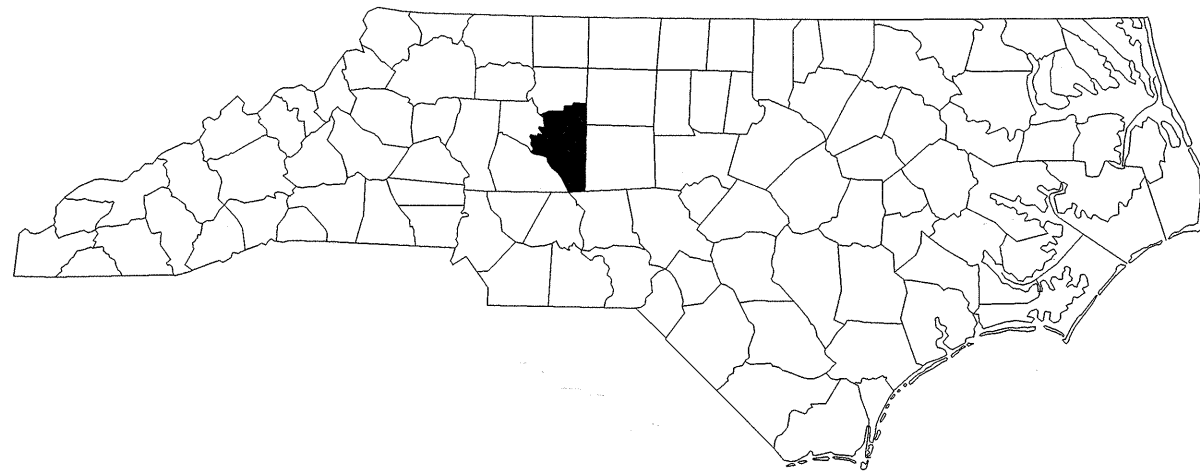
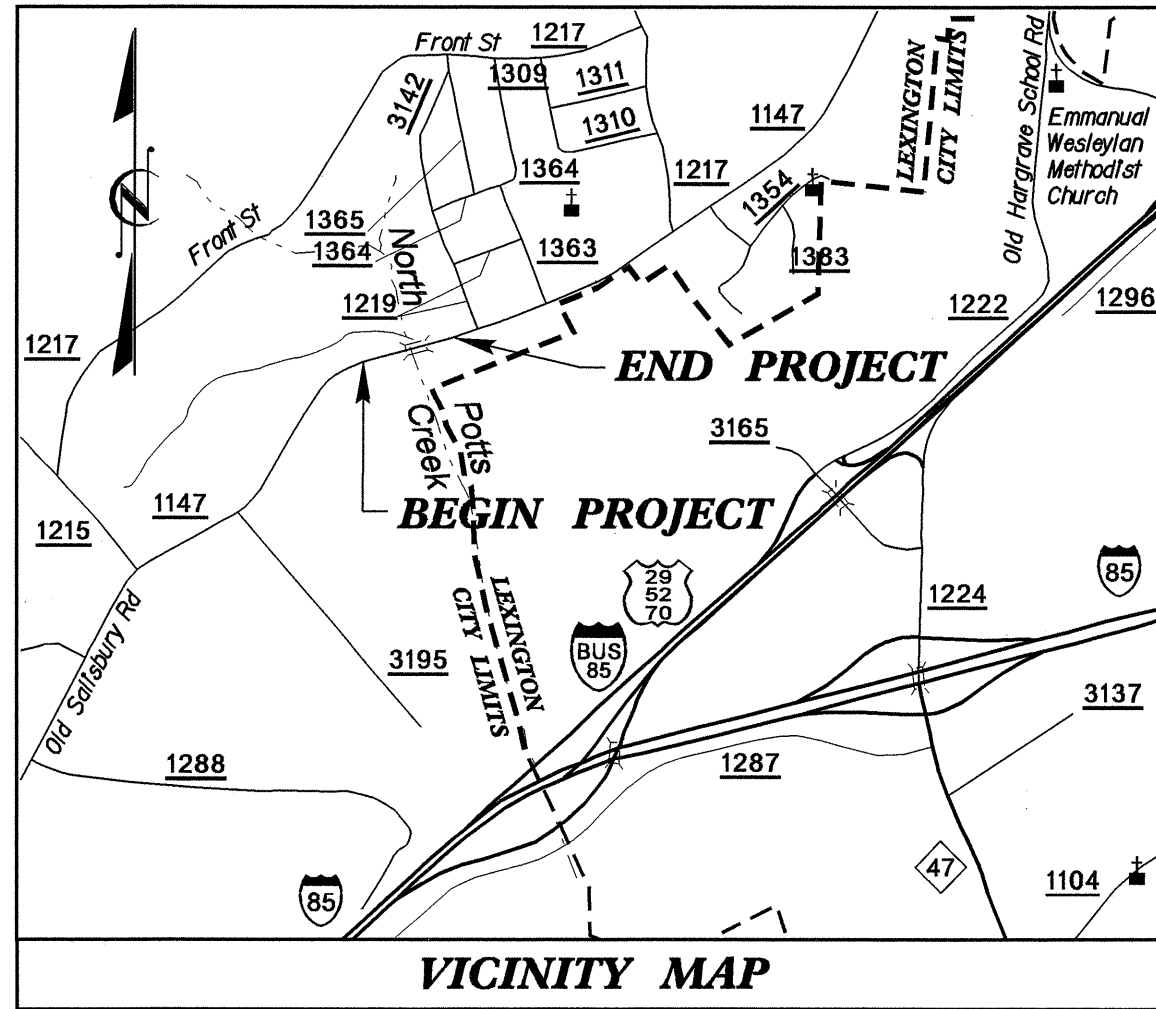


09/08/99

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



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

DAVIDSON COUNTY

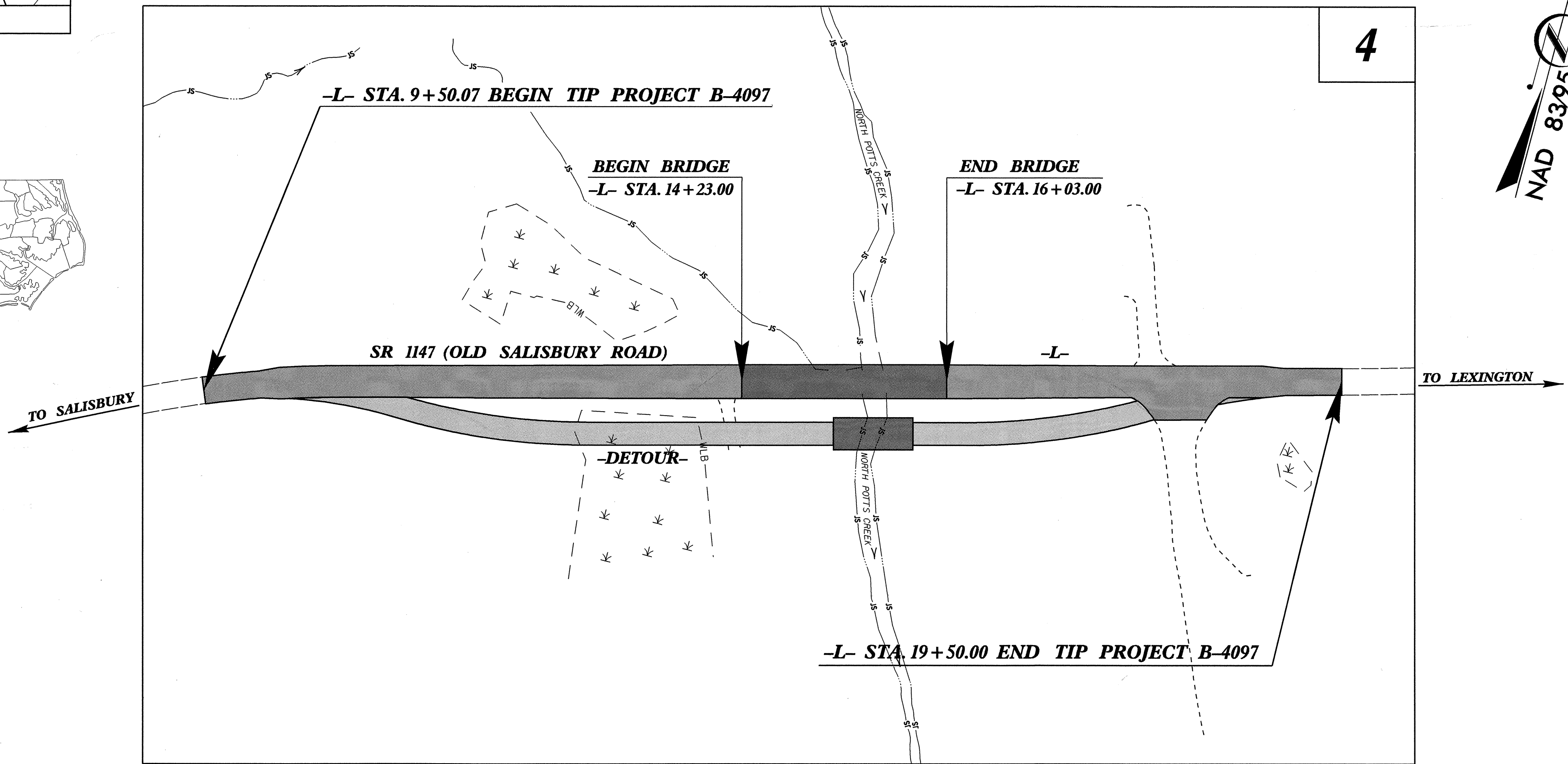
LOCATION: BRIDGE NO. 405 OVER NORTH POTTS CREEK AND
APPROACHES ON SR 1147 (OLD SALISBURY ROAD)

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

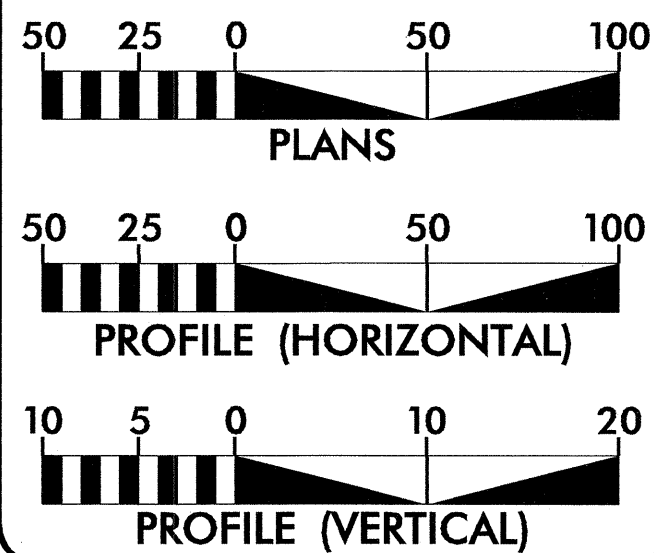
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4097	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33455.1.1	BRSTP-1147(6)	P.E.	
33455.2.1	BRSTP-1147(6)	RW & UTIL.	
33455.3.1	BRSTP-1147(6)	CONST.	

TIP PROJECT: B-4097

CONTRACT: C202100



GRAPHIC SCALES



DESIGN DATA

ADT 2009 = 3700 VPD
 ADT 2030 = 5400 VPD
 DHV = 10 %
 D = 60 %
 * T = 4 %
 V = 50 MPH
 * (TTST 1% + DUAL 3%)
 FUNC. CLASS. = RURAL COLLECTOR

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4097 = 0.155 MILE
 LENGTH STRUCTURE TIP PROJECT B-4097 = 0.034 MILE
 TOTAL LENGTH TIP PROJECT B-4097 = 0.189 MILE

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: **GLENN W. MUMFORD, P.E.**
MAY 23, 2008
PROJECT ENGINEER

LETTING DATE: **JEFFREY L. TEAGUE, P.E.**
MARCH 17, 2009
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

Signature 12/31/08
 SEAL
 12786
 ENGINEER
 STEVEN M. BOWDUR
 P.E.

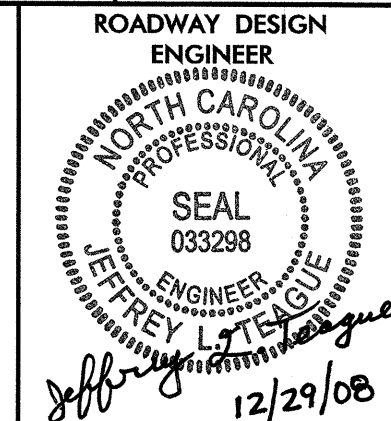
ROADWAY DESIGN ENGINEER

Signature 12/29/08
 SEAL
 033298
 ENGINEER
 JEFFREY L. TEAGUE
 P.E.

DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA

Signature
 SEAL
 STATE HIGHWAY DESIGN ENGINEER

04-DEC-2008 09:57
r:\roadway\proj\b4097_rdy_tsh.dgn
\$\$\$\$\$USERNAME\$\$\$\$\$



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

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	FINAL PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
2-A	DETAIL OF ON-SITE DETOUR
2-B	DETAIL OF ANCHORAGE FOR FRAMES
2-C THROUGH 2-N	DETAIL OF TEMPORARY SHORING
2-O	DETAIL OF BRIDGE APPROACH FILLS, SUB REGIONAL TIER
3	SUMMARY OF QUANTITIES
3-A	SUMMARY OF DRAINAGE QUANTITIES AND GUARDRAIL SUMMARY
3-B	SUMMARY OF EARTHWORK AND ASPHALT PAVEMENT REMOVAL AND BREAKING SUMMARY
4	PLAN SHEET
5	PROFILE SHEET
TCP-1 THROUGH TCP-5	TRAFFIC CONTROL PLANS
EC-1 THROUGH EC-6	EROSION CONTROL PLANS
RF-1	REFORESTATION DETAIL SHEET
UC-1 THROUGH UC-3	UTILITIES CONSTRUCTION PLANS
UO-1 THROUGH UO-2	UTILITIES BY OTHERS PLANS
X-1A	CROSS-SECTION SUMMARY
X-1 THROUGH X-11	CROSS-SECTIONS
S-1 THROUGH S-23	STRUCTURE PLANS

GENERAL NOTES:

2006 SPECIFICATIONS
EFFECTIVE: 07-18-06
REVISED: 09-12-08

2006 ROADWAY ENGLISH STANDARD DRAWINGS

GRADE LINE:

GRADING AND SURFACING OR RESURFACING AND WIDENING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED 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.

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".

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 LEXINGTON-SEWER, CITY OF LEXINGTON-GAS, MCI VERIZON, ENERGY UNITED, LEXCOM COMMUNICATIONS, TIME WARNER CABLE, AND DAVIDSON WATER, INC.
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 CONTRACT.

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated July 18, 2006 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.03	Method of Clearing - Method III
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation - Method 'A'
310.10	Driveway Pipe Construction
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
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

Note: Not to Scale

*S.U.E. = *Subsurface Utility Engineering*

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○
Property Corner	⊗
Property Monument	□
Parcel/Sequence Number	(123)
Existing Fence Line	---x---x---x---
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	---WLB---
Proposed Wetland Boundary	---WLB---
Existing Endangered Animal Boundary	---EAB---
Existing Endangered Plant Boundary	---EPB---

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	-----
Jurisdictional Stream	---JS---
Buffer Zone 1	---BZ 1---
Buffer Zone 2	---BZ 2---
Flow Arrow	←
Disappearing Stream	-----
Spring	○
Wetland	---WLB---
Proposed Lateral, Tail, Head Ditch	-----
False Sump	-----

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○
Switch	□
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	-----
Proposed Right of Way Line with Iron Pin and Cap Marker	-----
Proposed Right of Way Line with Concrete or Granite Marker	-----
Existing Control of Access	○
Proposed Control of Access	○
Existing Easement Line	-----
Proposed Temporary Construction Easement	-----
Proposed Temporary Drainage Easement	-----
Proposed Permanent Drainage Easement	-----
Proposed Permanent Utility Easement	-----

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	---C---
Proposed Slope Stakes Fill	---F---
Detour Slope Stakes Cut	---C---
Detour Slope Stakes Fill	---F---
Proposed Wheel Chair Ramp	-----
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	-----

VEGETATION:

Single Tree	○
Single Shrub	○
Hedge	-----
Woods Line	-----
Orchard	-----
Vineyard	-----

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	-----
Bridge Wing Wall, Head Wall and End Wall	-----
MINOR:	
Head and End Wall	-----
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	-----
Paved Ditch Gutter	-----
Storm Sewer Manhole	○
Storm Sewer	-----

UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	○
Power Line Tower	⊗
Power Transformer	⊗
U/G Power Cable Hand Hole	□
H-Frame Pole	●
Recorded U/G Power Line	-----
Designated U/G Power Line (S.U.E.*)	-----

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

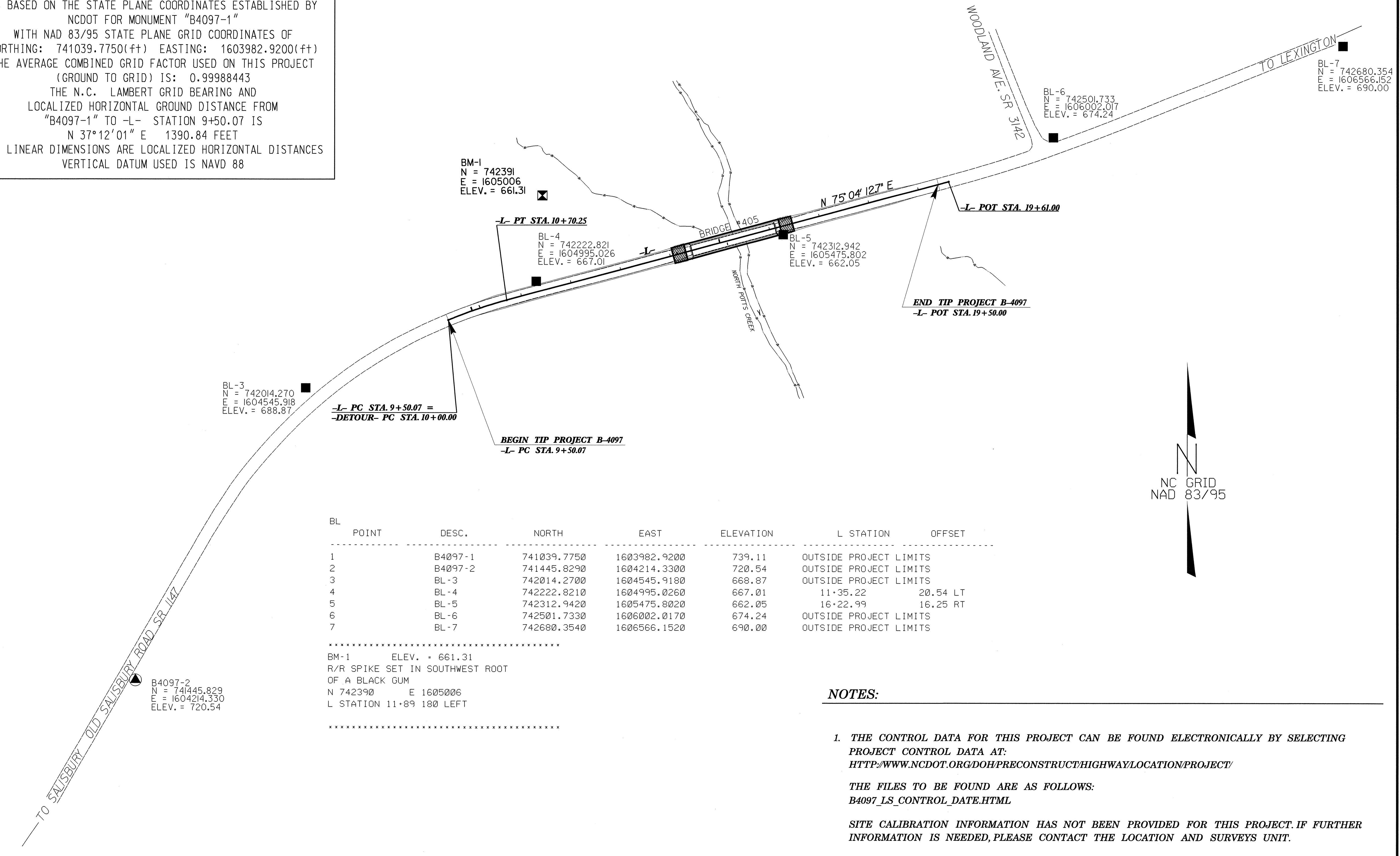
MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	⊕
Utility Unknown U/G Line	-----
U/G Tank; Water, Gas, Oil	□
AG 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-4097

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4097-1"
 WITH NAD 83/95 STATE PLANE GRID COORDINATES OF
 NORTHING: 741039.7750(++) EASTING: 1603982.9200(++)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99988443
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4097-1" TO -L- STATION 9+50.07 IS
 N 37°12'01" E 1390.84 FEET
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
 VERTICAL DATUM USED IS NAVD 88



BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	B4097-1	741039.7750	1603982.9200	739.11	OUTSIDE PROJECT LIMITS	
2	B4097-2	741445.8290	1604214.3300	720.54	OUTSIDE PROJECT LIMITS	
3	BL-3	742014.2700	1604545.9180	668.87	OUTSIDE PROJECT LIMITS	
4	BL-4	742222.8210	1604995.0260	667.01	11+35.22	20.54 LT
5	BL-5	742312.9420	1605475.8020	662.05	16+22.99	16.25 RT
6	BL-6	742501.7330	1606002.0170	674.24	OUTSIDE PROJECT LIMITS	
7	BL-7	742680.3540	1606566.1520	690.00	OUTSIDE PROJECT LIMITS	

 BM-1 ELEV. = 661.31
 R/R SPIKE SET IN SOUTHWEST ROOT OF A BLACK GUM
 N 742390 E 1605006
 L STATION 11+89 180 LEFT

NOTES:

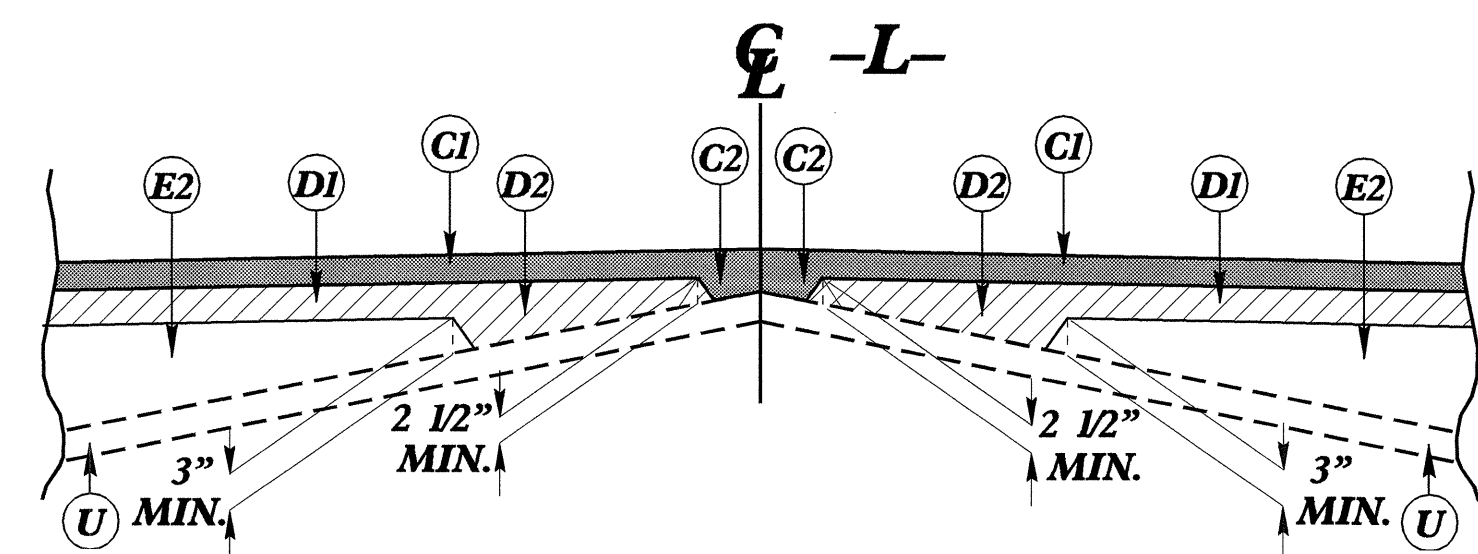
- THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.ncdot.org/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/)
 THE FILES TO BE FOUND ARE AS FOLLOWS:
B4097_LS_CONTROL_DATA.HTML
 SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
- ⊕ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
 PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
 NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING SERVICE (OPUS)

NOTE: DRAWING NOT TO SCALE

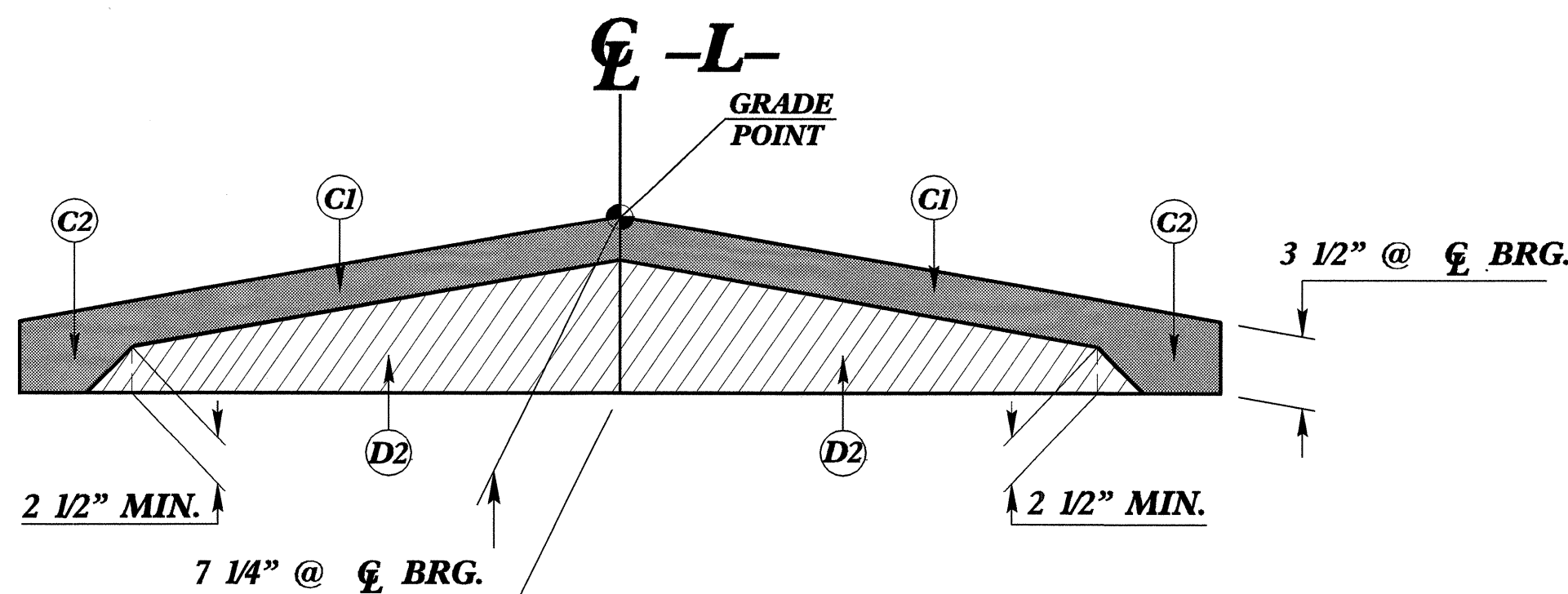
6/2/99
 26-NOV-2008 09:26
 r:\p\constr\B4097_1s.ic_071011.dgn
 10:54:31

FINAL PAVEMENT SCHEDULE	
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1 1/2" IN DEPTH OR GREATER THAN 2" IN DEPTH.
D1	PROP. APPROX. 2 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
J1	PROP. 6" AGGREGATE BASE COURSE.
PI	PRIME COAT AT THE RATE OF 0.35 GAL. PER SQ. YARD.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL).

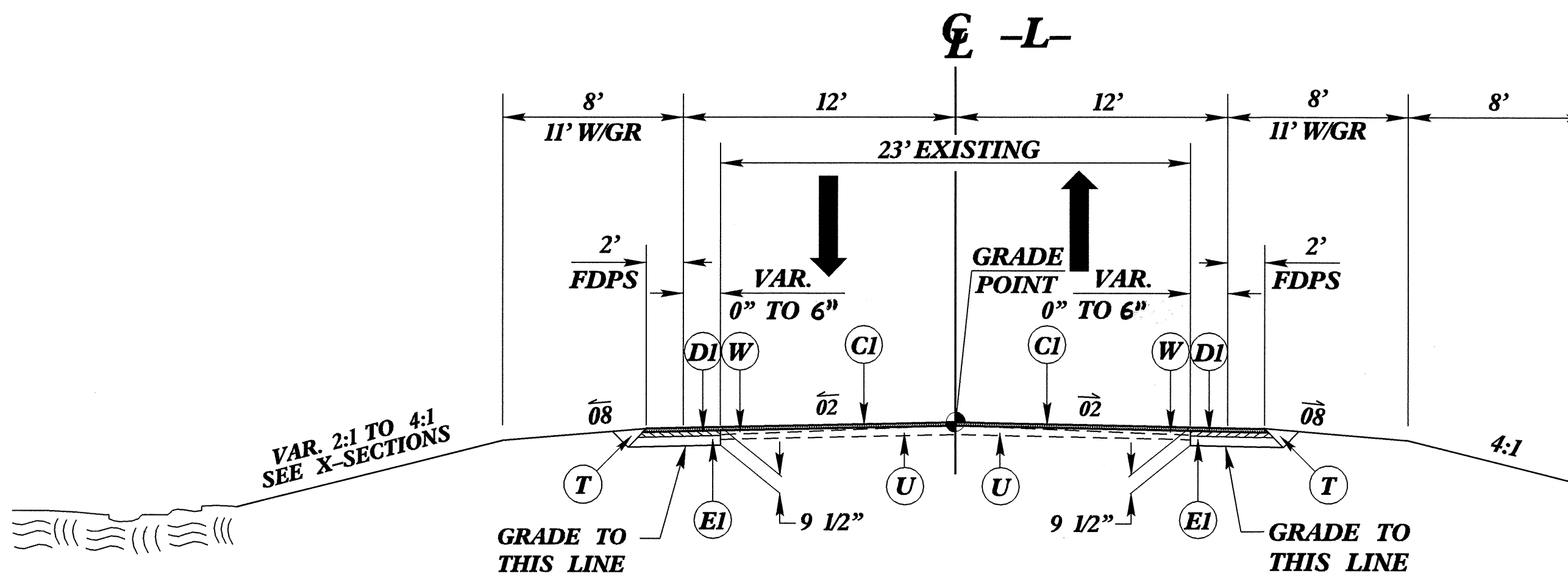
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



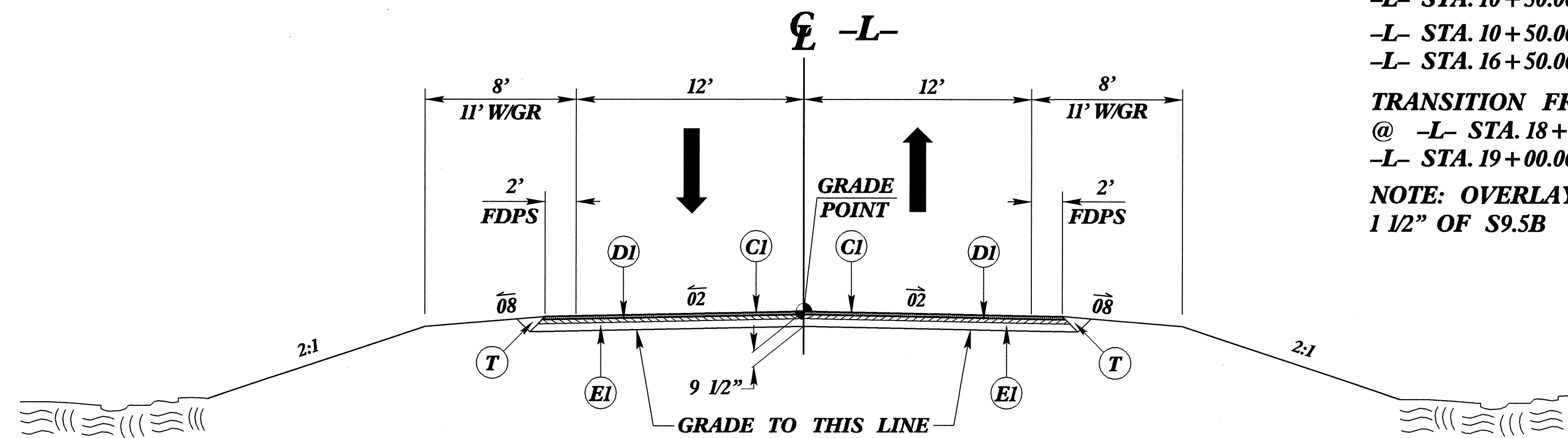
DETAIL SHOWING METHOD OF WEDGING
USE IN CONJUNCTION WITH TYPICAL SECTION NO. 1



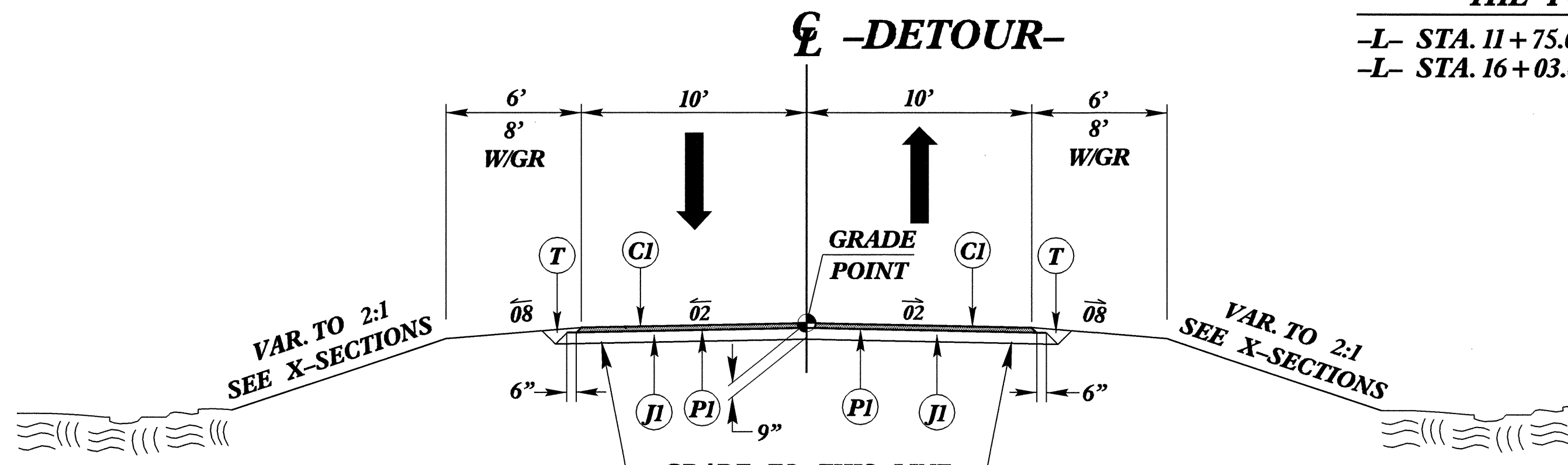
DETAIL SHOWING METHOD OF WEDGING ON BRIDGE
USE IN CONJUNCTION WITH TYPICAL SECTION NO. 4



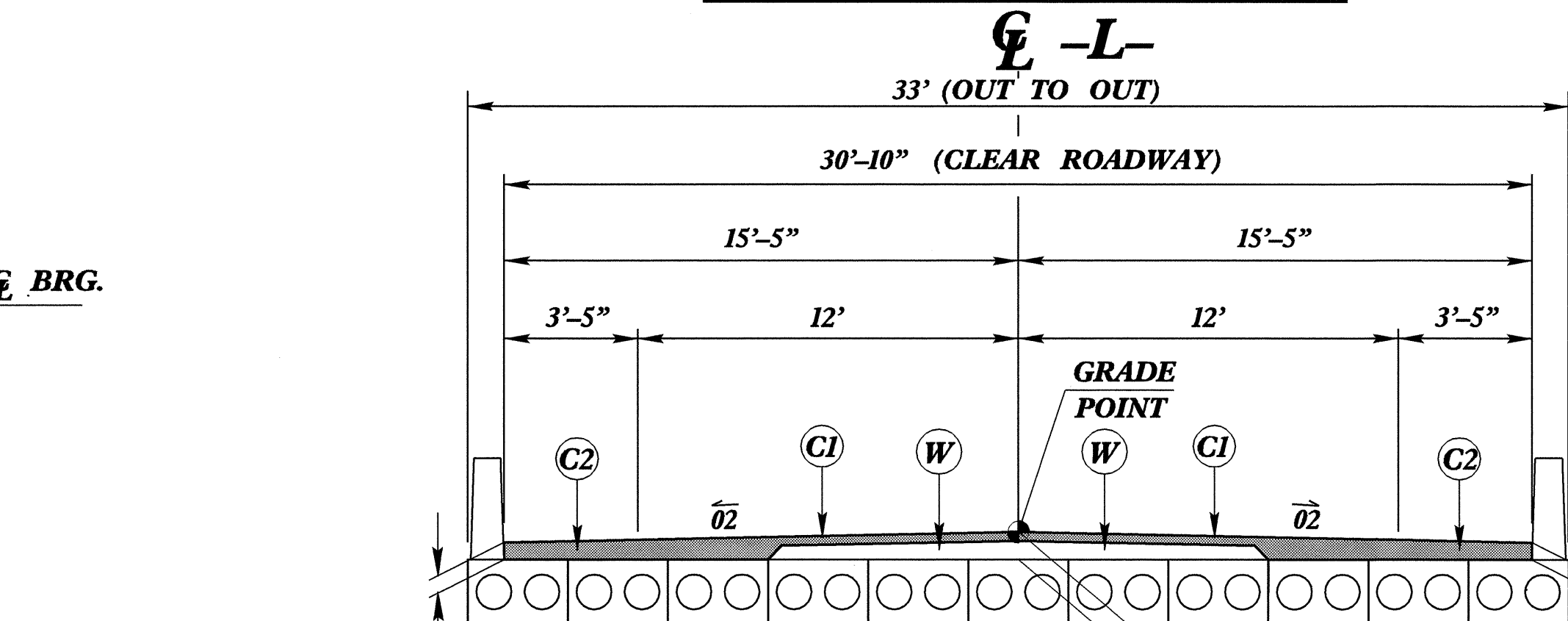
TYPICAL SECTION NO. 1



TYPICAL SECTION NO. 2



TYPICAL SECTION NO. 3



TYPICAL SECTION NO. 4

PROJECT REFERENCE NO. B-4097	SHEET NO. 2
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 033298 JEFFREY L. TELIGLE 12/29/08	PAVEMENT DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 22896 CLARK S. MORRISON 12/23/08

USE TYPICAL SECTION NO. 1 AT THE FOLLOWING LOCATIONS:

NOTE: OVERLAY EXISTING PAVEMENT WITH 1 1/2" OF S9.5B -L- STA. 9+50.07 TO 10+00.00
TRANSITION FROM EXISTING @ -L- STA. 10+00.00 TO TYPICAL SECTION NO. 1 @ -L- STA. 10+50.00
-L- STA. 10+50.00 TO STA. 11+75.00
-L- STA. 16+50.00 TO STA. 18+50.00
TRANSITION FROM TYPICAL SECTION NO. 1 @ -L- STA. 18+50.00 TO EXISTING @ -L- STA. 19+00.00
NOTE: OVERLAY EXISTING PAVEMENT WITH 1 1/2" OF S9.5B -L- STA. 19+00.00 TO 19+50.00

USE TYPICAL SECTION NO. 2 AT THE FOLLOWING LOCATIONS:

-L- STA. 11+75.00 TO STA. 14+23.00 (BEGIN BRIDGE)
-L- STA. 16+03.00 (END BRIDGE) TO STA. 16+50.00

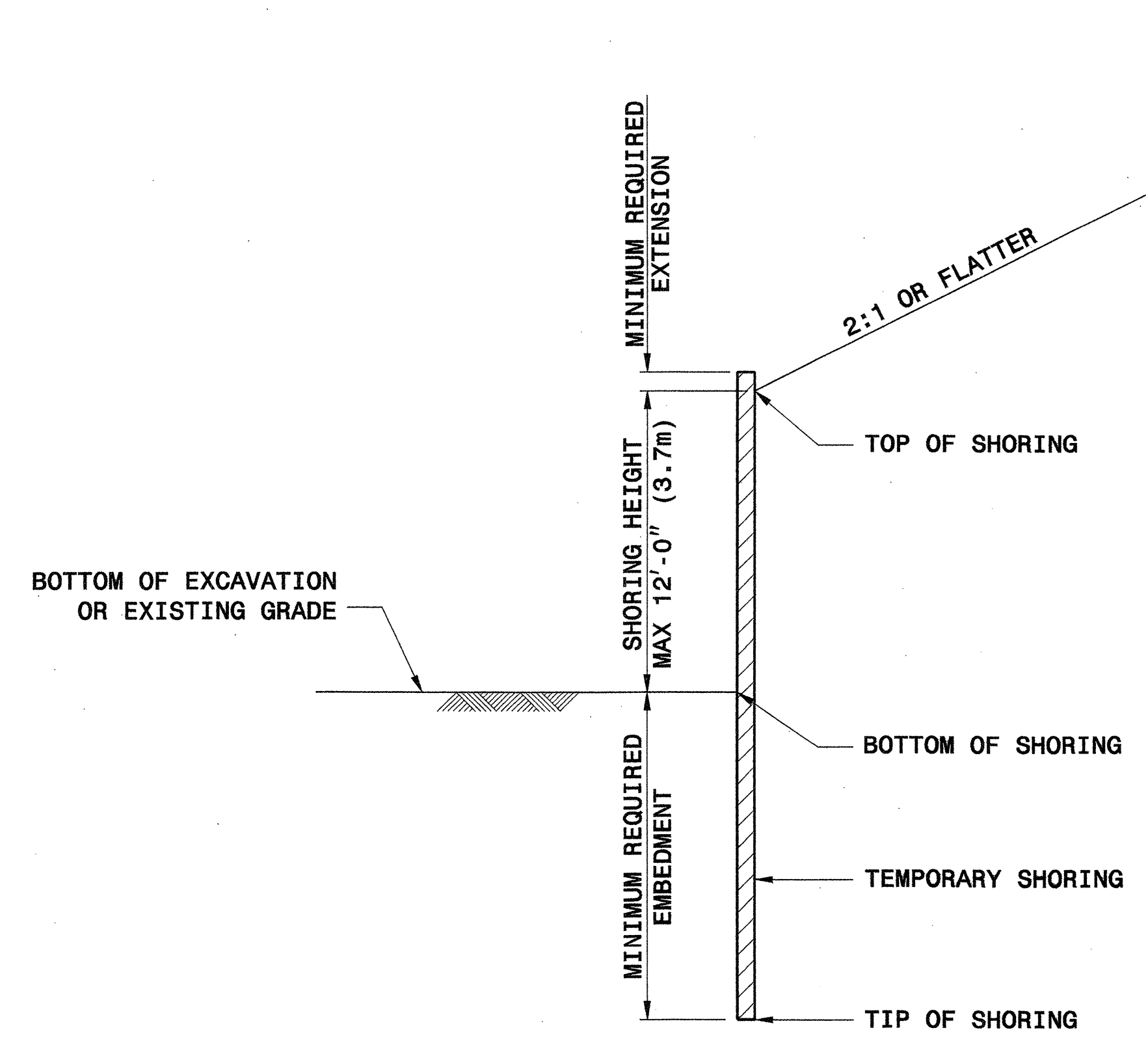
USE TYPICAL SECTION NO. 3 AT THE FOLLOWING LOCATIONS:

-DETOUR- STA. 11+28.16 TO 15+57.00 (BEGIN BRIDGE)
-DETOUR- STA. 16+27.00 (END BRIDGE) TO 18+87.35

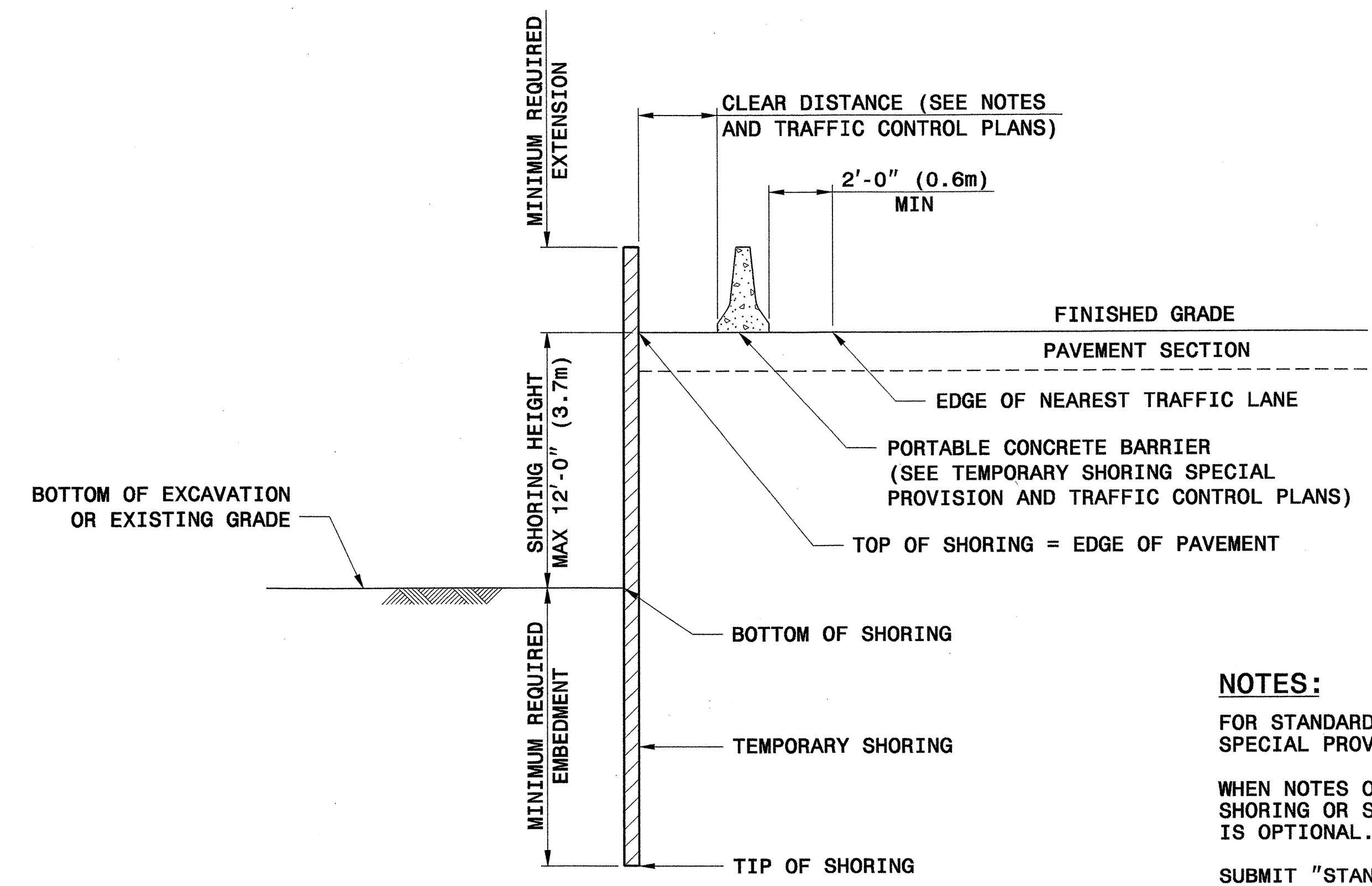
USE TYPICAL SECTION NO. 4 AT THE FOLLOWING LOCATION:

-L- STA. 14+23 (BEGIN BRIDGE) TO -L- STA. 16+03 (END BRIDGE)

CORED SLAB BRIDGE
SEE STRUCTURE PLANS



SLOPE CASE



SURCHARGE CASE

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	SHORING HEIGHT FT (m)	SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT					SURCHARGE CASE WITH TRAFFIC IMPACT				
		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".

GEOTECHNICAL ENGINEERING UNIT
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD DRAWING NO. 1801.01

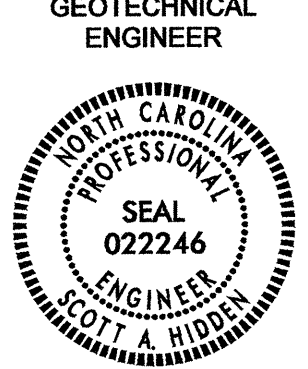
STANDARD TEMPORARY SHORING

 DATE: 2-20-07

STANDARD TEMPORARY MSE WALL OPTIONS

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

GEOTECHNICAL ENGINEER



SEAL
022246
ENGINEER
SCOTT A. HADDEN

Scott A. Hadden 3/29/07

SIGNATURE DATE

ENGINEER

SIGNATURE DATE

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.

EXCAVATE AS NECESSARY FOR STANDARD TEMPORARY MSE WALLS IN ACCORDANCE WITH THE FOLLOWING FOR THE WALL OPTION CHOSEN:

- 1) MINIMUM EMBEDMENT OF 18" (450mm) UNLESS WALL BEARS ON ROCK, CONCRETE OR PAVEMENT AS DETERMINED BY THE ENGINEER
- 2) VERTICAL STEPS IN INCREMENTS EQUAL TO THE VERTICAL REINFORCEMENT SPACING
- 3) WITH THE EXCEPTION OF EITHER THE FIRST OR LAST SECTION OF WALL, HORIZONTAL SECTION LENGTHS IN INCREMENTS EQUAL TO THE FOLLOWING:

STANDARD TEMPORARY MSE WALL OPTION	INCREMENT
TEMPORARY FABRIC WALL	9'-0" (2.7m) MIN (VARIES)
HILFIKER TEMPORARY WALL	10'-0" (3.0m) MIN (VARIES)
SIERRASCAPE TEMPORARY WALL	18'-7 1/4" (5.7m)
RETAINED EARTH TEMPORARY WALL	24'-0" (7.3m)
TERRATREL TEMPORARY WALL	19'-8" (6.0m)

DO NOT PLACE SHORING BACKFILL OR FIRST REINFORCEMENT LAYER UNTIL OBTAINING APPROVAL OF THE EXCAVATION DEPTH AND FOUNDATION MATERIAL.

IF APPLICABLE, INSTALL FOUNDATIONS LOCATED WITHIN THE REINFORCED ZONE BEFORE BEGINNING WALL CONSTRUCTION UNLESS DIRECTED OTHERWISE BY THE ENGINEER.

ERECT AND MAINTAIN FACINGS AND FORMS AS SHOWN ON THE STANDARD TEMPORARY MSE WALL DETAILS. STAGGER VERTICAL JOINTS OF FACINGS AND FORMS TO CREATE A RUNNING BOND WHEN POSSIBLE UNLESS SHOWN OTHERWISE ON THESE DETAILS.

PLACE FACINGS AND FORMS AS NEAR TO VERTICAL AS POSSIBLE WITH NO NEGATIVE BATTER. CONSTRUCT STANDARD TEMPORARY MSE WALLS WITH A VERTICAL AND HORIZONTAL TOLERANCE OF 3" (75mm) WHEN MEASURED WITH A 10'-0" (3m) STRAIGHT EDGE AND AN OVERALL VERTICAL PLUMBNESS (BATTER) AND HORIZONTAL ALIGNMENT OF LESS THAN 6" (150mm).

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, DELFECT, SKEW AND MODIFY REINFORCEMENT.

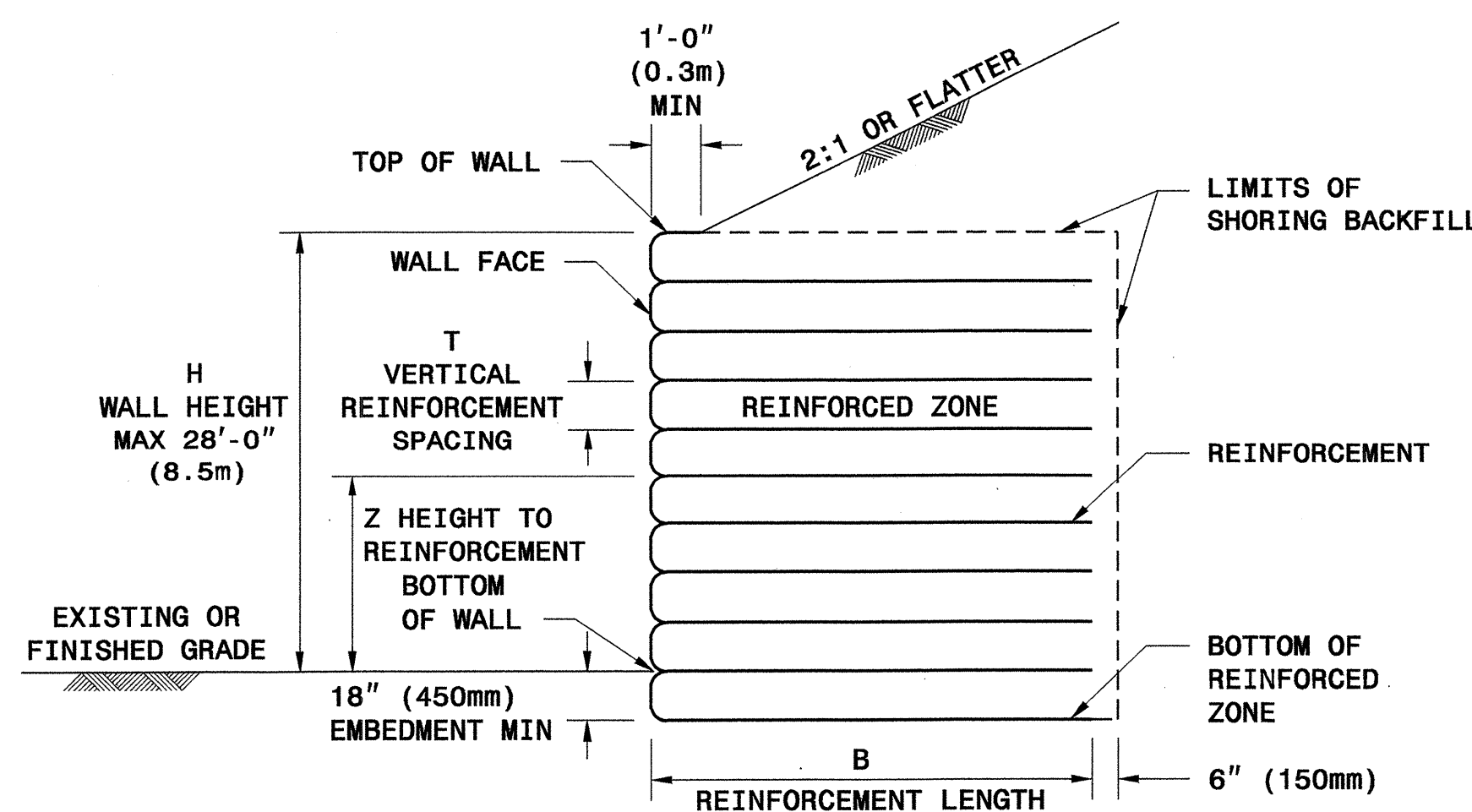
PLACE SHORING BACKFILL IN 8" TO 10" (200mm to 250mm) THICK LIFTS AND COMPACT IN ACCORDANCE WITH SUBARTICLE 235-4(C) OF THE STANDARD SPECIFICATIONS. USE ONLY HAND OPERATED COMPACTION EQUIPMENT WITHIN 3'-0" (1m) OF THE WALL FACE.

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.

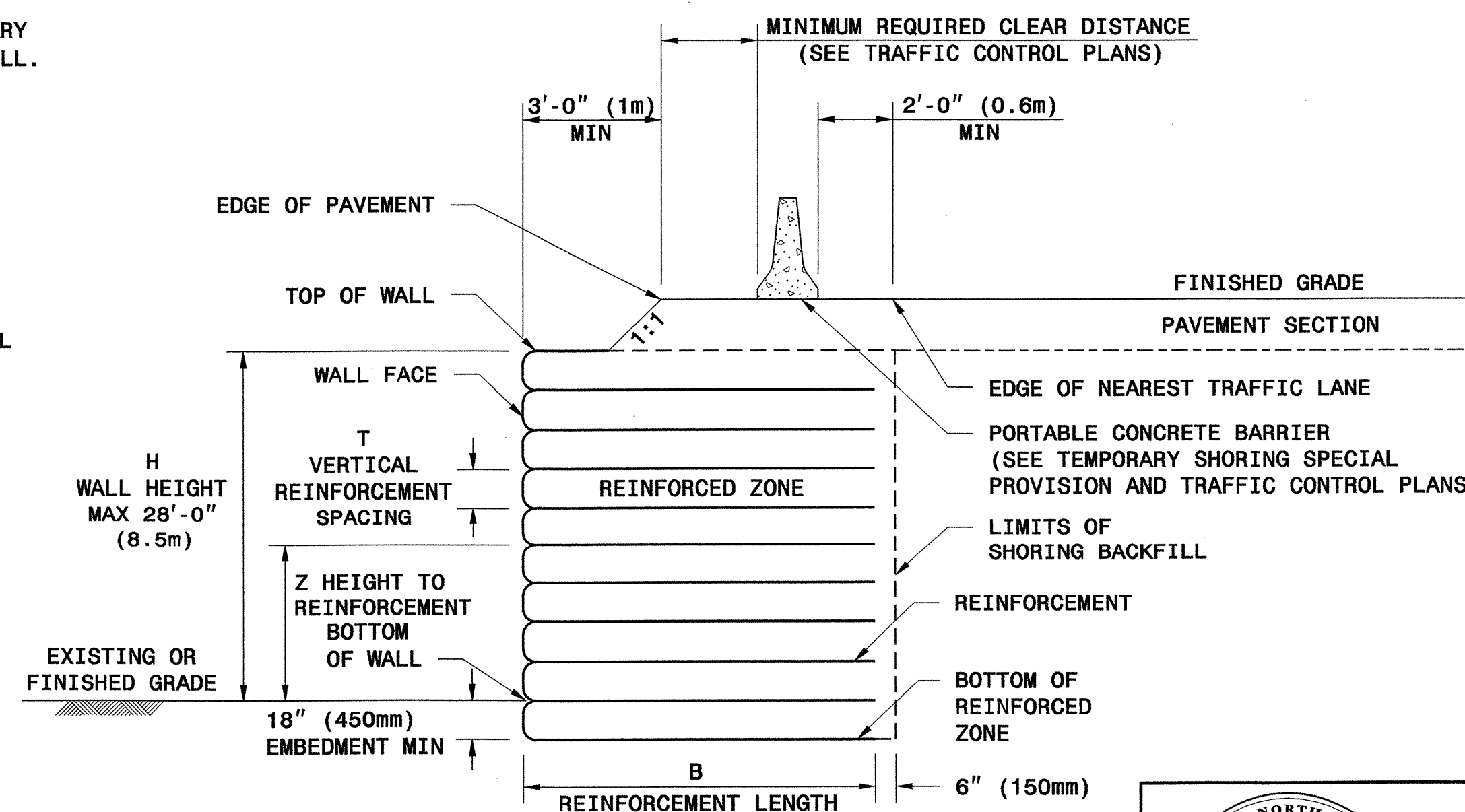
COVER REINFORCING AND RETENTION FABRIC WITH AT LEAST 3" (75mm) OF SHORING BACKFILL. PLACE TOP REINFORCEMENT LAYER BETWEEN 4" AND 24" (100mm and 600mm) BELOW TOP OF WALL DEPENDING ON WALL OPTION.

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

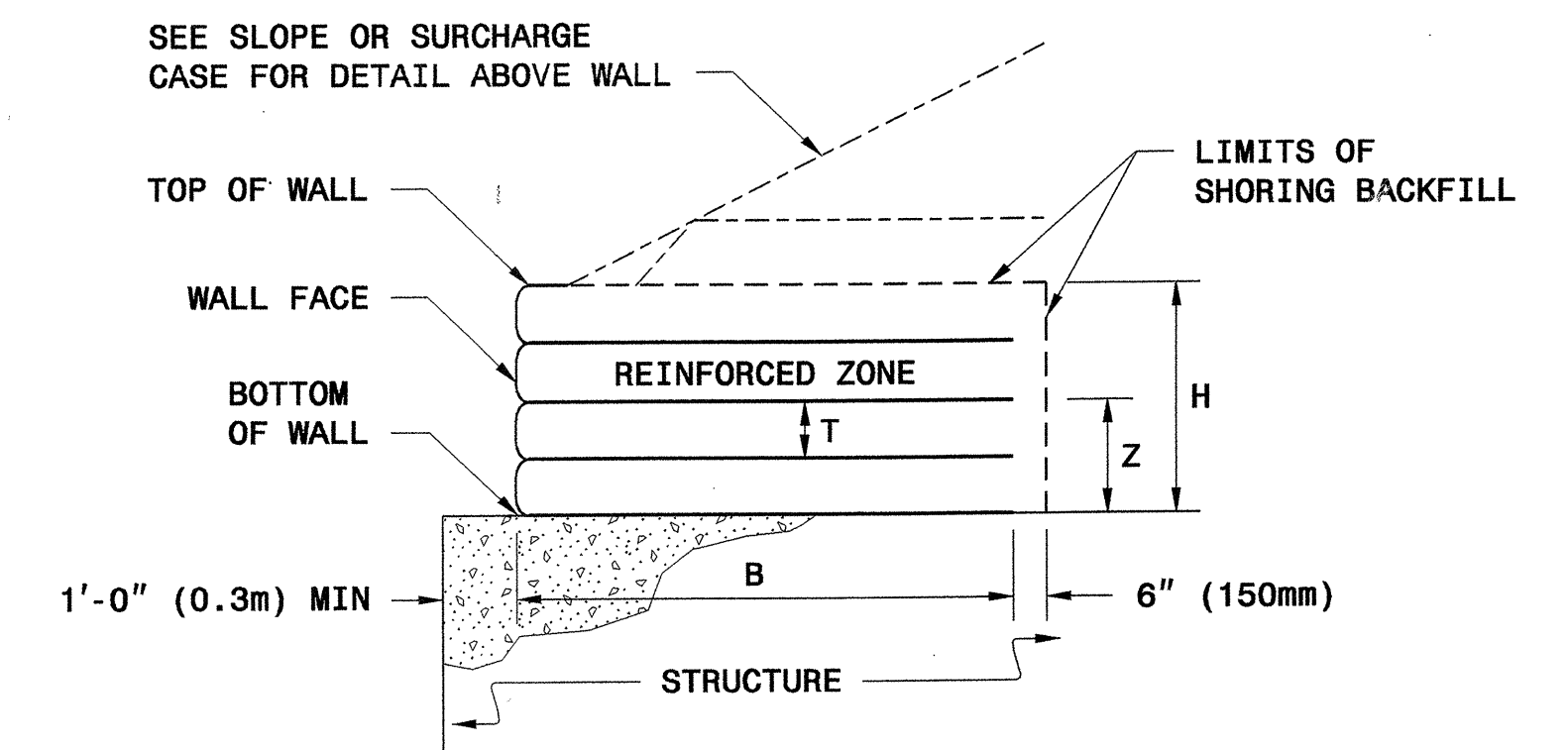
IF THE TOP OF WALL IS WITHIN 5'-0" (1.5m) OF FINISHED GRADE, REMOVE TOP FORM OR FACING AND INCORPORATE THE TOP REINFORCEMENT LAYER INTO THE FILL WHEN PLACING FILL IN FRONT OF THE WALL. STANDARD TEMPORARY MSE WALLS REMAIN IN PLACE PERMANENTLY UNLESS REQUIRED OTHERWISE.



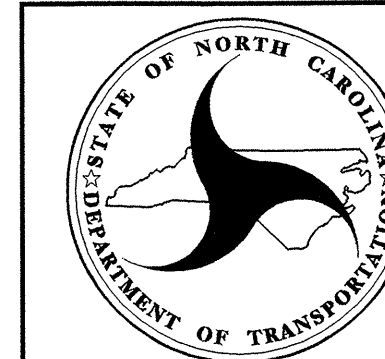
SLOPE CASE



SURCHARGE CASE



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

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	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
SLOPE AND SURCHARGE CASES													
Z (FT-INCHES)													

SIERRASCAPE TEMPORARY WALL (GEOGRID TYPE)

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

H (FT)	<4	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
SLOPE CASE													
Z (FT)													

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	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
SLOPE CASE													
Z (FT)													

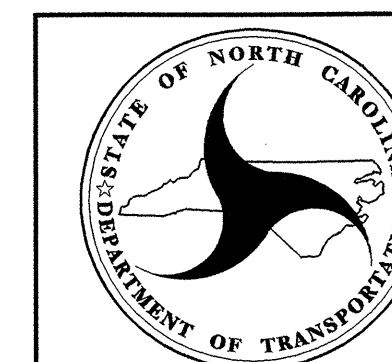
RETAINED EARTH TEMPORARY WALL (WELDED WIRE MESH TYPE)

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

H (FT)	<4	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
SLOPE AND SURCHARGE CASES													
Z (FT-INCHES)													

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'.



GEOTECHNICAL ENGINEERING UNIT
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

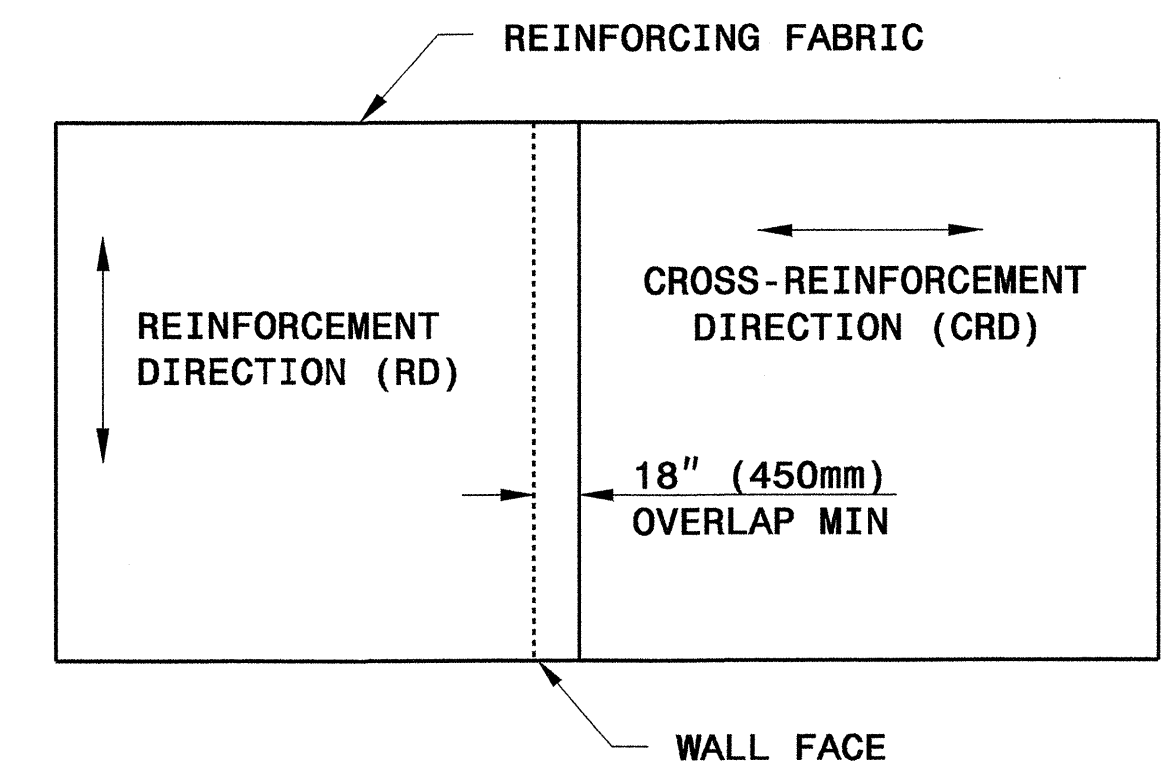
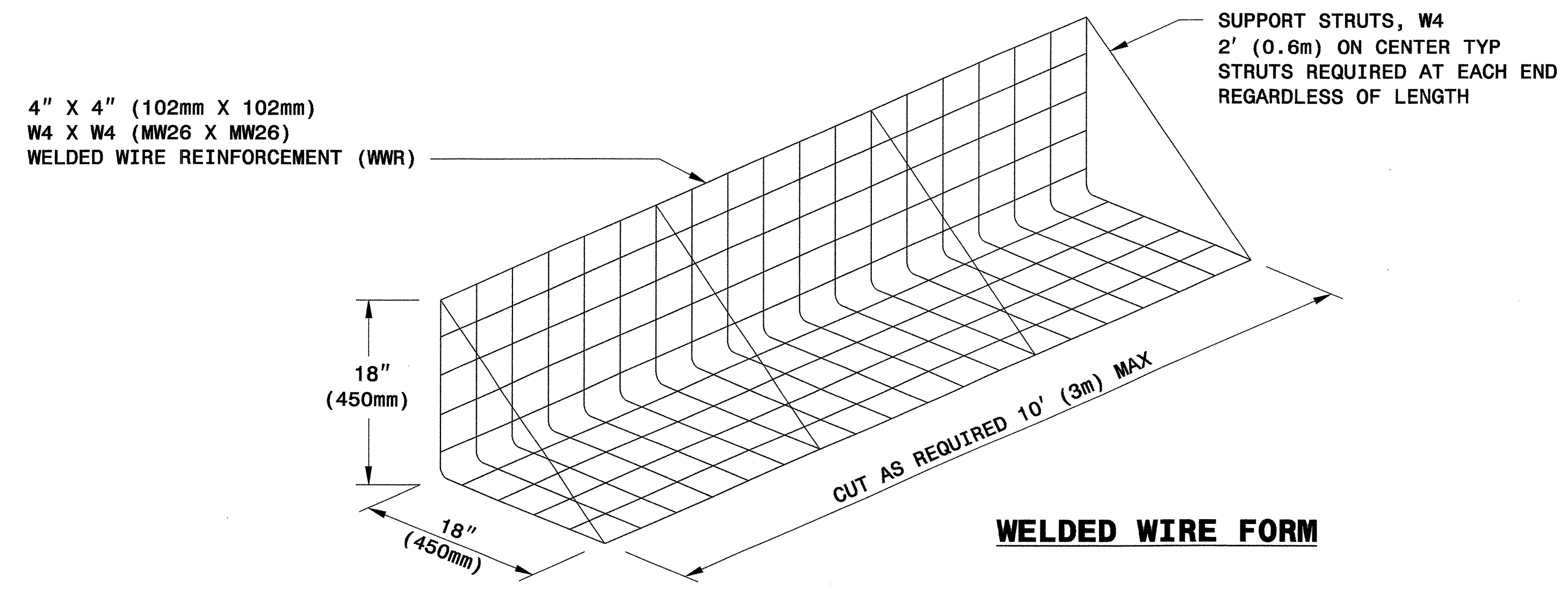
STANDARD DRAWING NO. 1801.02

STANDARD TEMPORARY MSE WALL REINFORCEMENT TABLES - ENGLISH UNITS

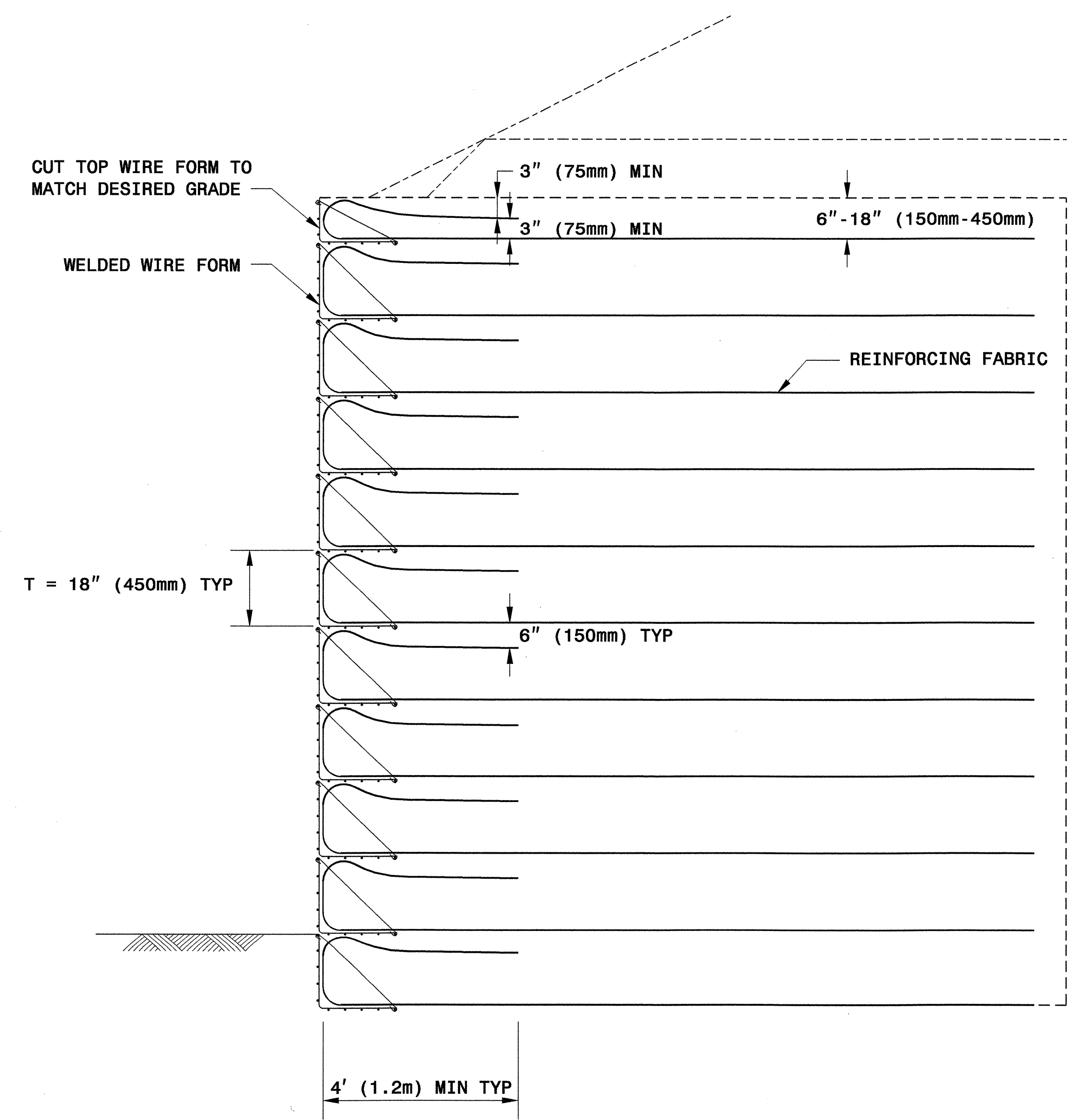
SHEET 2 OF 11 DATE: 2-20-07



Scott A. Hadden 3/29/07
SIGNATURE DATE



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

GEOTECHNICAL ENGINEERING UNIT
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD DRAWING NO. 1801.02

TEMPORARY FABRIC WALL

SHEET 3 OF 11 DATE: 12-19-06

GEOTECHNICAL ENGINEER

ENGINEER

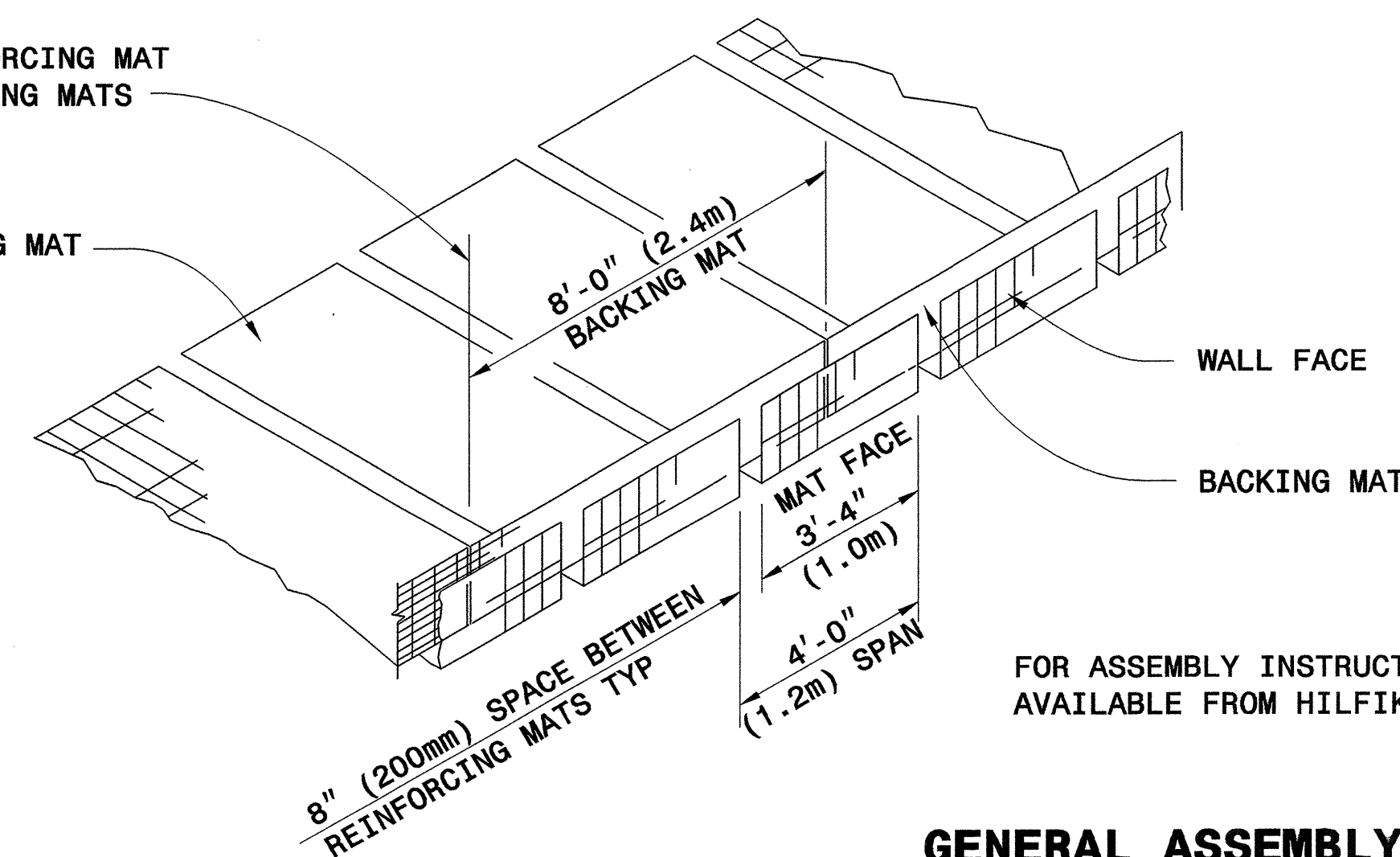


Scott A. Hildebrand 3/29/07
SIGNATURE DATE

SIGNATURE DATE

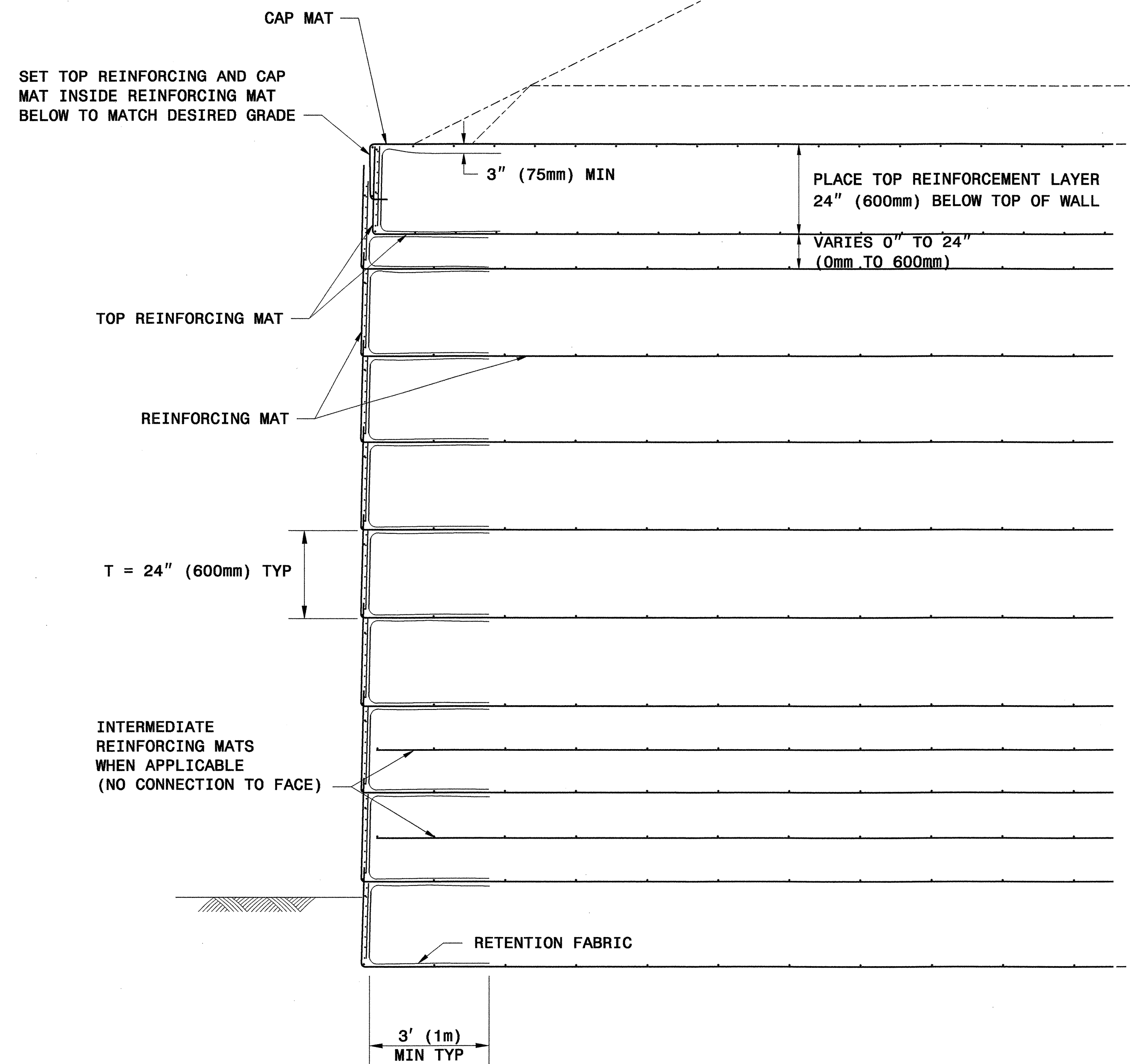
CENTERLINE OF REINFORCING MAT
FACE = EDGE OF BACKING MATS

REINFORCING MAT



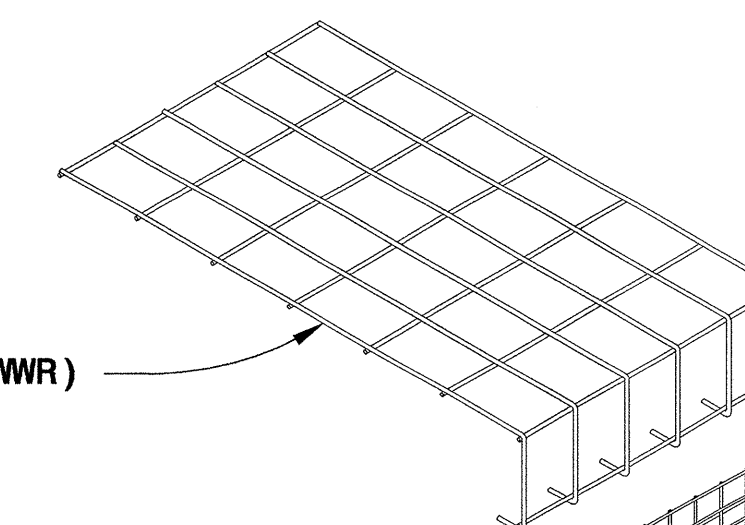
FOR ASSEMBLY INSTRUCTIONS, SEE WELDED WIRE WALL CONSTRUCTION GUIDE
AVAILABLE FROM HILFIKER WEBSITE AT WWW.HILFIKER.COM/WWW

GENERAL ASSEMBLY DETAIL

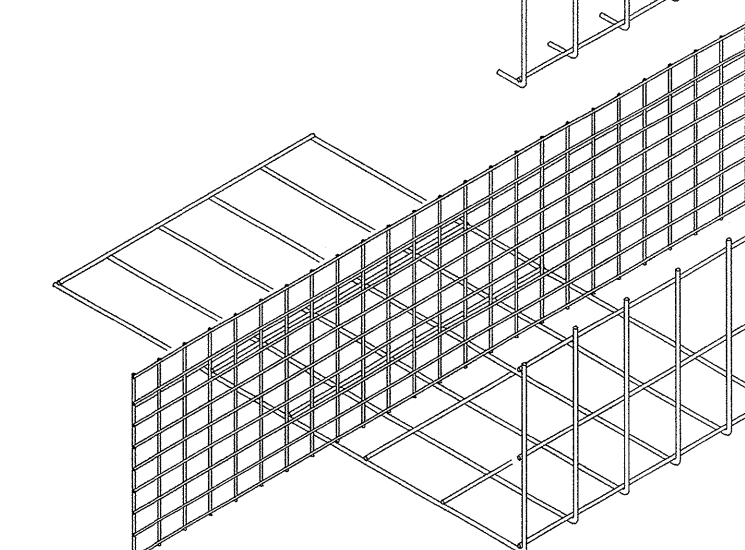


TYPICAL SECTION

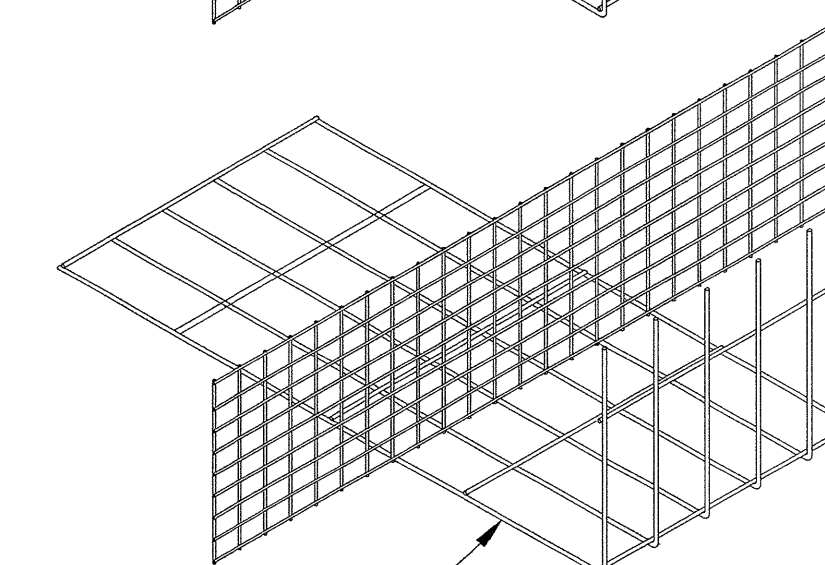
8" X 12" (203mm X 305mm)
W4.5 X W3.5 (MW29 X MW23)
CAP MAT
WELDED WIRE REINFORCEMENT (WWR)



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

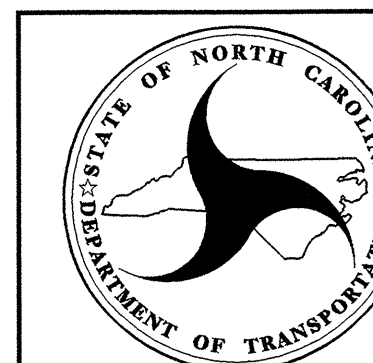


8" X 21" (203mm X 533mm)
REINFORCING MAT
SEE SHEETS 2 AND 3 FOR GAUGE SIZES



WALL COMPONENTS

HV HILFIKER RETAINING WALLS



GEOTECHNICAL ENGINEERING UNIT
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD DRAWING NO. 1801.02

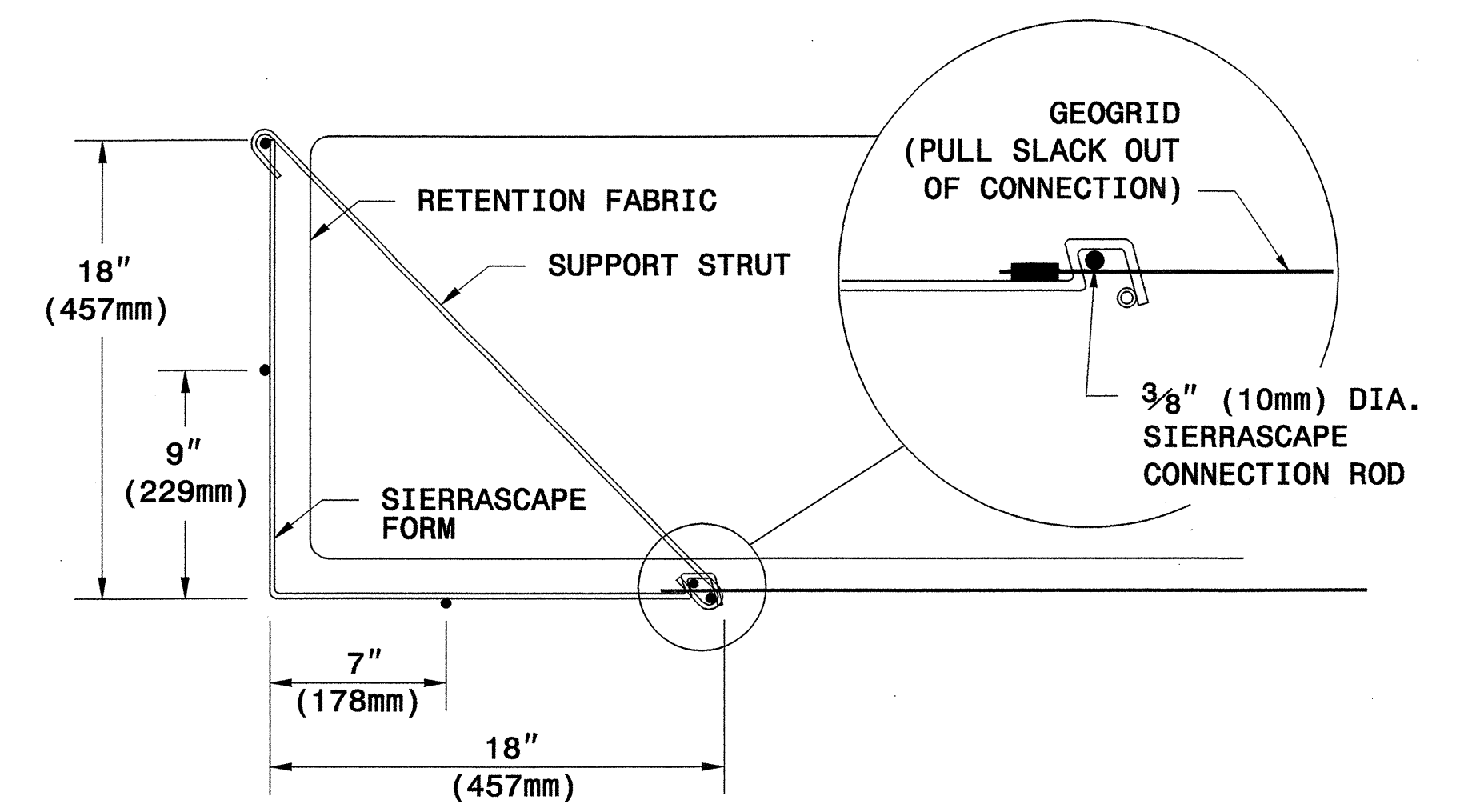
HILFIKER
TEMPORARY WALL

SHEET 4 OF 11

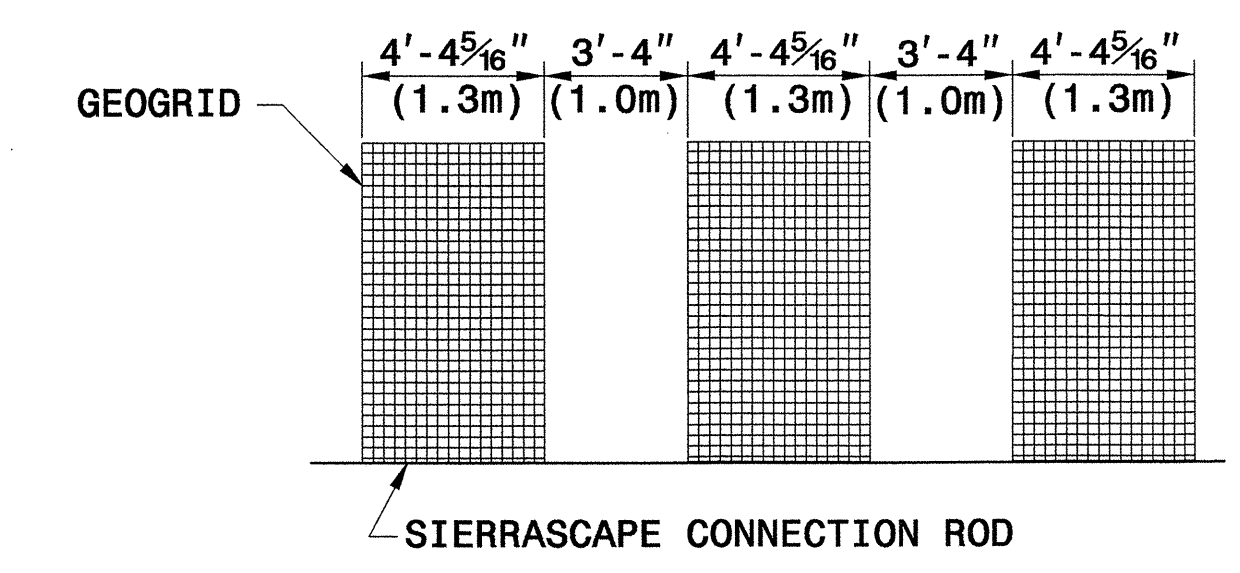
DATE: 12-19-06



Scott A. Hidden 3/29/07
SIGNATURE DATE SIGNATURE DATE

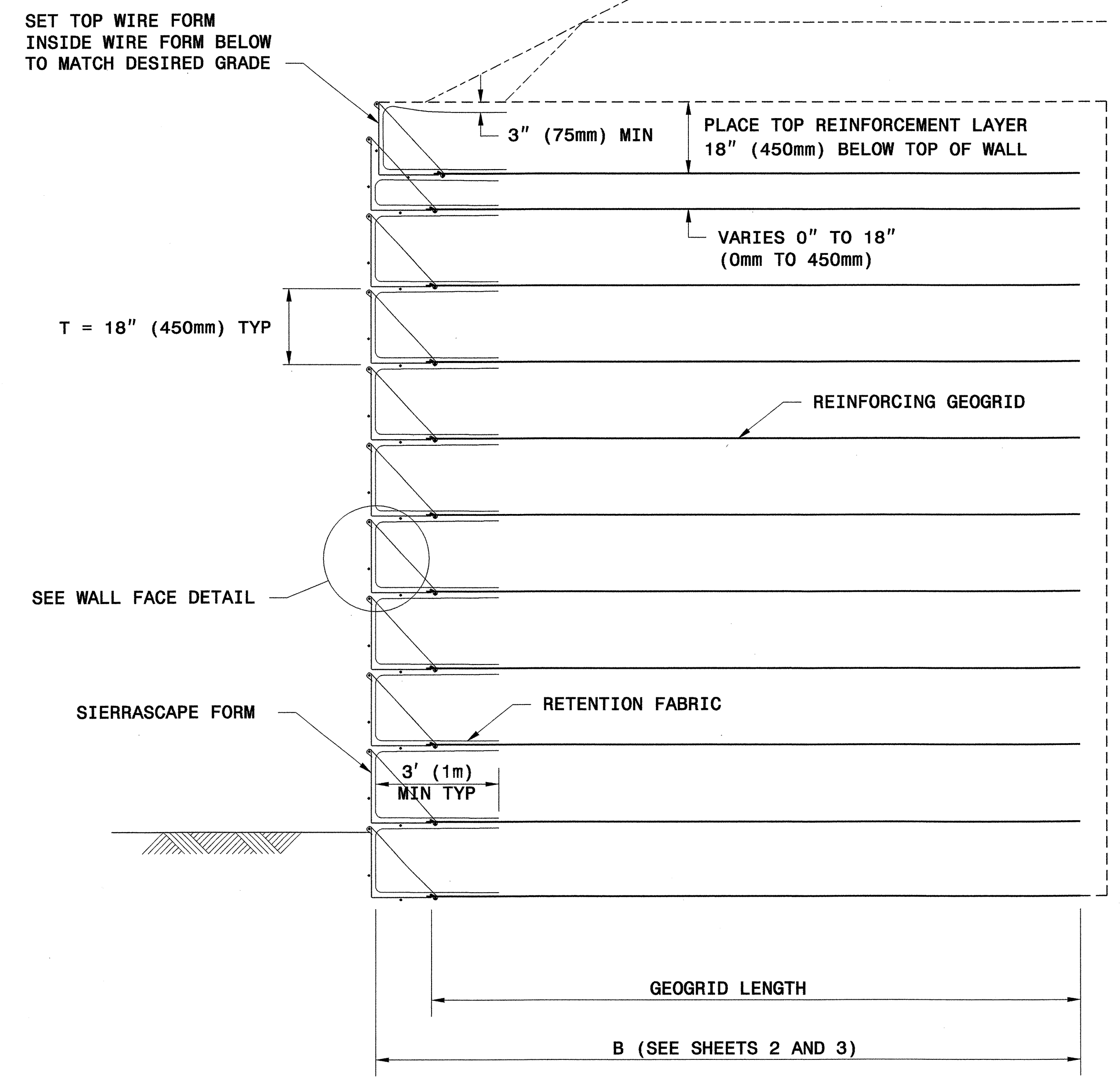


WALL FACE DETAIL

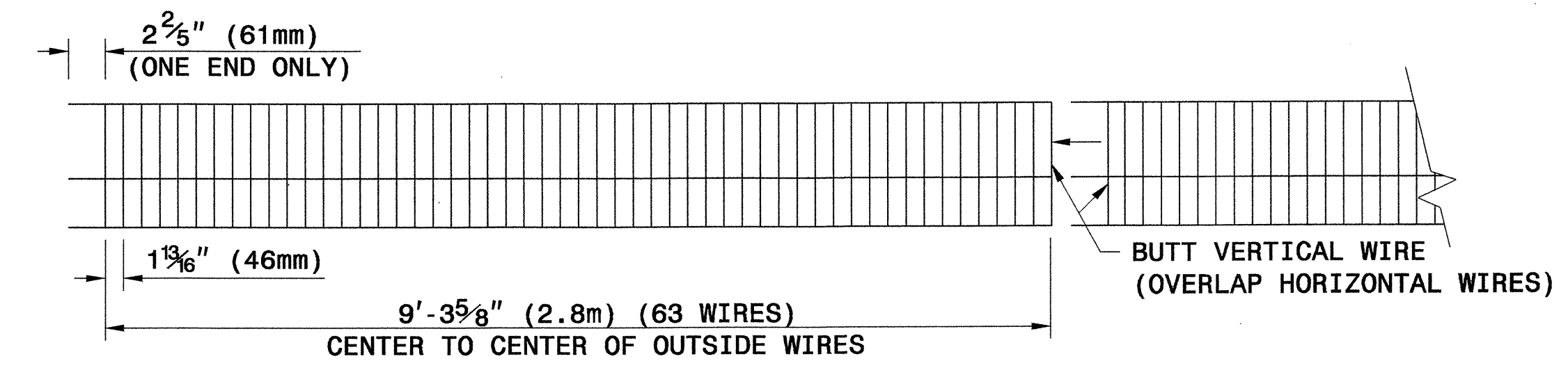


PLACE ALTERNATE LAYERS OF GEOGRID IN STAGGERED PATTERN SUCH THAT THE LAYER ABOVE IS CENTERED OVER SPACE BELOW

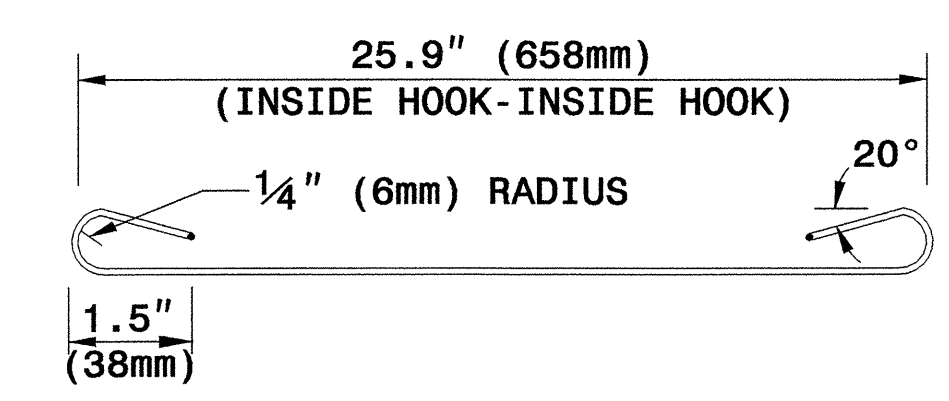
TYPICAL GEOGRID COVERAGE



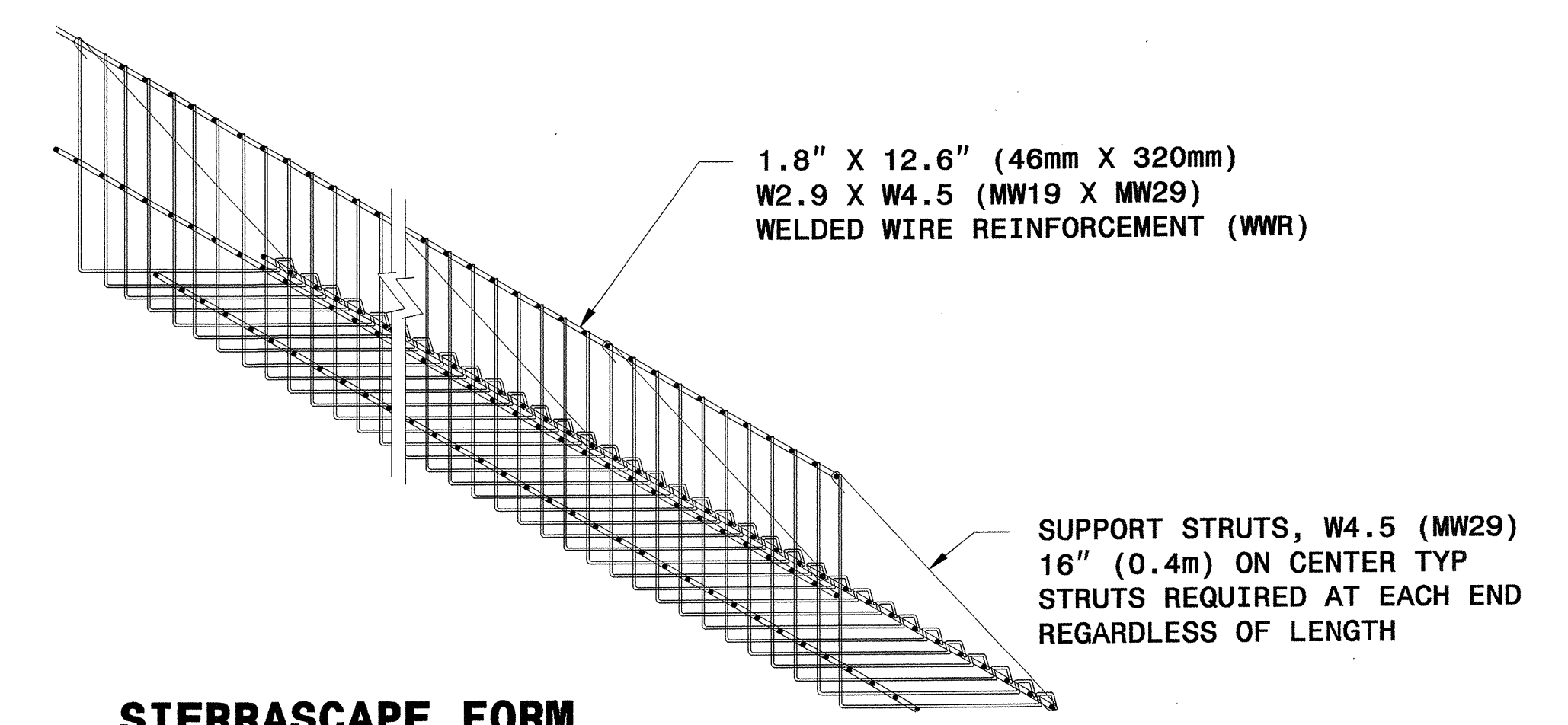
TYPICAL SECTION



ELEVATION VIEW

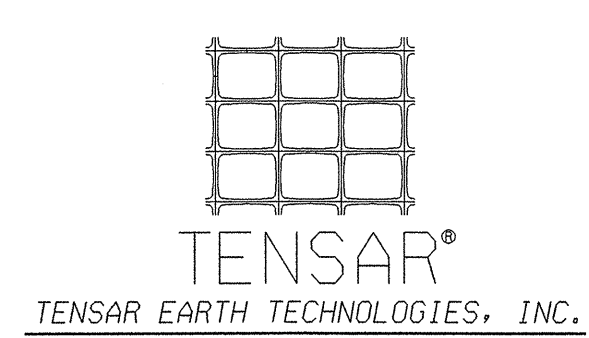


SUPPORT STRUT



SIERRASCAPE FORM

WALL COMPONENTS



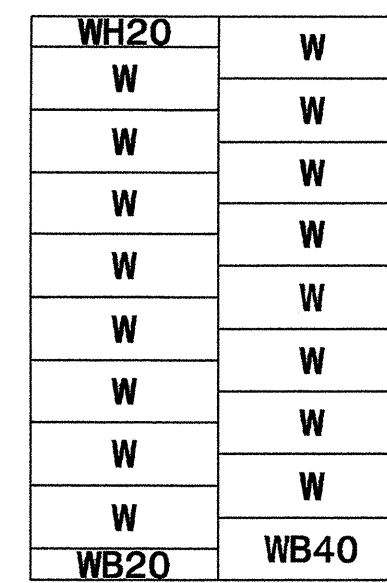
GEOTECHNICAL ENGINEERING UNIT
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD DRAWING NO. 1801.02

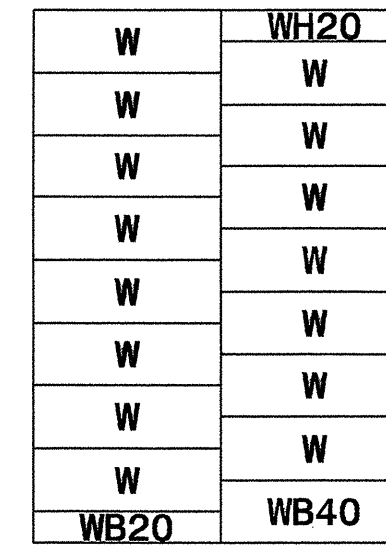
SIERRASCAPE TEMPORARY WALL

PANEL LAYOUTS

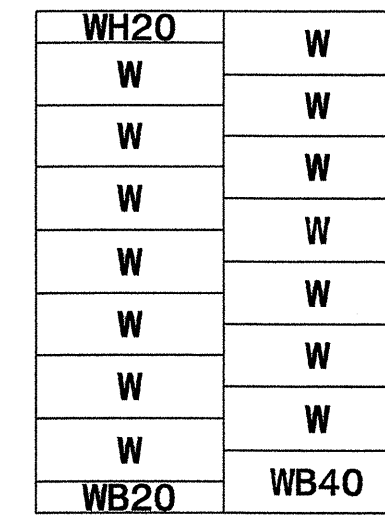
H - WALL HEIGHT
 (FEET-INCHES)
 (METER)



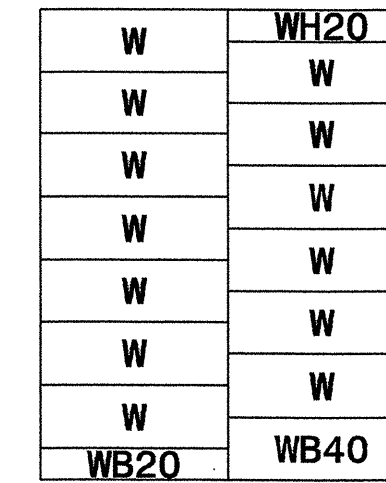
< 28 - 0
 < 8.5



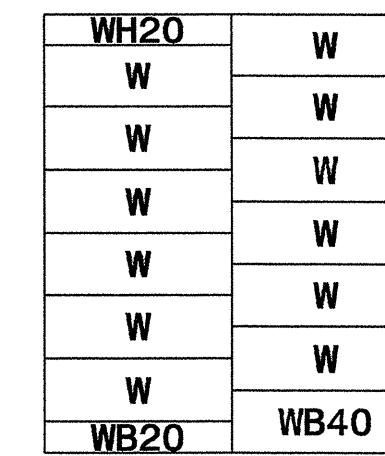
< 27 - 0
 < 8.2



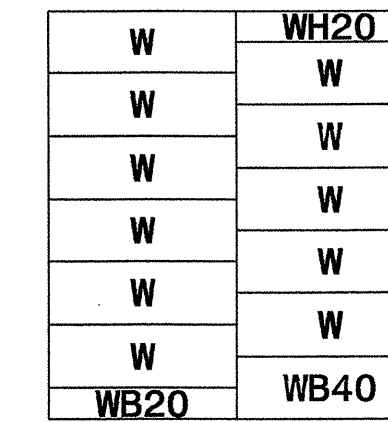
< 25 - 4
 < 7.7



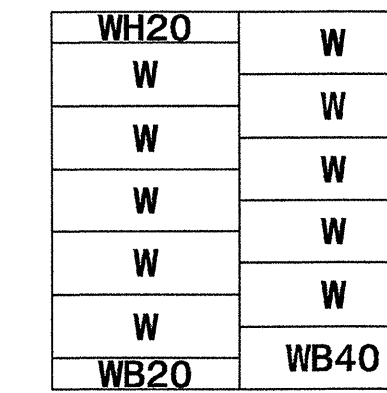
< 23 - 8
 < 7.2



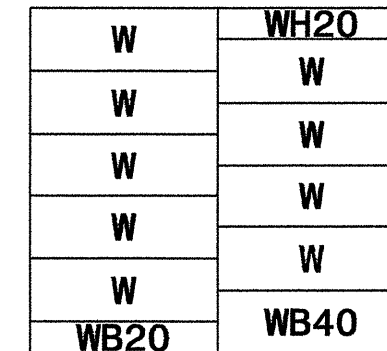
< 22 - 0
 < 6.7



< 20 - 4
 < 6.2

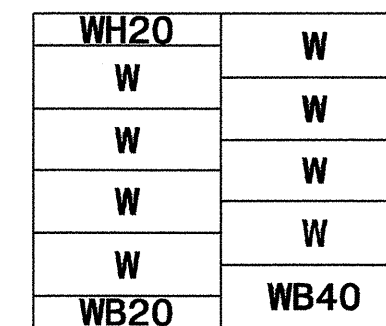


< 18 - 8
 < 5.7

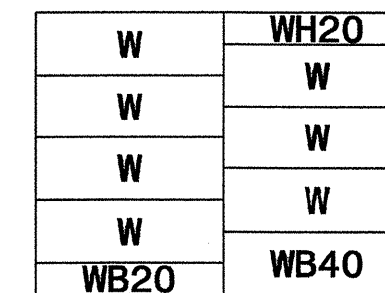


(FEET-INCHES)
 (METER)

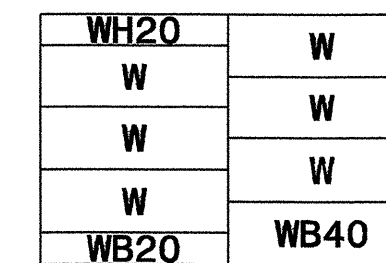
< 17 - 0
 < 5.2



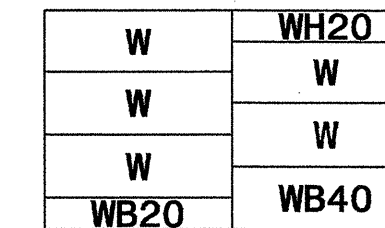
< 15 - 4
 < 4.7



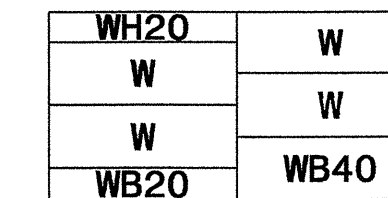
< 13 - 8
 < 4.2



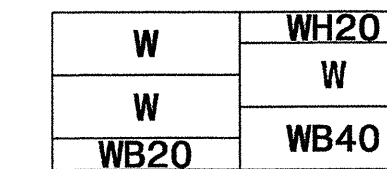
< 12 - 0
 < 3.7



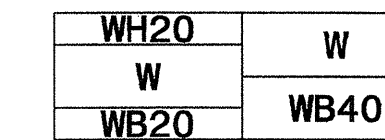
< 10 - 4
 < 3.2



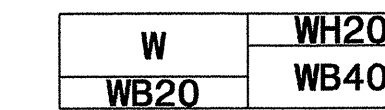
< 8 - 8
 < 2.6



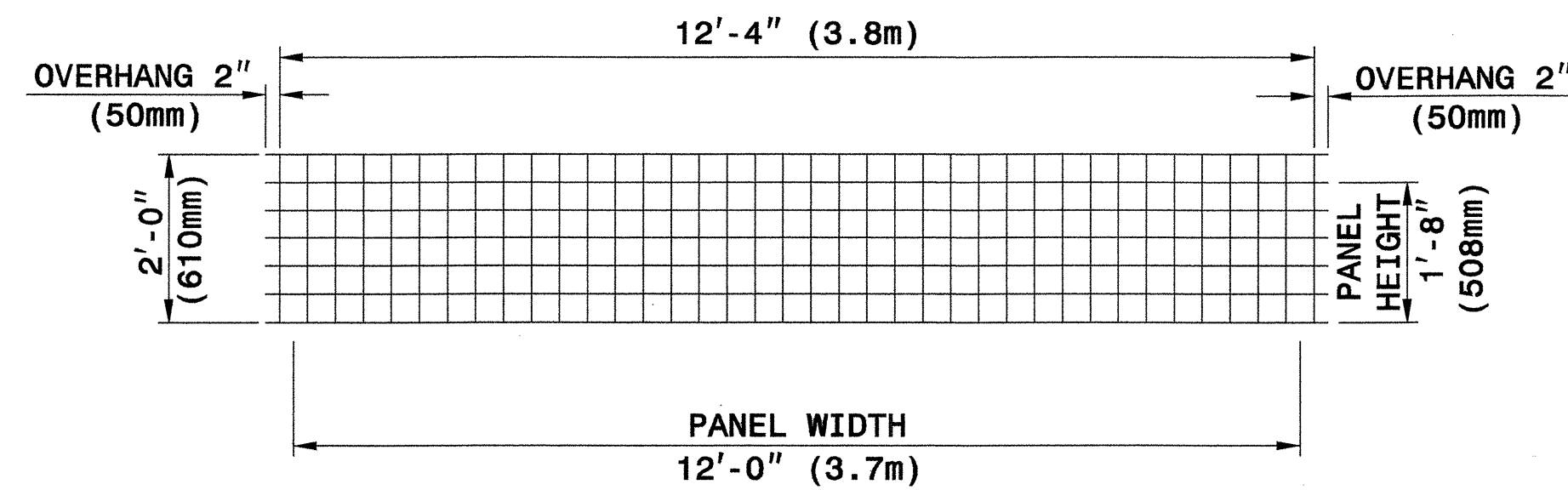
< 7 - 0
 < 2.1



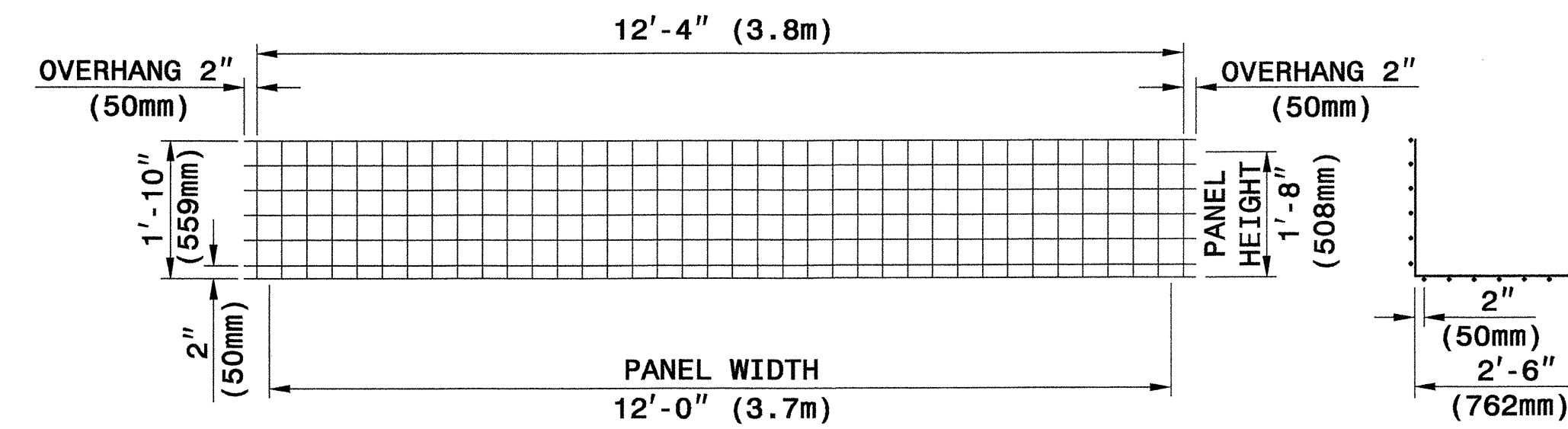
< 5 - 4
 < 1.6



< 3 - 8
 < 1.1

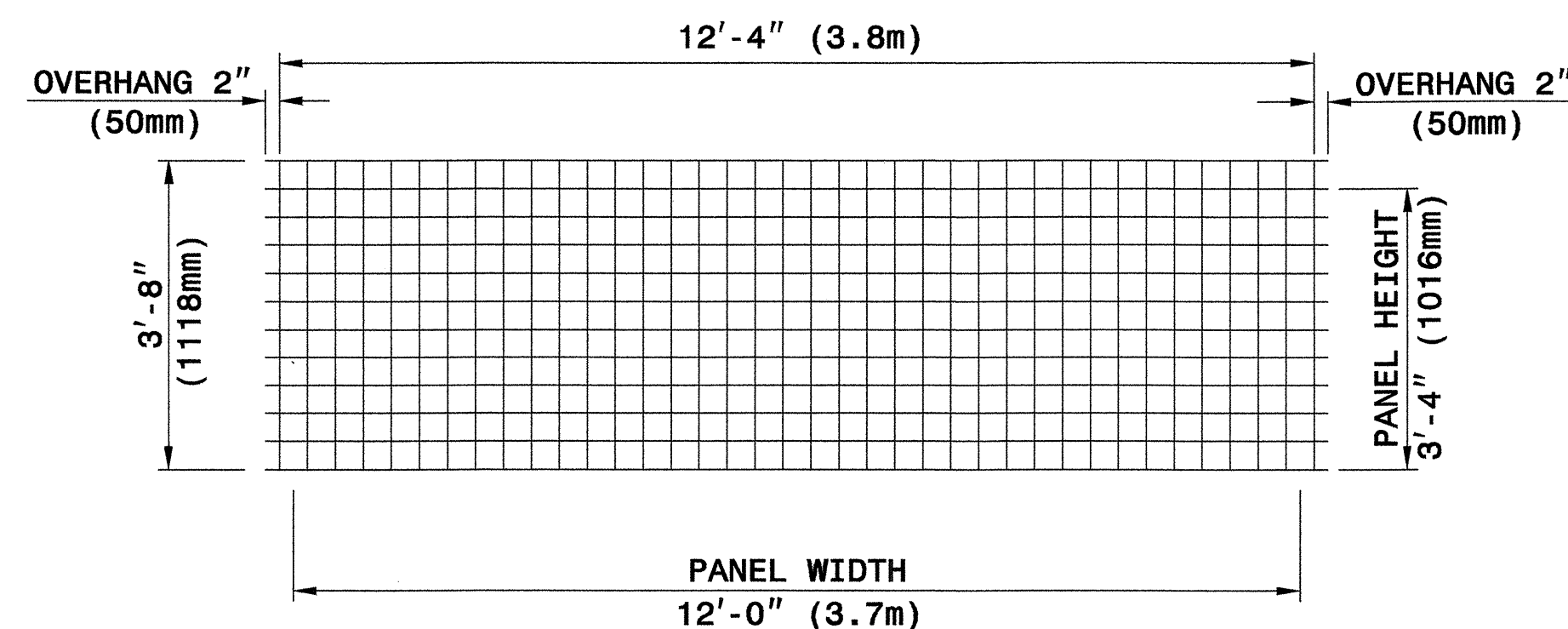


TYPE WH20

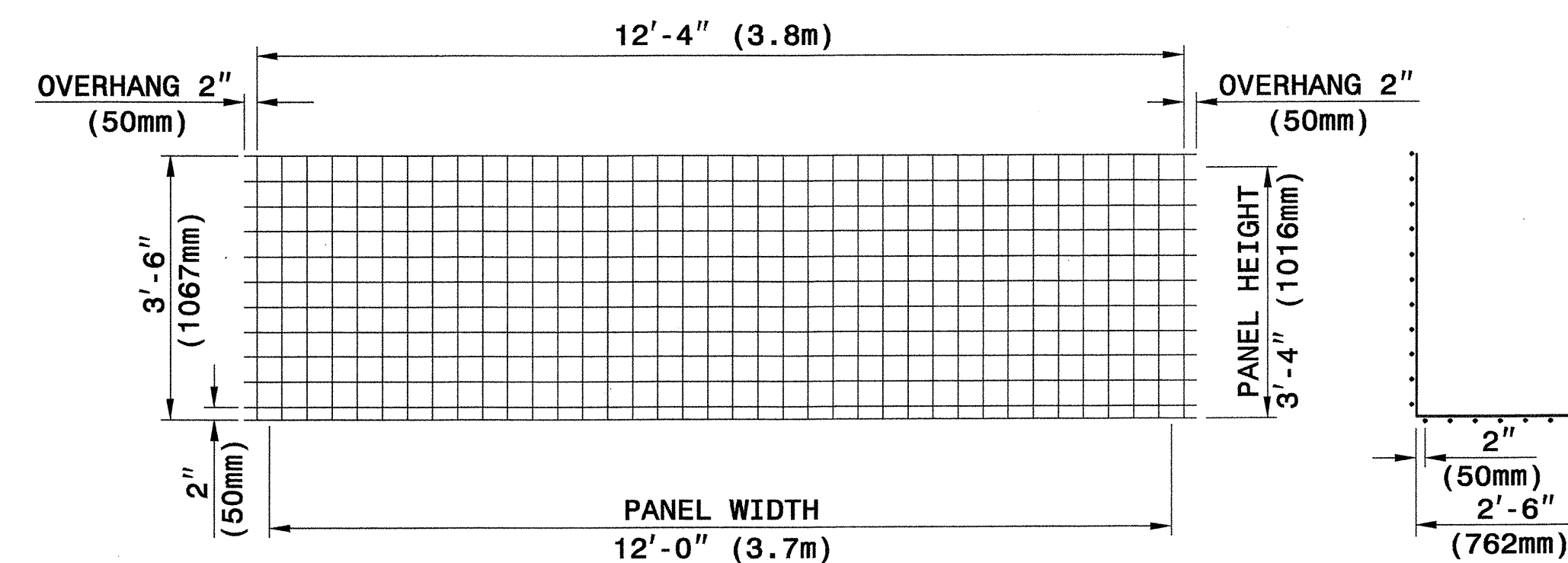


TYPE WB20

SECTION



TYPE W



TYPE WB40

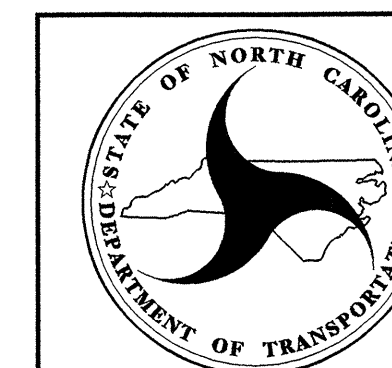
SECTION

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)



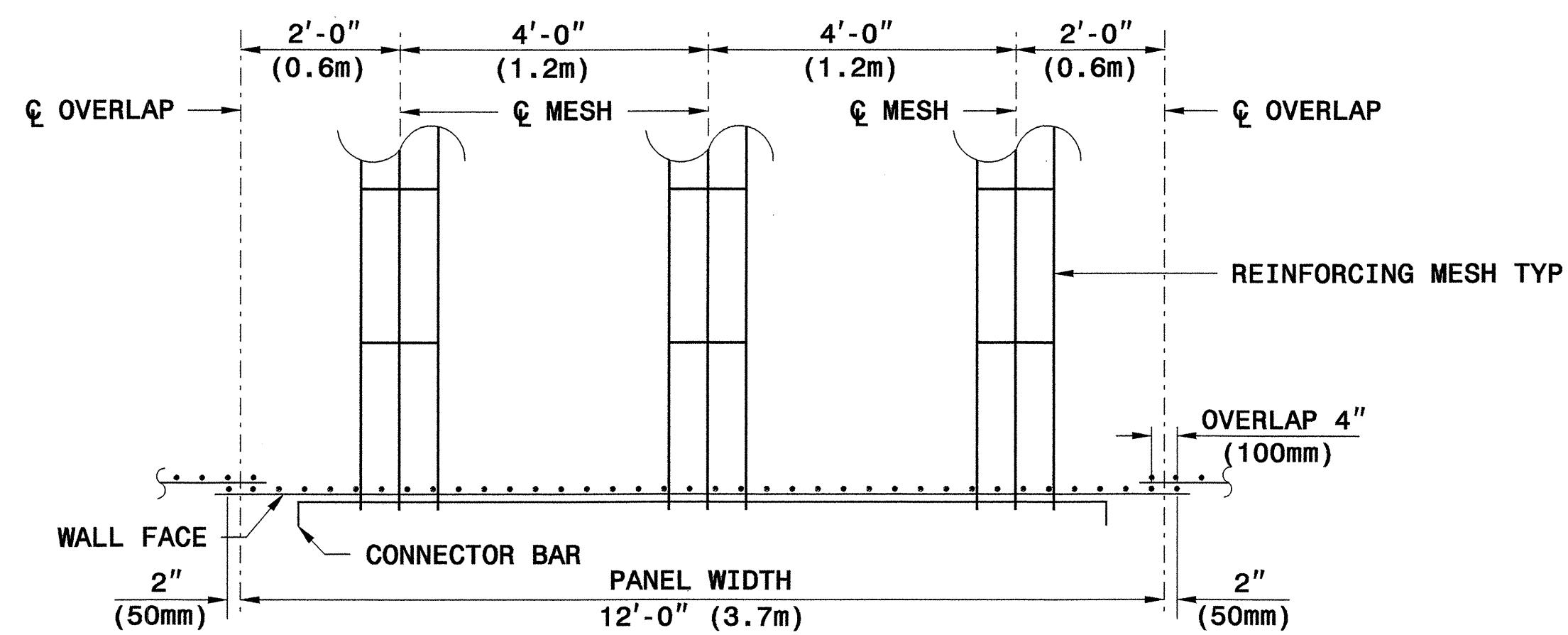
GEOTECHNICAL ENGINEERING UNIT
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD DRAWING NO. 1801.02

RETAINED EARTH
 TEMPORARY WALL

SHEET 6 OF 11

DATE: 12-19-06

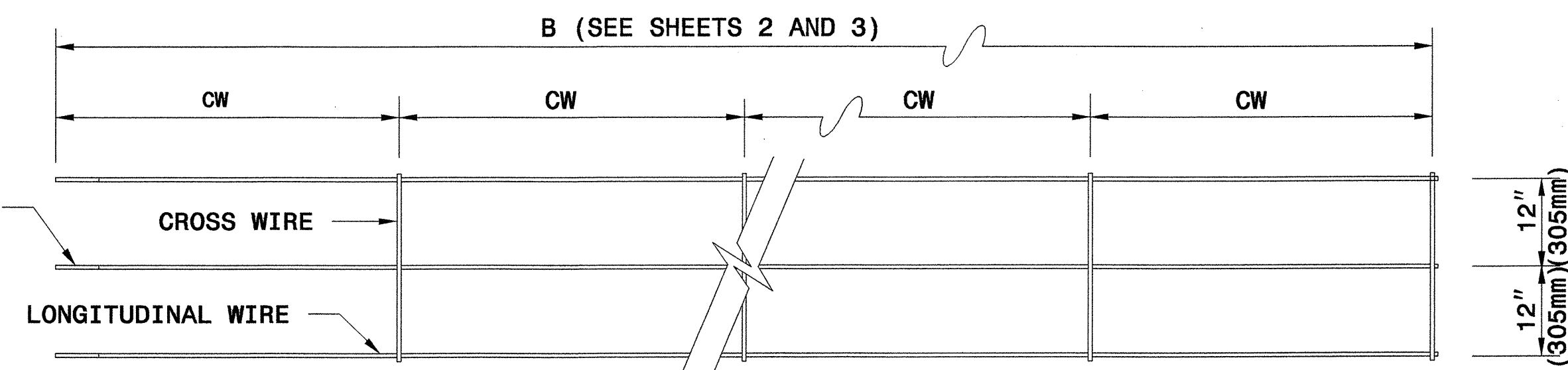


**REINFORCING MESH PLACEMENT DETAIL
(PLAN VIEW)**



1/2" (13mm) DIA. BAR

CONNECTOR BAR

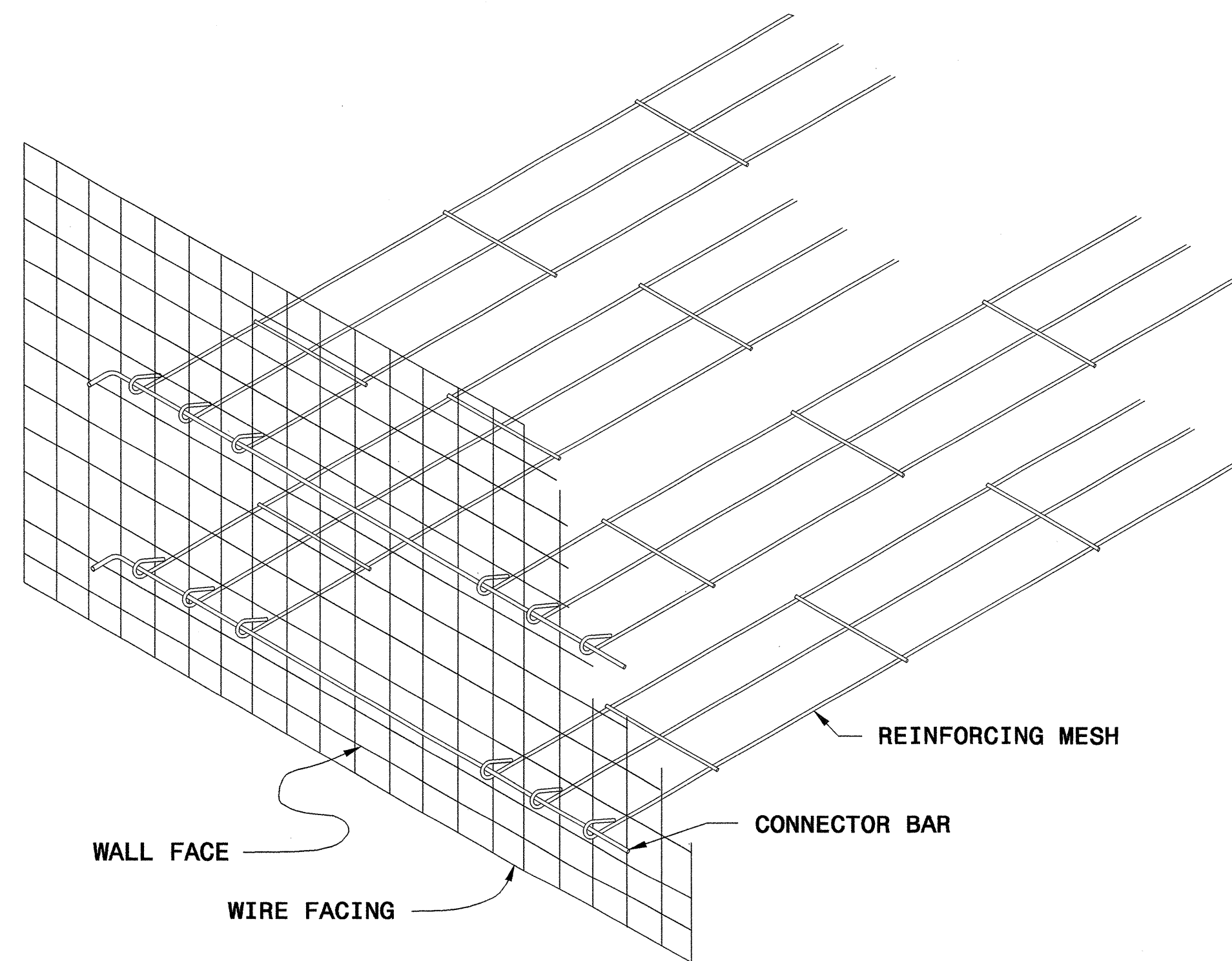


LOOPED END OF MESH
(SEE REINFORCING MESH LOOP DETAIL)

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

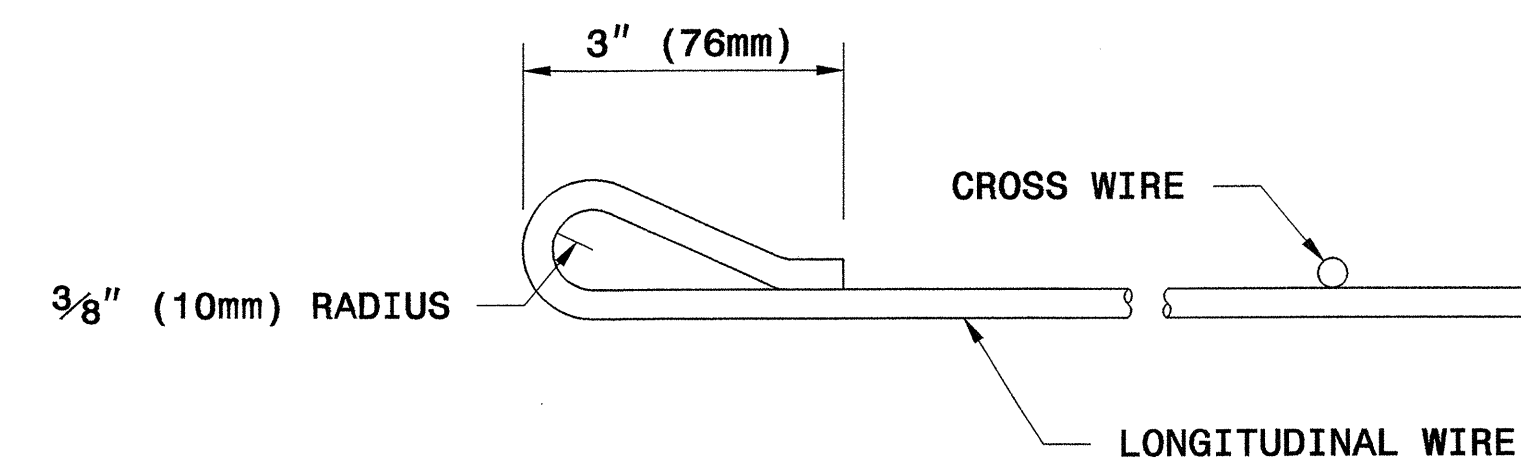
3W8 X W8 x 2.0' (3MW52 X MW52 X 610mm)
 NO. OF LONGITUDINAL WIRES
 GAUGE OF LONGITUDINAL WIRES
 GAUGE OF CROSS WIRES
 SPACING OF CROSS WIRES IN FT (mm), CW

REINFORCING MESH DESIGNATION



GENERAL ASSEMBLY DETAIL

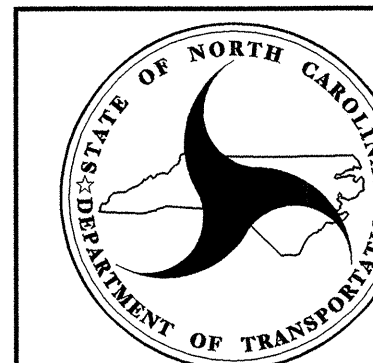
REINFORCING MESH



REINFORCING MESH LOOP DETAIL



The Reinforced Earth Company



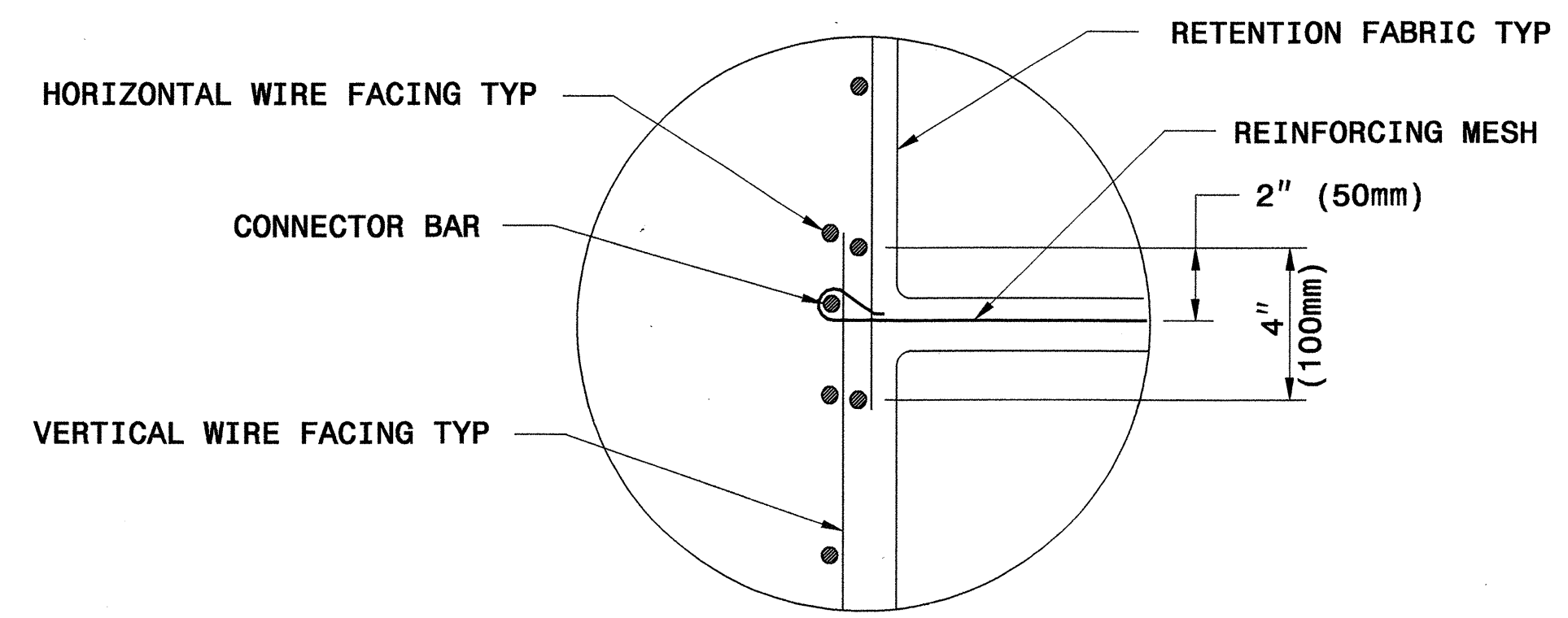
GEOTECHNICAL ENGINEERING UNIT
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD DRAWING NO. 1801.02

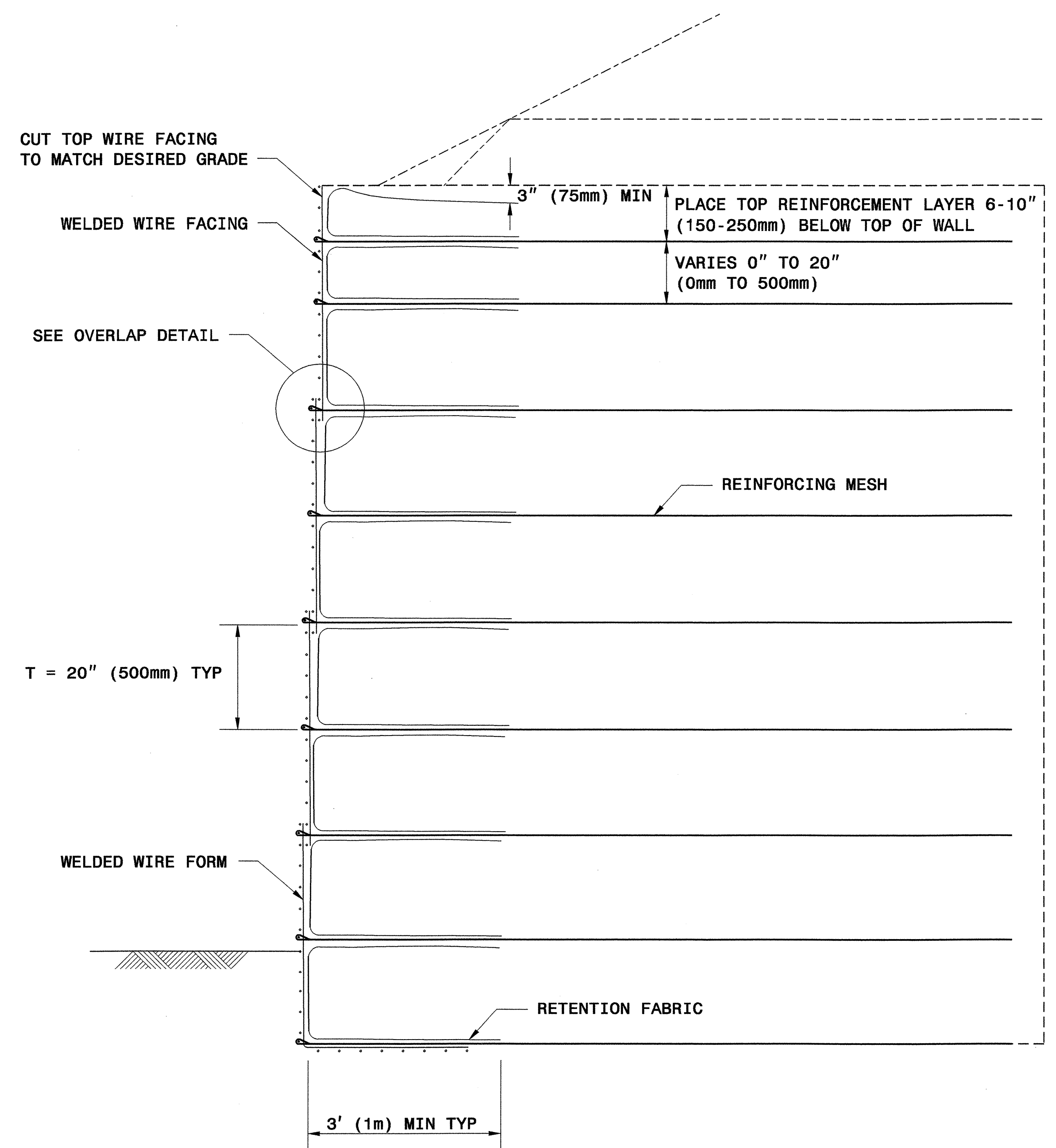
RETAINED EARTH
 TEMPORARY WALL

SHEET 7 OF 11

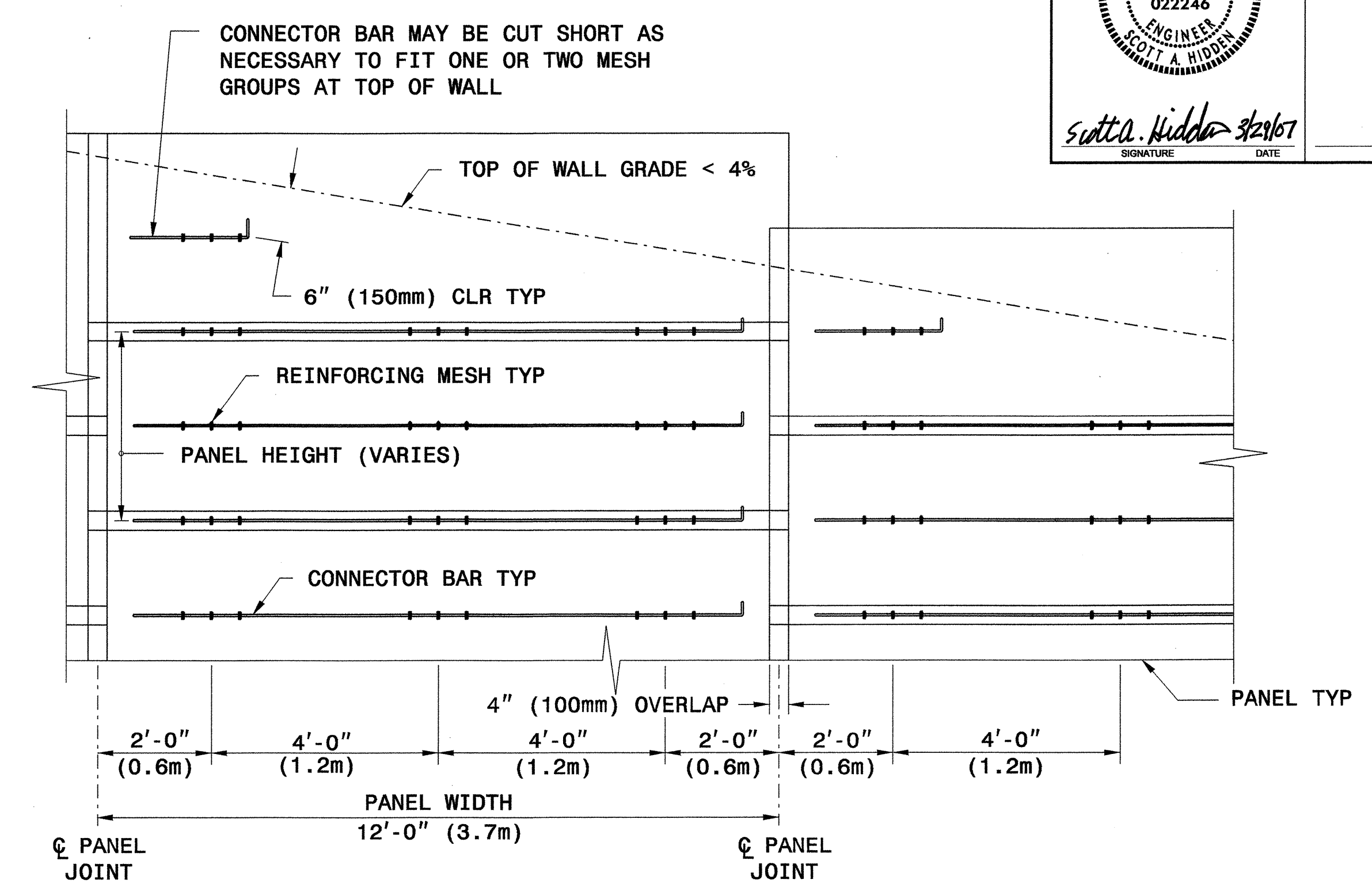
DATE: 12-19-06



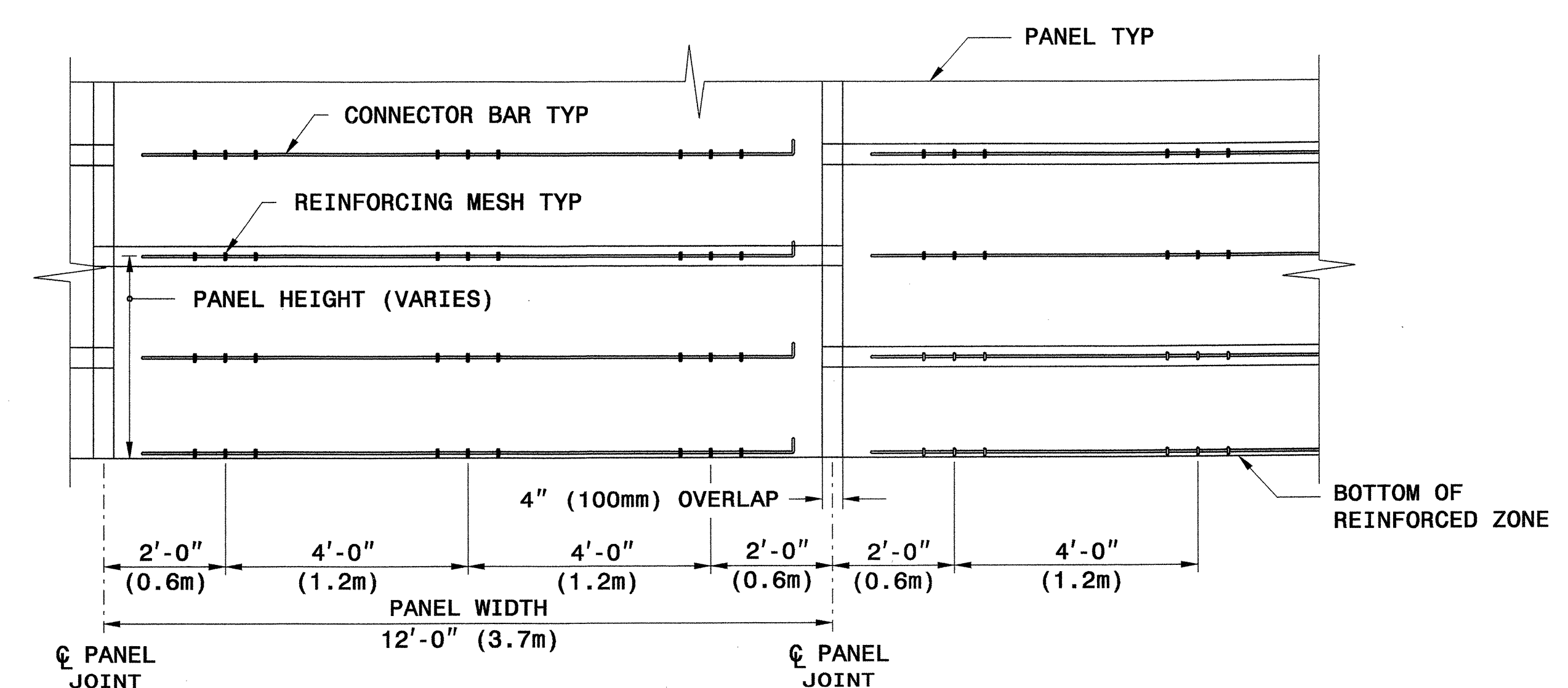
OVERLAP DETAIL



TYPICAL SECTION



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



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

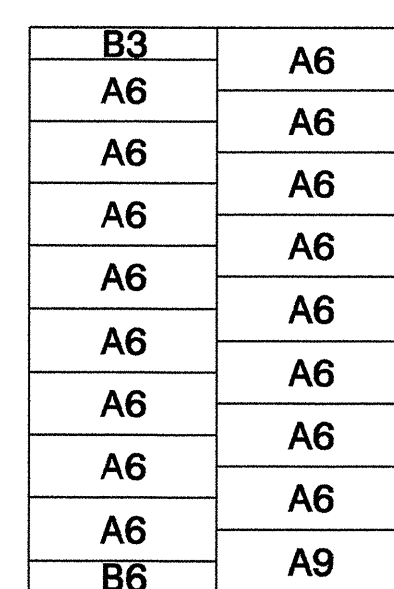


GEOTECHNICAL ENGINEERING UNIT
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

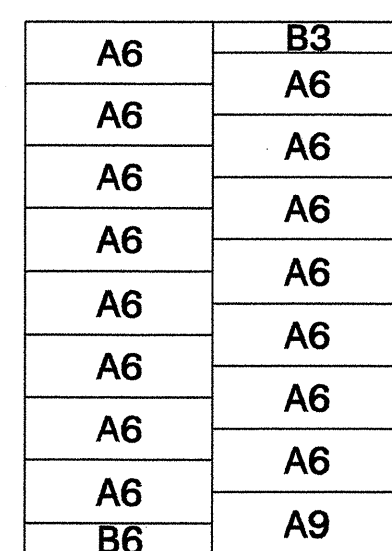
STANDARD DRAWING NO. 1801.02
RETAINED EARTH TEMPORARY WALL
 SHEET 8 OF 11 DATE: 12-19-06

PANEL LAYOUTS

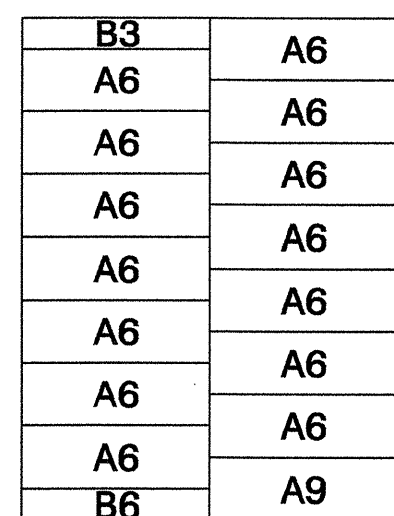
H - WALL HEIGHT
(FEET-INCHES)
(METER)



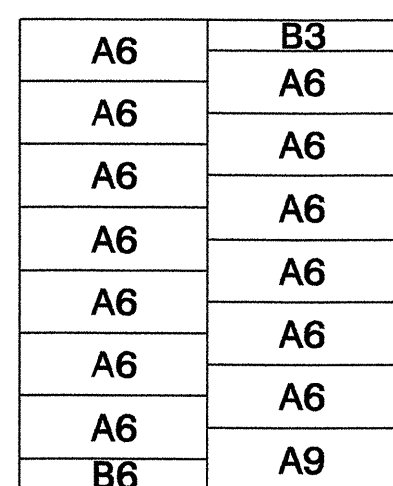
< 28 - 0
< 8.5



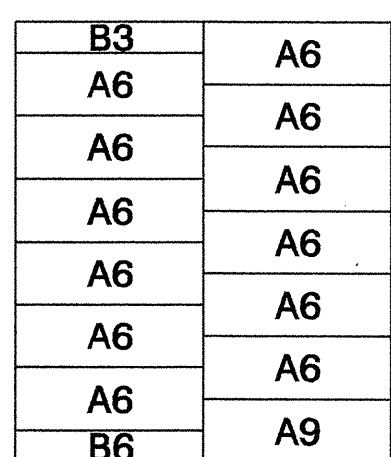
< 27 - 8
< 8.4



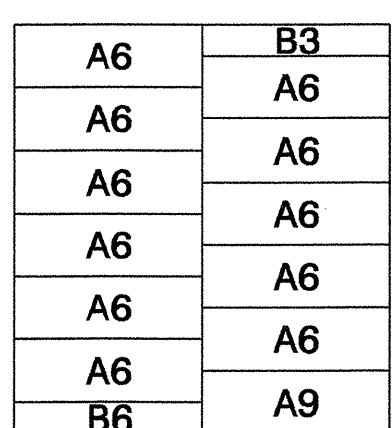
< 26 - 0
< 7.9



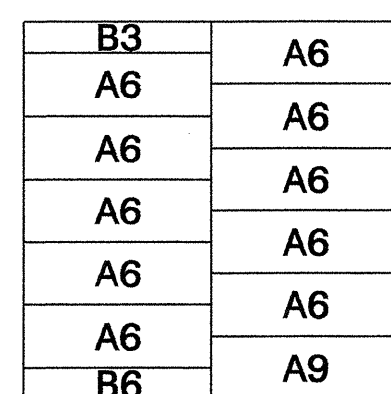
< 24 - 4
< 7.4



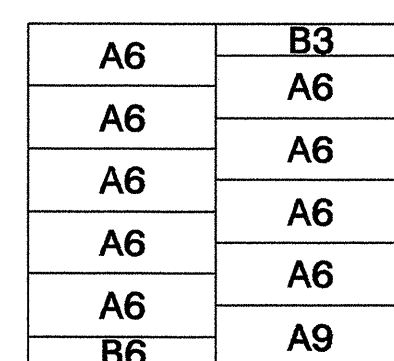
< 22 - 8
< 6.9



< 21 - 0
< 6.4

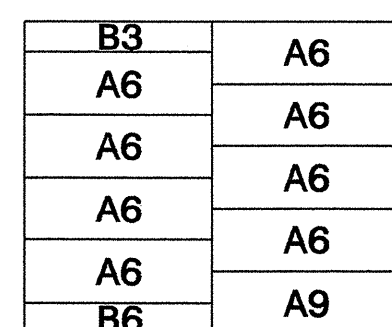


< 19 - 4
< 5.9

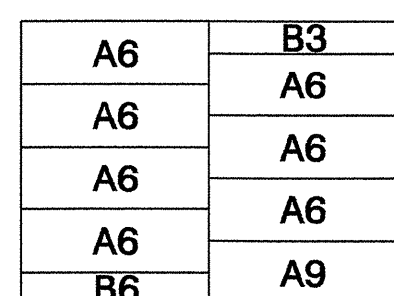


(FEET-INCHES)
(METER)

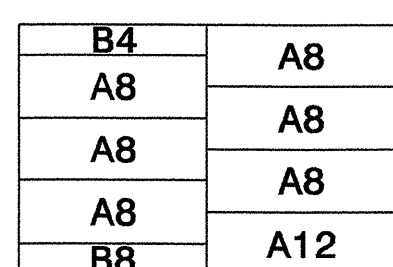
< 17 - 8
< 5.4



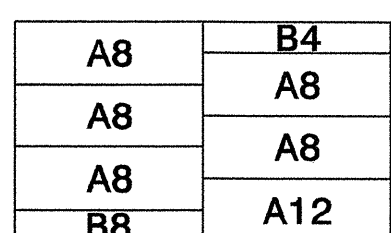
< 16 - 0
< 4.9



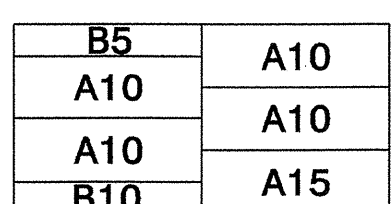
< 14 - 4
< 4.4



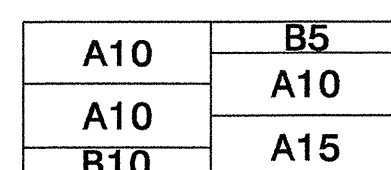
< 12 - 8
< 3.9



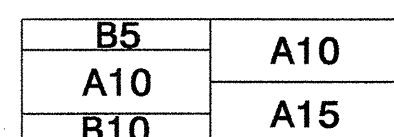
< 11 - 0
< 3.4



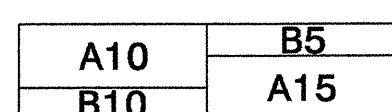
< 9 - 4
< 2.8



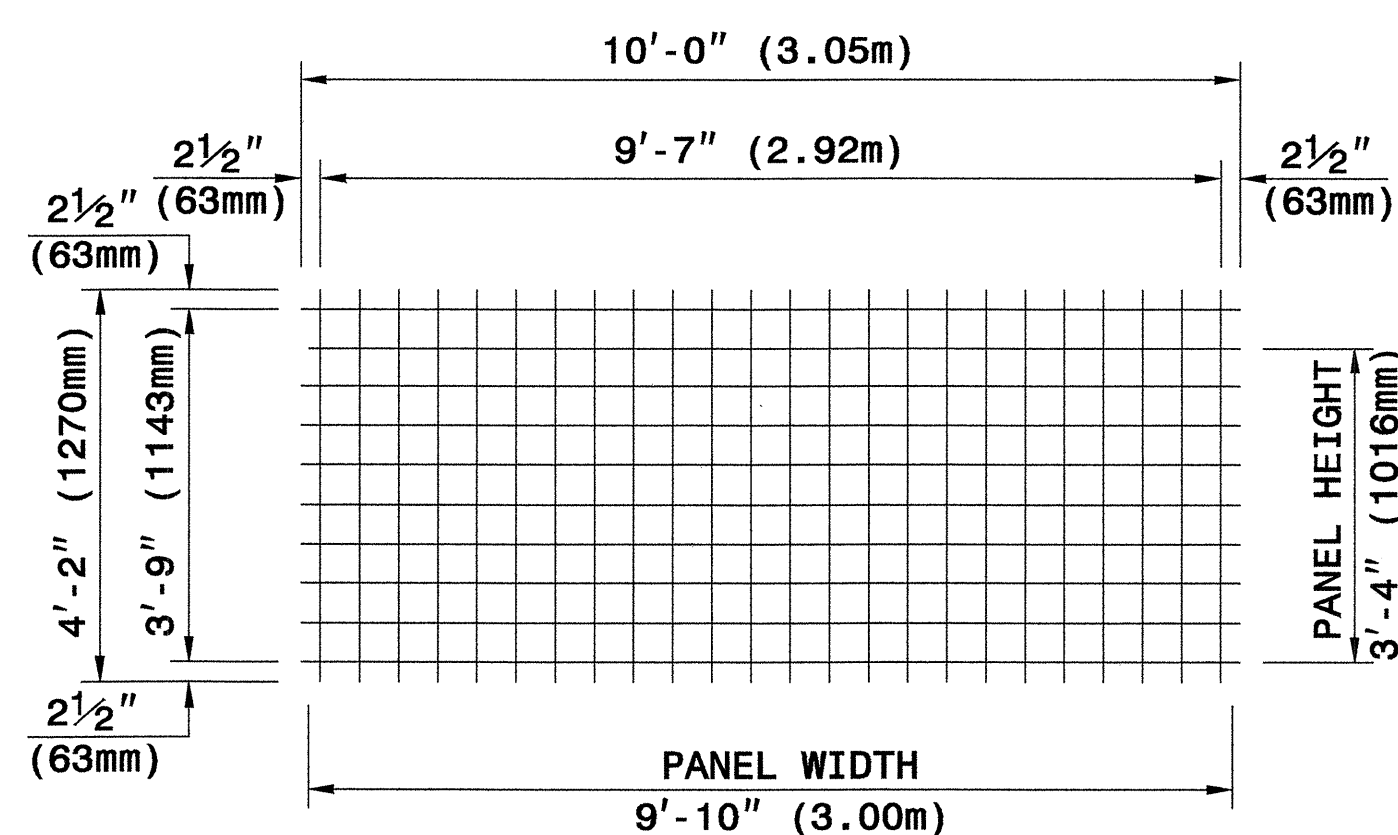
< 7 - 8
< 2.3



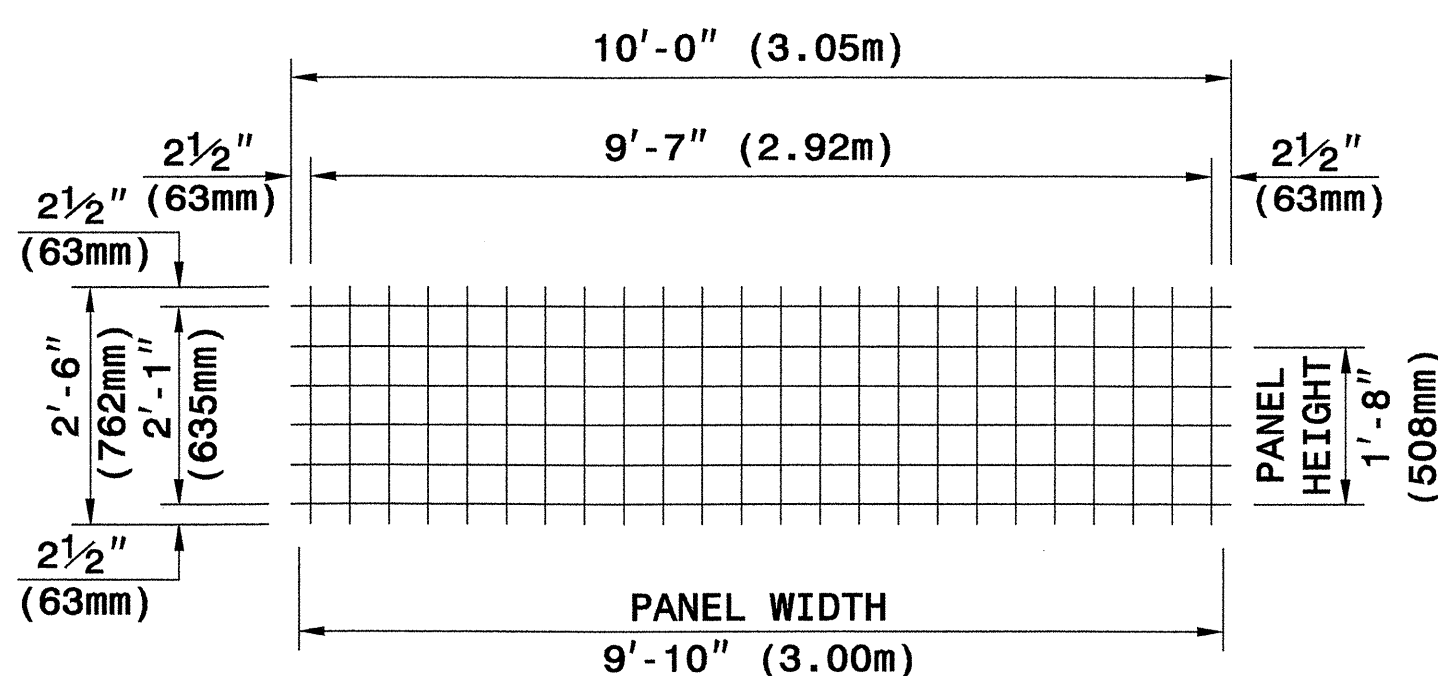
< 6 - 0
< 1.8



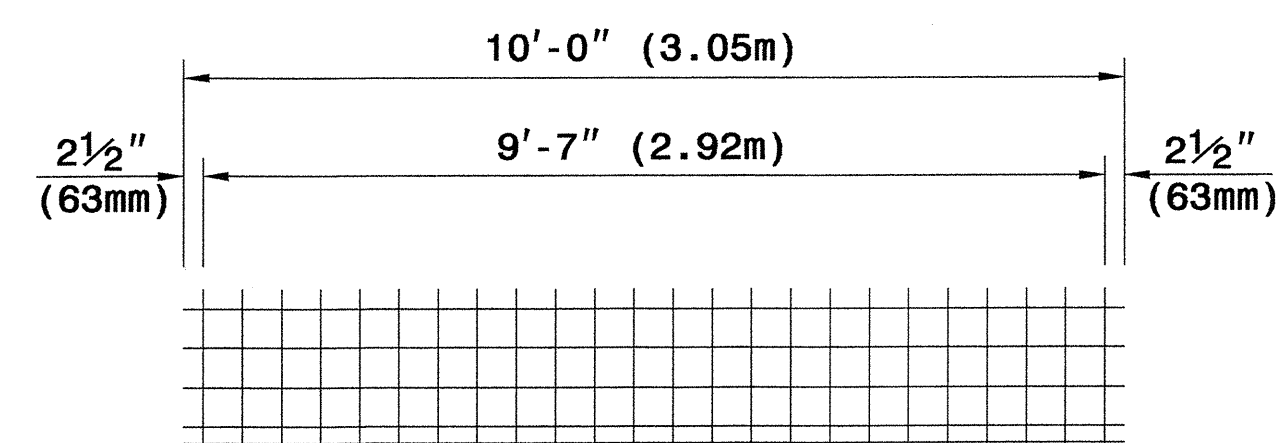
< 4 - 4
< 1.3



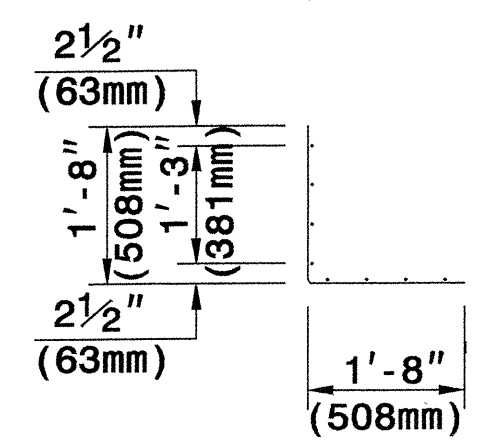
TYPE A



TYPE B



WELDED WIRE FORM

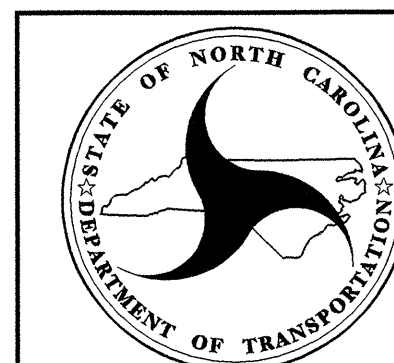


SECTION

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)



GEOTECHNICAL ENGINEERING UNIT
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD DRAWING NO. 1801.02

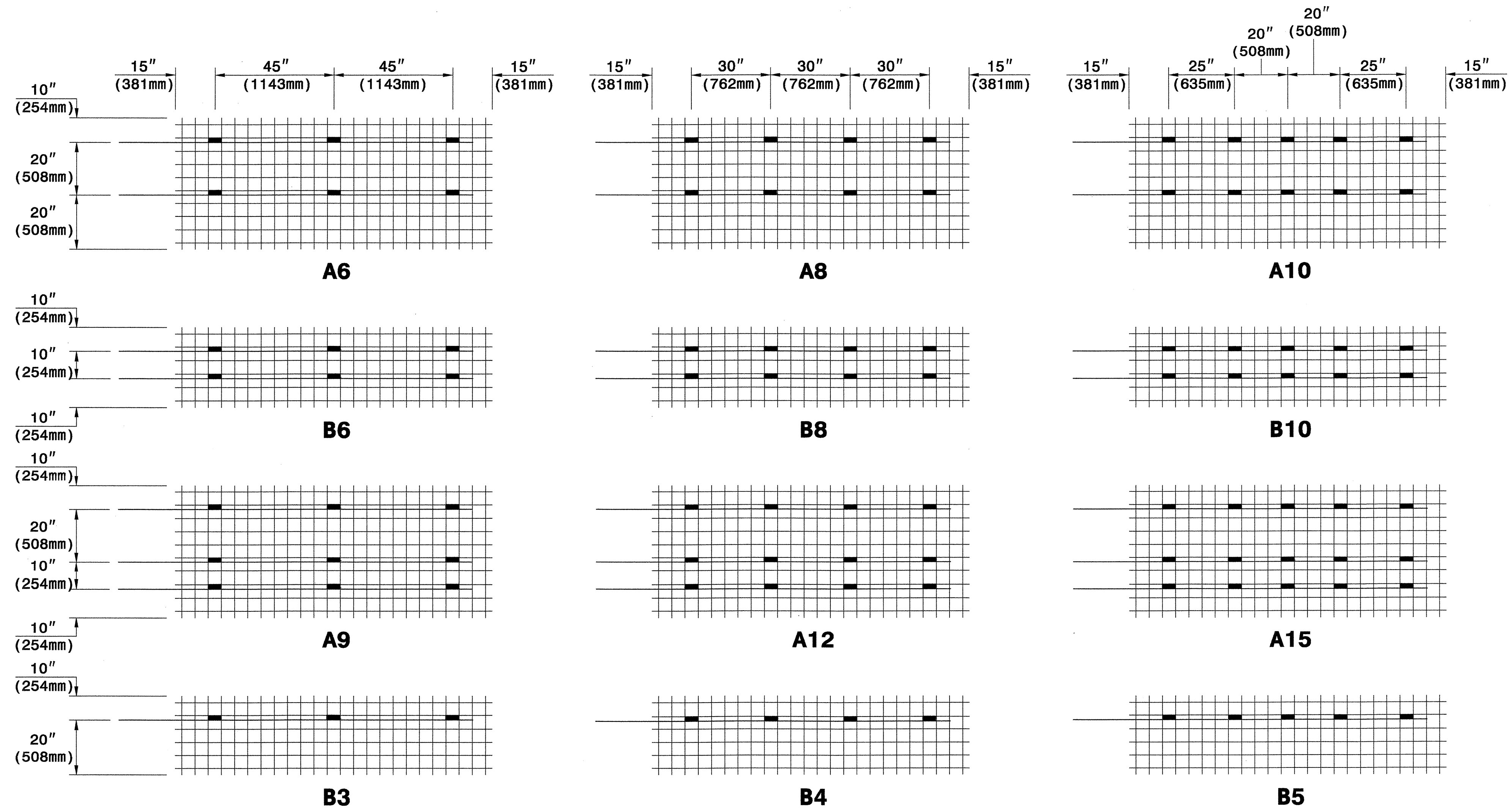
TERRATREL
TEMPORARY WALL

SHEET 9 OF 11

DATE: 12-19-06

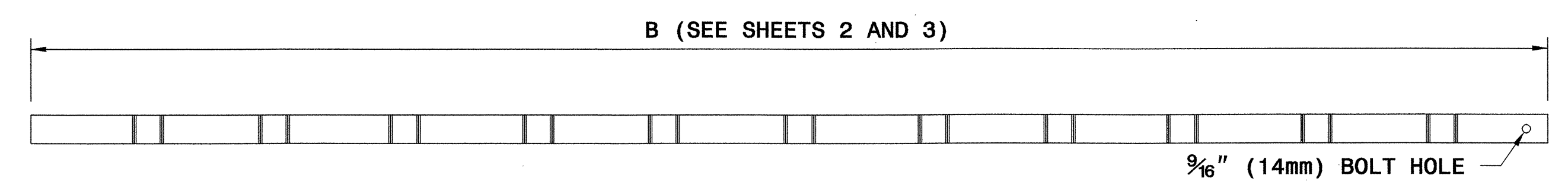


Scott A. Hadden 3/24/07
SIGNATURE DATE

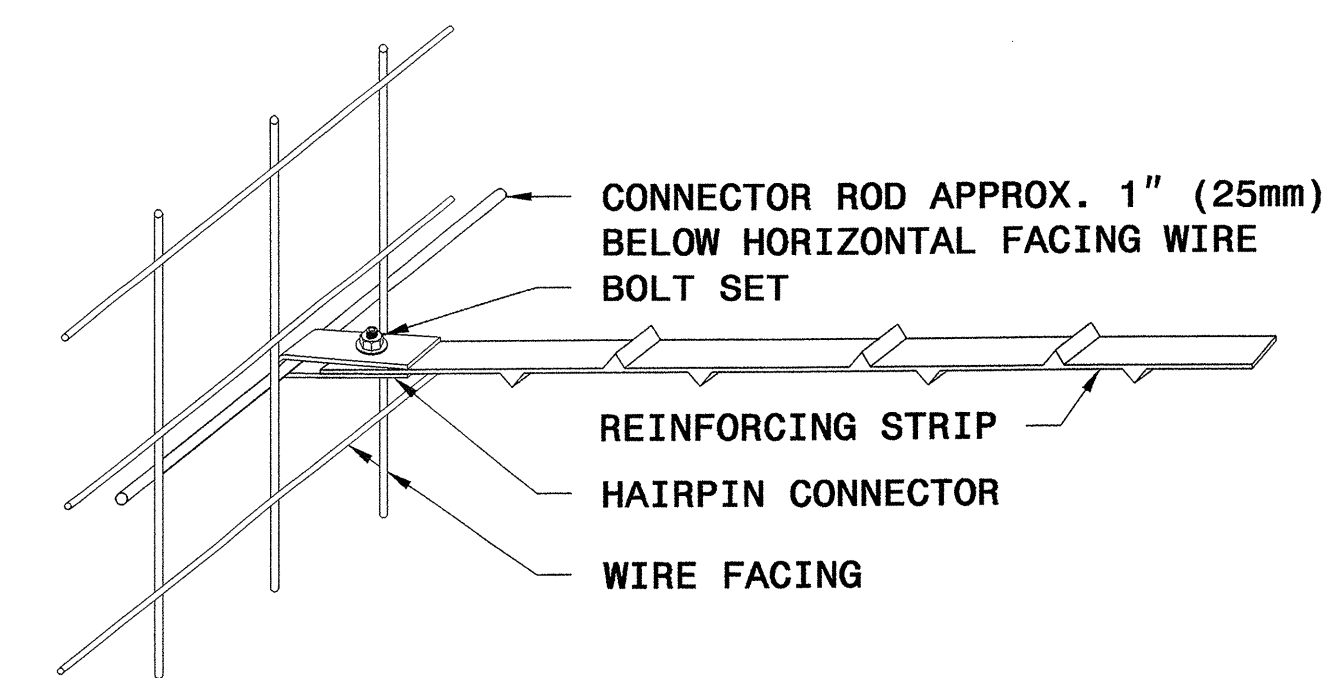


KEY: A8
NUMBER OF REINFORCING STRIPS
PANEL TYPE

CONNECTOR ROD AND REINFORCING STRIP PLACEMENT DIAGRAMS



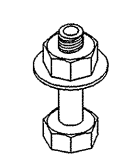
REINFORCING STRIP - 2" X 5/32" (50mm X 4mm)



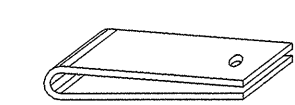
STRIP TO FACING CONNECTION



1/2" (13mm) DIA. ROD
CONNECTOR ROD



1/2" (13mm) BOLT WITH NUT AND WASHER
BOLT SET



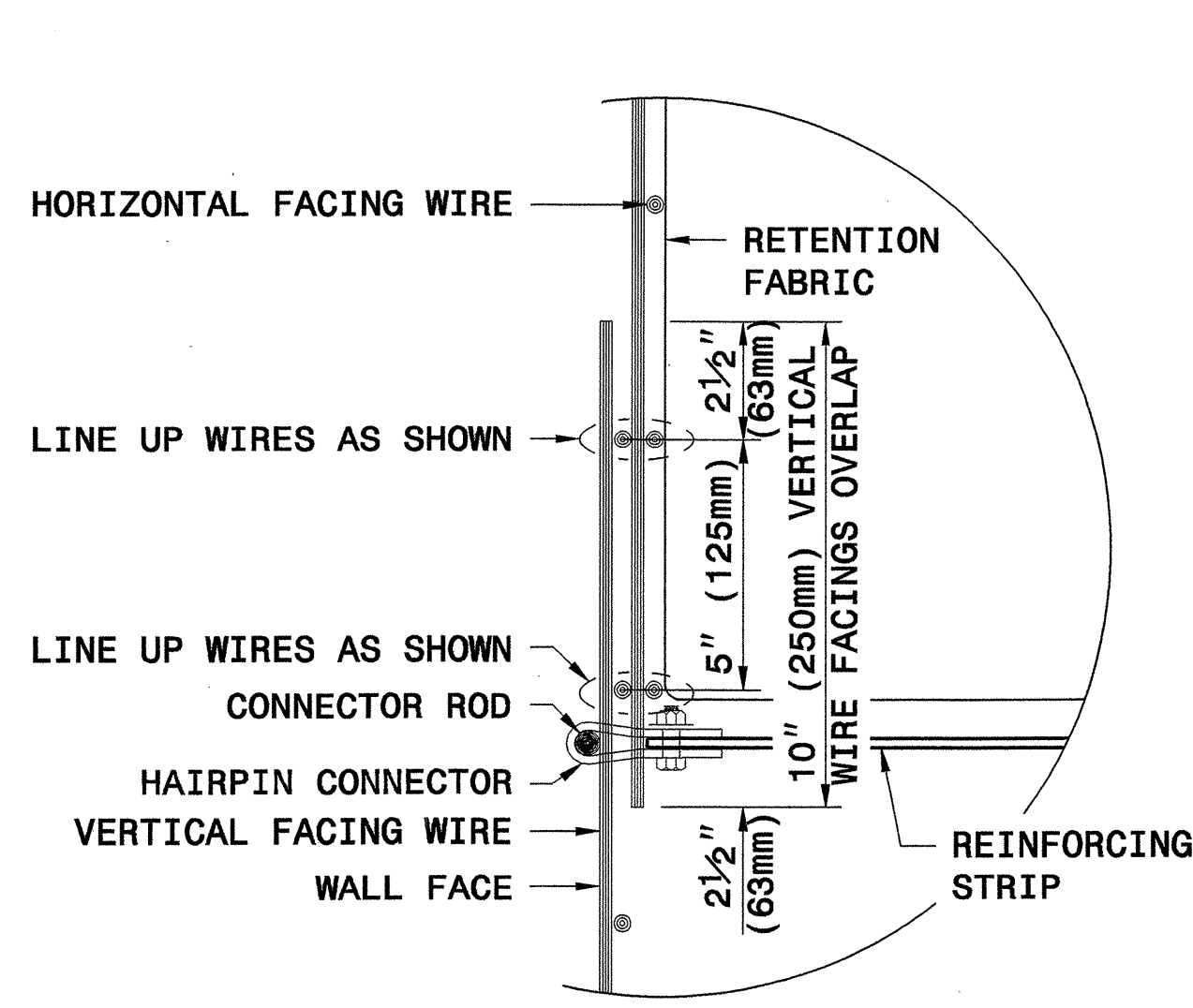
HAIRPIN CONNECTOR

WALL COMPONENTS



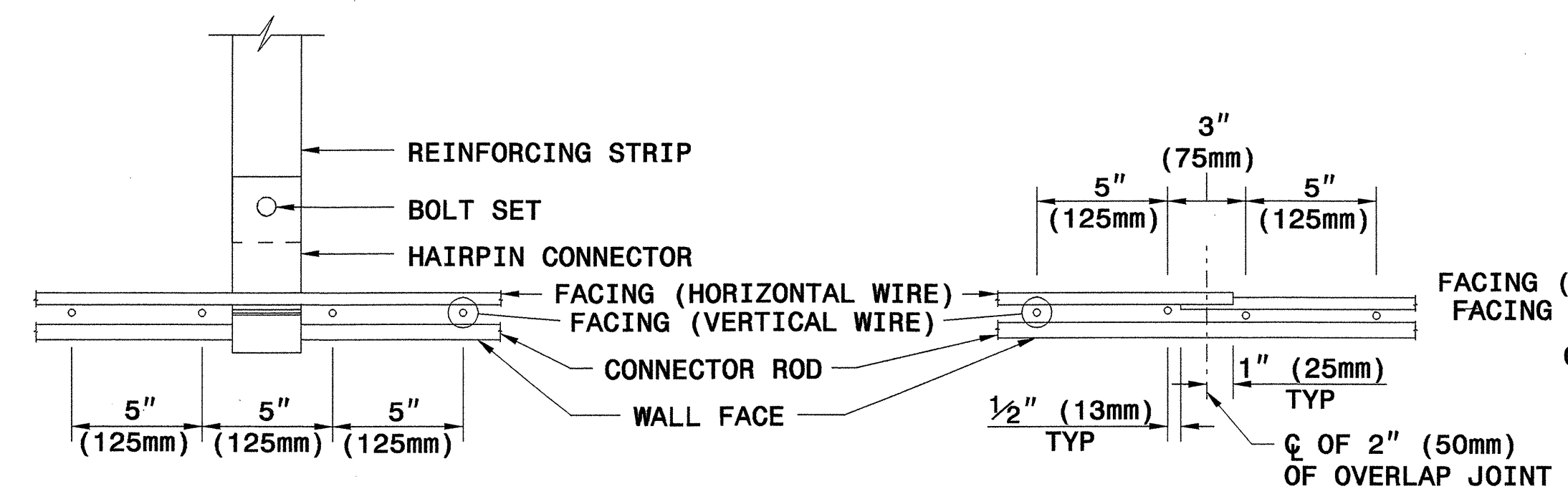
GEOTECHNICAL ENGINEERING UNIT
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD DRAWING NO. 1801.02
TERRATREL TEMPORARY WALL
SHEET 10 OF 11 DATE: 12-19-06



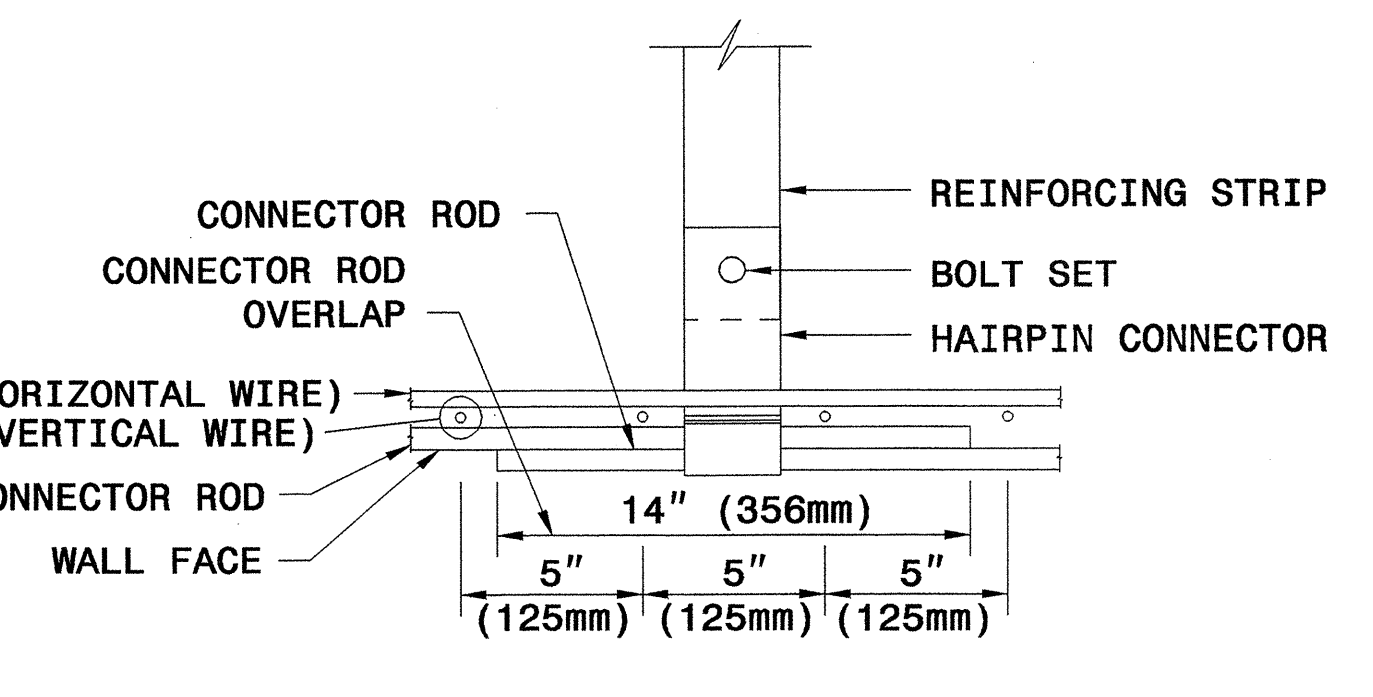
OVERLAP FACINGS VERTICALLY ONE FULL 5" (125mm) WIRE SQUARE DISREGARDING HALF SQUARES AT EDGES

VERTICAL OVERLAP DETAIL

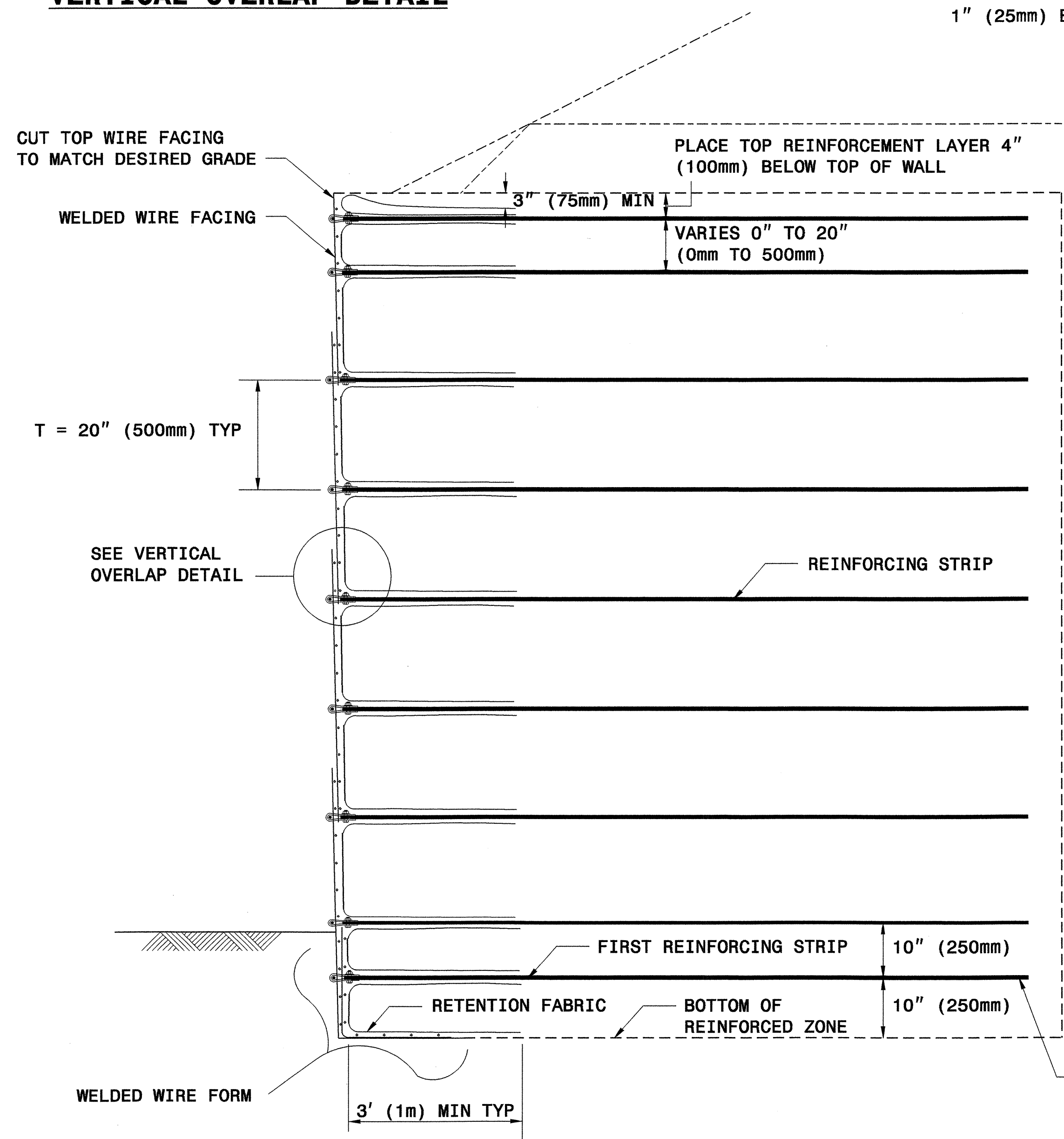


PLAN DETAIL 'A' STRIP CONNECTION

PLAN DETAIL 'B' HORIZONTAL OVERLAP DETAIL

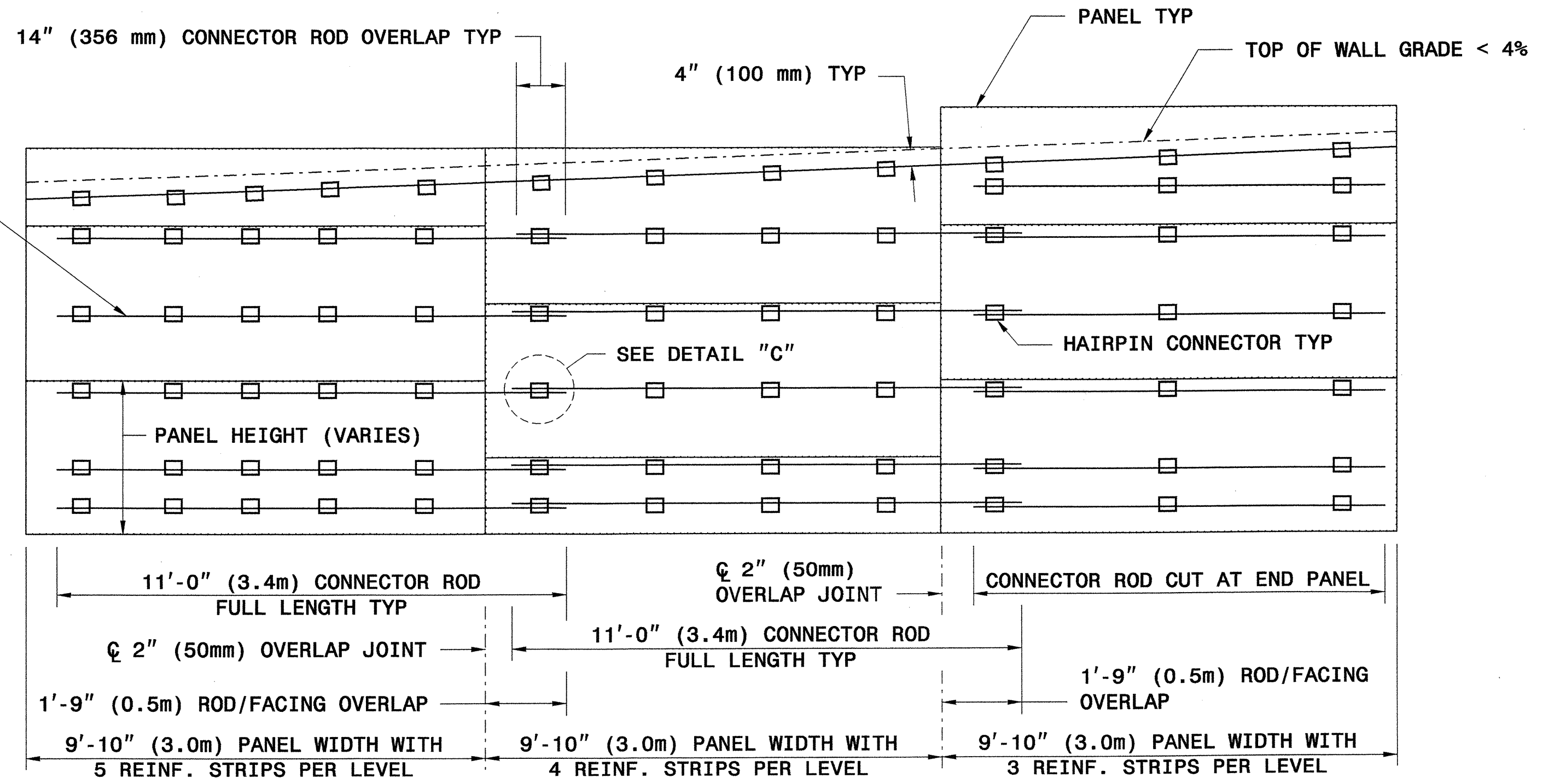


PLAN DETAIL 'C' STRIP CONNECTION WITH HORIZONTAL OVERLAP DETAIL

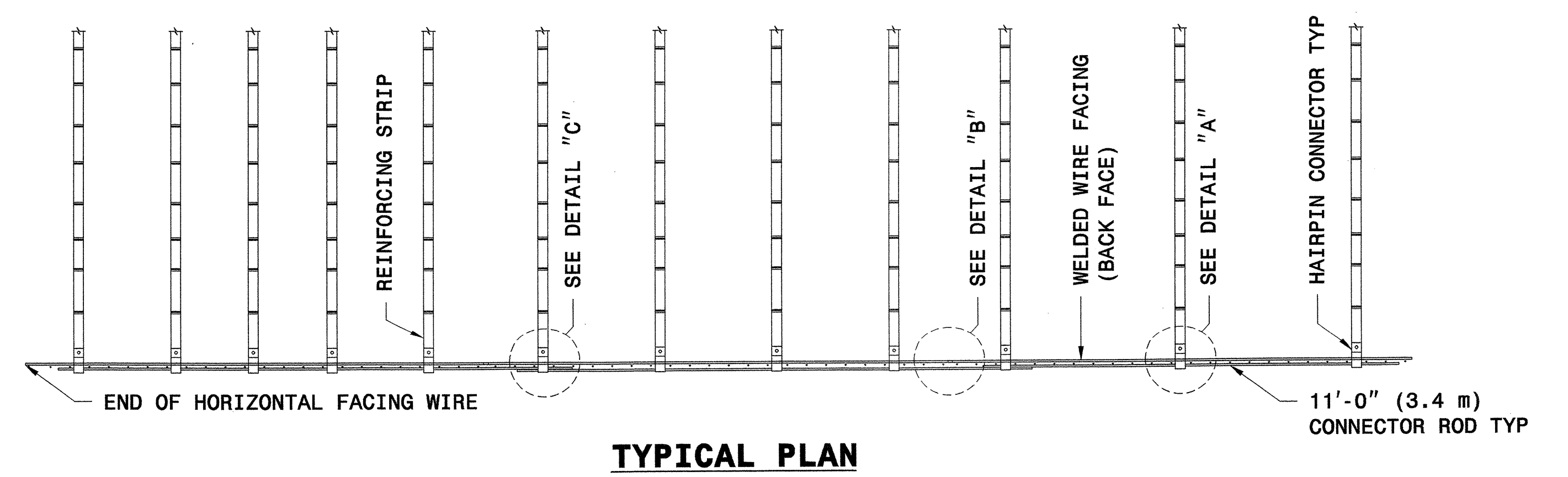


TYPICAL SECTION

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



TYPICAL ELEVATION (WIRES NOT SHOWN FOR CLARITY)



TYPICAL PLAN



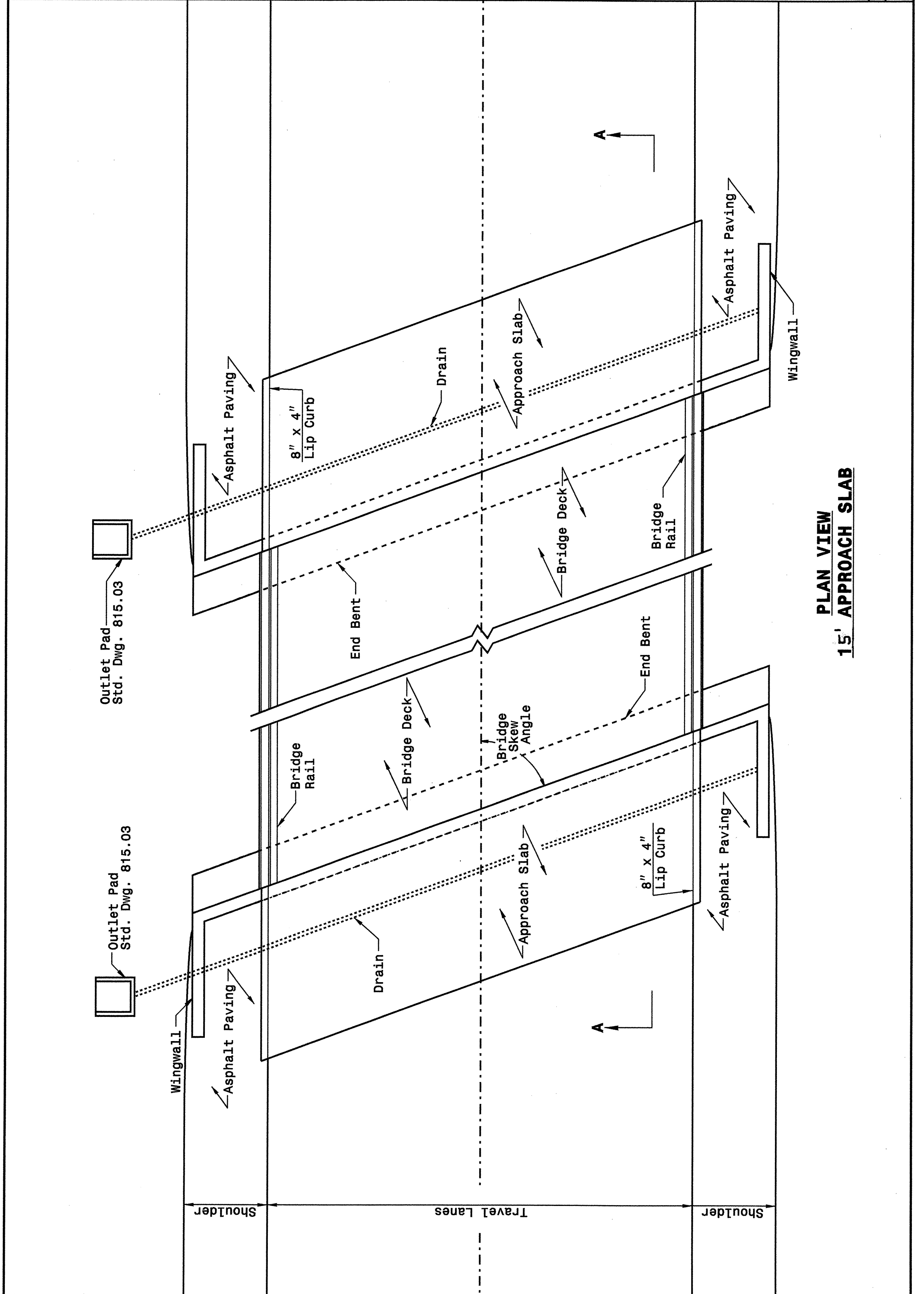
GEOTECHNICAL ENGINEERING UNIT
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD DRAWING NO. 1801.02
TERRATREL TEMPORARY WALL
 SHEET 11 OF 11 DATE: 12-19-06

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

ENGLISH DETAIL DRAWING FOR
BRIDGE APPROACH FILLS
CORED SLAB & BOX BEAM BRIDGES
SUB REGIONAL TIER

SHEET 1 OF 2
422D11



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

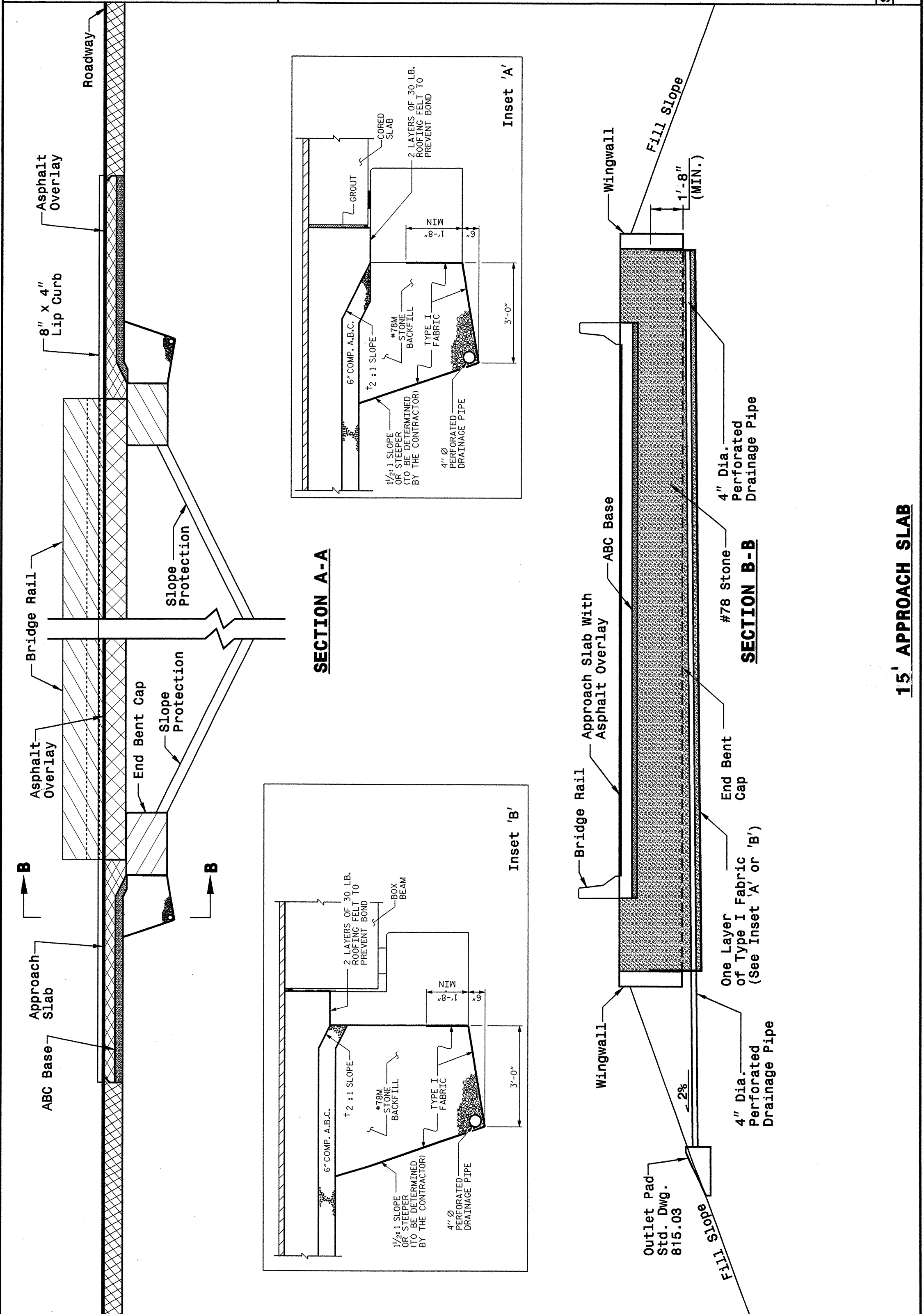
ENGLISH DETAIL DRAWING FOR
BRIDGE APPROACH FILLS
CORED SLAB & BOX BEAM BRIDGES
SUB REGIONAL TIER

SHEET 1 OF 2
422D11

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

ENGLISH DETAIL DRAWING FOR
BRIDGE APPROACH FILLS
CORED SLAB & BOX BEAM BRIDGES
SUB REGIONAL TIER

SHEET 2 OF 2
422D11



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

ENGLISH DETAIL DRAWING FOR
BRIDGE APPROACH FILLS
CORED SLAB & BOX BEAM BRIDGES
SUB REGIONAL TIER

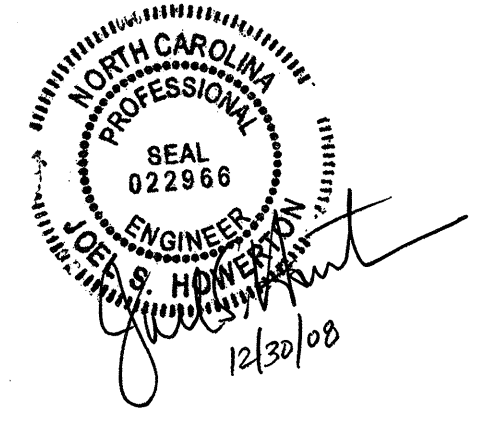
SHEET 2 OF 2
422D11

26-JUN-2008 15:33
ss\cont\proj\2008\projects\spectral\kempf\english\bridge approach fill.dgn
kempf

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

BRIDGE APPROACH FILLS
CORED SLAB & BOX BEAM BRIDGES
SUB REGIONAL TIER

ORIGINAL BY: K. A. Kempf DATE: 6-10-08
MODIFIED BY: *[Signature]* DATE: *[Date]*
CHECKED BY: *[Signature]* DATE: 4/27/08
FILE SPEC.: kempf/english/bridge approach fills.dgn



STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

SUMMARY OF QUANTITIES

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C202100

ItemNumber	Sec #	Quantity	Unit	Description
000100000-N	800	Lump Sum		MOBILIZATION
003000000-N	SP	Lump Sum		BRIDGE APPROACH FILL - SUB REGIONAL TIER, STATION ***** (15+13.00)
004300000-N	226	Lump Sum		GRADING
005000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB-BING
005700000-E	226	425	CY	UNDERCUT EXCAVATION
008000000-E	SP	350	TON	CLASS IV SUBGRADE STABILIZATION
013400000-E	240	209	CY	DRAINAGE DITCH EXCAVATION
019500000-E	265	3,600	CY	SELECT GRANULAR MATERIAL
019600000-E	270	4,100	SY	FABRIC FOR SOIL STABILIZATION
019900000-E	SP	140	SF	TEMPORARY SHORING
031400000-E	300	80	TON	SELECT MATERIAL, CLASS ***** (VI)
031800000-E	300	10	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRS
034300000-E	310	32	LF	15" SIDE DRAIN PIPE
036600000-E	310	44	LF	15" RC PIPE CULVERTS, CLASS III
058200000-E	310	16	LF	15" CS PIPE CULVERTS, 0.064" THICK
063600000-E	310	2	EA	*** CS PIPE ELBOWS, ***** THICK (15", 0.064")
099500000-E	340	55	LF	PIPE REMOVAL
112100000-E	520	592	TON	AGGREGATE BASE COURSE
122000000-E	545	200	TON	INCIDENTAL STONE BASE
127500000-E	600	560	GAL	PRIME COAT
148900000-E	610	350	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
149800000-E	610	415	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE 119.0B
151900000-E	610	800	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5B
156000000-E	620	83	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22
169300000-E	654	10	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR
200000000-N	806	10	EA	RIGHT OF WAY MARKERS
228600000-N	840	2	EA	MASONRY DRAINAGE STRUCTURES
236700000-N	840	2	EA	FRAME WITH TWO GRATES, STD 840.29
255600000-E	846	40	LF	SHOULDER BERM GUTTER
284500000-N	858	2	EA	ADJUSTMENT OF METER BOXES OR VALVE BOXES
303000000-E	862	850	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
338000000-E	862	650	LF	TEMPORARY STEEL BM GUARDRAIL
338700000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE ***** TEMPORARY (III)
338910000-N	SP	4	EA	GUARDRAIL ANCHOR UNITS, TYPE 350 TEMPORARY
364900000-E	876	98	TON	RIP RAP, CLASS B
365600000-E	876	492	SY	FILTER FABRIC FOR DRAINAGE
440000000-E	1110	128	SF	WORK ZONE SIGNS (STATIONARY)
440500000-E	1110	96	SF	WORK ZONE SIGNS (PORTABLE)
441000000-E	1110	56	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
443000000-N	1130	50	EA	DRUMS
443500000-N	1135	40	EA	CONES
444500000-E	1145	32	LF	BARRICADES (TYPE III)
445000000-N	1150	400	HR	FLAGGER
465000000-N	1251	50	EA	TEMPORARY RAISED PAVEMENT MARKERS

ItemNumber	Sec #	Quantity	Unit	Description
468500000-E	1205	1,620	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)
468600000-E	1205	1,620	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)
477000000-E	1205	760	LF	COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE ** (4") (II)
481000000-E	1205	8,064	LF	PAINT PAVEMENT MARKING LINES (4")
532560000-E	1510	514	LF	6" WATER LINE
532620000-E	1510	460	LF	12" WATER LINE
564800000-N	1515	1	EA	RELOCATE WATER METER
580000000-E	1530	896	LF	ABANDON 6" UTILITY PIPE
580400000-E	1530	456	LF	ABANDON 12" UTILITY PIPE
587140000-E	1550	400	LF	TRENCHLESS INSTALLATION OF 6" IN SOIL
600000000-E	1605	2,750	LF	TEMPORARY SILT FENCE
600600000-E	1610	100	TON	STONE FOR EROSION CONTROL, CLASS A
600900000-E	1610	200	TON	STONE FOR EROSION CONTROL, CLASS B
601200000-E	1610	120	TON	SEDIMENT CONTROL STONE
601500000-E	1615	2.5	ACR	TEMPORARY MULCHING
601800000-E	1620	100	LB	SEED FOR TEMPORARY SEEDING
602100000-E	1620	1.25	TON	FERTILIZER FOR TEMPORARY SEEDING
602400000-E	1622	65	LF	TEMPORARY SLOPE DRAINS
602700000-N	1622	2	EA	INLET PROTECTION AT TEMPORARY SLOPE DRAINS
602900000-E	SP	450	LF	SAFETY FENCE
603000000-E	1630	765	CY	SILT EXCAVATION
603600000-E	1631	1,700	SY	MATTING FOR EROSION CONTROL
603700000-E	SP	100	SY	COIR FIBER MAT
603800000-E	SP	205	SY	PERMANENT SOIL REINFORCEMENT MAT
604200000-E	1632	230	LF	1/4" HARDWARE CLOTH
6071010000-E	SP	50	LF	WATTLE
6071020000-E	SP	16	LB	POLYACRYLAMIDE (PAM)
6071030000-E	SP	225	LF	COIR FIBER BAFFLES
6071050000-E	SP	4	EA	*** SKIMMER (1-1/2")
608400000-E	1660	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	75	LB	SEED FOR SUPPLEMENTAL SEEDING
610800000-E	1665	1.75	TON	FERTILIZER TOPDRESSING
611400000-N	SP	5	HR	SPECIALIZED HAND MOWING
611700000-N	SP	12	EA	RESPONSE FOR EROSION CONTROL
612300000-E	1670	1.4	ACR	REFORESTATION

6/21/00

26-NOV-2008 09:26 4097_r.dwg-sum.dgn

**STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS**

**★ SUMMARY OF EARTHWORK
 IN CUBIC YARDS**

STATION	STATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT +%	BORROW	WASTE
-DETOUR-						
10+49.94	15+57.00	3	0	3,906	3,903	0
16+27.00	19+07.47	8	0	1,830	1,822	0
-L-						
10+00.00	14+23.00	1	0	1,411	1,410	0
16+03.00	19+00.00	11	0	289	278	0
SUBTOTAL		23	0	7,436	7,413	0
DETOUR REMOVAL						
10+49.94	15+57.00	2,915	0	220	0	2,695
16+27.00	19+07.47	1,522	0	7	0	1,515
SUBTOTAL		4,437	0	227	0	4,210
TOTAL		4,460	0	7,663	7,413	4,210
SELECT GRANULAR MATERIAL IN LIEU OF BORROW				-3,600	-3,600	
PROJECT TOTALS		4,460	0	4,063	3,813	4,210
EST. 5% TO REPLACE TOPSOIL ON BORROW PIT					191	
GRAND TOTALS		4,460			4,004	4,210
SAY		4,500			4,050	4,250

ESTIMATED DRAINAGE DITCH EXCAVATION = 209 CY
 ESTIMATED UNDERCUT = 425 CY

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

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

LINE	STATION TO STATION	LOCATION	REMOVAL	BREAKING
-L-	11+75.00 TO 13+50.00	EXISTING ROADBED		452
-L-	13+50.00 TO 14+41.00	EXISTING ROADBED	220	0
-L-	16+13.00 TO 16+50.00	EXISTING ROADBED	79	0
-DETOUR-	10+50.00 TO 11+68.00	DETOUR PAVEMENT	101	0
-DETOUR-	11+68.00 TO 15+57.00	DETOUR PAVEMENT	864	0
-DETOUR-	16+27.00 TO 18+47.00	DETOUR PAVEMENT	489	0
-DETOUR-	18+47.00 TO 19+57.00	DETOUR PAVEMENT	102	0
		TOTAL	1,855	452
		SAY	1,860	460

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

6/21/00
 08-JAN-2009 09:08:40 097_rdy_sum.dgn

5/28/09

BM#1 RAILROAD SPIKE SET IN SOUTHWEST ROOT OF A BLACK GUM 180' LT. OF -L- STA. 11+89 ELEV. = 661.31' N 742390 E 1605006

PI = 12+25.00
EL = 664.54'
VC = 356'
K = 80

-L-

PI = 17+75.00
EL = 662.89'
VC = 245'
K = 86

DITCH LEGEND

RIGHT DITCH - - - - -

LEFT DITCH - - - - -

END OVERLAY
-L- STA. 19+50.00

PROJECT REFERENCE NO. B-4097	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 1650	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 657.6	FT
BASE DISCHARGE	= 2450	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 658.5	FT
OVERTOPPING DISCHARGE	= 7000	CFS
OVERTOPPING FREQUENCY	= 500++	YRS
OVERTOPPING ELEVATION	= 663.3	FT
NORMAL WATER SURFACE ELEVATION	= 649.8	FT
DATE OF SURVEY	= 11/8/2007	
W.S. ELEVATION AT DATE OF SURVEY	= 649.8	FT

BEGIN OVERLAY
-L- STA. 9+50.87

END OVERLAY
BEGIN GRADE
-L- STA. 10+00.00
ELEV. = 675.20'

BEGIN BRIDGE
-L- STA. 14+23.00

21" CORED SLAB BRIDGE
1 SPAN @ 40'
2 SPANS @ 50'
1 SPAN @ 40'
-L- STA. 15+13.00
ELEV. = 663.68'
SKEW = 90 DEGREES

END GRADE
BEGIN OVERLAY
-L- STA. 19+00.00
ELEV. = 666.06'

END BRIDGE
-L- STA. 16+03.00

END BENT EXCAVATION
(STRUCTURE PAY ITEM)

CLASS II RIP RAP
(STRUCTURE PAY ITEM)

NOTES:
1.) FOR -L- PLAN VIEW SEE SHEET 4.
2.) FOR STRUCTURE PLANS SEE SHEETS S-1 THRU S-23.

BEGIN DITCH GRADE RT.
-L- STA. 10+50.00
E1 = 664.90'

PI = 11+00.00
E1 = 661.30'

PI = 11+50.00
E1 = 659.40'

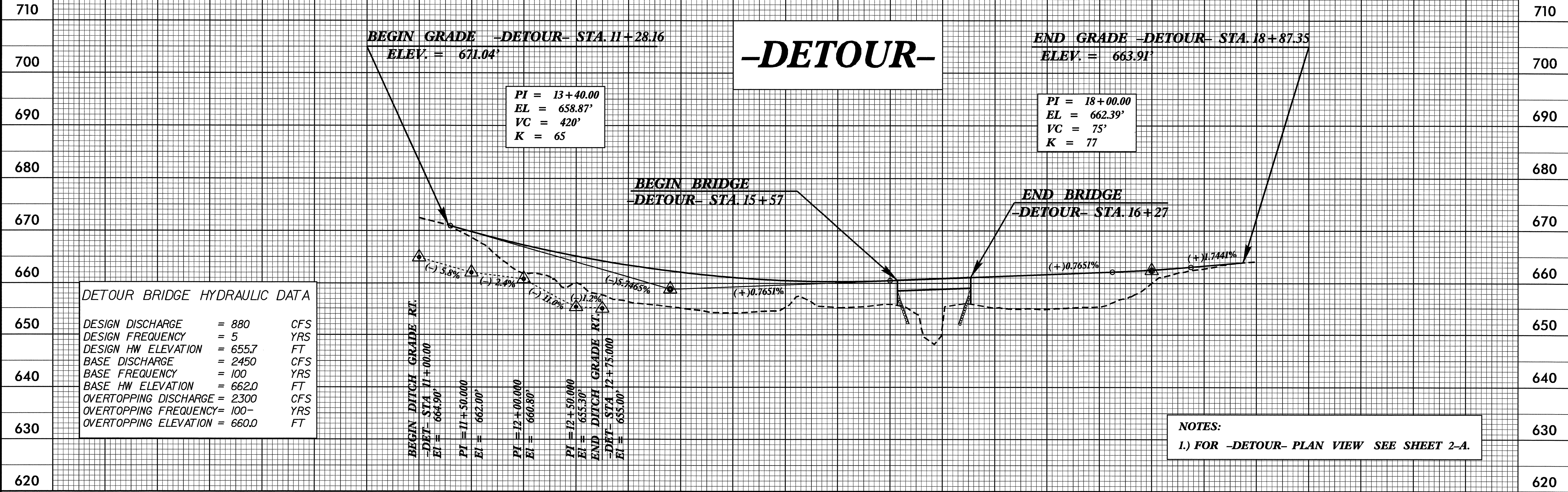
PI = 12+00.00
E1 = 656.10'

END DITCH GRADE RT.
-L- STA. 12+25.00
E1 = 655.50'

BEGIN DITCH GRADE LT.
-L- STA. 14+65.00
E1 = 652.50'

END DITCH GRADE LT.
-L- STA. 15+25.00
E1 = 651.00'

10 11 12 13 14 15 16 17 18 19



BEGIN GRADE -DETOUR- STA. 11+28.16
ELEV. = 671.04'

-DETOUR-

END GRADE -DETOUR- STA. 18+87.35
ELEV. = 663.91'

PI = 13+40.00
EL = 658.87'
VC = 420'
K = 65

PI = 18+00.00
EL = 662.39'
VC = 75'
K = 77

BEGIN BRIDGE
-DETOUR- STA. 15+57

END BRIDGE
-DETOUR- STA. 16+27

DETOUR BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 880	CFS
DESIGN FREQUENCY	= 5	YRS
DESIGN HW ELEVATION	= 655.7	FT
BASE DISCHARGE	= 2450	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 662.0	FT
OVERTOPPING DISCHARGE	= 2300	CFS
OVERTOPPING FREQUENCY	= 100-	YRS
OVERTOPPING ELEVATION	= 660.0	FT

BEGIN DITCH GRADE RT.
-DET- STA. 11+00.00
E1 = 664.90'

PI = 11+50.00
E1 = 662.00'

PI = 12+00.00
E1 = 660.80'

PI = 12+50.00
E1 = 655.30'

END DITCH GRADE RT.
-DET- STA. 12+75.00
E1 = 655.00'

NOTES:
1.) FOR -DETOUR- PLAN VIEW SEE SHEET 2-A.

10 11 12 13 14 15 16 17 18 19

04-DEC-2008 09:57
C:\PROJECTS\B-4097\rdy_p1.dgn