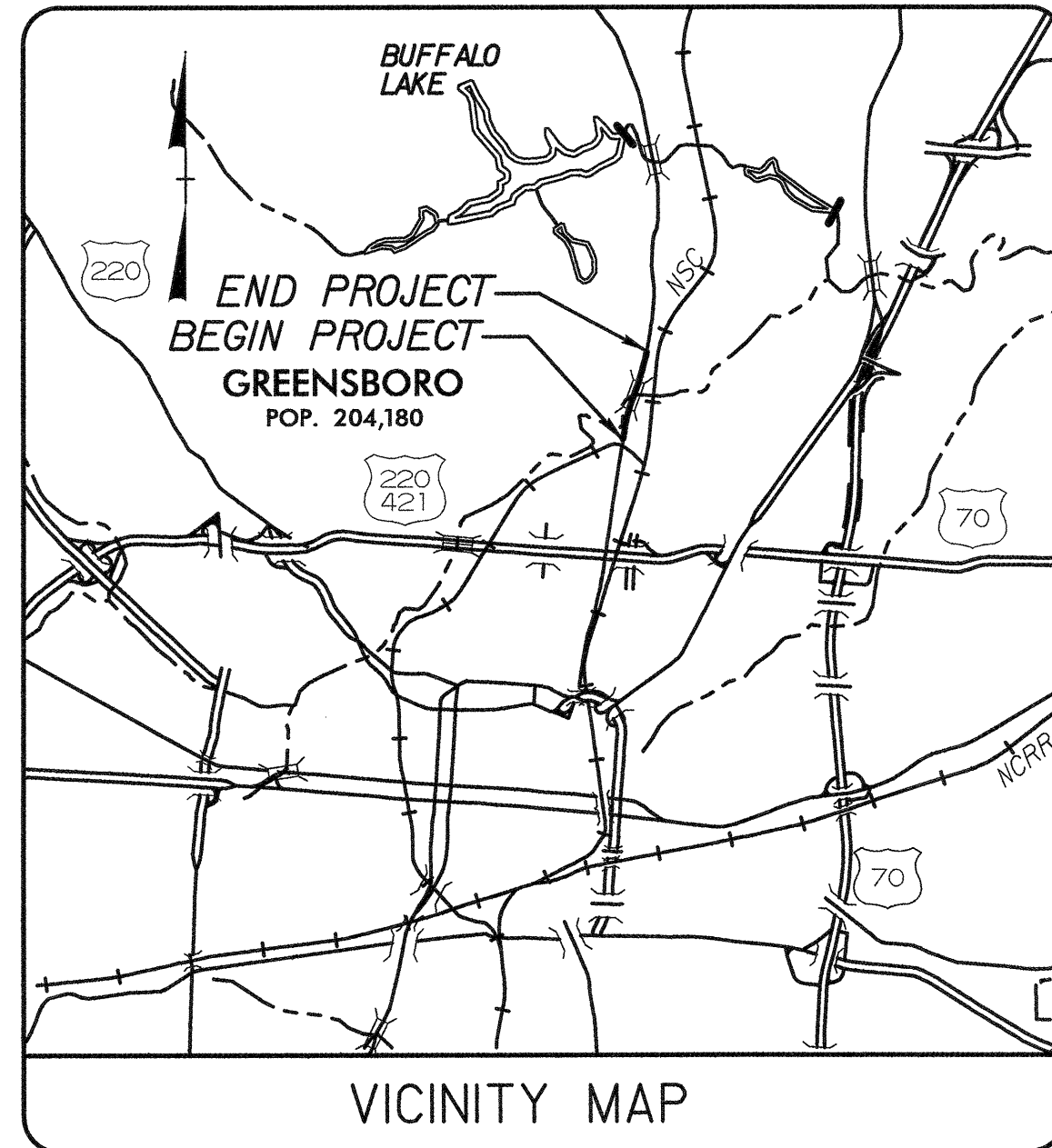


CONTRACT: C201564 TIP PROJECT: B-3337

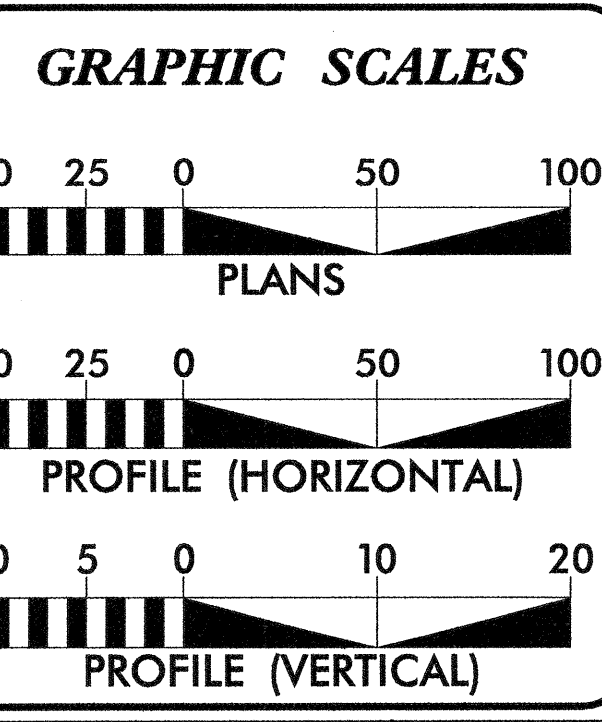
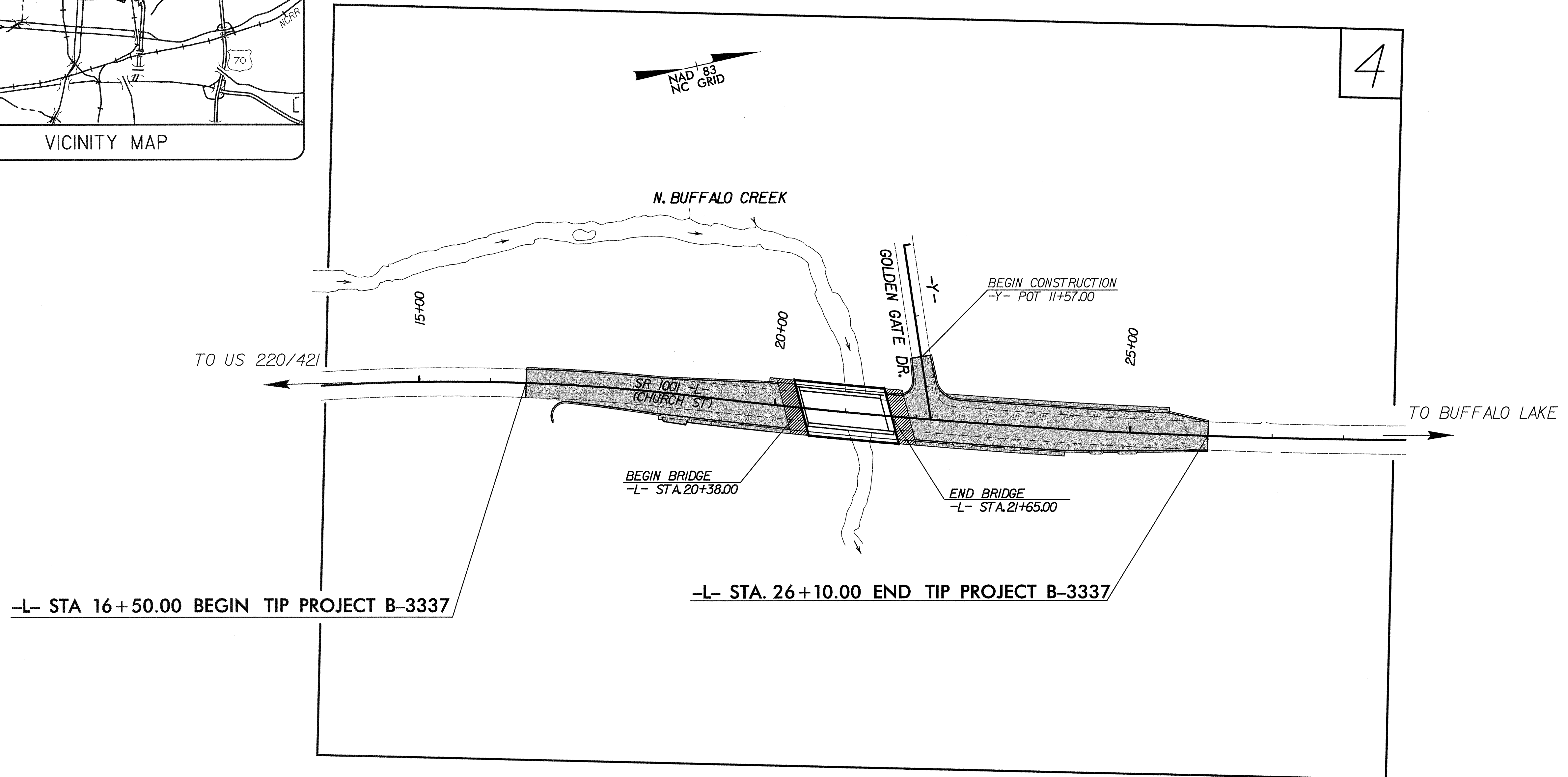
See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols



STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS
GUILFORD COUNTY

LOCATION: BRIDGE NO. 527 OVER NORTH BUFFALO CREEK ON SR 1001 (CHURCH ST)
TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3337	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33000.1.1	BRSTP-1001(18)	PE	
33000.2.2	BRSTP-1001(18)	RW, UTIL.	
33000.3.1	BRSTP-1001(18)	CONST.	



DESIGN DATA

ADT 2008 = 17,300
ADT 2028 = 19,300
DHV = 9 %
D = 65 %
T = 3 % *
V = 40 MPH
* (TTST 1% + DUAL 2%)

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-3337 =	0.158 MI
LENGTH STRUCTURE TIP PROJECT B-3337 =	0.024 MI
TOTAL LENGTH TIP PROJECT B-3337 =	0.182 MI

PLANS PREPARED BY:
TGS ENGINEERS
 TGS ENGINEERS
 SUITE 141
 975 WALNUT STREET
 CARY, NC 27511
 PH (919) 319-8850

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
 SEPTEMBER 29, 2005

LETTING DATE:
 NOVEMBER 20, 2007

NCDOT CONTACT:

PLANS PREPARED FOR:
DIVISION OF HIGHWAYS
 1000 Birch Ridge Dr.
 Raleigh, NC 27610

CHARLES L. FLOWE, PE
 PROJECT ENGINEER

W. CRAIG PARKER, PE
 PROJECT DESIGN ENGINEER

B. DOUG TAYLOR, PE
 PROJECT ENGINEER - ROADWAY DESIGN

HYDRAULICS ENGINEER

William F. Stephens
 SIGNATURE: 7/17/2007
 ROADWAY DESIGN ENGINEER

W. CRAIG PARKER
 SIGNATURE: 9/19/2007
 STATE HIGHWAY DESIGN ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

Ant McMillan
 P.E.
 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	—x—x—x—
Proposed Woven Wire Fence	—○—
Proposed Chain Link Fence	—□—
Proposed Barbed Wire Fence	—◇—
Existing Wetland Boundary	—WLB—
Proposed Wetland Boundary	—WLB—
Existing Endangered Animal Boundary	—EAB—
Existing Endangered Plant Boundary	—EPB—

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○
Well	○
Small Mine	⊗
Foundation	▭
Area Outline	▭
Cemetery	⊕
Building	▭
School	▭
Church	▭
Dam	▭

HYDROLOGY:

Stream or Body of Water	_____
Hydro, Pool or Reservoir	▭
Jurisdictional Stream	—JS—
Buffer Zone 1	—BZ 1—
Buffer Zone 2	—BZ 2—
Flow Arrow	←
Disappearing Stream	—>
Spring	○
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	—E—
Proposed Temporary Construction Easement	—E—
Proposed Temporary Drainage Easement	—TDE—
Proposed Permanent Drainage Easement	—PDE—
Proposed Permanent Utility Easement	—PUE—

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	_____
Existing Curb	_____
Proposed Slope Stakes Cut	—C—
Proposed Slope Stakes Fill	—F—
Proposed Wheel Chair Ramp	—WCR—
Curb Cut for Future Wheel Chair Ramp	—CCFR—
Existing Metal Guardrail	—T—T—T—
Proposed Guardrail	—T—T—T—
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	—) CONC WW (—
MINOR:	
Head and End Wall	—/ CONC HW \—
Pipe Culvert	_____
Footbridge	—>—
Drainage Box: Catch Basin, DI or JB	—□ CB—
Paved Ditch Gutter	_____
Storm Sewer Manhole	⊕
Storm Sewer	—S—

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	—P—
Designated U/G Power Line (S.U.E.*)	—P—

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	—T—
Designated U/G Telephone Cable (S.U.E.*)	—T—
Recorded U/G Telephone Conduit	—TC—
Designated U/G Telephone Conduit (S.U.E.*)	—TC—
Recorded U/G Fiber Optics Cable	—T FO—
Designated U/G Fiber Optics Cable (S.U.E.*)	—T FO—

WATER:

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

TV:

TV Satellite Dish	⊕
TV Pedestal	⊕
TV Tower	⊗
U/G TV Cable Hand Hole	⊕
Recorded U/G TV Cable	—TV—
Designated U/G TV Cable (S.U.E.*)	—TV—
Recorded U/G Fiber Optic Cable	—TV FO—
Designated U/G Fiber Optic Cable (S.U.E.*)	—TV FO—

GAS:

Gas Valve	⊕
Gas Meter	⊕
Recorded U/G Gas Line	—G—
Designated U/G Gas Line (S.U.E.*)	—G—
Above Ground Gas Line	—A/G Gas—

SANITARY SEWER:

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

MISCELLANEOUS:

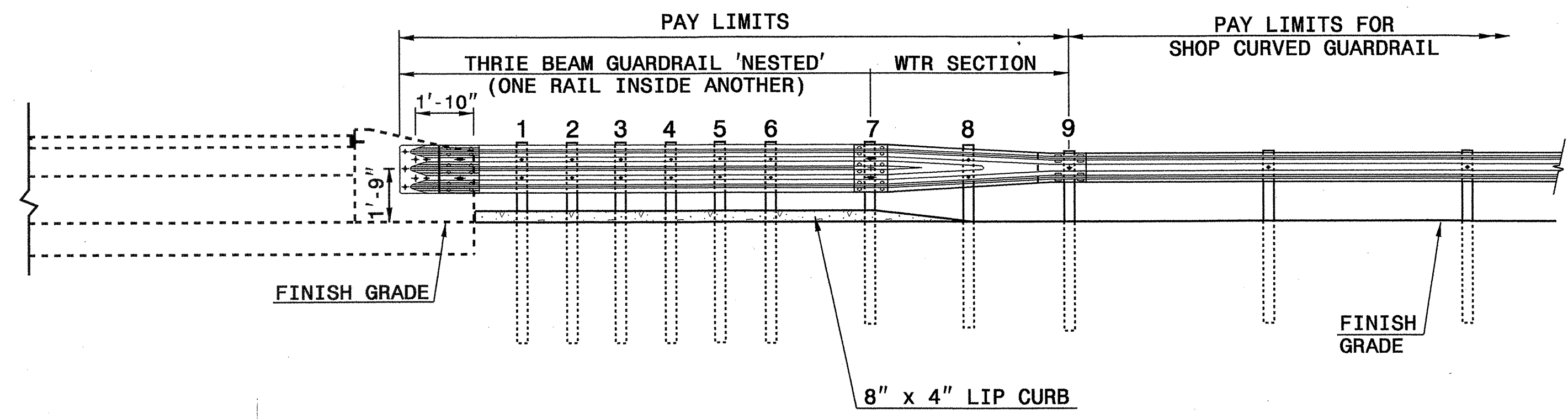
Utility Pole	●
Utility Pole with Base	⊕
Utility Located Object	○
Utility Traffic Signal Box	⊕
Utility Unknown U/G Line	—?UTL—
U/G Tank; Water, Gas, Oil	▭
A/G Tank; Water, Gas, Oil	▭
U/G Test Hole (S.U.E.*)	⊕
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

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

ENGLISH DETAIL DRAWING FOR
**TYPE III - SHOP CURVED
STRUCTURE ANCHOR UNIT**

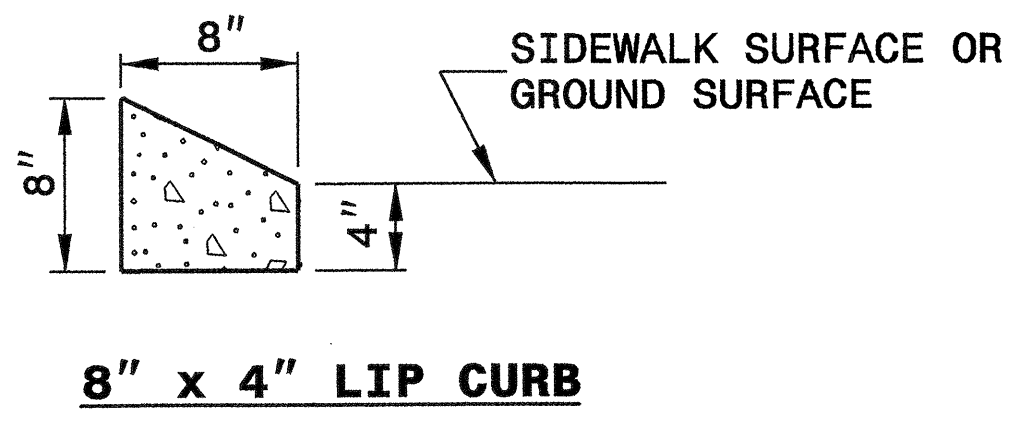
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
**TYPE III - SHOP CURVED
STRUCTURE ANCHOR UNIT**

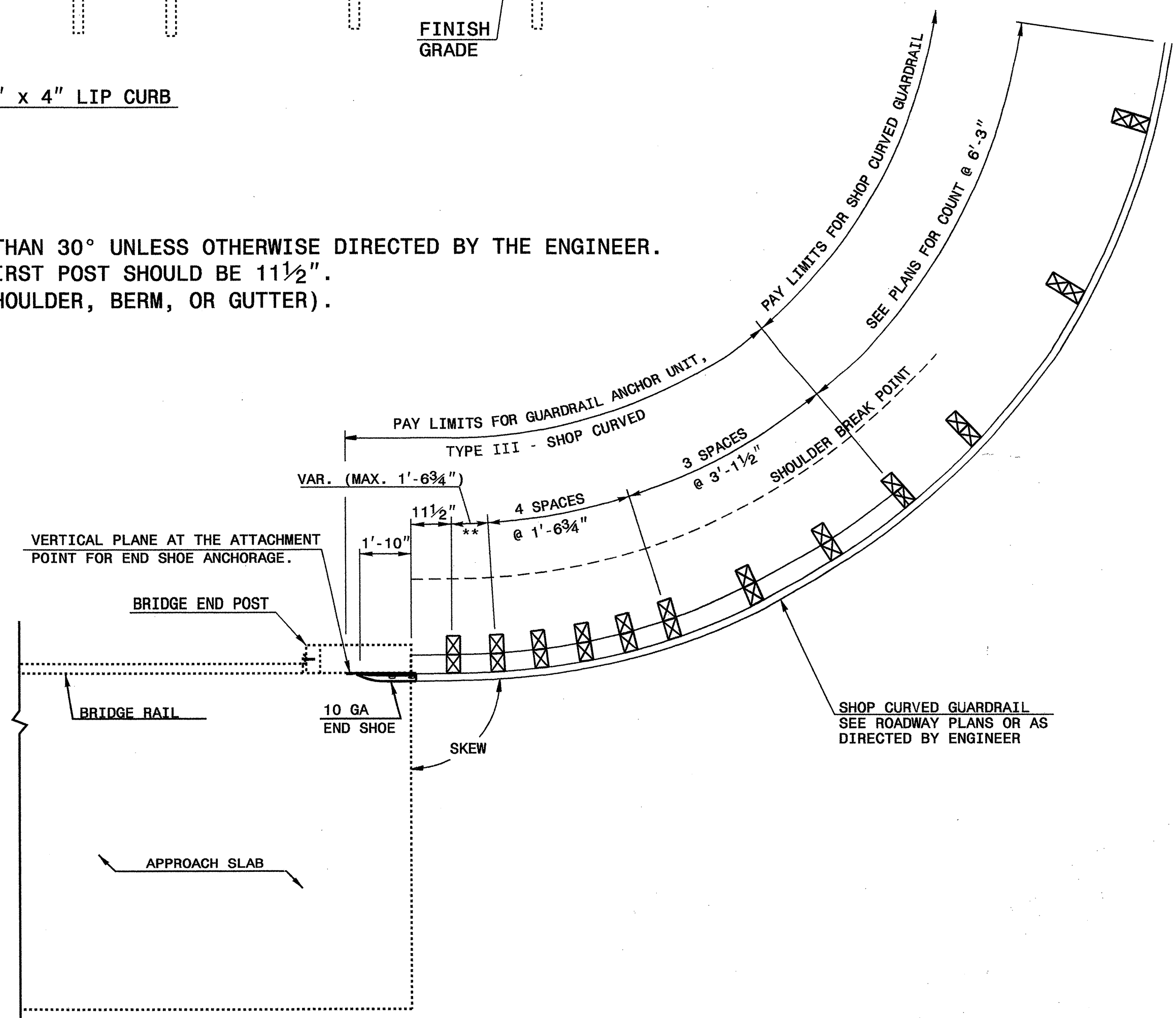


ELEVATION

NOTE:
 **POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
 -THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11½".
 -MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
 -USE NO STEEL POSTS WITHIN THE GUARDRAIL ANCHOR UNIT LIMITS.
 -LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
 -SEE STANDARD 862.03 SHEET 4 FOR POST SECTIONS 1 THRU 9.



8" x 4" LIP CURB

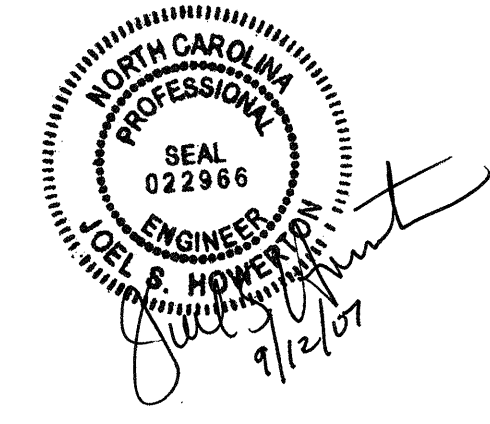


PLAN VIEW

**GUARDRAIL ANCHOR UNIT, TYPE III - SHOP CURVED
FOR ATTACHMENT TO RAIL ON BRIDGE**

SHEET 1 OF 1
TYPE III SC

SHEET 1 OF 1
TYPE III SC



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

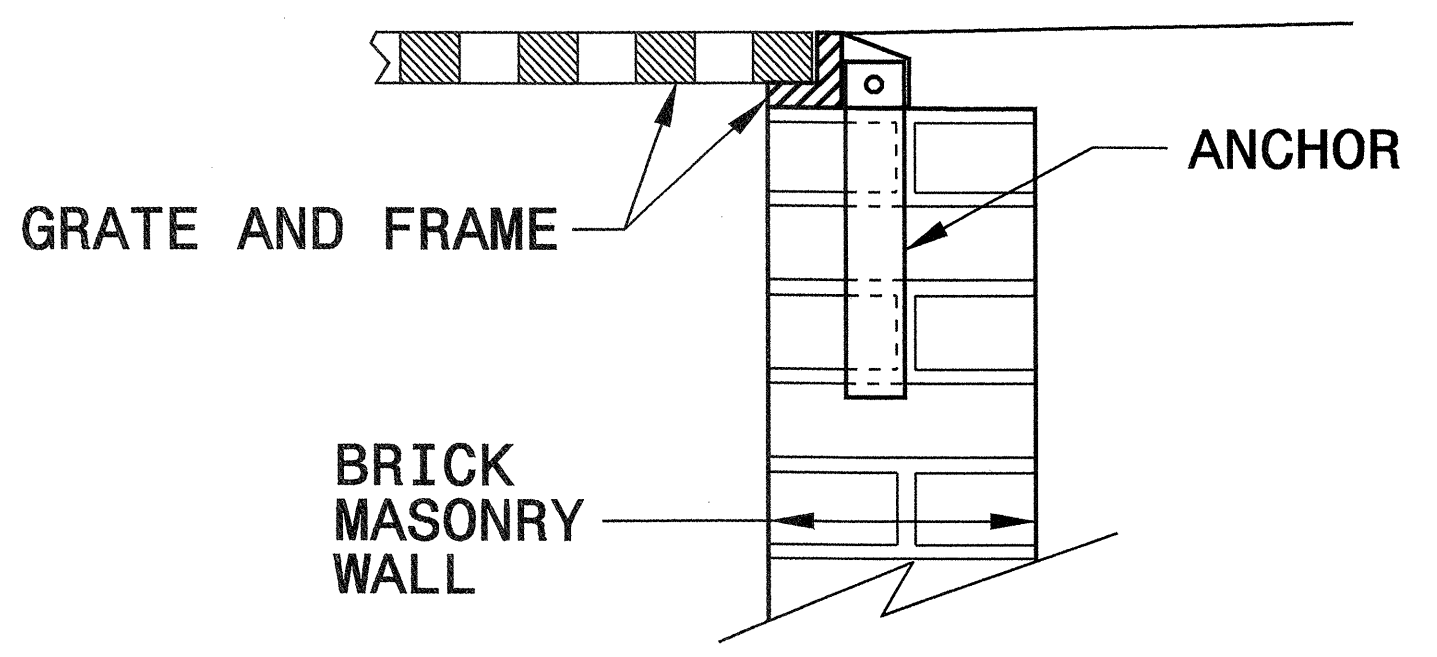
SEE PLATE FOR TITLE

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 MODIFIED BY: E.E. WARD DATE: 12-30-03
 CHECKED BY: _____ DATE: _____
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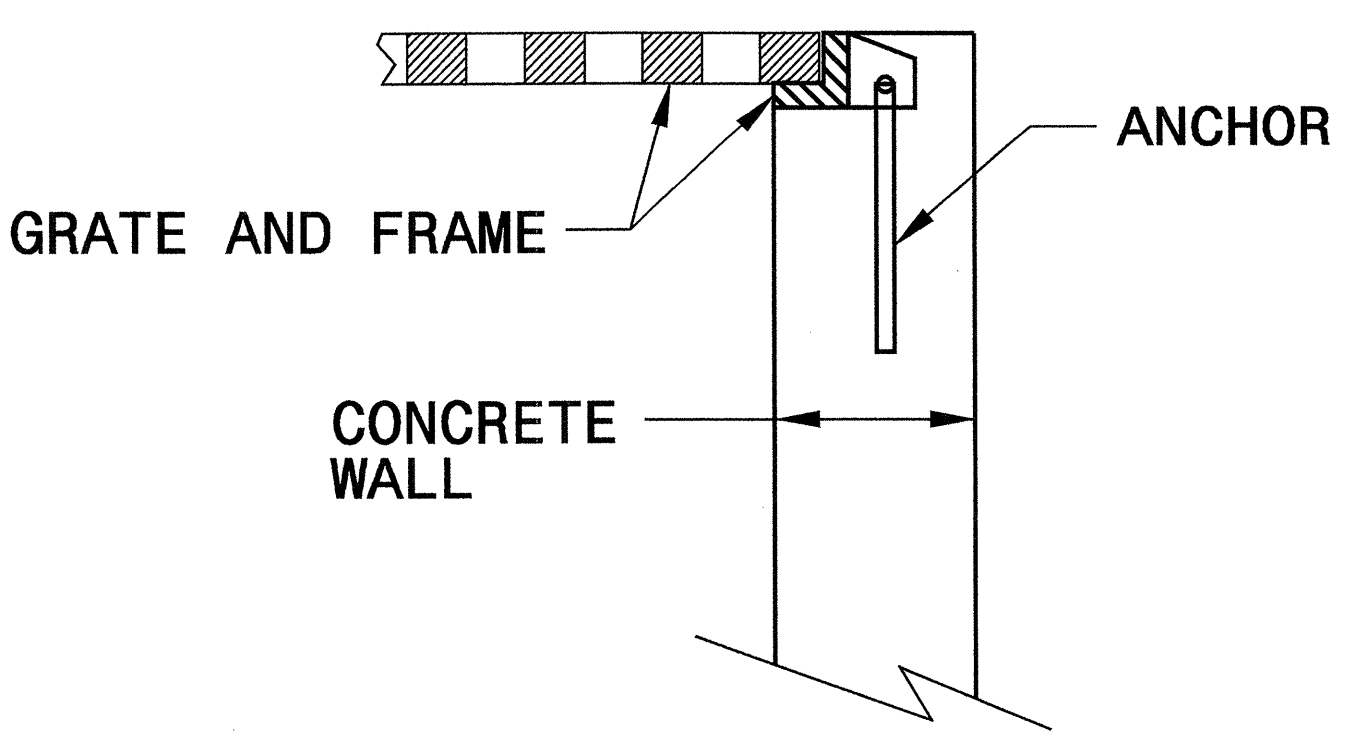
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STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

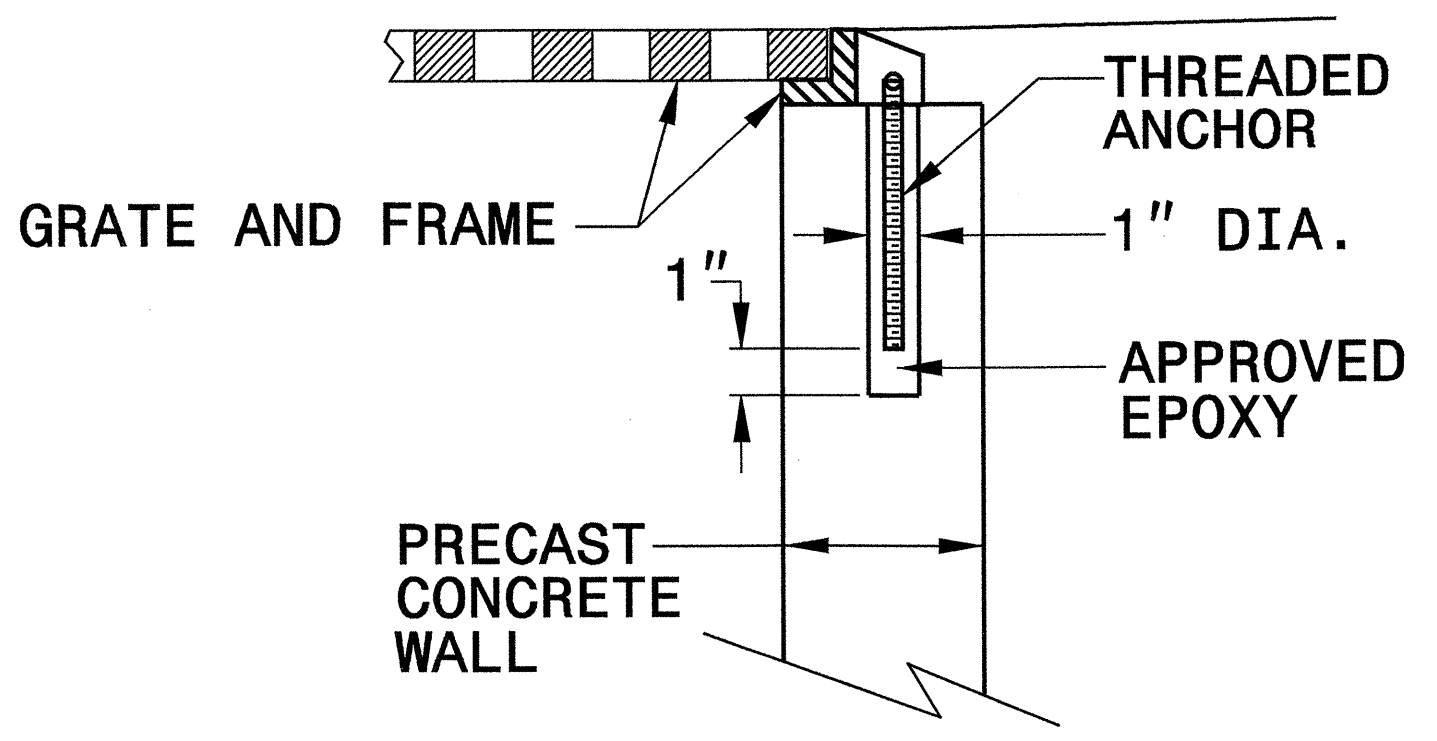
ENGLISH DETAIL DRAWING FOR
ANCHORAGE FOR FRAMES
BRICK/CONCRETE/PRECAST CONCRETE



BRICK MASONRY CONSTRUCTION



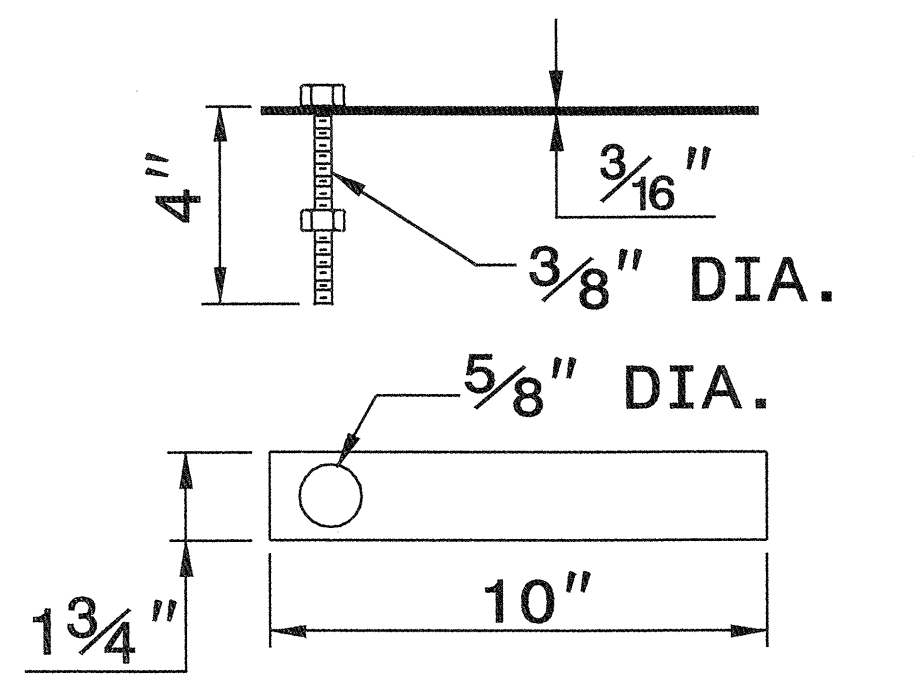
CONCRETE CONSTRUCTION



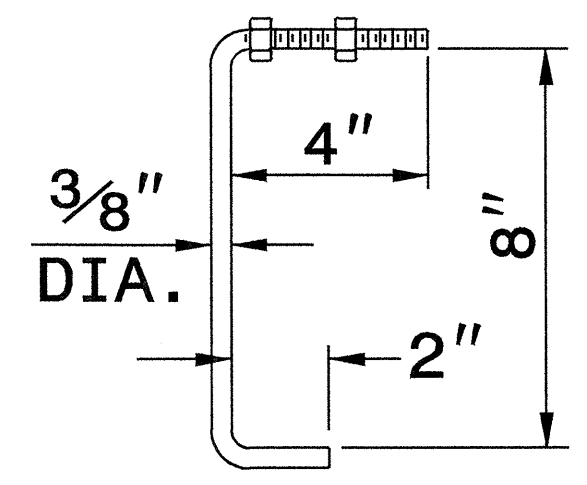
PRECAST CONCRETE CONSTRUCTION

DETAIL SHOWING ANCHORAGE OF FRAME FOR GRATED DROP INLET

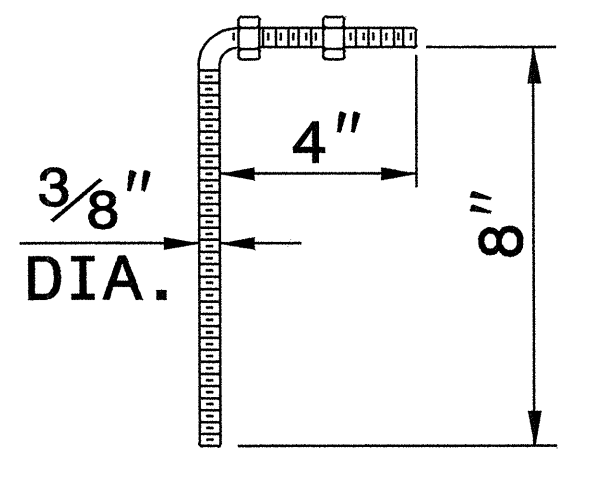
NOTE:
CONSTRUCT GRATED DROP INLET TO COINCIDE WITH NORMAL OR SUPERELEVATED SHOULDER OR PAVEMENT SLOPE.



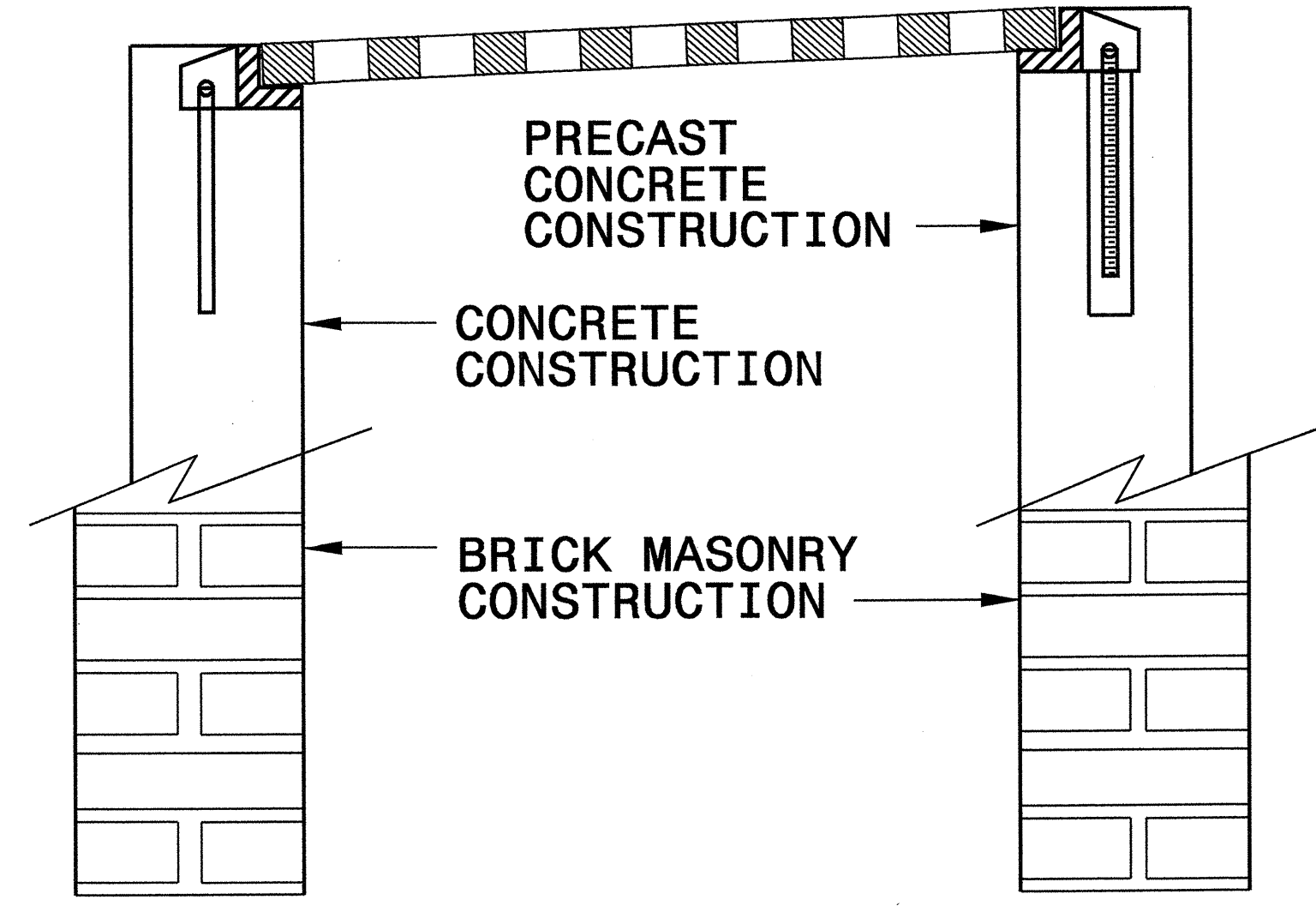
MASONRY ANCHOR
3/8" DIA. BOLT WITH PLATE



CONCRETE ANCHOR
3/8" DIA. BENT BAR



PRECAST CONCRETE ANCHOR
3/8" DIA. BENT BAR

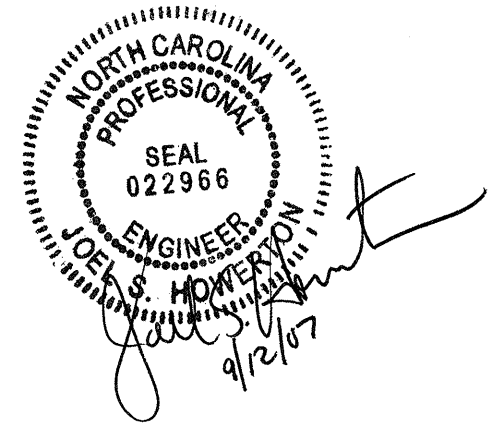


FRAME AND GRATE INSTALLATION FOR NORMAL CROWN AND SUPERELEVATED SECTIONS

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

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

01-MAR-2007 09:04 s:\work\projects\contracts\special_details\enward\stds\06 stds to special_details\0840d25 anchor-ge for Frames\0840d25.dgn .jhowerton AP PS212260



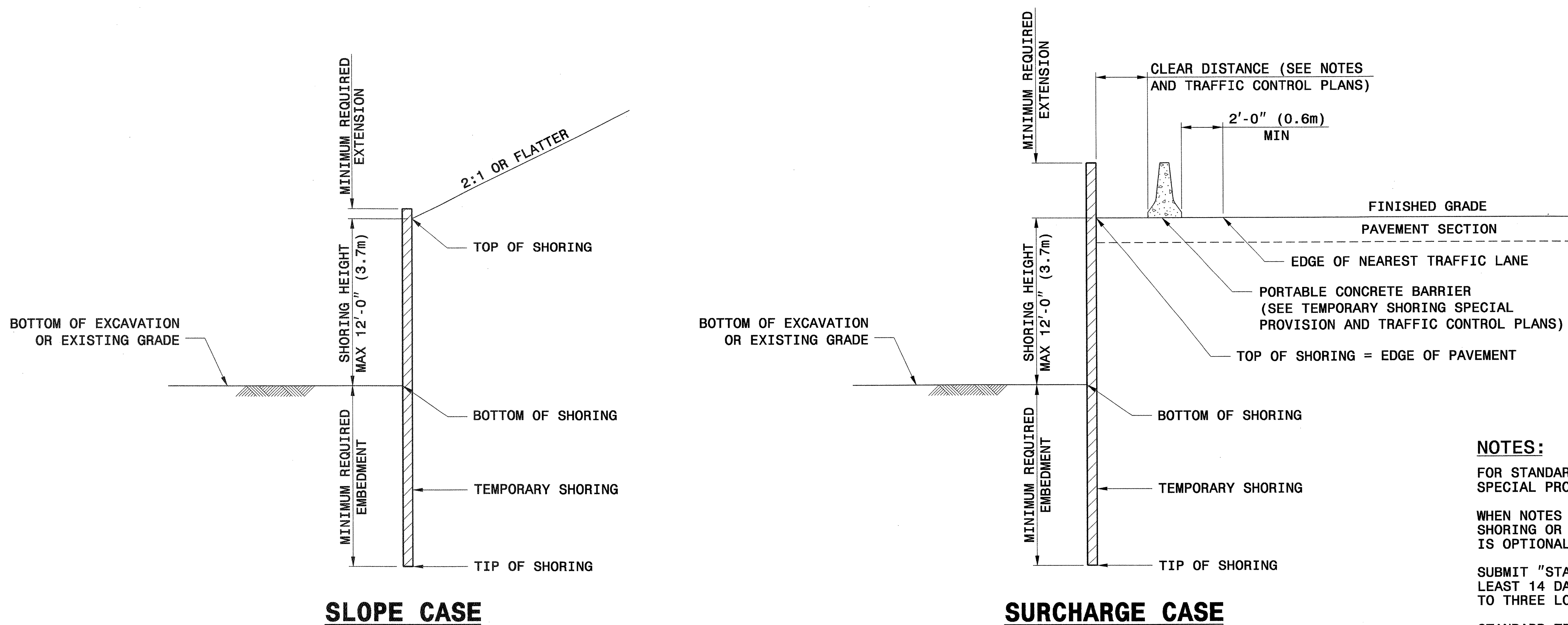
**PROJECT SERVICES UNIT
STANDARDS AND SPECIAL DESIGN**
Office 919-250-4128 FAX 919-250-4119

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.: _____



Scott A. Hadden 3/29/07
SIGNATURE DATE



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.

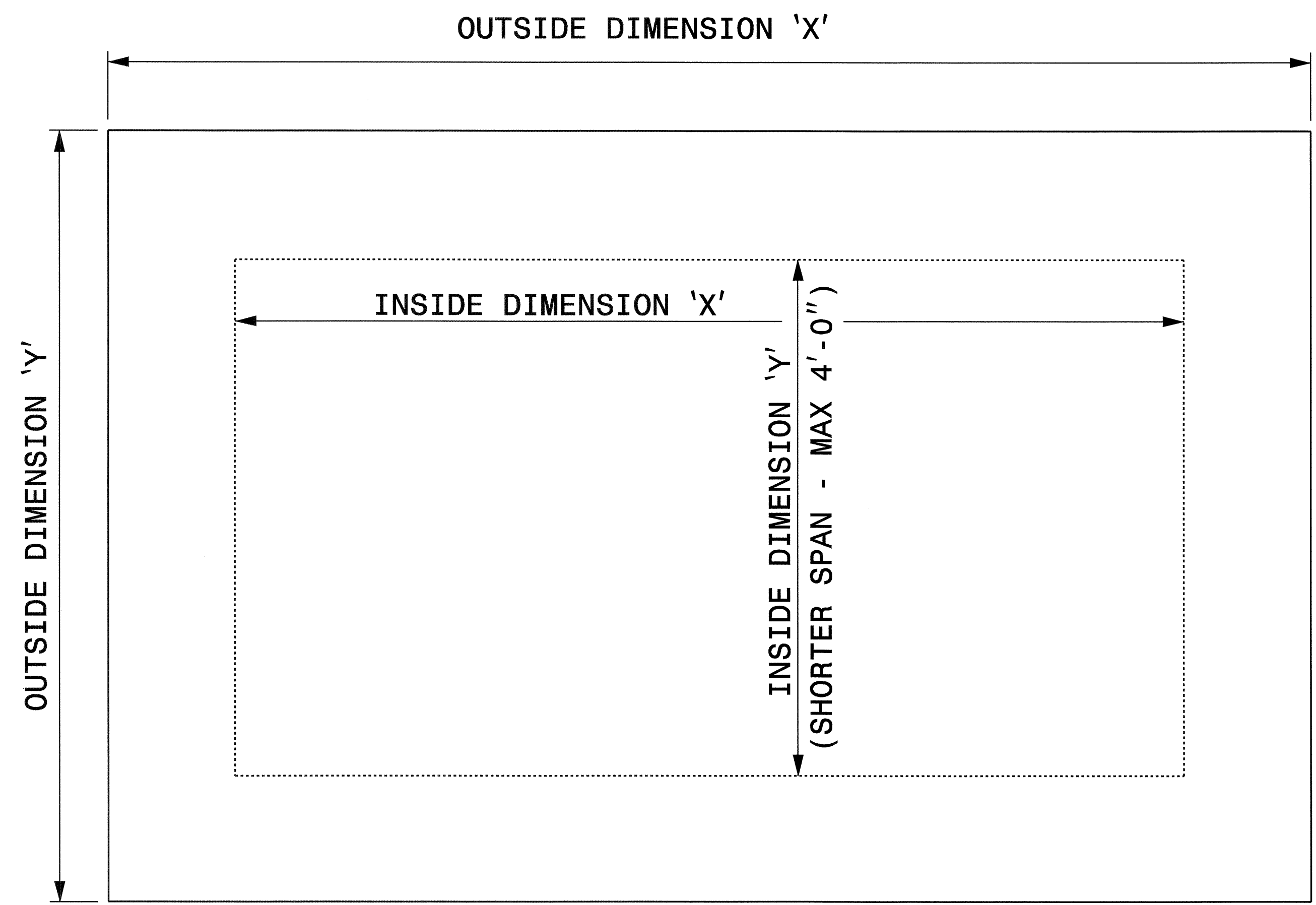
CONTROL DRAINAGE DURING CONSTRUCTION IN THE VICINITY OF THE SHORING. COLLECT AND DIRECT RUNOFF AWAY FROM SHORING.

CONTACT THE ENGINEER IF MINIMUM REQUIRED EMBEDMENT IS NOT ACHIEVED.

GROUNDWATER CONDITION	SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT						SURCHARGE CASE WITH TRAFFIC IMPACT				
	SHORING HEIGHT FT (m)	SHEET PILES		H PILES WITH TIMBER LAGGING			MINIMUM REQUIRED EMBEDMENT FT (m)	MINIMUM REQUIRED SECTION MODULUS IN ³ /FT (cm ³ /m)	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)
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)	

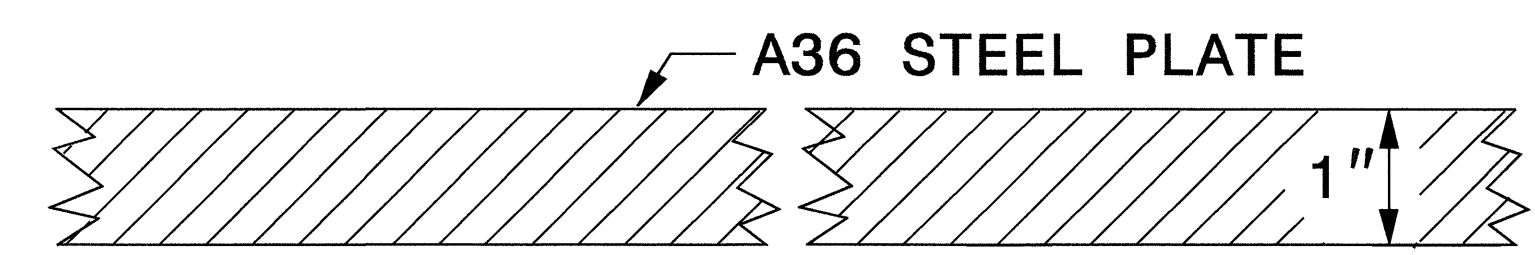
NOTE: MINIMUM REQUIRED EXTENSION IS 6" (150mm) FOR "SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT" AND 32" (800 mm) FOR "SURCHARGE CASE WITH TRAFFIC IMPACT".

<p>GEOTECHNICAL ENGINEERING UNIT STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH</p>	STANDARD DRAWING NO. 1801.01
	<p>STANDARD TEMPORARY SHORING</p> <p>DATE: 2-20-07</p>



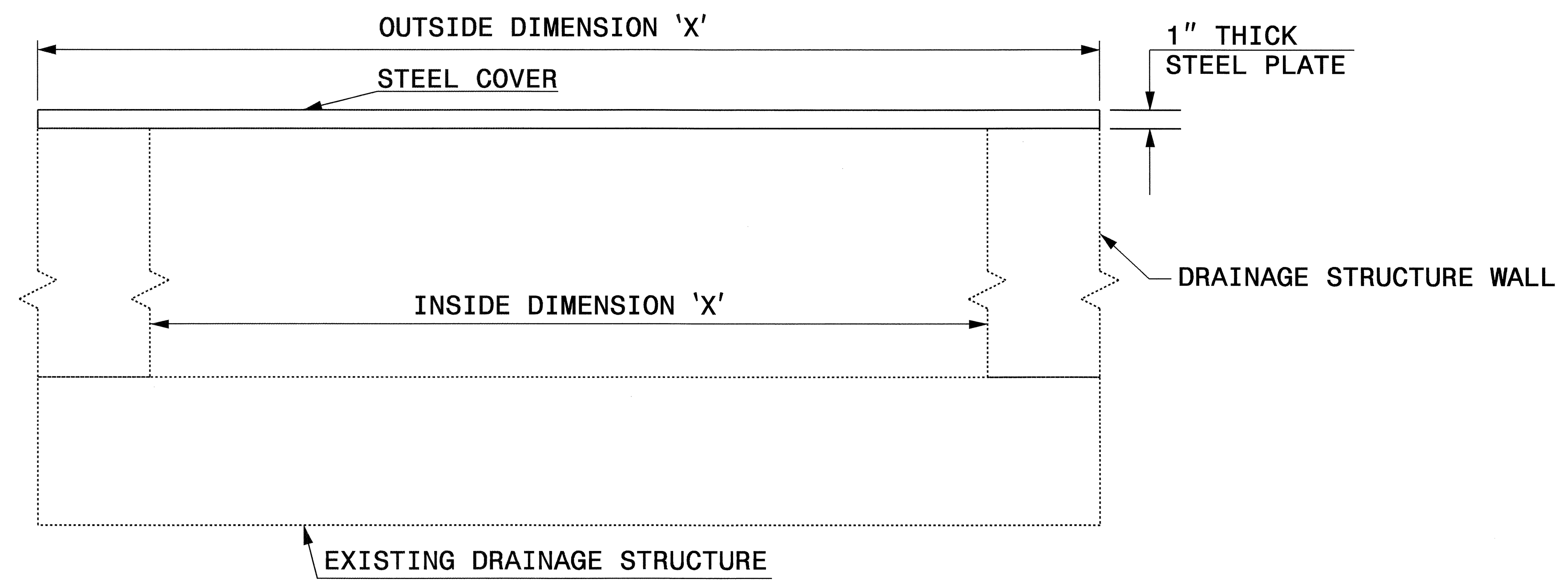
GENERAL NOTES:

- USE GRADE A36 STEEL
- STEEL COVERS ARE FOR TEMPORARY USE DURING PHASE CONSTRUCTION.
- FILL SHALL BE PLACED DIRECTLY OVER THE STEEL PLATES.
- SEE ROADWAY PLANS AND PROVISIONS FOR LOCATIONS
- QUANTITIES TO BE PAID FOR AT THE UNIT PRICE BID PER EACH.

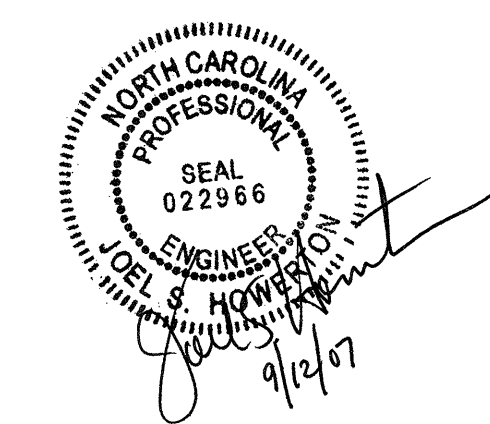


SECTION VIEW OF STEEL TOP PLATE

PLAN VIEWS



ELEVATION VIEWS



PROJECT SERVICES UNIT STANDARDS AND SPECIAL DESIGN	
Office 919-250-4128	FAX 919-250-4119
DETAIL OF TEMPORARY 1" STEEL COVER OVER DRAINAGE STRUCTURE	
ORIGINAL BY: E.E. WARD	DATE: 2-2-98
MODIFIED BY: <i>[Signature]</i>	DATE: <i>[Signature]</i>
CHECKED BY: <i>[Signature]</i>	DATE: 8/29/07
FILE SPEC.: <i>[Signature]</i>	

29-AUG-2007 10:03
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 .jhowerton AT P5212260

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C201564

SUMMARY OF QUANTITIES

ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION	3180000000-N	862	1	EA	GUARDRAIL ANCHOR UNITS, TYPE ***** (TYPE III, SHOP CURVED)
0022000000-E	225	1,700	CY	UNCLASSIFIED EXCAVATION	3195000000-N	862	1	EA	GUARDRAIL ANCHOR UNITS, TYPE AT-1
0029000000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ***** (21+01.50)	3215000000-N	862	1	EA	GUARDRAIL ANCHOR UNITS, TYPE III
0050000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUBBING	3270000000-N	SP	1	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
0057000000-E	226	200	CY	UNDERCUT EXCAVATION	3345000000-E	864	156.25	LF	REMOVE & RESET EXISTING GUARDRAIL
0063000000-N	SP	Lump Sum		GRADING	3360000000-E	863	225	LF	REMOVE EXISTING GUARDRAIL
0080000000-E	SP	100	TON	CLASS IV SUBGRADE STABILIZATION	3380000000-E	862	100	LF	TEMPORARY STEEL BM GUARDRAIL
0134000000-E	240	2	CY	DRAINAGE DITCH EXCAVATION	3387000000-N	862	2	EA	GUARDRAIL ANCHOR UNITS, TYPE ***** TEMPORARY (III)
0195000000-E	265	100	CY	SELECT GRANULAR MATERIAL	3389100000-N	SP	2	EA	GUARDRAIL ANCHOR UNITS, TYPE 350 TEMPORARY
0196000000-E	270	100	SY	FABRIC FOR SOIL STABILIZATION	3628000000-E	876	15	TON	RIP RAP, CLASS I
0199000000-E	SP	245	SF	TEMPORARY SHORING	3649000000-E	876	8	TON	RIP RAP, CLASS B
0318000000-E	300	74	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRS	3656000000-E	876	730	SY	FILTER FABRIC FOR DRAINAGE
0366000000-E	310	520	LF	15" RC PIPE CULVERTS, CLASS III	4400000000-E	1110	581	SF	WORK ZONE SIGNS (STATIONARY)
0372000000-E	310	20	LF	18" RC PIPE CULVERTS, CLASS III	4405000000-E	1110	444	SF	WORK ZONE SIGNS (PORTABLE)
0390000000-E	310	136	LF	36" RC PIPE CULVERTS, CLASS III	4410000000-E	1110	120	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
0995000000-E	340	106	LF	PIPE REMOVAL	4415000000-N	1115	2	EA	FLASHING ARROW PANELS, TYPE C
1220000000-E	545	250	TON	INCIDENTAL STONE BASE	4420000000-N	1120	3	EA	CHANGEABLE MESSAGE SIGN
1308000000-E	607	3,830	SY	MILLING ASPHALT PAVEMENT, **** TO ***** DEPTH (0" TO 1-1/2")	4430000000-N	1130	67	EA	DRUMS
1489000000-E	610	490	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B	4435000000-N	1135	131	EA	CONES
1498000000-E	610	330	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE 119.0B	4445000000-E	1145	154	LF	BARRICADES (TYPE III)
1519000000-E	610	630	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5B	4450000000-N	1150	2,736	HR	FLAGGER
1560000000-E	620	75	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22	4465000000-N	1160	4	EA	TEMPORARY CRASH CUSHIONS
2022000000-E	815	44.8	CY	SUBDRAIN EXCAVATION	4470000000-N	1160	2	EA	RESET TEMPORARY CRASH CUSHIONS
2033000000-E	815	33.6	CY	SUBDRAIN FINE AGGREGATE	4480000000-N	1165	2	EA	TMA
2044000000-E	815	200	LF	6" PERFORATED SUBDRAIN PIPE	4485000000-E	1170	440	LF	PORTABLE CONCRETE BARRIER (ANCHORED)
2055000000-E	815	6	EA	6" SUBDRAIN PIPE WYES, TEES, & ELBOWS	4490000000-E	1170	360	LF	PORTABLE CONCRETE BARRIER (DRAINAGE)
2066000000-N	815	1	EA	CONCRETE PAD FOR SUBDRAIN PIPE OUTLET	4495000000-E	1170	260	LF	PORTABLE CONCRETE BARRIER (DRAINAGE)
2077000000-E	815	6	LF	6" OUTLET PIPE (SUBDRAINS)	4510000000-N	SP	50	HR	POLICE
2190000000-N	828	5	EA	TEMPORARY STEEL PLATE COVERS FOR MASONRY DRAINAGE STRUCTURE	4516000000-N	1180	131	EA	SKINNY DRUM
2253000000-E	840	0.84	CY	PIPE COLLARS	4650000000-N	1251	316	EA	TEMPORARY RAISED PAVEMENT MARKERS
2264000000-E	840	0.25	CY	PIPE PLUGS	4770000000-E	1205	912	LF	COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE ** (4") (IV)
2286000000-N	840	18	EA	MASONRY DRAINAGE STRUCTURES	4805000000-N	1205	5	EA	COLD APPLIED PLASTIC PAVEMENT MARKING SYMBOL, TYPE ** (IV)
2308000000-E	840	9.1	LF	MASONRY DRAINAGE STRUCTURES	4810000000-E	1205	18,125	LF	PAINT PAVEMENT MARKING LINES (4")
2366000000-N	840	2	EA	FRAME WITH TWO GRATES, STD 840.24	4820000000-E	1205	212	LF	PAINT PAVEMENT MARKING LINES (8")
2367000000-N	840	2	EA	FRAME WITH TWO GRATES, STD 840.29	4835000000-E	1205	242	LF	PAINT PAVEMENT MARKING LINES (24")
2374000000-N	840	2	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (E)	4845000000-N	1205	24	EA	PAINT PAVEMENT MARKING SYMBOL
2374000000-N	840	4	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (F)	4847000000-E	1205	3,345	LF	POLYUREA PAVEMENT MARKING LINES (4", *****) (STANDARD GLASS BEADS)
2374000000-N	840	5	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (G)	4847110000-E	1205	232	LF	POLYUREA PAVEMENT MARKING LINES (8", *****) (STANDARD GLASS BEADS)
2396000000-N	840	3	EA	FRAME WITH COVER, STD 840.54	4847140000-E	1205	74	LF	POLYUREA PAVEMENT MARKING LINES (24", *****) (STANDARD GLASS BEADS)
2549000000-E	846	1,500	LF	2'-6" CONCRETE CURB & GUTTER	4847220000-N	1205	17	EA	POLYUREA PAVEMENT MARKING SYMBOL (***** (STANDARD GLASS BEADS)
2591000000-E	848	350	SY	4" CONCRETE SIDEWALK	4850000000-E	1205	7,899	LF	REMOVAL OF PAVEMENT MARKING LINES (4")
2605000000-N	848	3	EA	CONCRETE WHEELCHAIR RAMPS	4870000000-E	1205	24	LF	REMOVAL OF PAVEMENT MARKING LINES (24")
2612000000-E	848	120	SY	6" CONCRETE DRIVEWAY	4900000000-N	1251	73	EA	PERMANENT RAISED PAVEMENT MARKERS
3030000000-E	862	37.5	LF	STEEL BM GUARDRAIL	5648000000-N	1515	3	EA	RELOCATE WATER METER
3045000000-E	862	50	LF	STEEL BM GUARDRAIL, SHOP CURVED	5672000000-N	1515	1	EA	RELOCATE FIRE HYDRANT
3150000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS	6000000000-E	1605	1,630	LF	TEMPORARY SILT FENCE
6006000000-E	1610	115	TON	STONE FOR EROSION CONTROL, CLASS A					
6009000000-E	1610	125	TON	STONE FOR EROSION CONTROL, CLASS B					
6012000000-E	1610	375	TON	SEDIMENT CONTROL STONE					
6015000000-E	1615	0.5	ACR	TEMPORARY MULCHING					
6018000000-E	1620	50	LB	SEED FOR TEMPORARY SEEDING					
6021000000-E	1620	0.25	TON	FERTILIZER FOR TEMPORARY SEEDING					
6029000000-E	SP	350	LF	SAFETY FENCE					
6030000000-E	1630	330	CY	SILT EXCAVATION					
6036000000-E	1631	550	SY	MATTING FOR EROSION CONTROL					
6042000000-E	1632	380	LF	1/4" HARDWARE CLOTH					
6048000000-E	SP	70	SY	FLOATING TURBIDITY CURTAIN					
6070000000-N	SP	10	EA	SPECIAL STILLING BASINS					
6071030000-E	SP	90	LF	COIR FIBER BAFFLES					
6084000000-E	1660	0.67	ACR	SEEDING & MULCHING					
6087000000-E	1660	0.5	ACR	MOWING					
6090000000-E	1661	50	LB	SEED FOR REPAIR SEEDING					
6093000000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING					
6096000000-E	1662	50	LB	SEED FOR SUPPLEMENTAL SEEDING					
6108000000-E	1665	0.25	TON	FERTILIZER TOPDRESSING					
6114000000-N	SP	2	HR	SPECIALIZED HAND MOWING					
6117000000-N	SP	8	EA	RESPONSE FOR EROSION CONTROL					

5/28/99

**STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS**

SUMMARY OF EARTHWORK
 (Cubic Yard Volumes)

LINE	Station	Station	Uncl. Excav.	Undercut Excav.	Embank. +%	Borrow	Waste
-L-	16+50.00	20+38.00	620		212	0	408
BRIDGE							
-L-	21+65.00	26+10.00	980		134	0	846
TOTAL			1,600		346	0	1,254
Loss due to Clearing & Grubbing			0			0	
Earth Waste to replace Borrow						0	0
Shoulder Material							
GRAND TOTAL			1,600			0	1,254
Est. Undercut Contingency				200			
SAY:			1,700	200		0	1,300

Pavement Structure Volume = 702 Cu. Yd. DDE = 2 Cu. Yd.
 Shoulder Borrow for Temporary Widening = 30 Cu. Yd.

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.

**SUMMARY OF EXISTING ASPHALT
 PAVEMENT REMOVAL**

LINE	Station	Station	LOC LT/RT/CL	AREA SY
-L-	20+06	20+49	CL	125
-L-	21+48	21+85	CL	104
-L-	18+50	20+00	RT	111
-L-	22+00	23+00	RT	88
TOTAL:				428
SAY:				440

"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

NOTE: APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, SHOULDER BORROW, FINE GRADING, CLEARING AND GRUBBING, AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING".

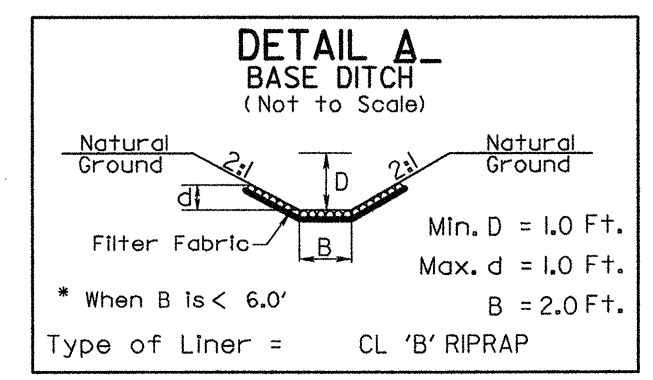
GUARDRAIL SUMMARY

LINE	BEG. STA.	END STA.	LOC.	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL BERM WIDTH	FLARE LENGTH		W		ANCHORS			TEMP. ANCHORS		REMOVE AND RESET	IMP. ATTN. TYPE 350			REMOVE EXISTING GRDRAIL	REMARKS	
				STRAIGHT	SHOP CURVED	TEMP. STRAIGHT	APPR. END	TRAIL. END			APPR. END	TRAIL. END	APPR. END	TRAIL. END	GRAU 350	AT-1	III	GRAU 350	III		EA	G	NG			
-L-	19+58.05	20+51.80	RT	93.75			BRIDGE		7.5'	8'	75		1.5		1		1			93.75					REMOVE AND RESET FOR TRAFFIC CONTROL	
-L-	18+67.83	20+24.08	LT			156.25	BRIDGE		7.5'	8'	75		1.5				1	1					156.25		REMOVE AND RESET FOR TRAFFIC CONTROL	
-L-	21+51.68	21+85+/-	LT		62.5		BRIDGE		7.5'	8'					1		1*								* SHOP CURVED TYPE III ANCHOR - SEE DETAIL SHEET 2-A	
-L-	21+78.20	23+28.20	RT			68.75	BRIDGE		7.5'	8'	50		1					1	1				68.75		REMOVE AND RESET FOR TRAFFIC CONTROL	
SUB-TOTALS:				93.75	62.5	225																				
LESS ANCHOR DEDUCTIONS																										
GRAU-350 3@50 ft				50		100																				
TYPE AT-1 1@6.25 ft					6.25																					
TYPE III 4@ 18.75 ft				18.75	18.75	37.5																				
ANCHOR TOTALS				68.75	25	137.5																				
GRAND TOTALS				25	37.5	87.5									1	1	2		2	2	156.25			225		
SAY				37.5	50	100															156.25			225		

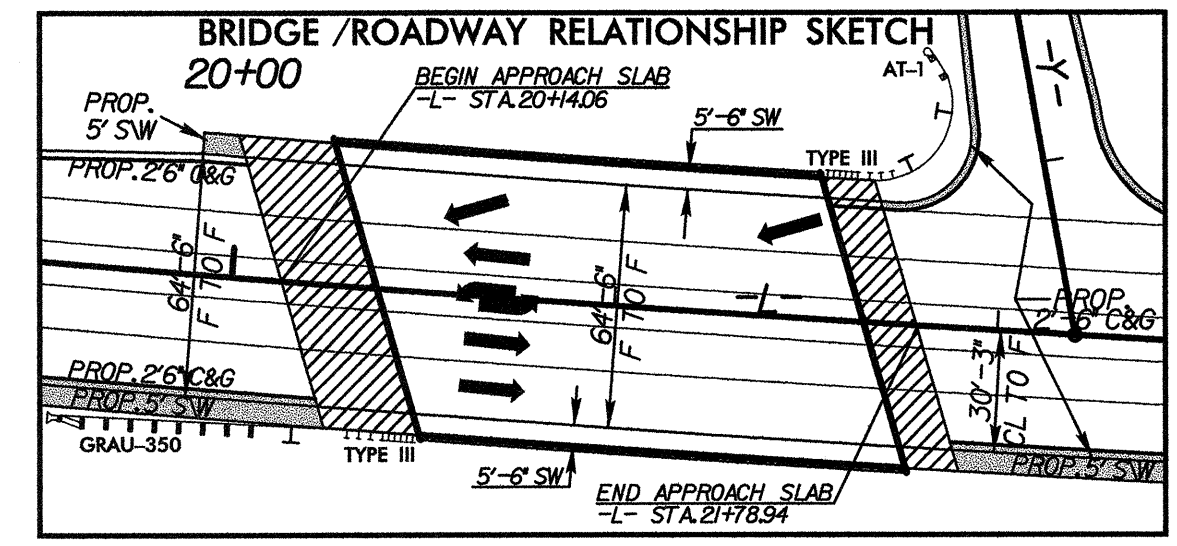
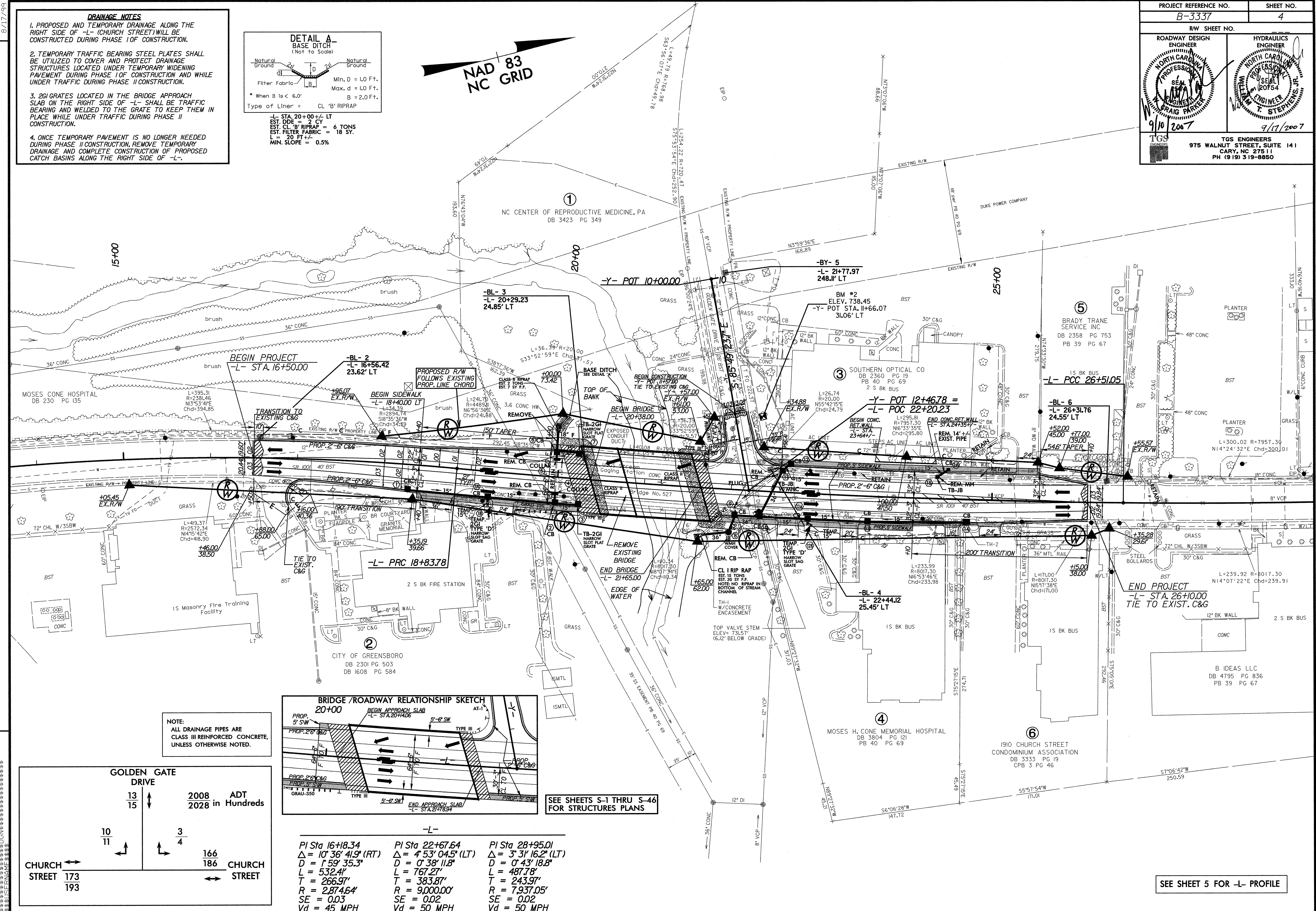
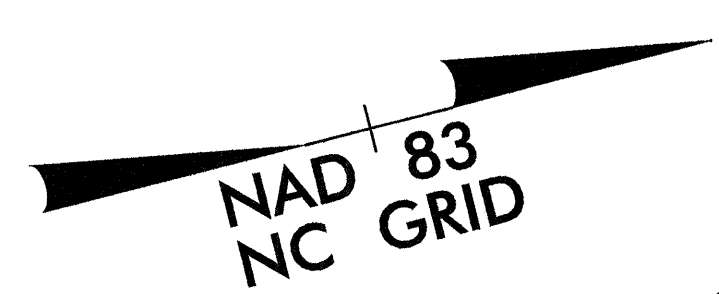
ADDITIONAL GUARDRAIL POSTS = 5

DRAINAGE NOTES

- PROPOSED AND TEMPORARY DRAINAGE ALONG THE RIGHT SIDE OF -L- (CHURCH STREET) WILL BE CONSTRUCTED DURING PHASE I OF CONSTRUCTION.
- TEMPORARY TRAFFIC BEARING STEEL PLATES SHALL BE UTILIZED TO COVER AND PROTECT DRAINAGE STRUCTURES LOCATED UNDER TEMPORARY WIDENING PAVEMENT DURING PHASE I OF CONSTRUCTION AND WHILE UNDER TRAFFIC DURING PHASE II CONSTRUCTION.
- 26G GRATES LOCATED IN THE BRIDGE APPROACH SLAB ON THE RIGHT SIDE OF -L- SHALL BE TRAFFIC BEARING AND WELDED TO THE GRATE TO KEEP THEM IN PLACE WHILE UNDER TRAFFIC DURING PHASE II CONSTRUCTION.
- ONCE TEMPORARY PAVEMENT IS NO LONGER NEEDED DURING PHASE II CONSTRUCTION, REMOVE TEMPORARY DRAINAGE AND COMPLETE CONSTRUCTION OF PROPOSED CATCH BASINS ALONG THE RIGHT SIDE OF -L-.



-L- STA. 20+00 +/- LT
EST. DDE = 2 CY
EST. CL 'B' RIPRAP = 6 TONS
EST. FILTER FABRIC = 18 SY.
L = 20 FT +/-
MIN. SLOPE = 0.5%



SEE SHEETS S-1 THRU S-46 FOR STRUCTURES PLANS

-L-		
PI Sta 16+18.34	PI Sta 22+67.64	PI Sta 28+95.01
$\Delta = 10' 36'' 41.9''$ (RT)	$\Delta = 4' 53'' 04.5''$ (LT)	$\Delta = 3' 31'' 16.2''$ (LT)
D = 1'59' 35.3"	D = 0'38' 11.8"	D = 0'43' 18.8"
L = 532.41'	L = 767.27'	L = 487.78'
T = 266.97'	T = 383.87'	T = 243.97'
R = 2,874.64'	R = 9,000.00'	R = 7,937.05'
SE = 0.03	SE = 0.02	SE = 0.02
Vd = 45 MPH	Vd = 50 MPH	Vd = 50 MPH

GOLDEN GATE DRIVE

13	2008 ADT	15
	166	
	186	
10	2028 ADT	3
	173	4
	193	

CHURCH STREET

NOTE: ALL DRAINAGE PIPES ARE CLASS III REINFORCED CONCRETE, UNLESS OTHERWISE NOTED.

SEE SHEET 5 FOR -L- PROFILE

8/17/99

9/10/2007 7:26:08 AM

