

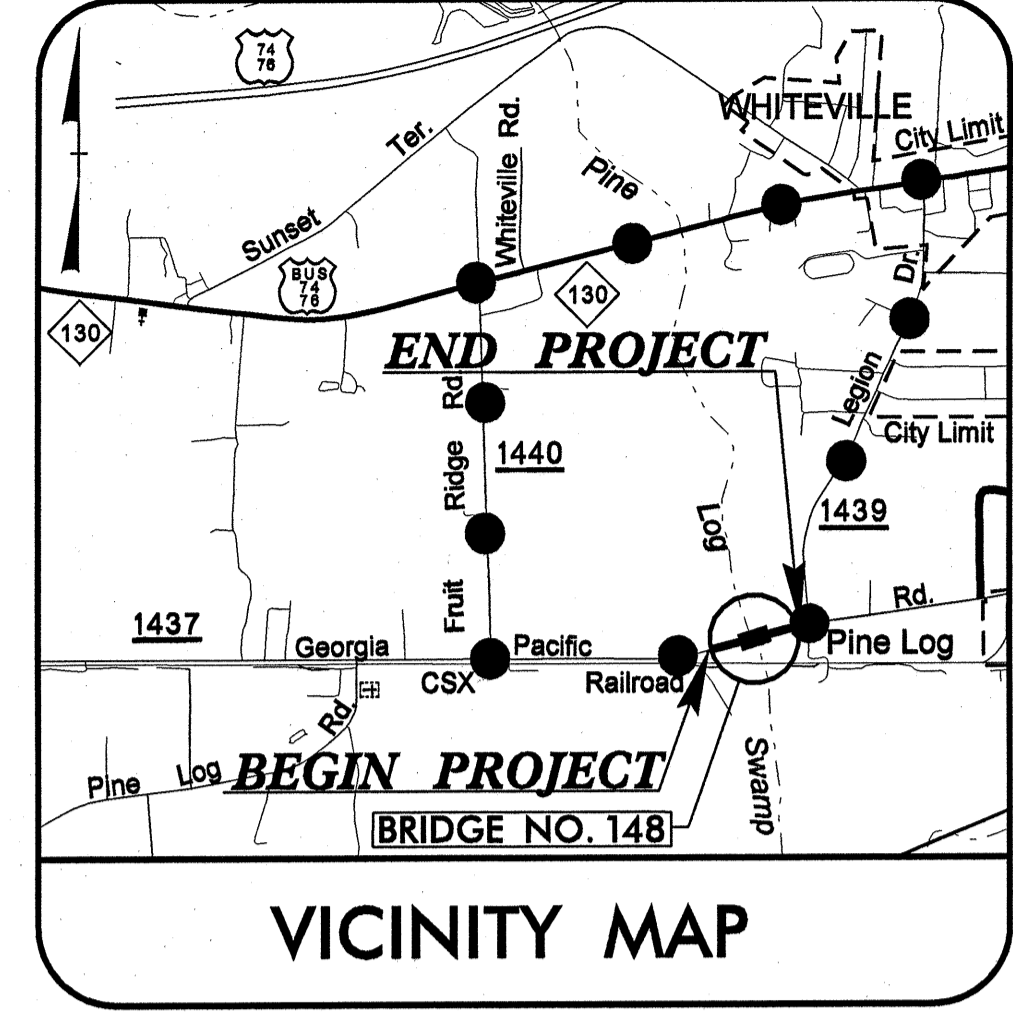
09/08/99

24-JUL-2008 12:05  
 I:\Projects\NCDOT\Bridges\Group 46 FinalDesign\B4080\Roadway\Proj\b4080\_rdy\_tsh.dgn  
 peaucat AT LPA30660

TIP PROJECT: B-4080

CONTRACT: C201970

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



STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS  
**COLUMBUS COUNTY**

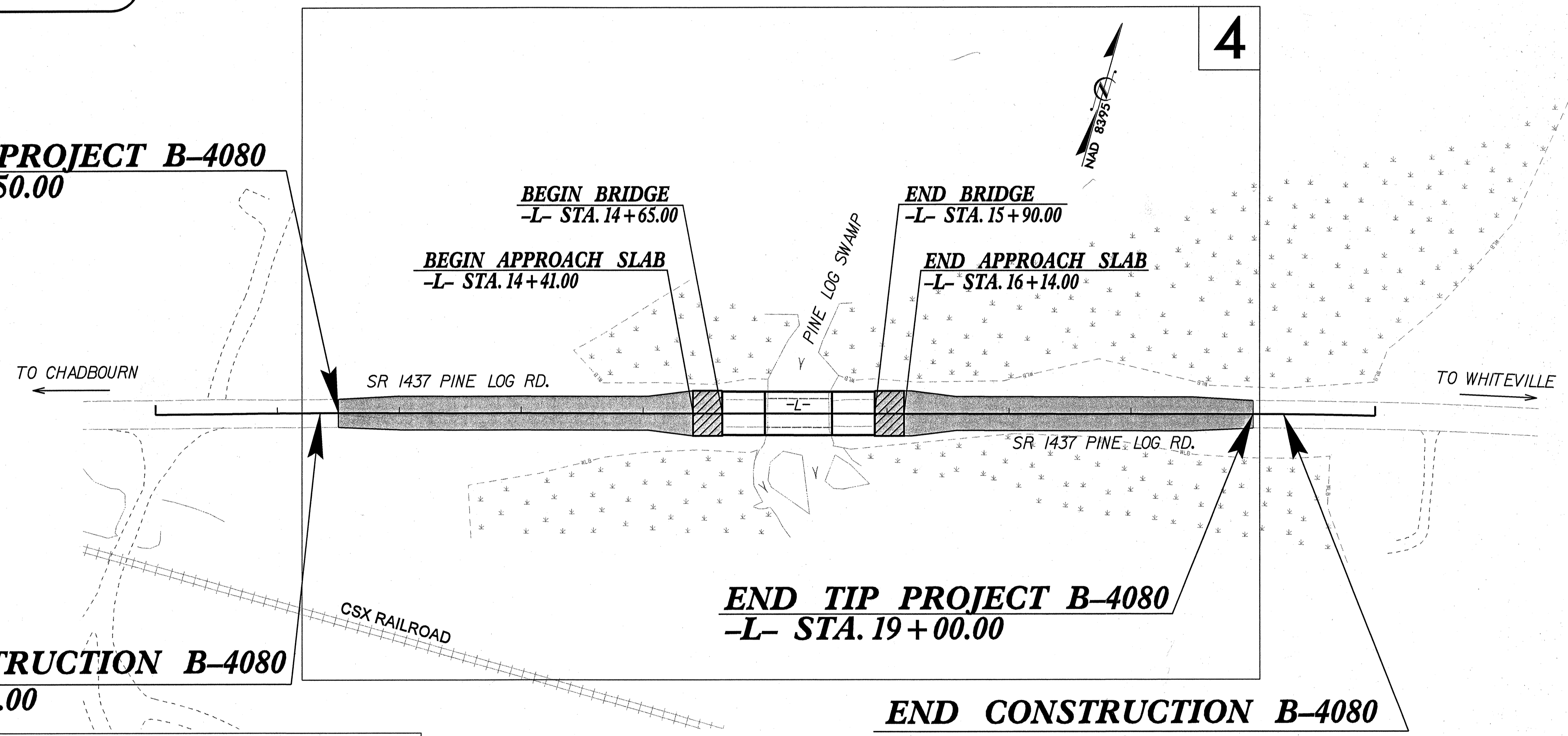
**LOCATION: BRIDGE NO.148 OVER PINE LOG SWAMP ON SR 1437**  
**TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4080	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33442.1.1	BRSTP-1437 (2)	PE	
33442.2.1	BRSTP-1437 (2)	RW-UTIL.	
33442.3.1	BRSTP-1437 (2)	CONST.	

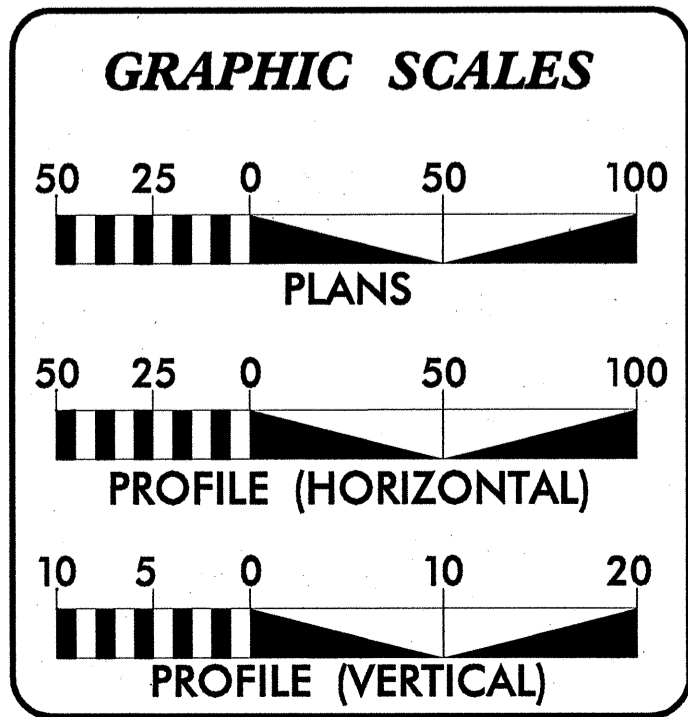
●●● OFFSITE DETOUR

**BEGIN TIP PROJECT B-4080**  
 -L- STA. 11+50.00

**BEGIN CONSTRUCTION B-4080**  
 -L- STA. 11+35.00



NCDOT CONTACT : CATHY HOUSER, P.E.  
 ROADWAY DESIGN-ENGINEERING COORDINATION



**DESIGN DATA**

ADT 2008 = 4,135  
 ADT 2028 = 6,917  
 DHV = 10 %  
 D = 60 %  
 T = 7 % \*  
 V = 60 MPH  
 \* TTST 4% DUAL 3%  
 FUNC. CLASS = URBAN COLLECTOR

**PROJECT LENGTH**

Length Roadway TIP Project B-4080 = 0.118 Miles  
 Length Structure TIP Project B-4080 = 0.024 Miles  
 Total Length TIP Project B-4080 = 0.142 Miles

Prepared In the Office of:  
**THE LPA GROUP** TRANSPORTATION CONSULTANTS  
 2006 STANDARD SPECIFICATIONS

THE LPA GROUP of North Carolina, p.a.  
 5000 Falls of Neuse Rd., Suite 304  
 Raleigh, North Carolina 27609

**RIGHT OF WAY DATE:** NOV 16, 2007  
**LETTING DATE:** NOV 18, 2008

**Jeanne K. Richter P.E.**  
 PROJECT ENGINEER

**Jody L. Cole**  
 PROJECT DESIGN ENGINEER

**HYDRAULICS ENGINEER**

SEAL 9334  
 ENGINEER  
 HENRY WELLS  
 P.E.

**ROADWAY DESIGN ENGINEER**

SEAL 24277  
 ENGINEER  
 JODY L. COLE  
 P.E.

**DIVISION OF HIGHWAYS**  
 STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER



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 Endangered Animal Boundary	-----
Existing Endangered Plant Boundary	-----

### BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or UG 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	-----
Buffer Zone 1	-----
Buffer Zone 2	-----
Flow Arrow	←
Disappearing Stream	-----
Spring	○
Wetland	-----
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	-----
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	⊗
UG Power Cable Hand Hole	□
H-Frame Pole	●
Recorded UG Power Line	-----
Designated UG Power Line (S.U.E.*)	-----

### TELEPHONE:

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

### WATER:

Water Manhole	⊕
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
Recorded UG Water Line	-----
Designated UG Water Line (S.U.E.*)	-----
Above Ground Water Line	-----

### TV:

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

### GAS:

Gas Valve	⊕
Gas Meter	⊕
Recorded UG Gas Line	-----
Designated UG Gas Line (S.U.E.*)	-----
Above Ground Gas Line	-----

### SANITARY SEWER:

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

6/2/99

# SURVEY CONTROL SHEET B-4080

PROJECT REFERENCE NO.	SHEET NO.
B-4080	I-C
Location and Surveys	



BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	B4080 - BL1	208558.5740	2081642.2315	66.37	10+00.00	0.27 RT
2	B4080 - BL2	208806.6455	2082513.2603	63.47	19+05.67	0.33 LT
3	B4080 - BL3	208677.8660	2082112.7510	59.30	14+85.24	14.83 RT
4	B4080 - BL4	208819.8250	2082620.6660	57.74	OUTSIDE PROJECT LIMITS	
5	B4080 - BL5	208911.4820	2083102.5080	58.35	OUTSIDE PROJECT LIMITS	

\*\*\*\*\*  
 80 ELEVATION = 68.12  
 N 208411 E 2080965  
 L STATION 10+00  
 S 77° 39' 16.0" W DIST 693.07  
 RAILROAD SPIKE IN BASE OF 18 INCH PINE  
 \*\*\*\*\*

\*\*\*\*\*  
 81 ELEVATION = 61.33  
 N 208962 E 2082784  
 L STATION 20+00  
 N 53° 49' 54.0" E DIST 222.40  
 RAILROAD SPIKE IN BASE OF 24 INCH HARDWOOD  
 \*\*\*\*\*

NCDOT GPS STATION B4080-2  
 LOCALIZED PROJECT COORDINATES  
 N= 208448.4310  
 E= 2079568.4550  
 ELEVATION=71.30'

NCDOT GPS STATION B4080-1  
 LOCALIZED PROJECT COORDINATES  
 N= 208462.2700  
 E= 2080351.6980  
 ELEVATION=68.97'

-L- POT STA 11+50.00  
 BEGIN TIP PROJECT B-4080  
 BEGIN CONSTRUCTION  
 LOCALIZED COORDINATES  
 N= 208601.0314  
 E= 2081786.0965

-L- POT STA 19+00.00  
 END TIP PROJECT B-4080  
 END CONSTRUCTION  
 LOCALIZED COORDINATES  
 N= 208804.7861  
 E= 2082507.8886

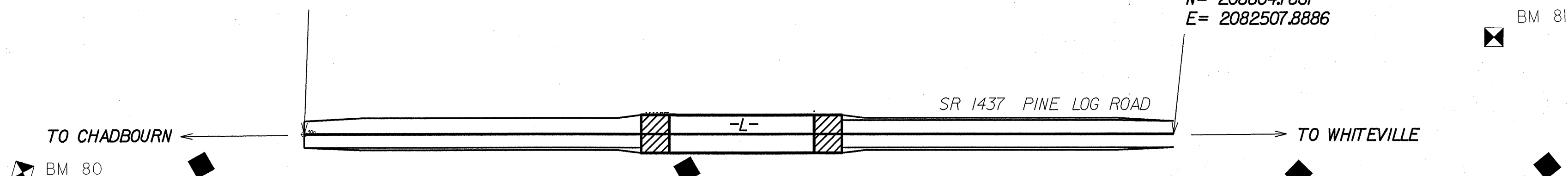
NCDOT BASELINE STATION -BL1-  
 POT 5+00.00  
 LOCALIZED PROJECT COORDINATES  
 N= 208468.7590  
 E= 2080844.6490

NCDOT BASELINE STATION -BL2-  
 PINC 11+06.26  
 LOCALIZED PROJECT COORDINATES  
 N= 208488.5360  
 E= 2081450.5910

NCDOT BASELINE STATION -BL3-  
 PINC 17+94.96  
 LOCALIZED PROJECT COORDINATES  
 N= 208677.8660  
 E= 2082112.7510

NCDOT BASELINE STATION -BL4-  
 PINC 23+22.34  
 LOCALIZED PROJECT COORDINATES  
 N= 208819.8250  
 E= 2082620.6660

NCDOT BASELINE STATION -BL5-  
 POT 28+12.82  
 LOCALIZED PROJECT COORDINATES  
 N= 208911.4820  
 E= 2083102.5080



## DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B-4080-1" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 208462.2701(ft) EASTING: 2080351.6989(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.000005080 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B-4080-1" TO -L- STATION POT 11+50.00 IS N 84° 22' 28.1723" E 1441.09' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

## NOTES:

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:  
[HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCTHIGHWAYLOCATIONPROJECT/](http://www.ncdot.org/doh/preconstructhighwaylocationproject/)

THE FILES TO BE FOUND ARE AS FOLLOWS:  
 B4080\_LS\_CONTROL\_070306.TXT

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

© 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 SERVICE (OPUS)  
 SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

NOTE: DRAWING NOT TO SCALE

24-JUL-2008 12:05 I:\Projects\NCDOT\Bridges\Group 46 Final Design\B4080\Roadway\Proj\B4080\_1s.ic.dgn



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

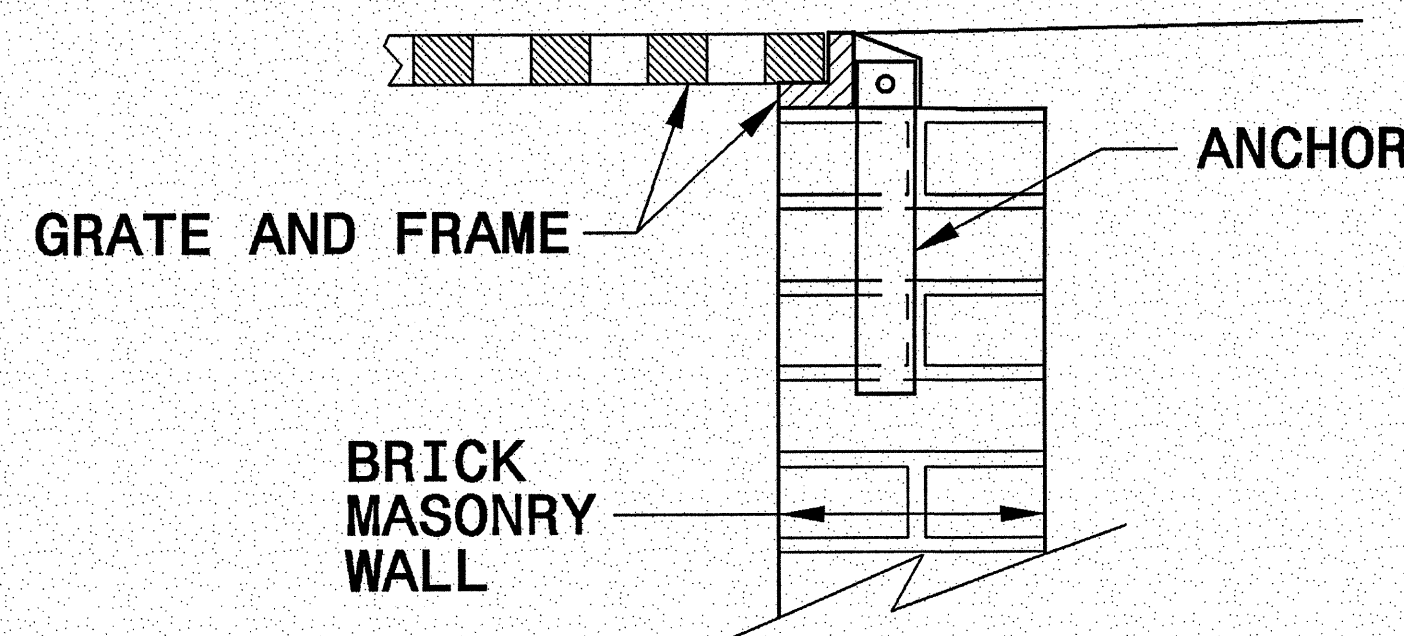
ENGLISH DETAIL DRAWING FOR  
**ANCHORAGE FOR FRAMES**  
BRICK/CONCRETE/PRECAST CONCRETE

SHEET 1 OF 1  
**840D25**

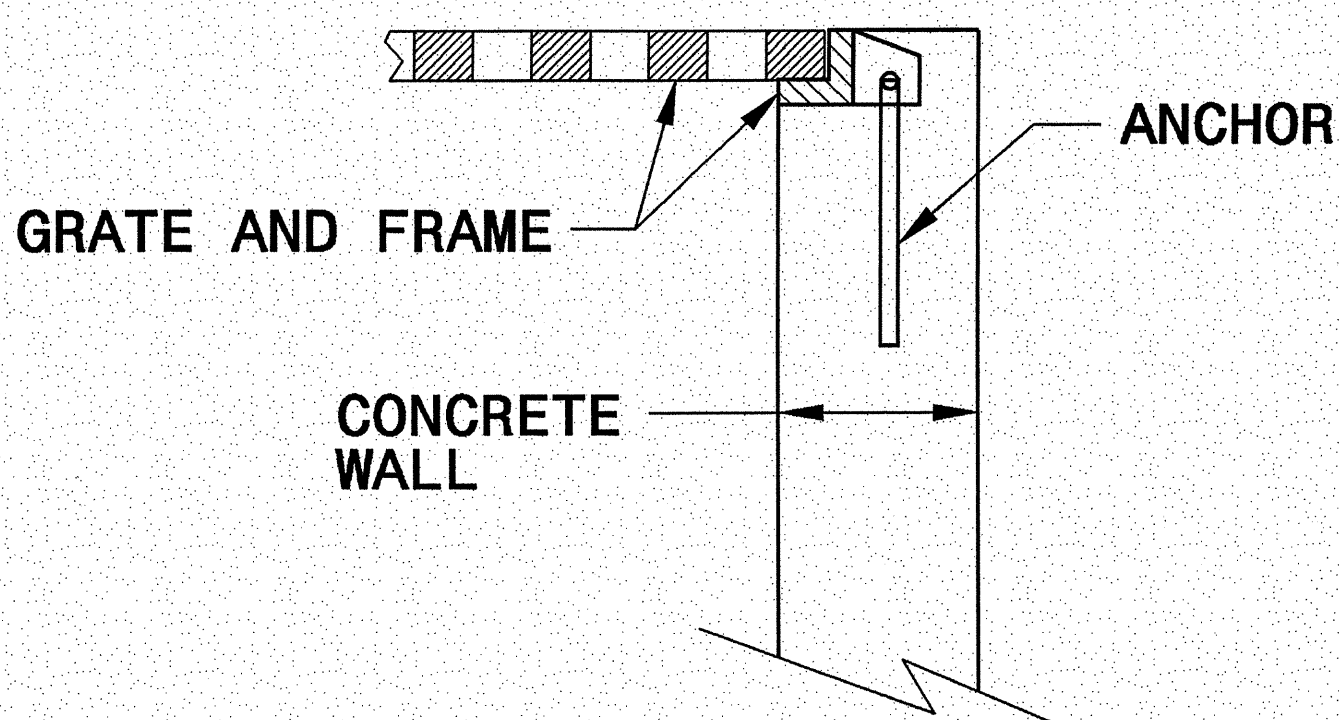
STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

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

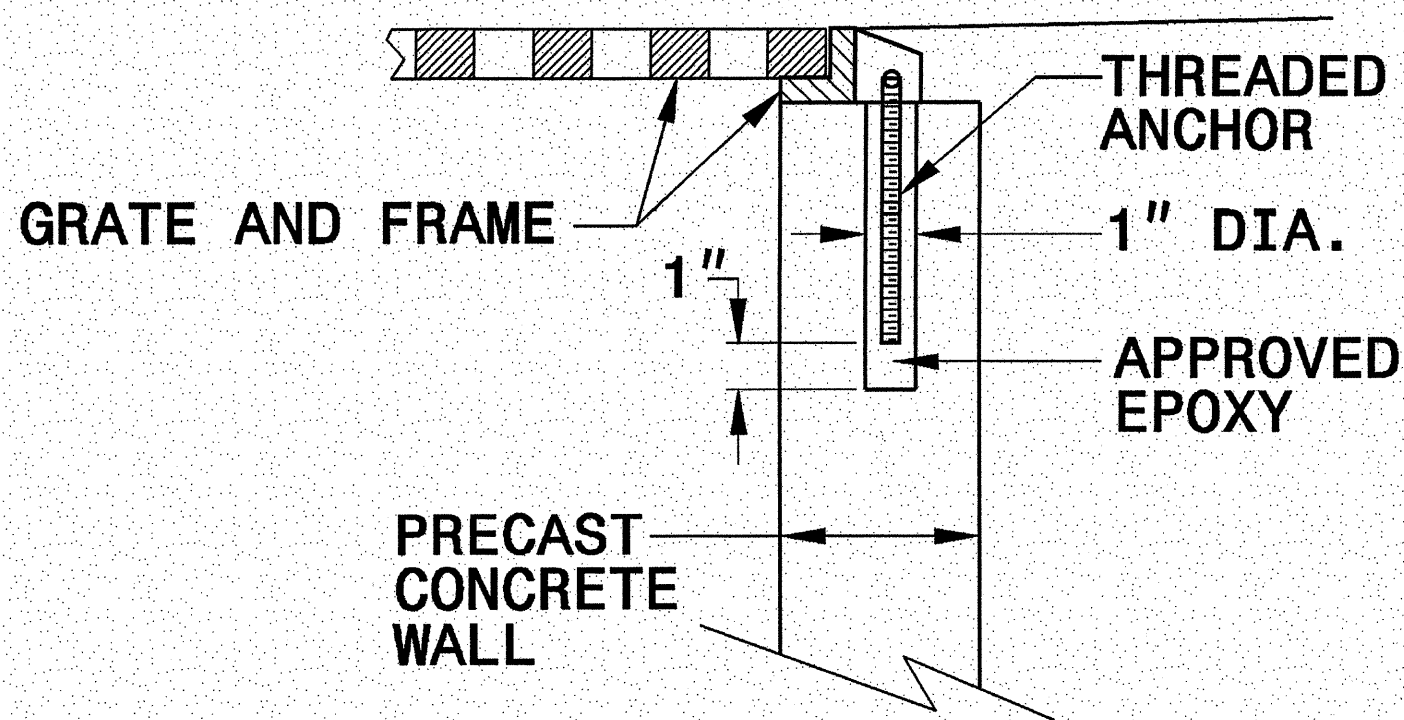
SHEET 1 OF 1  
**840D25**



**BRICK MASONRY CONSTRUCTION**



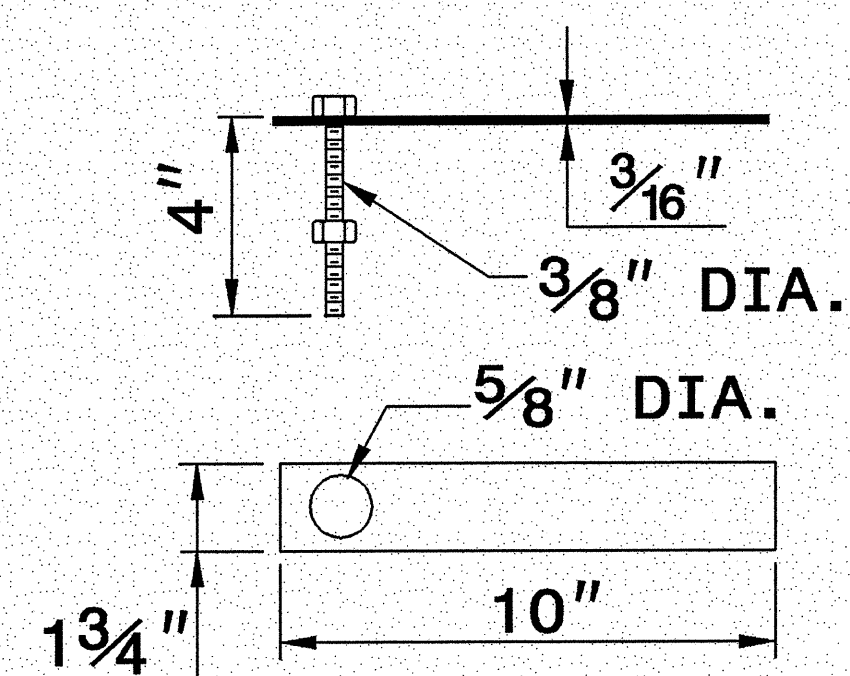
**CONCRETE CONSTRUCTION**



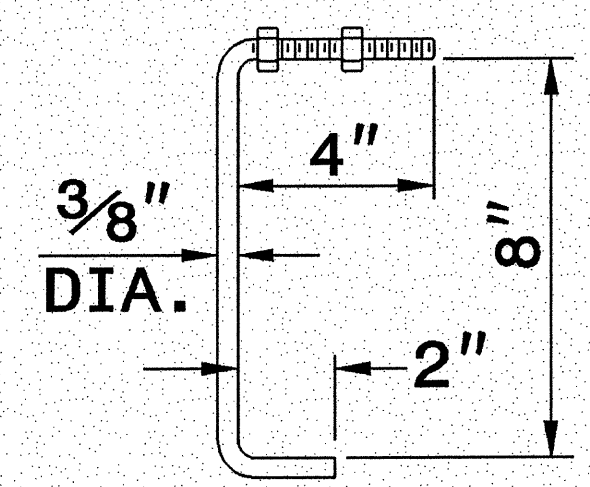
**PRECAST CONCRETE CONSTRUCTION**

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

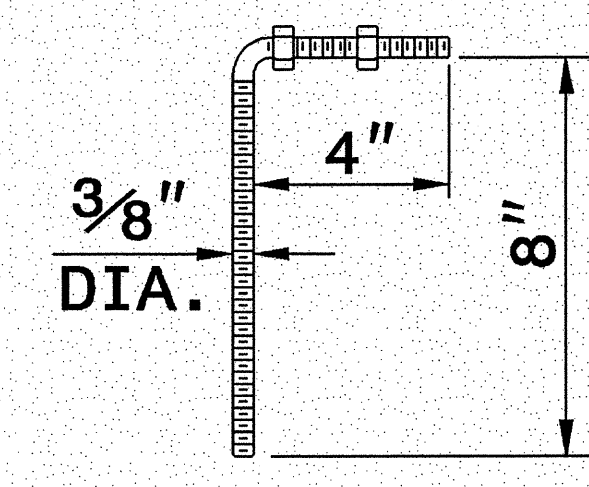
NOTE:  
CONSTRUCT GRATED DROP INLET TO COINCIDE WITH NORMAL OR SUPERELEVATED SHOULDER OR PAVEMENT SLOPE.



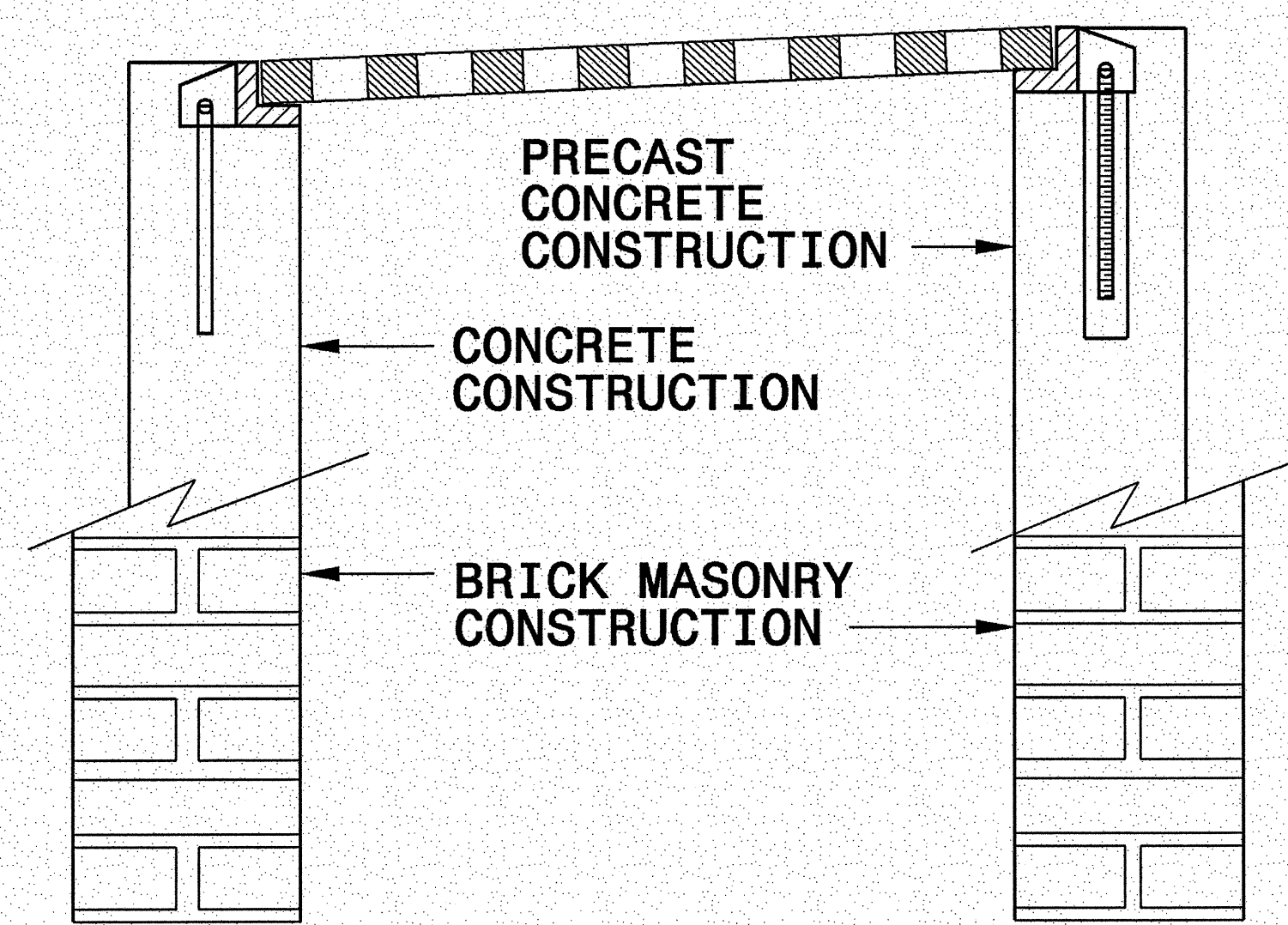
**MASONRY ANCHOR**  
3/8" DIA. BOLT WITH PLATE



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

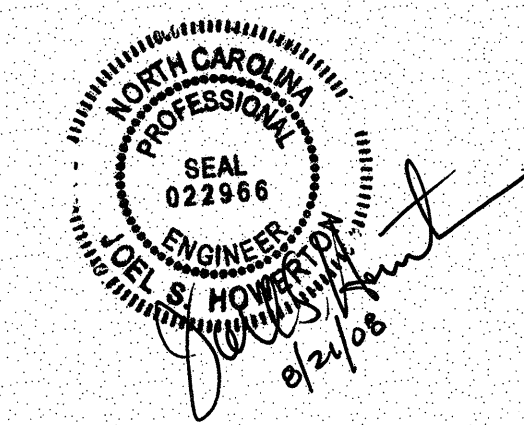


**PRECAST CONCRETE ANCHOR**  
3/8" DIA. BENT BAR



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

27-SEP-2006 09:59 S:\Center\acss\1\03\250593\Special Details\Vericard\stds\06\stds to Special Details\84025 Anchorage For Frames\084025.dgn



**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  
**SUMMARY OF QUANTITIES**

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C201970

ItemNumber	Sec #	Quantity	Unit	Description
000100000-N	800	Lump Sum		MOBILIZATION
000400000-N	801	Lump Sum		CONSTRUCTION SURVEYING
002900000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ***** (15+27.50)
004300000-N	226	Lump Sum		GRADING
005000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB- BING
005700000-E	226	200	CY	UNDERCUT EXCAVATION
019500000-E	265	200	CY	SELECT GRANULAR MATERIAL
019600000-E	270	200	SY	FABRIC FOR SOIL STABILIZATION
031800000-E	300	5	TON	FOUNDATION CONDITIONING MATE- RIAL, MINOR STRS
054600000-E	310	32	LF	*** CAA PIPE CULVERTS, ***** THICK (15", 0.060")
148900000-E	610	430	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
149800000-E	610	260	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0B
151900000-E	610	310	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5B
156000000-E	620	50	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22
202200000-E	815	23	CY	SUBDRAIN EXCAVATION
203300000-E	815	17	CY	SUBDRAIN FINE AGGREGATE
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)
228600000-N	840	2	EA	MASONRY DRAINAGE STRUCTURES
236700000-N	840	2	EA	FRAME WITH TWO GRATES, STD 840.29
255600000-E	846	12	LF	SHOULDER BERM GUTTER
303000000-E	862	600	LF	STEEL BM GUARDRAIL

ItemNumber	Sec #	Quantity	Unit	Description
315000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS
327000000-N	SP	4	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
331700000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE B-77
364900000-E	876	2	TON	RIP RAP, CLASS B
365600000-E	876	1,460	SY	FILTER FABRIC FOR DRAINAGE
407200000-E	903	30	LF	SUPPORTS, 3-LB STEEL U-CHANNEL
410200000-N	904	3	EA	SIGN ERECTION, TYPE E
415500000-N	907	7	EA	DISPOSAL OF SIGN SYSTEM, U- CHANNEL
440000000-E	1110	420	SF	WORK ZONE SIGNS (STATIONARY)
441000000-E	1110	90	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
444500000-E	1145	40	LF	BARRICADES (TYPE III)
481000000-E	1205	6,000	LF	PAINT PAVEMENT MARKING LINES (4")
490000000-N	1251	10	EA	PERMANENT RAISED PAVEMENT MARKERS
600000000-E	1605	5,400	LF	TEMPORARY SILT FENCE
600600000-E	1610	150	TON	STONE FOR EROSION CONTROL, CLASS A
600900000-E	1610	10	TON	STONE FOR EROSION CONTROL, CLASS B
601200000-E	1610	20	TON	SEDIMENT CONTROL STONE
601500000-E	1615	2	ACR	TEMPORARY MULCHING
601800000-E	1620	50	LB	SEED FOR TEMPORARY SEEDING
602100000-E	1620	1.25	TON	FERTILIZER FOR TEMPORARY SEED- ING
602400000-E	1622	50	LF	TEMPORARY SLOPE DRAINS
602700000-N	1622	2	EA	INLET PROTECTION AT TEMPORARY SLOPE DRAINS
602900000-E	SP	1,150	LF	SAFETY FENCE
603000000-E	1630	50	CY	SILT EXCAVATION
603600000-E	1631	6,500	SY	MATTING FOR EROSION CONTROL

ItemNumber	Sec #	Quantity	Unit	Description
603700000-E	SP	15	SY	COIR FIBER MAT
604200000-E	1632	85	LF	1/4" HARDWARE CLOTH
6071030000-E	SP	55	LF	COIR FIBER BAFFLES
6071050000-E	SP	2	EA	*** SKIMMER (1-1/2')
608400000-E	1660	4	ACR	SEEDING & MULCHING
608700000-E	1660	1	ACR	MOWING
609000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
609300000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
609600000-E	1662	50	LB	SEED FOR SUPPLEMENTAL SEEDING
610800000-E	1665	1	TON	FERTILIZER TOPDRESSING
611400000-N	SP	5	HR	SPECIALIZED HAND MOWING
611700000-N	SP	12	EA	RESPONSE FOR EROSION CONTROL

5/28/99

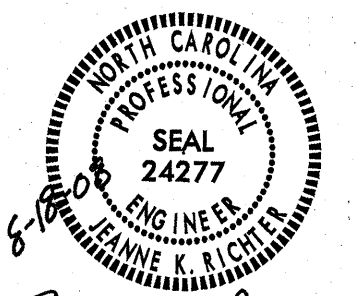

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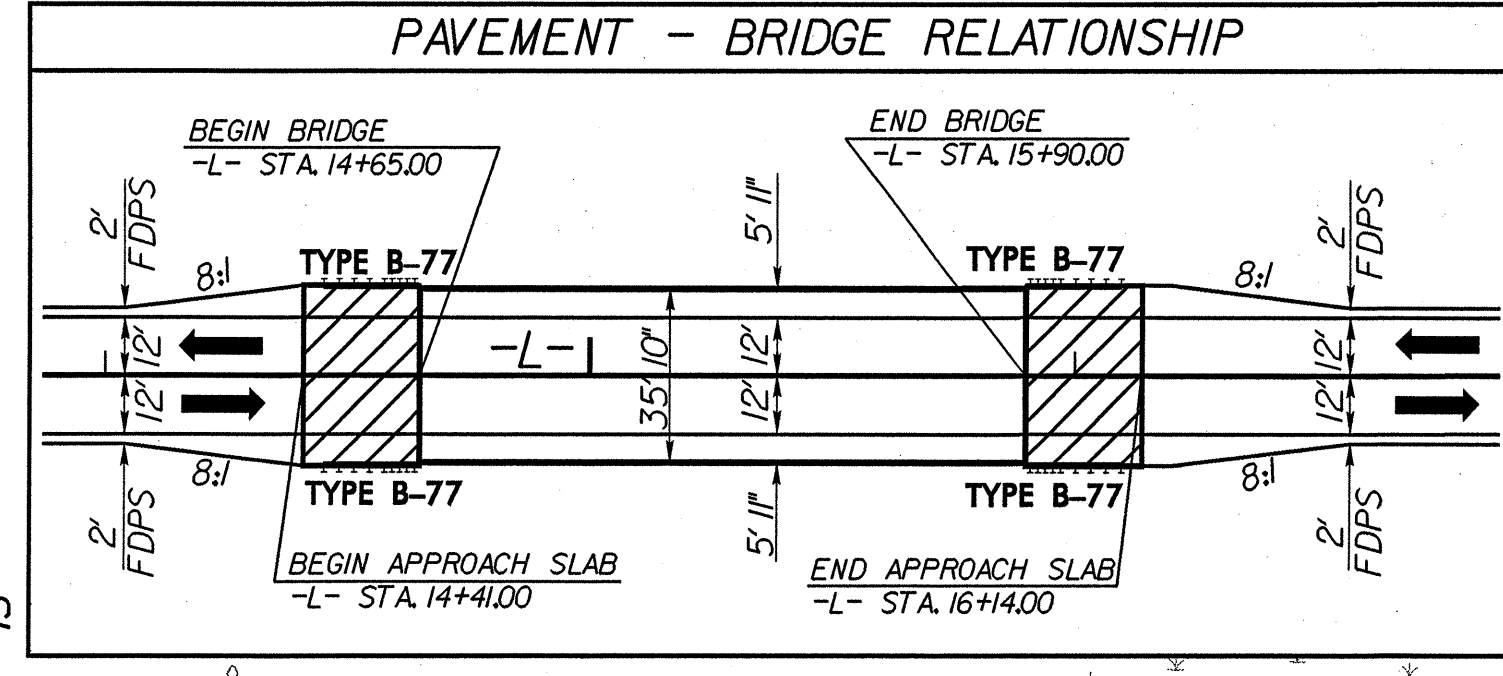
8/17/09

PROJECT REFERENCE NO. B-4080	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER 

BEGIN CONSTRUCTION B-4080  
-L- STA. 11+35.00

-L-  
PI Sta 11+31.36  
 $\Delta = 0' 41' 26.6''$  (RT)  
D = 0' 40' 26.6"  
L = 102.47'  
T = 51.24'  
R = 8,500.00'  
@MAX. = EXIST.

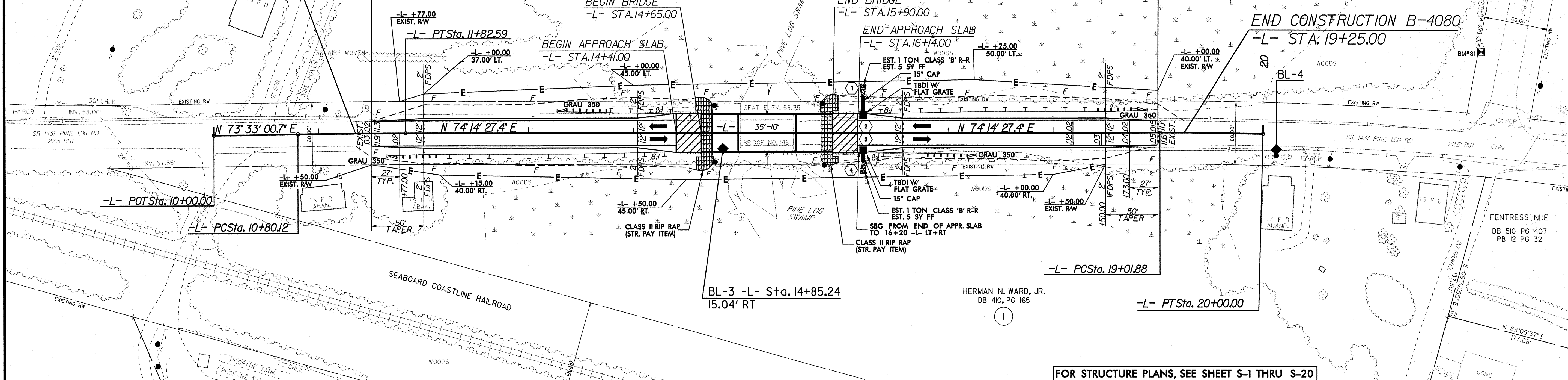
BEGIN TIP PROJECT B-4080  
-L- STA. 11+50.00  
BEGIN CONSTRUCTION



-L-  
PI Sta 19+50.94  
 $\Delta = 1' 27' 03.0''$  (RT)  
D = 1' 28' 43.0"  
L = 98.12'  
T = 49.06'  
R = 3,875.00'  
@MAX. = EXIST.  
Ds = 60MPH

END TIP PROJECT B-4080  
-L- STA. 19+00.00

END CONSTRUCTION B-4080  
-L- STA. 19+25.00



FOR STRUCTURE PLANS, SEE SHEET S-1 THRU S-20

BM80 ELEV. 68.12  
N 208410.6470 E 2080965.1100

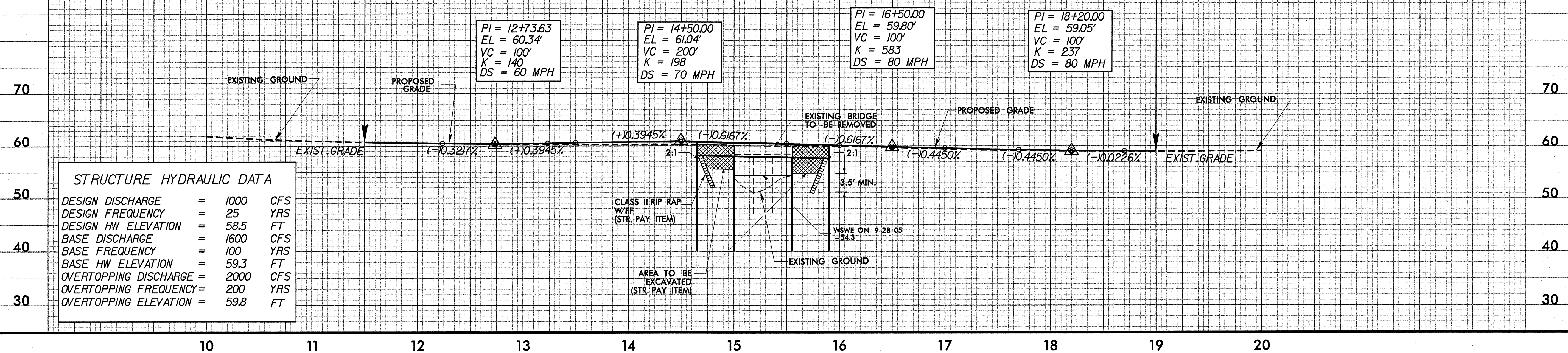
NOTE: BENCH MARK 80 & 81 ARE LOCATED OUTSIDE OF PROJECT LIMITS.

BM81 ELEV. 61.33  
N 208961.5632 E 2082783.7411

EXIST. ROAD FILL TO BE EXCAVATED

BEGIN GRADE B-4080  
-L- Sta. 11+50.00  
ELEV. = 60.74'

END GRADE B-4080  
-L- Sta. 19+00.00  
ELEV. = 59.03'



STRUCTURE HYDRAULIC DATA		
DESIGN DISCHARGE	=	1000 CFS
DESIGN FREQUENCY	=	25 YRS
DESIGN HW ELEVATION	=	58.5 FT
BASE DISCHARGE	=	1600 CFS
BASE FREQUENCY	=	100 YRS
BASE HW ELEVATION	=	59.3 FT
OVERTOPPING DISCHARGE	=	2000 CFS
OVERTOPPING FREQUENCY	=	200 YRS
OVERTOPPING ELEVATION	=	59.8 FT

REVISIONS

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