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Special Details\ericward\user\details\stand\840d17 Extra Depth 2GI.dgn

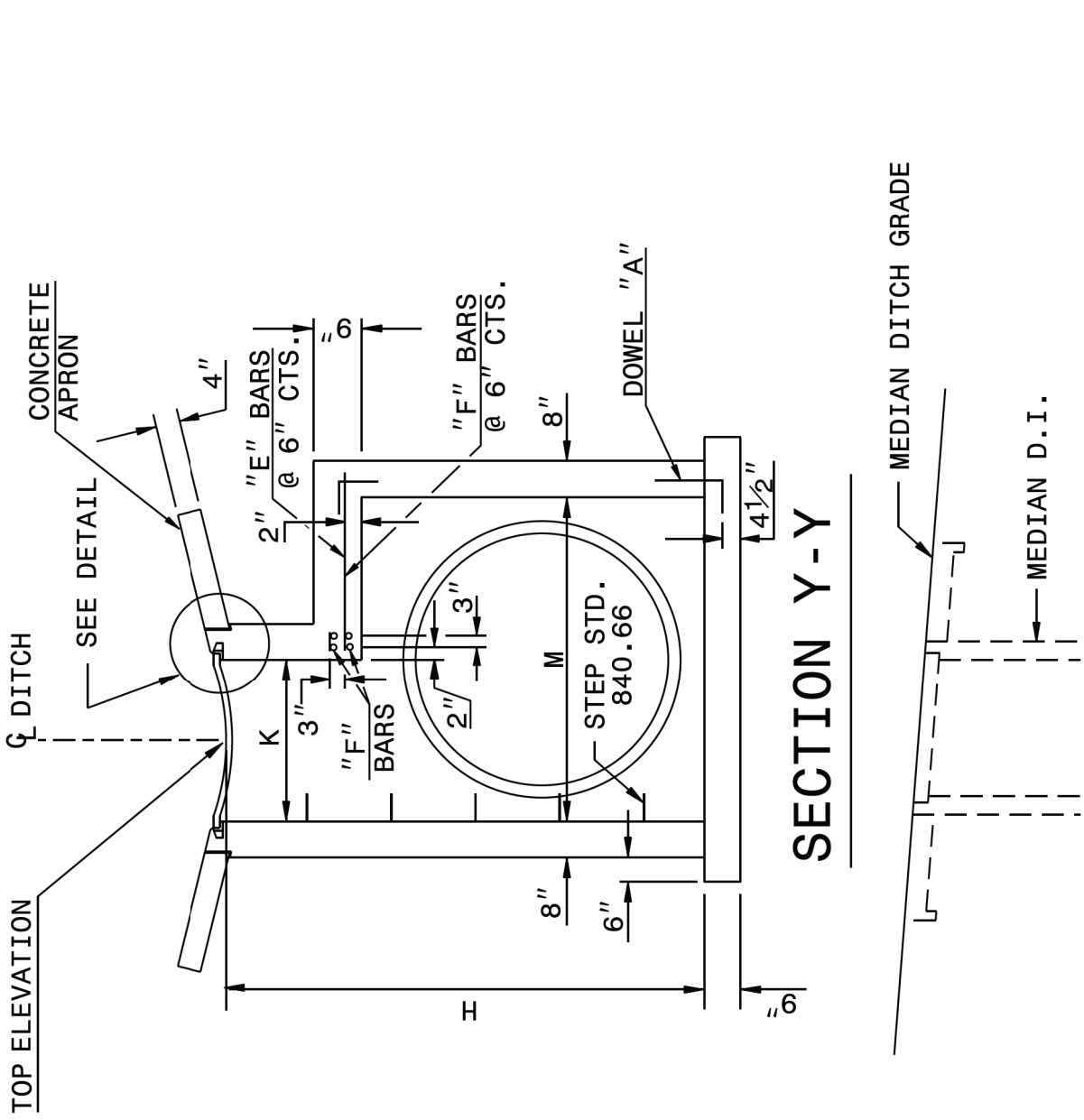
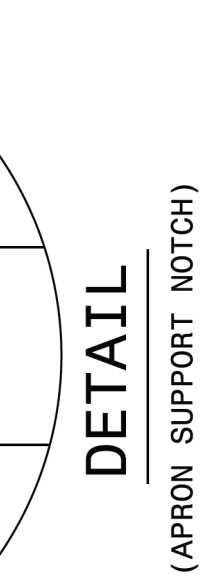
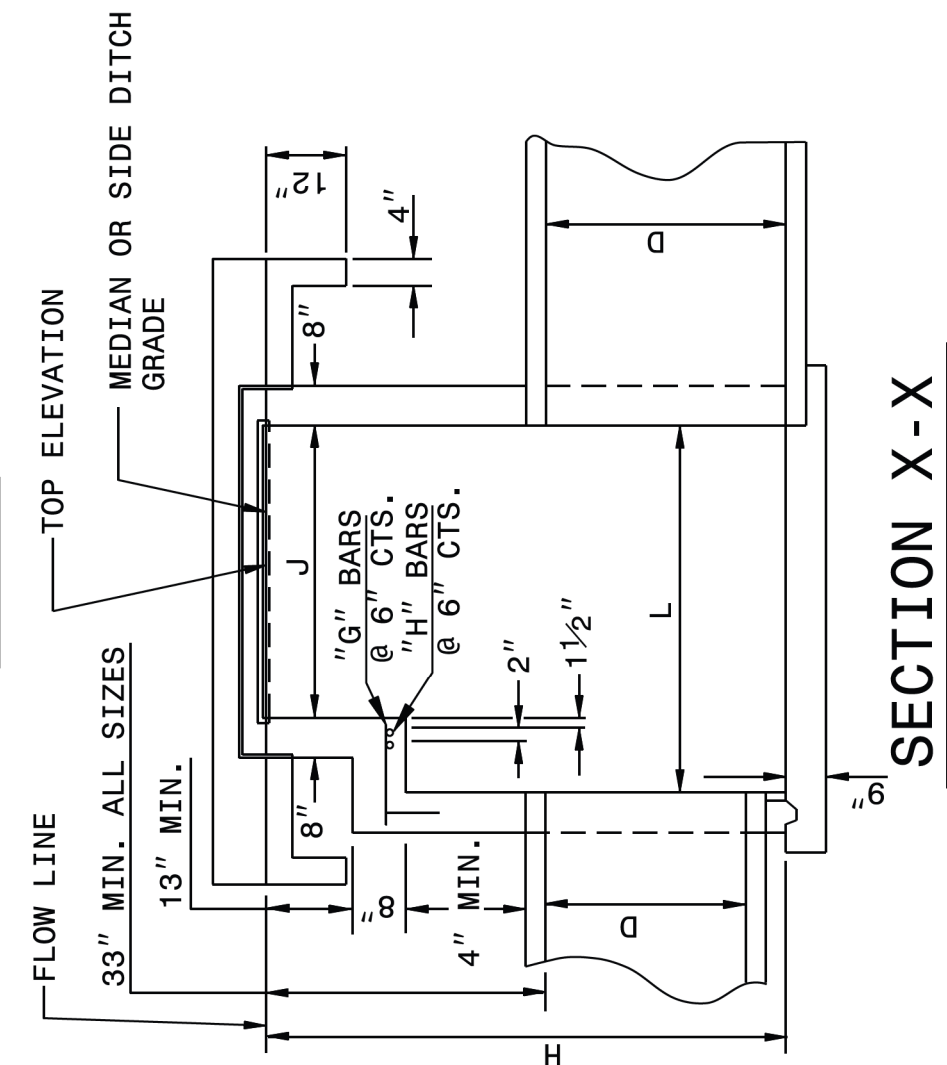
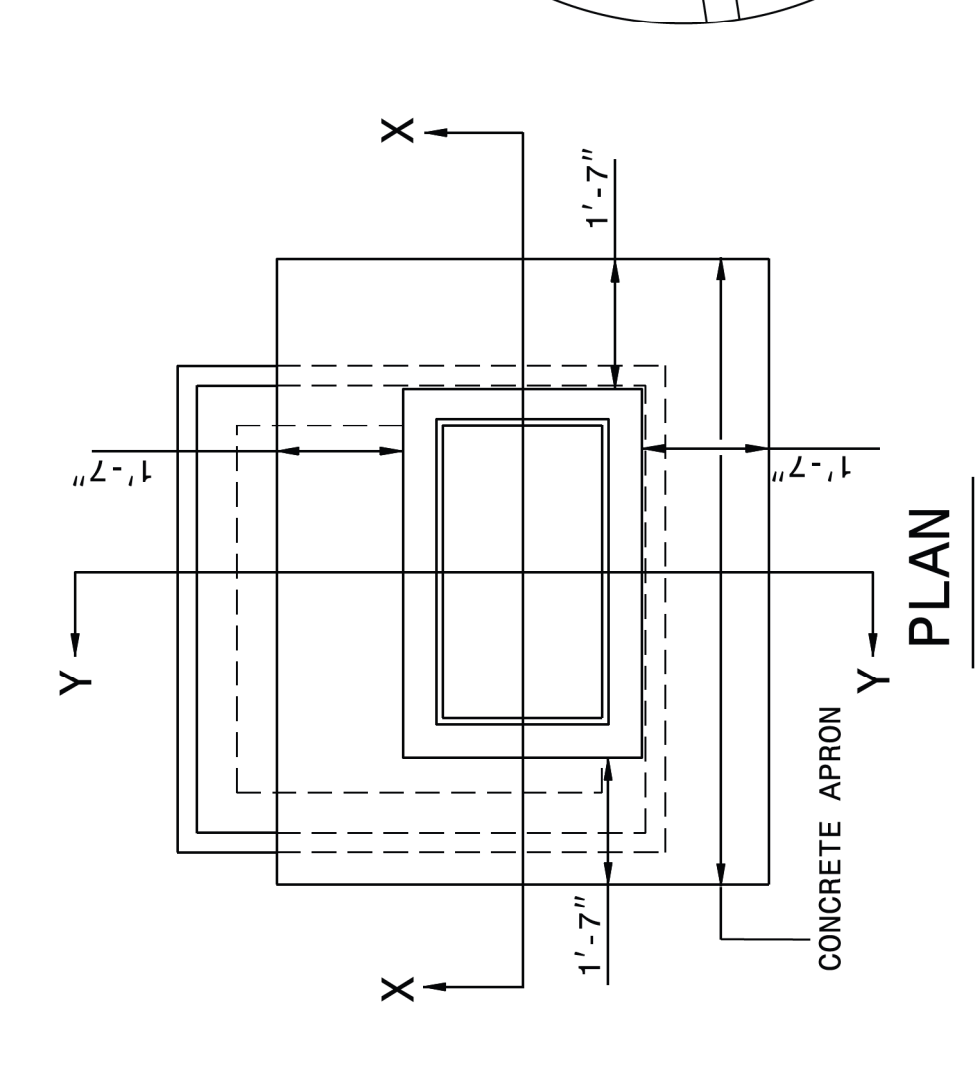
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
CONCRETE MEDIAN DROP INLET TYPE 'A'
EXTRA DEPTH OVER 12' TO 25'
12" THRU 72" PIPE

SHEET 1 OF 2

840D17

GENERAL NOTES:
USE CLASS "B" CONCRETE THROUGHOUT.
PROVIDE DROP INLETS WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.
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.
MAX. DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 25 FEET.



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ENGLISH DETAIL DRAWING FOR
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EXTRA DEPTH OVER 12' TO 25'
12" THRU 72" PIPE

SHEET 1 OF 2

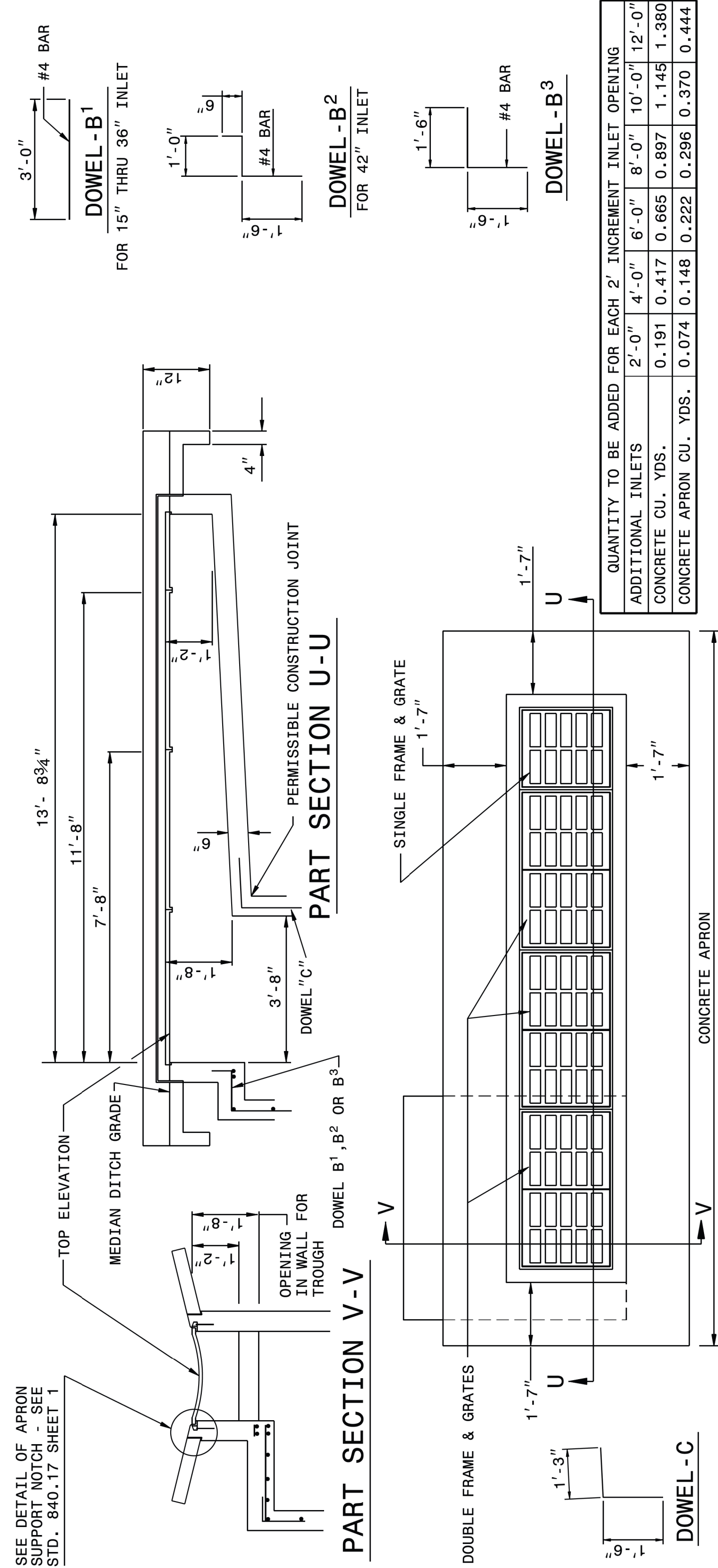
840D17

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RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
CONCRETE MEDIAN DROP INLET TYPE 'A'
EXTRA DEPTH OVER 12' TO 25'
12" THRU 72" PIPE

SHEET 2 OF 2

840D17



QUANTITY TO BE ADDED FOR EACH 2' INCREMENT INLET OPENING					
ADDITIONAL INLETS	2'-0"	4'-0"	6'-0"	8'-0"	10'-0" 12'-0"
CONCRETE CU. YDS.	0.191	0.417	0.665	0.897	1.145 1.380
CONCRETE APRON CU. YDS.	0.074	0.148	0.222	0.296	0.370 0.444

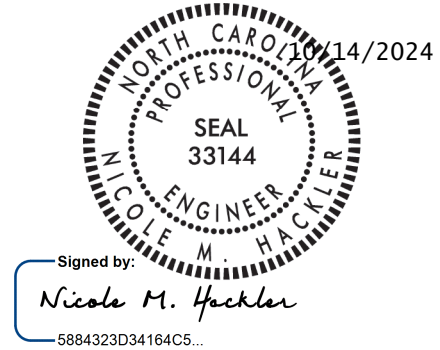
MIN. DIMENSIONS AND QUANTITIES FOR CONCRETE GRATED DROP INLET (BASED ON MIN. HEIGHT, H)									
DIMENSIONS OF BOX AND PIPE				REINFORCING STEEL - NO. 4 BARS				CU YDS CONC. IN BOX	
PIPE	SPAN	WIDTH	HEIGHT	BARS E	BARS F	BARS G	BARS H	H PER FT	DEDUCTIONS FOR ONE PIPE
D	J	K	L	M	N	O	P	Q	R
12"	3'-8"	2'-0"	3'-8"	2'-0"	3'-9"	2'-0"	3'-9"	0.926	1.683
15"	3'-8"	2'-0"	3'-8"	2'-0"	4'-0"	2'-0"	4'-0"	0.988	1.745
18"	3'-8"	2'-0"	3'-8"	2'-0"	4'-3"	2'-0"	4'-3"	1.050	1.807
24"	3'-8"	2'-0"	3'-8"	2'-10"	4'-9"	2'-10"	4'-9"	1.362	2.201
30"	3'-8"	2'-0"	3'-8"	2'-10"	5'-3"	2'-10"	5'-3"	1.644	2.541
36"	3'-8"	2'-0"	3'-8"	2'-10"	5'-9"	2'-10"	5'-9"	1.931	2.920
42"	3'-8"	2'-0"	3'-8"	2'-10"	6'-3"	2'-10"	6'-3"	2.500	3.677
48"	3'-8"	2'-0"	3'-8"	2'-10"	6'-9"	2'-10"	6'-9"	3.013	4.315
54"	3'-8"	2'-0"	3'-8"	2'-10"	7'-3"	2'-10"	7'-3"	3.589	5.072
60"	3'-8"	2'-0"	3'-8"	2'-10"	7'-9"	2'-10"	7'-9"	4.159	5.844
66"	3'-8"	2'-0"	3'-8"	2'-10"	8'-3"	2'-10"	8'-3"	4.739	6.617
72"	3'-8"	2'-0"	3'-8"	2'-10"	8'-9"	2'-10"	8'-9"	5.319	7.390

PROJECT REFERENCE NO.	SHEET NO.
R-5709C	2C-2

CONTRACT STANDARDS
AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

SEE PLATE FOR TITLE

ORIGINAL BY: 2002 STD.840.1 DATE: 07-06-09
MODIFIED BY: K.A. KEMPF DATE: 07-06-09
CHECKED BY: DATE: 07-06-09
FILE SPEC.: /stand/840d17 Extra Depth 2GI.dgn



DOCUMENT NOT CONSIDERED FINAL
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GENERAL NOTES:

USE CLASS "AA" CONCRETE THROUGHOUT.

IF REINFORCED CONCRETE PIPE IS SET IN BASE SLAB OR BOX, ADD TO BASE AS SHOWN ON STD. NO. 840.00.

CHAMFER ALL EXPOSED CORNERS 1 INCH.

OPTIONAL CONSTRUCTION - MONOLITHIC POUR 2" KEYWAY OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.

USE FORMS FOR CONSTRUCTION OF BOTTOM SLAB.

ALL JUNCTION BOXES OVER 3'-6" IN DEPTH TO BE PROVIDED WITH STEPS 12" ON CENTER. STEPS SHALL BE IN ACCORDANCE WITH STD. NO. 840.66.

REINFORCING STEEL TO BE POSITIONED AS DIRECTED BY THE ENGINEER.

BILL OF MATERIALS				
BAR	NO.	SIZE	LENGTH	WEIGHT
E1	12	#4	4'-8"	37
E2	12	#4	3'-0"	24
G	60	#4	2'-2"	87
H1	64	#4	10'-8"	456
H2	12	#4	10'-0"	80
H3	4	#4	3'-8"	10
H4	51	#4	12'-4"	420
H5	9	#4	11'-8"	70
H6	4	#4	4'-2"	11
H7	24	#4	10'-8"	171
H8	8	#4	3'-6"	19
H9	16	#4	2'-10"	30
H10	16	#4	2'-5"	26
H11	24	#4	2'-2"	35
H12	18	#4	12'-4"	148
H13	6	#4	5'-9"	23
H14	6	#4	4'-7"	18
H15	6	#4	6'-4"	25
H16	10	#4	9'-8"	65
V1	82	#4	7'-5"	406
V2	4	#4	3'-3"	9
V3	16	#4	2'-1"	22
V4	8	#4	1'-7"	8
V5	28	#4	1'-2"	22
V6	6	#4	4'-2"	17
Z1	24	#4	5'-0"	80
Z2	24	#4	4'-5"	71
Z3	16	#4	3'-8"	39
DOWEL	16	#4	1'-8"	69
TOTAL REINF. STEEL (LBS.)			2,498	
TOTAL CLASS "AA" CONC. (CU.YDS.)			15.6	

* CONCRETE FOR PIPE BASE PAD PER STD. NO. 840.00 NOT INCLUDED

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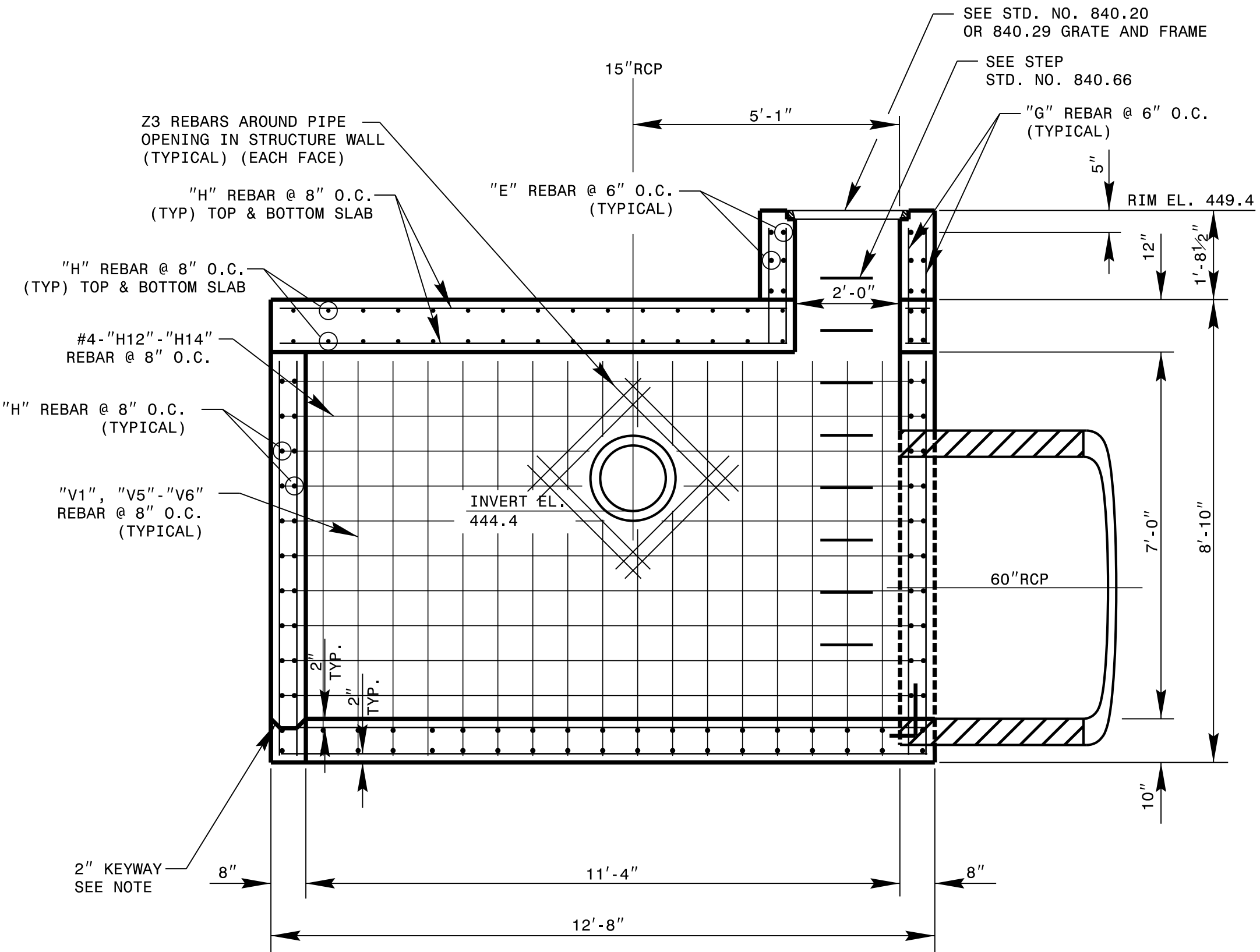
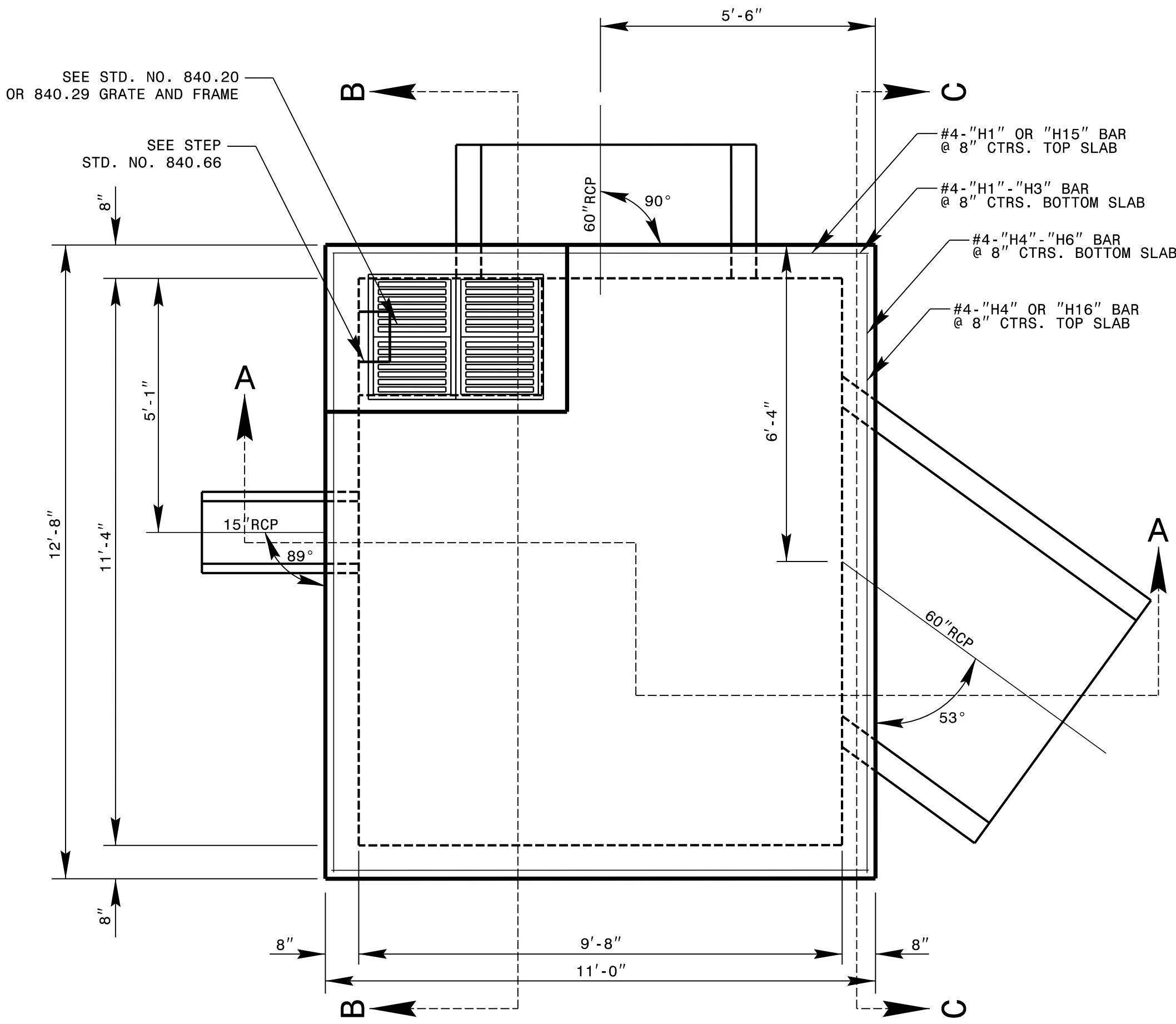
P: (919) 878-9560
8601 Six Forks Road, Forum 1 Suite 700
Raleigh, North Carolina 27615 NC License No. F-0112

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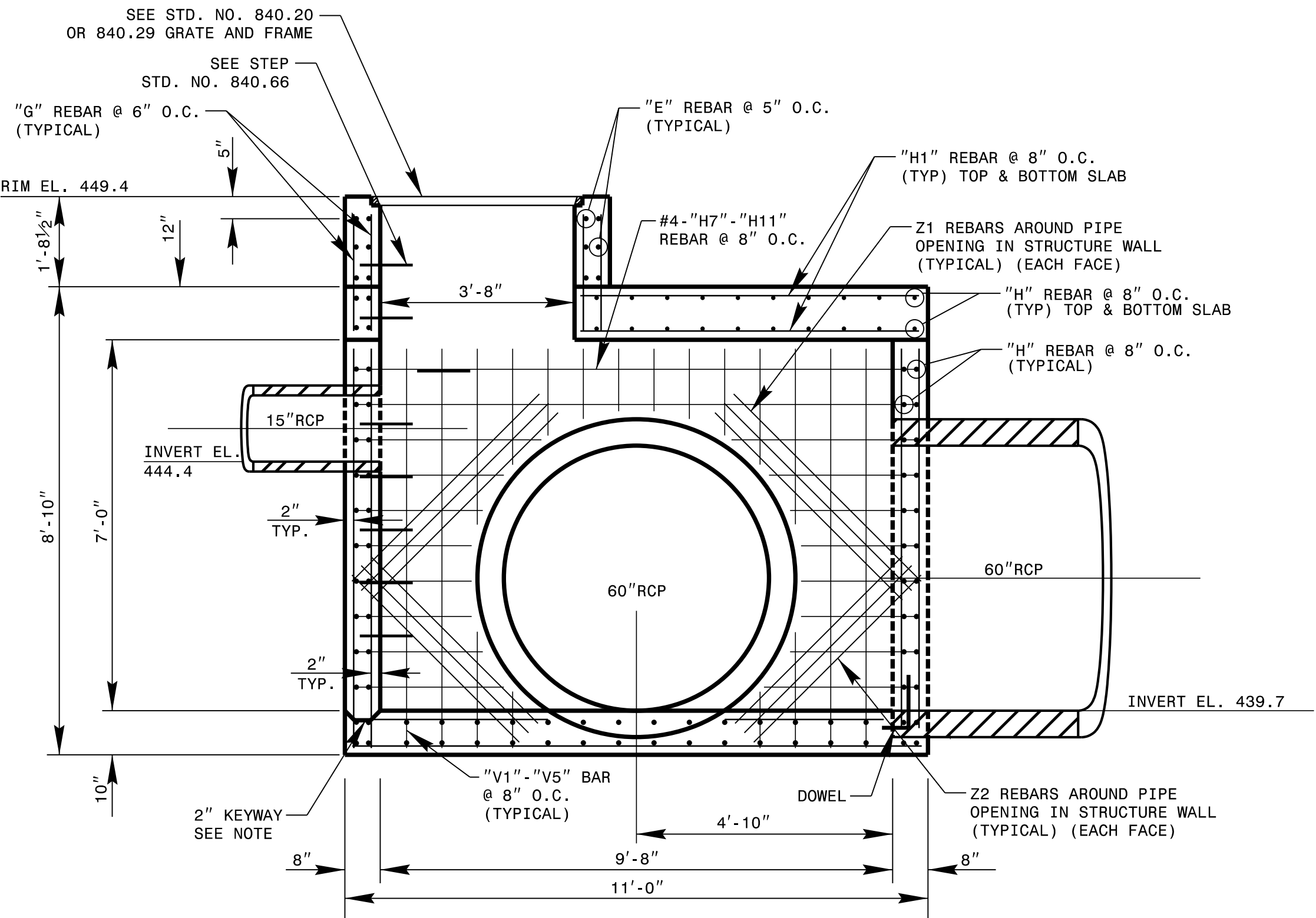
Responsive People | Creative Solutions

**SPECIAL DETAIL
TRAFFIC BEARING
DROP INLET BOX #0602**

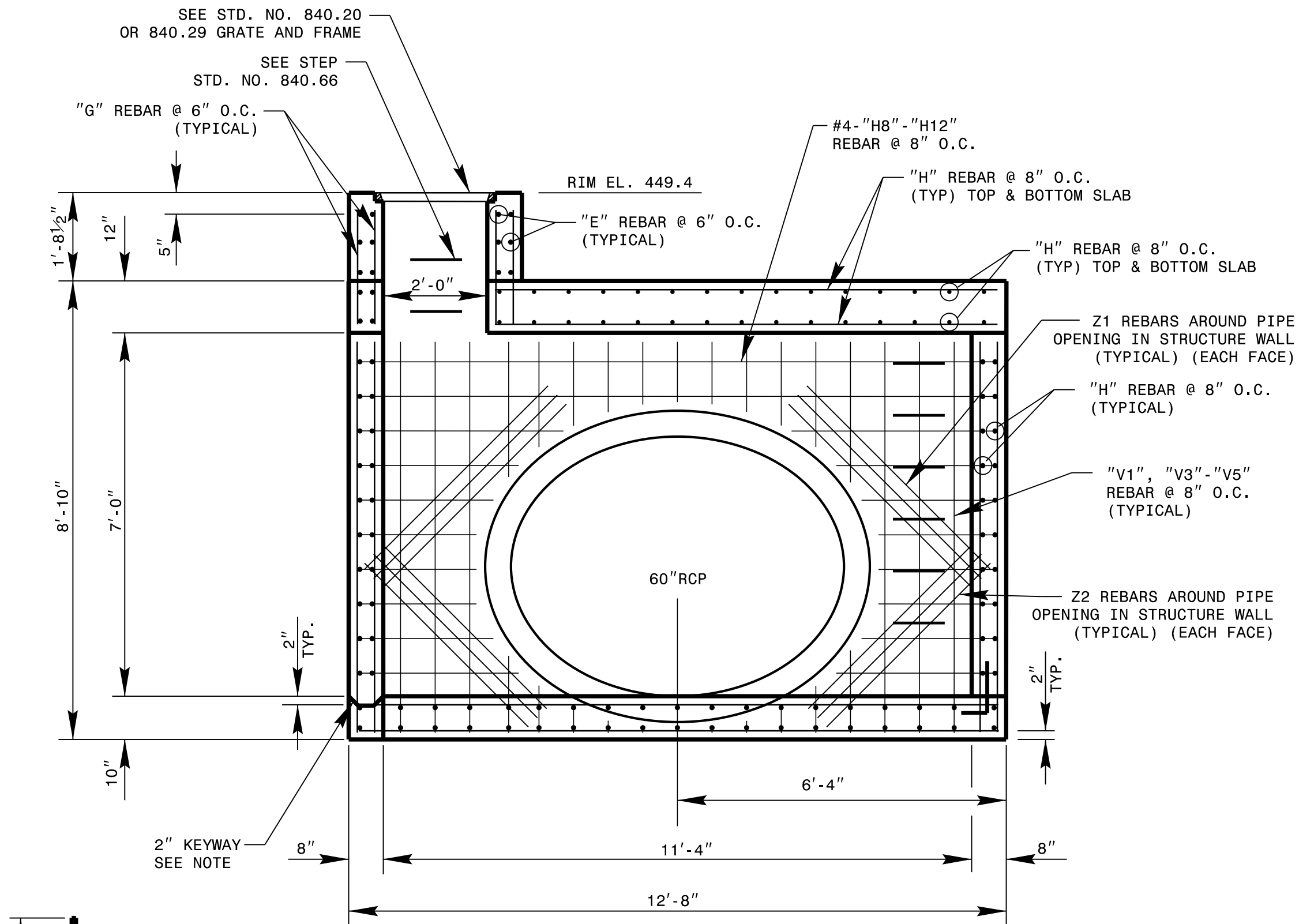
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CHECKED BY: JWG DATE: APR 2024
DESIGN ENGINEER OF RECORD: ALS DATE: APR 2024



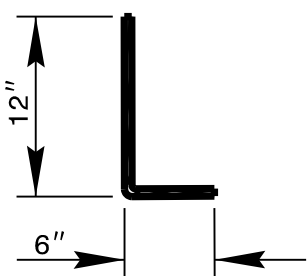
SECTION B-B



SECTION A-A



SECTION C-C



DOWEL

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DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
METHOD OF PIPE INSTALLATION
FLEXIBLE PIPE

SHEET 1 OF 2
300.01

Diagram showing a pipe in a trench with normal earth foundation. The pipe is surrounded by compacted backfill. Labels include: TOP OF FILL, GROUND LINE, H (fill height), I.D. /6 MIN. NOT LESS THAN 6", O.D. + 3', and COMPACT AFTER PIPE IS PLACED & PRIOR TO PLACEMENT OF FILL.

NORMAL EARTH FOUNDATION

Diagram showing a pipe in a trench with a rock foundation. The pipe sits on a layer of rock. Labels include: TOP OF FILL, GROUND LINE, H, I.D. /6 MIN. NOT LESS THAN 6", O.D. + 3', COMPACT AFTER PIPE IS PLACED & PRIOR TO PLACEMENT OF FILL, ROCK, and TYPE 4a GEOTEXTILE.

**ROCK FOUNDATION
PIPE IN TRENCH**

Diagram showing a pipe in a trench with an unsuitable material foundation. The pipe sits on a layer of unsuitable material. Labels include: TOP OF FILL, GROUND LINE, H, I.D. /6 MIN. NOT LESS THAN 6", O.D. + 3', COMPACT AFTER PIPE IS PLACED & PRIOR TO PLACEMENT OF FILL, EARTH, TYPE 4a GEOTEXTILE, and 1/2" PER FOOT OF 'H' BUT NOT LESS THAN 12" NOR MORE THAN 24" AS DIRECTED BY ENGR.

UNSUITABLE MATERIAL FOUNDATION

Diagram showing a pipe above ground with normal earth foundation. The pipe is surrounded by compacted backfill. Labels include: TOP OF FILL, GROUND LINE, MIN. O.D., H, I.D. /6 MIN. NOT LESS THAN 6", O.D. + 2', COMPACT AFTER PIPE IS PLACED & PRIOR TO PLACEMENT OF FILL, and 1:1 slope.

NORMAL EARTH FOUNDATION

Diagram showing a pipe above ground with a rock foundation. The pipe sits on a layer of rock. Labels include: TOP OF FILL, GROUND LINE, MIN. O.D., H, I.D. /6 MIN. NOT LESS THAN 6", O.D. + 2', COMPACT AFTER PIPE IS PLACED & PRIOR TO PLACEMENT OF FILL, ROCK, and TYPE 4a GEOTEXTILE.

**ROCK FOUNDATION
PIPE ABOVE GROUND**

Diagram showing a pipe above ground with an unsuitable material foundation. The pipe sits on a layer of unsuitable material. Labels include: TOP OF FILL, GROUND LINE, MIN. O.D., H, I.D. /6 MIN. NOT LESS THAN 6", O.D. + 2', COMPACT AFTER PIPE IS PLACED & PRIOR TO PLACEMENT OF FILL, EARTH, TYPE 4a GEOTEXTILE, and 1/2" PER FOOT OF 'H' BUT NOT LESS THAN 12" NOR MORE THAN 24" AS DIRECTED BY ENGINEER.

UNSUITABLE MATERIAL FOUNDATION

GENERAL NOTES:

I.D. = THE MAXIMUM HORIZONTAL INSIDE DIAMETER DIMENSION.

O.D. = THE MAXIMUM HORIZONTAL OUTSIDE DIAMETER DIMENSION.

H = THE FILL HEIGHT MEASURED VERTICALLY AT ANY POINT ALONG THE PIPE FROM THE TOP OF THE PIPE TO THE TOP OF THE EMBANKMENT AT THAT POINT.

APPROVED SUITABLE LOCAL MATERIAL.

TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.

LOOSELY PLACED SELECT MATERIAL CLASS III OR CLASS II, TYPE 1 FOR PIPE BEDDING. LEAVE SECTION DIRECTLY BENEATH PIPE UNCOMPACTED AS PIPE SEATING AND BACKFILL WILL ACCOMPLISH COMPACTION.

DO NOT OPERATE HEAVY EQUIPMENT OVER ANY PIPE CULVERT UNTIL THE PIPE CULVERT HAS BEEN PROPERLY BACKFILLED AND COVERED WITH AT LEAST 3 FEET OF APPROVED MATERIAL.

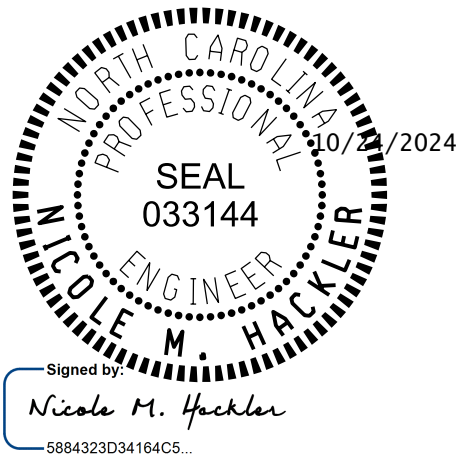
REFER TO NCDOT PIPE MATERIAL SELECTION GUIDE AND STANDARD SPECIFICATIONS FOR ALLOWABLE PIPE FILL HEIGHTS AND PIPE SPECIFICATIONS.

SPRINGLINE OF PIPE

SELECT BACKFILL MATERIAL CLASS III OR CLASS II, TYPE 1 ABOVE AND BELOW SPRINGLINE.

UNDISTURBED EARTH MATERIAL

SELECT MATERIAL CLASS V OR VI FOR FOUNDATION CONDITIONING. ENCAPSULATE WITH TYPE IV GEOTEXTILE AS DIRECTED BY THE ENGINEER.



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**CONTRACTS STANDARDS
AND DEVELOPMENT UNIT**
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ORIGINAL BY: S.CALHOUN DATE: 7-25-2024
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: DATE:

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

ROADWAY DETAIL DRAWING FOR
METHOD OF PIPE INSTALLATION
RIGID PIPE

SHEET 2 OF 2
300.01

Diagram showing a pipe in a trench with normal earth foundation. Labels include: TOP OF FILL, GROUND LINE, H, I.D. /6 MIN. NOT LESS THAN 6", O.D. + 3', COMPACT AFTER PIPE IS PLACED & PRIOR TO PLACEMENT OF FILL, NORMAL EARTH FOUNDATION.

Diagram showing a pipe in a trench with rock foundation. Labels include: TOP OF FILL, GROUND LINE, H, I.D. /6 MIN. NOT LESS THAN 6", O.D. + 3', COMPACT AFTER PIPE IS PLACED & PRIOR TO PLACEMENT OF FILL, ROCK, ROCK FOUNDATION, PIPE IN TRENCH.

Diagram showing a pipe in a trench with suitable material foundation. Labels include: TOP OF FILL, GROUND LINE, H, I.D. /6 MIN. NOT LESS THAN 6", O.D. + 3', COMPACT AFTER PIPE IS PLACED & PRIOR TO PLACEMENT OF FILL, TYPE 4a GEOTEXTILE, 1/2" PER FOOT OF 'H' BUT NOT LESS THAN 12" NOR MORE THAN 24" AS DIRECTED BY ENGR., UNSUITABLE MATERIAL FOUNDATION.

Diagram showing a pipe above ground with normal earth foundation. Labels include: TOP OF FILL, GROUND LINE, H, MIN. O.D., I.D. /6 MIN. NOT LESS THAN 6", O.D. + 2', COMPACT AFTER PIPE IS PLACED & PRIOR TO PLACEMENT OF FILL, NORMAL EARTH FOUNDATION.

Diagram showing a pipe above ground with rock foundation. Labels include: TOP OF FILL, GROUND LINE, H, MIN. O.D., I.D. /6 MIN. NOT LESS THAN 6", O.D. + 2', COMPACT AFTER PIPE IS PLACED & PRIOR TO PLACEMENT OF FILL, ROCK, ROCK FOUNDATION, PIPE ABOVE GROUND.

Diagram showing a pipe above ground with suitable material foundation. Labels include: TOP OF FILL, GROUND LINE, H, MIN. O.D., I.D. /6 MIN. NOT LESS THAN 6", O.D. + 2', COMPACT AFTER PIPE IS PLACED & PRIOR TO PLACEMENT OF FILL, TYPE 4a GEOTEXTILE, 1/2" PER FOOT OF 'H' BUT NOT LESS THAN 12" NOR MORE THAN 24" AS DIRECTED BY ENGINEER, UNSUITABLE MATERIAL FOUNDATION.

GENERAL NOTES:

I.D. = THE MAXIMUM HORIZONTAL INSIDE DIAMETER DIMENSION.

O.D. = THE MAXIMUM HORIZONTAL OUTSIDE DIAMETER DIMENSION.

H = THE FILL HEIGHT MEASURED VERTICALLY AT ANY POINT ALONG THE PIPE FROM THE TOP OF THE PIPE TO THE TOP OF THE EMBANKMENT AT THAT POINT.

APPROVED SUITABLE LOCAL MATERIAL.

TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.

LOOSELY PLACED SELECT MATERIAL CLASS III OR CLASS II, TYPE 1 FOR PIPE BEDDING. LEAVE SECTION DIRECTLY BENEATH PIPE UNCOMPACTED AS PIPE SEATING AND BACKFILL WILL ACCOMPLISH COMPACTION.

DO NOT OPERATE HEAVY EQUIPMENT OVER ANY PIPE CULVERT UNTIL THE PIPE CULVERT HAS BEEN PROPERLY BACKFILLED AND COVERED WITH AT LEAST 3 FEET OF APPROVED MATERIAL.

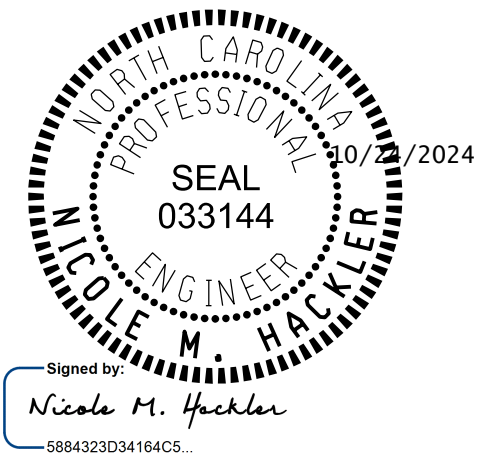
REFER TO NCDOT PIPE MATERIAL SELECTION GUIDE AND STANDARD SPECIFICATIONS FOR ALLOWABLE PIPE FILL HEIGHTS AND PIPE SPECIFICATIONS.

SPRINGLINE OF PIPE

SELECT BACKFILL MATERIAL CLASS III OR CLASS II, BELOW SPRINGLINE.

UNDISTURBED EARTH MATERIAL

SELECT MATERIAL CLASS V OR VI FOR FOUNDATION CONDITIONING. ENCAPSULATE WITH TYPE IV GEOTEXTILE AS DIRECTED BY THE ENGINEER.



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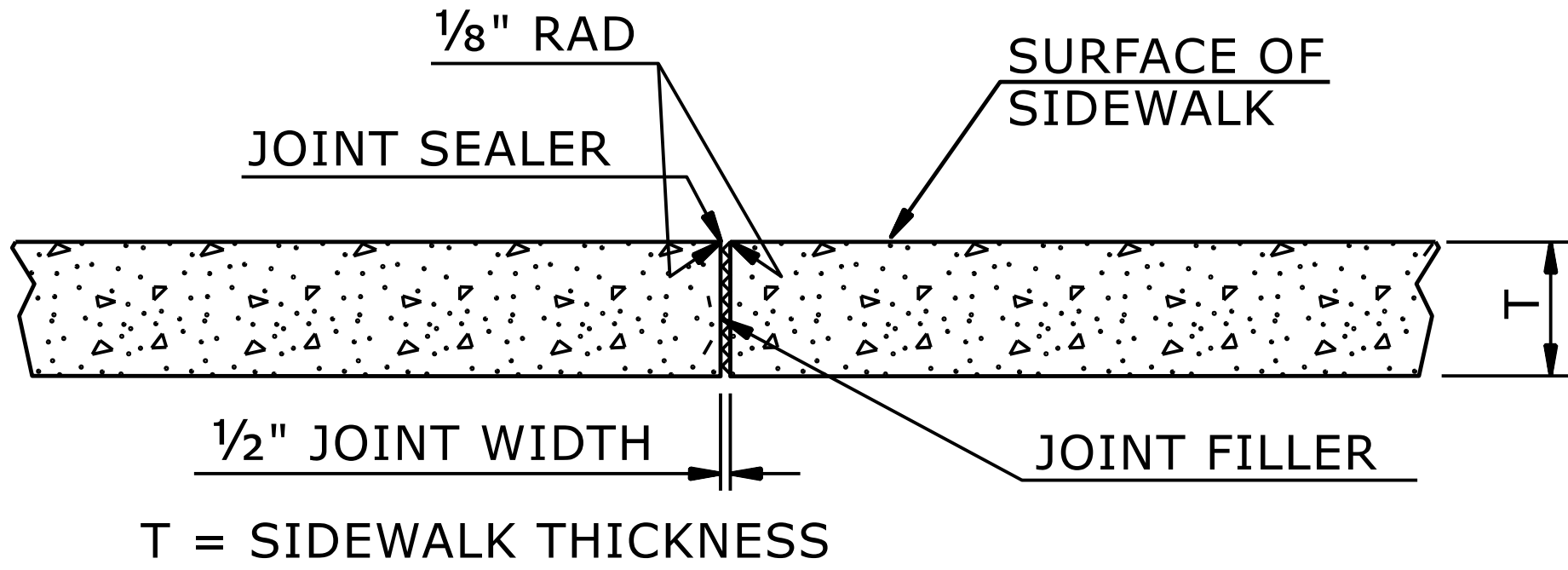
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FILE SPEC:			

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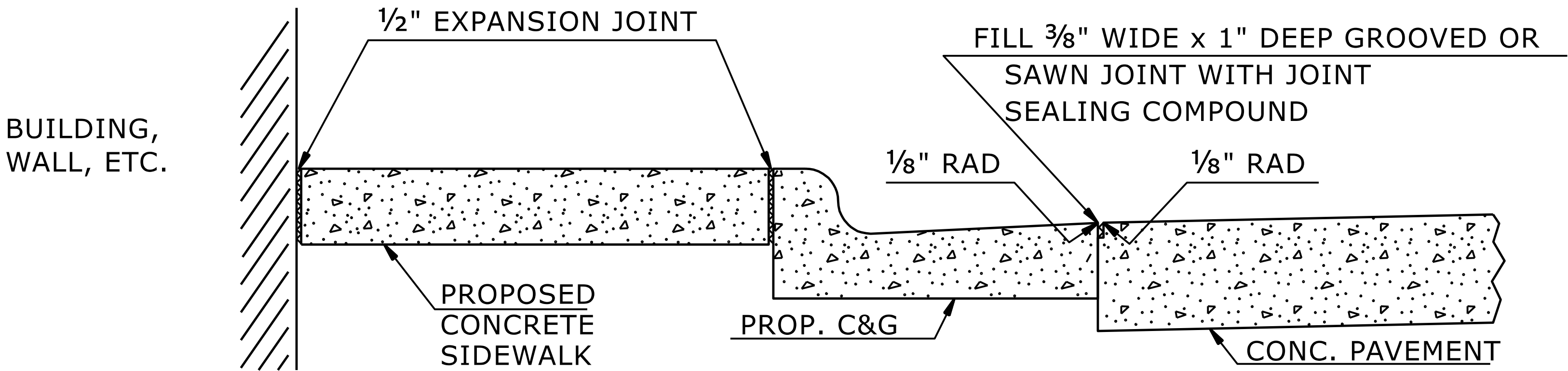
CONSTRUCT STANDARD SIDEWALK 5' WIDE AND 4" THICK UNLESS OTHERWISE DENOTED ON PLANS.

PLACE A GROOVE JOINT 1" DEEP WITH 1/8" RADII IN THE CONCRETE SIDEWALK AT 5' INTERVALS. ONE 1/2" EXPANSION JOINT WILL BE REQUIRED AT 50' INTERVALS. A 1/2" EXPANSION JOINT WILL BE REQUIRED WHERE THE SIDEWALK JOINS ANY RIGID STRUCTURE.

SEE STD. DWG. 848.06 FOR CURB RAMP LOCATION REQUIREMENTS AND CONSTRUCTION GUIDELINES.



TRANSVERSE EXPANSION JOINT
IN SIDEWALK



DETAILS SHOWING JOINTS IN CONCRETE SIDEWALK

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DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
CONCRETE SIDEWALK



SHEET 1 OF 1
848D01

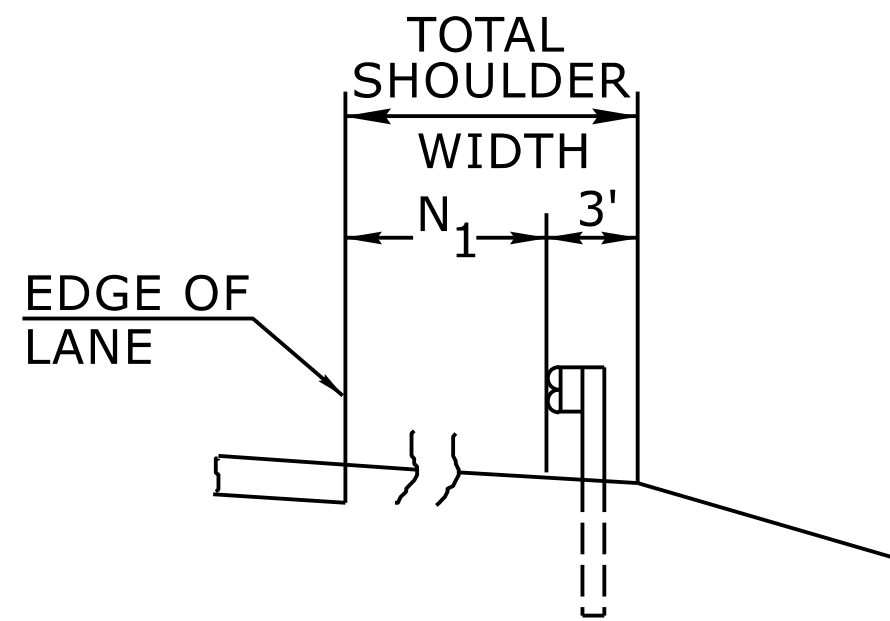
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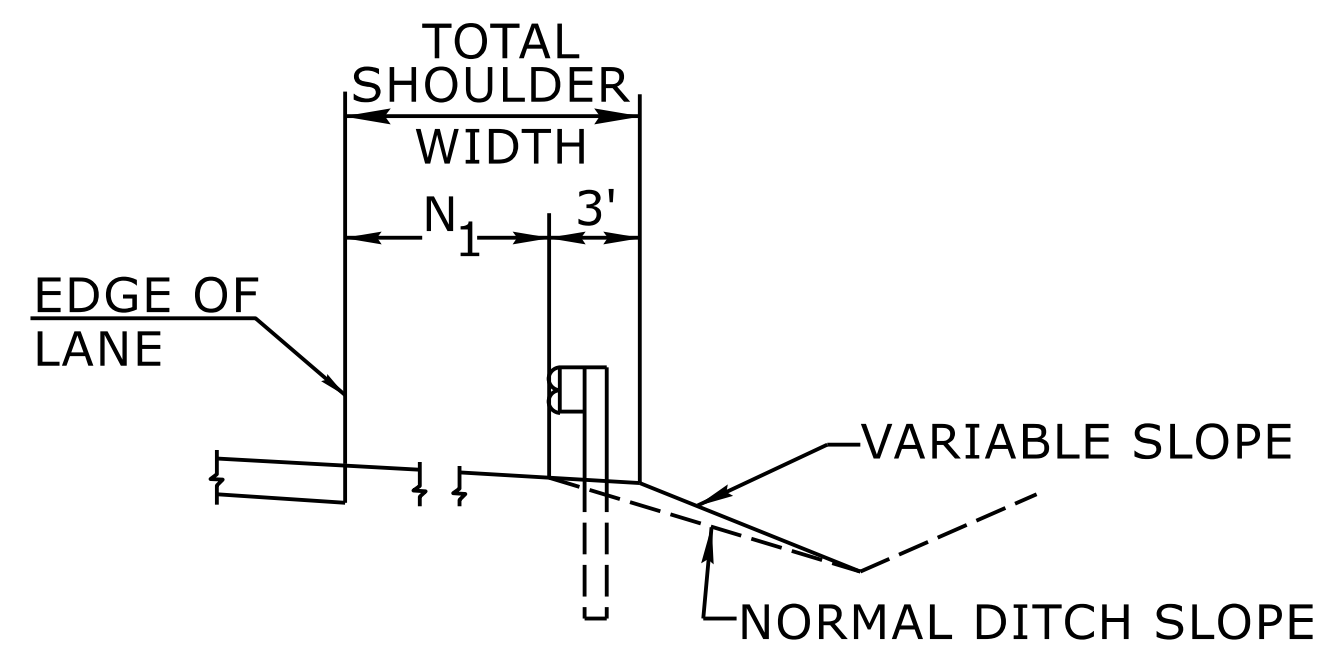
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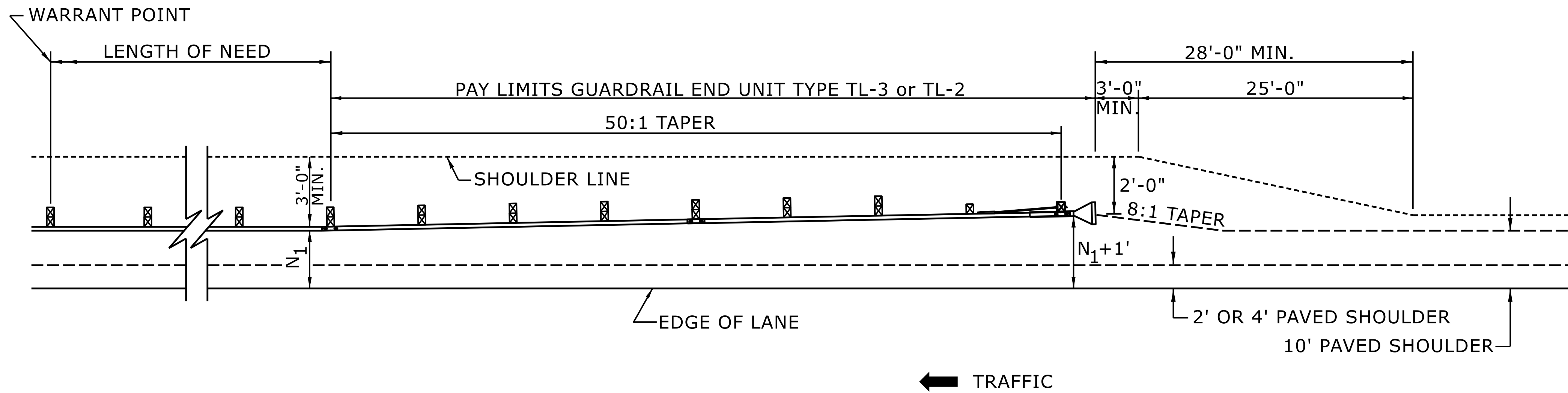


FILL SECTION



CUT SECTION

"N₁"= DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL WHERE GUARDRAIL IS PARALLEL TO LANE.



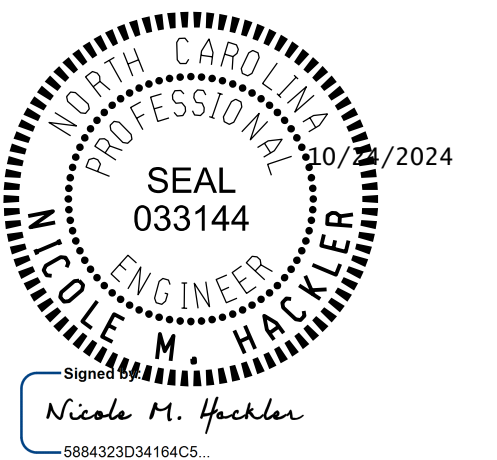
FOR POSTED SPEEDS ≥ 45mph USE GREU TYPE TL-3
FOR POSTED SPEEDS < 45mph USE GREU TYPE TL-2

DETAIL OF BEGINNING OF GUARDRAIL IN CUT OR FILL SECTION

ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT

SHEET 6 OF 15
862D01

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DIVISION OF HIGHWAYS
RALEIGH, N.C.



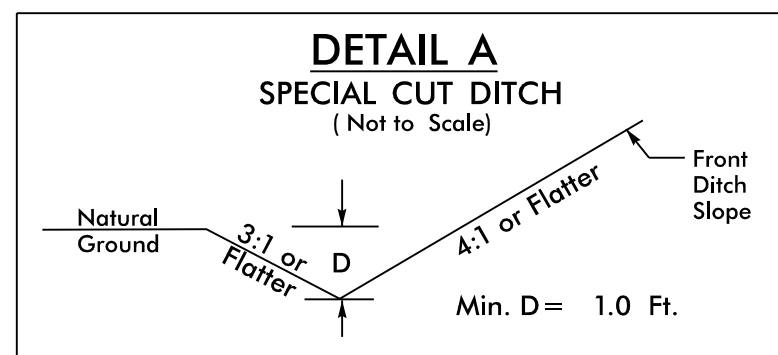
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AND DEVELOPMENT UNIT**

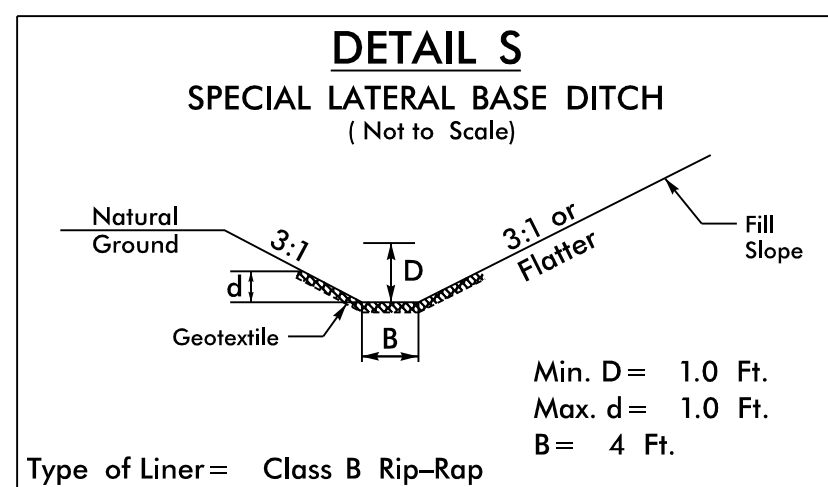
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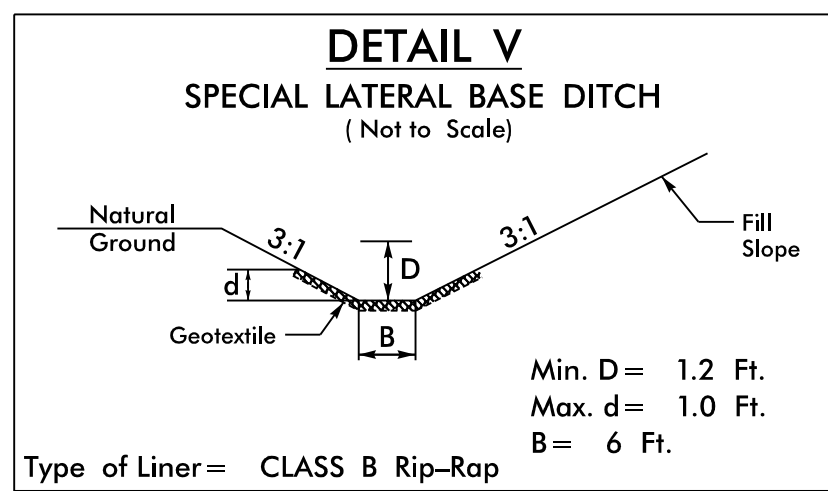
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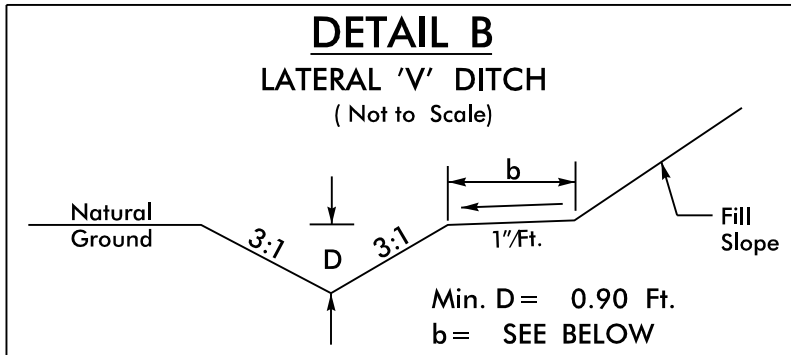
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 -L- FROM STA. 384+50 TO STA. 385+00 LT
 -L- FROM STA. 398+50 TO STA. 400+40 LT
 -L- FROM STA. 415+64 TO STA. 417+00 LT
 -L- FROM STA. 424+00 TO STA. 424+82 LT
 -L- FROM STA. 428+00 TO STA. 428+50 RT
 -L- FROM STA. 435+44 TO STA. 438+50 LT
 -L- FROM STA. 464+50 TO STA. 465+50 LT
 -L- FROM STA. 472+00 TO STA. 477+75 LT
 -L- FROM STA. 484+00 TO STA. 487+50 LT
 -L- FROM STA. 524+50 TO STA. 532+00 LT
 -L- FROM STA. 544+00 TO STA. 549+50 LT
 -L- FROM STA. 551+50 TO STA. 552+00 LT
 -L- FROM STA. 573+00 TO STA. 573+50 LT
 -L- FROM STA. 578+00 TO STA. 580+29 LT
 -L- FROM STA. 592+50 TO STA. 596+00 RT
 -L- FROM STA. 623+50 TO STA. 643+00 RT
 -L- FROM STA. 642+50 TO STA. 670+50 LT
 -L- FROM STA. 656+00 TO STA. 665+15 RT
 -L- FROM STA. 671+20 TO STA. 676+00 LT
 -L- FROM STA. 676+50 TO STA. 678+50 LT
 -L- FROM STA. 681+00 TO STA. 684+00 RT
 -L- FROM STA. 685+50 TO STA. 690+00 LT
 -L- FROM STA. 692+00 TO STA. 696+00 RT
 -L- FROM STA. 701+00 TO STA. 707+50 RT
 -L- FROM STA. 708+66 TO STA. 710+03 LT
 -L- FROM STA. 710+00 TO STA. 711+50 RT
 -L- FROM STA. 715+00 TO STA. 715+50 LT
 -L- FROM STA. 725+50 TO STA. 726+50 RT
 -L- FROM STA. 726+50 TO STA. 731+50 LT
 -L- FROM STA. 730+00 TO STA. 731+50 RT
 -L- FROM STA. 733+50 TO STA. 736+00 LT
 -L- FROM STA. 736+00 TO STA. 736+50 RT
 -L- FROM STA. 743+00 TO STA. 745+00 LT
 -L- FROM STA. 745+00 TO STA. 747+00 RT
 -L- FROM STA. 746+50 TO STA. 751+00 LT
 -L- FROM STA. 753+50 TO STA. 755+00 LT
 -L- FROM STA. 756+50 TO STA. 757+00 RT
 -L- FROM STA. 766+50 TO STA. 768+00 LT
 -L- FROM STA. 769+50 TO STA. 772+50 RT
 -L- FROM STA. 773+48 TO STA. 775+50 RT
 -L- FROM STA. 778+50 TO STA. 782+50 LT
 -L- FROM STA. 778+50 TO STA. 779+50 RT
 -L- FROM STA. 786+00 TO STA. 786+97 LT
 -L- FROM STA. 786+50 TO STA. 794+37 RT
 -L- FROM STA. 795+28 TO STA. 795+65 RT
 -L- FROM STA. 812+30 TO STA. 812+33 RT
 -L- FROM STA. 814+00 TO STA. 815+00 RT
 -L- FROM STA. 815+00 TO STA. 816+50 LT
 -L- FROM STA. 818+50 TO STA. 820+50 RT
 -L- FROM STA. 821+50 TO STA. 822+96 LT
 -L- FROM STA. 822+50 TO STA. 822+64 RT
 -L- FROM STA. 826+50 TO STA. 827+50 RT
 -L- FROM STA. 832+00 TO STA. 834+00 LT
 -L- /-Y11A- FROM STA. 376+00 TO STA. 376+39 RT
 -Y21- FROM STA. 10+81 TO STA. 11+50 LT
 -Y21- FROM STA. 10+71 TO STA. 12+00 RT
 -Y22- FROM STA. 11+00 TO STA. 11+50 LT
 -Y24A- FROM STA. 10+70 TO STA. 11+00 LT
 -Y24A- FROM STA. 11+50 TO STA. 12+50 RT
 -Y26- FROM STA. 14+00 TO STA. 14+50 RT
 -Y26- FROM STA. 18+50 TO STA. 23+50 RT
 -Y26A- FROM STA. 13+00 TO STA. 15+10 RT



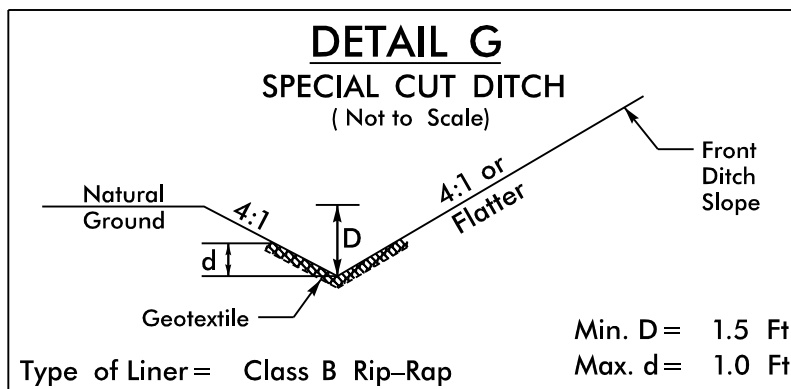
-L- FROM STA. 431+00 TO STA. 432+50 LT
 -L- FROM STA. 543+00 TO STA. 545+48 RT
 -Y14- FROM STA. 13+00 TO STA. 14+50 LT



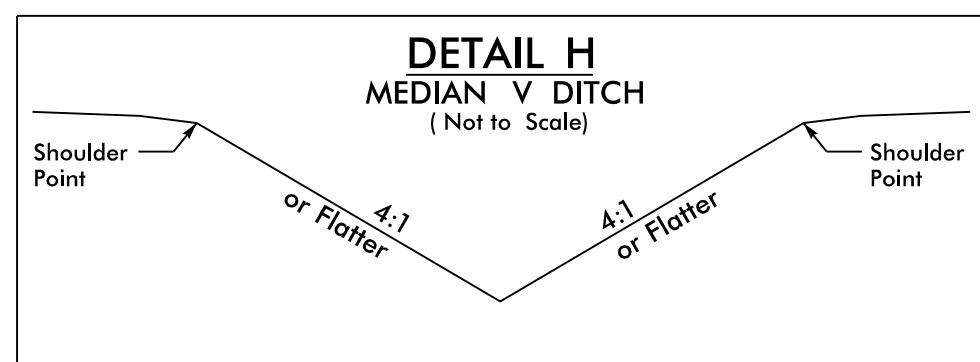
-L- FROM STA. 715+50 TO STA. 717+00 LT



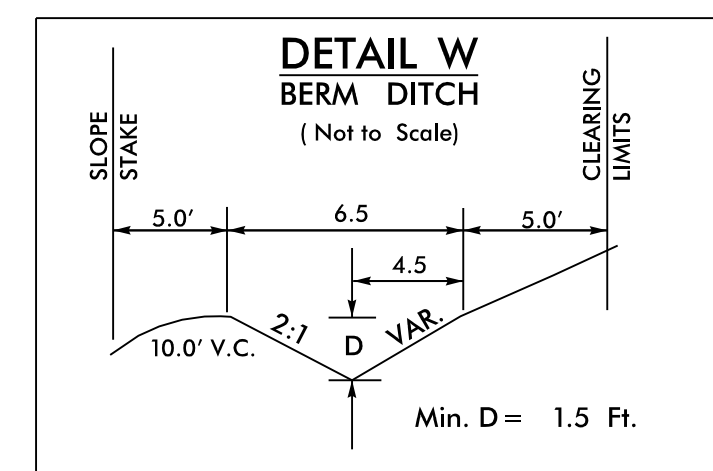
-L- FROM STA. 367+50 TO STA. 371+50 RT, b=5', DDE=122 CY
 -L- FROM STA. 391+00 TO STA. 393+00 RT, b=2', DDE=19 CY
 -L- FROM STA. 393+50 TO STA. 398+00 LT, b=2', DDE=228 CY
 -L- FROM STA. 465+00 TO STA. 466+69 RT, b=2', DDE=83 CY
 -L- FROM STA. 471+50 TO STA. 473+75 RT, b=5', DDE=48 CY
 -L- FROM STA. 474+35 TO STA. 477+67 RT, b=5', DDE=112 CY
 -L- FROM STA. 499+50 TO STA. 502+00 RT, b=2', DDE=190 CY
 -L- FROM STA. 707+50 TO STA. 708+27 RT, b=5', DDE=56 CY
 -L- FROM STA. 711+50 TO STA. 716+40 RT, b=5', DDE=425 CY
 -L- FROM STA. 736+50 TO STA. 737+93 RT, b=2', DDE=124 CY
 -L- FROM STA. 743+50 TO STA. 745+00 RT, b=5', DDE=105 CY
 -L- FROM STA. 747+00 TO STA. 748+50 RT, b=5', DDE=23 CY
 -L- FROM STA. 750+11 TO STA. 756+50 RT, b=5', DDE=100 CY
 -L- FROM STA. 751+00 TO STA. 753+50 LT, b=5', DDE=79 CY
 -L- FROM STA. 768+00 TO STA. 772+00 LT, b=4', DDE=144 CY
 -L- FROM STA. 806+50 TO STA. 808+00 RT, b=5', DDE=199 CY



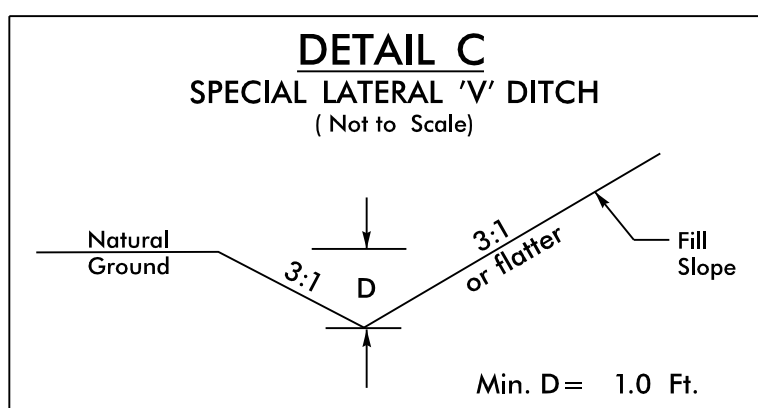
-L- FROM STA. 385+00 TO STA. 386+00 LT
 -L- FROM STA. 471+00 TO STA. 471+50 LT
 -L- FROM STA. 541+00 TO STA. 542+00 RT
 -L- FROM STA. 772+00 TO STA. 774+00 RT
 -L- FROM STA. 772+50 TO STA. 773+48 RT
 -LX1- FROM STA. 12+67.14 TO 18+68.19 LT



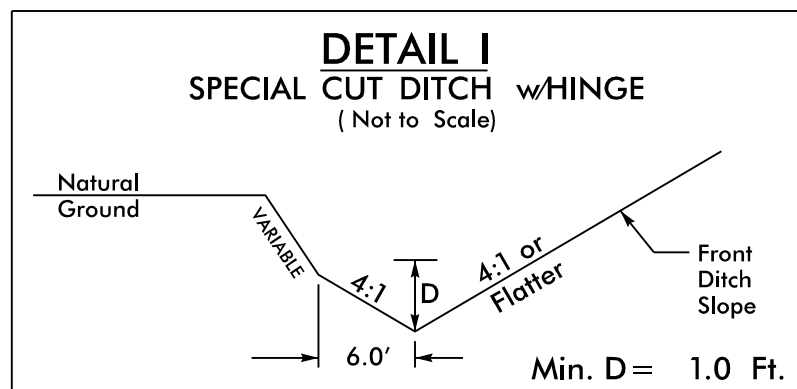
-L- FROM STA. 368+04 TO STA. 368+50 Median
 -L- FROM STA. 389+50 TO STA. 390+50 Median
 -L- FROM STA. 397+50 TO STA. 398+52 Median
 -L- FROM STA. 398+52 TO STA. 399+00 Median
 -L- FROM STA. 415+00 TO STA. 416+00 Median
 -L- FROM STA. 437+50 TO STA. 438+28 Median
 -L- FROM STA. 458+00 TO STA. 460+00 Median
 -L- FROM STA. 465+00 TO STA. 466+50 Median
 -L- FROM STA. 473+00 TO STA. 477+00 Median
 -L- FROM STA. 478+00 TO STA. 483+94 Median
 -L- FROM STA. 513+00 TO STA. 515+00 Median
 -L- FROM STA. 524+50 TO STA. 527+50 Median
 -L- FROM STA. 547+50 TO STA. 549+33 Median
 -L- FROM STA. 562+50 TO STA. 563+50 Median
 -L- FROM STA. 572+00 TO STA. 575+50 Median
 -L- FROM STA. 582+50 TO STA. 587+61 Median
 -L- FROM STA. 594+00 TO STA. 605+56 Median
 -L- FROM STA. 612+00 TO STA. 616+50 Median
 -L- FROM STA. 629+00 TO STA. 633+50 Median
 -L- FROM STA. 640+00 TO STA. 647+75 Median
 -L- FROM STA. 654+00 TO STA. 659+00 Median
 -L- FROM STA. 659+50 TO STA. 665+15 Median
 -L- FROM STA. 696+00 TO STA. 697+50 Median
 -L- FROM STA. 701+00 TO STA. 706+00 Median
 -L- FROM STA. 716+39 TO STA. 717+50 Median
 -L- FROM STA. 724+50 TO STA. 727+00 Median
 -L- FROM STA. 752+00 TO STA. 753+00 Median
 -L- FROM STA. 758+00 TO STA. 760+00 Median
 -L- FROM STA. 763+50 TO STA. 764+50 Median
 -L- FROM STA. 773+41 TO STA. 775+00 Median
 -L- FROM STA. 778+50 TO STA. 779+00 Median
 -L- FROM STA. 780+50 TO STA. 781+50 Median
 -L- FROM STA. 788+50 TO STA. 790+50 Median
 -L- FROM STA. 796+26 TO STA. 803+50 Median
 -L- FROM STA. 810+67 TO STA. 815+00 Median
 -L- FROM STA. 817+00 TO STA. 817+37 Median



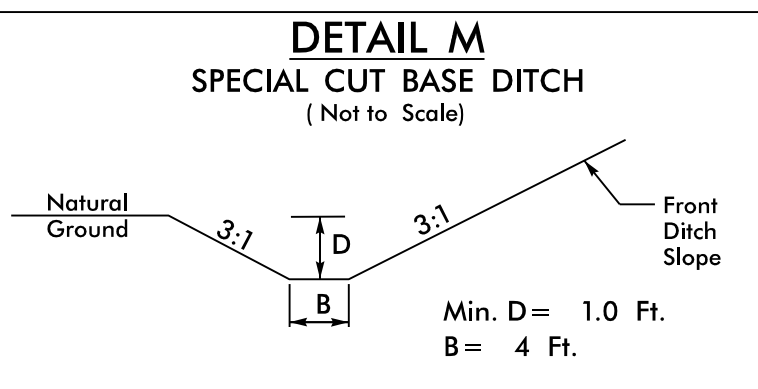
-L- FROM STA. 378+50 TO STA. 384+50 LT



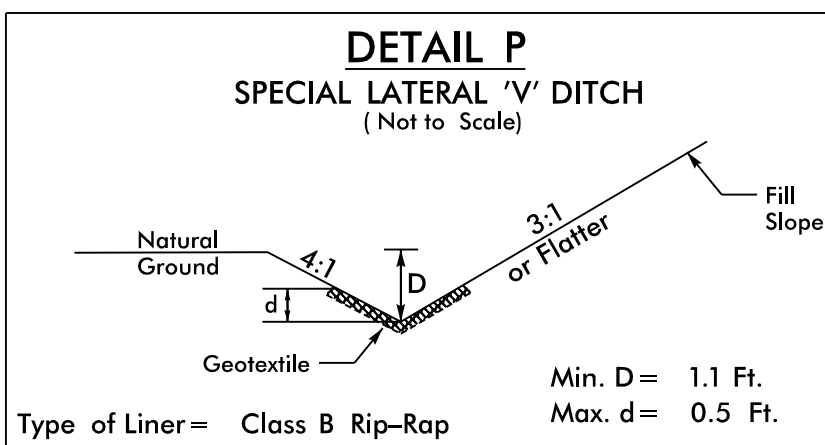
-L- FROM STA. 467+49 TO STA. 468+04 RT
 -L- FROM STA. 479+00 TO STA. 480+50 RT
 -L- FROM STA. 502+00 TO STA. 503+00 RT
 -L- FROM STA. 505+35 TO STA. 506+00 RT
 -L- FROM STA. 545+48 TO STA. 547+00 RT
 -L- FROM STA. 568+50 TO STA. 569+00 LT
 -L- FROM STA. 716+39 TO STA. 724+00 RT
 -Y11A- FROM STA. 11+00 TO STA. 11+50 LT
 -Y14- FROM STA. 11+00 TO STA. 14+50 RT
 -Y15- FROM STA. 11+75 TO STA. 14+50 LT
 -Y15- FROM STA. 12+50 TO STA. 14+50 RT
 -Y20- FROM STA. 13+00 TO STA. 14+90 LT
 -Y20- FROM STA. 13+00 TO STA. 15+10 RT
 -Y23- FROM STA. 10+85 TO STA. 11+50 RT
 -Y23- FROM STA. 10+96 TO STA. 12+00 LT
 -Y26- FROM STA. 11+13 TO STA. 14+00 RT
 -Y26- FROM STA. 15+00 TO STA. 18+50 RT
 -Y27- FROM STA. 11+12 TO STA. 12+32 RT



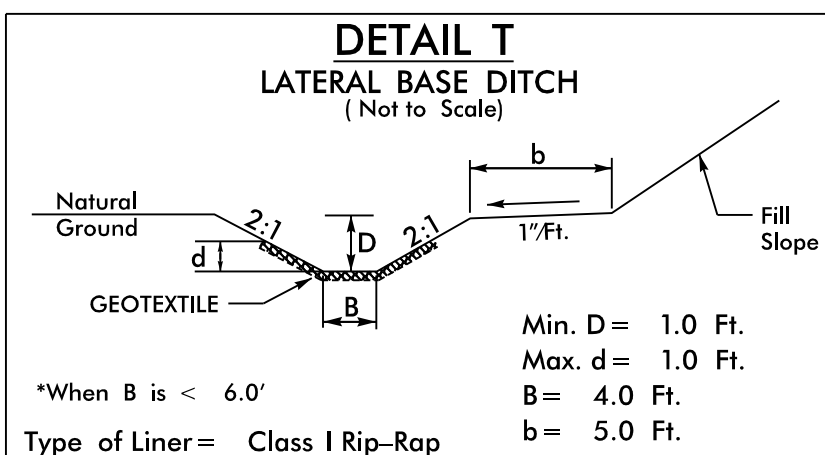
-L- FROM STA. 330+50 TO STA. 333+50 LT
 -L- FROM STA. 352+50 TO STA. 359+50 LT



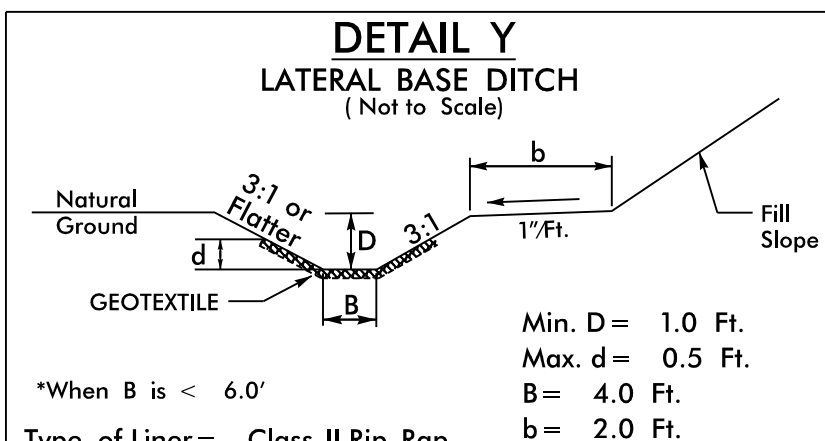
-L- FROM STA. 445+50 TO STA. 447+00 LT
 -L- FROM STA. 592+00 TO STA. 593+50 LT
 -Y24- FROM STA. 12+50 TO STA. 14+75 LT



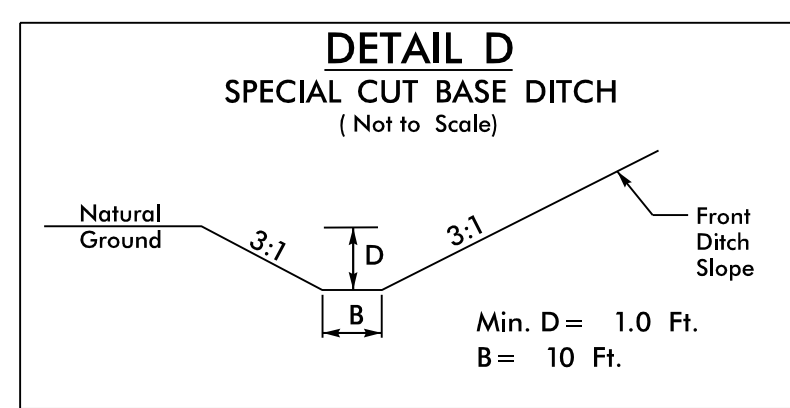
-L- FROM STA. 542+00 TO STA. 543+00 RT
 -Y12- FROM STA. 11+07 TO STA. 12+00 RT



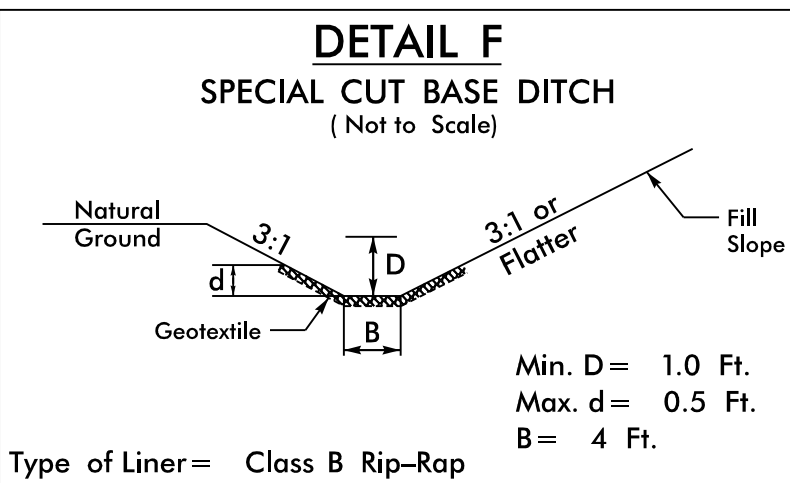
-LX1- FROM STA. 10+00 TO 12+67.14 LT, DDE=248 CY



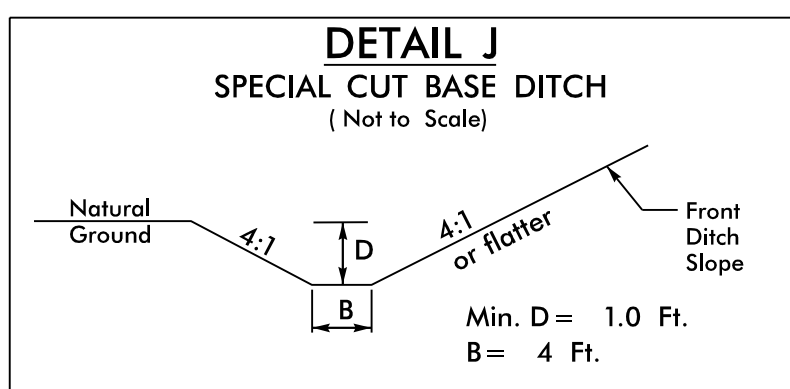
-Y11C- FROM STA. 10+67 TO STA. 11+28 RT, DDE=52 CY



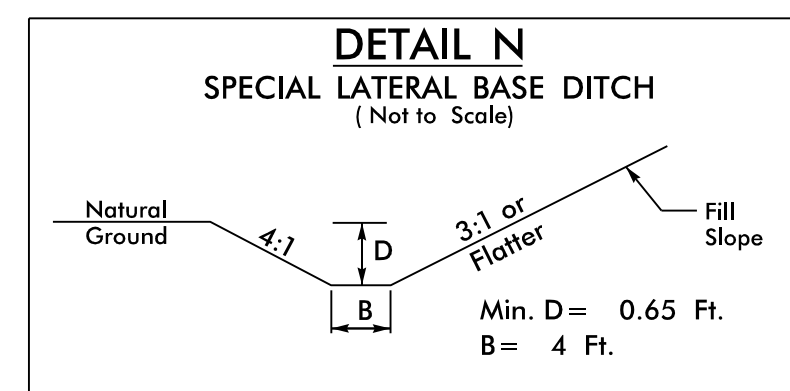
-Y14- FROM STA. 11+00 TO STA. 13+00 LT



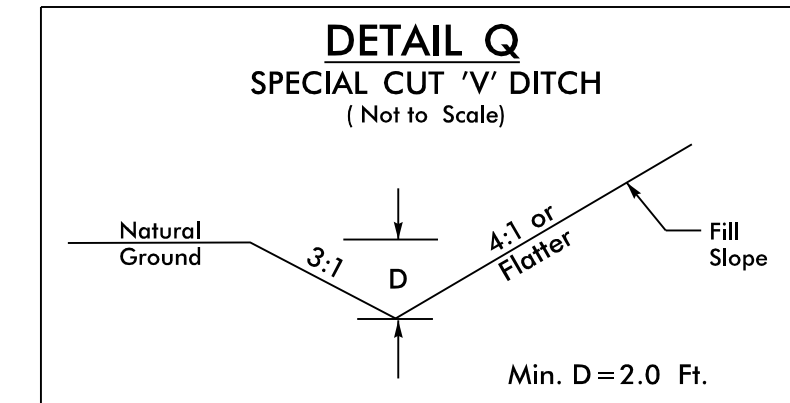
-L- FROM STA. 426+00 LT TO STA. 431+00 LT



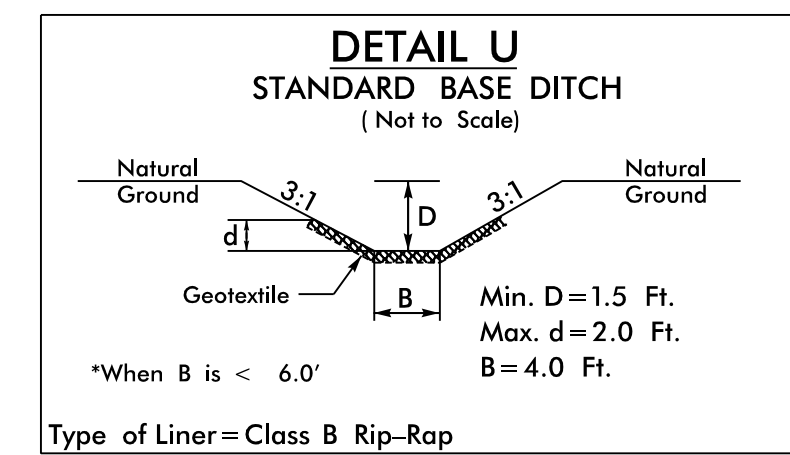
-L- FROM STA. 596+00 TO STA. 607+00 RT
 -L- FROM STA. 718+50 TO STA. 719+00 LT



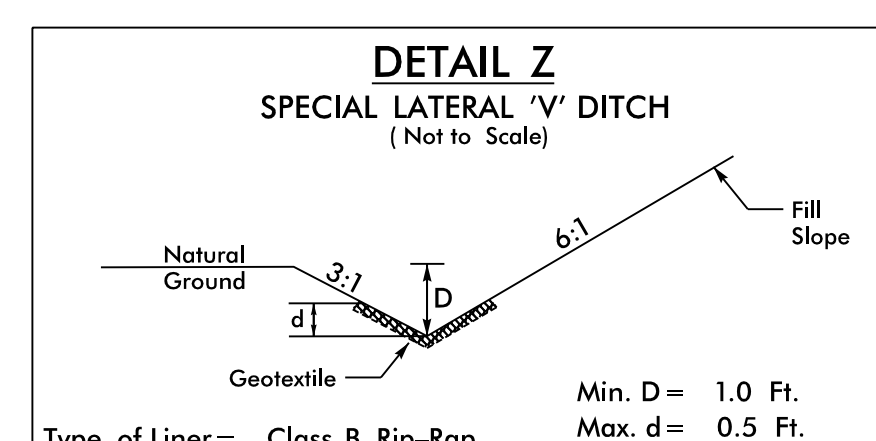
-L- FROM STA. 391+00 TO STA. 393+00 RT
 -L- FROM STA. 505+50 TO STA. 506+00 RT



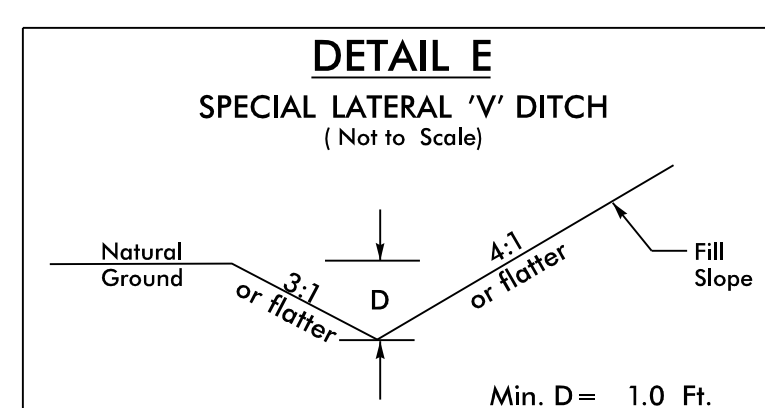
-L- FROM STA. 480+50 TO STA. 481+50 RT
 -L- FROM STA. 489+50 TO STA. 498+00 RT
 -L- FROM STA. 496+00 TO STA. 497+50 LT
 -L- FROM STA. 506+00 TO STA. 507+50 RT
 -L- FROM STA. 787+79 TO STA. 800+30 LT



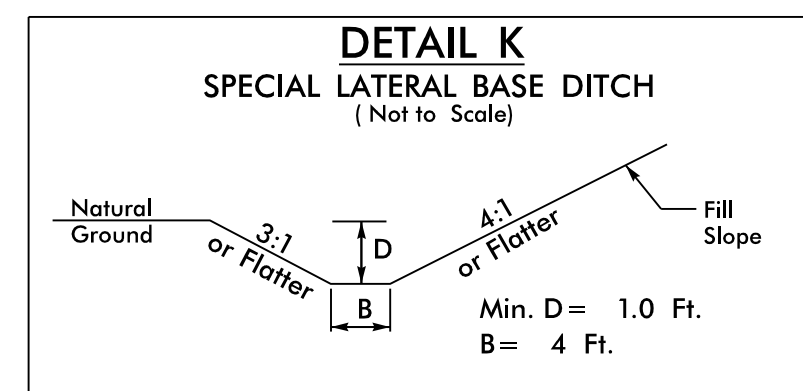
-L- STA. 644+46 LT; S=0.33%; L=60'; B=4'
 Beg. El.=364.00; End El.=362.00; DDE=62 CY; 40 TON RIP-RAP



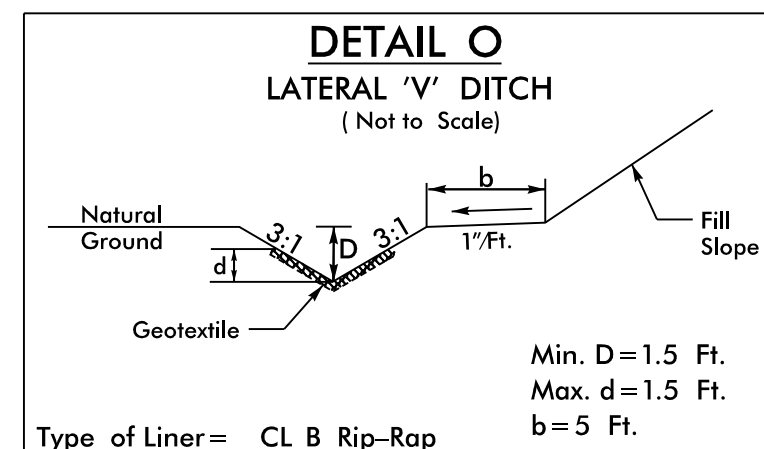
-Y13- FROM STA. 15+50 TO STA. 19+00 LT, DDE=825



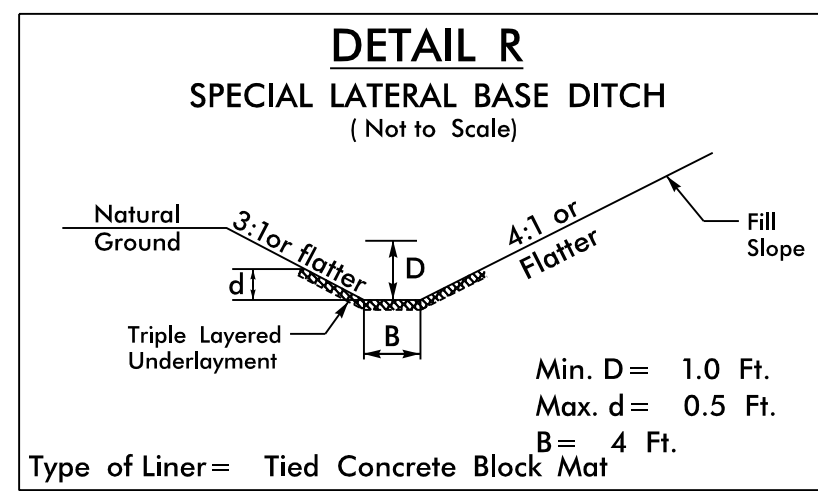
-L- FROM STA. 368+00 TO STA. 371+00 LT
 -L- FROM STA. 379+50 TO STA. 380+50 RT
 -L- FROM STA. 387+50 TO STA. 389+50 LT
 -L- FROM STA. 426+00 TO STA. 428+50 RT
 -L- FROM STA. 477+75 TO STA. 479+00 LT
 -L- FROM STA. 480+50 TO STA. 483+00 LT
 -L- FROM STA. 507+50 TO STA. 511+50 LT
 -L- FROM STA. 524+50 TO STA. 526+91 RT
 -L- FROM STA. 573+50 TO STA. 576+83 LT
 -L- FROM STA. 686+20 TO STA. 686+90 RT
 -L- FROM STA. 698+00 TO STA. 700+50 LT
 -L- FROM STA. 767+50 TO STA. 769+50 RT
 -L- FROM STA. 832+50 TO STA. 834+00 LT



-L- FROM STA. 499+34 TO STA. 501+00 LT
 -L- FROM STA. 717+00 TO STA. 718+50 LT
 -L- FROM STA. 810+49 TO STA. 812+30 RT



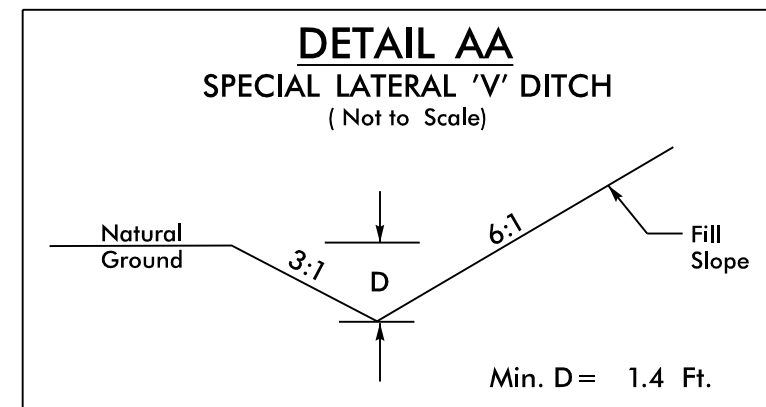
-L- FROM STA. 499+00 TO STA. 499+37 RT, DDE=43 CY
 -L- FROM STA. 731+50 TO STA. 733+27 RT, DDE=122 CY



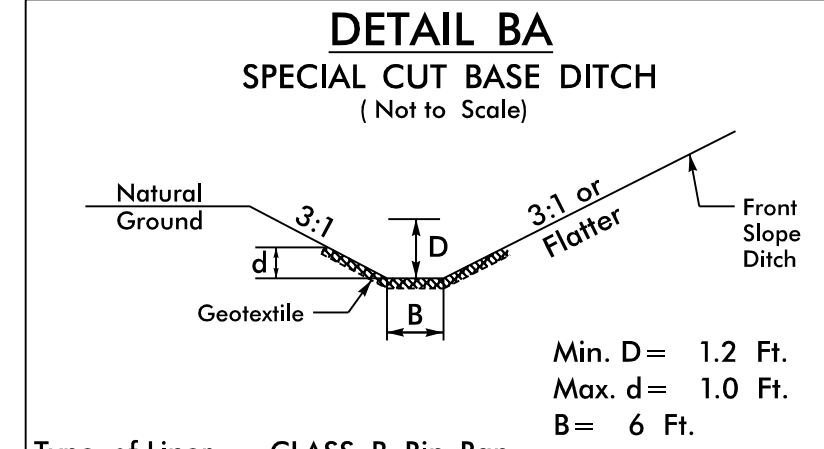
-L- FROM STA. 418+00 TO STA. 420+50 LT

PROJECT REFERENCE NO. <i>R-5709C</i>		SHEET NO. <i>2D-1</i>	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		ENGINEER	
Signed by: <i>Mary E. Mays</i> Date: <i>10/14/2024</i> Title: <i>Engineer</i>			
Signed by: <i>Courtney A. Hoffman</i> Date: <i>10/14/2024</i> Title: <i>Engineer</i>			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

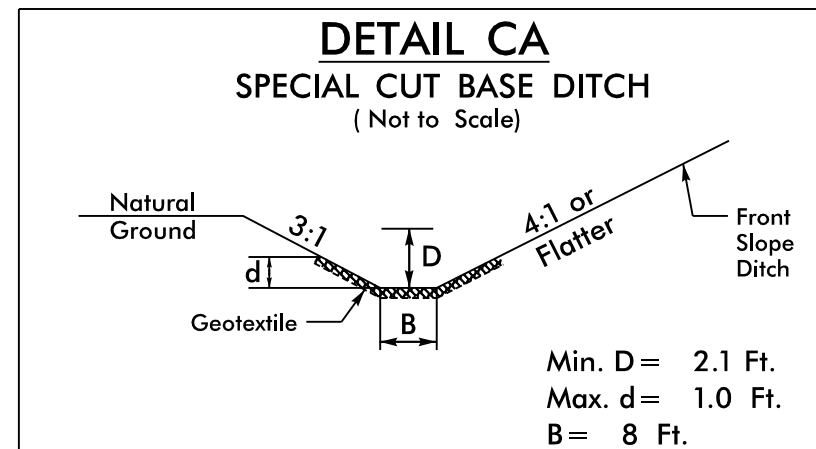
-L- STA. 665+15 RT; S=0.04%; L=60';
 Beg. El.=358.94; End El.=358.68; DDE=33 CY
 -L- STA. 773+35 LT (RT OF RR); S=1.25%; L=40';
 Beg. El.=297.00; End El.=296.50; DDE=22 CY
 -L- STA. 773+35 LT (LT OF RR); S=1.08%; L=28';
 Beg. El.=296.19; End El.=295.89; DDE=16 CY
 -L- STA. 774+00 LT; S=5.24%; L=63';
 Beg. El.=299.80; End El.=296.50; DDE=35 CY
 -L- STA. 812+30 RT; S=0.00%; L=68';
 Beg. El.=280.58; End El.=280.58; DDE=120 CY



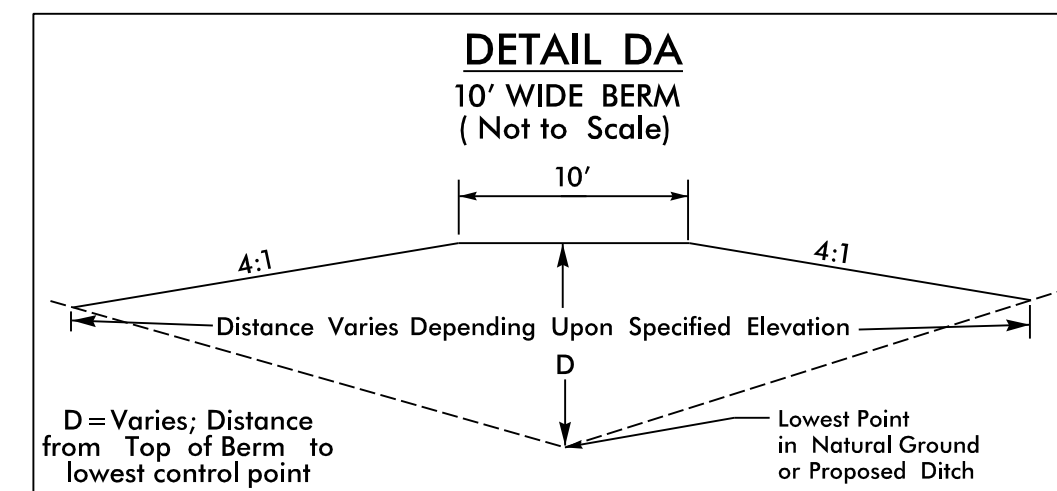
-Y13- FROM STA. 11+50 TO STA. 12+00 LT



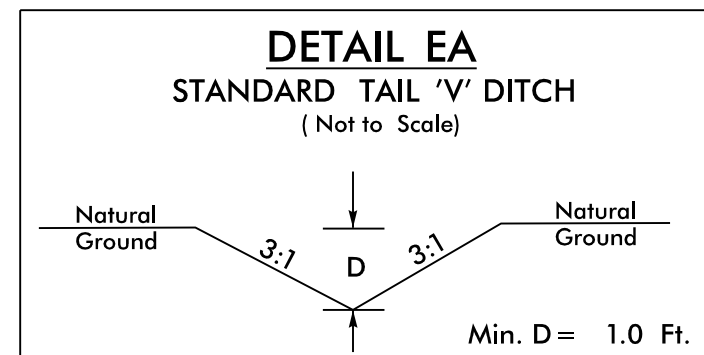
Type of Liner = CLASS B Rip-Rap
-Y14- FROM STA. 11+00 TO STA. 13+00 LT



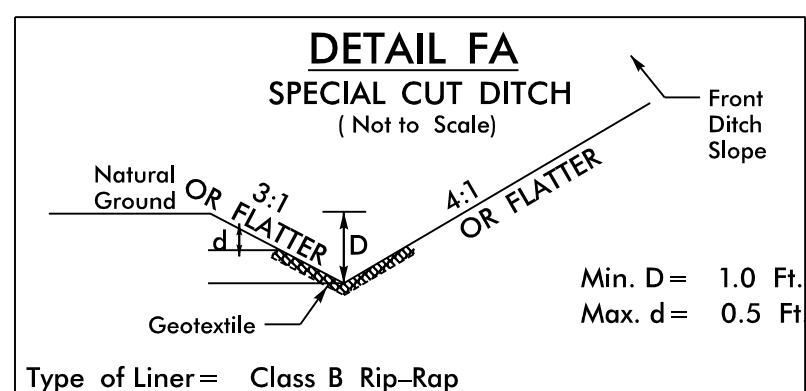
Type of Liner = CLASS B Rip-Rap
-Y14- FROM STA. 10+50 TO STA. 11+00 LT



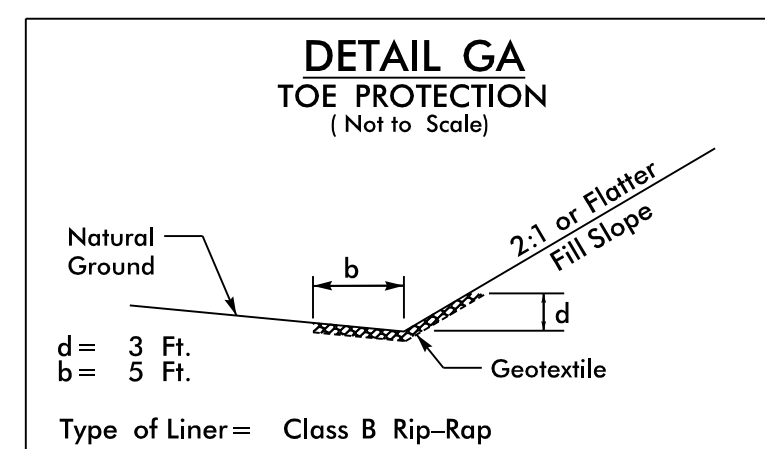
-L- STA. 386+00 LT; TOP ELEVATION = 447.3
-L- STA. 407+50 LT; TOP ELEVATION = 447.8
-L- STA. 471+50 LT; TOP ELEVATION = 447.0
-L- STA. 518+75 LT; TOP ELEVATION = 447.5
-L- STA. 708+44 LT; TOP ELEVATION = 349.2



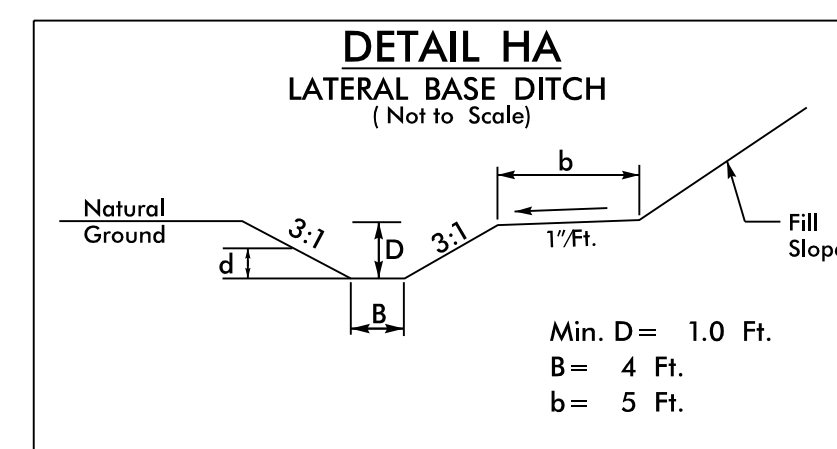
-L- STA. 321+36.60 TO STA. 323+00 RT; S=0.79%; L=163';
Beg. El.=438.29; End El.=437.00; DDE=18 CY
-L- STA. 448+96 TO STA. 449+78 LT; S=0.33%; L=82';
Beg. El.=473.74; End El.=473.47; DDE=5 CY
-L- STA. 656+70 LT; S=0.85%; L=39';
Beg. El.=362.33; End El.=362.00; DDE=4 CY
-L- STA. 666+29 TO STA. 667+00 RT; S=0.66%; L=76';
Beg. El.=359.25; End El.=358.75; DDE=19 CY
-L- FROM STA. 772+50 TO STA. 773+30 LT (RT OF RR); S=6.34%; L=82';
Beg. El.=301.7; End El.=296.5; DDE=9 CY
-L- FROM STA. 772+94 TO STA. 773+36 LT; S=6.45%; L=62';
Beg. El.=301.0; End El.=297.0; DDE=7 CY
-Y13- STA. 12+00 RT; S=0.48%; L=44';
Beg. El.=473+95; End El.=473.74; DDE=4 CY
-LX1- FROM STA. 10+00 LT; S=3.75%; L=88';
Beg. El.=402.0; End El.=398.7; DDE=80 CY



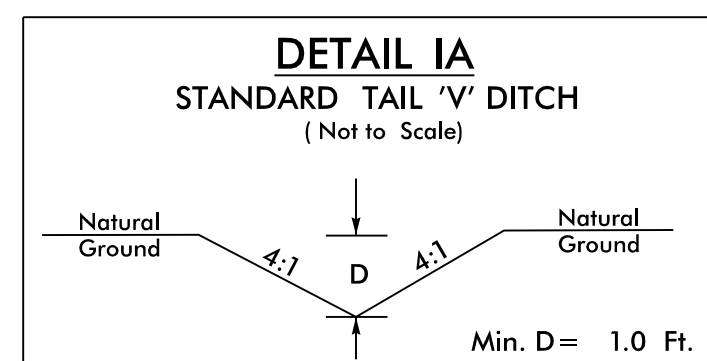
Type of Liner = Class B Rip-Rap
-L- FROM STA. 458+50 TO STA. 459+50 LT
-L- FROM STA. 700+50 TO STA. 708+27 LT
-L- FROM STA. 492+50 TO STA. 499+34 LT



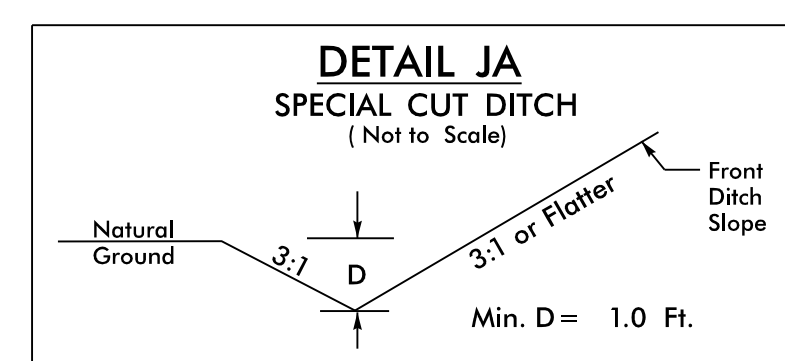
-L- FROM STA. 337+00 TO STA. 338+50 RT
-L- FROM STA. 396+00 TO STA. 397+50 LT
-L- FROM STA. 419+00 TO STA. 421+50 RT
-L- FROM STA. 438+50 TO STA. 445+00 LT
-L- FROM STA. 556+50 TO STA. 560+00 RT
-L- FROM STA. 557+80 TO STA. 559+75 LT
-L- FROM STA. 561+50 TO STA. 565+50 LT
-L- FROM STA. 564+65 TO STA. 568+00 RT
-L- FROM STA. 585+00 TO STA. 587+60 LT
-L- FROM STA. 590+00 TO STA. 591+50 LT
-L- FROM STA. 614+00 TO STA. 616+93 LT
-L- FROM STA. 808+80 TO STA. 810+07 LT
-L- FROM STA. 831+30 TO STA. 832+00 LT
-L- FROM STA. 831+30 TO STA. 832+00 RT
-Y11B- FROM STA. 10+35 TO STA. 11+40 RT
-Y11D- FROM STA. 12+53 TO STA. 14+75 LT
-Y26- FROM STA. 13+50 LT TO STA. 14+50 LT



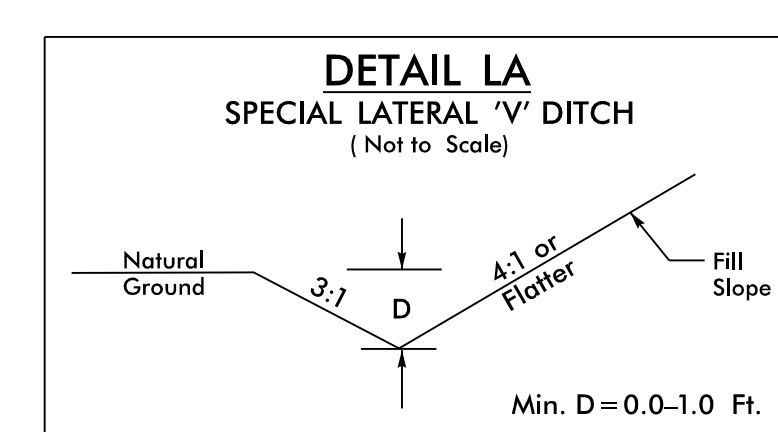
-L- FROM STA. 607+00 TO STA. 610+77 RT, DDE=432 CY
-L- FROM STA. 612+00 TO STA. 622+00 RT, DDE=3,105 CY
-L- FROM STA. 811+07 TO STA. 812+30 RT, DDE=265 CY



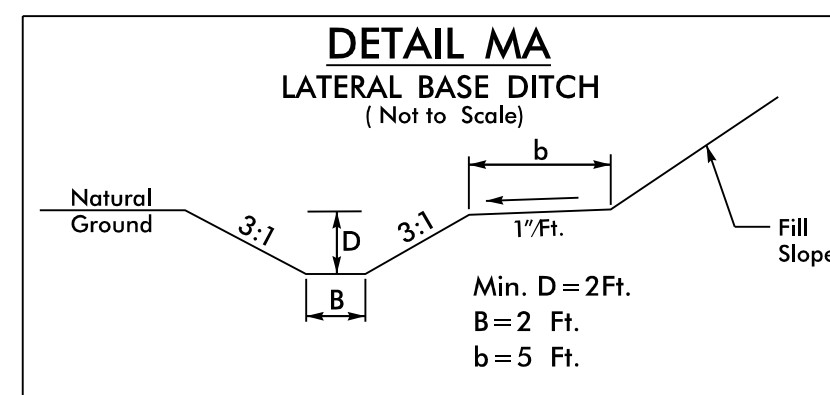
-L- FROM STA. 479+00 TO STA. 479+18 RT; L=74';
S=0.95%; Beg. El.=436.7; End El.=436.0; DDE=11 CY
-L- FROM STA. 527+84 TO STA. 528+41 RT; L=113';
S=2.27%; Beg. El.=426.4; End El.=429.0; DDE=17 CY
-L- FROM STA. 526+91 TO STA. 527+36 RT; L=120';
S=3.48%; Beg. El.=431.17; End El.=427.0; DDE=18 CY
-Y26A- FROM STA. 11+00 LT; L=219';
S=2.28%; Beg. El.=283.0; End El.=278.0; DDE=24 CY



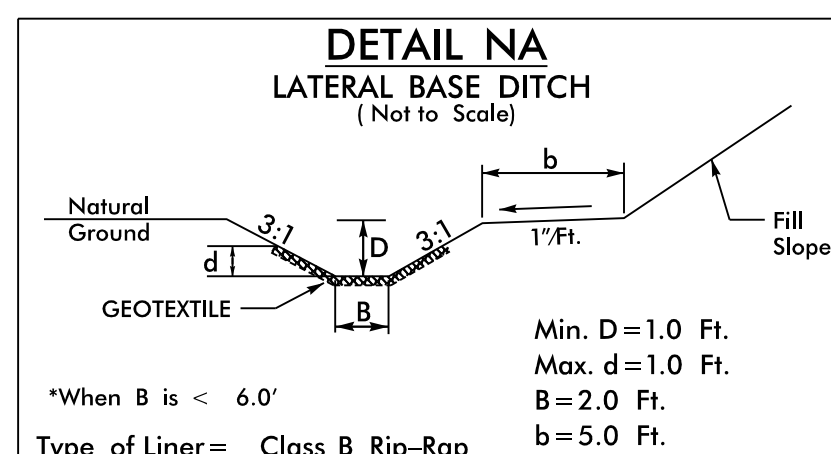
-L- FROM STA. 579+50 TO STA. 582+17 RT
-L- FROM STA. 690+00 TO STA. 692+00 RT
-L- FROM STA. 808+00 TO STA. 809+11 RT
-Y24A- FROM STA. 11+00 TO STA. 11+88 LT



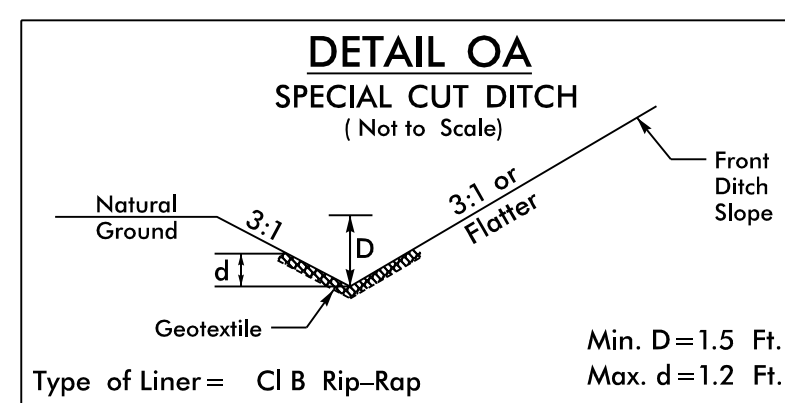
-L- FROM STA. 334+00 TO STA. 334+25 RT



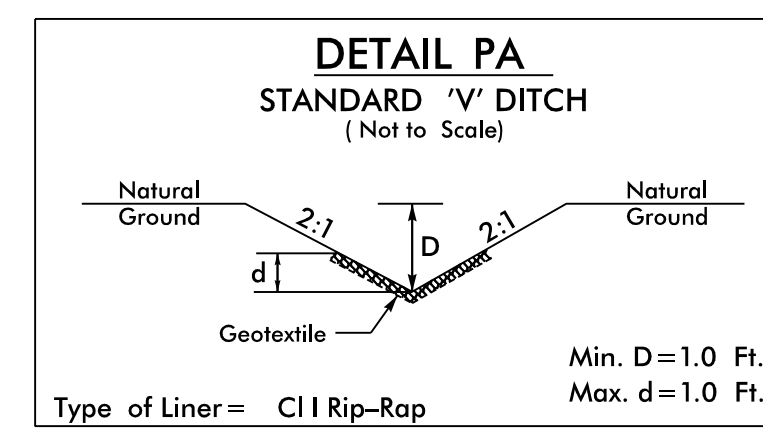
-L- FROM STA. 574+65 TO STA. 575+50 RT, DDE=48 CY



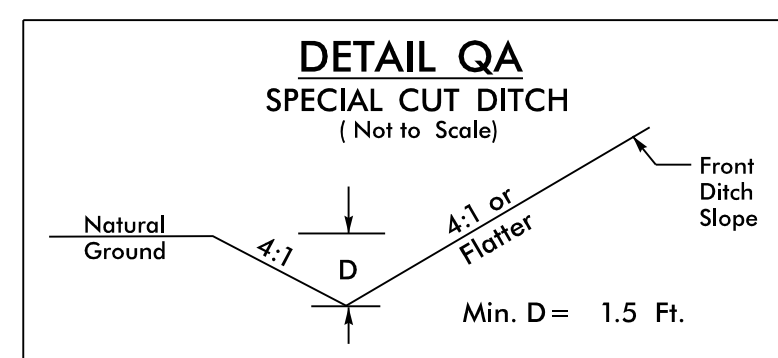
*When B is < 6.0'
Type of Liner = Class B Rip-Rap
-L- FROM STA. 360+50 TO STA. 362+00 RT, DDE=6 CY



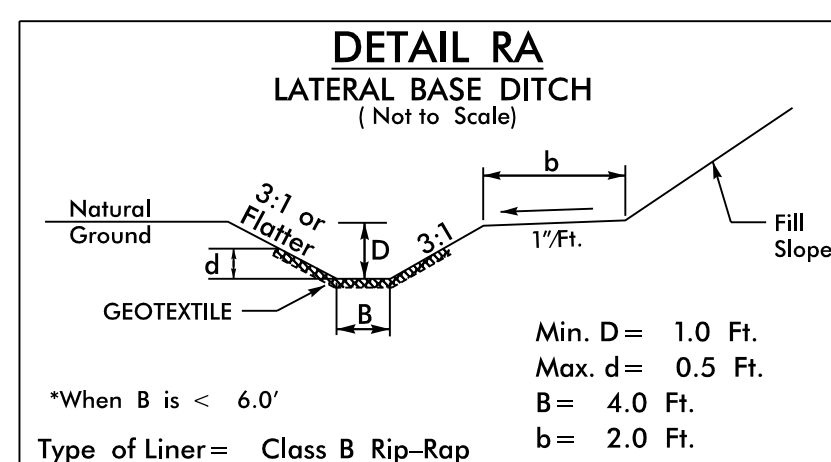
Type of Liner = CI B Rip-Rap
-L- FROM STA. 489+50 TO STA. 498+00 RT



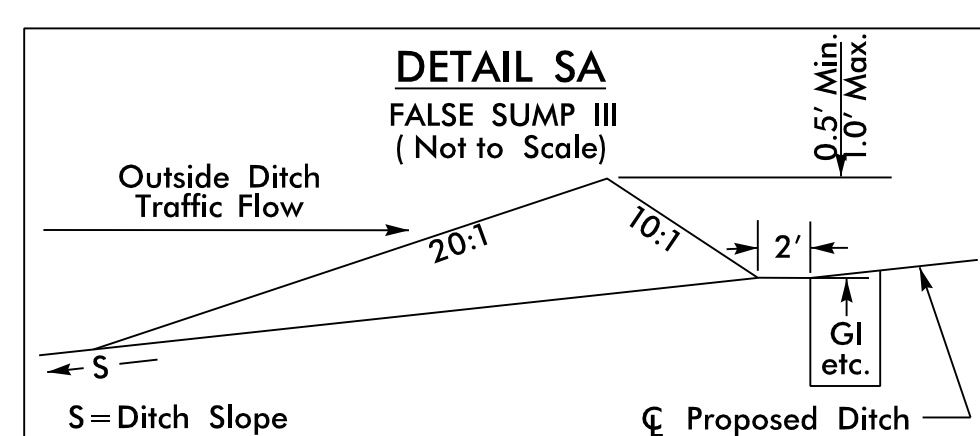
-L- FROM STA. 686+92 TO STA. 687+42 RT; S=5.00%; L=50';
Beg. El.=343.60 TO End El.=341.08; DDE=6 CY



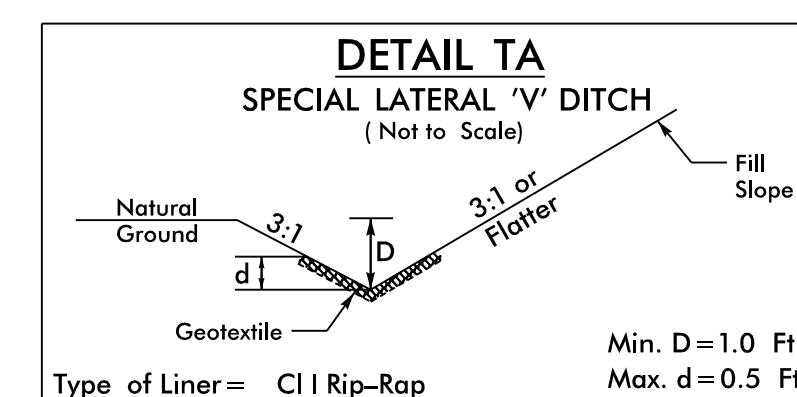
-L- FROM STA. 328+00 TO STA. 330+00 LT
-L- FROM STA. 336+00 TO STA. 339+00 LT
-L- FROM STA. 348+50 TO STA. 352+00 RT
-L- FROM STA. 358+00 TO STA. 358+88 RT
-L- FROM STA. 359+50 TO STA. 360+50 LT
-LX1- FROM STA. 18+68.19 TO STA. 26+18.97 LT
-Y10- FROM STA. 15+00 TO STA. 15+85 RT
-Y10- FROM STA. 18+00 TO STA. 19+50 RT



*When B is < 6.0'
Type of Liner = Class B Rip-Rap
-L- FROM STA. 402+50 TO STA. 407+50 LT, DDE=766 CY
-L- FROM STA. 557+00 TO STA. 557+75 LT, DDE=23 CY
-L- FROM STA. 737+93 TO STA. 741+34 RT, DDE=358 CY
-Y11E- FROM STA. 10+64 TO STA. 11+50 RT, DDE=78 CY

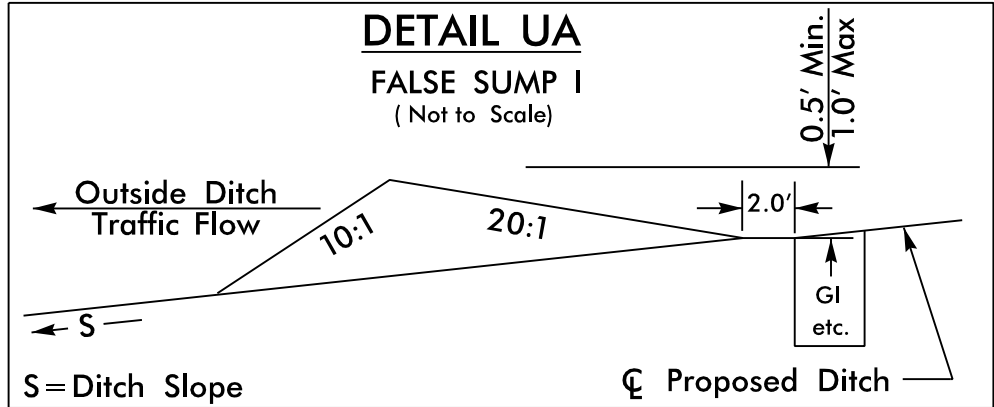


-L- STA. 385+12 RT
-L- STA. 422+00 RT
-L- STA. 555+63 RT
-L- STA. 569+00 RT
-L- STA. 644+63 LT

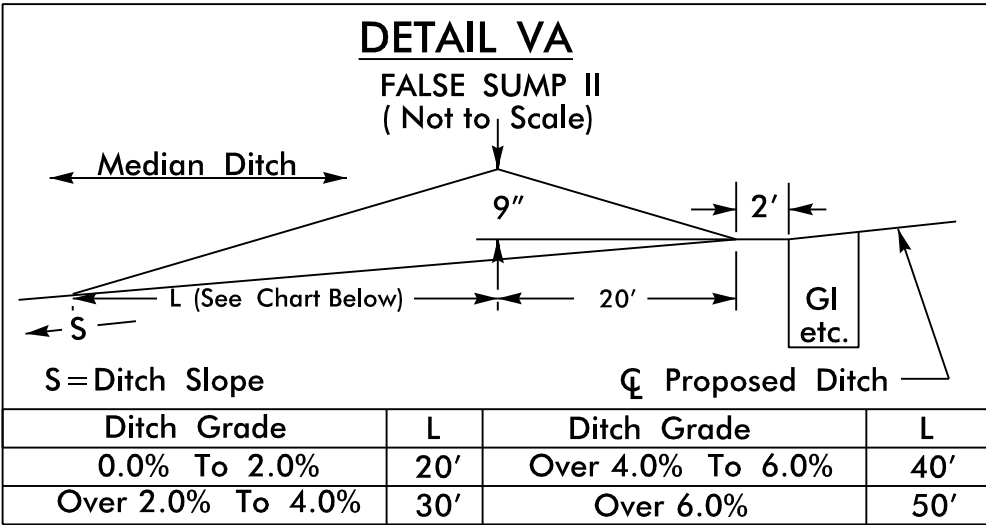


Type of Liner = CI I Rip-Rap
-Y11- FROM STA. 11+08 TO STA. 11+50 RT

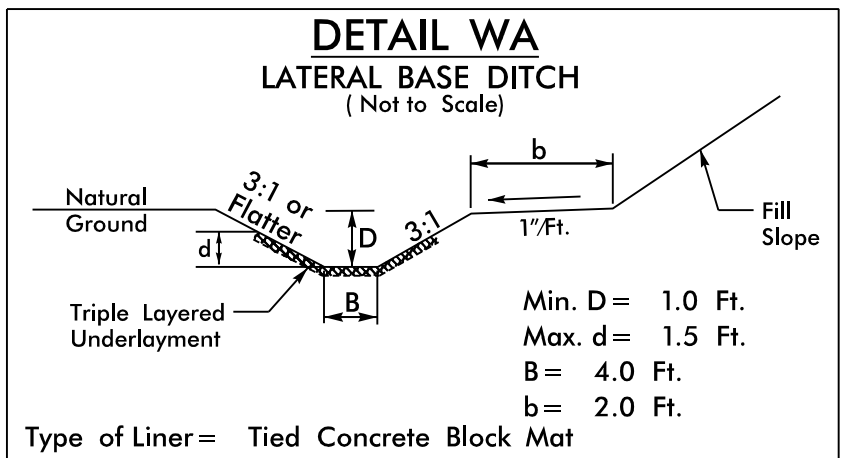
PROJECT REFERENCE NO.	SHEET NO.
R-5709C	2D-2
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	SEAL 040878
SEAL 040878	SEAL 51640
Signed Mary E. Mays, P.E.	Signed Courtland A. Hoffman, P.E.
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



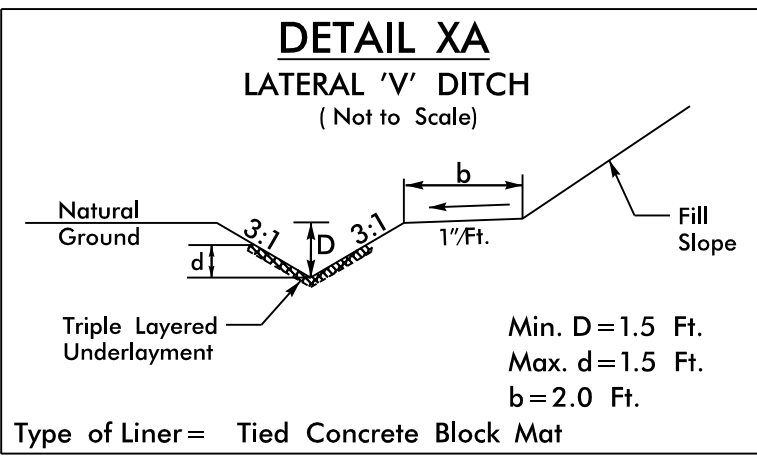
- L- STA. 339+30 LT
- L- STA. 361+05 LT
- L- STA. 378+00 LT
- L- STA. 390+00 RT
- L- STA. 397+31 LT
- L- STA. 402+00 LT
- L- STA. 421+88 LT
- L- STA. 529+00 LT
- L- STA. 555+80 LT
- Y11A- STA. 11+39 LT



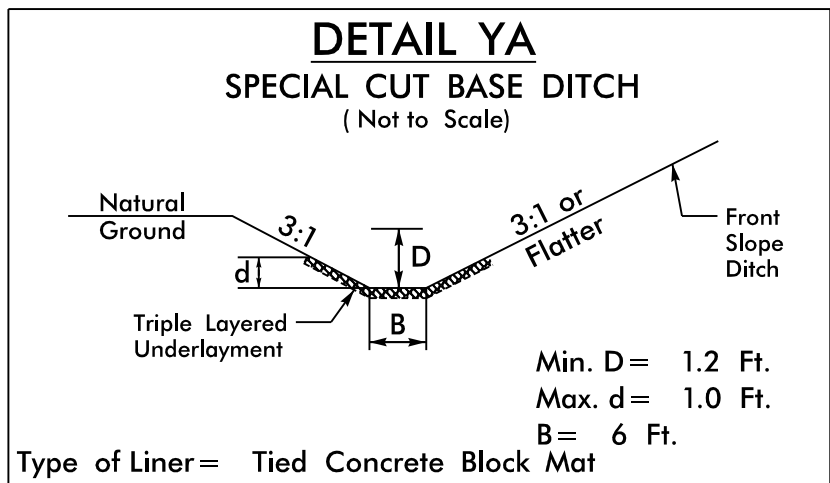
- L- STA. 359+23 MEDIAN
- L- STA. 361+05 MEDIAN
- L- STA. 376+31 MEDIAN
- L- STA. 387+14 MEDIAN
- L- STA. 400+78 MEDIAN
- L- STA. 401+63 MEDIAN
- L- STA. 407+62 MEDIAN
- L- STA. 413+00 MEDIAN
- L- STA. 426+00 MEDIAN
- L- STA. 453+00 MEDIAN
- L- STA. 489+00 MEDIAN
- L- STA. 507+00 MEDIAN
- L- STA. 528+69 MEDIAN
- L- STA. 555+63 MEDIAN
- L- STA. 607+35 MEDIAN
- L- STA. 633+64 MEDIAN
- L- STA. 650+39 MEDIAN
- L- STA. 699+57 MEDIAN
- L- STA. 708+43 MEDIAN
- L- STA. 731+49 MEDIAN
- L- STA. 740+50 MEDIAN
- L- STA. 758+00 MEDIAN
- L- STA. 782+69 MEDIAN



-L- FROM STA. 389+50 TO STA. 393+00 LT, DDE=464 CY



-L- FROM STA. 393+00 TO STA. 393+50 LT, DDE=93 CY
-L- FROM STA. 407+50 TO STA. 415+64 LT, DDE=1,311 CY



-L- FROM STA. 415+64 TO STA. 417+00 LT

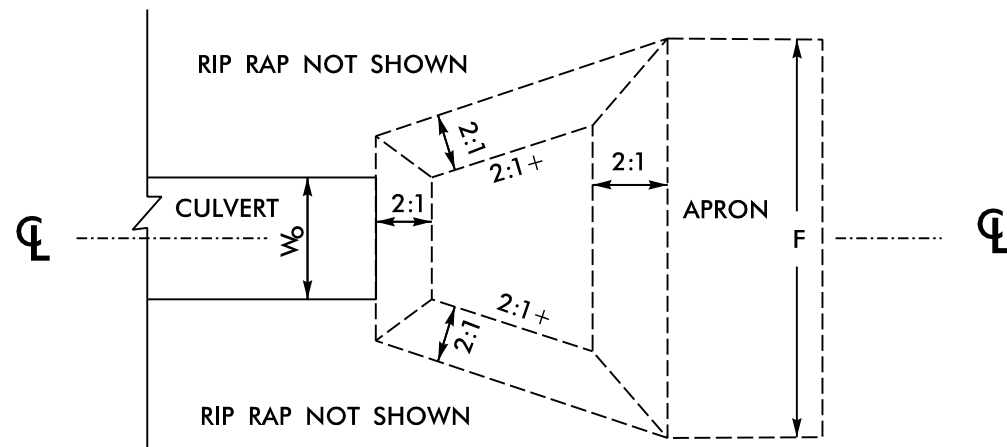
DETAIL ZA
RIP-RAPPED ENERGY DISSIPATOR BASIN

DIM. (ft)	1	2	3
A	2		
B	1.5		
C	2		
D	2		
E	10		
F	37		
G	20		

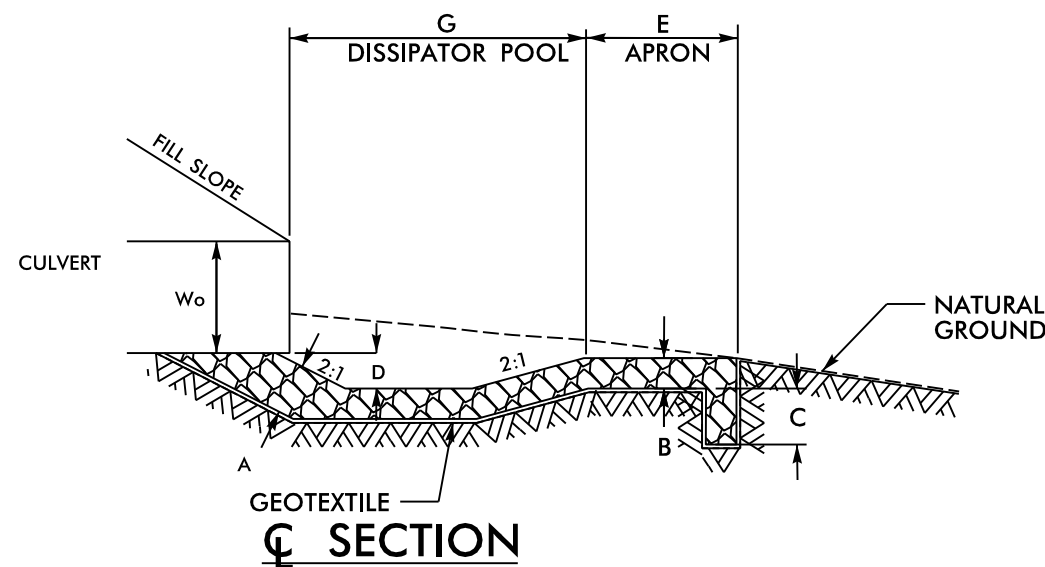
ALL DIMENSIONS APPROXIMATE

BASIN #	1	2	3
EST GEOTEXTILE (SY)	140		
EST TON CL 'I' RIPRAP	91		
DDE (CY)	55		

BASIN #	LOCATION (AT OUTLET)
1	-L- STA 312+00 RT
2	
3	



PLAN



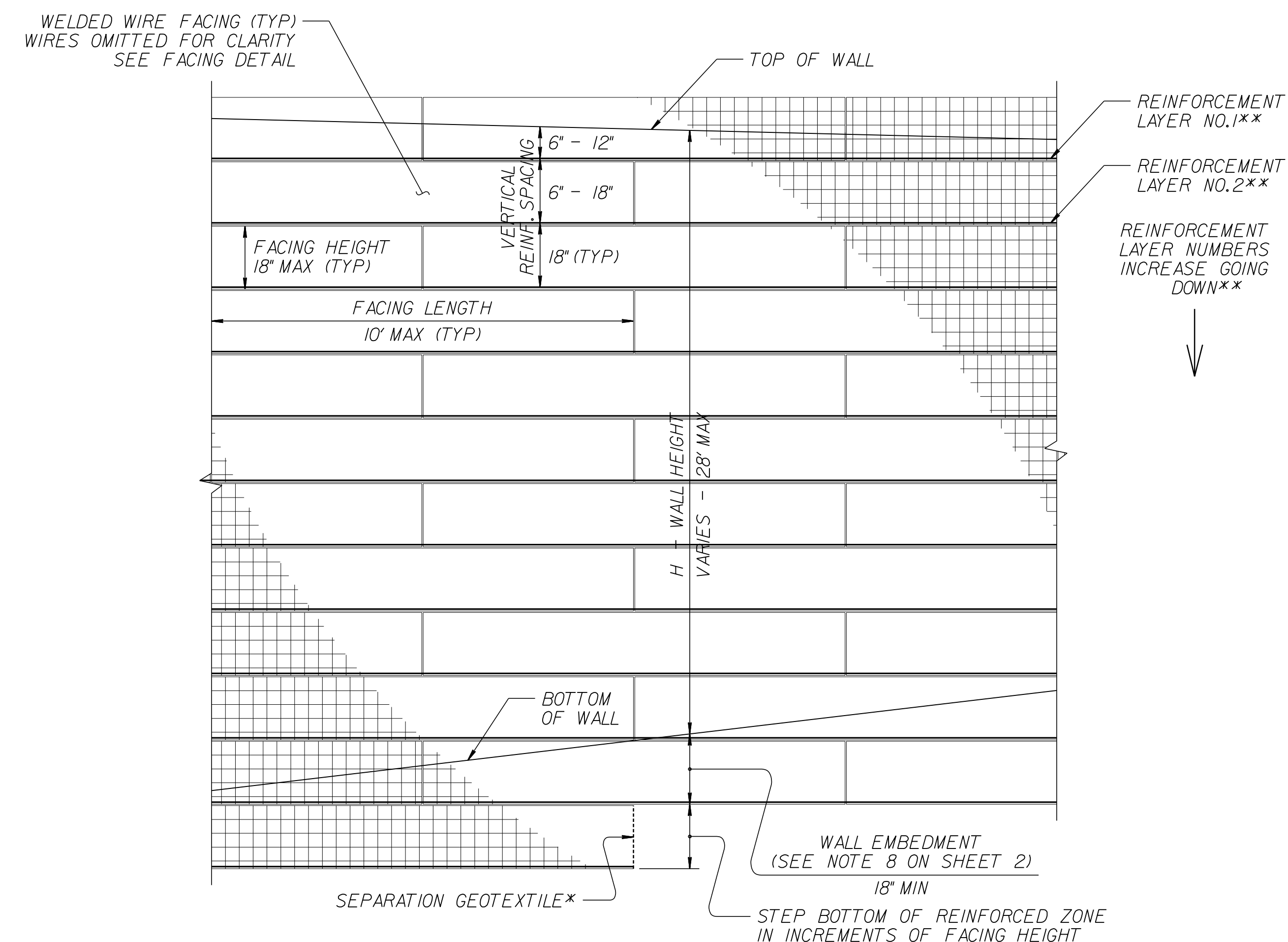
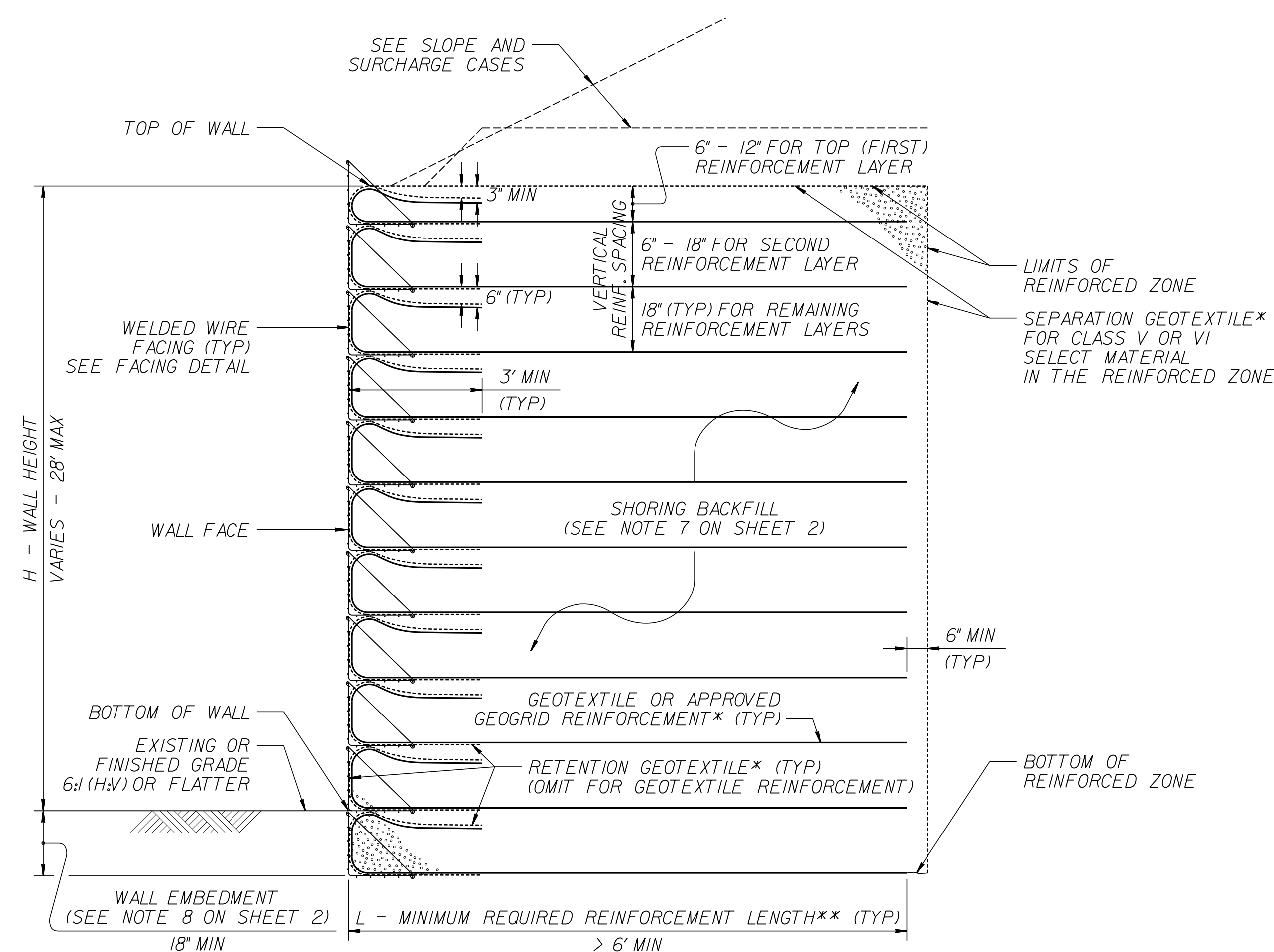
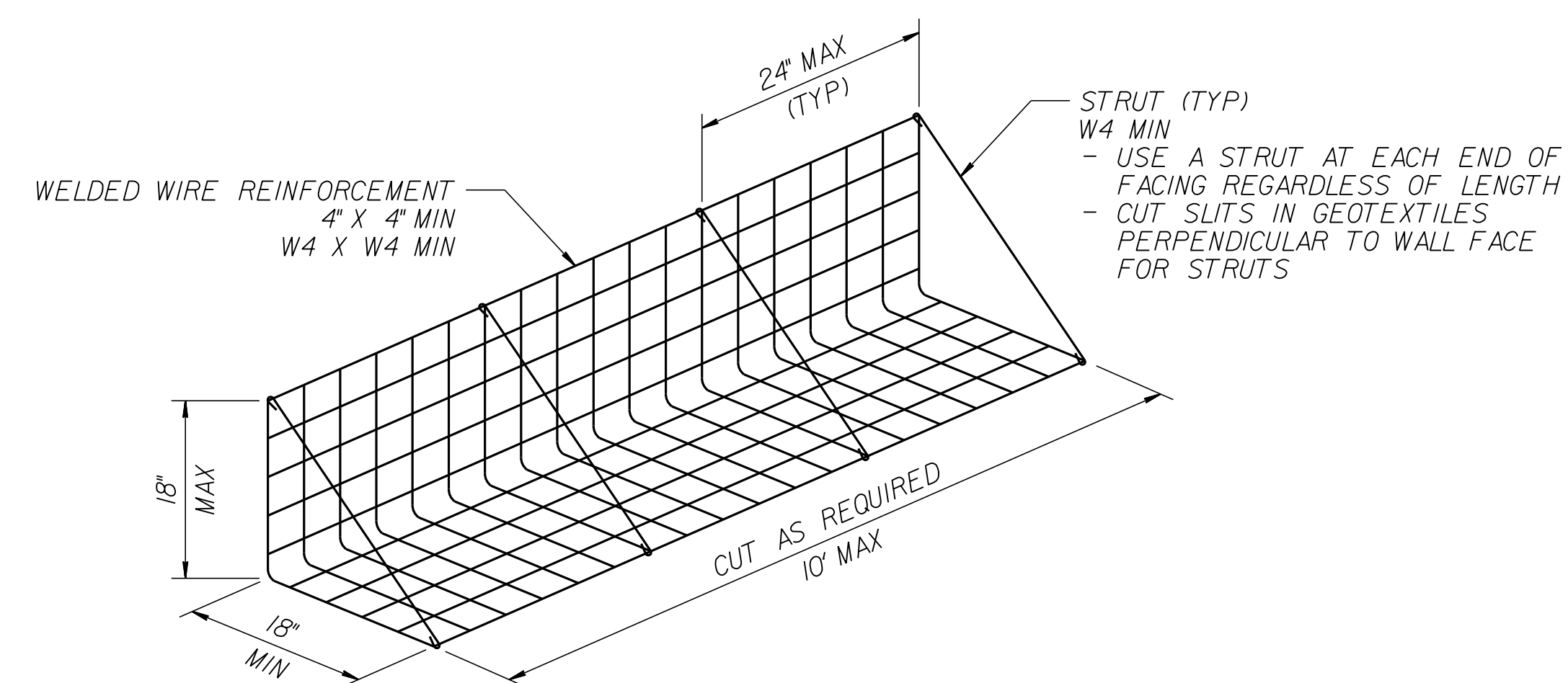
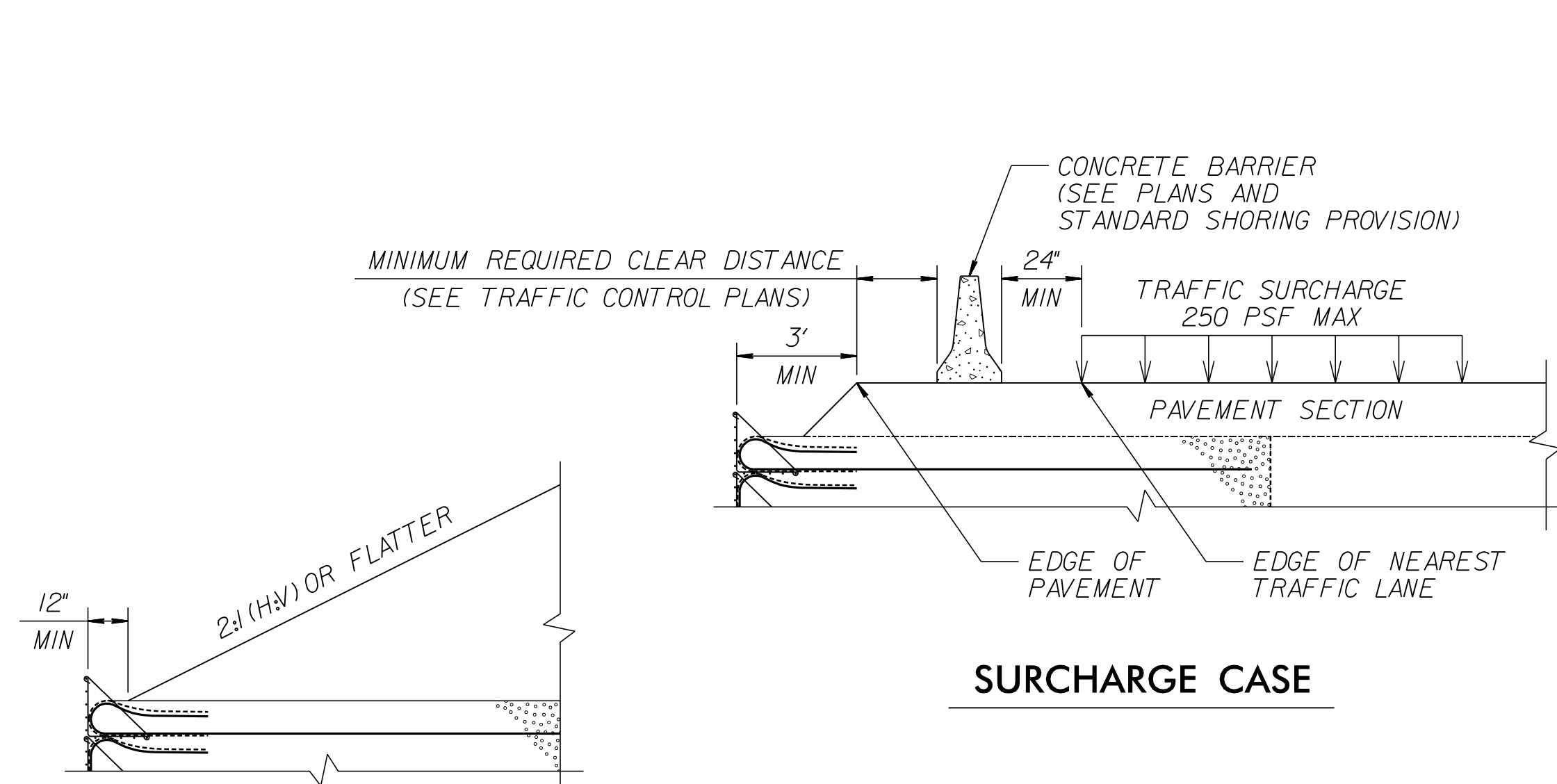
SECTION

PROJECT REFERENCE NO. <i>R-5709C</i>		SHEET NO. <i>2D-3</i>	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER 		HYDRAULICS ENGINEER 	
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DocuSigned by:
Margaret M. Sweet
4AC688A0680C4F3...

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UNLESS ALL SIGNATURES COMPLETED**



STANDARD TEMPORARY WALL – PARTIAL ELEVATION

*SEE GEOSYNTHETIC PLACEMENT DETAILS ON SHEET 2.

****SEE REINFORCEMENT TABLES ON SHEET 3.**

STANDARD TEMPORARY WALL
(FOR STANDARD TEMPORARY WALLS ON STRUCTURES,
SEE TEMPORARY WALL ON STRUCTURE DETAIL ON SHEET 2.)
*SEE GEOSYNTHETIC PLACEMENT DETAILS ON SHEET 2.
**SEE REINFORCEMENT TABLES ON SHEET 3.

PROJECT REFERENCE NO.

R-5709C

SHEET NO.

2G-4

GEOTECHNICAL ENGINEER



DocuSigned by:
Margaret M. Swisher2024

ENGINEER

SIGNATURE

DATE

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UNLESS ALL SIGNATURES COMPLETED

WALL HEIGHT (H) + WALL EMBEDMENT (FT)	NUMBER OF REINFORCEMENT LAYERS*
2.5 - 4	3
4 - 5.5	4
5.5 - 7	5
7 - 8.5	6
8.5 - 10	7
10 - 11.5	8
11.5 - 13	9
13 - 14.5	10
14.5 - 16	11
16 - 17.5	12
17.5 - 19	13
19 - 20.5	14
20.5 - 22	15
22 - 23.5	16
23.5 - 25	17
25 - 26.5	18
26.5 - 28	19
28 - 29.5	20

*BASED ON VERTICAL REINFORCEMENT SPACING SHOWN ON SHEET 1.

SLOPE OR SURCHARGE CASE	GROUNDWATER DEPTH BELOW BOTTOM OF REINFORCED ZONE (SEE NOTE 6 ON SHEET 2) (FT)	SHORING BACKFILL TYPE IN THE REINFORCED ZONE (SEE NOTE 7 ON SHEET 2)	H - WALL HEIGHT (FT)																									
			< 4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	
SLOPE CASE	> 0	CLASS II,TYPE I, CLASS III,CLASS V OR CLASS VI SELECT MATERIAL	6	6	7	8	9	11	12	13	13	14	15	16	17	18	19	20	21	22	23	24	24	25	26	27	27	
SURCHARGE CASE	> 0 TO 7 FOR H < 20' > 0 TO 10 FOR H ≥ 20'	ALL SHORING BACKFILL TYPES	6	7	7	8	8	9	9	10	11	11	12	12	13	14	14	15	16	17	17	18	19	19	20	21	22	
	> 7 FOR H < 20' > 10 FOR H ≥ 20'	A-2-4 SOIL	6	6	7	8	8	9	9	10	11	11	12	12	13	14	14	15	16	16	17	18	18	19	20	20	21	
		CLASS II,TYPE I OR CLASS III SELECT MATERIAL	6	6	7	7	8	8	9	10	10	11	11	12	12	13	14	15	15	16	16	17	17	18	18	19	20	
		CLASS V OR CLASS VI SELECT MATERIAL	6	6	7	7	7	8	8	9	9	10	10	11	12	13	13	14	14	15	15	16	17	17	18	19	19	

L – MINIMUM REQUIRED REINFORCEMENT LENGTH (FT)
(FOR ALL REINFORCEMENT TYPES)

REINFORCEMENT LAYER NUMBER*	SHORING BACKFILL TYPE IN THE REINFORCED ZONE (SEE NOTE 7 ON SHEET 2)				
	SLOPE CASE		SURCHARGE CASE		
	CLASS II,TYPE I OR CLASS III SELECT MATERIAL	CLASS V SELECT MATERIAL	A-2-4 SOIL	CLASS II,TYPE I OR CLASS III SELECT MATERIAL	CLASS V SELECT MATERIAL
1	2400	2400	2400	2400	2400
2	2400	2400	2400	2400	2400
3	2400	2400	2400	2400	2400
4	2400	2400	2500	2400	2400
5	2500	2400	3000	2400	2400
6	3000	2400	3500	2800	2400
7	3500	2700	4000	3200	2600
8	4000	3100	4500	3600	2900
9	4500	3500	5000	4000	3200
10	5000	3900	5500	4400	3500
11	5500	4300	6000	4800	3800
12	6000	4700	6500	5200	4100
13	6500	5100	7000	5600	4400
14	7000	5400	7500	6000	4700
15	7500	5800	8000	6400	5000
16	8000	6200	8500	6800	5300
17	8500	6600	9000	7200	5600
18	9000	7000	9500	7600	5900
19	9500	7400	10000	8000	6200
20	10000	7800	10500	8400	6500

GEOTEXTILE REINFORCEMENT
ULTIMATE TENSILE STRENGTH (LB/FT)

REINFORCEMENT LAYER NUMBER*	SHORING BACKFILL TYPE IN THE REINFORCED ZONE (SEE NOTE 7 ON SHEET 2)				
	SLOPE CASE		SURCHARGE CASE		
	CLASS II,TYPE I OR CLASS III SELECT MATERIAL	CLASS V OR CLASS VI SELECT MATERIAL	A-2-4 SOIL	CLASS II,TYPE I OR CLASS III SELECT MATERIAL	CLASS V OR CLASS VI SELECT MATERIAL
1	240	200	340	290	240
2	380	310	520	430	350
3	530	420	700	570	460
4	690	550	870	720	570
5	860	690	1050	860	680
6	1030	830	1220	1000	790
7	1200	970	1400	1150	900
8	1370	1110	1580	1290	1010
9	1550	1240	1750	1430	1120
10	1720	1380	1930	1580	1230
11	1890	1520	2100	1720	1340
12	2060	1660	2280	1860	1450
13	2240	1800	2450	2010	1560
14	2410	1940	2630	2150	1670
15	2580	2080	2800	2290	1780
16	2750	2220	2980	2440	1890
17	2930	2360	3160	2580	2000
18	3100	2500	3330	2720	2110
19	3270	2640	3510	2860	2220
20	3440	2780	3690	3000	2330

GEOGRID REINFORCEMENT
SHORT-TERM DESIGN STRENGTH (LB/FT)
(SEE NOTE 10 ON SHEET 2.)

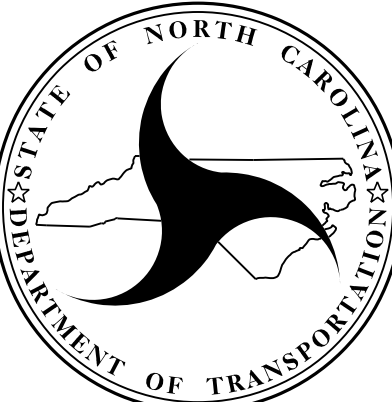
MINIMUM REQUIRED REINFORCEMENT STRENGTH IN MD
(SEE NOTE 9 ON SHEET 2.)
*SEE PARTIAL ELEVATION ON SHEET 1
FOR REINFORCEMENT LAYER NUMBERING.



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NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GEOTECHNICAL
ENGINEERING UNIT

STANDARD DETAIL NO. 1801.02

STANDARD
TEMPORARY WALL
SHEET 3 OF 3

DATE: 11-19-13

SUMMARY OF EARTHWORK

IN CUBIC YARDS

CHAIN	BEGINNING STATION	ENDING STATION	UNCL. EXCA. C.Y.	UNDERCUT C.Y.	EMBANK. +% C.Y.	BORROW C.Y.	WASTE C.Y.
PHASE 2 - SECTION 2							
SUMMARY 4							
-L- LT	384+00.00	414+00.00	3,122		17,328	14,206	
-L- LT	414+00.00	444+00.00	5,917		11,515	5,788	190
-L- LT	444+00.00	448+00.00	14		1,716	1,702	
-L- LT	449+50.00	479+50.00	4,140		10,230	6,090	
-L- LT	479+50.00	509+50.00	4,510		13,100	8,590	
-L- LT	509+50.00	539+50.00	2,900		9,696	6,796	
-L- LT	539+50.00	552+00.00	834		5,986	5,152	
-L- LT	562+00.00	592+00.00	2,277		27,431	25,154	
-L- LT	592+00.00	622+00.00	1,512		14,455	12,943	
-L- LT	622+00.00	652+00.00	2,344		8,831	6,487	
-L- LT	652+00.00	682+00.00	7,867		8,843	1,886	910
-L- LT	682+00.00	712+00.00	6,086		5,770	2,954	3,270
-L- LT	712+00.00	742+00.00	3,107		13,345	10,968	730
-L- LT	742+00.00	772+00.00	4,500		6,683	4,433	2,250
-L- LT	772+00.00	799+00.00	4,394		5,596	2,132	930
-L- LT	802+00.00	823+00.00	2,831		3,898	2,087	1,020
-L- LT	448+00.00	449+50.00	151		992	841	
-L- LT	552+00.00	562+00.00	1,881		12,517	10,636	
-L- LT	799+00.00	802+00.00	167		148		19
-Y11B-	10+47.00	13+25.00	7		139	132	
-Y11E-	10+47.44	12+75.00	15		172	157	
-Y12-	10+59.00	12+25.00	23		294	271	
-Y13-	10+48.66	19+15.00	4,592		868		3,724
-Y17-	10+59.03	13+25.00	385		12		373
-Y20A-	10+47.00	11+60.00	29		2		27
-Y21-	10+59.33	12+75.00	325		54		271
-Y23-	10+59.48	12+23.24	8		88	80	
-Y24A-	10+47.00	12+75.00	54		13		41
-Y26-	10+79.52	26+00.00	3,145	1,550	2,616	621	2,700
-Y26A-	10+29.60	15+25.22	170	140	1,492	1,382	200
-SR1-	15+00.00	17+65.85	3		89	86	
SUBTOTAL			67,310	1,690	183,917	131,572	16,655
SUMMARY 5							
-DET_RAB-	11+50.00	26+50.00	490		1,933	1,443	
-DET_Y27-	11+00.00	16+00.00	853		185		669
SUBTOTAL			1,343		2,118	1,443	669
SHEET TOTALS			159,595	34,700	946,620	810,034	57,710
LOSS DUE TO CLEARING AND GRUBBING			-3,600			3,600	
MATERIAL FOR SHOULDER CONSTRUCTION					42,792	42,792	
ADDITIONAL UNDERCUT				4,000	4,800	4,800	4,000
GRADE POINT UNDERCUT				1,000	1,200	1,200	1,000
SELECT MATERIAL IN LIEU OF BORROW					-19,800	-19,800	
EARTH WASTE IN LIEU OF BORROW						-12,210	-11,541
PROJECT TOTAL			155,995	39,700	975,612	830,416	51,169
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT						41,521	
GRAND TOTAL			155,995			871,937	
SAY			156,000			872,000	

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK

IN CUBIC YARDS

CHAIN	BEGINNING STATION	ENDING STATION	UNCL. EXCA. C.Y.	UNDERCUT C.Y.	EMBANK. +% C.Y.	BORROW C.Y.	WASTE C.Y.
Note: Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.							
-L-, -Y13-, -Y25-, & -Y26- PAVEMENT STRUCTURE VOLUME = 11,710 CY DRAINAGE DITCH EXCAVATION = 10,920 C.Y. SHALLOW UNDERCUT = 2,910 C.Y. SHALLOW UNDERCUT (CONTINGENCY) = 1,000 C.Y. UNCLASSIFIED EXCAVATION UNSUITABLE FOR TOP 3' OF EMBANKMENT = 6,750 C.Y. TOTAL UNCLASSIFIED EXCAVATION - ACCEPTABLE = 6,750 C.Y. BUT NOT TO BE USED IN TOP 3' OF EMBANKMENT OR BACKFILL							
-L-	353+75.00	356+25.00					
-L-	379+75.00	382+25.00					
-L-	648+75.00	650+25.00					
-L-	687+25.00	689+25.00					
-L-	723+75.00	730+75.00					
-L-	742+75.00	746+75.00					
-L-	806+25.00	809+25.00					
-RAB_L2-	10+00.00	10+25.00					
-Y23-	10+75.00	11+75.00					
-Y26-	19+00.00	21+25.00					
-Y27-	11+25.00	12+25.00					

REMOVAL OF EXISTING ASPHALT PAVEMENT
IN SQUARE YARDS

LINE	STATION	STATION	LOCATION	LENGTH OR AREA	WIDTH	SQUARE YARDS
L	328+00	337+00	LT/RT	10032.98		1,114.78
L	341+00	358+00	LT/RT	31370.14		3,485.57
L	359+50	362+18	LT/RT	6569.56		729.95
L	361+50	367+50	LT/RT	5,536.96		615.22
L	371+00	376+50	LT/RT	19,257.20		2,139.69
L	377+18	413+00	LT	11,863.83		1,318.20
L	377+63	400+06	LT	5,249.76		583.31
L	401+70	413+00	LT	11,782.18		1,309.13
L	416+50	425+38	LT	7,072.55		785.84
L	425+36	436+00	LT	13,865.26		1,540.58
L	435+50	446+00	LT	15,245.19		1,693.91
L	448+50	477+50	LT	16,316.36		1,812.93
L	450+00	477+50	LT	27,292.87		3,032.54
L	477+50	478+00	LT	1,219.19		135.47
L	481+00	497+00	LT	18,532.36		2,059.15
L	500+50	509+00	LT	12,325.89		1,369.54
L	511+00	516+00	LT	14,035.62		1,559.51
L	519+00	556+00	LT	65,872.99		7,319.22
L	569+50	581+50	LT	29,853.48		3,317.05
L	591+00	595+50	LT	10,919.07		1,213.23
L	599+00	613+00	LT	34,294.70		3,810.52
L	617+00	671+57	LT	130,202.31		14,466.92
L	671+57	710+49	LT	46,529.80		5,169.98
L	670+86	716+00	LT	9,911.41		1,101.27
L	710+74	716+00	LT	4,121.07		457.90
L	720+00	728+50	LT	19,682.78		2,186.98
L	732+50	787+51	LT	75,433.85		8,381.54
L	787+51	817+61	LT	8,400.58		933.40
L	789+67	800+70	LT	15,854.56		1,761.62
L	801+25	817+15	LT	25,696.70		2,855.19
L	817+60	823+00	LT/RT	6,776.10		752.90
L	823+00	824+26	LT	4,259.56		473.28
L2B	824+26	835+30	LT/RT	19,325.97		2,147.33
Y11	10+85	12+45	LT/RT	4,550.95		505.66
Y11A	10+00	12+58	LT/RT	2,588.38		287.60
Y11C	11+50	12+33	LT/RT	3,166.43		351.83
Y12	10+55	11+00	LT/RT	2,843.95		315.99
				SHEET TOTAL		83,094.73

LINE	STATION	STATION	LOCATION	LENGTH OR AREA	WIDTH	SQUARE YARDS
Y12A	9+98	11+25	LT/RT	4,929.00		547.67
Y12A	16+50	18+31	LT/RT	4,888.41		543.16
Y13	10+76	19+15	LT/RT	19,646.81		2,182.98
Y14	10+95	16+23	LT/RT	6,645.15		738.35
Y15	13+67	15+46	LT/RT	1,903.54		211.50
Y16	14+25	16+50	LT/RT	1,896.13		210.68
Y16	18+00	19+33	LT/RT	3,015.20		335.02
Y17	10+59	12+00	LT/RT	4,549.19		505.47
Y18	15+00	15+54	LT/RT	1,397.32		155.26
Y19	10+75	15+48	LT/RT	10,046.20		1,116.24
Y20	15+00	15+89	LT/RT	3,529.93		392.21
Y20A	10+74	11+60	LT/RT	1,817.33		201.93
Y22	10+15	12+58	LT/RT	4,329.89		481.10
Y24	11+77	15+83	LT/RT	6,489.95		721.11
Y25	15+00	15+99	RT	4,016.55		446.28
Y26	10+52	10+82	LT	881.24		97.92
Y26	13+87	18+73	LT	14,765.87		1,640.65
Y26	18+96	25+01	LT	21,669.40		2,407.71
Y27	10+00	13+25	RT	6,070.01		674.45
TEMPORARY PAVEMENT REMOVAL:						27,720.00
				Sheet TOTAL		41,329.68
				Sheet 1 TOTAL		83,094.73
				TOTAL		124,424.41
				SAY		124,430

COMPUTED BY:	CAH	DATE:	11/30/2023
CHECKED BY:	SCJ	DATE:	11/30/2023

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
R-5709C	3D-1

Note: Invert Elevations Indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications for Roads and Structures, Section 300-5."

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

[illegible]

COMPUTED BY:	CAH	DATE:	11/30/2023
CHECKED BY:	SCJ	DATE:	11/30/2023

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
R-5709C	3D-2

Note: Invert Elevations Indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications for Roads and Structures, Section 300-5."

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

[illegible]

COMPUTED BY:	CAH	DATE:	11/30/2023
CHECKED BY:	SCJ	DATE:	11/30/2023

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
R-5709C	3D-3

Note: Invert Elevations Indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications for Roads and Structures, Section 300-5."

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

[illegible]

COMPUTED BY:	CJP	DATE:	Aug. 20, 2024
CHECKED BY:	CAH	DATE:	Aug. 22, 2024

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
R-5709C	3D-4

Note: Invert Elevations Indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications for Roads and Structures, Section 300-5."

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

[illegible]

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

[illegible]

COMPUTED BY:	CJP	DATE:	Apr. 2, 2021
CHECKED BY:	CAH	DATE:	Apr. 9, 2021

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
R-5709C	3D-6

Note: Invert Elevations Indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications for Roads and Structures, Section 300-5."

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

[illegible]

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

COMPUTED BY:	CJP	DATE:	Apr. 2, 2021
CHECKED BY:	CAH	DATE:	Apr. 9, 2021

PROJECT REFERENCE NO.	SHEET NO.
R-5709C	3D-7

Note: Invert Elevations Indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications for Roads and Structures, Section 300-5."

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

[illegible]

COMPUTED BY:	CJP	DATE:	Apr. 2, 2021
CHECKED BY:	CAH	DATE:	Apr. 9, 2021

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
R-5709C	3D-8

Note: Invert Elevations Indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications for Roads and Structures, Section 300-5."

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

[illegible]

COMPUTED BY:	CJP	DATE:	Apr. 2, 2021
CHECKED BY:	CAH	DATE:	Apr. 9, 2021

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
R-5709C	3D-9

Note: Invert Elevations Indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications for Roads and Structures, Section 300-5.

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

[illegible]

COMPUTED BY:	CJP	DATE:	Apr. 2, 2021
CHECKED BY:	CAH	DATE:	Apr. 9, 2021

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
R-5709C	3D-10

Note: Invert Elevations Indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications for Roads and Structures, Section 300-5."

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

[illegible]

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

COMPUTED BY:	CJP	DATE:	Apr. 2, 2021
CHECKED BY:	CAH	DATE:	Apr. 9, 2021

PROJECT REFERENCE NO.	SHEET NO.
R-5709C	3D-11

Note: Invert Elevations Indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications for Roads and Structures, Section 300-5."

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

[illegible]

COMPUTED BY:	CJP	DATE:	Apr. 2, 2021
CHECKED BY:	CAH	DATE:	Apr. 9, 2021

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
R-5709C	3D-12

Note: Invert Elevations Indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications for Roads and Structures, Section 300-5."

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

[illegible]

COMPUTED BY:	CJP	DATE:	Apr. 2, 2021
CHECKED BY:	CAH	DATE:	Apr. 9, 2021

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
R-5709C	3D-13

Note: Invert Elevations Indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications for Roads and Structures, Section 300-5."

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

[illegible]

COMPUTED BY:	CJP	DATE:	Apr. 2, 2021
CHECKED BY:	CAH	DATE:	Apr. 9, 2021

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
R-5709C	3D-14

Note: Invert Elevations Indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications for Roads and Structures, Section 300-5."

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

[illegible]

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
R-5709C	3D-15

Note: Invert Elevations Indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications for Roads and Structures, Section 300-5.

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

[illegible]

COMPUTED BY: CJP DATE: Apr. 2, 2021
CHECKED BY: CJP DATE: Apr. 3, 2021

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
R-5709C	3D-16

Note: Invert Elevations Indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications for Roads and Structures, Section 300-5."

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

[illegible]

COMPUTED BY:	CJP	DATE:	Apr. 2, 2021
CHECKED BY:	CAH	DATE:	Apr. 9, 2021

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
R-5709C	3D-17

Note: Invert Elevations Indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications for Roads and Structures, Section 300-5."

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

[illegible]

COMPUTED BY:	CJP	DATE:	Apr. 2, 2021
CHECKED BY:	CAH	DATE:	Apr. 9, 2021

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
R-5709C	3D-18

Note: Invert Elevations Indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications for Roads and Structures, Section 300-5."

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

[illegible]