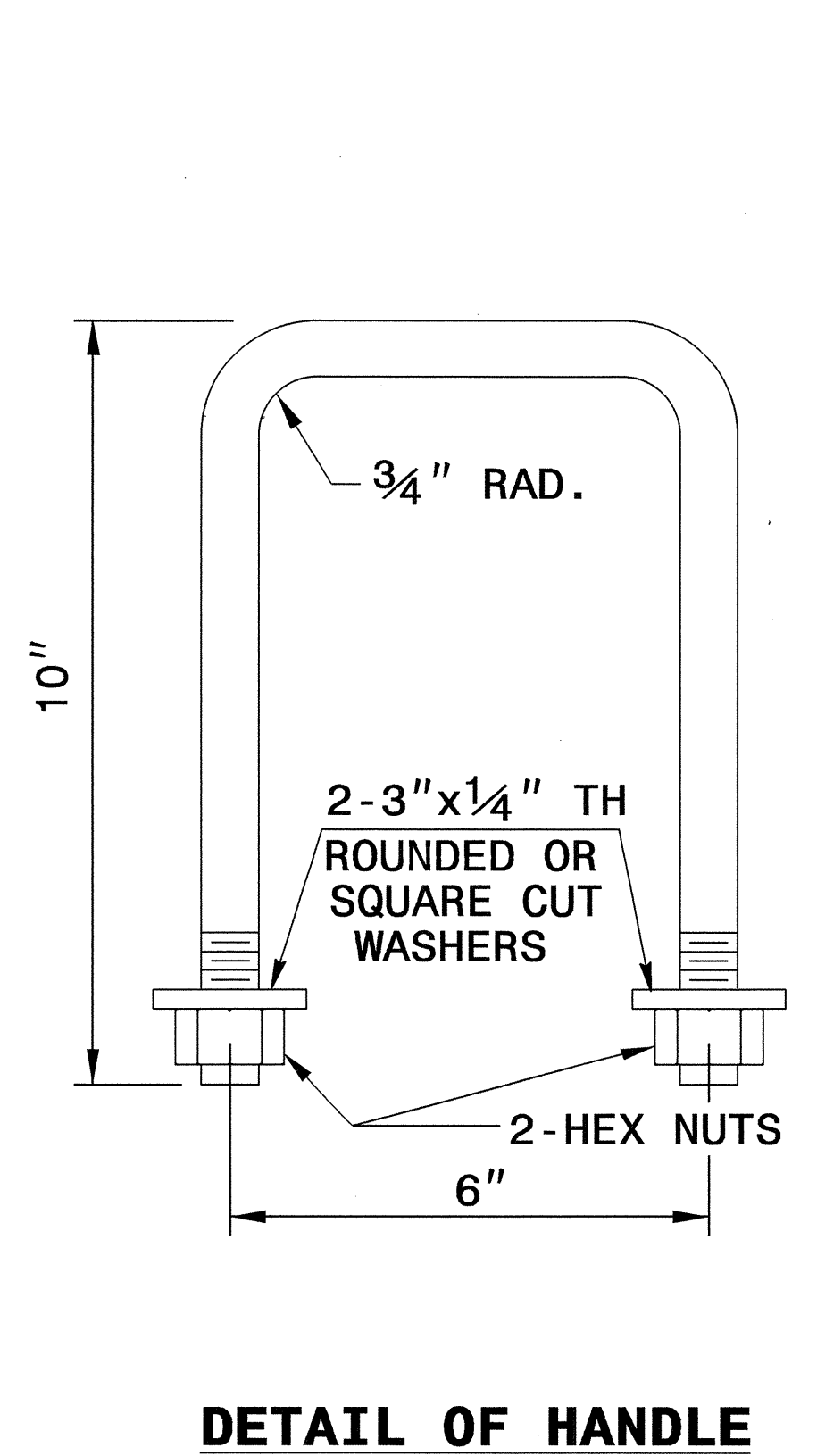
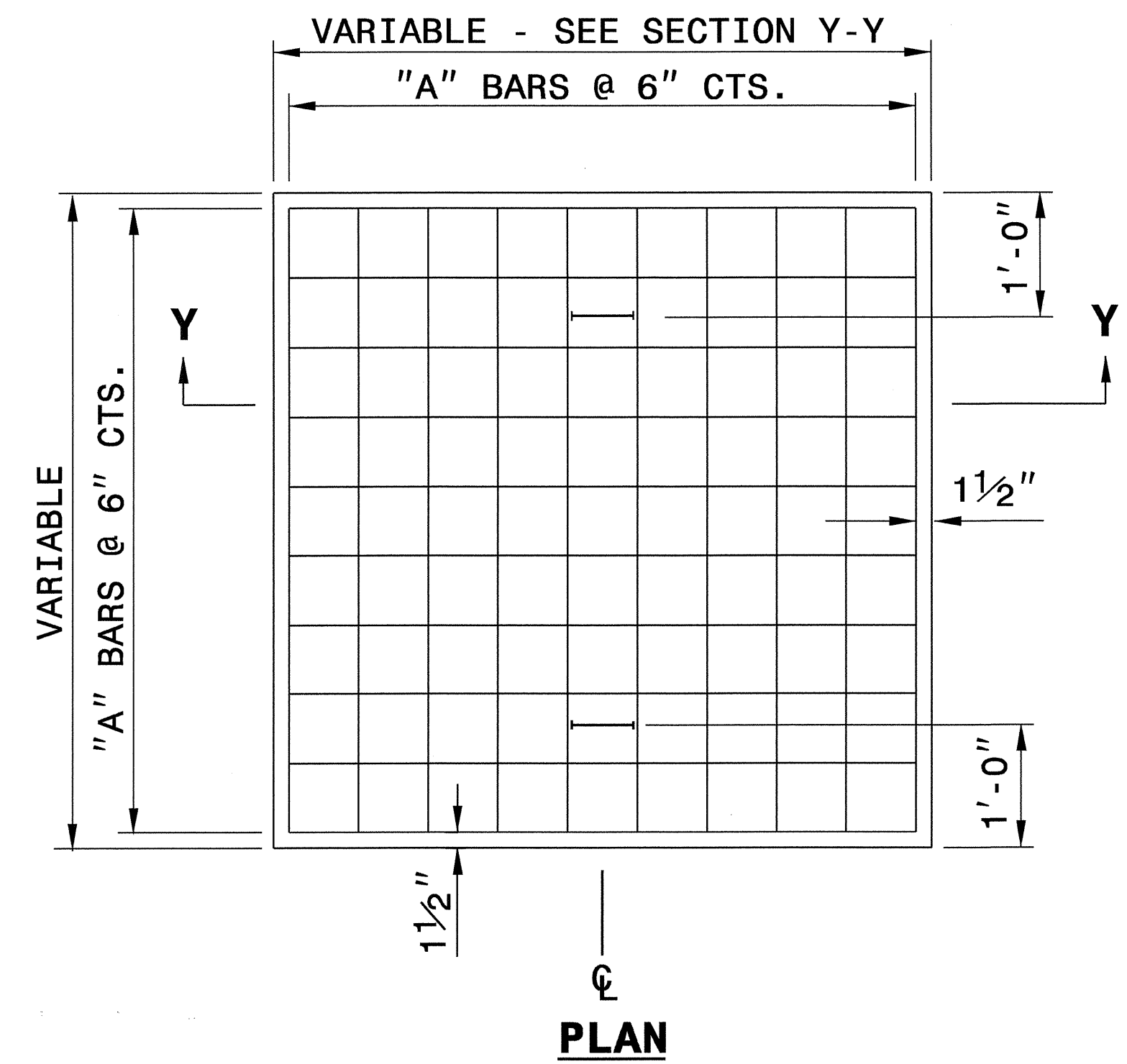
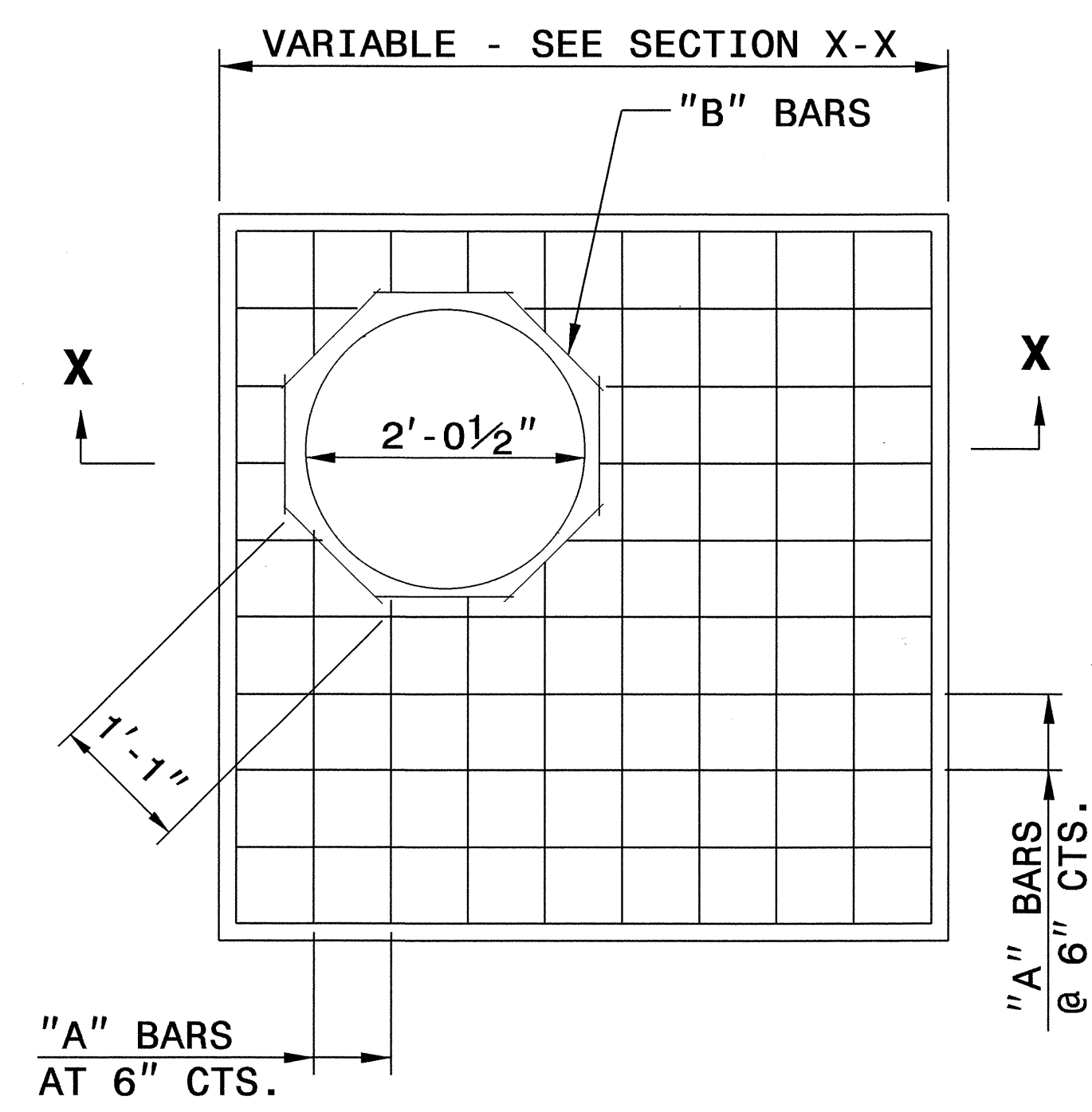
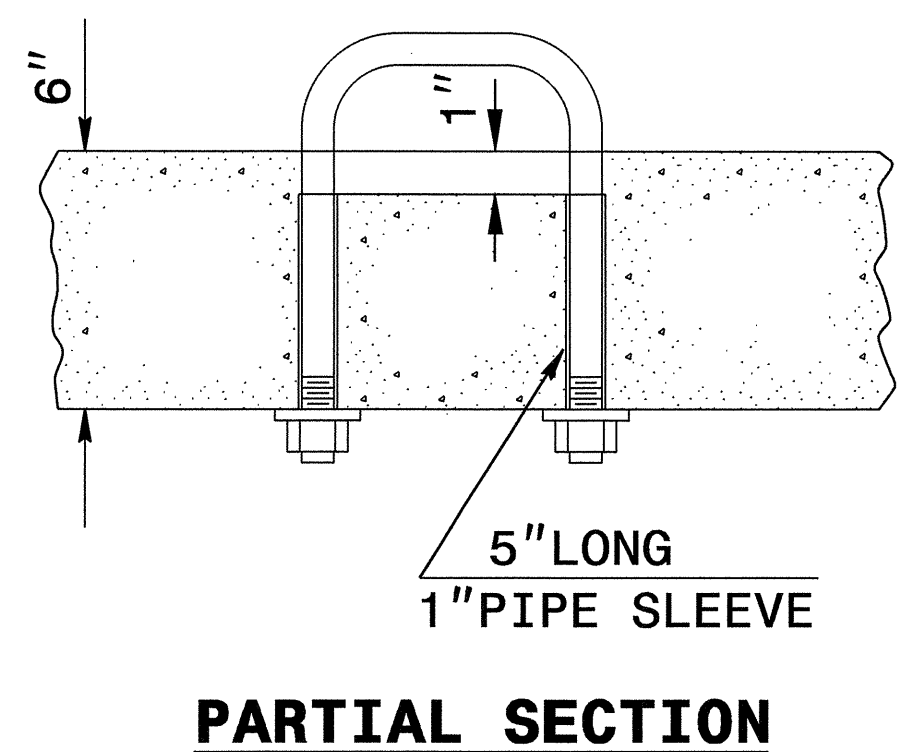


CONTRACT STANDARDS AND DEVELOPMENT UNIT
 Office 919-250-4128 FAX 919-250-4119

TRAFFIC BEARING JUNCTION BOX

ORIGINAL BY: nbritt DATE: 04/22/08
 MODIFIED BY: ispell DATE: 02/28/11
 CHECKED BY: [Signature] DATE: 3/6/12
 FILE SPEC.: d:\mail\nbritt/english/hydro/66 tbjb.dgn

06-MAR-2012 09:08 d:\projects\special\details\mbrtt\english\hydro\66 tbjb.dgn



GENERAL NOTES:

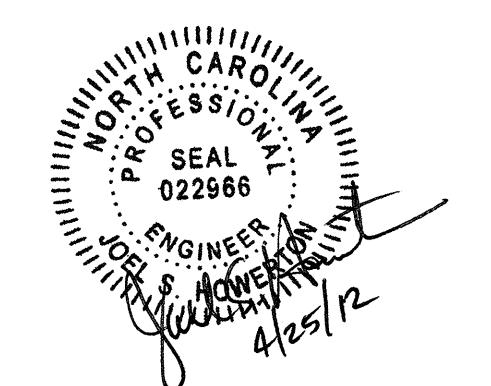
CONSTRUCT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.

THE DIMENSIONS FOR THE EXISTING BOXES ARE APPROXIMATE AND MAY VARY SLIGHTLY.

DETAIL INTENDED FOR NON-TRAFFIC BEARING DRAINAGE STRUCTURES.

BILL OF MATERIALS				
REINFORCING STEEL				
CODE	SIZE	QTY.	LENGTH	REINF. STEEL LBS.
A	#4	20	4'-6"	60.12
B	#4	8	1'-1"	5.79
TOTAL				65.91 *
MASONRY				CU YDS
TOP SLAB CONCRETE CLASS "B"				.4326 *
BRICK MASONRY PER FT HT (MIN)				.4111

*** NOTE:**
 QUANTITIES BASED ON 3'-6" X 3'-6" DRAINAGE STRUCTURE. ADJUST QUANTITIES FOR LARGER STRUCTURES AND MANHOLE CONSTRUCTION.

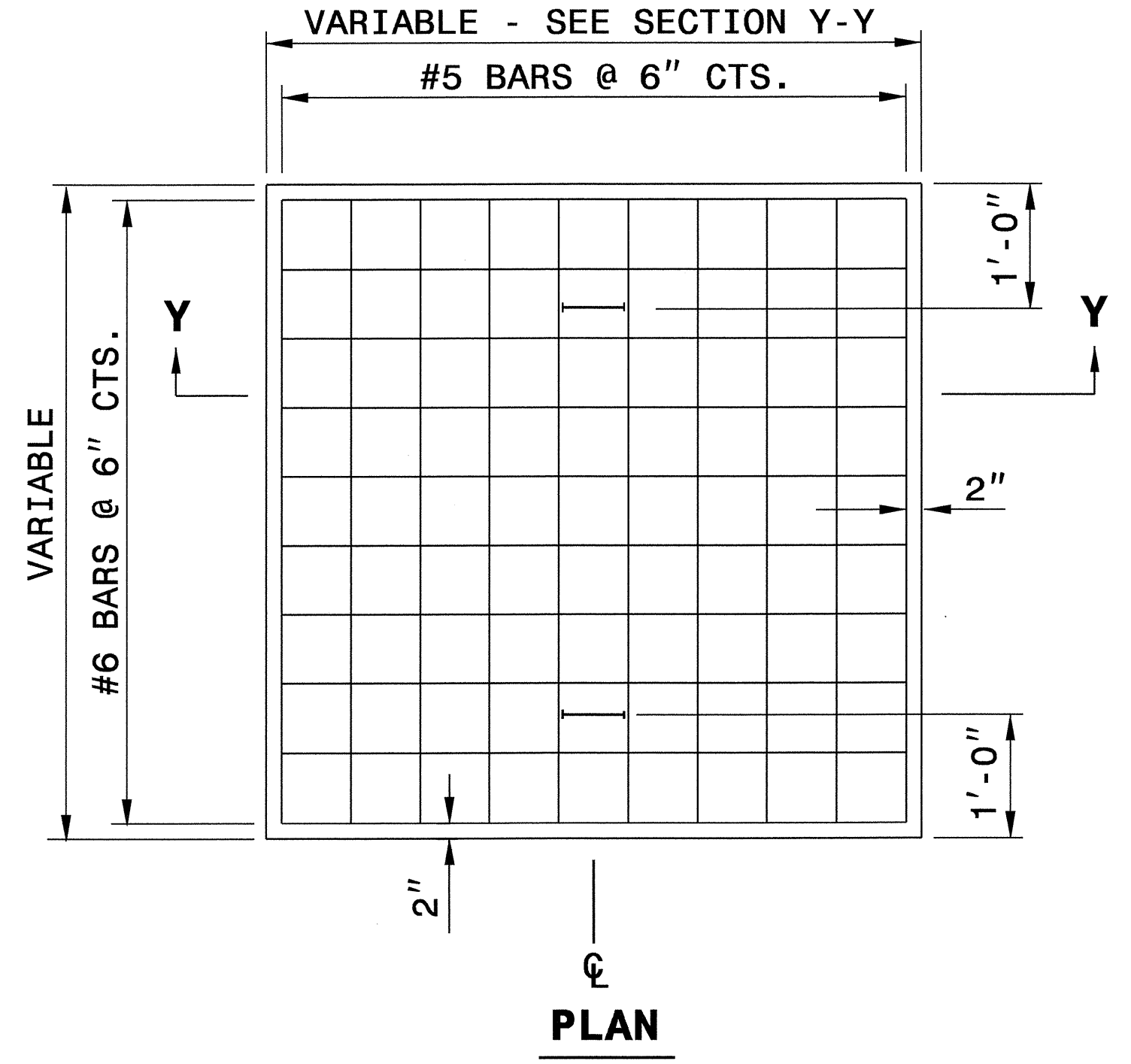
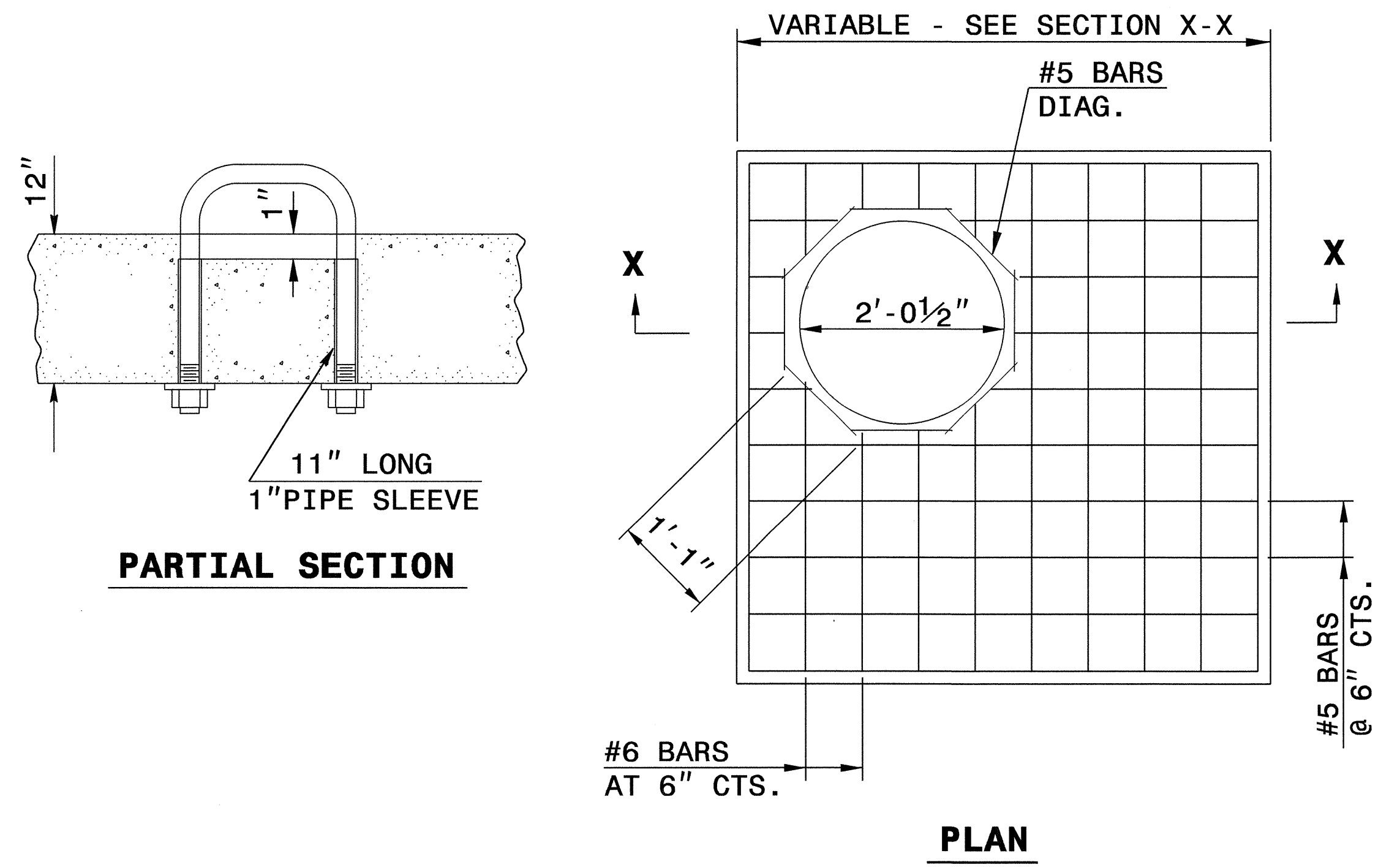


CONTRACT STANDARDS AND DEVELOPMENT UNIT
 Office 919-707-6950 FAX 919-250-4119

DETAIL TO CONVERT EXISTING DROP INLET OR CATCH BASIN TO JUNCTION BOX (MANHOLE OPTIONAL)

ORIGINAL BY: T.S.S. DATE: NOV. 1997
 MODIFIED BY: T.S.S. DATE: FEB. 2000
 CHECKED BY: *[Signature]* DATE: 2/8/12
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 \$\$\$SUBSERIAL\$\$\$



GENERAL NOTES:

CONSTRUCT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.

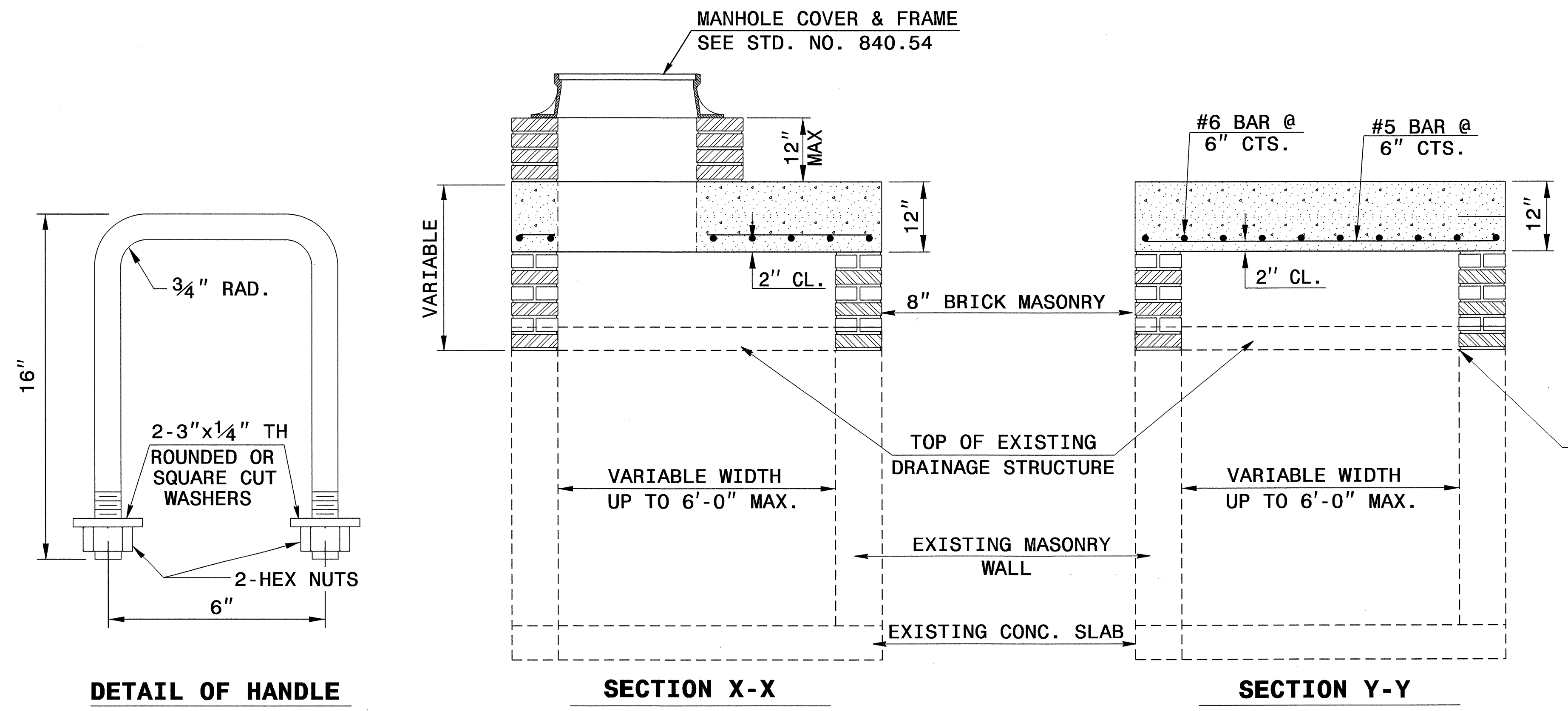
FIELD VERIFY THE DIMENSIONS FOR THE EXISTING BOXES.

BILL OF MATERIALS			
MASONRY			
TOP SLAB CONCRETE CLASS "A"		.037YDS ³	PER FT ²
BRICK MASONRY		.025YDS ³	PER FT ²
REINFORCING STEEL		7.64LBS	PER FT ²
MANHOLE OPTION QUANTITIES			
SIZE	QTY.	LENGTH	REINF. STEEL LBS.
#5 DIAG.	8	1'-1"	9.04

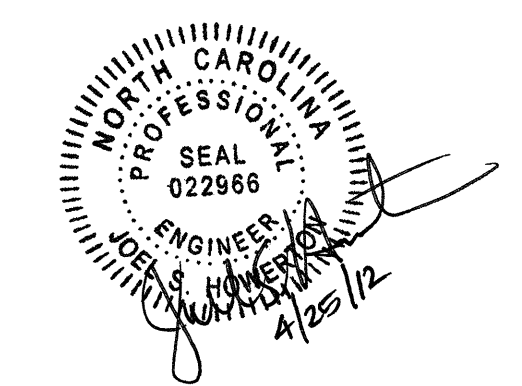
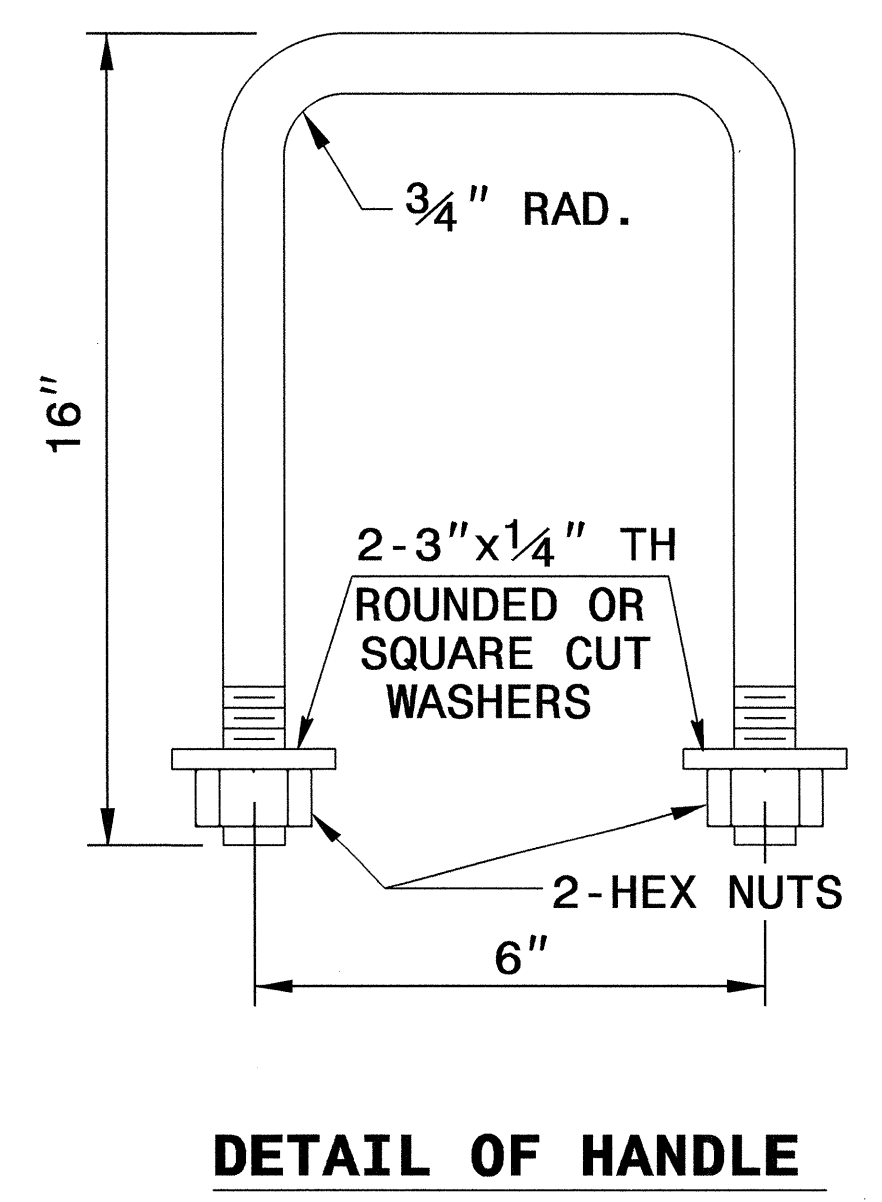
NOTE:

CONCRETE AND REINFORCING STEEL QUANTITIES BASED ON SQUARE FOOT AREA OF THE PROPOSED TOP SLAB FOR THE EXISTING DRAINAGE STRUCTURE.

BRICK MASONRY QUANTITY IS BASED ON THE TOTAL SQUARE FOOTAGE OF EXTERIOR WALL SURFACE AREA TO BE CONSTRUCTED.



ALIGN PROPOSED BRICK VERTICAL
ADJUSTMENT TO INNER FACE OF WALL



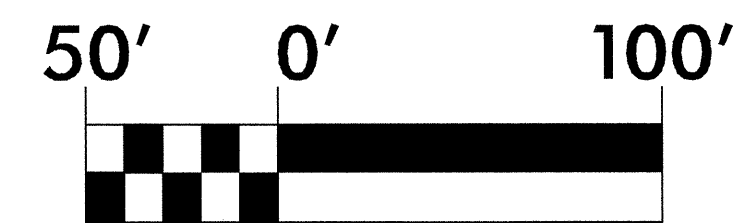
**CONTRACT STANDARDS
AND DEVELOPMENT UNIT**
Office 919-707-6950 FAX 919-250-4119

**DETAIL TO CONVERT EXISTING
DROP INLET OR CATCH BASIN
TO TRAFFIC BEARING JUNCTION BOX
(MANHOLE OPTIONAL)**

ORIGINAL BY: T.S.S. DATE: FEB. 2000
 MODIFIED BY: E.E.W. DATE: NOV. 2001
 CHECKED BY: *Paul S. Howard* DATE: 2/13/12
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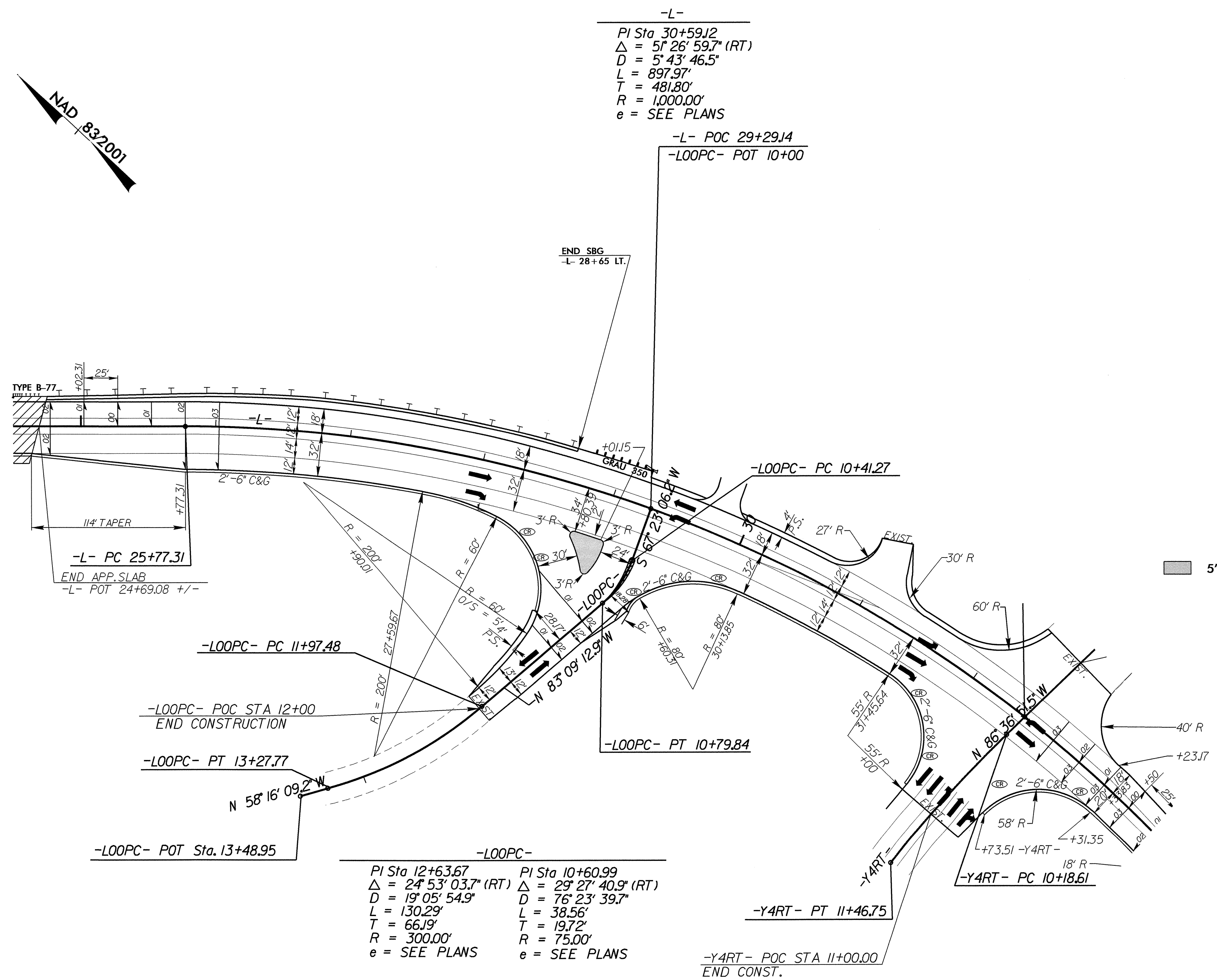
8/17/99



PROJECT REFERENCE NO. B-4760	SHEET NO. 2-G
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

FOR PLANS SEE SHEET 5

-LOOPC- INTERSECTION DETAIL



REVISIONS

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GEOTECHNICAL ENGINEER ENGINEER

Scott A. Hadden 11/19/11
SIGNATURE DATE

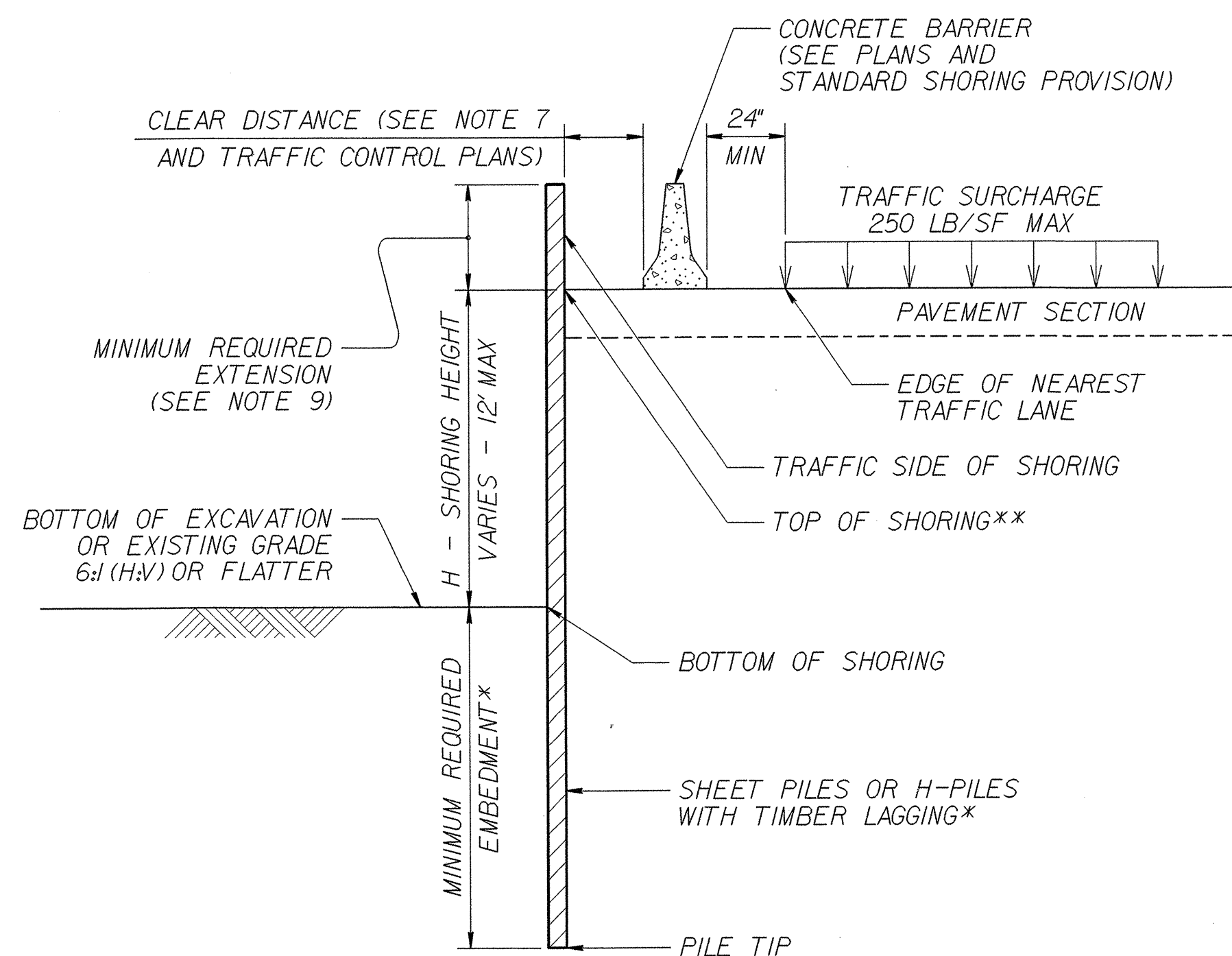
GROUNDWATER CONDITION (SEE NOTE 6)	H SHORING HEIGHT (FT)	SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT					SURCHARGE CASE WITH TRAFFIC IMPACT				
		SHEET PILES		H-PILES WITH TIMBER LAGGING			SHEET PILES		H-PILES WITH TIMBER LAGGING		
		MINIMUM REQUIRED EMBEDMENT (FT)	MINIMUM REQUIRED SECTION MODULUS (IN ³ /FT)	MINIMUM REQUIRED EMBEDMENT* (FT) (SEE NOTE 10)			MINIMUM REQUIRED EMBEDMENT (FT)	MINIMUM REQUIRED SECTION MODULUS (IN ³ /FT)	MINIMUM REQUIRED EMBEDMENT* (FT) (SEE NOTE 10)		
				HP 10x42	HP 12x53	HP 14x73			HP 10x42	HP 12x53	HP 14x73
GROUNDWATER ELEVATION BETWEEN BOTTOM OF SHORING AND PILE TIP	< 6	11.5	4.5	11.5	11.5	11.5	16.0	12.0	13.0	13.0	13.0
	7	13.0	7.0	13.0	13.0	13.0	17.0	14.5	14.5	14.5	14.5
	8	15.0	10.0	--	15.0	15.0	18.0	17.0	--	15.5	15.5
	9	17.0	14.0	--	17.0	17.0	19.0	20.0	--	17.0	17.0
	10	18.5	19.5	--	--	18.5	20.0	23.5	--	--	18.5
	11	20.5	26.0	--	--	--	21.0	28.0	--	--	20.0
GROUNDWATER ELEVATION BELOW PILE TIP	< 6	7.5	3.0	8.0	8.0	8.0	11.0	10.0	9.5	9.5	9.5
	7	8.5	4.5	9.5	9.5	9.5	12.0	12.0	10.5	10.5	10.5
	8	10.0	6.5	10.5	10.5	10.5	12.5	14.0	11.5	11.5	11.5
	9	11.0	9.5	--	12.0	12.0	13.5	16.5	--	12.5	12.5
	10	12.5	13.0	--	--	13.5	14.0	19.5	--	13.5	13.5
	11	13.5	17.0	--	--	14.5	15.0	22.5	--	--	14.5
12	15.0	21.5	--	--	16.0	16.0	25.5	--	--	15.5	

NOTES:

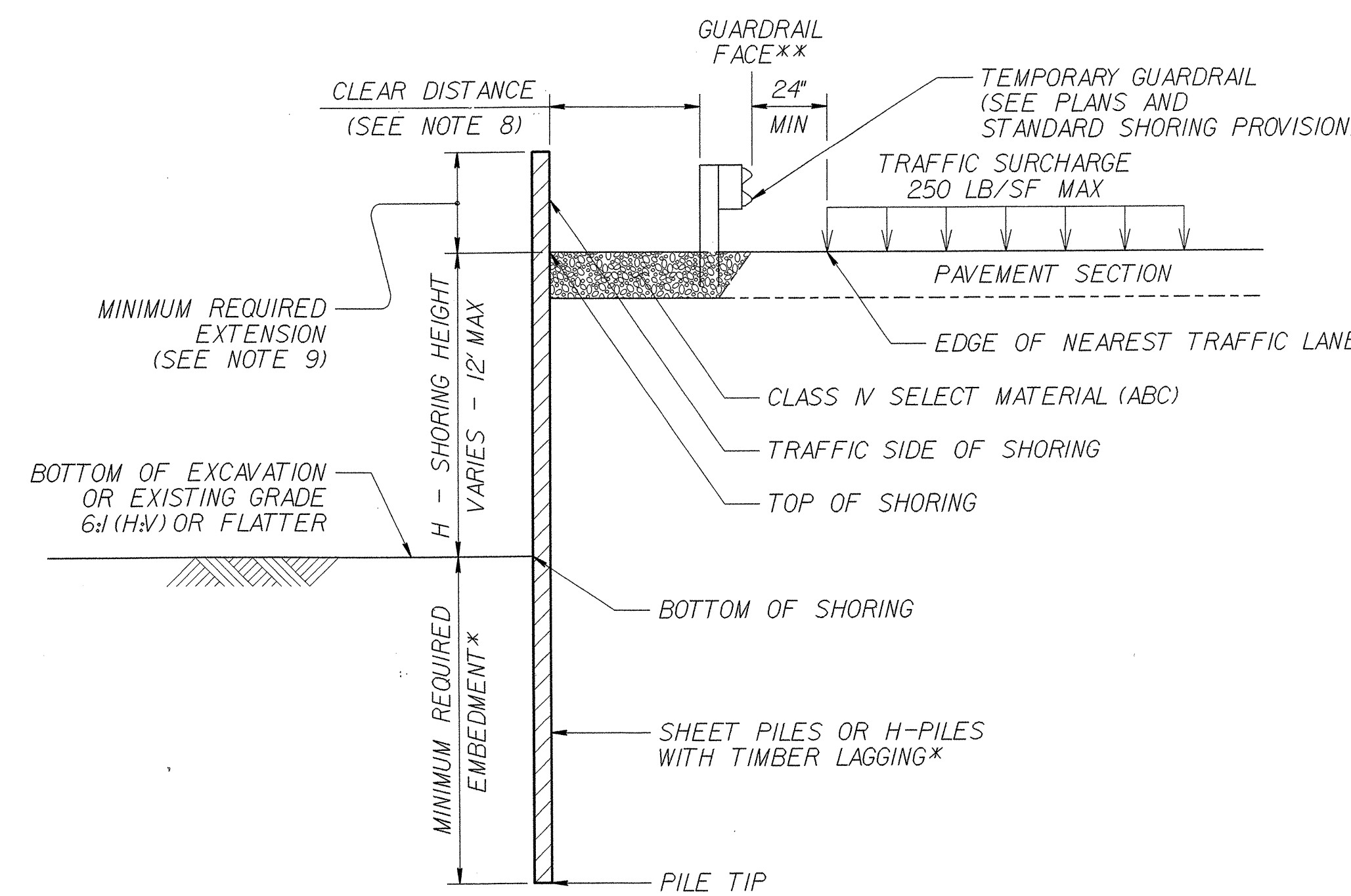
- AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING AS NOTED IN THE PLANS.
- FOR STANDARD TEMPORARY SHORING, SEE STANDARD SHORING PROVISION.
- STANDARD TEMPORARY SHORING IS BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:
UNIT WEIGHT, $\gamma = 120$ LB/CF
FRICTION ANGLE, $\phi = 30$ DEGREES
COHESION, $c = 0$ LB/SF
- DO NOT USE STANDARD TEMPORARY SHORING IF ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE.
- DO NOT USE STANDARD TEMPORARY SHORING WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS WITHIN THE EMBEDMENT DEPTH.
- USE GROUNDWATER ELEVATION NOTED IN THE PLANS. IF NO GROUNDWATER ELEVATION IS SHOWN IN THE PLANS, USE "GROUNDWATER ELEVATION BETWEEN BOTTOM OF SHORING AND PILE TIP" FOR GROUNDWATER CONDITION. DO NOT USE STANDARD TEMPORARY SHORING IF GROUNDWATER IS ABOVE BOTTOM OF SHORING.
- AT THE CONTRACTOR'S OPTION OR IF AVAILABLE CLEAR DISTANCE IS LESS THAN THE MINIMUM REQUIRED FOR CONCRETE BARRIER, SET BARRIER NEXT TO AND UP AGAINST TRAFFIC SIDE OF PILES AND USE "SURCHARGE CASE WITH TRAFFIC IMPACT".
- AT THE CONTRACTOR'S OPTION OR IF AVAILABLE CLEAR DISTANCE IS LESS THAN 4' FOR TEMPORARY GUARDRAIL, ATTACH GUARDRAIL TO TRAFFIC SIDE OF PILES AS SHOWN IN THE PLANS AND USE "SURCHARGE CASE WITH TRAFFIC IMPACT".
- MINIMUM REQUIRED EXTENSION IS 6" FOR "SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT" AND 32" FOR "SURCHARGE CASE WITH TRAFFIC IMPACT".
- MINIMUM REQUIRED EMBEDMENT FOR H-PILES WITH TIMBER LAGGING IS BASED ON DRIVEN H-PILES AT MAXIMUM 6' SPACING. AT THE CONTRACTOR'S OPTION, EMBEDMENT DEPTHS MAY BE REDUCED BY 25% FOR DRILLED-IN H-PILES.
- SUBMIT A "STANDARD TEMPORARY SHORING SELECTION FORM" AT LEAST 7 DAYS BEFORE STARTING TEMPORARY SHORING CONSTRUCTION. UP TO 3 SHORING LOCATIONS MAY BE INCLUDED ON EACH FORM.
- CONTACT THE ENGINEER IF PILES DO NOT ATTAIN THE MINIMUM REQUIRED EMBEDMENT.

MINIMUM REQUIRED EMBEDMENT AND SECTION MODULUS

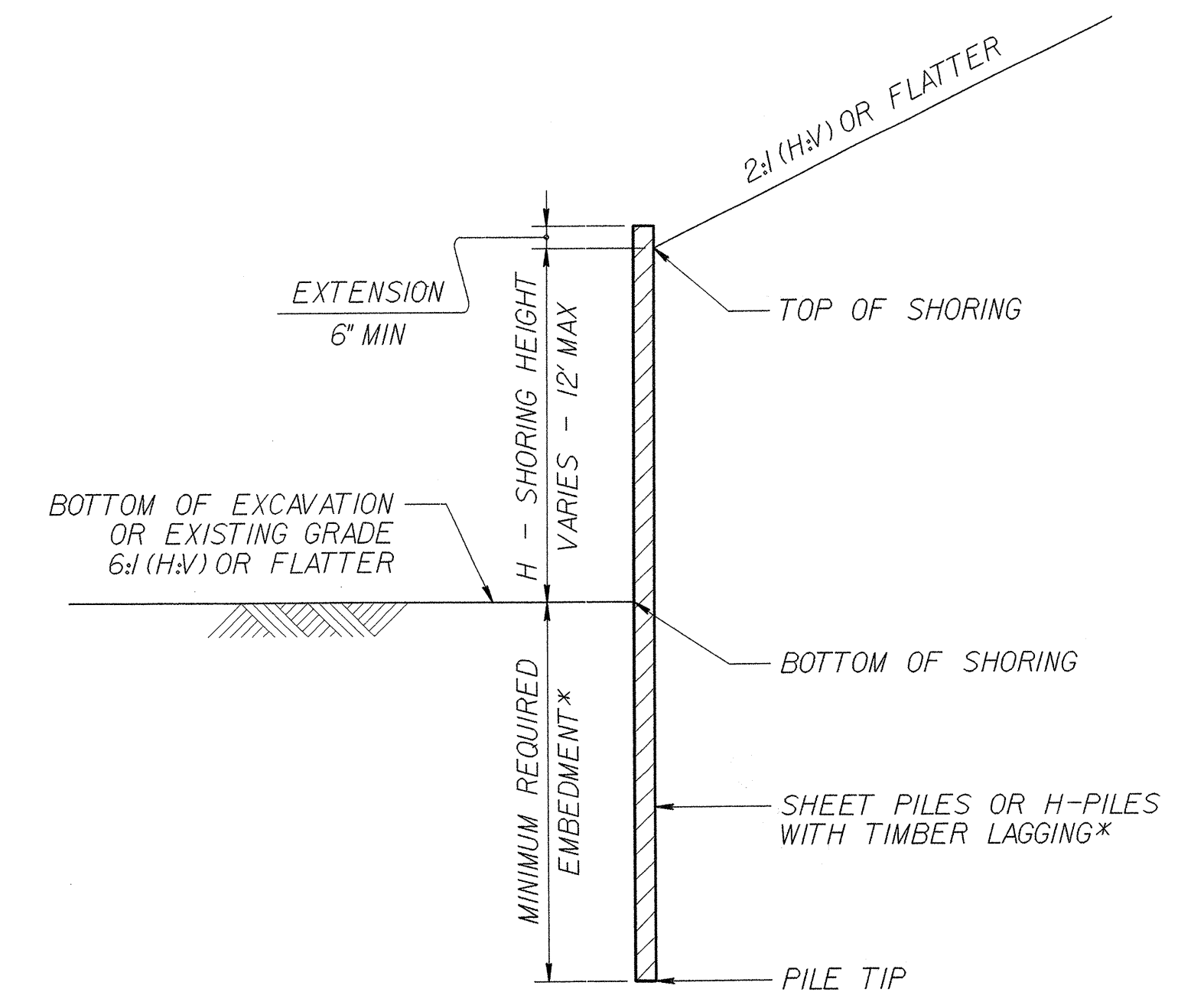
*DO NOT USE H-PILES WITH TIMBER LAGGING FOR GROUNDWATER CONDITION, SHORING HEIGHT AND H-PILE SIZE SHOWN IF MINIMUM REQUIRED EMBEDMENT IS "--".



CONCRETE BARRIER
**TOP OF SHORING =
EDGE OF PAVEMENT

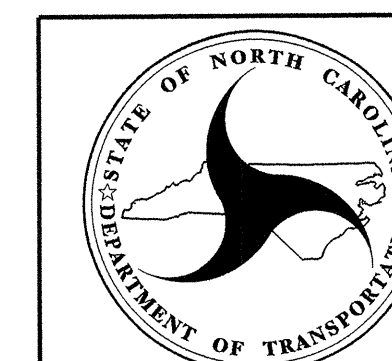


TEMPORARY GUARDRAIL
**GUARDRAIL FACE =
EDGE OF PAVEMENT



STANDARD TEMPORARY SHORING
(SLOPE CASE)
*SEE TABLE ABOVE.

STANDARD TEMPORARY SHORING
(SURCHARGE CASE)
*SEE TABLE ABOVE.



GEOTECHNICAL ENGINEERING UNIT
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD DRAWING NO. 1801.01

STANDARD TEMPORARY SHORING

DATE: 1-17-12

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C202846

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
0000400000-N	801	Lump Sum		CONSTRUCTION SURVEYING
0029000000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ***** (23+52.75-L)
0050000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUBBING
0057000000-E	226	550	CY	UNDERCUT EXCAVATION
0063000000-N	SP	Lump Sum		GRADING
0106000000-E	230	45,500	CY	BORROW EXCAVATION
0134000000-E	240	500	CY	DRAINAGE DITCH EXCAVATION
0195000000-E	265	250	CY	SELECT GRANULAR MATERIAL
0196000000-E	270	550	SY	GEOTEXTILE FOR SOIL STABILIZATION
0199000000-E	SP	990.4	SF	TEMPORARY SHORING
0318000000-E	300	140	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES
0320000000-E	300	390	SY	FOUNDATION CONDITIONING GEOTEXTILE
0343000000-E	310	260	LF	15" SIDE DRAIN PIPE
0344000000-E	310	204	LF	18" SIDE DRAIN PIPE
0372000000-E	310	88	LF	18" RC PIPE CULVERTS, CLASS III
0448000000-E	310	240	LF	**** RC PIPE CULVERTS, CLASS IV (54")
0448200000-E	310	216	LF	15" RC PIPE CULVERTS, CLASS IV
0576000000-E	310	156	LF	*** CS PIPE CULVERTS, ***** THICK (48", 0.138")
0995000000-E	340	290	LF	PIPE REMOVAL
1000000000-E	462	140	SY	6" SLOPE PROTECTION
1220000000-E	545	50	TON	INCIDENTAL STONE BASE
1489000000-E	610	2,800	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
1491000000-E	610	360	TON	ASPHALT CONC BASE COURSE, TYPE B25.0C

ItemNumber	Sec #	Quantity	Unit	Description
4415000000-N	1115	4	EA	FLASHING ARROW BOARD
4420000000-N	1120	4	EA	PORTABLE CHANGEABLE MESSAGE SIGN
4430000000-N	1130	100	EA	DRUMS
4445000000-E	1145	336	LF	BARRICADES (TYPE III)
4450000000-N	1150	1,480	HR	FLAGGER
4465000000-N	1160	2	EA	TEMPORARY CRASH CUSHIONS
4480000000-N	1165	4	EA	TMA
4485000000-E	1170	856	LF	PORTABLE CONCRETE BARRIER
4510000000-N	SP	120	HR	LAW ENFORCEMENT
4695000000-E	1205	609	LF	THERMOPLASTIC PAVEMENT MARKING LINES (8", 90 MILS)
4710000000-E	1205	355	LF	THERMOPLASTIC PAVEMENT MARKING LINES (24", 120 MILS)
4721000000-E	1205	4	EA	THERMOPLASTIC PAVEMENT MARKING CHARACTER (120 MILS)
4725000000-E	1205	32	EA	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)
4780000000-E	1205	131	LF	COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE ** (8") (II)
4810000000-E	1205	39,148	LF	PAINT PAVEMENT MARKING LINES (4")
4820000000-E	1205	1,300	LF	PAINT PAVEMENT MARKING LINES (8")
4835000000-E	1205	846	LF	PAINT PAVEMENT MARKING LINES (24")
4840000000-N	1205	8	EA	PAINT PAVEMENT MARKING CHARACTER
4845000000-N	1205	62	EA	PAINT PAVEMENT MARKING SYMBOL
4847000000-E	1205	12,711	LF	POLYUREA PAVEMENT MARKING LINES (4", *****) (HIGHLY REFLECTIVE ELEMENTS)
4850000000-E	1205	1,565	LF	REMOVAL OF PAVEMENT MARKING LINES (4")
4900000000-N	1251	25	EA	PERMANENT RAISED PAVEMENT MARKERS
4905000000-N	1253	73	EA	SNOWPLOWABLE PAVEMENT MARKERS

SUMMARY OF QUANTITIES - B-4760

ItemNumber	Sec #	Quantity	Unit	Description
1498000000-E	610	2,000	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0B
1503000000-E	610	100	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0C
1519000000-E	610	2,100	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5B
1523000000-E	610	100	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5C
1575000000-E	620	372	TON	ASPHALT BINDER FOR PLANT MIX
1693000000-E	654	120	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR
2000000000-N	806	4	EA	RIGHT OF WAY MARKERS
2264000000-E	840	1	CY	PIPE PLUGS
2275000000-E	SP	4	CY	FLOWABLE FILL
2286000000-N	840	14	EA	MASONRY DRAINAGE STRUCTURES
2308000000-E	840	2	LF	MASONRY DRAINAGE STRUCTURES
2365000000-N	840	1	EA	FRAME WITH TWO GRATES, STD 840.22
2366000000-N	840	1	EA	FRAME WITH TWO GRATES, STD 840.24
2367000000-N	840	5	EA	FRAME WITH TWO GRATES, STD 840.29
2374000000-N	840	1	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (E)
2374000000-N	840	2	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (F)
2374000000-N	840	2	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (G)
2396000000-N	840	4	EA	FRAME WITH COVER, STD 840.54
2549000000-E	846	1,080	LF	2'-6" CONCRETE CURB & GUTTER
2566000000-E	846	575	LF	SHOULDER BERM GUTTER
2605000000-N	848	11	EA	CONCRETE CURB RAMP
2647000000-E	852	85	SY	5' MONOLITHIC CONCRETE ISLANDS (SURFACE MOUNTED)
2830000000-N	858	3	EA	ADJUSTMENT OF MANHOLES

ItemNumber	Sec #	Quantity	Unit	Description
5325600000-E	1510	47	LF	6" WATER LINE
5325800000-E	1510	528	LF	8" WATER LINE
5326200000-E	1510	8	LF	12" WATER LINE
5326600000-E	1510	286	LF	16" WATER LINE
5540000000-E	1515	1	EA	6" VALVE
5546000000-E	1515	1	EA	8" VALVE
5558600000-E	1515	2	EA	16" VALVE
5648000000-N	1515	1	EA	RELOCATE WATER METER
5649000000-N	1515	1	EA	RECONNECT WATER METER
5653610000-E	1515	1	EA	RELOCATE 6" DCV BACKFLOW PREVENTION ASSEMBLY
5672000000-N	1515	2	EA	RELOCATE FIRE HYDRANT
5691300000-E	1520	519	LF	8" SANITARY GRAVITY SEWER
5691400000-E	1520	624	LF	10" SANITARY GRAVITY SEWER
5768000000-N	1520	2	EA	SANITARY SEWER CLEAN-OUT
5775000000-E	1525	7	EA	4" DIA UTILITY MANHOLE
5781000000-E	1525	60	LF	UTILITY MANHOLE WALL, 4" DIA
5801000000-E	1530	1,047	LF	ABANDON 8" UTILITY PIPE
5802000000-E	1530	452	LF	ABANDON 10" UTILITY PIPE
5810000000-E	1530	281	LF	ABANDON 16" UTILITY PIPE
5835900000-E	1540	449	LF	20" ENCASEMENT PIPE
5872100000-E	1550	120	LF	TRENCHLESS INSTALLATION OF 20" IN SOIL
5872110000-E	1550	120	LF	TRENCHLESS INSTALLATION OF 20" NOT IN SOIL
6000000000-E	1605	4,400	LF	TEMPORARY SILT FENCE
6006000000-E	1610	225	TON	STONE FOR EROSION CONTROL, CLASS A
6009000000-E	1610	565	TON	STONE FOR EROSION CONTROL, CLASS B
6012000000-E	1610	470	TON	SEDIMENT CONTROL STONE
6015000000-E	1615	4	ACR	TEMPORARY MULCHING

ItemNumber	Sec #	Quantity	Unit	Description
2845000000-N	858	4	EA	ADJUSTMENT OF METER BOXES OR VALVE BOXES
2905000000-N	859	1	EA	CONVERT EXISTING DROP INLET TO JUNCTION BOX
2995000000-N	SP	1	EA	GENERIC DRAINAGE ITEM CONVERT TB DI TO TB JB W/MH COVER
3030000000-E	862	950	LF	STEEL BM GUARDRAIL
3150000000-N	862	10	EA	ADDITIONAL GUARDRAIL POSTS
3210000000-N	862	1	EA	GUARDRAIL ANCHOR UNITS, TYPE CAT-1
3215000000-N	862	3	EA	GUARDRAIL ANCHOR UNITS, TYPE III
3270000000-N	SP	2	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
3360000000-E	863	250	LF	REMOVE EXISTING GUARDRAIL
3628000000-E	876	67	TON	RIP RAP, CLASS I
3649000000-E	876	8	TON	RIP RAP, CLASS B
3656000000-E	876	609	SY	GEOTEXTILE FOR DRAINAGE
4048000000-E	902	1	CY	REINFORCED CONCRETE SIGN FOUNDATIONS
4060000000-E	903	587	LB	SUPPORTS, BREAKAWAY STEEL BEAM
4072000000-E	903	608	LF	SUPPORTS, 3-LB STEEL U-CHANNEL
4096000000-N	904	1	EA	SIGN ERECTION, TYPE D
4102000000-N	904	18	EA	SIGN ERECTION, TYPE E
4108000000-N	904	8	EA	SIGN ERECTION, TYPE F
4110000000-N	904	1	EA	SIGN ERECTION, TYPE *** (GROUND MOUNTED) (A)
4155000000-N	907	20	EA	DISPOSAL OF SIGN SYSTEM, U-CHANNEL
4158000000-N	907	1	EA	DISPOSAL OF SIGN SYSTEM, WOOD
4400000000-E	1110	1,016	SF	WORK ZONE SIGNS (STATIONARY)
4405000000-E	1110	1,529	SF	WORK ZONE SIGNS (PORTABLE)
4410000000-E	1110	238	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)

ItemNumber	Sec #	Quantity	Unit	Description
6018000000-E	1620	150	LB	SEED FOR TEMPORARY SEEDING
6021000000-E	1620	1.5	TON	FERTILIZER FOR TEMPORARY SEEDING
6024000000-E	1622	600	LF	TEMPORARY SLOPE DRAINS
6029000000-E	SP	200	LF	SAFETY FENCE
6030000000-E	1630	760	CY	SILT EXCAVATION
6036000000-E	1631	5,000	SY	MATTING FOR EROSION CONTROL
6037000000-E	SP	10	SY	COIR FIBER MAT
6038000000-E	SP	1,000	SY	PERMANENT SOIL REINFORCEMENT MAT
6042000000-E	1632	840	LF	1/4" HARDWARE CLOTH
6045000000-E	SP	130	LF	*** TEMPORARY PIPE (18")
6070000000-N	1639	3	EA	SPECIAL STILLING BASINS
6071010000-E	SP	135	LF	WATTLE
6071020000-E	SP	45	LB	POLYACRYLAMIDE (PAM)
6071030000-E	1640	285	LF	COIR FIBER BAFFLE
6071050000-E	SP	1	EA	*** SKIMMER (1-1/2")
6084000000-E	1660	3	ACR	SEEDING & MULCHING
6087000000-E	1660	2	ACR	MOWING
6090000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
6093000000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
6096000000-E	1662	150	LB	SEED FOR SUPPLEMENTAL SEEDING
6108000000-E	1665	4.25	TON	FERTILIZER TOPDRESSING
6111000000-E	SP	30	LF	IMPERVIOUS DIKE
6114500000-N	1667	10	MHR	SPECIALIZED HAND MOWING
6117000000-N	SP	25	EA	RESPONSE FOR EROSION CONTROL
6123000000-E	1670	0.1	ACR	REFORESTATION
7060000000-E	1705	2,050	LF	SIGNAL CABLE
7120000000-E	1705	6	EA	VEHICLE SIGNAL HEAD (12", 3 SECTION)

ItemNumber	Sec #	Quantity	Unit	Description
7132000000-E	1705	3	EA	VEHICLE SIGNAL HEAD (12", 4 SECTION)
7144000000-E	1705	3	EA	VEHICLE SIGNAL HEAD (12", 5 SECTION)
7300000000-E	1715	200	LF	UNPAVED TRENCHING (*****) (1, 2')
7324000000-N	1716	9	EA	JUNCTION BOX (STANDARD SIZE)
7408000000-E	1722	1	EA	1" RISER WITH WEATHERHEAD
7420000000-E	1722	5	EA	2" RISER WITH WEATHERHEAD
7444000000-E	1725	1,450	LF	INDUCTIVE LOOP SAWCUT
7456000000-E	1726	3,200	LF	LEAD-IN CABLE (*****) (14-2)
7636000000-N	1745	6	EA	SIGN FOR SIGNALS
7675000000-N	1747	1	EA	LED BLANKOUT SIGN
7828000000-N	1751	1	EA	CONTROLLER WITH CABINET (NEMA TS-2, TYPE 2 CONTROLLER, TYPE 1 CABINET, BASE MOUNTED)
7852000000-N	1751	7	EA	DETECTOR CARD (NEMA TS-2)

RD223184

COMPUTED BY: JBT DATE: 10-31-2011
 CHECKED BY: CJT DATE: 2-9-2012

PROJECT NO. B-4760 SHEET NO. 3-C

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK

CUBIC YARDS				
Station to Station	Uncl. Exc. C.Y.	Embank. +% C.Y.	Borrow C.Y.	Waste C.Y.
SUMMARY NO. 1				
-L- 14+50.00 TO 22+55.49	1,206	8,803	7,597	
-L- 24+51.49 TO 34+00.00	213	31,595	31,382	
SUMMARY NO. 1 TOTALS	1,419	40,398	38,979	
SUMMARY NO. 2				
-L- 14+50.00 TO 22+55.49	273	1,609	1,336	
-L- 24+51.49 TO 34+00.00	45	1,880	1,835	
-LOOPB- 10+50.00 TO 11+50.00	54	144	90	
-LOOPC- 11+00.00 TO 11+50.00	30	5		25
SUMMARY NO. 2 TOTALS	402	3,638	3,261	25
PROJECT SUB TOTAL	1,821	44,036	42,240	25
Material For Shoulder Construction		523	523	
Loss due to Clearing&Grubbing	-100		100	
Est 5% To Replace Topsoil at Borrow Pit			2,143	
GRAND TOTALS	1,721		45,006	
SAY	1,800		45,500	
ESTIMATED UNDERCUT = 550 CY ESTIMATED SELECT GRANULAR MATERIAL = 250 CY ESTIMATED DRAINAGE DITCH EXCAVATION = 489 CY				

APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, FINE GRADING, CLEARING AND GRUBBING, AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE 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.

SUMMARY OF ASPHALT PAVEMENT REMOVAL

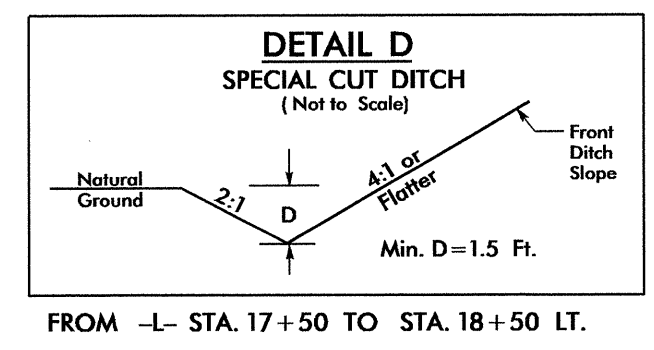
LINE	Station to Station	LOC LT/RT/CL	ASPHALT REMOVAL SQ. YDS.
-L-	16+72.38 TO 22+51.44	RT	1,908.55
-L-	24+30.40 TO 28+54.02	RT	1,171.23
PROJECT TOTAL			3079.78
SAY			3,080.00

GUARDRAIL SUMMARY

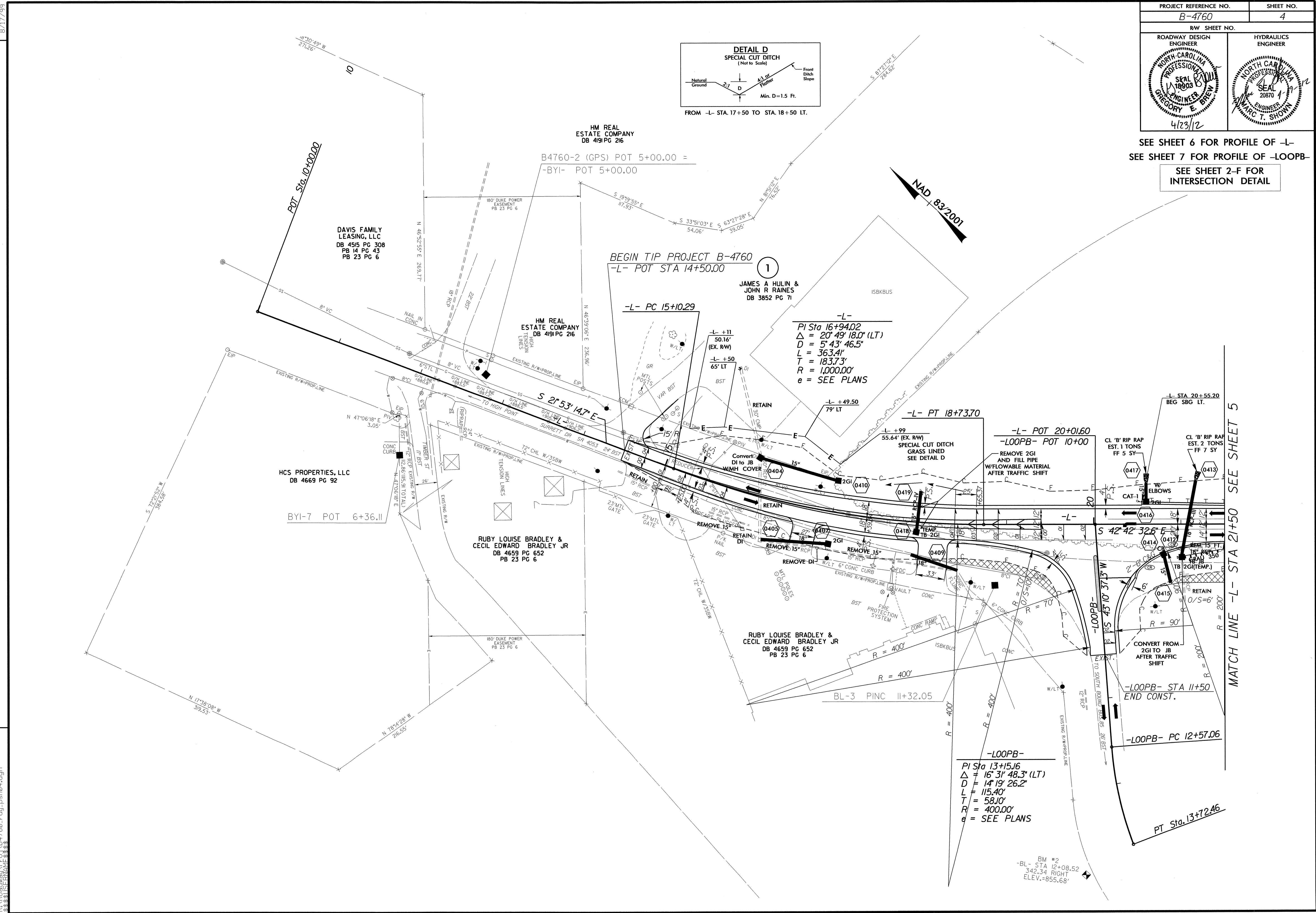
"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL
 TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
 FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
 W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL
 G = GATING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

LINE	BEG. STA.	END STA.	LOC.	LENGTH (FT.)			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHLDR WIDTH	FLARE LENGTH		W		ANCHORS				IMP. ATTEN. TYPE 350			REMOVE EXISTING GUARDRAIL	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPR. END	TRAIL. END			APPR. END	TRAIL. END	APPR. END	TRAIL. END	GRAU 350	TYPE III	CAT I	EA	G	NG			
L	20+98.09	22+48.09	RT	150.00				22+48.09	10'	14'	131.25'		3.5'		1	1							BRIDGE WARRANT
L	20+48.91	22+61.41	LT	212.50				21+25.00	8'	11'		193.75'		5'		1	1						FILL WARRANT
L	24+57.44	29+32.44	LT	475.00				28+50.00	8'	11'	25'		0.5'		1	1							FILL WARRANT
EY2	11+45.00	12+70.00	MED/LT	125																		125	REMOVE & REPLACE AND TIE TO EXISTING
EY2	11+45.00	12+70.00	MED/RT	125																		125	REMOVE & REPLACE AND TIE TO EXISTING
SUBTOTALS				1087.50											2	3						250	TOTAL
DEDUCTION FOR ANCHOR UNITS				(2 GRAU @50')	-100																		
				(3 TYPE III @18.75')	-56.25																		
				(1 TYPE CAT-1 @6.25')	-6.25																		
PROJECT TOTAL				925											2	3						250	PROJECT TOTAL
				SAY	950'																		
ADDITIONAL GUARDRAIL POSTS= 10 EA																							

SEE SHEET 6 FOR PROFILE OF -L-
SEE SHEET 7 FOR PROFILE OF -LOOPB-
SEE SHEET 2-F FOR INTERSECTION DETAIL



FROM -L- STA. 17+50 TO STA. 18+50 LT.

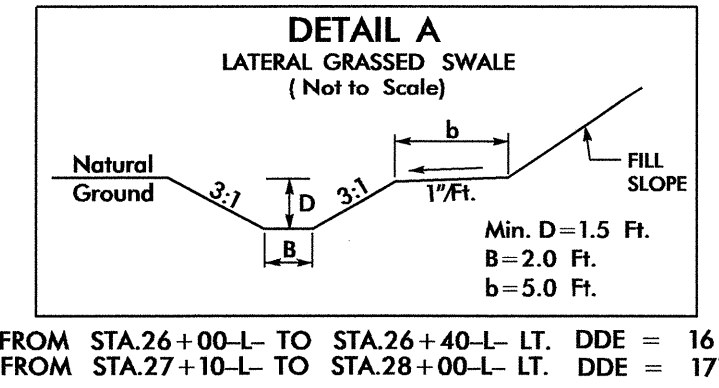


REVISIONS

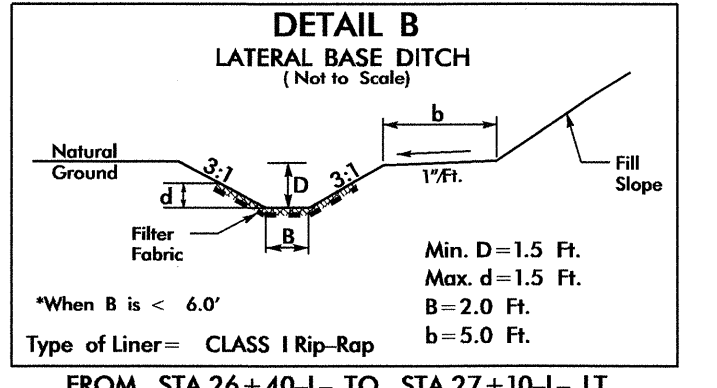
8/17/99
18-APR-2012 13:51
R:\Roadway\Projects\B4760_rdy_psh04.dgn

MATCH LINE -L- STA 21+50 SEE SHEET 5

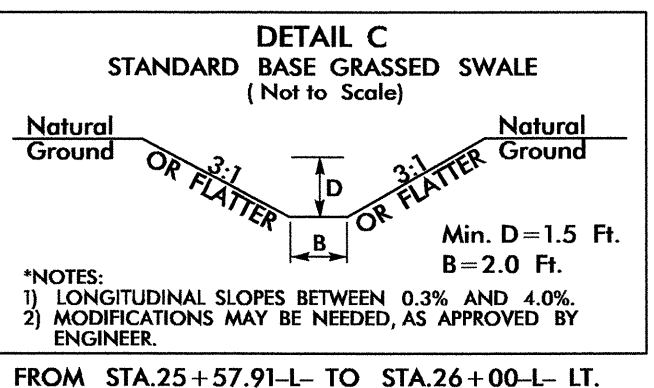
BM #2
-BL- STA 12+08.52
342.34 RIGHT
ELEV.=855.68'



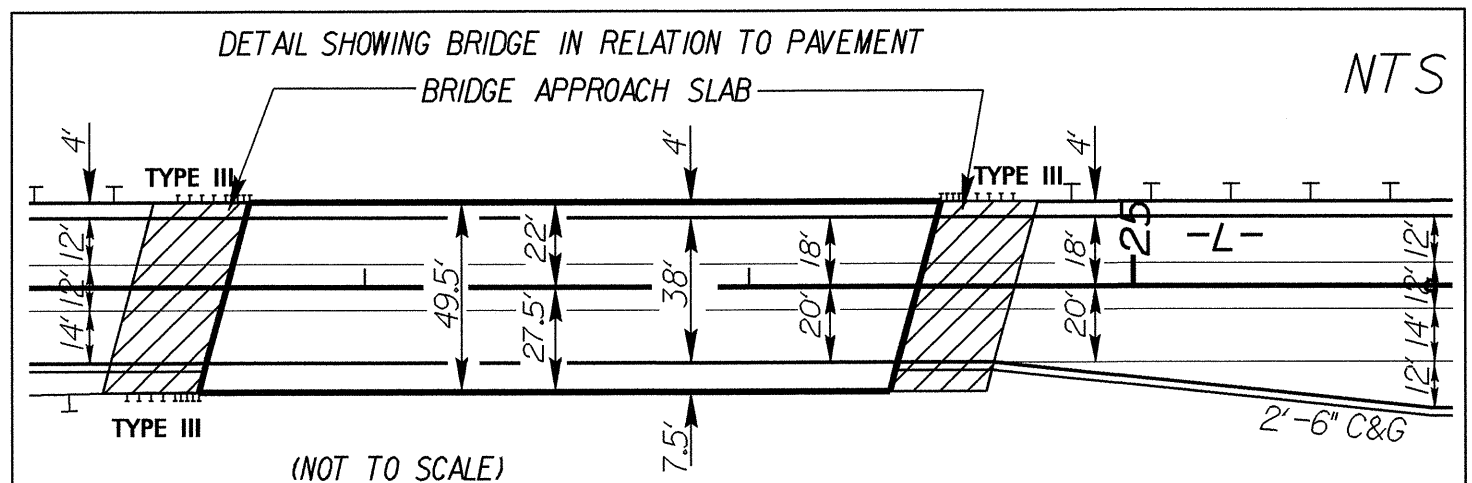
FROM STA.26+00-L TO STA.26+40-L LT. DDE = 16 CY
 FROM STA.27+10-L TO STA.28+00-L LT. DDE = 177 CY



FROM STA.26+40-L TO STA.27+10-L LT.
 DDE = 107 CY
 EST. CL I RIP-RAP = 55 TONS
 EST. FF = 96 SY



FROM STA.25+57.91-L TO STA.26+00-L LT.
 DDE = 200 CY



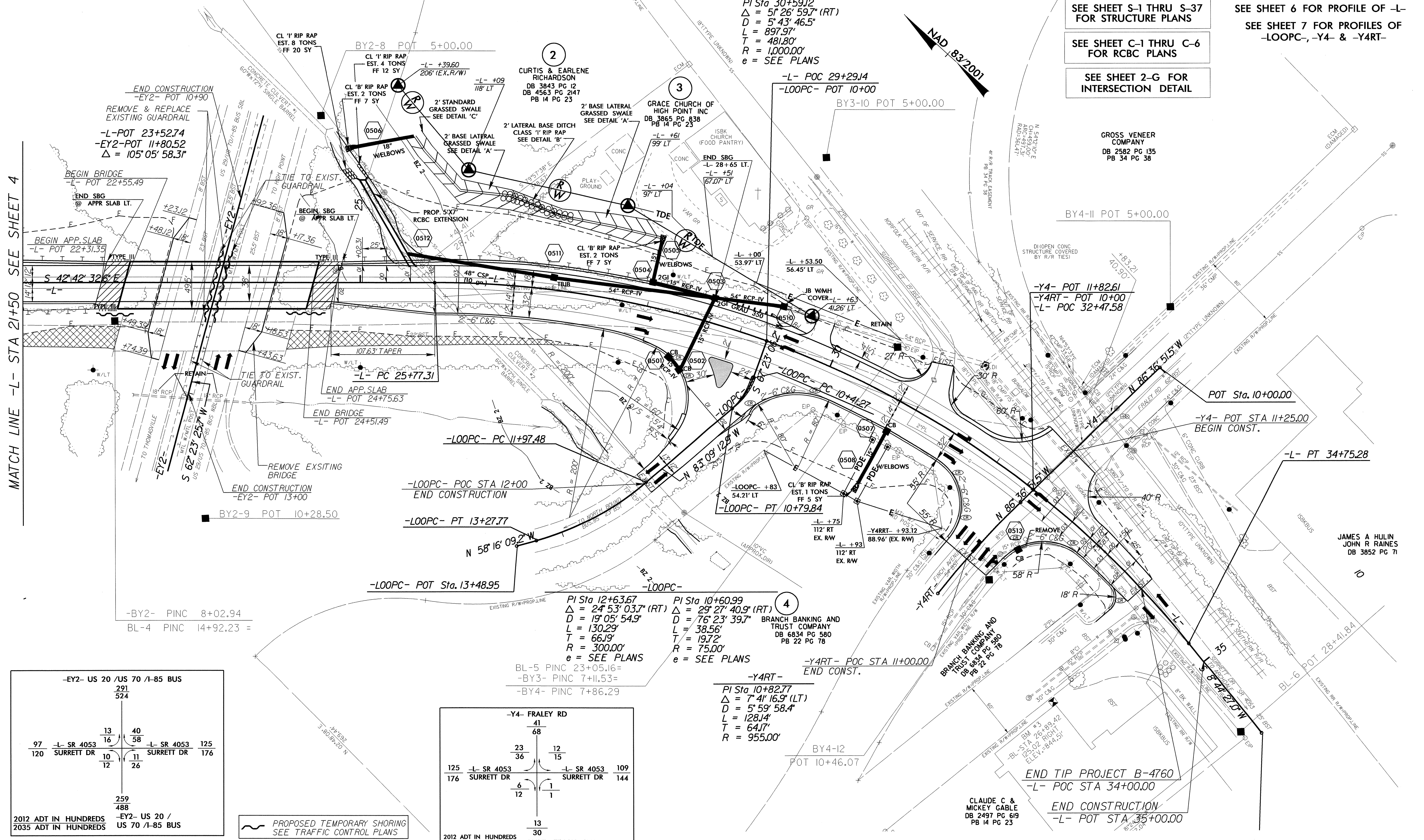
-L-
 PI Sta 30+59.12
 $\Delta = 5^\circ 26' 59.7''$ (RT)
 $D = 5^\circ 43' 46.5''$
 $L = 897.97'$
 $T = 481.80'$
 $R = 1,000.00'$
 $e = \text{SEE PLANS}$

SEE SHEET S-1 THRU S-37 FOR STRUCTURE PLANS

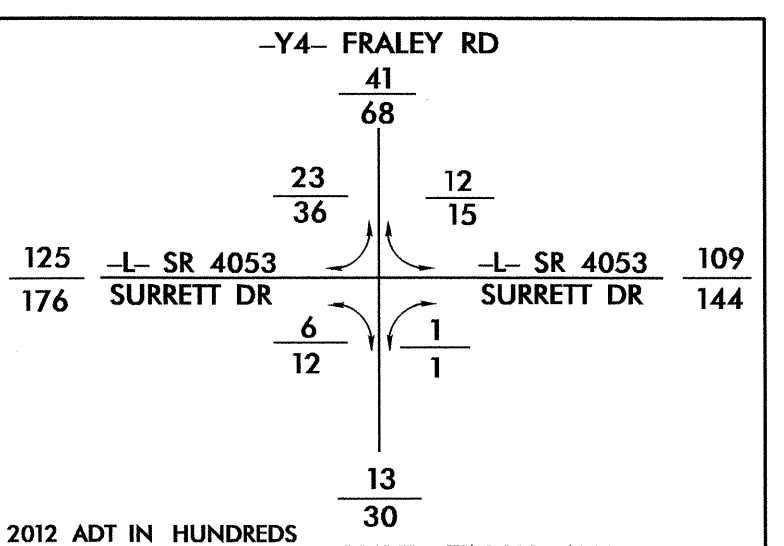
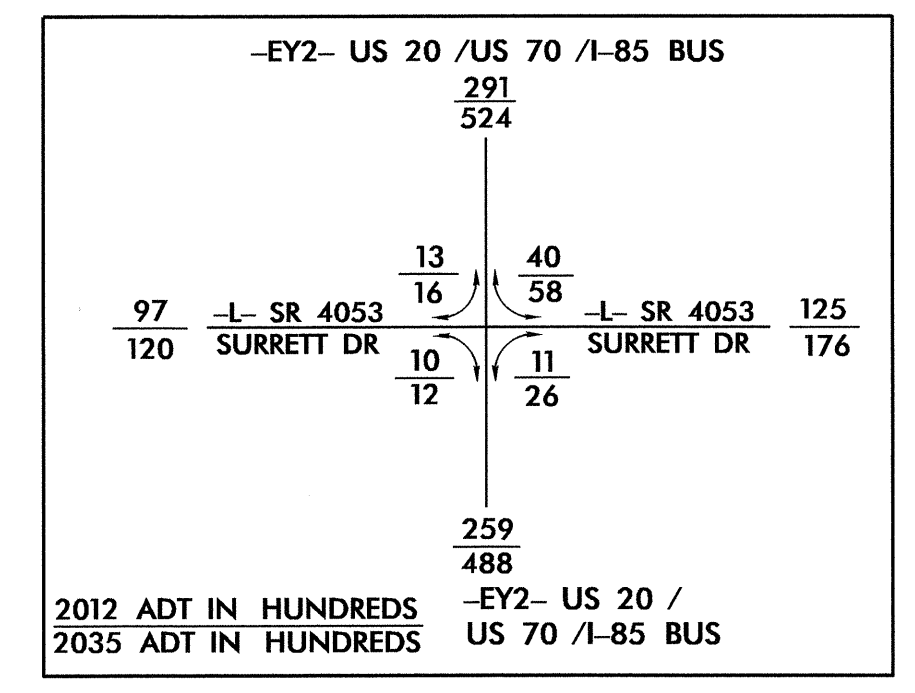
SEE SHEET C-1 THRU C-6 FOR RBCB PLANS

SEE SHEET 2-G FOR INTERSECTION DETAIL

SEE SHEET 6 FOR PROFILE OF -L-
 SEE SHEET 7 FOR PROFILES OF -LOOP-, -Y4- & -Y4RT-



MATCH LINE -L- STA 21+50 SEE SHEET 4



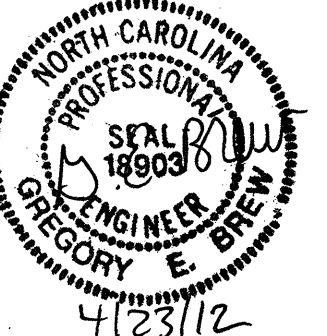

CLAUDE C & MICKEY GABLE
 DB 2497 PG 619
 PB 14 PG 23

END TIP PROJECT B-4760
 -L- POC STA 34+00.00

END CONSTRUCTION
 -L- POT STA 35+00.00

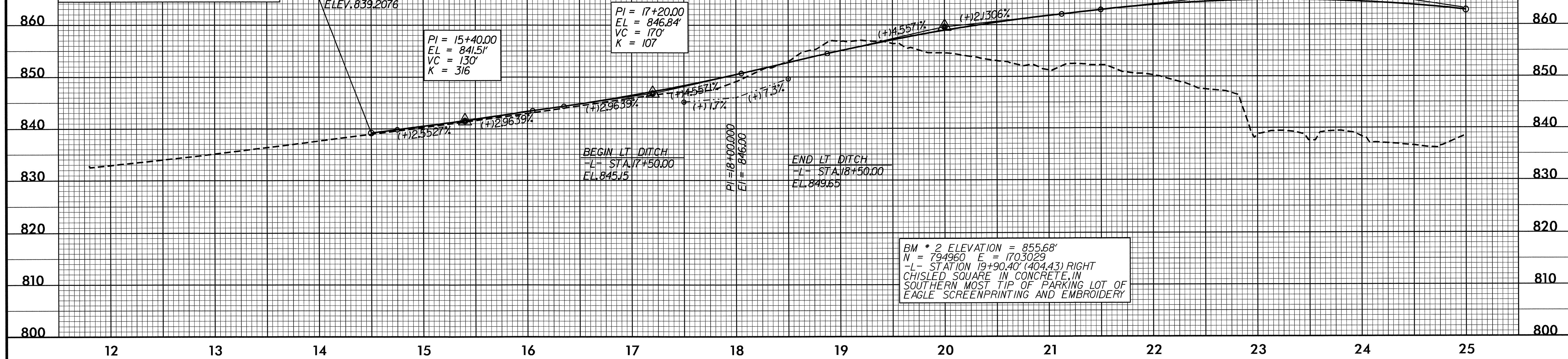
8/17/99
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 P:\PROJECTS\B-4760-r.dj-ps-h05.dgn

5/28/99

PROJECT REFERENCE NO. B-4760	SHEET NO. 6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
	
4/23/12	4/19/12

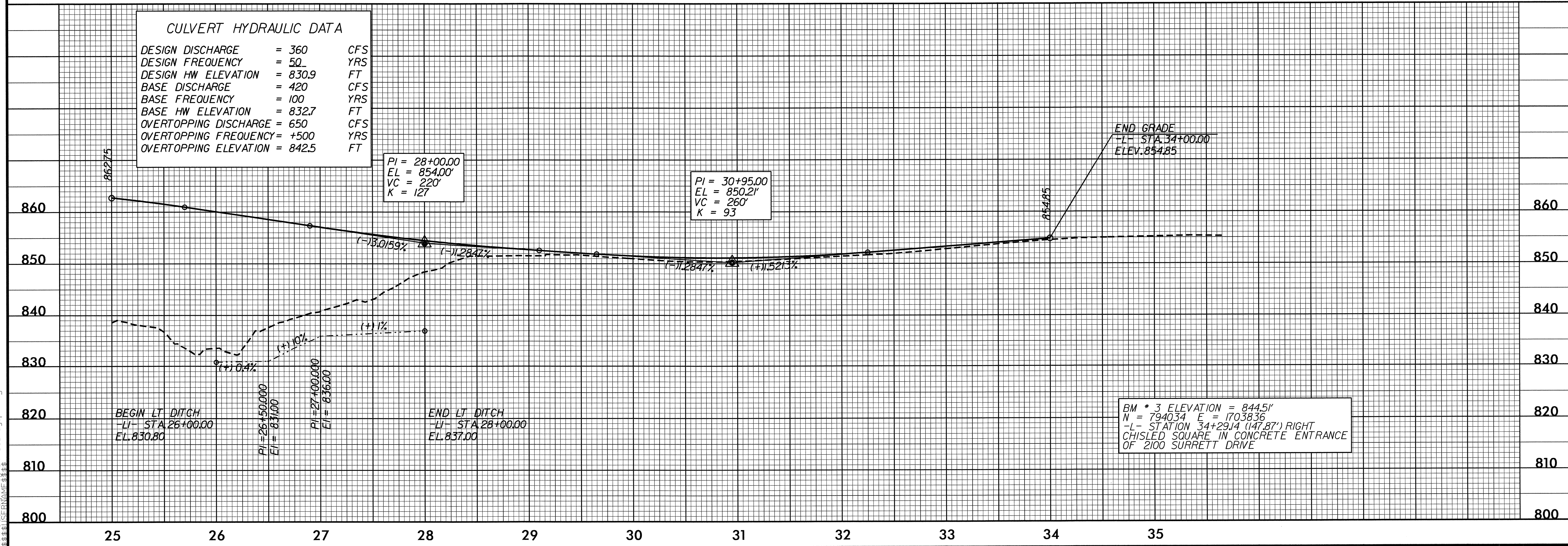
DITCH LEGEND
LEFT DITCH - - - - -

BM * 1 ELEVATION = 836.74'
N = 796690 E = 1702661
-BL- STATION 5+00.00 (GPS-2) TO BMI
N 2°26'30" W Dist. 894.46'
GPS B4760-1



CULVERT HYDRAULIC DATA

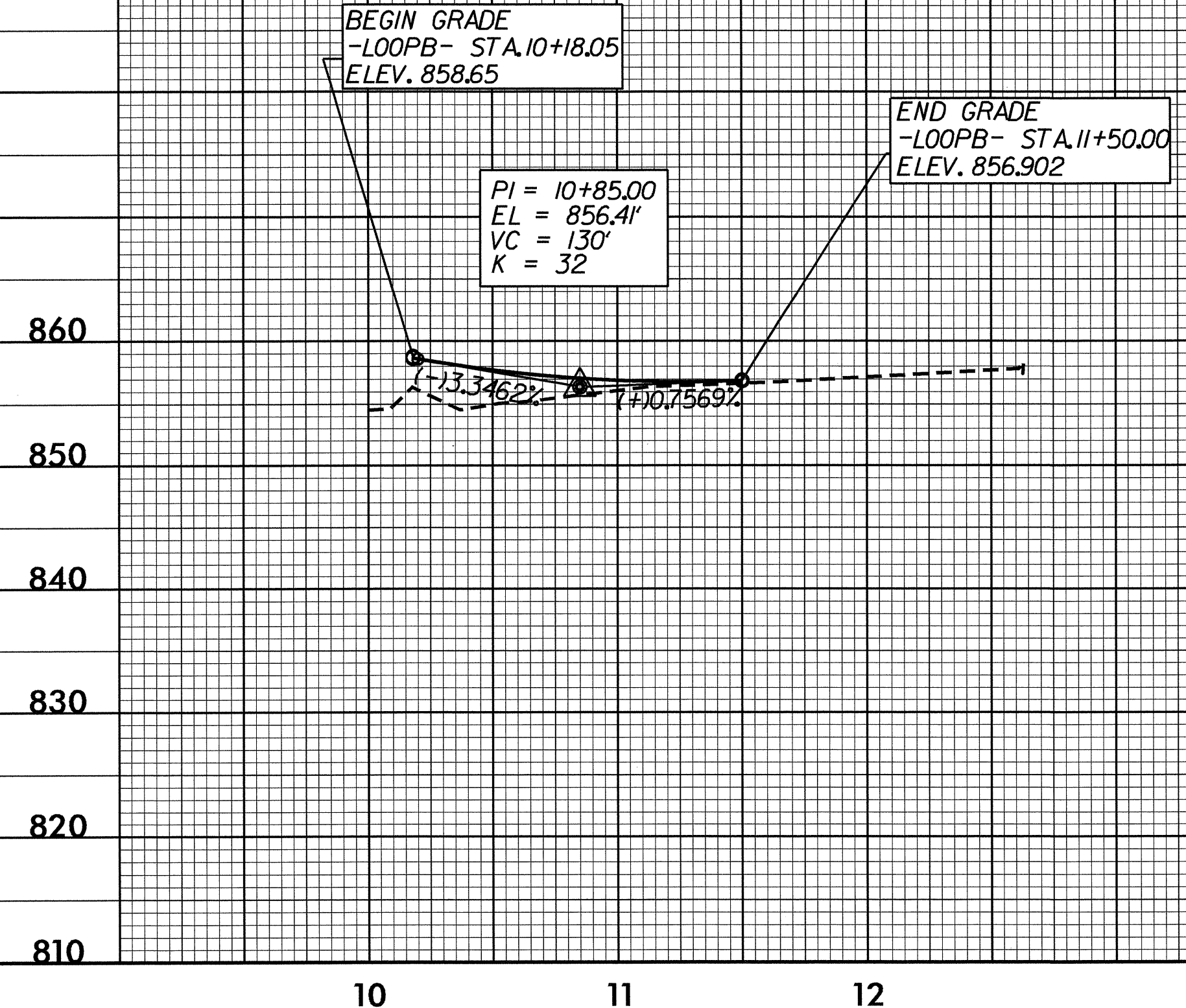
DESIGN DISCHARGE	= 360	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 830.9	FT
BASE DISCHARGE	= 420	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 832.7	FT
OVERTOPPING DISCHARGE	= 650	CFS
OVERTOPPING FREQUENCY	= +500	YRS
OVERTOPPING ELEVATION	= 842.5	FT



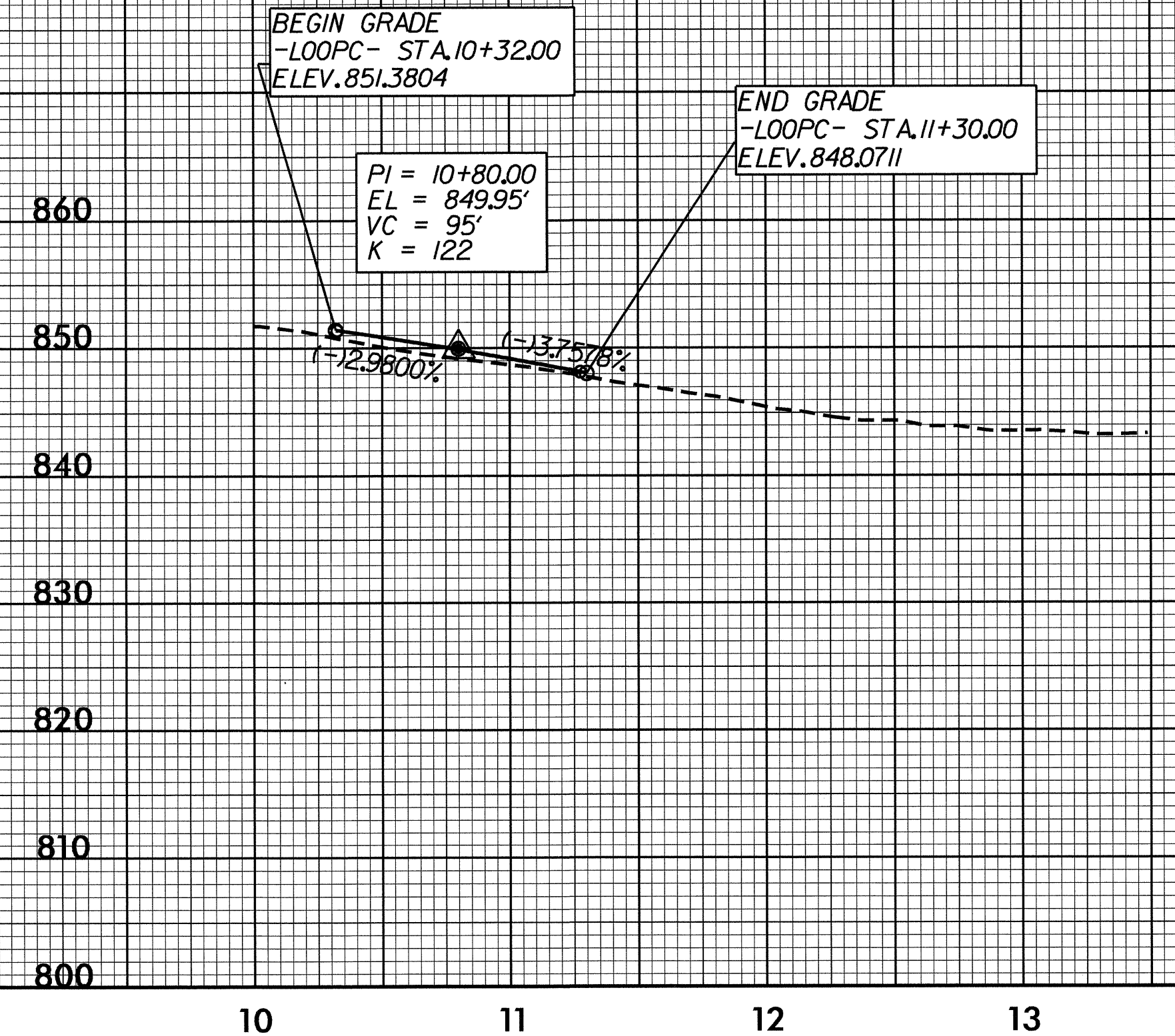
02 APR 2012 04:47 b4760_rdu-pl.dgn

-LOOPB-

BM * 2 ELEVATION = 855.68'
 N = 794960 E = 1703029
 -L- STATION 19+90.40' (404.43) RIGHT
 CHISLED SQUARE IN CONCRETE, IN
 SOUTHERN MOST TIP OF PARKING LOT OF
 EAGLE SCREENPRINTING AND EMBROIDERY

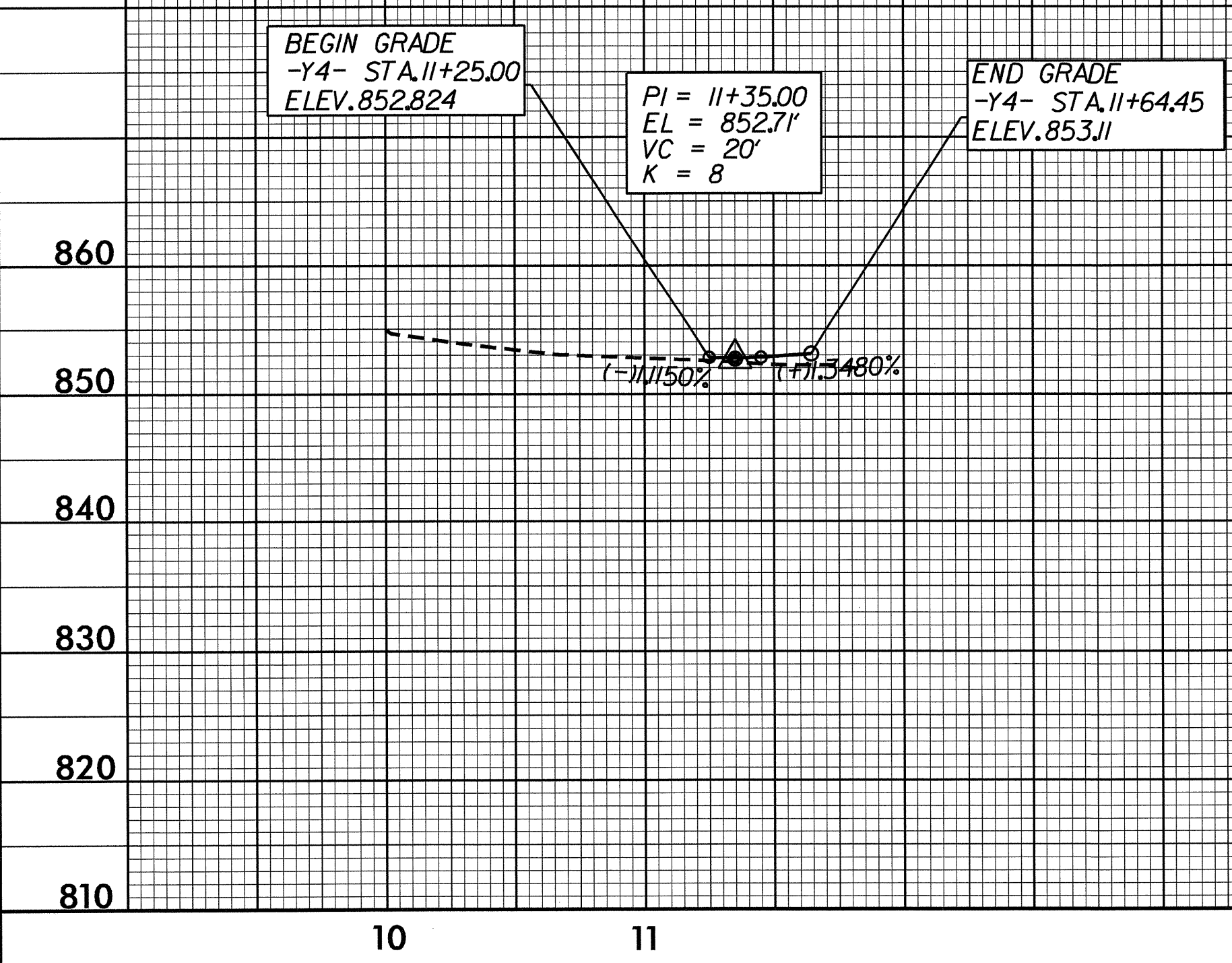


-LOOPC-



-Y4-

BM * 3 ELEVATION = 844.51'
 N = 794034 E = 1703836
 -L- STATION 34+29.14 (147.87) RIGHT
 CHISLED SQUARE IN CONCRETE ENTRANCE
 OF 2100 SURRETT DRIVE



-Y4RT-

