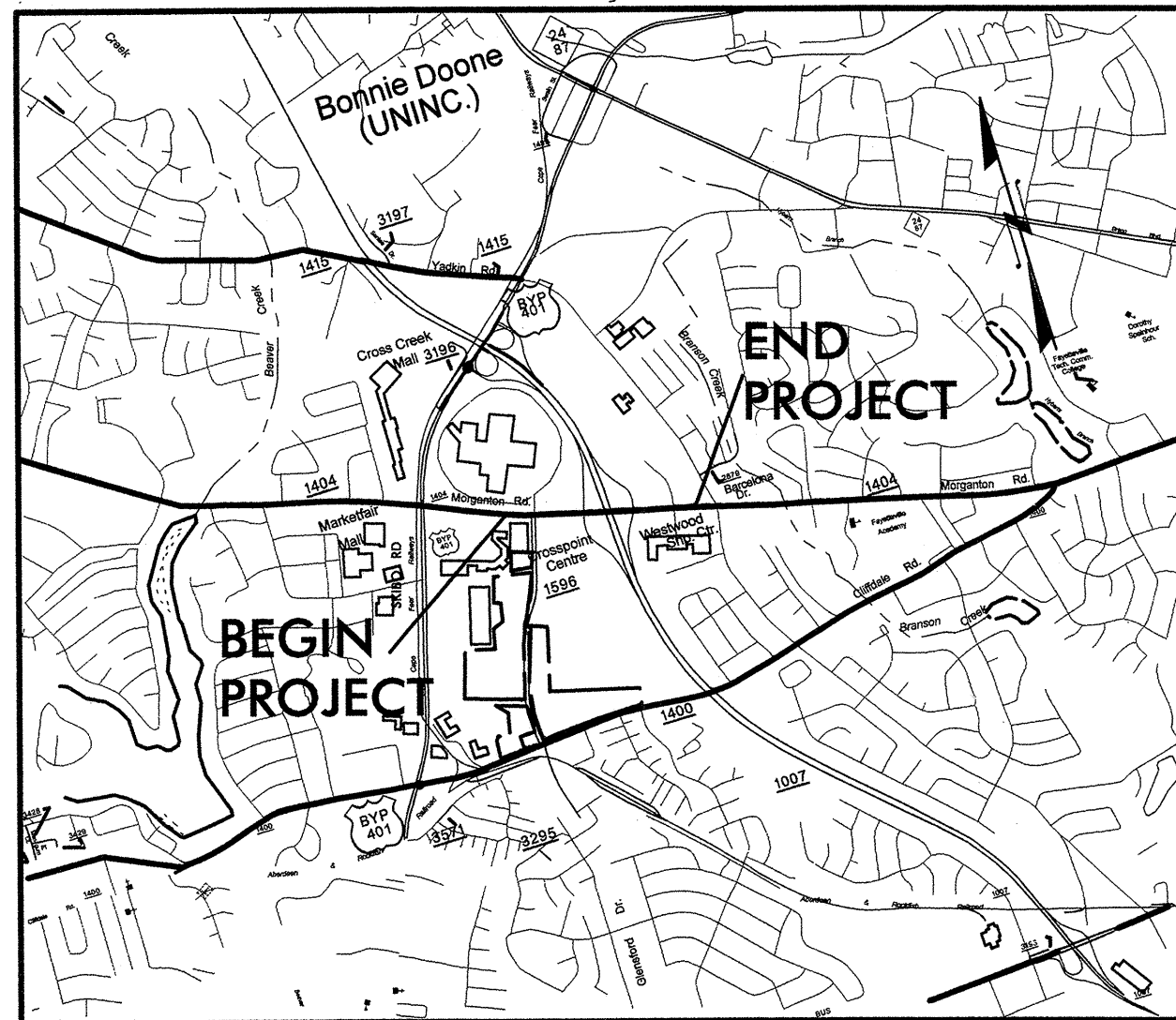


See Sheet 1-A For Index of Sheets  
See Sheet 1-B For Conventional Symbols



VICINITY MAP

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**CUMBERLAND COUNTY**

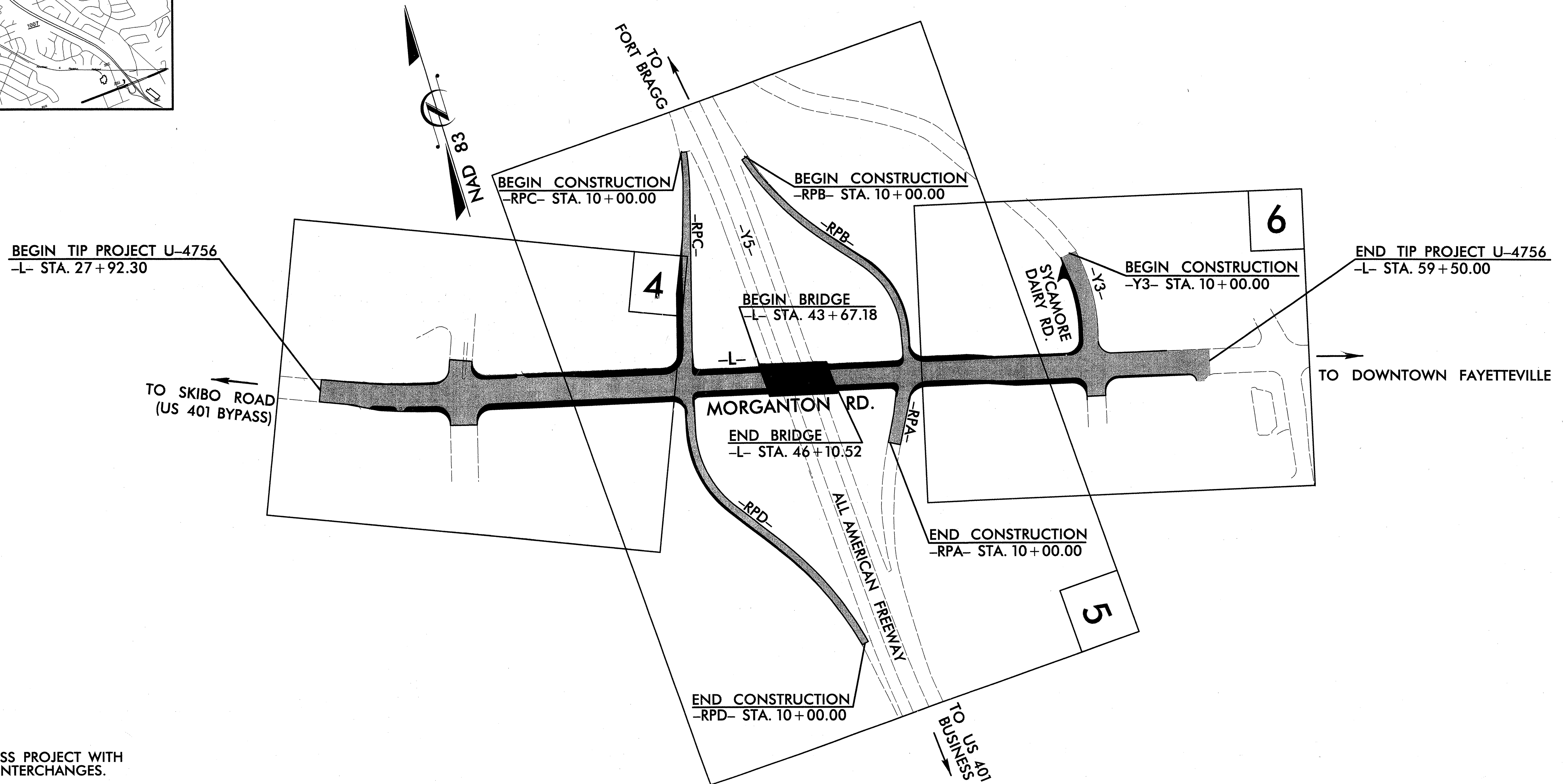
LOCATION: SR 1404 (MORGANTON ROAD) FROM SYCAMORE DAIRY ROAD TO GLENSFORD ROAD

TYPE OF WORK: GRADING, PAVING, DRAINAGE, STRUCTURE AND SIGNALS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4756	1	
WBS NO.	F.A. PROJ. NO.	DESCRIPTION	
39750.1.1	STP-1404(9)	P.E.	
39750.2.1	STP-1404(9)	RW, UTL	
39750.3.1	STP-1404(9)	CONST	

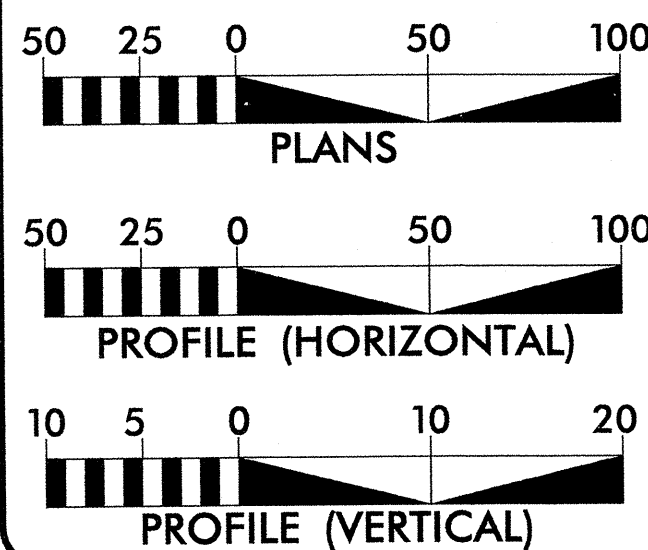
TIP PROJECT: U-4756

CONTRACT: C201461



THIS IS A CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.

GRAPHIC SCALES



DESIGN DATA

ADT 2009 = 25,900  
ADT 2029 = 52,000  
DHV = 9 %  
D = 60 %  
T = 3 % \*  
V = 40 MPH  
(\* TTST 2 % + DUAL 1 %)  
FUNC. CLASS:  
URBAN ARTERIAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-4756 = 0.552 MILES  
LENGTH STRUCTURE TIP PROJECT U-4756 = 0.046 MILES  
TOTAL LENGTH TIP PROJECT U-4756 = 0.598 MILES

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

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
2006 STANDARD SPECIFICATIONS  
RIGHT OF WAY DATE:  
FEBRUARY 16, 2007  
LETTING DATE:  
JULY 15, 2008

TIM JORDAN, PE  
PROJECT ENGINEER

DAVID BOCKER, PE  
HYDRAULICS ENGINEER

NCDOT CONTACTS: TRACEY PITTMAN, PE  
MIKE SUMMERS, PE

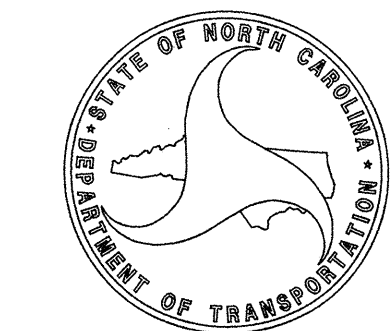
HYDRAULICS ENGINEER

SEAL 029984  
SIGNATURE: [Signature] P.E. 5/1/08

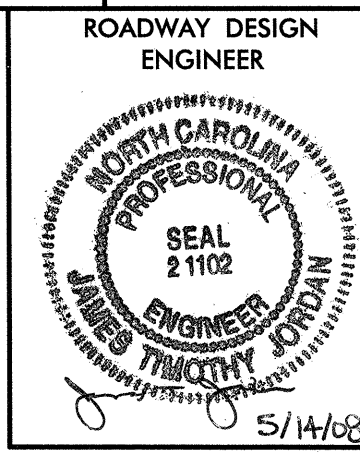
ROADWAY DESIGN

SEAL 21102  
SIGNATURE: [Signature] P.E. 5/1/08

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA



STATE HIGHWAY DESIGN ENGINEER



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

INDEX OF SHEETS

Sheet #	Description
1	Title Sheet
1-A	Index of Sheets, General Notes, and List of Standards
1-B	Conventional Symbols
1-C	Survey Control Sheet
2	Pavement Schedule, Detail for Median Bridge Approach and Wedging Detail
2-A thru 2-E	Typical Sections
2-F	Detail of Anchorage for Frames
2-G	Detail of Convert CB or DI to JB with Manhole Cover
2-H	Detail of Special Junction Box
3	Summary of Quantities
3-A	Guardrail Summary, Summary of Earthwork in Cubic Yards, Summary of Pavement Removal
3-B thru 3-C	List of Pipe, Endwalls, Etc. (For Pipes 48" & Under)
3-D	List of Pipe, Endwalls, Etc. (For Pipes 54" & Over)
3-E	Parcel Index Sheet
4 thru 6	Plan
7 thru 10	Profile
TCP-1 thru TCP-16	Traffic Control Plans
PM-1 thru PM-4	Pavement Marking Plans
EC-1 thru EC-6	Erosion Control Plans
SIGN-1 thru SIGN-13	Signing Plans
SIG-1 thru SIG-14	Signal Plans
TMS-1 thru TMS-12	Cable Routing Plans
UC-1 thru UC-4	Utility Construction Plans
UO-1 thru UO-3	Utilities by Others Plans
X-1	Cross-Section Summary Sheet
X-2 thru X-27	Cross-Sections
W-1 thru W-5	Retaining Wall Plans
S-1 thru S-39	Structure Plans

GENERAL NOTES:

2006 SPECIFICATIONS

EFFECTIVE: 07-18-06  
REVISED: 07-18-06

GRADE LINE:  
GRADING AND SURFACING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:

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

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01.

SIDE ROADS:

THE CONTRACTOR WILL BE REQUIRED TO DO ALL NECESSARY WORK TO PROVIDE SUITABLE CONNECTIONS WITH ALL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PARTICULAR ITEMS INVOLVED.

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 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:  
Fayetteville PWC - Electric Division  
Fayetteville PWC - Water Resources  
Embarq, Piedmont Natural Gas, Time Warner Cable

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

RIGHT-OF-WAY MARKERS:

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

WHEELCHAIR RAMPS:

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

2006 ROADWAY STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated July 18, 2006 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO. TITLE

DIVISION 2 - EARTHWORK

- 200.03 Method of Clearing - Method III
- 225.02 Guide for Grading Subgrade - Secondary and Local
- 225.04 Method of Obtaining Superelevation - Two Lane Pavement

DIVISION 3 - PIPE CULVERTS

- 300.01 Method of Pipe Installation - Method 'A'

DIVISION 4 - MAJOR STRUCTURES

- 422.10 Reinforced Bridge Approach Fills

DIVISION 5 - SUBGRADE, BASES AND SHOULDERS

- 560.01 Method of Shoulder Construction - High Side of Superelevated Curve - Method I
- 560.02 Method of Shoulder Construction - High Side of Superelevated Curve - Method II

DIVISION 6 - ASPHALT BASES AND PAVEMENTS

- 610.01 Guide for Paving Shoulders Under Bridges - Method I
- 610.03 Guide for Paving Shoulders Under Bridges - Method III
- 654.01 Pavement Repairs

DIVISION 8 - INCIDENTALS

- 838.27 Reinforced Concrete Endwall - for Single 60" Pipe 90 Skew
- 838.34 Reinforced Concrete Endwall - for Double and Triple 66" Pipes 90 Skew
- 838.45 Notes for Reinforced Concrete Endwall - Std. Dwg 838.21 thru 838.40
- 838.57 Reinforced Brick Endwall - for Single 60" Pipe 90 Skew
- 838.64 Reinforced Brick Endwall - for Double and Triple 66" Pipes 90 Skew
- 838.75 Notes for Reinforced Brick Endwall - Std. Dwg 838.51 thru 838.70
- 838.80 Precast Endwalls - 12" thru 72" Pipe 90 Skew
- 840.00 Concrete Base Pad for Drainage Structures
- 840.01 Brick Catch Basin - 12" thru 54" Pipe
- 840.02 Concrete Catch Basin - 12" thru 54" Pipe
- 840.03 Frame, Grates and Hood - for Use on Standard Catch Basin
- 840.14 Concrete Drop Inlet - 12" thru 30" Pipe
- 840.15 Brick Drop Inlet - 12" thru 30" Pipe
- 840.16 Drop Inlet Frame and Grates - for use with Std. Dwg 840.14 and 840.15
- 840.31 Concrete Junction Box - 12" thru 66" Pipe
- 840.32 Brick Junction Box - 12" thru 66" Pipe
- 840.36 Traffic Bearing Grated Drop Inlet - for Steel (840.37) Double Frame and Grates
- 840.37 Steel Grate and Frame
- 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
- 848.05 Wheelchair Ramp - Curb Cut
- 852.01 Concrete Islands
- 852.06 Method for Placement of Drop Inlets in Concrete Islands
- 857.01 Precast Reinforced Concrete Barrier - 41" Single Faced
- 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
- 866.01 Chain Link Fence - 4', 5' and 6' High Fence
- 866.03 Woven Wire Fence - with Steel Post
- 876.01 Rip Rap in Channels
- 876.02 Guide for Rip Rap at Pipe Outlets

8/17/06

5/14/2006 NP-roj\U-4756.RDY\_TSH.dgn

10/25/05

Note: Not to Scale

\*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# CONVENTIONAL PLAN SHEET SYMBOLS

**BOUNDARIES AND PROPERTY:**

State Line	_____
County Line	_____
Township Line	_____
City Line	_____
Reservation Line	_____
Property Line	_____
Existing Iron Pin	○ EIP
Property Corner	✕
Property Monument	□ EDM
Parcel/Sequence Number	②③
Existing Fence Line	—x—x—x—
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	--- WLB ---
Proposed Wetland Boundary	--- WLB ---
Existing Endangered Animal Boundary	--- EAB ---
Existing Endangered Plant Boundary	--- EPB ---

**BUILDINGS AND OTHER CULTURE:**

Gas Pump Vent or UG Tank Cap	○
Sign	○ S
Well	○ W
Small Mine	✕
Foundation	□
Area Outline	□
Cemetery	□ †
Building	□
School	□
Church	□
Dam	—

**HYDROLOGY:**

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

**RAILROADS:**

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

**RIGHT OF WAY:**

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	_____
Proposed Right of Way Line	○
Proposed Right of Way Line with Iron Pin and Cap Marker	○
Proposed Right of Way Line with Concrete or Granite Marker	○
Existing Control of Access	○
Proposed Control of Access	○
Existing Easement Line	— E ---
Proposed Temporary Construction Easement	— E ---
Proposed Temporary Drainage Easement	— TDE ---
Proposed Permanent Drainage Easement	— PDE ---
Proposed Permanent Utility Easement	— PUE ---

**ROADS AND RELATED FEATURES:**

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

**VEGETATION:**

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

**EXISTING STRUCTURES:**

MAJOR:	
Bridge, Tunnel or Box Culvert	CONC
Bridge Wing Wall, Head Wall and End Wall	CONC WW
MINOR:	
Head and End Wall	CONC HW
Pipe Culvert	_____
Footbridge	_____
Drainage Box: Catch Basin, DI or JB	CB
Paved Ditch Gutter	_____
Storm Sewer Manhole	⊕
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	⊗
UG Power Cable Hand Hole	□
H-Frame Pole	—
Recorded UG Power Line	— P ---
Designated UG Power Line (S.U.E.*)	--- P ---

**TELEPHONE:**

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

**WATER:**

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

**TV:**

TV Satellite Dish	⊗
TV Pedestal	□
TV Tower	⊗
UG TV Cable Hand Hole	□
Recorded UG TV Cable	— TV ---
Designated UG TV Cable (S.U.E.*)	--- TV ---
Recorded UG Fiber Optic Cable	— TV FO ---
Designated UG Fiber Optic Cable (S.U.E.*)	--- TV FO ---

**GAS:**

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

**SANITARY SEWER:**

Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
UG 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 UG Line	— UUL ---
UG Tank; Water, Gas, Oil	□
A/G Tank; Water, Gas, Oil	□
UG Test Hole (S.U.E.*)	⊕
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

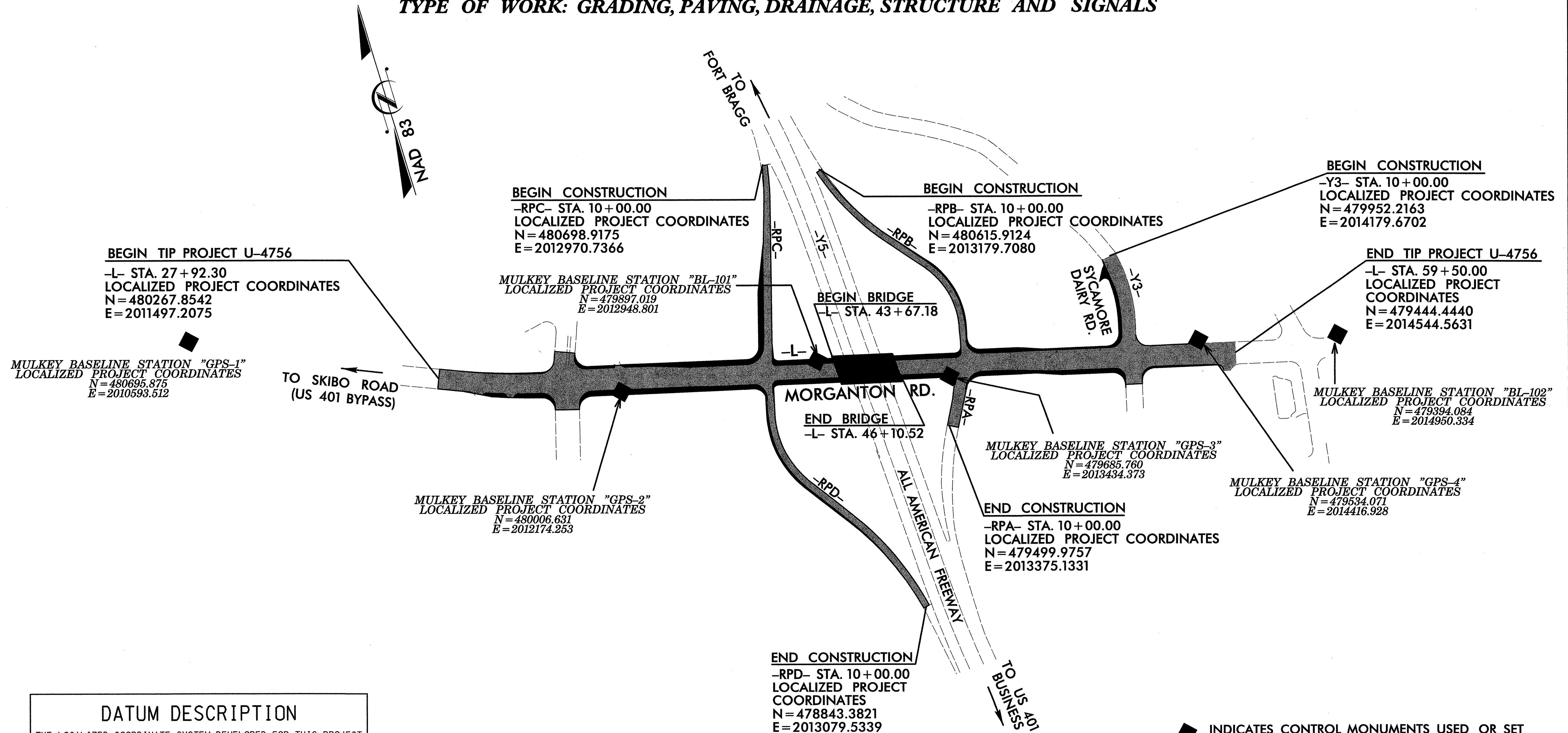
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**CUMBERLAND COUNTY**

**LOCATION: SR 1404 (MORGANTON ROAD) FROM SYCAMORE DAIRY ROAD TO GLENSFORD ROAD**

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4756	1-C	
WBS NO.	F.A. PROJ. NO.	DESCRIPTION	
39750.1.1	STP-1404(9)	P.E.	
39750.2.1	STP-1404(9)	R/W, UTL	
39750.3.1	STP-1404(9)	CONST	



**DATUM DESCRIPTION**

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY OTHERS FOR MONUMENT "U-4756-3"

WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF  
NORTHING: 479685.760(±±) EASTING: 2013434.373(±±)  
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99987184

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "U-4756-3" TO -L- STATION IS 27+92.30  
N 73° 18' 37.52" W 2,021.9637 FT

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

■ INDICATES CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY MULKEY, INC

PROJECT CONTROL ESTABLISHED UTILIZING CONVENTIONAL SURVEY

**NOTE: DRAWING NOT TO SCALE**

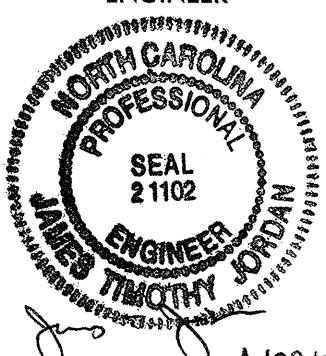
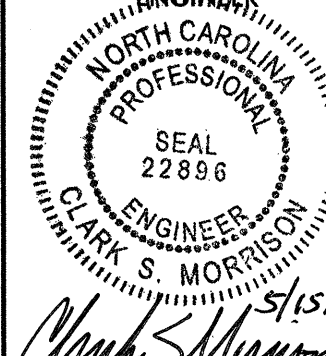
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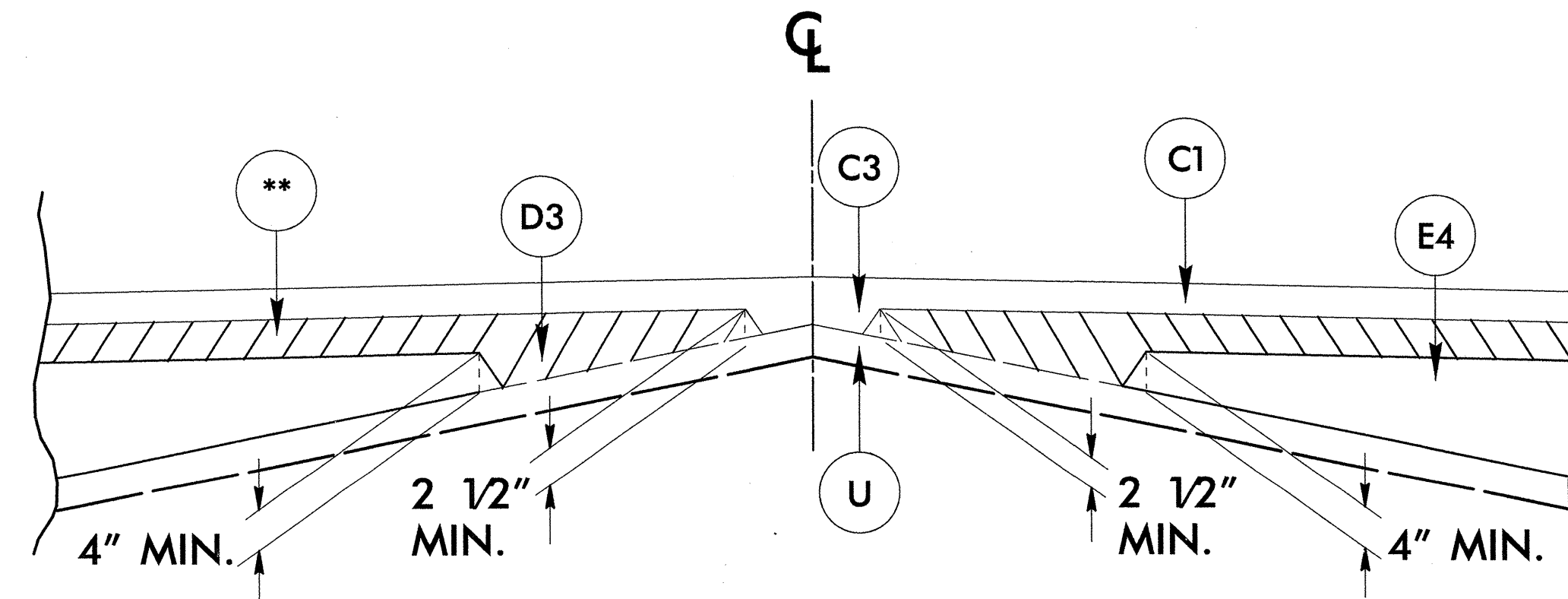
8/17/99

**PAVEMENT SCHEDULE**  
(FINAL PAVEMENT DESIGN)

C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
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 S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1½" IN DEPTH OR GREATER THAN 2" IN DEPTH
D1	PROP. APPROX. 2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D3	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. APPROX. 5½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
E3	PROP. APPROX. 7" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
E4	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 4" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
R1	2'-6" CONCRETE CURB AND GUTTER
R2	5" MONOLITHIC CONCRETE ISLAND (KEYED IN)
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	WEDGING (SEE WEDGING DETAIL)

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

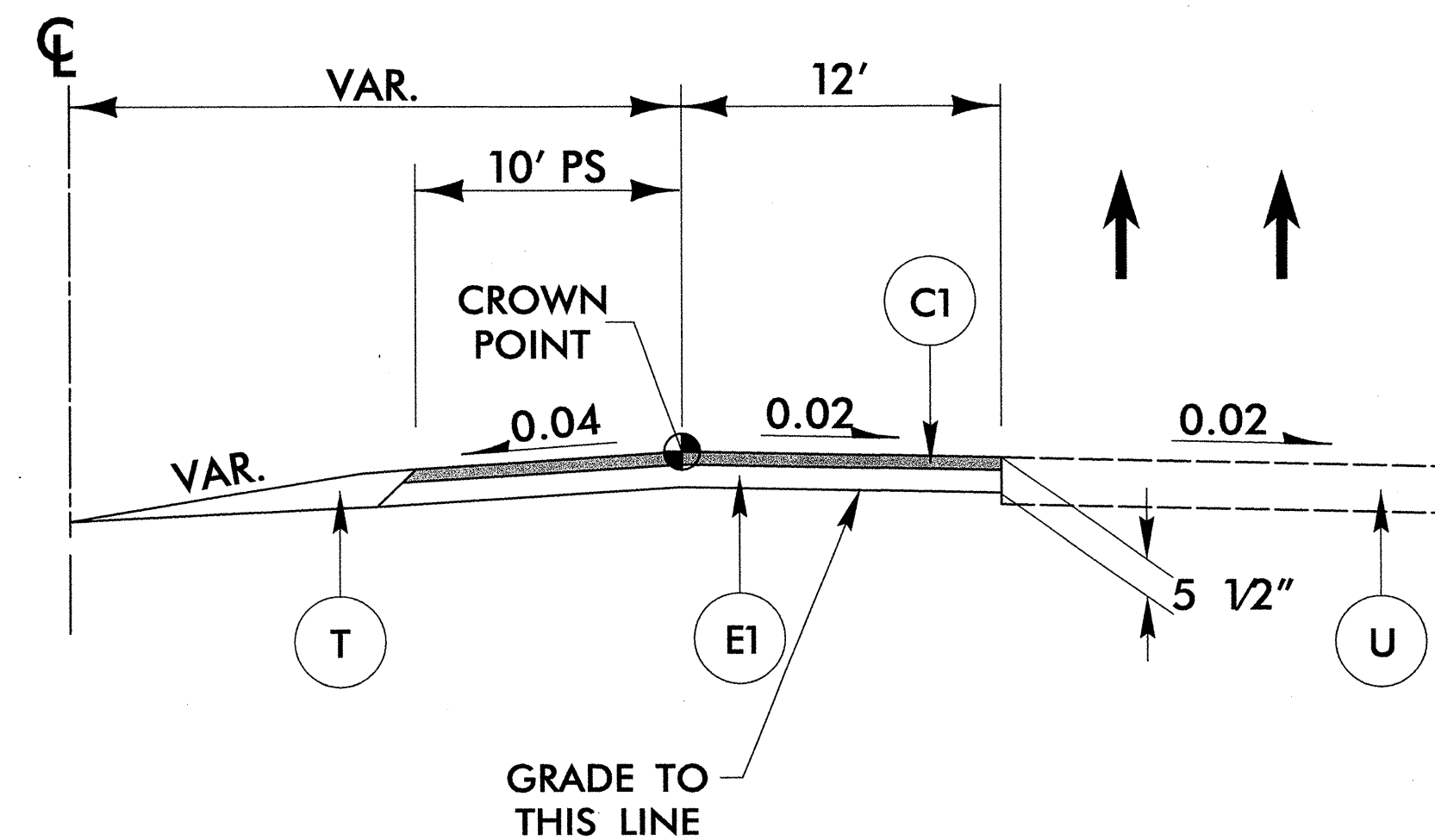
PROJECT REFERENCE NO. U-4756	SHEET NO. 2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER 



**DETAIL SHOWING METHOD OF WEDGING 1**

USE IN CONJUNCTION WITH TYPICAL SECTION NOS. 1 THRU 6

- \*\* D1 (-RPA- & -RPD-)
- \*\* D2 (-L- & -Y3-)
- \*\* NO INTERMEDIATE COURSE (-RPB- & -RPC-)



**DETAIL FOR MEDIAN BRIDGE APPROACH**

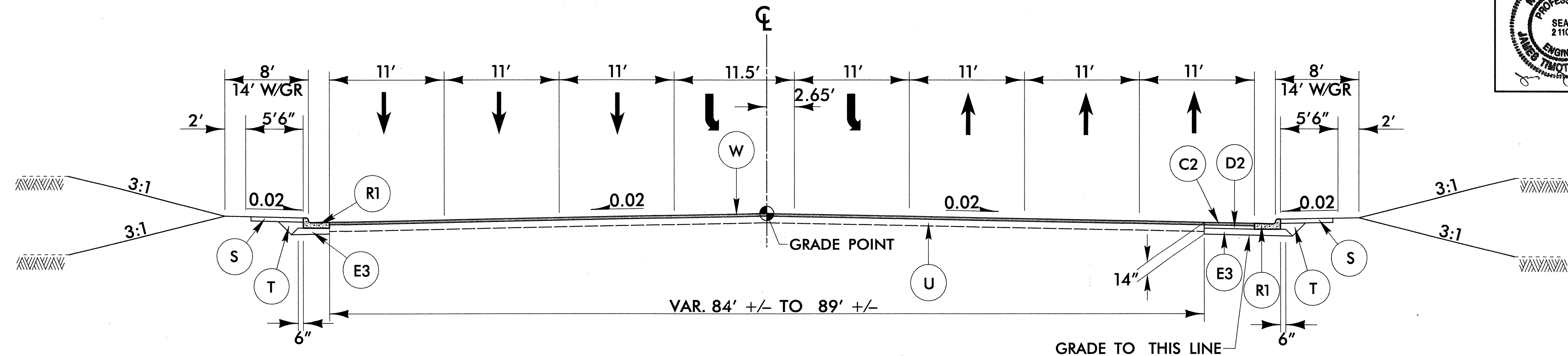
USE IN CONJUNCTION WITH STD. 862.01 (1 OF 11) AT THE FOLLOWING LOCATIONS

-Y5- STA. 21+00.00 TO STA. 26+55.00

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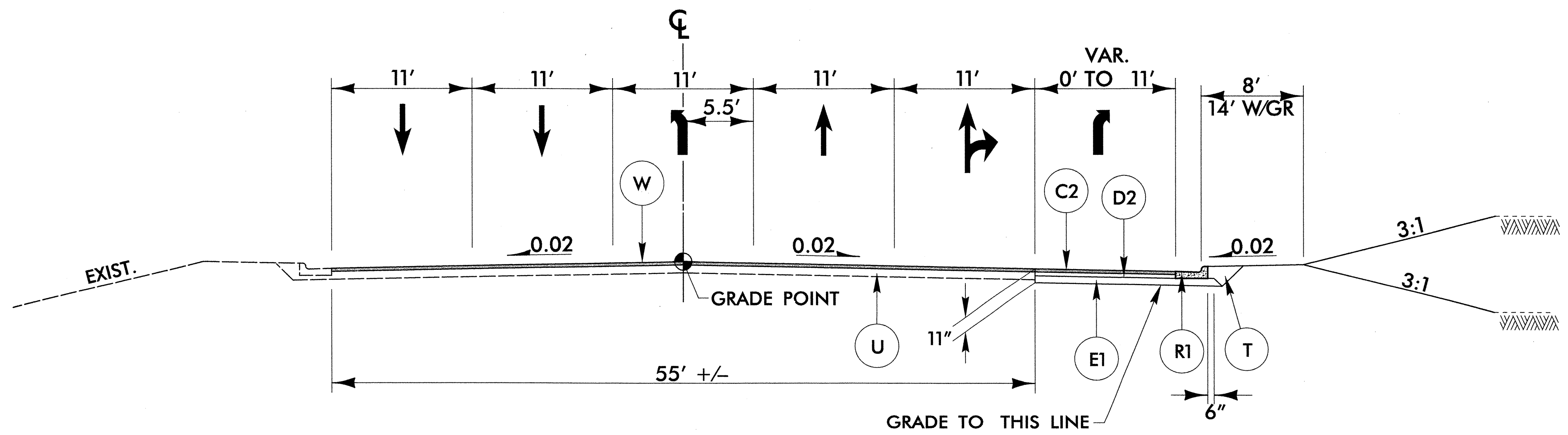




**TYPICAL SECTION NO. 4**

USE TYPICAL SECTION NO. 4  
AT THE FOLLOWING LOCATIONS

- L- STA. 56+09.77 TO STA. 58+50.00
- TRANSITION FROM TYPICAL NO. 2 TO TYPICAL NO. 5
- L- STA. 54+59.77 TO STA. 56+09.77
- TRANSITION FROM TYPICAL NO. 5 TO EXISTING
- L- STA. 58+50.00 TO STA. 59+50.00



**TYPICAL SECTION NO. 5**

USE TYPICAL SECTION NO. 5  
AT THE FOLLOWING LOCATIONS

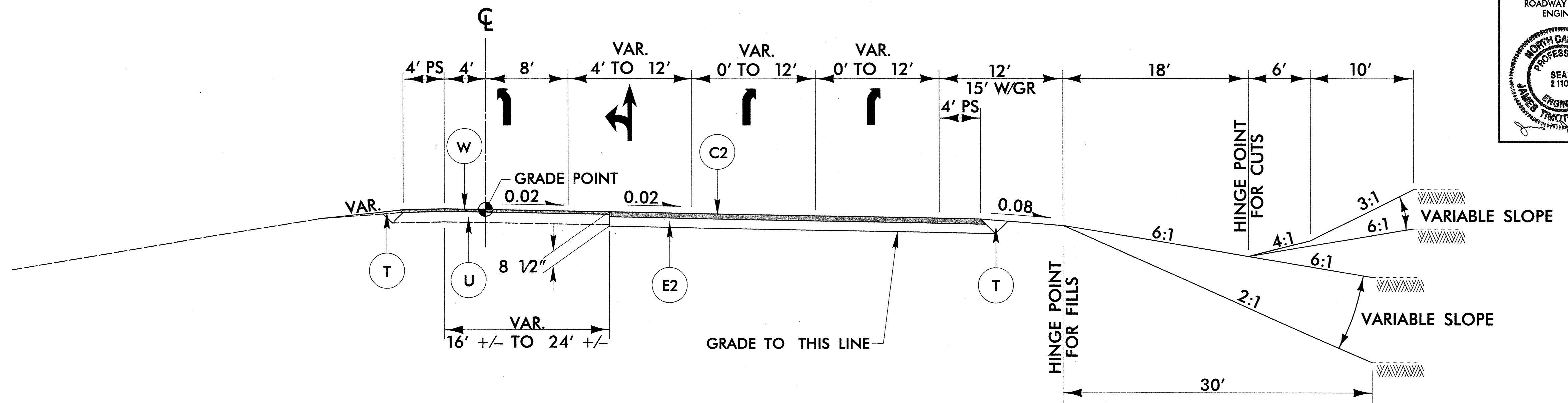
- Y3- STA. 13+00.00 TO STA. 13+67.41
- Y3- STA. 10+00.00 TO STA. 13+00.00 (OVERLAY WITH C1)

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	1.5" S9.5C
C2	3" S9.5C
D2	4" I19.0C
E1	4" B25.0C
E3	7" B25.0C
R1	2'-6" C & G
S	SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING





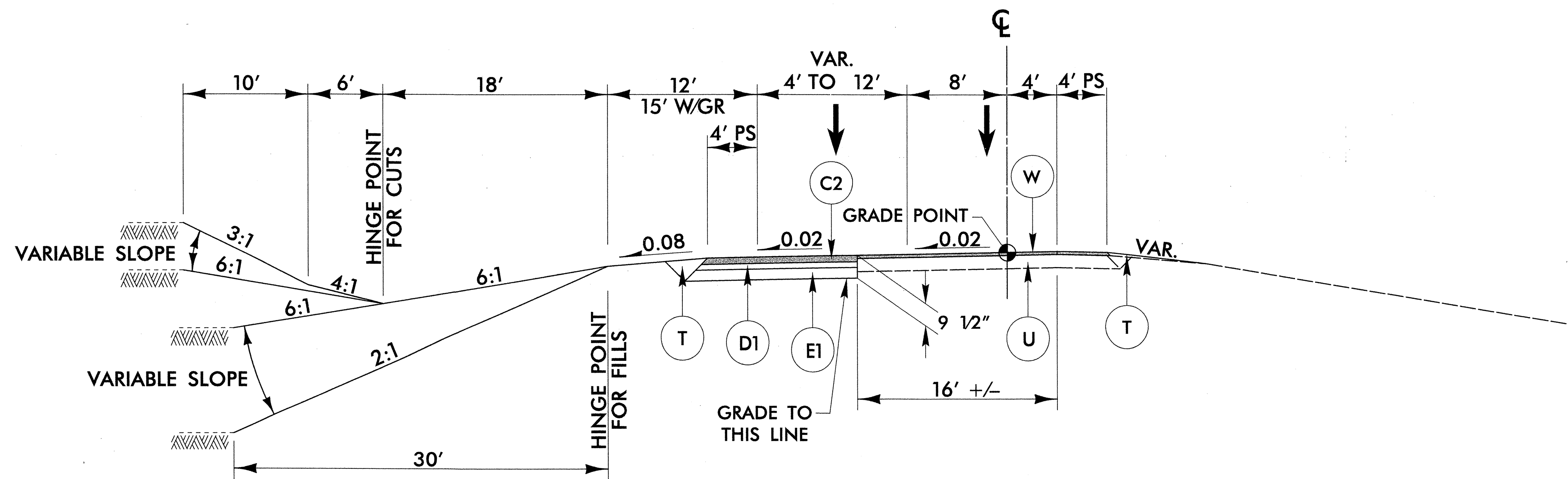
PROJECT REFERENCE NO. U-4756	SHEET NO. 2-E
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER



**TYPICAL SECTION NO. 8**

USE TYPICAL SECTION NO. 8  
AT THE FOLLOWING LOCATIONS

- RPC- STA. 16+00.00 TO STA. 17+61.75
- RPC- STA. 10+00.00 TO STA. 16+00.00 (OVERLAY WITH C1)



**TYPICAL SECTION NO. 9**

USE TYPICAL SECTION NO. 9  
AT THE FOLLOWING LOCATIONS

- RPD- STA. 18+50.00 TO STA. 21+00.30
- RPD- STA. 10+00.00 TO STA. 18+50.00 (OVERLAY WITH C1)

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	1 1/2" S9.5C
C2	3" S9.5C
D1	2 1/2" I19.0C
E1	4" B25.0C
E2	5 1/2" B25.0C
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING

8/17/99

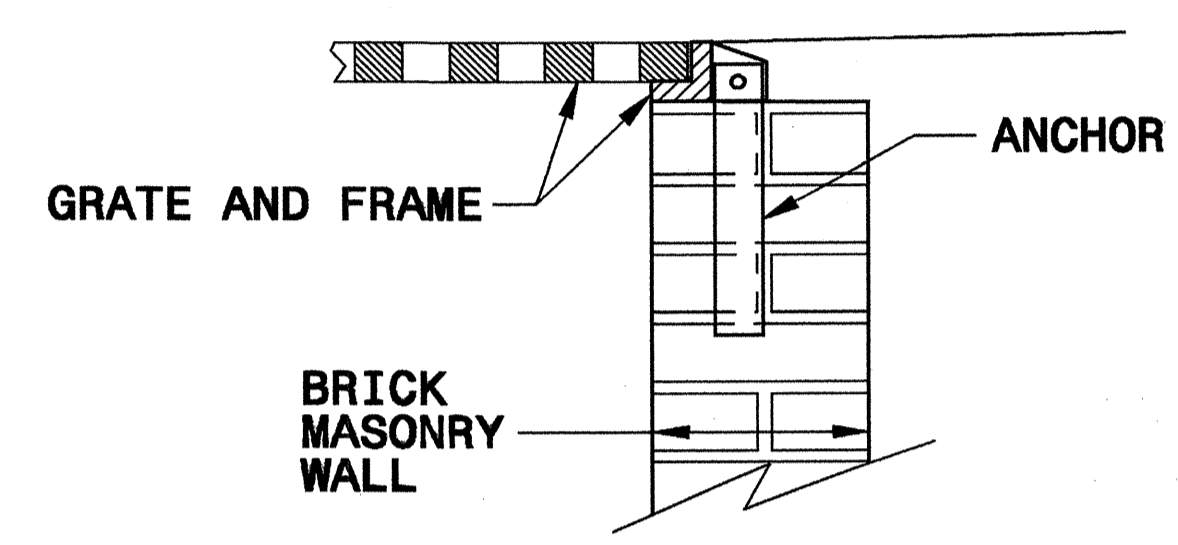
PROJECT REFERENCE NO.	SHEET NO.
U-4756	2-F
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	

PROJECT REFERENCE NO.	SHEET NO.
-----------------------	-----------

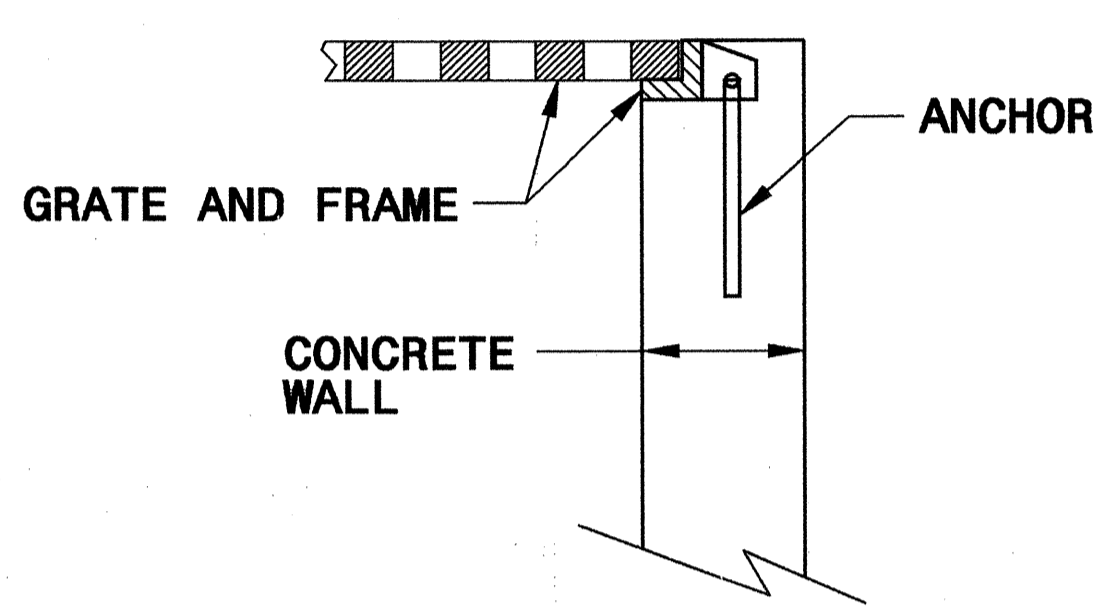
STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

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

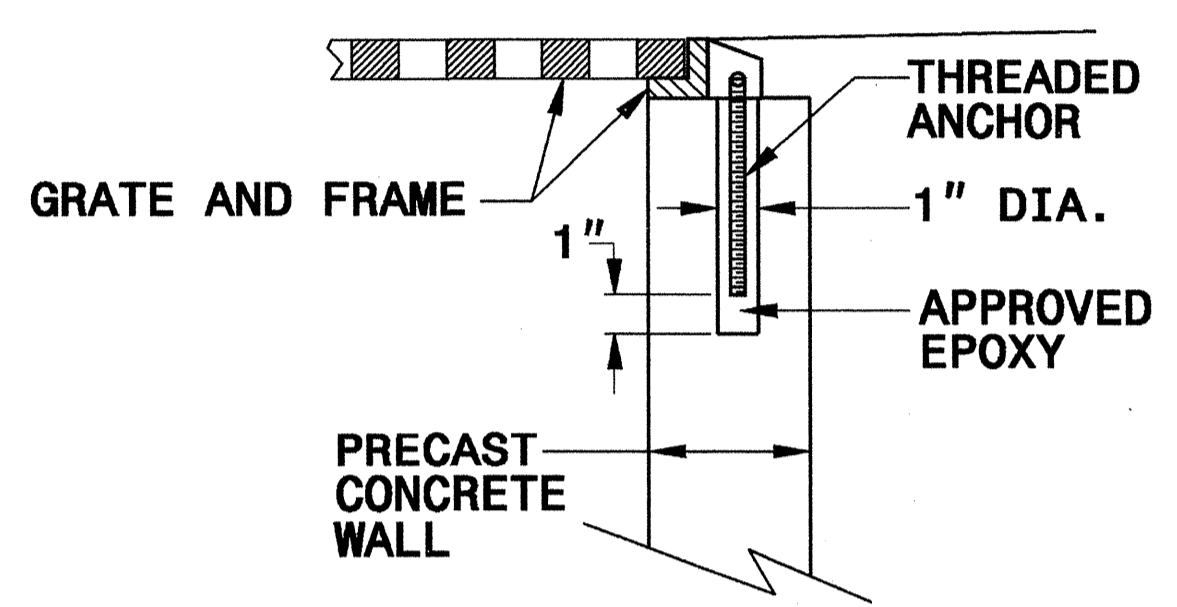
SHEET 1 OF 1  
**840D25**



**BRICK MASONRY CONSTRUCTION**



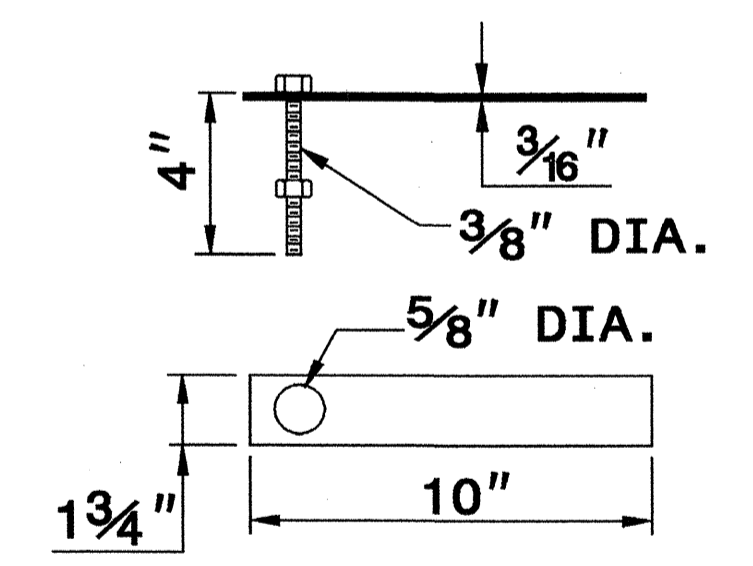
**CONCRETE CONSTRUCTION**



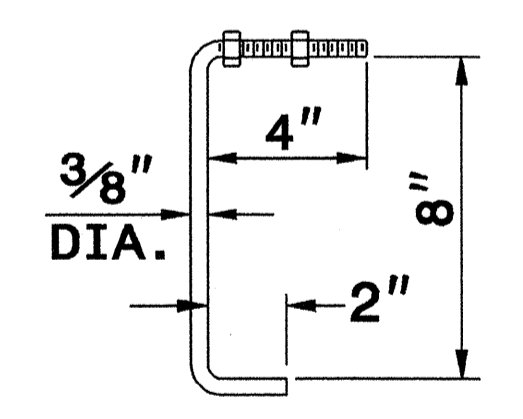
**PRECAST CONCRETE CONSTRUCTION**

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

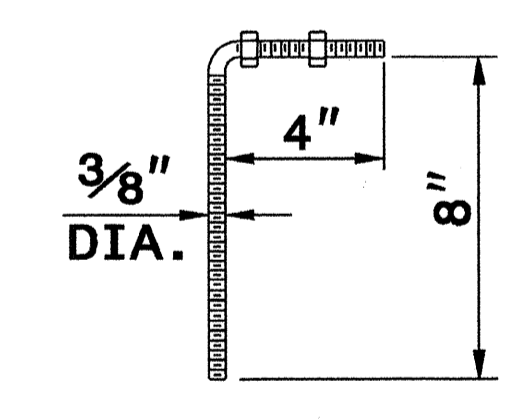
NOTE:  
CONSTRUCT GRATED DROP INLET TO COINCIDE WITH NORMAL OR SUPERELEVATED SHOULDER OR PAVEMENT SLOPE.



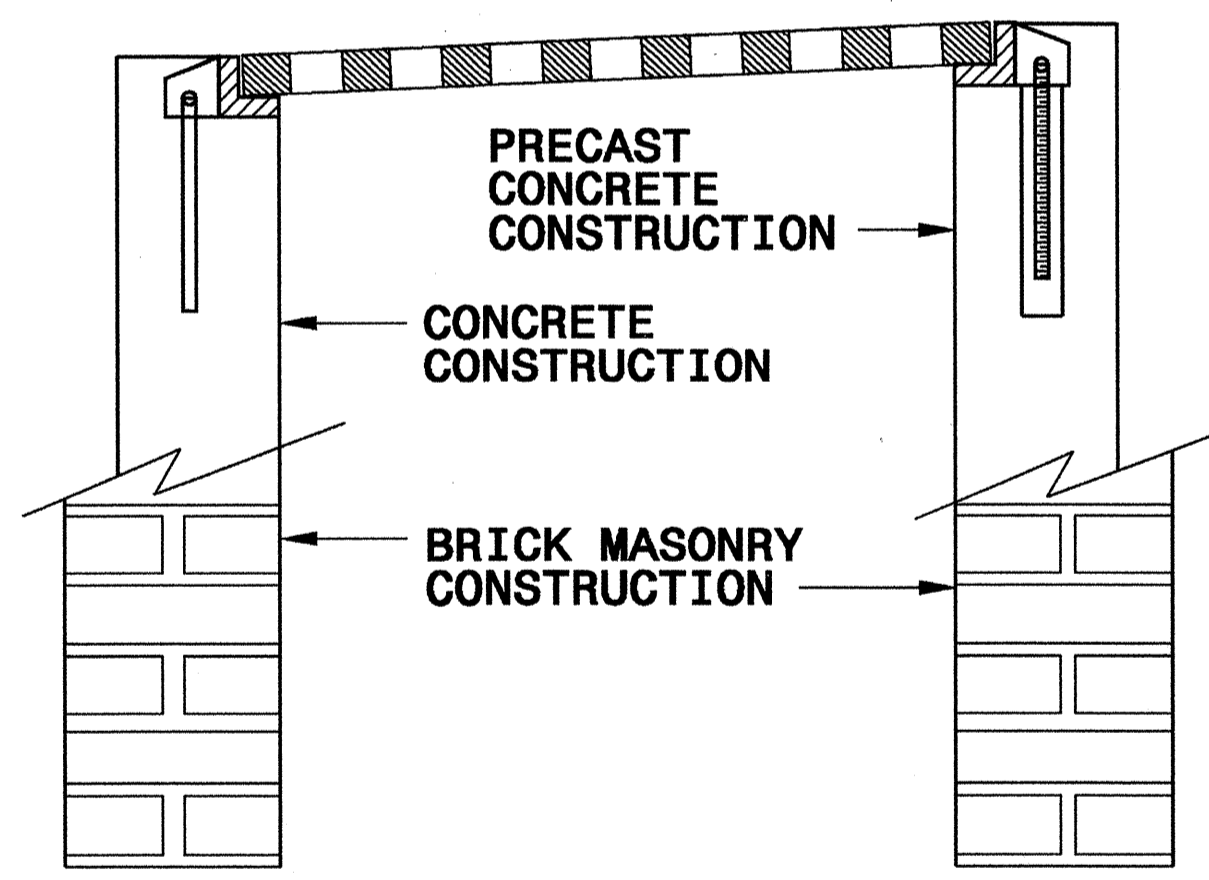
**MASONRY ANCHOR**  
3/8" DIA. BOLT WITH PLATE



**CONCRETE ANCHOR**  
3/8" DIA. BENT BAR



**PRECAST CONCRETE ANCHOR**  
3/8" DIA. BENT BAR



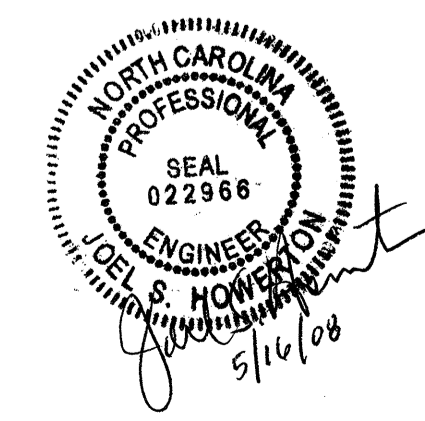
**FRAME AND GRATE INSTALLATION FOR NORMAL CROWN AND SUPERELEVATED SECTIONS**

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

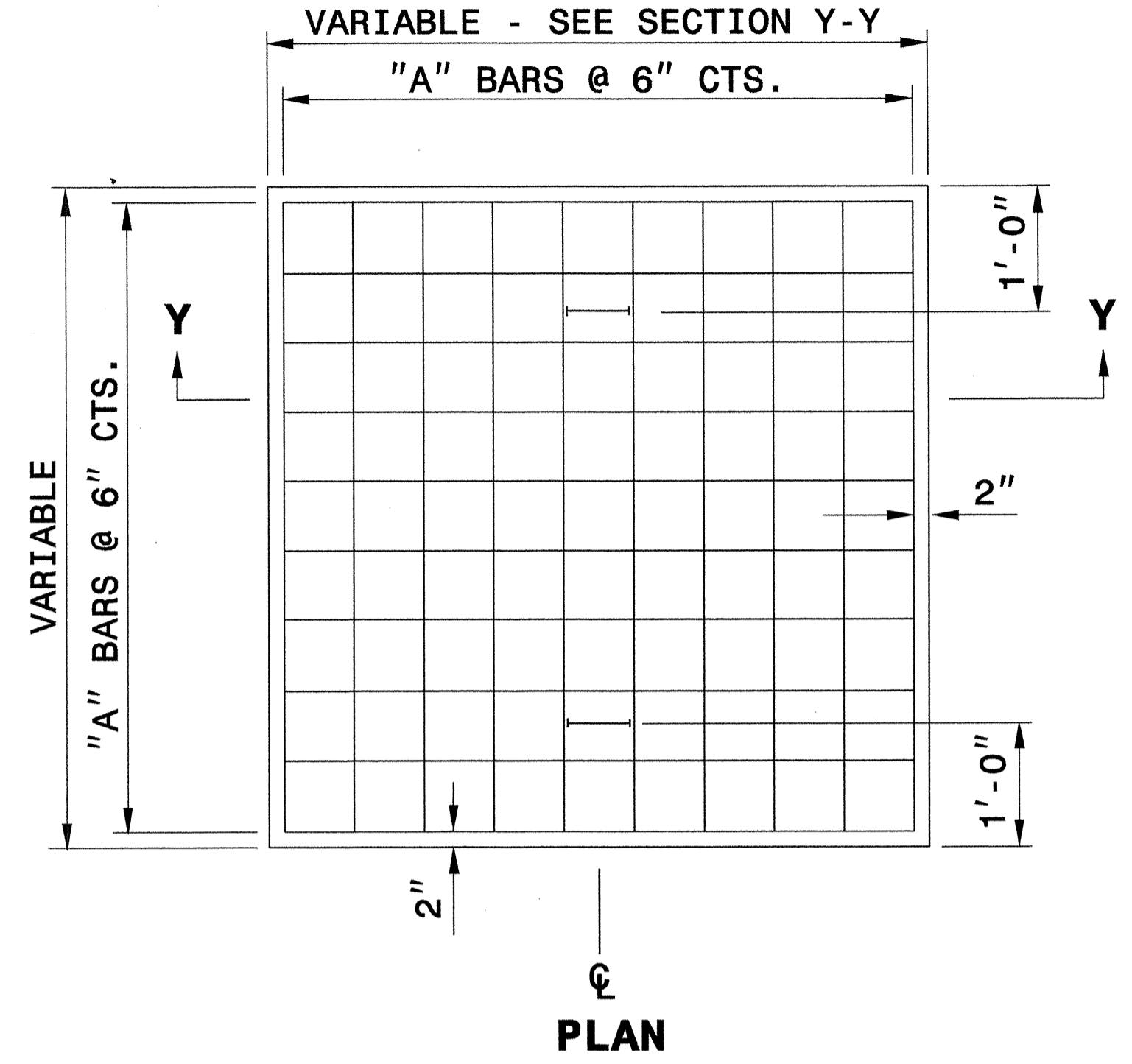
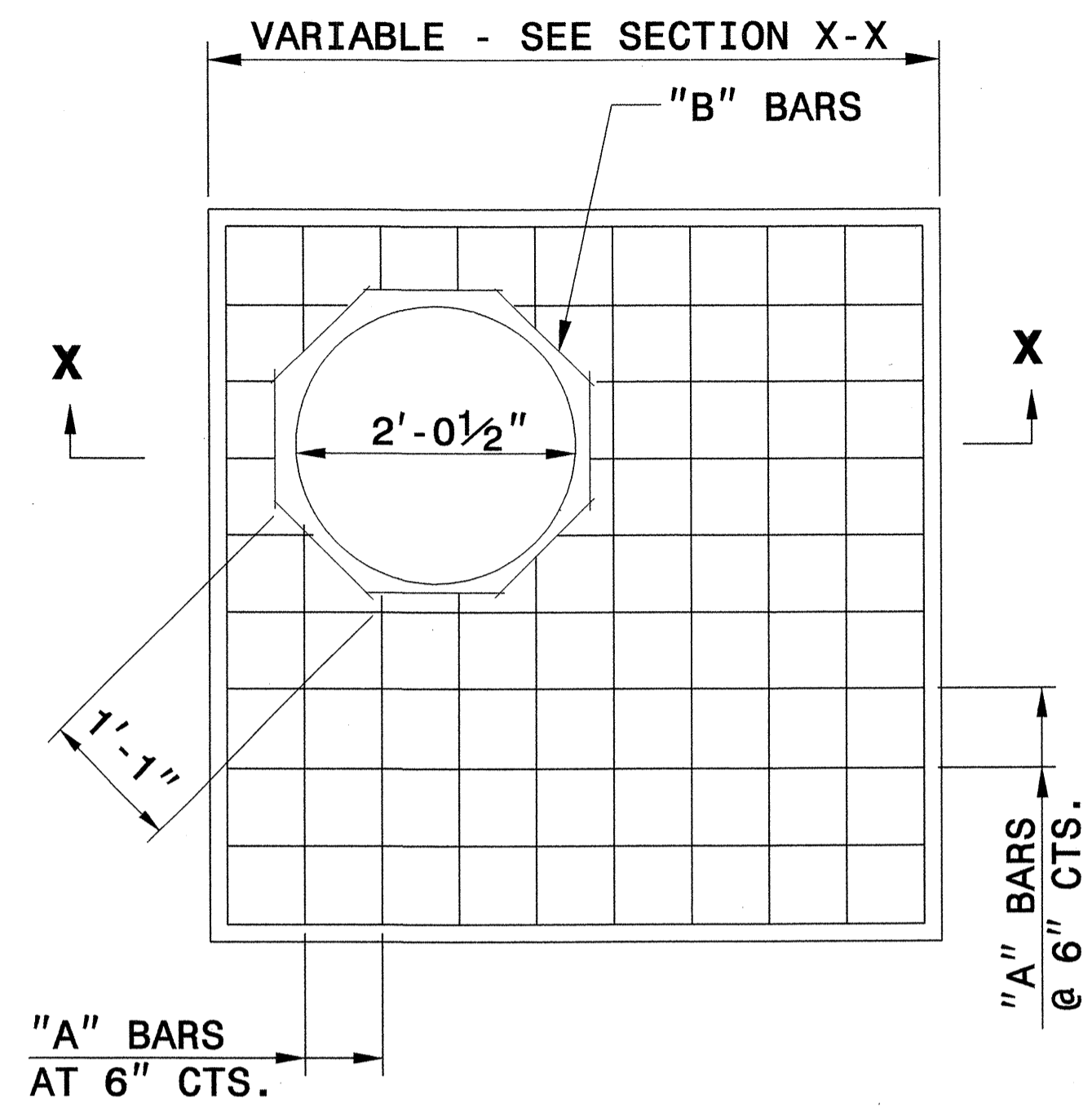
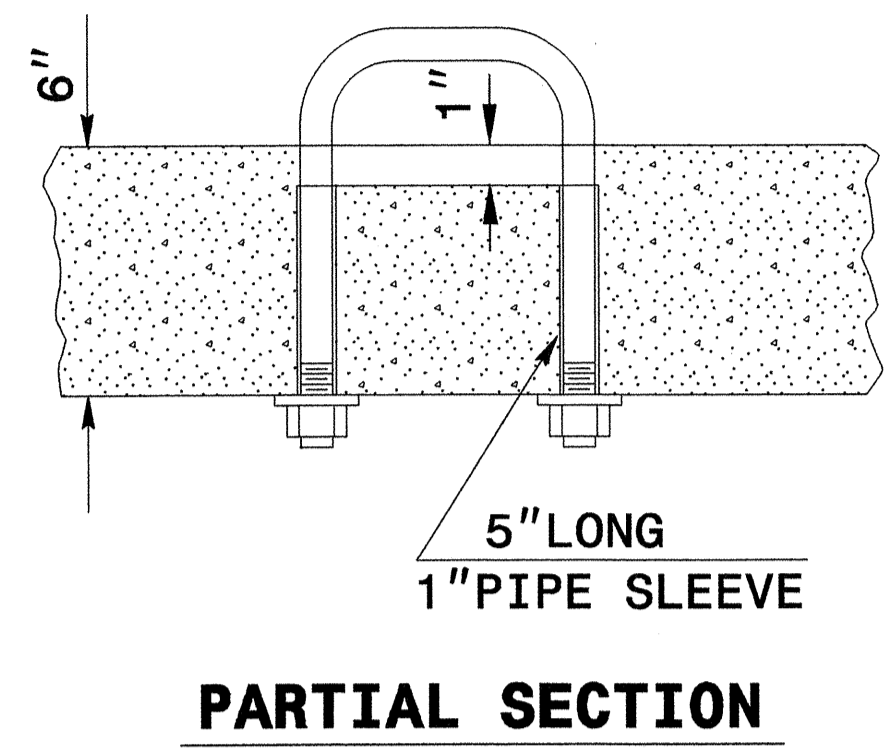
ENGLISH DETAIL DRAWING FOR  
**ANCHORAGE FOR FRAMES**  
BRICK/CONCRETE/PRECAST CONCRETE

SHEET 1 OF 1  
**840D25**

27-SEP-2006 08:59 S:\Contracts\03192533\Special Details\enward\stds\05 Stud to Special Details\840D25 Anchorage For Frames\0840d25.dgn enward R. PS22223

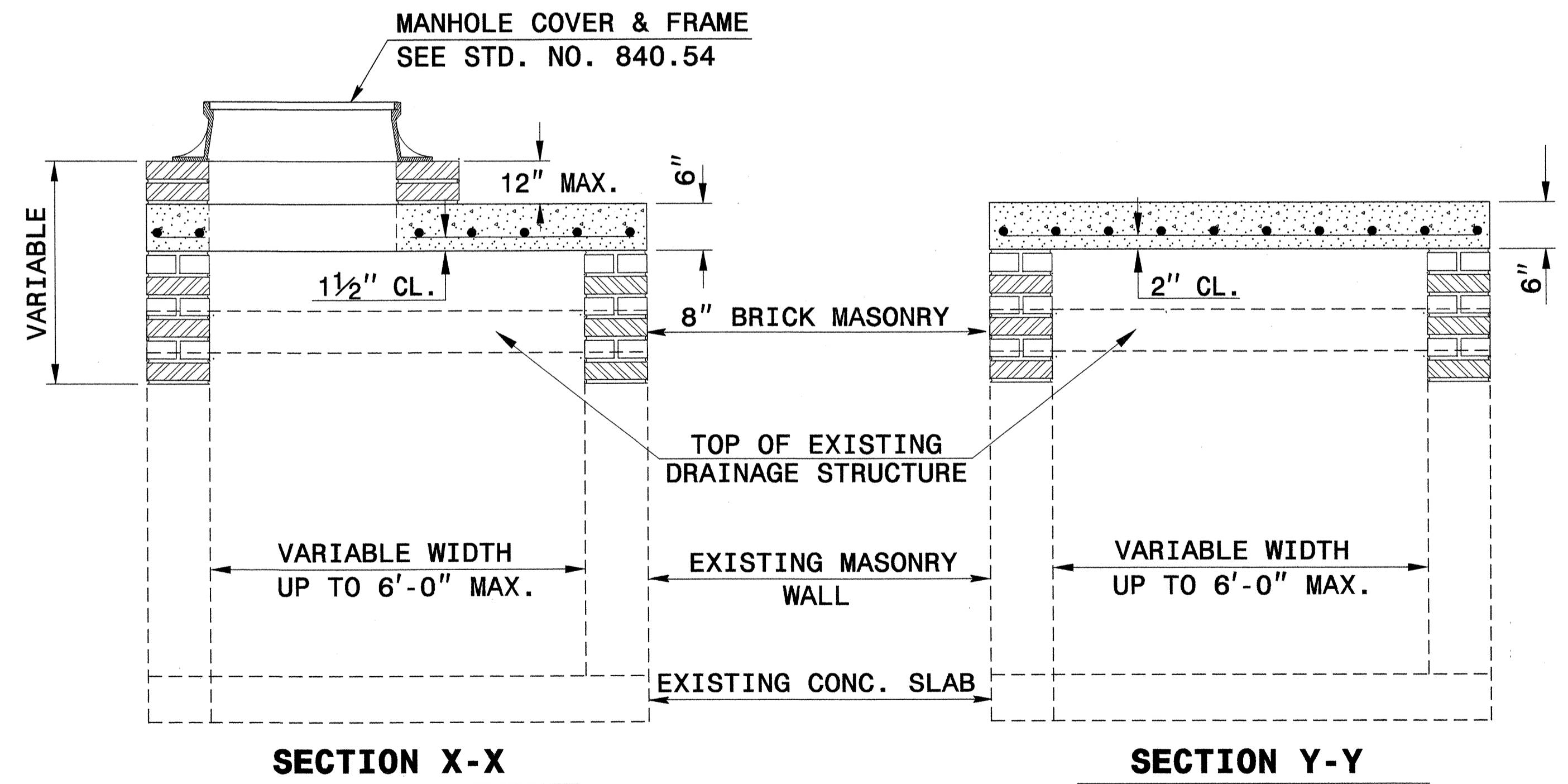
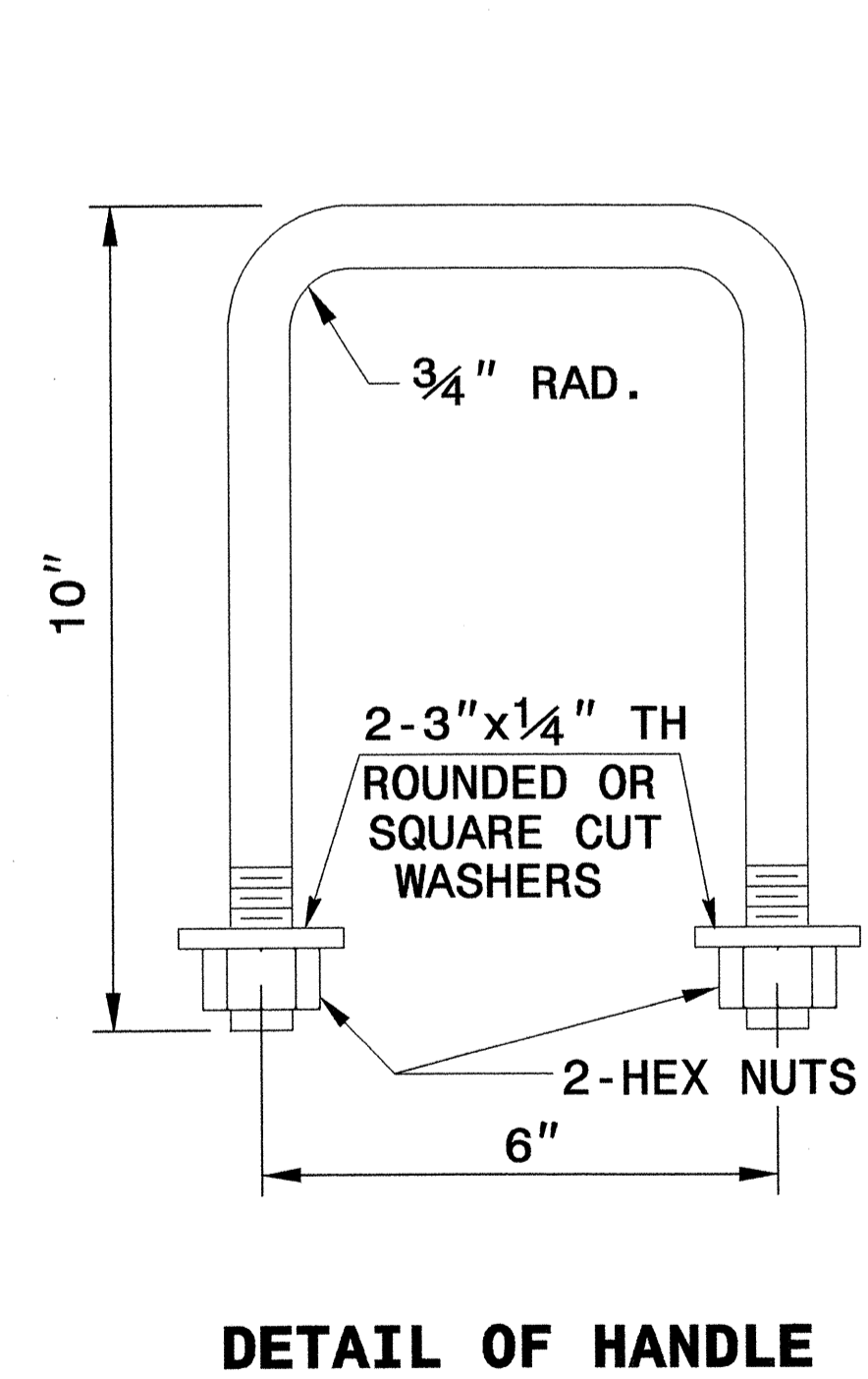


PROJECT SERVICES UNIT STANDARDS AND SPECIAL DESIGN Office 919-250-4128 FAX 919-250-4119	
<b>SEE PLATE FOR TITLE</b>	
ORIGINAL BY: 2006 STD 840.25	DATE: 07/18/06
MODIFIED BY: E.E. WARD	DATE: 9/25/06
CHECKED BY:	DATE:
FILE SPEC.:	



**GENERAL NOTES:**

- CONSTRUCT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.
- FIELD VERIFY THE DIMENSIONS FOR THE EXISTING BOXES
- 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
<b>TOTAL</b>				<b>65.91 *</b>
MASONRY				CU YDS
TOP SLAB CONCRETE CLASS "B"				.433 *
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.

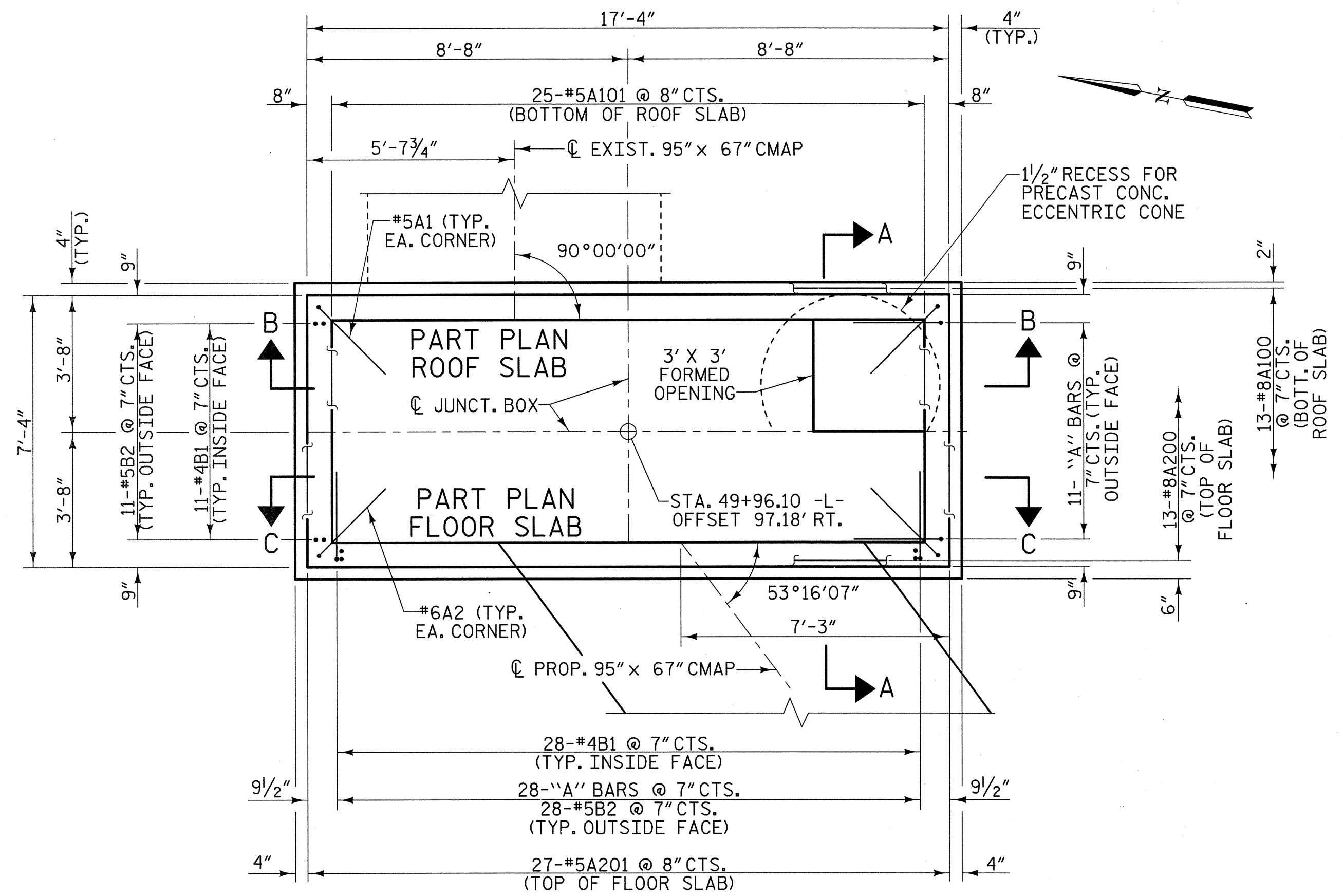


**PROJECT SERVICES UNIT  
 STANDARDS AND SPECIAL DESIGN**  
 Office 919-250-4128      FAX 919-250-4119

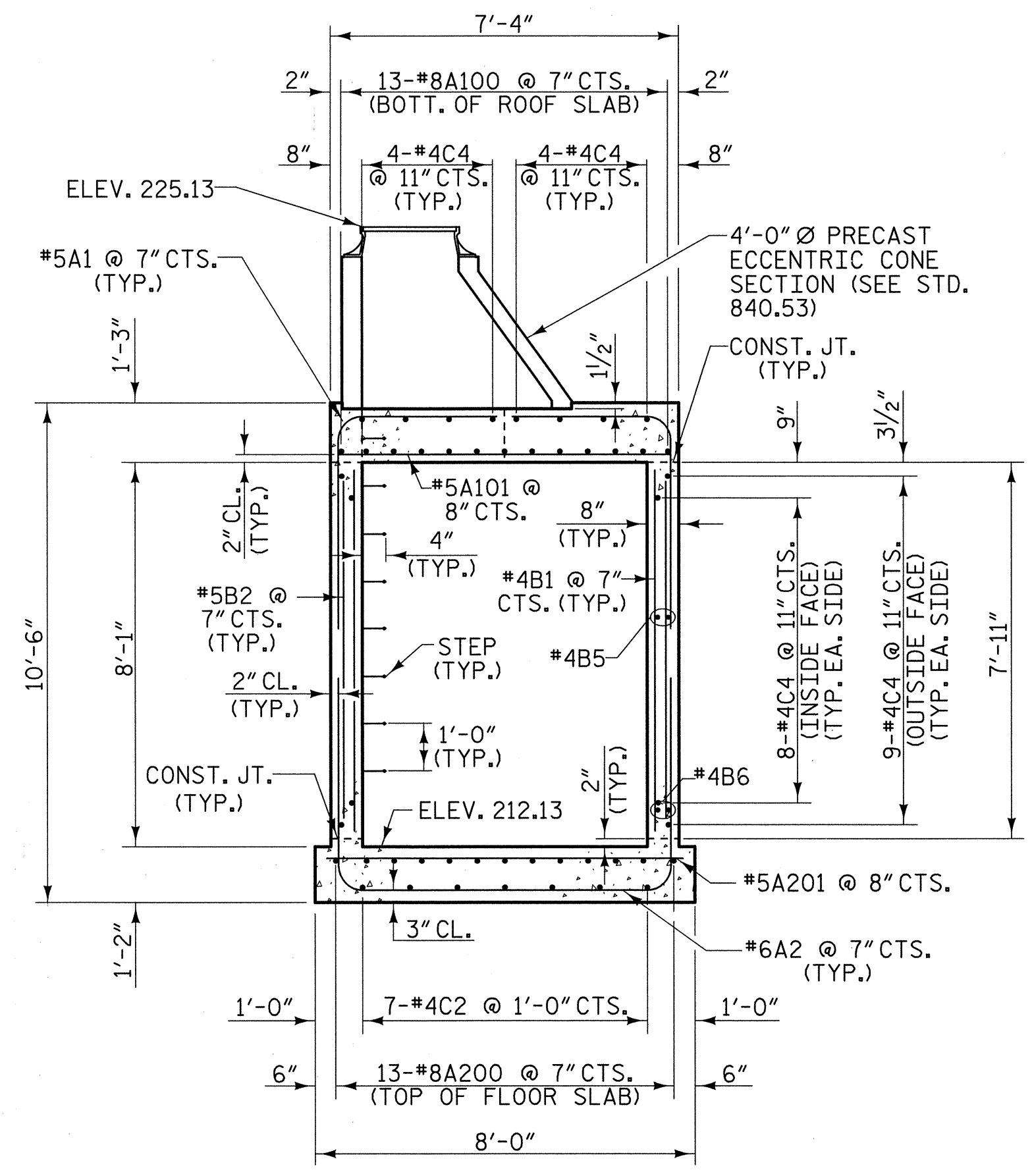
**DETAIL TO CONVERT EXISTING  
 DROP INLET OR CATCH BASIN  
 TO JUNCTION BOX  
 (MANHOLE OPTIONAL)**

ORIGINAL BY: T.S.S.      DATE: NOV. 1997  
 MODIFIED BY: E.E.W.      DATE: 8-28-02  
 CHECKED BY: *[Signature]*      DATE: 4/24/08  
 FILE SPEC.: *[Signature]*/details/stand/boxtojb.dgn

SYSTEM: \$\$\$\$\$\$  
 USER: \$\$\$\$\$\$  
 USERNAME: \$\$\$\$\$\$



**PLAN**



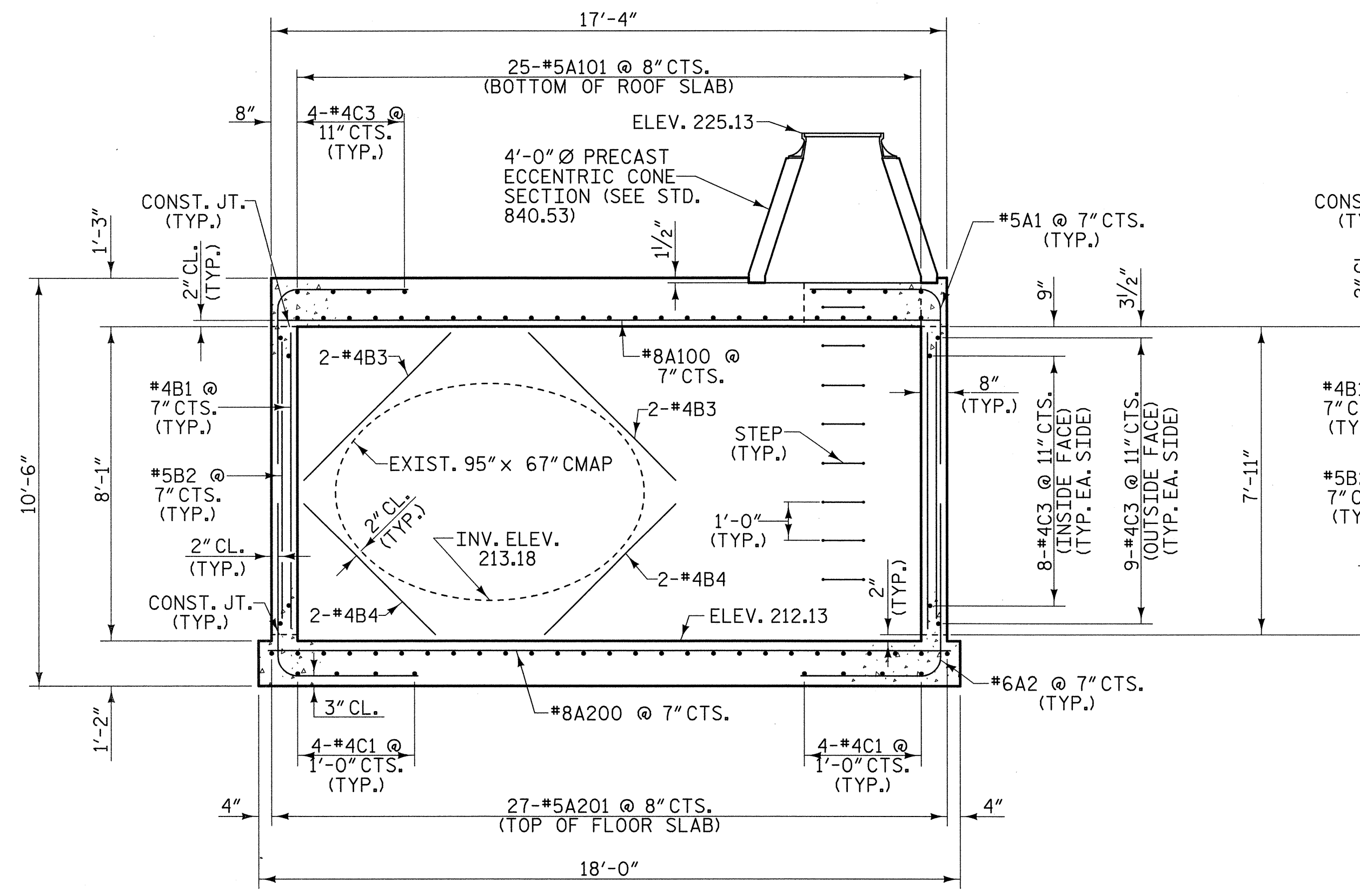
**SECTION A-A**

**NOTES:**

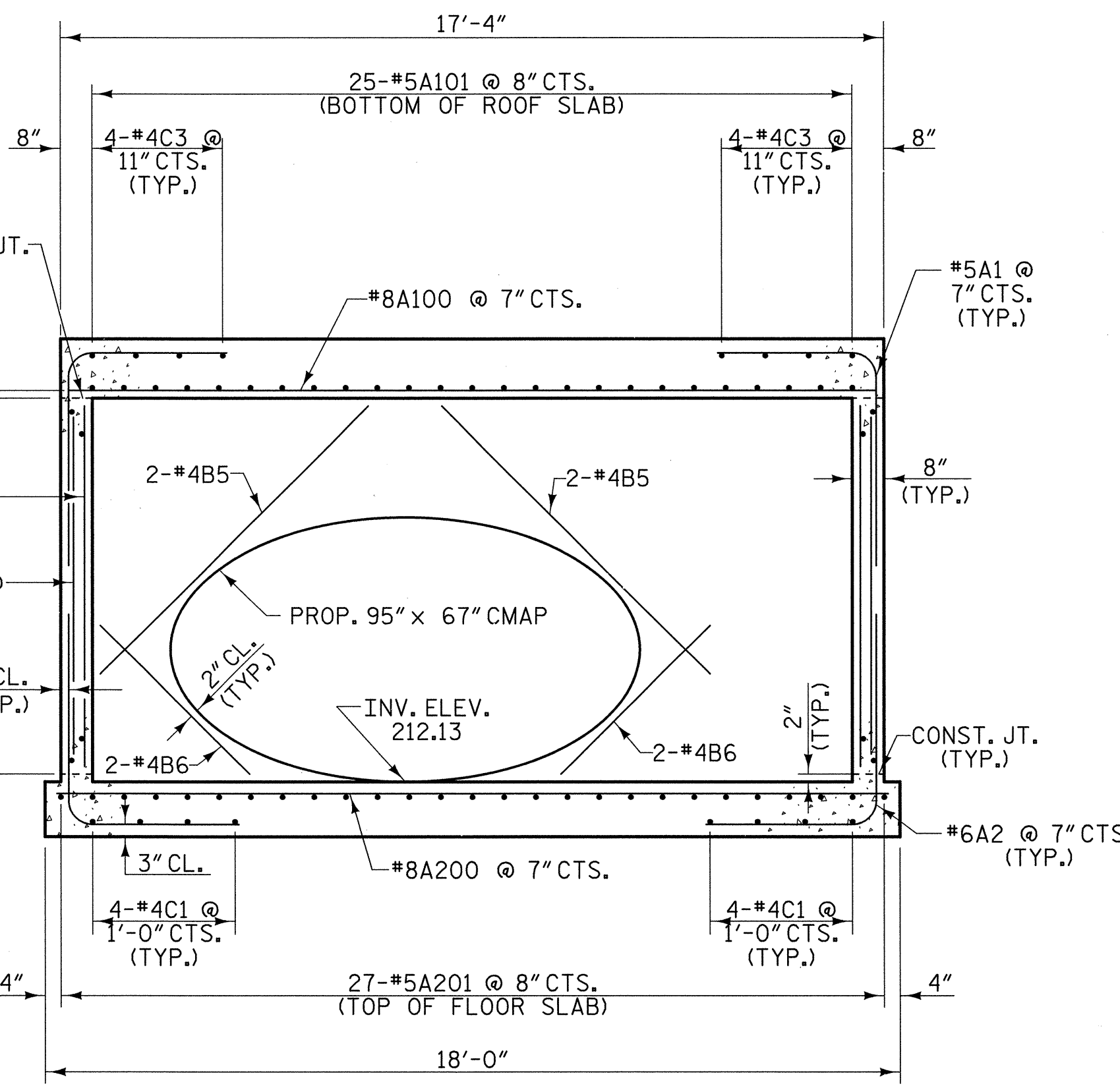
- ALL CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH,  $f'_c$ , OF 3,000 PSI AND SHALL MEET THE REQUIREMENTS OF DIVISION 6 OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT) STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
- ALL REINFORCING STEEL SHALL HAVE A MINIMUM YIELD STRENGTH,  $f_y$ , OF 60 KSI AND SHALL MEET THE REQUIREMENTS OF DIVISION 6 OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
- THE JUNCTION BOX SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 420 OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
- CUT REINFORCING STEEL AS NEEDED TO PROVIDE 2" MIN. CLEAR TO PIPES AND 3' X 3' FORMED OPENING. THE STEPS IN THE JUNCTION BOX SHALL MEET THE REQUIREMENTS OF SECTION 1074-8 OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
- 4' Ø PRECAST ECCENTRIC CONE SECTION DESIGNED BY OTHERS, SEE NCDOT STD. DRAWING 840.53 FOR DETAILS.

BILL OF MATERIAL					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A1	82	#5	1	7'-7"	649
A2	82	#6	1	7'-10"	965
A100	13	#8	STR	17'-0"	590
A101	25	#5	STR	7'-0"	183
A200	13	#8	STR	17'-6"	607
A201	27	#5	STR	7'-6"	211
B1	78	#4	STR	7'-7"	395
B2	78	#5	STR	7'-7"	617
B3	4	#4	STR	5'-4"	14
B4	4	#4	STR	4'-9"	13
B5	4	#4	STR	7'-11"	21
B6	4	#4	STR	4'-5"	12
C1	8	#4	STR	7'-6"	40
C2	7	#4	STR	17'-6"	82
C3	42	#4	STR	7'-0"	196
C4	42	#4	STR	17'-0"	477

BAR TYPES							
	<p>ALL BAR DIMENSIONS ARE OUT TO OUT</p> <p><b>STRUCTURE QUANTITIES</b></p> <table border="1"> <tr> <td>CLASS A CONCRETE</td> <td>20.0</td> <td>C.Y.</td> </tr> <tr> <td>REINFORCING STEEL</td> <td>5072</td> <td>LBS.</td> </tr> </table>	CLASS A CONCRETE	20.0	C.Y.	REINFORCING STEEL	5072	LBS.
CLASS A CONCRETE	20.0	C.Y.					
REINFORCING STEEL	5072	LBS.					



**SECTION B-B**



**SECTION C-C**

PROJECT NO. **U-4756**  
**CUMBERLAND COUNTY**

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**SPECIAL JUNCTION BOX**  
**STA. 49+96.10 -L-**

REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

8/17/99

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C201461

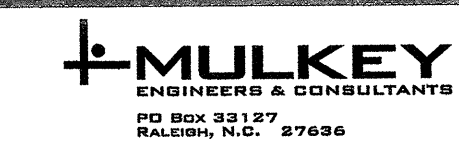


Table with columns: ItemNumber, Sec #, Quantity, Unit, Description. It lists various construction materials and services such as mobilization, surveying, bridge approaches, excavations, guardrails, and pavement markings.

STATE OF NORTH CAROLINA  
SUMMARY OF QUANTITIES

ItemNumber	Sec #	Quantity	Unit	Description
6084000000-E	1660	14	ACR	SEEDING & MULCHING
6087000000-E	1660	9	ACR	MOWING
6090000000-E	1661	200	LB	SEED FOR REPAIR SEEDING
6093000000-E	1661	0.5	TON	FERTILIZER FOR REPAIR SEEDING
6096000000-E	1662	350	LB	SEED FOR SUPPLEMENTAL SEEDING
6108000000-E	1665	10.5	TON	FERTILIZER TOPDRESSING
6114000000-N	SP	2	HR	SPECIALIZED HAND MOWING
6117000000-N	SP	8	EA	RESPONSE FOR EROSION CONTROL
7060000000-E	1705	4,450	LF	SIGNAL CABLE
7120000000-E	1705	48	EA	VEHICLE SIGNAL HEAD (12", 3 SECTION)
7144000000-E	1705	11	EA	VEHICLE SIGNAL HEAD (12", 5 SECTION)
7252000000-E	1710	4,090	LF	MESSENGER CABLE (1/4")
7264000000-E	1710	1,900	LF	MESSENGER CABLE (3/8")
7279000000-E	1715	350	LF	TRACER WIRE
7300000000-E	1715	1,500	LF	UNPAVED TRENCHING (***** (1, 2"))
7324000000-N	1716	31	EA	JUNCTION BOX (STANDARD SIZE)
7348000000-N	1716	5	EA	JUNCTION BOX (OVER-SIZED, HEAVY DUTY)
7360000000-N	1720	1	EA	WOOD POLE
7372000000-N	1721	4	EA	GUY ASSEMBLY
7444000000-E	1725	7,550	LF	INDUCTIVE LOOP SAWCUT
7456000000-E	1726	3,650	LF	LEAD-IN CABLE (***** (2 PAIR))
7481000000-N	SP	2	EA	SITE SURVEY
7481200000-N	SP	8	EA	LUMINAIRE ARM FOR VIDEO SYSTEM
7481240000-N	SP	8	EA	CAMERA WITHOUT INTERNAL LOOP EMULATOR PROCESSING UNIT
7481260000-N	SP	2	EA	EXTERNAL LOOP EMULATOR PROCESSING UNIT
7516000000-E	1730	4,500	LF	COMMUNICATIONS CABLE (**FIBER) (18)

ItemNumber	Sec #	Quantity	Unit	Description
7528000000-E	1730	500	LF	DROP CABLE
7540000000-N	1731	8	EA	SPLICE ENCLOSURE
7564100000-N	1732	2	EA	FIBER-OPTIC TRANSCEIVER, SELF-HEALING RING
7566000000-N	1733	2	EA	DELINEATOR MARKER
7575160000-E	1734	4,100	LF	REMOVE EXISTING COMMUNICATIONS CABLE
7576000000-N	SP	16	EA	METAL STRAIN SIGNAL POLE
7613000000-N	SP	16	EA	SOIL TEST
7614100000-E	SP	112	CY	DRILLED PIER FOUNDATION
7630000000-N	SP	2	EA	METAL STRAIN POLE DESIGN
7636000000-N	1745	17	EA	SIGN FOR SIGNALS
7684000000-N	1750	6	EA	SIGNAL CABINET FOUNDATION
7756000000-N	1751	2	EA	CONTROLLER WITH CABINET (TYPE 2070L, BASE MOUNTED)
7780000000-N	1751	33	EA	DETECTOR CARD (TYPE 2070L)
7901000000-N	1753	2	EA	CABINET BASE EXTENDER
7948000000-N	SP	2	EA	TRAFFIC SIGNAL REMOVAL
7960000000-N	SP	1	EA	METAL POLE FOUNDATION REMOVAL
7980000000-N	SP	1	EA	GENERIC SIGNAL ITEM METAL POLE RELOCATION
7980000000-N	SP	2	EA	GENERIC SIGNAL ITEM RELOCATE EXIST CCTV CABINET ASSEMBLY
7980000000-N	SP	2	EA	GENERIC SIGNAL ITEM RELOCATE EXIST SIGNAL CABINET & CONTROLLER ASSEMBLY
8035000000-N	402	Lump Sum		REMOVAL OF EXISTING STRUCTURE AT STATION ***** (44+88.35-L-)
8105400000-E	SP	262	LF	3'-6" DIA DRILLED PIERS IN SOIL
8105640000-E	SP	30	LF	3'-6" DIA DRILLED PIERS NOT IN SOIL
8113000000-N	SP	4	EA	SID INSPECTION
8114000000-N	SP	4	EA	SPT TESTING

ItemNumber	Sec #	Quantity	Unit	Description
8115000000-N	SP	4	EA	CROSSHOLE SONIC LOGGING
8154000000-E	420	27,683	SF	REINFORCED CONCRETE DECK SLAB (SAND LIGHTWEIGHT CONC)
8161000000-E	420	27,005	SF	GROOVING BRIDGE FLOORS
8182000000-E	420	233.5	CY	CLASS A CONCRETE (BRIDGE)
8210000000-N	422	Lump Sum		BRIDGE APPROACH SLABS, STATION ***** (44+88.35-L-)
8217000000-E	425	56,246	LB	REINFORCING STEEL (BRIDGE)
8238000000-E	425	7,586	LB	SPIRAL COLUMN REINFORCING STEEL (BRIDGE)
8280000000-E	440	763,916	LS	APPROX ..... LBS STRUCTURAL STEEL
8364000000-E	450	3,300	LF	HP12X53 STEEL PILES
8482000000-E	460	567.4	LF	THREE BAR METAL RAIL
8531000000-E	462	1,086	SY	4" SLOPE PROTECTION
8692000000-N	SP	Lump Sum		EVAZOTE JOINT SEALS
8741000000-N	SP	Lump Sum		STRUCTURE DRAINAGE SYSTEM AT STA ***** (44+88.35-L-)
8802012000-E	SP	7,947	SF	PILE PANEL RETAINING WALLS

***** BEGIN SCHEDULE AA *****				
***** (3 ALTERNATES) *****				
0366000000-E	310	1,248	LF	15" RC PIPE CULVERTS, CLASS III
AA1				
*** OR ***				
0366000000-E	310	1,200	LF	15" RC PIPE CULVERTS, CLASS III
AA2				
0536000000-E	SP	48	LF	**** HDPE PIPE CULVERTS (15")
AA2				
*** OR ***				
0366000000-E	310	1,200	LF	15" RC PIPE CULVERTS, CLASS III
AA3				
0540000000-E	SP	48	LF	**** ALUMINIZED CORRUGATED STEEL PIPE CULVERTS, **** THICK (15", 0.064")
AA3				
***** END SCHEDULE AA *****				







COMPUTED BY: PJJ DATE: 3/9/07  
CHECKED BY: JIJ DATE: 4/13/07



PROJECT REFERENCE NO. U-4756 SHEET NO. 3-C

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

Main data table with columns for Station, Location, Structure No., Pipe Size, Elevation, Pipe Type (CLASS III R.C. PIPE, BITUMINOUS COATED C.S. PIPE, etc.), Endwalls, Quantities, Frame/Grates, and Remarks. Includes summary rows for SHEET TOTAL, PROJECT TOTAL, and SAY.

- ABBREVIATIONS: C.B. CATCH BASIN, N.D.I. NARROW DROP INLET, D.I. DROP INLET, G.D.I. GRATED DROP INLET, G.D.I. (N.S.) GRATED DROP INLET (NARROW SLOT), J.B. JUNCTION BOX, M.H. MANHOLE, T.B.D.I. TRAFFIC BEARING DROP INLET, T.B.J.B. TRAFFIC BEARING JUNCTION BOX

COMPUTED BY: PJJ DATE: 3/9/07  
 CHECKED BY: JTJ DATE: 3/20/07

STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS



PROJECT REFERENCE NO. U-4756  
 SHEET NO. 3-D

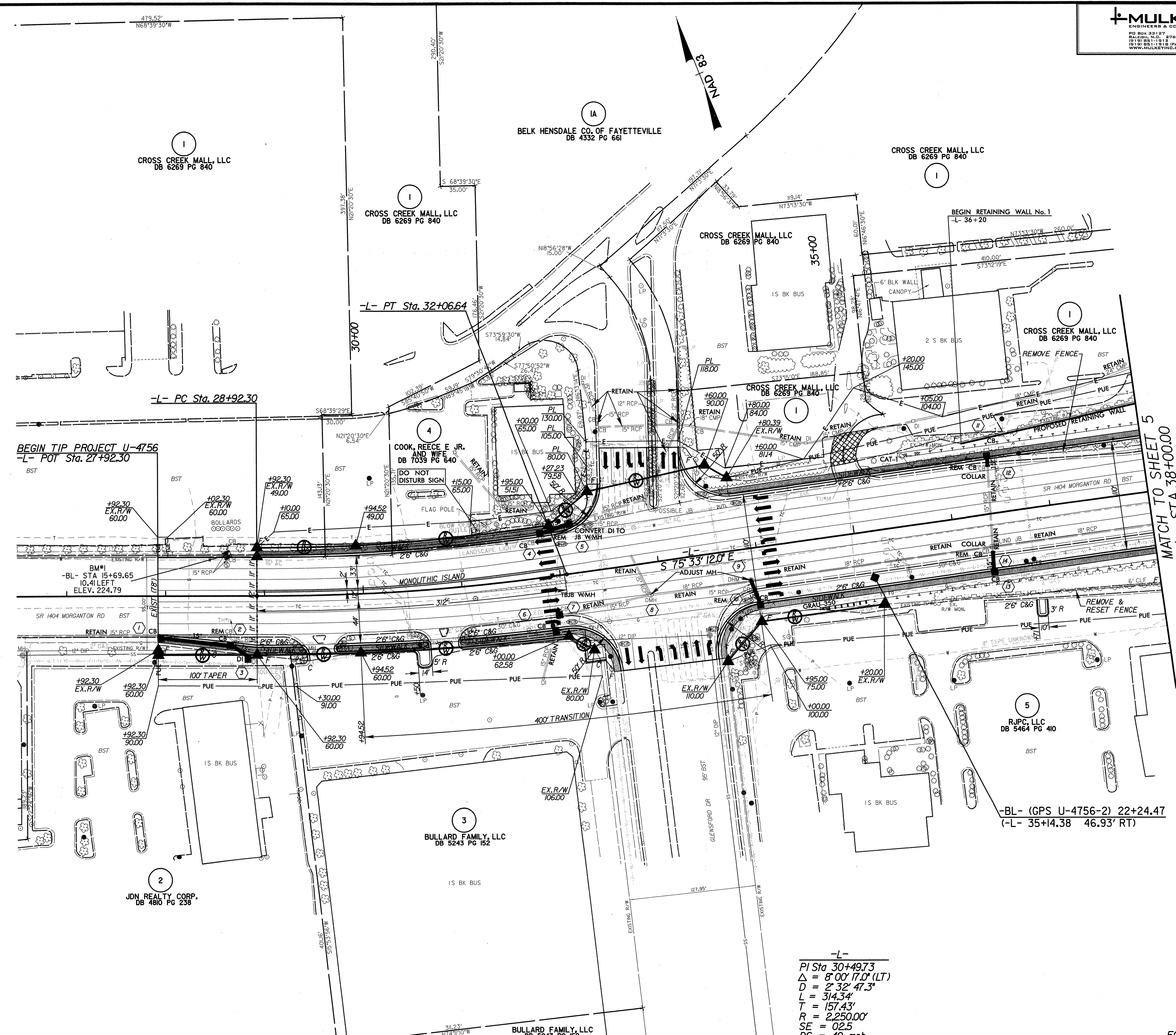
LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 54" & OVER)

STATION	LOCATION (L, RT, OR CL)	STRUCTURE NO.		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	CLASS III R.C. PIPE			CLASS IV R.C. PIPE			BITUMINOUS COATED C.S. PIPE ARCH, TYPE B						STRUCTURAL PLATE PIPE						REINFORCED ENDWALLS		MASONRY DRAINAGE STRUCTURES CUBIC YARDS	M.H. FRAME & COVER STD. 840.54	REINFC. CONC. FLARED END SECTIONS NO. & SIZE	CORR. STEEL FLARED END SECTIONS NO. & SIZE	REINFC. CONC. ELBOWS NO. & SIZE	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS	
		54"	60"					66"	54"	60"	66"	95" x 67"						60"	66"	72"	WITH R.C. - C.Y.	WITH C.S. - C.Y.															
												.109	.138	.168																							
THICKNESS OR GAUGE	FROM	TO																																			
39+89 -L-	LT	15	17		214.8	215.0				36																								3.1307	REMOVE HW		
39+95 -L-	LT	16	18		214.8	215.0				36																							3.1307				
16+95 -RPC-	RT	17		227.6																			6.445														
16+95 -RPC-	RT	18		228.6																			7.458														
16+95 -RPC-	RT	17	62		215.5	215.6		12															5.7														
16+95 -RPC-	RT	17	63		215.0	216.4			312														8.7														
16+95 -RPC-	RT	18	64		215.0	216.4			312																												
39+95 -L-	RT	19	20		214.2	214.1				36																								3.1307	REMOVE HW		
40+01 -L-	RT	21	22		214.2	214.1				36																								3.1307			
49+95 -L-	RT	65		225.1	212.0	212.0																	20.000													20.000	SPECIAL JB (SEE SHEET 2-H)
49+95 -L-	RT	65	66		212.0	211.9				12																											
SHEET TOTAL								12	624		144	12										23.10	33.903												12.5228		
PROJECT TOTAL								12	624		144	12										23.10	33.903												17.4644		
SAY																						24	35												18		

6/21/00

F:\2008\03\18\Proj\U-4756\_RDY\_sum.dgn 2/18/08





REVISIONS

8/17/99  
5/1/2008  
C:\2008\Projects\U-4756\RDY\_PSH4.dgn

-L-  
PI Sta 30+49.73  
Δ = 8' 00" 17.0' (LT)  
D = 2' 32' 47.3"  
L = 314.34'  
T = 157.43'  
R = 2,250.00'  
SE = 02.5  
DS = 40 mph

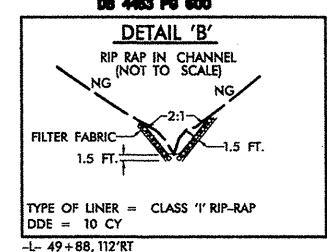
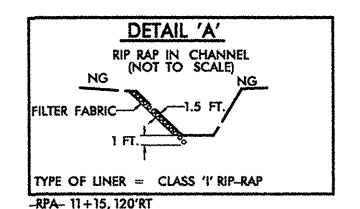
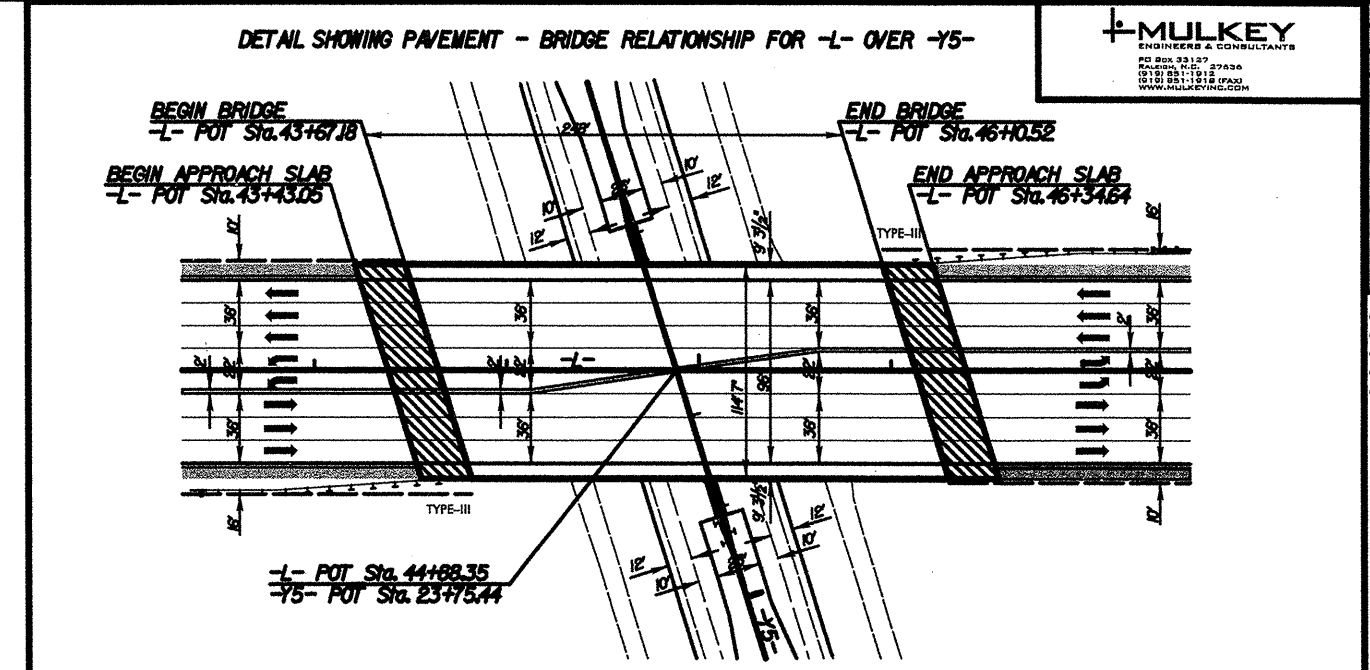
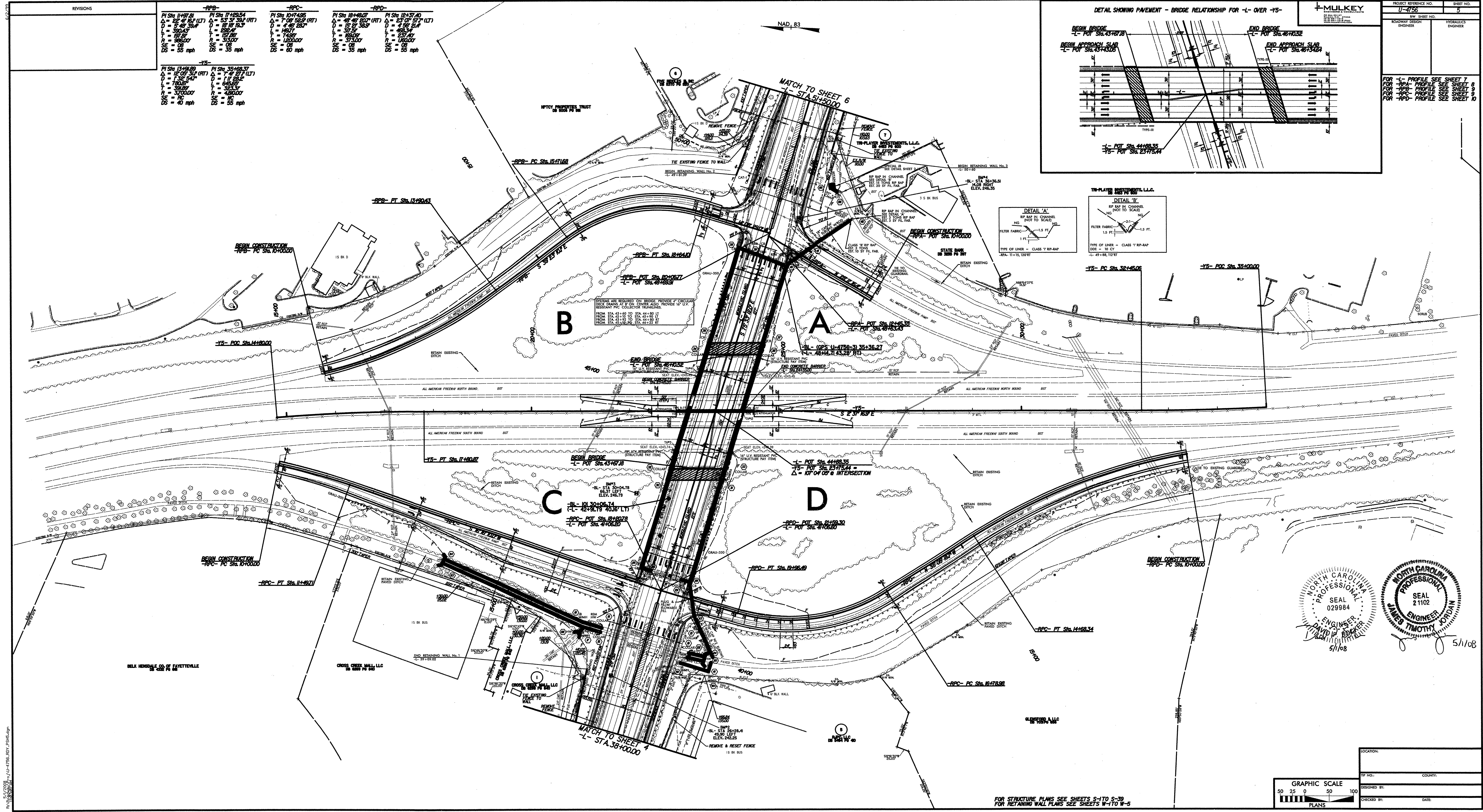
MATCH TO SHEET 5  
-L- STA. 38+00.00

FOR RETAINING WALL PLANS SEE SHEETS W-1 TO W-5

REVISIONS	
1	AS SHOWN

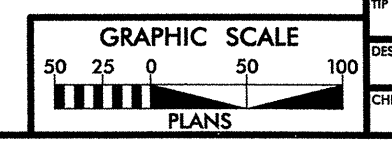
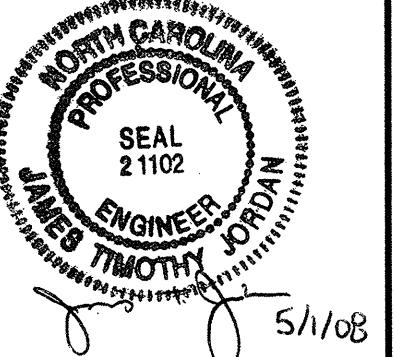
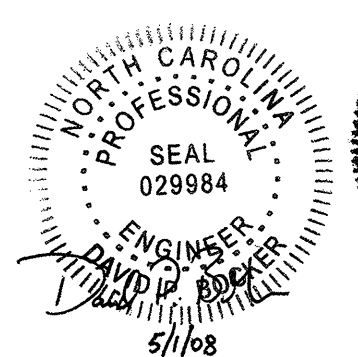
-RFB-		-RPC-		-RPD-	
PI Sta 11+47.81	PI Sta 17+125.54	PI Sta 10+74.55	PI Sta 10+74.55	PI Sta 10+49.07	PI Sta 10+37.40
$\Delta = 25' 48" \text{ (LT)}$	$\Delta = 33' 31" \text{ (RT)}$	$\Delta = 7' 08" \text{ (RT)}$	$\Delta = 7' 08" \text{ (RT)}$	$\Delta = 46' 40" \text{ (RT)}$	$\Delta = 23' 07" \text{ (LT)}$
$L = 390.43'$	$L = 18' 18" \text{ (RT)}$	$L = 4' 46" \text{ (RT)}$	$L = 4' 46" \text{ (RT)}$	$L = 15' 27" \text{ (RT)}$	$L = 4' 56" \text{ (LT)}$
$T = 157.28'$	$T = 157.28'$	$T = 14.57'$	$T = 14.57'$	$T = 69.54'$	$T = 69.54'$
$R = 5850.00'$	$R = 3150.00'$	$R = 1200.00'$	$R = 1200.00'$	$R = 650.00'$	$R = 1200.00'$
$SE = 32^\circ$	$SE = 03^\circ$	$SE = 03^\circ$	$SE = 03^\circ$	$SE = 03^\circ$	$SE = 03^\circ$
$DS = 55 \text{ mph}$	$DS = 35 \text{ mph}$	$DS = 35 \text{ mph}$	$DS = 35 \text{ mph}$	$DS = 35 \text{ mph}$	$DS = 35 \text{ mph}$

-Y5-	
PI Sta 13+191.89	PI Sta 35+168.57
$\Delta = 12' 09" \text{ (RT)}$	$\Delta = 7' 48" \text{ (LT)}$
$L = 732.54'$	$L = 111.92'$
$T = 366.27'$	$T = 55.96'$
$R = 3700.00'$	$R = 4800.00'$
$SE = 32^\circ$	$SE = 35^\circ$
$DS = 40 \text{ mph}$	$DS = 35 \text{ mph}$



PROJECT REFERENCE NO.	17-4752
SHEET NO.	5
ROADWAY DESIGN ENGINEER	
HYDRAULIC ENGINEER	

FOR -L- PROFILE SEE SHEET 7  
 FOR -RPC- PROFILE SEE SHEET 8  
 FOR -RPD- PROFILE SEE SHEET 9  
 FOR -Y5- PROFILE SEE SHEET 10



FOR STRUCTURE PLANS SEE SHEETS S-1 TO S-39  
 FOR RETAINING WALL PLANS SEE SHEETS W-1 TO W-5

LOCATION:	
RF NO.:	COUNTY:
DESIGNED BY:	
CHECKED BY:	DATE:

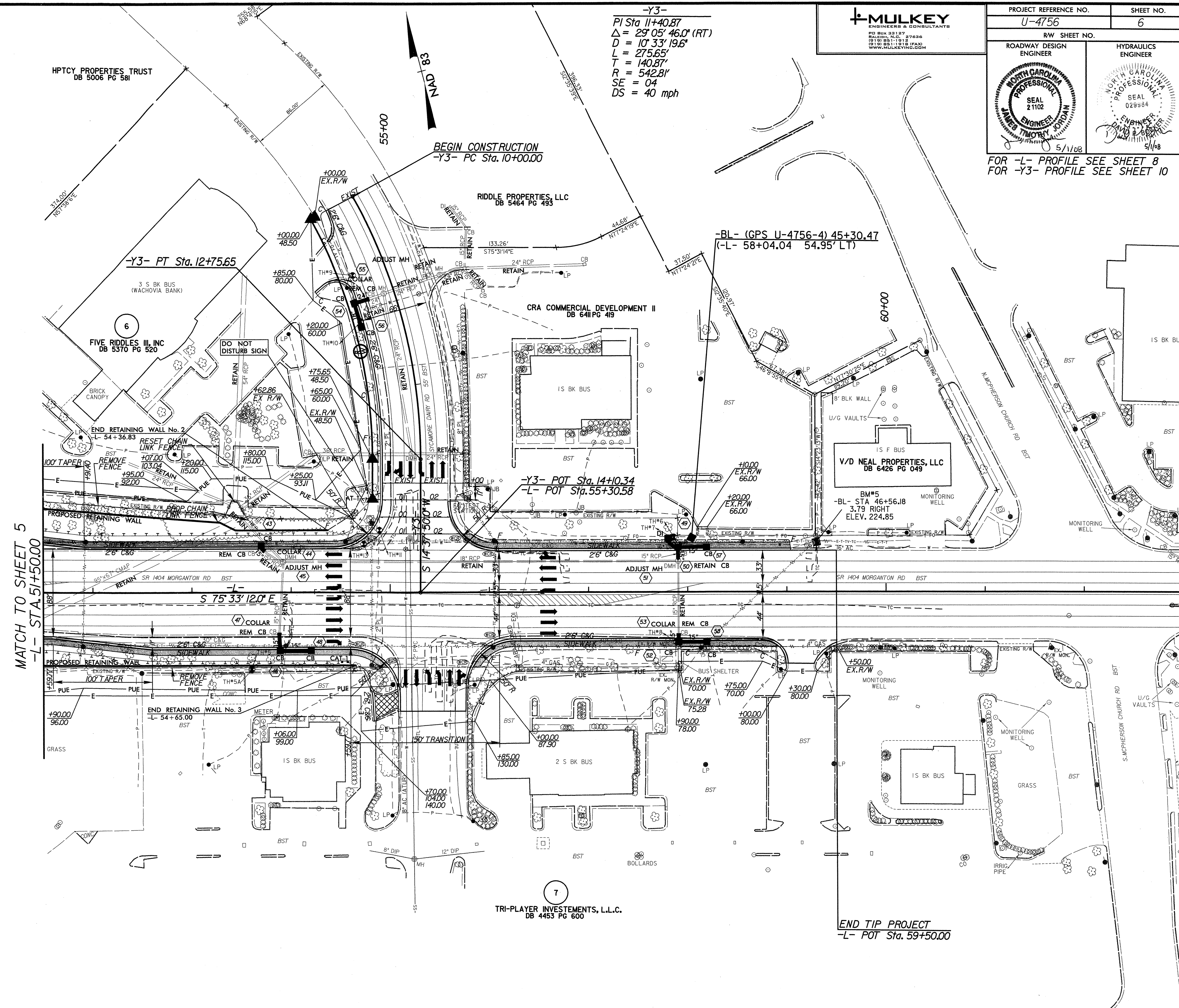
8/17/99

**MULKEY**  
ENGINEERS & CONSULTANTS  
PO Box 93127  
Raleigh, N.C. 27636  
919 851-1912  
919 851-1918 (FAX)  
WWW.MULKEYINC.COM

PROJECT REFERENCE NO. <b>U-4756</b>		SHEET NO. <b>6</b>	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		SEAL 029954	
NORTH CAROLINA PROFESSIONAL ENGINEER JAMES TIMOTHY JORDAN SEAL 21102 5/11/08		NORTH CAROLINA PROFESSIONAL ENGINEER DAVID J. JORDAN SEAL 029954 5/11/08	

FOR -L- PROFILE SEE SHEET 8  
FOR -Y3- PROFILE SEE SHEET 10

**-Y3-**  
 PI Sta 11+40.87  
 $\Delta = 29^{\circ} 05' 46.0''$  (RT)  
 $D = 10^{\circ} 33' 19.6''$   
 $L = 275.65'$   
 $T = 140.87'$   
 $R = 542.81'$   
 $SE = 04$   
 $DS = 40$  mph



MATCH TO SHEET 5  
-L- STA. 51+50.00

END TIP PROJECT  
-L- POT Sta. 59+50.00

REVISIONS

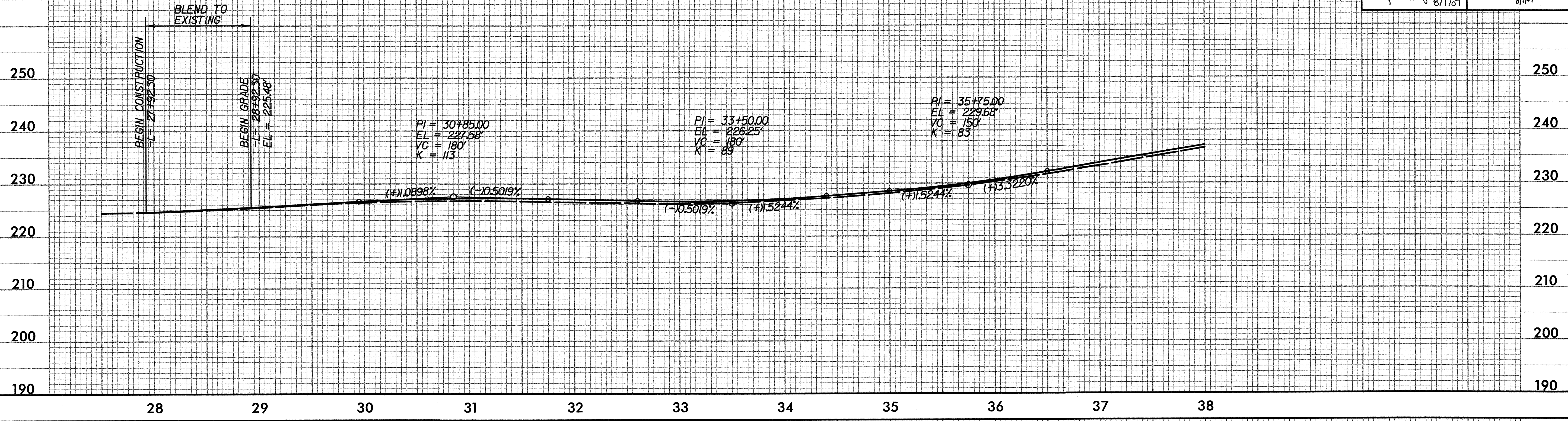
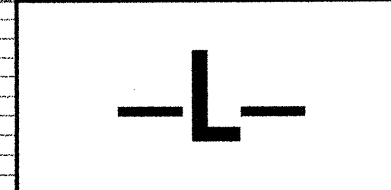
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FOR RETAINING WALL PLANS SEE SHEETS W-1 TO W-5

5/28/99

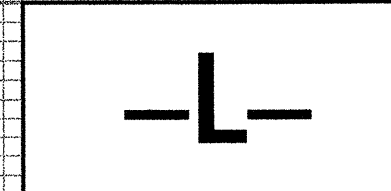
-BM1-  
BENCHLITE NAIL SET IN POWER POLE  
-L- 28+62.21 41.39' LT EL = 224.79'

-BL- 2 (GPS U-4756-2)  
-L- 35+14.38  
EL = 228.21'



-BM2-  
BENCHLITE NAIL SET IN POWER/LIGHT POLE  
-L- 39+10.17 47.15' LT EL = 242.25'

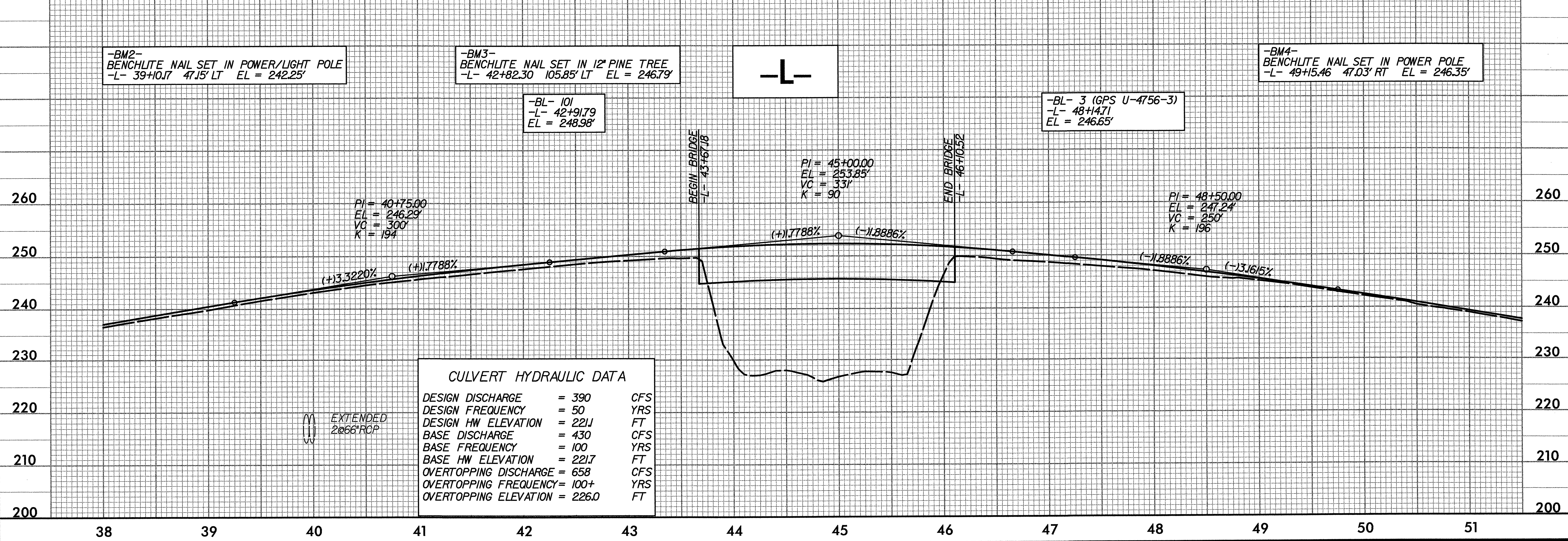
-BM3-  
BENCHLITE NAIL SET IN 12" PINE TREE  
-L- 42+82.30 105.85' LT EL = 246.79'



-BM4-  
BENCHLITE NAIL SET IN POWER POLE  
-L- 49+15.46 47.03' RT EL = 246.35'

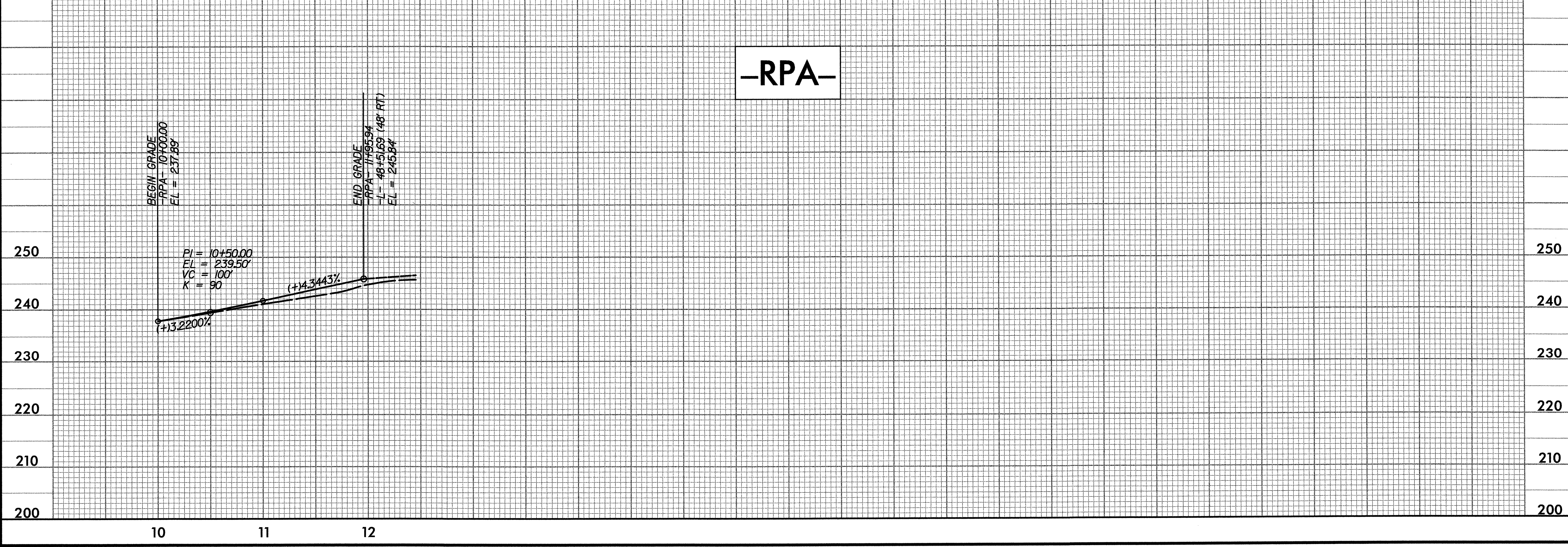
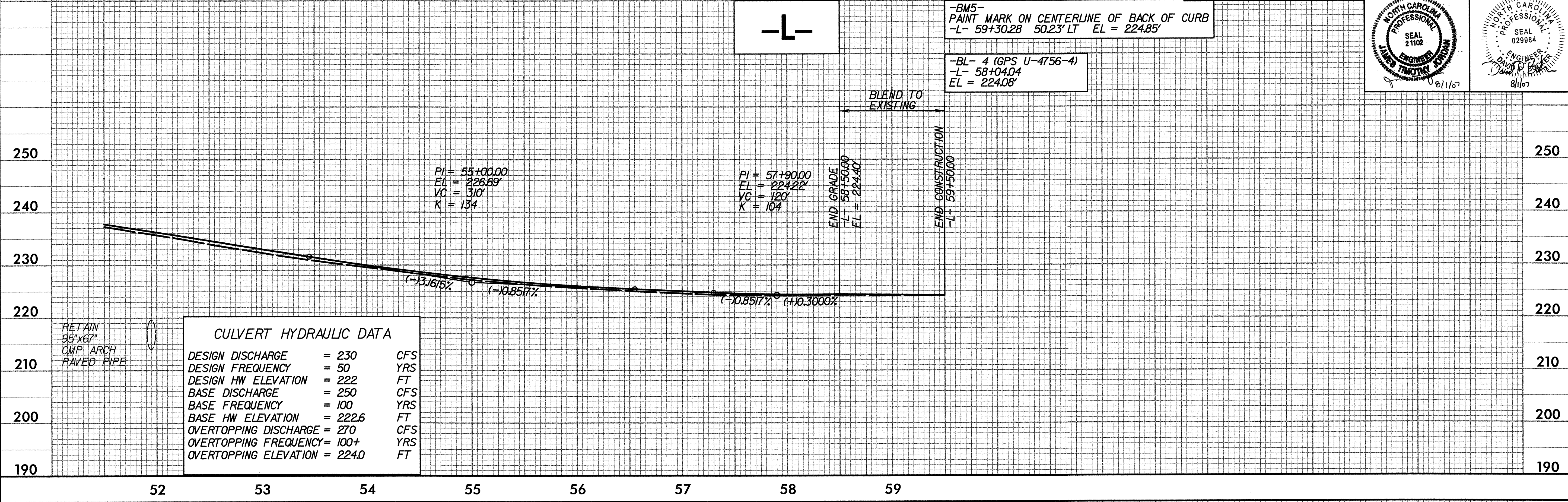
-BL- 101  
-L- 42+91.79  
EL = 248.98'

-BL- 3 (GPS U-4756-3)  
-L- 48+14.71  
EL = 246.65'



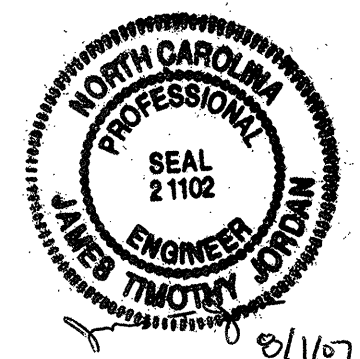
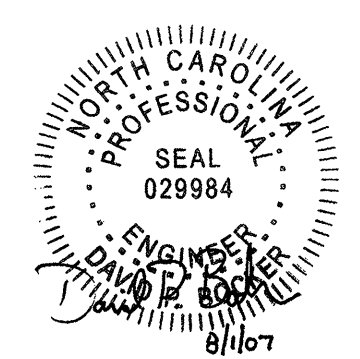
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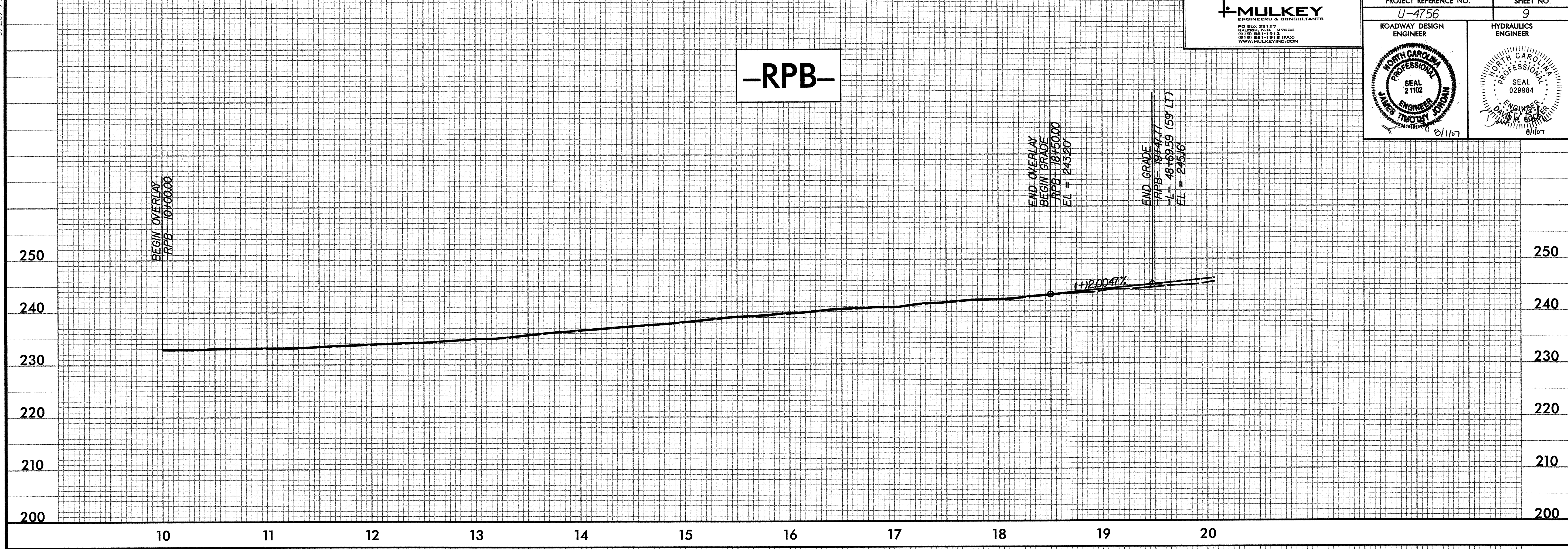


5/28/99

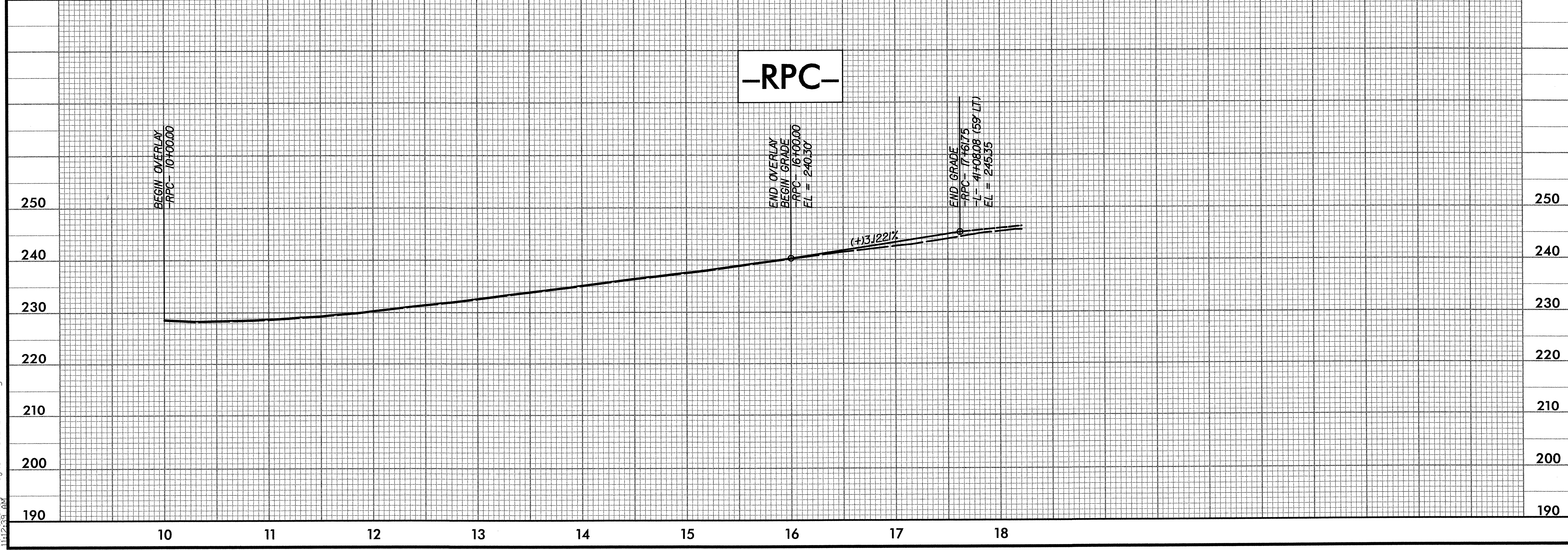
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Raleigh, NC 27606  
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(919) 851-1016 (FAX)  
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PROJECT REFERENCE NO. U-4756	SHEET NO. 9
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER 

# -RPB-

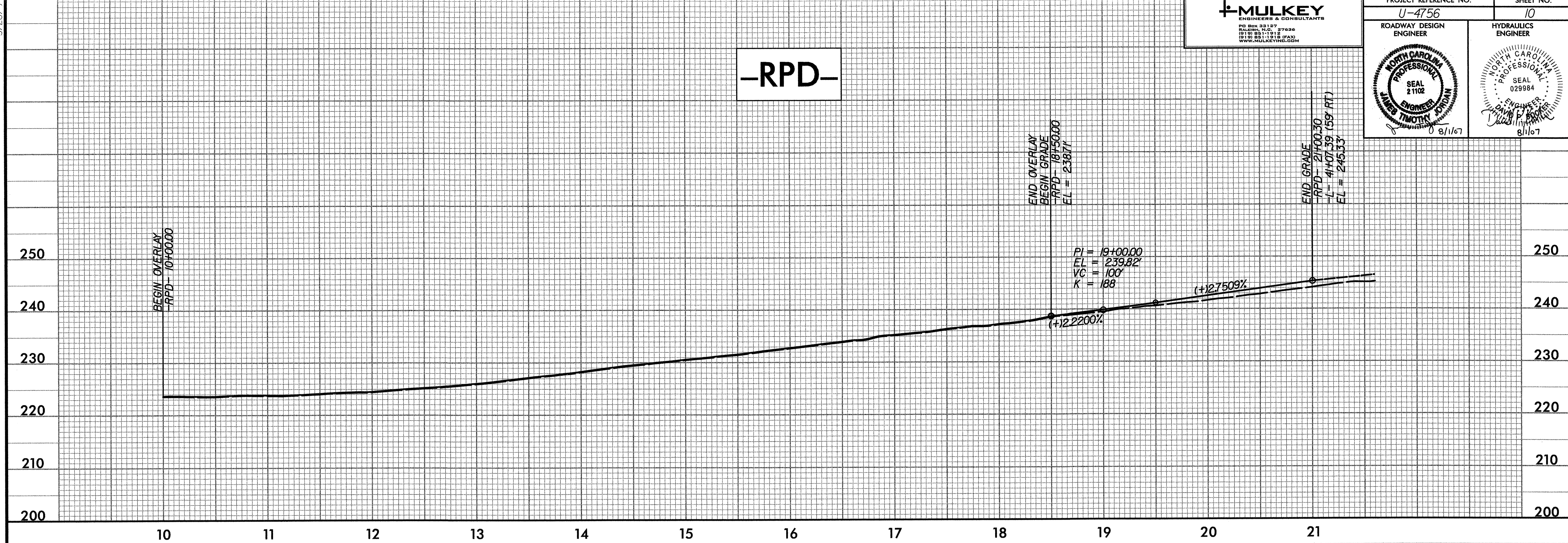


# -RPC-



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# -RPD-



# -Y3-

