

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CUMBERLAND COUNTY

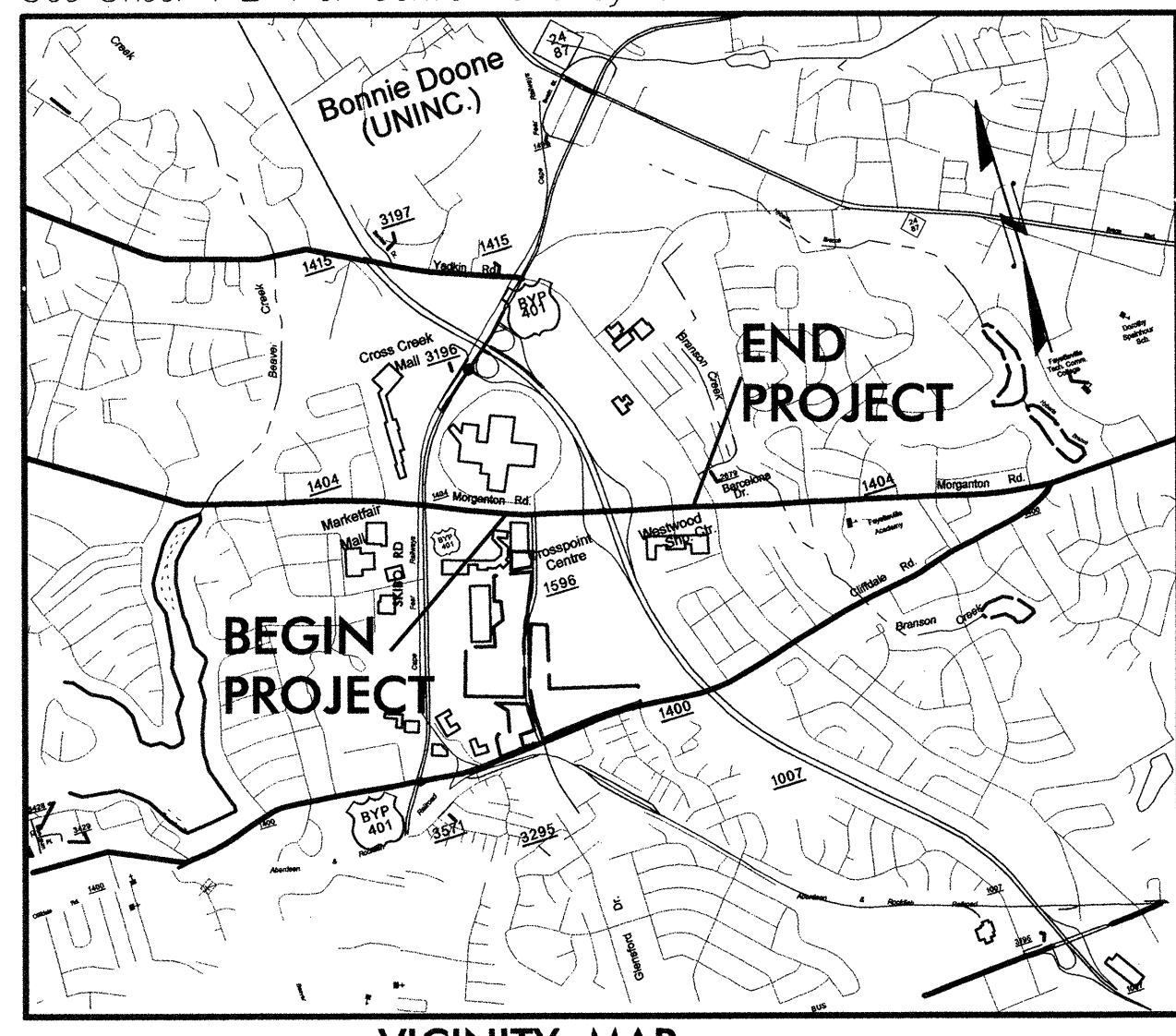
LOCATION: SR 1404 (MORGANTON ROAD) FROM SYCAMORE DAIRY ROAD TO GLENSFORD ROAD

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

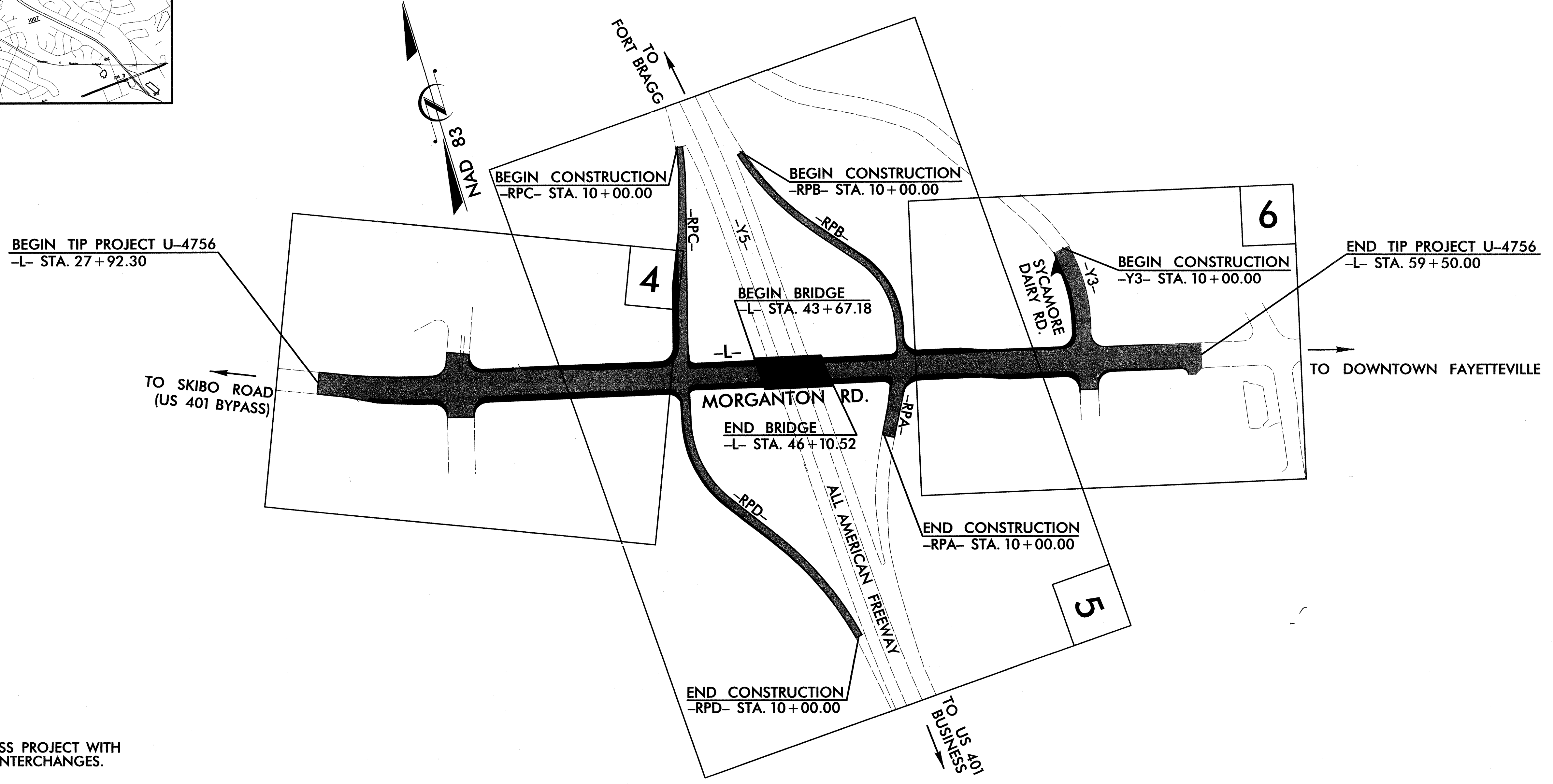
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4756	1	
WBS NO.	F.A. PROJ. NO.	DESCRIPTION	
39750.1.1	STP-1404(9)	P.E.	
39750.2.1	STP-1404(9)	RAW, UTL	
39750.3.1	STP-1404(9)	CONST	

TIP PROJECT: U-4756

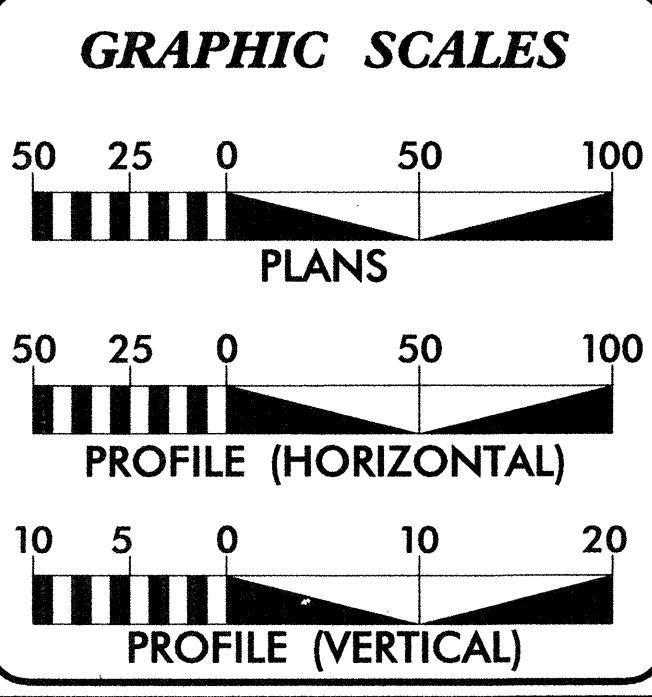
CONTRACT: C201461



VICINITY MAP



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



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
FOR
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: FEBRUARY 16, 2007

LETTING DATE: OCTOBER 16, 2007

NCDOT CONTACTS: TRACEY PITTMAN, PE
MIKE SUMMERS, PE

TIM JORDAN, PE
PROJECT ENGINEER

DAVID BOCKER, PE
HYDRAULICS ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: *David P. Bocker* P.E. 8/30/2007

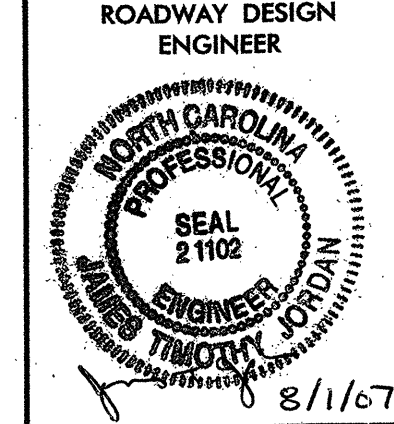
ROADWAY DESIGN

SIGNATURE: *Tim Jordan* P.E. 8/30/07

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

Art McMillan P.E.
STATE HIGHWAY DESIGN ENGINEER

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8/17/99

8/1/2007
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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
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-11	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-3	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
 Embarras, 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	
838.34	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
838.64	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
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
840.52	Precast Manhole - 4', 5' and 6' Diameter
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

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 U/G Tank Cap	○
Sign	○
Well	○
Small Mine	✕
Foundation	□
Area Outline	□
Cemetery	□
Building	□
School	□
Church	□
Dam	□

HYDROLOGY:

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

RAILROADS:

Standard Gauge	_____
RR Signal Milepost	○ 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	_____

EXISTING STRUCTURES:

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

UTILITIES:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

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

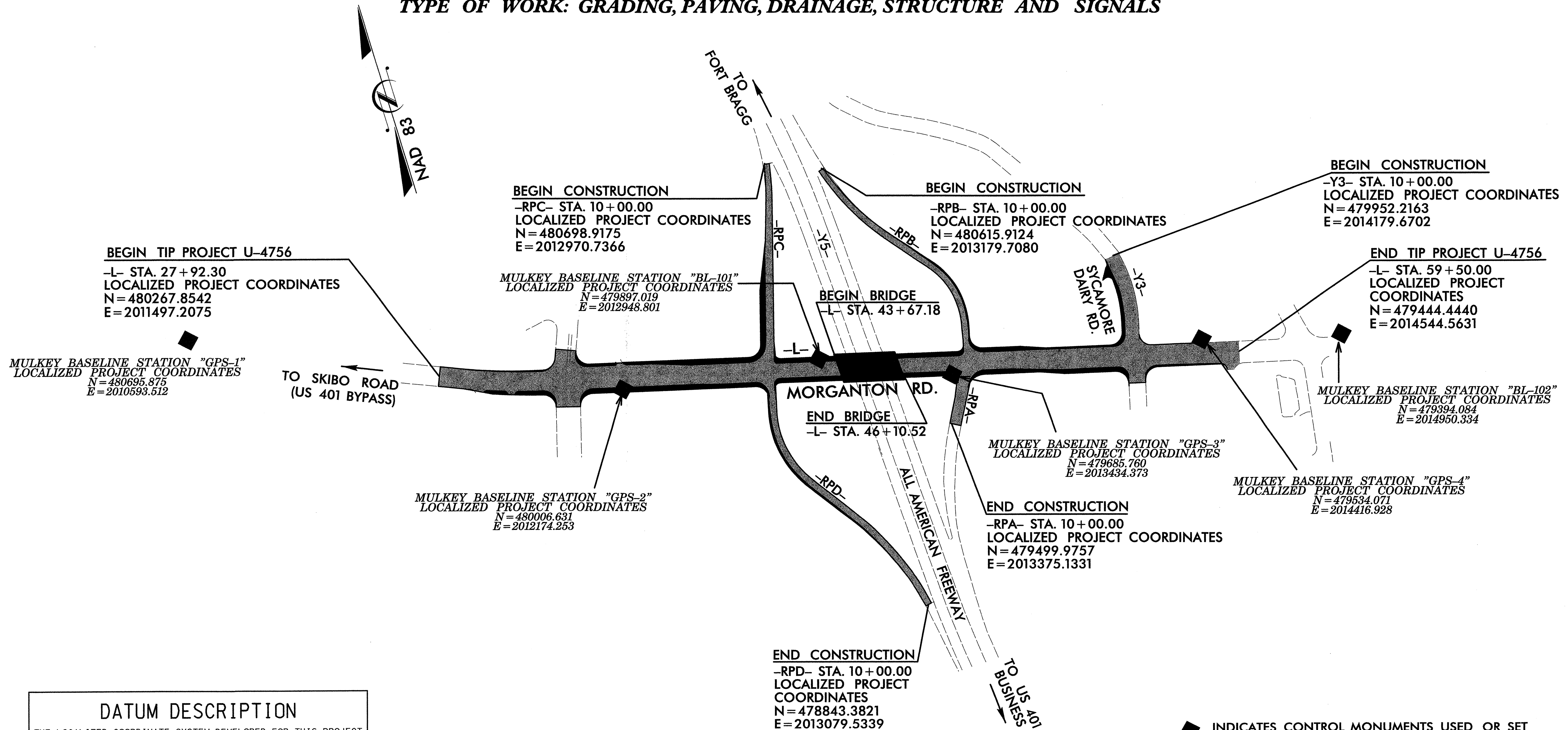
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

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


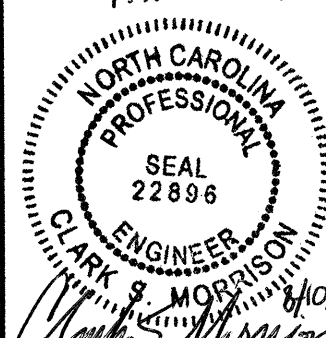
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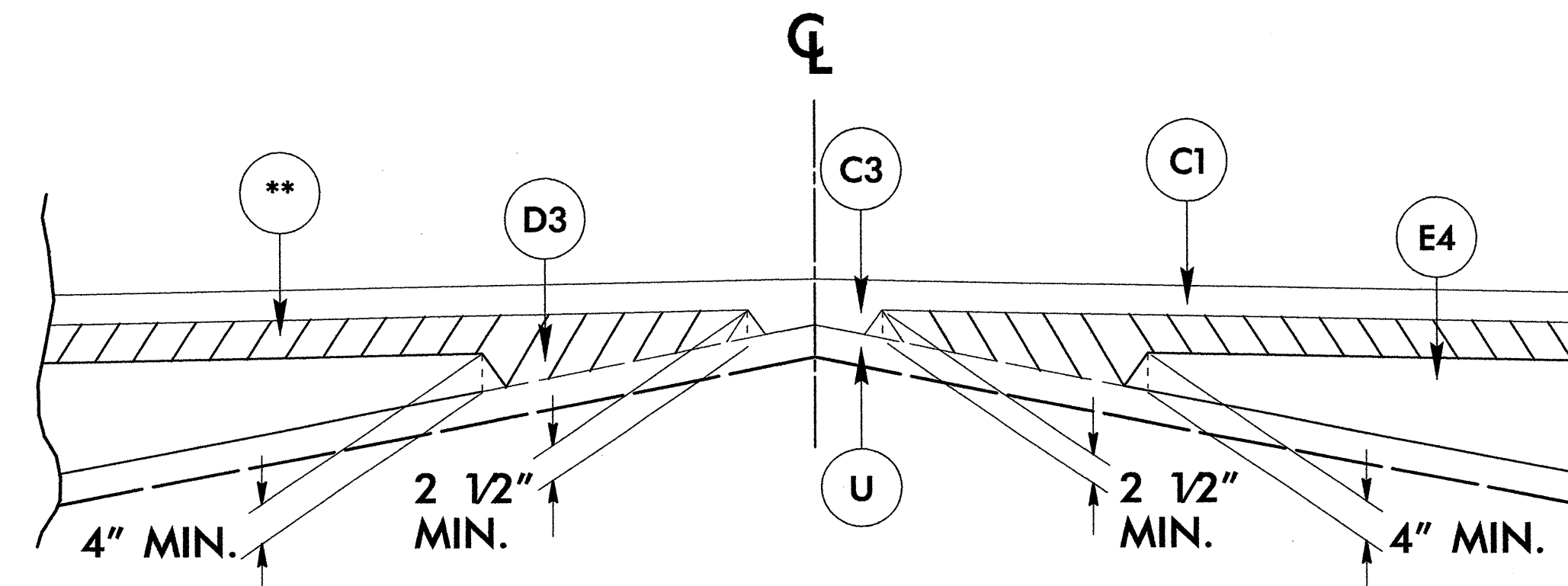
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PAVEMENT SCHEDULE
(FINAL PAVEMENT DESIGN)

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.

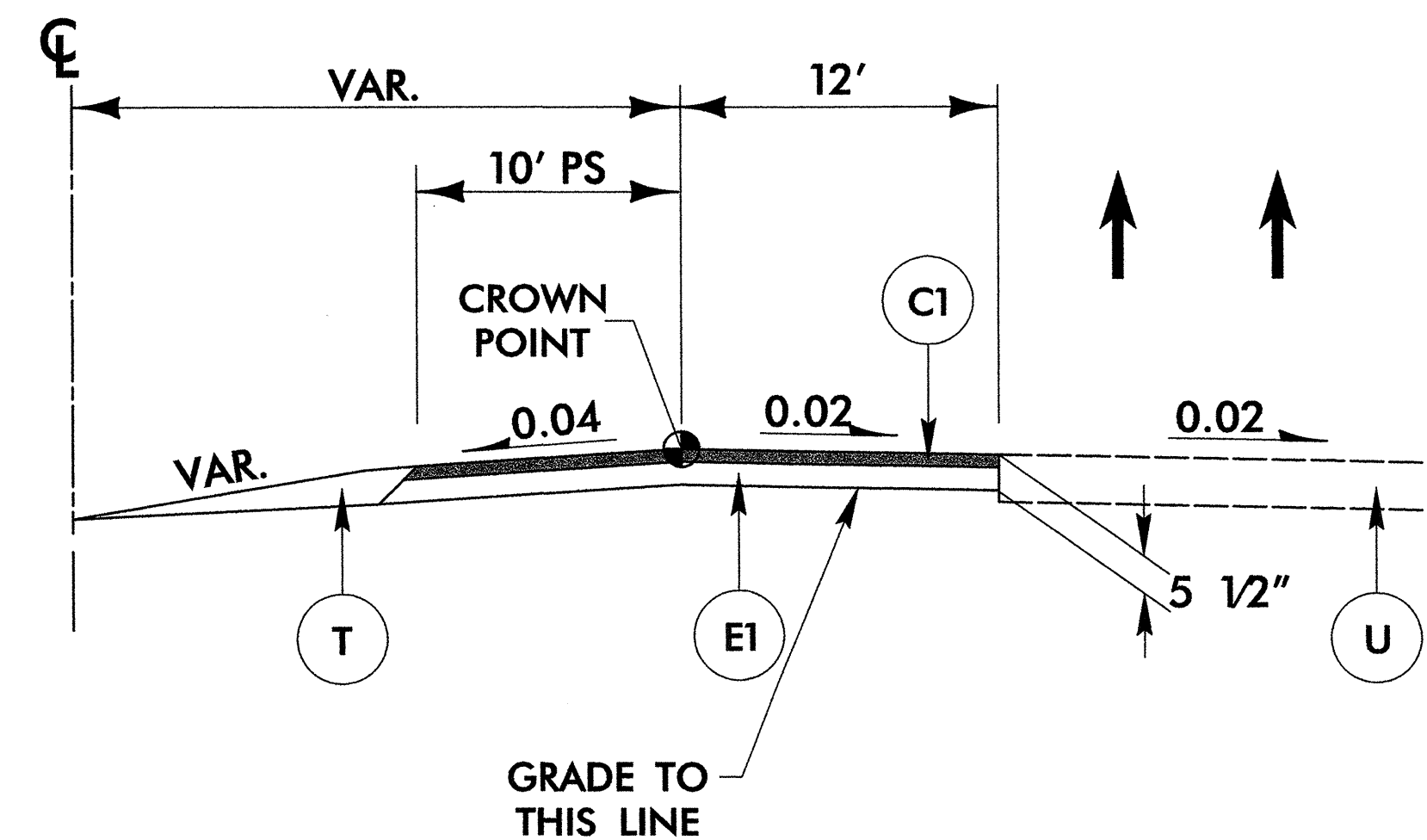
PROJECT REFERENCE NO. U-4756	SHEET NO. 2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER PAVEMENT
	
8/1/07	8/1/07



DETAIL SHOWING METHOD OF WEDGING 1

USE IN CONJUNCTION WITH TYPICAL SECTION NOS. 1 THRU 6

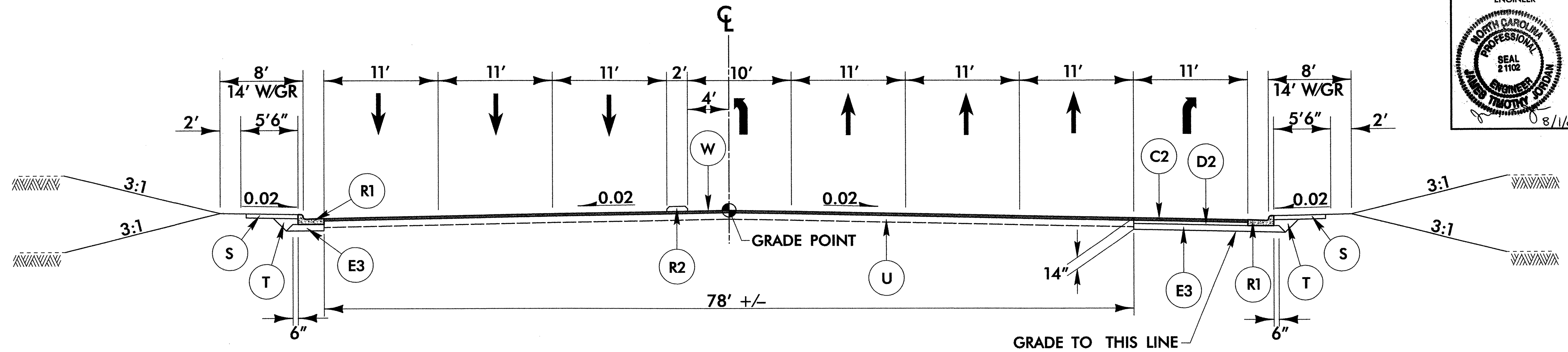
- ** D1 (-RPA- & -RPD-)
- ** D2 (-L- & -Y3-)
- ** NO INTERMEDIATE COURSE (-RPB- & -RPC-)



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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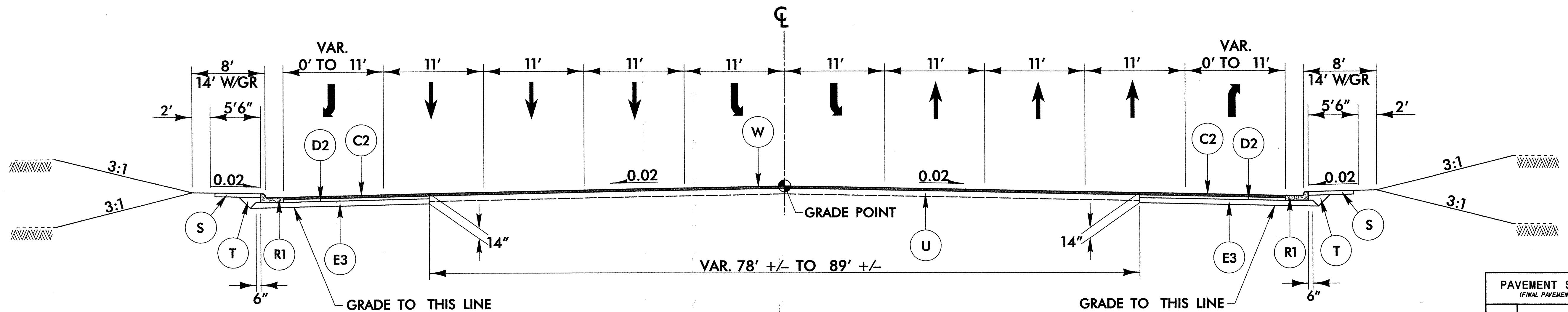
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1
AT THE FOLLOWING LOCATIONS

-L- STA. 28+92.30 TO STA. 29+94.52

TRANSITION FROM EXISTING TO TYPICAL NO. 1

-L- STA. 27+92.30 TO STA. 28+92.30



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2
AT THE FOLLOWING LOCATIONS

-L- STA. 33+94.52 TO STA. 38+55.59

-L- STA. 51+01.68 TO STA. 54+59.77

TRANSITION FROM TYPICAL NO. 1 TO TYPICAL NO. 2

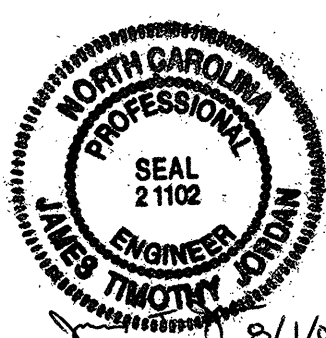
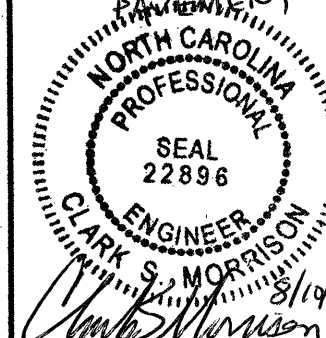
-L- STA. 29+94.52 TO STA. 33+94.52

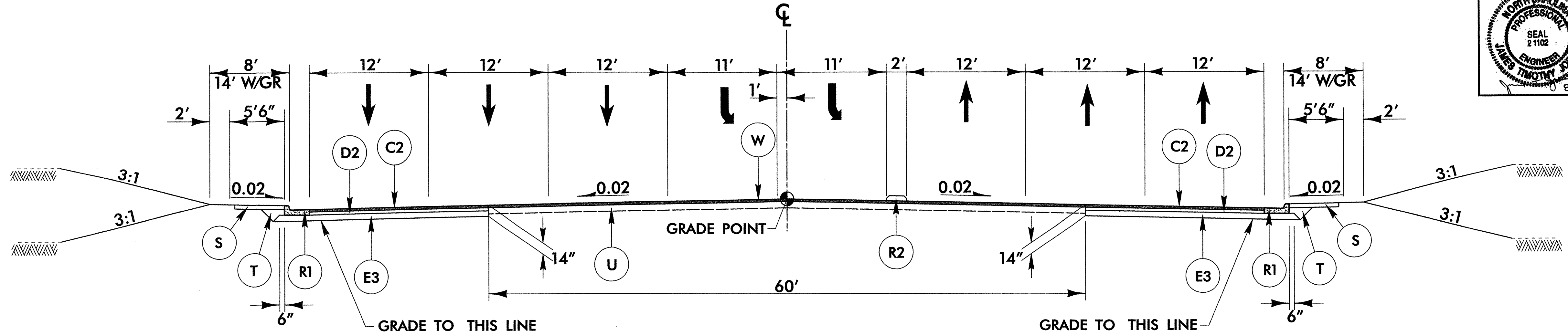
TRANSITION FROM TYPICAL NO. 3 TO TYPICAL NO. 2

-L- STA. 49+41.68 TO STA. 51+01.68

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C2	3" S9.5C
D2	4" I19.0C
E3	7" B25.0C
R1	2'-6" C & G
R2	CONCRETE ISLAND
S	SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING

8/17/99

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



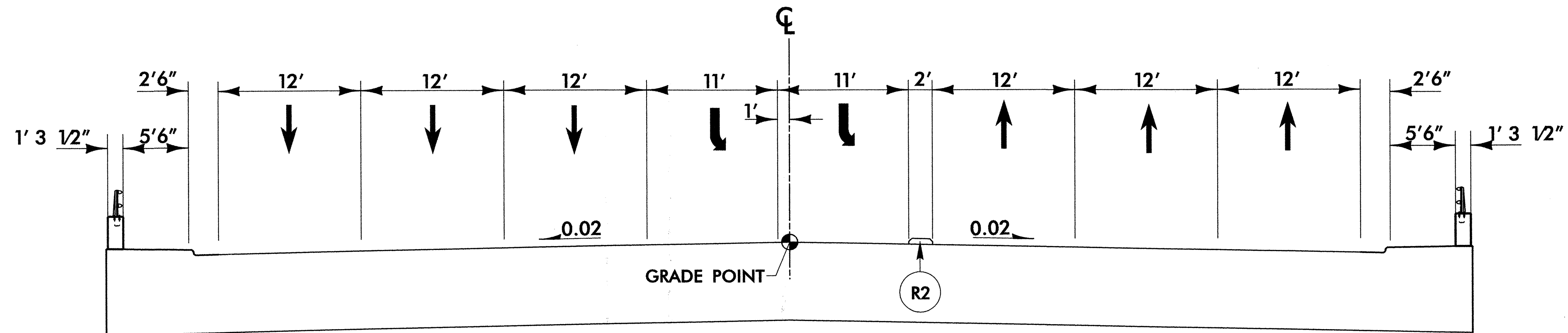
TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3
AT THE FOLLOWING LOCATIONS

- L- STA. 40+15.59 TO STA. 43+67.18 (BEGIN BRIDGE)
- L- STA. 46+10.52 (END BRIDGE) TO STA. 49+41.68

TRANSITION FROM TYPICAL NO. 2 TO TYPICAL NO. 3

- L- STA. 38+55.59 TO STA. 40+15.59




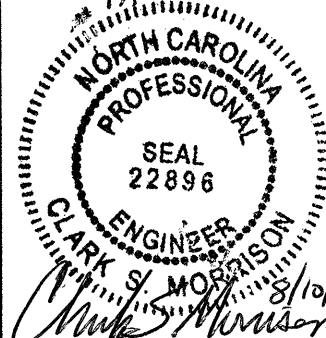
DETAIL OF BRIDGE

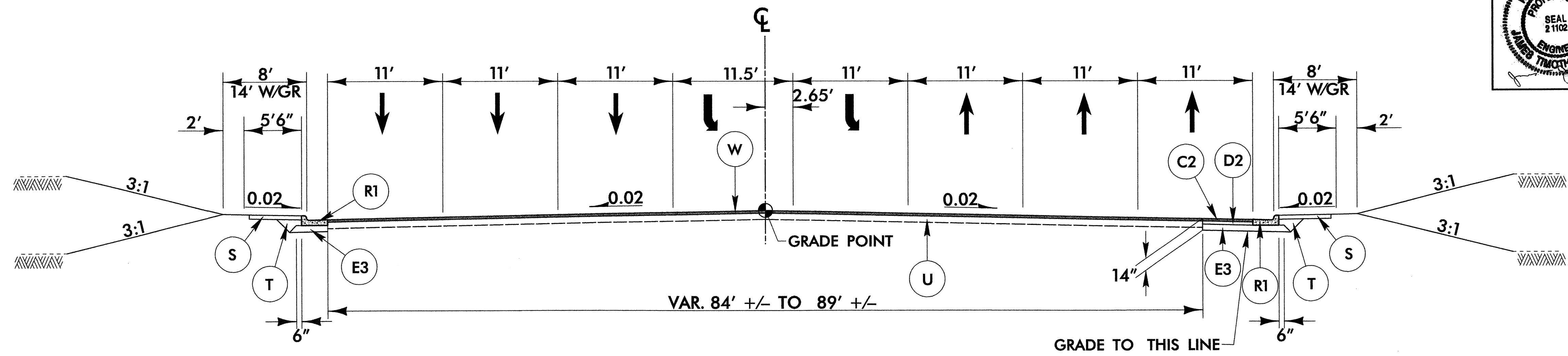
-L- STA 43+67.18 TO STA 46+10.52

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C2	3" S9.5C
D2	4" I19.0C
E3	7" B25.0C
R1	2'-6" C & G
R2	CONCRETE ISLAND
S	SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING

7/26/2007 11:41:00 AM Proj: U-4756.RDY_TYP.dgn

8/17/99

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



TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4
AT THE FOLLOWING LOCATIONS

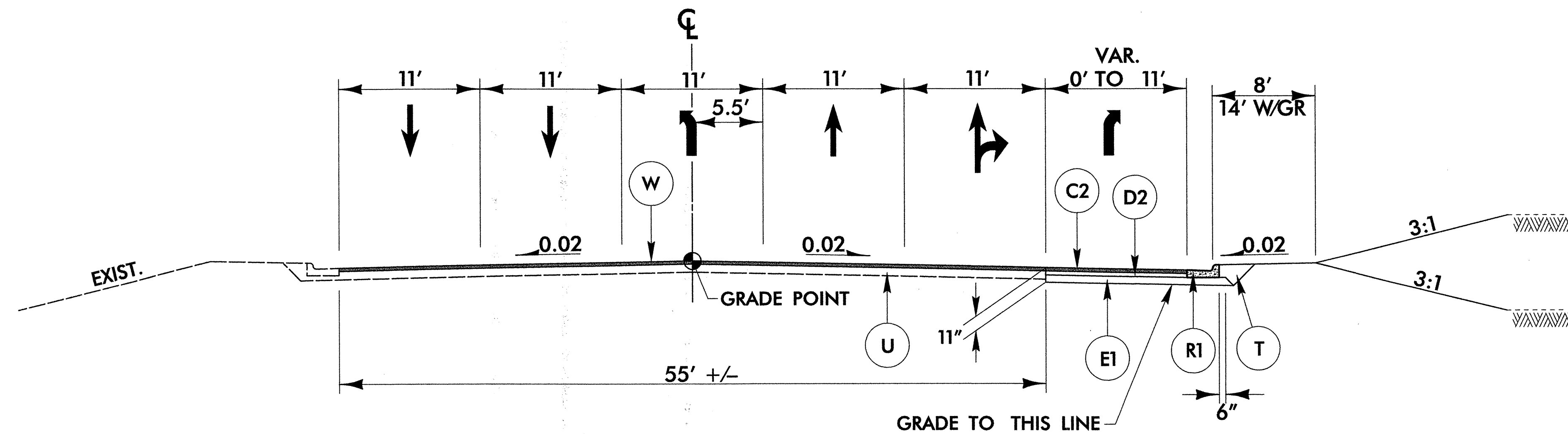
-L- STA. 56+09.77 TO STA. 58+50.00

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

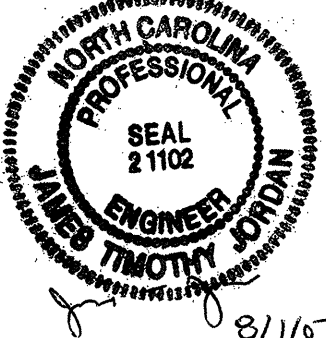
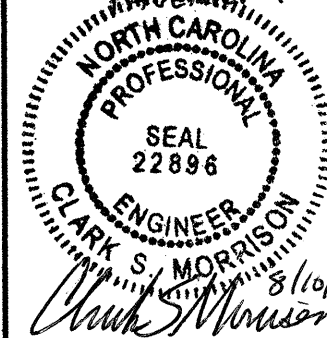
-Y3- STA. 13+00.00 TO STA. 13+67.41

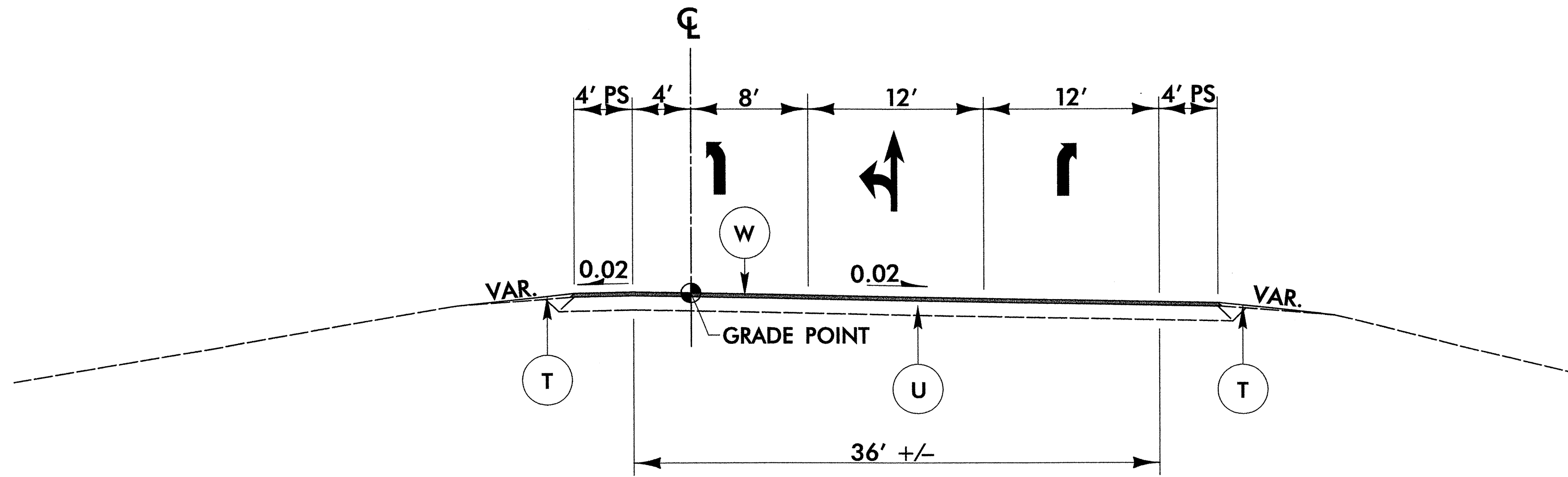
-Y3- STA. 10+00.00 TO STA. 13+00.00 (OVERLAY WITH C1)

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

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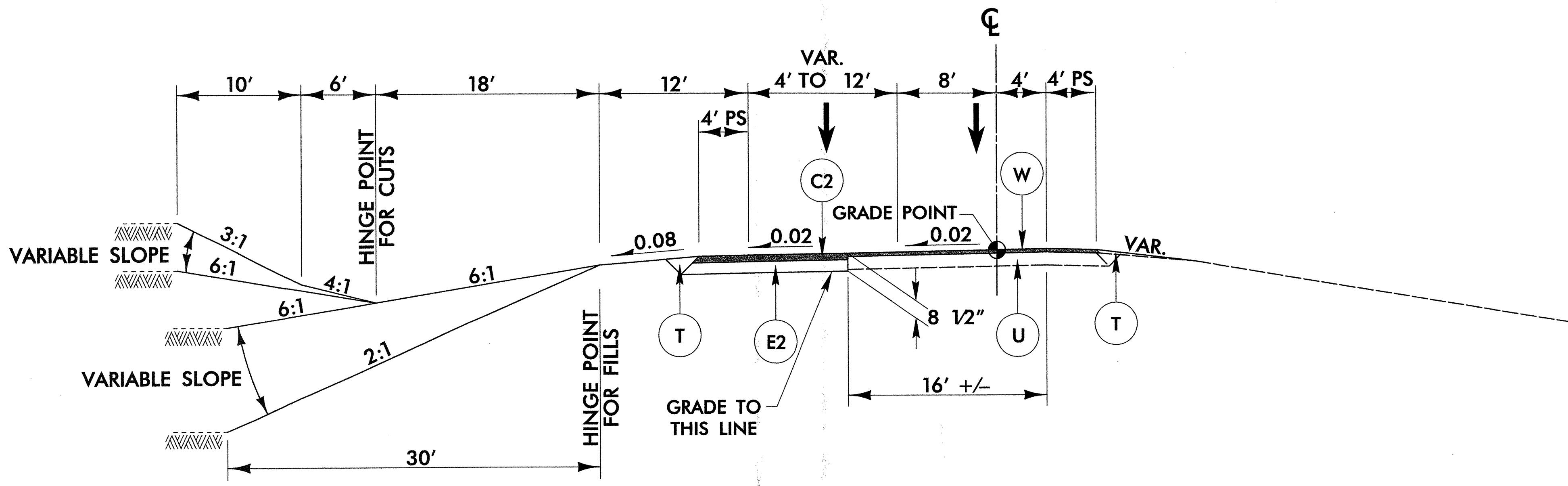
8/17/99

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



TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6
AT THE FOLLOWING LOCATIONS
-RPA- STA. 10+00.00 TO STA. 11+95.94

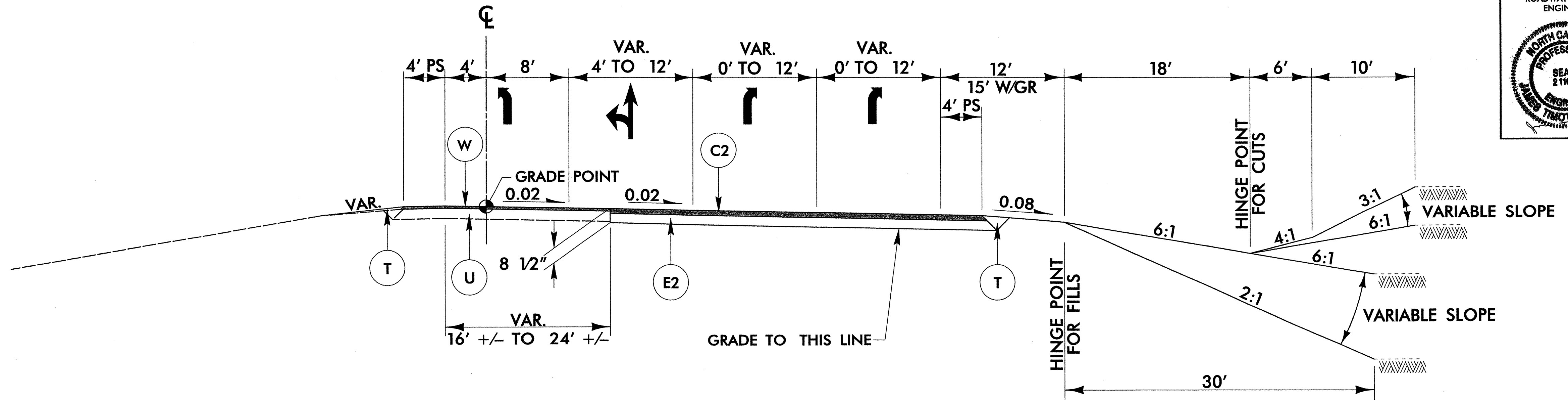


TYPICAL SECTION NO. 7

USE TYPICAL SECTION NO. 7
AT THE FOLLOWING LOCATIONS
-RPB- STA. 18+50.00 TO STA. 19+47.77
-RPA- 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
E2	5 1/2" B25.0C
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING

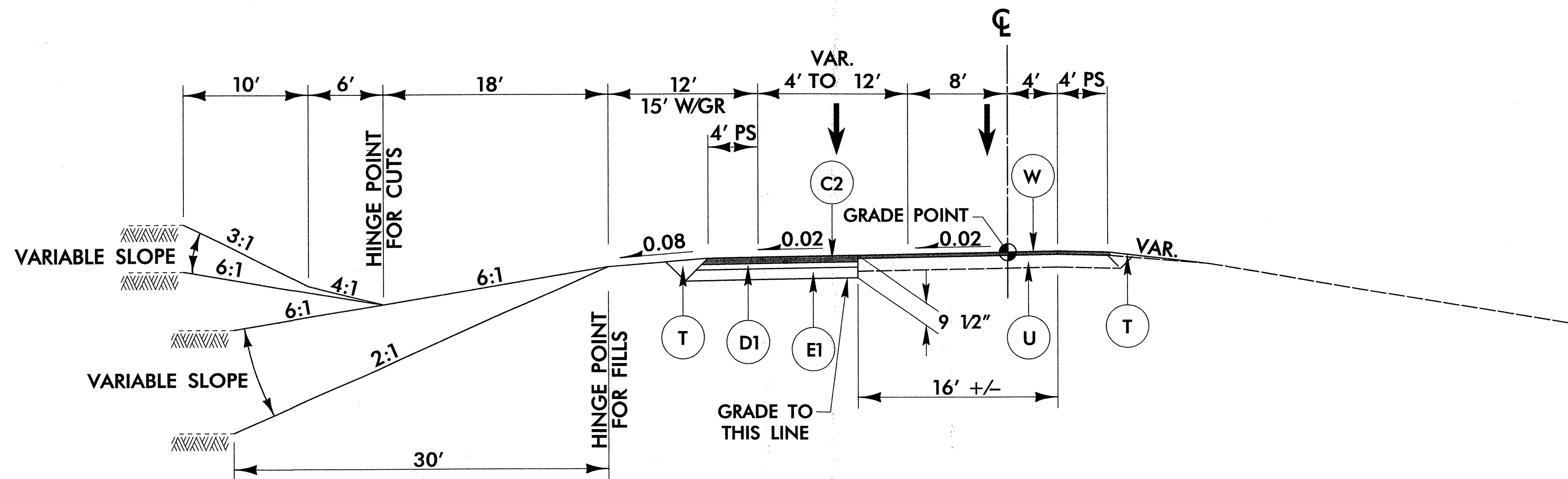
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TYPICAL SECTION NO. 8

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	1½" S9.5C
C2	3" S9.5C
D1	2½" I19.0C
E1	4" B25.0C
E2	5½" B25.0C
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING

8/17/99

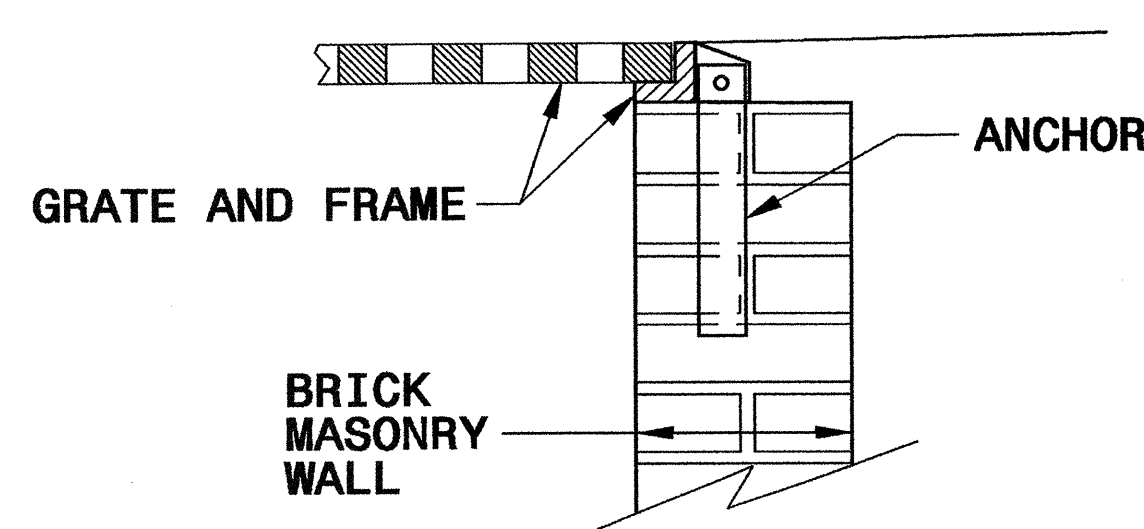
PROJECT REFERENCE NO. U-4756	SHEET NO. 2-F
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PROJECT REFERENCE NO.	SHEET NO.
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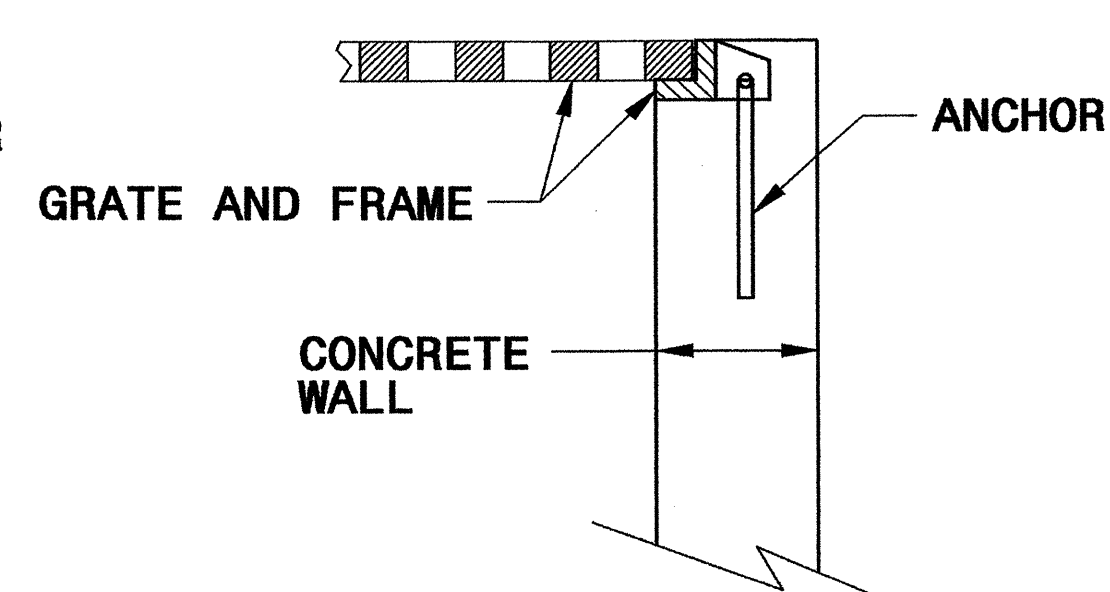
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

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

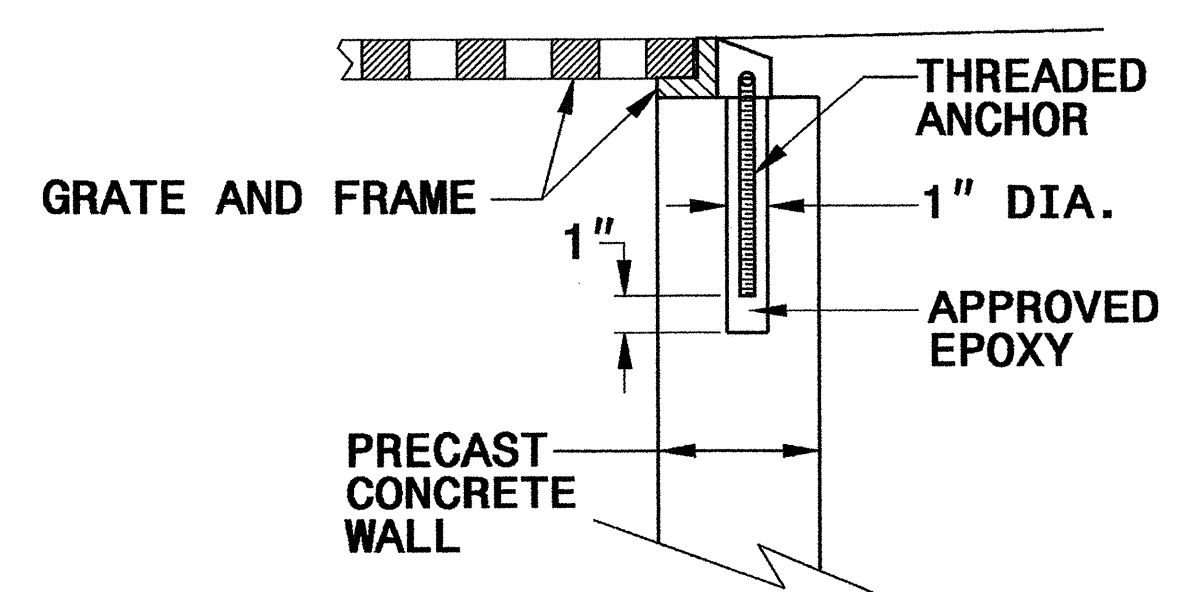
SHEET 1 OF 1
840D25



BRICK MASONRY CONSTRUCTION



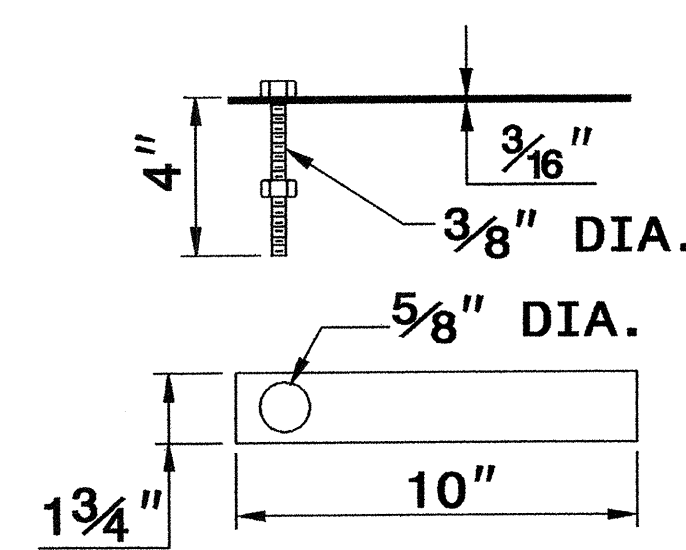
CONCRETE CONSTRUCTION



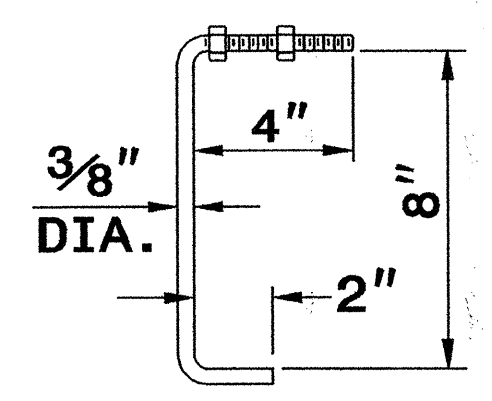
PRECAST CONCRETE CONSTRUCTION

DETAIL SHOWING ANCHORAGE OF FRAME FOR GRATED DROP INLET

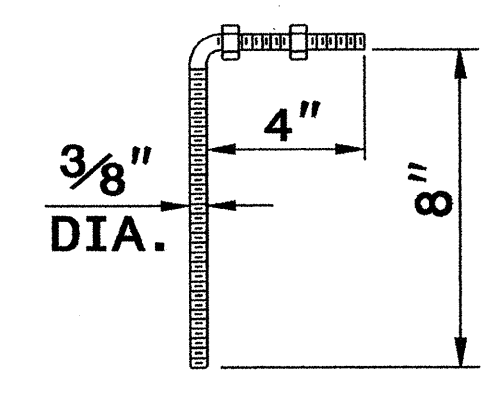
NOTE:
CONSTRUCT GRATED DROP INLET TO COINCIDE WITH NORMAL OR SUPERELEVATED SHOULDER OR PAVEMENT SLOPE.



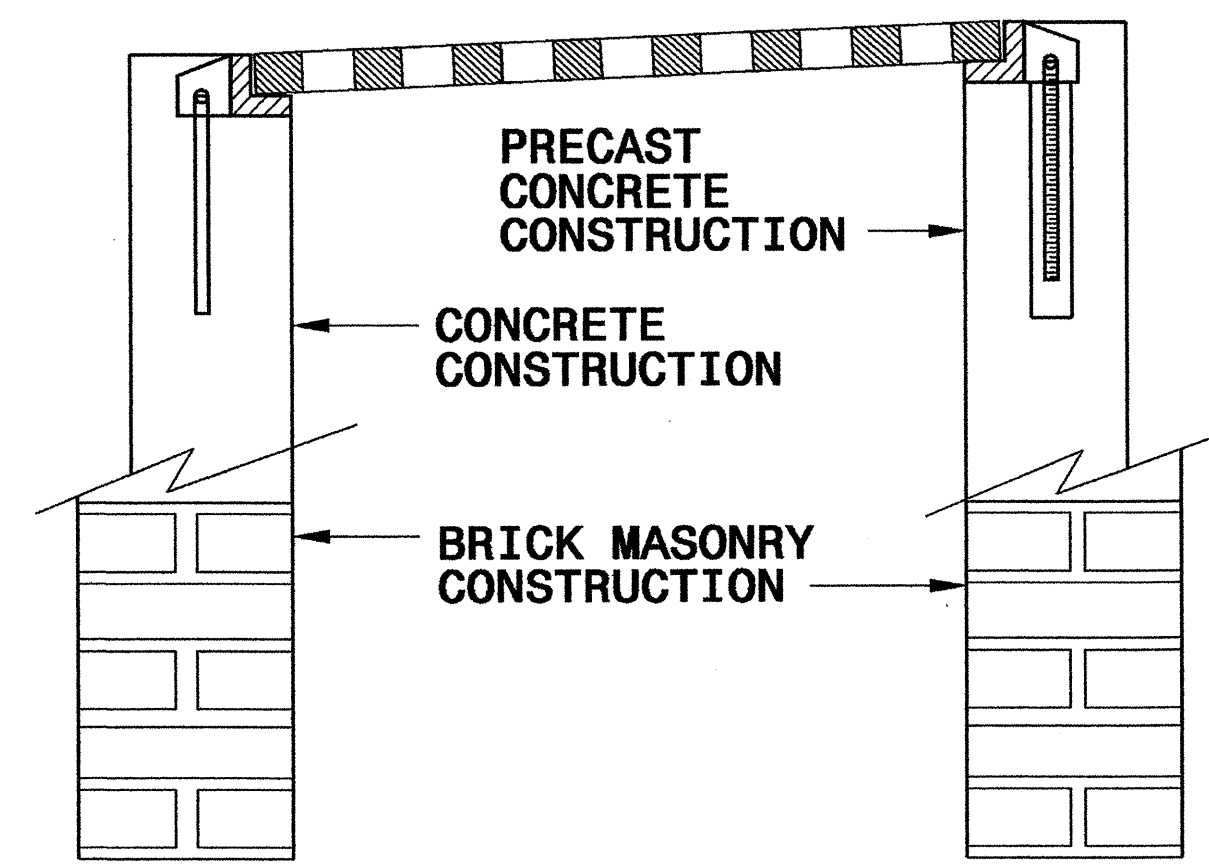
MASONRY ANCHOR
3/8" DIA. BOLT WITH PLATE



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

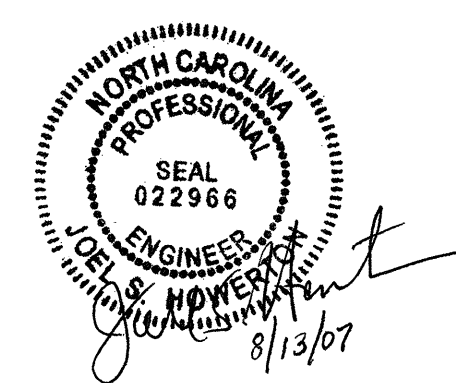
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

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

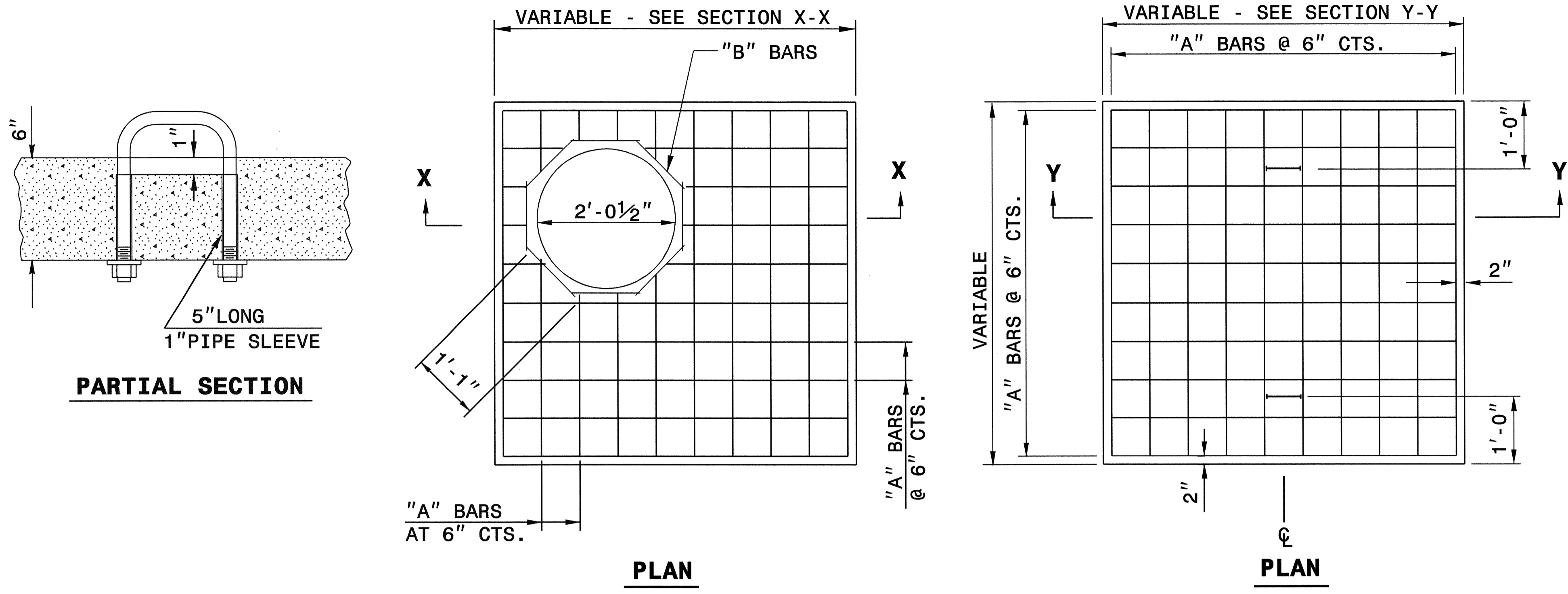
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840D25

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Special Details\Anchored\stds\06 Stds to Special Details\Anchored\stds\06 Stds to Special Details\Anchored for Frames\0840D25.dgn
A:\PS22233



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



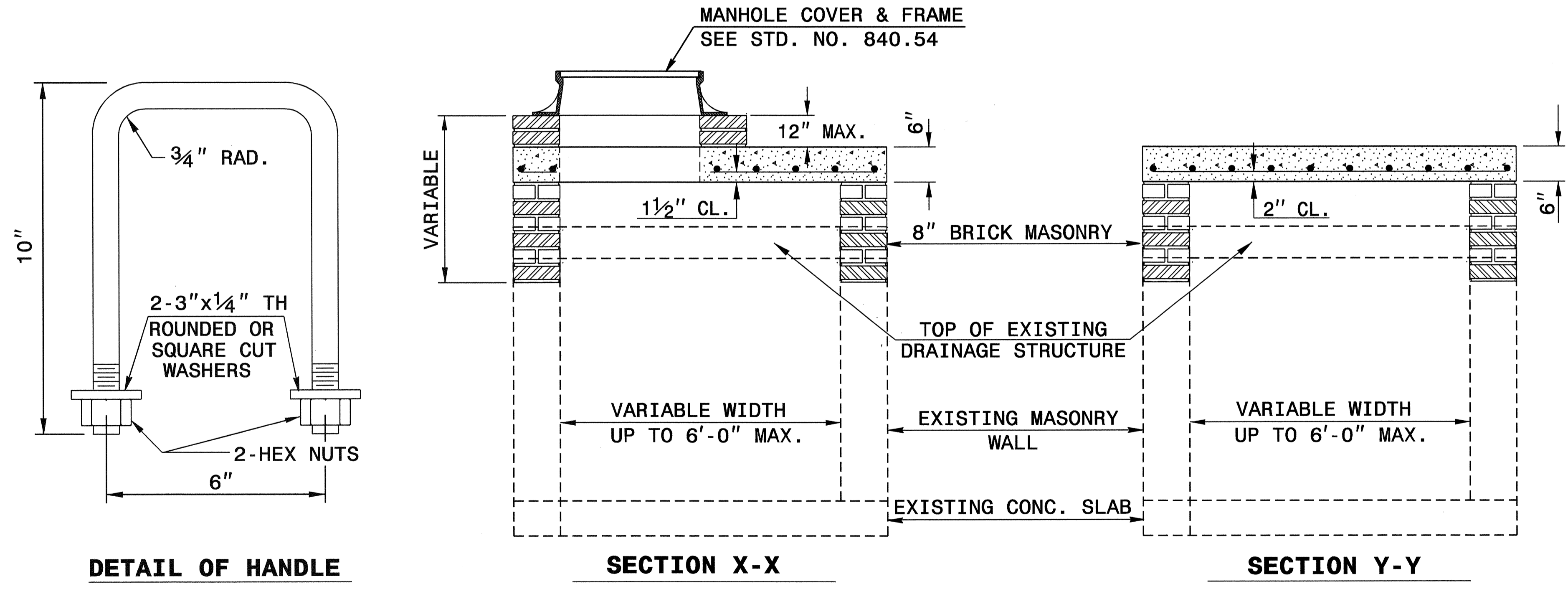
GENERAL NOTES:

CONSTRUCT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.

FIELD VERIFY THE DIMENSIONS FOR THE EXISTING BOXES

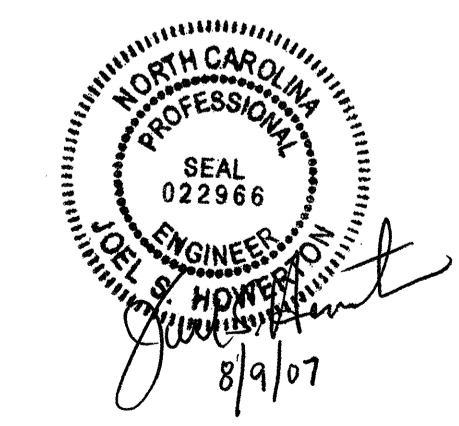
DETAIL INTENDED FOR NON-TRAFFIC BEARING DRAINAGE STRUCTURES.

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
TOTAL				65.91 *
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: *Joe S. Howerton* DATE: 8/7/07
 FILE SPEC.: \\usr\details\stand\boxtoibe.dgn

07-AUG-2007 08:12:58
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 jhowerton

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

Table with 12 columns: ItemNumber, Sec #, Quantity, Unit, Description, ItemNumber, Sec #, Quantity, Unit, Description, ItemNumber, Sec #, Quantity, Unit, Description. It lists various construction materials and services such as mobilization, surveying, guardrails, culverts, and pavement marking.

STATE OF NORTH CAROLINA SUMMARY OF QUANTITIES

ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description
6108000000-E	1665	10.5	TON	FERTILIZER TOPDRESSING	7613000000-N	SP	16	EA	SOIL TEST
6114000000-N	SP	2	HR	SPECIALIZED HAND MOWING	7614100000-E	SP	112	CY	DRILLED PIER FOUNDATION
6117000000-N	SP	8	EA	RESPONSE FOR EROSION CONTROL	7630000000-N	SP	2	EA	METAL STRAIN POLE DESIGN
7060000000-E	1705	4,450	LF	SIGNAL CABLE	7636000000-N	1745	17	EA	SIGN FOR SIGNALS
7120000000-E	1705	48	EA	VEHICLE SIGNAL HEAD (12", 3 SECTION)	7684000000-N	1750	6	EA	SIGNAL CABINET FOUNDATION
7144000000-E	1705	11	EA	VEHICLE SIGNAL HEAD (12", 5 SECTION)	7756000000-N	1751	2	EA	CONTROLLER WITH CABINET (TYPE 2070L, BASE MOUNTED)
7252000000-E	1710	4,090	LF	MESSENGER CABLE (1/4")	7780000000-N	1751	33	EA	DETECTOR CARD (TYPE 2070L)
7264000000-E	1710	1,900	LF	MESSENGER CABLE (3/8")	7901000000-N	1753	2	EA	CABINET BASE EXTENDER
7279000000-E	1715	350	LF	TRACER WIRE	7948000000-N	SP	2	EA	TRAFFIC SIGNAL REMOVAL
7300000000-E	1715	1,500	LF	UNPAVED TRENCHING (***** (1, 2"))	7960000000-N	SP	1	EA	METAL POLE FOUNDATION REMOVAL
7324000000-N	1716	31	EA	JUNCTION BOX (STANDARD SIZE)	7972000000-N	SP	1	EA	METAL POLE REMOVAL
7348000000-N	1716	4	EA	JUNCTION BOX (OVER-SIZED, HEAVY DUTY)	7980000000-N	SP	2	EA	GENERIC SIGNAL ITEM RELOCATE EXIST CCTV CABINET ASSEMBLY
7444000000-E	1725	7,550	LF	INDUCTIVE LOOP SAWCUT	7980000000-N	SP	2	EA	GENERIC SIGNAL ITEM RELOCATE EXIST SIGNAL CABINET & CONTROLLER ASSEMBLY
7456000000-E	1726	3,650	LF	LEAD-IN CABLE (***** (2 PAIR))	8035000000-N	402	Lump Sum		REMOVAL OF EXISTING STRUCTURE AT STATION ***** (44+88.35 -L-)
7481000000-N	SP	2	EA	SITE SURVEY	8105540000-E	SP	262	LF	3'-6" DIA DRILLED PIERS IN SOIL
7481200000-N	SP	8	EA	LUMINAIRE ARM FOR VIDEO SYSTEM	8105640000-E	SP	30	LF	3'-6" DIA DRILLED PIERS NOT IN SOIL
7481240000-N	SP	8	EA	CAMERA WITHOUT INTERNAL LOOP EMULATOR PROCESSING UNIT	8113000000-N	SP	4	EA	SID INSPECTION
7481260000-N	SP	2	EA	EXTERNAL LOOP EMULATOR PROCESSING UNIT	8114000000-N	SP	4	EA	SPT TESTING
7516000000-E	1730	4,500	LF	COMMUNICATIONS CABLE (**FIBER) (18)	8115000000-N	SP	4	EA	CROSSHOLE SONIC LOGGING
7528000000-E	1730	500	LF	DROP CABLE	8154000000-E	420	27,683	SF	REINFORCED CONCRETE DECK SLAB (SAND LIGHTWEIGHT CONC)
7540000000-N	1731	7	EA	SPLICE ENCLOSURE	8161000000-E	420	27,005	SF	GROOVING BRIDGE FLOORS
7564100000-N	1732	2	EA	FIBER-OPTIC TRANSCEIVER, SELF-HEALING RING	8182000000-E	420	233.5	CY	CLASS A CONCRETE (BRIDGE)
7566000000-N	1733	2	EA	DELINEATOR MARKER	8210000000-N	422	Lump Sum		BRIDGE APPROACH SLABS, STATION ***** (44+88.35 -L-)
7575160000-E	1734	4,100	LF	REMOVE EXISTING COMMUNICATIONS CABLE	8217000000-E	425	56,246	LB	REINFORCING STEEL (BRIDGE)
7576000000-N	SP	16	EA	METAL STRAIN SIGNAL POLE					

ItemNumber	Sec #	Quantity	Unit	Description
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
8436000000-E	453	7,947	SF	GRAVITY RETAINING WALLS
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-)

***** 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 *****				

8/17/99

COMPUTED BY: PJJ DATE: 4/24/07
 CHECKED BY: JJJ DATE: 8/30/07



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

DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA

GUARDRAIL SUMMARY

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

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH		W		ANCHORS						IMPACT ATTENUATOR TYPE 350			REMOVE EXISTING GUARDRAIL	REMARKS			
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	GRAU 350	TYPE III	CAT-1	AT-1	B-77	EA	G	NG						
-L-/-RPD-	34+55 -L-	10+00 -RPD-	RT /LT	1637.5'	62.5'		35+30 -L-	18+00 -RPD-	8' BERM /12'	14' BERM /15'																1495'	TIE TO EXISTING GUARDRAIL	
-L-/-RPC-	35+75 -L-	11+50 -RPC-	LT /RT	1000'	62.5'		12+75 -RPC-	35+75 -L-	8' BERM /12'	14' BERM /15'																405'		
-L-	42+10.24	43+60.24	RT	150'			43+60.24		8' BERM	14' BERM																230'		
-Y3-	22+52.50	24+97.50	MED	250'			23+15	24+35																		200'		
-L-	46+17.45	47+67.45	LT	150'			46+17.45		8' BERM	14' BERM																230'		
-RPA-/-L-	10+00 -RPA-	54+59.77 -L-	RT /RT	675'	75'		10+00 -RPA-	54+59.77 -L-	12' /8' BERM	15' /14' BERM																645'	TIE TO EXISTING GUARDRAIL	
-L-/-Y3-	49+50 -L-	13+05 -Y3-	LT /RT	487.5'	62.5'		54+35 -L-	49+50 -L-	8' BERM	14' BERM																530'		
PROJECT TOTAL				4350'	262.5'																					240'	3735'	
LESS ANCHOR DEDUCTIONS																												
GRAND TOTAL				4012.5'	262.5'																						240'	3735'

**SUMMARY OF EARTHWORK
 IN CUBIC YARDS**

**SUMMARY OF PAVEMENT REMOVAL
 IN SQUARE YARDS**

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
-L- 27+92.30 TO 43+67.18	1033		14079	13046	
-RPC- 10+00.00 TO 17+61.75	504		1675	1171	
-RPD- 10+00.00 TO 21+00.30	340		1228	888	
SUBTOTAL	1877		16982	15105	
-L- 46+10.52 TO 59+50.00	679		10979	10300	
-RPA- 10+00.00 TO 11+95.94			155	155	
-RPB- 10+00.00 TO 19+47.77	220		603	383	
-Y3- 10+00.00 TO 13+67.41	222		3		219
-Y5- 21+00.00 TO 26+50.00	232		250	18	
SUBTOTAL	1353		11990	10856	219
TOTAL	3230		28972	25961	219
LOSS DUE TO CLEARING AND GRUBBING					
EST. SHOULDER MATERIAL					
WASTE TO REPLACE BORROW				-219	-219
PROJECT TOTAL	3230		28972	25742	0
5% TO REPLACE BORROW				1290	
GRAND TOTAL	3230			27032	
SAY	3400			27400	

LOCATION	ASPHALT REMOVAL	ASPHALT BREAK UP	CONCRETE REMOVAL	CONCRETE BREAK UP
-L- 35+00 LT	151			
-L- 54+95 RT	61			
TOTAL	212			
SAY	225			

NOTE: Earthwork quantities are calculated by the Roadway Design Unit.

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



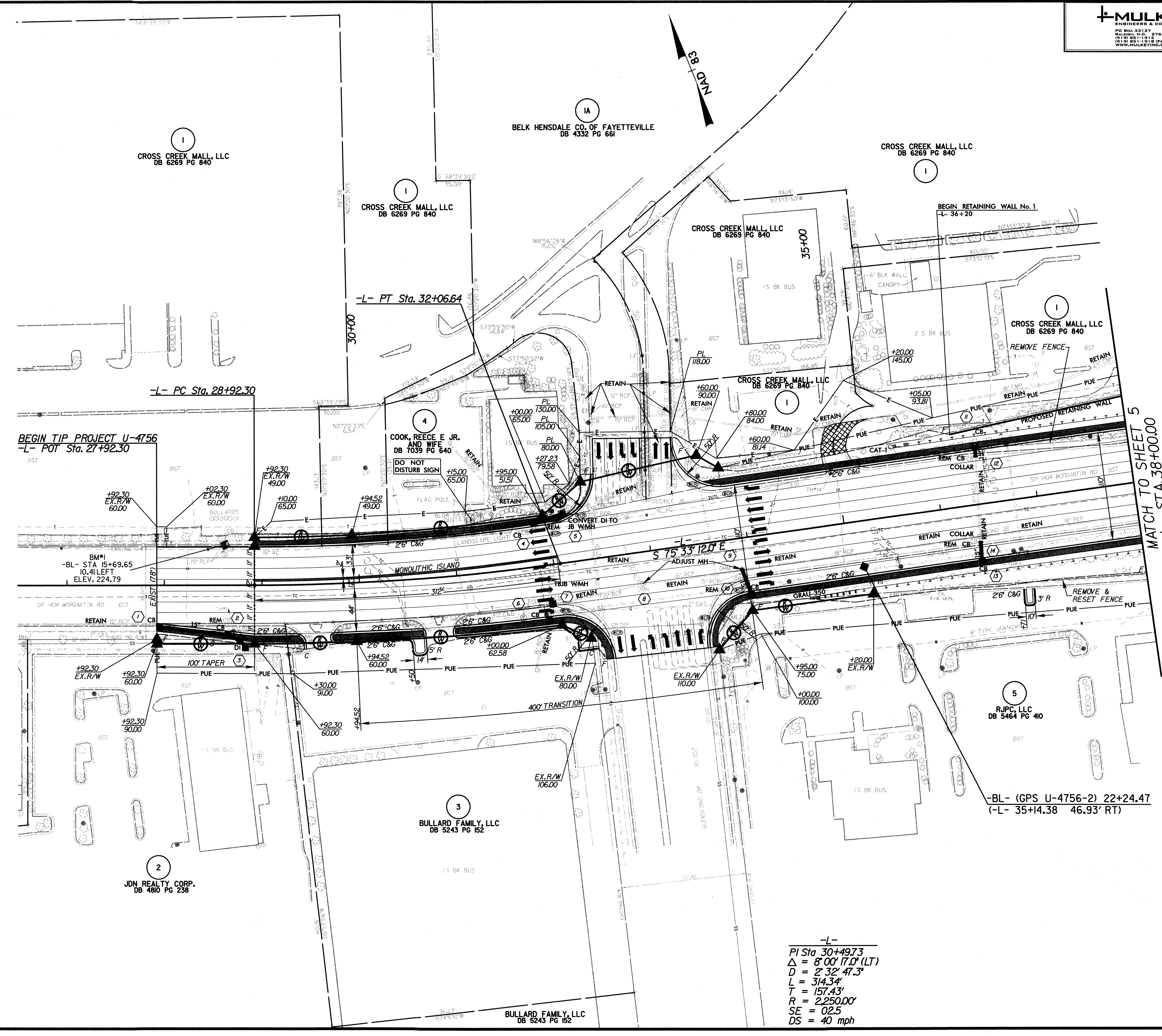
LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 54" & OVER)

STATION	LOCATION (L, RT, OR CI)		STRUCTURE NO.		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	CLASS IV R.C. PIPE (UNLESS NOTED OTHERWISE)						BITUMINOUS COATED C.S. PIPE TYPE A				STRUCTURAL PLATE PIPE			REINFORCED ENDWALLS		MASONRY DRAINAGE STRUCTURES CUBIC YARDS	REINF. CONC. FLARED END SECTIONS NO. & SIZE	CORR. STEEL FLARED END SECTIONS NO. & SIZE	REINF. CONC. ELBOWS NO. & SIZE	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	PIPE REMOVAL LIN. FT.	REMARKS					
	SIZE	THICKNESS OR GAUGE	FROM	TO					54"	60"	66"	72"	78"	84"	54"	60"	66"	72"	60"	66"	72"	WITH R.C. - C.Y.	WITH C.S. - C.Y.													
39+89 -L-	LT		15																									3.1307								
39+89 -L-	LT		15	16		214.8	215.0						24																	REMOVE HW						
39+98 -L-	LT		17																										3.1307							
39+98 -L-	LT		17	18		214.8	215.0						24																							
39+95 -L-	RT		19																										3.1307							
39+95 -L-	RT		19	20		214.2	214.1						34																	REMOVE HW						
40+01 -L-	RT		21																										3.1307							
40+01 -L-	RT		21	22		214.2	214.1						34																							
SHEET TOTAL														116																	17.4		12.5228			
PROJECT TOTAL														116																				17.4		17.4644
SAY																																	18		18	

6/21/00
 6/26/2007
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FOR -L- PROFILE SEE SHEET 7
FOR RETAINING WALL SEE SHEET W-1

8/17/99
8/10/2007
C:\p\proj\proj\U-4756.RDY_PSH4.dgn
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REVISIONS

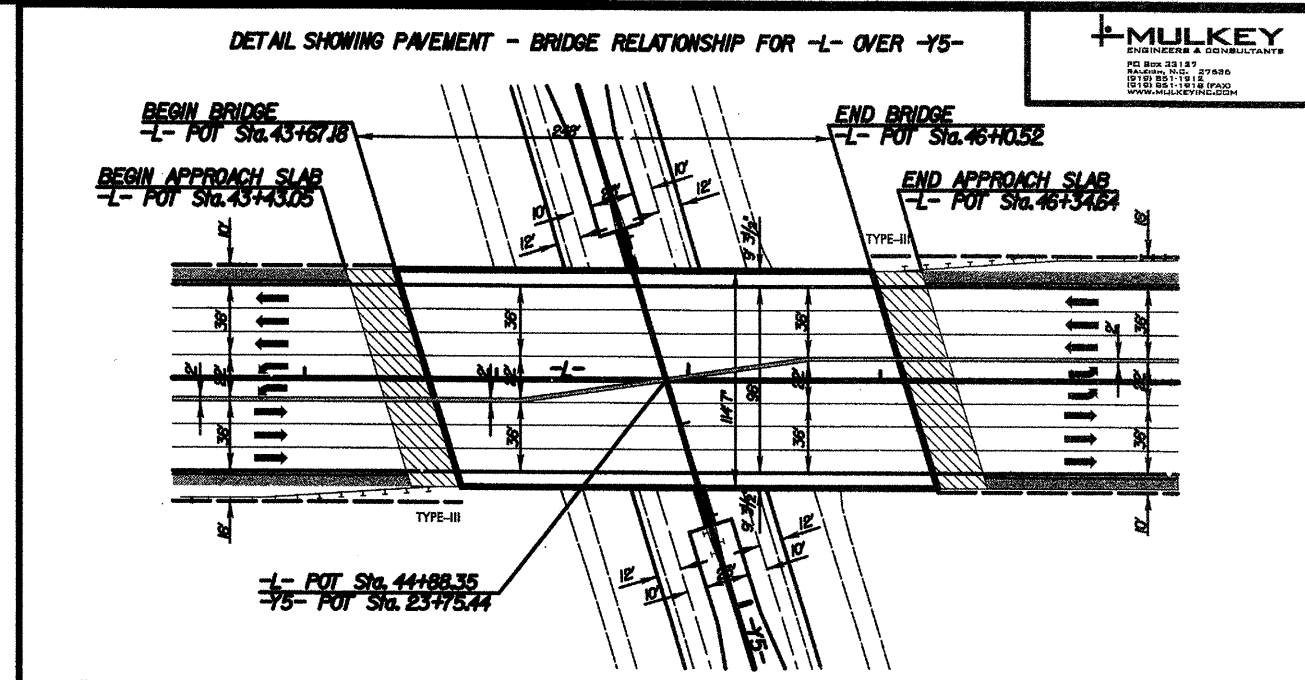
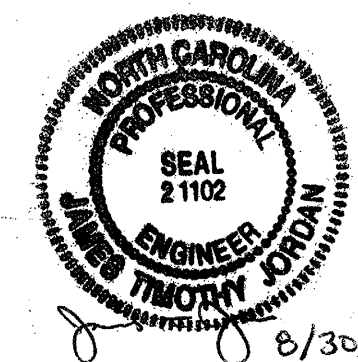
MATCH TO SHEET 5
-L- STA. 38+00.00

-L-
PI Sta 30+49.73
 $\Delta = 8^{\circ} 00' 17.0''$ (LT)
D = 2' 32' 47.3"
L = 314.34'
T = 157.43'
R = 2,250.00'
SE = 02.5
DS = 40 mph

REVISIONS

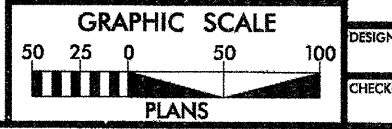
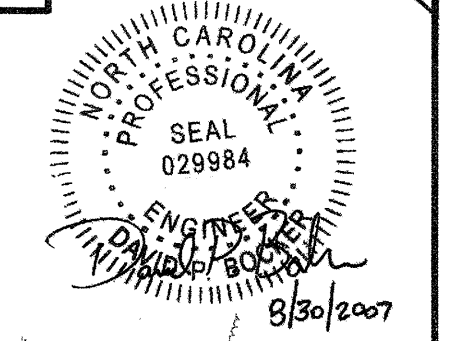
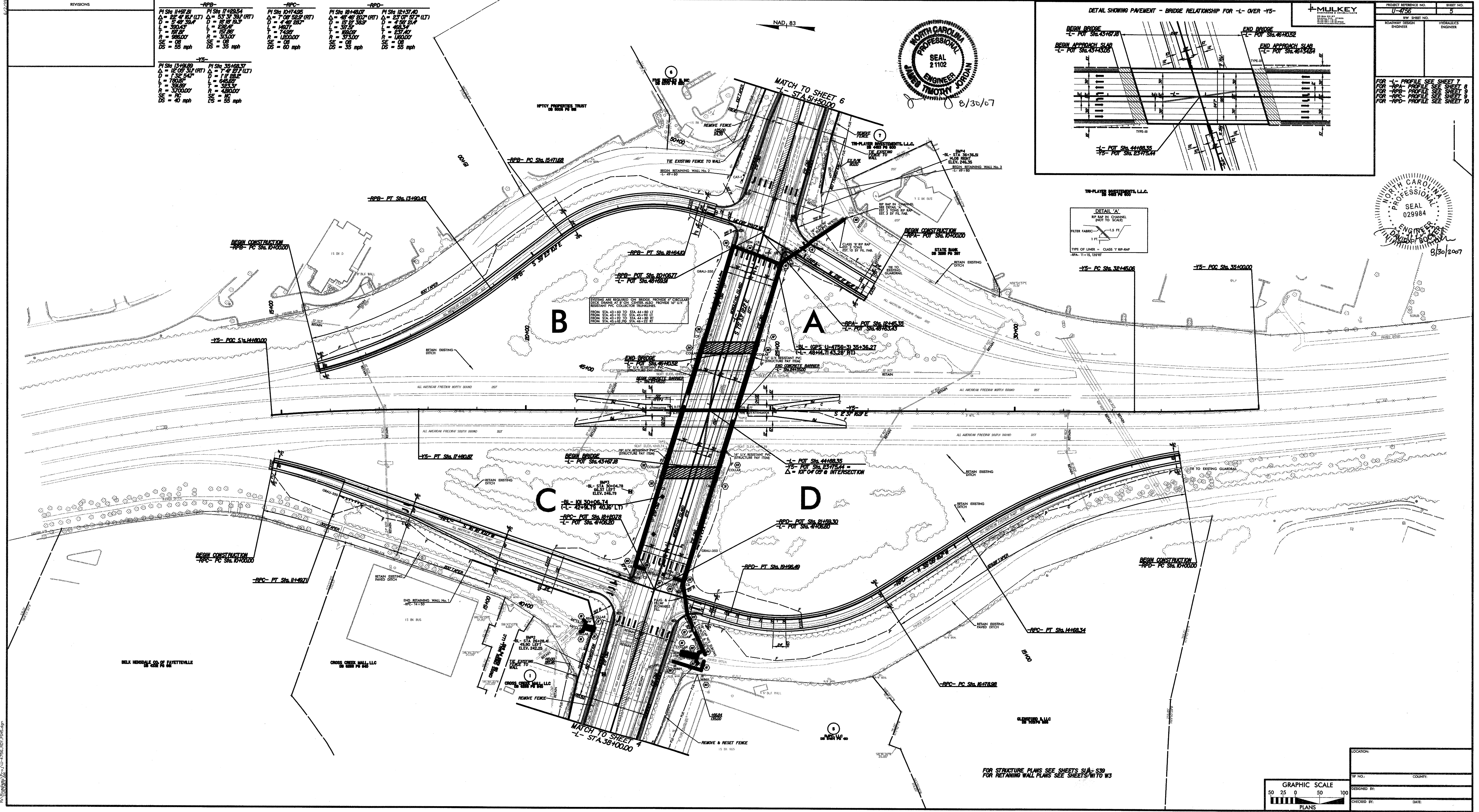
NO. <th>DATE <th>DESCRIPTION </th></th>	DATE <th>DESCRIPTION </th>	DESCRIPTION
1	8/30/07	ISSUED FOR PERMITS

NO.	DATE	DESCRIPTION
1	8/30/07	ISSUED FOR PERMITS



PROJECT REFERENCE NO.	SHEET NO.
U-728	9

NO.	DATE	DESCRIPTION
1	8/30/07	ISSUED FOR PERMITS



NO.	DATE	DESCRIPTION
1	8/30/07	ISSUED FOR PERMITS

FOR STRUCTURE PLANS SEE SHEETS SJA-530
FOR RETAINING WALL PLANS SEE SHEETS W10-W13

8/17/99



PROJECT REFERENCE NO. U-4756	SHEET NO. 6
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	SEAL 029984

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

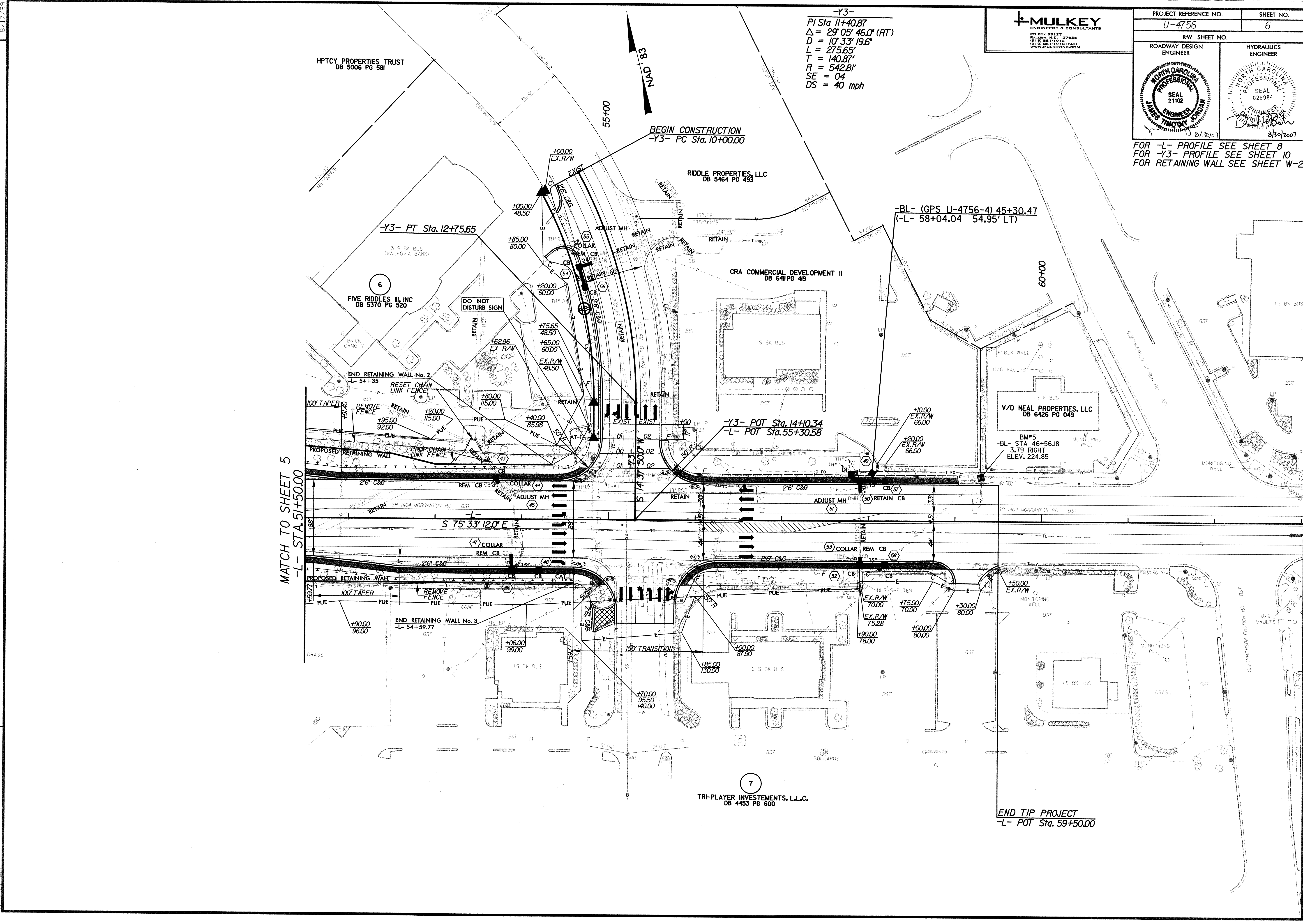
FOR -L- PROFILE SEE SHEET 8
 FOR -Y3- PROFILE SEE SHEET 10
 FOR RETAINING WALL SEE SHEET W-2

REVISIONS

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

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

8/30/2007
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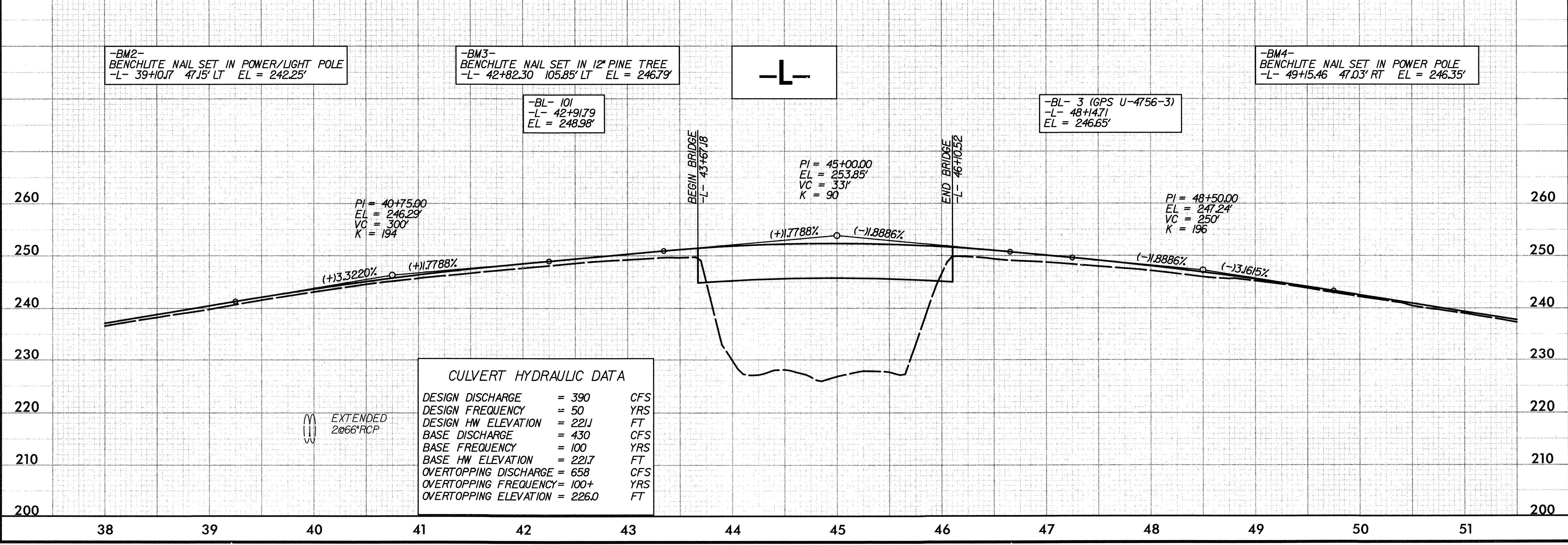
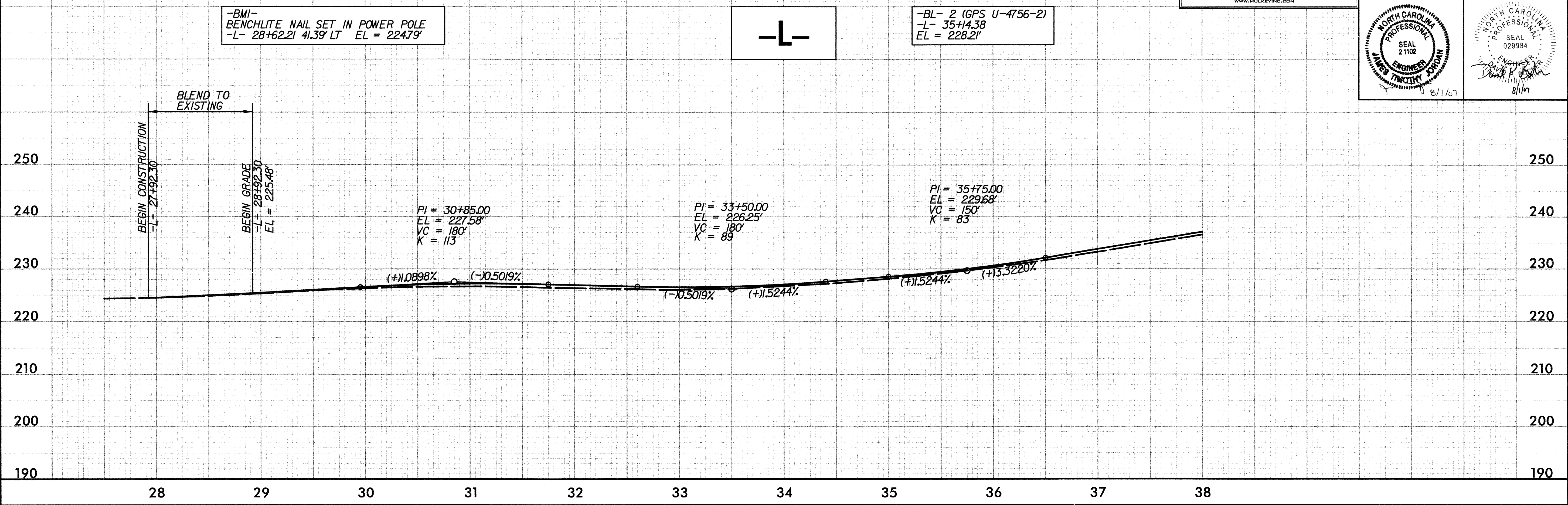


7
 TRI-PLAYER INVESTMENTS, L.L.C.
 DB 4453 PG 600

5/28/99

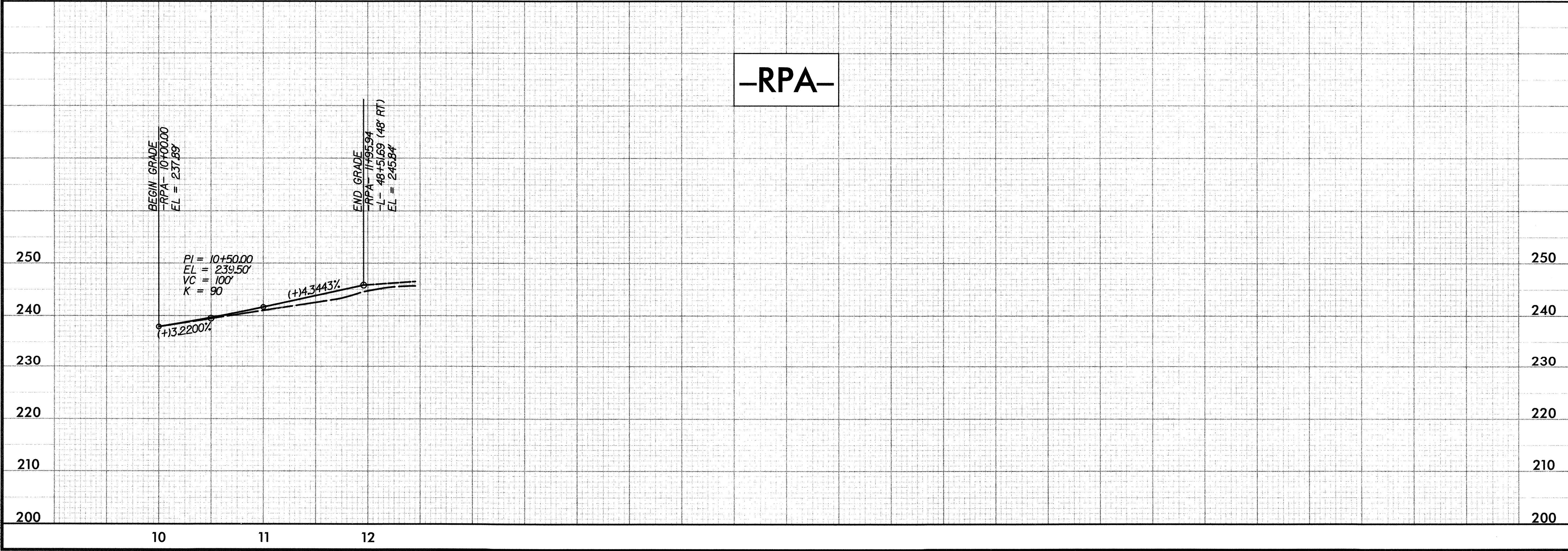
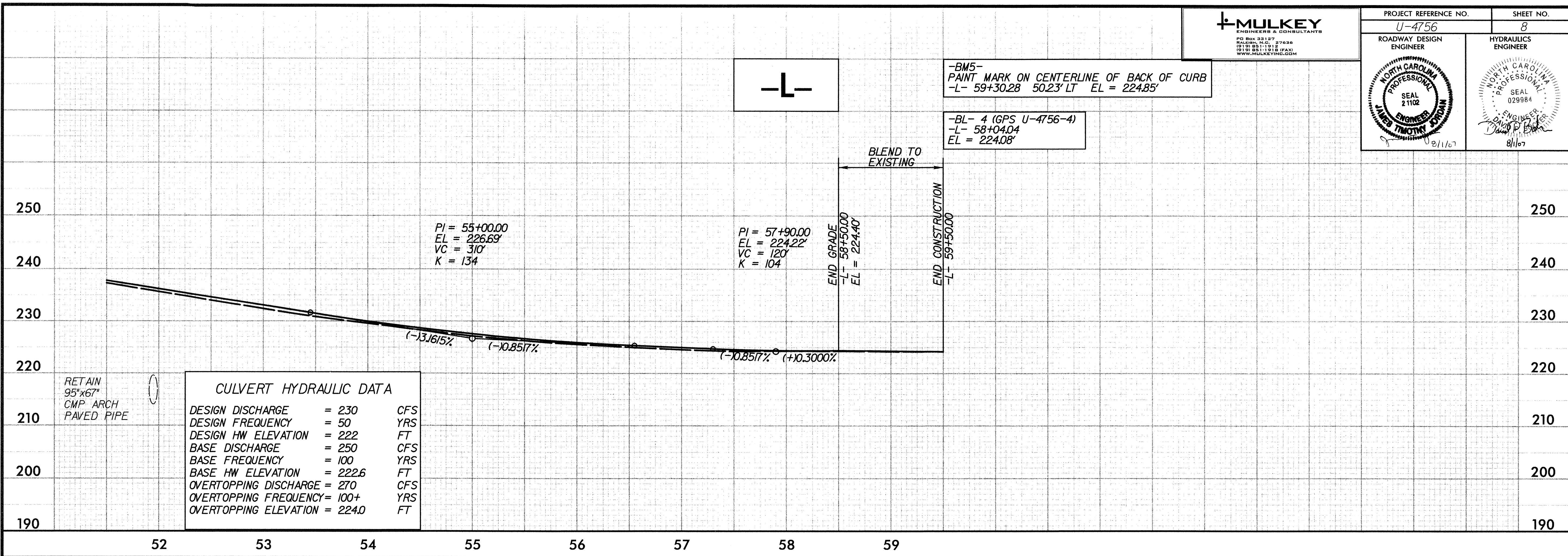


PROJECT REFERENCE NO. U-4756	SHEET NO. 7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
8/1/07	8/1/07



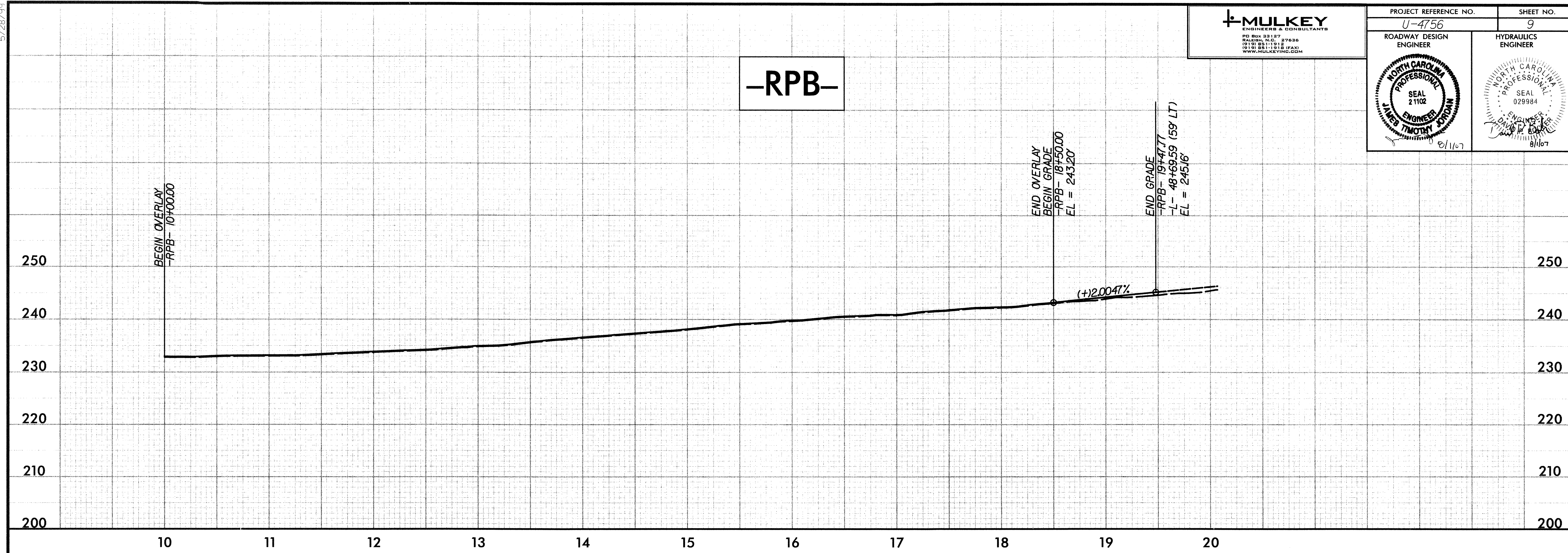
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5/28/99

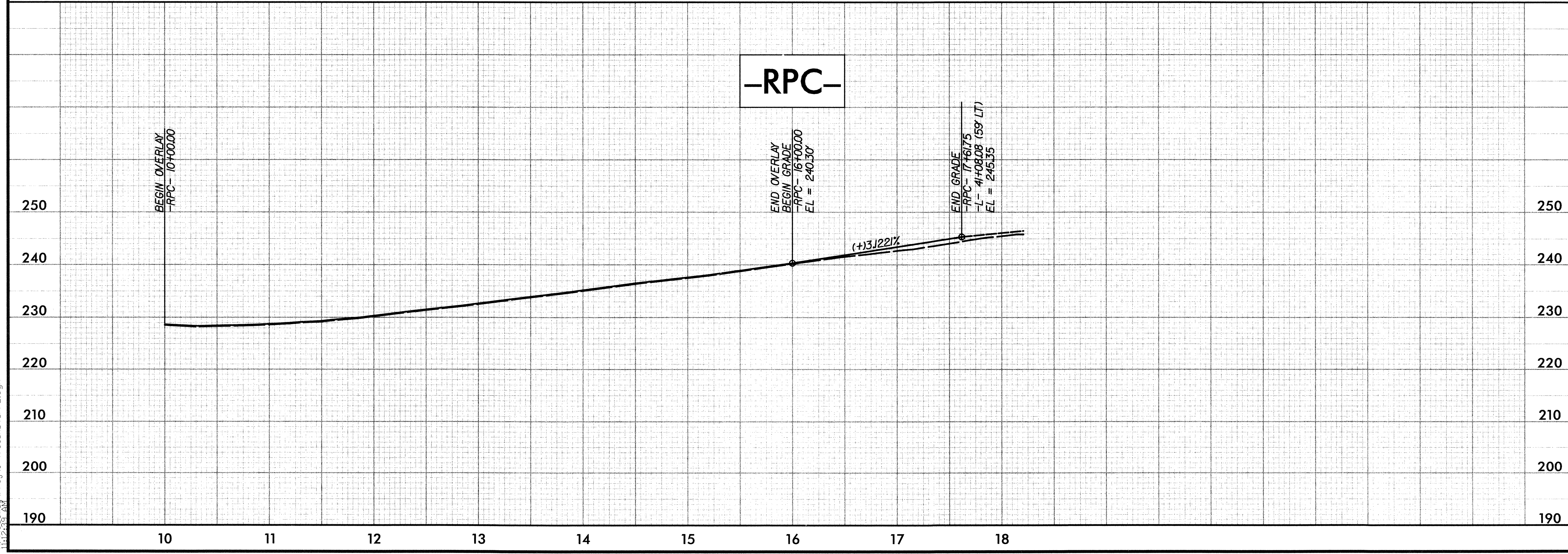


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11:23:22 AM

-RPB-


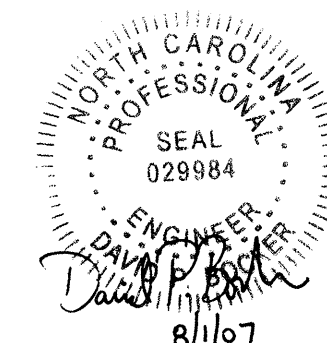


-RPC-

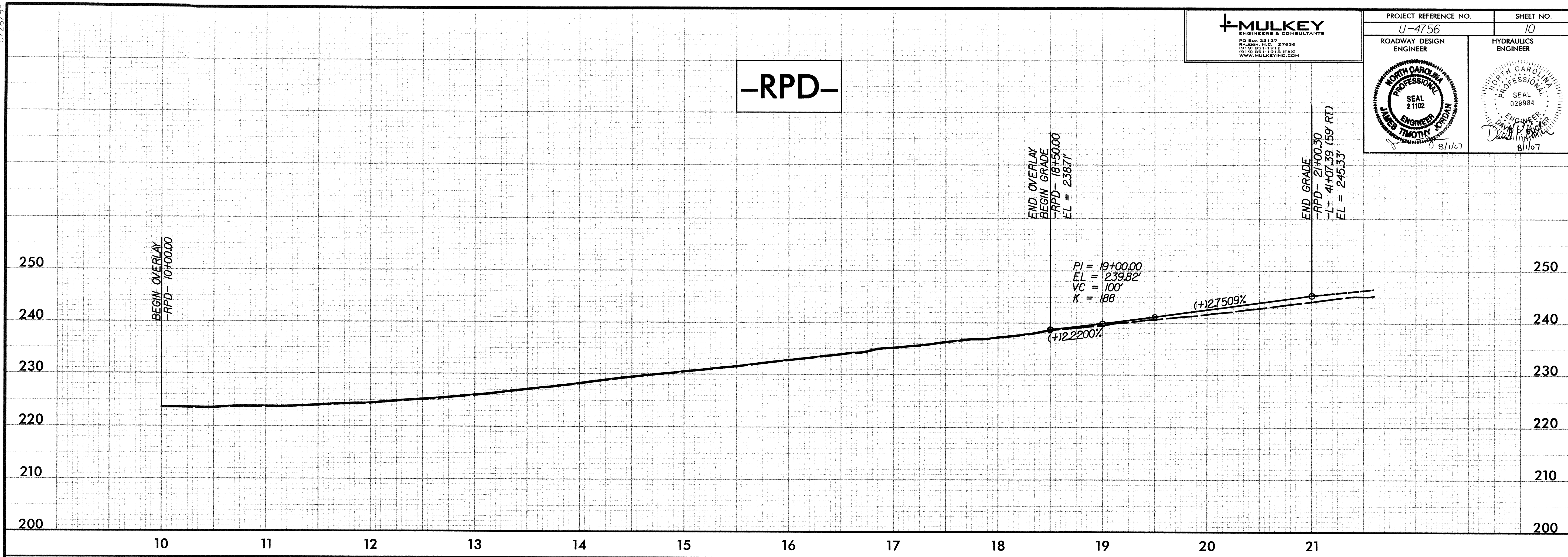


5/28/99

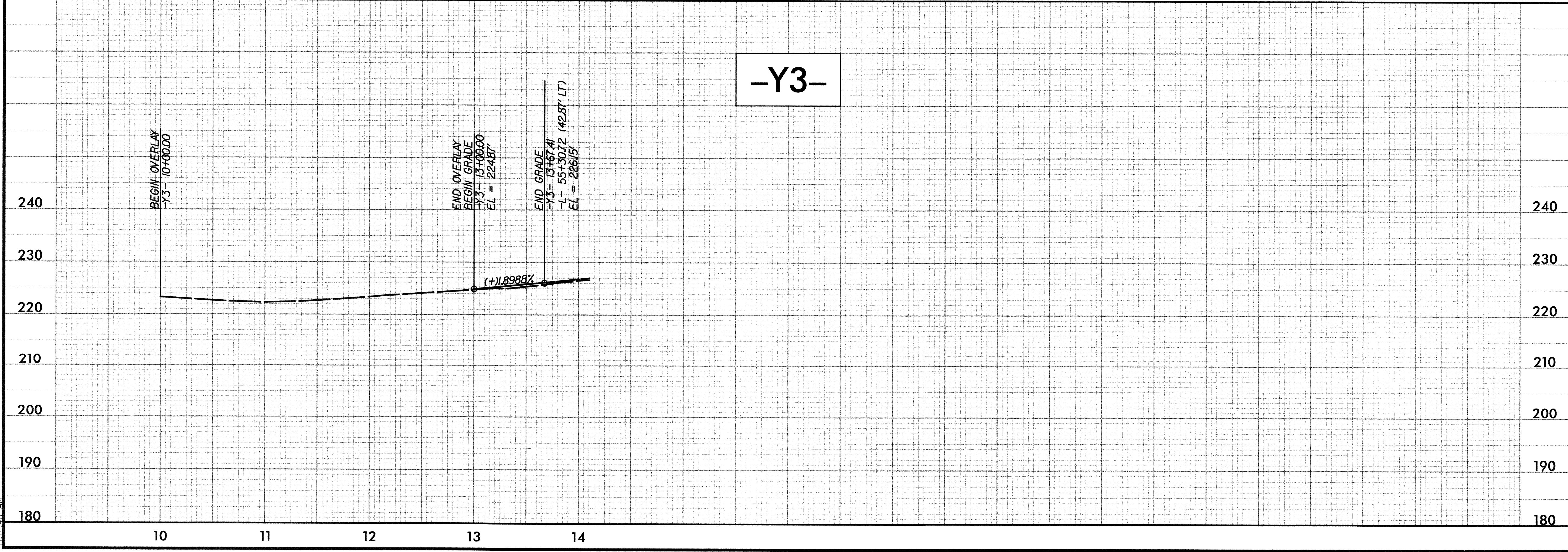
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ENGINEERS & CONSULTANTS
PO. BOX 33127
RALEIGH, NC 27636
(919) 851-1912
(919) 851-1913 FAX
WWW.MULKEYINC.COM

PROJECT REFERENCE NO. U-4756	SHEET NO. 10
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
	

-RPD-



-Y3-



6/26/2007
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11/2/06