

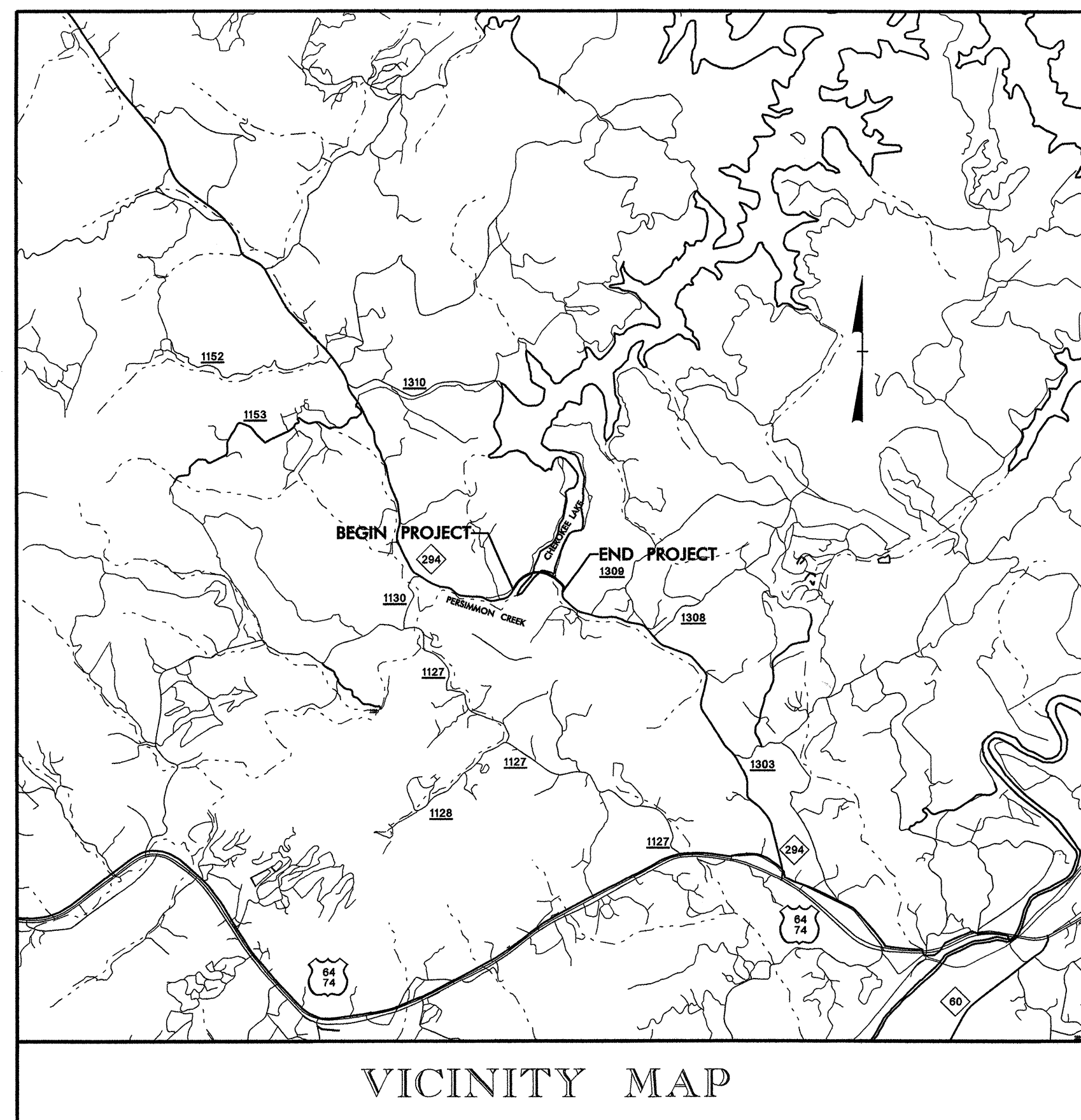
See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CHEROKEE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3622AA	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
38068.1.1		PE	
38068.2.1		ROW	
38068.3.1		CONST.	

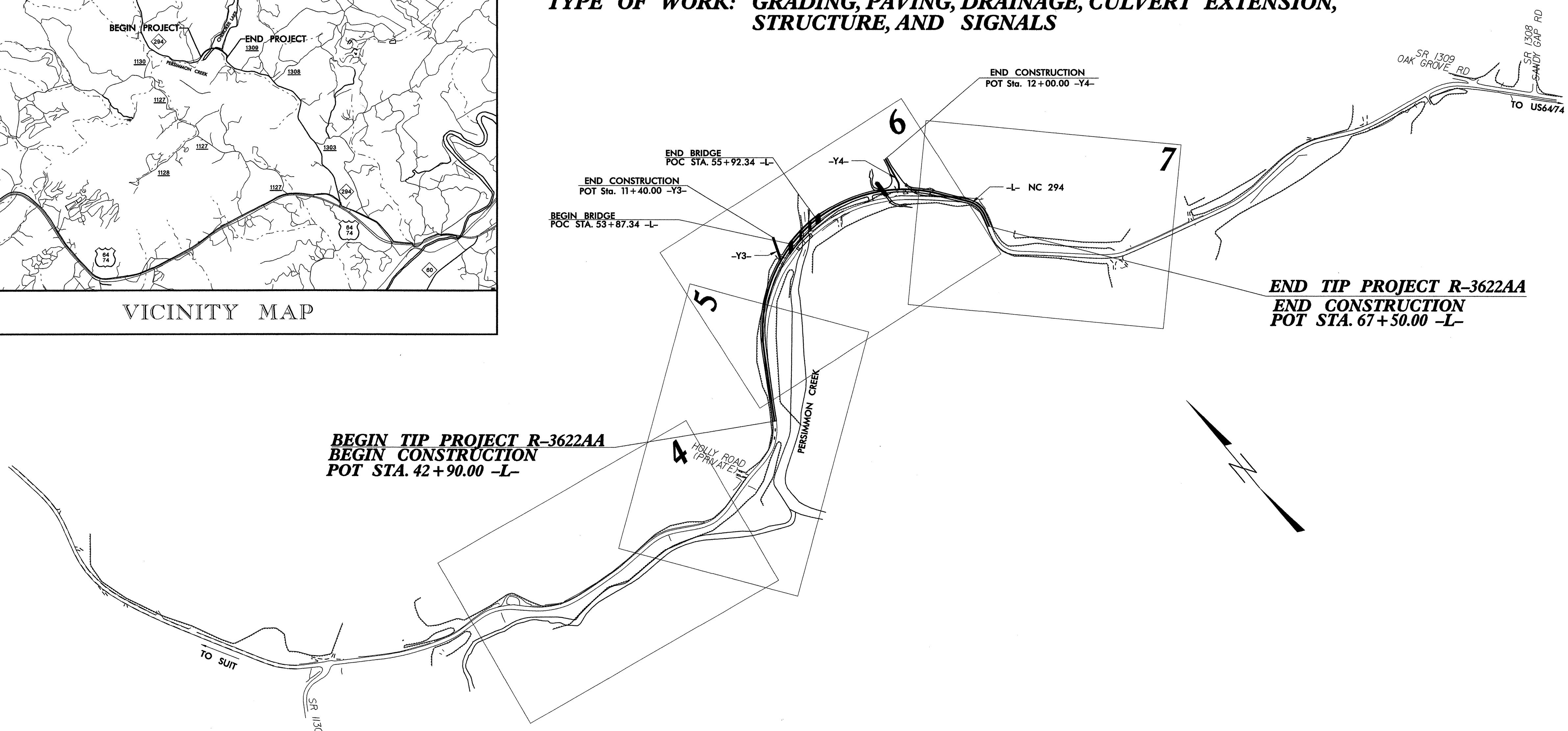
TIP PROJECT: R-3622AA



VICINITY MAP

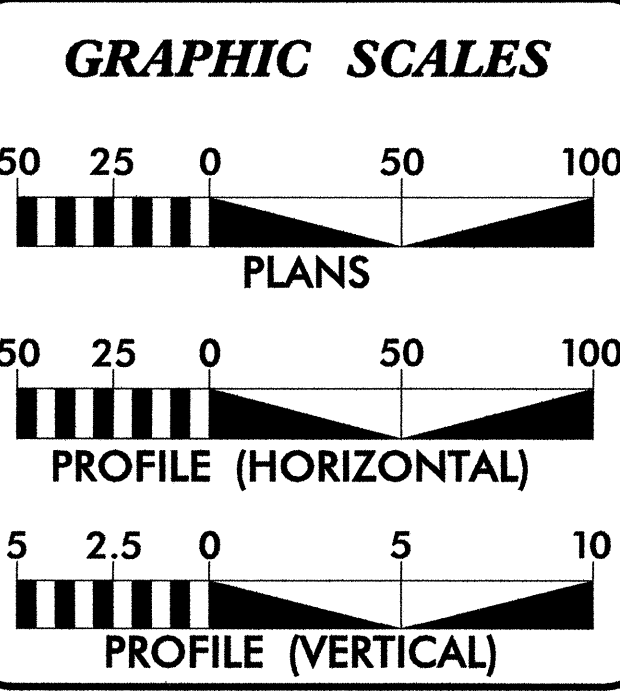
**LOCATION: NC 294 ROADWAY IMPROVEMENTS AND BRIDGE REPLACEMENT:
BRIDGE NO. 50 OVER PERSIMMON CREEK AND
EXTENSION OF CULVERT FOR TRIBUTARY TO LAKE CHEROKEE**

**TYPE OF WORK: GRADING, PAVING, DRAINAGE, CULVERT EXTENSION,
STRUCTURE, AND SIGNALS**



NCDOT CONTACT: J.B. Setzer, P.E., Division 14

CONTRACT: C201819



DESIGN DATA

ADT 2008 =	3,360
ADT 2025 =	6,000
DHV =	— %
D =	— %
T =	3 % *
V =	50 MPH
(* TTST 3% & DUAL 0%)	
FUNC. =	MAJOR
CLASS. =	COLLECTOR

PROJECT LENGTH

LENGTH ROADWAY	
TIP PROJECT R-3622AA =	0.427 MILES
LENGTH STRUCTURE	
TIP PROJECT R-3622AA =	0.039 MILES
TOTAL LENGTH OF	
TIP PROJECT R-3622AA =	0.466 MILES

Prepared in the Office of:
WILBUR SMITH ASSOCIATES
421 Fayetteville St., Suite 1303 Raleigh, NC 27601 Phone (919) 755-0583

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
NOVEMBER 16, 2007

LETTING DATE:
SEPTEMBER 16, 2008

DAVID L. WILVER, P.E.
PROJECT ENGINEER

R. D. ODELL, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

7119108
SIGNATURE: [Signature]
ROADWAY DESIGN ENGINEER

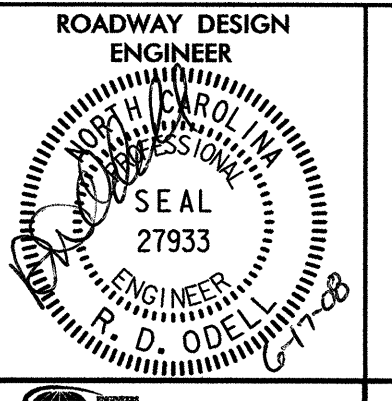

R. D. ODELL, P.E.
SIGNATURE: [Signature]

**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

STATE HIGHWAY DESIGN ENGINEER

09/08/09
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DATE: 7/16/2008 3:54:38 PM

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

PROJECT REFERENCE NO. R-3622AA	SHEET NO. 1A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 	
 421 Fayetteville Street Suite 1203 Raleigh, N.C. 27601	

INDEX OF SHEETS

SHEET #	DESCRIPTION
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES AND LIST OF STANDARDS
1-B	CONVENTIONAL SYMBOLS
1-C & 1-D	SURVEY CONTROL SHEETS
2	TYPICAL SECTIONS
2-A THRU 2-L	TEMPORARY SHORING DETAILS
3	SUMMARY OF QUANTITIES
3-A	GUARDRAIL SUMMARY SHEET, EXIST. ASPHALT PAVEMENT REMOVAL SUMMARY
3-B	DRAINAGE SUMMARY SHEET
3-C	EARTHWORK SUMMARY SHEET
3-D	PARCEL INDEX SHEET
4 THRU 7	PLAN SHEETS
8 THRU 11	PROFILE SHEETS
TCP-1 THRU TCP-15	TRAFFIC CONTROL PLANS
PM-1 THRU PM-3	PAVEMENT MARKING PLANS
EC-1 THRU EC-11	EROSION CONTROL PLANS
SIG-1 THRU SIG-7	SIGNAL PLANS
X-1 THRU X-22	CROSS SECTIONS
S-1 THRU S-36	BRIDGE PLANS
C-1 THRU C-4	CULVERT PLANS

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

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 II.

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:

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.02 USING 3' RADII OR RADII AS SHOWN ON THE PLANS. 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.

SUBSURFACE PLANS:

NO SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS.

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.

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

2006 ROADWAY ENGLISH 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	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.03	Method of Structural Plate Pipe and Pipe Arch Installation - Method 'A'
310.10	Driveway Pipe Construction
DIVISION 4 - MAJOR STRUCTURES	
422.10	Reinforced Bridge Approach Fills
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
838.01	Concrete Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
838.11	Brick Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
838.80	Precast Endwalls - 12" thru 72" Pipe 90 Skew
840.00	Concrete Base Pad for Drainage Structures
840.22	Frames and Wide Slot Sag Grates
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.36	Traffic Bearing Grated Drop Inlet - for Steel (840.37) Double Frame and Grates
840.37	Steel Grate and Frame
840.45	Precast Drainage Structure
840.46	Traffic Bearing Precast Drainage Structure
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
848.02	Driveway Turnout - Radius Type
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
862.04	Anchoring End of Guardrail - B-77 and B-83 Anchor Units
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets

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

REVISIONS

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	FLW
False Sump	▽

RAILROADS:

Standard Gauge	_____
RR Signal Milepost	MILEPOST 35
Switch	SWITCH
RR Abandoned	_____
RR Dismantled	_____

RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	_____
Proposed Right of Way Line	⊙
Proposed Right of Way Line with Iron Pin and Cap Marker	⊙
Proposed Right of Way Line with Concrete or Granite Marker	⊙
Existing Control of Access	⊙
Proposed Control of Access	⊙
Existing Easement Line	E
Proposed Temporary Construction Easement	E
Proposed Temporary Drainage Easement	TDE
Proposed Permanent Drainage Easement	PDE
Proposed Permanent Utility Easement	PUE

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	_____
Existing Curb	_____
Proposed Slope Stakes Cut	C
Proposed Slope Stakes Fill	F
Proposed Wheel Chair Ramp	WCR
Proposed Wheel Chair Ramp Curb Cut	WCC
Curb Cut for Future Wheel Chair Ramp	CCFR
Existing Metal Guardrail	_____
Proposed Guardrail	_____
Existing Cable Guiderail	_____
Proposed Cable Guiderail	_____
Equality Symbol	⊕
Pavement Removal	⊗

VEGETATION:

Single Tree	⊕
Single Shrub	⊕
Hedge	_____
Woods Line	_____
Orchard	⊕
Vineyard	Vineyard

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	CONC
Bridge Wing Wall, Head Wall and End Wall	CONC WW
MINOR:	
Head and End Wall	CONC HW
Pipe Culvert	_____
Footbridge	_____
Drainage Box: Catch Basin, DI or JB	CB
Paved Ditch Gutter	_____
Storm Sewer Manhole	⊙
Storm Sewer	S

UTILITIES:

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

TELEPHONE:

Existing Telephone Pole	⊙
Proposed Telephone Pole	⊙
Telephone Manhole	⊙
Telephone Booth	⊙
Telephone Pedestal	⊙
Telephone Cell Tower	⊙
U/G Telephone Cable Hand Hole	PH
Recorded U/G Telephone Cable	T
Designated U/G Telephone Cable (S.U.E.*)	T
Recorded U/G Telephone Conduit	TC
Designated U/G Telephone Conduit (S.U.E.*)	TC
Recorded U/G Fiber Optics Cable	T FO
Designated U/G Fiber Optics Cable (S.U.E.*)	T FO

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

Utility Pole	⊙
Utility Pole with Base	⊙
Utility Located Object	⊙
Utility Traffic Signal Box	⊙
Utility Unknown U/G Line	UTUL
U/G Tank; Water, Gas, Oil	□
A/G Tank; Water, Gas, Oil	□
U/G Test Hole (S.U.E.*)	⊙
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

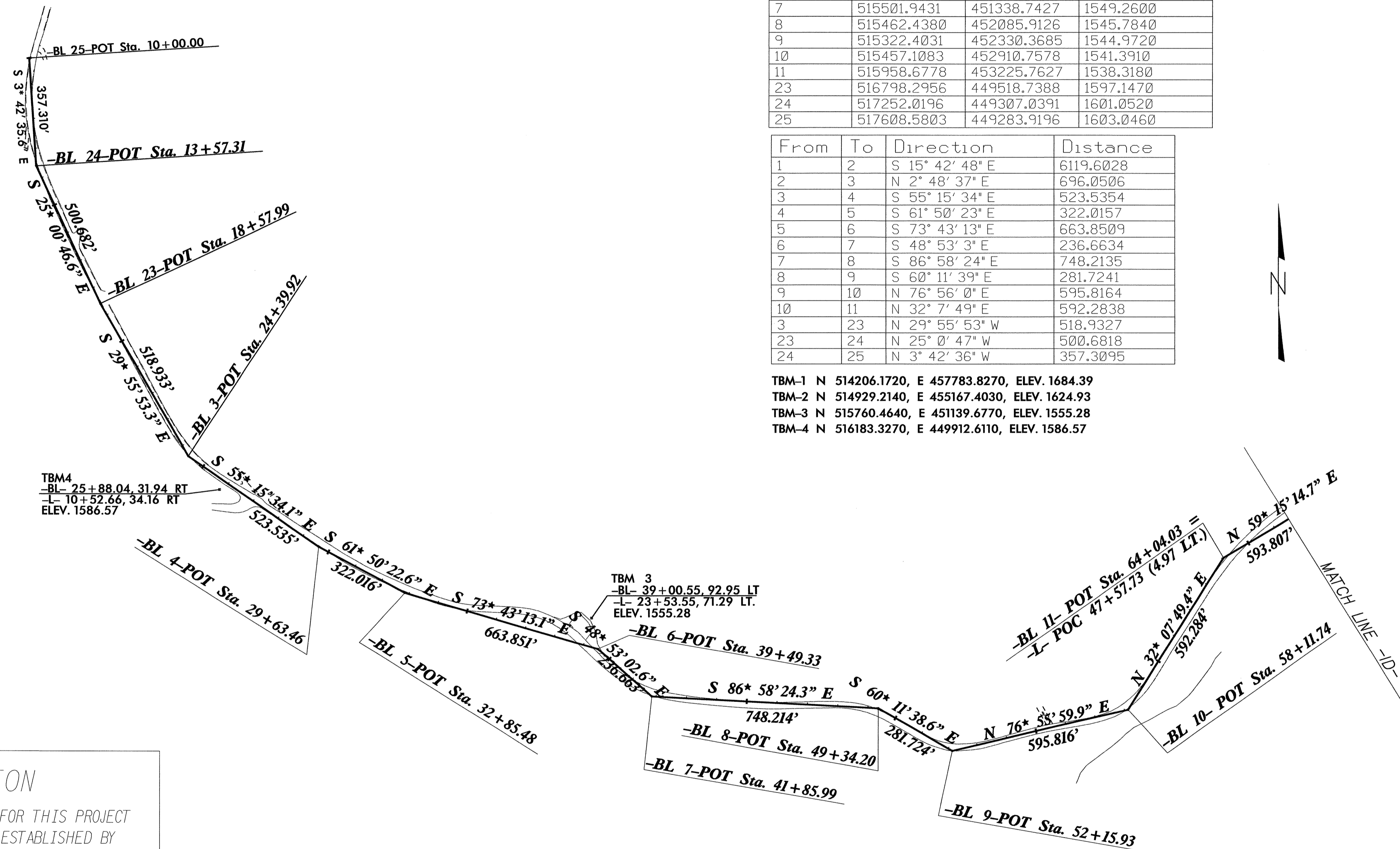
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SURVEY CONTROL SHEET R-3622

Point	North	East	Elevation
1	521489.6750	448117.6490	1809.0530
2	515598.7660	449774.9750	1578.7380
3	516293.9795	449809.1022	1595.6200
4	515995.6371	450239.3128	1591.1390
5	515843.6645	450523.2115	1583.2090
6	515657.5694	451160.4451	1548.7310
7	515501.9431	451338.7427	1549.2600
8	515462.4380	452085.9126	1545.7840
9	515322.4031	452330.3685	1544.9720
10	515457.1083	452910.7578	1541.3910
11	515958.6778	453225.7627	1538.3180
23	516798.2956	449518.7388	1597.1470
24	517252.0196	449307.0391	1601.0520
25	517608.5803	449283.9196	1603.0460

From	To	Direction	Distance
1	2	S 15° 42' 48" E	6119.6028
2	3	N 2° 48' 37" E	696.0506
3	4	S 55° 15' 34" E	523.5354
4	5	S 61° 50' 23" E	322.0157
5	6	S 73° 43' 13" E	663.8509
6	7	S 48° 53' 3" E	236.6634
7	8	S 86° 58' 24" E	748.2135
8	9	S 60° 11' 39" E	281.7241
9	10	N 76° 56' 0" E	595.8164
10	11	N 32° 7' 49" E	592.2838
23	24	N 29° 55' 53" W	518.9327
23	24	N 25° 0' 47" W	500.6818
24	25	N 3° 42' 36" W	357.3095

TBM-1 N 514206.1720, E 457783.8270, ELEV. 1684.39
TBM-2 N 514929.2140, E 455167.4030, ELEV. 1624.93
TBM-3 N 515760.4640, E 451139.6770, ELEV. 1555.28
TBM-4 N 516183.3270, E 449912.6110, ELEV. 1586.57



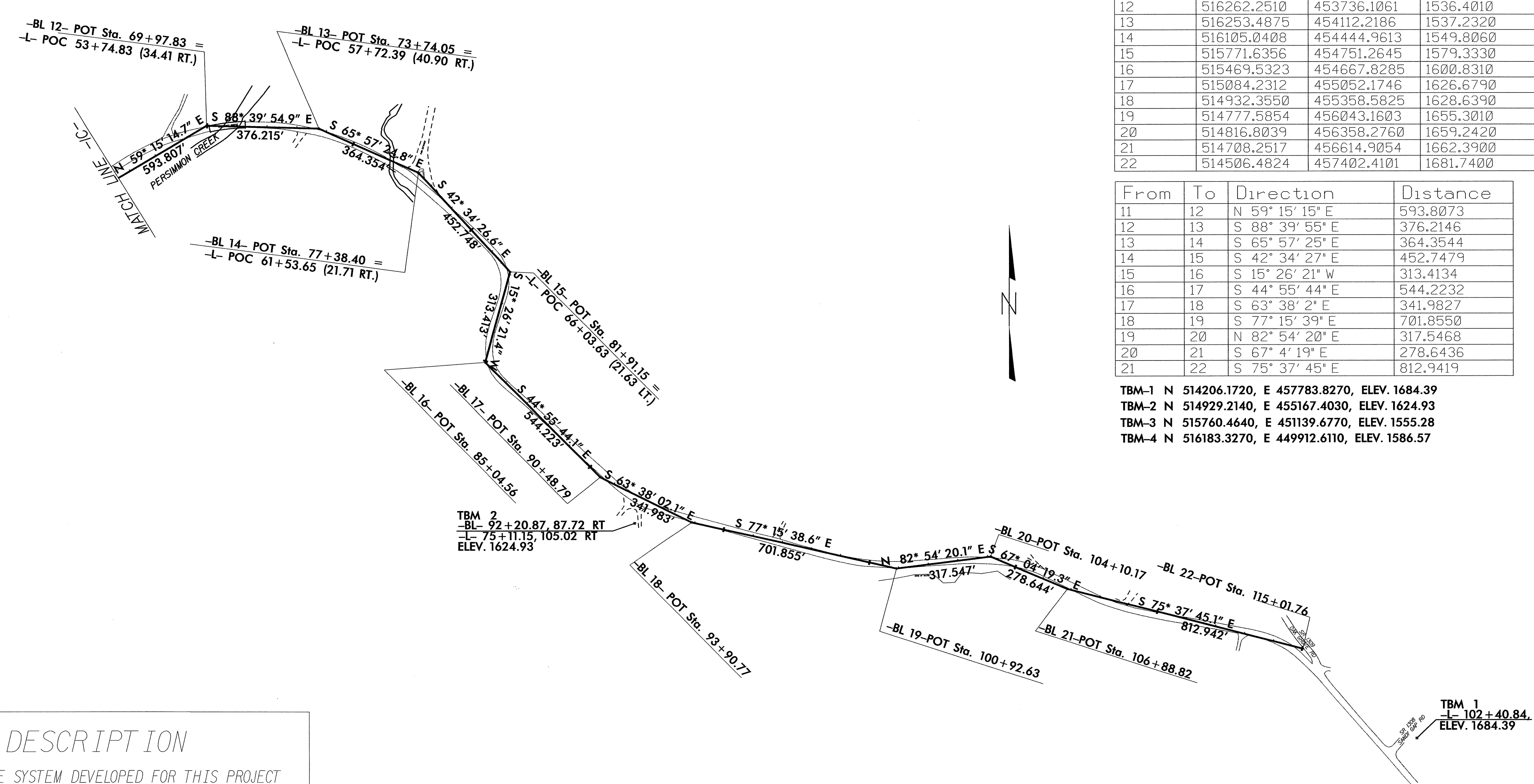
DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "SMOKEY" WITH NAD 83/86 STATE PLANE GRID COORDINATES OF NORTHING: 521489.6750(ft) EASTING: 448117.6490(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998779 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "R3622-1" TO -L- STATION 11+00.00 IS S 19° 22' 12" E 5618.22' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAD 83

NOTE: DRAWING NOT TO SCALE

SURVEY CONTROL SHEET R-3622

PROJECT REFERENCE NO. R-3622AA	SHEET NO. ID
--	------------------------



Point	North	East	Elevation
11	515958.6778	453225.7627	1538.3180
12	516262.2510	453736.1061	1536.4010
13	516253.4875	454112.2186	1537.2320
14	516105.0408	454444.9613	1549.8060
15	515771.6356	454751.2645	1579.3330
16	515469.5323	454667.8285	1600.8310
17	515084.2312	455052.1746	1626.6790
18	514932.3550	455358.5825	1628.6390
19	514777.5854	456043.1603	1655.3010
20	514816.8039	456358.2760	1659.2420
21	514708.2517	456614.9054	1662.3900
22	514506.4824	457402.4101	1681.7400

From	To	Direction	Distance
11	12	N 59° 15' 15" E	593.8073
12	13	S 88° 39' 55" E	376.2146
13	14	S 65° 57' 25" E	364.3544
14	15	S 42° 34' 27" E	452.7479
15	16	S 15° 26' 21" W	313.4134
16	17	S 44° 55' 44" E	544.2232
17	18	S 63° 38' 2" E	341.9827
18	19	S 77° 15' 39" E	701.8550
19	20	N 82° 54' 20" E	317.5468
20	21	S 67° 04' 19" E	278.6436
21	22	S 75° 37' 45" E	812.9419

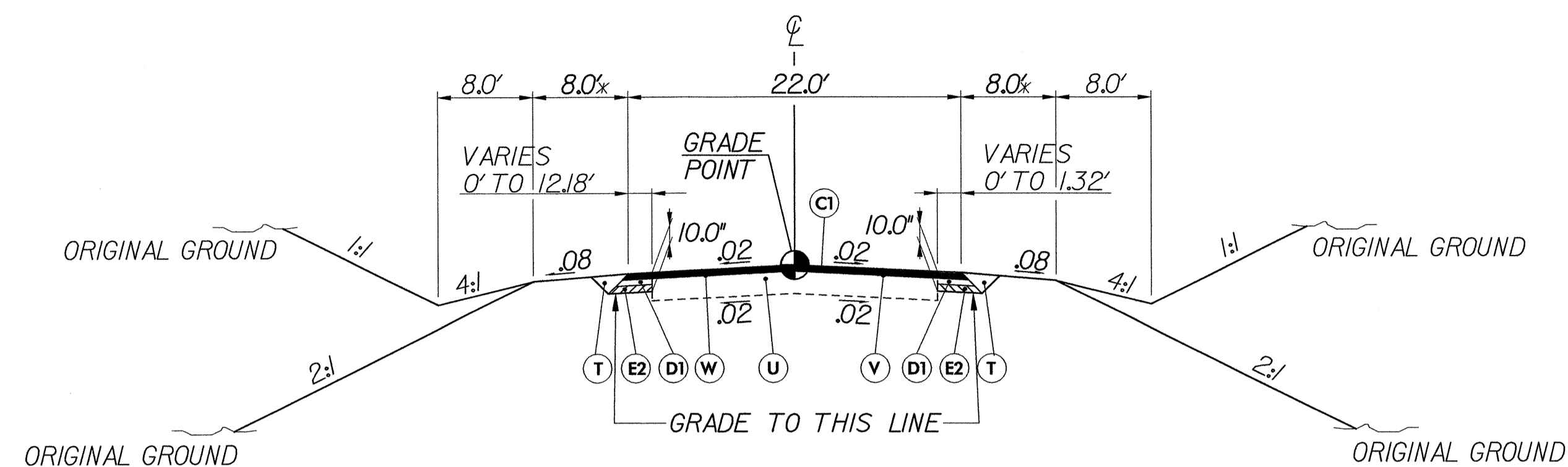
- TBM-1 N 514206.1720, E 457783.8270, ELEV. 1684.39
- TBM-2 N 514929.2140, E 455167.4030, ELEV. 1624.93
- TBM-3 N 515760.4640, E 451139.6770, ELEV. 1555.28
- TBM-4 N 516183.3270, E 449912.6110, ELEV. 1586.57

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "SMOKEY" WITH NAD 83/86 STATE PLANE GRID COORDINATES OF NORTHING: 521489.6750(ft) EASTING: 448117.6490(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998779 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "R3622-1" TO L- STATION 11+00.00 IS S 19° 22' 12" E 5618.22' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAD 83

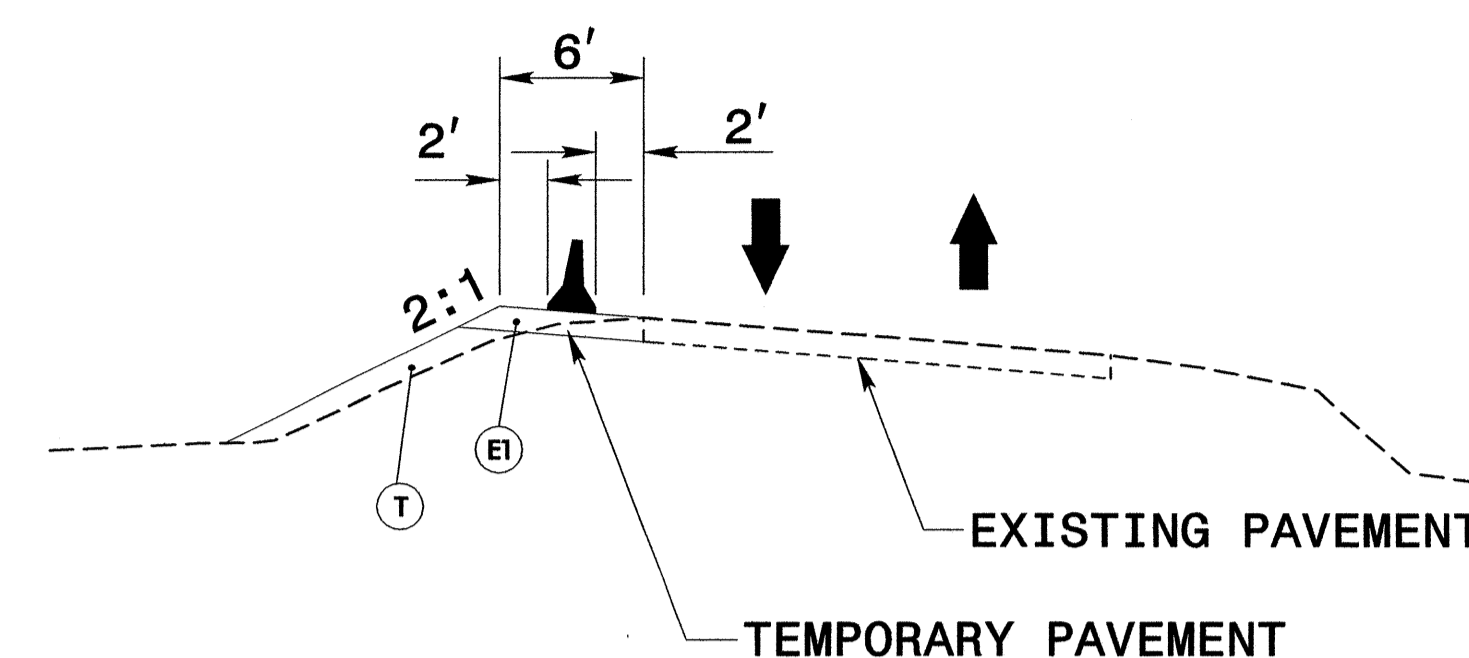
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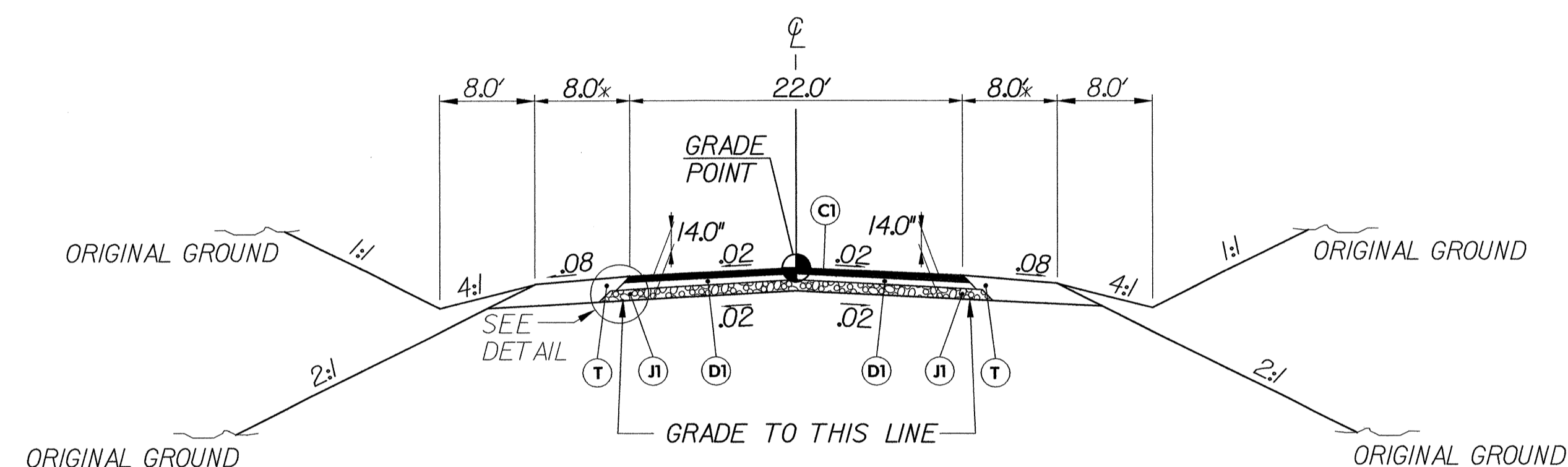
TYPICAL SECTION NO.1

USE ON: -L- Sta. 42+90.00 to Sta. 46+79.37
-L- Sta. 64+28.46 to Sta. 67+50.00



TEMPORARY PAVEMENT DETAIL

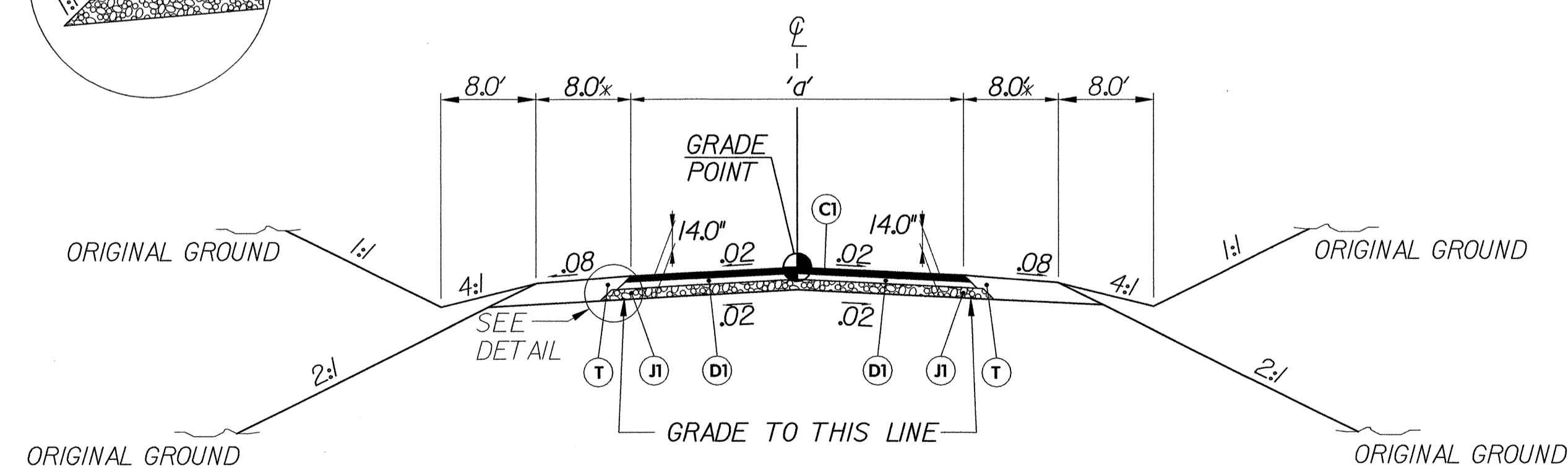
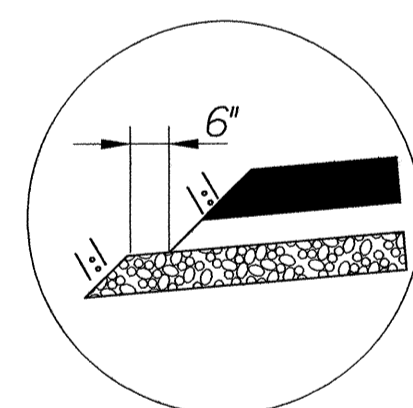
USE ON: -L- Sta. 51+88+/- to Sta. 53+82+/-
-L- Sta. 55+10+/- to Sta. 61+20+/-
(SEE TRAFFIC CONTROL PLANS)



TYPICAL SECTION NO.2

USE ON: -L- Sta. 46+79.37 to Sta. 53+87.34 (Begin Bridge)
-L- Sta. 55+92.34 (End Bridge) to Sta. 64+28.46

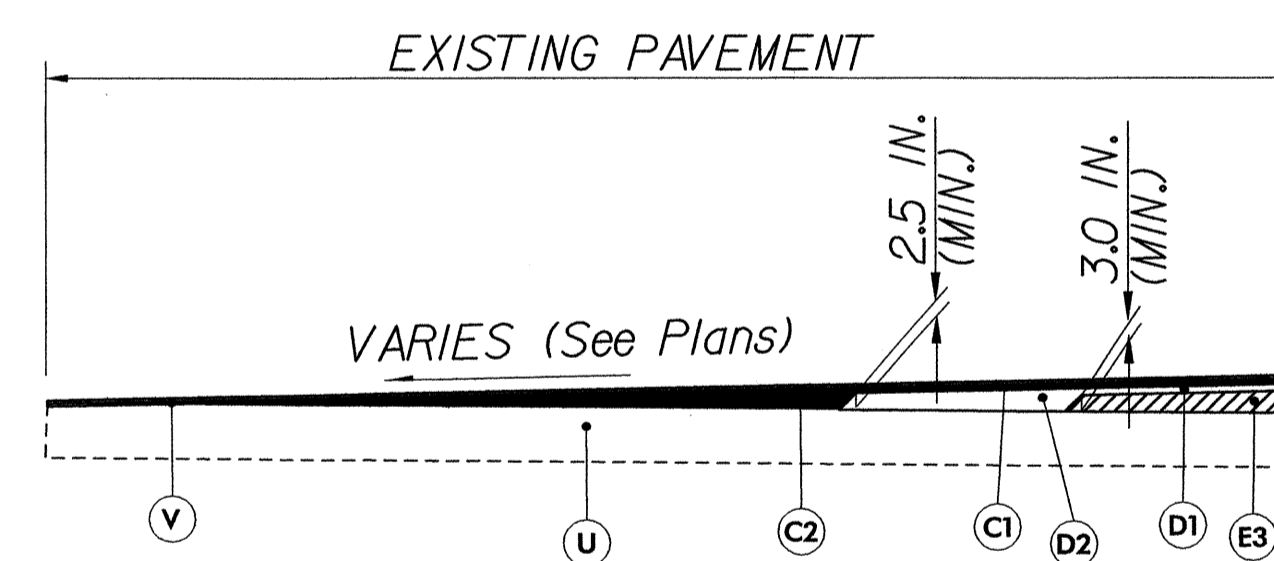
PAVEMENT EDGE DETAIL



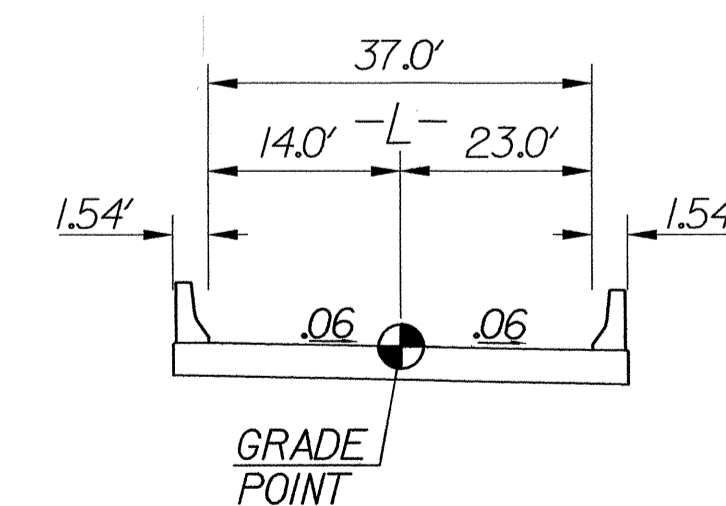
TYPICAL SECTION NO.3

USE ON: -Y3- Sta. 10+14.50 to Sta. 11+40.00
-Y4- Sta. 10+11.00 to Sta. 12+00.00

LINE	DIM. 'a'
Y3	10.0'
Y4	22.0'



WEDGING DETAIL



TYPICAL SECTION ON STRUCTURE

USE ON: -L- Sta. 53+87.34 (BEGIN BRIDGE) to
Sta. 55+92.34 (END BRIDGE)

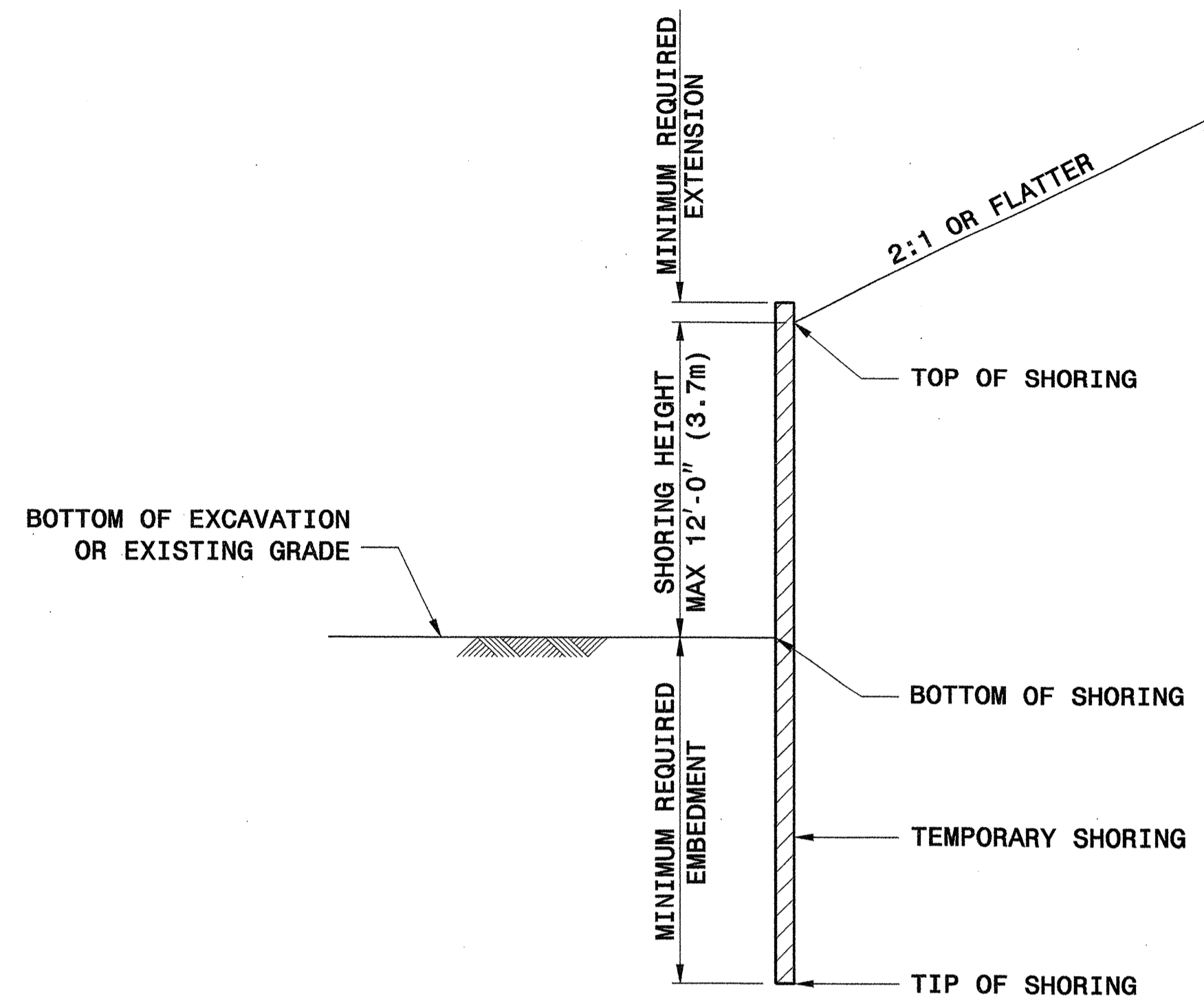
NOTES:

* TOTAL SHOULDER WIDTH TO BE INCREASED 3' WHERE GUARDRAIL IS USED.
PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE NOTED.

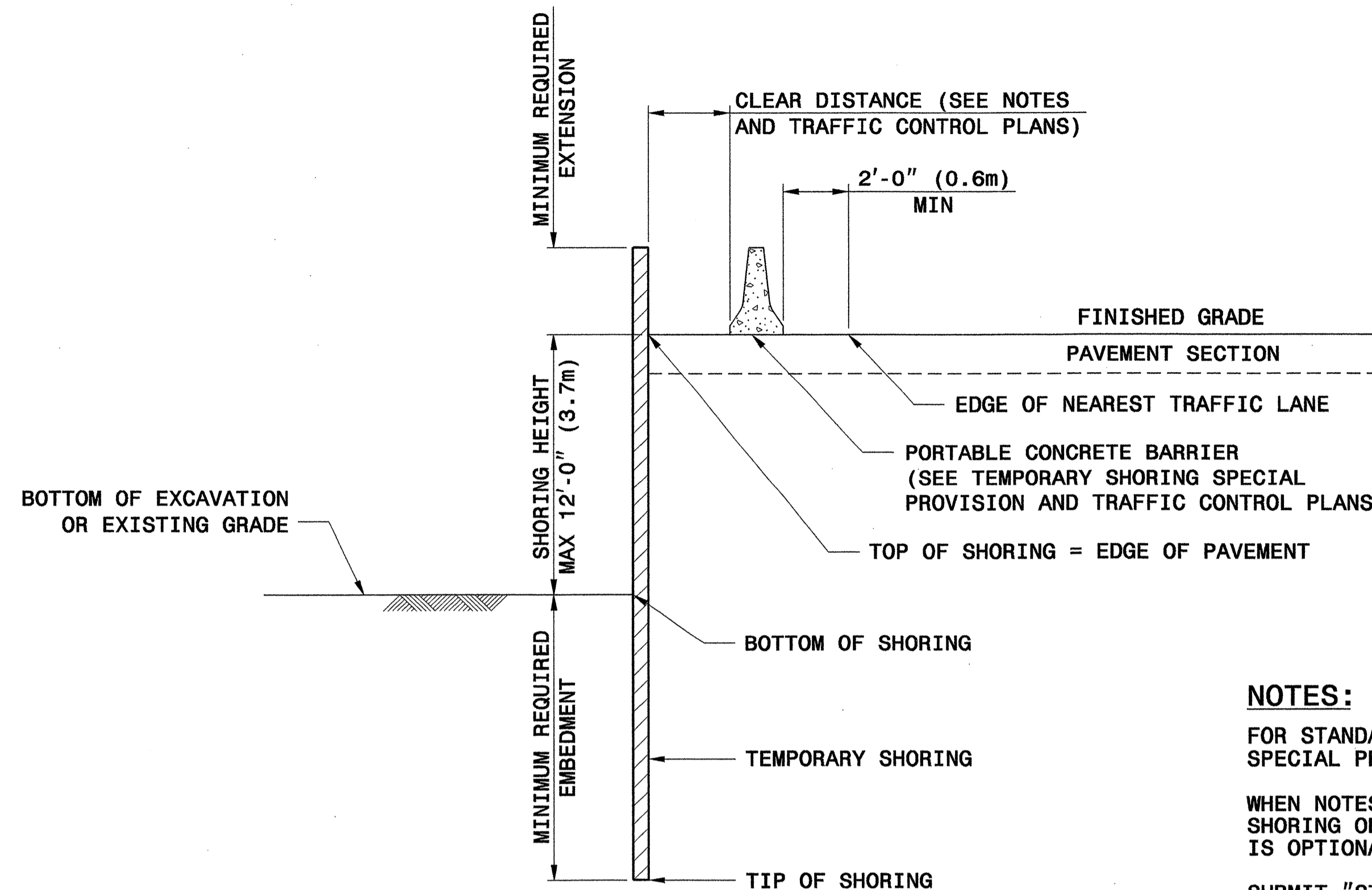
PAVEMENT SCHEDULE

C1	PROPOSED APPROX. 3.0 IN. ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS/SY IN EACH OF TWO LAYERS.
C2	PROPOSED VAR. DEPTH. ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS PER SY PER 1 IN. DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1.5 IN. NOR GREATER THAN 2.0 IN. IN DEPTH.
D1	PROPOSED APPROX. 3.0 IN. ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 342 LBS/SY.
D2	PROPOSED VAR. DEPTH. ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS PER SY PER 1 IN. DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2.5 IN. NOR GREATER THAN 4.0 IN. IN DEPTH.
E1	PROPOSED APPROX. 2.0 IN. ASPHALT CONC. BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 228 LBS/SY.
E2	PROPOSED APPROX. 4.0 IN. ASPHALT CONC. BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS/SY.
E3	PROPOSED VAR. DEPTH ASPHALT CONC. BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS PER SY PER 1 IN. DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 3.0 IN. NOR GREATER THAN 5.5 IN. IN DEPTH.
J1	8.0' OF AGGREGATE BASE COURSE
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	MILLING -- MILL AND REPLACE EXISTING PAVEMENT TO A DEPTH OF 3 INCHES.
W	WEDGING

REVISIONS



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".

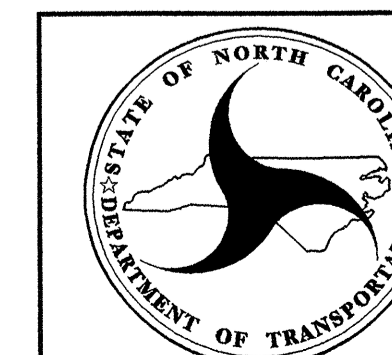
AT THE CONTRACTOR'S OPTION, H PILE EMBEDMENT DEPTHS FOR PILES SET IN DRILLED HOLES MAY BE REDUCED BY 25%. FOR PILE EXCAVATION, SEE TEMPORARY SHORING SPECIAL PROVISION.

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	SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT						SURCHARGE CASE WITH TRAFFIC IMPACT					
	SHORING HEIGHT FT (m)	SHEET PILES		H PILES WITH TIMBER LAGGING			MINIMUM REQUIRED EMBEDMENT FT (m)	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 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)	
	12 (3.7)	15.0 (4.6)	21.5 (1156)	--	--	16.0 (4.9)	16.0 (4.9)	25.5 (1371)	--	--	15.5 (4.7)	
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



Sutta 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.

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)

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).

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.

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.

- 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).

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

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.

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.

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

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.

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.

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.

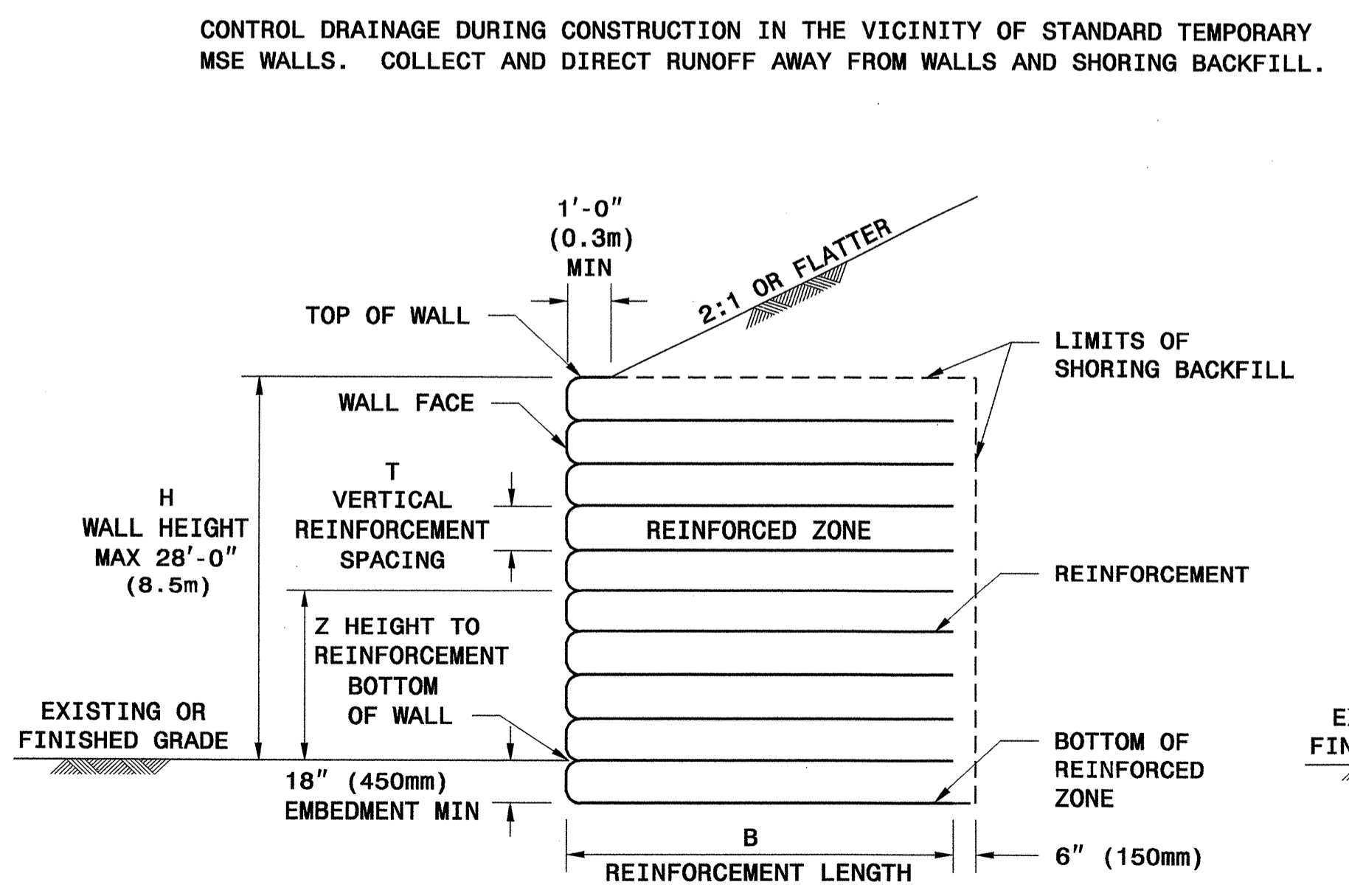
COVER REINFORCING AND RETENTION FABRIC WITH AT LEAST 3" (75mm) OF SHORING BACKFILL. PLACE TOP REINFORCEMENT LAYER BETWEEN 4" AND 24" (100mm and 600mm) BELOW TOP OF WALL DEPENDING ON WALL OPTION.

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

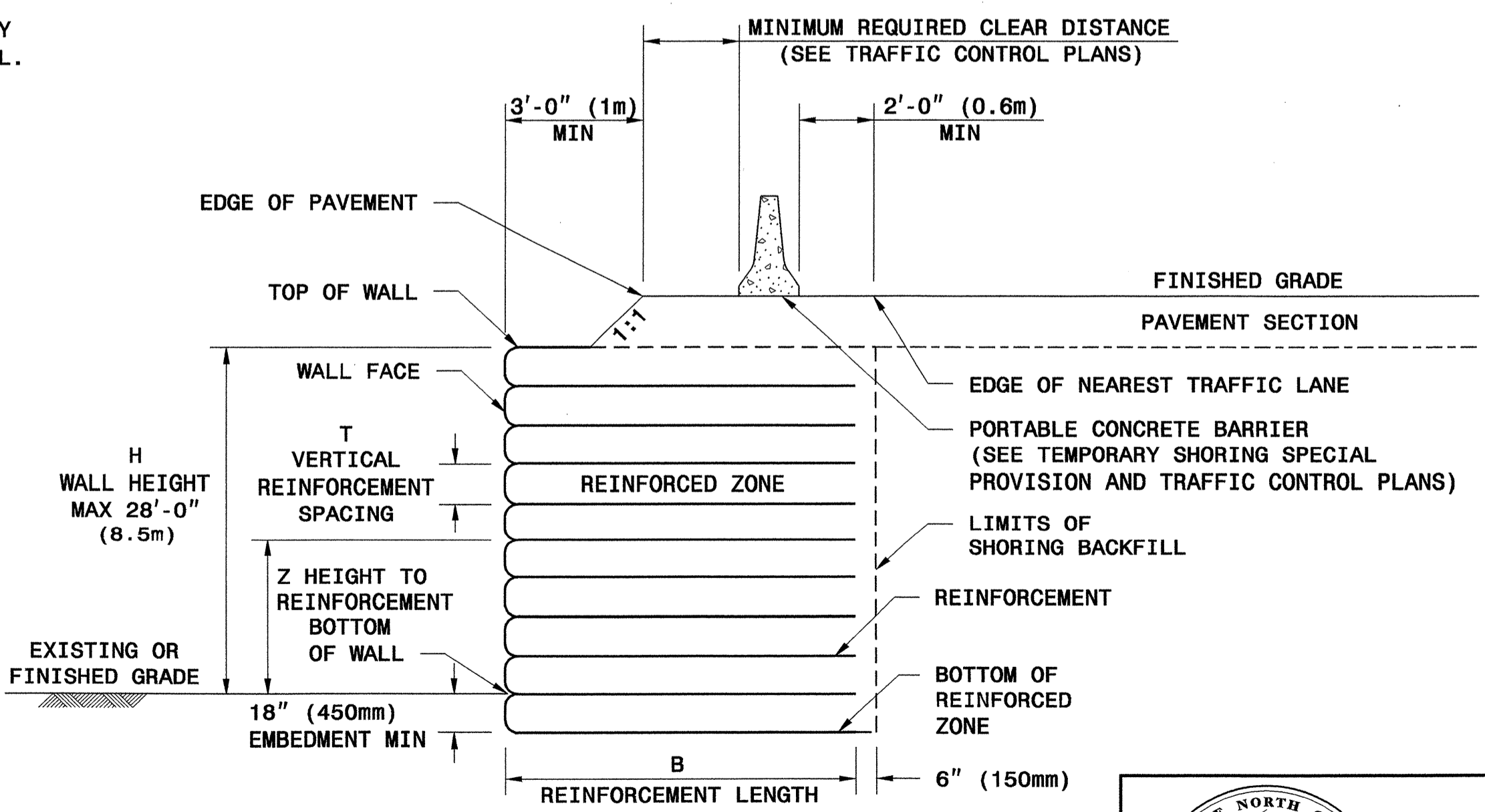
PLACE FACINGS AND FORMS AS NEAR TO VERTICAL AS POSSIBLE WITH NO NEGATIVE BATTER. CONSTRUCT STANDARD TEMPORARY MSE WALLS WITH A VERTICAL AND HORIZONTAL TOLERANCE OF 3" (75mm) WHEN MEASURED WITH A 10'-0" (3m) STRAIGHT EDGE AND AN OVERALL VERTICAL PLUMBNESS (BATTER) AND HORIZONTAL ALIGNMENT OF LESS THAN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

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

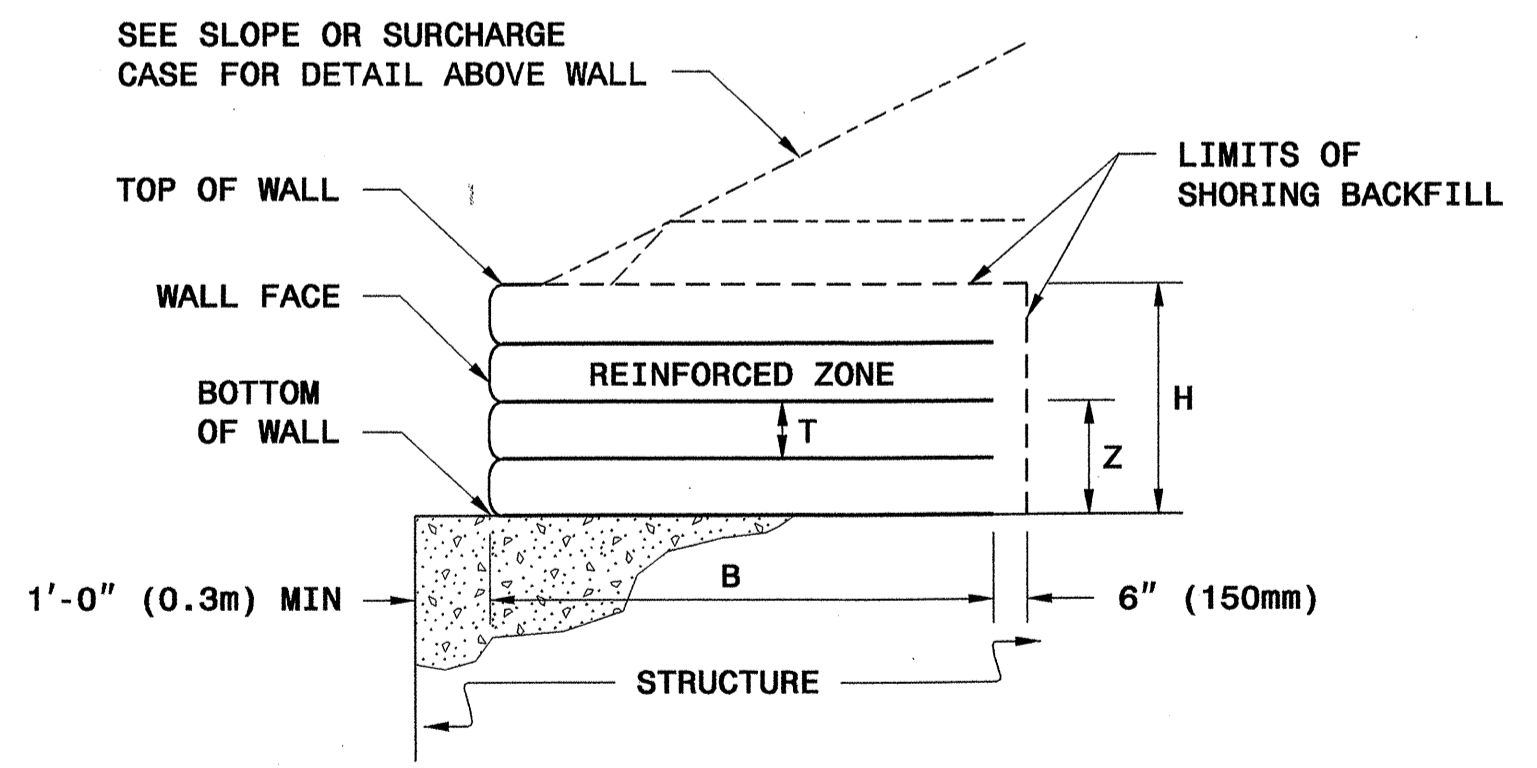
IF THE TOP OF WALL IS WITHIN 5'-0" (1.5m) OF FINISHED GRADE, REMOVE TOP FORM OR FACING AND INCORPORATE THE TOP REINFORCEMENT LAYER INTO THE FILL WHEN PLACING FILL IN FRONT OF THE WALL. STANDARD TEMPORARY MSE WALLS REMAIN IN PLACE PERMANENTLY UNLESS REQUIRED OTHERWISE.



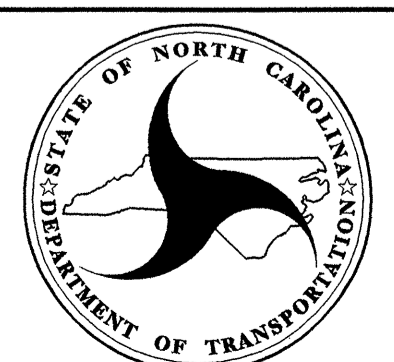
SLOPE CASE



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

SHEET 1 OF 11 DATE: 2-20-07

GEOTECHNICAL ENGINEER



Scott A. Nicholson 3/29/07

ENGINEER

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)

Table with columns: WALL HEIGHT H (FT), SLOPE CASE, SURCHARGE CASE and rows for wall heights 8, 10, 12, 14, 16, 18, 20, 22, 24, 26.

TERRATREL TEMPORARY WALL (STRIPS PER LEVEL PER PANEL)

Table for Terratrel Temporary Wall showing strips per level per panel for various wall heights (H) and slope/surcharge cases (Z).

SIERRASCAPE TEMPORARY WALL (GEOGRID TYPE)

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

Table for Sierrascape Temporary Wall showing geogrid type for various wall heights (H) and slope/surcharge cases (Z).

Table for Sierrascape Temporary Wall showing geogrid type for various wall heights (H) and slope/surcharge cases (Z).

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

Table for Hilfiker Temporary Wall showing welded wire mat type for various wall heights (H) and slope/surcharge cases (Z).

Table for Hilfiker Temporary Wall showing welded wire mat type for various wall heights (H) and slope/surcharge cases (Z).

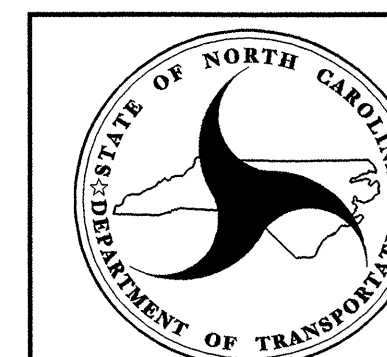
RETAINED EARTH TEMPORARY WALL (WELDED WIRE MESH TYPE)

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

Table for Retained Earth Temporary Wall showing welded wire mesh type for various wall heights (H) and slope/surcharge cases (Z).

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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STANDARD DRAWING NO. 1801.02

STANDARD TEMPORARY MSE WALL REINFORCEMENT TABLES - ENGLISH UNITS

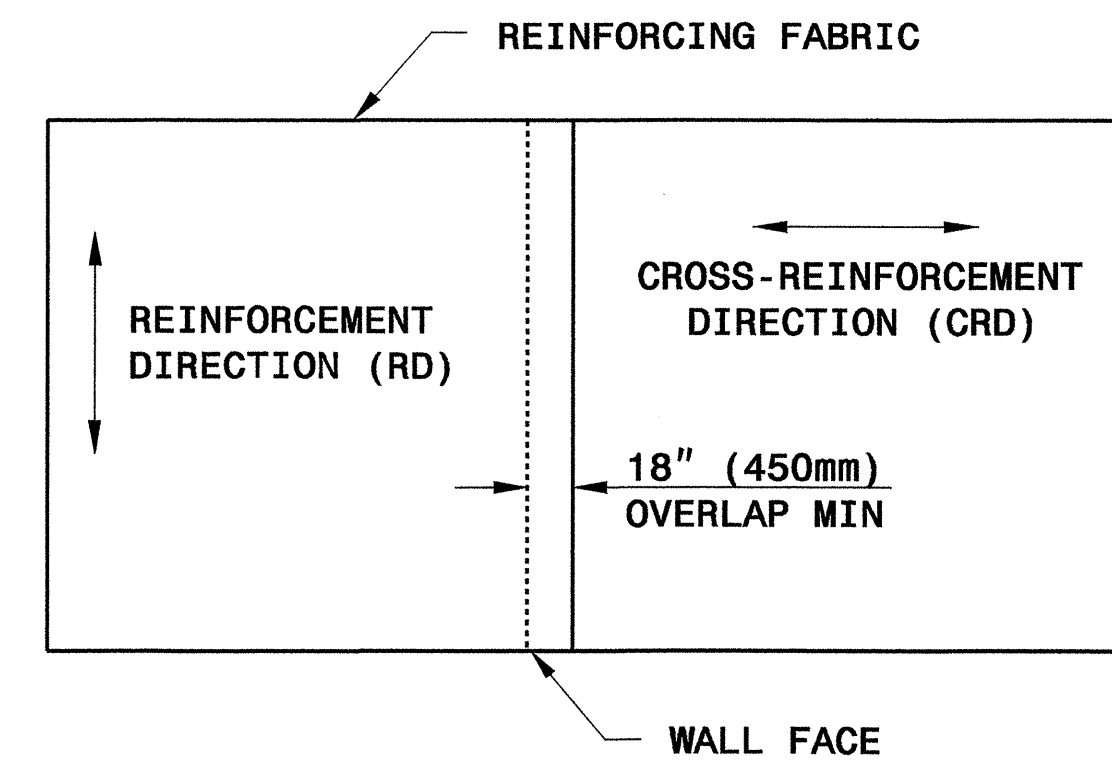
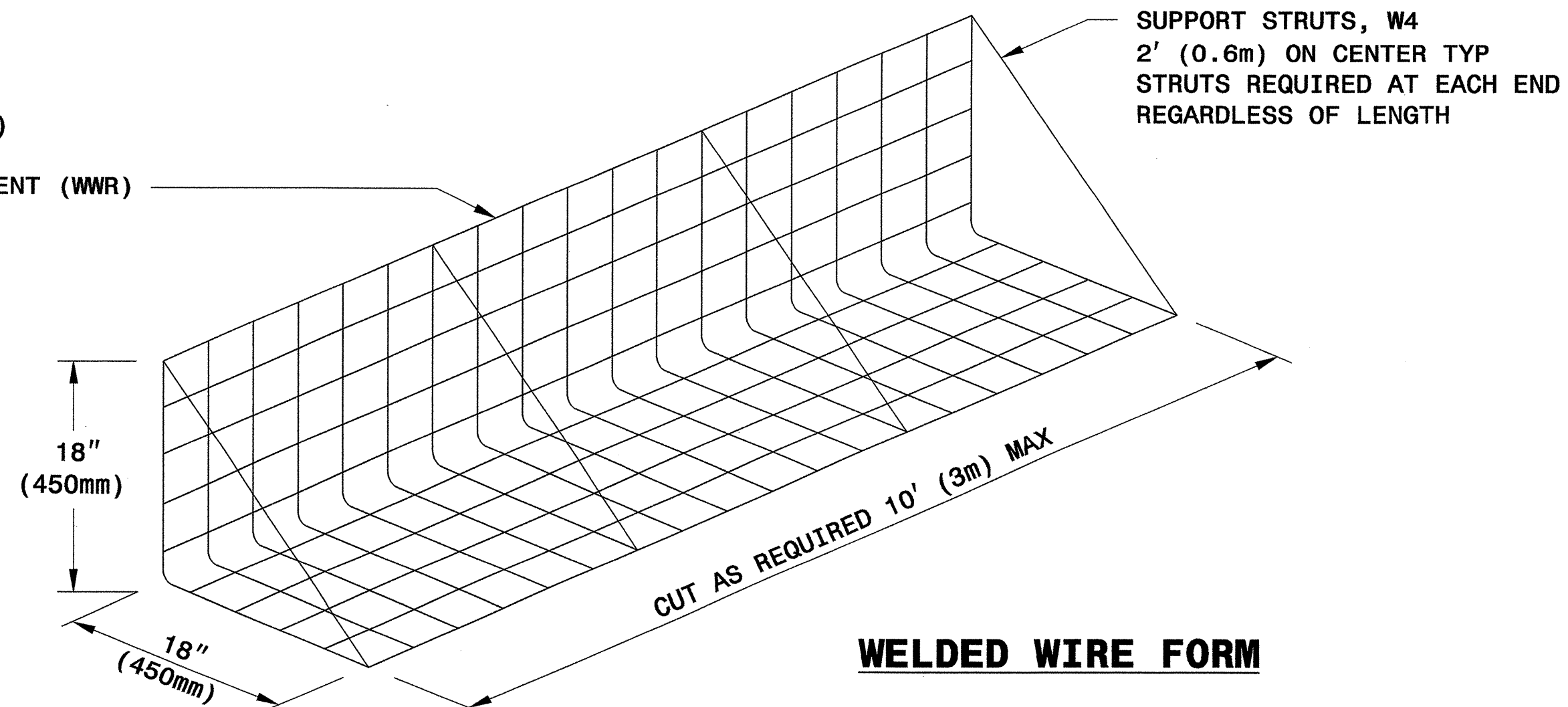
SHEET 2 OF 11 DATE: 2-20-07



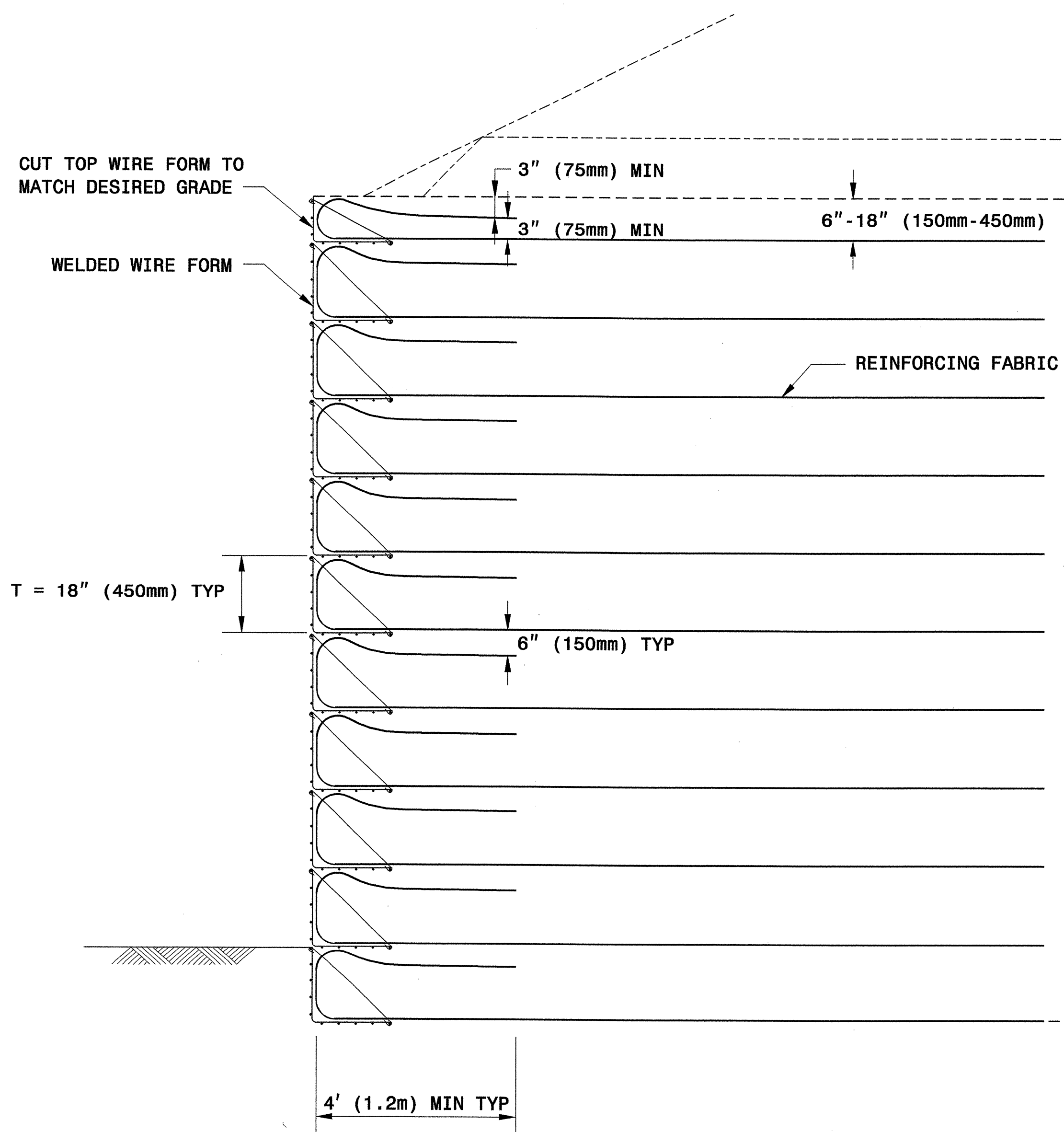
Scott A. Hadden 3/29/07
SIGNATURE DATE

SIGNATURE DATE

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



PLAN VIEW OF FABRIC OVERLAP

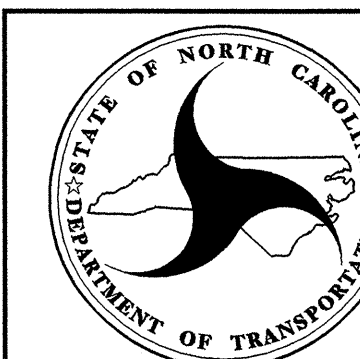


TYPICAL SECTION

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



GEOTECHNICAL ENGINEERING UNIT
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH

STANDARD DRAWING NO. 1801.02

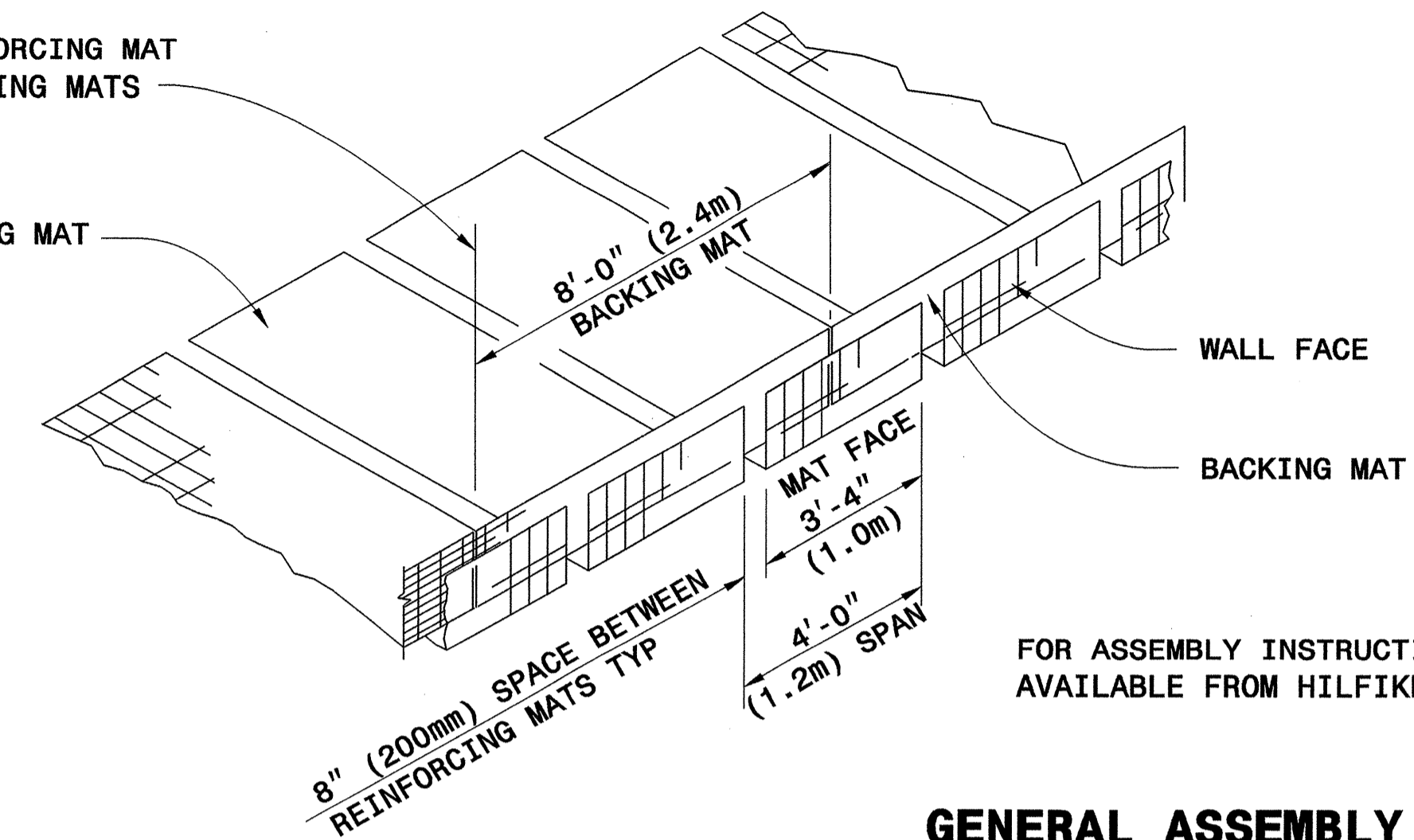
TEMPORARY FABRIC WALL

SHEET 3 OF 11

DATE: 12-19-06

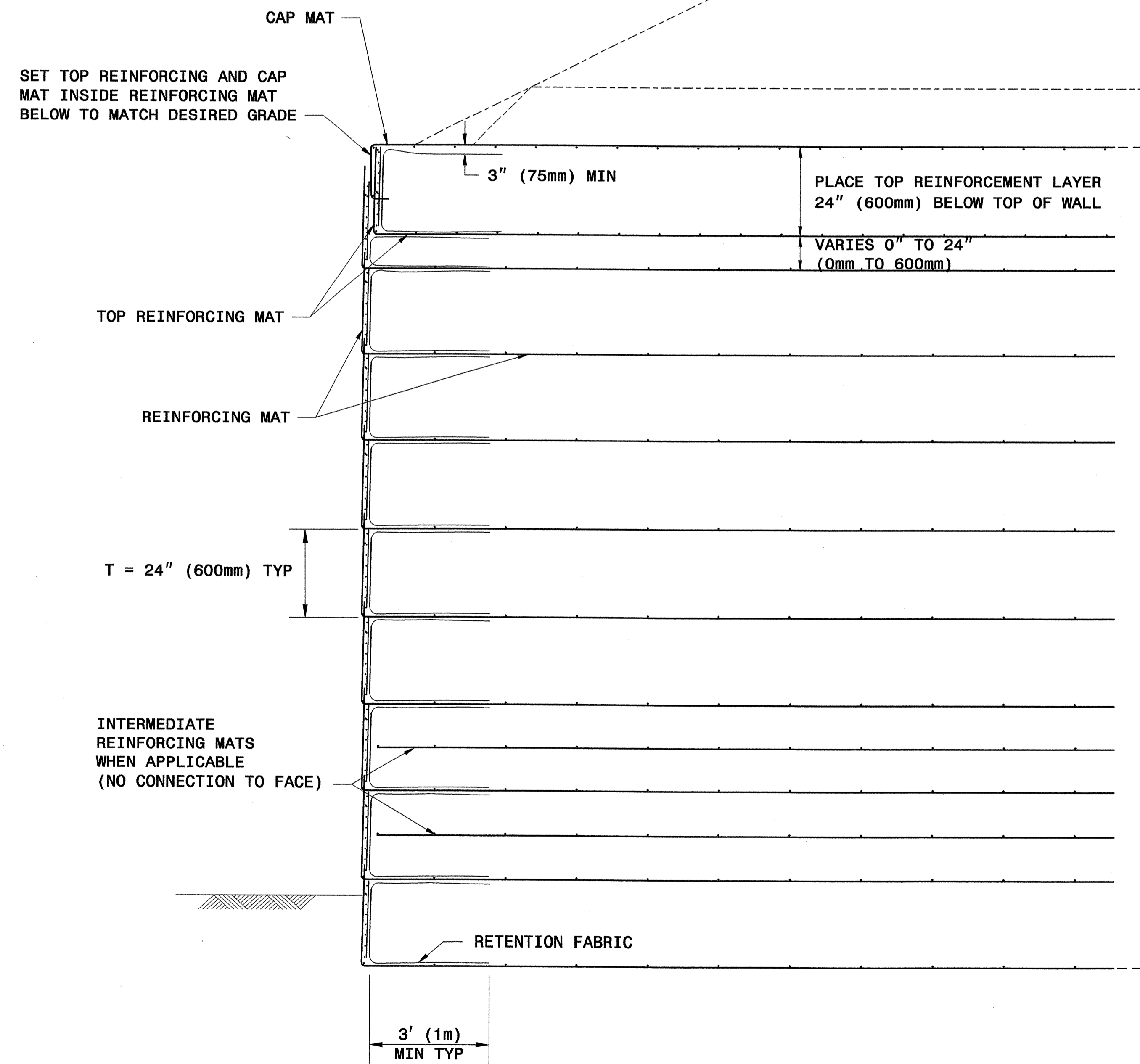
CENTERLINE OF REINFORCING MAT
FACE = EDGE OF BACKING MATS

REINFORCING MAT



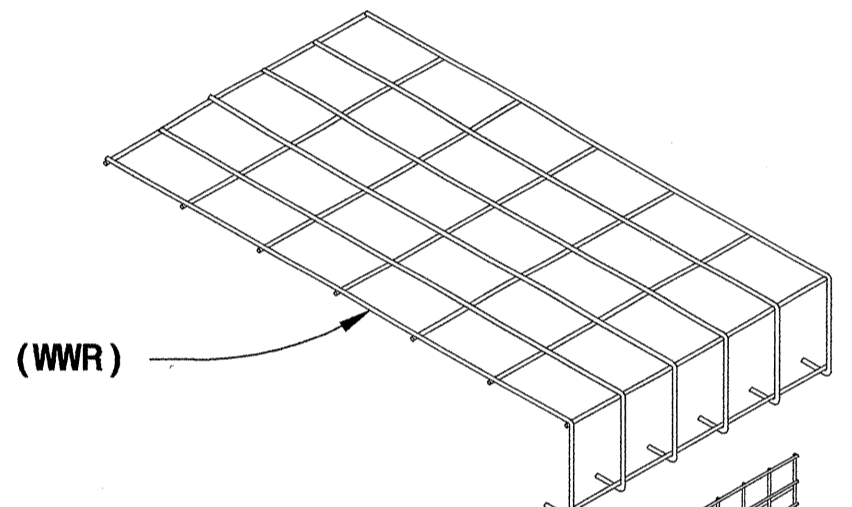
FOR ASSEMBLY INSTRUCTIONS, SEE WELDED WIRE WALL CONSTRUCTION GUIDE AVAILABLE FROM HILFIKER WEBSITE AT WWW.HILFIKER.COM/WWW

GENERAL ASSEMBLY DETAIL

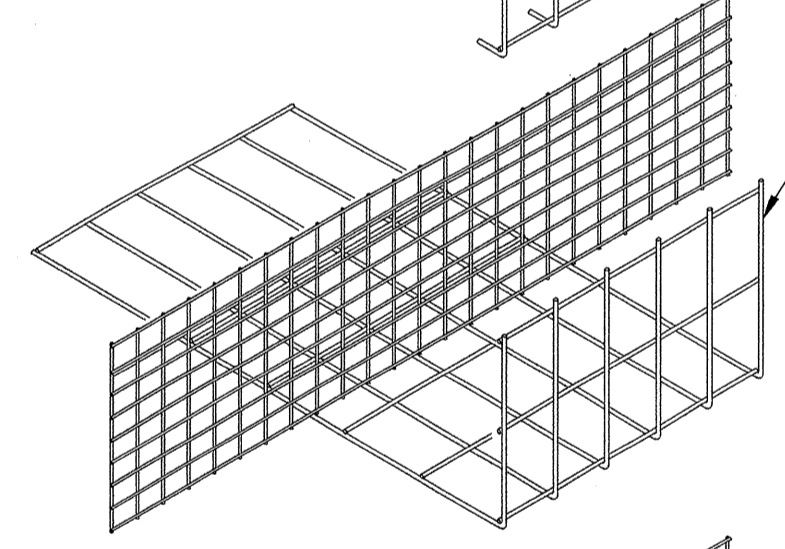


TYPICAL SECTION

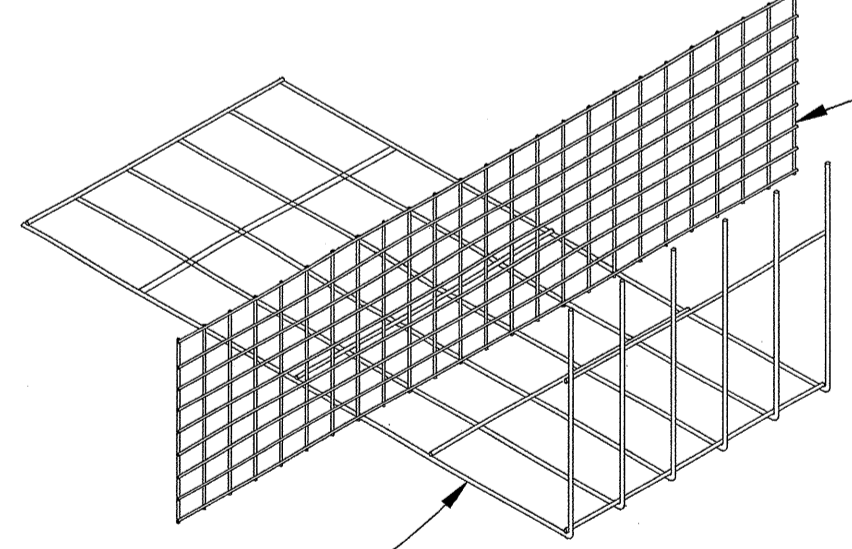
8" X 12" (203mm X 305mm)
W4.5 X W3.5 (MW29 X MW23)
CAP MAT
WELDED WIRE REINFORCEMENT (WWR)



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



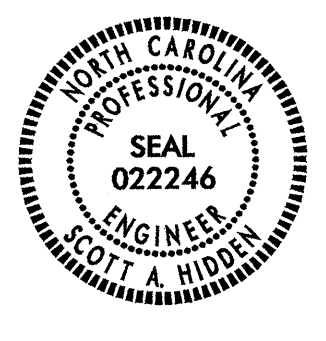
4" X 3" (102mm X 76mm)
W5 X W2.5 (MW32 X MW16) WWR
BACKING MAT
8' (2.4m) WIDE

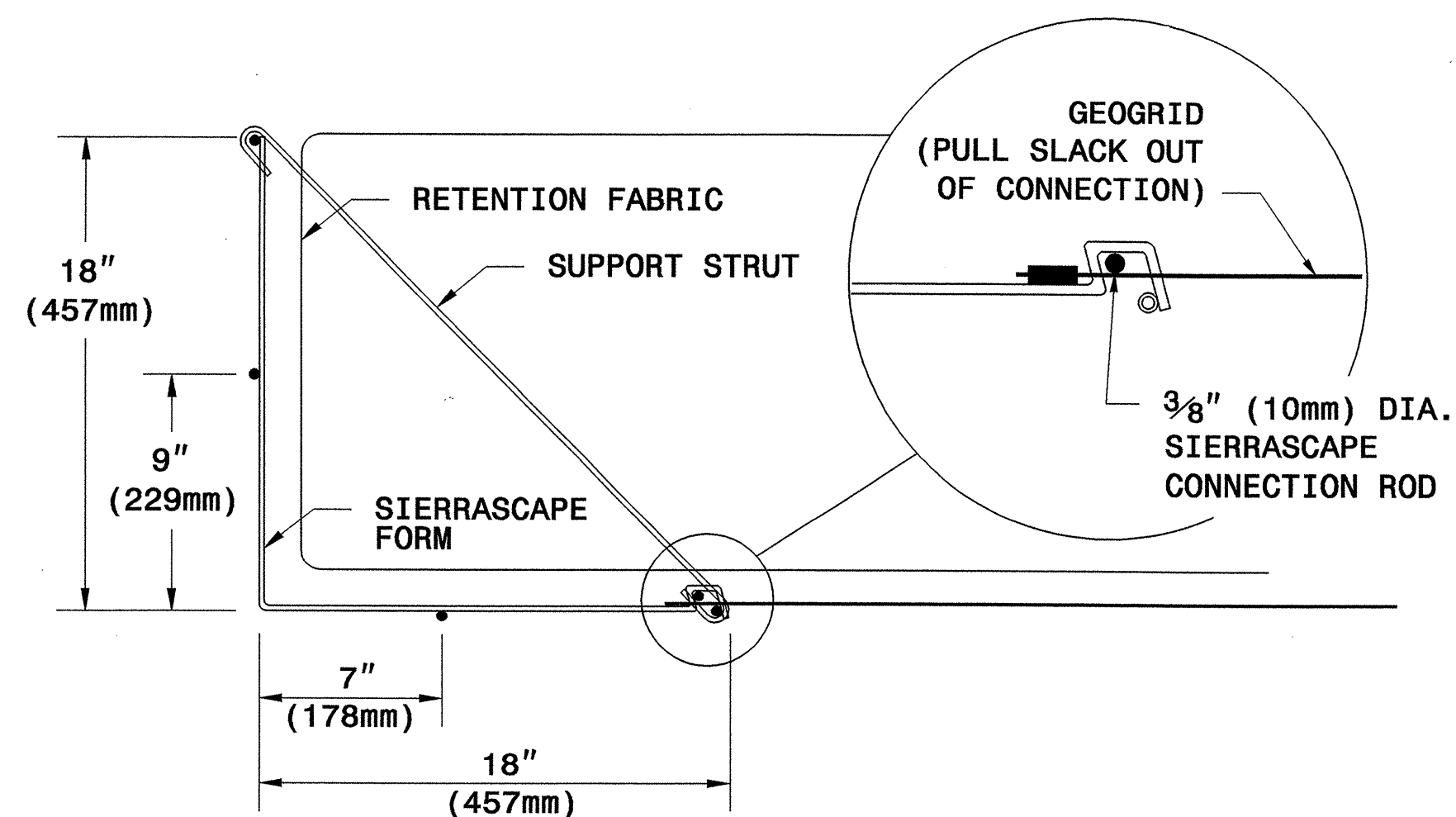


8" X 21" (203mm X 533mm)
REINFORCING MAT
SEE SHEETS 2 AND 3 FOR GAUGE SIZES

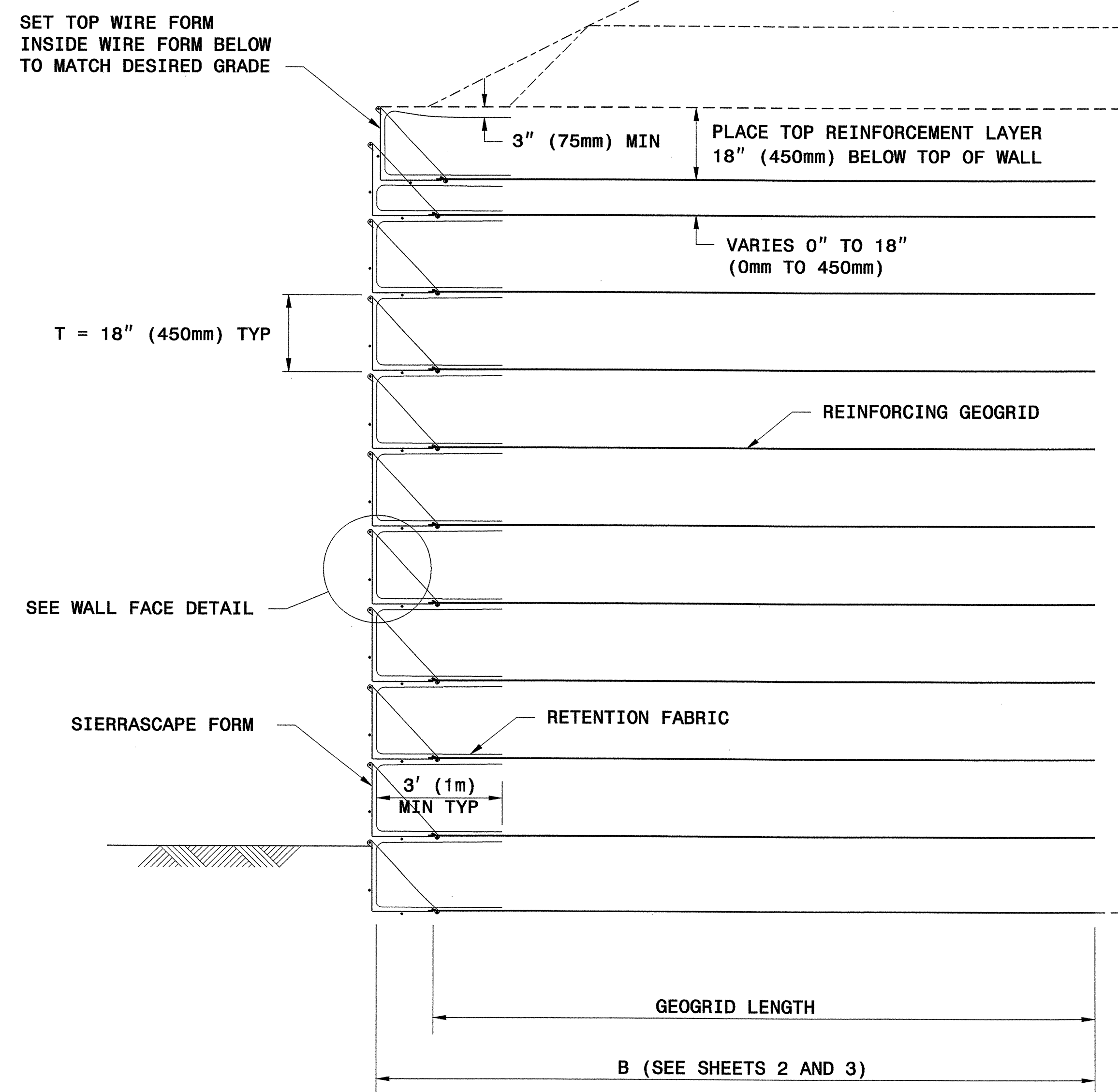


WALL COMPONENTS

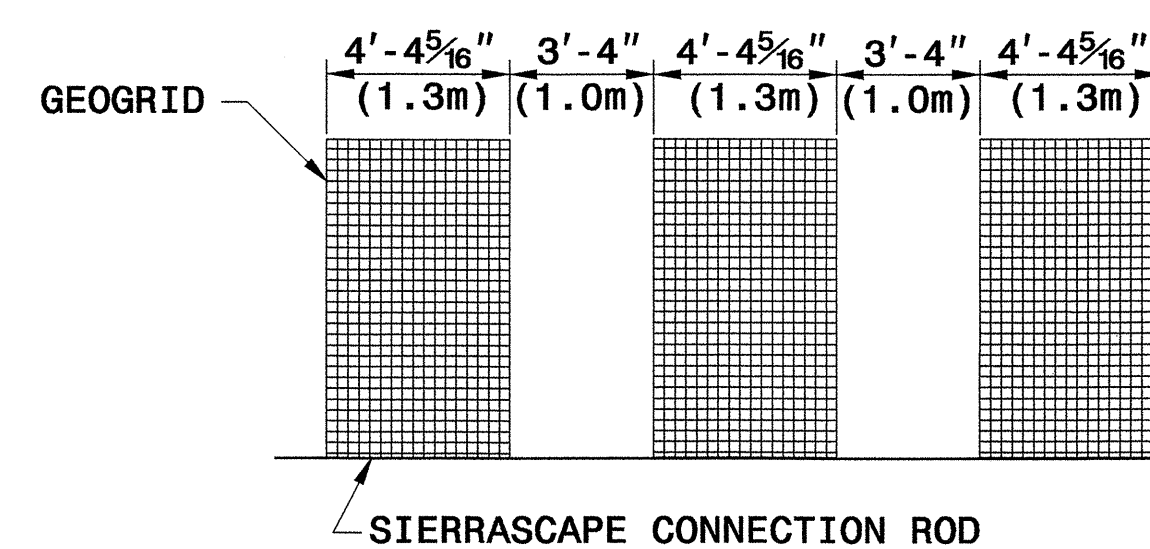
GEOTECHNICAL ENGINEER  Scott A. Hadden 3/29/07 SIGNATURE DATE	ENGINEER _____ SIGNATURE DATE
---	-------------------------------------



WALL FACE DETAIL

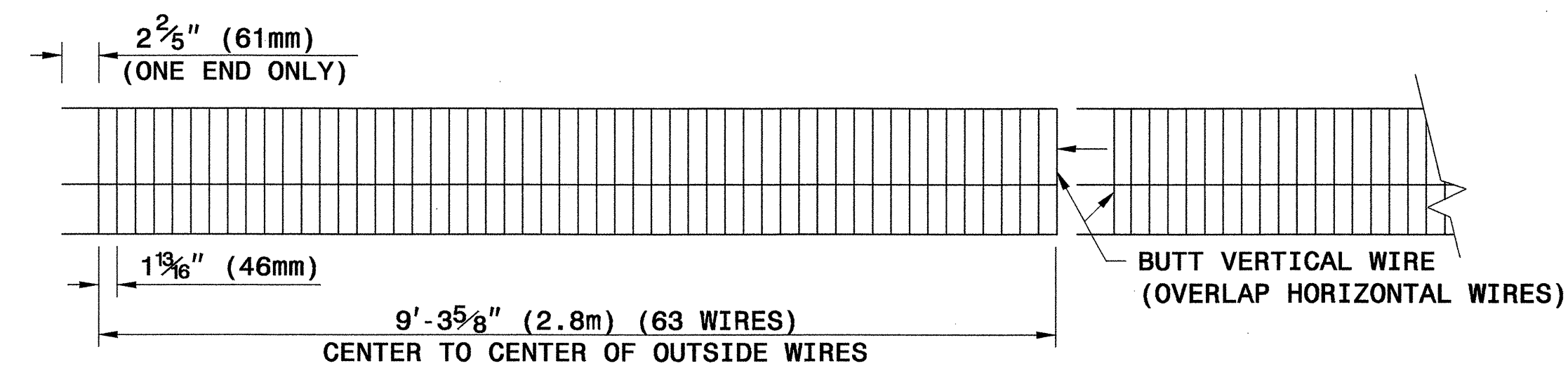


TYPICAL SECTION

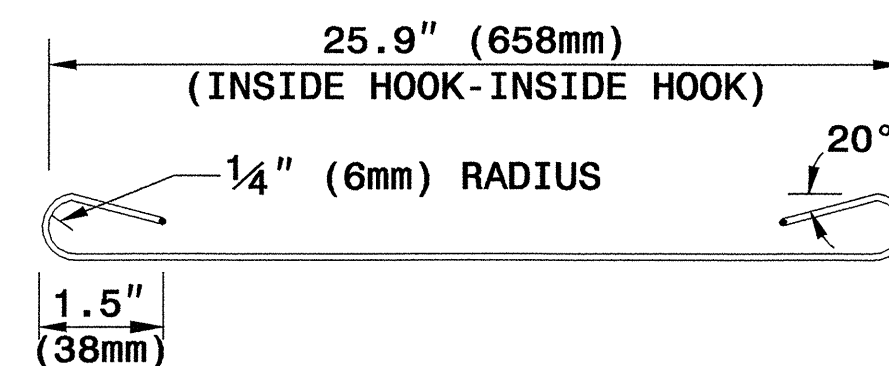


PLACE ALTERNATE LAYERS OF GEOGRID IN STAGGERED PATTERN SUCH THAT THE LAYER ABOVE IS CENTERED OVER SPACE BELOW

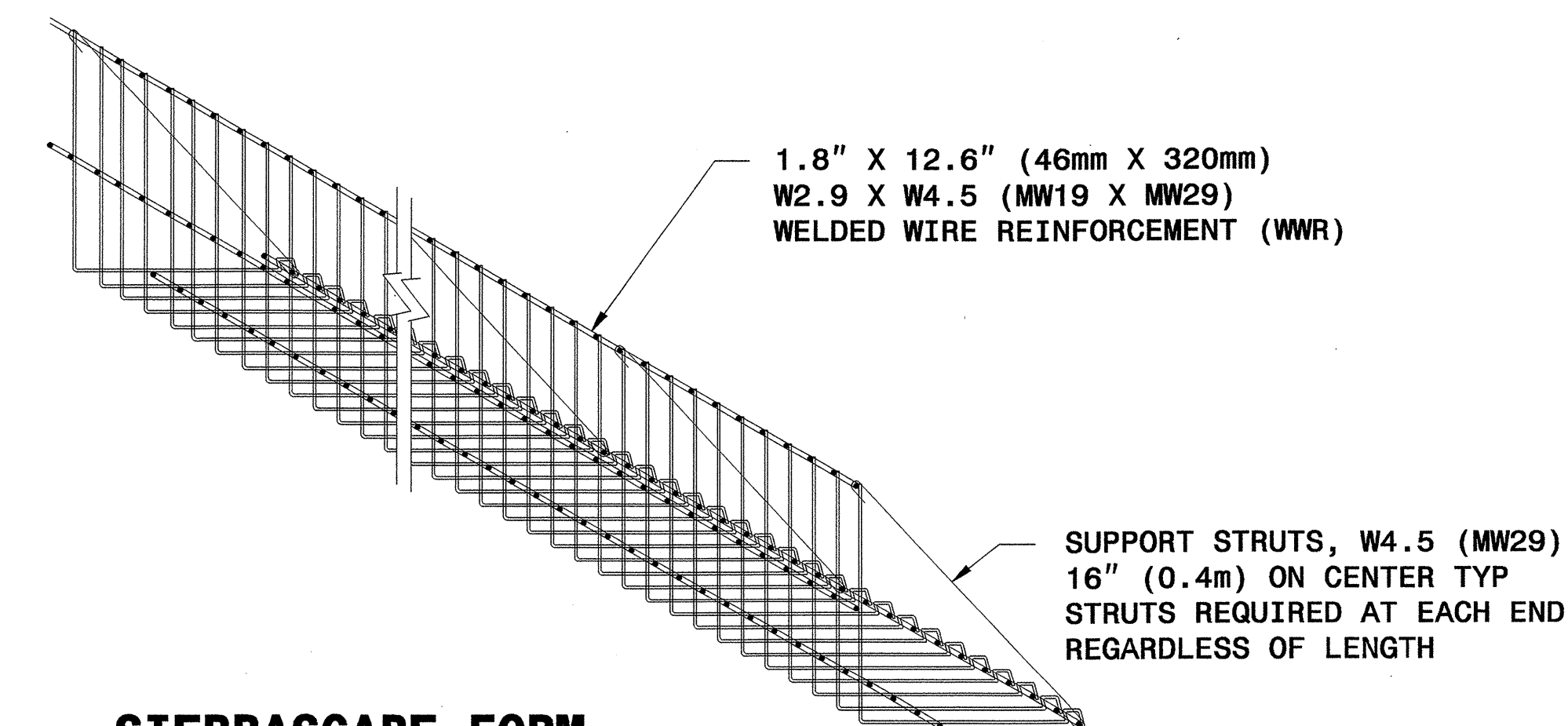
TYPICAL GEOGRID COVERAGE



ELEVATION VIEW

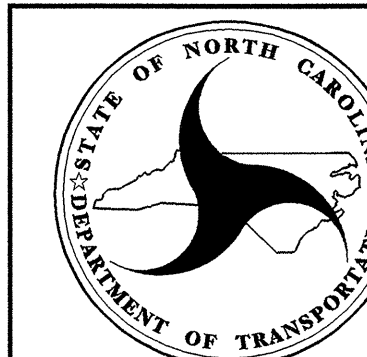
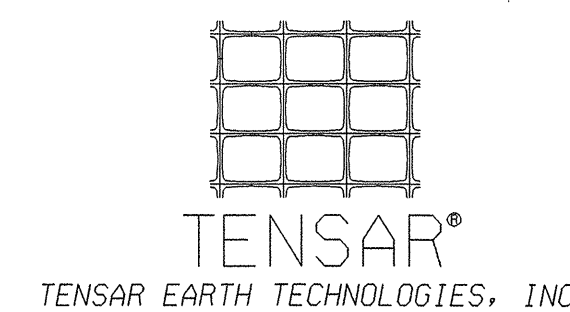


SUPPORT STRUT



SIERRASCAPE FORM

WALL COMPONENTS



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 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH


STANDARD DRAWING NO. 1801.02

SIERRASCAPE TEMPORARY WALL

SHEET 5 OF 11

DATE: 12-19-06

GEOTECHNICAL ENGINEER ENGINEER

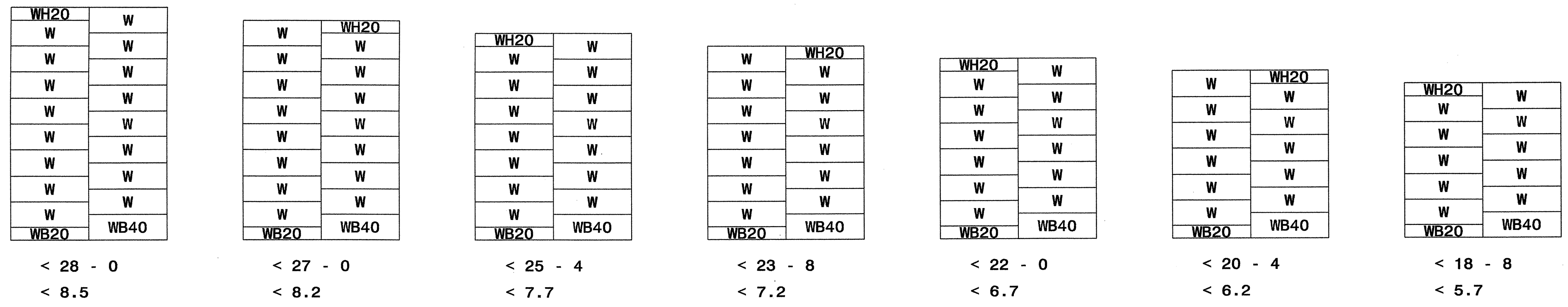


Scott A. Hidden 3/29/07

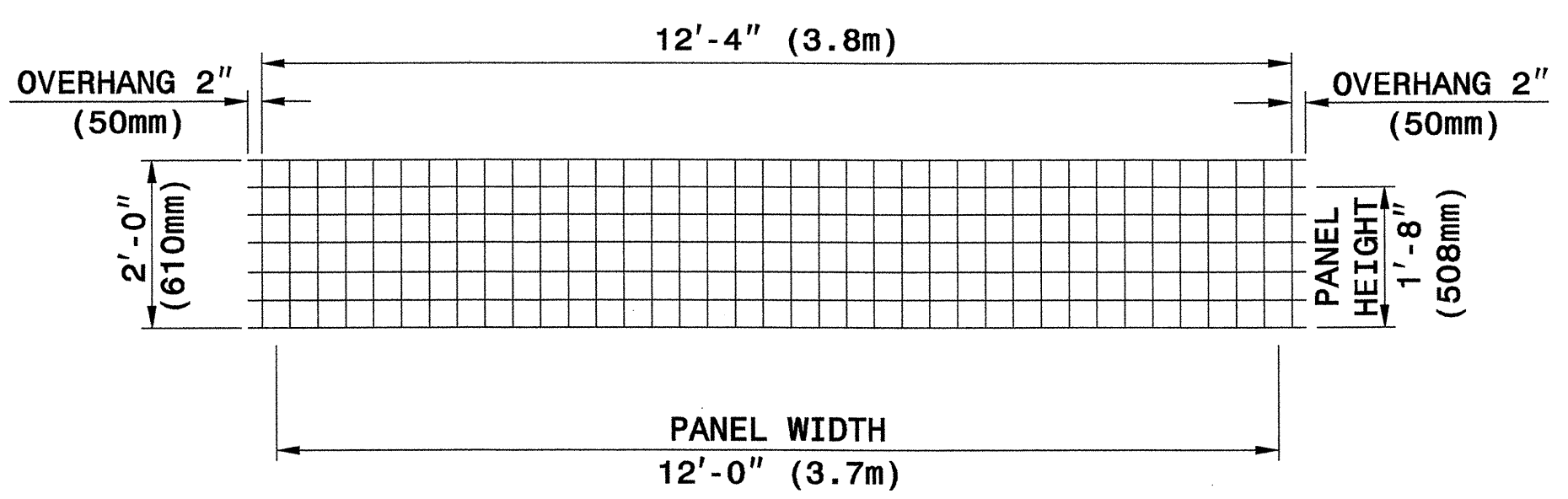
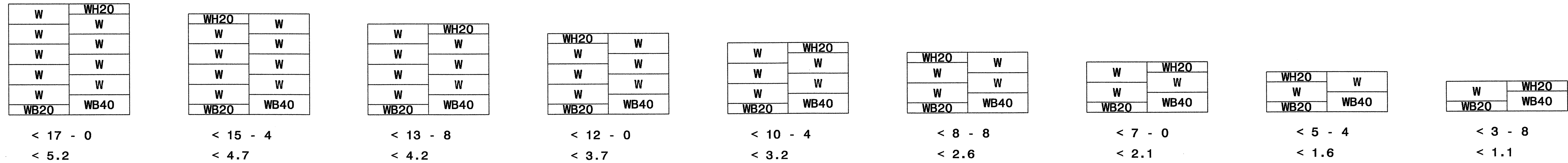
SIGNATURE DATE SIGNATURE DATE

PANEL LAYOUTS

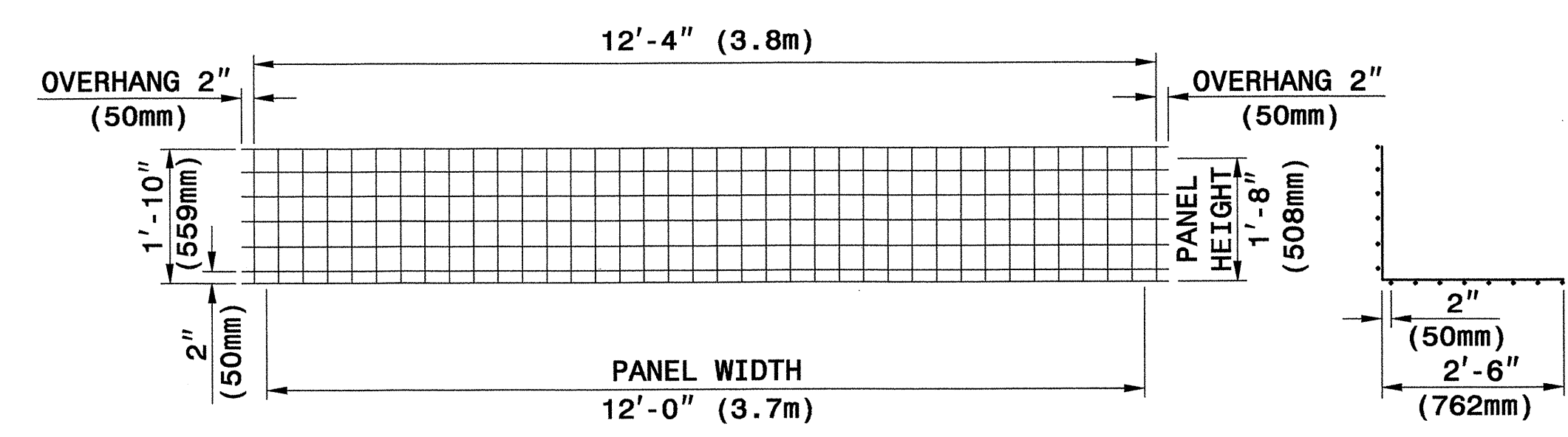
H - WALL HEIGHT
(FEET-INCHES)
(METER)



(FEET-INCHES)
(METER)

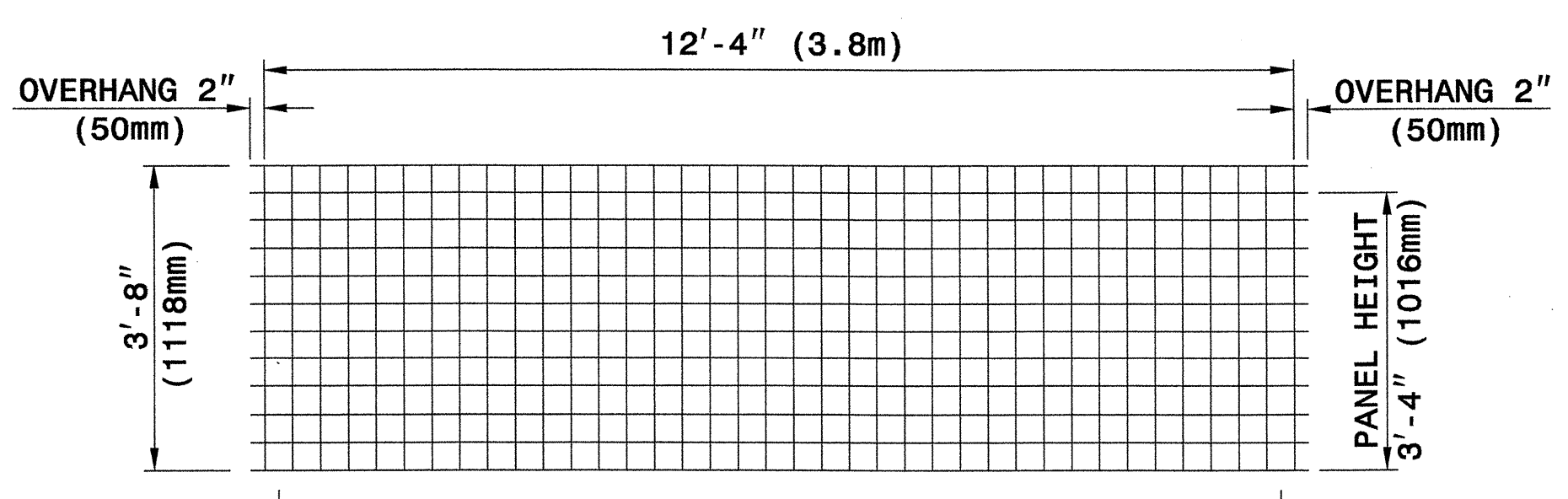


TYPE WH20

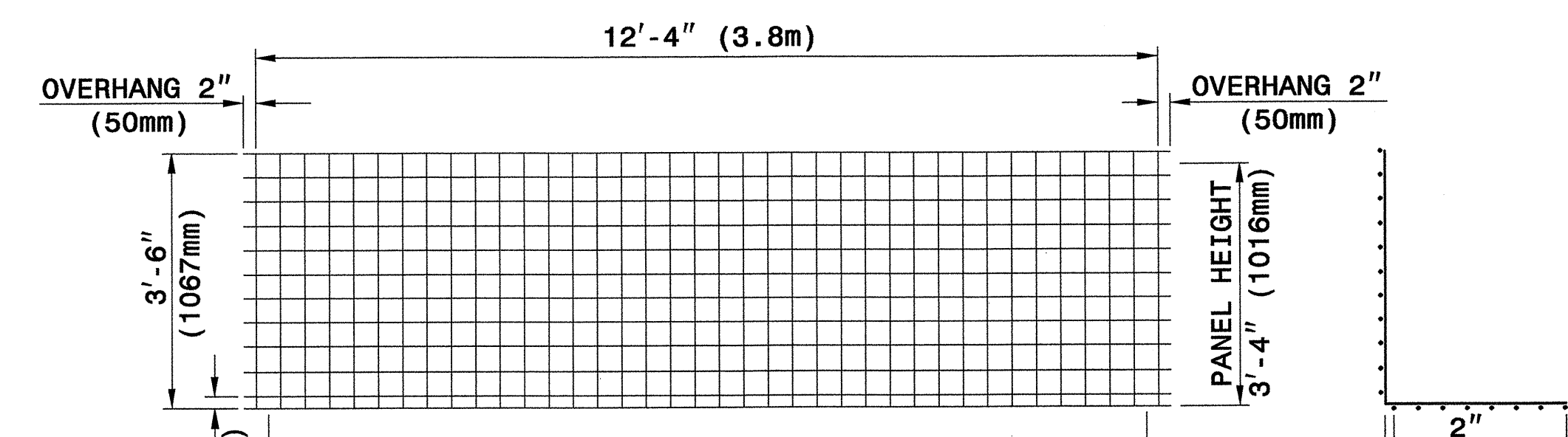


TYPE WB20

SECTION



TYPE W



TYPE WB40

SECTION

WELDED WIRE FACINGS

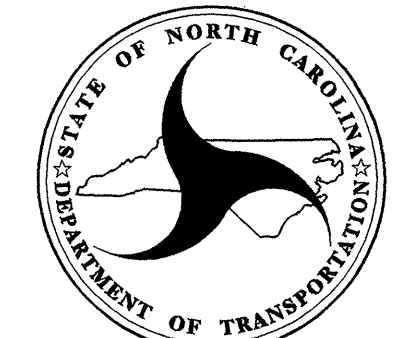
WELDED WIRE FORMS

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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DEPARTMENT OF TRANSPORTATION
RALEIGH

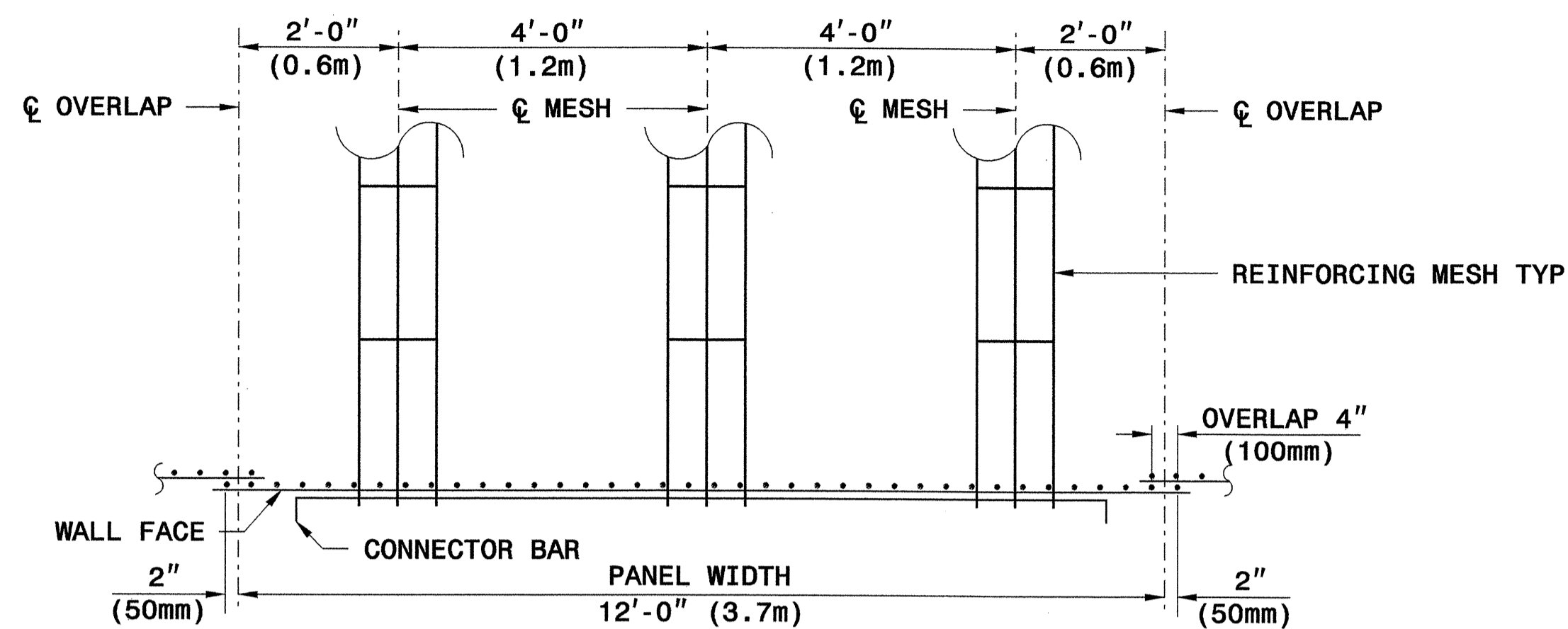


STANDARD DRAWING NO. 1801.02

RETAINED EARTH
TEMPORARY WALL



Signature: *Scott A. Hadden* 3/29/07
 DATE: _____
 SIGNATURE: _____ DATE: _____

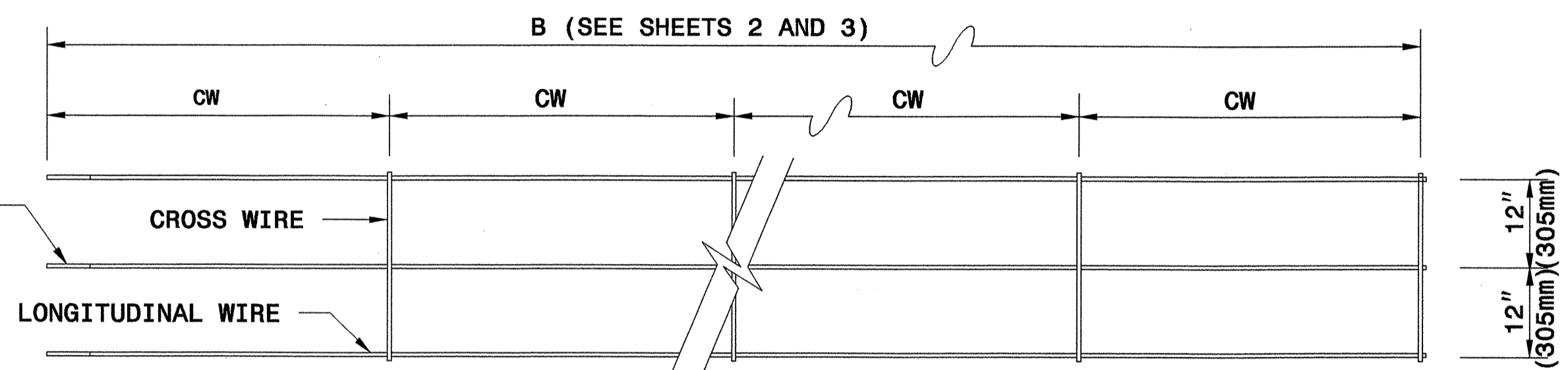


**REINFORCING MESH PLACEMENT DETAIL
(PLAN VIEW)**



1/2" (13mm) DIA. BAR

CONNECTOR BAR

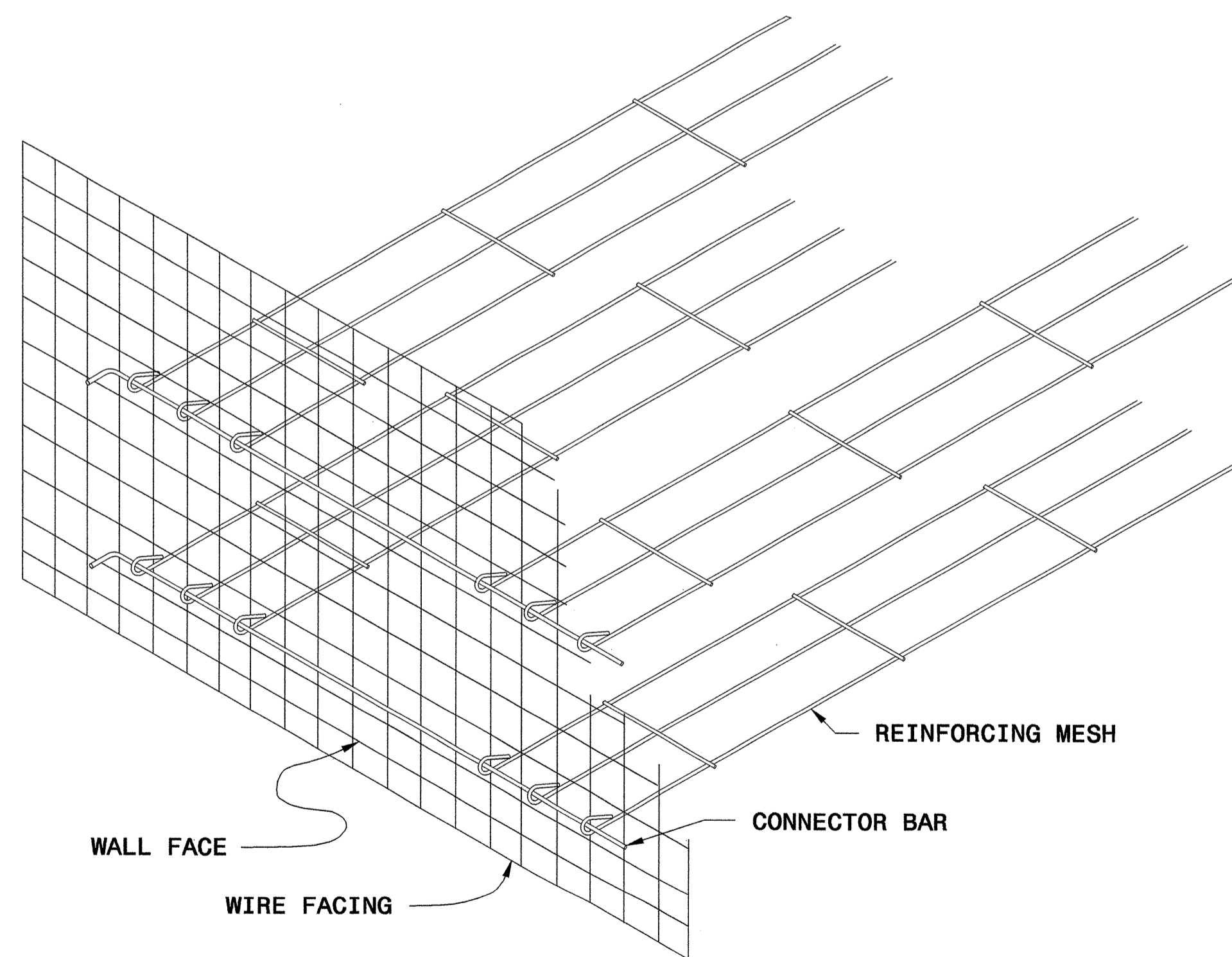


LOOPEd END OF MESH
(SEE REINFORCING MESH LOOP DETAIL)

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

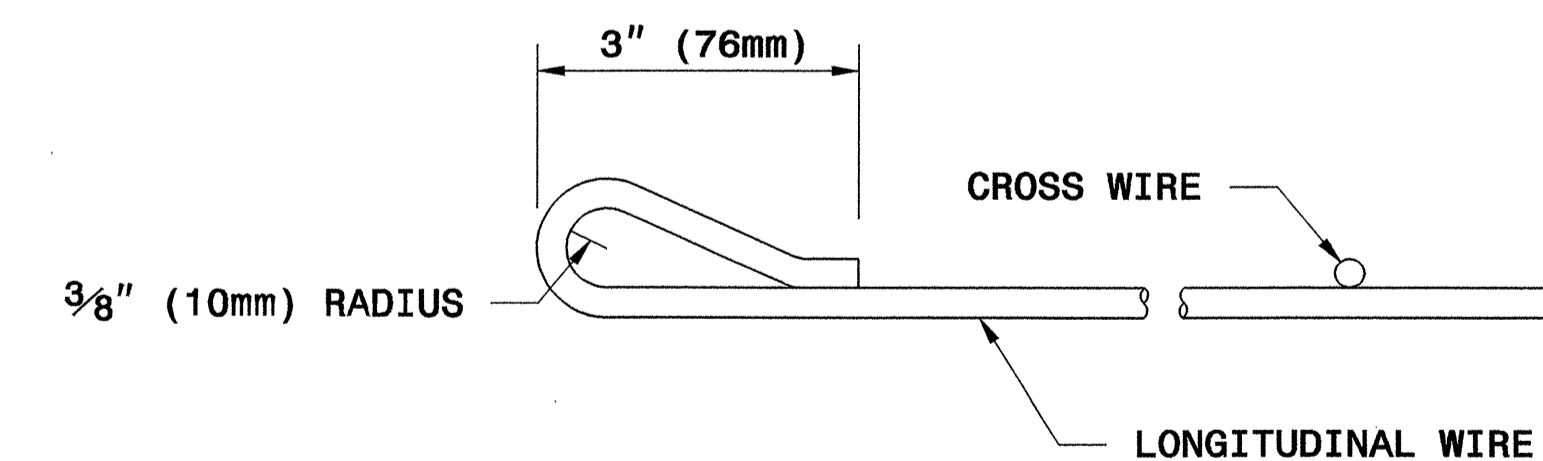
3W8 X W8 X 2.0' (3MW52 X MW52 X 610mm)
 NO. OF LONGITUDINAL WIRES
 GAUGE OF LONGITUDINAL WIRES
 GAUGE OF CROSS WIRES
 SPACING OF CROSS WIRES IN FT (mm), CW

REINFORCING MESH DESIGNATION

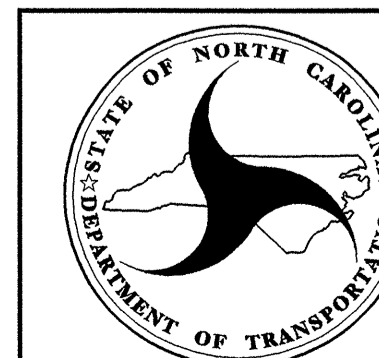


GENERAL ASSEMBLY DETAIL

REINFORCING MESH



REINFORCING MESH LOOP DETAIL



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STANDARD DRAWING NO. 1801.02

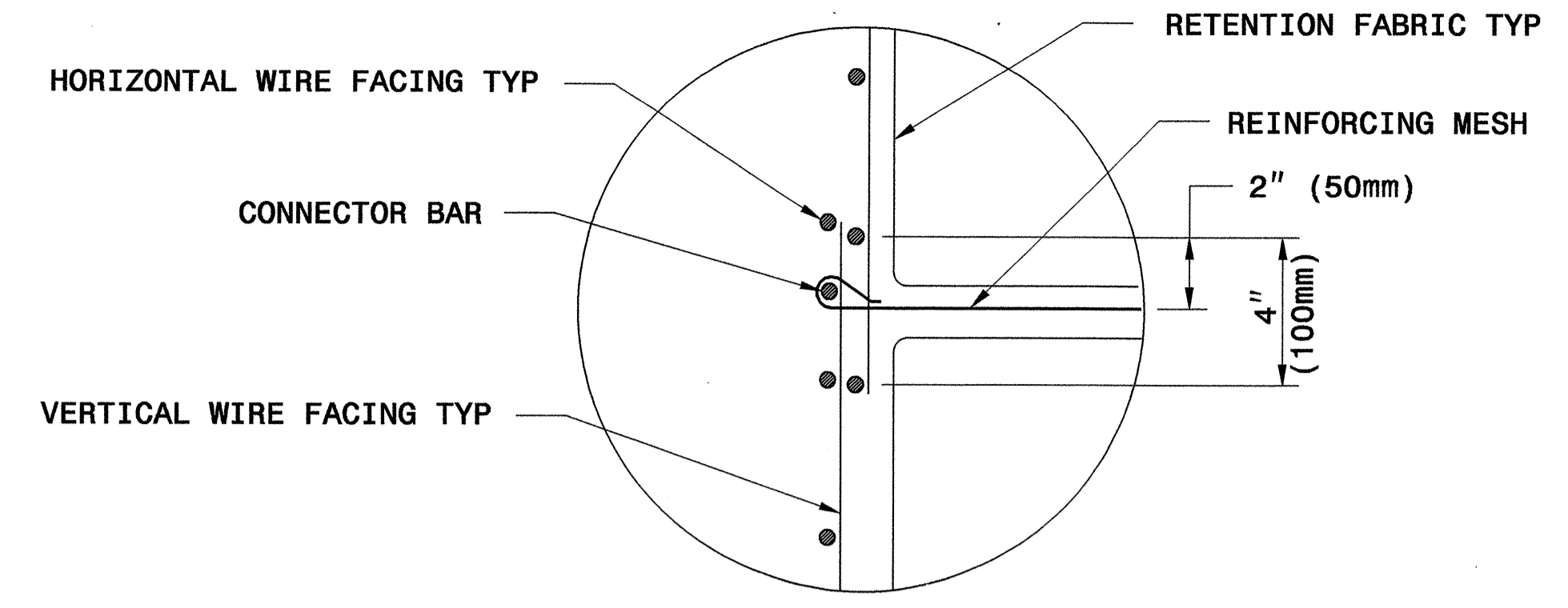
RETAINED EARTH
 TEMPORARY WALL

SHEET 7 OF 11 DATE: 12-19-06

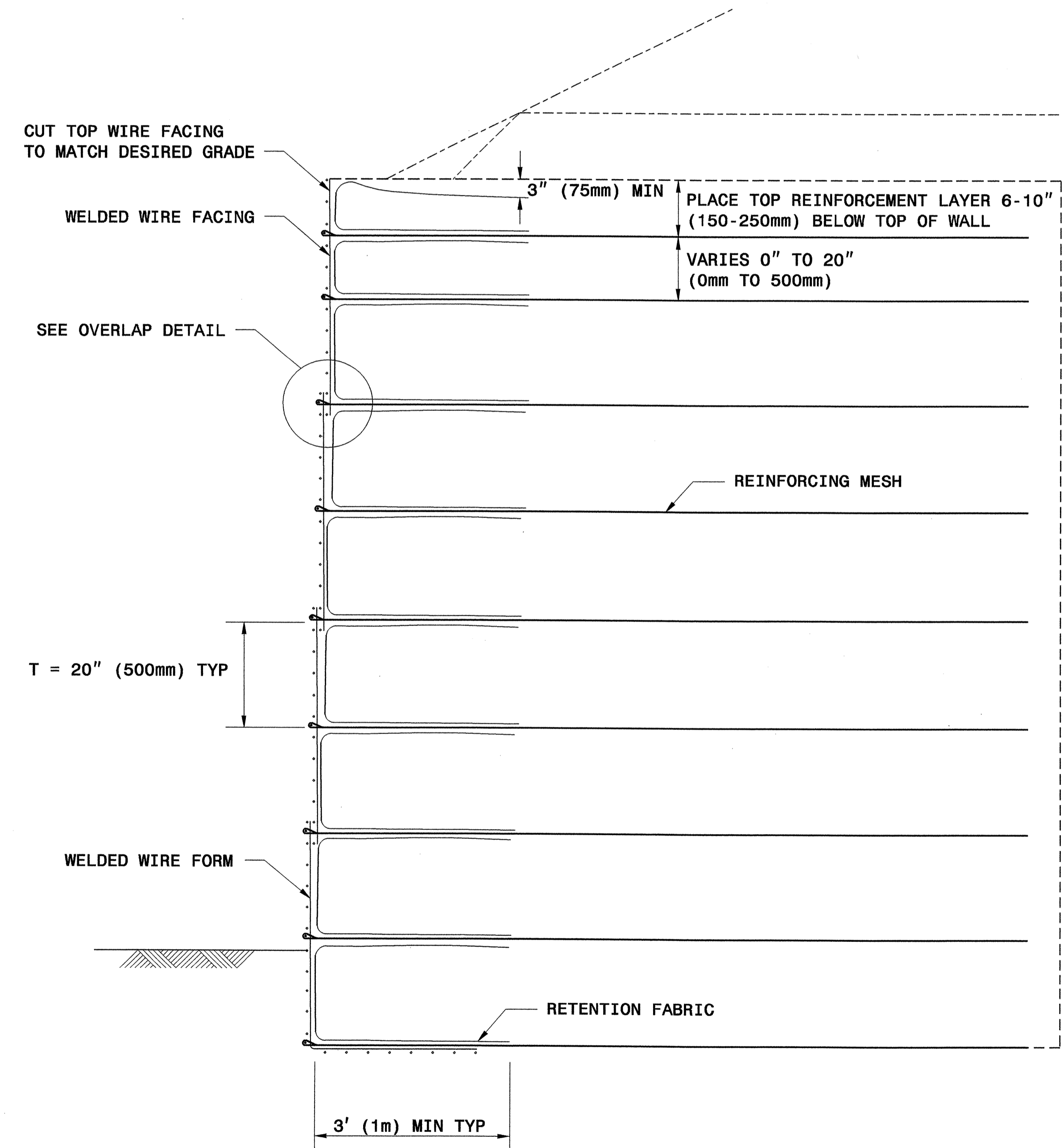


Scott A. Hadden 3/29/07
SIGNATURE DATE

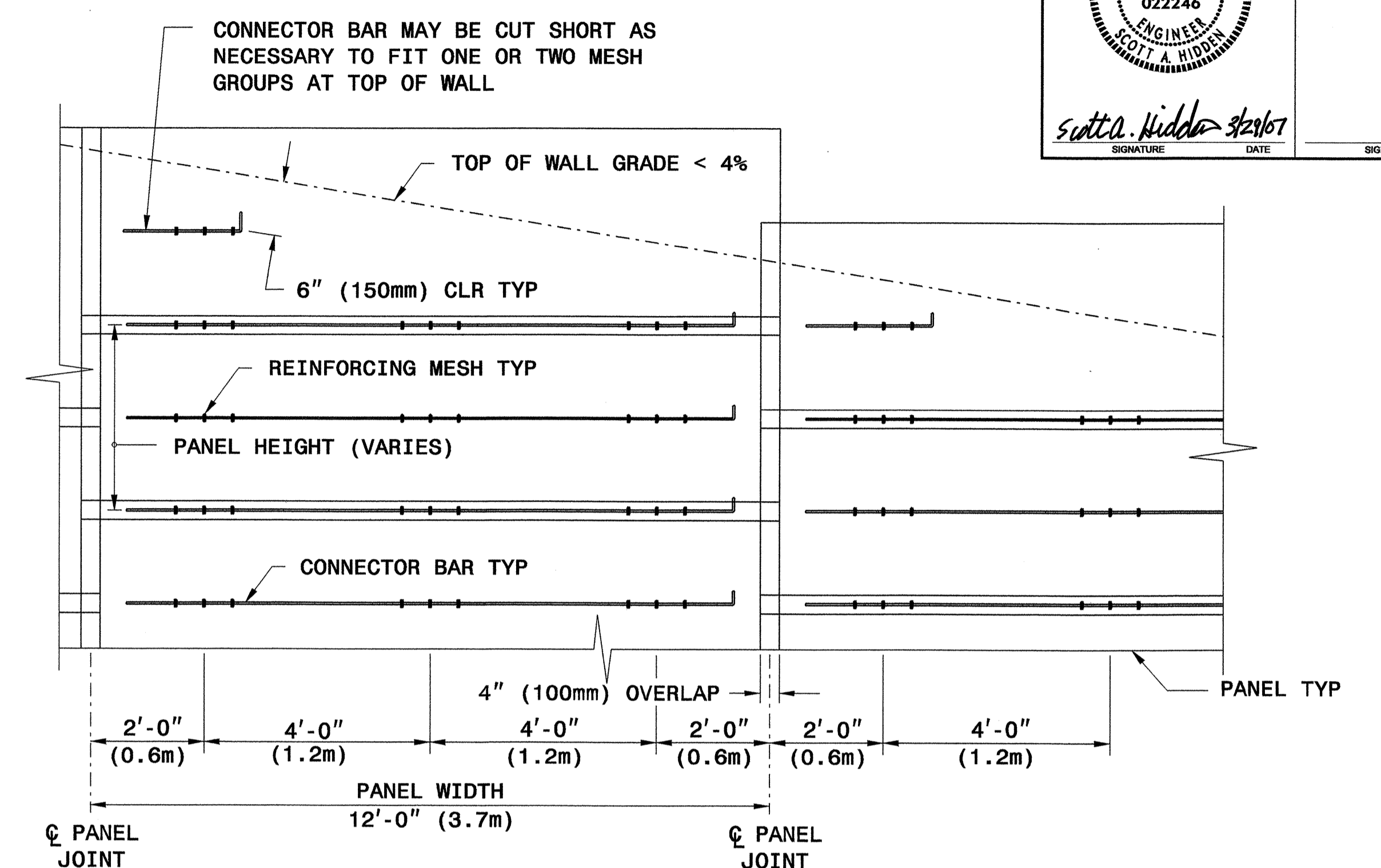
SIGNATURE DATE



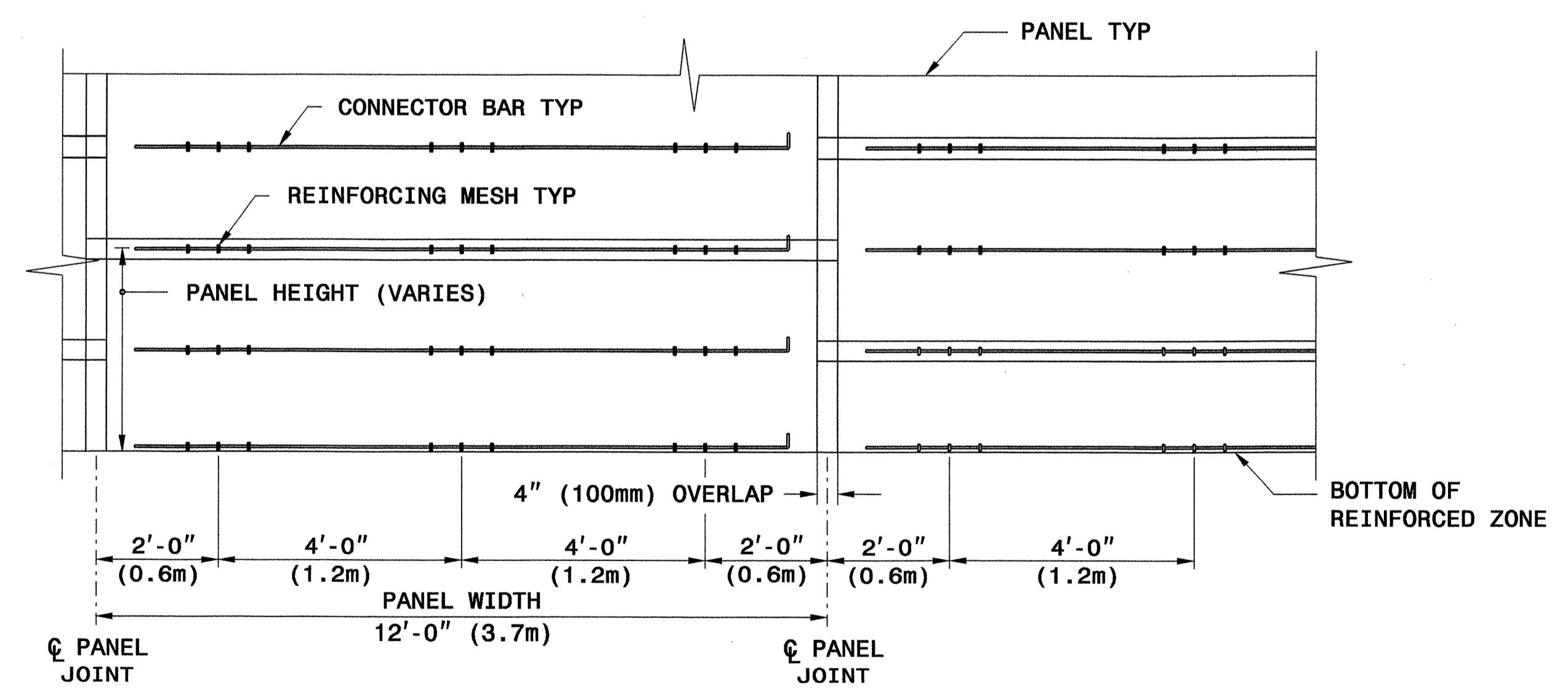
OVERLAP DETAIL



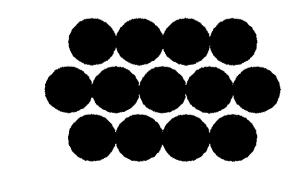
TYPICAL SECTION



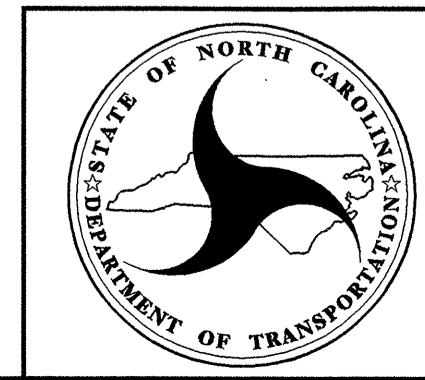
**TYPICAL ELEVATION @ TOP OF WALL
(WIRES NOT SHOWN FOR CLARITY)**



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



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DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD DRAWING NO. 1801.02

RETAINED EARTH
TEMPORARY WALL

SHEET 8 OF 11

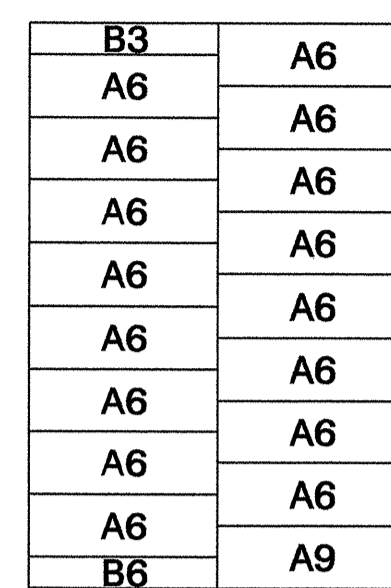
DATE: 12-19-06



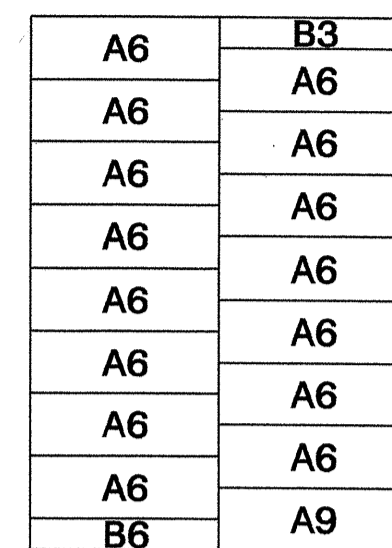
Scott A. Hadden 3/29/07

PANEL LAYOUTS

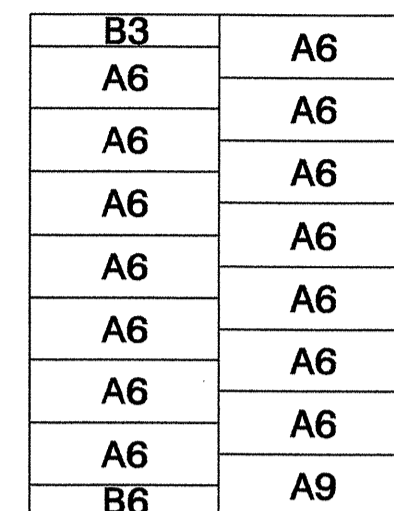
H - WALL HEIGHT
(FEET-INCHES)
(METER)



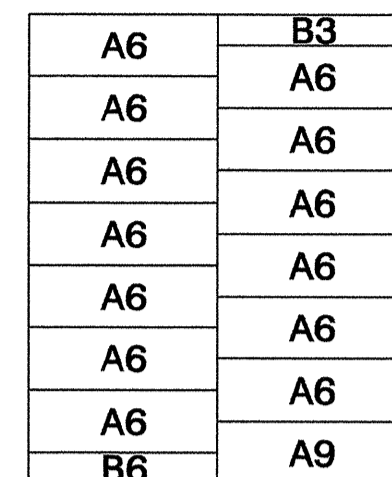
< 28 - 0
< 8.5



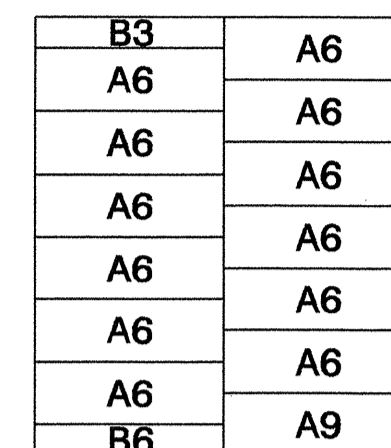
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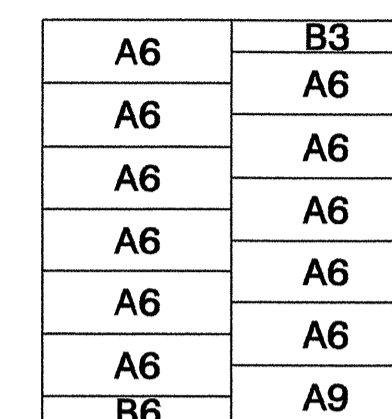
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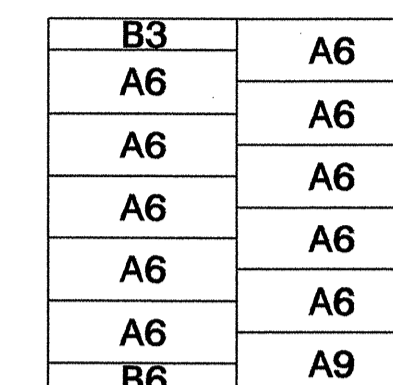
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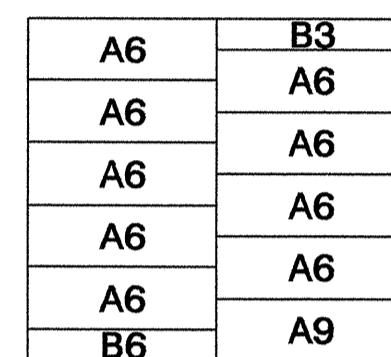
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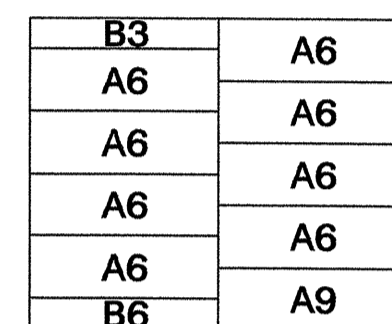
< 21 - 0
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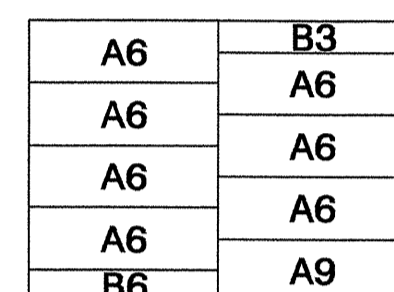
< 19 - 4
< 5.9



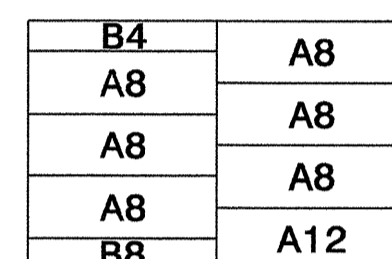
< 17 - 8
< 5.4



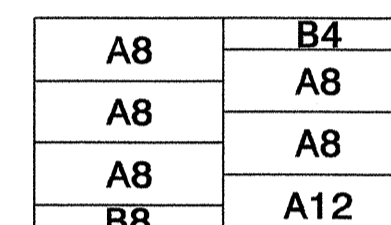
< 16 - 0
< 4.9



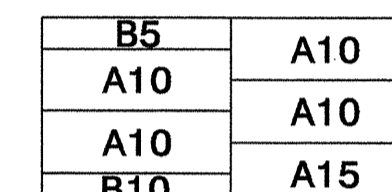
< 14 - 4
< 4.4



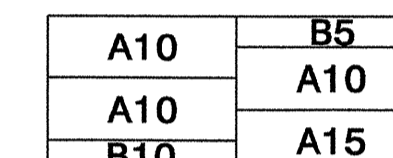
< 12 - 8
< 3.9



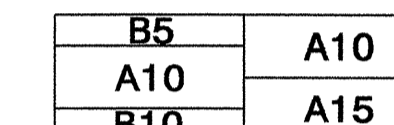
< 11 - 0
< 3.4



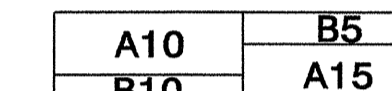
< 9 - 4
< 2.8



< 7 - 8
< 2.3

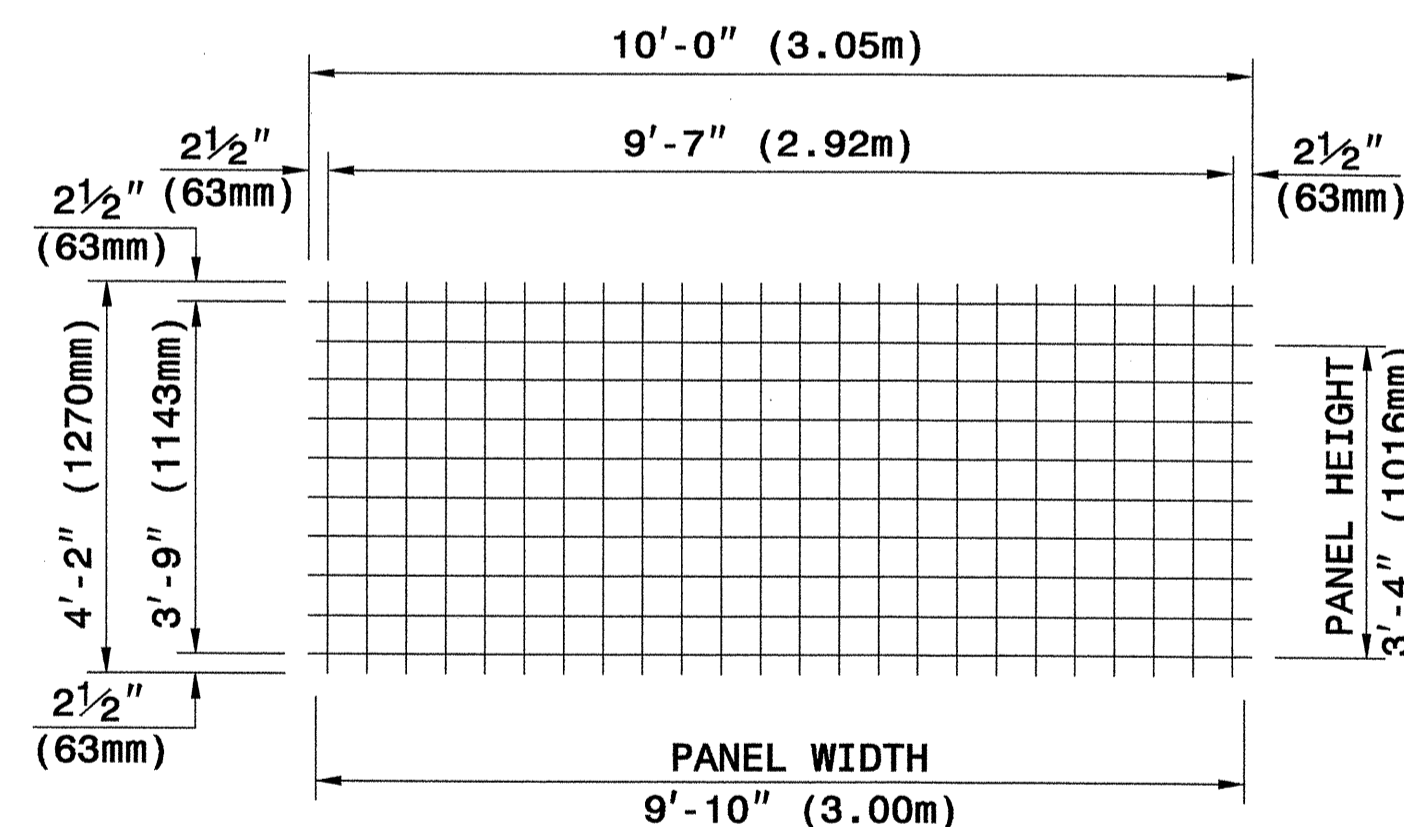


< 6 - 0
< 1.8

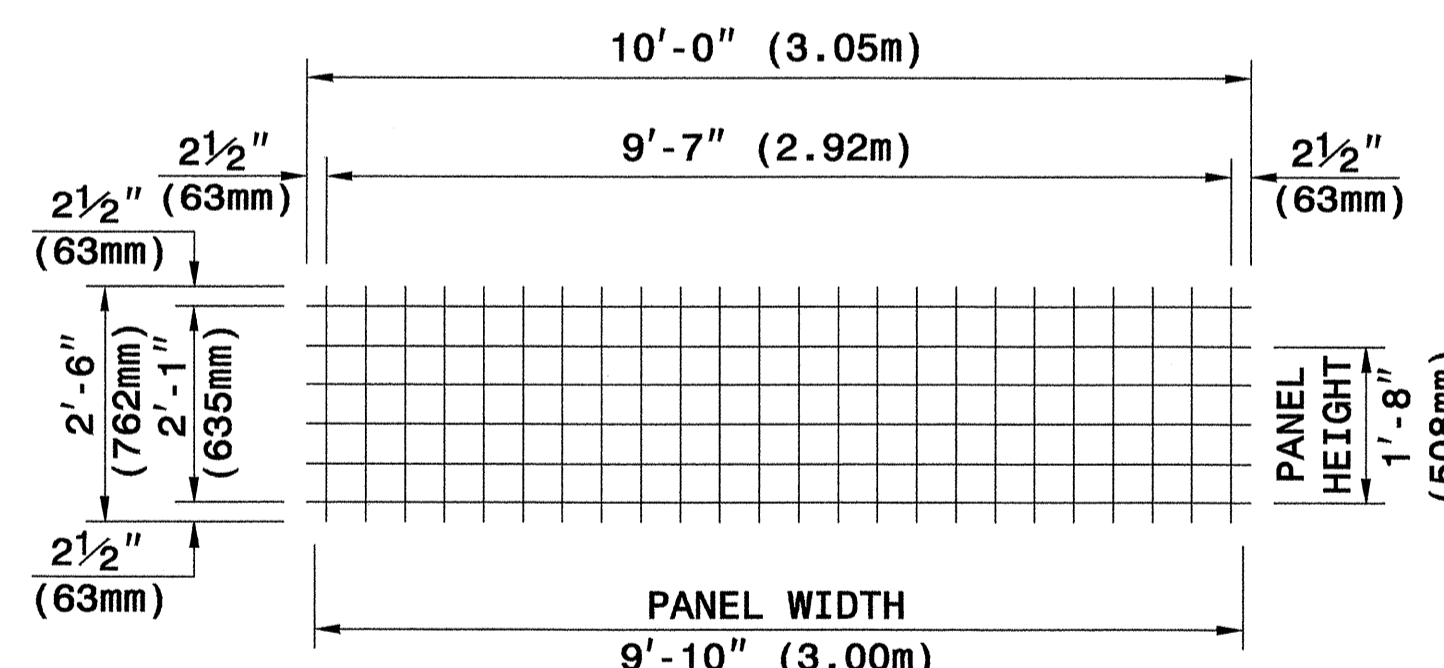


< 4 - 4
< 1.3

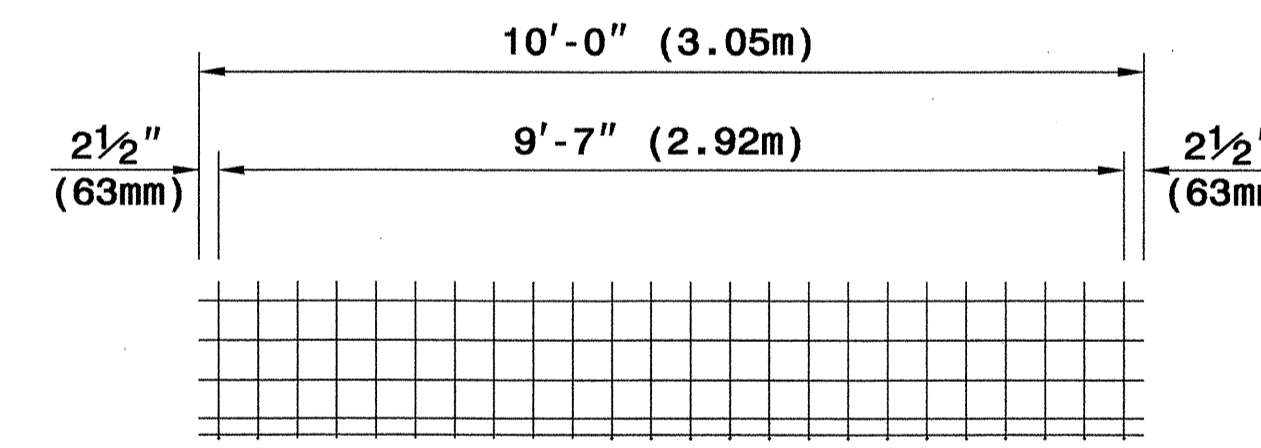
(FEET-INCHES)
(METER)



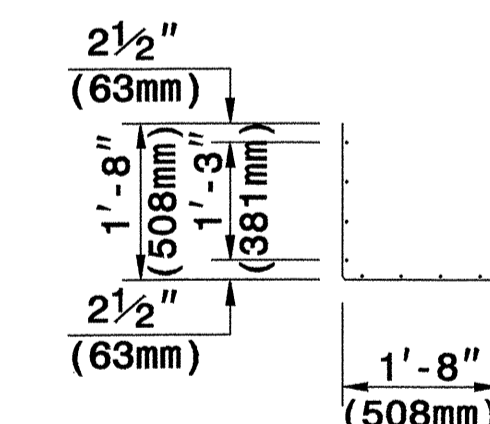
TYPE A



TYPE B



WELDED WIRE FORM

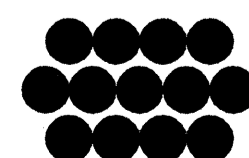


SECTION

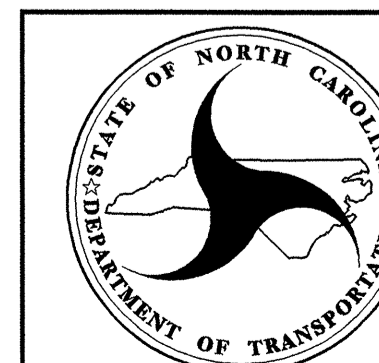
WELDED WIRE FACINGS

PANEL TYPES (WELDED WIRE FACINGS AND FORM)

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



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STANDARD DRAWING NO. 1801.02

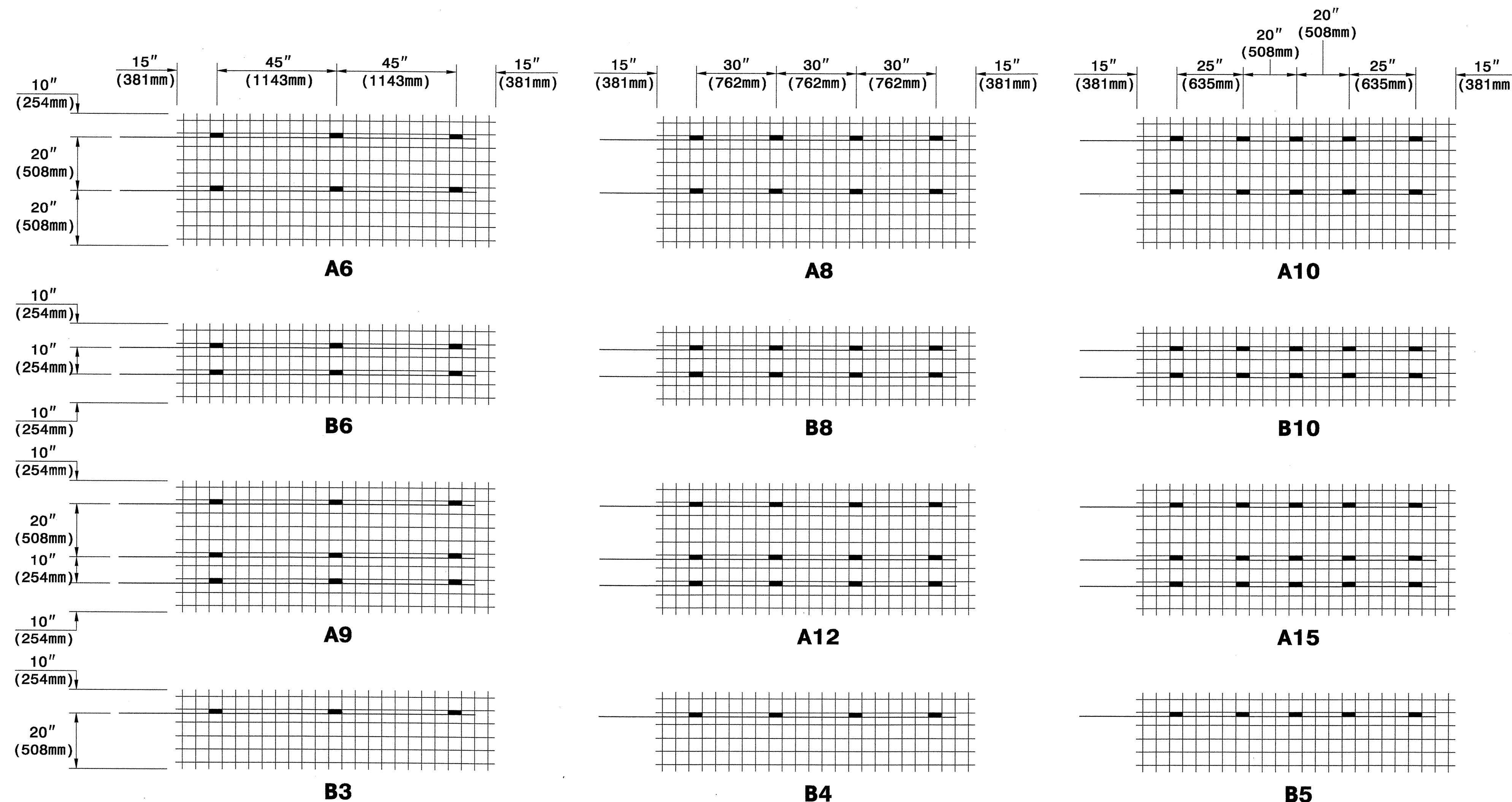
TERRATREL
TEMPORARY WALL

SHEET 9 OF 11

DATE: 12-19-06

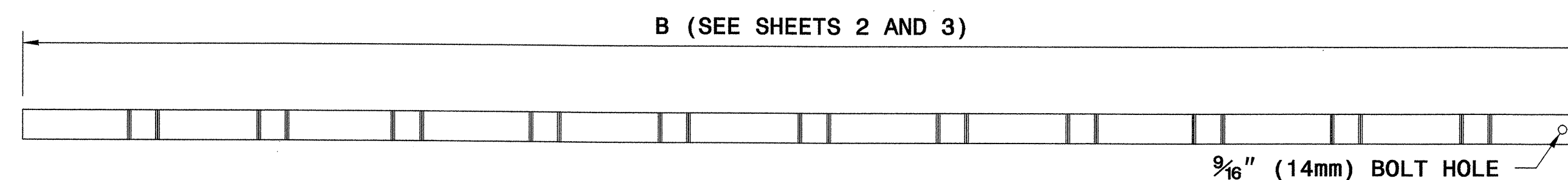


Scott A. Hadden 3/24/07

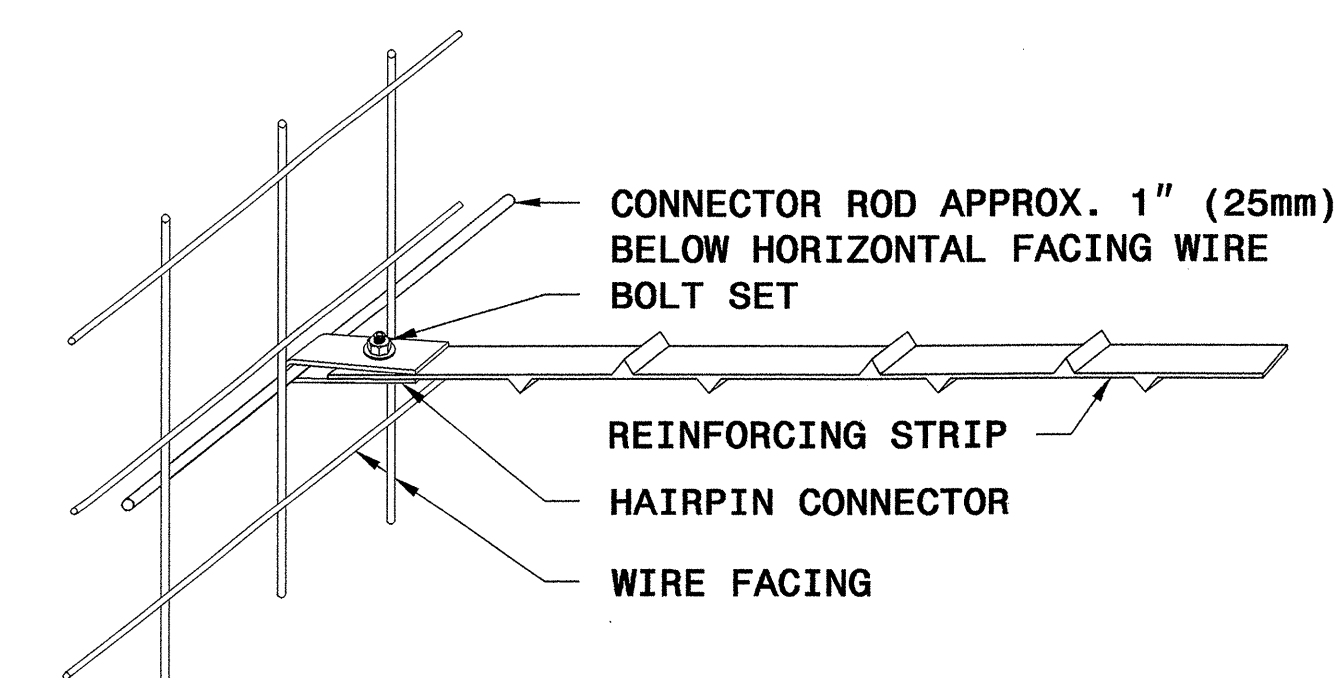


KEY: A8
 NUMBER OF REINFORCING STRIPS
 PANEL TYPE

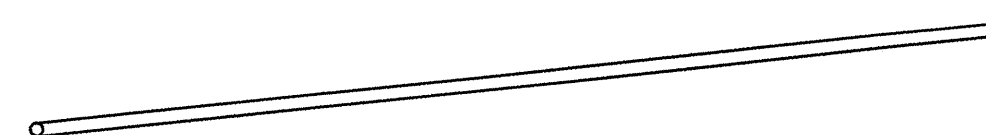
CONNECTOR ROD AND REINFORCING STRIP PLACEMENT DIAGRAMS



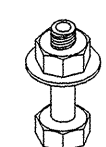
REINFORCING STRIP - 2" X 5/32" (50mm X 4mm)



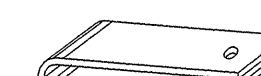
STRIP TO FACING CONNECTION



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

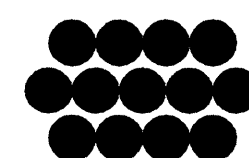


1/2" (13mm) BOLT WITH NUT AND WASHER
BOLT SET

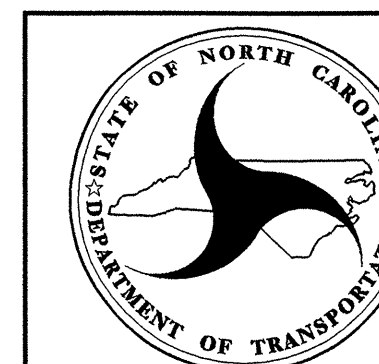


HAIRPIN CONNECTOR

WALL COMPONENTS



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 RALEIGH

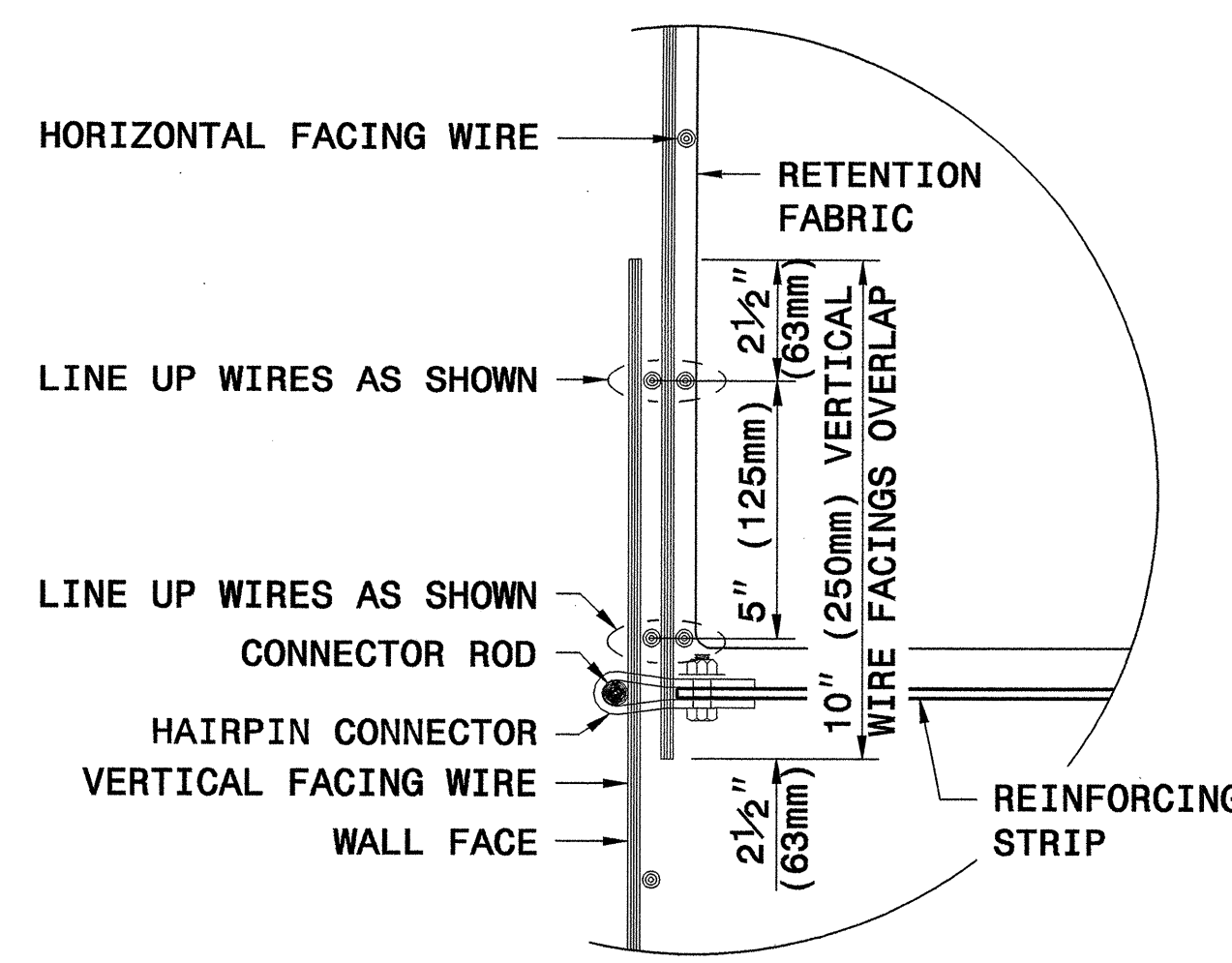
STANDARD DRAWING NO. 1801.02

TERRATREL
 TEMPORARY WALL

SHEET 10 OF 11 DATE: 12-19-06

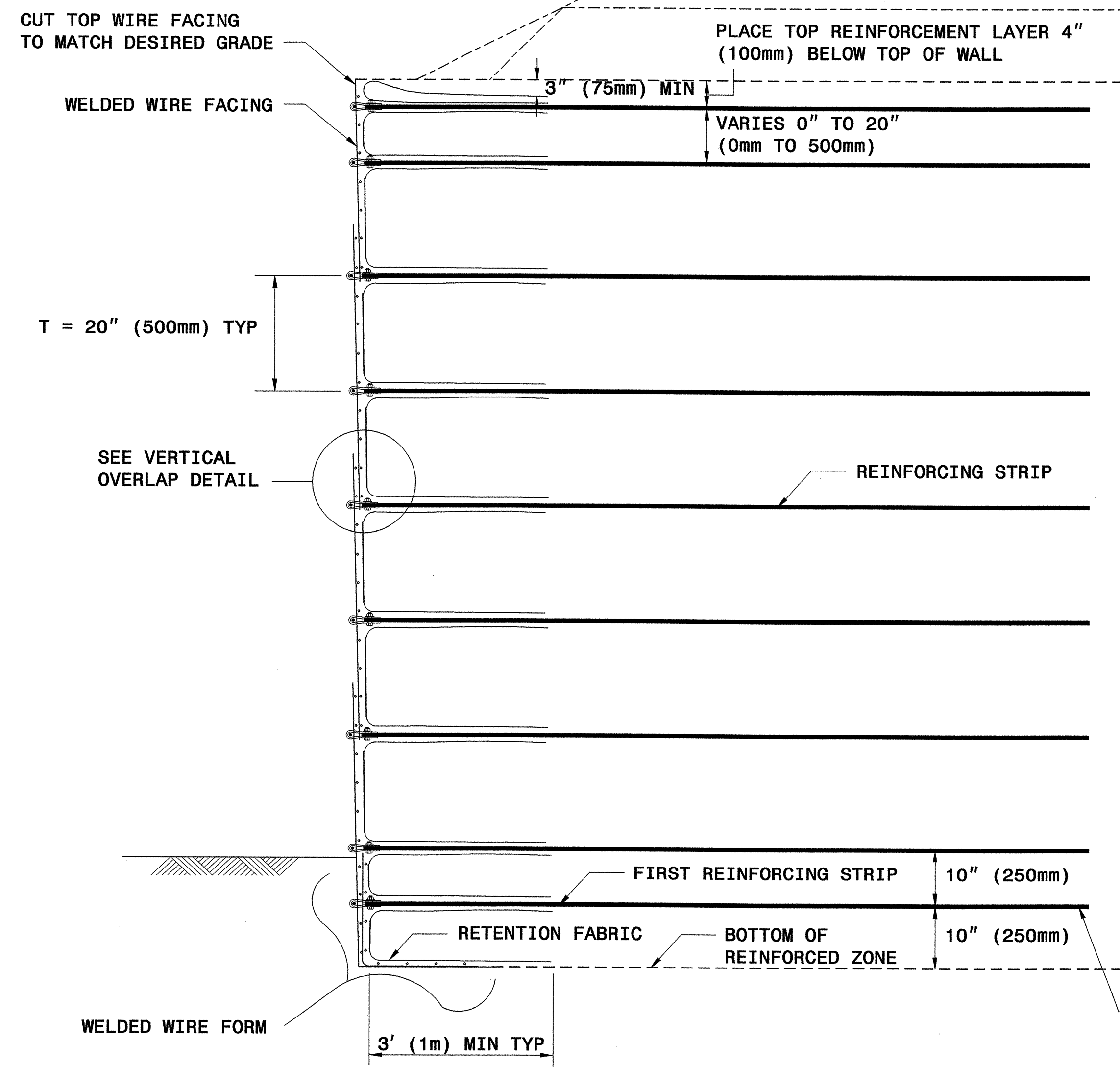
GEOTECHNICAL ENGINEER ENGINEER

Scott A. Hadden 3/21/07



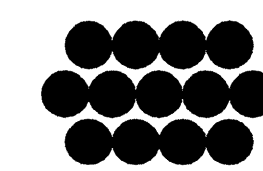
OVERLAP FACINGS VERTICALLY ONE FULL 5" (125mm) WIRE SQUARE DISREGARDING HALF SQUARES AT EDGES

VERTICAL OVERLAP DETAIL

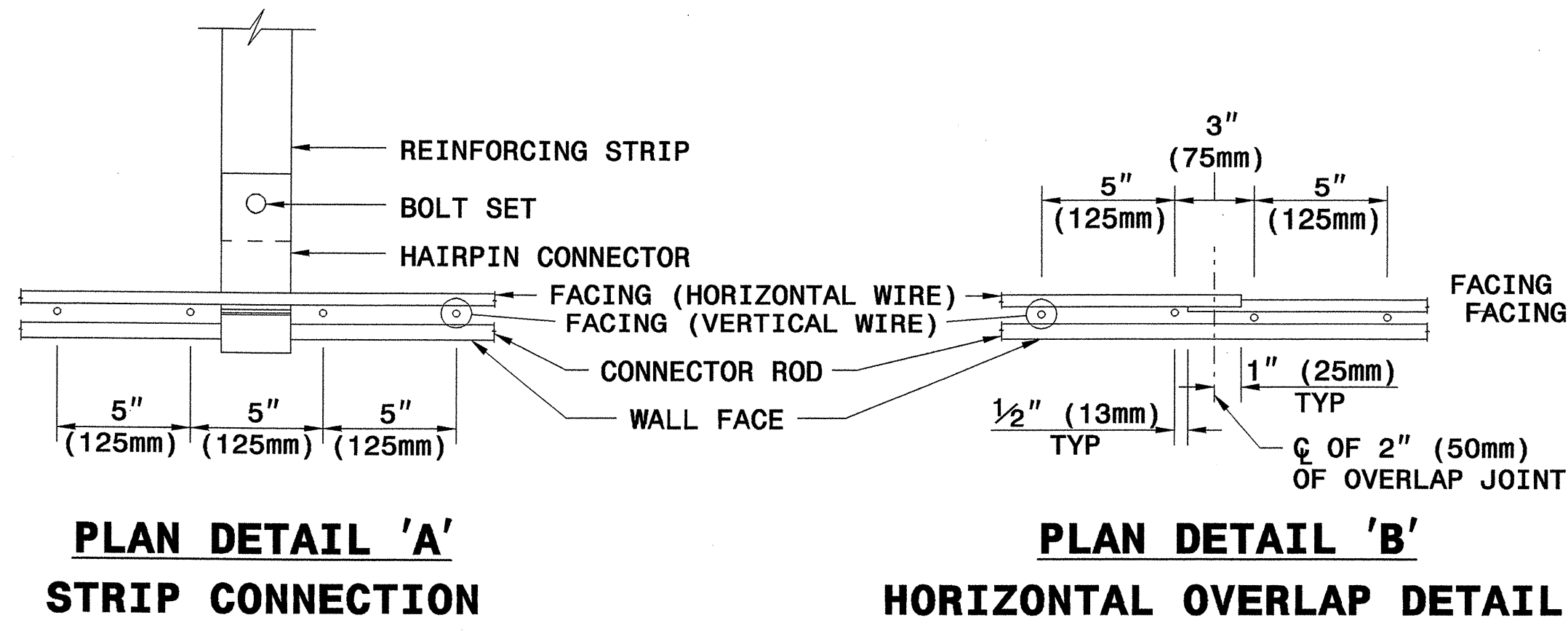


TYPICAL SECTION

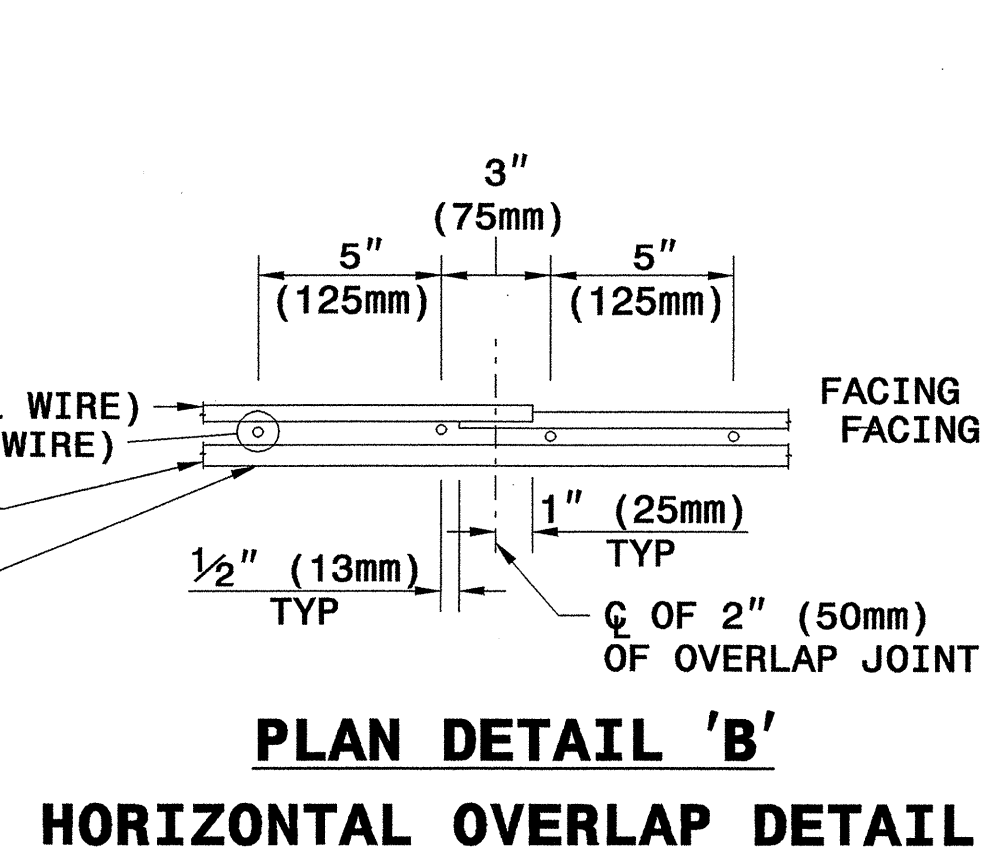
PLACE LOWEST REINFORCING STRIP 10" (250mm) FROM BOTTOM OF REINFORCED ZONE



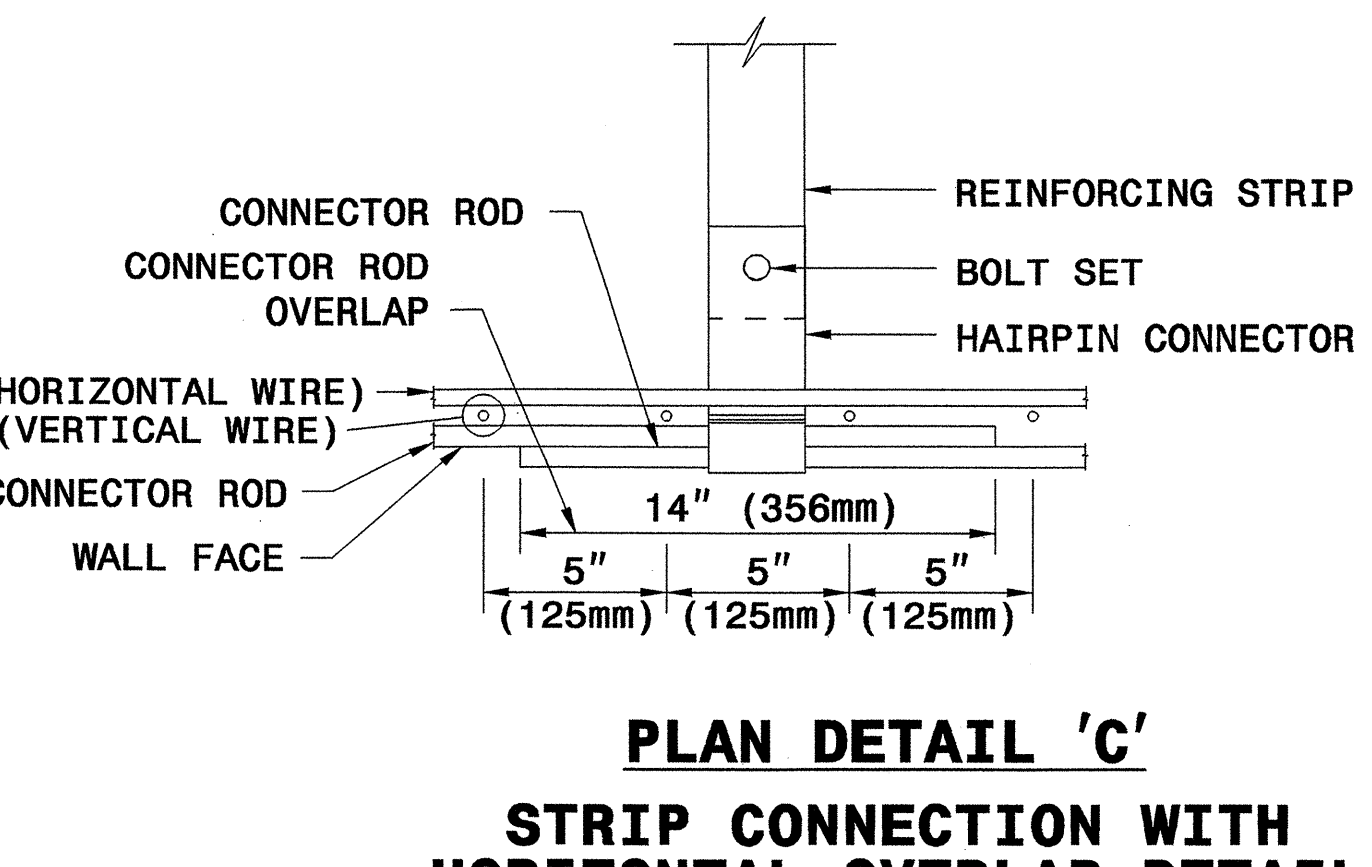
The Reinforced Earth Company



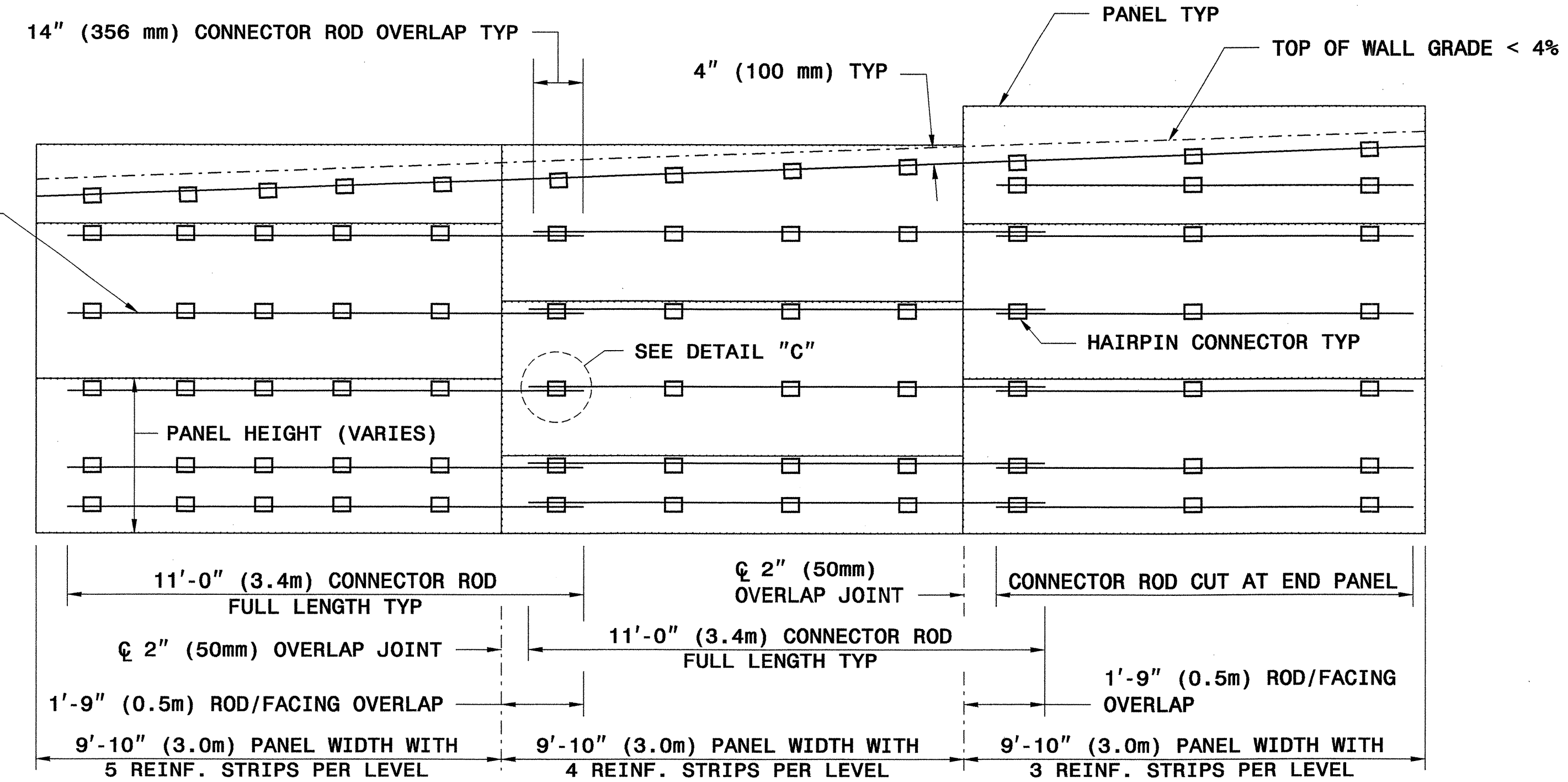
PLAN DETAIL 'A' STRIP CONNECTION



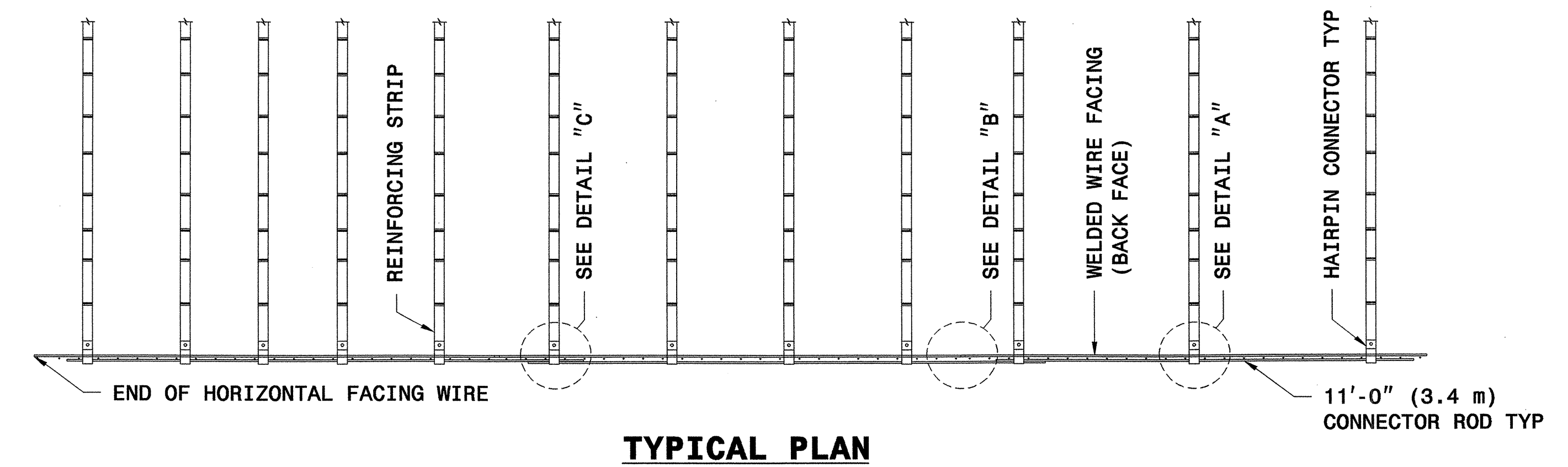
PLAN DETAIL 'B' HORIZONTAL OVERLAP DETAIL



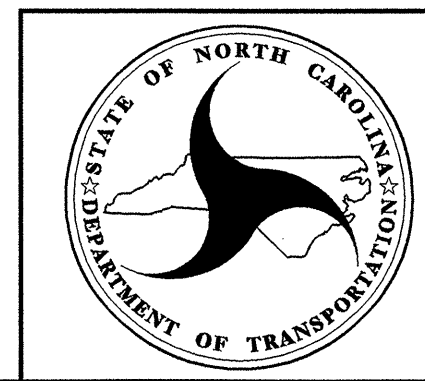
PLAN DETAIL 'C' STRIP CONNECTION WITH HORIZONTAL OVERLAP DETAIL



TYPICAL ELEVATION (WIRES NOT SHOWN FOR CLARITY)



TYPICAL PLAN



GEOTECHNICAL ENGINEERING UNIT
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RALEIGH

STANDARD DRAWING NO. 1801.02

TERRATREL TEMPORARY WALL

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF QUANTITIES

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C201819

ItemNumber	Sec #	Quantity	Unit	Description
000010000-N	800	Lump Sum		MOBILIZATION
000040000-N	801	Lump Sum		CONSTRUCTION SURVEYING
000070000-N	SP	Lump Sum		FIELD OFFICE
002900000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL STATION ***** (54+89.84)
005000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB- BING
005700000-E	226	1,350	CY	UNDERCUT EXCAVATION
006300000-N	SP	Lump Sum		GRADING
010600000-E	230	30,500	CY	BORROW EXCAVATION
013400000-E	240	390	CY	DRAINAGE DITCH EXCAVATION
019500000-E	265	2,200	CY	SELECT GRANULAR MATERIAL
019600000-E	270	3,000	SY	FABRIC FOR SOIL STABILIZATION
019900000-E	SP	580	SF	TEMPORARY SHORING
031800000-E	300	80	TON	FOUNDATION CONDITIONING MATE- RIAL, MINOR STRS
037200000-E	310	72	LF	18" RC PIPE CULVERTS, CLASS III
037800000-E	310	252	LF	24" RC PIPE CULVERTS, CLASS III
039600000-E	310	112	LF	42" RC PIPE CULVERTS, CLASS III
070800000-E	310	148	LF	15" BIT COAT CS PIPE CULVERTS, TYPE B 0.064" THICK
072000000-E	310	88	LF	24" BIT COAT CS PIPE CULVERTS, TYPE B 0.064" THICK
080600000-E	310	4	EA	15" BIT COAT CS PIPE ELBOWS, TYPE B 0.064" THICK
092500000-E	340	151	LF	PIPE REMOVAL
112100000-E	520	2,250	TON	AGGREGATE BASE COURSE
129700000-E	607	500	SY	MILLING ASPHALT PAVEMENT, **** DEPTH (3")
148900000-E	610	600	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
149800000-E	610	980	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0B
151900000-E	610	1,120	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5B
156000000-E	620	140	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22
220900000-E	838	4.5	CY	ENDWALLS
228600000-N	840	3	EA	MASONRY DRAINAGE STRUCTURES
236500000-N	840	1	EA	FRAME WITH TWO GRATES, STD 840.22
240700000-N	840	2	EA	STEEL FRAME WITH TWO GRATES, STD 840.37
255600000-E	846	100	LF	SHOULDER BERM GUTTER
271000000-N	854	2	EA	CONCRETE BARRIER TRANSITION SECTION
303000000-E	862	1,500	LF	STEEL BM GUARDRAIL
304500000-E	862	100	LF	STEEL BM GUARDRAIL, SHOP CURVED
310500000-N	862	2	EA	STEEL BM GUARDRAIL TERMINAL SECTIONS
315000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS
321000000-N	862	2	EA	GUARDRAIL ANCHOR UNITS, TYPE CAT-1
327000000-N	SP	6	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
331700000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE B-77
357800000-N	SP	2	EA	GENERIC FENCING ITEM RESET GATE
362800000-E	876	225	TON	RIP RAP, CLASS I
364200000-E	876	5,555	TON	RIP RAP, CLASS A
364900000-E	876	15	TON	RIP RAP, CLASS B
365600000-E	876	565	SY	FILTER FABRIC FOR DRAINAGE
440000000-E	1110	194	SF	WORK ZONE SIGNS (STATIONARY)
440500000-E	1110	96	SF	WORK ZONE SIGNS (PORTABLE)
441000000-E	1110	30	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)

ItemNumber	Sec #	Quantity	Unit	Description
443000000-N	1130	70	EA	DRUMS
443500000-N	1135	60	EA	CONES
444500000-E	1145	78	LF	BARRICADES (TYPE III)
445500000-N	1150	66	MD	FLAGGER
446500000-N	1160	4	EA	TEMPORARY CRASH CUSHIONS
447000000-N	1160	2	EA	RESET TEMPORARY CRASH CUSHIONS
448500000-E	1170	2,418	LF	PORTABLE CONCRETE BARRIER
450000000-E	1170	70	LF	RESET PORTABLE CONCRETE BAR- RIER
465000000-N	1251	8	EA	TEMPORARY RAISED PAVEMENT MARKERS
477000000-E	1205	512	LF	COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE ** (4")
481000000-E	1205	38,348	LF	PAINT PAVEMENT MARKING LINES (4")
483500000-E	1205	66	LF	PAINT PAVEMENT MARKING LINES (24")
485000000-E	1205	3,618	LF	REMOVAL OF PAVEMENT MARKING LINES (4")
490500000-N	1253	31	EA	SNOWPLOWABLE PAVEMENT MARKERS
600000000-E	1605	2,835	LF	TEMPORARY SILT FENCE
600600000-E	1610	280	TON	STONE FOR EROSION CONTROL, CLASS A
600900000-E	1610	420	TON	STONE FOR EROSION CONTROL, CLASS B
601200000-E	1610	295	TON	SEDIMENT CONTROL STONE
601500000-E	1615	0.5	ACR	TEMPORARY MULCHING
601800000-E	1620	200	LB	SEED FOR TEMPORARY SEEDING
602100000-E	1620	0.75	TON	FERTILIZER FOR TEMPORARY SEED- ING
602400000-E	1622	445	LF	TEMPORARY SLOPE DRAINS
602700000-N	1622	7	EA	INLET PROTECTION AT TEMPORARY SLOPE DRAINS
602900000-E	SP	2,336	LF	SAFETY FENCE
603000000-E	1630	1,240	CY	SILT EXCAVATION

ItemNumber	Sec #	Quantity	Unit	Description
603600000-E	1631	17,500	SY	MATTING FOR EROSION CONTROL
603800000-E	SP	280	SY	PERMANENT SOIL REINFORCEMENT MAT
604200000-E	1632	225	LF	1/4" HARDWARE CLOTH
604500000-E	SP	200	LF	*** TEMPORARY PIPE (15")
604500000-E	SP	150	LF	*** TEMPORARY PIPE (18")
604500000-E	SP	100	LF	*** TEMPORARY PIPE (36")
607000000-N	SP	1	EA	SPECIAL STILLING BASINS
608400000-E	1660	10.5	ACR	SEEDING & MULCHING
608700000-E	1660	4	ACR	MOWING
609000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
609300000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
609600000-E	1662	175	LB	SEED FOR SUPPLEMENTAL SEEDING
610800000-E	1665	4.75	TON	FERTILIZER TOPDRESSING
611100000-E	SP	36	LF	IMPERVIOUS DIKE
611400000-N	SP	2	HR	SPECIALIZED HAND MOWING
611700000-N	SP	12	EA	RESPONSE FOR EROSION CONTROL
706000000-E	1705	1,360	LF	SIGNAL CABLE
712000000-E	1705	8	EA	VEHICLE SIGNAL HEAD (12", 3 SECTION)
726400000-E	1710	1,270	LF	MESSANGER CABLE (3/8")
736000000-N	1720	10	EA	WOOD POLE
737200000-N	1721	6	EA	GUY ASSEMBLY
740800000-E	1722	1	EA	1" RISER WITH WEATHERHEAD
742000000-E	1722	3	EA	2" RISER WITH WEATHERHEAD
744400000-E	1725	560	LF	INDUCTIVE LOOP SAWCUT
745600000-E	1726	1,770	LF	LEAD-IN CABLE (***** (14-2)
776800000-N	1751	1	EA	CONTROLLER WITH CABINET (TYPE 2070L, POLE MOUNTED)
778000000-N	1751	2	EA	DETECTOR CARD (TYPE 2070L)

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			TERMINAL END SECTIONS	REMARKS		
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	GRAU 350	TYPE B-77	CAT-1										
-L-	43+40.00	45+02.50	RT.	162.50			43+40.00	44+00.00	8	11											2						
-L-	47+97.87	53+60.37	RT.	562.50			49+00.00	53+60.37	8	11											1	1					
-L-	+/- 10+60 -Y3-	54+02.03	LT.	87.50	25.00			54+02.03	8	11											1	1	1				
-L-	55+78.99	58+53.99	RT.	275.00				57+50.00	8	11											1	1					
-L-	56+03.96	+/- 10+90 -Y4-	LT.	437.50	62.50		60+50.00	56+03.96	8	11												1	1	1			
-L-	64+00.00	67+25.00	RT.	325.00			65+00.00	67+25.00	8	11											2						
-L-	56+70		RT.	25.00																					2		
		TOTAL		1875	87.50																6	4	2				
		LESS ANCHOR UNIT DEDUCTIONS																									
		GRAU350 6 @ 50.00	300.00																								
		TYPE III 4 @ 18.75	75.00																								
		CAT-1 2 @ 6.75	12.50																								
			387.50																								
		PROJECT TOTAL		1487.50	87.50																					2	
		SAY		1500.00	100.00																						
		ADDITIONAL GR POSTS = 5																									

REMOVAL OF EXISTING ASPHALT PAVEMENT SUMMARY

LINE	STATION TO STATION	LOCATION	SQUARE YARDS
-L-	STA 49+00 TO STA 53+15	RT	165
-L-	STA 53+47 TO STA 53+84	RT	43
-L-	STA 55+10 TO STA 56+70	RT	261
-L-	STA 59+60 TO STA 61+42	RT	344
-L-	STA 51+88 TO STA 61+20 (TEMP. PVMT.)	RT	544
	TOTAL		1,357
	SAY		1,360

DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA

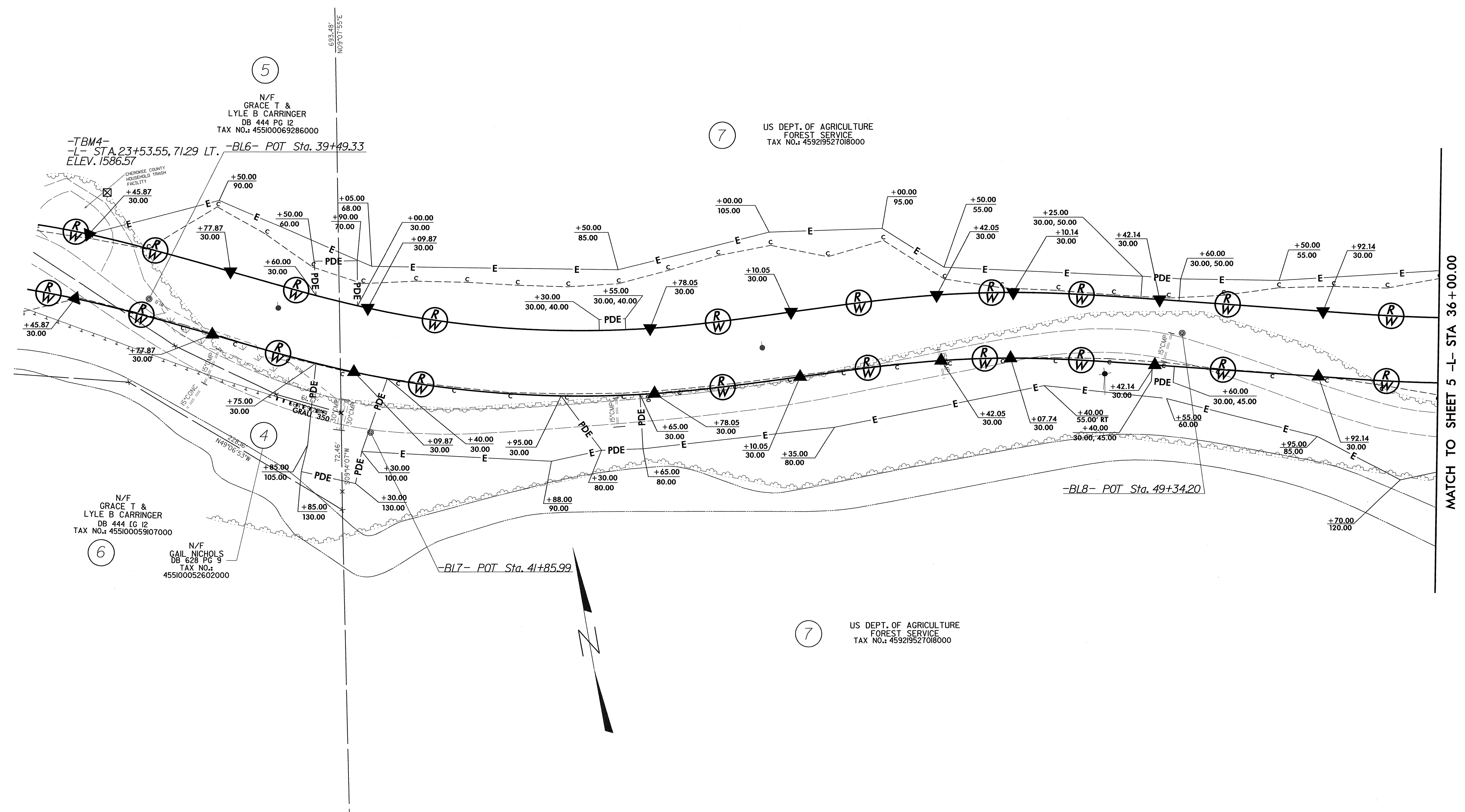
SUMMARY OF EARTHWORK
 IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBANKMENT +%	BORROW	WASTE
SUMMARY #1					
-L- 42+90.00 TO -L- 53+87.34 (BEGIN BRIDGE)	7,110		6,828		282
-Y3- 10+15.00 TO -Y3- 11+40.00	23		835	812	
SUBTOTAL: SUMMARY #1	7,133		7,663	812	282
SUMMARY #2					
-L- 55+92.34 (END BRIDGE) TO -L- 67+50.00	7,221		31,214	23,993	
-Y4- 10+12.00 TO -Y4- 12+00.00	1,083		3,388	2,305	
SUBTOTAL: SUMMARY #2	8,304		34,602	26,298	
SUMMARY TOTAL	15,437		42,265	27,110	282
LOSS DUE TO CLEARING AND GRUBBING	(-400)		400	400	
WASTE TO BE USED IN LIEU OF BORROW				-282	-282
SHOULDER CONSTRUCTION			1,774	1,774	
PROJECT TOTAL	15,037		44,439	29,002	
5% TO REPLACE TOPSOIL ON BORROW PIT(S)				1,450	
GRAND TOTAL	15,037			30,452	
SAY	15,050			30,500	

UNDERCUT CONTINGENCY (PER GEOTECH REPORT & DIVISION) = 1350 CY
 DDE = 390 CY
 NOTE: BORROW MATERIAL MAY BE REMOVED FROM NCDOT ROW OFF PROJECT LIMITS AS AVAILABLE AND AS DIRECTED BY THE ENGINEER.

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

REVISIONS



REVISIONS

MATCH TO SHEET 5 -L- STA 36+00.00

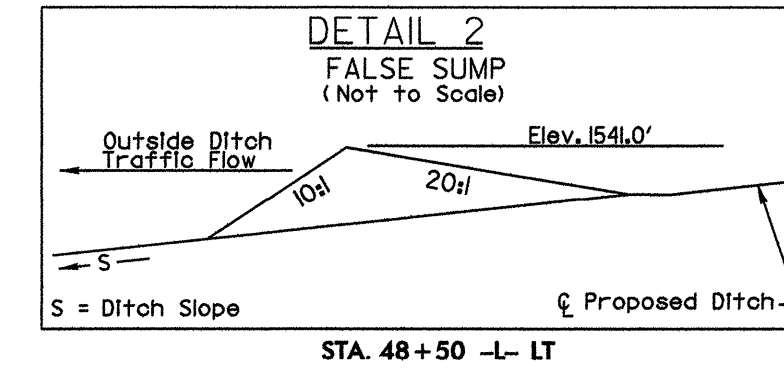
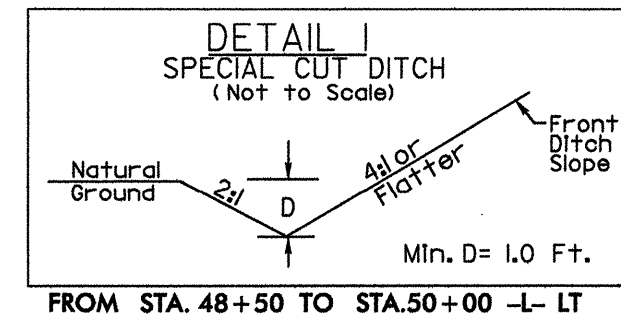
SHOWN FOR ROW PURPOSES ONLY (-L- R3622AB)

$PIs = 25+65.89$	$PI = 27+44.85$	$PIs = 29+22.07$	$PIs = 30+98.07$	$PI = 31+76.11$	$PIs = 32+54.16$
$\Theta_s = 3^\circ 57' 36.0''$	$\Delta = 16^\circ 05' 26.9'' (LT)$	$\Theta_s = 3^\circ 57' 36.0''$	$\Theta_s = 3^\circ 57' 36.0''$	$\Delta = 4^\circ 05' 07.4'' (RT)$	$\Theta_s = 3^\circ 57' 36.0''$
$Ls = 132.00'$	$D = 6^\circ 00' 00.0''$	$Ls = 132.00'$	$Ls = 132.00'$	$D = 6^\circ 00' 00.0''$	$Ls = 132.00'$
$LT = 88.02'$	$L = 268.18'$	$LT = 88.02'$	$LT = 88.02'$	$L = 68.09'$	$LT = 88.02'$
$ST = 44.02'$	$T = 134.98'$	$ST = 44.02'$	$ST = 44.02'$	$T = 34.06'$	$ST = 44.02'$
	$R = 954.93'$			$R = 954.93'$	

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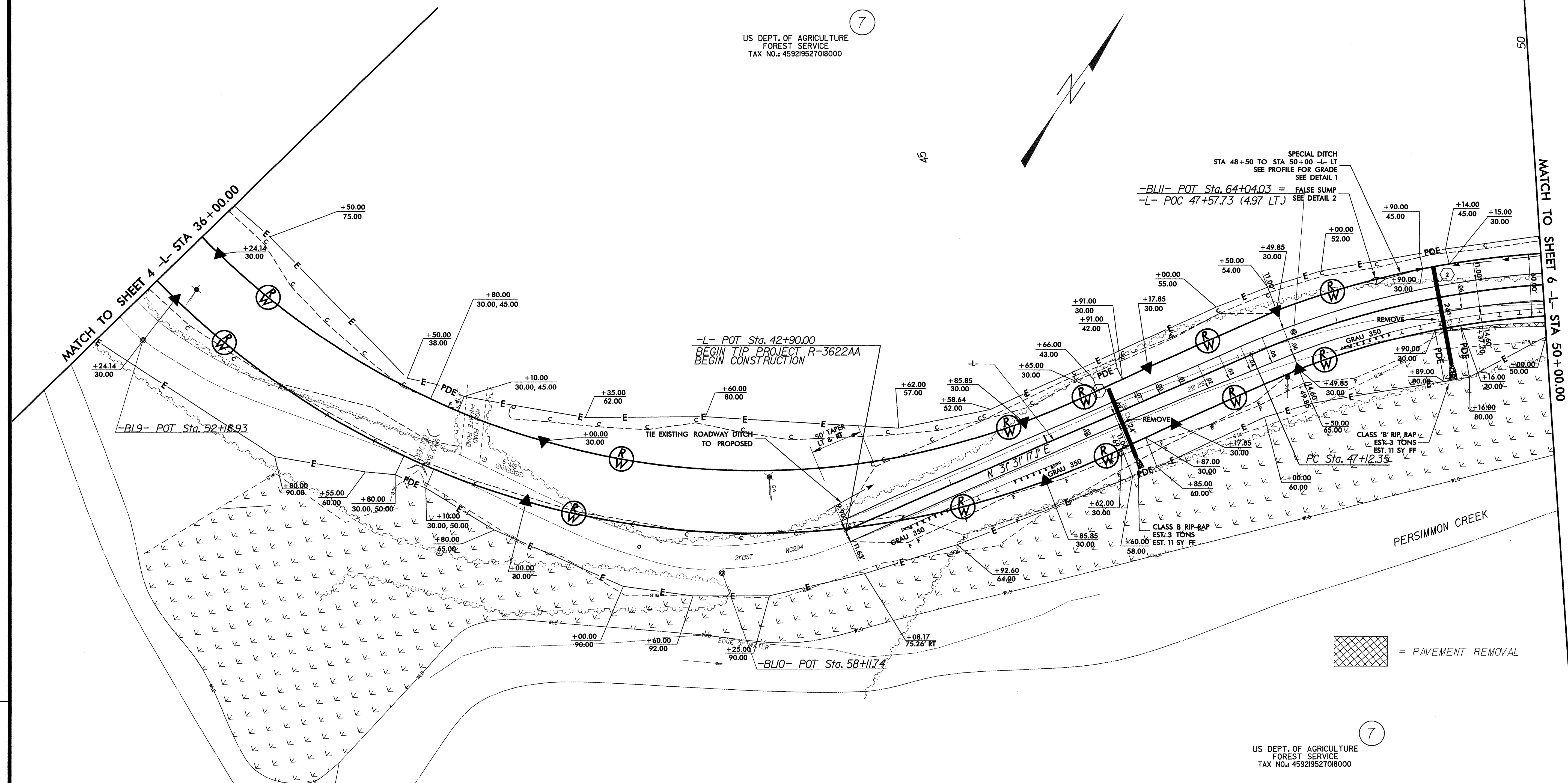
NOTE: EXISTING ROW OUTSIDE PROPOSED ROW LIMITS TO REVERT TO PROPERTY OWNER AT COMPLETION OF PROJECT.

SHEET SHOWN FOR ROW PURPOSES ONLY



-L- (R-3622AA)
 PI Sta 59+76.41
 $\Delta = 112^\circ 53' 09.8''$ (RT)
 $D = 6' 50' 00.0''$
 $L = 1,651.99'$
 $T = 1,264.06'$
 $R = 838.47'$
 $SE = .06$
 Runoff = 132'

US DEPT. OF AGRICULTURE
 FOREST SERVICE
 TAX NO.: 459219527018000



SHOWN FOR ROW PURPOSES ONLY (-L- R3622AB)

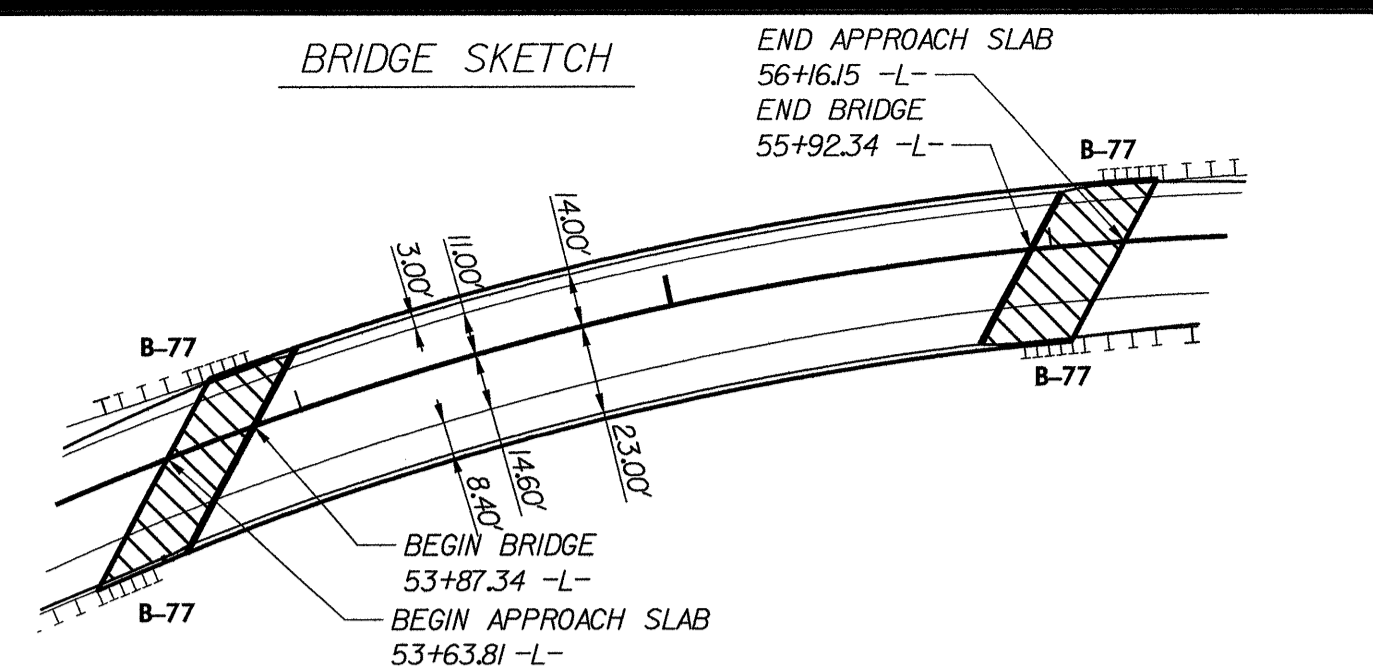
PIs = 35+80.17	PI = 41+07.35	PIs = 45+29.89
$\Theta_s = 4^\circ 57' 00.0''$	$\Delta = 64^\circ 37' 43.4''$ (LT)	$\Theta_s = 4^\circ 57' 00.0''$
$L_s = 132.00'$	$D = 7^\circ 30' 00.0''$	$L_s = 132.00'$
$LT = 88.03'$	$L = 861.72'$	$LT = 88.03'$
$ST = 44.03'$	$T = 483.21'$	$ST = 44.03'$
	$R = 763.94'$	

US DEPT. OF AGRICULTURE
 FOREST SERVICE
 TAX NO.: 459219527018000

7

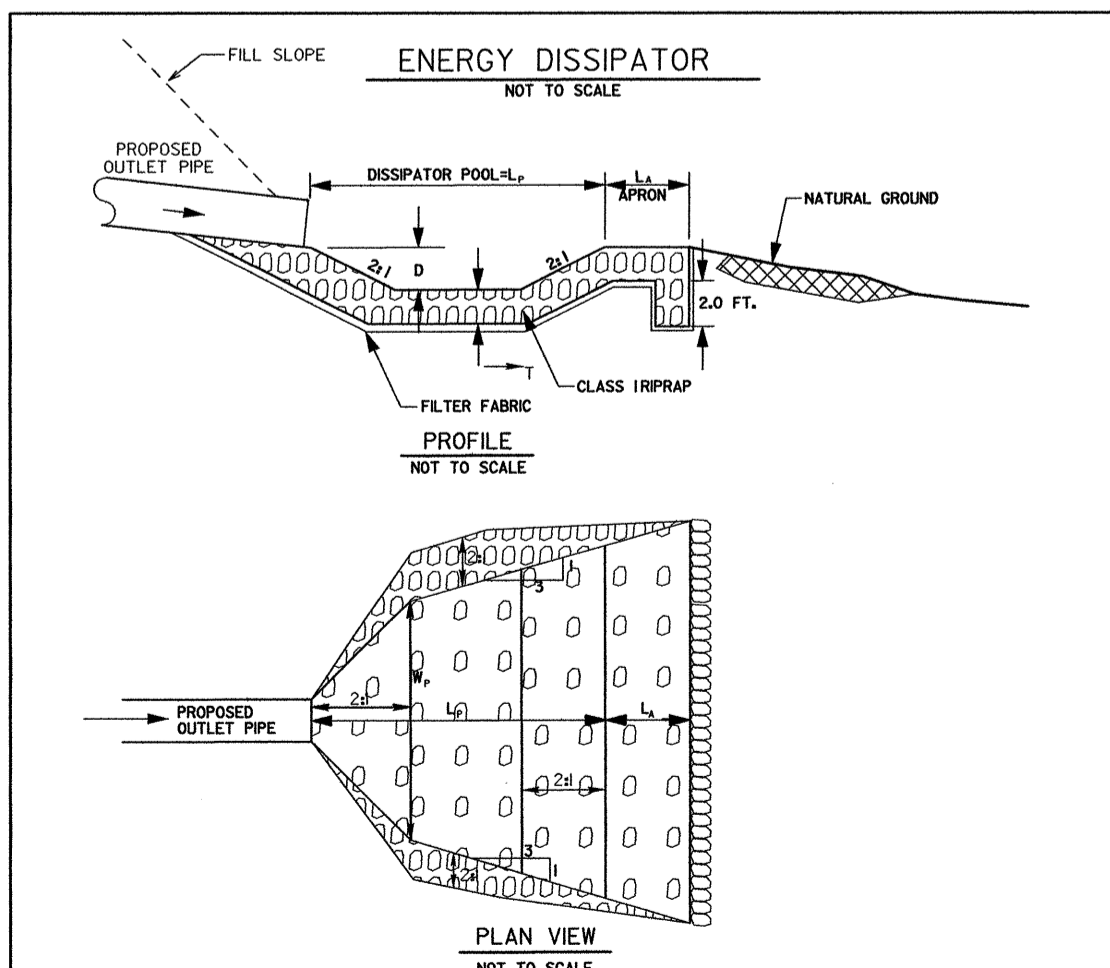
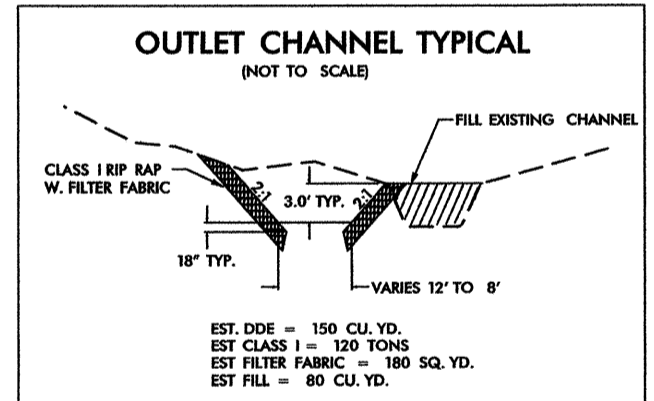
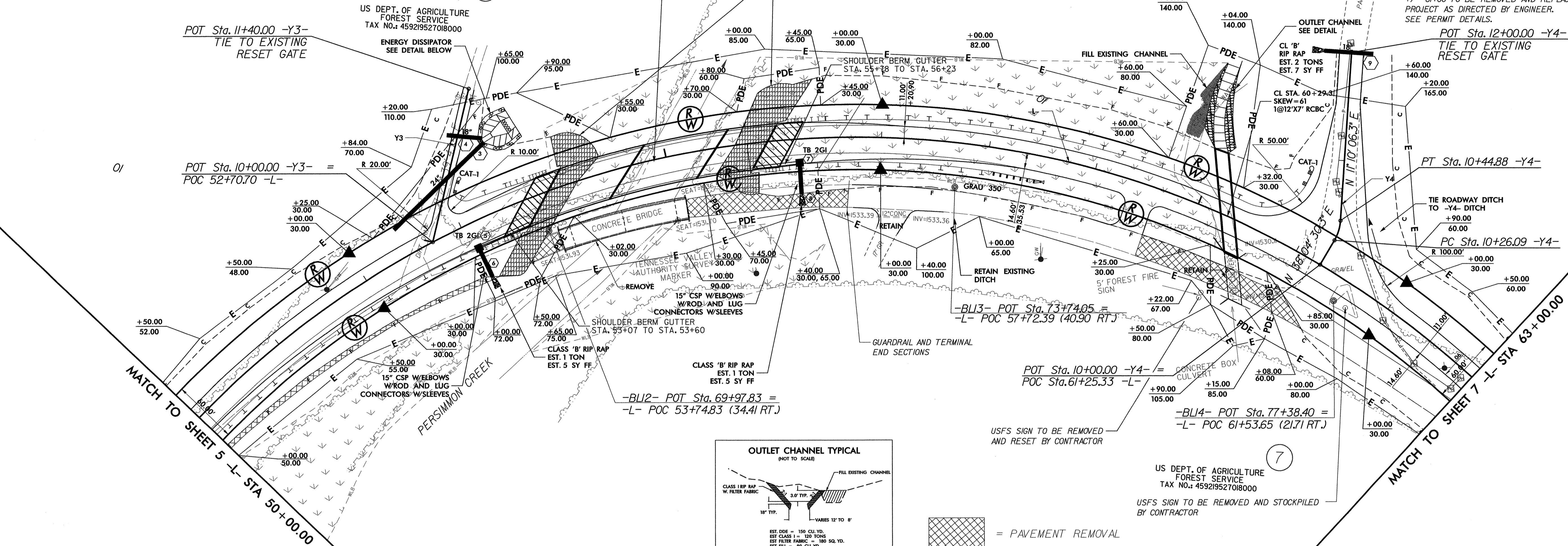
NOTE: EXISTING ROW OUTSIDE PROPOSED ROW LIMITS TO REVERT TO PROPERTY OWNER AT COMPLETION OF PROJECT.
 SEE SHEET 8 FOR -L- PROFILE
 SEE SHEETS X-2 THRU X-8 FOR -L- X-SECTIONS

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SHOWN FOR ROW PURPOSES ONLY (-L- R3622AA)

PIs Sta 47+05.88 Os = 4' 30" 36.0" Ls = 132.00' LT = 88.03' ST = 44.03'	PI Sta 59+12.07 Os = 108' 23" 00.0" (RT) D = 6' 50" 00.0" L = 1,586.10' T = 1,162.22' R = 838.47' SE = 0.06 1/1" DS = 50 mph	PIs = 63+49.34 Os = 0' 31" 30.0" Ls = 30.00' LT = 16.61' ST = 13.39'	PI = 64+77.27 Os = 7' 46" 49.4" (RT) D = 3' 30" 00.0" L = 222.30' T = 111.32' R = 1,637.02' SE = 0.05 1/1" DS = 50 mph	PIs = 66+24.92 Os = 1' 55" 30.0" Ls = 110.00' LT = 73.34' ST = 36.67'
---	---	--	---	---



STATION	L _p FT.	W _p FT.	L _a FT.	T FT.	D FT.	CLASS I RIP RAP TONS	DDE (CU YD)	FILTER FABRIC (SQ YD)
54+00 -L- LT	25.0	15.0	6.0	2.0	3.0	90	240	70

-Y4-
PI Sta 10+35.66
Δ = 26' 54" 24.1" (LT)
D = 143' 14" 22.0"
L = 18.78'
T = 9.57'
R = 40.00'

-L- (R3622AA)
PI Sta 59+76.41
Δ = 112' 53" 09.8" (RT)
D = 6' 50" 00.0"
L = 1,651.99'
T = 1,264.06'
R = 838.47'
SE = .06
Runoff = 132'

NOTE: 6 INCHES OF TOPSOIL FROM +/- 58+00 TO +/- 64+00 TO BE REMOVED AND REPLACED ON PROJECT AS DIRECTED BY ENGINEER. SEE PERMIT DETAILS.

PT Sta. 10+44.88 -Y4-
TIE ROADWAY DITCH TO -Y4- DITCH

US DEPT. OF AGRICULTURE
FOREST SERVICE
TAX NO.: 459219527018000
USFS SIGN TO BE REMOVED AND STOCKPILED BY CONTRACTOR

USFS SIGN TO BE REMOVED AND RESET BY CONTRACTOR

REVISIONS

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NOTE: EXISTING ROW OUTSIDE PROPOSED ROW LIMITS TO REVERT TO PROPERTY OWNER AT COMPLETION OF PROJECT.
SEE SHEET 9 FOR -L- PROFILE
SEE SHEETS X-8 THRU X-15 FOR -L- X-SECTIONS
SEE SHEET 11 FOR Y-3 AND Y-4 PROFILES
SEE SHEETS X-20 THRU X-22 FOR Y-3 AND Y-4 X-SECTIONS
SEE SHEETS S-1 THRU S-36 FOR BRIDGE DESIGN
SEE SHEETS C-1 THRU C-4 FOR CULVERT DESIGN

-L- (R3622AA)

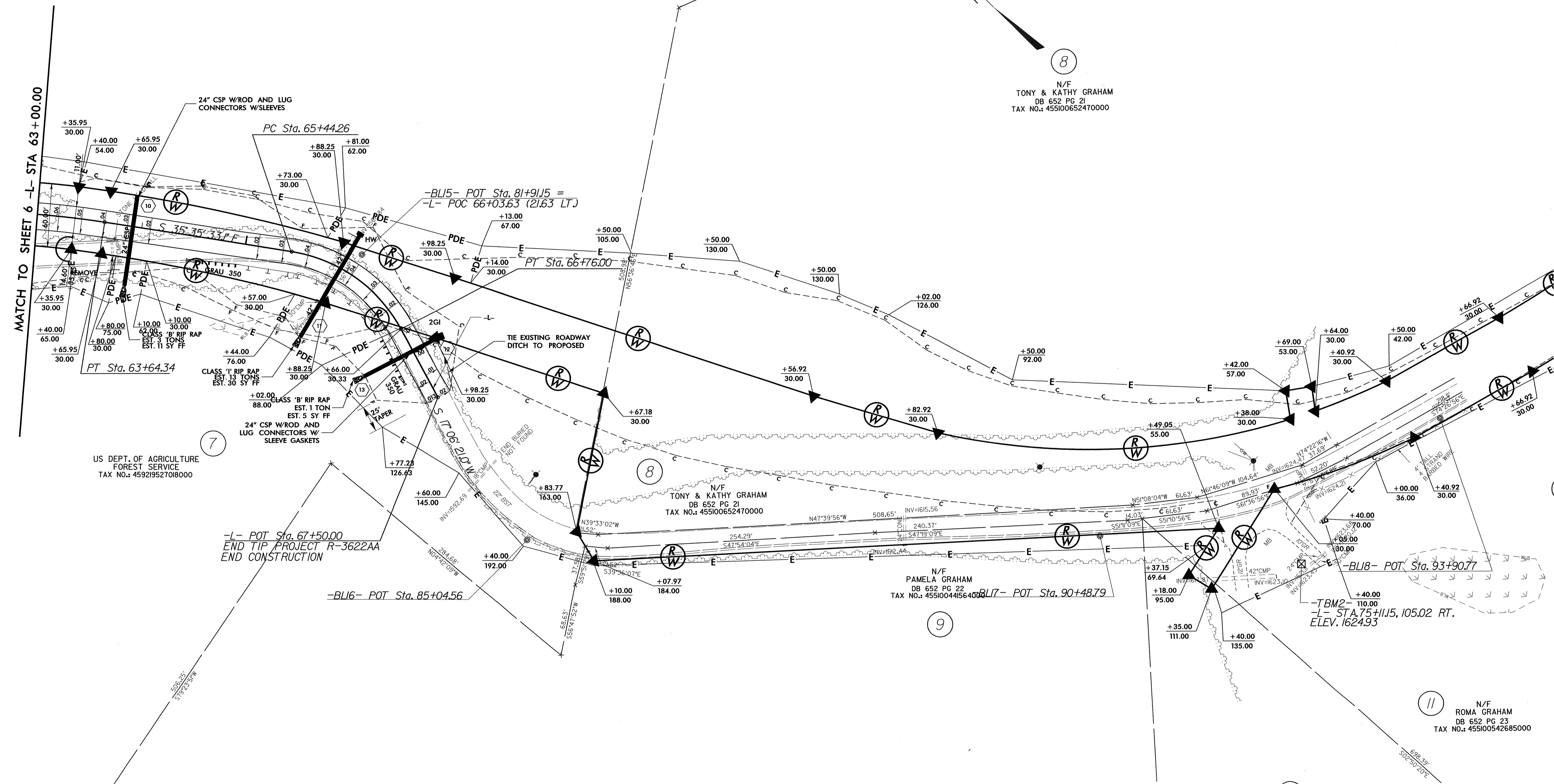
PI Sta 59+76.41	PI Sta 66+15.20
$\Delta = 112^{\circ} 53' 09.8''$ (RT)	$\Delta = 52^{\circ} 41' 54.1''$ (RT)
D = 6' 50' 00.0"	D = 39' 59' 59.9"
L = 1,651.99'	L = 131.75'
T = 1,264.06'	T = 70.95'
R = 838.47'	R = 143.24'
SE = .06	SE = .04
Runoff = 132'	Runoff = 96'

US DEPT. OF AGRICULTURE
FOREST SERVICE
TAX NO.: 459219527018000

N/F
TONY & KATHY GRAHAM
DB 652 PG 21
TAX NO.: 455100652470000

N/F
PAMELA GRAHAM
DB 652 PG 22
TAX NO.: 455100441564000

N/F
ROMA GRAHAM
DB 652 PG 23
TAX NO.: 455100542685000



MATCH TO SHEET 6 -L- STA 63+00.00

REVISIONS

US DEPT. OF AGRICULTURE
FOREST SERVICE
TAX NO.: 459219527018000

-L- POT Sta. 67+50.00
END TIP PROJECT R-3622AA
END CONSTRUCTION

SHOWN FOR ROW PURPOSES ONLY (-L- R3622AA)

PIs = 47+05.88	PI = 59+12.07	PIs = 63+49.34	PI = 64+77.27	PIs = 66+24.92	PIs = 71+40.95	PI = 74+21.15	PIs = 76+82.95
$\theta_s = 4^{\circ} 30' 36.0''$	$\Delta = 108^{\circ} 23' 00.0''$ (RT)	$\theta_s = 0^{\circ} 31' 30.0''$	$\Delta = 7^{\circ} 46' 49.4''$ (RT)	$\theta_s = 1^{\circ} 55' 30.0''$	$\theta_s = 5^{\circ} 21' 18.0''$	$\Delta = 38^{\circ} 55' 48.5''$ (LT)	$\theta_s = 5^{\circ} 21' 18.0''$
Ls = 132.00'	D = 6' 50' 00.0"	$\theta_s = 1^{\circ} 01' 30.0''$	D = 3' 30' 00.0"	Ls = 110.00'	Ls = 126.00'	D = 8' 30' 00.0"	Ls = 126.00'
LT = 88.03'	L = 1,586.10'	Ls = 30.00'	L = 222.30'	LT = 73.34'	LT = 84.04'	L = 458.00'	LT = 84.04'
ST = 44.03'	T = 1,162.22'	LT = 16.61'	T = 111.32'	ST = 36.67'	ST = 42.03'	T = 238.24'	ST = 42.03'
	R = 838.47'	ST = 13.39'	R = 1,637.02'			R = 674.07'	
	SE = 0.06 '/'		SE = 0.05 '/'			SE = 0.06 '/'	
	DS = 50 mph		DS = 50 mph			DS = 45 mph	

NOTE: EXISTING ROW OUTSIDE PROPOSED ROW LIMITS TO REVERT TO PROPERTY OWNER AT COMPLETION OF PROJECT.
SEE SHEET 10 FOR -L- PROFILE
SEE SHEETS X-15 THRU X-19 FOR -L- X-SECTIONS

-TBM4-
-L- STA. 23+53.55, 71.29 LT.
ELEV. 1586.57

BEGIN GRADE -L-
STA. 42+90.00
ELEV. 1540.21

PI = 43+40.00
EL = 1,539.89'

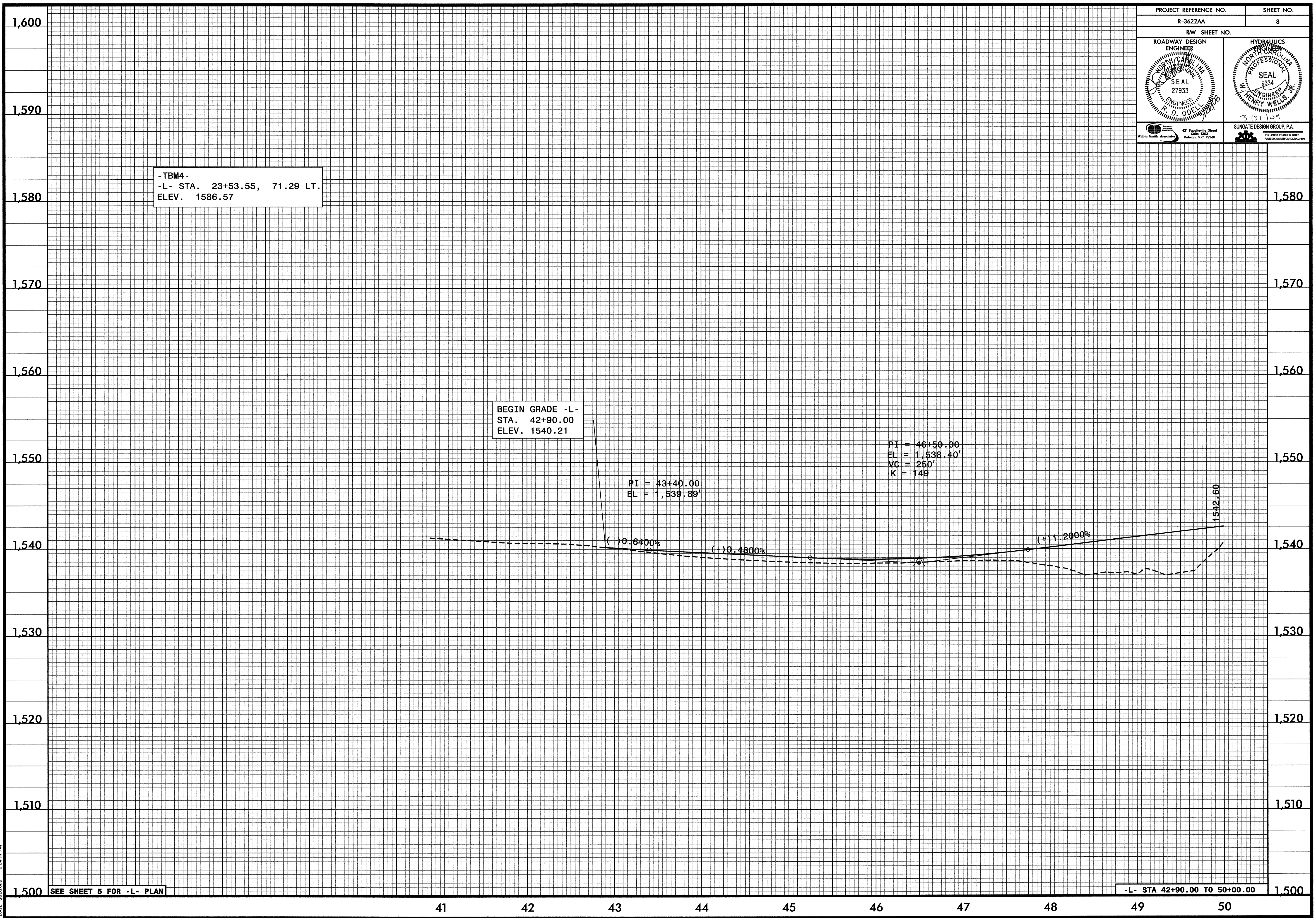
PI = 46+50.00
EL = 1,538.40'
VC = 250'
K = 149

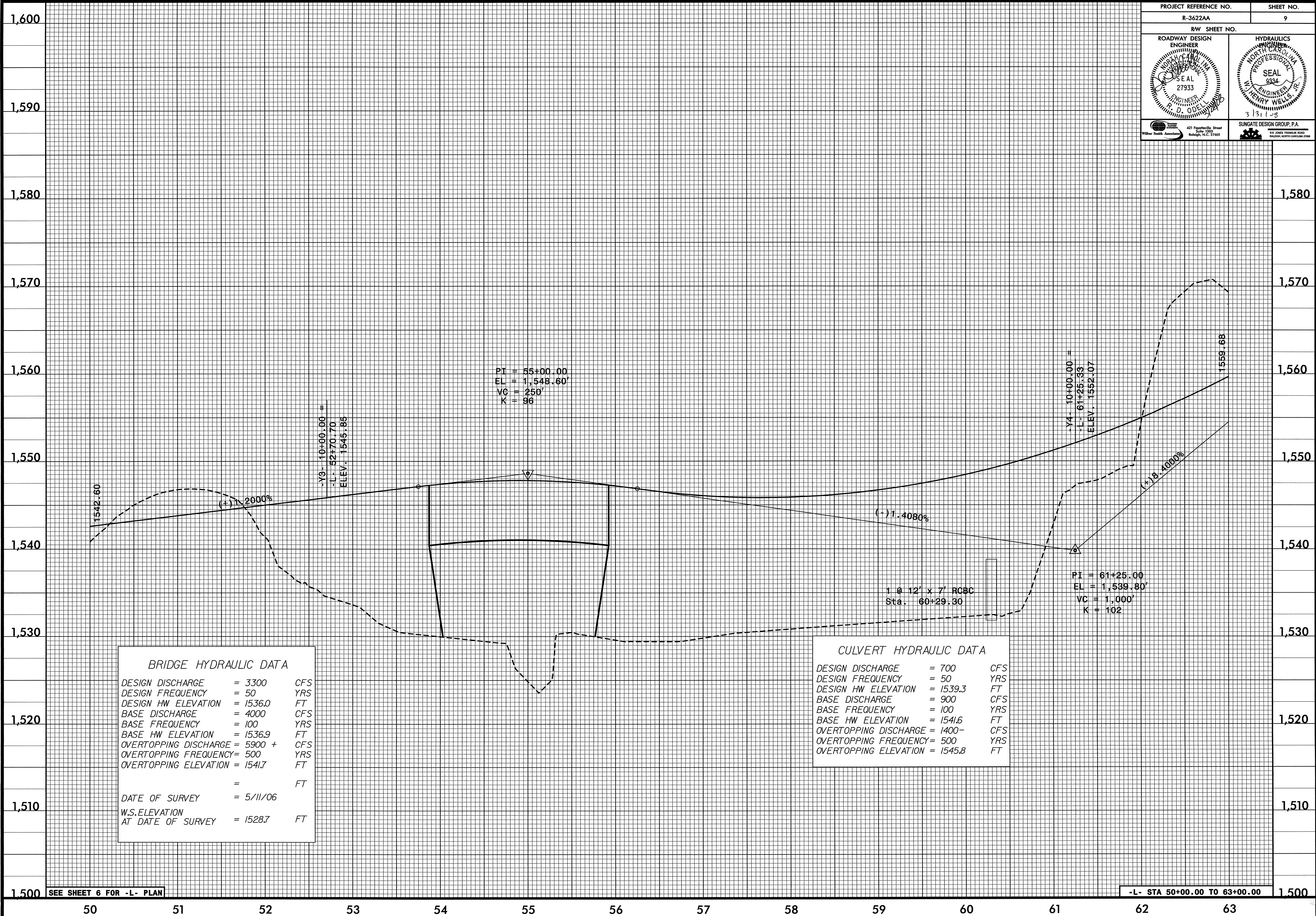
15+42.60

SEE SHEET 5 FOR -L- PLAN

-L- STA 42+90.00 TO 50+00.00

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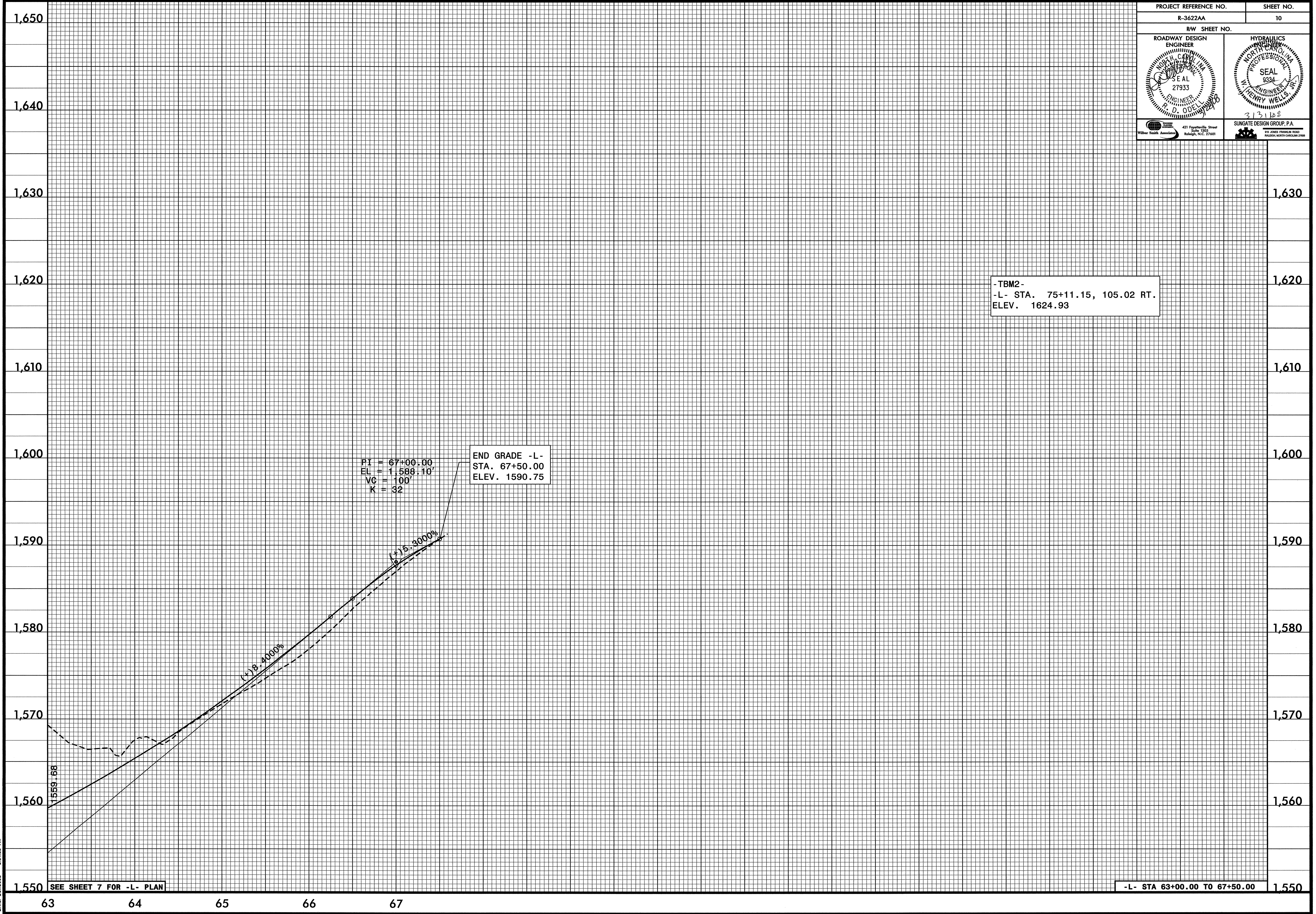
BRIDGE HYDRAULIC DATA		
DESIGN DISCHARGE	= 3300	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 1536.0	FT
BASE DISCHARGE	= 4000	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 1536.9	FT
OVERTOPPING DISCHARGE	= 5900 +	CFS
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING ELEVATION	= 1541.7	FT
	=	FT
DATE OF SURVEY	= 5/11/06	
W.S. ELEVATION AT DATE OF SURVEY	= 1528.7	FT

CULVERT HYDRAULIC DATA		
DESIGN DISCHARGE	= 700	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 1539.3	FT
BASE DISCHARGE	= 900	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 1541.6	FT
OVERTOPPING DISCHARGE	= 1400-	CFS
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING ELEVATION	= 1545.8	FT

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 DATE: 07/28/08 2:34:53 PM

SEE SHEET 6 FOR -L- PLAN

-L- STA 50+00.00 TO 63+00.00



FILE: r:\model\3622a\roadway\Proj\R3622AA_Rwy_pfl10.dgn
 DATE: 3/27/2008 2:34:55 PM

-Y3-

-Y4-

BEGIN GRADE -Y3-
STA 10+00.00
EL 1545.85

BEGIN GRADE -Y4-
STA 10+00.00
EL 1552.07

END GRADE -Y4-
STA 12+00.00
EL 1541.86

END GRADE -Y3-
STA 11+40.00
EL 1538.57

PI = 10+14.50
 EL = 1,546.62
 PI = 10+30.00
 EL = 1,546.62
 PI = 10+45.00
 EL = 1,545.72
 PI = 10+65.00
 EL = 1,543.52
 PI = 10+80.00
 EL = 1,541.27
 PI = 11+00.00
 EL = 1,539.07
 PI = 11+15.00
 EL = 1,538.26
 PI = 11+35.00
 EL = 1,538.33

PI = 10+12.50
 EL = 1,552.82
 PI = 10+25.00
 EL = 1,552.82
 PI = 10+40.00
 EL = 1,552.07
 PI = 11+00.00
 EL = 1,546.07
 PI = 11+60.00
 EL = 1,542.42

SEE SHEET 6 FOR Y3 PLAN

Y3 10+00.00 TO 11+40.00

SEE SHEET 6 FOR Y4 PLAN

Y4 10+00.00 TO 12+00.00

FILE: c:\msd\1\852a\roadway\proj\83622AA_Rwy_pfl1.dgn
DATE: 3/22/08 2:45:58 PM