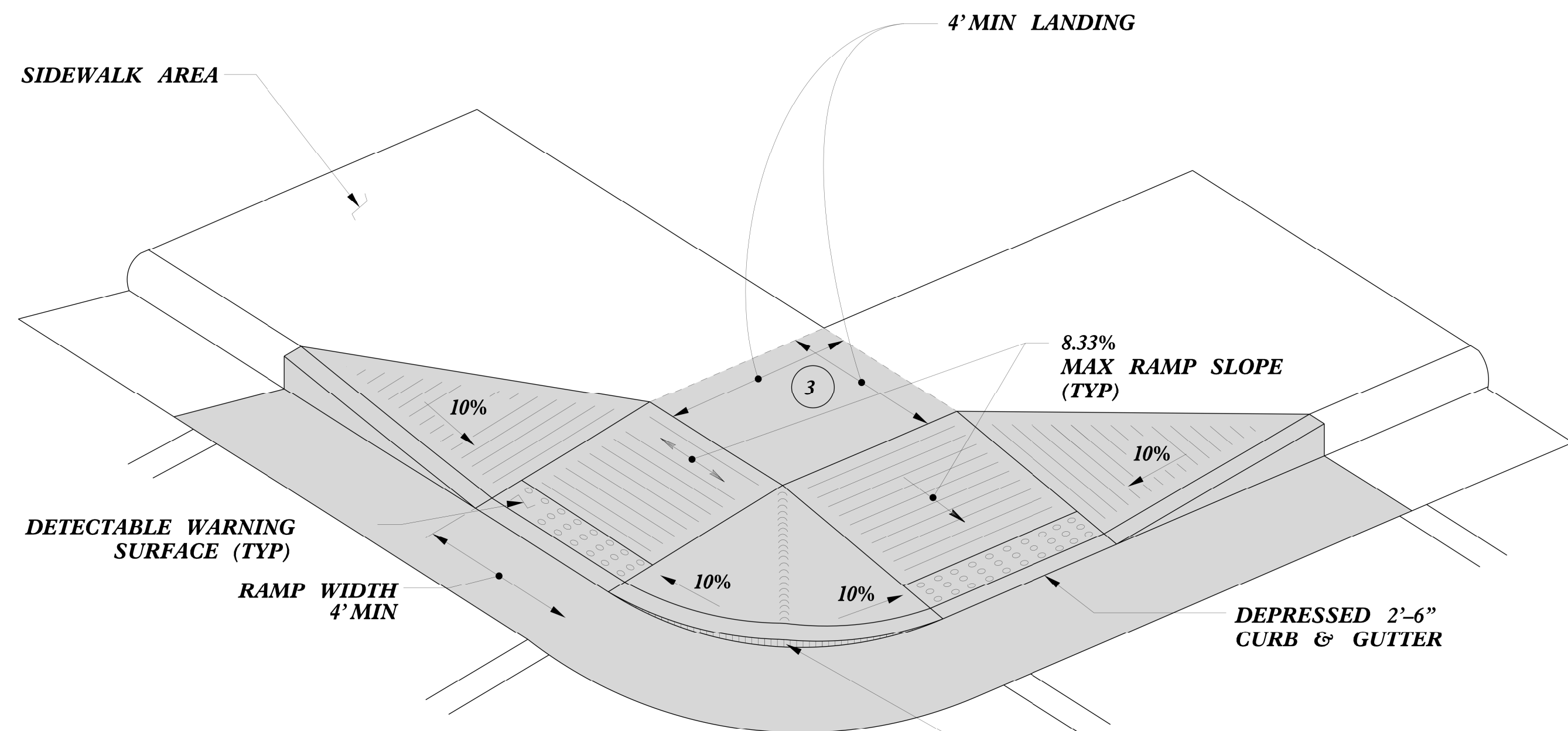


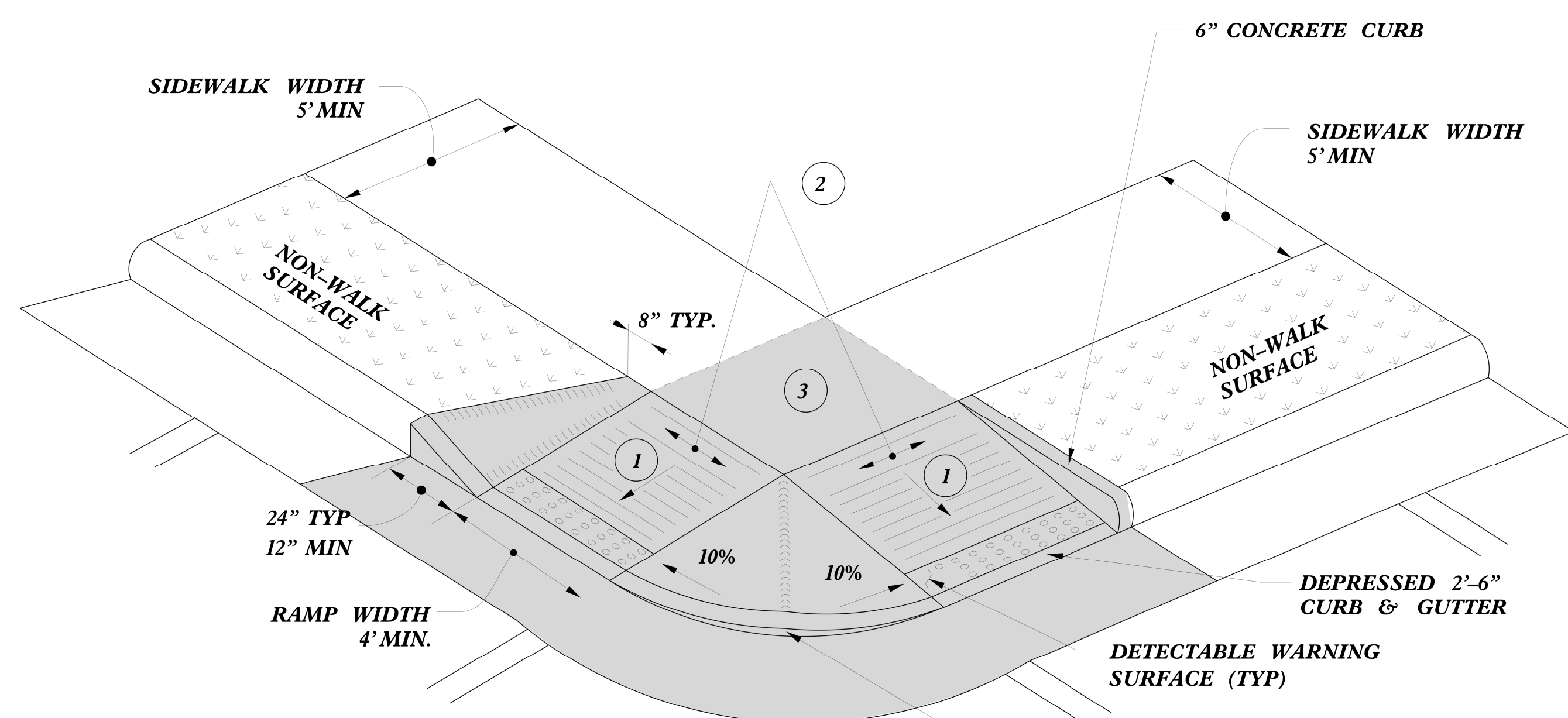
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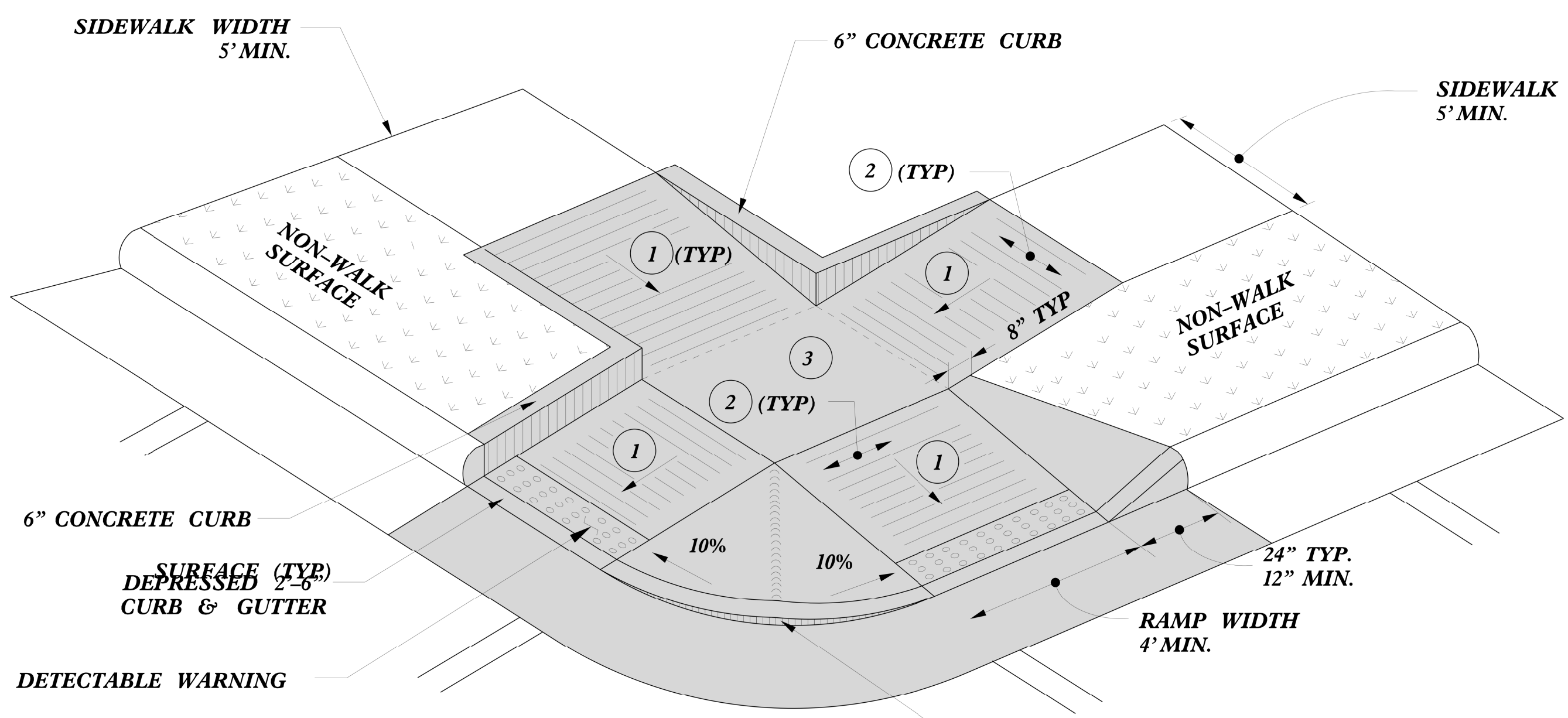
**This file or an individual page  
shall not be considered a certified document.**



**TYPE 4**



**TYPE 4A**



**TYPE 5**

**PAY LIMITS FOR 2 CURB RAMPS**

- 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.



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

**CURB RAMPS**  
Shared Landing

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

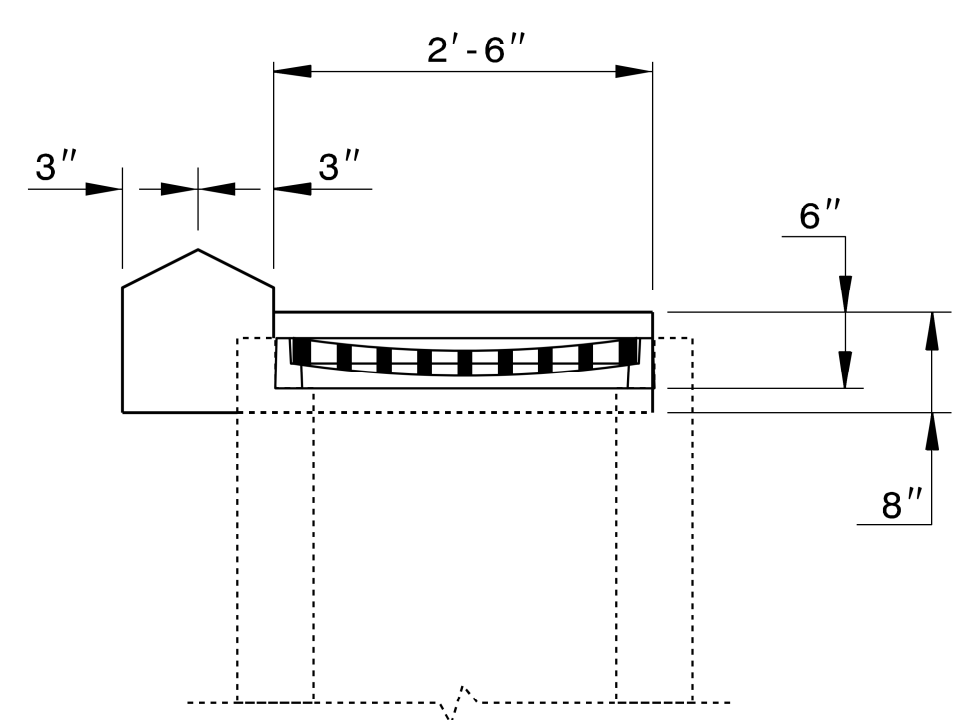
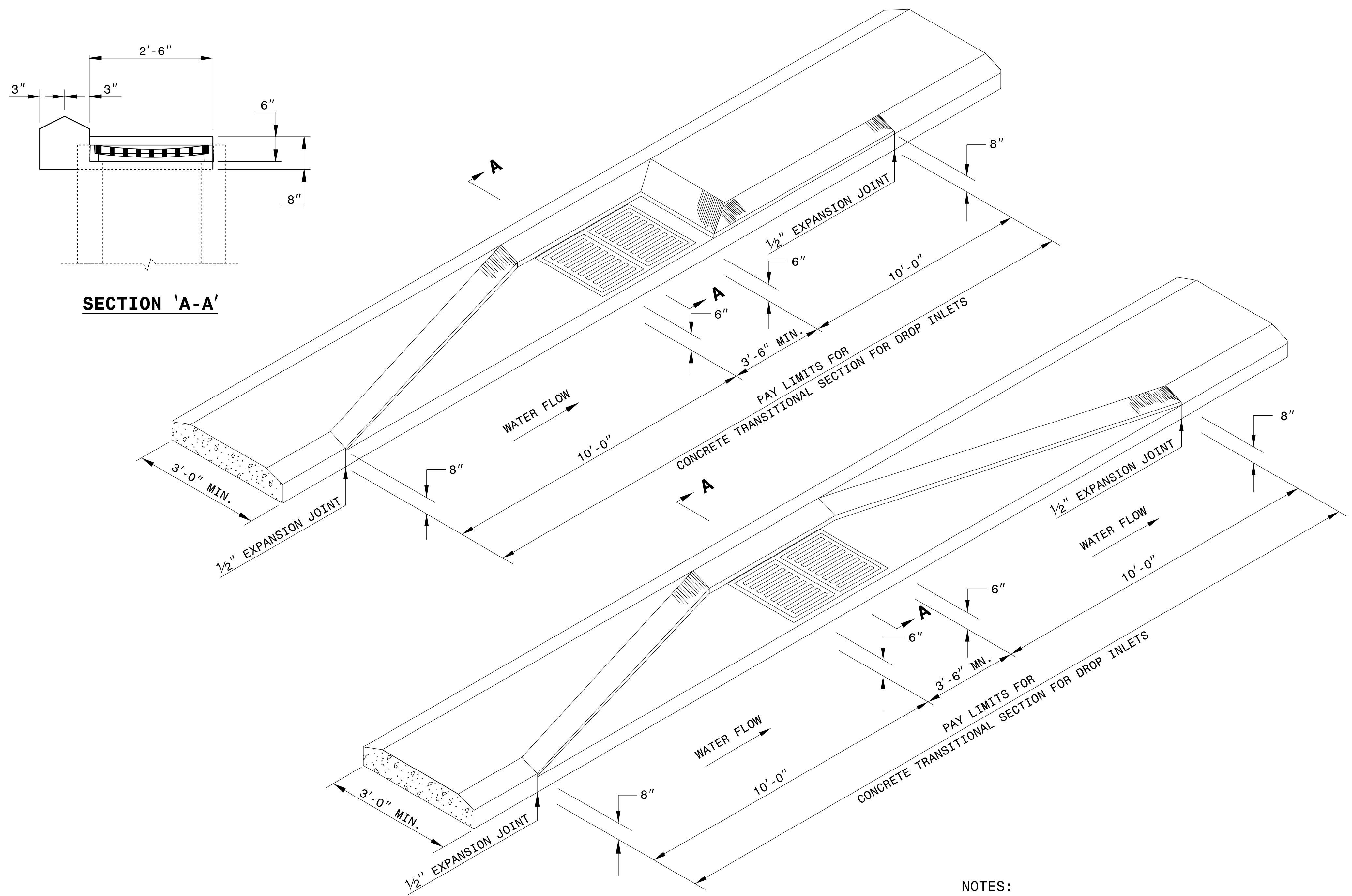
REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES

5/14/2011 10:58:55 AM C:\Users\jsho\Documents\2012CurbRamp\CurbRampDetails.dgn

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

ENGLISH DETAIL DRAWING FOR  
**METHOD FOR PLACEMENT OF  
DROP INLETS IN CONCRETE ISLANDS**

SHEET 1 OF 1  
**852D06**



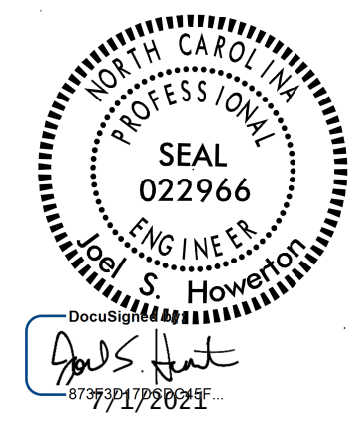
**SECTION 'A-A'**

NOTES:  
-REFER TO STD. NO. 840.14 AND 840.15 FOR DRAINAGE STRUCTURE.  
-REFER TO STD. NO. 840.16 FOR GRATE AND FRAME.

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

ENGLISH DETAIL DRAWING FOR  
**METHOD FOR PLACEMENT OF  
DROP INLETS IN CONCRETE ISLANDS**

SHEET 1 OF 1  
**852D06**

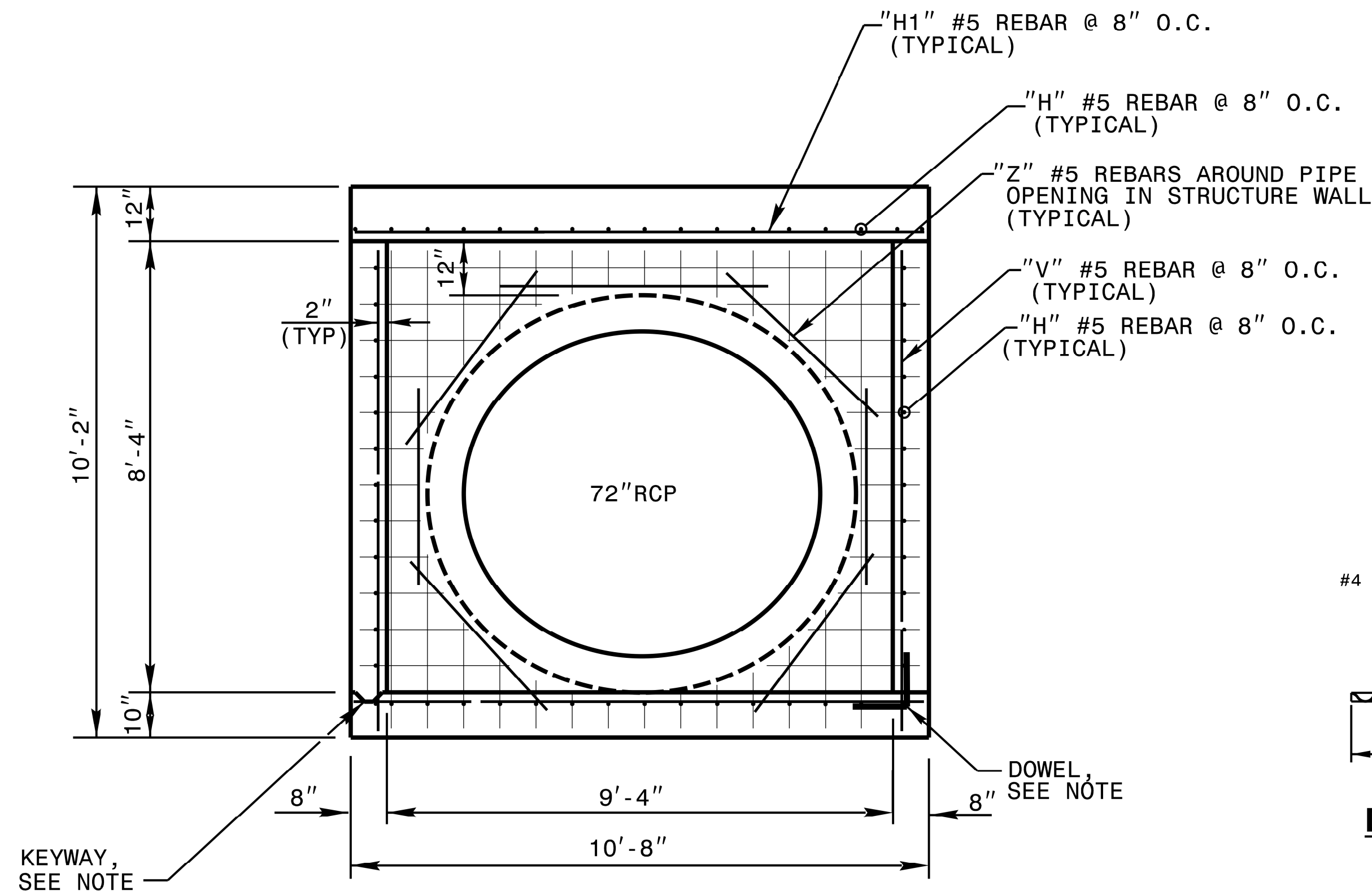


**CONTRACT STANDARDS  
AND DEVELOPMENT UNIT**  
Office 919-707-6950 FAX 919-250-4119

**SEE TITLE PLATE**

ORIGINAL BY: KKEMPF DATE: 8/2/10  
MODIFIED BY: DATE:  
CHECKED BY: DATE:  
FILE SPEC.: KKEMPF\ENGLISH\852D0601.DGN

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SECTION A-A

GENERAL NOTES:

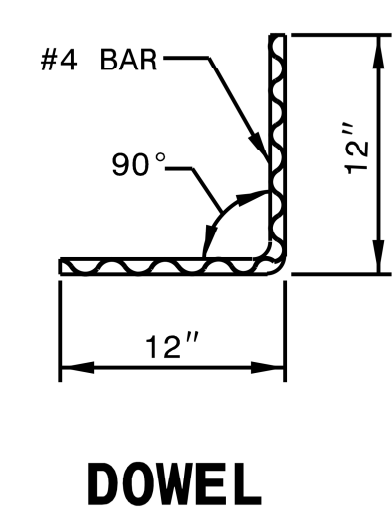
USE CLASS "B" CONCRETE THROUGHOUT.

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

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

BOX DIMENSIONS MAY BE FIELD ADJUSTED AS DIRECTED BY THE ENGINEER.

2" MINIMUM CONCRETE COVERAGE ON ALL REBAR.

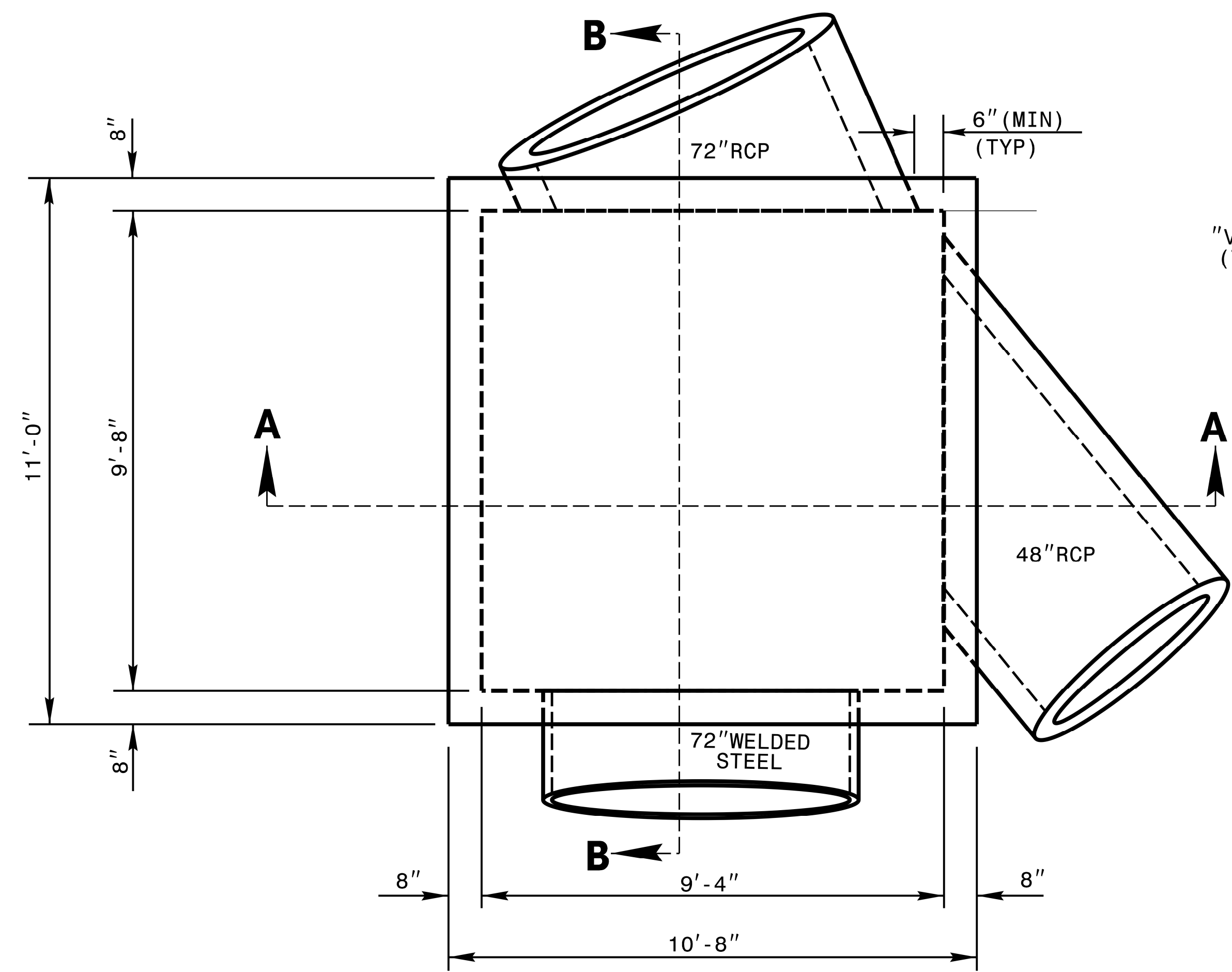


DOWEL

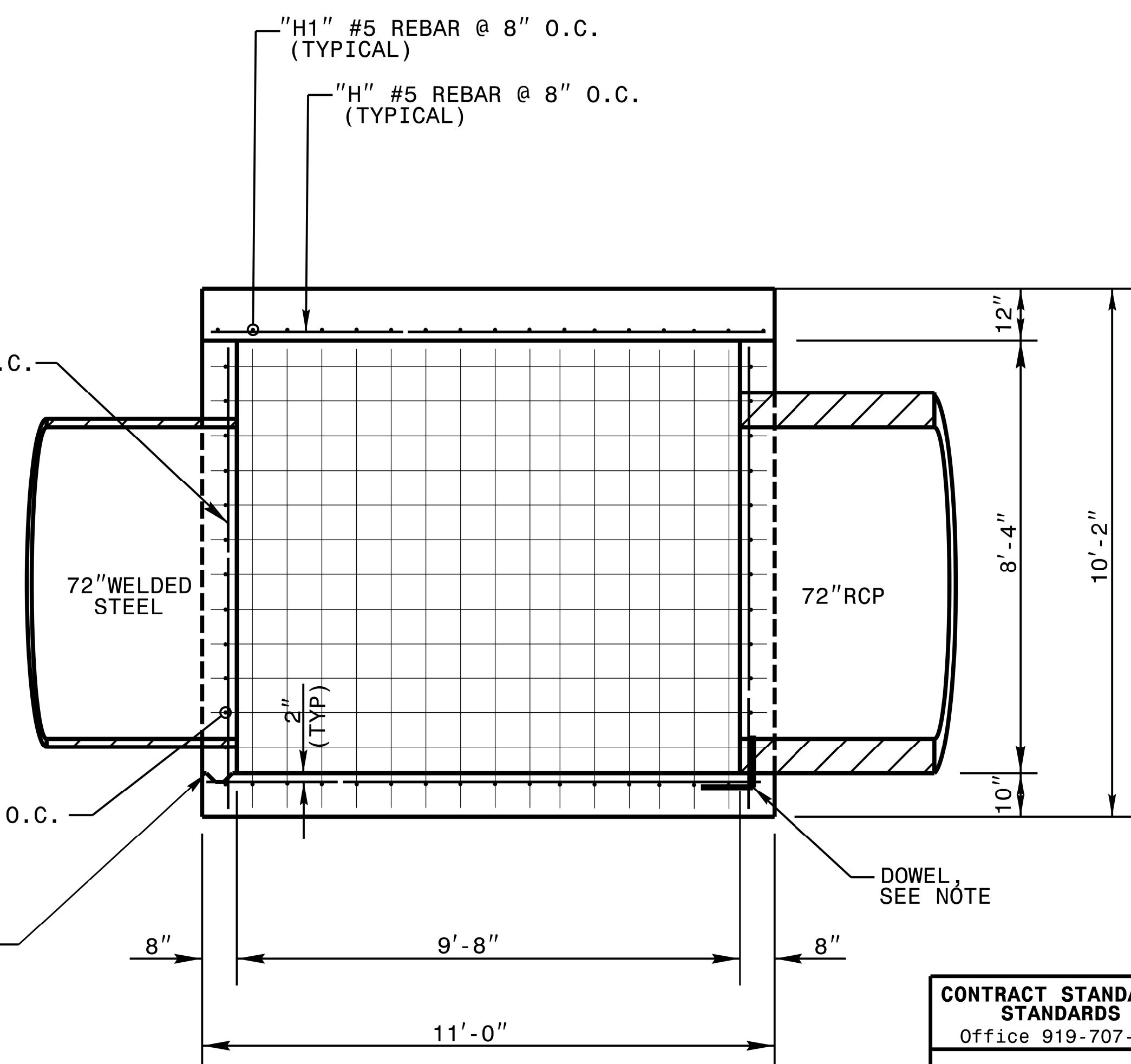
**BILL OF MATERIALS**

BAR	NO.	SIZE	LENGTH	WEIGHT
H	42	#5	10'-8"	467
H1	48	#5	10'-4"	517
V	62	#5	8'-10"	571
Z	21	#5	5'-0"	110
TOTAL REINF. STEEL (LBS.)				1665
TOTAL CONC. (CU. YDS.)				* 16.3

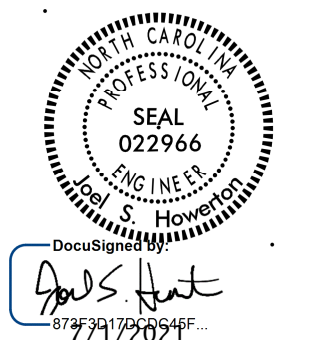
\* NO DEDUCTION HAS BEEN MADE FOR PIPES



PLAN VIEW



SECTION B-B



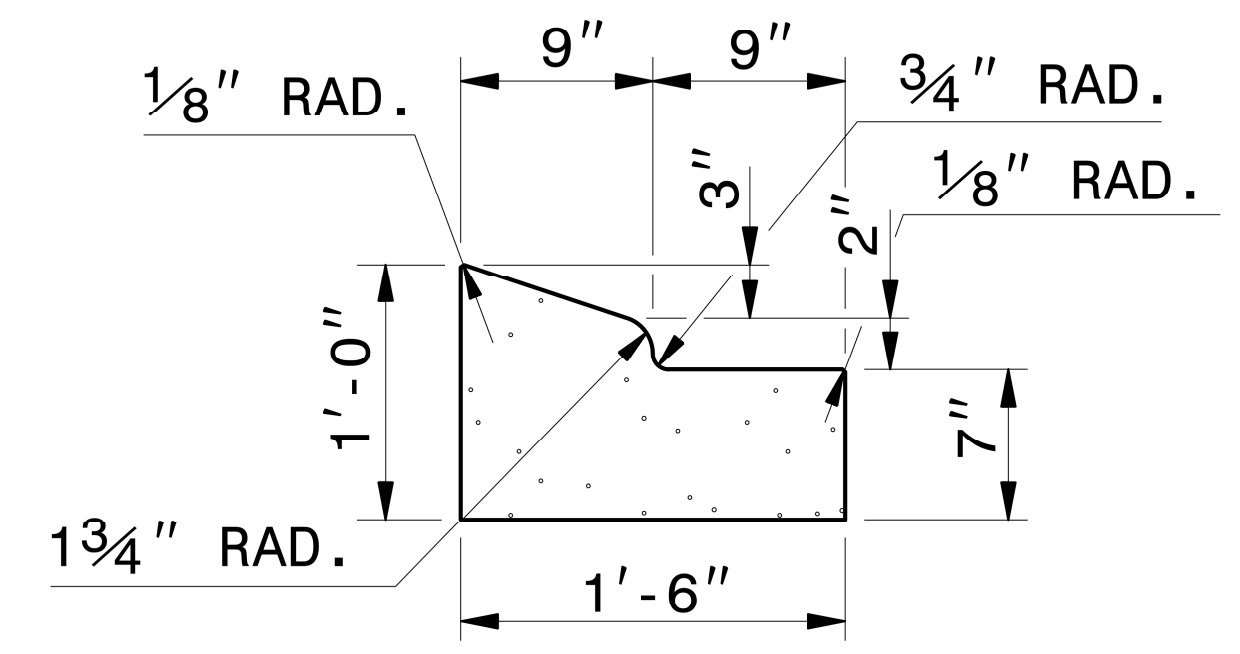
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

**SPECIAL JUNCTION BOX  
WITH SLAB LID**

ORIGINAL BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 MODIFIED BY: k Kempf DATE: 02/23/18  
 CHECKED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 FILE SPEC.: detail/kkempf/english/u4405\_72jb.dgn

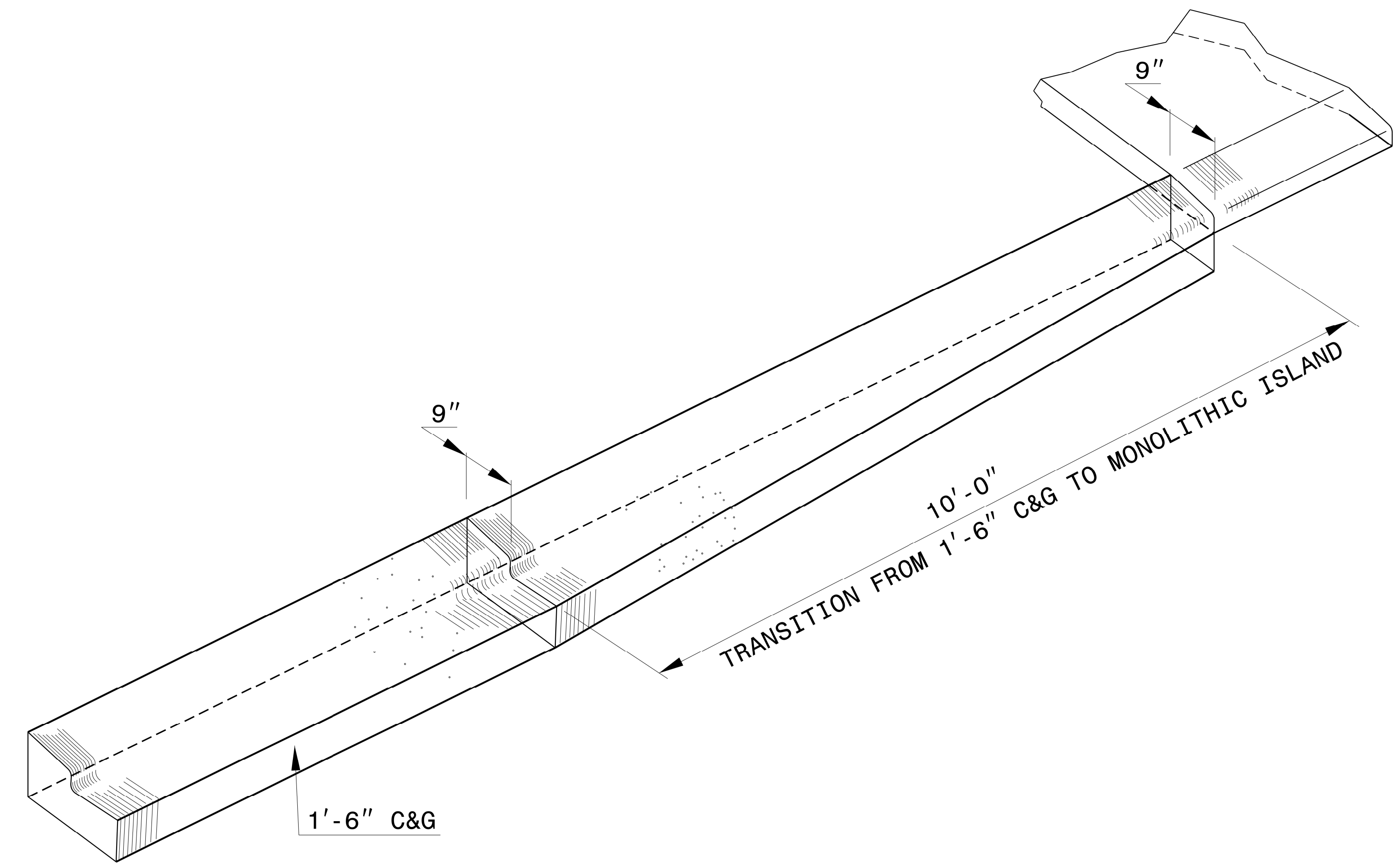
5/14/99  
 \$\$\$SYTIME\$\$\$  
 \$\$\$SYSTEM\$\$\$\$\$  
 \$\$\$USER\$\$\$\$\$  
 \$\$\$JOBNO\$\$\$\$\$  
 \$\$\$PROJECT\$\$\$\$\$  
 \$\$\$DRAWING\$\$\$\$\$  
 \$\$\$DATE\$\$\$\$\$  
 \$\$\$BY\$\$\$\$\$  
 \$\$\$CHECKED\$\$\$\$\$  
 \$\$\$FILE\$\$\$\$\$



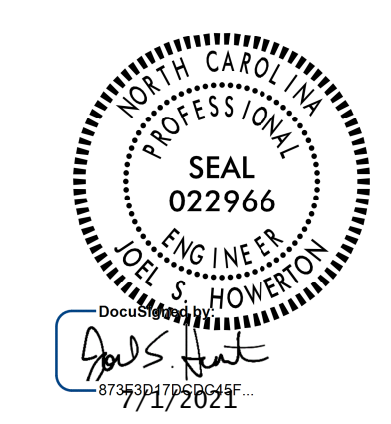
**1'-6" CURB AND GUTTER**

NOTE: SEE STD. DWG. 846.01 FOR ADDITIONAL CURB AND GUTTER INFORMATION.

SEE ROADWAY PLANS FOR LOCATION OF CURB TRANSITION.



**ISOMETRIC VIEW OF  
TRANSITIONING CURB & GUTTER**

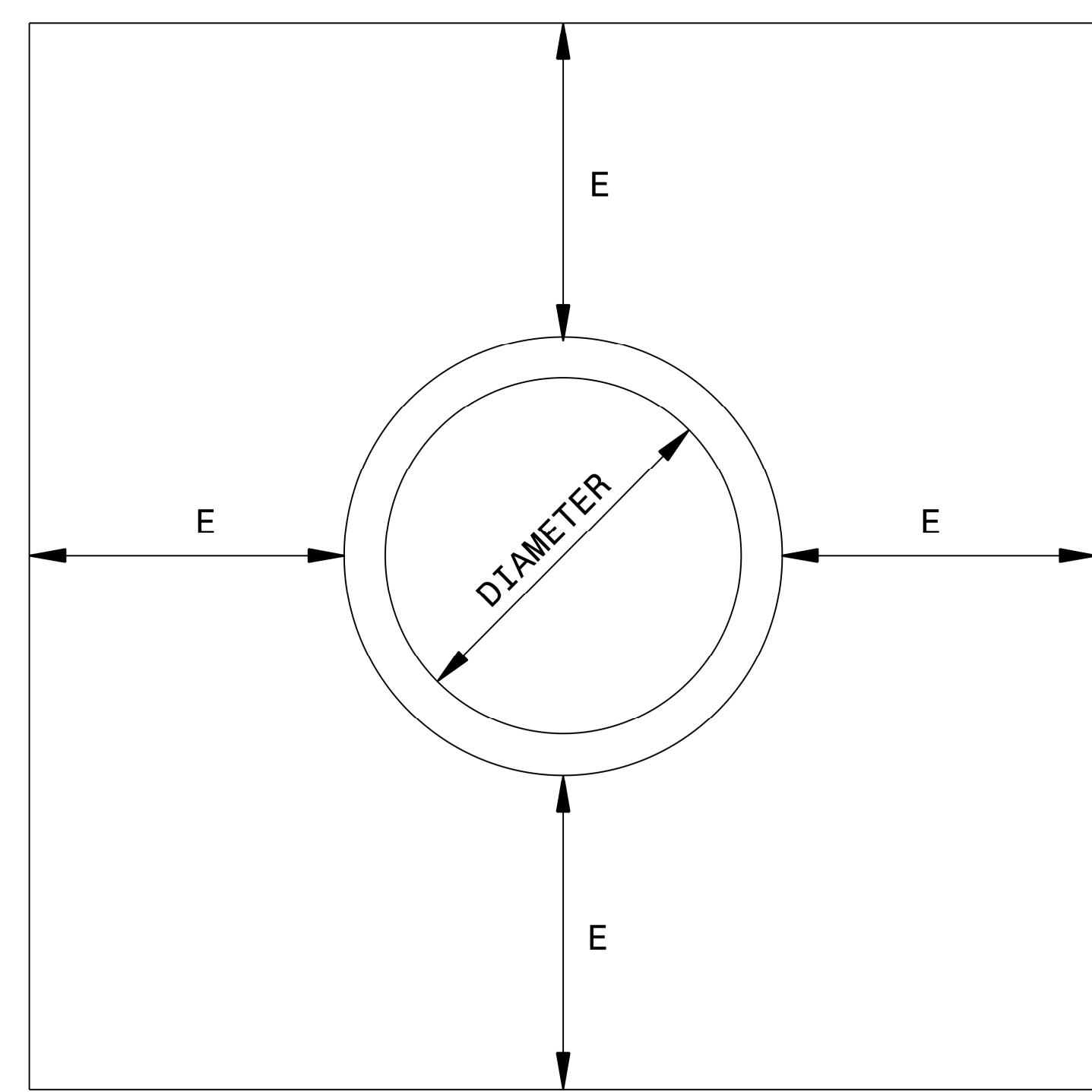


DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

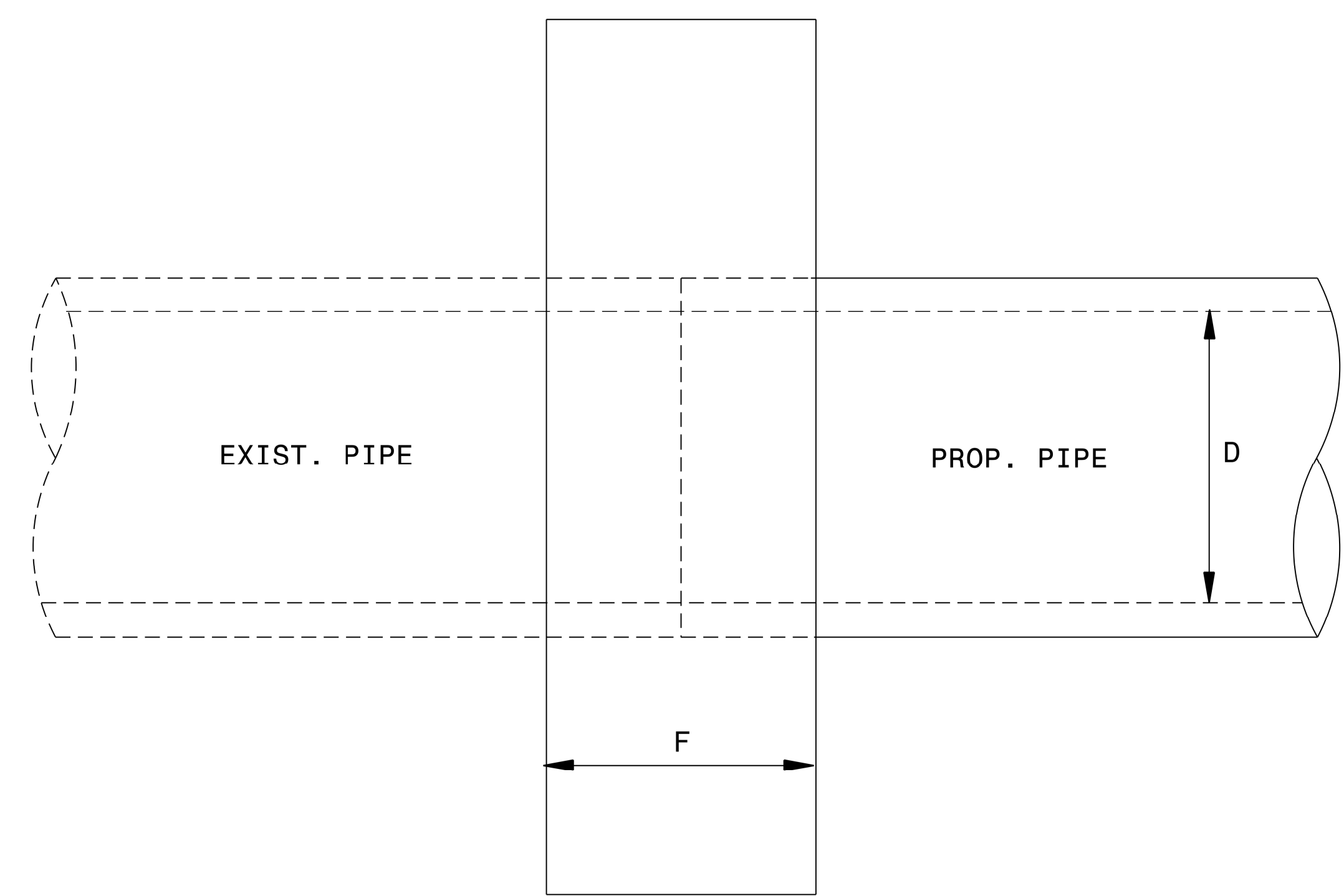
<b>CONTRACTS STANDARDS AND DEVELOPMENT UNIT</b>	
Office 919-707-6950 FAX 919-250-4119	
<b>DETAIL OF 1'-6" CURB &amp; GUTTER TRANSITION SECTION</b>	
ORIGINAL BY:	DATE:
MODIFIED BY: KKEMPF	DATE: 09-24-14
CHECKED BY:	DATE:
FILE SPEC.: kkempf/english/curb_gutter_tansion.dgn	

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

ROADWAY DETAIL DRAWING FOR  
**PIPE COLLAR**



**ELEVATION**



**SIDE ELEVATION**

GENERAL NOTES:

USE PIPE COLLAR FOR EXTENDING EXISTING CONCRETE PIPE CULVERTS AT LOCATIONS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER. THIS INCLUDES EXTENDING EXISTING PIPES WITH PIPES OF DIFFERENT MATERIALS.

CONSTRUCT THE PIPE COLLAR WITH CLASS "B" OR BETTER CONCRETE.

OBSERVE ALL REQUIREMENTS OF SECTION 840 OF THE STANDARD SPECIFICATIONS.

\* USE 12 INCH DIAMETER VALUES FOR PIPE DIAMETERS LESS THAN 12 INCH.

D	E	F	CU. YD.
12"	12"	24"	0.7056
15"	12"	24"	0.7980
18"	12"	24"	0.8930
24"	12"	24"	0.5526
30"	12"	24"	1.1052
36"	12"	24"	1.5280
42"	12"	24"	1.7712
48"	12"	24"	2.0252
54"	18"	30"	4.2988
60"	18"	30"	4.7520
66"	18"	30"	5.2189
72"	18"	30"	5.6971

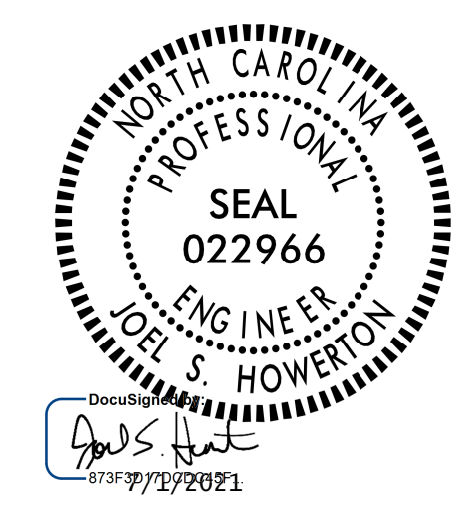
STATE OF NORTH CAROLINA  
 DEPT. OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR  
**PIPE COLLAR**

SHEET 1 OF 1  
**840D72**

SHEET 1 OF 1  
**840D72**

DOCUMENT NOT CONSIDERED FINAL  
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CONTRACTS STANDARDS AND DEVELOPMENT UNIT  
Office 919-707-6950 FAX 919-250-4119

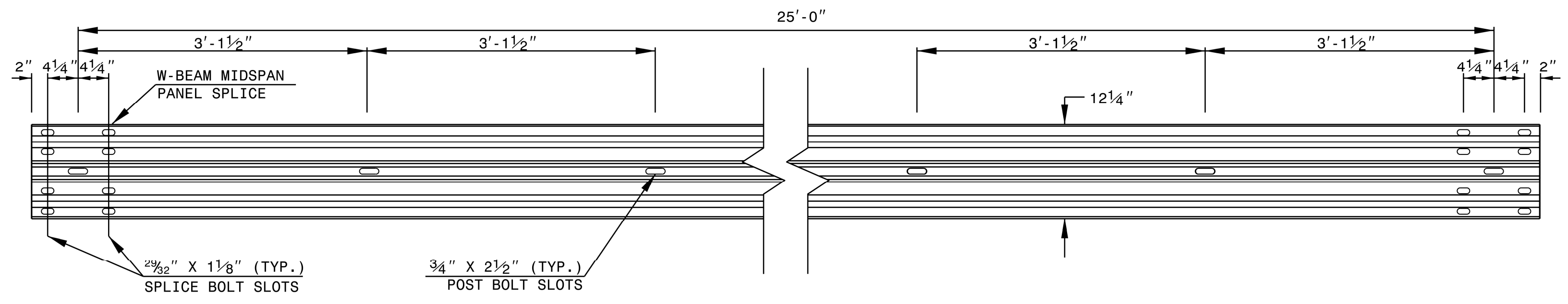
**SEE TITLE PLATE**

ORIGINAL BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 MODIFIED BY: K.KEMPF DATE: 4/23/2018  
 CHECKED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 FILE SPEC.: kkempf\english\840D72.dgn

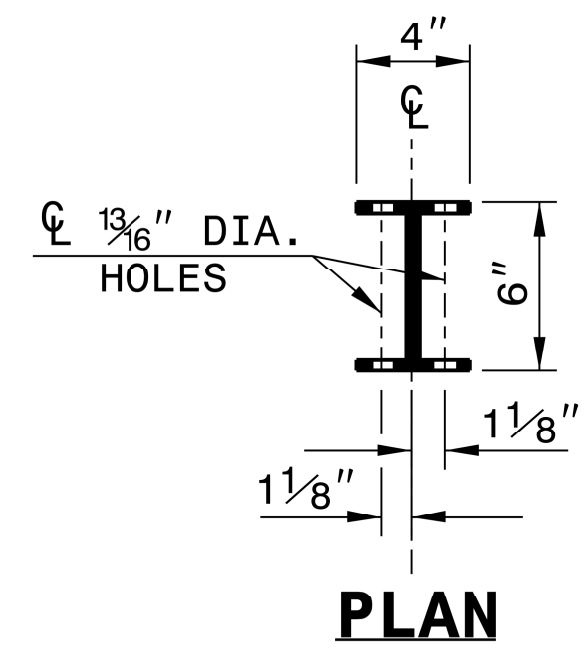
STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR  
**GUARDRAIL INSTALLATION**

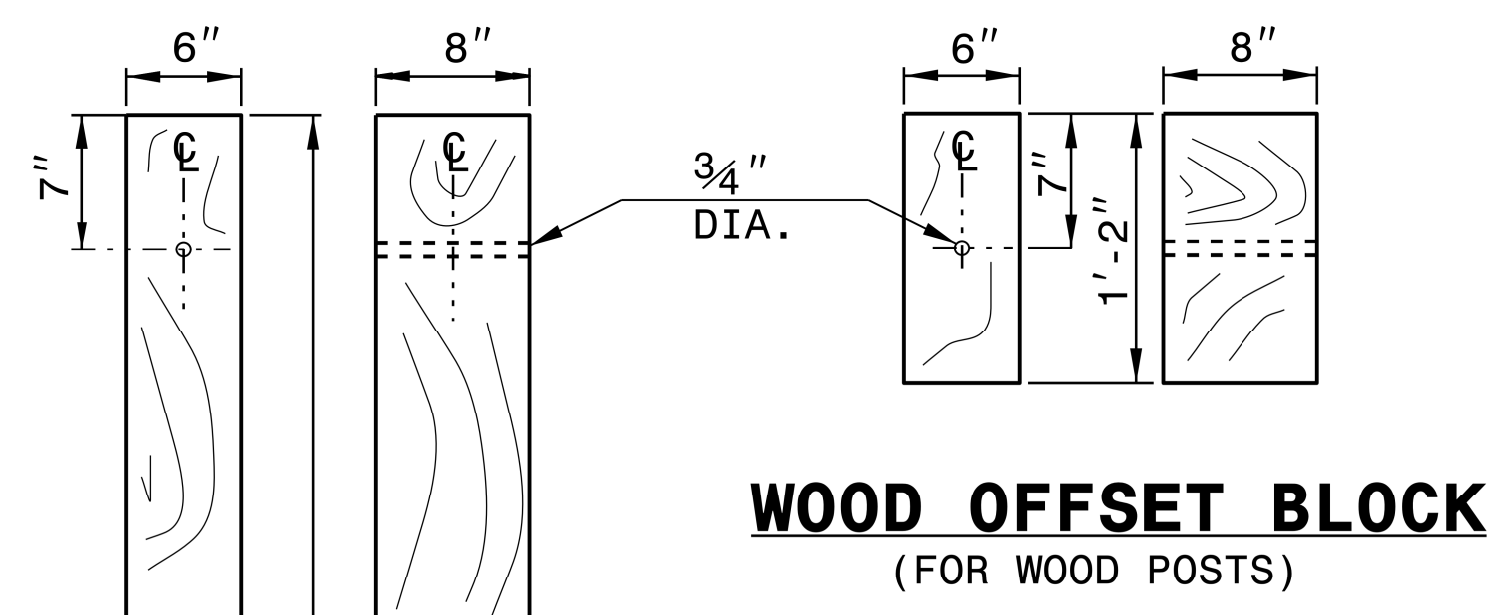
SHEET 6 OF 8  
**862D02**



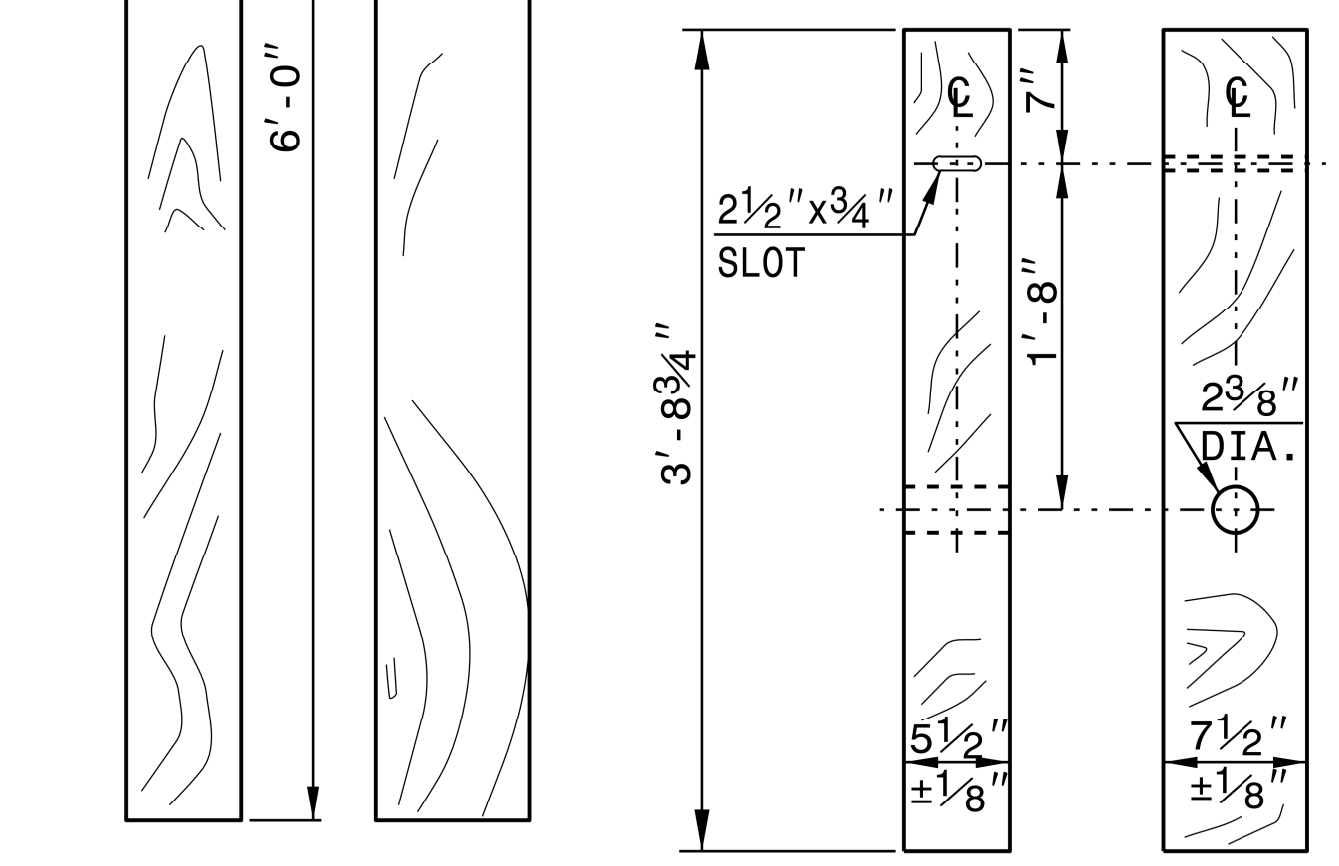
**STANDARD W-BEAM GUARDRAIL**



**PLAN**

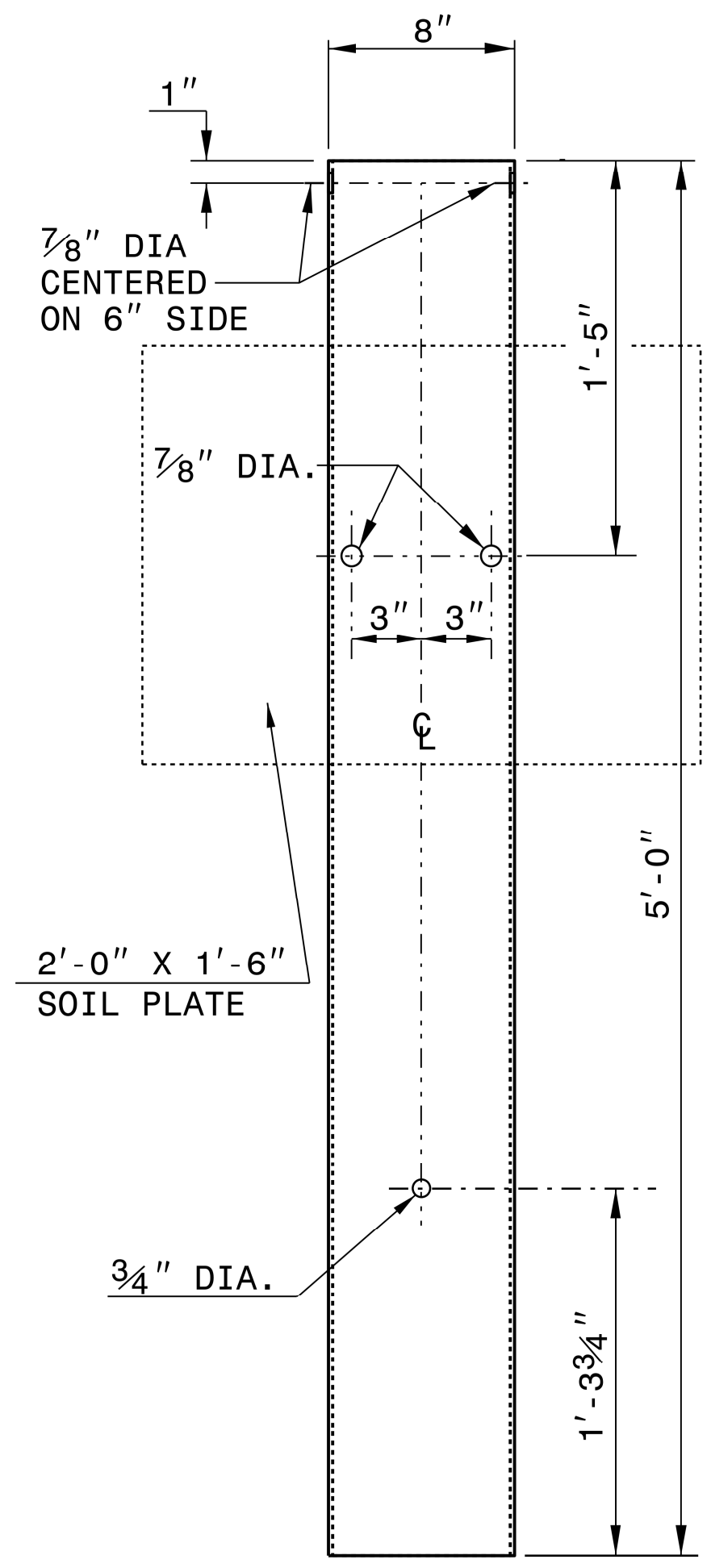


**WOOD OFFSET BLOCK  
(FOR WOOD POSTS)**

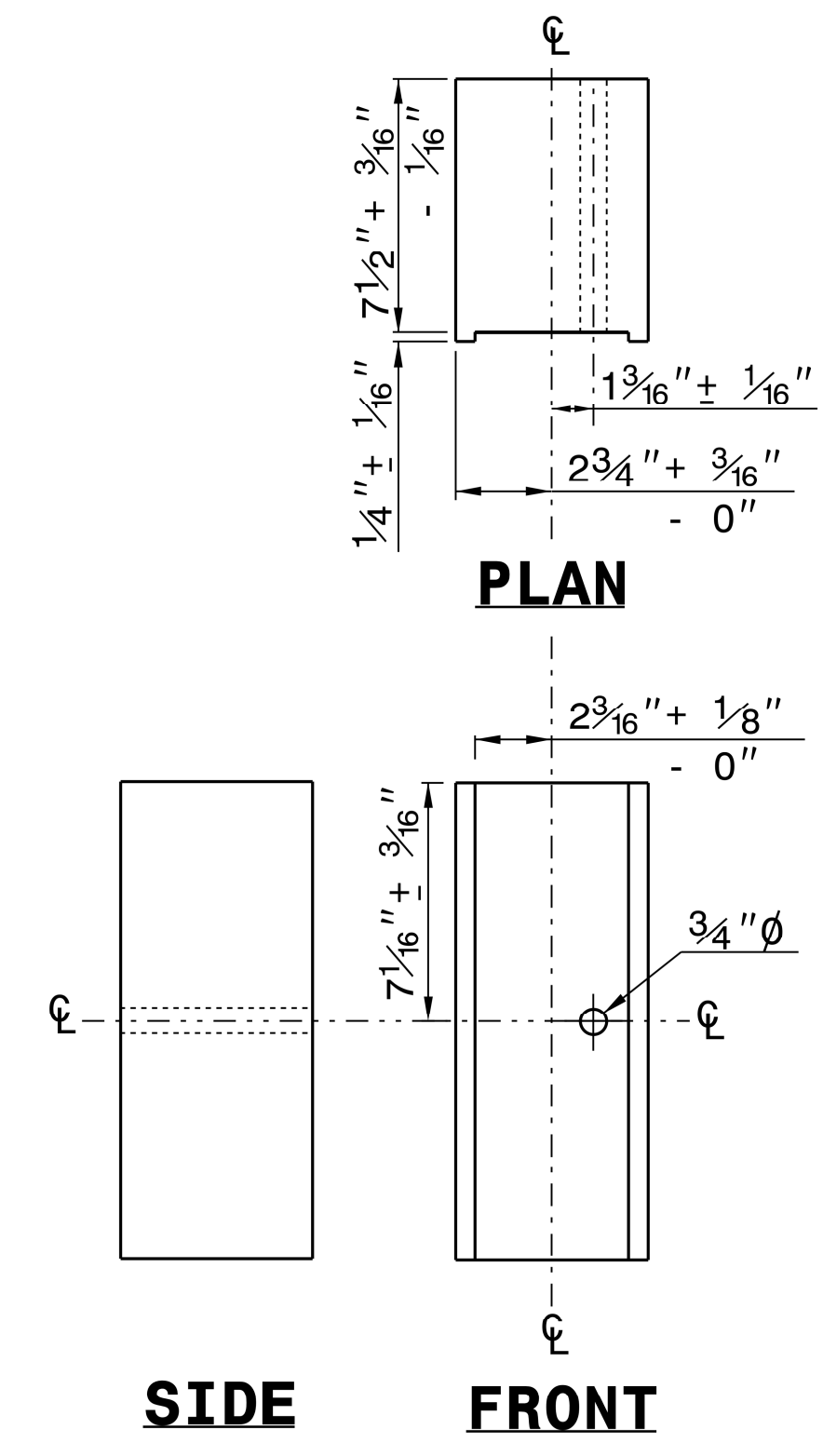


**STANDARD  
LINE POST**

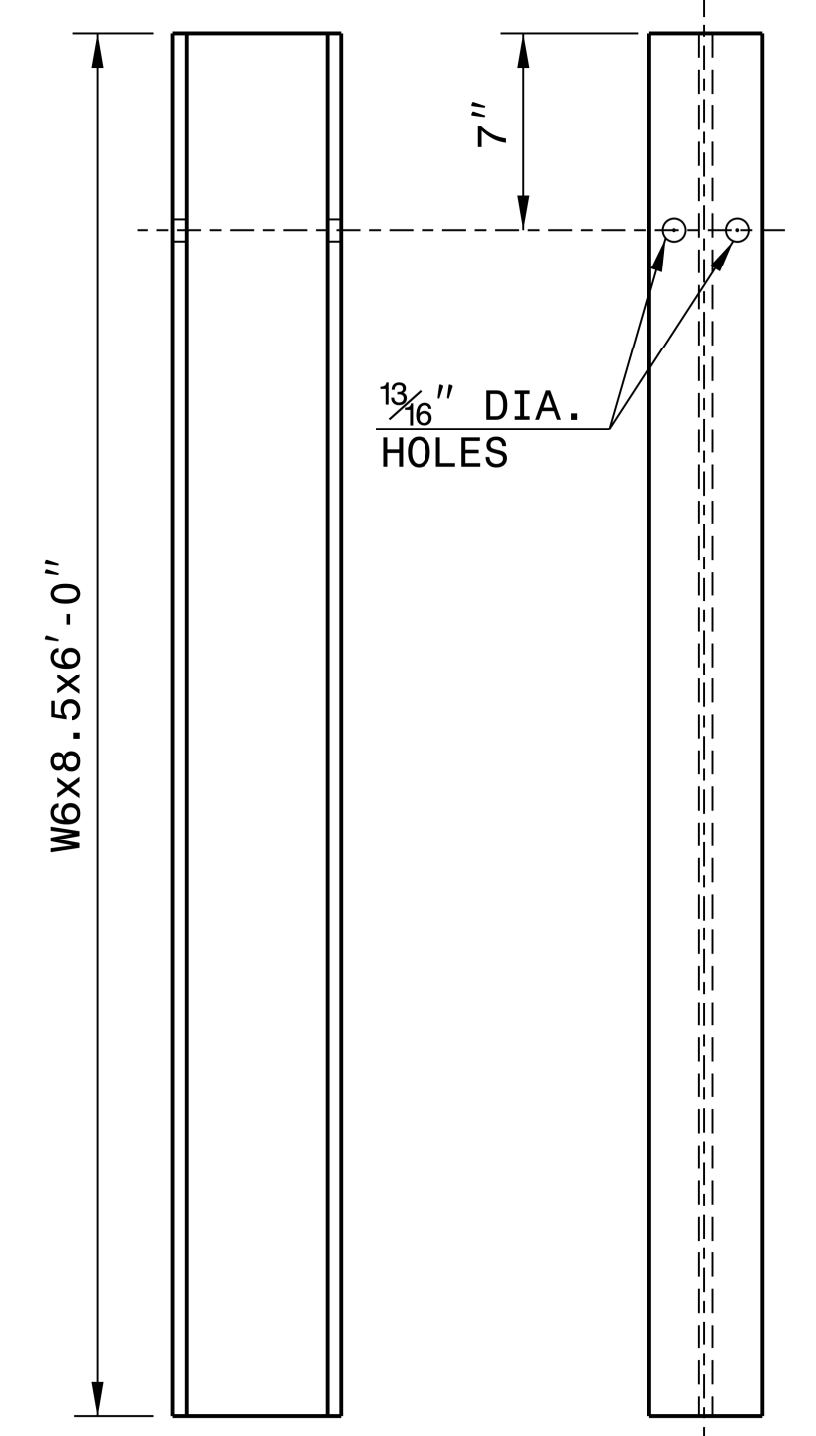
**SHORT WOOD  
BREAKAWAY POST**



**STEEL TUBE  
TS 6"x8"x0.1875"**



**ROUTED  
OFFSET BLOCK**



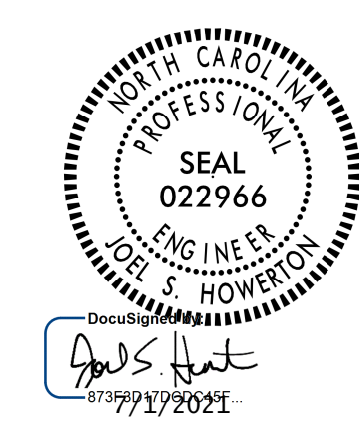
**"W6" STEEL POST**

**SYSTEM PARTS**

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

ROADWAY DETAIL DRAWING FOR  
**GUARDRAIL INSTALLATION**

SHEET 6 OF 8  
**862D02**



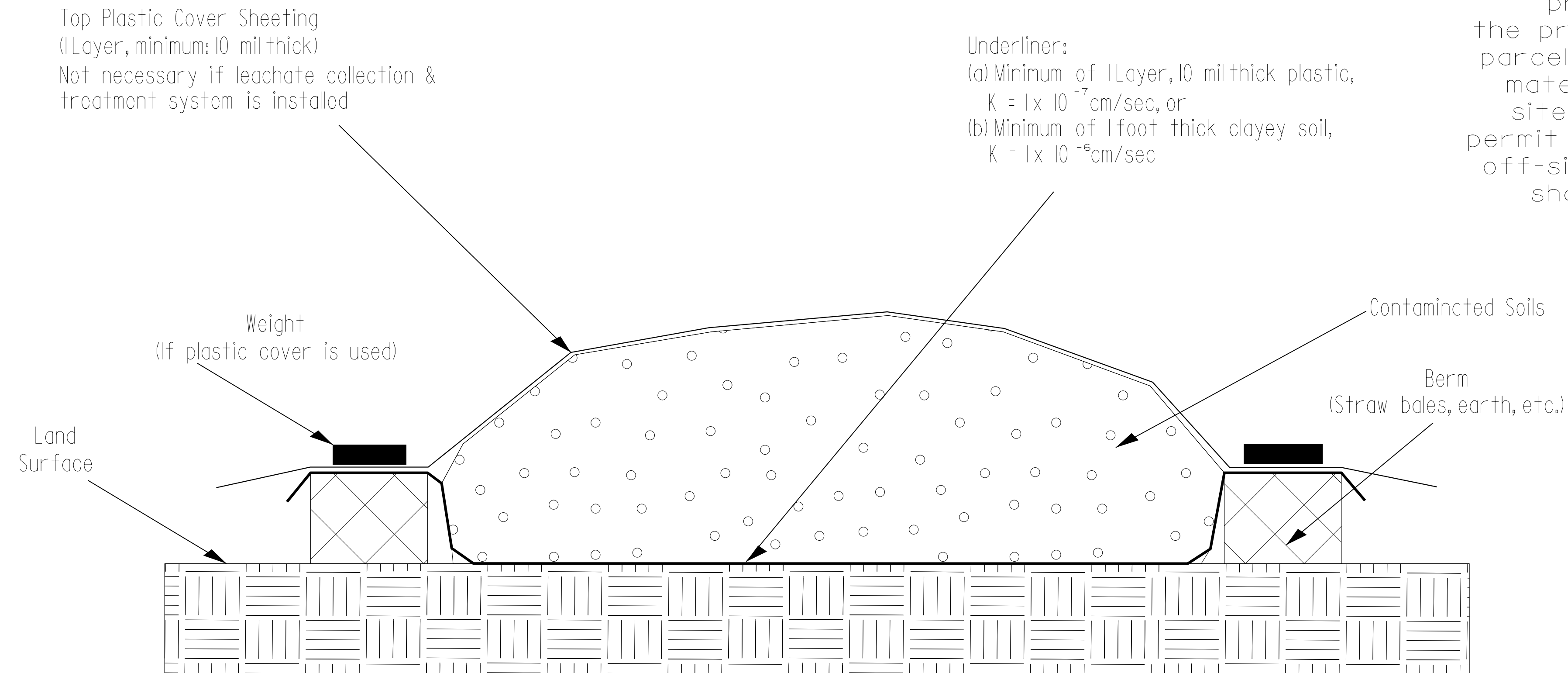
**CONTRACTS STANDARDS  
AND DEVELOPMENT UNIT**  
Office 919-707-6950 FAX 919-250-4119

**SEE TITLE BLOCK**

ORIGINAL BY: J. HOWERTON DATE: 3-7-2018  
MODIFIED BY: DATE: \_\_\_\_\_  
CHECKED BY: DATE: \_\_\_\_\_  
FILE SPEC.: \_\_\_\_\_

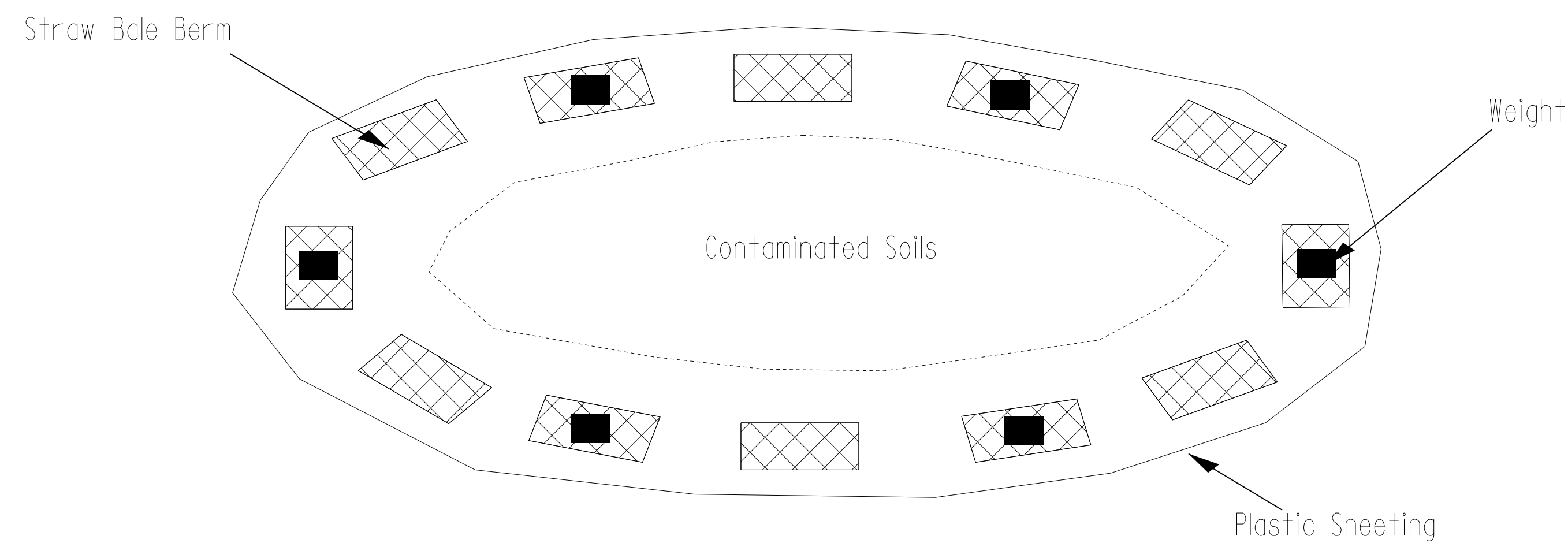
## Detail for Temporary Containment of Contaminated Soil

### Cross-Section View



**NOTE:**  
The Contractor shall stockpile all contaminated soil excavated from a property in a location within the property boundaries of the source parcel. If the volume of contaminated material exceeds available space on site, the Contractor shall obtain a permit from the NCDEQ UST Section for off-site temporary storage. Stockpile shall be removed within 45 days.

### Map View



**GEOTECHNICAL ENGINEERING UNIT**

EASTERN REGIONAL OFFICE  
 WESTERN REGIONAL OFFICE  
 CONTRACT OFFICE

**STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH**

### STOCKPILE CONTAINMENT DETAIL

REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

PREPARED BY:	DATE:
REVIEWED BY:	DATE:



STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS

**ASPHALT PAVEMENT  
 REMOVAL SUMMARY**

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD'
-L-	32+29	41+18	CL	713.11
-L-	42+39	44+47	RT	10.54
-L-	43+88	44+76	LT	3.00
-L-	43+98	44+41	LT	53.55
-L-	45+92	46+01	RT	0.92
-L-	45+92	48+72	LT	34.34
-L-	67+21	67+27	RT	0.43
-L-	67+21	75+67	CL	709.89
-L-	80+61	88+84	CL	177.21
-L-	85+42	88+96	RT	264.61
-L-	88+91	88+96	LT	0.51
-SRI-	12+40	17+17	RT	382.49
-SRI-	17+53	18+90	RT	375.47
TOTAL:				2,726.06
SAY:				2,730

**SUMMARY OF EARTHWORK**

LINE	STATION	STATION	UNCL. EXCAV. (CY)	EMB. +% (CY)	BORROW (CY)	TOTAL WASTE (CY)
-L1-LT	96+00.00	115+65.00	849	3,153	2,516	212
-L-LT	15+65.00	25+00.00	68	1,440	1,389	17
-Y1-	14+20.00	14+76.00	5	51	47	1
BREAK 1 LEFT TOTAL			922	4,644	3,952	231
-L-CL	15+65.00	25+00.00	0	775	775	0
BREAK 1 CENTER TOTAL			0	775	775	0
-L-RT	15+65.00	25+00.00	56	1,274	1,232	14
-Y2-	10+38.50	11+00.00	9	23	16	2
BREAK 1 RIGHT TOTAL			65	1,296	1,248	16
-L-LT	25+50.00	55+00.00	111	4,585	4,502	28
-SR1-	10+95.00	18+64.00	292	620	401	73
-SR2-	10+12.00	12+12.00	12	55	46	3
-SR3-	10+02.00	13+19.00	79	464	405	20
-Y4-LT	17+00.00	18+00.00	72	30	0	42
BREAK 2 LEFT TOTAL			566	5,754	5,353	166
-L-CL	25+50.00	55+00.00	8	4,241	4,235	2
BREAK 2 CENTER TOTAL			8	4,241	4,235	2
-L-RT	25+50.00	55+00.00	187	3,291	3,151	47
-Y4-RT	18+50.00	19+70.00	27	76	56	7
BREAK 2 RIGHT TOTAL			214	3,368	3,207	54
-L-LT	55+50.00	85+00.00	131	13,504	13,406	33
-Y5-LT	19+60.00	21+50.00	43	113	81	11
BREAK 3 LEFT TOTAL			174	13,616	13,487	44

PER GEOTECH RECOMMENDATIONS DATED : 02-26-19  
 PER PAVEMENT DESGIN RECOMMENDATIONS DATED : 07-14-15  
 UNDERCUT = 1,100 CY  
 SHALLOW UNDERCUT = 1,300 CY  
 SELECT GRANULAR MATERIAL = 1,200 CY  
 CLASS IV SUBGRADE STABILIZATION = 3,850 TONS

**SUMMARY OF EARTHWORK**

LINE	STATION	STATION	UNCL. EXCAV. (CY)	EMB. +% (CY)	BORROW (CY)	TOTAL WASTE (CY)
-L-CL	55+50.00	85+00.00	27	5,109	5,089	7
BREAK 3 CENTER TOTAL			27	5,109	5,089	7
-L-RT	55+50.00	85+00.00	375	5,321	5,041	94
-Y5-RT	22+00.00	28+00.00	305	660	431	76
BREAK 3 RIGHT TOTAL			680	5,981	5,472	170
-L-LT	85+50.00	106+00.00	593	1,526	1,082	148
-Y7-	13+20.00	14+18.00	121	23	0	99
BREAK 4 LEFT TOTAL			714	1,549	1,082	247
-L-CL	85+50.00	106+00.00	11	1,025	1,018	3
BREAK 4 CENTER TOTAL			11	1,025	1,018	3
-L-RT	85+50.00	106+00.00	113	3,001	2,917	28
-Y6-	10+42.00	11+20.00	0	63	63	0
-Y7-	15+36.00	16+45.00	197	61	0	136
BREAK 4 RIGHT TOTAL			310	3,125	2,979	164
<b>PROJECT TOTAL</b>			<b>3,691</b>	<b>50,483</b>	<b>47,892</b>	<b>1,102</b>
MATERIAL FOR SHOULDER CONSTRUCTION				2,625		2,625
WASTE IN LIEU OF BORROW (PHASE 1 AND 2)					-179	-179
REPLACE TOP SOIL ON BORROW PIT (5%)						2,537
LOSS DUE TO CLEARING AND GRUBBING			-400		400	
<b>GRAND TOTAL</b>			<b>3,291</b>	<b>53,108</b>	<b>53,276</b>	<b>923</b>
SAY			3,300		53,300	

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.

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.  
 TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.  
 FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.  
 W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.  
 G = GATING IMPACT ATTENUATOR TYPE 350  
 NG = NON-GATING IMPACT ATTENUATOR TYPE 350

**GUARDRAIL SUMMARY**

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH		W		ANCHORS					IMPACT ATTENUATOR TYPE 350	SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS		
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	GREU TL-3	TYPE III	B-77	CAT-1	EA						G	NG
-L-	37+02.50	39+33.75	RT	231.25'			39+15.00		0.75'		1'	50'														
-L-	38+96.25	42+21.25	LT	331.25'			39+15.00		0.75'		1'	50'														
-L-	79+93.75	84+50.00	LT	456.25'			83+50.00	80+00.00	2'		1'	50'														
-L-	82+50.00	85+56.25	RT	306.25'			83+00.00	85+50.00	2'		1'	50'														
SUBTOTAL				1,325.00'																						
LESS 4 GREU TL-3 @ 50' EACH				200'																						
LESS 4 CAT-1 @ 6.25' EACH				25'																						
PROJECT TOTALS				1,100'																						
SAY				1,125'																						

ADDITIONAL GUARDRAIL POSTS = 5









21001

COMPUTED BY: VHB DATE: 8/24/2021  
CHECKED BY: VHB DATE: 8/24/2021

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

PROJECT NO. U-4405A SHEET NO. 3D-5

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 INCHES & UNDER)

Table with columns: LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC), C. S. PIPE, R. C. PIPE CLASS III, R. C. PIPE CLASS IV, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, CONCRETE TRANSITIONAL SECTION, ENDWALLS, PIPE REMOVAL, and REMARKS.

SHEET TOTALS

- ABBREVIATIONS
C.A.A. CORRUGATED ALUMINIUM ALLOY
C.B. CATCH BASIN
C.S. CORRUGATED STEEL
D.I. DROP INLET
G.D.I. GRATED DROP INLET
H.D.P.E. HIGH DENSITY POLYETHYLENE
J.B. JUNCTION BOX
M.H. MANHOLE
N.S. 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
W.S. WIDE SLOT

COMPUTED BY: VHB DATE: 8/24/2021  
CHECKED BY: VHB DATE: 8/24/2021

PROJECT NO. U-4405A SHEET NO. 3D-6

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 48 INCHES & UNDER)

Table with columns for Line & Station, Offset, Structure Number, Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC), C.S. Pipe, R.C. Pipe Class III, R.C. Pipe Class IV, Quantities for Drainage Structures, Frame, Grates, and Hood, Concrete Transitional Section, and Remarks. Includes a 'SHEET TOTALS' row at the bottom.

Z1601

COMPUTED BY: VHB DATE: 8/24/2021
CHECKED BY: VHB DATE: 8/24/2021

PROJECT NO. SHEET NO.
U-4405A 3D-7

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 48 INCHES & UNDER)

Table with columns for Line & Station, Offset, Structure Number, Invert Elevation, Minimum Required Slope, Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC), C.S. Pipe, R.C. Pipe Class III, R.C. Pipe Class IV, Quantities for Drainage Structures, Frame, Grates, and Hood, Concrete Transitional Section, and Abbreviations. Includes a SHEET TOTALS row at the bottom.





Z1601

COMPUTED BY: VHB DATE: 8/24/2021
CHECKED BY: VHB DATE: 8/24/2021

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO. U-4405A SHEET NO. 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 INCHES & UNDER)

Main table with columns: LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC), C. S. PIPE, R. C. PIPE CLASS III, R. C. PIPE CLASS IV, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, CONCRETE TRANSITIONAL SECTION, and REMARKS.

Z:\600

COMPUTED BY: VHB DATE: 8/24/2021  
CHECKED BY: VHB DATE: 8/24/2021

PROJECT NO. SHEET NO.  
U-4405A 3D-10

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 48 INCHES & UNDER)

Table with columns: LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC), C. S. PIPE, R. C. PIPE CLASS III, R. C. PIPE CLASS IV, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, CONCRETE TRANSITIONAL SECTION, and REMARKS. Includes a SHEET TOTALS row at the bottom.

COMPUTED BY: VHB DATE: 8/24/2021  
CHECKED BY: VHB DATE: 8/24/2021

PROJECT NO. U-4405A SHEET NO. 3D-11

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 48 INCHES & UNDER)

Table with columns: LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, RCP/CS/PIPE CLASS, ENDWALLS, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME/GRATES, CONCRETE TRANSITIONAL SECTION, and REMARKS. Includes sub-headers for 'DO NOT USE' and 'PIPE REMOVAL'.

ABBREVIATIONS: C.A.A. CORRUGATED ALUMINIUM ALLOY, C.B. CATCH BASIN, C.S. CORRUGATED STEEL, D.I. DROP INLET, G.D.I. GRATED DROP INLET, H.D.P.E. HIGH DENSITY POLYETHYLENE, J.B. JUNCTION BOX, M.H. MANHOLE, N.S. 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, W.S. WIDE SLOT.

SHEET TOTALS: 32, 288, 1, 1, 1, 36, 1, 79, 81, 5, 3, 5, 8, 10, 2, 11, 1, 3, 1, 2, 4, 64, 4.7746, 3.745, 8542  
PROJECT TOTALS: 52, 1076, 636, 140, 604, 60, 768, 572, 20, 7384, 1416, 1964, 1132, 1648, 1240, 652, 60, 11.700, 213, 155.6, 105, 13, 48, 45, 36, 1, 79, 81, 5, 3, 5, 8, 10, 2, 11, 1, 3, 1, 2, 4, 64, 4.7746, 3.745, 8542



COMPUTED BY: THEIN ZAN DATE: 02-26-2019  
 CHECKED BY: JAMEY BATTS DATE: 02-27-2019

(5-15-18)

PROJECT NO.  
U-4405A (39049.1.1)

SHEET NO.  
3G-1

**STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS**

**SUMMARY OF SUBSURFACE DRAINAGE**

LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
	CONTINGENCY			SD	200
				<b>TOTAL LF:</b>	200

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

**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
L	19+00	25+00	ASU1	12	500	950	1500		
L	70+00	74+00	ASU1	12	450	850	1350		
L	102+00	106+00	ASU1	12	250	500	750		
	CONTINGENCY			ASU1	12	100	200	300	
			<b>TOTAL CY/TONS/SY:</b>		1300	2500**	3900**	0	0

\*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.

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**PARCEL INDEX**

PARCEL NO.	SHEET NO.	PROPERTY OWNER NAME
1	4B & 4	RAY JOHNSON
2	4	ZARKO JOHNSON
8	4	SIMPSON & SIMPSON II
9	4	JANICE MARIE TYSON
5	4	RAYCONDA PROPERTIES
7	4	SPIRIT MASTERS FUNDING III, LLC
10	4	DEBRA NEICE WILLIAMS
11	4	V C CORRELL & WIFE
12	4	SHIRLEY A FONTAINE
20	4 & 5	THOMAS L MANIGO & WIFE
21	5	TRINITY UNITED METHODIST CHURCH
22	5	NORTH CAROLINA NATURAL GAS
23	5	MURRY EUGENE HODGES, JR & WIFE
24	4 & 5	FORT SILL NATIONAL BANK
25	5	RAYCONDA PROPERTIES
27	5	EYE MEDICS OPTOMETRIST, PA
28	5	PHILLIP R. TAYLOR
30	5	MCNL ENTERPRISES, LLC
31	5	M & S PIKE, LLC
33	5	DELLAR CLAUDINE CAULDER
34	5	DELLAR C CAULDER
35	5	WALTER E CAULDER & WIFE
41	5	JOHNNY DEAN CAPPS
42	5	BEATRICE GLENN
43	5	GERALD GOODSPEED, JR. HEIRS
44	5 & 6	CYNTHIA HARRIS STEVENS
45	6	PETER A PORRECO & WIFE
46	6	MARLENE ELIZABETH VARGAS
47	6	JOSEPH R WEST & WIFE LINDA M.
48	6	G6 PROPERTIES, LLC
49	6	BILLY C BALDWIN & WIFE
50	6	LOU S HORTON
51	6	OAIHA & GIAU TANG
52	5	FAYETTEVILLE STORAGE 17 NC, LLC
53	5	CUMBERLAND COUNTY
55	6 & 28	CUMBERLAND COUNTY BOARD OF EDUCATION
59	6	MCDONALD'S CORP
60	6 & 7	AOM INVESTMENTS, LLC
61	7	R & W PIZZA HUTS OF NORTH CAROLINA
61A	7	LAFAYETTE CEMETERY PARK CORP
62	6, 7	CUMBERLAND COUNTY BOARD OF EDUCATION
63	7	LAFAYETTE CEMETERY PARK CORP
64	7	JERNIGAN-WARREN FUNERAL
65	7, 8	LAFAYETTE CEMETERY PARK CORP
67	8	RAEFORD ROAD PARTNERS, LLC
68	8	SANDRA K CAIN
69	8	GORDON FRANKLIN CRUMPLER
70	8	M D GILLIS
71	8, 9 & 29	CIRCLE K STORES, INC.
73	8 & 9	WAL-MART REAL ESTATE BUSINESS TRUST
74	29	CAROLINA CONFERENCE OF SEVENTH DAY ADVENTIST, INC.
75	29	CONFERENCE OF CAROLINA
80	29	FIRST SPANISH BAPTIST CHURCH
83	9	FRANCES H ELLIOT, TRUSTEE
84	9	FRANCES H ELLIOT, TRUSTEE
81	29	FIRST SPANISH BAPTIST CHURCH
85	9	RAEFORD CORPORATE PARK PROPERTY OWNERS ASSOC. INC.
86	9	RAEFORD CROSSING, LLC
87	9	SOUTH COAST PROPERTIES, LLC
88	9	JONATHAN H ELLIOT
89	9	CROSS DEVELOPMENT CC RAEFORD, LLC
90	9 & 10	STEPHEN M. GENTER & WIFE
91	9 & 10	RICHARD WILDER & WIFE ALICE
94	10	VAN METER RENTALS, LLC

**PARCEL INDEX**

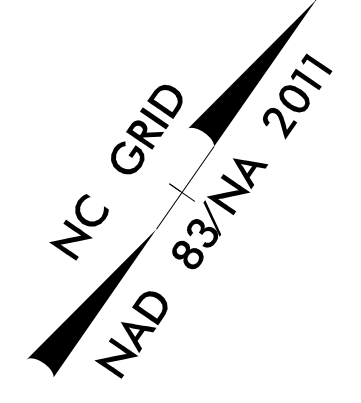
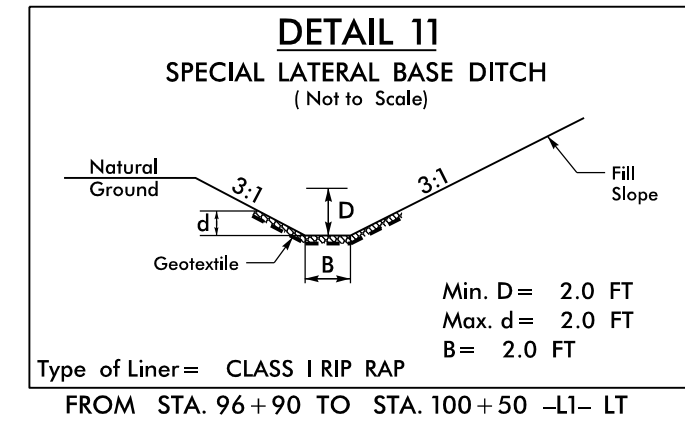
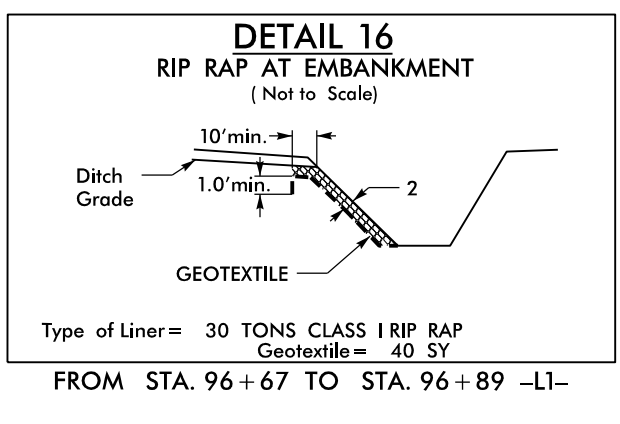
PARCEL NO.	SHEET NO.	PROPERTY OWNER NAME
95	10	NEW MACEDONIA FREE WILL BAPTIST CHURCH, INC
96	10	NEW MACEDONIA FREE WILL BAPTIST CHURCH, INC
97	10	NEW MACEDONIA FREE WILL BAPTIST CHURCH, INC
98	10	CHRISTINE WALKER HEIRS
100	10	BESSIE BLUE LIFE MOORE
101	10	PETER STEWART ENTERPRISES, INC
103	10	NCDOT
104	10	CONNIE L WILSON PRICE
107	10 & 11	PSP OF FAYETTEVILLE, LLC
109	10 & 11	WOCOLO, LLC
110	11	ROGERS & BREECE INC
111	11	DOHERTY HOLDINGS, LLC
112	11	ALLISON HOLDINGS VII, LLC
116	11	ZP #15, LLC
118	11	ROBERT H JORDAN & WIFE, SUE ANN JONES JORDAN
119	11	M D GILLIS
120	11	DWANE D CLODFELTER
121	11 & 12	SARA WILLIAMS TOLLISON AND JOHN ELWOOD WILLIAMS
124	11 & 12	BILL P PAPPAS & WIFE MARIA G
400	4B	NORLAN B. BILLER AND WIFE JULIE T. BILLER
401	4B	JOHN T. FRANGAKIS
402	4B	JOSHUA T. WORTH AND WIFE ANNIE G. WORTH

**PARCEL INDEX**

PARCEL NO.	SHEET NO.	PROPERTY OWNER NAME
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8/17/99

PROJECT REFERENCE NO. U-4405A	SHEET NO. 4A
R/W SHEET NO. U-4405 PSH 4A	
ROADWAY DESIGN ENGINEER SEAL 024929	HYDRAULICS ENGINEER SEAL 20147
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

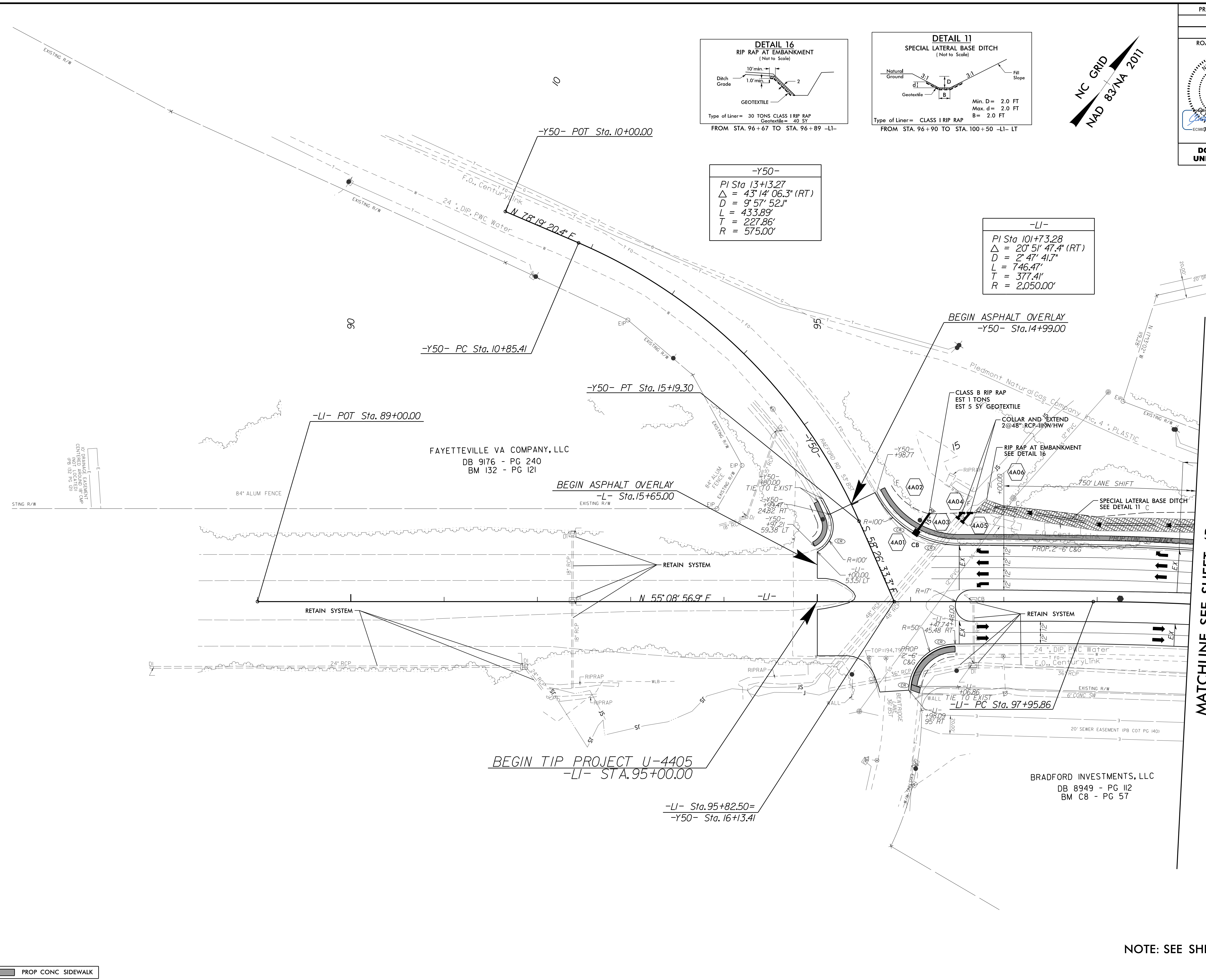


**-Y50-**

PI Sta 13+13.27  
 $\Delta = 43' 14" 06.3" (RT)$   
 $D = 9' 57" 52.1"$   
 $L = 433.89'$   
 $T = 227.86'$   
 $R = 575.00'$

**-LI-**

PI Sta 101+73.28  
 $\Delta = 20' 51' 47.4" (RT)$   
 $D = 2' 47' 41.7"$   
 $L = 746.47'$   
 $T = 377.41'$   
 $R = 2,050.00'$



MATCHLINE SEE SHEET 4B  
-LI- STA 99+00

PROP CONC SIDEWALK

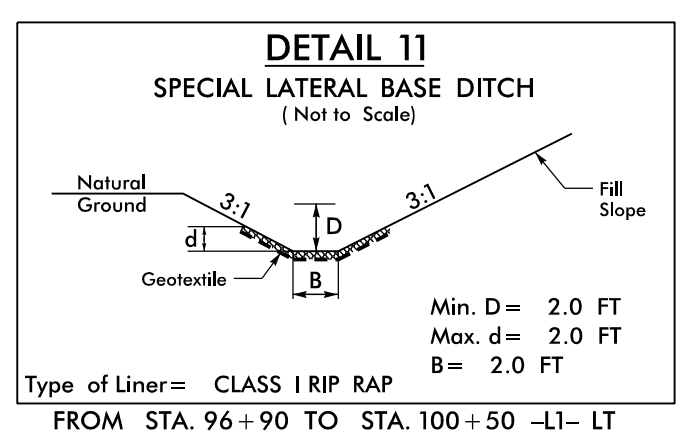
NOTE: SEE SHEET 39 FOR -LI- PROFILE

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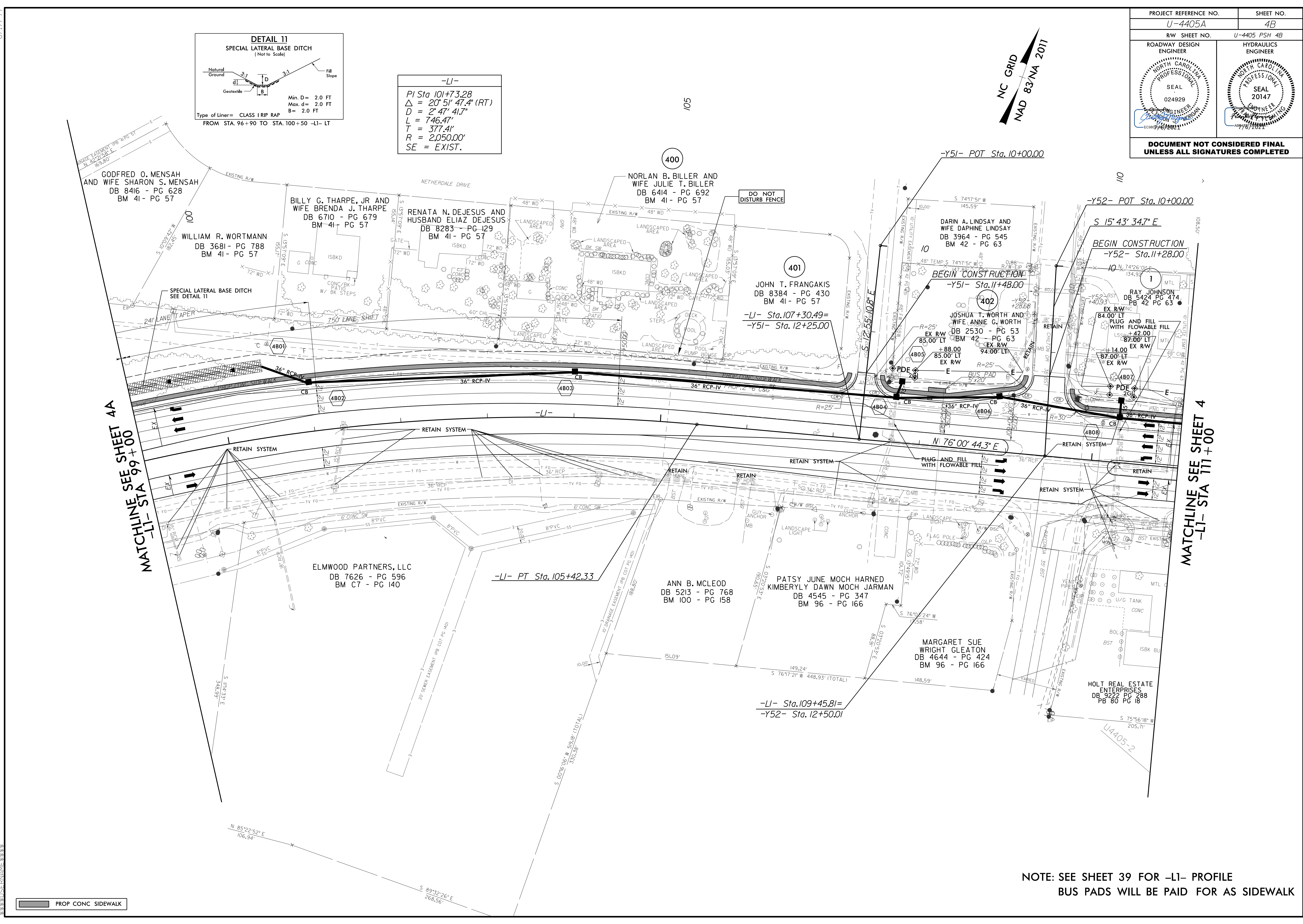
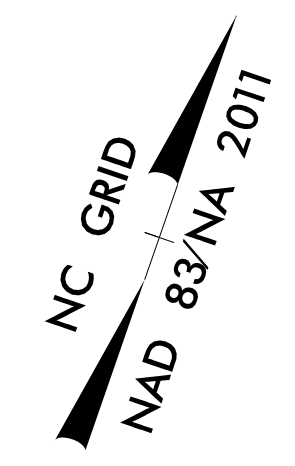
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PROJECT REFERENCE NO.	SHEET NO.
U-4405A	4B
RW SHEET NO.	U-4405 PSH 4B
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



-LI-

PI Sta 101+73.28  
Δ = 20' 5" 47.4" (RT)  
D = 2' 47' 41"  
L = 746.47'  
T = 377.41'  
R = 2,050.00'  
SE = EXIST.



MATCHLINE SEE SHEET 4A  
-LI- STA 99+00

MATCHLINE SEE SHEET 4  
-LI- STA 111+00

PROP CONC SIDEWALK

NOTE: SEE SHEET 39 FOR -LI- PROFILE  
BUS PADS WILL BE PAID FOR AS SIDEWALK

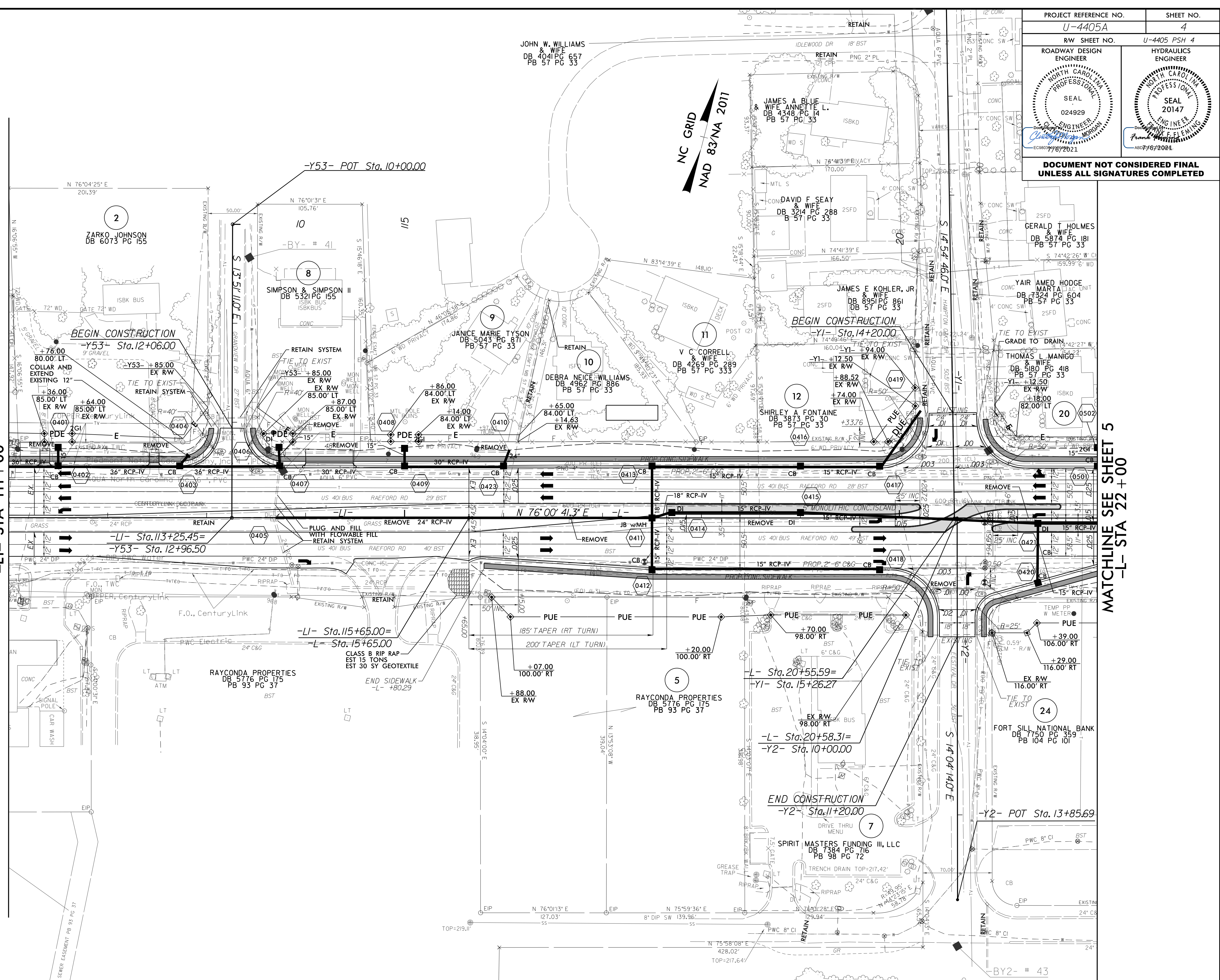
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8/17/99

PROJECT REFERENCE NO. <b>U-4405A</b>		SHEET NO. <b>4</b>	
RW SHEET NO. <b>U-4405 PSH 4</b>		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>			

MATCHLINE SEE SHEET 4B  
-L1- STA 11+00

MATCHLINE SEE SHEET 5  
-L- STA 22+00

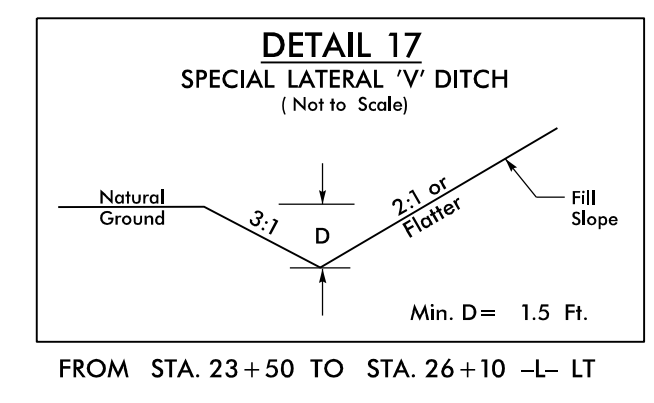


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PROP CONC SIDEWALK

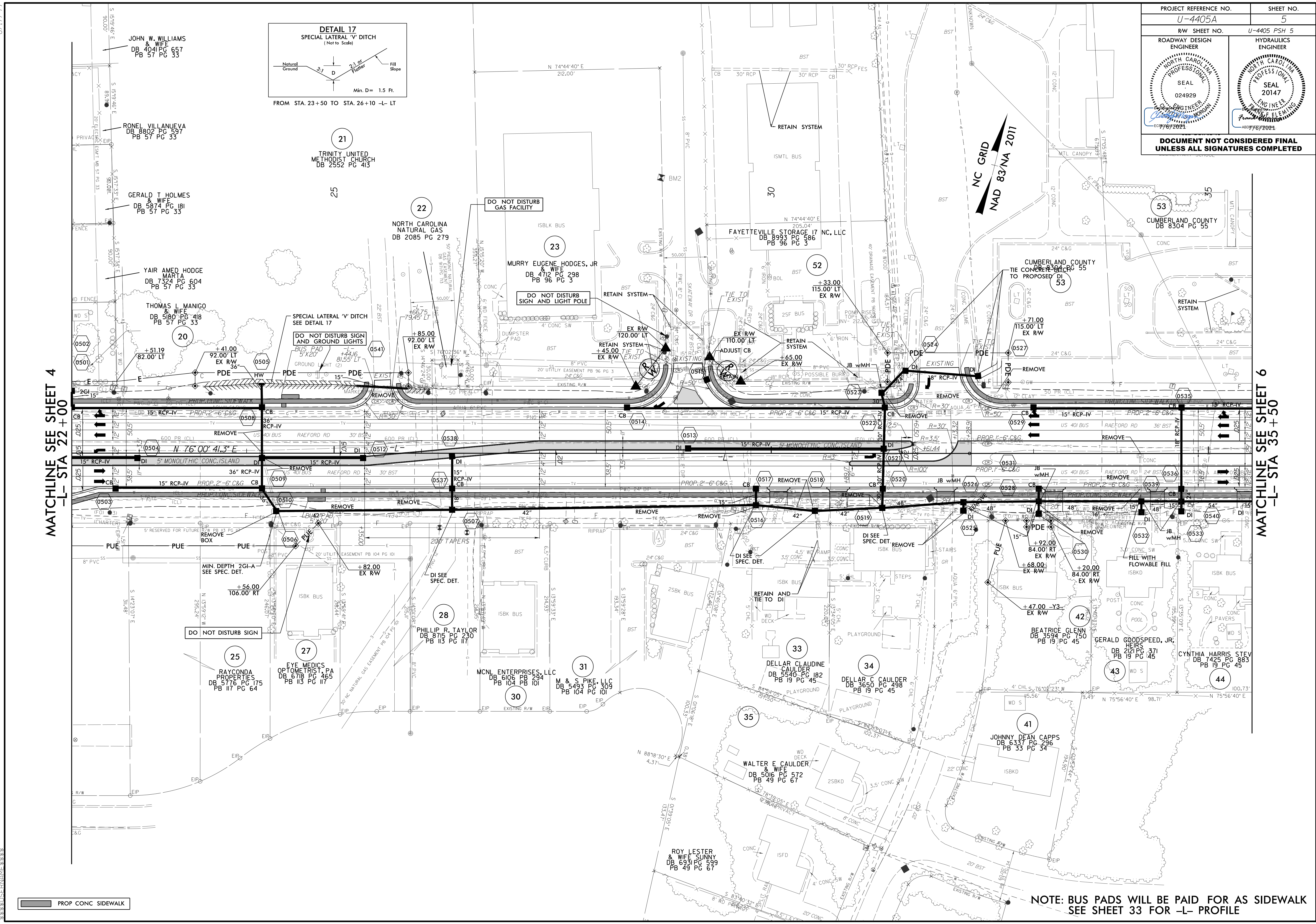
NOTE: SEE SHEET 33 FOR -L- PROFILE  
SEE SHEET 36 FOR -Y1- PROFILE  
SEE SHEET 37 FOR -Y2- PROFILE  
SEE SHEET 39 FOR -L1- PROFILE  
SEE SHEET 2B-1 FOR INTERSECTION DETAILS

PROJECT REFERENCE NO.	SHEET NO.
U-4405A	5
RW SHEET NO.	U-4405 PSH 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



MATCHLINE SEE SHEET 4  
-L- STA 22+00

MATCHLINE SEE SHEET 6  
-L- STA 35+50

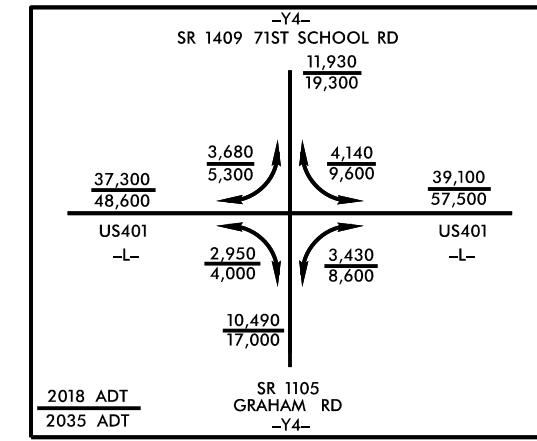


PROP CONC SIDEWALK

NOTE: BUS PADS WILL BE PAID FOR AS SIDEWALK  
SEE SHEET 33 FOR -L- PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
U-4405A	6
RW SHEET NO.	U-4405 PSH 6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



NC GRID  
NAD 83/NA 2011

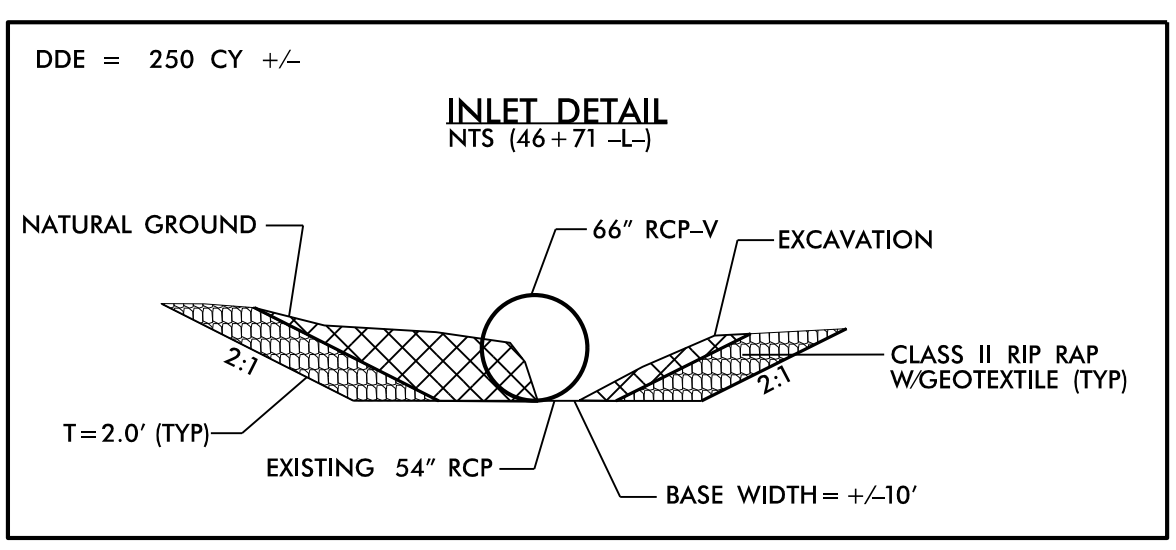
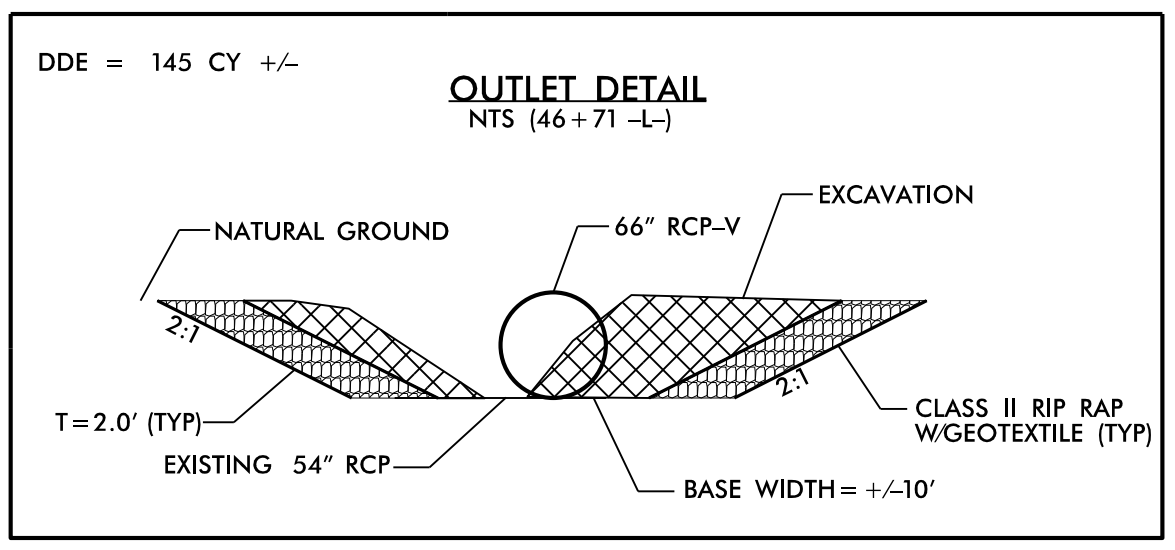
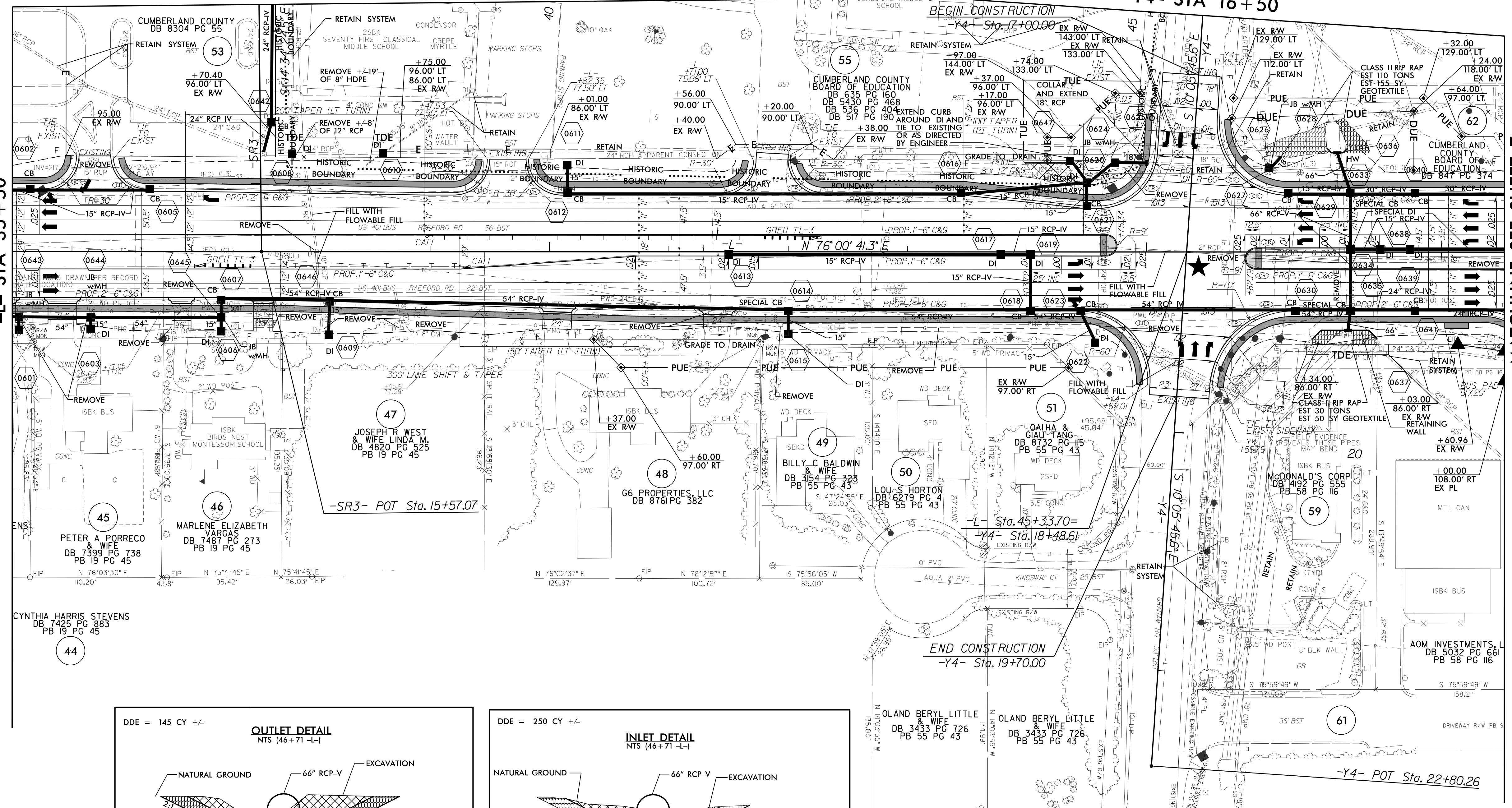
NOTE: COORDINATION WITH RESIDENT ENGINEER IS REQUIRED PRIOR TO ANY TREE REMOVAL ON PARCEL 55

MATCHLINE SEE SHEET 28  
-SR3- STA 13+50

MATCHLINE SEE SHEET 28  
-Y4- STA 16+50

MATCHLINE SEE SHEET 5  
-L- STA 35+50

MATCHLINE SEE SHEET 7  
-L- STA 48+00

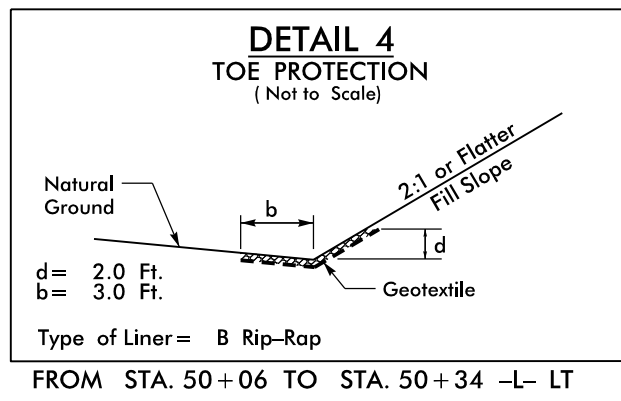
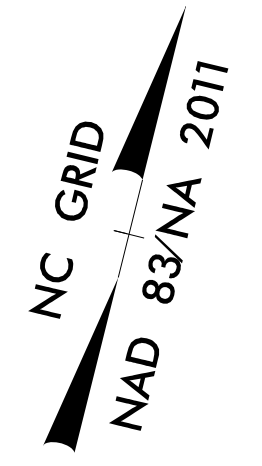


NOTE: BUS PADS WILL BE PAID FOR AS SIDEWALK  
SEE SHEET 33 & 34 FOR -L- PROFILE  
SEE SHEET 37 FOR -Y4- PROFILE  
SEE SHEET C2-1 THRU C2-4 FOR CULVERT PLANS

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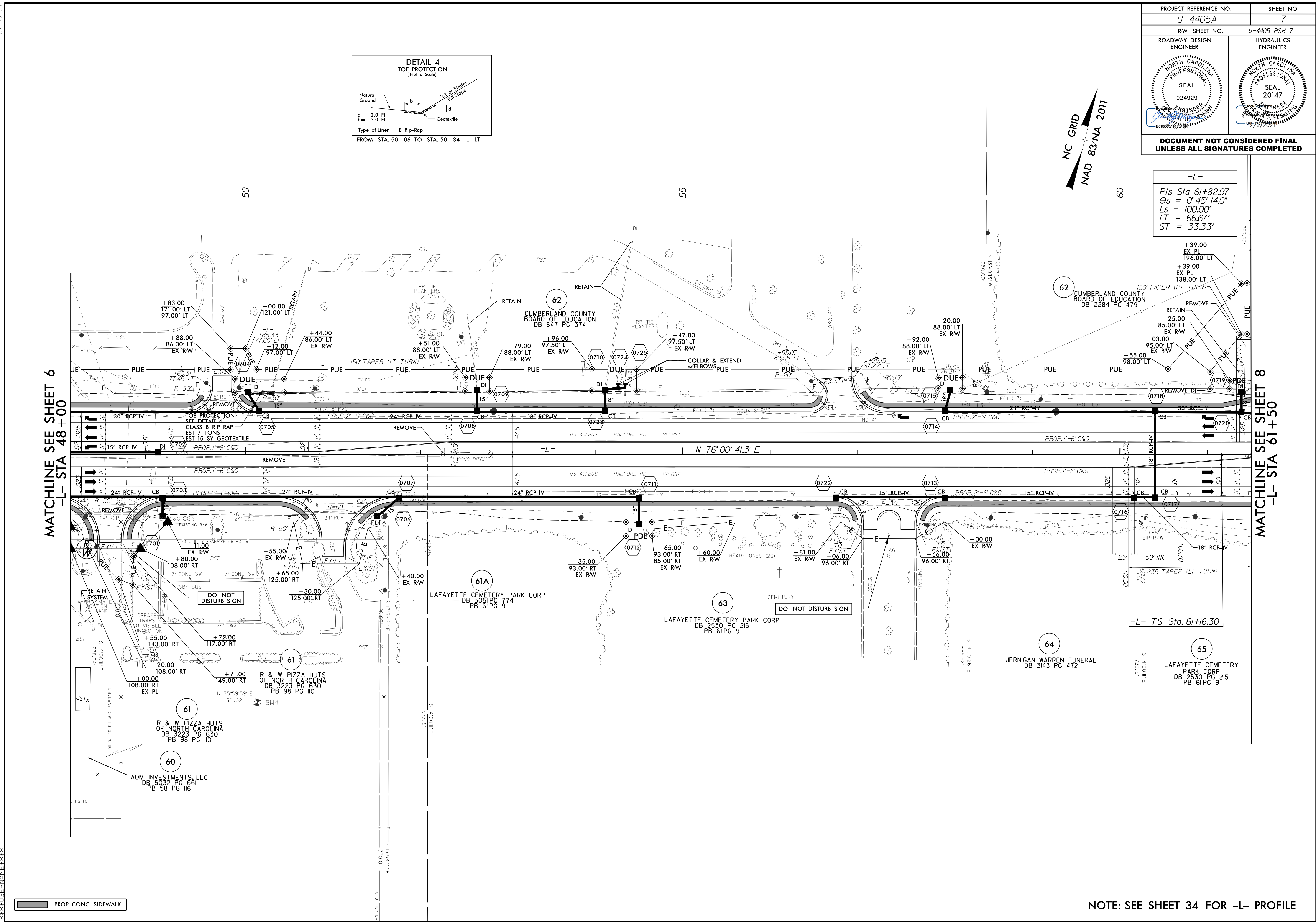
PROJECT REFERENCE NO. U-4405A	SHEET NO. 7
RW SHEET NO. U-4405 PSH 7	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



-L-  
 Pls Sta 61+82.97  
 $\theta_s = 0^\circ 45' 14.0''$   
 $L_s = 100.00'$   
 $LT = 66.67'$   
 $ST = 33.33'$

MATCHLINE SEE SHEET 6  
-L- STA 48+00

MATCHLINE SEE SHEET 8  
-L- STA 61+50



PROP CONC SIDEWALK

NOTE: SEE SHEET 34 FOR -L- PROFILE

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