

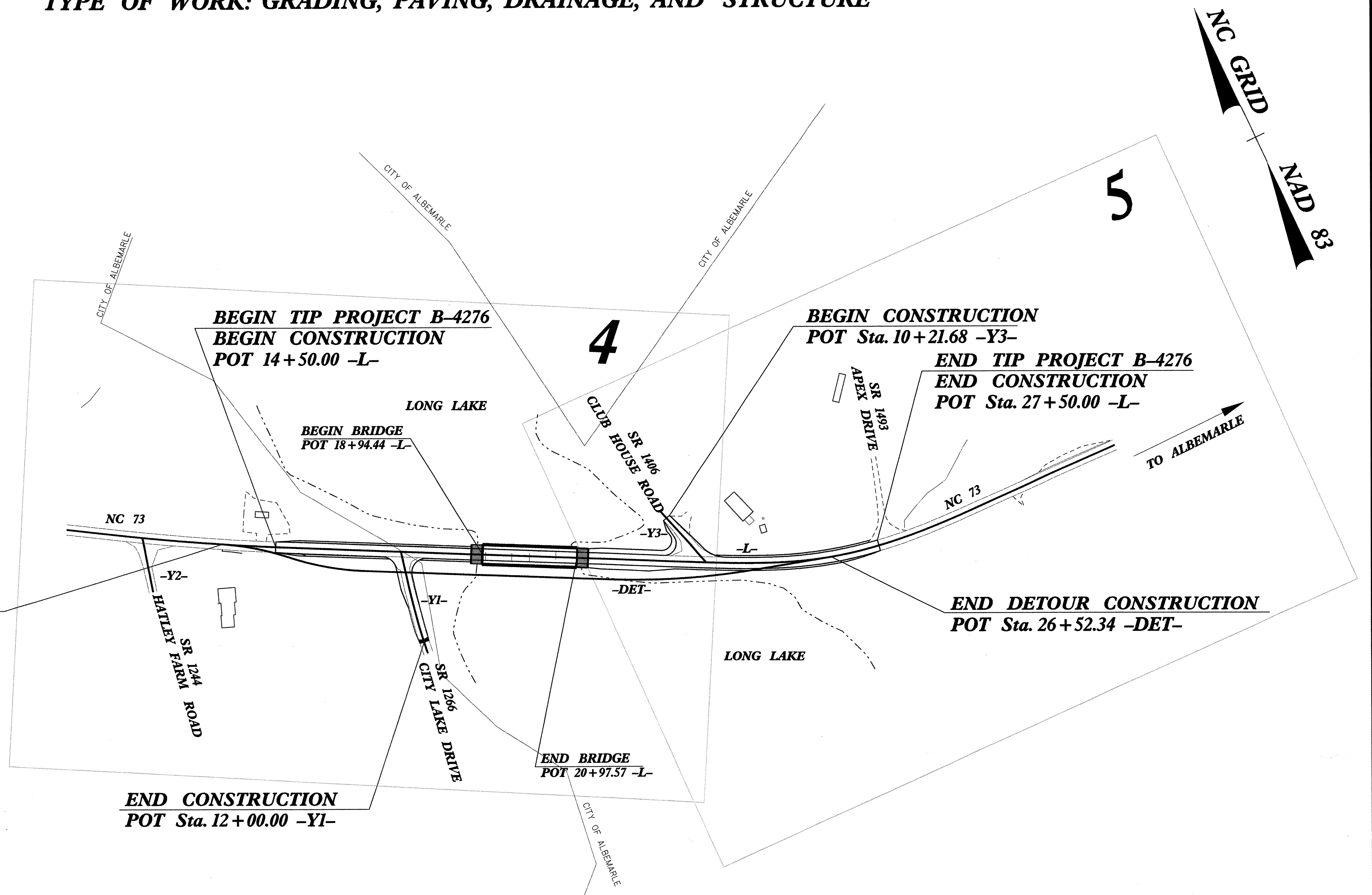
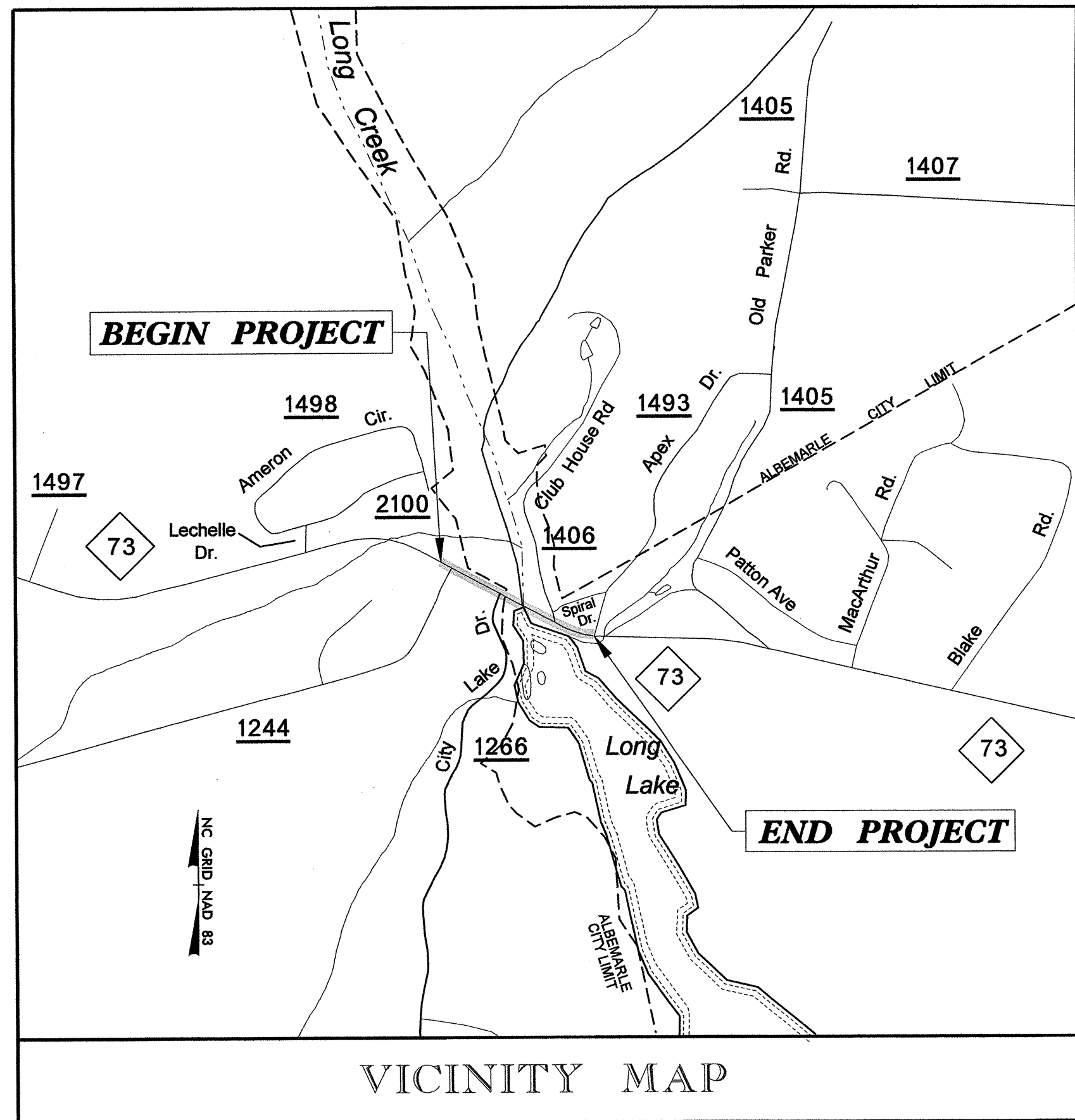
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4276	1	
WBS NO.	F.A. PROJ. NO.	DESCRIPTION	
33617.1.1	BRSTP-73(5)	P.E.	
33617.2.2	BRSTP-73(5)	ROW & UTILITIES	
33617.3.1.ST1		CONSTRUCTION	

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STANLY COUNTY

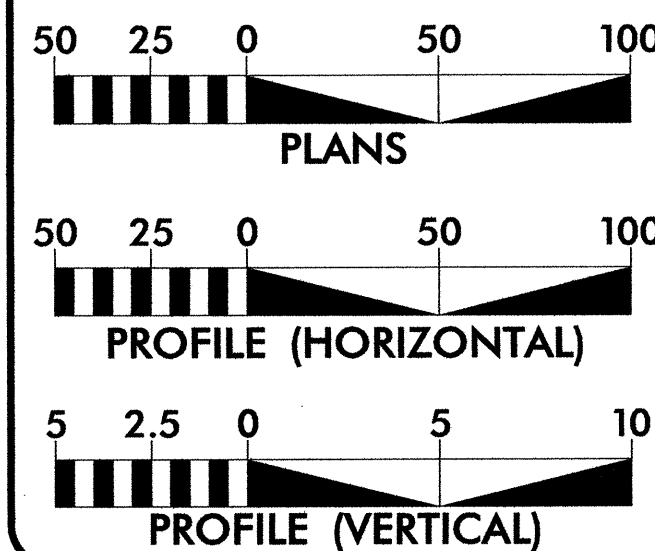
LOCATION: BRIDGE NO. 33 OVER LONG CREEK ON NC 73

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



NCDOT CONTACT: DOUG TAYLOR, P.E. - PROJECT ENGINEER - ROADWAY DESIGN

GRAPHIC SCALES



DESIGN DATA

ADT 2008 = 11,500
ADT 2030 = 20,000
DHV = 10 %
D = 60 %
T = 7 % *
V = 60 MPH **
* TTST 3% & DUAL 4%
FUNCTIONAL CLASSIFICATION = URBAN MINOR ARTERIAL
**DESIGN EXCEPTION REQUIRED FOR DESIGN SPEED (40 MPH)

PROJECT LENGTH

LENGTH OF ROADWAY
TIP PROJECT B-4276 = 0.208 MILES

LENGTH OF STRUCTURE
TIP PROJECT B-4276 = 0.038 MILES

TOTAL LENGTH OF
TIP PROJECT B-4276 = 0.246 MILES

Prepared in the Office of:
WILBUR SMITH ASSOCIATES

421 FAYETTEVILLE ST. STE. 1303 RALEIGH, NC 27601 PHONE (919) 755-0583

2006 STANDARD SPECIFICATIONS

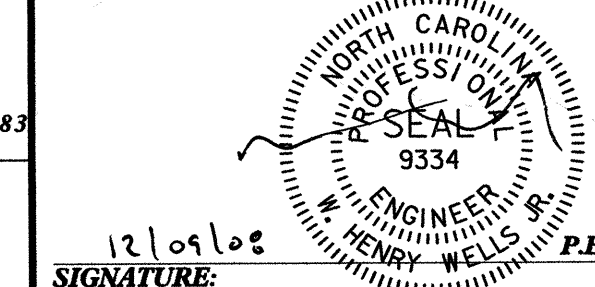
RIGHT OF WAY DATE:
SEPT. 21, 2007

LETTING DATE:
MARCH 17, 2009

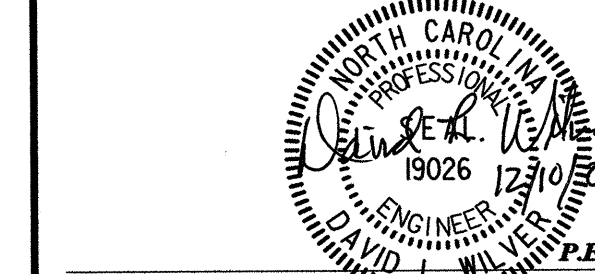
DAVID L. WILVER, P.E.
PROJECT ENGINEER

DAVID L. WILVER, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

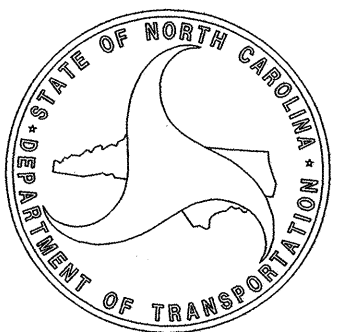


1209102
SIGNATURE: HENRY WELLS, P.E.
ROADWAY DESIGN ENGINEER



SIGNATURE: DAVID L. WILVER, P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA



STATE HIGHWAY DESIGN ENGINEER

CONTRACT: C201831 TIP PROJECT B-4276
 DATE: 12/29/2008
 TIME: 11:52:26 AM
 FILE: I:\ncdot\c201831\roadway\proj\B4276_RDY_TSH_01.dgn

PROJECT REFERENCE NO.	SHEET NO.
B-4276	1A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	
421 Fayetteville Street Mail Stop 1808 RALEIGH, N. C. 27601	

INDEX OF SHEETS	
SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
1C	SURVEY CONTROL SHEET
2	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
2A THRU 2B	DETOUR PLAN AND PROFILE SHEET
2C THRU 2N	TEMPORARY SHORING DETAILS
2O	ANCHORAGE FOR FRAMES DETAIL
2P	ROCK EMBANKMENT FOR TEMPORARY STRUCTURE
3	SUMMARY OF QUANTITIES
3A	SUMMARY OF DRAINAGE QUANTITIES
3B	GUARDRAIL SUMMARY, ASPHALT PAVEMENT REMOVAL SUMMARY
3C	EARTHWORK SUMMARY
3D	R/W PARCEL INDEX
4 THRU 7	PLAN AND PROFILE SHEETS
TCP1 THRU TCP20	TRAFFIC CONTROL PLANS
PM1 THRU PM2	PAVEMENT MARKING PLANS
SD1	SPECIAL SIGN DETAIL
EC1 THRU EC9	EROSION CONTROL PLANS
RF1	REFORESTATION DETAIL
SIGN1 THRU SIGN5	SIGNING PLANS
UC1 THRU UC4	UTILITY CONSTRUCTION PLANS
UO1 THRU UO3	UTILITY BY OTHERS
X-1	CROSS-SECTION SUMMARY
X-2 THRU X-14	CROSS-SECTIONS
S1 THRU S21	STRUCTURE PLANS

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.

DRIVEWAYS:
LOCATIONS OF DRIVES WILL BE AS SHOWN ON THE PLANS OR AS 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 NOT SHOWN ON THE PLANS WILL BE PAID FOR AT THE CONTRACT PRICE FOR "TEMPORARY SHORING" OR "TEMPORARY SHORING-BARRIER SUPPORTED" DEPENDING UPON THE LOCATION OF THE SHORING.

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 City of Albemarle Electric Dept. (Power), Windstream Concord (Telephone), Time Warner Cable (CATV), Stanly County (Sewer), Stanly County (Water).
ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

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

EFF. 07-18-06

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:

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 Superlevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation - Method 'A'
DIVISION 4 - MAJOR STRUCTURES	
422.10	Reinforced Bridge Approach Fills
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
806.01	Concrete Right-of-Way Marker
840.00	Concrete Base Pad for Drainage Structures
840.14	Concrete Drop Inlet - 12" thru 30" Pipe
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.20	Frames and Wide Slot Flat Grates
840.22	Frames and Wide Slot Sag Grates
840.27	Brick Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.45	Precast Drainage Structure
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter, and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862.04	Anchoring End of Guardrail - B-77 and B-83 Anchor Units
866.01	Chain Link Fence - 4', 5' and 6' High Fence
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

REVISIONS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

*S.U.E = SUBSURFACE UTILITY ENGINEER

CONVENTIONAL SYMBOLS

ROADS & RELATED ITEMS

Edge of Pavement	-----
Curb	-----
Prop. Slope Stakes Cut	C
Prop. Slope Stakes Fill	F
Prop. Woven Wire Fence	○ ○
Prop. Chain Link Fence	□ □
Prop. Barbed Wire Fence	◇ ◇
Prop. Wheelchair Ramp	WCR
Curb Cut for Future Wheelchair Ramp	CCFR
Exist. Guardrail	-----
Prop. Guardrail	-----
Equality Symbol	⊕
Pavement Removal	XXXX

RIGHT OF WAY

Baseline Control Point	◆
Existing Right of Way Marker	△
Exist. Right of Way Line w/Marker	△-----
Prop. Right of Way Line with Proposed	-----
R/W Marker (Iron Pin & Cap)	▲
Prop. Right of Way Line with Proposed	-----
(Concrete or Granite) R/W Marker	▲
Exist. Control of Access Line	⊙
Prop. Control of Access Line	⊙
Exist. Easement Line	-E-
Prop. Temp. Construction Easement Line	-E-
Prop. Temp. Drainage Easement Line	-TDE-
Prop. Perm. Drainage Easement Line	-PDE-

HYDROLOGY

Stream or Body of Water	-----
River Basin Buffer	RBB
Flow Arrow	→
Disappearing Stream	---
Spring	○
Swamp Marsh	↓
Shoreline	-----
Falls, Rapids	+
Prop Lateral, Tail, Head Ditches	← FLOW

STRUCTURES

MAJOR	
Bridge, Tunnel, or Box Culvert	CONC
Bridge Wing Wall, Head Wall and End Wall	CONC WW

MINOR	
Head & End Wall	CONC HW
Pipe Culvert	-----
Footbridge	-----
Drainage Boxes	CB
Paved Ditch Gutter	-----

UTILITIES

Exist. Pole	•
Exist. Power Pole	•
Prop. Power Pole	○
Exist. Telephone Pole	•
Prop. Telephone Pole	○
Exist. Joint Use Pole	•
Prop. Joint Use Pole	○
Telephone Pedestal	T
UG Telephone Cable Hand Hold	H
Cable TV Pedestal	C
UG TV Cable Hand Hold	H
UG Power Cable Hand Hold	H
Hydrant	⊕
Satellite Dish	⊕
Exist. Water Valve	⊕
Sewer Clean Out	⊕
Power Manhole	⊕
Telephone Booth	⊕
Cellular Telephone Tower	⊕
Water Manhole	⊕
Light Pole	⊕
H-Frame Pole	⊕
Power Line Tower	⊕
Pole with Base	⊕
Gas Valve	⊕
Gas Meter	⊕
Telephone Manhole	⊕
Power Transformer	⊕
Sanitary Sewer Manhole	⊕
Storm Sewer Manhole	⊕
Tank; Water, Gas, Oil	⊕
Water Tank With Legs	⊕
Traffic Signal Junction Box	⊕
Fiber Optic Splice Box	⊕
Television or Radio Tower	⊕
Utility Power Line Connects to Traffic Signal Lines Cut Into the Pavement	TS

Recorded Water Line	W W
Designated Water Line (S.U.E.*)	W W
Sanitary Sewer	SS SS
Recorded Sanitary Sewer Force Main	FSS FSS
Designated Sanitary Sewer Force Main(S.U.E.*)	FSS FSS
Recorded Gas Line	G G
Designated Gas Line (S.U.E.*)	G G
Storm Sewer	S S
Recorded Power Line	P P
Designated Power Line (S.U.E.*)	P P
Recorded Telephone Cable	T T
Designated Telephone Cable (S.U.E.*)	T T
Recorded U/G Telephone Conduit	TC TC
Designated U/G Telephone Conduit (S.U.E.*)	TC TC
Unknown Utility (S.U.E.*)	?UTL ?UTL
Recorded Television Cable	TV TV
Designated Television Cable (S.U.E.*)	TV TV
Recorded Fiber Optics Cable	FO FO
Designated Fiber Optics Cable (S.U.E.*)	FO FO
Exist. Water Meter	⊕
UG Test Hole (S.U.E.*)	⊕
Abandoned According to U/G Record	AATUR
End of Information	E.O.I.

BOUNDARIES & PROPERTIES

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Property Line Symbol	⊕
Exist. Iron Pin	⊕
Property Corner	+
Property Monument	⊕
Property Number	123
Parcel Number	6
Fence Line	XX
Existing Wetland Boundaries	WW & ISBW
High Quality Wetland Boundary	HQ WLB
Medium Quality Wetland Boundaries	MQ WLB
Low Quality Wetland Boundaries	LQ WLB
Proposed Wetland Boundaries	WLB
Existing Endangered Animal Boundaries	EAB
Existing Endangered Plant Boundaries	EPB

BUILDINGS & OTHER CULTURE

Buildings	⊕
Foundations	⊕
Area Outline	⊕
Gate	⊕
Gas Pump Vent or U/G Tank Cap	⊕
Church	⊕
School	⊕
Park	⊕
Cemetery	⊕
Dam	⊕
Sign	⊕
Well	⊕
Small Mine	⊕
Swimming Pool	⊕

TOPOGRAPHY

Loose Surface	-----
Hard Surface	-----
Change in Road Surface	-----
Curb	-----
Right of Way Symbol	R/W
Guard Post	⊕ GP
Paved Walk	-----
Bridge	-----
Box Culvert or Tunnel	-----
Ferry	-----
Culvert	-----
Footbridge	-----
Trail, Footpath	-----
Light House	⊕

VEGETATION

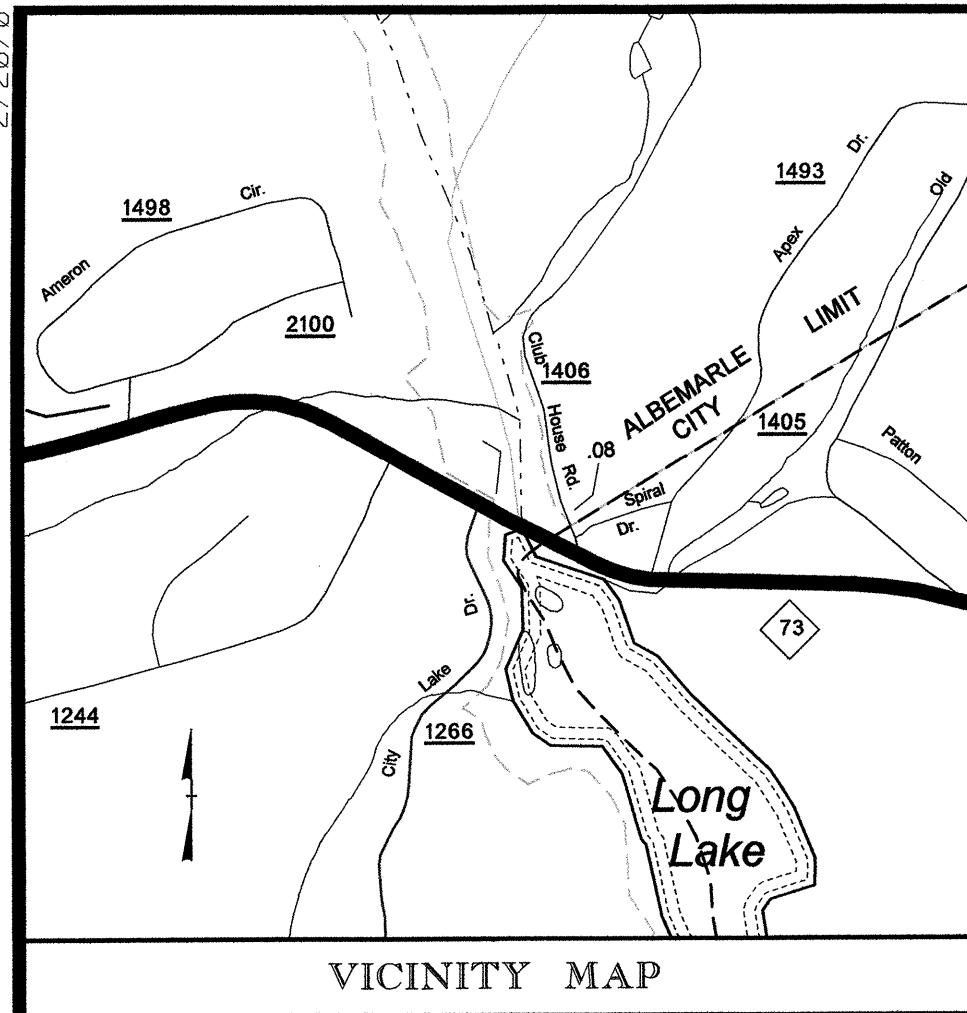
Single Tree	⊕
Single Shrub	⊕
Hedge	-----
Woods Line	-----
Orchard	⊕
Vineyard	VINEYARD

RAILROADS

Standard Gauge	-----
RR Signal Milepost	⊕
Switch	⊕

5/28/99 DATE: 12/4/09 PM TIME: 12:46:09 PM FILE: (redat) b4276 roadway (proj) b4276 RDY_psh_01b.dgn

SURVEY CONTROL SHEET B-4276



BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1		TERRY	588781.7621	1629645.2348	504.06	OUTSIDE PROJECT LIMITS	
2		ODEEN	588497.2496	1630309.2208	499.12	11+21.23	17.77 LT
3		BL-3	588254.7369	1630645.6230	489.53	15+32.82	32.09 RT
4		BL-4	587997.1958	1631164.1828	468.07	21+11.76	24.35 RT
5		GUARDRAIL	587762.2549	1631680.3338	470.98	26+74.20	25.99 RT
6		TRENT	587753.6558	1633093.6116	541.46	OUTSIDE PROJECT LIMITS	

```

.....
BM1      ELEVATION = 499.68
N 588533      E 1630350
L STATION 11+38 69 LEFT
RR SPIKE SET IN BASE OF 15' POPLAR
.....
BM2      ELEVATION = 470.68
N 588099      E 1630982
L STATION 19+03 17 RIGHT
CHISELED SQUARE ON SW HEADWALL OF BRIDGE
NO 33
.....
BM3      ELEVATION = 494.91
N 587797      E 1632171
L STATION 31+60 41 LEFT
RR SPIKE SET IN BASE OF 14' PINE
.....

```

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "TERRY" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 588781.7621(ft) EASTING: 1629645.2348(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999855044 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "TERRY" TO L- STATION 10+00.00 IS S 66°48'59.2" E 599.951 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NGVD 29

NCGS TERRY
LOCALIZED PROJECT COORDINATES
N = 588781.7621
E = 1629645.2348
ELEV = 504.06'

NCGS ODEEN
LOCALIZED PROJECT COORDINATES
N = 588497.2496
E = 1630309.2208
ELEV = 499.12'

NCGS TRENT
LOCALIZED PROJECT COORDINATES
N = 587753.6558
E = 1633093.6116
ELEV = 541.46'

NCGS GUARDRAIL
LOCALIZED PROJECT COORDINATES
N = 587762.2549
E = 1631680.3338
ELEV = 470.98'

TO MT. PLEASANT

TO ALBEMARLE

POT Sta. 10+00.00 -L-

BEGIN TIP PROJECT B-4276
POT Sta. 10+75.00 -L-

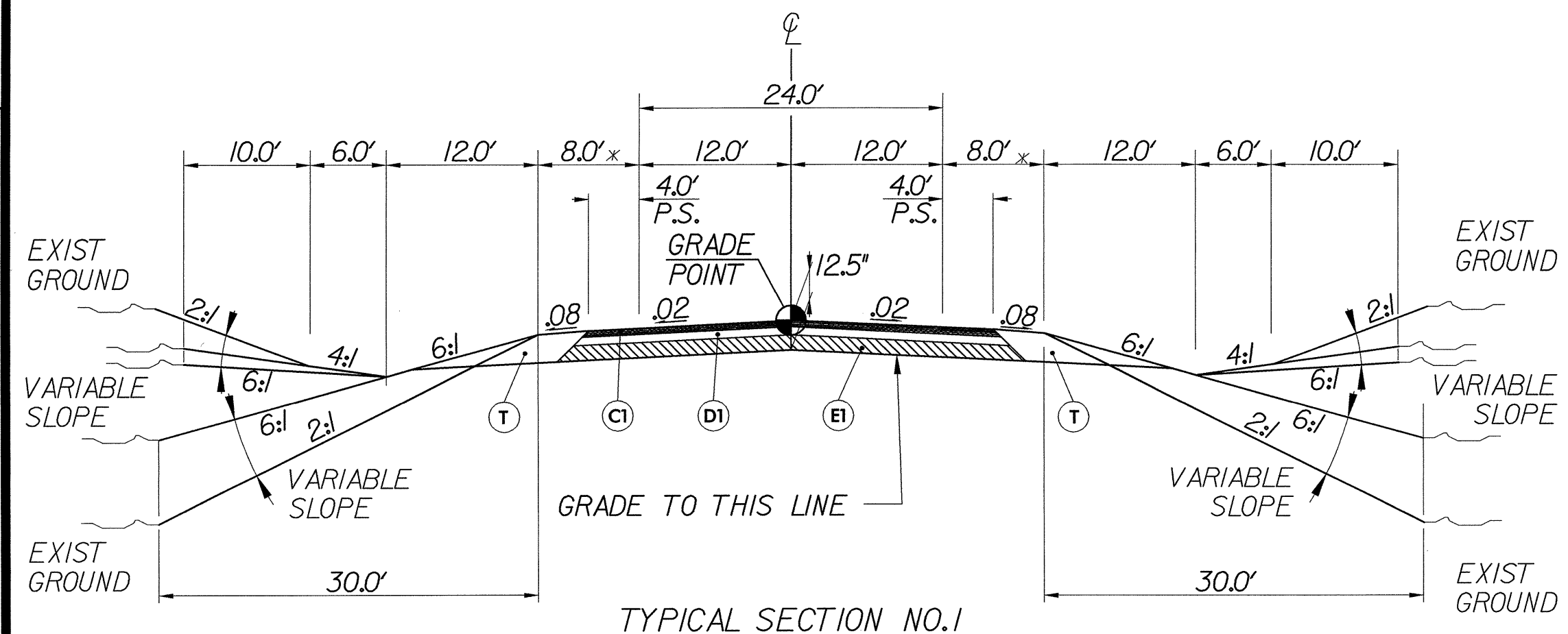
END TIP PROJECT B-4276
POT Sta. 27+50.00 -L-

NOTES:

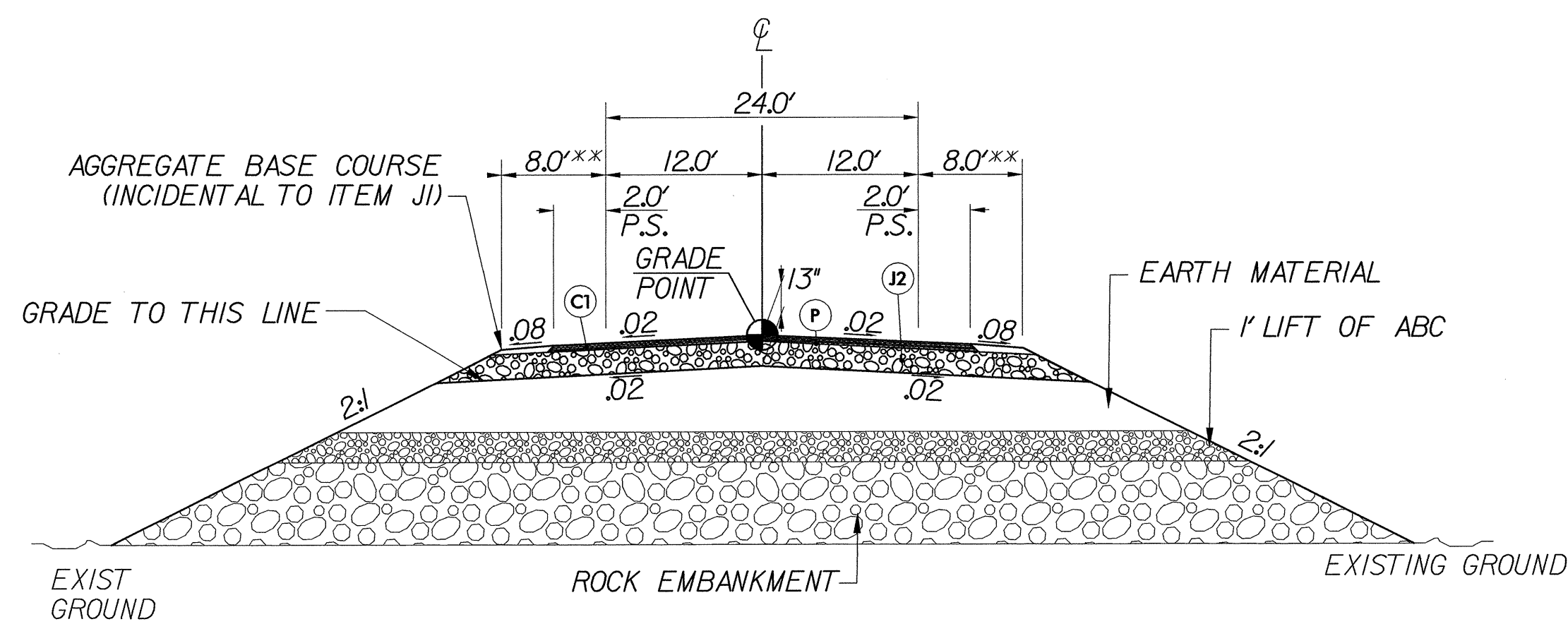
1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project/)

THE FILES TO BE FOUND ARE AS FOLLOWS:
B4276_LS_CONTROL_070220.TXT
 2. SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
 3. PROJECT CONTROL ESTABLISHED USING EXISTING NCGS MONUMENTATION.
- ⊙ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.

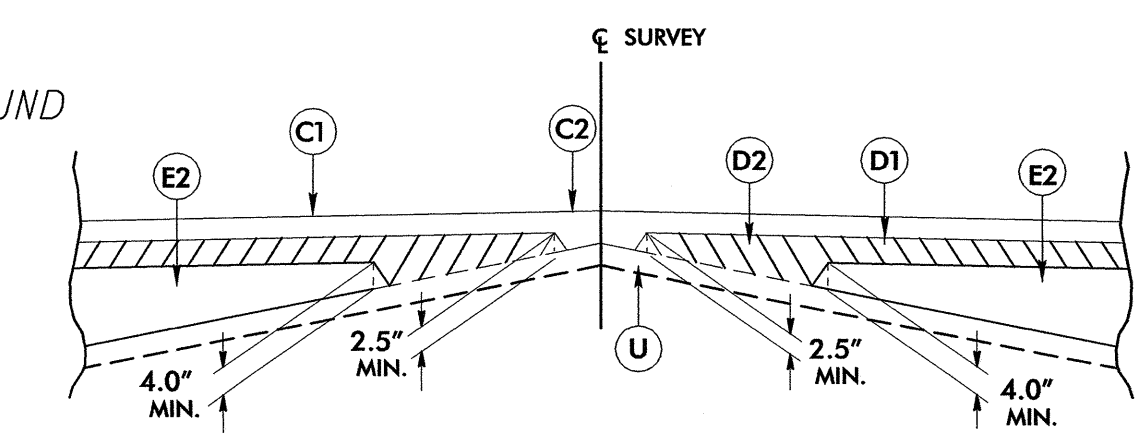
NOTE: DRAWING NOT TO SCALE



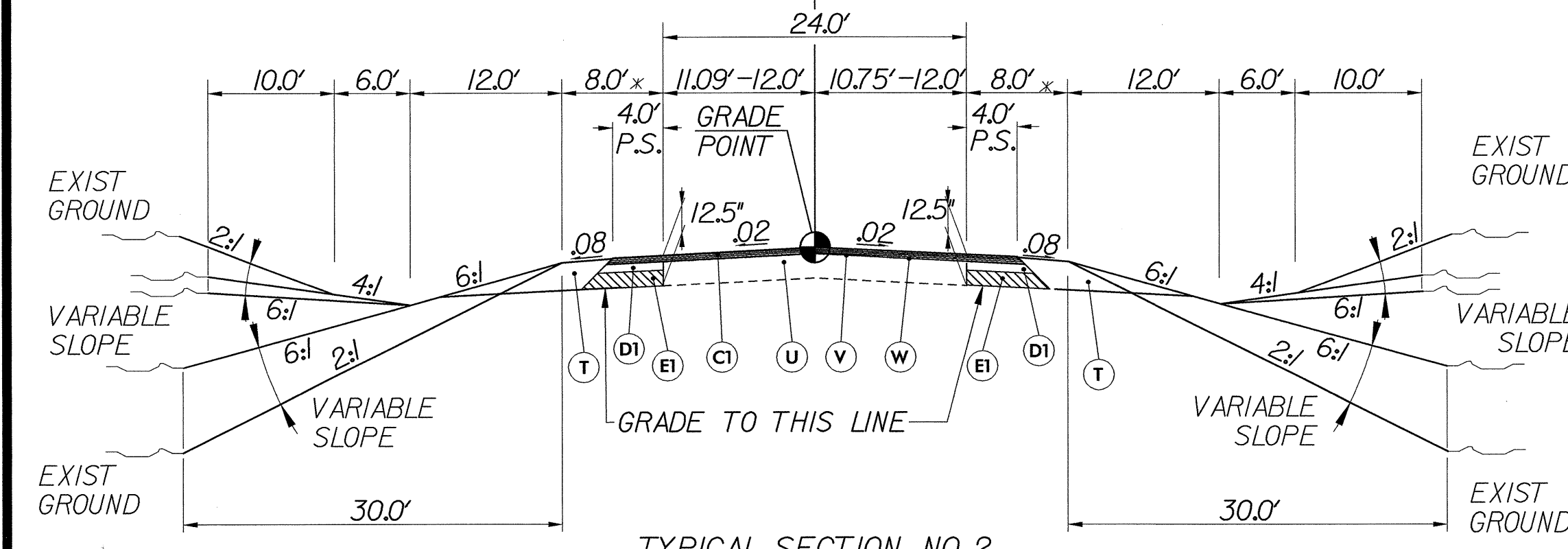
TYPICAL SECTION NO.1
 USE ON: -L- Sta.15+50.00 to Sta.18+94.44 (BEGIN BRIDGE)
 Sta.20+97.57 (END BRIDGE) to Sta.23+50.00



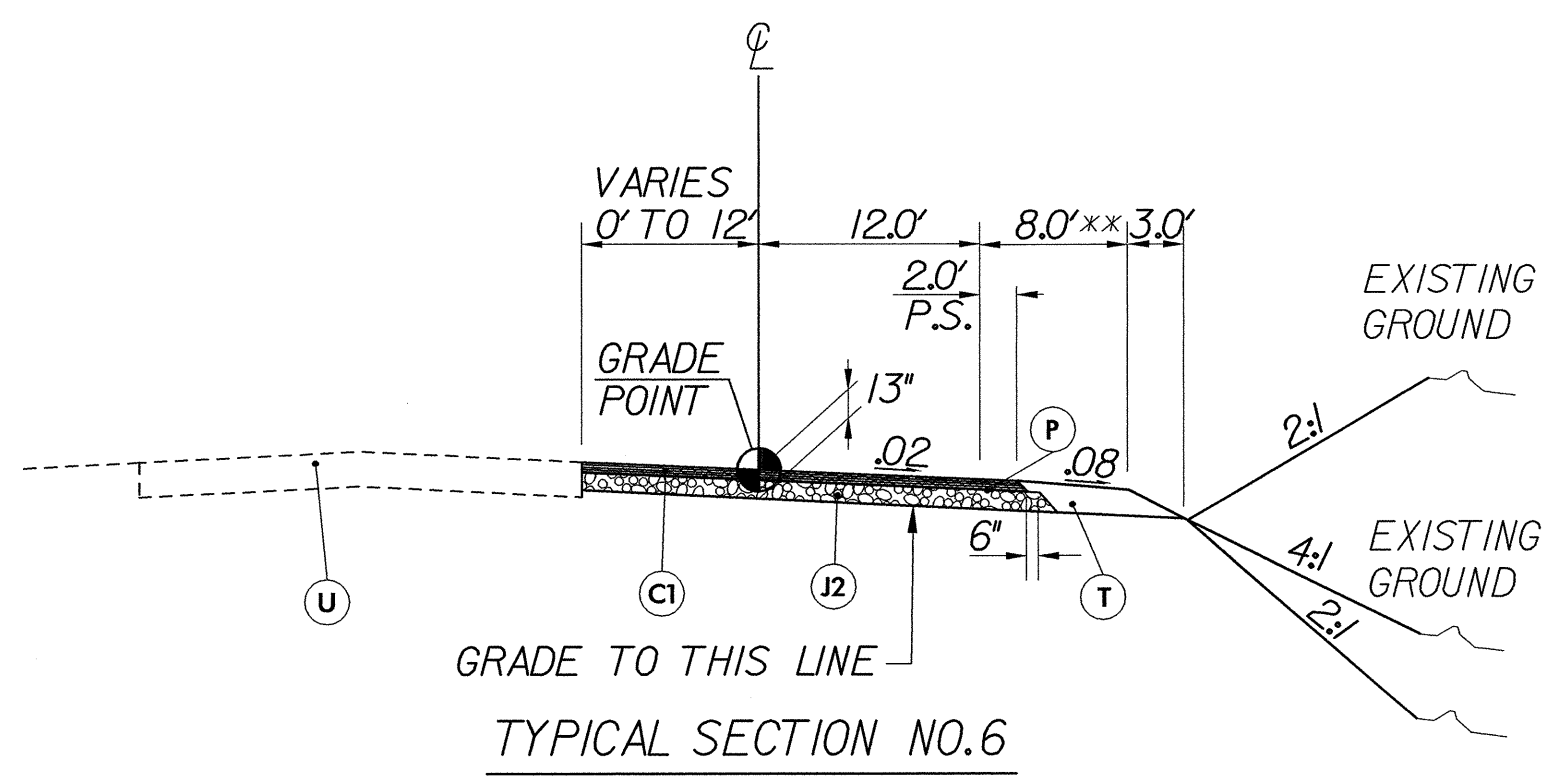
TYPICAL SECTION NO.5 (SEE SHEET 2-P)
 USE ON: DETOUR Sta.18+45.00 to Sta.19+50.00 (BEGIN DETOUR BRIDGE)
 Sta.20+95.00 (END DETOUR BRIDGE) to Sta.23+60.65



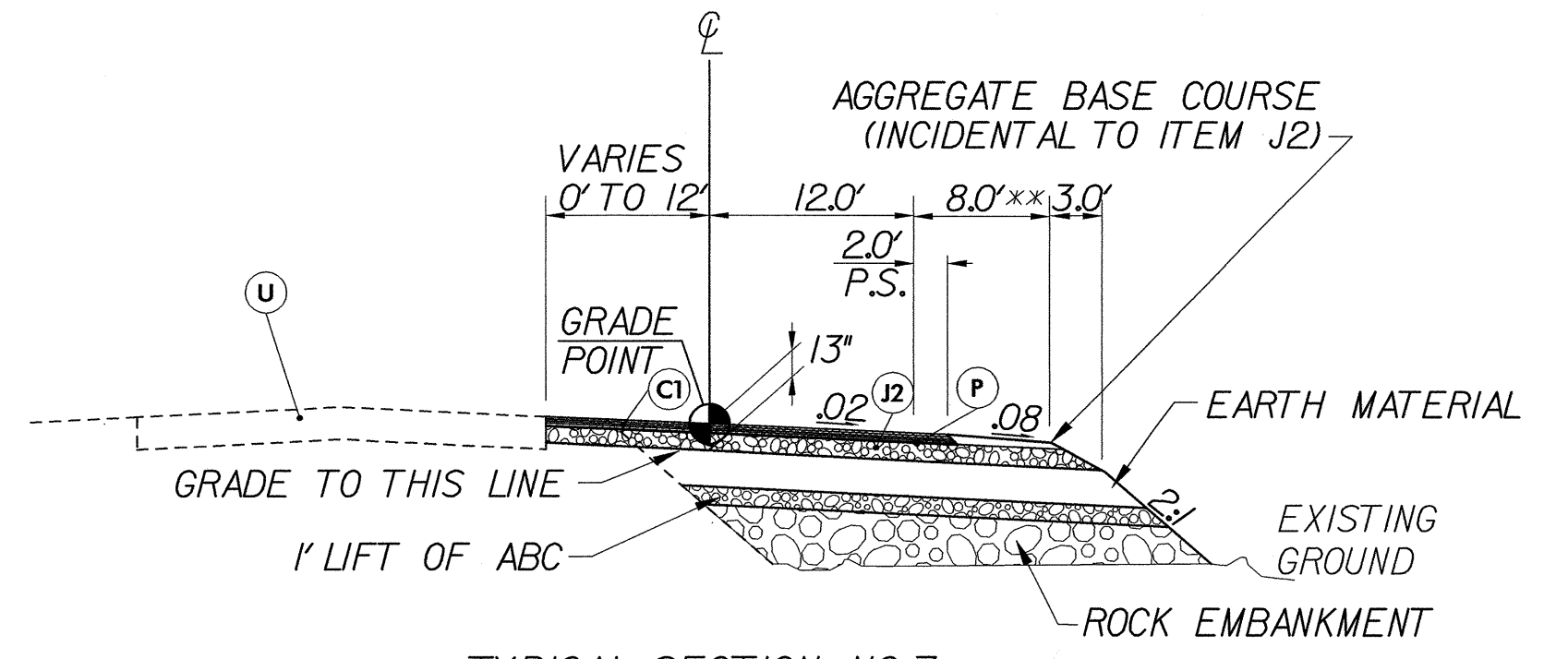
Detail Showing Method of Wedging



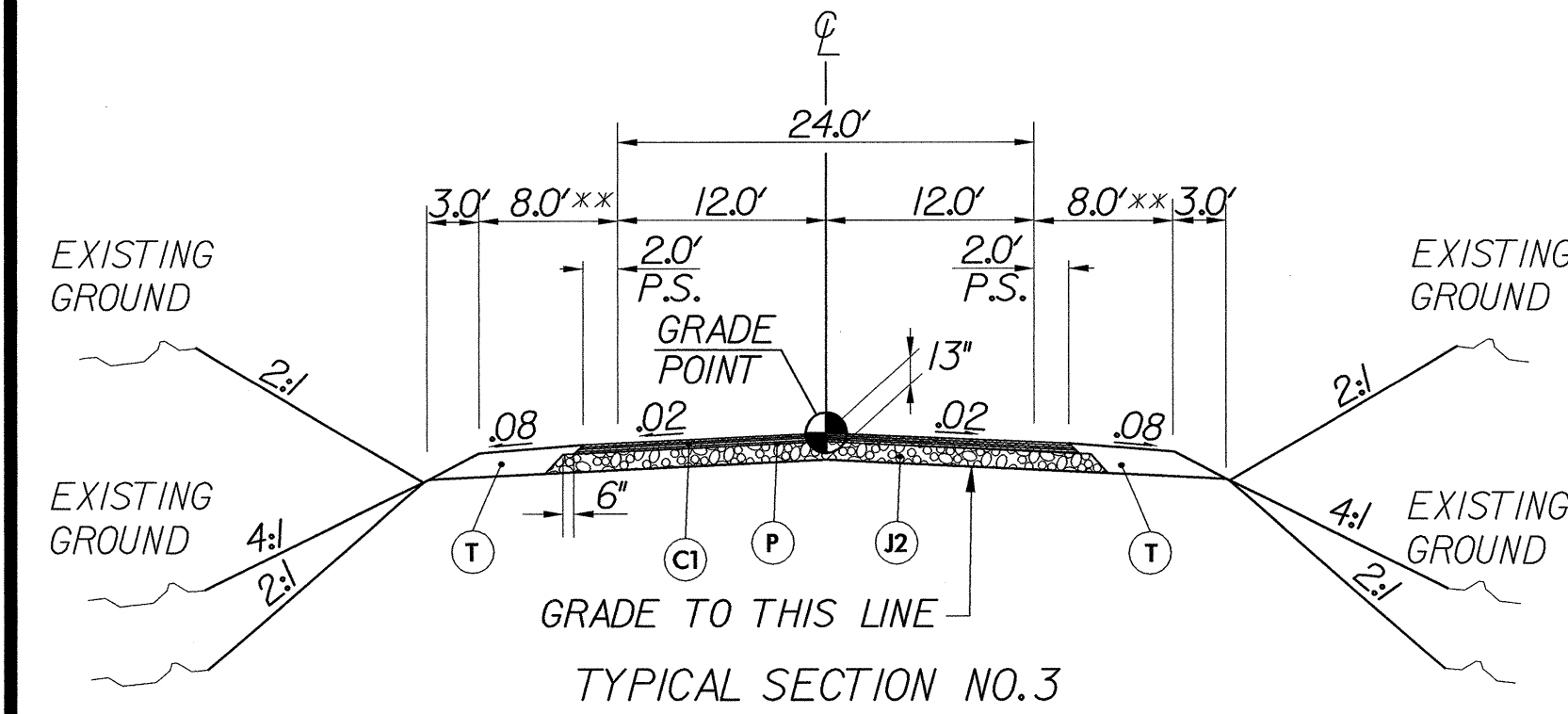
TYPICAL SECTION NO.2
 USE ON: -L- Sta.14+50 to Sta.15+50.00
 -L- Sta.23+50.00 to Sta.27+50.00



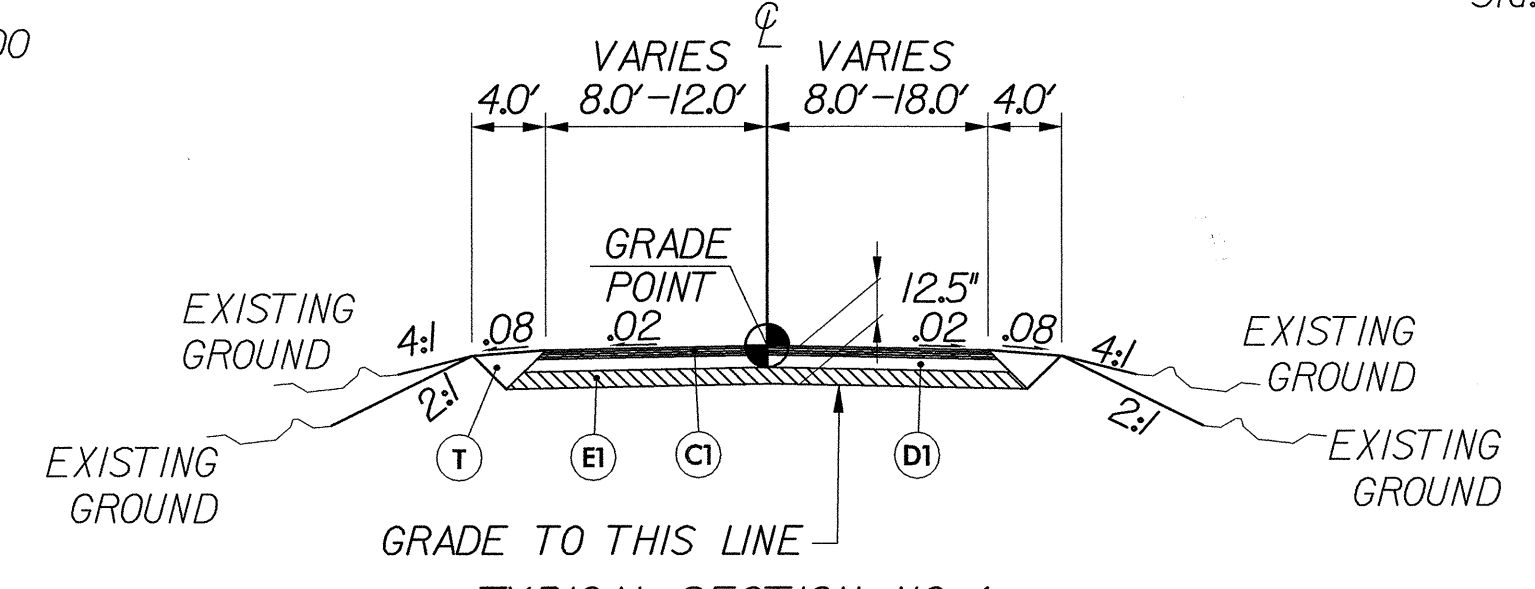
TYPICAL SECTION NO.6
 USE ON: DETOUR Sta.13+34.91 to Sta.14+96.65
 Sta.25+57.00 to Sta.26+52.34



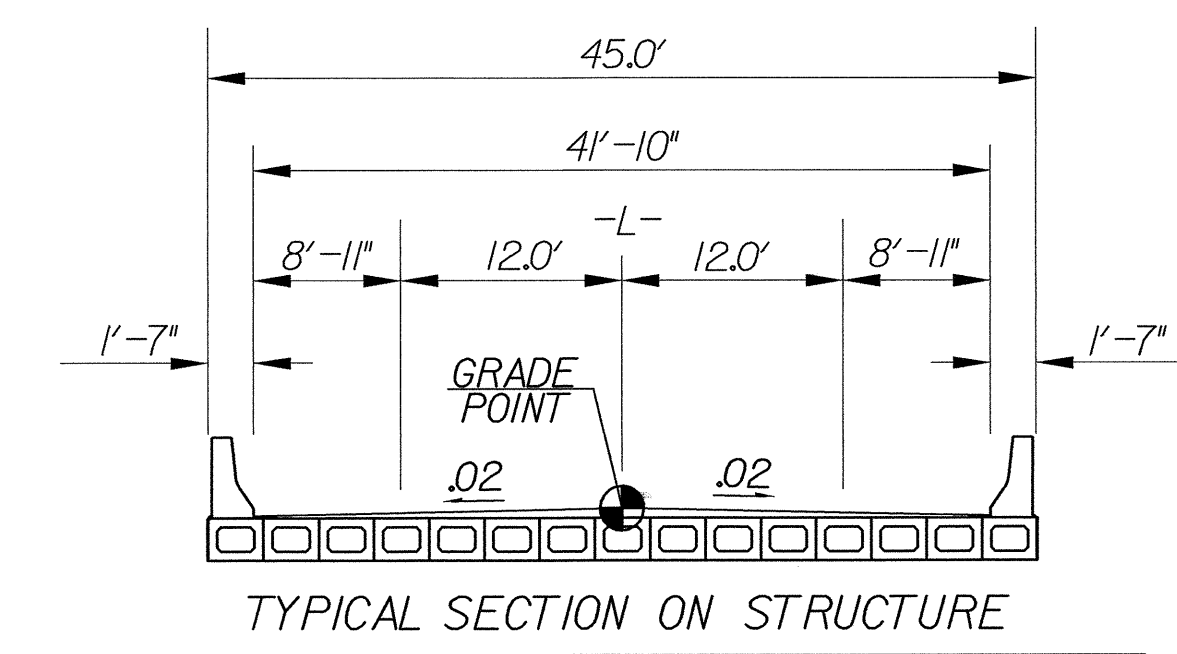
TYPICAL SECTION NO.7 (SEE SHEET 2-P)
 USE ON: DETOUR Sta.23+60.65 to Sta.25+57.00



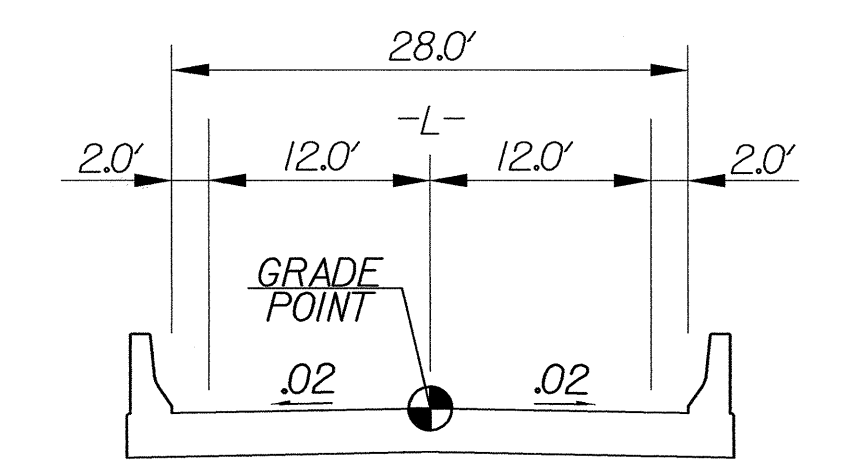
TYPICAL SECTION NO.3
 USE ON: DETOUR Sta.14+96.65 to Sta.18+45.00



TYPICAL SECTION NO.4
 USE ON: -Y1- Sta.10+57.41 TO Sta.12+00.00 (DETOUR)
 Sta.10+12.41 TO Sta.11+30.00 (FINAL)
 -Y3- Sta.10+21.68 TO Sta.11+33.33



TYPICAL SECTION ON STRUCTURE
 USE ON: -L- Sta.18+94.44 (BEGIN BRIDGE) to Sta.20+97.57 (END BRIDGE)

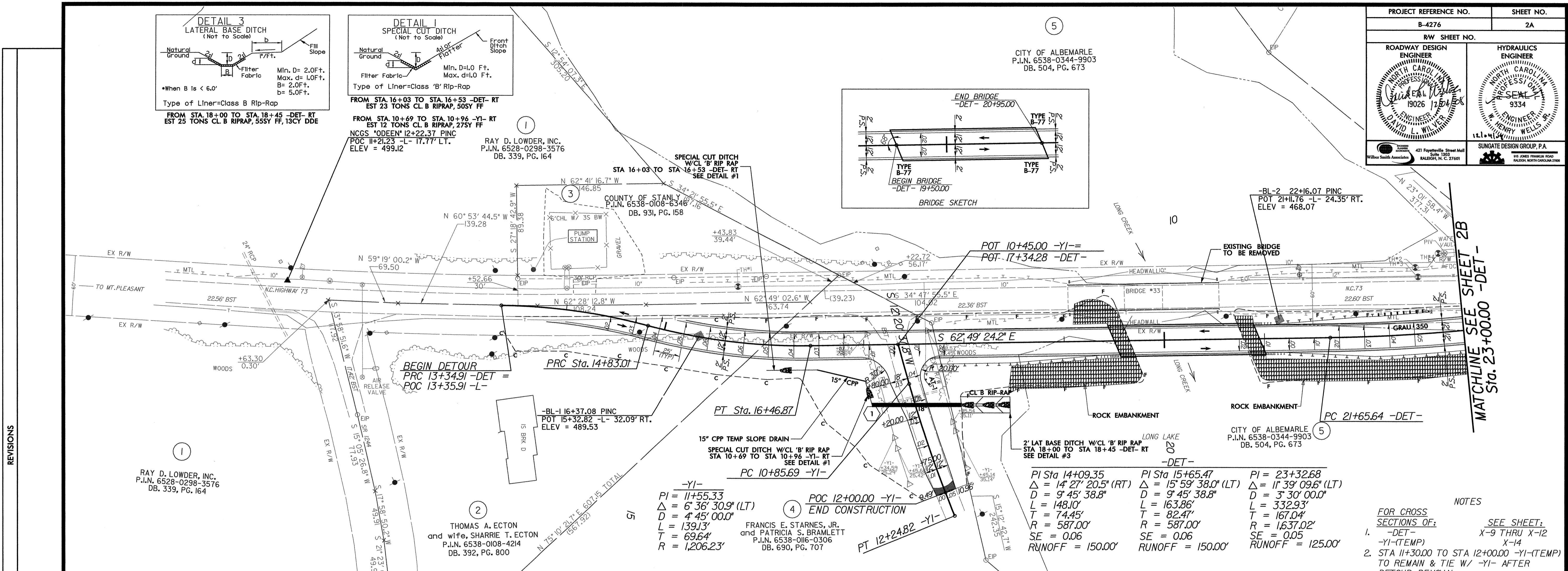
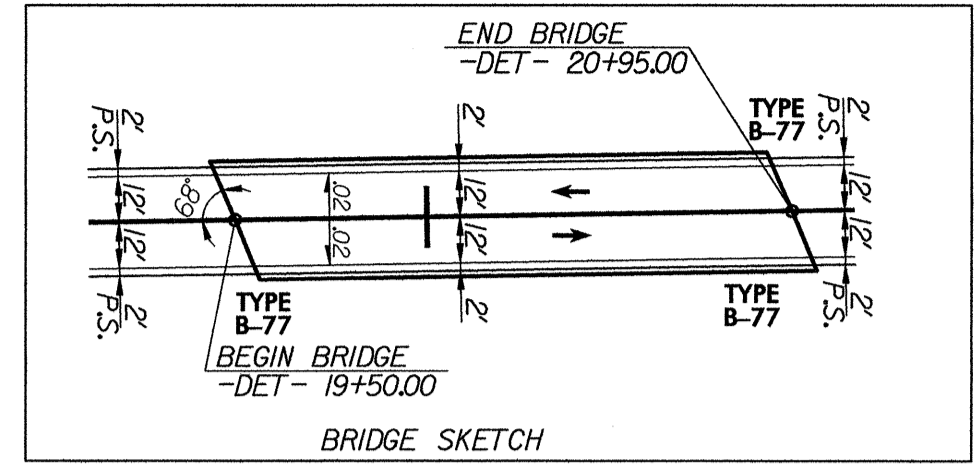
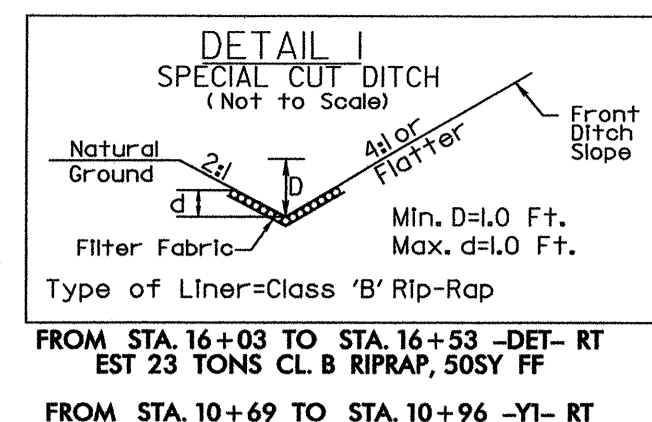
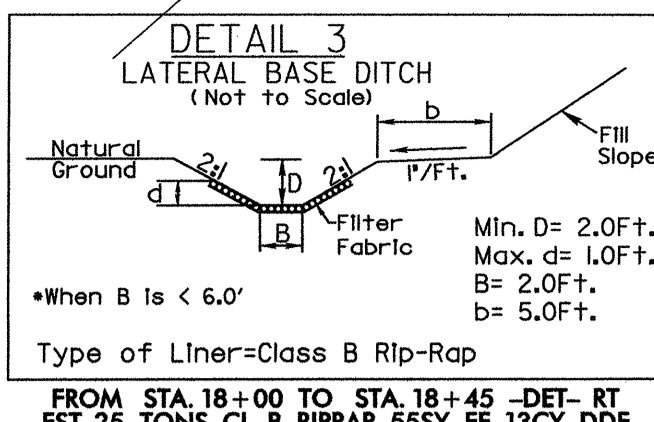


DETOUR BRIDGE
 USE ON: DETOUR Sta.19+50.00 to Sta.20+95.00

PAVEMENT SCHEDULE

ITEM	DESCRIPTION	ITEM	DESCRIPTION	ITEM	DESCRIPTION
C1	PROP. APPROX. 3 IN. ASPHALT SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS/SY IN EACH OF TWO LAYERS	E2	PROP. VAR. DEPTH ASPHALT BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS/SY PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 4" IN DEPTH OR GREATER THAN 5.5" IN DEPTH	V	MILLING
C2	PROP. VAR. DEPTH ASPHALT SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS/SY PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1.5" OR GREATER THAN 2.0" IN DEPTH	J1	PROP. 8 IN. AGGREGATE BASE COURSE	NOTES * INCREASE SHOULDER WIDTH 5' WHEN GUARDRAIL IS USED. ** INCREASE SHOULDER WIDTH 3' WHEN GUARDRAIL IS USED. ALL PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE NOTED. 4' P.S. WITH SHOULDER BERM GUTTER FROM -L- STA 21+08.50 TO STA 22+50.00 LT & RT MILL NOTCH TO TIE INTO EXISTING ASPHALT PAVEMENT AT BEGIN AND END CONSTRUCTION SAWCUT EXISTING PAVEMENT TO PROVIDE A MINIMUM 1' WIDTH OF FULL DEPTH PAVEMENT	
D1	PROP. APPROX. 4 IN. ASPHALT INT. COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS/SY	J2	PROP. 10 IN. AGGREGATE BASE COURSE		
D2	PROP. VAR. DEPTH ASPHALT INT. COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS/SY PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2.5" IN DEPTH OR GREATER THAN 4" IN DEPTH	P	PRIME COAT AT THE RATE OF 0.35 GAL/SY		
E1	PROP. APPROX. 5.5 IN. ASPHALT BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS/SY	T	EARTH MATERIAL		
		U	EXISTING PAVEMENT		
		W	WEDGING		

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REVISIONS

RAY D. LOWDER, INC.
P.I.N. 6528-0298-3576
DB. 339, PG. 164

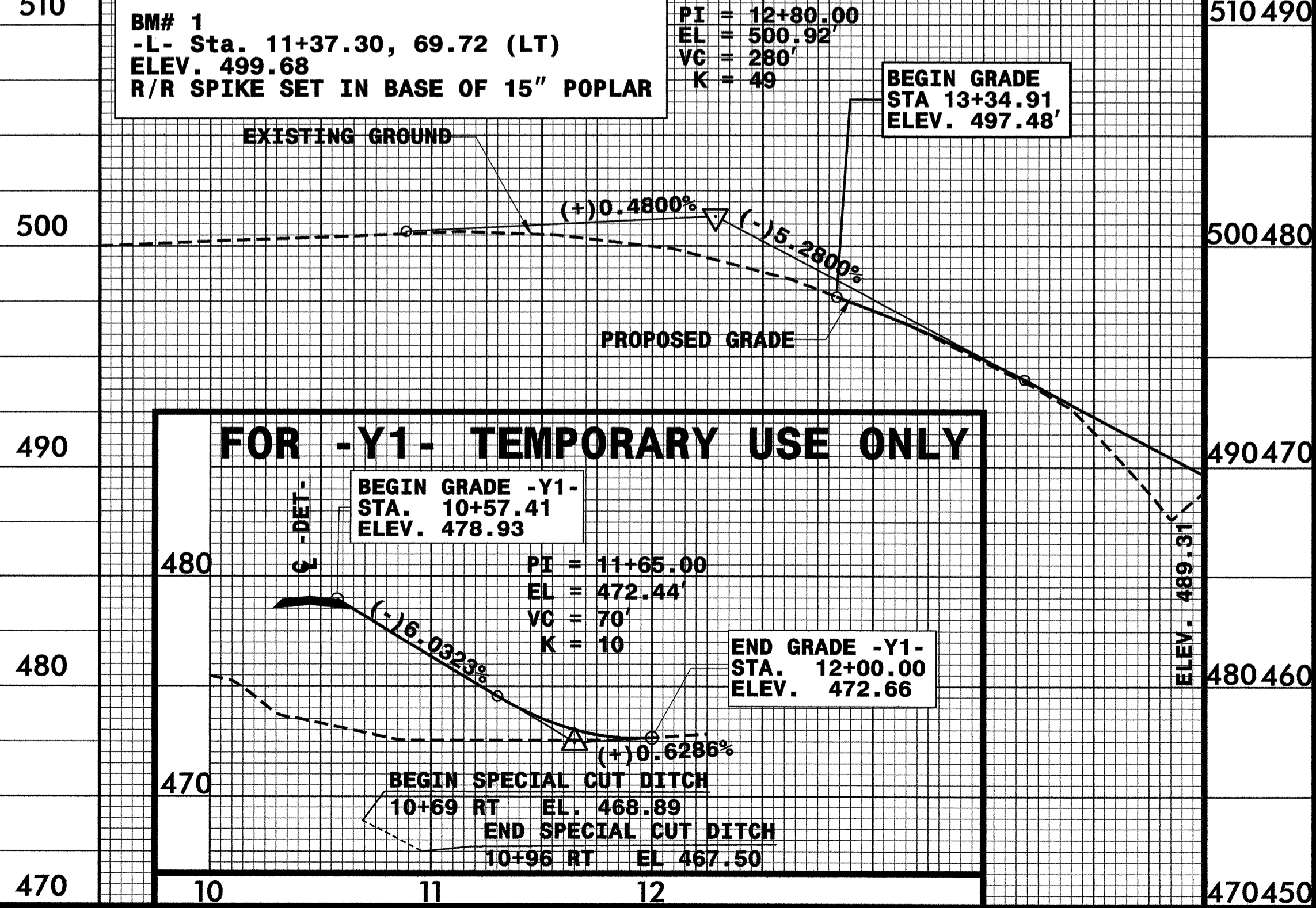
THOMAS A. ECTON
and wife, SHARRIE T. ECTON
P.I.N. 6538-0108-4214
DB. 392, PG. 800

FRANCIS E. STARNES, JR.
and PATRICIA S. BRAMLETT
P.I.N. 6538-0116-0306
DB. 690, PG. 707

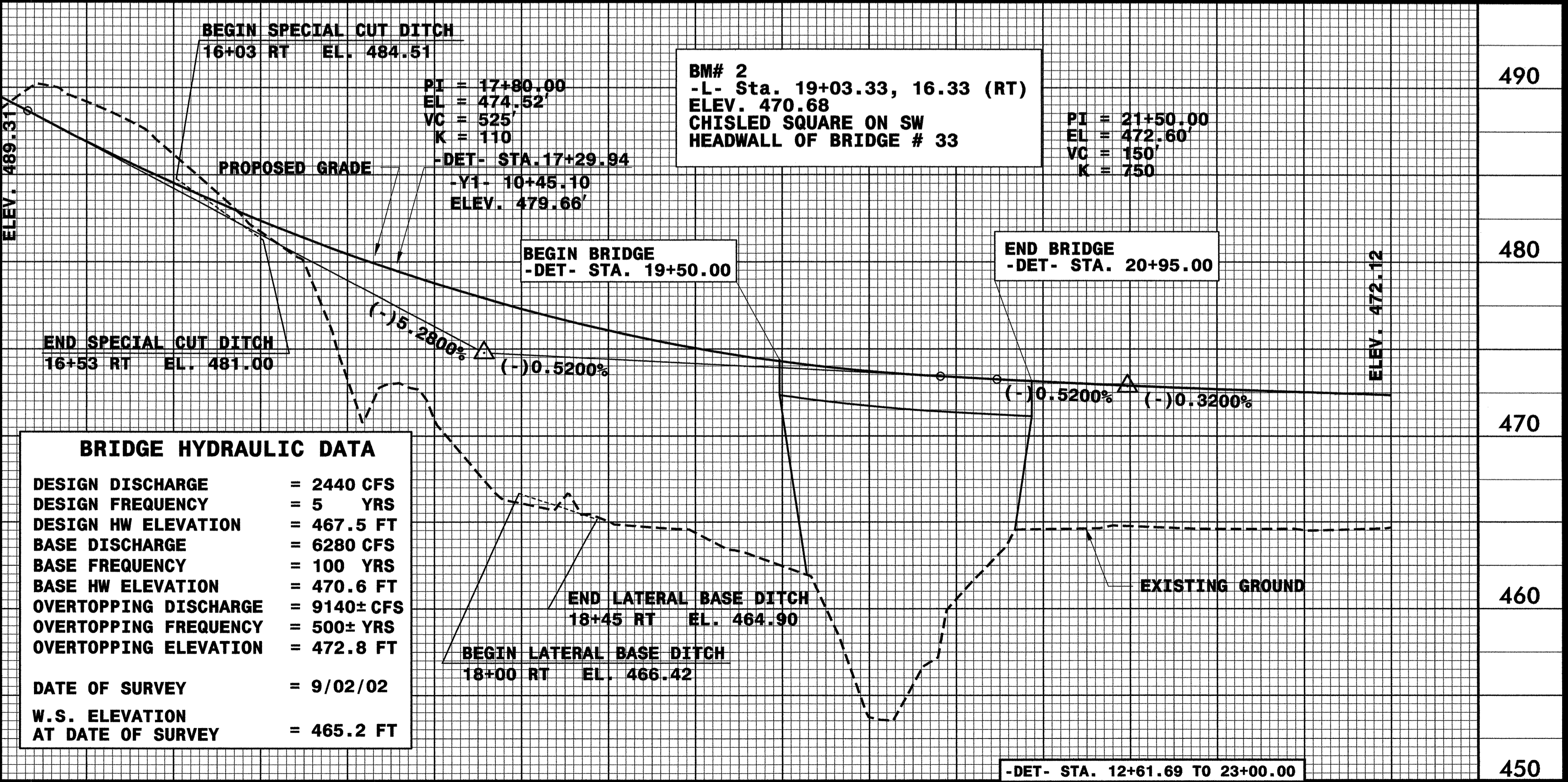
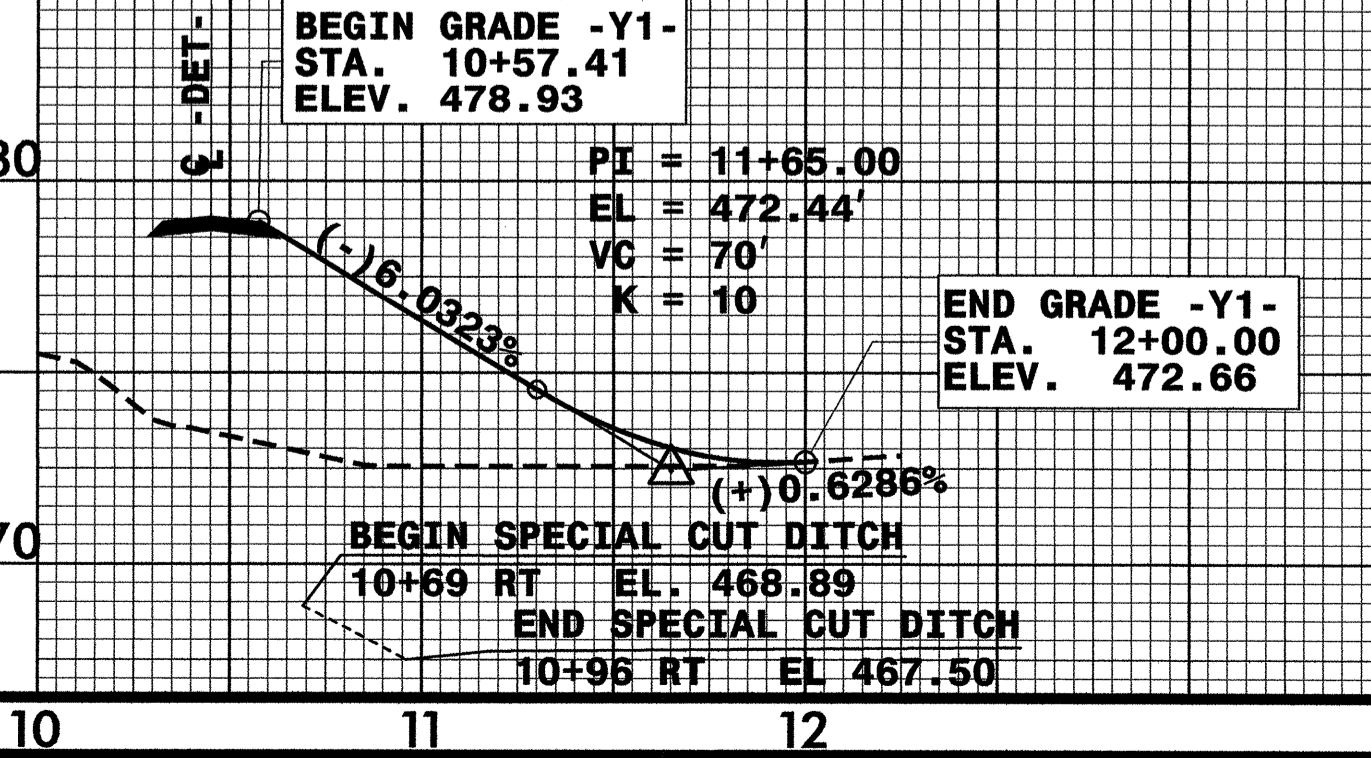
CITY OF ALBEMARLE
P.I.N. 6538-0344-9903
DB. 504, PG. 673

- NOTES
- FOR CROSS SECTIONS OF:
- DET- X-9 THRU X-12
 - Y1-(TEMP) X-14
 - STA 11+30.00 TO STA 12+00.00 -Y1-(TEMP) TO REMAIN & TIE W/ -Y1- AFTER DETOUR REMOVAL

FOR DETOUR USE ONLY



FOR -Y1- TEMPORARY USE ONLY

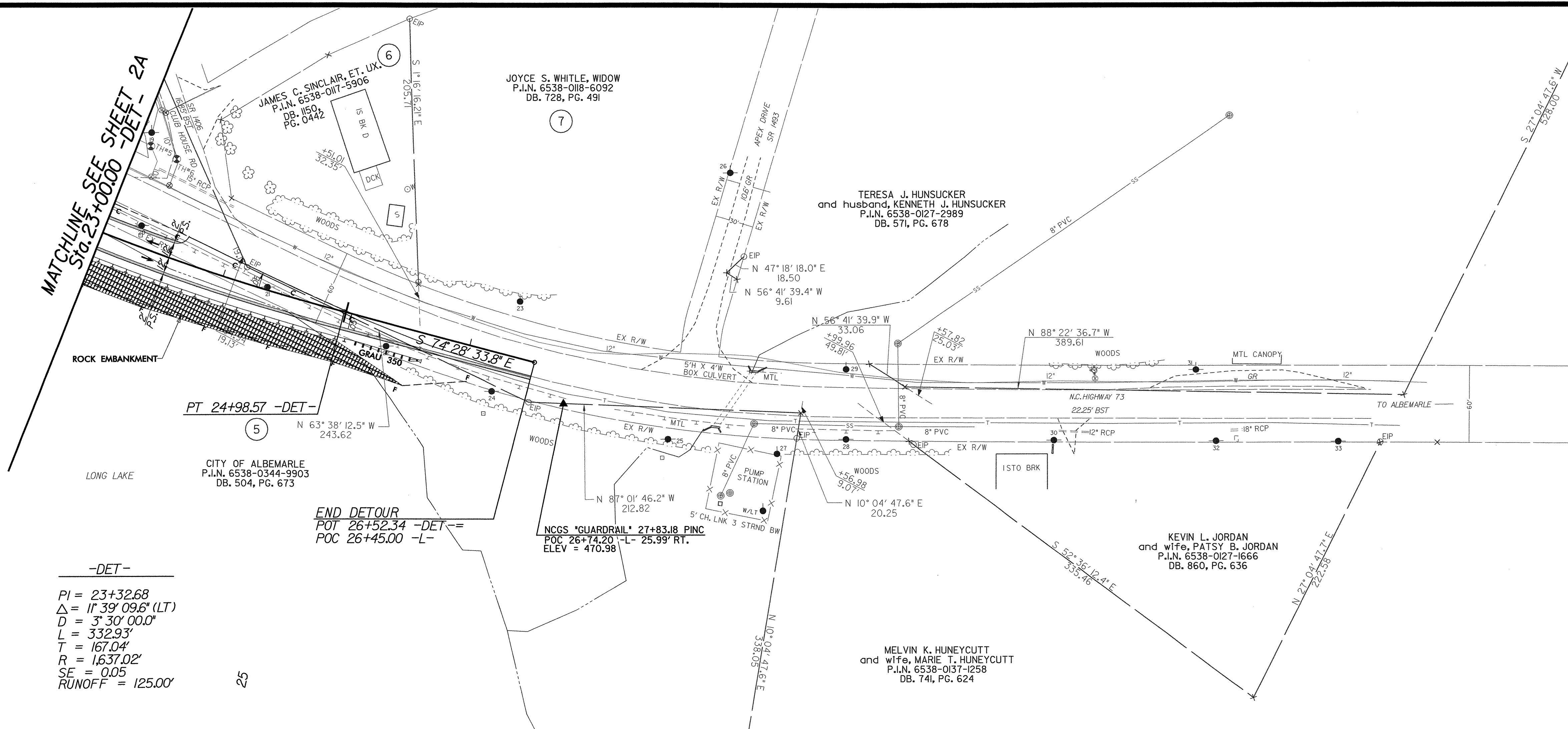


BRIDGE HYDRAULIC DATA	
DESIGN DISCHARGE	= 2440 CFS
DESIGN FREQUENCY	= 5 YRS
DESIGN HW ELEVATION	= 467.5 FT
BASE DISCHARGE	= 6280 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 470.6 FT
OVERTOPPING DISCHARGE	= 9140± CFS
OVERTOPPING FREQUENCY	= 500± YRS
OVERTOPPING ELEVATION	= 472.8 FT
DATE OF SURVEY	= 9/02/02
W.S. ELEVATION AT DATE OF SURVEY	= 465.2 FT

FILE: r:\order\4276\roadway\proj\4276_R01_191_02A.dgn
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PROJECT REFERENCE NO. B-4276	SHEET NO. 2B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER DAVID L. WILVER P.I.N. 6538-0127-2989 DB. 571, PG. 678	HYDRAULICS ENGINEER HENRY WELLS JR. P.I.N. 6538-0127-2989 DB. 571, PG. 678
SUNGATE DESIGN GROUP, P.A. 421 Fayetteville Street, Suite 1303 RALEIGH, N.C. 27601	

MATCHLINE SEE SHEET 2A
Sta. 23+00.00 -DET-



PT 24+98.57 -DET-
N 63° 38' 12.5" W
243.62

CITY OF ALBEMARLE
P.I.N. 6538-0344-9903
DB. 504, PG. 673

END DETOUR
POT 26+52.34 -DET-
POC 26+45.00 -L-

NGCS "GUARDRAIL" 27+83.18 P.I.N.C
POC 26+74.20 -L- 25.99' RT.
ELEV = 470.98

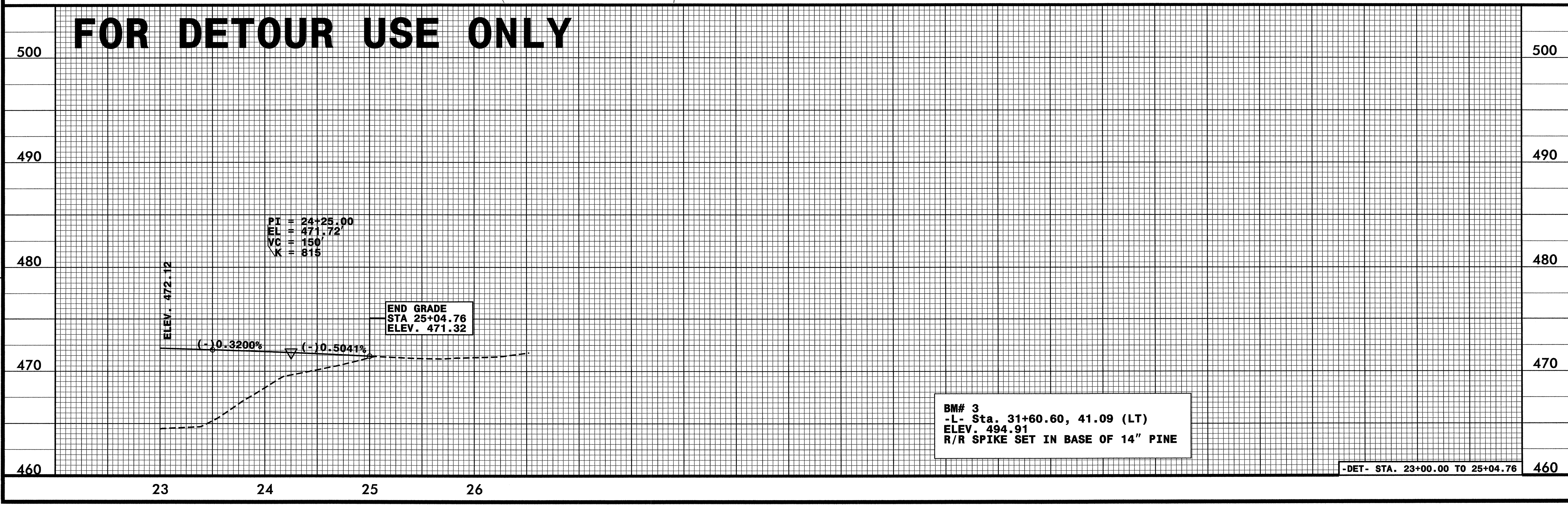
MELVIN K. HUNEYCUTT
and wife, MARIE T. HUNEYCUTT
P.I.N. 6538-0137-1258
DB. 741, PG. 624

KEVIN L. JORDAN
and wife, PATSY B. JORDAN
P.I.N. 6538-0127-1666
DB. 860, PG. 636

-DET-
PI = 23+32.68
Δ = 11° 39' 09.6" (LT)
D = 3° 30' 00.0"
L = 332.93'
T = 167.04'
R = 1637.02'
SE = 0.05
RUNOFF = 125.00'

NOTES
FOR CROSS SECTIONS OF:
I. DETOUR
SEE SHEET:
X-12 THRU X-13

FOR DETOUR USE ONLY



PT = 24+25.00
EL = 471.72
VC = 150
K = 815

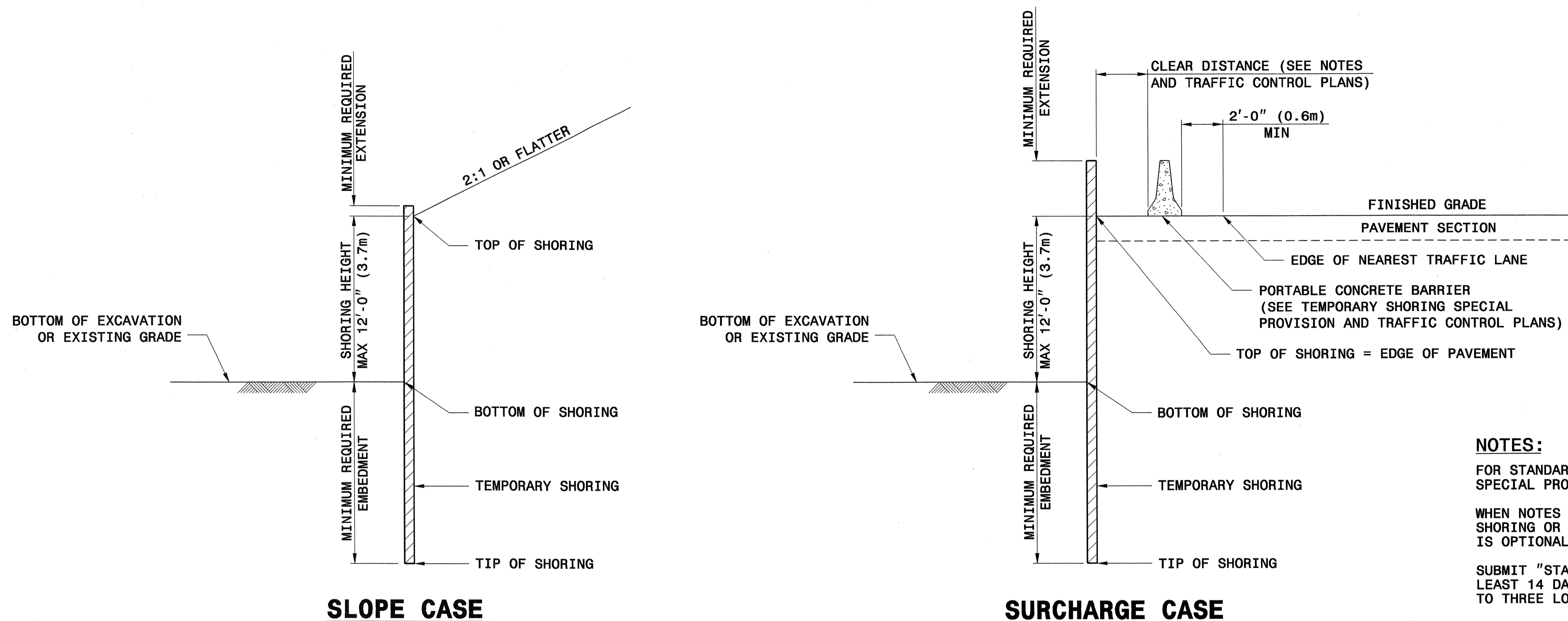
END GRADE
STA 25+04.76
ELEV. 471.32

BM# 3
-L- Sta. 31+60.60, 41.09 (LT)
ELEV. 494.91
R/R SPIKE SET IN BASE OF 14" PINE

-DET- STA. 23+00.00 TO 25+04.76

REVISIONS

FILE: r:\ncor\14276\roadway\proj\14276_RDY_PSH_02b.dgn
DATE: 10/26/08 10:21 PM



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			SHEET PILES		H PILES WITH TIMBER LAGGING		
		MINIMUM REQUIRED EMBEDMENT FT (m)	MINIMUM REQUIRED SECTION MODULUS IN ³ /FT (cm ³ /m)	MINIMUM REQUIRED EMBEDMENT FT (m)			MINIMUM REQUIRED EMBEDMENT FT (m)	MINIMUM REQUIRED SECTION MODULUS IN ³ /FT (cm ³ /m)	MINIMUM REQUIRED EMBEDMENT FT (m)		
			HP 10x42 (HP 250x62)	HP 12x53 (HP 310x79)	HP 14x73 (HP 360x108)			HP 10x42 (HP 250x62)	HP 12x53 (HP 310x79)	HP 14x73 (HP 360x108)	
GROUNDWATER ELEVATION BELOW TIP OF SHORING	< 6 (1.8)	7.5 (2.3)	3.0 (161)	8.0 (2.4)	8.0 (2.4)	8.0 (2.4)	11.0 (3.4)	10.0 (538)	9.5 (2.9)	9.5 (2.9)	9.5 (2.9)
	7 (2.1)	8.5 (2.6)	4.5 (242)	9.5 (2.9)	9.5 (2.9)	9.5 (2.9)	12.0 (3.7)	12.0 (645)	10.5 (3.2)	10.5 (3.2)	10.5 (3.2)
	8 (2.4)	10.0 (3.0)	6.5 (349)	10.5 (3.2)	10.5 (3.2)	10.5 (3.2)	12.5 (3.8)	14.0 (753)	11.5 (3.5)	11.5 (3.5)	11.5 (3.5)
	9 (2.7)	11.0 (3.4)	9.5 (511)	--	12.0 (3.7)	12.0 (3.7)	13.5 (4.1)	16.5 (887)	--	12.5 (3.8)	12.5 (3.8)
	10 (3.0)	12.5 (3.8)	13.0 (699)	--	--	13.5 (4.1)	14.0 (4.3)	19.5 (1048)	--	13.5 (4.1)	13.5 (4.1)
	11 (3.4)	13.5 (4.1)	17.0 (914)	--	--	14.5 (4.4)	15.0 (4.6)	22.5 (1210)	--	--	14.5 (4.4)
GROUNDWATER ELEVATION BETWEEN BOTTOM OF SHORING AND TIP OF SHORING	< 6 (1.8)	11.5 (3.5)	4.5 (242)	11.5 (3.5)	11.5 (3.5)	11.5 (3.5)	16.0 (4.9)	12.0 (645)	13.0 (4.0)	13.0 (4.0)	13.0 (4.0)
	7 (2.1)	13.0 (4.0)	7.0 (376)	13.0 (4.0)	13.0 (4.0)	13.0 (4.0)	17.0 (5.2)	14.5 (780)	14.5 (4.4)	14.5 (4.4)	14.5 (4.4)
	8 (2.4)	15.0 (4.6)	10.0 (538)	--	15.0 (4.6)	15.0 (4.6)	18.0 (5.5)	17.0 (914)	--	15.5 (4.7)	15.5 (4.7)
	9 (2.7)	17.0 (5.2)	14.0 (753)	--	17.0 (5.2)	17.0 (5.2)	19.0 (5.8)	20.0 (1075)	--	17.0 (5.2)	17.0 (5.2)
	10 (3.0)	18.5 (5.6)	19.5 (1048)	--	--	18.5 (5.6)	20.0 (6.1)	23.5 (1263)	--	--	18.5 (5.6)
	11 (3.4)	20.5 (6.3)	26.0 (1398)	--	--	--	21.0 (6.4)	28.0 (1505)	--	--	20.0 (6.1)
12 (3.7)	22.5 (6.9)	33.0 (1774)	--	--	--	22.0 (6.7)	33.0 (1774)	--	--	21.5 (6.6)	

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

STANDARD TEMPORARY MSE WALL OPTIONS

PROJECT REFERENCE NO. SHEET

B-4276

2-D

GEOTECHNICAL ENGINEER

ENGINEER



Scott A. Shidden 3/29/07
SIGNATURE DATE

TEMPORARY MSE WALL OPTION	VENDOR	CONTACT INFORMATION	REINFORCEMENT TYPE	SHEETS
TEMPORARY FABRIC WALL	N/A	N/A	POLYESTER OR POLYPROPYLENE FABRIC	3
HILFIKER TEMPORARY WALL	HILFIKER RETAINING WALLS	1902 HILFIKER LANE, EUREKA, CA 95503-5711 707-443-5093 WWW.HILFIKER.COM	WELDED WIRE MAT	4
SIERRASCAPE TEMPORARY WALL	TENSAR EARTH TECHNOLOGIES, INC	5883 GLENRIDGE DRIVE, SUITE 200 ATLANTA, GA 30328-5363 404-250-1290 WWW.TENSARCORP.COM	GEOGRID	5
RETAINED EARTH TEMPORARY WALL	THE REINFORCED EARTH COMPANY	8614 WESTWOOD CENTER DRIVE, SUITE 1100 VIENNA, VA 22182-2233 703-749-4325 WWW.REINFORCEDEARTH.COM	WELDED WIRE MESH	6-8
TERRATREL TEMPORARY WALL	THE REINFORCED EARTH COMPANY	8614 WESTWOOD CENTER DRIVE, SUITE 1100 VIENNA, VA 22182-2233 703-749-4325 WWW.REINFORCEDEARTH.COM	RIBBED STEEL STRIPS	9-11

FOR STANDARD TEMPORARY MSE WALLS, SEE TEMPORARY SHORING SPECIAL PROVISION.

WHEN NOTES ON PLANS DO NOT PROHIBIT TEMPORARY MSE WALLS OR STANDARD SHORING, STANDARD TEMPORARY MSE WALLS ARE OPTIONAL.

WHEN NOTES ON PLANS REQUIRE TEMPORARY MSE WALLS, USE STANDARD TEMPORARY MSE WALLS OR CONTRACTOR DESIGNED TEMPORARY MSE WALLS.

WHEN THE ALIGNMENT OF STANDARD TEMPORARY MSE WALLS RESULTS IN AN INTERIOR ANGLE LESS THAN 90 DEGREES, SUBMIT AN ACUTE CORNER DETAIL FOR THE SPECIFIC SITUATION IN ACCORDANCE WITH THE WALL VENDOR RECOMMENDATIONS. ALSO, SUBMIT A "STANDARD TEMPORARY MSE WALL SELECTION FORM" FOR EACH TEMPORARY MSE WALL LOCATION. SUBMIT THESE ITEMS AT LEAST 14 DAYS BEFORE BEGINNING WALL CONSTRUCTION.

STANDARD TEMPORARY MSE WALLS ARE BASED ON THE FOLLOWING CONDITIONS:

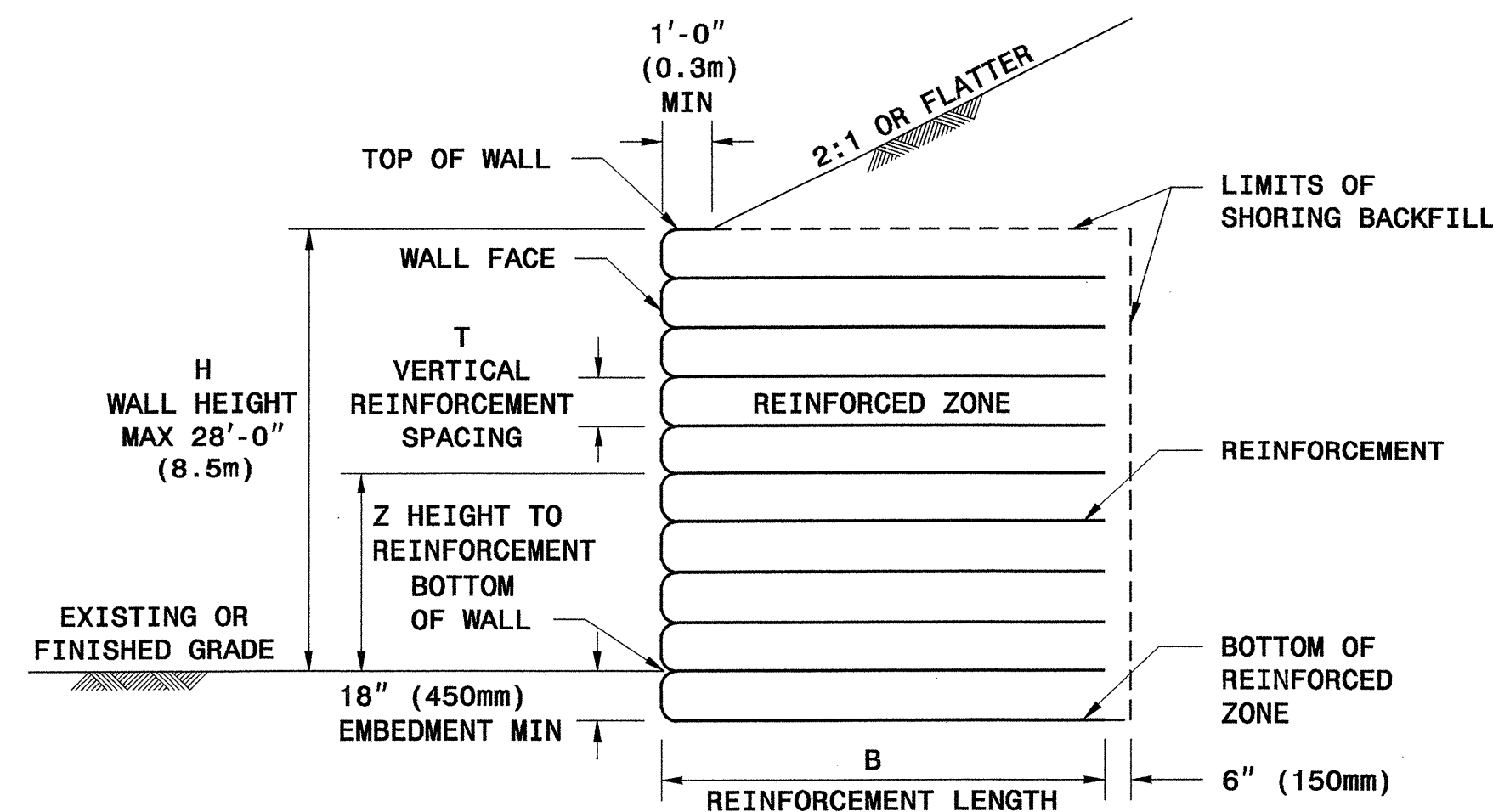
- 1) MAXIMUM WALL HEIGHT IS 28'-0" (8.5m).
- 2) TRAFFIC SURCHARGE IS 240 PSF (11.5 KPA) MAXIMUM OR BACKSLOPE IS 2:1 (H:V) OR FLATTER.
- 3) EXISTING OR FINISHED GRADE IN FRONT OF WALL IS 6:1 (H:V) SLOPE OR FLATTER.
- 4) THE GRADE OF THE TOP OF WALL IS LESS THAN 4% FOR RETAINED EARTH AND TERRATREL TEMPORARY WALLS.
- 5) DESIGN SERVICE LIFE IS 3 YEARS.
- 6) MATERIAL IN REINFORCED ZONE IS SHORING BACKFILL.
- 7) MAXIMUM APPLIED BEARING PRESSURE IS 1 TSF (100 KPA) FOR WALL HEIGHTS UP TO 8'-0" (2.4m), 2 TSF (195 KPA) FOR WALL HEIGHTS BETWEEN 8'-0" AND 18'-0" (2.4m AND 5.5m) AND 3 TSF (290 KPA) FOR WALL HEIGHTS OVER 18'-0" (5.5m).

STANDARD TEMPORARY MSE WALLS ARE BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:

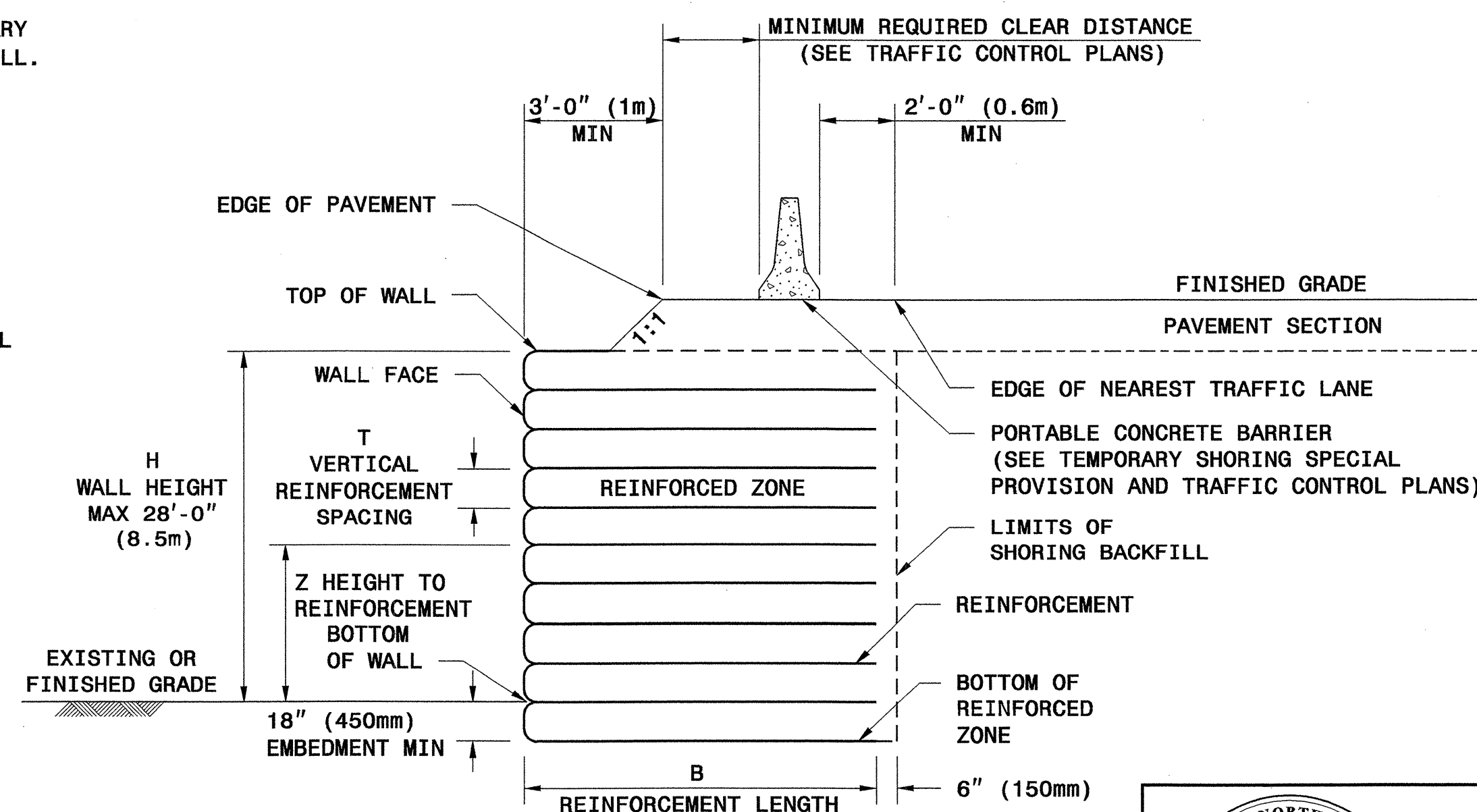
- TOTAL UNIT WEIGHT = 120 PCF (18.8 KN/m³)
- FRICTION ANGLE = 30 DEGREES
- COHESION = 0 PSF (0 KPA)
- GROUNDWATER IS ASSUMED TO BE BELOW BOTTOM OF REINFORCED ZONE.

DO NOT USE STANDARD TEMPORARY MSE WALLS WHEN THE ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE OR VERY LOOSE OR SOFT SOIL OR MUCK IS PRESENT BELOW THE BOTTOM OF REINFORCED ZONE.

CONTROL DRAINAGE DURING CONSTRUCTION IN THE VICINITY OF STANDARD TEMPORARY MSE WALLS. COLLECT AND DIRECT RUNOFF AWAY FROM WALLS AND SHORING BACKFILL.



SLOPE CASE



SURCHARGE CASE

PLACE REINFORCEMENT AT LOCATIONS AND ELEVATIONS SHOWN ON THE STANDARD TEMPORARY MSE WALL DETAILS AND IN SLIGHT TENSION FREE OF KINKS, FOLDS, WRINKLES OR CREASES.

DO NOT SPLICE REINFORCEMENT IN THE REINFORCEMENT DIRECTION (RD), i.e., PARALLEL TO THE WALL FACE. SEAMS ARE ALLOWED IN THE CROSS-REINFORCEMENT DIRECTION (CRD).

CONTACT THE ENGINEER WHEN EXISTING OR FUTURE STRUCTURES SUCH AS FOUNDATIONS, PAVEMENTS, PIPES, INLETS OR UTILITIES WILL INTERFERE WITH REINFORCEMENT. TO AVOID STRUCTURES, DEFLECT, SKEW AND MODIFY REINFORCEMENT.

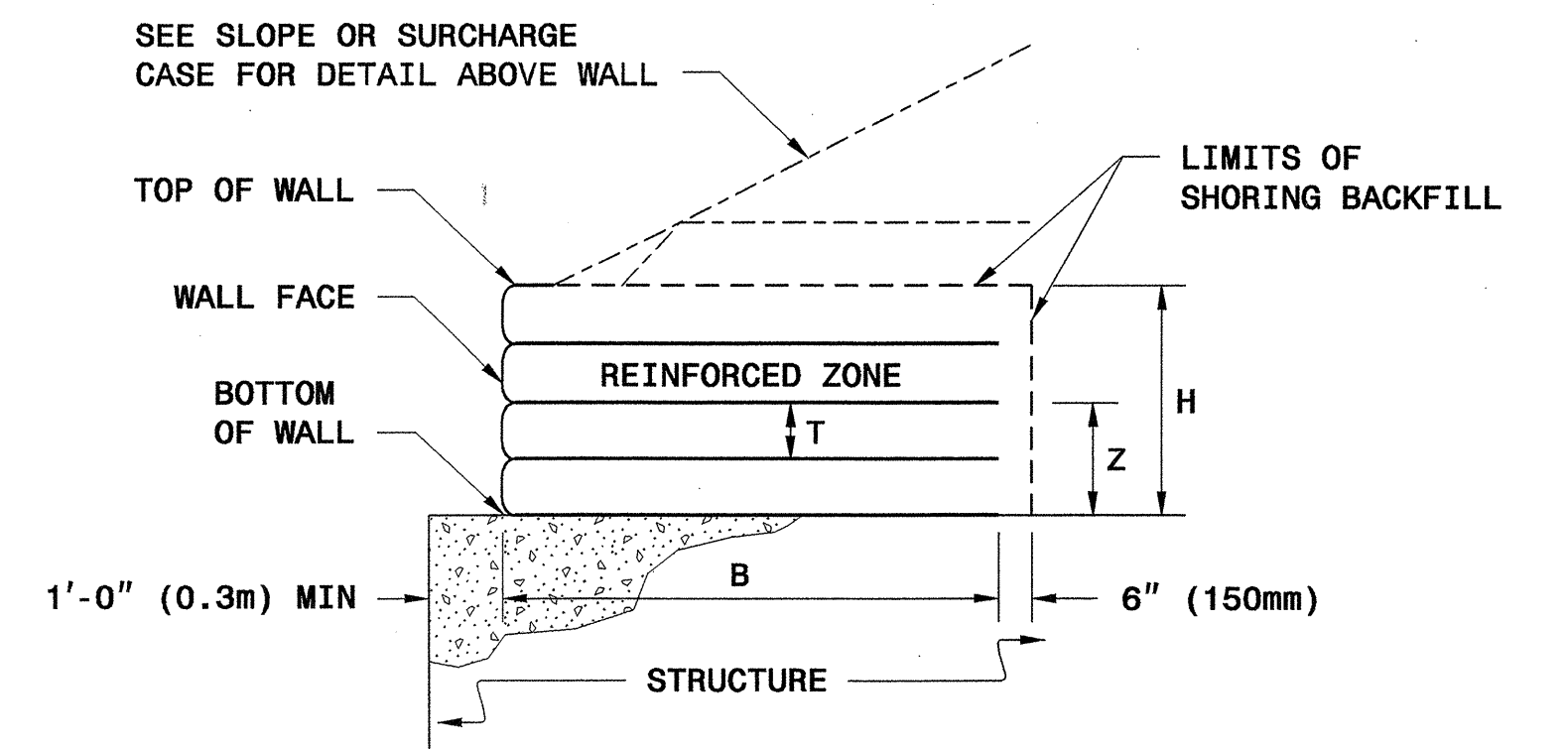
PLACE SHORING BACKFILL IN 8" TO 10" (200mm to 250mm) THICK LIFTS AND COMPACT IN ACCORDANCE WITH SUBARTICLE 235-4(C) OF THE STANDARD SPECIFICATIONS. USE ONLY HAND OPERATED COMPACTION EQUIPMENT WITHIN 3'-0" (1m) OF THE WALL FACE.

DO NOT DAMAGE REINFORCEMENT WHEN PLACING AND COMPACTING SHORING BACKFILL. DO NOT OPERATE HEAVY EQUIPMENT ON REINFORCEMENT UNTIL IT IS COVERED WITH AT LEAST 10" (250mm) OF SHORING BACKFILL. DO NOT USE SHEEPSFOOT, GRID ROLLERS OR OTHER TYPES OF COMPACTION EQUIPMENT WITH FEET.

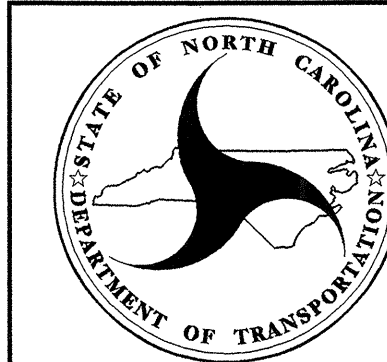
COVER REINFORCING AND RETENTION FABRIC WITH AT LEAST 3" (75mm) OF SHORING BACKFILL. PLACE TOP REINFORCEMENT LAYER BETWEEN 4" AND 24" (100mm and 600mm) BELOW TOP OF WALL DEPENDING ON WALL OPTION.

BENCH STANDARD TEMPORARY MSE WALLS INTO THE SIDES OF EXCAVATIONS WHERE APPLICABLE.

IF THE TOP OF WALL IS WITHIN 5'-0" (1.5m) OF FINISHED GRADE, REMOVE TOP FORM OR FACING AND INCORPORATE THE TOP REINFORCEMENT LAYER INTO THE FILL WHEN PLACING FILL IN FRONT OF THE WALL. STANDARD TEMPORARY MSE WALLS REMAIN IN PLACE PERMANENTLY UNLESS REQUIRED OTHERWISE.



TEMPORARY MSE WALL ON STRUCTURE



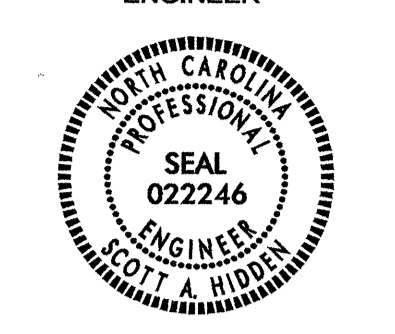
GEOTECHNICAL ENGINEERING UNIT
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD DRAWING NO. 1801.02

STANDARD TEMPORARY MECHANICALLY STABILIZED EARTH (MSE) WALLS

SHEET 1 OF 11

DATE: 2-20-07


 GEOTECHNICAL ENGINEER
 ENGINEER
 Scott A. Shadden 3/29/07
 SIGNATURE DATE SIGNATURE DATE

HOW TO USE THIS SHEET:

- FOR ALL WALL OPTIONS, DETERMINE MINIMUM REQUIRED REINFORCEMENT LENGTH (B) FROM TABLE AT RIGHT BASED ON WALL HEIGHT (H) AND SLOPE OR SURCHARGE CASE
- FOR STANDARD TEMPORARY FABRIC WALL, SEE SHEET 3 FOR FABRIC STRENGTH REQUIREMENTS BASED ON WALL HEIGHT (H)
- FOR ALL OTHER WALL OPTIONS, DETERMINE REINFORCEMENT TYPE FROM TABLES BELOW FOR EACH HEIGHT TO REINFORCEMENT (Z) BASED ON WALL HEIGHT (H) AND SLOPE OR SURCHARGE CASE

MINIMUM REQUIRED REINFORCEMENT LENGTH B (FT)

(FOR ALL WALL OPTIONS)

WALL HEIGHT H (FT)	<8	8 TO 10	10 TO 12	12 TO 14	14 TO 16	16 TO 18	18 TO 20	20 TO 22	22 TO 24	24 TO 26	26 TO 28
SLOPE CASE	8	11	13	14	16	18	20	22	24	25	27
SURCHARGE CASE	8	9	11	12	14	15	16	18	19	21	22

TERRATREL TEMPORARY WALL (STRIPS PER LEVEL PER PANEL)

H (FT)

	4 TO 6	6 TO 8	8 TO 10	10 TO 12	12 TO 14	14 TO 16	16 TO 18	18 TO 20	20 TO 22	22 TO 24	24 TO 26	26 TO 28
27 - 8											3	
26 - 10										3	3	
25 - 2										3	3	
23 - 6										3	3	
21 - 10										3	3	
20 - 2										3	3	
18 - 6										3	3	
16 - 10										3	3	
15 - 2										3	3	
13 - 6										3	3	
11 - 10										4	4	
10 - 2										4	4	
8 - 6										5	5	
6 - 10										5	5	
5 - 2										5	5	
3 - 6										5	5	
1 - 10										5	5	
0 - 2										5	5	
-0 - 8										5	5	

Z (FT-INCHES)

SLOPE AND SURCHARGE CASES

SIERRASCAPE TEMPORARY WALL (GEOGRID TYPE)

11 = UX1100MSE 16 = UX1600MSE
14 = UX1400MSE 17 = UX1700MSE
15 = UX1500MSE

H (FT)

	4 TO 6	6 TO 8	8 TO 10	10 TO 12	12 TO 14	14 TO 16	16 TO 18	18 TO 20	20 TO 22	22 TO 24	24 TO 26	26 TO 28
27 - 8												11
26 - 10												11
25 - 2												11
24 - 4												11
23 - 6												11
22 - 8												11
21 - 10												11
20 - 2												11
19 - 4												11
18 - 6												11
17 - 8												11
16 - 10												11
15 - 2												11
14 - 4												11
13 - 6												11
12 - 8												11
11 - 10												11
10 - 2												11
9 - 4												11
8 - 6												11
7 - 8												11
6 - 10												11
5 - 2												11
4 - 4												11
3 - 6												11
2 - 8												11
1 - 10												11
0 - 2												11
-1.5												11

Z (FT)

SLOPE CASE

H (FT)

	4 TO 6	6 TO 8	8 TO 10	10 TO 12	12 TO 14	14 TO 16	16 TO 18	18 TO 20	20 TO 22	22 TO 24	24 TO 26	26 TO 28
27 - 8												11
26 - 10												11
25 - 2												11
24 - 4												11
23 - 6												11
22 - 8												11
21 - 10												11
20 - 2												11
19 - 4												11
18 - 6												11
17 - 8												11
16 - 10												11
15 - 2												11
14 - 4												11
13 - 6												11
12 - 8												11
11 - 10												11
10 - 2												11
9 - 4												11
8 - 6												11
7 - 8												11
6 - 10												11
5 - 2												11
4 - 4												11
3 - 6												11
2 - 8												11
1 - 10												11
0 - 2												11
-1.5												11

Z (FT)

SURCHARGE CASE

HILFIKER TEMPORARY WALL (WELDED WIRE MAT TYPE)

4.5 = W4.5 x W3.5
7.0 = W7.0 x W3.5
9.5 = W9.5 x W4.0

H (FT)

	4 TO 6	6 TO 8	8 TO 10	10 TO 12	12 TO 14	14 TO 16	16 TO 18	18 TO 20	20 TO 22	22 TO 24	24 TO 26	26 TO 28
26											4.5	
24											4.5	
22											4.5	
20											4.5	
18											4.5	
16											4.5	
14											4.5	
12											4.5	
10											4.5	
8											4.5	
6											4.5	
4											4.5	
3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7.0
2	4.5	7.0	7.0	7.0	7.0	7.0	9.5	9.5	9.5	9.5	9.5	7.0
1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7.0
0	7.0	7.0	7.0	7.0	7.0	7.0	9.5	9.5	9.5	9.5	9.5	7.0
-1.5	7.0	7.0	7.0	7.0	7.0	7.0	9.5	9.5	9.5	9.5	9.5	7.0

Z (FT)

SLOPE CASE

H (FT)

	4 TO 6	6 TO 8	8 TO 10	10 TO 12	12 TO 14	14 TO 16	16 TO 18	18 TO 20	20 TO 22	22 TO 24	24 TO 26	26 TO 28
26											4.5	
24											4.5	
22											4.5	
20											4.5	
18											4.5	
16											4.5	
14											4.5	
12											4.5	
10											4.5	
8											4.5	
6											4.5	
4											4.5	
3	4.5	7.0	7.0	7.0	7.0	7.0	9.5	9.5	9.5	9.5	9.5	7.0
2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7.0
1	7.0	7.0	7.0	7.0	7.0	7.0	9.5	9.5	9.5	9.5	9.5	7.0
0	7.0	7.0	7.0	7.0	7.0	7.0	9.5	9.5	9.5	9.5	9.5	7.0
-1.5	7.0	7.0	7.0	7.0	7.0	7.0	9.5	9.5	9.5	9.5	9.5	7.0

Z (FT)

SURCHARGE CASE

RETAINED EARTH TEMPORARY WALL (WELDED WIRE MESH TYPE)

3X1 = 3W8 x W8 x 1.0'
3X2 = 3W8 x W8 x 2.0'

H (FT)

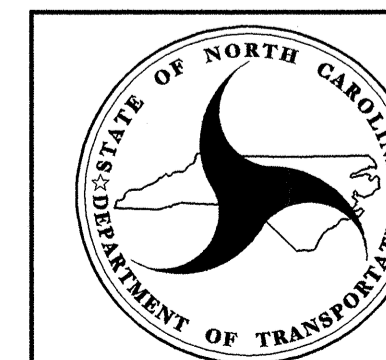
	4 TO 6	6 TO 8	8 TO 10	10 TO 12	12 TO 14	14 TO 16	16 TO 18	18 TO 20	20 TO 22	22 TO 24	24 TO 26	26 TO 28
26												3X1
25 - 2												3X1
23 - 6												3X1
21 - 10												3X1
20 - 2												3X1
18 - 6												3X1
16 - 10												3X1
15 - 2												3X1
13 - 6												3X1
11 - 10												3X1
10 - 2												3X1
8 - 6												3X1
6 - 10												3X1
5 - 2												3X1
3 - 6												3X1
1 - 10												3X1
0 - 2												3X1
-1.5												3X1

Z (FT-INCHES)

SLOPE AND SURCHARGE CASES

NOTES FOR HILFIKER TEMPORARY WALL

- 1) CAP MAT AT TOP OF WALL IS NOT INCLUDED IN TABLES.
- 2) REINFORCEMENT IS NOT REQUIRED AT 1' LEVEL FOR SLOPE CASE UNTIL WALL HEIGHT (H) IS GREATER THAN 24'.
- 3) REINFORCEMENT IS NOT REQUIRED AT 3' LEVEL FOR SLOPE CASE UNTIL WALL HEIGHT (H) IS GREATER THAN 26'.
- 4) REINFORCEMENT IS NOT REQUIRED AT 1' LEVEL FOR SURCHARGE CASE UNTIL WALL HEIGHT (H) IS GREATER THAN 26'.



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RALEIGH

STANDARD DRAWING NO. 1801.02

STANDARD TEMPORARY MSE WALL REINFORCEMENT TABLES - ENGLISH UNITS

GEOTECHNICAL ENGINEER

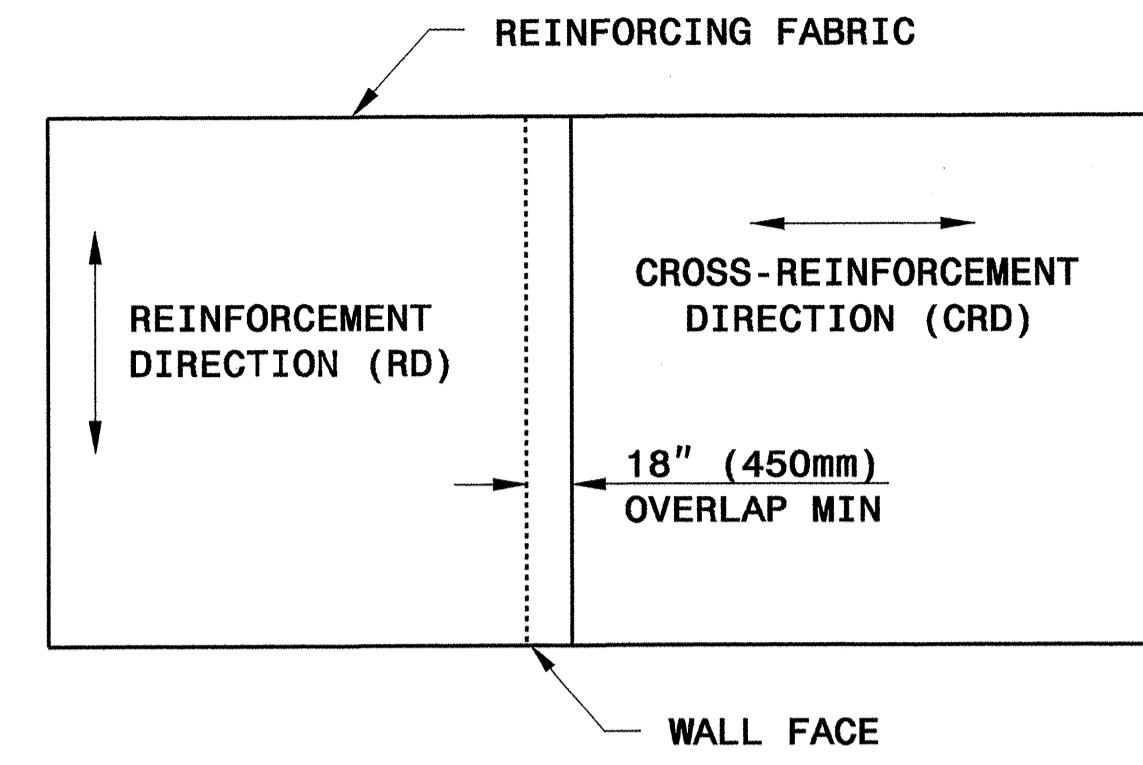
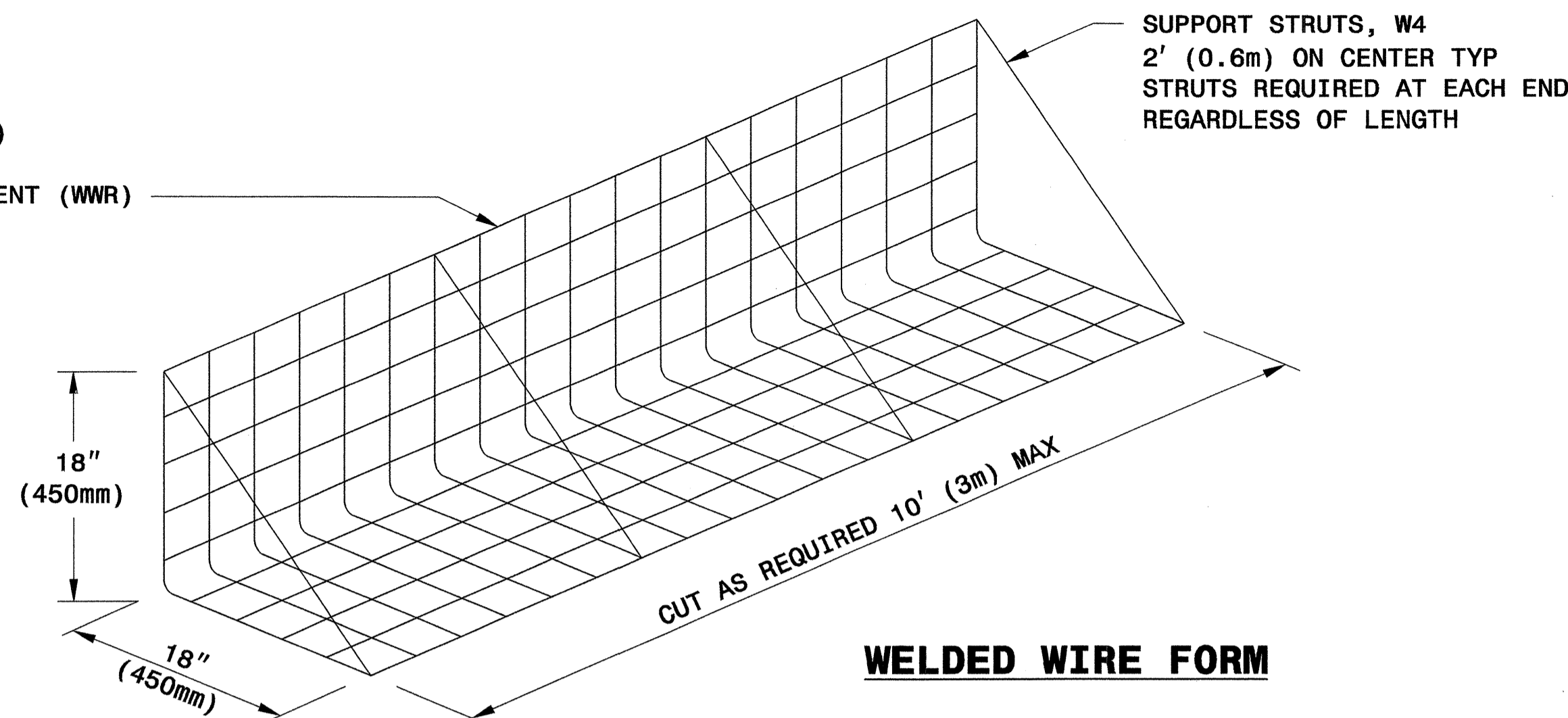
ENGINEER



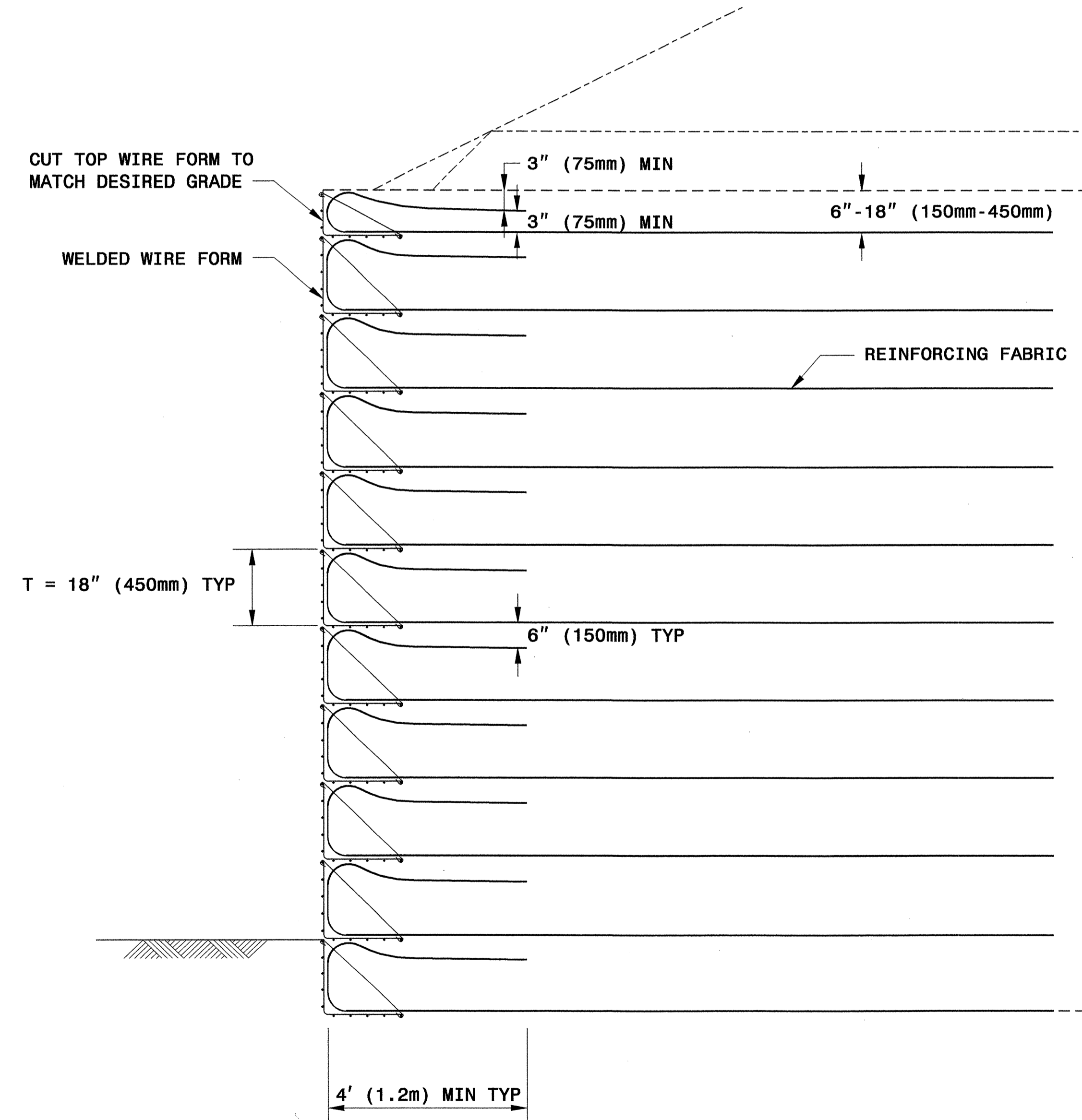
Scott A. Shidden
SIGNATURE DATE

SIGNATURE DATE

4" X 4" (102mm X 102mm)
W4 X W4 (MW26 X MW26)
WELDED WIRE REINFORCEMENT (WWR)



PLAN VIEW OF FABRIC OVERLAP

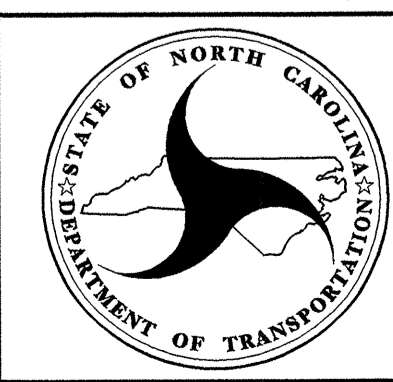


TYPICAL SECTION

MINIMUM REQUIRED REINFORCING FABRIC STRENGTH FOR RD*
(SLOPE AND SURCHARGE CASES)

WALL HEIGHT H FEET (M)	POLYESTER WIDE WIDTH TENSILE STRENGTH @ ULTIMATE LB/INCH (KN/M)	POLYPROPYLENE WIDE WIDTH TENSILE STRENGTH @ ULTIMATE LB/INCH (KN/M)
4 (1.2)	200 (35)	200 (35)
6 (1.8)	200 (35)	200 (35)
8 (2.4)	200 (35)	200 (35)
10 (3.0)	200 (35)	230 (40)
12 (3.7)	220 (39)	264 (46)
14 (4.3)	248 (43)	297 (52)
16 (4.9)	276 (48)	330 (58)
18 (5.5)	304 (53)	364 (64)
20 (6.1)	332 (58)	397 (70)
22 (6.7)	359 (63)	431 (76)
24 (7.3)	387 (68)	464 (81)
26 (7.9)	415 (73)	497 (87)
28 (8.5)	443 (78)	531 (93)

*RD = REINFORCEMENT DIRECTION



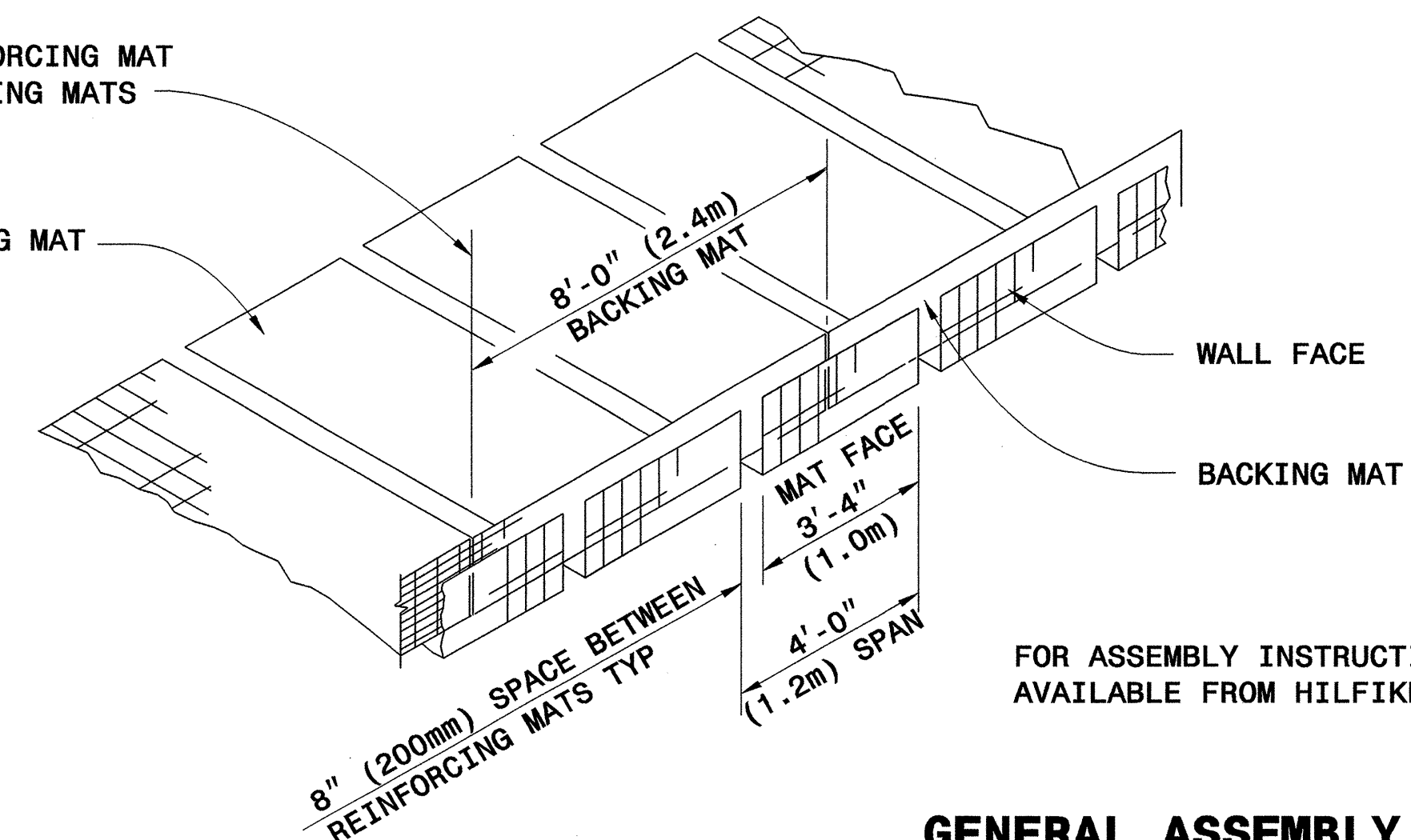
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STATE OF NORTH CAROLINA
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RALEIGH

STANDARD DRAWING NO. 1801.02

TEMPORARY FABRIC WALL

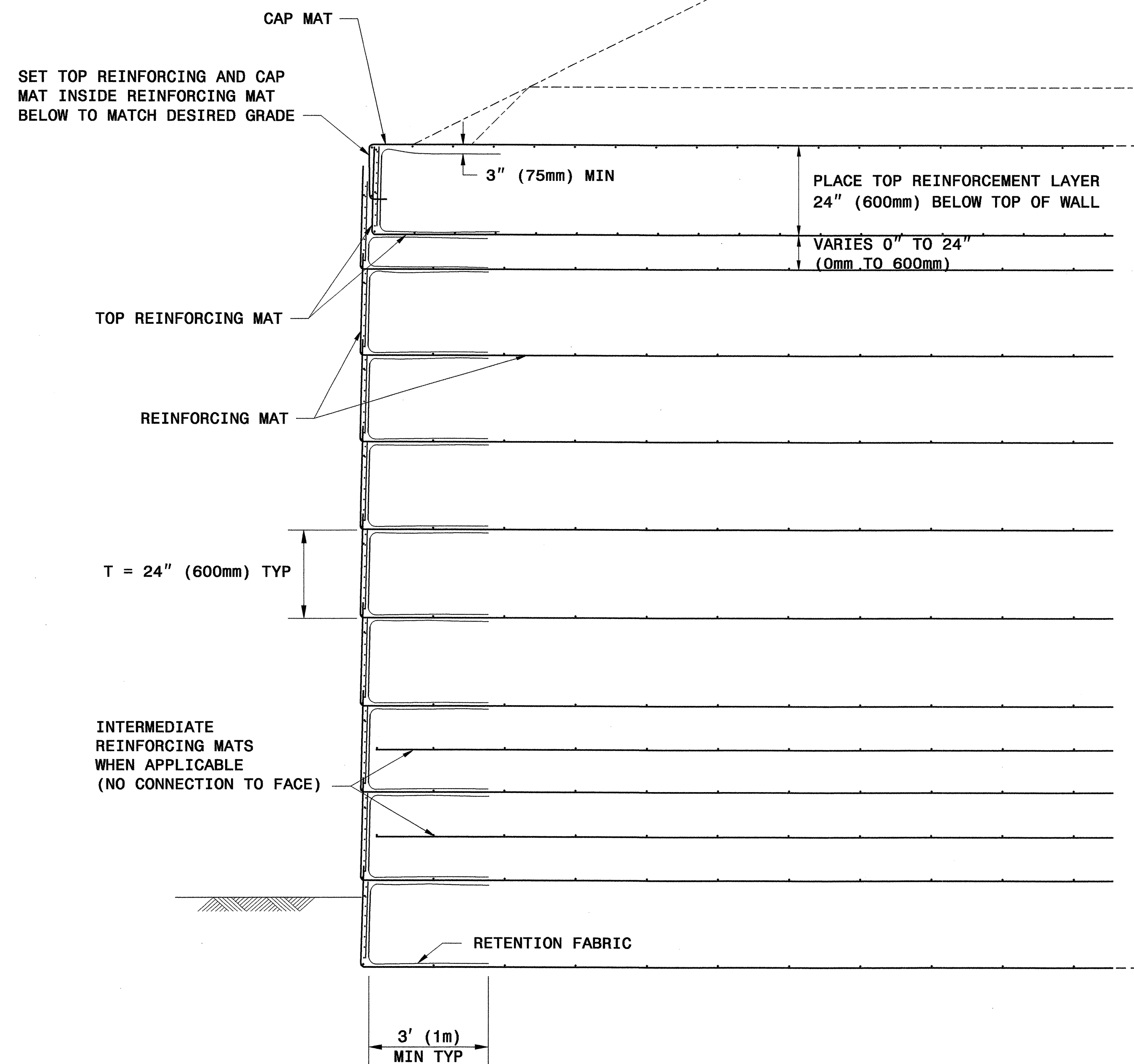
CENTERLINE OF REINFORCING MAT
FACE = EDGE OF BACKING MATS

REINFORCING MAT



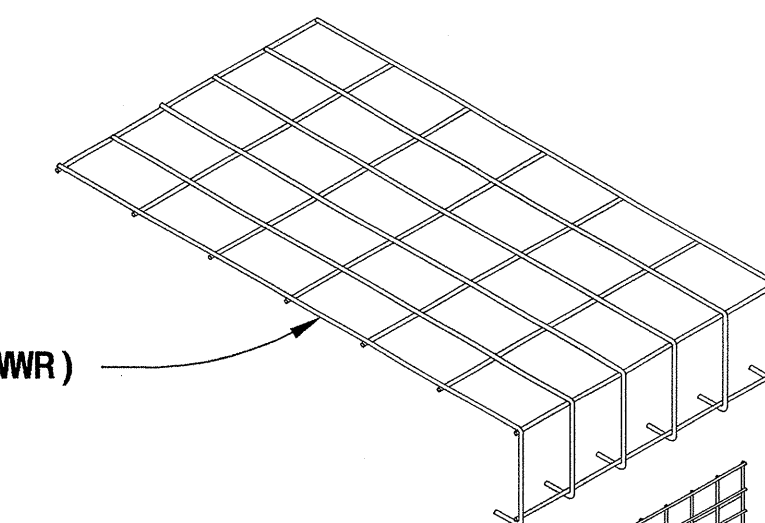
FOR ASSEMBLY INSTRUCTIONS, SEE WELDED WIRE WALL CONSTRUCTION GUIDE AVAILABLE FROM HILFIKER WEBSITE AT WWW.HILFIKER.COM/WWW

GENERAL ASSEMBLY DETAIL

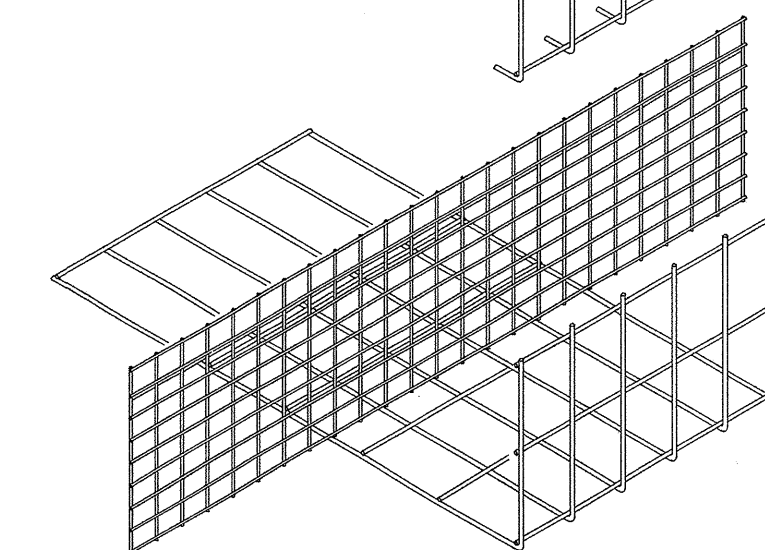


TYPICAL SECTION

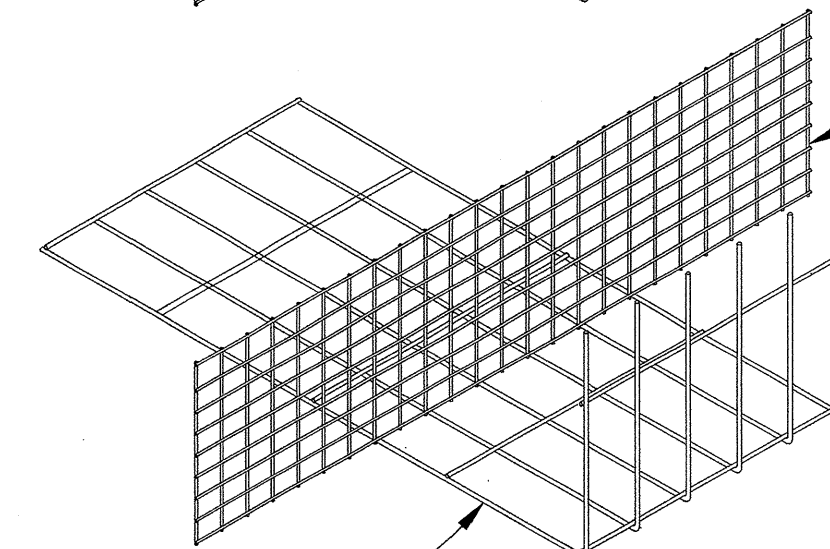
8" X 12" (203mm X 305mm)
W4.5 X W3.5 (MW29 X MW23)
CAP MAT
WELDED WIRE REINFORCEMENT (WWR)



8" X 12" (203mm X 305mm)
W4.5 X W3.5 (MW29 X MW23) WWR
TOP REINFORCING MAT (NO PRONGS)

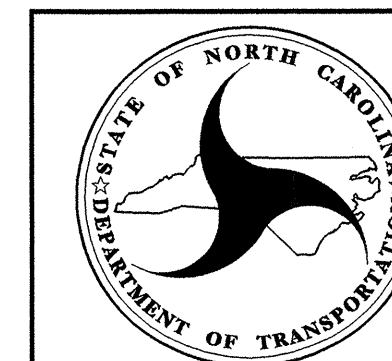


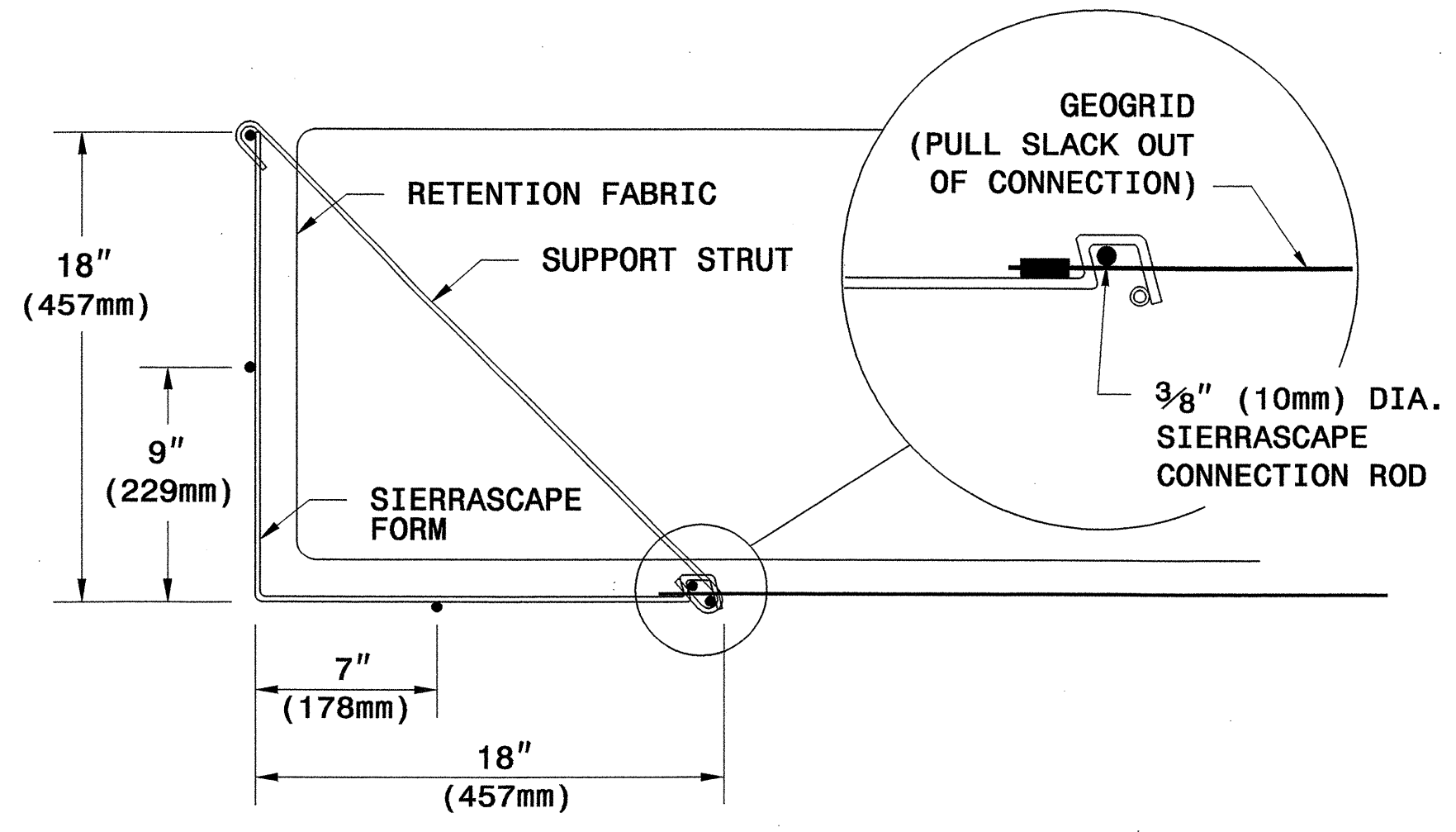
4" X 3" (102mm X 76mm)
W5 X W2.5 (MW32 X MW16) WWR
BACKING MAT
8' (2.4m) WIDE



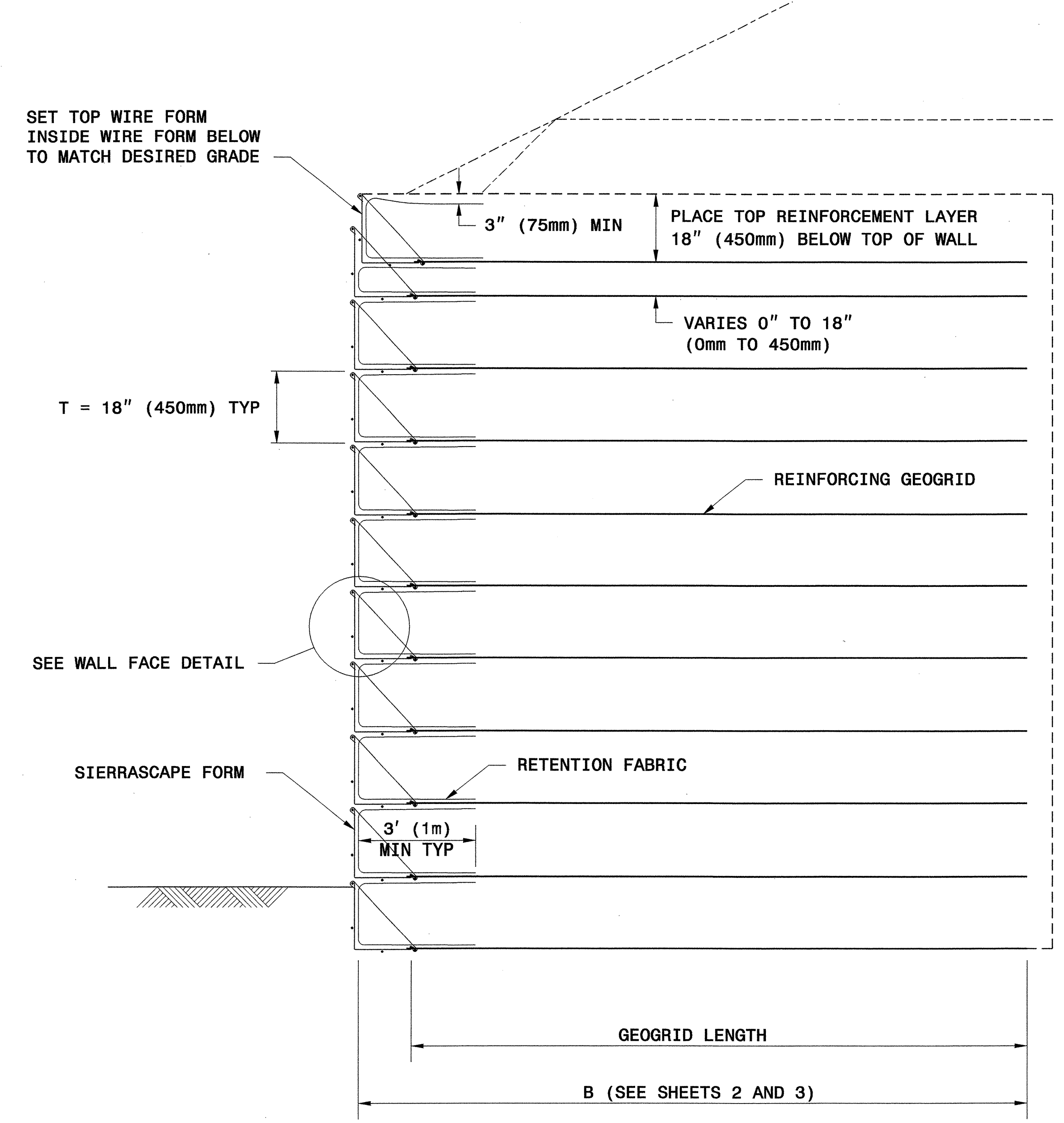
8" X 21" (203mm X 533mm)
REINFORCING MAT
SEE SHEETS 2 AND 3 FOR GAUGE SIZES

WALL COMPONENTS

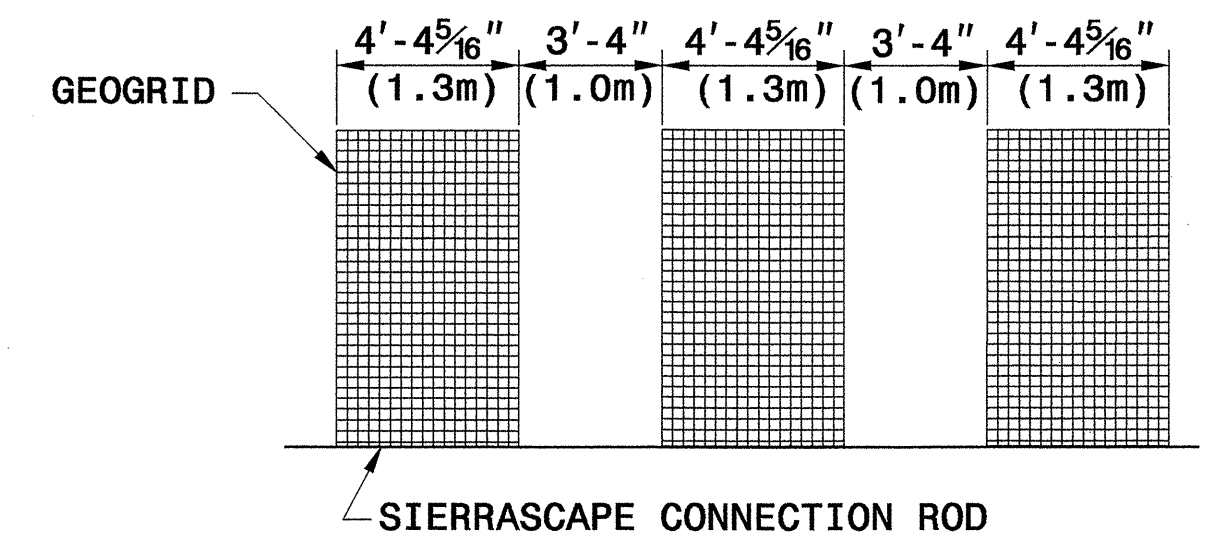




WALL FACE DETAIL

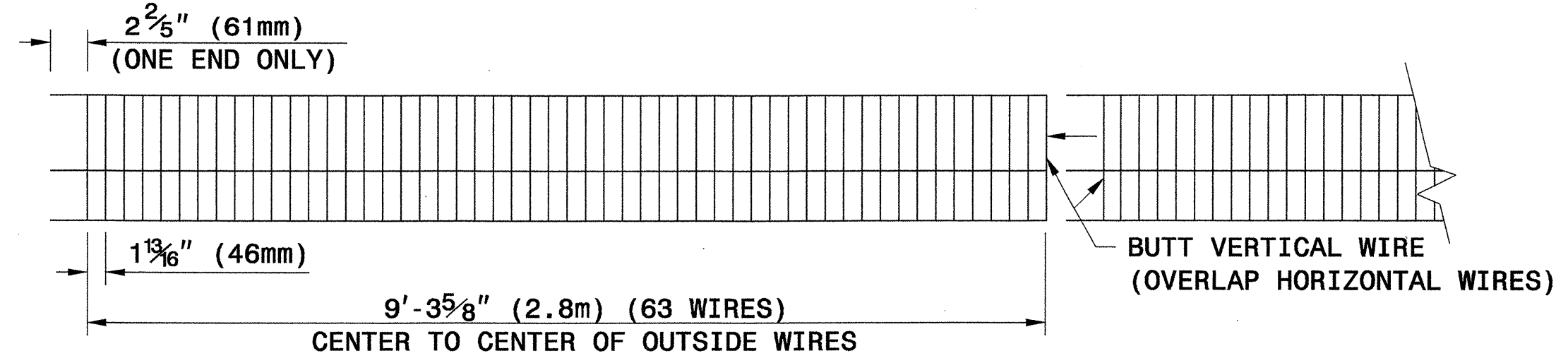


TYPICAL SECTION

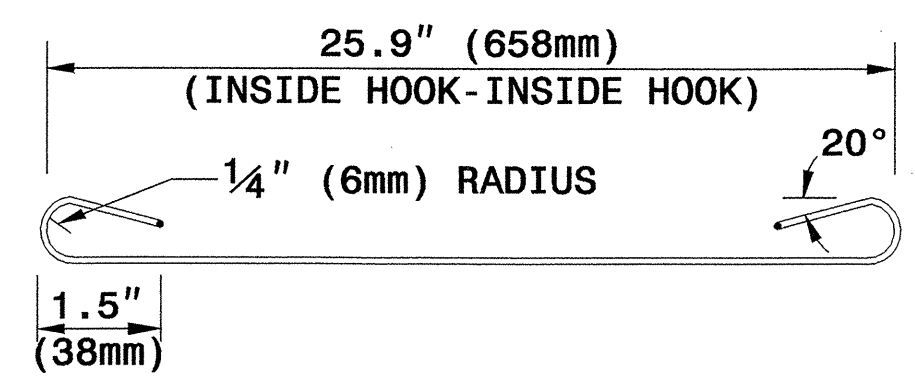


PLACE ALTERNATE LAYERS OF GEOGRID IN STAGGERED PATTERN SUCH THAT THE LAYER ABOVE IS CENTERED OVER SPACE BELOW

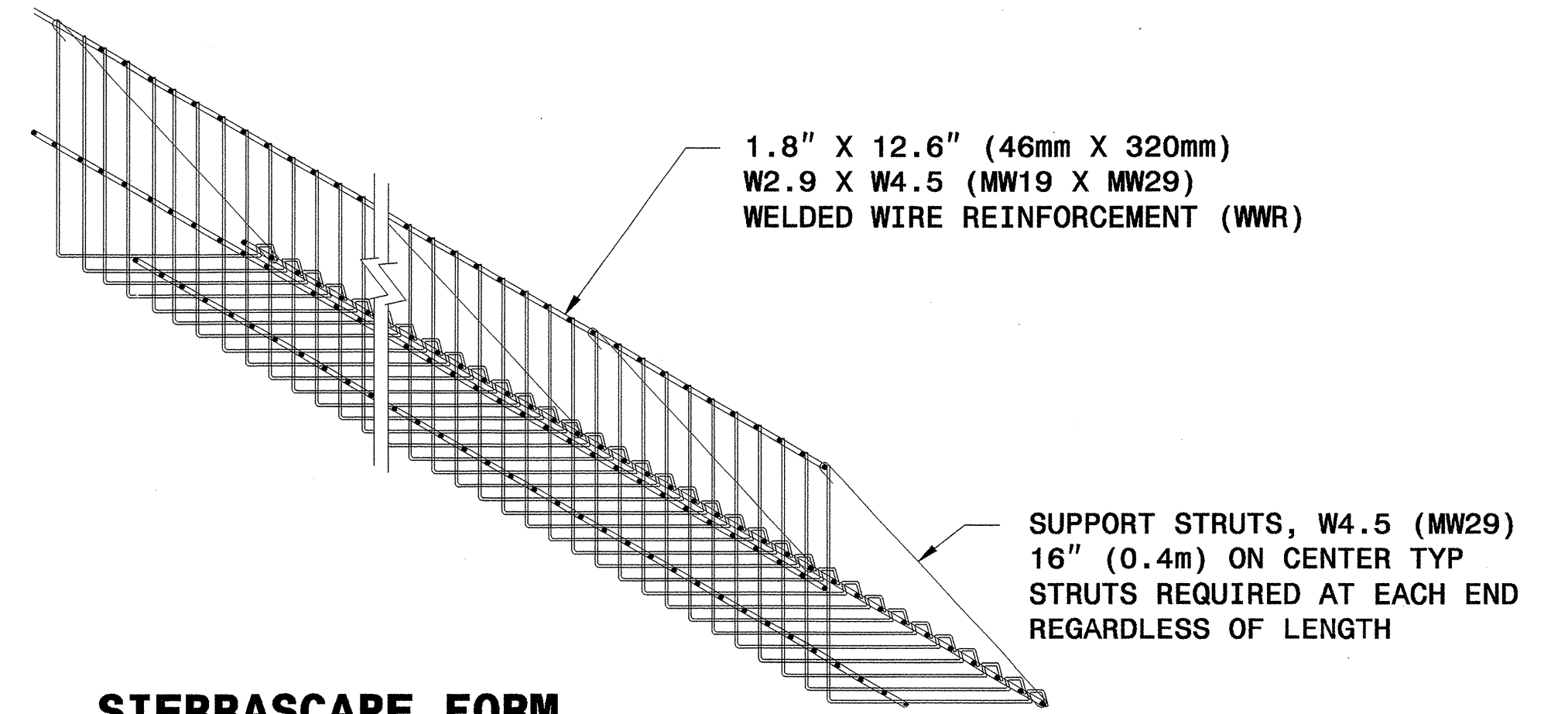
TYPICAL GEOGRID COVERAGE



ELEVATION VIEW

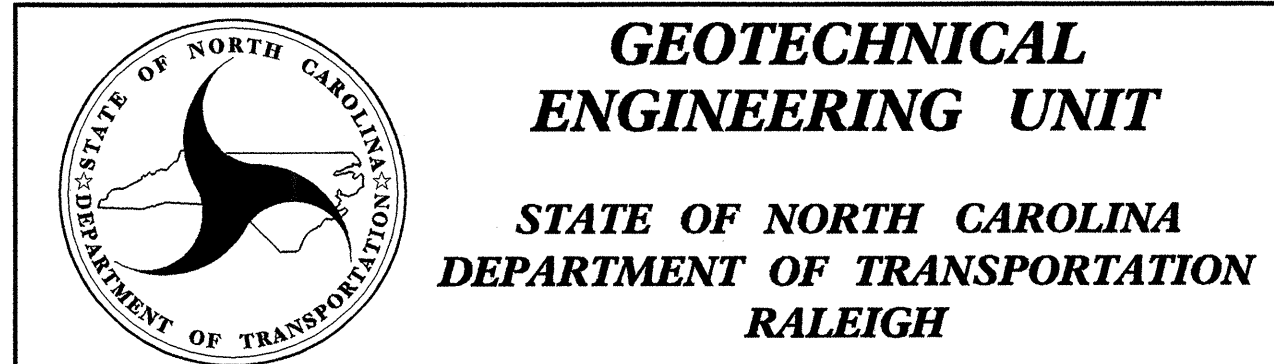
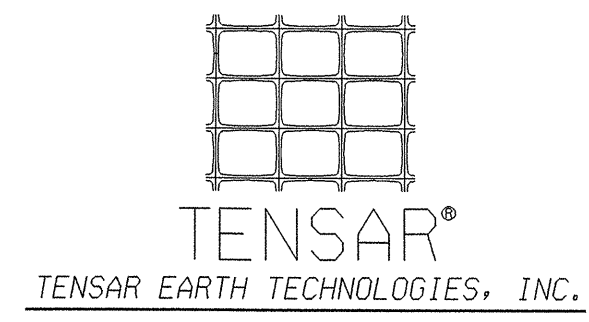


SUPPORT STRUT



SIERRASCAPE FORM

WALL COMPONENTS



GEOTECHNICAL ENGINEER

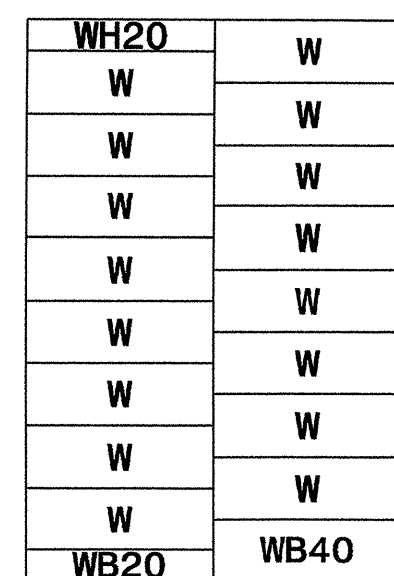


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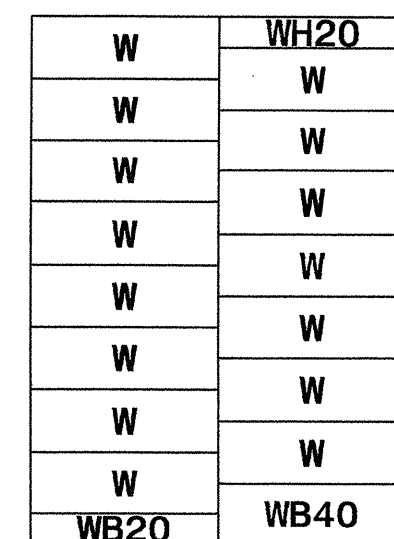
ENGINEER

PANEL LAYOUTS

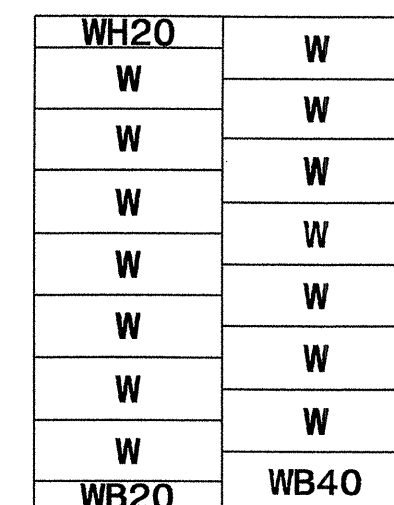
H - WALL HEIGHT
(FEET - INCHES)
(METER)



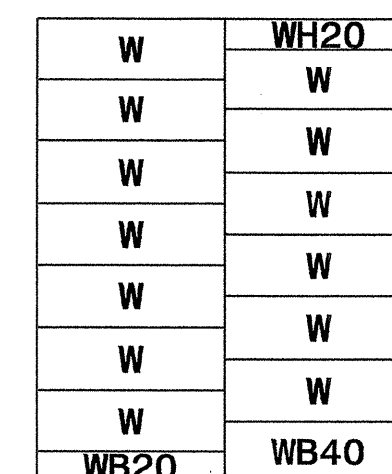
< 28 - 0
< 8.5



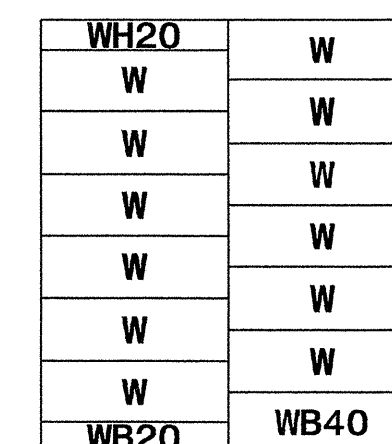
< 27 - 0
< 8.2



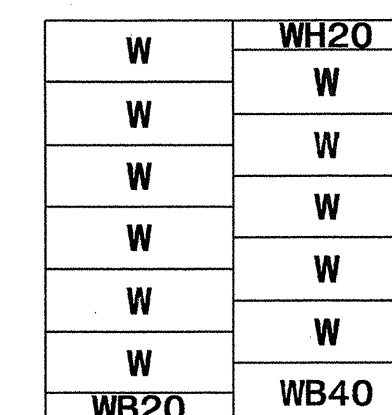
< 25 - 4
< 7.7



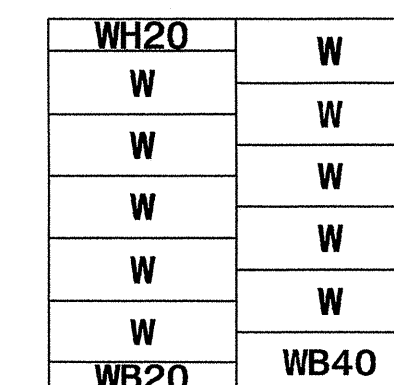
< 23 - 8
< 7.2



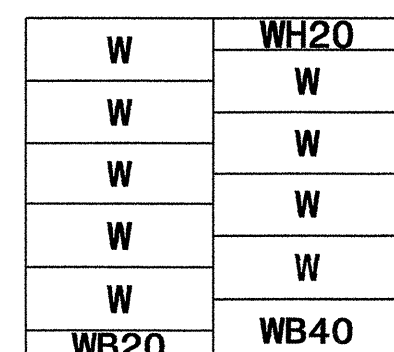
< 22 - 0
< 6.7



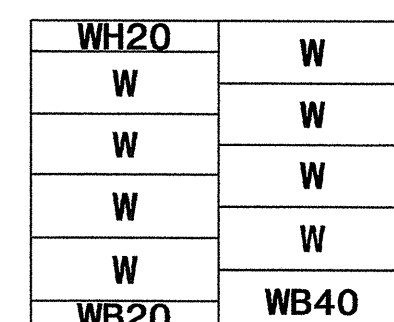
< 20 - 4
< 6.2



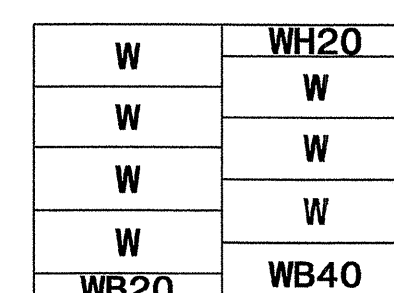
< 18 - 8
< 5.7



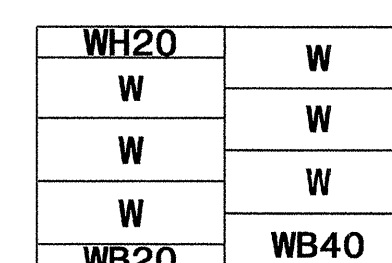
< 17 - 0
< 5.2



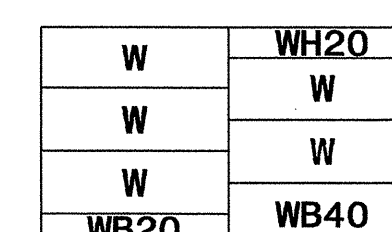
< 15 - 4
< 4.7



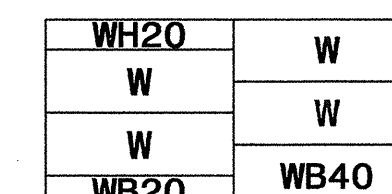
< 13 - 8
< 4.2



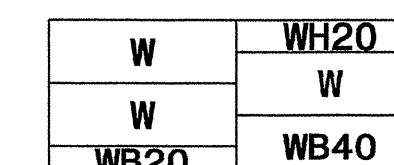
< 12 - 0
< 3.7



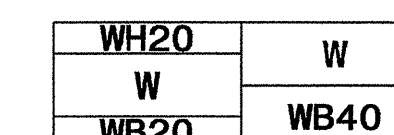
< 10 - 4
< 3.2



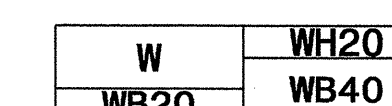
< 8 - 8
< 2.6



< 7 - 0
< 2.1

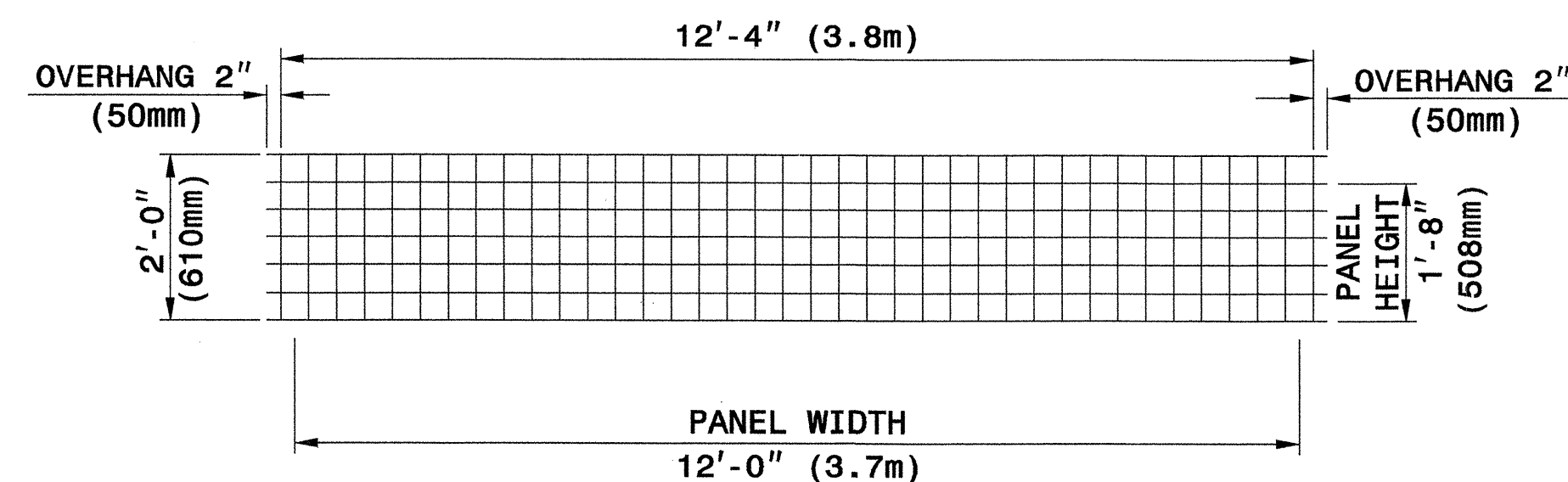


< 5 - 4
< 1.6

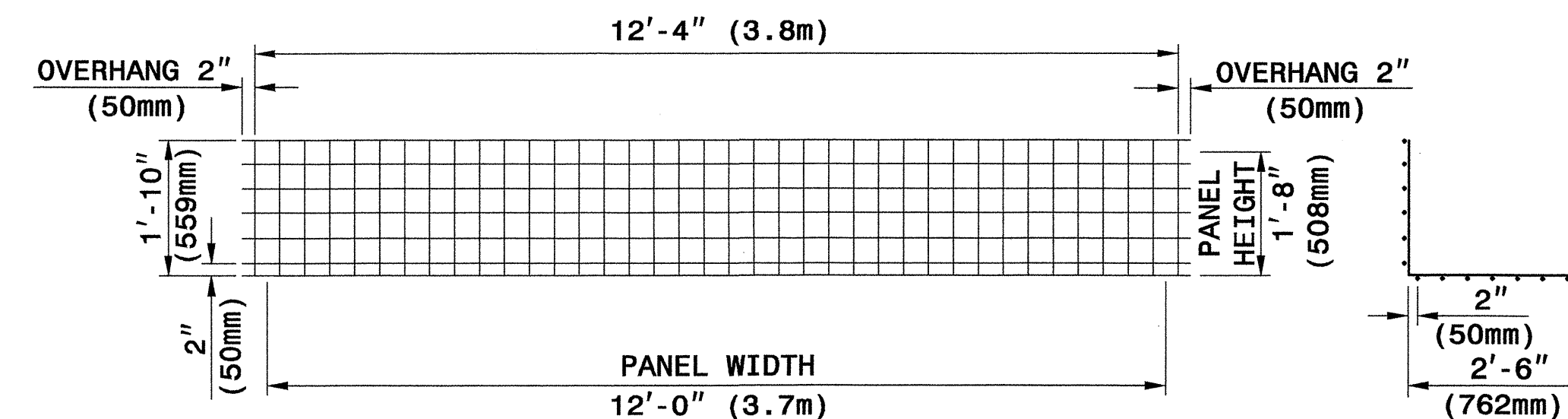


< 3 - 8
< 1.1

(FEET - INCHES)
(METER)

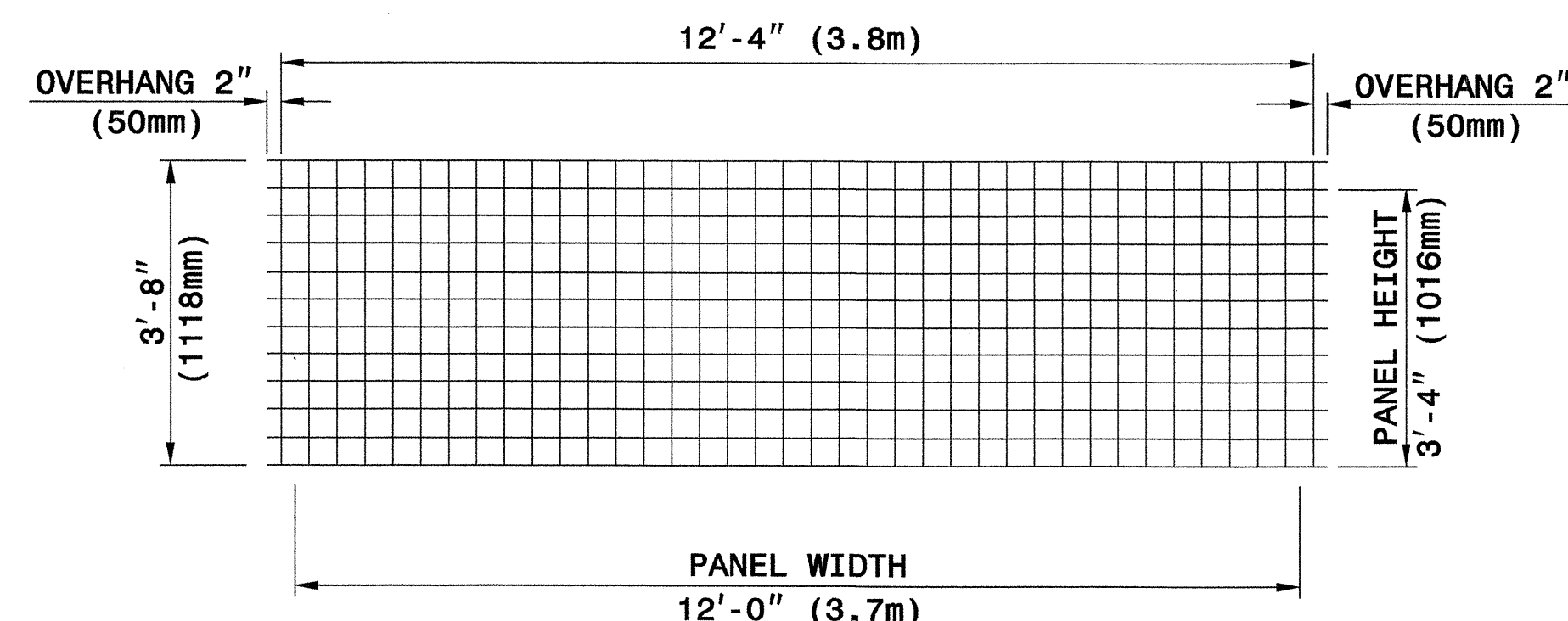


TYPE WH20

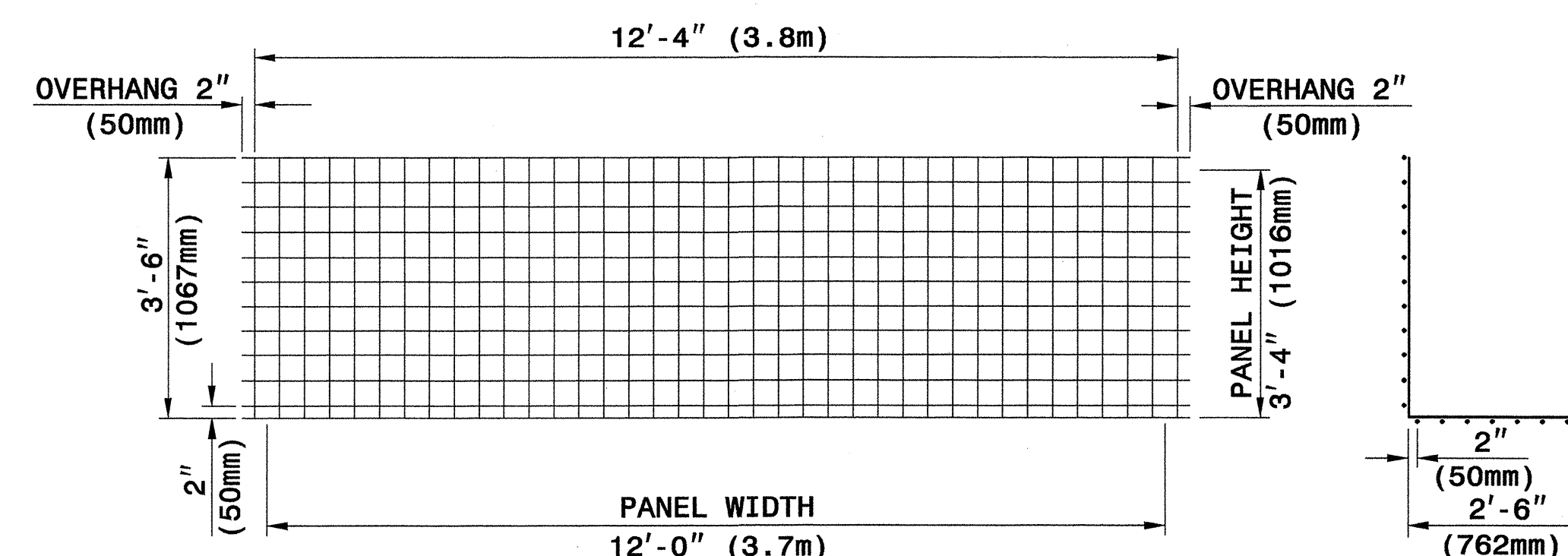


TYPE WB20

SECTION



TYPE W



TYPE WB40

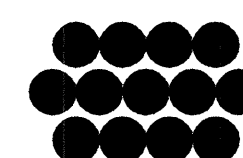
SECTION

WELDED WIRE FACINGS

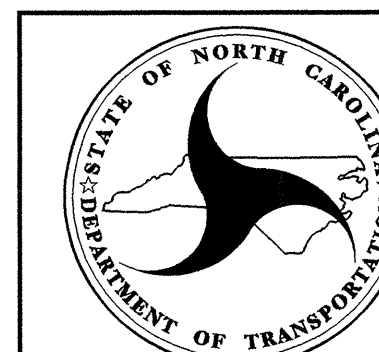
WELDED WIRE FORMS

PANEL TYPES (WELDED WIRE FACINGS AND FORMS)

4" X 4" (100mm X 100mm), W8 X W8 (MW52 X MW52) WELDED WIRE REINFORCEMENT (WWR)



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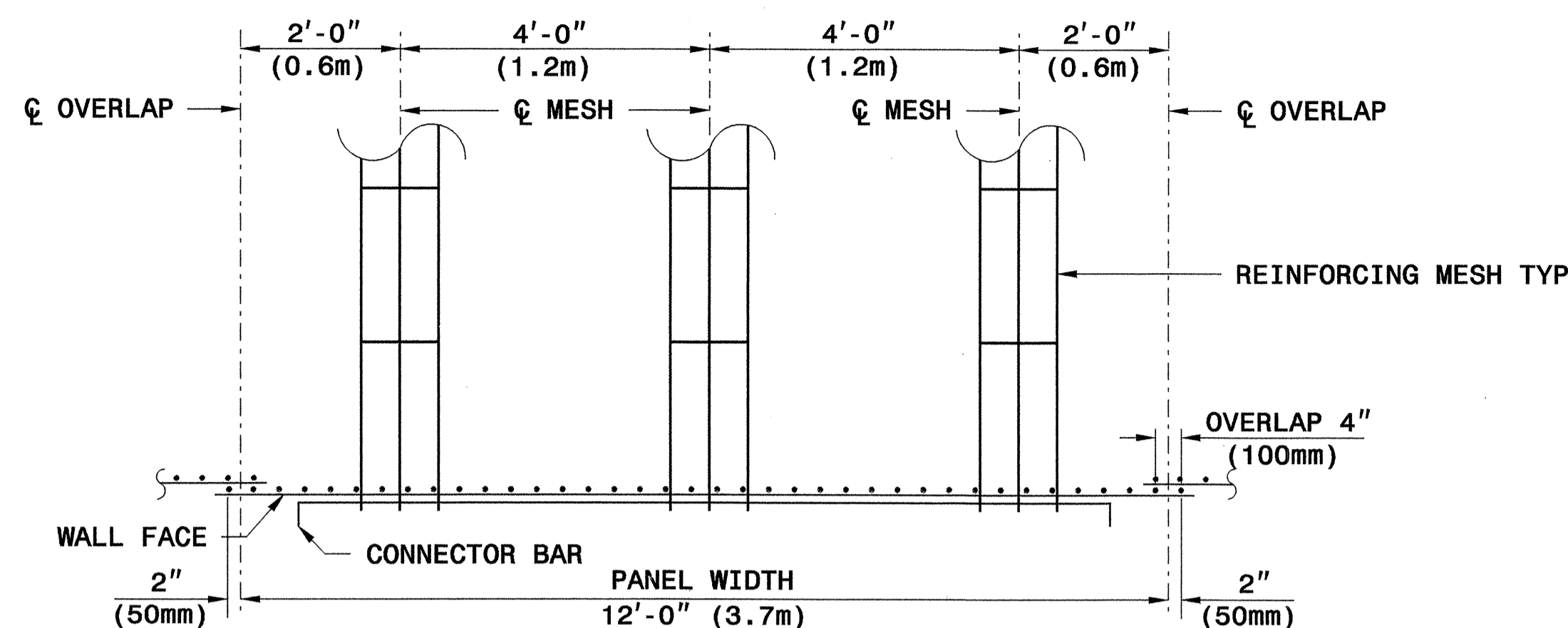
GEOTECHNICAL ENGINEERING UNIT
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD DRAWING NO. 1801.02

RETAINED EARTH
TEMPORARY WALL



Signature: *Scott A. Shidden* 3/29/07
 DATE: 3/29/07



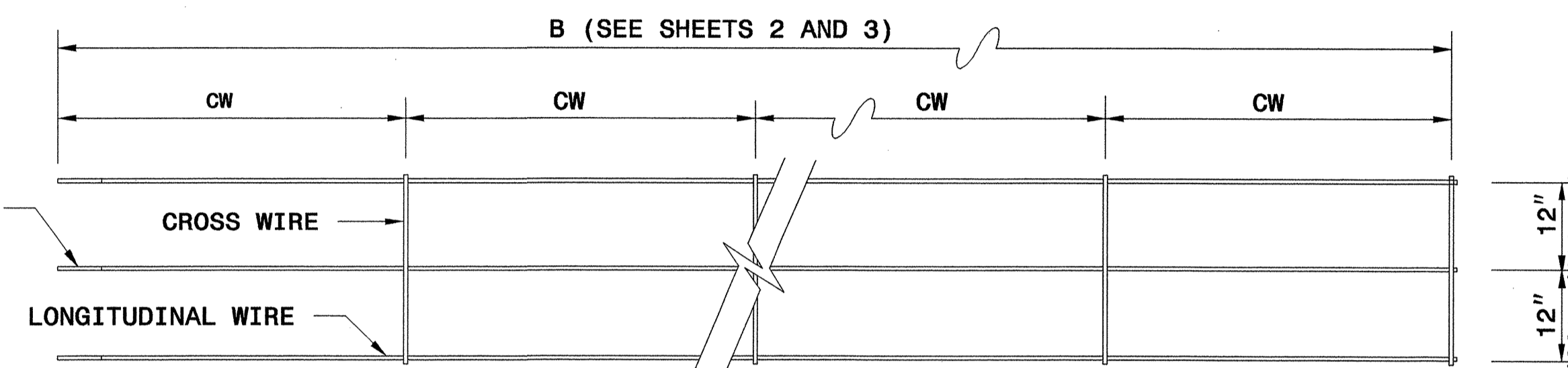
**REINFORCING MESH PLACEMENT DETAIL
(PLAN VIEW)**



1/2" (13mm) DIA. BAR

CONNECTOR BAR

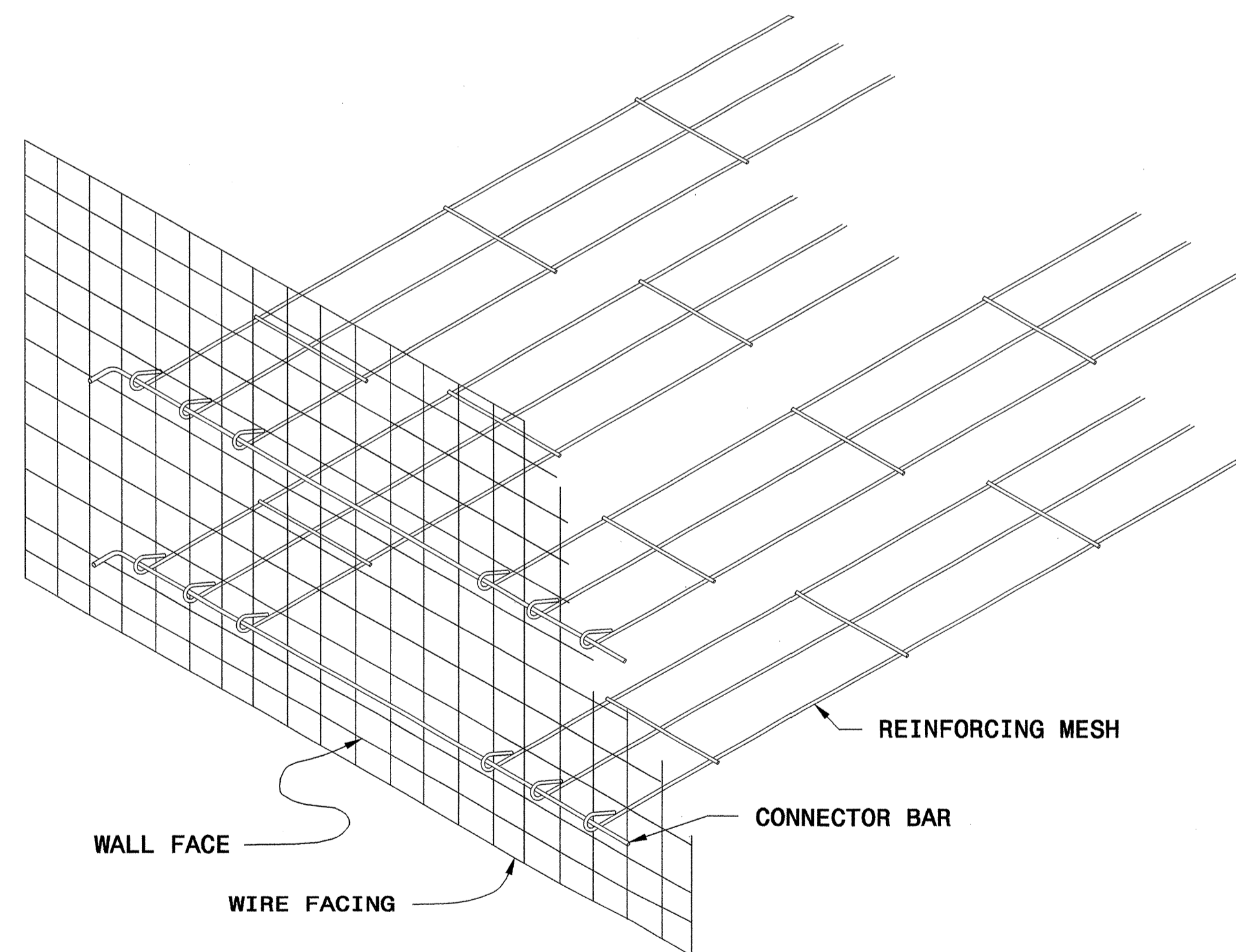
LOOPED END OF MESH
(SEE REINFORCING MESH LOOP DETAIL)



IF REINFORCEMENT LENGTH IS NOT AN INCREMENT OF 2'-0" (610mm) MAKE CW EQUAL TO 12" (305mm) AT THE END OF THE REINFORCING MESH OPPOSITE THE LOOPED END

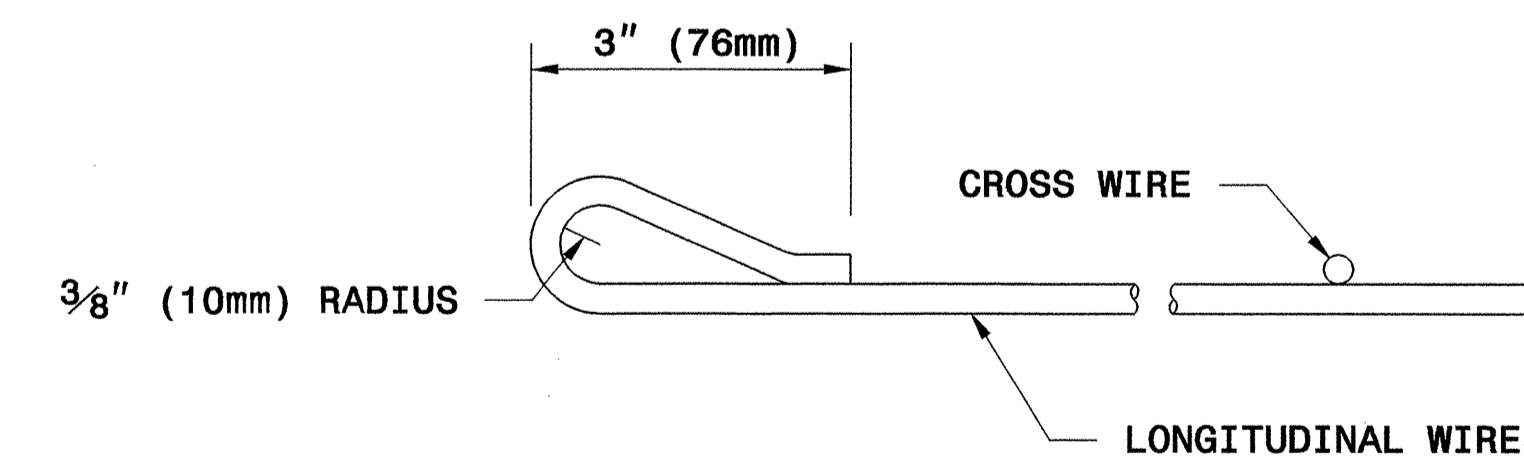
3W8 X W8 x 2.0' (3MW52 X MW52 X 610mm)
 NO. OF LONGITUDINAL WIRES
 GAUGE OF LONGITUDINAL WIRES
 GAUGE OF CROSS WIRES
 SPACING OF CROSS WIRES IN FT (mm), CW

REINFORCING MESH DESIGNATION



GENERAL ASSEMBLY DETAIL

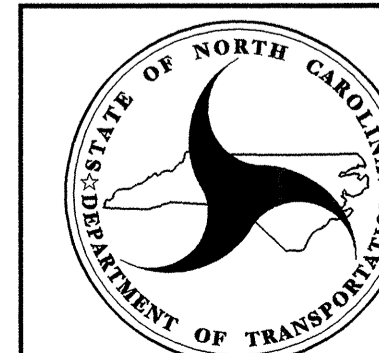
REINFORCING MESH



REINFORCING MESH LOOP DETAIL



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STANDARD DRAWING NO. 1801.02

RETAINED EARTH
 TEMPORARY WALL

SHEET 7 OF 11

DATE: 12-19-06

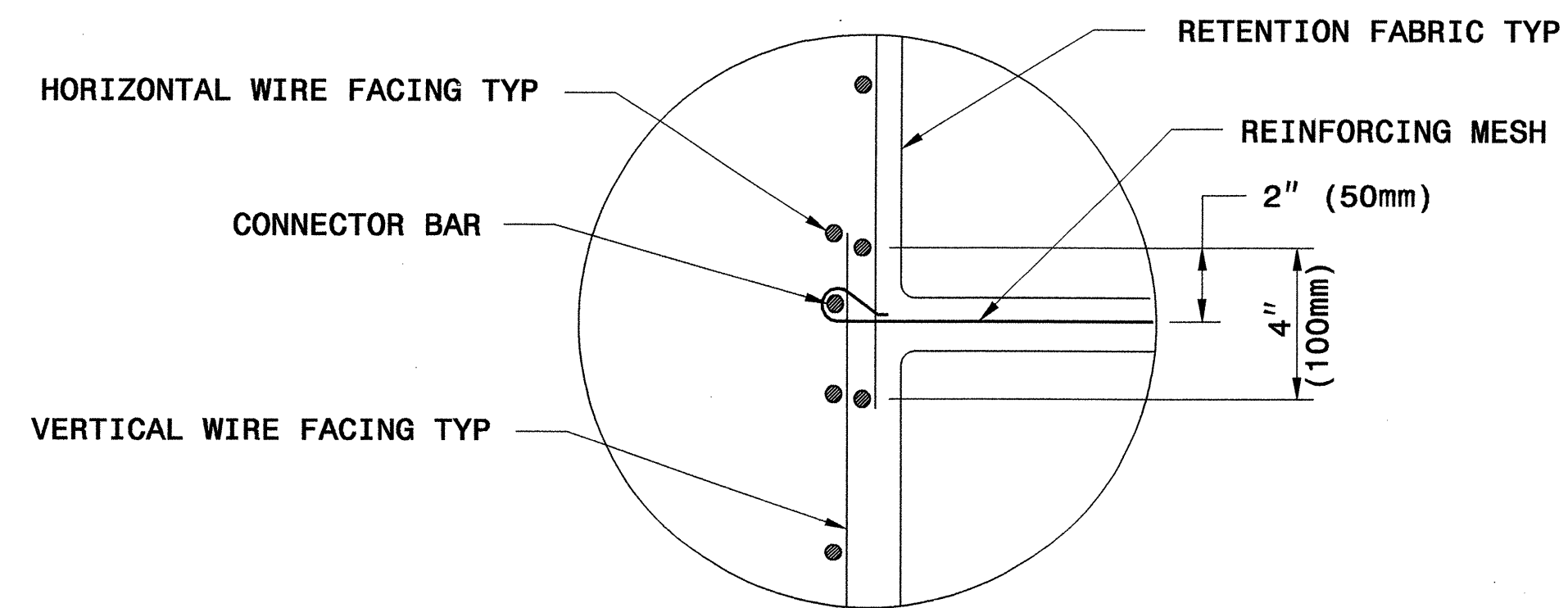
GEOTECHNICAL ENGINEER

ENGINEER

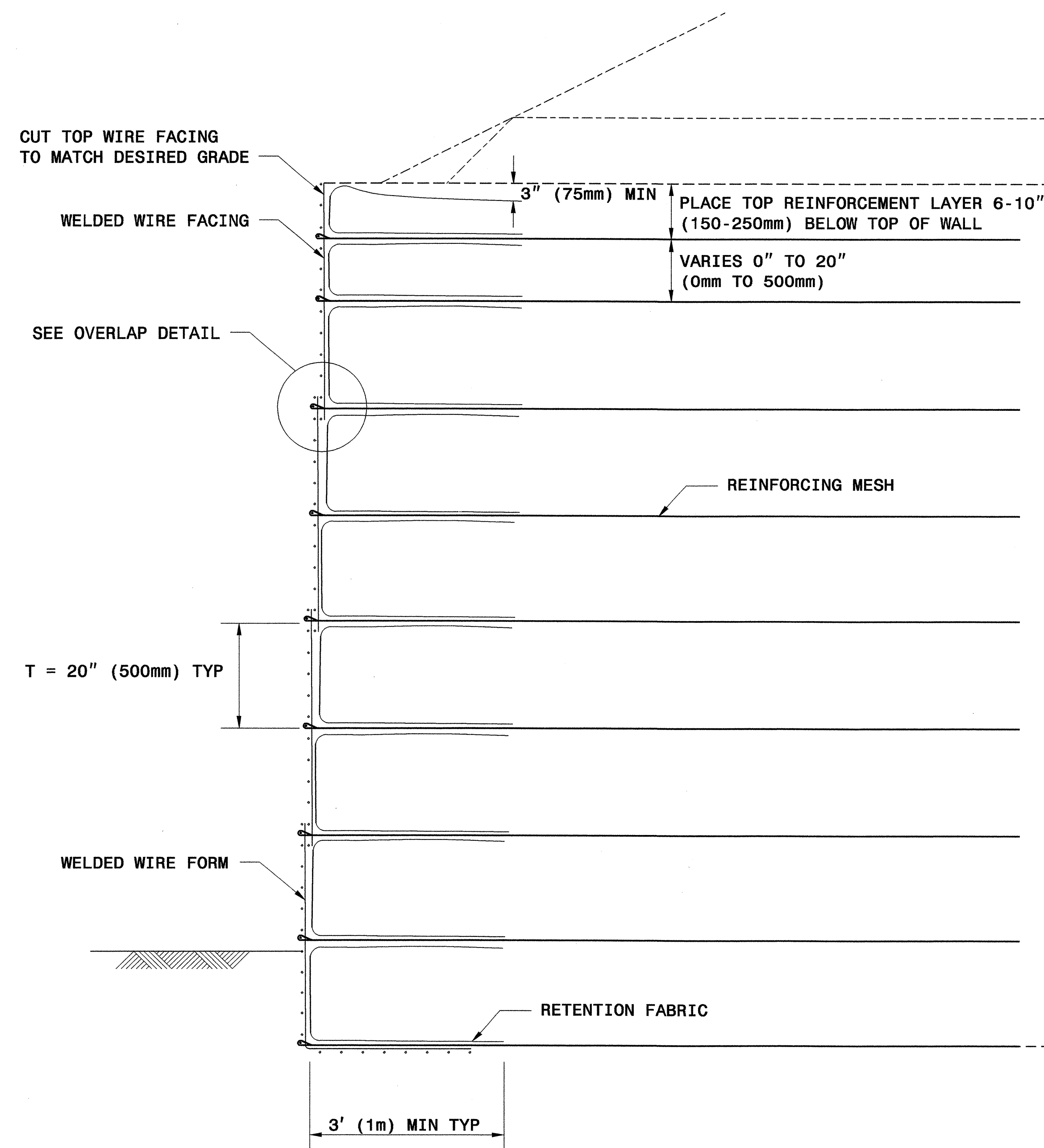


Scott A. Hilder 3/29/07
SIGNATURE DATE

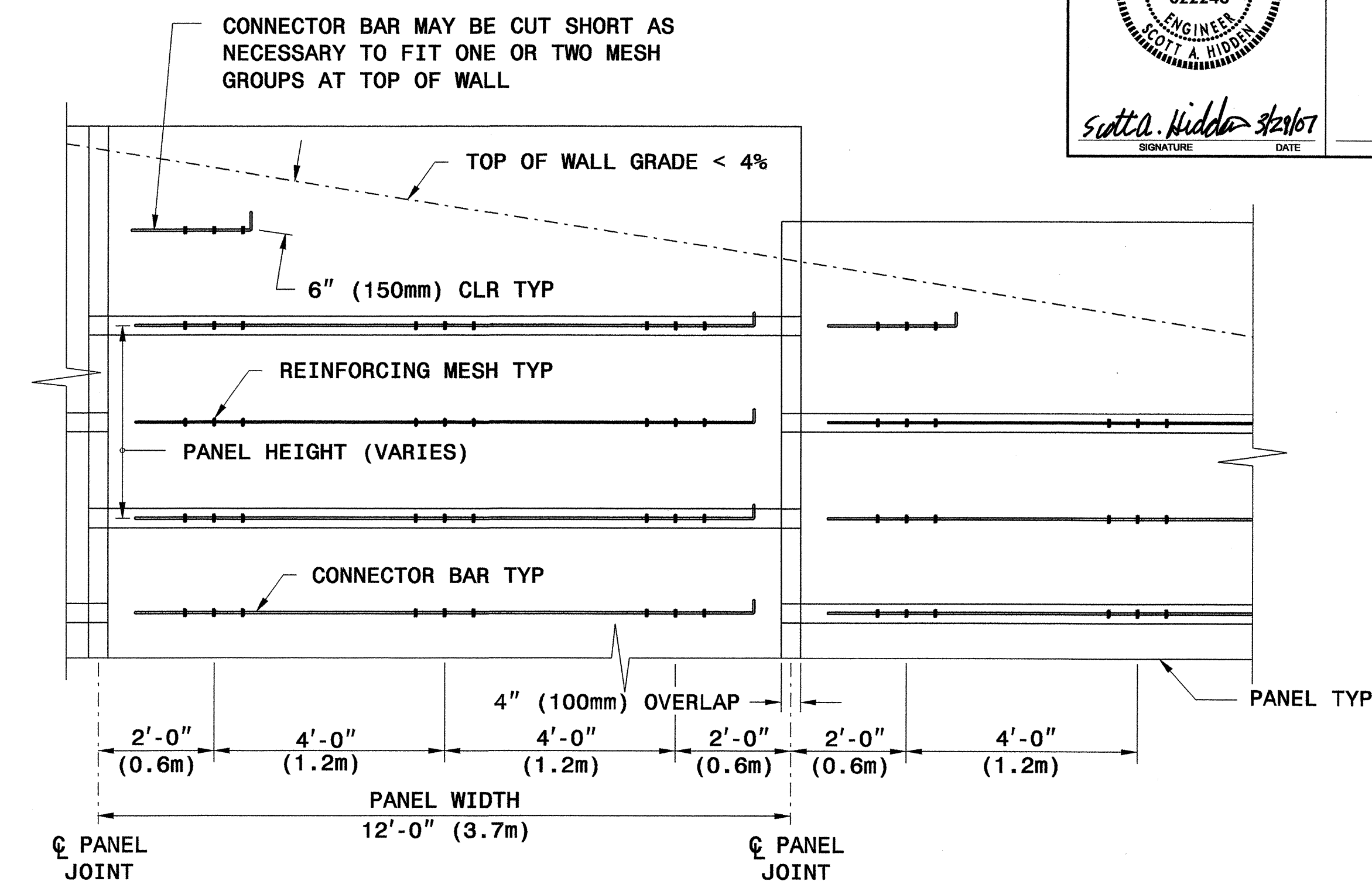
SIGNATURE DATE



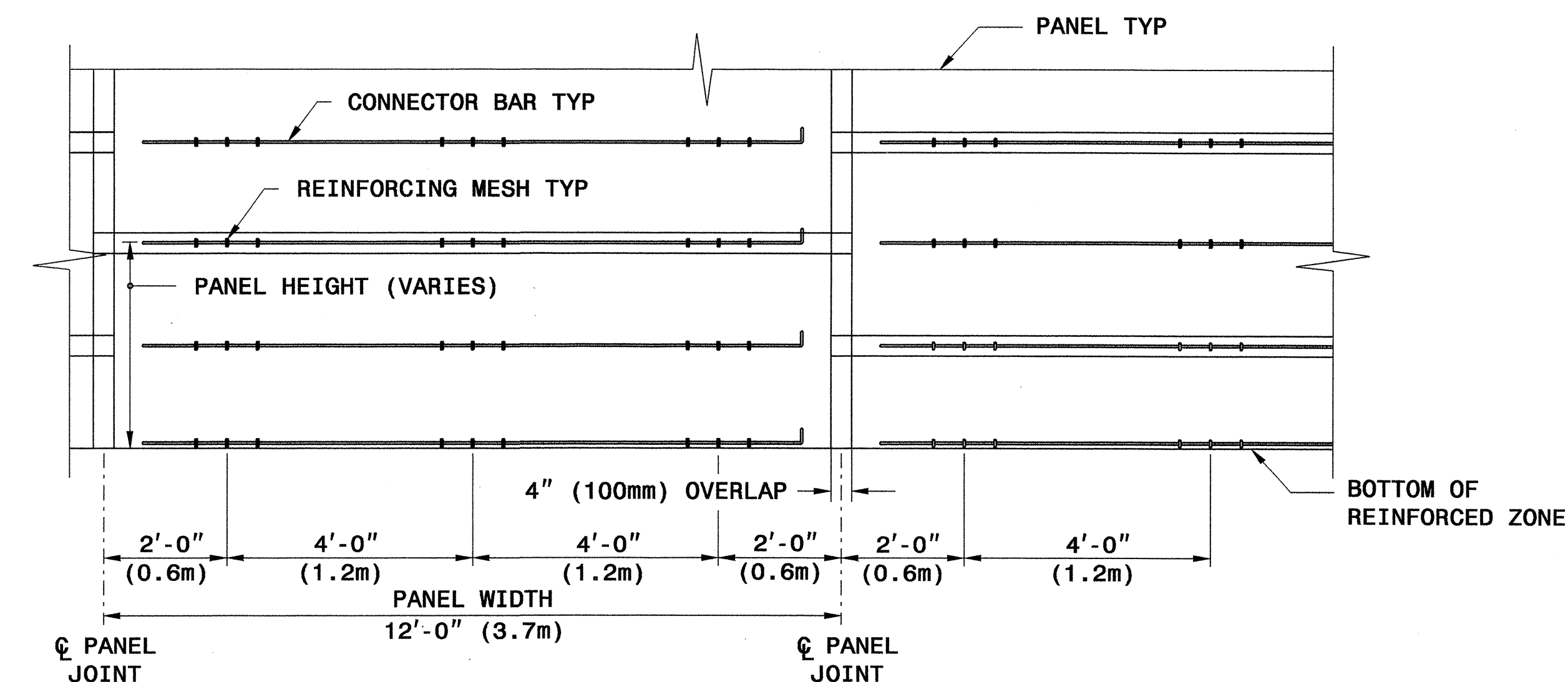
OVERLAP DETAIL



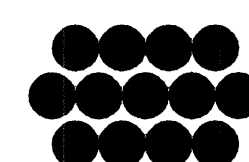
TYPICAL SECTION



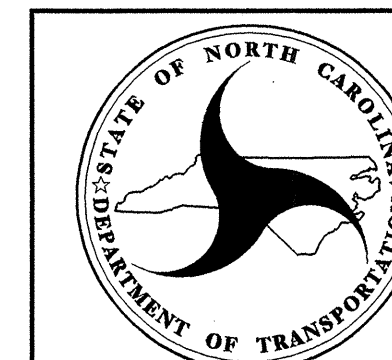
**TYPICAL ELEVATION @ TOP OF WALL
(WIRES NOT SHOWN FOR CLARITY)**



**TYPICAL ELEVATION @ BOTTOM OF WALL
(WIRES NOT SHOWN FOR CLARITY)**



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STANDARD DRAWING NO. 1801.02

RETAINED EARTH
TEMPORARY WALL

SHEET 8 OF 11

DATE: 12-19-06

GEOTECHNICAL ENGINEER

ENGINEER

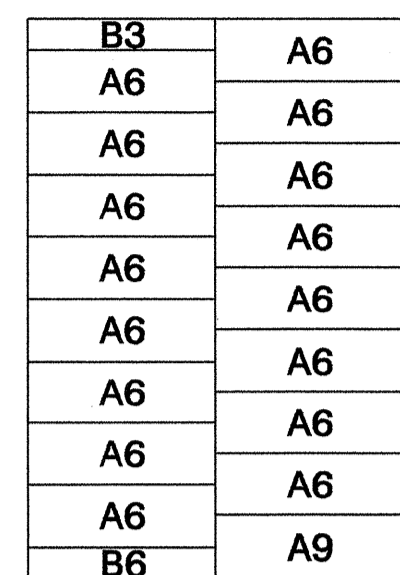


S. A. Hudson 3/29/07
SIGNATURE DATE

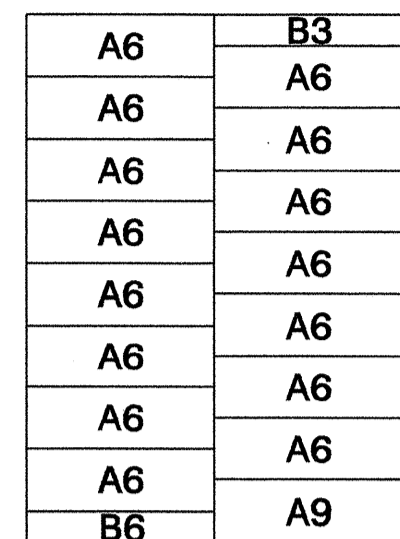
SIGNATURE DATE

PANEL LAYOUTS

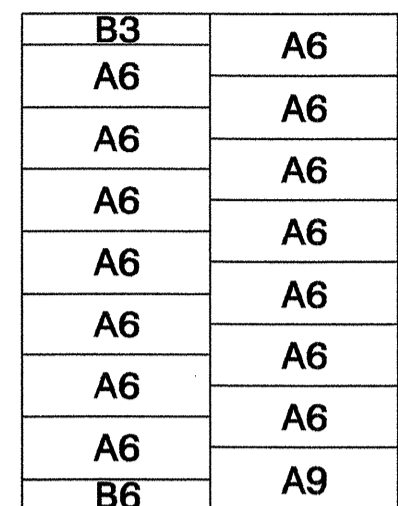
H - WALL HEIGHT
(FEET-INCHES)
(METER)



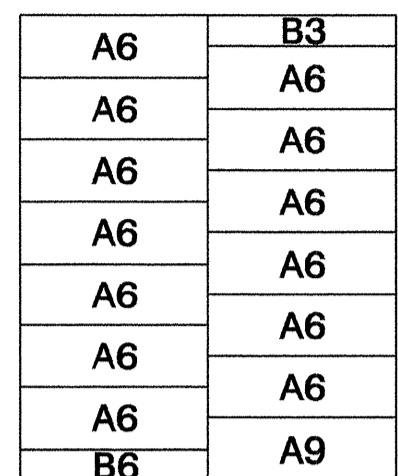
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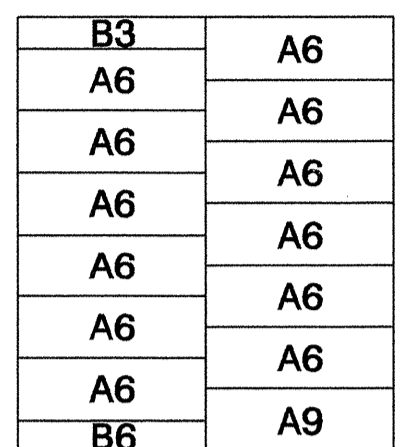
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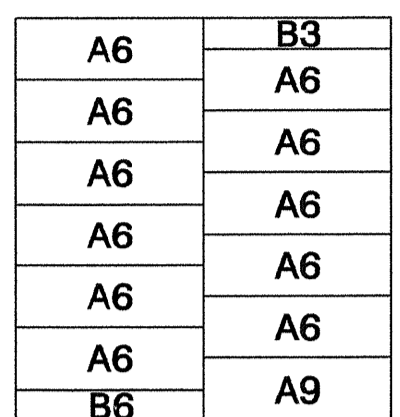
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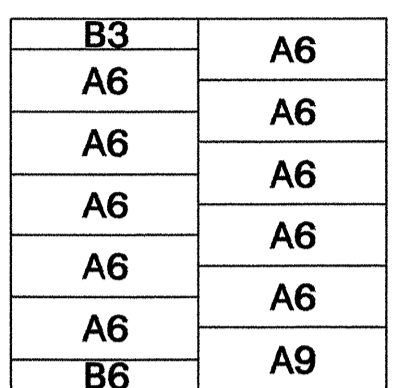
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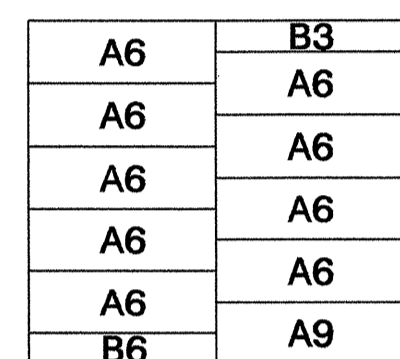
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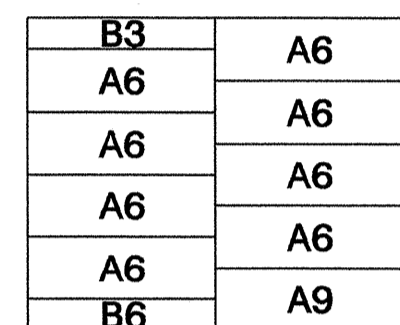
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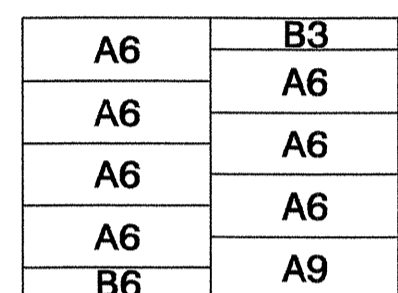
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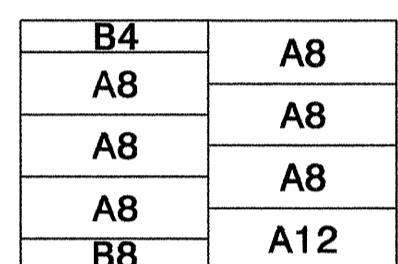
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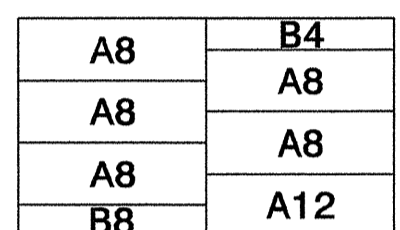
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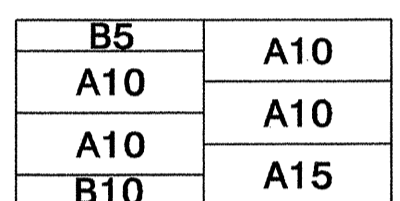
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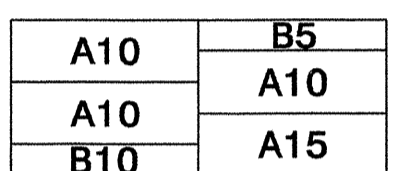
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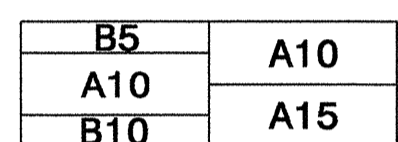
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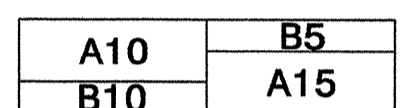
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< 7 - 8
< 2.3

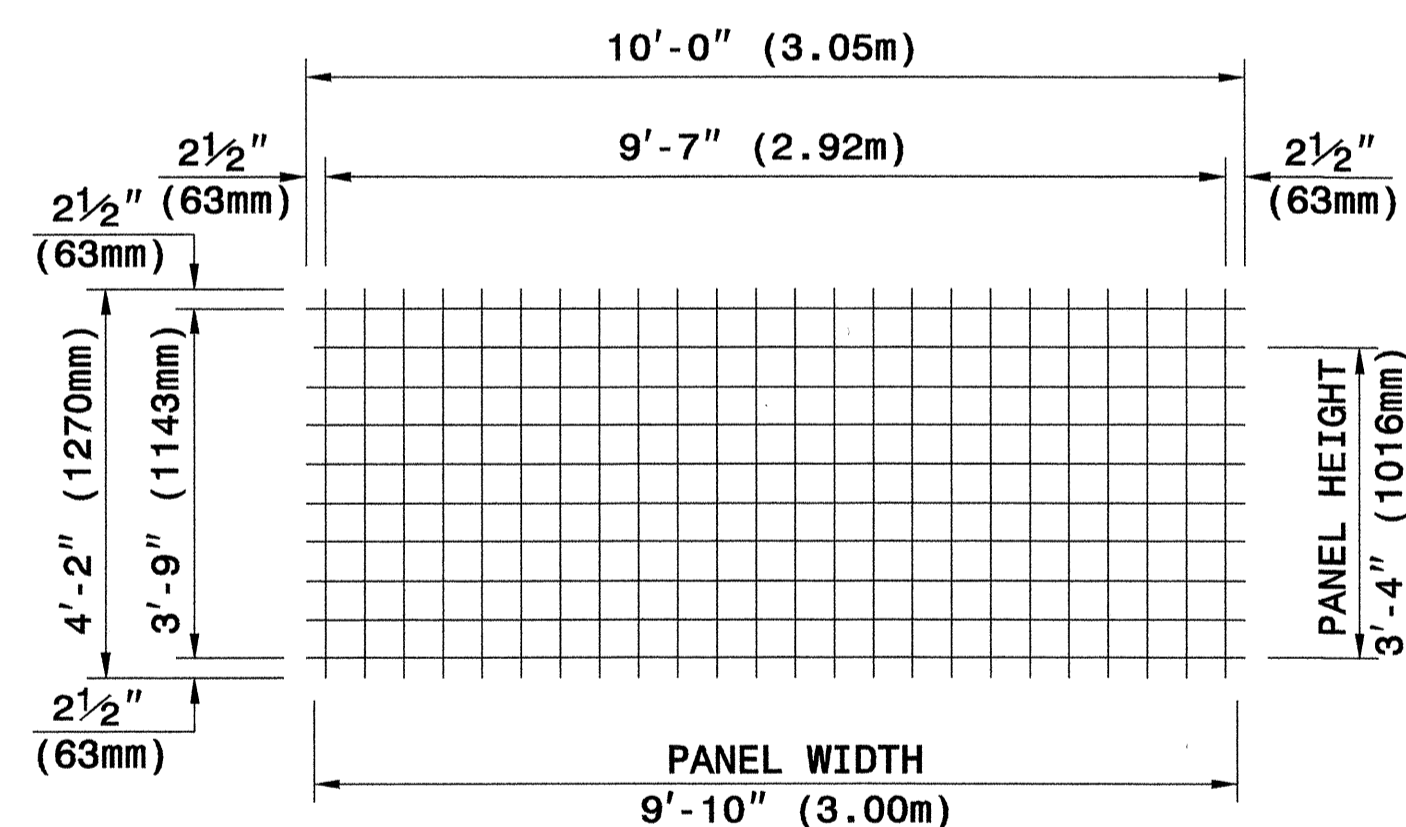


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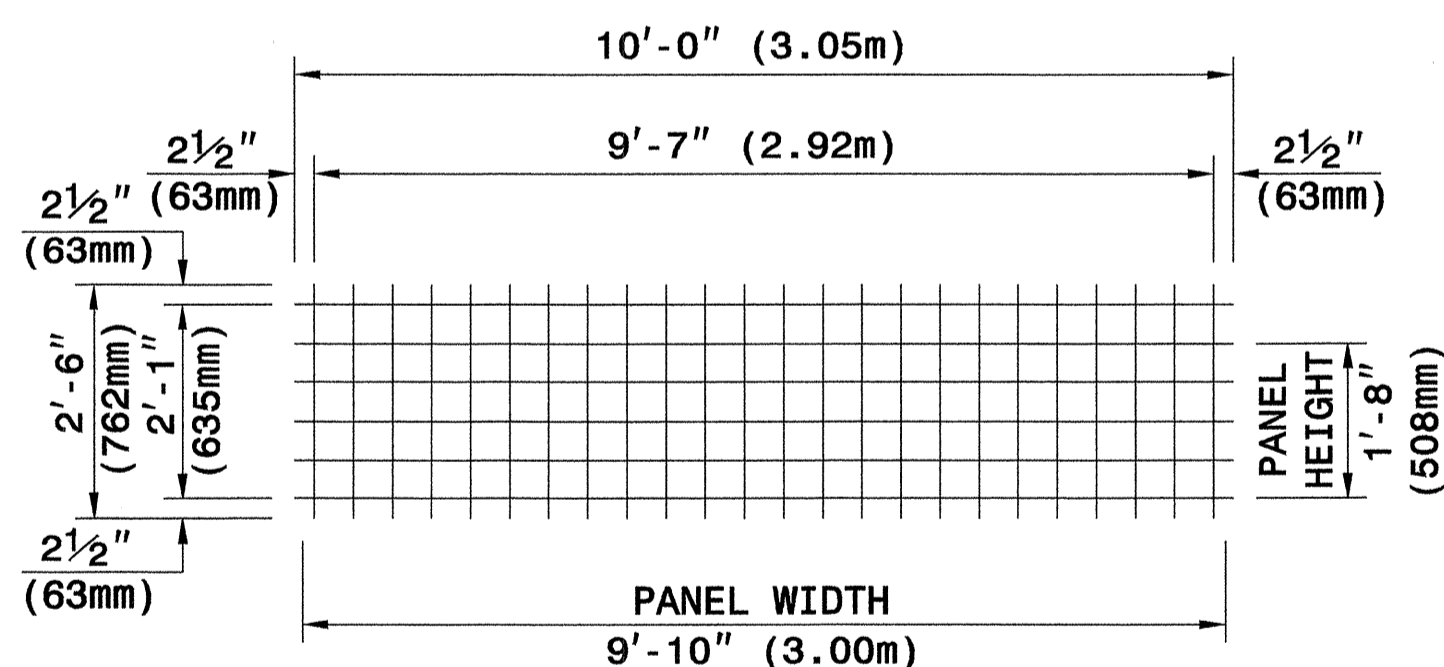


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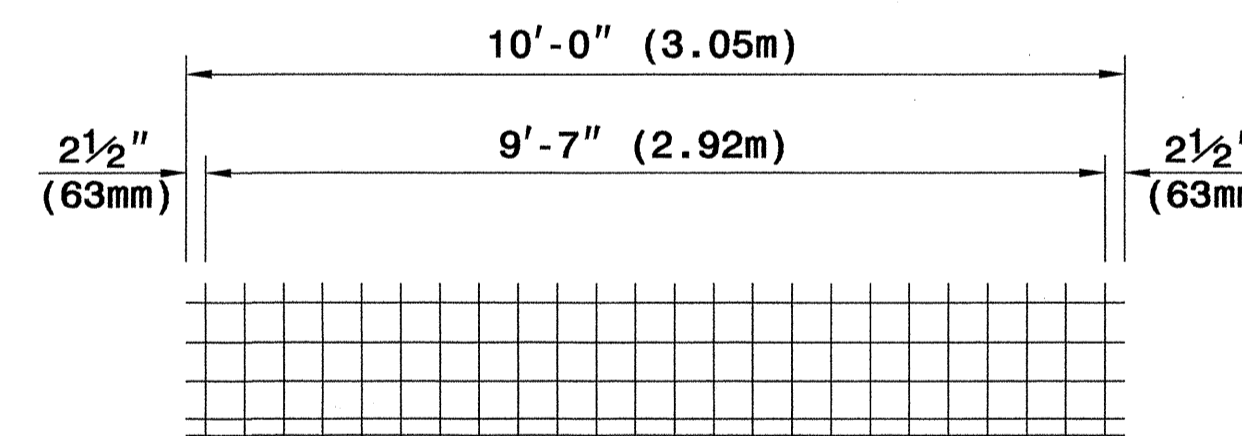
(FEET-INCHES)
(METER)



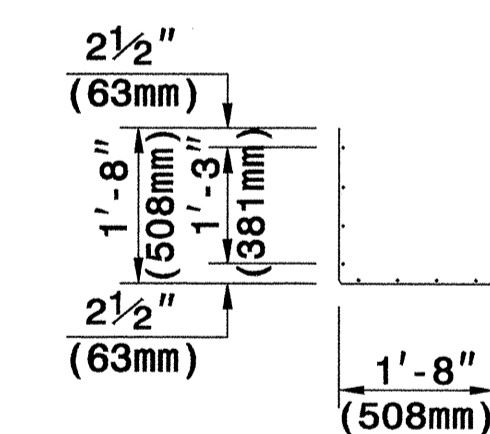
TYPE A



TYPE B



WELDED WIRE FORM

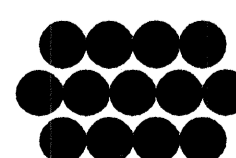


SECTION

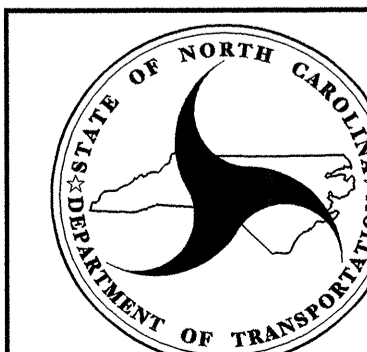
WELDED WIRE FACINGS

PANEL TYPES (WELDED WIRE FACINGS AND FORM)

5" X 5" (125mm X 125mm), W5 X W5 (MW32 X MW32) WELDED WIRE REINFORCEMENT (WWR)




The Reinforced Earth Company

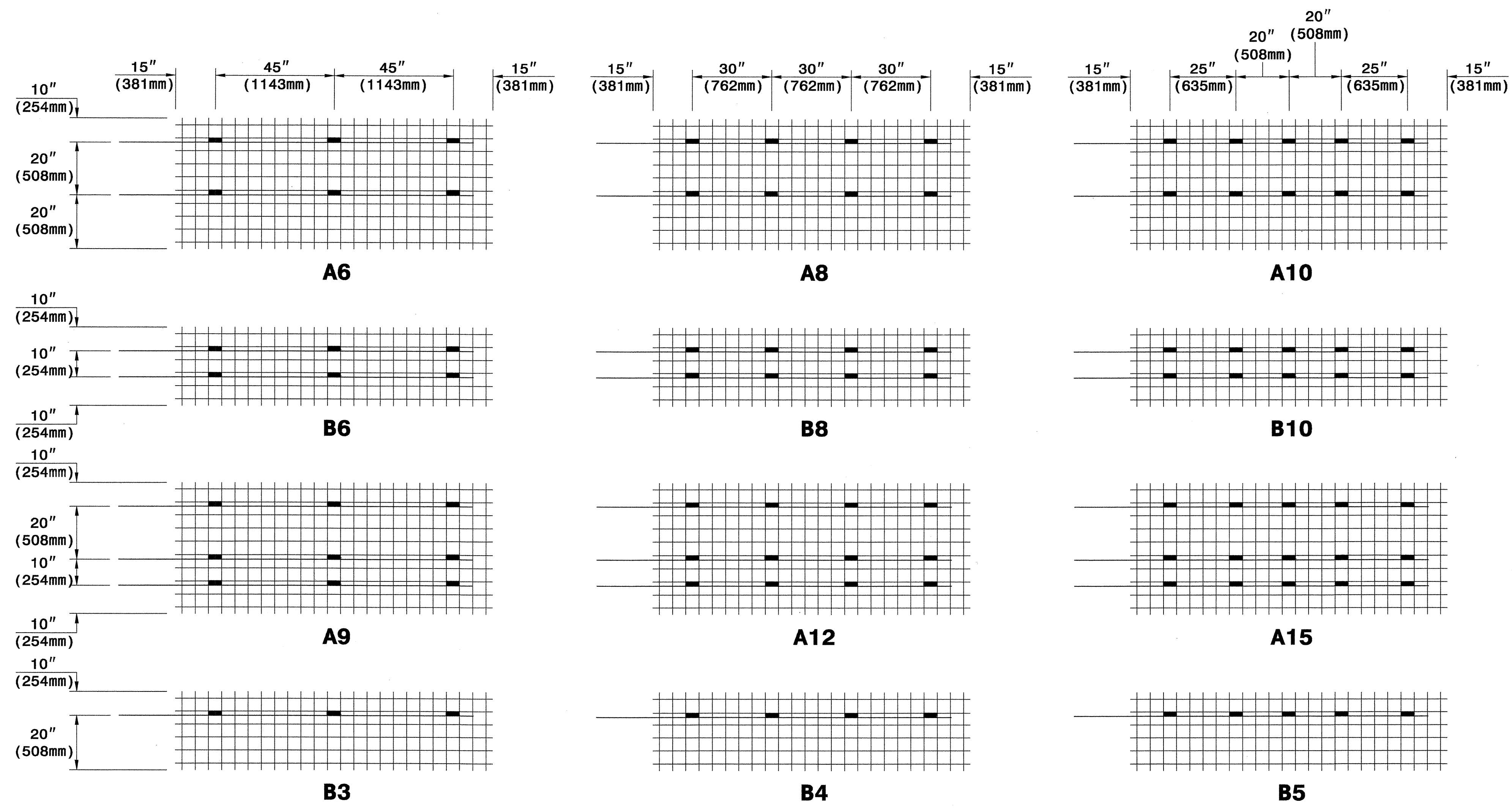


GEOTECHNICAL ENGINEERING UNIT
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD DRAWING NO. 1801.02

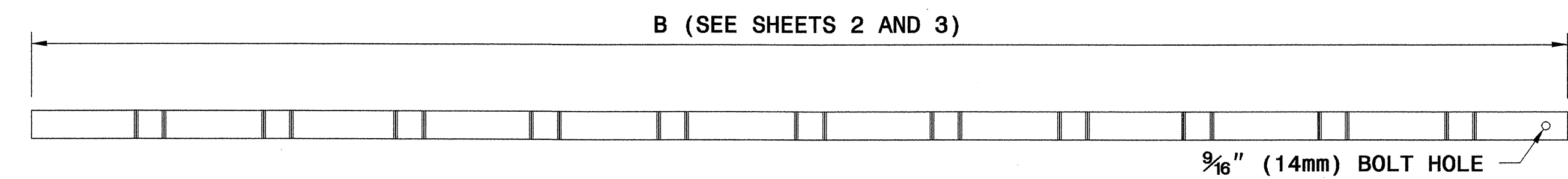
TERRATREL
TEMPORARY WALL

GEOTECHNICAL ENGINEER  Scott A. Hidden 3/24/07 SIGNATURE DATE	ENGINEER SIGNATURE DATE
---	----------------------------

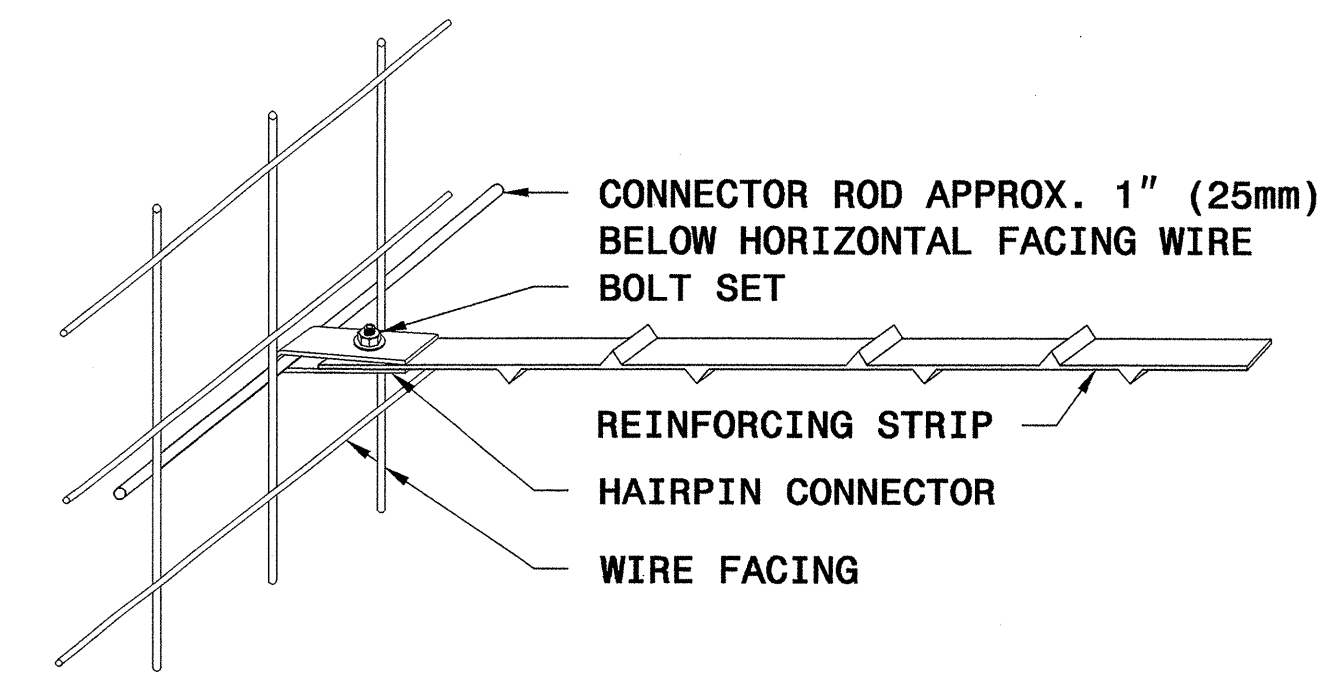


KEY: A8
 NUMBER OF REINFORCING STRIPS
 PANEL TYPE

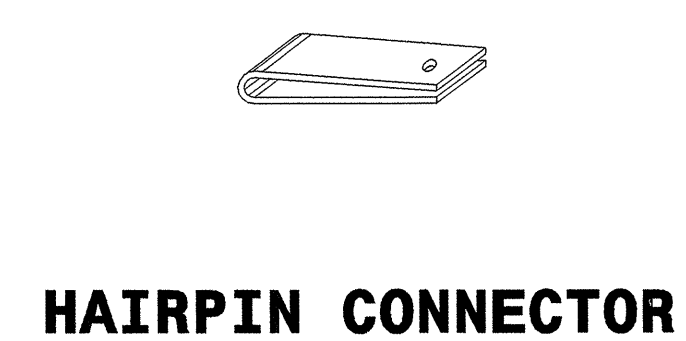
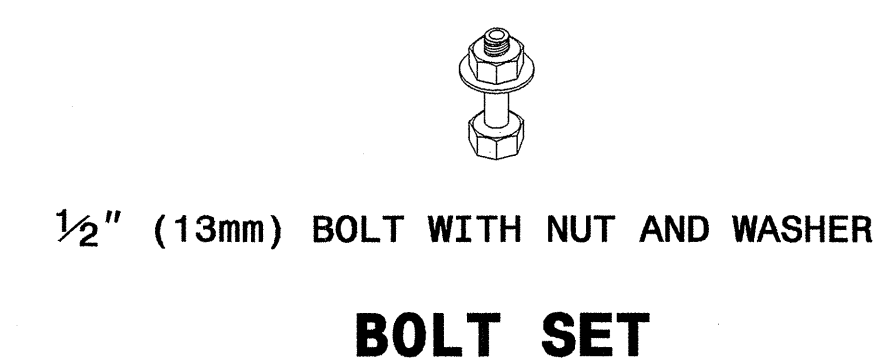
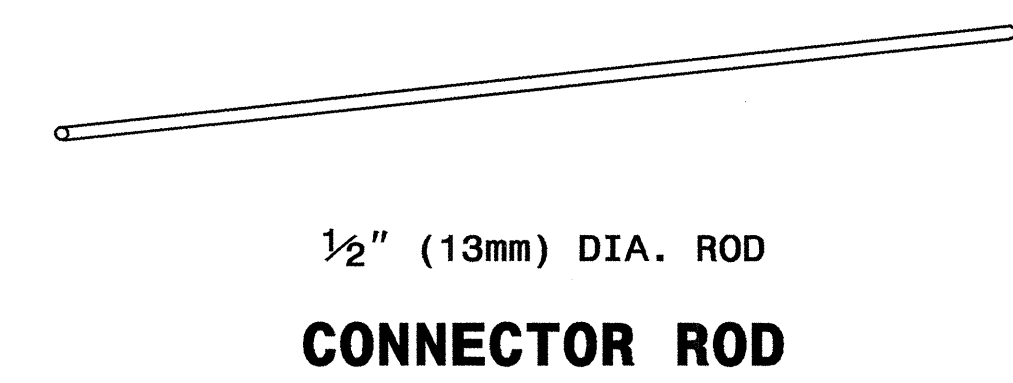
CONNECTOR ROD AND REINFORCING STRIP PLACEMENT DIAGRAMS



REINFORCING STRIP - 2" X 5/32" (50mm X 4mm)



STRIP TO FACING CONNECTION



WALL COMPONENTS




GEOTECHNICAL ENGINEERING UNIT
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

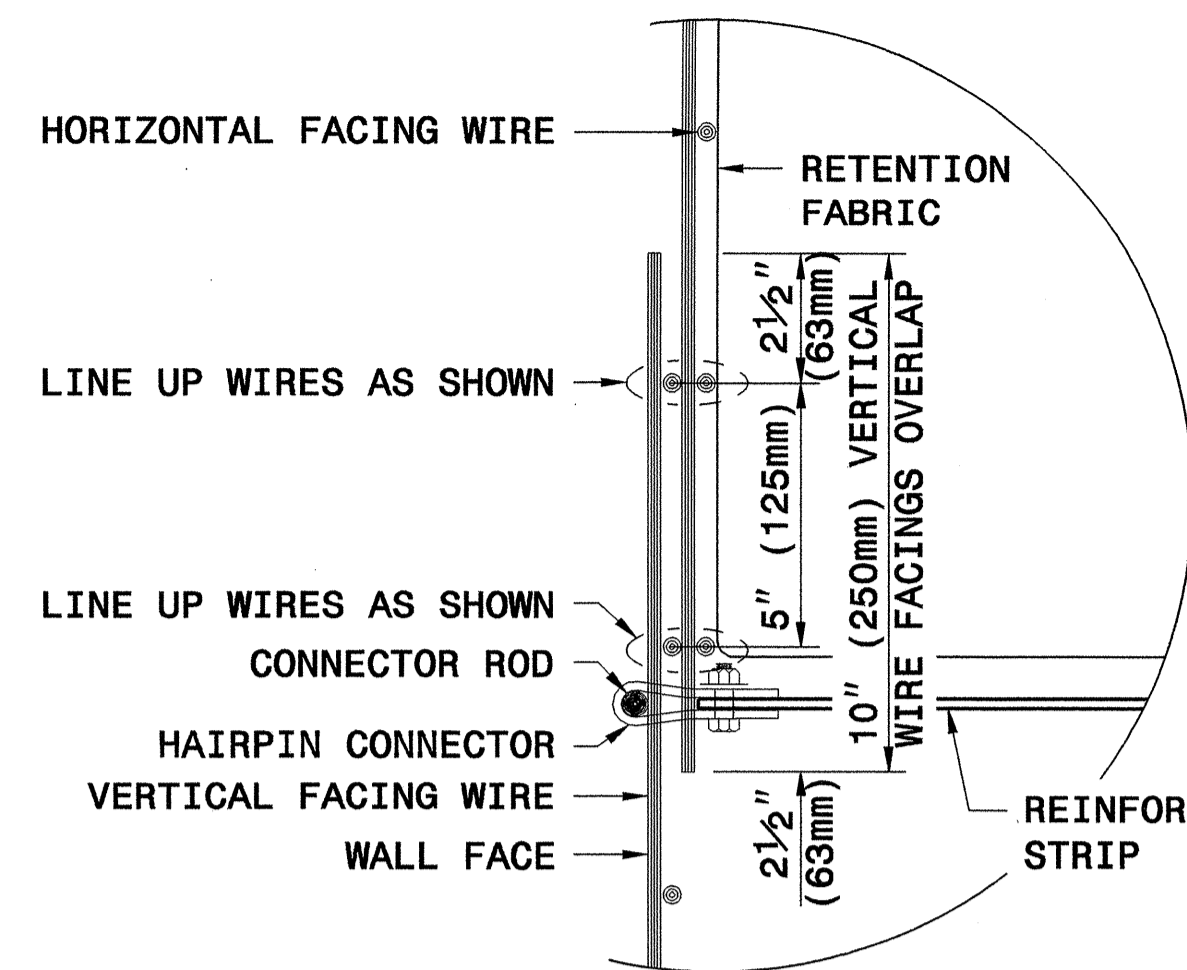
STANDARD DRAWING NO. 1801.02

TERRATREL
 TEMPORARY WALL

GEOTECHNICAL ENGINEER ENGINEER

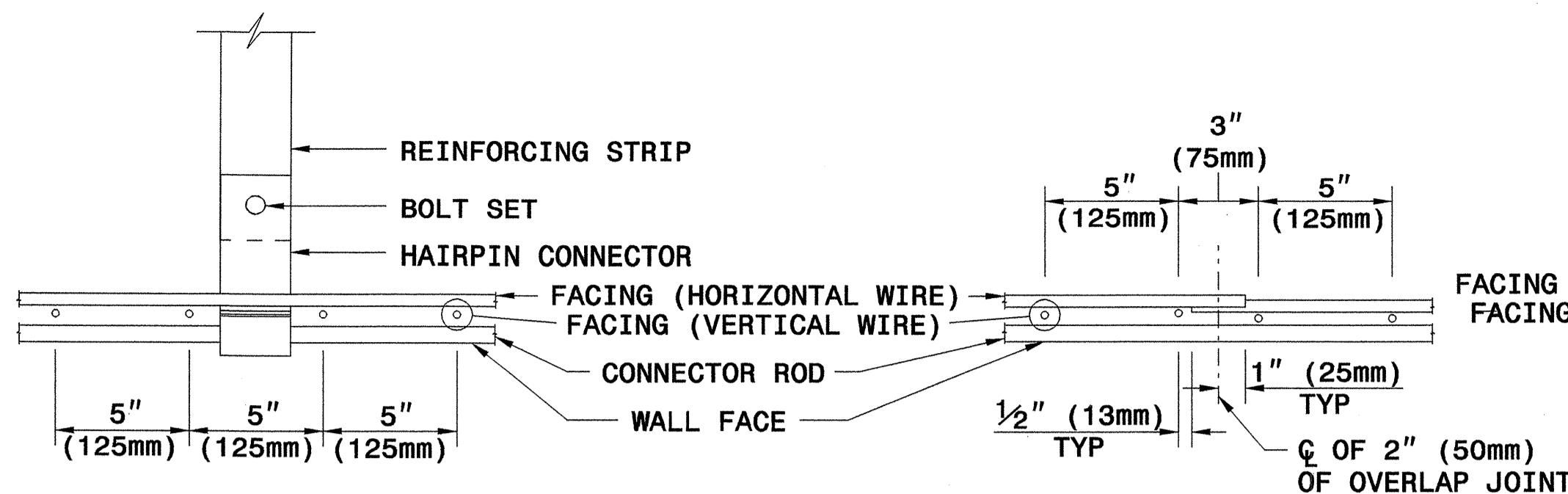


Scott A. Hadden
SIGNATURE DATE

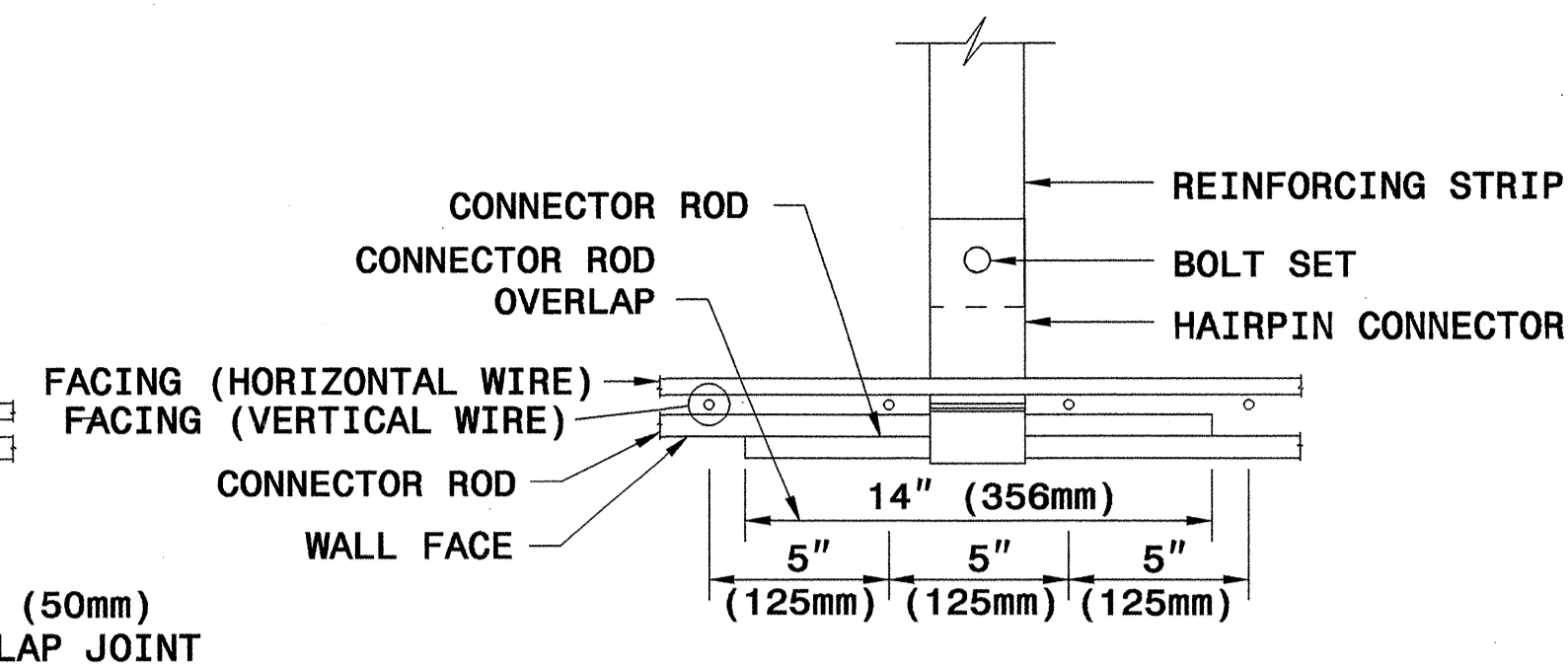


OVERLAP FACINGS VERTICALLY ONE FULL 5" (125mm) WIRE SQUARE DISREGARDING HALF SQUARES AT EDGES

VERTICAL OVERLAP DETAIL

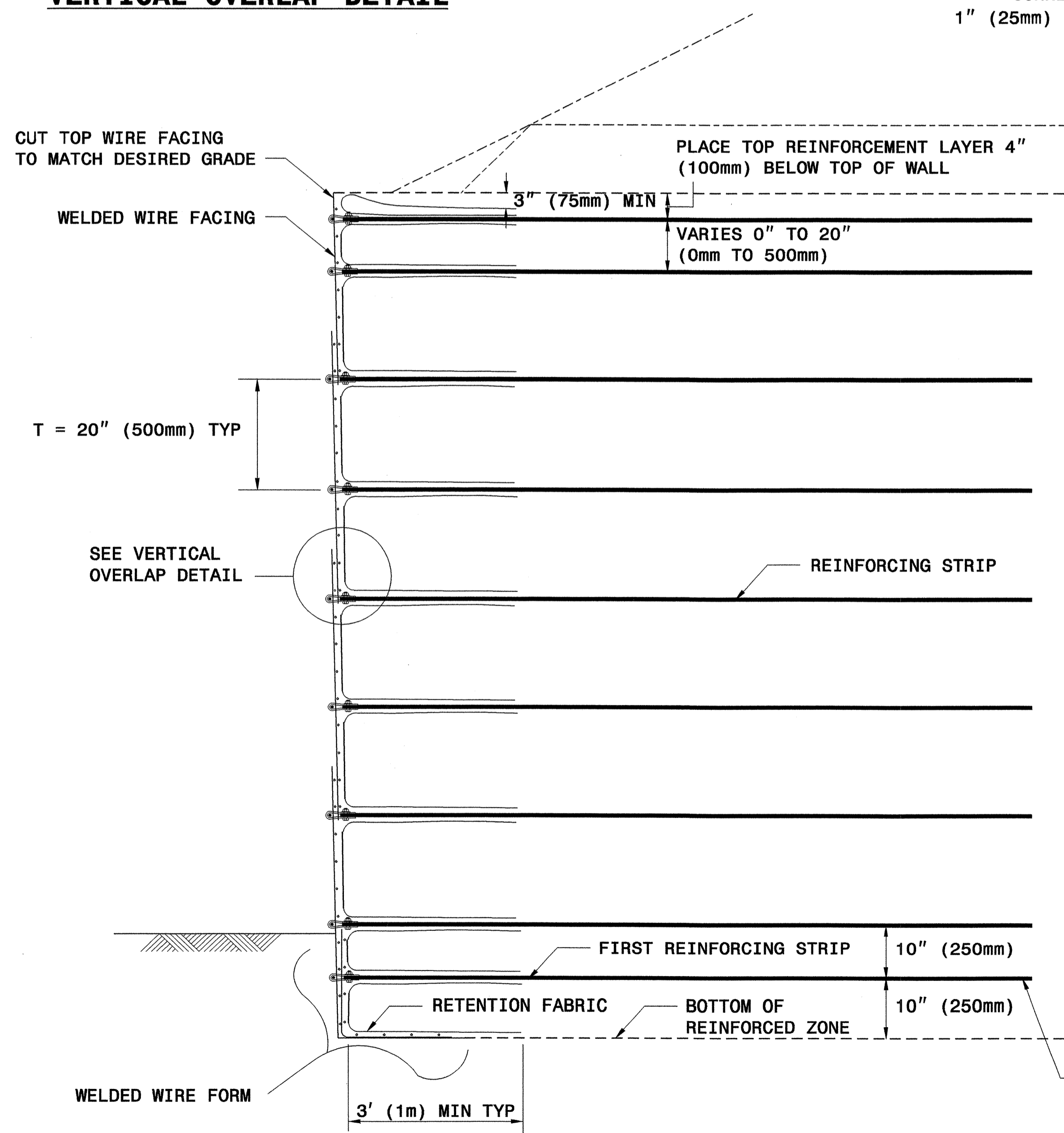


**PLAN DETAIL 'A'
STRIP CONNECTION**



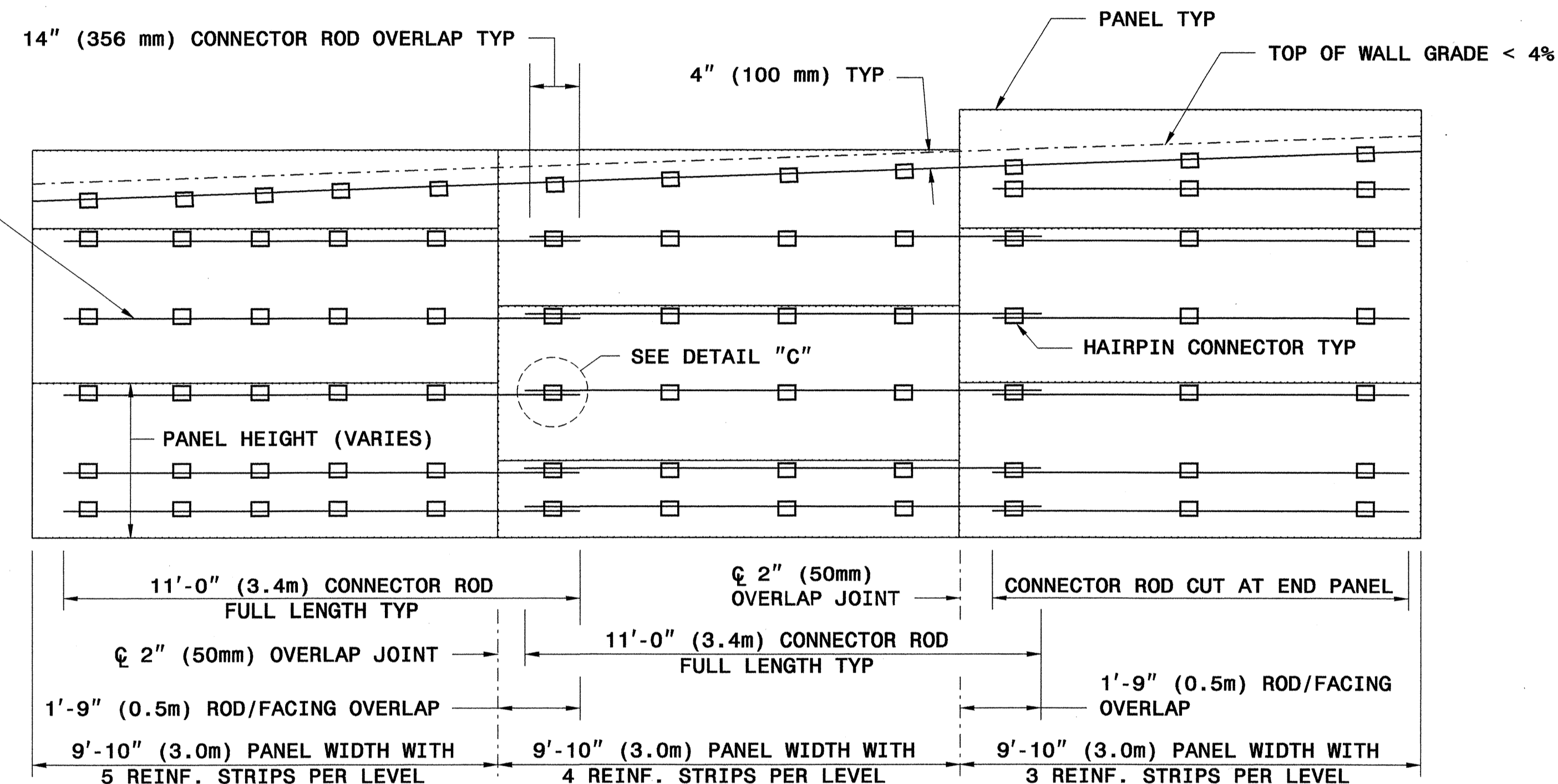
**PLAN DETAIL 'B'
HORIZONTAL OVERLAP DETAIL**

**PLAN DETAIL 'C'
STRIP CONNECTION WITH
HORIZONTAL OVERLAP DETAIL**

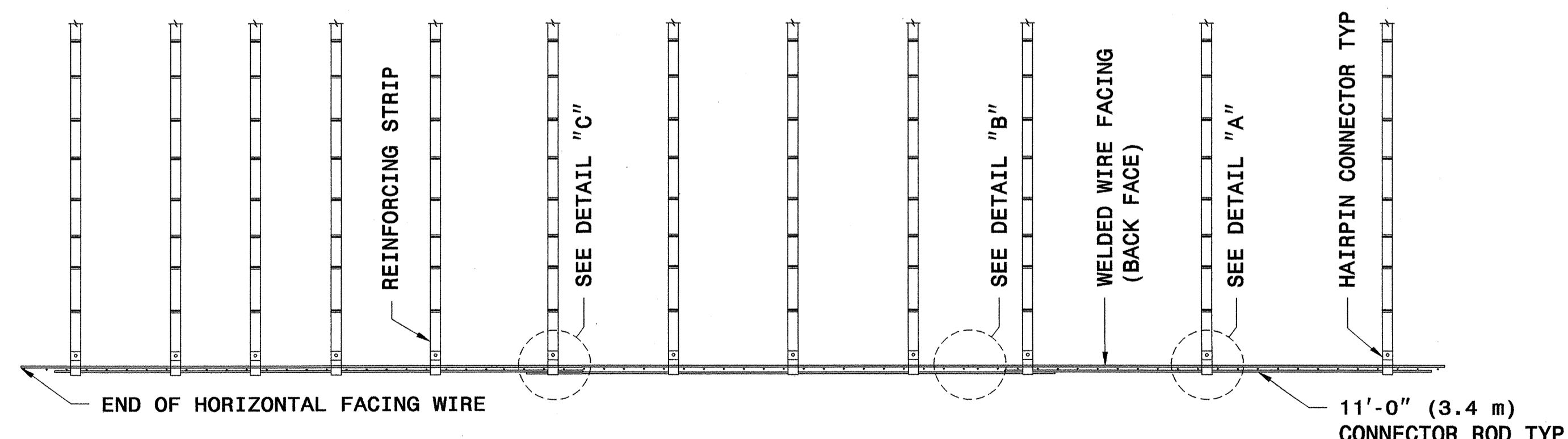


TYPICAL SECTION

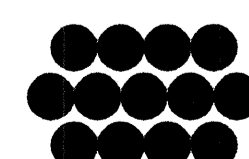
PLACE LOWEST REINFORCING STRIP 10" (250mm) FROM BOTTOM OF REINFORCED ZONE



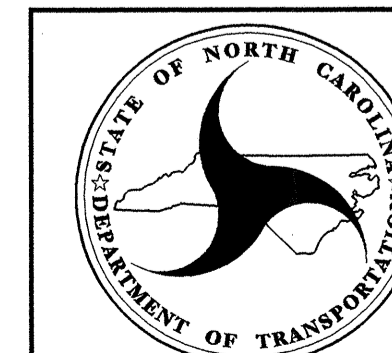
**TYPICAL ELEVATION
(WIRES NOT SHOWN FOR CLARITY)**



TYPICAL PLAN



The Reinforced Earth Company



**GEOTECHNICAL
ENGINEERING UNIT**
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD DRAWING NO. 1801.02

**TERRATREL
TEMPORARY WALL**

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

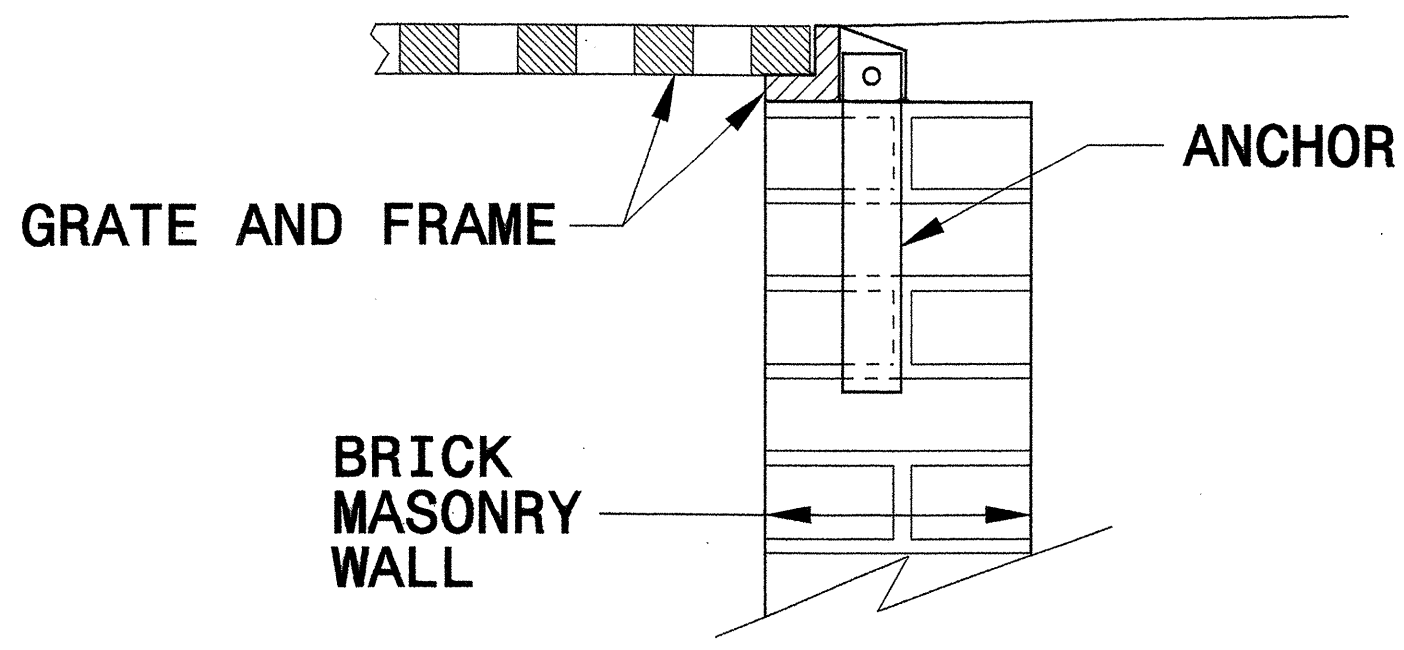
ENGLISH DETAIL DRAWING FOR
ANCHORAGE FOR FRAMES
BRICK/CONCRETE/PRECAST CONCRETE

SHEET 1 OF 1
840D25

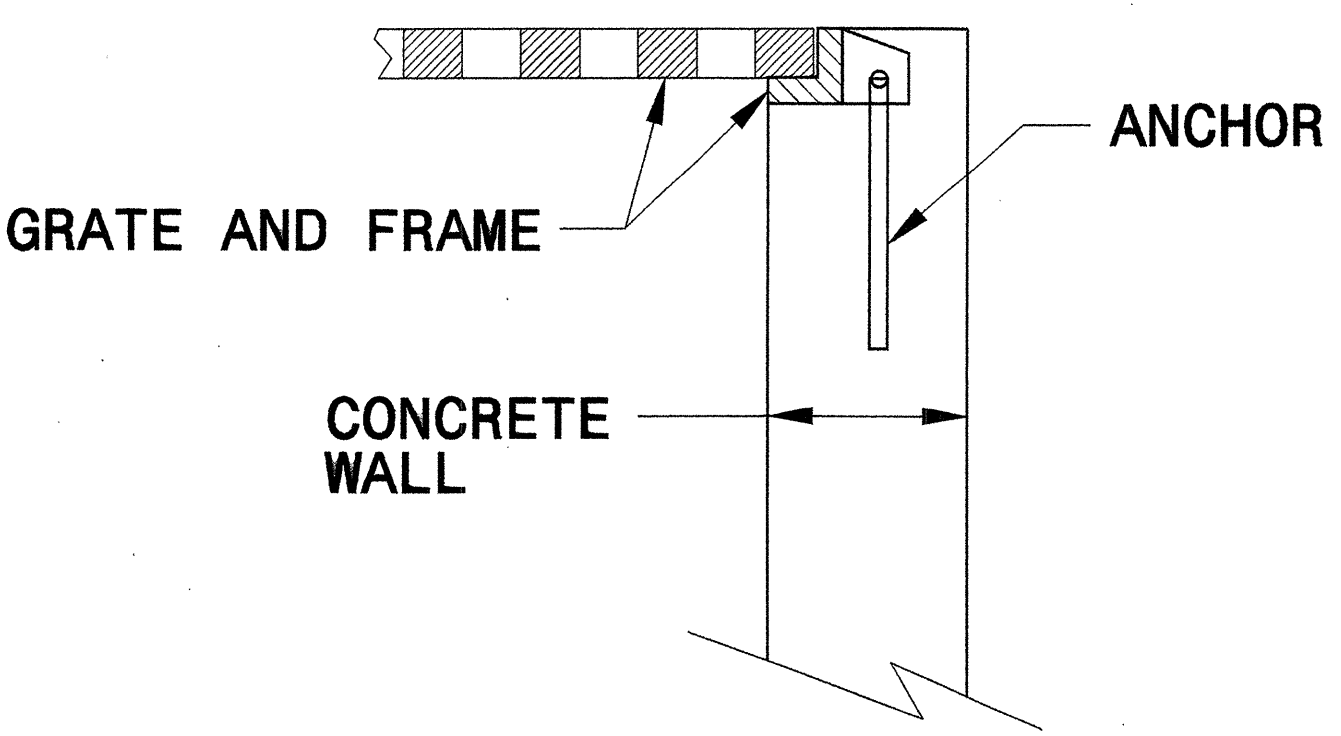
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

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

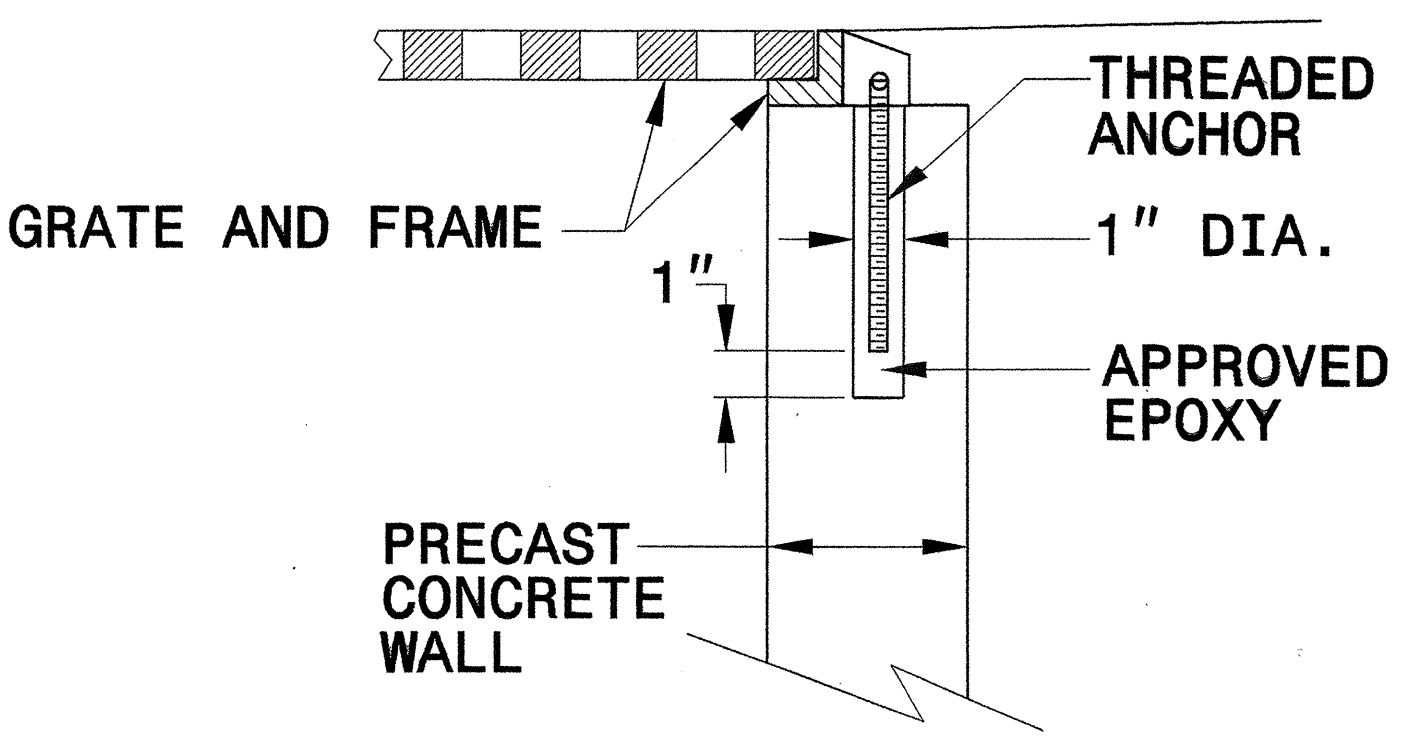
SHEET 1 OF 1
840D25



BRICK MASONRY CONSTRUCTION



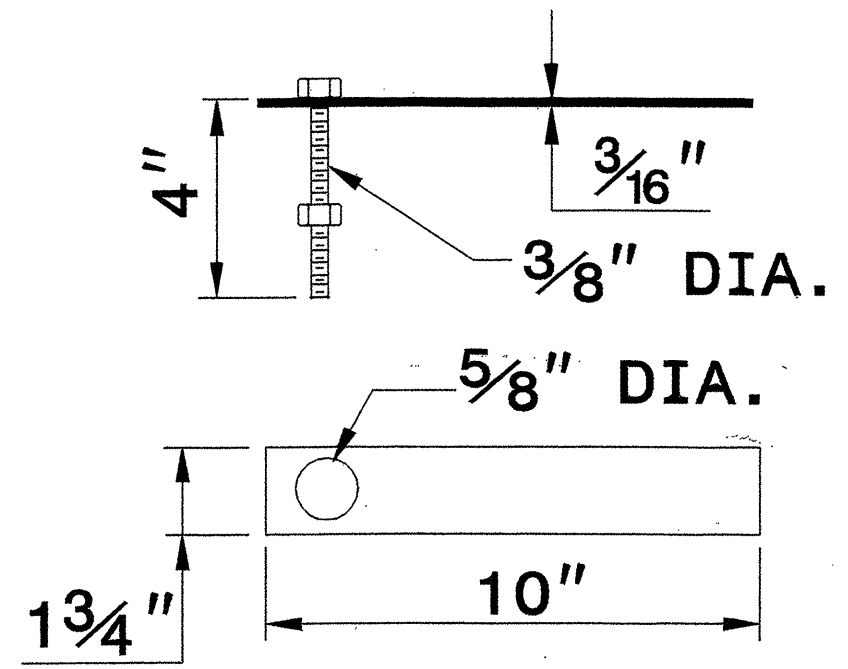
CONCRETE CONSTRUCTION



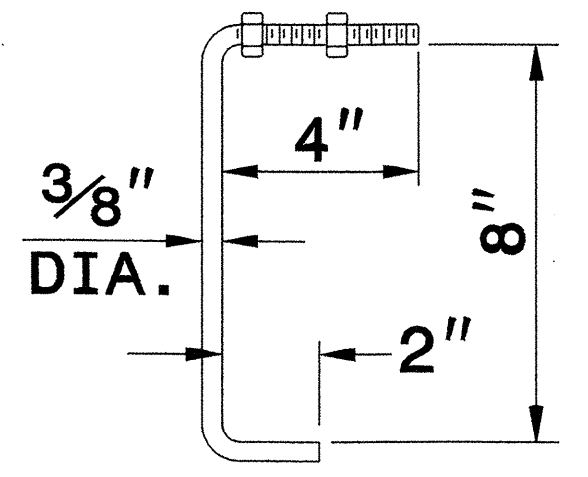
PRECAST CONCRETE CONSTRUCTION

DETAIL SHOWING ANCHORAGE OF FRAME FOR GRATED DROP INLET

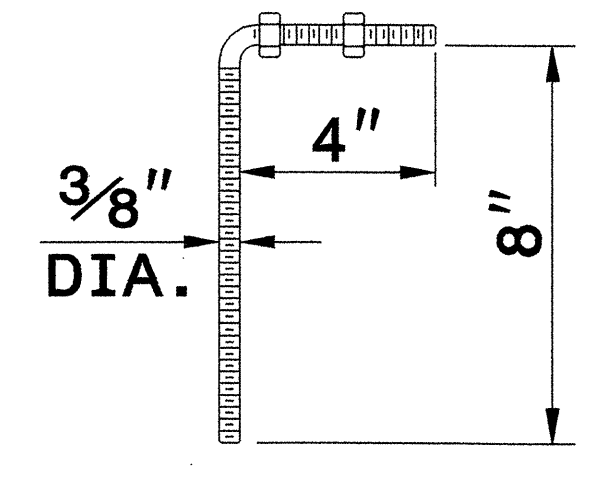
NOTE:
CONSTRUCT GRATED DROP INLET TO COINCIDE WITH NORMAL OR SUPERELEVATED SHOULDER OR PAVEMENT SLOPE.



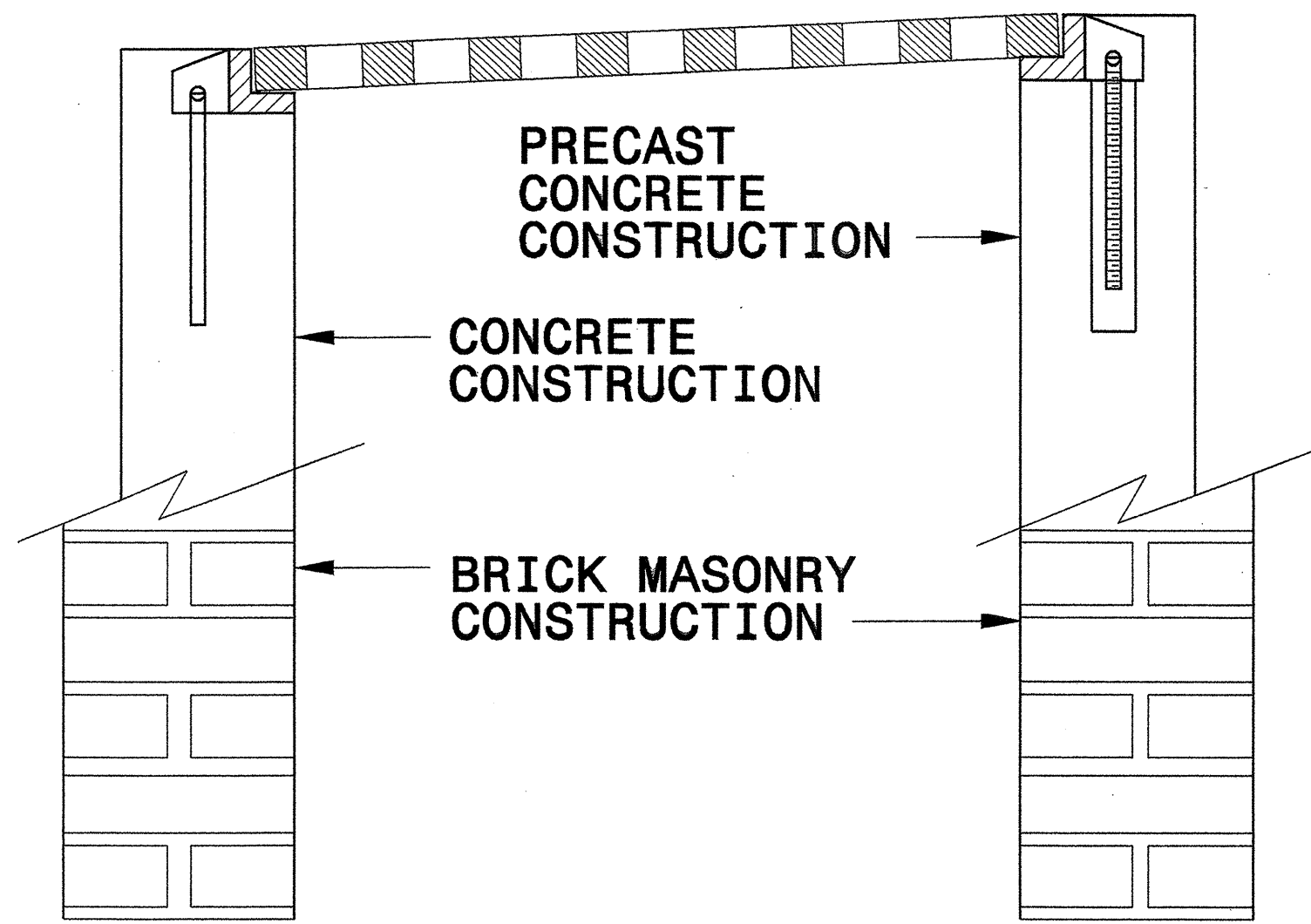
MASONRY ANCHOR
3/8" DIA. BOLT WITH PLATE



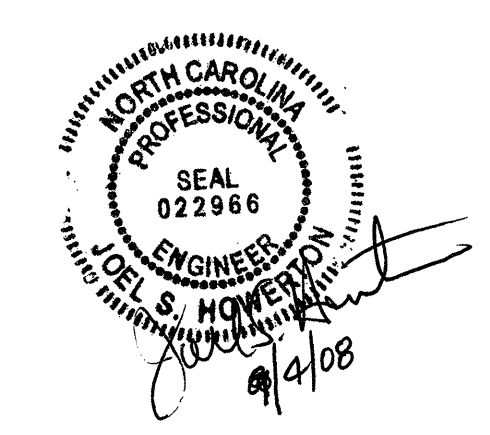
CONCRETE ANCHOR
3/8" DIA. BENT BAR



PRECAST CONCRETE ANCHOR
3/8" DIA. BENT BAR



FRAME AND GRATE INSTALLATION FOR NORMAL CROWN AND SUPERELEVATED SECTIONS




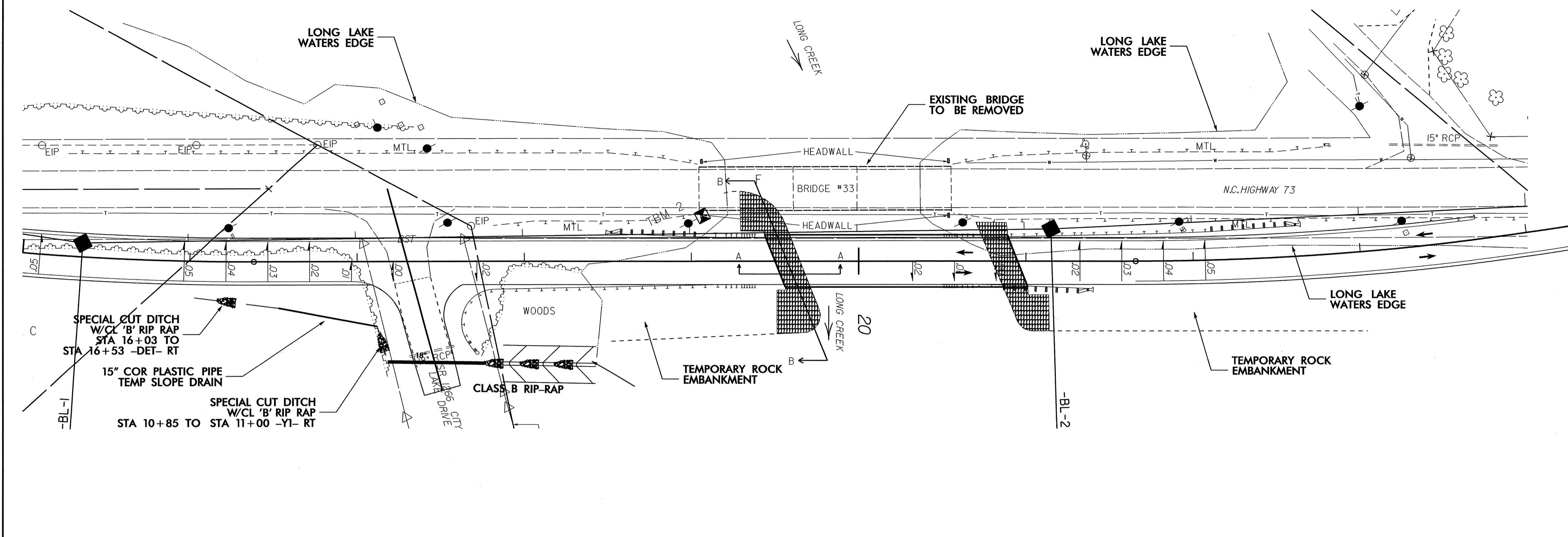
PROJECT SERVICES UNIT
STANDARDS AND SPECIAL DESIGN
Office 919-250-4128 FAX 919-250-4119

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.:

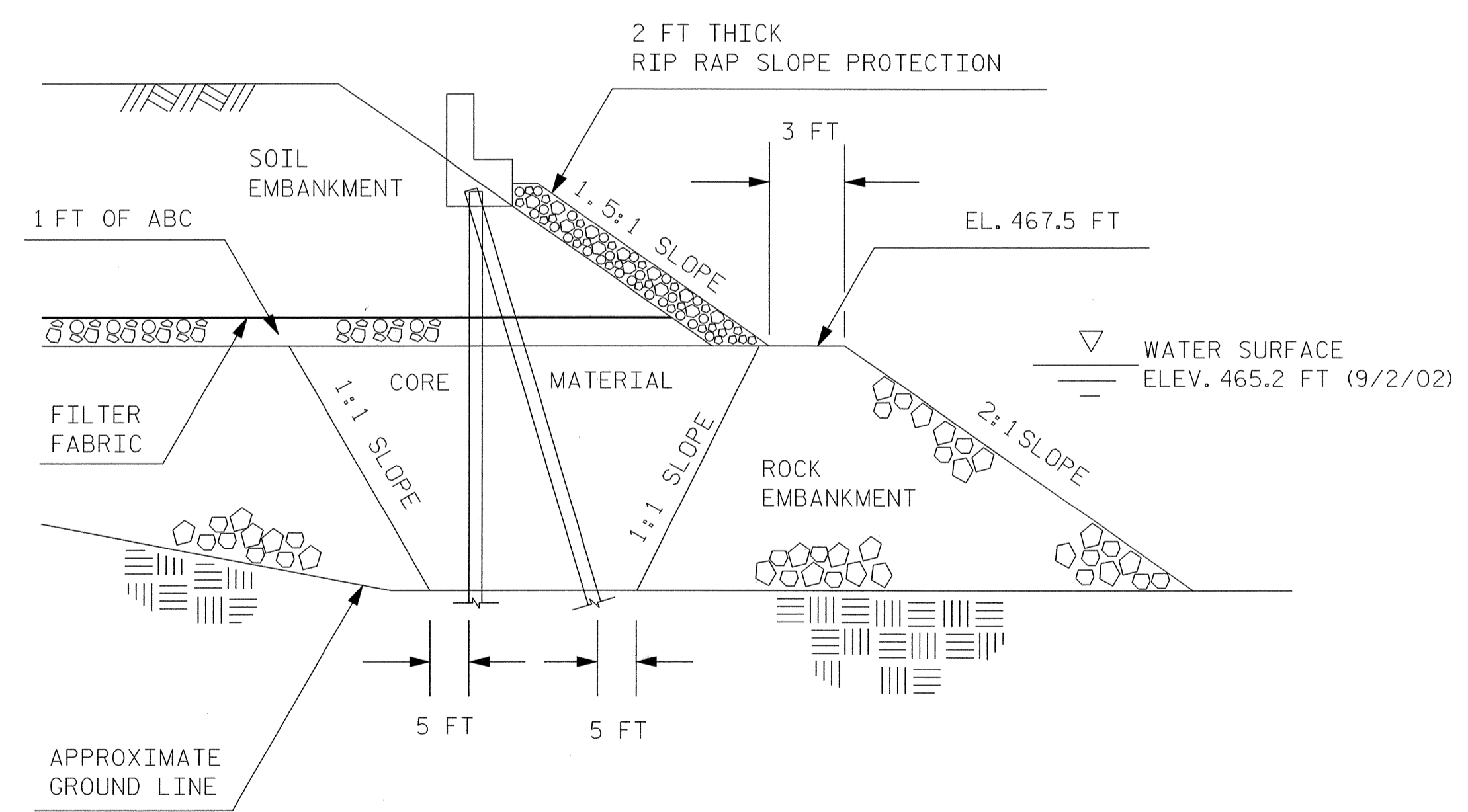
SYSTEMS: \$\$\$\$\$\$
DESIGN: \$\$\$\$\$\$
USER NAME: \$\$\$\$\$\$

GEOTECHNICAL ENGINEER  SIGNATURE: <i>Shane C. Clark</i> DATE: 10/6/08	ENGINEER SIGNATURE: _____ DATE: _____
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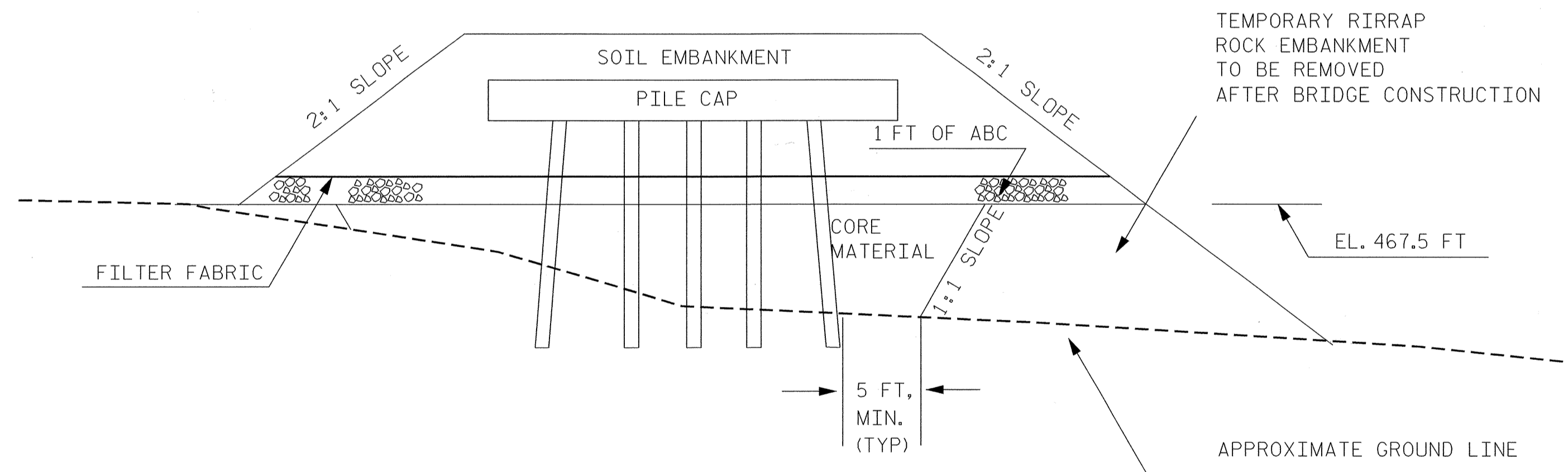


NOTES:

1. THE CONTRACTOR HAS THE OPTION TO USE THE DETAILS PROVIDED FOR DESIGN AND CONSTRUCTION OR MAY SUBMIT AN ALTERNATIVE PLAN WITH THE TEMPORARY STRUCTURE PLANS.
2. SEE ROCK EMBANKMENTS FOR TEMPORARY STRUCTURES PROJECT SPECIAL PROVISION
3. AT THE DIRECTION OF THE ENGINEER, REMOVE TEMPORARY ROCK EMBANKMENT AFTER THE BRIDGE CONSTRUCTION HAS BEEN COMPLETED.
4. CONTRACTOR TO SUBMIT TEMPORARY STRUCTURE FOUNDATION PLAN PRIOR BE BEGINNING CONSTRUCTION OF EMBANKMENT.



SECTION A-A
Not to Scale



SECTION B-B
Not to Scale

PROJECT NO.: B-4276
STANLY COUNTY
STATION: 18+45 TO 19+50 -L-,
 20+95 TO 23+60.65 -L-
 SHEET 1 OF 1

GEOTECHNICAL ENGINEERING UNIT

EASTERN REGIONAL OFFICE
 WESTERN REGIONAL OFFICE
 CONTRACT OFFICE

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**ROCK EMBANKMENT
FOR TEMPORARY STRUCTURE**

PREPARED BY: SCC	DATE: 9/22/08
REVIEWED BY: SCC	DATE: 9/22/08

REVISIONS						SHEET NO. 2-P	TOTAL SHEETS
NO.	BY	DATE	NO.	BY	DATE		
1			3				
2			4				

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SUMMARY OF QUANTITIES

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C201831

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
0022000000-E	225	14,300	CY	UNCLASSIFIED EXCAVATION
0029000000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ***** (19+96.00)
0050000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB-BING
0057000000-E	226	950	CY	UNDERCUT EXCAVATION
0063000000-N	SP	Lump Sum		GRADING
0080000000-E	SP	1,500	TON	CLASS IV SUBGRADE STABILIZATION
0134000000-E	240	20	CY	DRAINAGE DITCH EXCAVATION
0196000000-E	270	2,000	SY	FABRIC FOR SOIL STABILIZATION
0199000000-E	SP	1,550	SF	TEMPORARY SHORING
0220000000-E	SP	4,350	TON	ROCK EMBANKMENTS
0241000000-E	SP	2,600	SY	GENERIC GRADING ITEM FILTER FABRIC FOR ROCK EMBANKMENTS
0255000000-E	SP	1,150	TON	GENERIC GRADING ITEM SELECT MATERIAL, CLASS IV (ABC)
0255000000-E	SP	250	TON	GENERIC GRADING ITEM SELECT MATERIAL, CLASS VI
0318000000-E	300	64.5	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRS
0366000000-E	310	116	LF	15" RC PIPE CULVERTS, CLASS III
0372000000-E	310	204	LF	18" RC PIPE CULVERTS, CLASS III
0708000000-E	310	20	LF	15" BIT COAT CS PIPE CULVERTS, TYPE B 0.064" THICK
0806000000-E	310	2	EA	15" BIT COAT CS PIPE ELBOWS, TYPE B 0.064" THICK
0995000000-E	340	143	LF	PIPE REMOVAL
1121000000-E	520	2,000	TON	AGGREGATE BASE COURSE
1220000000-E	545	150	TON	INCIDENTAL STONE BASE
1275000000-E	600	1,250	GAL	PRIME COAT
1297000000-E	607	900	SY	MILLING ASPHALT PAVEMENT, **** DEPTH (3")
1489000000-E	610	1,250	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
1498000000-E	610	960	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0B
1519000000-E	610	1,380	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5B
1560000000-E	620	185	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22
1693000000-E	654	9.25	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR
2286000000-N	840	3	EA	MASONRY DRAINAGE STRUCTURES
2354000000-N	840	1	EA	FRAME WITH GRATE, STD 840.22
2364200000-N	840	2	EA	FRAME WITH TWO GRATES, STD 840.20
2556000000-E	846	310	LF	SHOULDER BERM GUTTER
3030000000-E	862	750	LF	STEEL BM GUARDRAIL
3045000000-E	862	100	LF	STEEL BM GUARDRAIL, SHOP CURVED
3150000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS
3195000000-N	862	2	EA	GUARDRAIL ANCHOR UNITS, TYPE AT-1
3270000000-N	SP	2	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
3317000000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE B-77
3380000000-E	862	1,137.5	LF	TEMPORARY STEEL BM GUARDRAIL
3382000000-E	862	37.5	LF	TEMPORARY STEEL BM GUARDRAIL (SHOP CURVED)
3387000000-N	862	1	EA	GUARDRAIL ANCHOR UNITS, TYPE ***** TEMPORARY (AT-1)
3387000000-N	862	3	EA	GUARDRAIL ANCHOR UNITS, TYPE ***** TEMPORARY (B-77)
3389100000-N	SP	6	EA	GUARDRAIL ANCHOR UNITS, TYPE 350 TEMPORARY
3649000000-E	876	165	TON	RIP RAP, CLASS B

ItemNumber	Sec #	Quantity	Unit	Description
3656000000-E	876	1,275	SY	FILTER FABRIC FOR DRAINAGE
4072000000-E	903	244	LF	SUPPORTS, 3-LB STEEL U-CHANNEL
4096000000-N	904	2	EA	SIGN ERECTION, TYPE D
4102000000-N	904	10	EA	SIGN ERECTION, TYPE E
4155000000-N	907	15	EA	DISPOSAL OF SIGN SYSTEM, U-CHANNEL
4238000000-N	907	1	EA	DISPOSAL OF SIGN, D, E OR F
4400000000-E	1110	474	SF	WORK ZONE SIGNS (STATIONARY)
4405000000-E	1110	96	SF	WORK ZONE SIGNS (PORTABLE)
4410000000-E	1110	103	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
4430000000-N	1130	70	EA	DRUMS
4435000000-N	1135	30	EA	CONES
4445000000-E	1145	84	LF	BARRICADES (TYPE III)
4450000000-N	1150	960	HR	FLAGGER
4465000000-N	1160	1	EA	TEMPORARY CRASH CUSHIONS
4480000000-N	1165	1	EA	TMIA
4485000000-E	1170	424	LF	PORTABLE CONCRETE BARRIER
4650000000-N	1251	87	EA	TEMPORARY RAISED PAVEMENT MARKERS
4770000000-E	1205	996	LF	COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE ** (4") (IV)
4810000000-E	1205	25,140	LF	PAINT PAVEMENT MARKING LINES (4")
4835000000-E	1205	188	LF	PAINT PAVEMENT MARKING LINES (24")
4847000000-E	1205	7,692	LF	POLYUREA PAVEMENT MARKING LINES (4", *****) (STANDARD GLASS BEADS)
4847140000-E	1205	93	LF	POLYUREA PAVEMENT MARKING LINES (24", *****) (STANDARD GLASS BEADS)
4850000000-E	1205	2,300	LF	REMOVAL OF PAVEMENT MARKING LINES (4")
4900000000-N	1251	31	EA	PERMANENT RAISED PAVEMENT MARKERS

ItemNumber	Sec #	Quantity	Unit	Description
5326000000-E	1510	23	LF	10" WATER LINE
5326200000-E	1510	439	LF	12" WATER LINE
5552000000-E	1515	1	EA	10" VALVE
5558000000-E	1515	1	EA	12" VALVE
5648000000-N	1515	1	EA	RELOCATE WATER METER
5672000000-N	1515	1	EA	RELOCATE FIRE HYDRANT
5802000000-E	1530	75	LF	ABANDON 10" UTILITY PIPE
5804000000-E	1530	682	LF	ABANDON 12" UTILITY PIPE
6000000000-E	1605	2,500	LF	TEMPORARY SILT FENCE
6006000000-E	1610	180	TON	STONE FOR EROSION CONTROL, CLASS A
6009000000-E	1610	255	TON	STONE FOR EROSION CONTROL, CLASS B
6012000000-E	1610	500	TON	SEDIMENT CONTROL STONE
6015000000-E	1615	3	ACR	TEMPORARY MULCHING
6018000000-E	1620	100	LB	SEED FOR TEMPORARY SEEDING
6021000000-E	1620	1.5	TON	FERTILIZER FOR TEMPORARY SEEDING
6024000000-E	1622	200	LF	TEMPORARY SLOPE DRAINS
6027000000-N	1622	7	EA	INLET PROTECTION AT TEMPORARY SLOPE DRAINS
6029000000-E	SP	400	LF	SAFETY FENCE
6030000000-E	1630	600	CY	SILT EXCAVATION
6036000000-E	1631	2,600	SY	MATting FOR EROSION CONTROL
6037000000-E	SP	15	SY	COIR FIBER MAT
6042000000-E	1632	500	LF	1/4" HARDWARE CLOTH
6070000000-N	SP	12	EA	SPECIAL STILLING BASINS
6071030000-E	SP	130	LF	COIR FIBER BAFFLES
6071050000-E	SP	1	EA	*** SKIMMER (1-1/2")
6084000000-E	1660	5.8	ACR	SEEDING & MULCHING
6087000000-E	1660	2	ACR	MOWING
6090000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
6093000000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
6096000000-E	1662	75	LB	SEED FOR SUPPLEMENTAL SEEDING
6108000000-E	1665	2	TON	FERTILIZER TOPDRESSING
6114000000-N	SP	2	HR	SPECIALIZED HAND MOWING
6117000000-N	SP	12	EA	RESPONSE FOR EROSION CONTROL
6123000000-E	1670	1	ACR	REFORESTATION

REVISIONS

COMPUTED BY: T. H. B. DATE: 8-04
 CHECKED BY: D. L. W. DATE: 8-04

PROJECT REFERENCE NO. B-4276 SHEET NO. 3B

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

"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

GUARDRAIL SUMMARY

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			SINGLE FACED CONCRETE BARRIERS	REMARKS				
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	GRAU 350	CAT-1	AT-1	B-77	TYPE III								EA	G	NG
-L-	14+70.50	18+95.50	LT	425.00				14+75.00	8.0	11.0																			ADJUST TO PUMP STATION DRIVEWAY PER ENGINEER
-L-	20+96.50	10+35 -Y3-	LT	200.00	50.00			23+00.00	8.0	11.0	6.25	6.25	4.0																
-L-	10+70 -Y1-	18+95.50	RT	137.50	37.50			17+50.00	8.0	11.0	6.25		4.0																
-L-	20+96.50	22+59.00	RT	162.50				22+50.00	8.0	11.0				1.0															
			SUBTOTAL	925.00	87.50																								
		LESS ANCHOR DEDUCTIONS																											
		B-77 4 @ 18.75			75.00																								
		GRAU 350 2 @ 50.00			100.00																								
		AT-1 2 @ 6.25			12.50																								
		SUBTOTAL	187.50	-187.50																									
		TOTAL	737.50	87.50																									
		SAY	750.00	100.00																									
		ADDITIONAL GUARDRAIL POSTS = 5																											

TEMPORARY GUARDRAIL SUMMARY

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			SINGLE FACED CONCRETE BARRIERS	REMARKS					
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	GRAU 350	CAT-1	AT-1	B-77	TYPE III	TYPE III MOD							EA	G	NG	
DETOUR	10+97 -Y1-	19+55.66	RT	162.5	25.0			17+78.22	8.0	10.0	6.25		4.0																	
DETOUR	20+89.34	22+64.34	LT	175.0				22+53.26	8.0	10.0	50.0		1.0																	
DETOUR	21+00.66	25+63.16	RT	462.5				25+57.00	8.0	10.0		50.0		1.0																
-L-	17+65	18+90	RT	125.0					2.0		50.0																			SEE TRAFFIC CONTROL PLAN PHASE 1
-L-	15+53	18+15	RT	262.5					2.0		50.0																			SEE TRAFFIC CONTROL PLAN PHASE 2
-L-	20+52	23+02	RT	250.0					2.0			50.0																		SEE TRAFFIC CONTROL PLAN PHASE 2
-L-	17+60	18+10	RT	50.0					2.0		50.0																			SEE TRAFFIC CONTROL PLAN PHASE 3
			SUBTOTAL	1487.5	25.0																									
		LESS ANCHOR DEDUCTIONS																												
		GRAU 350 6 @ 50			300.0																									
		AT-1 1 @ 6.25			6.25																									
		TYPE B-77 3 @ 18.75			56.25																									
		SUBTOTAL	362.5	-362.5																										
		TOTAL	1125.0	25.0																										
		SAY	1137.5	37.5																										

EXISTING ASPHALT PAVEMENT REMOVAL SUMMARY



LINE	STATION TO STATION	LOCATION	REMOVAL (SY)	BREAKING (SY)
-L-	Sta. 15+50.00 TO Sta. 19+01.35	CL	860	
-L-	Sta. 20+52.11 TO Sta. 23+00.00	CL	630	
DETOUR	Sta. 13+11.23 TO Sta. 17+17.50	CL	1263	
DETOUR	Sta. 17+44.19 TO Sta. 24+74.93	CL	2290	
		TOTAL	5043	
		SAY	5100 SY	

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REVISIONS

DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA

SUMMARY OF EARTHWORK

PROJECT REFERENCE NO. B-4276		SHEET NO. 3-C	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
 421 Fayetteville Street, Suite 1523 WILSON, N. C. 27601		 811 JONES FERRIS ROAD HILLSBORO, NORTH CAROLINA 27541	

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBANKMENT +%	BORROW	WASTE
SUMMARY #1					
-L- STA 14+50 TO STA 18+94.44	6		2,759	2,753	
Y1TEMP STA 10+57 TO STA 12+00	1,267		951		316
SUBTOTAL: SUMMARY #1	1,273		3,710	2,753	316
SUMMARY #2					
-L- STA 20+97.57 TO STA 27+50	3,947		590		3,357
Y3 STA. 10+22 TO STA 11+25	72		16		56
SUBTOTAL: SUMMARY #2	4,019		606		3,413
SUMMARY #3					
DET STA 13+34.91 TO STA 18+45.00	1,226		2,129	903	
DET STA 18+45.00 TO STA 19+50			1,938	1,938	
SUBTOTAL: SUMMARY #3	1,226		4,067	2,841	
SUMMARY #4					
DET STA 20+95 TO STA 26+52.34	26		2,105	2,079	
SUBTOTAL: SUMMARY #4	26		2,105	2,079	
SUMMARY #5					
Y1 STA 10+40 TO STA 11+30	592		248		344
REMOVE DETOUR STA 13+34.91 to 18+45.00	2,675				2,675
REMOVE DETOUR STA 18+45.00 TO STA 19+50	1,122				1,122
SUBTOTAL: SUMMARY #5	4,389		248		4,141
SUMMARY #6					
REMOVE DETOUR STA 20+95 TO STA 26+52	4,097				4,097
SUBTOTAL: SUMMARY #6	4,097				4,097
SUBTOTAL (SUMMARIES 1-6)	15,030		10,736	7,673	11,967
LOSS DUE CLEARING & GRUBBING	-750			750	
SHOULDER MATERIAL:				863	
WASTE TO BE USED IN LIEU OF BORROW				-3,755	
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT				277	
STOCKPILE					-3,755
PROJECT TOTAL	14,280		10,736	5,808	8,212
GRAND TOTAL	14,280		10,736	5,808	8,212
SAY	14,300			5,850	8,250
DRAINAGE DITCH EXCAVATION:	20				
UNDERCUT EXCAVATION	950				
SELECT GRANULAR MATERIAL					

- NOTES:
- APPROXIMATE QUANTITIES ONLY. BORROW EXCAVATION, FINE GRADING, CLEARING AND GRUBBING, AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING".
 - EARTHWORK QUANTITIES ARE CALCULATED BY THE ROADWAY DESIGN UNIT. THESE QUANTITIES ARE BASED IN PART ON SUBSURFACE DATA PROVIDED BY THE GEOTECHNICAL ENGINEERING UNIT.

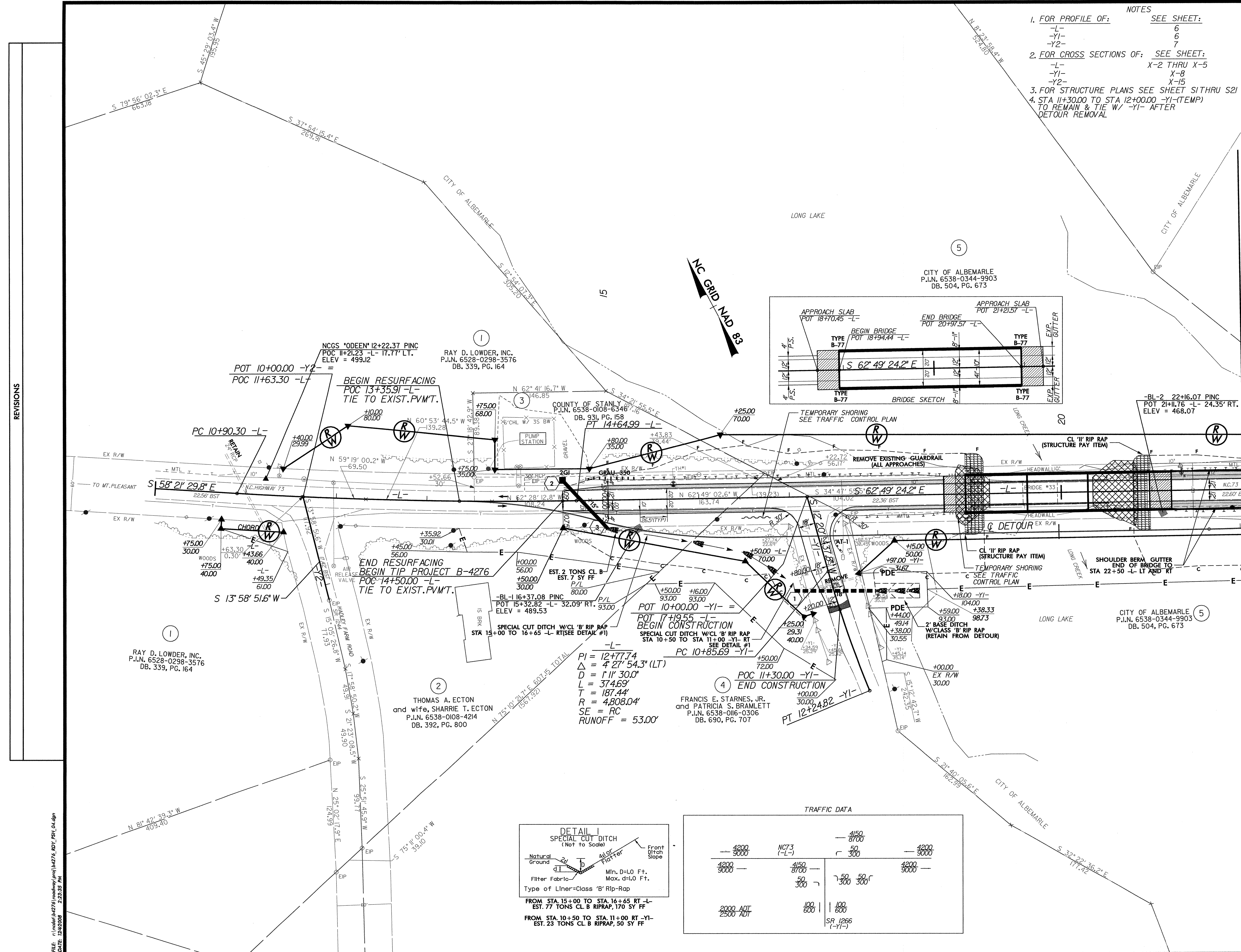
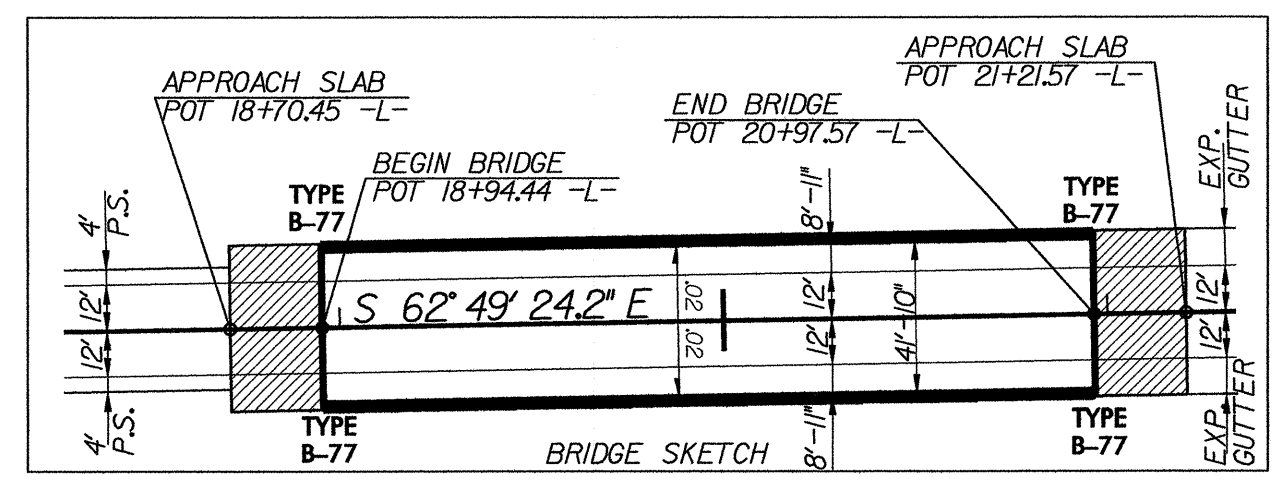
ROCK EMBANKMENT (-DET- CONSTRUCTION STA. 18+45 TO 19+50 AND STA. 20+95 TO 26+52) = 4,350 TONS
 SELECT MATERIAL IV EMBANKMENT (-DET- CONSTRUCTION STA. 18+45 TO 19+50 AND STA. 20+95 TO 26+52) = 1,150 TONS

REVISIONS

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 DATE: SDATES
 STIMES

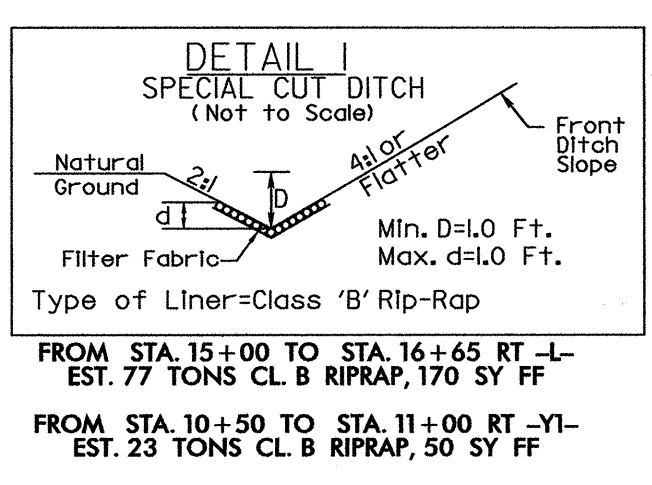
NOTES

- FOR PROFILE OF: SEE SHEET:
-L- 6
-Y1- 6
-Y2- 7
- FOR CROSS SECTIONS OF: SEE SHEET:
-L- X-2 THRU X-5
-Y1- X-8
-Y2- X-15
- FOR STRUCTURE PLANS SEE SHEET SITHRU S21
- STA 11+30.00 TO STA 12+00.00 -Y1-(TEMP) TO REMAIN & TIE W/ -Y1- AFTER DETOUR REMOVAL



REVISIONS

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TRAFFIC DATA

4200 3000	4150 8700	4200 3000
4200	4150	4200
3000	8700	3000
2000 ADT 2500 ADT	100 600	100 600
	SR 1266 (-Y1-)	

NOTES

- FOR PROFILE OF: SEE SHEET:
 1. -L- 6
 -Y3- 7
- FOR CROSS SECTIONS OF: SEE SHEET:
 -L- X-5 THRU X-7
 -Y3- X-16

MATCHLINE SEE SHEET 4
 Sta. 22+00.00 -L-

POT 10+21.68 -Y3-
 BEGIN CONSTRUCTION

EST 2 TONS CLASS B RIPRAP,
 7 SY FF

S16° 53' 39.6"E

6

JAMES C. SINCLAIR, ET. UX.
 P.I.N. 6538-0117-5906
 DB. 1950
 PG. 0442

JOYCE S. WHITLE, WIDOW
 P.I.N. 6538-0118-6092
 DB. 728, PG. 491

END TIP PROJECT B-4276
 POC 27+50.00 -L-
 TIE TO EXIST. P.V.M.T.
 SC 25+81.01 -L-

TERESA J. HUNSUCKER
 and husband, KENNETH J. HUNSUCKER
 P.I.N. 6538-0127-2989
 DB. 571, PG. 678

POT 33+00.71 -L-

ST 29+98.88 -L-

POT 11+50.00 -Y3-
 POS 23+76.04 -L-
 END CONSTRUCTION

CITY OF ALBEMARLE
 P.I.N. 6538-0344-9903
 DB. 504, PG. 673

NCGS 'GUARDRAIL' 27+83.18 P.I.N.C.
 POC 26+74.20 -L- 25.99' RT.
 ELEV = 470.98

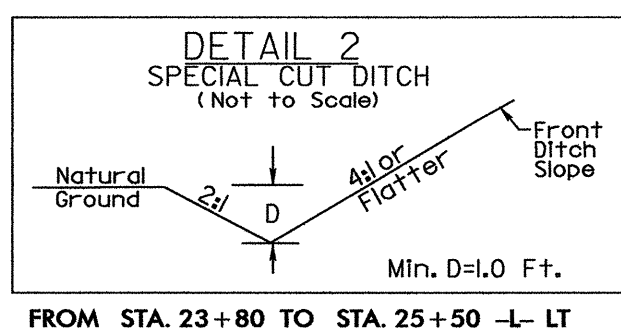
KEVIN L. JORDAN
 and wife, PATSY B. JORDAN
 P.I.N. 6538-0127-1666
 DB. 860, PG. 636

MELVIN K. HUNEY CUTT
 and wife, MARIE T. HUNEY CUTT
 P.I.N. 6538-0137-1258
 DB. 741, PG. 624

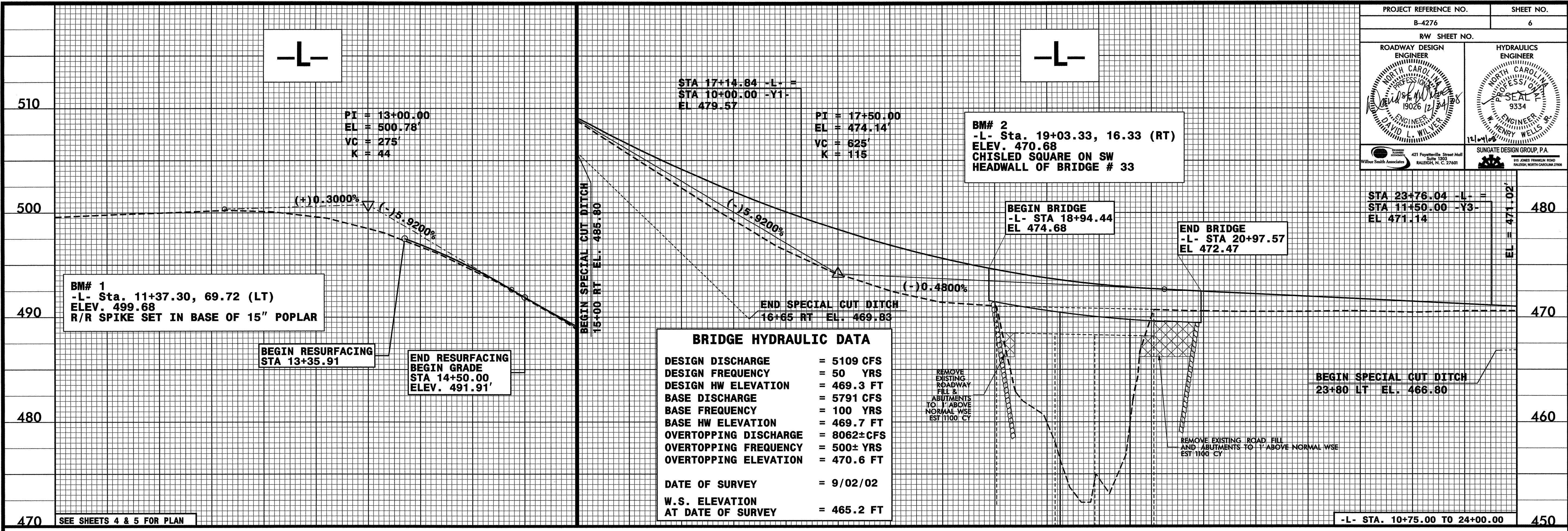
PIs = 25+01.16
 Os = 7° 36' 00.0"
 Ls = 240.00'
 LT = 160.15'
 ST = 80.13'

PI = 26+70.23
 Δ = 11° 15' 53.9" (LT)
 D = 6' 20' 00.0"
 L = 177.87'
 T = 89.22'
 R = 904.67'
 SE = 0.08
 RUNOFF = 213.00'

PIs = 28+39.01
 Os = 7° 36' 00.0"
 Ls = 240.00'
 LT = 160.15'
 ST = 80.13'



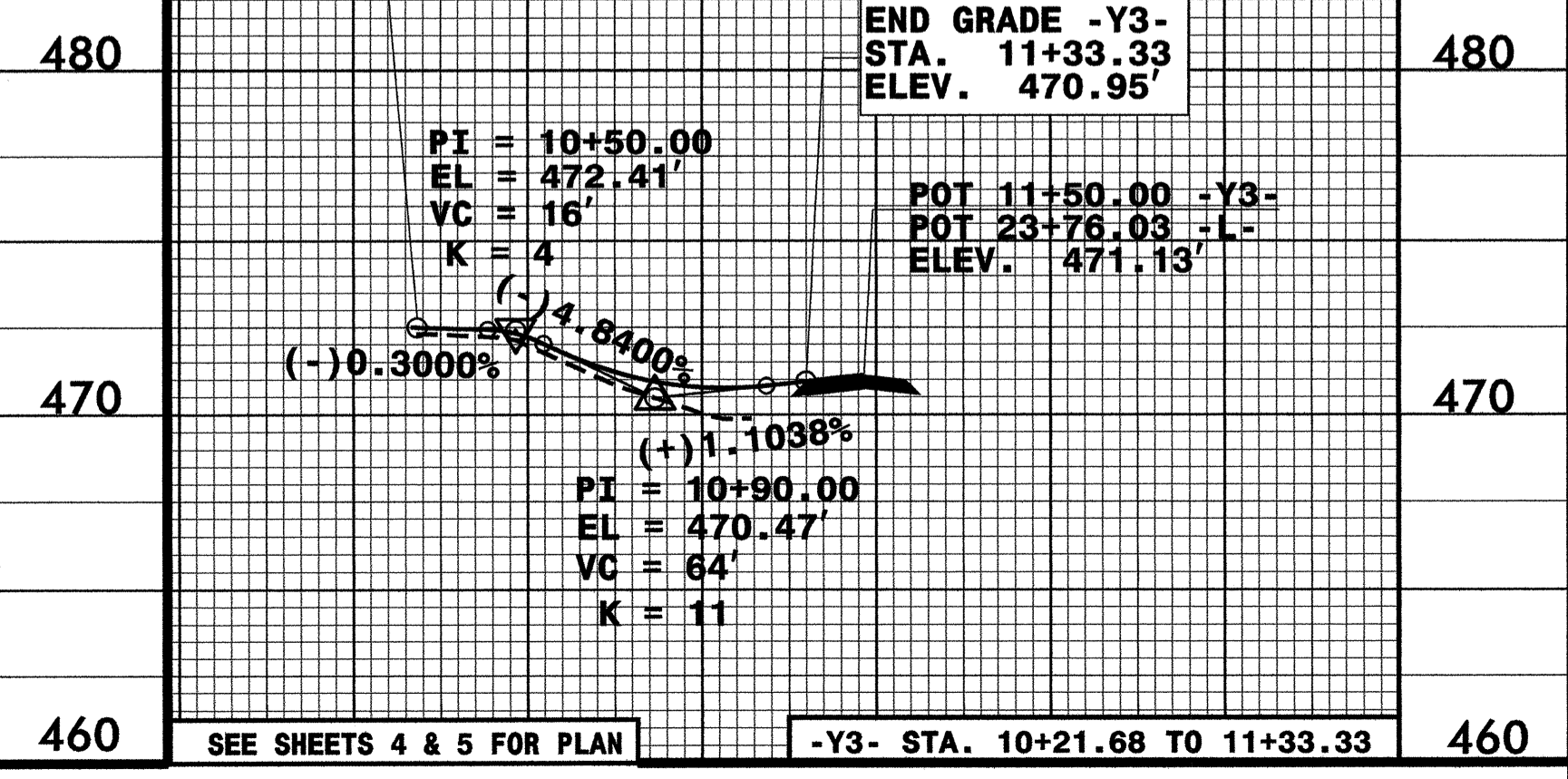
REVISIONS



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PROJECT REFERENCE NO. B-4276	SHEET NO. 7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER DAVID L. WILVE 19026 NORTH CAROLINA PROFESSIONAL ENGINEER	HYDRAULICS ENGINEER HENRY WELLS 9334 NORTH CAROLINA PROFESSIONAL ENGINEER
421 Foytville Street Suite 1003 Raleigh, N.C. 27601	SUNGATE DESIGN GROUP, P.A. 10000 FOREMAN ROAD RALEIGH, NORTH CAROLINA 27608

-Y3-



SEE SHEETS 4 & 5 FOR PLAN

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