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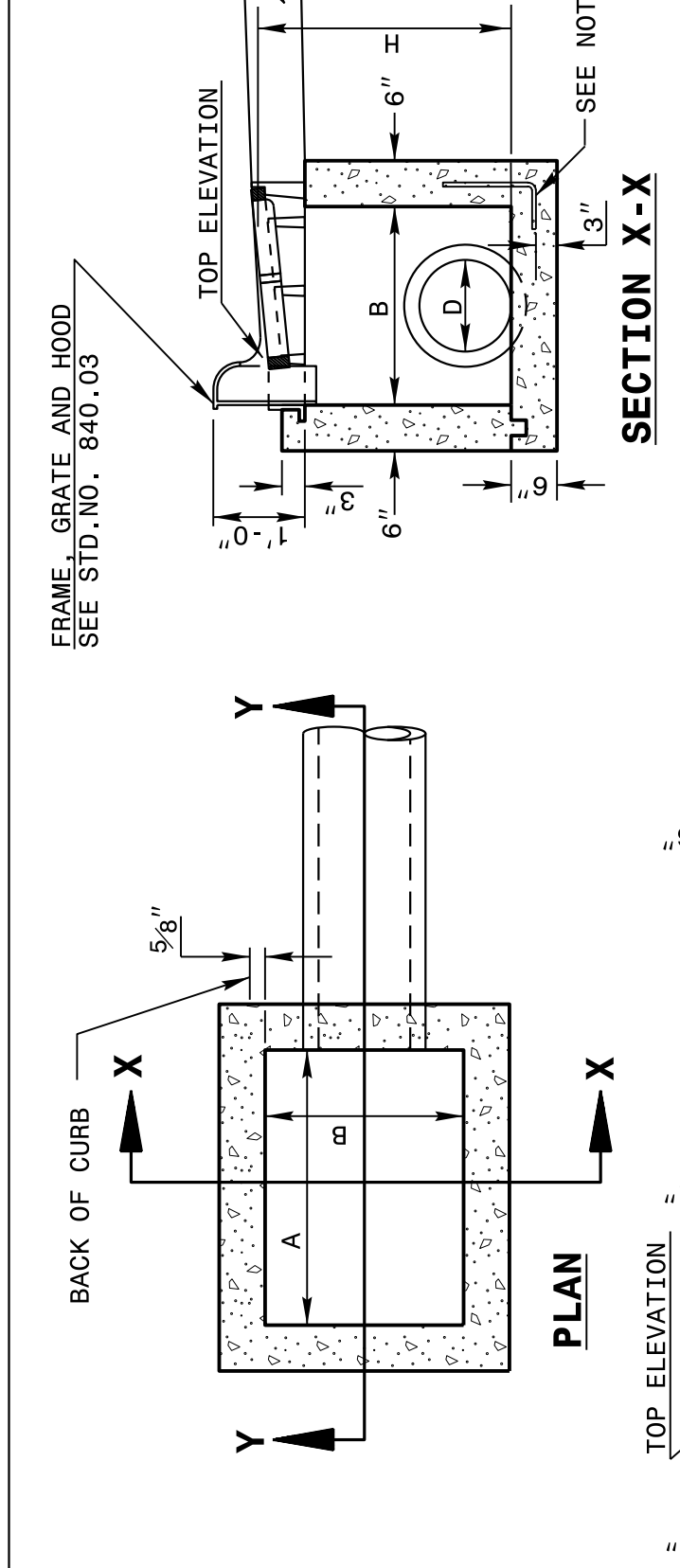
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STATE OF
 NORTH CAROLINA
 DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
**MINIMUM DEPTH
 CONCRETE CATCH BASIN**
 12" THRU 84" PIPE

SHEET 1 OF 2
840D02

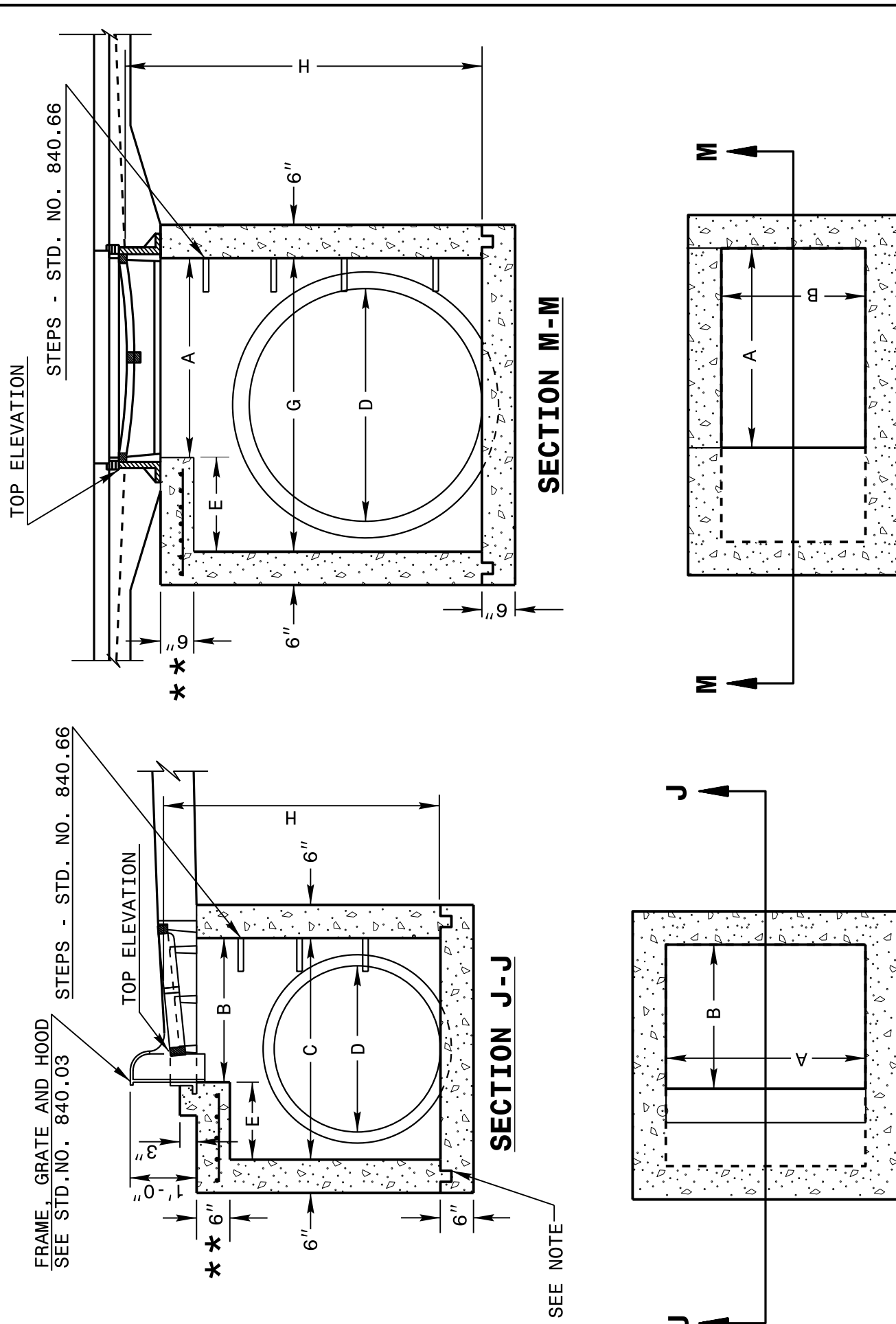
GENERAL NOTES:
 USE CLASS "B" CONCRETE THROUGHOUT.
 PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.
 OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12 CENTERS AS DIRECTED BY THE ENGINEER.
 USE FORMS FOR THE 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.
 USE TYPE "E", "F" AND "G" GRATES UNLESS OTHERWISE INDICATED.
 FOR 8'-0" IN HEIGHT OR LESS USE 6" WALLS AND BOTTOM SLAB. OVER 8'-0" TO 16'-0" IN HEIGHT USE 8" WALLS AND BOTTOM SLAB. ADJUST QUANTITIES ACCORDINGLY.
 CONSTRUCT WITH PIPE CROWNS MATCHING.
 CHAMFER ALL EXPOSED CORNERS 1".
 ** FOR STRUCTURES WITH PIPE LARGER THAN 54", MAKE THE TOP SLAB 8" THICK.



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**MINIMUM DEPTH
 CONCRETE CATCH BASIN**
 12" THRU 84" PIPE

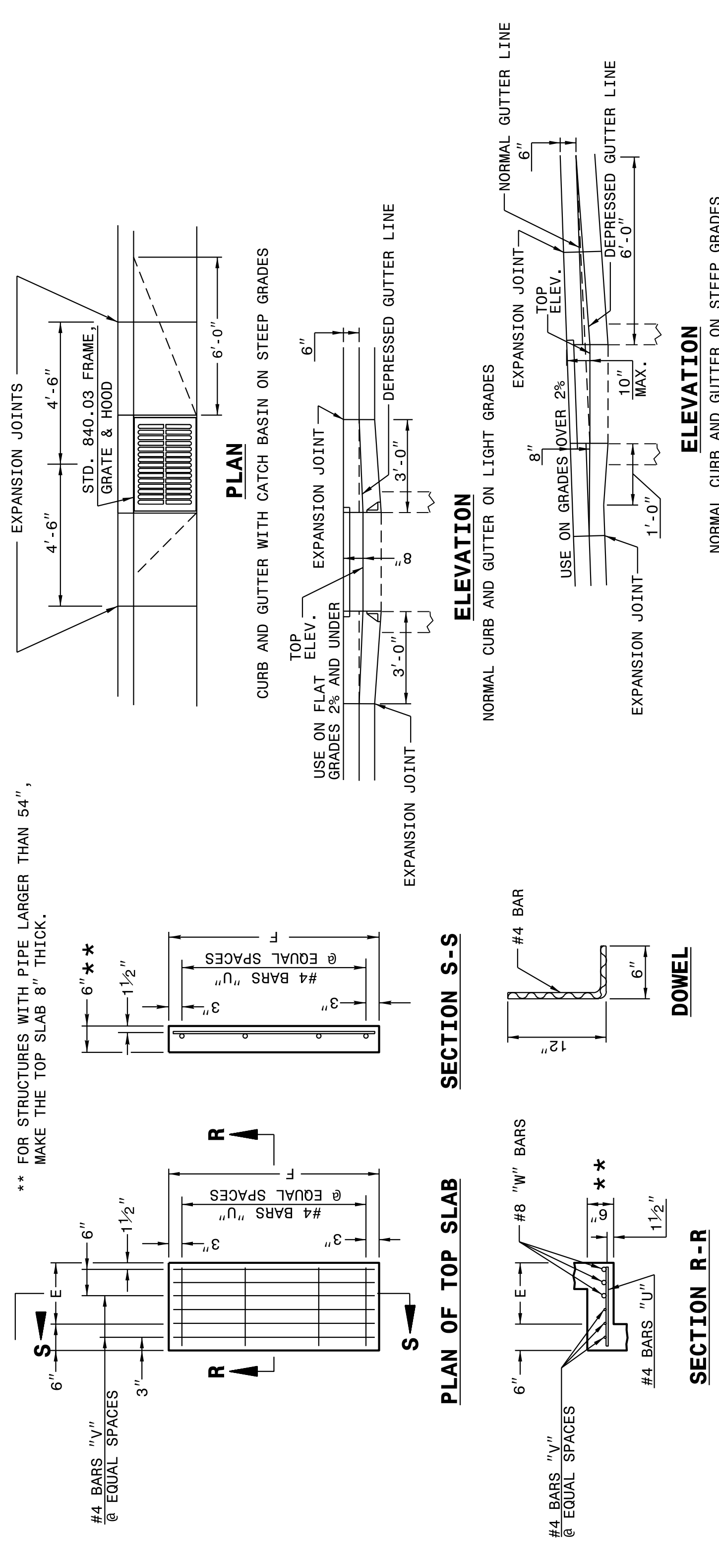
SHEET 1 OF 2
840D02



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ENGLISH DETAIL DRAWING FOR
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 12" THRU 84" PIPE

SHEET 2 OF 2
840D02



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ENGLISH DETAIL DRAWING FOR
**MINIMUM DEPTH
 CONCRETE CATCH BASIN**
 12" THRU 84" PIPE

SHEET 2 OF 2
840D02

* RISER HAS .228 CUBIC YARDS OF CONCRETE PER FOOT HEIGHT

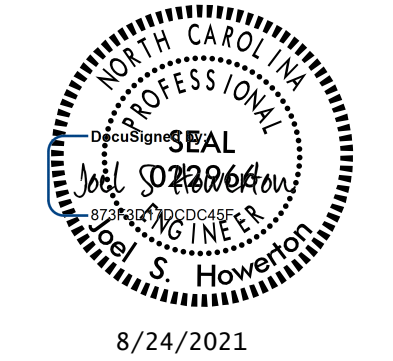
PIPE D.	DIMENSIONS OF BOX AND PIPE			COVER DIMENSION			BARS-U			BARS-V			BARS-W			TOTAL LBS.	CU. YDS. CONC. IN BOX	DEDUCTIONS		
	SPAN	WIDTH	HEIGHT	E	F	H	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	TOP SLAB			BOTTOM SLAB	TOT. CONC. FOR MINIMUM HEIGHT, H	C. M.	R. C.
12"	3'-0"	2'-2"	2'-0"	..	..	2'-0"	..	..	..	..	..	..	..	..	0.285	0.772	0.015	0.026	0.026
15"	3'-0"	2'-2"	2'-3"	..	..	2'-3"	..	..	..	..	..	..	..	..	0.295	0.829	0.023	0.036	0.036
18"	3'-0"	2'-2"	3'-1"	..	..	3'-1"	..	..	..	..	..	..	..	..	0.295	0.887	0.033	0.049	0.049
24"	3'-0"	2'-2"	3'-10"	..	..	3'-10"	..	..	..	..	..	..	..	..	0.235	1.001	0.059	0.085	0.085
30"	3'-0"	2'-2"	3'-4"	..	..	3'-4"	..	..	..	..	..	..	..	..	0.123	0.347	1.433	0.092	0.127
36"	3'-0"	2'-2"	3'-10"	..	..	3'-10"	..	..	..	..	..	..	..	..	0.161	0.432	1.714	0.132	0.178
42"	3'-0"	2'-2"	4'-5"	..	..	4'-5"	..	..	..	..	..	..	..	..	0.200	0.543	1.738	0.180	0.243
48"	3'-0"	2'-2"	5'-0"	..	..	5'-0"	..	..	..	..	..	..	..	..	0.235	0.667	2.052	0.235	0.317
54"	3'-0"	2'-2"	5'-7"	..	..	5'-7"	..	..	..	..	..	..	..	..	0.289	0.802	2.387	0.287	0.401
60"	3'-0"	2'-2"	6'-3"	..	..	6'-3"	..	..	..	..	..	..	..	..	0.340	0.973	2.722	0.363	0.546
66"	3'-0"	2'-2"	6'-11"	..	..	6'-11"	..	..	..	..	..	..	..	..	0.391	1.160	3.057	0.440	0.655
72"	3'-0"	2'-2"	7'-6"	..	..	7'-6"	..	..	..	..	..	..	..	..	0.442	1.340	3.392	0.524	0.774
78"	3'-0"	2'-2"	8'-1"	8'-1"	0.493	1.530	3.727	0.615	0.893	
84"	3'-0"	2'-2"	8'-9"	8'-9"	0.544	1.760	4.062	0.713	1.010	

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ORIGINAL BY: 2002 Std.840.01 DATE: _____
 MODIFIED BY: E.E. WARD DATE: 3-1-02
 CHECKED BY: _____ DATE: _____
 FILE SPEC.: s:Special Details/jhowerton/840d02.dgn



8/24/2011

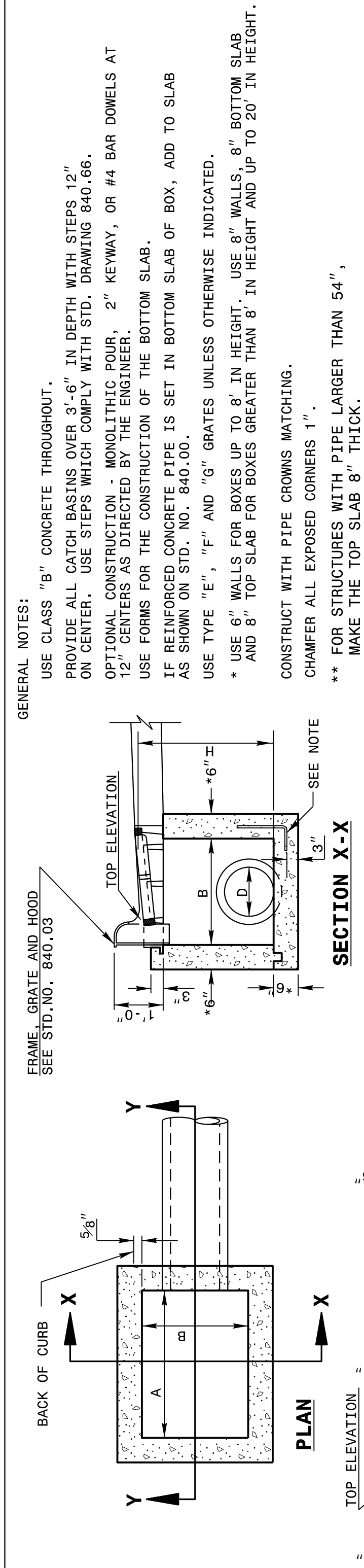
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 Jhewerton AT CSD-292595

5/14/99

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

ENGLISH DETAIL DRAWING FOR
**EXTRA DEPTH
 CONCRETE CATCH BASIN**
 12" THRU 84" PIPE

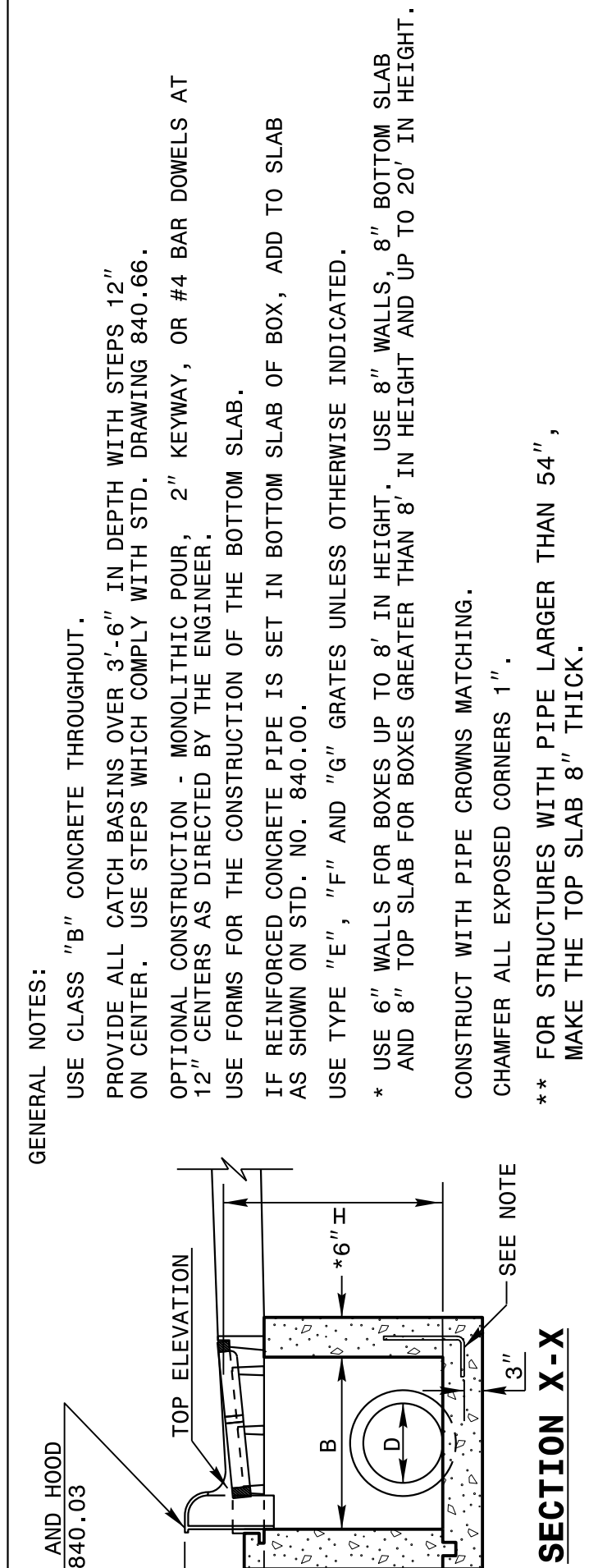
SHEET 1 OF 2
840D02



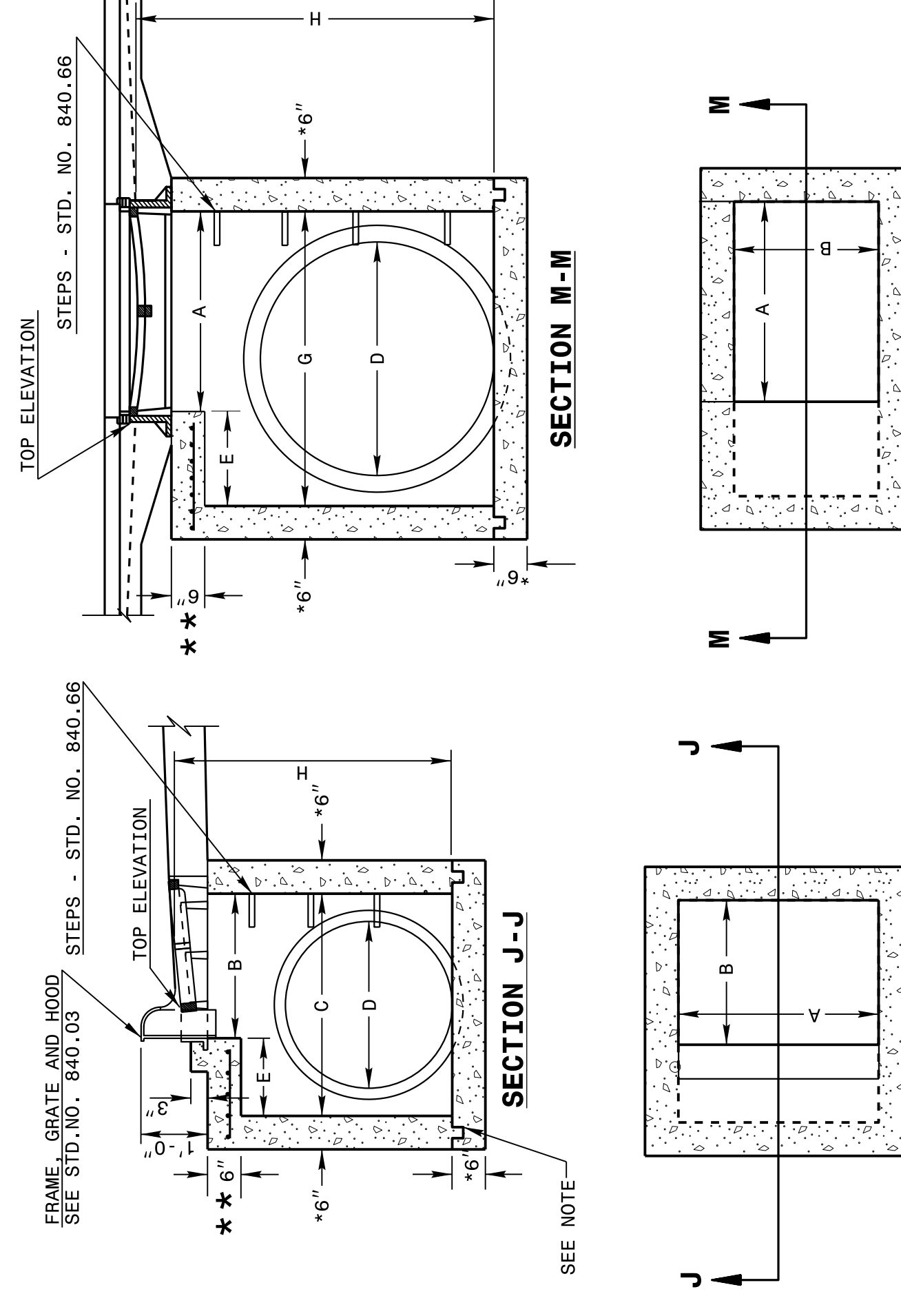
STATE OF NORTH CAROLINA
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ENGLISH DETAIL DRAWING FOR
**EXTRA DEPTH
 CONCRETE CATCH BASIN**
 12" THRU 84" PIPE

SHEET 1 OF 2
840D02



GENERAL NOTES:
 USE CLASS "B" CONCRETE THROUGHOUT.
 PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH 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.
 USE TYPE "E", "F" AND "G" GRATES UNLESS OTHERWISE INDICATED.
 * USE 6" WALLS FOR BOXES UP TO 8' IN HEIGHT. USE 8" WALLS, 8" BOTTOM SLAB AND 8" TOP SLAB FOR BOXES GREATER THAN 8' IN HEIGHT AND UP TO 20' IN HEIGHT.
 CONSTRUCT WITH PIPE CORNERS MATCHING.
 CHAMFER ALL EXPOSED CORNERS 1".
 ** FOR STRUCTURES WITH PIPE LARGER THAN 54", MAKE THE TOP SLAB 8" THICK.

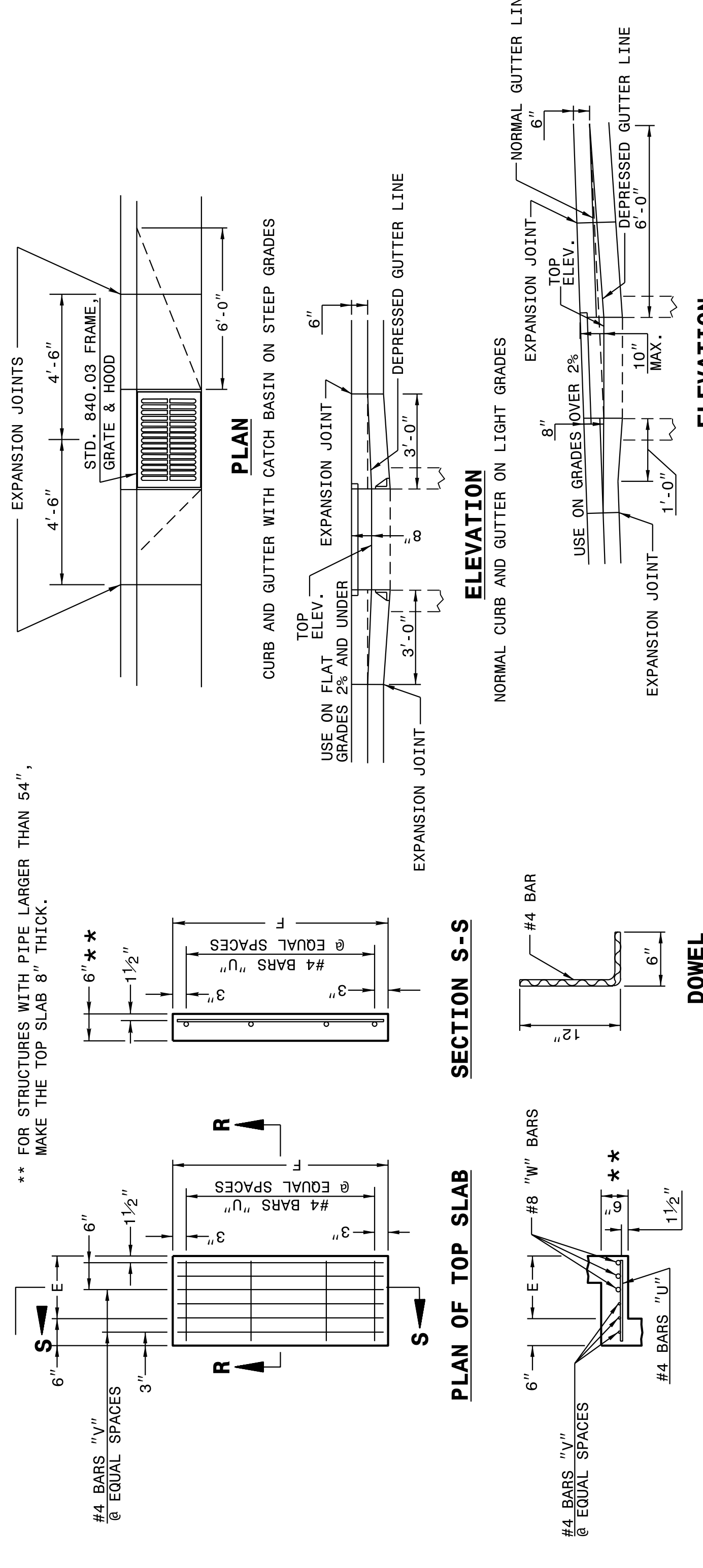


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 CONCRETE CATCH BASIN**
 12" THRU 84" PIPE

SHEET 2 OF 2
840D02



GENERAL NOTES:
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* RISER HAS .228 CUBIC YARDS OF CONCRETE PER FOOT HEIGHT

PIPE D.	MINIMUM DIMENSIONS OF BOX AND PIPE			COVER DIMENSION			DIMENSIONS OF BOX AND PIPE			QUANTITIES FOR CONCRETE CATCH BASIN (BASED ON MIN. HEIGHT, H, WITH NO RISER) *			DEDUCTIONS ONE PIPE			
	SPAN	WIDTH	HEIGHT	E	F	H	NO.	LENGTH	NO.	LENGTH	TOTAL LBS.	CU. YDS. CONC.	TOP SLAB	BOTTOM SLAB	R.C.	
12"	3'-0"	2'-2"	2'-0"	..	..	2'-0"	..	..	..	..	..	0.235	0.772	0.015	0.026	
15"	3'-0"	2'-2"	2'-3"	..	..	2'-3"	..	..	..	..	..	0.235	0.829	0.023	0.036	
18"	3'-0"	2'-2"	3'-1"	..	..	3'-1"	..	..	..	..	..	0.235	0.887	0.033	0.049	
24"	3'-0"	2'-2"	3'-10"	..	..	3'-10"	..	..	..	..	..	0.235	1.001	0.059	0.085	
30"	3'-0"	2'-2"	3'-4"	1'-2"	4'-4"	4'-4"	4	1'-5"	2	4'-1"	39	0.123	0.347	1.433	0.092	0.127
36"	3'-0"	2'-2"	3'-10"	1'-8"	4'-10"	4'-10"	4	1'-11"	3	4'-7"	43	0.161	0.432	1.714	0.132	0.178
42"	3'-0"	2'-2"	4'-5"	2'-2"	5'-5"	5'-5"	5	2'-5"	4	5'-2"	47	0.200	0.543	1.738	0.180	0.243
48"	3'-0"	2'-2"	5'-0"	2'-10"	6'-0"	6'-0"	5	3'-1"	4	5'-9"	51	0.235	0.667	2.052	0.235	0.317
54"	3'-0"	2'-2"	5'-7"	3'-5"	6'-7"	6'-7"	6	3'-8"	5	6'-4"	56	0.269	0.802	2.387	0.287	0.401
60"	3'-0"	2'-2"	6'-3"	4'-1"	7'-3"	7'-3"	6	4'-4"	5	7'-0"	61	0.340	0.973	2.722	0.363	0.546
66"	3'-0"	2'-2"	6'-11"	4'-9"	7'-11"	7'-11"	7	5'-0"	6	7'-8"	66	0.391	1.160	3.057	0.440	0.655
72"	3'-0"	2'-2"	7'-6"	5'-3"	8'-6"	8'-6"	7	5'-6"	6	8'-3"	72	0.442	1.340	3.392	0.524	0.774
78"	3'-0"	2'-2"	8'-1"	5'-11"	9'-1"	9'-1"	8	6'-2"	7	8'-10"	78	0.493	1.530	3.727	0.615	0.893
84"	3'-0"	2'-2"	8'-9"	6'-7"	9'-9"	9'-9"	8	6'-10"	7	9'-6"	84	0.544	1.760	4.062	0.713	1.010

GENERAL NOTES:
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 OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12 CENTERS AS DIRECTED BY THE ENGINEER.
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 USE TYPE "E", "F" AND "G" GRATES UNLESS OTHERWISE INDICATED.
 * USE 6" WALLS FOR BOXES UP TO 8' IN HEIGHT. USE 8" WALLS, 8" BOTTOM SLAB AND 8" TOP SLAB FOR BOXES GREATER THAN 8' IN HEIGHT AND UP TO 20' IN HEIGHT.
 CONSTRUCT WITH PIPE CORNERS MATCHING.
 CHAMFER ALL EXPOSED CORNERS 1".
 ** FOR STRUCTURES WITH PIPE LARGER THAN 54", MAKE THE TOP SLAB 8" THICK.

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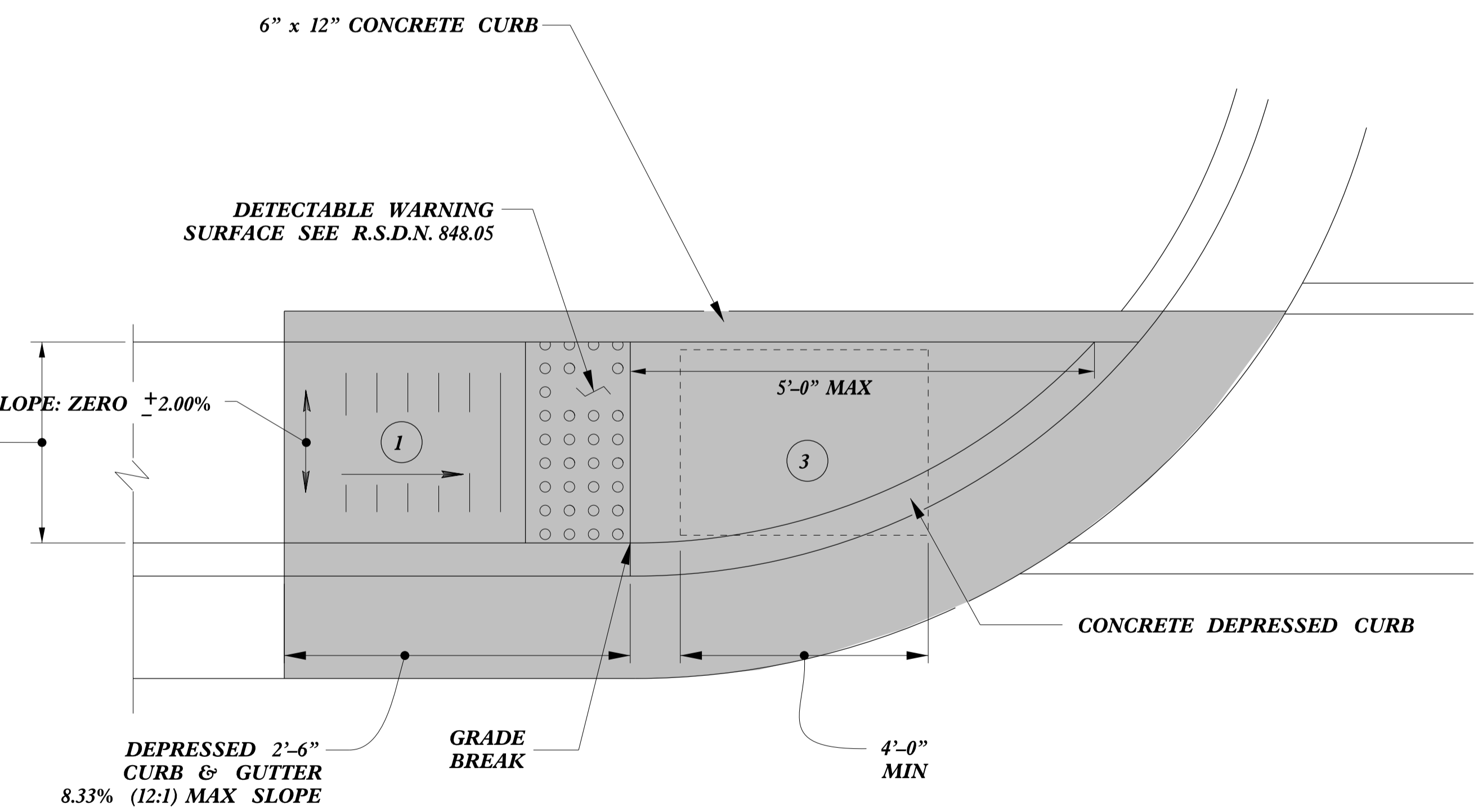
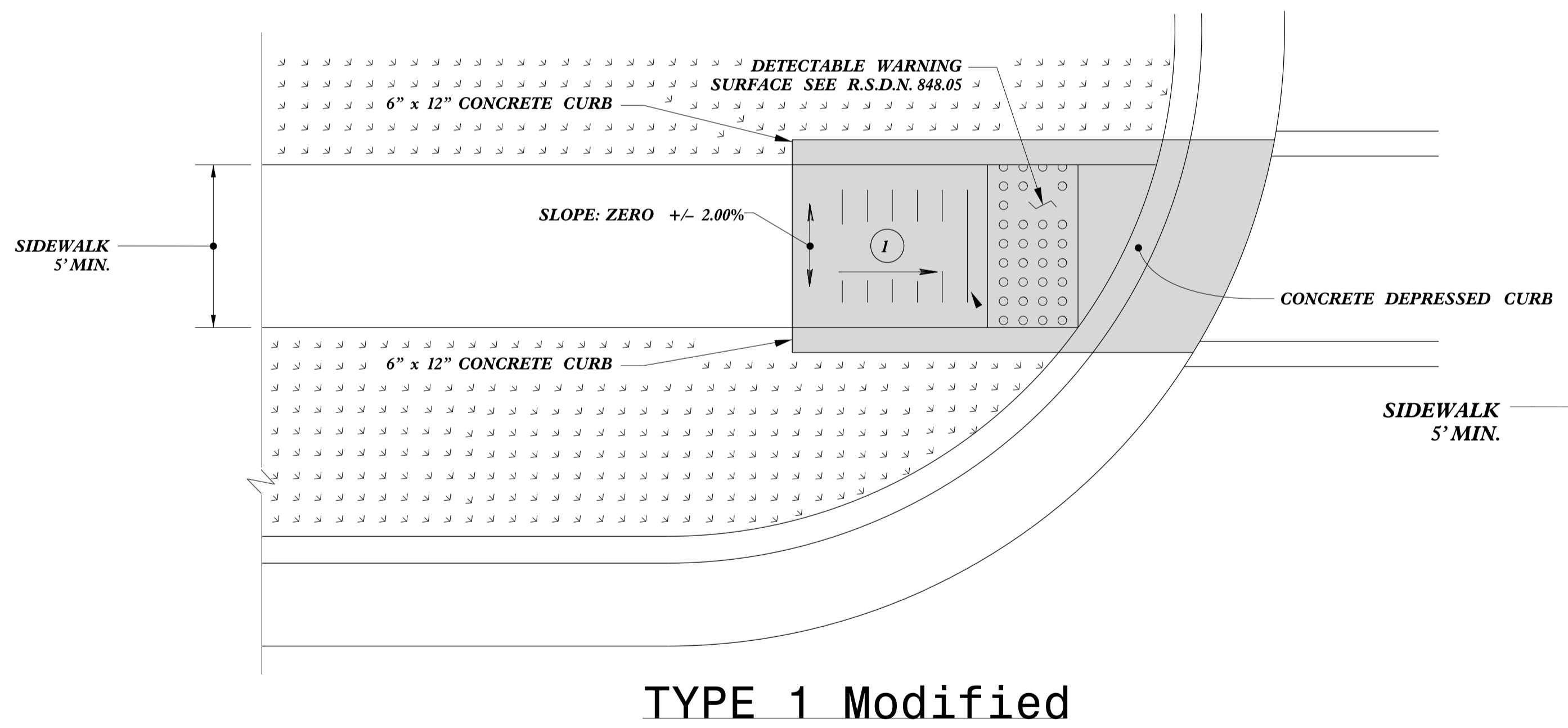
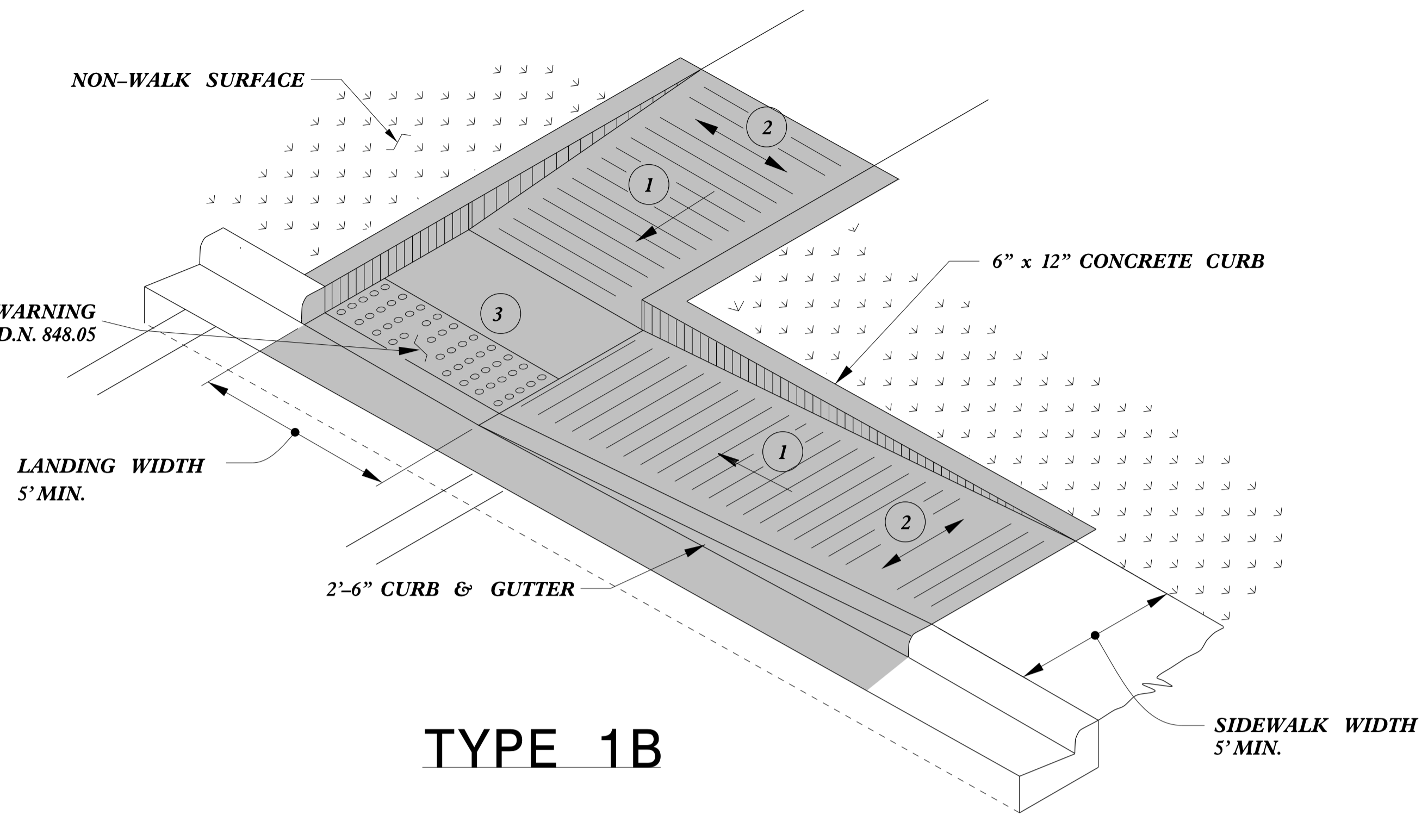
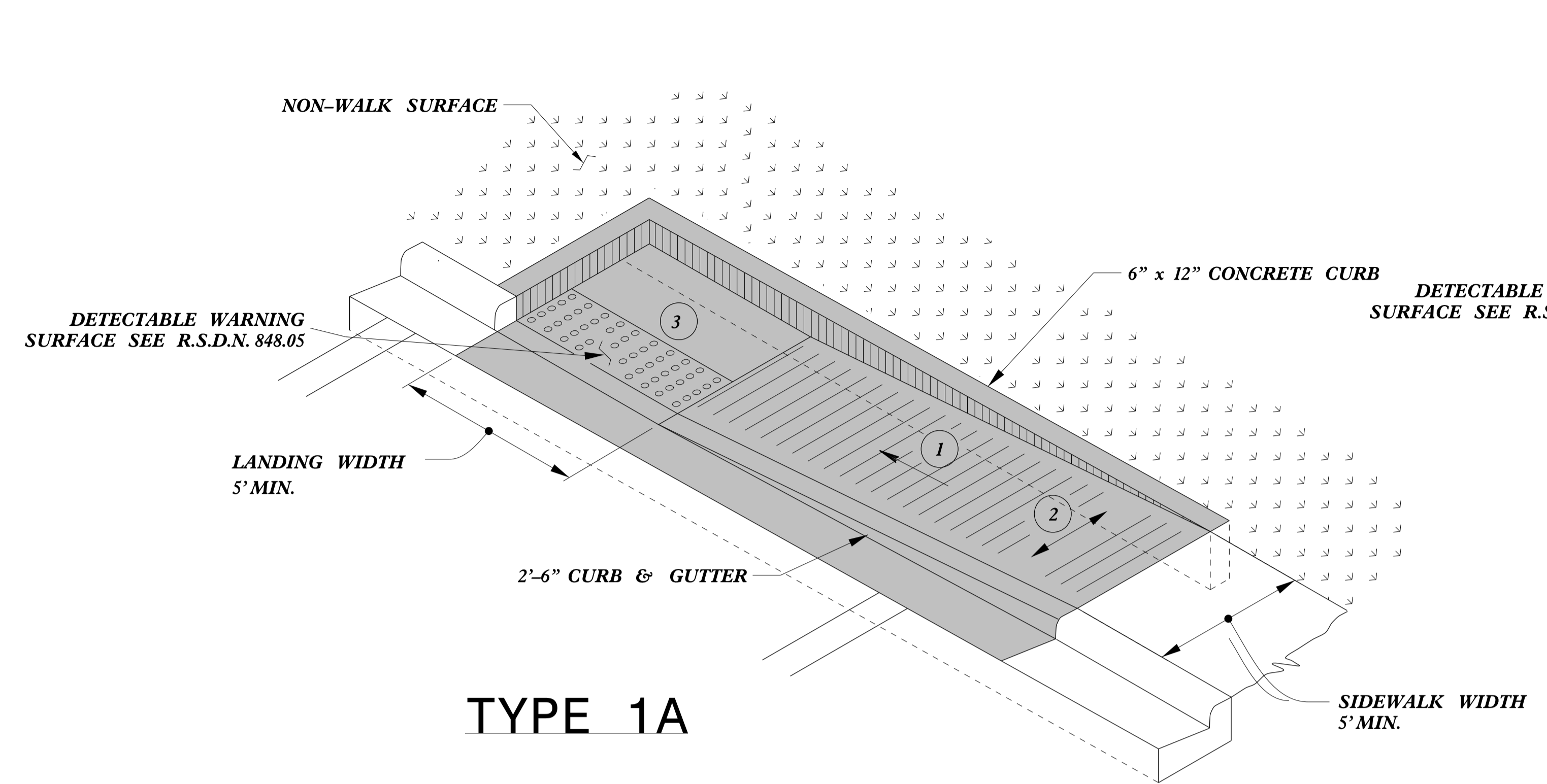
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ORIGINAL BY: 2002 Std.840.01 DATE: _____
 MODIFIED BY: E.E. WARD DATE: 3-1-02
 CHECKED BY: _____ DATE: _____
 FILE SPEC.: jhewerton/840d02 Extra_Depth CB.dgn



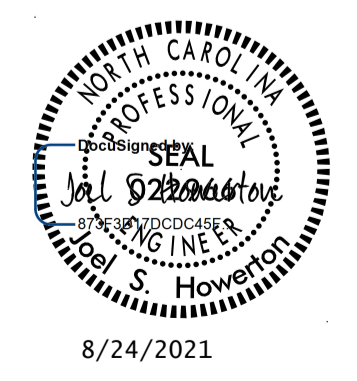
8/24/2021



- 1 8.33% (12:1) MAX RAMP SLOPE
- 2 CROSS SLOPE: 2.00%
- 3 CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.

PAY LIMITS FOR 1 CURB RAMP

REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES



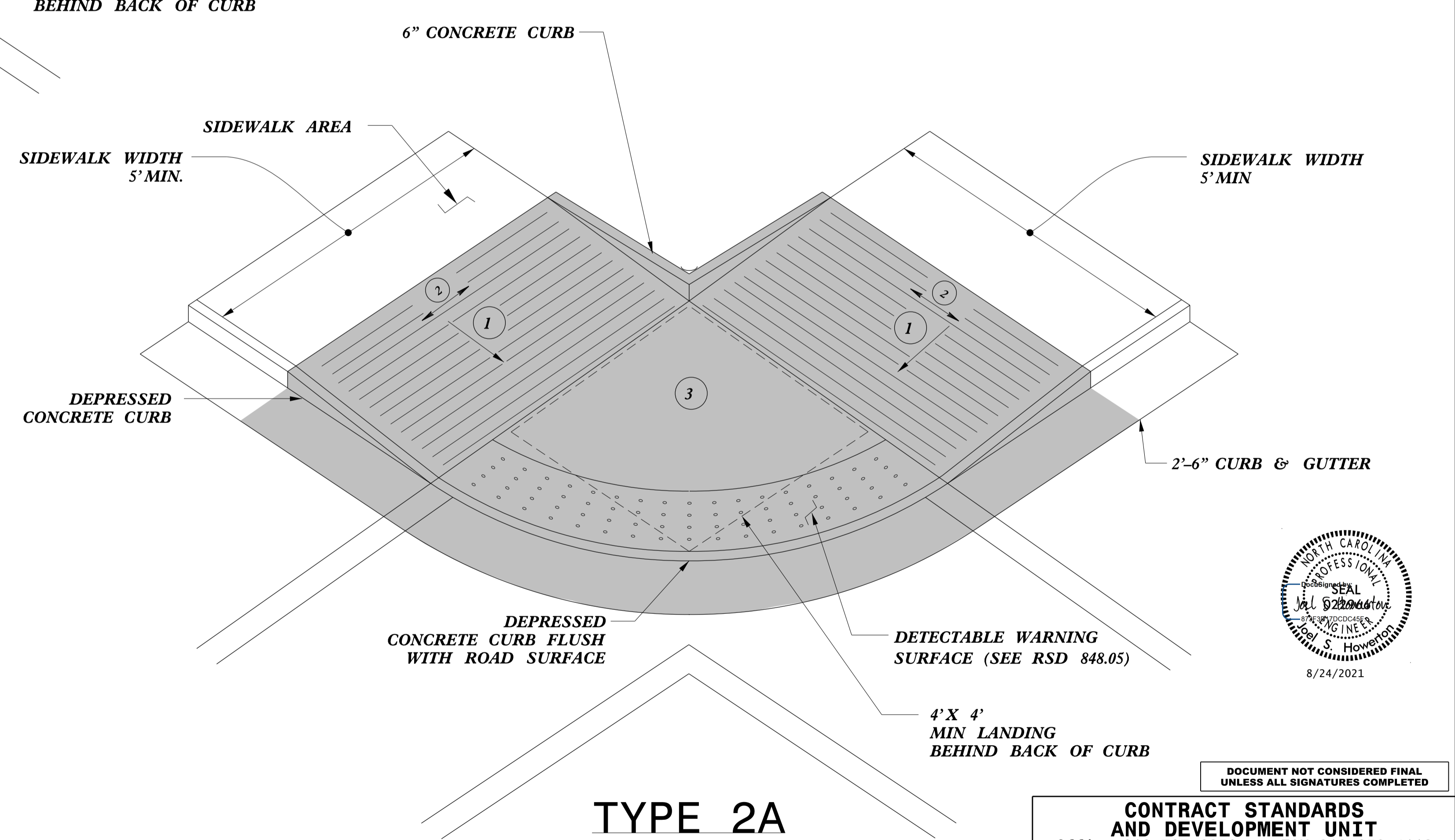
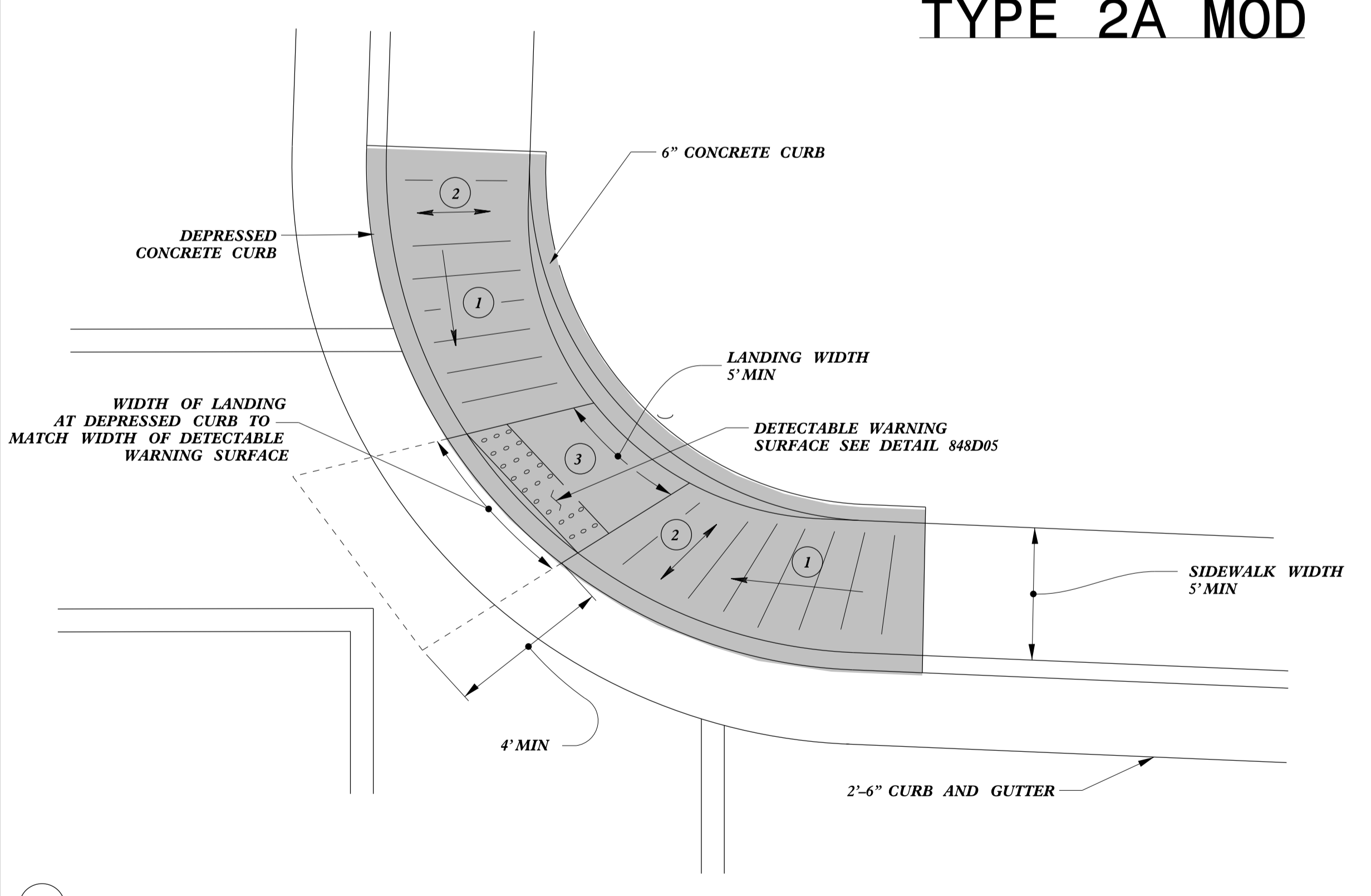
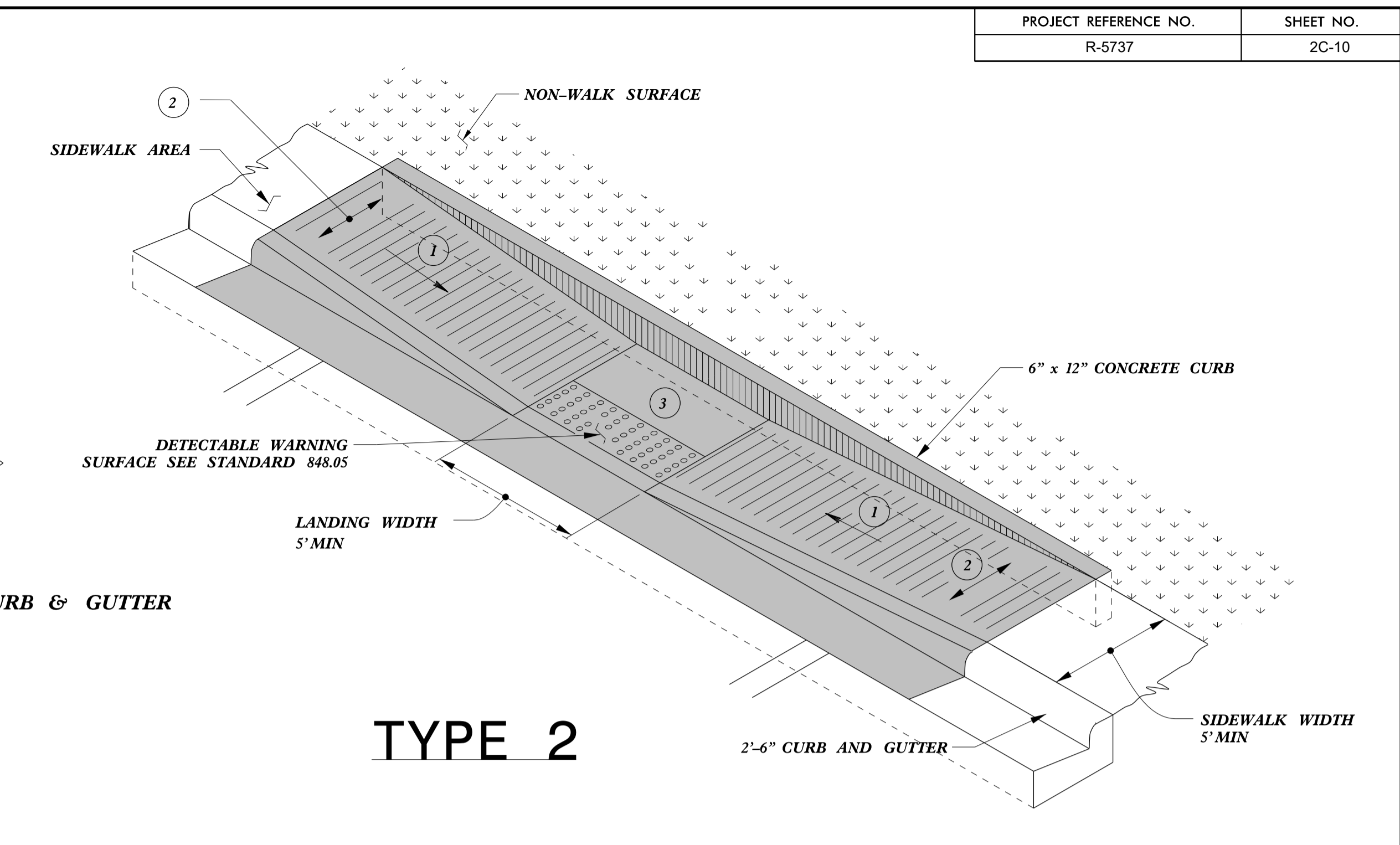
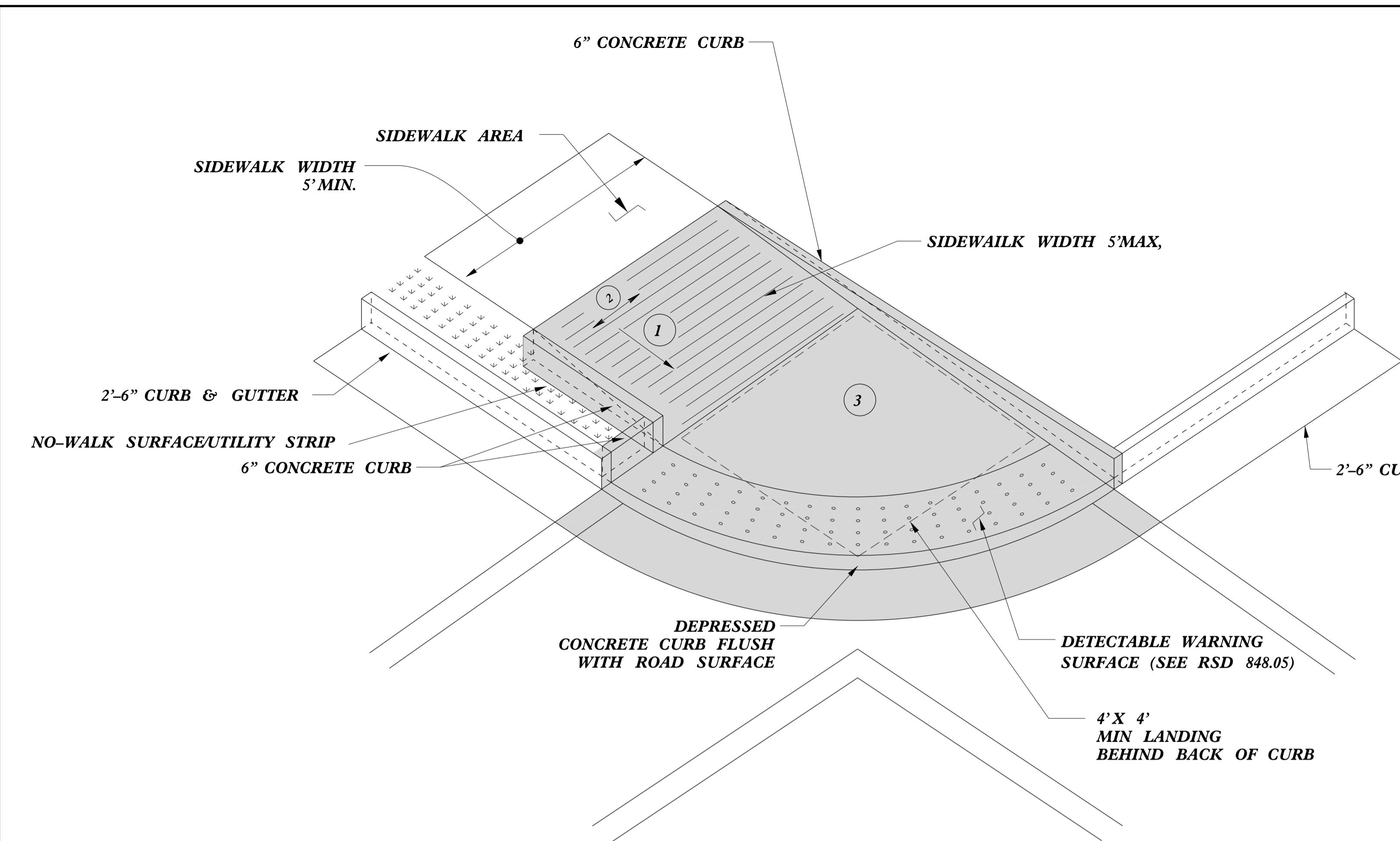
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CONTRACT STANDARDS AND DEVELOPMENT UNIT
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CURB RAMPS
Directional Ramps

ORIGINAL BY: J.S. HOWERTON DATE: 7/7/11
 MODIFIED BY: DATE:
 CHECKED BY: DATE:
 FILE SPEC.: stds/2012CurbRamp/CurbRampDetails.dgn

C:\TEMP\DWG\CURB RAMPS\USER\NAME.DWG



- 1 8.33% (12:1) MAX RAMP SLOPE
- 2 CROSS SLOPE: 2.00%
- 3 CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.

PAY LIMITS FOR 1 CURB RAMP

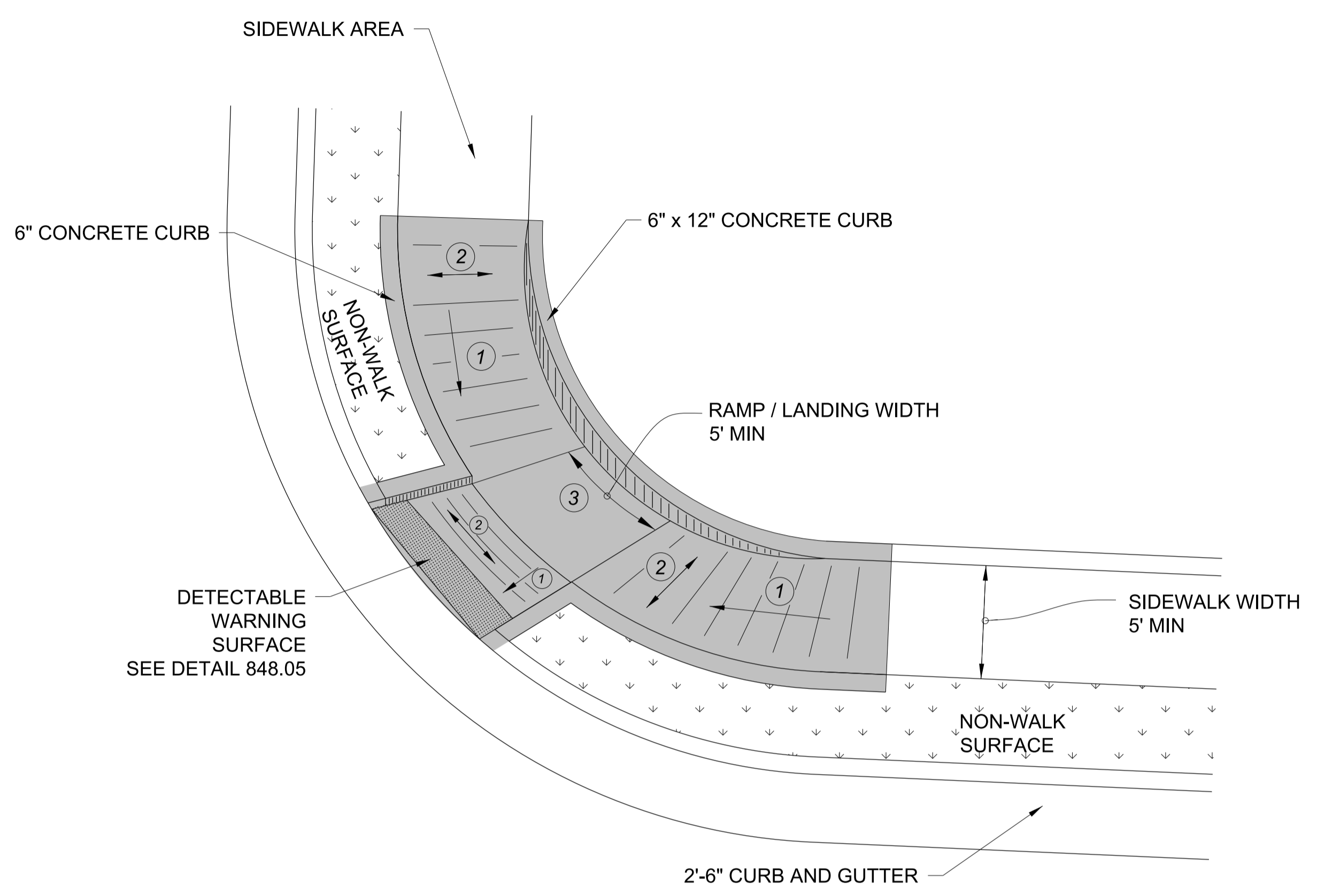


DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

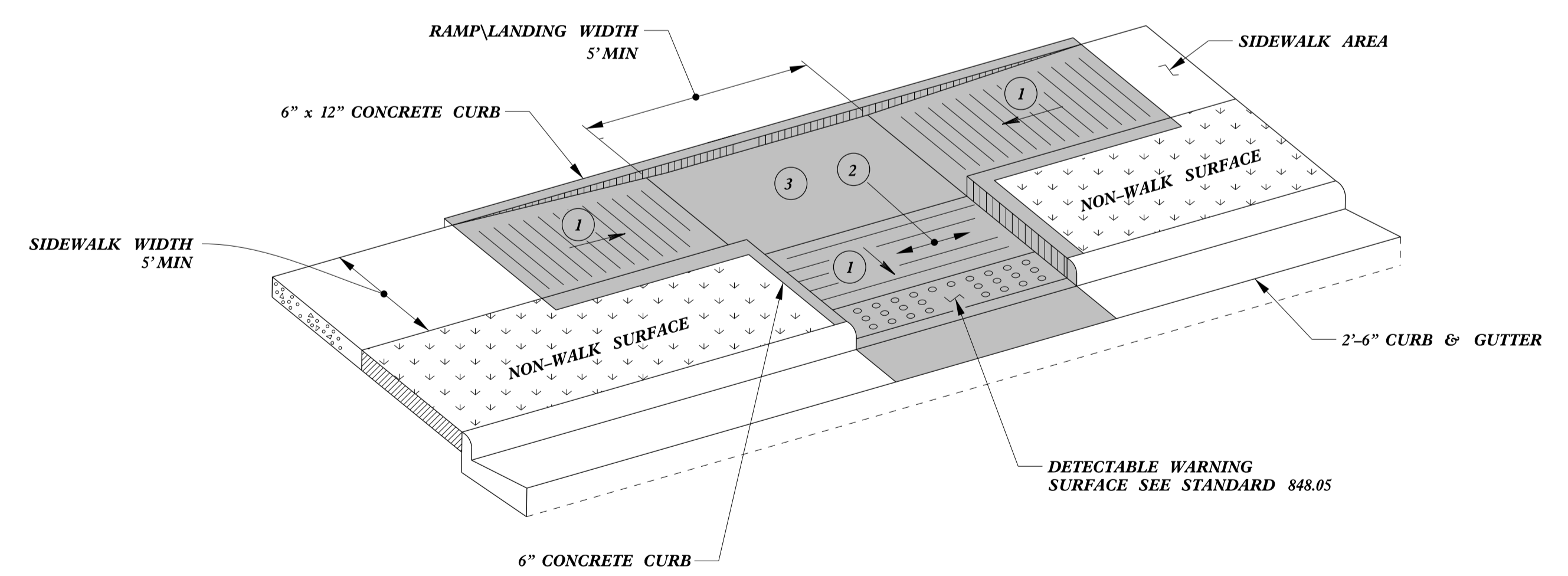
CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950	FAX 919-250-4119
CURB RAMPS	
ORIGINAL BY: J.S. HOWERTON	DATE: 7/7/11
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC.: stds\2012CurbRamp\CurbRampDetails.dgn	

5/14/99
C:\P\2012\STDS\2012CurbRamp\CurbRampDetails.dgn

PAY LIMITS FOR 1 CURB RAMP



TYPE 3 MODIFIED
INSTALLATION IN A RADIUS



TYPE 3

- 1 8.33% (12:1) MAX RAMP SLOPE
- 2 CROSS SLOPE: 2.00%
- 3 CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.



8/24/2021

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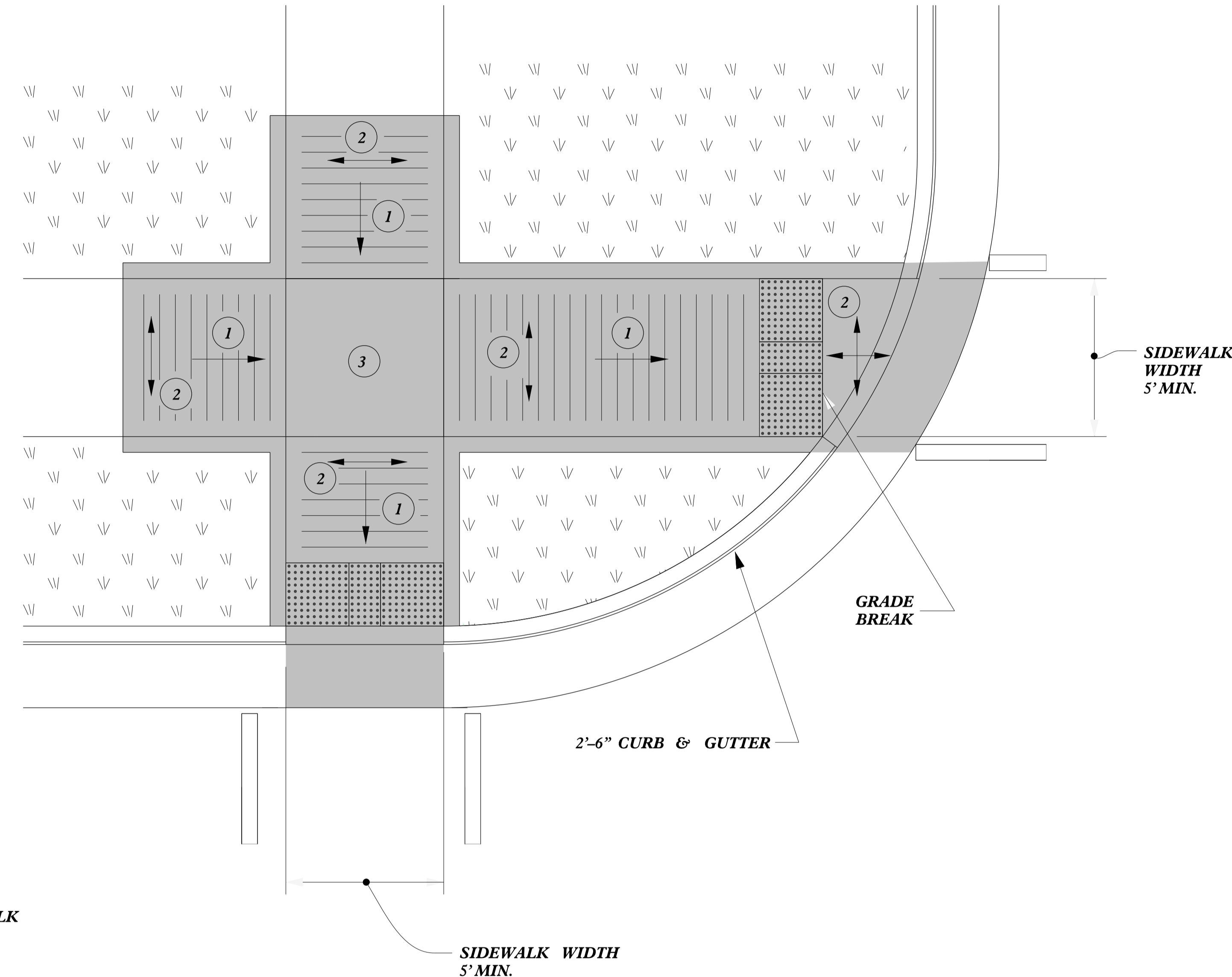
**CONTRACT STANDARDS
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CURB RAMPS

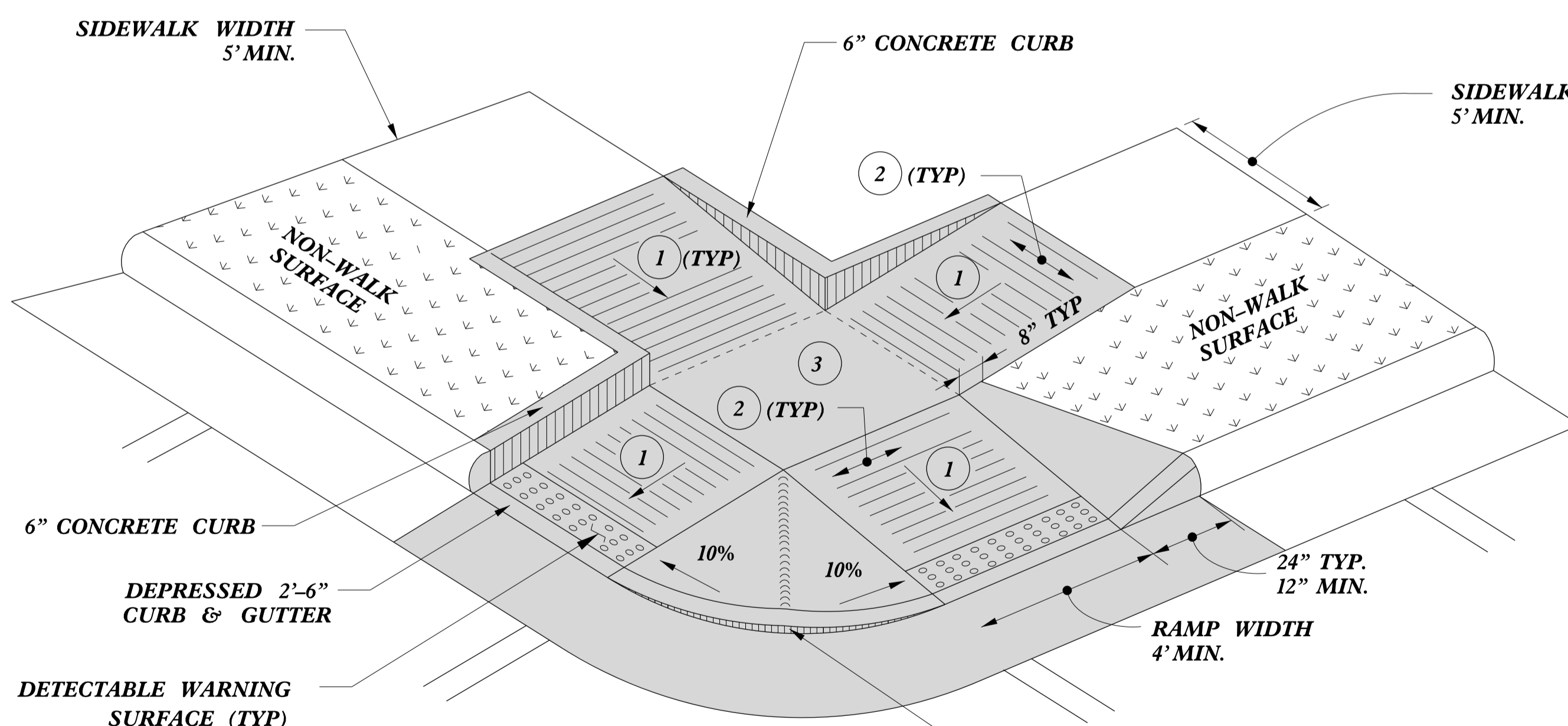
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 MODIFIED BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____
 FILE SPEC.: stds/2012CurbRamp/CurbRampDetails.dgn

5/14/99
C:\P\2012\STDS\2012CurbRamp\CurbRampDetails.dgn

PAY LIMITS FOR 1 OR 2 CURB RAMPS
(CALCULATE BASED ON NUMBER OF SETS OF TRUNCATED DOMES)

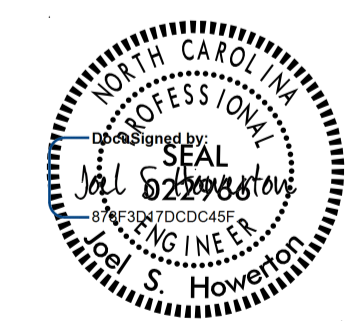


TYPE 5A



TYPE 5

- 1 8.33% (12:1) MAX RAMP SLOPE
- 2 CROSS SLOPE: 2.00%
- 3 CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.



8/24/2021

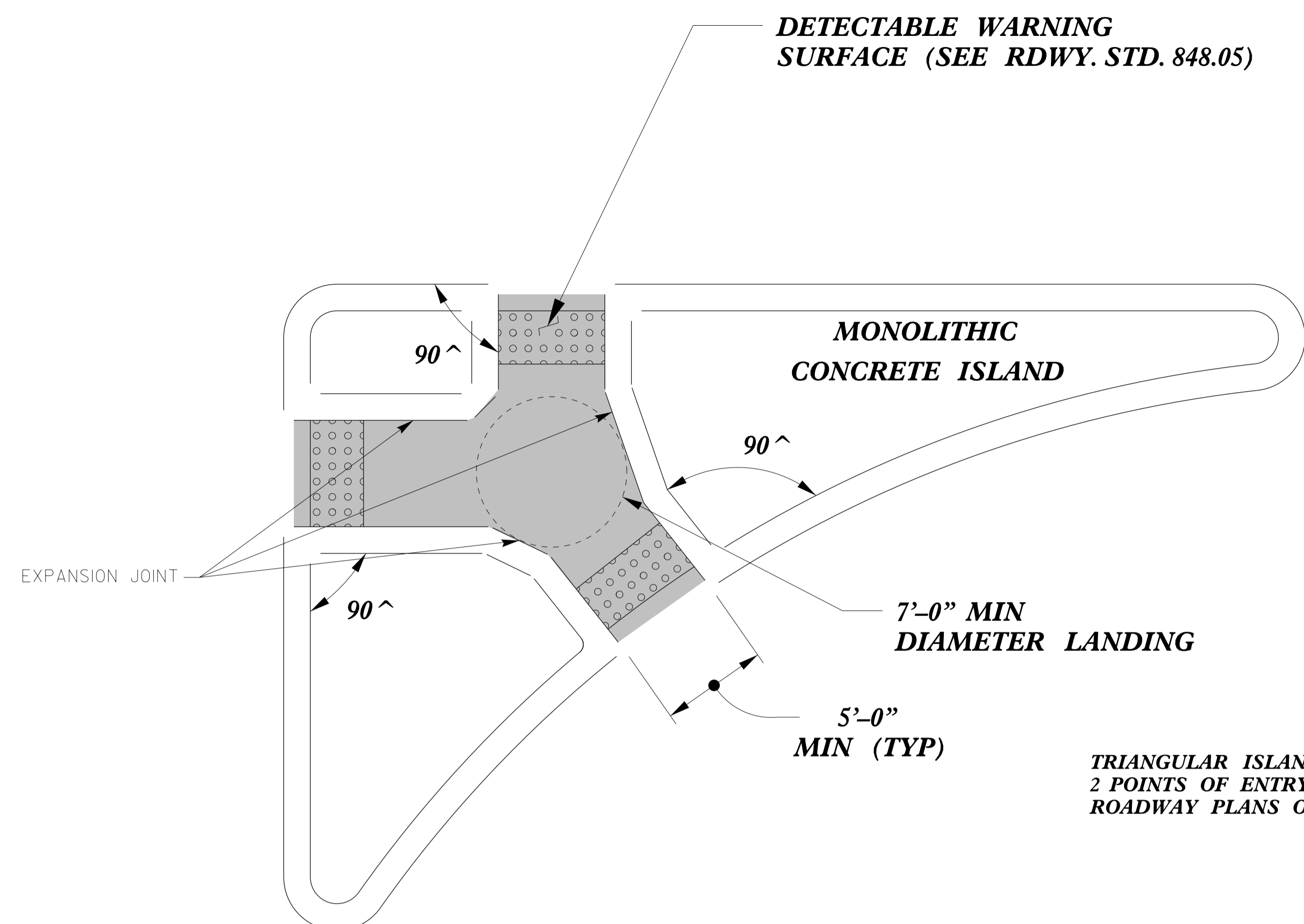
CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

CURB RAMPS

ORIGINAL BY: J.S. HOWERTON DATE: 7/7/11
 MODIFIED BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____
 FILE SPEC: :stds/2012CurbRamp/CurbRampDetails.dgn

REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES

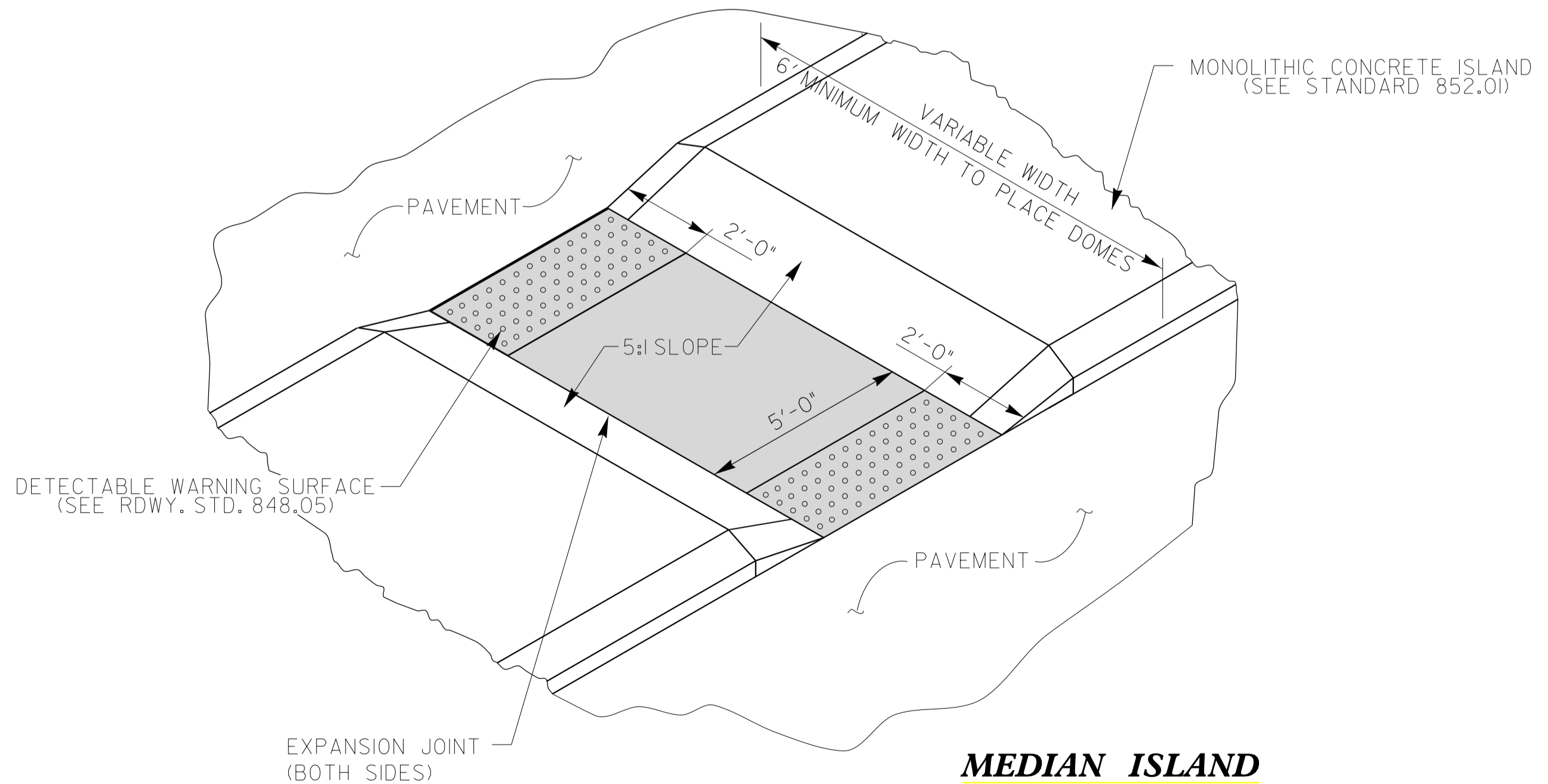
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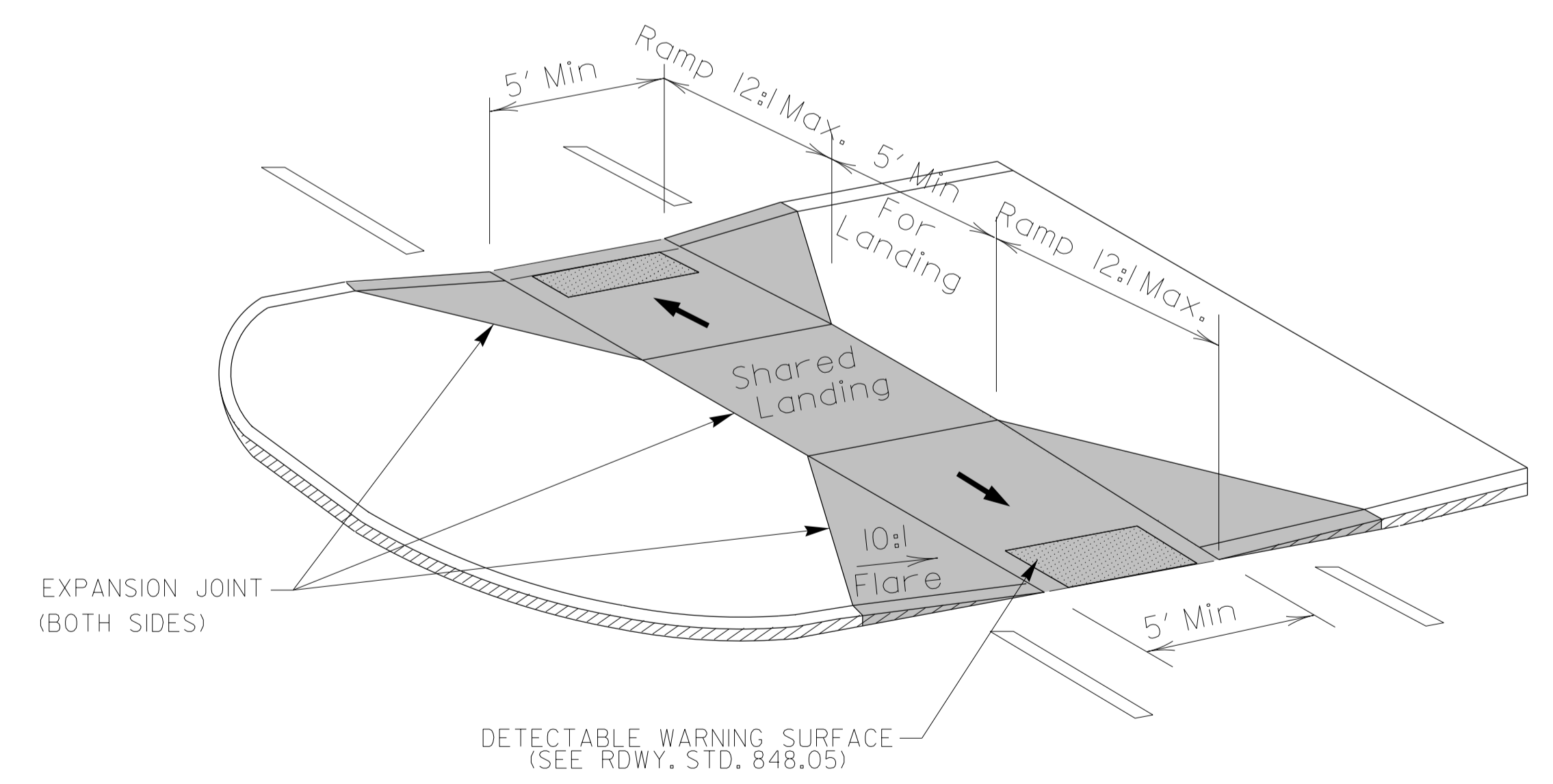
PAY LIMITS FOR 2 OR 3 CURB RAMPS
(CALCULATE BASED ON NUMBER OF SETS OF TRUNCATED DOMES)

TRIANGULAR ISLANDS MAY BE CONSTRUCTED WITH ONLY 2 POINTS OF ENTRY AND EXIT AS SHOWN IN THE ROADWAY PLANS OR AS DIRECTED BY THE ENGINEER.

TRIANGULAR ISLAND WITH CUT THROUGH
TYPE 6



MEDIAN ISLAND WITH CUT THROUGH
TYPE 7



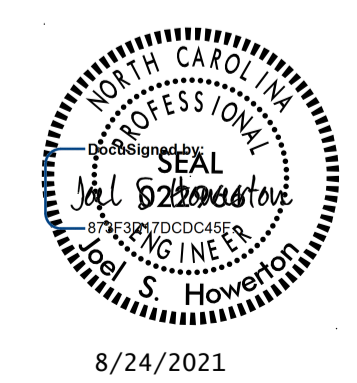
MEDIAN ISLAND CURB RAMPS
TYPE 8

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

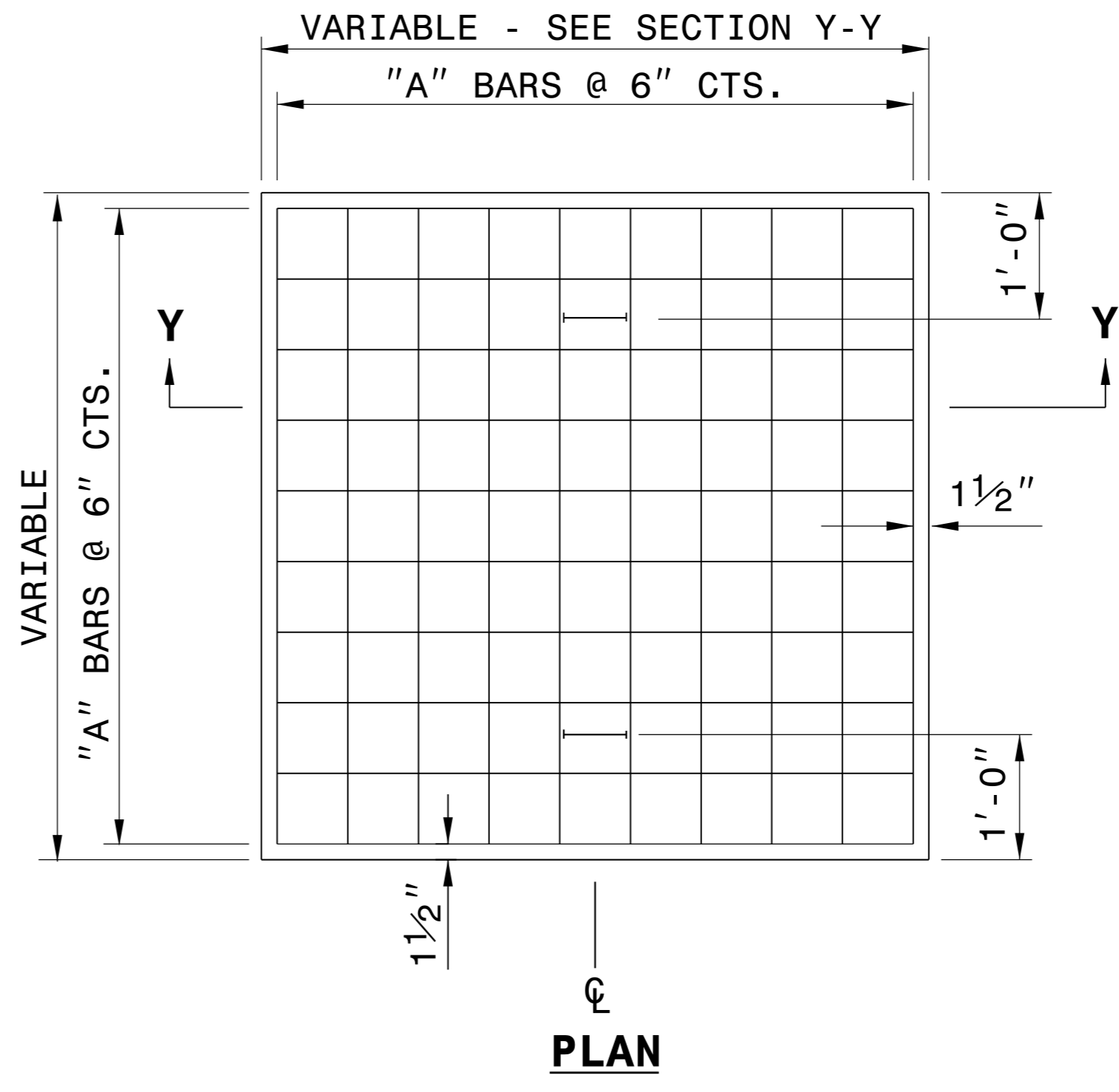
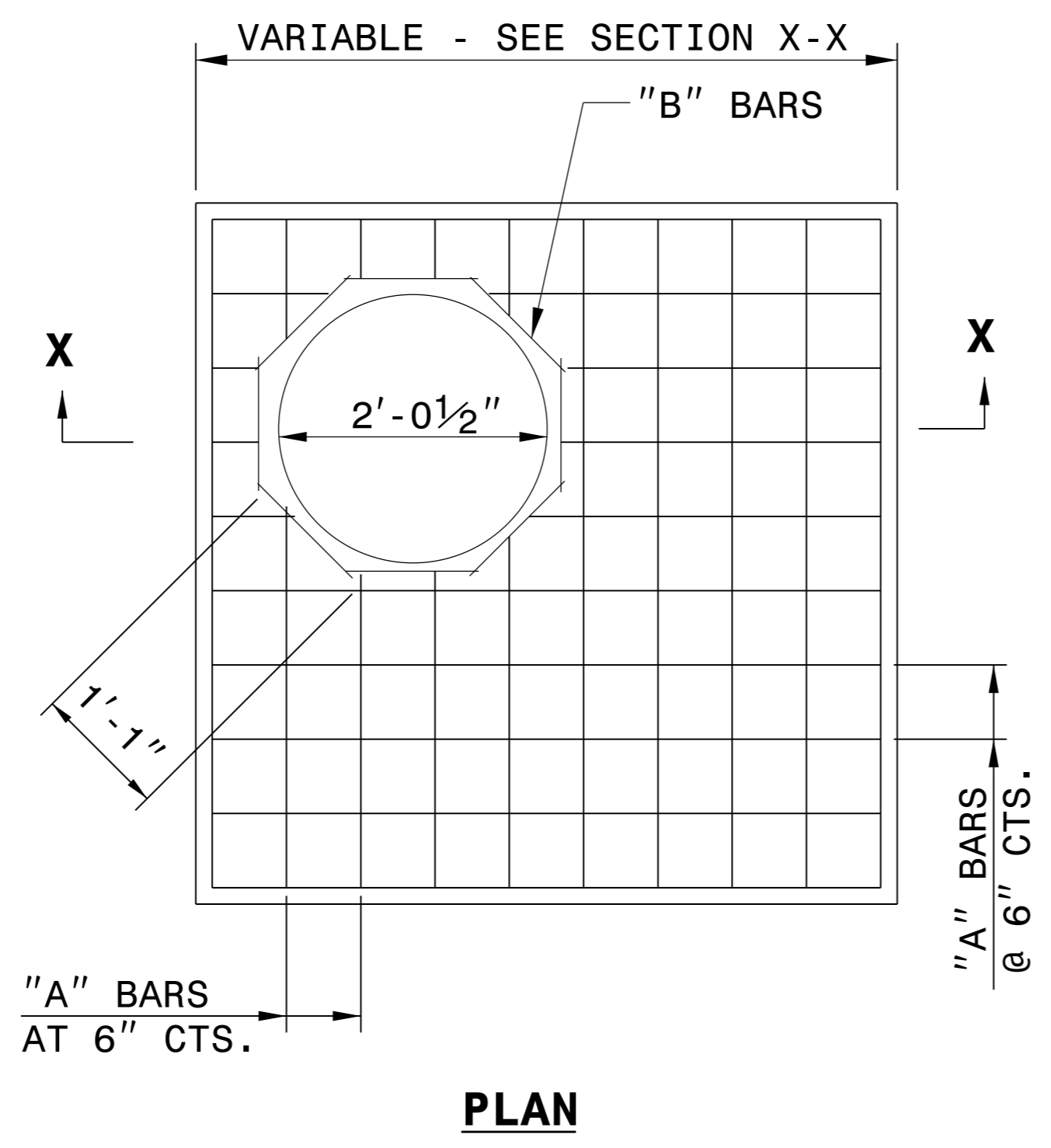
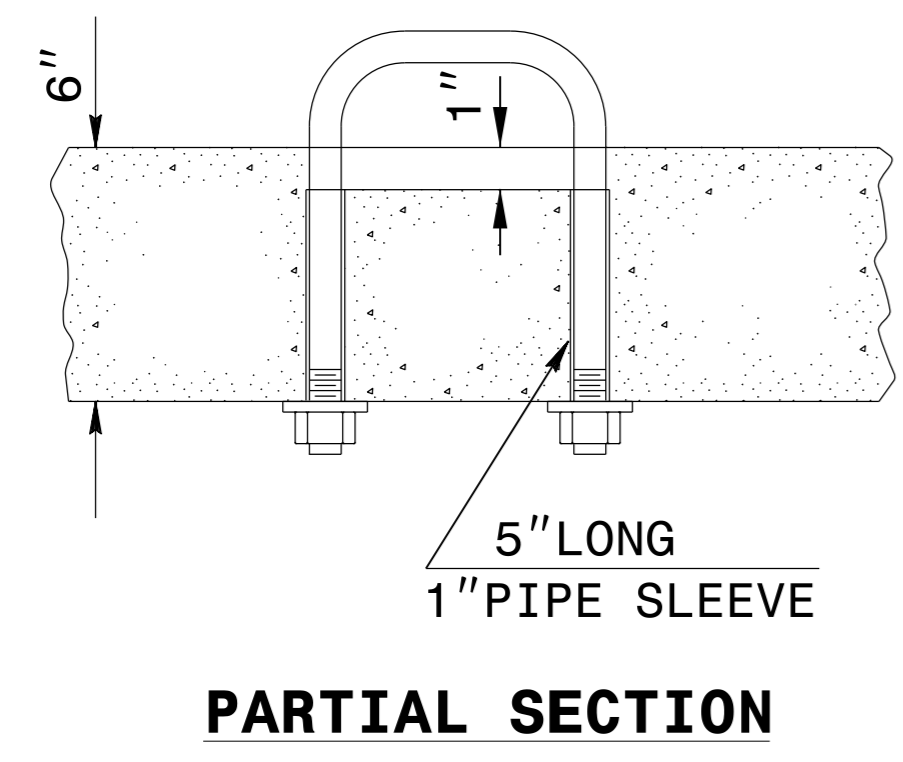
CURB RAMPS
Median or Turn Lane Islands

ORIGINAL BY: J.S. HOWERTON DATE: 7/7/11
MODIFIED BY: DATE: _____
CHECKED BY: DATE: _____
FILE SPEC: stds/2012CurbRamp/CurbRampDetails.dgn



8/24/2021

5/14/99
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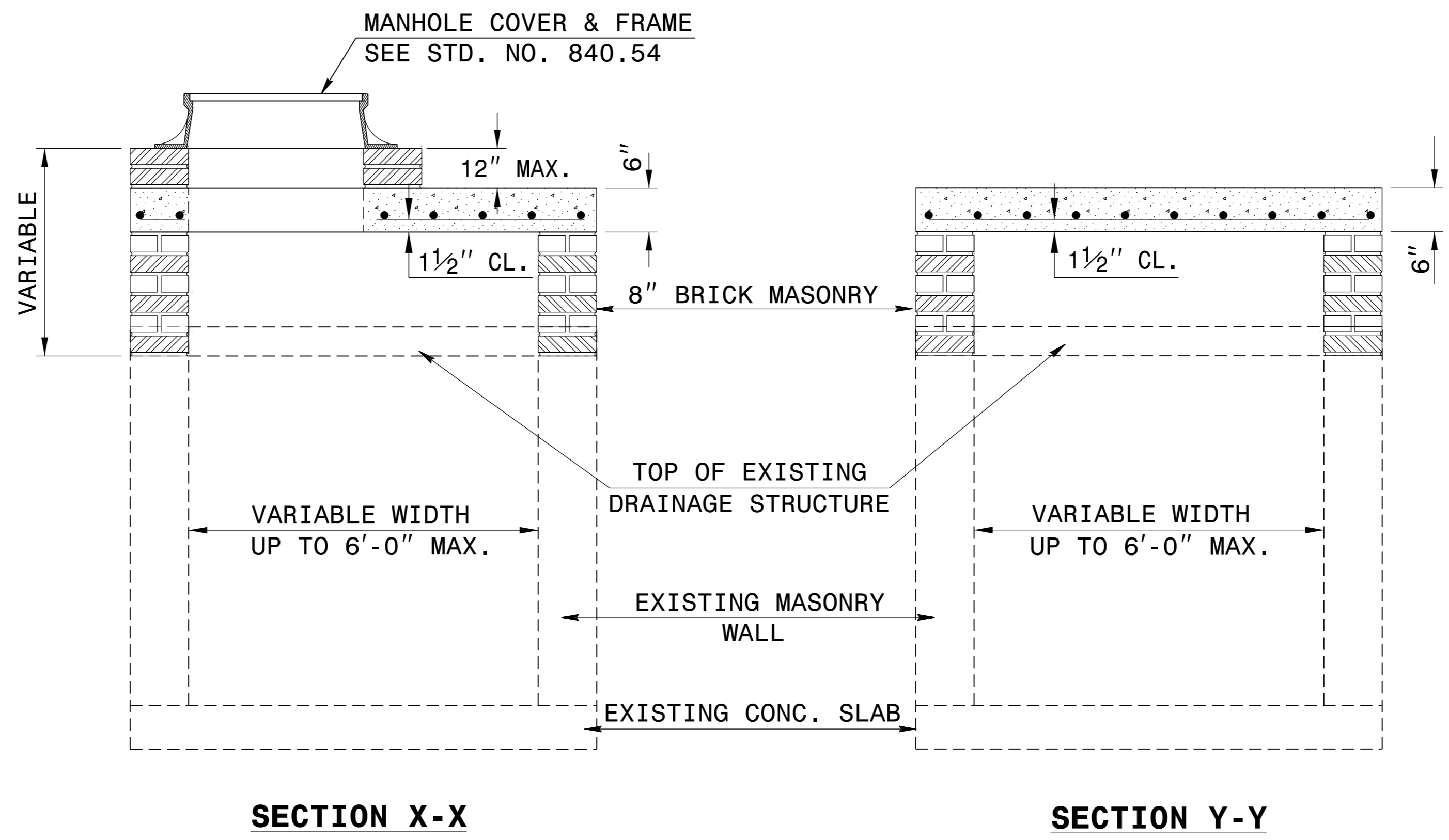
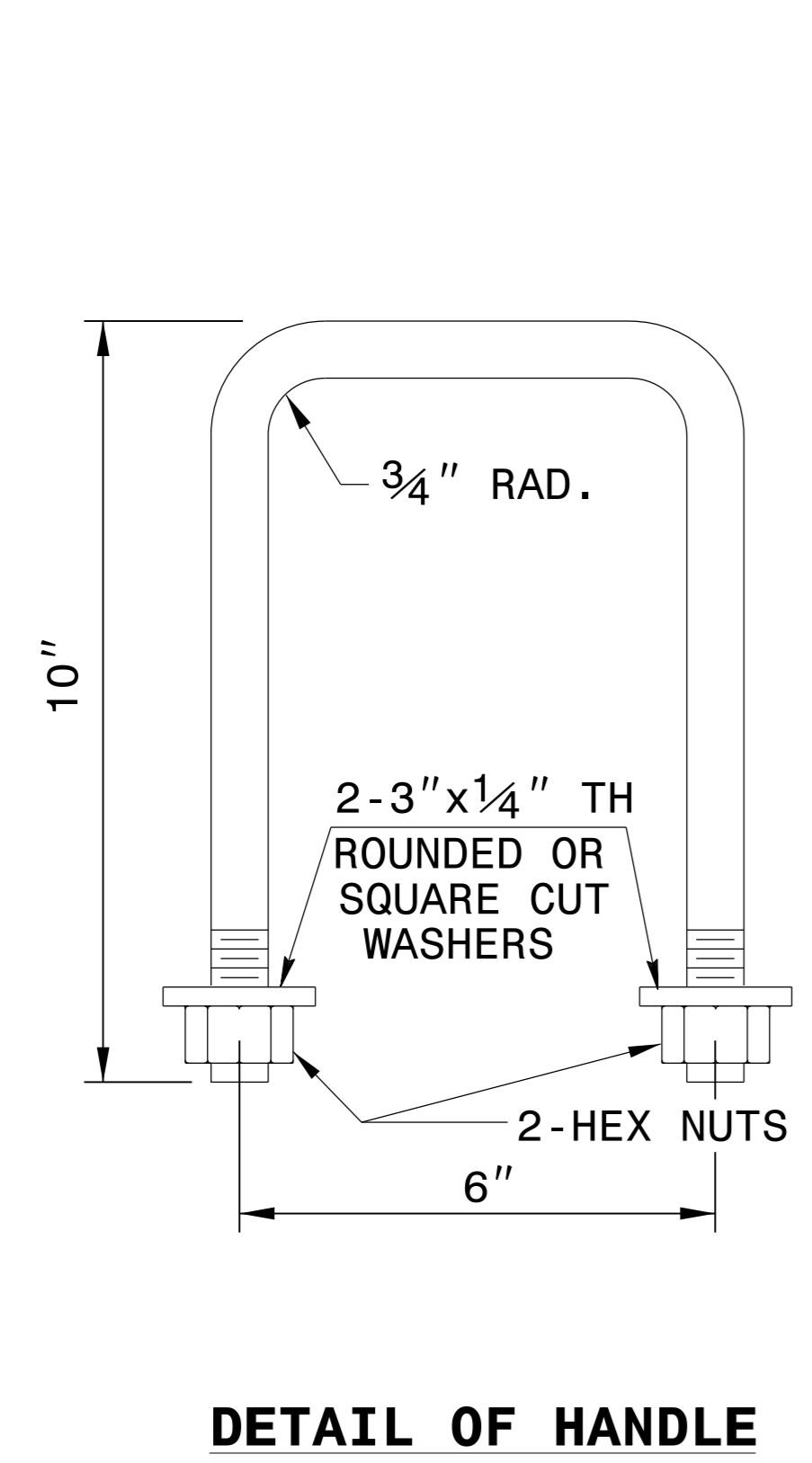


GENERAL NOTES:

CONSTRUCT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.

THE DIMENSIONS FOR THE EXISTING BOXES ARE APPROXIMATE AND MAY VARY SLIGHTLY.

DETAIL INTENDED FOR NON-TRAFFIC BEARING DRAINAGE STRUCTURES.



BILL OF MATERIALS				
REINFORCING STEEL				
CODE	SIZE	QTY.	LENGTH	REINF. STEEL LBS.
A	#4	20	4'-6"	60.12
B	#4	8	1'-1"	5.79
TOTAL				65.91 *
MASONRY				CU YDS
TOP SLAB CONCRETE CLASS "B"				.4326 *
BRICK MASONRY PER FT HT (MIN)				.4111

*** NOTE:**
 QUANTITIES BASED ON 3'-6" X 3'-6" DRAINAGE STRUCTURE. ADJUST QUANTITIES FOR LARGER STRUCTURES AND MANHOLE CONSTRUCTION.



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

DETAIL TO CONVERT EXISTING DI, CB, OTCB or GI TO JUNCTION BOX (MANHOLE OPTIONAL)

ORIGINAL BY: T.S.S. DATE: NOV. 1997
 MODIFIED BY: T.S.S. DATE: FEB. 2000
 CHECKED BY: DATE:
 FILE SPEC.: ds174:/usr/details/stand/boxtojb.dgn

8/24/2021

EXPRESSWAY GUTTER SUMMARY

LINE	STATION	STATION	SIDE	LENGTH
RPA	10+00.00	22+74.84	RT	1274.8
RPA / Y1	22+74.84	19+33.54	RT / RT	176.9
RPA	18+00.00	23+10.89	LT	510.9
L	75+06.28	75+78.00	LT	71.7
RPB	17+00.00	22+59.00	RT	559.0
RPB	12+30.00	22+59.00	LT	1029.0
L / RPC	41+05.00	12+00.00	RT	443.0
RPC	16+50.00	26+44.14	LT	994.1
RPC	14+00.00	26+24.47	RT	1224.5
RPC / Y1	26+24.47	14+82.33	RT / LT	154.1
RPD	16+24.00	22+38.61	RT	614.6
TOTAL:				7,052.6
SAY:				7,060

4" CONCRETE SIDEWALK

LINE	STATION	STATION	SIDE	SQUARE YDS.
Y1	10+97.00	16+30.00	RT	315.8
Y1	16+52.00	17+97.00	RT	91.2
Y1	18+37.00	21+89.00	RT	229.2
Y1 / Y2	26+98.00	14+00.00	RT / LT	450.8
Y2	14+41.00	16+28.00	LT	98.9
Y3 / Y1	31+56.00	122+97.00	LT	131.7
TOTAL:				1,317.6
SAY:				1,320

SHOULDER BERM GUTTER SUMMARY

LINE	STATION	STATION	SIDE	LENGTH
RPD-	11+20.67	14+13.57	RT	292.9
TOTAL:				292.9
SAY:				300

MODIFIED VALLEY GUTTER SUMMARY

LINE	STATION	Station	SIDE	LENGTH
C1	10+00.00	12+63.89	RT	264
C2	10+00.00	15+80.54	RT	581
C3	10+00.00	12+63.89	RT	264
TOTAL:				1,109
SAY:				1,110

SUMMARY OF SUBSURFACE DRAINAGE

LINE	Station To Station	Drain Type* UD/BD/SD	LF
-C1-	10+00 To 11+31	UD	125
-C2-	10+00 To 15+80	UD	550
-C3-	10+00 To 11+31	UD	125
TOTAL			800

*UD = Underdrain
 *BD = Blind Drain
 *SD = Subsurface Drain

2'-6" CURB AND GUTTER SUMMARY

LINE	STATION	STATION	SIDE	LENGTH
Y1	10+99.00	14+82.33	LT	383
Y1	18+78.10	20+96.49	LT	218
Y1	23+10.19	26+98.47	LT	388
Y1	10+97.00	15+34.87	RT	438
Y1	10+97.00	15+34.87	RT	438
Y1/RPD	15+34.87	22+59.94	RT/LT	158
Y1/Y2	21+08.37	11+07.01	RT	137
Y1	23+24.06	26+98.47	RT	374
Y2/Y1	11+01.96	23+24.06	LT/RT	140
Y2	11+01.96	13+80.41	LT	278
Y2	13+80.41	14+10.46	LT	52
Y2	14+32.16	14+62.11	LT	52
Y2	14+62.11	16+06.89	LT	145
Y2	16+06.89	16+38.73	LT	56
Y2	16+50.51	17+06.07	LT	72
Y2	11+07.01	16+97.33	RT	590
Y3	28+40.00	30+12.25	LT	172
Y3	30+60.15	31+14.23	LT	54
Y3	31+55.17	32+60.09	LT	105
Y3/Y1	32+60.09	23+10.19	LT	127
Y3	28+40.00	30+89.46	RT	249
Y3/Y1	28+40.00	20+96.49	RT/LT	300
Y4	15+99.10	24+86.13	LT	887
Y4/Y1	24+86.13	10+99.00	LT	121
Y4	15+99.10	21+42.96	RT	544
Y4SP	10+00.00	14+25.72	RT	426
RPA/C2	23+11.32	12+19.57	LT/RT	33
RPB/Y1	22+59.00	18+78.10	LT	185
RPC/C2	26+44.82	15+14.35	LT/RT	70
RPD	22+16.21	22+59.94	LT	44
RPD/C2	22+38.61	11+04.93	RT	52
C1/Y1	12+31.92	10+97.00	RT	60
C1	10+99.97	12+31.92	LT	132
C1	10+00.00	12+63.89	LT	138
C2	13+99.77	15+14.35	RT	127
C2	11+04.93	12+19.57	LT	127
C2	10+00.00	15+80.54	LT	442
C3	10+00.00	12+63.89	LT	138
TOTAL:				8,453
SAY:				8,460

CHAIN LINK FENCE SUMMARY

LINE	BEGIN STATION	END STATION	LT./RT.	FABRIC LF	LINE POSTS EA	TERMINAL POSTS EA
L	17+00	43+24	LT.	2624	219	5
L / Y3	43+24	24+99	RT.	733	61	5
Y3	24+99	31+14	RT.	616	51	3
Y3 / Y1	31+69	23+69	LT.	124	10	3
Y2	11+00	16+00	RT.	500	42	4
Y2 / L	16+00	82+00	RT.	1462	122	6
L	17+24	29+35	RT.	1211	101	5
L	29+35	35+84	RT.	649	54	3
L	35+84	38+26	RT.	242	20	2
L	17+24	29+35	RT.	1211	101	5
L	29+35	35+84	RT.	649	54	3
L	35+84	38+26	RT.	242	20	2
L	38+26	45+04	RT.	679	56	3
L / RPC	45+04	17+41	RT.	584	49	3
RPC	17+41	20+38	RT.	297	24	2
RPC	20+38	23+28	RT.	290	24	3
RPC / Y1	23+28	14+48	RT.	281	23	2
RPD	11+22	13+75	LT.	354	30	8
RPD / Y1	13+75	15+78	LT.	925	77	5
Y1	14+48	15+78	RT.	130	11	2
RPD / Y1	11+22	83+50	RT.	981	82	4
TOTAL:				14,783	1,231.0	78
SAY:				14,790	1,240	80

SUMMARY OF CONCRETE BARRIER
 IN LINEAR FEET AND EACH

SURVEY LINE	BEGIN STATION	END STATION	LOCATION	SINGLE FACED CONCRETE BARRIER (LF)	DOUBLE FACED CONC. BARRIER TYPE III (LF)	DOUBLE FACED CONC. BARRIER TYPE IV (LF)	MEDIAN HAZARD PROTECTION TRANSITION (EA)	CONCRETE BARRIER WITH MOMENT SLAB (LF)
-L-	37+95.00	43+25.00	MEDIAN		530			
-L-	43+25.00	58+25.00	MEDIAN			1500		
-L-	58+25.00	59+50.00	MEDIAN				1	
-L-	59+50.00	59+94.00	MEDIAN LT	44				
-L-	59+50.00	59+90.00	MEDIAN RT	40				
-L-	62+14.00	62+54.25	MEDIAN LT	40				
-L-	62+11.00	62+54.25	MEDIAN RT	43				
-L-	62+54.25	63+79.25	MEDIAN				1	
-L-	63+79.25	81+50.00	MEDIAN		1771			
-L-	75+78.00	80+00.00	LT	422				
-L-	50+00.00	52+00.00	RT		200			
-L-	53+50.00	54+01.00	LT		51			
-L-	66+14.00	67+14.00	LT		100			
-L-	67+97.00	69+42.00	RT		145			
-L-	54+01.00	59+79.00	LT					578
-L-	62+50.00	67+14.00	LT					464
-L-	52+00.00	59+55.00	RT					755
-L-	62+25.00	67+97.00	RT					571
TOTAL:				590	2797	1500	2	2368
SAY:				600	2800	1500	2	2400

PAVEMENT REMOVAL & BREAKUP SUMMARY
 IN SQUARE YARDS

SURVEY LINE	STATION	STATION	LOCATION	ASPHALT REMOVAL	ASPHALT BREAKUP
L	55+00	61+85	LT		2283
L	55+00	61+85	RT		2283
L	62+20	65+00	LT		933
L	62+20	65+00	RT		933
RPA	INTERCHANGE	QUAD A	RT	1889	
RPB	INTERCHANGE	QUAD B	LT	1808	
RPC	INTERCHANGE	QUAD C	RT	612	
EY1			RT OF L		636
EY2			LT OF L		1797
EY3A			LT OF L		2069
DET	13+75	17+50	CL	1083	
DET2	31+49	35+60	CL	46	
DET2	35+73	44+39	CL	2950	
DET2	44+39	45+98	CL	601	
DET2	45+92	54+06	CL	935	
DET3	10+12	11+25	CL	377	
DET4	10+22	12+50	CL	1013	
DETA & DETC	11+35 DETC	13+55 DETC	CL	416	
DETB & DETD	10+00 DETB	14+70 DETD	CL	888	
DETE	10+70	12+75	CL	342	
TOTAL:				17,463	6,432
SAY:				17,470	6,440

CONCRETE CURB RAMPS

LINE	STATION	SIDE	# OF RAMPS
RPD	22+88.00	RT & LT	2
RPA	23+25.00	RT & LT	2
Y2	10+85.00	RT & LT	2
Y1	22+97.00	RT & LT	2
Y2	13+97.00	LT	1
Y2	14+42.00	LT	1
Y2	16+25.00	LT	1
TOTAL:			11
SAY:			11

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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK

IN CUBIC YARDS

STATION	STATION	UNCL. EXCAV.	EMBANK	BORROW	WASTE
PHASE 1		SUMMARY 1			
-DET- 10+00	-DET- 19+36.68	500	708	208	
-DET2- 18+50	-DET2- 40+00	3,086	193		2,893
-DET3- 10+00	-DET3- 12+25	202	32		170
-DETB- 10+00	-DETB- 14+19.48	88	72		16
-DETE- 10+00	-DETB- 14+81.11	43	140	97	
SUBTOTAL 1		3,919	1,145	305	3,079
PHASE 1A					
-Y1- 10+00	-Y1- 16+50	35,553	1,523		34,030
-Y4- 10+00	-Y4- 25+24.51	14,658	29,077	14,419	70
-DET4- 10+00	-DET4- 12+25	75	198	123	
-DET2- 40+00	-DET2- 54+17.40	1,326	5,738	4,412	
SUBTOTAL 2		51,612	36,536	18,954	34,100
PHASE 1		TOTAL			
		55,531	37,681	19,259	37,179
PHASE 2		SUMMARY 1 - RIGHT			
-L- 12+70 RIGHT	-L- 37+00 RIGHT	169	128		41
SUBTOTAL 1		169	128		41
-L- 37+00 RIGHT	59+85.01 BRIDGE	28,184	9,443		18,741
-RPC- 10+00	-RPC- 26+78.72	11,239	1,052		10,187
SUBTOTAL 2		39,423	10,495		28,928
-L- 62+07.57 BRIDGE	-L- 84+60 RIGHT	3,683	2,303		1,380
-RPD- 10+00	23+07.13	15,738	8,426		7,312
SUBTOTAL 3		19,421	10,729		8,692
PHASE 2		TOTAL - RIGHT			
		59,013	21,353		37,661
PHASE 2		SUMMARY 2 - LEFT			
-L- 12+70 LEFT	-L- 37+00 LEFT	230	85		145
SUBTOTAL 1		230	85		145
-L- 37+00 LEFT	59+98.25 BRIDGE	10,341	5,915		4,426
-Y1- 16+50	-Y1- 17+50	13,671			13,671
-DET2- 35+50	-DET2- 45+50	9,556			9,556
SUBTOTAL 2		33,568	5,915		27,653
PHASE 2		TOTAL - LEFT			
		33,798	6,000		27,798
PHASE 2		TOTAL			
		92,811	27,353		65,459

STATION	STATION	UNCL. EXCAV.	EMBANK	BORROW	WASTE
PHASE 3		SUMMARY			
-L- 62+20.35 BRIDGE	-L- 84+60 LEFT	2,030	1,879		235
-RPA- 10+00	-RPA- 23+43.46	9,098	2,874		6,224
-RPB- 10+00	-RPB- 23+48.81	2,069	251		1,818
-Y1- 17+50	-Y1- 26+98.47	35,405	1		35,404
-Y2- 10+60	-Y2- 21+00	3,254	805		2,449
-Y3- 28+00	-Y3- 32+99.53	6,167	32		6,135
-DET- 10+00 REMOVE	-DET- 19+36.68	590	600	10	
-DET4- 10+00 REMOVE	-DET4- 12+25	165	90		75
-DET3- 10+00 REMOVE	-DET3- 12+25	27	242	215	
-DETB- 10+00 REMOVE	-DETB- 14+19.48	60	106	46	
-DETE- 10+00 REMOVE	-DETB- 14+81.11	117	52		65
PHASE 3		TOTAL			
		58,982	6,932	271	52,405
PROJECT		SUBTOTAL			
		207,324	71,966	19,531	155,043
LOSS DUE TO CLEARING & GRUBBING		-5,100			-5,100
WASTE IN LIEU OF BORROW				-19,531	-19,531
PROJECT TOTALS:		202,224	71,966		130,411
GRAND TOTALS:		202,224	71,966		130,411
SAY:		202,300			

EST. SHALLOW UNDERCUT BY STATIONS = 800 CUBIC YARDS
 CONTINGENCY SHALLOW UNDERCUT = 2,000 CUBIC YARDS
 CONTINGENCY UNDERCUT FOR EMBANKMENT STABILITY BY STATION = 725 CUBIC YARDS
 CONTINGENCY UNDERCUT FOR EMBANKMENT STABILITY = 1,000 CUBIC YARDS
 CONTINGENCY UNDERCUT FOR SUBGRADE STABILITY = 1,000 CUBIC YARDS
 EST. CLASS IV SUBGRADE STABILIZATION BY STATIONS = 2,450 TONS
 CONTINGENCY CLASS IV SUBGRADE STABILIZATION = 5,200 TONS
 SELECT GRANULAR MATERIAL BY STATIONS = 725 CUBIC YARDS
 CONTINGENCY SELECT GRANULAR MATERIAL = 2,000 CUBIC YARDS

SHOULDER BORROW = 2,700 CUBIC YARDS
 PAVEMENT VOLUME STRUCTURE = 12,500 CUBIC YARDS
 EST. DDE = 920 CUBIC YARDS

*NOTE: UNCLASSIFIED EXCAVATION - ACCEPTABLE, BUT NOT TO BE USED IN TOP 3' OF EMBANKMENT BENEATH PAVEMENT SECTION FROM -L- 56+25 TO 56+75 (623 CY) & -L- 62+25 TO 62+75 (1,242 CY) & -L- 64+25 TO 64+75 (13 CY) & -L- 80+25 TO 84+75 (683 CY) & -Y1- 11+75 TO 14+75 (8,491 CY) & -Y1- 20+25 TO 27+25 (15,482 CY)

PC01MVKCC

COMPUTED BY: SB DATE: 05/20/2021
CHECKED BY: DM DATE: 05/20/21

PROJECT NO. R-5737 SHEET NO. 3D-8

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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 54 INCHES & OVER)

Table with columns for LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, R. C. PIPE CLASS III, ENDWALLS, REINFORCED ENDWALLS, DRAINAGE STRUCTURE, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, CONCRETE TRANSITIONAL SECTION, and REMARKS. Includes data for RPD 13+39 and RPD 13+47.

SHEET TOTALS: 104, 7.600, 1, 1, 212, 2.8506
PROJECT TOTALS: 104, 7.600, 1, 1, 212, 2.8506

ABBREVIATIONS: C.A.A. CORRUGATED ALUMINIUM ALLOY, C.B. CATCH BASIN, C.S. CORRUGATED STEEL, D.I. DROP INLET, GDI GRATED DROP INLET, H.D.P.E. HIGH DENSITY POLYETHYLENE, J.B. JUNCTION BOX, M.H. MANHOLE, NS NARROW SLOT, P.V.C. POLYVINYL CHLORIDE, R.C. REINFORCED CONCRETE, T.B.D.I. TRAFFIC BEARING DROP INLET, T.B.J.B. TRAFFIC BEARING JUNCTION BOX, WS WIDE SLOT

SUMMARY OF SUBSURFACE DRAINAGE			
LINE	Station To Station	Drain Type* UD/BD/SD	LF
-Y1-	10+50.00 To 20+00 - LT	SD	1900
	CONTINGENCY	SD	3000
		TOTAL	4900

*UD = Underdrain
 *BD = Blind Drain
 *SD = Subsurface Drain

SUMMARY OF GEOTEXTILE FOR PAVEMENT STABILIZATION				
LINE	Station	Station	Geotextile for Pavement Stabilization SY	Class IV Subgrade Stabilization TONS
-RPD- LT	11+28	14+25	1386	
-RPD- CL	20+19	21+25	436	
-Y4- CL	18+00	20+75	1131	
		CONTINGENCY		1300
		TOTALS	2953	1300*

*Total tons of "Class IV Subgrade Stabilization" is only the estimated quantity for pavement stabilization and may only represent a portion of the subgrade stabilization quantity shown in the Item Sheets of the Proposal.

SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION										
LINE	Station	Station	Aggregate Type* ASU(1/2)/ AST	Aggregate Thickness INCHES [8" for ASU(2)]	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Soil Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS	Select Granualr Material CY
-L- (LT)	55+25.00	56+25.00	ASU		190	360	545			
-L- (LT & RT)	70+25.00	73+75.00	ASU		520	1925	2925			
-Y1- (LT & RT)	17+25.00	17+75.00	ASU		90	165	245			
-Y4-	19+25.00	19+75.00								725
		CONTINGENCY	AST	3	2000	3900	8000	500		2000
			TOTAL CY/TONS/SY:		2800	6350**	11715**	500	0	2725

*ASU(1/2) = Aggregate Subgrade (Type 1 or 2)
 *AST = Aggregate Stabilization

**Total tons of "Class IV Subgrade Stabilization" and total square yards of "Geotextile for Soil Stabilization" are only the estimated quantities for ASU(1/2)/AST and may only represent a portion of the subgrade stabilization and geotextile quantities shown in the Item Sheets of the Proposal.

7/29/2021 5:52:27 PM PSH_30-1.dgn



2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.883.9329
NC CCA No. F-0029

PROJECT REFERENCE NO.	SHEET NO.
R-5737	4

R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	SEAL

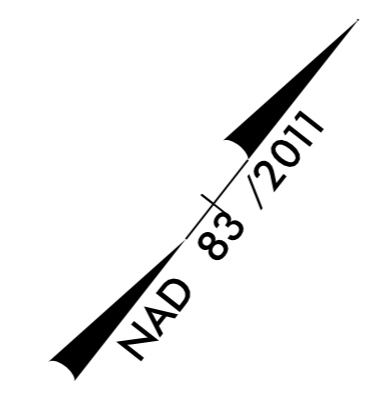
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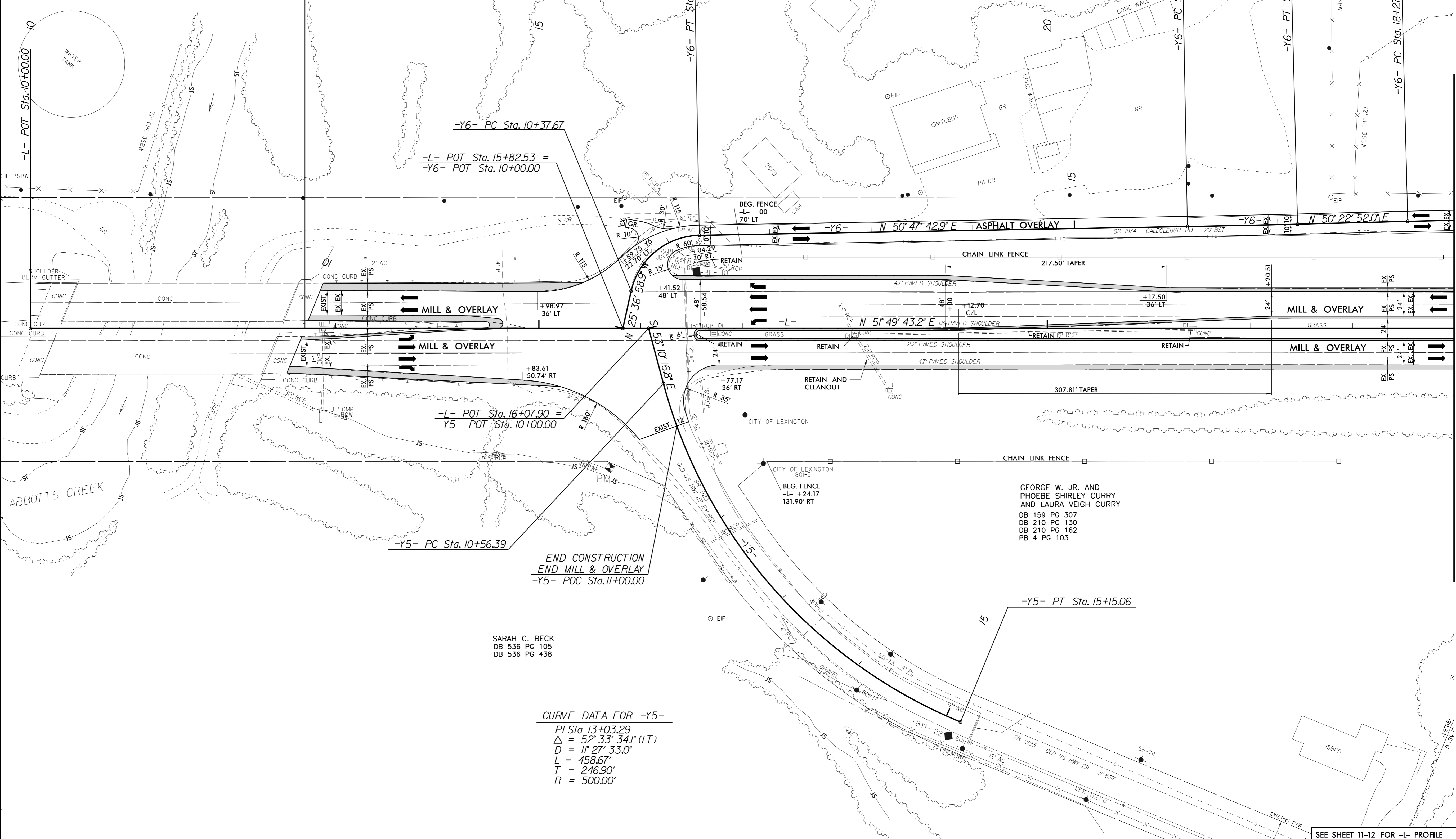
**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

CURVE DATA FOR -Y6-

PI Sta 10+92.76	PI Sta 16+65.25
$\Delta = 76^\circ 24' 41.8''$ (RT)	$\Delta = 0^\circ 24' 50.8''$ (LT)
$D = 81^\circ 51' 04.0''$	$D = 0^\circ 22' 55.1''$
$L = 93.35'$	$L = 108.42'$
$T = 55.10'$	$T = 54.21'$
$R = 70.00'$	$R = 15,000.00'$
Se = EXIST	Se = EXIST



BEGIN TIP PROJECT R-5737
BEGIN MILL & OVERLAY
-L- POT Sta.12+70.00



-Y6- PC Sta.10+37.67

-L- POT Sta.15+82.53 =
-Y6- POT Sta.10+00.00

-L- POT Sta.16+07.90 =
-Y5- POT Sta.10+00.00

-Y5- PC Sta.10+56.39

END CONSTRUCTION
END MILL & OVERLAY
-Y5- POC Sta.11+00.00

SARAH C. BECK
DB 536 PG 105
DB 536 PG 438

CURVE DATA FOR -Y5-

PI Sta 13+03.29
$\Delta = 52^\circ 33' 34.1''$ (LT)
$D = 11^\circ 27' 33.0''$
$L = 458.67'$
$T = 246.90'$
$R = 500.00'$

MATCH TO SHEET 5 - -L- STA. 24+00.00

SEE SHEET 11-12 FOR -L- PROFILE
SEE SHEET 24 FOR -Y6- PROFILE



2410 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.883.9329
NC CCA No. F-0029

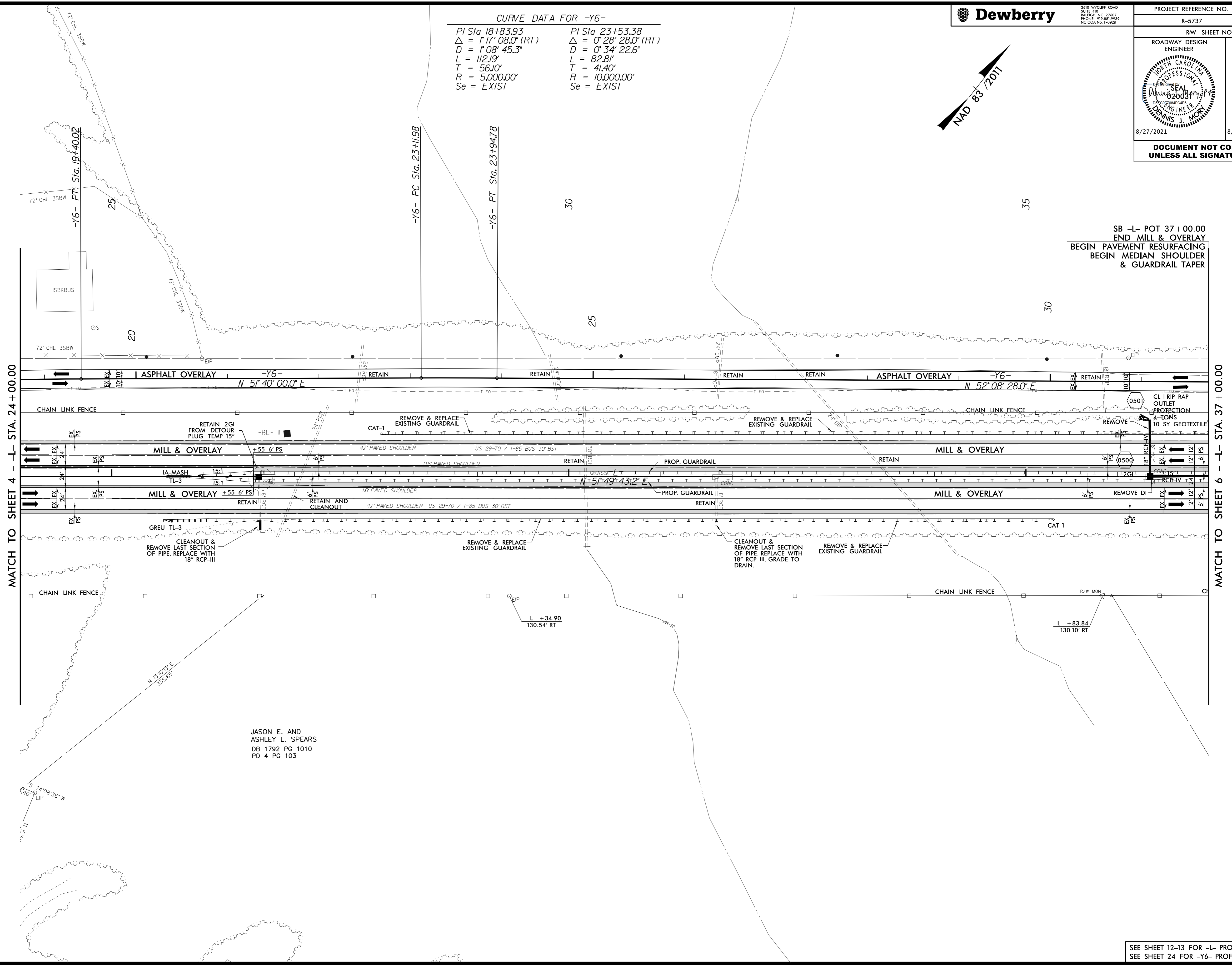
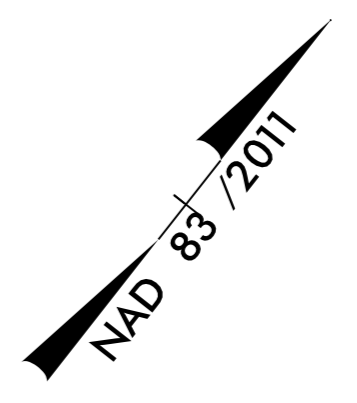
PROJECT REFERENCE NO.	SHEET NO.
R-5737	5

RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
8/27/2021	8/27/2021

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

CURVE DATA FOR -Y6-

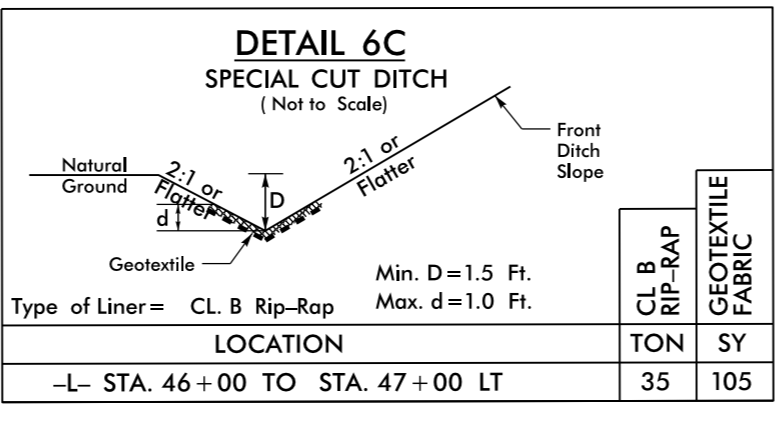
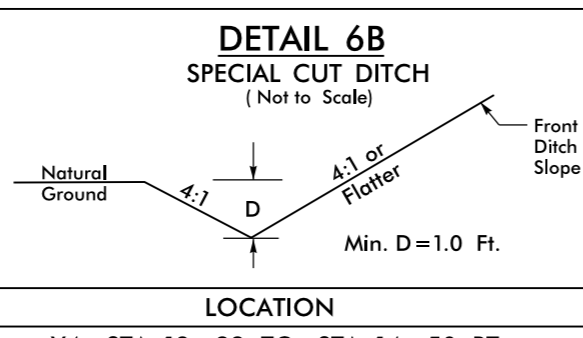
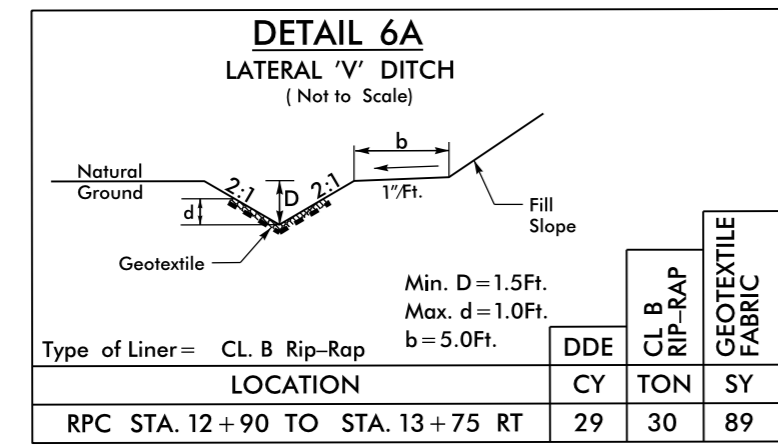
PI Sta 18+83.93	PI Sta 23+53.38
$\Delta = 1^{\circ}17'08.0''$ (RT)	$\Delta = 0^{\circ}28'28.0''$ (RT)
D = 1'08'45.3"	D = 0'34'22.6"
L = 112.19'	L = 82.81'
T = 56.10'	T = 41.40'
R = 5,000.00'	R = 10,000.00'
Se = EXIST	Se = EXIST



JASON E. AND
ASHLEY L. SPEARS
DB 1792 PG 1010
PD 4 PG 103

7/29/2021 5:38:36 PM
C:\Users\rdy\OneDrive\Documents\RDY_PSH05.dgn

SEE SHEET 12-13 FOR -L- PROFILE
SEE SHEET 24 FOR -Y6- PROFILE

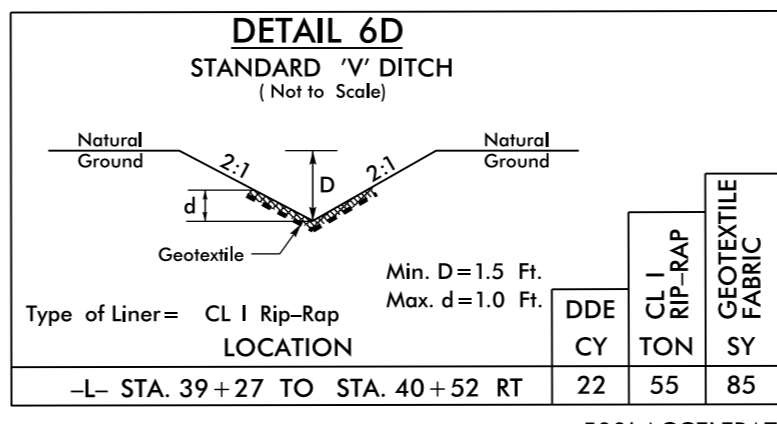


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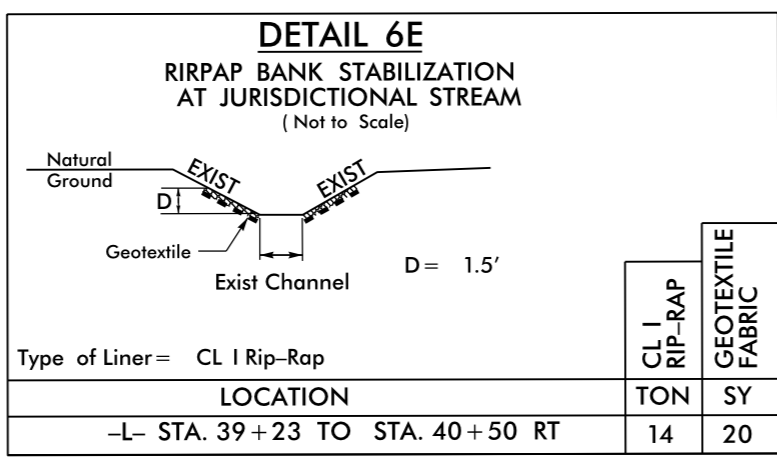
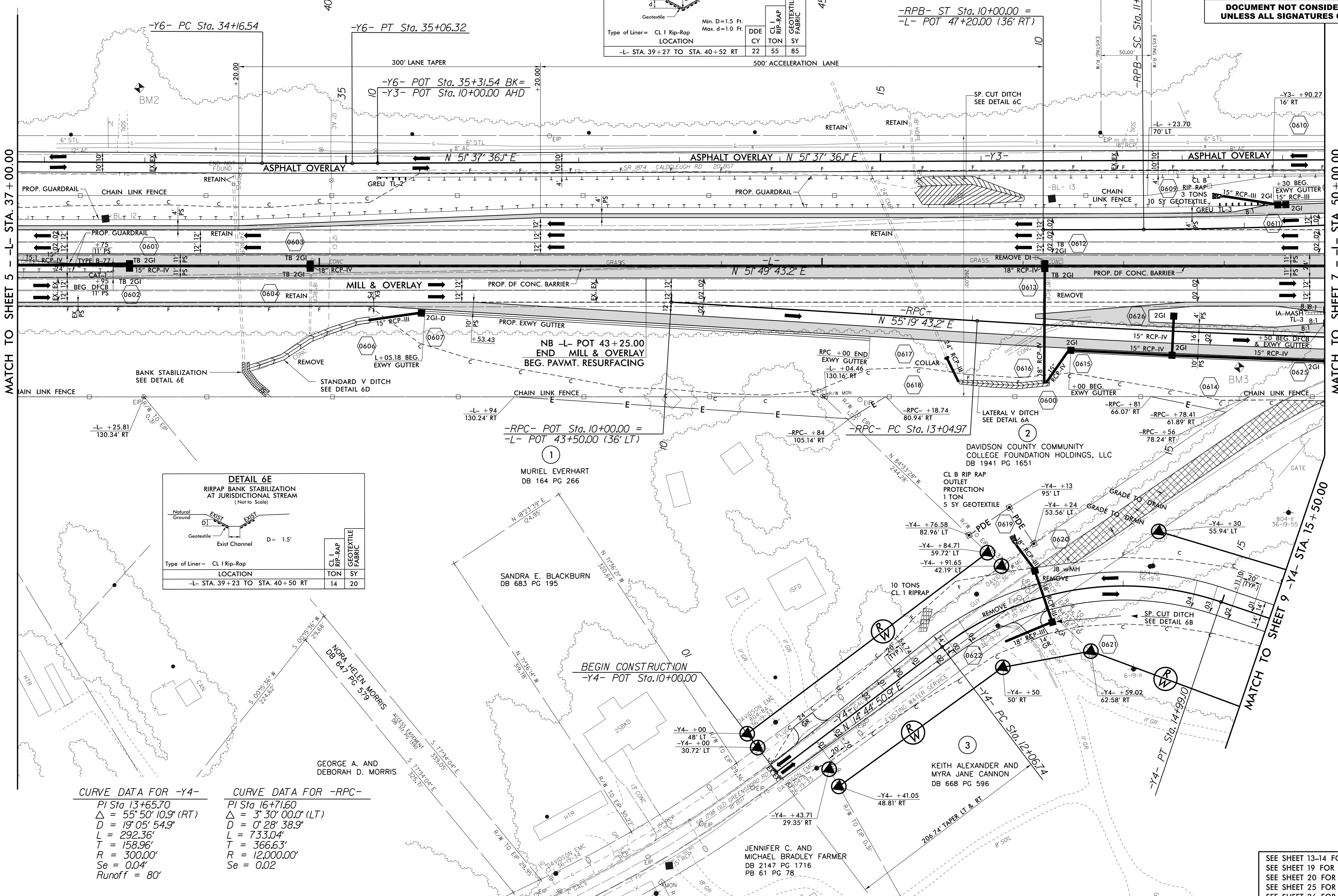
PI Sta 34+61.43
 $\Delta = 0^\circ 30' 51.9" (LT)$
 $D = 0^\circ 34' 22.6"$
 $L = 89.78'$
 $T = 44.89'$
 $R = 10,000.00'$
 $Se = EXIST$

CURVE DATA FOR -RPB-

PIs Sta 10+66.67
 $\Theta_s = 0^\circ 28' 41.7"$
 $L_s = 100.00'$
 $LT = 66.67'$
 $ST = 33.33'$



-RPB- ST Sta. 10+00.00 =
 -L- POT 47+20.00 (36' RT)



CURVE DATA FOR -Y4-

PI Sta 13+65.70
 $\Delta = 55^\circ 50' 10.9" (RT)$
 $D = 19^\circ 05' 54.9"$
 $L = 292.36'$
 $T = 158.96'$
 $R = 300.00'$
 $Se = 0.04'$
 $Runoff = 80'$

CURVE DATA FOR -RPC-

PI Sta 16+71.60
 $\Delta = 3^\circ 30' 00.0" (LT)$
 $D = 0^\circ 28' 38.9"$
 $L = 733.04'$
 $T = 366.63'$
 $R = 12,000.00'$
 $Se = 0.02$

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL, DENNIS J. MORRIS, 02003974, 8/27/2021

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL, STEVEN M. BONDINO, 1780, 8/27/2021

7/29/2021 5:41:12 PM -RDY_PSH06.dgn

SEE SHEET 13-14 FOR -L- PROFILE
 SEE SHEET 19 FOR -RPB- PROFILE
 SEE SHEET 20 FOR -RPC- PROFILE
 SEE SHEET 25 FOR -Y3- PROFILE
 SEE SHEET 26 FOR -Y4- PROFILE

Dewberry

PROJECT REFERENCE NO. R-5737 SHEET NO. 7

ROADWAY DESIGN ENGINEER: [Signature]

HYDRAULICS ENGINEER: [Signature]

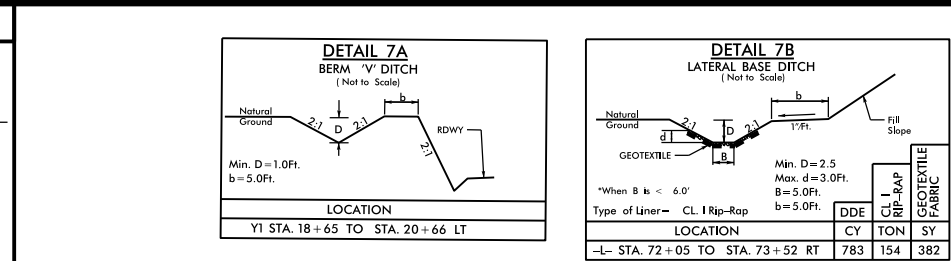
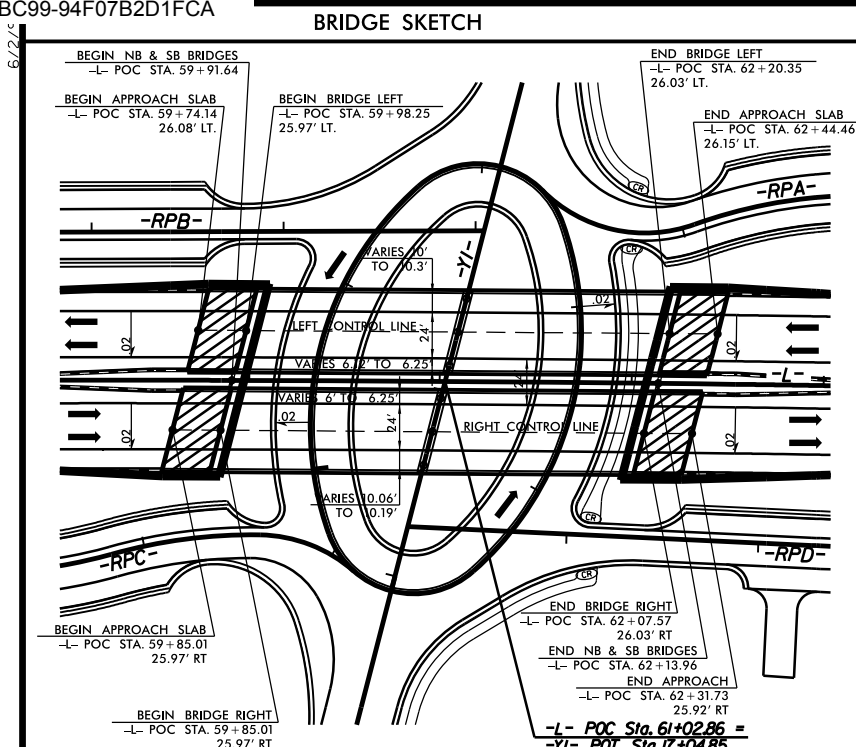
DATE: 8/27/2021

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TRAFFIC DATA

B	71	A
193	24	163
24	1-85 BUS	182
	1-2	
	1-2	

OLD GREENSBORO RD. SR. 193
I-85 BUS
VPD IN 100s

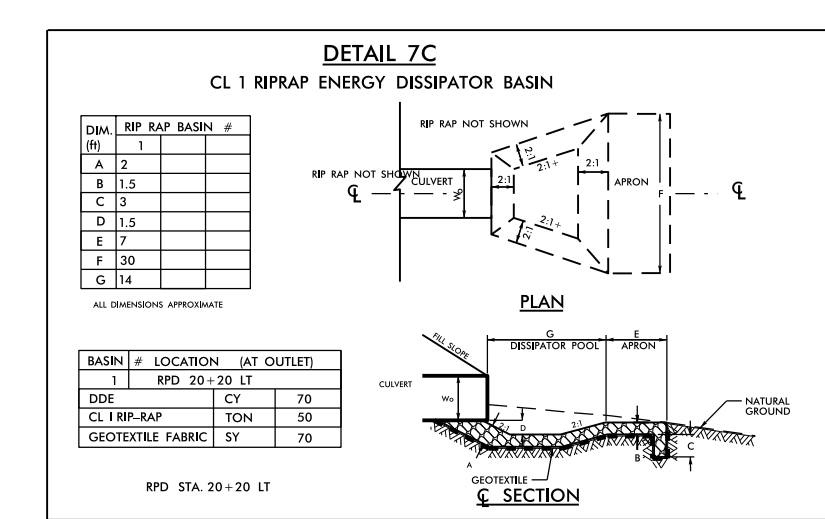


CURVE DATA FOR -Y1-

PI Sta 20+08.47 Δ = 18° 05' 03" (RT) D = 11' 27' 33.0" L = 157.96' T = 79.65' R = 500.00' Se = NC	PI Sta 25+62.42 Δ = 2° 44' 06" (LT) D = 1' 00' 18.7" L = 272.15' T = 136.07' R = 5700.00' Se = NC	PI Sta 17+40.88 Δ = 23° 00' 59.9" (LT) D = 4' 24' 26.5" L = 522.23' T = 264.68' R = 1300.00' Se = EXIST.	PI Sta 23+67.78 Δ = 6° 24' 03" (RT) D = 1' 38' 13.3" L = 390.31' T = 195.71' R = 3500.00' Se = EXIST.
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CURVE DATA FOR -RPA-

PI Sta 10+40.00 Δ = 0° 37' 48.3" D = 12' 00" L = 80.00' T = 40.00' Se = 0.00	PI Sta 17+38.97 Δ = 9° 07' 55.2" (LT) D = 7' 39' 13.5" L = 57.78' T = 27.92' R = 496.00' Se = 0.02	PI Sta 20+73.02 Δ = 12° 49' 05.3" (RT) D = 25' 07' 05.2" L = 103.96' T = 55.71' R = 239.00' Se = 0.02	PI Sta 22+13.78 Δ = 35° 32' 25.9" (LT) D = 11' 33' 05.2" L = 165.81' T = 85.51' R = 239.00' Se = 0.02	PI Sta 23+14.69 Δ = 64° 48' 32.1" (RT) D = 75' 23' 21.1" L = 85.97' T = 48.24' R = 76.00' Se = 0.02
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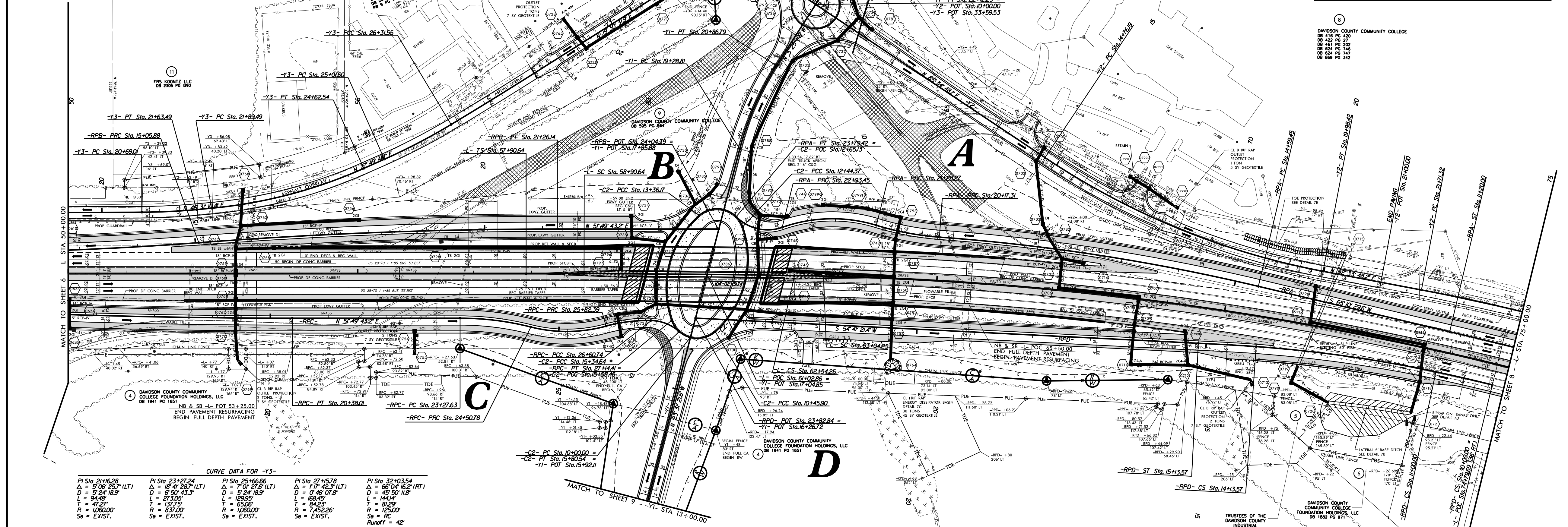


CURVE DATA FOR -RPB-

PI Sta 10+66.57 Δ = 0° 28' 41.7" Ls = 100.00' LT = 66.67' ST = 33.33'	PI Sta 13+03.02 Δ = 5° 52' 56.3" (LT) D = 0° 57' 23.5" L = 405.88' T = 203.29' R = 5990.00' Se = 0.02	PI Sta 18+16.16 Δ = 4° 27' 38.0" (RT) D = 0° 42' 10.9" L = 620.26' T = 310.28' R = 8150.00' Se = 0.02
---	---	---

CURVE DATA FOR -C3-

PI Sta 10+00.00 Δ = 360° 00' 00.0" (LT) D = 136' 25' 06.7" L = 263.90' T = 0.00' R = 42.00'
--



SEE SHEET 14-16 FOR -L- PROFILE
SEE SHEET 18 FOR -RPA- PROFILE
SEE SHEET 19 FOR -RPB- PROFILE
SEE SHEET 20 FOR -RPC- PROFILE
SEE SHEET 21 FOR -RPD- PROFILE
SEE SHEET 22 FOR -C2- PROFILE
SEE SHEET 22 FOR -C3- PROFILE
SEE SHEET 23 FOR -Y1- PROFILE
SEE SHEET 24 FOR -Y2- PROFILE
SEE SHEET 25 FOR -Y3- PROFILE
SEE SHEET 26 FOR -Y4- PROFILE

FOR ROUNDABOUT C2 DETAILS: SEE SHEETS 2B-2 & 2B-5 FOR FINAL PAVEMENT PLAN ELEVATIONS, SUPERELEVATION, AND CONC. ISLAND DETAILS WITH STATION & OFFSETS.

FOR ROUNDABOUT C3 DETAILS: SEE SHEET 2B-3 & 2B-6 FOR FINAL PAVEMENT PLAN ELEVATIONS, SUPERELEVATION, AND CONC. ISLAND DETAILS WITH STATION & OFFSETS.

CURVE DATA FOR -C2-

PI Sta 10+42.97 Δ = 3° 30' 00.0" (LT) D = 12' 54' 21.3" L = 45.90' T = 22.95' R = 47.00'	PI Sta 11+58.74 Δ = 65° 15' 34.6" (LT) D = 34' 18' 31.9" L = 186.47' T = 93.24' R = 167.00'	PI Sta 13+13.93 Δ = 107° 54' 25.3" (LT) D = 121' 54' 21.3" L = 91.80' T = 45.90' R = 47.00'	PI Sta 14+49.01 Δ = 59° 17' 12.7" (LT) D = 34' 18' 31.9" L = 186.47' T = 93.24' R = 167.00'	PI Sta 15+59.60 Δ = 121' 54' 21.3" L = 45.90' T = 22.95' R = 47.00'
---	--	--	--	---

CURVE DATA FOR -RPA-

PI Sta 16+71.60 Δ = 3° 30' 00.0" (LT) D = 0° 28' 38.9" L = 73.50' T = 36.63' Se = 0.02	PI Sta 23+89.52 Δ = 14° 13' 34.1" (RT) D = 1' 13' 05.6" L = 61.90' R = 496.00' Se = 0.02	PI Sta 25+18.10 Δ = 29° 41' 16.8" (LT) D = 2' 33' 26.6" L = 123.75' T = 61.32' Se = 0.02	PI Sta 26+18.84 Δ = 16° 33' 54.5" (RT) D = 2' 08' 32.5" L = 131.61' T = 39.45' Se = 0.02	PI Sta 26+88.75 Δ = 40° 27' 22.5" (RT) D = 7' 23' 21.1" L = 53.68' T = 28.00' R = 76.00' Se = 0.02
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CURVE DATA FOR -L-

PI Sta 58+57.31 Δ = 0° 08' 56.2" Ls = 100.00' LT = 66.67' ST = 33.33'	PI Sta 60+72.45 Δ = 0° 17' 00.0" (RT) D = 0° 17' 45.1" L = 363.87' T = 181.94' R = 25000.00' Se = 0.02 Runoff = 100	PI Sta 62+84.62 Δ = 0° 03' 25.3" Gs = 0° 15' 51.4" Ls = 50.00' LT = 30.36' ST = 15.18'	PI Sta 70+27.17 Δ = 15° 12' 24.7" (RT) D = 1' 03' 25.6" L = 1438.52' T = 723.57' R = 5420.00' Se = 0.03 Runoff = 150	PI Sta 77+82.77 Δ = 0° 18' 03.4" Gs = 1° 14' 44.0" Ls = 100.00' LT = 66.67' ST = 33.33'
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CURVE DATA FOR -RPD-

PI Sta 10+56.69 Δ = 0° 31' 55.5" Gs = 1° 14' 44.0" Ls = 100.00' LT = 66.67' ST = 33.33'	PI Sta 12+57.03 Δ = 7° 48' 41.3" (LT) D = 2° 29' 28.0" L = 313.57' T = 157.03' R = 2300.00' Se = 0.04	PI Sta 14+46.30 Δ = 1° 14' 44.0" Gs = 1° 14' 44.0" Ls = 100.00' LT = 66.67' ST = 33.33'
--	---	--

LEGEND

- 5' MONOLITHIC CONCRETE ISLAND
- 7' CONCRETE TRUCK APRON w/RUMBLE STRIPS
- 7' CONCRETE TRUCK APRON
- 3' CONCRETE ISLAND COVER
- 4" CONCRETE SIDEWALK

GRAPHIC SCALE



50 25 0 50 100

PLANS

LOCATION: CONVERT AT-GRADE INTERSECTION OF OLD GREENSBORO RD. (SR 193) AND I-85 BUS. US 29-70 TO INTERCHANGE

DESIGNED BY: WET
CHECKED BY: DJM

DATE: 8/26/2021

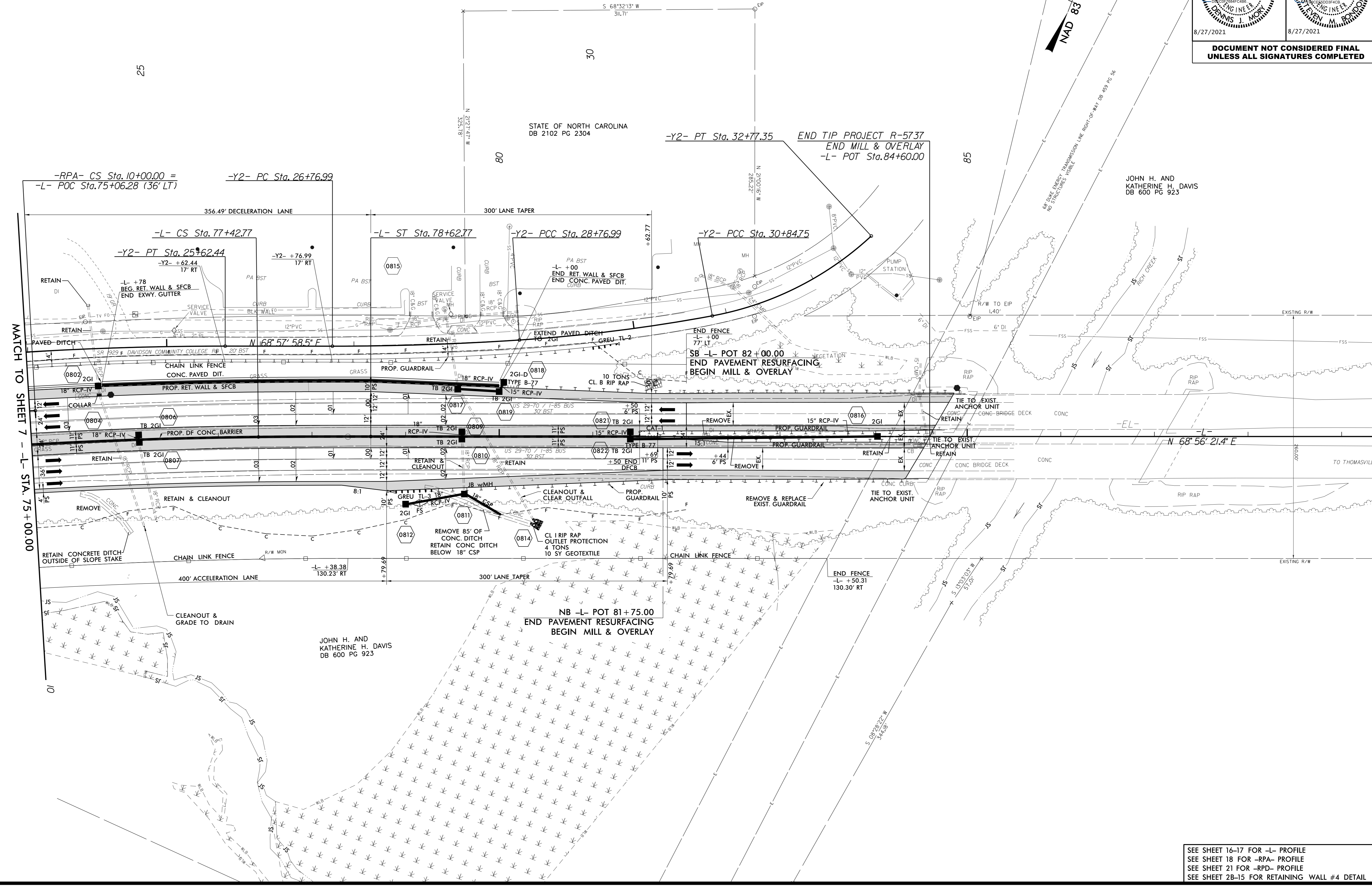
PROJECT REFERENCE NO. R-5737		SHEET NO. 8	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
 DENNIS J. MORI 02003 8/27/2021		 STEVEN M. BONDIANO 02003 8/27/2021	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

CURVE DATA FOR -Y2-

PI Sta 27+77.03 Δ = 3° 49' 11.0" (LT) D = 1' 54' 35.5" L = 200.00' T = 100.04' R = 3,000.00' Se = EXIST.	PI Sta 29+80.99 Δ = 6° 42' 23.1" (LT) D = 3' 13' 40.6" L = 207.76' T = 104.00' R = 1,775.00' Se = EXIST.	PI Sta 31+83.69 Δ = 32° 20' 34.3" (LT) D = 16' 47' 33.9" L = 192.60' T = 98.94' R = 341.9' Se = EXIST.
--	--	--

CURVE DATA FOR -L-

PI Sta 70+27.77 Δ = 15° 12' 24.7" (RT) D = 1' 03' 25.6" L = 1,438.52' T = 723.51' R = 5,420.00' Se = 0.03 Runoff = 150'	PIs Sta 77+82.77 Θs = 0° 38' 03.4" Ls = 120.00' LT = 80.00' ST = 40.00'
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5/14/19
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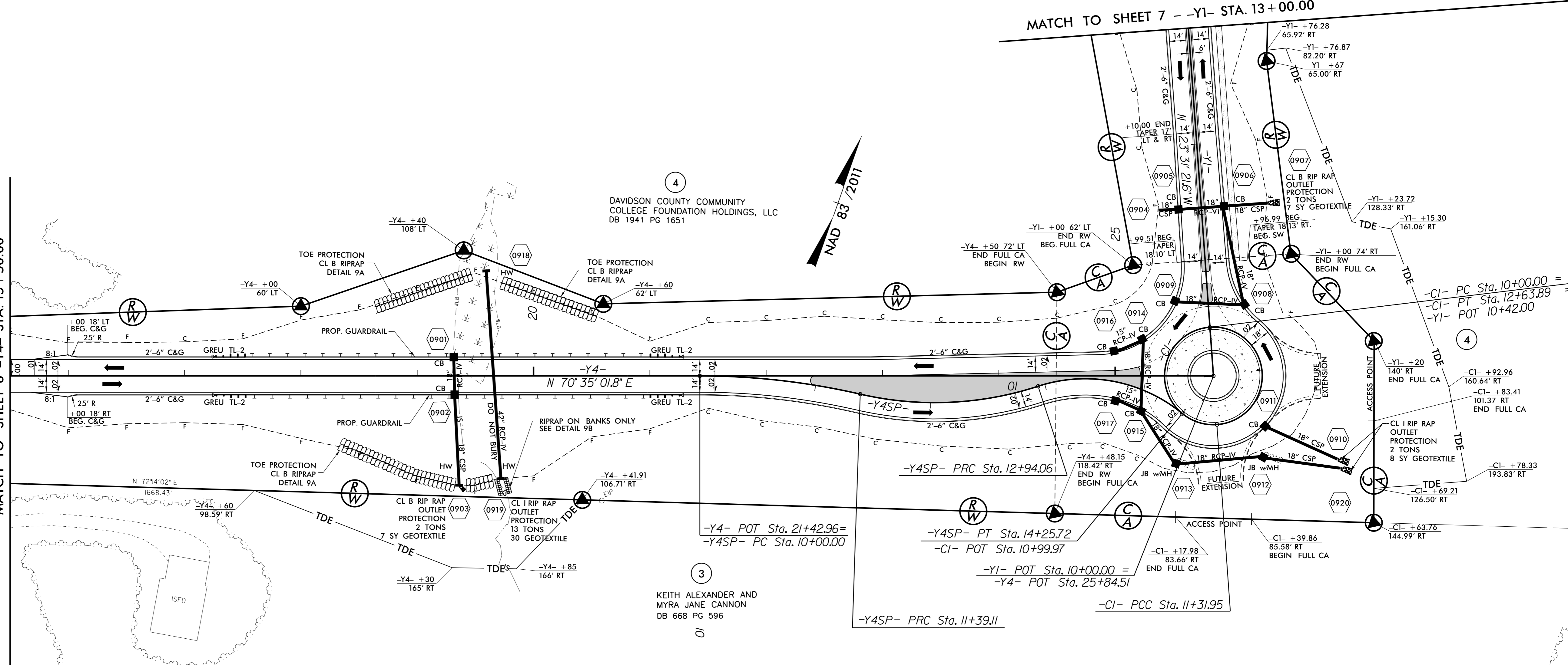
SEE SHEET 16-17 FOR -L- PROFILE
SEE SHEET 18 FOR -RPA- PROFILE
SEE SHEET 21 FOR -RPD- PROFILE
SEE SHEET 2B-15 FOR RETAINING WALL #4 DETAIL

5/14/2021

PROJECT REFERENCE NO. R-5737		SHEET NO. 9
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

MATCH TO SHEET 6 -Y4- STA. 15+50.00

MATCH TO SHEET 7 -Y1- STA. 13+00.00



DETAIL 9A
TOE PROTECTION
(Not to Scale)

d = 1 Ft.
b = 2 Ft.

Type of Liner = CL B Rip-Rap

LOCATION	TON	SY
-Y4 STA. 18+50 TO STA. 19+30 LT	30	87
-Y4 STA. 18+50 TO STA. 19+68 RT	35	116
-Y4 STA. 19+65 TO STA. 20+50 LT	32	92

DETAIL 9B
RIPRAP PAD AT JURISDICTIONAL STREAM
(Not to Scale)

D = Pipe Dia.
Length = 4D

Type of Liner = CL II Rip-Rap

TON	SY
31	40

CURVE DATA FOR -Y4SP-

PI Sta	Delta	D	L	T	R	Se
10+69.85	12° 58' 51.8" (RT)	9° 19' 53.6"	139.11'	69.85'	614.00'	0.02
12+18.54	31° 02' 34.9" (LT)	20° 02' 00.6"	154.96'	79.43'	286.00'	0.02
13+66.06	57° 34' 58.4" (RT)	43° 44' 14.1"	131.66'	71.99'	131.00'	0.02

CURVE DATA FOR -CI-

PI Sta	Delta	D	L	T	R
10+00.00	360° 00' 00.0" (LT)	136° 25' 06.7"	263.90'	0.00'	42.00'

SEE SHEET 22 FOR -CI- PROFILE
 SEE SHEET 23 FOR -Y1- PROFILE
 SEE SHEET 26 FOR -Y4- PROFILE
 FOR ROUNDABOUT CI DETAILS: SEE SHEET 2B-1 & 2B-4
 FOR FINAL PAYMENT PLAN ELEVATIONS, SUPERELEVATION,
 AND CONC. ISLAND DETAILS WITH STATION & OFFSETS.

LEGEND

- 5" MONOLITHIC CONCRETE ISLAND
- 7" CONCRETE TRUCK APRON
- 4" CONCRETE SIDEWALK

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5/14/2021



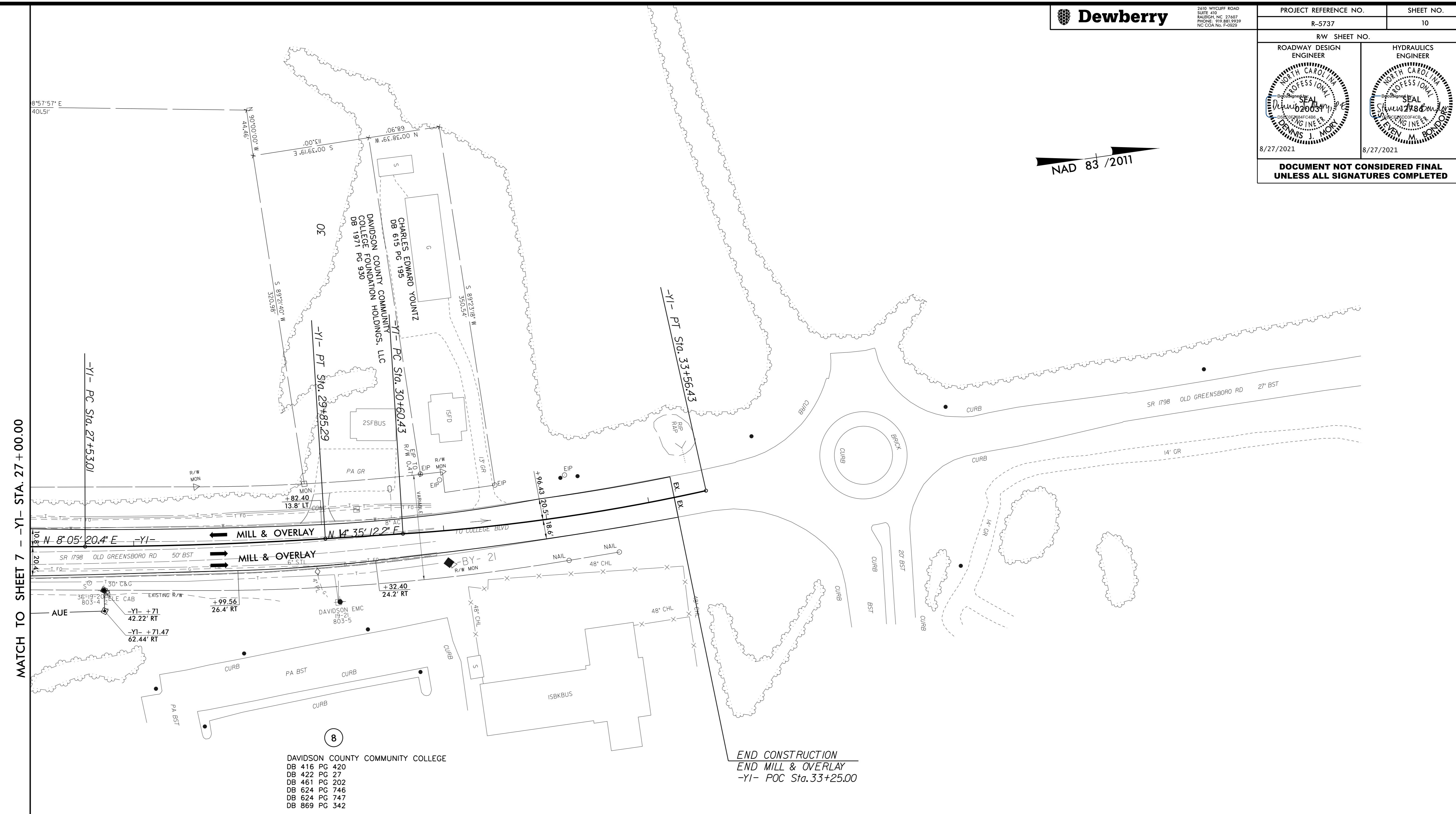
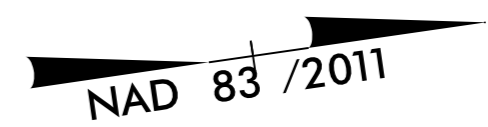
2410 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.883.9329
NC CCA No. F-0929

PROJECT REFERENCE NO.	SHEET NO.
R-5737	10

R/W SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
8/27/2021	8/27/2021

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MATCH TO SHEET 7 - -YI- STA. 27+00.00

END CONSTRUCTION
END MILL & OVERLAY
-YI- POC Sta.33+25.00

- 8
- DAVIDSON COUNTY COMMUNITY COLLEGE
DB 416 PG 420
DB 422 PG 27
DB 461 PG 202
DB 624 PG 746
DB 624 PG 747
DB 869 PG 342

CURVE DATA FOR -YI-

PI Sta 25+79.99	PI Sta 28+86.76
$\Delta = 2^{\circ} 44' 08.1''$ (LT)	$\Delta = 3^{\circ} 30' 08.2''$ (LT)
$D = 1^{\circ} 00' 18.7''$	$D = 1^{\circ} 30' 28.0''$
$L = 272.15'$	$L = 232.28'$
$T = 136.10'$	$T = 116.18'$
$R = 5,700.00'$	$R = 3,800.00'$

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SEE SHEET 23 FOR -YI- PROFILE

5/28/21

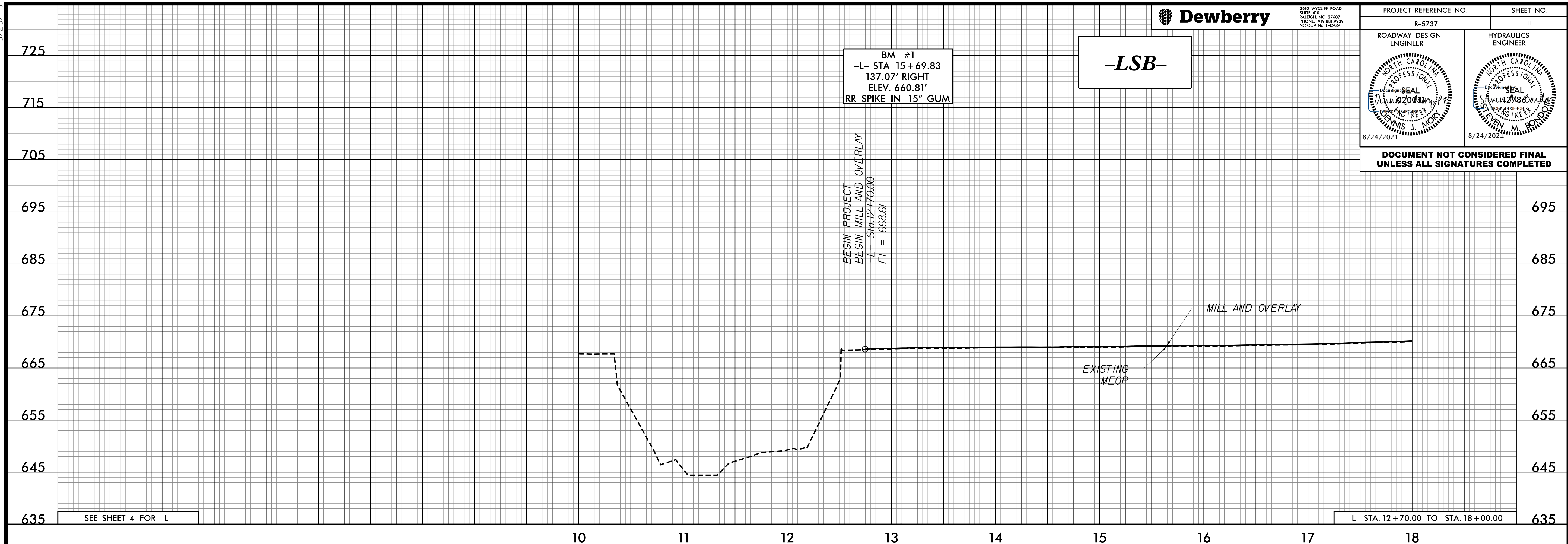


2610 WYCLIFF ROAD
SUITE 400
RALEIGH, NC 27607
PHONE: 919.881.9339
NC COA No. F-0929

PROJECT REFERENCE NO.	SHEET NO.
R-5737	11

ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER
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UNLESS ALL SIGNATURES COMPLETED**



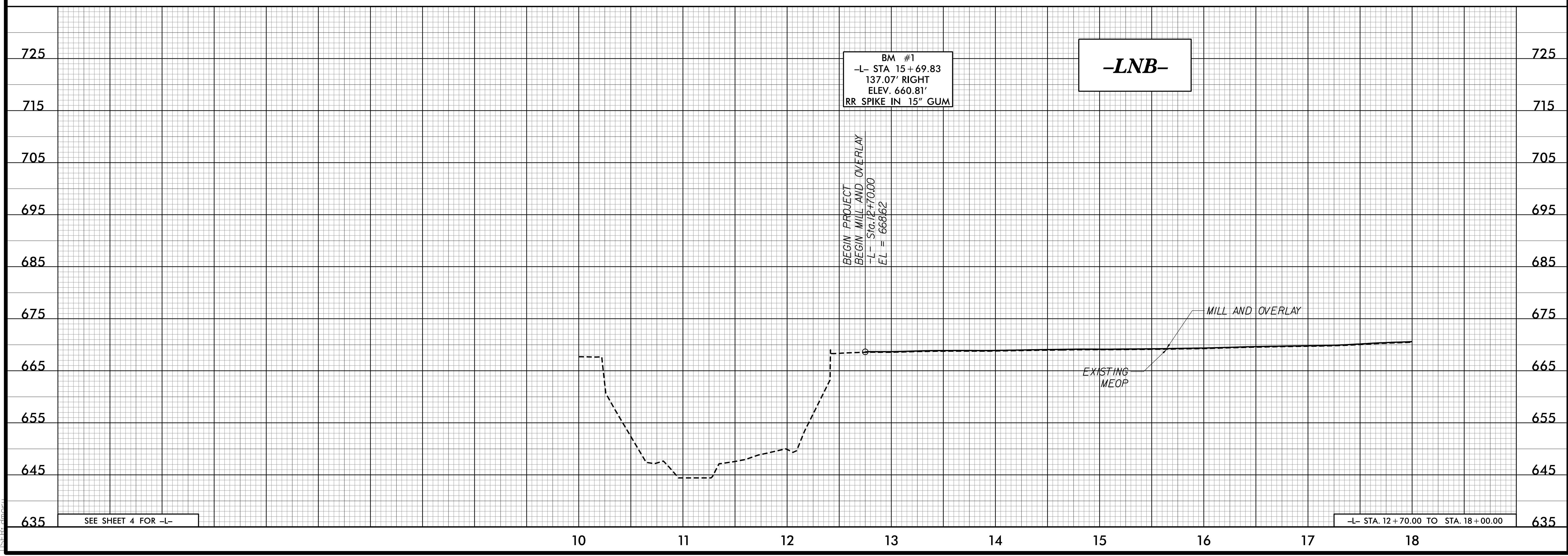
SEE SHEET 4 FOR -L-

-L- STA. 12 + 70.00 TO STA. 18 + 00.00

-LNB-

BM #1
-L- STA 15 + 69.83
137.07' RIGHT
ELEV. 660.81'
RR SPIKE IN 15" GUM

BEGIN PROJECT
BEGIN MILL AND OVERLAY
-L- STA. 12 + 70.00
E.L. = 668.62



SEE SHEET 4 FOR -L-

-L- STA. 12 + 70.00 TO STA. 18 + 00.00

7/29/2021 6:17:26 PM
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USER: dmorin

5/28/2021

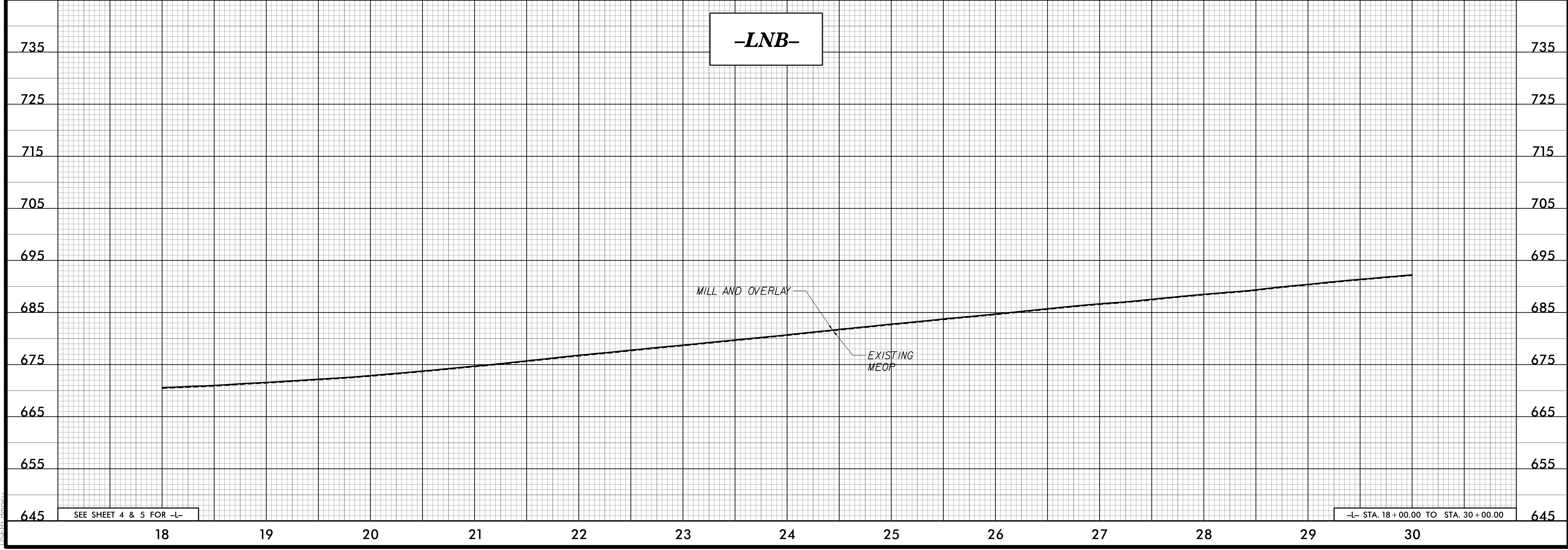
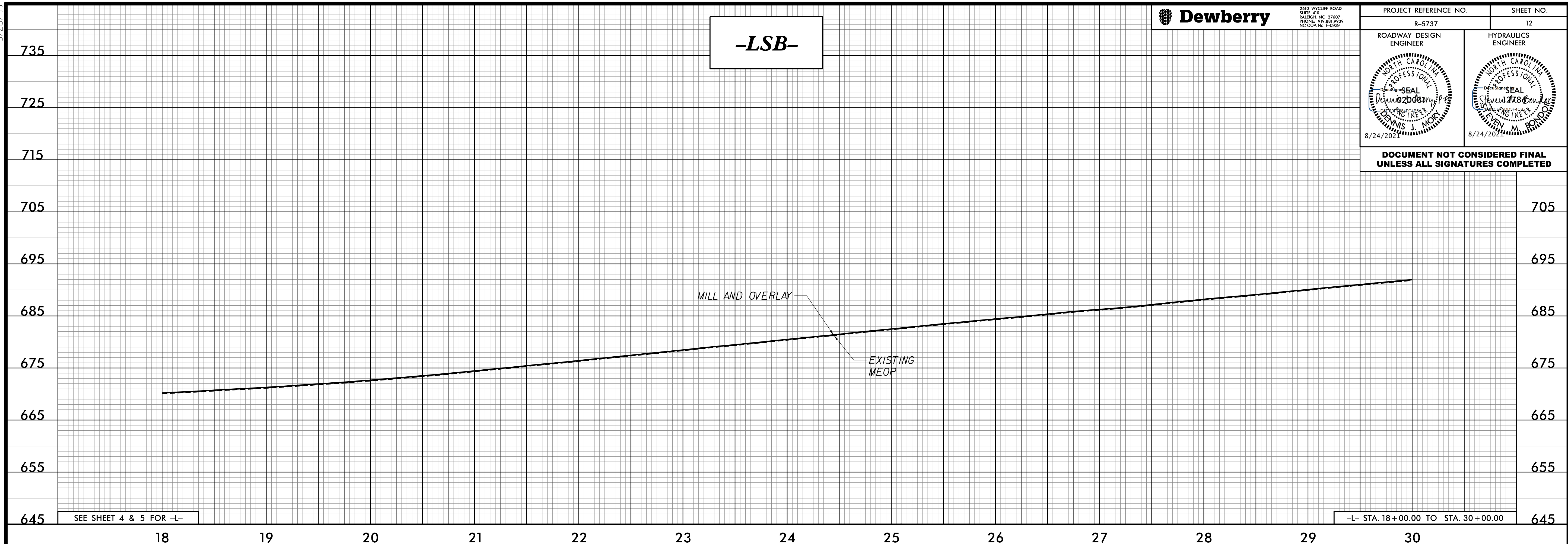


2610 WYCLIFF ROAD
SUITE 400
RALEIGH, NC 27607
PHONE: 919.881.5000
NC COA No. F-0929

PROJECT REFERENCE NO.	SHEET NO.
R-5737	12

ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER
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7/29/2021 5:18:30 PM
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