

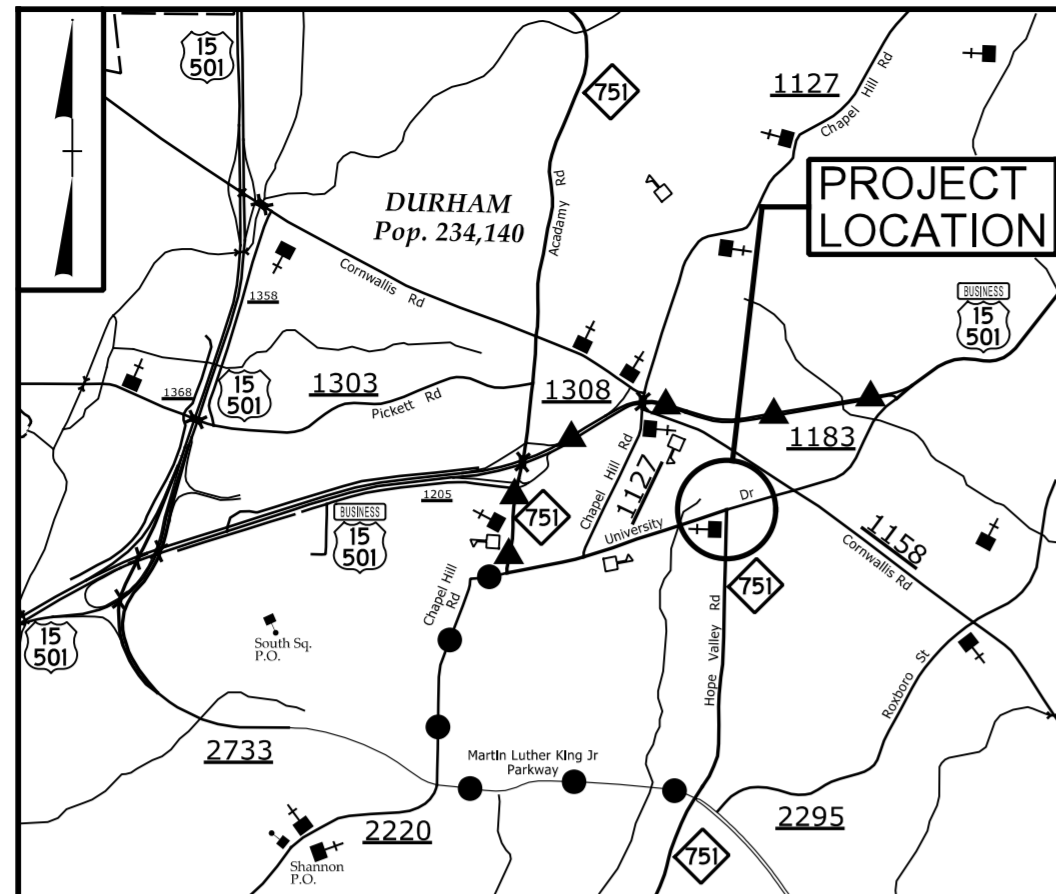
**This electronic collection of documents is provided
for the convenience of the user
and is Not a Certified Document –**

**The documents contained herein were originally issued
and sealed by the individuals whose names and license
numbers appear on each page, on the dates appearing
with their signature on that page.**

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

09/08/19

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols
See Sheet 1C For Survey Control Sheet



VICINITY MAP



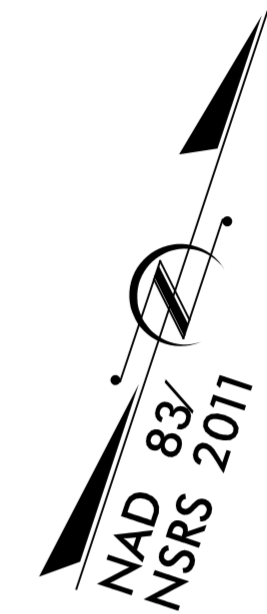
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

DURHAM COUNTY

**LOCATION: INTERSECTION IMPROVEMENTS (ROUNDAABOUT)
AT NC 751 (HOPE VALLEY ROAD) AND
SR 1183 (UNIVERSITY DRIVE) IN DURHAM**
TYPE OF WORK: GRADING, PAVING, DRAINAGE

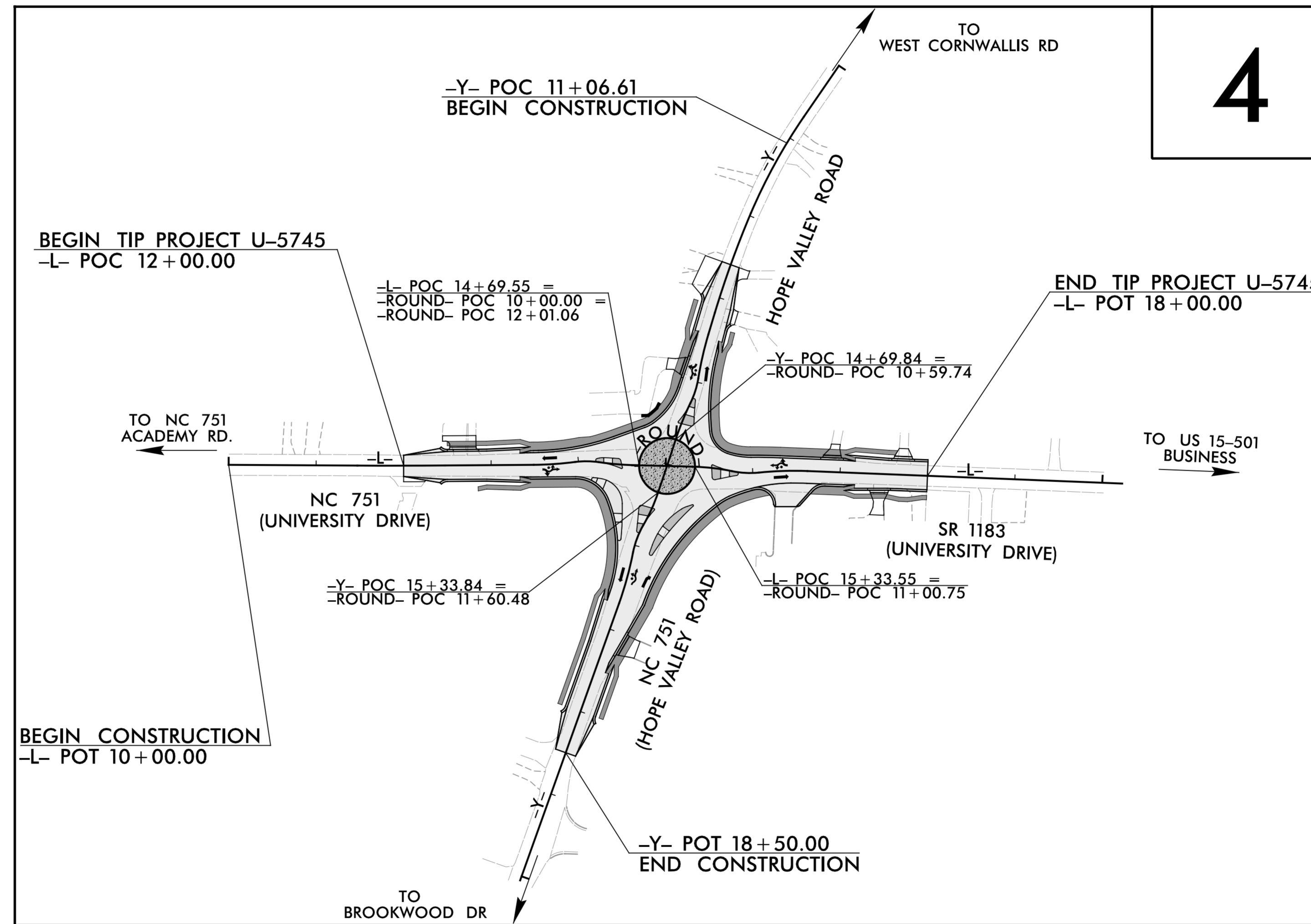
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-5745	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
50166.1.1		PE	
50166.2.1		RW & UTIL	
50166.3.1		CONST	

PART I



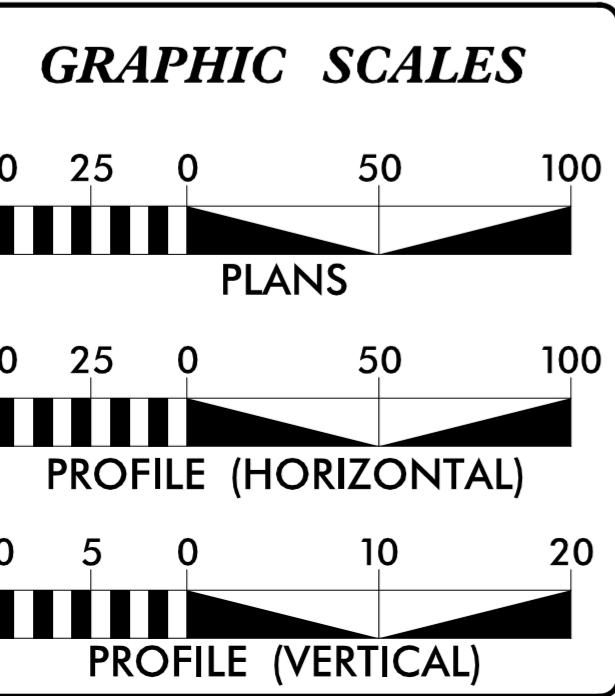
TIP PROJECT: U-5745

CONTRACT: C204270



NCDOT CONTACT: STEPHEN R. DAVIDSON, P.E.
DIVISION 5 - DIVISION DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



DESIGN DATA

V = 40 MPH (NC 751)

V = 15 MPH (ROUNDAABOUT)

ADT 2018 = 11,320

ADT 2040 = 12,200 (NC 751)

FUNC CLASS = MINOR ARTERIAL

REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-5745 = 0.114 MILE

TOTAL LENGTH TIP PROJECT U-5745 = 0.114 MILE

Prepared for the North Carolina Department of Transportation
In the office of: **HDR** HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: August 17, 2017

LETTING DATE: January 15, 2019

PHILLIP E. ROGERS, PE
PROJECT ENGINEER

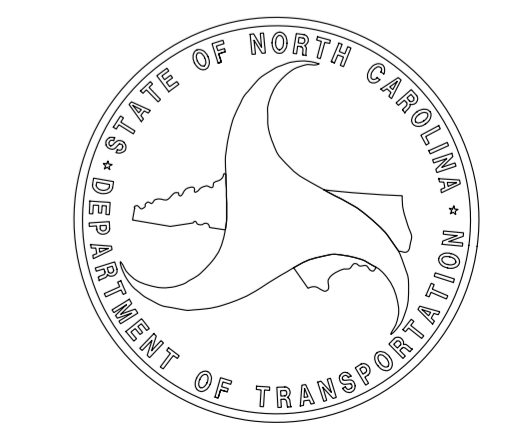
JEFFREY P. MUHLBAUER, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
12/17/2018

(Signature) P.E.

ROADWAY DESIGN ENGINEER
12/17/2018

(Signature) P.E.



12/17/2018
R:\Projects\2018\U5745\RDY_TSH.dgn
HDR ENGINEERING, INC.

6/2/09

PROJECT SURVEYOR

SURVEY CONTROL SHEET

W/EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1		807451.4778	2019202.1890	368.60		OUTSIDE PROJECT LIMITS
2		807768.0490	2019109.9520	347.79		OUTSIDE PROJECT LIMITS
100		807894.3269	2019616.6798	359.97	10+92.41	21.58 RT
101		807994.6534	2019959.3880	373.54	14+51.76	34.66 RT
102		808223.8399	2020553.0619	362.88		OUTSIDE PROJECT LIMITS

BY POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
103		807572.6682	2020016.3632	377.73	13+57.38	453.42 RT
101		807994.6534	2019959.3880	373.54	14+51.76	34.66 RT
104		808348.8117	2020021.6312	382.69	16+31.54	289.54 LT
105		808545.8882	2020069.4625	385.24	17+09.57	463.64 LT

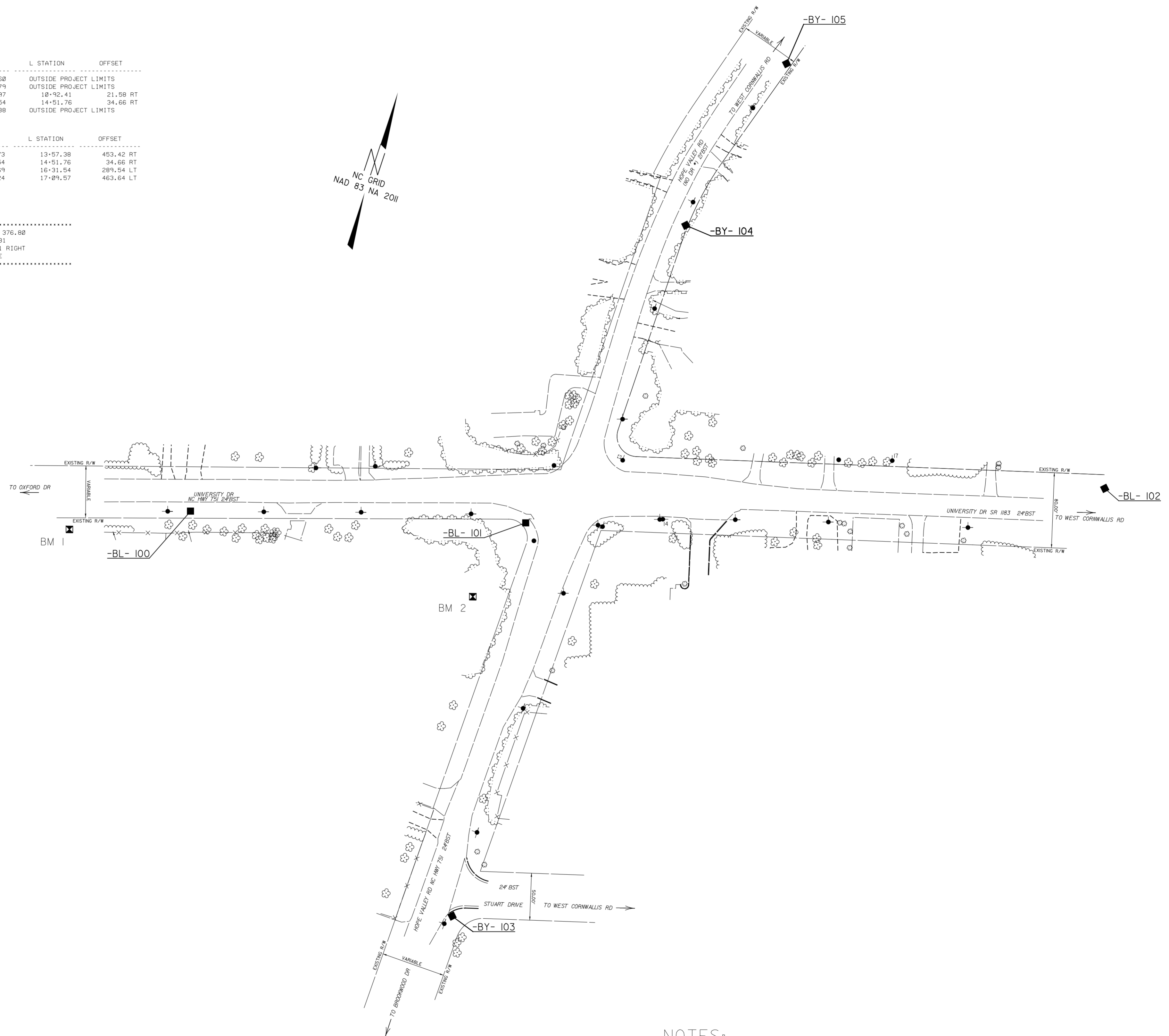
.....
 BM1 ELEVATION = 358.96
 N 807835 E 2019500
 BL STATION 17+81.00 29 RIGHT
 60D NAIL IN A 24" MAPLE

.....
 BM2 ELEVATION = 376.80
 N 807902 E 2019931
 BL STATION 22+12.00 81 RIGHT
 60D NAIL IN A 20" PINE



U5745-1

U5745-2



NOTES:

1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
2. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.

NOTE: DRAWING NOT TO SCALE

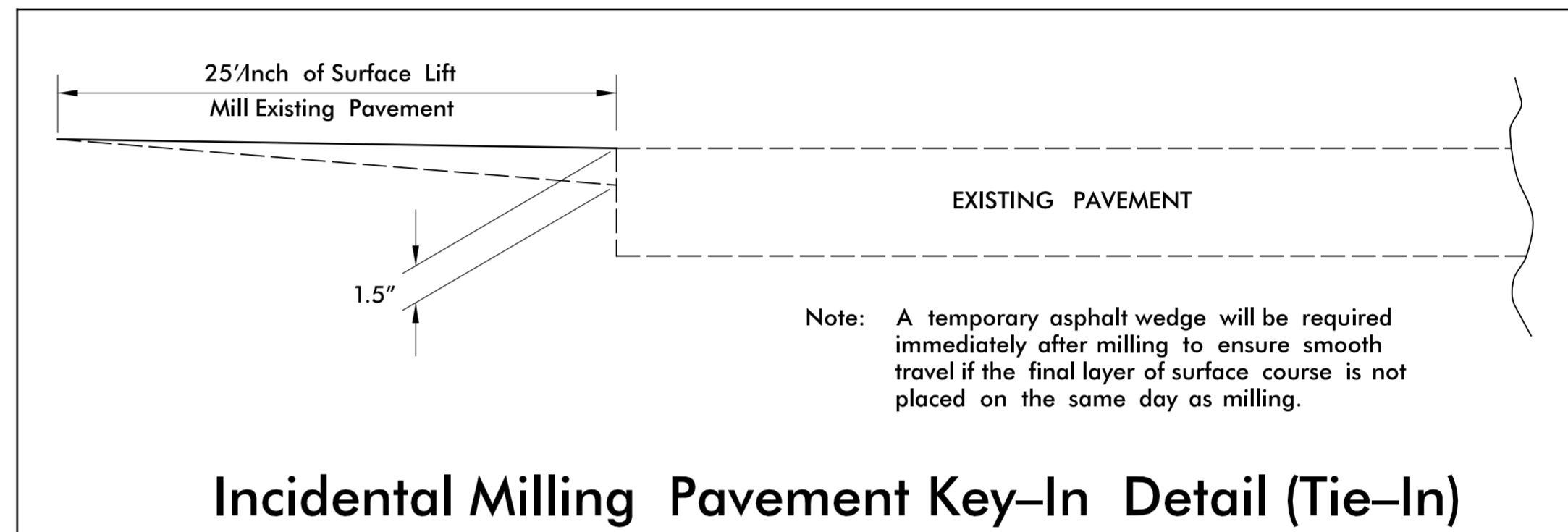
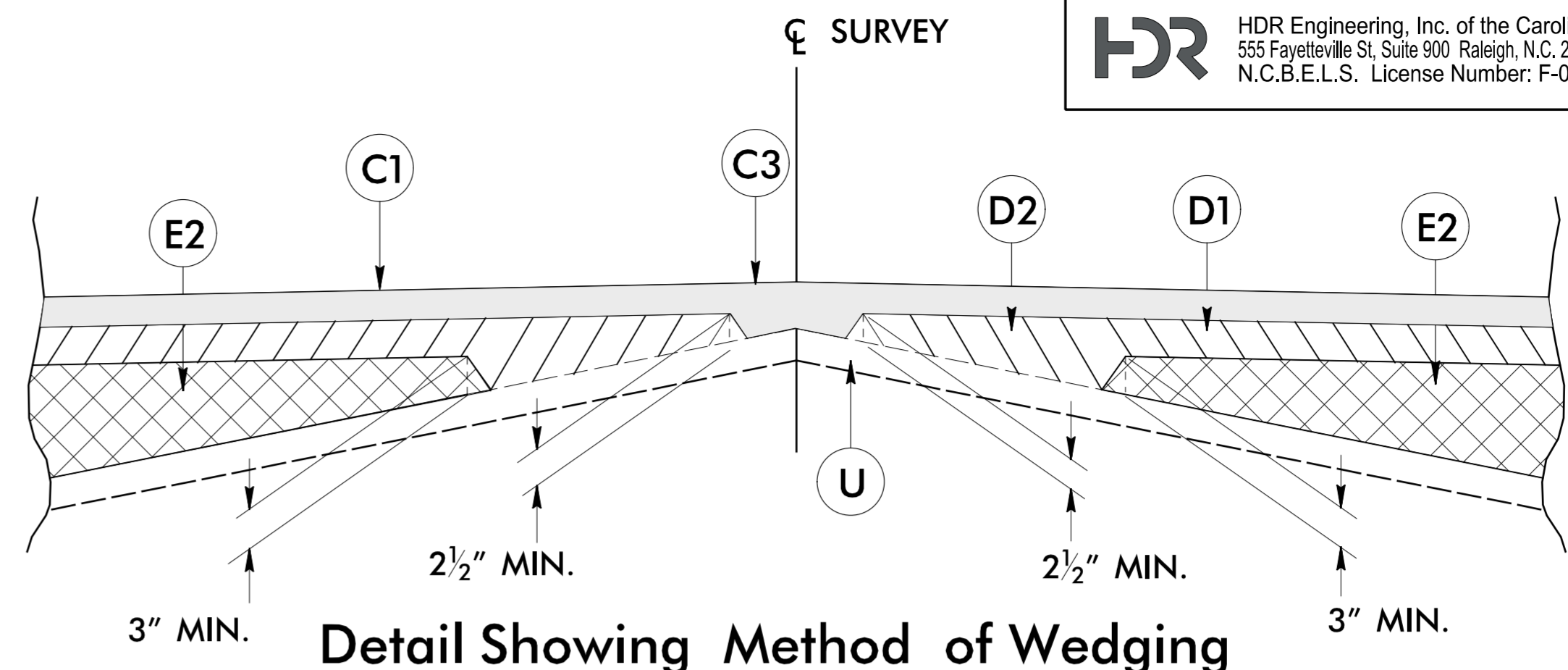
6/2/2018

PAVEMENT SCHEDULE

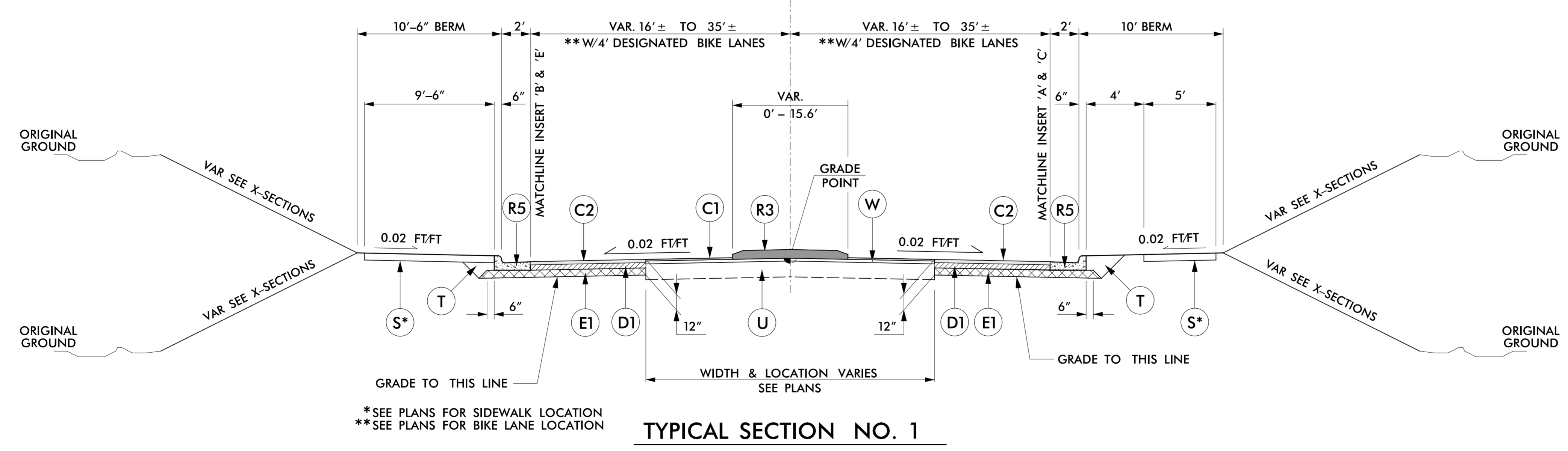
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.	R1	8" JOINTED CONCRETE TRUCK APRON
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	R2	2" ROLLED CONCRETE CURB
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS GREATER THAN 1½" IN DEPTH AND LESS THAN 2".	R3	5" MONOLITHIC CONCRETE ISLAND (KEYED-IN)
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	R4	CONCRETE MOUNTABLE MEDIAN
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.	R5	2'-6" CONCRETE CURB & GUTTER
E1	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.	S	4" CONCRETE SIDEWALK
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.	T	EARTH MATERIAL
J1	PROP. 8" AGGREGATE BASE COURSE	U	EXISTING PAVEMENT
ALL PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE		W	WEDGING (SEE DETAIL)

HDR HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

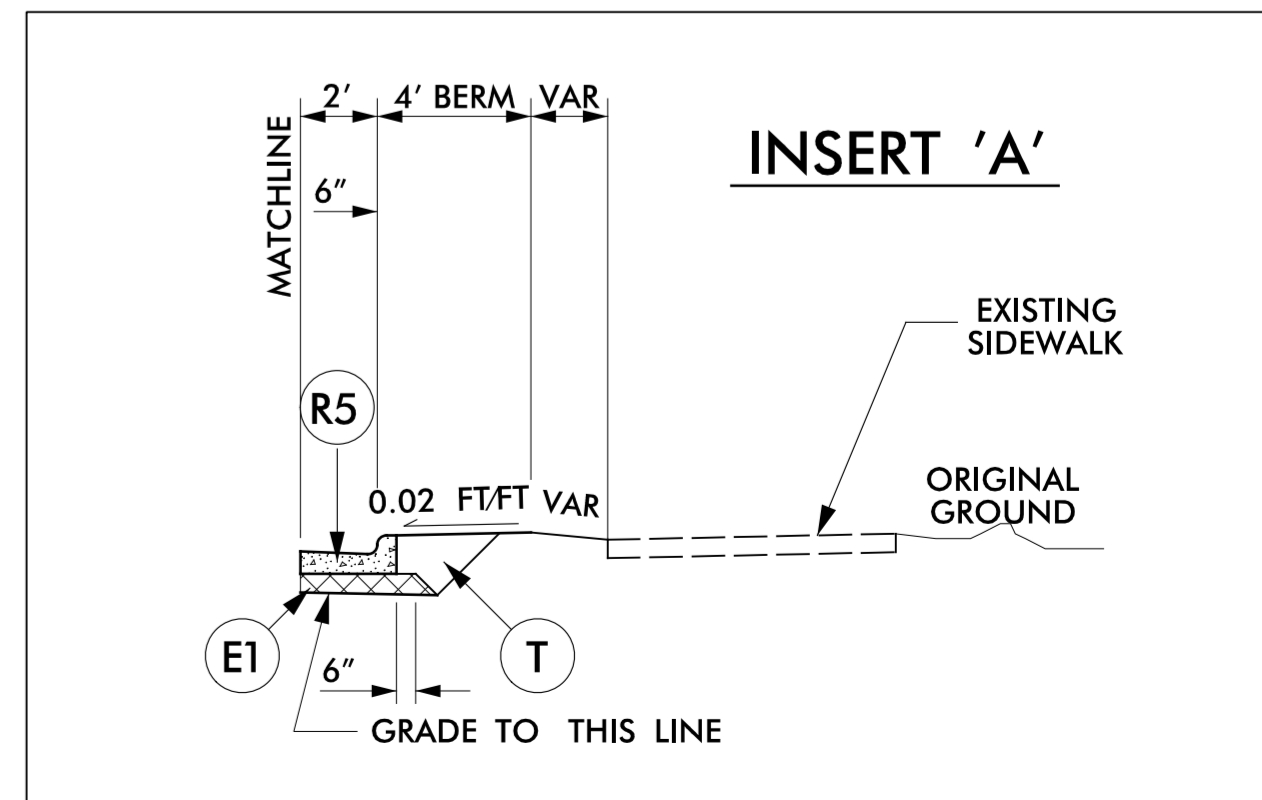
PROJECT REFERENCE NO. U-5745	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



☐ -L- (UNIVERSITY DR.) & -Y- (HOPE VALLEY RD.)



USE TYPICAL SECTION NO. 1
 -L- STA. 12+00.00 TO STA. 12+50.00 TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 1
 -L- STA. 12+50.00 TO STA. 14+51.55
 -L- STA. 15+51.57 TO STA. 18+00.00
 -Y- STA. 12+60.00 TO STA. 13+10.00 TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 1
 -Y- STA. 13+10.00 TO STA. 13+50.00
 -Y- STA. 16+45.00 TO STA. 18+00.00
 -Y- STA. 18+00.00 TO STA. 18+50.00 TRANSITION FROM TYPICAL SECTION NO. 1 TO EXISTING



USE INSERT 'A' IN CONJUNCTION WITH TYPICAL SECTION NO. 1
 -L- RT. FROM STA. 12+50.00 TO STA. 12+85.00


12/17/2018
 HDR ENGINEERING, INC.
 JAMES P. MILLER, P.E.
 12172

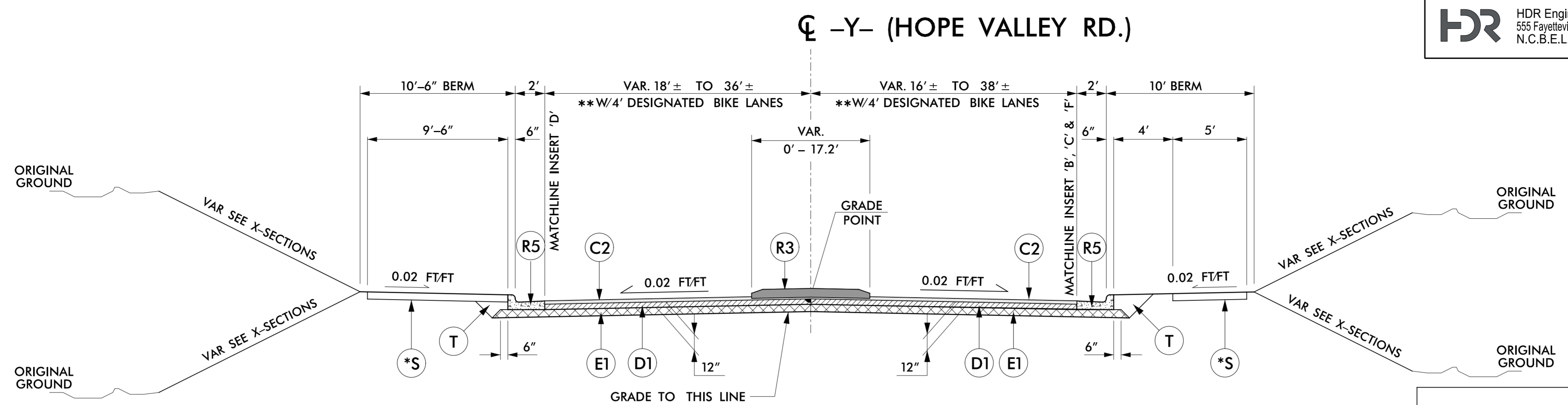
6/2/2019

2/17/2018
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 H:\PROJECTS\RDY_TYP.dgn

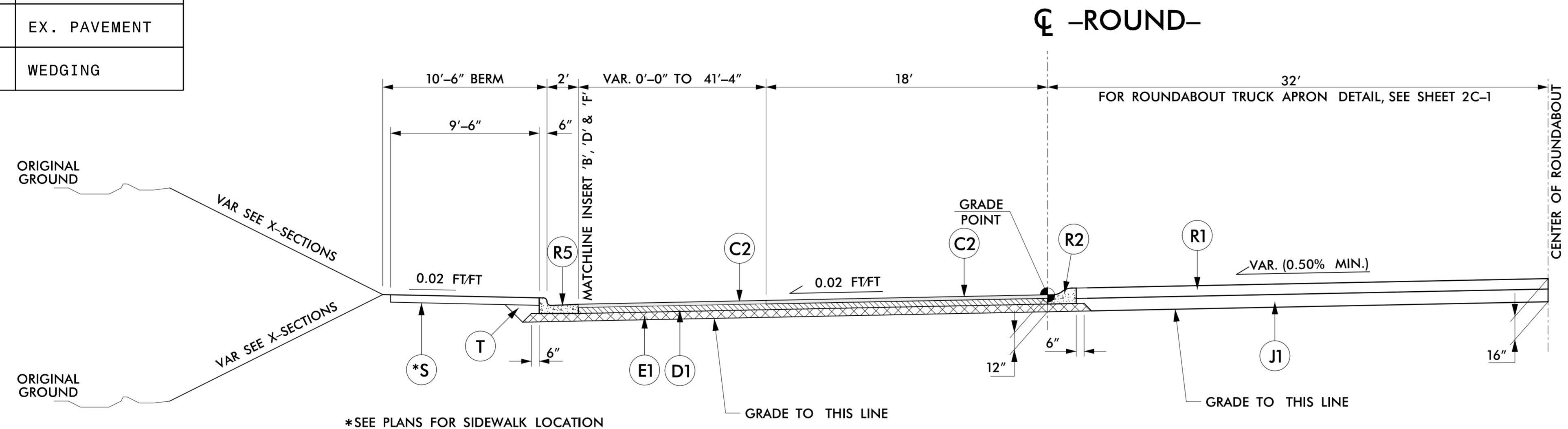
PAVEMENT SCHEDULE	
C2	3" S9.5B
C3	VAR. S9.5B
D1	4" I19.0C
D2	VAR. I19.0C
E1	5" B25.0C
E2	VAR. B25.0C
J1	8" ABC
R1	8" TRUCK APRON
R2	2" ROLLED CURB
R3	5" MCI
R4	MOUNT. MEDIAN
R5	2'-6" C&G
S	4" SIDEWALK
T	EARTH MATERIAL
U	EX. PAVEMENT
W	WEDGING

HDR HDR Engineering, Inc. of the Carolinas
 555 Fayetteville St. Suite 900 Raleigh, N.C. 27601
 N.C.B.E.L.S. License Number: F-0116

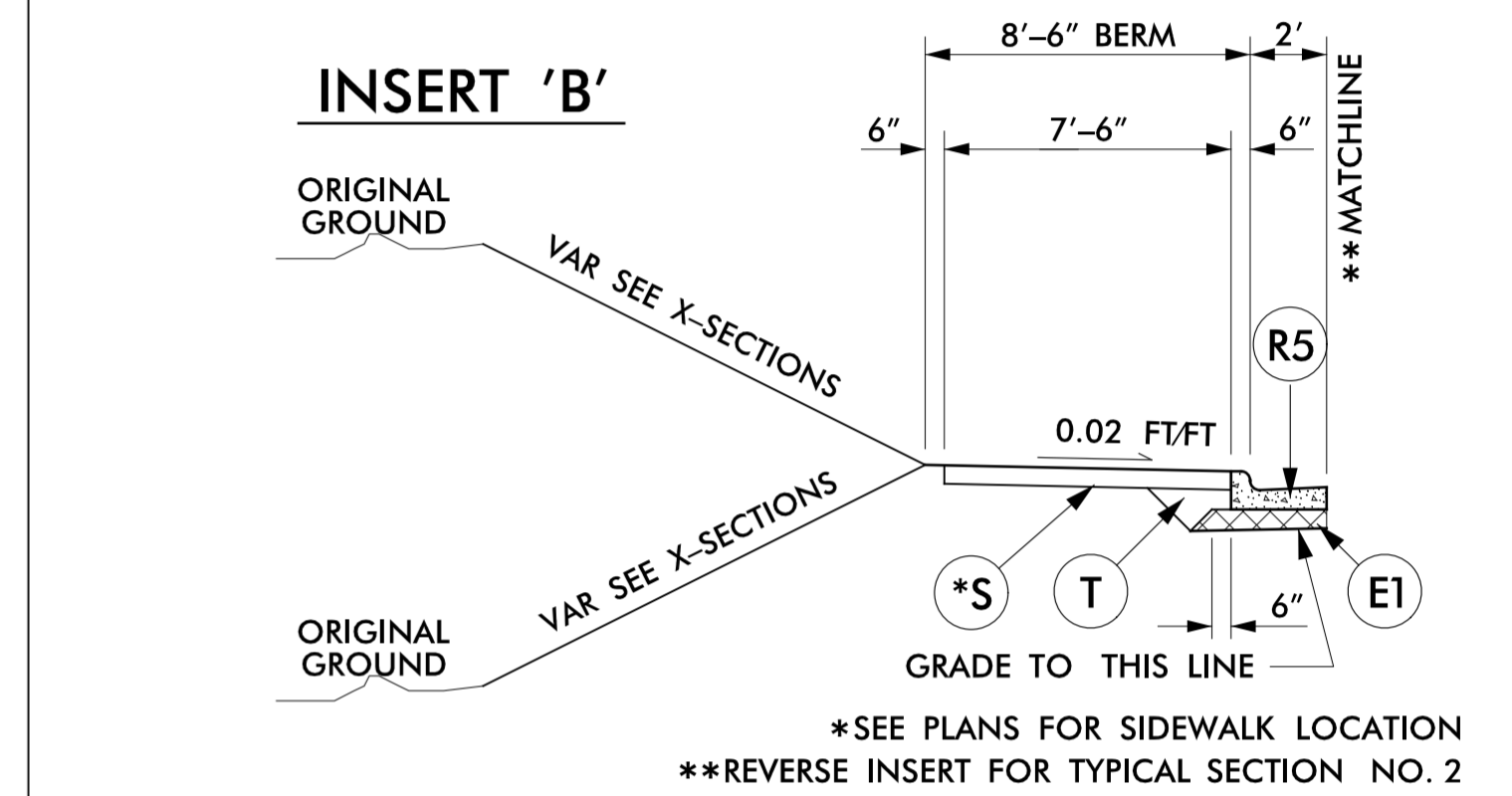
PROJECT REFERENCE NO. U-5745	SHEET NO. 2A-2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



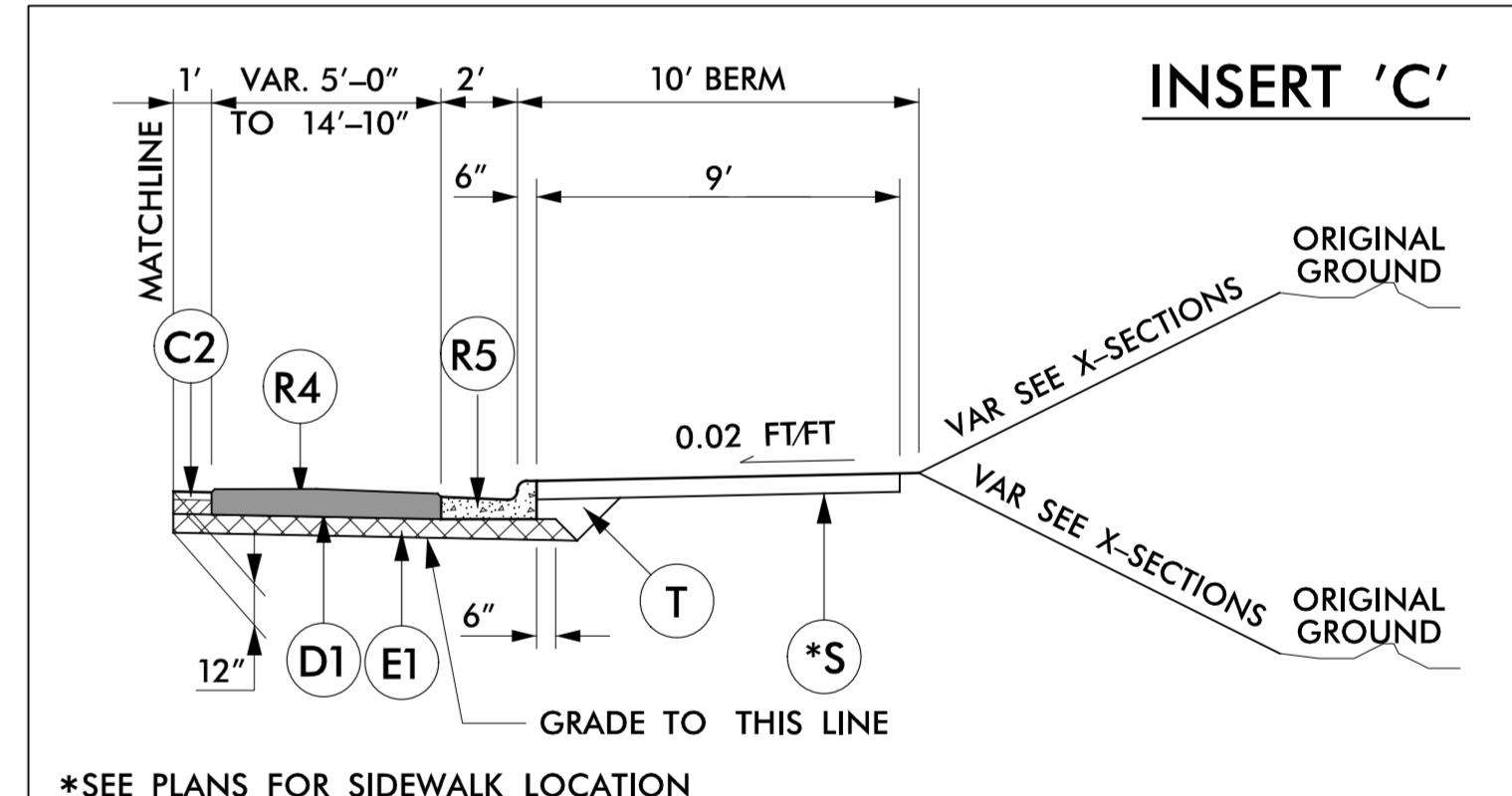
TYPICAL SECTION NO. 2
 *SEE PLANS FOR SIDEWALK LOCATION
 **SEE PLANS FOR BIKE LANE LOCATION
 USE TYPICAL SECTION NO. 2
 -Y- STA. 13+50.00 TO STA. 14+51.83
 -Y- STA. 15+51.86 TO STA. 16+45.00



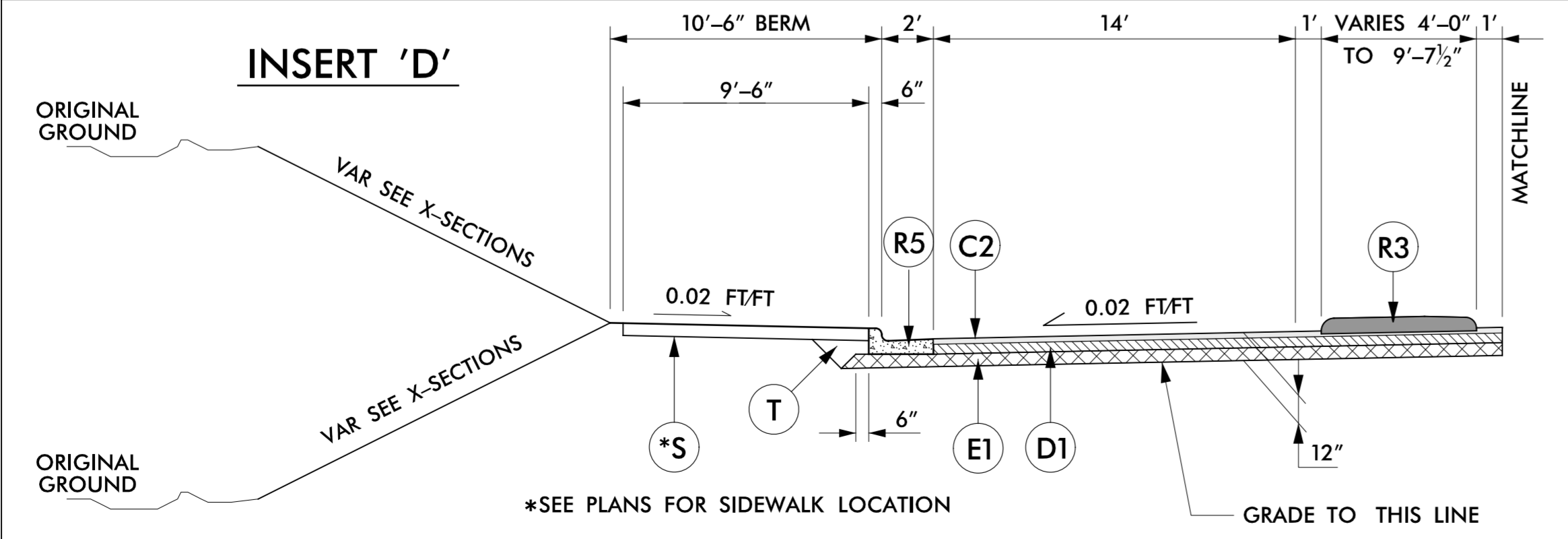
TYPICAL SECTION NO. 3
 ROUNDABOUT
 USE TYPICAL SECTION NO. 3
 -ROUND- STA. 10+00.00 TO STA. 12+01.06



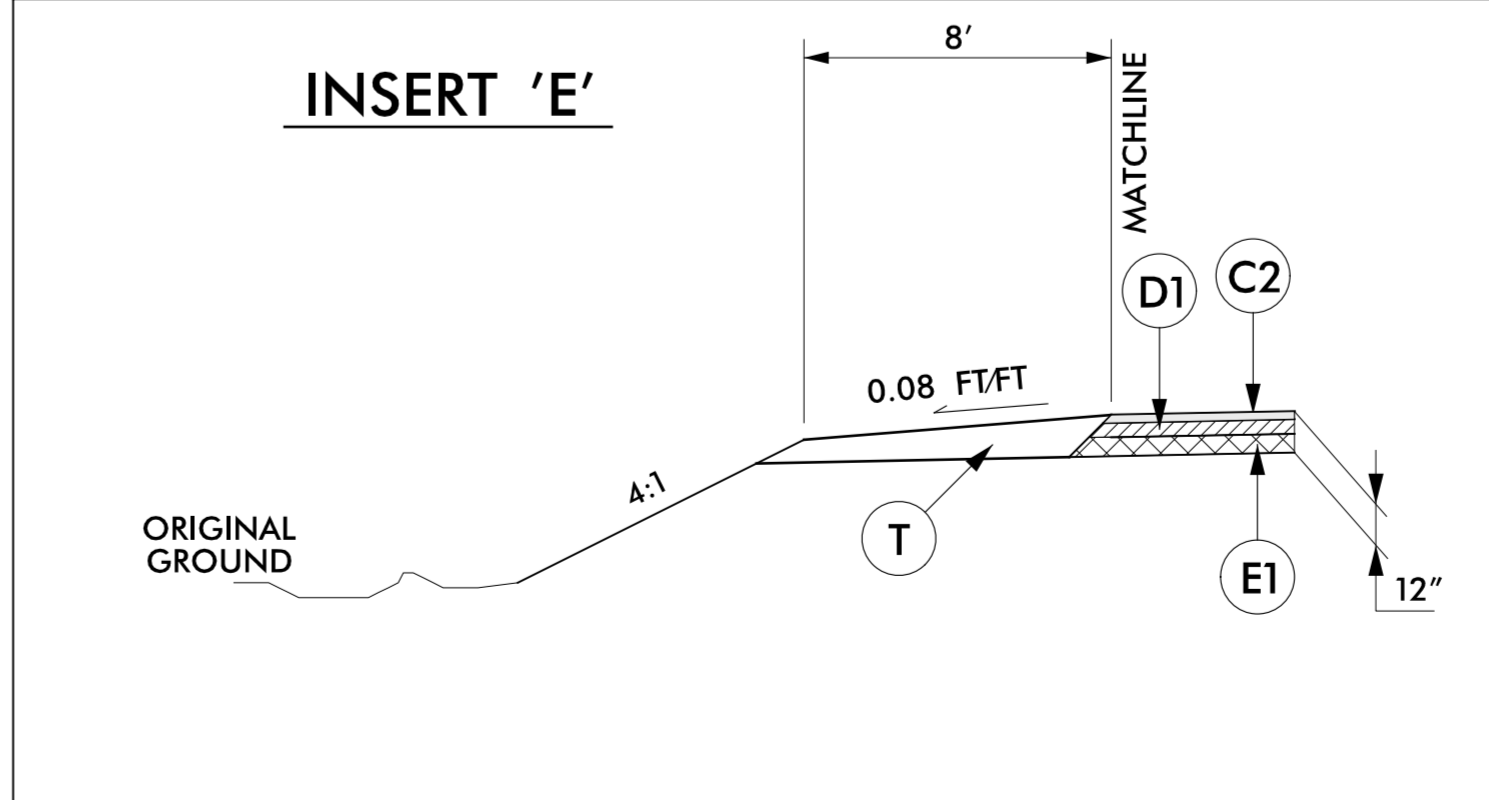
INSERT 'B'
 *SEE PLANS FOR SIDEWALK LOCATION
 **REVERSE INSERT FOR TYPICAL SECTION NO. 2
 USE INSERT 'B' IN CONJUNCTION WITH TYPICAL SECTION NOS. 1, 2 & 3
 -L- LT. FROM STA. 14+12.57 TO STA. 14+51.55
 -ROUND- LT. FROM STA. 10+20.03 TO STA. 10+35.00
 -Y- RT. FROM STA. 14+18.08 TO STA. 14+40.00



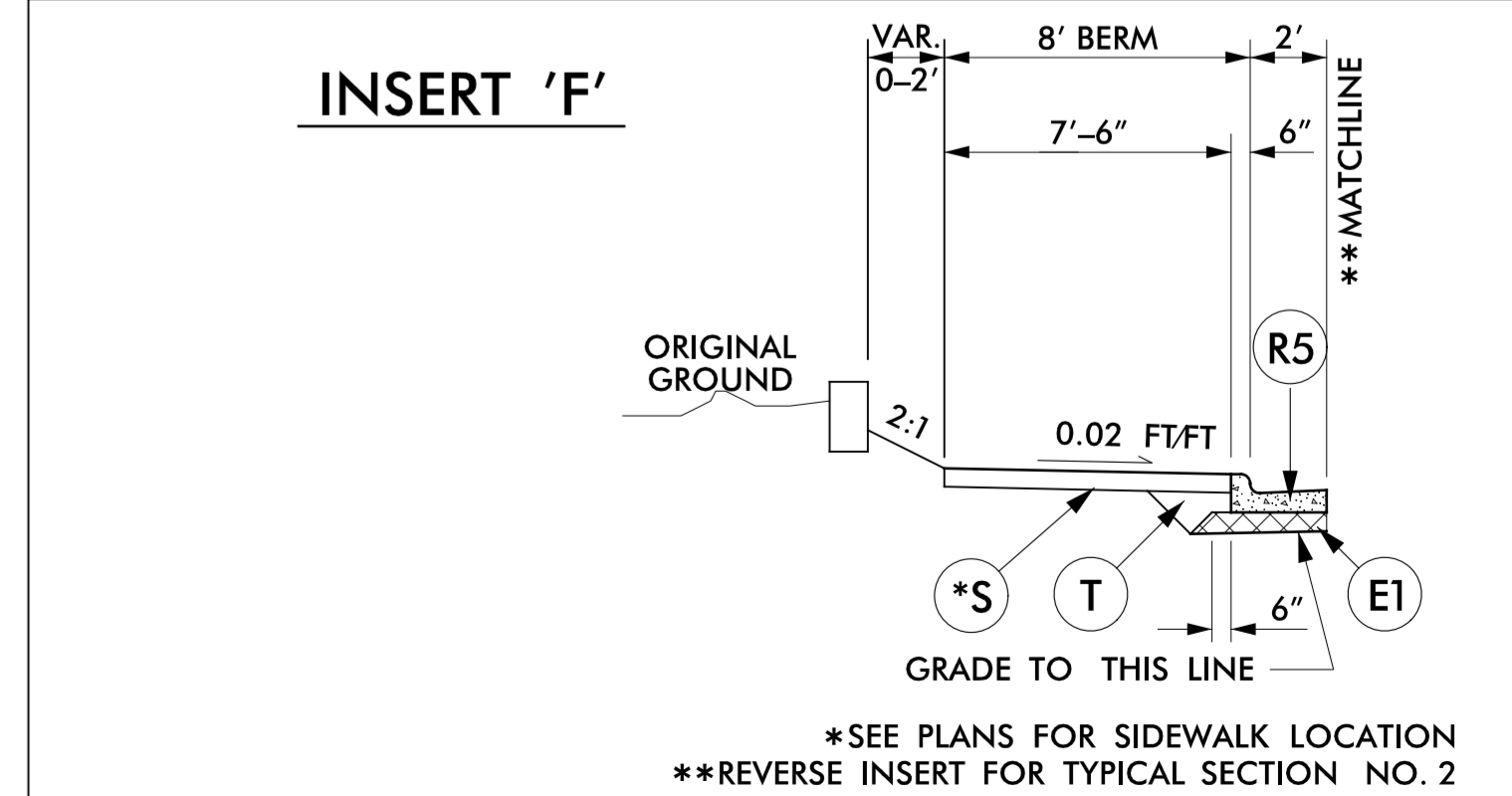
INSERT 'C'
 *SEE PLANS FOR SIDEWALK LOCATION
 USE INSERT 'C' IN CONJUNCTION WITH TYPICAL SECTION NOS. 1 & 2
 -L- RT. FROM STA. 14+14.92 TO STA. 14+51.55
 -Y- RT. FROM STA. 15+51.86 TO STA. 16+03.82



INSERT 'D'
 *SEE PLANS FOR SIDEWALK LOCATION
 USE INSERT 'D' IN CONJUNCTION WITH TYPICAL SECTION NOS. 2 & 3
 -ROUND- LT. FROM STA. 11+33.39 TO STA. 11+47.36
 -Y- LT. FROM STA. 15+51.86 TO STA. 16+07.51



INSERT 'E'
 USE INSERT 'E' IN CONJUNCTION WITH TYPICAL SECTION NO. 1
 -Y- LT. FROM STA. 13+10.00 TO STA. 13+30.00



INSERT 'F'
 *SEE PLANS FOR SIDEWALK LOCATION
 **REVERSE INSERT FOR TYPICAL SECTION NO. 2
 USE INSERT 'F' IN CONJUNCTION WITH TYPICAL SECTION NOS. 2 & 3
 -ROUND- LT. FROM STA. 10+35.00 TO STA. 10+40.61
 -Y- RT. FROM STA. 14+40.00 TO STA. 14+51.83

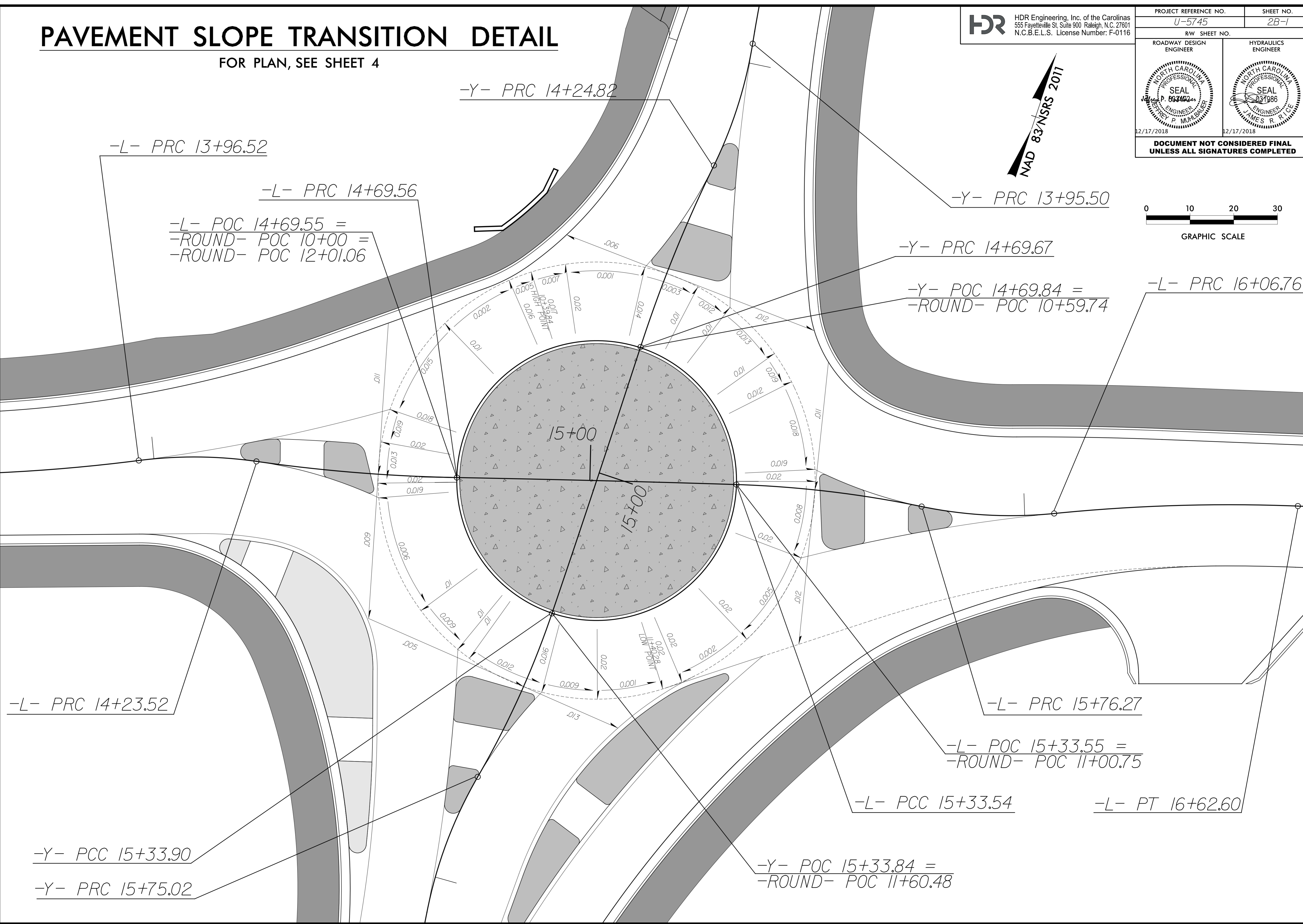
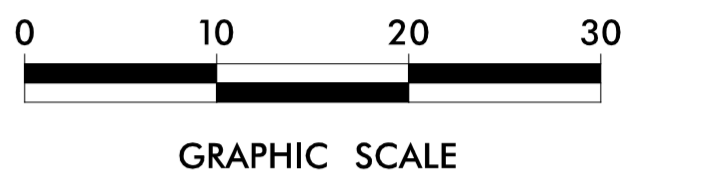
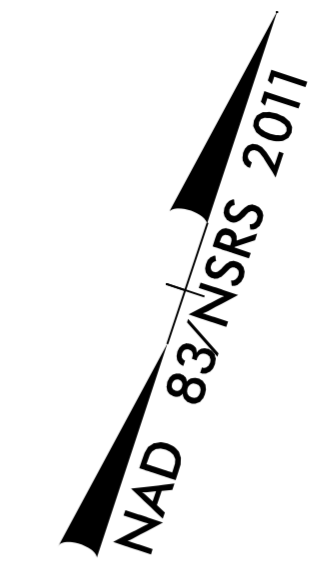
8/17/19

PAVEMENT SLOPE TRANSITION DETAIL

FOR PLAN, SEE SHEET 4

HDR HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO. U-5745	SHEET NO. 2B-1
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



8/17/2018
P:\Projects\115745\RDY.DTL_2B_01.dgn
HDR ENGINEERING, INC.

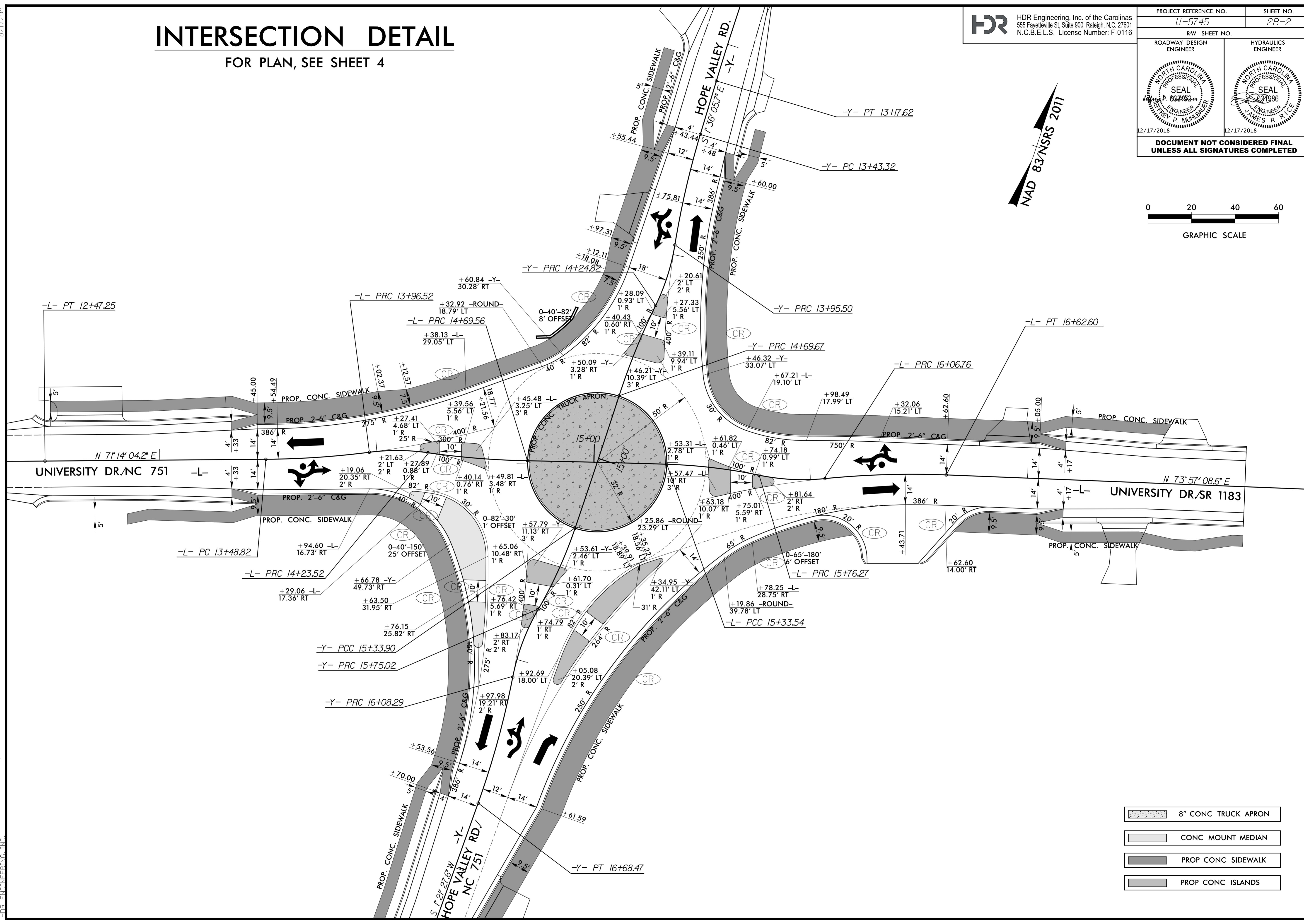
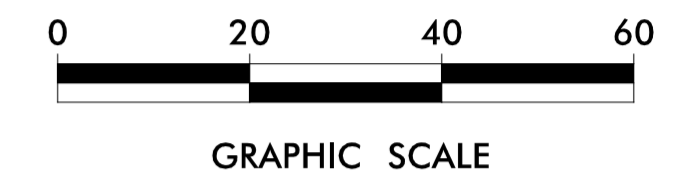
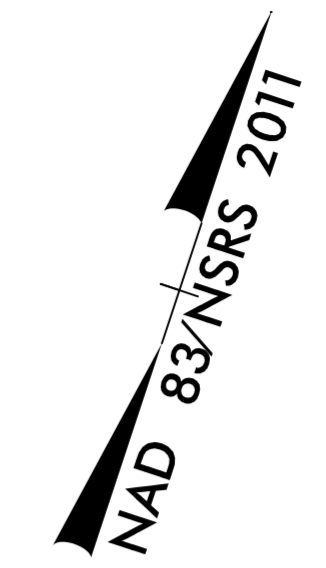
8/17/19

INTERSECTION DETAIL

FOR PLAN, SEE SHEET 4

HDR HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO. U-5745	SHEET NO. 2B-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



	8" CONC TRUCK APRON
	CONC MOUNT MEDIAN
	PROP CONC SIDEWALK
	PROP CONC ISLANDS

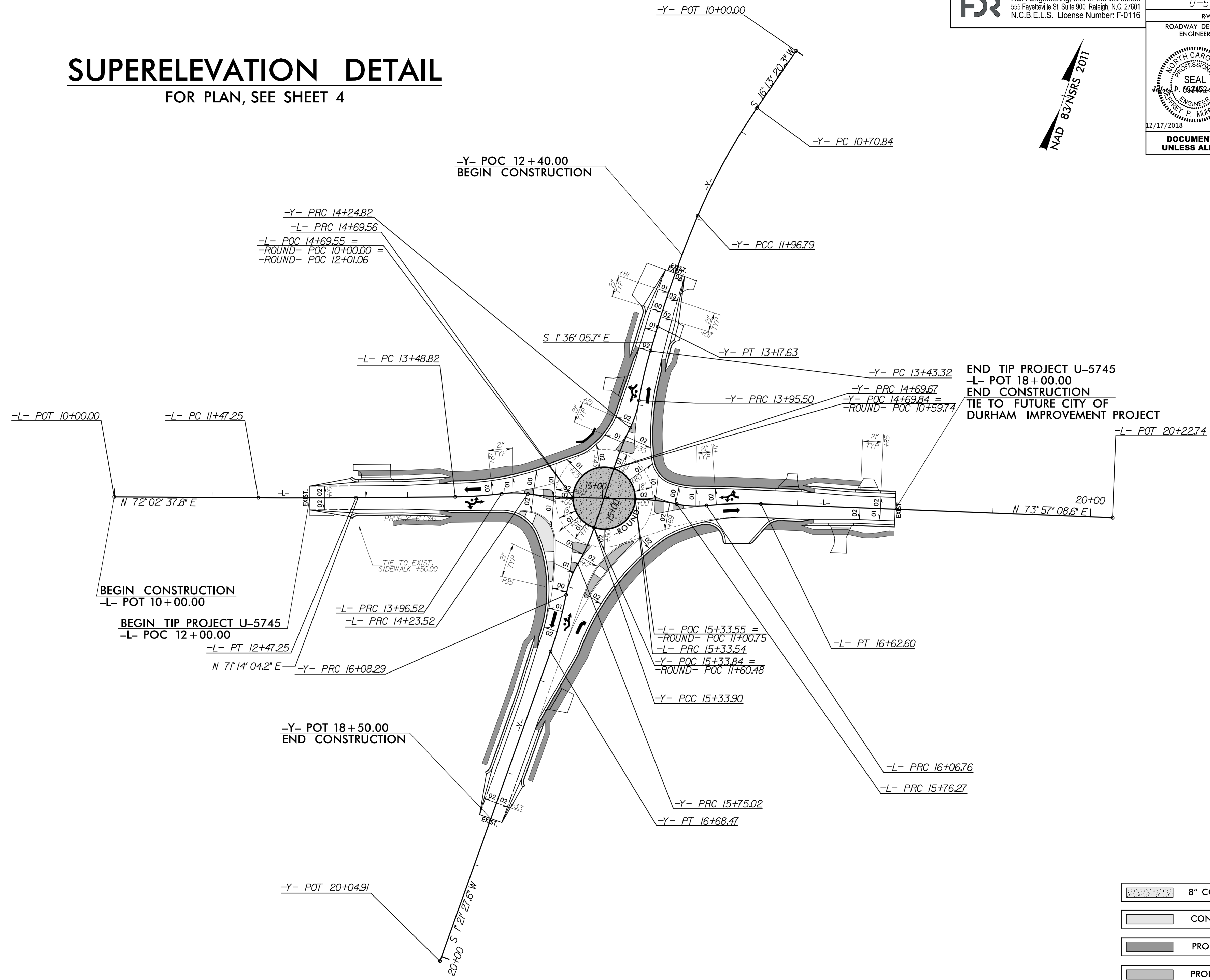
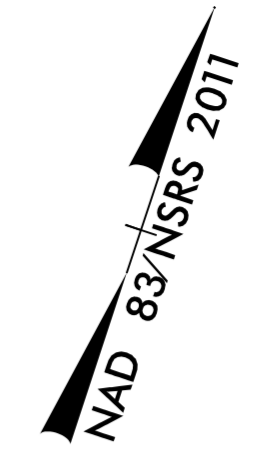
8/17/2018 10:45:15 AM P:\05\110745\RDY_DTL_2B_02.dgn

SUPERELEVATION DETAIL

FOR PLAN, SEE SHEET 4

HDR HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO. <i>U-5745</i>	SHEET NO. <i>2B-3</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
12/17/2018	12/17/2018
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

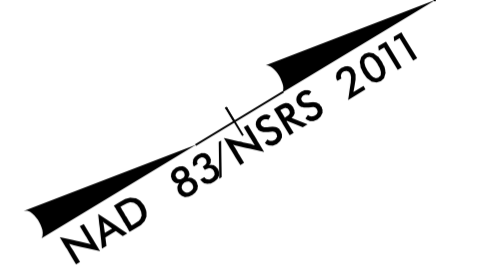
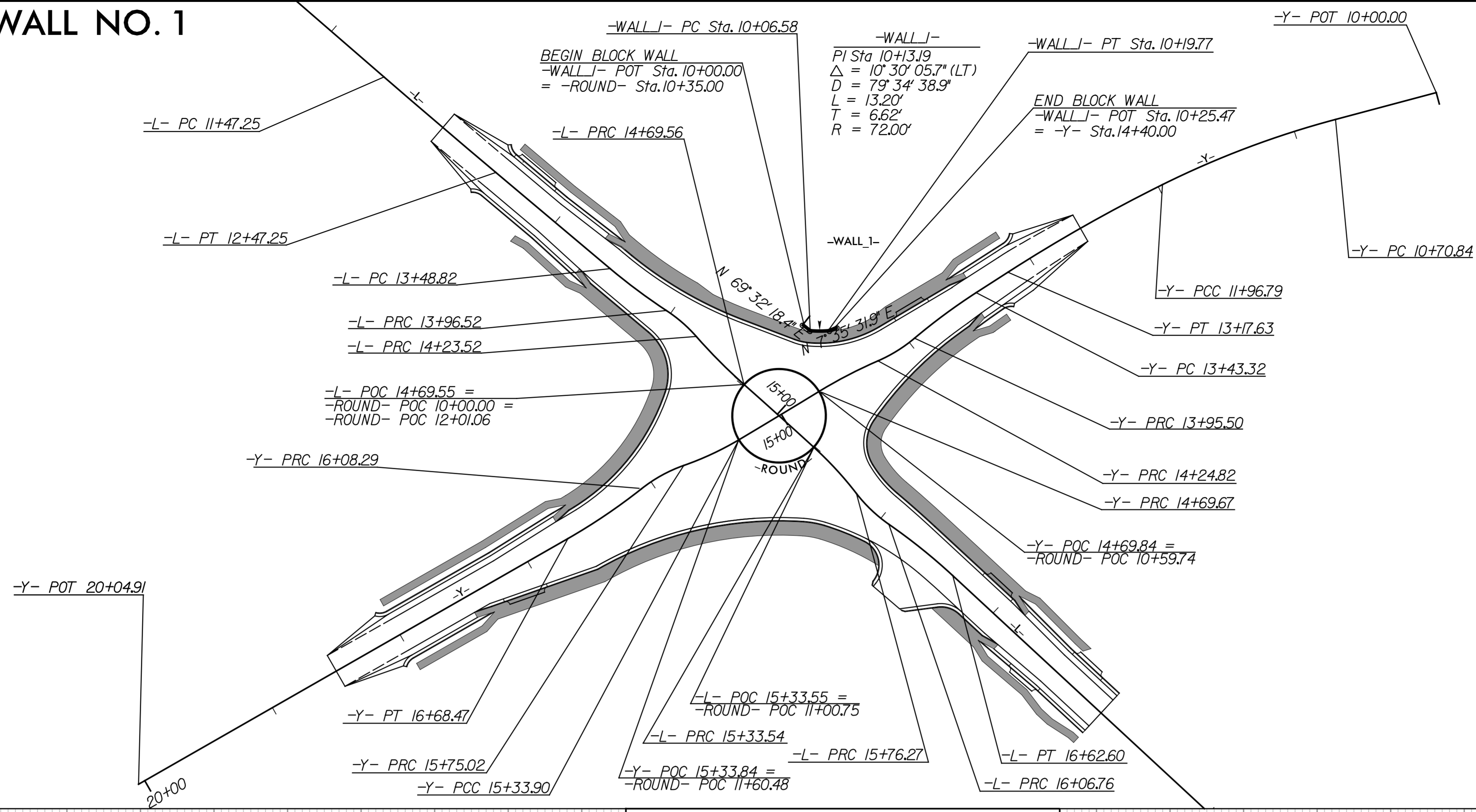


END TIP PROJECT U-5745
-L- POT 18+00.00
END CONSTRUCTION
TIE TO FUTURE CITY OF
DURHAM IMPROVEMENT PROJECT

- 8" CONC TRUCK APRON
- CONC MOUNT MEDIAN
- PROP CONC SIDEWALK
- PROP CONC ISLANDS

8/17/09

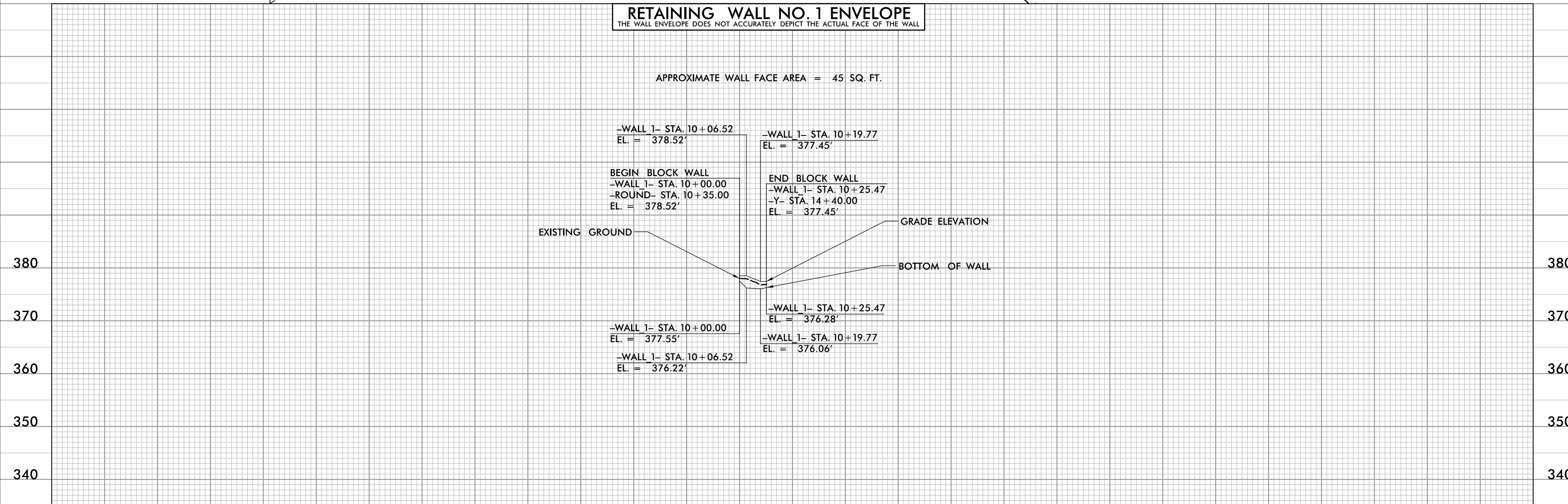
RETAINING WALL NO. 1



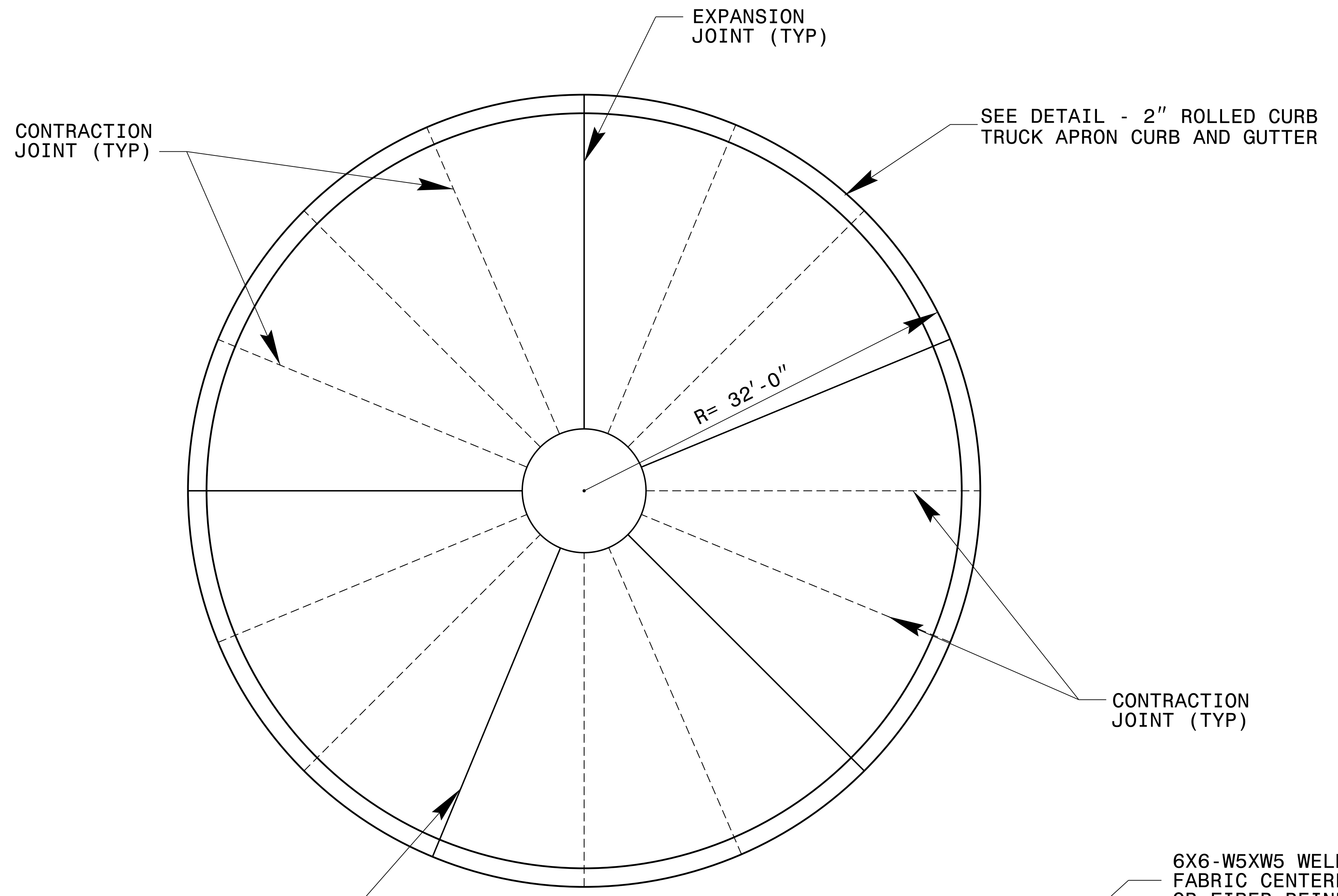
RETAINING WALL NO. 1 ENVELOPE

THE WALL ENVELOPE DOES NOT ACCURATELY DEPICT THE ACTUAL FACE OF THE WALL

APPROXIMATE WALL FACE AREA = 45 SQ. FT.

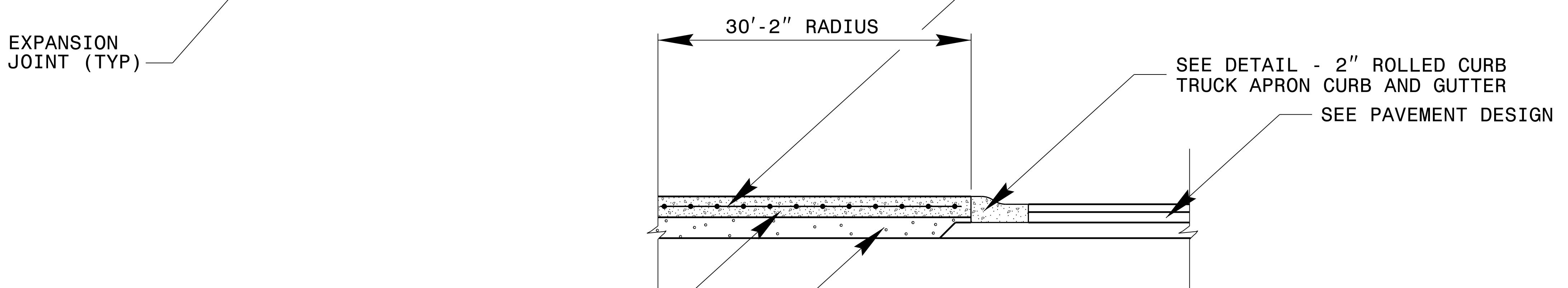


8/17/2018
 P:\05\110745\RDY_PSH_WALL.dgn
 HDR



PLACE CONTRACTION AND EXPANSION JOINTS AS DIRECTED BY THE ENGINEER.

LEGEND	
R1	8" JOINTED CONCRETE TRUCK APRON
J1	8" ABC



R1

J1



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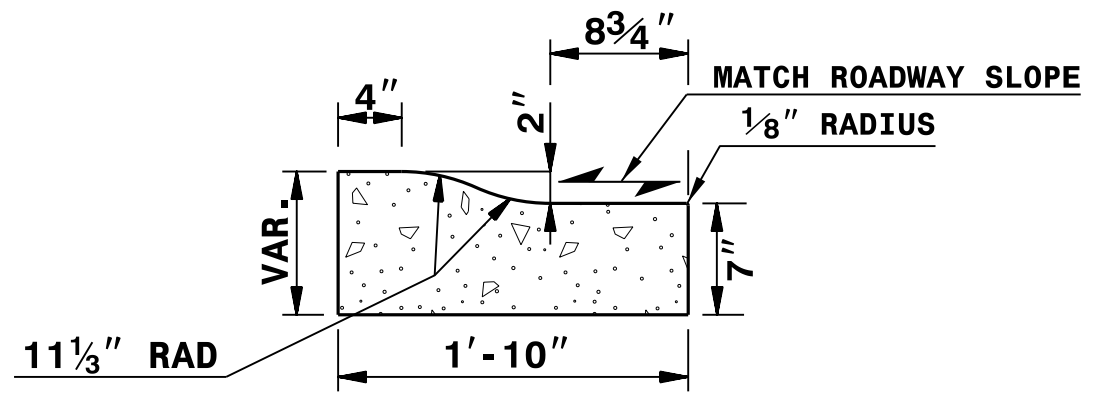
CONTRACT STANDARDS & DEVELOPMENT UNIT
STANDARDS AND SPECIAL DESIGN
Office 919-707-6950 FAX 919-250-4119

ROUNDAABOUT TRUCK APRON



ORIGINAL BY: jhowerton DATE: 09-29-2016
MODIFIED BY: kakempf DATE: 04-02-2018
CHECKED BY: DATE:
FILE SPEC.: details/kkempf/english/u5745 roundabout truck apron.dgn


3-11-2018 10:47 S:\Contracts\Special Details\kkempf\english\5745 roundabout truck apron.dgn jhowerton AT CSD-292595

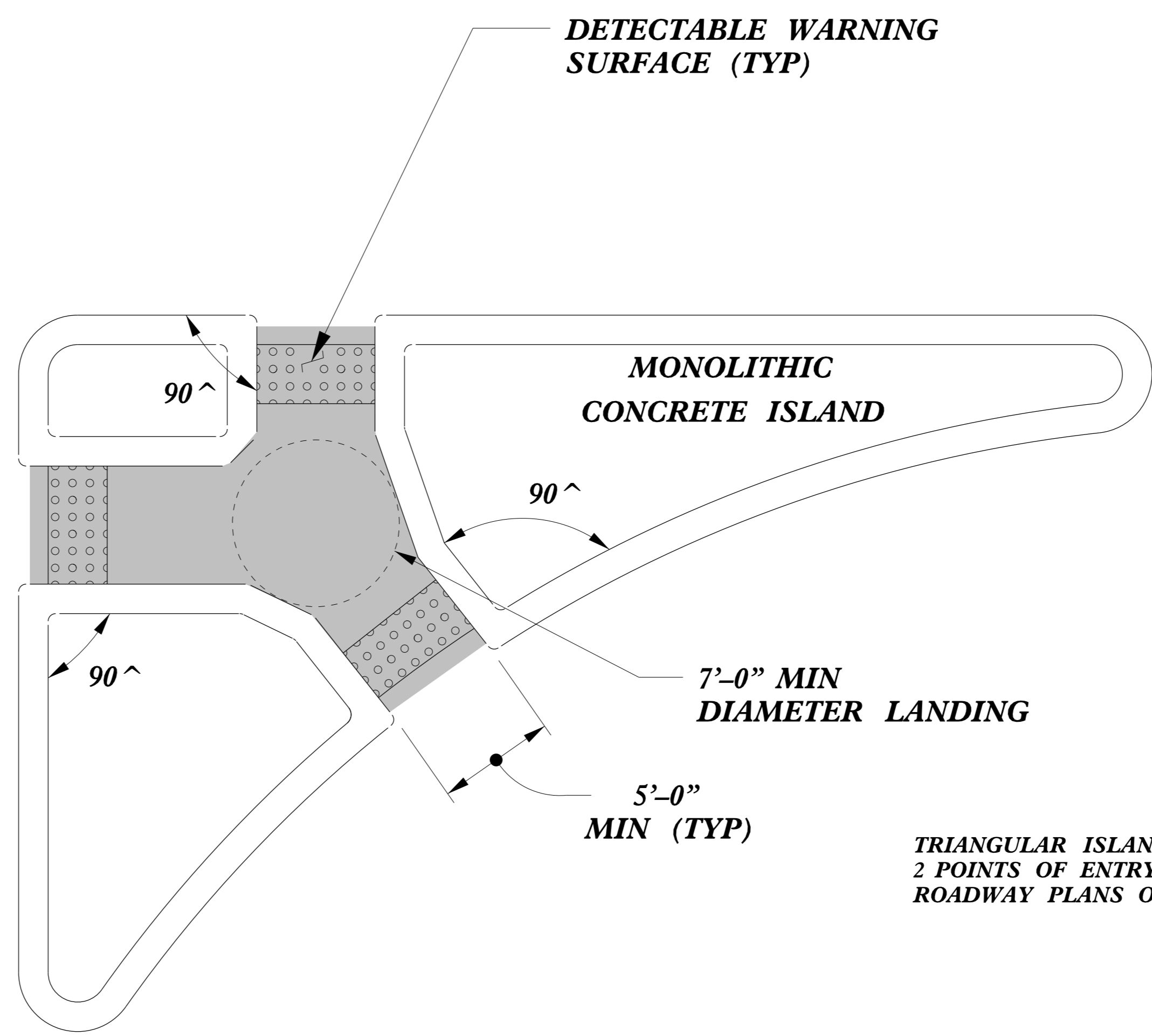
5/14/99



ROUNDBOUT TRUCK APRON CURB AND GUTTER
(2" ROLLED CURB)

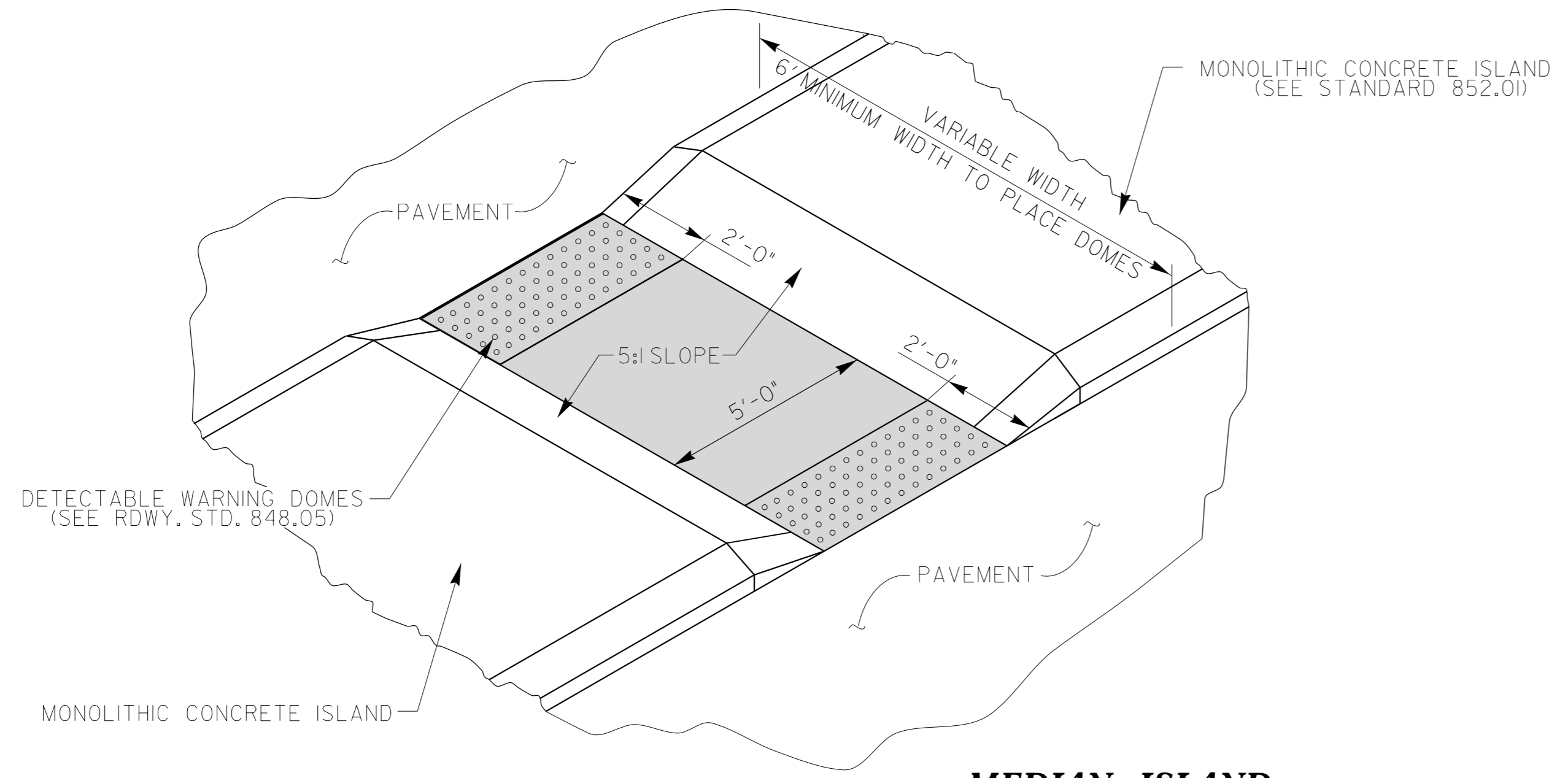
DIVISION 5 DIVISION PROJECT DELIVERY Office 919-220-4717 FAX 919-560-3371		
DETAIL OF 2" ROLLED CURB		
 <i>Roger C. Kluckman</i> SIGNATURE	ORIGINAL BY: R. KLUCKMAN DATE: 11/30/17	
	MODIFIED BY: _____ DATE: _____	
	FILED BY: _____ DATE: _____	
	FILE SPEC.: _____	

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

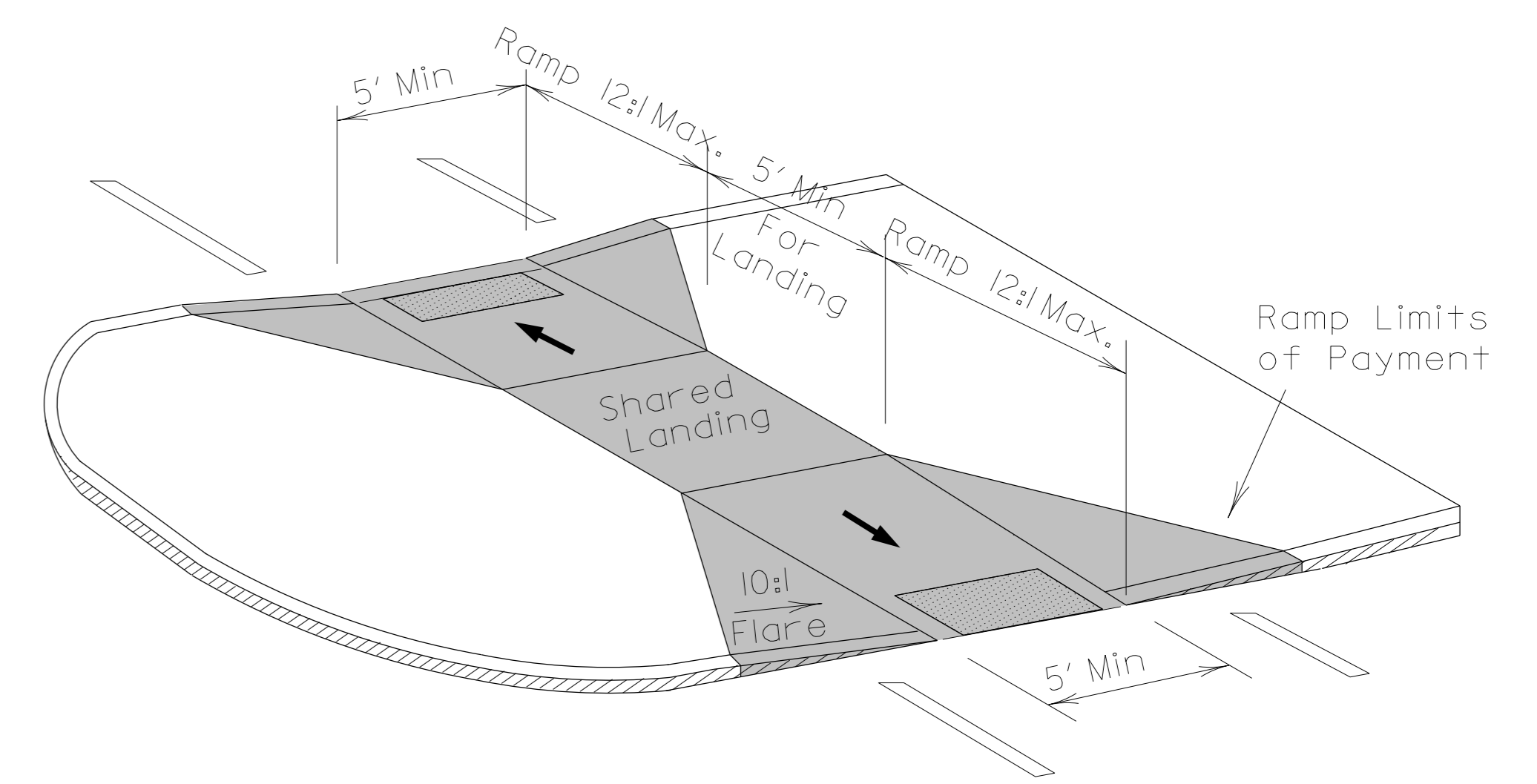


TRIANGULAR ISLANDS MAY BE CONSTRUCTED WITH ONLY
2 POINTS OF ENTRY AND EXIT AS SHOWN IN THE
ROADWAY PLANS OR AS DIRECTED BY THE ENGINEER.

**TRIANGULAR ISLAND
WITH CUT THROUGH**



**MEDIAN ISLAND
WITH CUT THROUGH**



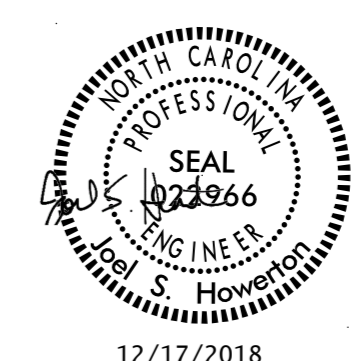
**MEDIAN ISLAND
CURB RAMPS**

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

**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



12/17/2018

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

8/17/99

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK

CHAIN	BEGINNING	ENDING	UNCL. EXCA. C.Y.	UNDERCUT C.Y.	EMBANK. +% C.Y.	BORROW C.Y.	WASTE C.Y.
	STATION	STATION					
PART I							
SUMMARY 1							
-L-	12+00.00	14+51.55	72		200	128	
-L-	15+51.57	18+00.00	46		461	415	
-Y-	12+60.00	14+51.83	171		194	23	
-Y-	15+51.86	18+50.00	314		259		55
-ROUND-	10+00.00	12+01.06	29		451	422	
U-5745 SUBTOTAL			632		1,566	989	55
PART II							
SUMMARY 2							
-L-	11+00.00	12+50.00	176		48		128
-Y1-	10+25.00	10+75.00	53		0		53
ADJUSTMENT FOR EROSION BACKFILL					30	30	
17BP.5.C.02 SUBTOTAL			229		78	30	181
SHEET TOTALS			861		1,644	1,019	236
LOSS DUE TO CLEARING AND GRUBBING			-19			19	
MATERIAL FOR SHOULDER CONSTRUCTION					48	48	
EARTH WASTE IN LIEU OF BORROW						-236	-236
PROJECT TOTAL			842		1,692	850	0
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT						44	
GRAND TOTAL			842			894	
SAY			865			910	

Note: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

PAVEMENT REMOVAL SUMMARY

CHAIN	BEGINNING	ENDING	LOCATION	TOTAL
	STATION	STATION	LT/RT/CL	S.Y.
PART I				
-L-	13+29.00	14+05.00	RT	4
-L-	13+29.00	13+75.00	LT	1
-L-	15+55.00	17+25.00	LT	111
-L-	15+93.00	16+79.00	RT	12
-Y-	13+50.00	16+45.00	CL	1,476
-Y-	16+45.00	16+73.00	RT	5
-Y-	16+83.00	17+54.00	LT	29
U-5745 SUBTOTAL				1,638
PART II				
-L-	11+00.00	12+50.00	CL	608
-Y1-	10+21.56	10+75.00	CL	157
17BP.5.C.02 SUBTOTAL				765
PROJECT TOTAL				2,403
SAY				2,410

GUARDRAIL SUMMARY

SURV EY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"M" DIST. FROM E.O.L.	TOTAL SHOUL WIDTH	FLARE LENGTH		ANCHORS		IMPACT ATTENUATO R TYPE 35A		SINGLE FACED CONCRETE BARRIER	REMOVE EXISTING GUARDRAIL	REMOVE & STOCKPILE EXISTING GUARDRAIL	REMARKS	
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			CH END	NG END	APPROACH END	TRAILING END	XI MOD	XI					GREU TL-3
-L-	11+11.83	12+30.53	RT	118.75					6'	3'	50'	50'									
			SUBTOTAL:	118.75																	
			LESS ANCHOR DEDUCTIONS:																		
			GREU, TL-3(2 @ 50')	100.00'																	
			17BP.5.C.02 TOTAL:	18.75																	
			17BP.5.C.02 SAY:	25'																	
			ADDITIONAL GUARDRAIL POSTS = 5 EA																		

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VIL-02071804W

COMPUTED BY: KMS DATE: 11/02/2018
CHECKED BY: ADS DATE: 11/02/2018

PROJECT NO. U-5745 SHEET NO. 3D-1

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".

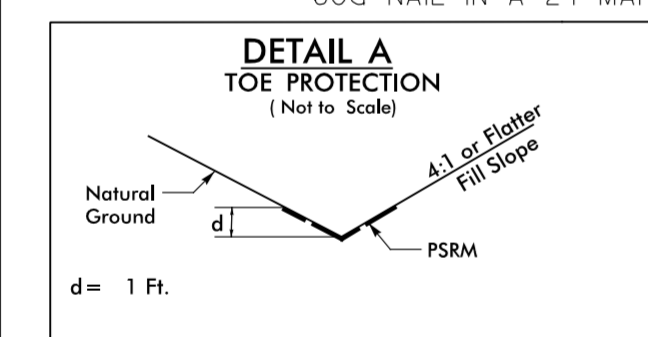
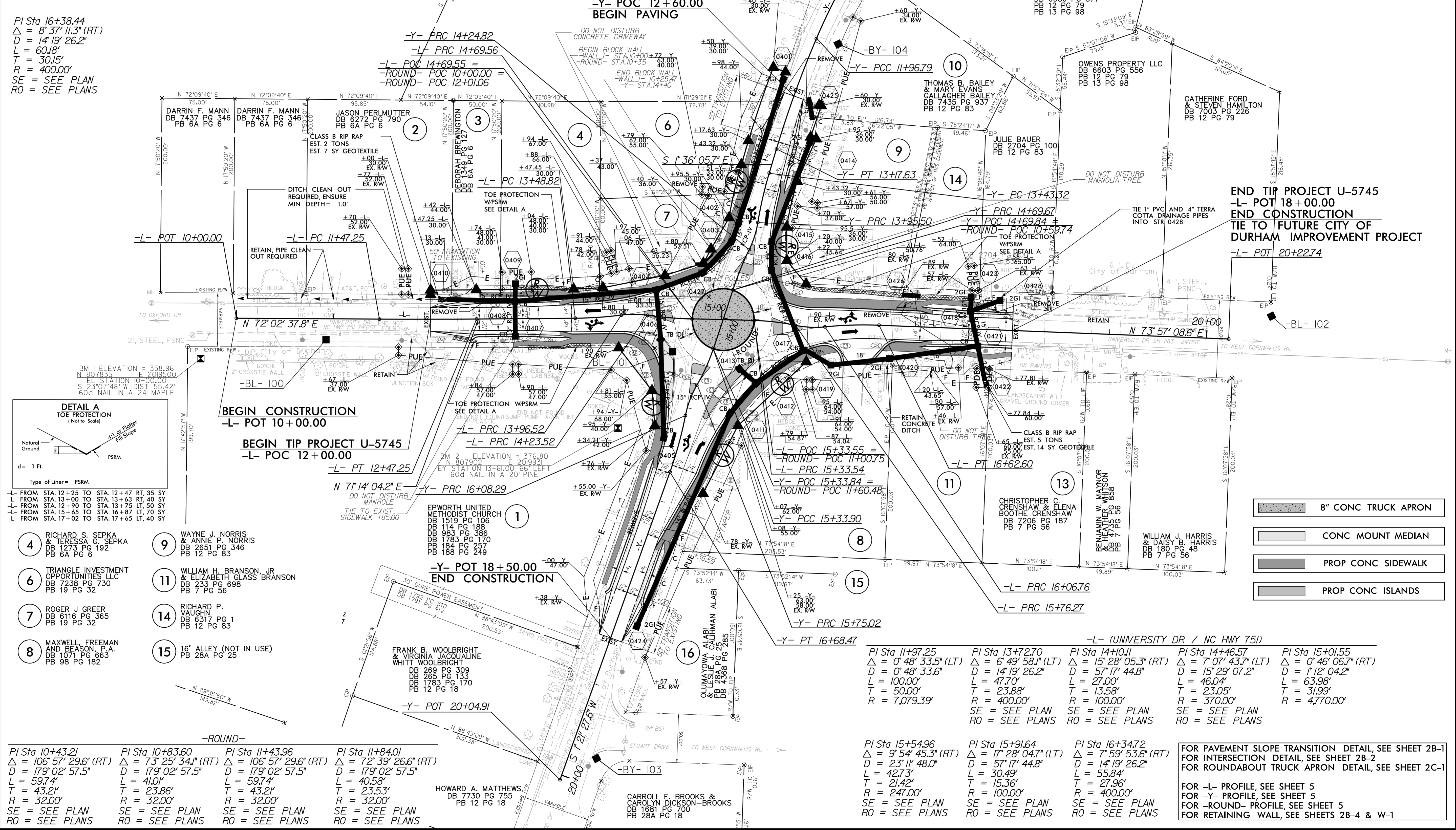
LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

Table with columns for Line & Station, Offset, Structure Number, Invert Elevation, Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC), R.C. Pipe Class III, IV, V, Quantities for Drainage Structures, Frame, Grates, and Hood, Concrete Transitional Section, and Remarks. Includes sub-totals for SHEET TOTALS and PROJECT TOTALS.

ABBREVIATIONS table listing codes like C.A.A., C.B., C.S., D.I., G.D.I., H.D.P.E., J.B., M.H., N.S., P.V.C., R.C., T.B.D.I., T.B.J.B., W.S. and their corresponding descriptions.

-Y- (HOPE VALLEY RD)

PI Sta 11+34.02 Δ = 11' 27" 16.3" (LT) D = 9' 05" 40.4" L = 125.95' T = 63.19' R = 630.00' SE = EXISTING RO = SEE PLANS	PI Sta 12+57.27 Δ = 6' 22" 09.7" (LT) D = 5' 16" 15.6" L = 120.84' T = 60.48' R = 1,087.00' SE = SEE PLAN RO = SEE PLANS	PI Sta 13+69.45 Δ = 7' 28" 23.8" (LT) D = 14' 19" 26.2" L = 52.17' T = 26.12' R = 400.00' SE = SEE PLAN RO = SEE PLANS	PI Sta 14+10.27 Δ = 16' 48" 07.8" (RT) D = 57' 17" 44.8" L = 29.33' T = 14.77' R = 100.00' SE = SEE PLAN RO = SEE PLANS
PI Sta 14+47.28 Δ = 8' 01" 48.3" (RT) D = 17' 54" 17.8" L = 44.85' T = 22.46' R = 320.00' SE = SEE PLAN RO = SEE PLANS	PI Sta 15+01.78 Δ = 0' 46" 17.3" (RT) D = 1' 12" 04.2" L = 64.23' T = 32.11' R = 4,770.00' SE = SEE PLAN RO = SEE PLANS	PI Sta 15+54.53 Δ = 11' 19" 43.2" (RT) D = 27' 32" 45.8" L = 41.13' T = 20.63' R = 208.00' SE = SEE PLAN RO = SEE PLANS	PI Sta 15+91.81 Δ = 19' 03" 34.1" (LT) D = 57' 17" 44.8" L = 33.27' T = 16.79' R = 100.00' SE = SEE PLAN RO = SEE PLANS
PI Sta 16+38.44 Δ = 8' 37" 11.3" (RT) D = 14' 19" 26.2" L = 60.18' T = 30.15' R = 400.00' SE = SEE PLAN RO = SEE PLANS			



- L- FROM STA. 12+25 TO STA. 12+47 RT, 35 SY
- L- FROM STA. 13+00 TO STA. 13+63 RT, 40 SY
- L- FROM STA. 12+90 TO STA. 13+75 LT, 50 SY
- L- FROM STA. 15+65 TO STA. 16+87 LT, 70 SY
- L- FROM STA. 17+02 TO STA. 17+65 LT, 40 SY

- | | |
|--|--|
| 4 RICHARD S. SEPKA & TERESSA C. SEPKA DB 1273 PG 192 PB 6A PG 6 | 9 WAYNE J. NORRIS & ANNIE P. NORRIS DB 211 PG 346 PB 12 PG 83 |
| 6 TRIANGLE INVESTMENT OPPORTUNITIES LLC DB 7238 PG 730 PB 19 PG 32 | 11 WILLIAM H. BRANSON, JR & ELIZABETH GLASS BRANSON DB 233 PG 698 PB 7 PG 56 |
| 7 ROGER J. GREER VAUGHN DB 6116 PG 365 PB 19 PG 32 | 14 RICHARD P. VAUGHN DB 6317 PG 81 PB 12 PG 83 |
| 8 MAXWELL FREEMAN AND BEASON P.A. DB 1071 PG 663 PB 98 PG 182 | 15 16' ALLEY (NOT IN USE) PB 28A PG 25 |

-ROUND-

PI Sta 10+43.21 Δ = 106' 57" 29.6" (RT) D = 179' 02" 57.5" L = 59.74' T = 43.21' R = 32.00' SE = SEE PLAN RO = SEE PLANS	PI Sta 10+83.60 Δ = 73' 25" 34.1" (RT) D = 179' 02" 57.5" L = 41.01' T = 23.86' R = 32.00' SE = SEE PLAN RO = SEE PLANS	PI Sta 11+43.96 Δ = 106' 57" 29.6" (RT) D = 179' 02" 57.5" L = 59.74' T = 43.21' R = 32.00' SE = SEE PLAN RO = SEE PLANS	PI Sta 11+84.01 Δ = 72' 39" 26.6" (RT) D = 179' 02" 57.5" L = 40.58' T = 23.53' R = 32.00' SE = SEE PLAN RO = SEE PLANS
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PI Sta 11+97.25 Δ = 0' 48" 33.5" (LT) D = 0' 48" 33.6" L = 100.00' T = 50.00' R = 7,079.39'	PI Sta 13+72.70 Δ = 6' 49" 58.1" (LT) D = 14' 19" 26.2" L = 47.00' T = 23.88' R = 400.00' SE = SEE PLAN RO = SEE PLANS	PI Sta 14+10.11 Δ = 15' 28" 05.3" (RT) D = 57' 17" 44.8" L = 47.00' T = 13.58' R = 100.00' SE = SEE PLAN RO = SEE PLANS	PI Sta 14+46.57 Δ = 7' 07" 43.7" (LT) D = 15' 29" 07.2" L = 46.04' T = 23.05' R = 370.00' SE = SEE PLAN RO = SEE PLANS	PI Sta 15+01.55 Δ = 0' 46" 06.7" (RT) D = 1' 12" 04.2" L = 63.98' T = 31.99' R = 4,770.00' SE = SEE PLAN RO = SEE PLANS
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PI Sta 15+54.96 Δ = 9' 54" 45.3" (RT) D = 23' 11" 48.0" L = 42.73' T = 21.42' R = 247.00' SE = SEE PLAN RO = SEE PLANS	PI Sta 15+91.64 Δ = 17' 28" 04.7" (LT) D = 57' 17" 44.8" L = 30.49' T = 15.36' R = 100.00' SE = SEE PLAN RO = SEE PLANS	PI Sta 16+34.72 Δ = 7' 59" 53.6" (RT) D = 14' 19" 26.2" L = 55.84' T = 27.96' R = 400.00' SE = SEE PLAN RO = SEE PLANS
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FOR PAVEMENT SLOPE TRANSITION DETAIL, SEE SHEET 2B-1
FOR INTERSECTION DETAIL, SEE SHEET 2B-2
FOR ROUNDABOUT TRUCK APRON DETAIL, SEE SHEET 2C-1
FOR -L- PROFILE, SEE SHEET 5
FOR -Y- PROFILE, SEE SHEET 5
FOR -ROUND- PROFILE, SEE SHEET 5
FOR RETAINING WALL, SEE SHEETS 2B-4 & W-1

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12/17/2018
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12/17/2018

5/28/19

-L-

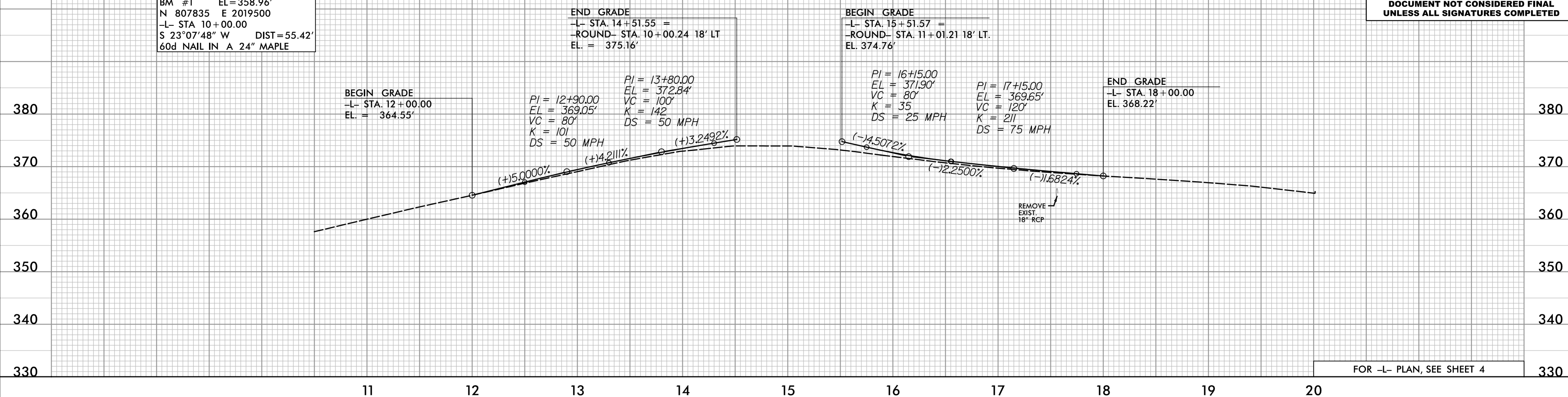
HDR HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO. <i>U-5745</i>	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

BM #1 EL=358.96'
N 807835 E 2019500
-L- STA 10+00.00
S 23°07'48" W DIST=55.42'
60d NAIL IN A 24" MAPLE

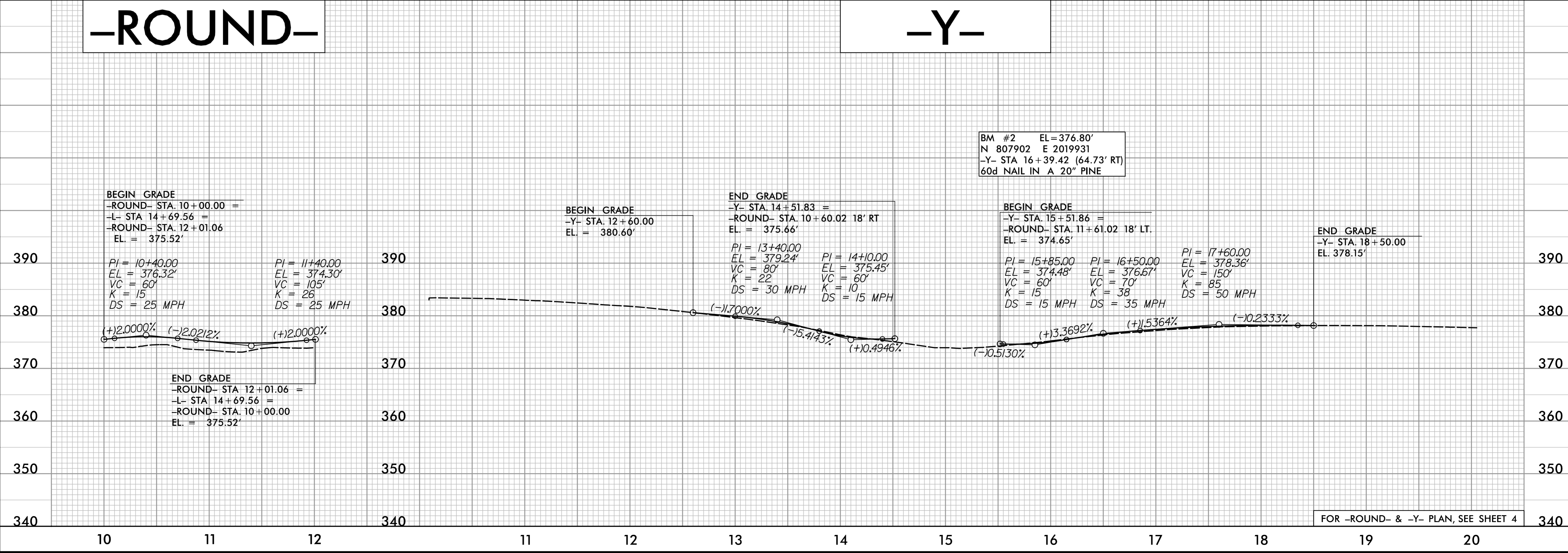
BM #2 EL=376.80'
N 807902 E 2019931
-L- STA 13+82.28 (115.28' RT)
60d NAIL IN A 20" PINE



-ROUND-

-Y-

BM #2 EL=376.80'
N 807902 E 2019931
-Y- STA 16+39.42 (64.73' RT)
60d NAIL IN A 20" PINE



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