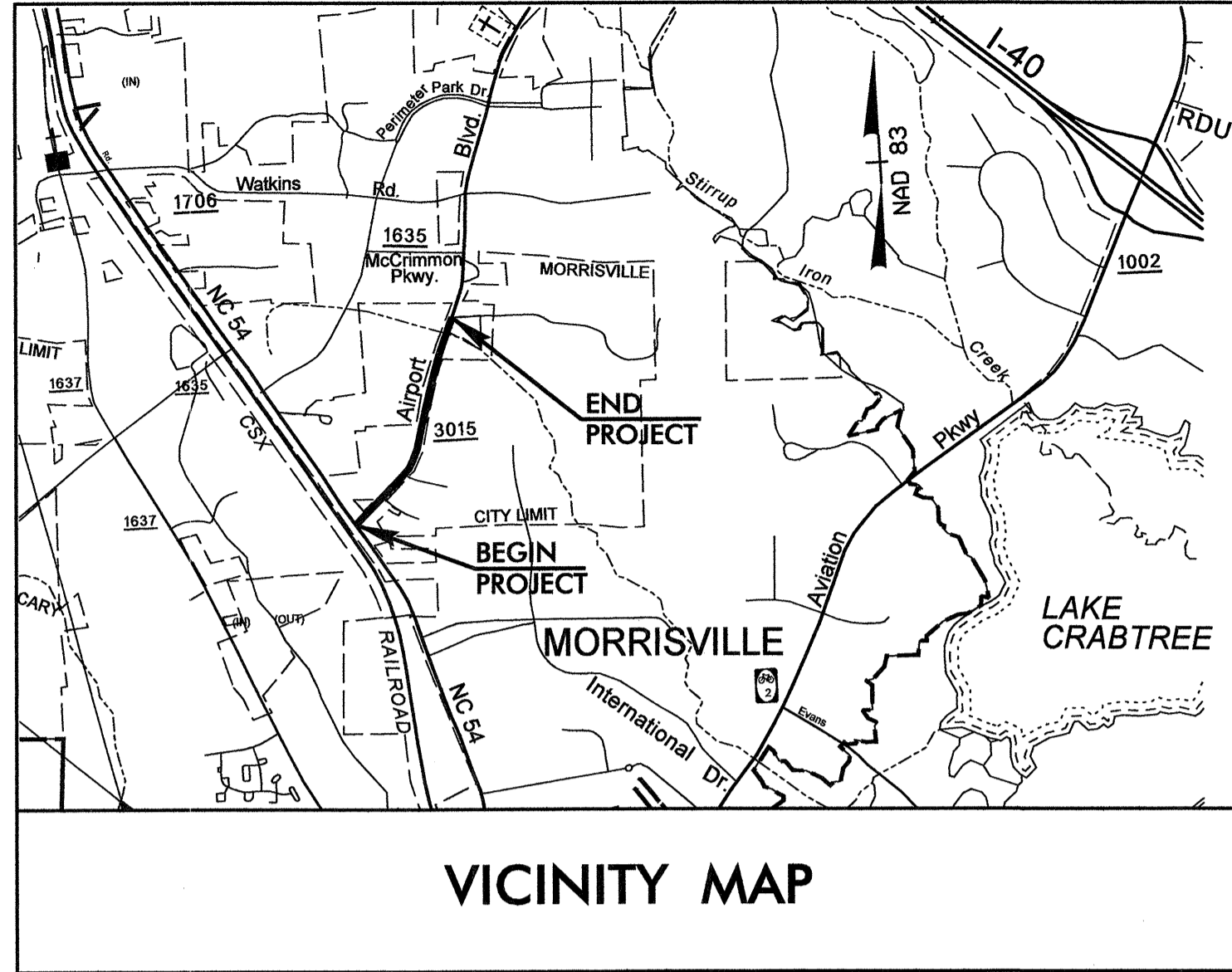


TIP PROJECT: U-3344A

CONTRACT NO.: C201144

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



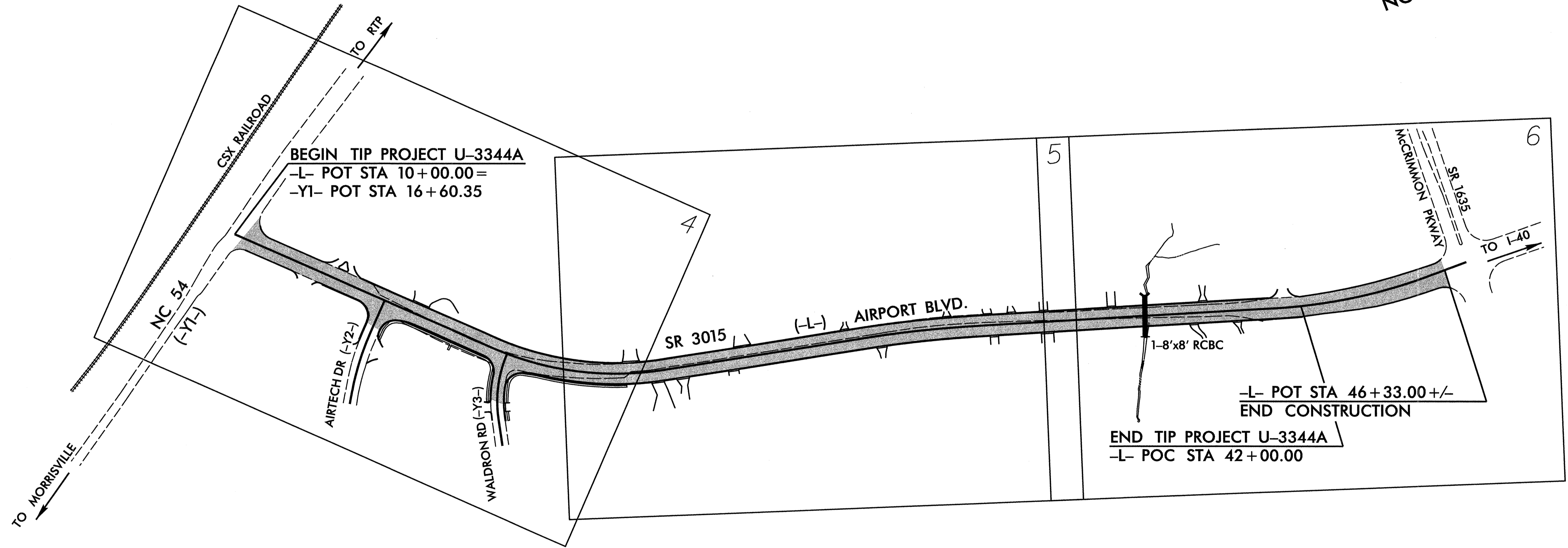
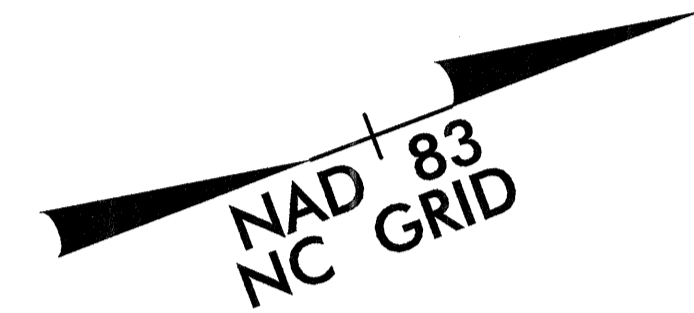
VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
WAKE COUNTY

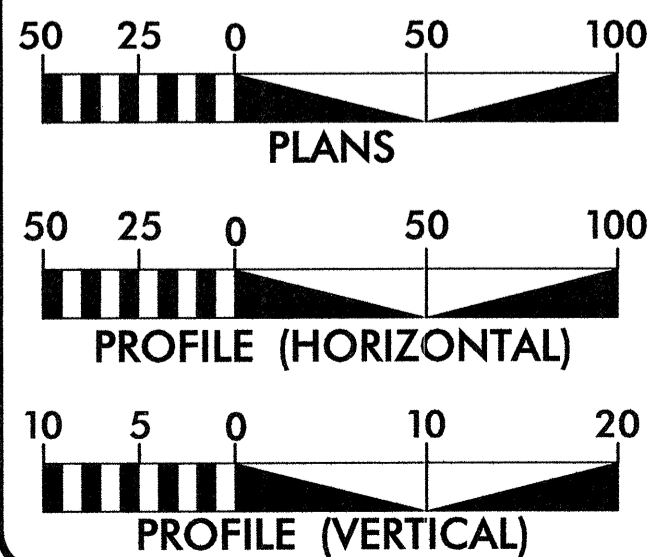
**LOCATION: MORRISVILLE - SR 3015 (AIRPORT BLVD.)
FROM NC 54 TO McCRIMMON PARKWAY**

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3344A	1	
W.M. NO.	F.A. PROJ. NO.	DESCRIPTION	
34934.1.1		PE	
34934.2.1		RW, UTIL.	
34934.3.3		CONST.	



GRAPHIC SCALES



DESIGN DATA

ADT 2006 = 16,500
ADT 2026 = 37,800
DHV = 11 %
D = 55 %
*T = 7 %
V = 50 MPH
FUNC CLASS = LOCAL
*(TTST 3 % + DUAL 4 %)

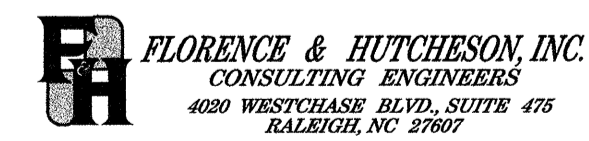
PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-3344A = 0.606 Mile
TOTAL LENGTH TIP PROJECT U-3344A = 0.606 Mile

NCDOT CONTACT:

DOUG TAYLOR, PE
PROJECT ENGINEER - DESIGN SERVICES

Prepared in the Office of:



FOR THE NORTH CAROLINA DEPT. OF TRANSPORTATION

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
FEBRUARY 20, 2004

LETTING DATE:
JANUARY 16, 2007

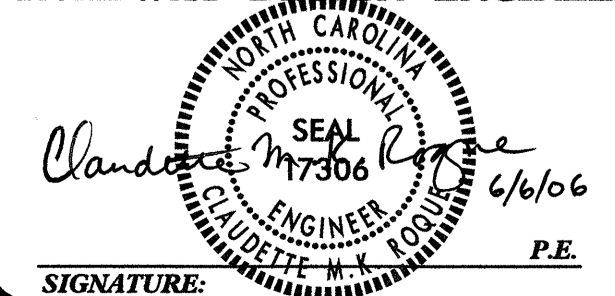
CLAUDETTE M.K. ROQUE, PE
PROJECT ENGINEER

HENRY W. BARE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER



ROADWAY DESIGN ENGINEER



**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

Curt Miller
STATE DESIGN ENGINEER P.E.

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR DATE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

*S.U.E = SUBSURFACE UTILITY ENGINEER

CONVENTIONAL SYMBOLS

ROADS & RELATED ITEMS

Edge of Pavement	
Curb	
Prop. Slope Stakes Cut	
Prop. Slope Stakes Fill	
Prop. Woven Wire Fence	
Prop. Chain Link Fence	
Prop. Barbed Wire Fence	
Prop. Wheelchair Ramp	
Curb Cut for Future Wheelchair Ramp	
Exist. Guardrail	
Prop. Guardrail	
Equality Symbol	
Pavement Removal	

RIGHT OF WAY

Baseline Control Point	
Existing Right of Way Marker	
Exist. Right of Way Line w/Marker	
Prop. Right of Way Line with Proposed	
RW Marker (Iron Pin & Cap)	
Prop. Right of Way Line with Proposed	
(Concrete or Granite) RW Marker	
Exist. Control of Access Line	
Prop. Control of Access Line	
Exist. Easement Line	
Prop. Temp. Construction Easement Line	
Prop. Temp. Drainage Easement Line	
Prop. Perm. Drainage Easement Line	

HYDROLOGY

Stream or Body of Water	
Riparian Buffer Zone	
Flow Arrow	
Disappearing Stream	
Spring	
Swamp Marsh	
Shoreline	
Falls, Rapids	
Prop Lateral, Tail, Head Ditches	

STRUCTURES

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

MINOR	
Head & End Wall	
Pipe Culvert	
Footbridge	
Drainage Boxes	
Paved Ditch Gutter	

UTILITIES

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

Recorded Water Line	
Designated Water Line (S.U.E.*)	
Sanitary Sewer	
Recorded Sanitary Sewer Force Main	
Designated Sanitary Sewer Force Main(S.U.E.*)	
Recorded Gas Line	
Designated Gas Line (S.U.E.*)	
Storm Sewer	
Recorded Power Line	
Designated Power Line (S.U.E.*)	
Recorded Telephone Cable	
Designated Telephone Cable (S.U.E.*)	
Recorded U/G Telephone Conduit	
Designated U/G Telephone Conduit (S.U.E.*)	
Unknown Utility (S.U.E.*)	
Recorded Television Cable	
Designated Television Cable (S.U.E.*)	
Recorded Fiber Optics Cable	
Designated Fiber Optics Cable (S.U.E.*)	
Exist. Water Meter	
UG Test Hole (S.U.E.*)	
Abandoned According to U/G Record	
End of Information	

BOUNDARIES & PROPERTIES

State Line	
County Line	
Township Line	
City Line	
Reservation Line	
Property Line	
Property Line Symbol	
Exist. Iron Pin	
Property Corner	
Property Monument	
Property Number	
Parcel Number	
Fence Line	
Existing Wetland Boundaries	
High Quality Wetland Boundary	
Medium Quality Wetland Boundaries	
Low Quality Wetland Boundaries	
Proposed Wetland Boundaries	
Existing Endangered Animal Boundaries	
Existing Endangered Plant Boundaries	

BUILDINGS & OTHER CULTURE

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

TOPOGRAPHY

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

VEGETATION

Single Tree	
Single Shrub	
Hedge	
Woods Line	
Orchard	
Vineyard	

RAILROADS

Standard Gauge	
RR Signal Milepost	
Switch	

6/2/99

SURVEY CONTROL SHEET U-3344A

PROJECT REFERENCE NO.	SHEET NO.
U-3344A	1 C
Location and Surveys	

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
101	BL-101	760367.3590	2049590.2230	345.57	OUTSIDE PROJECT LIMITS	
102	BL-102	760521.1020	2049796.6400	346.67	OUTSIDE PROJECT LIMITS	
103	BL-103	760633.4250	2049931.7830	346.68	10+35.29	48.91 RT
104	BL-104	760907.4060	2050214.5090	358.52	14+28.93	41.99 RT
105	BL-105	761218.8220	2050579.4030	351.09	19+01.63	68.45 RT
106	BL-106	761868.9760	2050782.9090	344.23	25+66.37	0.06 LT
107	BL-107	762404.5170	2050928.0050	349.59	31+21.47	3.91 RT
108	BL-108	762964.0250	2051128.6760	331.12	37+16.06	7.50 RT
109	BL-109	763526.6110	2051338.9880	342.92	43+13.59	28.68 RT

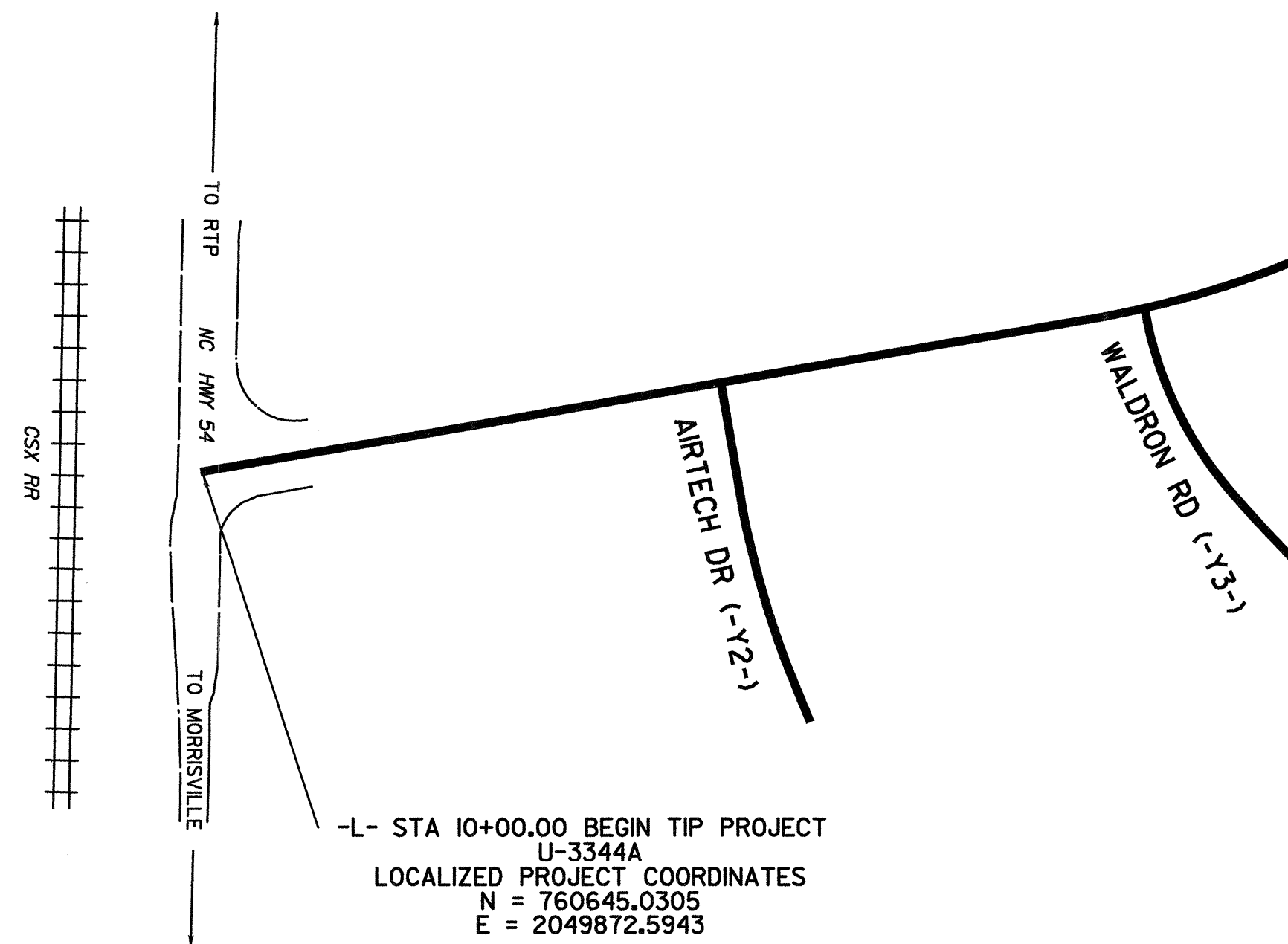
BY2 POINT	DESC.	NORTH	EAST	ELEVATION	Y2 STATION	OFFSET
104	BL-104	760907.4060	2050214.5090	358.52	10+41.96	48.66 RT
207	BY2-207	760690.9940	2050518.0640	360.93	OUTSIDE PROJECT LIMITS	

BY3 POINT	DESC.	NORTH	EAST	ELEVATION	Y3 STATION	OFFSET
105	BL-105	761218.8220	2050579.4030	351.09	10+73.41	34.45 LT
209	BY3-209	761118.8910	2050907.9730	348.48	OUTSIDE PROJECT LIMITS	

.....
 BM1 ELEVATION = 354.79
 N 760777 E 2049889
 L STATION 11+02 85 LEFT
 X CUT IN CONC. BASE TO LIGHT POLE,
 EXXON PARKING LOT

.....
 BM2 ELEVATION = 345.59
 N 761648 E 2050617
 L STATION 23+09 107 LEFT
 X CUT IN CORNER OF CONC. PAD AT
 RESEARCH TRIANGLE INDUSTRIAL CENTER

.....
 BM3 ELEVATION = 347.28
 N 763873 E 2051192
 L STATION 46+12
 N 74° 18' 03.6" W DIST 162.91
 X CUT IN CONC. BASE TO LIGHT POLE, AT
 MCCRIMMON PKWY. AND AIRPORT BLVD.



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "VIEW" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 768563.059(ft) EASTING: 2055003.974(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9999176 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "VIEW" TO -L- STATION 10+00.00 IS S32°56'44.78"W 9,435.371 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NGVD 29

NOTES:

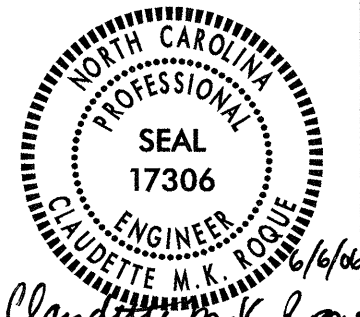
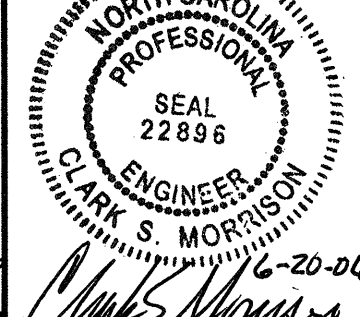
THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project)
 FILE NAME: u3344a_ls_control_050107.txt

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

© INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.

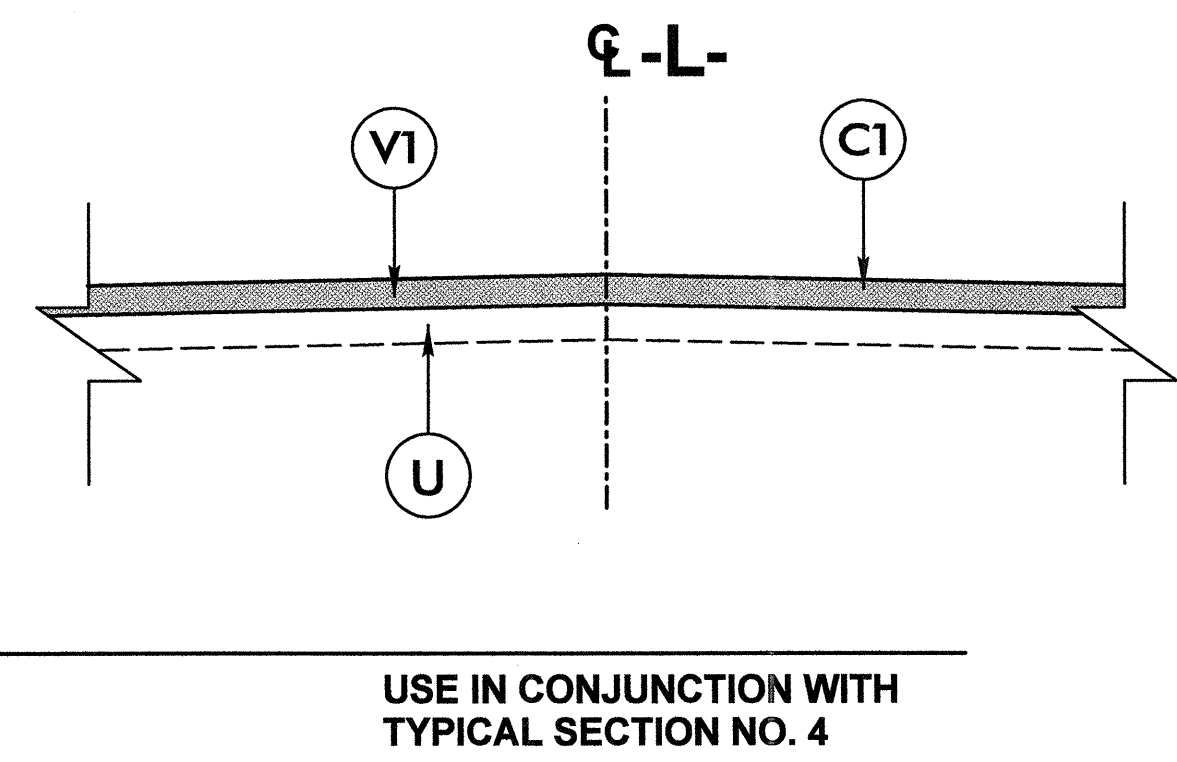
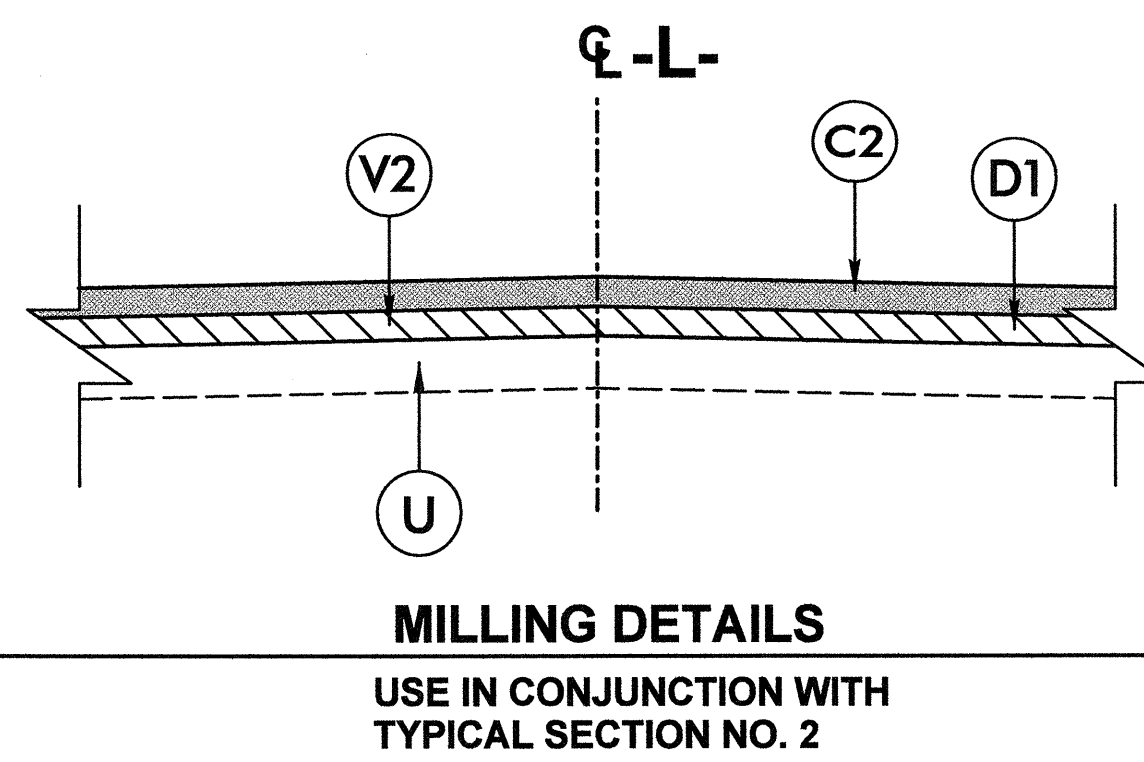
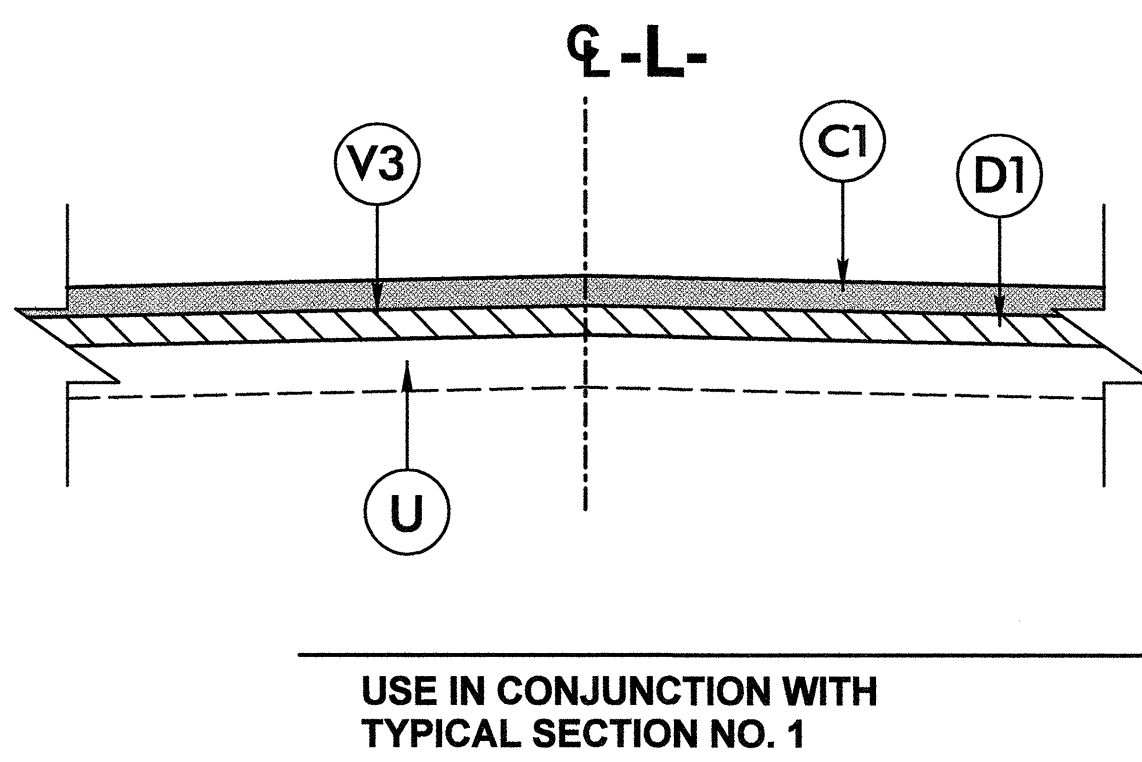
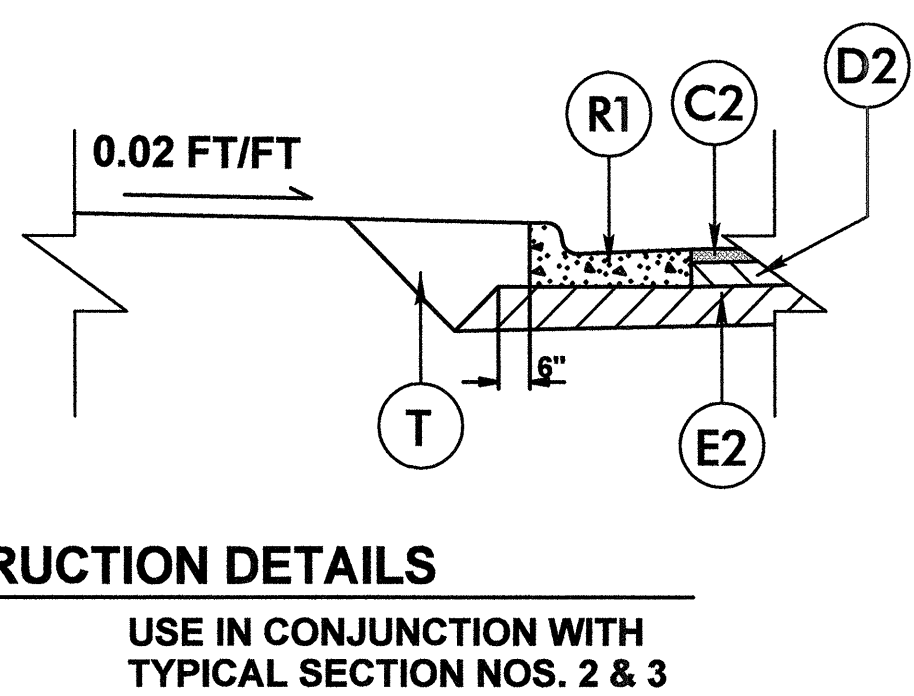
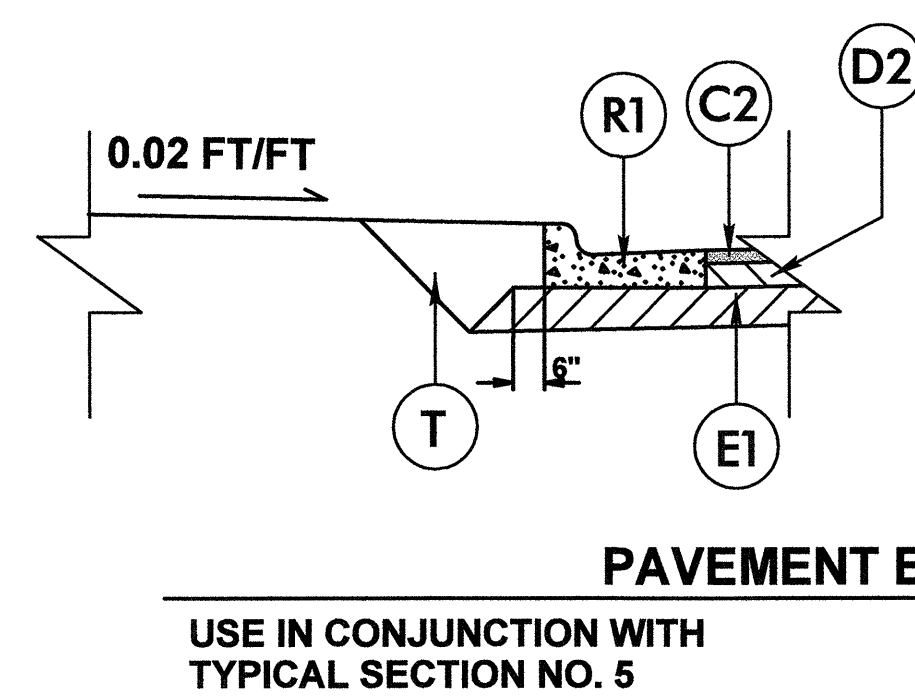
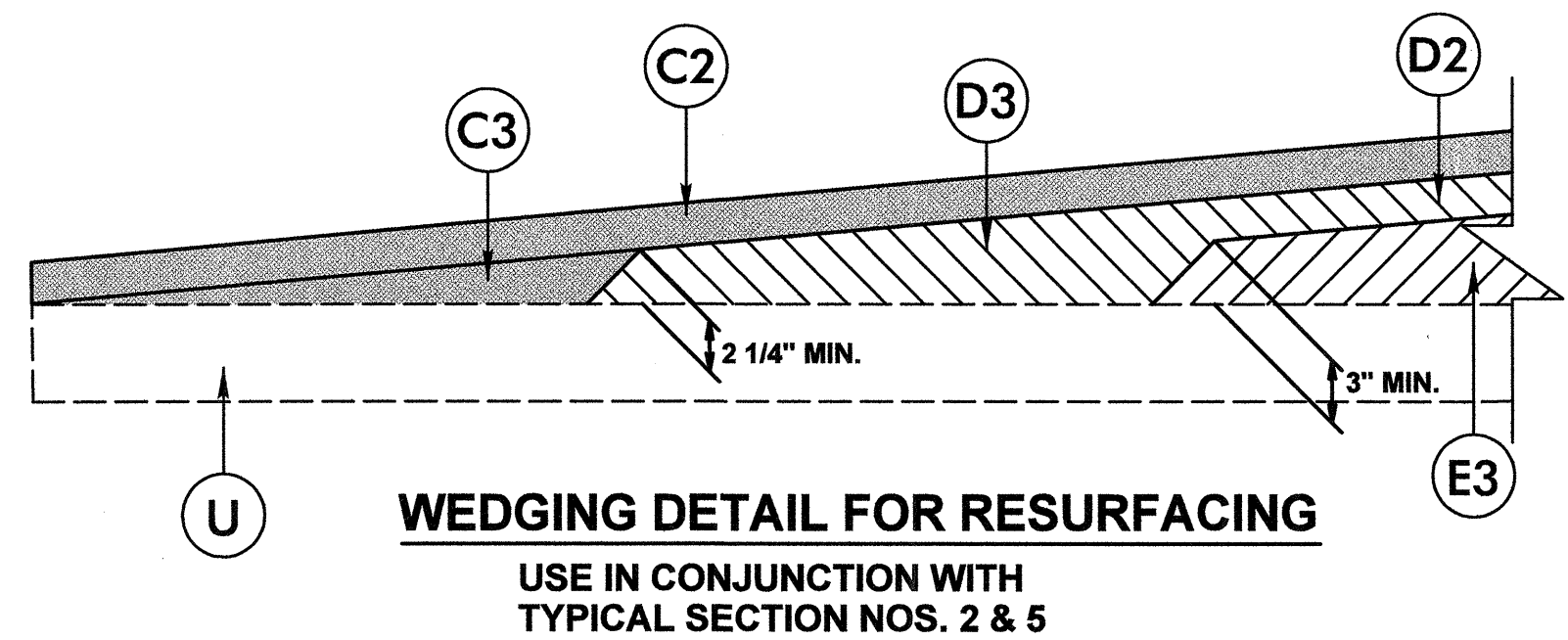
NOTE: DRAWING NOT TO SCALE

SYSTEMS ENGINEERING

PROJECT REFERENCE NO. U-3344A	SHEET NO. 2
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER 
PLANS PREPARED BY: FLORENCE & HUTCHESON, INC. CONSULTING ENGINEERS 4020 WESTCHASE BLVD., SUITE 475 RALEIGH, NC 27607	

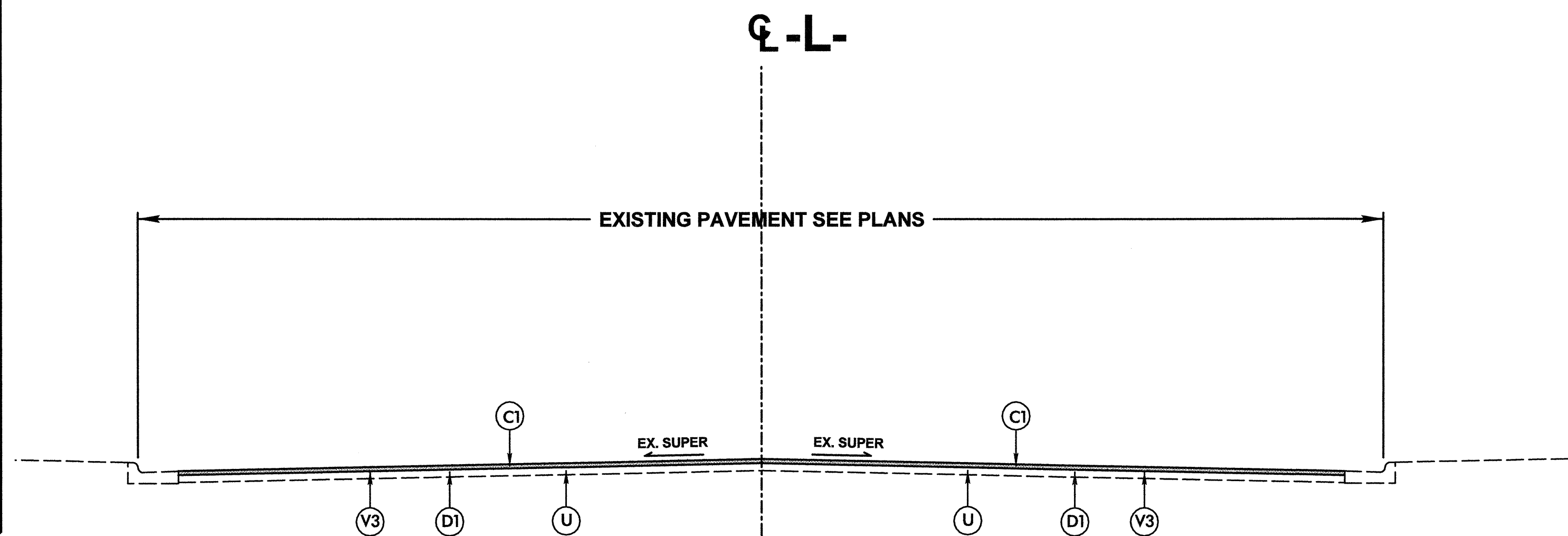
PAVEMENT SCHEDULE			
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	R1	2'-6" CONCRETE CURB AND GUTTER.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	S	4" CONCRETE SIDEWALK.
C3	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 TO EXCEED 2" IN DEPTH.	T	EARTH MATERIAL.
D1	PROP. APPROX. 2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	U	EXISTING PAVEMENT.
D2	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	V1	MILLING BITUMINOUS PAVEMENT TO A DEPTH OF 1½".
D3	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 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.	V2	MILLING BITUMINOUS PAVEMENT TO A DEPTH OF 2½".
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	V3	MILLING BITUMINOUS PAVEMENT TO A DEPTH OF 4".
E2	PROP. APPROX. 5½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.	W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL ON THIS SHEET).
E3	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 5½" IN DEPTH.		

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



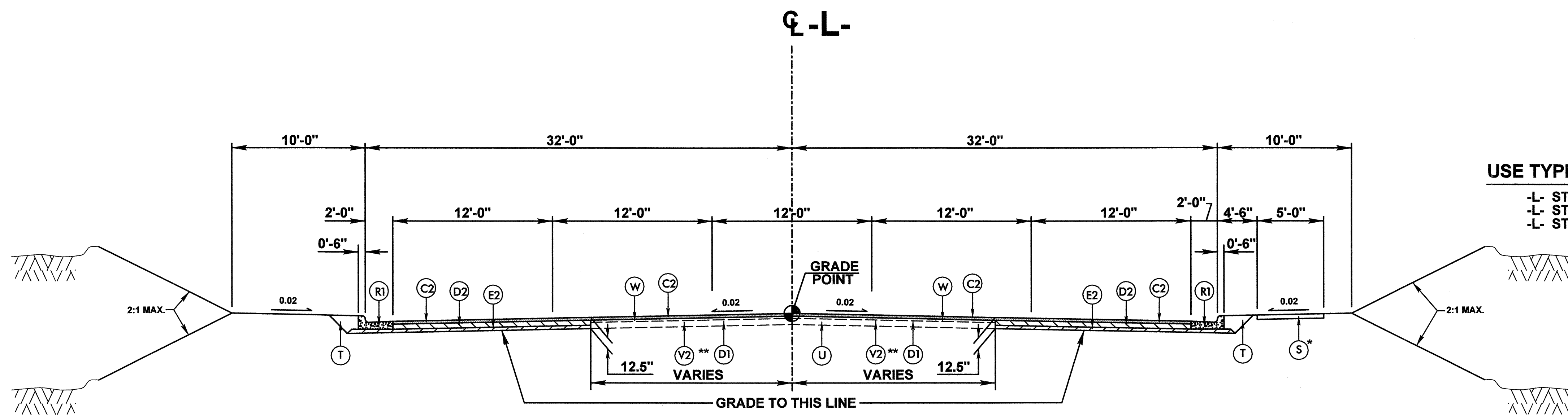
PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B
D1	PROP. APPROX. 2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B
D2	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, I19.0B
D3	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, I19.0B
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B
E2	PROP. APPROX. 5½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B
E3	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B
R1	2'-6" CONCRETE CURB AND GUTTER.
S	4" CONCRETE SIDEWALK.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V1	MILLING BITUMINOUS PAVEMENT TO A DEPTH OF 1½".
V2	MILLING BITUMINOUS PAVEMENT TO A DEPTH OF 2½".
V3	MILLING BITUMINOUS PAVEMENT TO A DEPTH OF 4".
W	VARIABLE DEPTH ASPHALT PAVEMENT
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.	

PROJECT REFERENCE NO. U-3344A	SHEET NO. 2-A
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER
PLANS PREPARED BY: FLORENCE & HUTCHESON, INC. CONSULTING ENGINEERS 4020 WESTCHASE BLVD., SUITE 475 RALEIGH, NC 27607	



TYPICAL SECTION NO. 1

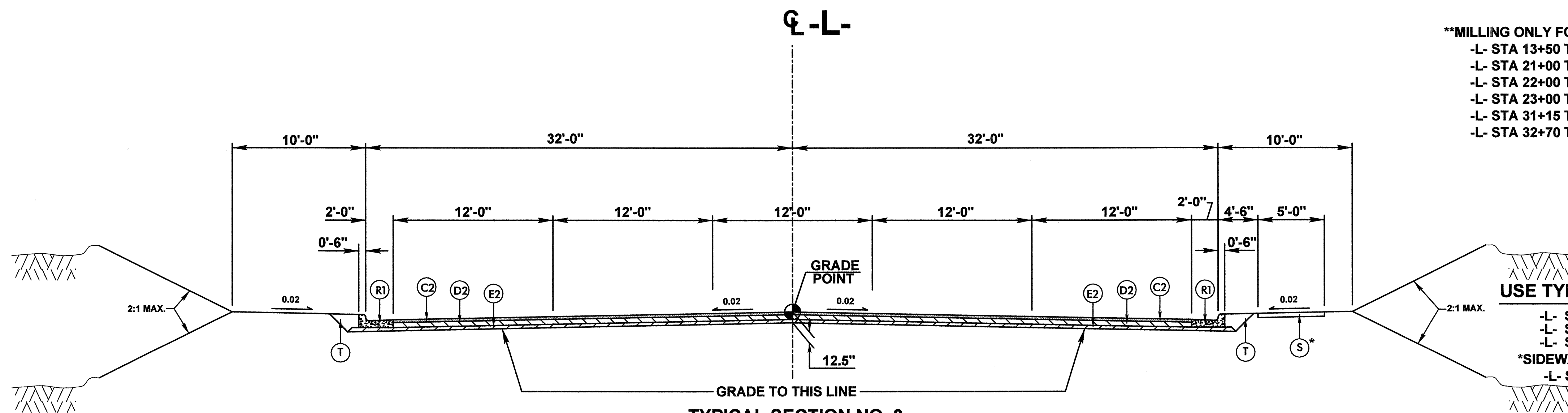
USE TYPICAL SECTION NO. 1 FOR:
-L- STA 10+36.70 TO STA 13+50
(MILLING AND RESURFACING ONLY)



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2 FOR:
-L- STA 13+50 TO STA 15+00
-L- STA 21+00 TO STA 28+00
-L- STA 30+00 TO STA 33+50

*SIDEWALK TO BE REPLACED ONLY FOR:
-L- STA 21+00 TO STA 22+21



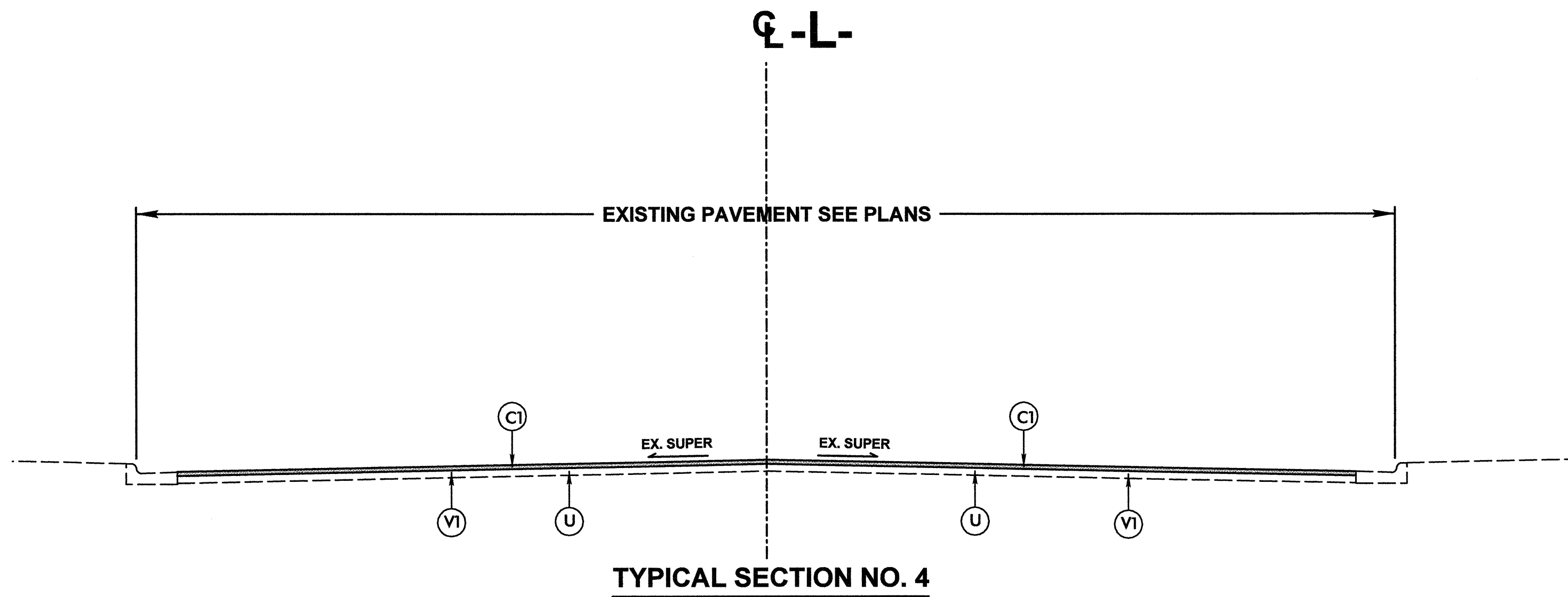
TYPICAL SECTION NO. 3

**MILLING ONLY FOR:
-L- STA 13+50 TO STA 15+00 4' OUTSIDE RT LANE
-L- STA 21+00 TO STA 21+35 12' RT LANE
-L- STA 22+00 TO STA 23+00 12' RT LANE
-L- STA 23+00 TO STA 28+00 24' RT/LT LANES
-L- STA 31+15 TO STA 32+70 4' OUTSIDE RT LANE
-L- STA 32+70 TO STA 33+50 24' RT/LT LANES

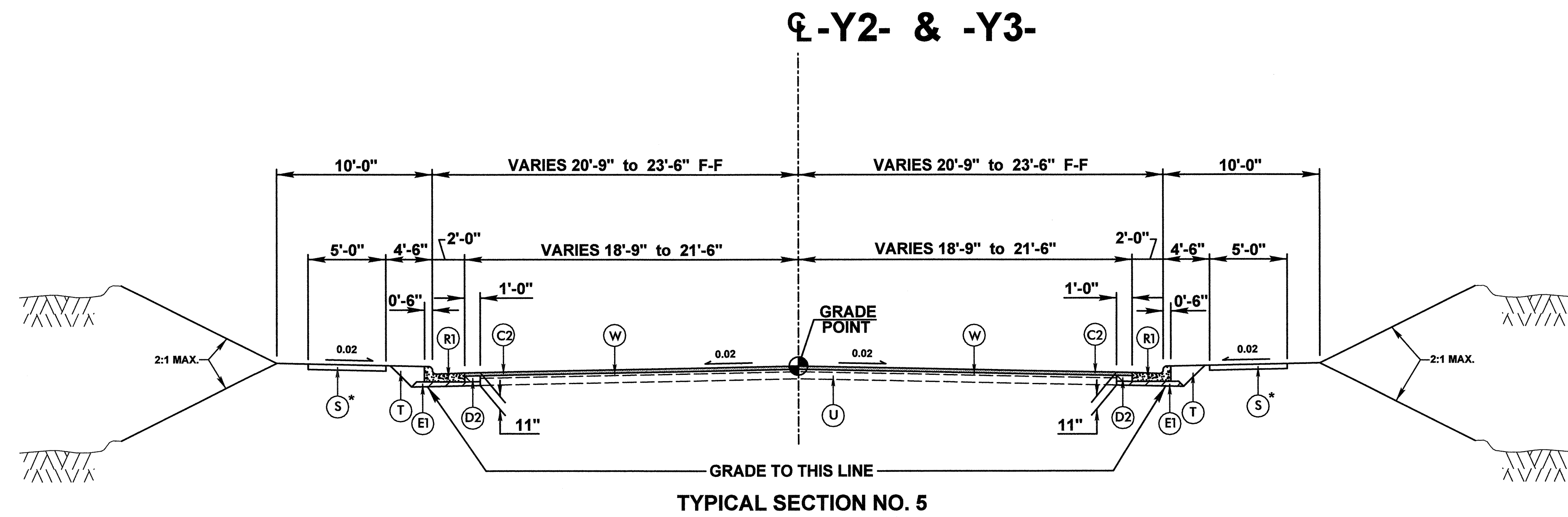
USE TYPICAL SECTION NO. 3 FOR:
-L- STA 15+00 TO STA 21+00
-L- STA 28+00 TO STA 30+00
-L- STA 33+50 TO STA 42+00
*SIDEWALK TO BE REPLACED ONLY FOR:
-L- STA 15+00 TO STA 21+00

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B
D1	PROP. APPROX. 2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B
D2	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, I19.0B
D3	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, I19.0B
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B
E2	PROP. APPROX. 5½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B
E3	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B
R1	2'-6" CONCRETE CURB AND GUTTER.
S	4" CONCRETE SIDEWALK.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V1	MILLING BITUMINOUS PAVEMENT TO A DEPTH OF 1½".
V2	MILLING BITUMINOUS PAVEMENT TO A DEPTH OF 2½".
V3	MILLING BITUMINOUS PAVEMENT TO A DEPTH OF 4".
W	VARIABLE DEPTH ASPHALT PAVEMENT
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.	

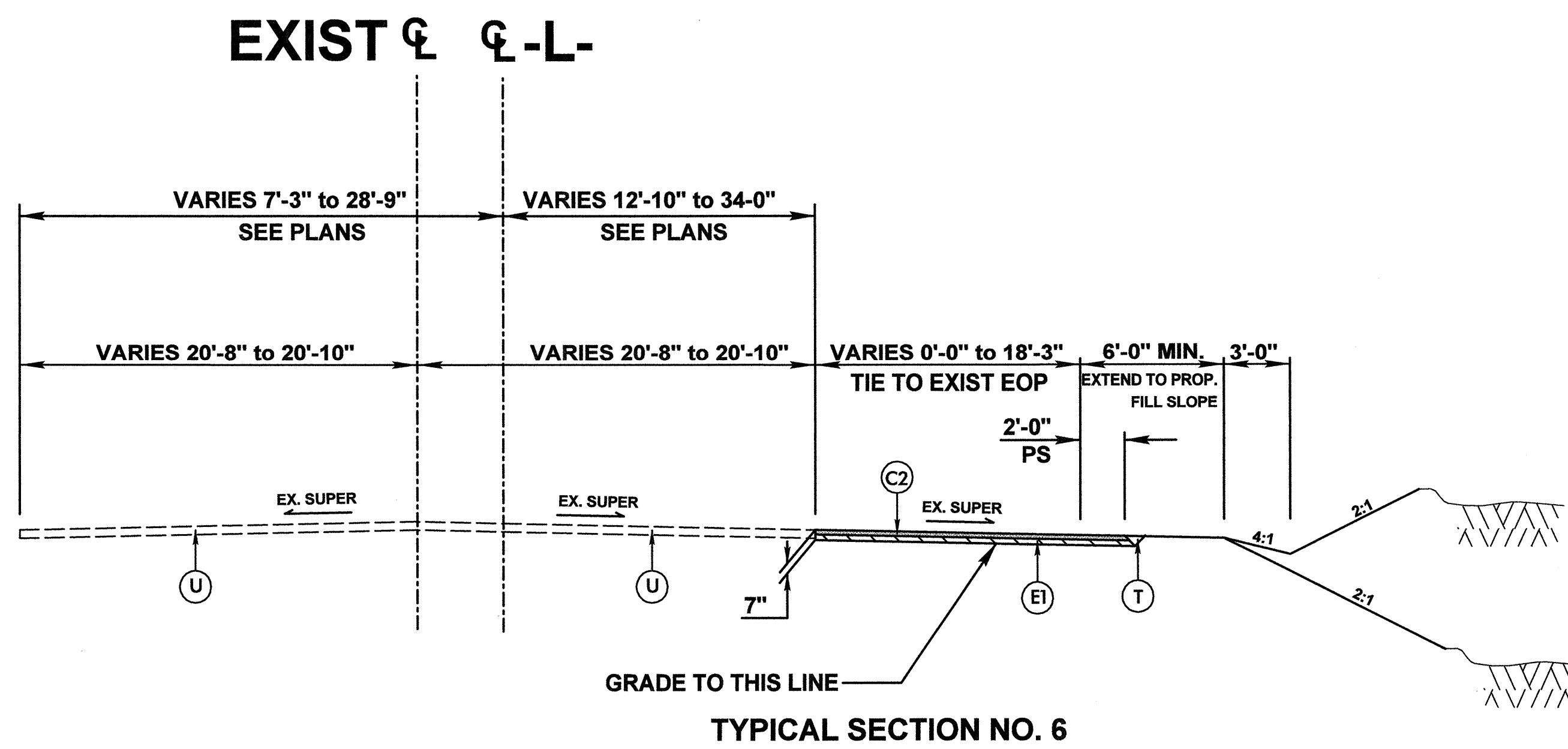
PROJECT REFERENCE NO. U-3344A	SHEET NO. 2-B
ROADWAY DESIGN ENGINEER CLAUDETTE M. S. ROSS SEAL 17306	PAVEMENT DESIGN ENGINEER CLARK S. MORRISON SEAL 22898
PLANS PREPARED BY: FLORENCE & HUTCHESON, INC. CONSULTING ENGINEERS 4020 WESTCHASE BLVD., SUITE 475 RALEIGH, NC 27607	



USE TYPICAL SECTION NO. 4 FOR:
-L- STA 42+00 TO STA 46+33+/-
(MILLING AND RESURFACING ONLY)

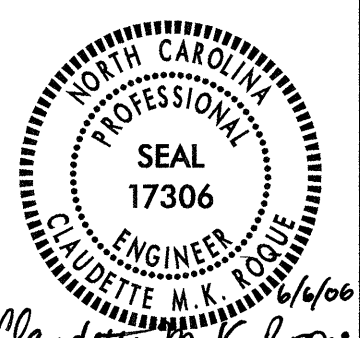
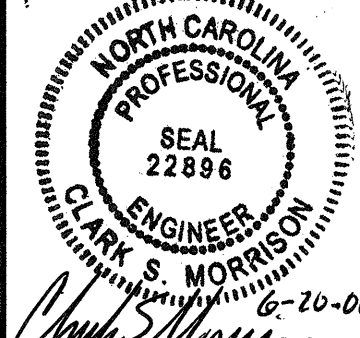


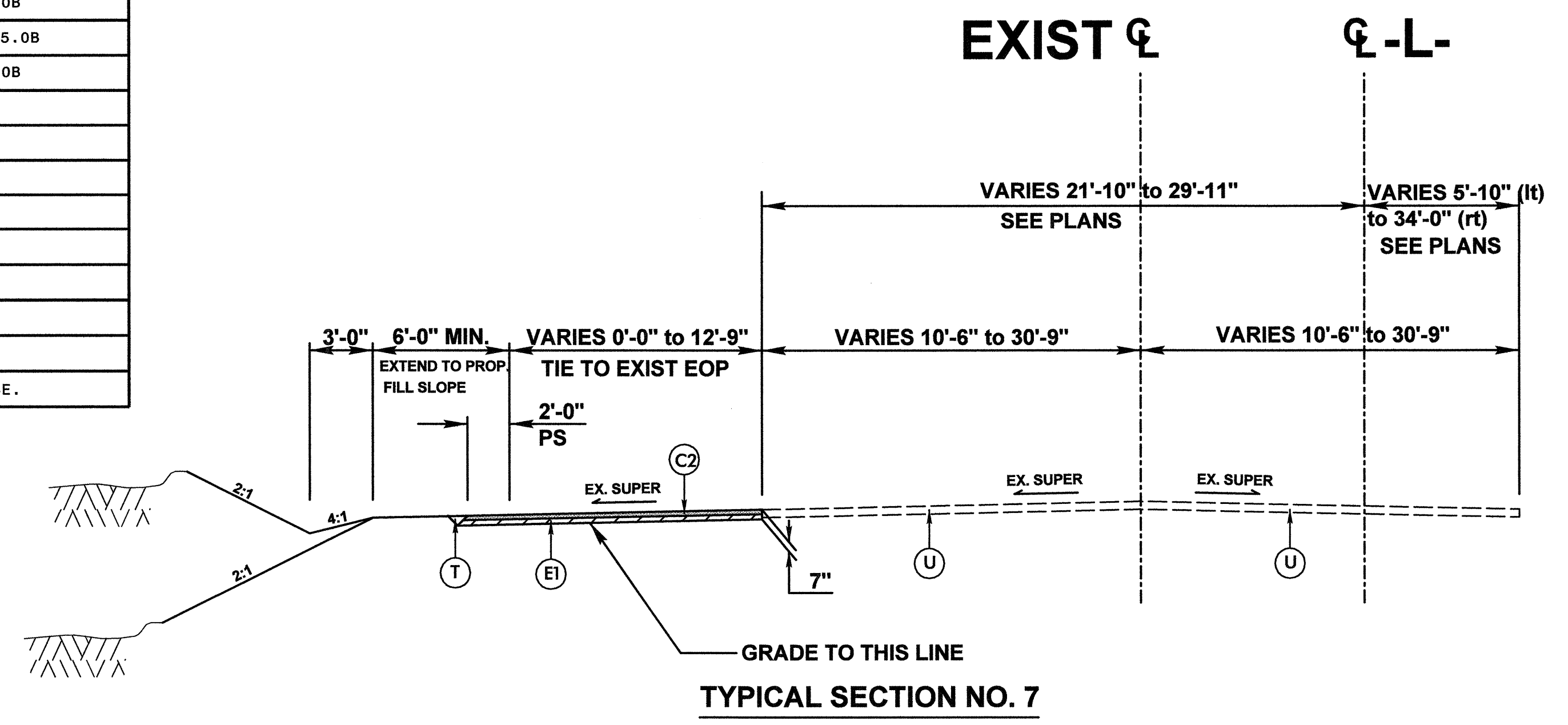
USE TYPICAL SECTION NO. 5 FOR:
-Y2- STA 10+86.20 TO STA 12+00
-Y3- STA 10+99.64 TO STA 12+00
***SIDEWALK TO BE REPLACED ONLY FOR:**
-Y2- STA 10+86.20 TO STA 11+17.07 LT
-Y3- STA 10+99.64 TO STA 12+00 LT
-Y3- STA 10+99.64 TO STA 11+44.26 RT



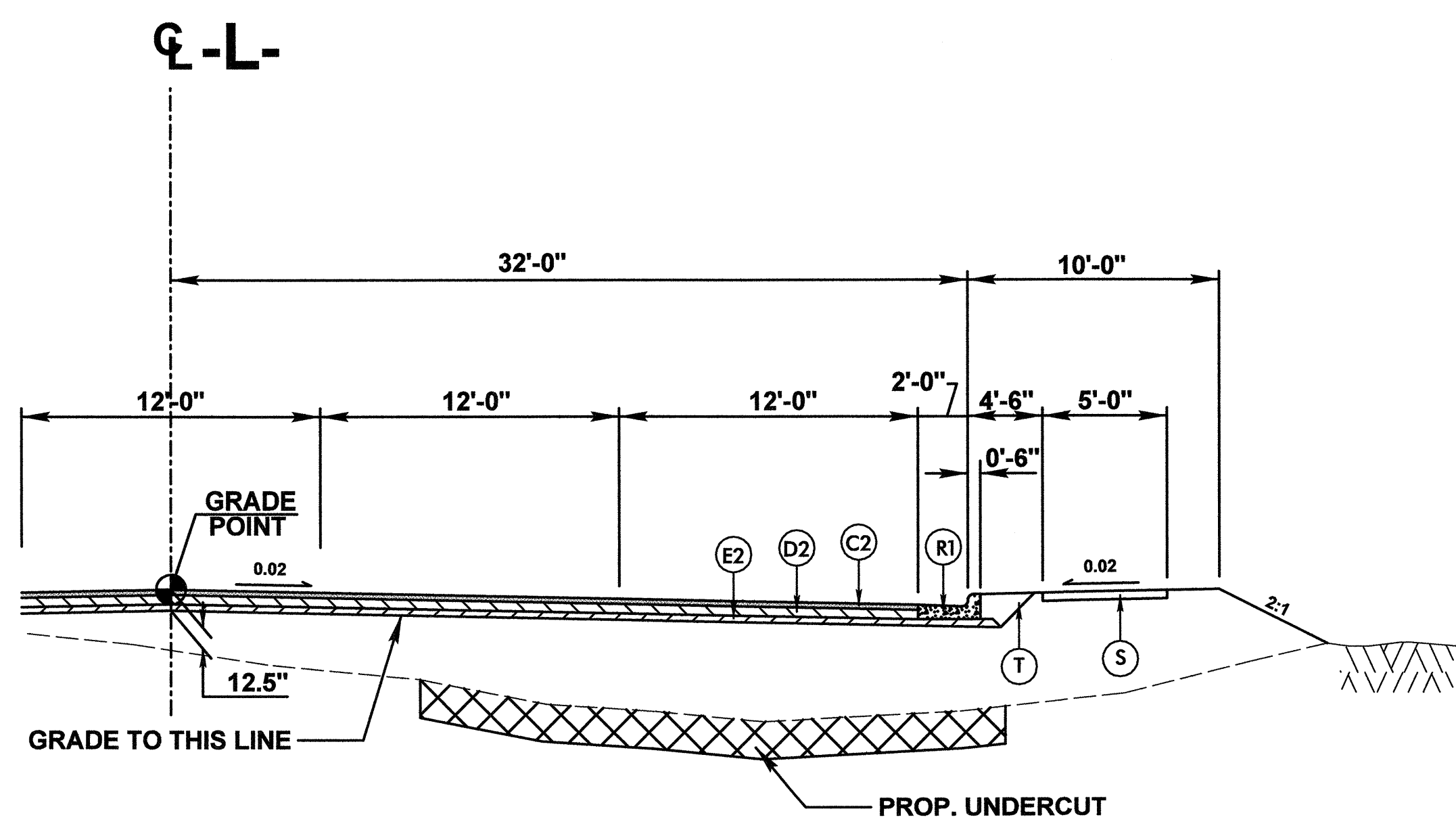
USE TYPICAL SECTION NO. 6 FOR:
-L- STA 19+00+/- TO STA 22+00+/-
TEMPORARY WIDENING
(SEE SHEET 2-D AND TRAFFIC CONTROL PLANS)

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B
D1	PROP. APPROX. 2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B
D2	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, I19.0B
D3	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, I19.0B
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B
E2	PROP. APPROX. 5½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B
E3	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B
R1	2'-6" CONCRETE CURB AND GUTTER.
S	4" CONCRETE SIDEWALK.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V1	MILLING BITUMINOUS PAVEMENT TO A DEPTH OF 1½".
V2	MILLING BITUMINOUS PAVEMENT TO A DEPTH OF 2½".
V3	MILLING BITUMINOUS PAVEMENT TO A DEPTH OF 4".
W	VARIABLE DEPTH ASPHALT PAVEMENT
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.	

PROJECT REFERENCE NO. U-3344A	SHEET NO. 2-C
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER 
PLANS PREPARED BY: FLORENCE & HUTCHESON, INC. CONSULTING ENGINEERS 4020 WESTCHASE BLVD., SUITE 475 RALEIGH, NC 27607	



USE TYPICAL SECTION NO. 7 FOR:
 -L- STA 33+94+/- TO STA 40+84+/-
 TEMPORARY WIDENING
 (SEE SHEET 2-E AND TRAFFIC CONTROL PLANS)



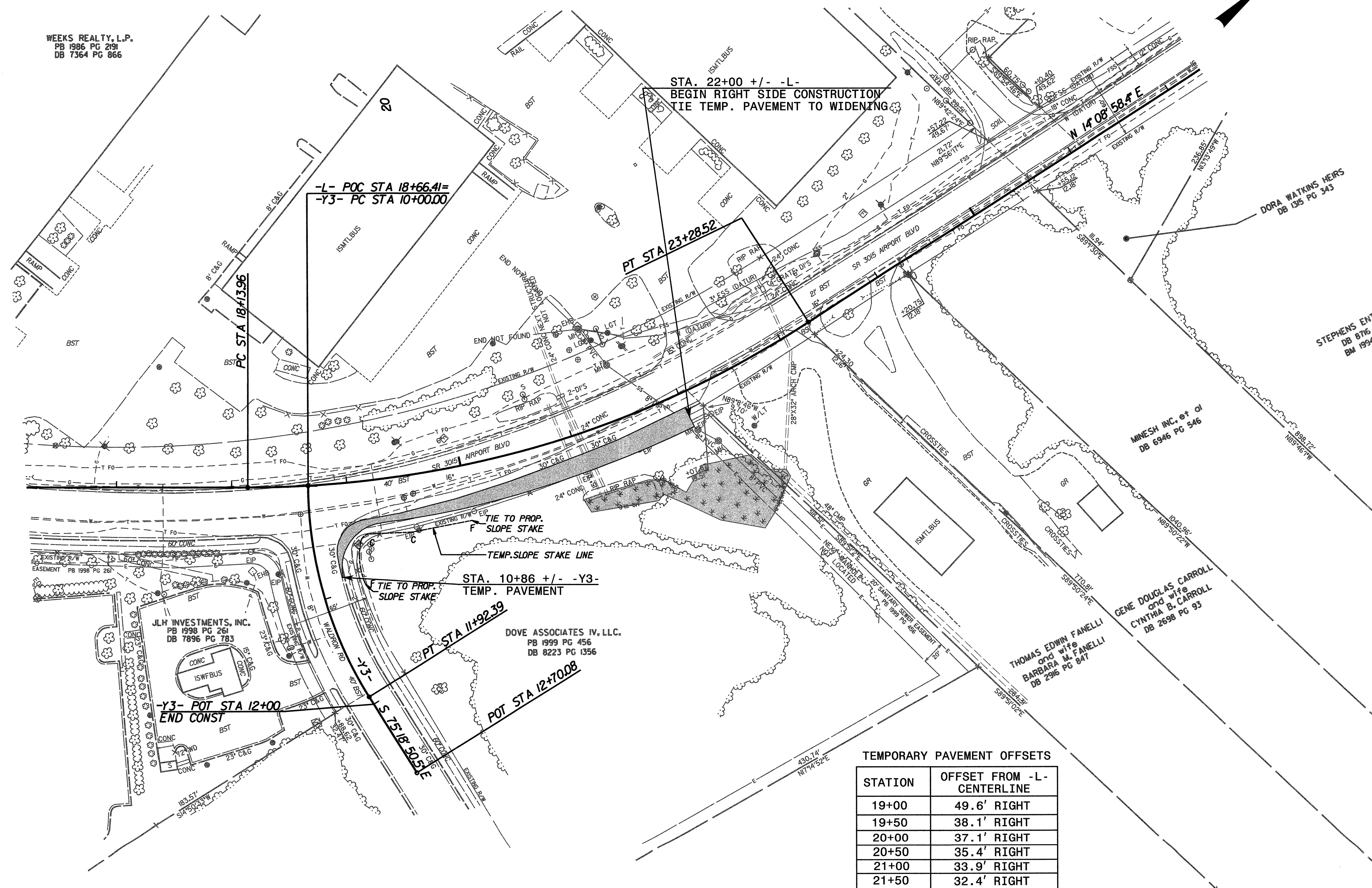
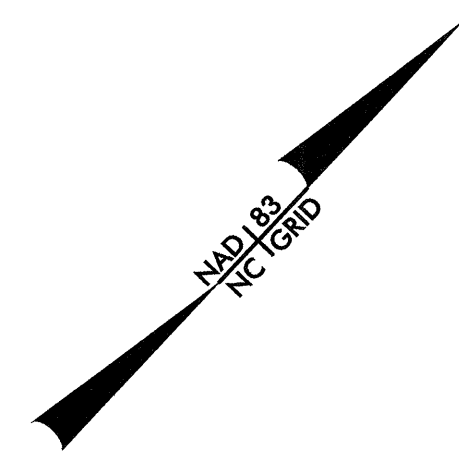
USE UNDERCUT DETAIL FOR:
 -L- STA 27+25 TO STA 29+25 (RT)

DETAIL OF UNDERCUTTING

USE IN CONJUNCTION WITH
 TYPICAL SECTION NOS. 2 & 3

NOTE: UNDERCUT FROM APPROX. 10' RT OF CL-L- TO 1' BEYOND CURB AND GUTTER TO A MIN. DEPTH OF 4' BELOW EXISTING GROUND SURFACE. (SEE X-SECTS)
 UNDERCUT EXCAVATION SHALL BE REQUIRED AT LOCATIONS NOTED ON PLANS OR AS DIRECTED BY THE ENGINEER.

PROJECT REFERENCE NO. U-3344A	SHEET NO. 2-D
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PLANS PREPARED BY: FLORENCE & HUTCHESON, INC. CONSULTING ENGINEERS 4020 WESTCHASE BLVD, SUITE 415 RALEIGH, NC 27607	



TEMPORARY PAVEMENT OFFSETS




STATION	OFFSET FROM -L- CENTERLINE
19+00	49.6' RIGHT
19+50	38.1' RIGHT
20+00	37.1' RIGHT
20+50	35.4' RIGHT
21+00	33.9' RIGHT
21+50	32.4' RIGHT

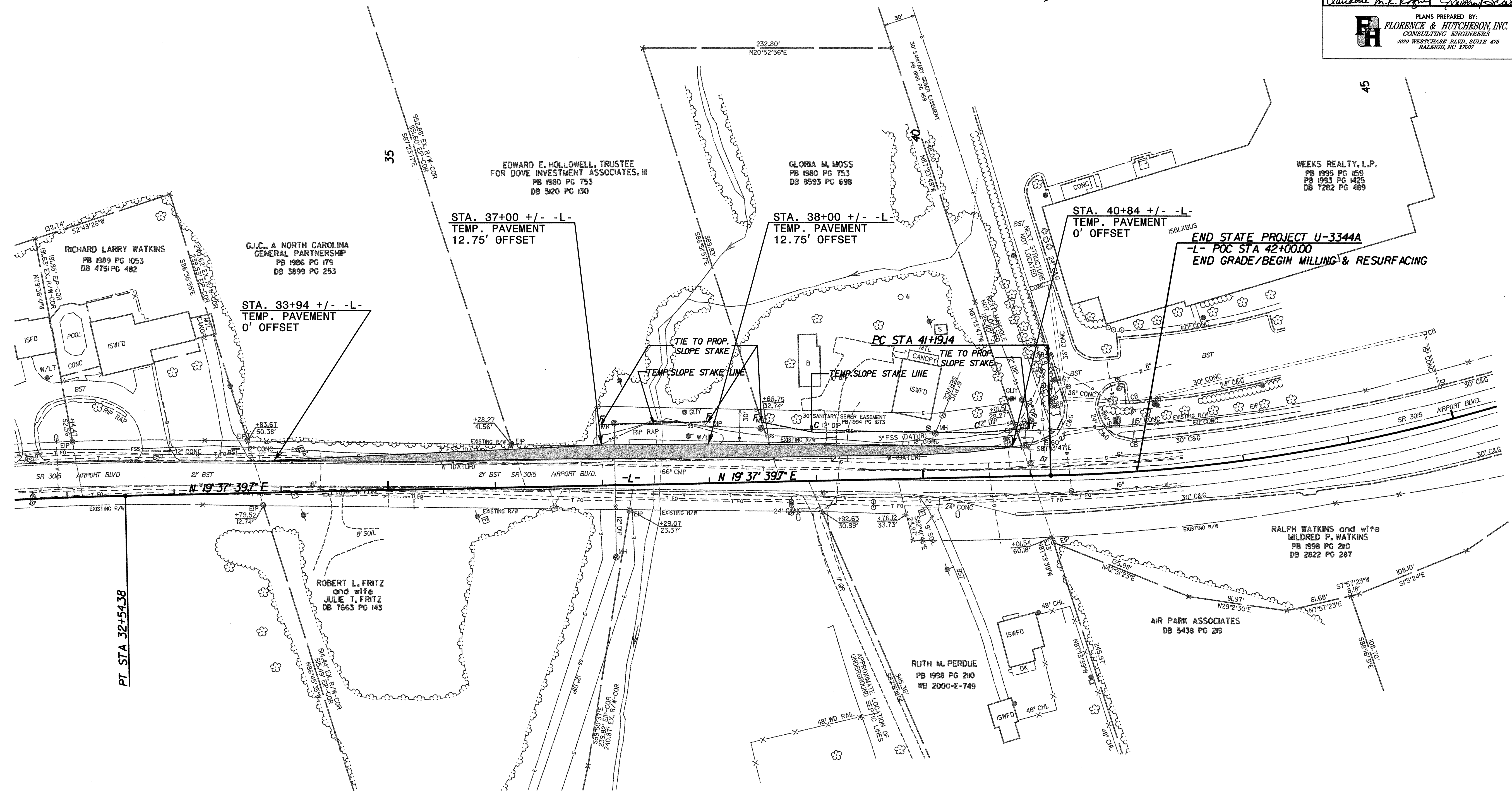
REVISIONS

WEEKS REALTY, L.P.
PB 1986 PG 2191
DB 7364 PG 866

STEPHENS ENTERPRISES, LLC.
DB 876 PG 945
BM 1994 PG 1673

SEE TRAFFIC CONTROL PLANS FOR PHASING

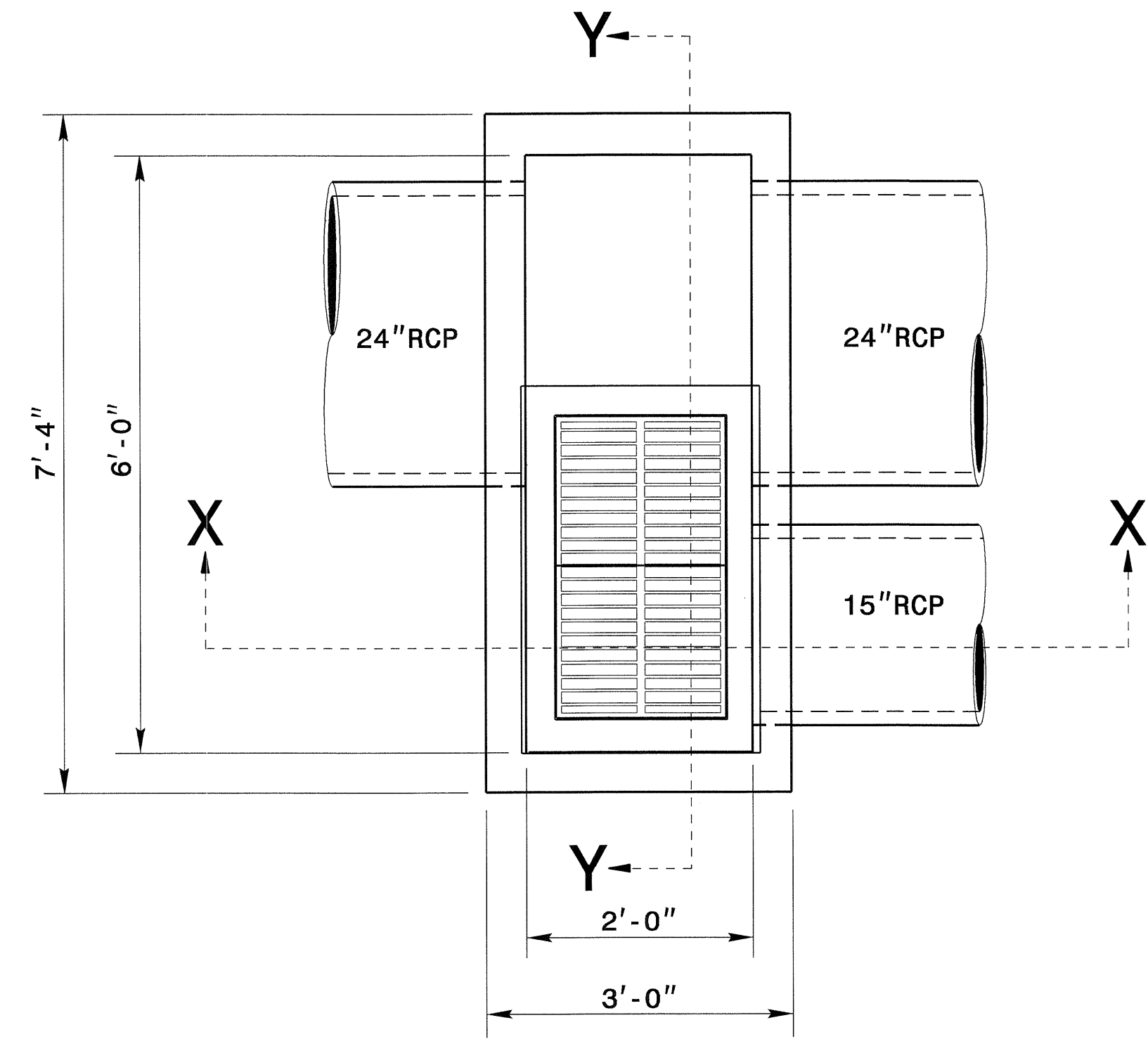
PROJECT REFERENCE NO. U-3344A		SHEET NO. 2-E	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
 CLAUDE M.K. KOSS 6/6/06		 JONATHAN KENNING 1/1/06	
PLANS PREPARED BY:  FLORENCIA & HUTCHERSON, INC. CONSULTING ENGINEERS 4000 WESTCHASE DRIVE, SUITE 415 RALEIGH, NC 27607			



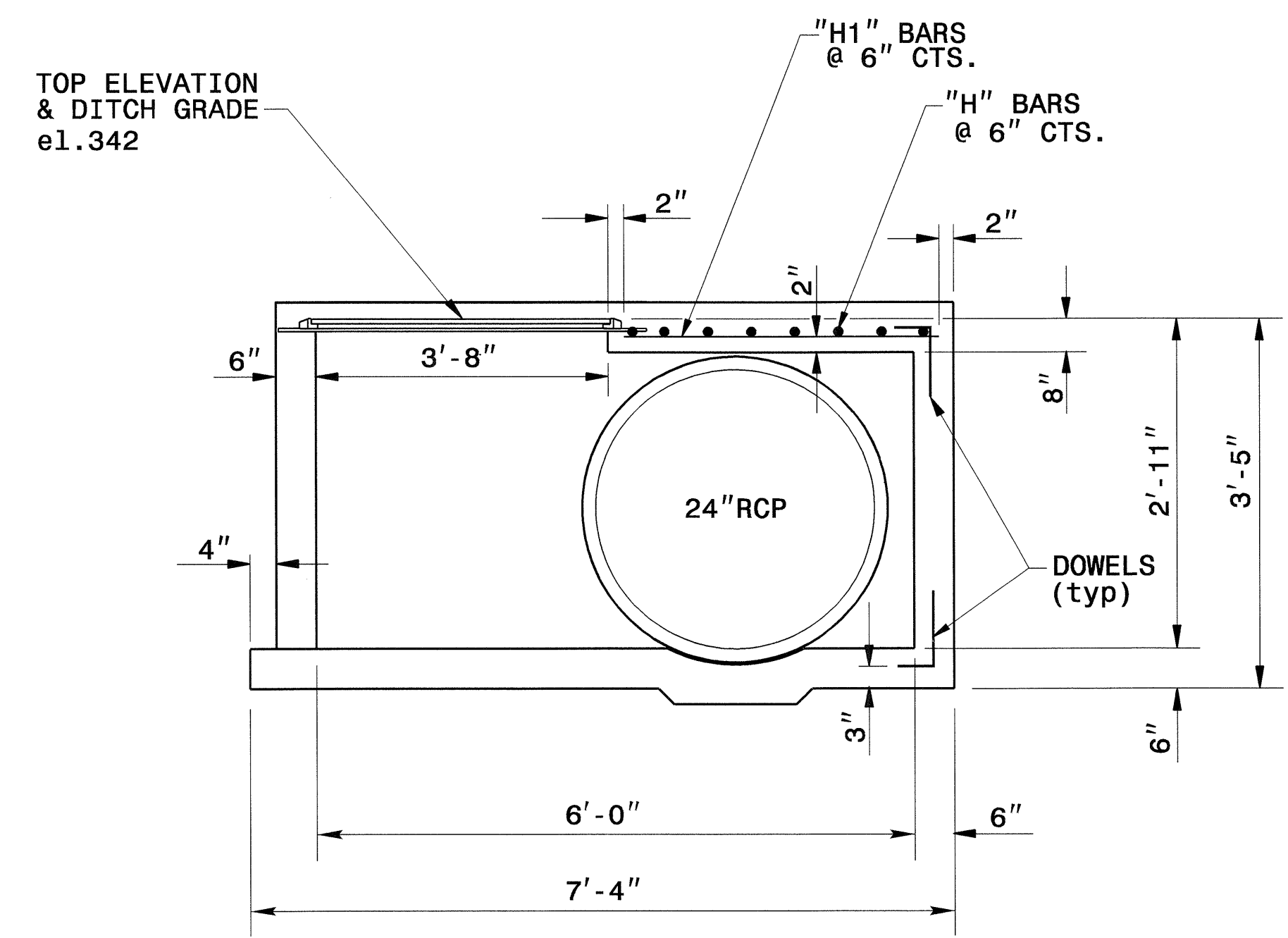
REVISIONS

SEE TRAFFIC CONTROL PLANS FOR PHASING

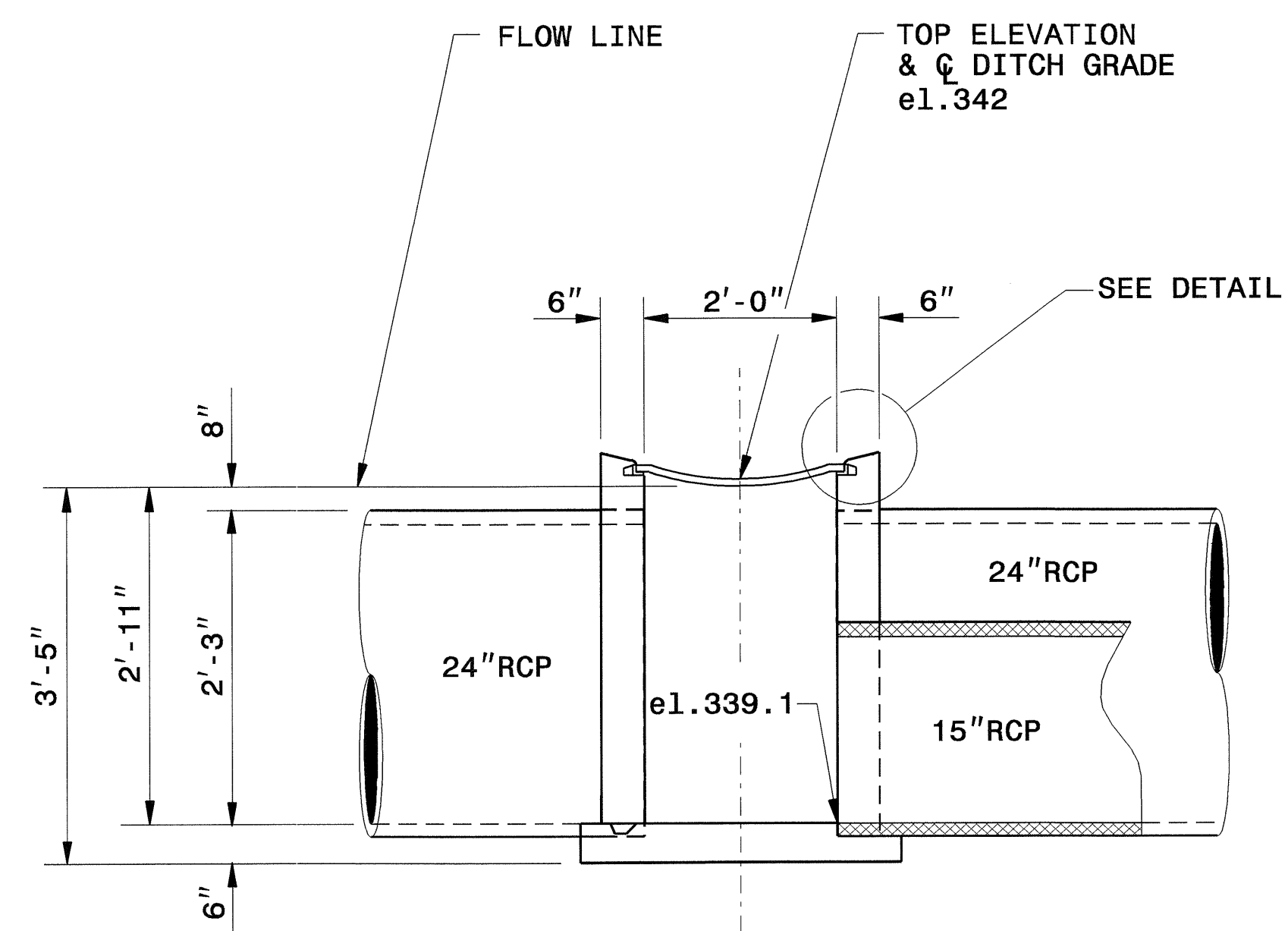
5/14/99



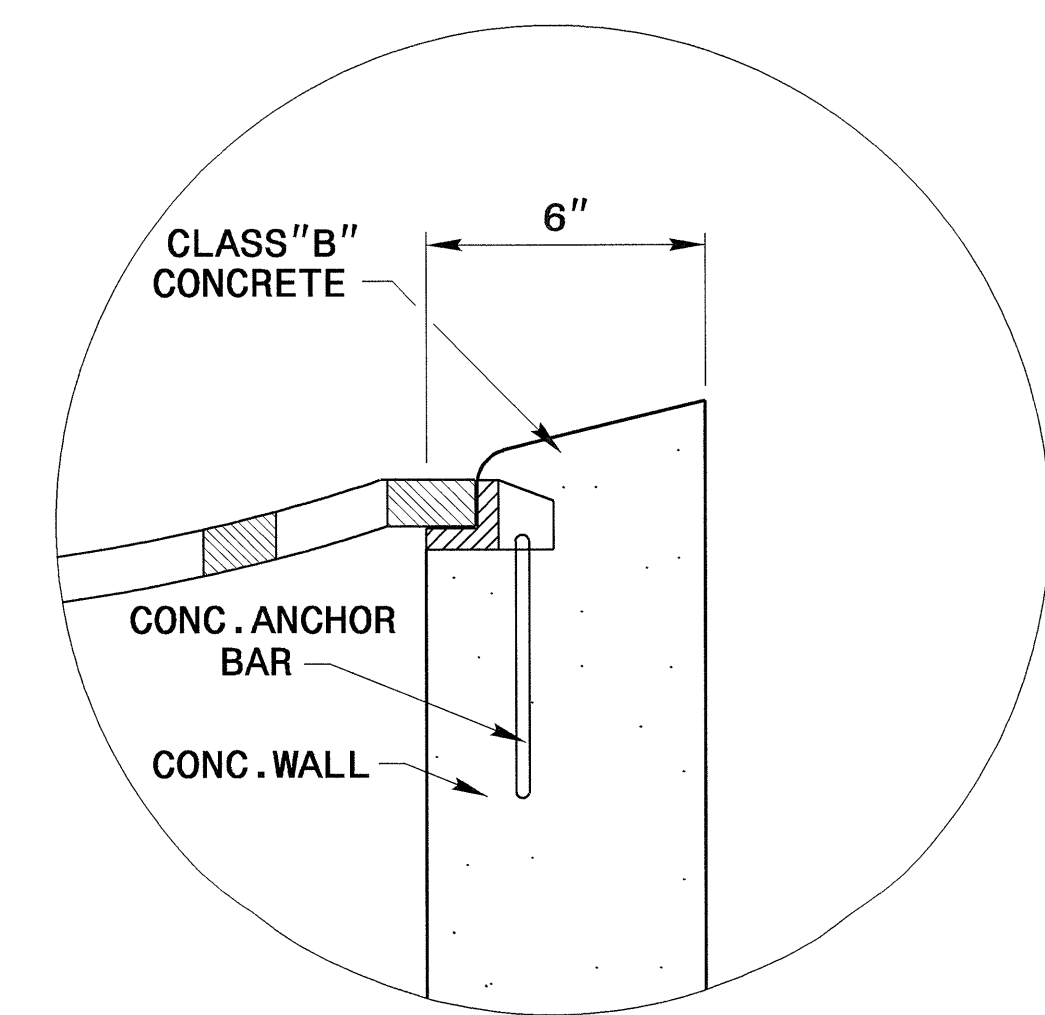
PLAN



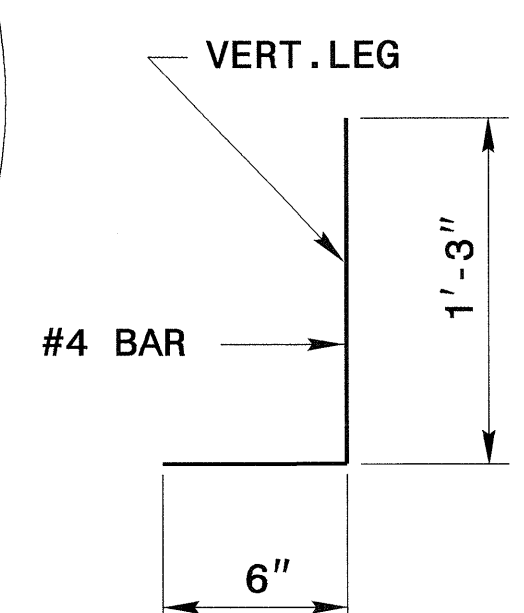
SECTION Y-Y



SECTION X-X



DETAIL



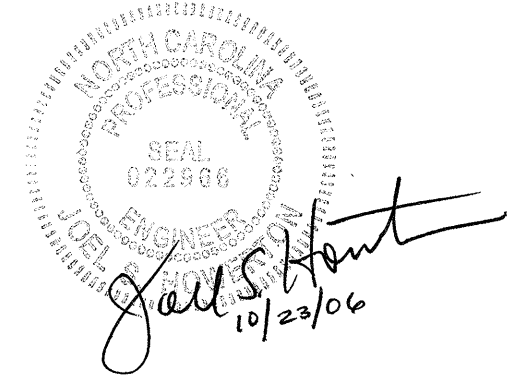
DOWEL - A

BILL OF MATERIALS				
BAR	NO.	SIZE	LENGTH	WEIGHT
H	8	#4	2'-8"	15
H1	4	#4	2'-6"	7
DOWEL	20	#4	1'-9"	24
TOTAL REINF. STEEL (LBS.)				46
TOTAL CONC. (CU. YDS.)				1.8

- * 0.036 CY DEDUCTION FOR 15" RCP
- * 0.085 CY DEDUCTION FOR 24" RCP
- * NO DEDUCTIONS HAVE BEEN MADE FOR PIPES OR GRATE THROAT

GENERAL NOTES:

- USE CLASS "B" CONCRETE THROUGHOUT.
- OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
- USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
- IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.
- WHEN PAYMENT FOR THE DROP INLET IS MADE ON A PER EACH BASIS, THE CONCRETE APRON WILL BE CONSIDERED PART OF THE DROP INLET.
- CONSTRUCT WITH PIPE CROWNS MATCHING.
- USE STANDARD FRAMES AND GRATES 840.22 (SHOWN), 840.24 (SHOWN), 840.20, 840.29, AND 840.33.
- SEE STANDARD DRAWING 840.25 FOR ATTACHMENT OF FRAMES AND GRATES NOT SHOWN.
- CHAMFER ALL EXPOSED CORNERS 1".
- DRAWING NOT TO SCALE.




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

DOUBLE GRATED INLET

USE FOR STRUCTURE
NO. 21A

ORIGINAL BY: cnbritt DATE: 05-23-06
 MODIFIED BY: J.S. Hunt DATE: 5/24/06
 CHECKED BY: J.S. Hunt DATE: 5/24/06
 FILE SPEC.: details/nbritt/english/urban/u3344a2g1.dgn

STANDARD TEMPORARY MSE WALL OPTIONS

PROJECT REFERENCE NO. 34934.3.3 (U-3344A)		SHEET 2 ±
GEOTECHNICAL ENGINEER		ENGINEER
		ENGINEER
		ENGINEER
SIGNATURE	DATE	SIGNATURE

TEMPORARY MSE WALL OPTION	VENDOR	CONTACT INFORMATION	REINFORCEMENT TYPE	SHEETS
TEMPORARY FABRIC WALL	N/A	N/A	POLYESTER OR POLYPROPYLENE FABRIC	4
HILFIKER TEMPORARY WALL	HILFIKER RETAINING WALLS	1902 HILFIKER LANE, EUREKA, CA 95503-5711 707-443-5093 WWW.HILFIKER.COM	WELDED WIRE MAT	5
SIERRASCAPE TEMPORARY WALL	TENSAR EARTH TECHNOLOGIES, INC	5883 GLENRIDGE DRIVE, SUITE 200 ATLANTA, GA 30328-5363 404-250-1290 WWW.TENSARCORP.COM	GEOGRID	6
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	7-9
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	10-12

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

WHEN THE PLANS DO NOT PROHIBIT A STANDARD TEMPORARY MSE WALL OR STANDARD SHORING, THE USE OF A TEMPORARY MSE WALL IS AN OPTION.

WHEN THE PLANS REQUIRE A TEMPORARY MSE WALL, USE ONE OF THE STANDARD TEMPORARY MSE WALL OPTIONS OR SUBMIT AN ALTERNATIVE TEMPORARY MSE WALL DESIGN FOR REVIEW AND ACCEPTANCE.

WHEN THE ALIGNMENT OF A STANDARD TEMPORARY MSE WALL 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).

THE 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 A STANDARD TEMPORARY MSE WALL WHEN THE ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE.

DO NOT USE A STANDARD TEMPORARY MSE WALL WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS PRESENT BELOW THE BOTTOM OF REINFORCED ZONE.

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 INCREMENT 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 THE FIRST REINFORCEMENT LAYER UNTIL OBTAINING APPROVAL OF THE EXCAVATION DEPTH AND CHECKING FOUNDATION MATERIAL FOR IN-SITU ASSUMED SOIL PARAMETERS.

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 THE LOCATIONS AND ELEVATIONS SHOWN ON THE STANDARD TEMPORARY MSE WALL DETAILS.

CONTACT THE ENGINEER WHEN EXISTING OR FUTURE STRUCTURES SUCH AS PAVEMENTS, PIPES, INLETS OR UTILITIES WILL INTERFERE WITH THE REINFORCEMENT.

PLACE SHORING BACKFILL IN THE REINFORCED ZONE IN 8" TO 10" (200mm to 250mm) THICK LIFTS AND COMPACT BACKFILL 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 THE REINFORCEMENT UNTIL IT IS COVERED WITH AT LEAST 10" (250mm) OF SHORING BACKFILL. DO NOT USE SHEEPFOOT, GRID ROLLERS OR OTHER TYPES OF EQUIPMENT WITH FEET.

COVER REINFORCING AND RETENTION FABRIC WITH AT LEAST 3" (75mm) OF SHORING BACKFILL.

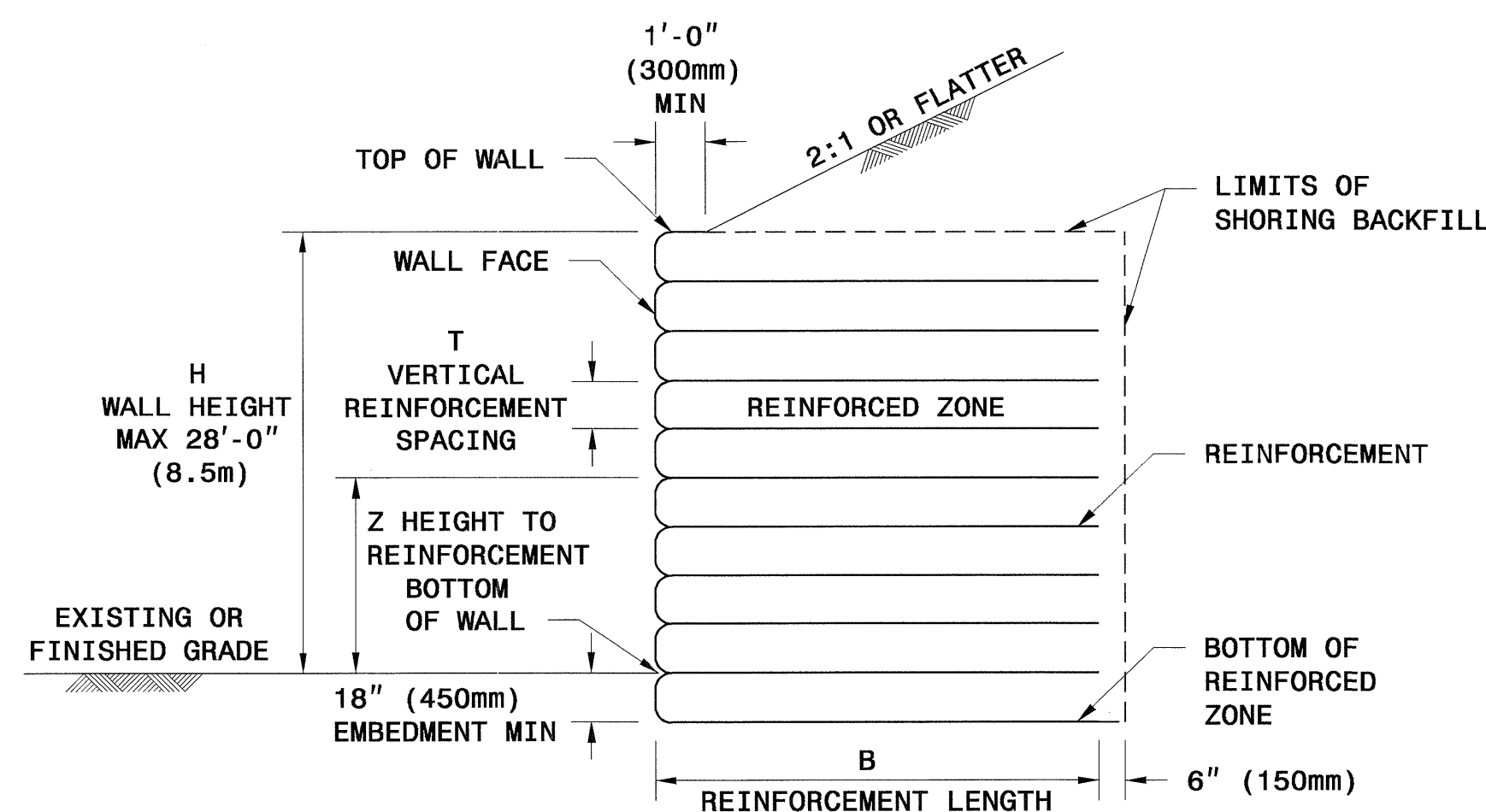
PLACE TOP REINFORCEMENT LAYER BETWEEN 4" (100mm) AND 24" (600mm) BELOW TOP OF WALL DEPENDING ON WALL OPTION.

BENCH STANDARD TEMPORARY MSE WALLS INTO THE SIDES OF THE EXCAVATIONS WHERE APPLICABLE AND AS DIRECTED BY THE ENGINEER.

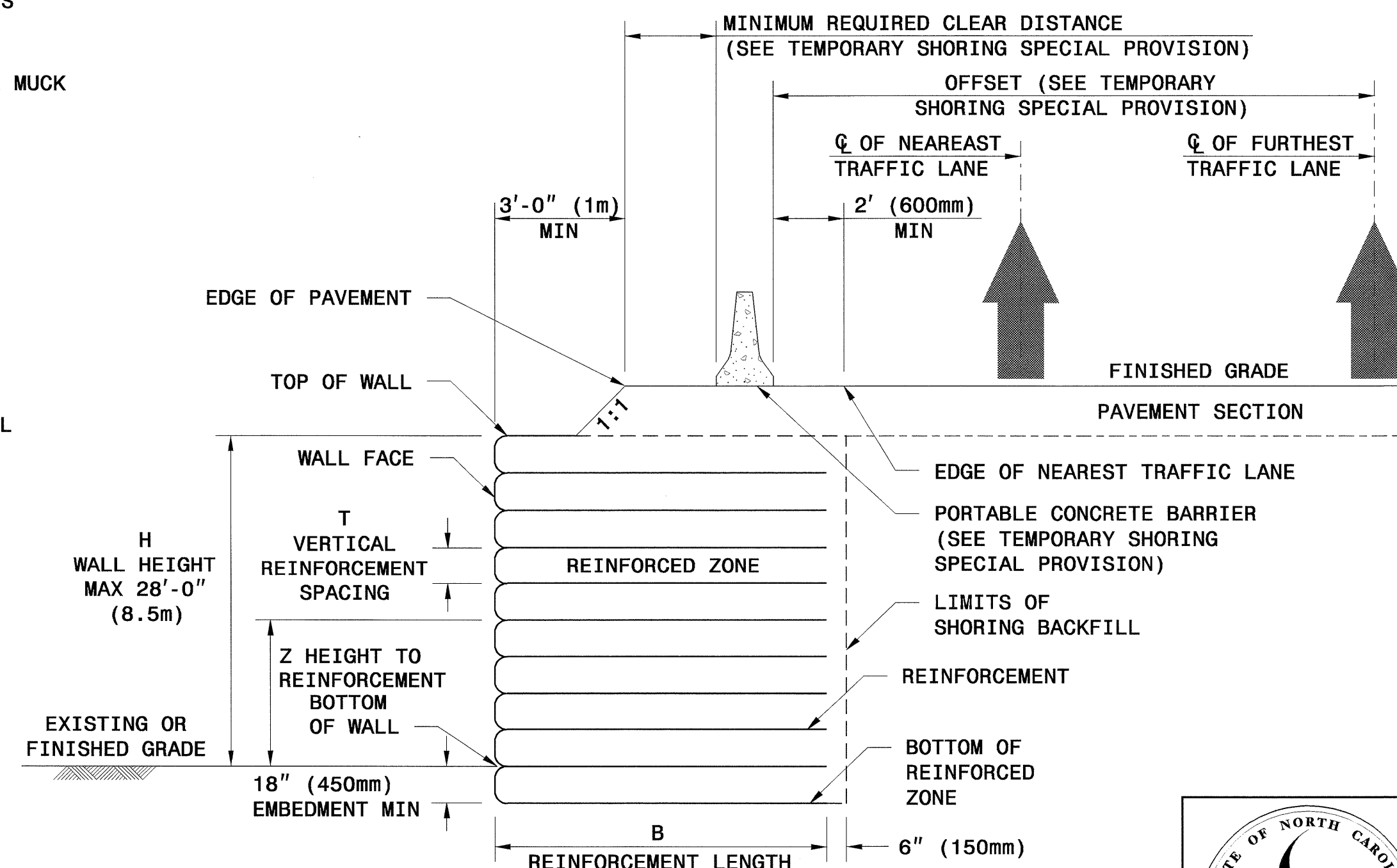
IF THE TOP OF WALL IS WITHIN 5'-0" (1.5m) OF FINISHED GRADE, REMOVE TOP FORM OR FACING AND INCORPORATE THE TOP REINFORCEMENT LAYER INTO THE FILL WHEN PLACING FILL IN FRONT OF THE WALL.

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

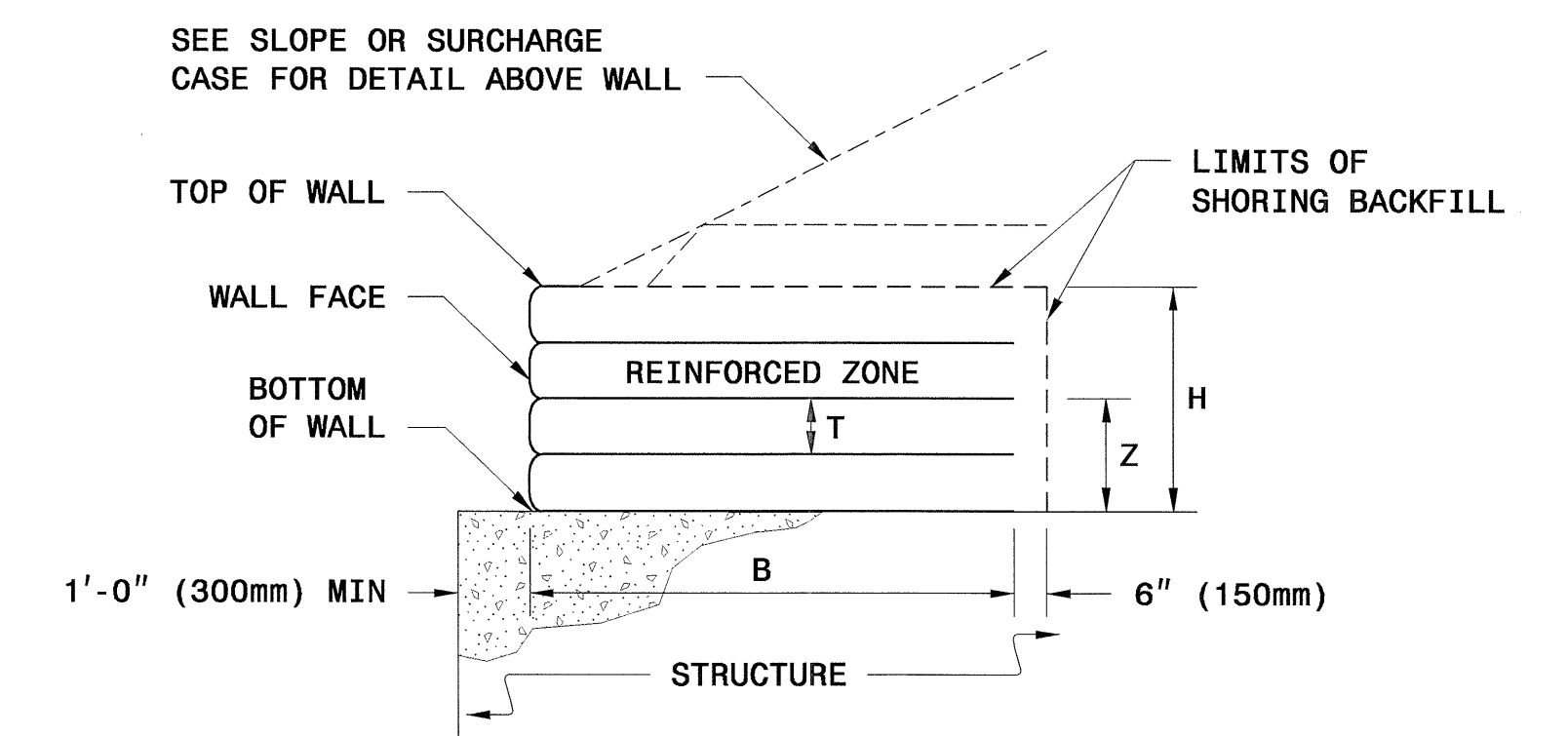
STANDARD TEMPORARY MSE WALLS REMAIN IN PLACE PERMANENTLY UNLESS DIRECTED OTHERWISE BY THE ENGINEER.



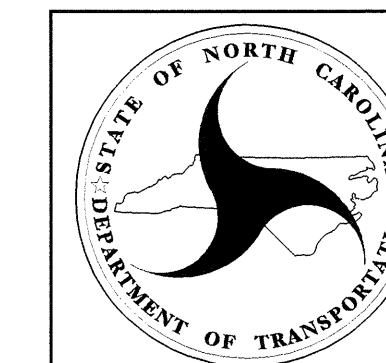
SLOPE CASE



SURCHARGE CASE



TEMPORARY MSE WALL ON STRUCTURE



GEOTECHNICAL ENGINEERING UNIT
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD TEMPORARY MECHANICALLY STABILIZED EARTH (MSE) WALLS

SHEET 1 OF 12 DATE: 10/17/06

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 4 FOR FABRIC STRENGTH REQUIREMENTS BASED ON WALL HEIGHT (H)
- FOR ALL OTHER WALL OPTIONS, DETERMINE REINFORCEMENT TYPE FROM TABLES BELOW FOR EACH HEIGHT TO REINFORCEMENT (Z) BASED ON WALL HEIGHT (H) AND SLOPE OR SURCHARGE CASE

MINIMUM REQUIRED REINFORCEMENT LENGTH B (FT)

(FOR ALL WALL OPTIONS)

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

TERRATREL TEMPORARY WALL (STRIPS PER LEVEL PER PANEL)

H (FT)		4 TO 6	6 TO 8	8 TO 10	10 TO 12	12 TO 14	14 TO 16	16 TO 18	18 TO 20	20 TO 22	22 TO 24	24 TO 26	26 TO 28	Z (FT-IN)
SLOPE AND SURCHARGE CASES														

SIERRASCAPE TEMPORARY WALL (GEOGRID TYPE)

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

H (FT)		4 TO 6	6 TO 8	8 TO 10	10 TO 12	12 TO 14	14 TO 16	16 TO 18	18 TO 20	20 TO 22	22 TO 24	24 TO 26	26 TO 28	Z (FT)
SLOPE CASE														

HILFIKER TEMPORARY WALL (WELDED WIRE MAT TYPE)

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

H (FT)		4 TO 6	6 TO 8	8 TO 10	10 TO 12	12 TO 14	14 TO 16	16 TO 18	18 TO 20	20 TO 22	22 TO 24	24 TO 26	26 TO 28	Z (FT)
SLOPE CASE														

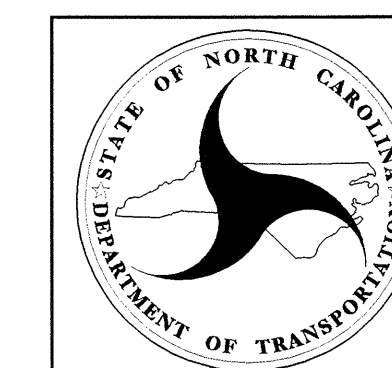
RETAINED EARTH TEMPORARY WALL (WELDED WIRE MESH TYPE)

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

H (FT)		4 TO 6	6 TO 8	8 TO 10	10 TO 12	12 TO 14	14 TO 16	16 TO 18	18 TO 20	20 TO 22	22 TO 24	24 TO 26	26 TO 28	Z (FT-IN)
SLOPE AND SURCHARGE CASES														

NOTES FOR HILFIKER TEMPORARY WALL

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



GEOTECHNICAL ENGINEERING UNIT
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD TEMPORARY MSE WALL REINFORCEMENT TABLES - ENGLISH

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 4 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 (M)

(FOR ALL WALL OPTIONS)

WALL HEIGHT H (M)	<2.4	2.4 TO 3.0	3.0 TO 3.7	3.7 TO 4.3	4.3 TO 4.9	4.9 TO 5.5	5.5 TO 6.1	6.1 TO 6.7	6.7 TO 7.3	7.3 TO 7.9	7.9 TO 8.5
SLOPE CASE	2.4	3.4	4.0	4.3	4.9	5.5	6.1	6.7	7.3	7.6	8.2
SURCHARGE CASE	2.4	2.7	3.4	3.7	4.3	4.6	4.9	5.5	5.8	6.4	6.7

TERRATREL TEMPORARY WALL (STRIPS PER LEVEL PER PANEL)

H (M)	<1.2	1.2 TO 1.8	1.8 TO 2.4	2.4 TO 3.0	3.0 TO 3.7	3.7 TO 4.3	4.3 TO 4.9	4.9 TO 5.5	5.5 TO 6.1	6.1 TO 6.7	6.7 TO 7.3	7.3 TO 7.9	7.9 TO 8.5
SLOPE AND SURCHARGE CASES	3	3	3	3	3	3	3	3	3	3	3	3	3

SIERRASCAPE TEMPORARY WALL (GEOGRID TYPE)

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

H (M)	<1.2	1.2 TO 1.8	1.8 TO 2.4	2.4 TO 3.0	3.0 TO 3.7	3.7 TO 4.3	4.3 TO 4.9	4.9 TO 5.5	5.5 TO 6.1	6.1 TO 6.7	6.7 TO 7.3	7.3 TO 7.9	7.9 TO 8.5
SLOPE CASE	11	11	11	11	11	11	11	11	11	11	11	11	11

H (M)	<1.2	1.2 TO 1.8	1.8 TO 2.4	2.4 TO 3.0	3.0 TO 3.7	3.7 TO 4.3	4.3 TO 4.9	4.9 TO 5.5	5.5 TO 6.1	6.1 TO 6.7	6.7 TO 7.3	7.3 TO 7.9	7.9 TO 8.5
SURCHARGE CASE	11	11	11	11	11	11	11	11	11	11	11	11	11

HILFIKER TEMPORARY WALL (WELDED WIRE MAT TYPE)

29 = MW29 x MW23
45 = MW45 x MW23
61 = MW61 x MW26

H (M)	<1.2	1.2 TO 1.8	1.8 TO 2.4	2.4 TO 3.0	3.0 TO 3.7	3.7 TO 4.3	4.3 TO 4.9	4.9 TO 5.5	5.5 TO 6.1	6.1 TO 6.7	6.7 TO 7.3	7.3 TO 7.9
SLOPE CASE	29	29	29	29	29	29	29	29	29	29	29	29

H (M)	<1.2	1.2 TO 1.8	1.8 TO 2.4	2.4 TO 3.0	3.0 TO 3.7	3.7 TO 4.3	4.3 TO 4.9	4.9 TO 5.5	5.5 TO 6.1	6.1 TO 6.7	6.7 TO 7.3	7.3 TO 7.9
SURCHARGE CASE	29	29	29	29	29	29	29	29	29	29	29	29

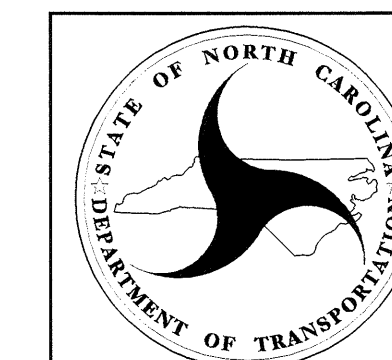
RETAINED EARTH TEMPORARY WALL (WELDED WIRE MESH TYPE)

3X1 = 3MW52 x MW52 x 305mm
3X2 = 3MW52 x MW52 x 610mm

H (M)	<1.2	1.2 TO 1.8	1.8 TO 2.4	2.4 TO 3.0	3.0 TO 3.7	3.7 TO 4.3	4.3 TO 4.9	4.9 TO 5.5	5.5 TO 6.1	6.1 TO 6.7	6.7 TO 7.3	7.3 TO 7.9
SLOPE AND SURCHARGE CASES	3X1	3X1	3X1	3X1	3X1	3X1	3X1	3X1	3X1	3X1	3X1	3X1

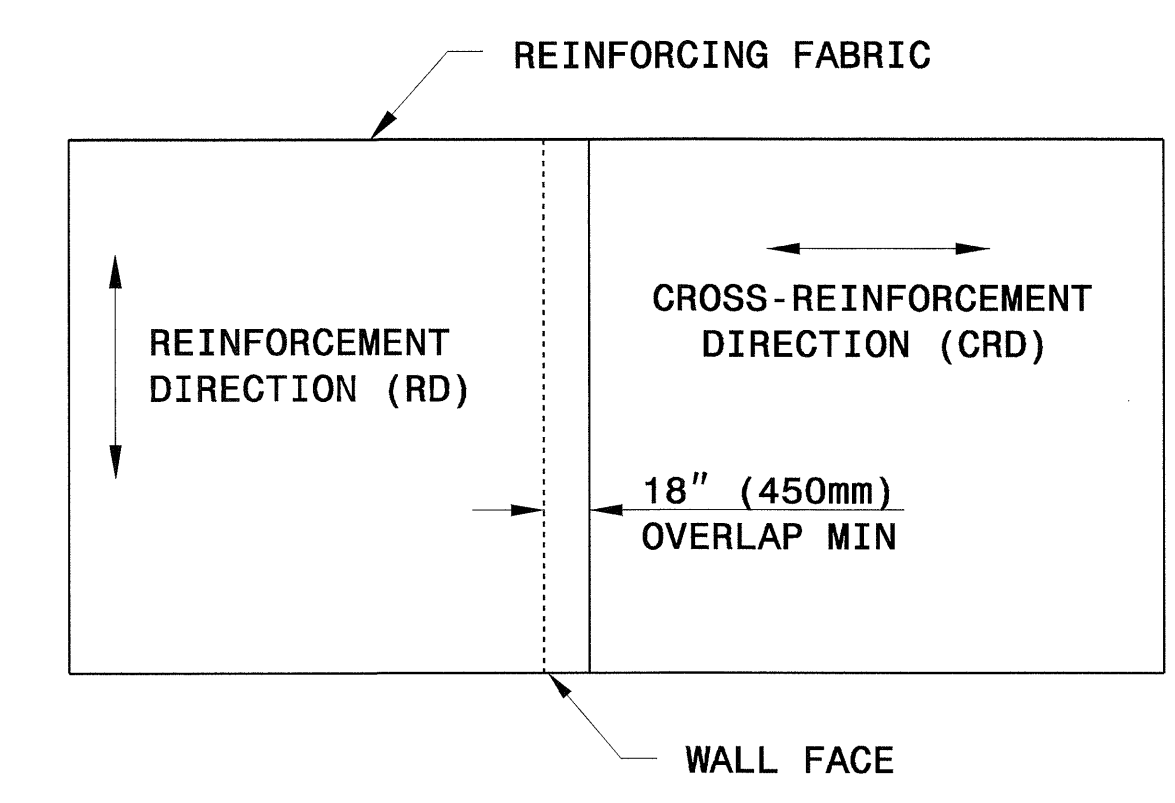
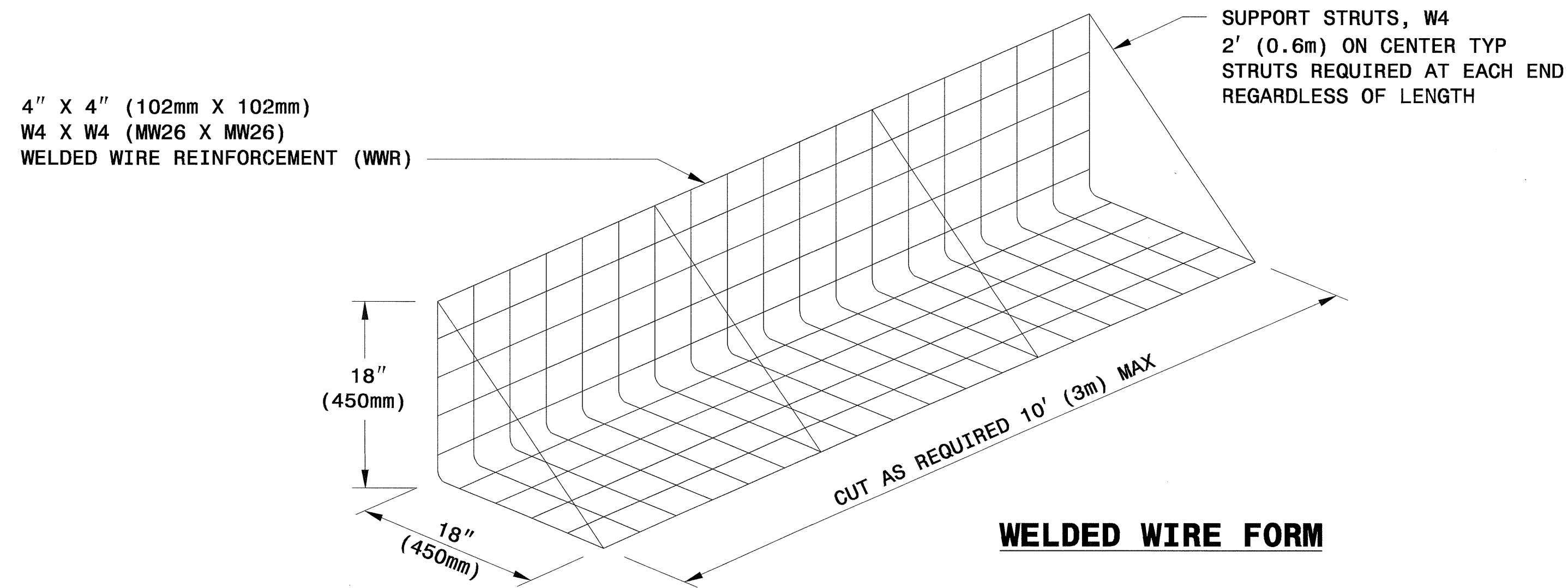
NOTES FOR HILFIKER TEMPORARY WALL

- 1) CAP MAT AT TOP OF WALL IS NOT INCLUDED IN TABLES.
- 2) REINFORCEMENT IS NOT REQUIRED AT 0.3m LEVEL FOR SLOPE CASE UNTIL WALL HEIGHT (H) IS GREATER THAN 7.3m.
- 3) REINFORCEMENT IS NOT REQUIRED AT 0.9m LEVEL FOR SLOPE CASE UNTIL WALL HEIGHT (H) IS GREATER THAN 7.9m.
- 4) REINFORCEMENT IS NOT REQUIRED AT 0.3m LEVEL FOR SURCHARGE CASE UNTIL WALL HEIGHT (H) IS GREATER THAN 7.9m.

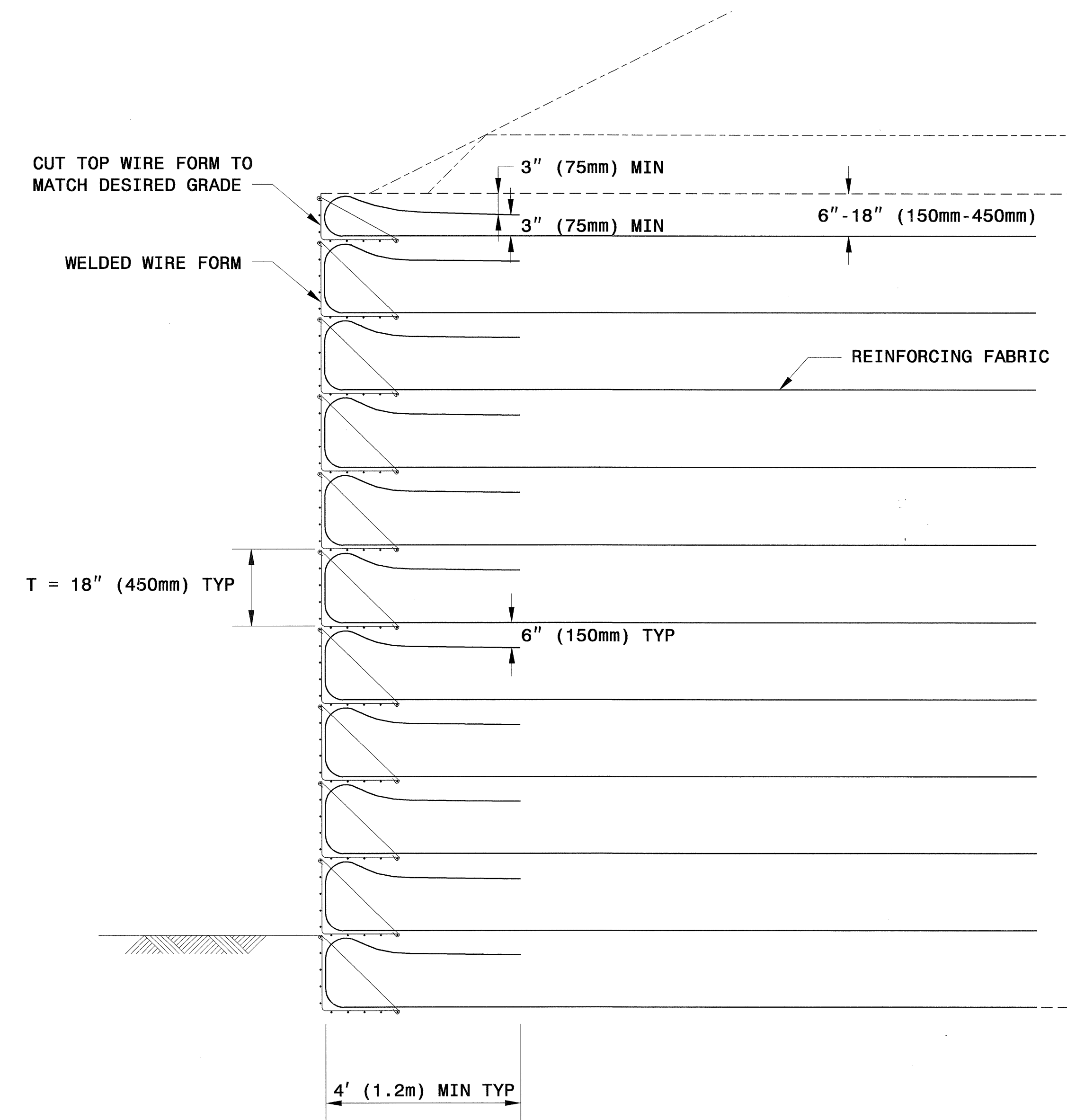


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DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD TEMPORARY MSE WALL REINFORCEMENT TABLES - METRIC



PLAN VIEW OF FABRIC OVERLAP

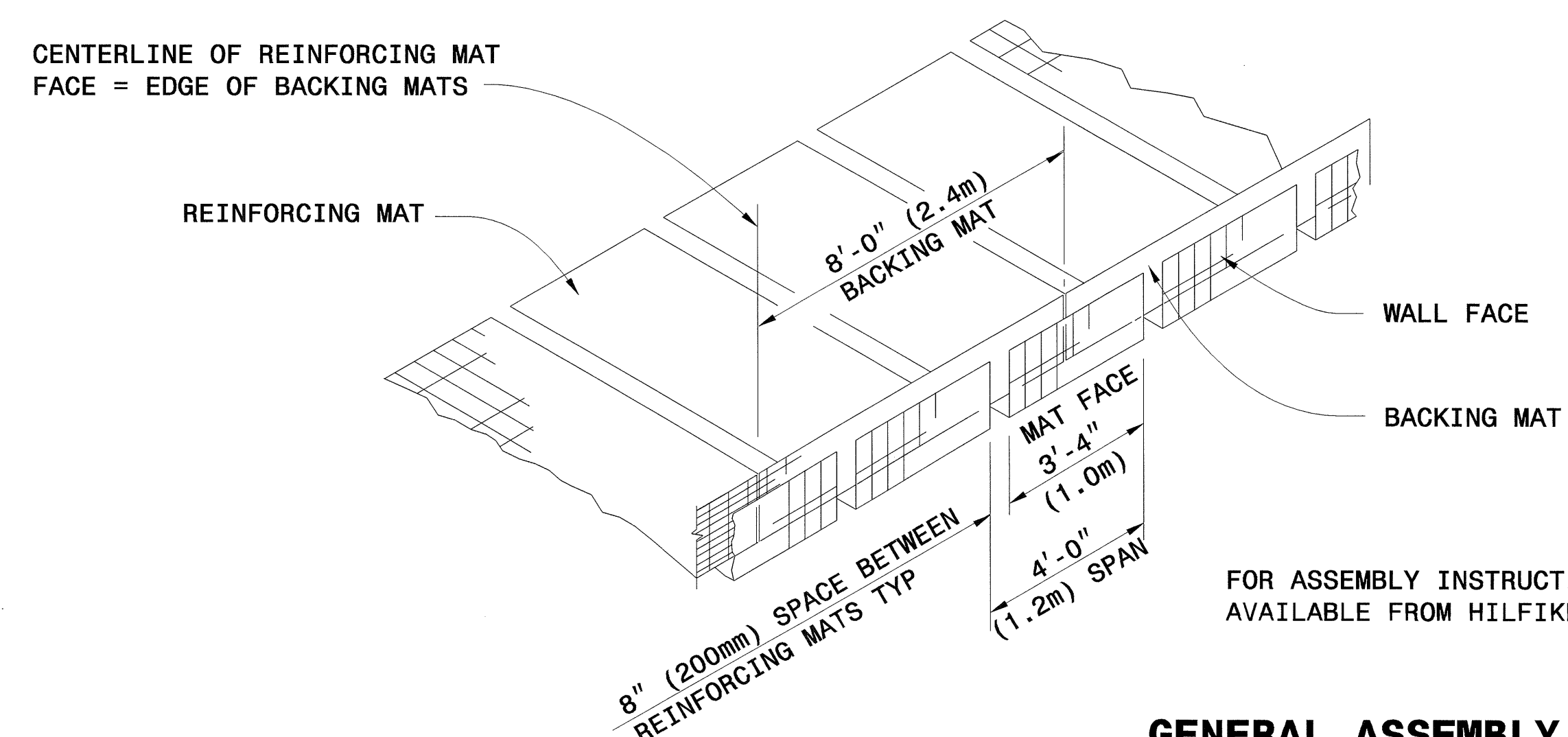


TYPICAL SECTION

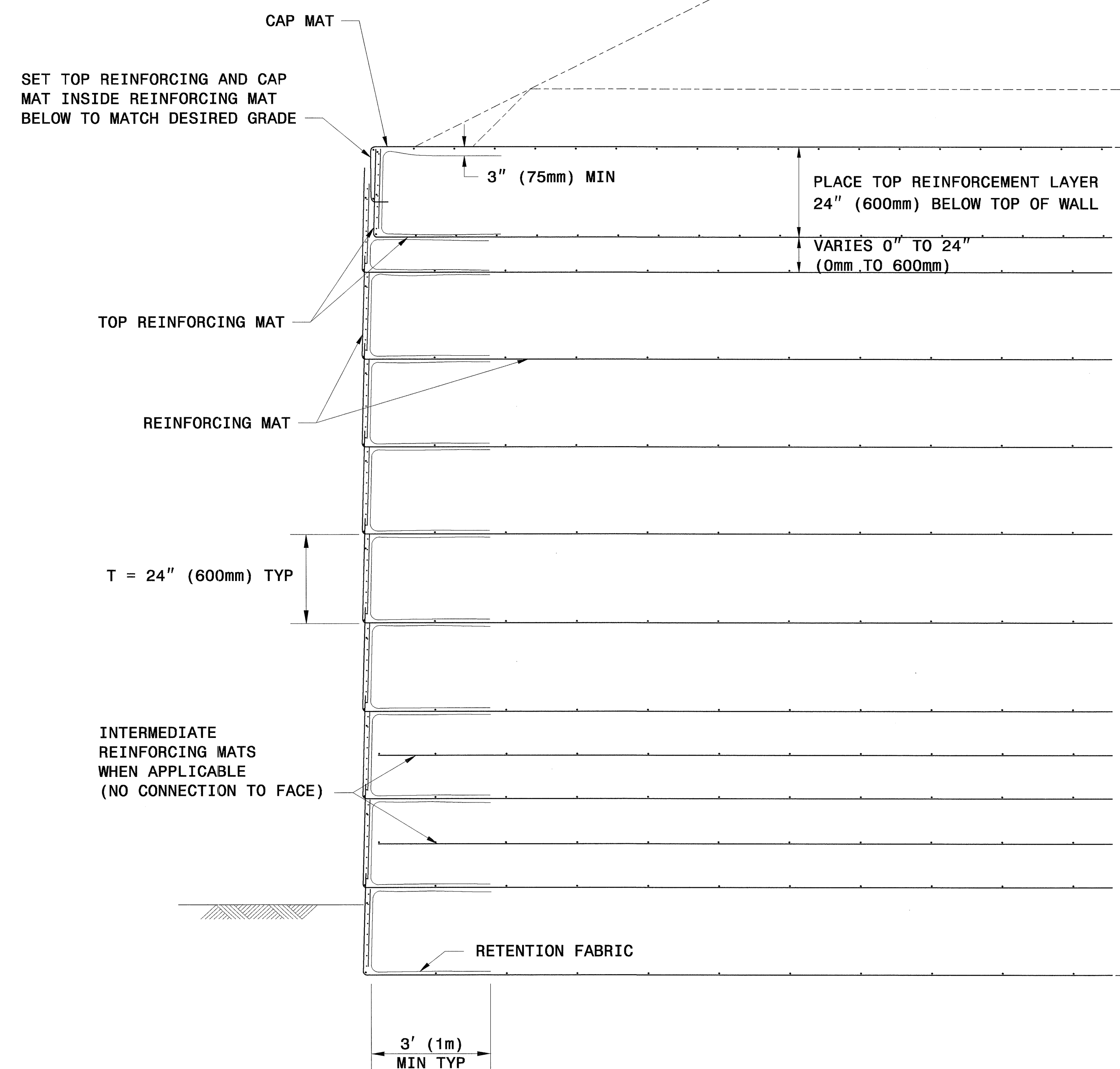
**MINIMUM REQUIRED REINFORCING FABRIC STRENGTH FOR RD*
(SLOPE AND SURCHARGE CASES)**

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)

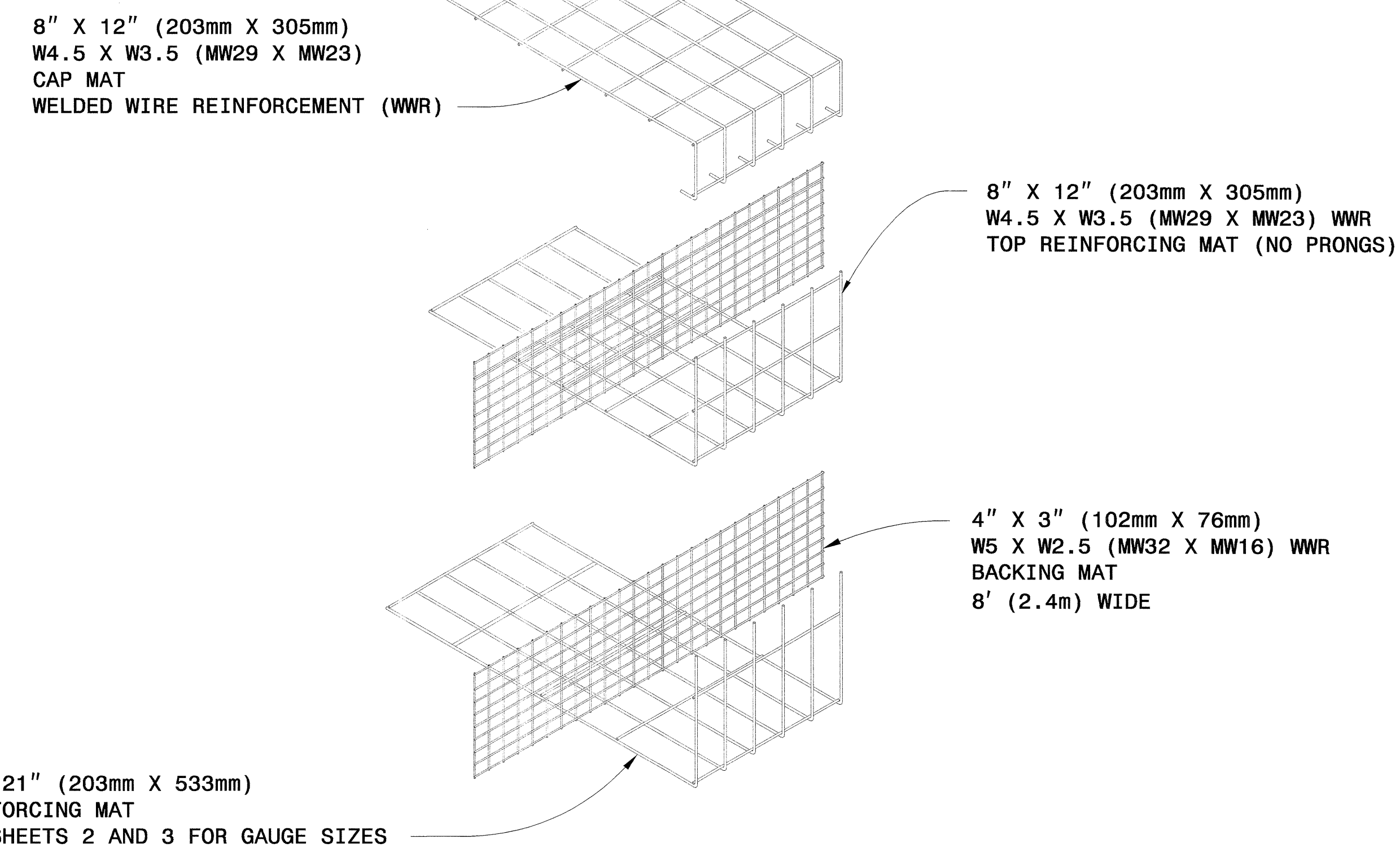
*RD = REINFORCEMENT DIRECTION



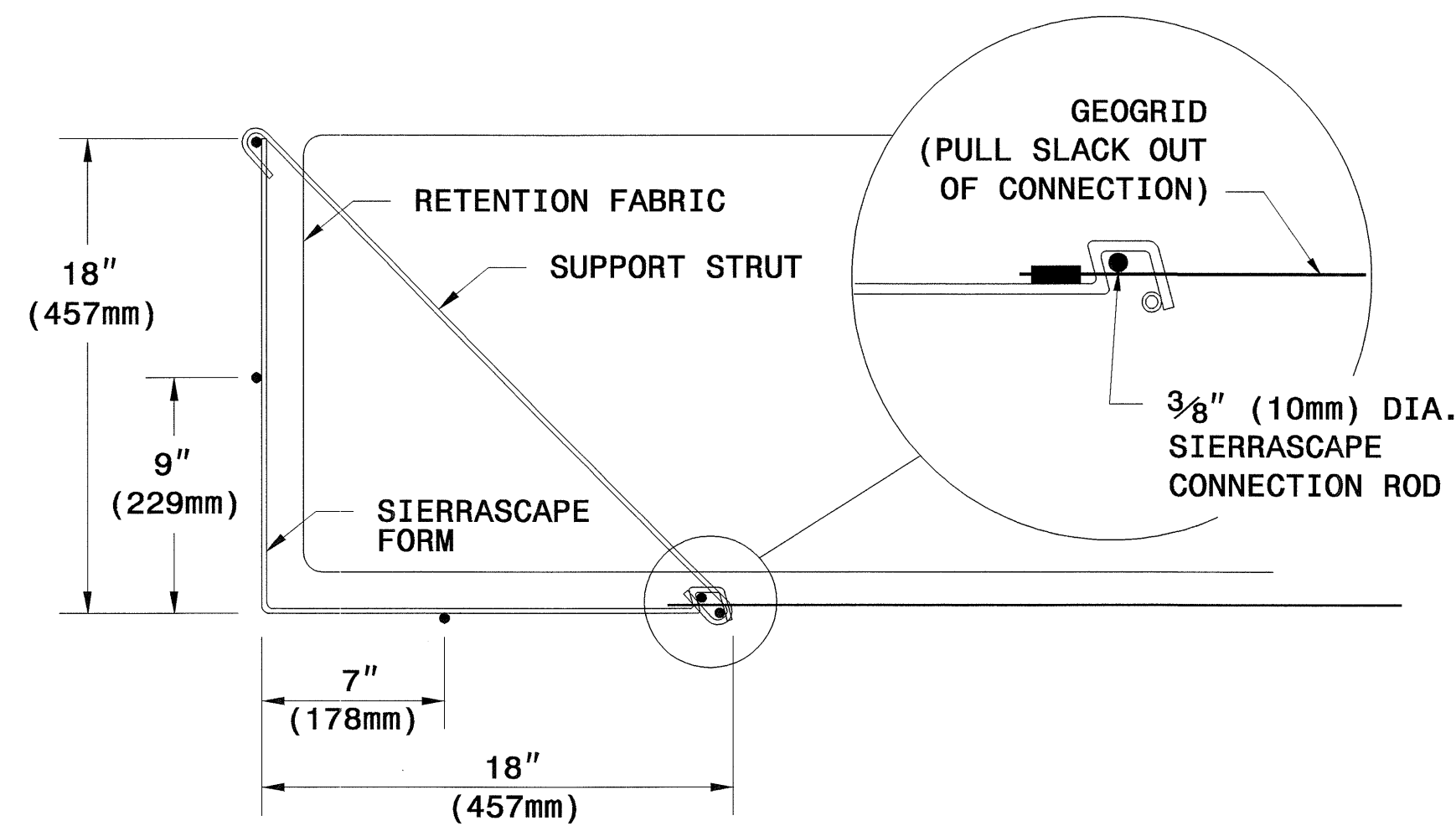
GENERAL ASSEMBLY DETAIL



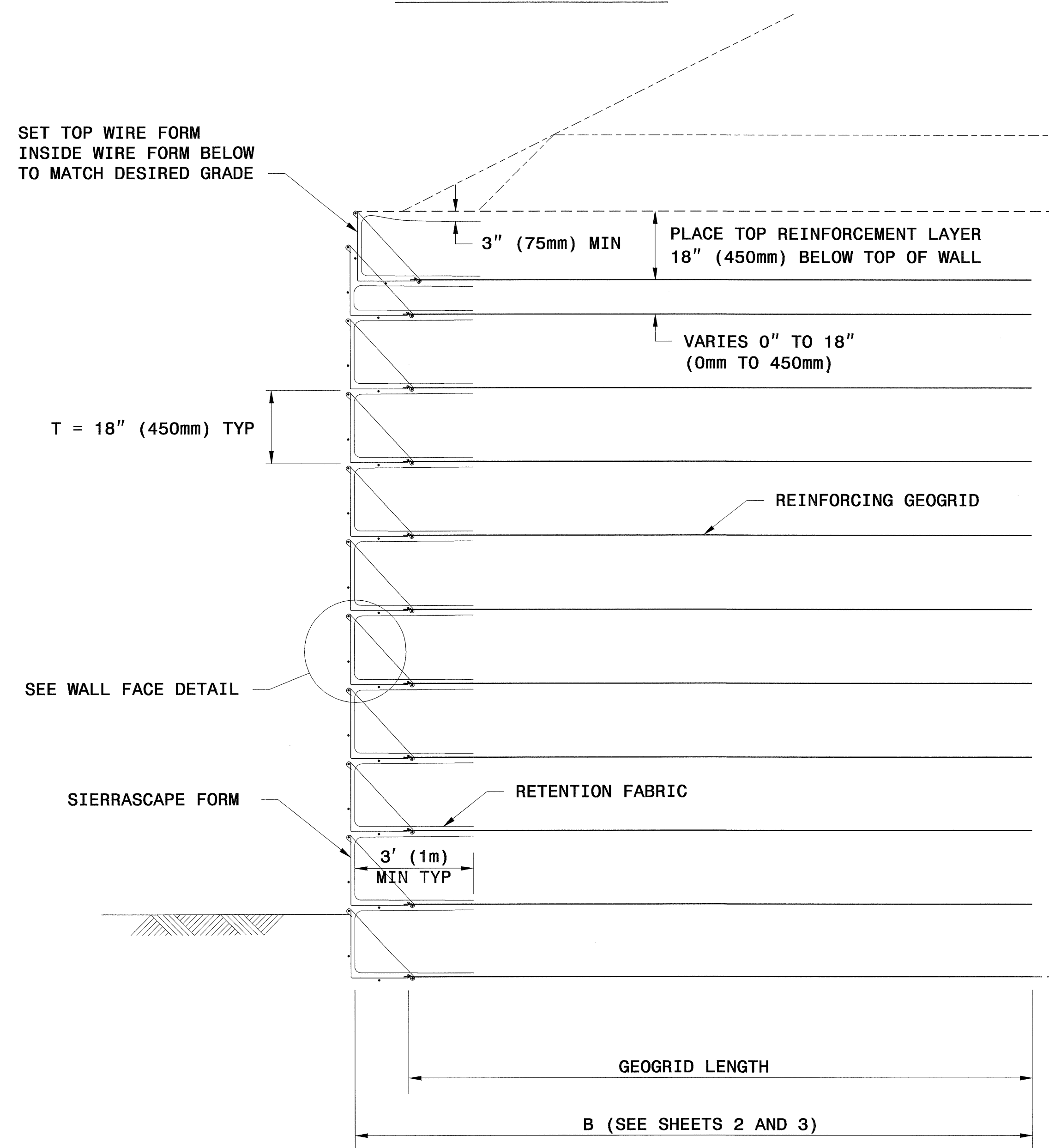
TYPICAL SECTION



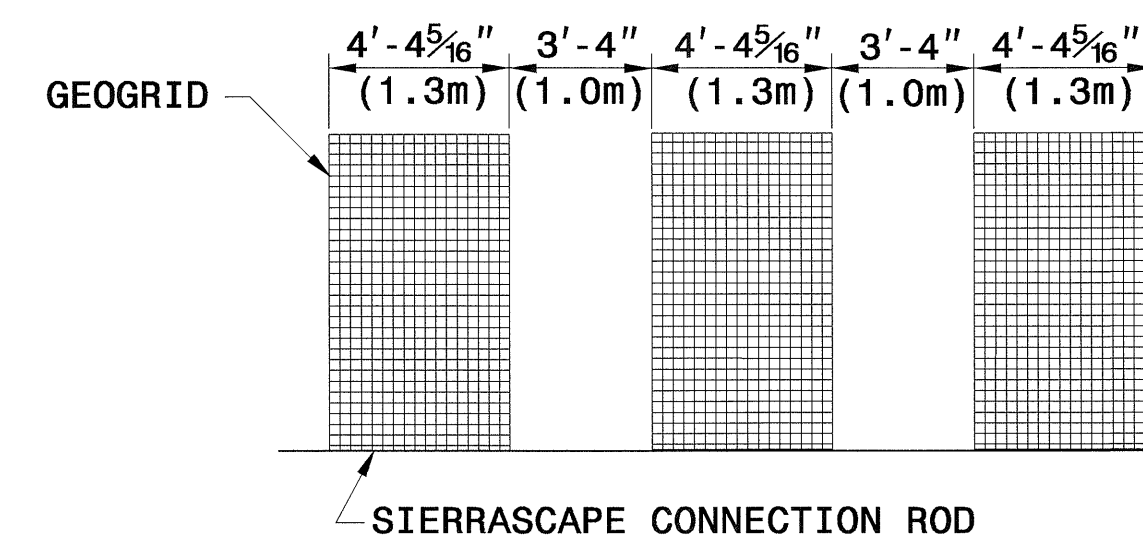
WALL COMPONENTS



WALL FACE DETAIL

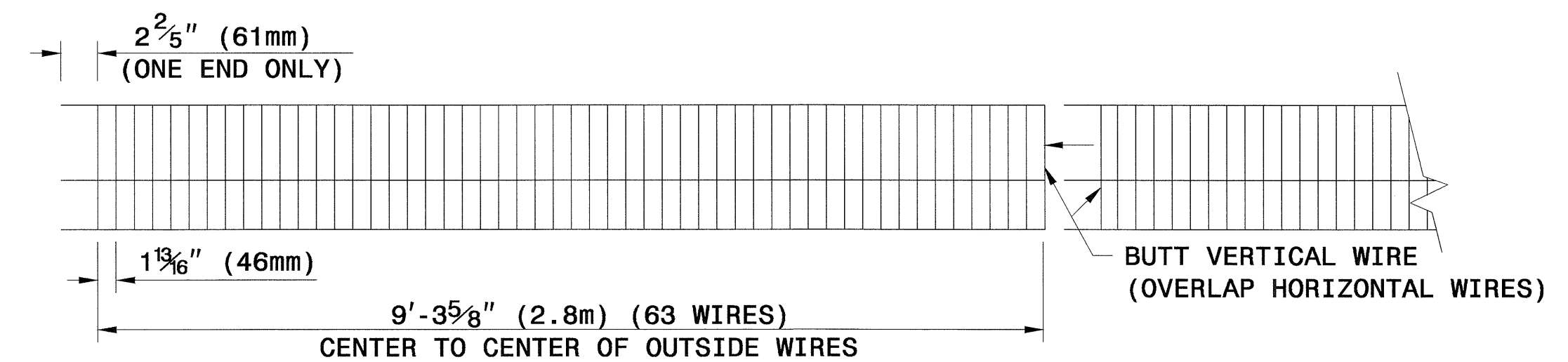


TYPICAL SECTION

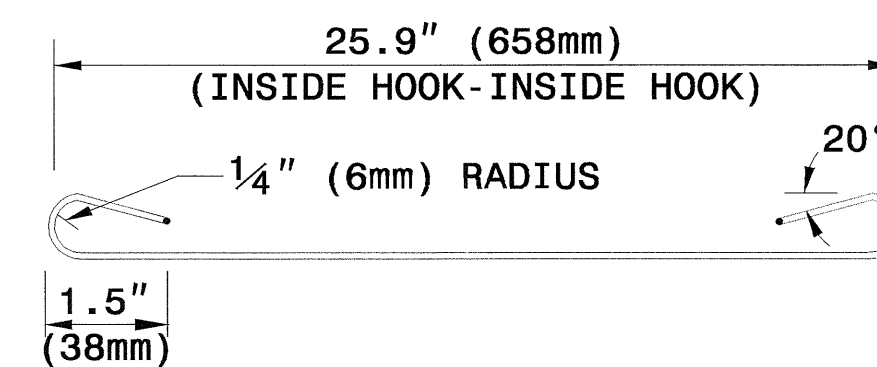


PLACE ALTERNATE LAYERS OF GEOGRID IN STAGGERED PATTERN SUCH THAT THE LAYER ABOVE IS CENTERED OVER SPACE BELOW

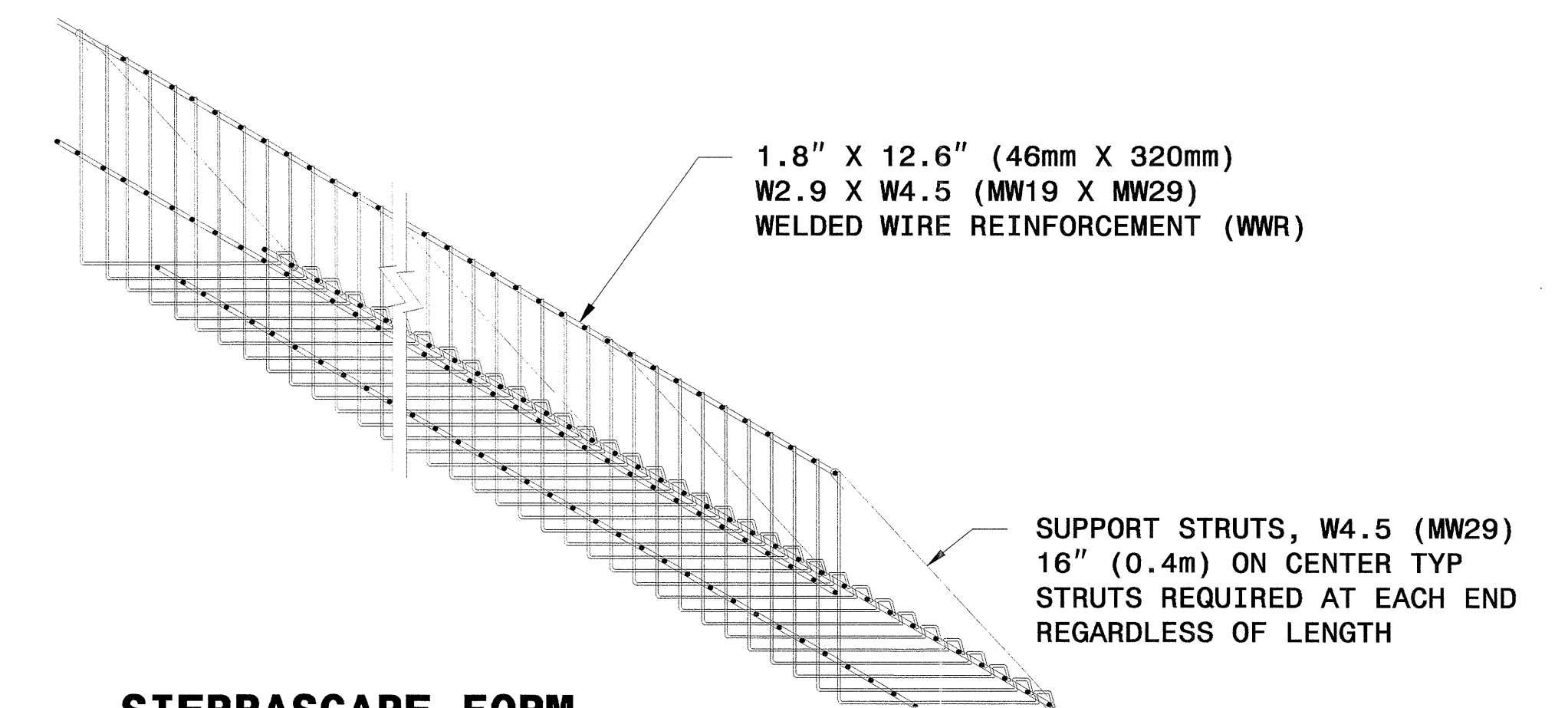
TYPICAL GEOGRID COVERAGE



ELEVATION VIEW

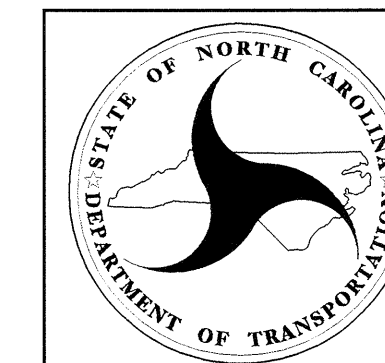
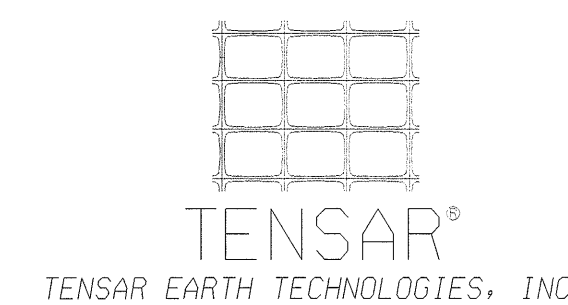


SUPPORT STRUT



SIERRASCAPE FORM

WALL COMPONENTS

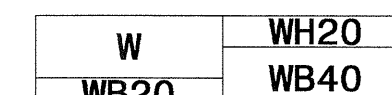
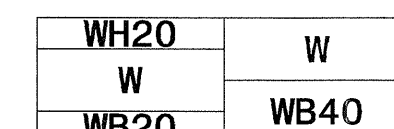
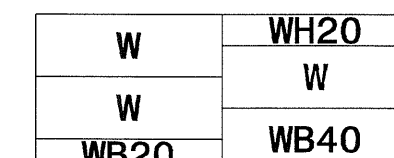
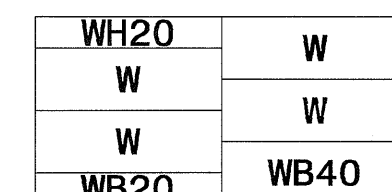
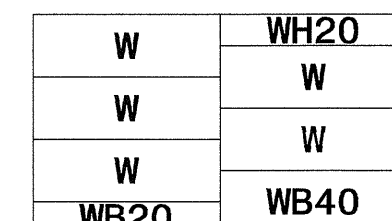
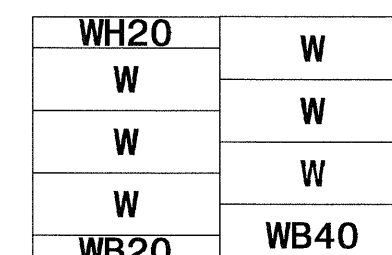
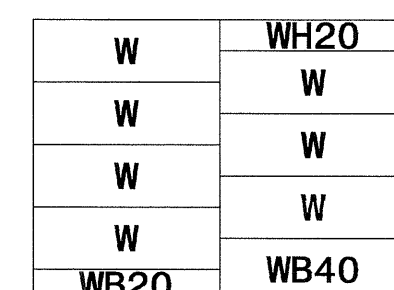
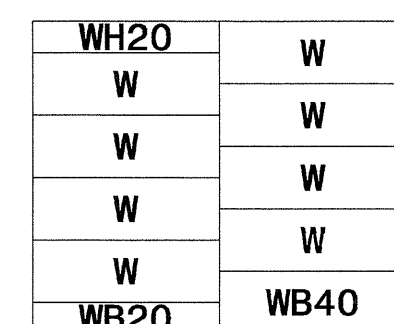
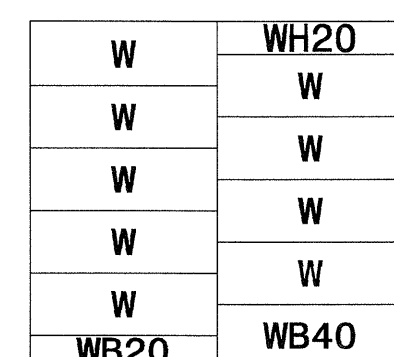
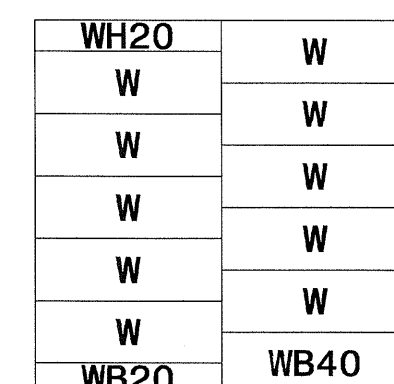
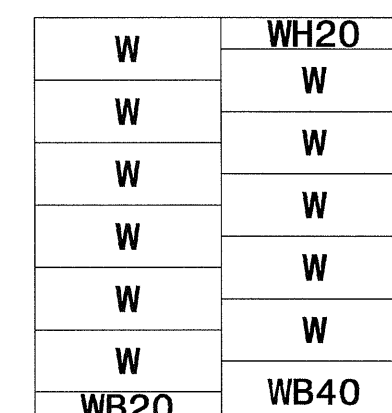
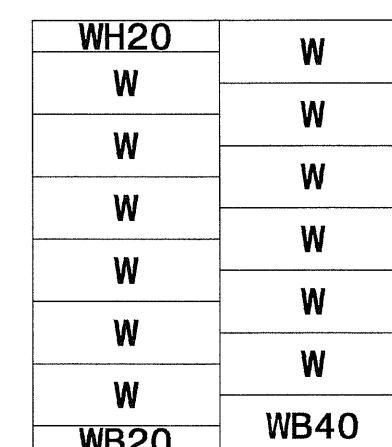
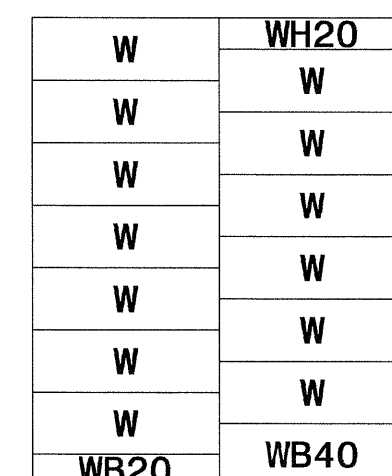
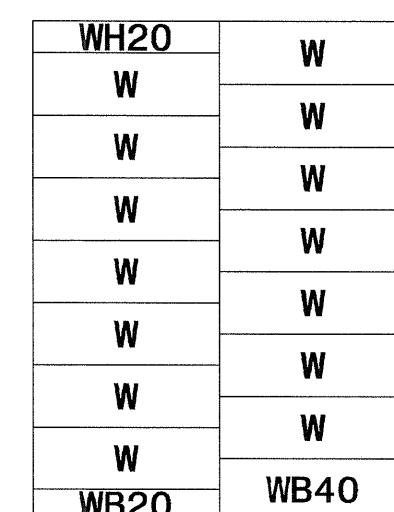
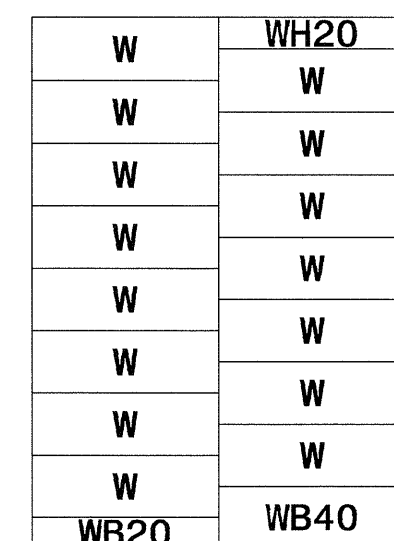
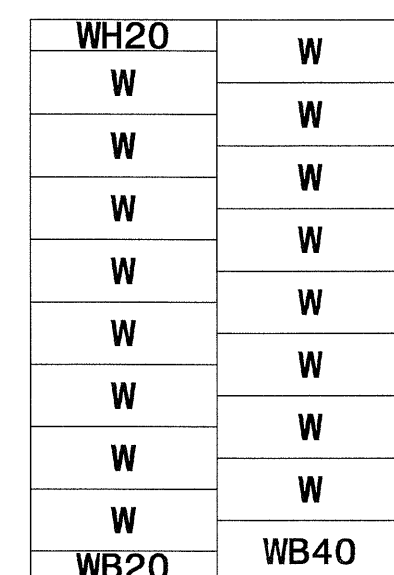


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SIERRASCAPE TEMPORARY WALL

PANEL LAYOUTS

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



(FEET-INCHES)
(METER)

< 17 - 0
< 5.2

< 15 - 4
< 4.7

< 13 - 8
< 4.2

< 12 - 0
< 3.7

< 10 - 4
< 3.2

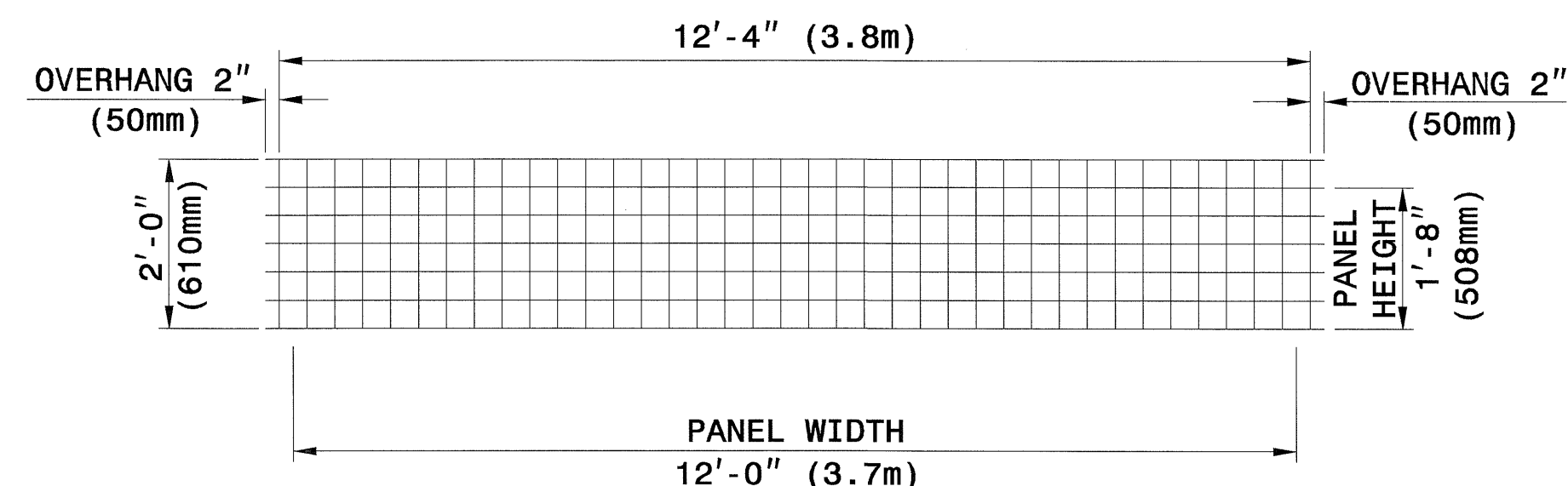
< 8 - 8
< 2.6

< 7 - 0
< 2.1

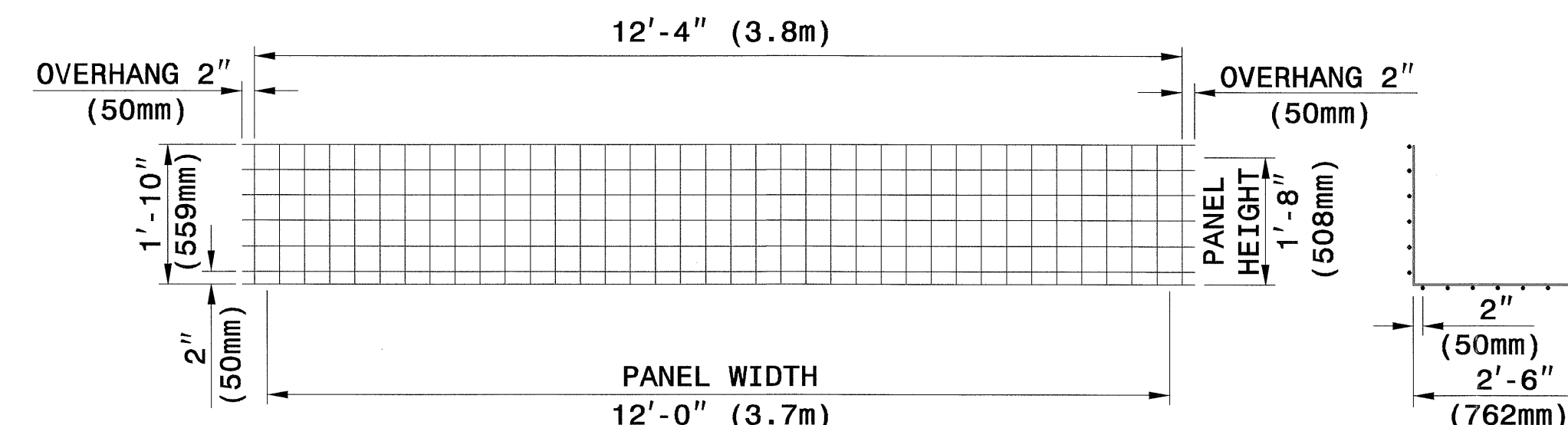
< 5 - 4
< 1.6

< 3 - 8
< 1.1

34934.3.3 (U3344A)

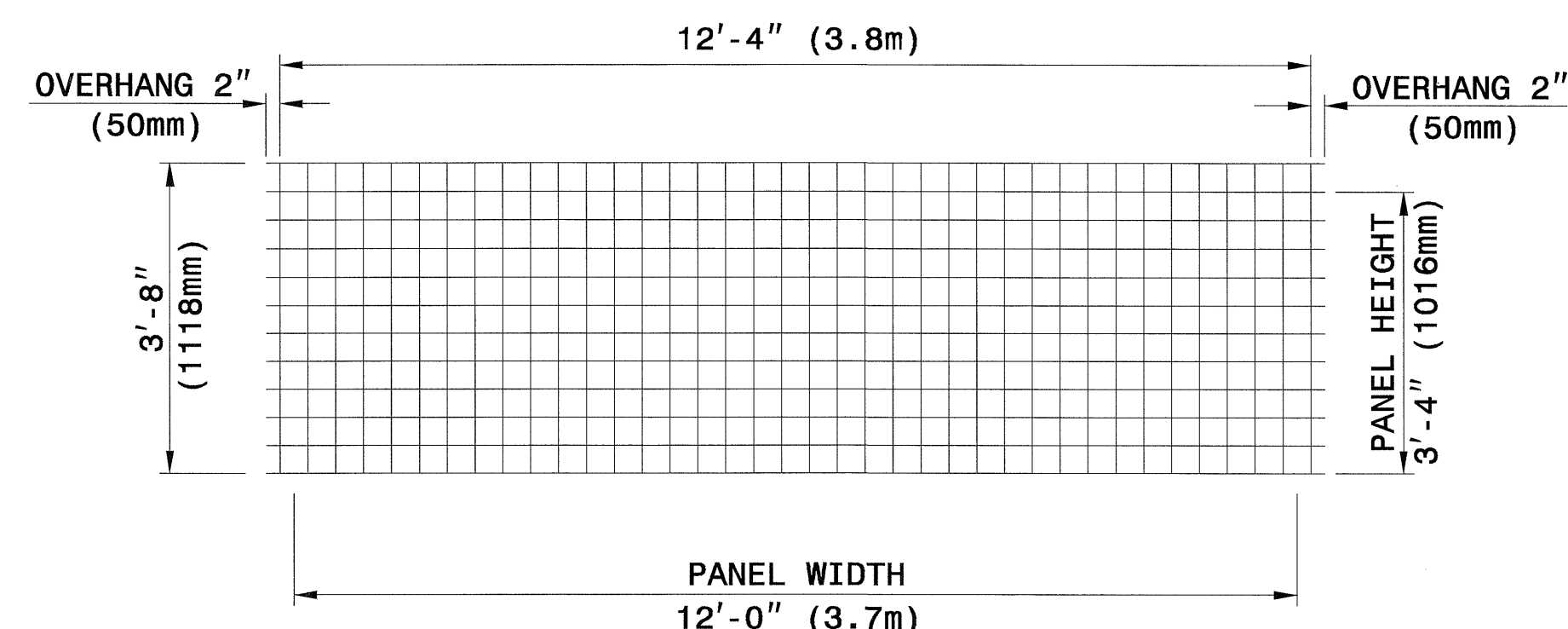


TYPE WH20

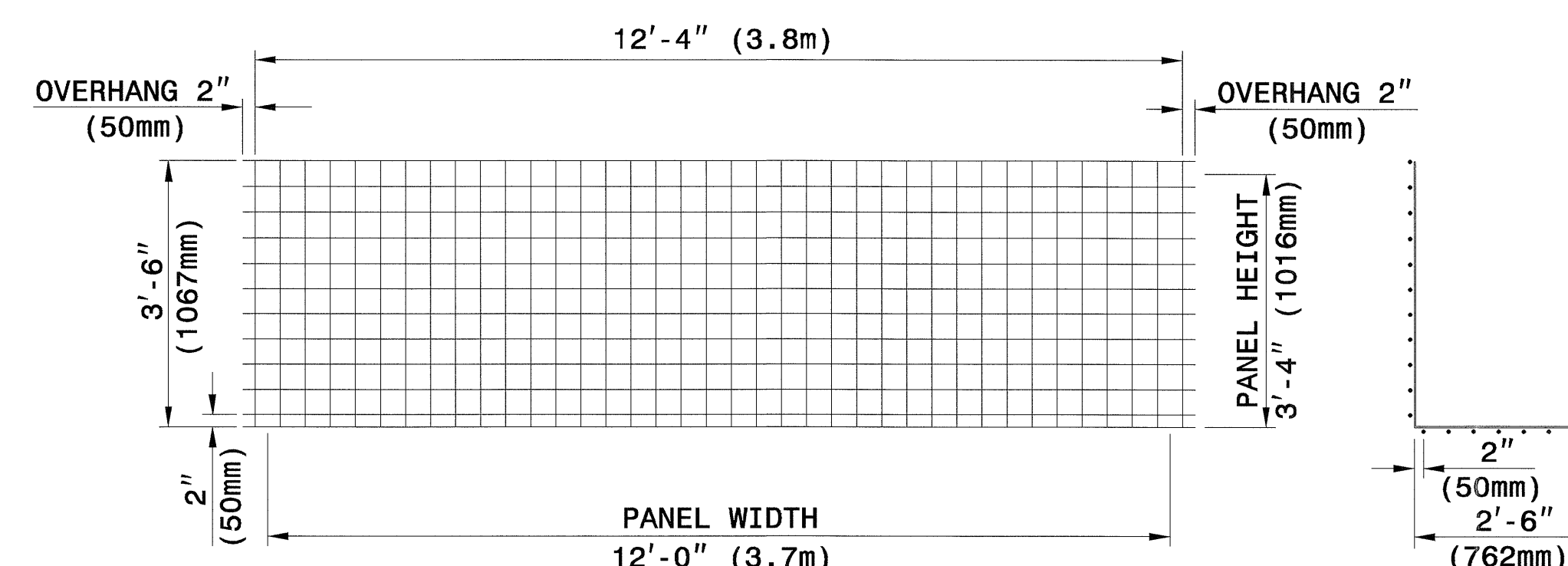


TYPE WB20

SECTION



TYPE W



TYPE WB40

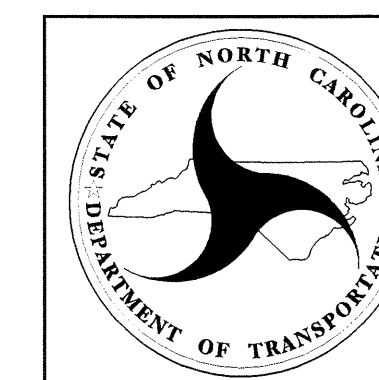
SECTION

WELDED WIRE FACINGS

WELDED WIRE FORMS

PANEL TYPES (WELDED WIRE FACINGS AND FORMS)

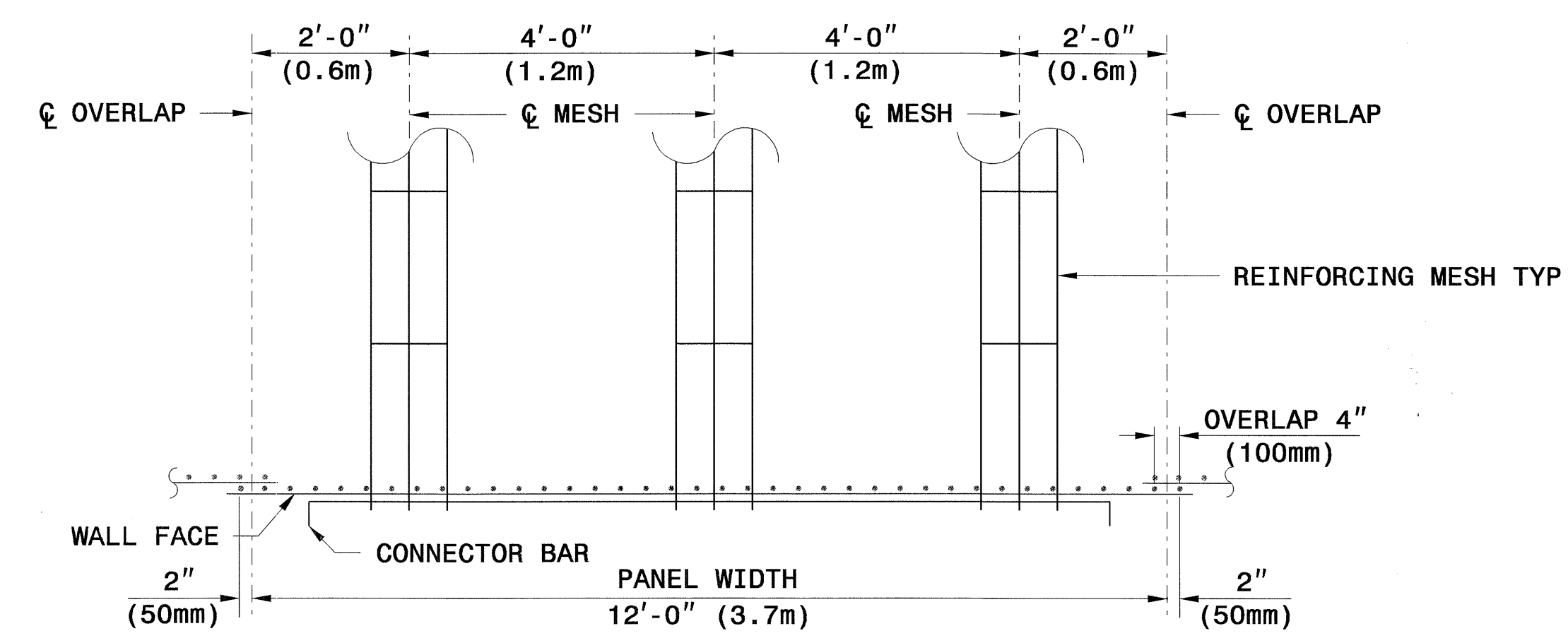
4" X 4" (100mm X 100mm), W8 X W8 (MW52 X MW52) WELDED WIRE REINFORCEMENT (WWR)



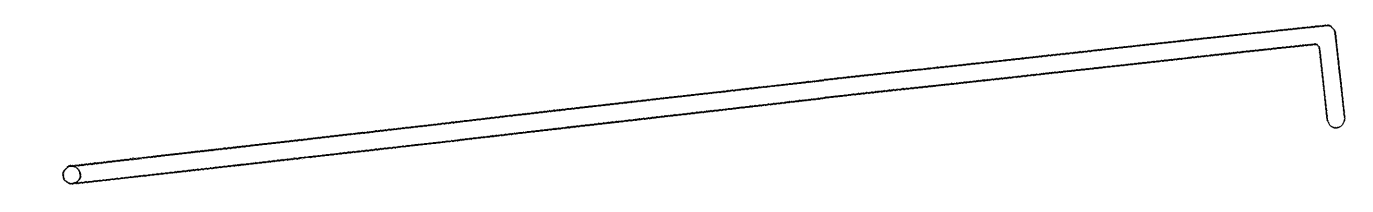
GEOTECHNICAL ENGINEERING UNIT

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

RETAINED EARTH
TEMPORARY WALL



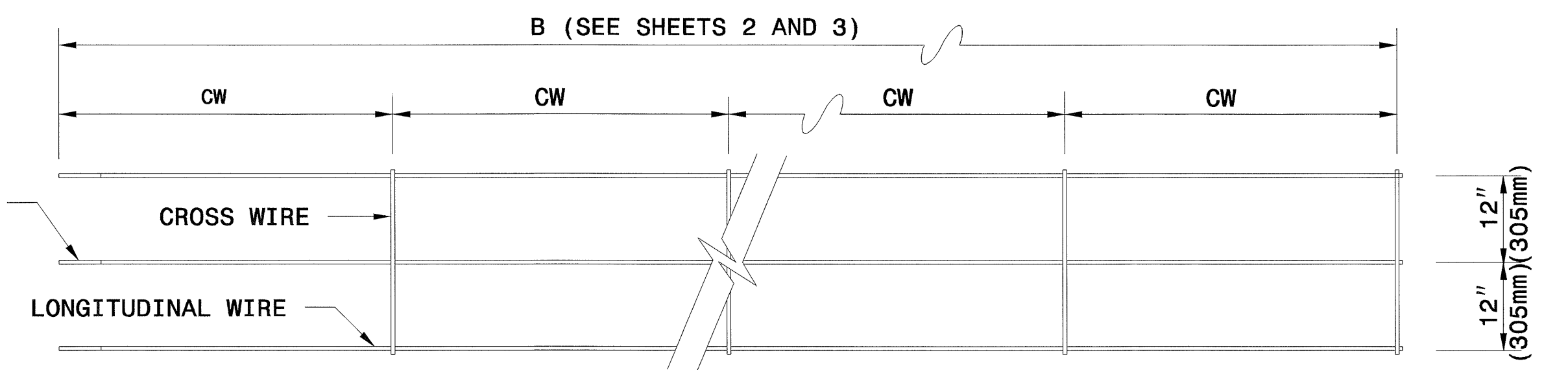
**REINFORCING MESH PLACEMENT DETAIL
(PLAN VIEW)**



1/2" (13 mm) DIA. BAR

CONNECTOR BAR

LOOPED END OF MESH
(SEE REINFORCING MESH LOOP DETAIL)

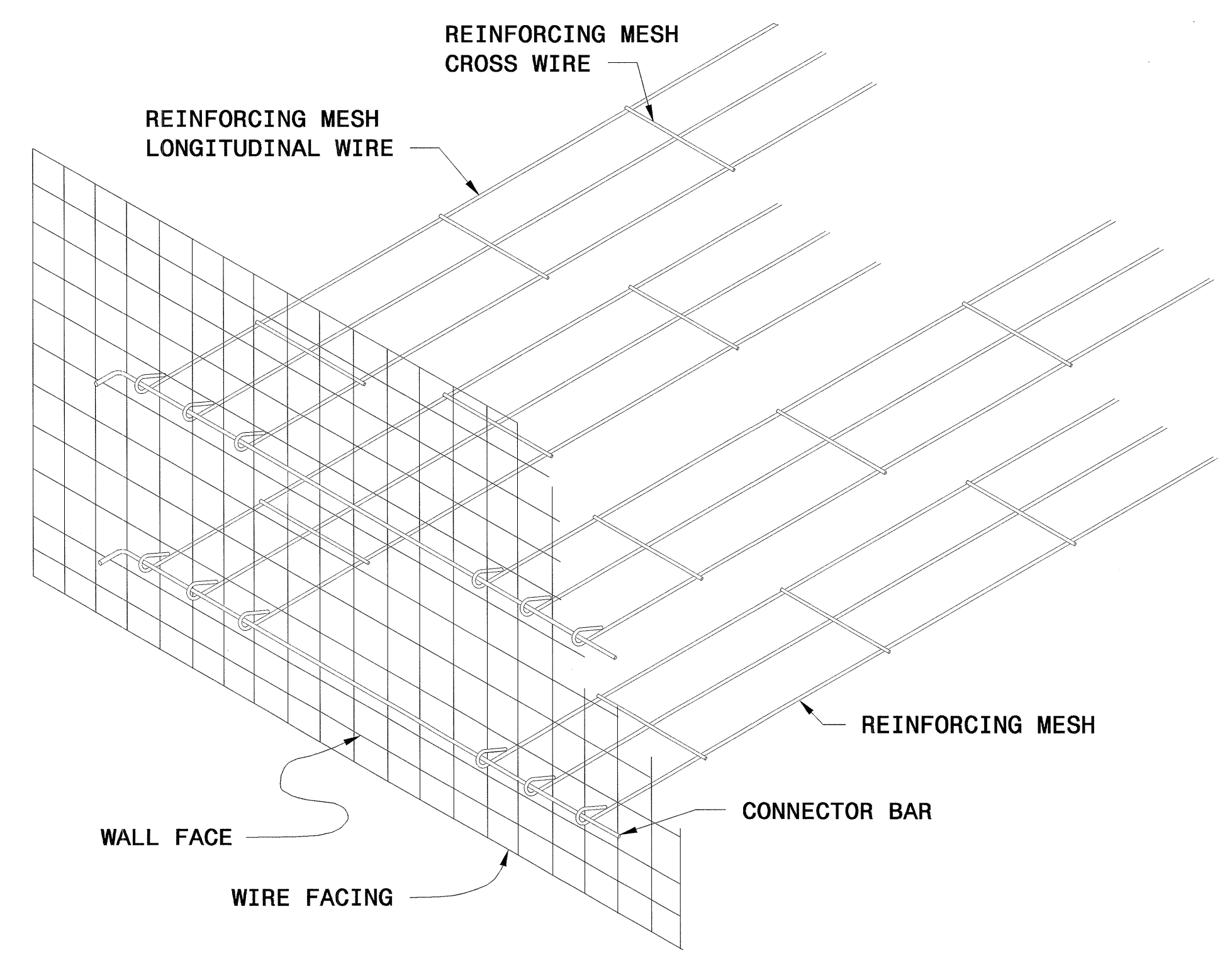


IF REINFORCEMENT LENGTH IS NOT AN INCREMENT OF 2'-0" (610mm) MAKE CW EQUAL TO 12" (305mm) AT THE END OF THE REINFORCING MESH OPPOSITE THE LOOPED END

3W8 X W8 x 2.0' (3MW52 X MW52 X 610mm)

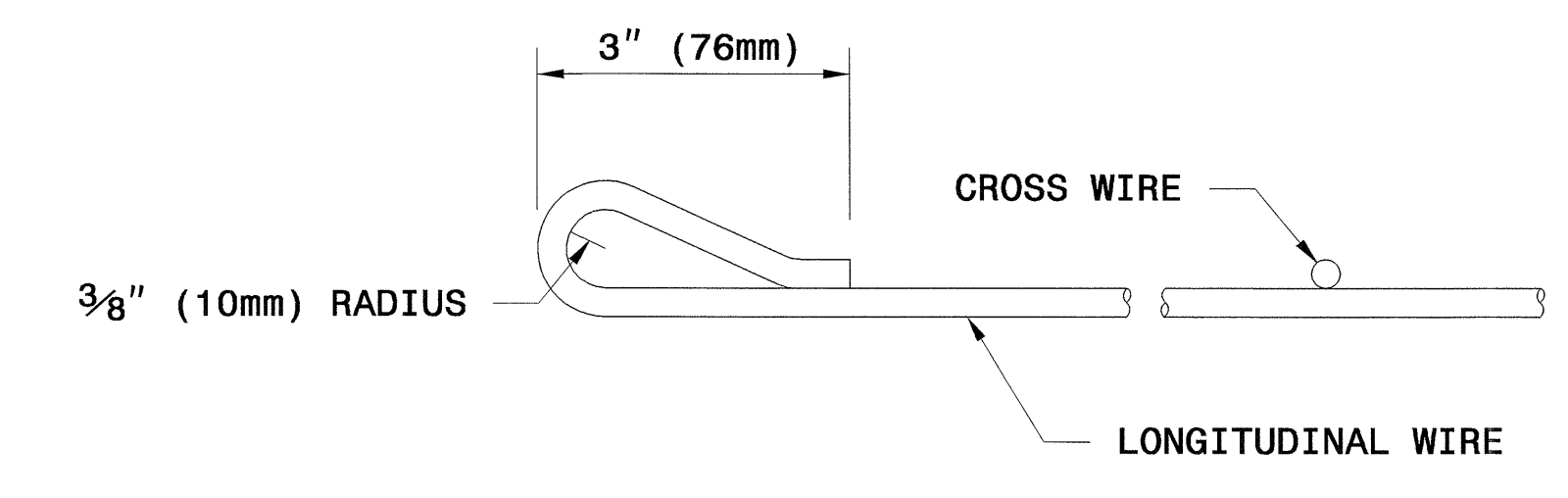
NO. OF LONGITUDINAL WIRES →
GAUGE OF LONGITUDINAL WIRES →
GAUGE OF CROSS WIRES →
SPACING OF CROSS WIRES IN FT (mm), CW →

REINFORCING MESH DESIGNATION



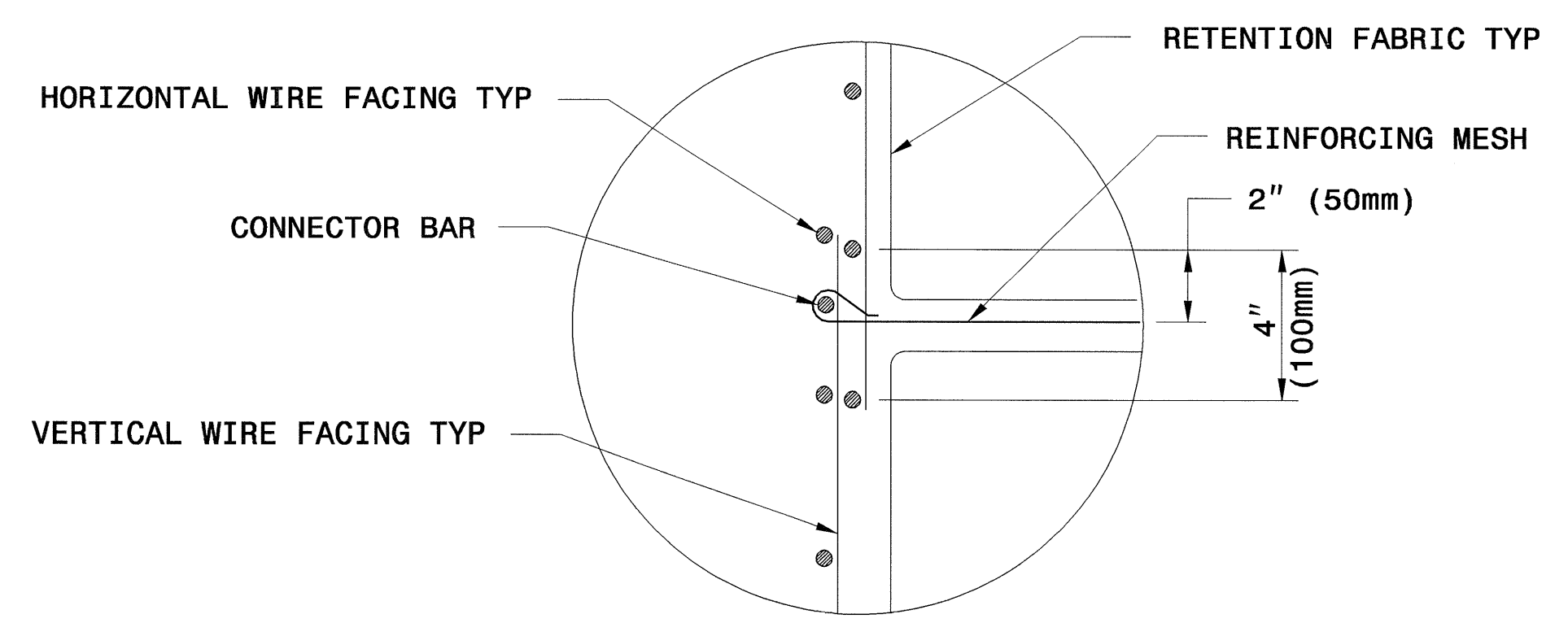
GENERAL ASSEMBLY DETAIL

REINFORCING MESH

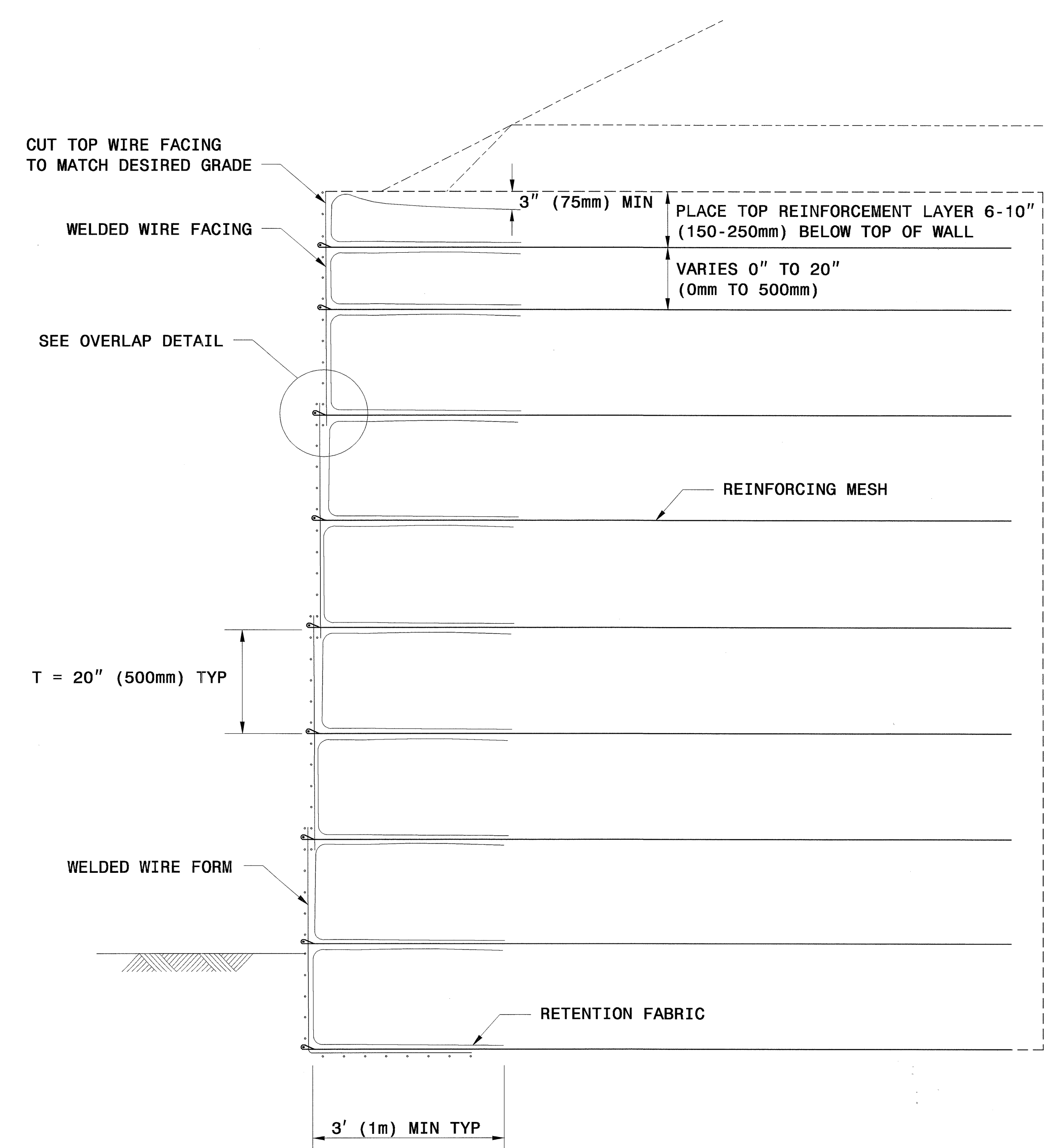


REINFORCING MESH LOOP DETAIL

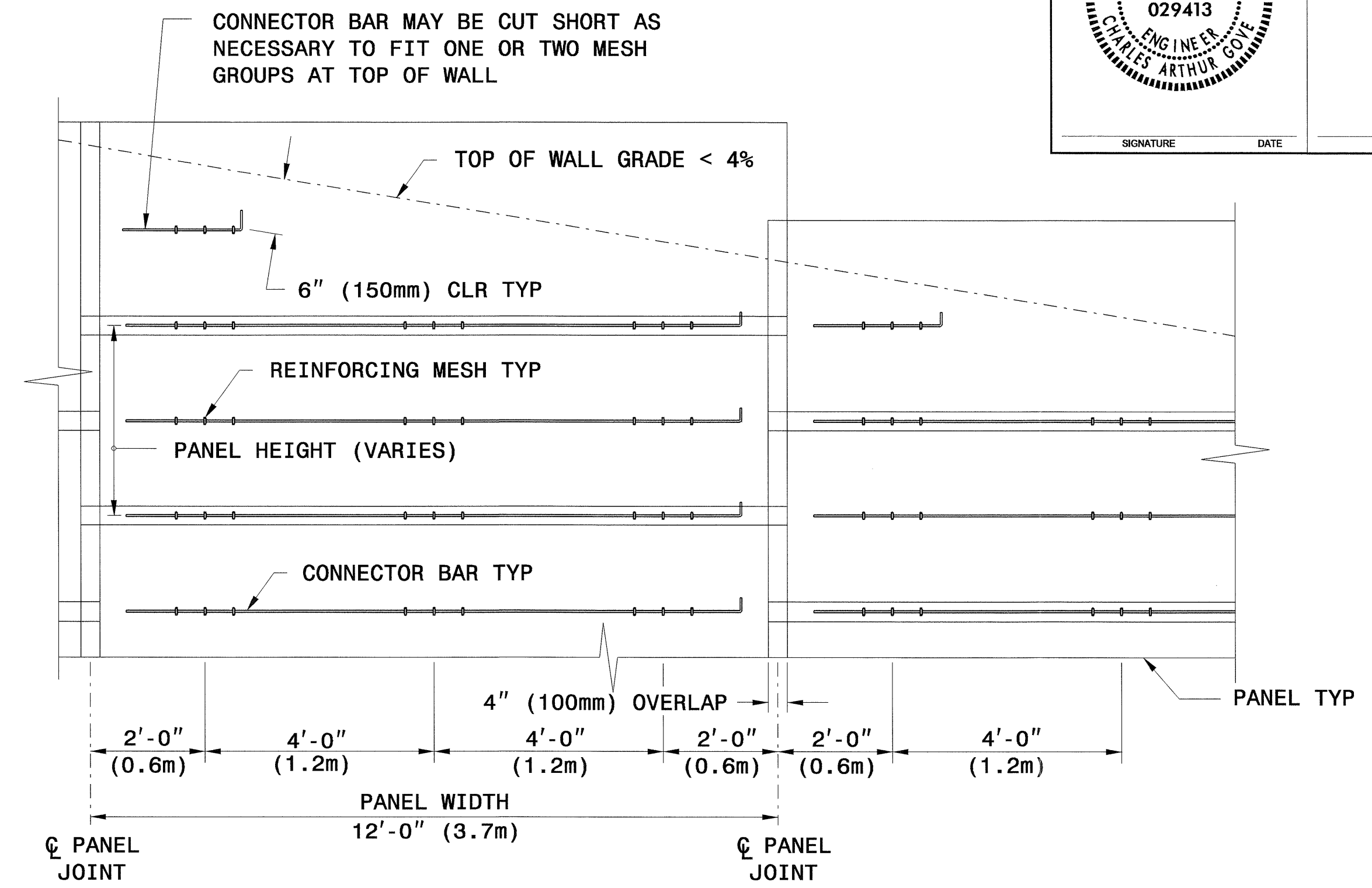




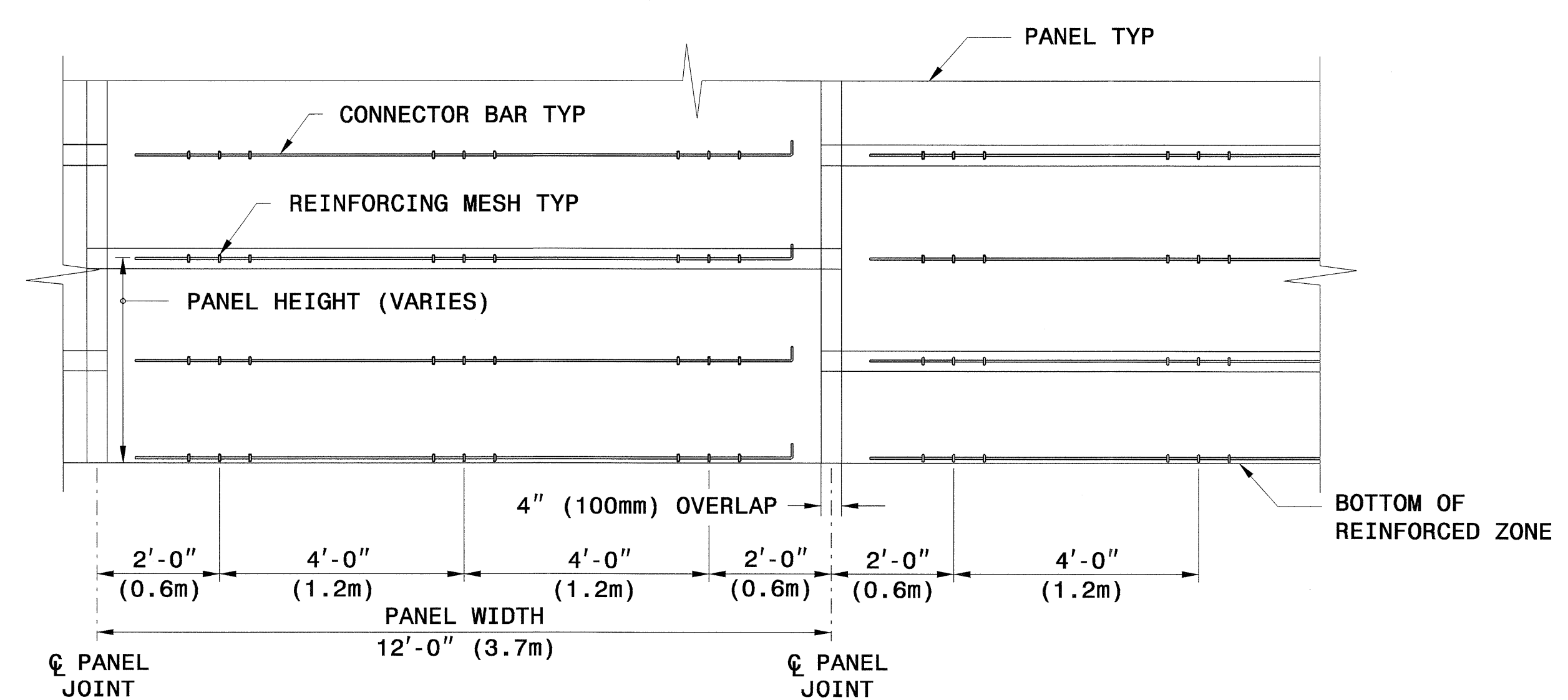
OVERLAP DETAIL



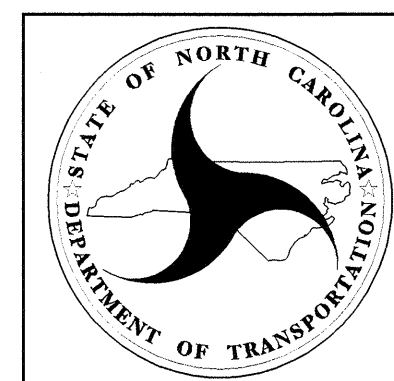
TYPICAL SECTION



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



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



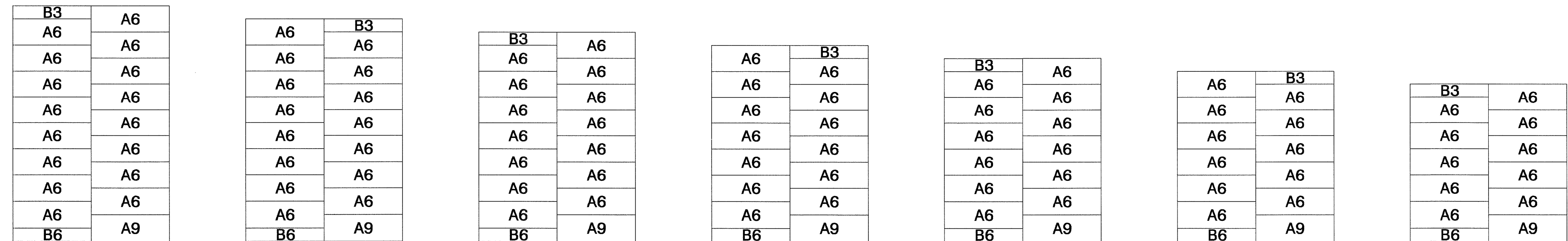
GEOTECHNICAL ENGINEERING UNIT
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

RETAINED EARTH
 TEMPORARY WALL

GEJ221417 11/21/2006 u3344a retained earth temporary wall s789 jrmatula RD-Oce34

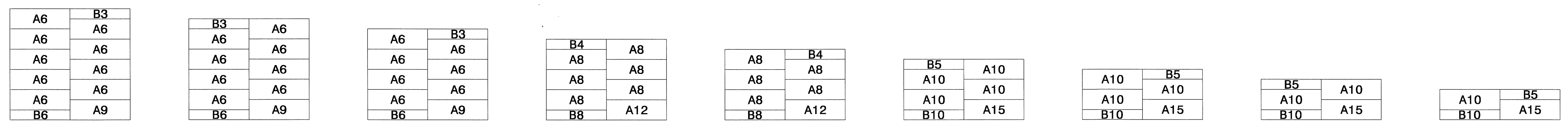
PANEL LAYOUTS

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

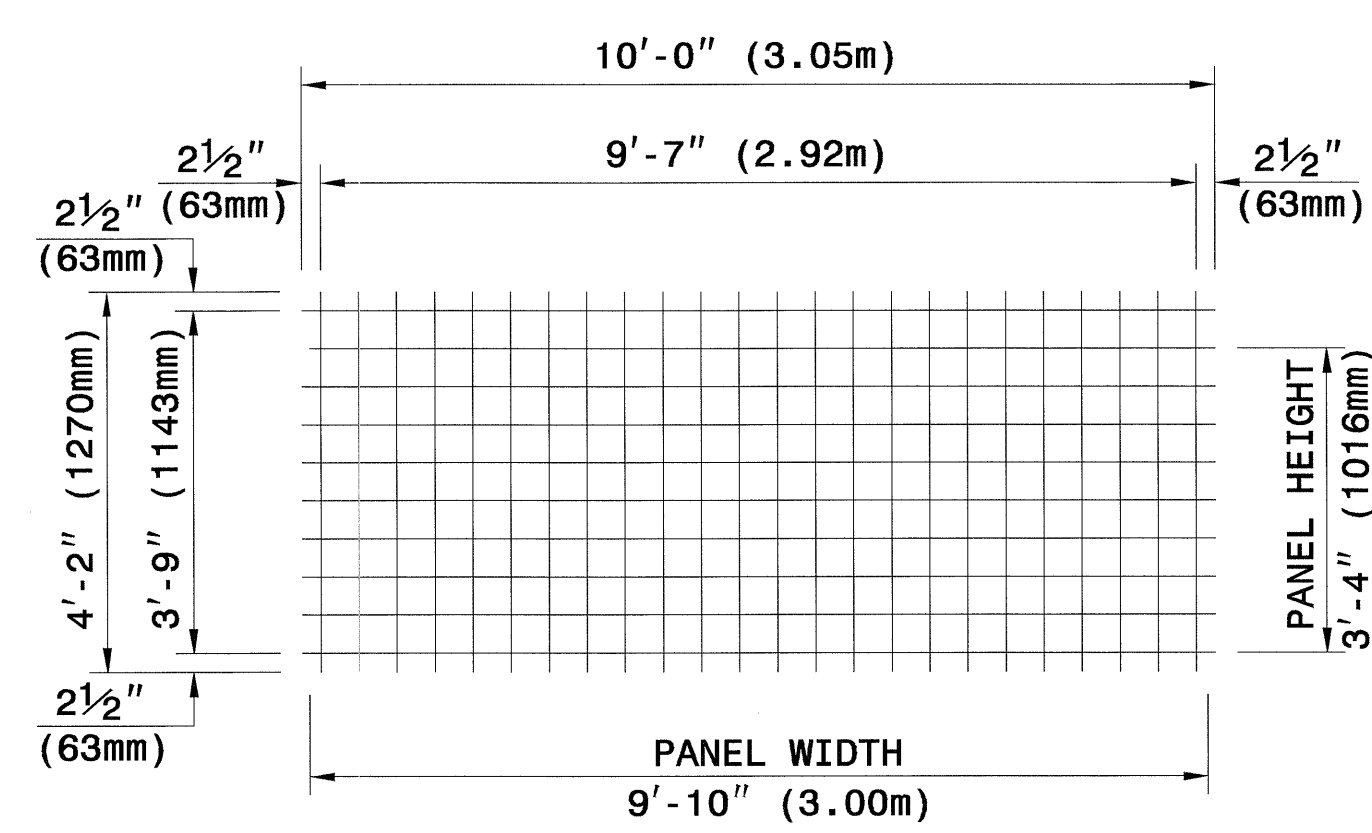


< 28 - 0 < 27 - 8 < 26 - 0 < 24 - 4 < 22 - 8 < 21 - 0 < 19 - 4
 < 8.5 < 8.4 < 7.9 < 7.4 < 6.9 < 6.4 < 5.9

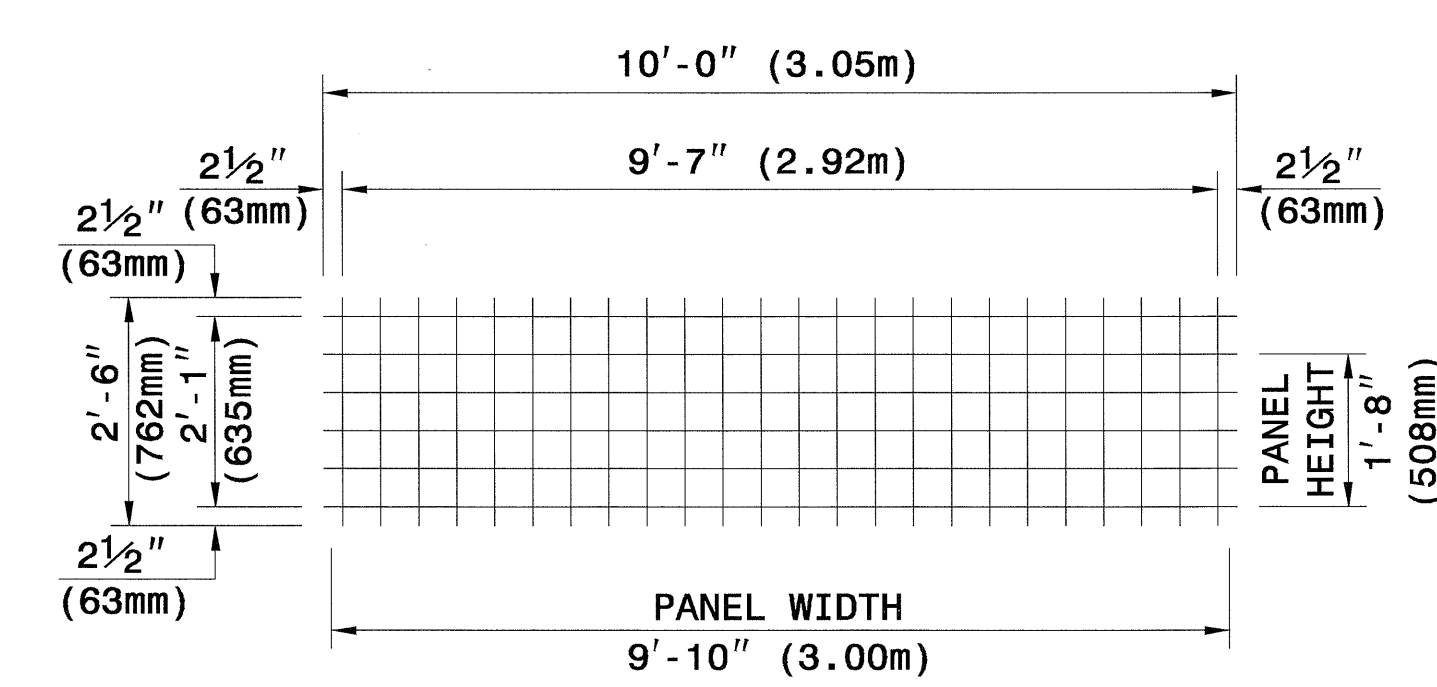
(FEET - INCHES)
(METER)



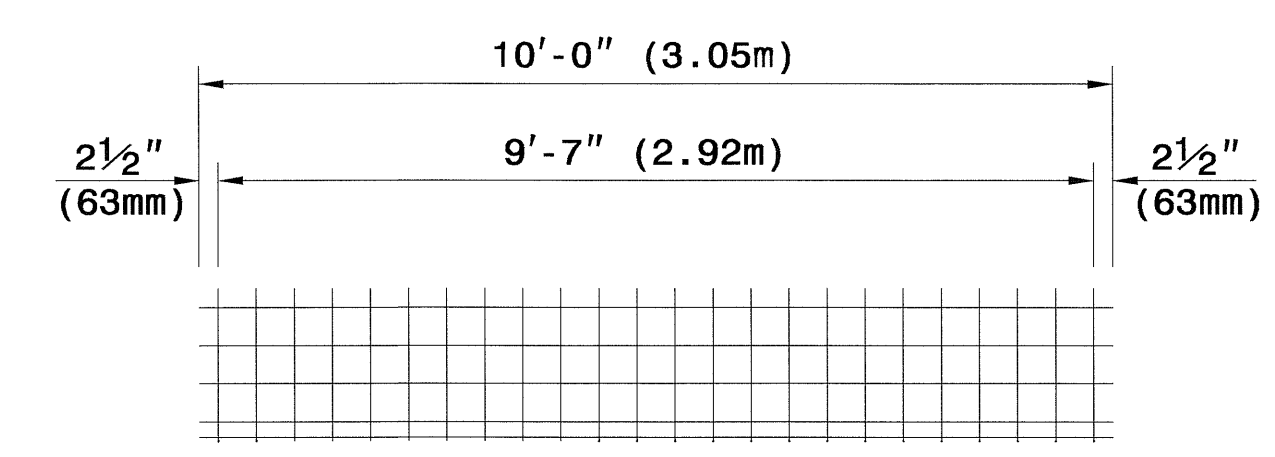
< 17 - 8 < 16 - 0 < 14 - 4 < 12 - 8 < 11 - 0 < 9 - 4 < 7 - 8 < 6 - 0 < 4 - 4
 < 5.4 < 4.9 < 4.4 < 3.9 < 3.4 < 2.8 < 2.3 < 1.8 < 1.3



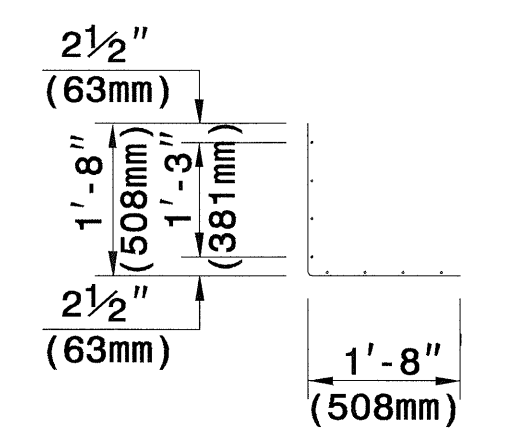
TYPE A



TYPE B



WELDED WIRE FORM

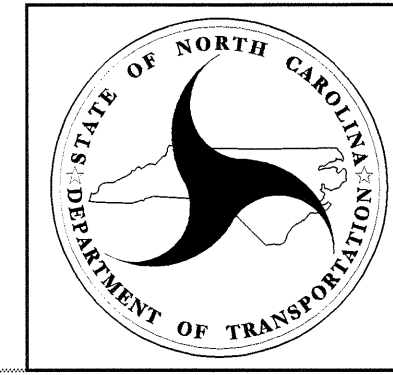


SECTION

WELDED WIRE FACINGS

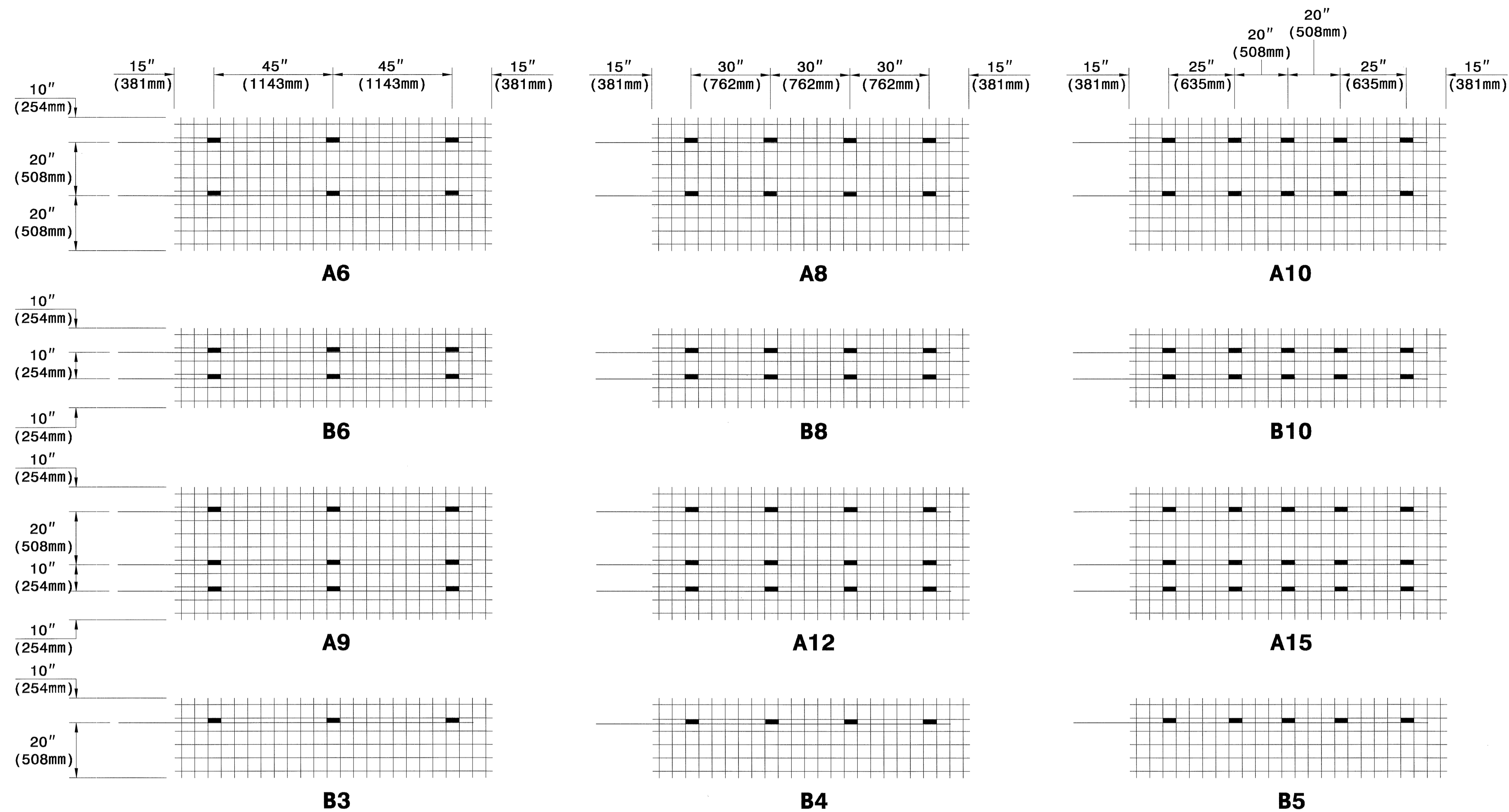
PANEL TYPES (WELDED WIRE FACINGS AND FORM)

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



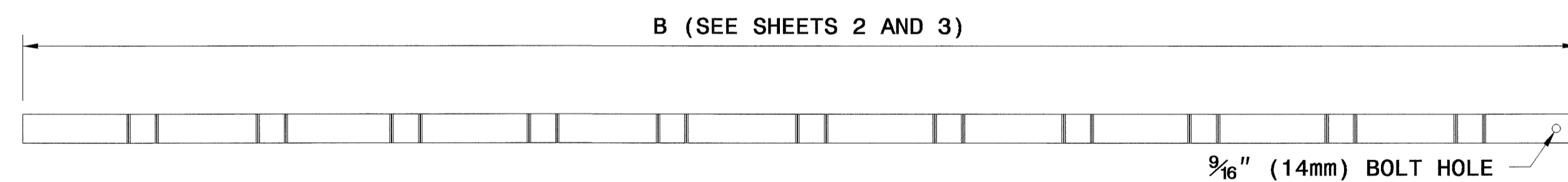
GEOTECHNICAL ENGINEERING UNIT
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

TERRATREL
 TEMPORARY WALL
 SHEET 10 OF 12 DATE: 10/17/06

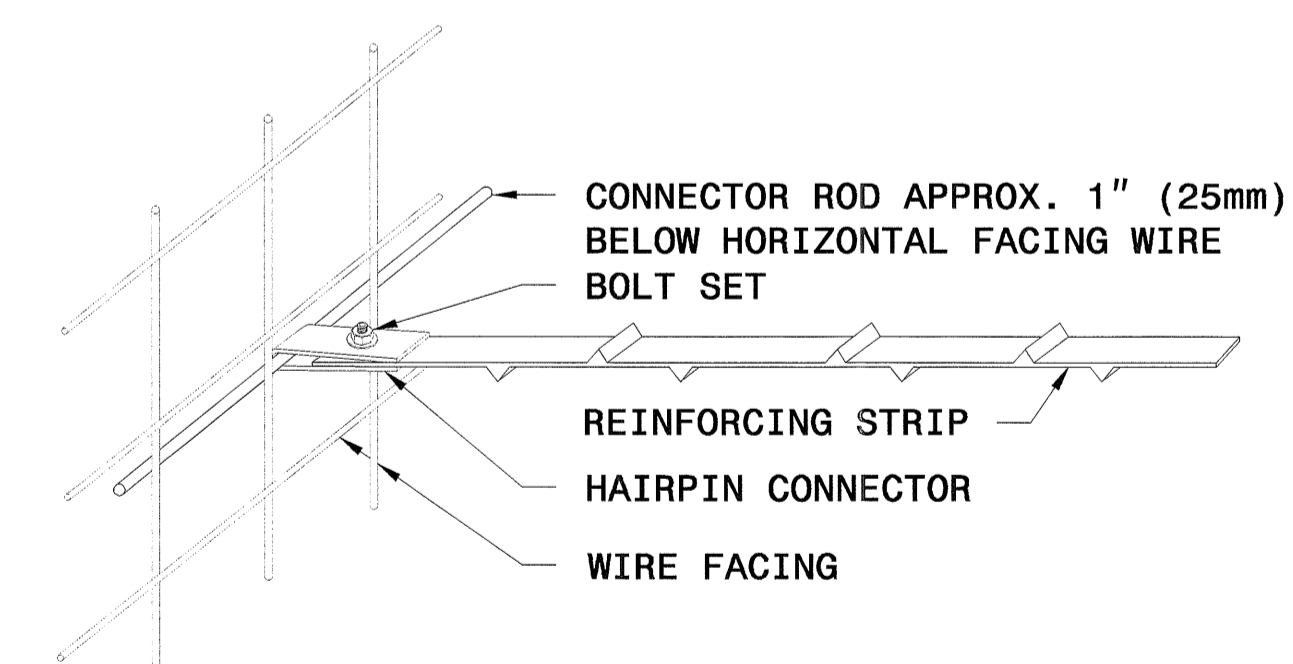


KEY: A8
 NUMBER OF REINFORCING STRIPS
 PANEL TYPE

CONNECTOR ROD AND REINFORCING STRIP PLACEMENT DIAGRAMS



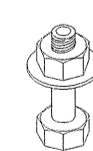
REINFORCING STRIP - 2" X 5/32" (50mm X 4mm)



STRIP TO FACING CONNECTION



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

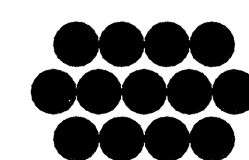


1/2" (13mm) BOLT WITH NUT AND WASHER
BOLT SET

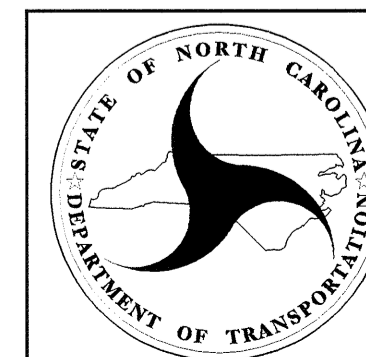


HAIRPIN CONNECTOR

WALL COMPONENTS

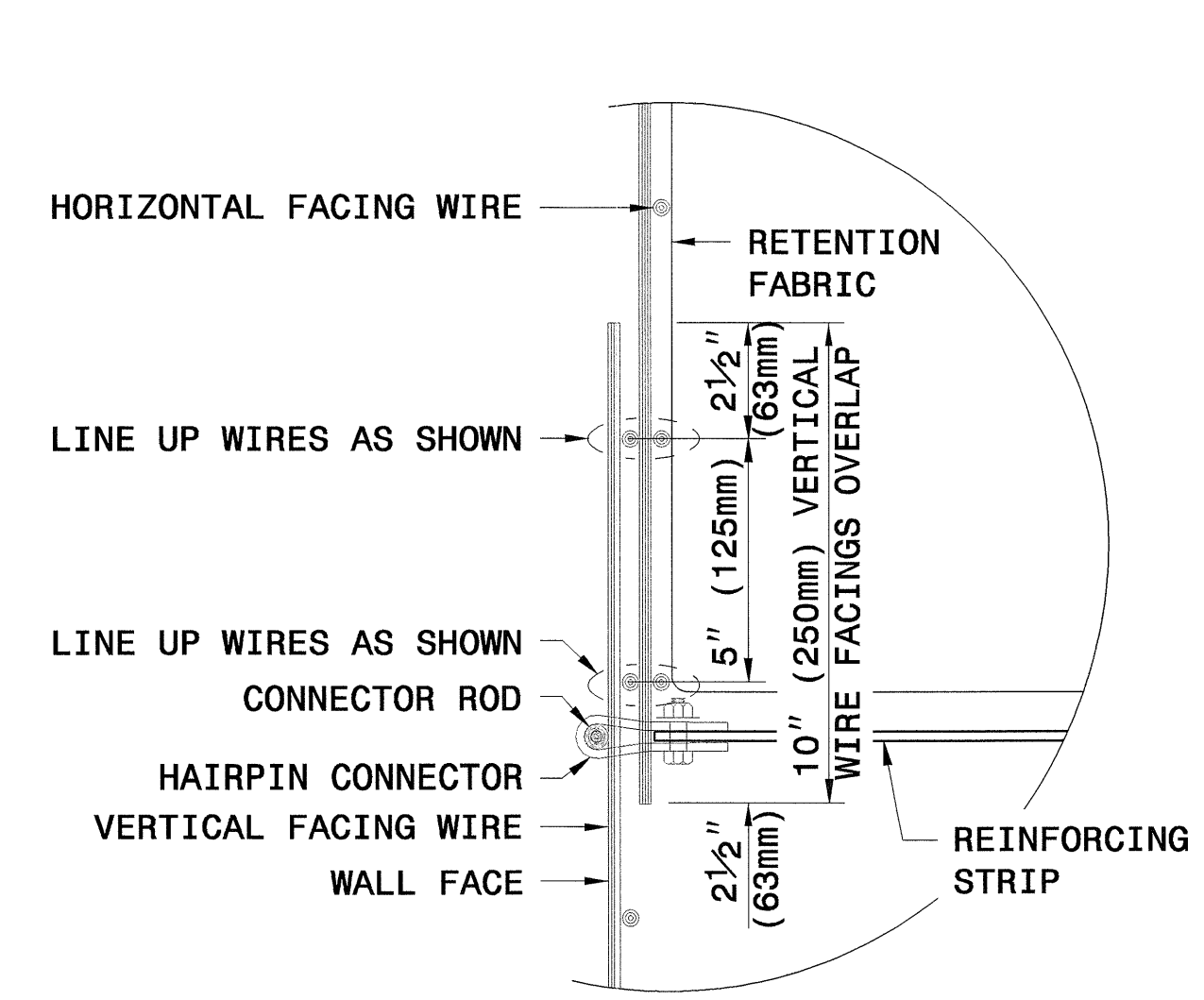


The Reinforced Earth Company



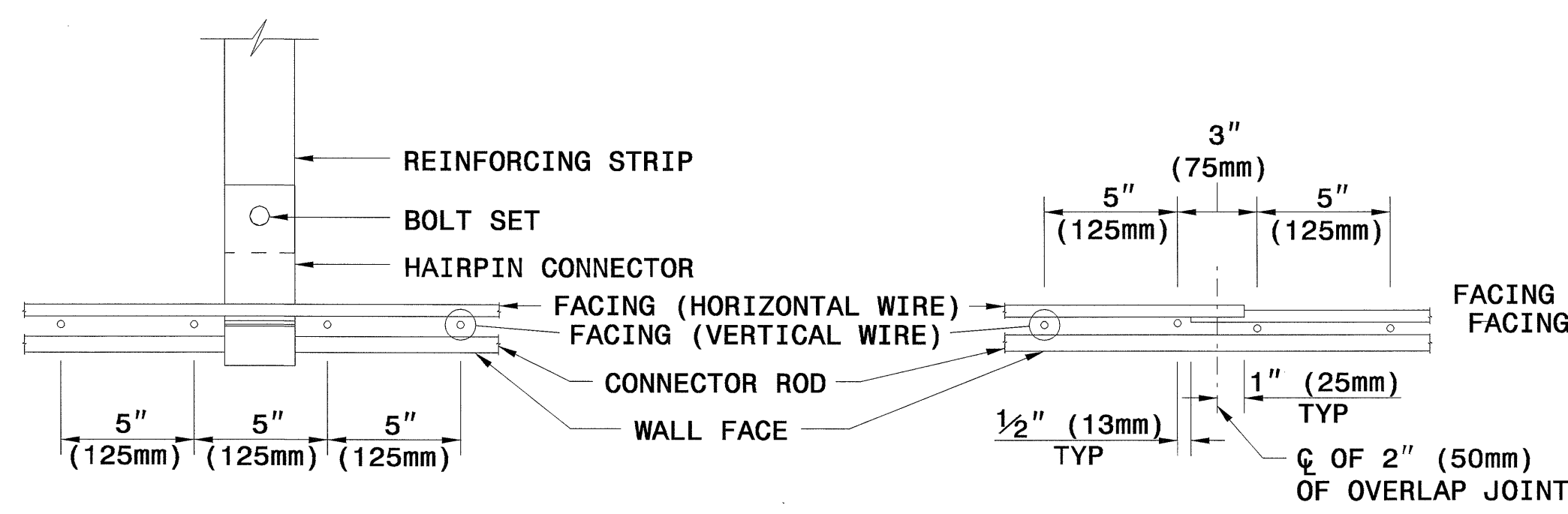
GEOTECHNICAL ENGINEERING UNIT
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

TERRATREL
 TEMPORARY WALL

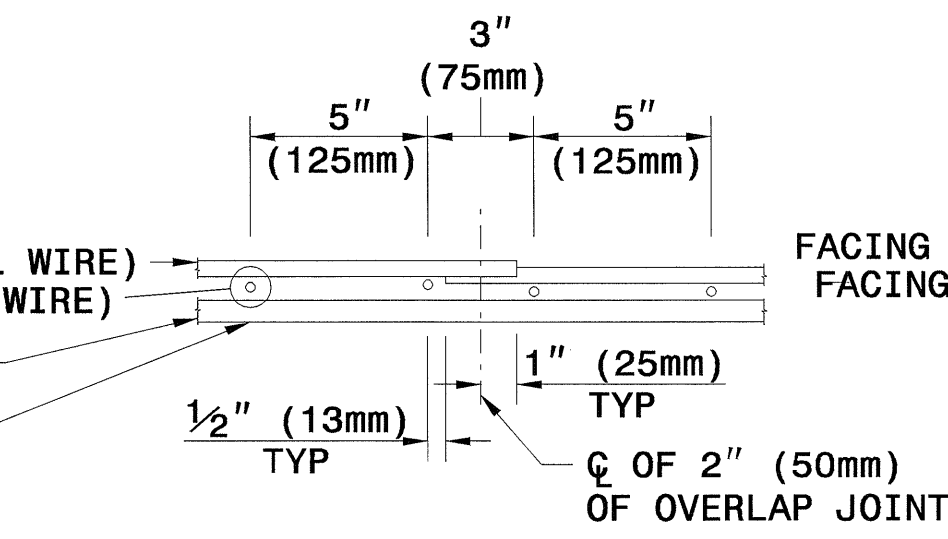


OVERLAP FACINGS VERTICALLY ONE FULL 5" (125mm) WIRE SQUARE DISREGARDING HALF SQUARES AT EDGES

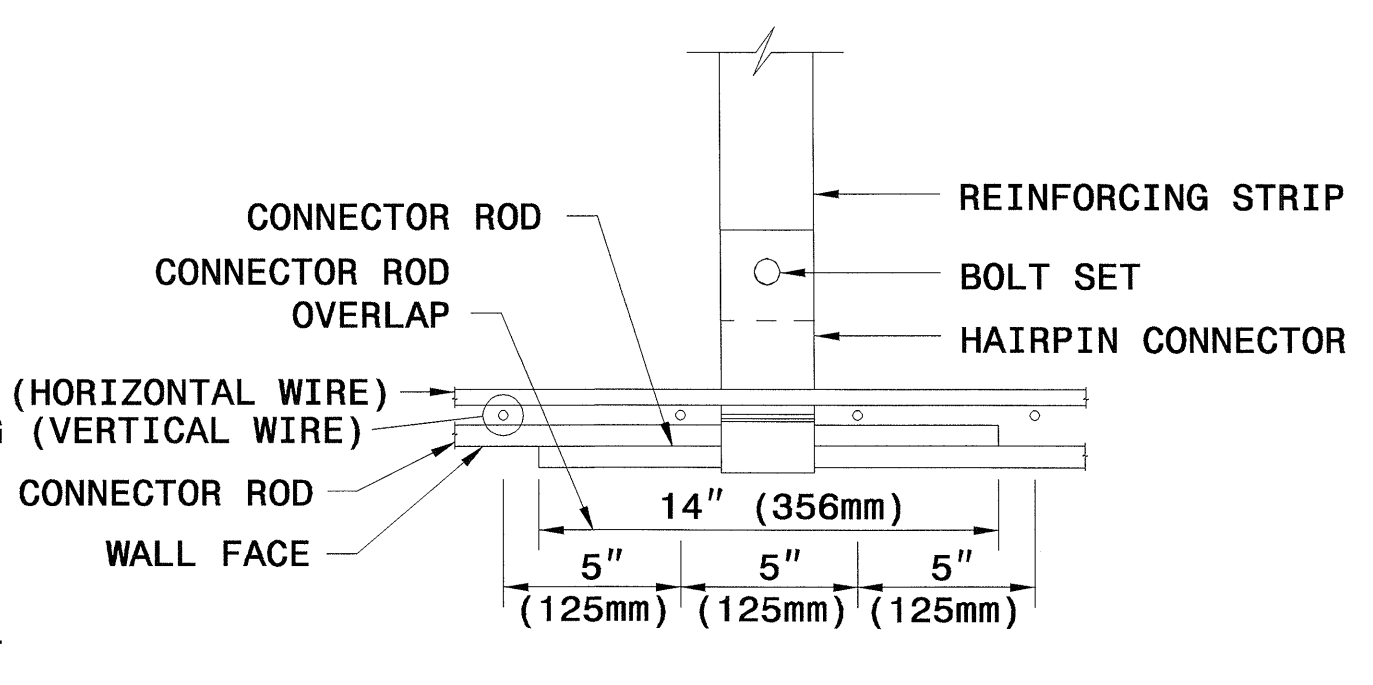
VERTICAL OVERLAP DETAIL



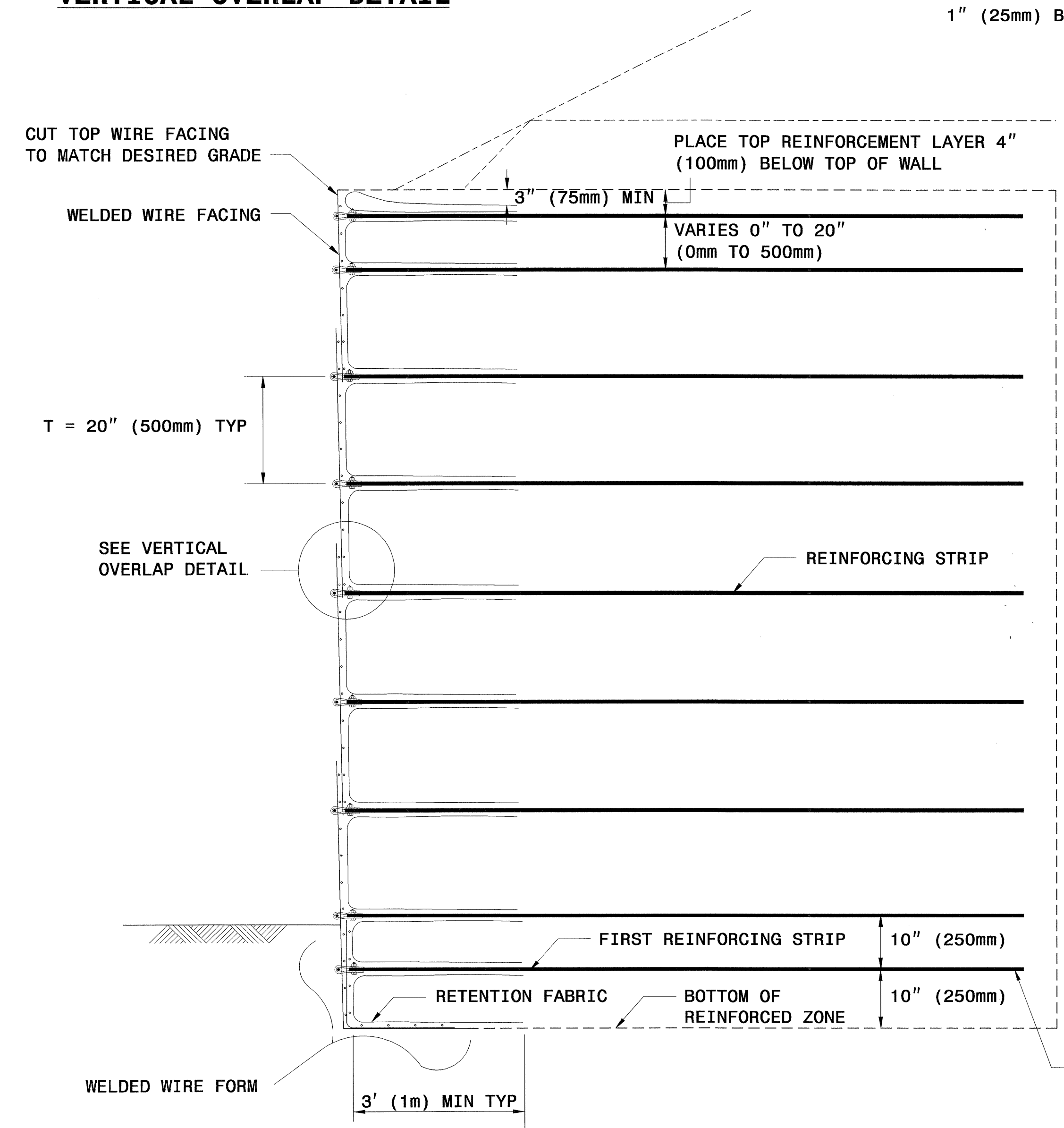
PLAN DETAIL 'A' STRIP CONNECTION



PLAN DETAIL 'B' HORIZONTAL OVERLAP DETAIL

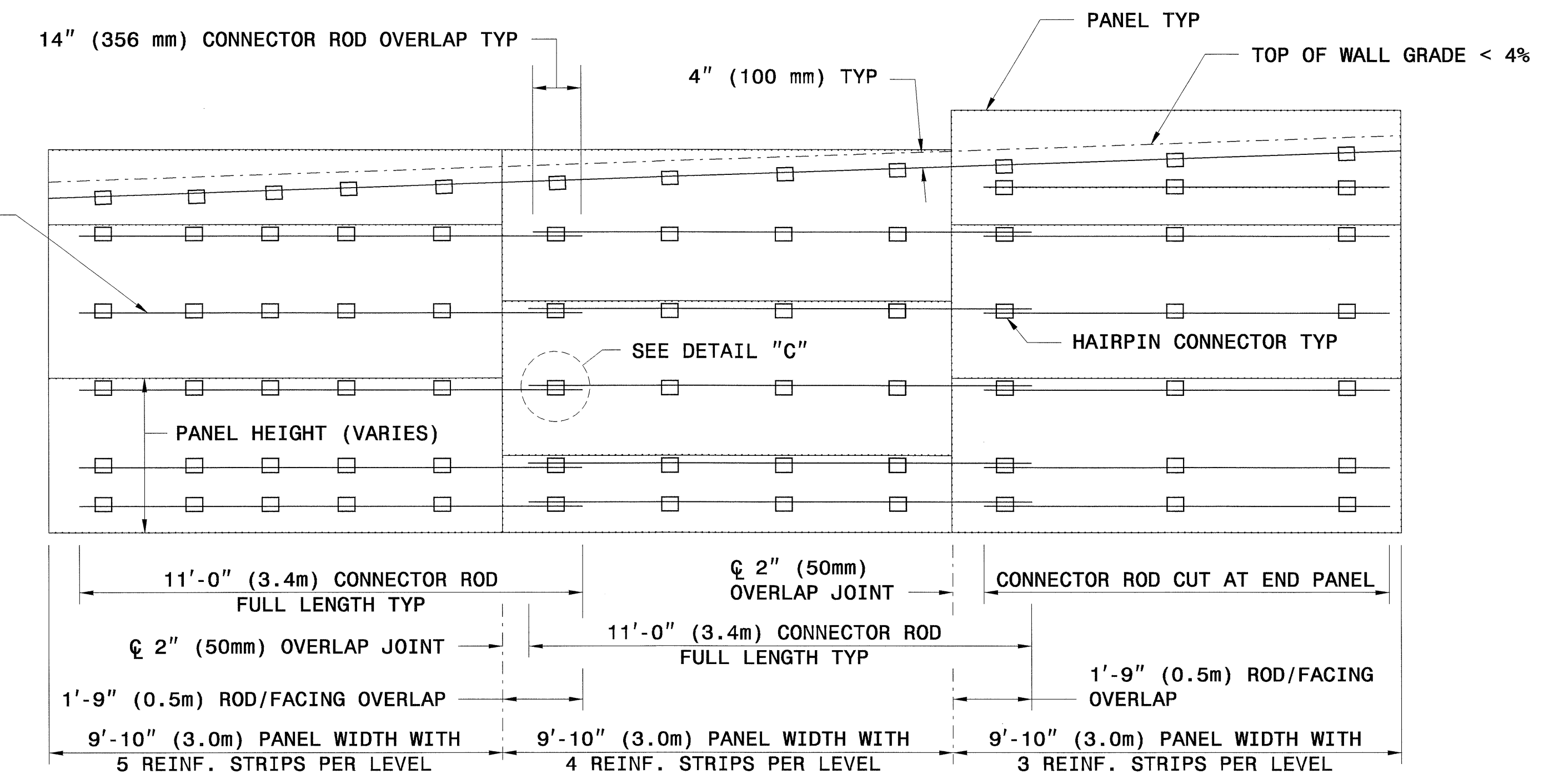


PLAN DETAIL 'C' STRIP CONNECTION WITH HORIZONTAL OVERLAP DETAIL

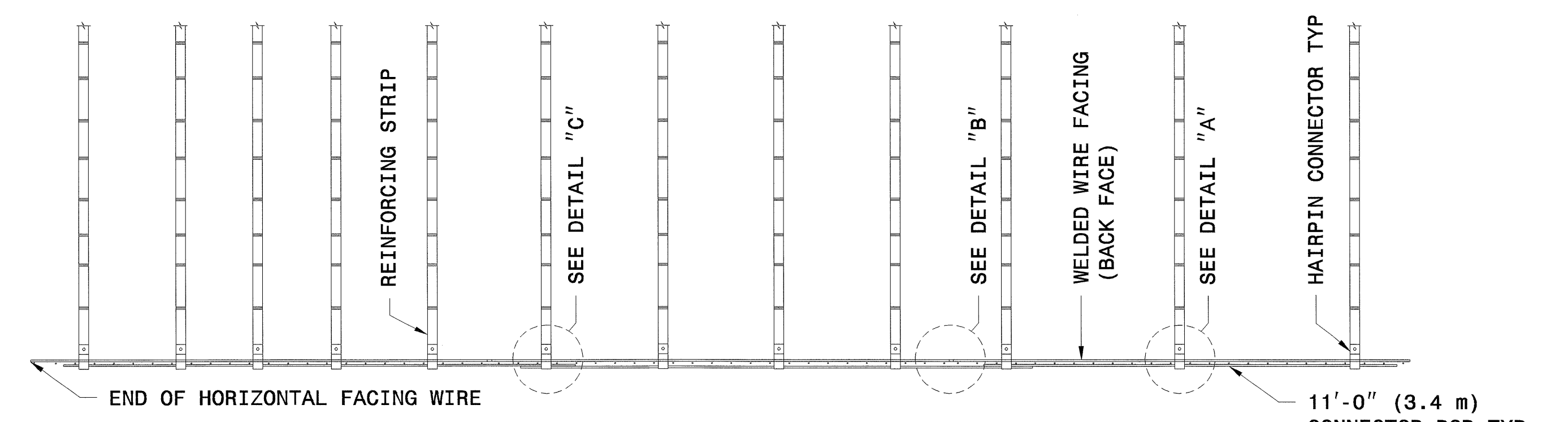


TYPICAL SECTION

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

TERRATREL TEMPORARY WALL
 SHEET 12 OF 12 DATE: 10/17/06

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C201144

ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description
000100000-N	800	Lump Sum		MOBILIZATION	237400000-N	840	13	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (F)	490000000-N	1251	379	EA	PERMANENT RAISED PAVEMENT MARKERS
000400000-N	801	Lump Sum		CONSTRUCTION SURVEYING	237400000-N	840	17	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (G)	588200000-N	SP	1	EA	GENERIC UTILITY ITEM 6" GATE VALVE & VALVE BOX, 200# WP
000100000-E	200	Lump Sum		CLEARING & GRUBBING ... ACRE(S)	254900000-E	846	5,300	LF	2'-6" CONCRETE CURB & GUTTER	588200000-N	SP	1	EA	GENERIC UTILITY ITEM 8" DOUBLE DETECTOR CHECK VALVE ASSEMBLY & VAULT
000800000-E	200	1	ACR	SUPPLEMENTARY CLEARING & GRUBBING	259100000-E	848	500	SY	4" CONCRETE SIDEWALK	588200000-N	SP	1	EA	GENERIC UTILITY ITEM 8" WATER METER ASSEMBLY & VAULT
001500000-N	205	2	EA	SEALING ABANDONED WELLS	260500000-N	848	8	EA	CONCRETE WHEELCHAIR RAMPS	588200000-N	SP	7	EA	GENERIC UTILITY ITEM RELOCATE EXISTING FIRE HYDRANT
002200000-E	225	2,700	CY	UNCLASSIFIED EXCAVATION	261200000-E	848	350	SY	6" CONCRETE DRIVEWAY	588200000-N	SP	2	EA	GENERIC UTILITY ITEM RELOCATE EXISTING WATER METER
003600000-E	225	1,750	CY	UNDERCUT EXCAVATION	261900000-E	850	70	SY	4" CONCRETE PAVED DITCH	588200000-N	SP	60	LF	GENERIC UTILITY ITEM 16" DI WATER PIPE, PC 250
008000000-E	SP	325	TON	CLASS IV SUBGRADE STABILIZATION	283000000-N	858	40	EA	ADJUSTMENT OF MANHOLES	588800000-E	SP	60	LF	GENERIC UTILITY ITEM 3/4" COPPER WATER PIPE, TYPE K
010600000-E	230	19,900	CY	BORROW EXCAVATION	284500000-N	858	40	EA	ADJUSTMENT OF METER BOXES OR VALVE BOXES	588800000-E	SP	68	LF	GENERIC UTILITY ITEM 6" DI WATER PIPE, PC 350
013400000-E	240	1,500	CY	DRAINAGE DITCH EXCAVATION	362800000-E	876	115	TON	RIP RAP, CLASS I	588800000-E	SP	121	LF	GENERIC UTILITY ITEM 8" DI WATER PIPE, PC 350
015600000-E	250	4,550	SY	REMOVAL OF EXISTING ASPHALT PAVEMENT	364900000-E	876	75	TON	RIP RAP, CLASS B	588800000-E	SP	60	LF	GENERIC UTILITY ITEM BEDDING MATERIAL, UTILITIES CLASS VI
017700000-E	250	3,850	SY	BREAKING OF EXISTING ASPHALT PAVEMENT	365600000-E	876	745	SY	FILTER FABRIC FOR DRAINAGE	588800000-E	SP	12	TON	GENERIC UTILITY ITEM FOUNDATION CONDITIONING MATERIAL, UTILITIES CLASS VI
019500000-E	265	500	CY	SELECT GRANULAR MATERIAL	365900000-N	SP	1	EA	PREFORMED SCOUR HOLES WITH LEVEL SPREADER APRON	590000000-E	SP	12	TON	GENERIC UTILITY ITEM FOUNDATION CONDITIONING MATERIAL, UTILITIES CLASS VI
019600000-E	270	500	SY	FABRIC FOR SOIL STABILIZATION	407200000-E	903	353	LF	SUPPORTS, 3-LB STEEL U-CHANNEL	590000000-E	SP	12	TON	GENERIC UTILITY ITEM FOUNDATION CONDITIONING MATERIAL, UTILITIES CLASS VI
019900000-E	SP	1,930	SF	TEMPORARY SHORING	410200000-N	904	8	EA	SIGN ERECTION, TYPE E	590000000-E	SP	12	TON	GENERIC UTILITY ITEM FOUNDATION CONDITIONING MATERIAL, UTILITIES CLASS VI
031800000-E	300	425	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRS	410800000-N	904	3	EA	SIGN ERECTION, TYPE F	590600000-E	SP	1,975	LB	GENERIC UTILITY ITEM DUCTILE IRON WATER PIPE FITTINGS, 250# WP
034300000-E	310	24	LF	15" SIDE DRAIN PIPE	411610000-N	904	2	EA	SIGN ERECTION, RELOCATE, TYPE *** (GROUND MOUNTED) (TYPE E)	600000000-E	1605	5,155	LF	TEMPORARY SILT FENCE
098600000-E	SP	48	LF	GENERIC PIPE ITEM 10" PVC PIPE	415500000-N	907	20	EA	DISPOSAL OF SIGN SYSTEM, U-CHANNEL	600600000-E	1610	495	TON	STONE FOR EROSION CONTROL, CLASS A
099500000-E	340	768	LF	PIPE REMOVAL	440000000-E	1110	588	SF	WORK ZONE SIGNS (STATIONARY)	600900000-E	1610	1,070	TON	STONE FOR EROSION CONTROL, CLASS B
101100000-N	500	Lump Sum		FINE GRADING	440500000-E	1110	148	SF	WORK ZONE SIGNS (PORTABLE)	601200000-E	1610	940	TON	SEDIMENT CONTROL STONE
111000000-E	510	200	TON	STABILIZER AGGREGATE	441000000-E	1110	219	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)	601500000-E	1615	4	ACR	TEMPORARY MULCHING
122000000-E	545	100	TON	INCIDENTAL STONE BASE	441500000-N	1115	1	EA	FLASHING ARROW PANELS, TYPE C	601800000-E	1620	150	LB	SEED FOR TEMPORARY SEEDING
129700000-E	607	3,300	SY	MILLING ASPHALT PAVEMENT, *** DEPTH (1-1/2")	442000000-N	1120	9	EA	CHANGEABLE MESSAGE SIGN	602100000-E	1620	0.5	TON	FERTILIZER FOR TEMPORARY SEEDING
129700000-E	607	1,900	SY	MILLING ASPHALT PAVEMENT, *** DEPTH (2-1/2")	444500000-E	1145	184	LF	BARRICADES (TYPE III)	445500000-N	1150	600	MD	FLAGGER
129700000-E	607	2,100	SY	MILLING ASPHALT PAVEMENT, *** DEPTH (4")	446500000-N	1160	4	EA	TEMPORARY CRASH CUSHIONS	446500000-N	1160	4	EA	TEMPORARY CRASH CUSHIONS
133000000-E	607	300	SY	INCIDENTAL MILLING	448500000-E	1170	1,000	LF	PORTABLE CONCRETE BARRIER	450700000-E	SP	798	LF	WATER FILLED BARRIER
148900000-E	610	6,950	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B	450800000-E	SP	1,809	LF	RESET WATER FILLED BARRIER	451000000-N	SP	60	HR	POLICE
149800000-E	610	5,475	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0B	451000000-N	SP	60	HR	POLICE	465000000-N	1251	647	EA	TEMPORARY RAISED PAVEMENT MARKERS
151900000-E	610	4,550	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5B	465000000-N	1251	647	EA	TEMPORARY RAISED PAVEMENT MARKERS	468500000-E	1205	636	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)
156000000-E	620	830	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22	468600000-E	1205	11,290	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)	468600000-E	1205	11,290	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)
169300000-E	654	230	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR	469500000-E	1205	315	LF	THERMOPLASTIC PAVEMENT MARKING LINES (8", 90 MILS)	469500000-E	1205	315	LF	THERMOPLASTIC PAVEMENT MARKING LINES (8", 90 MILS)
200000000-N	806	25	EA	RIGHT OF WAY MARKERS	471000000-E	1205	157	LF	THERMOPLASTIC PAVEMENT MARKING LINES (24", 120 MILS)	471000000-E	1205	157	LF	THERMOPLASTIC PAVEMENT MARKING LINES (24", 120 MILS)
202200000-E	815	112	CY	SUBDRAIN EXCAVATION	472100000-E	1205	16	EA	THERMOPLASTIC PAVEMENT MARKING CHARACTER (120 MILS)	472100000-E	1205	16	EA	THERMOPLASTIC PAVEMENT MARKING CHARACTER (120 MILS)
203300000-E	815	84	CY	SUBDRAIN FINE AGGREGATE	472500000-E	1205	31	EA	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)	472500000-E	1205	31	EA	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)
204400000-E	815	500	LF	6" PERFORATED SUBDRAIN PIPE	481000000-E	1205	66,251	LF	PAINT PAVEMENT MARKING LINES (4")	481000000-E	1205	66,251	LF	PAINT PAVEMENT MARKING LINES (4")
205500000-E	815	15	EA	6" SUBDRAIN PIPE WYES, TEES, & ELBOWS	482000000-E	1205	2,465	LF	PAINT PAVEMENT MARKING LINES (8")	482000000-E	1205	2,465	LF	PAINT PAVEMENT MARKING LINES (8")
206600000-N	815	1	EA	CONCRETE PAD FOR SUBDRAIN PIPE OUTLET	483500000-E	1205	405	LF	PAINT PAVEMENT MARKING LINES (24")	483500000-E	1205	405	LF	PAINT PAVEMENT MARKING LINES (24")
207700000-E	815	6	LF	6" OUTLET PIPE (SUBDRAINS)	484000000-N	1205	24	EA	PAINT PAVEMENT MARKING CHARACTER	484000000-N	1205	24	EA	PAINT PAVEMENT MARKING CHARACTER
220900000-E	838	4.5	CY	ENDWALLS	484500000-N	1205	53	EA	PAINT PAVEMENT MARKING SYMBOL	484500000-N	1205	53	EA	PAINT PAVEMENT MARKING SYMBOL
225300000-E	840	2	CY	PIPE COLLARS	485000000-E	1205	23,390	LF	REMOVAL OF PAVEMENT MARKING LINES (4")	485000000-E	1205	23,390	LF	REMOVAL OF PAVEMENT MARKING LINES (4")
228600000-N	840	48	EA	MASONRY DRAINAGE STRUCTURES	485500000-E	1205	87	LF	REMOVAL OF PAVEMENT MARKING LINES (6")	485500000-E	1205	87	LF	REMOVAL OF PAVEMENT MARKING LINES (6")
230800000-E	840	28	LF	MASONRY DRAINAGE STRUCTURES	486000000-E	1205	1,794	LF	REMOVAL OF PAVEMENT MARKING LINES (8")	486000000-E	1205	1,794	LF	REMOVAL OF PAVEMENT MARKING LINES (8")
235200000-N	840	9	EA	FRAME WITH GRATE, STD 840.*** (840.16)	487000000-E	1205	54	LF	REMOVAL OF PAVEMENT MARKING LINES (24")	487000000-E	1205	54	LF	REMOVAL OF PAVEMENT MARKING LINES (24")
236700000-N	840	1	EA	FRAME WITH TWO GRATES, STD 840.29	487500000-N	1205	20	EA	REMOVAL OF PAVEMENT MARKING SYMBOLS & CHARACTERS	487500000-N	1205	20	EA	REMOVAL OF PAVEMENT MARKING SYMBOLS & CHARACTERS
237400000-N	840	5	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (E)										

FILENAME: r:\U3344A\Roadway\Proc\U3344A_rdy_pah_03.dgn
 DATE: 01

15500	DIRECTIONAL		DHW	
30900	65%	-Y1-	10%	-Y1-
	55%	-L-	11%	-L-

4800	-L-		AIRPORT BLVD	
13300	15100	16300	16500	
	35800	37600	37800	

10200	-Y2-		AIRTECH DR	
22500	1400	3100	1400	1700

20900	-Y3-		WALDRON RD	
40200	3300	2300	2300	
	4600	3100		

TRAFFIC DIAGRAM

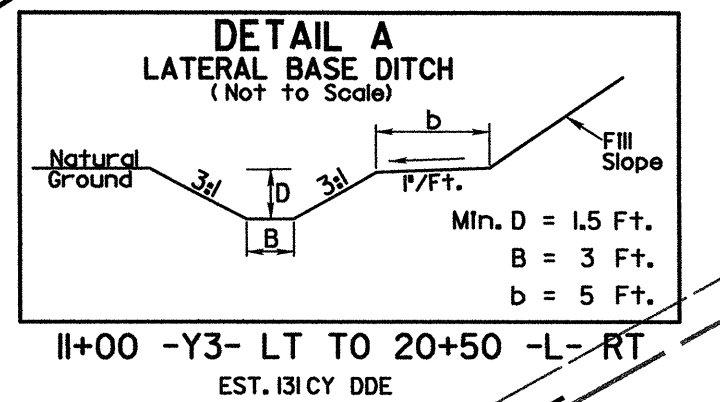
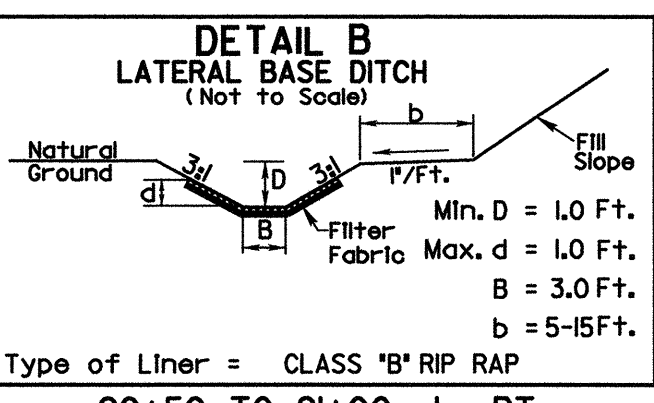
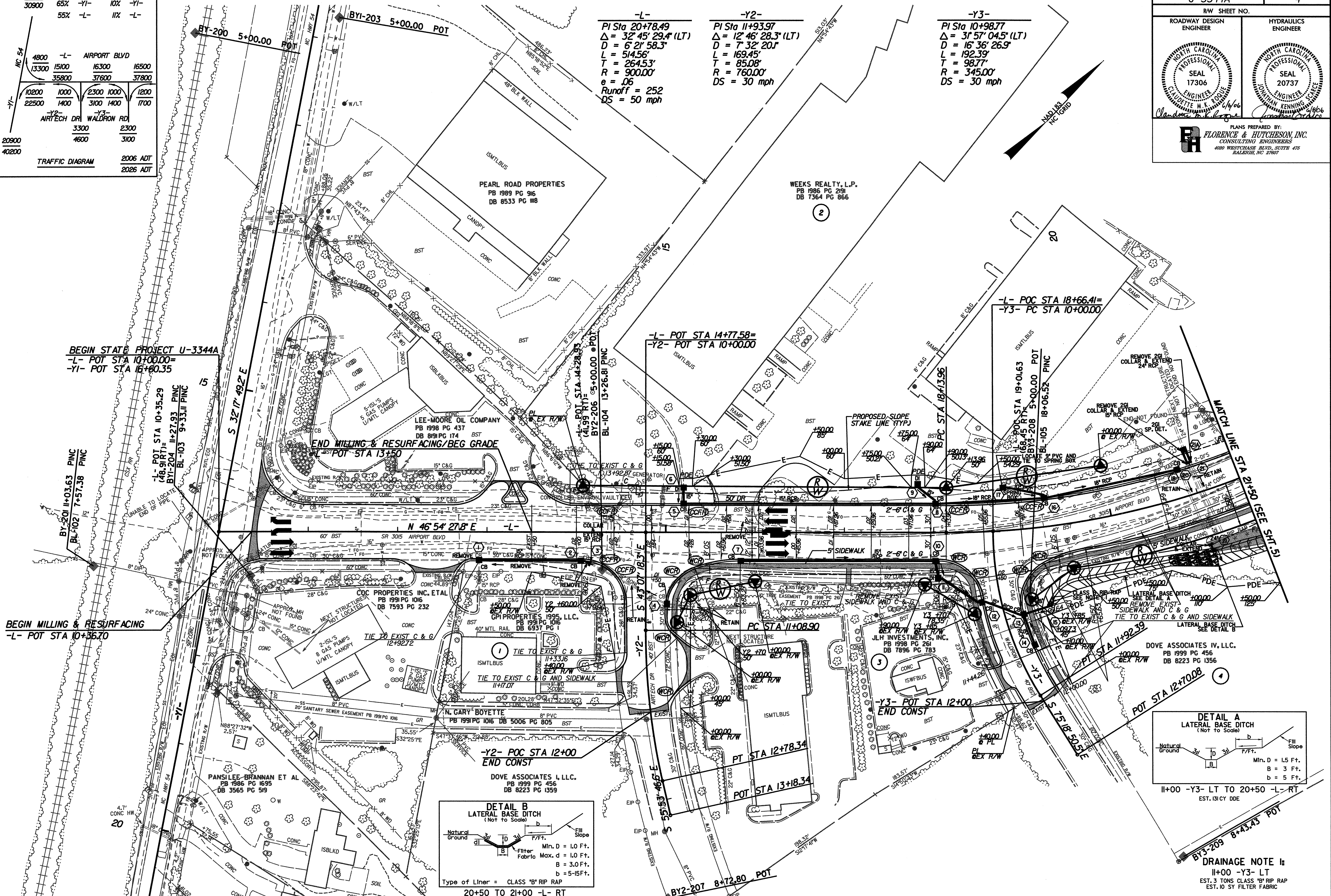
2006 ADT	2026 ADT
3100	2026

PROJECT REFERENCE NO. U-3344A	SHEET NO. 4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLAUDETTE M. V. MOORE
17306

JONATHAN KENNING
20737

PLANS PREPARED BY:
FLORENCE & HUTCHESON, INC.
 CONSULTING ENGINEERS
 4800 WESTCHASE BLVD, SUITE 475
 RALEIGH, NC 27607

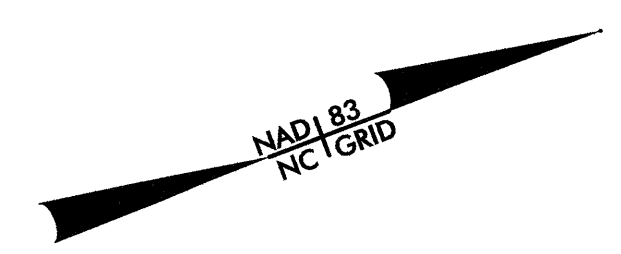


DRAINAGE NOTE 1:
11+00 -Y3- LT
EST. 3 TONS CLASS 'B' RIP RAP
EST. 10 SY FILTER FABRIC

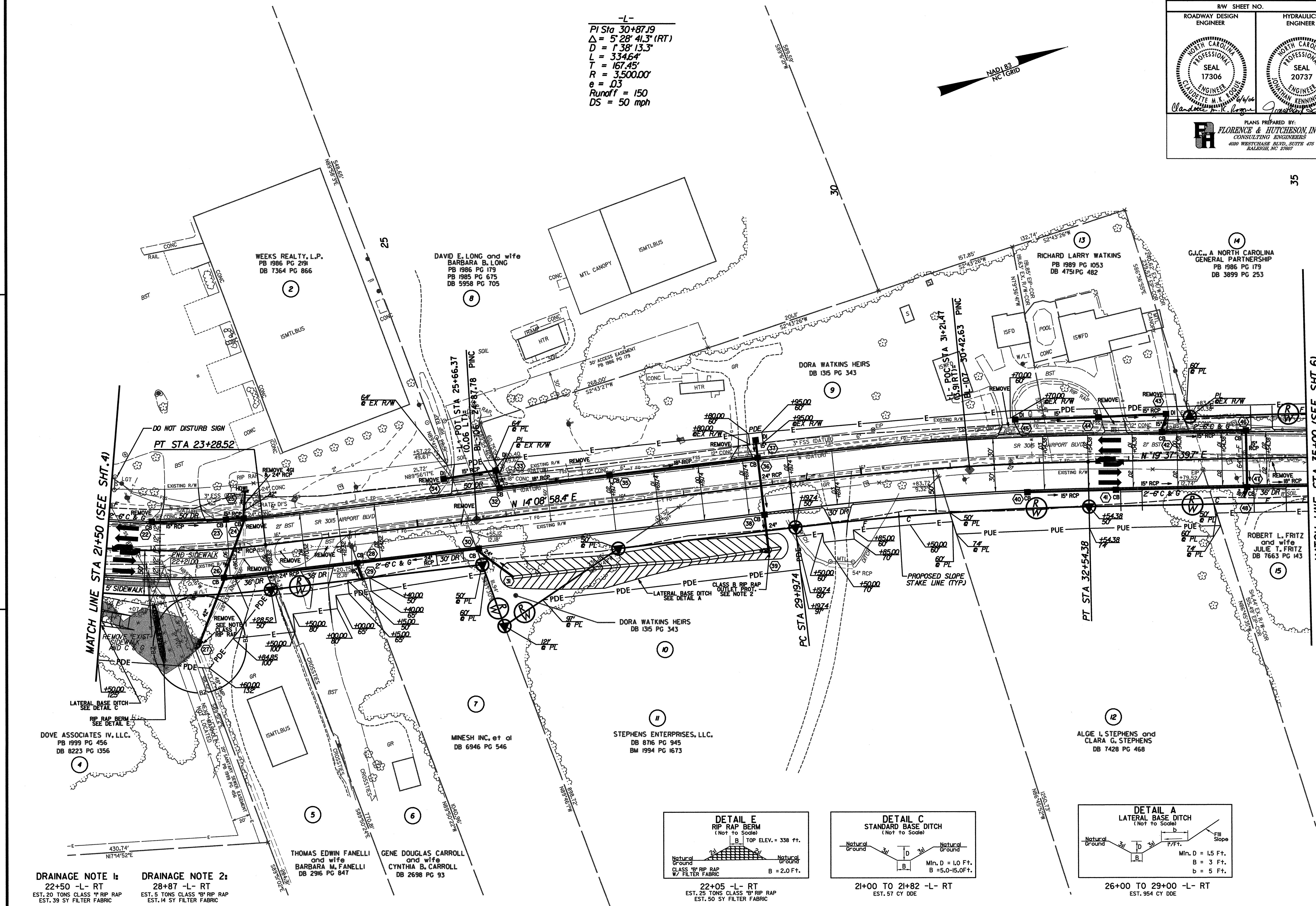
NOTE: ALL DRIVEWAYS ARE 24' UNLESS OTHERWISE NOTED

SEE SHEET 7 FOR -L- PROFILE
SEE SHEET 8 FOR -Y2- & -Y3- PROFILE

-L-
 PI Sta 30+87.19
 $\Delta = 5' 28" 41.3" (RT)$
 $D = 1' 38" 13.3"$
 $L = 334.64'$
 $T = 167.45'$
 $R = 3,500.00'$
 $e = .03$
 Runoff = 150
 DS = 50 mph



35

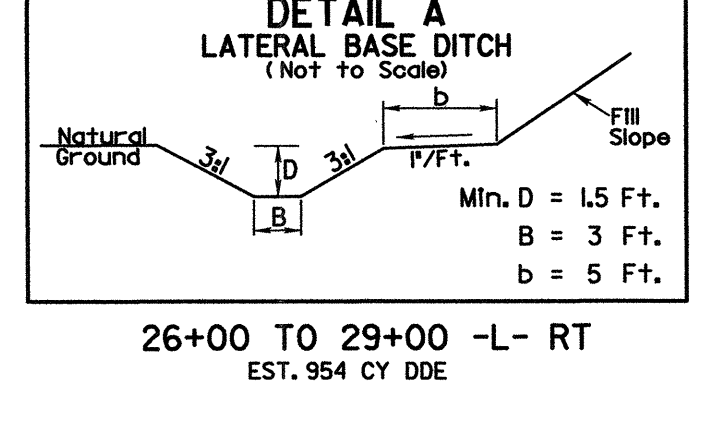
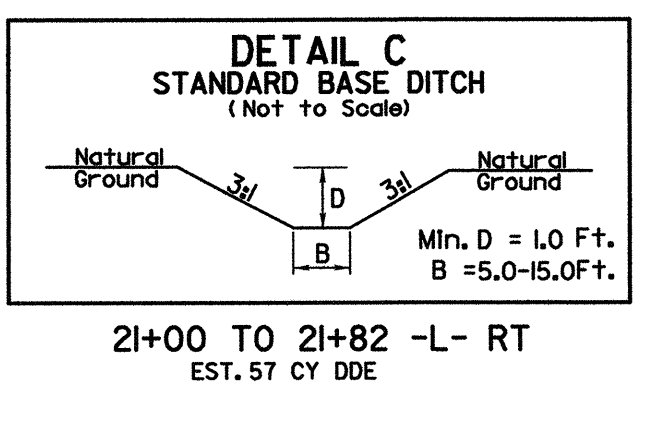
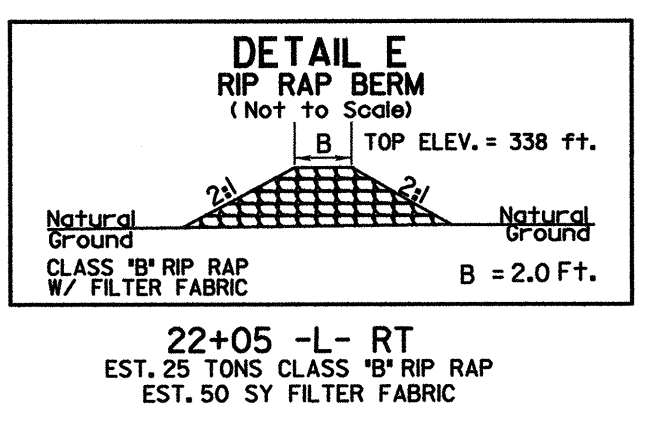


MATCH LINE STA 21+50 (SEE SHT. 4)

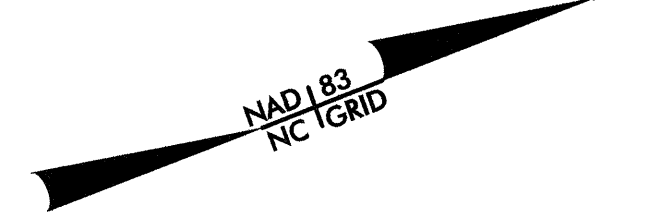
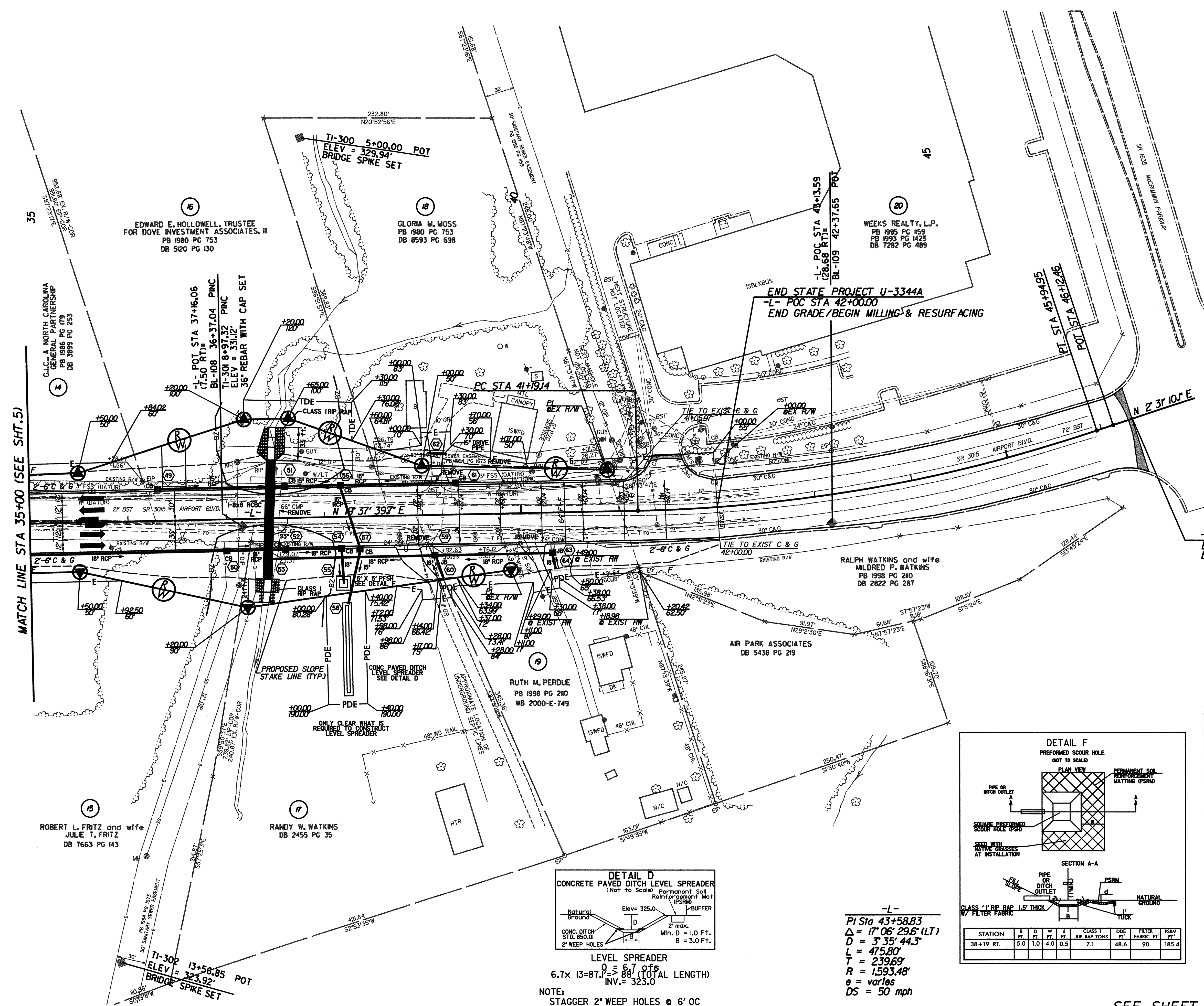
MATCH LINE STA 35+00 (SEE SHT. 6)

DRAINAGE NOTE 1:
22+50 -L- RT
EST. 20 TONS CLASS #1 RIP RAP
EST. 39 SY FILTER FABRIC

DRAINAGE NOTE 2:
28+87 -L- RT
EST. 5 TONS CLASS #1 RIP RAP
EST. 14 SY FILTER FABRIC

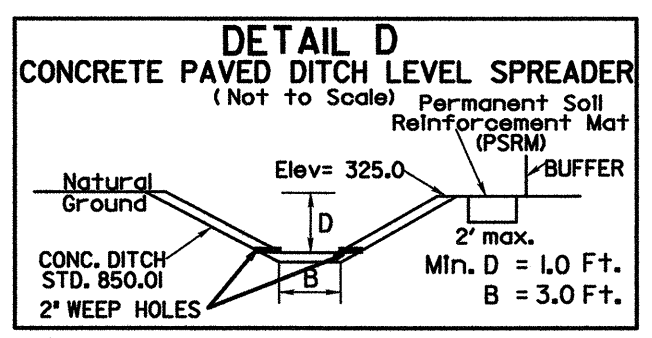


NOTE: ALL DRIVEWAYS ARE 24' UNLESS OTHERWISE NOTED SEE SHEET 7 FOR -L- PROFILE

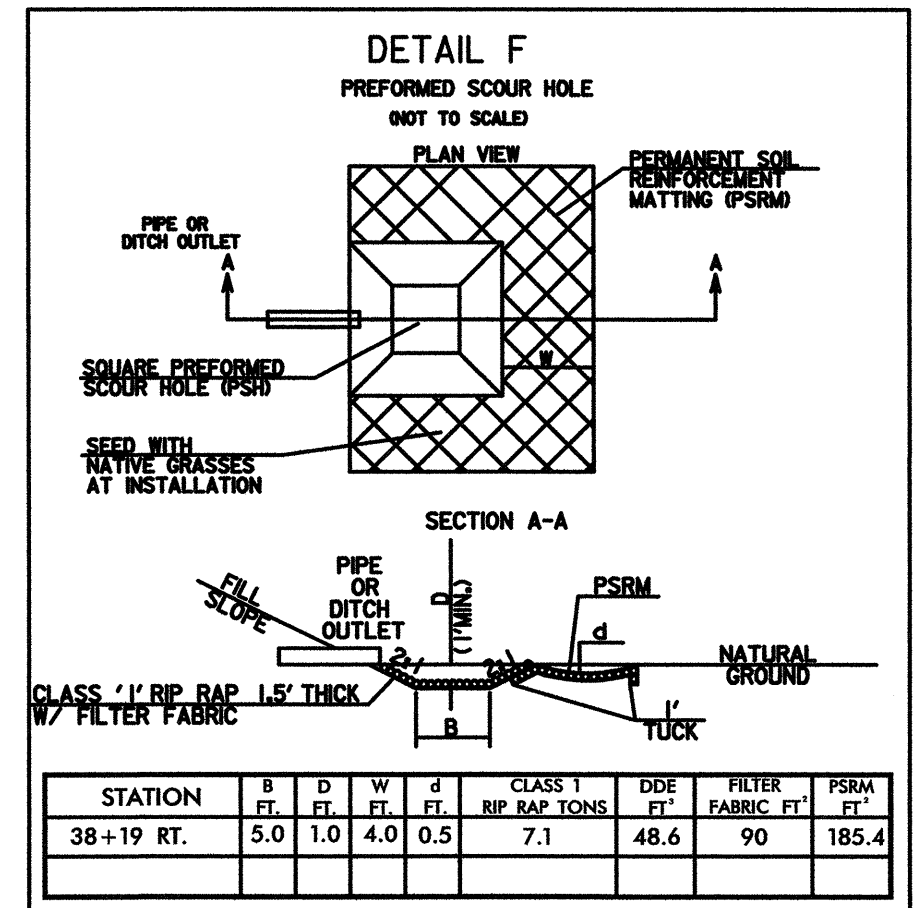


MATCH LINE STA 35+00 (SEE SHT. 5)

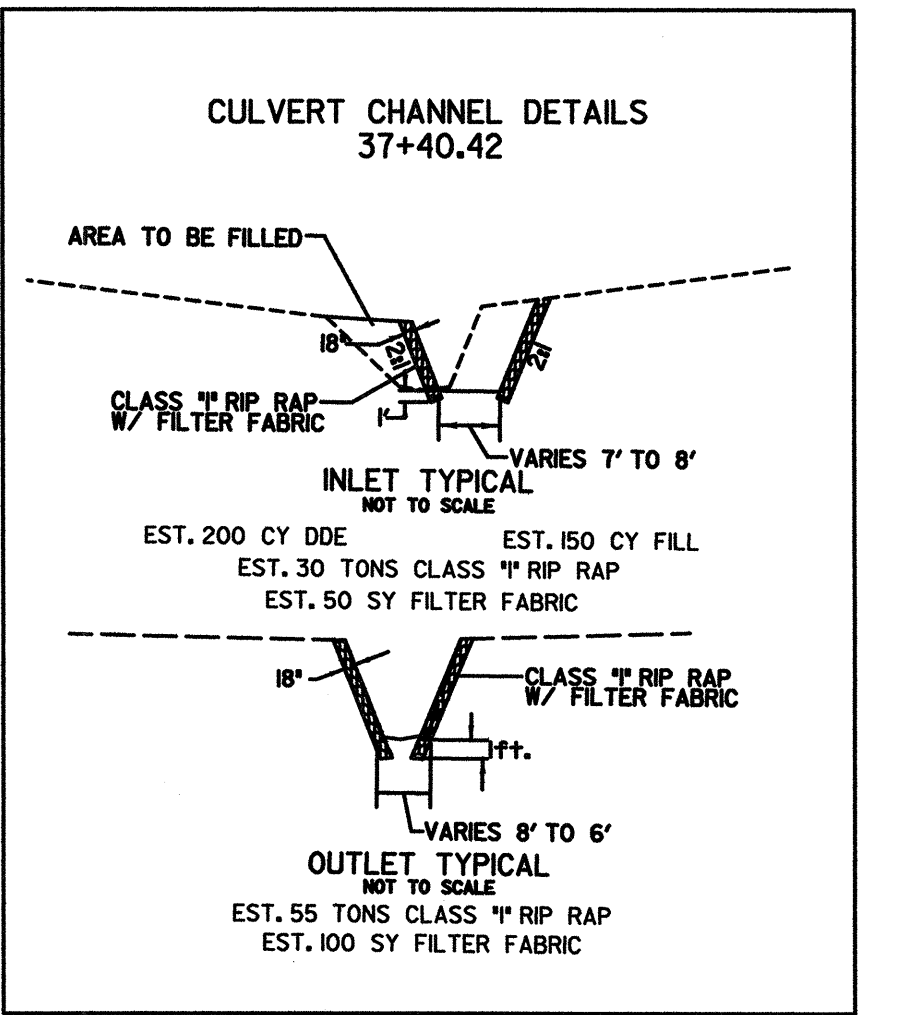
REVISIONS



LEVEL SPREADER
 6.7x 13=87.1' = 88' (TOTAL LENGTH)
 INV. = 323.0
 NOTE: STAGGER 2" WEEP HOLES @ 6' OC
 EST. 20 SY PSRM
 EST. 25 CY DDE

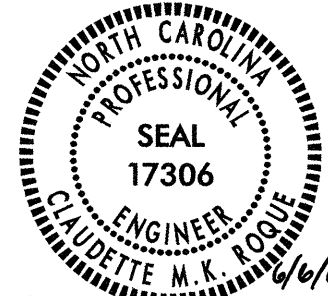

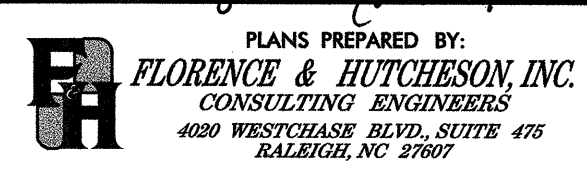


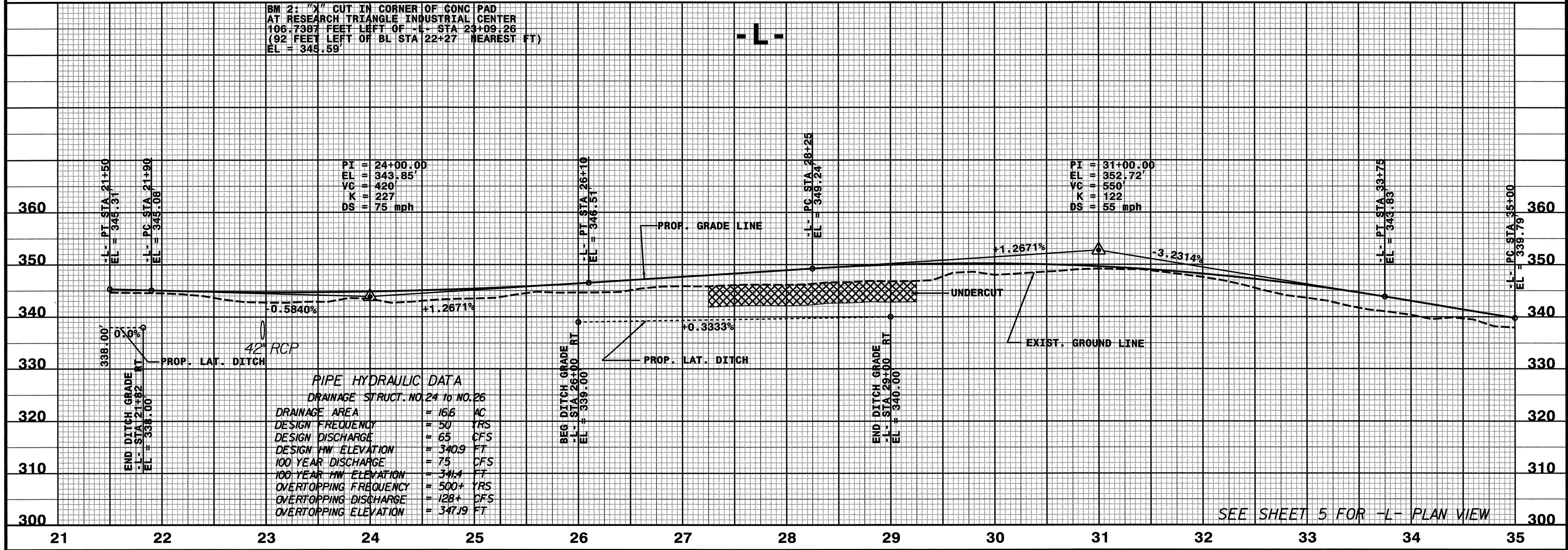
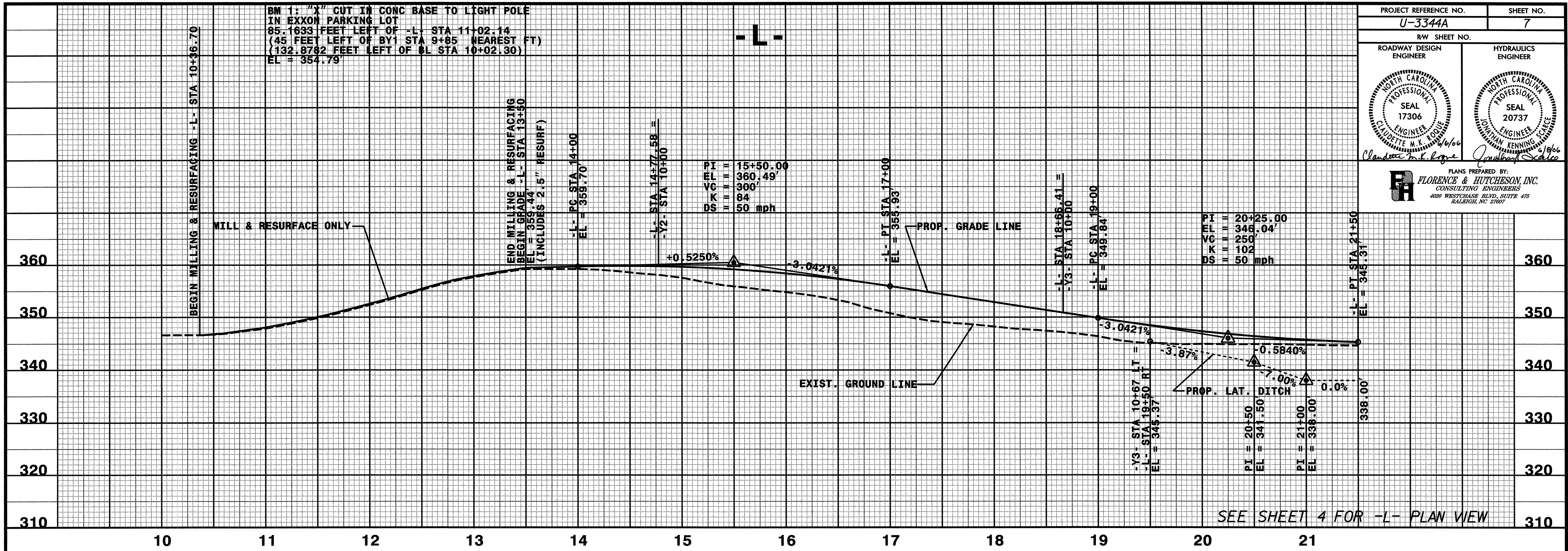
STATION	B FT.	D FT.	W FT.	J FT.	CLASS 1 RIP RAP TONS	DDE FT.	FILTER FABRIC FT.	PSRM FT.
38+19 RT.	5.0	1.0	4.0	0.5	7.1	48.6	90	185.4



-L-
 PI Sta 43+58.83
 $\Delta = 17' 06'' 296' (LT)$
 $D = 3' 35'' 44.3'$
 $L = 475.80'$
 $T = 239.69'$
 $R = 1,593.48'$
 $e = \text{varies}$
 $DS = 50 \text{ mph}$

NOTE: ALL DRIVEWAYS ARE 24' UNLESS OTHERWISE NOTED
 SEE SHEET C-1 thru C-5 FOR CULVERT PLANS
 SEE SHEET 8 FOR -L- PROFILE

PROJECT REFERENCE NO. U-3344A	SHEET NO. 7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
	
PLANS PREPARED BY:  FLORENCE & HUTCHESON, INC. CONSULTING ENGINEERS 4020 WESTCHASE BLVD., SUITE 475 RALEIGH, NC 27607	



PROJECT REFERENCE NO. U-3344A	SHEET NO. 8
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PLANS PREPARED BY: FLORENCE & HUTCHESON, INC. CONSULTING ENGINEERS 4020 WESTPARK BLVD., SUITE 475 RALEIGH, NC 27607	

CULVERT HYDRAULIC DATA	
DESIGN DISCHARGE	= 530 CFS
DESIGN FREQUENCY	= 50 YRS
DESIGN HW ELEVATION	= 328.4 FT
BASE DISCHARGE	= 600 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 329.5 FT
OVERTOPPING DISCHARGE	= 920 CFS
OVERTOPPING FREQUENCY	= 500-YRS
OVERTOPPING ELEVATION	= 334.7 FT

