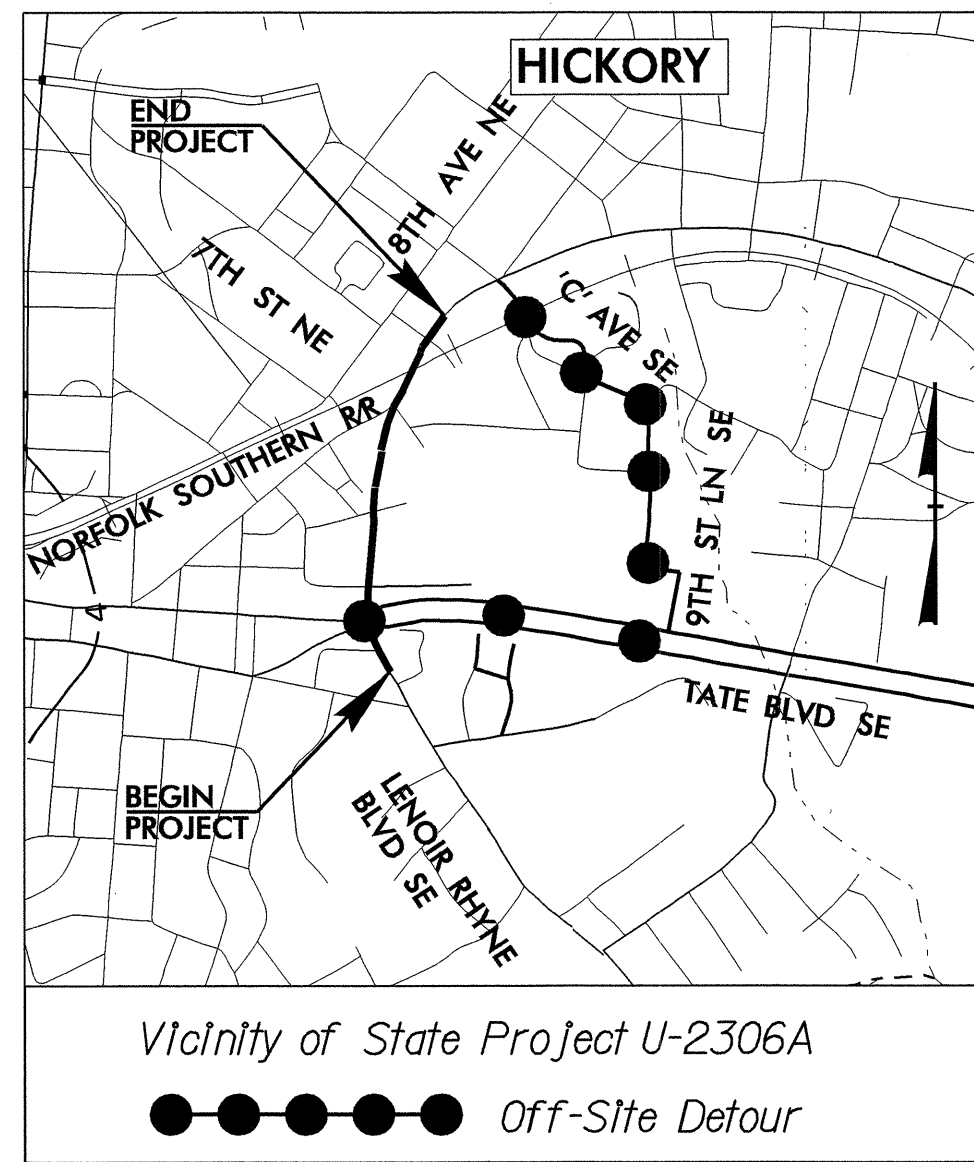


07/03/97

**CONTRACT: C201862** **TIP PROJECT: U-2306A**

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



# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

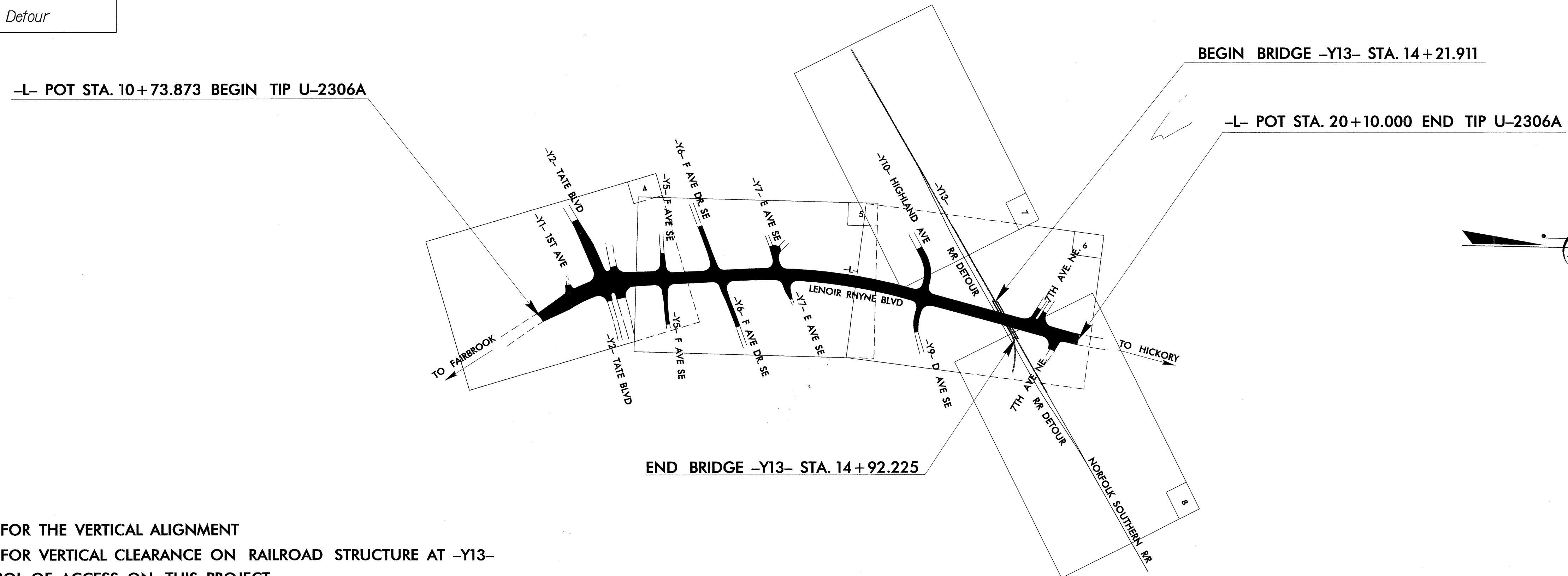
## CATAWBA COUNTY

**LOCATION: HICKORY - LENOIR RHYNE BLVD. EXTENSION  
FROM TATE BLVD. TO 7TH AVE. NE.**

**TYPE OF WORK: WIDENING, GRADING, DRAINAGE, PAVING, STRUCTURES,  
SIGNALS, SIGNING AND TRACKWORK**

ALL DIMENSIONS IN THESE PLANS ARE IN METERS UNLESS OTHERWISE SHOWN

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-2306A	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34790.1.2	MA-STP-1216(8)	PE	
34790.2.2	MA-STP-1216(8)	R/W, UTIL	
34790.3.2	STP-1216(17)	CONST.	



DESIGN EXCEPTION FOR THE VERTICAL ALIGNMENT  
DESIGN EXCEPTION FOR VERTICAL CLEARANCE ON RAILROAD STRUCTURE AT -Y13-  
THERE IS NO CONTROL OF ACCESS ON THIS PROJECT

**GRAPHIC SCALE**

5 0 10  
PLANS

5 0 10  
PROFILE (HORIZONTAL)

2 0 4  
PROFILE (VERTICAL)

**DESIGN DATA**

ADT 2007 = 19,286 vpd  
ADT 2024 = 27,425 vpd

DHV = 10 %  
D = 60 %  
T = 10 % \*  
V = 60 km/h

\* TTST 4 % DUAL 6 %

**PROJECT LENGTH**

LENGTH ROADWAY F. A. PROJECT STP-1216(17) = 0.936 km  
TOTAL LENGTH STATE TIP PROJECT U-2306A = 0.936 km

Prepared In the Office of:  
**DIVISION OF HIGHWAYS**  
1000 BIRCH RIDGE DRIVE, RALEIGH, NC 27610  
2002 STANDARD SPECIFICATIONS

**RIGHT OF WAY DATE:**  
JUNE 22, 1999

**LETTING DATE:**  
AUGUST 21, 2007

**TONY HOUSER, PE**  
PROJECT ENGINEER

**BRUCE PAYNE, PE**  
PROJECT DESIGN ENGINEER

**HYDRAULICS ENGINEER**

SIGNATURE: \_\_\_\_\_

**ROADWAY DESIGN ENGINEER**

SIGNATURE: *Bruce Payne*

**DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA**

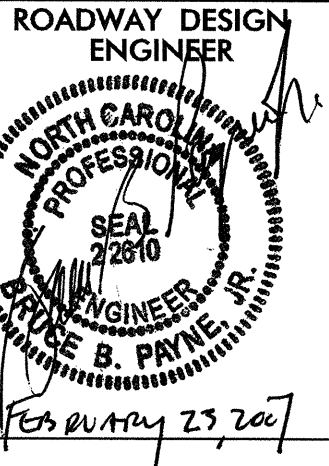
STATE DESIGN ENGINEER

**DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION**

APPROVED \_\_\_\_\_  
DIVISION ADMINISTRATOR

DATE \_\_\_\_\_

03-APR-2007 09:31  
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INDEX OF SHEETS

SHEET NUMBER	SHEET TITLE SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARDS
1-B	CONVENTIONAL SYMBOLS
2	PAVEMENT SCHEDULE & TYPICAL SECTIONS
2-A	PAVEMENT SCHEDULE & TYPICAL SECTIONS
2-B	CURVE DATA & TRAFFIC DIAGRAM
2-C	FENCING SUMMARY AND DETAILS
2-D	DETAILS - INTERSECTIONS AND TEMPORARY DRAINAGE DETAIL
2-E THRU 2-H	GUARDRAIL INSTALLATION
2-I	CHAIN LINK FENCE WITH BARBED WIRE <b>(omitted)</b>
2-J	CONVERT EXISTING DROP INLET OR CATCH BASIN TO JUNCTION BOX (MANHOLE OPTIONAL)
2-K	DRIVEWAY TURNOUT
2-L THRU 2-N	WHEELCHAIR RAMP-CURB CUT
3	SUMMARY OF QUANTITIES
3-A THRU 3-C	DRAINAGE SUMMARY SHEETS
3-D	EARTHWORK SUMMARY
3-E	ASPHALT PAVEMENT REMOVAL, CURB & GUTTER PLACEMENT, SIDEWALK, GUARDRAIL BARRICADE, & BREAKING OF EXISTING ASPHALT SUMMARIES
3-F	PARCEL INDEX SHEET
4 THRU 8	PLAN SHEETS
9 THRU 13	PROFILE SHEETS
TCP-1 THRU TCP-8	TRAFFIC CONTROL PLANS
PM-1 THRU PM-4	PAVEMENT MARKING PLANS
EC-1 THRU EC-4	EROSION CONTROL PLANS
SIGN-1 THRU SIGN-6	SIGNING PLANS
SIG-1 THRU SIG-31	SIGNAL PLANS
UC-1 THRU UC-9	UTILITY CONSTRUCTION PLANS
UO-1 THRU UO-5	UTILITY BY OTHERS
TW-1 THRU TW-15	TRACKWORK PLANS SHEETS AND CROSS-SECTIONS
X-1A	CROSS SECTION SUMMARY
X-1B	CROSS SECTION INDEX
X-1 THRU X-25	CROSS SECTIONS
S-1 THRU S-47	STRUCTURE PLANS

GENERAL NOTES: 2002 SPECIFICATIONS EFFECTIVE: 01-15-02 REVISED: 05-14-03

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

CLEARING: CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE AREAS IN THE PLANS DESIGNATED SAFETY CLEARING. THE LIMITS ARE AS SHOWN AND THE CLEARING AND GRUBBING IS CONSIDERED A PART OF THE LUMP SUM ITEM FOR "CLEARING AND GRUBBING".

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 AND EARTH 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 DETAILS IN PLANS USING 3/900 MM RADIUS OR RADIUS SHOWN ON THE PLANS. LOCATIONS OF DRIVES WILL BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

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

TEMPORARY SHORING: SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.

SUBSURFACE PLANS: NO SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS.

END BENTS: THE ENGINEER SHALL CHECK THE STRUCTURE END BENT PLANS, DETAILS, AND CROSS-SECTION PRIOR TO SETTING OF THE SLOPE STAKES FOR THE EMBANKMENT OR EXCAVATION APPROACHING A BRIDGE.

UTILITIES: UTILITY OWNERS ON THIS PROJECT ARE: DUKE POWER COMPANY, PIEDMONT GAS, SPRINT, CENTEL TELEPHONE COMPANY, AND CHARTER COMMUNICATIONS.

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.

ROADWAY METRIC 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 15, 2002 are applicable to this project and by reference hereby are considered a part of these plans.

STD. NO.	TITLE
<b>DIVISION 2 - EARTHWORK</b>	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superlevation - Two Lane Pavement
<b>DIVISION 3 - PIPE CULVERTS</b>	
300.01	Method of Pipe Installation - Method 'A'
310.0	Driveway Pipe Construction
<b>DIVISION 5 - SUBGRADE, BASES AND SHOULDERS</b>	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
<b>DIVISION 6 - ASPHALT BASES AND PAVEMENTS</b>	
654.01	Pavement Repairs
<b>DIVISION 8 - INCIDENTALS</b>	
815.03	Pipe Underdrain and Blind Drain
840.00	Concrete Base Pad for Drainage Structures
840.01	Brick Catch Basin - 300mm thru 1350mm Pipe
840.02	Concrete Catch Basin - 300mm thru 1350mm Pipe
840.03	Frame, Grates and Hood - for Use on Standard Catch Basin
840.14	Concrete Drop Inlet - 300mm thru 750mm Pipe
840.15	Brick Drop Inlet - 300mm thru 750mm Pipe
840.16	Drop Inlet Frame and Grates - for use with Std. Dwg 840.14 and 840.15
840.24	Frames and Narrow Slot Sag Grates
840.25	Anchorage for Frames - Brick or Concrete
840.26	Brick Median Drop Inlet Type 'A' - 300mm thru 1800mm Pipe
840.29	Frames and Narrow Slot Flat Grates
840.31	Concrete Junction Box - 300mm thru 1650mm Pipe
840.32	Brick Junction Box - 300mm thru 1650mm Pipe
840.34	Traffic Bearing Junction Box - for Use with Pipes 1050mm and Under
840.35	Traffic Bearing Drop Inlet - for Cast Iron Double Frame and Grates
840.36	Traffic Bearing Drop Inlet - for Steel (840.37) 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
840.72	Pipe Collar
846.01	Concrete Curb, Gutter and Curb & Gutter
848.01	Concrete Sidewalk
848.04	Street Turnout
852.01	Concrete Islands
852.10	Median Construction - with Curb and Gutter
862.01	Guardrail Placement
866.01	Chain Link Fence - 1.2m, 1.5m and 1.8m High Fence
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

EFF. 01-15-02 REV. 11-23-04



\*S.U.E = SUBSURFACE UTILITY ENGINEER

# CONVENTIONAL SYMBOLS

## ROADS & RELATED ITEMS

Edge of Pavement	-----
Curb	-----
Prop. Slope Stakes Cut	----- C
Prop. Slope Stakes Fill	----- F
Prop. Woven Wire Fence	----- ○ ○
Prop. Chain Link Fence	----- □ □
Prop. Barbed Wire Fence	----- ◇ ◇
Prop. Wheelchair Ramp	----- WCR
Exist. Guardrail	-----
Prop. Guardrail	-----
Equality Symbol	----- ⊕
Pavement Removal	----- XXXXXX

## RIGHT OF WAY

Baseline Control Point	----- ◆
Existing Right of Way Marker	----- △
Exist. Right of Way Line w/Marker	----- △
Prop. Right of Way Line with Proposed RW marker (Iron Pin & Cap)	----- ▲
Prop. Right of Way Line with Proposed (Concrete or Granite) R/w Marker	----- ▲
Exist. Control of Access Line	----- C A
Prop. Control of Access Line	----- C A
Exist. Easement Line	----- E
Prop. Temp. Construction Easement Line	----- E
Prop. Temp. Drainage Easement Line	----- TDE
Prop. Perm. Drainage Easement Line	----- PDE

## HYDROLOGY

Stream or Body of Water	-----
Flow Arrow	----- →
Disappearing Stream	----- / /
Spring	----- ○
Swamp Marsh	----- ▽
Shoreline	-----
Falls, Rapids	----- +
Prop Lateral, Tail, Head Ditches	----- ← FLOW

## STRUCTURES

MAJOR	
Bridge, Tunnel, or Box Culvert	----- CONC
Bridge Wing Wall, Head Wall and End Wall	----- CONC WW

MINOR	
Head & End Wall	----- CONC HW
Pipe Culvert	----- = = = = =
Footbridge	----- > ----- <
Drainage Boxes	----- □ CB
Paved Ditch Gutter	-----

## UTILITIES

Exist. Pole	----- •
Exist. Power Pole	----- •
Prop. Power Pole	----- ○
Exist. Telephone Pole	----- •
Prop. Telephone Pole	----- ○
Exist. Joint Use Pole	----- •
Prop. Joint Use Pole	----- ○
Telephone Pedestal	----- □
Cable TV Pedestal	----- □
Hydrant	----- ⊕
Satellite Dish	----- ∠
Exist. Water Valve	----- ⊗
Sewer Clean Out	----- ⊕
Power Manhole	----- ⊕
Telephone Booth	----- ⊕
Water Manhole	----- ⊕
Light Pole	----- ⊕
H-Frame Pole	----- •
Power Line Tower	----- ⊗
Pole with Base	----- □
Gas Valve	----- ◇
Gas Meter	----- ◇
Telephone Manhole	----- ⊕
Power Transformer	----- ⊕
Sanitary Sewer Manhole	----- ⊕
Storm Sewer Manhole	----- ⊕
Tank; Water, Gas, Oil	----- ○
Water Tank With Legs	----- ○
Traffic Signal Junction Box	----- ⊕
Fiber Optic Splice Box	----- ⊕
Television or Radio Tower	----- ⊕
Utility Power Line Connects to Traffic Signal Lines Cut Into the Pavement	----- TS TS

Recorded Water Line	----- W W
Designated Water Line (S.U.E.*)	----- -W -W
Sanitary Sewer	----- SS SS
Recorded Sanitary Sewer Force Main	----- FSS FSS
Designated Sanitary Sewer Force Main(S.U.E.*)	----- -FSS -FSS
Recorded Gas Line	----- G G
Designated Gas Line (S.U.E.*)	----- -G -G
Storm Sewer	----- S S
Recorded Power Line	----- P P
Designated Power Line (S.U.E.*)	----- -P -P
Recorded Telephone Cable	----- T T
Designated Telephone Cable (S.U.E.*)	----- -T -T
Recorded U/G Telephone Conduit	----- TC TC
Designated U/G Telephone Conduit (S.U.E.*)	----- -TC -TC
Unknown Utility (S.U.E.*)	----- ?UTL ?UTL
Recorded Television Cable	----- TV TV
Designated Television Cable (S.U.E.*)	----- -TV -TV
Recorded Fiber Optics Cable	----- FO FO
Designated Fiber Optics Cable (S.U.E.*)	----- -FO -FO
Exist. Water Meter	----- ○
U/G Test Hole (S.U.E.*)	----- ⊗
Abandoned According to U/G Record	----- ATTUR
End of Information	----- E.O.I.

## BOUNDARIES & PROPERTIES

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Property Line Symbol	----- PL
Exist. Iron Pin	----- ○ EIP
Property Corner	----- +
Property Monument	----- ECM
Property Number	----- 123
Parcel Number	----- 6
Fence Line	----- X-X-X-X- WW & ISBW
Existing Wetland Boundaries	----- -WLB -
Proposed Wetland Boundaries	----- WLB
Existing Endangered Animal Boundaries	----- -EAB -
Existing Endangered Plant Boundaries	----- -EPB -

## BUILDINGS & OTHER CULTURE

Buildings	----- □
Foundations	----- □
Area Outline	----- □
Gate	----- ↗
Gas Pump Vent or U/G Tank Cap	----- ○
Church	----- □
School	----- □
Park	----- □
Cemetery	----- □
Dam	----- □
Sign	----- ○ S
Well	----- ○ W
Small Mine	----- ⊗
Swimming Pool	----- ▨

## TOPOGRAPHY

Loose Surface	----- -----
Hard Surface	----- -----
Change in Road Surface	----- -----
Curb	----- -----
Right of Way Symbol	----- R/W
Guard Post	----- ○ GP
Paved Walk	----- -----
Bridge	----- -----
Box Culvert or Tunnel	----- -----
Ferry	----- -----
Culvert	----- -----
Footbridge	----- -----
Trail, Footpath	----- -----
Light House	----- ⊕

## VEGETATION

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

## RAILROADS

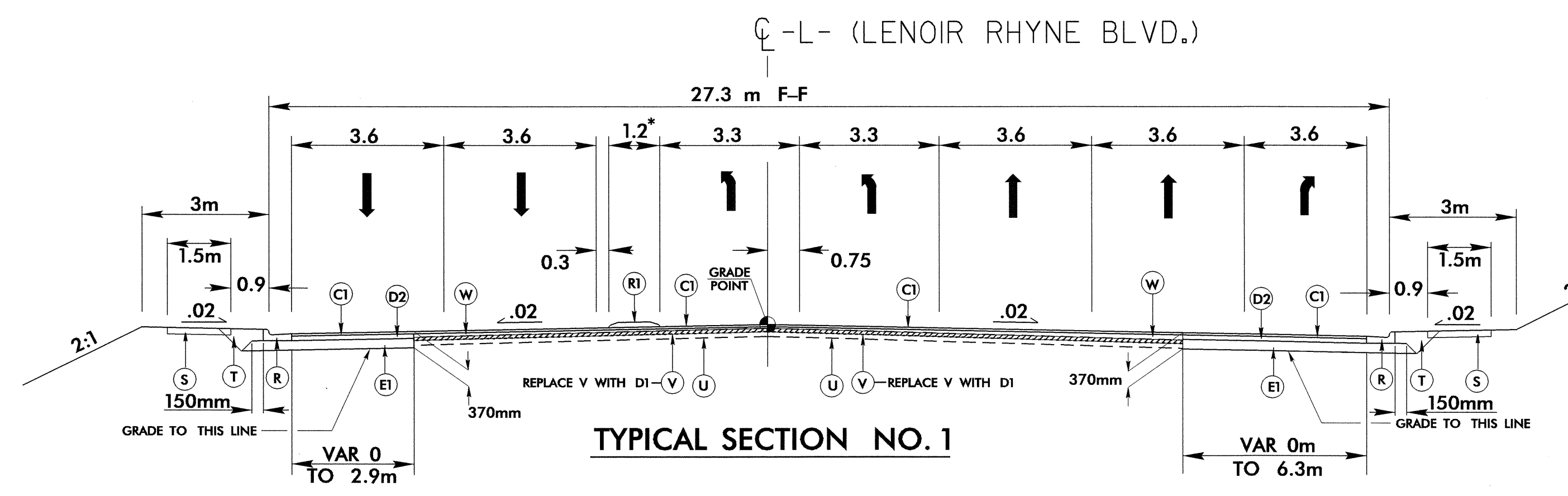
Standard Gauge	----- ----- CSX TRANSPORTATION
RR Signal Milepost	----- ○ MILEPOST 35
Switch	----- □ SWITCH



PROJECT REFERENCE NO. <b>U-2306A</b>	SHEET NO. <b>2</b>
ROADWAY DESIGN ENGINEER <i>[Signature]</i>	PAVEMENT DESIGN ENGINEER <i>[Signature]</i>

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 80 mm ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 96 kg PER SQ. METER IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 2.4 kg PER SQ. METER PER 1 mm DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 40 mm IN DEPTH OR GREATER THAN 50 mm IN DEPTH.
D1	PROP. APPROX. 65 mm ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 159 kg PER SQ. METER.
D2	PROP. APPROX. 100 mm ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 245 kg PER SQ. METER.
D3	PROP. VAR. DEPTH ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 2.45 kg PER SQ. METER PER 1 mm DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 65 mm OR GREATER THAN 110 mm IN DEPTH.
E1	PROP. APPROX. 190 mm ASPHALT CONC. BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 232.75 KG. PER SQ. METER IN EACH OF TWO LAYERS
E2	PROP. VAR. DEPTH CONC. BASE COURSE TYPE, B25.0C, AT AN AVERAGE RATE OF 2.45KG PER SQ. METER PER 1 mm DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 75 mm IN DEPTH OR GREATER THAN 140 mm IN DEPTH.
R	750 mm CONCRETE CURB AND GUTTER.
RI	125 mm MONOLITHIC CONCRETE ISLAND (KEYED-IN)
R2	75 mm CONCRETE COVER
S	CONCRETE SIDEWALK
T	EARTH MATERIAL.
U	EXIST. PAVEMENT
V	MILLING OF EXISTING PAVEMENT (65 mm)
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL)

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



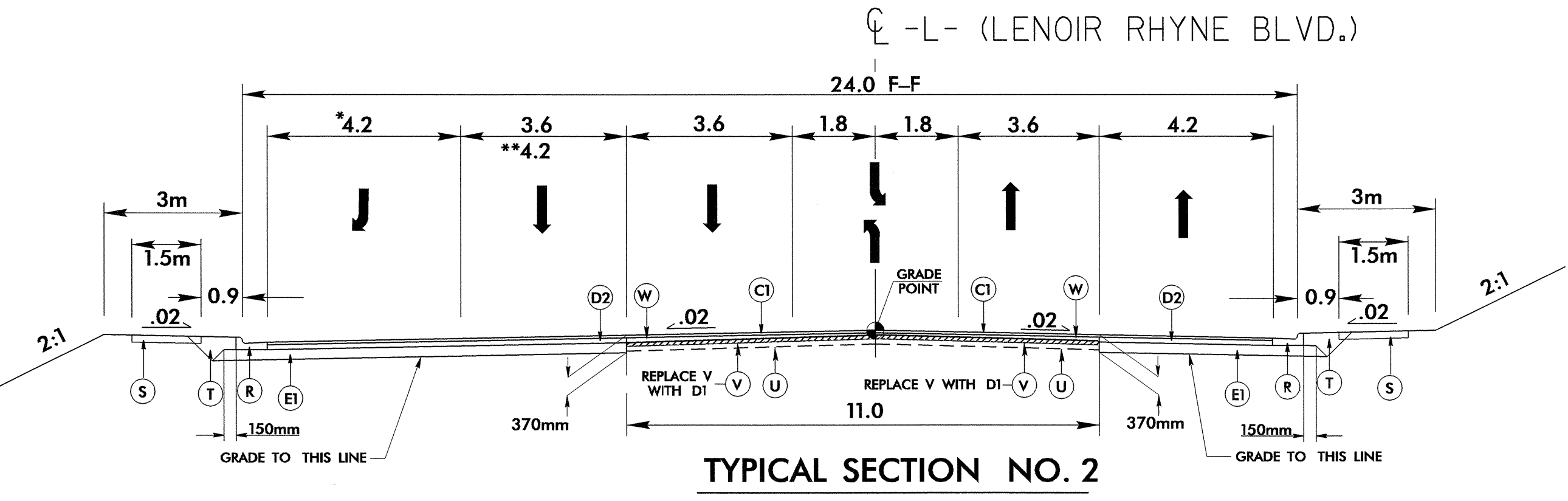
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

-L- STA. 10+73.873 TO 11+90.857

NOTE:  
SEE TYPICAL SECTION NO. 6  
FOR TRANSITION FROM  
TYPICAL SECTION NO. 1 TO  
TYPICAL SECTION NO. 2

NOTE: SEE PLANS FOR TURN LANES, TAPERS  
AND MONOLITHIC ISLANDS  
NOTE: MILL EXISTING PAVEMENT TO A DEPTH  
OF 65 mm AND REPLACE WITH D1



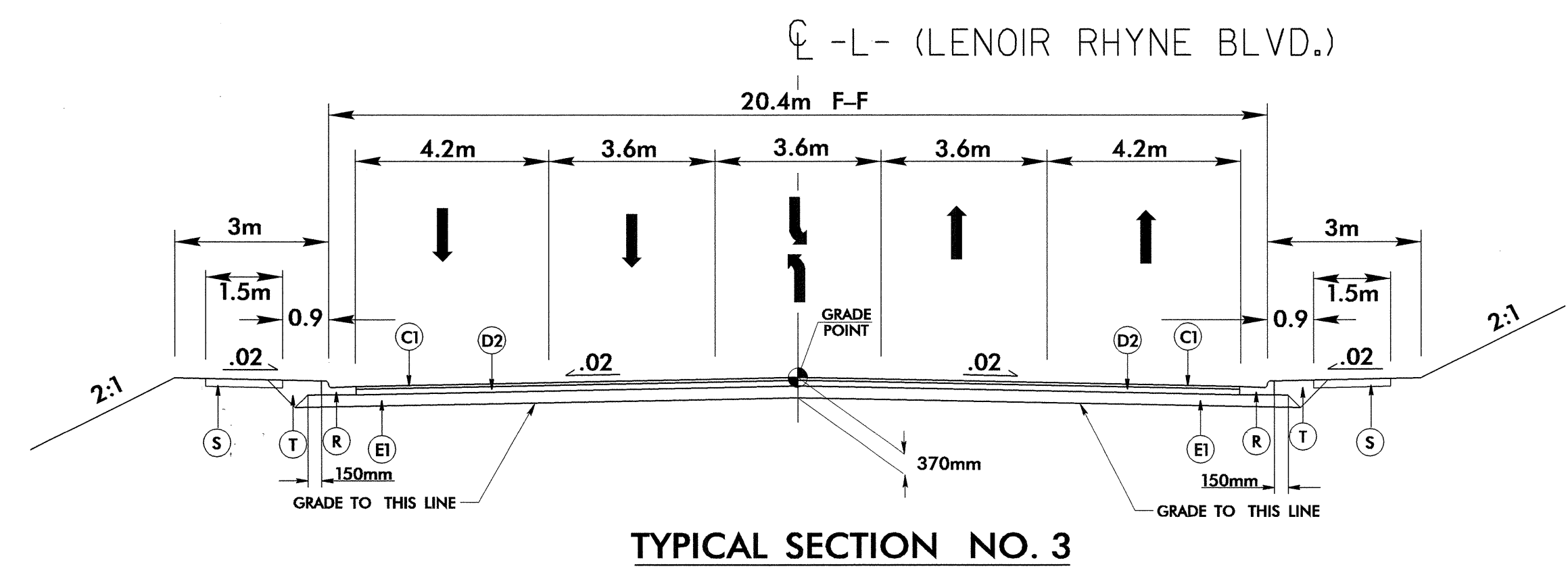
TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2

\*-L- STA. 12+24.781 TO 12+97.233

\*\*L- STA. 14+20.000 TO 17+57.070

NOTE: SEE PLANS FOR TURN LANES, TAPERS  
AND MONOLITHIC ISLANDS  
NOTE: MILL EXISTING PAVEMENT TO A DEPTH  
OF 65 mm AND REPLACE WITH D1

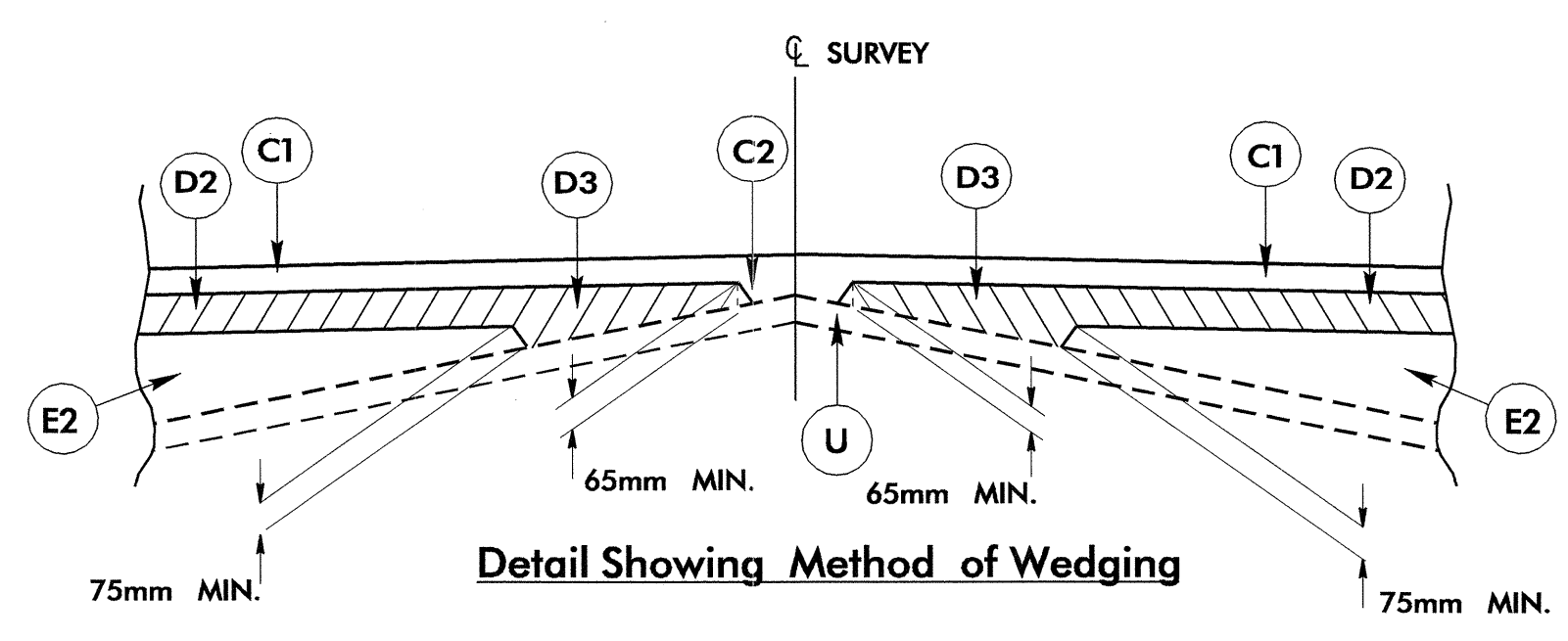


TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3

-L- STA. 12+97.233 TO 14+20.000

NOTE: SEE PLANS FOR TURN LANES, TAPERS  
AND MONOLITHIC ISLANDS

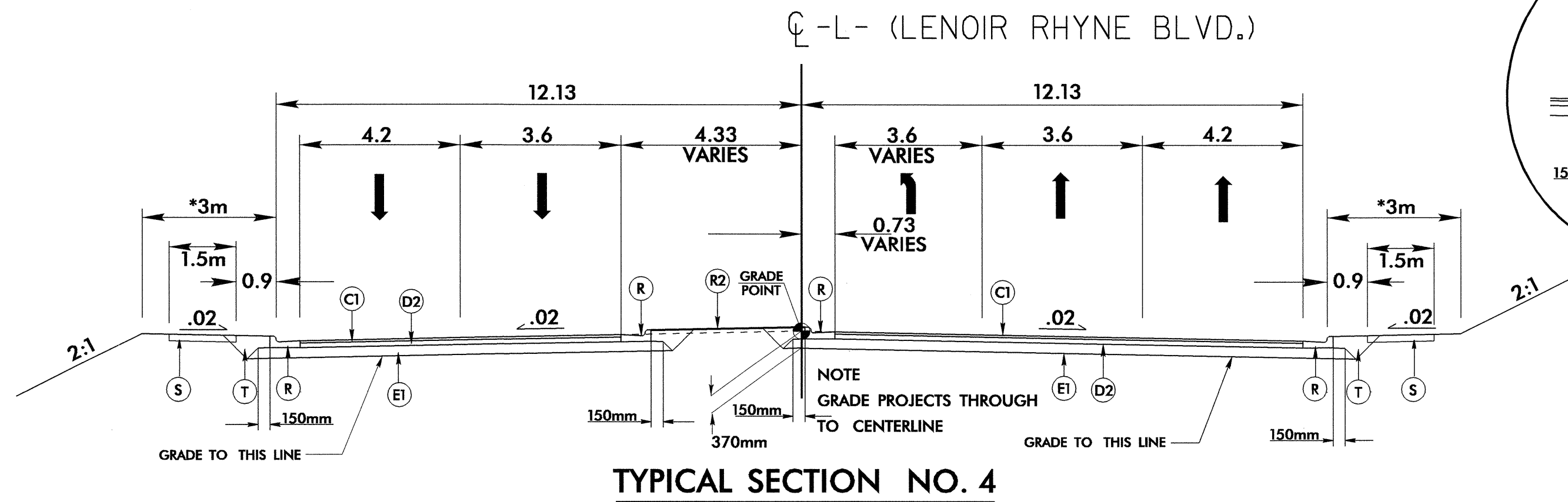


Detail Showing Method of Wedging

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PROJECT REFERENCE NO. U-2306A ROADWAY DESIGN ENGINEER	SHEET NO. 2-A PAVEMENT DESIGN ENGINEER



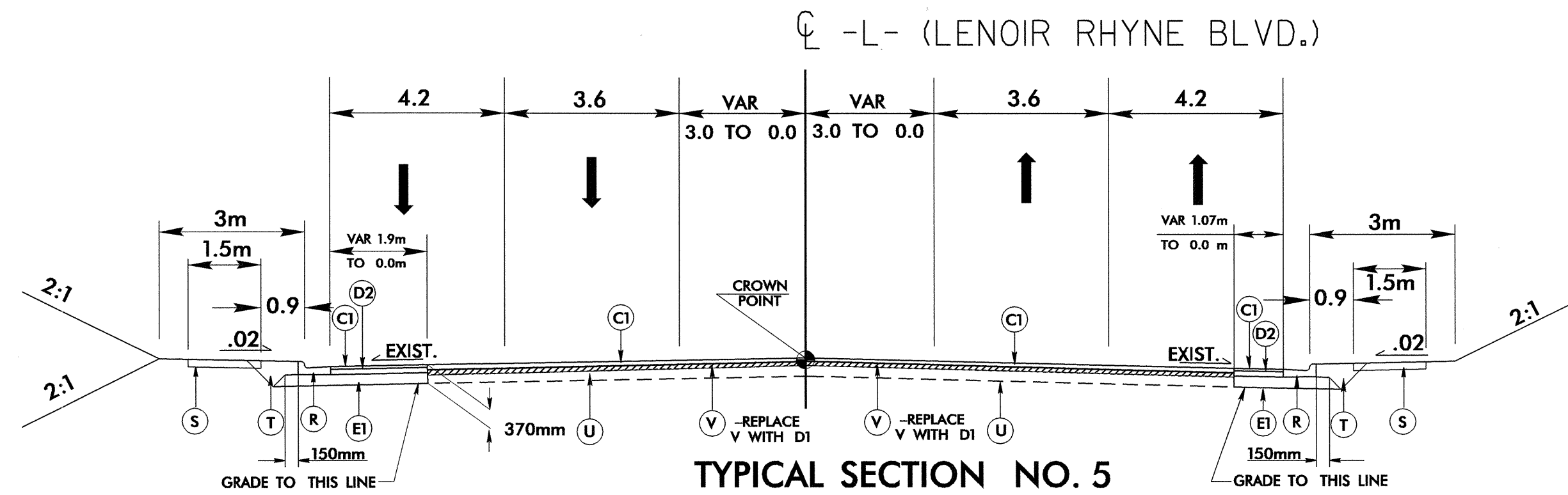
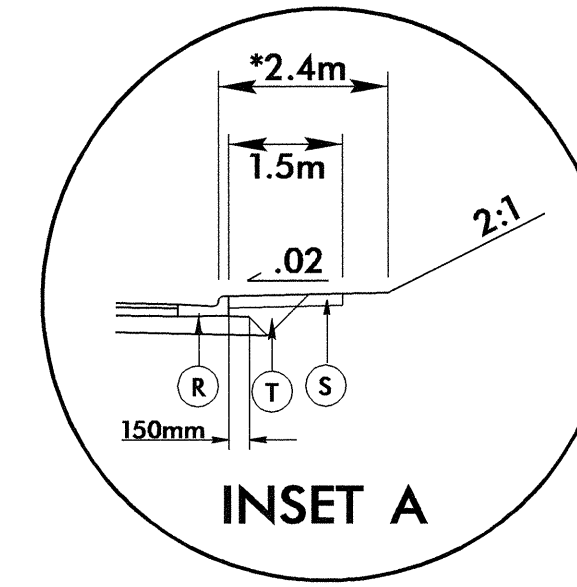
TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4

-L- STA. 17+57.070 TO 19+65.350

\*NOTE: BERM WIDTH IS 2.4M UNDER STRUCTURE @ -L- STA 18+80 SEE INSET A

NOTE: SEE PLANS FOR TURN LANES, TAPERS AND MONOLITHIC ISLANDS



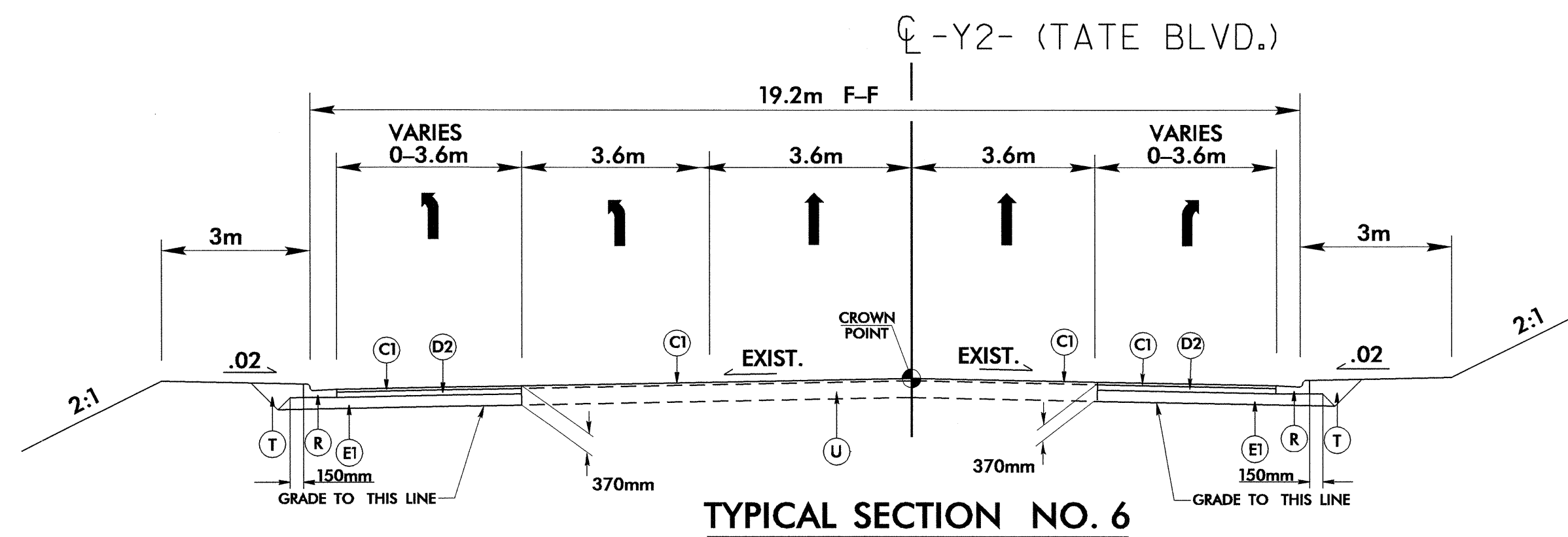
TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5

-L- STA. 19+65.350 TO 20+10.000

NOTE: SEE PLANS FOR TURN LANES, TAPERS AND MONOLITHIC ISLANDS

NOTE: MILL EXISTING PAVEMENT TO A DEPTH OF 65 mm AND REPLACE WITH D1



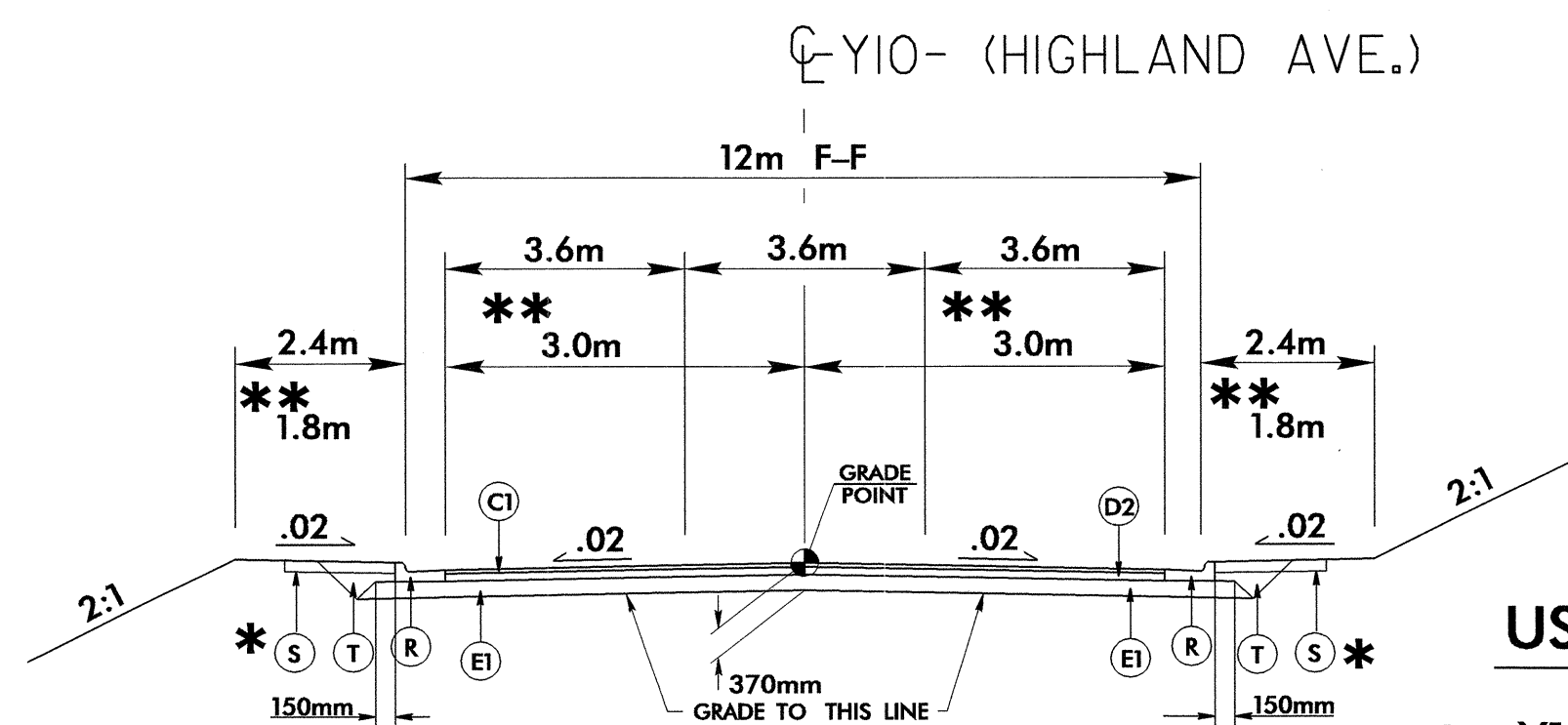
TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6

-Y2- STA. 11+21.082 TO 12+26.410

NOTE: CONTINUE RESURFACING THROUGH INTERSECTION OF -Y2- & -L-

NOTE: SEE PLANS FOR TURN LANES, TAPERS AND MONOLITHIC ISLANDS

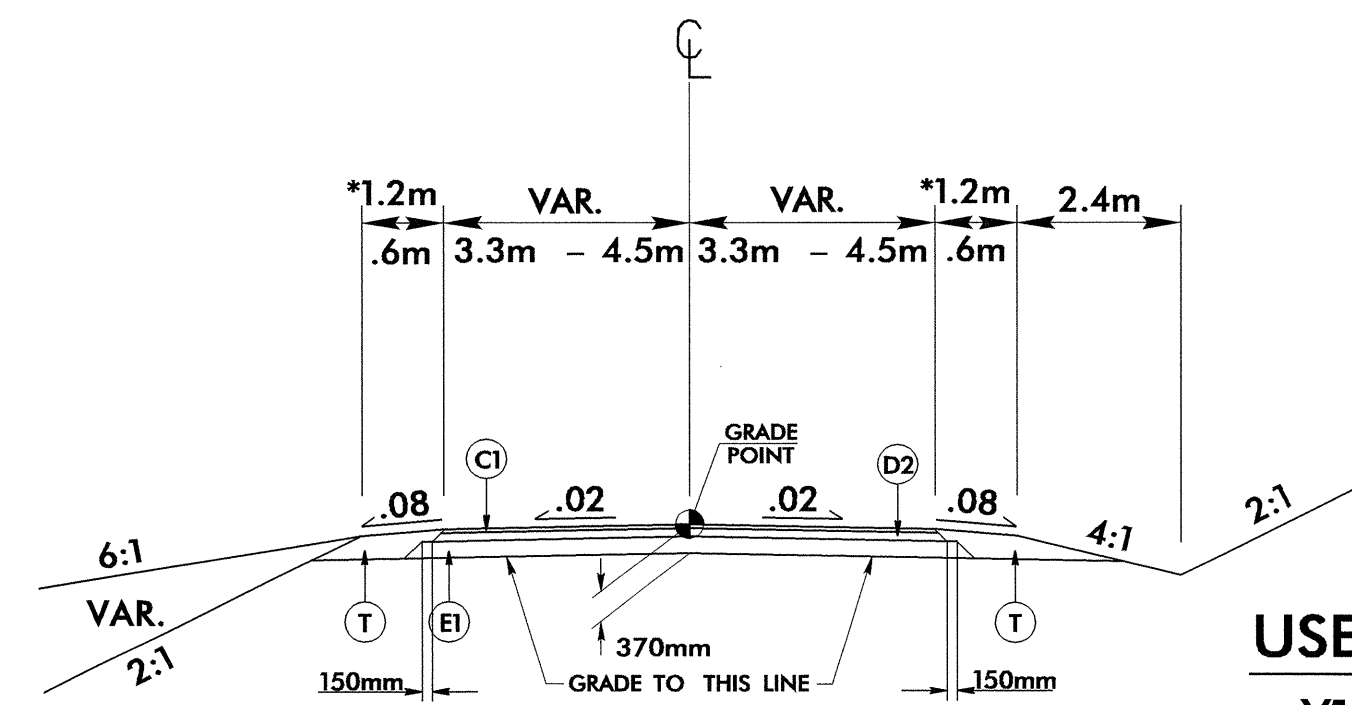


TYPICAL SECTION NO. 8

USE TYPICAL SECTION NO. 8

\* -Y10- STA. 10+00.000 TO 10+76.506

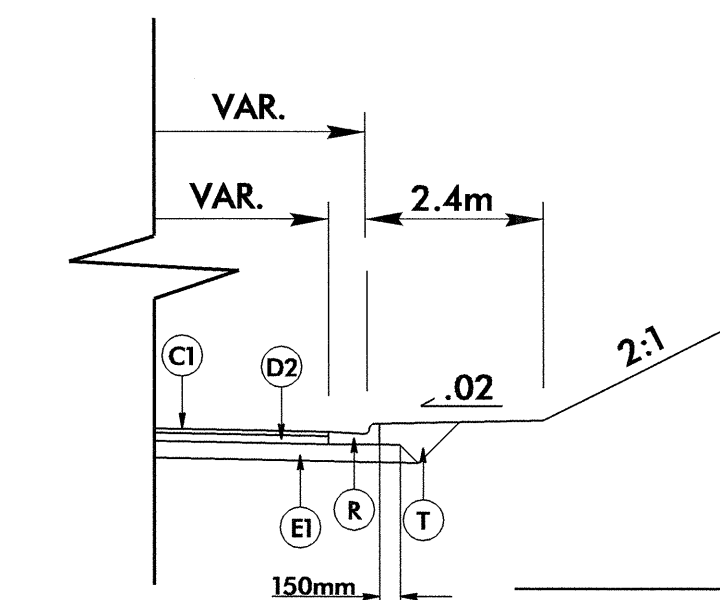
\*\* -DR1- STA. 10+09.620 TO 10+42.308



TYPICAL SECTION NO. 7

USE TYPICAL SECTION NO. 7

- Y1- STA. 10+60.000 TO 10+79.344 (9m)
- Y5- (F AVE SE) STA. 10+90.000 TO 11+21.180 (6.6m)
- Y5- (F AVE SE) STA. 11+42.219 TO 12+10.000 (6.6m)
- \* -Y6- (F AVE DR. SE) STA. 10+40.000 TO 11+18.397 (7.2m)
- Y7- (E AVE SE) STA. 10+80.000 TO 11+19.449 (9m)
- Y7- (E AVE SE) STA. 11+40.225 TO 11+75.000 (9m)
- Y9- (D AVE SE) STA. 10+09.600 TO 10+60.000 (9m)

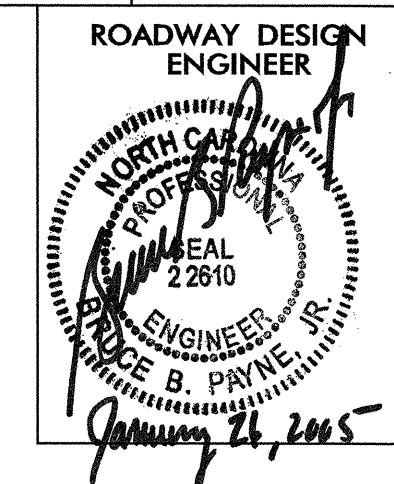


PARTIAL TYPICAL SECTION

USE IN CONJUNCTION WITH T. S. NO. 7  
\* -Y6- STA. 11+38.603 TO 12+20.000 (7.2m)

C1	80 mm, TYPE S9.5C
C2	VAR. DEPTH, TYPE S9.5C
D1	65 mm, TYPE I19.0C
D2	100 mm, TYPE I19.0C
D3	VAR. DEPTH, TYPE I19.0C
E1	190 mm, TYPE B25.0C.
E2	VAR. DEPTH, TYPE B25.0C.
R	750 mm CURB & GUTTER.
R1	125 mm MONO. CONC. ISLAND
R2	75 mm CONCRETE COVER
S	SIDEWALK
T	EARTH MATERIAL.
U	EXIST. PAVEMENT
V	65 mm MILLING
W	WEDGING

22-JAN-2007 08:54  
 \*\*\*USER NAME\*\*\*  
 6/16/09



# CURVE DATA

FOR PLAN SHEETS 4,5,6,7 AND 8

NOTE:  
PLEASE SEE TRACKWORK PLANS FOR ALL  
INFORMATION PERTAINING TO RAILROAD  
DETOUR AND PROPOSED RAILROAD TRACKWORK

## -L-

PI Sta. 11+85.377  
 $\Delta = 29^\circ 38' 12.5''$  (RT)  
 L = 112.916  
 T = 57.752  
 R = 218.297  
 SE = .02  
 RUNOFF = 28.92 m

PI Sta. 15+68.468  
 $\Delta = 18^\circ 08' 07.7''$  (RT)  
 L = 279.174  
 T = 140.764  
 R = 882.000  
 SE = .02  
 RUNOFF = 28.92 m

PI Sta. 20+20.249  
 $\Delta = 7^\circ 59' 08.7''$  (LT)  
 L = 74.567  
 T = 37.344  
 R = 535.000  
 SE = SEE PLANS  
 RUNOFF = SEE PLANS

## DRIVE 1

PI Sta. 10+36.647  
 $\Delta = 95^\circ 22' 13.7''$  (LT)  
 L = 16.645  
 T = 10.984  
 R = 10.000  
 SE = NC  
 RUNOFF = 0.0

## -Y2-

PI Sta. 13+36.557  
 $\Delta = 31^\circ 21' 59.0''$  (RT)  
 L = 382.420  
 T = 196.133  
 R = 698.552  
 SE = SEE PLANS  
 RUNOFF = SEE PLANS

PIs Sta. 11+20.108  
 $\Theta_s = 2^\circ 30' 00.0''$   
 Ls = 60.960  
 Lt = 40.644  
 St = 20.324  
 SE = EXISTING  
 RUNOFF = 0.0

## -Y5-

PI Sta. 12+02.049  
 $\Delta = 5^\circ 42' 15.0''$  (LT)  
 L = 29.867  
 T = 14.946  
 R = 300.000  
 SE = SEE PLANS  
 RUNOFF = SEE PLANS

## -Y6-

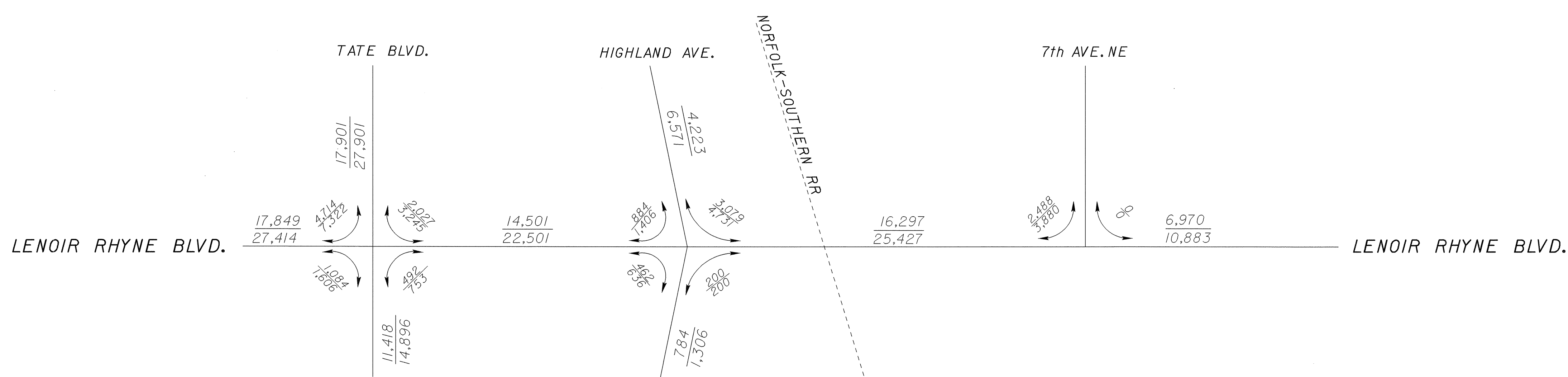
PI Sta. 12+38.249  
 $\Delta = 3^\circ 21' 24.6''$  (RT)  
 L = 82.023  
 T = 41.023  
 R = 1,400.000  
 SE = SEE PLANS  
 RUNOFF = SEE PLANS

## -Y9-

PI Sta. 10+51.012  
 $\Delta = 32^\circ 22' 32.0''$  (LT)  
 L = 28.253  
 T = 14.515  
 R = 50.000  
 SE = SEE PLANS  
 RUNOFF = SEE PLANS

## -Y10-

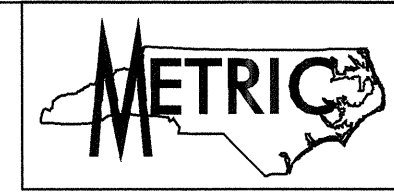
PI Sta. 10+38.184  
 $\Delta = 43^\circ 43' 36.0''$  (RT)  
 L = 45.790  
 T = 24.075  
 R = 60.000  
 SE = SEE PLANS  
 RUNOFF = SEE PLANS



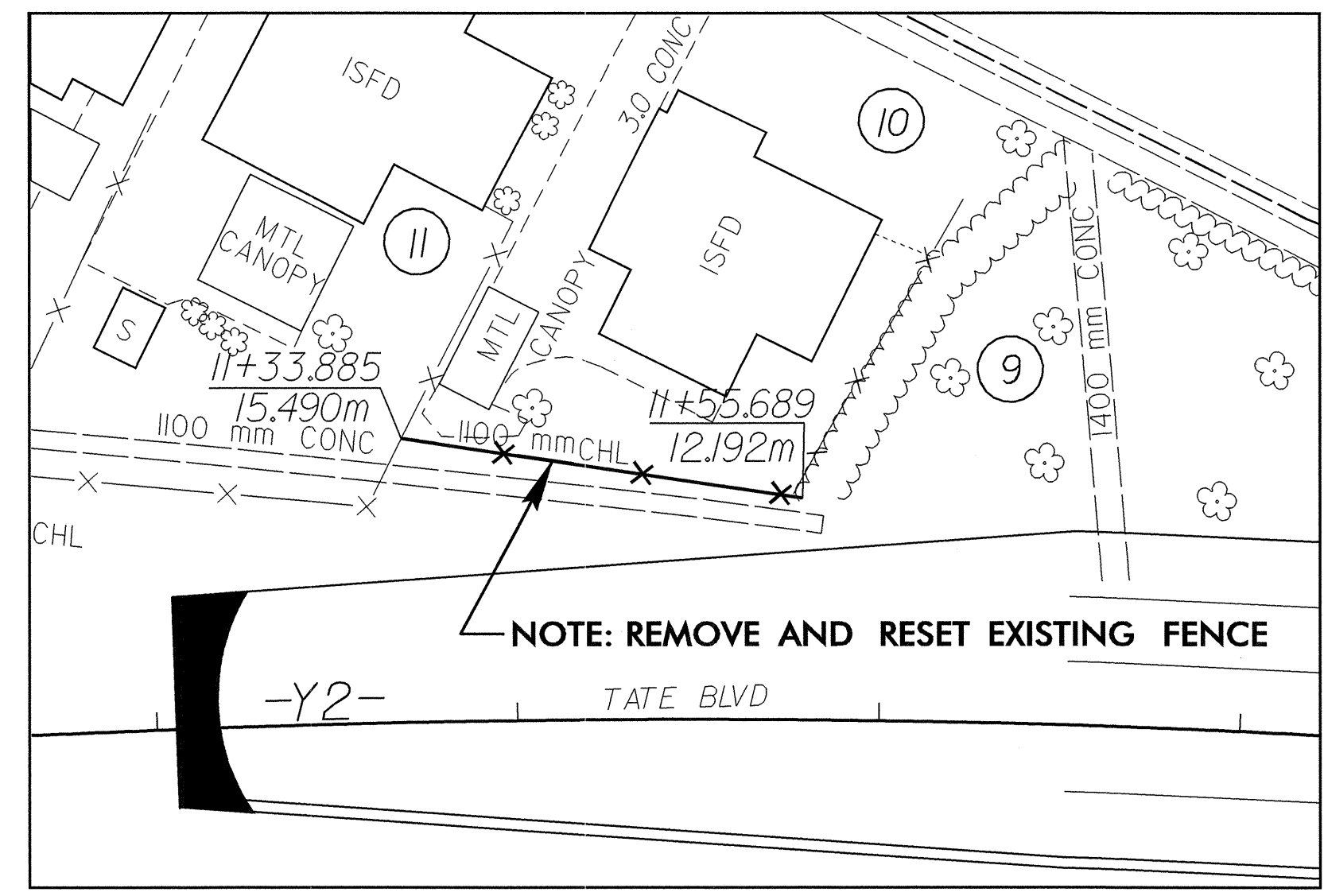
2024 TRAFFIC PROJECTIONS  
 for the  
 LENOIR RHYNE BLVD. EXT.  
 CATAWBA COUNTY  
 TIP# U-2306A

ADT = 2004  
 ADT = 2024

# FENCING SUMMARY & DETAILS



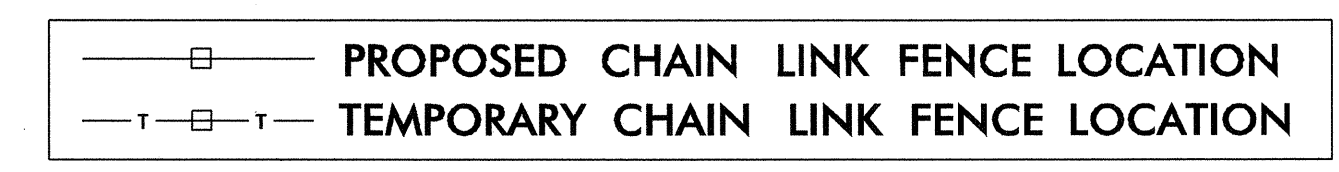
NOT TO SCALE



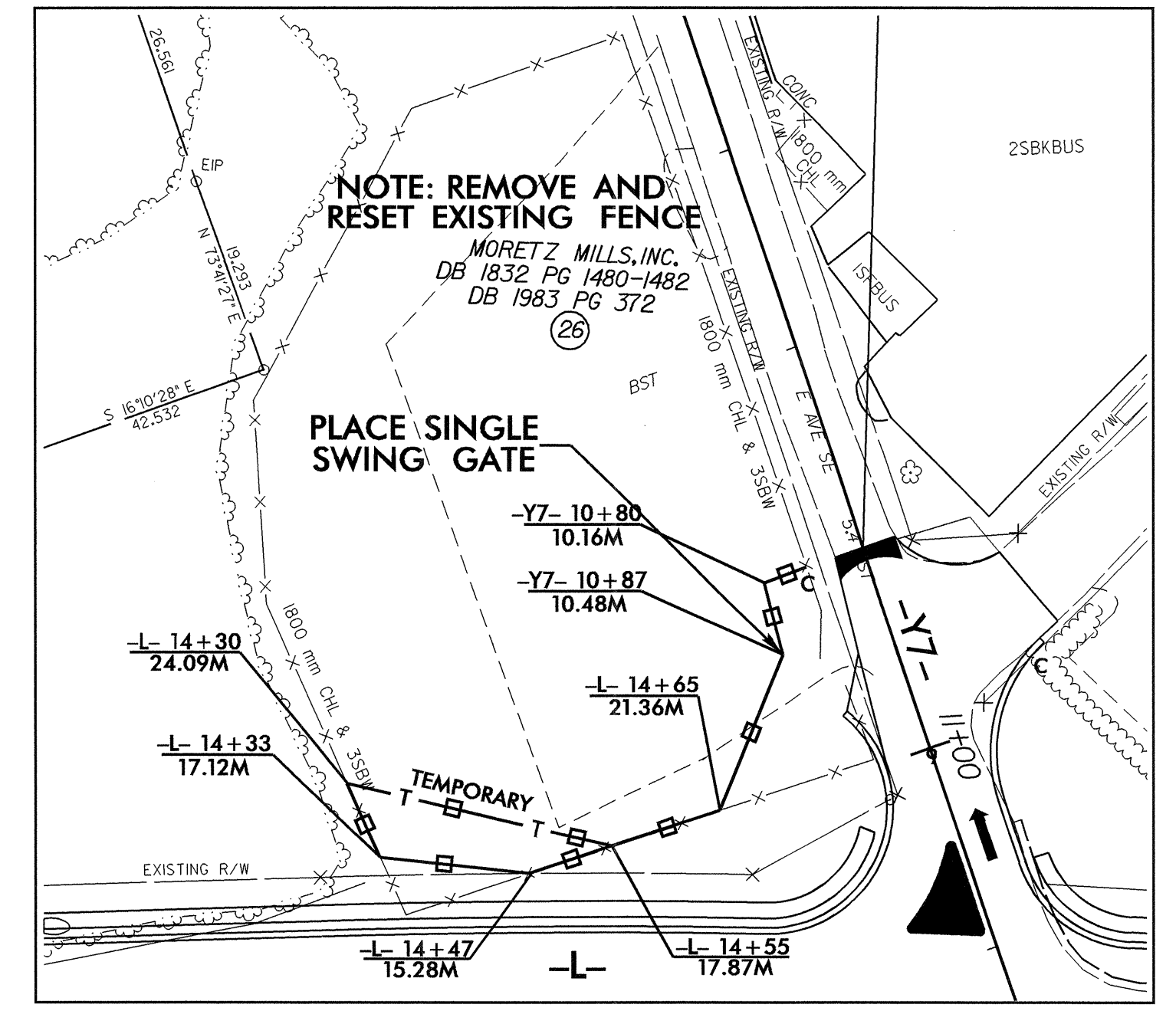
DETAIL 1

**DETAIL 1 (SEE SHEET 4 FOR PLAN VIEW)**  
REMOVE CHAIN LINK FENCE AND RESET IN SAME LOCATION CLEAR OF SLOPE STAKES

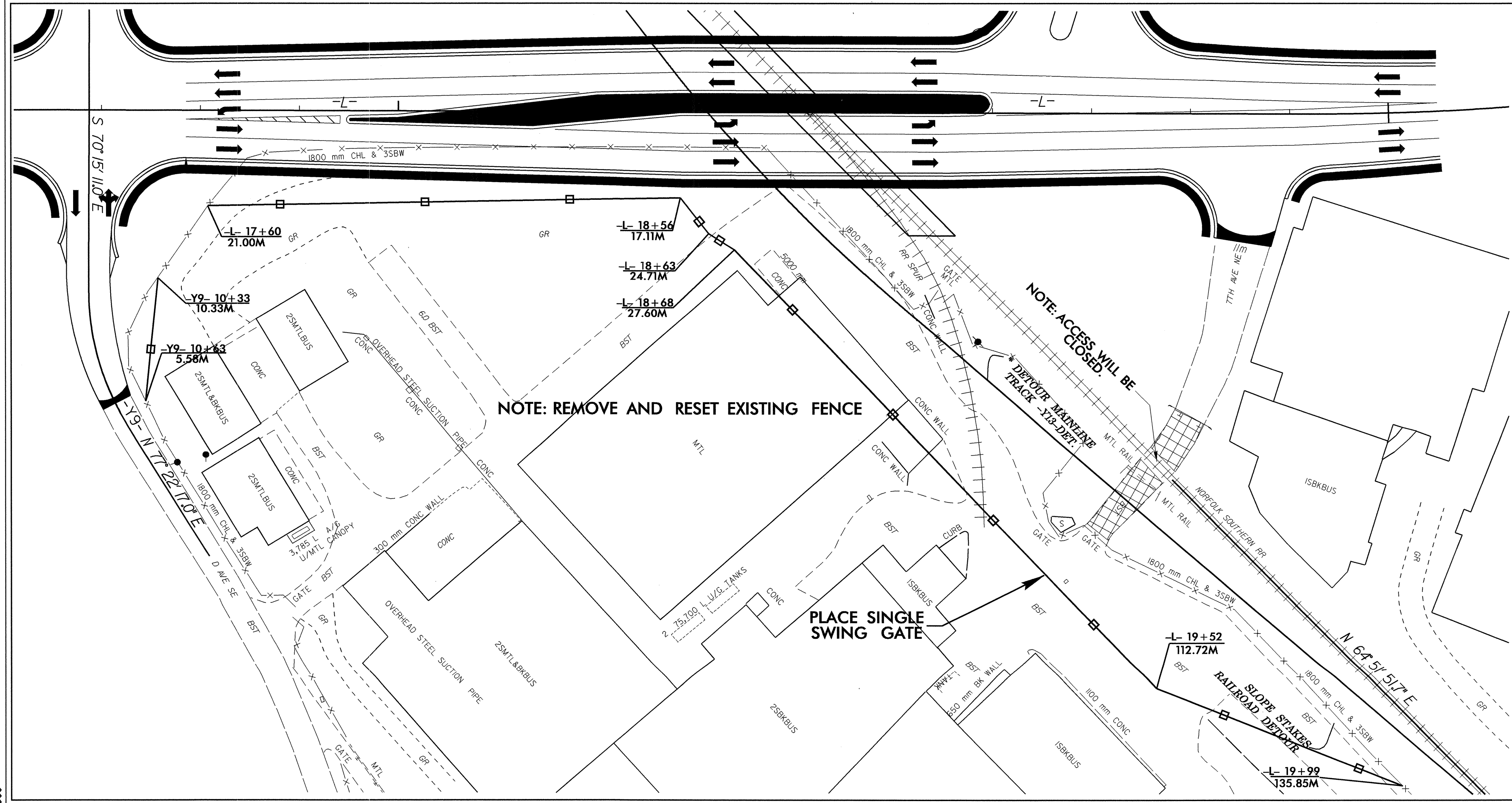
**DETAIL 2**  
1) TEMPORARILY REMOVE AND RESET EXISTING CHAIN LINK FENCE (WITH 3 STRAND BARBWIRE) ALONG EASEMENT & PROPOSED ROW CLEAR OF SLOPE STAKES  
2) REMOVE & RESET TEMPORARY FENCE TO PROPERTY LINE CLEAR OF SLOPE STAKES WHEN CONSTRUCTION IS FINISHED



**DETAIL 3**  
REMOVE AND RESET CHAIN LINK FENCE WITH 3 STRAND BARBWIRE ALONG EASEMENT & SOUTHERN RAILROAD EXISTING ROW WITH GATE AT RAILROAD CROSSING



DETAIL 2



DETAIL 3

## FENCING SUMMARY (REMOVE AND RESET) IN METERS

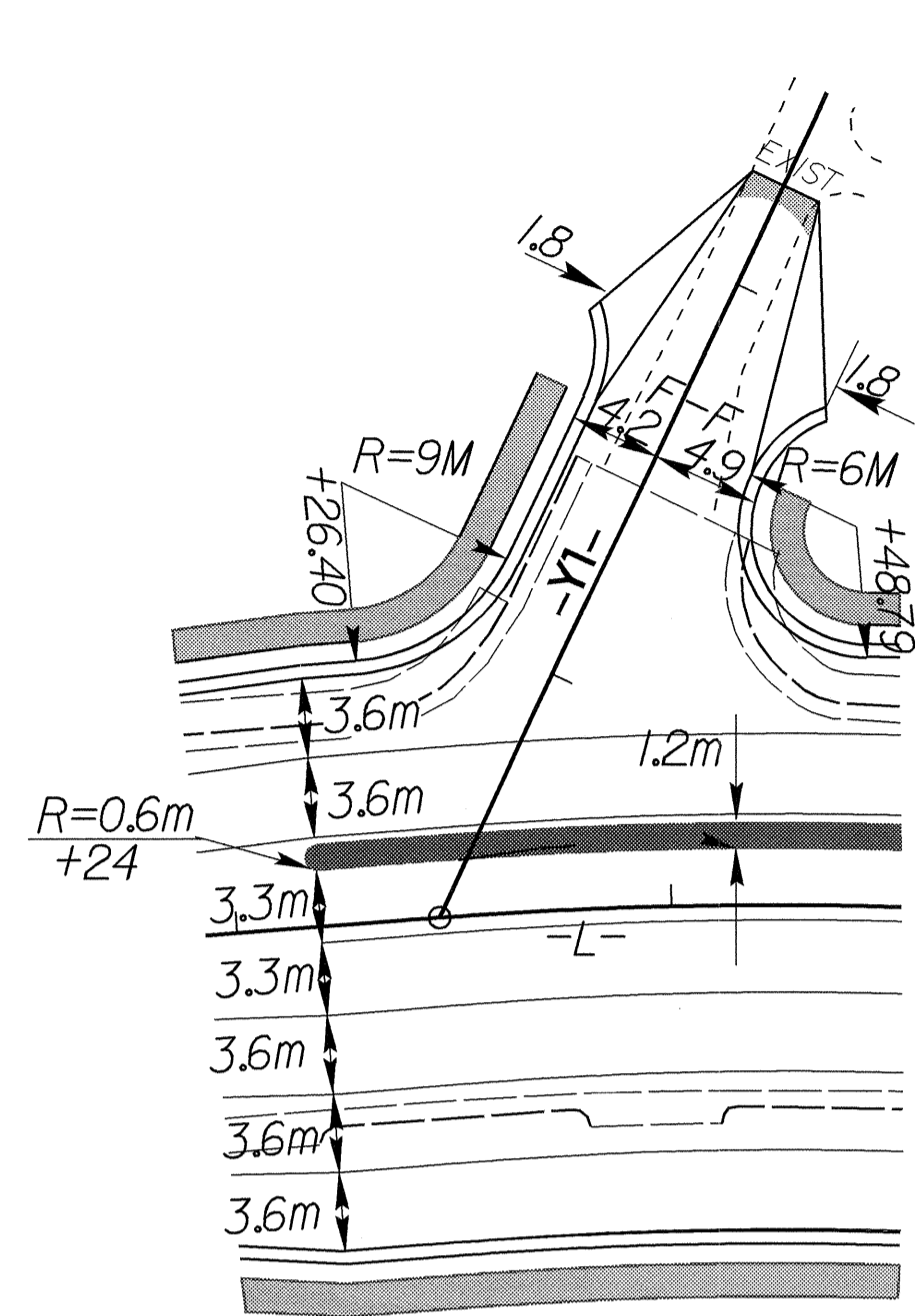
LINE	LOCATION	SIDE	LENGTH M	CORNER BRACE	LINE POST	TERM. POST
<b>1200mm CHAIN LINK FENCE</b>						
-Y2-	11+11.00 TO 11+53.00	LT	41.26	2	12	2
-Y2-	11+53.00 TO 11+56.00	LT	7.56	1	3	1
<b>TOTAL =</b>				<b>3</b>	<b>15</b>	<b>3</b>
<b>1800mm CHAIN LINK FENCE WITH 3 SBW</b>						
-L-	14+30.00 TO 14+33.00	LT	7.00			
-L-	14+33.00 TO 14+47.00	LT	13.15			
-L-	14+47.00 TO 14+65.00	LT	17.40			
-L-	14+65.00 TO -Y7- 10+87.00	LT	14.48			
-Y7-	10+87.00 TO 10+80.00	LT	6.32			
-Y7-	10+80.00 TO 10+80.00	LT	3.86			
-Y9-	10+63.00 TO 10+33.00	RT	22.79			
-L-	17+60.00 TO 18+56.00	RT	86.41			
-L-	18+56.00 TO 18+63.00	RT	8.90			
-L-	18+63.00 TO 18+68.00	RT	4.50			
-L-	18+68.00 TO 19+52.00	RT	108.78			
-L-	19+52.00 TO 19+99.00	RT	50.10			
<b>TEMPORARY 1800mm CHAIN LINK FENCE WITH 3 SBW</b>						
-L-	14+30.00 TO 14+55.00	LT	23.50			
<b>TOTAL =</b>				<b>367.19</b>		
SAY 1800mm FABRIC LENGTH =				<b>375</b>		
SAY 1200mm FABRIC LENGTH =				<b>50</b>		

6/15/09 16-MAY-2007 15:37 \*\*\*USER:R188810001/112306a.dwg

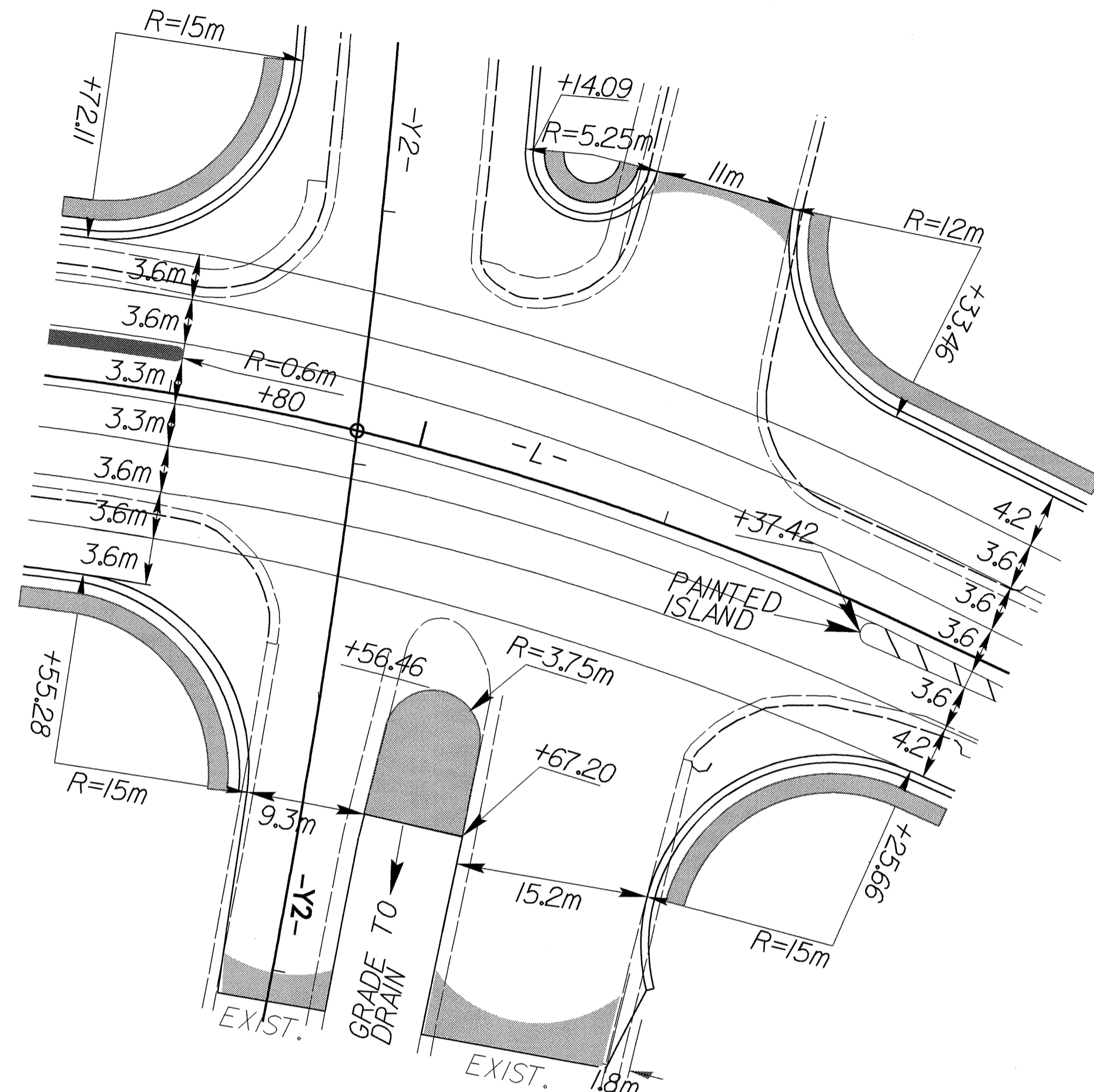
# INTERSECTIONS DETAIL AND TEMPORARY DRAINAGE DETAIL

NOT TO SCALE

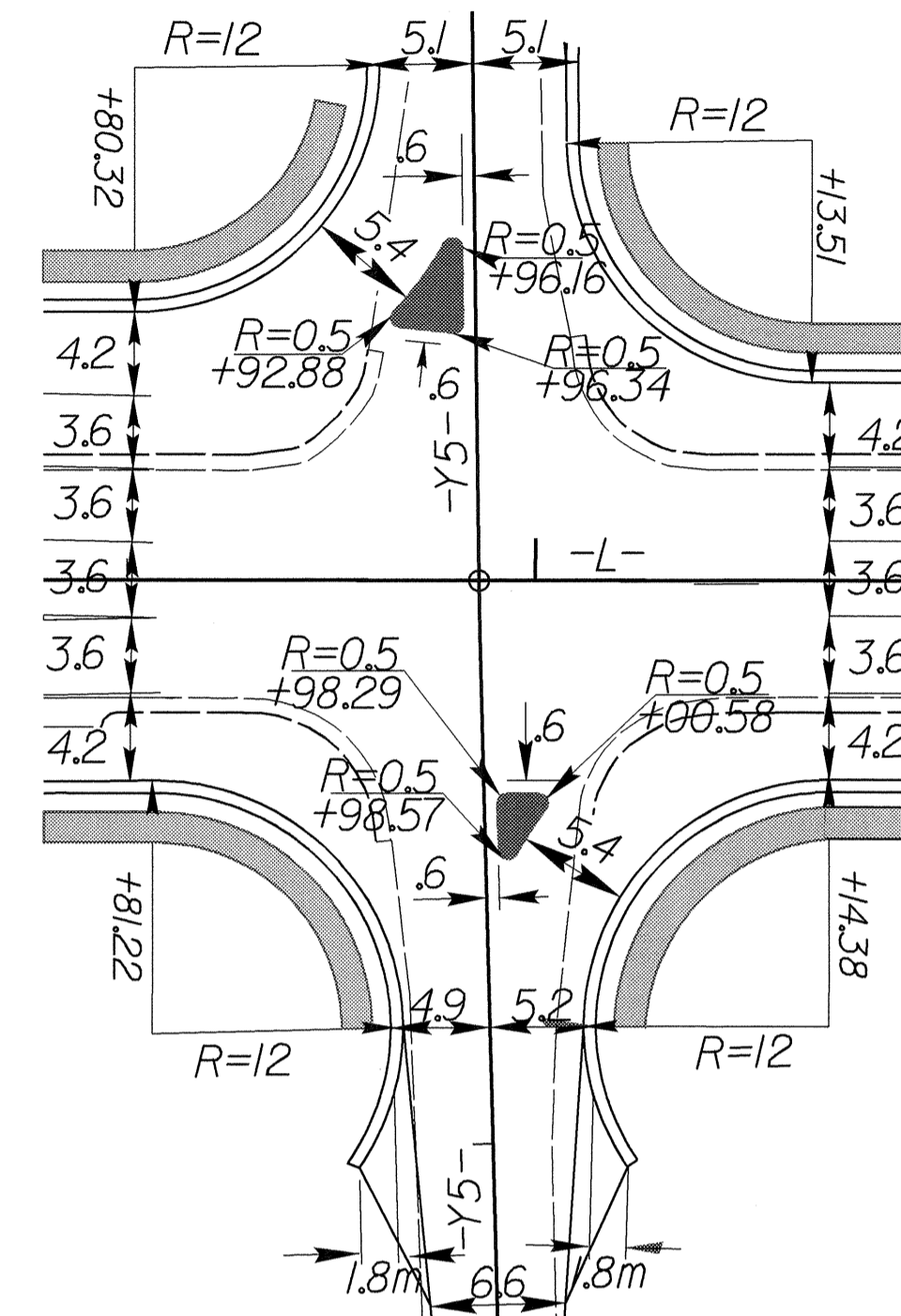
	PROJECT REFERENCE NO.	SHEET NO.
	U-2306A	2-D
	HIGHWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



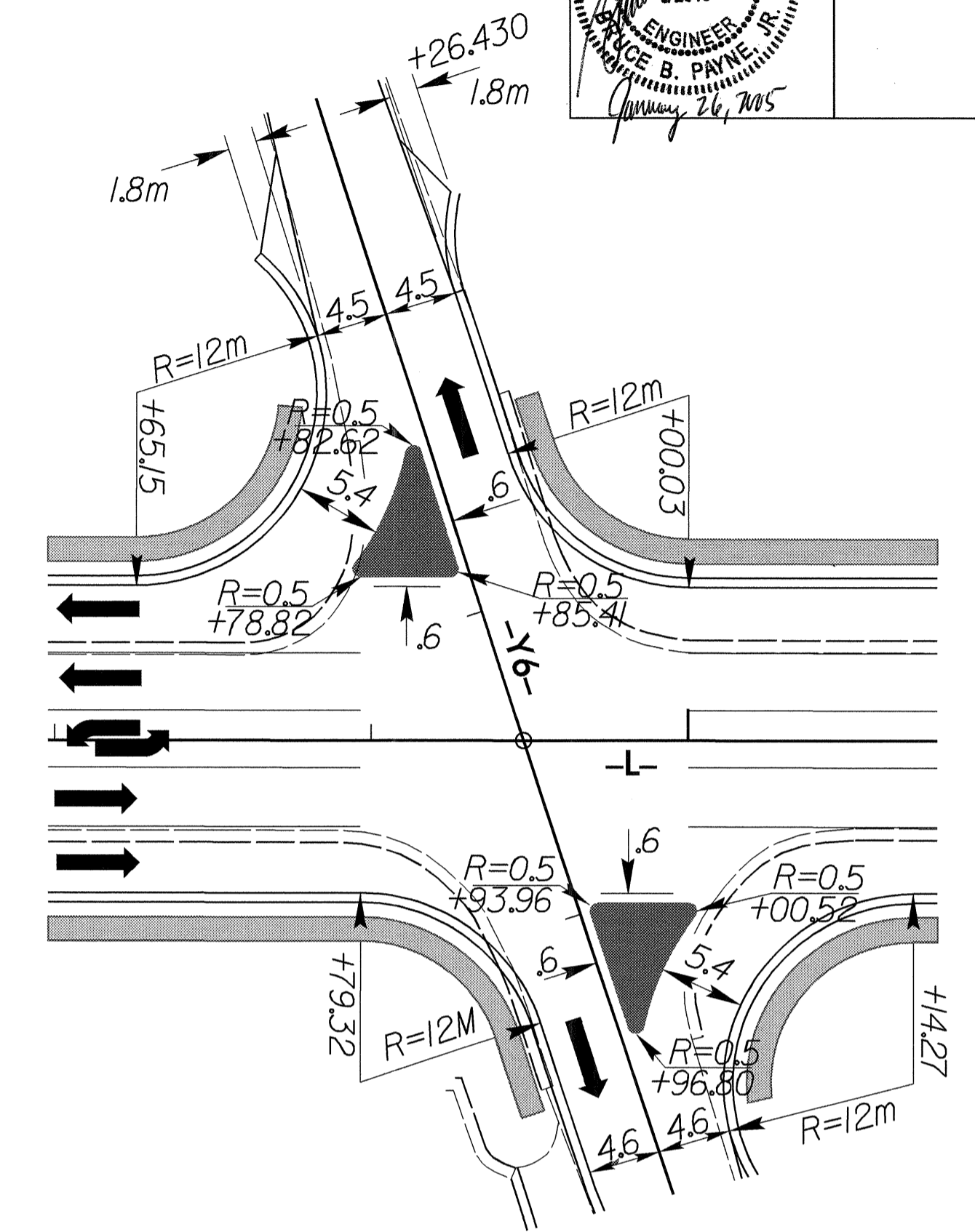
INTERSECTION OF LENOIR RHYME BLVD AND 1st AVE. PL. (Y1) (SEE PLAN SHEET 4)



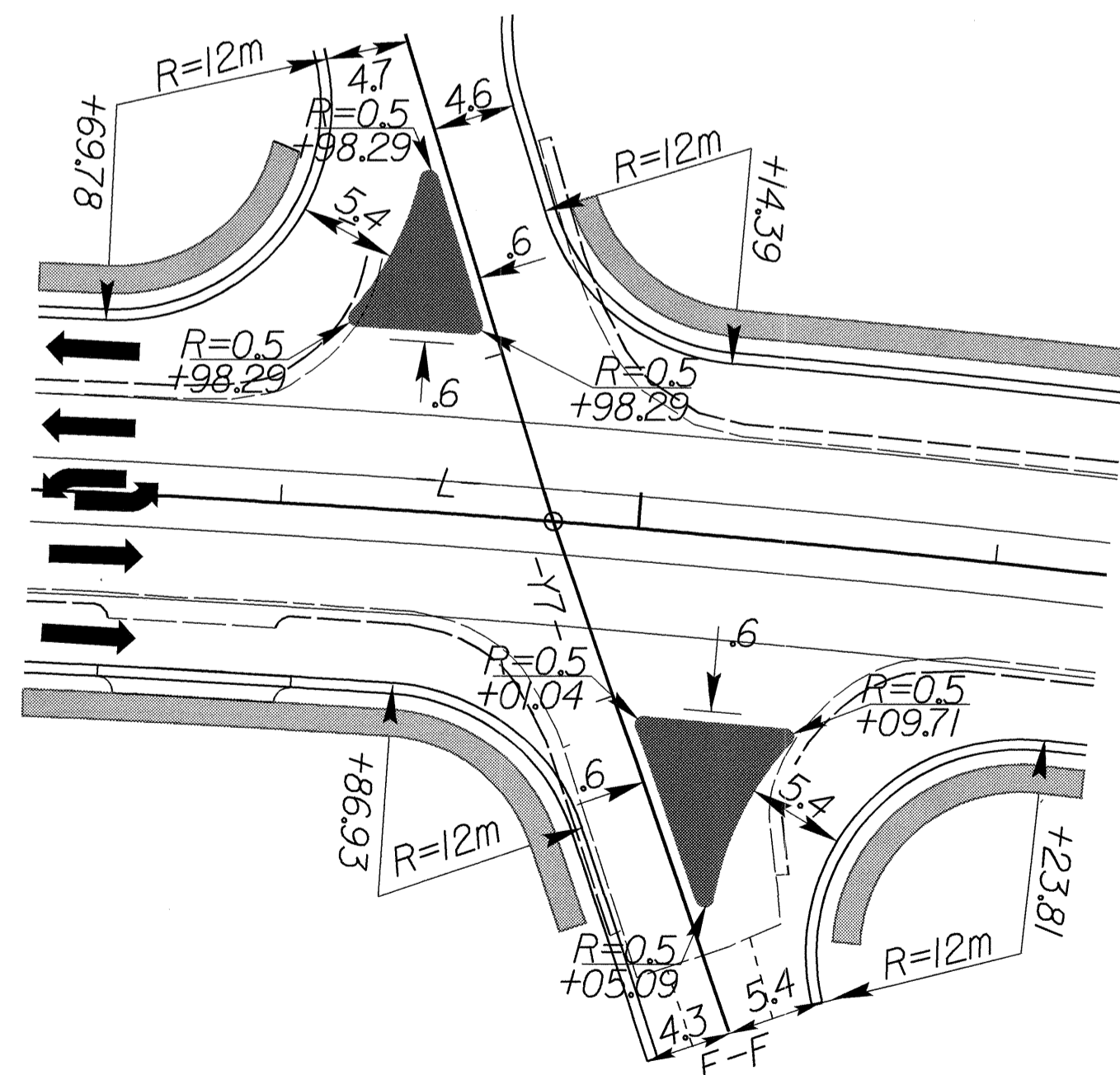
INTERSECTION OF LENOIR RHYME BLVD AND TATE BLVD. (-Y2-) (SEE PLAN SHEET 4)



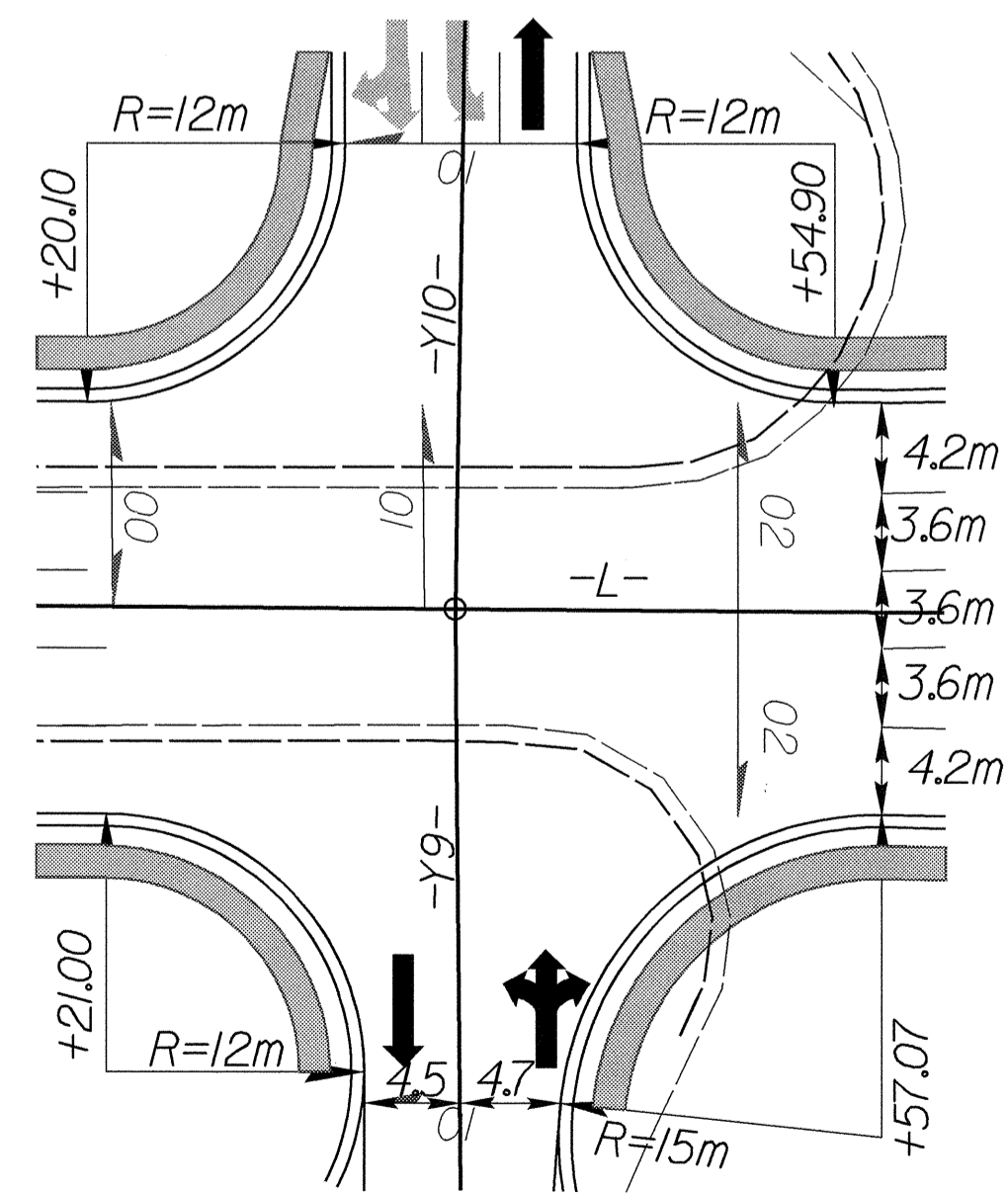
INTERSECTION OF LENOIR RHYME BLVD AND 'F' AVE. (-Y5-) (SEE PLAN SHEET 5)



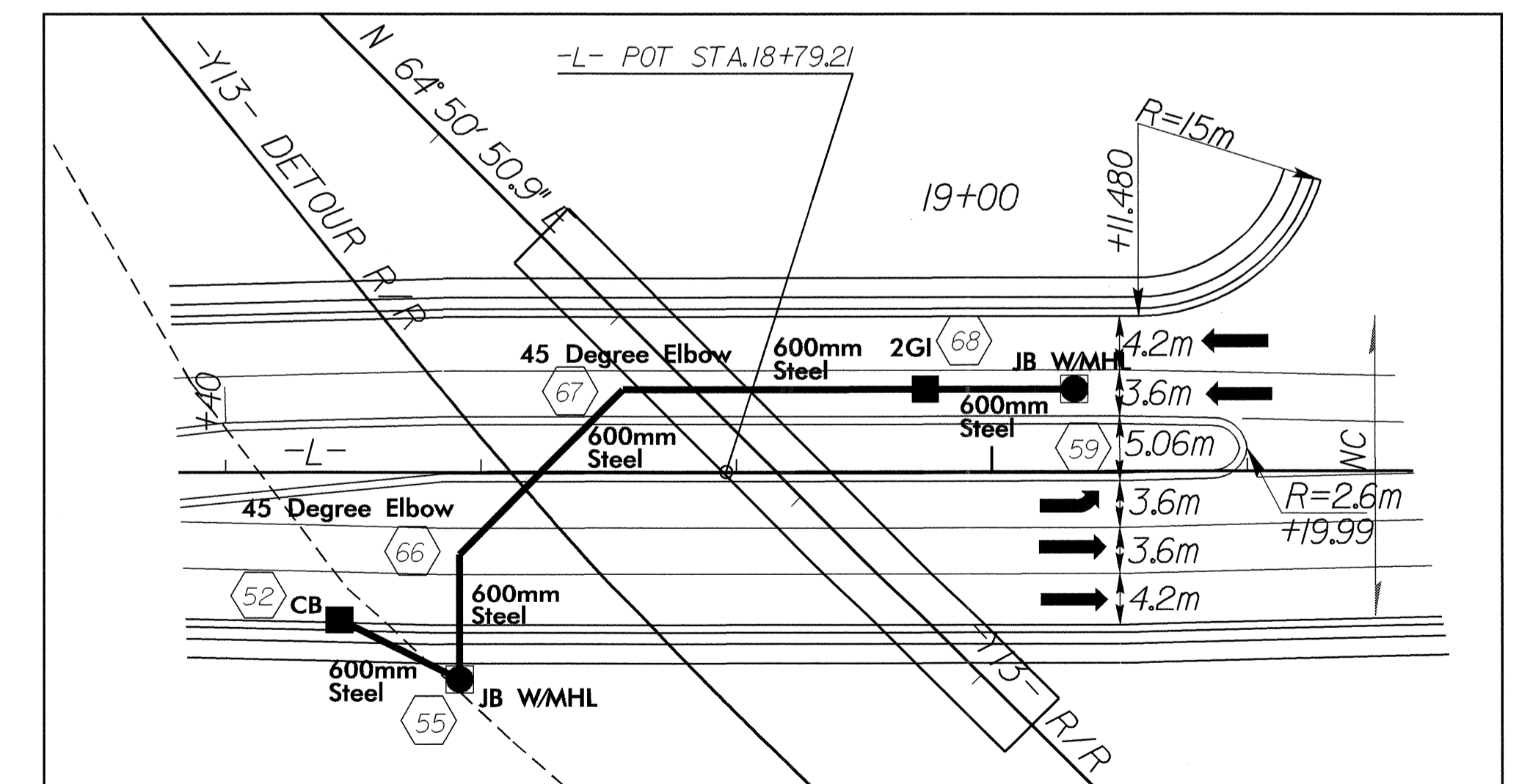
INTERSECTION OF LENOIR RHYME BLVD AND 'F' AVE. DR. (-Y6-) (SEE PLAN SHEET 5)



INTERSECTION OF LENOIR RHYME BLVD AND 'E' AVE. (-Y7-) (SEE PLAN SHEET 5)



INTERSECTION OF LENOIR RHYME BLVD AND HIGHLAND AVE (-Y10-) AND (-Y9-) (SEE PLAN SHEET 6)



TEMPORARY DRAINAGE SYSTEM DETAIL FOR RAILROAD CONSTRUCTION

NOTE: STRUCTURES 52, 55 AND 59 ARE PERMANENT STRUCTURES

(SEE SHEET 6)

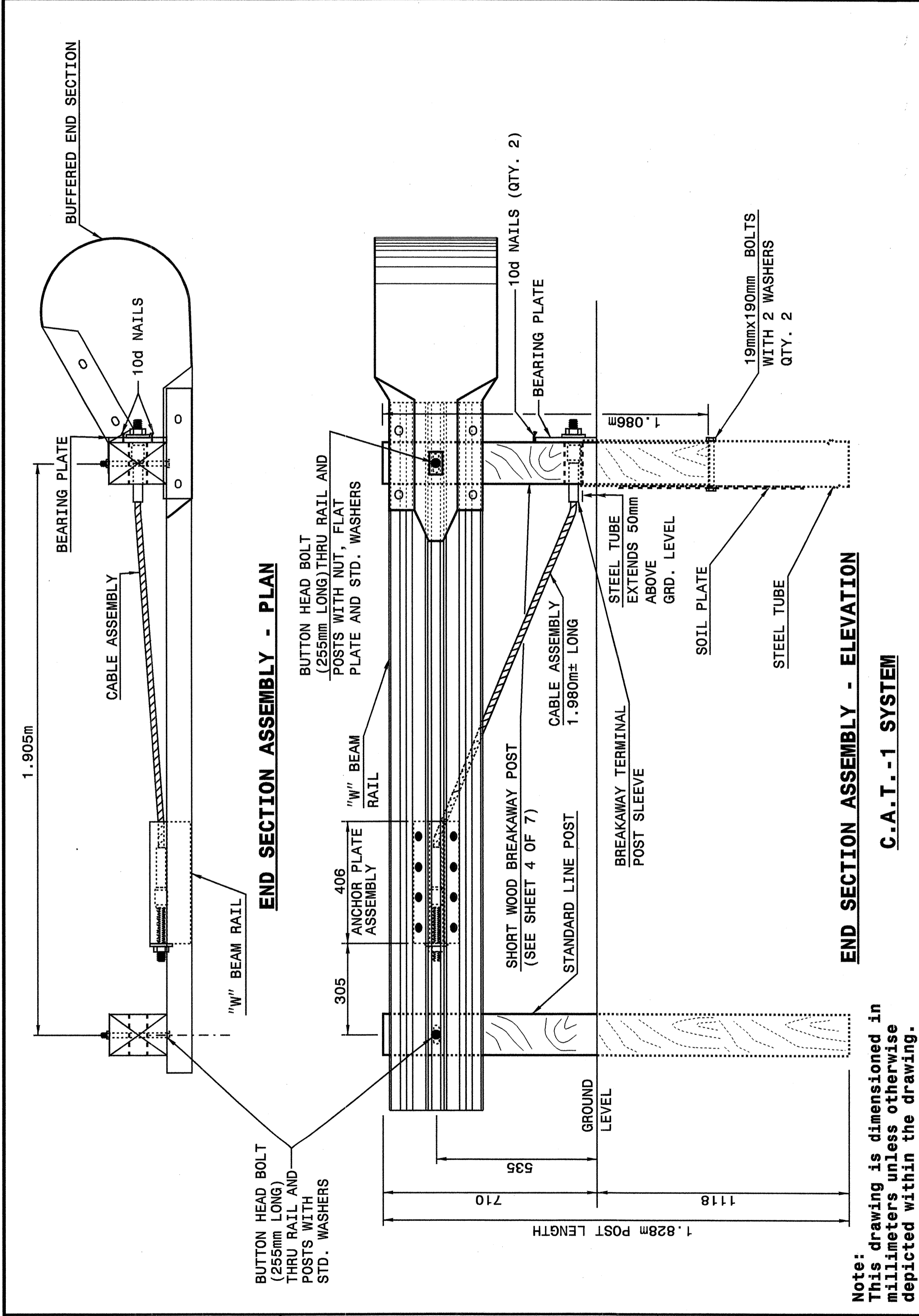




STATE OF NORTH CAROLINA  
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RALEIGH, N.C.

METRIC DETAIL DRAWING FOR  
**GUARDRAIL INSTALLATION**

SHEET 1 OF 7  
**862D02**



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

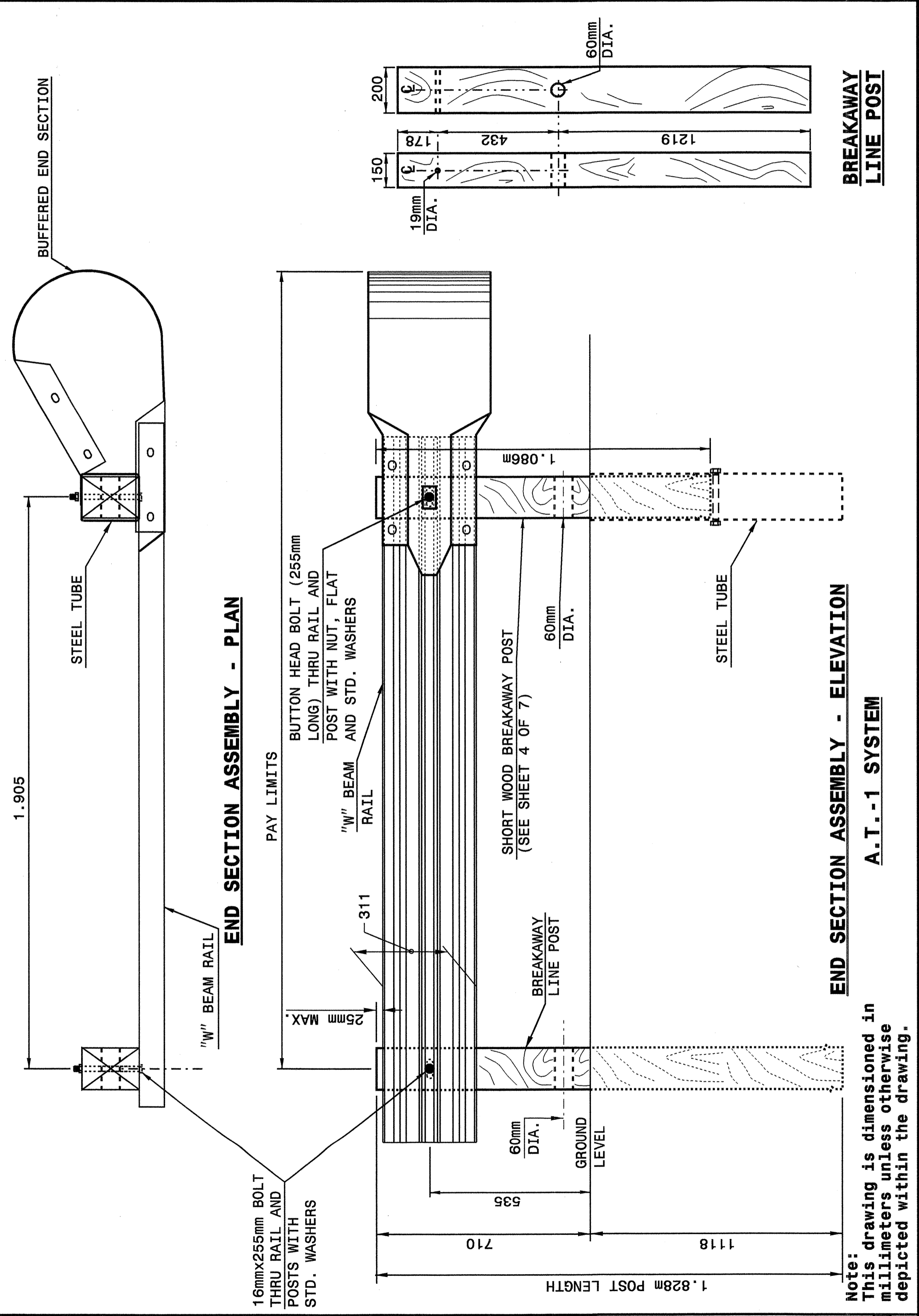
METRIC DETAIL DRAWING FOR  
**GUARDRAIL INSTALLATION**

SHEET 1 OF 7  
**862D02**

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

METRIC DETAIL DRAWING FOR  
**GUARDRAIL INSTALLATION**

SHEET 2 OF 7  
**862D02**



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

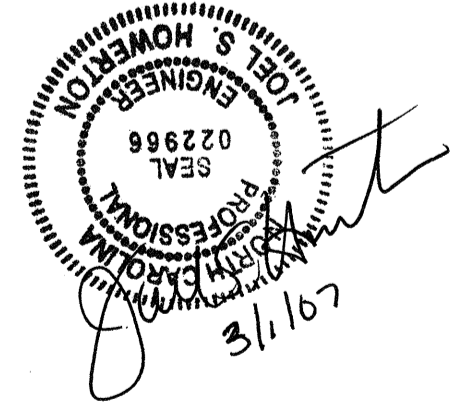
METRIC DETAIL DRAWING FOR  
**GUARDRAIL INSTALLATION**

SHEET 2 OF 7  
**862D02**

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

**SEE PLATE FOR TITLE**

ORIGINAL BY: 2002 STD.862.02 DATE:  
MODIFIED BY: E.E. WARD DATE: 02-09-03  
CHECKED BY: DATE:  
FILE SPEC.: /psf/stds/02tdetail/metric/86202/862d02m.dgn



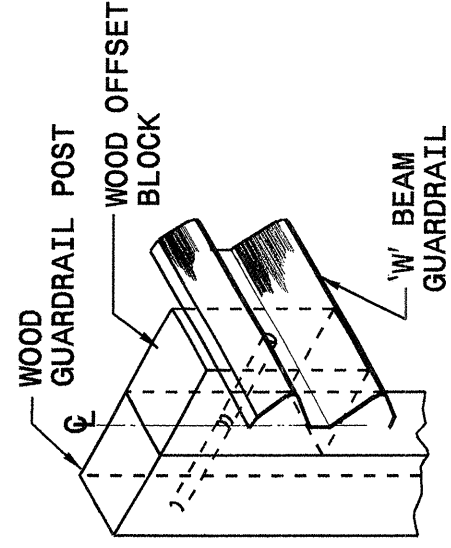
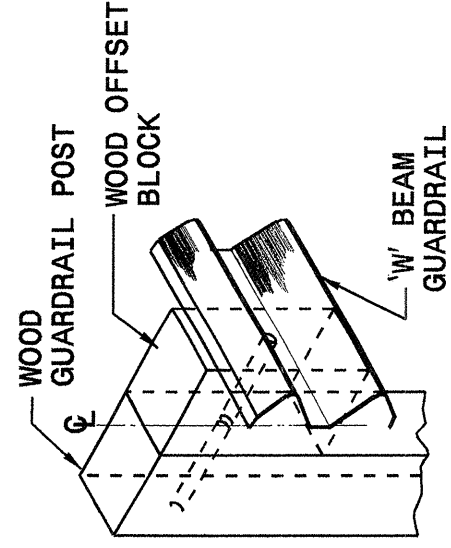
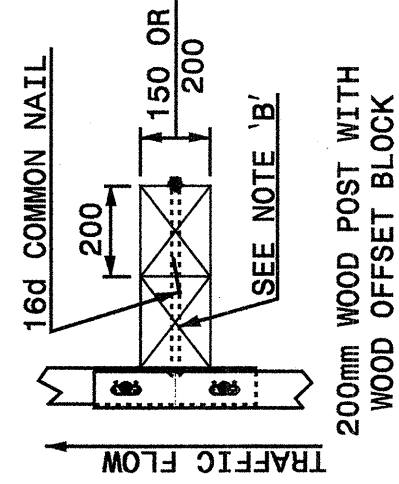
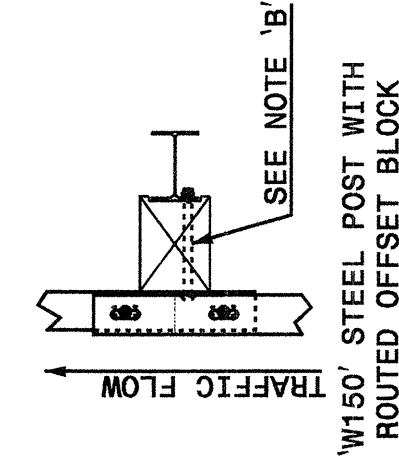
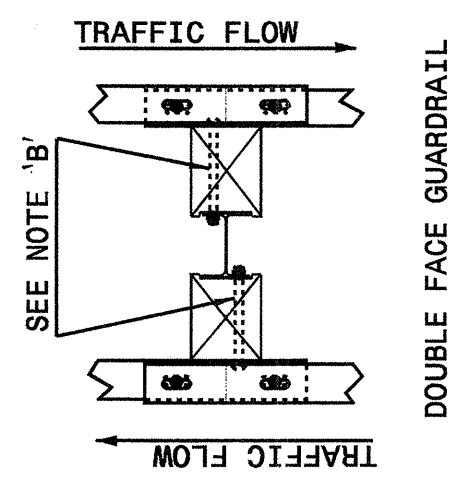
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12-JUL-2004 15:07  
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STATE OF  
 NORTH CAROLINA  
 DEPT. OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 RALEIGH, N.C.

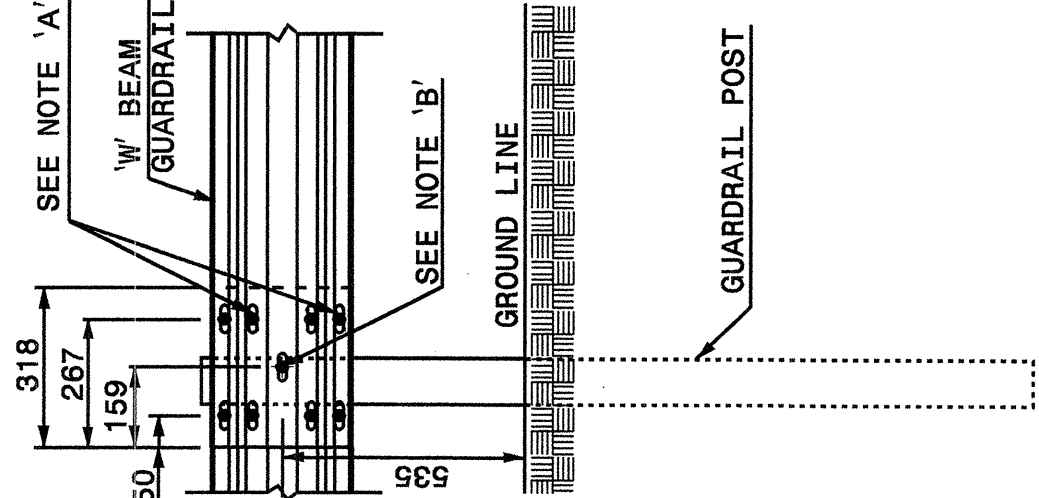
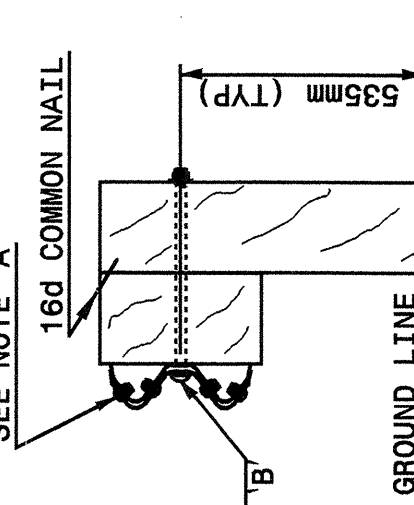
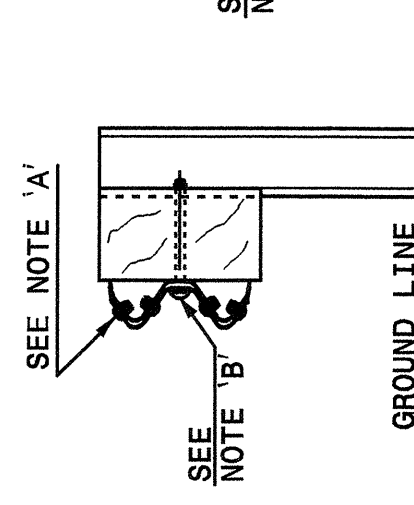
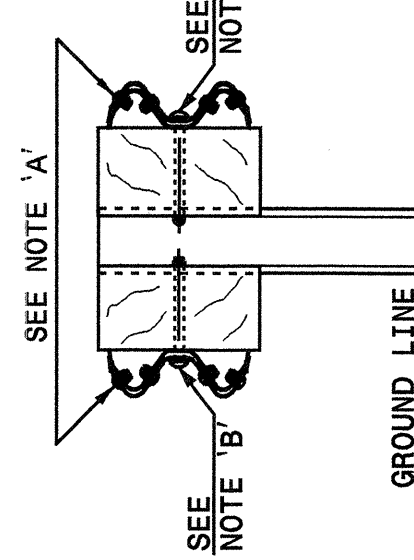
METRIC DETAIL DRAWING FOR  
**GUARDRAIL INSTALLATION**

SHEET 3 OF 7  
**862D02**



**PLAN**

**ISOMETRIC VIEWS**



**SIDE**

**FRONT**

- NOTES:  
 A - 16mm DIA. BUTTON HEAD SPLICE BOLT 32mm LONG WITH STD. WASHER UNDER NUT (8 REQ. PER SPLICE JOINT).  
 B - 16mm DIA. BUTTON HEAD BOLT 190mm/228mm LONG WITH NUT FOR BOLTING 150mm/200mm ROUTED OFFSET BLOCK TO STEEL POSTS OR  
 16mm DIA. BUTTON HEAD BOLT 457mm LONG WITH STD. WASHER UNDER NUT FOR BOLTING TO WOOD POSTS (1 REQ. PER LOCATION)  
 C - FIELD PUNCH HOLES INTO THE GUARDRAIL AS DIRECTED BY THE ENGINEER.

Note:  
 This drawing is dimensioned in  
 millimeters unless otherwise  
 depicted within the drawing.

**TYPICAL GUARDRAIL AND GUARDRAIL POST ALTERNATIVES**

STATE OF  
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 DIVISION OF HIGHWAYS  
 RALEIGH, N.C.

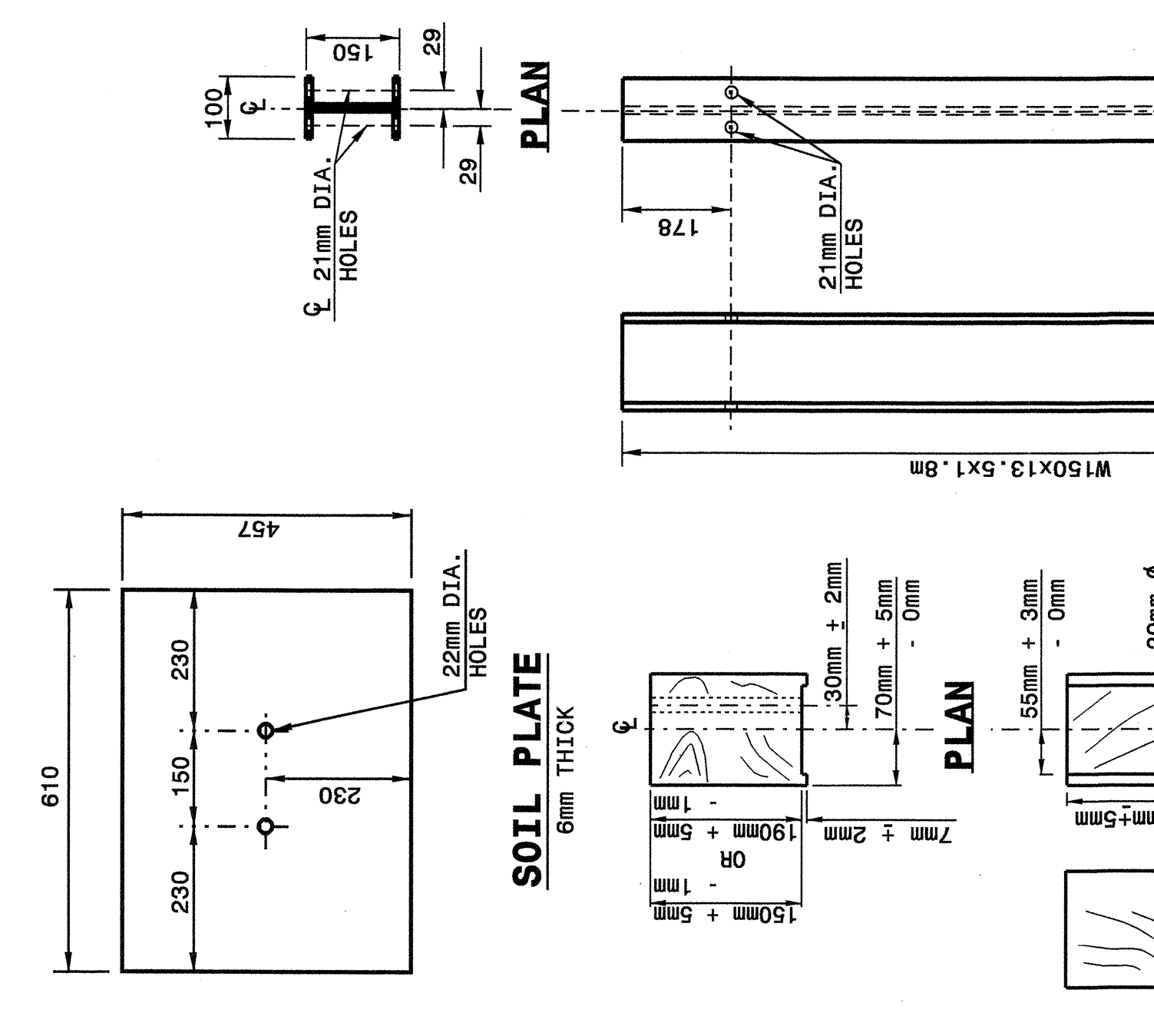
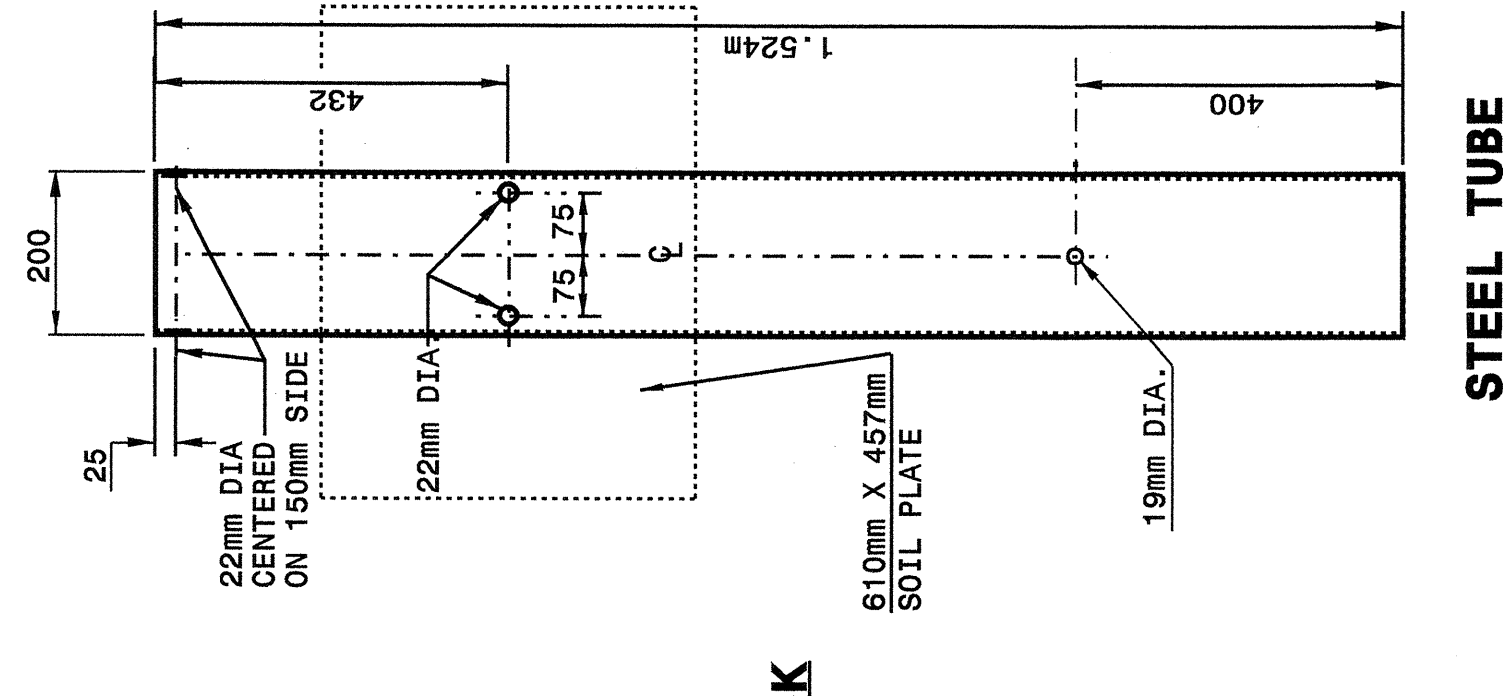
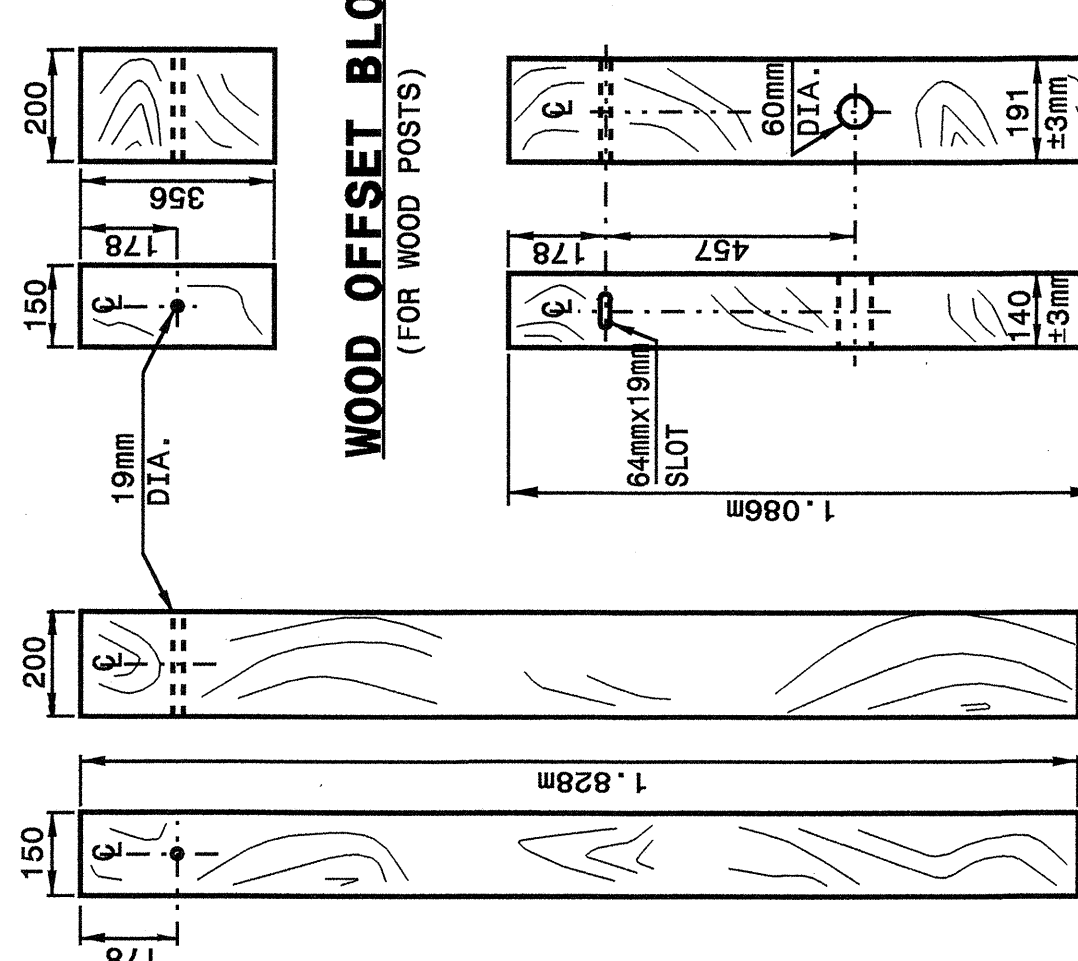
METRIC DETAIL DRAWING FOR  
**GUARDRAIL INSTALLATION**

SHEET 3 OF 7  
**862D02**

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

METRIC DETAIL DRAWING FOR  
**GUARDRAIL INSTALLATION**

SHEET 4 OF 7  
**862D02**



**SYSTEM PARTS**

Note:  
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 millimeters unless otherwise  
 depicted within the drawing.

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

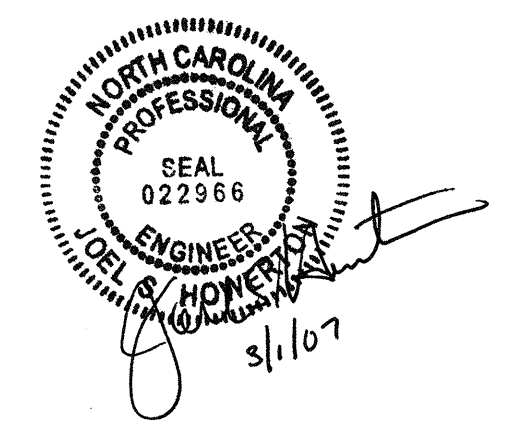
METRIC DETAIL DRAWING FOR  
**GUARDRAIL INSTALLATION**

SHEET 4 OF 7  
**862D02**

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

**SEE PLATE FOR TITLE**

ORIGINAL BY: 2002 STD.862.02 DATE: \_\_\_\_\_  
 MODIFIED BY: E.E. WARD DATE: 02-09-03  
 CHECKED BY: DATE: 7/13/04  
 FILE SPEC.: /usr/stds/02/detail/metric/862d02/862d02m.dgn

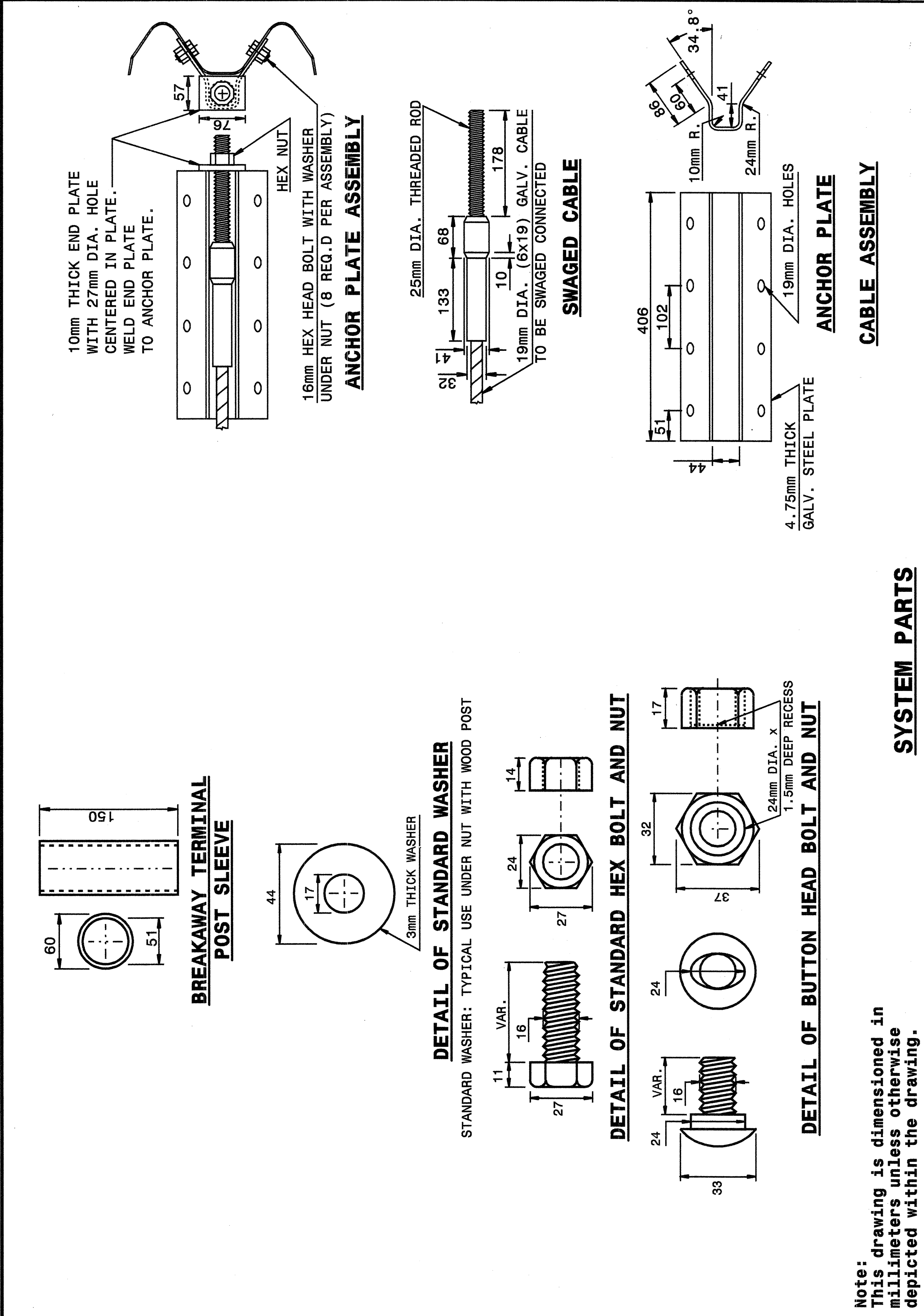




STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

METRIC DETAIL DRAWING FOR GUARDRAIL INSTALLATION

SHEET 5 OF 7 862D02



Note: This drawing is dimensioned in millimeters unless otherwise depicted within the drawing.

SYSTEM PARTS

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

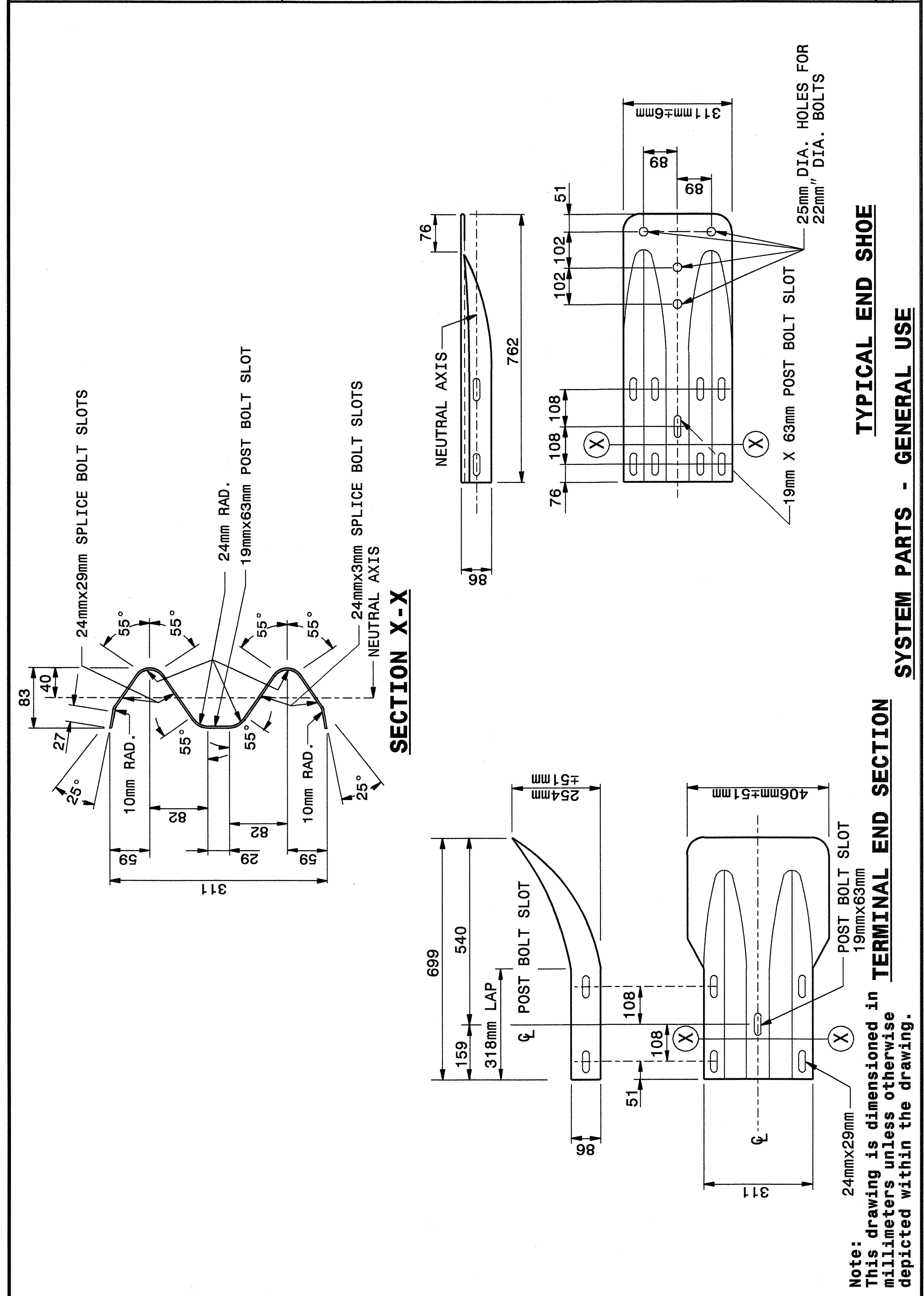
METRIC DETAIL DRAWING FOR GUARDRAIL INSTALLATION

SHEET 5 OF 7 862D02

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

METRIC DETAIL DRAWING FOR GUARDRAIL INSTALLATION

SHEET 6 OF 7 862D02



Note: This drawing is dimensioned in millimeters unless otherwise depicted within the drawing.

SYSTEM PARTS - GENERAL USE

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

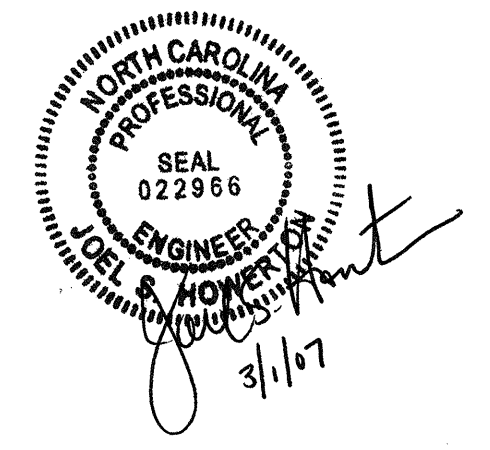
METRIC DETAIL DRAWING FOR GUARDRAIL INSTALLATION

SHEET 6 OF 7 862D02

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

SEE PLATE FOR TITLE

ORIGINAL BY: 2002 STD.862.02 DATE: 02-09-03  
 MODIFIED BY: E.E. WARD DATE: 7/13/04  
 CHECKED BY: DATE: 7/13/04  
 FILE SPEC.: /usr/stds/02todetail/metric/86202/862d02m.dgn



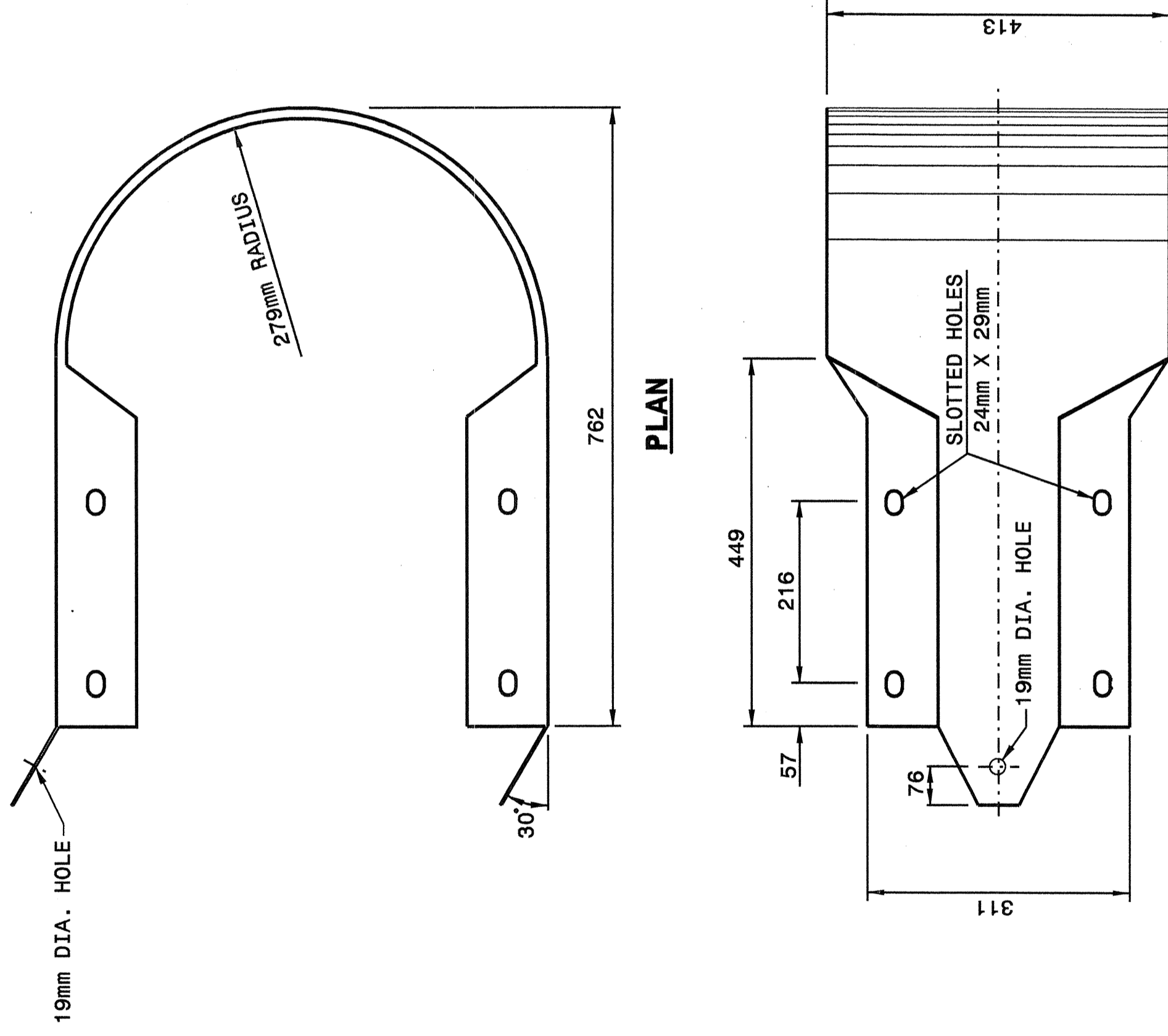
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STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

METRIC DETAIL DRAWING FOR  
**GUARDRAIL INSTALLATION**

SHEET 7 OF 7  
**862D02**



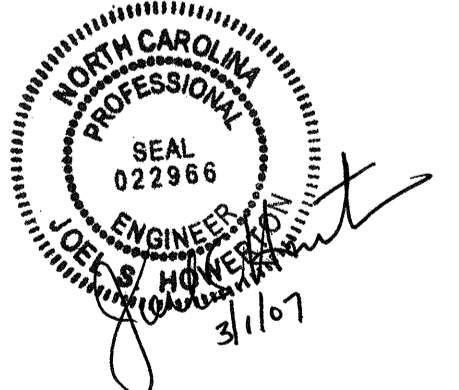
**ELEVATION**  
**BUFFERED END SECTION**

Note:  
This drawing is dimensioned in  
millimeters unless otherwise  
depicted within the drawing.

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

METRIC DETAIL DRAWING FOR  
**GUARDRAIL INSTALLATION**

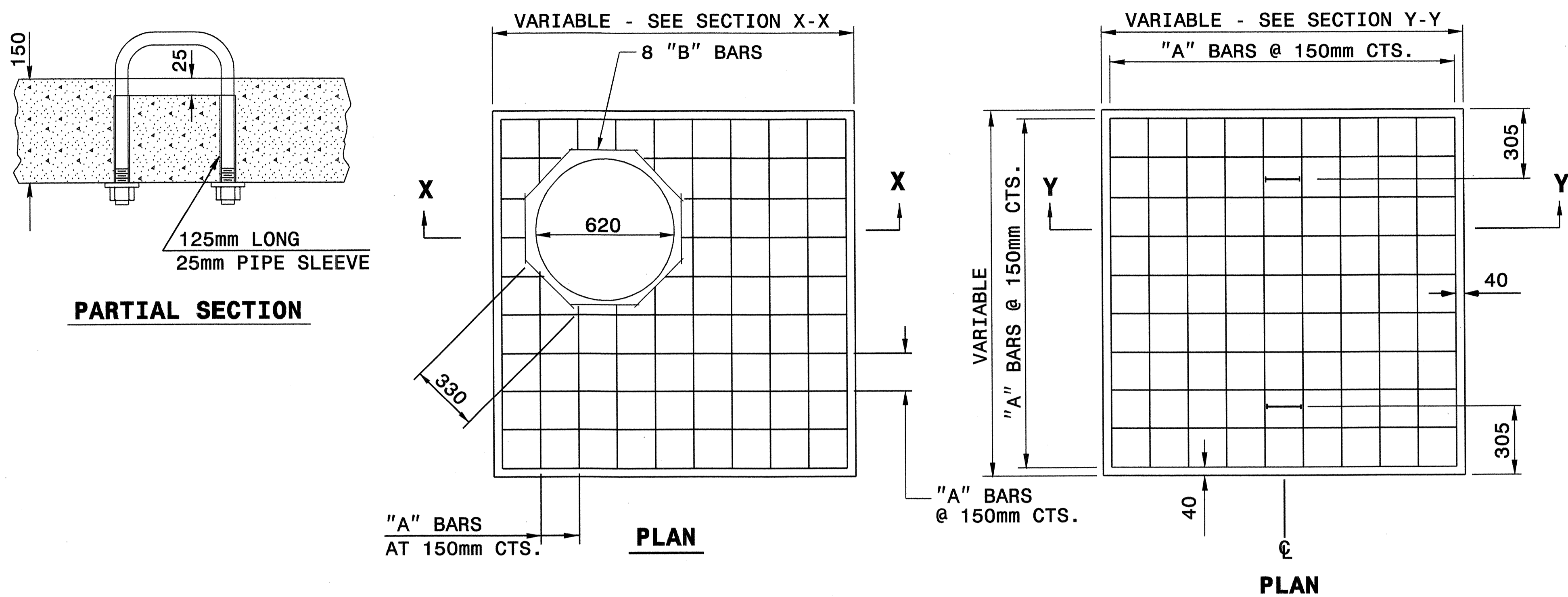
SHEET 7 OF 7  
**862D02**



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

**SEE PLATE FOR TITLE**

ORIGINAL BY: 2002 STD.862.02 DATE: \_\_\_\_\_  
 MODIFIED BY: E.E. WARD DATE: 02-09-03  
 CHECKED BY: *Gracie Hunt* DATE: 7/13/04  
 FILE SPEC.: /usr/stds/02todetail/metric/86202/862d02m.dgn



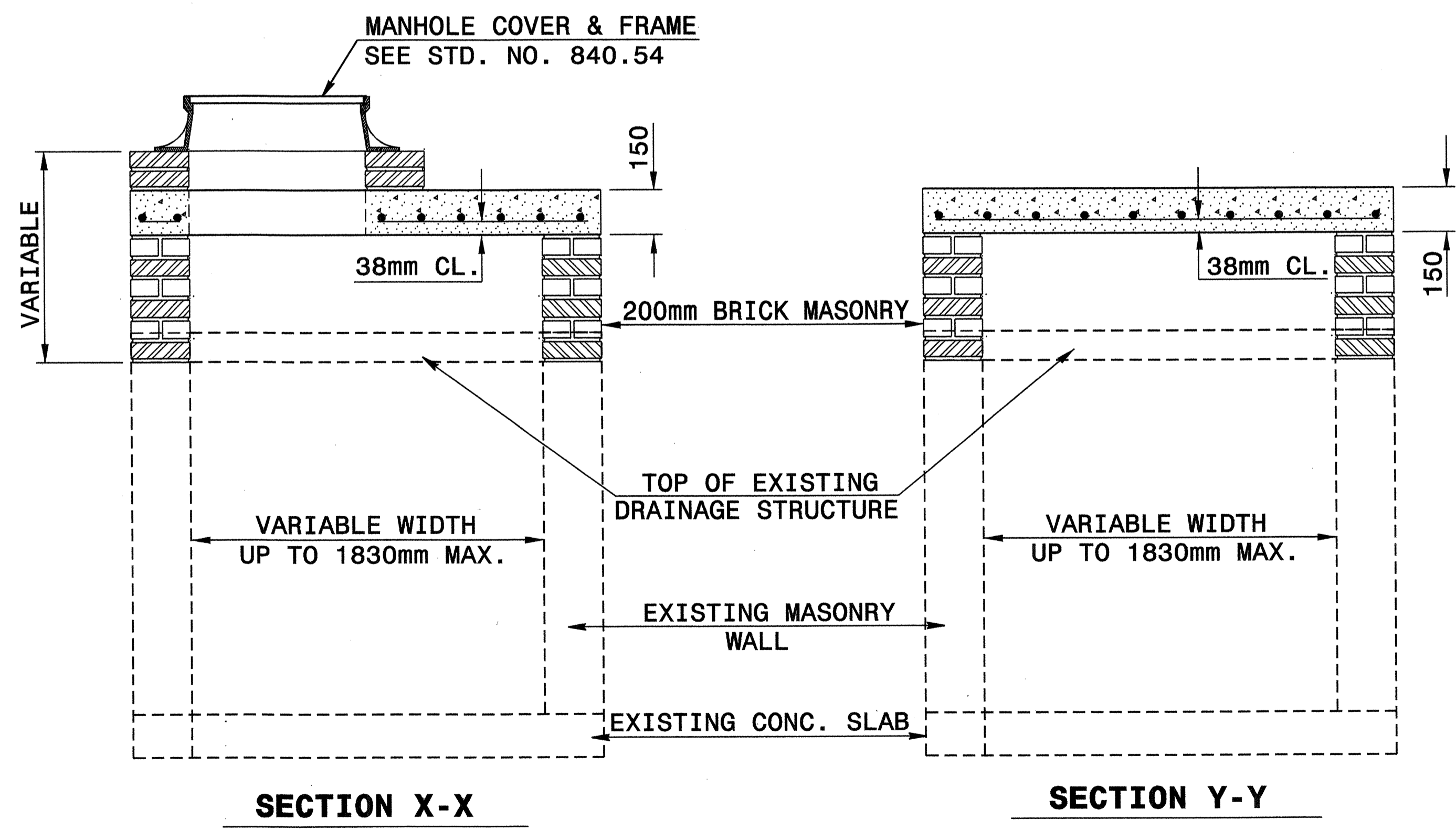
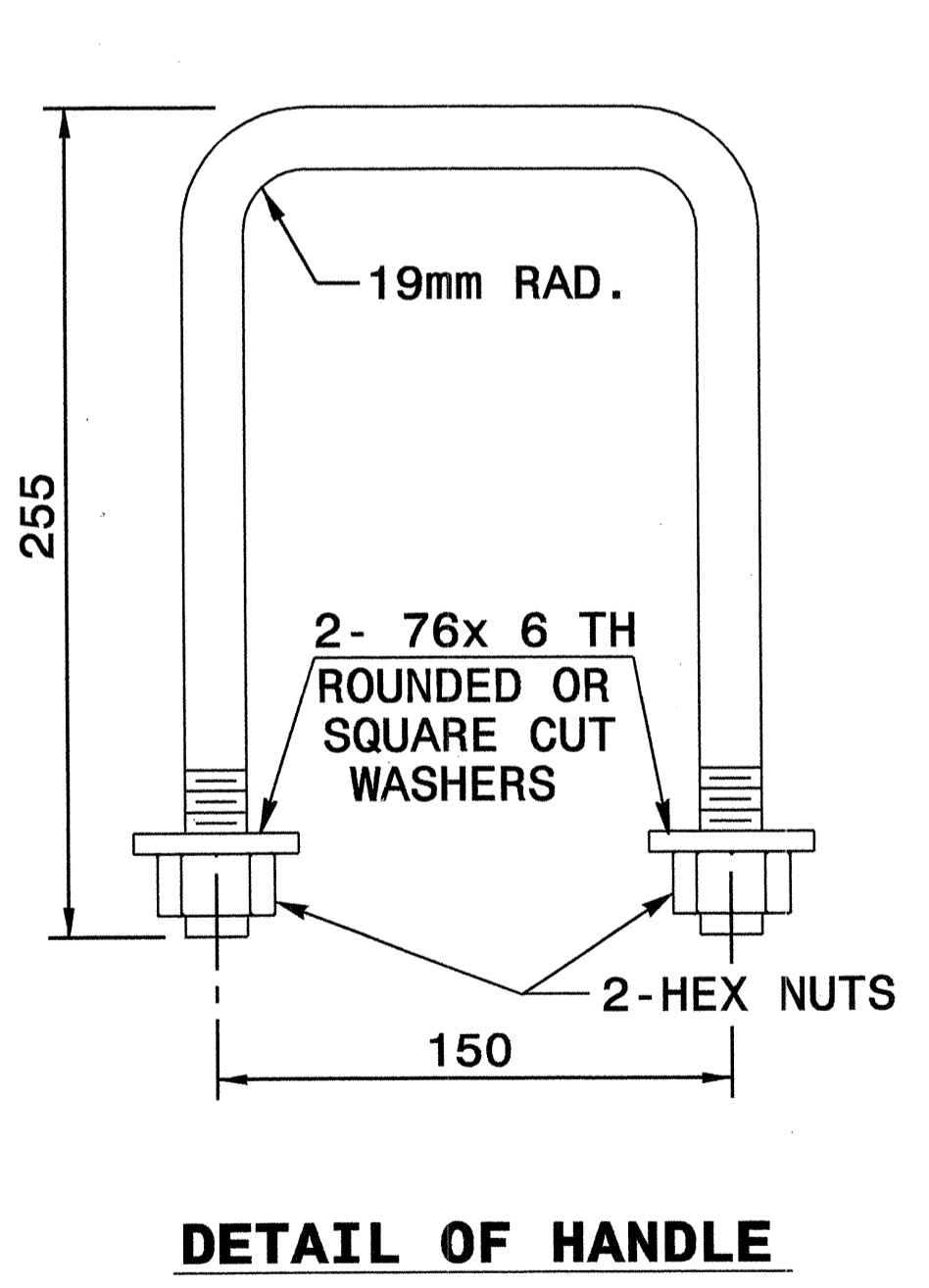
**GENERAL NOTES:**

CONSTRUCT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.

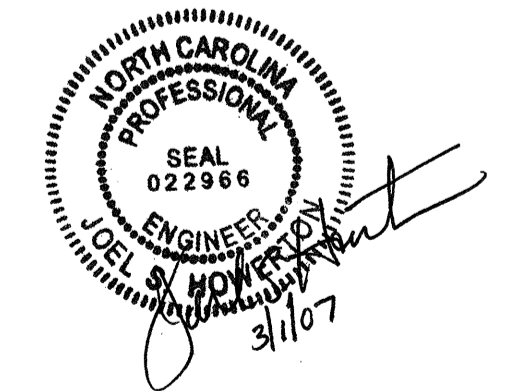
THE DIMENSIONS FOR THE EXISTING BOXES ARE APPROXIMATE AND MAY VARY SLIGHTLY.

DETAIL INTENDED FOR NON-TRAFFIC BEARING DRAINAGE STRUCTURES.

BILL OF MATERIALS				
REINFORCING STEEL				
CODE	SIZE	QTY.	LENGTH	REINF. STEEL kgs.
A	#16	20	1370	45.52
B	#16	8	330	4.10
TOTAL				49.62 *
MASONRY				m <sup>3</sup>
TOP SLAB CONCRETE CLASS "B"				.3305 *
BRICK MASONRY PER m HT (MIN)				1.7651



**\* NOTE:**  
 QUANTITIES BASED ON 1070mm X 1070mm DRAINAGE STRUCTURE. ADJUST QUANTITIES FOR LARGER STRUCTURES AND MANHOLE CONSTRUCTION.



**DESIGN SERVICES UNIT  
 STANDARDS AND SPECIAL DESIGN**  
 Office 919-250-4128 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: *Joe S. Howrey* DATE: 02/04  
 FILE SPEC.: ds174:/usr/details/metric/stand/boxtojb.dgn

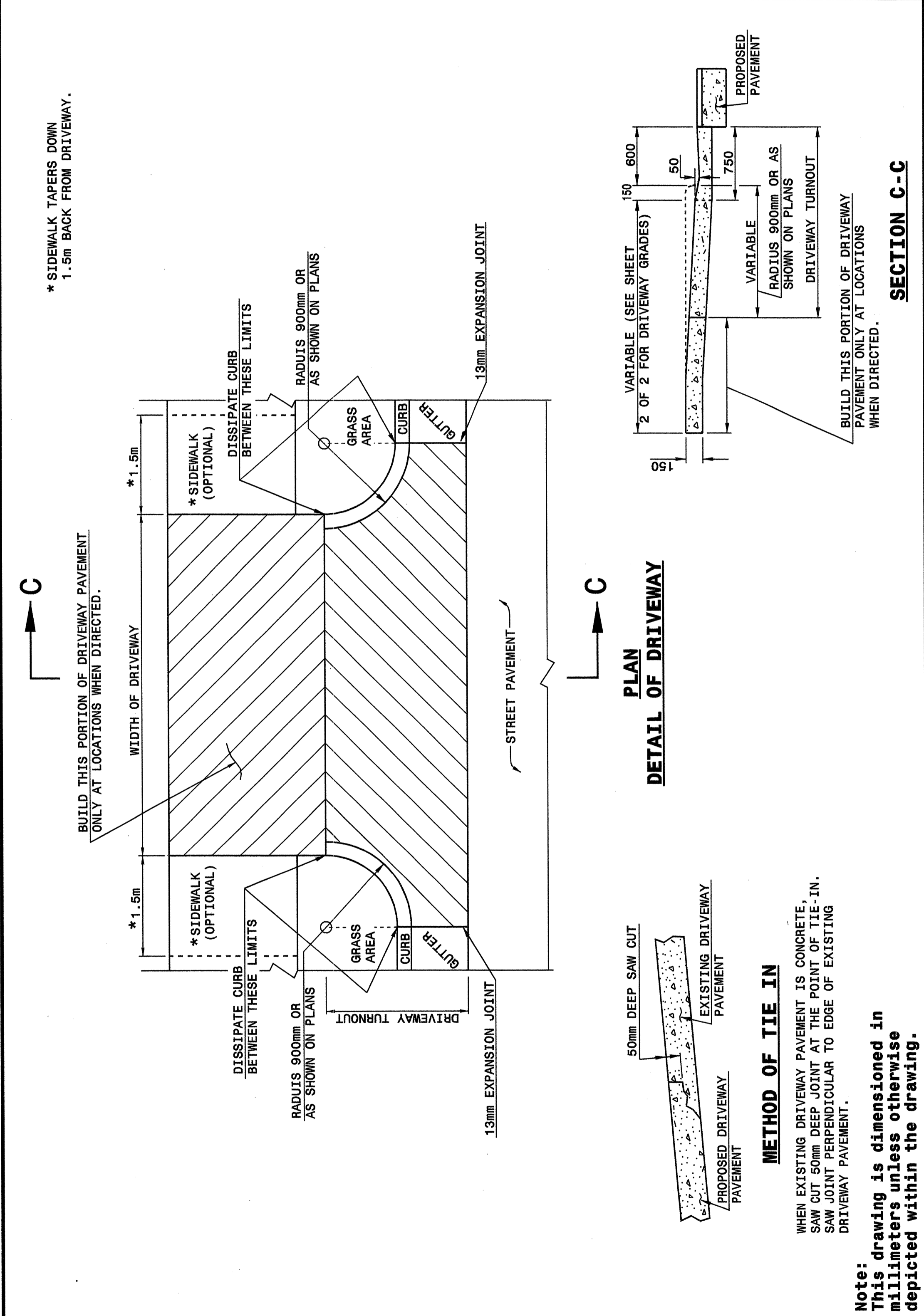
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STATE OF NORTH CAROLINA  
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DIVISION OF HIGHWAYS  
RALEIGH, N.C.

METRIC DETAIL DRAWING FOR  
**DRIVEWAY TURNOUT**  
RADIUS TYPE

SHEET 1 OF 2  
**848D02**



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

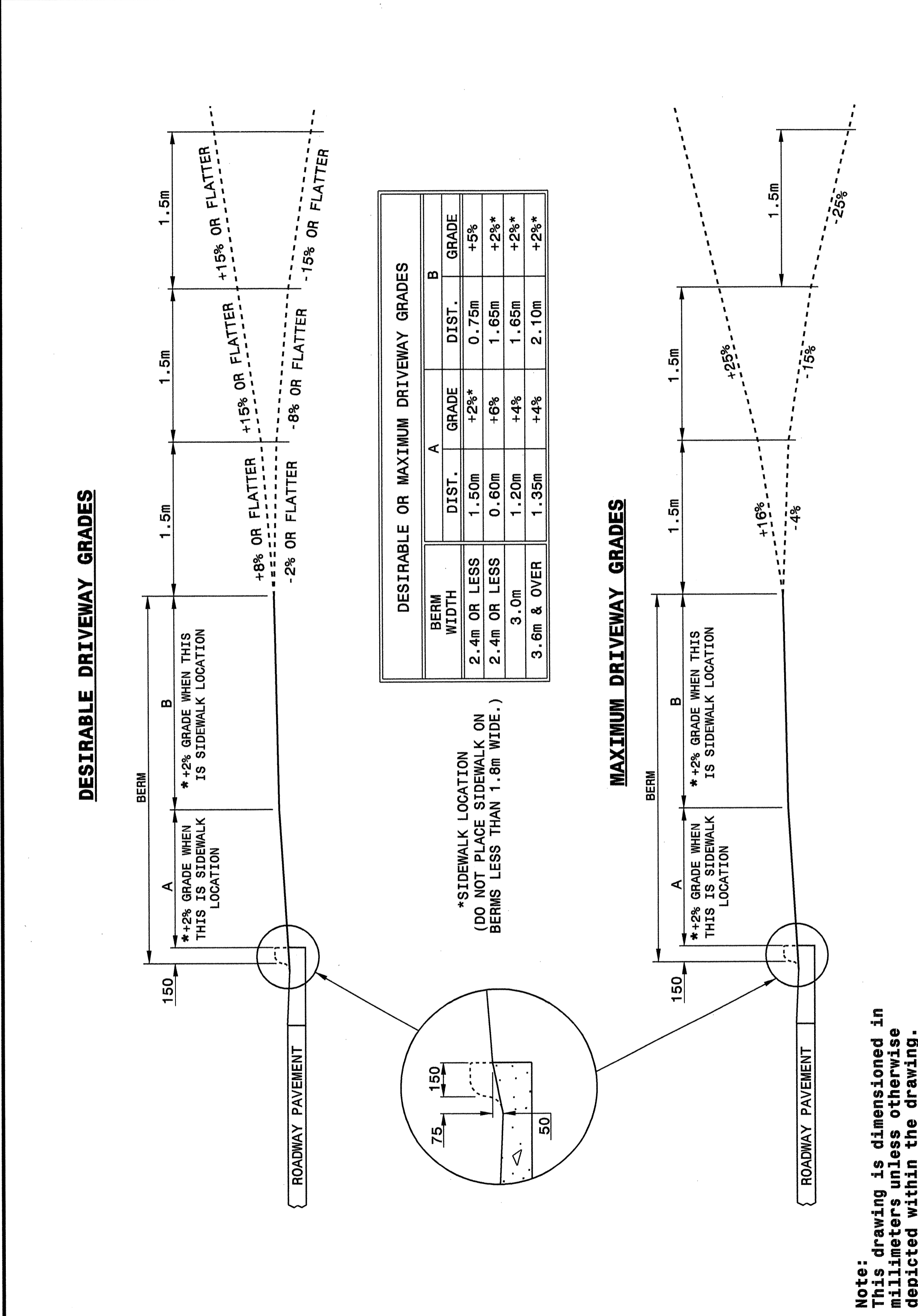
METRIC DETAIL DRAWING FOR  
**DRIVEWAY TURNOUT**  
RADIUS TYPE

SHEET 1 OF 2  
**848D02**

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

METRIC DETAIL DRAWING FOR  
**DRIVEWAY TURNOUT**  
DRIVEWAY GRADES

SHEET 2 OF 2  
**848D02**



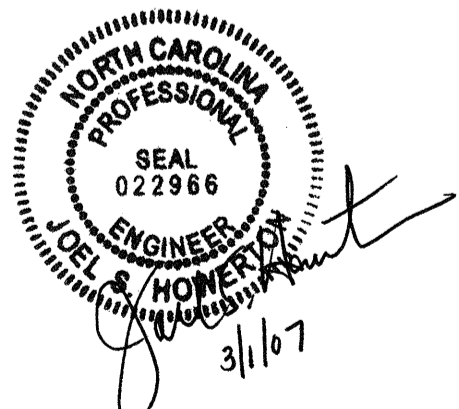
STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

METRIC DETAIL DRAWING FOR  
**DRIVEWAY TURNOUT**  
DRIVEWAY GRADES

SHEET 2 OF 2  
**848D02**

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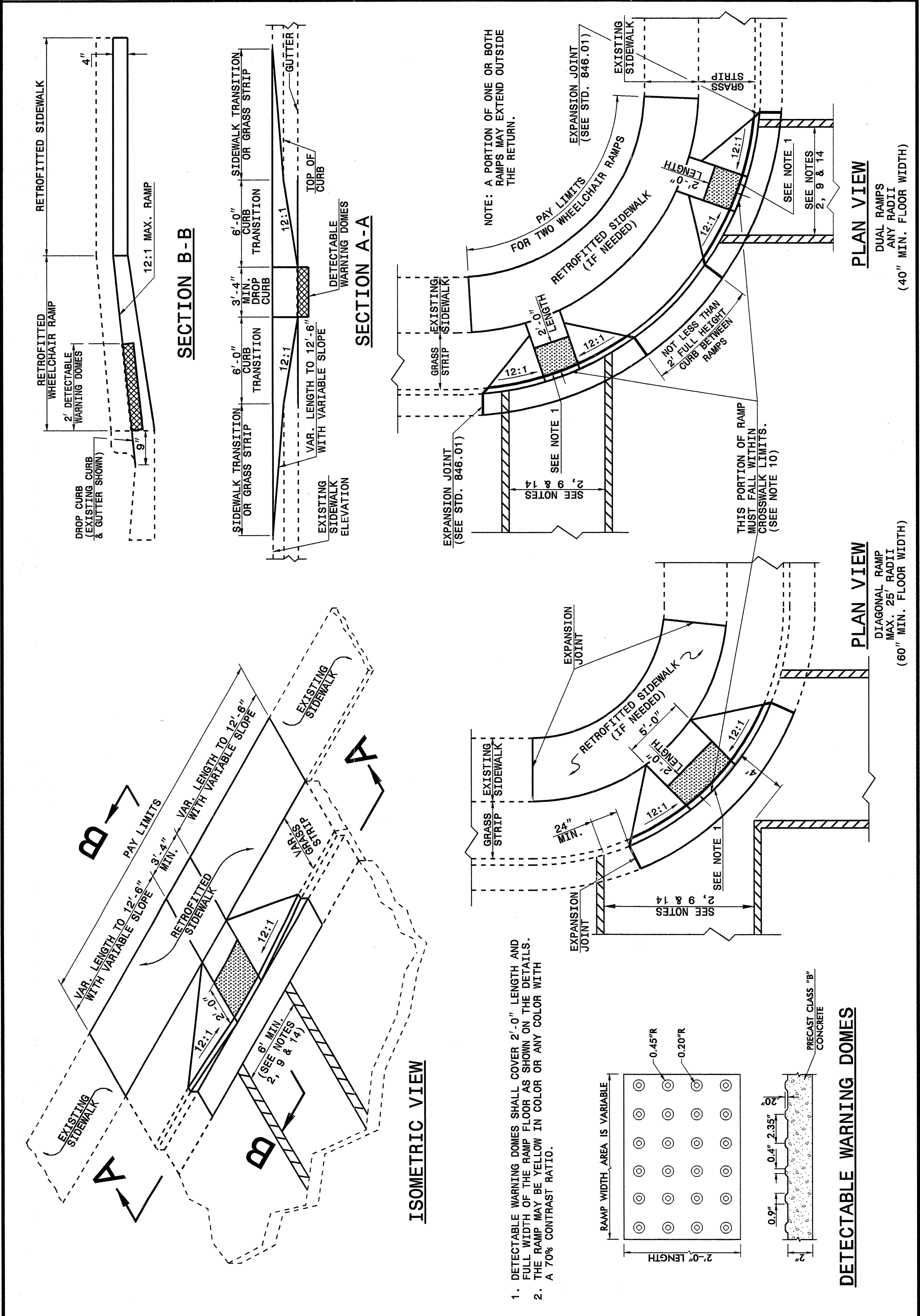
**SEE PLATE FOR TITLE**



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DIVISION OF HIGHWAYS  
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR  
**WHEELCHAIR RAMP AND EXISTING SIDEWALK WITH GRASS STRIP**  
CURB CUT

SHEET 1 OF 5  
**848D06**



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RALEIGH, N.C.

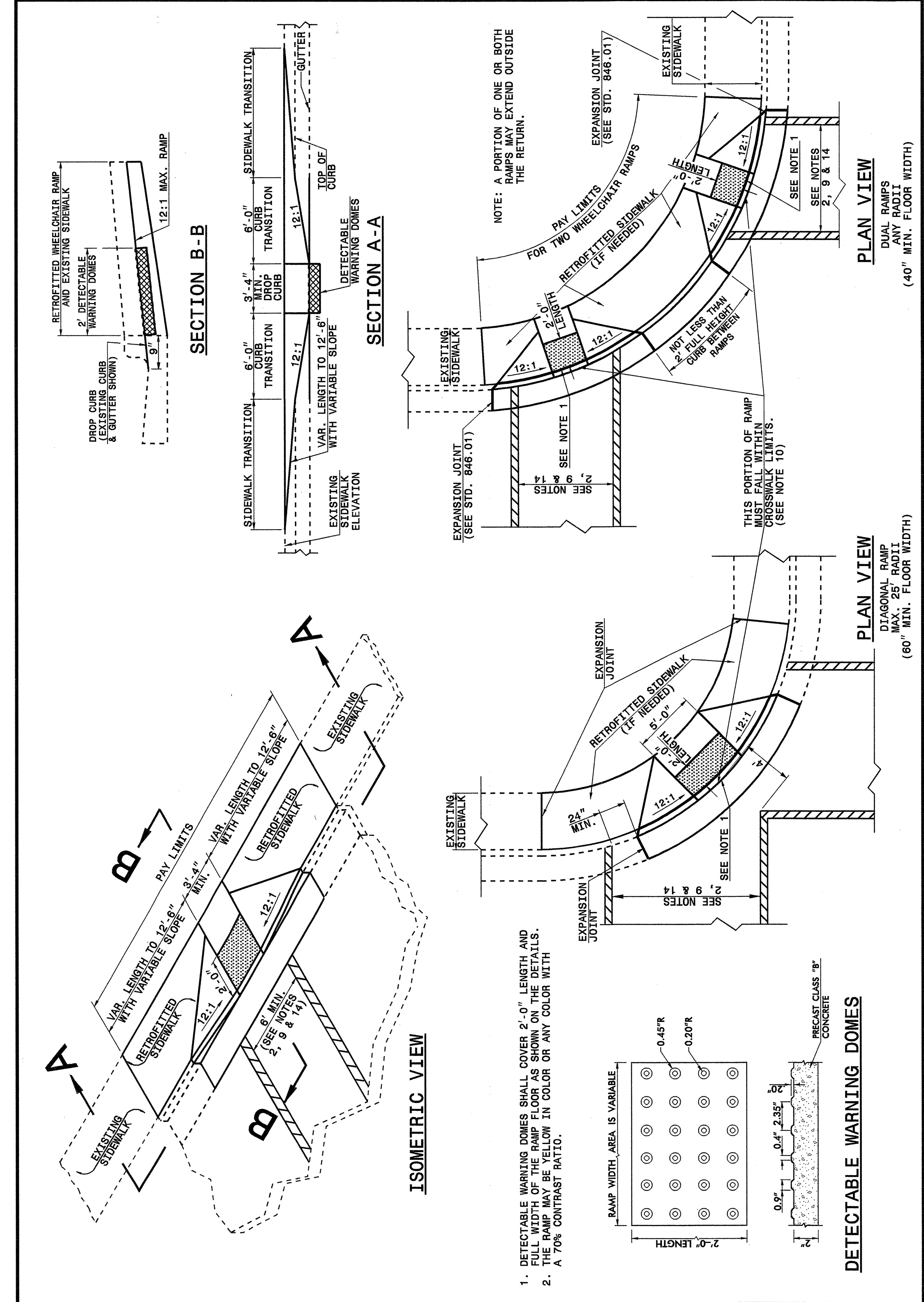
ENGLISH DETAIL DRAWING FOR  
**WHEELCHAIR RAMP AND EXISTING SIDEWALK WITH GRASS STRIP**  
CURB CUT

SHEET 1 OF 5  
**848D06**

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

ENGLISH DETAIL DRAWING FOR  
**WHEELCHAIR RAMP AND EXISTING SIDEWALK ADJACENT TO CURB**  
CURB CUT

SHEET 2 OF 5  
**848D06**



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

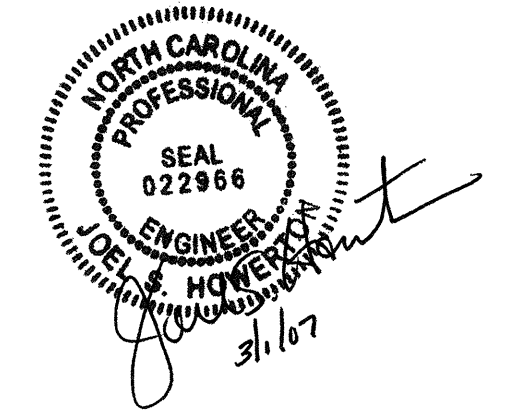
ENGLISH DETAIL DRAWING FOR  
**WHEELCHAIR RAMP AND EXISTING SIDEWALK ADJACENT TO CURB**  
CURB CUT

SHEET 2 OF 5  
**848D06**

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ORIGINAL BY: DETAIL 848D05 DATE: \_\_\_\_\_  
MODIFIED BY: E.E. WARD DATE: 06-18-03  
CHECKED BY: *E.E. Ward* DATE: 6-03



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

ENGLISH DETAIL DRAWING FOR WHEELCHAIR RAMP AND EXISTING SIDEWALK CURB CUT

SHEET 5 OF 5 848D06

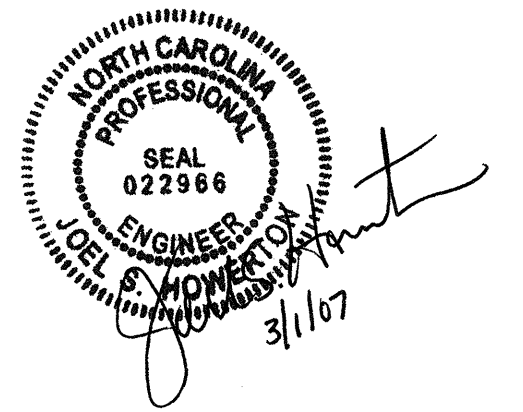
NOTES:

- CONSTRUCT THE WALKING SURFACE WITH SLIP RESISTANCE AND A 70% CONTRASTING COLOR TO THE SIDEWALK.
- CROSSWALK WIDTHS AND CONFIGURATION VARY, BUT MUST CONFORM TO TRAFFIC DESIGN STANDARDS.
- NORTH CAROLINA GENERAL STATUTE 136-44.14 REQUIRES THAT ALL STREET CURBS BEING CONSTRUCTED OR RECONSTRUCTED FOR MAINTENANCE PROCEDURES, TRAFFIC OPERATIONS, REPAIRS, CORRECTION OF UTILITIES OR ALTERED FOR ANY REASON AFTER SEPTEMBER 1, 1973 SHALL PROVIDE WHEELCHAIR RAMPS FOR THE PHYSICALLY DISABLED AT ALL INTERSECTIONS WHERE BOTH CURB AND GUTTER AND SIDEWALKS ARE PROVIDED AND AT OTHER POINTS OF PEDESTRIAN FLOW.  
IN ADDITION, SECTION 228 OF THE 1973 FEDERAL AID HIGHWAY SAFETY ACT REQUIRES PROVISION OF CURB RAMPS ON ANY CURB CONSTRUCTION AFTER JULY 1, 1976 WHETHER A SIDEWALK IS PROPOSED INITIALLY OR IS PLANNED FOR A FUTURE DATE.  
THE AMERICANS WITH DISABILITIES ACT (ADA) OF 1990 EXTENDS TO INDIVIDUALS WITH DISABILITIES, COMPREHENSIVE CIVIL RIGHTS PROTECTIONS SIMILAR TO THOSE PROVIDED TO PERSONS ON THE BASIS OF RACE, SEX, NATIONAL ORIGIN AND RELIGION UNDER THE CIVIL RIGHTS ACT OF 1964. THESE CURB RAMPS HAVE BEEN DESIGNED TO COMPLY WITH THE CURRENT ADA STANDARDS.
- PROVIDE WHEELCHAIR RAMPS AT LOCATIONS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. LOCATE WHEELCHAIR RAMPS AS DIRECTED BY THE ENGINEER WHERE EXISTING LIGHT POLES, FIRE HYDRANTS, DROP INLETS, ETC. AFFECT PLACEMENT. WHERE TWO RAMPS ARE INSTALLED PLACE NOT LESS THAN 2 FEET OF FULL HEIGHT CURB BETWEEN THE RAMPS. PLACE DUAL RAMPS AS NEAR PERPENDICULAR TO THE TRAVEL LANE BEING CROSSED AS POSSIBLE.
- DO NOT EXCEED 0.08 (12:1) SLOPE ON THE WHEELCHAIR RAMP IN RELATIONSHIP TO THE GRADE OF THE STREET.
- CONSTRUCT WHEELCHAIR RAMPS 40" (3'-4") OR GREATER FOR DUAL RAMPS AND 60" (5'-0") OR GREATER FOR DIAGONAL RAMPS.
- USE CLASS "B" CONCRETE WITH A SIDEWALK FINISH IN ORDER TO OBTAIN A ROUGH NON-SKID TYPE SURFACE.
- PLACE A 1/2" EXPANSION JOINT WHERE THE CONCRETE WHEELCHAIR RAMP JOINS THE CURB AND AS SHOWN ON STD. DWG. 848.01.
- PLACE THE INSIDE PEDESTRIAN CROSSWALK LINES NO CLOSER IN THE INTERSECTION BY BISECTING THE INTERSECTION RADIUS, WITH ALLOWANCE OF A 4' CLEAR ZONE IN THE VEHICULAR TRAVELWAY WHEN ONE RAMP IS INSTALLED. (SEE NOTE 14)
- COORDINATE THE CURB CUT AND THE PEDESTRIAN CROSSWALK LINES SO THE FLOOR OF THE WHEELCHAIR RAMP WILL FALL WITHIN THE PEDESTRIAN CROSSWALK LINES. PLACE DIAGONAL RAMPS WITH FLARED SIDES SO 24" OF FULL HEIGHT CURB FALLS WITHIN THE CROSSWALK MARKINGS ON EACH SIDE OF THE FLARES.
- CONSTRUCT THE PEDESTRIAN CROSSWALK A MINIMUM OF 6 FEET. A CROSSWALK WIDTH OF 10 FEET OR GREATER IS DESIRABLE.
- USE STOP LINES, NORMALLY PERPENDICULAR TO THE LANE LINES, WHERE IT IS IMPORTANT TO INDICATE THE POINT BEHIND WHICH VEHICLES ARE REQUIRED TO STOP IN COMPLIANCE WITH A TRAFFIC SIGNAL, STOP SIGN OR OTHER LEGAL REQUIREMENT. AN UNUSUAL APPROACH SKEW MAY REQUIRE THE PLACEMENT OF THE STOP LINE TO BE PARALLEL TO THE INTERSECTING ROADWAY.
- TERMINATE PARKING A MINIMUM OF 20 FEET BACK OF PEDESTRIAN CROSSWALK.
- PLACE ALL PAVEMENT MARKINGS IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION AND THE NORTH CAROLINA SUPPLEMENT TO THE MUTCD.

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

ENGLISH DETAIL DRAWING FOR WHEELCHAIR RAMP AND EXISTING SIDEWALK CURB CUT

SHEET 5 OF 5 848D06

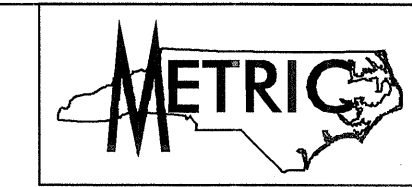


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ORIGINAL BY: DETAIL 848D05 DATE:  
MODIFIED BY: E.E. WARD DATE: 06-18-03  
CHECKED BY: *[Signature]* DATE: 6-13

8/17/09



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - ~~C200866~~ **C201882**

PROJECT REFERENCE NO. U-2306A	SHEET NO. 3
R/W SHEET NO. (1 of 2)	
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER 

ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION	2374000000-N	840	7	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (E)	4686000000-M	1205	3,583	M	THERMOPLASTIC PAVEMENT MARKING LINES (100MM, 3.1MM)
0000400000-N	801	Lump Sum		CONSTRUCTION SURVEYING	2374000000-N	840	18	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (F)	4688000000-M	1205	250	M	THERMOPLASTIC PAVEMENT MARKING LINES (150MM, 2.3MM)
0001000000-M	200	Lump Sum		CLEARING & GRUBBING ... HEC-TARE(S)	2374000000-N	840	7	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (G)	4695000000-M	1205	68	M	THERMOPLASTIC PAVEMENT MARKING LINES (200MM, 2.3MM)
0008000000-M	200	0.4	HA	SUPPLEMENTARY CLEARING & GRUB-BING	2396000000-N	840	7	EA	FRAME WITH COVER, STD 840.54	4697000000-M	1205	264	M	THERMOPLASTIC PAVEMENT MARKING LINES (200MM, 3.1MM)
0022000000-M	225	<del>2,191</del> 2,191	M3	UNCLASSIFIED EXCAVATION	2535000000-M	846	40	M	*** X ***MM CONCRETE CURB (225MM X 450MM)	4710000000-M	1205	150	M	THERMOPLASTIC PAVEMENT MARKING LINES (600MM, 3.1MM)
0036000000-M	225	1,500	M3	UNDERCUT EXCAVATION	2549000000-M	846	2,700	M	750MM CONCRETE CURB & GUTTER	4725000000-M	1205	91	EA	THERMOPLASTIC PAVEMENT MARKING SYMBOL (2.3MM)
0080000000-M	SP	325	MTN	CLASS IV SUBGRADE STABILIZA-TION	2591000000-M	848	2,890	M2	100MM CONCRETE SIDEWALK	4810000000-M	1205	2	M	PAINT PAVEMENT MARKING LINES (100MM)
0106000000-M	230	<del>2,094</del> 2,094	M3	BORROW EXCAVATION	2598000000-M	848	300	M2	CONCRETE WHEELCHAIR RAMPS	4840000000-N	1205	8	EA	PAINT PAVEMENT MARKING CHARAC-TER
0134000000-M	240	105	M3	DRAINAGE DITCH EXCAVATION	2612000000-M	848	160	M2	150MM CONCRETE DRIVEWAY	4845000000-N	1205	4	EA	PAINT PAVEMENT MARKING SYMBOL
0156000000-M	250	3,515	M2	REMOVAL OF EXISTING ASPHALT PAVEMENT	2626000000-M	852	475	M2	75MM CONCRETE ISLAND COVERS	4875000000-N	1205	2	EA	REMOVAL OF PAVEMENT MARKING SYMBOLS & CHARACTERS
0177000000-M	250	2,650	M2	BREAKING OF EXISTING ASPHALT PAVEMENT	2655000000-M	852	250	M2	125MM MONOLITHIC CONCRETE IS-LANDS (KEYED IN)	4905000000-N	1253	363	EA	SNOWPLOWABLE PAVEMENT MARKERS
0195000000-M	265	500	M3	SELECT GRANULAR MATERIAL	2830000000-N	858	2	EA	ADJUSTMENT OF MANHOLES	5300000000-M	1505	265	MTN	FOUNDATION CONDITIONING MATE-RIAL, UTILITIES CLASS ***** (VI)
0196000000-M	270	250	M2	FABRIC FOR SOIL STABILIZATION	2845000000-N	858	41	EA	ADJUSTMENT OF METER BOXES OR VALVE BOXES	5306000000-M	SP	265	MTN	BEDDING MATERIAL, UTILITIES CLASS ***** (IV)
0318000000-M	300	261	MTN	FOUNDATION CONDITIONING MATE-RIAL, MINOR STRS	3030000000-M	862	30.48	M	STEEL BM GUARDRAIL	5318000000-M	1505	198	MTN	PAVEMENT REPAIR FOR UTILITY WORK
0343000000-M	310	9.6	M	375MM SIDE DRAIN PIPE	3105000000-N	862	6	EA	STEEL BM GUARDRAIL TERMINAL SECTIONS	5360000000-M	1510	248.6	M	150MM DI WATER PIPE, PC 2.41MPA
0378000000-M	310	320.4	M	600MM RC PIPE CULVERTS, CLASS III	3572000000-M	867	50	M	CHAIN LINK FENCE RESET	5366000000-M	1510	435	M	200MM DI WATER PIPE, PC 2.41MPA
0594000000-M	310	66	M	600MM CS PIPE CULVERTS, 1.63MM THICK	3575000000-M	SP	375	M	GENERIC FENCING ITEM REMOVE AND RESET 1800MM CHAIN LINK W/3 SBW FENCE	5378000000-M	1510	537	M	300MM DI WATER PIPE, PC 2.41MPA
0636000000-M	310	2	EA	***MM CS PIPE ELBOWS, ****MM THICK (600MM, 1.63MM)	3649000000-M	876	54	MTN	PLAIN RIP RAP, CLASS B	5414000000-M	1510	23.8	M	20MM COPPER WATER PIPE, TYPE K
0708000000-M	310	22.8	M	400MM BIT COAT CS PIPE CUL-VERTS, TYPE B 1.63MM THICK	3656000000-M	876	725	M2	FILTER FABRIC FOR DRAINAGE	5420000000-M	1510	2	M	25MM COPPER WATER PIPE, TYPE K
0720000000-M	310	10.8	M	600MM BIT COAT CS PIPE CUL-VERTS, TYPE B 1.63MM THICK	3804000000-M	SP	1,650	MTN	AGGREGATE BASE COURSE (SUB-BALLAST)	5480000000-M	1510	2,559	KG	DUCTILE IRON WATER PIPE FIT-TINGS, 1.72MPA MIN WP
0806000000-M	310	1	EA	400MM BIT COAT CS PIPE ELBOWS, TYPE B 1.63MM THICK	3860000000-N	SP	75	EA	CROSS TIE REPLACEMENTS	5510000000-M	1510	2	EA	20MM CORPORATION STOP
0995000000-M	340	200	M	PIPE REMOVAL	3876000000-M	SP	290	M	GENERIC TRACKWORK ITEM RAILROAD BYPASS MAIN TRACK TO BE REMOVED & RELAID	5540000000-M	1510	10	EA	150MM GATE VALVE & VALVE BOX, 1.38MPA WP
1011000000-N	500	Lump Sum		FINE GRADING	3876000000-M	SP	290	M	GENERIC TRACKWORK ITEM RAILROAD DETOUR MAIN TRACK TO BE CONSTRUCTED & REMOVED	5546000000-M	1510	5	EA	200MM GATE VALVE & VALVE BOX, ****MPA WP (1.38MPA)
1022000000-M	SP	250	KG	SEALING EXISTING PAVEMENT CRACKS	3885000000-M	SP	1,450	MTN	GENERIC TRACKWORK ITEM STONE BALLAST (AREA #3)	5558000000-M	1510	10	EA	300MM GATE VALVE & VALVE BOX, ****MPA WP (1.38MPA)
1110000000-M	510	300	MTN	STABILIZER AGGREGATE	4072000000-M	903	280	M	SUPPORTS, 4.5KG STEEL U-CHANNEL	5582000000-M	1510	2	EA	*** X ***MM TAPPING SADDLE (300MM X 20MM)
1220000000-M	545	500	MTN	INCIDENTAL STONE BASE	4096000000-N	904	6	EA	SIGN ERECTION, TYPE D	5648000000-N	1510	6	EA	RELOCATE EXISTING WATER METER
1297000000-M	607	8,100	M2	MILLING ASPHALT PAVEMENT, **MM DEPTH (65MM)	4102000000-N	904	44	EA	SIGN ERECTION, TYPE E	5672000000-N	1510	3	EA	RELOCATE EXISTING FIRE HYDRANT
1491000000-M	610	9,850	MTN	ASPHALT CONC BASE COURSE, TYPE B25.0C	4129000000-N	906	1	EA	RELOCATE SIGN, TYPE **** (D)	5726000000-M	1520	329.8	M	200MM DI SEWER PIPE, PC 2.41MPA
1503000000-M	610	5,700	MTN	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0C	4129000000-N	906	3	EA	RELOCATE SIGN, TYPE **** (E)	5738000000-M	1520	83.8	M	300MM DI SEWER PIPE, PC 2.41MPA
1523000000-M	610	5,400	MTN	ASPHALT CONC SURFACE COURSE, TYPE S9.5C	4129000000-N	906	6	EA	RELOCATE SIGN, TYPE **** (F)	5775000000-M	1525	8	EA	1200MM DIA PRECAST CONC SEWER MANHOLE 0-1.8M DEPTH
1560000000-M	620	692	MTN	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22	4155000000-N	907	27	EA	DISPOSAL OF SIGN SYSTEM, U-CHANNEL	5776000000-M	1525	1	EA	1500MM DIA PRECAST CONC SEWER MANHOLE 0-1.8M DEPTH
1565000000-M	620	351	MTN	ASPHALT BINDER FOR PLANT MIX, GRADE PG 70-22	4192000000-N	907	11	EA	DISPOSAL OF SUPPORT, U-CHANNEL	5780000000-M	1525	14	M	PRECAST CONC MANHOLE WALL, ****MM DIA, OVER 1.8M HT (1200MM)
1693000000-M	654	50	MTN	ASPHALT PLANT MIX PAVEMENT REPAIR	4238000000-N	907	1	EA	DISPOSAL OF SIGN, D, E OR F	5780000000-M	1525	1	M	PRECAST CONC MANHOLE WALL, ****MM DIA, OVER 1.8M HT (1500MM)
2022000000-M	815	170	M3	SUBDRAIN EXCAVATION	4412000000-M	SP	46	M2	WORK ZONE SIGNS (STATIONARY)	5786000000-M	1525	1	M	SEWER MANHOLE OUTSIDE DROP AS-SEMBLY
2033000000-M	815	125	M3	SUBDRAIN FINE AGGREGATE	4412200000-M	SP	27	M2	WORK ZONE SIGNS (PORTABLE)	5798000000-M	1530	312	M	FILL OR REMOVE ABANDONED ***MM PIPE, ***** (150MM, CI)
2044000000-M	815	300	M	150MM PERFORATED SUBDRAIN PIPE	4430000000-N	1130	80	EA	DRUMS	5798000000-M	1530	260	M	FILL OR REMOVE ABANDONED ***MM PIPE, ***** (200MM, CI)
2055000000-M	815	30	EA	150MM SUBDRAIN PIPE WYES, TEES, & ELBOWS	4435000000-N	1135	25	EA	CONES	5798000000-M	1530	53	M	FILL OR REMOVE ABANDONED ***MM PIPE, ***** (250MM, CI)
2066000000-N	815	2	EA	CONCRETE PAD FOR SUBDRAIN PIPE OUTLET	4446100000-M	SP	146	M	BARRICADES (TYPE III)	5804000000-M	1530	411	M	FILL OR REMOVE ABANDONED 300MM PIPE, ***** (CI)
2077000000-M	815	4	M	150MM OUTLET PIPE (SUBDRAINS)	4455000000-N	1150	256	MD	FLAGGER	5804000000-M	1530	17.5	M	FILL OR REMOVE ABANDONED 300MM PIPE, ***** (CI)
2253000000-M	840	1.5	M3	PIPE COLLARS	4460000000-N	1155	6	EA	WARNING LIGHTS (TYPE B)	5804000000-M	1530	17.5	M	FILL OR REMOVE ABANDONED 300MM PIPE, ***** (CI)
2264000000-M	840	1	M3	PIPE PLUGS	4465000000-N	1160	1	EA	TEMPORARY CRASH CUSHIONS	5816000000-N	1530	4	EA	BREAK DOWN, PLUG, & FILL ABAN-DONED UTILITY MANHOLE
2286000000-N	840	47	EA	MASONRY DRAINAGE STRUCTURES	4475000000-N	1165	2	EA	TRUCK MOUNTED IMPACT ATTENUA-TOR (45 MPH)	5828000000-N	1530	6	EA	REMOVE EXISTING MANHOLE
2308000000-M	840	17	M	MASONRY DRAINAGE STRUCTURES										
2364000000-N	840	3	EA	FRAME WITH TWO GRATES, STD 840.16										
2366000000-N	840	1	EA	FRAME WITH TWO GRATES, STD 840.24										
2367000000-N	840	1	EA	FRAME WITH TWO GRATES, STD 840.29										

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# STATE OF NORTH CAROLINA SUMMARY OF QUANTITIES

ItemNumber	Sec #	Quantity	Unit	Description
588200000-N	SP	1	EA	GENERIC UTILITY ITEM RELOCATE EXT WM W/ NEW VAULT
588800000-M	SP	85.6	M	GENERIC UTILITY ITEM 600MM STEEL ENCASMENT PIPE, 9.53MM THICK, BY OPEN CUT
588800000-M	SP	52	M	GENERIC UTILITY ITEM 600MM STEEL ENCASMENT PIPE, 9.53MM THK, TRENCHLESS IN SOIL
588800000-M	SP	53	M	GENERIC UTILITY ITEM 600MM STEEL ENCASMENT PIPE, 9.53MM THK, TRENCHLESS NOT IN SOIL
600000000-M	1605	950	M	TEMPORARY SILT FENCE
600600000-M	1610	460	MTN	STONE FOR EROSION CONTROL, CLASS A
600900000-M	1610	840	MTN	STONE FOR EROSION CONTROL, CLASS B
601200000-M	1610	775	MTN	SEDIMENT CONTROL STONE
601500000-M	1615	5.5	HA	TEMPORARY MULCHING
601800000-M	1620	200	KG	SEED FOR TEMPORARY SEEDING
602100000-M	1620	1.75	MTN	FERTILIZER FOR TEMPORARY SEED- ING
602400000-M	1622	100	M	TEMPORARY SLOPE DRAINS
602700000-N	1622	4	EA	INLET PROTECTION AT TEMPORARY SLOPE DRAINS
602900000-M	SP	80	M	SAFETY FENCE
603000000-M	1630	1,330	M3	SILT EXCAVATION
603600000-M	1631	2,000	M2	MATting FOR EROSION CONTROL
603700000-M	SP	20	M2	COIR FIBER MAT
604200000-M	1632	420	M	6.4MM HARDWARE CLOTH
608400000-M	1660	5.5	HA	SEEDING & MULCHING
608700000-M	1660	3	HA	MOWING
609000000-M	1661	50	KG	SEED FOR REPAIR SEEDING
609300000-M	1661	0.25	MTN	FERTILIZER FOR REPAIR SEEDING
609600000-M	1662	150	KG	SEED FOR SUPPLEMENTAL SEEDING
610800000-M	1665	8.75	MTN	FERTILIZER TOPDRESSING
611400000-N	SP	2	HR	SPECIALIZED HAND MOWING
613200000-N	SP	2	EA	GENERIC EROSION CONTROL ITEM 50MM SKIMMER
613200000-N	SP	24	EA	GENERIC EROSION CONTROL ITEM RESPONSE FOR EROSION CONTROL
614700000-M	SP	45	M	GENERIC EROSION CONTROL ITEM COIR FIBER BAFFLES
700000000-M	1705	16	EA	PEDESTRIAN SIGNAL HEAD (**MM, ** SECTION) (400MM, 1 SECTION WITH COUNTDO WN)
706000000-M	1705	2,435	M	SIGNAL CABLE
712000000-M	1705	43	EA	VEHICLE SIGNAL HEAD (300MM, 3 SECTION)
714400000-M	1705	10	EA	VEHICLE SIGNAL HEAD (300MM, 5 SECTION)
715600000-N	SP	2	EA	VEHICLE SIGNAL HEAD WITH SIN- GLE OPTICALLY-PROGRAMMED SEC- TION
726400000-M	1710	210	M	MESSENGER CABLE (9.52MM)
727900000-M	1715	1,415	M	TRACER WIRE
728800000-M	1715	50	M	TRENCHING (PAVED)
730000000-M	1715	760	M	TRENCHING (UNPAVED)
730100000-M	SP	720	M	DIRECTIONAL DRILL POLYETHYLENE CONDUIT, ***** (** CONDUIT) (50MM, 1)
730100000-M	SP	220	M	DIRECTIONAL DRILL POLYETHYLENE CONDUIT, ***** (** CONDUIT) (50MM, 2)
732400000-N	1716	35	EA	JUNCTION BOX (STANDARD SIZE)
733600000-N	1716	15	EA	JUNCTION BOX (OVER-SIZED)
736000000-N	1720	8	EA	WOOD POLE
737200000-N	1721	14	EA	GUY ASSEMBLY
740800000-M	1722	2	EA	25MM RISER WITH WEATHERHEAD
742000000-M	1722	8	EA	50MM RISER WITH WEATHERHEAD
743200000-M	1722	2	EA	50MM RISER WITH HEAT SHRINK TUBING
744400000-M	1725	1,950	M	INDUCTIVE LOOP SAWCUT

ItemNumber	Sec #	Quantity	Unit	Description
745600000-M	1726	2,160	M	LEAD-IN CABLE
751600000-M	1730	450	M	COMMUNICATIONS CABLE (**FIBER) (48)
754000000-N	1731	2	EA	AERIAL SPLICE ENCLOSURE
755200000-N	1731	1	EA	INTERCONNECT CENTER
756600000-N	1733	15	EA	DELINEATOR MARKER
7575140000-N	SP	1	EA	FIBER-OPTIC SPLICE CABINET (BASE MOUNTED)
7575160000-M	SP	350	M	REMOVE EXISTING COMMUNICATIONS CABLE
761300000-N	SP	11	EA	SOIL TEST
762400000-N	1743	2	EA	SIGNAL PEDESTAL WITH FOUNDA- TION
763100000-N	1744	11	EA	MAST ARM WITH METAL POLE DE- SIGN
768400000-N	1750	5	EA	SIGNAL CABINET FOUNDATION
772000000-N	1751	4	EA	CONTROLLER WITH CABINET (TYPE 170E, BASE MOUNTED)
774400000-N	SP	33	EA	DETECTOR CARD (TYPE 170)
787600000-N	1752	1	EA	MASTER CONTROLLER (TYPE 170E)
798000000-N	SP	4	EA	GENERIC SIGNAL ITEM CABINET BASE EXTENDER
798000000-N	SP	1	EA	GENERIC SIGNAL ITEM FURNISH MMFO TRANCEIVER
798000000-N	SP	11	EA	GENERIC SIGNAL ITEM METAL POLE WITH SINGLE MAST ARM
798000000-N	SP	6	EA	GENERIC SIGNAL ITEM MMFO INTERCONNECT CENTER
798000000-N	SP	4	EA	GENERIC SIGNAL ITEM MMFO TRANCEIVER
798000000-N	SP	10	EA	GENERIC SIGNAL ITEM SIGN FOR SIGNALS
799000000-M	SP	1,600	M	GENERIC SIGNAL ITEM MMFO COMMUNICATIONS CABLE, (12-FIBER)
799000000-M	SP	695	M	GENERIC SIGNAL ITEM UNDERGROUND POLETHYLENE CON- DUIT (50MM, 1)
799200000-M	SP	51	M3	GENERIC SIGNAL ITEM DRILLED PIER FOUNDATION

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

036600000-M AA1	310	272.4	M	375MM RC PIPE CULVERTS, CLASS III
037200000-M AA1	310	102	M	450MM RC PIPE CULVERTS, CLASS III
038400000-M AA1	310	12	M	750MM RC PIPE CULVERTS, CLASS III

\*\*\* OR \*\*\*

036600000-M AA2	310	261.6	M	375MM RC PIPE CULVERTS, CLASS III
037200000-M AA2	310	82.8	M	450MM RC PIPE CULVERTS, CLASS III
098600000-M AA2	SP	10.8	M	GENERIC PIPE ITEM 375MM HDPE PIPE CULVERTS
098600000-M AA2	SP	19.2	M	GENERIC PIPE ITEM 450MM HDPE PIPE CULVERTS
098600000-M AA2	SP	12	M	GENERIC PIPE ITEM 750MM HDPE PIPE CULVERTS

\*\*\* OR \*\*\*

036600000-M AA3	310	261.6	M	375MM RC PIPE CULVERTS, CLASS III
037200000-M AA3	310	82.8	M	450MM RC PIPE CULVERTS, CLASS III
098600000-M AA3	SP	10.8	M	GENERIC PIPE ITEM 375MM ALUMINIZED CORRUGATED STEEL PIPE CULV., 1.63MM THICK
098600000-M AA3	SP	19.2	M	GENERIC PIPE ITEM 450MM ALUMINIZED CORRUGATED STEEL PIPE CULV., 1.63MM THICK
098600000-M AA3	SP	12	M	GENERIC PIPE ITEM 750MM ALUMINIZED CORRUGATED STEEL PIPE CULV., 1.63MM THICK

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







STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS  
**SUMMARY OF EARTHWORK**  
 IN CUBIC METERS

LOCATION	UNCL. EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
<b>SUMMARY 1</b>					
-L- 10+73.873 - 11+90.857 LT	319		43		276
<b>SUBTOTAL</b>	319		43		276
<b>SUMMARY 2</b>					
-L- 10+73.873 - 11+90.857 RT	489		47		442
<b>SUBTOTAL</b>	489		47		442
<b>SUMMARY 3</b>					
-L- 12+24.781 - 19+65.350	8,895		25,992	17,097	
-Y1- 10+60.000 TO 10+79.344	109		0		109
-Y5- 10+90.000 TO 12+10.000 LT	128		677	549	
-Y6- 10+40.000 TO 12+20.000 LT	308		2375	2067	
-Y7- 10+80.000 TO 11+75.000 LT	564		13		551
-Y9- 10+09.60 TO 10+60.000	176		179	3	
-Y10- 10+00.000 TO 10+76.506	152		515	363	
<b>SUBTOTAL</b>	10,332		29,751	20,080	660
<b>SUMMARY 4</b>					
-Y2- 11+21.082 TO 12+22.000	749		171		578
<b>SUBTOTAL</b>	749		171		578
<b>SUMMARY 5</b>					
-L- 19+65.35 - 20+10.000 LT	99		2		97
<b>SUBTOTAL</b>	99		2		97
<b>SUMMARY 6</b>					
-L- 19+80 - 20+10.000 RT	18		6		12
<b>SUBTOTAL</b>	18		6		12
<b>SUMMARY 7</b>					
RAILROAD CONST.	5,142		4,765		377
<b>SUBTOTAL</b>	5,142		4,765		377
<b>SUMMARY 8</b>					
RAILROAD REMOVAL	4,143				4,143
<b>SUBTOTAL</b>	4,143				4,143
<b>TOTAL</b>	21,291		34,785	20,080	6,585
LOSS DUE TO C & G	-100			+100	
SHOULDER MATERIAL			1,351	1,351	
WASTE IN LIEU OF BORROW				-2,442	-2,442
<b>PROJECT TOTAL</b>	21,191		36,136	19089	4,143
<b>EST 5% FOR REPLACING TOPSOIL ON BORROW PITS</b>	0			955	
<b>GRAND TOTAL</b>	21,191			20,044	
<b>SAY</b>	21,191			20,044	

SELECT MATERIAL CL II OR III = 500 M3  
 SELECT MATERIAL CL IV = 325 MTN  
 UNDERCUT EXCAVATION = 1000 M3  
 GRADEPOINT UNDERCUT = 500 M3  
 DDE = 105 M3

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.



STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS

**SUMMARY OF CURB & GUTTER PLACEMENT**

IN METERS  
 NOTE: LENGTHS INCLUDE TURNOUTS FOR -Y- LINES AND REDUCTIONS FOR DRIVEWAY OPENINGS

LINE	LOCATION	SIDE	LENGTH m
-L-	10+73.88 TO 11+37.41	LT	63.78
-L-	11+48.30 TO 11+78.01	LT	150.83
-L-	11+85.34 TO 12+11.26	LT	110.03
-L-	12+21.08 TO 12+89.73	LT	93.01
-L-	13+03.85 TO 13+72.60	LT	110.34
-L-	13+85.00 TO 14+76.95	LT	132.41
-L-	14+94.45 TO 17+07.57	LT	300.71
-L-	17+15.07 TO 19+25.23	LT	250.96
-L-	19+47.78 TO 20+10.00	LT	75.38
-L-	10+73.87 TO 11+92.62	RT	116.19
-L-	12+33.60 TO 12+90.80	RT	92.97
-L-	13+05.02 TO 13+50.47	RT	86.51
-L-	13+52.92 TO 14+14.88	RT	136.38
-L-	14+04.98 TO 15+03.66	RT	115.86
-L-	15+12.79 TO 17+32.40	RT	245.25
-L-	17+42.97 TO 19+65.35	RT	245.94
-L-	19+79.04 TO 20+10.00	RT	34.69
-L-	17+90.15 TO 19+19.99	MEDIAN	265.27
-Y6-	11+48.066 TO 11+61.983	RT	13.92
-Y6-	11+82.489 TO 11+83.194	RT	9.50
-Y6-	11+90.994 TO 11+98.064	RT	14.40
-Y6-	12+05.742 TO 12+05.892	RT	4.45
		TOTAL	2668.78
		SAY	2700

**SIDEWALK SUMMARY**

IN METERS

NOTE: LENGTHS INCLUDE TURNOUTS FOR -Y- LINES

LINE	LOCATION	SIDE	LENGTH m
-L-	10+83.69 TO 11+37.47	LT	76.10
-L-	11+45.71 TO 11+84.88	LT	81.95
-L-	12+03.00 TO 12+10.19	LT	14.75
-L-	12+22.40 TO 12+90.65	LT	116.15
-L-	13+03.01 TO 13+75.62	LT	122.01
-L-	13+89.09 TO 14+79.84	LT	147.06
-L-	14+94.84 TO 17+07.12	LT	455.01
-L-	17+15.07 TO 19+24.37	LT	386.27
-L-	19+49.21 TO 20+10.00	LT	106.91
-L-	10+73.72 TO 11+90.82	RT	176.87
-L-	12+31.49 TO 12+92.00	RT	110.07
-L-	13+03.88 TO 13+90.97	RT	136.19
-L-	14+03.84 TO 14+98.87	RT	157.14
-L-	15+13.05 TO 17+31.50	RT	338.81
-L-	17+43.64 TO 19+63.87	RT	348.15
-L-	19+80.48 TO 20+10.00	RT	45.03
		TOTAL	2818.43
		SAY	2890

**SUMMARY OF ASPHALT PAVEMENT REMOVAL**

IN SQUARE METERS

LINE	LOCATION	WIDTH	SQUARE METERS
-L-	14+50.00 TO 14+70.00 RT	5.5	110
-L-	14+50.00 TO 14+60.00 LT	5.5	55
-L-	15+40.00 TO 17+57.07 RT	5.6	1215.6
-L-	15+60.00 TO 15+65.00 LT (ISWP)	1.0	5
-L-	16+60.00 TO 16+80.00 LT (ISWP)	1.0	20
-Y10-	10+36.00 TO 10+73.00 LT	VAR. SEE PLANS	517
-Y9-	10+15.00 TO 10+36.00 RT	VAR. SEE PLANS	88
-L-	17+57.07 TO 18+60.00	8+/-	334
-L-	18+60.00 TO 19+65.35	8+/-	840
-Y13- R/R	Sta. 12+50 LT. (8th Street SE)	3.7+/-	21.7
-Y13- R/R	Sta. 12+50 RT. (8th Street SE)	5.6+/-	34.2
-Y13- R/R	Sta. 15+55 LT. (7th Avenue NE)	VAR. SEE PLANS	80.1
-Y13- R/R	Sta. 15+55 RT. (7th Avenue NE)	VAR. SEE PLANS	108.7
		TOTAL	3429.3
		SAY	3515

**GUARDRAIL BARRICADE**

LINE	LOCATION	LENGTH	ANCHORS (TES)
-Y13- R/R	Sta. 12+50 LT. (8th Street SE)	11.43	2
-Y13- R/R	Sta. 12+50 RT. (8th Street SE)	11.43	2
-Y13- R/R	Sta. 15+55 LT. (7th Avenue NE)	7.62	2
		TOTAL	30.48
			6

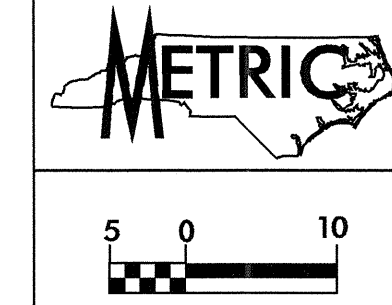
**SUMMARY OF BREAKING OF EXISTING ASPHALT**

IN SQUARE METERS

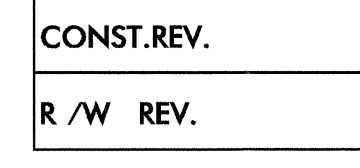
LINE	LOCATION	WIDTH	SQUARE METERS
-L-	12+70.000 TO 14+20.000	ENTIRE WIDTH	1660.89
-Y6-	10+80.000 TO 11+18.000	ENTIRE WIDTH	352.74
-Y6-	11+38.603 TO 12+00.000	ENTIRE WIDTH	569.35
		TOTAL	2582.98
		SAY	2650







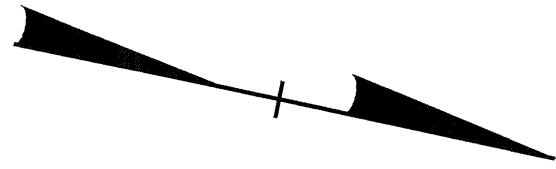
PROJECT REFERENCE NO. <b>U-2306A</b>	SHEET NO. <b>4</b>
R./W SHEET NO.	
ROADWAY DESIGN ENGINEER <i>[Signature]</i>	HYDRAULICS ENGINEER <i>[Signature]</i>
CONST. REV.	
R./W REV.	



January 26, 2005 *[Signature]* 3/6/07

### DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "U2306A-3001" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 222140.65(m) EASTING: 399187.912(m) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999856075 THE N.C. LAMBERT GRID BEARING LOCALIZED HORIZONTAL GROUND DISTANCE FROM "U2306A-3001" TO "-L- STATION 10+73.873 IS 156.495m S 40° 12' 27.72" E ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NGVD 29



- |  |   |
|--|---|
| ③ PETER ROWE<br>DB 1677 PG 811-812             | ⑮ GRACE KANIPE & LENNIE SEVER<br>DB 2003 PG 1220-1221 |
| ⑤ MURPHY SUDDERTH<br>DB 1199 PG 404            | ⑯ EVA JENNINGS<br>DB 1356 PG 915-916                  |
| ⑥ ELEANOR DAVIS<br>DB 1270 PG 992              | ⑰ WILLIAM H. CHAMBLEE<br>DB 1285 PG 440               |
| ⑨ CITY OF HICKORY<br>DB 1587 PG 237-238        | ⑱ DORIS BOST<br>DB 479 PG 350                         |
| ⑩ BURRELL & MARCENIA BROWN<br>DB 756 PG 467    |   |
| ⑫ NC STATE HIGHWAY COMMISSION<br>DB 908 PG 648 |   |
| ⑬ MICHELLE L. DULA<br>DB 1651 PG 911           |   |
| ⑭ AUDREY JOHNSTON<br>DB 1374 PG 938            |   |

### BEGIN PROJECT U-2306A -L- POT Sta. 10+73.873

BY-1PINC 5+00.000 =  
BL-1PINC 5+00.000 =  
-L- 10+38.00 10.299m (RT)

-L- POT Sta. 10+00.000

BEG. CONSTRUCTION  
-Y2- POS Sta. 11+21.082

-Y2- SC Sta. 11+40.424

-Y1- POT Sta. 10+00.000

BEGIN CONSTRUCTION  
-Y1- POT Sta. 10+55.000

-L- PT Sta. 12+40.542

MATCHLINE SEE SHEET 5 -L- STA 12+66.383

- #### NOTES:
- SEE SHEET 2-B FOR CURVE DATA & TRAFFIC
  - SEE SHEET 9 FOR -L- GRADE AND PROFILE
  - SEE SHEET 10 FOR -Y1- GRADE AND PROFILE
  - SEE SHEET 11 FOR -Y2- GRADE AND PROFILE
  - SEE SHEET 2-C FOR FENCING DETAIL FOR PARCEL #10
  - SEE SHEET 2-D FOR -Y1- AND -Y2- INTERSECTION DETAILS
  - CONCRETE SIDEWALK

**METRIC**

PROJECT REFERENCE NO. **U-2306A** SHEET NO. **5**

R/W SHEET NO.

ROADWAY DESIGN ENGINEER: **JOHN B. PAYNE**

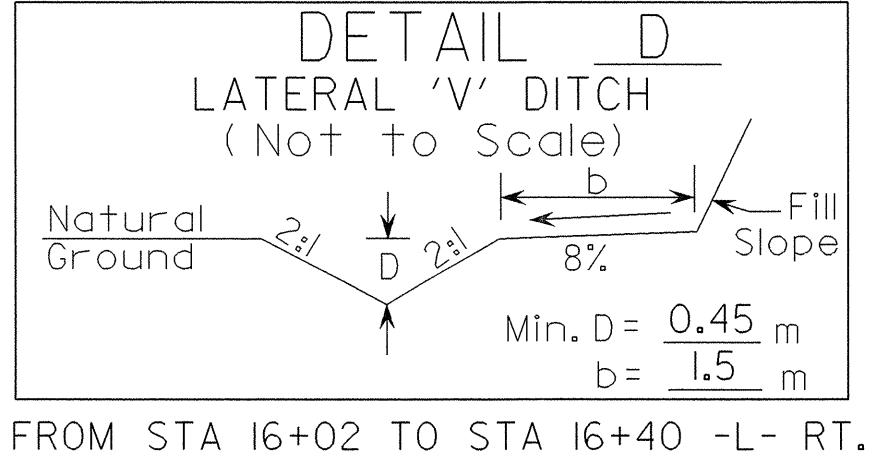
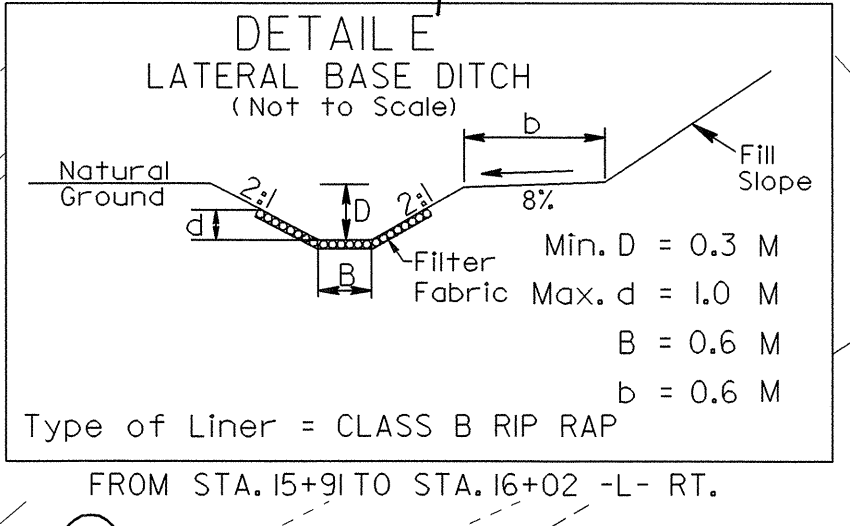
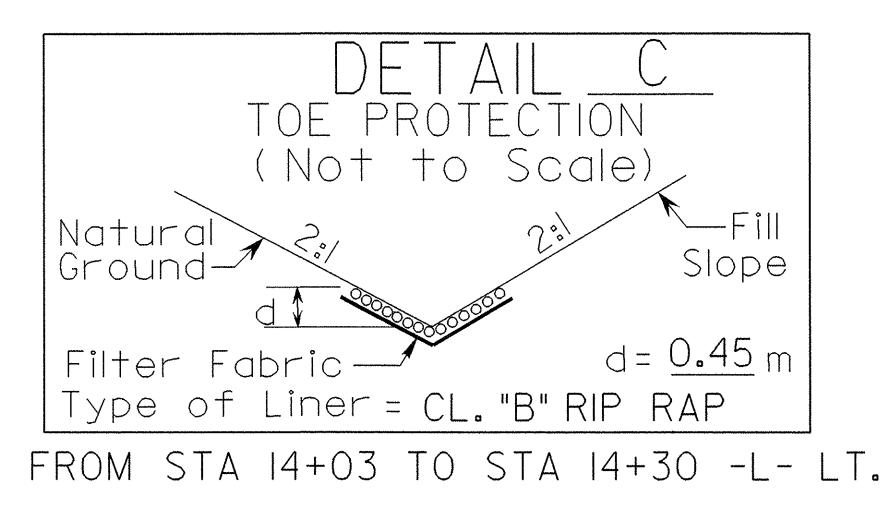
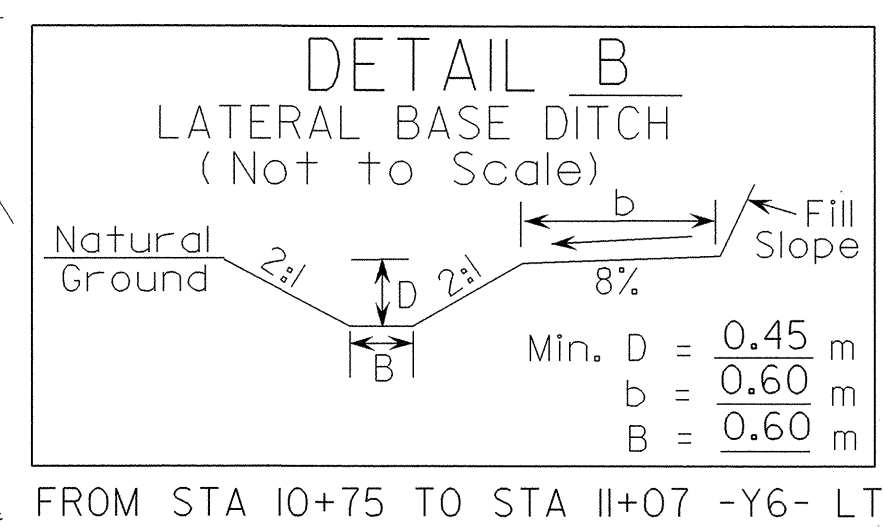
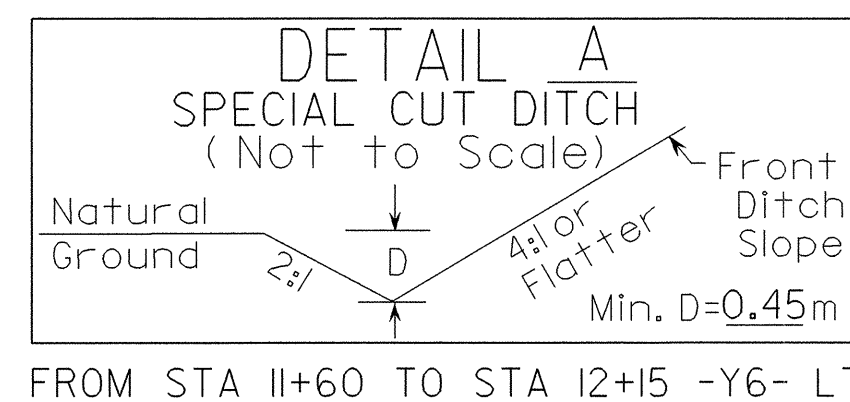
HYDRAULICS ENGINEER: **DAVID L. ...**

CONST. REV.

R/W REV.

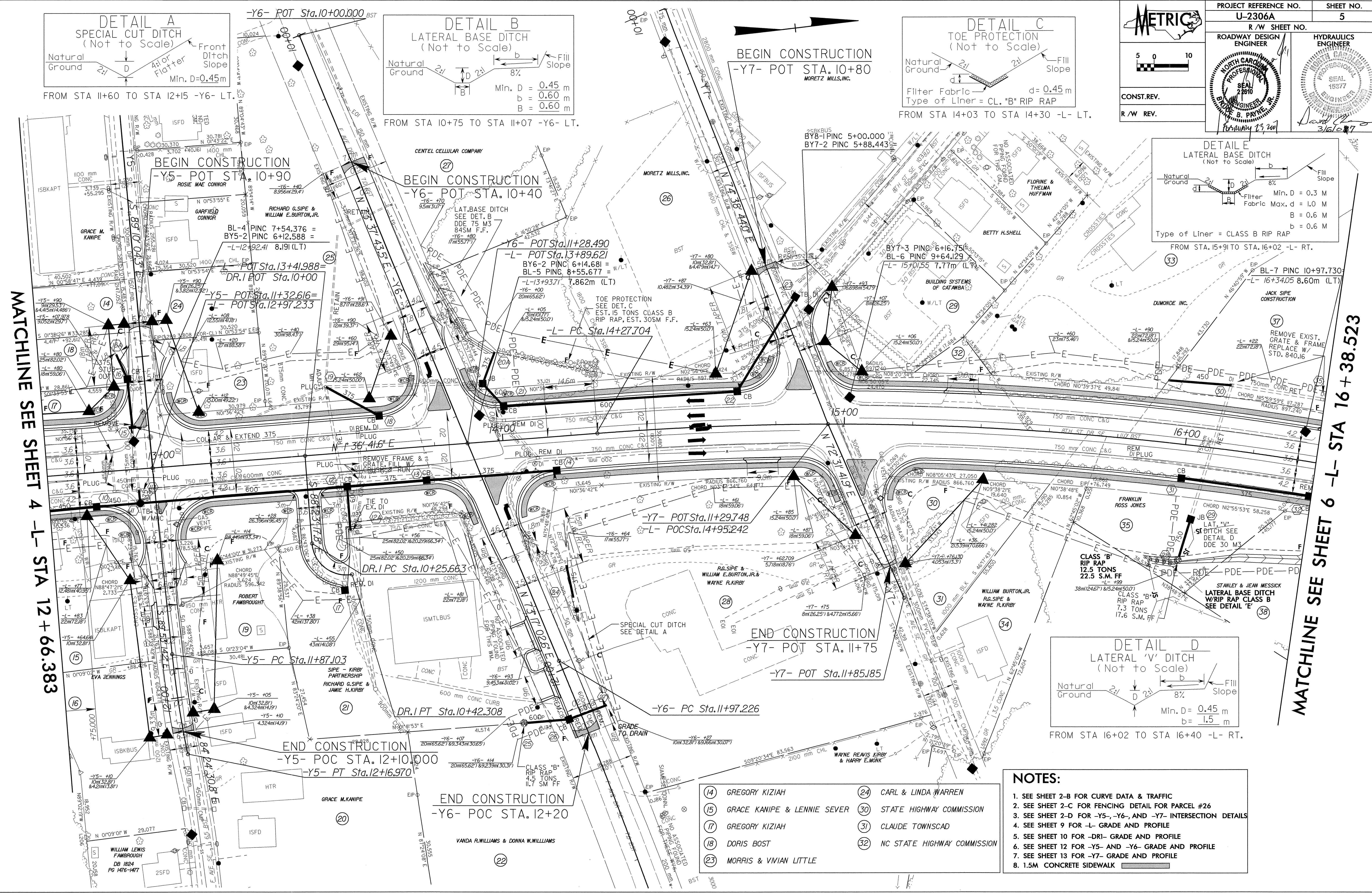
Professional Engineer Seal: JOHN B. PAYNE, No. 25810, State of North Carolina, expires 12/31/2011.

Professional Engineer Seal: DAVID L. ..., No. 15377, State of North Carolina, expires 3/31/2011.



MATCHLINE SEE SHEET 4 -L- STA 12 + 66.383

MATCHLINE SEE SHEET 6 -L- STA 16 + 38.523

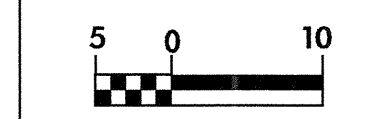


- (14) GREGORY KIZIAH
- (15) GRACE KANIPE & LENNIE SEVER
- (17) GREGORY KIZIAH
- (18) DORIS BOST
- (23) MORRIS & VIVIAN LITTLE
- (24) CARL & LINDA WARREN
- (30) STATE HIGHWAY COMMISSION
- (31) CLAUDE TOWNSCAD
- (32) NC STATE HIGHWAY COMMISSION

- NOTES:**
- SEE SHEET 2-B FOR CURVE DATA & TRAFFIC
  - SEE SHEET 2-C FOR FENCING DETAIL FOR PARCEL #26
  - SEE SHEET 2-D FOR -Y5-, -Y6-, AND -Y7- INTERSECTION DETAILS
  - SEE SHEET 9 FOR -L- GRADE AND PROFILE
  - SEE SHEET 10 FOR -DR1- GRADE AND PROFILE
  - SEE SHEET 12 FOR -Y5- AND -Y6- GRADE AND PROFILE
  - SEE SHEET 13 FOR -Y7- GRADE AND PROFILE
  - 1.5M CONCRETE SIDEWALK



PROJECT REFERENCE NO. <b>U-2306A</b>	SHEET NO. <b>6</b>
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER <b>NORTH CAROLINA PROFESSIONAL SEAL 22610</b> BRYCE B. PAYNE, P.E. January 26, 2015	HYDRAULICS ENGINEER <b>NORTH CAROLINA PROFESSIONAL SEAL 15377</b> DAVE W. HARRIS, P.E. January 26, 2015
CONST. REV.	
R/W REV.	



**NOTES:**

- SEE SHEET 2-B FOR CURVE DATA & TRAFFIC
- SEE SHEET 9 AND 10 FOR -L- GRADE AND PROFILE
- SEE SHEET 13 FOR -Y9- AND -Y10- GRADE AND PROFILE
- SEE SHEET 2-C FOR FENCING DETAIL FOR PARCEL #40
- SEE SHEET 2-D FOR TEMP DRAINAGE SYSTEM DETAIL AND -Y9- AND -Y10- INTERSECTION DETAILS
- SEE SHEETS TW-1 THRU TW-14 FOR TRACKWORK PLANS
- SEE SHEETS S-1 THRU S-47 FOR STRUCTURE PLANS

DESIGN EXCEPTION FOR VERTICAL CLEARANCE ON RAILROAD STRUCTURE AT -Y13-



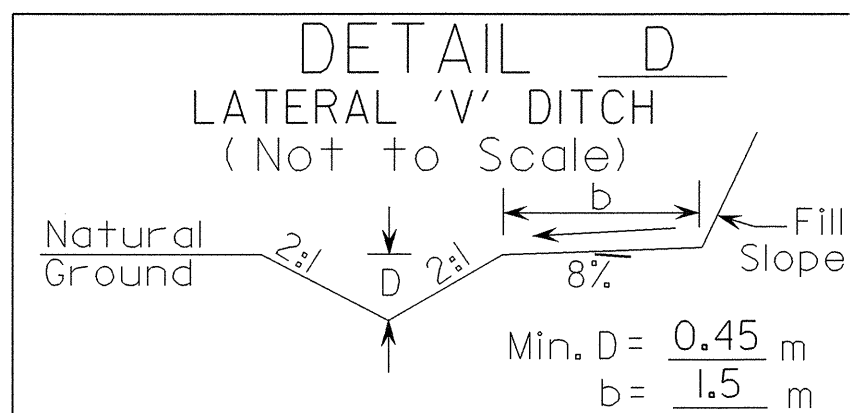
END PROJECT U-2306A  
-L- POT Sta. 20+10.000

MATCHLINE SEE SHEET 5 -L- STA 16+38.523

MATCHLINE SEE SHEET 7

MATCHLINE SEE SHEET 8 -L- STA 20+23.215

MATCHLINE SEE SHEET 8



FROM STA 16+02 TO STA 16+40 -L- RT.

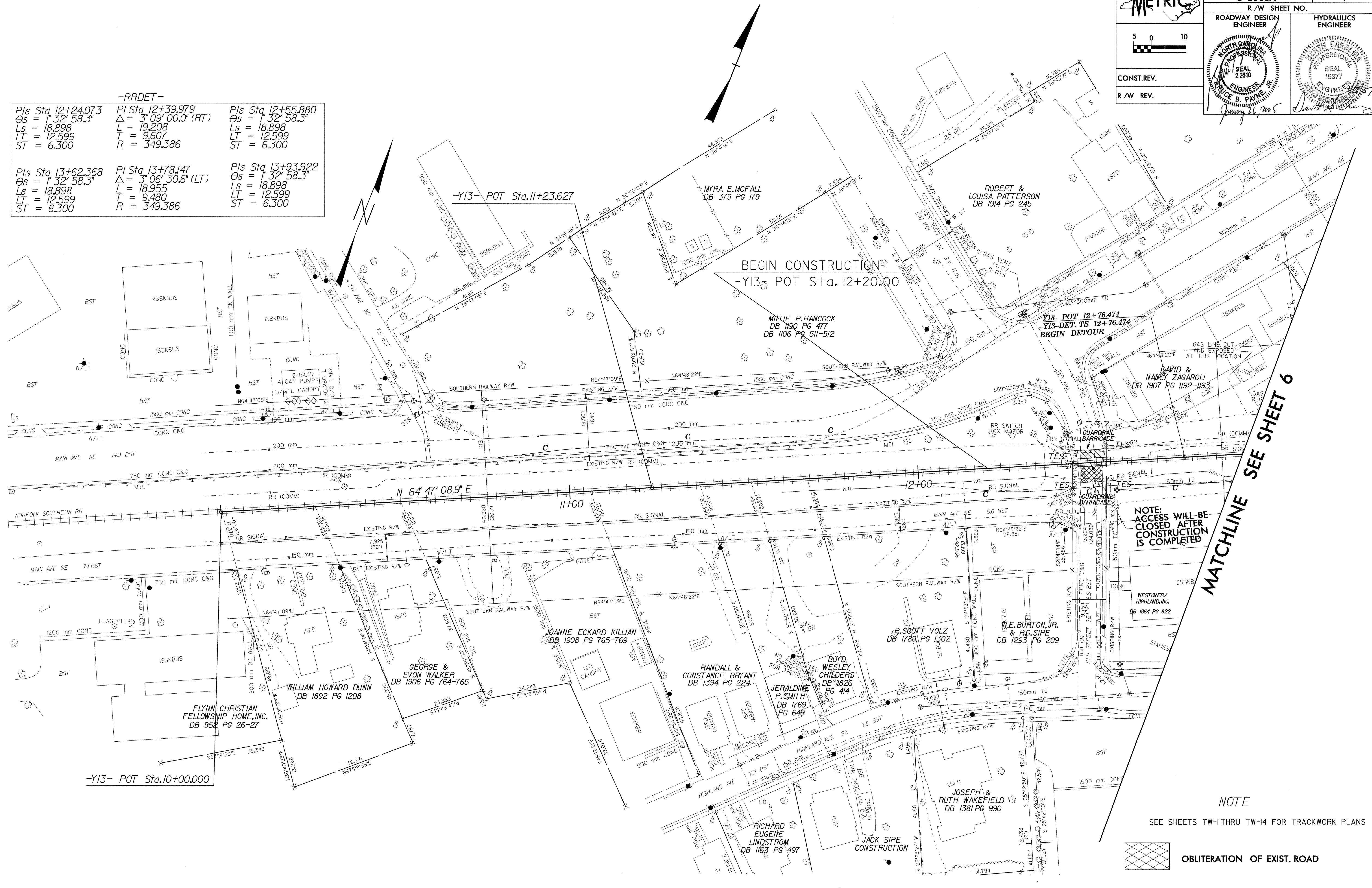
**METRIC**

CONST. REV.  
R/W REV.

PROJECT REFERENCE NO. <b>U-2306A</b>	SHEET NO. <b>7</b>
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER <b>PROFESSIONAL SEAL 22610</b> JAYCE B. PAYNE, JR. January 16, 2015	HYDRAULICS ENGINEER <b>PROFESSIONAL SEAL 15877</b> DAVID W. [Signature]

-RRDET-

Pls Sta 12+24.073 Os = 1 32' 58.3" Ls = 18.898 LT = 12.599 ST = 6.300	Pl Sta 12+39.979 Δ = 3' 09' 00.0" (RT) L = 19.208 T = 9.607 R = 349.386	Pls Sta 12+55.880 Os = 1 32' 58.3" Ls = 18.898 LT = 12.599 ST = 6.300
Pls Sta 13+62.368 Os = 1 32' 58.3" Ls = 18.898 LT = 12.599 ST = 6.300	Pl Sta 13+78.147 Δ = 3' 06' 30.6" (LT) L = 18.955 T = 9.480 R = 349.386	Pls Sta 13+93.922 Os = 1 32' 58.3" Ls = 18.898 LT = 12.599 ST = 6.300



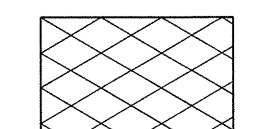
**BEGIN CONSTRUCTION**  
-Y13- POT Sta. 12+20.00

**BEGIN DETOUR**  
Y13- POT 12+76.474  
Y13-DET. TS 12+76.474

**NOTE:**  
ACCESS WILL BE CLOSED AFTER CONSTRUCTION IS COMPLETED

**MATCHLINE SEE SHEET 6**

**NOTE**  
SEE SHEETS TW-1 THRU TW-14 FOR TRACKWORK PLANS



**OBTERATION OF EXIST. ROAD**

07.036.07

**METRIC**

PROJECT REFERENCE NO. U-2306A SHEET NO. 8  
 R/W SHEET NO.

ROADWAY DESIGN ENGINEER  
 HYDRAULICS ENGINEER

CONST. REV.  
 R/W REV.

0 5 10

January 26, 2005

Professional Engineer Seal: North Carolina, Seal 22610, B. P. PLYNE, JR.  
 Professional Engineer Seal: North Carolina, Seal 15377, David Chan

-L- POT Sta. 20+86.379  
 -L- PT Sta. 20+57.472  
 N 17°45'40.6"E

MATCHLINE SEE SHEET 6

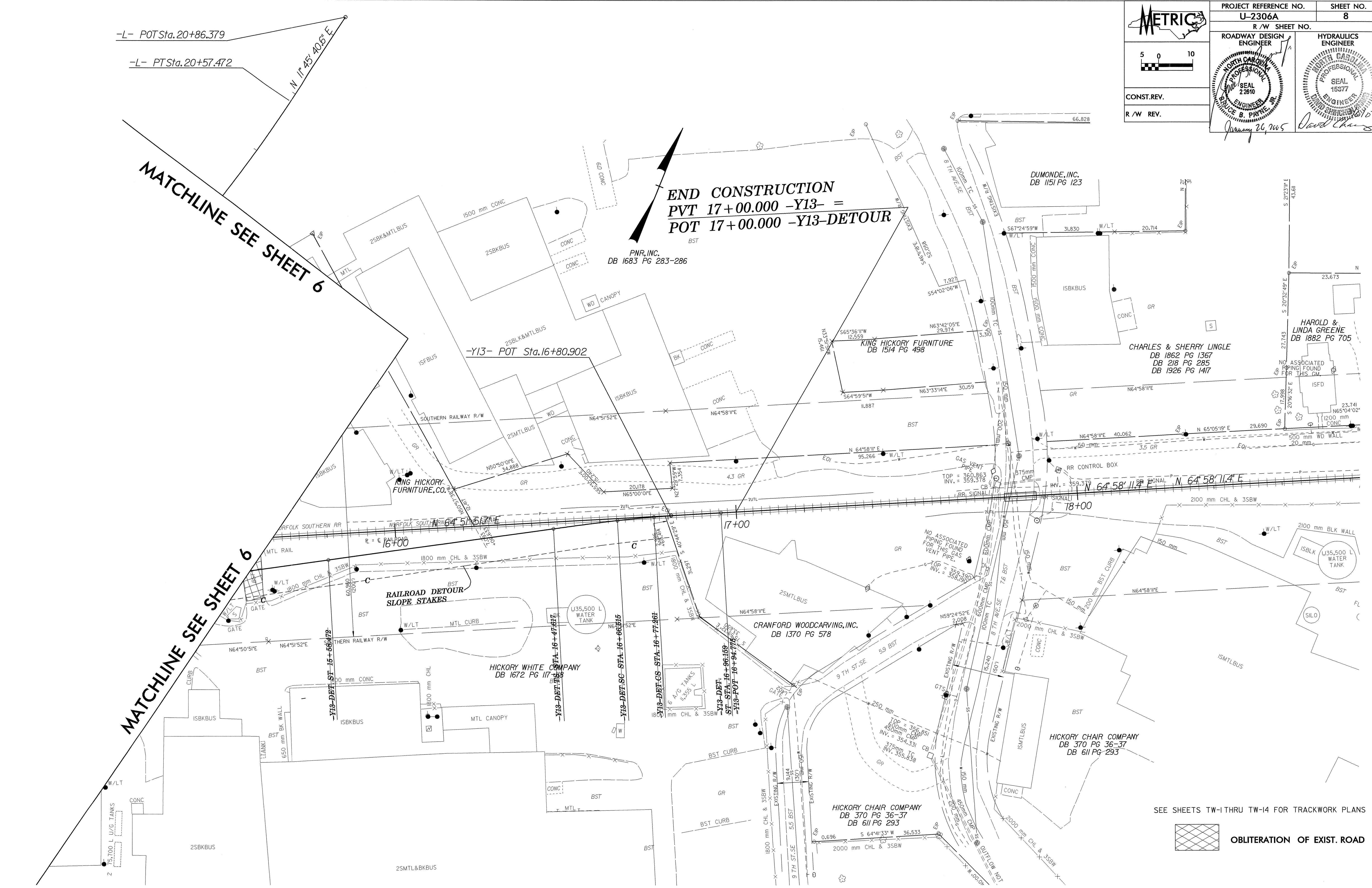
END CONSTRUCTION  
 PVT 17+00.000 -Y13- =  
 POT 17+00.000 -Y13-DETOUR

MATCHLINE SEE SHEET 6

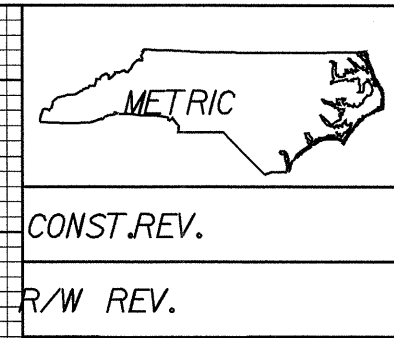
SEE SHEETS TW-1 THRU TW-14 FOR TRACKWORK PLANS

OBLITERATION OF EXIST. ROAD

05-JAN-2005 13:25  
 M:\Ballard AT 100223086.dwg



040397



PROJECT REFERENCE NO. U-2306A SHEET NO. 9

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

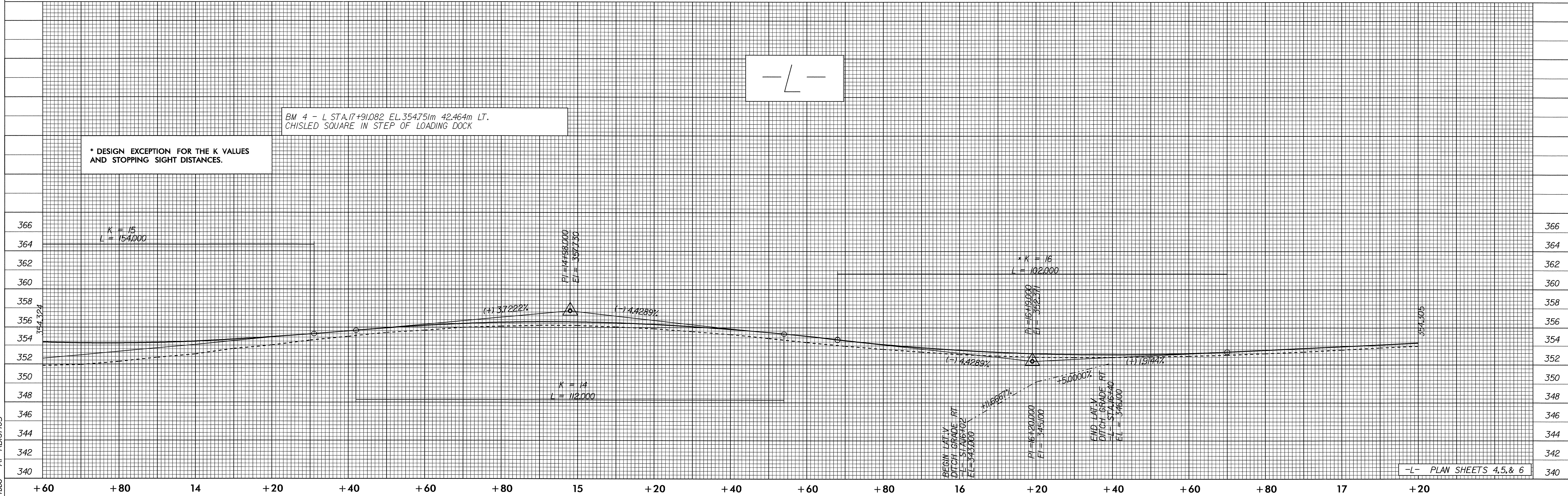
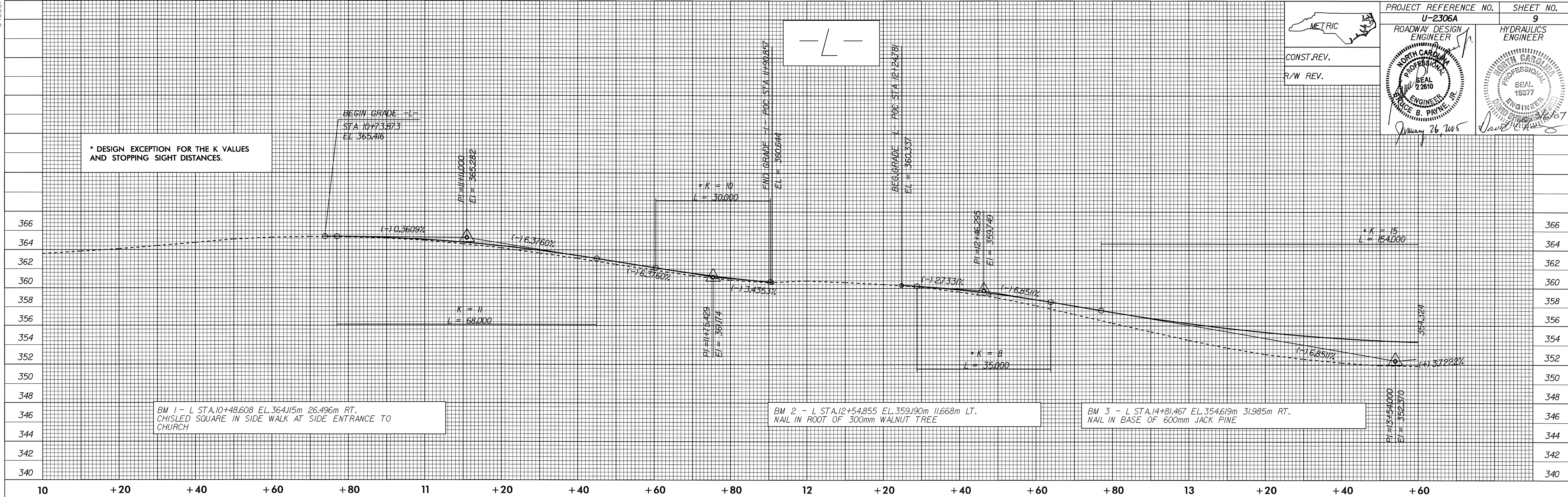
PROFESSIONAL SEAL 22610

PROFESSIONAL SEAL 15377

ENGINEER ROYCE B. PAYNE, JR.

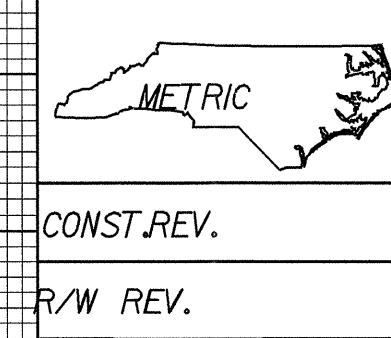
ENGINEER DAVID C. HARRIS

January 26, 2005



06-JAN-2005 14:55:06 p1

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PROJECT REFERENCE NO. <b>U-2306A</b>	SHEET NO. <b>10</b>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

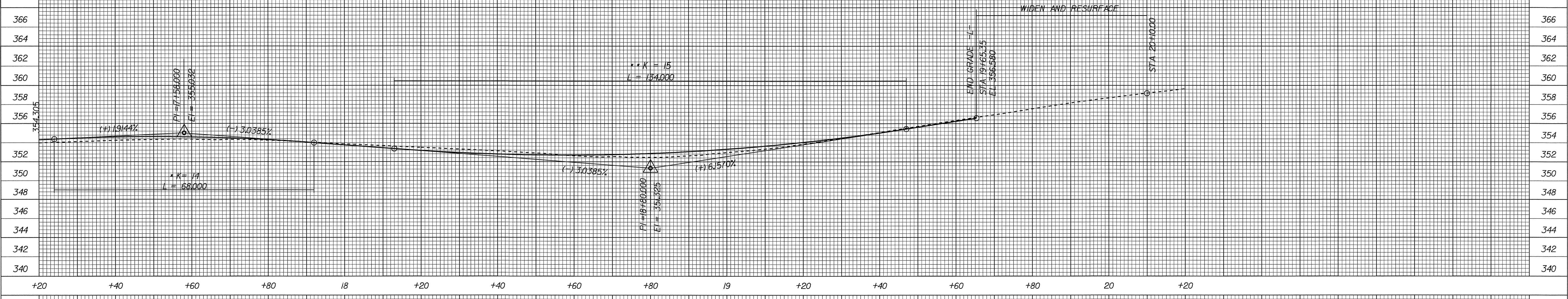
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R/W REV.

\* DESIGN EXCEPTION FOR THE K VALUES AND STOPPING SIGHT DISTANCES.

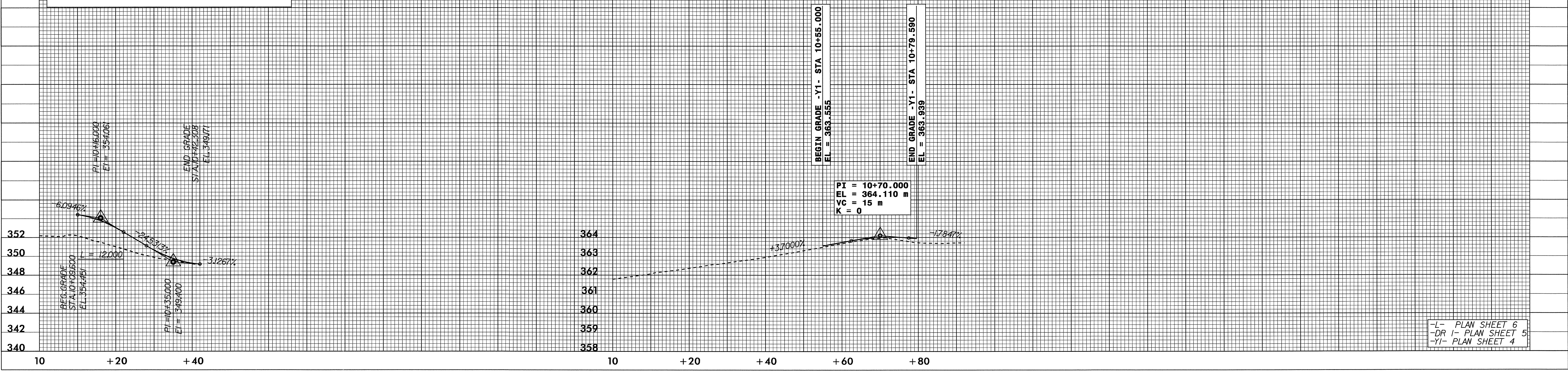
\*\* DESIGN EXCEPTION FOR THE K VALUE, STOPPING SIGHT DISTANCE AND VERTICAL CLEARANCE.

-L-



-DRIVEI-

-YI-



-L- PLAN SHEET 6  
 -DR I- PLAN SHEET 5  
 -YI- PLAN SHEET 4

06-JAN-2005 14:58  
ALCT1005 AT 10/18/05

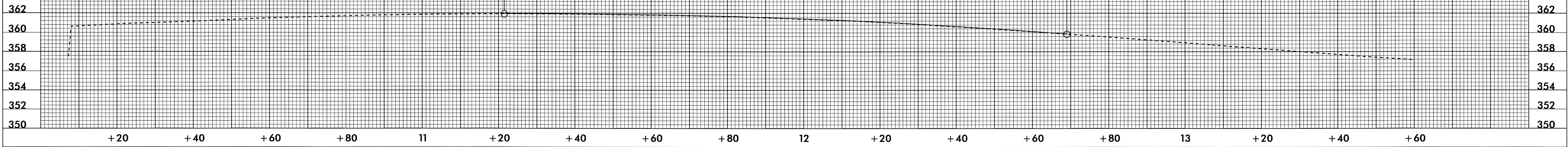


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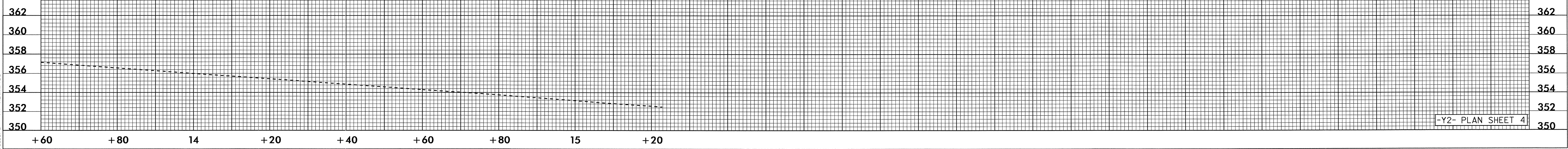


PROJECT REFERENCE NO. U-2306A	SHEET NO. 11
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 22610 PRICE B. PAYNE JR. January 26, 2005	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 15377 David Chang
CONST. REV.	
R/W REV.	

-Y2-



-Y2-



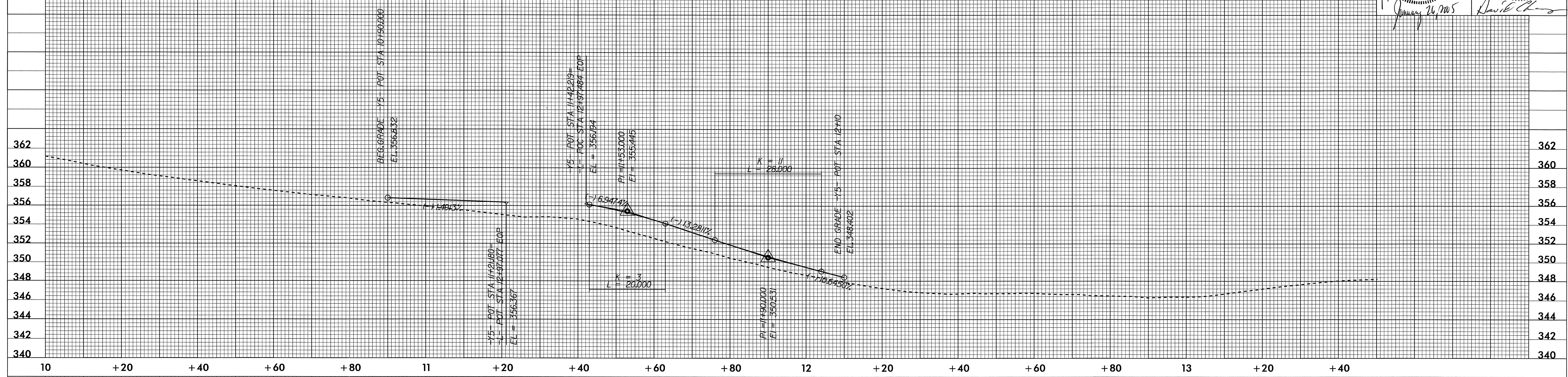
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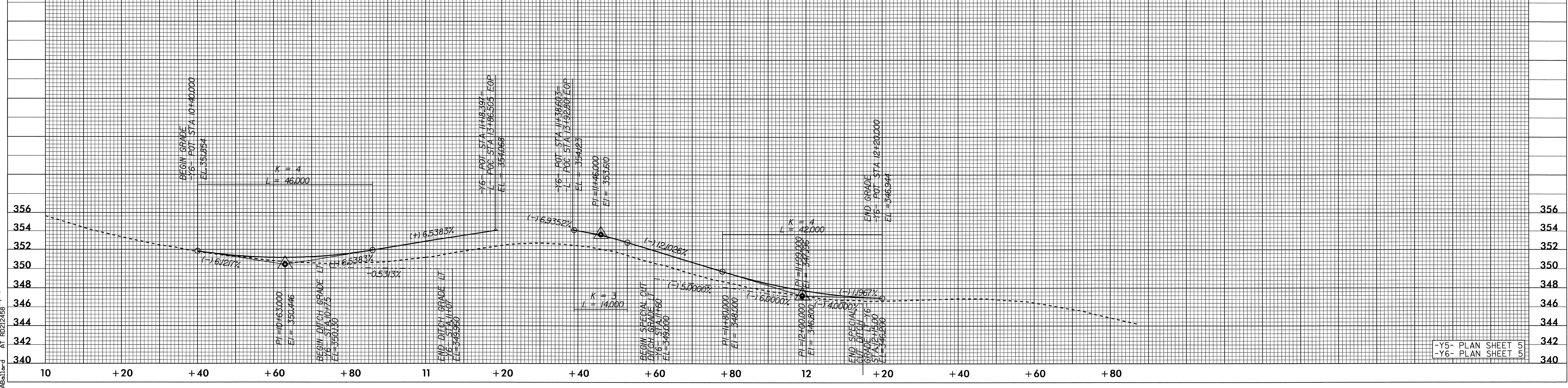
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PROJECT REFERENCE NO. U-2306A  
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NORTH CAROLINA PROFESSIONAL SEAL 2610  
NORTH CAROLINA PROFESSIONAL SEAL 15377  
January 26, 2005

-Y5-

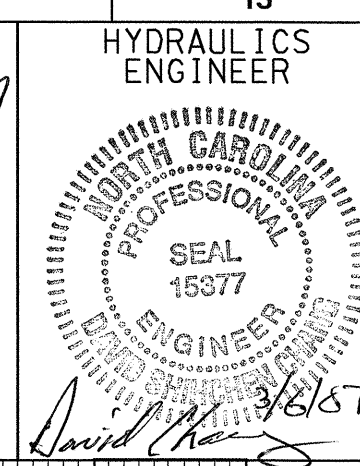
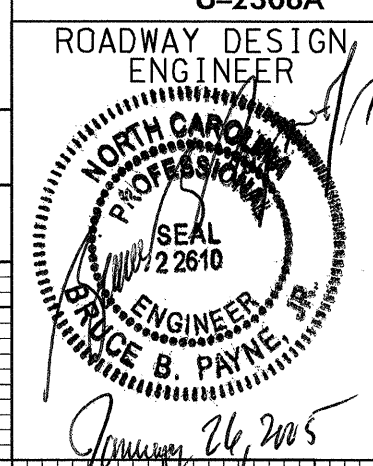


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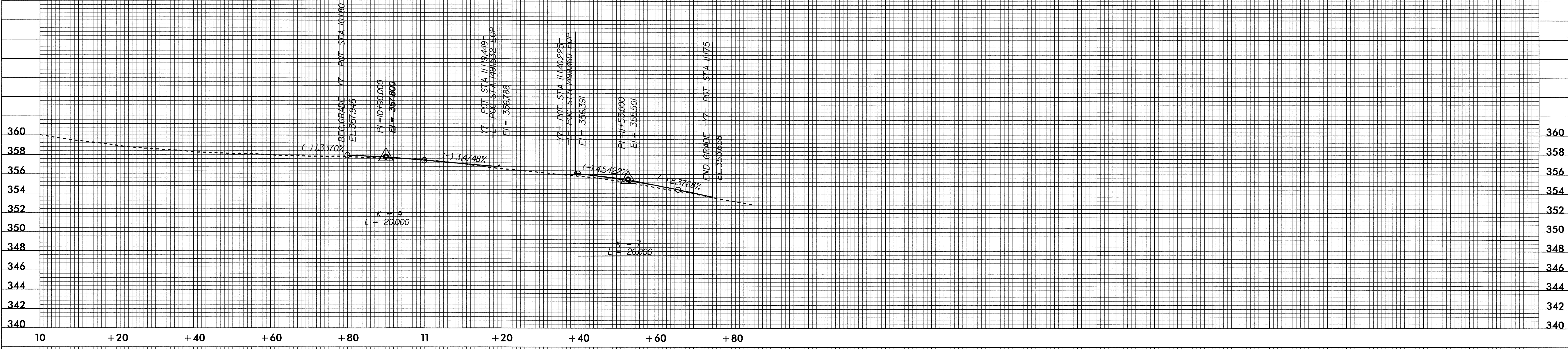


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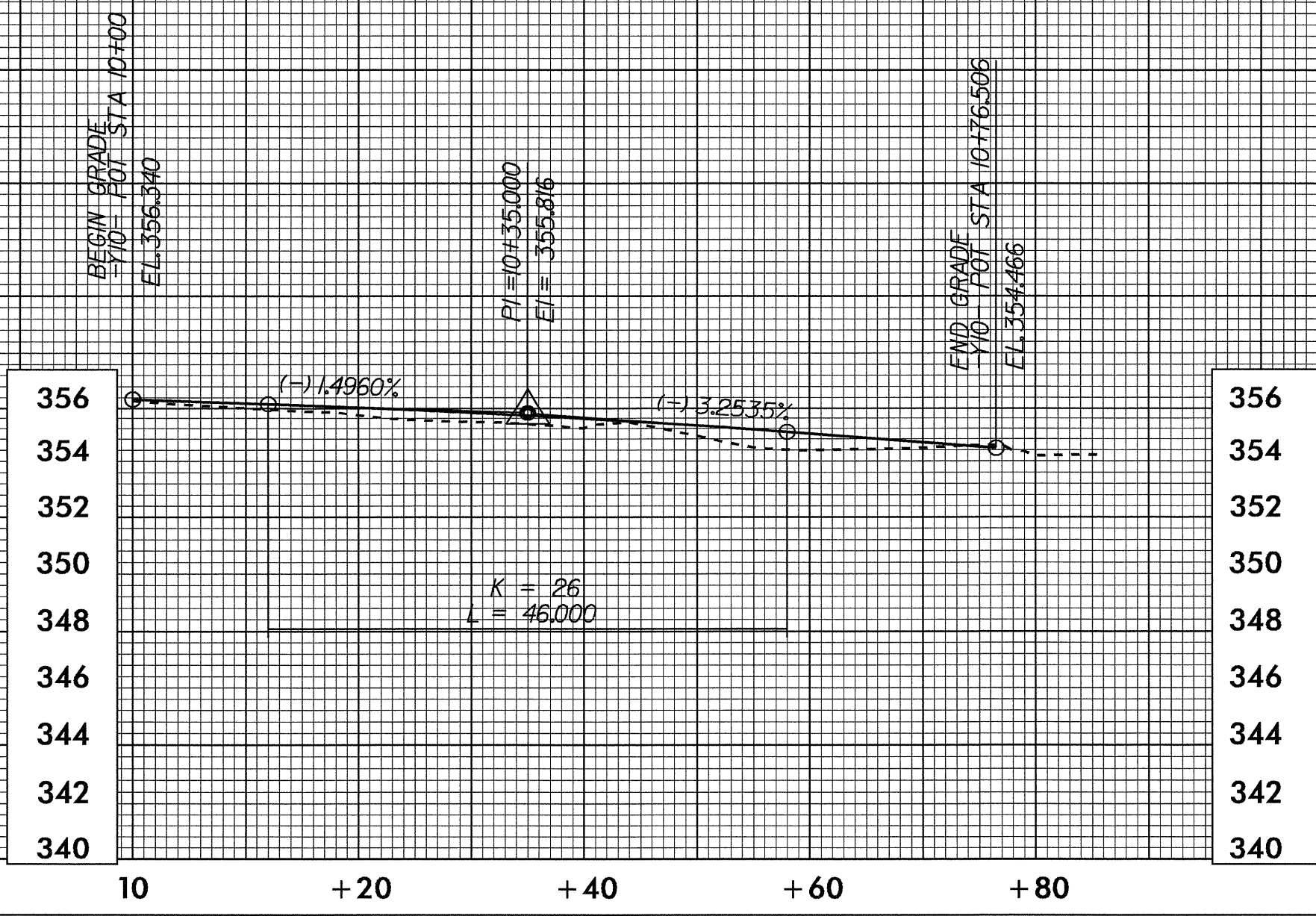
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