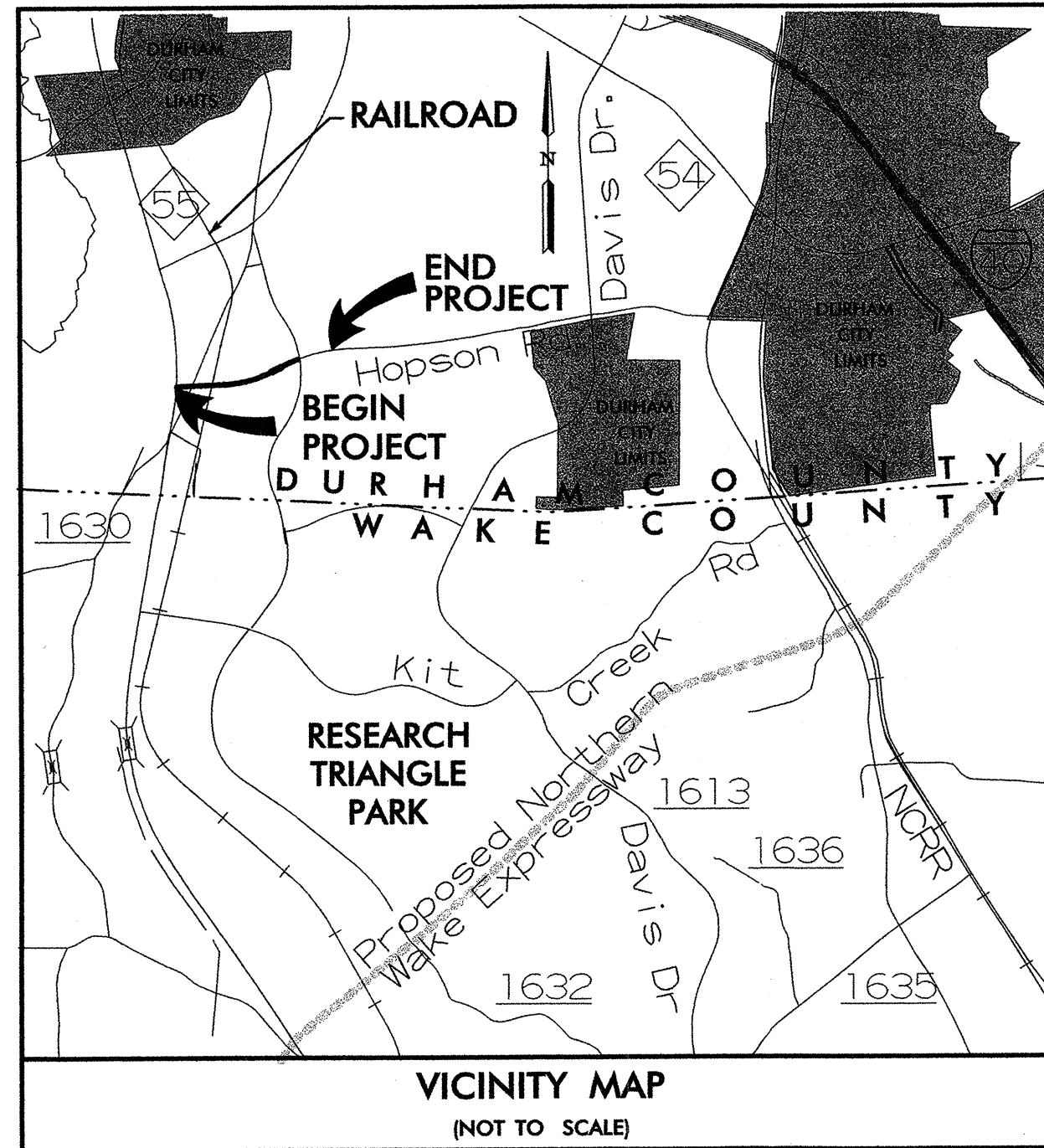


TIP PROJECT: U-4410DB

CONTRACT: C201642

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



STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

DURHAM COUNTY

LOCATION: HOPSON ROAD FROM NC 55 TO LOUIS STEPHENS DRIVE
TYPE OF WORK: GRADING, PAVING, DRAINAGE, CURB AND GUTTER,
TRAFFIC SIGNALS AND RETAINING WALL



RESEARCH TRIANGLE FOUNDATION PROJECT		SHEET NO.	TOTAL SHEETS
U-4410DB		1	
PROJ. NO.	DESCRIPTION		
35021.2.1	PE		
35021.3.2	RW, UTL.		
35021.1.8	CONST		

END CONSTRUCTION
-Y- STA. 508+37 +/-
(TIE TO R-2906)

BEGIN PROJECT U-4410DB
-Y1- STA. 200+38.31

BEGIN CONSTRUCTION
-Y- STA. 494+20 +/-
(TIE TO R-2906)

END CONSTRUCTION
-L- STA. 133+93 +/-
**(OVERLAY U-4410DA)

END PROJECT U-4410DB
-Y1- STA. 231+39 +/-
**(OVERLAY U-4410DA)

END GRADING U-4410DB
BEGIN OVERLAY U-4410DA
-Y1- STA. 224+13.18
(TIE TO U-4410DA)

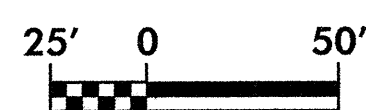
BEGIN CONSTRUCTION
-L- STA. 117+81 +/-
**(OVERLAY U-4410DA)

**FOR U-4410DA OVERLAY DETAIL SEE SHEET 2-B

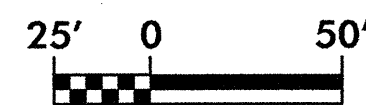
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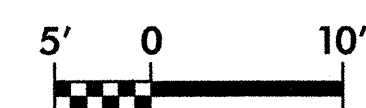
GRAPHIC SCALE



PLANS



PROFILE (HORIZONTAL)



PROFILE (VERTICAL)

PROJECT LENGTH

LENGTH ROADWAY PROJECT U-4410DB = 0.587 MILES
LENGTH STRUCTURE PROJECT U-4410DB = 0.000 MILES
TOTAL LENGTH STATE PROJECT U-4410DB = 0.587 MILES

DESIGN DATA

	ADT 2005	ADT 2030	DHV	D	T	V	DUALS	TTST
-Y1-	11,200	34,600	10%	50%	4%	50 MPH	3%	1%

Prepared In the Office of:
MULKEY
ENGINEERS & CONSULTANTS

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
FEBRUARY 17, 2006

LETTING DATE:
AUGUST 21, 2007

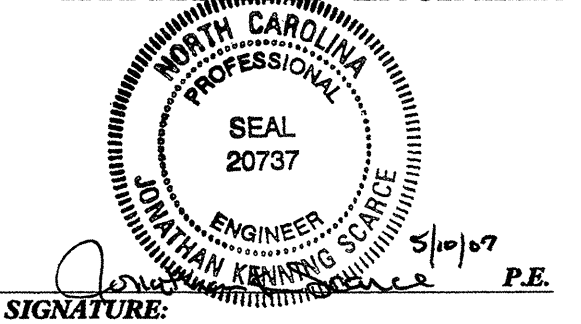
TIM JORDAN, PE
ROADWAY DESIGN ENGINEER

JONATHAN SCARCE, PE
HYDRAULIC DESIGN ENGINEER

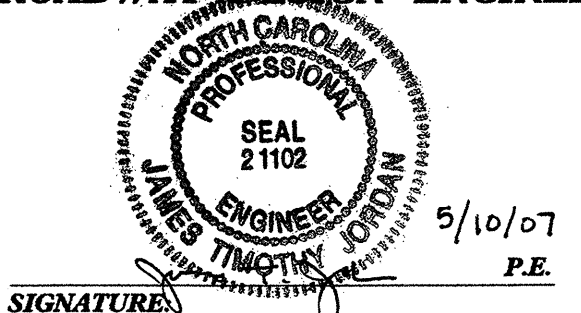
RTF CONTACT : LIZ ROOKS
PROJECT MANAGER

NCDOT CONTACT : CHRIS HAIRE
ROADWAY DESIGN PROJECT ENGINEER

HYDRAULICS ENGINEER



ROADWAY DESIGN ENGINEER



STRUCTURE DESIGN ENGINEER

SIGNATURE: _____ P.E.

TRAFFIC ENGINEER

SIGNATURE: _____ P.E.

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS CONVENTIONAL SYMBOLS

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PROJECT REFERENCE NO. *U-4410DB* SHEET NO. *1-B*

*S.U.E = SUBSURFACE UTILITY ENGINEER

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	----- T -----
Prop. Guardrail	----- T -----
Equality Symbol	----- ⊕ -----
Pavement Removal	----- ⊗ -----

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 R/W 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	----- (S) -----
Swamp Marsh	----- (SM) -----
Shoreline	-----
Falls, Rapids	-----
Prop Lateral, Tail, Head Ditches	-----

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	----- P -----
Telephone Booth	----- □ -----
Water Manhole	----- W -----
Light Pole	----- ⊕ -----
H-Frame Pole	----- ⊕ -----
Power Line Tower	----- ⊕ -----
Pole with Base	----- ⊕ -----
Gas Valve	----- ⊕ -----
Gas Meter	----- ⊕ -----
Telephone Manhole	----- T -----
Power Transformer	----- ⊕ -----
Sanitary Sewer Manhole	----- S -----
Storm Sewer Manhole	----- S -----
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 -----

Recorded Water Line	----- W -----
Designated Water Line (S.U.E.*)	----- W -----
Sanitary Sewer	----- SS -----
Recorded Sanitary Sewer Force Main	----- FSS -----
Designated Sanitary Sewer Force Main(S.U.E.*)	----- FSS -----
Recorded Gas Line	----- G -----
Designated Gas Line (S.U.E.*)	----- G -----
Storm Sewer	----- S -----
Recorded Power Line	----- P -----
Designated Power Line (S.U.E.*)	----- P -----
Recorded Telephone Cable	----- T -----
Designated Telephone Cable (S.U.E.*)	----- T -----
Recorded U/G Telephone Conduit	----- TC -----
Designated U/G Telephone Conduit (S.U.E.*)	----- TC -----
Unknown Utility (S.U.E.*)	----- ?UTL -----
Recorded Television Cable	----- TV -----
Designated Television Cable (S.U.E.*)	----- TV -----
Recorded Fiber Optics Cable	----- FO -----
Designated Fiber Optics Cable (S.U.E.*)	----- 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	----- ⊕ -----
Property Corner	----- ⊕ -----
Property Monument	----- ECM -----
Property Number	----- (123) -----
Parcel Number	----- (6) -----
Fence Line	----- X X 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	-----
Well	-----
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 -----

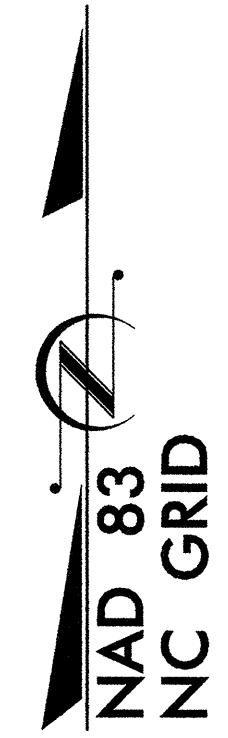
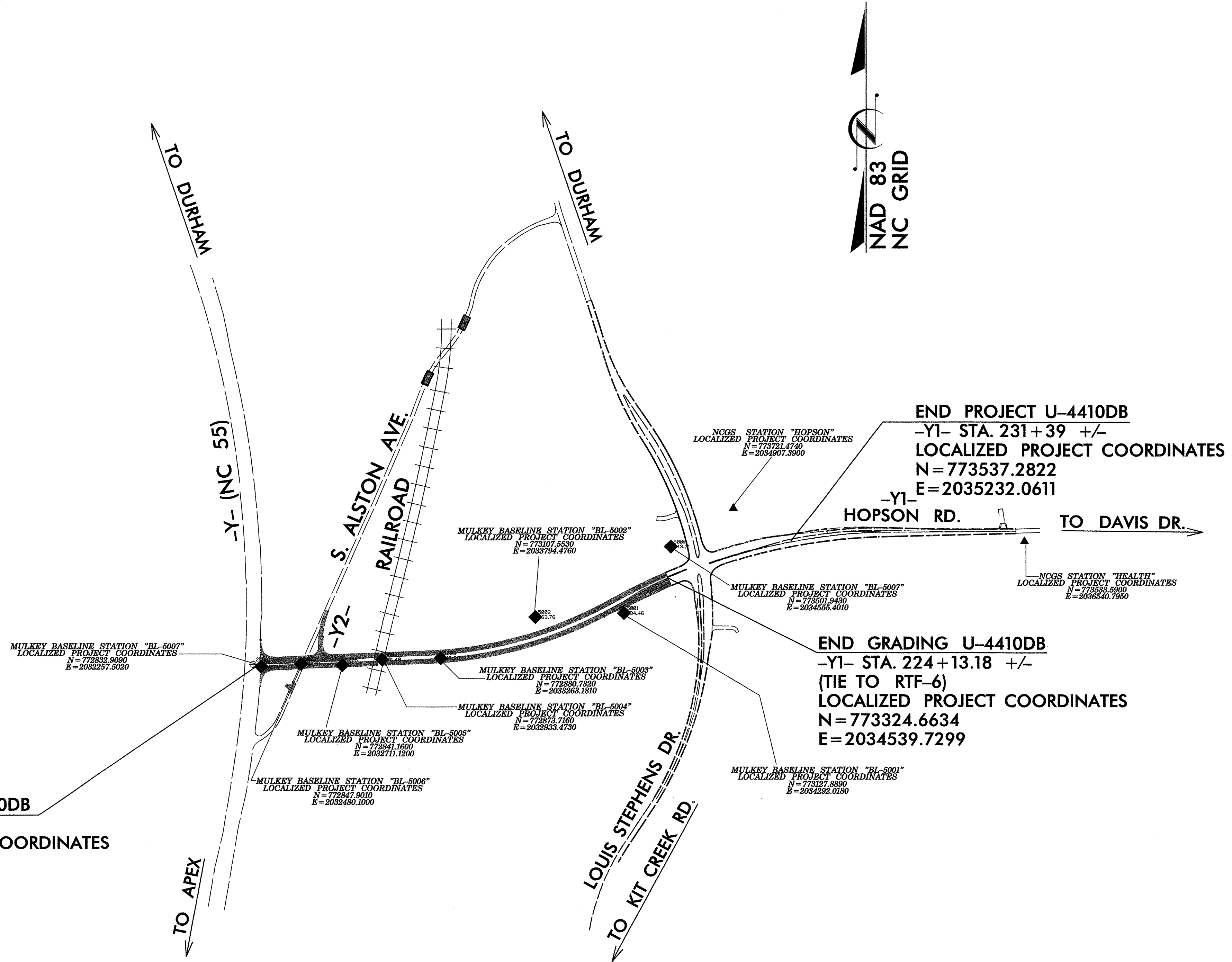
RAILROADS

Standard Gauge	-----
RR Signal Milepost	-----
Switch	-----

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SURVEY CONTROL SHEET

NOTE: DRAWING NOT TO SCALE



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "HEALTH" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 773,533.5900(±) EASTING: 2,036,540.7950(±) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9991958 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "HEALTH" TO -Y1- STATION 200+00 IS S 80° 58' 09" W 4,583.7055' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NGVD 29

- ◆ INDICATES CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY MULKEY, INC
 - ▲ INDICATES CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY NCGS
- PROJECT CONTROL ESTABLISHED UTILIZING CONVENTIONAL SURVEY
- PROJECT CONTROL ESTABLISHED UTILIZING CONVENTIONAL SURVEY

5/1/2007 3:02:56 PM G:\p\proj\sect\200\N\09\00\RTF-T\Survey\U-4410DB.LS-IC-07010.dgn

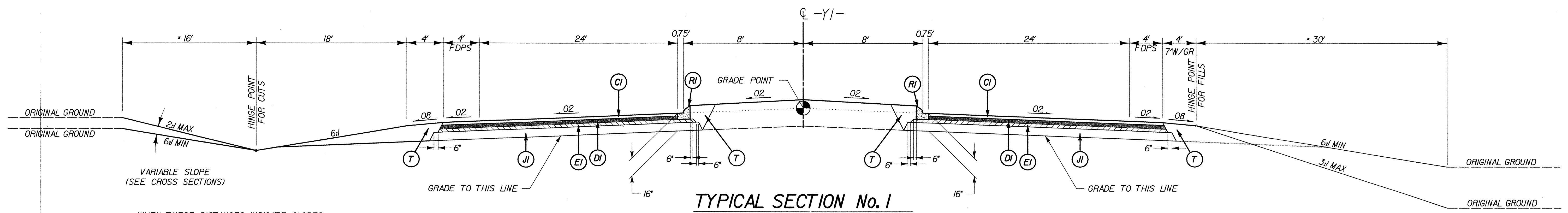
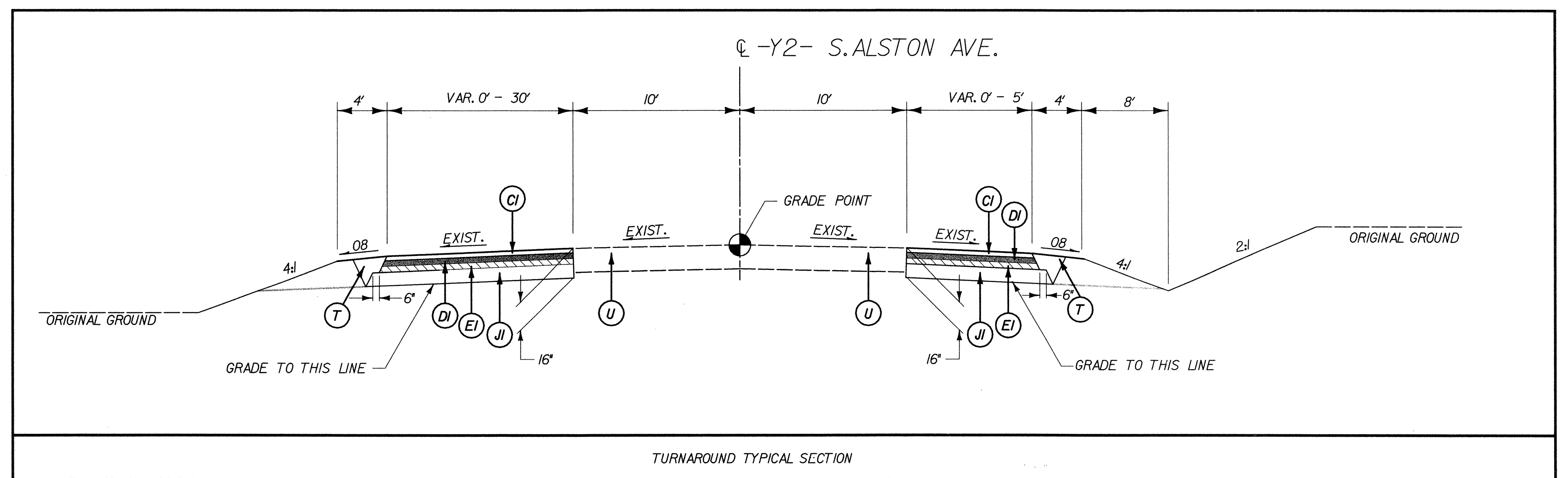
PAVEMENT SCHEDULE
(FINAL PAVEMENT DESIGN)

C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 3" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
J1	PROP. 6" AGGREGATE BASE COURSE
R1	PROP. 1'-6" CONCRETE CURB & GUTTER
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.

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

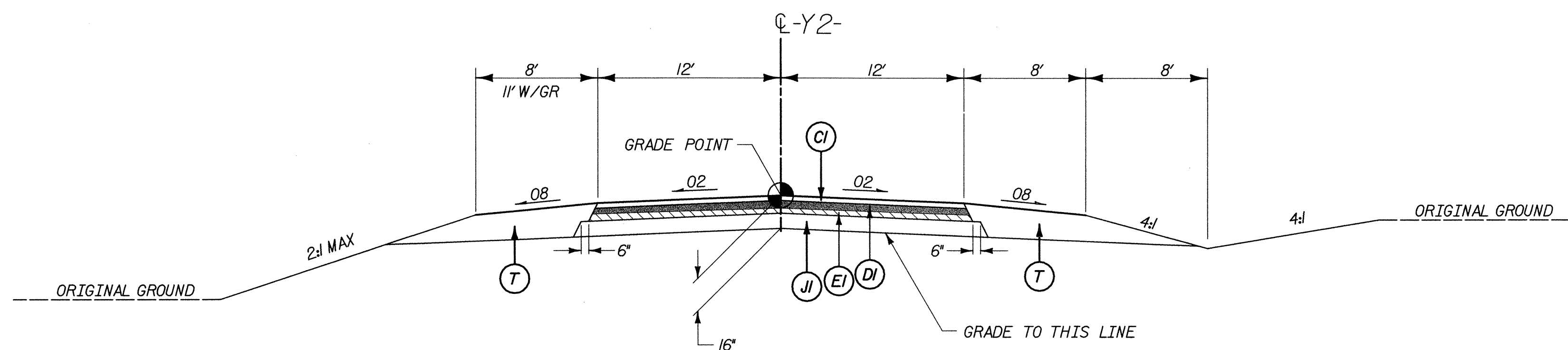
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PROJECT REFERENCE NO. U-4410DB	SHEET NO. 2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER



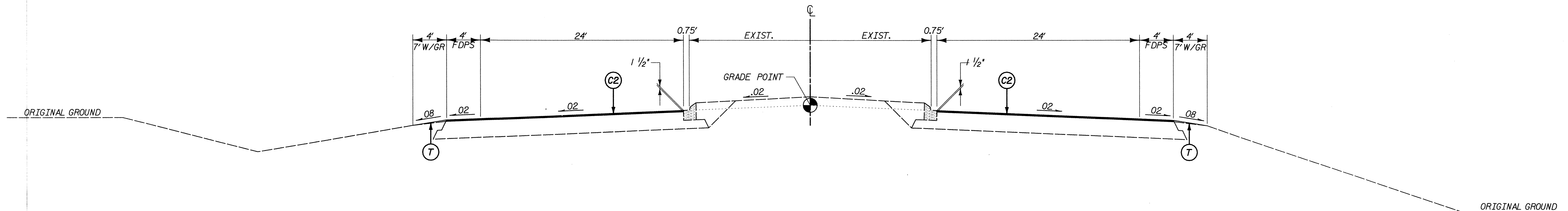
* WHEN THESE DISTANCES INDICATE SLOPES OUTSIDE THE LIMITS OF 6:1 TO 4:1, THE DISTANCE BECOMES VARIABLE AND THE MAXIMUM OR MINIMUM SLOPE MAINTAINED.

TYPICAL SECTION No. 1
USE TYPICAL SECTION No. 1 AS FOLLOWS:
FROM -Y1- STA 200+38.31 TO -Y1- STA 224+13.18



TYPICAL SECTION No. 2

USE TYPICAL SECTION No. 2 AS FOLLOWS:
FROM -Y2- STA 10+32.75 TO -Y2- STA 12+89.94



TYPICAL SECTION No. 3

USE TYPICAL SECTION No. 3 AS FOLLOWS:
FROM -L- STA 117+81 +/- TO -L- STA 133+93 +/-
FROM -Y1- STA 224+13.18 TO -Y1- 231+39 +/-

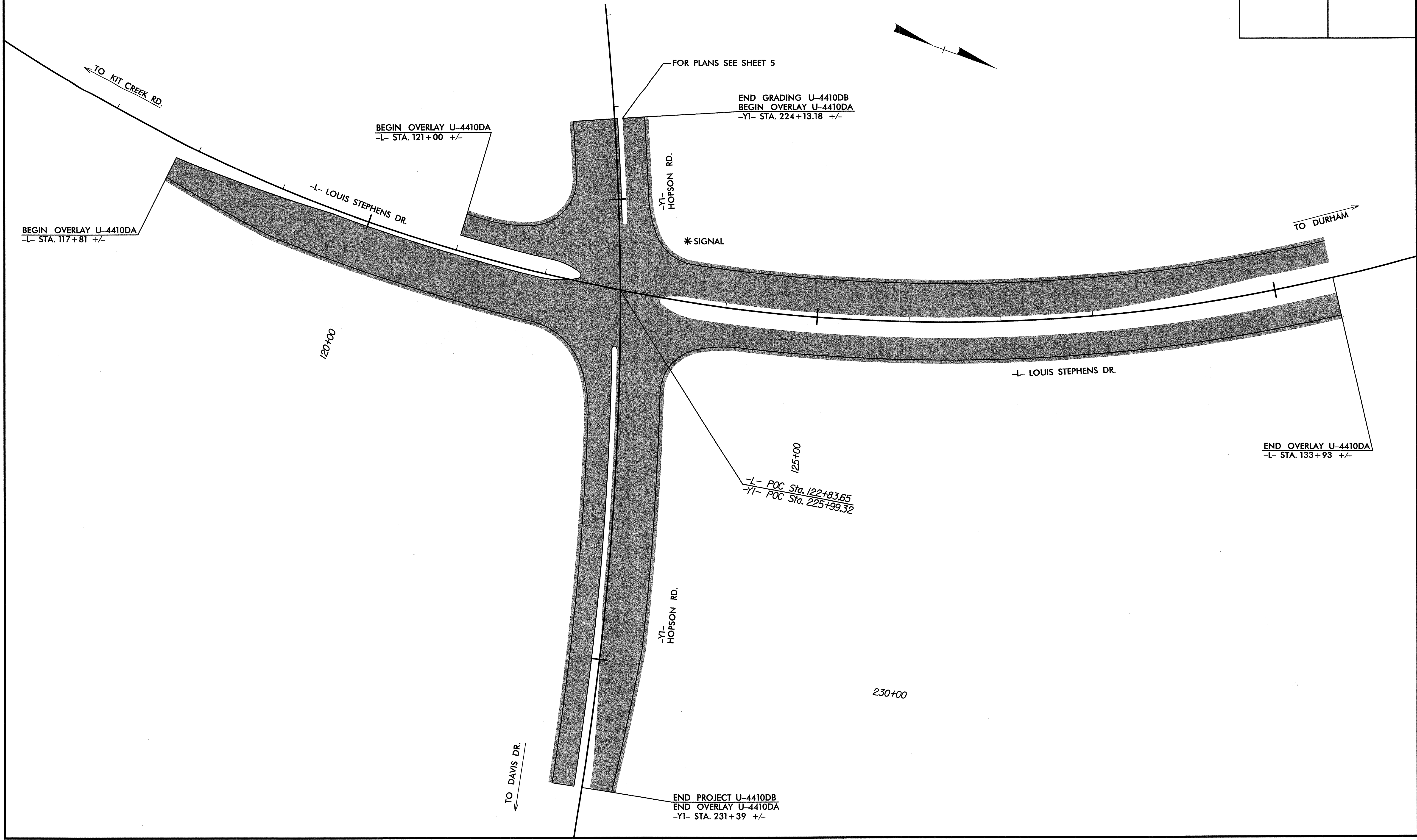
PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	3" S9.5B
C3	1 1/2" S9.5B
D1	4" I19.0B
E1	3" B25.0B
R1	1'-6" C & G
J1	6" ABC
T	EARTH MATERIAL

DETAIL OF OVERLAY OF U-4410DA INTERSECTION AND APPROACHES

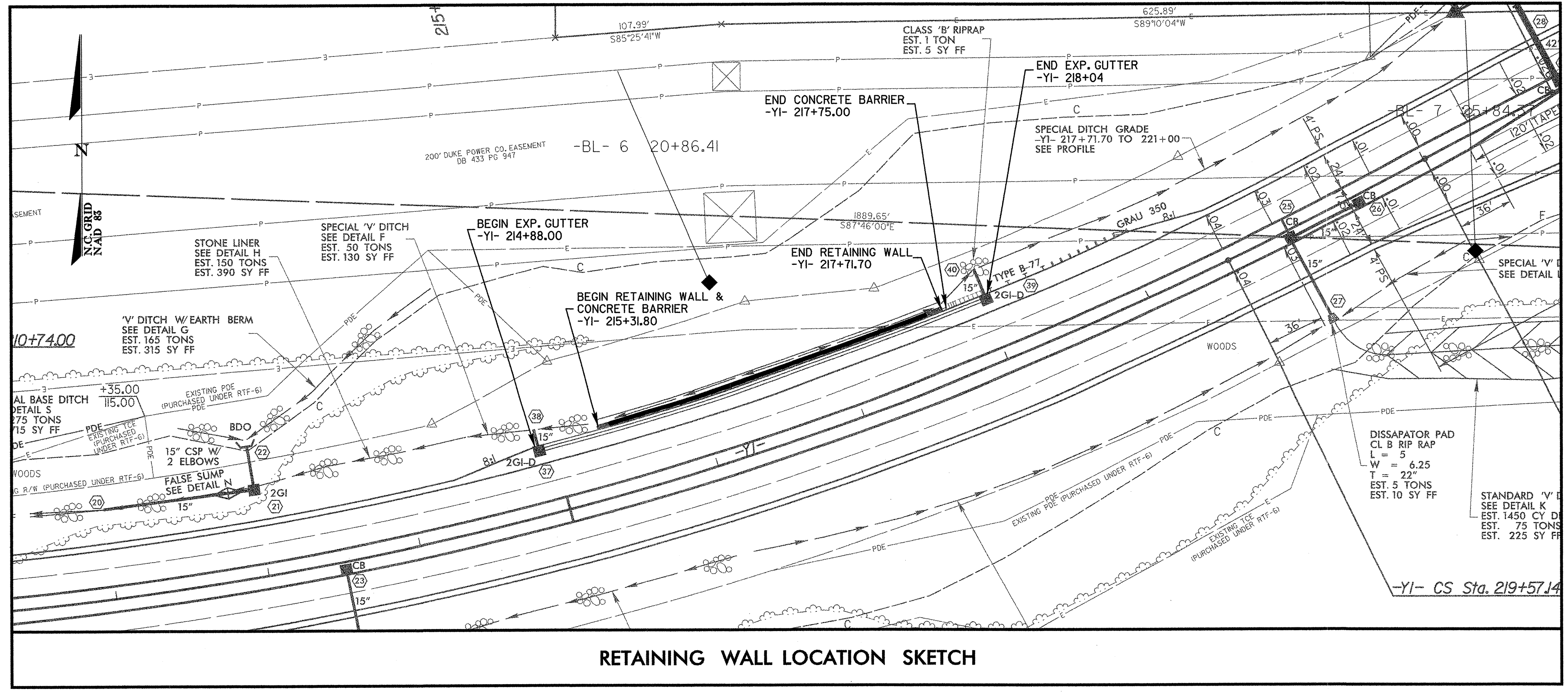
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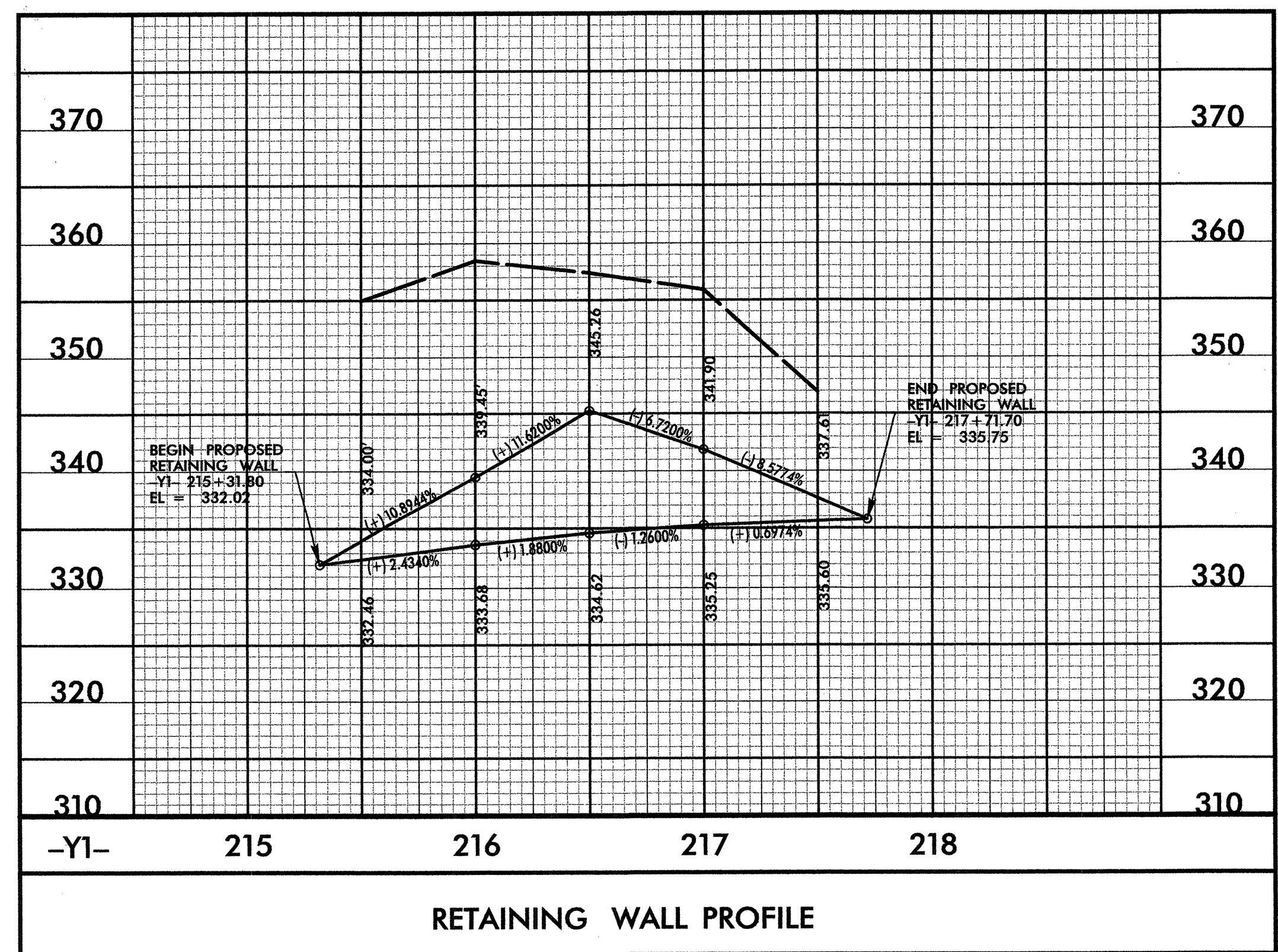
PROJECT REFERENCE NO. U-4410DB	SHEET NO. 2-B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER



FOR -YI- PROFILE SEE SHEET 7



RETAINING WALL LOCATION SKETCH

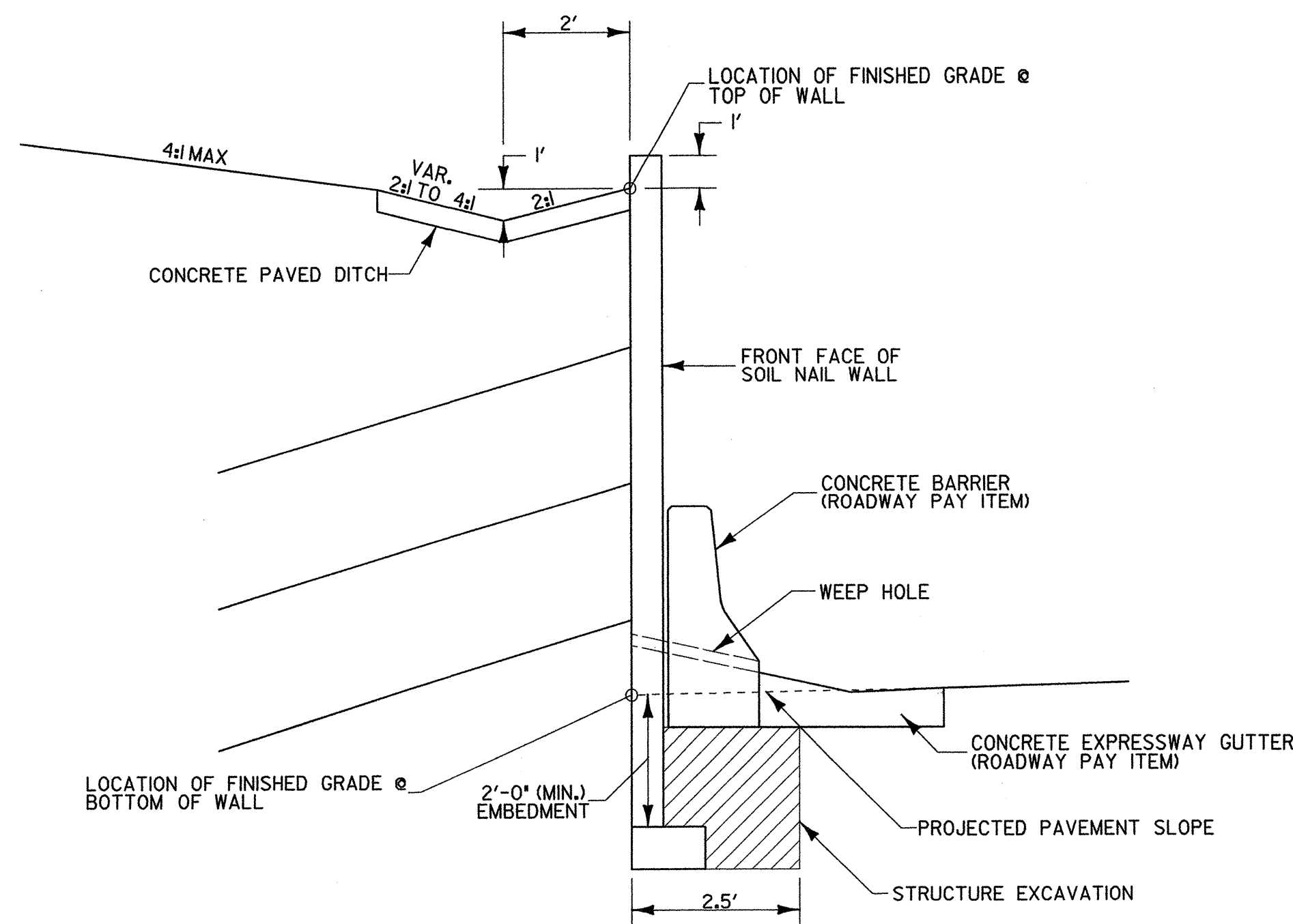


RETAINING WALL PROFILE

RETAINING WALL TYPICAL SECTION				
-YI- STA.	OFFSET FROM CL	ELEV. @ TOP OF WALL	ELEV. @ BOTTOM OF WALL	WALL HEIGHT
215+31.80	46.25' LT	332.02'	332.02'	0.00'
215+50	46.25' LT	334.00'	332.46'	1.54'
216+00	46.25' LT	339.45'	333.68'	5.77'
216+50	46.25' LT	345.26'	334.62'	10.64'
217+00	46.25' LT	341.90'	335.25'	6.65'
217+50	46.25' LT	337.61'	335.60'	2.01'
217+71.70	46.25' LT	335.75'	335.75'	0.00'

TOTAL BILL OF MATERIAL	
SOIL NAIL RETAINING WALL	1280 SQUARE FEET

PROJECT REFERENCE NO. <i>U-4410DB</i>	SHEET NO. <i>2-D</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



SOIL NAIL WALL TYPICAL SECTION

(NOT TO SCALE)

NOTES:

IN ELEVATION VIEW, SHOW THE TOP OF WALL (SOLID LINE), THE EXISTING GROUND LINE (LARGE DASHED LINE), AND THE BOTTOM OF WALL (SOLID LINE). SHOW ELEVATIONS FOR THE TOP OF WALL AT VERTICAL BREAK POINTS, AND AT NO GREATER THAN 50 FOOT INTERVALS. LABEL WHETHER THE ELEVATION VIEW IS FRONT FACE OR BACK FACE.

FINAL PLANS MUST BE ON REPRODUCIBLE SHEETS SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN NORTH CAROLINA.

PROVIDE A CAST-IN-PLACE CONCRETE FACE WITH A SMOOTH CONCRETE FINISH ON THE FACE OF THE WALL. SEE SPECIAL PROVISIONS.

SCHEDULE A PRECONSTRUCTION CONFERENCE WITH REPRESENTATIVES FROM THE CONTRACTOR, THE RETAINING WALL SYSTEM SUPPLIER, AND THE GEOTECHNICAL ENGINEERING UNIT TO DISCUSS DETAILS AND INSPECTION OF THE RETAINING WALL PRIOR TO ANY WORK BEING PERFORMED AT THE SITE.

SEE ROADWAY PLANS FOR CROSS-SECTIONS AND TYPICAL SECTIONS.

FOR DESIGN CRITERIA AND DETAILS, SEE SPECIAL PROVISIONS.

PLANS, WORKING, DRAWINGS, SOIL REINFORCEMENT AND DESIGN CALCULATIONS SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER FOR REVIEW AND APPROVAL. SEE SPECIAL PROVISIONS.

ALL NAIL BARS FOR THE SOIL NAIL RETAINING WALLS SHALL BE ENCAPSULATED FOR CORROSION PROTECTION.

CONCRETE LEVELING PADS FOR THE CAST-IN-PLACE WALL FACING AND THE DRAINAGE DITCHES BEHIND THE WALLS WILL BE CONSIDERED INCIDENTAL TO THE COST OF THE WALLS.

DESIGN WALL TO MEET THE LATEST FHWA MANUAL FHWA-IF-03-017 (GEC 7), SEE THE SPECIAL PROVISIONS AND THE PLANS.

PLANS SUBMITTED FOR REVIEW SHALL INCLUDE THE FOLLOWING: PLAN VIEW, ELEVATION VIEW, TYPICAL SECTIONS, CAST-IN-PLACE FACING, OBSTRUCTION DETAILS AND DRAINAGE DETAILS.

BLASTING WILL NOT BE ALLOWED TO INSTALL THE NAIL BARS OF THE PROPOSED SOIL NAIL RETAINING WALLS.

THE SOIL NAIL RETAINING WALL SHALL BE DESIGNED WITH THE FOLLOWING SOIL PARAMETERS:

ALL SOIL ABOVE AND BELOW BOTTOM OF WALL : $\gamma = 120$ PCF, $\phi = 28^\circ$, $c = 0$
ALL WEATHERED ROCK ABOVE AND BELOW BOTTOM OF WALL : $\gamma = 140$ PCF, $\phi = 36^\circ$, $c = 0$

THE OFFSET FOR WALL LAYOUT TO FRONT FACE OF WALL NEEDS TO BE GIVEN WITH STATIONING INCREASING FROM LEFT TO RIGHT ON PLAN SHEETS.

PROPER CONSIDERATION SHALL BE GIVEN TO THE DRAINAGE SYSTEMS BEHIND THE WALL SEE ROADWAY DRAINAGE PLANS FOR DETAILS.

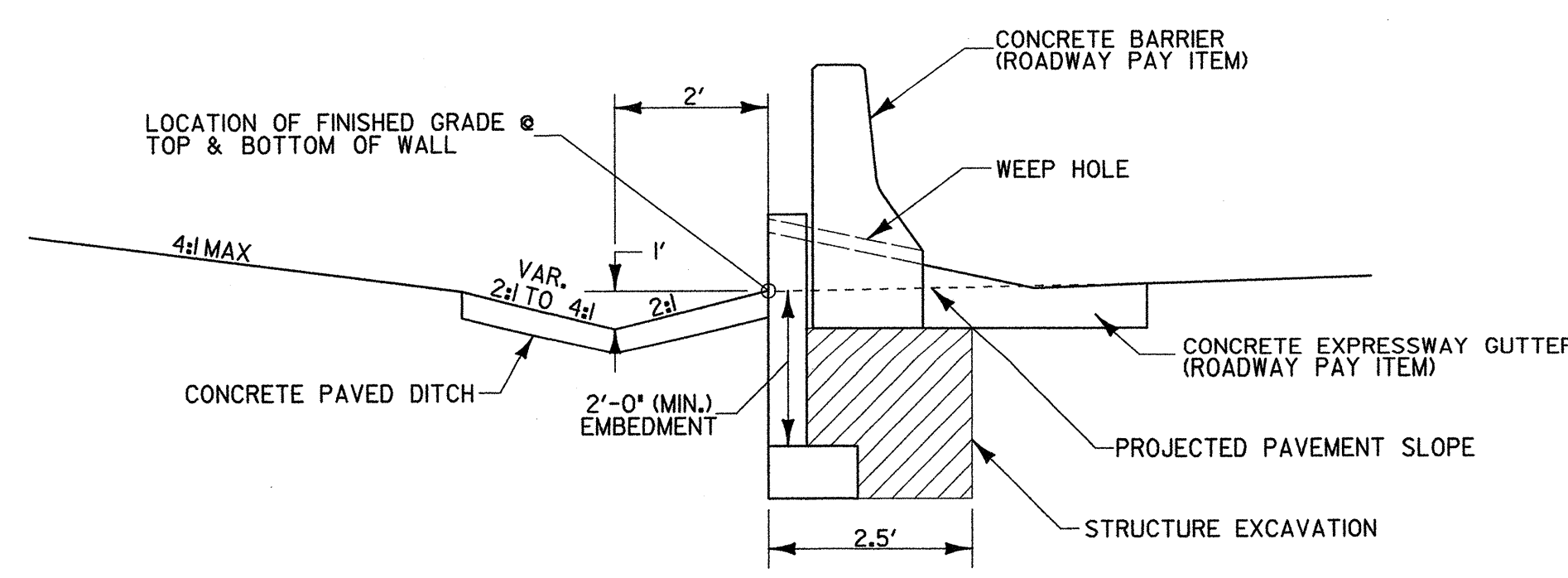
FOR POTENTIAL CONFLICTS WITH WATER SUPPLY PIPES, DRAINAGE STRUCTURES, OR UTILITIES, SEE ROADWAY PLANS.

PROVIDE PAVED DRAINAGE DITCH ON TOP OF THE WALLS.

BOTTOM OF WALL ELEVATIONS ARE FINISHED GRADE ELEVATIONS AND THESE ELEVATIONS DO NOT INCLUDE EMBEDMENT FOR THE SOIL NAIL WALLS.

ALL STRUCTURE EXCAVATION AND BACKFILL NECESSARY FOR THE CONSTRUCTION OF THE PERMANENT SOIL NAIL RETAINING WALLS WILL BE CONSIDERED INCIDENTAL TO THE COST OF THE WALLS.

THE SERVICE LIFE FOR DESIGN IS 100 YEARS.



SECTION THRU WALL @ WALL TERMINATION

(NOT TO SCALE)

DETAIL OF ANCHORAGE FOR FRAMES

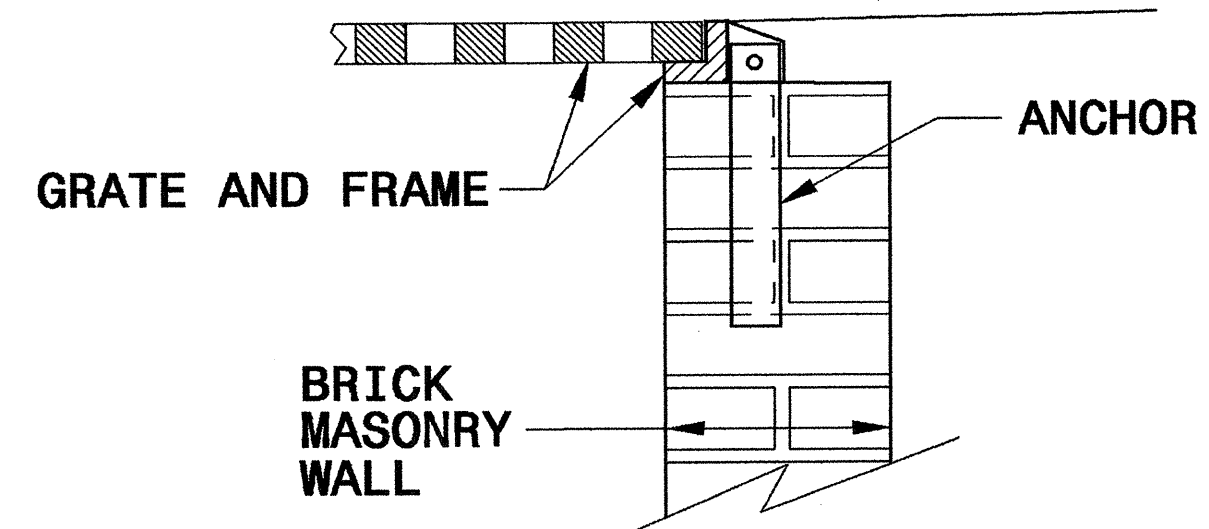
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PROJECT REFERENCE NO. <i>U-4410DB</i>	SHEET NO. <i>2-E</i>
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

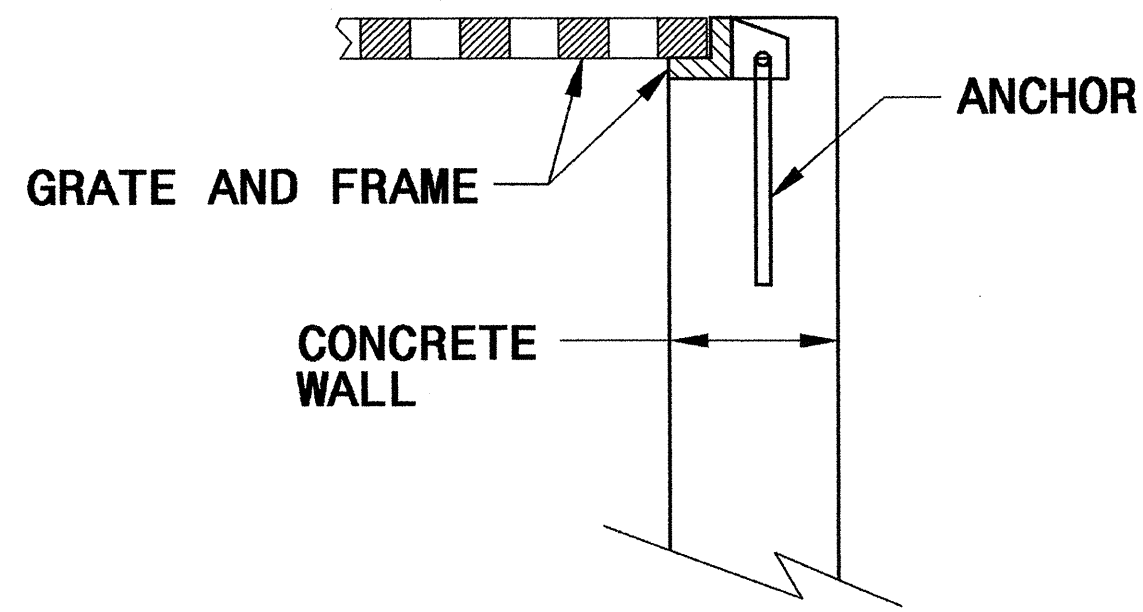
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STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

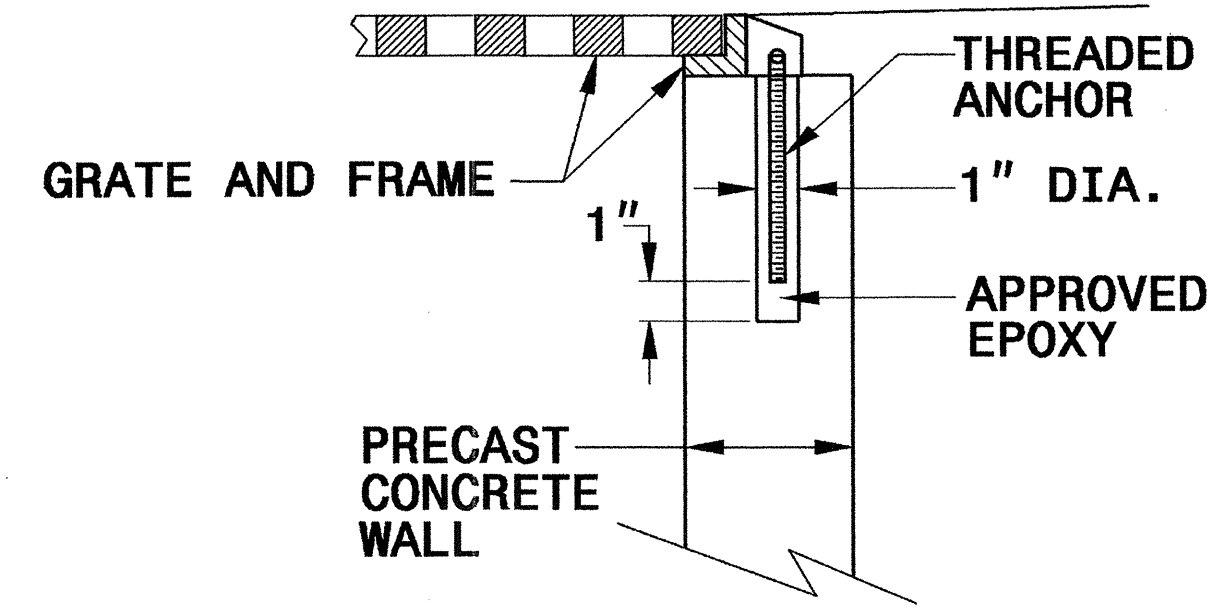
ENGLISH DETAIL DRAWING FOR
ANCHORAGE FOR FRAMES
BRICK/CONCRETE/PRECAST CONCRETE



BRICK MASONRY CONSTRUCTION



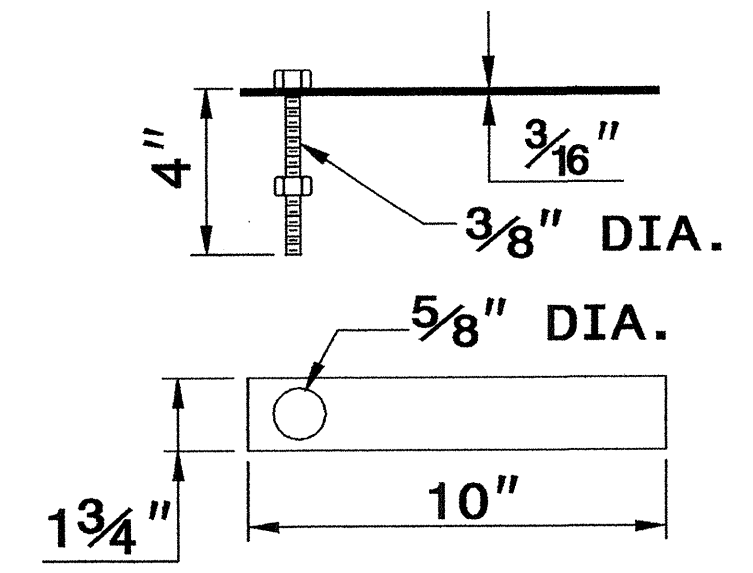
CONCRETE CONSTRUCTION



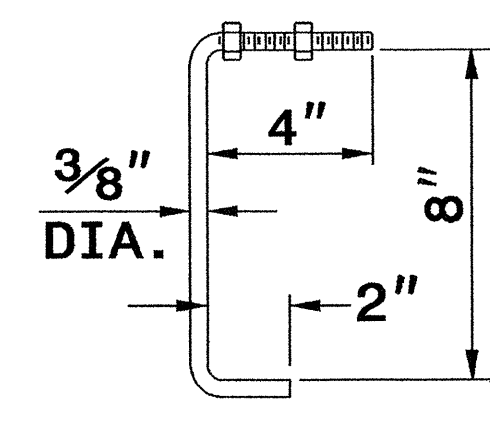
PRECAST CONCRETE CONSTRUCTION

DETAIL SHOWING ANCHORAGE OF FRAME FOR GRATED DROP INLET

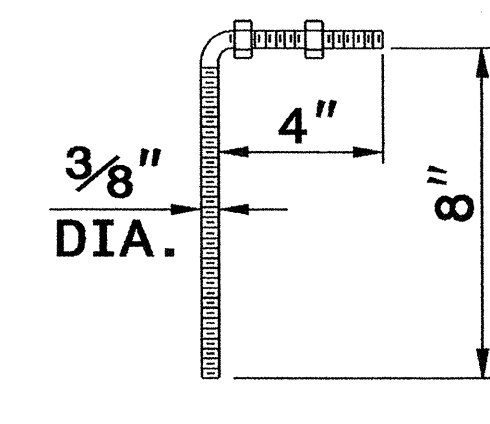
NOTE:
CONSTRUCT GRATED DROP INLET TO COINCIDE WITH NORMAL OR SUPERELEVATED SHOULDER OR PAVEMENT SLOPE.



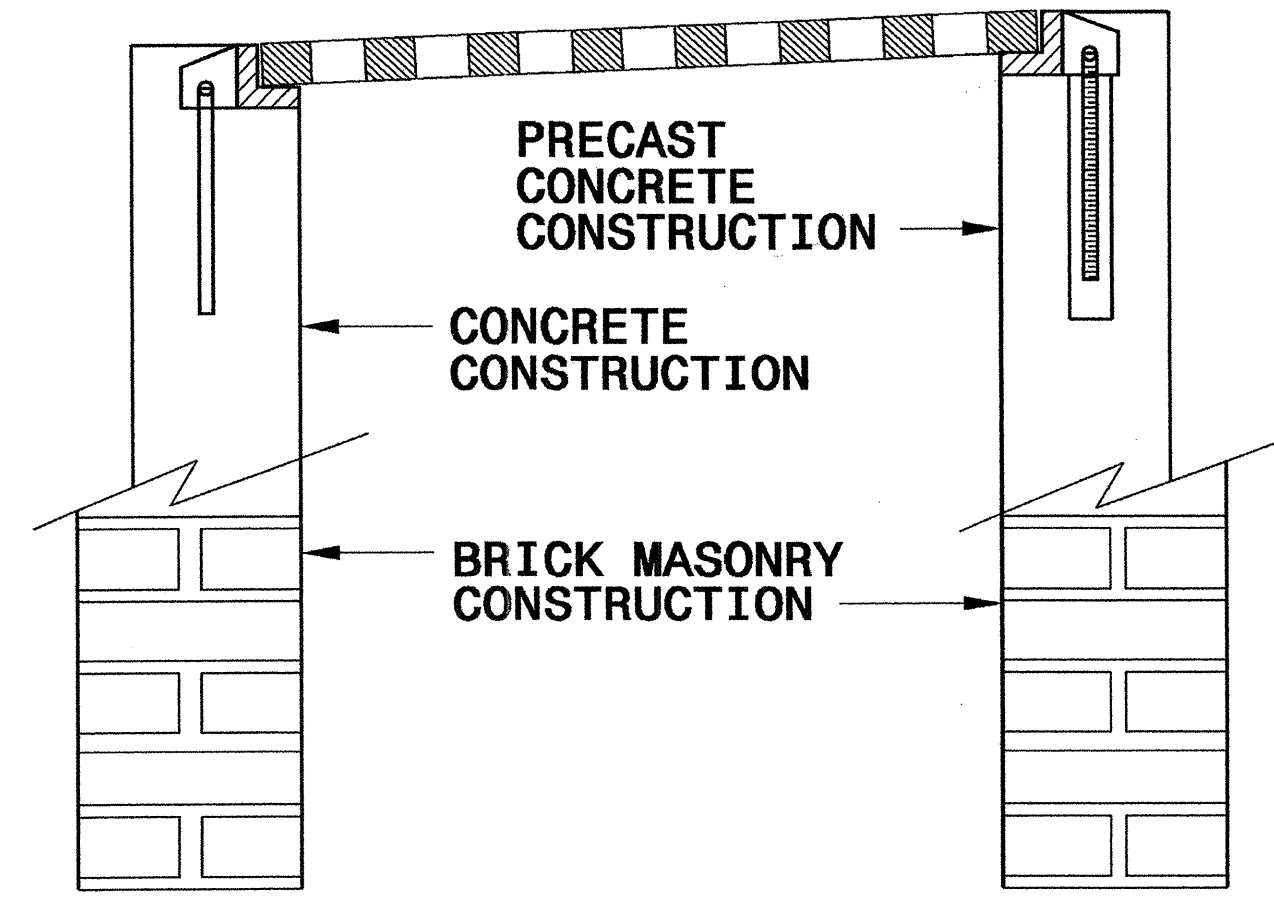
MASONRY ANCHOR
3/8" DIA. BOLT WITH PLATE



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

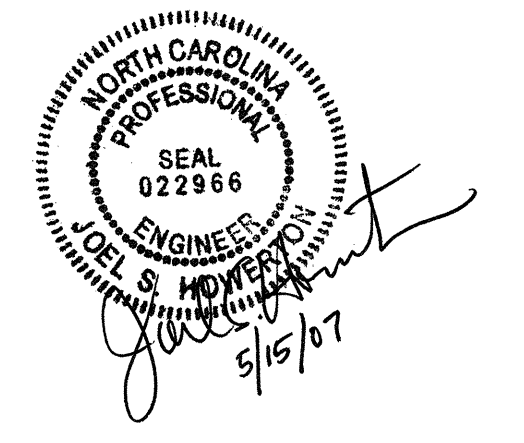
SHEET 1 OF 1
840D25

SHEET 1 OF 1
840D25

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

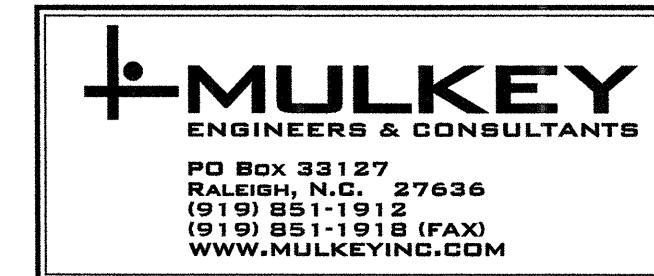
SEE PLATE FOR TITLE

ORIGINAL BY: 2006 STD 840.25 DATE: 07/18/06
MODIFIED BY: E.E. WARD DATE: 9/25/06
CHECKED BY: DATE: _____
FILE SPEC.: _____



27_SEP_2006_08159
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enward AT P222293

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS



PROJECT REFERENCE NO. U-4410DB	SHEET NO. 3-C
RW SHEET NO.	

PAVEMENT REMOVAL SUMMARY
IN SQUARE YARDS

SURVEY LINE	BEG. STA.	END STA.	LOCATION	ASPHALT REMOVAL	ASPHALT BREAK-UP
-Y2-	10+50	12+00	LT	72	
-Y2-	12+00	12+40	LT	114	
S. ALSTON	CUL DE SAC @ HOPSON (-Y10)			98	
S. ALSTON	DEAD END @ RAILROAD			339	
S. ALSTON	DEAD END @ RAILROAD			350	
S. ALSTON	UNDER HOPSON ROAD				481
TOTAL				973	481
SAY				1,000	500

SUMMARY OF EARTHWORK
IN CUBIC YARDS

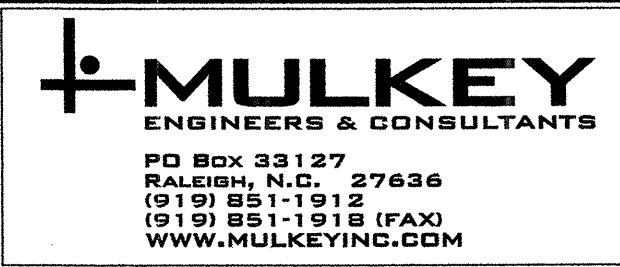
LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBANKMENT	BORROW	WASTE
-Y1- 200+38.31 TO 224+13.18	94,180		40,104		
-Y2- 10+32.75 TO 12+89.94	2		4,474		
SUBTOTAL	94,182		44,578		
S. ALSTON (SHEET 4)			350		
S. ALSTON (SHEET 6)			280		
S. ALSTON (SHEET 6)			280		
SUBTOTAL			910		
PROJECT TOTAL	94,182		45,488		
LOSS DUE TO CLEARING & GRUBBING	-2000				
GRAND TOTAL	92,182		45,488		54,569
SAY	92,500				55,000

EST. DDE = 4335 CY
EST. UNDERCUT = 200 CY
EST. SELECT GRANULAR MATERIAL = 500 CY
EST. FABRIC FOR SOIL STABILIZATION = 500 SY
EST. SHOULDER BORROW = 1500 CY

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

RIGHT OF WAY AREA DATA

PARCEL NO.	PROPERTY OWNERS NAME	TOTAL ACREAGE	AREA TAKEN	AREA REMAINING RIGHT	AREA REMAINING LEFT	CONSTR. EASEMENT	PERMANENT DRAINAGE EASEMENT	TEMPORARY DRAINAGE EASEMENT
1	RESEARCH TRIANGLE FOUNDATION OF NORTH CAROLINA	NA	1.067	NA	NA	0.086	0.492	
2	BRENDA HURST	2.412	1.191	1.221	NA	0.226		
3	TYSON HURST, JR.	1.999	0.647	NA	1.352	0.148	0.447	
4	RONALD L. & MARY ELLEN MITCHELL, ROBERT A. & CAROL BARBEE WORTHAM	4.761	NA	4.761	NA	0.204		
5	JMC HITECH METALS INC.	10.951	0.124	NA	10.827		0.073	
6	DUKE ENERGY	NA	1.102	NA	NA	0.052	0.127	

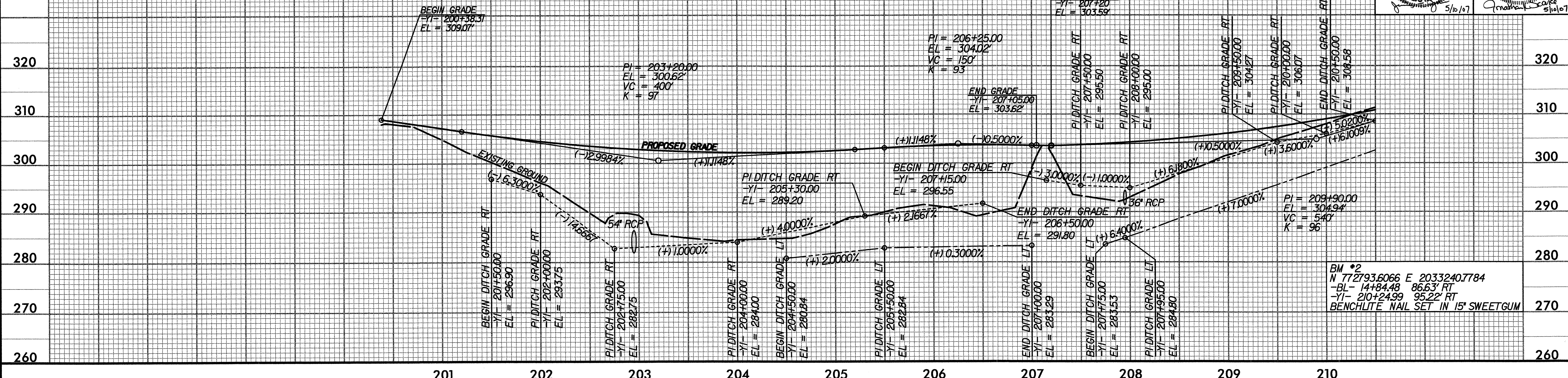


PROPOSED 36" RCP -YI- 207+95
DRAINAGE AREA 8.7 AC
DESIGN FREQUENCY 25 YRS
DESIGN DISCHARGE 46 CFS
DESIGN HW ELEVATION 297.85 FT
100 YEAR DISCHARGE 53 CFS
100 YEAR HW ELEVATION 298.3 FT
OVERTOPPING FREQUENCY 100++ YRS
OVERTOPPING DISCHARGE 95 CFS
OVERTOPPING ELEVATION 303.00 FT

BM #1
N 772756.8545 E 2032407.4908
-BL- 6+44.54 89.96' RT
-YI- 201+92.19 96.74' RT
BENCHLITE NAIL SET IN POWER POLE

-YI-

FOR -YI- PLAN VIEW SEE SHEET 4

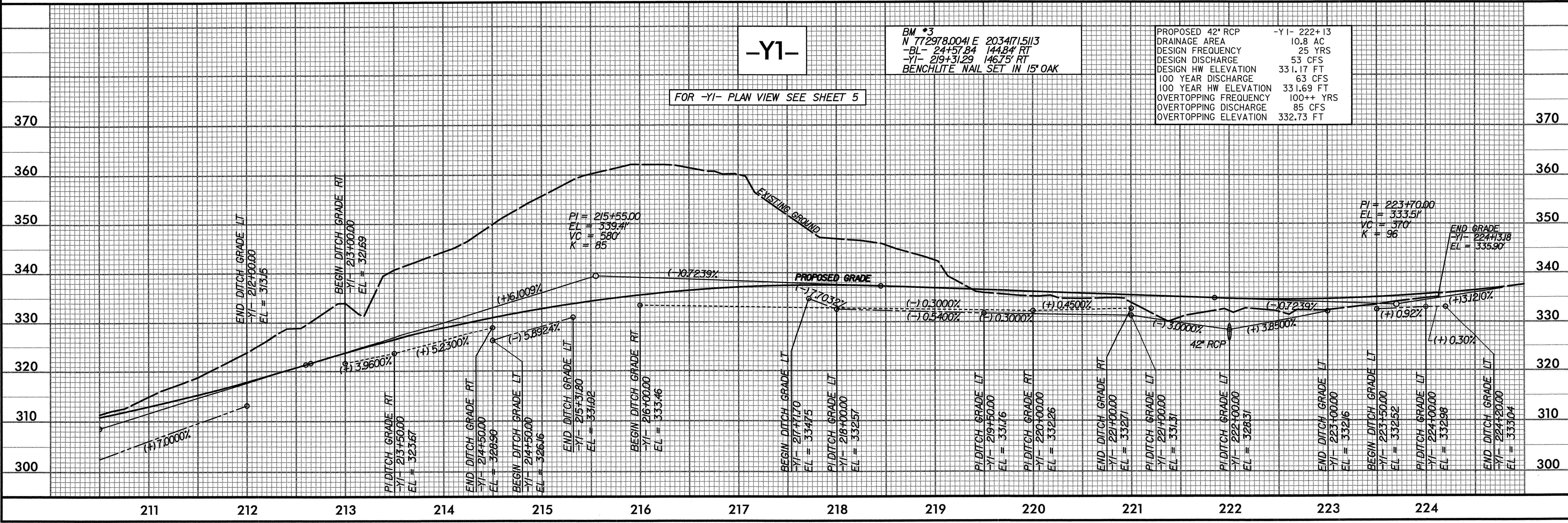


BM #3
N 772978.0041 E 2034715.1113
-BL- 24+57.84 144.84' RT
-YI- 219+31.29 146.75' RT
BENCHLITE NAIL SET IN 15' OAK

-YI-

FOR -YI- PLAN VIEW SEE SHEET 5

PROPOSED 42" RCP -YI- 222+13
DRAINAGE AREA 10.8 AC
DESIGN FREQUENCY 25 YRS
DESIGN DISCHARGE 53 CFS
DESIGN HW ELEVATION 331.17 FT
100 YEAR DISCHARGE 63 CFS
100 YEAR HW ELEVATION 331.69 FT
OVERTOPPING FREQUENCY 100++ YRS
OVERTOPPING DISCHARGE 85 CFS
OVERTOPPING ELEVATION 332.73 FT



-Y2-

FOR -Y2- PLAN VIEW SEE SHEET 4

LEFT DITCH - - - - -
RIGHT DITCH - - - - -

