

CONTRACT: C201732 TIP PROJECT: B-4020

See Sheet 1-A For Index of Sheets

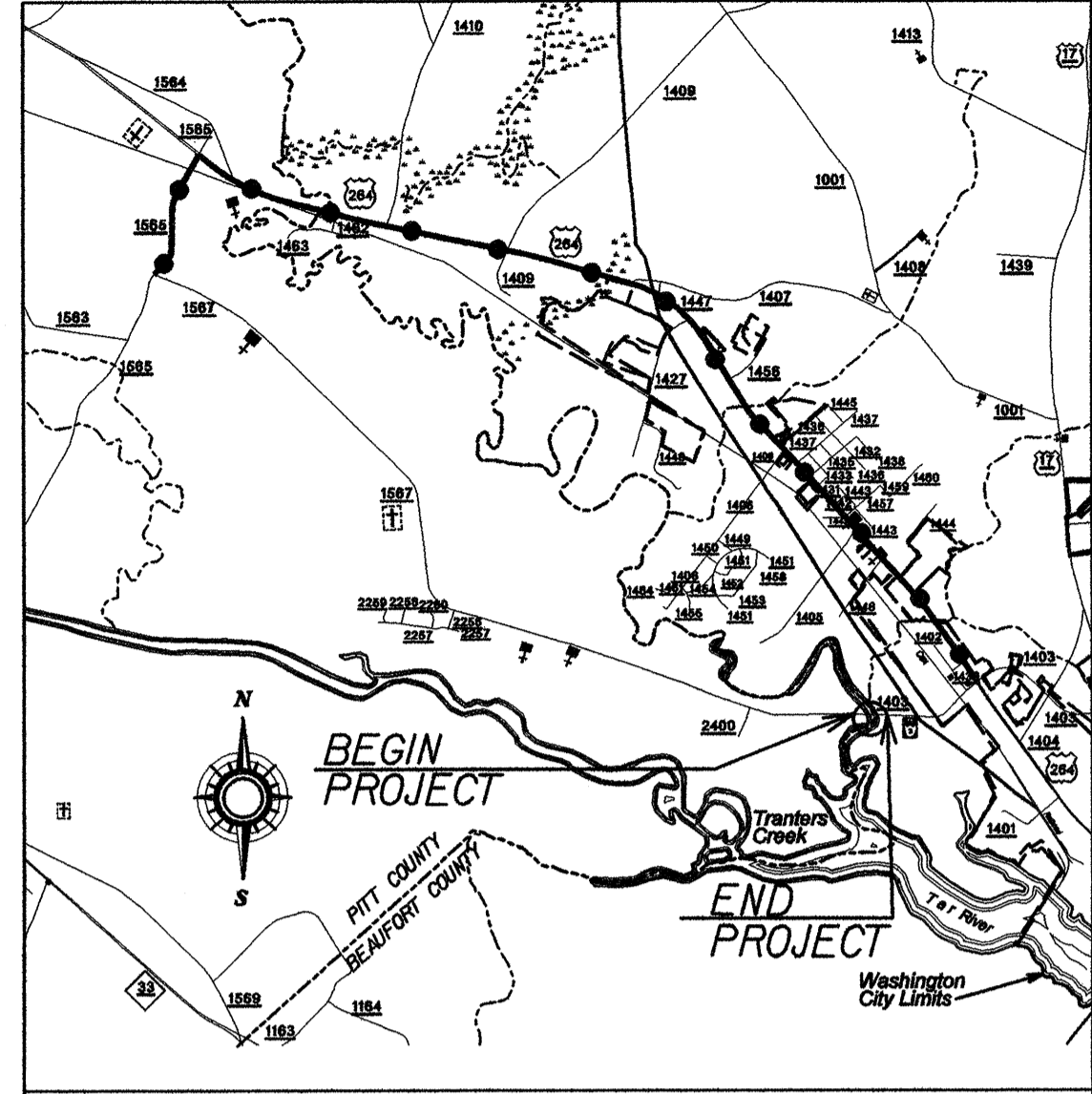
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BEAUFORT / PITT COUNTIES

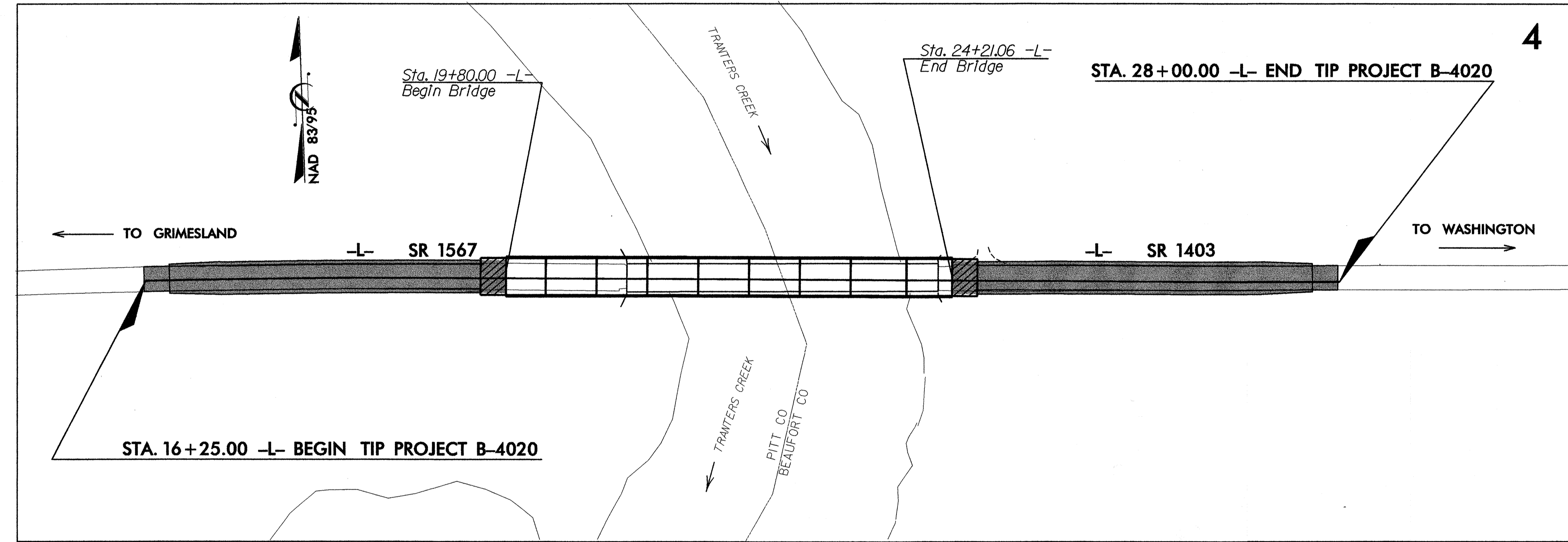
**LOCATION: BRIDGE NO. 8 OVER TRANTERS CREEK
ON SR 1403 / SR 1567 IN WASHINGTON**

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

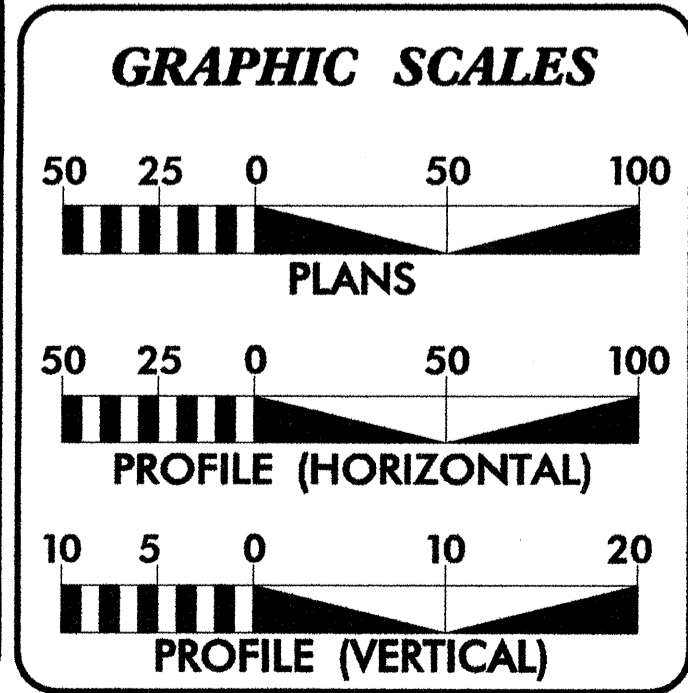
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4020	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33387.1.1	BRZ-1403(4)	P.E.	
33387.2.1	BRZ-1403(4)	R/W, UTIL.	
33387.3.1	BRZ-1403(4)	CONST.	



VICINITY MAP
LEGEND ●●● Studied Detour Route



NC DOT CONTACT: CATHY HOUSER, P.E., PROJECT ENGINEER - ROADWAY DESIGN



DESIGN DATA

ADT 2007 =	5940
ADT 2030 =	9300
DHV =	10 %
D =	60 %
T =	3 % *
V =	60 MPH
FUNC. CLASS =	URBAN LOCAL
* TTST 1 %	DUAL 2 %

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4020	=	0.139 mi.
LENGTH STRUCTURE TIP PROJECT B-4020	=	0.083 mi.
TOTAL LENGTH TIP PROJECT B-4020	=	0.222 mi.

Prepared In the Office of:
WANG ENGINEERING COMPANY, INC.
CARY, N.C.
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: November 16, 2006	JAMES SJ WANG, P. E. PROJECT ENGINEER
LETTING DATE: July 15, 2008	SCOTT L. KENNEDY PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
SUNGATE DESIGN GROUP, PA

SEAL 9334
HENRY WELLS, P.E.

SIGNATURE: [Signature]

ROADWAY DESIGN ENGINEER
WANG ENGINEERING

SEAL 7521
JAMES SJ WANG, P.E.

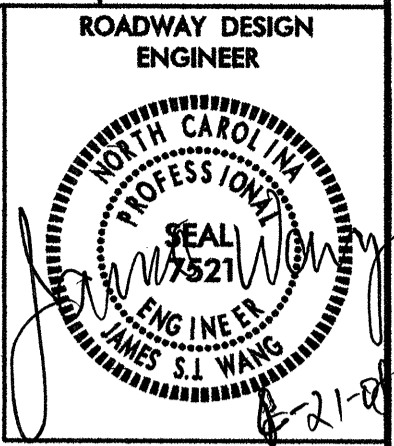
SIGNATURE: [Signature]

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER

[Signature]

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2006 ROADWAY STANDARD DRAWINGS

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:

INDEX OF SHEETS	
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	TYPICAL SECTIONS AND PAVEMENT SCHEDULE
2-A	ANCHORAGE FOR FRAMES - BRICK/CONCRETE/PRECAST CONCRETE
2-B	LIGHTWEIGHT AGGREGATE FILL EMBANKMENT
2-C	DETAIL OF EMBANKMENT MONITORING
3	SUMMARY OF QUANTITIES
3A	SUMMARY OF EARTHWORK SUMMARY OF GUARDRAIL, LIST OF PIPES, ENDWALLS, ETC., AND ASPHALT PAVEMENT REMOVAL SUMMARY
4	PLAN/PROFILE SHEET
TCP-1 THRU TCP-5	TRAFFIC CONTROL PLANS
EC-1 THRU EC-4	EROSION CONTROL PLANS
RF-1 AND RF-2	REFORESTATION PLANS
SIGN-1 THRU SIGN-4	SIGNING PLANS
UO-1 THRU UO-2	UTILITY BY OTHERS PLANS
X-1	CROSS SECTION INDEX AND SUMMARY SHEET
X-2 THRU X-6	CROSS-SECTIONS
S-1 THRU S-22	STRUCTURE 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	
815.03	Pipe Underdrain and Blind Drain
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
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

GENERAL NOTES:

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

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.

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
SUDDENLINK
EMBARQ - TELEPHONE
CITY OF WASHINGTON - POWER

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 OTHERS.

3/15/06

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	○ EP
Property Corner	_____ X
Property Monument	□ EDM
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	○ S
Well	○ W
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	○
Wetland	▽
Proposed Lateral, Tail, Head Ditch	_____
False Sump	▽

RAILROADS:

Standard Gauge	_____
RR Signal Milepost	○
Switch	□ 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
Proposed Wheel Chair Ramp Curb Cut	WCC
Curb Cut for Future Wheel Chair Ramp	CCFR
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	CONC
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	PH
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	PH
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	PH
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

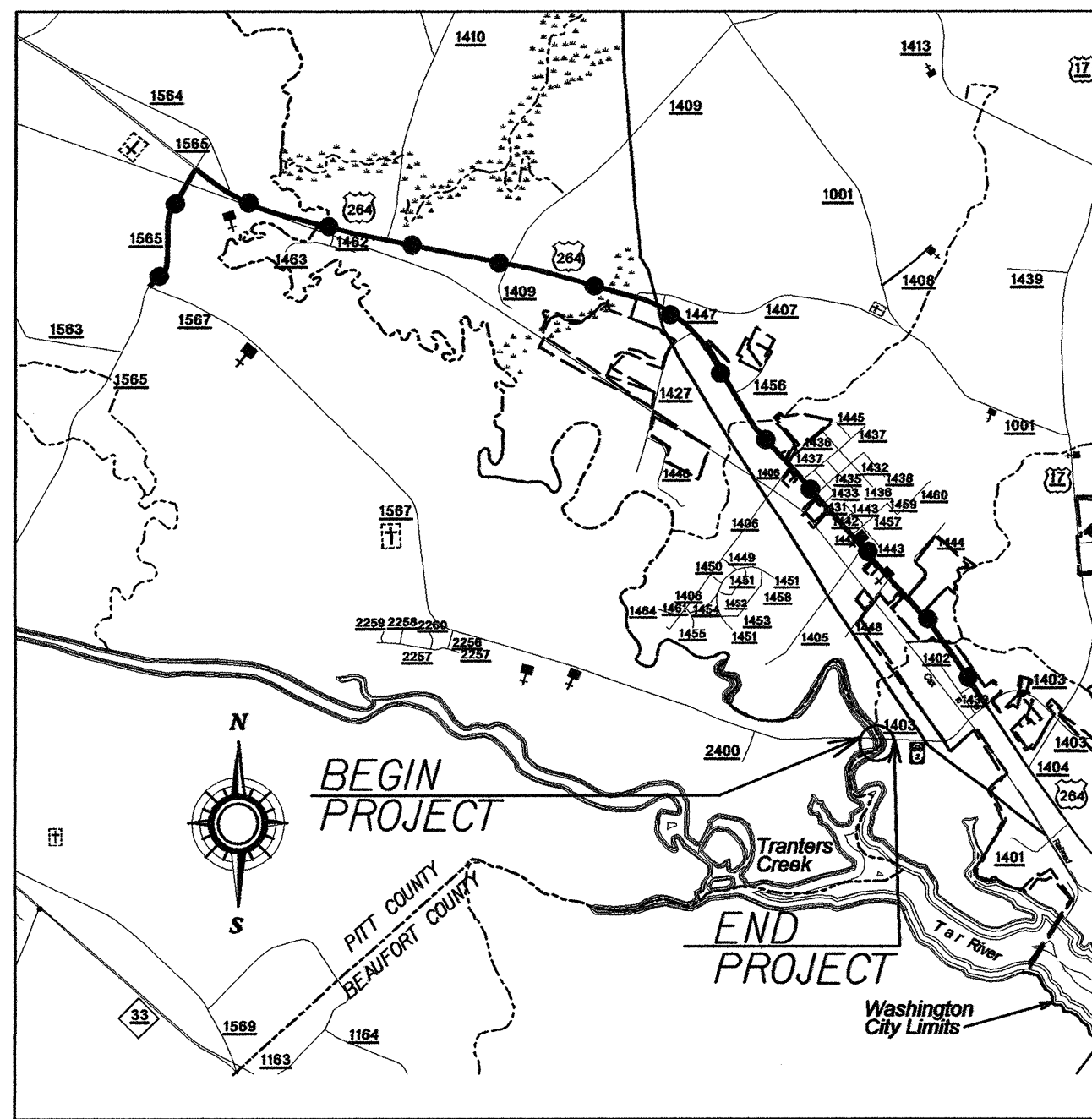
SANITARY SEWER:

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.

SURVEY CONTROL SHEET B-4020



VICINITY MAP
LEGEND ●●● Studied Detour Route

CONTROL DATA

BL POINT	DESC.	NORTH	EAST	ELEVATION	L. STATION	OFFSET
BL3	(BL-3)	665320.2580	2567360.6860	2.44	OUTSIDE PROJECT LIMITS	
BL4	(BL-4)	665368.4850	2568292.4510	3.11	15+44.15	17.99 LT
BL5	(BL-5)	665316.9980	2568809.6340	8.66	20+62.48	18.70 RT
BL6	(BL-6)	665302.2990	2569167.8190	8.56	24+20.97	18.52 RT
BL1	(GPS B4020-1)	665331.8090	2569591.0840	6.85	28+42.78	27.77 LT
BL2	(GPS B4020-2)	665305.3910	2570829.1660	11.41	OUTSIDE PROJECT LIMITS	

BENCHMARK DATA

 BM10 ELEVATION = 2.29
 N 665413 E 2568325
 L STATION 15+76 62 LEFT
 RR SPIKE IN BASE OF 12' GUM

 BM11 ELEVATION = 2.28
 N 665171 E 2569158
 L STATION 24+17 150 RIGHT
 (NCGS 'BEA 117')

 BM12 ELEVATION = 2.28
 N 665171 E 2569158
 L STATION 24+17 150 RIGHT
 NCGS 'BEA 117'



STA. 16+25.00 -L- BEGIN TIP PROJECT B-4020
LOCALIZED PROJECT COORDINATES
 N = 665,349.6159
 E = 2,568,373.1688

STA. 28+00.00 -L- END TIP PROJECT B-4020
LOCALIZED PROJECT COORDINATES
 N = 665,305.6136
 E = 2,569,547.3150

NCDOT BASELINE STATION "BL-4"
LOCALIZED PROJECT COORDINATES
 N = 665,368.4850
 E = 2,568,292.4510

NCDOT GPS STATION "B4020-2"
LOCALIZED PROJECT COORDINATES
 N = 665,305.3910
 E = 2,570,829.1660

NCDOT BASELINE STATION "BL-3"
LOCALIZED PROJECT COORDINATES
 N = 665,320.2580
 E = 2,567,360.6860

NCDOT BASELINE STATION "BL-5"
LOCALIZED PROJECT COORDINATES
 N = 665,316.9980
 E = 2,568,809.6340

NCDOT BASELINE STATION "BL-6"
LOCALIZED PROJECT COORDINATES
 N = 665,302.2990
 E = 2,569,167.8190

NCDOT GPS STATION "B4020-1"
LOCALIZED PROJECT COORDINATES
 N = 665,331.8090
 E = 2,569,591.0840

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4020-1" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 665331.809(ft) EASTING: 2569591.084(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99989259 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4020-1" TO -L- STATION 16+25.00 IS N 89°09'44" W 1,218.045 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

NOTES:

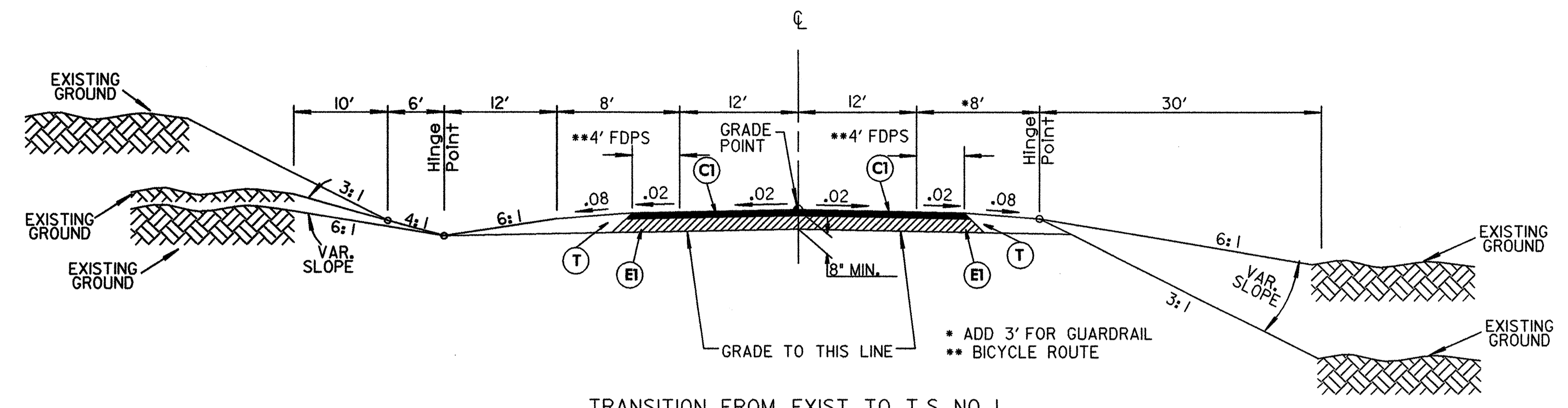
1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTP://WWW.NCDOT.ORG/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.ncdot.org/preconstruct/highway/location/project/)

THE FILES TO BE FOUND ARE AS FOLLOWS:
 TIP B4020_LS_CONTROL_060213.TXT

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

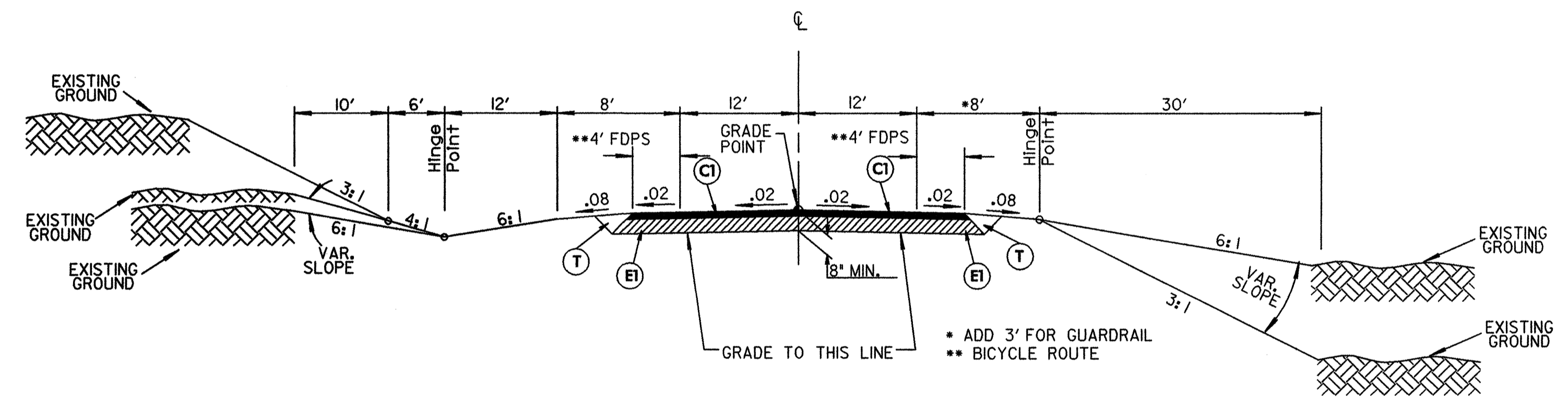
© INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
 PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
 NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTATION
 SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

NOTE: DRAWING NOT TO SCALE



TRANSITION FROM EXIST. TO T.S. NO. 1
 -L- Sta. 16+25.00 to Sta. 16+50.00
TYPICAL SECTION NO. 1
 USE TYPICAL SECTION NO. 1 AS FOLLOWS
 -L- Sta. 16+50.00 to Sta. 19+80.00 (BEGIN BRIDGE)

TRANSITION FROM T.S. NO. 1 TO EXIST.
 -L- Sta. 27+75.00 to Sta. 28+00.00

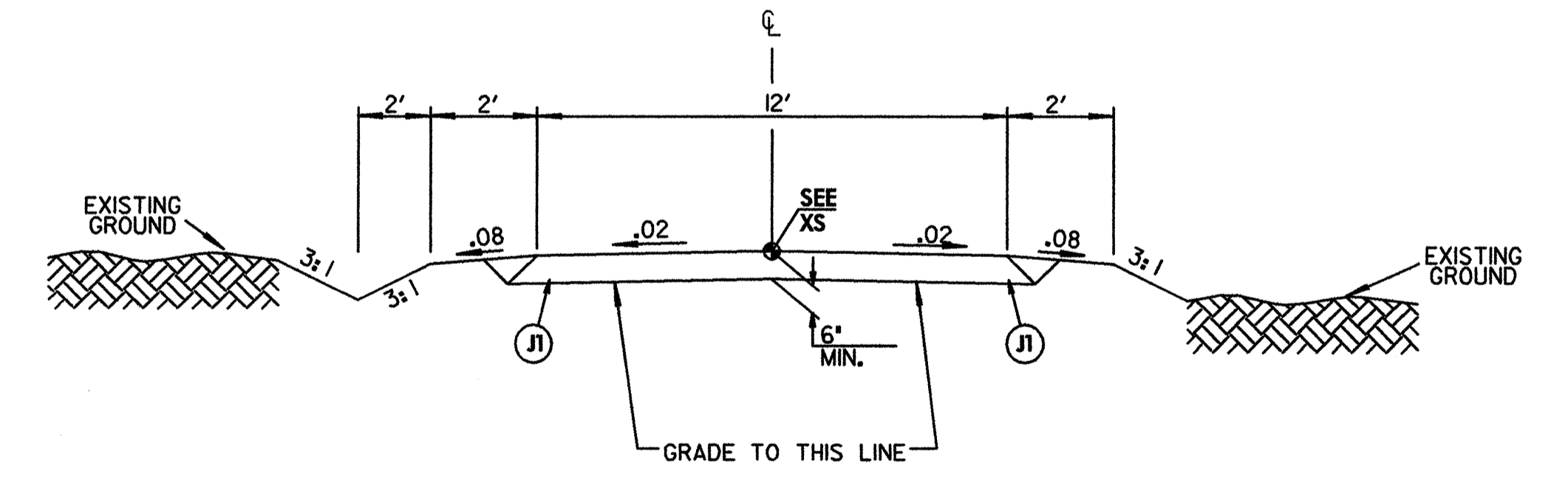


TYPICAL SECTION NO. 2
 USE TYPICAL SECTION NO. 1 AS FOLLOWS
 -L- Sta. 24+21.06 (END BRIDGE) to Sta. 27+75.00

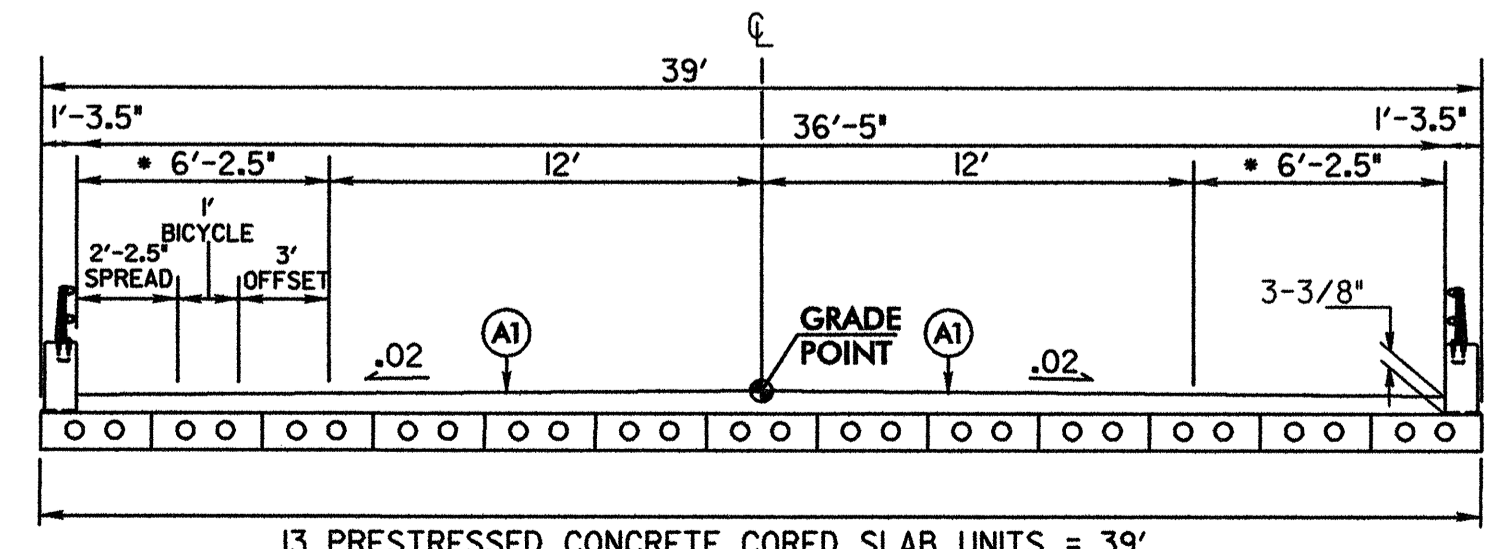
PROP. PORTLAND CEMENT CONCRETE PAVEMENT

PAVEMENT SCHEDULE	
A1	PROP. APPROX. 3-3/8" ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 189 LBS PER SQ. YD. IN EACH OF TWO LAYERS.
C1	PROP. APPROX. 3" ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS PER SQ. YD. IN EACH OF TWO LAYERS.
E1	PROP. APPROX. 5" ASPHALT CONC. BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS PER SQ. YD.
J1	6" AGGREGATE BASE COURSE (SEE PLAN SHEET 4)
T	EARTH MATERIAL
U	EXISTING PAVEMENT

NOTE: ALL SLOPES 1:1 UNLESS OTHERWISE SPECIFIED



DRIVEWAY DETAIL
 -L- Sta. 24+45 to -L- Sta. 27+00 LT.



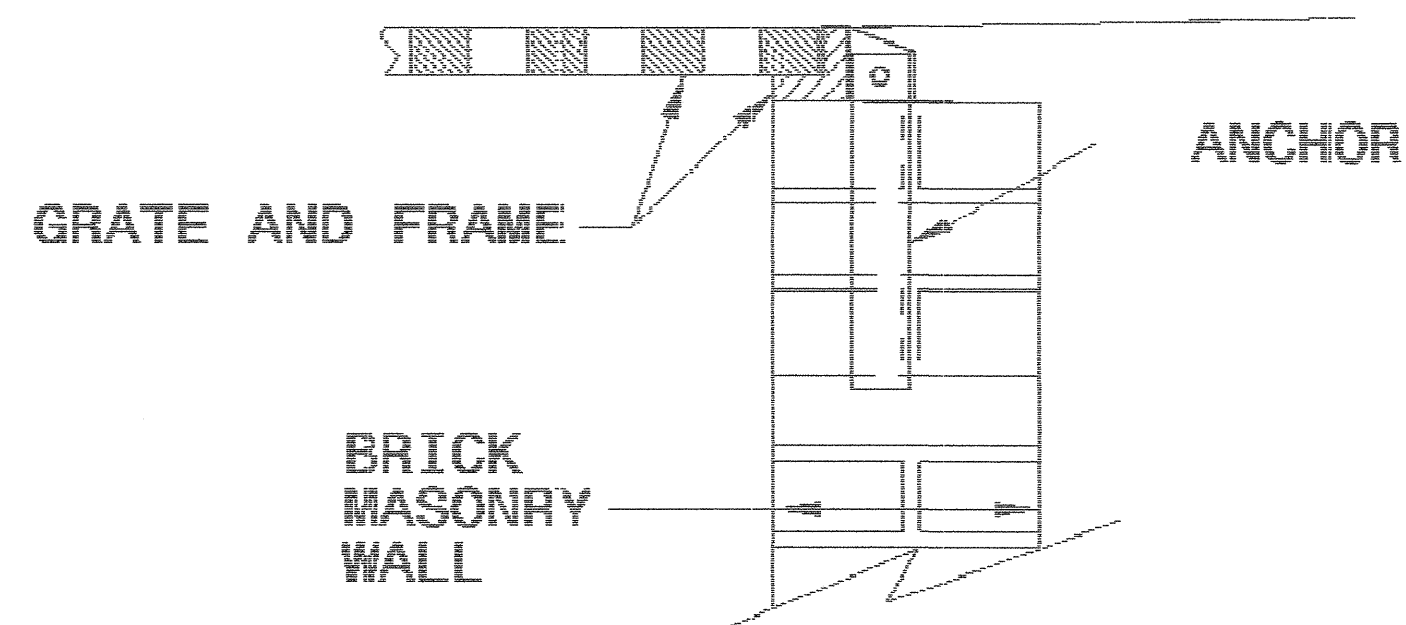
TYPICAL BRIDGE SECTION
 Sta. 19+80.00 to Sta. 24+21.06

* EXTRA WIDTH NEEDED DUE TO BICYCLE LANES AND SPREAD

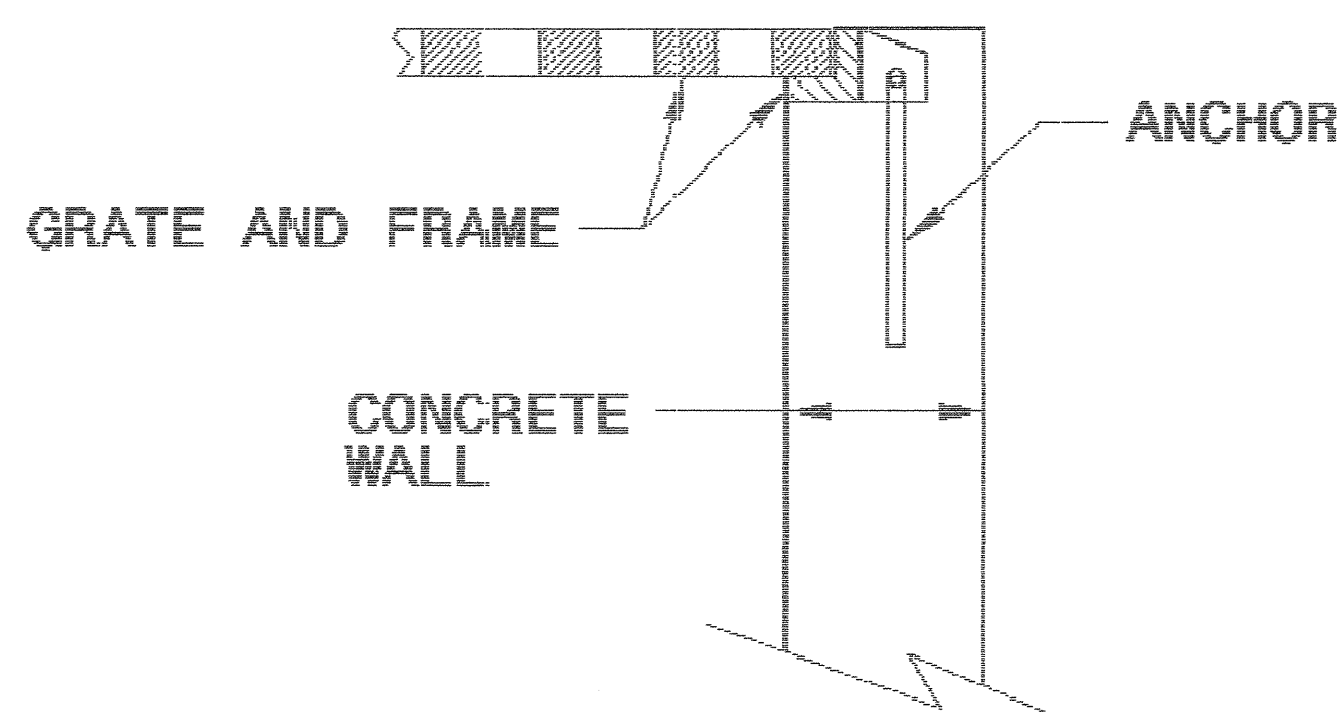
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

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

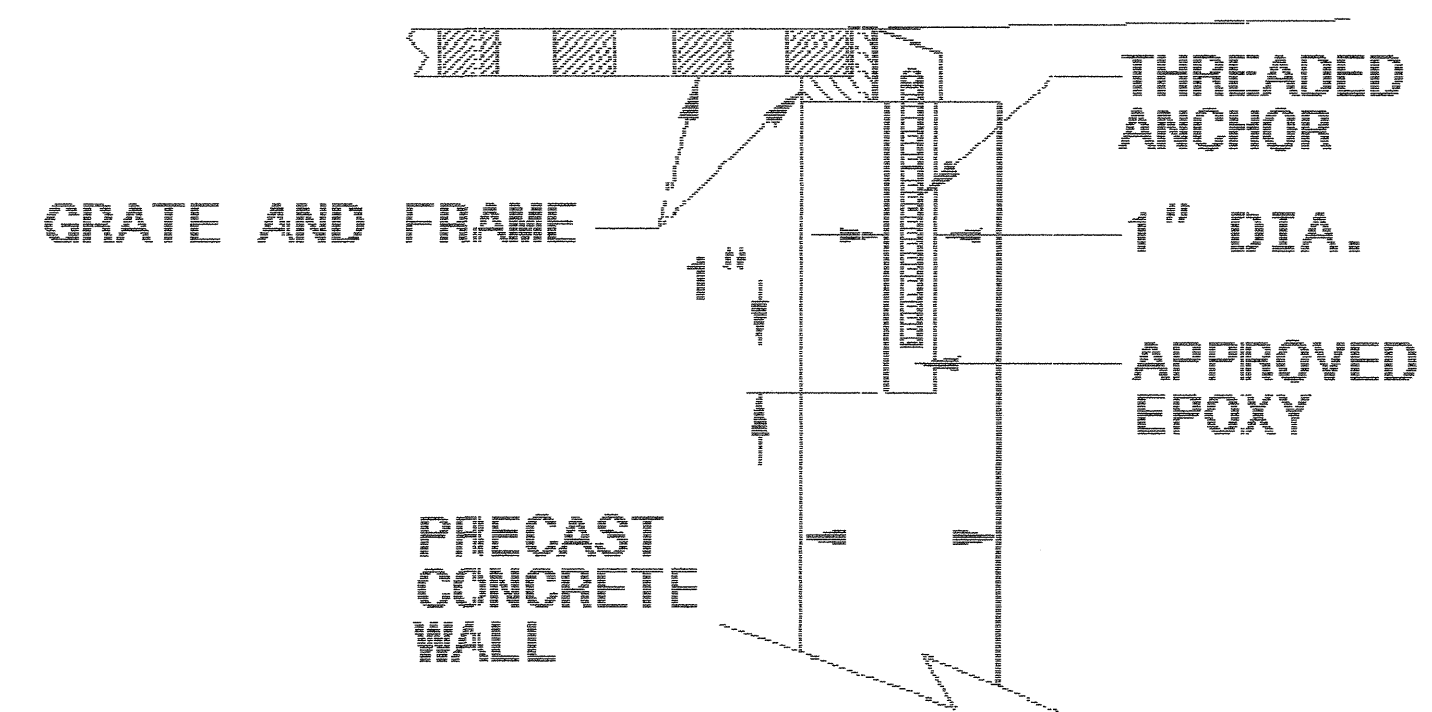
SHEET 1 OF 1
840D25



BRICK MASONRY CONSTRUCTION



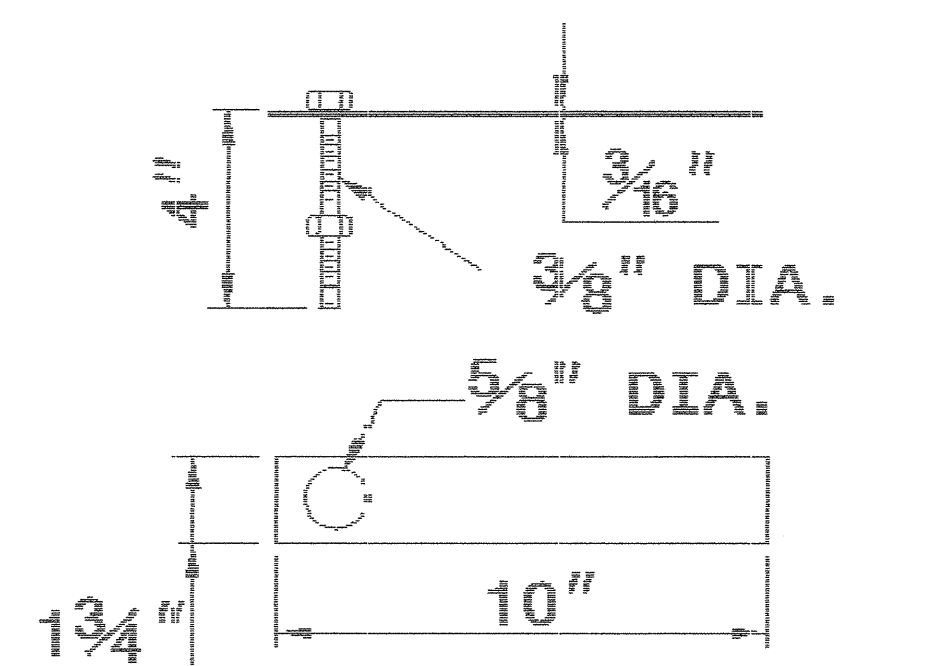
CONCRETE CONSTRUCTION



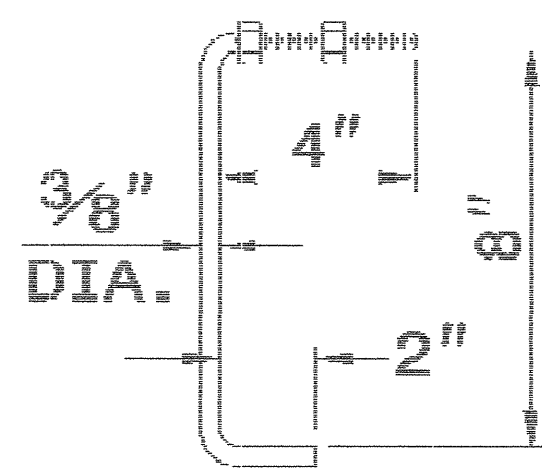
PRECAST CONCRETE CONSTRUCTION

DETAIL SHOWING ANCHORAGE OF FRAME FOR GRATED DROP INLET

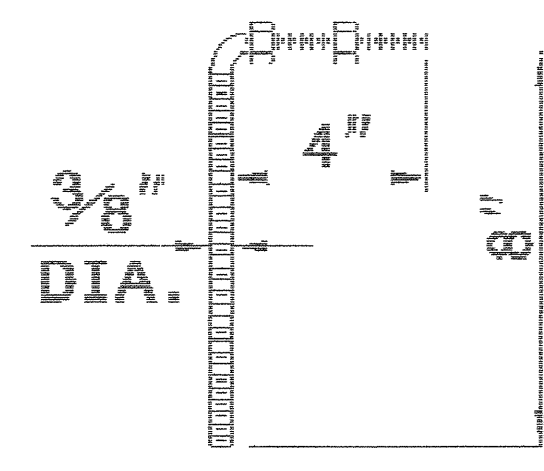
NOTE:
CONSTRUCT GRATED DROP INLET TO COINCIDE WITH NORMAL OR SUPERELEVATED SHOULDER OR PAVEMENT SLOPE.



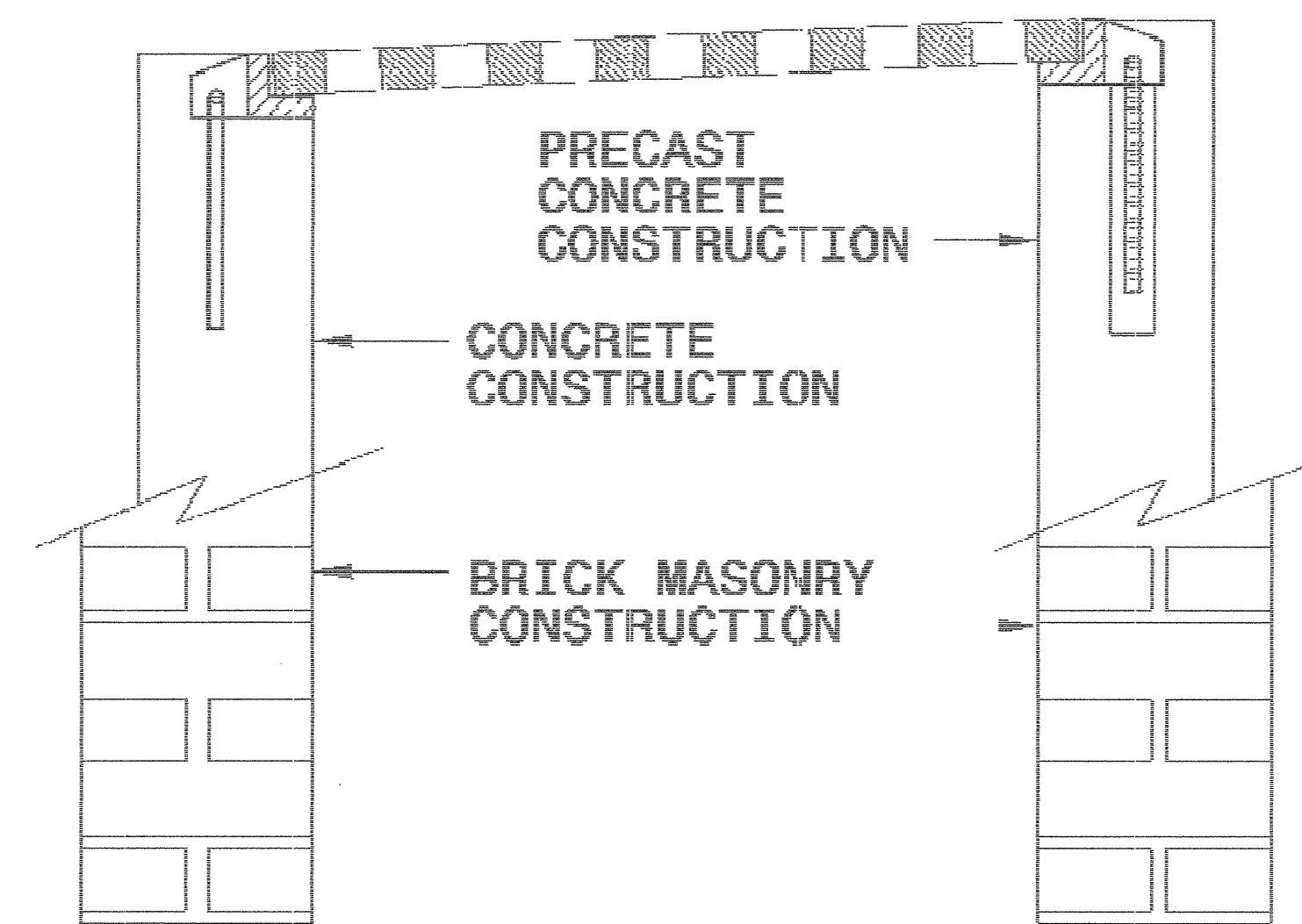
MASONRY ANCHOR
3/8" DIA. BOLT WITH PLATE



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

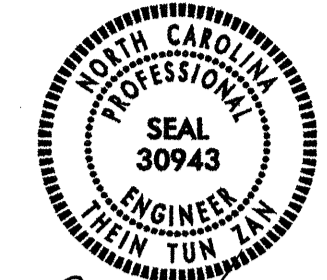
SHEET 1 OF 1
840D25



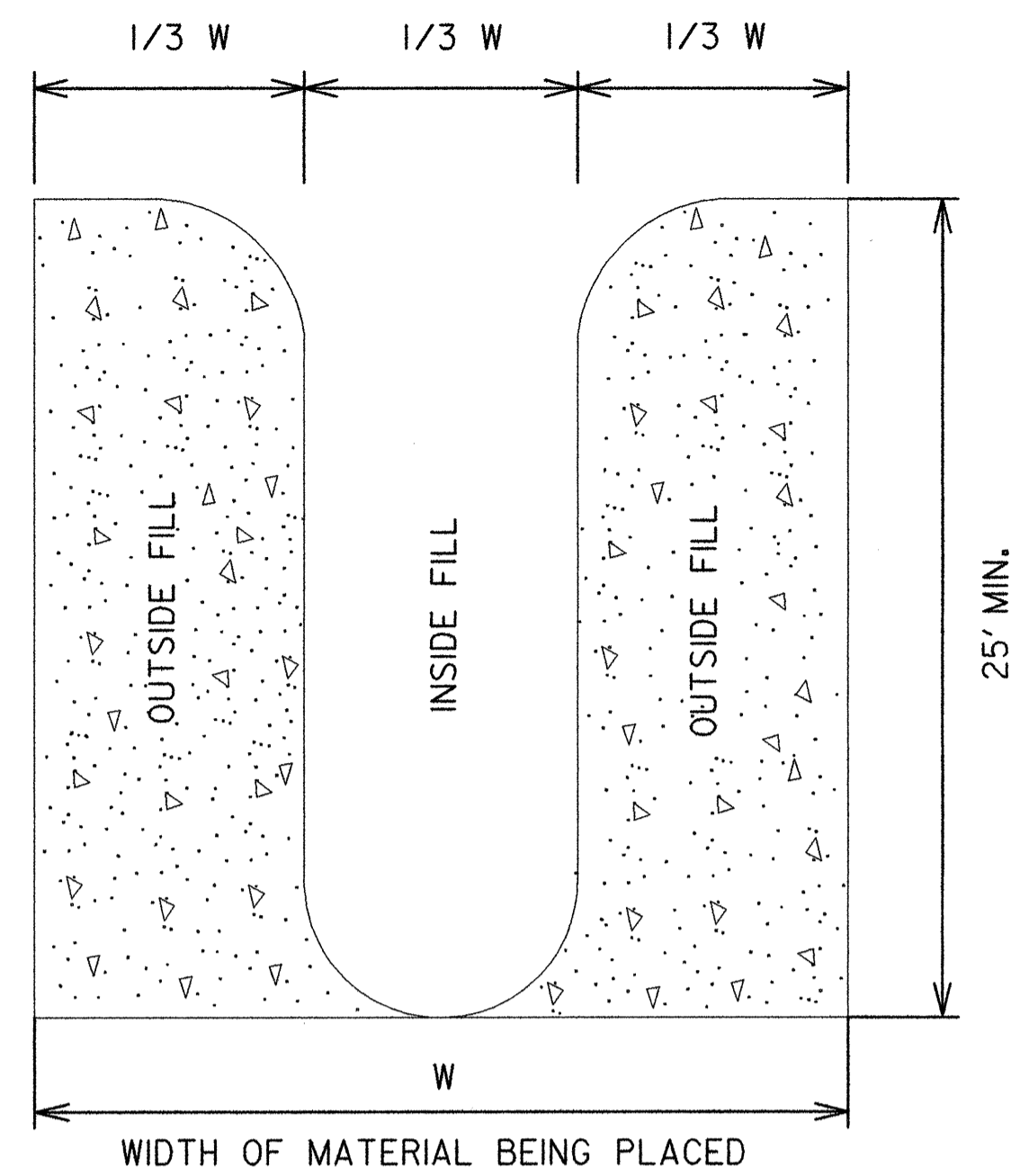
PROJECT SERVICES UNIT
STANDARDS AND SPECIAL DESIGN
Office 919-250-4128 FAX 919-250-4119

SEE PLATE FOR TITLE

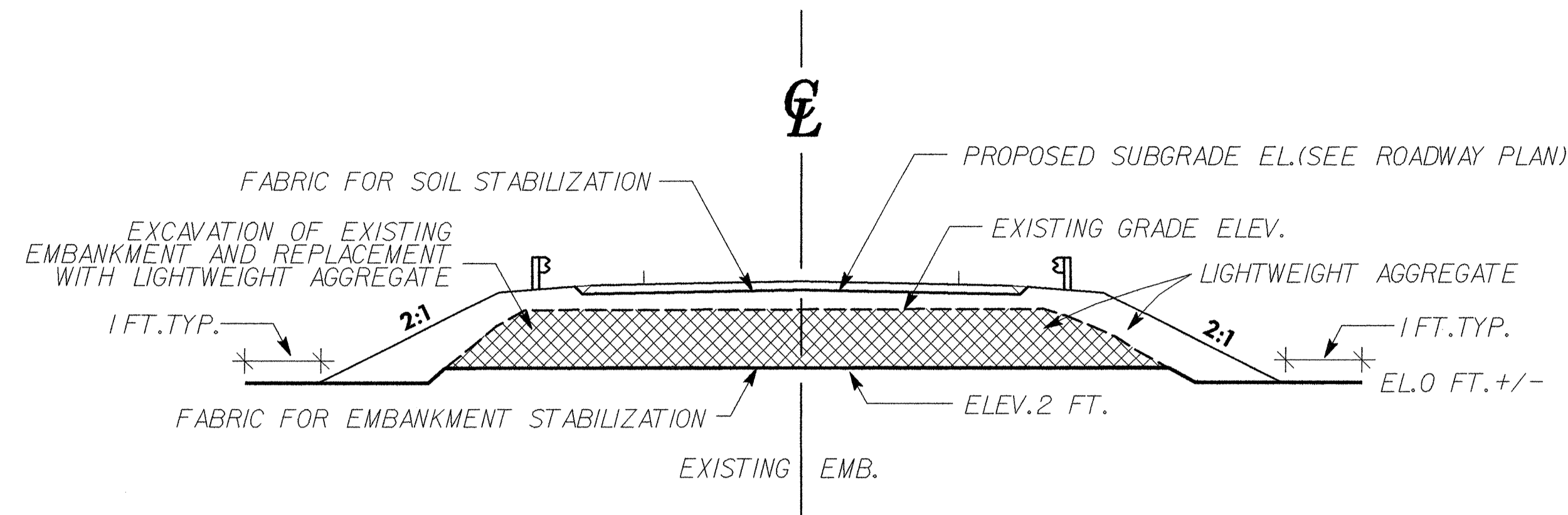
ORIGINAL BY: 2006 STD 840.25 DATE: 07/18/06
MODIFIED BY: E.E. WARD DATE: 5/25/06
CHECKED BY: DATE:
FILE SPEC.:



SIGNATURE DATE



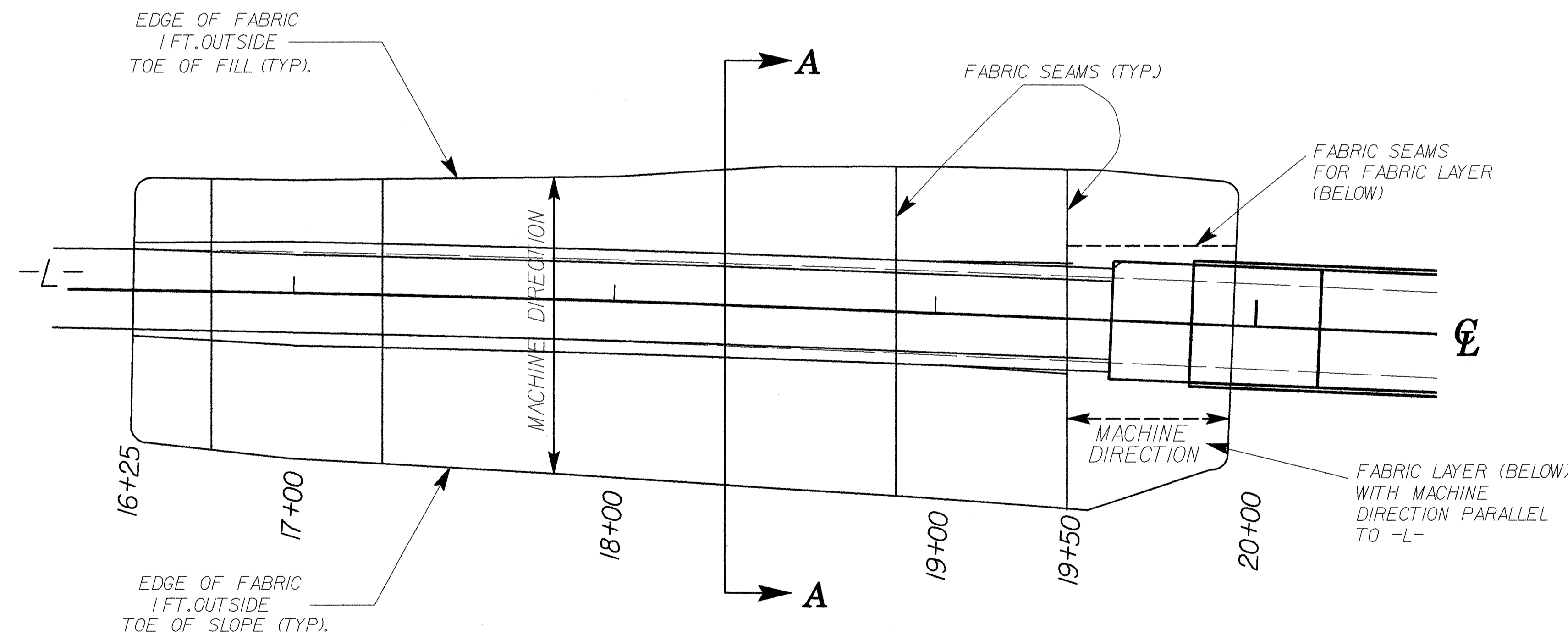
DETAIL OF FILL PLACEMENT OVER FABRIC
PLAN VIEW N.T.S



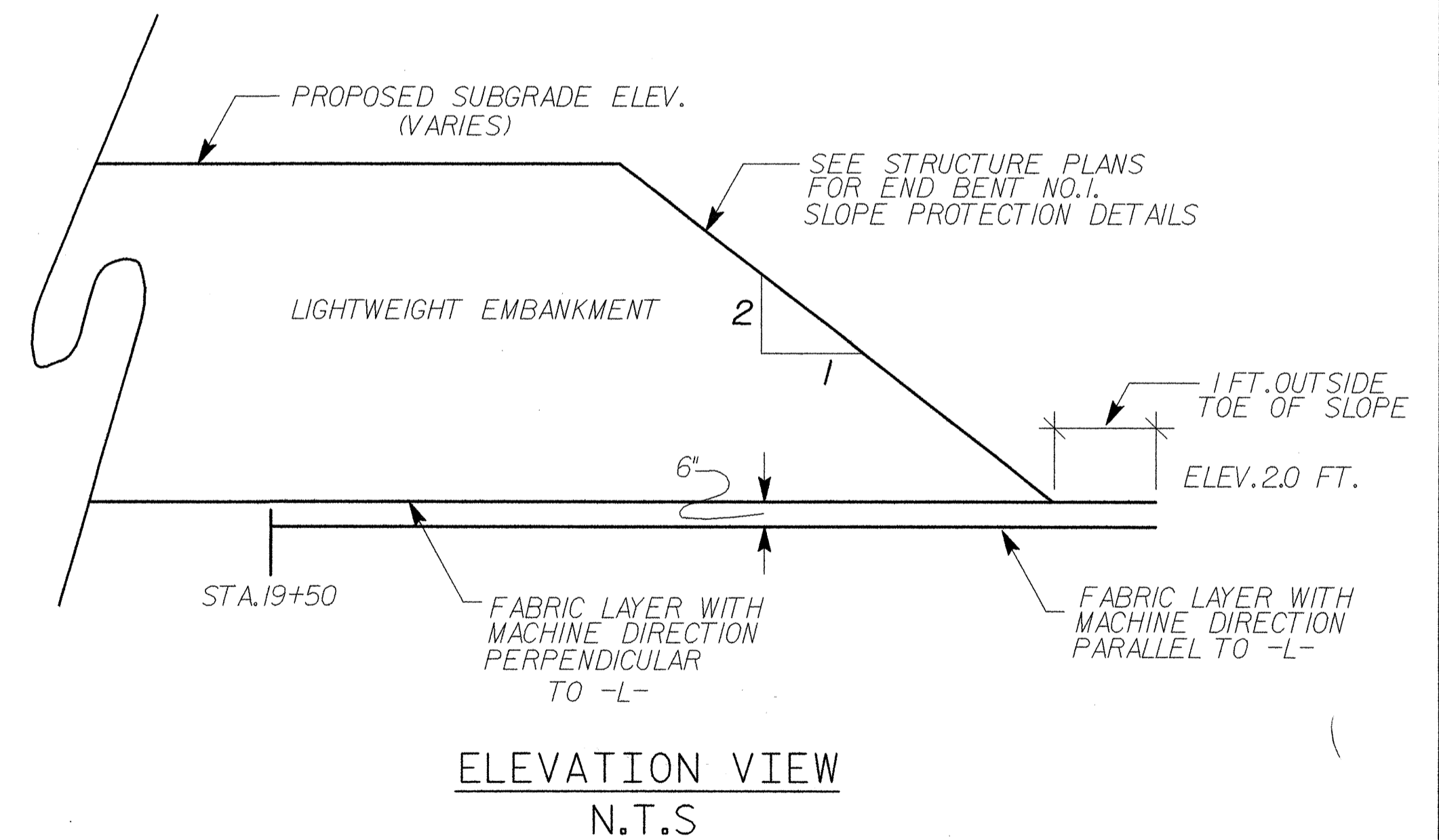
LIGHTWEIGHT AGGREGATE EMBANKMENT (TYP. SECTION A-A)
N.T.S

NOTES:

1. EXCAVATE EXISTING EMBANKMENT FROM -L- STA. 16+25 +/- TO STA. 19+98 +/- TO THE ELEVATION 2 FT. AS SHOWN IN PLAN OR AS DIRECTED BY THE ENGINEER.
2. PLACE FABRIC FOR EMBANKMENT STABILIZATION FROM -L- STA. 16+25 +/- TO STA. 19+98 +/- AS SHOWN IN THE PLAN OR AS DIRECTED BY THE ENGINEER.
3. AT FABRIC LOCATIONS, ALL STUMPS SHALL BE CUT CLOSE TO THE GROUND AND/OR WATER SURFACE. GRUBBING IS NOT TO BE PERFORMED IN THE FABRIC PLACEMENT AREAS.
4. REPLACE EXISTING EMBANKMENT AND BUILD PROPOSED EMBANKMENT WITH LIGHTWEIGHT AGGREGATE UP TO THE SUBGRADE ELEVATION SHOWN IN THE ROADWAY PLAN OR AS DIRECTED BY THE ENGINEER.
5. FABRIC FOR SOIL STABILIZATION (SEPARATION) FABRIC BETWEEN THE SUBGRADE (LIGHTWEIGHT FILL EMBANKMENT) AND PAVEMENT STRUCTURE AS SHOWN IN THE PLAN OR AS DIRECTED BY THE ENGINEER.



FABRIC FOR EMBANKMENT STABILIZATION LAYOUT
N.T.S



ELEVATION VIEW
N.T.S

PREPARED BY: JRM DATE: 3/10/08
REVIEWED BY: JRB DATE: 3/10/08

GEOTECHNICAL ENGINEERING UNIT
 EASTERN REGIONAL OFFICE
 WESTERN REGIONAL OFFICE

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

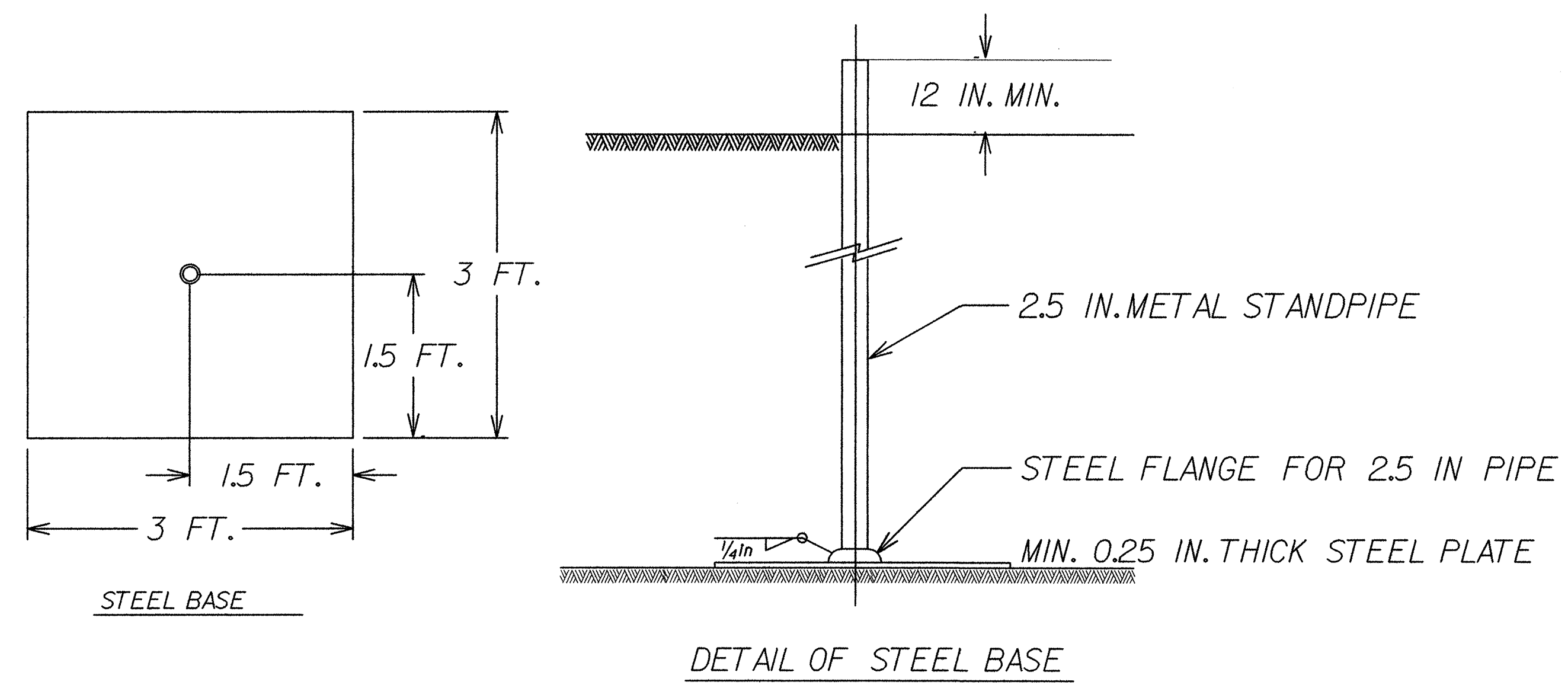
LIGHTWEIGHT AGGREGATE FILL EMBANKMENT

REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

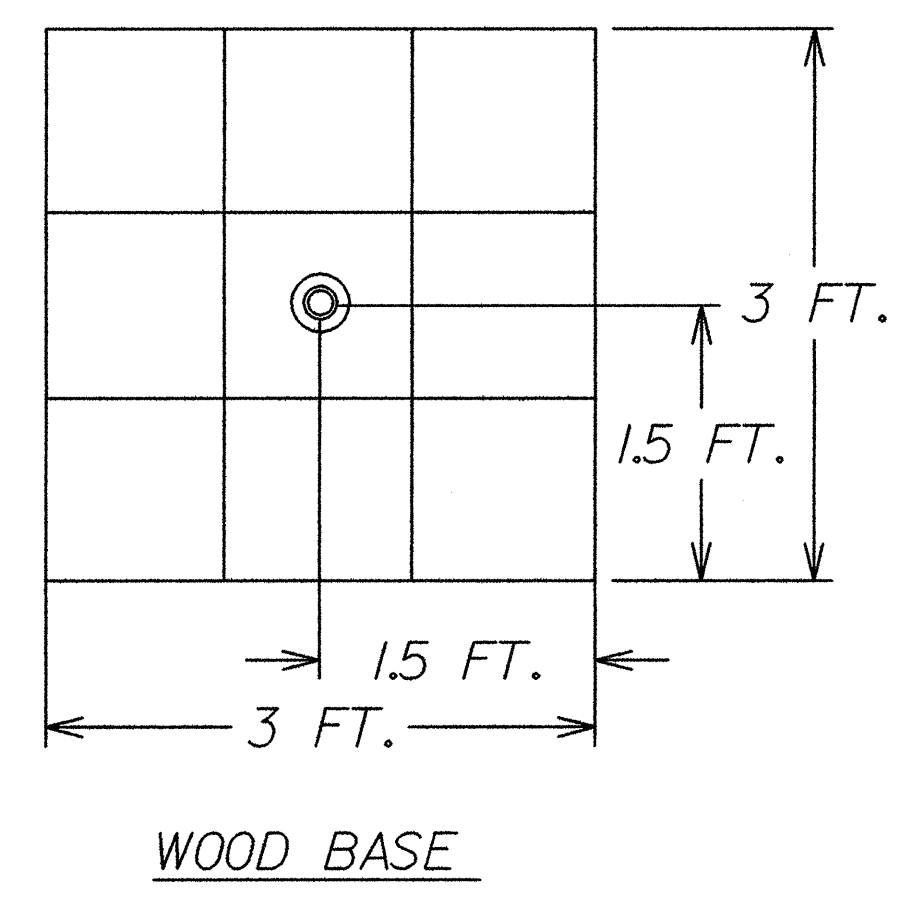
SETTLEMENT GAUGE DETAIL

PLAN VIEW

N.T.S.

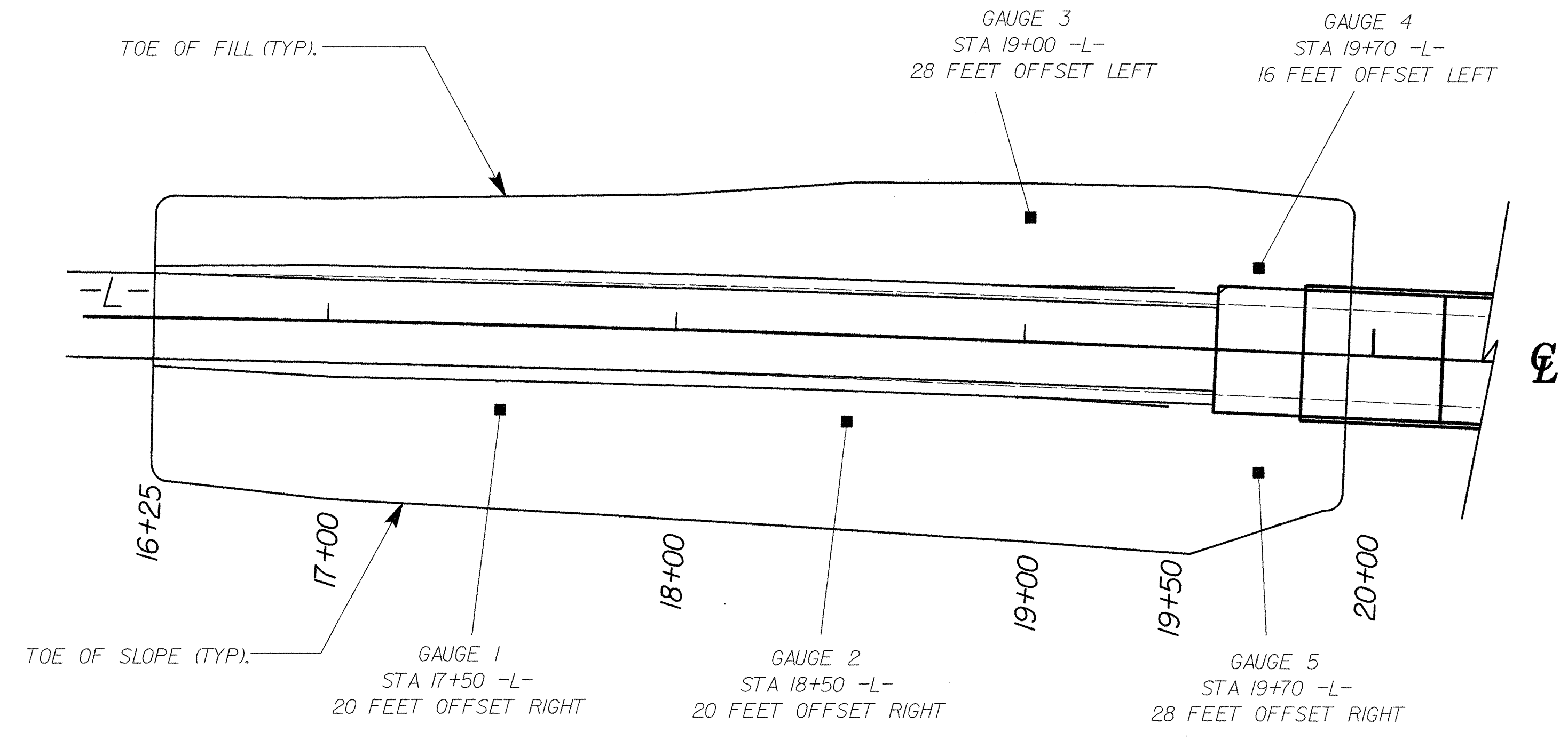


DETAIL OF STEEL BASE



DETAIL OF WOOD BASE

SIX - 1 IN. X 1 FT. X 3 FT. PLANKS OF LUMBER OR TWO PIECES 1 IN. X 3 FT. X 3 FT. EXTERIOR GRADE PLYWOOD, SECURELY FASTENED AND THEN COATED WITH WOOD PRESERVATIVE



NOTES

1. THE USE OF EITHER THE WOOD BASE OR THE STEEL BASE SETTLEMENT GAUGE SHALL BE THE CONTRACTOR'S OPTION.
2. SETTLEMENT GAUGES SHALL BE INSTALLED BEFORE ANY FILL IS PLACED.
3. SETTLEMENT GAUGE ELEVATIONS ARE TO BE DETERMINED AND RECORDED WEEKLY BY THE RESIDENT ENGINEER. THE INITIAL ELEVATION OF THE SETTLEMENT GAUGE PLATE (AT TOP OF PLATE) SHALL BE DETERMINED AT THE TIME OF INSTALLATION ALONG WITH THE EMBANKMENT ELEVATION. WHEN NEW SECTIONS OF THE PIPE ARE ADDED, ELEVATIONS SHALL BE RECORDED AT THE TOP OF EXISTING PIPE AND AT THE TOP OF THE NEW PIPE. THIS IS TO TAKE INTO ACCOUNT INTERIM SETTLEMENT, VARIABLE PIPE LENGTHS, AND THREAD LENGTHS IN COUPLING. RESULTS OF SETTLEMENT GAUGE READINGS SHALL BE FORWARDED TO MR. K.J. KIM, EASTERN REGIONAL GEOTECHNICAL MANAGER, WITHIN THREE DAYS.

Gauge #	Station	Offset from Centerline of -L-
1	17+50	20 feet +/- Right
2	18+50	20 feet +/- Right
3	19+00	28 feet +/- Left
4	19+70	16 feet +/- Left
5	19+70	28 feet +/- Right

QUANTITIES
SETTLEMENT GAUGES..... 5 EACH

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

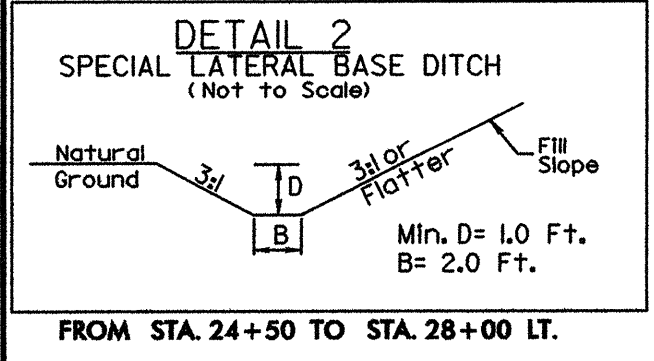
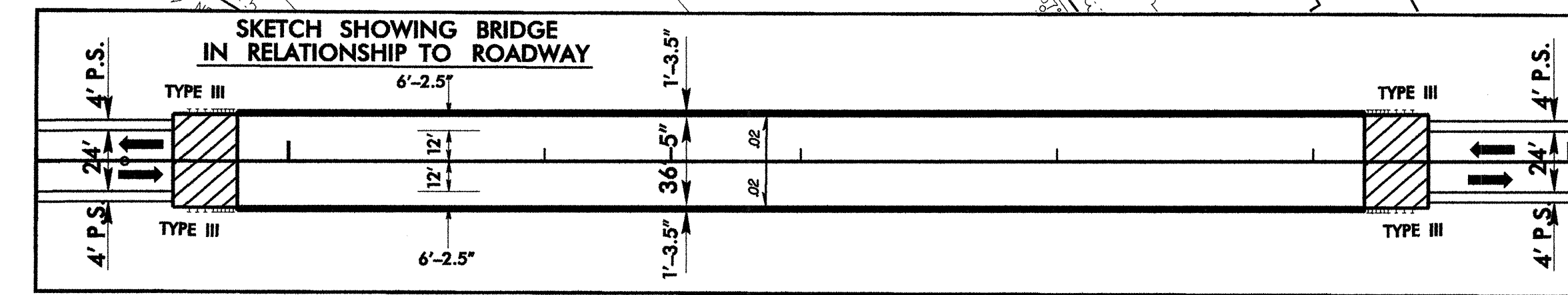
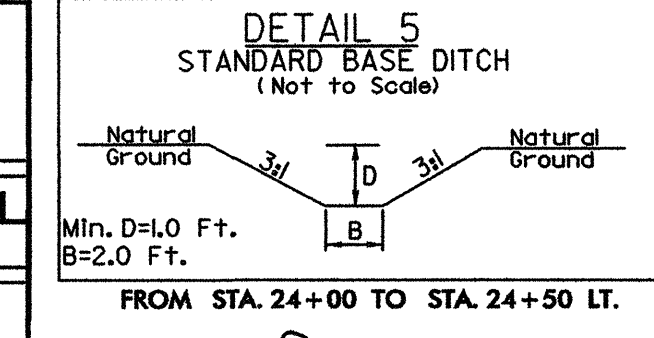
SUMMARY OF QUANTITIES

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C201732

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 ***** (22+00.53)
004300000-N	226	Lump Sum		GRADING
005000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUBBING
005700000-E	226	3,300	CY	UNDERCUT EXCAVATION
012700000-N	SP	5	EA	EMBANKMENT SETTLEMENT GAUGES
013400000-E	240	91	CY	DRAINAGE DITCH EXCAVATION
019600000-E	270	1,900	SY	FABRIC FOR SOIL STABILIZATION
023400000-E	SP	300	CY	GENERIC GRADING ITEM SELECT GRANULAR MATERIAL
024100000-E	SP	3,700	SY	GENERIC GRADING ITEM FABRIC FOR EMBANKMENT STABILIZATION
025500000-E	SP	3,600	TON	GENERIC GRADING ITEM LIGHTWEIGHT AGGREGATE
031800000-E	300	18	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRS
034400000-E	310	36	LF	18" SIDE DRAIN PIPE
036600000-E	310	64	LF	15" RC PIPE CULVERTS, CLASS III
070800000-E	310	64	LF	15" BIT COAT CS PIPE CULVERTS, TYPE B 0.064" THICK
080600000-E	310	4	EA	15" BIT COAT CS PIPE ELBOWS, TYPE B 0.064" THICK
099500000-E	340	61	LF	PIPE REMOVAL
112100000-E	520	148	TON	AGGREGATE BASE COURSE
122000000-E	545	200	TON	INCIDENTAL STONE BASE
148900000-E	610	662	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
151900000-E	610	753	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5B
156000000-E	620	74	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	4	EA	MASONRY DRAINAGE STRUCTURES
235500000-N	840	4	EA	FRAME WITH GRATE, STD 840.29
255600000-E	846	54	LF	SHOULDER BERM GUTTER
303000000-E	862	550	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	5	TON	RIP RAP, CLASS B
365600000-E	876	245	SY	FILTER FABRIC FOR DRAINAGE
402500000-E	901	13.6	SF	CONTRACTOR FURNISHED, TYPE *** SIGN (D)
402500000-E	901	29	SF	CONTRACTOR FURNISHED, TYPE *** SIGN (E)
408200000-E	903	132	LF	SUPPORTS, WOOD
409600000-N	904	2	EA	SIGN ERECTION, TYPE D
410200000-N	904	5	EA	SIGN ERECTION, TYPE E
415800000-N	907	11	EA	DISPOSAL OF SIGN SYSTEM, WOOD
440000000-E	1110	294	SF	WORK ZONE SIGNS (STATIONARY)
441000000-E	1110	107	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
444500000-E	1145	96	LF	BARRICADES (TYPE III)

ItemNumber	Sec #	Quantity	Unit	Description
484700000-E	1205	4,700	LF	POLYUREA PAVEMENT MARKING LINES (4", *****) (STANDARD GLASS BEADS)
490000000-N	1251	16	EA	PERMANENT RAISED PAVEMENT MARKERS
600000000-E	1605	1,380	LF	TEMPORARY SILT FENCE
600600000-E	1610	90	TON	STONE FOR EROSION CONTROL, CLASS A
600900000-E	1610	160	TON	STONE FOR EROSION CONTROL, CLASS B
601200000-E	1610	90	TON	SEDIMENT CONTROL STONE
601500000-E	1615	2.5	ACR	TEMPORARY MULCHING
601800000-E	1620	100	LB	SEED FOR TEMPORARY SEEDING
602100000-E	1620	0.5	TON	FERTILIZER FOR TEMPORARY SEEDING
602400000-E	1622	90	LF	TEMPORARY SLOPE DRAINS
602700000-N	1622	4	EA	INLET PROTECTION AT TEMPORARY SLOPE DRAINS
602900000-E	SP	250	LF	SAFETY FENCE
603000000-E	1630	365	CY	SILT EXCAVATION
603600000-E	1631	225	SY	MATting FOR EROSION CONTROL
604800000-E	SP	150	SY	FLOATING TURBIDITY CURTAIN
607103000-E	SP	115	LF	COIR FIBER BAFFLES
608400000-E	1660	2.5	ACR	SEEDING & MULCHING
608700000-E	1660	1.5	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	1.75	TON	FERTILIZER TOPDRESSING
611400000-N	SP	2	HR	SPECIALIZED HAND MOWING
611700000-N	SP	12	EA	RESPONSE FOR EROSION CONTROL
612300000-E	1670	0.1	ACR	REFORESTATION
612900000-E	1670	0.05	ACR	WETLAND REFORESTATION
613500000-E	SP	0.14	ACR	GENERIC EROSION CONTROL ITEM DISKING
613500000-E	SP	0.14	ACR	GENERIC EROSION CONTROL ITEM RIPPING
859400000-E	876	5	TON	RIP RAP, CLASS B

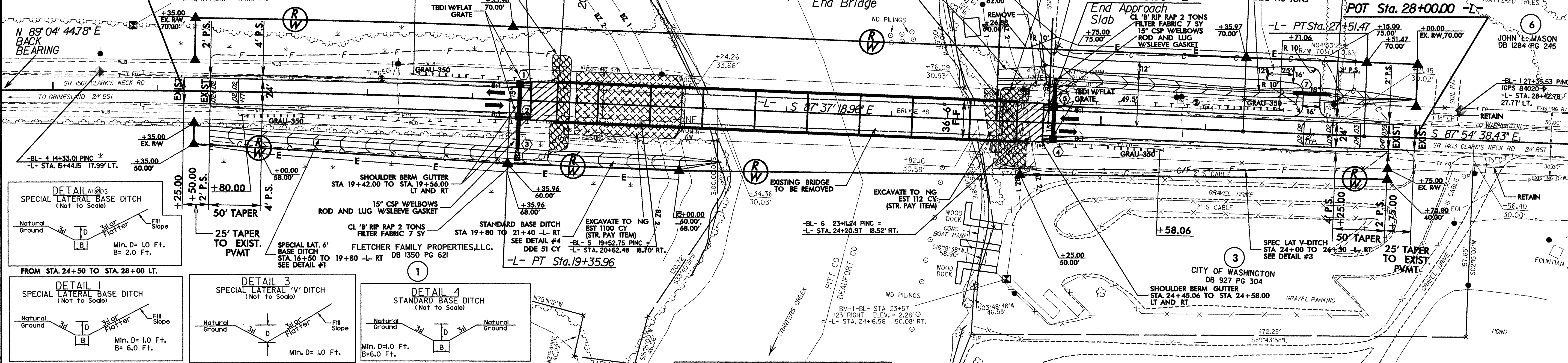
PI Sta 26+93.72
 $\Delta = 0' 17' 19.47''$ (LT)
 $D = 0' 15' 00.0''$
 $L = 115.50'$
 $T = 57.75'$
 $R = 22,918.31'$
 $DS = 60$ mph



PI Sta 16+06.16
 $\Delta = 3' 17' 56.26''$ (RT)
 $D = 0' 30' 00.0''$
 $L = 659.79'$
 $T = 329.99'$
 $R = 11,459.16'$
 $DS = 60$ mph

BEGIN TIP PROJECT B-4020
 BEGIN CONSTRUCTION
 POC Sta. 16+25.00 -L-

END TIP PROJECT B-4020
 END CONSTRUCTION
 POT Sta. 28+00.00 -L-



BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 9,970 CFS
DESIGN FREQUENCY	= 50 YR
DESIGN HW ELEVATION	= 6.0'
BASE DISCHARGE	= 12,370 CFS
BASE FREQUENCY	= 100 YR
BASE HW ELEVATION	= 7.6'
OVERTOPPING DISCHARGE	= -9,970 CFS
OVERTOPPING FREQUENCY	= -50 YR
OVERTOPPING ELEVATION	= 5.0'
DATE OF SURVEY	= 3/3/05
W.S. ELEVATION AT DATE OF SURVEY	= -1.0'

SEE STRUCTURE PLANS S-1 THRU S-22

