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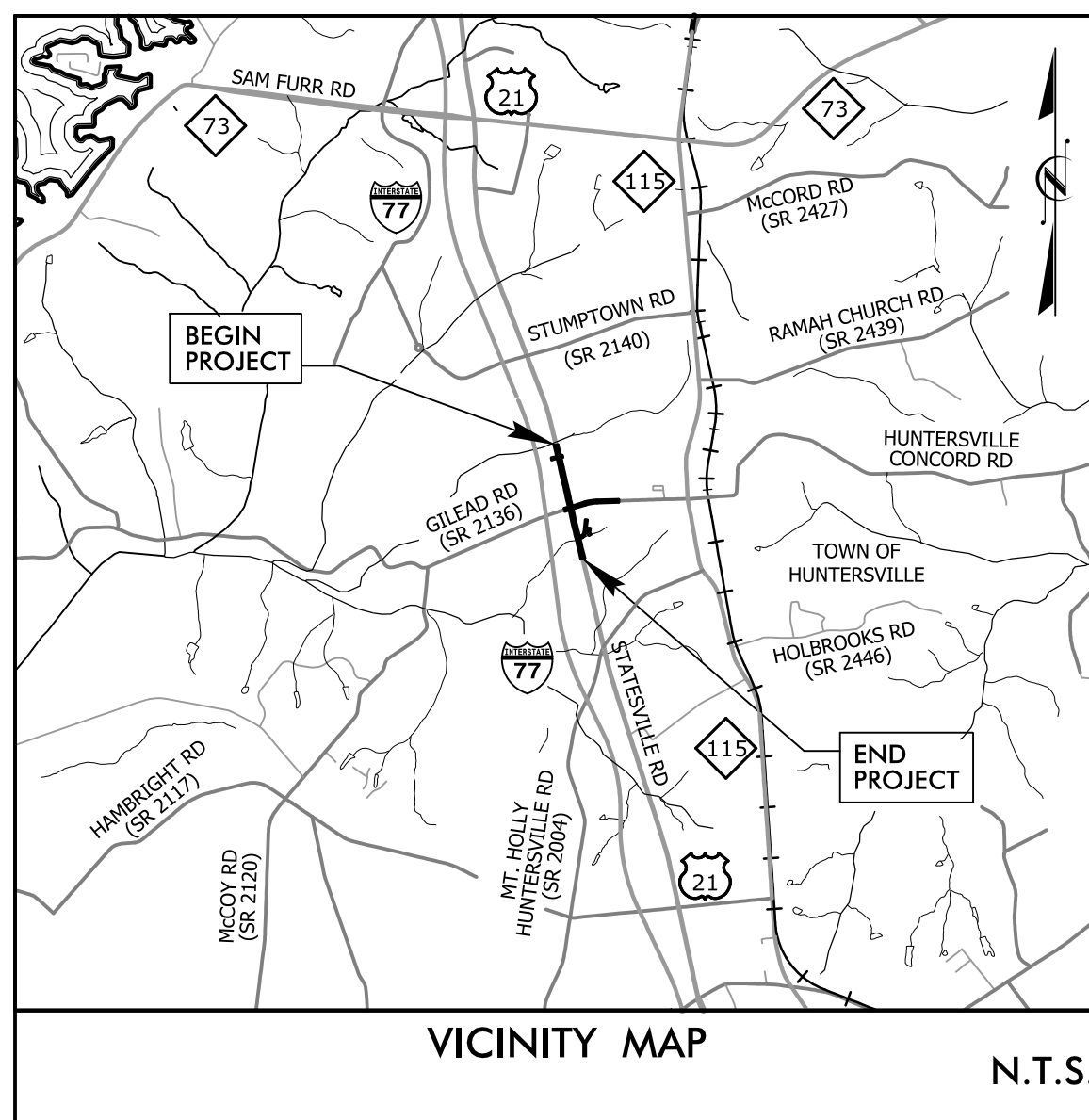
**This file or an individual page
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09/05/19

TIP PROJECT: U-5114

CONTRACT: C204104

See Sheet 1A For Index of Sheets
See Sheet 1B For Standard Symbology Sheet



FINAL PLANS

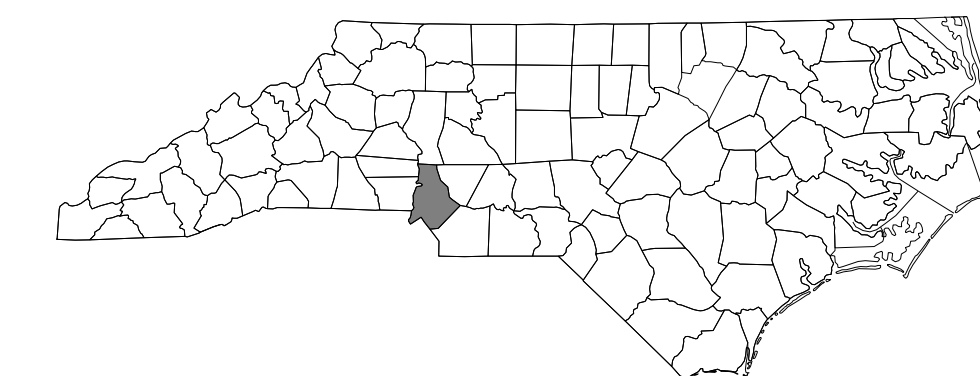
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

MECKLENBURG COUNTY

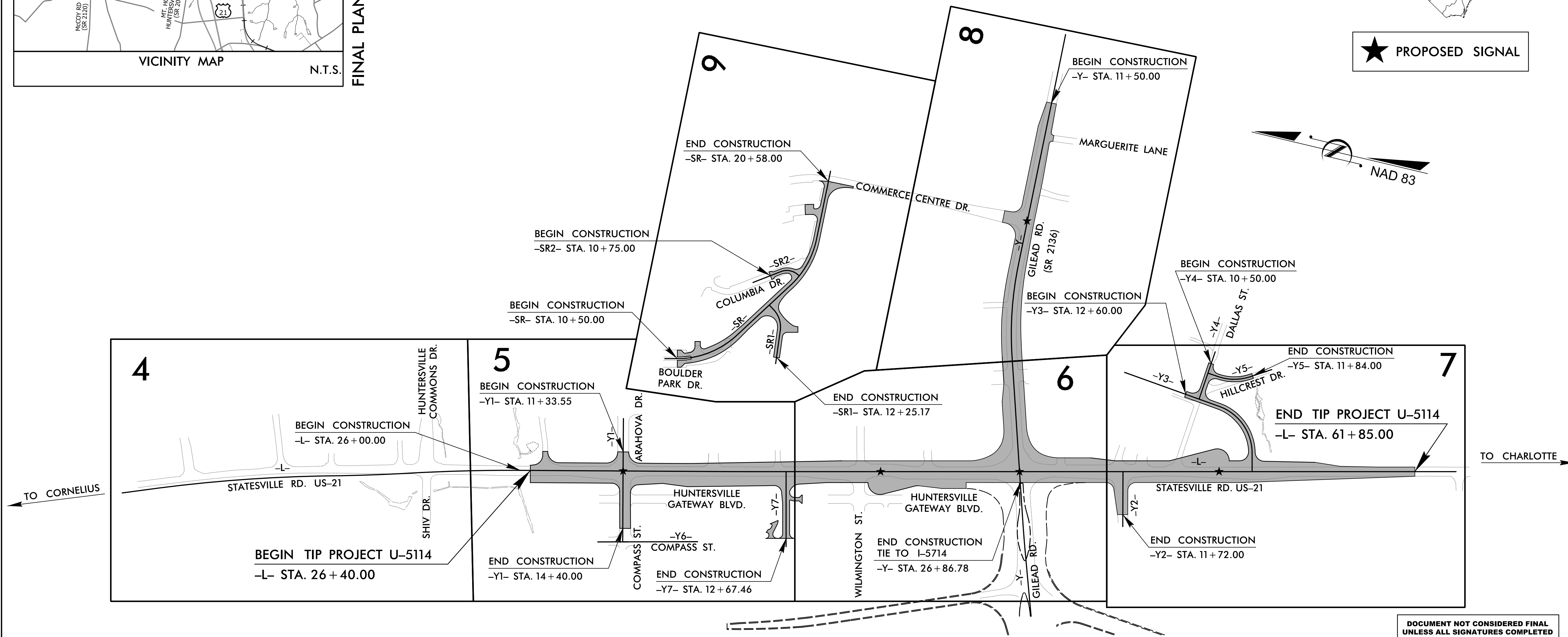
LOCATION: US 21 (STATESVILLE ROAD) AND SR 2136 (GILEAD ROAD)

TYPE OF WORK: GRADING, DRAINAGE, PAVING, SIGNALS AND RETAINING WALLS

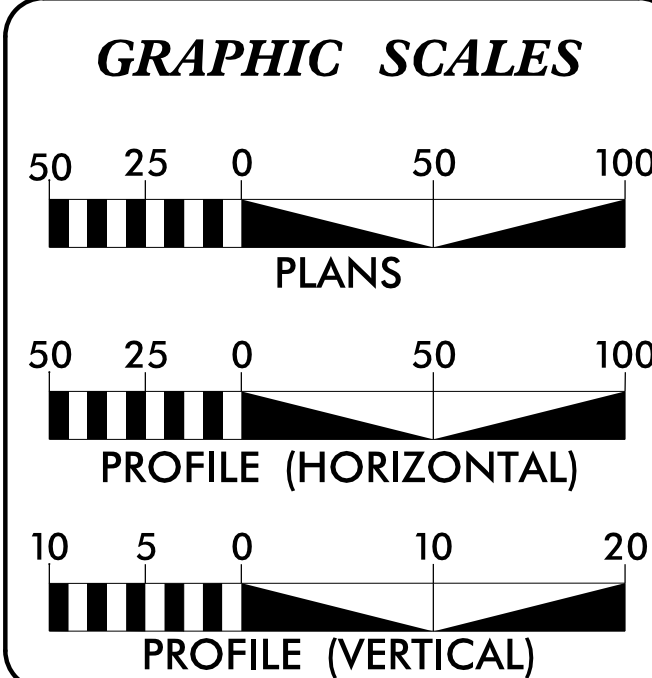
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-5114	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
42376.1.R2		PE	
42376.2.2		ROW/UTIL	
42376.3.1		CONSTRUCTION	



★ PROPOSED SIGNAL



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



DESIGN DATA

ADT 2018 =	27,900
ADT 2038 =	54,200
K =	9%
D =	55%
T =	5%*
V =	50 MPH

* (TTST=1%+DUAL 4%)
FUNC CLASS = MINOR ARTERIAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-5114 =	0.671 MILES
TOTAL LENGTH OF TIP PROJECT U-5114 =	0.671 MILES

PLANS PREPARED FOR THE CITY OF HUNTERSVILLE BY:

STV 100 Years
STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

2018 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE:	SEPTEMBER 6, 2016
LETTING DATE:	JULY 17, 2018

NIKKI HONEYCUTT, PE
PROJECT ENGINEER

MAAMOON ABDELAZIZ
PROJECT DESIGNER

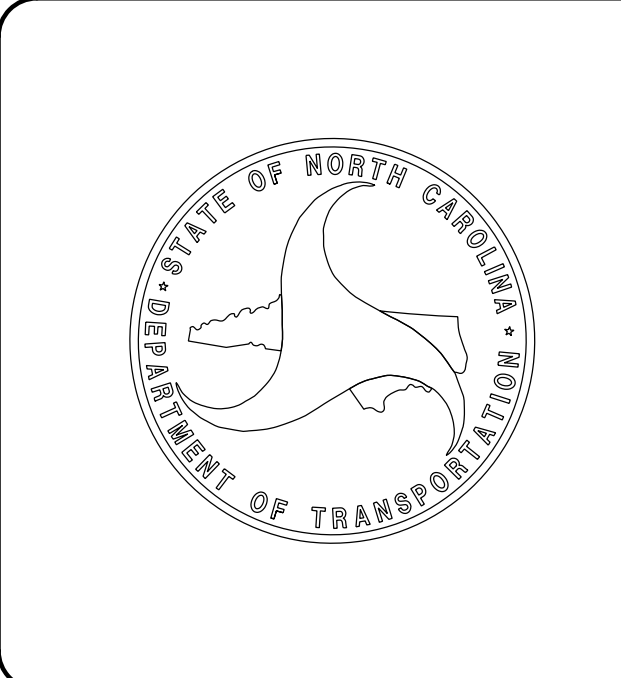
HYDRAULICS ENGINEER

DocuSigned by:
Davin C. Morrison
SIGNATURE: 5/17/2018

ROADWAY DESIGN ENGINEER

DocuSigned by:
Nikki J. Honeycutt
SIGNATURE: 5/17/2018

Seal: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 038053
Seal: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 039234

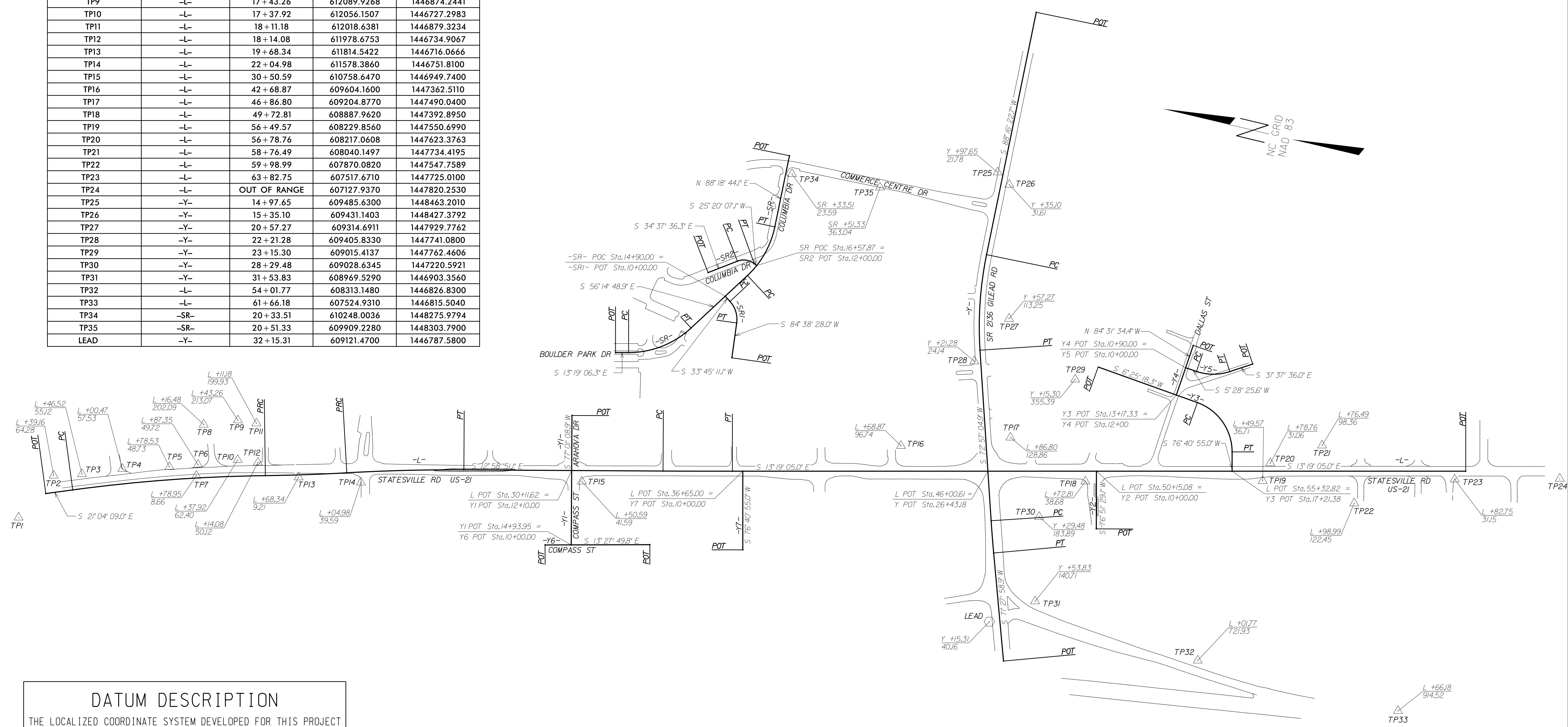


5/15/2018

FINAL SURVEY CONTROL SHEET U-5114

WITH PROPOSED CENTERLINE ALIGNMENTS

POINT NO.	LINE	STATION	NORTH	EAST
TP1	-L-	OUT OF RANGE	612819.3987	1446320.6795
TP2	-L-	10+39.16	612725.9860	1446507.3090
TP3	-L-	10+46.52	612622.0983	1446537.3572
TP4	-L-	13+00.47	612476.8384	1446592.5986
TP5	-L-	14+78.53	612303.5879	1446640.8099
TP6	-L-	15+87.35	612198.9584	1446673.8215
TP7	-L-	15+78.95	612195.3793	1446632.0610
TP8	-L-	16+16.48	612213.2839	1446828.4090
TP9	-L-	17+43.26	612089.9268	1446874.2441
TP10	-L-	17+37.92	612056.1507	1446727.2983
TP11	-L-	18+11.18	612018.6381	1446879.3234
TP12	-L-	18+14.08	611978.6753	1446734.9067
TP13	-L-	19+68.34	611814.5422	1446716.0666
TP14	-L-	22+04.98	611578.3860	1446751.8100
TP15	-L-	30+50.59	610758.6470	1446949.7400
TP16	-L-	42+68.87	609604.1600	1447362.5110
TP17	-L-	46+86.80	609204.8770	1447490.0400
TP18	-L-	49+72.81	608887.9620	1447392.8950
TP19	-L-	56+49.57	608229.8560	1447550.6990
TP20	-L-	56+78.76	608217.0608	1447623.3763
TP21	-L-	58+76.49	608040.1497	1447734.4195
TP22	-L-	59+98.99	607870.0820	1447547.7589
TP23	-L-	63+82.75	607517.6710	1447725.0100
TP24	-L-	OUT OF RANGE	607127.9370	1447820.2530
TP25	-Y-	14+97.65	609485.6300	1448463.2010
TP26	-Y-	15+35.10	609431.1403	1448427.3792
TP27	-Y-	20+57.27	609314.6911	1447929.7762
TP28	-Y-	22+21.28	609405.8330	1447741.0800
TP29	-Y-	23+15.30	609015.4137	1447762.4606
TP30	-Y-	28+29.48	609028.6345	1447220.5921
TP31	-Y-	31+53.83	608969.5290	1446903.3560
TP32	-L-	54+01.77	608313.1480	1446826.8300
TP33	-L-	61+66.18	607524.9310	1446815.5040
TP34	-SR-	20+33.51	610248.0036	1448275.9794
TP35	-SR-	20+51.33	609909.2280	1448303.7900
LEAD	-Y-	32+15.31	609121.4700	1446787.5800



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS THE NAD 83, NC STATE PLANE COORDINATES, LOCALIZED FROM NCGS MONUMENT "LEAD" HAVING A NORTHING: 609121.47(ft) EASTING: 1446787.58(ft) VERTICAL ELEVATION: 773.50(ft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998442

THE LOCALIZED HORIZONTAL GROUND DISTANCE FROM "LEAD" TO -L- STATION 26+40.00 IS N 03° 05' 21.785" E 2049.595(ft)

ALL LINEAR DISTANCES ARE LOCALIZED HORIZONTAL DISTANCES THE VERTICAL DATUM IS BASED ON NAVD 88 (GEOID 03)

NOTE: DRAWING NOT TO SCALE

5/2/2018 10:00:00 AM \\proj\shu\U-5114_rdy_psh01C-1.dgn

PROPOSED ALIGNMENT CONTROL SHEET U-5114

-L-

TYPE	STATION	NORTH	EAST
POT	10+00.00	612739.4218	1446433.2492
PC	11+03.98	612642.3951	1446470.6287
PRC	18+41.63	611939.5694	1446693.1010
PRC	21+52.82	611639.4310	1446775.1806
PT	26+00.00	611207.0641	1446889.0555
PC	33+60.45	610466.0425	1447059.8733
PT	36+25.28	610208.1657	1447120.1178
POT	64+25.00	607483.7363	1447765.0521

-Y5-

TYPE	STATION	NORTH	EAST
PC	10+43.75	608571.7339	1447898.7057
PT	12+65.00	608369.6579	1447975.6079
POT	11+73.25	608447.7794	1447927.4971

-Y6-

TYPE	STATION	NORTH	EAST
POT	9+00.00	610839.4325	1446681.5397
POT	13+00.00	610450.4257	1446774.6723

-Y-

TYPE	STATION	NORTH	EAST
POT	8+70.00	609482.7801	1449091.2268
PC	18+14.02	609454.3293	1448147.6363
PT	21+80.37	609394.7485	1447787.2638
PC	28+32.39	609203.5887	1447163.9017
PT	29+56.02	609165.8150	1447046.1880
POT	33+70.00	609034.2261	1446653.6763

-Y7-

TYPE	STATION	NORTH	EAST
POT	13+00.00	610100.4029	1446837.3366

-Y1-

TYPE	STATION	NORTH	EAST
POT	10+00.00	610853.1346	1447186.1494

-SR-

TYPE	STATION	NORTH	EAST
POT	10+00.00	610746.7285	1447457.7753
PC	10+50.00	610698.0732	1447469.2934
PT	13+12.24	610487.6962	1447615.4149
PC	16+06.44	610324.2292	1447860.0320
PT	18+22.94	610265.3850	1448064.8057
POT	21+00.00	610273.5452	1448341.7453

-Y2-

TYPE	STATION	NORTH	EAST
POT	12+20.00	608805.7141	1447226.0309

-SR1-

TYPE	STATION	NORTH	EAST
PC	10+26.93	610366.5379	1447748.2536
PT	11+15.75	610322.5365	1447674.4490
POT	12+50.00	610309.9979	1447540.7808

-Y3-

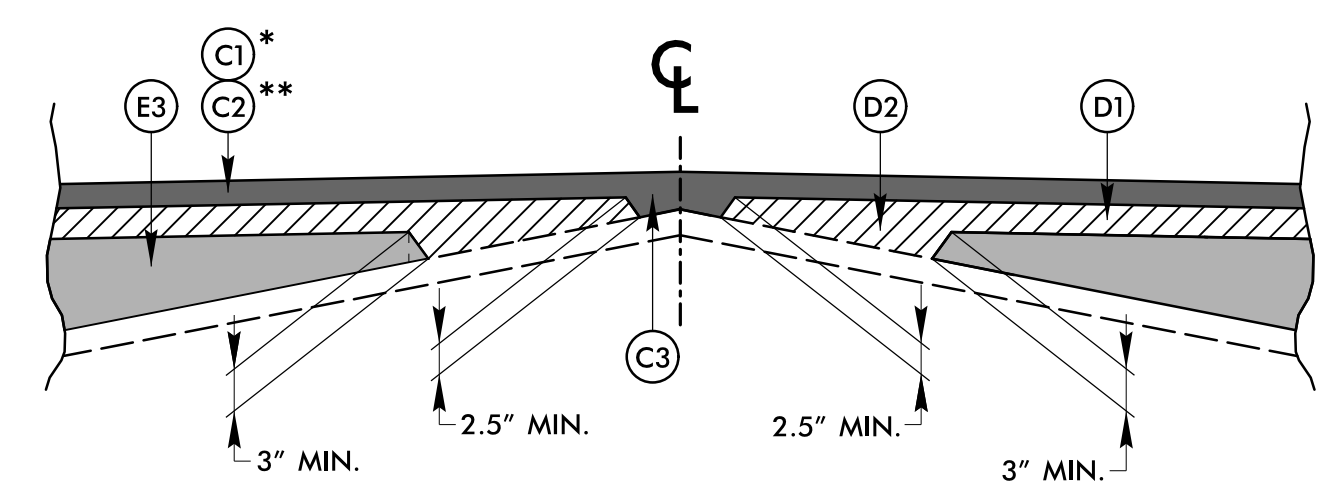
TYPE	STATION	NORTH	EAST
POT	10+00.00	608941.1088	1447828.8720
PC	14+02.50	608541.1344	1447783.8539
PT	16+47.75	608368.8824	1447631.1801

-SR2-

TYPE	STATION	NORTH	EAST
POT	10+00.00	610473.1901	1447836.1117
PC	11+20.29	610374.2054	1447904.4649
PT	11+88.32	610309.4561	1447909.7265

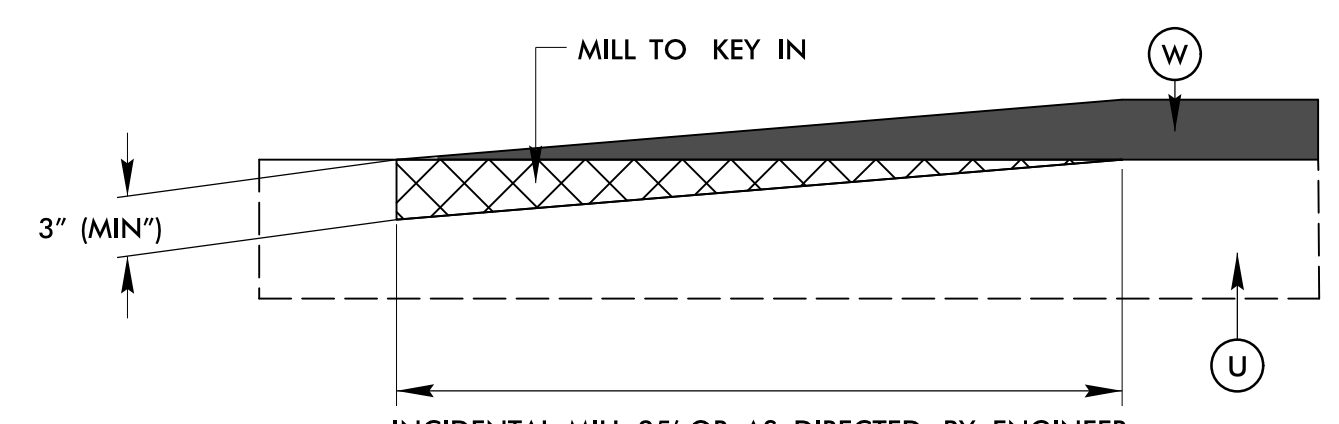
-Y4-

TYPE	STATION	NORTH	EAST
POT	10+00.00	608606.6967	1447992.4684



SEE PLANS FOR ALL WEDGING LOCATIONS
 * USE WITH -L- US 21
 ** USE WITH -Y- GILEAD ROAD, -Y2-

WEDGING DETAIL A

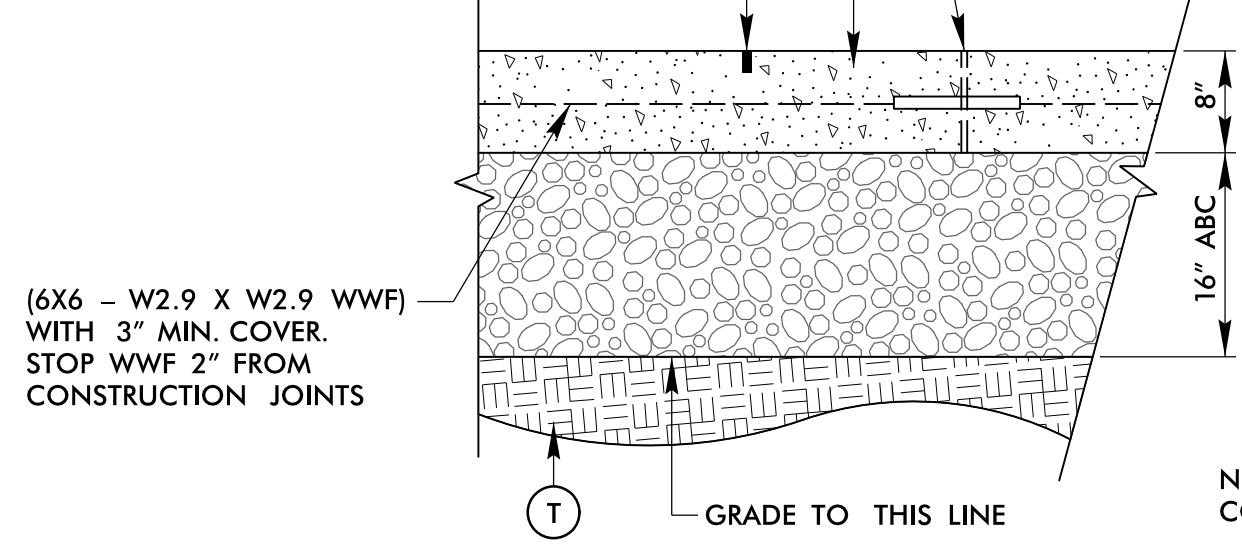


INCIDENTAL MILL 25' OR AS DIRECTED BY ENGINEER
 TO BE USED AT ALL TIE-IN LOCATIONS

INCIDENTAL MILLING DETAIL B

CONTROL JOINT
 SAW CUT JOINTS - MAXIMUM 15' SPACING
 JOINTS TO BE 1/8" X 1-1/2" TO 2" DEEP
 WITH WATERPROOF SEALANT

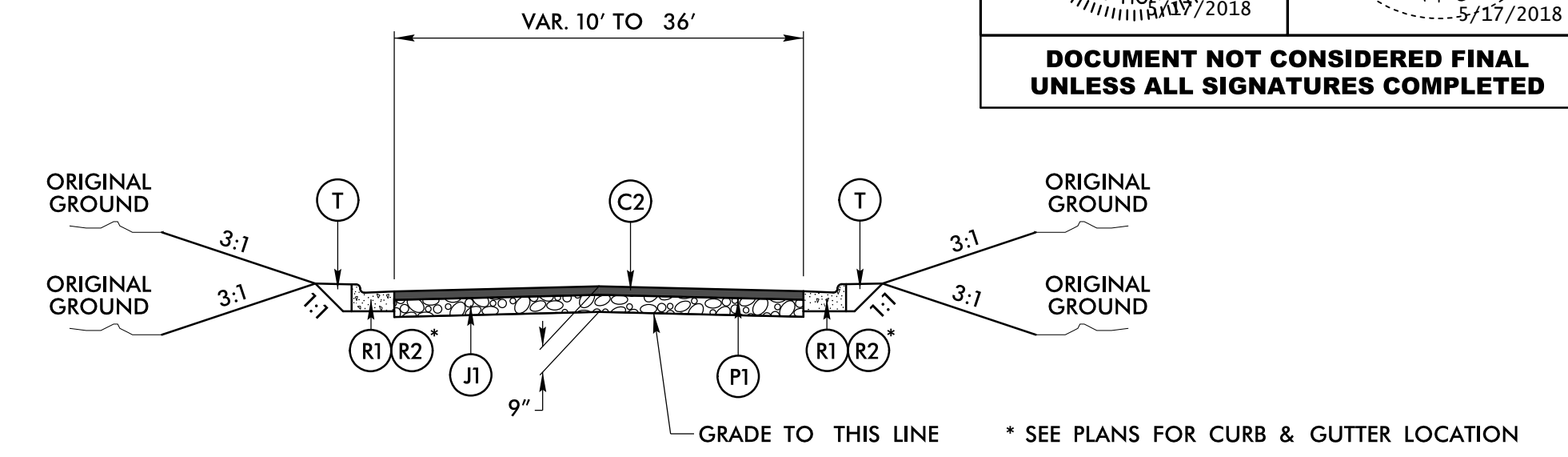
CONSTRUCTION JOINT
 IF USED, INSTALL 5/8" DIA. SMOOTH STEEL DOWELS 18" O.C.,
 2' LONG, GREASE ON SIDE OF STEEL AND SEAL WITH
 WATERPROOF SEALANT



NOTE:
 CONCRETE SHALL BE 3600 PSI @ 28 DAYS

TO BE USED FOR CATS PARK AND RIDE BUS PAVEMENT

CONCRETE PAVEMENT DETAIL C

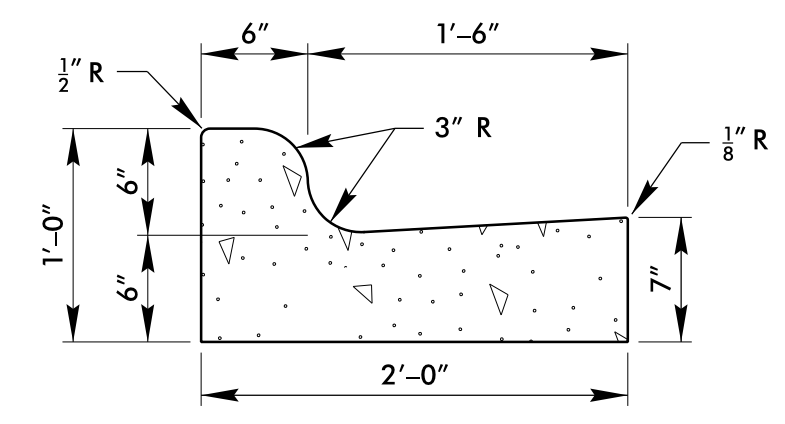
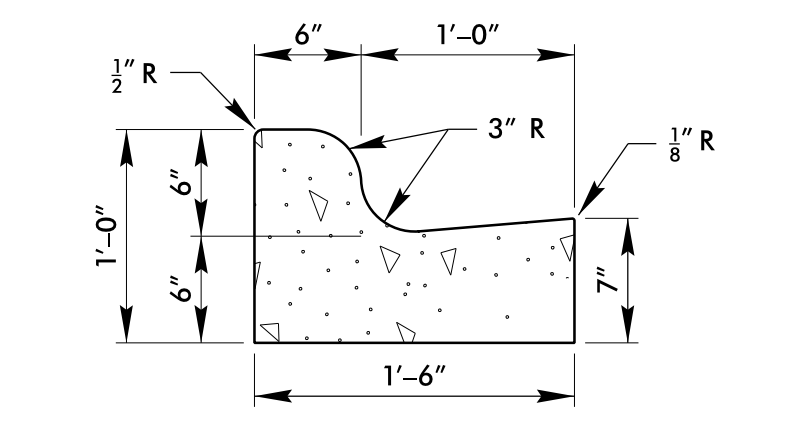


ASPHALT DRIVEWAY DETAIL D

APPLY TO ALL EXISTING ASPHALT DRIVEWAYS ALONG:
 -L- (US 21/STATESVILLE RD)
 -Y- (GILEAD RD)
 -SR- (BOULDER PARK DR)

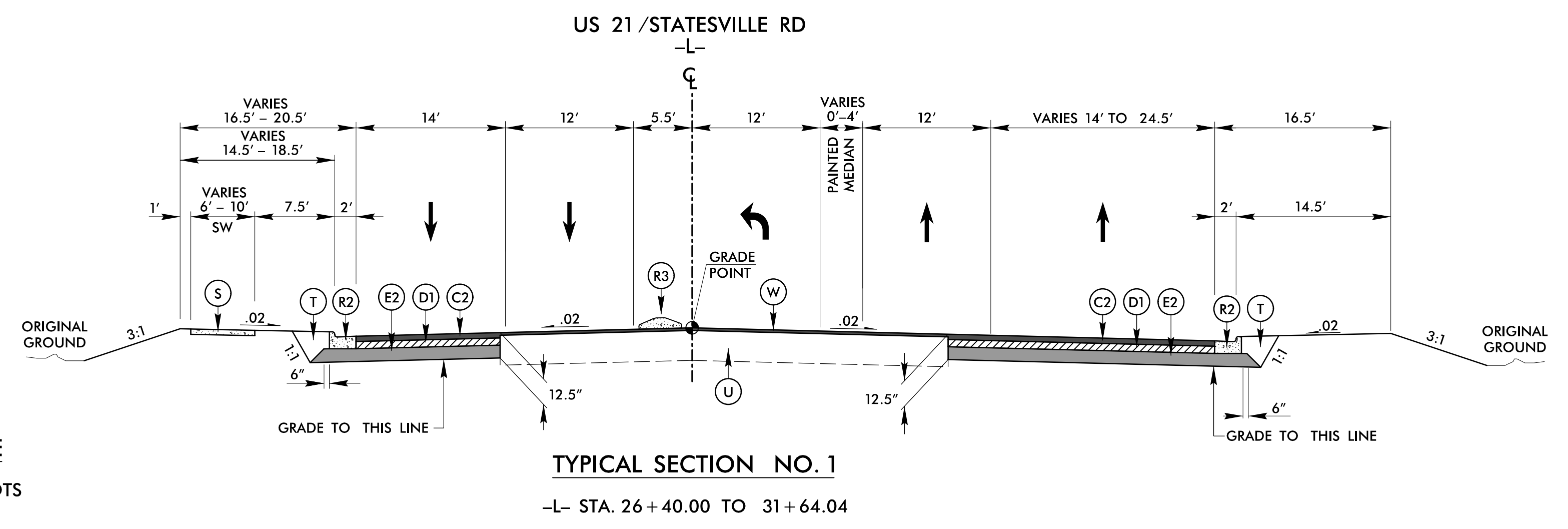
FINAL PAVEMENT SCHEDULE	
A1	8" CONTINUOUSLY REINFORCED CONCRETE PAVEMENT
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ.YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ.YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ.YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1.5" IN DEPTH OR GREATER THAN 2" IN DEPTH.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ.YD.
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 2.5" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ.YD.
E2	PROP. APPROX. 5.5" ASPHALT CONCRETE BASE COURSE TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ.YD.
E3	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 5.5" IN DEPTH.
J1	PROP. 6" AGGREGATE BASE COURSE
P1	PRIME COAT AT THE RATE OF 0.35 GAL. PER SQ. YD.
R1	1'-6" CONCRETE CURB AND GUTTER
R2	2'-6" CONCRETE CURB AND GUTTER
R3	5" MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED)
S	4" SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	MILLING 1.5" IN DEPTH)
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL THIS SHEET)

ALL PAVEMENT SLOPES 1:1 UNLESS NOTED OTHERWISE



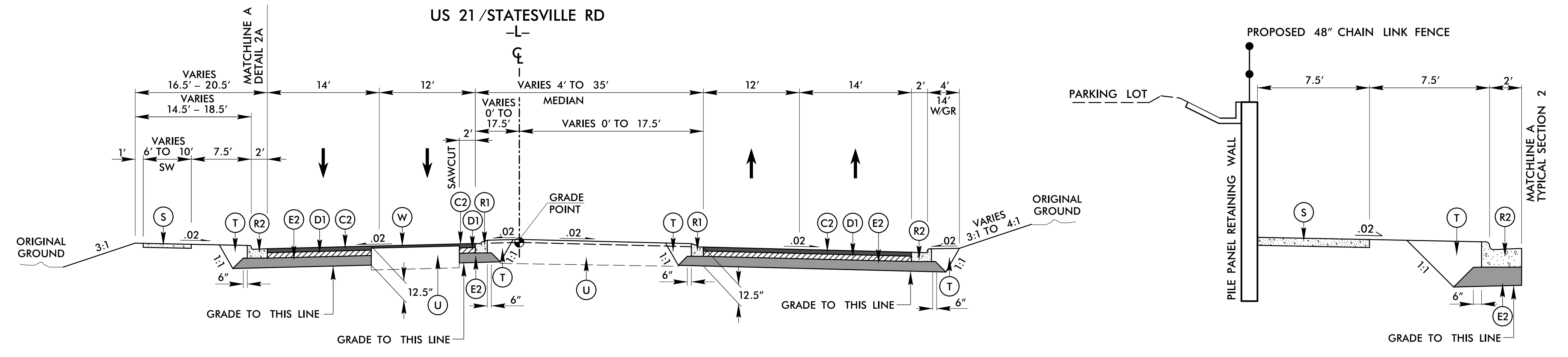
MODIFIED CURB & GUTTER DETAIL E

TO BE USED FOR DRIVEWAYS AND PARKING LOTS
 SEE PLANS FOR LOCATIONS



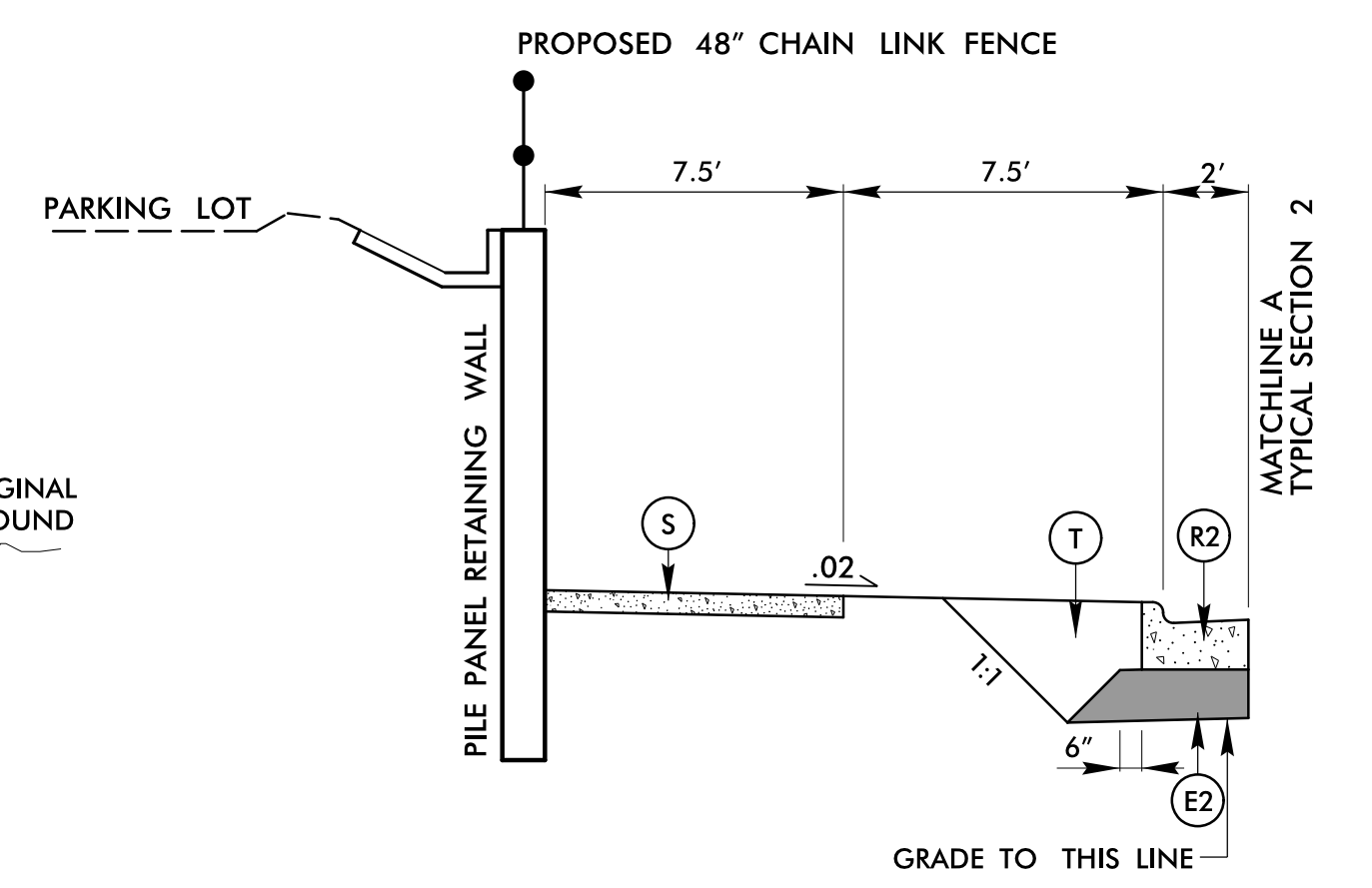
TYPICAL SECTION NO. 1

-L- STA. 26+40.00 TO 31+64.04



TYPICAL SECTION NO. 2

-L- STA. 31+64.04 TO 40+85.00
 SEE PLANS FOR ISLAND AND SIDEWALK LOCATIONS



DETAIL 2A

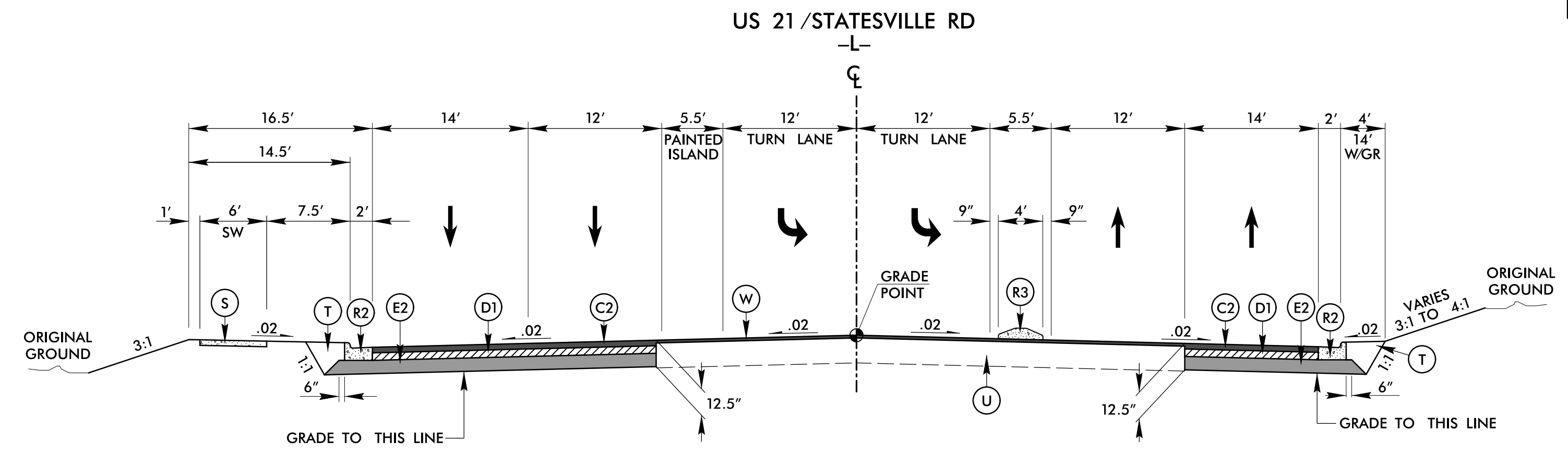
W1 -L- STA. 34+01.99 TO 36+15.20 (LT.)
 W2 -L- STA. 36+50.09 TO 39+40.64 (LT.)

ALL PAVEMENT SLOPES 1:1
UNLESS NOTED OTHERWISE

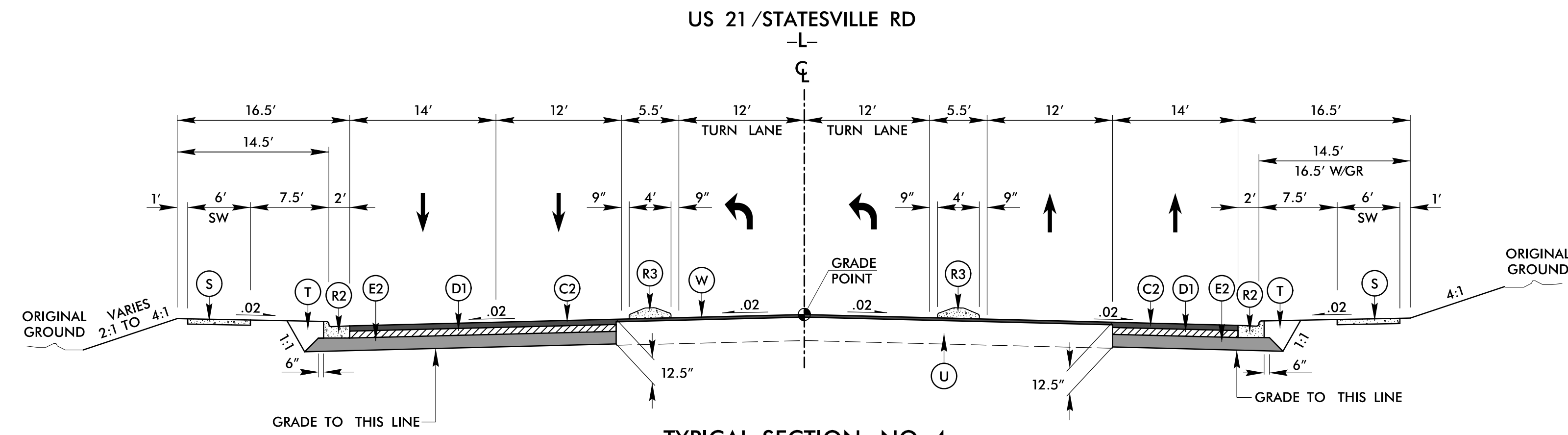
C1	1.5" S9.5C
C2	3.0" S9.5C
C3	VAR. S9.5C
D1	4" I19.0C
D2	VAR. I19.0C
E1	4.0" B25.0C
E2	5.5" B25.0C
E3	VAR. B25.0C
J1	6.0" ABC
P1	PRIME COAT
R1	1' - 6" C&G
R2	2' - 6" C&G
R3	5" MONO. ISLAND
S	4" SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	MILLING
W	WEDGING

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 STV Engineers, Inc.
 800 West Trade St., Suite 715
 Charlotte, NC 28202
 NC License Number F-0991

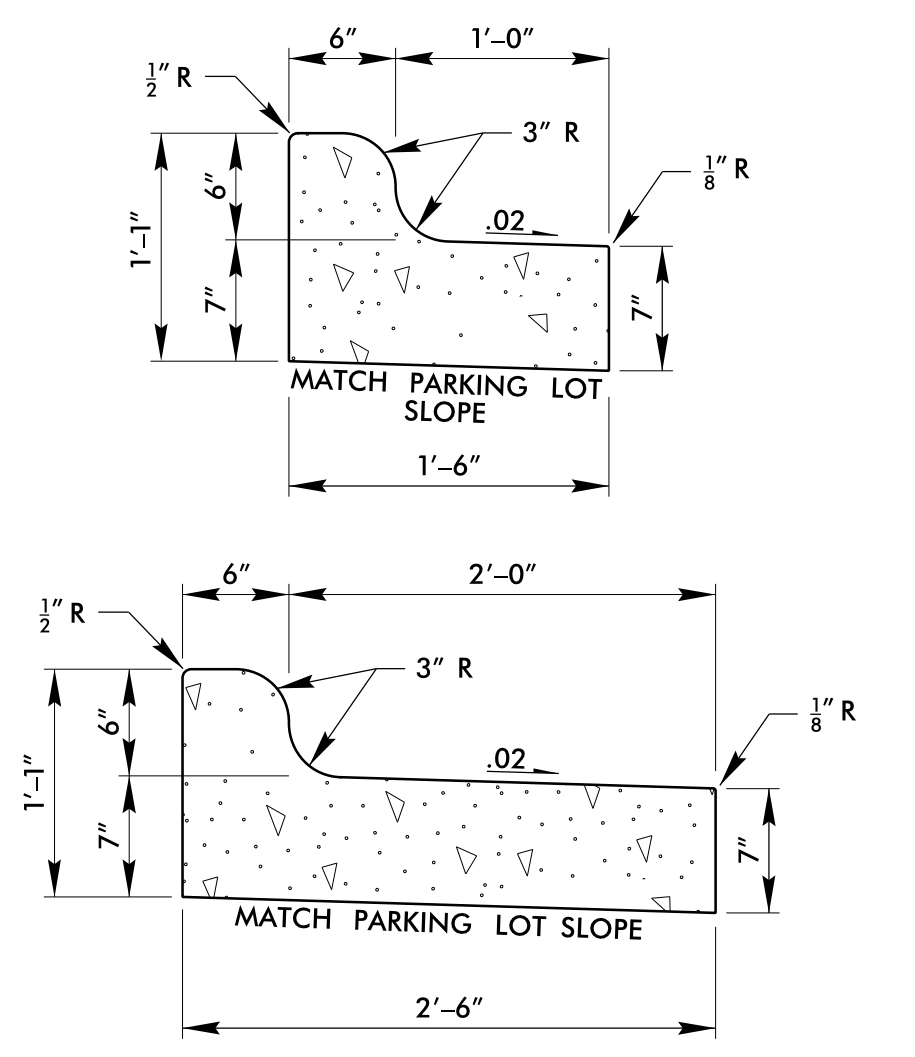
PROJECT REFERENCE NO. U-5114	SHEET NO. 2A-2
ROADWAY DESIGN ENGINEER <i>[Signature]</i> 039234 9/17/2018	PAVEMENT DESIGN ENGINEER <i>[Signature]</i> 31013 9/17/2018
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



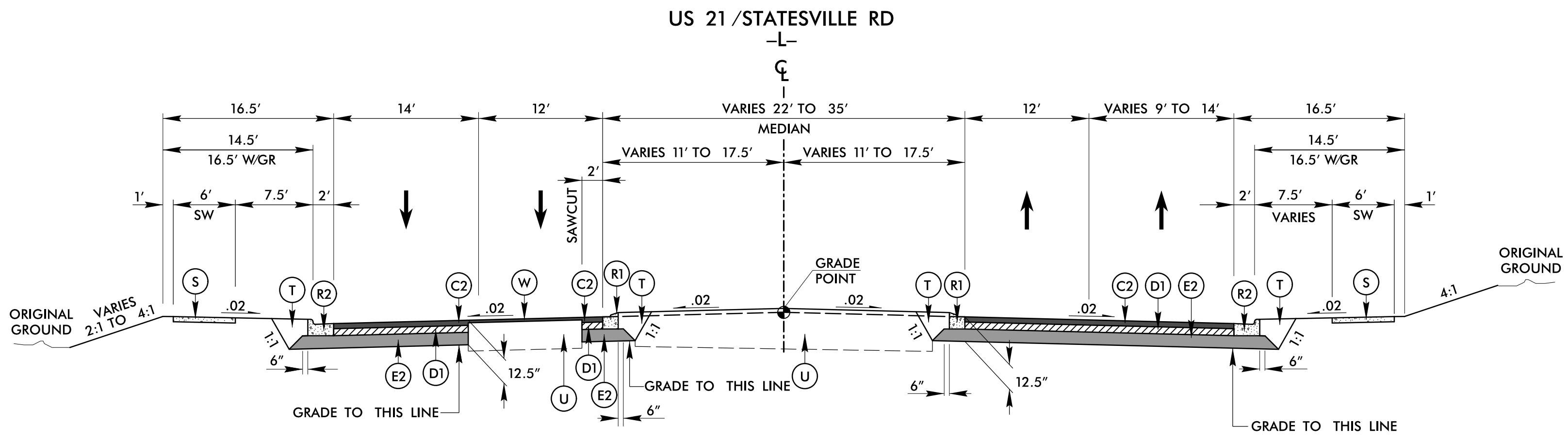
TYPICAL SECTION NO. 3
 -L- STA. 40+85.00 TO 46+50.00
 SEE PLANS FOR ALL ISLAND LOCATIONS



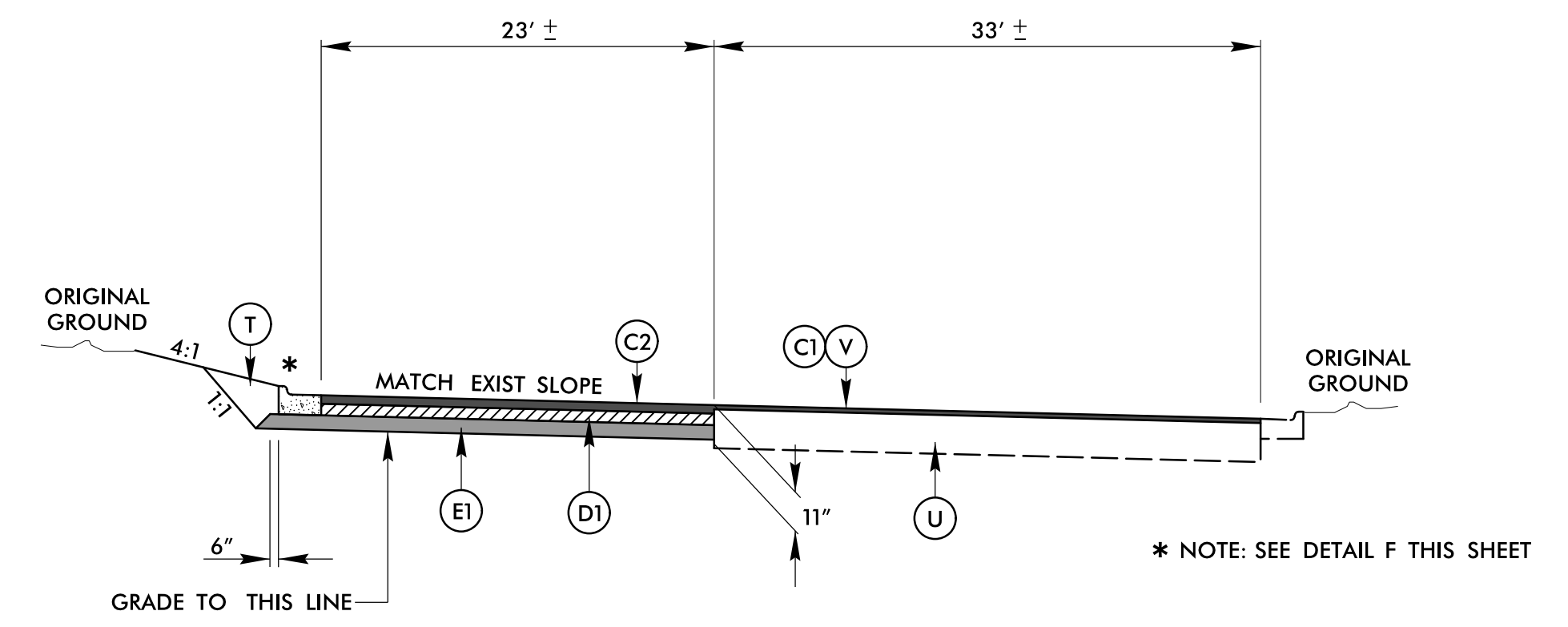
TYPICAL SECTION NO. 4
 -L- STA. 46+50.00 TO 54+68.14
 SEE PLANS FOR ALL ISLAND LOCATIONS



MODIFIED CURB & GUTTER DETAIL F
 USE 2'-6" C&G FOR AUTO ZONE
 USE 1'-6" C&G FOR COOK OUT



TYPICAL SECTION NO. 5
 -L- STA. 54+68.14 TO 58+00.00
 SEE PLANS FOR SIDEWALK LOCATIONS
 (CROWN POINT SHIFT -L- STA. 62+39.50 TO 64+15)



TYPICAL SECTION NO. 6
 -L- STA. 29+00.00 TO 29+64.75 (AUTO ZONE)
 -L- STA. 30+60.00 TO 31+25.00 (COOK OUT)

* NOTE: SEE DETAIL F THIS SHEET

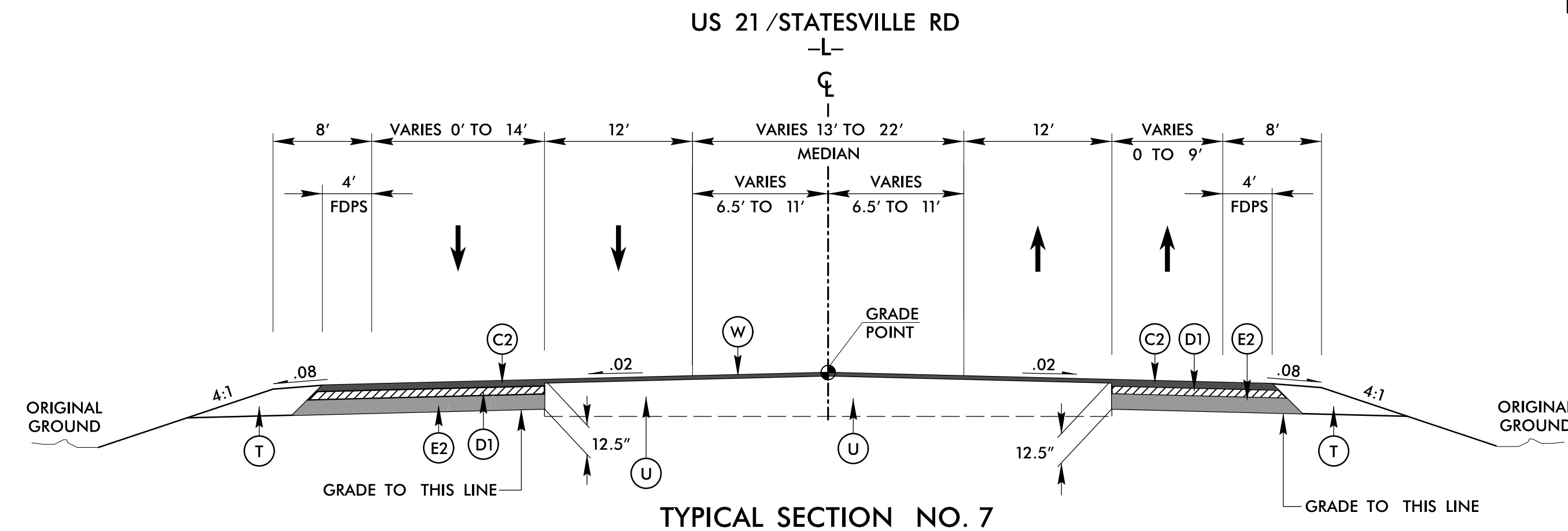
6/2/19

ALL PAVEMENT SLOPES 1:1
UNLESS NOTED OTHERWISE

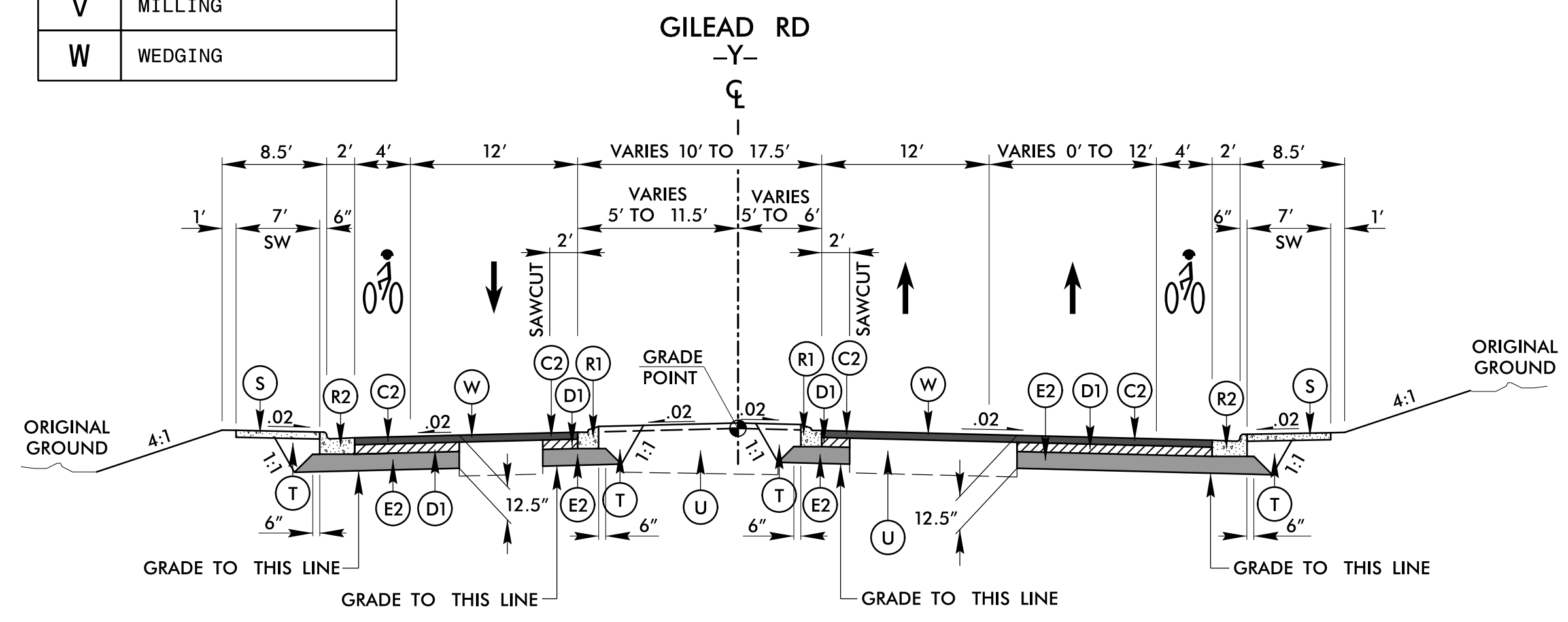
C1	1.5" S9.5C
C2	3.0" S9.5C
C3	VAR. S9.5C
D1	4" I19.0C
D2	VAR. I19.0C
E1	4.0" B25.0C
E2	5.5" B25.0C
E3	VAR. B25.0C
J1	6.0" ABC
P1	PRIME COAT
R1	1' - 6" C&G
R2	2' - 6" C&G
R3	5" MONO. ISLAND
S	4" SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	MILLING
W	WEDGING

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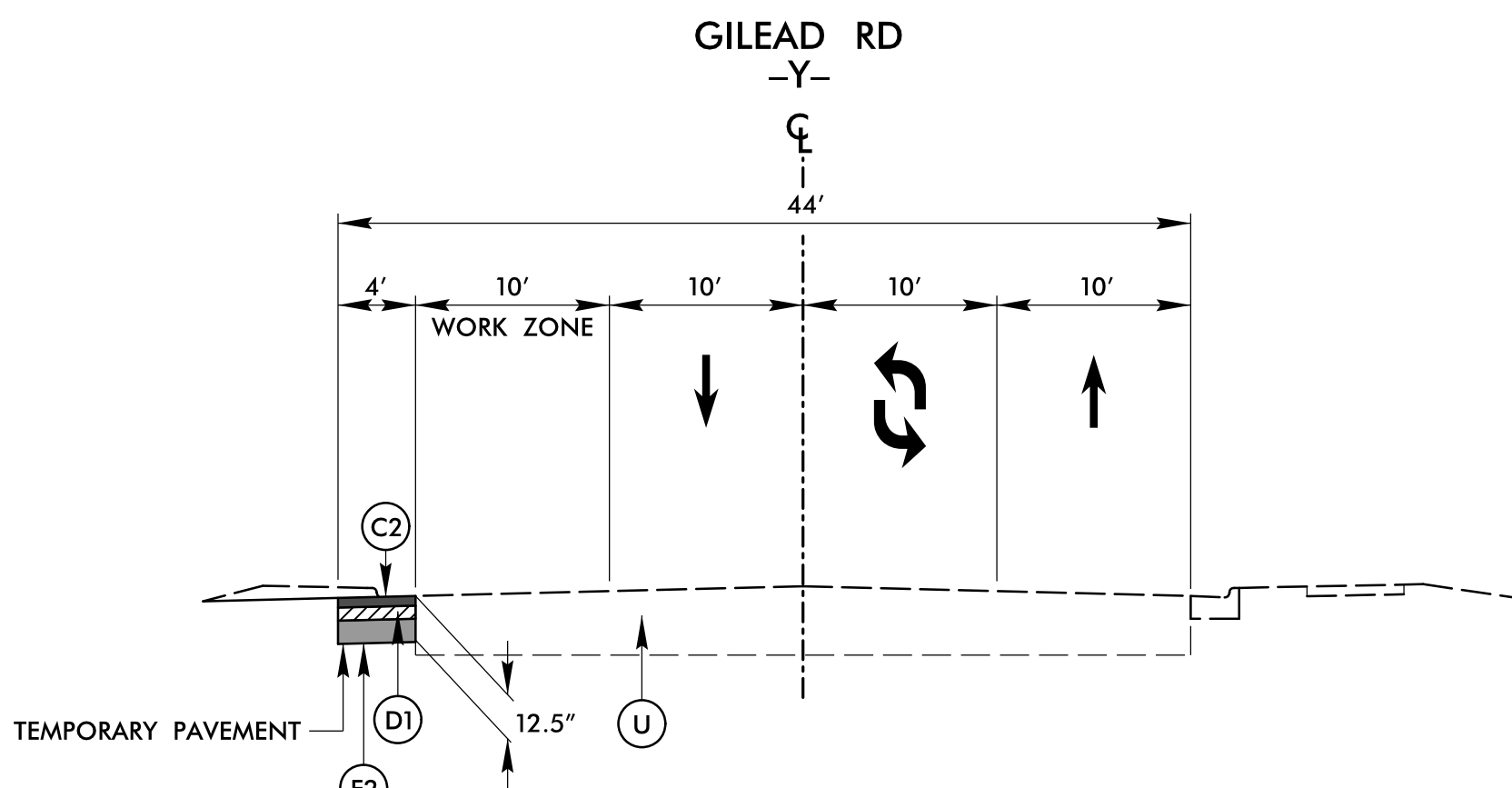
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ROADWAY DESIGN ENGINEER <i>[Signature]</i>	PAVEMENT DESIGN ENGINEER <i>[Signature]</i>
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



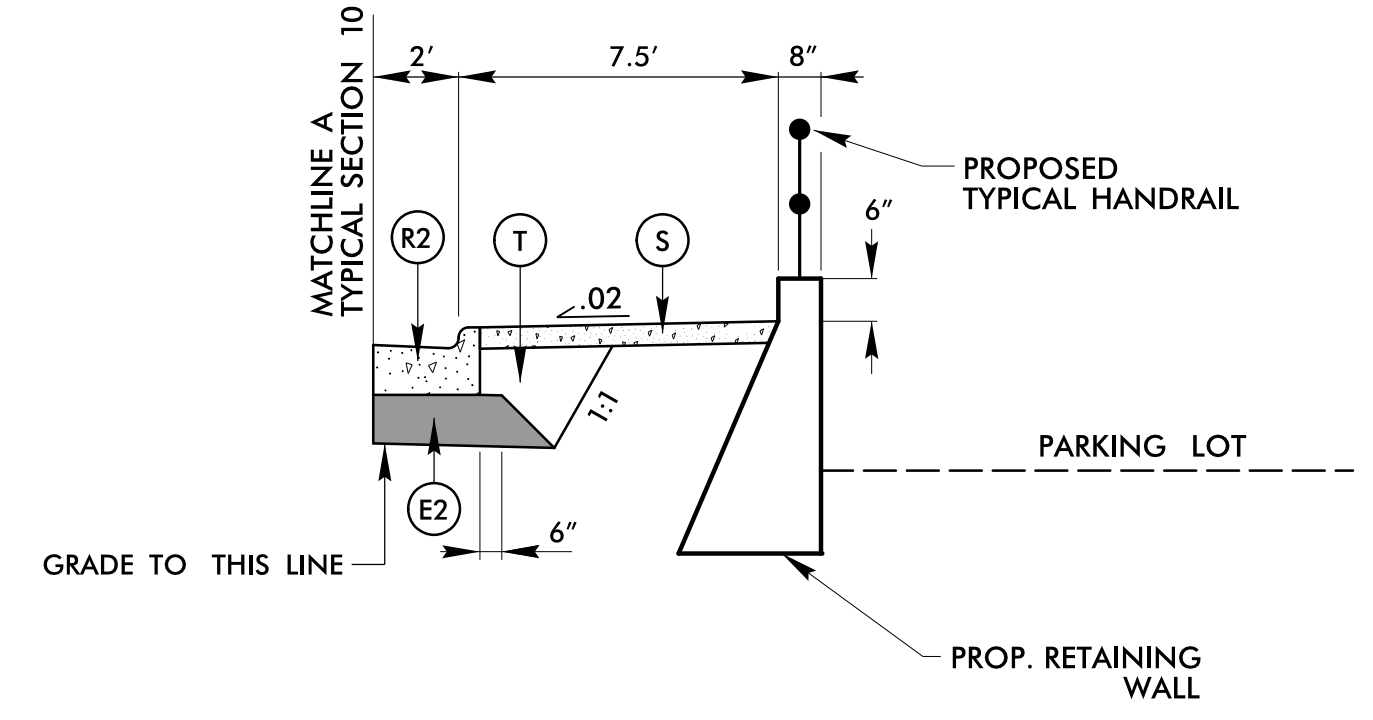
TYPICAL SECTION NO. 7
 -L- STA. 58+00.00 TO 61+85.00
 SEE PLANS FOR ISLAND LOCATIONS
 (CROWN POINT SHIFT -L- STA. 60+09.50 TO 61+85.00)



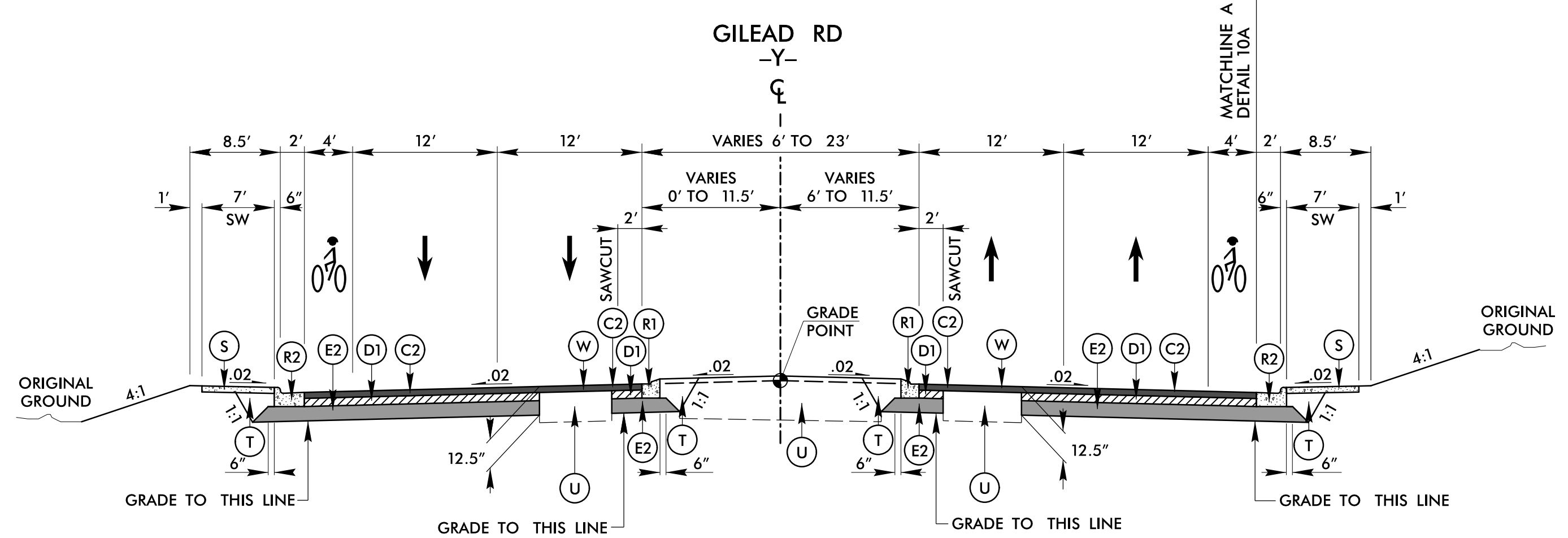
TYPICAL SECTION NO. 8
 -Y- STA. 11+50.00 TO 16+36.00
 SEE PLANS FOR ALL ISLAND LOCATIONS



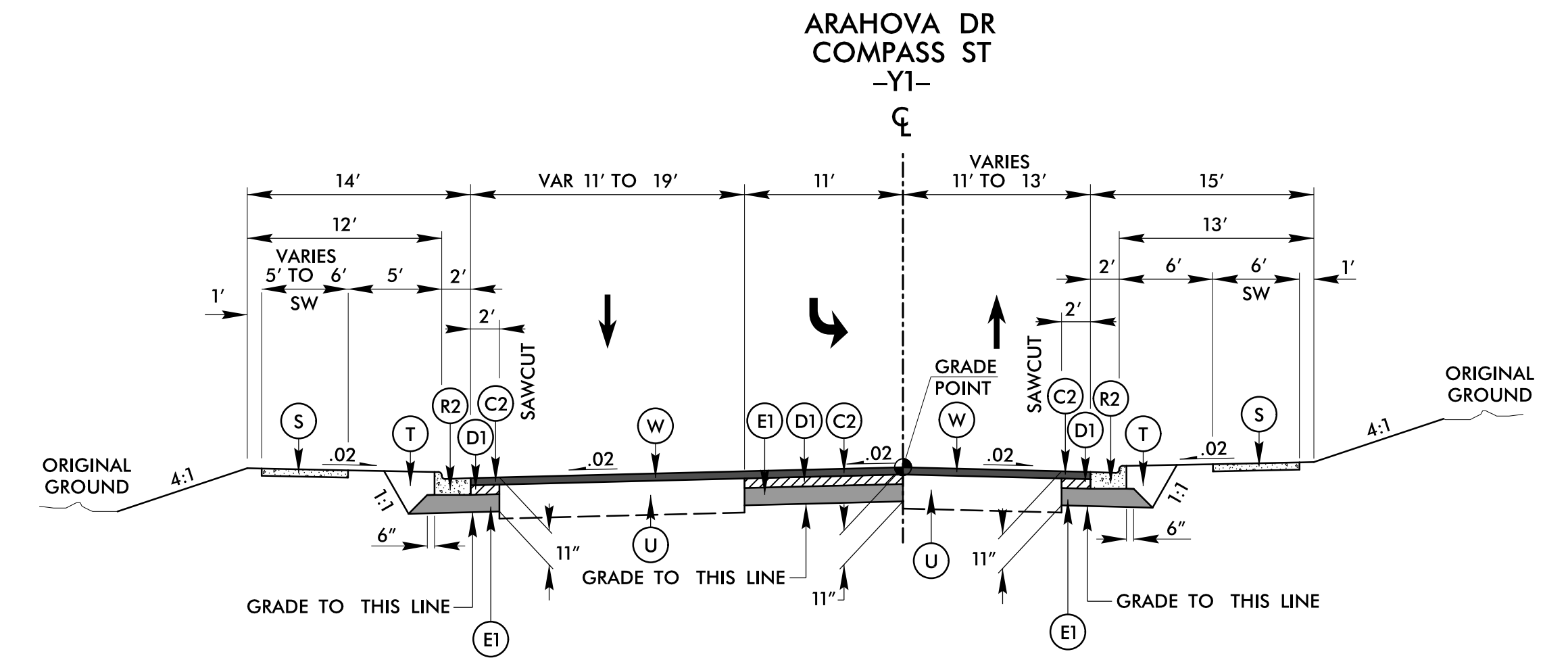
TYPICAL SECTION NO. 9
 -Y- STA. 14+44.00 TO 25+64.00
 TEMPORARY PAVEMENT DESIGN



DETAIL 10A
 -Y- STA. 19+95.17 TO 21+74.49 (RT.)



TYPICAL SECTION NO. 10
 -Y- STA. 16+36.00 TO 26+86.78
 SEE PLANS FOR ALL ISLAND LOCATIONS



TYPICAL SECTION NO. 11
 -Y1- STA. 11+33.55 TO 14+31.00

5/17/2018
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 mabde1021

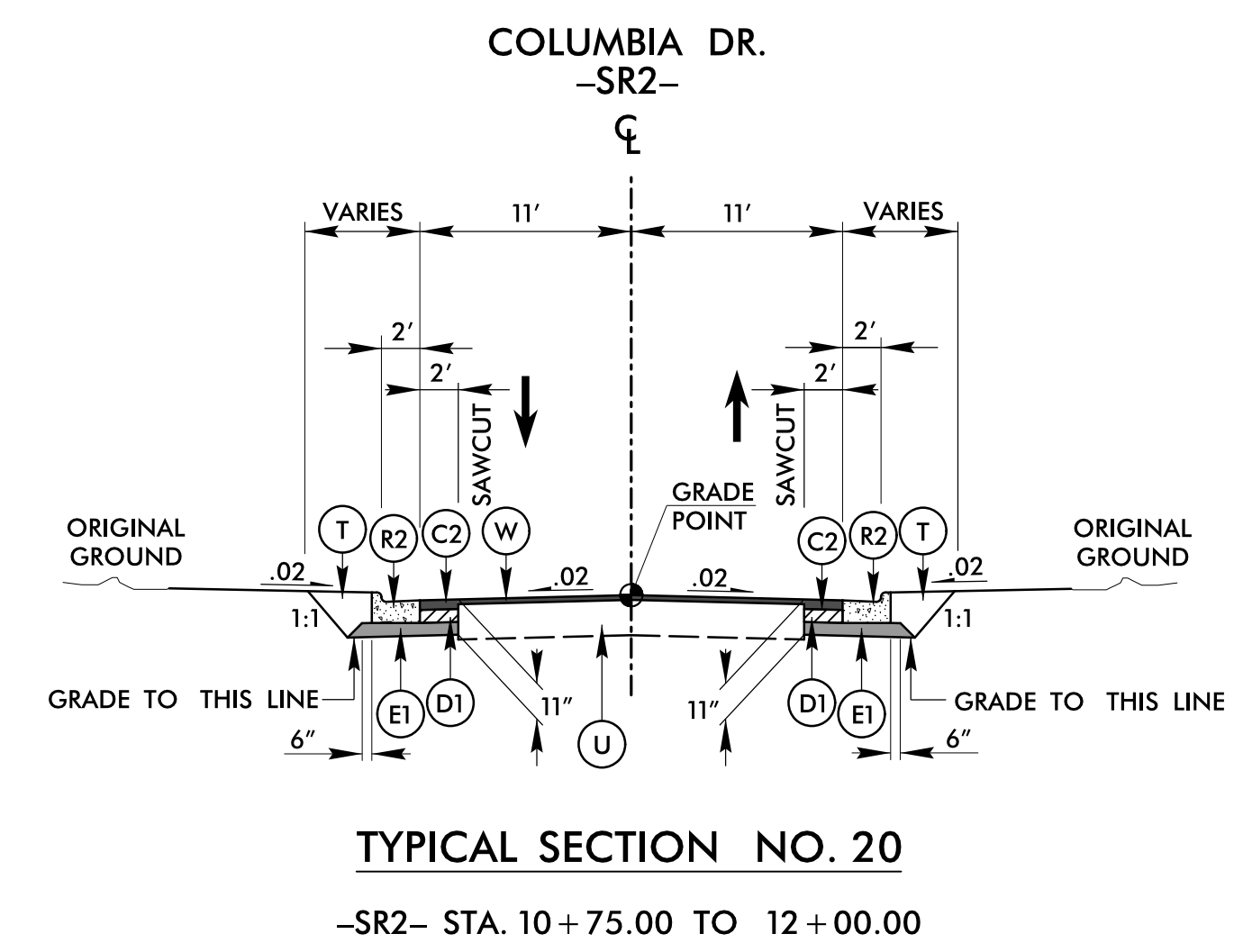
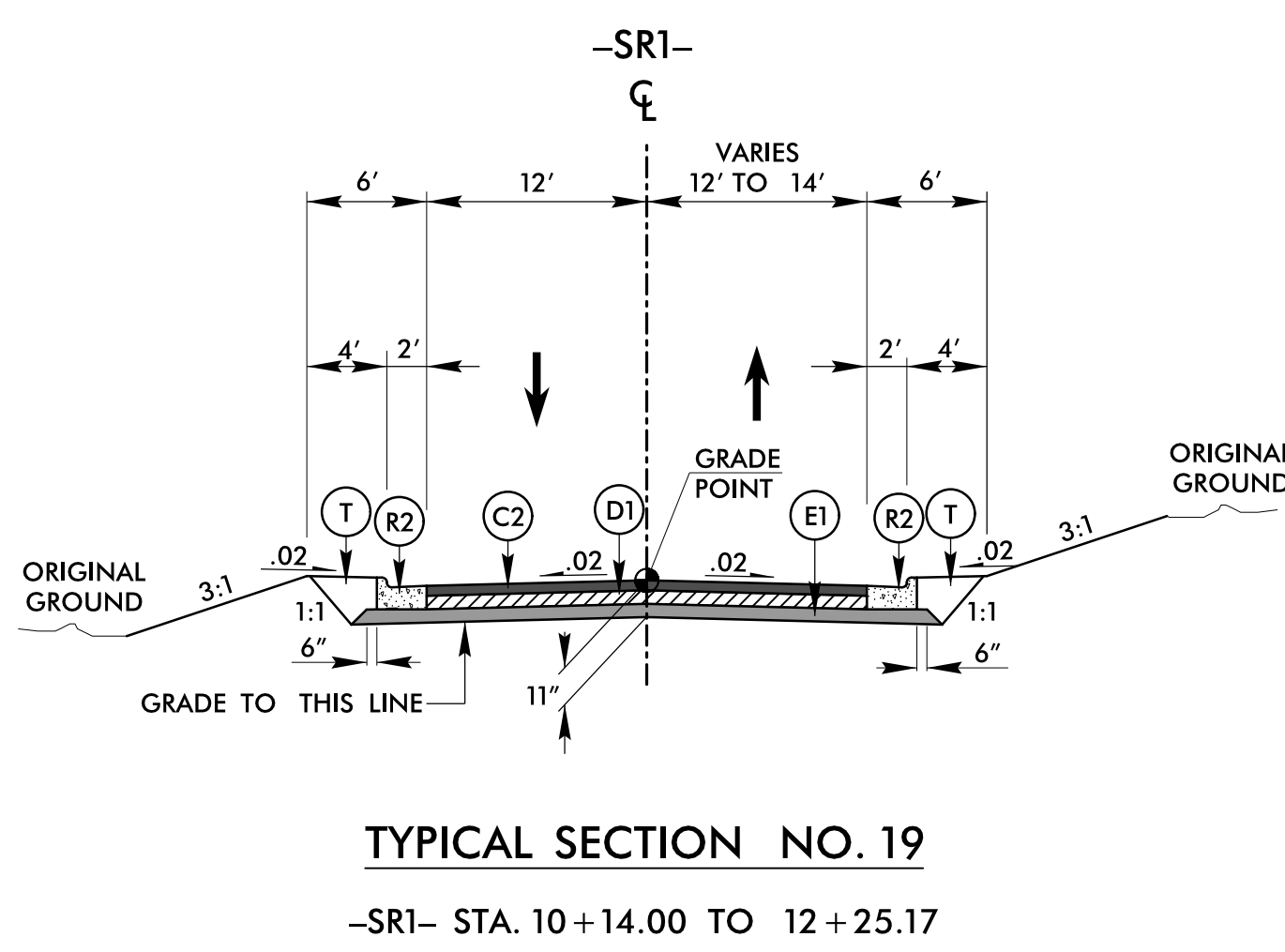
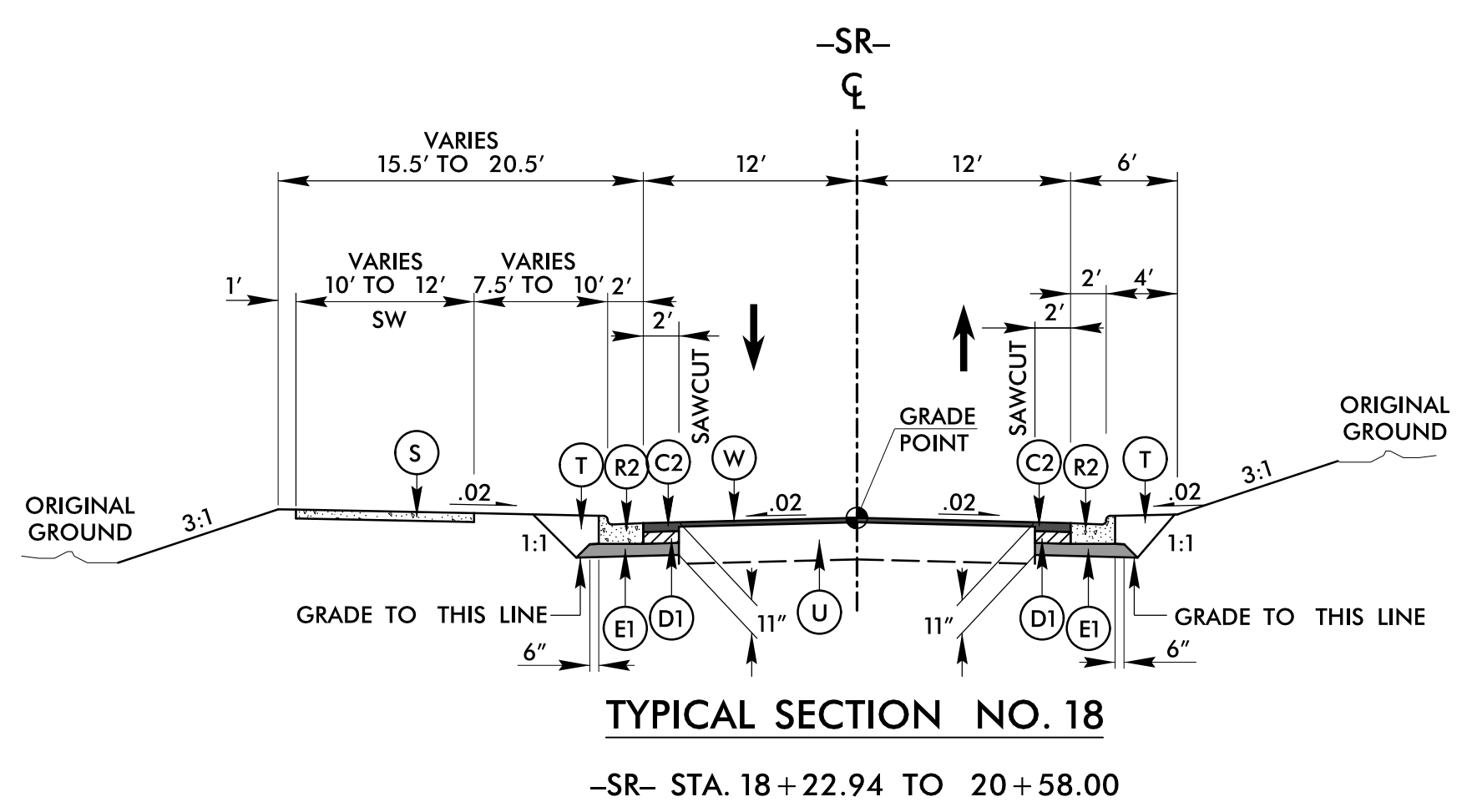
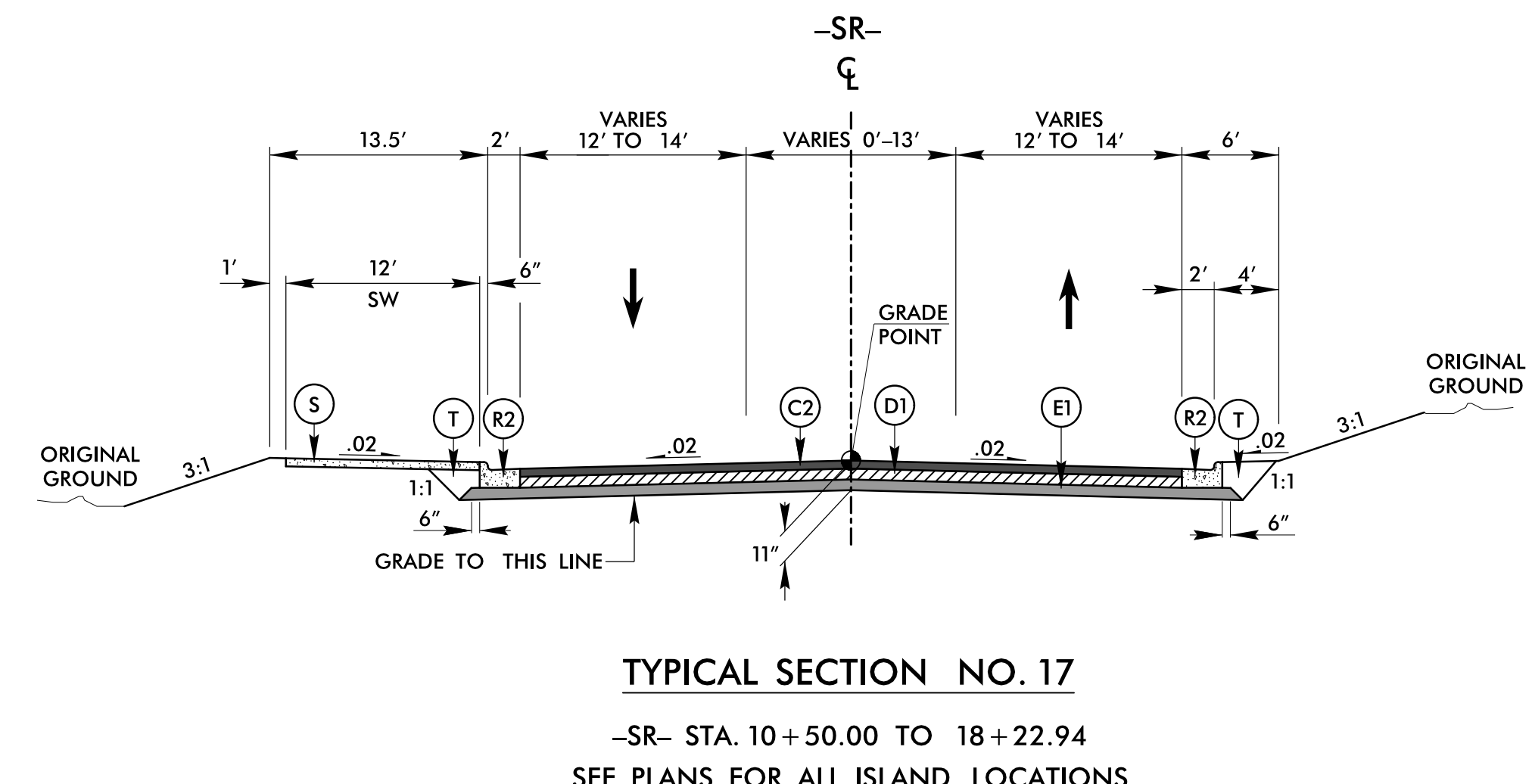
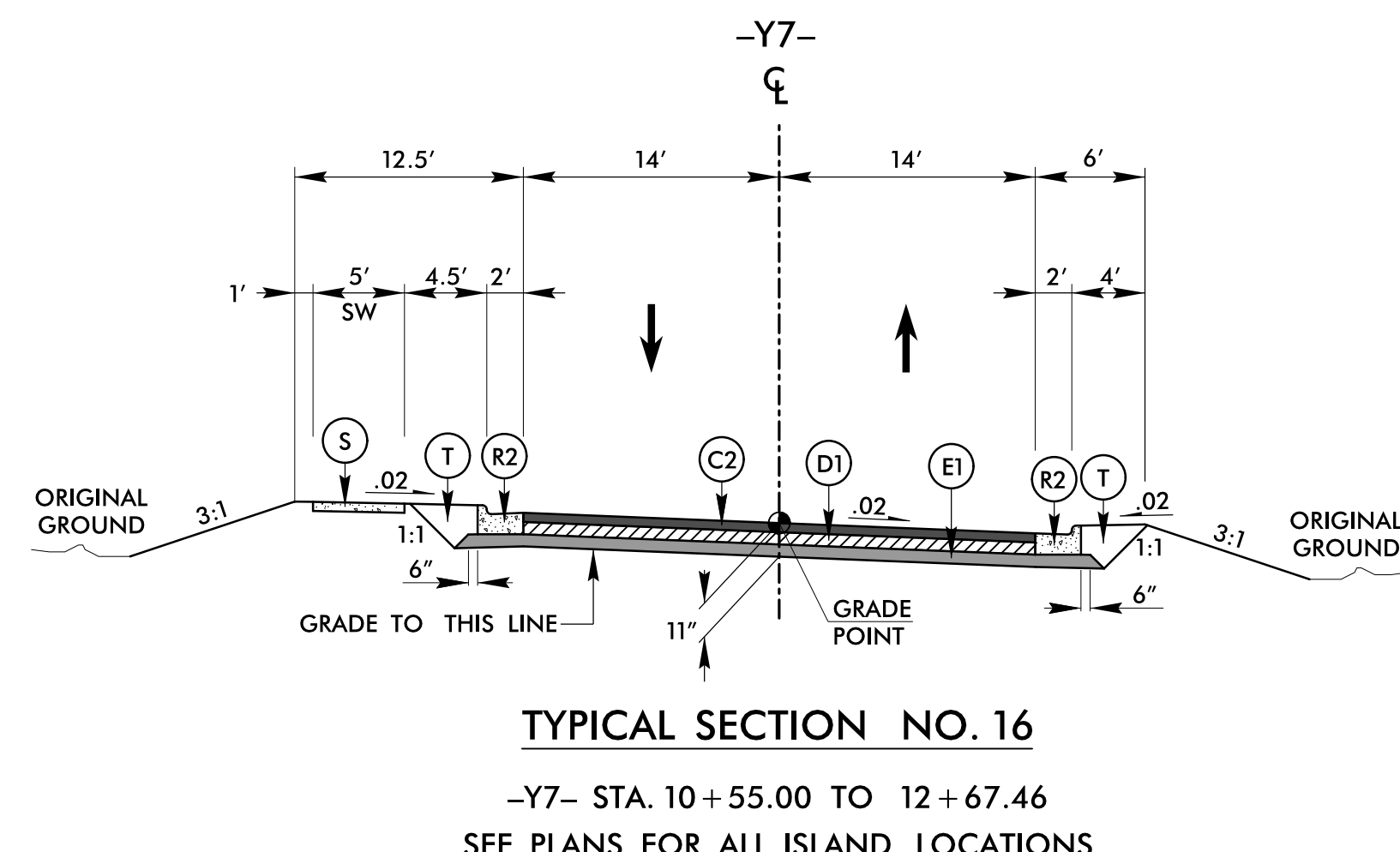
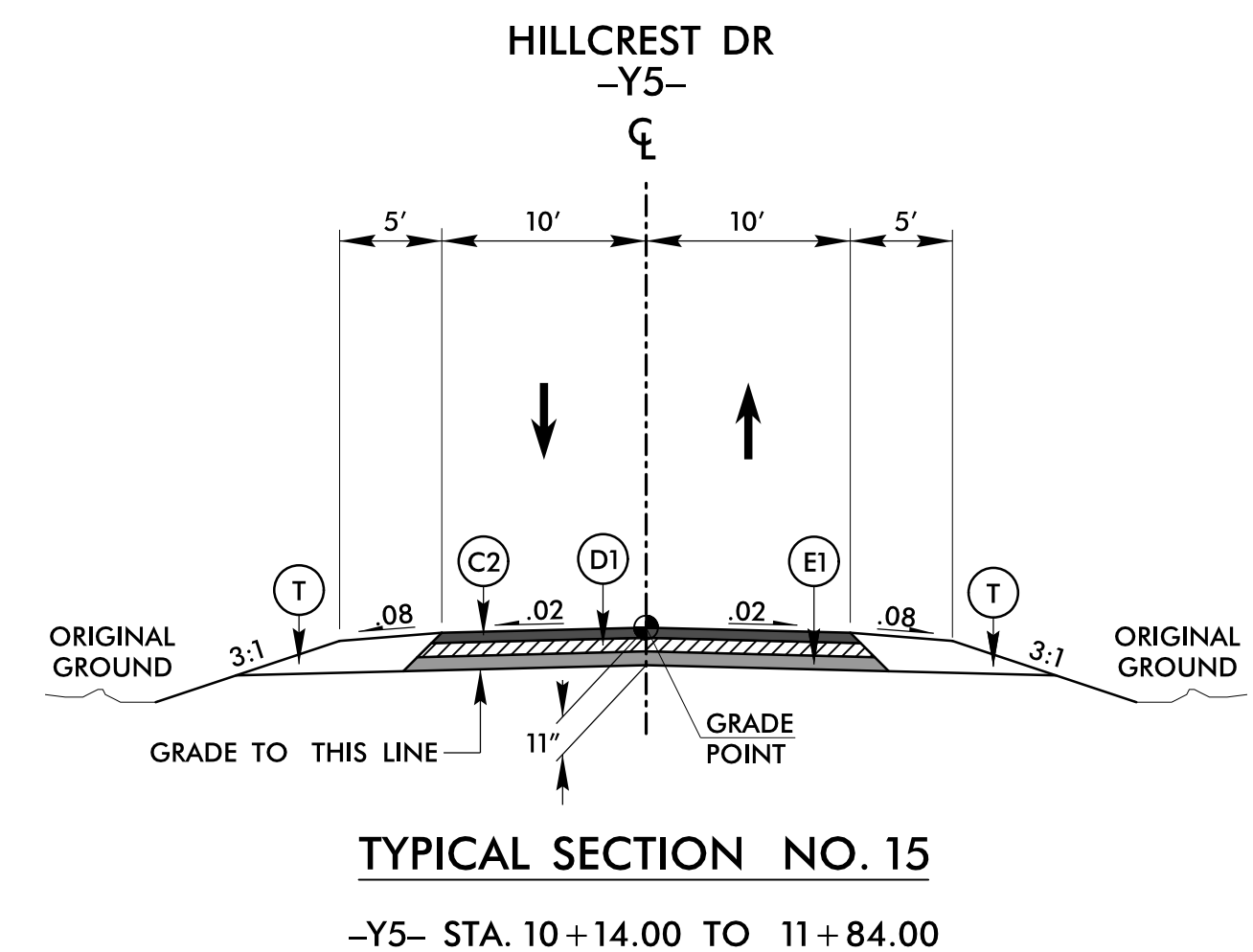
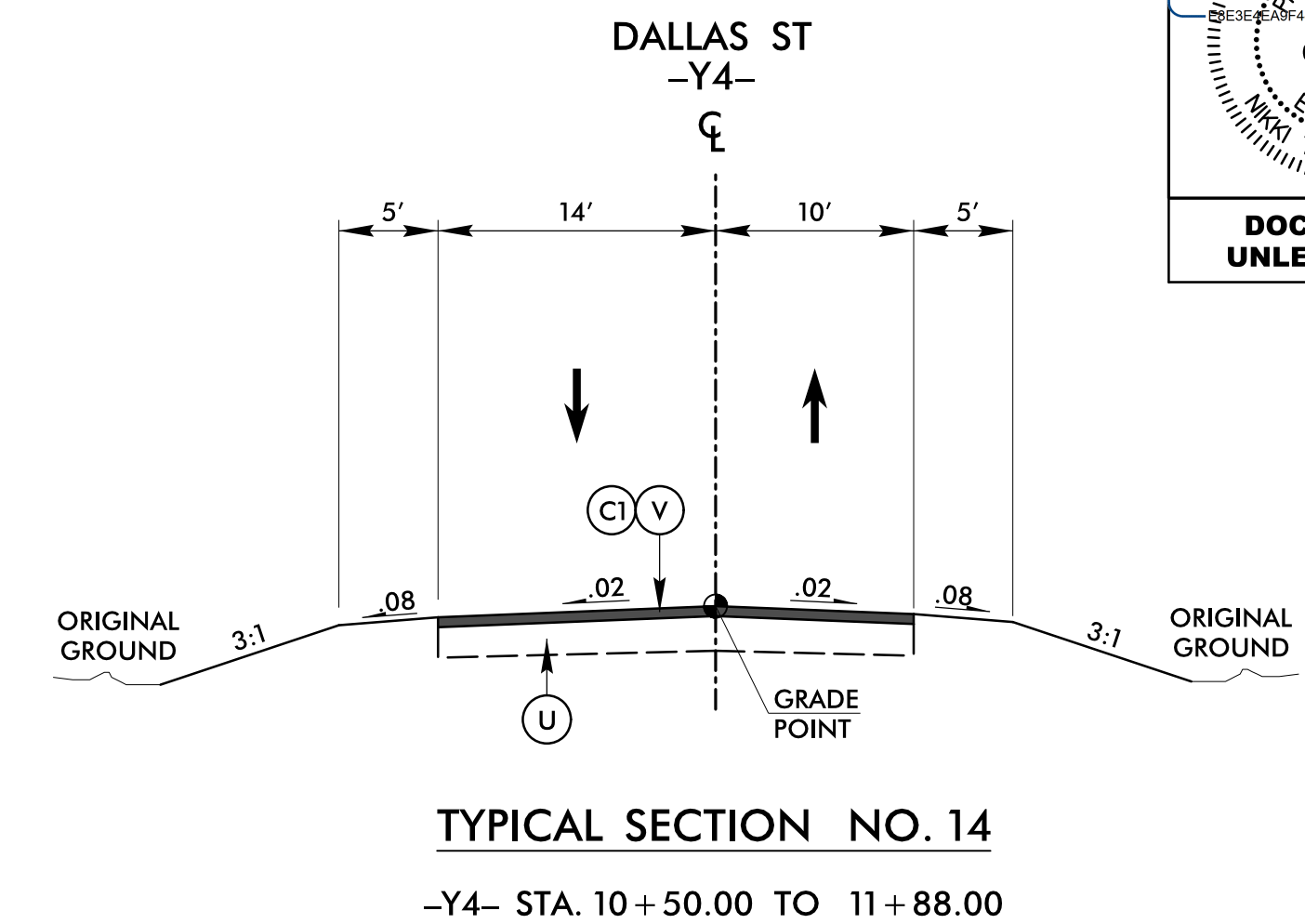
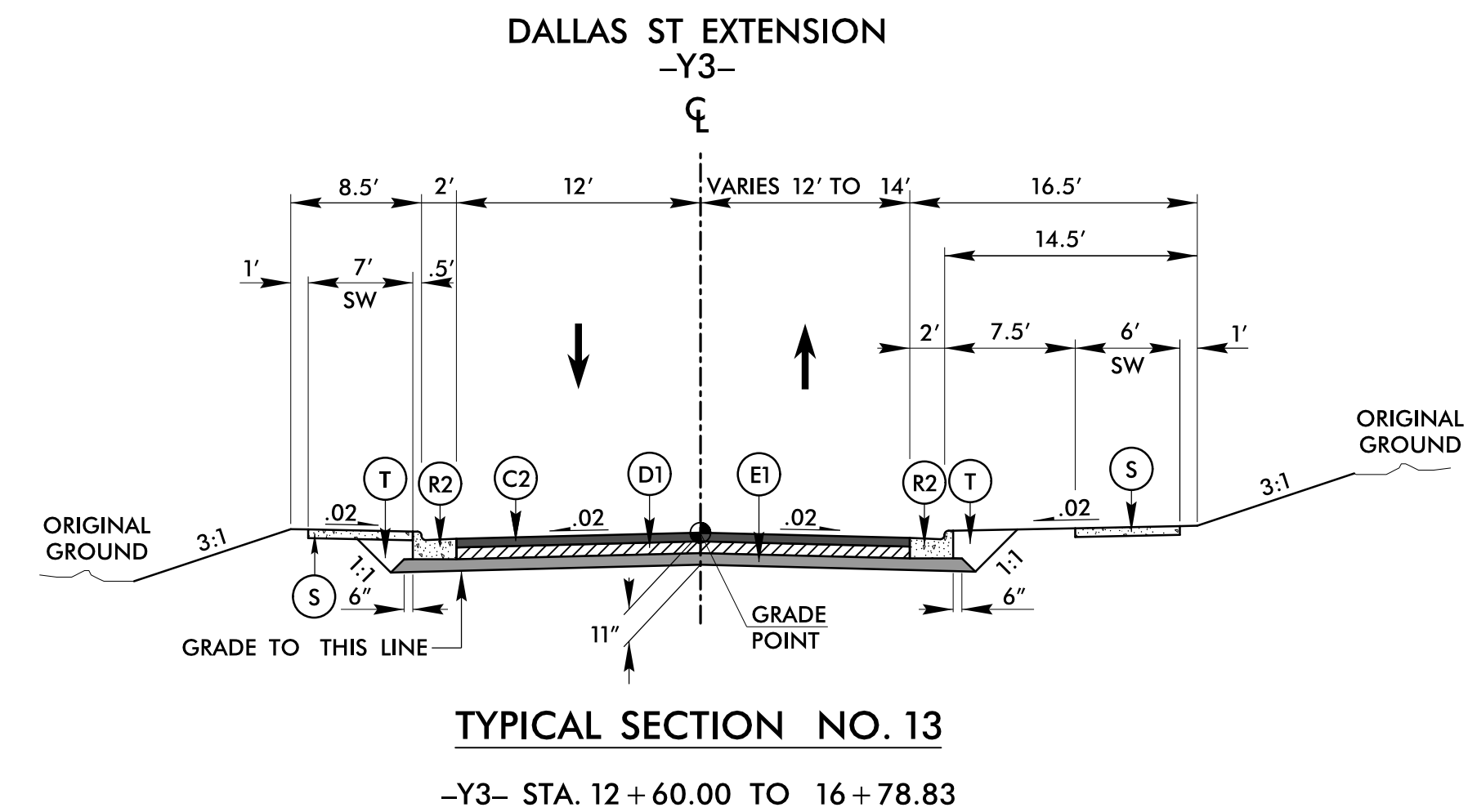
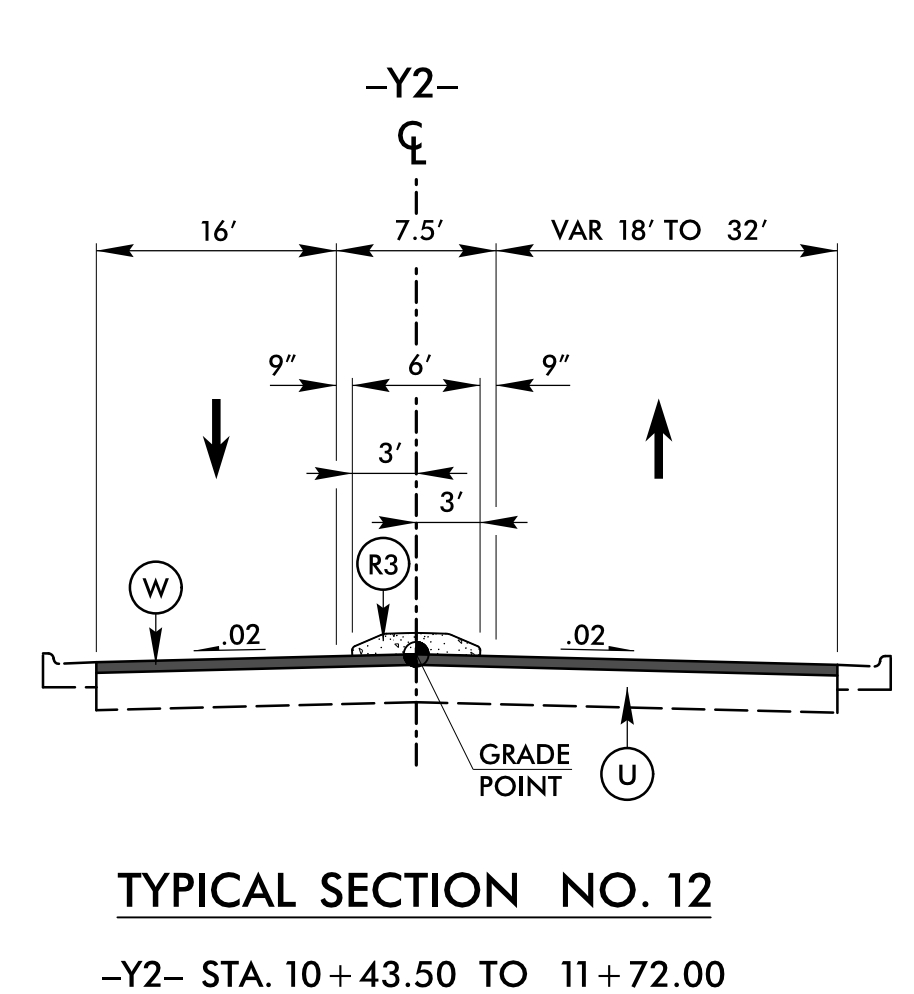
ALL PAVEMENT SLOPES 1:1 UNLESS NOTED OTHERWISE

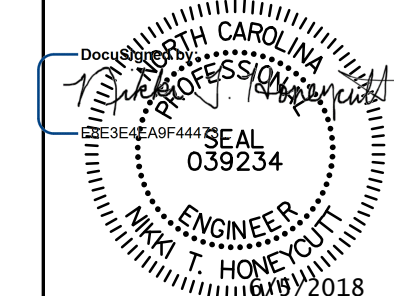
C1	1.5" S9.5C
C2	3.0" S9.5C
C3	VAR. S9.5C
D1	4" I19.0C
D2	VAR. I19.0C
E1	4.0" B25.0C
E2	5.5" B25.0C
E3	VAR. B25.0C
J1	6.0" ABC
P1	PRIME COAT
R1	1' - 6" C&G
R2	2' - 6" C&G
R3	5" MONO. ISLAND
S	4" SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	MILLING
W	WEDGING

STV 100 Years
 STV Engineers, Inc.
 800 West Trade St., Suite 715
 Charlotte, NC 28202
 NC License Number F-0991

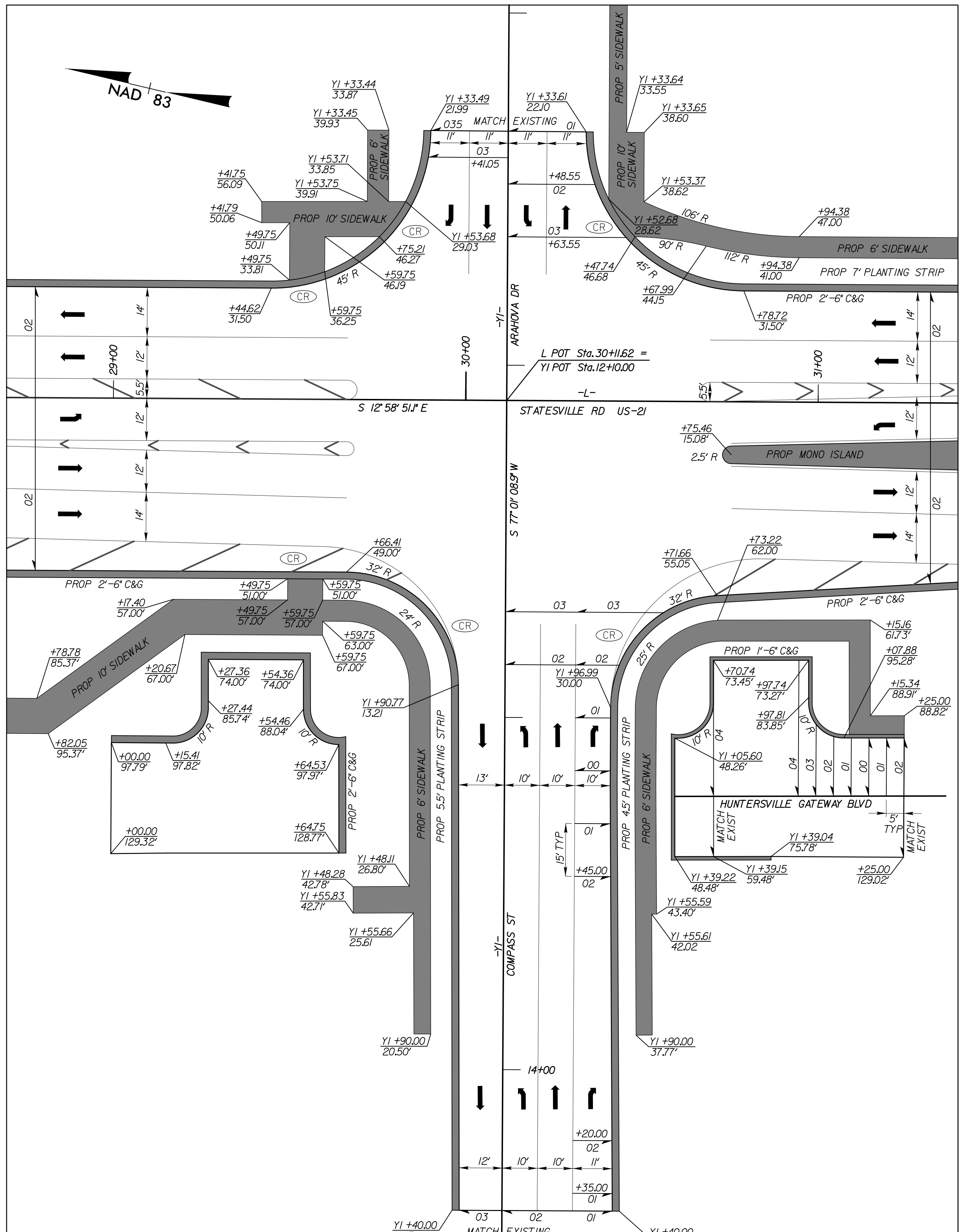
PROJECT REFERENCE NO. U-5114	SHEET NO. 2A-4
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

Professional Engineer Seal: 039234
 Professional Engineer Seal: 31013
 DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



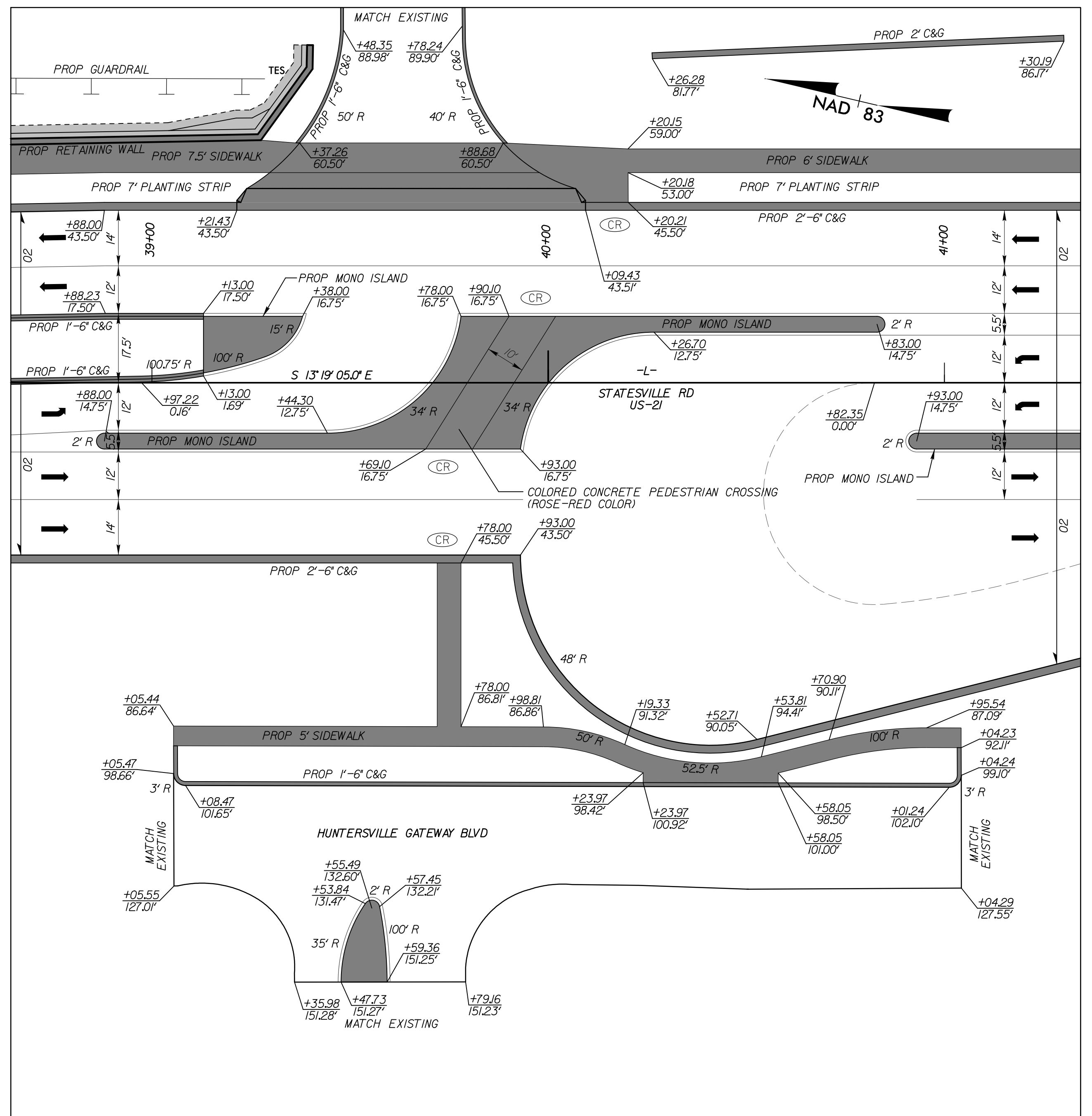


DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



INTERSECTION DETAIL - A SEE SHEET 5 FOR FULL PLAN VIEW SCALE : 1" = 20'

-L- STATESVILLE RD, -Y1- ARAHOVA DR & COMPASS ST

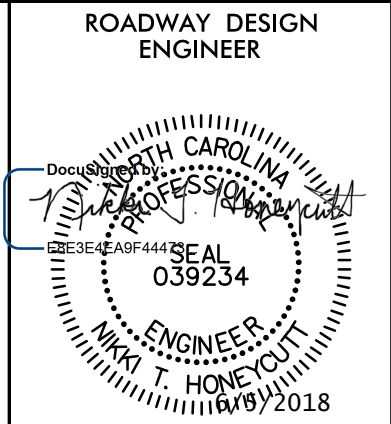


INTERSECTION DETAIL - B SEE SHEET 6 FOR FULL PLAN VIEW SCALE : 1" = 20'

-L- STATESVILLE RD

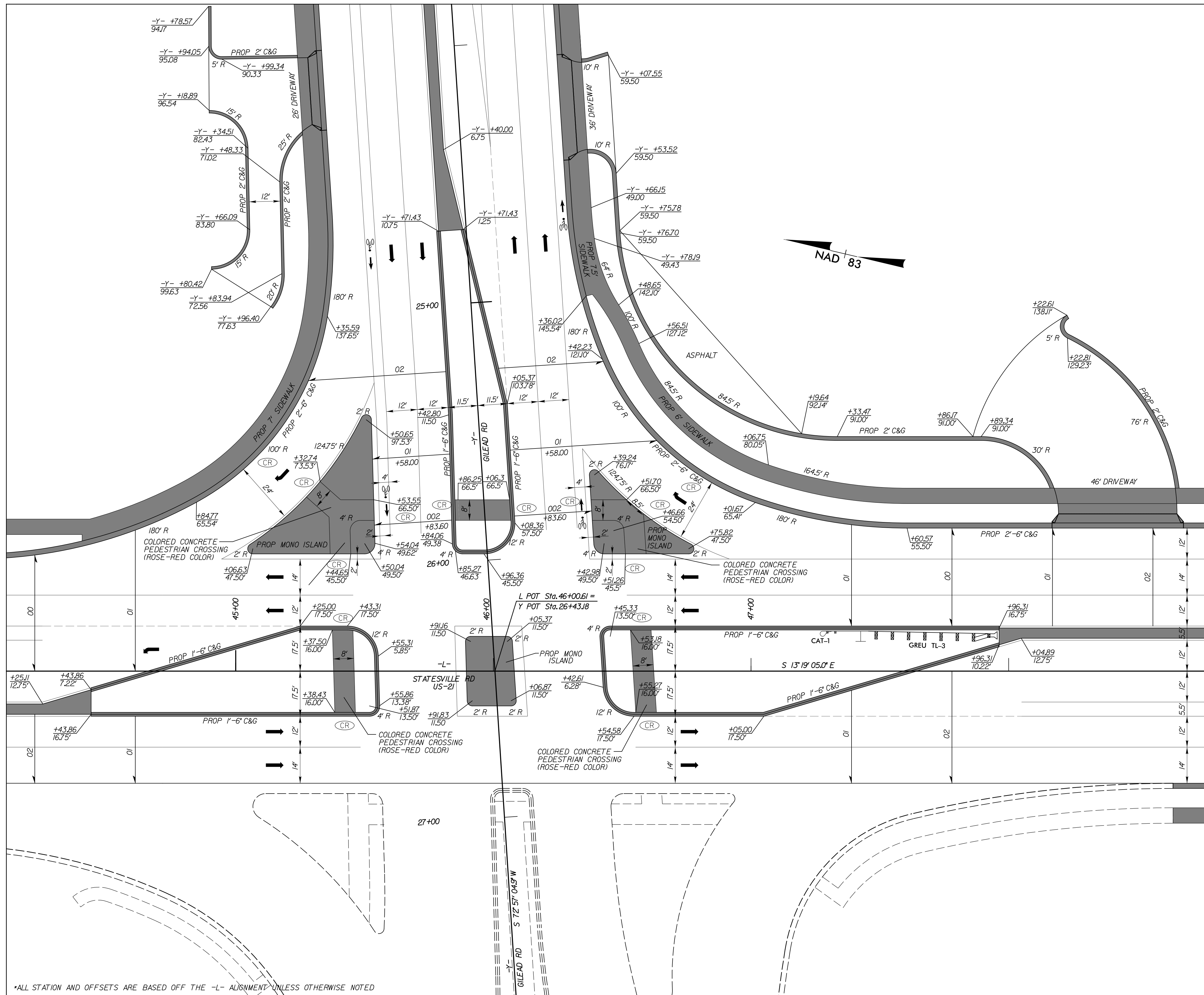
6/2/19

6/5/2018 8:41:00 AM Proj:\SHT\U-5114_r.dwg -esh02B-1.dgn mabdel01



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

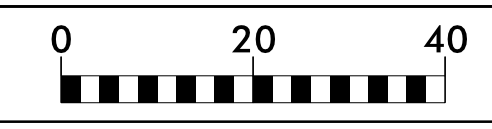
STV 100 Years
 STV Engineers, Inc.
 900 West Trade St., Suite 715
 Charlotte, NC 28202
 NC License Number F-0991



*ALL STATION AND OFFSETS ARE BASED OFF THE -L- ALIGNMENT UNLESS OTHERWISE NOTED

INTERSECTION DETAIL - A

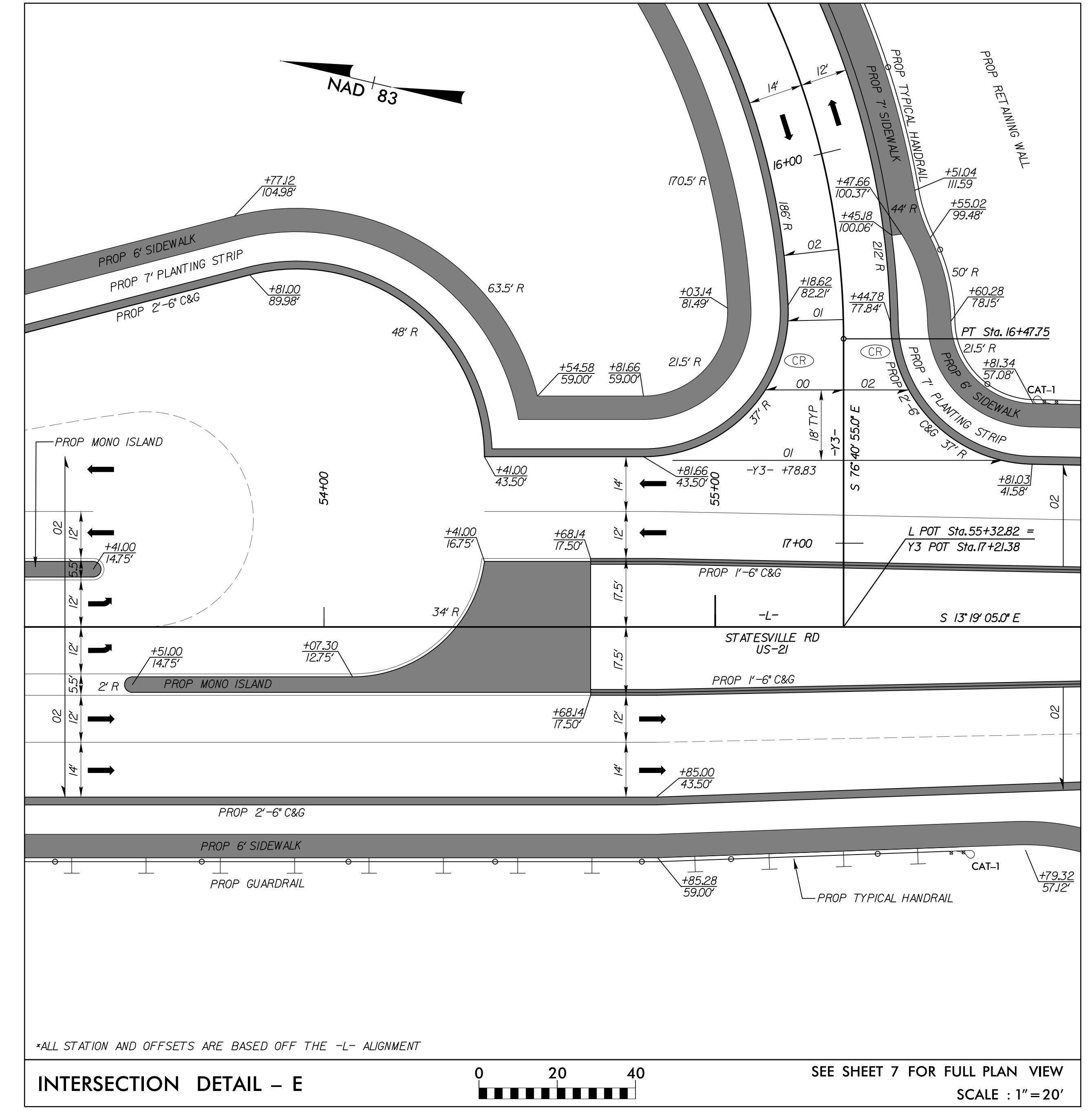
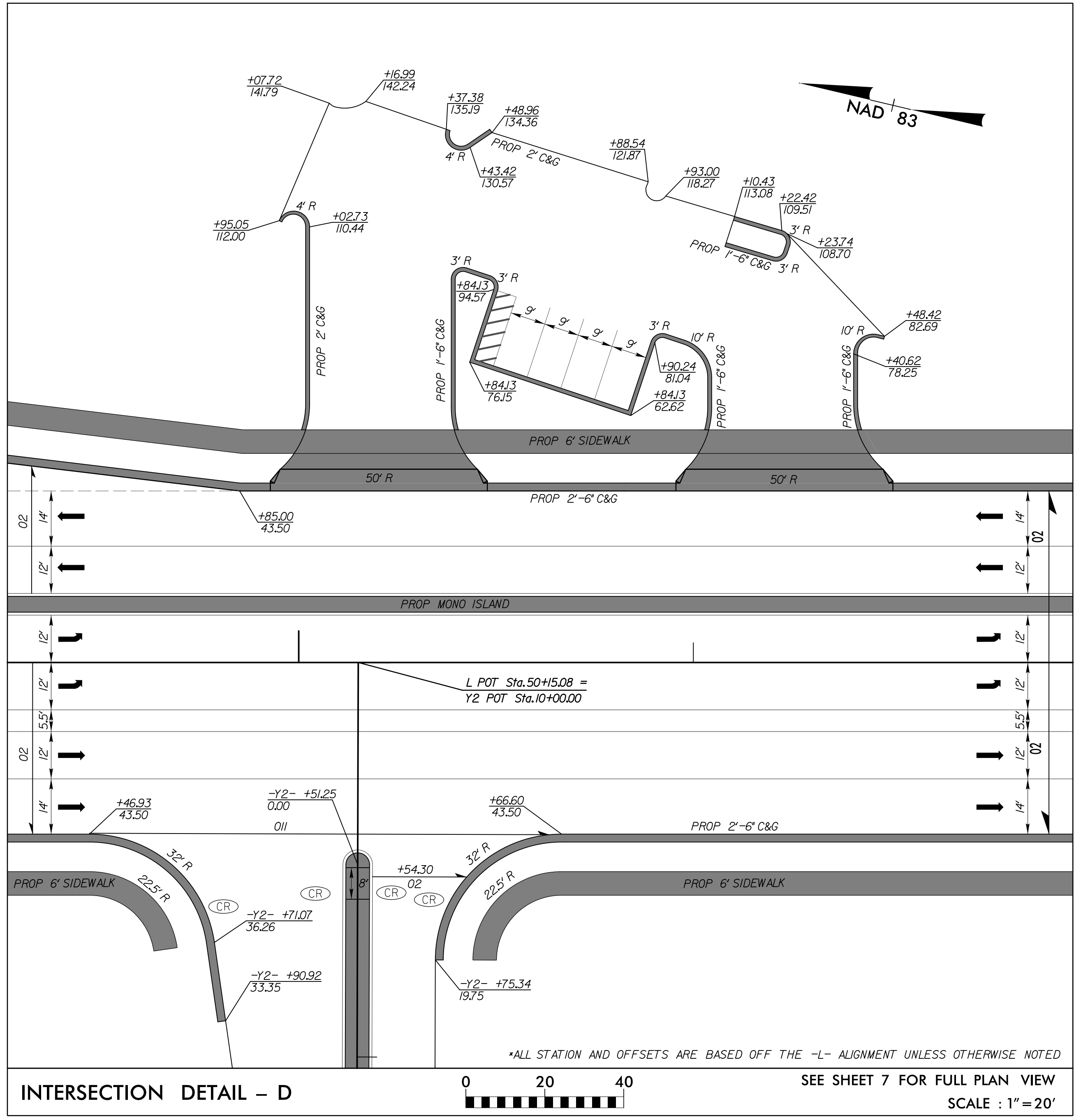
-L- STATESVILLE RD, -Y- GILEAD RD

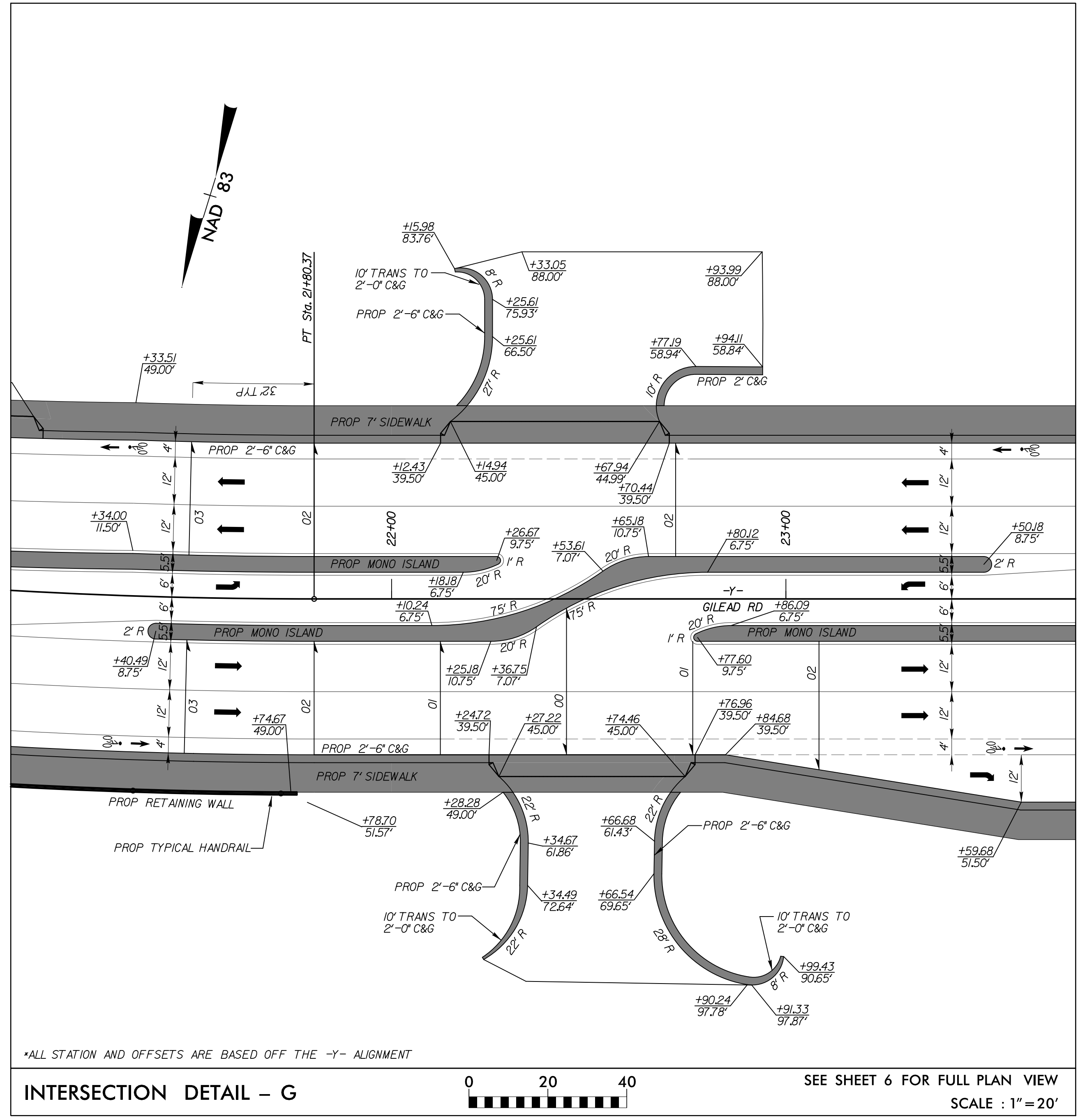
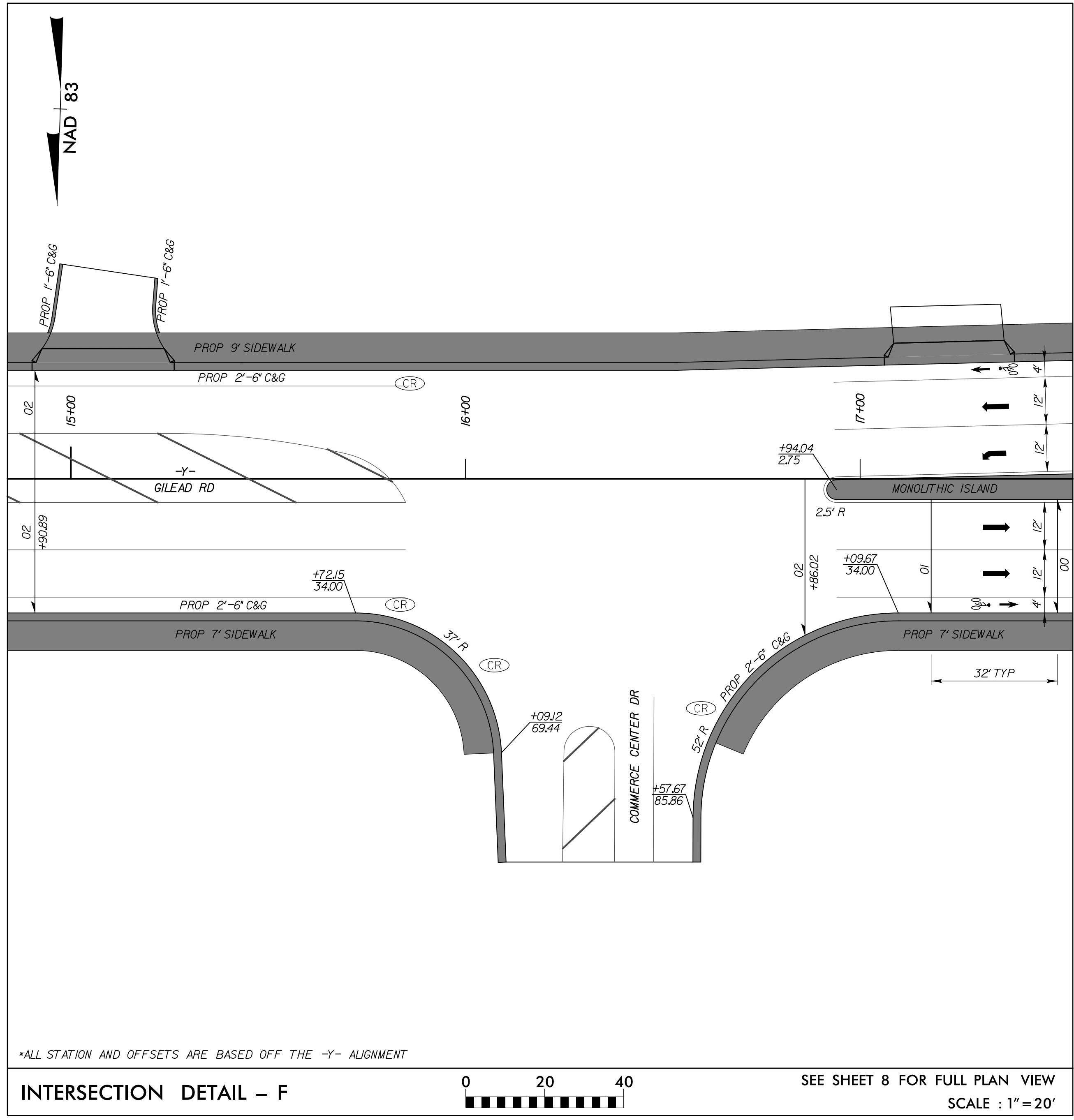


SEE SHEET 6 FOR FULL PLAN VIEW
 SCALE : 1"=20'

6/2/19

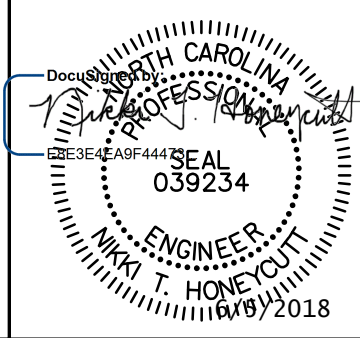
6/15/2018
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 mabdelbaki

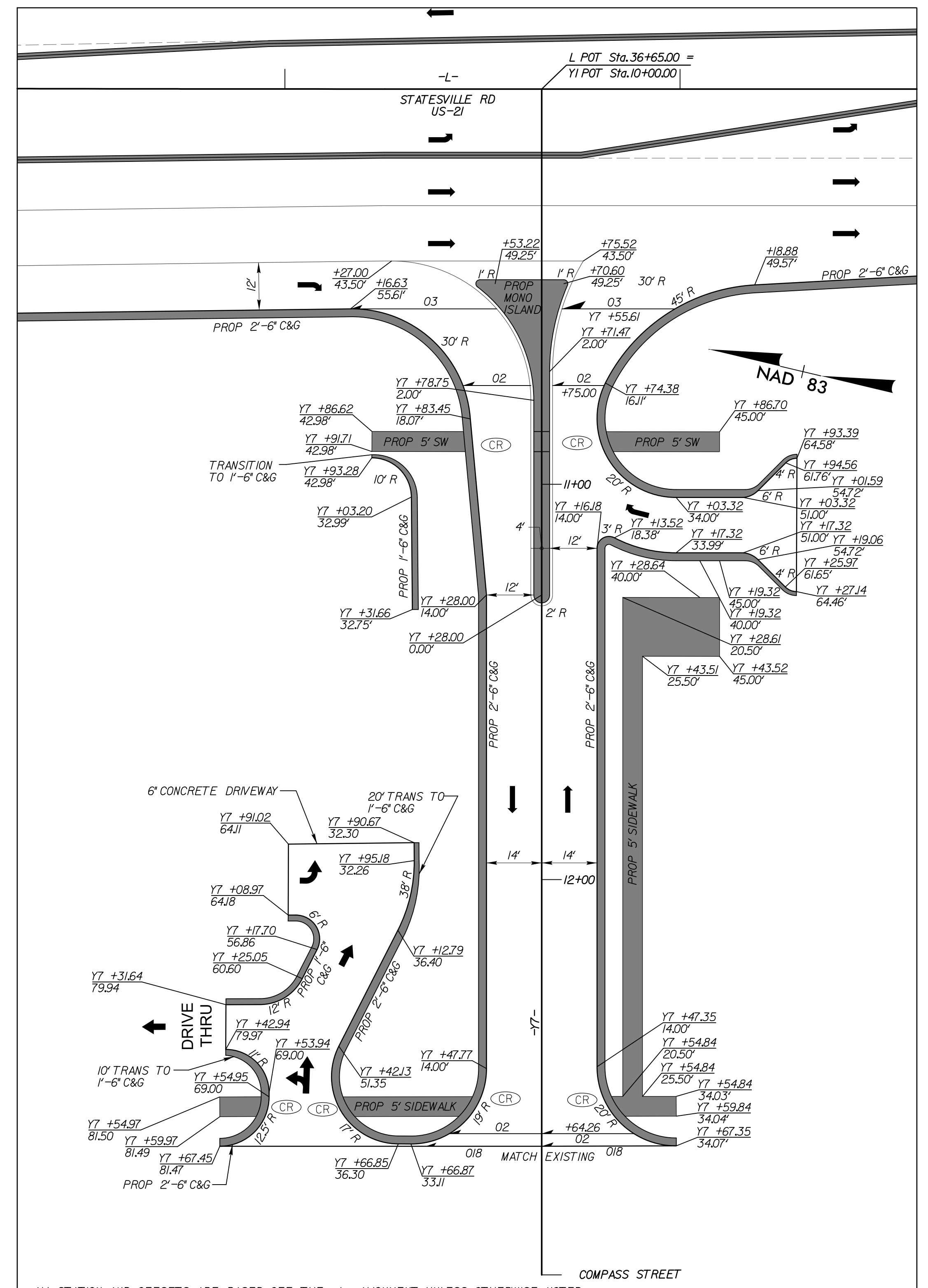




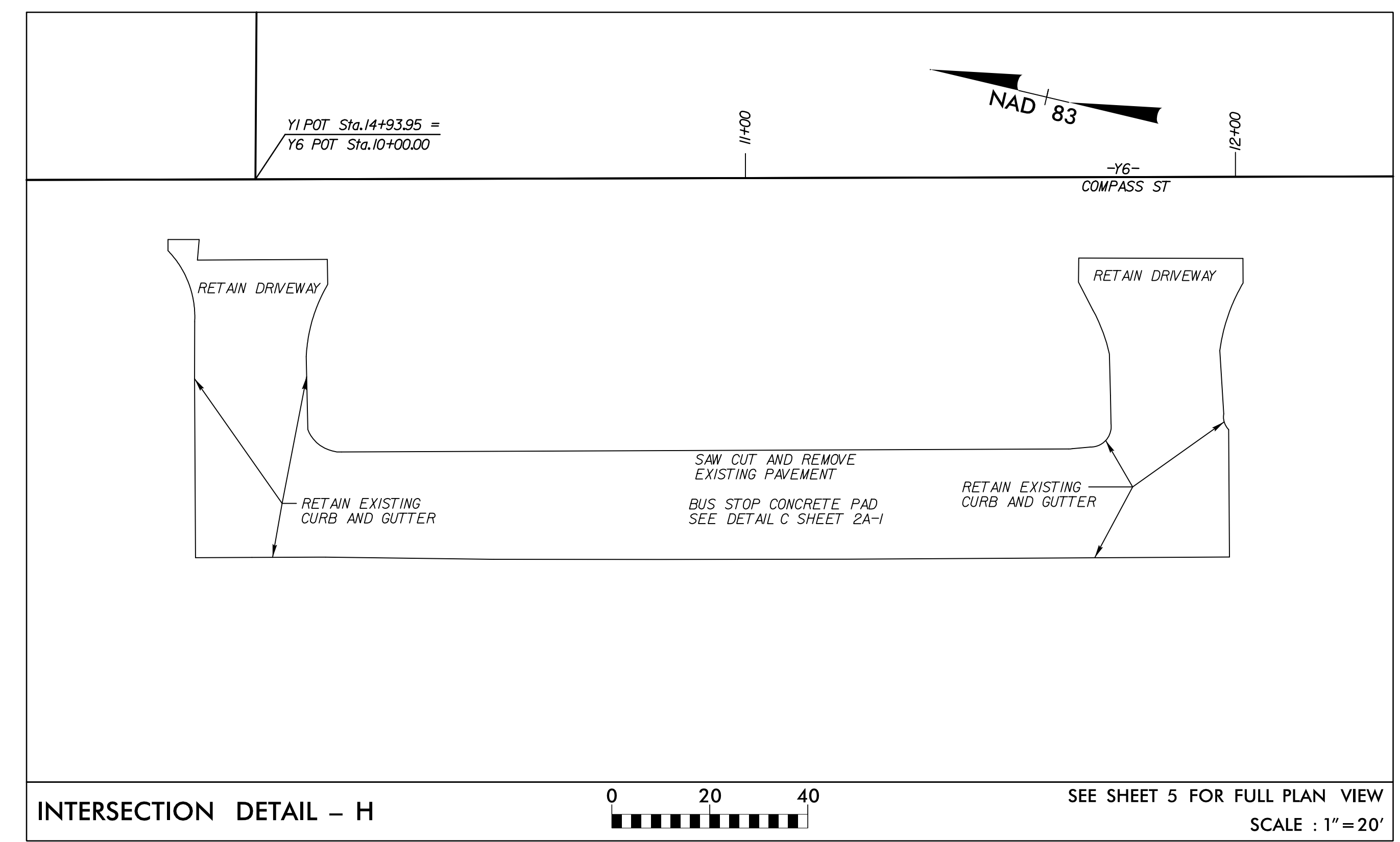
6/2/19

6/5/2018
C:\Users\pao\OneDrive\Project\Sheet\U-5114-rdy-psh02B-4.dgn
mabde1021

PROJECT REFERENCE NO. U-5114	SHEET NO. 2B-5
ROADWAY DESIGN ENGINEER	
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



INTERSECTION DETAIL - I
 ALL STATION AND OFFSETS ARE BASED OFF THE -L- ALIGNMENT UNLESS OTHERWISE NOTED
 SEE SHEET 5 FOR FULL PLAN VIEW
 SCALE : 1" = 20'
 -Y7-

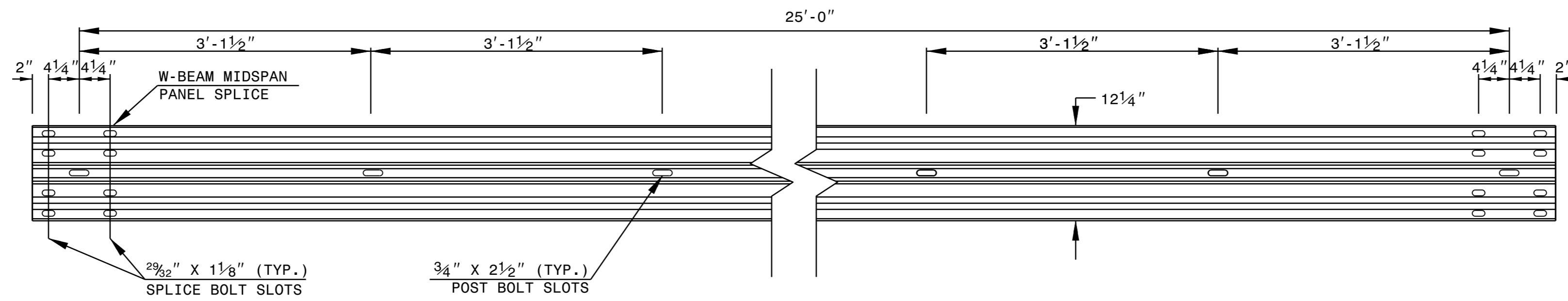


INTERSECTION DETAIL - H
 SEE SHEET 5 FOR FULL PLAN VIEW
 SCALE : 1" = 20'
 -Y6-

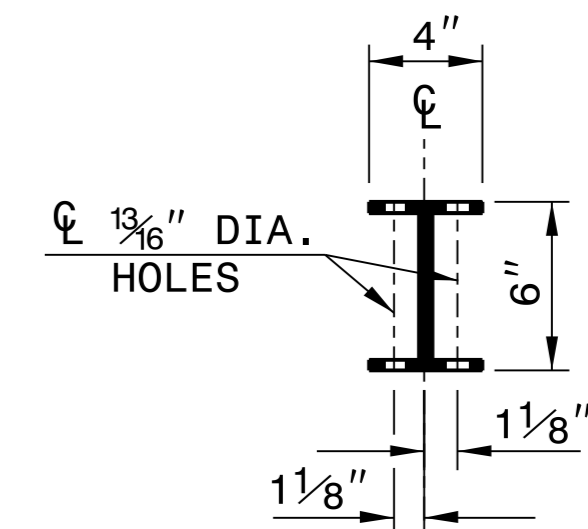
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

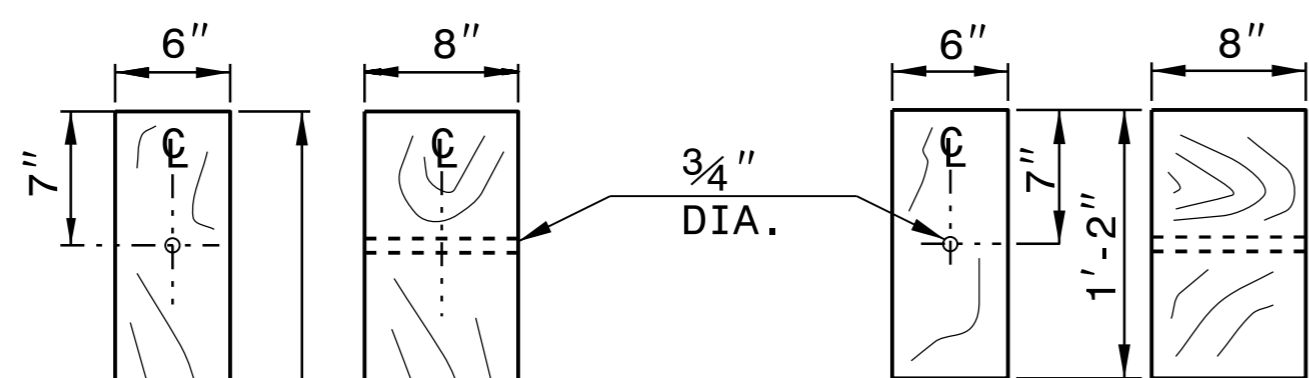
SHEET 6 OF 8
862D02



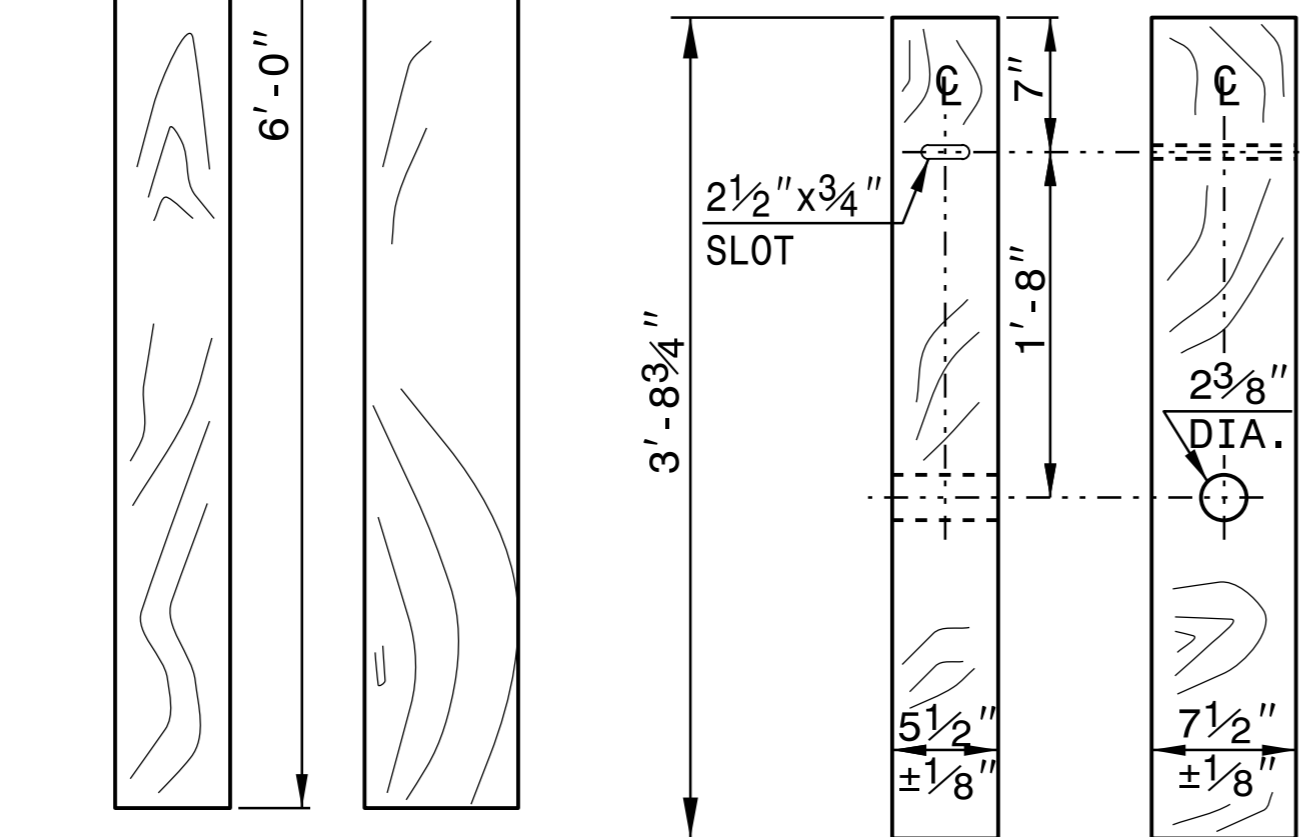
STANDARD W-BEAM GUARDRAIL



PLAN

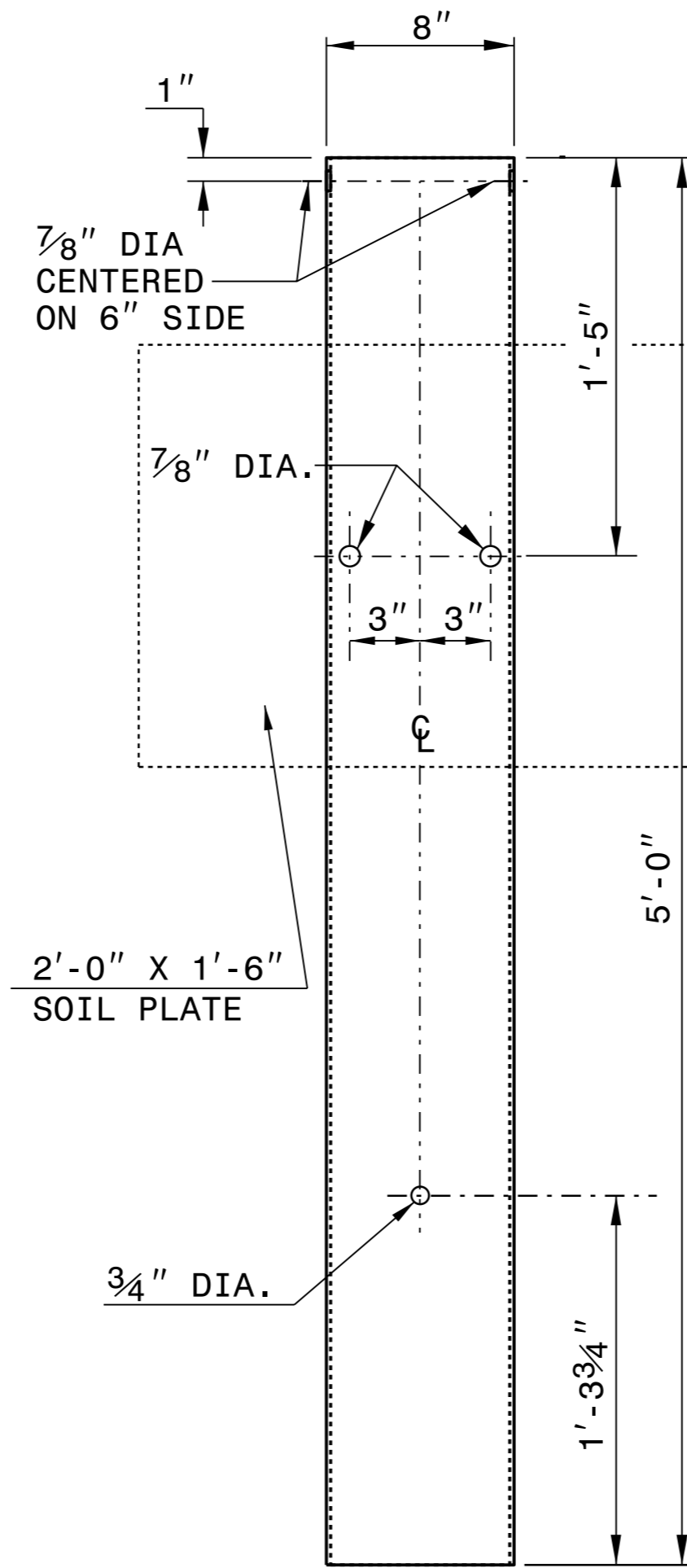


**WOOD OFFSET BLOCK
(FOR WOOD POSTS)**

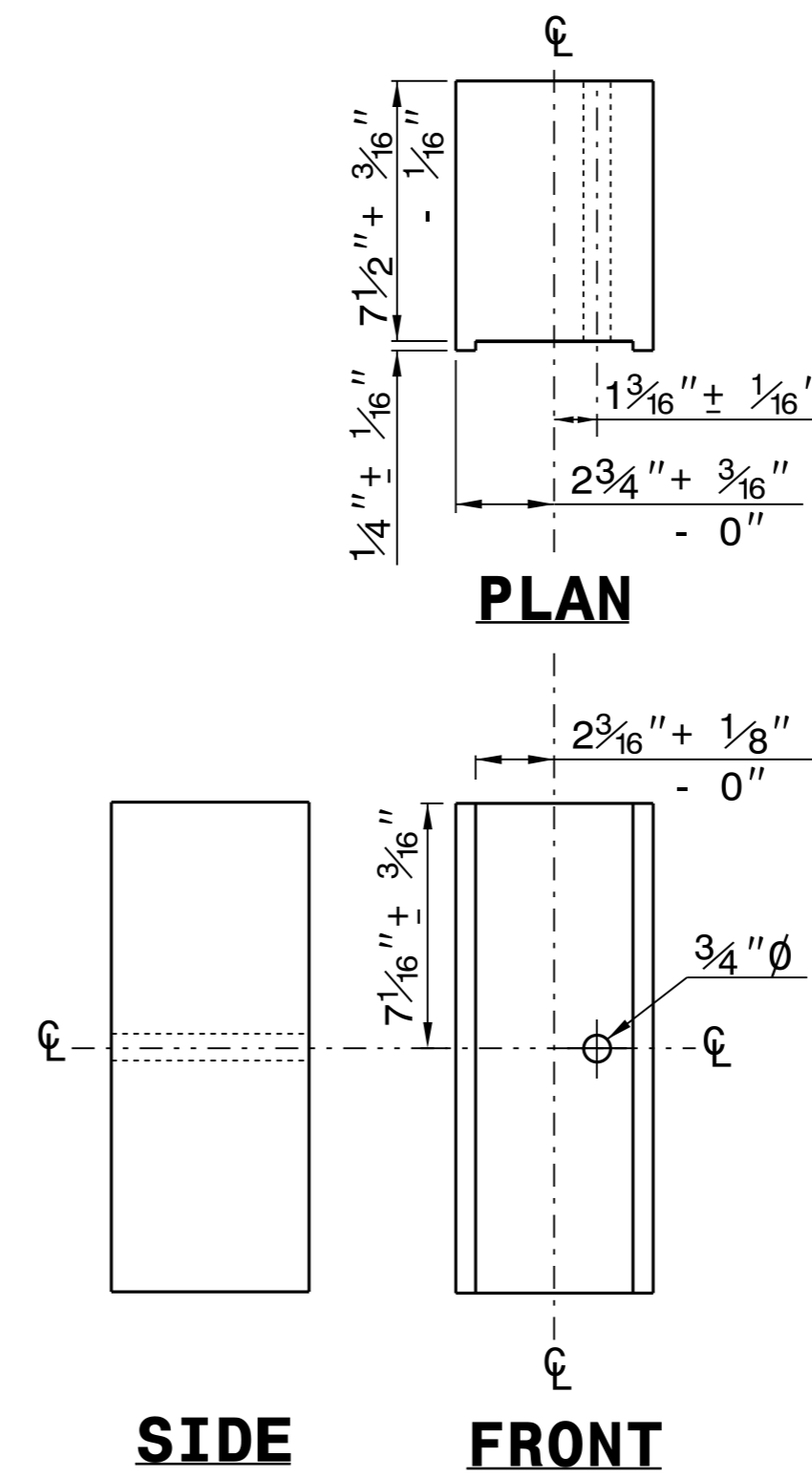


**STANDARD
LINE POST**

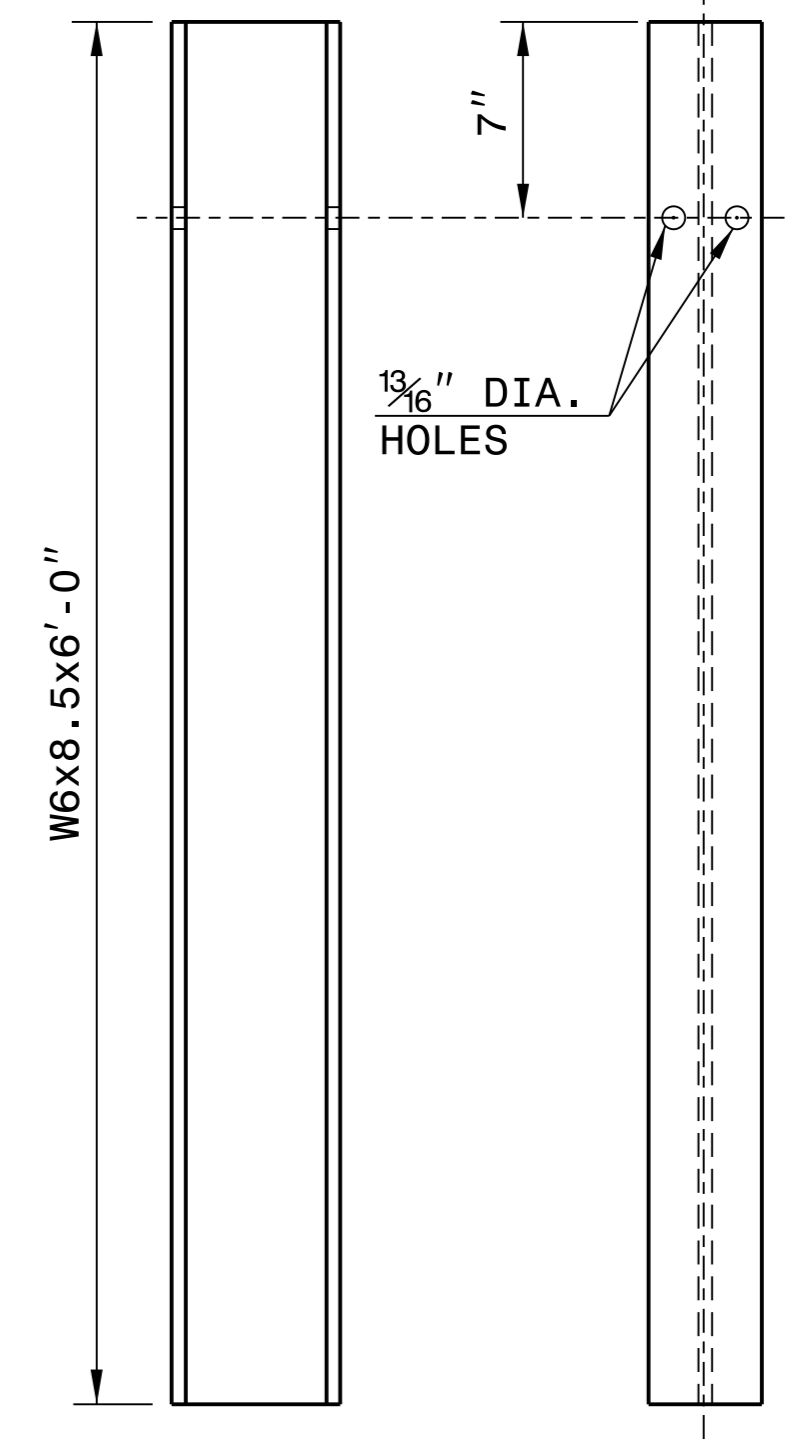
**SHORT WOOD
BREAKAWAY POST**



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



**ROUTED
OFFSET BLOCK**



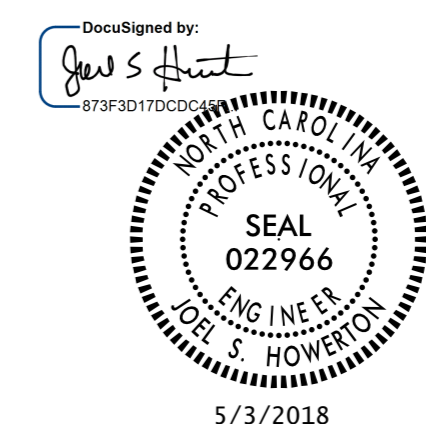
"W6" STEEL POST

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



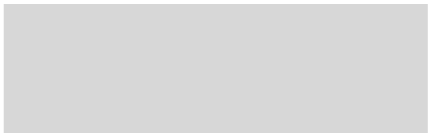
**CONTRACTS STANDARDS
AND DEVELOPMENT UNIT**
Office 919-707-6950 FAX 919-250-4119

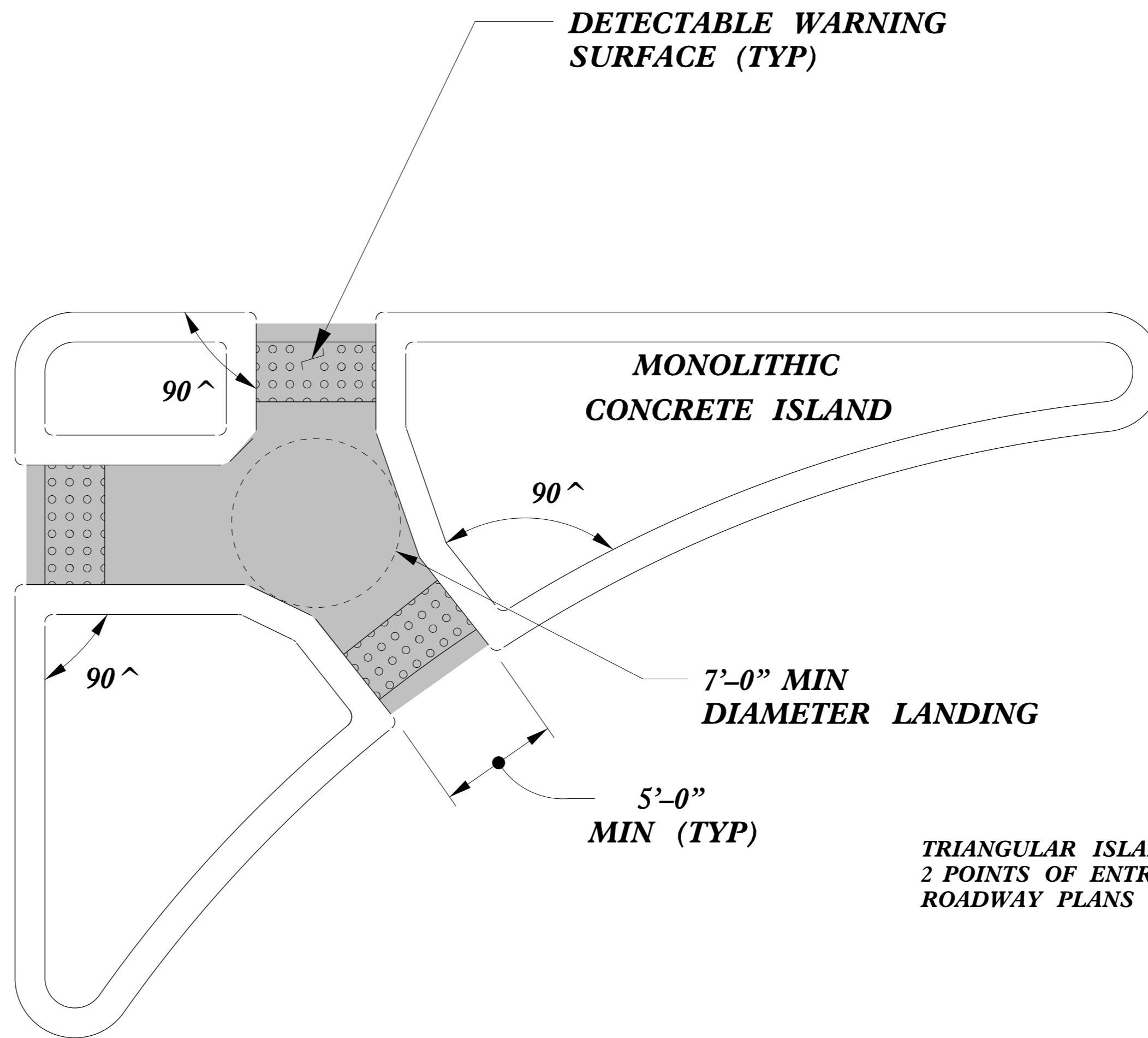
SEE TITLE BLOCK

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

5/14/99

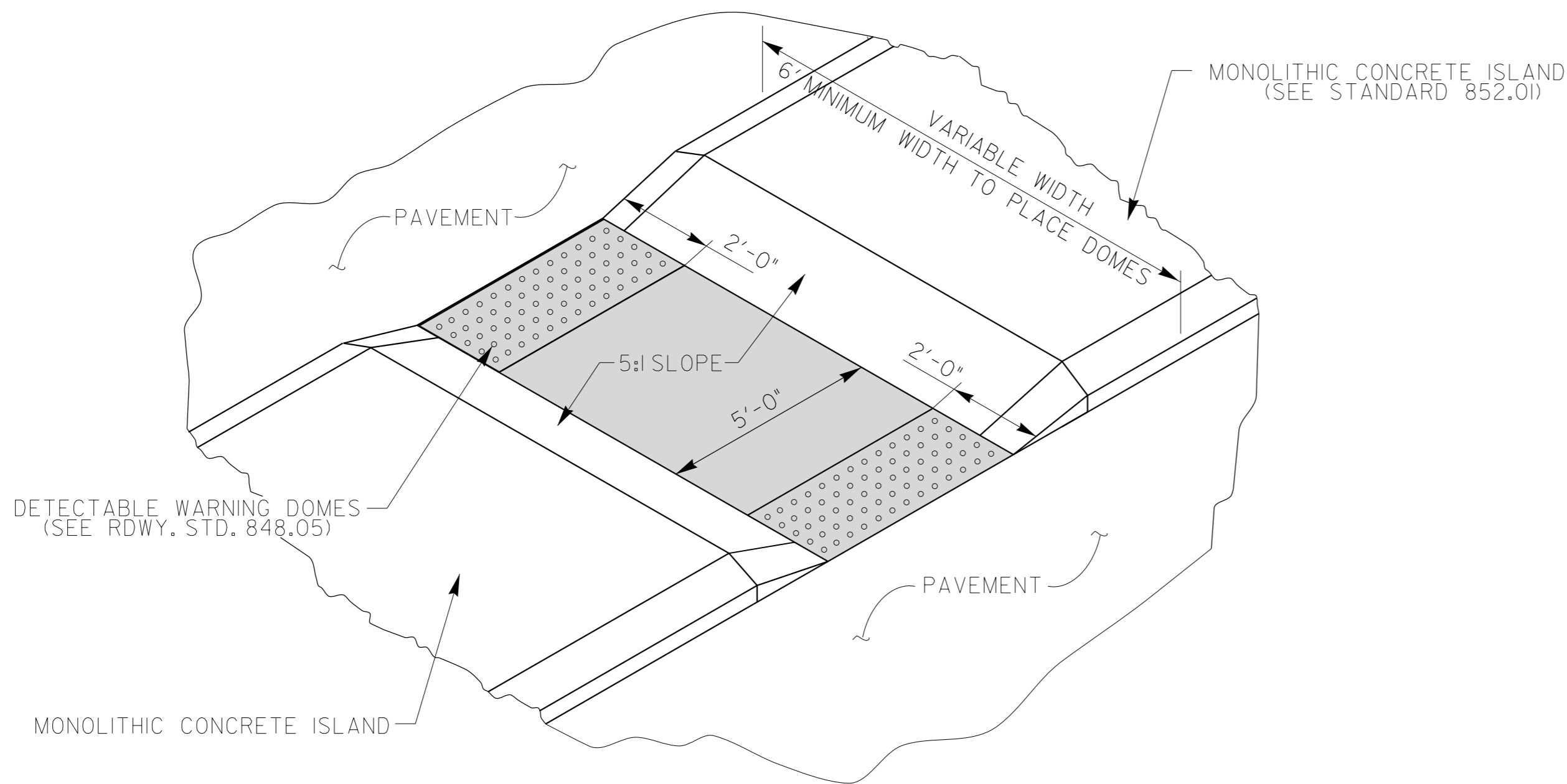
PROJECT REFERENCE NO.	SHEET NO.
U-5114	2C-2

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

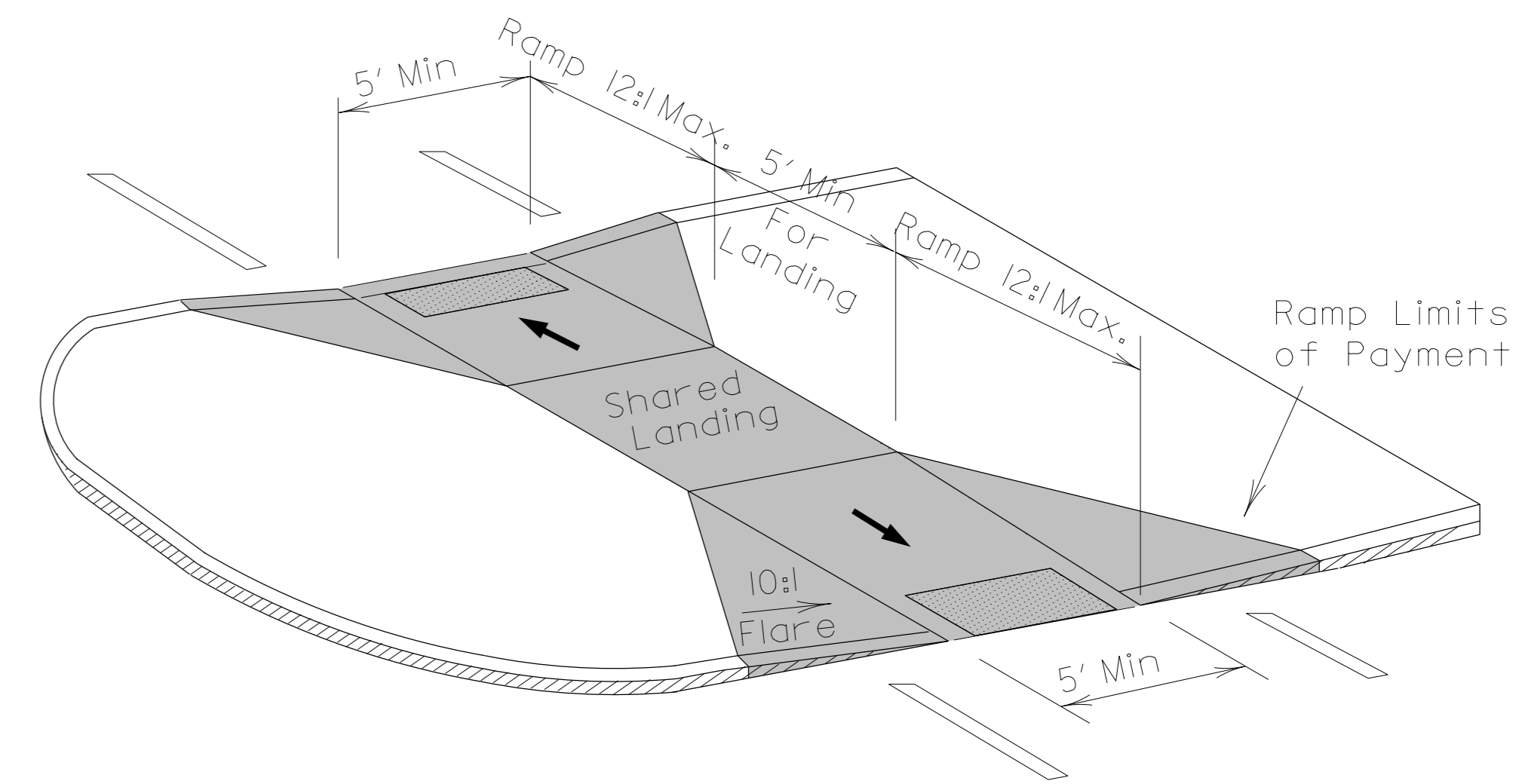


**TRIANGULAR ISLANDS MAY BE CONSTRUCTED WITH ONLY
 2 POINTS OF ENTRY AND EXIT AS SHOWN IN THE
 ROADWAY PLANS OR AS DIRECTED BY THE ENGINEER.**

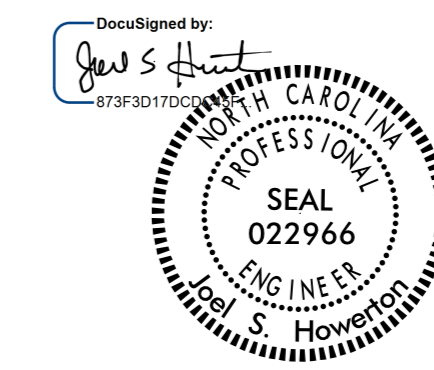
**TRIANGULAR ISLAND
 WITH CUT THROUGH**



**MEDIAN ISLAND
 WITH CUT THROUGH**



**MEDIAN ISLAND
 CURB RAMPS**



5/3/2018

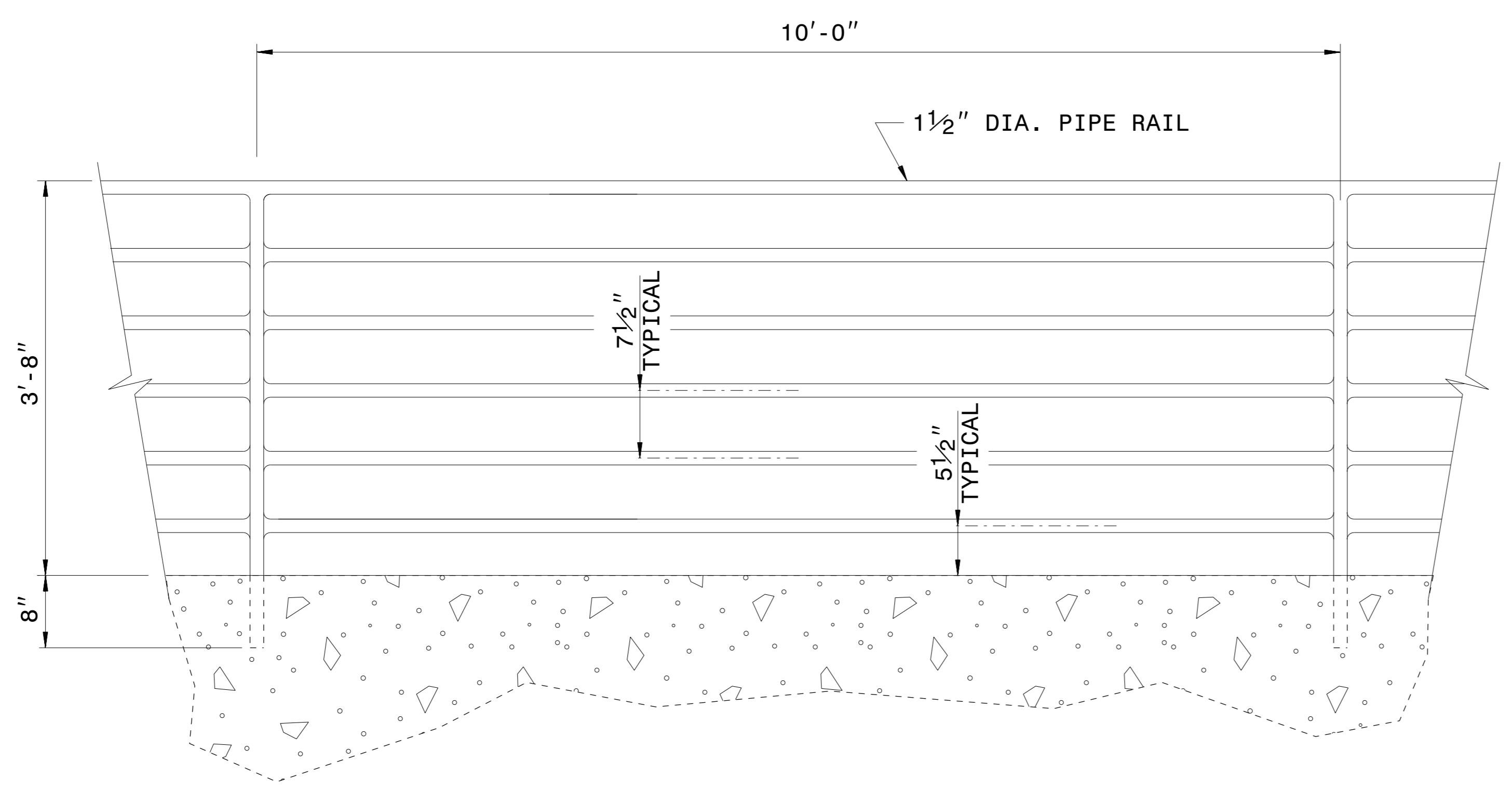
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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

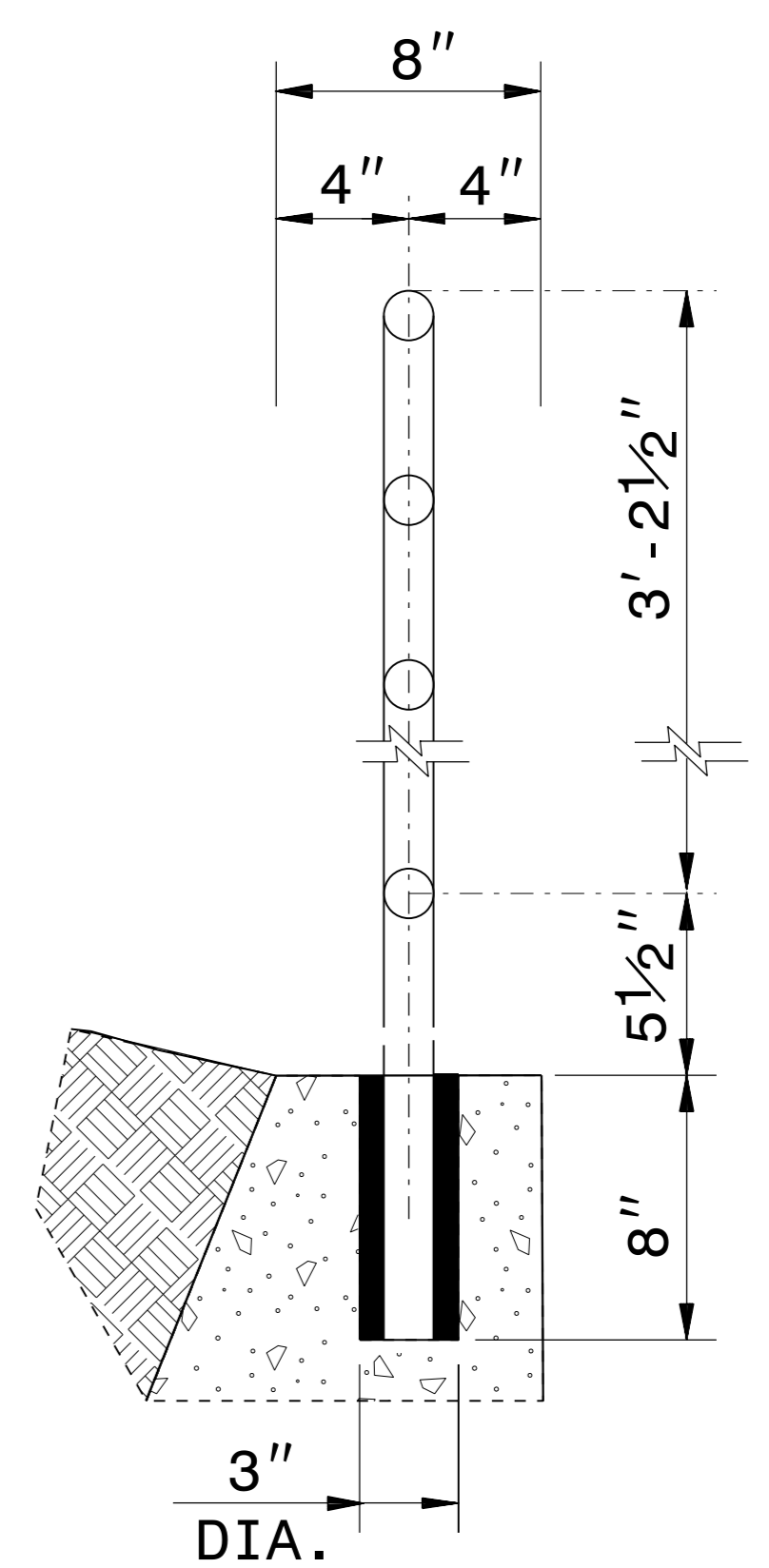
CURB RAMPS
 Median or Turn Lane Islands

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

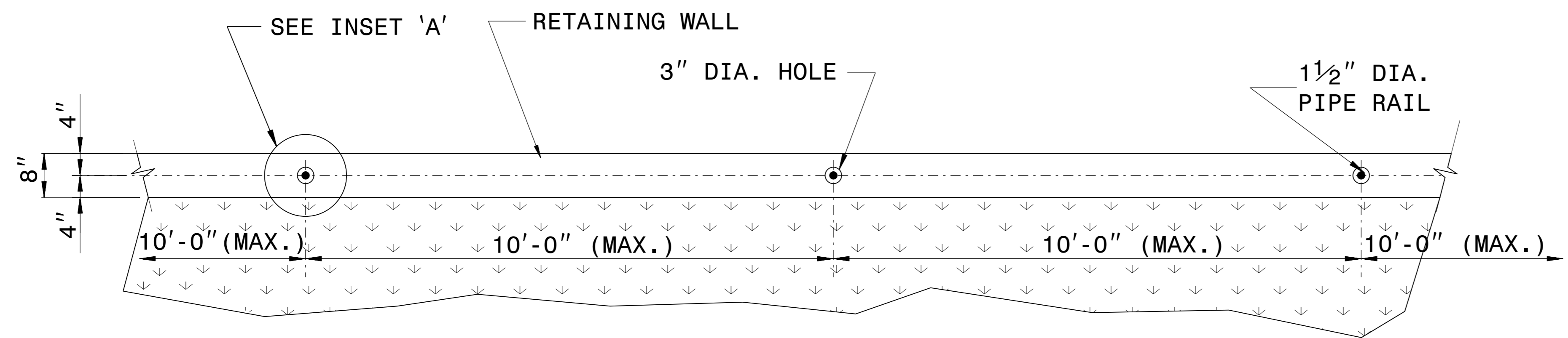
\$\$\$ TIME STAMP: 05/14/99 10:00:00 \$\$\$
 \$\$\$ CURB RAMPS \$\$\$
 \$\$\$ USER: JSHOWERTON \$\$\$
 \$\$\$ FILE: stds/2012CurbRamp/CurbRampDetails.dgn \$\$\$
 \$\$\$ PLOT: 5/14/99 10:00:00 \$\$\$



ELEVATION OF HANDRAIL



INSET 'A'

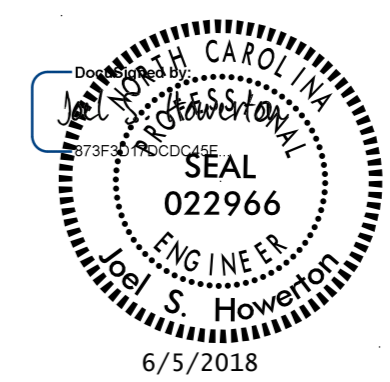


PLAN VIEW

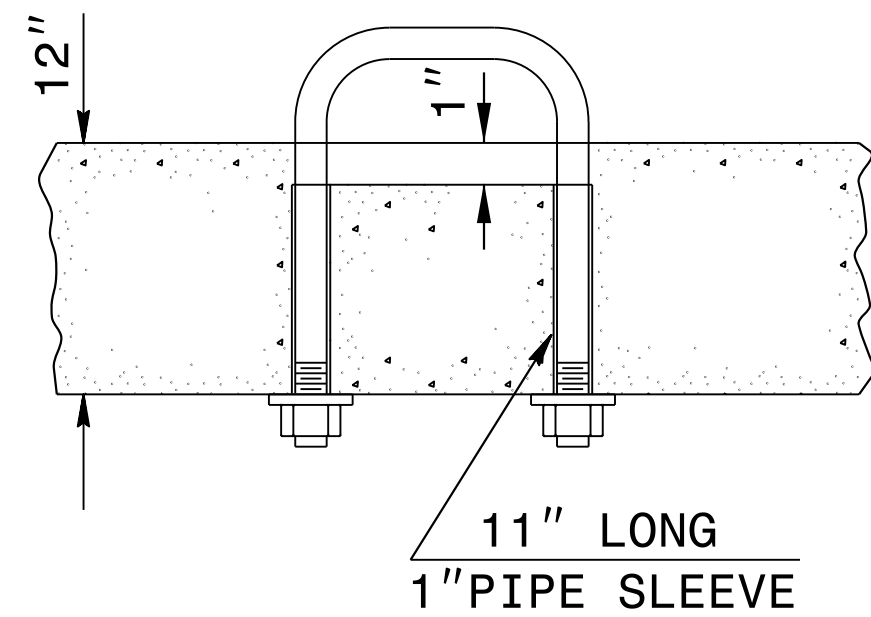
NOTES:

- CONSTRUCT PROPOSED STEEL PIPE RAIL 1 1/2" DIAMETER SCHEDULE 40 PLAIN END GALVANIZED STEEL PIPE MEETING THE REQUIREMENTS OF ASTM A53.
- EMBED PIPE RAIL 8" INTO PROPOSED WALL WITH CHEMICAL OR CONCRETE GROUT ANCHORING SYSTEM AS DIRECTED BY THE ENGINEER.
- REPAIR GALVANIZING IN ACCORDANCE WITH SECTION 1076 OF THE NCDOT STANDARD SPECIFICATIONS.
- PAINT, IF REQUIRED BY THE ENGINEER, IN ACCORDANCE WITH SECTION 1080 OF THE STANDARD SPECIFICATIONS.
- CENTER THE PROPOSED RAILING ON TOP OF THE WALL WITH POST SPACING SYMMETRICAL ABOUT THE CENTER-LINE OF THE WALL.
- USE A ROTARY DRILL IF NEEDED FOR EMBEDMENT HOLES OF RAIL IN WALL. ROTARY DRILL ONLY (NO ROTARY-IMPACT DRILLS).
- WELD IN ACCORDANCE WITH ARTICLE 1072-18 OF THE STANDARD SPECIFICATIONS.

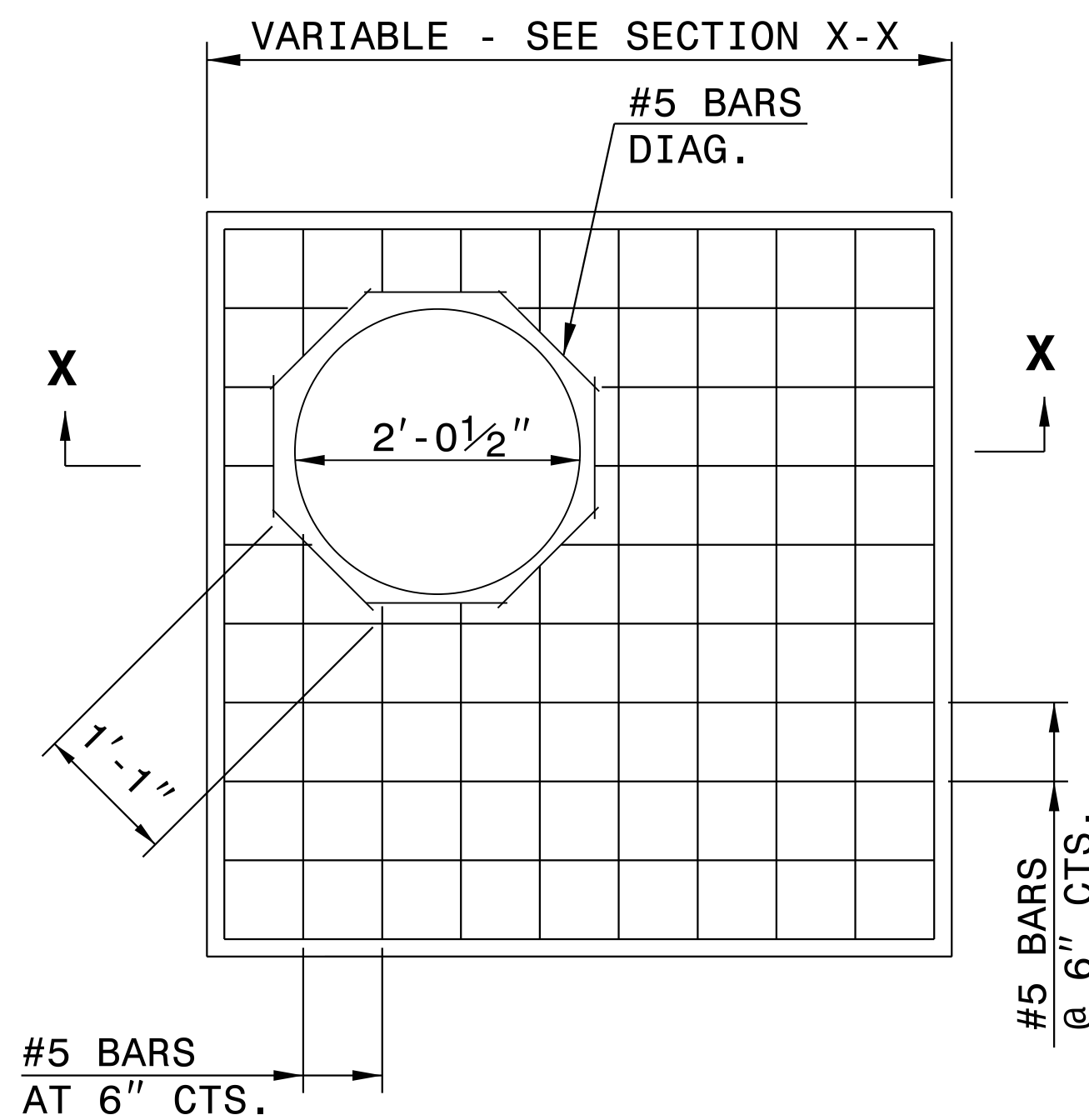
\$\$\$\$\$ TIME\$\$\$\$\$ DATE\$\$\$\$\$ USER\$\$\$\$\$



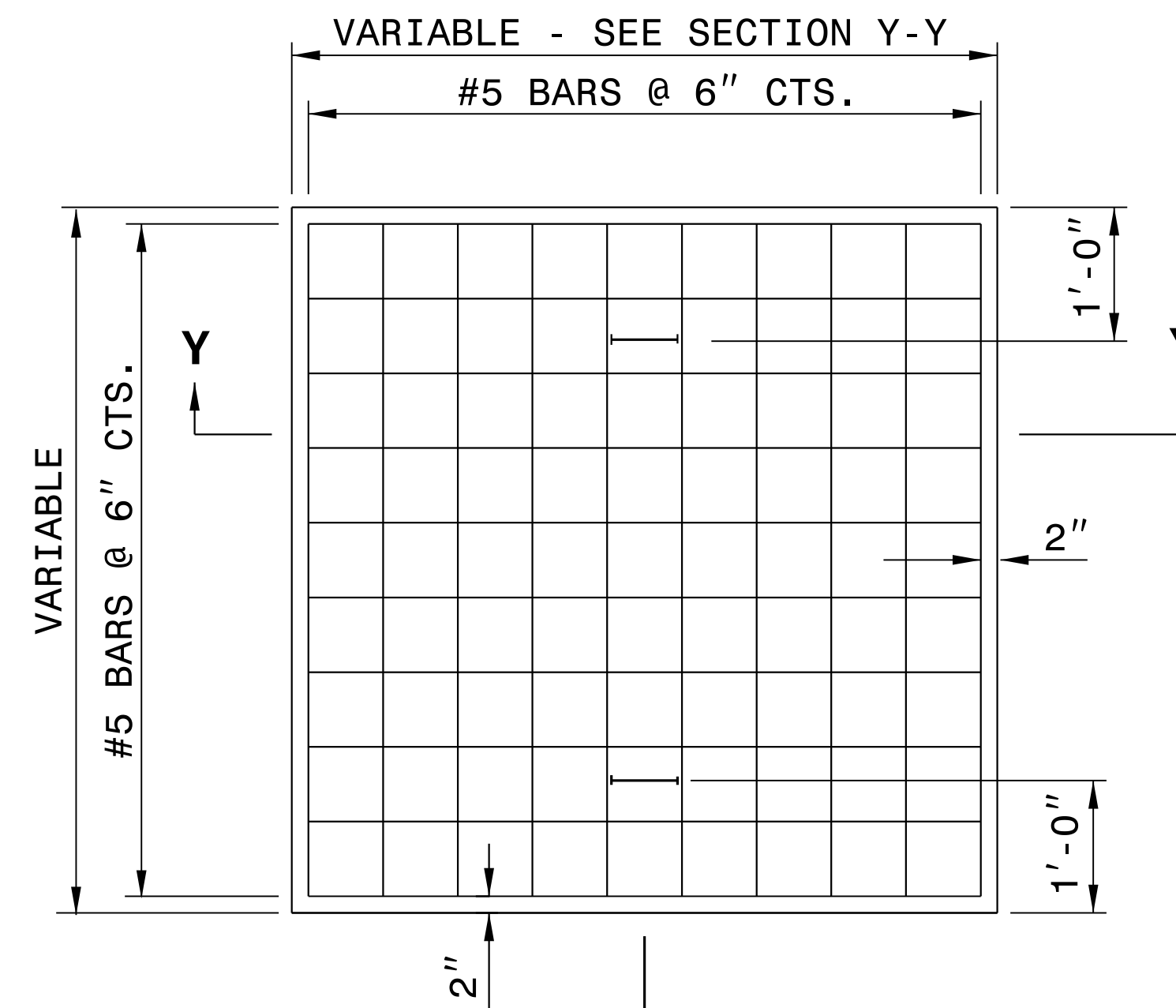
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
CONTRACT STANDARDS AND DEVELOPMENT UNIT Office 919-707-6950 FAX 919-250-4119	
DETAIL OF PIPE HANDRAIL MOUNTED ON RETAINING WALL	
ORIGINAL BY: E.E. WARD	DATE: 12-99
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC.: jhowerton/handrail on retaining_wall.dgn	



PARTIAL SECTION



PLAN



PLAN

GENERAL NOTES:

CONSTRUCT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.

FIELD VERIFY THE DIMENSIONS FOR THE EXISTING BOXES.

BILL OF MATERIALS

MASONRY

TOP SLAB CONCRETE CLASS "A"	.037YDS ³ PER FT ²
BRICK MASONRY	.025YDS ³ PER FT ²

REINFORCING STEEL	7.64LBS PER FT ²
-------------------	-----------------------------

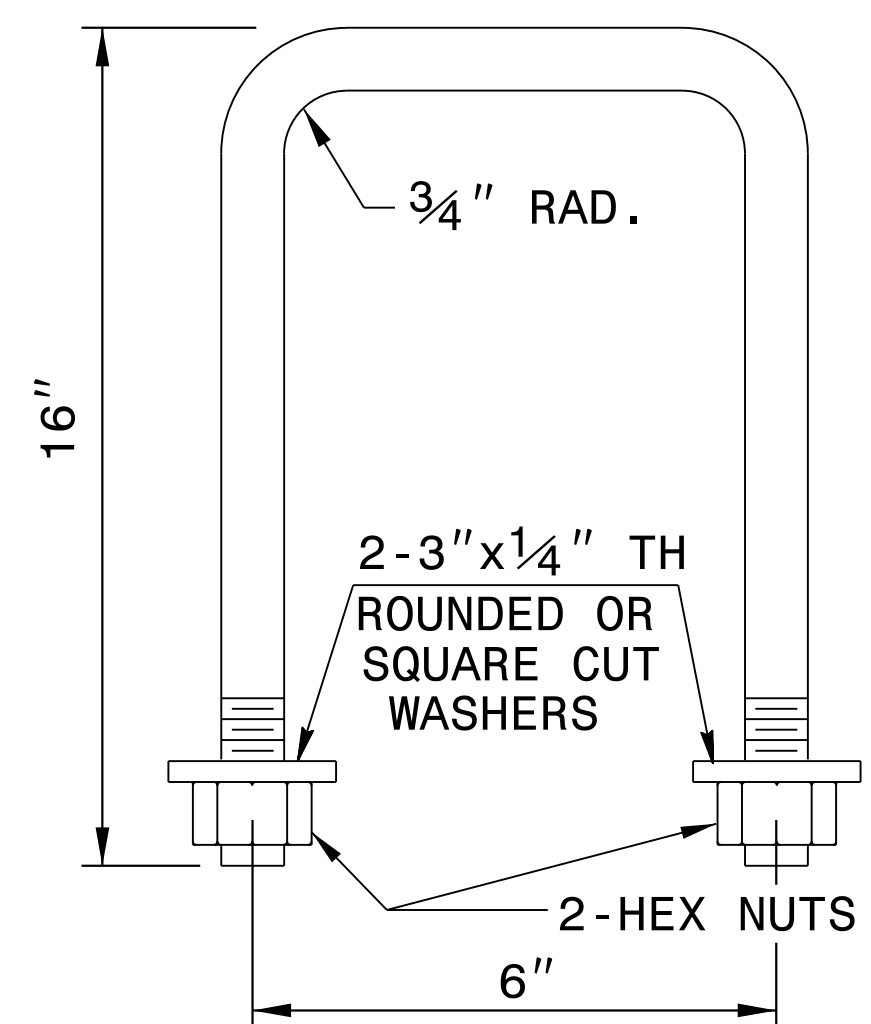
MANHOLE OPTION QUANTITIES

SIZE	QTY.	LENGTH	REINF. STEEL LBS.
#5 DIAG.	8	1'-1"	9.04

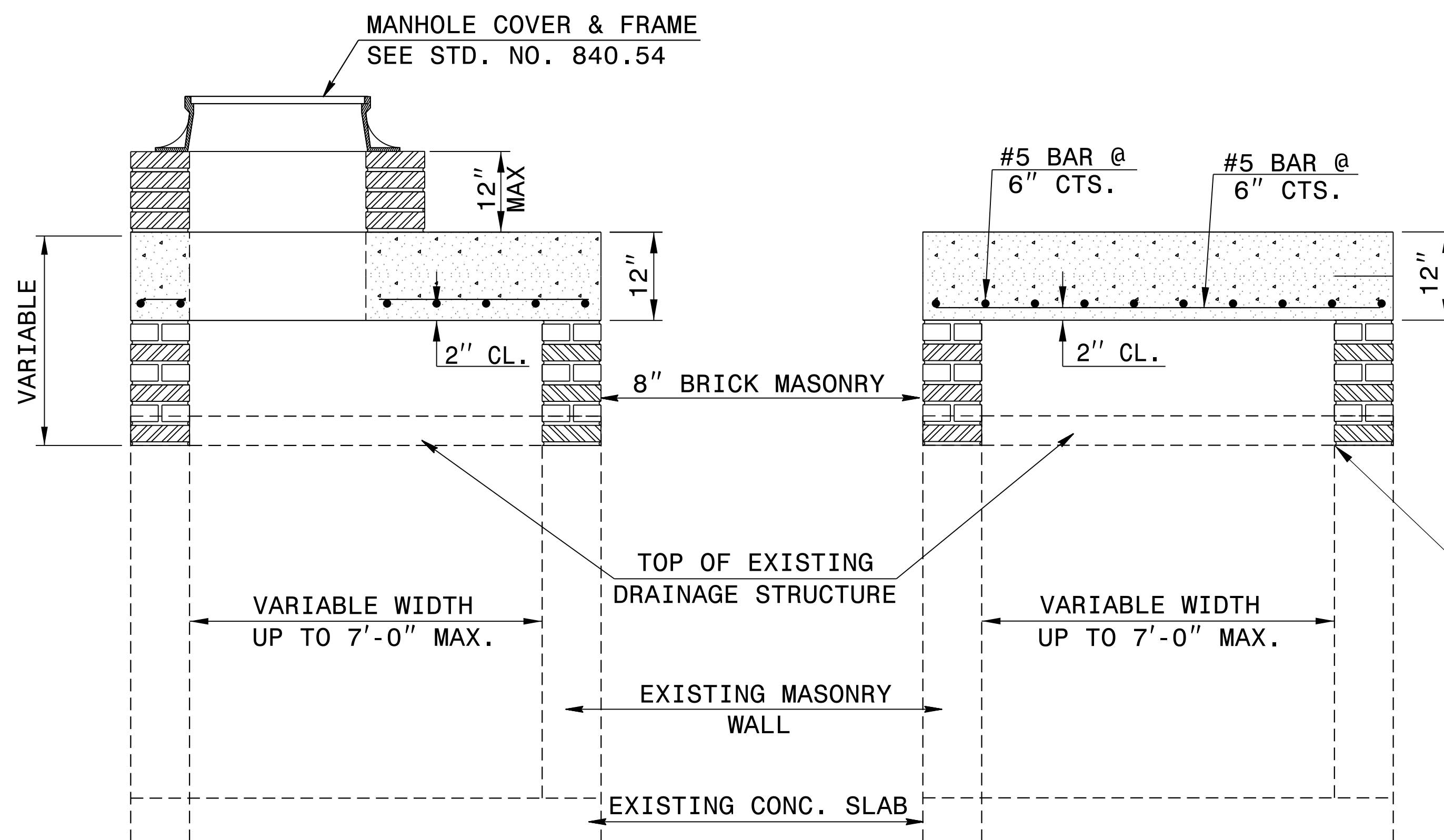
NOTE:

CONCRETE AND REINFORCING STEEL QUANTITIES BASED ON SQUARE FOOT AREA OF THE PROPOSED TOP SLAB FOR THE EXISTING DRAINAGE STRUCTURE.

BRICK MASONRY QUANTITY IS BASED ON THE TOTAL SQUARE FOOTAGE OF EXTERIOR WALL SURFACE AREA TO BE CONSTRUCTED.



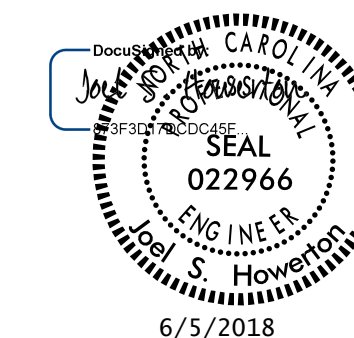
DETAIL OF HANDLE



SECTION X-X

SECTION Y-Y

ALIGN PROPOSED BRICK VERTICAL ADJUSTMENT TO INNER FACE OF WALL

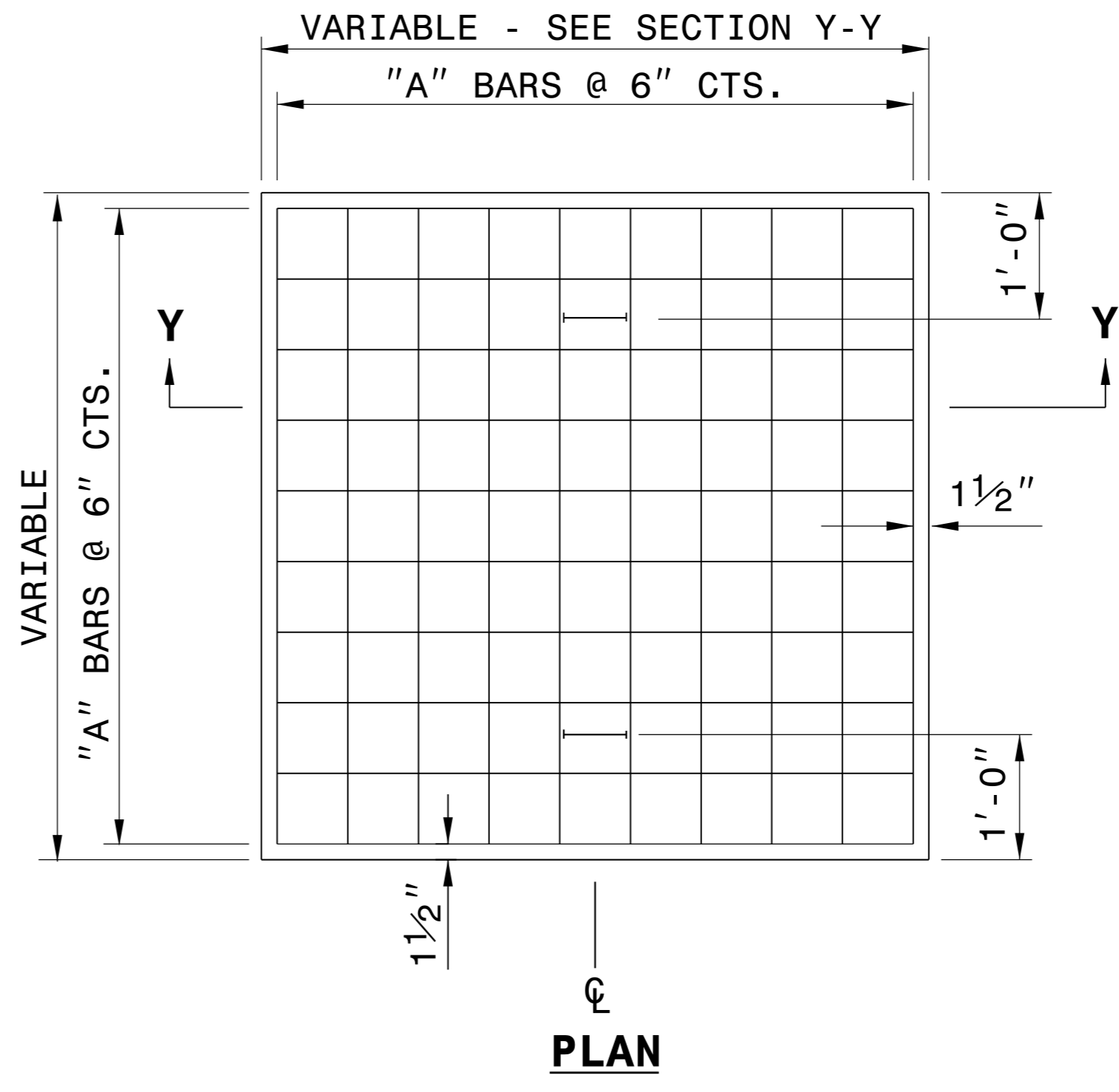
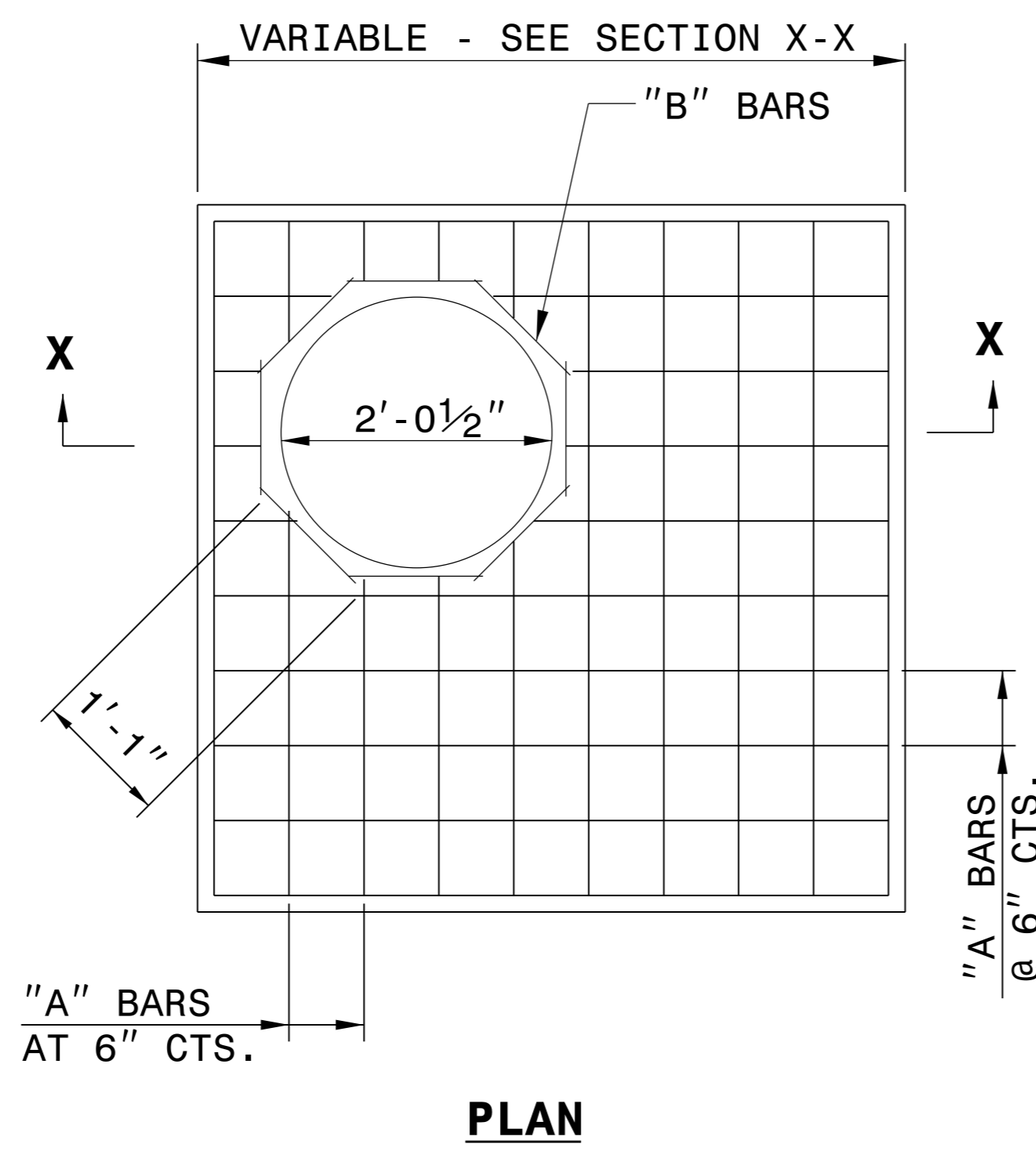
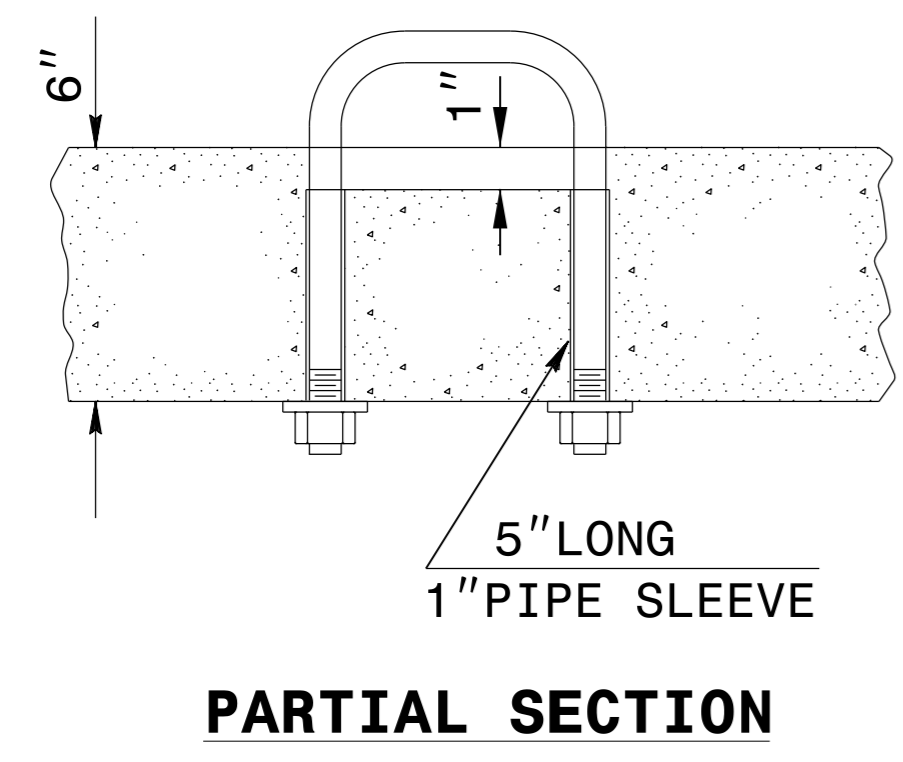


CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

DETAIL TO CONVERT EXISTING TRAFFIC BEARING DROP INLET OR CATCH BASIN TO TRAFFIC BEARING JUNCTION BOX (MANHOLE OPTIONAL)

ORIGINAL BY: T.S.S.	DATE: FEB. 2000
MODIFIED BY: E.E.W.	DATE: NOV. 2001
CHECKED BY:	DATE:
FILE SPEC.: w:ericward/usr/details/stand/boxtotbjbe.dgn	

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



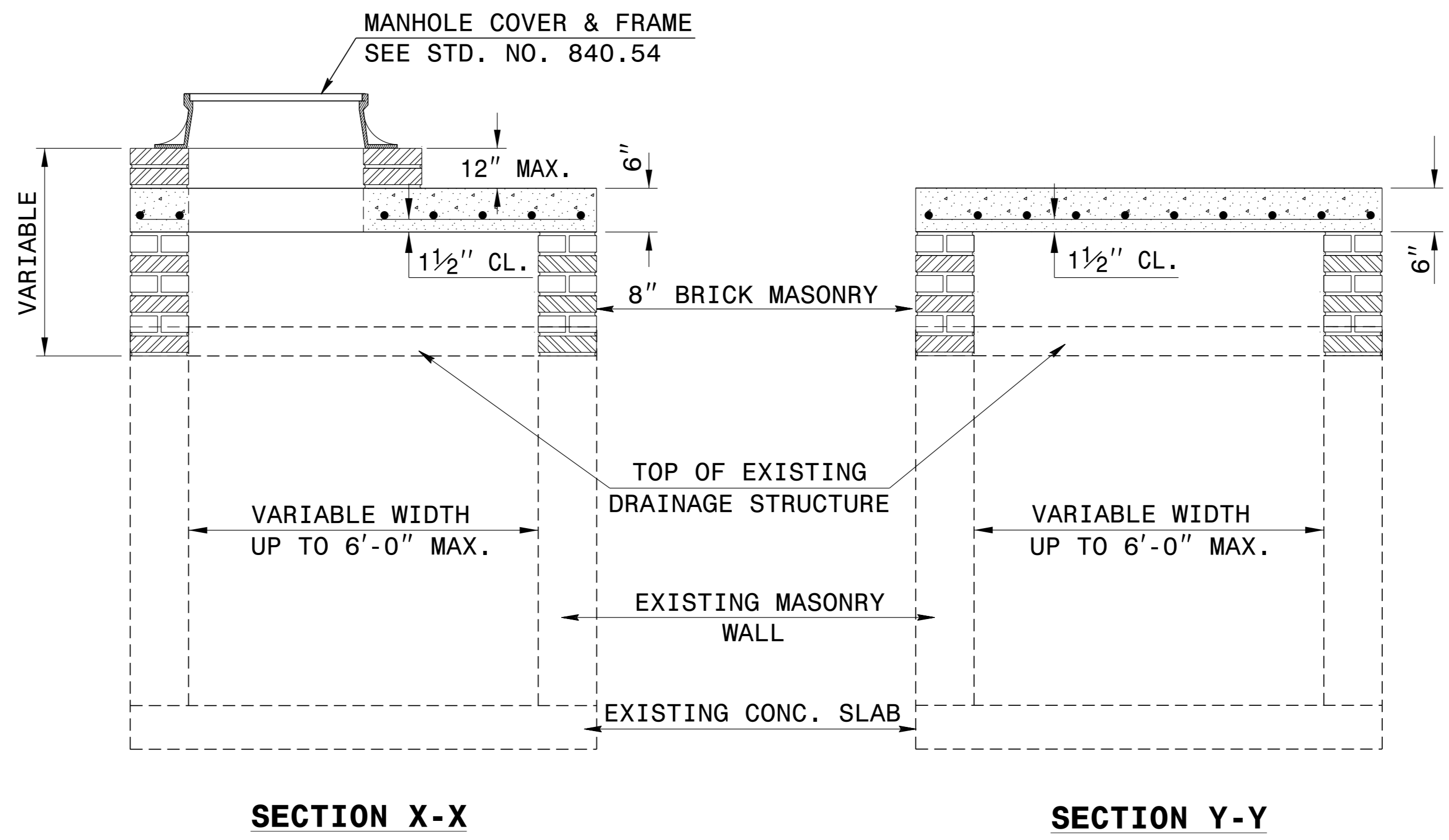
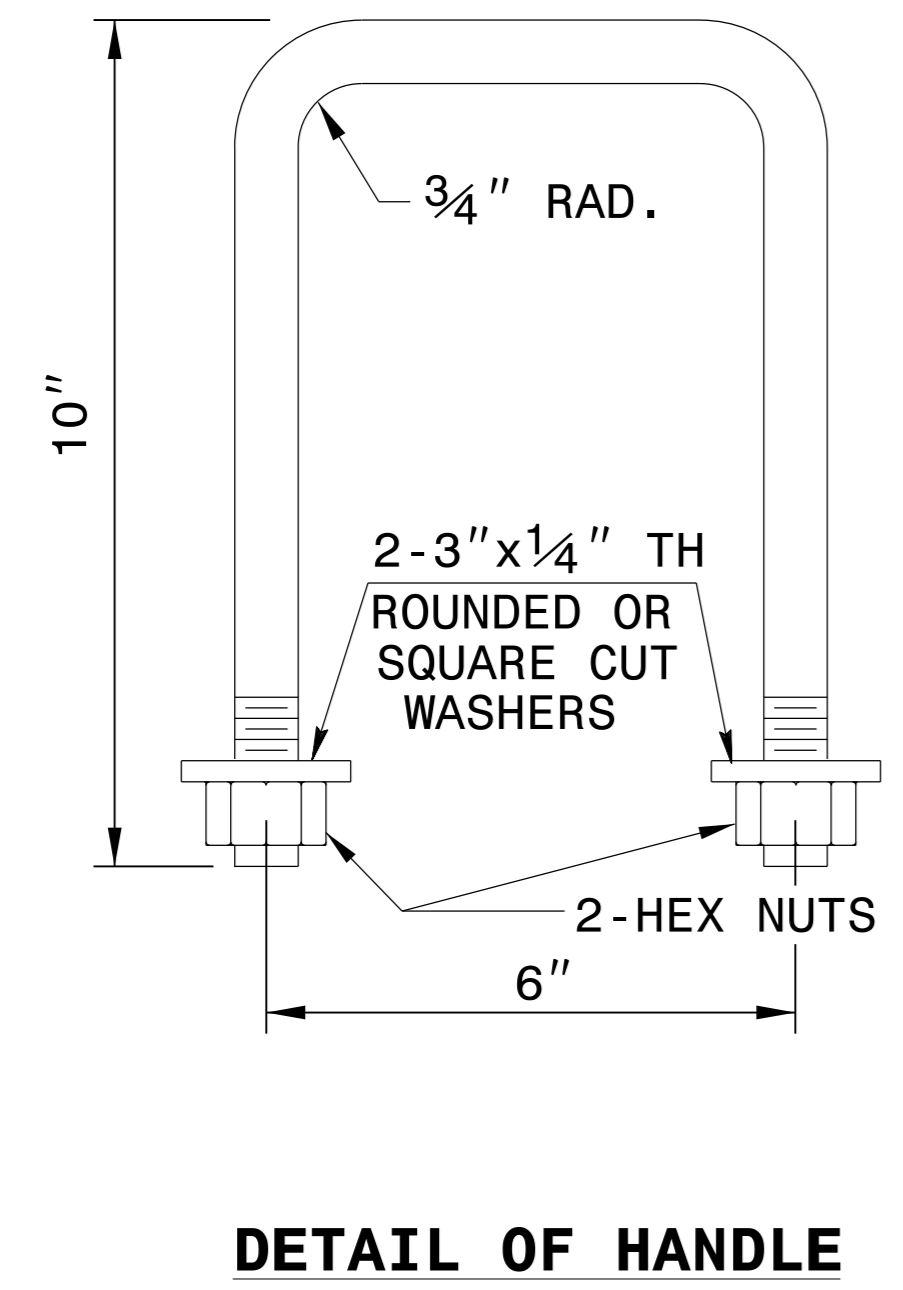
GENERAL NOTES:

CONSTRUCT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.

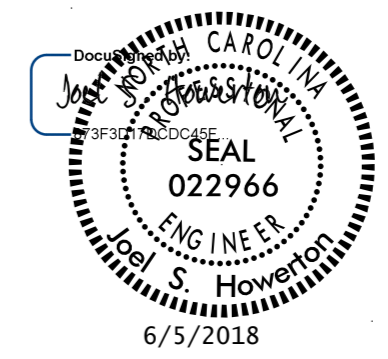
THE DIMENSIONS FOR THE EXISTING BOXES ARE APPROXIMATE AND MAY VARY SLIGHTLY.

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.

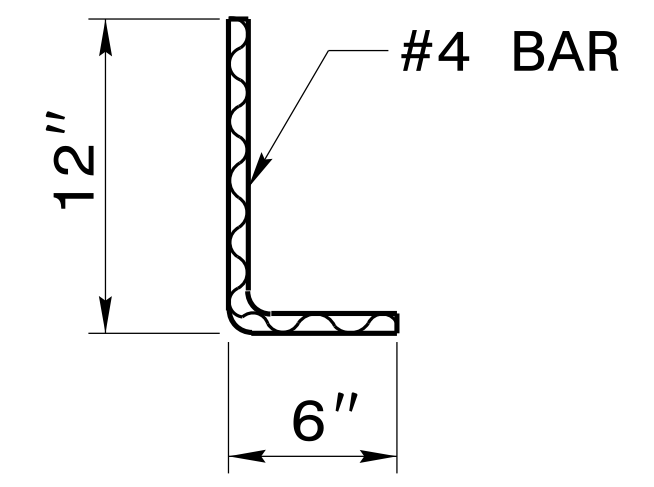
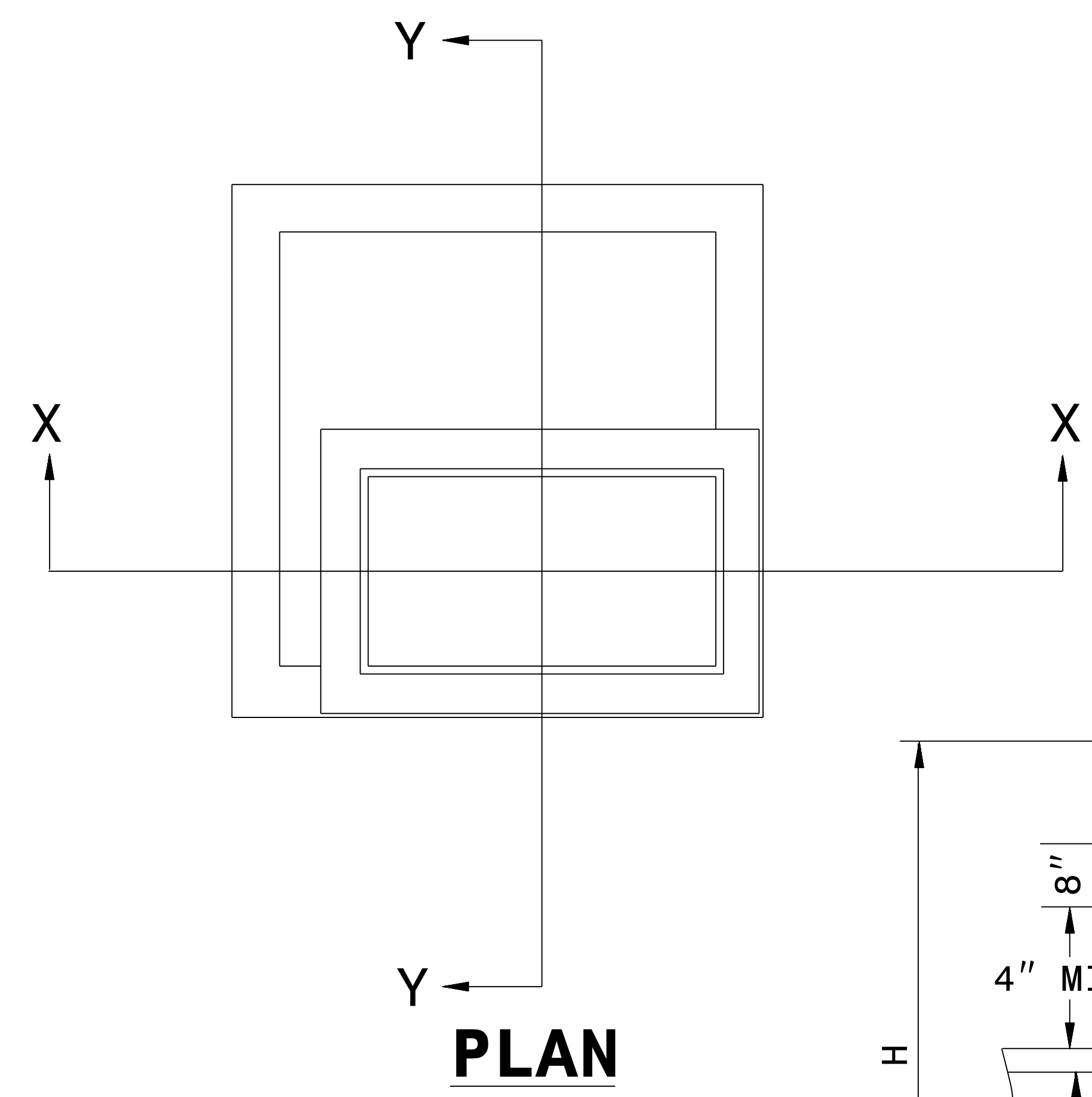


DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

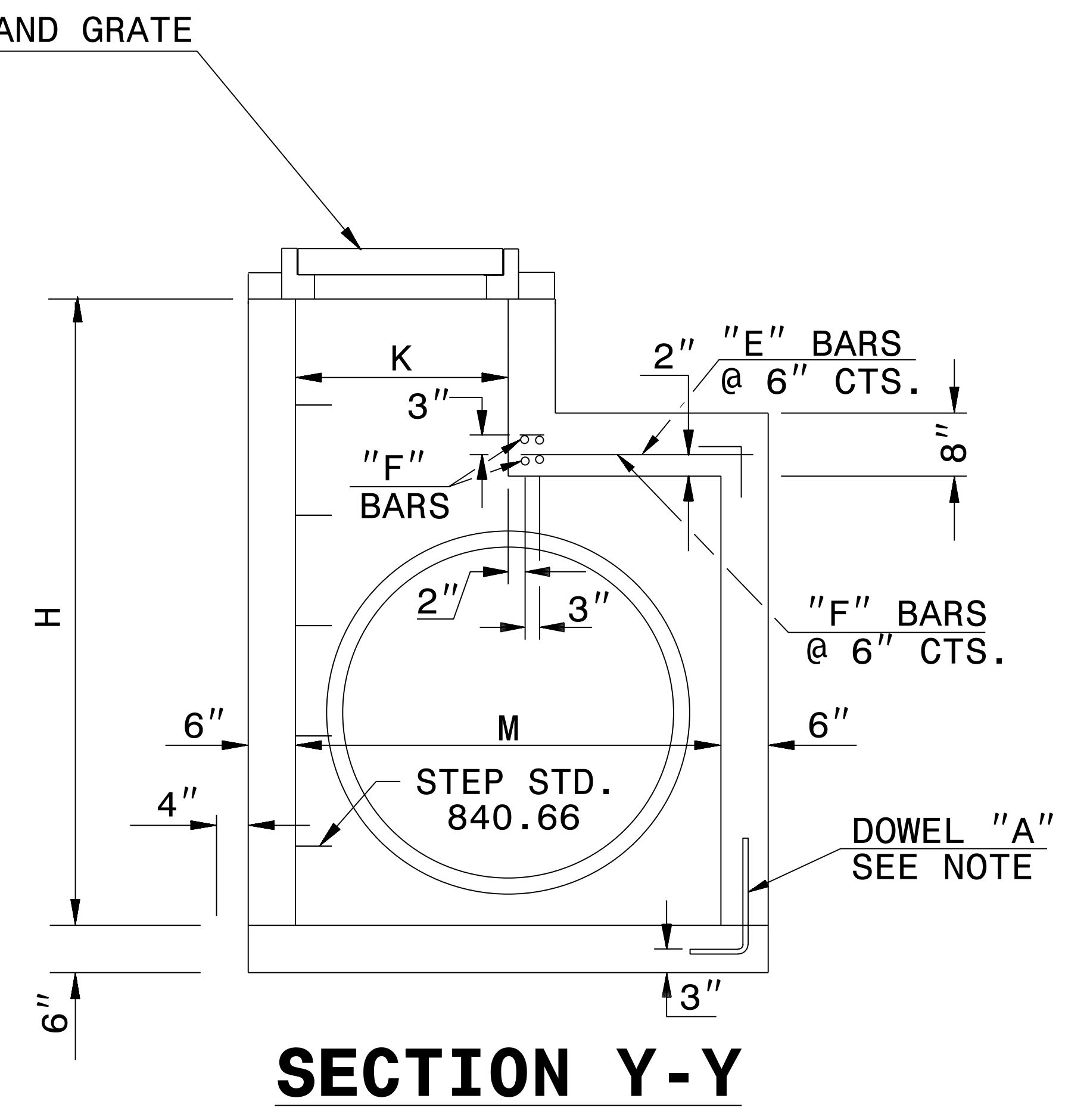
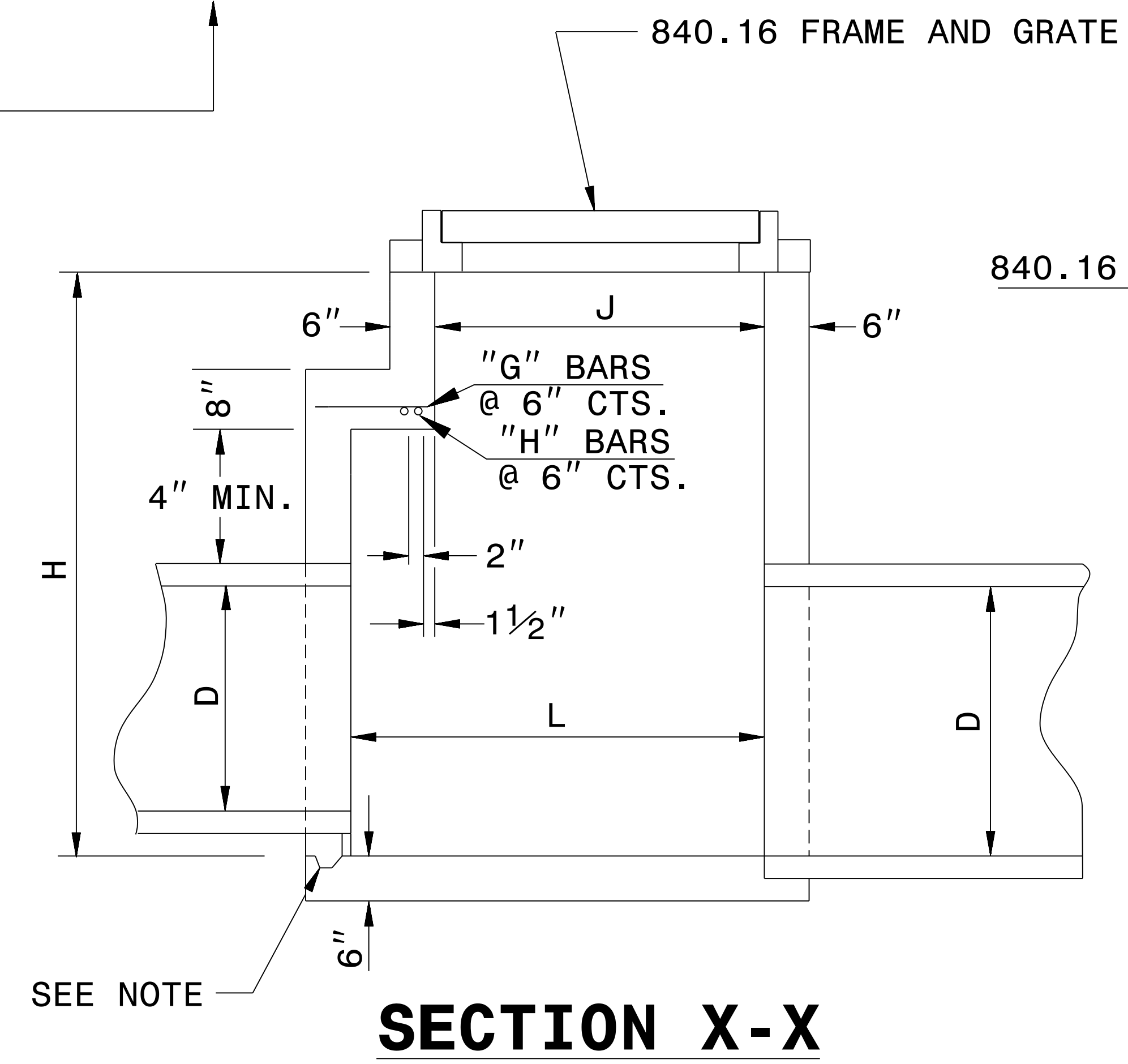
CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119
DETAIL TO CONVERT EXISTING DI, CB, OTCB or GI TO JUNCTION BOX (MANHOLE OPTIONAL)

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

Vertical text along the left margin, likely a reference or revision list.



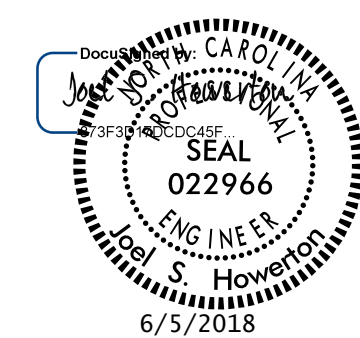
GENERAL NOTES:
 USE CLASS "B" CONCRETE THROUGHOUT.
 PROVIDE ALL DROP INLETS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.
 OPTIONAL CONSTRUCTION - MONOLITHIC POUR 2" KEYWAY OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
 USE FORMS FOR THE 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.
 CONSTRUCT WITH PIPE CROWNS MATCHING.
 INSTALL 2" WEEPHOLES AS DIRECTED BY THE ENGINEER.
 INSTALL STONE DRAINS, OF A MINIMUM OF 1 CUBIC FOOT OF NO. 78M STONE IN A POROUS FABRIC BAG OR WRAP, AT EACH WEEP HOLE OR AS DIRECTED BY THE ENGINEER.
 CHAMFER ALL EXPOSED CORNERS 1".
 DRAWING NOT TO SCALE.
 DIMENSIONS MAY BE FIELD ADJUSTED AS DIRECTED BY THE ENGINEER.



MIN. DIMENSIONS AND QUANTITIES FOR CONCRETE DROP INLET (BASED ON MIN. HEIGHT, H)

DIMENSIONS OF BOX AND PIPE						REINFORCING STEEL - NO. 4 BARS								CU YDS CONC. IN BOX				DEDUCTIONS FOR ONE PIPE		
PIPE	SPAN	WIDTH	SPAN	WIDTH	HEIGHT	BARS E		BARS F		BARS G		BARS H		TOTAL	BOTTOM SLAB	H TOTAL	H PER FT HT	TOTAL	C.S.	R.C.
D	J	K	L	M	H	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	LBS.						
12"	3'-0"	2'-0"	3'-8"	2'-0"	3'-9"	—	—	—	—	—	—	—	—	—	0.362	0.926	0.247	1.288	0.015	0.024
15"	3'-0"	2'-0"	3'-8"	2'-0"	4'-0"	—	—	—	—	—	—	—	—	—	0.362	0.988	0.247	1.350	0.023	0.036
18"				2'-0"	4'-3"	—	—	—	—	—	—	—	—	—	0.362	1.050	0.247	1.412	0.033	0.049
24"				2'-10"	4'-9"	8	1'-5"	6	4'-9"	—	—	—	—	27	0.444	1.362	0.278	1.806	0.059	0.085
30"			3'-8"	3'-5"	5'-3"	8	2'-0"	7	4'-9"	—	—	—	—	33	0.502	1.644	0.288	2.146	0.092	0.127
36"			4'-0"	4'-0"	5'-9"	8	2'-5"	8	4'-11"	4	0'-9"	2	4'-11"	47	0.560	1.931	0.321	2.525	0.132	0.178
42"			4'-10"	4'-10"	6'-3"	10	3'-1"	9	5'-7"		1'-5"	3	5'-7"	67	0.704	2.500	0.370	3.282	0.180	0.243
48"			5'-4"	5'-4"	6'-9"	11	3'-7"	10	6'-1"		1'-11"	4	6'-1"	87	0.823	3.013	0.407	3.920	0.235	0.317
54"			6'-0"	6'-0"	7'-3"	12	4'-1"	11	6'-7"		2'-5"	5	6'-7"	107	0.951	3.589	0.444	4.677	0.297	0.401
60"			6'-6"	6'-6"	7'-9"	13	4'-9"	12	7'-3"		3'-1"	6	7'-3"	135	1.311	4.539	0.494	5.775	0.367	0.495
66"			7'-2"	7'-2"	8'-3"	14	5'-4"	14	7'-10"		3'-7"	7	7'-10"	168	1.136	5.061	0.537	6.506	0.444	0.599
72"	3'-0"	2'-0"	7'-8"	7'-8"	8'-9"	15	5'-11"	15	8'-5"	4	4'-3"	8	8'-5"	199	1.500	5.860	0.580	7.473	0.528	0.713

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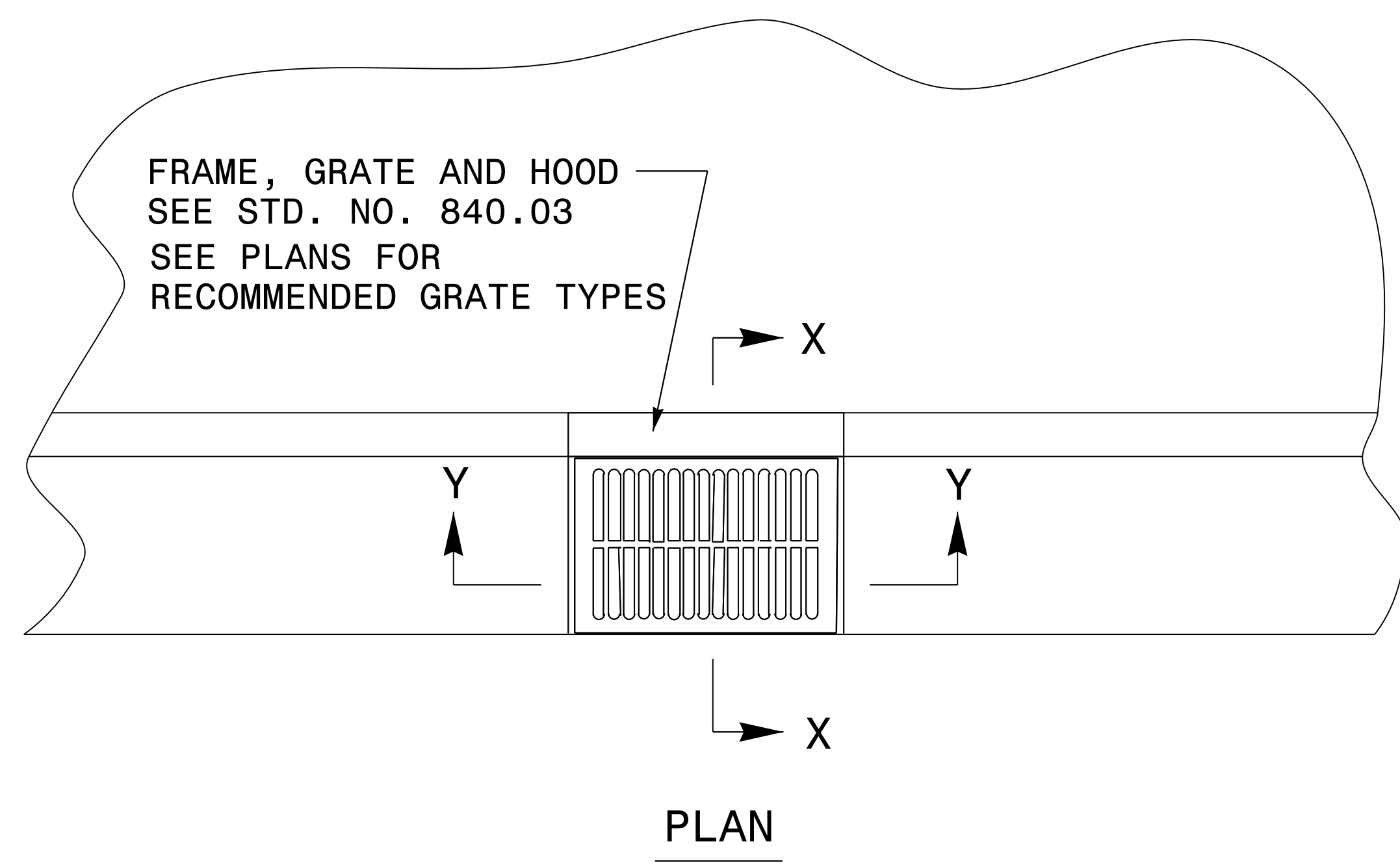


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CONTRACT STANDARDS AND DEVELOPMENT UNIT
 Office 919-707-6950 FAX 919-250-4119

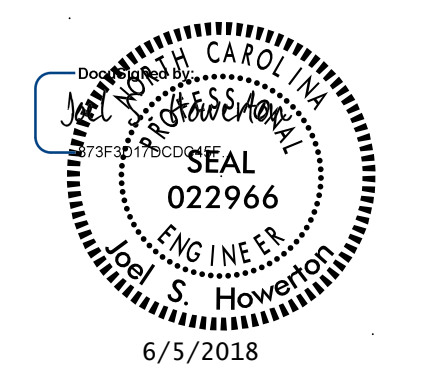
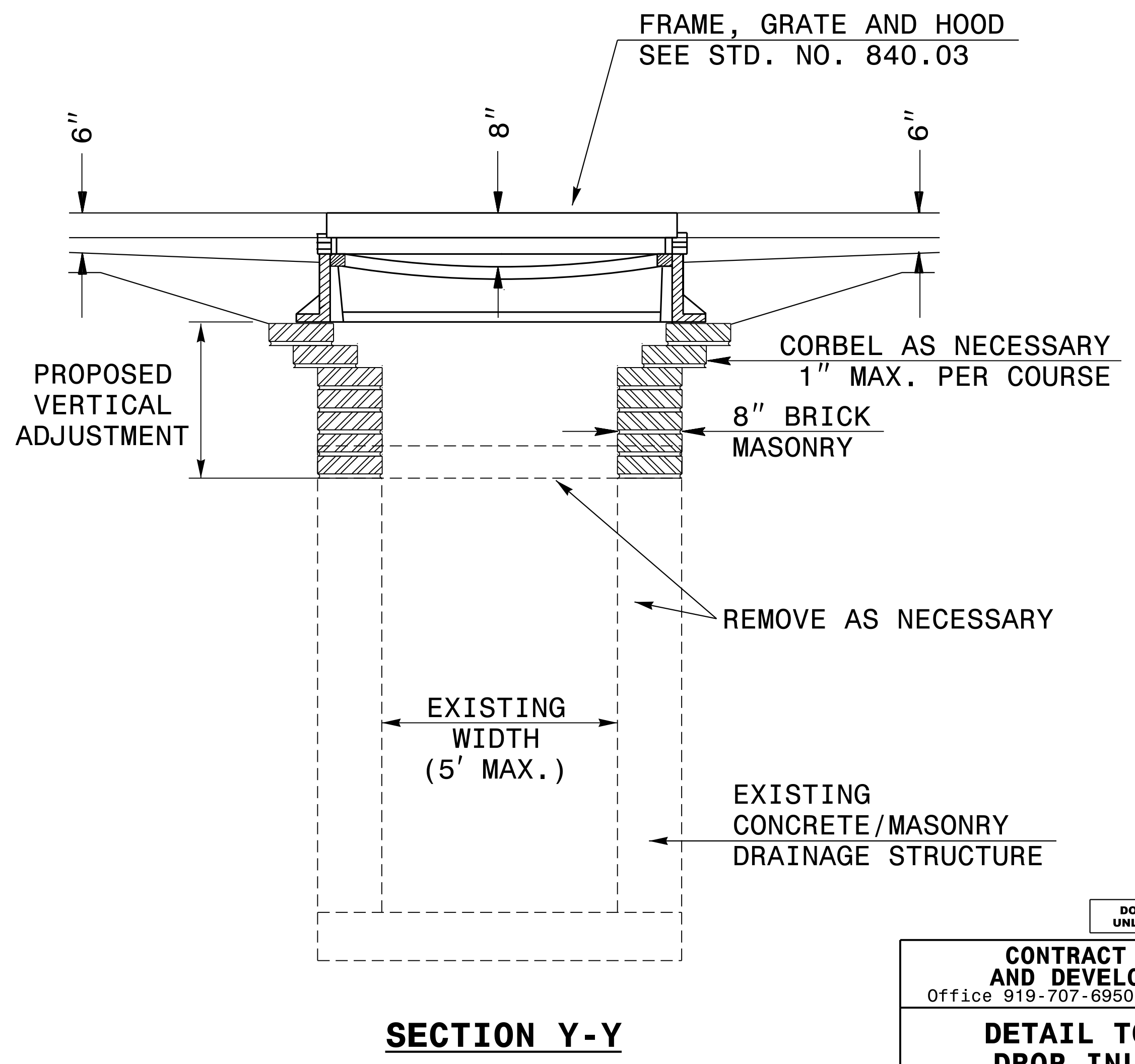
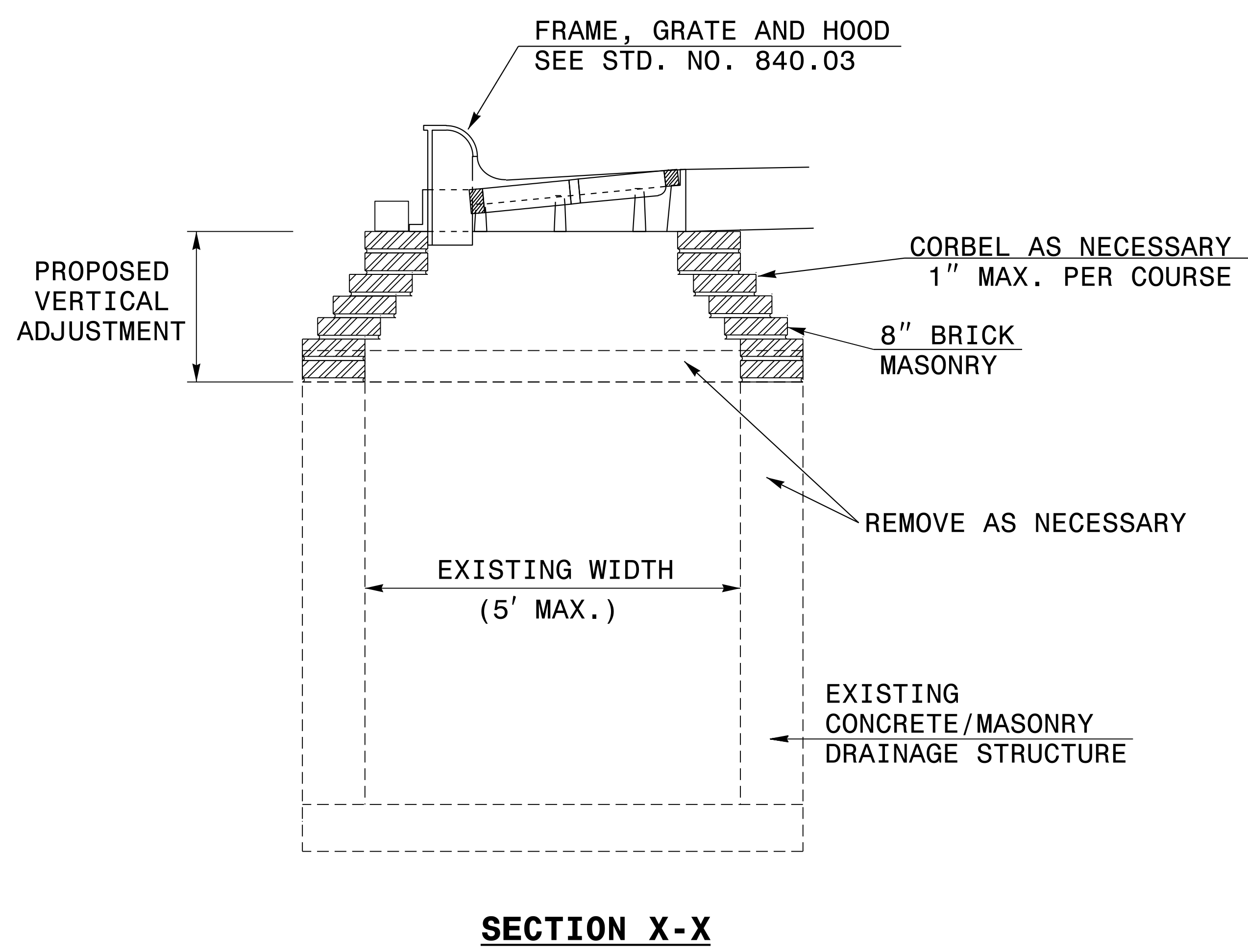
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 CHECKED BY: DATE:
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GENERAL NOTES:

- THE ROADWAY PLANS INDICATE STRUCTURES TO BE CONVERTED.
- AFTER REMOVAL, STORE GRATES AND FRAMES AS DIRECTED BY THE ENGINEER.
- 4" SOLID CLAY BRICK, JUMBO BRICK, CONCRETE, OR 4" SOLID CONCRETE BLOCK MAY BE USED FOR VERTICAL ADJUSTMENT OF THE STRUCTURE.
- CONVERT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.



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

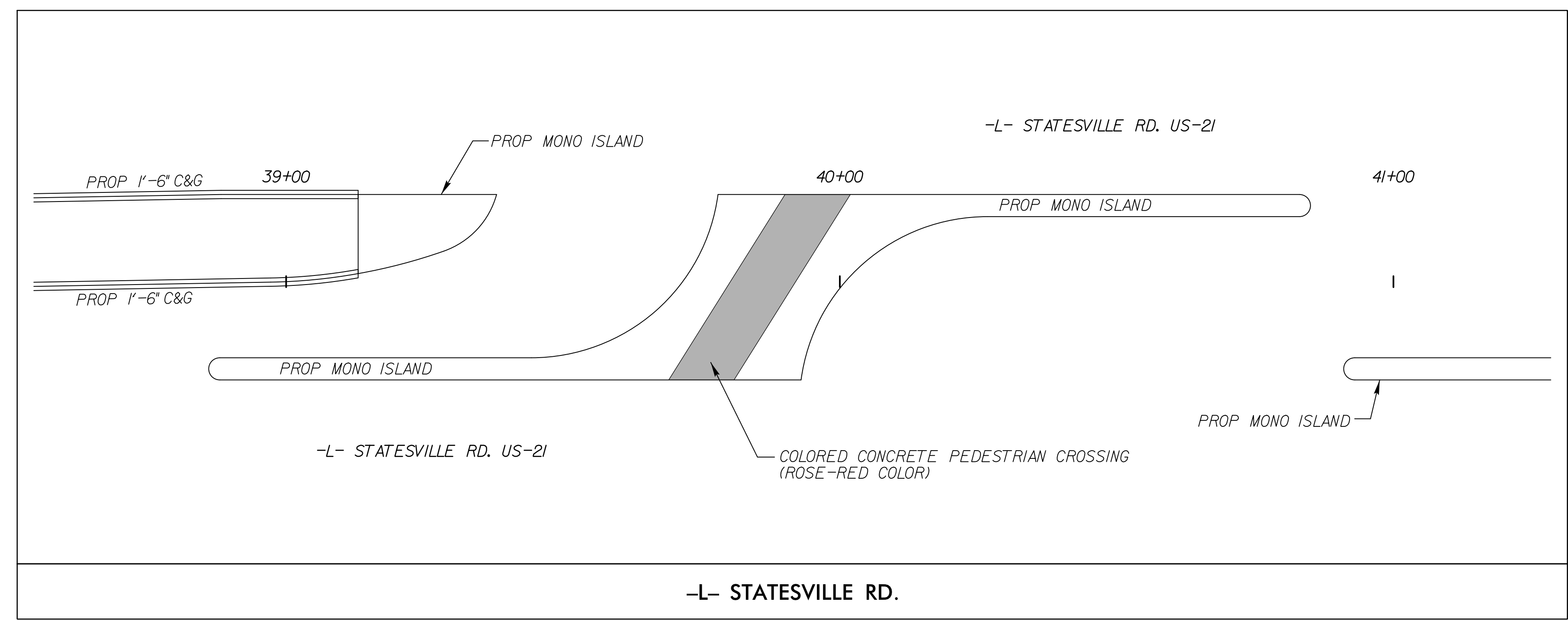
DETAIL TO CONVERT DROP INLET OR JB TO CATCH BASIN

ORIGINAL BY: E.E. WARD DATE: 11-97
 MODIFIED BY: DATE:
 CHECKED BY: DATE:
 FILE SPEC.: DS37:usr\details\stand\jbtocb.dgn

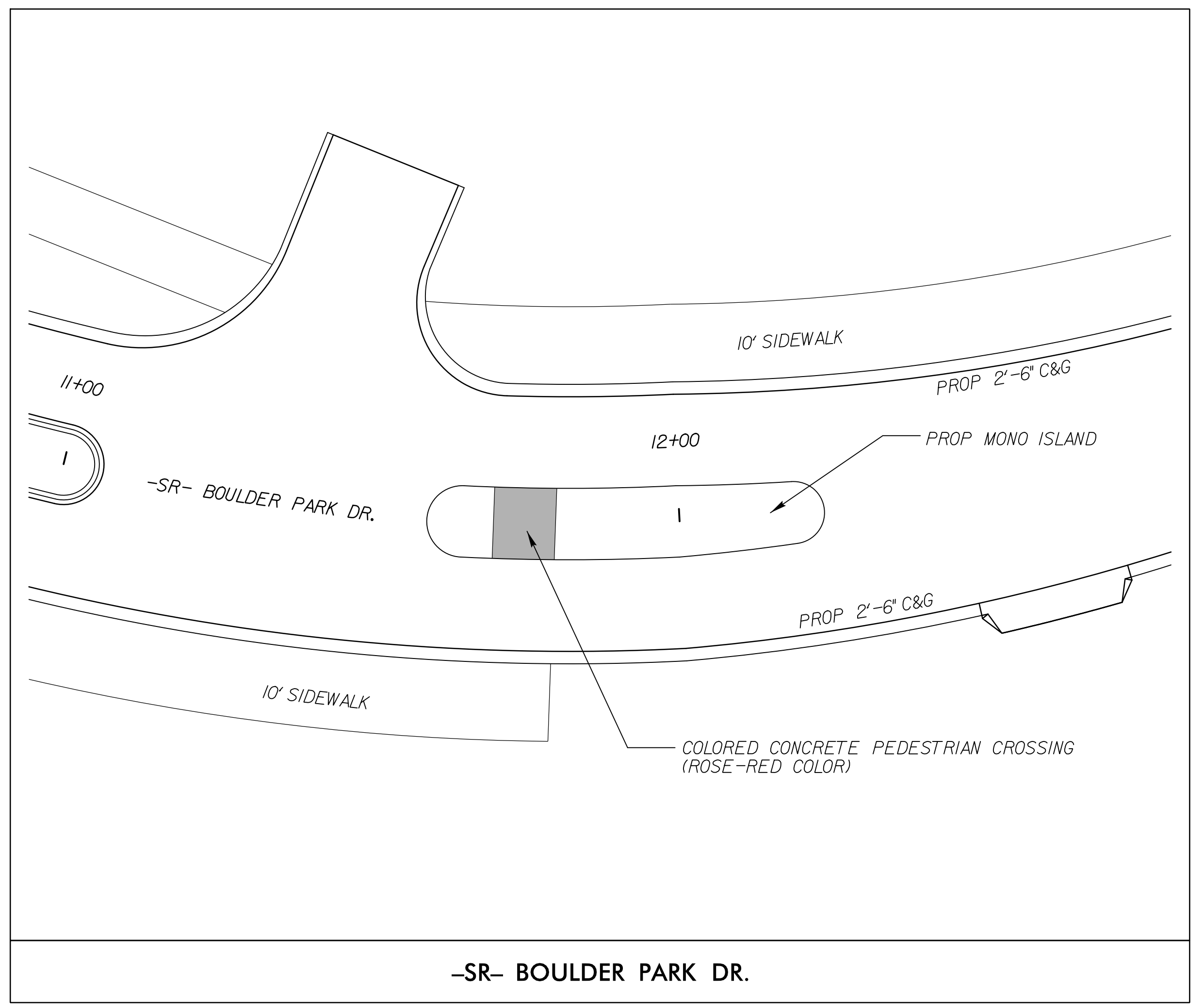
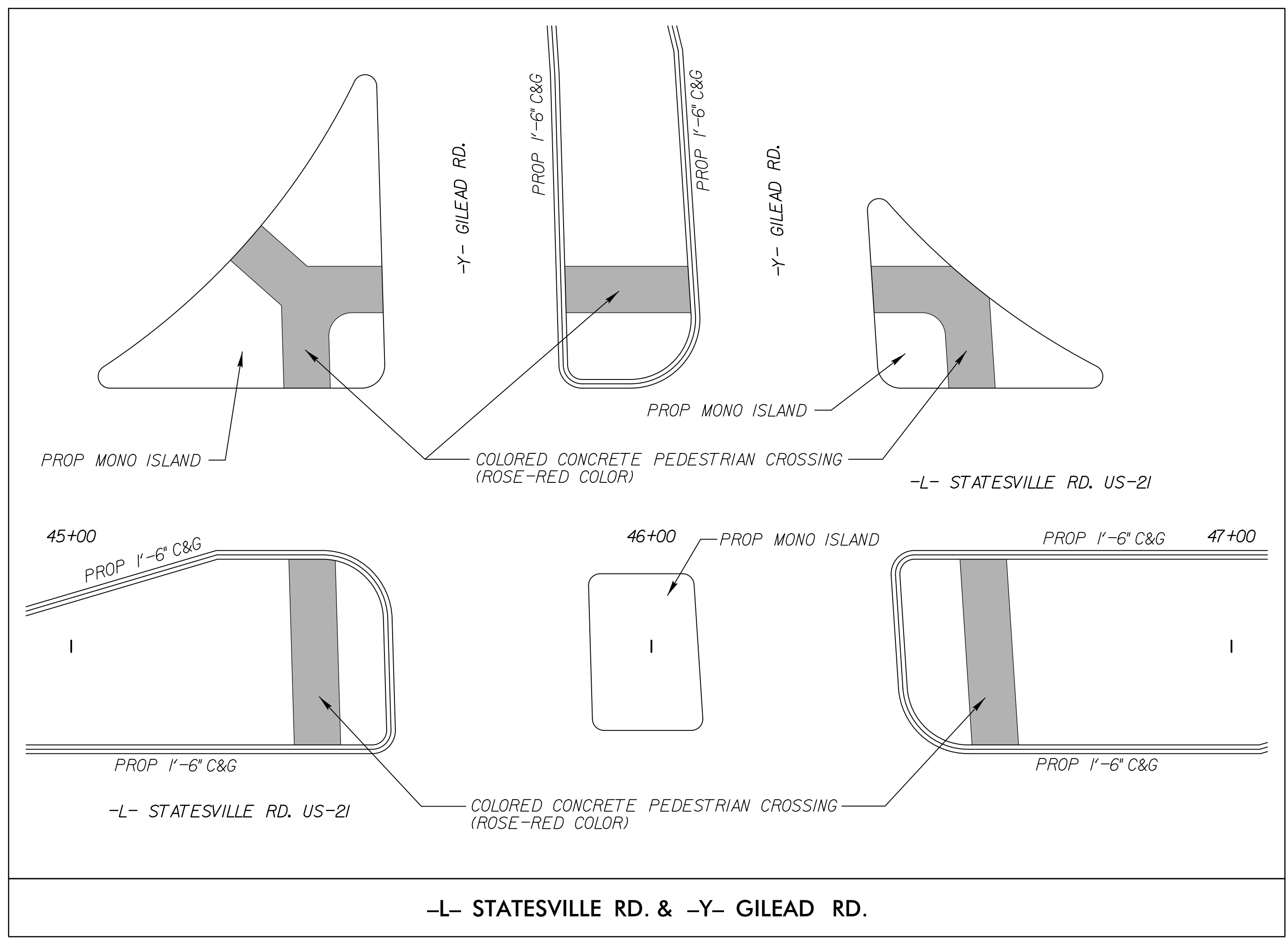
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PROJECT REFERENCE NO. U-5114	SHEET NO. 2C-8
ROADWAY DESIGN ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
STV Engineers, Inc. 900 West Trade St., Suite 715 Charlotte, NC 28202 NC License Number F-0991	



PAY LIMITS FOR COLORED CONCRETE PEDESTRIAN CROSSING (ROSE-RED COLOR)



6/2/19

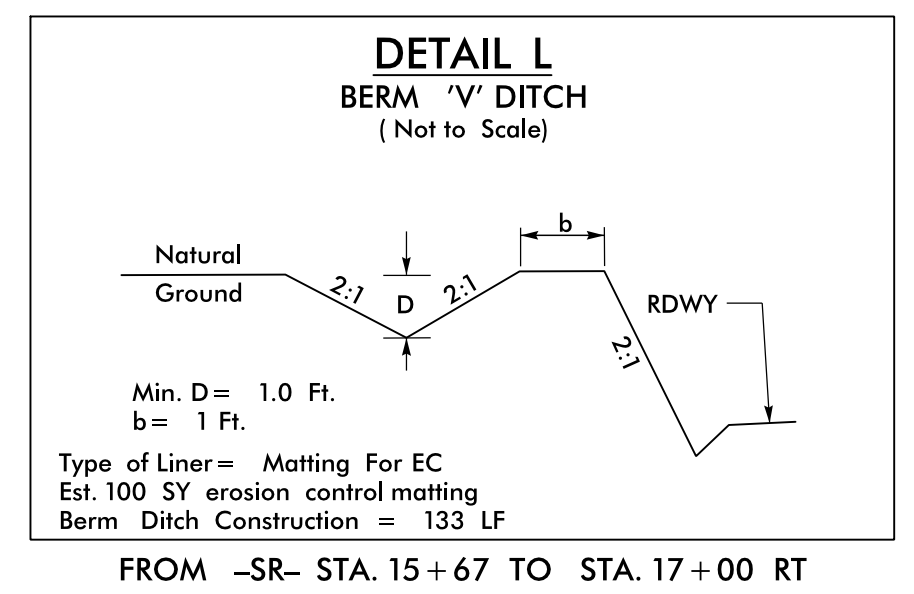
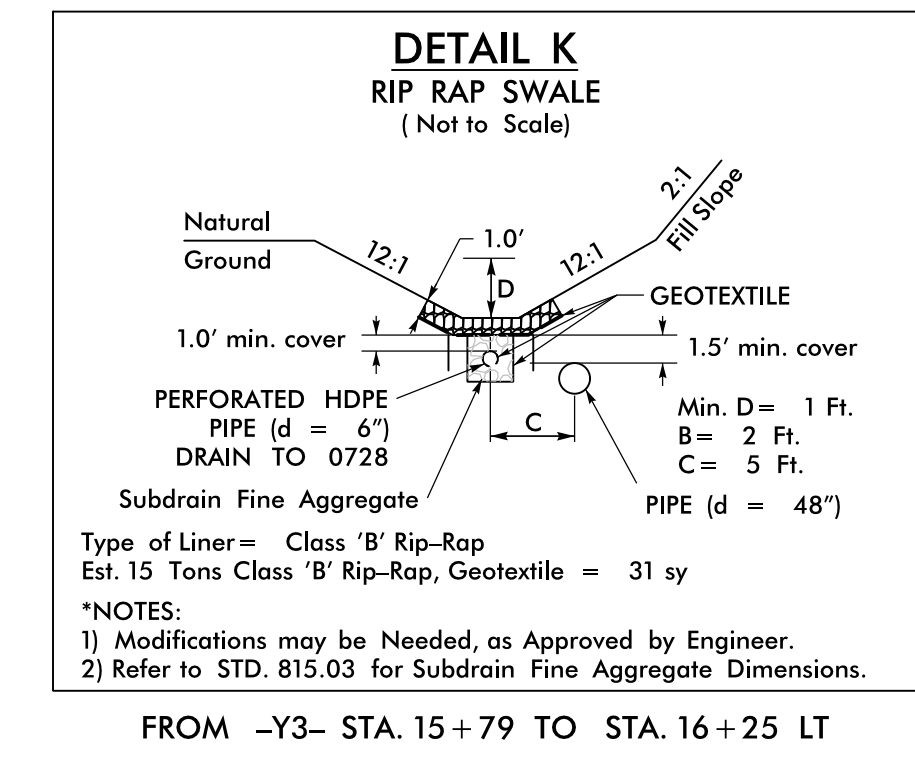
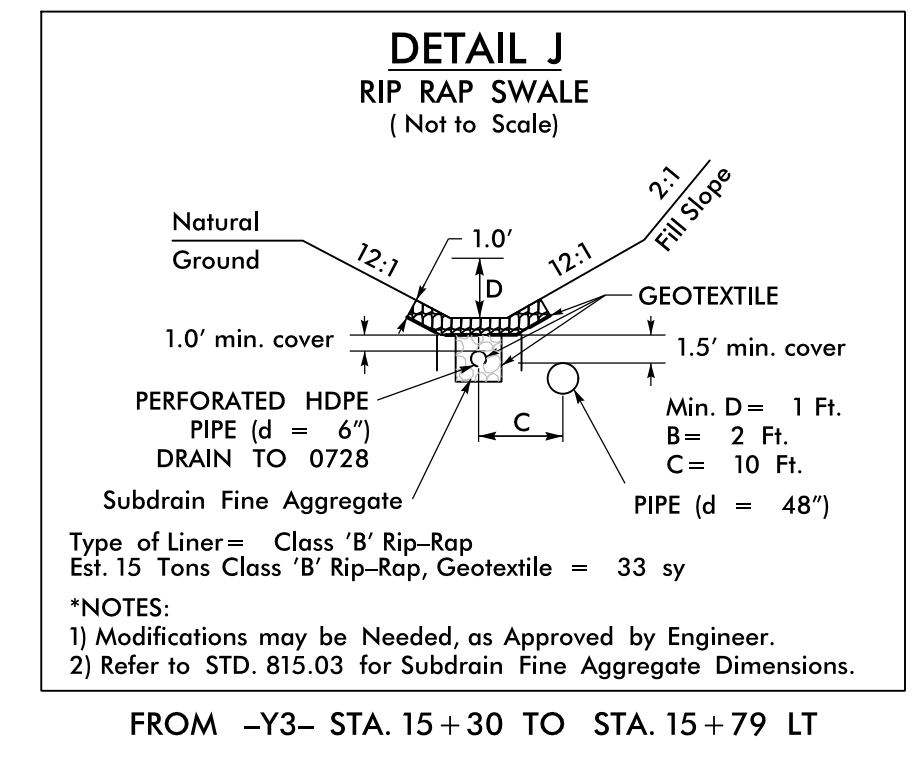
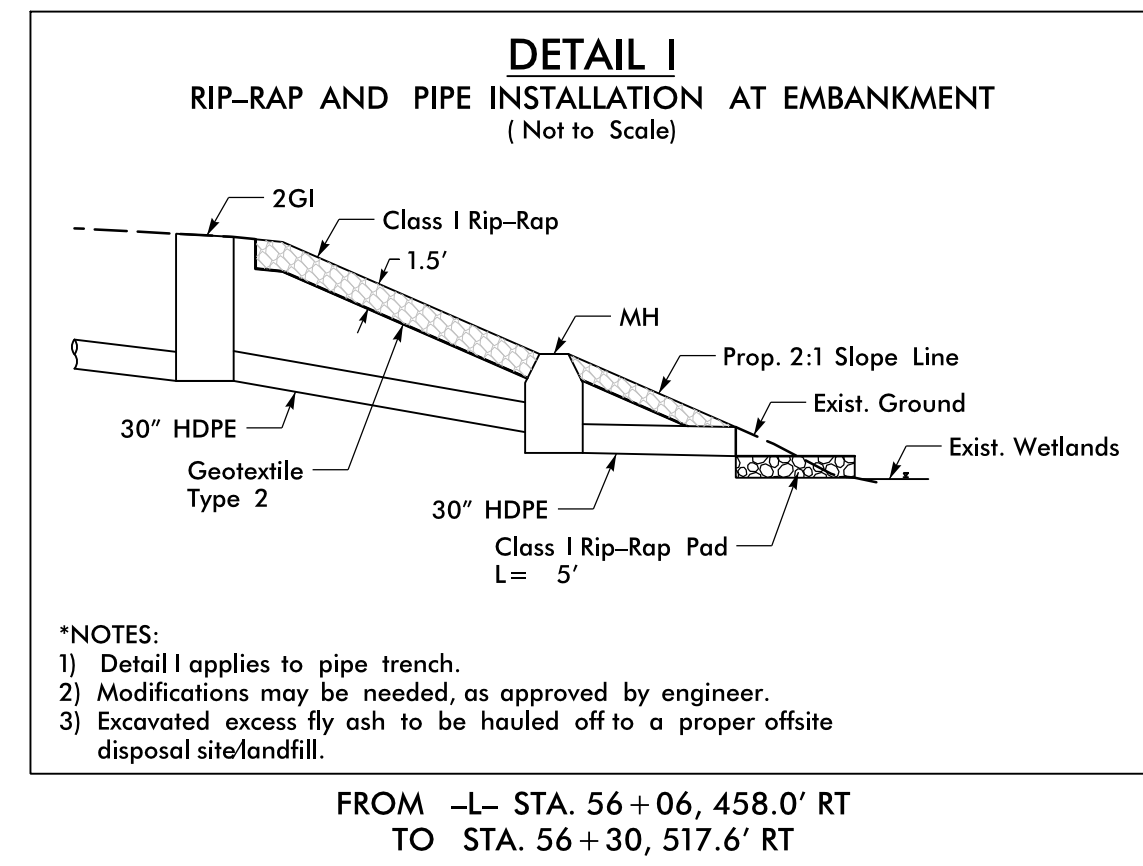
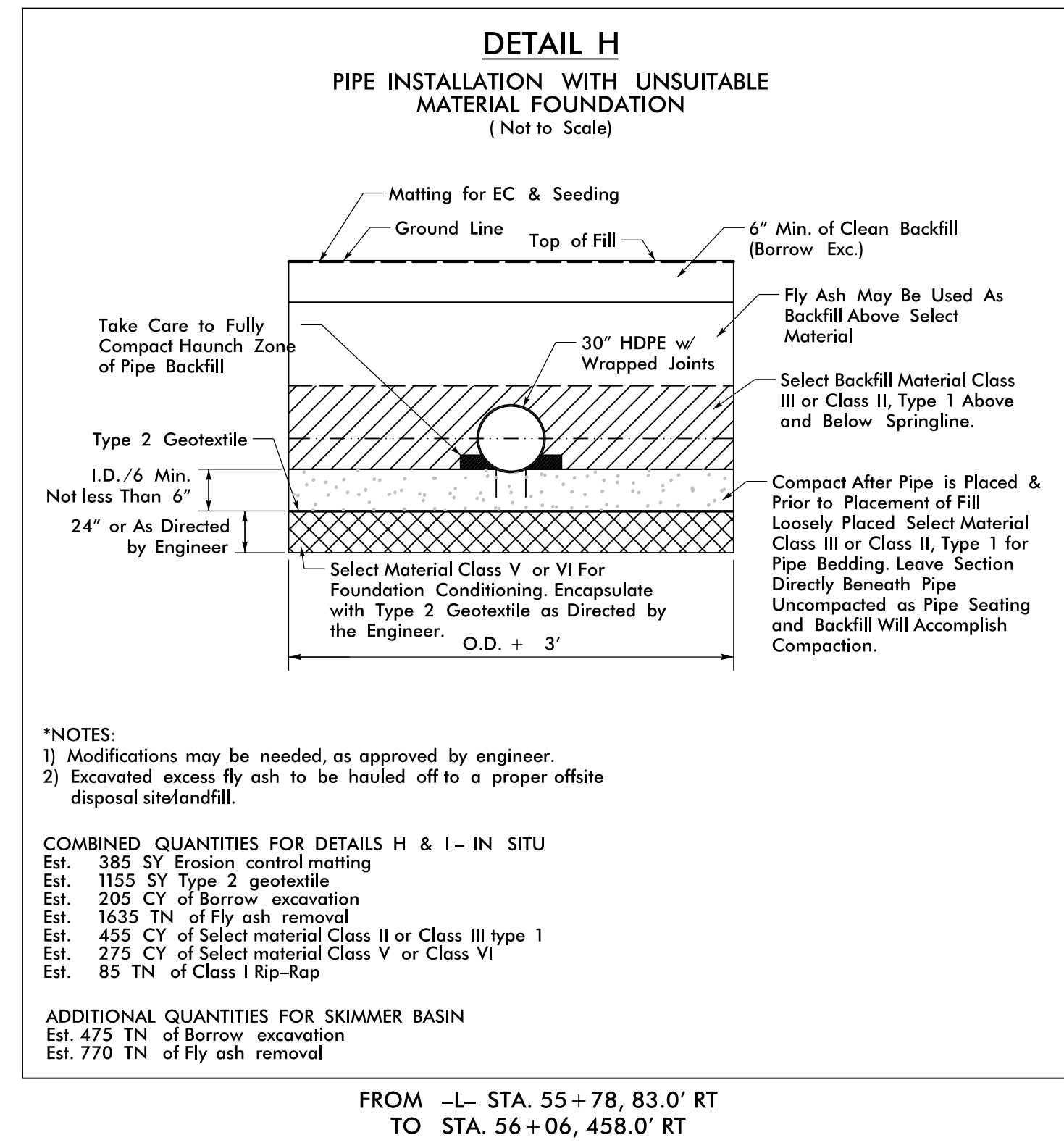
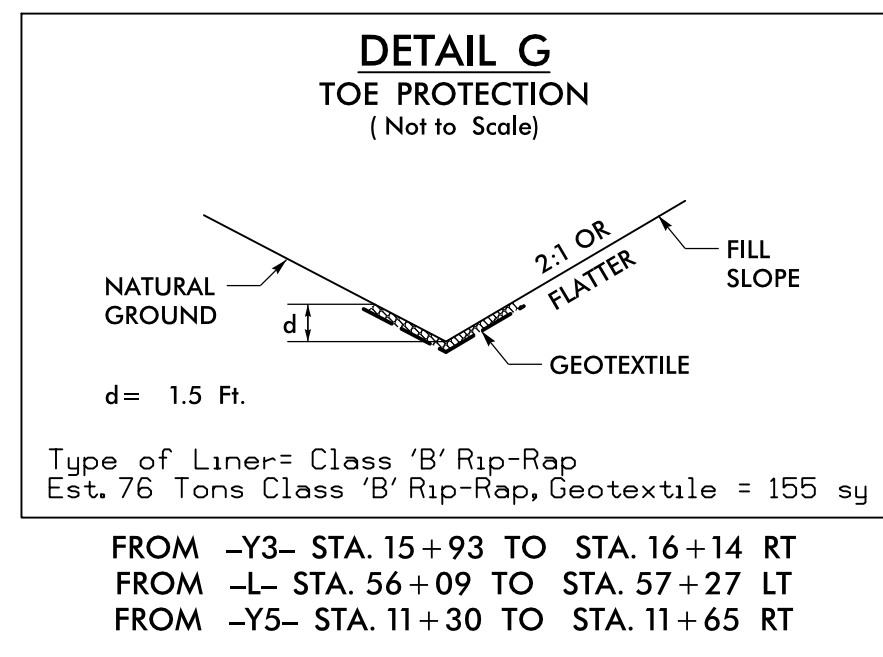
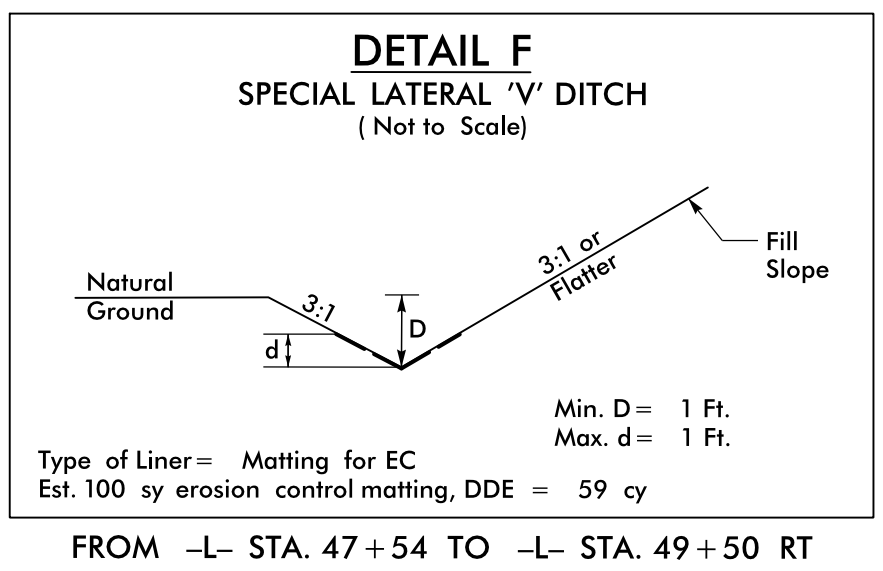
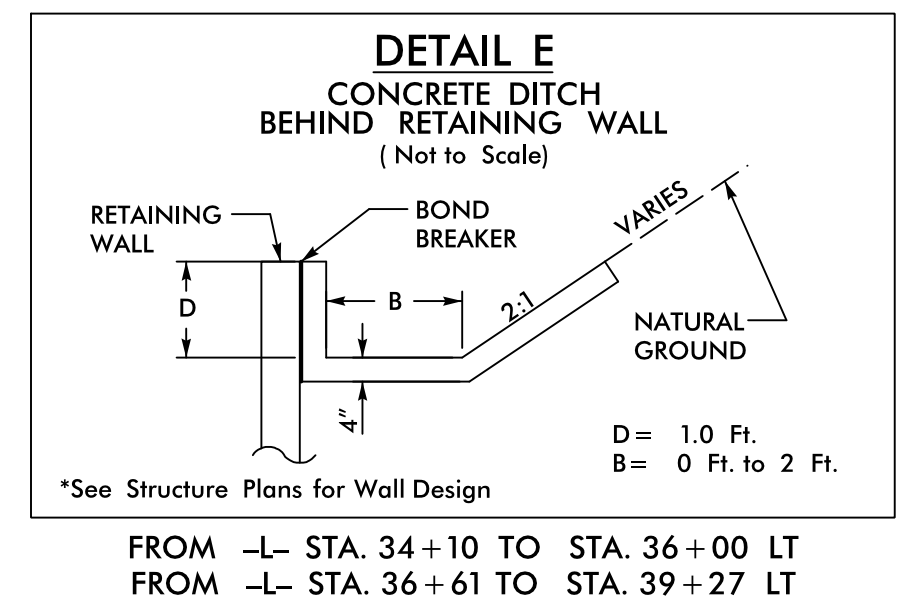
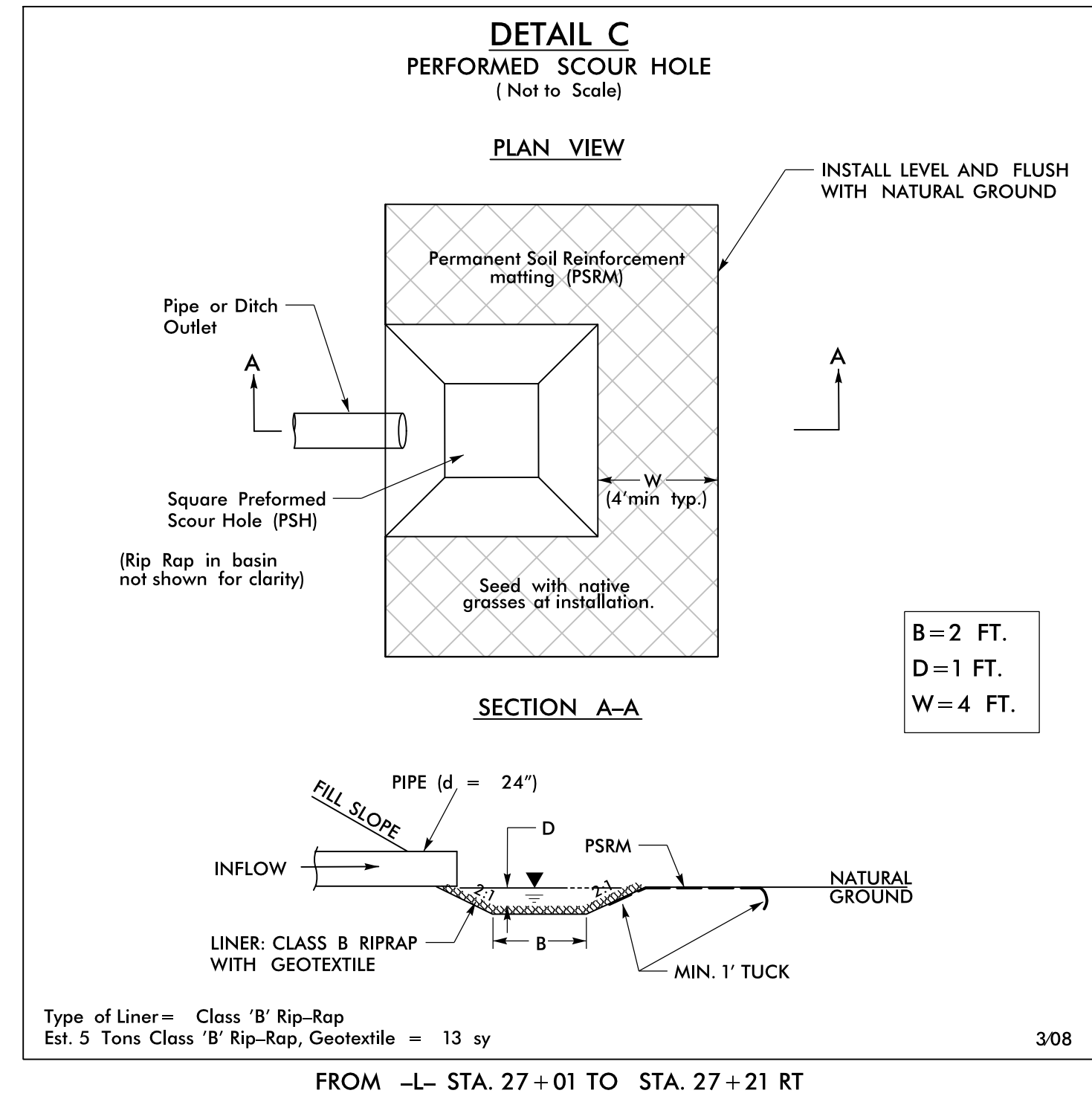
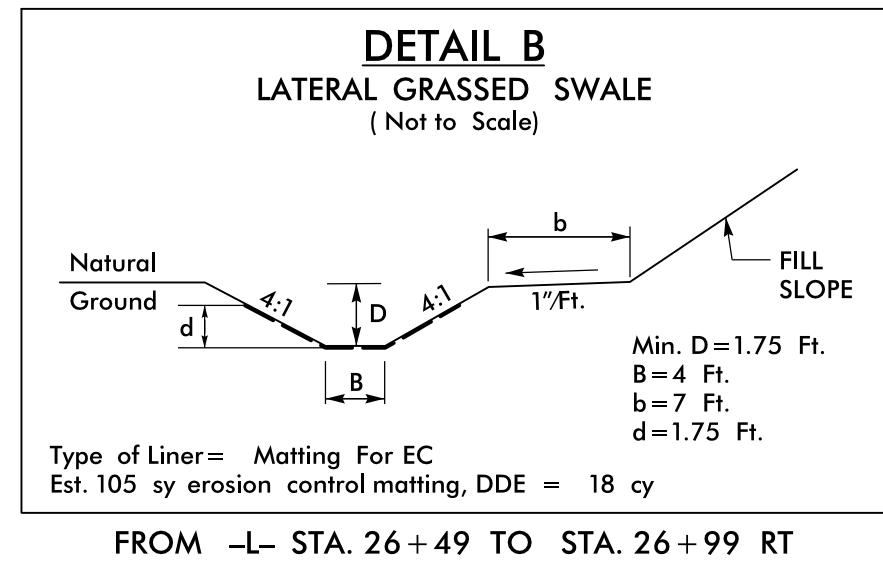
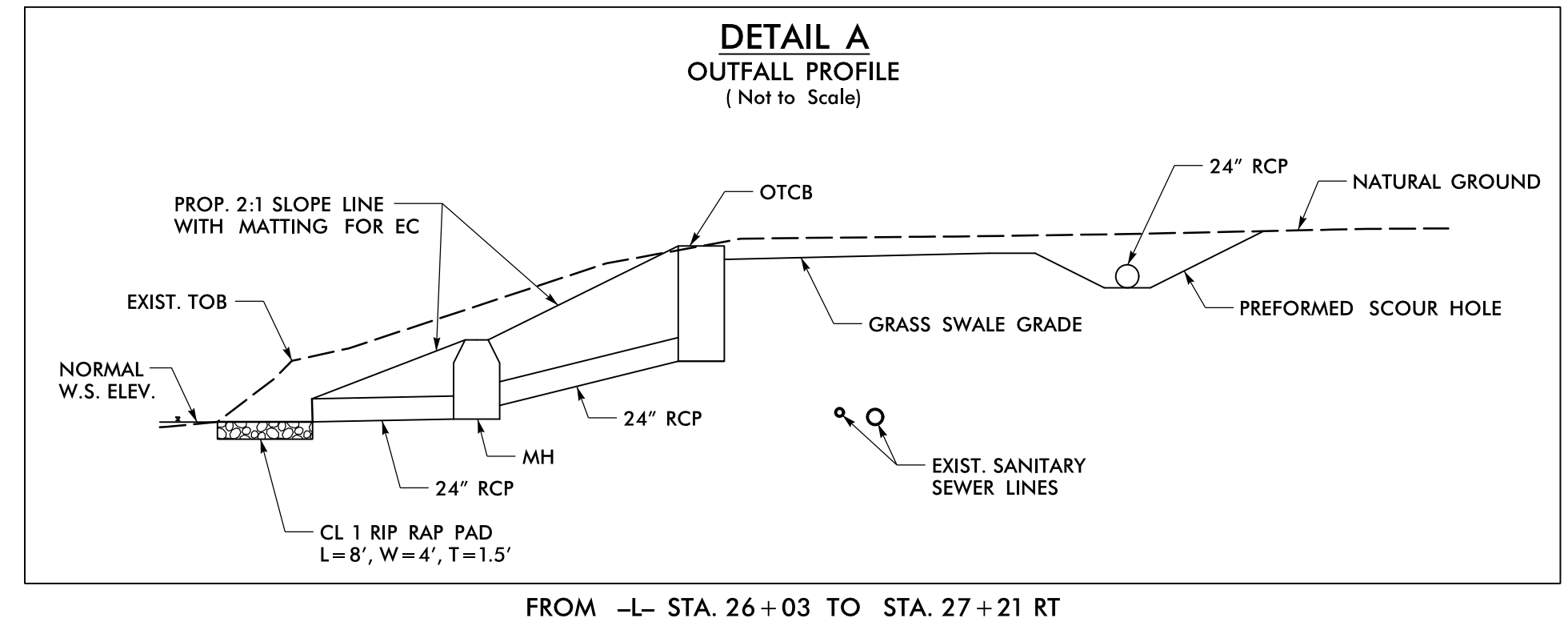
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STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

DRAINAGE DITCH DETAILS

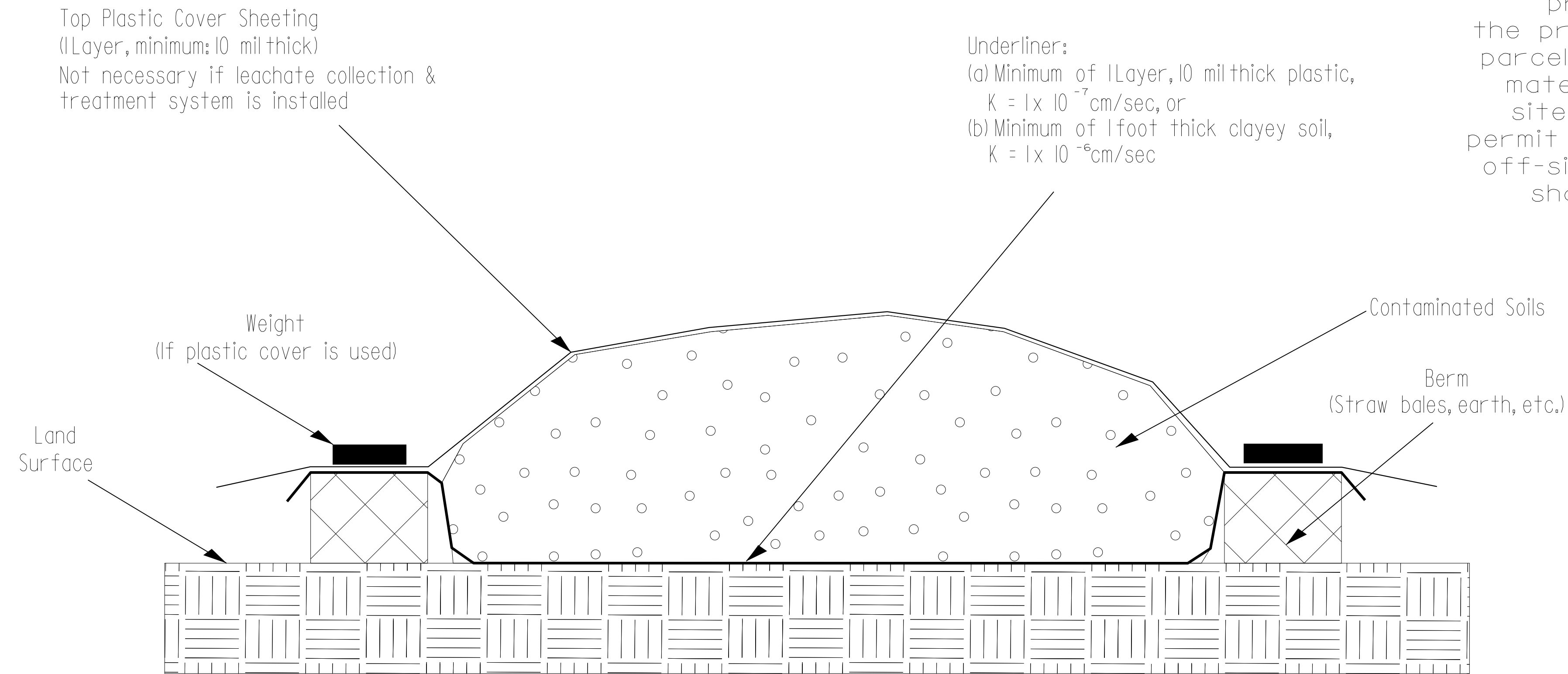
STV 100 Years
STV Engineers, Inc.
 300 West Trade St., Suite 715
 Charlotte, NC 28202
 NC License Number F-0991

PROJECT REFERENCE NO. <i>U-5114</i>	SHEET NO. <i>2D-1</i>
HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



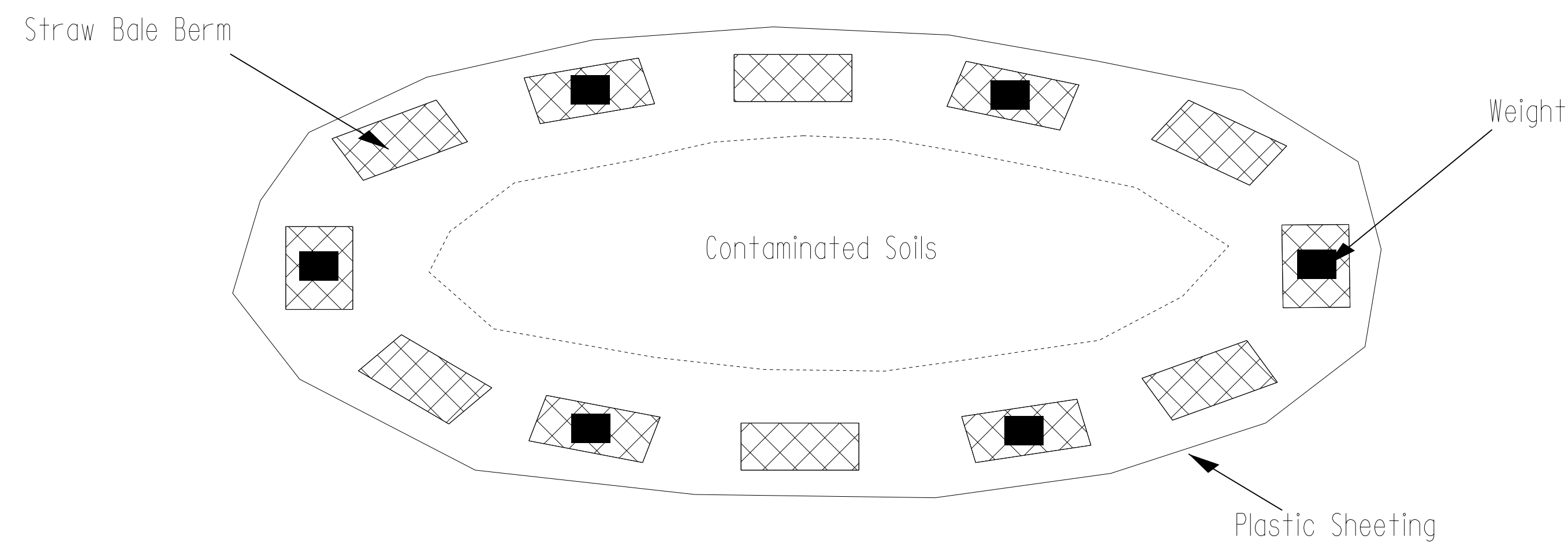
Detail for Temporary Containment of Contaminated Soil

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

SUMMARY OF EARTHWORK IN CUBIC YARDS

SURVEY LINE	FROM STATION	TO STATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
-L- (LT)	26 + 40.00	45 + 42.00	3,006		470		2,536
-L- (LT)	46 + 50.00	51 + 68.00	493		189		304
-L- (LT)	51 + 68.00	54 + 82.00	150		2,685	2,535	
-L- (LT)	54 + 82.00	61 + 85.00	138		3,802	3,664	
-Y1-	11 + 33.55	14 + 40.00	139		133		6
-Y3-	12 + 60.00	16 + 78.83	154	900	12,196	12,042	900
-Y5-	10 + 14.00	11 + 84.00	9	350	397	388	350
-Y- (LT)	11 + 50.00	25 + 66.00	420		64		356
-Y- (RT)	11 + 50.00	25 + 59.00	624		153		471
-SR-	10 + 50.00	19 + 00.00	3,196		1,472		1,724
-SR1-	10 + 14.00	12 + 25.00	814		110		704
-SR2-	10 + 75.00	11 + 86.46	67		56		11
SUBTOTAL			9,210	1,250	21,728	18,628	7,362
-L- (RT)	26 + 40.00	39 + 30.00	1,025		783		242
-L- (RT)	39 + 80.00	45 + 71.00	346		202		144
-L- (RT)	46 + 38.00	61 + 85.00	130		6,177	6,046	
-Y- (RT)	11 + 50.00	25 + 59.00	982		47		935
-Y7-	10 + 55.00	12 + 67.46	268		44		224
SUBTOTAL			2,751		7,253	6,046	1,544
-Y- (LT)	11 + 50.00	25 + 66.00	679		5		674
-Y- (M)	18 + 00.00	20 + 00.00	52		44		8
-Y- (M)	25 + 00.00	25 + 66.00			74	74	
-L- (M)	31 + 64.00	39 + 13.00	101		558	457	
-L- (M)	44 + 44.00	45 + 50.00	11		135	124	
-L- (M)	46 + 41.00	47 + 47.00	23		176	153	
-L- (M)	54 + 68.00	58 + 56.00	93		252	159	
SUBTOTAL			959		1,242	965	682
TOTAL			12,920	1,250	30,223	25,639	9,588
MATERIAL FOR SHOULDER CONSTRUCTION					95	95	
LOSS DUE TO CLEARING & GRUBBING			-500			500	
ADDITIONAL UNDERCUT				1,450	1,668	1,668	1,450
WASTE IN LIEU OF BORROW						-8,336	-8,336
PROJECT TOTAL			12,420	2,700	31,986	19,566	2,702
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT						978	
GRAND TOTAL			12,420	2,700	31,986	20,544	2,702
SAY			12,450	2,700		20,600	

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 STRUCTURE VOLUME = 5,800 CY

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STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD ²
-L-	29+64	30+60	RT	220
-L-	33+33	33+97	RT	18
-L-	36+22	37+30	RT	148
-L-	39+06	41+04	RT	447
-L-	47+20	47+86	LT	188
-L-	49+80	51+24	LT	197
-Y-	19+09	19+40	RT	87
-Y-	19+95	21+72	RT	81
-Y-	21+11	22+26	LT	129
-Y-	22+67	22+94	LT	46
-Y-	22+68	22+89	RT	104
-Y-	23+80	24+00	RT	56
-Y-	24+27	24+96	RT	54
-Y-	24+43	24+76	LT	38
-Y3-	12+10	13+10	RT	599
-Y5-	10+14	11+63	RT	298
-Y7-	11+95	12+67	RT	90
-SR-	10+62	12+48	RT	289
-SR-	10+65	11+32	LT	33
-SR-	17+70	18+93	LT	101
-SR-	19+75	20+25	LT	44
-SR2-	10+83	11+49	RT	32
-SR2-	10+83	11+83	LT	259
TOTAL:				3559
SAY:				3560

CHAIN LINK FENCE SUMMARY

SURVEY LINE	STATION	STATION	LENGTH
-W1-	34+02.56	36+14.65	255
-W2-	36+50.65	39+39.95	327
TOTAL:			582
SAY:			585

* W MEASURED FROM "N" AT THE BEGINNING OF THE ANCHOR TO "N" AT THE END OF THE ANCHOR.
 "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

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."

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 EA G NG	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	XI MOD	B-77	GREU TL-3	M-350	TYPE III	CAT-1	VI MOD						BIC	AT-1
-L-	35+30.00	35+92.59	LT	62.50																								GUARDRAIL AT RETAINING WALL
-L-	37+66.00	39+28.50	LT	162.50																								GUARDRAIL AT RETAINING WALL
-L-	47+26.80	47+95.55	LT	68.75			47+50.00		2.0 - 3.0	4.0	50.0'		1.0'															
-L-	52+00.00	55+68.73	RT	368.75			53+00.00		15.5 - 16.5	17.5	50.0'		1.0'															324
-L-	55+82.33	57+65.00	LT	131.25			56+65.00		15.5 - 16.5	17.5	50.0'		1.0'															
-SR-	12+76.10	12+89.12																										28
ADDITIONAL POSTS:				10.00																								
TOTAL:				793.75																								
TOTAL ANCHOR LENGTH:				168.75																								
TOTAL GUARDRAIL LENGTH:				625.00																								
SAY:				625.00 LF																								

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COMPUTED BY: MAT DATE: 4/30/2018
CHECKED BY: DCM DATE: 4/30/2018

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO. U-5114 SHEET NO. 3D-2

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

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

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

ABBREVIATIONS table listing codes and their corresponding material descriptions, such as C.A.A. for Corrugated Aluminium Alloy, C.B. for Catch Basin, etc.

REMARKS

1607101V122

COMPUTED BY: MAT DATE: 4/30/2018
CHECKED BY: DCM DATE: 4/30/2018

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO. U-5114 SHEET NO. 3D-3

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

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

Table with columns: LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, HDPE PIPE, C. S. PIPE, R. C. PIPE CLASS III, R. C. PIPE CLASS IV, R. C. PIPE CLASS V, ENDWALLS, REINFORCED ENDWALLS, DRAINAGE STRUCTURE, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, CONCRETE TRANSITIONAL SECTION, GRATE TYPE, and REMARKS. Includes a SHEET TOTALS row at the bottom.

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.

REMARKS

CONNECT ADJACENT PROJECT'S DRAINAGE

160702/122

COMPUTED BY: MAT DATE: 4/30/2018
CHECKED BY: DCM DATE: 4/30/2018

PROJECT NO. U-5114 SHEET NO. 3D-5

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, HDPE PIPE, C. S. PIPE, R. C. PIPE CLASS III, R. C. PIPE CLASS IV, R. C. PIPE CLASS V, ENDWALLS, REINFORCED ENDWALLS, MASONRY, DRAINAGE STRUCTURE, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, CONCRETE TRANSITIONAL SECTION, and REMARKS. Includes a SHEET TOTALS row at the bottom.

ABBREVIATIONS table listing terms 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.

REMARKS

1607010122

COMPUTED BY: MAT DATE: 4/30/2018
CHECKED BY: DCM DATE: 4/30/2018

PROJECT NO. U-5114 SHEET NO. 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, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, HDPE PIPE, C.S. PIPE, R.C. PIPE CLASS III, R.C. PIPE CLASS IV, R.C. PIPE CLASS V, ENDWALLS, REINFORCED ENDWALLS, DRAINAGE STRUCTURE, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, CONCRETE TRANSITIONAL SECTION, GRATE TYPE, and REMARKS. Includes a SHEET TOTALS row at the bottom.

ABBREVIATIONS table listing materials like 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.

REMARKS

16070101122

COMPUTED BY: MAT DATE: 4/30/2018
CHECKED BY: DCM DATE: 4/30/2018

PROJECT NO. U-5114 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 48 INCHES & UNDER)

Table with columns for LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, HDPE PIPE, C. S. PIPE, R. C. PIPE CLASS III, IV, V, ENDWALLS, REINFORCED ENDWALLS, DRAINAGE STRUCTURE, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, CONCRETE TRANSITIONAL SECTION, GRATE TYPE, and REMARKS. Includes a SHEET TOTALS row at the bottom.

ABBREVIATIONS table listing various materials and components like 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.

**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
				TOTAL LF:	200

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

SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION

LINE	Station	Station	Aggregate Type* ASU/AST	Aggregate Thickness INCHES	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Soil Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
-L-	40+00	42+00	ASU	18	650	1000	1250		
-L-	52+50	54+50	ASU	18	650	1000	1250		
-SR-	10+50	13+00	ASU	18	700	1150	1400		
-Y3-	14+00	15+00	AST	24			450		
	CONTINGENCY		ASU		200	300	800		
			TOTAL CY/TONS/SY:		2200	3450**	5150**	0	

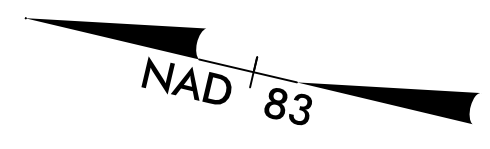
*ASU = Aggregate Subgrade
 *AST = Aggregate Stabilization
 **Total tons of "Class IV Subgrade Stabilization" and total square yards of "Geotextile for Soil Stabilization" are only the estimated quantities for ASU/AST and may only represent a portion of the subgrade stabilization and geotextile quantities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

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

PARCEL INDEX SHEET

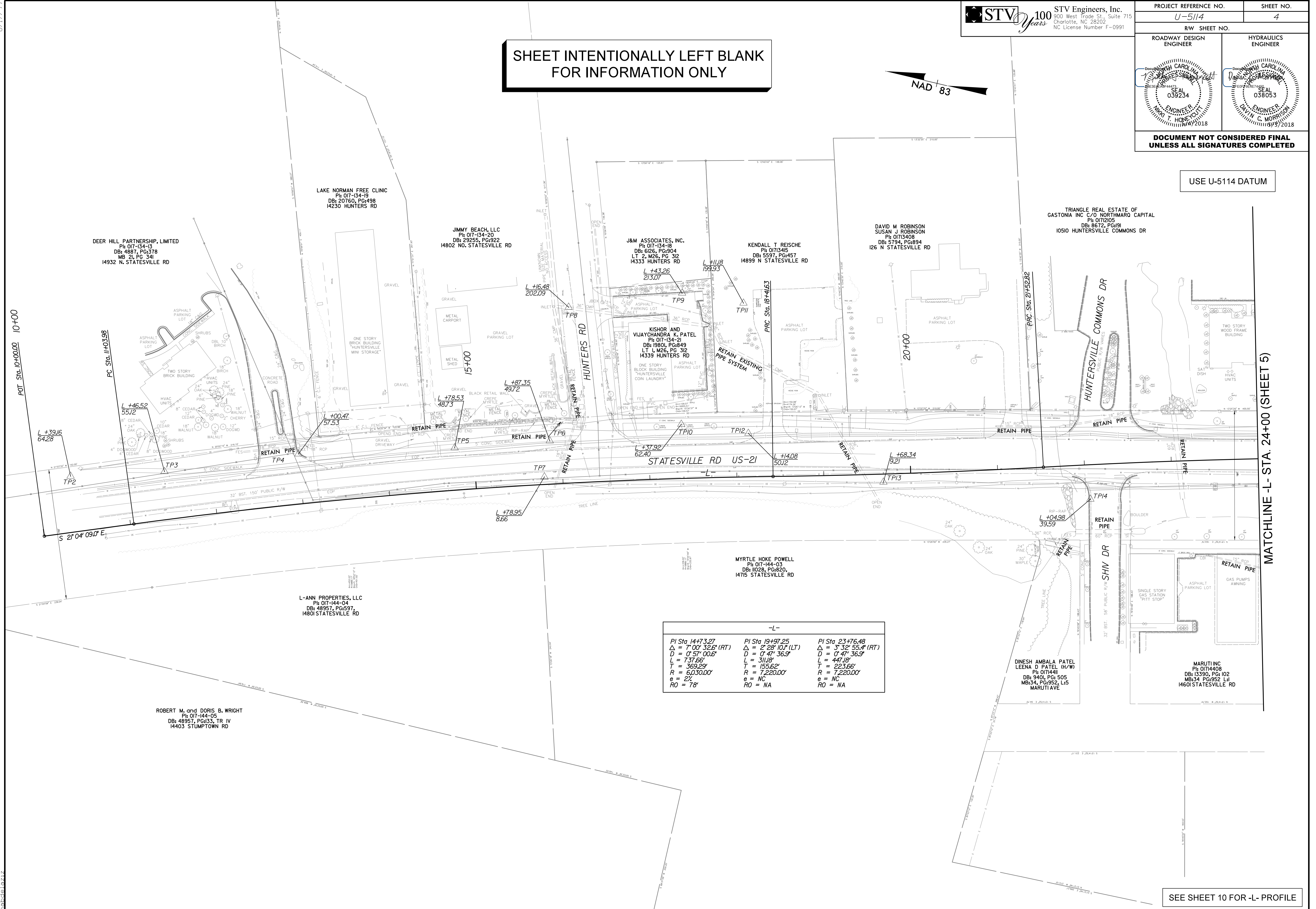
PARCEL NO.	SHEET NO.	PROPERTY OWNER NAME
1	5	STATE EMPLOYEE'S CREDIT UNION
2	5	ENCAR REALTY LLC
3	5	DEVAZ LLC
4	5	ARAOVA LLC
5	5, 9	GOODWILL INDUSTRIES OF THE SOUTHERN PIEDMONT INC
6	5	COOK-OUT HUNTERSVILLE, INC
7	5, 9	AMERICAN TOWERS INC
8	5	HOOK LAND LLC
9	5	LISAROB PROPERTIES LLC
10	5, 6	LISAROB PROPERTIES LLC
11	6	NICK GALLIS, JIMMY GALLIS
12	5, 6	JAMES P HOUSER JR
13	6, 8	GPG HUNTERSVILLE LLC
14	6	GPG HUNTERSVILLE LLC
16	6	SHREE JALARAM PROPERTIES LLC
17	6	FIRST NATIONAL BANK
18	6	PIEDMONT NATURAL GAS CO INC
20	6	DONG SIK KIM
21	6, 7, 8	SOUTHSTAR HOLDINGS-HUNTERSVILLE LLC CO TRIBEK PROPERTIES
23	7	QAS II INC
24	7	HILLCREST FOODS INC
25	7	LISA B WAINWRIGHT, LILLIA G BROWN, KAREN B DANIELS
26	7	VERNON L KRAUSE
27	7	SREE MAHA LAXMI INC
28	7	SREE MAHA LAXMI INC
32	7	FRIEDRICH MAX ROGER
33	8	DMK INVESTMENT GROUP LLC
34	8	DMK INVESTMENT GROUP LLC
35	8	SARAH RICHARDSON MCAULAY
36	8	FIRST BANK
37	8	OAKHURST 111 LLC
38	8	SOUTHERN HOLDINGS LLC & SBBH INVESTMENTS LLC
39	8	MICHAEL V WARD JANE H WARD CO THOMSON REUTERS PTS
40	8	CAH HOLDINGS LLC
41	8	FIFTH THIRD BANK
42	8	J.C. FAW
44	9	JAMES FUNERAL SERVICES LLC
45	9	PARKVIEW NC ASSOCIATES LP
46	9	PIEMONT NATURAL GAS INC
48	9	NHC PARTNERSHIP 8 LP
49	9	PARKVIEW NC ASSOCIATES LP
51	8	TOWN OF HUNTERSVILLE
51A	7	TOWN OF HUNTERSVILLE
52	5	CITY OF CHARLOTTE
53	5	CITY OF CHARLOTTE
54	5	SEA MOUNTAIN VENTURES II LLC
55	5, 6	HUNTERSVILLE HOTEL INC

SHEET INTENTIONALLY LEFT BLANK FOR INFORMATION ONLY



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

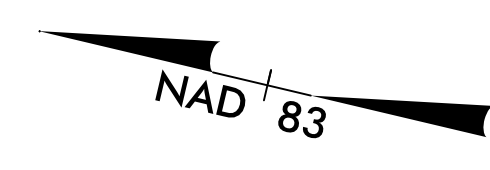
USE U-5114 DATUM



-L-

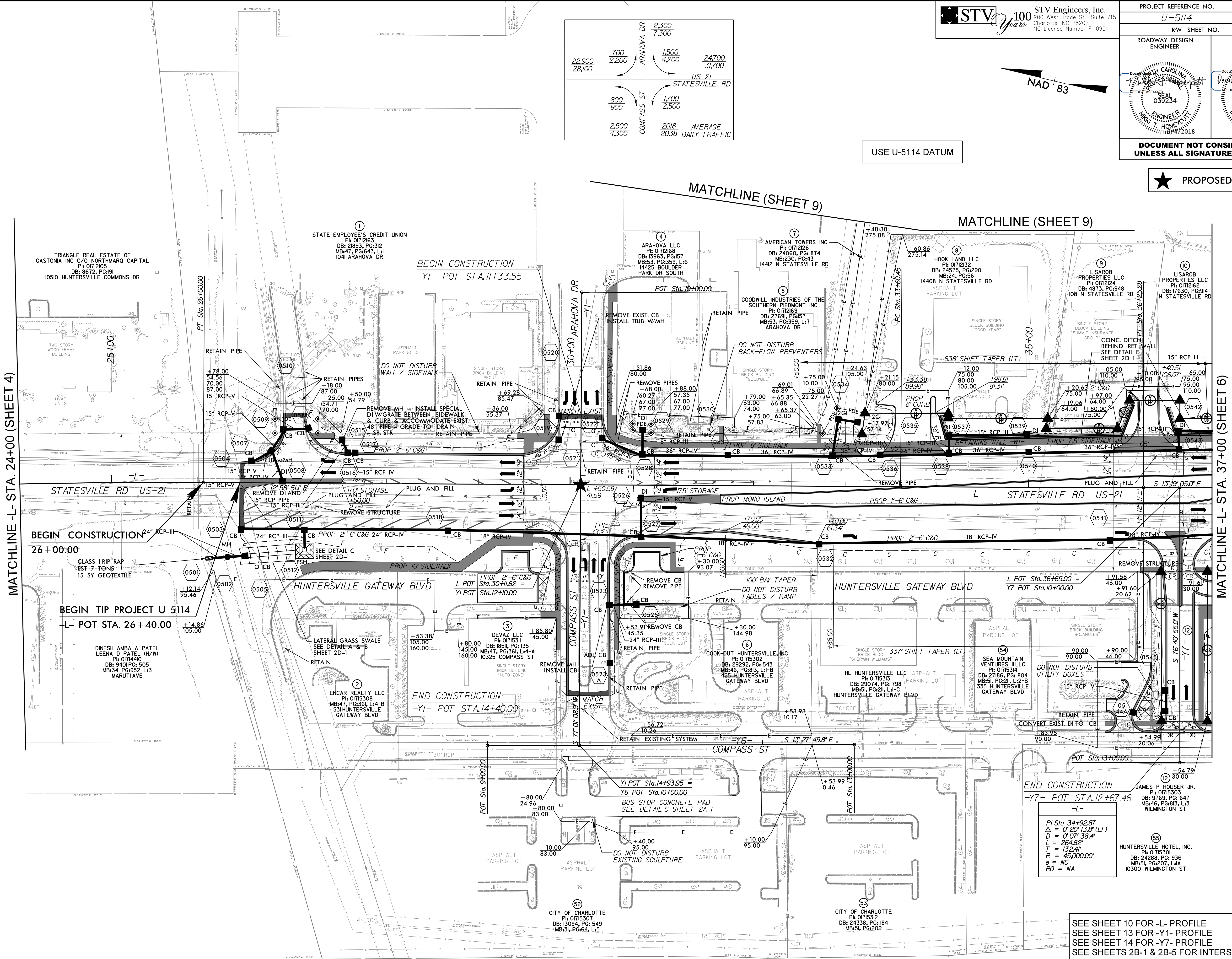
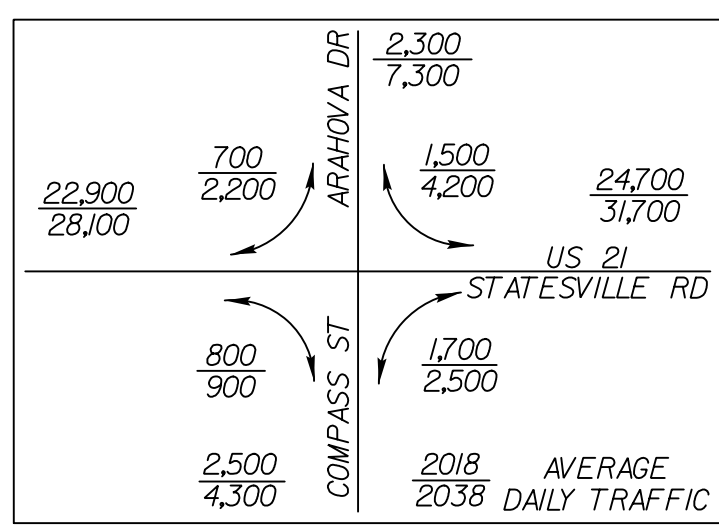
PI Sta 14+73.27 Δ = 7' 00" 32.6" (RT) D = 0' 57" 00.6" L = 737.66' T = 363.29' R = 6,030.00' e = 2' RO = 78'	PI Sta 19+97.25 Δ = 2' 28" 10.1" (LT) D = 0' 47" 36.9" L = 311.8' T = 155.62' R = 7,220.00' e = NC RO = NA	PI Sta 23+76.48 Δ = 3' 32" 55.4" (RT) D = 0' 47" 36.9" L = 447.18' T = 223.66' R = 7,220.00' e = NC RO = NA
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PROJECT REFERENCE NO. U-5114	SHEET NO. 5
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	SEAL 039234
	SEAL 038053
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>	



USE U-5114 DATUM

★ PROPOSED SIGNAL



MATCHLINE -L- STA. 24+00 (SHEET 4)

MATCHLINE -L- STA. 37+00 (SHEET 6)

BEGIN CONSTRUCTION
 -Y1- POT STA. 11+33.55

BEGIN CONSTRUCTION
 -Y1- POT STA. 11+33.55

END CONSTRUCTION
 -Y1- POT STA. 14+40.00

BEGIN TIP PROJECT U-5114
 -L- POT STA. 26+40.00

END CONSTRUCTION
 -Y7- POT STA. 12+67.46

SEE SHEET 10 FOR -L- PROFILE
 SEE SHEET 13 FOR -Y1- PROFILE
 SEE SHEET 14 FOR -Y7- PROFILE
 SEE SHEETS 2B-1 & 2B-5 FOR INTERSECTION DETAIL

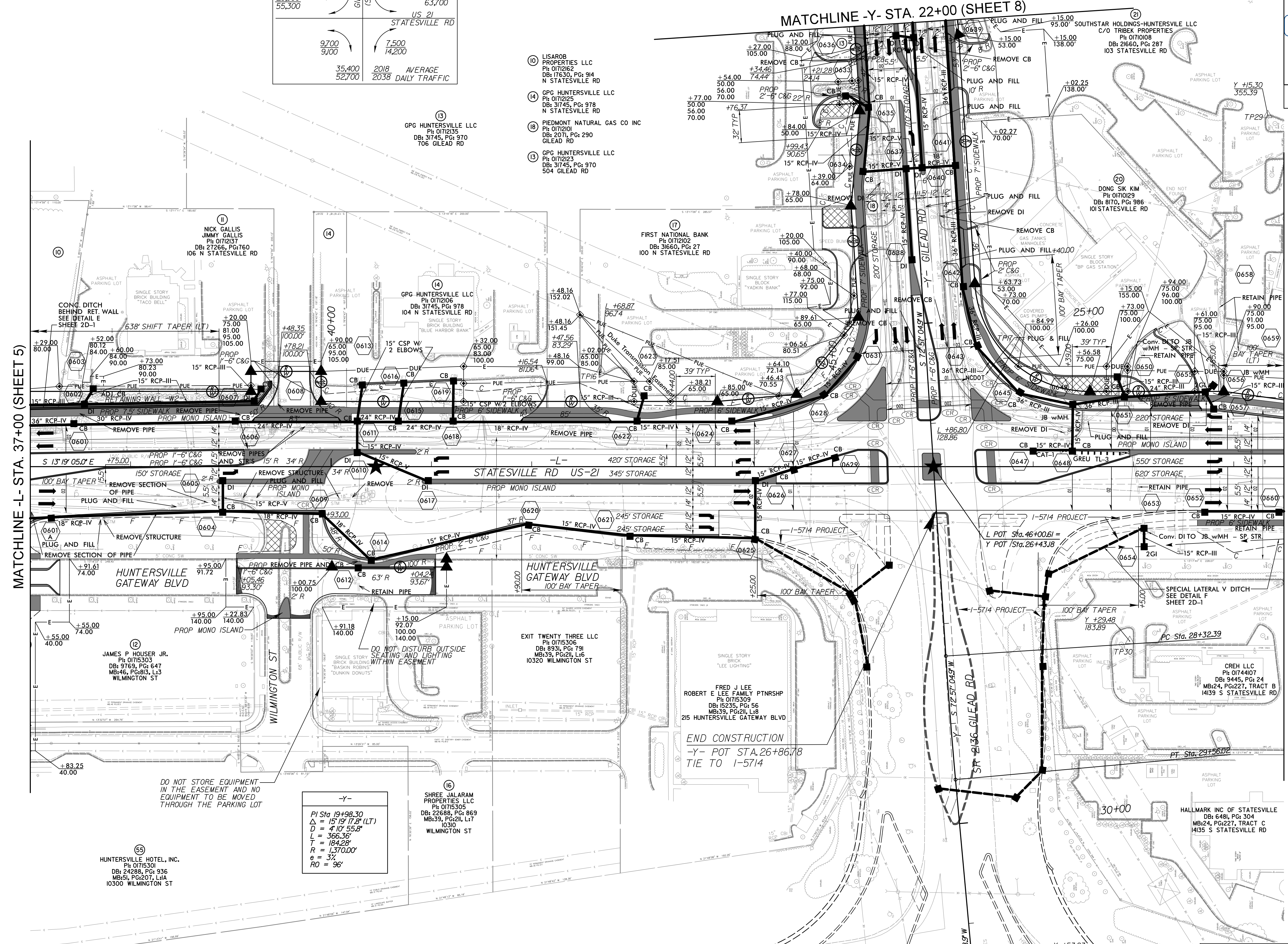
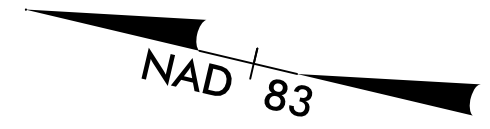
PROJECT REFERENCE NO. U-5114	SHEET NO. 6
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	SEAL 039234
	SEAL 038053

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

★ PROPOSED SIGNAL

USE U-5114 DATUM

28,900 55,300	3,900 2,900	GILEAD RD (SR 2136)	24,800 38,500	2,700 6,200	25,500 63,700
STATESVILLE RD US 21					
2018 AVERAGE 35,400 2018 2038 DAILY TRAFFIC 52,700 14,200					



MATCHLINE -L- STA. 37+00 (SHEET 5)

MATCHLINE -Y- STA. 22+00 (SHEET 8)

MATCHLINE -L- STA. 49+50 (SHEET 7)

- 10 LISAROB PROPERTIES LLC
PI: 071262
DB: 17630, PG: 914
N STATESVILLE RD
- 14 GPG HUNTERSVILLE LLC
PI: 071225
DB: 31745, PG: 978
N STATESVILLE RD
- 18 PIEDMONT NATURAL GAS CO INC
PI: 071210
DB: 20371, PG: 290
GILEAD RD
- 13 GPG HUNTERSVILLE LLC
PI: 071223
DB: 31745, PG: 970
504 GILEAD RD

10 NICK GALLIS JIMMY GALLIS
PI: 071237
DB: 27266, PG: 760
106 N STATESVILLE RD

13 GPG HUNTERSVILLE LLC
PI: 071235
DB: 31745, PG: 970
706 GILEAD RD

17 FIRST NATIONAL BANK
PI: 071202
DB: 31660, PG: 27
100 N STATESVILLE RD

14 GPG HUNTERSVILLE LLC
PI: 071206
DB: 31745, PG: 978
104 N STATESVILLE RD

12 JAMES P HOUSER JR.
PI: 0715303
DB: 9769, PG: 647
MB: 46, PG: 813, L: 3
WILMINGTON ST

DO NOT STORE EQUIPMENT IN THE EASEMENT AND NO EQUIPMENT TO BE MOVED THROUGH THE PARKING LOT

-Y-
PI Sta 19+98.30
Δ = 15' 19" (7.8' (LT))
D = 4' 10" 55.8"
L = 366.36'
T = 104.28'
R = 1,370.00'
e = 3%
RO = 96'

16 SHREE JALARAM PROPERTIES LLC
PI: 0715305
DB: 22688, PG: 869
MB: 39, PG: 211, L: 8
1030 WILMINGTON ST

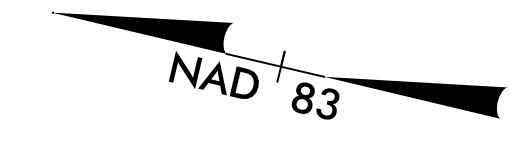
FRED J LEE ROBERT E LEE FAMILY PTRNSHP
PI: 0715309
DB: 15235, PG: 56
MB: 39, PG: 211, L: 8
215 HUNTERSVILLE GATEWAY BLVD

END CONSTRUCTION
-Y- POT STA. 26+86.78
TIE TO I-5714

15 HUNTERSVILLE HOTEL, INC.
PI: 0715301
DB: 24288, PG: 936
MB: 51, PG: 207, L: 1A
10300 WILMINGTON ST

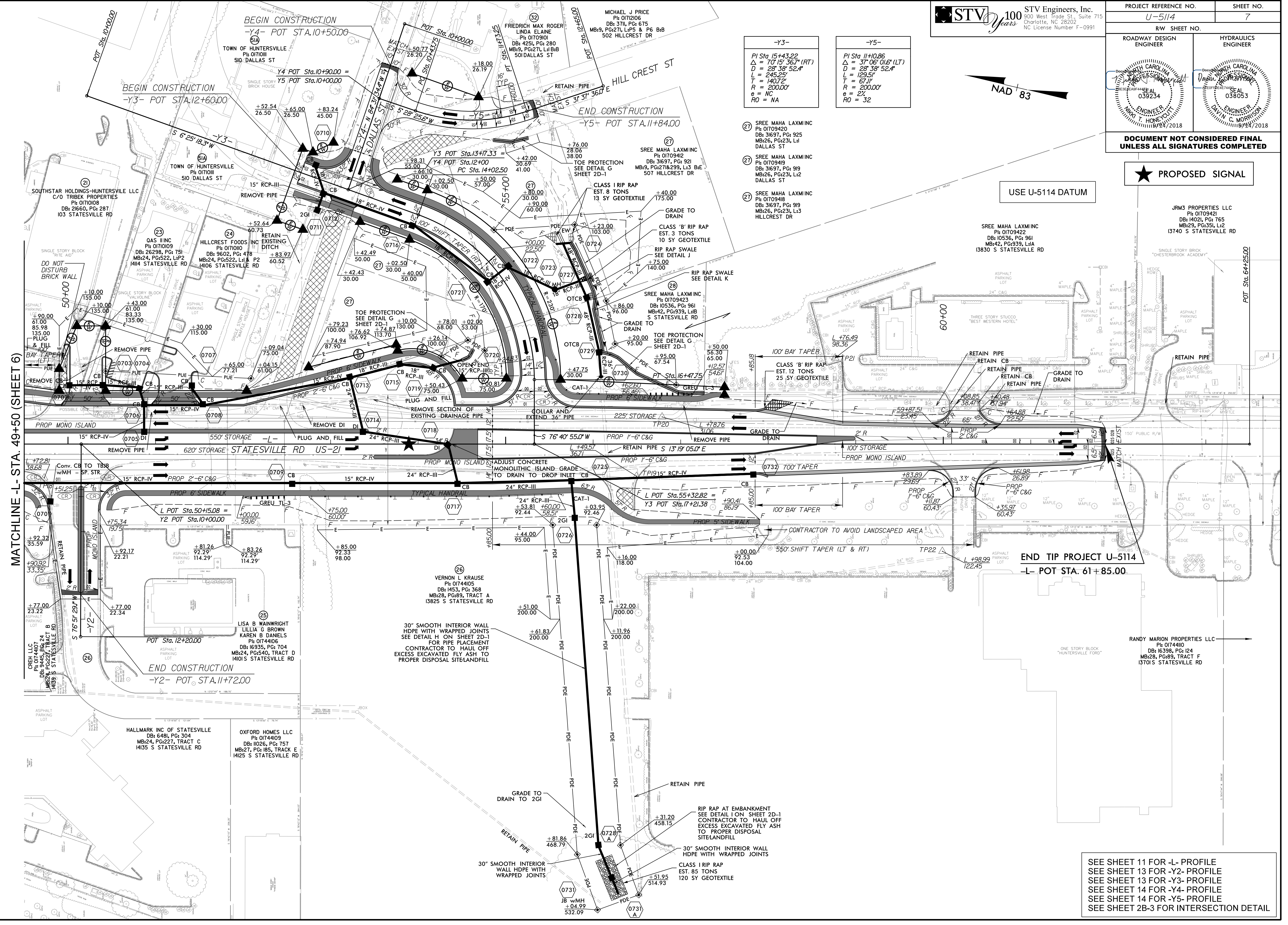
SEE SHEET 11 FOR -L- PROFILE
SEE SHEET 12 FOR -Y- PROFILE
SEE SHEETS 2B-1, 2B-2 & 2B-4 FOR INTERSECTION DETAIL

PROJECT REFERENCE NO. U-5114	SHEET NO. 7
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	SEAL 039234
	SEAL 038053
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>	



USE U-5114 DATUM

★ PROPOSED SIGNAL



-Y3-	-Y5-
PI Sta 15+43.22 $\Delta = 10' 15" 36.7" (RT)$ $D = 28' 38" 52.4"$ $L = 245.23'$ $T = 140.72'$ $R = 200.00'$ $e = NC$ $RO = NA$	PI Sta 11+0.86 $\Delta = 37' 06" 016" (LT)$ $D = 28' 38" 52.4"$ $L = 129.51'$ $T = 67.1'$ $R = 200.00'$ $e = 2'$ $RO = 32$

- (27) SREE MAHA LAXMINC
 PI: 0109420
 DB: 31697, PG: 925
 MB:26, PG:231, L:1
 DALLAS ST
- (27) SREE MAHA LAXMINC
 PI: 0109412
 DB: 31697, PG: 921
 MB:9, PG:218&299, L:3 B:6
 507 HILLCREST DR
- (27) SREE MAHA LAXMINC
 PI: 0109418
 DB: 31697, PG: 919
 MB:26, PG:231, L:2
 HILLCREST DR

SREE MAHA LAXMINC
 PI: 0109422
 DB: 10536, PG: 961
 MB:42, PG:939, L:1A
 13830 S STATESVILLE RD

JRM3 PROPERTIES LLC
 PI: 0109421
 DB: 14021, PG: 765
 MB:29, PG:351, L:2
 13740 S STATESVILLE RD

VERNON L KRAUSE
 PI: 0174405
 DB: 1453, PG: 368
 MB:28, PG:69, TRACT A
 13825 S STATESVILLE RD

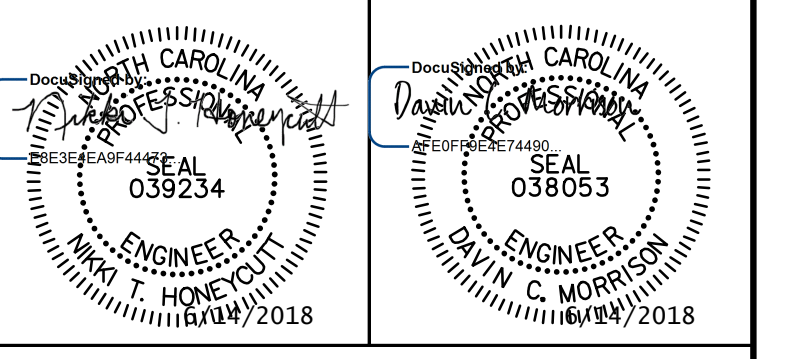
30" SMOOTH INTERIOR WALL HDPE WITH WRAPPED JOINTS
 SEE DETAIL H ON SHEET 2D-1
 FOR PIPE PLACEMENT
 CONTRACTOR TO HAUL OFF
 EXCESS EXCAVATED FLY ASH TO
 PROPER DISPOSAL SITELANDFILL

HALLMARK INC OF STATESVILLE
 DB: 6481, PG: 304
 MB:24, PG:227, TRACT C
 14135 S STATESVILLE RD

OXFORD HOMES LLC
 PI: 0174409
 DB: 11026, PG: 757
 MB:27, PG: 185, TRACK E
 14125 S STATESVILLE RD

SEE SHEET 11 FOR -L- PROFILE
 SEE SHEET 13 FOR -Y2- PROFILE
 SEE SHEET 13 FOR -Y3- PROFILE
 SEE SHEET 14 FOR -Y4- PROFILE
 SEE SHEET 14 FOR -Y5- PROFILE
 SEE SHEET 2B-3 FOR INTERSECTION DETAIL

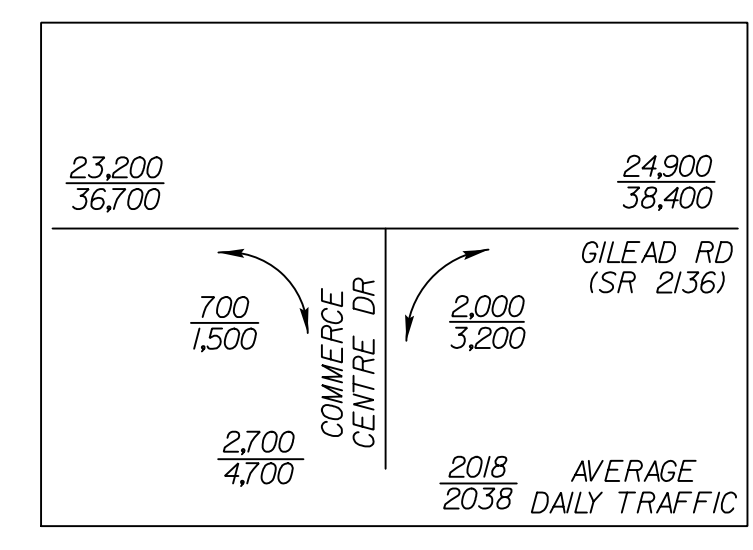
8/17/19



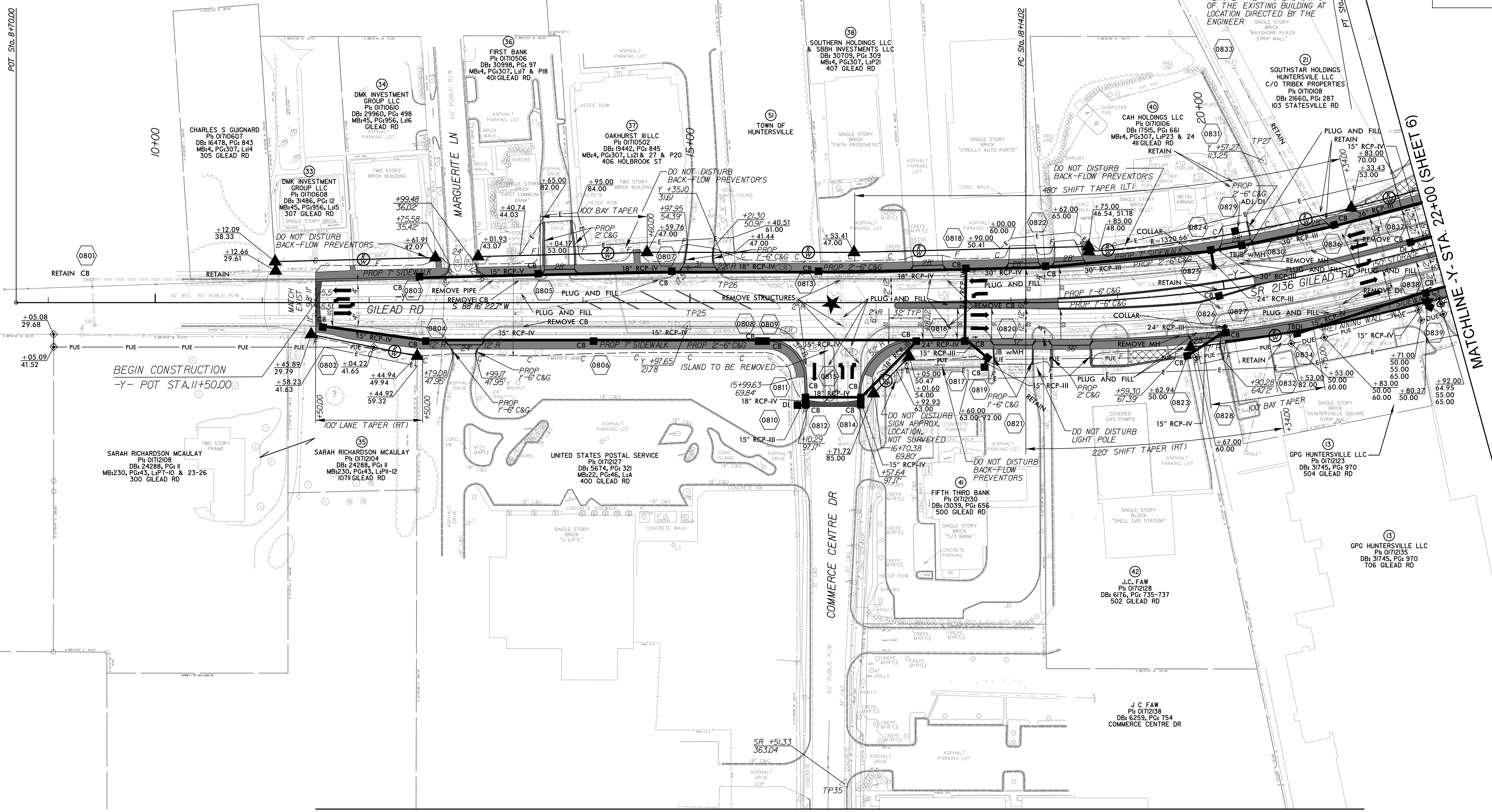
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

★ PROPOSED SIGNAL

USE U-5114 DATUM



-Y- PI Sta. 28+94.2 Δ = 1' 29" 06.0' (LT) D = 1' 12" 04.2' L = 123.63' T = 61.82' R = 4,770.00' e = NC RO = NA

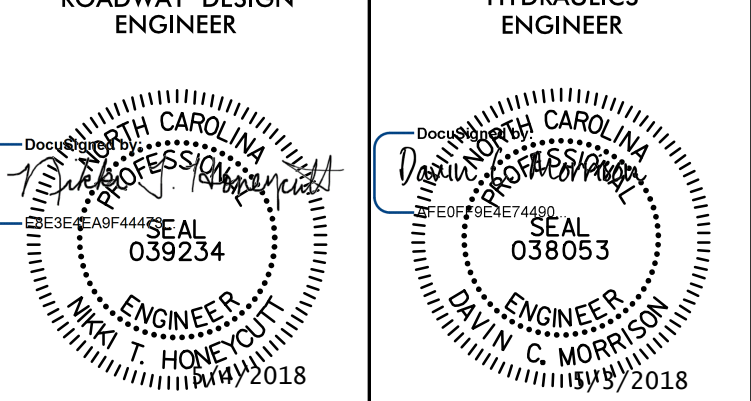


POT Sta. 8+70.00

6/14/2018 au:\proj\proj\SH\U-5114-r-dly-ps-h08.dgn

MATCHLINE (SHEET 9)

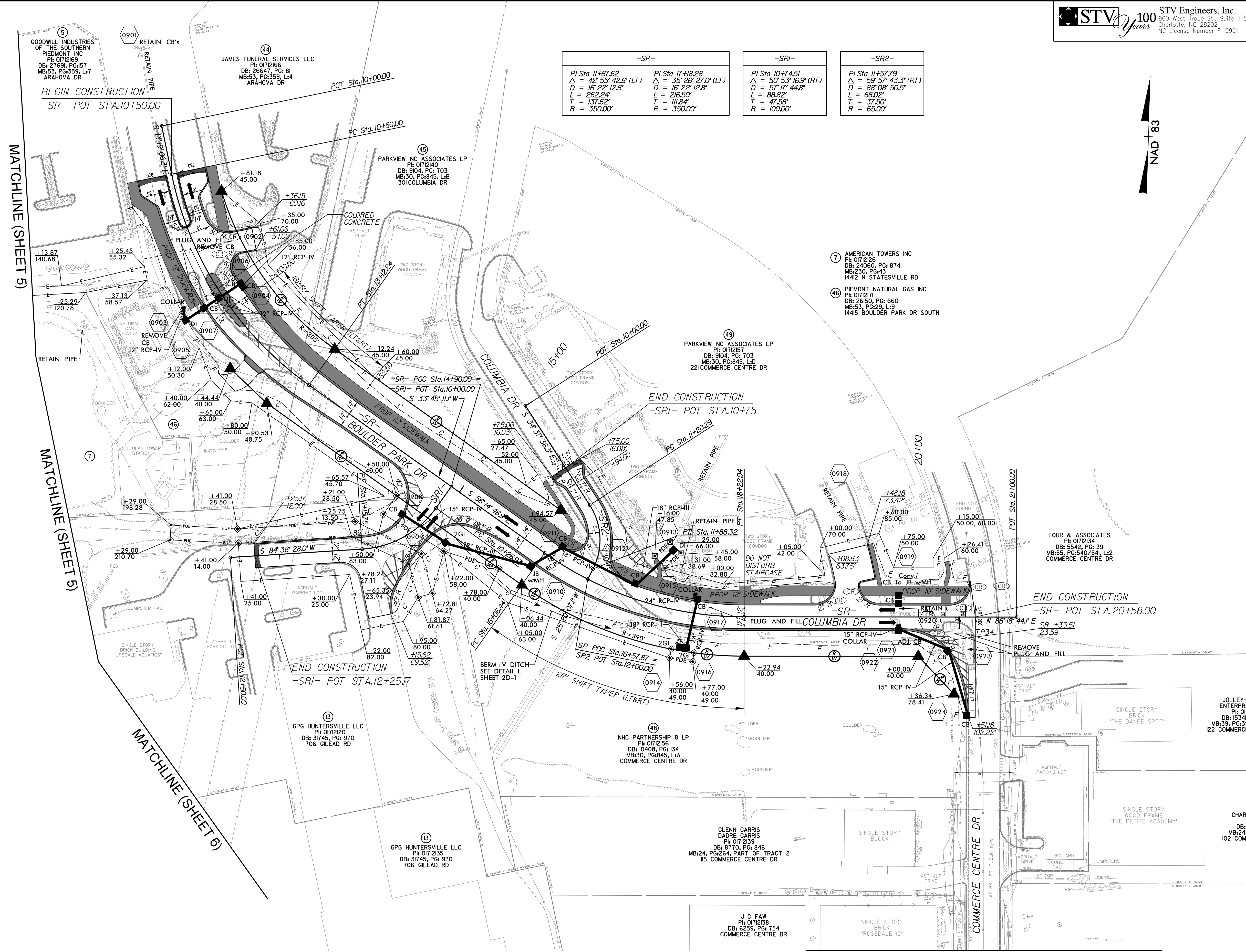
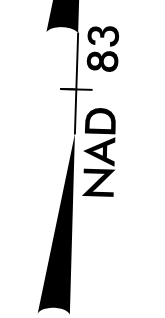
SEE SHEET 12 FOR -Y- PROFILE SEE SHEET 2B-4 FOR INTERSECTION DETAIL



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

USE U-5114 DATUM

-SR-		-SRI-		-SR2-	
PI Sta 11+87.62	PI Sta 17+18.28	PI Sta 10+74.51	PI Sta 11+57.79		
$\Delta = 42' 55" 42.6" (LT)$	$\Delta = 35' 26" 27.0" (LT)$	$\Delta = 50' 53" 16.9" (RT)$	$\Delta = 59' 57" 43.3" (RT)$		
$D = 16' 22" 12.8"$	$D = 16' 22" 12.8"$	$D = 57' 17" 44.8"$	$D = 88' 08" 50.5"$		
$L = 262.24'$	$L = 216.50'$	$L = 88.82'$	$L = 68.02'$		
$T = 137.62'$	$T = 111.84'$	$T = 47.58'$	$T = 37.50'$		
$R = 350.00'$	$R = 350.00'$	$R = 100.00'$	$R = 65.00'$		



MATCHLINE (SHEET 5)

MATCHLINE (SHEET 5)

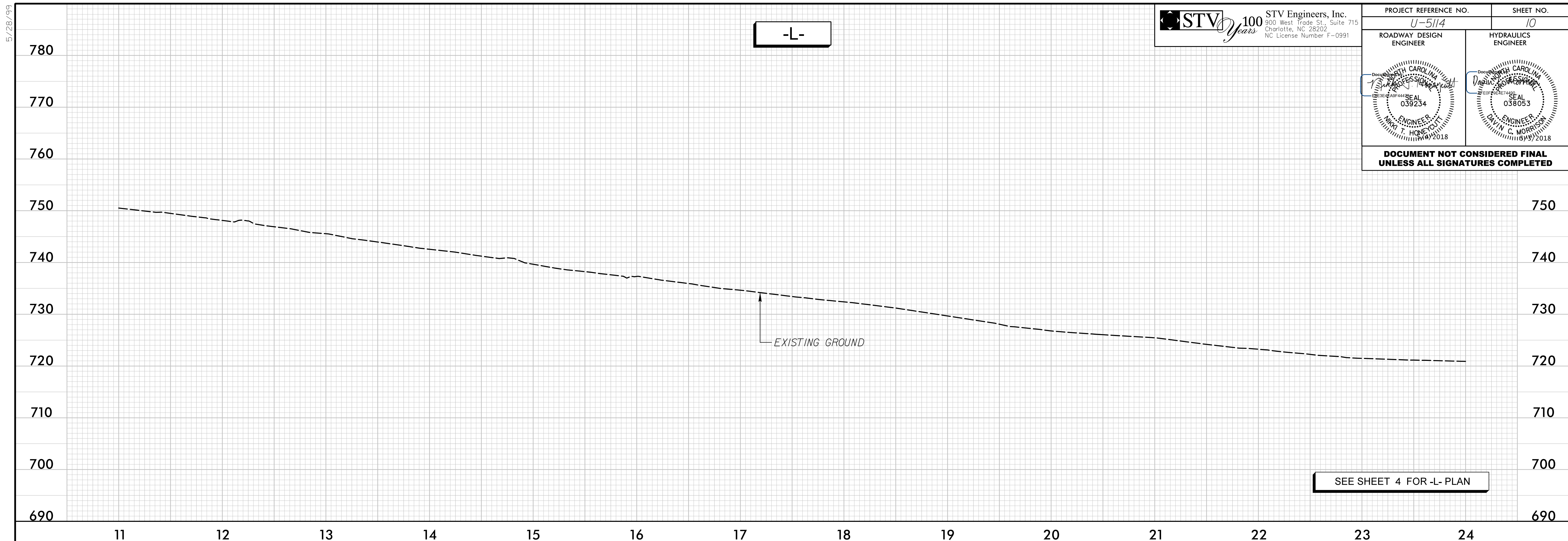
MATCHLINE (SHEET 6)

MATCHLINE (SHEET 8)

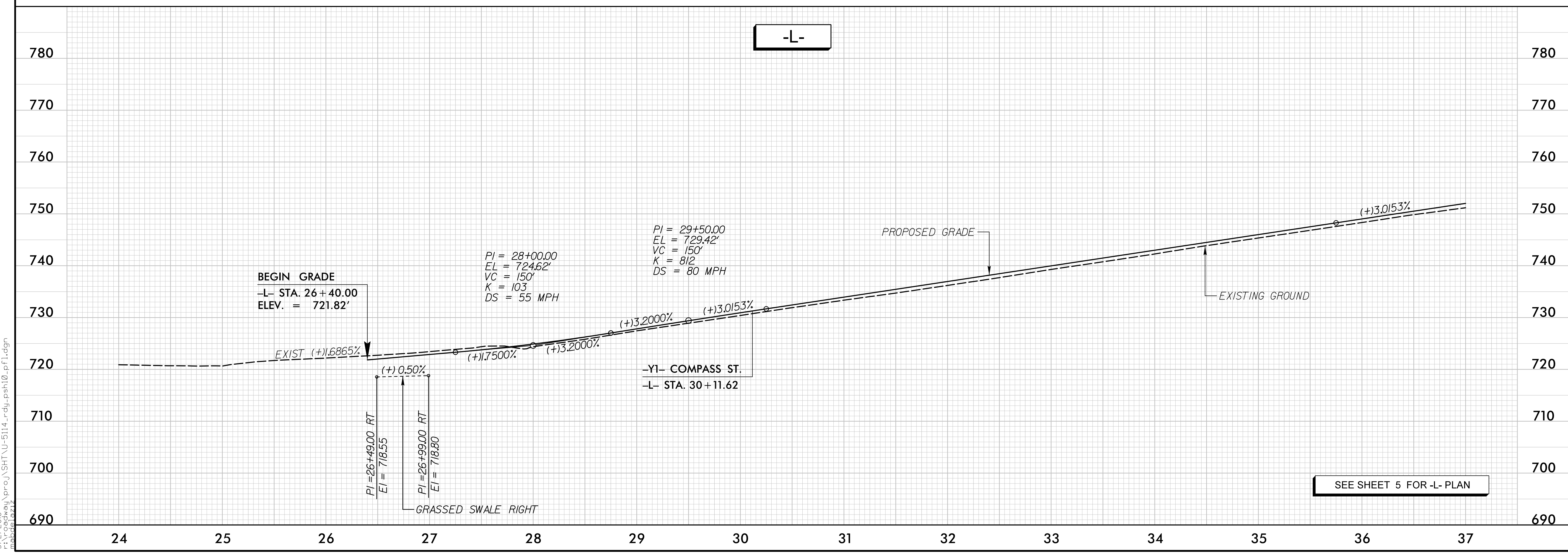
SEE SHEET 15 FOR -SR- PROFILE
SEE SHEET 15 FOR -SRI- PROFILE
SEE SHEET 15 FOR -SR2- PROFILE

8/17/19
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mabb01

PROJECT REFERENCE NO. <i>U-5114</i>	SHEET NO. <i>10</i>
ROADWAY DESIGN ENGINEER <i>[Signature]</i>	HYDRAULICS ENGINEER <i>[Signature]</i>
SEAL 039234 2018	SEAL 038053 2018
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



SEE SHEET 4 FOR -L- PLAN



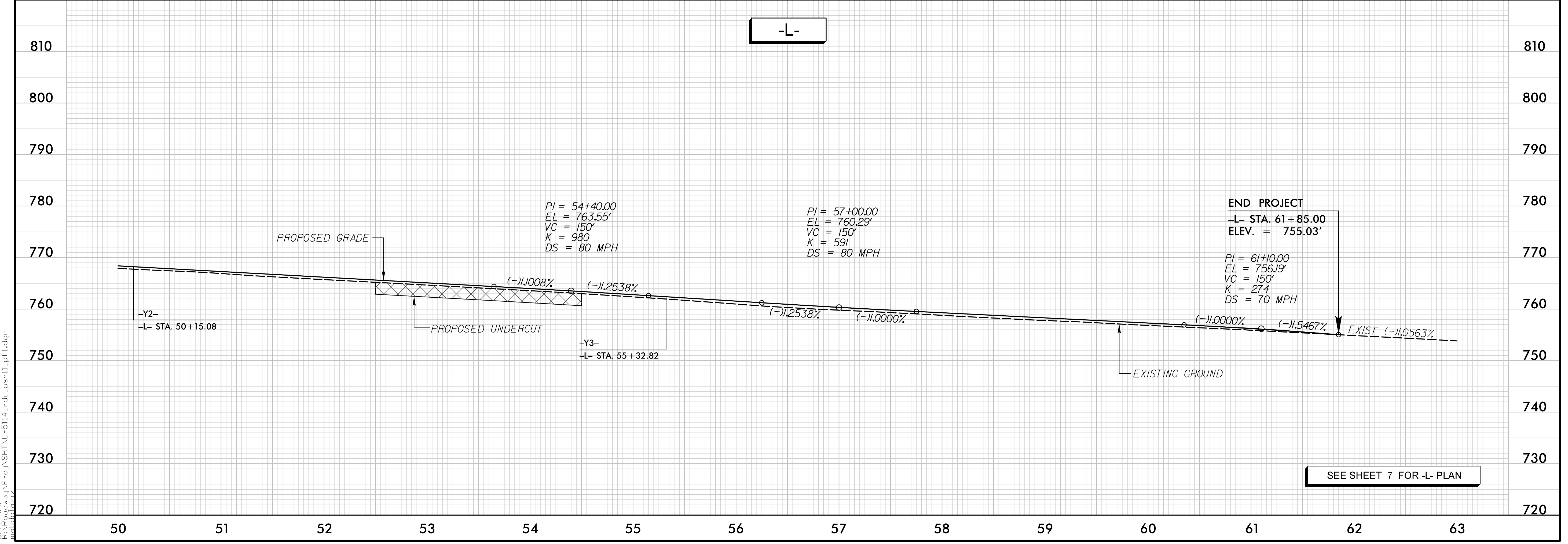
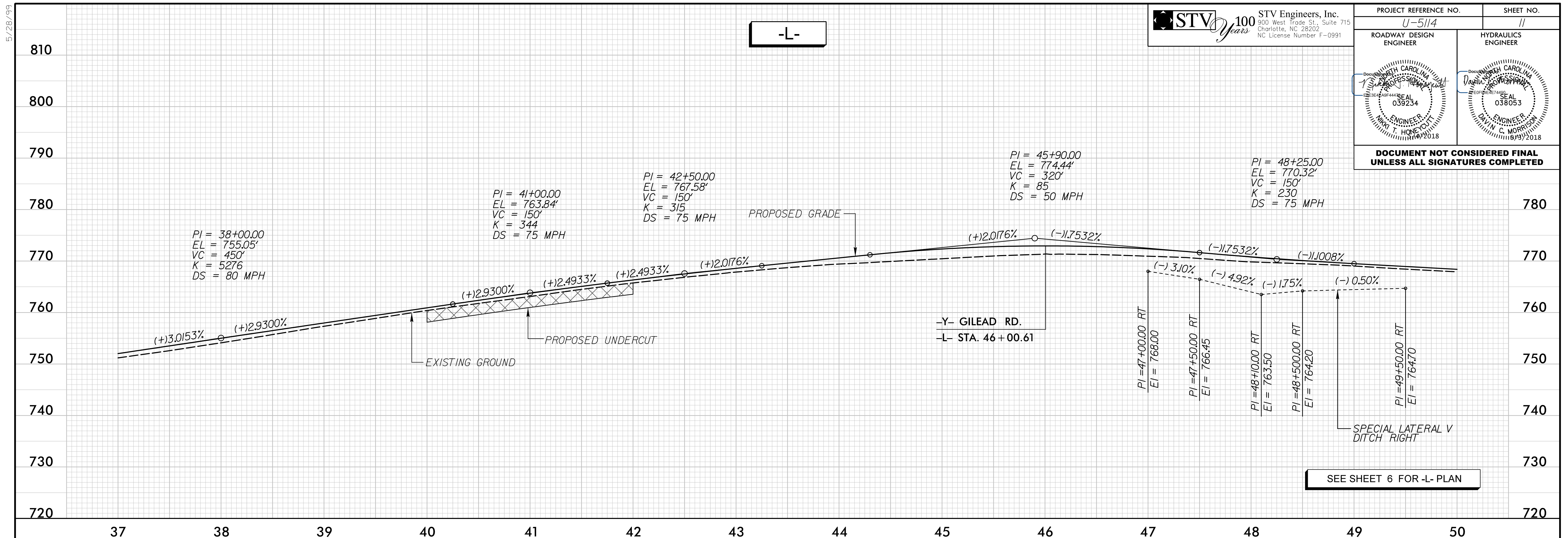
SEE SHEET 5 FOR -L- PLAN

5/2/2018
mabdelaziz

PROJECT REFERENCE NO. <i>U-5114</i>	SHEET NO. <i>11</i>
ROADWAY DESIGN ENGINEER <i>[Signature]</i>	HYDRAULICS ENGINEER <i>[Signature]</i>
SEAL 039234	SEAL 038053
DATE: 11/15/2018	DATE: 11/15/2018

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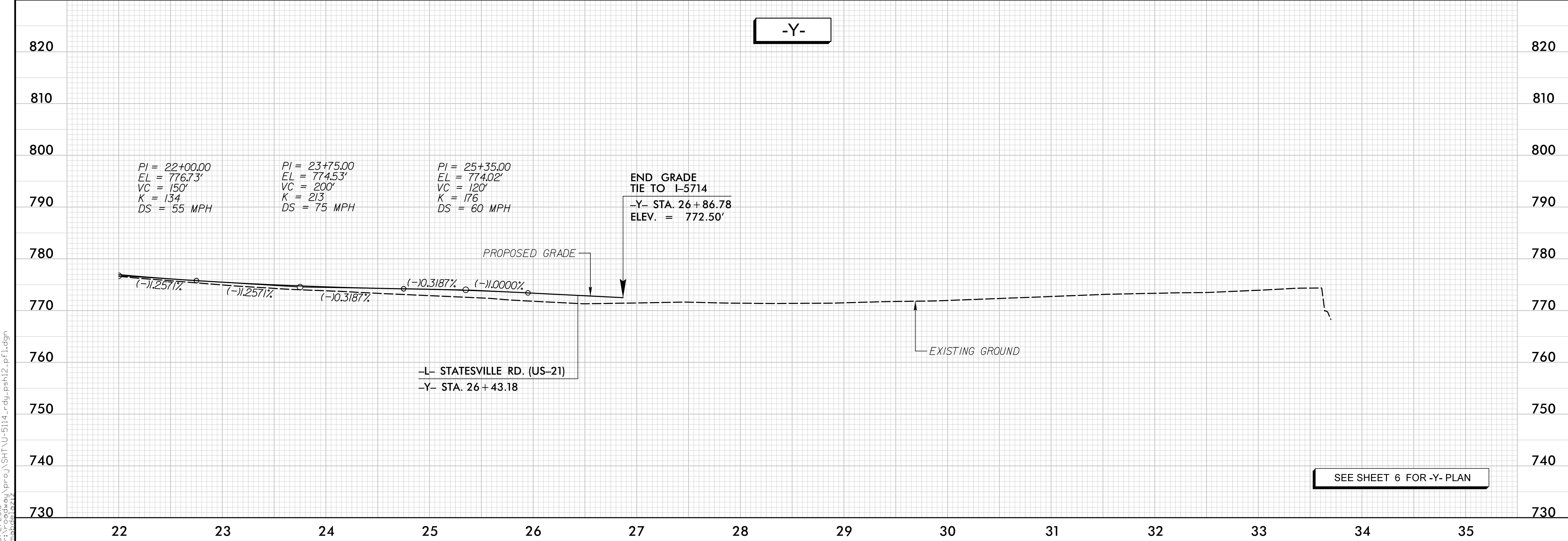
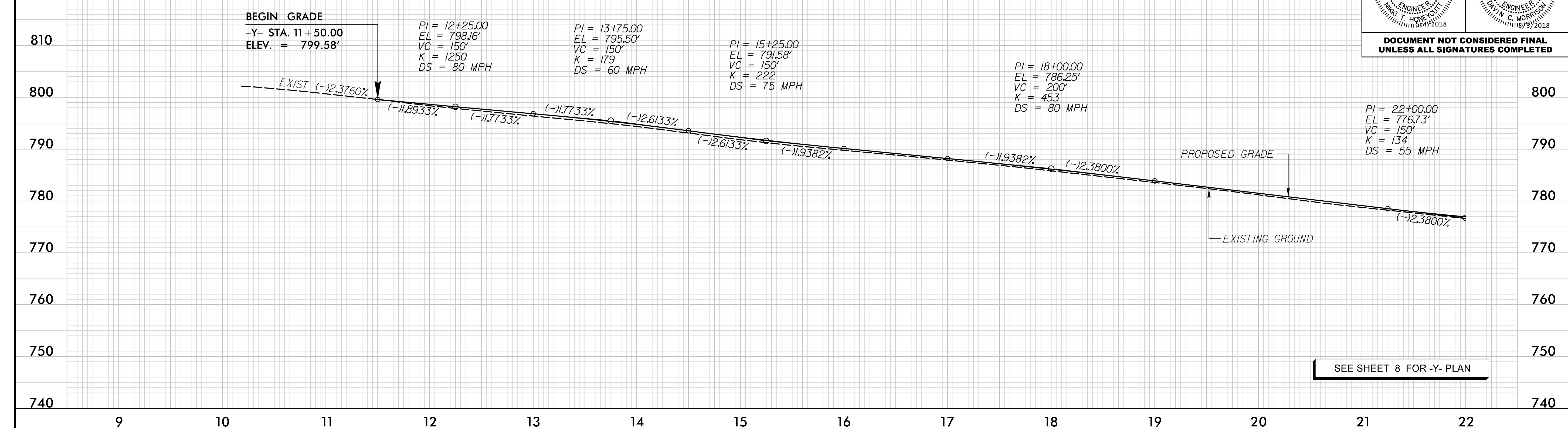
5/28/99



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PROJECT REFERENCE NO. U-5114	SHEET NO. 12
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

5/28/19



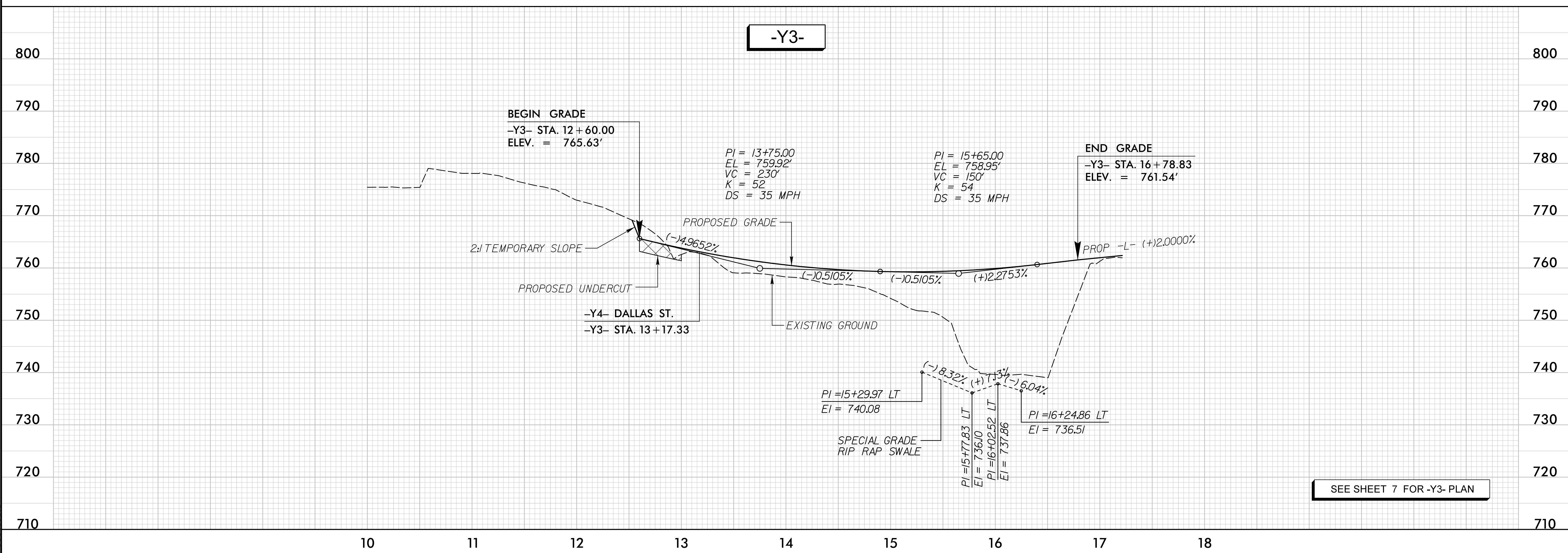
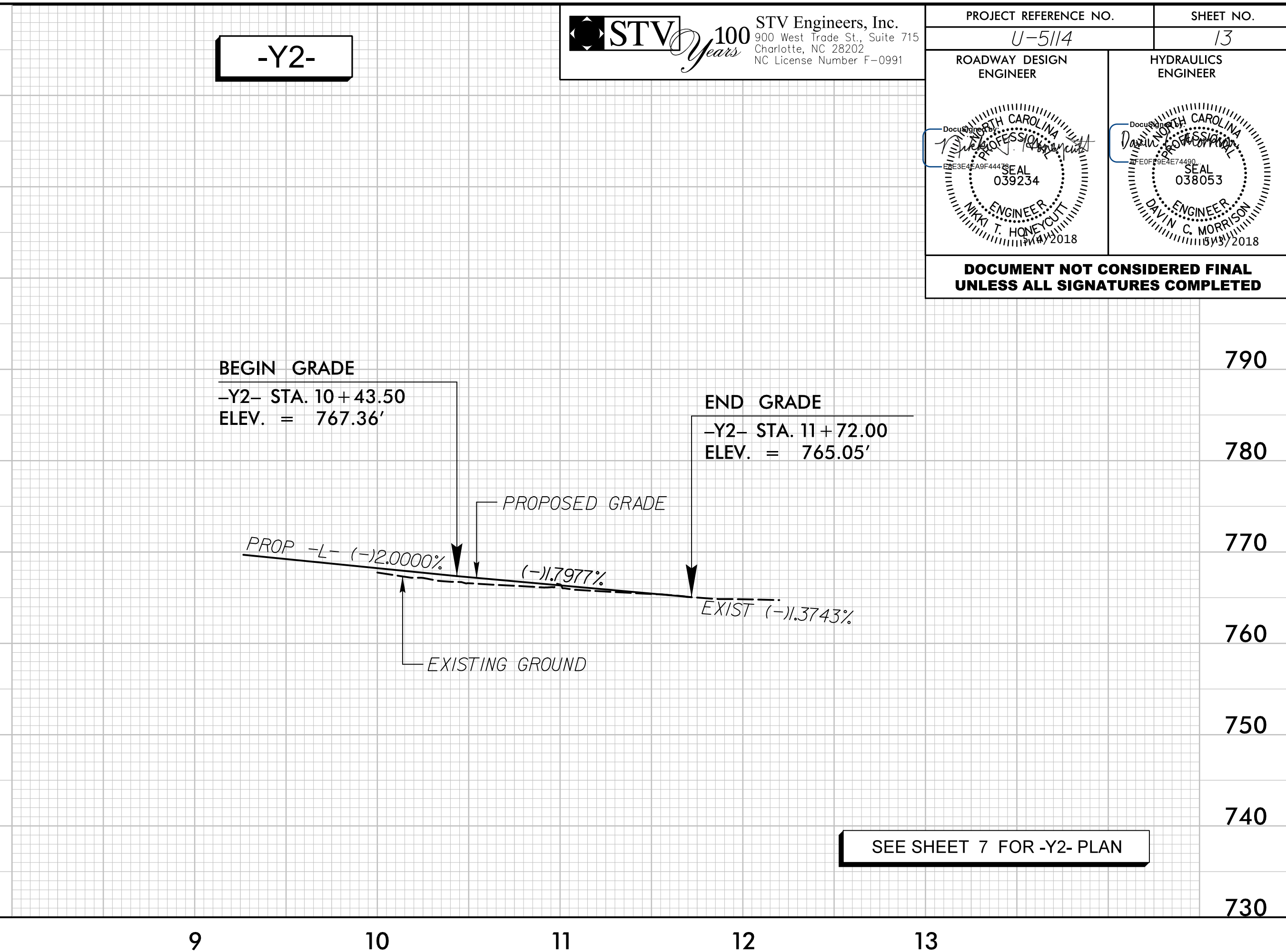
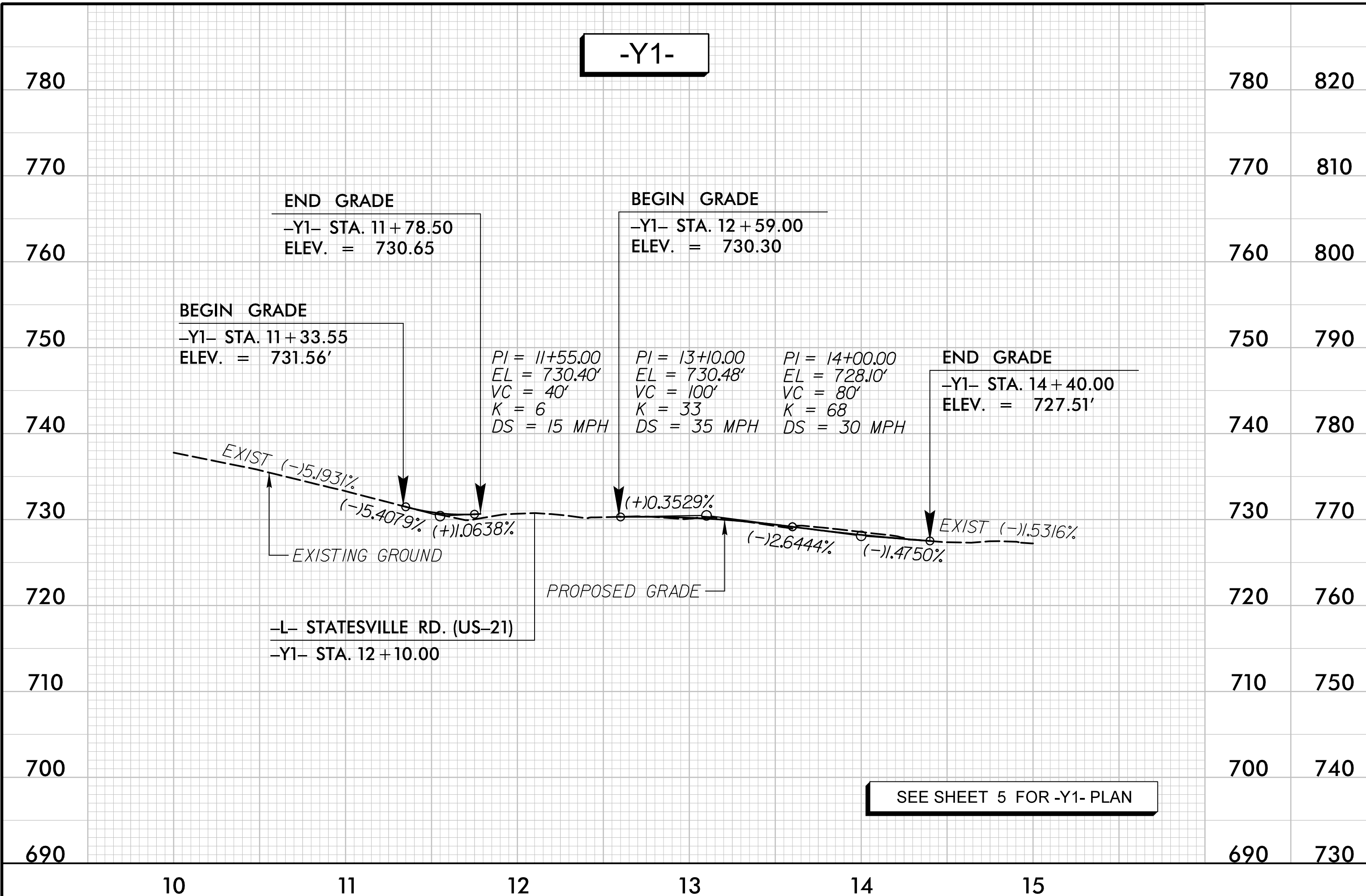
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mabdelaziz

5/28/19



STV Engineers, Inc.
300 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

PROJECT REFERENCE NO. U-5114	SHEET NO. 13
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



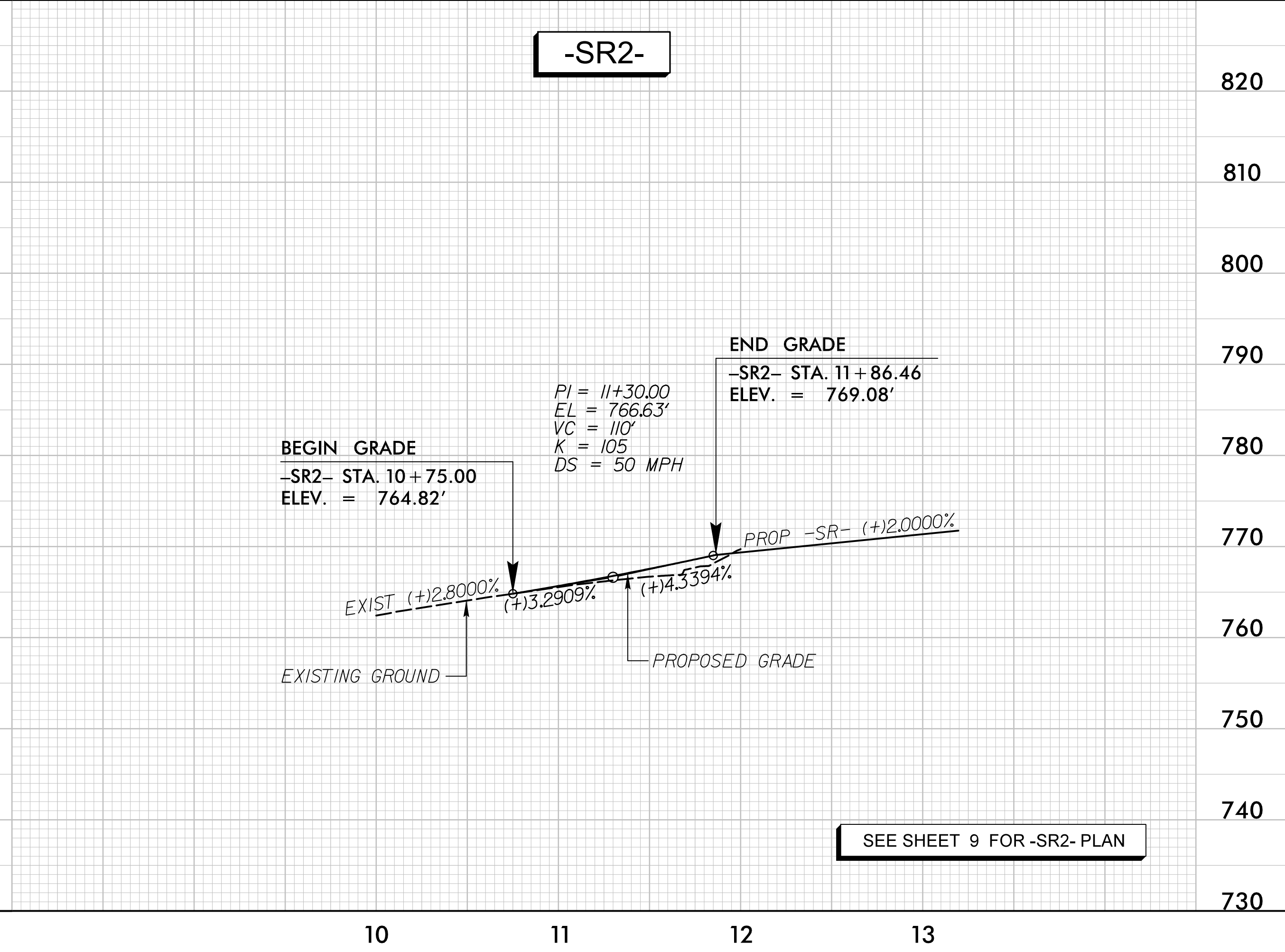
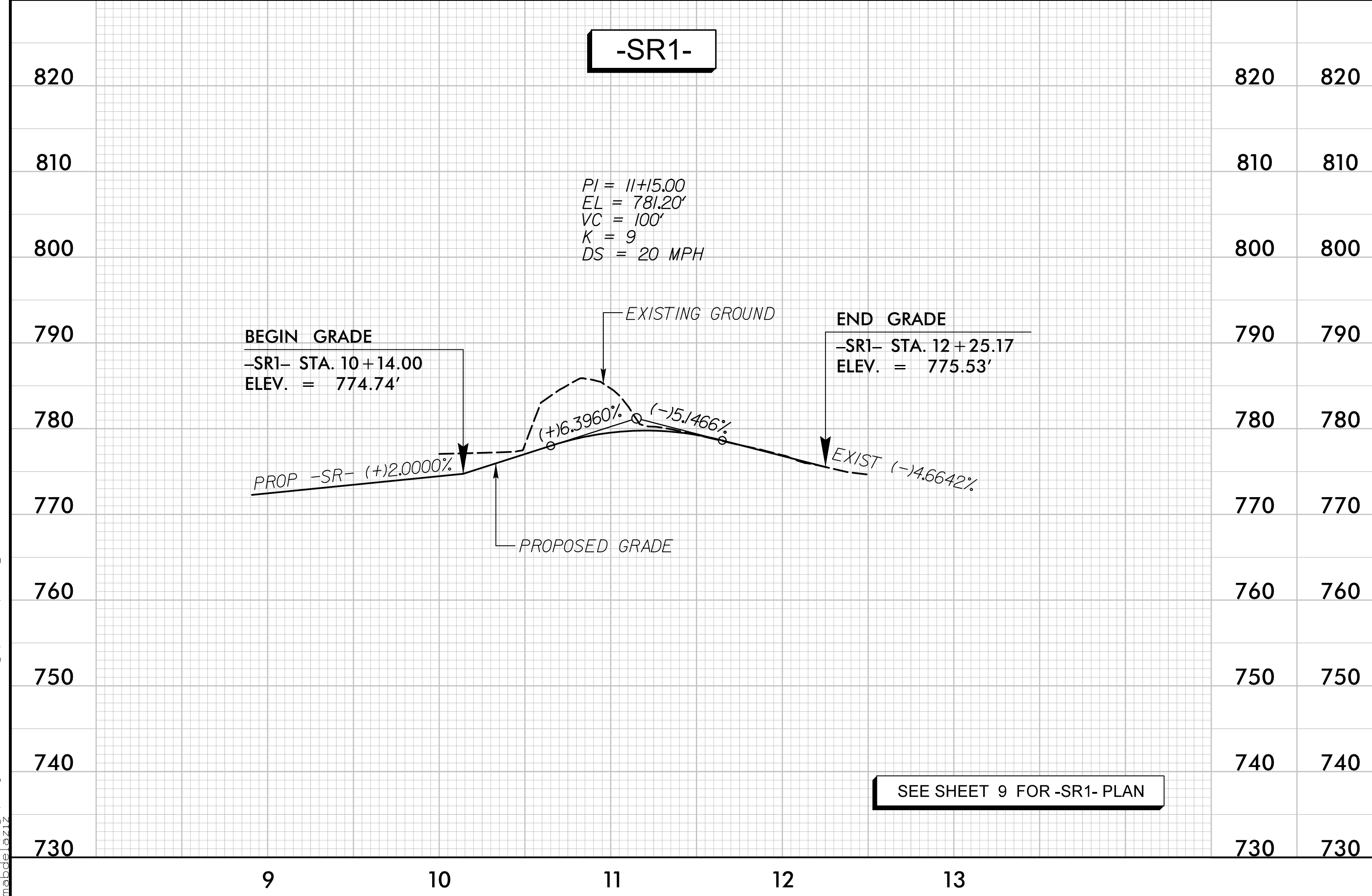
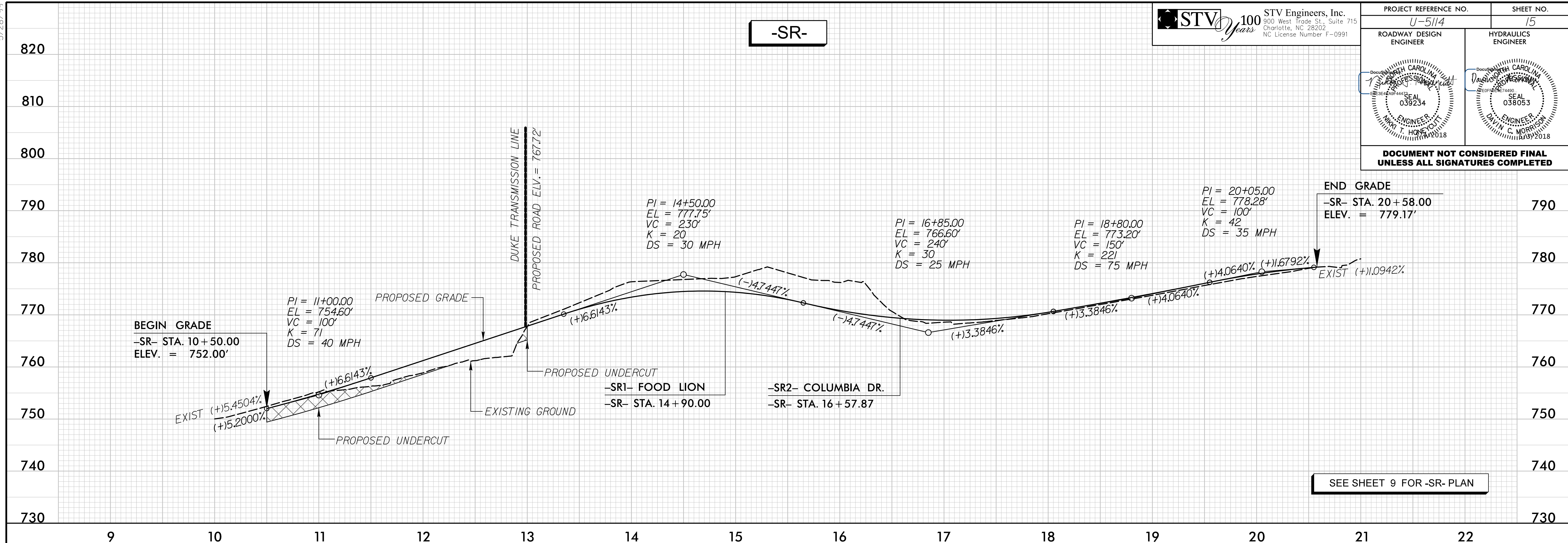
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5/28/19



STV Engineers, Inc.
300 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

PROJECT REFERENCE NO. U-5114	SHEET NO. 15
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



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