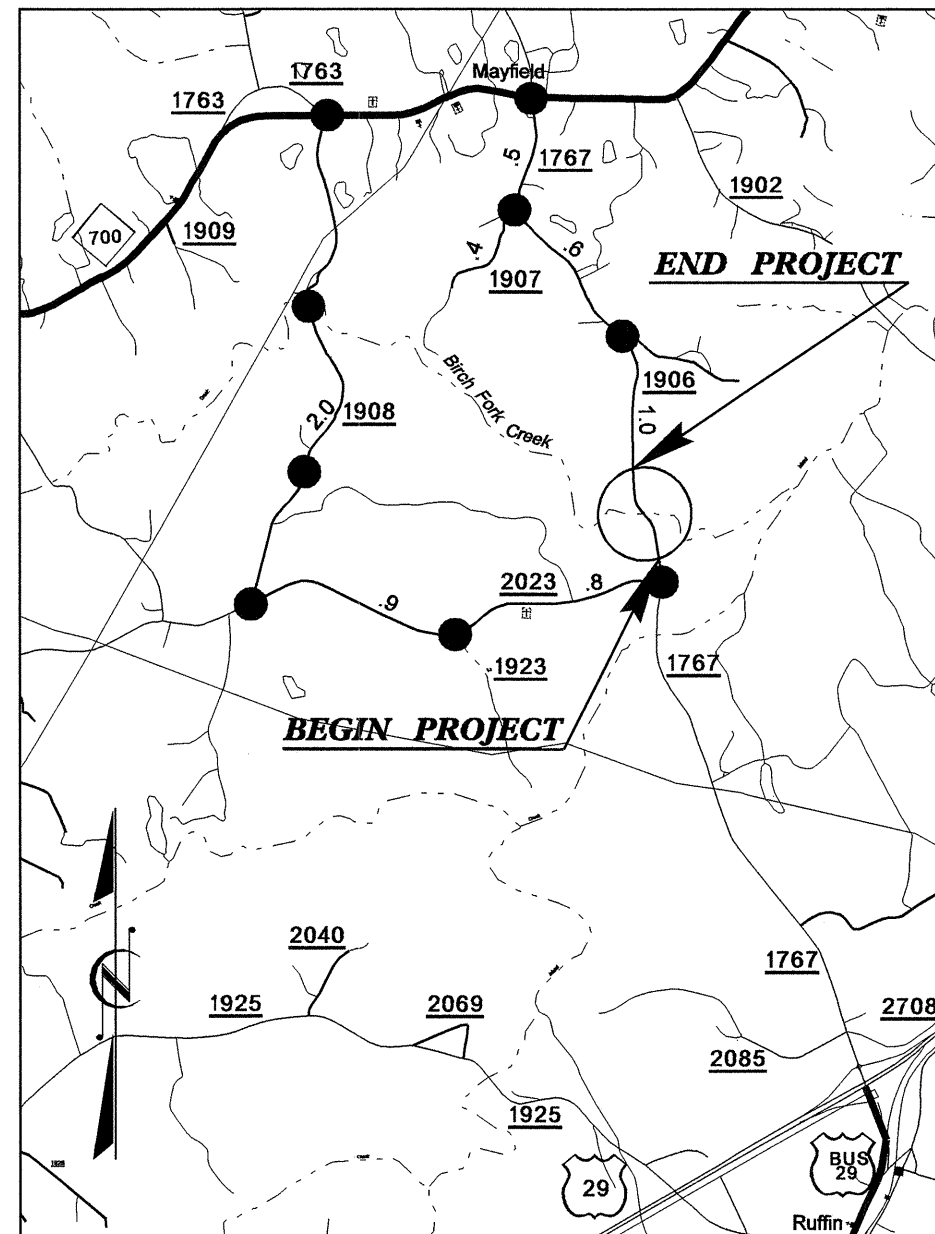
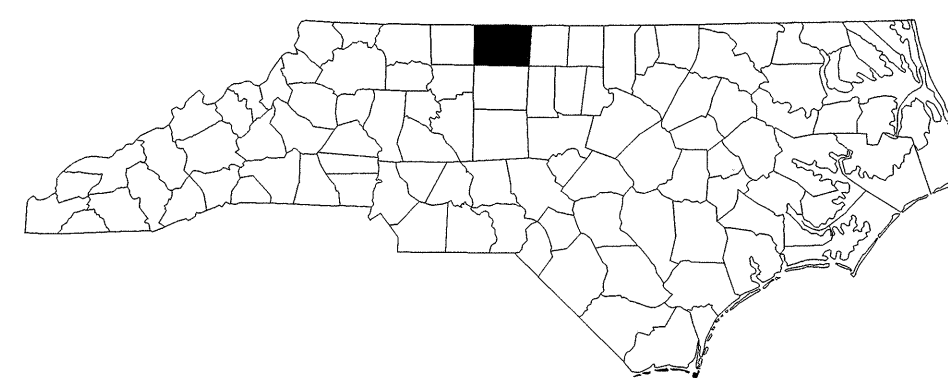


090899

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



VICINITY MAP
OFF-SITE DETOUR



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ROCKINGHAM COUNTY

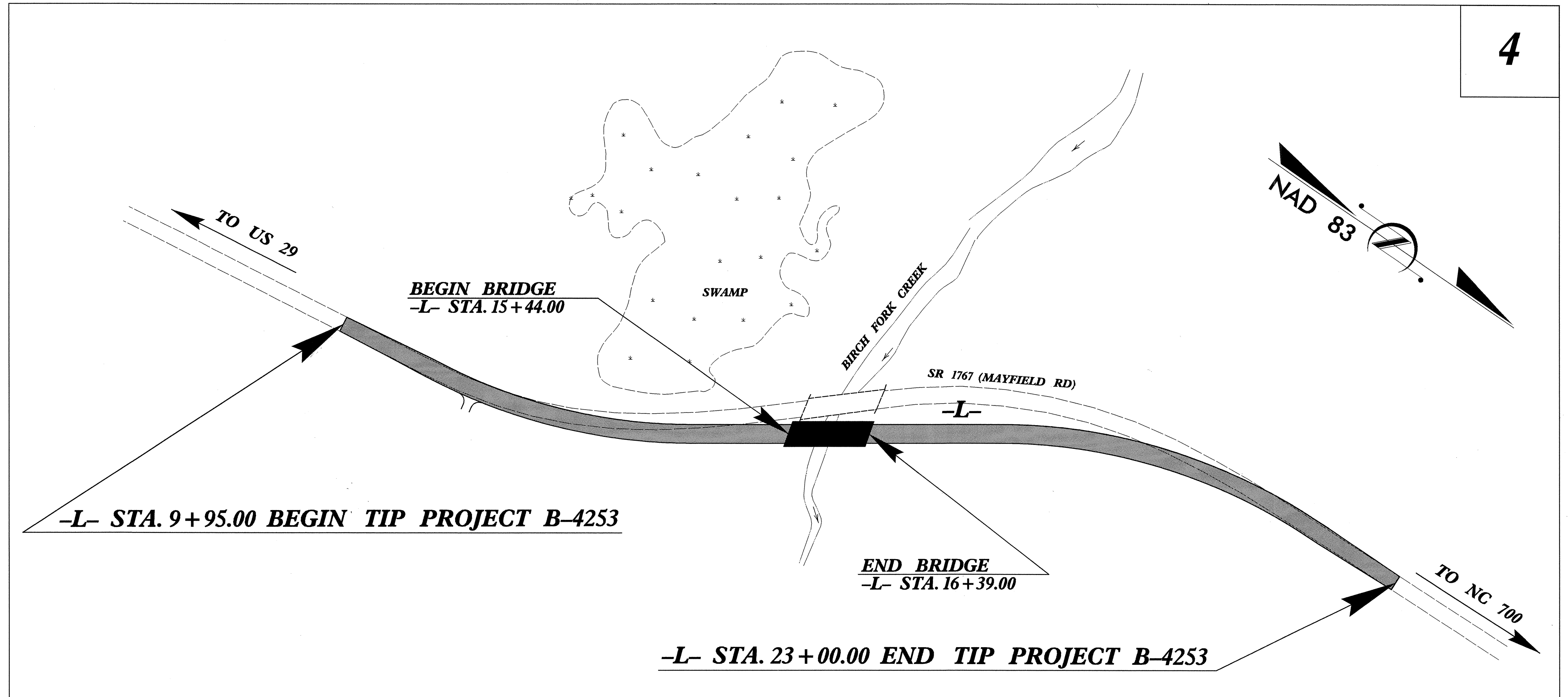
LOCATION: BRIDGE NO. 109 OVER BIRCH FORK CREEK
AND APPROACHES ON SR 1767 (MAYFIELD ROAD)

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4253	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33595.1.1	BRZ-1767(2)	P.E.	
33595.2.1	BRZ-1767(2)	R/W & UTIL.	
33595.3.1	BRZ-1767(2)	CONST.	

TIP PROJECT: B-4253

CONTRACT: C201492

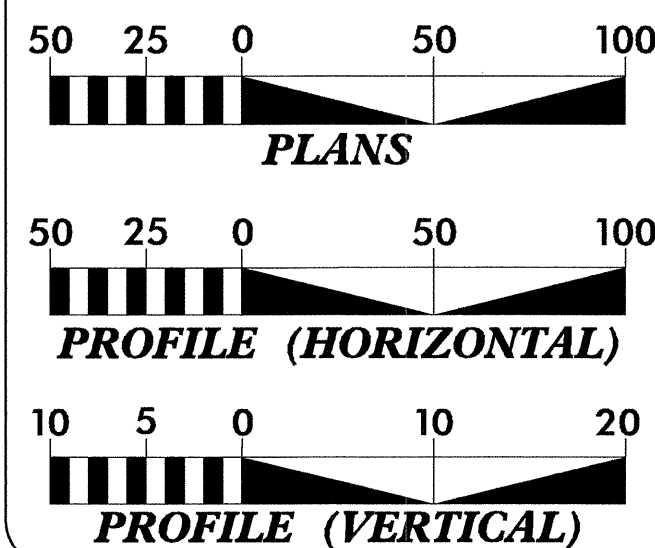


-L- STA. 9+95.00 BEGIN TIP PROJECT B-4253

-L- STA. 23+00.00 END TIP PROJECT B-4253

** DESIGN EXCEPTIONS FOR HORIZONTAL ALIGNMENT AND HORIZONTAL STOPPING SIGHT DISTANCE ARE REQUIRED.

GRAPHIC SCALES



DESIGN DATA

ADT 2007 = 700 VPD
 ADT 2030 = 1100 VPD
 DHV = 10 %
 D = 60 %
 * T = 3 %
 ** V = 60 MPH
 *(TTST 1% + DUAL 2%)
 FUNC. CLASS. = RURAL COLLECTOR

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4253 = 0.229 MILES
 LENGTH STRUCTURE TIP PROJECT B-4253 = 0.018 MILES
 TOTAL LENGTH OF TIP PROJECT B-4253 = 0.247 MILES

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

2006 STANDARD SPECIFICATIONS

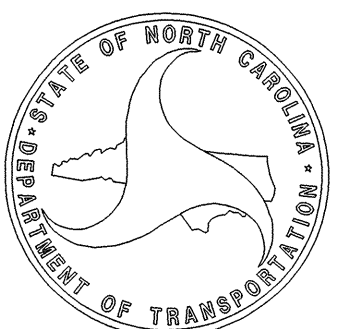
RIGHT OF WAY DATE: **GLENN W. MUMFORD, P.E.**
 PROJECT ENGINEER
 MAY 25, 2005

LETTING DATE: **JEFFREY L. TEAGUE, E.I.**
 PROJECT DESIGN ENGINEER
 JULY 17, 2007

HYDRAULICS ENGINEER
 PROFESSIONAL SEAL
 12786
 ENGINEER
 STEVEN W. BONDUR
 SIGNATURE: *[Signature]* 5/16/07 P.E.

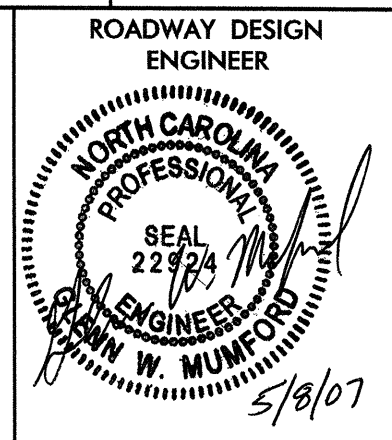
ROADWAY DESIGN ENGINEER
 PROFESSIONAL SEAL
 22924
 ENGINEER
 GLENN W. MUMFORD
 SIGNATURE: *[Signature]* 5/16/07 P.E.

DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA



ant m. millan P.E.
 STATE HIGHWAY DESIGN ENGINEER

04-APR-2007 17:00
r:\work\mumf\proj\B4253_rdy_tsh.dgn
\$\$\$\$\$USER\$AM\$\$\$\$\$



INDEX OF SHEETS

SHEET NUMBER	SHEET
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, TYPICAL SECTIONS, AND WEDGING DETAILS
2-A	DETAIL OF ANCHORAGE FOR FRAMES
3	SUMMARY OF QUANTITIES
3A	SUMMARY OF DRAINAGE QUANTITIES AND GUARDRAIL SUMMARY
3-B	SUMMARY OF EARTHWORK AND REMOVAL OF EXISTING ASPHALT PAVEMENT
4	PLAN SHEET
5	PROFILE SHEET
TCP-1 THROUGH TCP-3	TRAFFIC CONTROL PLANS
EC-1 THROUGH EC-5	EROSION CONTROL PLANS
RF-1	REFORESTATION DETAIL SHEET
UO-1 THROUGH UO-2	UTILITIES BY OTHERS PLANS
X-A	CROSS-SECTION SUMMARY
X-1 THROUGH X-6	CROSS-SECTIONS
S-1 THROUGH S-18	STRUCTURE PLANS

GENERAL NOTES:

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

2006 ROADWAY STANDARD DRAWINGS

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

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.

UNDERDRAINS:

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

GUARDRAIL:

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

TEMPORARY SHORING:

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

SUBSURFACE PLANS:

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

END BENTS:

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

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE DUKE ENERGY, BELL SOUTH, AND TELCOVE COMMUNICATIONS.

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

RIGHT-OF-WAY MARKERS:

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

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'
310.10	Driveway Pipe Construction
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 8	INCIDENTALS
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
815.03	Pipe Underdrain and Blind Drain
816.04	Markers for Drainage Structure and Concrete Pad
840.00	Concrete Base Pad for Drainage Structures
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.46	Traffic Bearing Precast Drainage Structure
840.66	Drainage Structure Steps
840.72	Pipe Collar
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
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	-x-x-x-
Proposed Woven Wire Fence	-o-o-o-
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	○
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	-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	○
Proposed Wheel Chair Ramp Curb Cut	○
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.

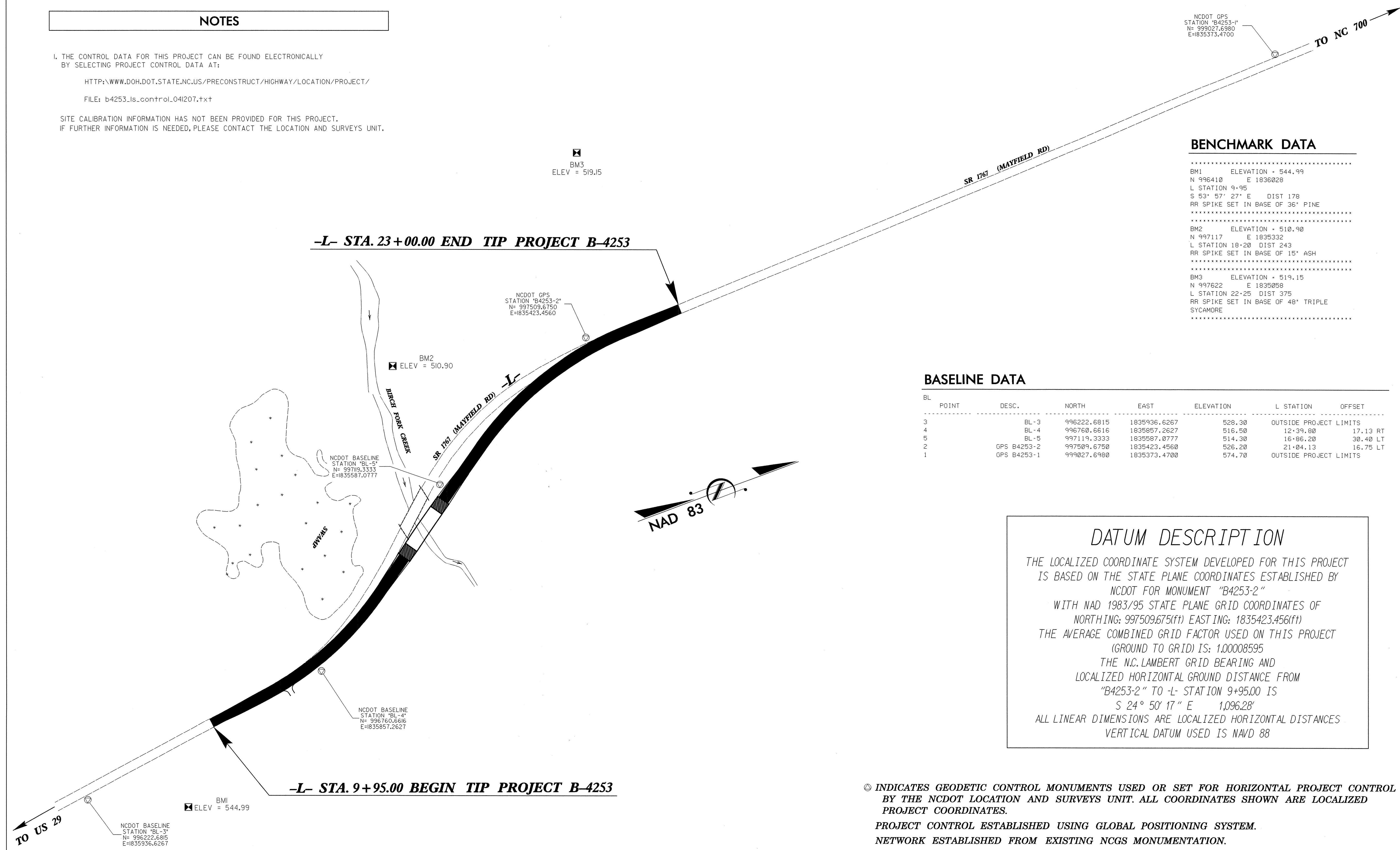
B-4253 SURVEY CONTROL SHEET

PROJECT REFERENCE NO.	SHEET NO.
B-4253	I-C
LOCATION AND SURVEYS	

NOTES

I. 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/
 FILE: b4253_ls_control_041207.txt

SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.



BENCHMARK DATA

BM1	ELEVATION = 544.99
N 996410	E 1836028
L STATION 9+95	
S 53° 57' 27" E	DIST 178
RR SPIKE SET IN BASE OF 36" PINE	
BM2	ELEVATION = 510.90
N 997117	E 1835332
L STATION 18+20	DIST 243
RR SPIKE SET IN BASE OF 15" ASH	
BM3	ELEVATION = 519.15
N 997622	E 1835058
L STATION 22+25	DIST 375
RR SPIKE SET IN BASE OF 48" TRIPLE SYCAMORE	

BASELINE DATA

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
3		BL-3	996222.6815	1835936.6267	528.30	OUTSIDE PROJECT LIMITS	
4		BL-4	996760.6616	1835857.2627	516.50	12+39.80	17.13 RT
5		BL-5	997119.3333	1835587.0777	514.30	16+86.20	30.40 LT
2		GPS B4253-2	997509.6750	1835423.4560	526.20	21+04.13	16.75 LT
1		GPS B4253-1	999027.6980	1835373.4700	574.70	OUTSIDE PROJECT LIMITS	

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4253-2" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 997509.675(ft) EASTING: 1835423.456(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.00008595 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4253-2" TO -L- STATION 9+95.00 IS S 24° 50' 17" E 1,096.28' 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. ALL COORDINATES SHOWN ARE LOCALIZED PROJECT COORDINATES.

PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM. NETWORK ESTABLISHED FROM EXISTING NCGS MONUMENTATION.

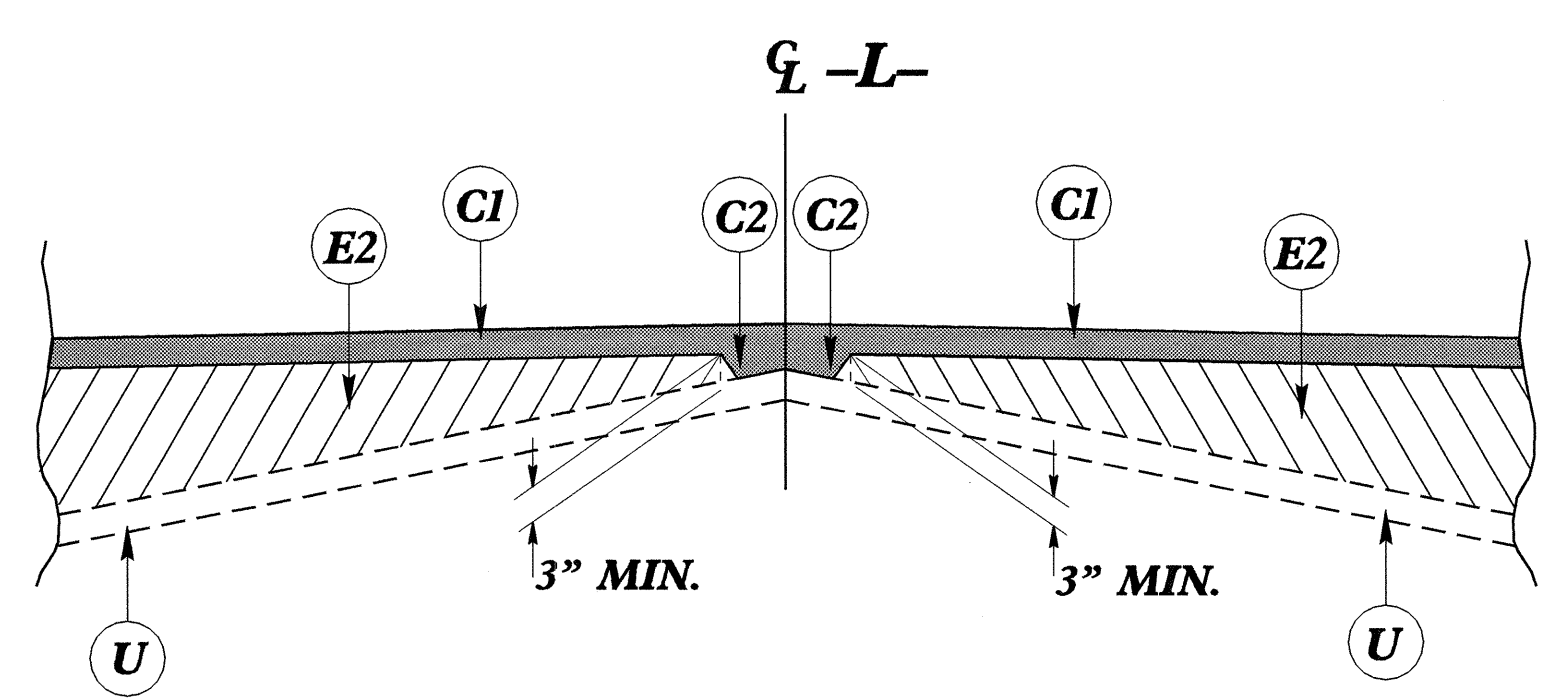
NOTE: DRAWING NOT TO SCALE

6/2/99

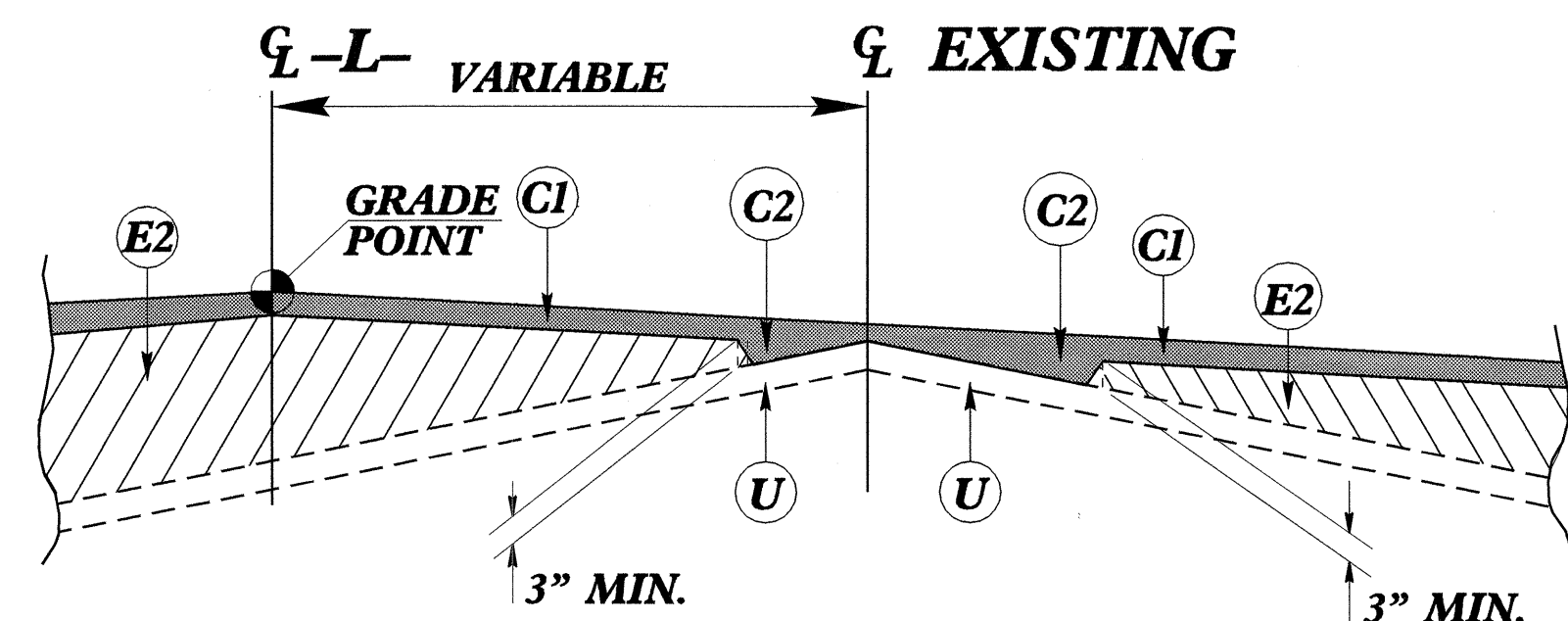
PROJECT REFERENCE NO. B-4253	SHEET NO. 2
ROADWAY DESIGN ENGINEER <i>[Signature]</i>	PAVEMENT DESIGN ENGINEER <i>[Signature]</i>
SEAL 21894 W. W. WUMFORD	SEAL 22896 CLARK S. MORRISON

FINAL PAVEMENT SCHEDULE	
C1	PROP. APPROX. 2 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1" IN DEPTH OR GREATER THAN 1.5" IN DEPTH.
E1	PROP. APPROX. 4 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.
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.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAILS NO. 1 & NO. 2).

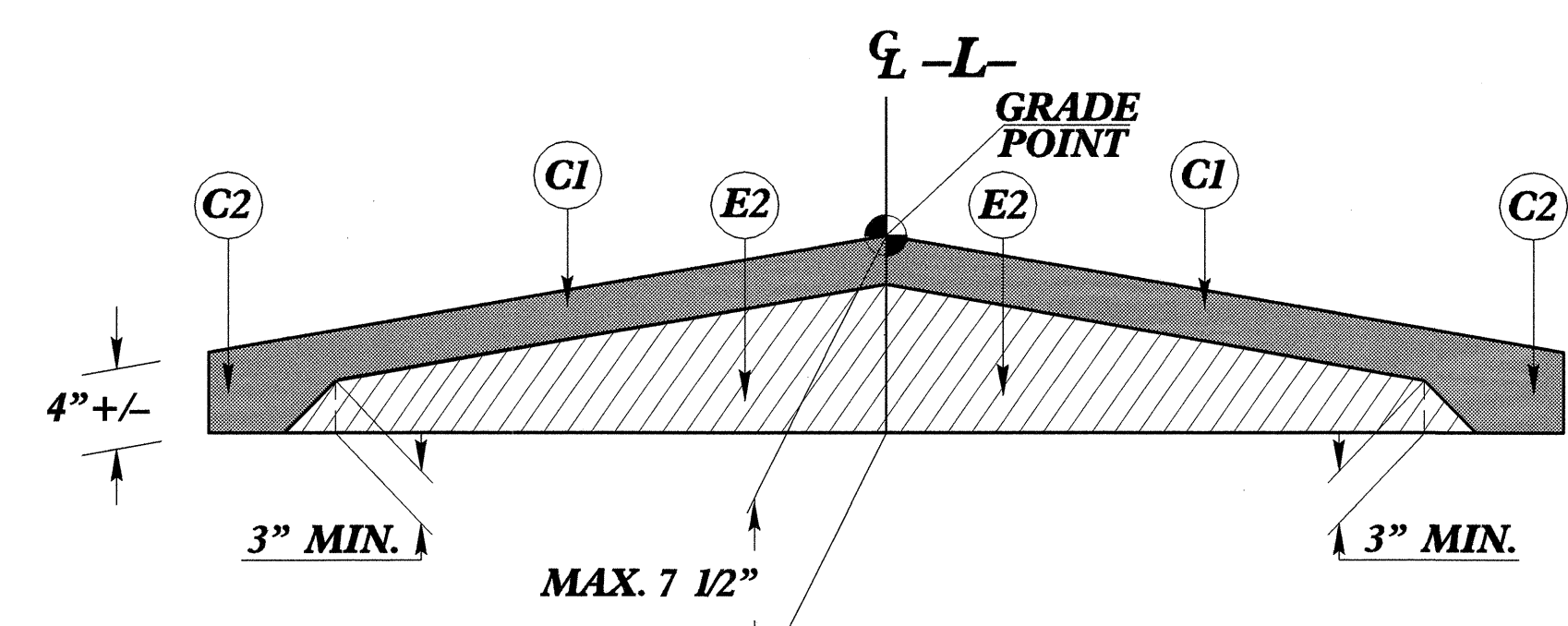
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



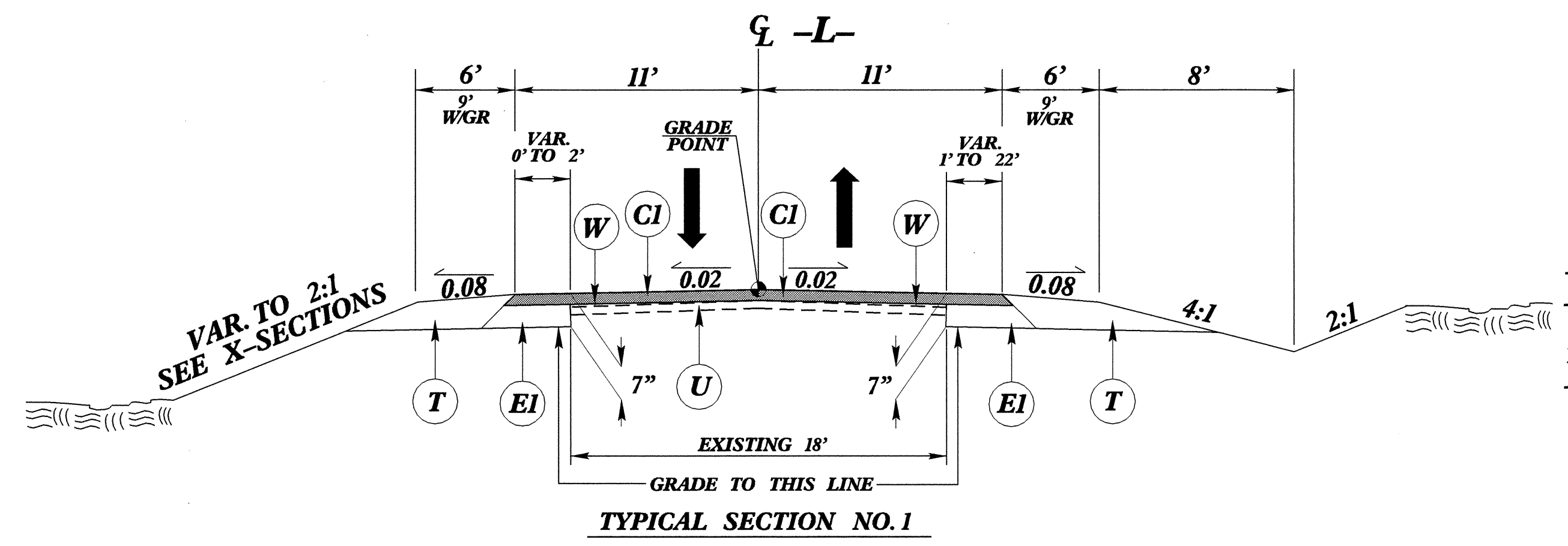
DETAIL SHOWING METHOD OF WEDGING NO. 1
USE IN CONJUNCTION WITH TYPICAL SECTION NO. 1



DETAIL SHOWING METHOD OF WEDGING NO. 2
USE IN CONJUNCTION WITH TYPICAL SECTION NO. 1



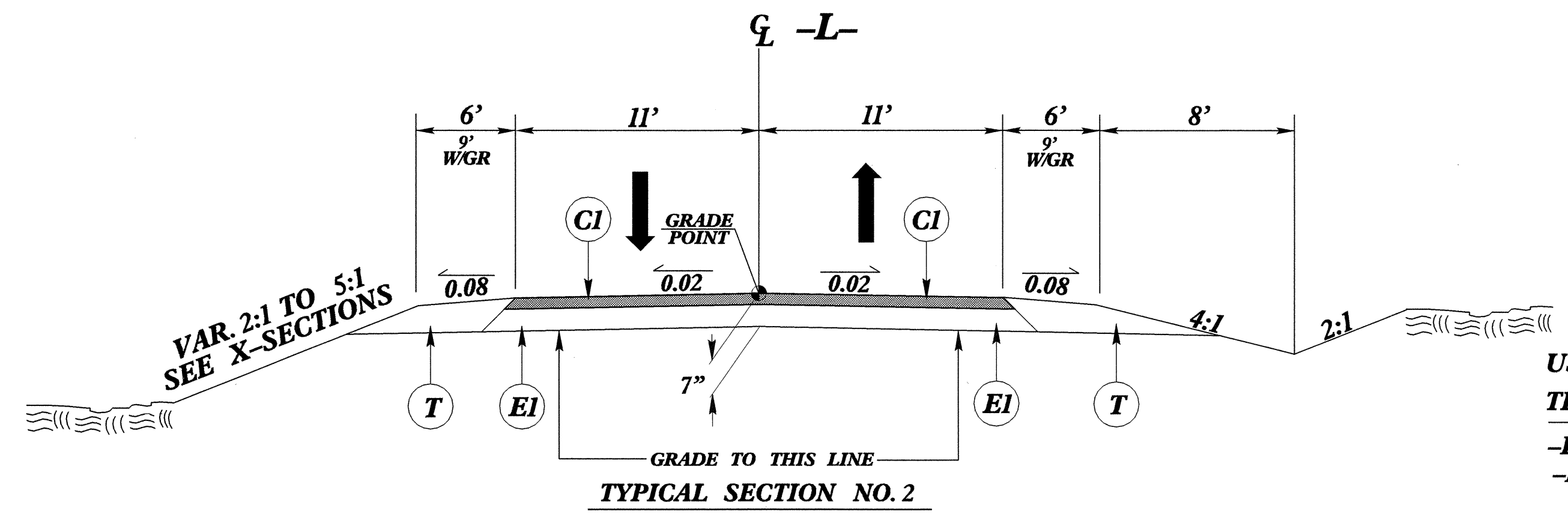
DETAIL SHOWING METHOD OF WEDGING ON BRIDGE
USE IN CONJUNCTION WITH TYPICAL SECTION NO. 3



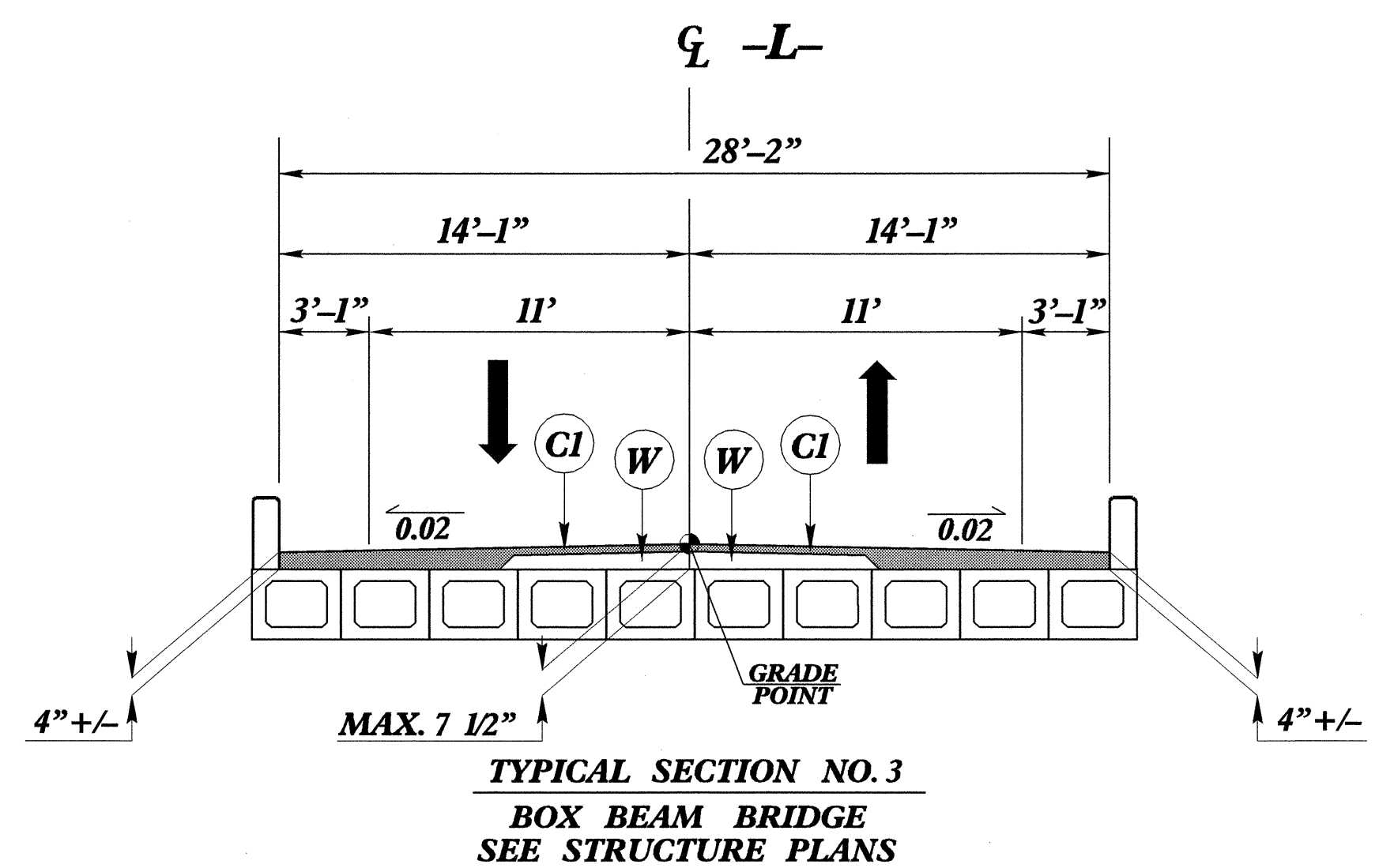
USE TYPICAL SECTION NO. 1 AT
THE FOLLOWING LOCATIONS:
TRANSITION FROM EXISTING @ -L- STA. 9+95.00
TO TYPICAL SECTION NO. 1 @ -L- STA. 10+95.00

-L- STA. 10+95.00 TO STA. 14+85.00
-L- STA. 20+50.00 TO STA. 22+00.00

TRANSITION FROM TYPICAL SECTION NO. 1 @
-L- STA. 22+00.00 TO EXISTING @ -L- STA. 23+00.00



USE TYPICAL SECTION NO. 2 AT
THE FOLLOWING LOCATIONS:
-L- STA. 14+85.00 TO STA. 15+44.00 (BEGIN BRIDGE)
-L- STA. 16+39.00 (END BRIDGE) TO STA. 20+50.00



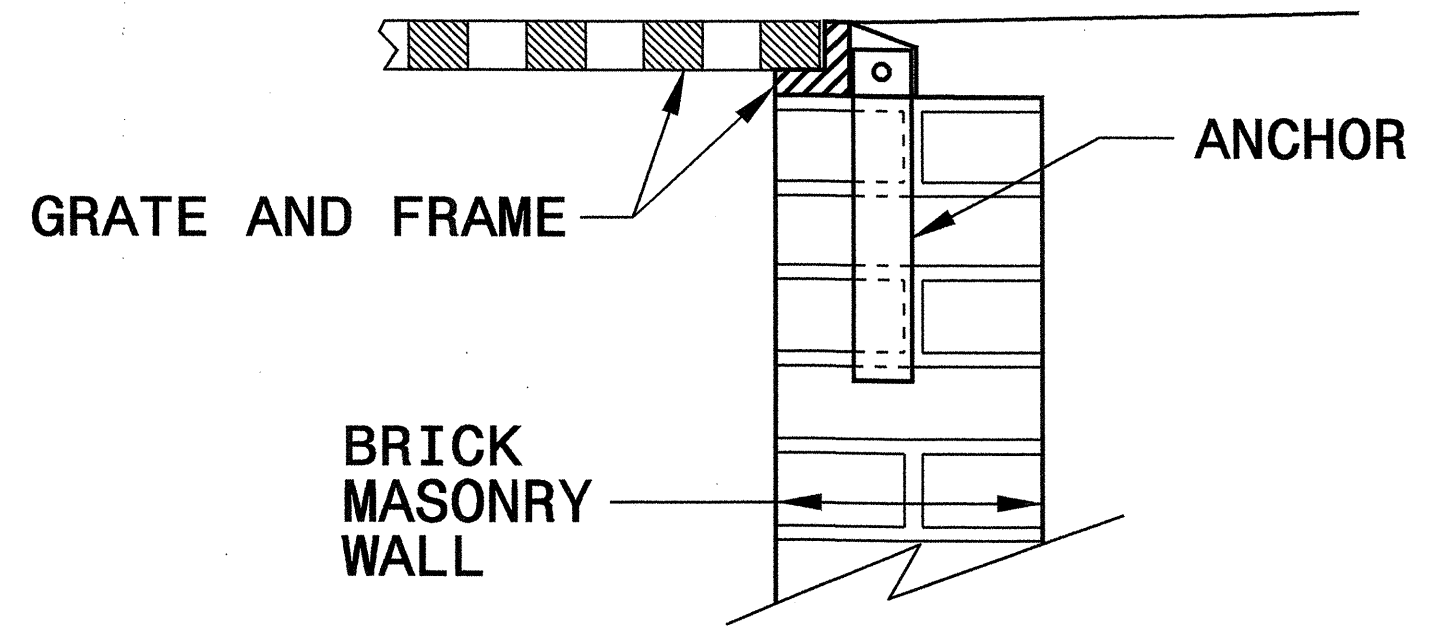
USE TYPICAL SECTION NO. 3 AT
THE FOLLOWING LOCATION:
-L- STA. 15+44.00 (BEGIN BRIDGE) TO
-L- STA. 16+39.00 (END BRIDGE)

10-APR-2007 09:23 4253.rdl-tyr.dgn

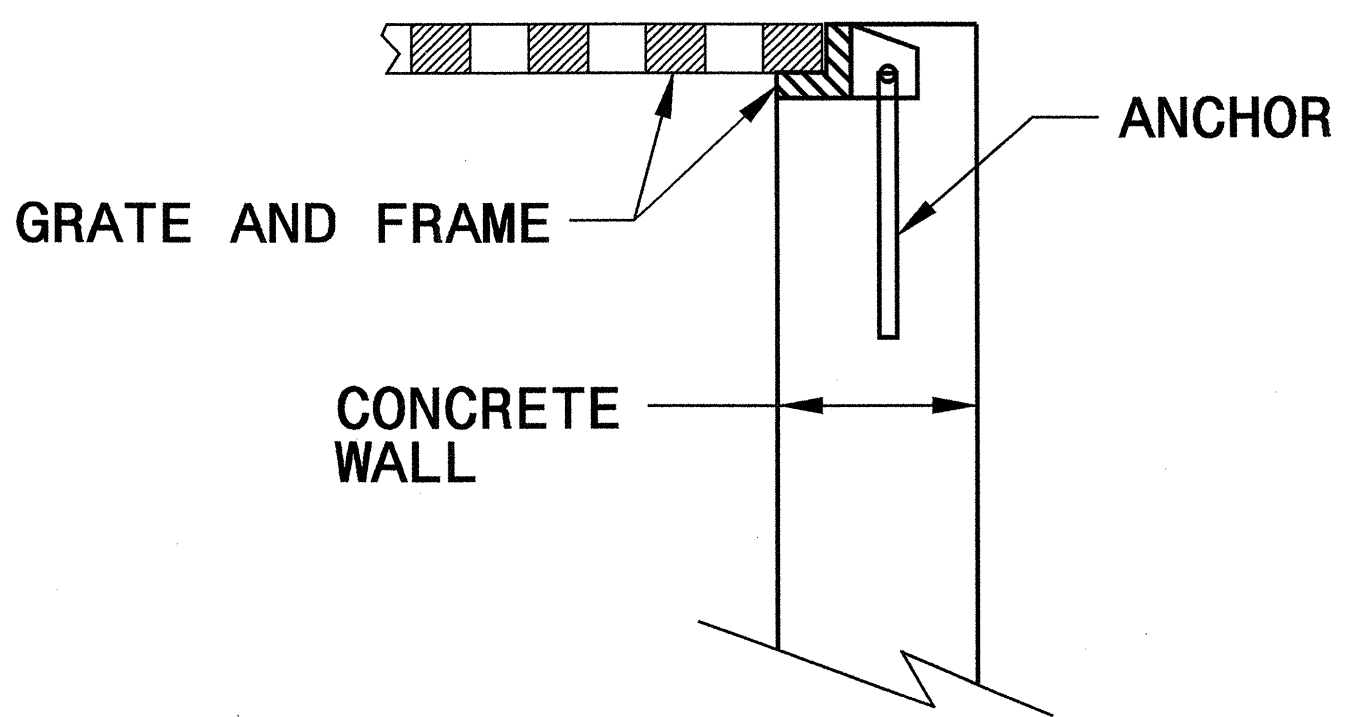
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

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

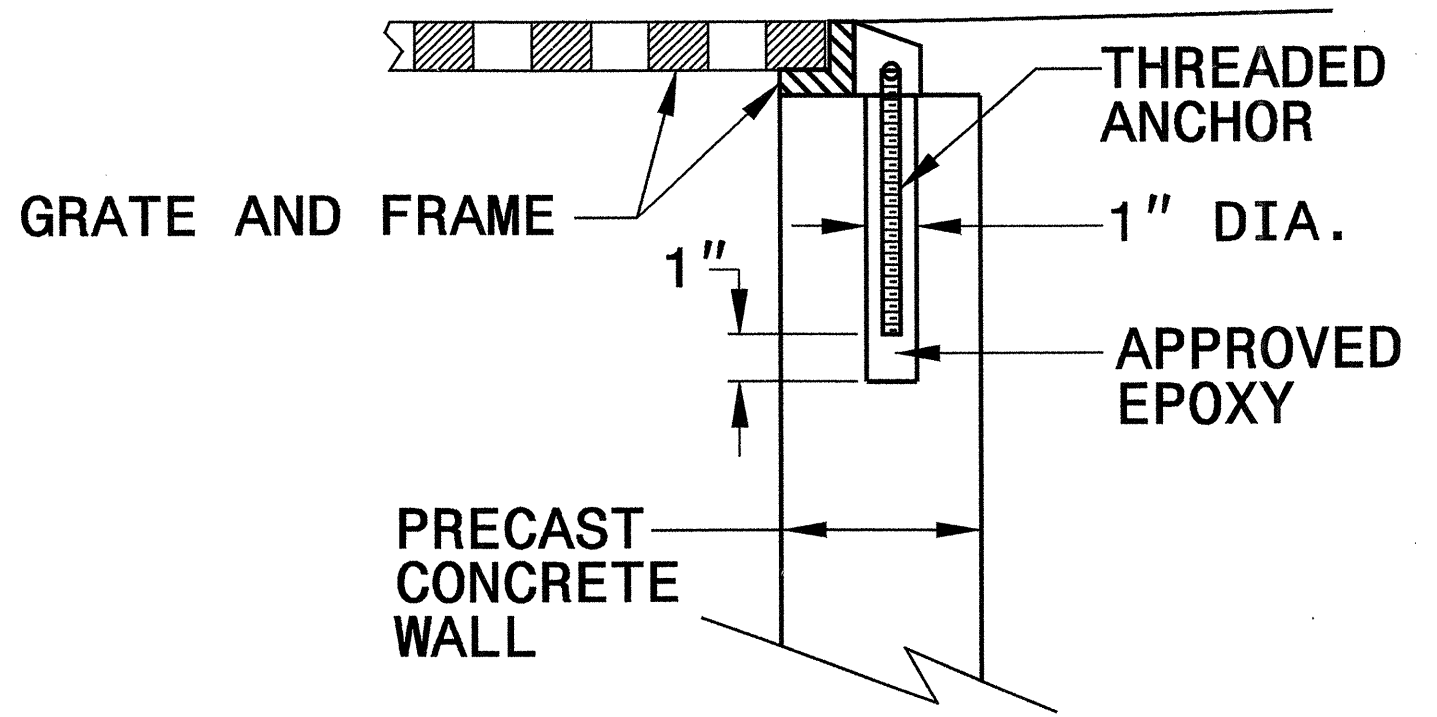
SHEET 1 OF 1
840D25



BRICK MASONRY CONSTRUCTION



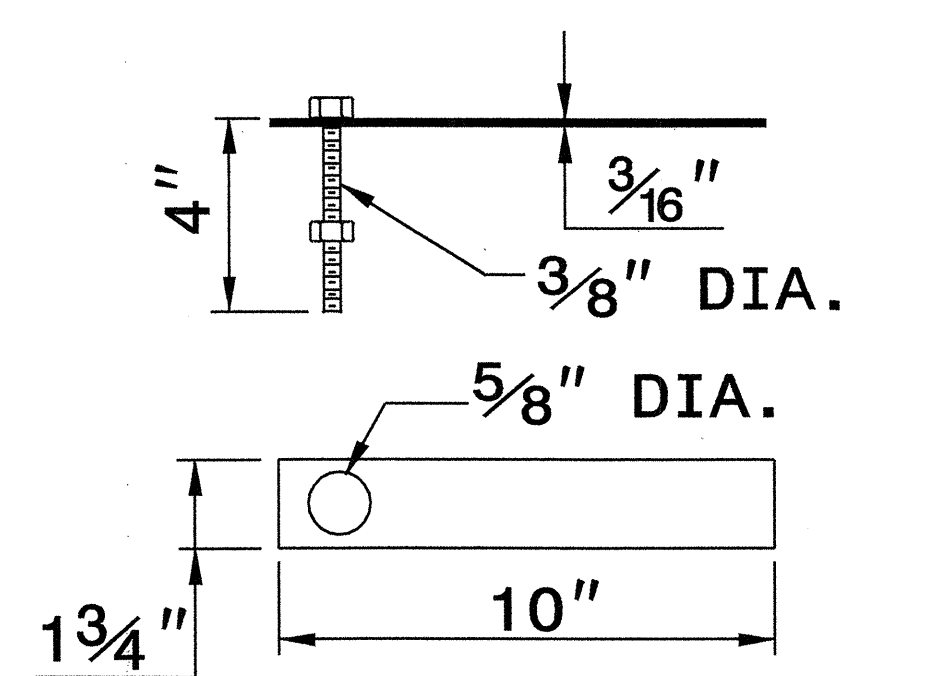
CONCRETE CONSTRUCTION



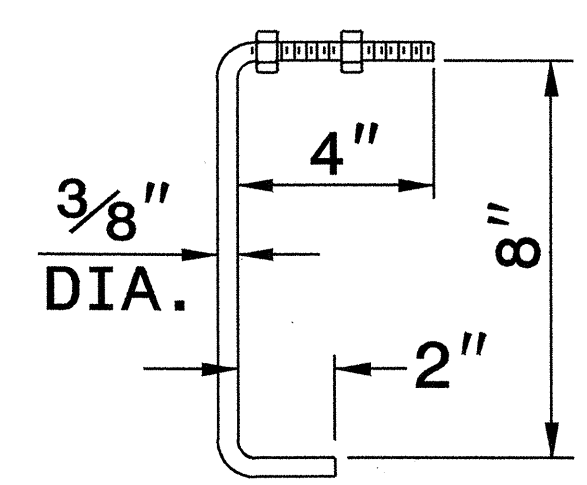
PRECAST CONCRETE CONSTRUCTION

DETAIL SHOWING ANCHORAGE OF FRAME FOR GRATED DROP INLET

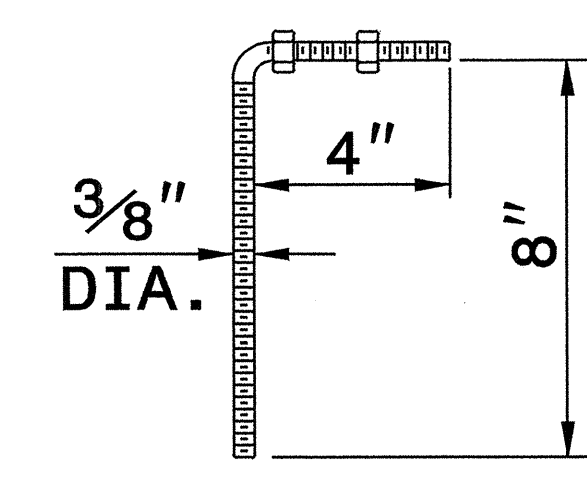
NOTE:
CONSTRUCT GRATED DROP INLET TO COINCIDE WITH NORMAL OR SUPERELEVATED SHOULDER OR PAVEMENT SLOPE.



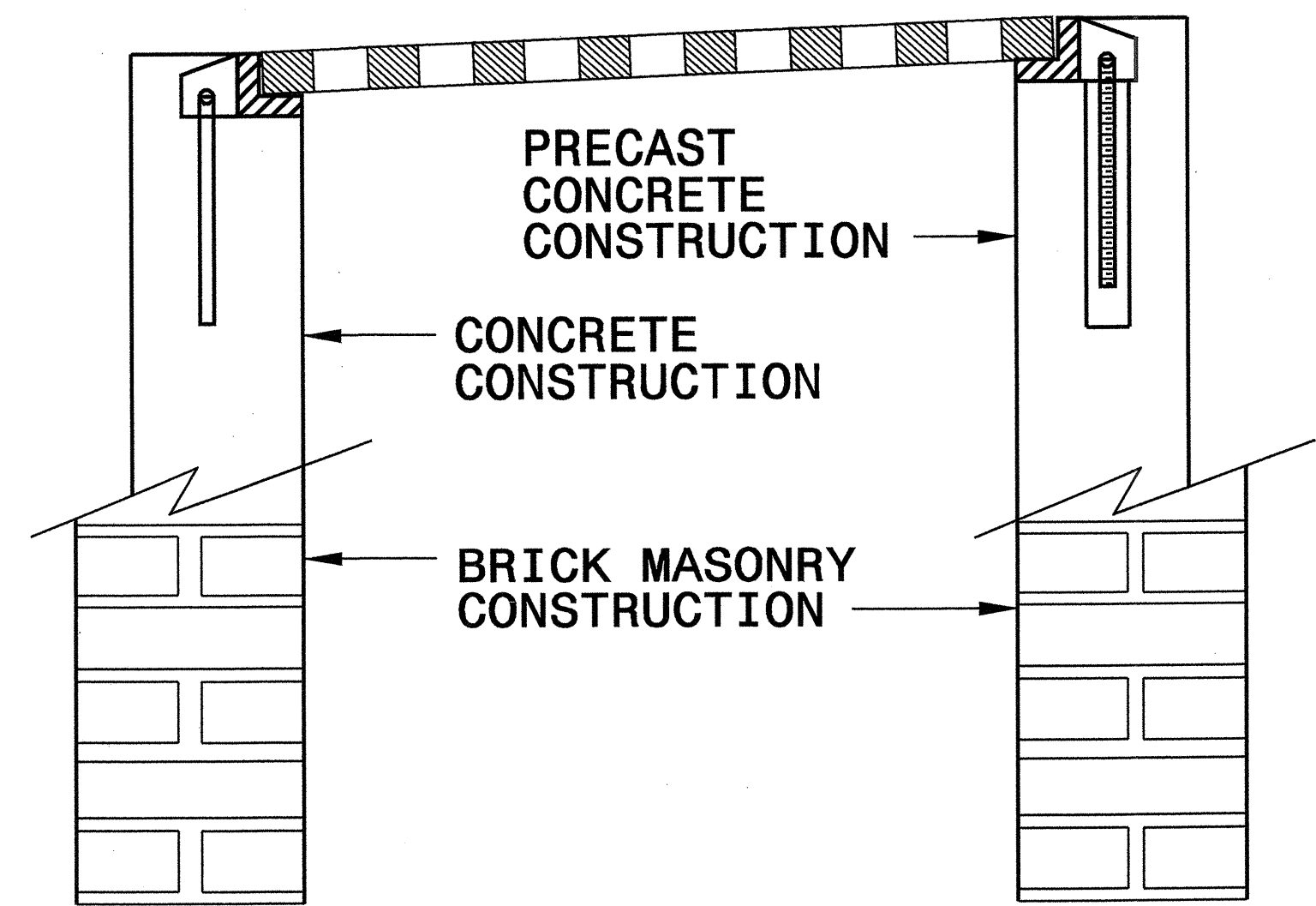
MASONRY ANCHOR
3/8" DIA. BOLT WITH PLATE



CONCRETE ANCHOR
3/8" DIA. BENT BAR



PRECAST CONCRETE ANCHOR
3/8" DIA. BENT BAR



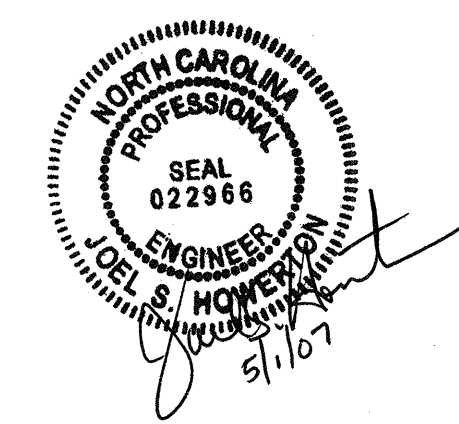
FRAME AND GRATE INSTALLATION FOR NORMAL CROWN AND SUPERELEVATED SECTIONS

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

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

SHEET 1 OF 1
840D25

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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.:

SUMMARY OF QUANTITIES

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C201492

ItemNumber	Sec #	Quantity	Unit	Description
000100000-N	800	Lump Sum		MOBILIZATION
002900000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL STATION ***** (15+91.50-L)
005000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB- BING
005700000-E	226	200	CY	UNDERCUT EXCAVATION
006300000-N	SP	Lump Sum		GRADING
008000000-E	SP	100	TON	CLASS IV SUBGRADE STABILIZA- TION
010600000-E	230	4,700	CY	BORROW EXCAVATION
013400000-E	240	125	CY	DRAINAGE DITCH EXCAVATION
019500000-E	265	100	CY	SELECT GRANULAR MATERIAL
019600000-E	270	100	SY	FABRIC FOR SOIL STABILIZATION
031800000-E	300	11	TON	FOUNDATION CONDITIONING MATE- RIAL, MINOR STRS
034400000-E	310	28	LF	18" SIDE DRAIN PIPE
036600000-E	310	28	LF	15" RC PIPE CULVERTS, CLASS III
038400000-E	310	20	LF	30" RC PIPE CULVERTS, CLASS III
070800000-E	310	20	LF	15" BIT COAT CS PIPE CULVERTS, TYPE B 0.064" THICK
080600000-E	310	2	EA	15" BIT COAT CS PIPE ELBOWS, TYPE B 0.064" THICK
099500000-E	340	25	LF	PIPE REMOVAL
122000000-E	545	100	TON	INCIDENTAL STONE BASE
148900000-E	610	720	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
152500000-E	610	625	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A
156000000-E	620	72	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22
200000000-N	806	21	EA	RIGHT OF WAY MARKERS
202200000-E	815	22	CY	SUBDRAIN EXCAVATION
203300000-E	815	17	CY	SUBDRAIN FINE AGGREGATE

ItemNumber	Sec #	Quantity	Unit	Description
204400000-E	815	100	LF	6" PERFORATED SUBDRAIN PIPE
205500000-E	815	3	EA	6" SUBDRAIN PIPE WYES, TEES, & ELBOWS
206600000-N	815	1	EA	CONCRETE PAD FOR SUBDRAIN PIPE OUTLET
207700000-E	815	6	LF	6" OUTLET PIPE (SUBDRAINS)
225300000-E	840	1	CY	PIPE COLLARS
228600000-N	840	2	EA	MASONRY DRAINAGE STRUCTURES
236700000-N	840	2	EA	FRAME WITH TWO GRATES, STD 840.29
255600000-E	846	60	LF	SHOULDER BERM GUTTER
303000000-E	862	800	LF	STEEL BM GUARDRAIL
315000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS
321500000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE III
327000000-N	SP	4	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
364900000-E	876	32	TON	RIP RAP, CLASS B
365600000-E	876	204	SY	FILTER FABRIC FOR DRAINAGE
440000000-E	1110	459	SF	WORK ZONE SIGNS (STATIONARY)
441000000-E	1110	144	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
444500000-E	1145	112	LF	BARRICADES (TYPE III)
481000000-E	1205	10,440	LF	PAINT PAVEMENT MARKING LINES (4")
600000000-E	1605	2,615	LF	TEMPORARY SILT FENCE
600600000-E	1610	90	TON	STONE FOR EROSION CONTROL, CLASS A
600900000-E	1610	245	TON	STONE FOR EROSION CONTROL, CLASS B
601200000-E	1610	80	TON	SEDIMENT CONTROL STONE
601500000-E	1615	3	ACR	TEMPORARY MULCHING
601800000-E	1620	100	LB	SEED FOR TEMPORARY SEEDING
602100000-E	1620	0.5	TON	FERTILIZER FOR TEMPORARY SEED- ING

ItemNumber	Sec #	Quantity	Unit	Description
602900000-E	SP	250	LF	SAFETY FENCE
603000000-E	1630	1,255	CY	SILT EXCAVATION
603600000-E	1631	840	SY	MATTING FOR EROSION CONTROL
603800000-E	SP	410	SY	PERMANENT SOIL REINFORCEMENT MAT
604200000-E	1632	50	LF	1/4" HARDWARE CLOTH
6071030000-E	SP	300	LF	COIR FIBER BAFFLES
608400000-E	1660	3	ACR	SEEDING & MULCHING
608700000-E	1660	2	ACR	MOWING
609000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
609300000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
609600000-E	1662	75	LB	SEED FOR SUPPLEMENTAL SEEDING
610800000-E	1665	2.25	TON	FERTILIZER TOPDRESSING
611400000-N	SP	2.5	HR	SPECIALIZED HAND MOWING
611700000-N	SP	8	EA	RESPONSE FOR EROSION CONTROL
612300000-E	1670	0.2	ACR	REFORESTATION

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

STATION	LOCATION (L,R,T, OR CU)	STRUCTURE NO.	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	CLASS III R.C. PIPE (UNLESS NOTED OTHERWISE)								BITUMINOUS COATED C.S. PIPE TYPE B (UNLESS NOTED OTHERWISE)								ENDWALLS		QUANTITIES FOR DRAINAGE STRUCTURES * TOTAL LF. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL. 'B')	FRAME, GRATES AND HOOD STANDARD 840.03	TYPE OF GRATE	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD. 840.72	CONC. & BRICK PIPE PLUG. C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS								
							12"	15"	18"	24"	30"	36"	42"	48"	12"	15"	18"	24"	30"	36"	42"	48"	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE									24" SIDE DRAIN PIPE	STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE)	CU. YDS.	R.C.P.	C.S.P.	F	F	G
							PER EACH (0' THRU 5.0')		5.0' THRU 10.0'		10.0' AND ABOVE		C.B. STD. 840.01 OR STD. 840.02																											
-L- 11+60	RT	1																	28'													25'	Remove Existing 15" Conc. Pipe							
-L- 14+20	RT	2		506.8	506.6																											0.66	Retain Existing 30" Conc. Pipe							
-L- 15+10	LT	3	515.6																																					
		4		512.9	512.5																																			
-L- 15+10	RT	4	515.7																																					
		5		512.5	509.5																																			
TOTAL																			28'																					
SAY																																								

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 SHOULDER WIDTH	FLARE LENGTH		W		ANCHORS					IMPACT ATTENUATOR TYPE 350			REMARKS															
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	TYPE III	GRAU 350	AT-1				EA	G		NG														
-L-	12+17.85	15+49.10	LT	331.25'			FILL 13+00.00		3'-1"	9'		312.50'			4'	4'	1	1																				
-L-	16+44.10	18+87.85	LT	243.75'				BRIDGE	3'-1"	9'	225.00'				4'		1	1																				
-L-	12+20.15	15+38.90	RT	318.75'			FILL 13+25.00		3'-1"	9'	300.00'				4'		1	1																				
-L-	16+33.90	18+02.65	RT	168.75'				FILL 16+75.00	3'-1"	9'		150.00'			3'		1	1																				
SUBTOTAL				1062.50'																																		
TOTAL				787.50'													4	4																				
SAY				800'																																		
				DEDUCTION FOR ANCHOR UNITS																																		
				GRAU-350	4 @ 50'	=	200.00'																															
				TYPE III	4 @ 18.75'	=	75.00'																															
				5 ADDITIONAL GUARDRAIL POSTS																																		
				TOTAL			275.00'																															

*** SUMMARY OF EARTHWORK
 IN CUBIC YARDS**

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
-L- STA. 9+95.00 TO 15+44.00 (BEGIN BRIDGE)	324	0	1,345	1,021	0
END BENT 1	0	0	30	30	0
END BENT 2	0	0	48	48	0
-L- STA. 16+39.00 (END BRIDGE) TO 23+00.00	337	0	2,680	2,343	0
TOTAL	661	0	4,103	3,442	0
LOSS DUE TO CLEARING & GRUBBING	-100			100	
ESTIMATED SHOULDER MATERIAL			876	876	
PROJECT TOTALS	561	0	4,979	4,418	0
ESTIMATED 5% TO REPLACE TOPSOIL ON BORROW PIT				221	
GRAND TOTALS	561			4,639	
SAY	600			4,700	

EST. DRAINAGE DITCH EXCAVATION = 125 CY
 EST. UNDERCUT EXCAVATION = 200 CY

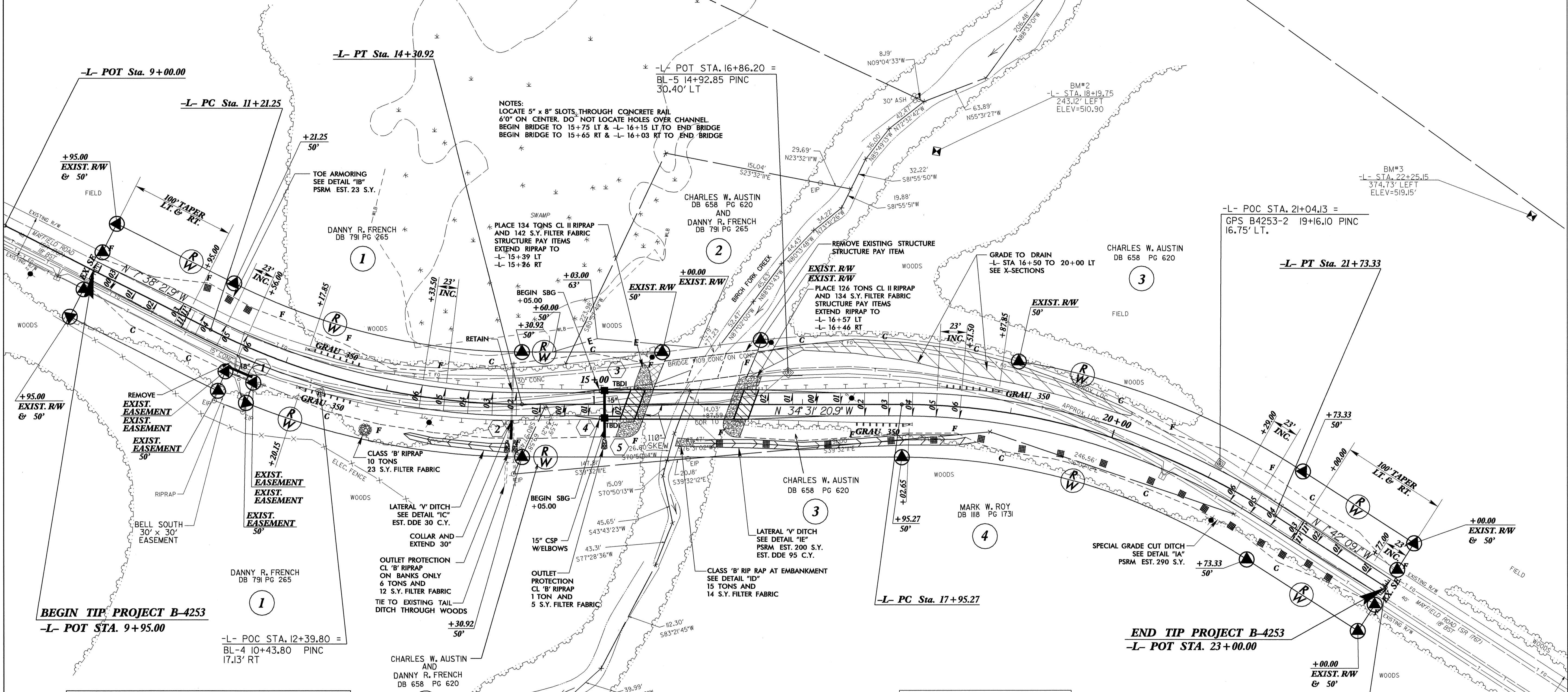
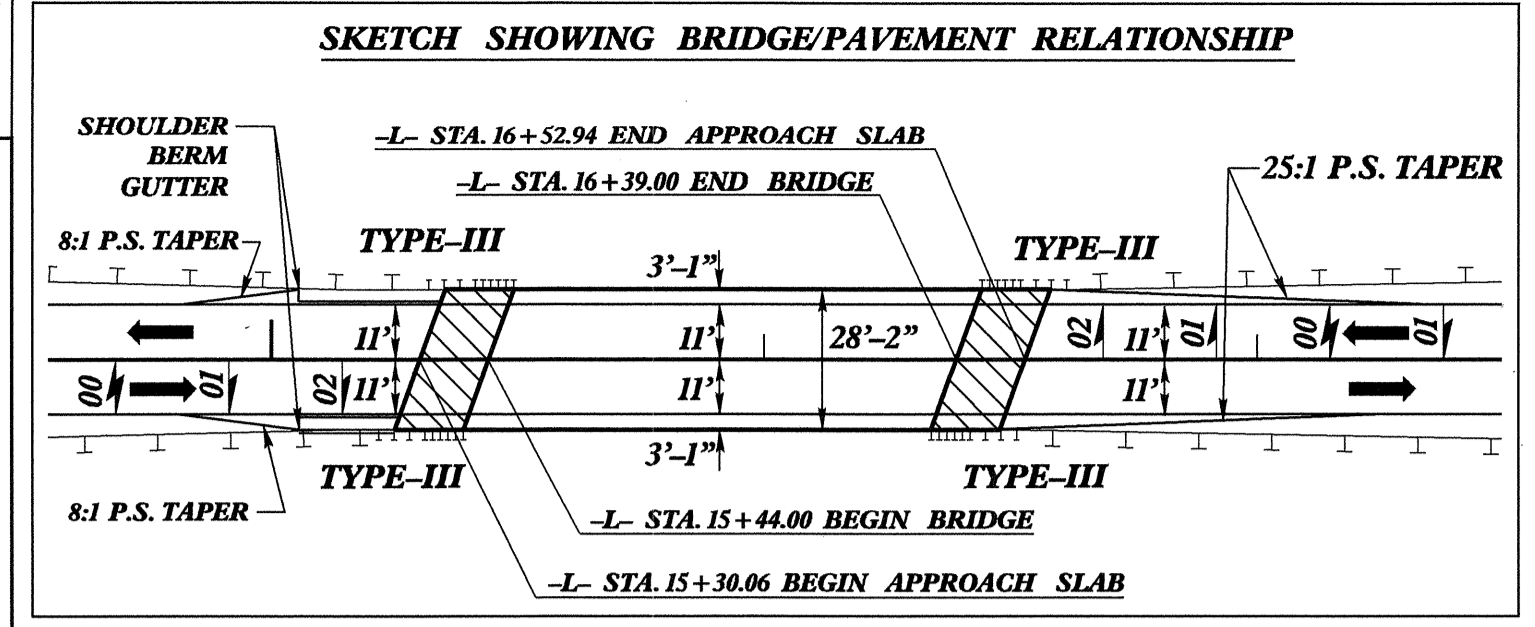
NOTE: Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

*** ASPHALT PAVEMENT
 REMOVAL AND BREAKING SUMMARY
 IN SQUARE YARDS**

LINE	STATION TO STATION	LOCATION	REMOVAL	BREAK-UP
-L-	12+07.00 TO 15+66.00	EXISTING ROADBED	421	
-L-	16+48.00 TO 21+18.00	EXISTING ROADBED	894	
	TOTAL		1,315	
	SAY		1,320	

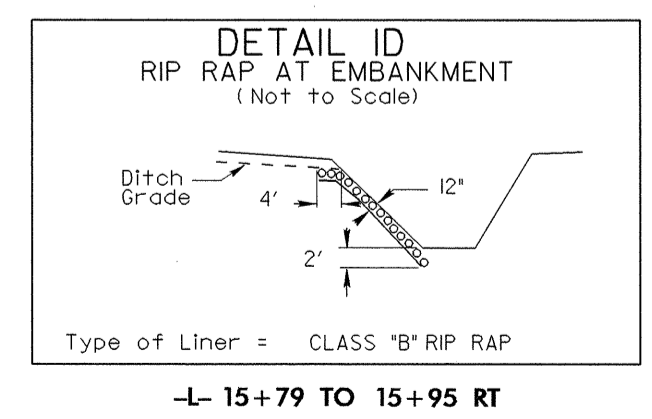
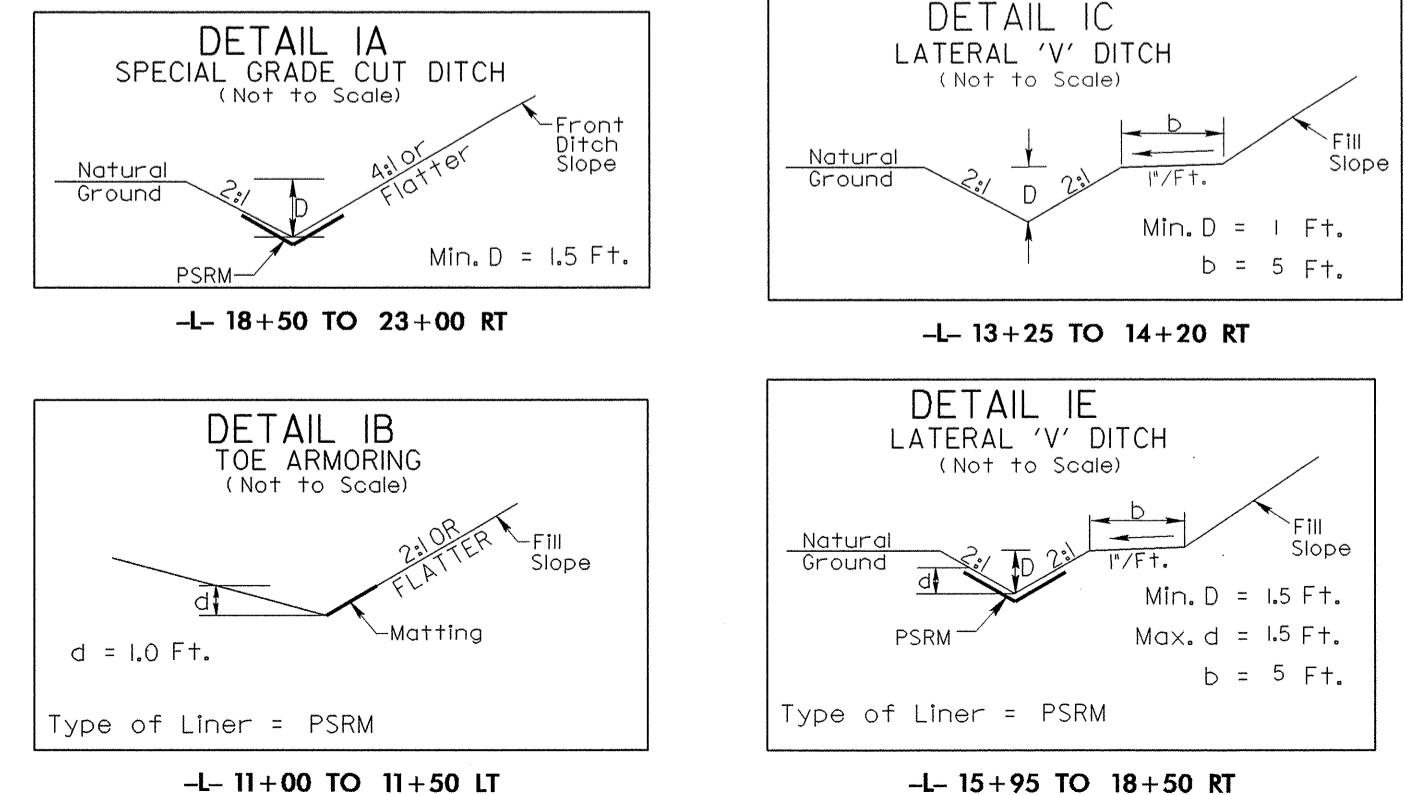
*** APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, FINE GRADING, CLEARING AND GRUBBING, BREAKING OF EXISTING PAVEMENT, AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING".**
 NOTE: BORROW EXCAVATION WILL BE PAID FOR AS A SEPARATE PAY ITEM.

★ DESIGN EXCEPTIONS FOR HORIZONTAL ALIGNMENT AND HORIZONTAL STOPPING SIGHT DISTANCE ARE REQUIRED.



-L-

★ PI Sta 12+78.99 Δ = 26° 52' 59.0" (LT) D = 8' 40' 52.2" L = 309.67' T = 157.74' R = 660.00' SE = 0.06 RUNOFF = 138' V _d = 45 MPH	★ PI Sta 19+89.64 Δ = 32° 49' 11.9" (RT) D = 8' 40' 52.2" L = 378.06' T = 194.37' R = 660.00' SE = 0.06 RUNOFF = 138' V _d = 45 MPH
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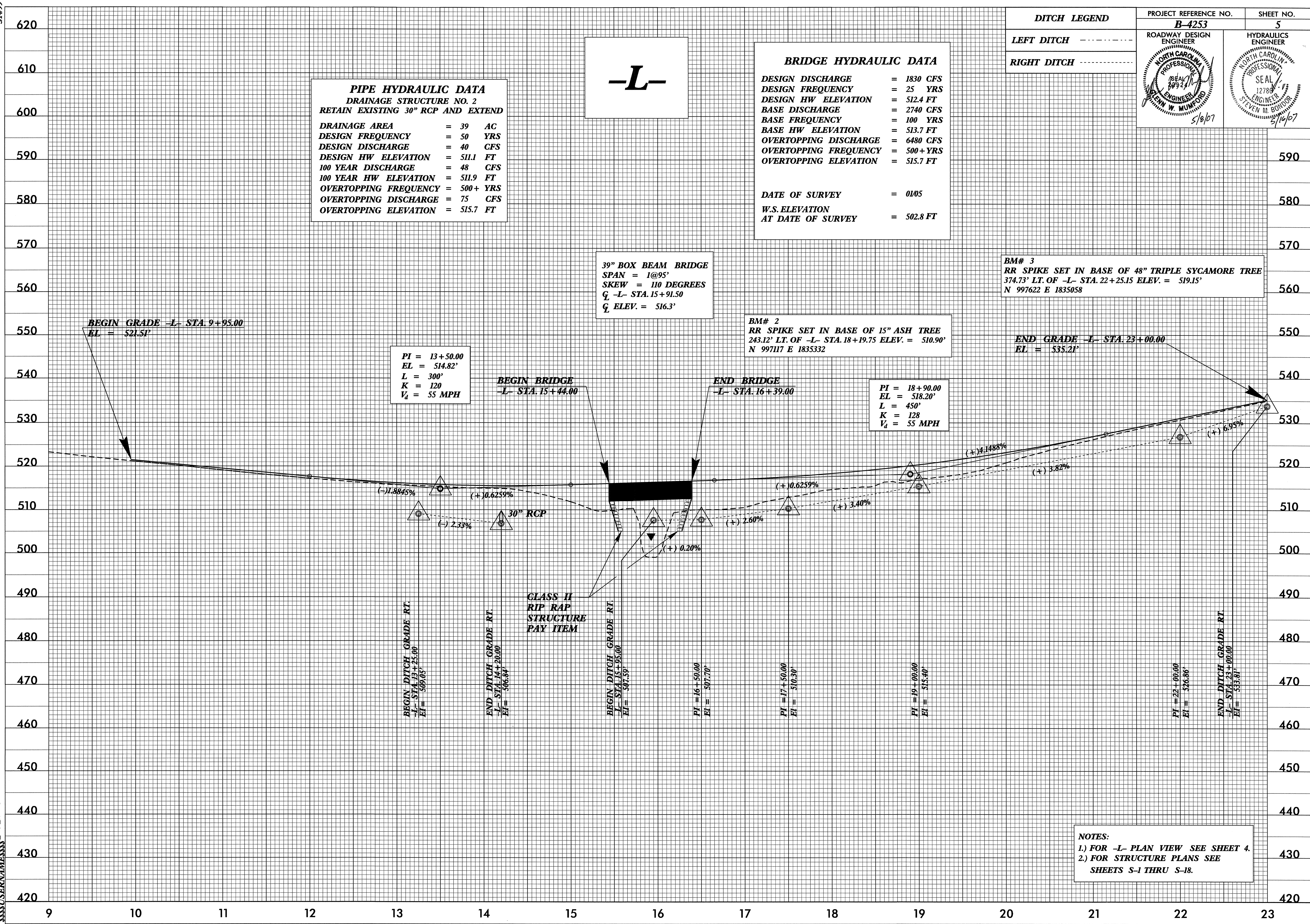


NOTES:

- FOR -L- PROFILE SEE SHEET 5.
- FOR STRUCTURE PLANS SEE SHEETS S-1 THRU S-18.
- ALL DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE.
- EXISTING FILL MATERIAL TO BE REMOVED (SEE X-SECTIONS).

REVISIONS

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PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 2
 RETAIN EXISTING 30" RCP AND EXTEND

DRAINAGE AREA = 39 AC
 DESIGN FREQUENCY = 50 YRS
 DESIGN DISCHARGE = 40 CFS
 DESIGN HW ELEVATION = 511.1 FT
 100 YEAR DISCHARGE = 48 CFS
 100 YEAR HW ELEVATION = 511.9 FT
 OVERTOPPING FREQUENCY = 500+ YRS
 OVERTOPPING DISCHARGE = 75 CFS
 OVERTOPPING ELEVATION = 515.7 FT

-L-

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE = 1830 CFS
 DESIGN FREQUENCY = 25 YRS
 DESIGN HW ELEVATION = 512.4 FT
 BASE DISCHARGE = 2740 CFS
 BASE FREQUENCY = 100 YRS
 BASE HW ELEVATION = 513.7 FT
 OVERTOPPING DISCHARGE = 6480 CFS
 OVERTOPPING FREQUENCY = 500+ YRS
 OVERTOPPING ELEVATION = 515.7 FT

DATE OF SURVEY = 01/05
 W.S. ELEVATION AT DATE OF SURVEY = 502.8 FT

DITCH LEGEND	PROJECT REFERENCE NO.	SHEET NO.
	B-4253	5
LEFT DITCH - - - - -	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
RIGHT DITCH - - - - -		

PI = 13+50.00
 EL = 514.82'
 L = 300'
 K = 120
 Va = 55 MPH

39" BOX BEAM BRIDGE
 SPAN = 1@95'
 SKEW = 110 DEGREES
 CL -L- STA. 15+91.50
 CL ELEV. = 516.3'

BM# 2
 RR SPIKE SET IN BASE OF 15" ASH TREE
 243.12' LT. OF -L- STA. 18+19.75 ELEV. = 510.90'
 N 997117 E 1835332

BM# 3
 RR SPIKE SET IN BASE OF 48" TRIPLE SYCAMORE TREE
 374.73' LT. OF -L- STA. 22+25.15 ELEV. = 519.15'
 N 997622 E 1835058

PI = 18+90.00
 EL = 518.20'
 L = 450'
 K = 128
 Va = 55 MPH

NOTES:
 1.) FOR -L- PLAN VIEW SEE SHEET 4.
 2.) FOR STRUCTURE PLANS SEE SHEETS S-1 THRU S-18.