

09/08/09

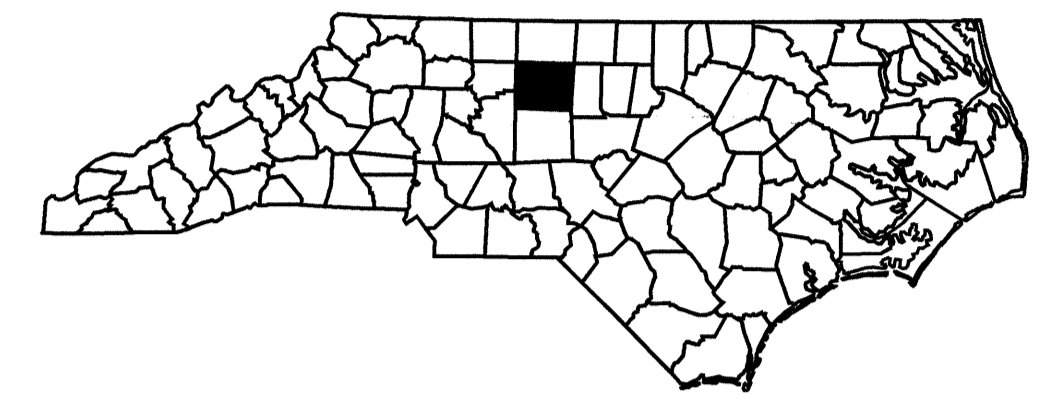
See Sheet 1-A For Index of Sheets
 See Sheet 1-B For Conventional Symbols
 See Sheet 1-C For Survey Control

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4128	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33481.1.1	BRSTP-1549(4)	PE	
33481.2.1	BRZ-1549(4)	RW, UTIL.	
33481.3.1	BRSTP-1549(4)	CONSTR.	

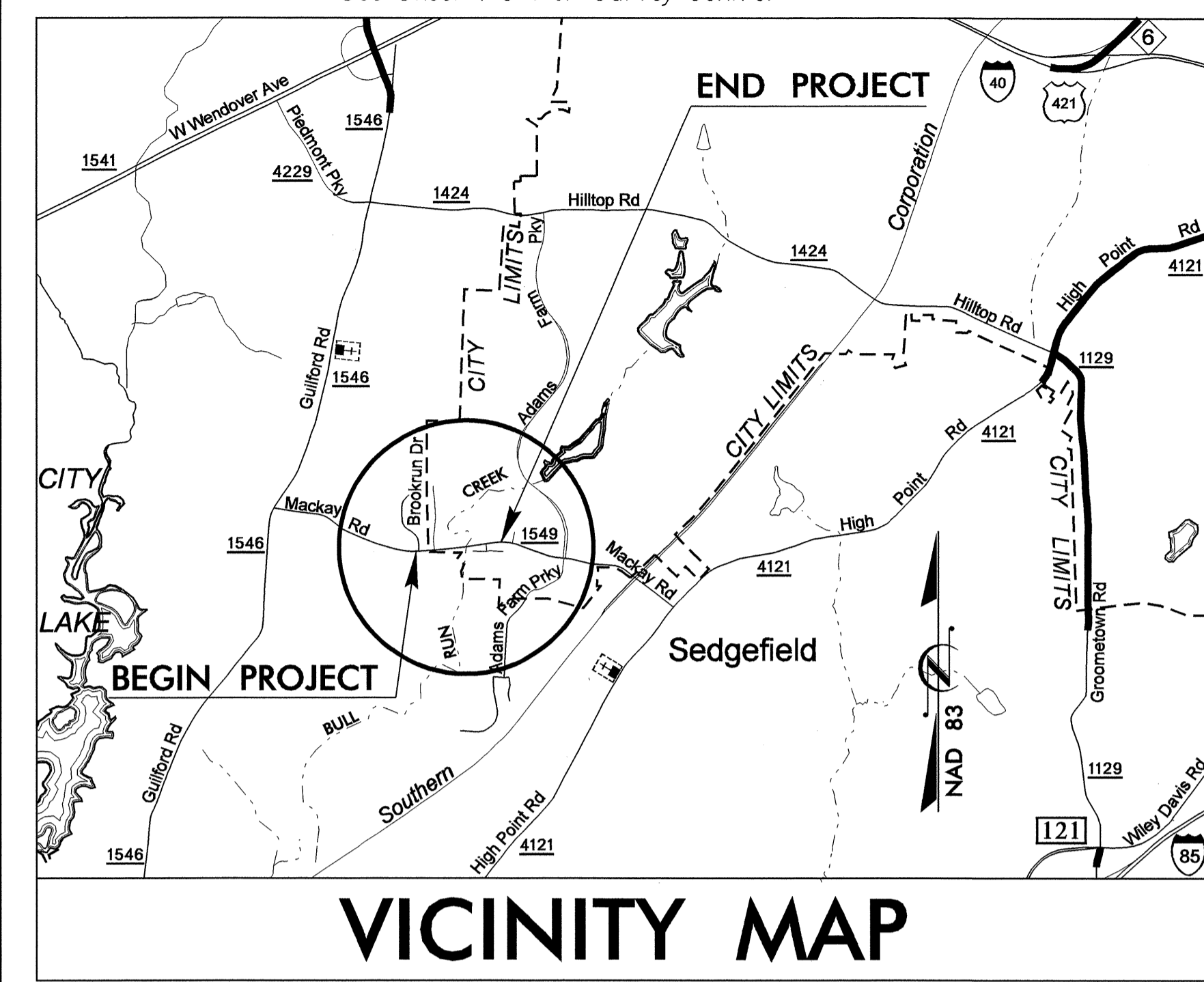
GUILFORD COUNTY

**LOCATION: BRIDGE No. 73 OVER BULL RUN CREEK
 ON SR 1549 (MACKAY ROAD) IN GREENSBORO**
TYPE OF WORK: GRADING, DRAINAGE, STRUCTURE, PAVING

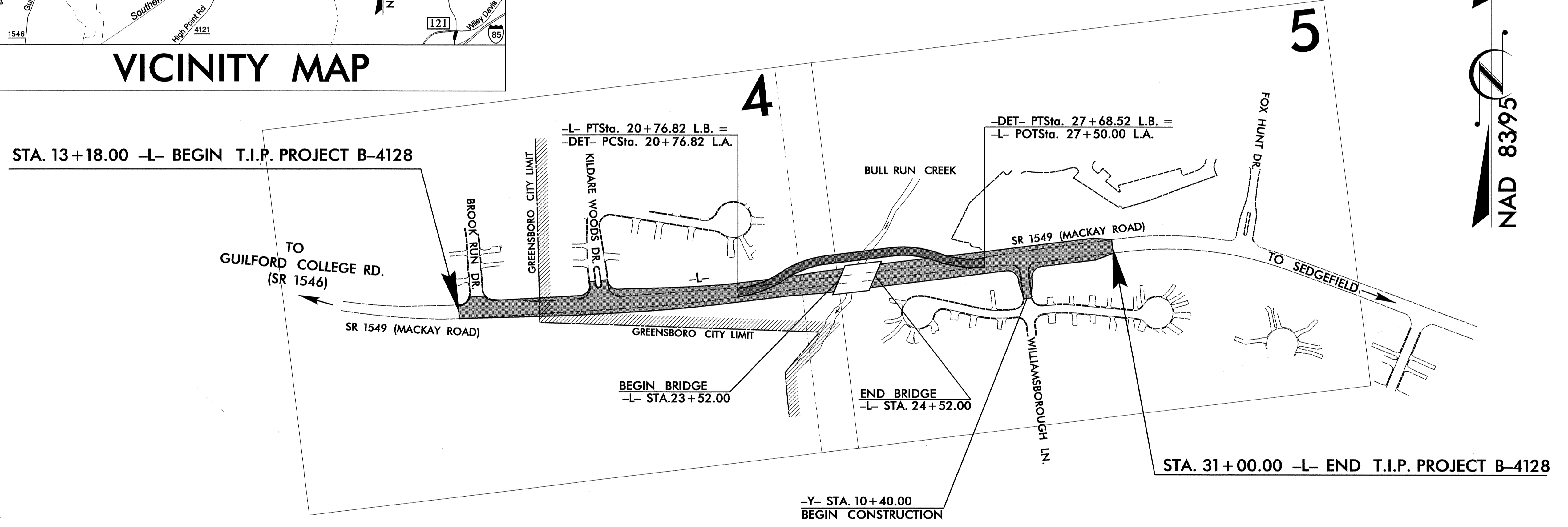


TIP PROJECT: B-4128

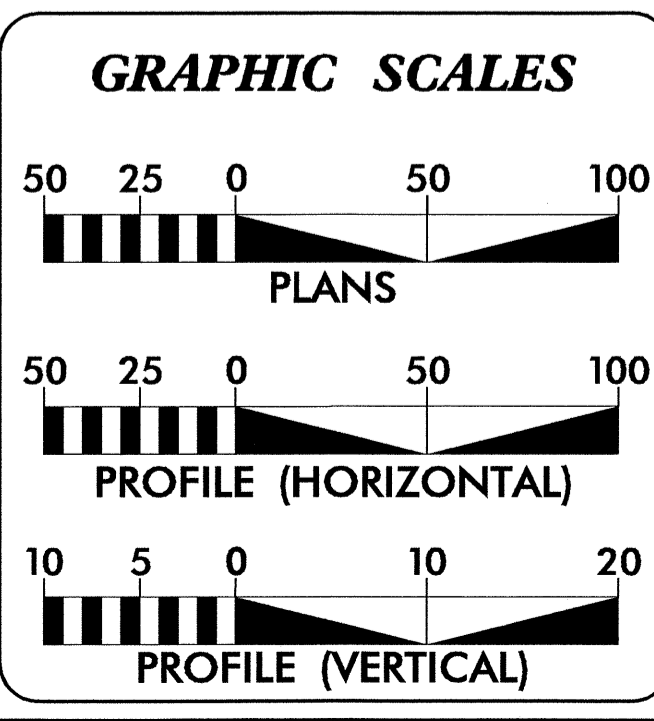
CONTRACT: C201586



VICINITY MAP



DESIGN EXCEPTION REQUIRED FOR VERTICAL CURVE.



DESIGN DATA

ADT 2005 =	9400
ADT 2025 =	20000
DHV =	55 %
D =	10 %
T =	3 % *
V =	45 MPH
* TTST 1%	DUAL 2%
FUNC CLASS = COLLECTOR	

PROJECT LENGTH

LENGTH ROADWAY T.I.P. PROJECT B-4128 =	.319 MI
LENGTH STRUCTURE T.I.P. PROJECT B-4128 =	.019 MI
TOTAL LENGTH OF T.I.P. PROJECT B-4128 =	0.338 MI

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
 OCTOBER 21, 2005

LETTING DATE:
 DECEMBER 18, 2007

JASON MOORE, PE
 PROJECT ENGINEER

KEVIN E. MOORE, PE
 PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SEAL 20870
 9-21-07
 P.E.

ROADWAY DESIGN ENGINEER

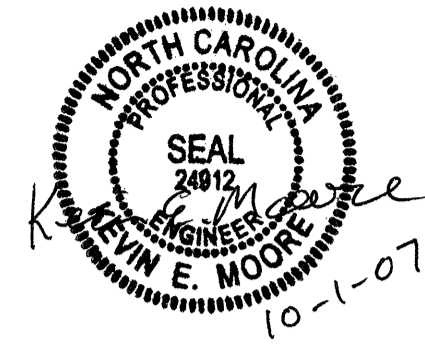
SEAL 24912
 9-19-07
 P.E.

**DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA**

STATE HIGHWAY DESIGN ENGINEER

20-SEP-2007 07:42
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 \$\$\$USERNAME\$\$\$

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS



SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C	SURVEY CONTROL SHEET
2 THRU 2-A	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
2-B	TEMPORARY SHORING DETAIL
2-C	ANCHORAGE FOR FRAMES DETAIL
3	SUMMARY OF QUANTITIES
3-A THRU 3-B	SUMMARY OF DRAINAGE QUANTITIES
3-C	SUMMARY OF GUARDRAIL
3-D	EARTHWORK, ETC.
3-E	PARCEL INDEX SHEET
4 THRU 6	PLAN SHEETS
7 THRU 8	PROFILE SHEETS
TCP-1 THRU TCP-7	TRAFFIC CONTROL PLANS
SD-1	SPECAIL SIGN DESIGN DETAIL
PM-1 THRU PM-2	PAVEMENT MARKING PLANS
EC-1 THRU EC-8	EROSION CONTROL PLANS
RF-1	REFORESTATION PLANS
SIGN-1 THRU SIGN-3	SIGNING PLANS
UC-1 THRU UC-5	UTILITY CONSTRUCTION PLANS
UO-1 THRU UO-3	UTILITIES BY OTHERS PLANS
X-1 THRU X- 11	CROSS-SECTIONS
S-1 THRU S-25	STRUCTURE PLANS

GENERAL NOTES:

2006 SPECIFICATIONS
EFFECTIVE: 07-18-06
REVISED: 07-18-06

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

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

UNDERDRAINS:
UNDERDRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.03 AT LOCATIONS DIRECTED BY THE ENGINEER.

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

TEMPORARY SHORING:
SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC NOT SHOWN ON THE PLANS WILL BE PAID FOR AT THE CONTRACT PRICE FOR "TEMPORARY SHORING" OR "TEMPORARY SHORING-BARRIER SUPPORTED" DEPENDING UPON THE LOCATION OF THE SHORING.

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.

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

UTILITIES:
UTILITY OWNERS ON THIS PROJECT ARE DUKE ENERGY, NORTH STATE COMM., LEVEL 3 COMM., TIME WARNER, PIEDMONT NATURAL GAS, CITY OF GREENSBORO, TOWN OF JAMESTOWN, COLONIAL PIPELINE.

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

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.

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

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

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	
300.02	Method of Pipe Installation - Method 'B'
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
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 7 - CONCRETE PAVEMENTS AND SHOULDERS	
700.05	Tying Proposed Pavement to Existing
DIVISION 8 - INCIDENTALS	
815.03	Pipe Underdrain and Blind Drain
840.01	Brick Catch Basin - 12" thru 54" Pipe
840.00	Concrete Base Pad for Drainage Structures
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
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.24	Frames and Narrow Slot Sag Grates
840.25	Anchorage for Frames - Brick or Concrete. See Detail Sheet 2-C
840.27	Brick Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.45	Precast Drainage Structure
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb & Gutter
848.01	Concrete Sidewalk
848.04	Street Turnout
848.05	Wheelchair Ramp - Curb Cut
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

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	○
Property Corner	-----
Property Monument	□
Parcel/Sequence Number	(123)
Existing Fence Line	-----
Proposed Woven Wire Fence	-----
Proposed Chain Link Fence	-----
Proposed Barbed Wire Fence	-----
Existing Wetland Boundary	-----
Proposed Wetland Boundary	-----
Existing High Quality Wetland Boundary	-----
Existing Endangered Animal Boundary	-----
Existing Endangered Plant Boundary	-----

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	-----
River Basin Buffer	-----
Flow Arrow	←
Disappearing Stream	-----
Spring	○
Swamp Marsh	-----
Proposed Lateral, Tail, Head Ditch	-----
False Sump	-----

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○
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	-----
Proposed Temporary Construction Easement	-----
Proposed Temporary Drainage Easement	-----
Proposed Permanent Drainage Easement	-----
Proposed Permanent Utility Easement	-----

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	-----
Proposed Slope Stakes Fill	-----
Proposed Wheel Chair Ramp	-----
Curb Cut for Future Wheel Chair Ramp	-----
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	□
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:

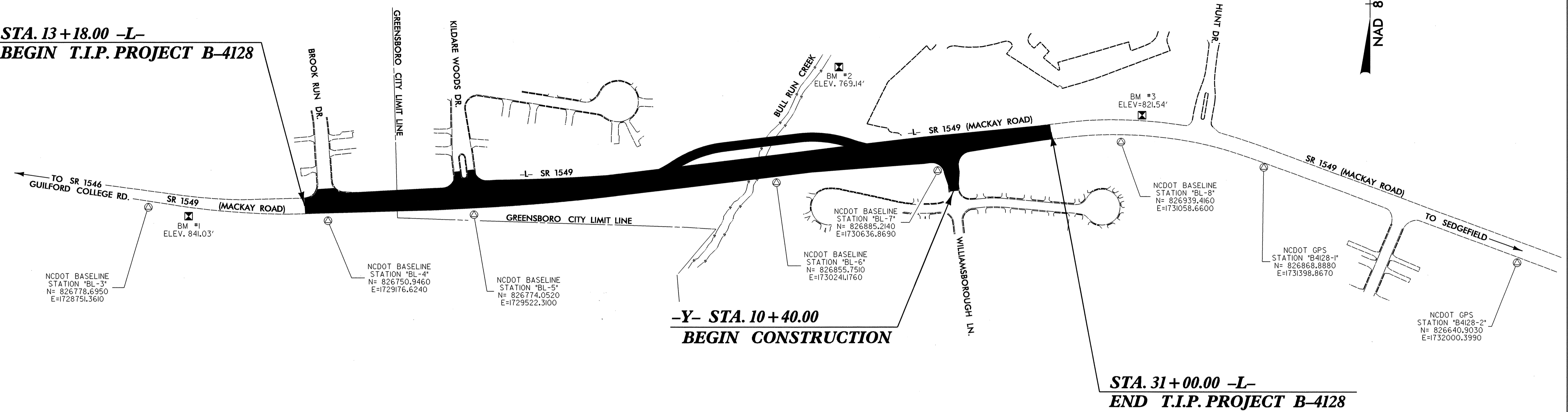
Sanitary Sewer Manhole	○
Sanitary Sewer Cleanout	○
U/G Sanitary Sewer Line	-----
Above Ground Sanitary Sewer	-----
Recorded SS Forced Main Line	-----
Designated SS Forced Main Line (S.U.E.*)	-----

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.

B-4128 SURVEY CONTROL SHEET

STA. 13+18.00 -L-
BEGIN T.I.P. PROJECT B-4128



-Y- STA. 10+40.00
BEGIN CONSTRUCTION

STA. 31+00.00 -L-
END T.I.P. PROJECT B-4128

NOTES

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project/)
 FILE: b4128_ls_control_050406.txt
 SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

CONTROL DATA

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
3	BL-3		826778.6950	1728751.3610	841.84	OUTSIDE PROJECT LIMITS	
4	BL-4		826750.9460	1729176.6240	820.14	13+72.08	25.11 RT
5	BL-5		826774.0520	1729522.3100	798.12	17+18.51	20.74 RT
6	BL-6		826855.7510	1730241.1760	771.93	24+40.87	14.21 RT
7	BL-7		826885.2140	1730636.8690	795.66	28+37.21	33.08 RT
8	BL-8		826939.4160	1731058.6600	816.32	OUTSIDE PROJECT LIMITS	

BENCHMARK DATA

 BM1 ELEVATION = 841.03
 N 826749 E 1728846
 L STATION 10+46 33 RIGHT
 RR SPIKE IN POWER POLE

 BM2 ELEVATION = 769.14
 N 827105 E 1730390
 L STATION 26+19 215 LEFT
 RR SPIKE IN POWER POLE

 BM3 ELEVATION = 821.54
 N 826985 E 1731110
 L STATION 31+44
 N 80° 15' 38.2" E DIST 175.38
 RR SPIKE IN POWER POLE

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4128-1" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 826868.89(ft) EASTING: 1731398.87(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 99992746 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4128-1" TO -L- STATION 13+18.00 IS S 87° 35' 30" W 2279.61' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

⊙ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
 PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
 NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING USER SERVICE (OPUS)
NOTE: DRAWING NOT TO SCALE

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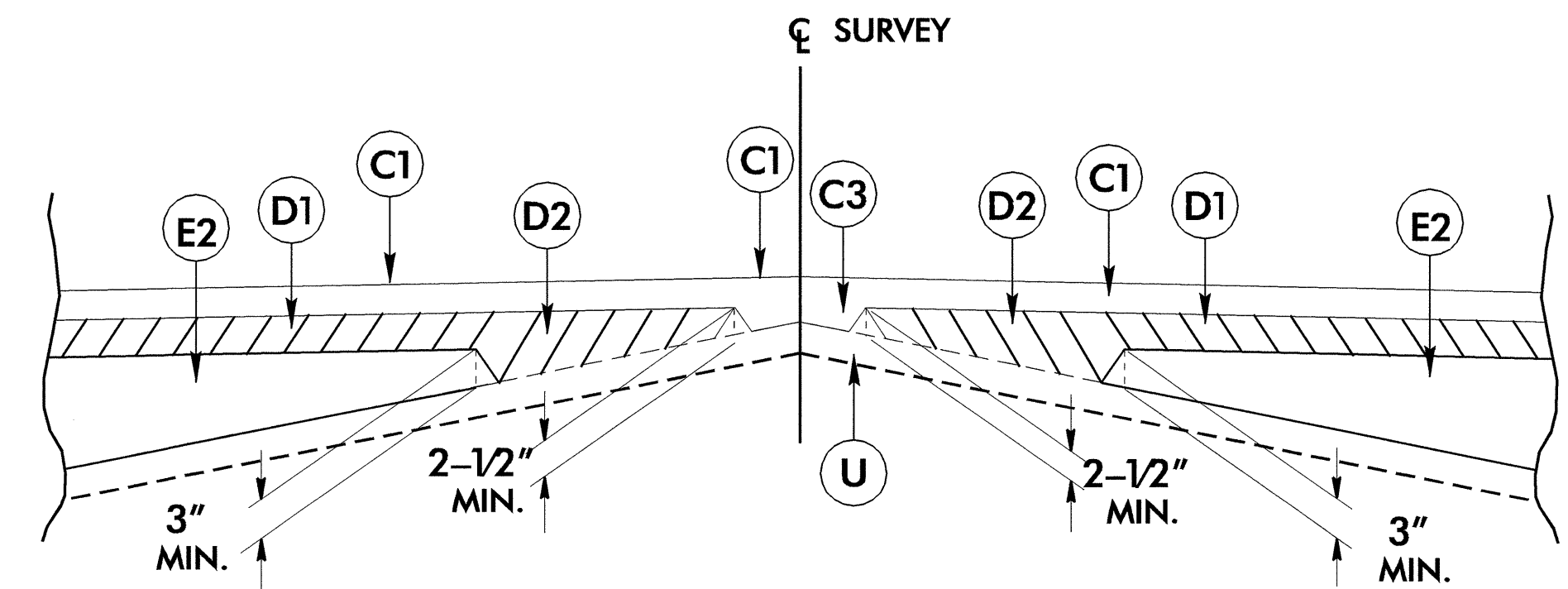
6/2/99

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	P	PRIME COAT
C2	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.	R1	2' - 6" CONCRETE CURB AND GUTTER
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.	S	4" CONCRETE SIDEWALK
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	T	EARTH MATERIAL.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 2 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH	U	EXISTING PAVEMENT.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	V	VARIABLE MILLING
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH	W	WEDGING DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL)
J1	PROP. 8" AGGREGATE BASE COURSE.		

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

PROJECT REFERENCE NO. B-4128	SHEET NO. 2
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER

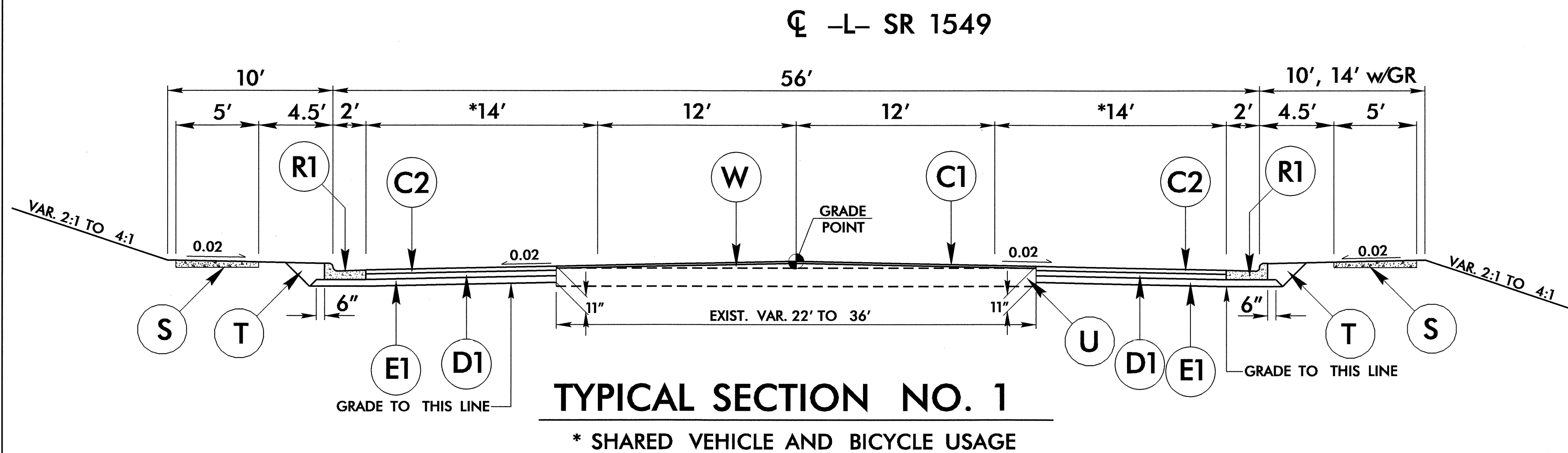


Detail Showing Method of Wedging

NOTE: TRANSITION FROM EXISTING TO T.S NO. 1 FROM -L- STA. 13+18.00 TO STA.16+18.00

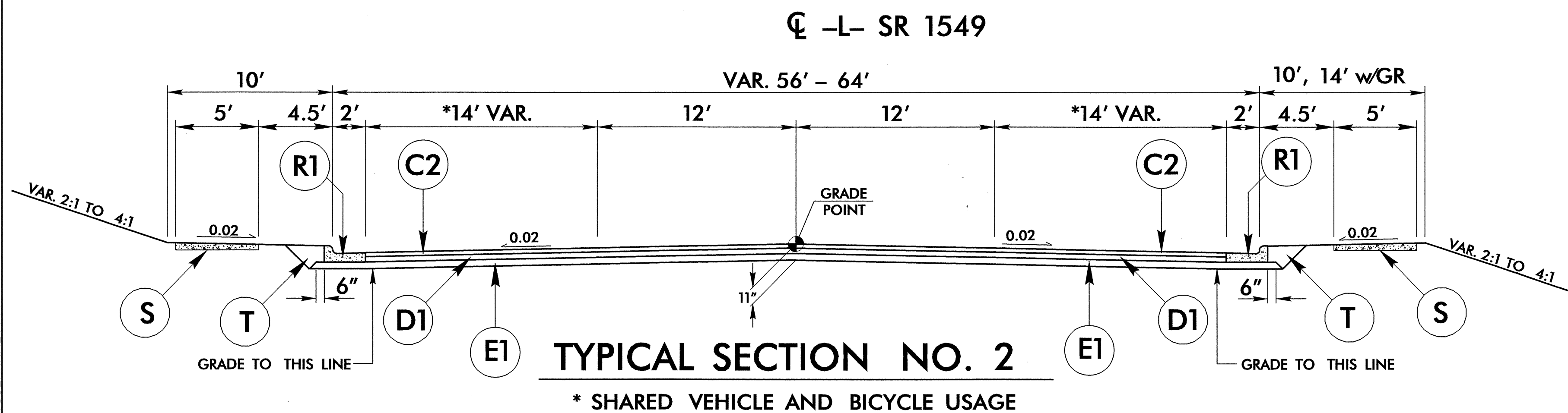
USE TYPICAL SECTION NO. 1

-L- STA. 16+18.00 TO STA. 20+00.00



TYPICAL SECTION NO. 1

* SHARED VEHICLE AND BICYCLE USAGE



TYPICAL SECTION NO. 2

* SHARED VEHICLE AND BICYCLE USAGE

USE TYPICAL SECTION NO. 2

-L- STA. 20+00.00 TO STA. 23+52.00 (BEGIN BRIDGE)


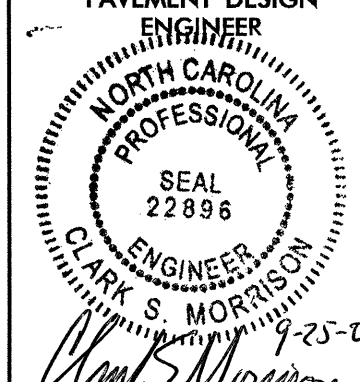
-L- STA. 24+52.00 (END BRIDGE) TO STA. 25+25.00

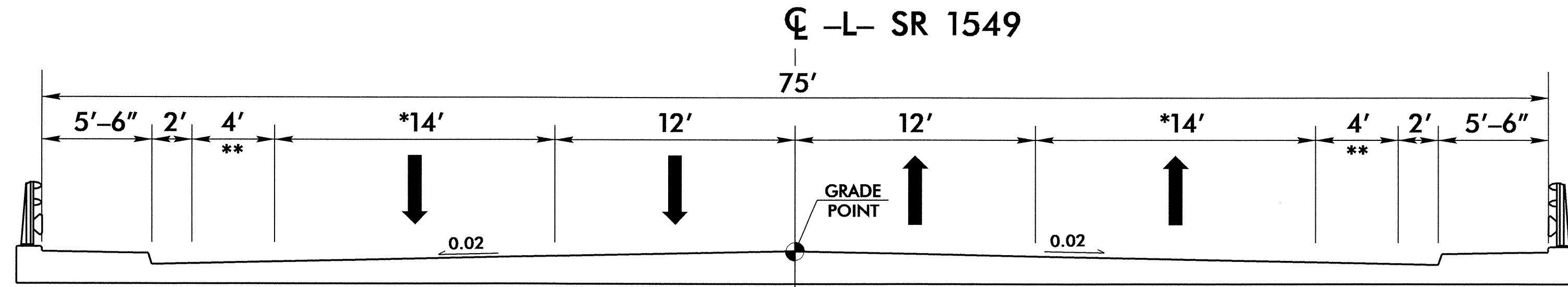
TRANSITION FROM T.S. NO. 2 TO T.S. NO. 3

-L- STA. 25+25.00 TO 27+75.00

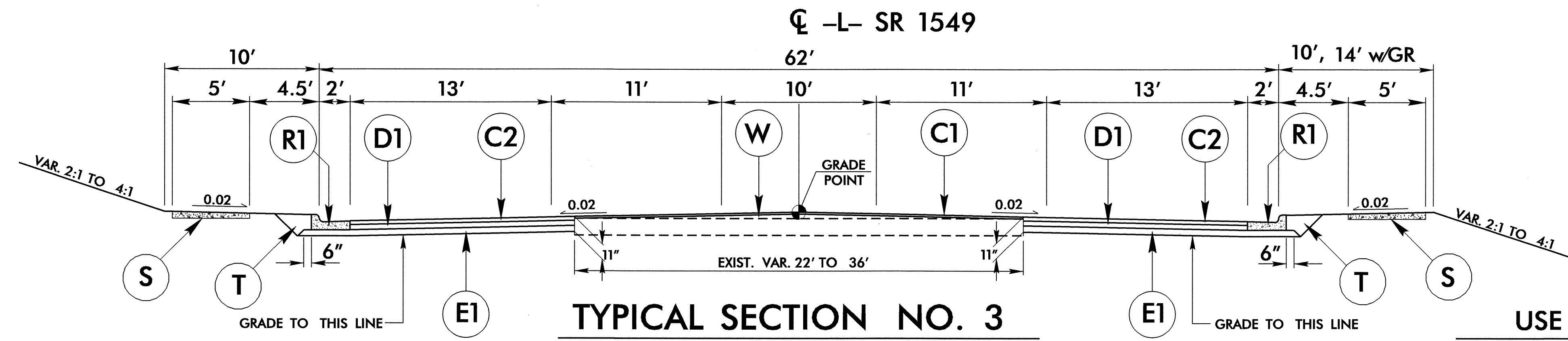
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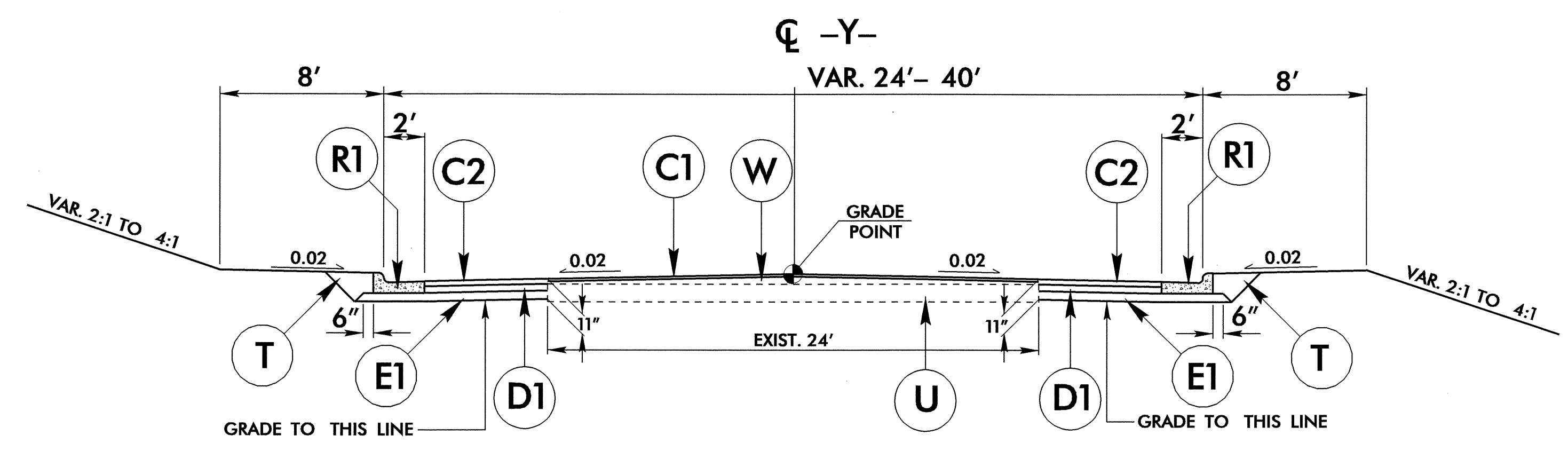
PROJECT REFERENCE NO. B-4128	SHEET NO. 2-A
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER 



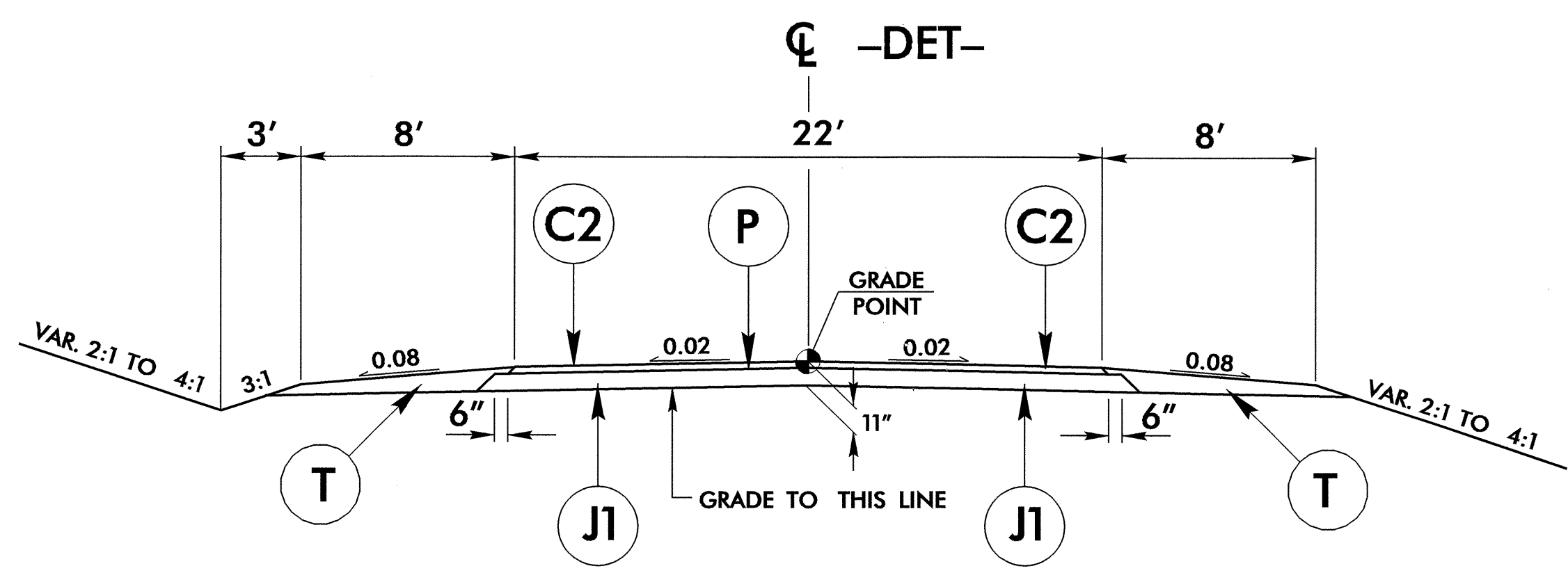
TYPICAL SECTION ON STRUCTURE
 -L- STA. 23+52.00 TO STA. 24+52.00
 * SHARED VEHICLE AND BICYCLE USAGE
 ** WIDTH FOR HYDRAULIC DESIGN SPREAD



USE TYPICAL SECTION NO. 3
 -L- STA. 27+75.00 TO STA. 30+50.00
 TRANSITION FROM T.S. NO. 3 TO EXISTING
 -L- STA. 30+50.00 TO 31+00.00



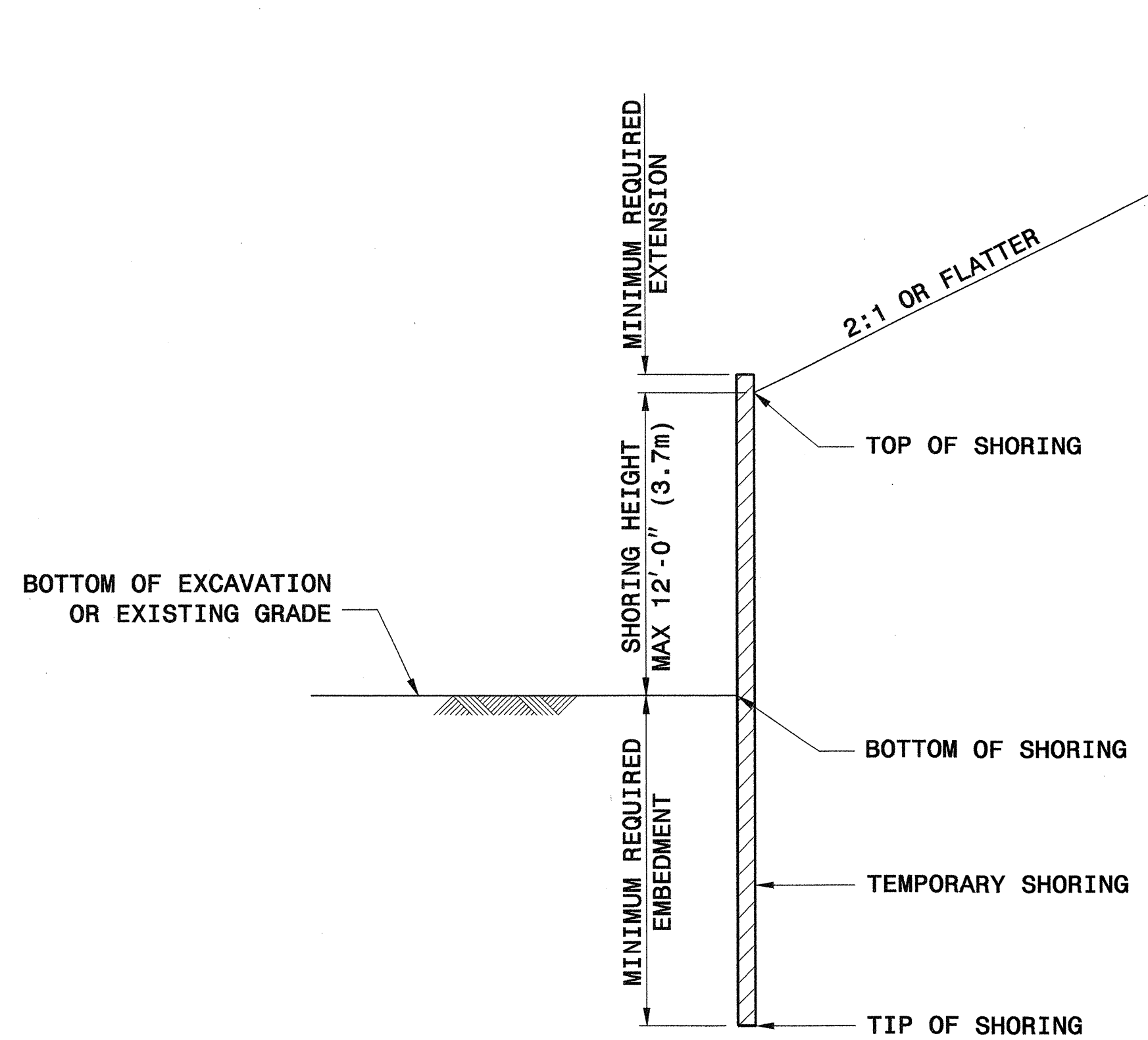
USE TYPICAL SECTION NO. 4
 -Y- STA. 10+40.00 TO STA. 10+91.96



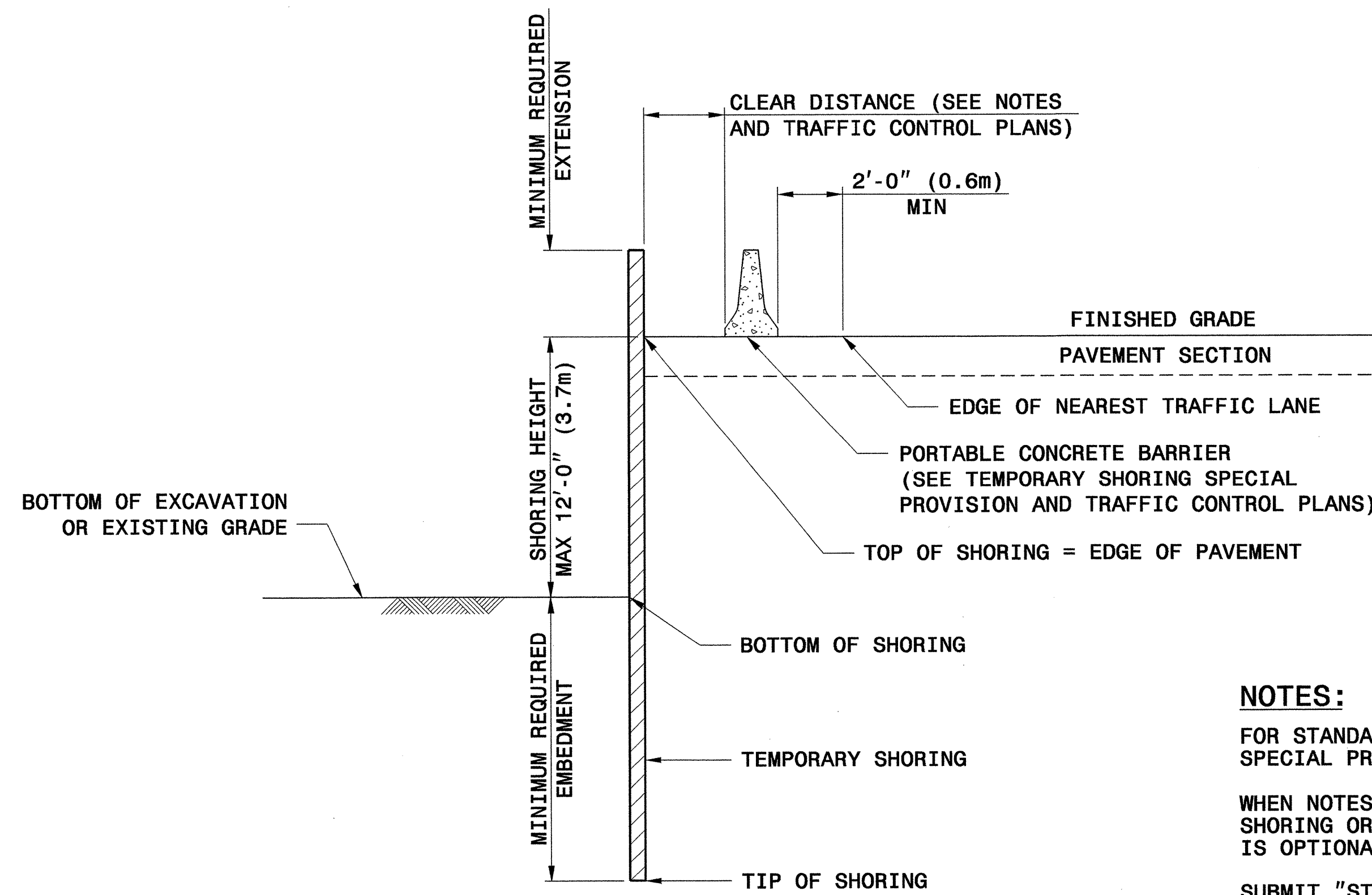
USE TYPICAL SECTION NO. 5
 -DET- STA. 21+56.38 TO STA. 24+04.00 (BEGIN BRIDGE)
 -DET- STA. 24+89.00 (END BRIDGE) TO STA. 26+89.36

PAVEMENT SCHEDULE	
C1	1.5" S9.5B
C2	3.0" S9.5B
C3	VAR. DEPTH S9.5B
D1	4.0" I19.0B
D2	VAR. DEPTH I19.0B
E1	4.0" B25.0B
E2	VAR. DEPTH B25.0B
J1	8.0" ABC
P	PRIME COAT
R1	2' - 6" CONC. C&G
S	4" CONC. SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	MILLING
W	WEDGING

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SLOPE CASE



SURCHARGE CASE

NOTES:

FOR STANDARD TEMPORARY SHORING, SEE TEMPORARY SHORING SPECIAL PROVISION.
 WHEN NOTES ON PLANS DO NOT PROHIBIT STANDARD TEMPORARY SHORING OR STANDARD SHORING, STANDARD TEMPORARY SHORING IS OPTIONAL.

SUBMIT "STANDARD TEMPORARY SHORING SELECTION FORM" AT LEAST 14 DAYS BEFORE BEGINNING SHORING CONSTRUCTION. UP TO THREE LOCATIONS MAY BE INCLUDED ON EACH SELECTION FORM.

- STANDARD TEMPORARY SHORING IS BASED ON THE FOLLOWING CONDITIONS:
- 1) MAXIMUM SHORING HEIGHT IS 12'-0" (3.7m).
 - 2) TRAFFIC SURCHARGE IS 240 PSF (11.5 KPA) MAXIMUM OR BACKSLOPE IS 2:1 (H:V) OR FLATTER.
 - 3) BOTTOM OF EXCAVATION OR EXISTING GRADE IN FRONT OF SHORING IS 6:1 (H:V) SLOPE OR FLATTER.
 - 4) H PILE SPACING IS 6'-0" (1.8m).
 - 5) H PILE EMBEDMENT DEPTHS ARE FOR DRIVEN PILES.
 - 6) TIMBER LAGGING IS A MINIMUM OF 3" (75mm) THICK.

STANDARD TEMPORARY SHORING IS BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:
 TOTAL UNIT WEIGHT = 120 PCF (18.8 KN/M³)
 FRICTION ANGLE = 30 DEGREES
 COHESION = 0 PSF (0 KPA)
 GROUNDWATER IS ASSUMED TO BE BELOW BOTTOM OF SHORING.

DO NOT USE STANDARD TEMPORARY SHORING WHEN THE ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE OR GROUNDWATER IS ABOVE THE BOTTOM OF SHORING.

DO NOT USE STANDARD TEMPORARY SHORING WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS PRESENT WITHIN THE EMBEDMENT DEPTH.

VERIFY GROUNDWATER ELEVATION BEFORE BEGINNING SHORING CONSTRUCTION.

IF THE CLEAR DISTANCE AVAILABLE IS LESS THAN THE MINIMUM REQUIRED IN ACCORDANCE WITH THE TRAFFIC CONTROL PLANS, SET THE BARRIER AGAINST THE TRAFFIC SIDE OF THE SHORING AND USE THE "SURCHARGE CASE WITH TRAFFIC IMPACT".

AT THE CONTRACTOR'S OPTION, H PILE EMBEDMENT DEPTHS FOR PILES SET IN DRILLED HOLES MAY BE REDUCED BY 25%. FOR PILE EXCAVATION, SEE TEMPORARY SHORING SPECIAL PROVISION.

CONTROL DRAINAGE DURING CONSTRUCTION IN THE VICINITY OF THE SHORING. COLLECT AND DIRECT RUNOFF AWAY FROM SHORING.

CONTACT THE ENGINEER IF MINIMUM REQUIRED EMBEDMENT IS NOT ACHIEVED.

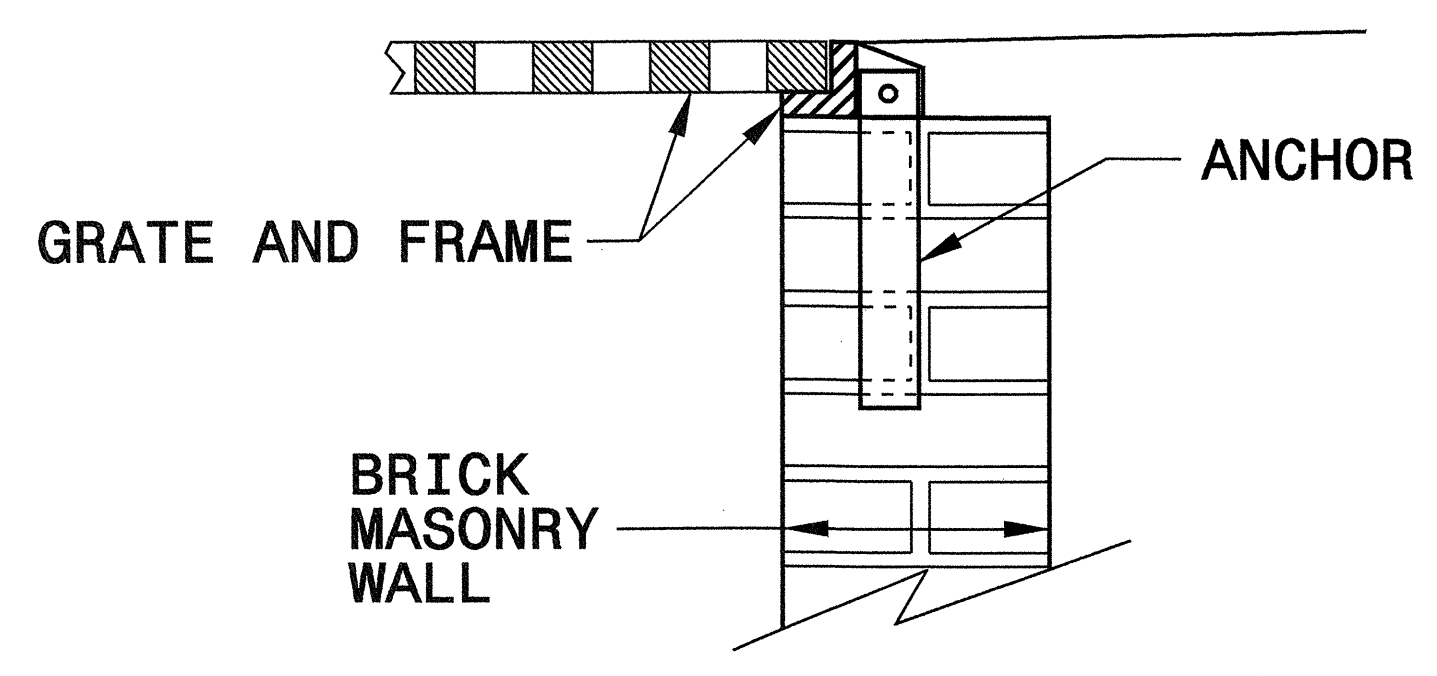
GROUNDWATER CONDITION	SHORING HEIGHT FT (m)	SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT					SURCHARGE CASE WITH TRAFFIC IMPACT				
		SHEET PILES		H PILES WITH TIMBER LAGGING			SHEET PILES		H PILES WITH TIMBER LAGGING		
		MINIMUM REQUIRED EMBEDMENT FT (m)	MINIMUM REQUIRED SECTION MODULUS IN ³ /FT (cm ³ /m)	MINIMUM REQUIRED EMBEDMENT FT (m)			MINIMUM REQUIRED EMBEDMENT FT (m)	MINIMUM REQUIRED SECTION MODULUS IN ³ /FT (cm ³ /m)	MINIMUM REQUIRED EMBEDMENT FT (m)		
			HP 10x42 (HP 250x62)	HP 12x53 (HP 310x79)	HP 14x73 (HP 360x108)			HP 10x42 (HP 250x62)	HP 12x53 (HP 310x79)	HP 14x73 (HP 360x108)	
GROUNDWATER ELEVATION BELOW TIP OF SHORING	< 6 (1.8)	7.5 (2.3)	3.0 (161)	8.0 (2.4)	8.0 (2.4)	8.0 (2.4)	11.0 (3.4)	10.0 (538)	9.5 (2.9)	9.5 (2.9)	9.5 (2.9)
	7 (2.1)	8.5 (2.6)	4.5 (242)	9.5 (2.9)	9.5 (2.9)	9.5 (2.9)	12.0 (3.7)	12.0 (645)	10.5 (3.2)	10.5 (3.2)	10.5 (3.2)
	8 (2.4)	10.0 (3.0)	6.5 (349)	10.5 (3.2)	10.5 (3.2)	10.5 (3.2)	12.5 (3.8)	14.0 (753)	11.5 (3.5)	11.5 (3.5)	11.5 (3.5)
	9 (2.7)	11.0 (3.4)	9.5 (511)	--	12.0 (3.7)	12.0 (3.7)	13.5 (4.1)	16.5 (887)	--	12.5 (3.8)	12.5 (3.8)
	10 (3.0)	12.5 (3.8)	13.0 (699)	--	--	13.5 (4.1)	14.0 (4.3)	19.5 (1048)	--	13.5 (4.1)	13.5 (4.1)
	11 (3.4)	13.5 (4.1)	17.0 (914)	--	--	14.5 (4.4)	15.0 (4.6)	22.5 (1210)	--	--	14.5 (4.4)
GROUNDWATER ELEVATION BETWEEN BOTTOM OF SHORING AND TIP OF SHORING	< 6 (1.8)	11.5 (3.5)	4.5 (242)	11.5 (3.5)	11.5 (3.5)	11.5 (3.5)	16.0 (4.9)	12.0 (645)	13.0 (4.0)	13.0 (4.0)	13.0 (4.0)
	7 (2.1)	13.0 (4.0)	7.0 (376)	13.0 (4.0)	13.0 (4.0)	13.0 (4.0)	17.0 (5.2)	14.5 (780)	14.5 (4.4)	14.5 (4.4)	14.5 (4.4)
	8 (2.4)	15.0 (4.6)	10.0 (538)	--	15.0 (4.6)	15.0 (4.6)	18.0 (5.5)	17.0 (914)	--	15.5 (4.7)	15.5 (4.7)
	9 (2.7)	17.0 (5.2)	14.0 (753)	--	17.0 (5.2)	17.0 (5.2)	19.0 (5.8)	20.0 (1075)	--	17.0 (5.2)	17.0 (5.2)
	10 (3.0)	18.5 (5.6)	19.5 (1048)	--	--	18.5 (5.6)	20.0 (6.1)	23.5 (1263)	--	--	18.5 (5.6)
	11 (3.4)	20.5 (6.3)	26.0 (1398)	--	--	--	21.0 (6.4)	28.0 (1505)	--	--	20.0 (6.1)
12 (3.7)	22.5 (6.9)	33.0 (1774)	--	--	--	22.0 (6.7)	33.0 (1774)	--	--	21.5 (6.6)	

NOTE: MINIMUM REQUIRED EXTENSION IS 6" (150mm) FOR "SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT" AND 32" (800 mm) FOR "SURCHARGE CASE WITH TRAFFIC IMPACT".

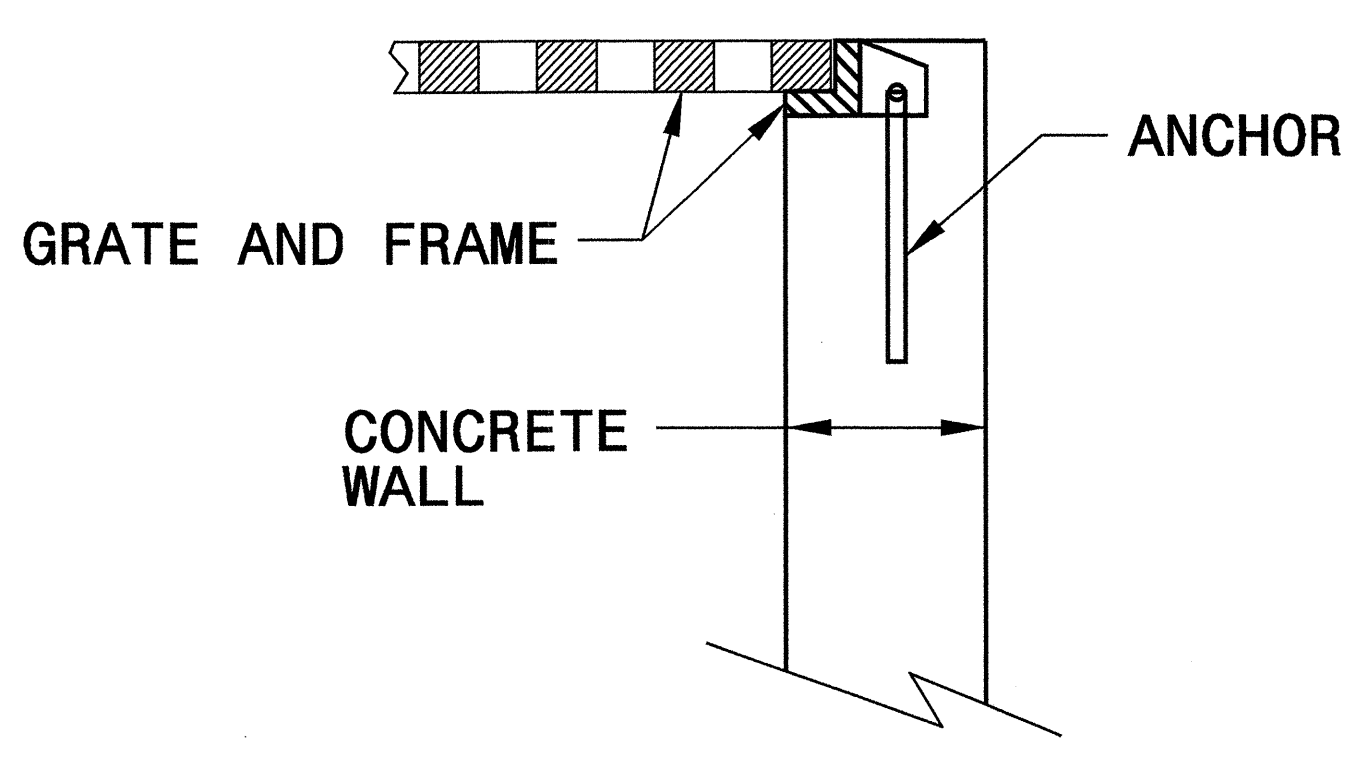
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

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

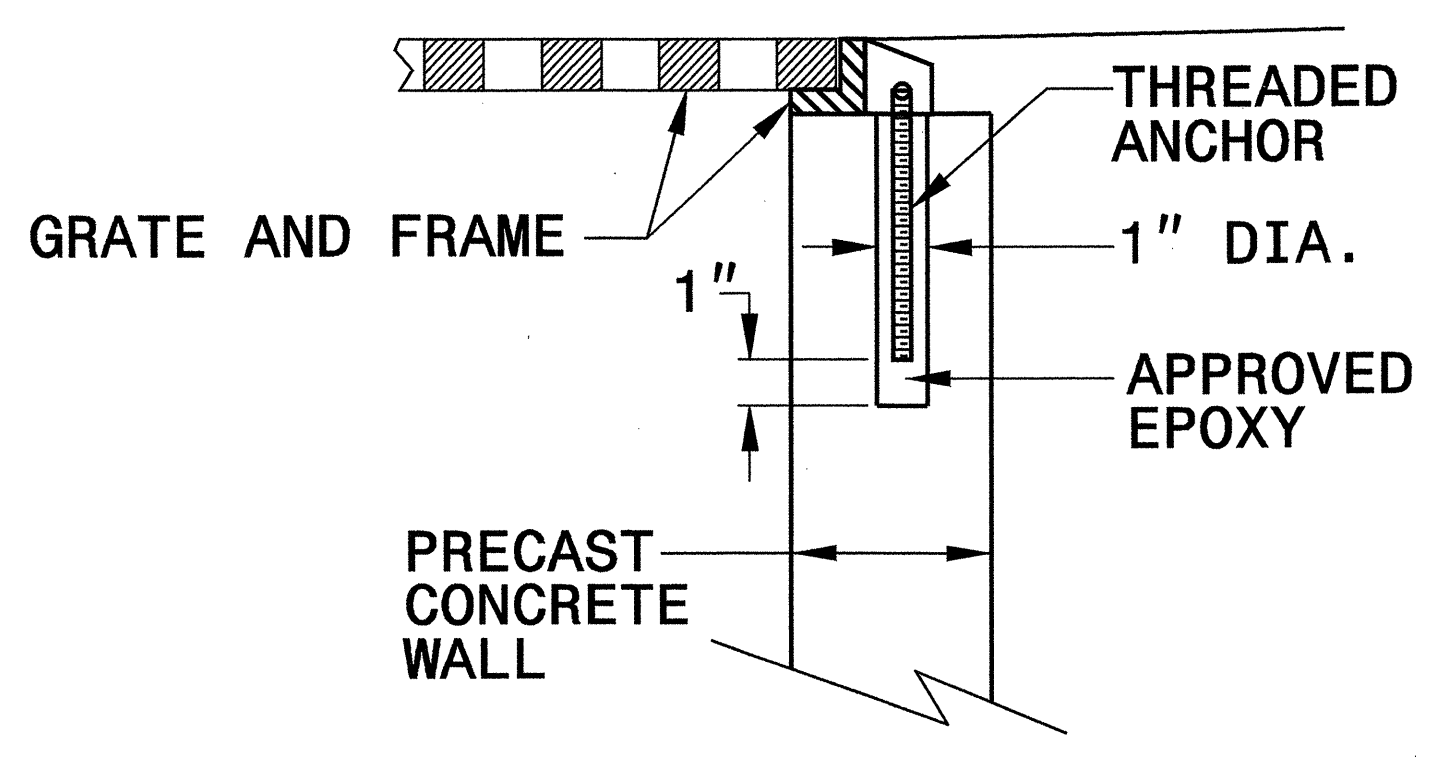
SHEET 1 OF 1
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**BRICK MASONRY
CONSTRUCTION**



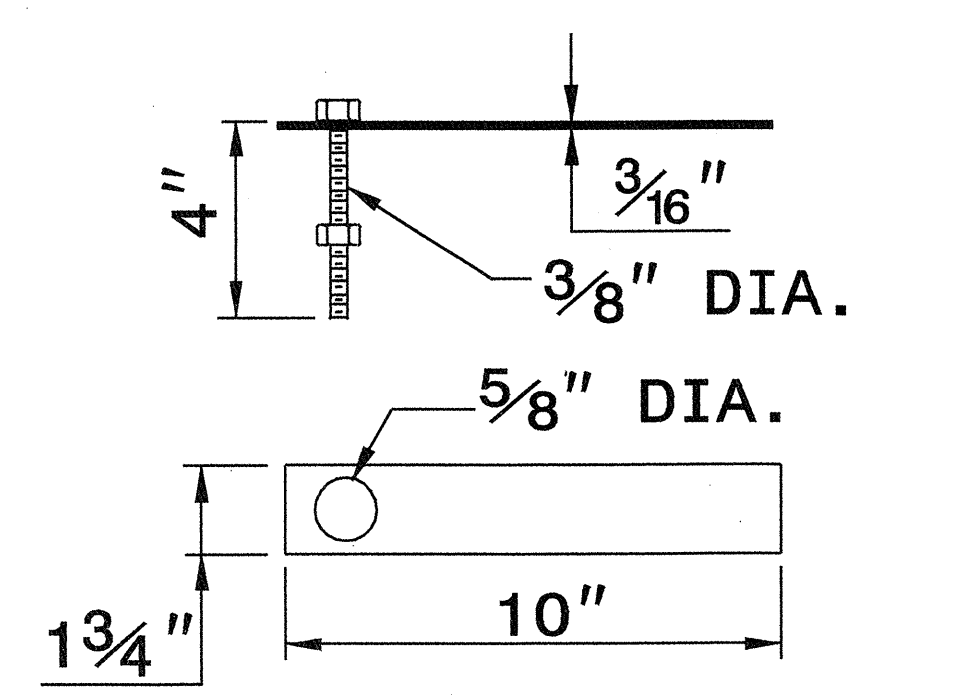
**CONCRETE
CONSTRUCTION**



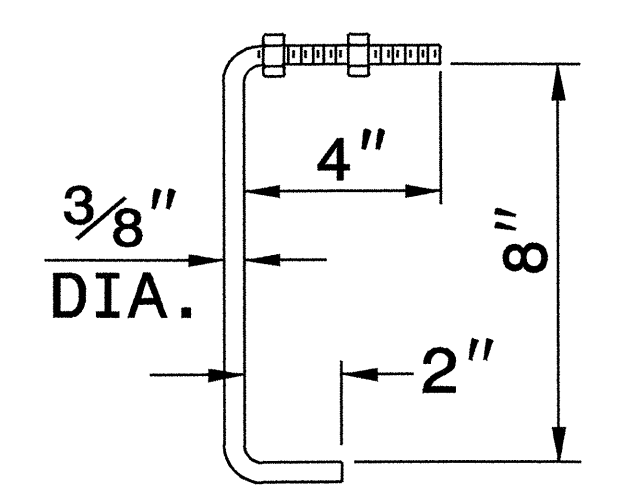
**PRECAST CONCRETE
CONSTRUCTION**

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

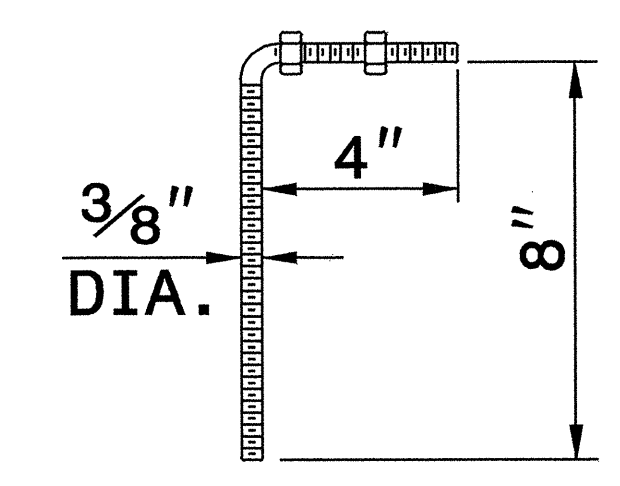
NOTE:
CONSTRUCT GRATED DROP INLET TO COINCIDE WITH NORMAL
OR SUPERELEVATED SHOULDER OR PAVEMENT SLOPE.



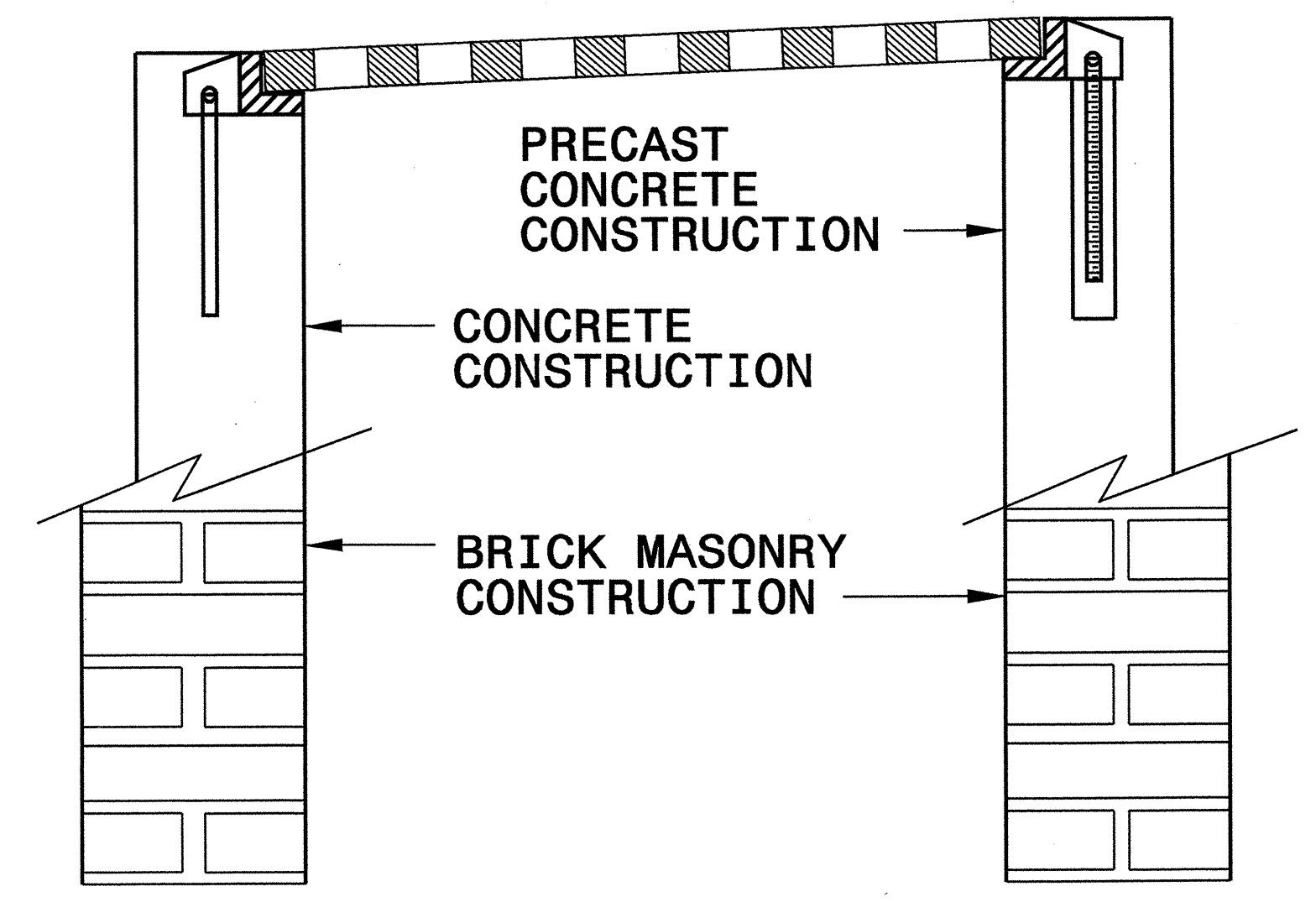
MASONRY ANCHOR
3/8" DIA. BOLT WITH PLATE



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
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**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.: _____

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C201586

ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION	4840000000-N	1205	24	EA	PAINT PAVEMENT MARKING CHARACTER
0029000000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ***** (24+02.00)	4845000000-N	1205	28	EA	PAINT PAVEMENT MARKING SYMBOL
0043000000-N	226	Lump Sum		GRADING	4847000000-E	1205	5,648	LF	POLYUREA PAVEMENT MARKING LINES (4", *****) (STANDARD BEADS)
0050000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUBBING	4847110000-E	1205	239	LF	POLYUREA PAVEMENT MARKING LINES (8", *****) (STANDARD BEADS)
0057000000-E	226	200	CY	UNDERCUT EXCAVATION	4847200000-N	1205	12	EA	POLYUREA PAVEMENT MARKING CHARACTER (***** (STANDARD BEADS)
0080000000-E	SP	100	TON	CLASS IV SUBGRADE STABILIZATION	4847200000-N	1205	14	EA	POLYUREA PAVEMENT MARKING SYMBOL (***** (STANDARD BEADS)
0134000000-E	240	160	CY	DRAINAGE DITCH EXCAVATION	4905000000-N	1253	141	EA	SNOWPLOWABLE PAVEMENT MARKERS
0195000000-E	265	400	CY	SELECT GRANULAR MATERIAL	4915000000-E	1264	8	EA	7 U-CHANNEL POSTS
0196000000-E	270	500	SY	FABRIC FOR SOIL STABILIZATION	4957000000-N	1264	8	EA	OBJECT MARKERS (TYPE **) (III)
0199000000-E	SP	150	SF	TEMPORARY SHORING	5325000000-E	1510	10	LF	8" WATER LINE
0318000000-E	300	400	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRS	5326200000-E	1510	1,381	LF	12" WATER LINE
0366000000-E	310	1,204	LF	15" RC PIPE CULVERTS, CLASS III	5546000000-E	1515	2	EA	8" VALVE
0372000000-E	310	348	LF	18" RC PIPE CULVERTS, CLASS III	5558000000-E	1515	3	EA	12" VALVE
0378000000-E	310	500	LF	24" RC PIPE CULVERTS, CLASS III	5672000000-N	1515	4	EA	RELOCATE FIRE HYDRANT
0384000000-E	310	32	LF	30" RC PIPE CULVERTS, CLASS III	5691700000-E	1520	113	LF	18" SANITARY GRAVITY SEWER
0708000000-E	310	24	LF	15" BIT COAT CS PIPE CULVERTS, TYPE B 0.064" THICK	5768000000-N	1520	1	EA	SANITARY SEWER CLEAN-OUT
0720000000-E	310	208	LF	24" BIT COAT CS PIPE CULVERTS, TYPE B 0.064" THICK	5775000000-E	1525	2	EA	4" DIA UTILITY MANHOLE
0808000000-E	310	3	EA	24" BIT COAT CS PIPE ELBOWS, TYPE B 0.064" THICK	5781000000-E	1525	17	LF	UTILITY MANHOLE WALL, 4" DIA
0995000000-E	340	460	LF	PIPE REMOVAL	5811000000-E	1530	106	LF	ABANDON 18" UTILITY PIPE
1121000000-E	520	560	TON	AGGREGATE BASE COURSE	5828000000-N	1530	1	EA	REMOVE UTILITY MANHOLE
1220000000-E	545	100	TON	INCIDENTAL STONE BASE	5871700000-E	1550	126	LF	TRENCHLESS INSTALLATION OF 12" IN SOIL
1275000000-E	600	420	GAL	PRIME COAT	5871710000-E	1550	80	LF	TRENCHLESS INSTALLATION OF 12" NOT IN SOIL
1330000000-E	607	460	SY	INCIDENTAL MILLING	6000000000-E	1605	3,100	LF	TEMPORARY SILT FENCE
1489000000-E	610	1,700	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B	6006000000-E	1610	205	TON	STONE FOR EROSION CONTROL, CLASS A
1498000000-E	610	1,900	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE 119.0B	6009000000-E	1610	665	TON	STONE FOR EROSION CONTROL, CLASS B
1519000000-E	610	2,000	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5B	6012000000-E	1610	330	TON	SEDIMENT CONTROL STONE
1560000000-E	620	283	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22	6015000000-E	1615	4.5	ACR	TEMPORARY MULCHING
1693000000-E	654	175	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR	6018000000-E	1620	150	LB	SEED FOR TEMPORARY SEEDING
2022000000-E	815	23	CY	SUBDRAIN EXCAVATION	6021000000-E	1620	0.75	TON	FERTILIZER FOR TEMPORARY SEEDING
2033000000-E	815	17	CY	SUBDRAIN FINE AGGREGATE	6024000000-E	1622	35	LF	TEMPORARY SLOPE DRAINS
2044000000-E	815	100	LF	6" PERFORATED SUBDRAIN PIPE	6027000000-N	1622	1	EA	INLET PROTECTION AT TEMPORARY SLOPE DRAINS
2055000000-E	815	3	EA	6" SUBDRAIN PIPE WYES, TEES, & ELBOWS	6029000000-E	SP	300	LF	SAFETY FENCE
2066000000-N	815	1	EA	CONCRETE PAD FOR SUBDRAIN PIPE OUTLET	6030000000-E	1630	2,785	CY	SILT EXCAVATION
2077000000-E	815	6	LF	6" OUTLET PIPE (SUBDRAINS)	6036000000-E	1631	1,160	SY	MATTING FOR EROSION CONTROL
2286000000-N	840	22	EA	MASONRY DRAINAGE STRUCTURES	6037000000-E	SP	10	SY	COIR FIBER MAT
2308000000-E	840	5	LF	MASONRY DRAINAGE STRUCTURES	6038000000-E	SP	170	SY	PERMANENT SOIL REINFORCEMENT MAT
2364000000-N	840	1	EA	FRAME WITH TWO GRATES, STD 840.16	6042000000-E	1632	440	LF	1/4" HARDWARE CLOTH
2366000000-N	840	2	EA	FRAME WITH TWO GRATES, STD 840.24	6071030000-E	SP	620	LF	COIR FIBER BAFFLES
2374000000-N	840	2	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (E)	6071050000-E	SP	1	EA	*** SKIMMER (2")
2374000000-N	840	7	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (F)	6084000000-E	1660	4.5	ACR	SEEDING & MULCHING
2374000000-N	840	10	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (G)	6087000000-E	1660	2.5	ACR	MOWING
2535000000-E	846	50	LF	***X*** CONCRETE CURB (8" X 18")	6090000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
2549000000-E	846	3,190	LF	2-6" CONCRETE CURB & GUTTER	6093000000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
2591000000-E	848	1,700	SY	4" CONCRETE SIDEWALK	6096000000-E	1662	100	LB	SEED FOR SUPPLEMENTAL SEEDING
2605000000-N	848	15	EA	CONCRETE WHEELCHAIR RAMPS	6108000000-E	1665	3.25	TON	FERTILIZER TOPDRESSING
3030000000-E	862	250	LF	STEEL BM GUARDRAIL	6114000000-N	SP	2	HR	SPECIALIZED HAND MOWING
3150000000-N	862	10	EA	ADDITIONAL GUARDRAIL POSTS	6117000000-N	SP	27	EA	RESPONSE FOR EROSION CONTROL
					6123000000-E	1670	0.5	ACR	REFORESTATION

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DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA

SUMMARY OF EARTHWORK
 IN CUBIC YARDS

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.

LOCATION	UNCLASSIFIED EXCAVATION	EMBT + %	BORROW	WASTE
-L LT- STA. 13+00.00 TO STA. 23+52.00	1,196	406	0	790
-L RT- STA. 13+00.00 TO STA. 23+52.00	546	640	94	0
SUBTOTAL NO. 1	1,742	1,046	94	790
-L LT- STA. 24+52.00 TO STA. 31+00.00	599	552	0	47
-L RT- STA. 24+52.00 TO STA. 31+00.00	727	349	0	378
-Y- STA. 10+30.00 TO 11+00.00	90	0	0	90
SUBTOTAL NO. 2	1,416	901	0	515
-DET- STA. 21+50.00 TO STA. 24+04+/-	740	697	0	43
-DET- STA. 24+89+/- TO STA. 27+00.00	567	1,013	446	0
-DET REM- STA. 21+50.00 TO STA. 24+04+/-	568	530	0	38
-DET REM- STA. 24+89+/- TO STA. 27+00.00	637	175	0	462
SUBTOTAL NO. 3	2,512	2,415	446	543
PROJECT SUBTOTALS	5,670	4,362	540	1,848
LOSS DUE TO CLEAR. & GRUB.	-400			-400
WASTE IN LIEU OF BORROW			-94	-94
REPLACE TOPSOIL IN BORROW PIT			22	
GRAND TOTALS	5,270	4,591	468	1,354
SAY	5,300		500	

DRAINAGE DITCH EXCAVATION = 160 CU. YD.
 UNDERCUT EXCAVATION = 200 CU. YD.
 SELECT GRANULAR MATERIAL = 400 CU. YD.

Note: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading".

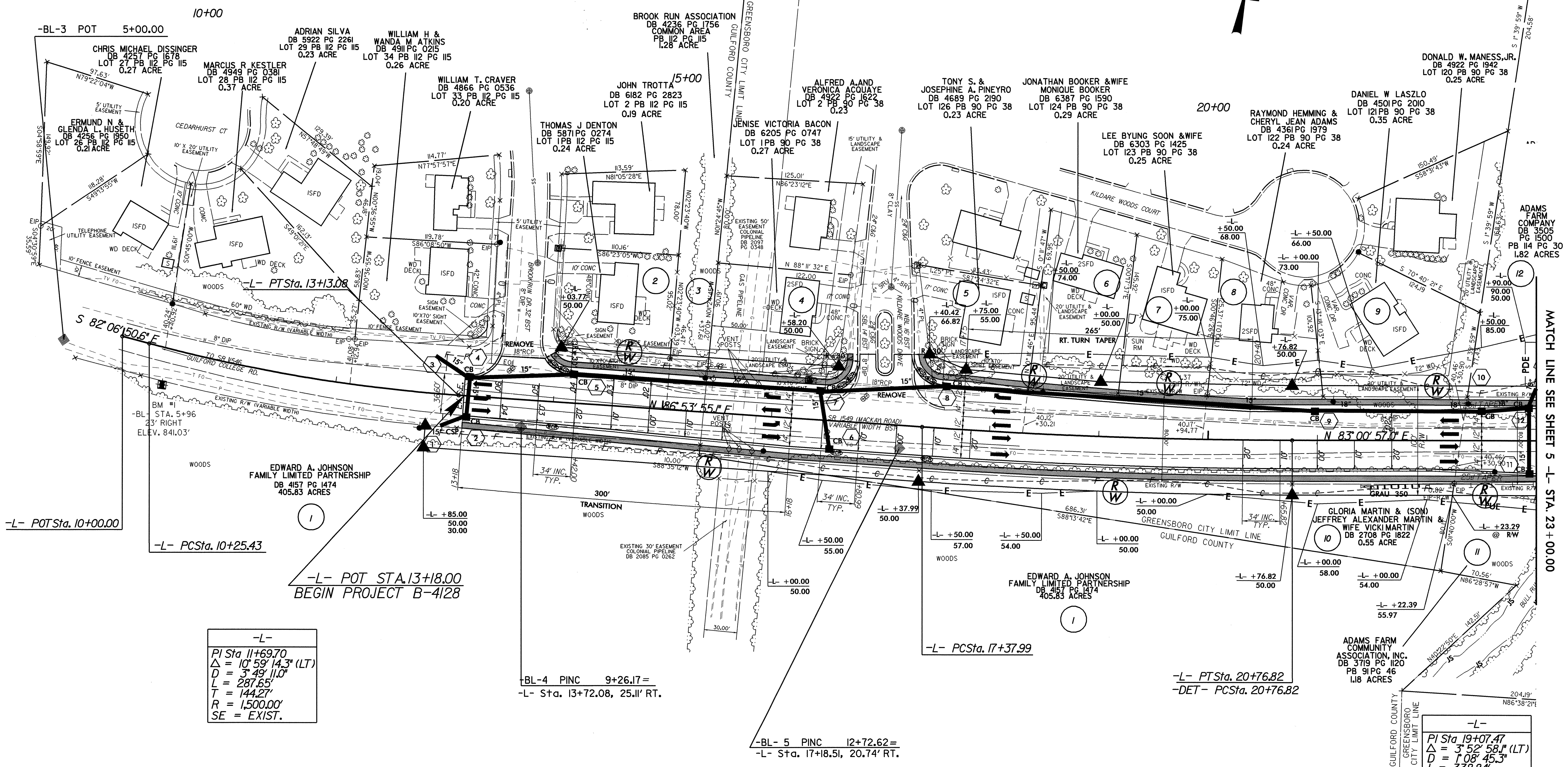
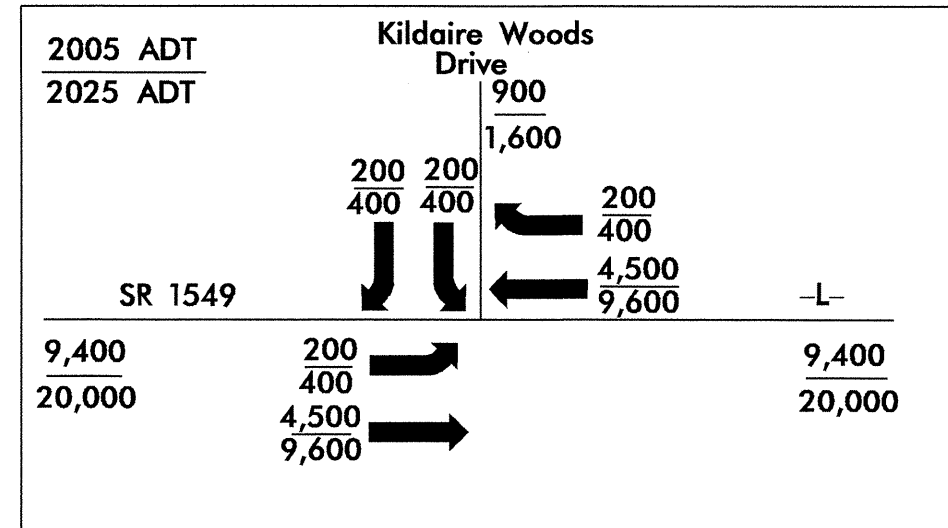
SUMMARY OF INCIDENTAL MILLING
 IN SQUARE YARDS

LINE	STATION	LOCATION	SQ. YDS.
-L-	13+18.00 TO 13+68.00	CL	260.75
-L-	30+50.00 TO 31+00.00	CL	198.63
		PROJECT TOTAL	459.37
		SAY	460 SY

SUMMARY OF PAVEMENT REMOVAL
 IN SQUARE YARDS

LINE	STATION	LOCATION	REMOVAL
-DET-	21+56.38 TO 24+04.00	CL	612.40
-DET-	24+50.00 TO 27+00.00	CL	495.70
-L-	20+00.00 TO 23+82.03	CL	968.73
-L-	24+20.76 TO 26+00.00	CL	420.96
		PROJECT TOTAL	2497.79
		SAY	2500 SY

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 \$\$\$LSPRIG\$\$\$



-L-
PI Sta 11+69.70
 $\Delta = 10^{\circ} 59' 14.3''$ (LT)
D = 3' 49' 11.0"
L = 287.65'
T = 144.27'
R = 1,500.00'
SE = EXIST.

BL-4 PINC 9+26.17=
-L- Sta. 13+72.08, 25.11' RT.

BL-5 PINC 12+72.62=
-L- Sta. 17+18.51, 20.74' RT.

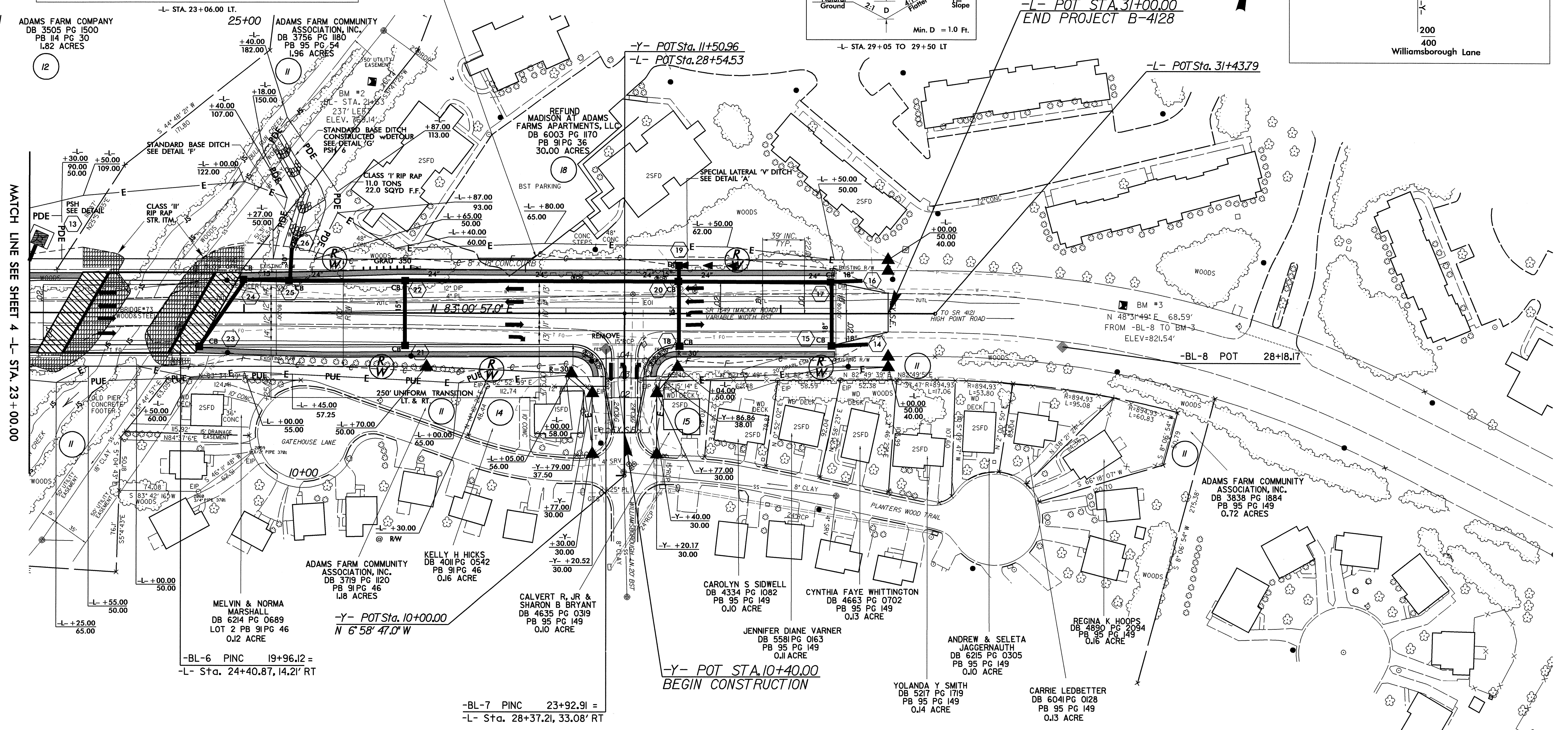
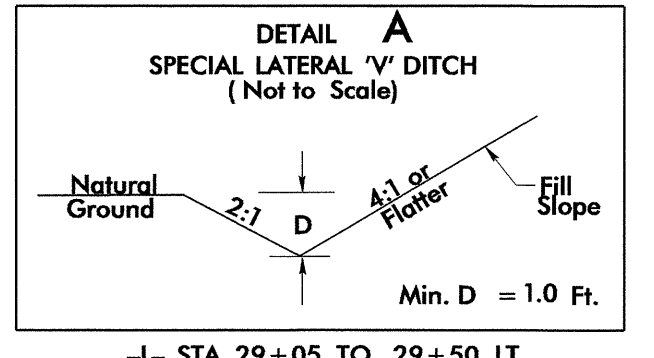
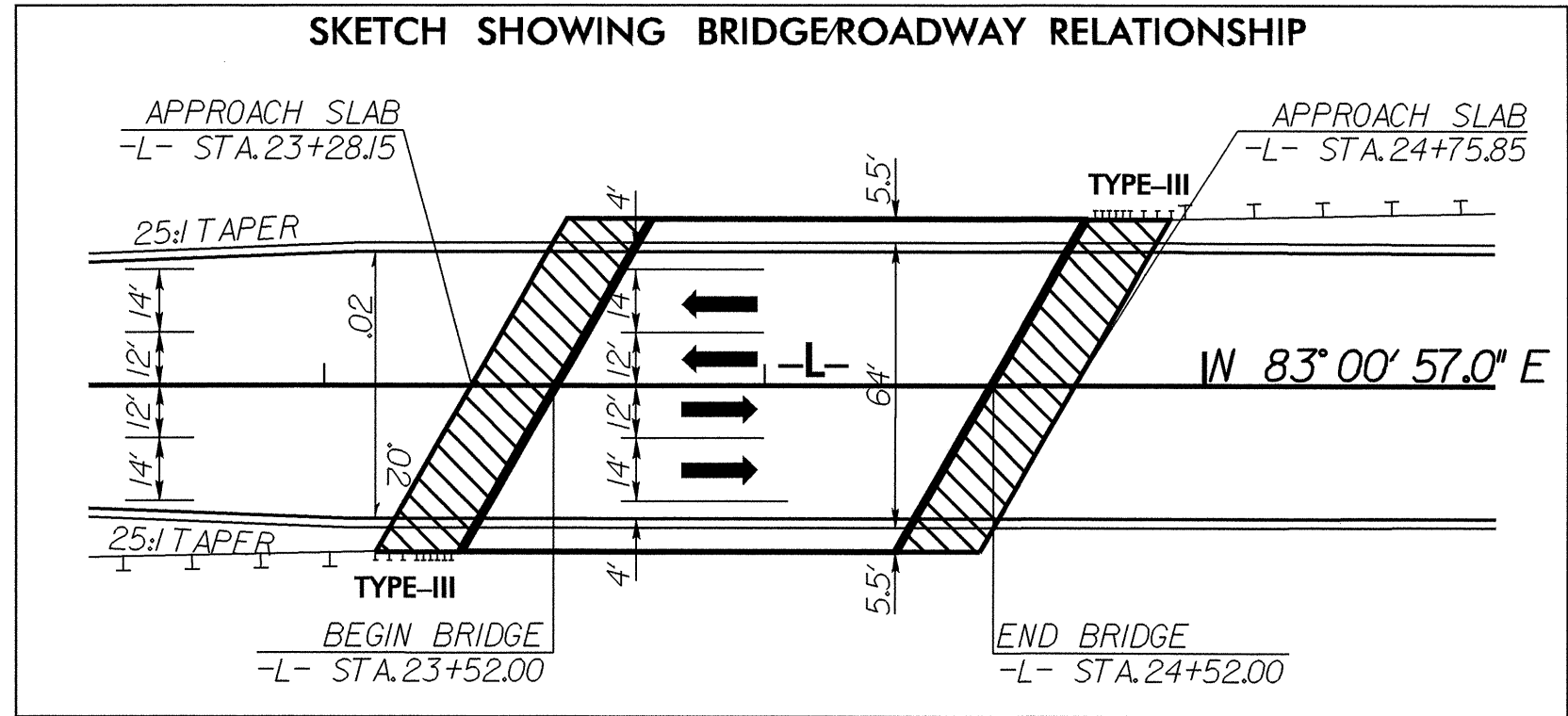
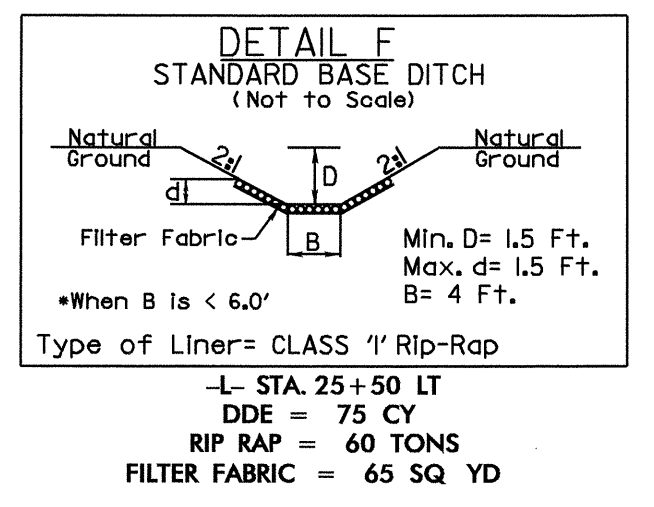
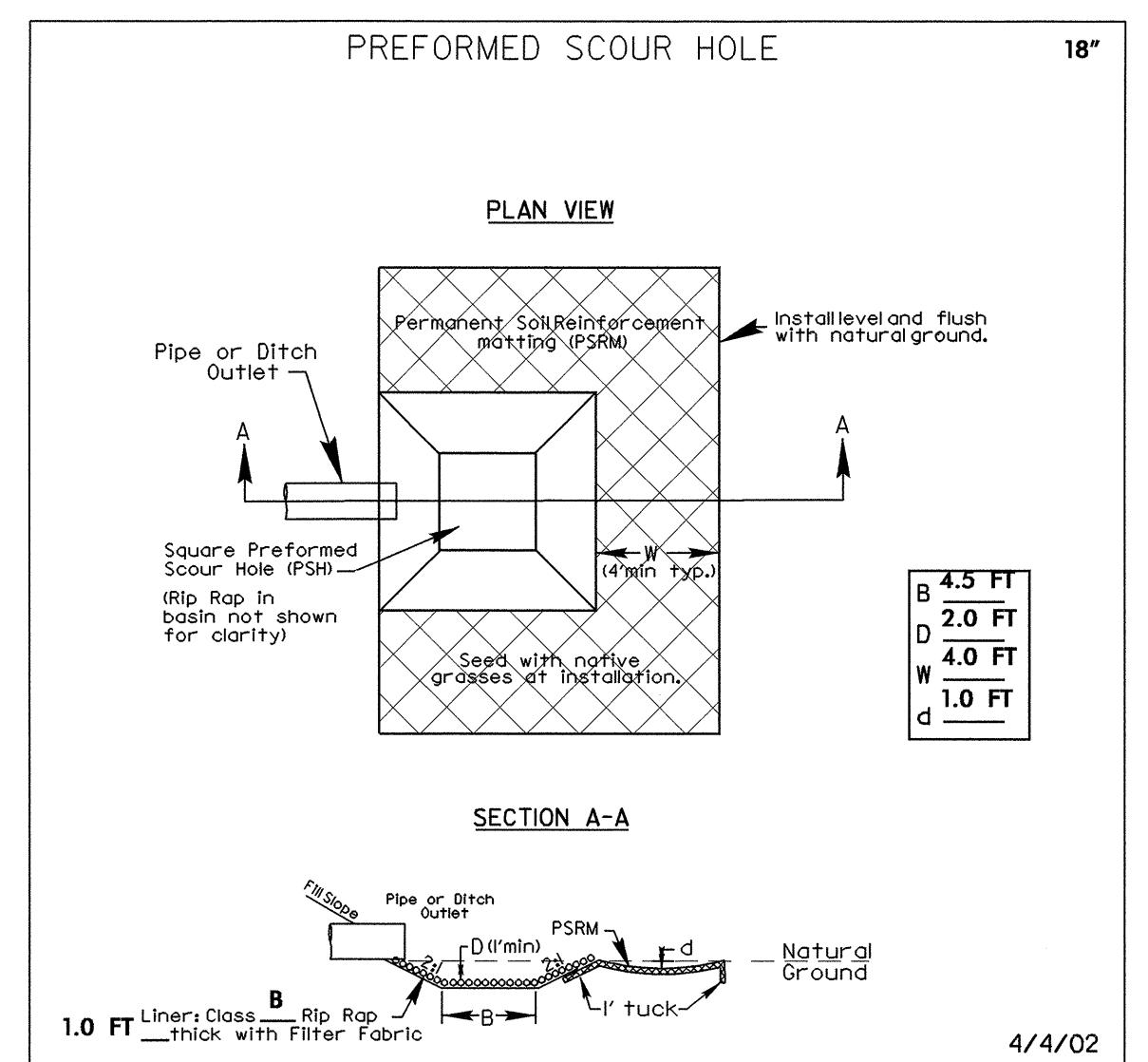
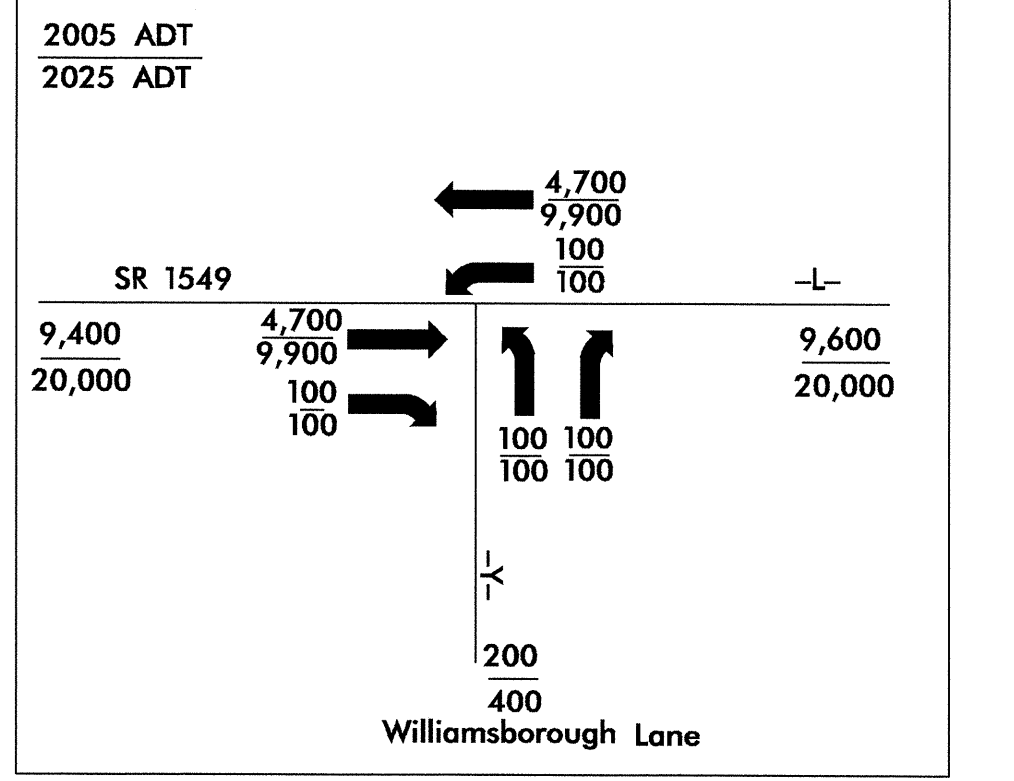
-L- PT Sta. 20+76.82
-DET- PC Sta. 20+76.82

-L-
PI Sta 19+07.47
 $\Delta = 3^{\circ} 52' 58.1''$ (LT)
D = 1' 08' 45.3"
L = 338.84'
T = 169.48'
R = 5,000.00'
SE = 0.02

REVISIONS

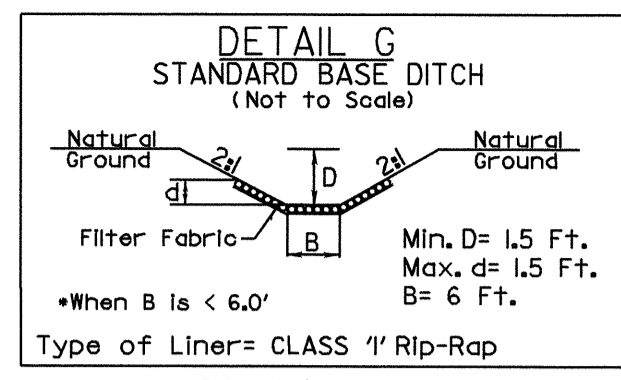
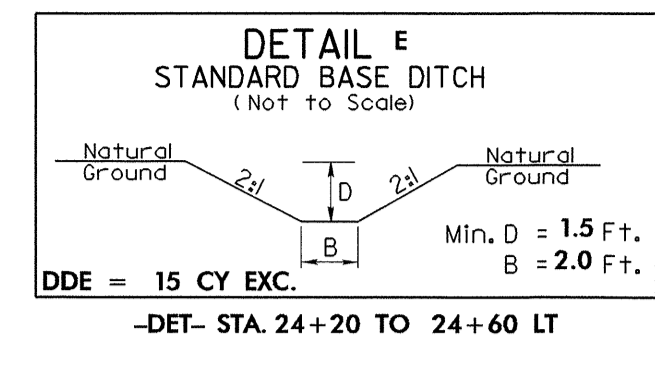
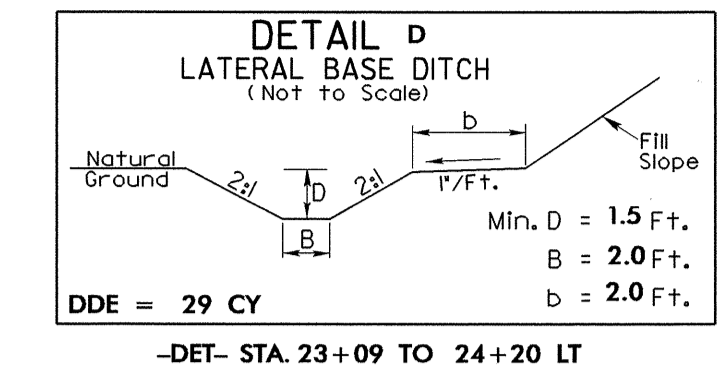
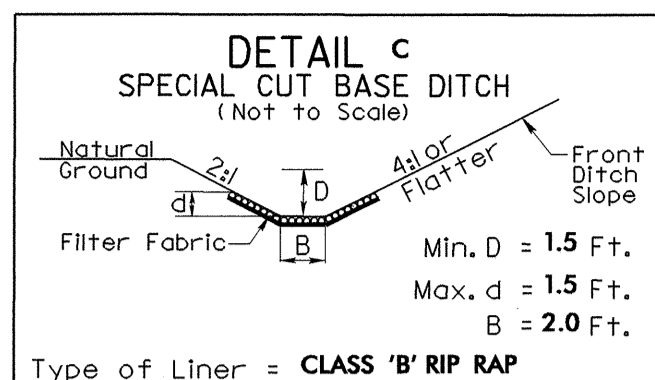
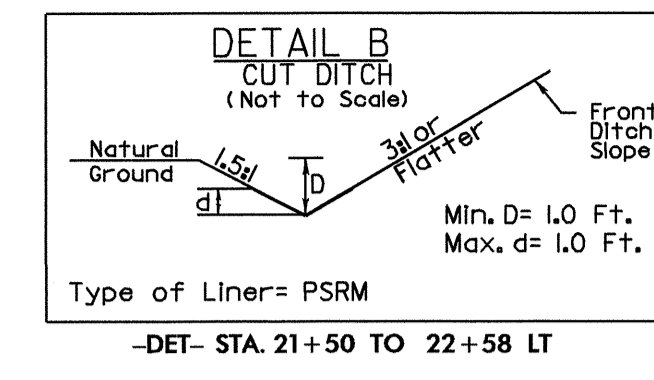
8/17/99

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SEE SHEET 7 FOR -L- PROFILE
 SEE SHEET 7 FOR -Y- PROFILE
 SEE STRUCTURE PLANS S-1 TO S-25

8/17/99
 REVISIONS
 20-SEP-2007 10:31
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 USER:RDM



-DET-

PI Sta 21+42.29
$\Delta = 26' 46'' 55.3'' (LT)$
$D = 20' 50'' 05.4''$
$L = 128.54'$
$T = 65.47'$
$R = 275.00'$
SE = SEE PLANS

-DET-

PI Sta 22+70.83
$\Delta = 26' 46'' 55.3'' (RT)$
$D = 20' 50'' 05.4''$
$L = 128.54'$
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-DET- PRCSta. 22+05.36

-DET- PRCSta. 26+39.97

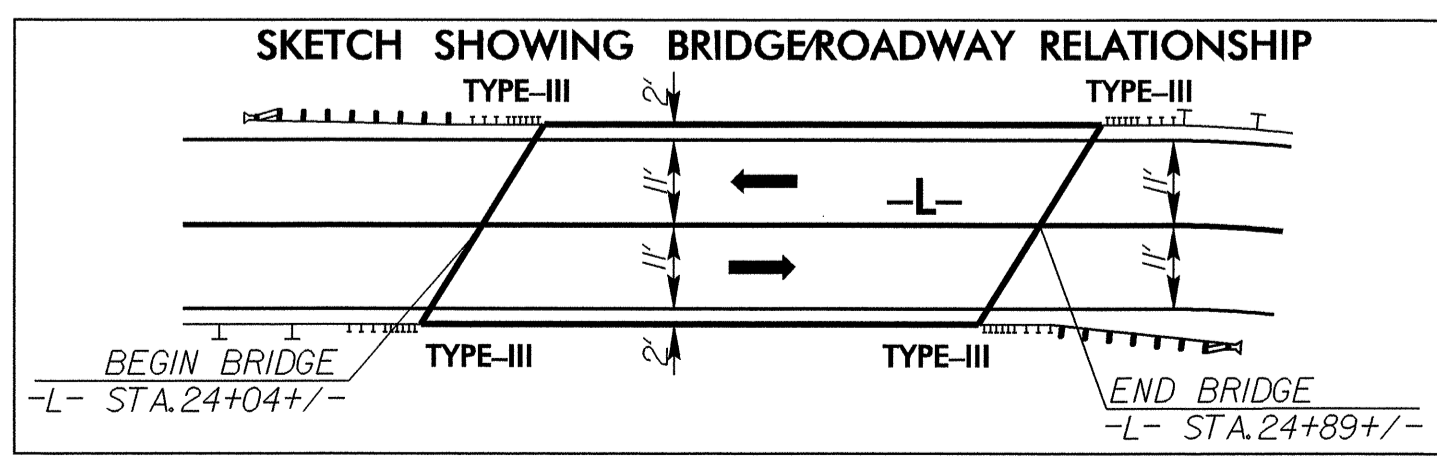
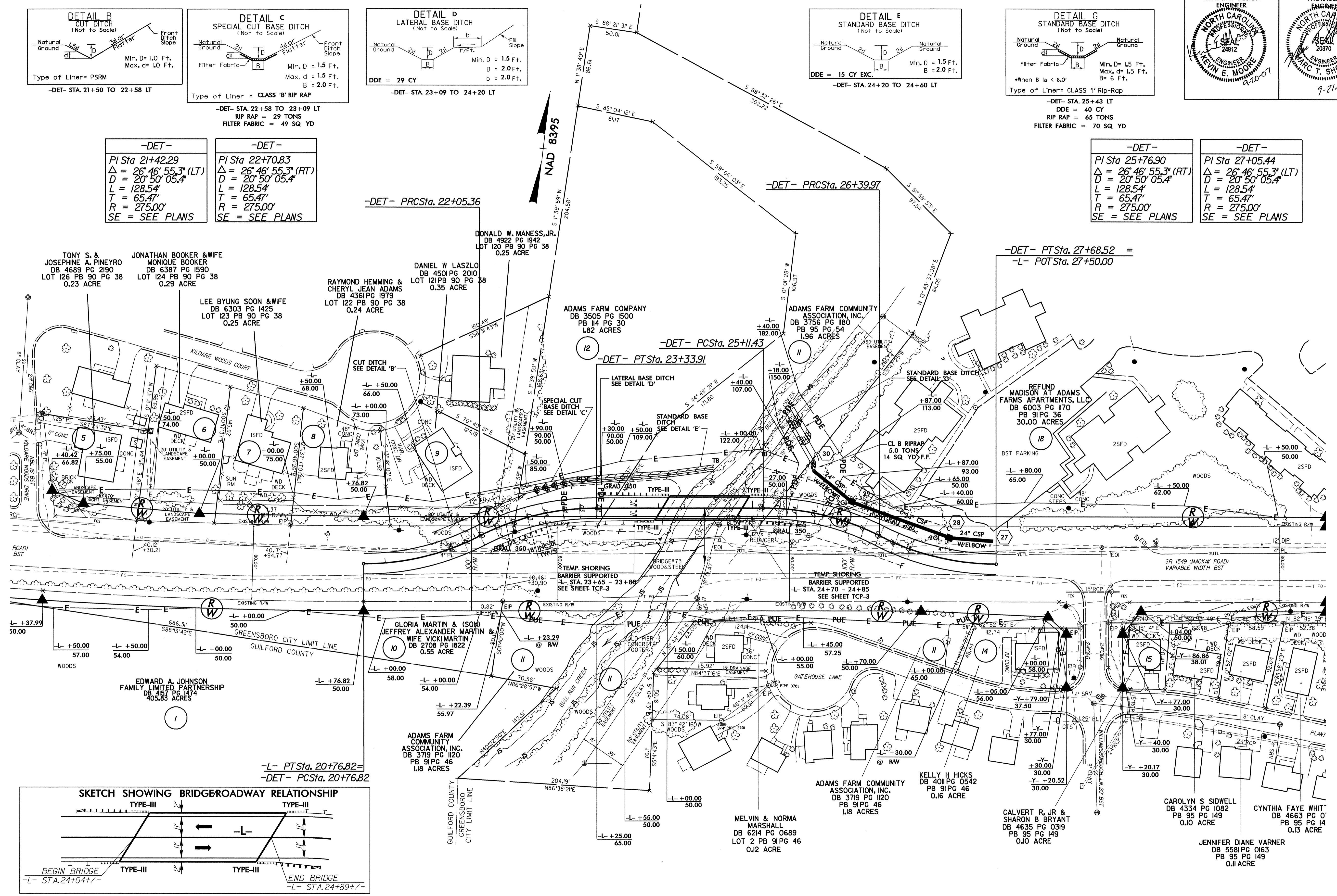
-DET-

PI Sta 25+76.90
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SE = SEE PLANS

-DET-

PI Sta 27+05.44
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SE = SEE PLANS

-DET- PTSta. 27+68.52 =
-L- POTSta. 27+50.00



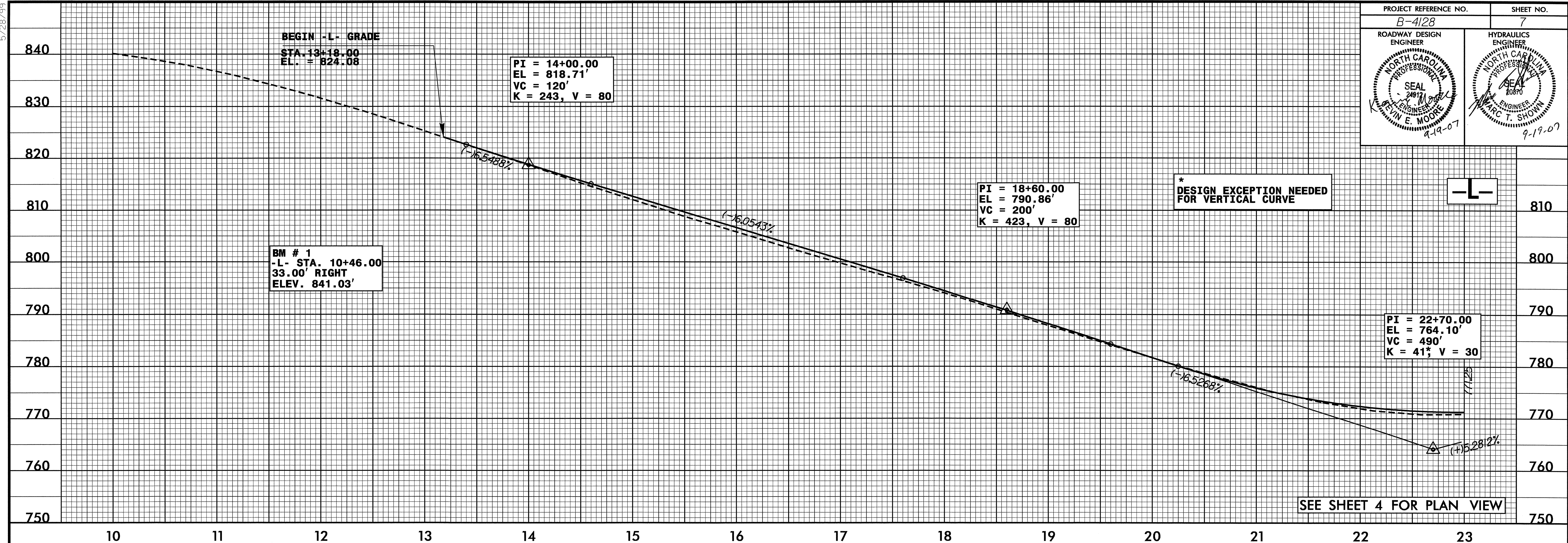
SEE SHEET 8 FOR -DET- PROFILE

REVISIONS

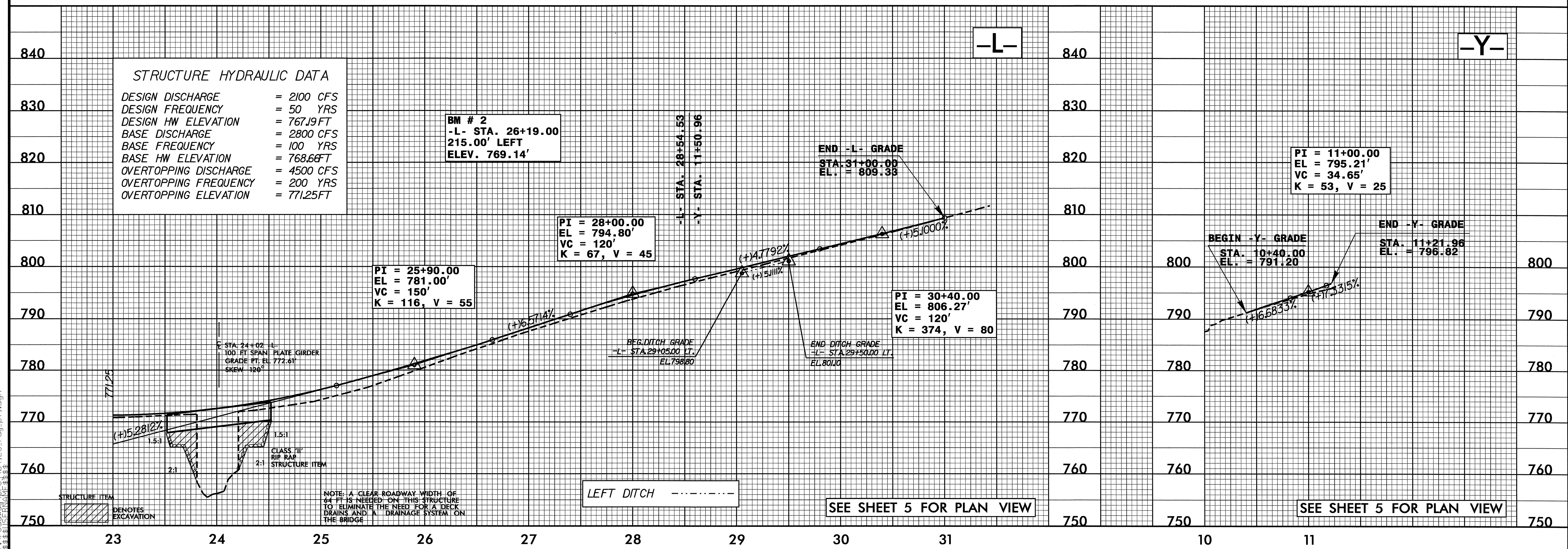
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5/28/99

PROJECT REFERENCE NO. B-4128	SHEET NO. 7
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL KEVIN E. MOORE 9-19-07	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL ERIC T. SHOWN 9-19-07



SEE SHEET 4 FOR PLAN VIEW



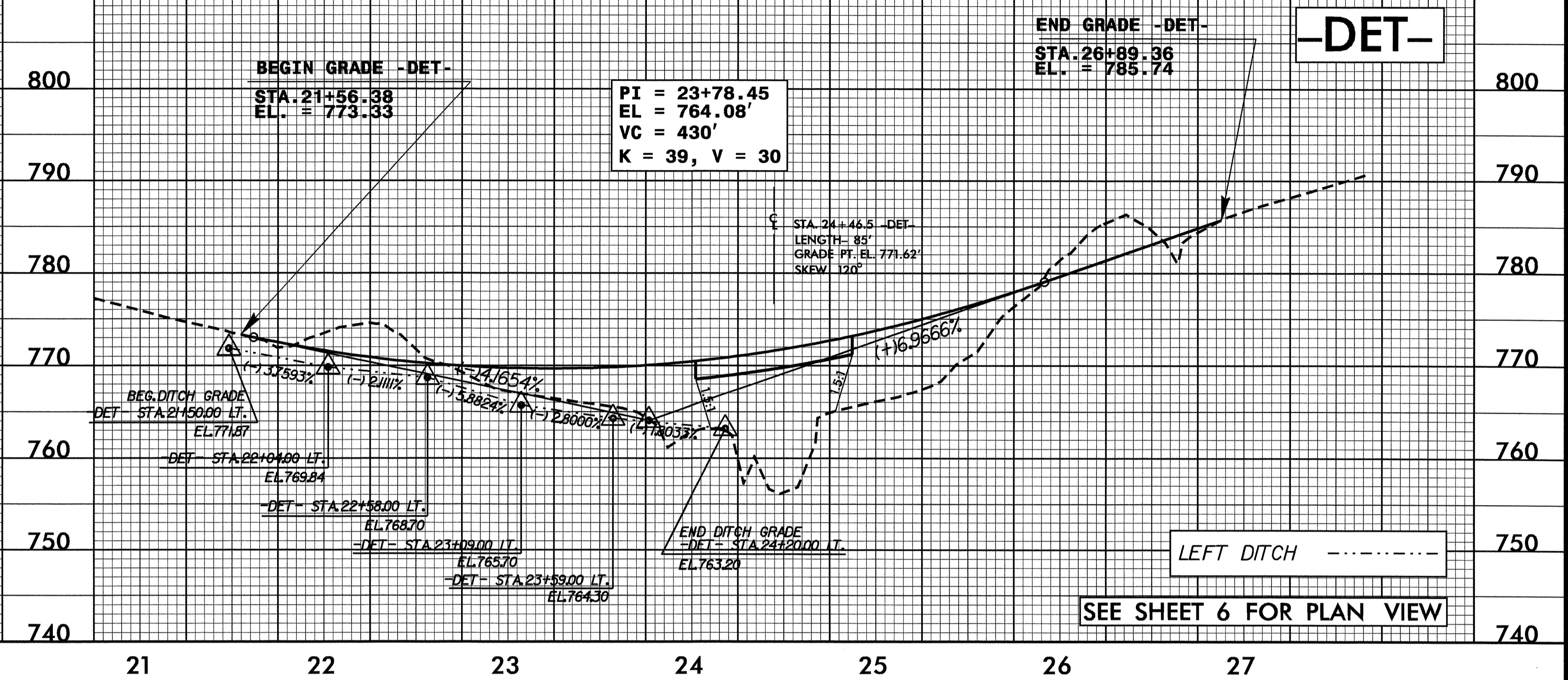
SEE SHEET 5 FOR PLAN VIEW

SEE SHEET 5 FOR PLAN VIEW

06-SEP-2007 09:25
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5/28/99

PROJECT REFERENCE NO. B-4128	SHEET NO. 8
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL ENGINEER KEVIN E. MOORE 9-19-07	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL ENGINEER MARC T. SHOWN 9-19-07



04-SEP-2007 08:59 4128_rdy.pfl.dgn