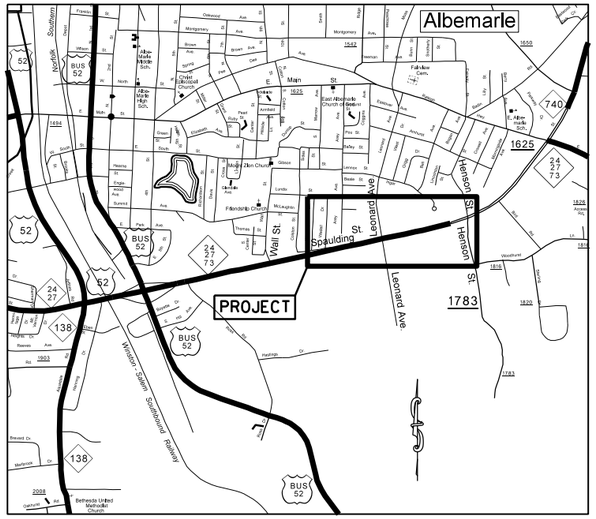
PROJECT: 50138.3.249 TIP: W-5601IN

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	50138.3.249	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
50138.1.249	HSIP-0024(079)	P.E.
50138.2.249	HSIP-0024(079)	R/W
50138.3.249	HSIP-0024(079)	CONST.

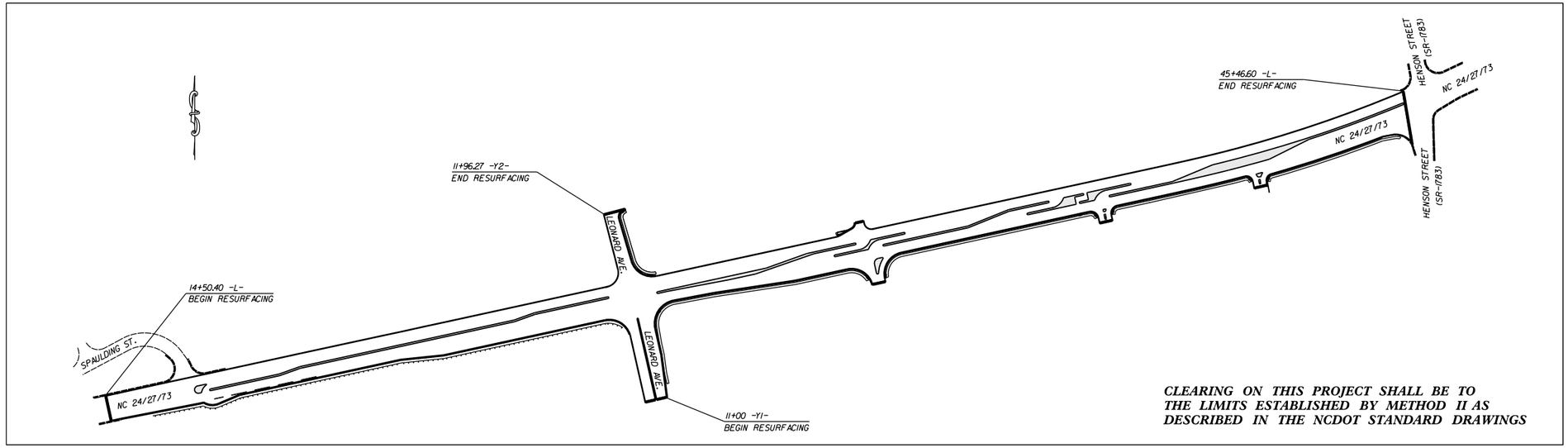


VICINITY MAP NOT TO SCALE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
STANLY COUNTY

LOCATION: *NC 24/27/73 FROM SPAULDING St. TO HENSON St. (SR-1783)*

TYPE OF WORK: *GRADING, DRAINAGE, CURB and GUTTER, PROFILE MILLING, PAVING, CONCRETE MONOLITHIC ISLAND, THERMOPLASTIC PAVEMENT MARKING, AND TRAFFIC SIGNAL.*



CLEARING ON THIS PROJECT SHALL BE TO THE LIMITS ESTABLISHED BY METHOD II AS DESCRIBED IN THE NCDOT STANDARD DRAWINGS

GRAPHIC SCALES

PLANS: 0 50 100

PROFILE (HORIZONTAL): 0 50 100

PROFILE (VERTICAL): 0 5 10

DESIGN DATA

ADT	=	
ADT	=	
DHV	=	%
D	=	%
T	=	%
V	=	MPH

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT 50138.3.249	= 0.66	MILES
TOTAL LENGTH OF STATE PROJECT 50138.3.249	= 0.66	MILES

Prepared In the Office of:

DIVISION OF HIGHWAYS
DIVISION TEN
DIVISION DESIGN / CONSTRUCT UNIT

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: _____

LETTING DATE: _____

DONALD GRIFFITH
PROJECT ENGINEER

DONALD HARWARD
PROJECT DESIGN ENGINEER

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · DIVISION TEN · DESIGN CONSTRUCT UNIT

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034357 ENGINEER SEAN MICHAEL EPPERSON

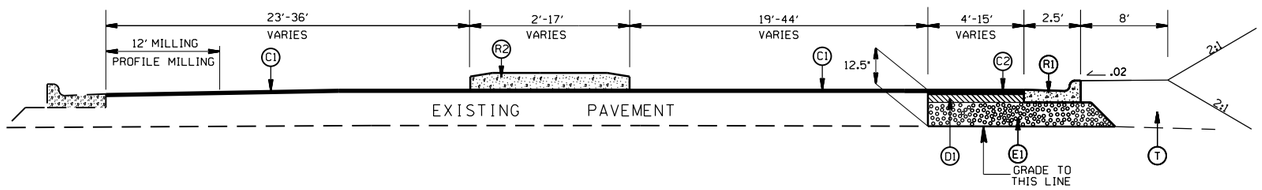
SIGNATURE

01-JUN-2018 07:57
S:\DDC\RDY\Stanly\albemarle leftoversets\t
jgnorward AT DIVDIVCAD279827

PROJECT NO.	SHEET NO.
50138.3.249	2
F.A. PROJECT NO. HSIP-0024(079)	

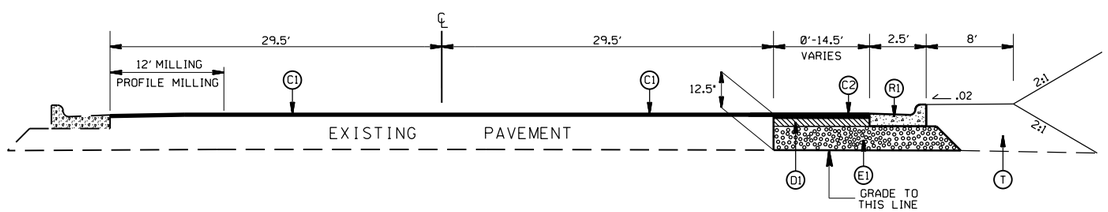
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034357 ENGINEER STEPHEN MICHAEL EFFERSON



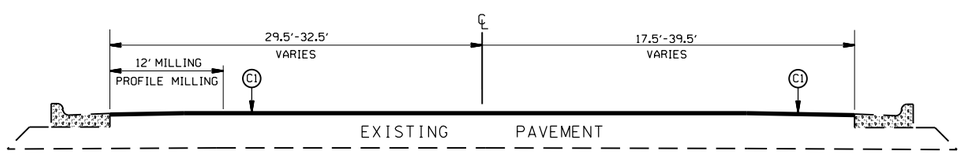
TYPICAL SECTION NO.3

STA 16+55.00 TO 16+85.45 -L-
STA 16+90.01 TO 26+38.17 -L-



TYPICAL SECTION NO.2

STA 14+75.00 TO 16+55.00 -L-
STA 16+85.45 TO 16+90.01 -L-

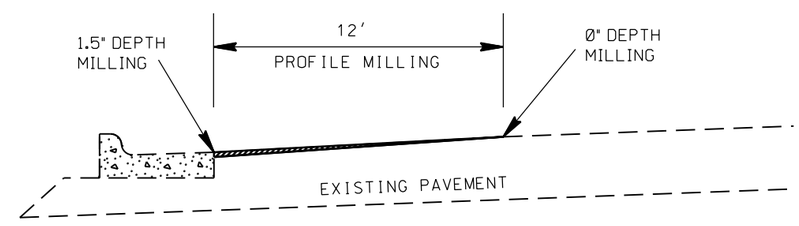


TYPICAL SECTION NO.1

STA 14+50.00 TO 14+75.00 -L-
STA 26+38.17 TO 27+49.31 -L-
STA 45+35.30 TO 45+46.60 -L-

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1.5" ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
D1	PROP. APPROX. 4" ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 5.5" ASPHALT CONC. BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
R1	PROP. 2'-6" CURB & GUTTER
R2	PROP. 5" MONOLITHIC CONCRETE ISLAND
R3	PROP. 4" CONC. SIDEWALK (5' IN WIDTH)
R4	PROP. 4" CONC. SLOPE PROTECTION
R5	PROP. 5" MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED)
T	EARTH MATERIAL



PROFILE MILLING CURB AND GUTTER DETAIL

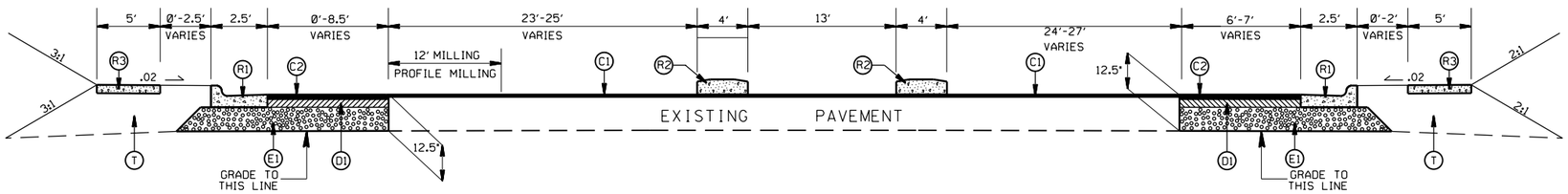
ALBEMARLE LEFTOVERS

SCALE	1"=50'		REVISIONS
DATE	3-2018		
DWG. BY	CEB		
DESIGN BY	JDH		
APPROVED	DCG		

PROJECT NO.	SHEET NO.
50138.3.249	2A
F.A. PROJECT NO. HSIP-0024(079)	

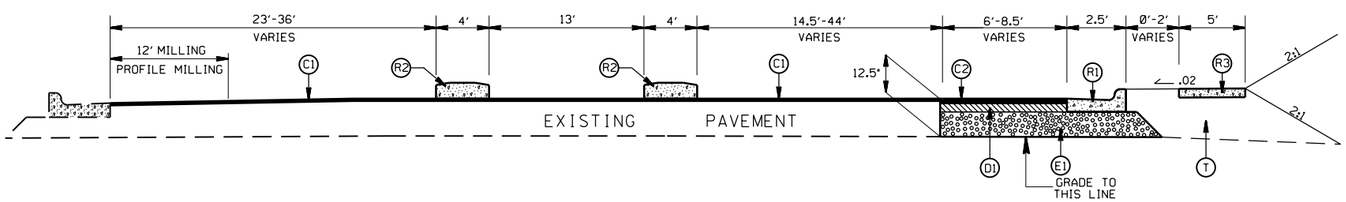
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034357 ENGINEER SEAN MICHAEL EMERSON



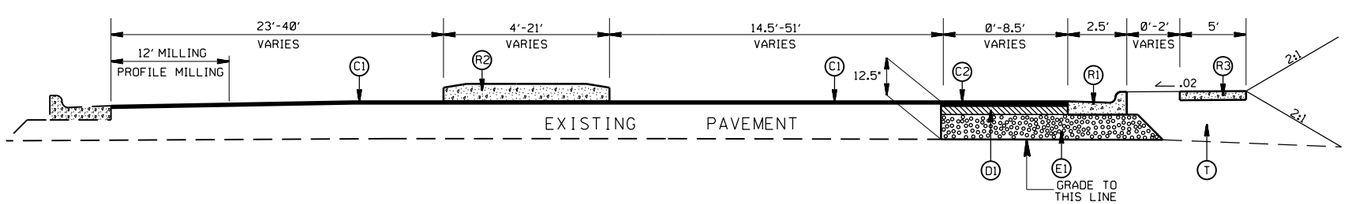
TYPICAL SECTION NO.6

STA 31+83.47 TO 32+23.55 -L-



TYPICAL SECTION NO.5

STA 31+68.55 TO 31+83.47 -L-
STA 32+84.17 TO 33+39.75 -L-
STA 36+25.34 TO 36+80.93 -L-
STA 37+49.29 TO 37+63.10 -L-
STA 38+19.91 TO 38+74.92 -L-



TYPICAL SECTION NO.4

STA 27+49.31 TO 31+68.55 -L-
STA 32+32.31 TO 32+84.17 -L-
STA 33+39.75 TO 36+25.34 -L-
STA 36+80.93 TO 37+49.29 -L-
STA 37+63.10 TO 38+19.91 -L-
STA 38+74.92 TO 44+62.42 -L-

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1.5" ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
D1	PROP. APPROX. 4" ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 5.5" ASPHALT CONC. BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
R1	PROP. 2'-6" CURB & GUTTER
R2	PROP. 5" MONOLITHIC CONCRETE ISLAND
R3	PROP. 4" CONC. SIDEWALK (5' IN WIDTH)
R4	PROP. 4" CONC. SLOPE PROTECTION
R5	PROP. 5" MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED)
T	EARTH MATERIAL

ALBEMARLE LEFTOVERS

		REVISIONS	
SCALE	1"=50'		
DATE	3-2018		
DWG. BY	CEB		
DESIGN BY	JDH		
APPROVED	DCG		

PROJECT NO.	SHEET NO.
50138.3.249	2B
F.A. PROJECT NO. HSIP-0024(079)	

ROADWAY DESIGN ENGINEER

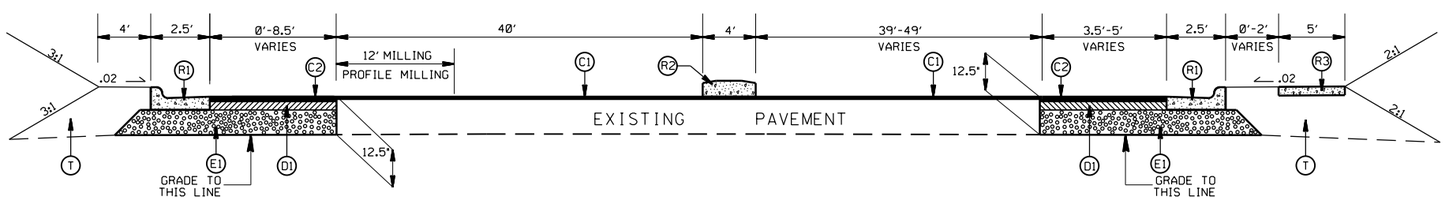
NORTH CAROLINA PROFESSIONAL SEAL 034357 ENGINEER SEAN MICHAEL ERRICSON

TYPICAL SECTION NO.9

STA 45+19.63 TO 45+35.30 -L-

TYPICAL SECTION NO.8

STA 44+62.42 TO 45+19.63 -L-



TYPICAL SECTION NO.7

STA 32+23.55 TO 32+32.31 -L-

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1.5" ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
D1	PROP. APPROX. 4" ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 5.5" ASPHALT CONC. BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
R1	PROP. 2'-6" CURB & GUTTER
R2	PROP. 5" MONOLITHIC CONCRETE ISLAND
R3	PROP. 4" CONC. SIDEWALK (5' IN WIDTH)
R4	PROP. 4" CONC. SLOPE PROTECTION
R5	PROP. 5" MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED)
T	EARTH MATERIAL

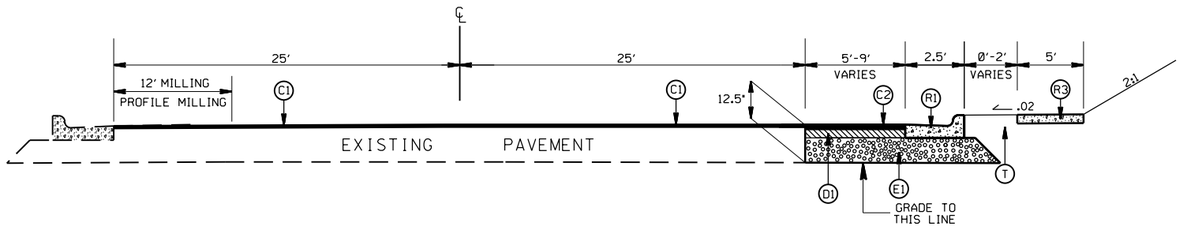
ALBEMARLE LEFTOVERS

			REVISIONS	
SCALE	1"=50'	DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		
DATE	3-2018			
DWG. BY	CEB			
DESIGN BY	JDH			
APPROVED	DCG			

PROJECT NO.	SHEET NO.
50138.3.249	2C
F.A. PROJECT NO. HSIP-0024(079)	

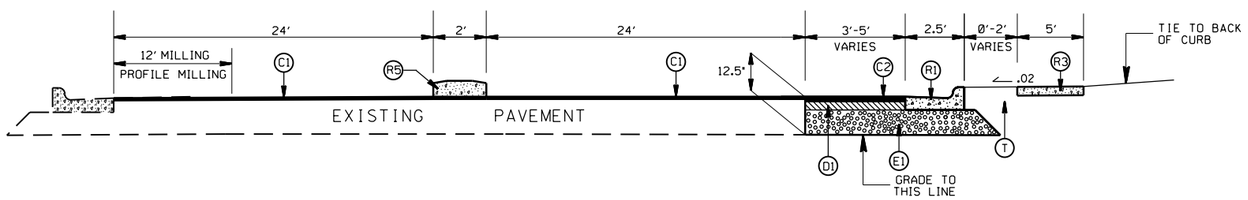
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034357 ENGINEER SEAN MICHAEL EMERSON



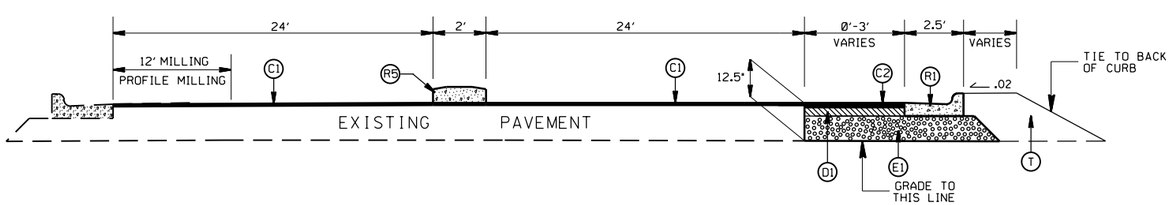
TYPICAL SECTION NO.12

STA 11+51.00 TO 12+61.83 -Y1-



TYPICAL SECTION NO.11

STA 11+32.00 TO 11+51 -Y1-



TYPICAL SECTION NO.10

STA 11+00.00 TO 11+32.00 -Y1-

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1.5" ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
D1	PROP. APPROX. 4" ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 5.5" ASPHALT CONC. BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
R1	PROP. 2'-6" CURB & GUTTER
R2	PROP. 5" MONOLITHIC CONCRETE ISLAND
R3	PROP. 4" CONC. SIDEWALK (5' IN WIDTH)
R4	PROP. 4" CONC. SLOPE PROTECTION
R5	PROP. 5" MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED)
T	EARTH MATERIAL
V1	MILLING ASPHALT PAVEMENT, 1.5" IN DEPTH

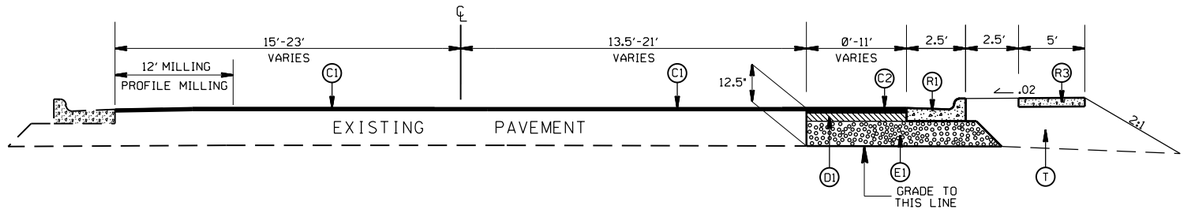
ALBEMARLE LEFTOVERS

		REVISIONS	
SCALE	1"=50'		
DATE	3-2018		
DWG. BY	CEB		
DESIGN BY	JDH		
APPROVED	DCG		

PROJECT NO.	SHEET NO.
50138.3.249	2D
F.A. PROJECT NO. HSIP-0024(079)	

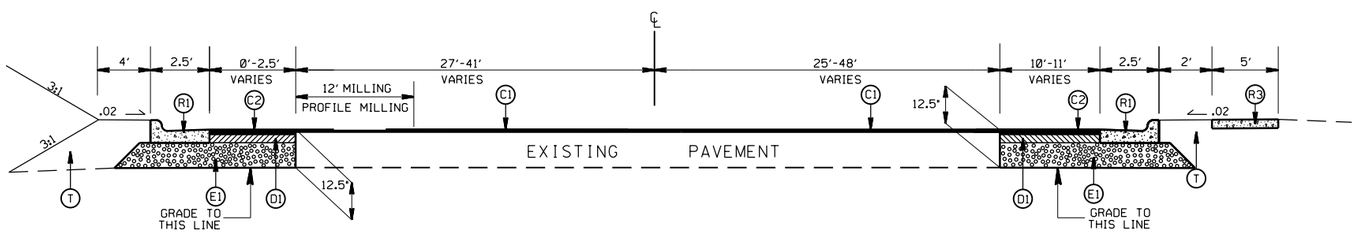
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034357 ENGINEER SEAN MICHAEL EMERSON



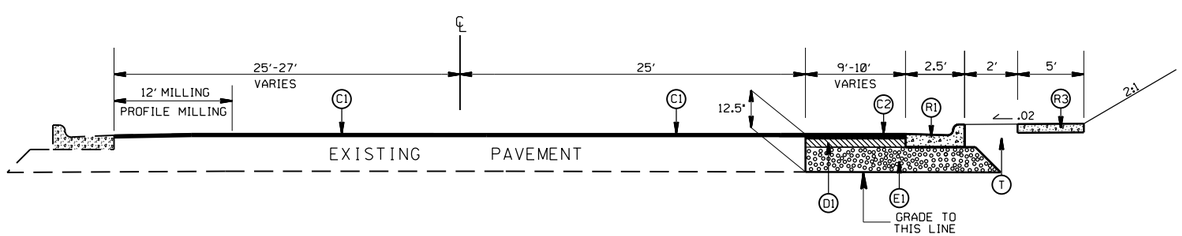
TYPICAL SECTION NO.15

STA 10+29.31 TO 11+96.27 -Y2-



TYPICAL SECTION NO.14

STA 12+70.53 TO 13+16.00 -Y1-



TYPICAL SECTION NO.13

STA 12+61.83 TO 12+70.53 -Y1-

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1.5" ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
D1	PROP. APPROX. 4" ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 5.5" ASPHALT CONC. BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
R1	PROP. 2'-6" CURB & GUTTER
R2	PROP. 5" MONOLITHIC CONCRETE ISLAND
R3	PROP. 4" CONC. SIDEWALK (5' IN WIDTH)
R4	PROP. 4" CONC. SLOPE PROTECTION
R5	PROP. 5" MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED)
T	EARTH MATERIAL

ALBEMARLE LEFTOVERS

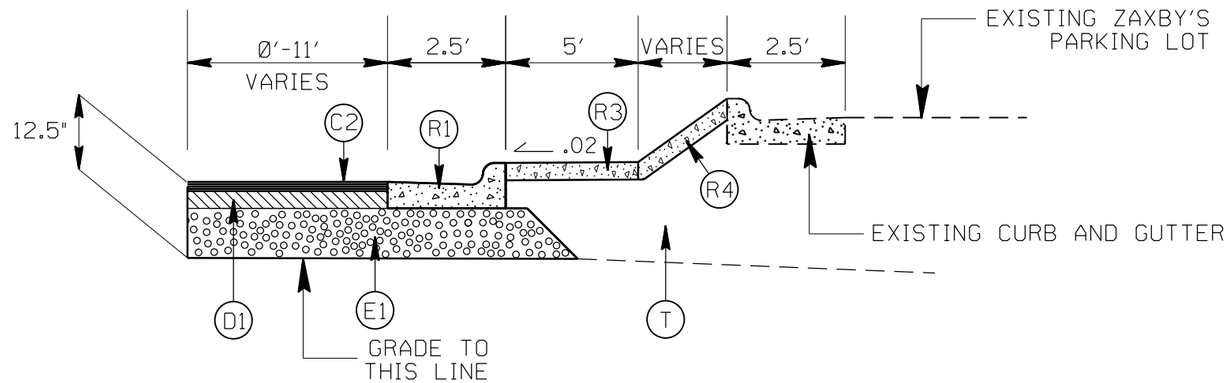
		REVISIONS	
SCALE	1"=50'		
DATE	3-2018		
DWG. BY	CEB		
DESIGN BY	JDH		
APPROVED	DCG		

PROJECT NO.	SHEET NO.
50138.3.249	2E
F.A. PROJECT NO. HSIP-0024(079)	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034357 ENGINEER SEAN MICHAEL EMERSON

4" CONCRETE SLOPE PROTECTION DETAIL



PAVEMENT SCHEDULE

C1	PROP. APPROX. 1.5" ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
D1	PROP. APPROX. 4" ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
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R1	PROP. 2'-6" CURB & GUTTER
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R3	PROP. 4" CONC. SIDEWALK (5' IN WIDTH)
R4	PROP. 4" CONC. SLOPE PROTECTION
R5	PROP. 5" MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED)
T	EARTH MATERIAL

ALBEMARLE LEFTOVERS

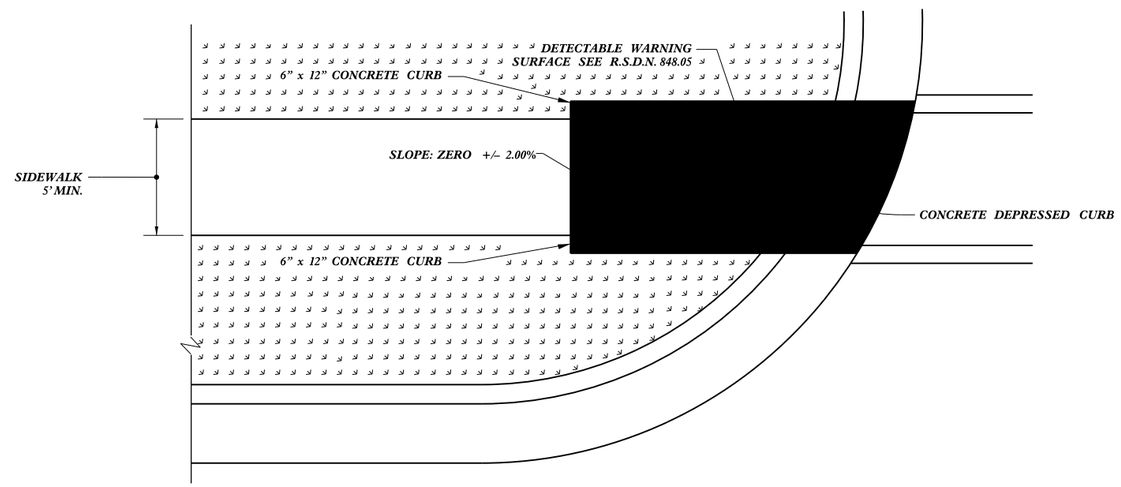
		REVISIONS	
SCALE	1"=50'		
DATE	3-2018		
DWG. BY	CEB		
DESIGN BY	JDH		
APPROVED	DCG		

DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
50138.3.249	2F
F.A. PROJECT NO. HSIP-0024(079)	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034357 ENGINEER SEAN MICHAEL EPPERSON



TYPE 1 Modified

PAY LIMITS FOR 1 CURB RAMP

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

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

ALBEMARLE LEFTOVERS

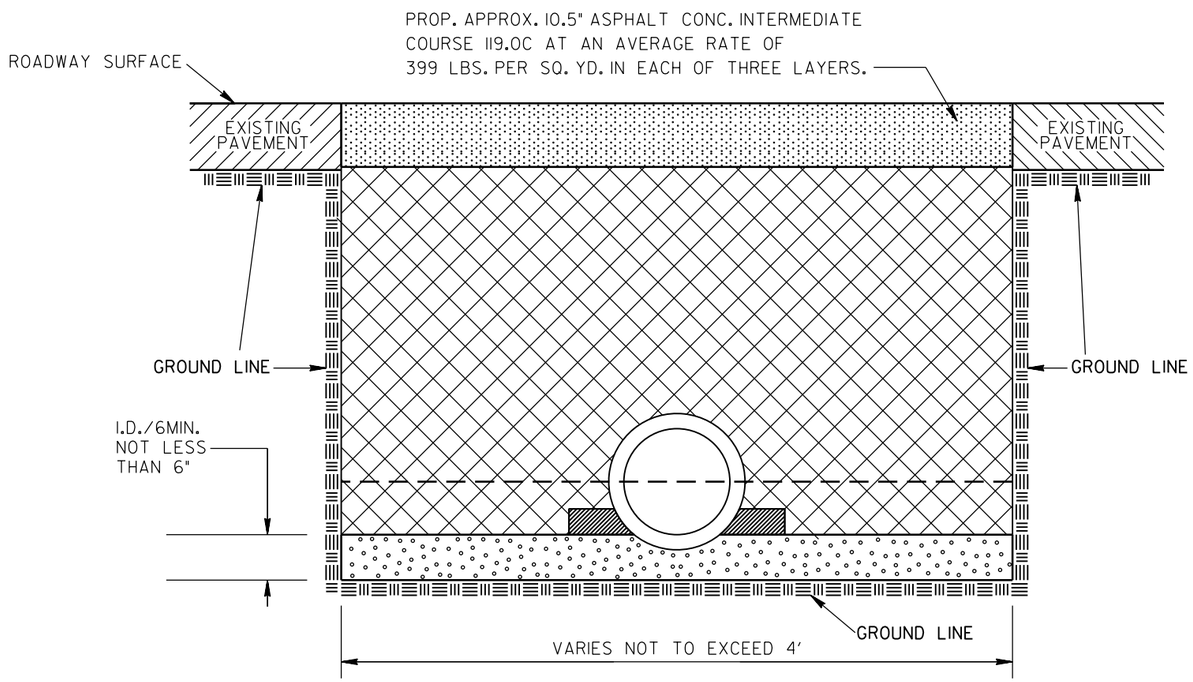
		REVISIONS	
SCALE	1"=50'		
DATE	3-2018		
DWG. BY	CEB		
DESIGN BY	JDH		
APPROVED	DCG		

PROJECT NO.	SHEET NO.
50138.3.249	2G
F.A. PROJECT NO. HSIP-0024(079)	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034357 ENGINEER SEAN MICHAEL EMERSON

PIPE INSTALLATION



NORMAL EARTH FOUNDATION

GENERAL NOTES:

- SPRINGLINE OF PIPE
- TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL
- LOOSELY PLACED SELECT MATERIAL CLASS III OR CLASS II, TYPE I FOR PIPE BEDDING. LEAVE SECTION DIRECTLY BENEATH PIPE UNCOMPACTED AS PIPE SEATING AND BACKFILL WILL ACCOMPLISH COMPACTION.
- SELECT GRANULAR MATERIAL CLASS II, TYPE I.
- UNDISTURBED EARTH MATERIAL

ALBEMARLE LEFTOVERS

SCALE	1"=50'
DATE	3-2018
DWG. BY	CEB
DESIGN BY	JDH
APPROVED	DCG

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

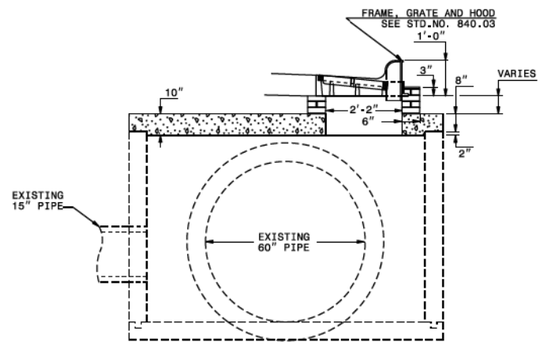
REVISIONS	

PROJECT NO.	SHEET NO.
50138.3.249	2H
F.A. PROJECT NO. HSIP-0024(079)	

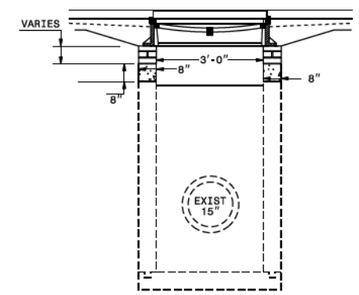
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034357 ENGINEER SEAN MICHAEL EMERSON

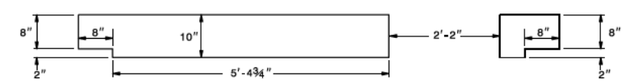
PROJECT REFERENCE NO.	SHEET NO.



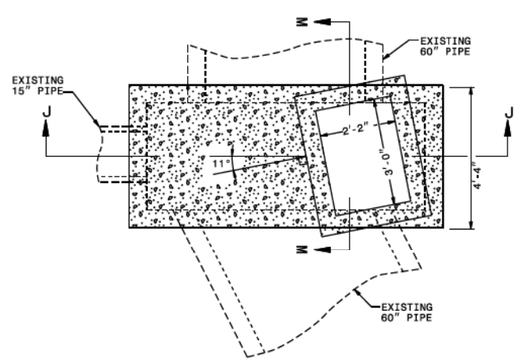
END ELEVATION
SECTION J-J



SECTION M-M



PRECAST TOP SLAB



PLAN

- LOCATION AND ORIENTATION OF THE HOOD, FRAME & GRATE SHOULD BE FIELD VERIFIED
- WALLS OF THE EXISTING CATCH BASIN SHOULD BE ADJUSTED AS NEEDED TO FIT PROPOSED PRECAST TOP SLAB
- REFER TO STANDARD DRAWING 840.46 FOR TRAFFIC BEARING TOP SLAB.

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER KARL E. HOWERTON

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

CONCRETE CATCH BASIN MODIFIED TOP SLAB

ORIGINAL BY: K.A.KEMPF DATE: 02-17
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: details/kkempf/english/840d201.dgn

ALBEMARLE LEFTOVERS

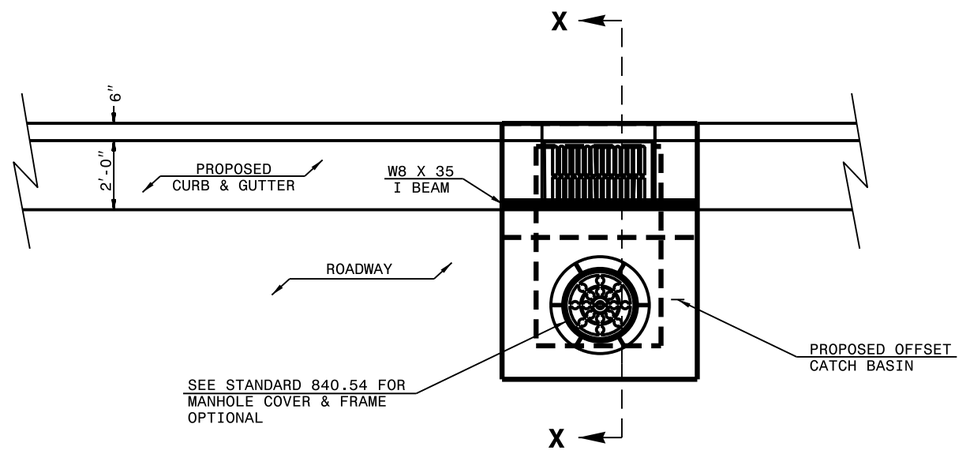
SCALE	1"=50'		REVISIONS
DATE	3-2018		
DWG. BY	CEB		
DESIGN BY	JDH		
APPROVED	DCG		

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

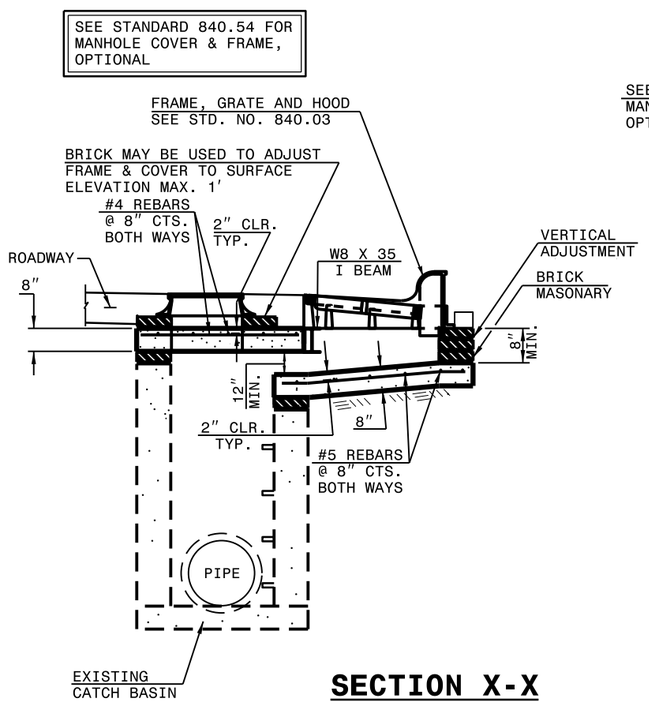
PROJECT NO.	SHEET NO.
50138.3.249	21
F.A. PROJECT NO. HSIP-0024(079)	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034357 ENGINEER SEAN MICHAEL EMERSON



PLAN



SECTION X-X

NOTES:

MORTAR JOINTS ½" TO ¼" THICK.

USE CLASS "B" CONCRETE THROUGHOUT.

USE TYPE "E", "F" AND "G" GRATES UNLESS OTHERWISE INDICATED.

USE BRICK OR CONCRETE BLOCK WHICH COMPLIES WITH THE REQUIREMENTS OF SECTION 840 OF THE STANDARD SPECIFICATIONS.

CHAMFER ALL EXPOSED CORNERS 1".

DRAWING NOT TO SCALE.

ALL CONVERSIONS SHALL BE ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.

DIMENSIONS MAY BE ADJUSTED BY THE ENGINEER.

CONVERSION OF EXISTING CATCH BASIN TO OFFSET CATCH BASIN

nbritt 03/15/2016

details/nbritt/english/hydro/offset boxes.dgn

ALBEMARLE LEFTOVERS

			REVISIONS	
SCALE	1"=50'	DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH, NORTH CAROLINA		
DATE	3-2018			
DWG. BY	CEB			
DESIGN BY	JDH			
APPROVED	DCG			

PROJECT NO.	SHEET NO.
50138.3.249	2J
F.A. PROJECT NO. HSIP-0024(079)	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034357 ENGINEER SEAN MICHAEL ERRICSON

5/14/99

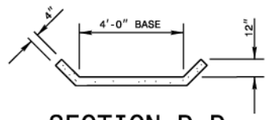
PROJECT REFERENCE NO.	SHEET NO.

GENERAL NOTES:

WIDTH AND SHAPE OF PROPOSED CONCRETE FLUME AND ETC. SHALL BE AS SHOWN OR AS DIRECTED BY THE ENGINEER.

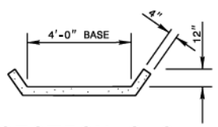
REINFORCING BARS ARE TO BE ASTM A615, GRADE 60.

THE FOLLOWING SHALL BE CONSTRUCTED IN ACCORDANCE WITH N.C. ROADWAY SPECIFICATIONS, CONCRETE CURB AND GUTTER-SECTION 846, CONCRETE FLUME COVER (TO BE CONSTRUCTED UNDER SIDEWALK SPECIFICATIONS) SECTION 848, CONCRETE PAVED DITCH- SECTION 850.



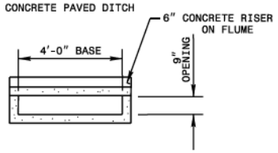
SECTION D-D

CONCRETE PAVED DITCH



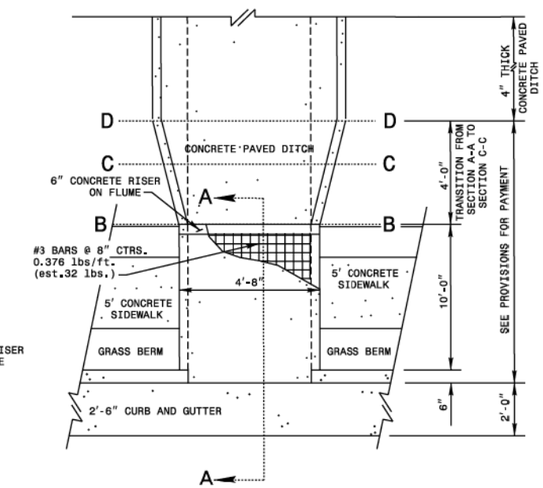
SECTION C-C

CONCRETE PAVED DITCH

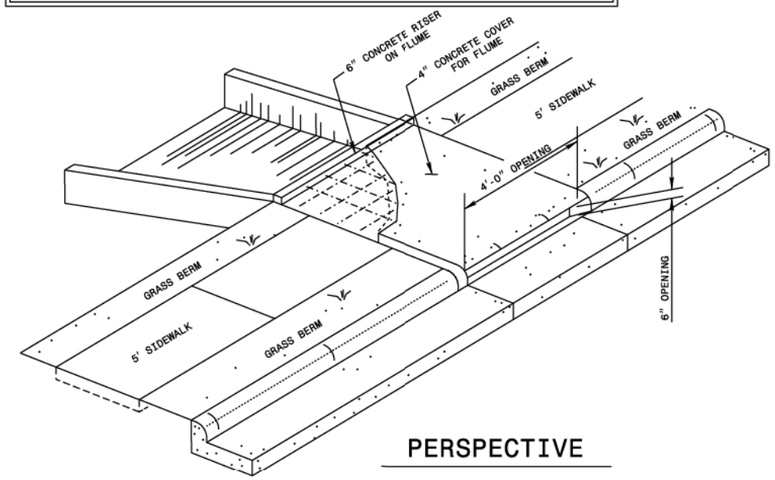


SECTION B-B

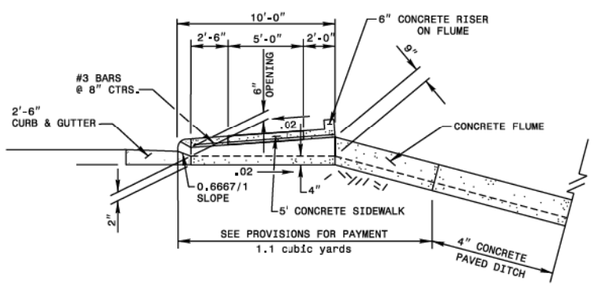
CONCRETE PAVED DITCH
CONCRETE FLUME



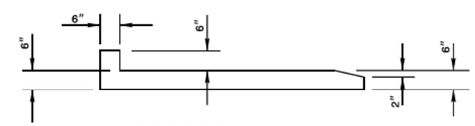
PLAN



PERSPECTIVE



ELEVATION



SECTION A-A

CONTRACT STANDARDS & DEVELOPMENT UNIT
STANDARDS AND SPECIAL DESIGN

CONCRETE FLUME DETAIL

ORIGINAL BY: _____ DATE: _____
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: _____

ALBEMARLE LEFTOVERS

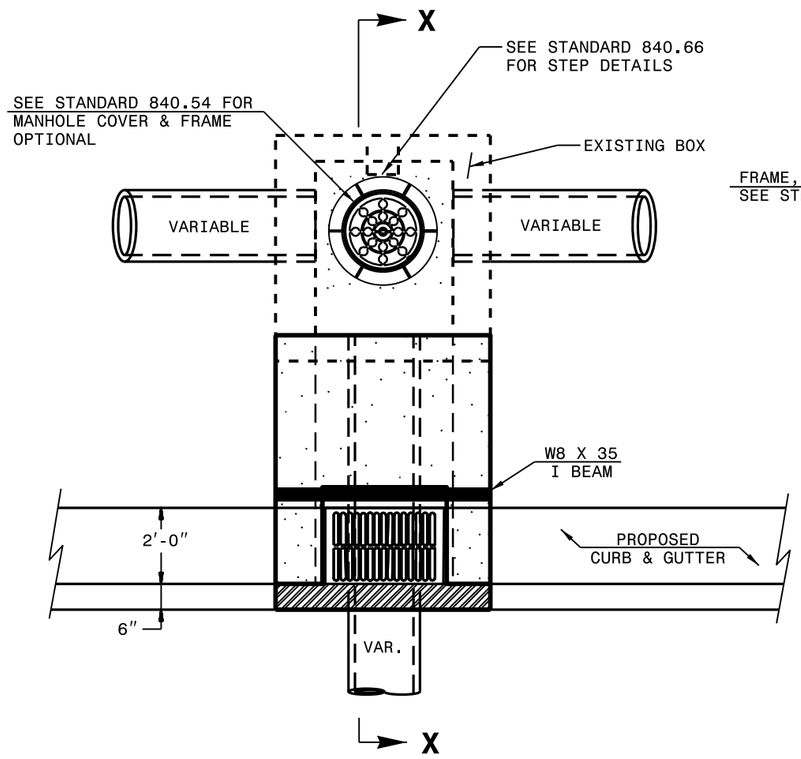
			REVISIONS	
SCALE	1"=50'	DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA		
DATE	3-2018			
DWG. BY	CEB			
DESIGN BY	JDH			
APPROVED	DCG			

PROJECT NO.	SHEET NO.
50138.3.249	2K
F.A. PROJECT NO. HSIP-0024(079)	

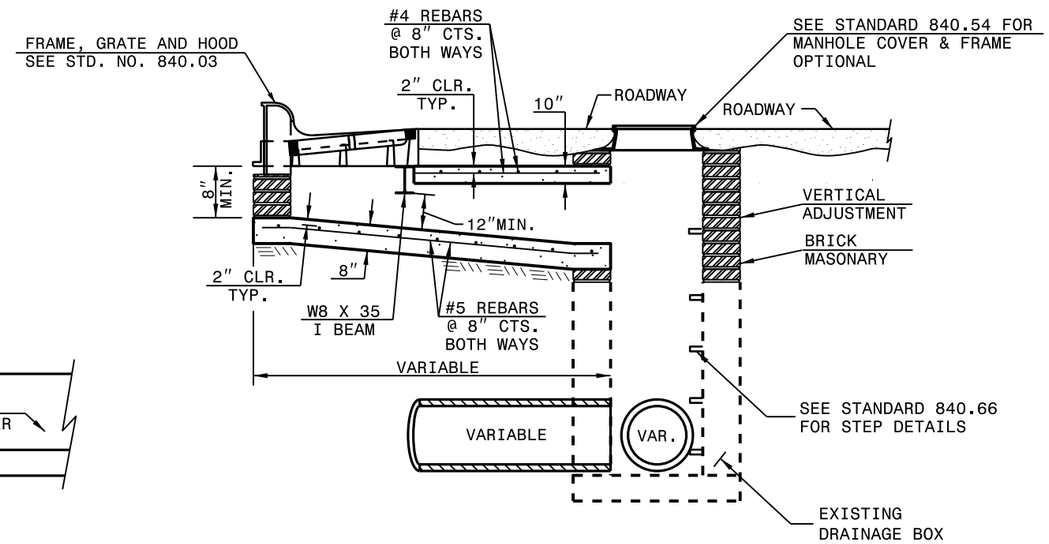
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034357 ENGINEER SEAN MICHAEL EMERSON

PROJECT REFERENCE NO.	SHEET NO.



PLAN



SECTION X-X

NOTES:

MORTAR JOINTS ½" TO ¼" THICK.

USE CLASS "B" CONCRETE THROUGHOUT.

USE TYPE "E", "F" AND "G" GRATES UNLESS OTHERWISE INDICATED.

USE BRICK OR CONCRETE BLOCK WHICH COMPLIES WITH THE REQUIREMENTS OF SECTION 840 OF THE STANDARD SPECIFICATIONS.

CHAMFER ALL EXPOSED CORNERS 1".

ALL CONVERSIONS SHALL BE ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.

PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING NO. 840.66.

DRAWING NOT TO SCALE.

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

CONVERSION OF EXISTING DRAINAGE BOX TO CATCH BASIN

ORIGINAL BY: E.E. WARD DATE: 1-24-02
MODIFIED BY: JDH DATE: 5-2018
CHECKED BY: DATE:
FILE SPEC.: nbritt/english/hydro/edb to offsetcb.dgn

ALBEMARLE LEFTOVERS

		REVISIONS	
SCALE	1"=50'		
DATE	3-2018		
DWG. BY	CEB		
DESIGN BY	JDH		
APPROVED	DCG		

COMPUTED BY: TBL DATE: 3-2017
CHECKED BY: CEB DATE: 5-2018

PROJECT REFERENCE NO.	SHEET NO.
50138.3.249	3

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
SUB-REGIONAL & REGIONAL
LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

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

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) SIZE	THICKNESS OR GAUGE	C.S. PIPE SIZE	THICKNESS OR GAUGE	R.C. PIPE (CLASS III) SIZE	R.C. PIPE (CLASS IV) SIZE	*** R.C. PIPE (CLASS V)	*** R.C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE	*** R.C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) R.C.P.	ENDWALLS CU. YDS. C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES * TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL. 'B') PER EACH (0' THRU 5.0')	LIN. *FT. 5.0' THRU 10.0' A	LIN. *FT. 10.0' AND ABOVE B	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION CATCH BASIN	DROP INLET	T.B.J.B. STD. 840.34	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. FRAME & GRATE STD. 840.22	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	M.H. FRAME & COVER STD. 840.54	CONC. FLUME (SEE DETAIL SHEET 2J)	OFFSET CATCH BASIN	CONC. COLLARS CL. "B" C.Y. STD 840.72	PIPE REMOVAL LIN.FT.	REMARKS
16+94 -L-	RT	401		532.93	528.03																1			1			1														
		401	402		528.03	527.55						12'																													
16+94 -L-	RT	402		531.05	529.00	524.57															1	1.5								1										REMOVE CB (LUMP SUM GRADING)
16+94 -L-	RT	403		533.83	524.90																1	3.9							1			1	1							
16+95 -L-	RT	404																																							RETAIN
10+78 -Y-	RT	405																																							RETAIN
12+10 -Y-	LT	406																																							RETAIN
12+95 -Y-	RT	407																																							RETAIN
13+24 -Y-	RT	408																																							RETAIN
19+39 -L-	RT	409		534.13	523.28	523.18															1	5	1	1			1														
		409	410									2'																													
19+39 -L-	RT	410		528.28	523.38	523.28															1										1										
19+39 -L-	RT	411																																							RETAIN
19+69 -L-	RT	412																																							RETAIN
19+82 -L-	RT	413																																							RETAIN
20+50 -L-	RT	414		534.93	526.15																1	3.8		1			1														
		414	415		526.15	526.15						2'																													
20+50 -L-	RT	415		531.05	526.15	526.05															1										1										
22+45 -L-	RT	501		535.83	531.24																1			1			1														
		501	502		531.24	531.00						12'																													
22+45 -L-	RT	502		536.16	531.00	530.90															1	0.3									1				1					REMOVE EXIST. CB
22+45 -L-	LT	503																																							RETAIN
24+00 -L-	RT	504		536.75	533.75																1			1			1														
		504	505		533.75	531.30						141'																													
25+43 -L-	RT	505		537.30	531.30																						1								1		1				SEE DETAIL SHEET 2K
25+39 -L-	RT	506																																							RETAIN
24+19 -L-	LT	507																																							RETAIN
25+55 -L-	LT	508																																							RETAIN
26+41 -L-	LT	509																																							RETAIN
10+68 -Y2-	LT	510																																							RETAIN
11+14 -Y2-	LT	511																																							RETAIN
11+14 -Y2-	RT	512			537.32																																				REMOVE BACK TO JOINT AND EXTEND
		512	513		537.32	537.47						10'																													
11+14 -Y2-	RT	513		539.52	537.47																1			1			1														
26+49 -L-	RT	514																																							RETAIN
12+54 -Y1-	LT	515																																							RETAIN
12+54 -Y1-	LT	516																																							RETAIN
12+53 -Y1-	LT	517																																							RETAIN
10+89 -Y1-	RT	518																																							RETAIN
12+15 -Y1-	RT	519																																							RETAIN
12+53 -Y1-	RT	520		536.18	TBD																					1									1		1				SEE SHEET 2K
~~12+54 -Y1-~~	~~RT~~	~~521~~																																							
12+44 -Y1-	RT	522																																							RETAIN
27+66 -L-	RT	523																																							RETAIN
~~27+54 -L-~~	~~RT~~	~~524~~		~~538.90~~	~~535.90~~																+			+			+		+											
					~~535.90~~	~~535.80~~						~~17'~~																													
27+73 -L-	RT	525		539.13	535.56	531.20															1	2.9								1			1	1						
		525	526		535.56	536.80						124'																													
29+00 -L-	RT	526		539.80	536.80																1									1			1	1						

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

4/04/06
06-JUN-2018 15:09
bemar18_1ef_tovers_sum\2427.leftovers_albemarle_se2_sum.dgn
ris_ST_TIVD\50138.3.249

COMPUTED BY: TBL	DATE: 3-2017
CHECKED BY: CEB	DATE: 5-2018

PROJECT REFERENCE NO.	SHEET NO.
50138.3.249	3A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
SUB-REGIONAL & REGIONAL
LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

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

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	REMARKS
27+73 -L-	LT	528						RETAIN
27+83 -L-	LT	529						RETAIN
28+05 -L-	LT	530						RETAIN
28+30 -L-	LT	531						RETAIN
28+70 -L-	LT	532						RETAIN
29+95 -L-	LT	533						RETAIN
30+34 -L-	RT	534						RETAIN
30+34 -L-	RT	535		539.70	530.40			
		535	536		530.40	531.90		INCIDENTAL TO 226 L.S. GRADING
30+34 -L-	RT	536		535.70	531.90			
31+62 -L-	RT	537						RETAIN
31+68 -L-	RT	538		540.40	535.70			
		538	539		535.70	TBD		
31+68 -L-	RT	539			TBD			REMOVE CB (LUMP SUM GRADING)
31+67 -L-	RT	540			TBD			
		540	541		TBD	TBD		TIE TO EXIST TBJB
31+67 -L-	RT	541		541.23	536.46	TBD		
		541	542		536.46	538.70		
32+89 -L-	RT	542		541.70	538.70			
31+87 -L-	RT	543						RETAIN
32+22 -L-	RT	544		540.40	537.07	537.03		
		544	545		537.07	537.11		
32+28 -L-	RT	545			537.50	537.11		SEE SPECIAL PROVISIONS (1" STEEL PLATE)
32+28 -L-	RT	546		540.70	537.60			SEE DETAIL SHEET 2I
32+80 -L-	LT	547						RETAIN
33+01 -L-	LT	548						RETAIN
33+06 -L-	LT	549						RETAIN
33+05 -L-	LT	550						RETAIN
34+30 -L-	LT	551						RETAIN
34+38 -L-	LT	552						RETAIN
34+30 -L-	LT	553						RETAIN
34+49 -L-	LT	554						RETAIN
~~34+80 -L-~~	~~RT~~	~~556~~		~~542.30~~	~~533.66~~	~~533.66~~		
34+80 -L-	RT	557						RETAIN
35+51 -L-	LT	601						RETAIN
35+99 -L-	LT	602						RETAIN
36+31 -L-	LT	603						RETAIN
36+80 -L-	LT	604						RETAIN
37+26 -L-	LT	605						RETAIN
37+33 -L-	LT	606						RETAIN
38+72 -L-	LT	607						RETAIN
40+22 -L-	LT	608						RETAIN
40+22 -L-	LT	609						RETAIN
40+82 -L-	LT	610						RETAIN
41+33 -L-	LT	611						RETAIN
41+97 -L-	LT	612						RETAIN
42+51 -L-	LT	613						RETAIN
42+52 -L-	LT	614						RETAIN
43+22 -L-	LT	615						RETAIN
43+97 -L-	LT	616						RETAIN

SIZE / THICKNESS OR GAUGE — pipe columns:

STATION	FROM	TO	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	C.S. PIPE 12" .064	15" .064	18" .064	24" .064	36" .079	42" .109	48" .109	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS IV) 12"	15"	18"	24"	30"	36"	42"	48"
27+73 -L-	528																																			
27+83 -L-	529																																			
28+05 -L-	530																																			
28+30 -L-	531																																			
28+70 -L-	532																																			
29+95 -L-	533																																			
30+34 -L-	534																																			
30+34 -L-	535																																			
	535	536																						16'												
30+34 -L-	536																																			
31+62 -L-	537																																			
31+68 -L-	538																																			
	538	539																					8'													
31+68 -L-	539																																			
31+67 -L-	540																																			
	540	541																					19'													
31+67 -L-	541																																			
	541	542																				112'														
32+89 -L-	542																																			
31+87 -L-	543																																			
32+22 -L-	544																																			
	544	545																						2'												
32+28 -L-	545																																			
32+28 -L-	546																																			
32+80 -L-	547																																			
33+01 -L-	548																																			
33+06 -L-	549																																			
33+05 -L-	550																																			
34+30 -L-	551																																			
34+38 -L-	552																																			
34+30 -L-	553																																			
34+49 -L-	554																																			
~~34+80 -L-~~	~~556~~																																			
34+80 -L-	557																																			
35+51 -L-	601																																			
35+99 -L-	602																																			
36+31 -L-	603																																			
36+80 -L-	604																																			
37+26 -L-	605																																			
37+33 -L-	606																																			
38+72 -L-	607																																			
40+22 -L-	608																																			
40+22 -L-	609																																			
40+82 -L-	610																																			
41+33 -L-	611																																			
41+97 -L-	612																																			
42+51 -L-	613																																			
42+52 -L-	614																																			
43+22 -L-	615																																			
43+97 -L-	616																																			

Structures and other items:

STATION	FROM	TO	**" R. C. PIPE (CLASS V)	**" R. C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE	**" R. C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	* TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. *FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G		CONCRETE TRANSITIONAL SECTION CATCH BASIN	DROP INLET	T.B.J.B. STD. 840.34	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. FRAME & GRATE STD. 840.22	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	M.H. FRAME & COVER STD. 840.54	CONC. FLUME (SEE DETAIL SHEET 2J)	OFFSET CATCH BASIN			CONC. COLLARS CL. "B" C.Y. STD 840.72	PIPE REMOVAL LIN.FT.
27+73 -L-	528																														
27+83 -L-	529																														
28+05 -L-	530																														
28+30 -L-	531																														
28+70 -L-	532																														
29+95 -L-	533																														
30+34 -L-	534																														
30+34 -L-	535									1	4.3		1			1															
	535	536																													
30+34 -L-	536									1											1	1									
31+62 -L-	537																														
31+68 -L-	538									1			1			1															
	538	539																													
31+68 -L-	539																														
31+67 -L-	540																														
	540	541																													
31+67 -L-	541									1									1				1	1							
	541	542																													
32+89 -L-	542									1									1				1	1							
31+87 -L-	543																														
32+22 -L-	544									1			1			1															
	544	545																													
32+28 -L-	545									1										1											
32+28 -L-	546														1												1				
32+80 -L-	547																														
33+01 -L-	548																														
33+06 -L-	549																														
33+05 -L-	550																														
34+30 -L-	551																														
34+38 -L-	552																														
34+30 -L-	553																														
34+49 -L-	554																														
~~34+80 -L-~~	~~556~~									~~1~~	~~4~~		~~1~~			~~1~~															
34+80 -L-	557																														
35+51 -L-	601																														
35+99 -L-	602																														
36+31 -L-	603																														
36+80 -L-	604																														
37+26 -L-	605																														
37+33 -L-	606																														
38+72 -L-	607																														
40+22 -L-	608																														
40+22 -L-	609																														
40+82 -L-	610																														
41+33 -L-	611																														
41+97 -L-	612																														
42+51 -L-	613																														
42+52 -L-	614																														
43+22 -L-	615																														
43+97 -L-	616																														

COMPUTED BY: TBL	DATE: 3-2017
CHECKED BY: CEB	DATE: 5-2018

PROJECT REFERENCE NO.	SHEET NO.
50138.3.249	3B

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
SUB-REGIONAL & REGIONAL
LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

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

STATION (SIZE / THICKNESS OR GAUGE)	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	C.S. PIPE 12" .064	15" .064	18" .064	24" .064	36" .079	42" .109	48" .109
44+87 -L-	LT	617																								
45+37 -L-	LT	618																								
35+50 -L-	RT	619																								
36+30 -L-	RT	620		543.50	540.00																					
		620	621		540.00	537.62																				
38+24 -L-	RT	621		545.68	537.62	537.52																				
		621	622		541.27	543.43																				
39+00 -L-	RT	622		547.44	543.53	543.43																				
		622	623		543.53	545.69																				
39+75 -L-	RT	623		549.66	545.79	545.69																				
		623	624		545.79	547.95																				
40+50 -L-	RT	624		551.95	547.95																					
42+27 -L-	RT	625		556.93	552.37	552.27																				
		625	626		552.37	554.53																				
42+27 -L-	RT	626		558.49	554.53																					
38+24 -L-	RT	621		545.93	539.40	537.52																				
		621	627		537.52	537.16																				
38+34 -L-	RT	627		545.56	539.30																					
~~38+38 -L-~~	~~RT~~	~~628~~		~~543.20~~	~~537.00~~																					
38+50 -L-	RT	629			540.50																					
40+02 -L-	RT	631																								
40+11 -L-	RT	635																								
41+25 -L-	RT	636		554.58																						
41+48 -L-	RT	637																								
42+01 -L-	RT	638																								
44+32 -L-	RT	639																								
45+96 -L-	RT	640																								
TOTALS																										

STATION	FROM	TO	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS IV) 12"	15"	18"	24"	30"	36"	42"	48"	**" R. C. PIPE (CLASS V)	**" R. C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE	**" R. C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.
44+87 -L-	617																							
45+37 -L-	618																							
35+50 -L-	619																							
36+30 -L-	620																							
	620	621	191'																					
38+24 -L-	621																							
	621	622	72'																					
39+00 -L-	622																							
	622	623	72'																					
39+75 -L-	623																							
	623	624	72'																					
40+50 -L-	624																							
42+27 -L-	625																							
	625	626	72'																					
42+27 -L-	626																							
38+24 -L-	621																							
	621	627		18'																				
38+34 -L-	627																							
~~38+38 -L-~~	~~628~~																							
38+50 -L-	629			8'																				
40+02 -L-	631																							
40+11 -L-	635																							
41+25 -L-	636																							
41+48 -L-	637																							
42+01 -L-	638																							
44+32 -L-	639																							
45+96 -L-	640																							
TOTALS			866	81	18																			

STATION	FROM	TO	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	* TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. *FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G		CONCRETE TRANSITIONAL SECTION CATCH BASIN	DROP INLET	T.B.J.B. STD. 840.34	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. FRAME & GRATE STD. 840.22	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	M.H. FRAME & COVER STD. 840.54	CONC. FLUME (SEE DETAIL SHEET 2J)	OFFSET CATCH BASIN			CONC. COLLARS CL. "B" C.Y. STD 840.72	PIPE REMOVAL LIN.FT.	REMARKS
44+87 -L-	617																								RETAIN
45+37 -L-	618																								RETAIN
35+50 -L-	619																			1						CONC. FLUME (SEE DETAIL SHEET 2J)
36+30 -L-	620		1									1				1	1								
	620	621																							
38+24 -L-	621		1	3.2								1				1	1								
	621	622																							
39+00 -L-	622		1									1				1	1								
	622	623																							
39+75 -L-	623		1									1				1	1								
	623	624																							
40+50 -L-	624		1									1				1	1								
42+27 -L-	625		1									1				1	1								
	625	626																							
42+27 -L-	626		1									1				1	1								
38+24 -L-	621																								
	621	627																							
38+34 -L-	627																								SEE SHEET 3C
~~38+38 -L-~~	~~628~~																								
38+50 -L-	629																						0.5		
40+02 -L-	631																								RETAIN
40+11 -L-	635																							6'	REMOVE 6' OF EXISTING 36" CMP
41+25 -L-	636																								ADJUST MANHOLE LID
41+48 -L-	637																								RETAIN
42+01 -L-	638																								RETAIN
44+32 -L-	639																								RETAIN
45+96 -L-	640																								RETAIN
TOTALS			27	24.9	1	9		2	10			12	5		1	12	12	3	1	3			0.5	6'	

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

4/04/06

COMPUTED BY: TBL	DATE: 3-2017
CHECKED BY: CEB	DATE: 5-2018

PROJECT REFERENCE NO.	SHEET NO.
50138.3.249	3C

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

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

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 54" & OVER)

STATION	LOCATION (LT, RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	CLASS III R.C. PIPE (UNLESS NOTED OTHERWISE) 54"	60"	66"	72"	78"	84"	C.S. PIPE (54", 60", 66", 72"; .109/.138/.168; SHOP ELONGATED)	STRUCTURAL PLATE PIPE (60", 66", 72"; 12/10)	REINFORCED ENDWALLS WITH R.C. - C.Y.	REINFORCED ENDWALLS WITH C.S. - C.Y.	MASONRY DRAINAGE STRUCTURES CUBIC YARDS	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION CATCH BASIN	DROP INLET	SEE DETAIL SHEET 2H	SEE DETAIL SHEET 2I	M.H. FRAME & COVER STD. 840.54	CONC. COLLARS CL. "B" C.Y. STD 840.72	REINFORCED CONCRETE ENDWALL STD. 838.27	PIPE REMOVAL LIN.FT.	REMARKS
27+73 -L-	RT	527		538.43	529.10	527.20																1			1						SEE DETAIL SHEET 2H
31+67 -L-	RT	540			535.50																										
34+80 -L-	RT	555		542.34	533.32																	1				1	1				SEE DETAIL SHEET 2I
38+34 -L-	RT	627		545.45	537.20	537.09																1				1	1				SEE DETAIL SHEET 2I
36+78 -L-	RT	630		543.20	534.64	534.73																1				1	1				SEE DETAIL SHEET 2I
40+00 -L-	RT	632			541.06																							2.85			COLLAR AND EXTEND
		632	633		541.06	541.90			6'																						
40+02 -L-	RT	633			541.90																								5.6		
40+00 -L-	RT	634																												8'	REMOVE 8' OF EXISTING 54" CMP
TOTALS									6'													4			1	3	3	2.85	5.6	8'	

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

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cburris AT DIV10-307040

COMPUTED BY: DLS	DATE: 3-2017
CHECKED BY: TBL	DATE: 2-2018

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
50138.3.249	3D

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

RIGHT OF WAY AREA DATA

PARCEL NO.	PROPERTY OWNERS NAMES	TOTAL ACREAGE	AREA TAKEN	AREA REMAINING RT.	AREA REMAINING LT.	CONST. EASE.	PERM. DRAIN. EASE.	PERPETUAL EASE. FOR HIGHWAY PURPOSE ONLY
1	GRIFFETH PROPERTIES LLC	1.085 AC	0.033 AC	1.052 AC	0.000 AC	679 SQ FT	0.0 SQ FT	0.0 SQ FT
2	VENTURE PROPERTIES II, LLC	0.009 AC	0.006 AC	0.003 AC	0.000 AC	1104 SQ FT	0.0 SQ FT	0.0 SQ FT
3	GEOEQUITY PROPERTIES INC	2.537 AC	0.034 AC	2.503 AC	0.000 AC	1607 SQ FT	0.0 SQ FT	41 SQ FT

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

GUARDRAIL SUMMARY

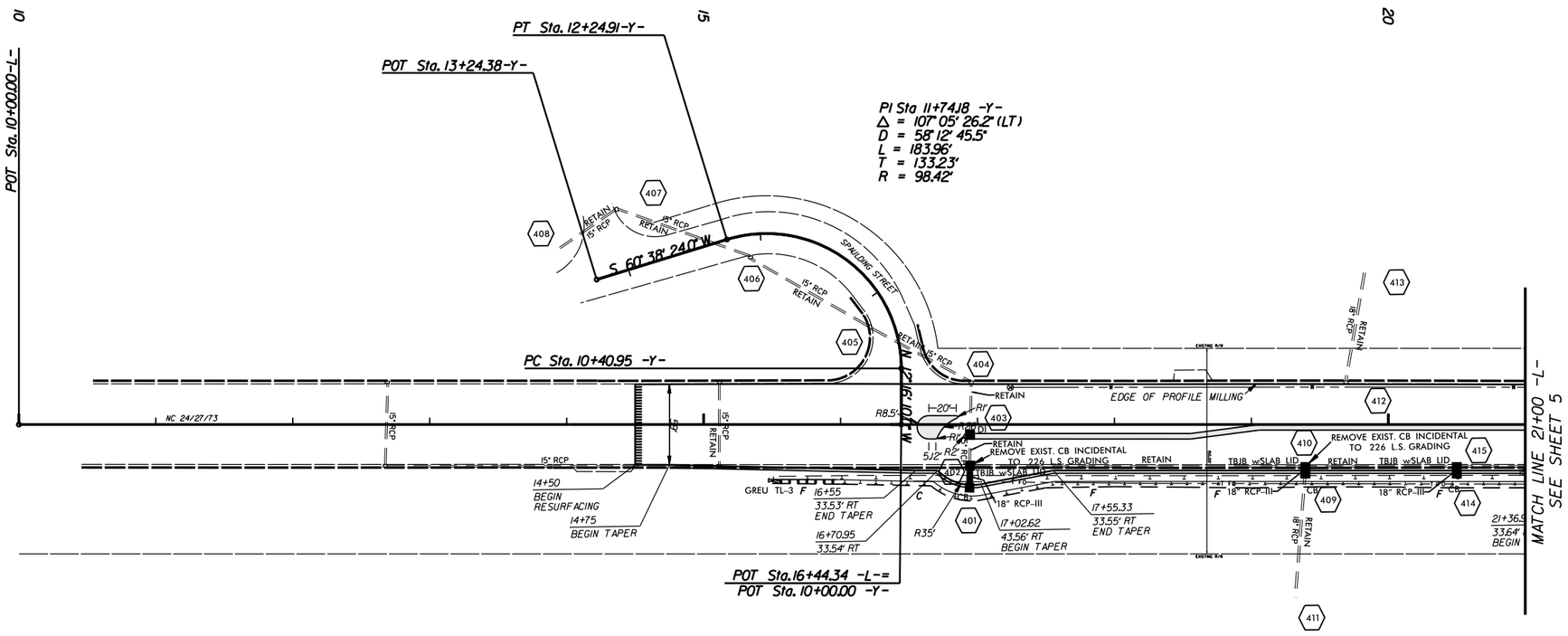
SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH		W		ANCHORS								IMPACT ATTENUATOR TYPE 350			SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	XI MOD	XI	GREU TL-3	M-350	XIII	CAT-1	VI MOD	BIC	AT-1	EA	G	NG				
-L-	15+48 -L-	12+80 -Y1-	RT /LT	1050'	100'				8'	11'	50'						1											1112.5'		
			SUBTOTALS:	1050'	100'																									
	DEDUCTION FOR ANCHOR UNITS		(1 GREU@50')	-50'																										
			PROJECT TOTAL:	1000'	100'												1													
			SAY:	1000'	100'																									

6/21/00
06-JUN-2018 15:16
S:\DOCUMENTS\Stanly\albemarle leftovers\sum\2427_leftovers_albemarle_sa2_sum.dgn
$$USERNAME$$ $$DATE$$

PROJECT NO.	SHEET NO.
50138.3.249	4
F.A. PROJECT NO. BSIP-0024(079)	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034357 ENGINEER SEAN MICHAEL EPPERSON



NOTE: INCIDENTAL MILL APPROX.25' AT EACH TIE IN TO PROVIDE A SMOOTH TRANSITION TO THE EXISTING ASPHALT PAVEMENT.

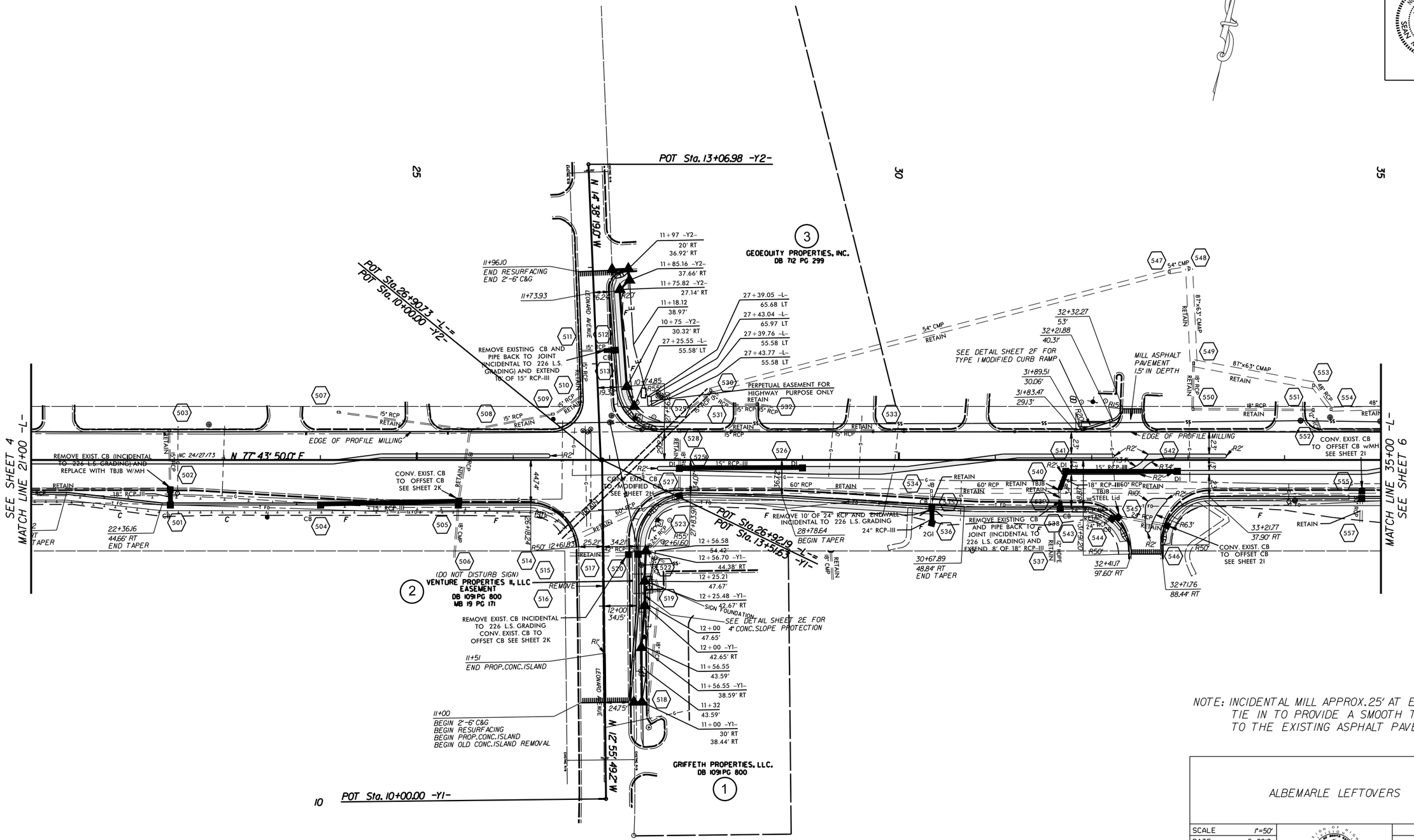
ALBEMARLE LEFTOVERS

			REVISIONS	
SCALE	1"=50'	DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		
DATE	5-2018			
DWG. BY	TBL			
DESIGN BY	JDH			
APPROVED	DCG			

PROJECT NO.	SHEET NO.
50138.3.249	5
F.A. PROJECT NO. HSIP-0024(079)	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034357 ENGINEER SEAN MICHAEL EPPERSON



NOTE: INCIDENTAL MILL APPROX. 25' AT EACH TIE IN TO PROVIDE A SMOOTH TRANSITION TO THE EXISTING ASPHALT PAVEMENT.

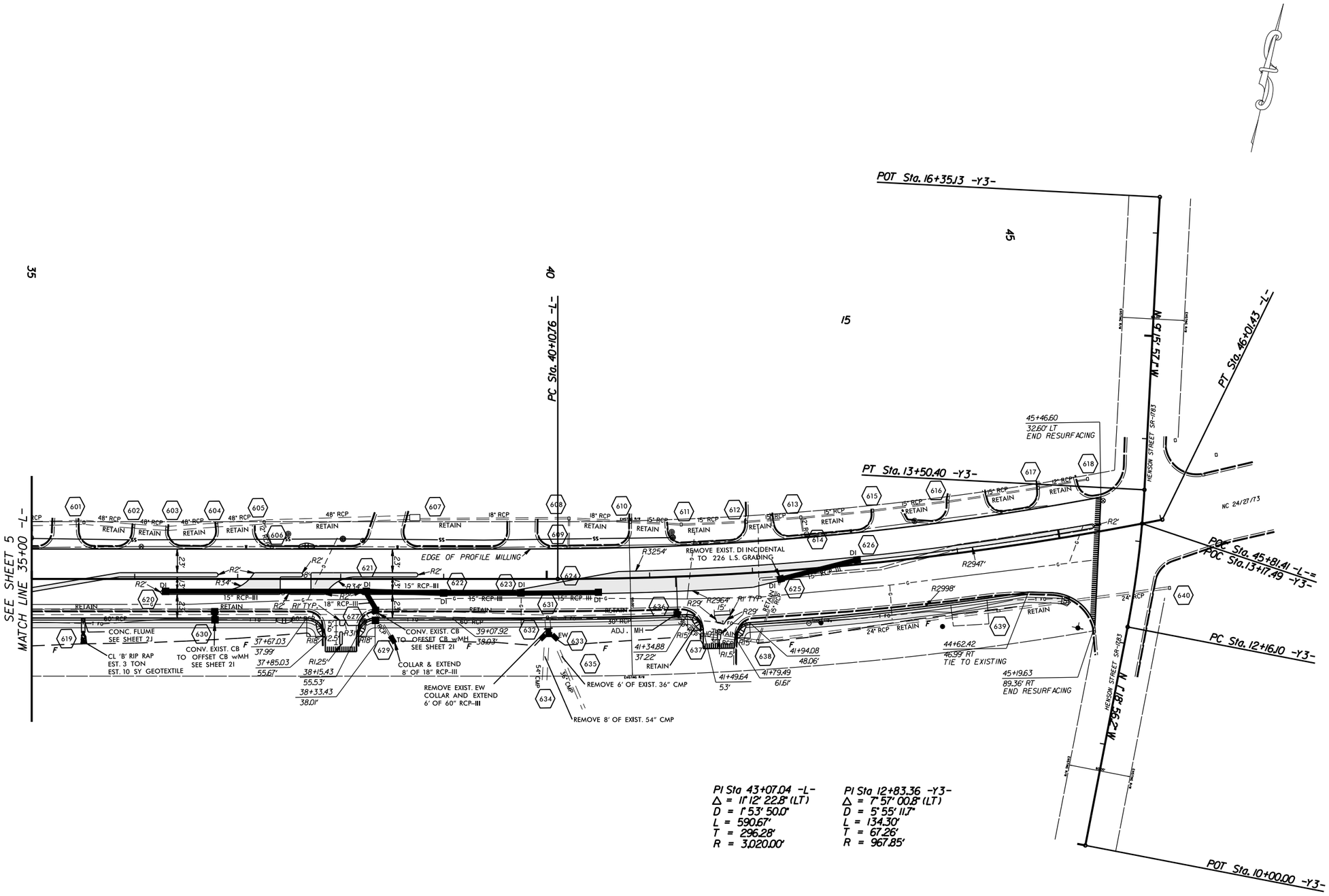
ALBEMARLE LEFTOVERS

		REVISIONS	
SCALE	1"=50'		
DATE	5-2018		
DWG. BY	TBL		
DESIGN BY	JDH		
APPROVED	DCG		

PROJECT NO.	SHEET NO.
50138.3.249	6
F.A. PROJECT NO. HSIP-0024(079)	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034357 ENGINEER SEAN MICHAEL EPPERSON



PI Sta 43+07.04 -L-
Δ = 11° 12' 22.8" (LT)
D = 1° 53' 50.0"
L = 590.67'
T = 296.28'
R = 3,020.00'

PI Sta 12+83.36 -Y3-
Δ = 7° 57' 00.8" (LT)
D = 5° 55' 11.7"
L = 134.30'
T = 67.26'
R = 967.85'

NOTE: INCIDENTAL MILL APPROX. 25' AT EACH TIE IN TO PROVIDE A SMOOTH TRANSITION TO THE EXISTING ASPHALT PAVEMENT.

ALBEMARLE LEFTOVERS

		REVISIONS	
SCALE	1"=50'		
DATE	5-2018		
DWG. BY	TBL		
DESIGN BY	JDH		
APPROVED	DCG		

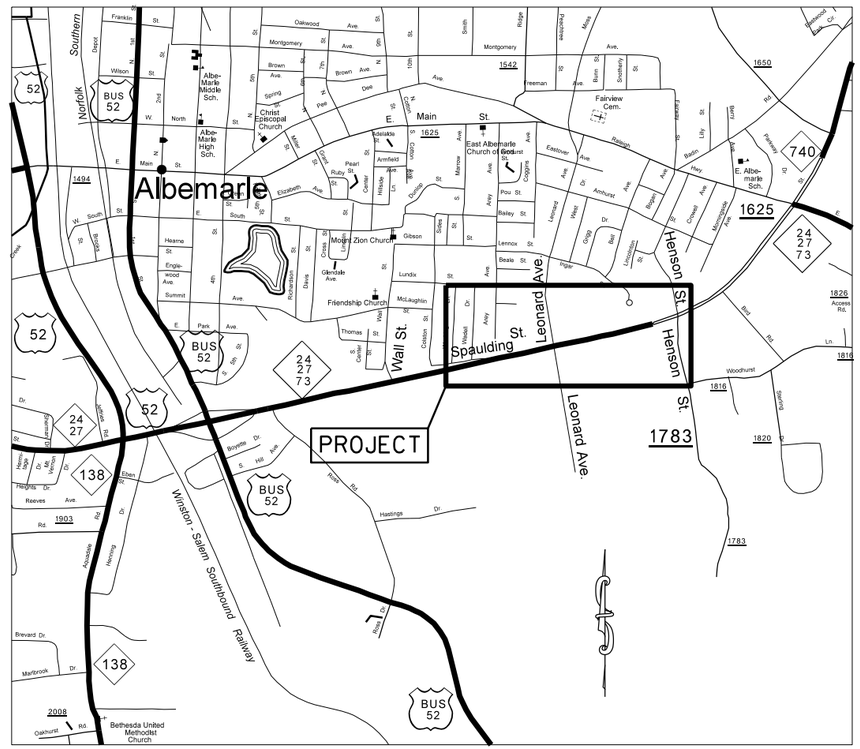
PROJECT: 50138.3.249 TIP: W-5601IN

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	50138.3.249	EC-1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
50138.1.249	HSIP-0024(079)	P.E.
50138.2.249	HSIP-0024(079)	R/W
50138.3.249	HSIP-0024(079)	CONST.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL



VICINITY MAP NOT TO SCALE

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TSD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
1633.02	Temporary Rock Silt Check Type-B	
	Wattle / Coir Fiber Wattle	
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	
1634.01	Temporary Rock Sediment Dam Type-A	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	
1635.02	Rock Pipe Inlet Sediment Trap Type-B	
1630.04	Stilling Basin	
1630.06	Special Stilling Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	
	Tiered Skimmer Basin	
	Infiltration Basin	

THIS PROJECT CONTAINS EROSION CONTROL PLANS FOR CLEARING AND GRUBBING PHASE OF CONSTRUCTION.

GRAPHIC SCALE

0
PLANS

0
PROFILE (HORIZONTAL)

0
PROFILE (VERTICAL)

ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER QUALITY.

Prepared in the Office of:

DDC UNIT DIVISION 10
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

2018 STANDARD SPECIFICATIONS

TRAVIS LOWDER — *EROSION CONTROL DESIGNER*
3742 — *LEVEL III CERTIFICATION #*

Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"– Roadway Design Unit – N. C. Department of Transportation – Raleigh, N. C., dated January 2012 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

1604.01	Railroad Erosion Control Detail	1632.01	Rock Inlet Sediment Trap Type A
1605.01	Temporary Silt Fence	1632.02	Rock Inlet Sediment Trap Type B
1606.01	Special Sediment Control Fence	1632.03	Rock Inlet Sediment Trap Type C
1607.01	Gravel Construction Entrance	1633.01	Temporary Rock Silt Check Type A
1622.01	Temporary Berms and Slope Drains	1633.02	Temporary Rock Silt Check Type B
1630.01	Riser Basin	1634.01	Temporary Rock Sediment Dam Type A
1630.02	Silt Basin Type B	1634.02	Temporary Rock Sediment Dam Type B
1630.03	Temporary Silt Ditch	1635.01	Rock Pipe Inlet Sediment Trap Type A
1630.04	Stilling Basin	1635.02	Rock Pipe Inlet Sediment Trap Type B
1630.05	Temporary Diversion	1640.01	Coir Fiber Baffle
1630.06	Special Stilling Basin	1645.01	Temporary Stream Crossing
1631.01	Matting Installation		

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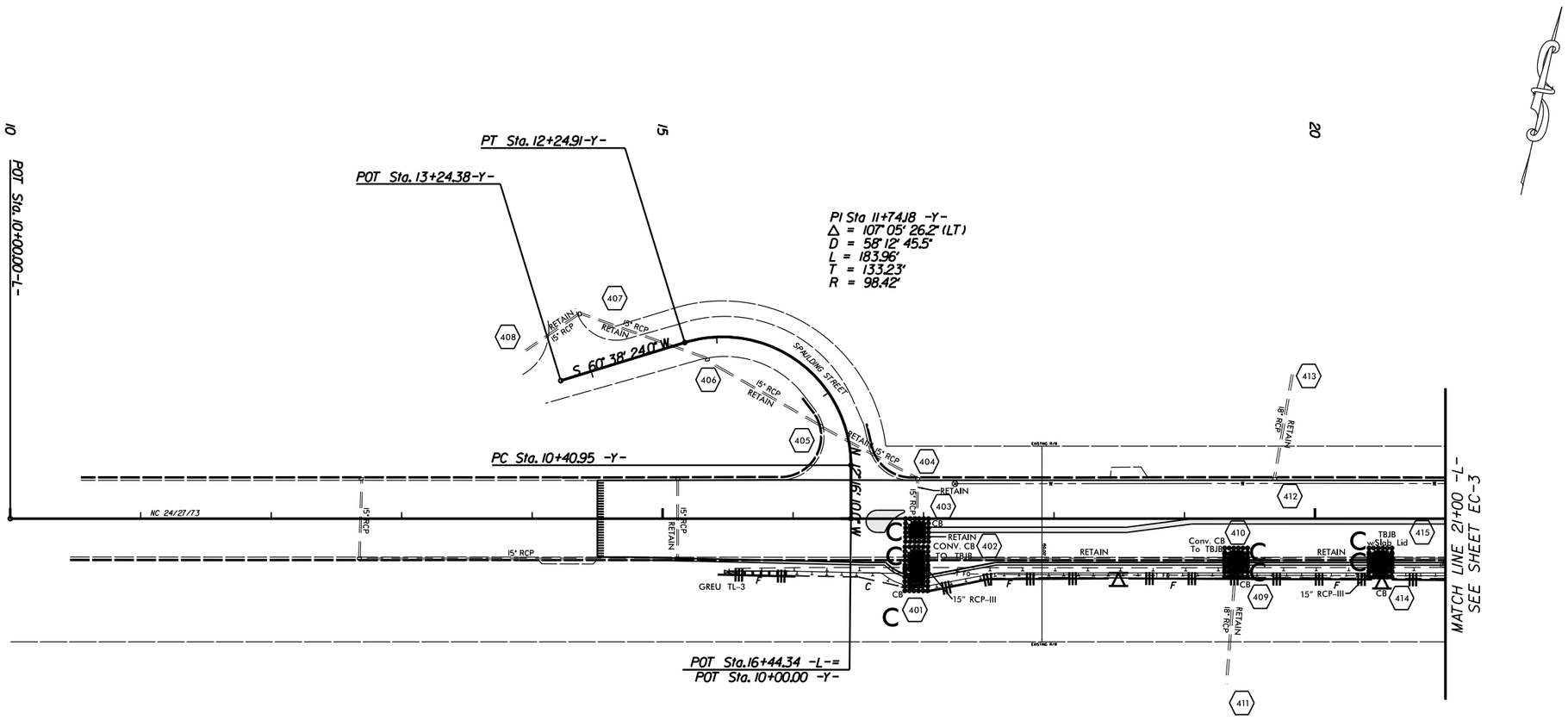
PROJECT NO.	SHEET NO.
50138.3.249	EC-2
F.A. PROJECT NO.	HSIP-0024(079)

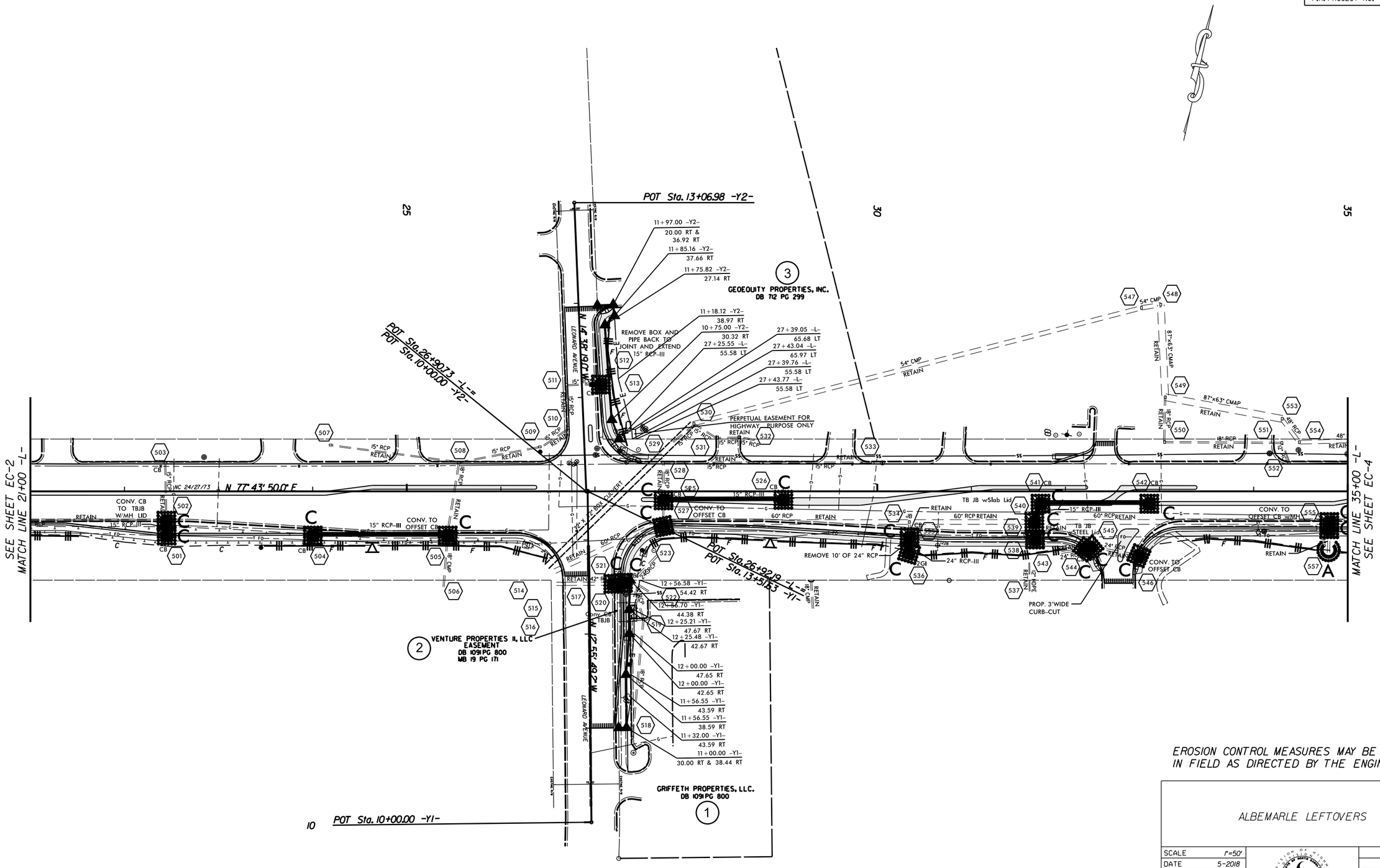


EROSION CONTROL MEASURES MAY BE CHANGED, IN FIELD AS DIRECTED BY THE ENGINEER.

ALBEMARLE LEFTOVERS

			REVISIONS	
SCALE	1"=50'	DIVISION OF HIGHWAYS		
DATE	5-2018			
DWG. BY	TBL			
DESIGN BY	JDH			
APPROVED	DCG			

PROJECT NO.	SHEET NO.
50138.3.249	EC-3
F.A. PROJECT NO. HSIP-0024(079)	

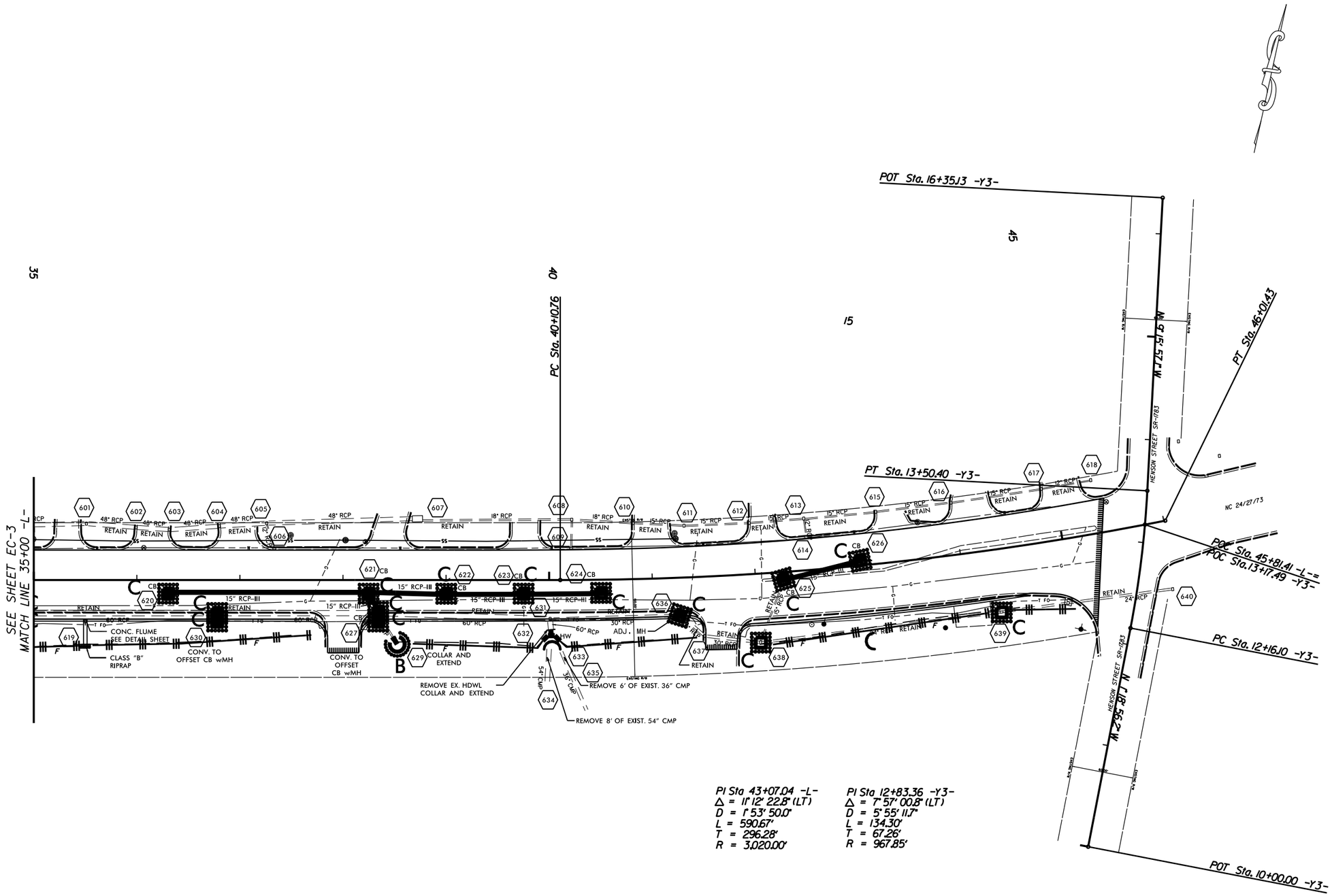


EROSION CONTROL MEASURES MAY BE CHANGED, IN FIELD AS DIRECTED BY THE ENGINEER.

ALBEMARLE LEFTOVERS

			REVISIONS	
SCALE	1"=50'			
DATE	5-2018			
DWG. BY	TBL			
DESIGN BY	JDH			
APPROVED	DCG			

PROJECT NO.	SHEET NO.
50138.3.249	EC-4
F.A. PROJECT NO. HSIP-0024(079)	



EROSION CONTROL MEASURES MAY BE CHANGED, IN FIELD AS DIRECTED BY THE ENGINEER.

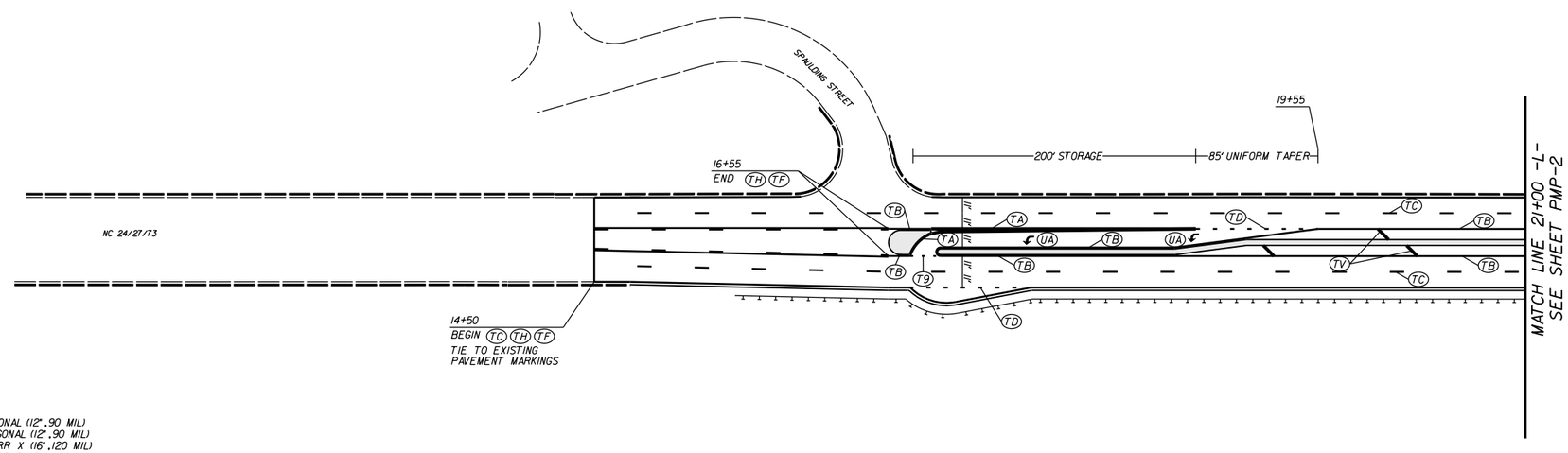
ALBEMARLE LEFTOVERS

		REVISIONS	
SCALE	1"=50'		
DATE	5-2018		
DWG. BY	TBL		
DESIGN BY	JDH		
APPROVED	DCG		

PROJECT NO.	SHEET NO.
50138.3.249	PMP-1
F.A. PROJECT NO. HSIP-0024(079)	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034357 ENGINEER SEAN MICHAEL EPPERSON



PAVEMENT MARKING SCHEDULE

PAVEMENT MARKING LINES

TA - WHITE EDGELINE (4",90 MIL)
TB - YELLOW EDGELINE (4",90 MIL)
TC - 10FT. WHITE SKIP (4",120 MIL)
TD - 3FT.-9FT./SP WHITE MINISKIP (4",120 MIL)
TE - WHITE SOLID LANE LINE (4",120 MIL)
TF - 10FT. YELLOW SKIP (4",120 MIL)
TH - YELLOW SINGLE CENTER (4",120 MIL)
TI - YELLOW DOUBLE CENTER (4",120 MIL)
TJ - 10FT. WHITE SKIP (6",120 MIL)
TK - 3FT.-9FT./SP WHITE MINISKIP (6",120 MIL)
TL - WHITE SOLID LANE LINE (6",120 MIL)
TM - 10FT. YELLOW SKIP (6",120 MIL)
TN - WHITE GORELINE (8",90 MIL)
TO - WHITE DIAGONAL (8",90 MIL)
TP - YELLOW DIAGONAL (8",90 MIL)
TQ - WHITE CROSSWALK LINE (8",120 MIL)
TR - WHITE SOLID LANE LINE (8",120 MIL)
TS - WHITE GORELINE (12",90 MIL)
TT - WHITE SOLID LANE LINE (12",120 MIL)
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TV - YELLOW DIAGONAL (12",90 MIL)
T1 - WHITE LINE, RR X (16",120 MIL)
T2 - WHITE STOPBAR (24",120 MIL)
T3 - WHITE CROSSWALK LINE (24",120 MIL)
T4 - WHITE RUMBLE STRIP (4",240 MIL)
T5 - YELLOW RUMBLE STRIP (4",240 MIL)
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T8 - 2FT.-6FT./SP WHITE MINISKIP (4",120 MIL)
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T15 - YELLOW SINGLE CENTER (6",120 MIL)
T16 - YELLOW DOUBLE CENTER (6",120 MIL)
T17 - 3FT.-3FT./SP WHITE MINISKIP ENTRANCE LINE (8",120 MIL)

PAVEMENT MARKING SYMBOLS

UA -LEFT TURN ARROW (90 MIL)
UB - RIGHT TURN ARROW (90 MIL)
UC - STRAIGHT ARROW (90 MIL)
UD - COMBO. LEFT/STRAIGHT ARROW (90 MIL)
UE - COMBO. RIGHT/STRAIGHT ARROW (90 MIL)
UF - COMBO. LEFT/RIGHT ARROW (90 MIL)
UG - COMBO. LEFT/RIGHT/STRAIGHT ARROW (90 MIL)
UH - HANDICAP PARKING (90 MIL)
UI - ALPHANUMERIC CHAR. (120 MIL)
UJ - BICYCLE SYMBOL (90 MIL)
UK - BICYCLE STRAIGHT ARROW (90 MIL)
UL - BICYCLE CHAR. (120 MIL)
UM - 12" YIELD LINE TRIANGLE (90 MIL)
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UO - BICYCLE LEFT ARROW (90 MIL)
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UQ - RAMP ARROW SYMBOL (90 MIL)
UR - SHARROW (90 MIL)
US - BICYCLE LOOP DETECTOR (90 MIL)
UT - U-TURN ARROW (90 MIL)
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MA - PERMANENT RAISED MARKER (YELLOW & YELLOW)
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ALBEMARLE LEFTOVERS

			REVISIONS	
SCALE	1"=50'	DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		
DATE	5-2018			
DWG. BY	CEB			
DESIGN BY	JDH			
APPROVED	DCG			

PROJECT NO.	SHEET NO.
50138.3.249	PMP-2
F.A. PROJECT NO. HSIP-0024(079)	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034357 ENGINEER SEAN MICHAEL EPPERSON

PAVEMENT MARKING SCHEDULE

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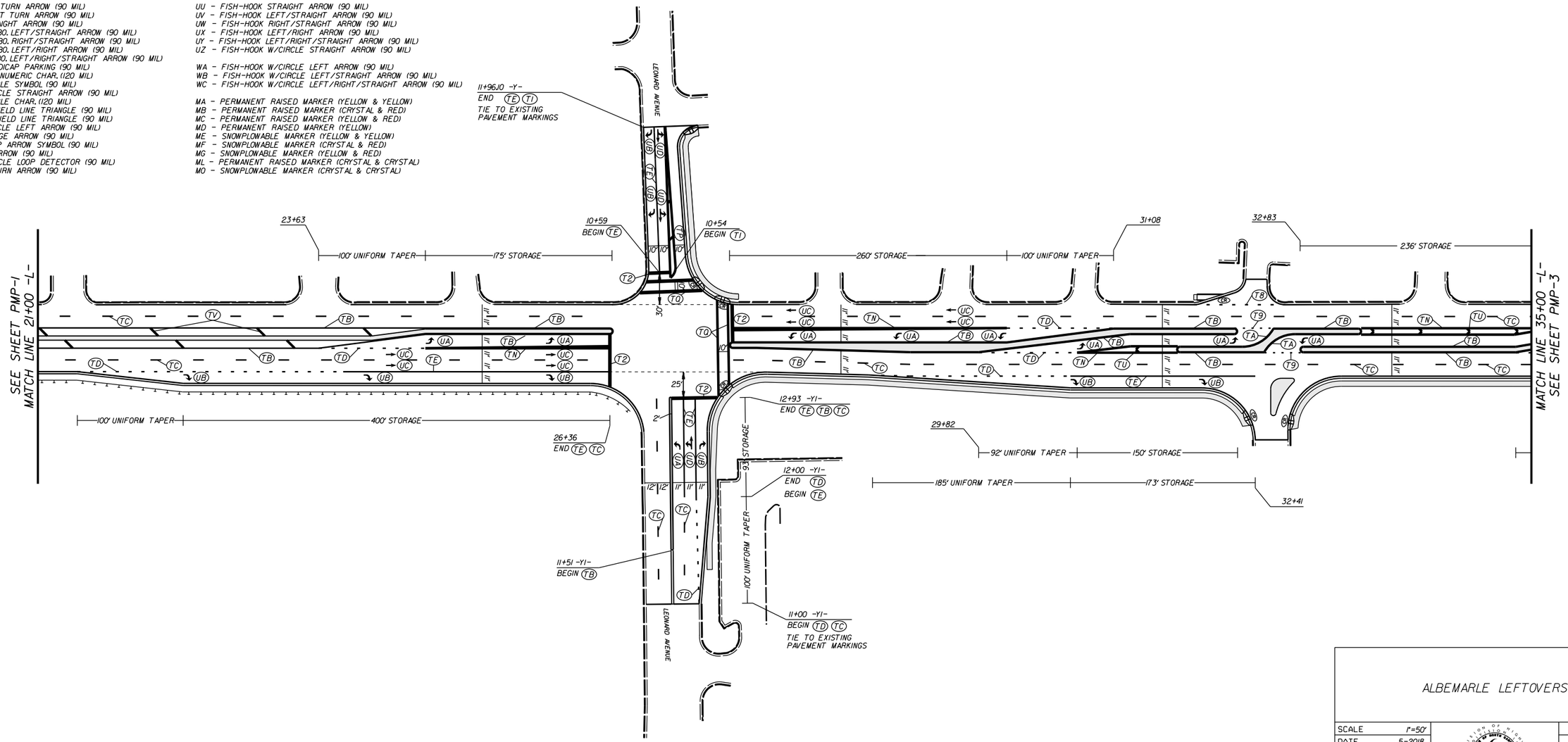

ALBEMARLE LEFTOVERS

SCALE	1"=50'	
DATE	5-2018	
DWG. BY	CEB	
DESIGN BY	JDH	
APPROVED	DCG	

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

REVISIONS	

PROJECT NO.	SHEET NO.
50138.3.249	PMP-3
F.A. PROJECT NO. HSIP-0024(079)	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034357 ENGINEER SEAN MICHAEL EPPERSON

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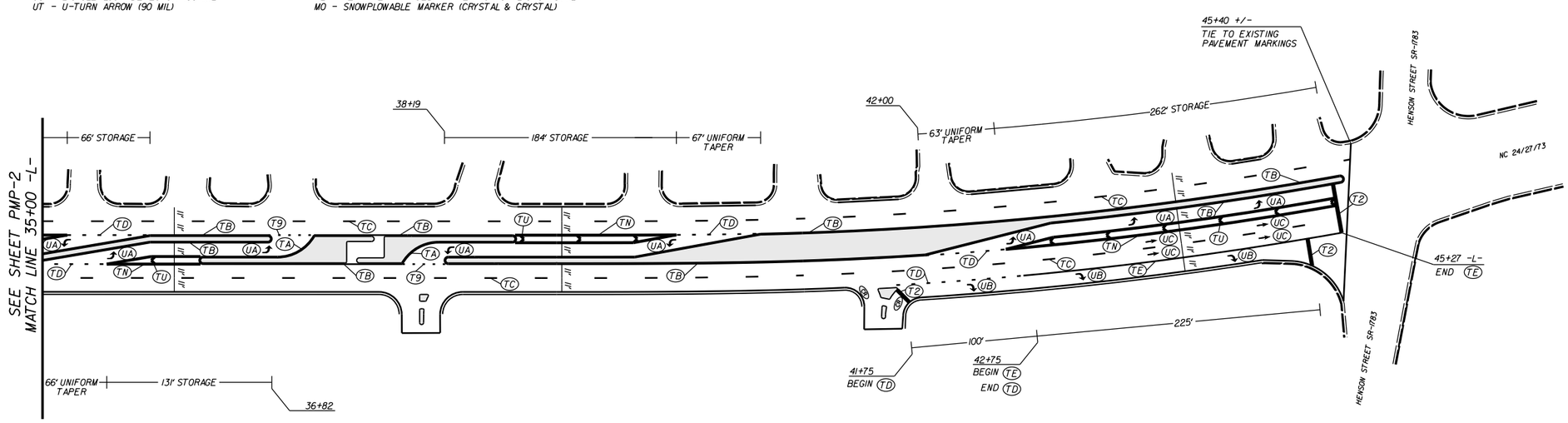

ALBEMARLE LEFTOVERS

			REVISIONS	
SCALE	1"=50'	DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		
DATE	4-2018			
DWG. BY	CEB			
DESIGN BY	JDH			
APPROVED	DCG			

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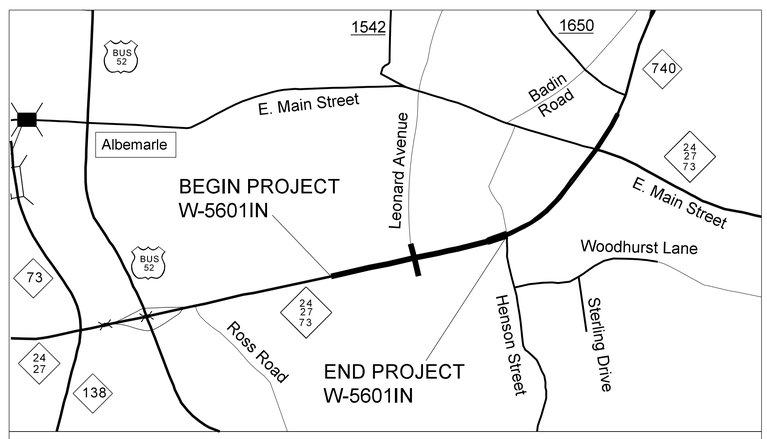
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

STANLY COUNTY



VICINITY MAP

INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP, AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS AND LEGEND
TMP-2 - TMP-2B	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES, GENERAL NOTES, AND LOCAL NOTES)
TMP-3	TEMPORARY TRAFFIC CONTROL PHASING
TMP-4 - TMP-5	PHASE I, STEP 2 TEMPORARY TRAFFIC CONTROL DETAILS
TMP-6 - TMP-7	PHASE I, STEP 3 TEMPORARY TRAFFIC CONTROL DETAILS
TMP-8 - TMP-10	PHASE I, STEP 4 TEMPORARY TRAFFIC CONTROL DETAILS
TMP-11 - TMP-14	PHASE II TEMPORARY TRAFFIC CONTROL DETAILS
TMP-15 - TMP-19	PHASE III TEMPORARY TRAFFIC CONTROL DETAILS

SHEET NO.
TMP-1

PROJECT: W-5601IN

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

WORK ZONE SAFETY & MOBILITY
"from the MOUNTAINS to the COAST"

PLANS PREPARED BY:

CLINTON J. MORGAN, PE
PROJECT ENGINEER

LUKE W. CLARKE
PROJECT DESIGN ENGINEER

NCDOT CONTACTS:

DONALD GRIFFITH
PROJECT ENGINEER

DONALD HARWARD
PROJECT DESIGN ENGINEER

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

PLAN PREPARED FOR N.C.D.O.T. BY:

ATKINS
1616 EAST MILLBROOK ROAD, SUITE 160
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

APPROVED:

DATE:

SEAL

5/1/2018

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

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PROJ. REFERENCE NO.	SHEET NO.
W-5601IN	TMP-1A

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES - TYPE III
1150.01	FLAGGING DEVICES
1165.01	TRUCK MOUNTED ATTENUATOR - DELINEATION
1180.01	SKINNY DRUMS
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - DIVIDED AND UNDIVIDED ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- TEMP. SHORING (LOCATION PURPOSES ONLY)
- WORK AREA
- REMOVAL
- TEMPORARY PAVEMENT

SIGNALS

- EXISTING
- PROPOSED
- TEMPORARY

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- CONE
- DRUM — SKINNY DRUM — TUBULAR MARKER
- TEMPORARY CRASH CUSHION
- PORTABLE CONCRETE BARRIER (P.C.B.)
- FLASHING ARROW BOARD
- FLAGGER
- LAW ENFORCEMENT
- TRUCK MOUNTED ATTENUATOR (TMA)
- CHANGEABLE MESSAGE SIGN

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

PAVEMENT MARKERS

- CRYSTAL/CRYSTAL
- CRYSTAL/RED
- YELLOW/YELLOW

PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

TEMPORARY PAVEMENT MARKING

PAVEMENT MARKING LINES:

PA	WHITE EDGELINE	PAINT (4")
PB	YELLOW EDGELINE	PAINT (4")
PC	10 FT. WHITE SKIP LINE	PAINT (4")
PD	3'-9' MINISKIP LINE	PAINT (4")
PE	WHITE SOLID LANE LINE	PAINT (4")
PF	10' YELLOW SKIP	PAINT (4")
PH	SINGLE YELLOW CENTER LINE	PAINT (4")
PN	WHITE GORE LINE	PAINT (8")
P8	2'-6' WHITE MINISKIP LINE	PAINT (4")
P9	2'-6' YELLOW MINISKIP LINE	PAINT (4")

PAVEMENT MARKING SYMBOLS AND CHARACTERS:

QA	LEFT TURN ARROW	PAINT
QB	RIGHT TURN ARROW	PAINT

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 160
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

APPROVED: _____

DATE: _____

SEAL

5/1/2018

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

DocuSigned by: Clinton J. Morgan
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DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

ROADWAY STANDARD DRAWINGS & LEGEND

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MANAGEMENT STRATEGIES

THE PURPOSE OF THIS PROJECT IS TO WIDEN EXISTING NC 24/27/73 FROM JUST EAST OF SPAULDING STREET TO HENSON STREET. THE WIDENING IS PRIMARILY ALONG THE SOUTH SIDE OF NC 24/27/73 AND INCLUDES BOTH DRAINAGE IMPROVEMENTS AND SIDEWALK CONSTRUCTION.

PHASE I OF THIS TRAFFIC MANAGEMENT PLAN CONSISTS OF CONSTRUCTING THE PROPOSED -L- OUTSIDE WIDENING, SOUTH SIDE DRAINAGE IMPROVEMENTS AND SIDEWALK CONSTRUCTION BEHIND LANE CLOSURES. PHASE I CONSTRUCTION ALSO INCLUDES THE WORK ON THE EAST SIDE OF -Y1- LEONARD AVENUE. TRAFFIC WILL BE MAINTAINED IN THE EXISTING LANES.

PHASE I CONSTRUCTION CONTAINS THREE STEPS THAT MUST BE COMPLETED SEQUENTIALLY AS SHOWN IN STEPS TWO THROUGH FOUR BELOW. THE CONTRACTOR CANNOT PROGRESS TO THE NEXT STEP UNTIL CONSTRUCTION IS COMPLETED TO THE SATISFACTION OF THE ENGINEER. CONCURRENT WORK ON MULTIPLE STEPS IS PROHIBITED.

- PHASE I, STEP 2: CONSTRUCT -L- EASTBOUND WIDENING AND DRAIANGE IMPROVEMENTS FROM THE BEGINNING OF THE PROJECT TO -Y1- (LEONARD AVENUE).
- PHASE I, STEP 3: CONSTRUCT NORTHBOUND -Y1- WIDENING AND DRAINAGE IMPROVEMENTS FROM -Y1- STA. 11+00 +/- TO -Y1- STA. 12+82 +/-.
- PHASE I, STEP 4: CONSTRUCT -L- EASTBOUND WIDENING, DRAINAGE IMPROVEMENTS AND SIDEWALK CONSTRUCTION FROM -Y1- (LEONARD AVENUE) TO THE END OF THE PROJECT.

PHASE II OF THIS TRAFFIC MANAGEMENT PLAN CONSISTS OF CONSTRUCTING THE PROPOSED -L- MEDIAN DRAINAGE BEHIND LANE CLOSURES. WESTBOUND EXISTING TRAFFIC IS MAINTAINED IN THE EXISTING TRAVEL LANES. CONCERNING THE EASTBOUND DIRECTION, TRAFFIC IS REDUCED TO ONE LANE AND SHIFTED TO THE PAVEMENT CONSTRUCTED IN PHASE I. THIS SHIFT OCCURS SO THAT AS MUCH ROOM AS POSSIBLE IS MAINTAINED BETWEEN THE MEDIAN DRAINAGE CONSTRUCTION AND TRAFFIC.

PHASE III OF THIS TRAFFIC MANAGEMENT PLAN CONSISTS OF CONSTRUCTING THE FOLLOWING:

- THE PROPOSED MEDIAN ISLANDS
- IMPROVEMENTS ON THE NORTH SIDE OF -L-
- THE NORTH LEG OF -Y2- LEONARD AVENUE
- ADJUST THE SIGNAL HEADS AT LEONARD AVENUE TO CORRESPOND WITH THE NEW PHASE III TRAFFIC PATTERN

BOTH EASTBOUND AND WESTBOUND TRAFFIC ARE SHIFTED TO TWO 10′ LANES IN BOTH DIRECTIONS. THE SIGNAL HEADS AT THE INTERSECTION WITH LEONARD AVENUE ARE ALSO ADJUSTED IN ACCORADANCE WITH THIS NEW TRAFFIC PATTERN. LANE CLOSURES ARE USED AS NECESSARY TO CONSTRUCT THE PROPOSED MEDIAN ISLANDS. ALL LANES ARE TO REOPEN AT THE END OF EACH WORK PERIOD. THIS TRAFFIC MANAGEMENT PLAN EMPLOYS 10′ LANES SO THAT A 3′ MINIMUM OFFSET IS MAINTAINED BETWEEN THE NEWLY CONSTRUCTED MEDIAN ISLANDS AND THE ADJACENT TRAVEL LANE WHILE THE CONCRETE CURES.

THE IMPROVEMENTS ON THE NORTH SIDE OF -L- AND THE EAST SIDE OF -Y2- ARE PERFORMED AFTER THE PROPOSED MEDIAN ISLAND CONSTRUCTION IS COMPLETE SO THAT THE CONTRACTOR IS NOT WORKING ON BOTH SIDES OF WESTBOUND -L-. CONSTRUCT THESE IMPROVEMENTS USING LANE CLOSURES DURING OFF-PEAK HOURS. REOPEN BOTH WESTBOUND -L- AND -Y2- DURING PERIODS WHEN WORK IS NOT BEING PERFORMED.

MANAGEMENT STRATEGIES – CONT.

PHASE IV OF THIS TRAFFIC MANAGEMENT PLAN CONSISTS OF THE FOLLOWING:

- MILLING AND PLACEMENT OF THE FINAL LAYER OF SURFACE COURSE
- PLACEMENT OF THE FINAL PAVEMENT MARKINGS AS PER THE PAVEMENT MARKING PLAN
- REMOVAL OF ANY REMAING TRAFFIC CONTROL DEVICES AND SIGNING
- OPENING THE PROJECT TO THE FINAL TRAFFIC PATTERN.

PERFORM MILLING TO INCLUDE PROFILE MILLING OF THE WB LANES, PLACEMENT OF FINAL LAYER OF SURFACE COURSE AND FINAL PAVEMENT MARKINGS USING ALTERNATE LANE CLOSURES.

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.
THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

TIME RESTRICTIONS

A) DO NOT CLOSE OR NARROW TRAVEL LANES AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS	OTHER
NC 24/27/73	MONDAY THROUGH FRIDAY FROM 6:00 AM TO 9:00 AM & 4:00 PM TO 6:00 PM SUNDAY - ANYTIME	MONDAY THROUGH FRIDAY NO ADDITIONAL LANE CLOSURES ON -L-, -Y1- AND -Y2- OTHER THAN THOSE CALLED FOR ON PLANS AND RSD FROM 8:00 PM TO 6:00 AM
LEONARD AVENUE (-Y1- & -Y2-)	MONDAY THROUGH FRIDAY FROM 6:00 AM TO 9:00 PM SATURDAY AND SUNDAY - ANYTIME	

B) DO NOT CLOSE OR NARROW TRAVEL LANES DURING HOLIDAYS AND SPECIAL EVENTS AS FOLLOWS:

ROAD NAME

NC 24/27/73
LEONARD AVENUE (-Y1- & -Y2-)

HOLIDAY AND HOLIDAY WEEKEND

1. FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.

2. FOR NEW YEAR'S, BETWEEN THE HOURS OF 6:00 AM DECEMBER 31st TO 9:00 PM JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 8:00 PM THE FOLLOWING TUESDAY.

3. FOR EASTER, BETWEEN THE HOURS OF 6:00 AM THURSDAY AND 9:00 PM MONDAY.

(CONTINUED ON TMP-2A)

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GENERAL NOTES

(CONTINUED FROM TMP-2)

TIME RESTRICTIONS - CONT.

HOLIDAY AND HOLIDAY WEEKEND - CONT.

4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 AM FRIDAY TO 9:00 PM TUESDAY.

5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 AM THE DAY BEFORE INDEPENDENCE DAY AND 9:00 PM THE DAY AFTER INDEPENDENCE DAY.

6. IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 6:00 AM THE THURSDAY BEFORE INDEPENDENCE DAY AND 9:00 PM THE TUESDAY AFTER INDEPENDENCE DAY.

7. FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 AM FRIDAY AND 9:00 PM TUESDAY.

8. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 AM TUESDAY TO 9:00 PM MONDAY.

9. FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 AM THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 9:00 PM THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

LANE AND SHOULDER CLOSED REQUIREMENTS

C) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.

D) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.

E) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

F) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC MANAGEMENT PLANS, ROADWAYS STANDARD DRAWINGS OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.

G) DO NOT WORK SIMULTANEOUSLY WITHIN 15FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

H) PROVIDE TRAFFIC CONTROL FOR APPROPRIATE LANE CLOSURES FOR SURVEYING DONE BY THE DEPARTMENT.

PAVEMENT EDGE DROP OFF REQUIREMENTS

I) BACKFILL AT 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS AN EDGE OF PAVEMENT DROP-OFF AS FOLLOWS:

- BACKFILL DROP-OFFS THAT EXCEED 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.
- BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH
- BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.

J) DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING 'UNEVEN LANES' SIGNS (W8-11) 500 FT IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

K) NOTIFY THE ENGINEER TWENTY-ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

L) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

M) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERNS.

N) INSTALL BLACK ON ORANGE 'DIP' SIGNS (W8-2) AND/OR BUMP SIGNS (W8-1) 500 FT IN ADVANCE OF THE UNEVEN AREA OR AS DIRECTED BY THE ENGINEER.

TRAFFIC CONTROL DEVICES

O) WHEN LANE CLOSURES ARE NOT IN EFFECT, SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES), AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

P) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES DRUMS PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.

PAVEMENT MARKINGS AND MARKERS

Q) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS SHOWN IN THE PAVEMENT MARKING PLAN.

R) INSTALL TEMPORARY PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:

ROAD NAME	MARKERS	MARKINGS/SYMBOLS
NC 24/27/73	NONE	PAINT

S) PLACE ONE APPLICATION OF PAINT FOR TEMPORARY TRAFFIC PATTERNS. PLACE A SECOND APPLICATION OF PAINT SIX (6)MONTHS AFTER THE INITIAL APPLICATION AND EVERY SIX MONTHS AS DIRECTED BY THE ENGINEER.

T) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

U) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATIONS.

V) TRACE THE PROPOSED MONOLITHIC ISLAND LOCATIONS WITH PROPER COLOR PAVEMENT MARKINGS PRIOR TO INSTALLATION. PLACE DRUMS TO DELINEATE ANY PROPOSED MONOLITHIC ISLANDS BEFORE INSTALLATION.

(CONTINUED ON TMP-2B)

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(CONTINUED FROM TMP-2A)

GENERAL NOTES

MISCELLANEOUS

W) LAW ENFORCEMENT MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS, AS DIRECTED BY THE ENGINEER.

X) IN THE EVENT A TIE-IN CANNOT BE MADE IN ONE DAY'S TIME, BRING THE TIE-IN AREA TO AN APPROPRIATE ROADWAY ELEVATION AS DETERMINED BY THE ENGINEER.

Y) PATCH PAVEMENT THAT HAS BEEN DISTURBED BY CONSTRUCTION OPERATIONS PRIOR TO REOPENING TRAVEL LANES TO TRAFFIC.

LOCAL NOTES

1) AT THE END OF EACH WORK PERIOD, COVER UNFINISHED DRAINAGE STRUCTURES WITH TRAFFIC-BEARING STEEL PLATE PRIOR TO REOPENING ANY ADJACENT TRAVEL LANES TO TRAFFIC.

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PHASING

PROJ. REFERENCE NO.	SHEET NO.
W-5601IN	TMP-3

PHASE I

STEP 1: USING RSD NO. 1101.01, SHEETS 2 AND 3 OF 3, INSTALL WORK ZONE ADVANCE WARNING SIGNS ON -L- (NC 24/27/73), -Y- (SPAULDING STREET), -Y1- & -Y2- (LEONARD AVENUE) AND -Y3- (HENSON STREET). UNDER THE DIRECTION OF THE ENGINEER, SUPPLEMENT THE ADVANCE WARNING SIGNS WITH 35 MPH ADVISORY SPEED LIMIT PLAQUES (W13-1P).

STEP 2: USING RSD 1101.02, SHEET 3 OF 14, AND TMP-4 THROUGH TMP-5, PLACE DRUMS TO CLOSE THE -L- EASTBOUND OUTSIDE LANE TO TRAFFIC. SEE TIME RESTRICTIONS.

WHILE MAINTAINING TRAFFIC ON EXISTING -L-, CONSTRUCT THE EASTBOUND WIDENING UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE FROM -L- STA. 14+50 +/- TO -L- STA. 26+66 +/-. FEATHER ASPHALT TO PROVIDE A SMOOTH DRIVING SURFACE BETWEEN EXISTING AND NEW PAVEMENT WHEN TRAFFIC IS SHIFTED IN A SUBSEQUENT PHASE.

STEP 3: USING RSD 1101.02, SHEET 3 OF 14, AND TMP-6 THROUGH TMP-7, CONSTRUCT -Y1- NORTHBOUND WIDENING UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE FROM -Y1- STA. 11+00 +/- TO -Y1- STA. 12+82 +/-. FEATHER ASPHALT TO PROVIDE A SMOOTH DRIVING SURFACE BETWEEN EXISTING AND NEW PAVEMENT WHEN TRAFFIC IS SHIFTED IN A SUBSEQUENT PHASE. PERFORM THIS WORK DURING SUCCESIVE WORK PERIODS AS PER TIME RESTRICTIONS. THE CONTRACTOR SHALL NOT BE ALLOWED TO WORK ON ANY OTHER PORTION OF THE PROJECT UNTIL THIS PORTION OF THE LEONARD AVE. CONSTRUCTION IS COMPLETED TO THE SATISFACTION OF THE ENGINEER.

AS SHOWN ON TMP-7, USE A LINE OF SKINNY DRUMS SPACED 35′ C-C TO DELINEATE THE EXISTING RIGHT EDGE OF TRAVEL WHEN THE RIGHT TURN LANE IS REOPENED TO TRAFFIC AT THE END OF EACH WORK PERIOD. SEE TIME RESTRICTIONS.

STEP 4: USING RSD 1101.02, SHEET 3 OF 14, AND TMP-8 THROUGH TMP-10, PLACE DRUMS TO CLOSE THE -L- EASTBOUND OUTSIDE LANE TO TRAFFIC. SEE TIME RESTRICTIONS.

WHILE MAINTAINING TRAFFIC ON EXISTING -L-, CONSTRUCT THE FOLLOWING:

- EASTBOUND WIDENING AND DRAINAGE IMPROVEMENTS UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE FROM -Y1- (LEONARD AVE.) TO THE END OF PROJECT (-L- STA. 44+97 +/-). THIS WORK INCLUDES THE SE RADIUS RETURN AT THE INTERSECTION OF -L- AND -Y1-. FEATHER ASPHALT TO PROVIDE A SMOOTH DRIVING SURFACE BETWEEN EXISTING AND NEW PAVEMENT WHEN TRAFFIC IS SHIFTED IN A SUBSEQUENT PHASE.

- THE PROPOSED SIDEWALK FROM THE SE RADIUS RETURN AT -L- AND -Y1- TO THE END OF THE PROJECT AT -L- STA. 44+97 +/-. ONCE CONSTRUCTED, THE PROPOSED SIDEWALK ON THE SOUTH SIDE OF -L- WILL REMAIN CLOSED DURING PHASES II & III TO ELIMINATE ANY CONFLICTS BETWEEN PEDESTRIANS (PARTICULARLY BLIND PEDESTRIANS WHO RELY ON CANING TO NAVIGATE PEDESTRIAN TRAVELWAYS) AND PROPOSED DRIVEWAY ISLAND CONSTRUCTION ON THE SOUTH SIDE OF -L- DURING PHASE III.

STEP 5: USING RSD 1101.02, SHEET 2 OF 14, PERFORM OVERNIGHT WORK TO CONSTRUCT THE 15″ RCP AT -L- STA. 31+70 +/- AND -L- STA. 38+30 +/- . SEE NOTE 3 ON SHEETS TMP-6 AND TMP-7.

PHASE II

THE CONTRACTOR SHALL NOTIFY THE ENGINEER TWENTY-ONE (21) CALENDAR DAYS PRIOR TO THE TRAFFIC SHIFT.

CONTINUE TO MAINTAIN PEDESTRIAN TRAFFIC ON THE EXISTING SIDEWALK ON THE NORTH SIDE OF -L-. CONTINUE TO CLOSE THE SIDEWALK ON THE SOUTH SIDE OF -L- CONSTRUCTED IN PHASE I.

STEP 1: USING THE DETAILS ON SHEETS TMP-11 THROUGH TMP-14, PLACE TEMPORARY PAVEMENT MARKINGS AND SHIFT EASTBOUND -L- TRAFFIC TO THE OUTSIDE UTILIZING THE NEW PAVEMENT CONSTRUCTED IN PHASE I. REFER TO RSD 1101.02 SHEET 3 OF 14, FOR LANE CLOSURE DETAIL, SIGNING AND DEVICES NEEDED TO SHIFT UPSTREAM EASTBOUND TRAFFIC TO THE NEW PATTERN.

PHASE II - CONT.

STEP 2: CONSTRUCT THE PROPOSED MEDIAN DRAINAGE ON -L- FROM STA. 42+25 +/- TO STA. 43+00 +/- DURING SUCCESIVE WORK PERIODS. SEE TIME RESTRICTIONS. CLOSE THE ADJACENT WESTBOUND THROUGH LANE AND LEFT TURN LANE DURING THOSE WORK PERIODS USING RSD 1101.02, SHEET 3 OF 14. REFER ALSO TO SHEETS TMP-13 AND TMP-14 FOR THE CORRESPONDING WESTBOUND UPSTREAM LANE CLOSURE EAST -Y3- (HENSON STREET).

STEP 3: USING RSD 1101.02, SHEET 3 OF 14, AND THE ADDITIONAL DETAILS ON SHEETS TMP-11 THROUGH TMP-14, CONSTRUCT THE PROPOSED MEDIAN DRAINAGE ON -L- FROM STA. 16+80 +/- TO STA. 40+60 +/- DURING SUCCESIVE WORK PERIODS. SEE NOTE 1 ON SHEETS TMP-12 AND TMP-13.

PHASE III

THE CONTRACTOR SHALL NOTIFY THE ENGINEER TWENTY-ONE (21) CALENDAR DAYS PRIOR TO THE TRAFFIC SHIFT.

CONTINUE TO MAINTAIN PEDESTRIAN TRAFFIC ON THE EXISTING SIDEWALK ON THE NORTH SIDE OF -L-. CONTINUE TO CLOSE THE SIDEWALK ON THE SOUTH SIDE OF -L- CONSTRUCTED IN PHASE I.

STEP 1: USING THE DETAILS ON SHEETS TMP-15 THROUGH TMP-19 AND RSD 1101.02, SHEET 3 OF 14, PERFORM THE FOLLOWING UNDER THE DIRECTION OF THE ENGINEER:

- PLACE TEMPORARY PAINT PAVEMENT MARKINGS ON -L- IN BOTH EASTBOUND AND WESTBOUND DIRECTIONS.
- INSTALL DRUMS, SKINNY DRUMS, AND BARRICADES IN ACCORDANCE WITH THE PHASE III TMP DETAILS.
- IN CONJUNCTION WITH SHIFTING TRAFFIC TO THE PHASE III TRAFFIC PATTERN, ADJUST THE TRAFFIC SIGNAL HEADS FOR THE INTERSECTION OF -L-, -Y1- AND -Y2- DURING A SINGLE WORK PERIOD. SEE TIME RESTRICTIONS.
- SHIFT TRAFFIC TO THE PHASE III PATTERN ONCE SIGNAL HEADS AT LEONARD AVENUE AND -L- ARE ADJUSTED.

STEP 2: CONSTRUCT THE PROPOSED CONCRETE MEDIAN ISLANDS ON -L- FROM STA. 42+25 +/- TO STA. 43+00 +/- DURING SUCCESIVE WORK PERIODS. SEE TIME RESTRICTIONS.

STEP 3: USING RSD 1101.02, SHEET 3 OF 14, AND THE ADDITIONAL DETAILS ON SHEETS TMP-18 & TMP-19, CONSTRUCT THE PROPOSED CONCRETE MEDIAN ISLANDS ON -L- FROM STATION 16+80 +/-TO STATION 40+60 +/- DURING SUCCESIVE WORK PERIODS. SEE TIME RESTRICTIONS. CONSTRUCT THE SOUTH SIDE DRIVEWAY ISLANDS AS SHOWN ON SHEETS TMP-16 AND TMP-18.

STEP 4: USING RSD 1101.02, SHEET 3 OF 14, AND SHEET TMP-17, CONSTRUCT THE THE NORTBOUND -Y2- LEONARD AVENUE IMPROVEMENTS FROM STATION 10+00 TO STATION 11+97, THE ADJACENT RADIUS RETURN AND THE DRIVEWAY WIDENING AT STATION 32+30 +/- DURING SUCCESIVE WORK PERIODS. SEE NOTE 3 ON SHEET TMP-17 AND TIME RESTRICTIONS.

PHASE IV

STEP 1: USING RSD 1101.02 SHEET 3 OF 14, MILL THE EXISTING ROADWAY ON -L-, -Y1- AND -Y2-. PROFILE MILLING WILL BE PERFORMED ALONG THE NORTH CURBLINE OF -L- TO MATCH THE OVERLAY WITH THE EXISTING GUTTER EDGE. NO MILLING WILL BE PERFORMED ADJACENT TO THE NEW MEDIAN CURBS. PLACE THE FINAL LAYER OF SURFACE COURSE, PERMANENT SIGNS, PERMANENT PAVEMENT MARKINGS AND RAISED PAVEMENT MARKERS.

STEP 2: REMOVE ANY REMAINING TEMPORARY TRAFFIC CONTROL DEVICES AND BARRICADES. PERFORM A FINAL CLEAN-UP OF THE PROJECT. OPEN THE SIDEWALK ON THE SOUTH SIDE OF -L- TO PEDESTRIAN TRAFFIC.

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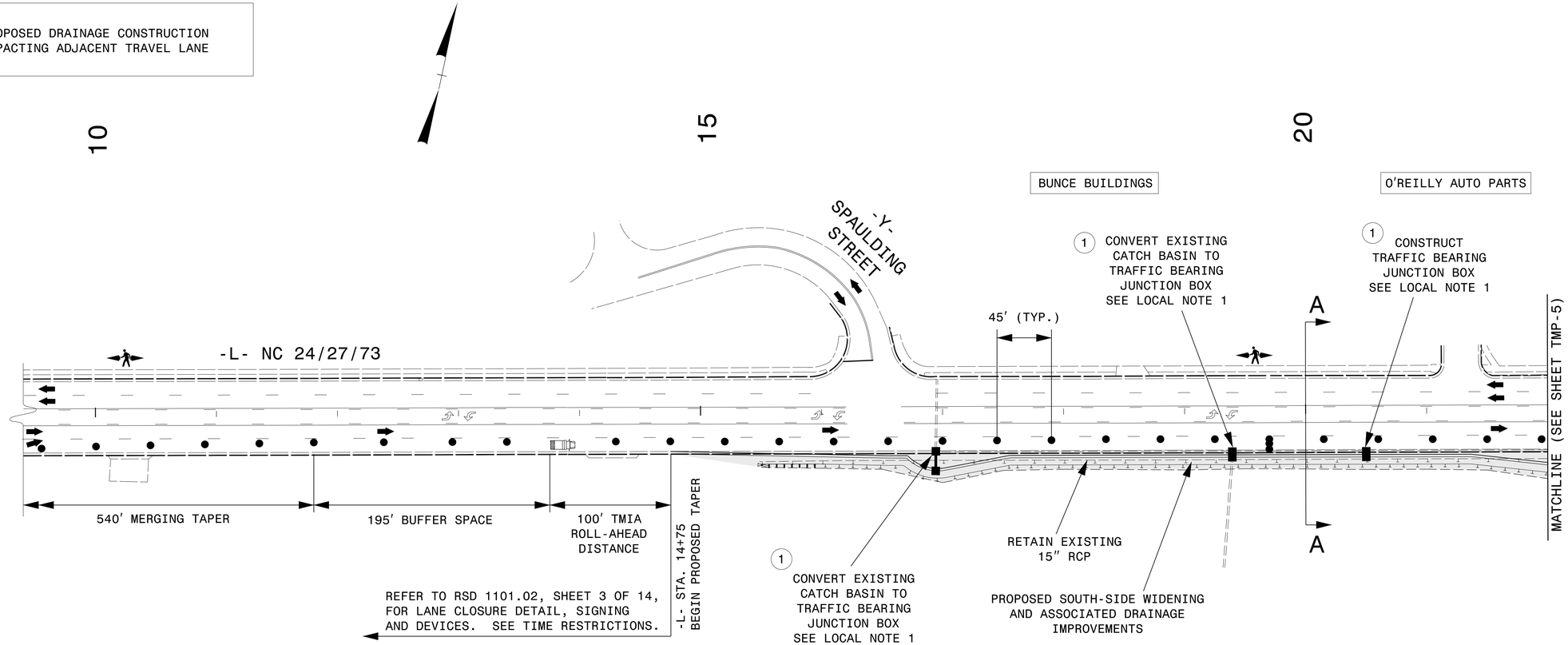
PROJ. REFERENCE NO.	SHEET NO.
W-5601IN	TMP-4

(1) PROPOSED DRAINAGE CONSTRUCTION IMPACTING ADJACENT TRAVEL LANE

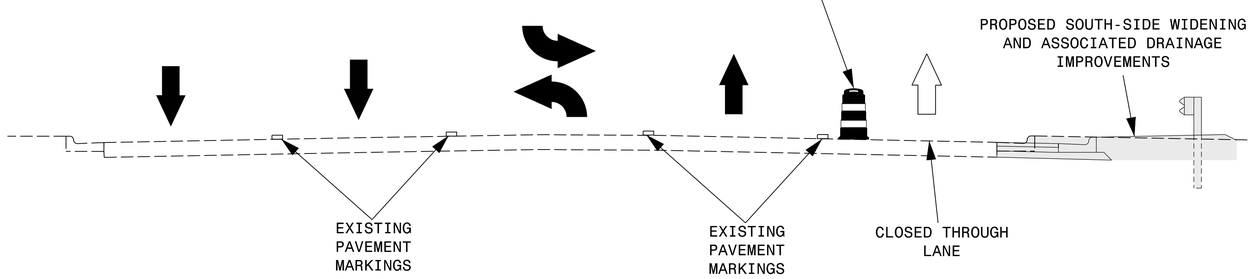


ALL PAVEMENT MARKINGS ARE EXISTING

CUT SECTION 'A-A'

-L- STA. 20+00

USE DRUMS TO CLOSE ADJACENT THROUGH LANE IN LIEU OF POSITIVE PROTECTION SUCH AS PORTABLE CONCRETE BARRIER OR WATER-FILLED BARRIER. THE USE OF DRUMS WILL ALLOW THE CONTRACTOR GREATER WORK AREA INGRESS AND EGRESS FLEXIBLITY WHILE ALSO NEGATING CLEAR ZONE CONCERNS AND THE NEED FOR BARRIER END UNIT ATTENTUATION. THE LANE CLOSURE WILL REMAIN IN EFFECT WHILE ANY DRAINAGE CONSTRUCTION EXCAVATION AND PAVEMENT EDGE DROP-OFFS POSE HAZARDS TO MOTORISTS.



NTS

ATKINS
1616 EAST MILLBROOK ROAD, SUITE 160
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

APPROVED: _____

DATE: _____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

5/1/2018

DocuSigned by: Clinton J. Morgan

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

PHASE I, STEP 2 DETAIL

30-APR-2018 15:15
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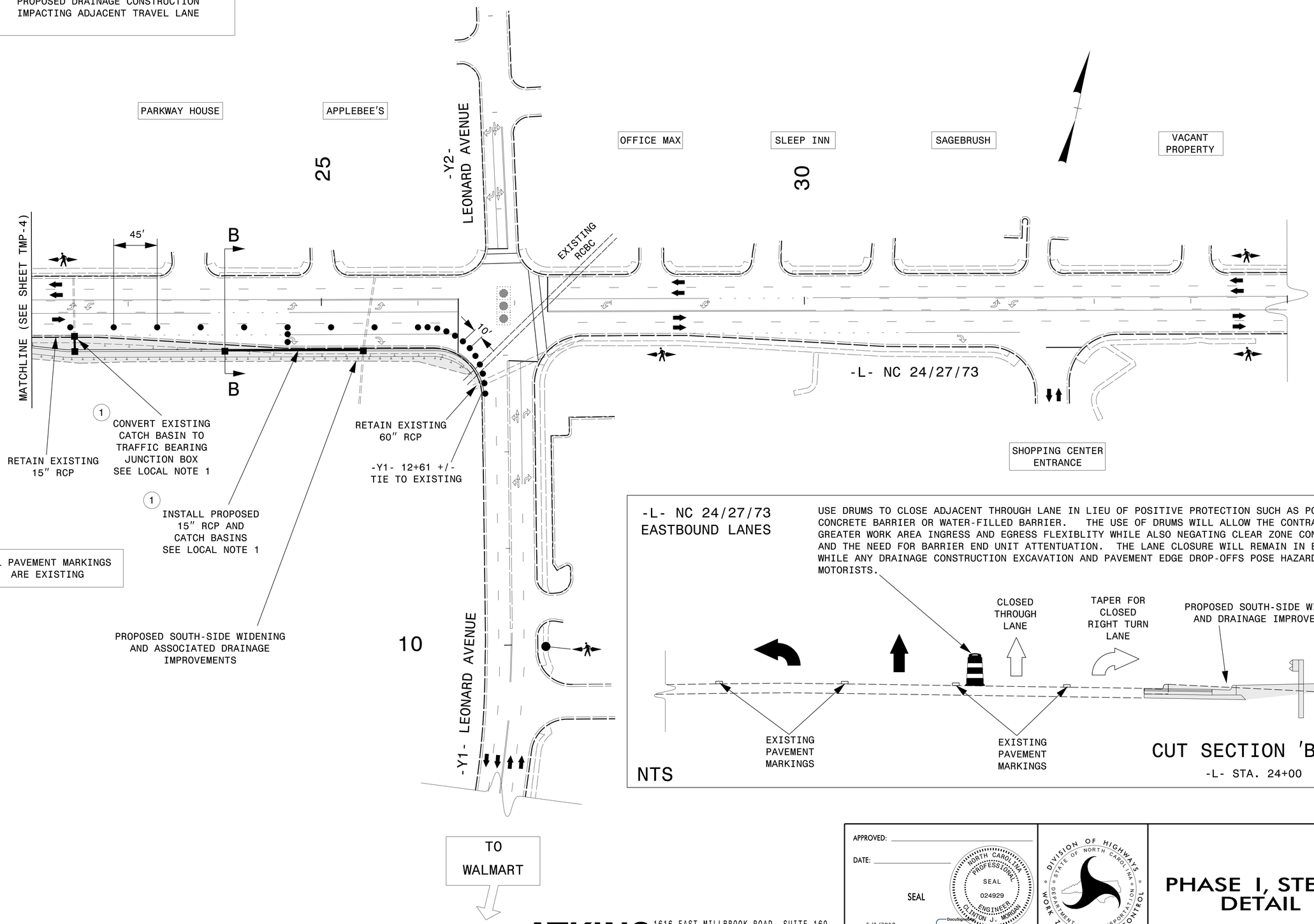
PROJ. REFERENCE NO.	SHEET NO.
W-5601IN	TMP-5

(1) PROPOSED DRAINAGE CONSTRUCTION IMPACTING ADJACENT TRAVEL LANE



-L- NC 24/27/73
EASTBOUND LANES

USE DRUMS TO CLOSE ADJACENT THROUGH LANE IN LIEU OF POSITIVE PROTECTION SUCH AS PORTABLE CONCRETE BARRIER OR WATER-FILLED BARRIER. THE USE OF DRUMS WILL ALLOW THE CONTRACTOR GREATER WORK AREA INGRESS AND EGRESS FLEXIBLITY WHILE ALSO NEGATING CLEAR ZONE CONCERNS AND THE NEED FOR BARRIER END UNIT ATTENTUATION. THE LANE CLOSURE WILL REMAIN IN EFFECT WHILE ANY DRAINAGE CONSTRUCTION EXCAVATION AND PAVEMENT EDGE DROP-OFFS POSE HAZARDS TO MOTORISTS.

NTS

CUT SECTION 'B-B'
-L- STA. 24+00

ATKINS
1616 EAST MILLBROOK ROAD, SUITE 160
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

APPROVED: _____

DATE: _____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

5/1/2018

DocuSigned by: Clinton J. Morgan

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

PHASE I, STEP 2 DETAIL

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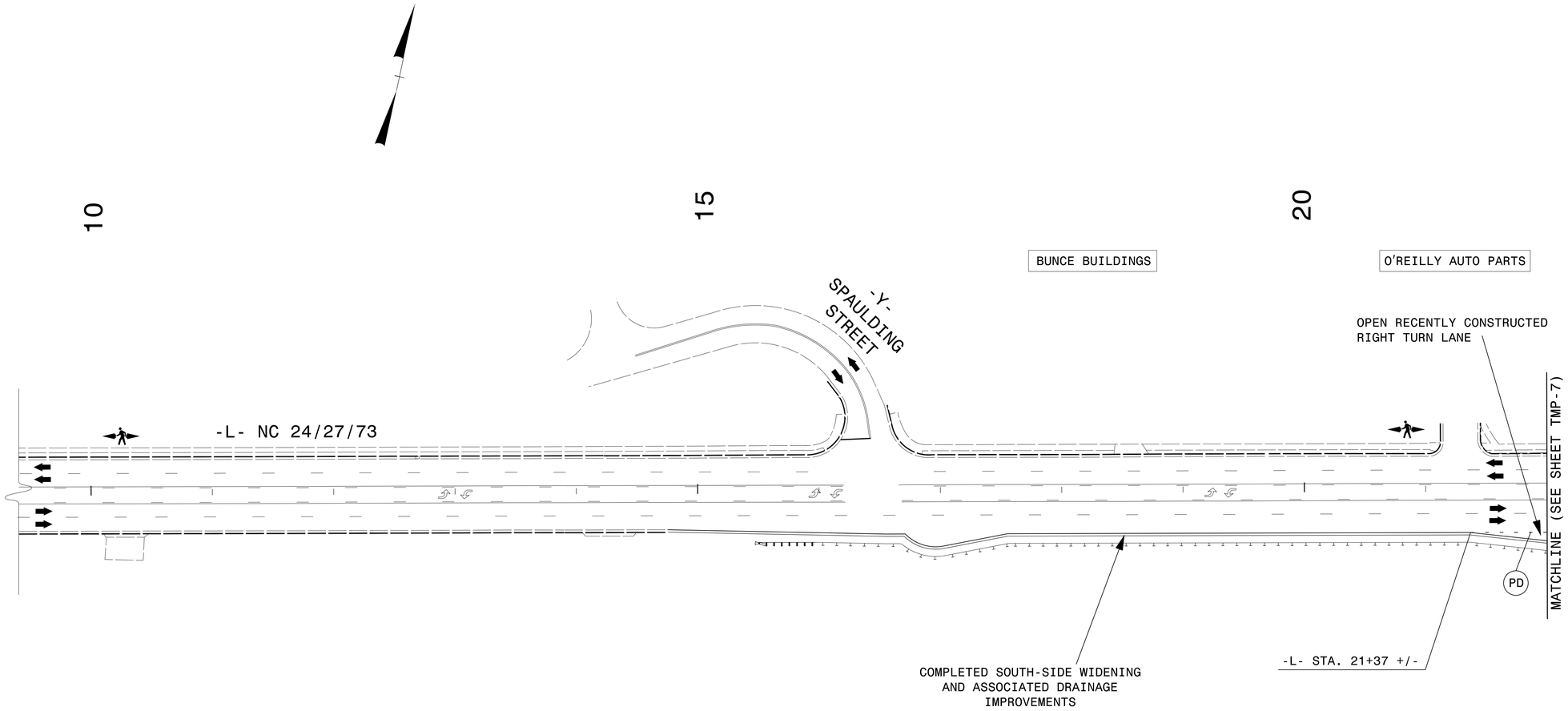
PROJ. REFERENCE NO.	SHEET NO.
W-5601IN	TMP-6



TEMPORARY PAVEMENT MARKING

PAVEMENT MARKING LINES:

PD	3'-9' WHITE MINISKIP LINE	PAINT (4")

ALL PAVEMENT MARKINGS
ARE EXISTING UNLESS
OTHERWISE NOTED

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 160
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

APPROVED: _____

DATE: _____

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NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

5/1/2018

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PHASE I, STEP 3 DETAIL

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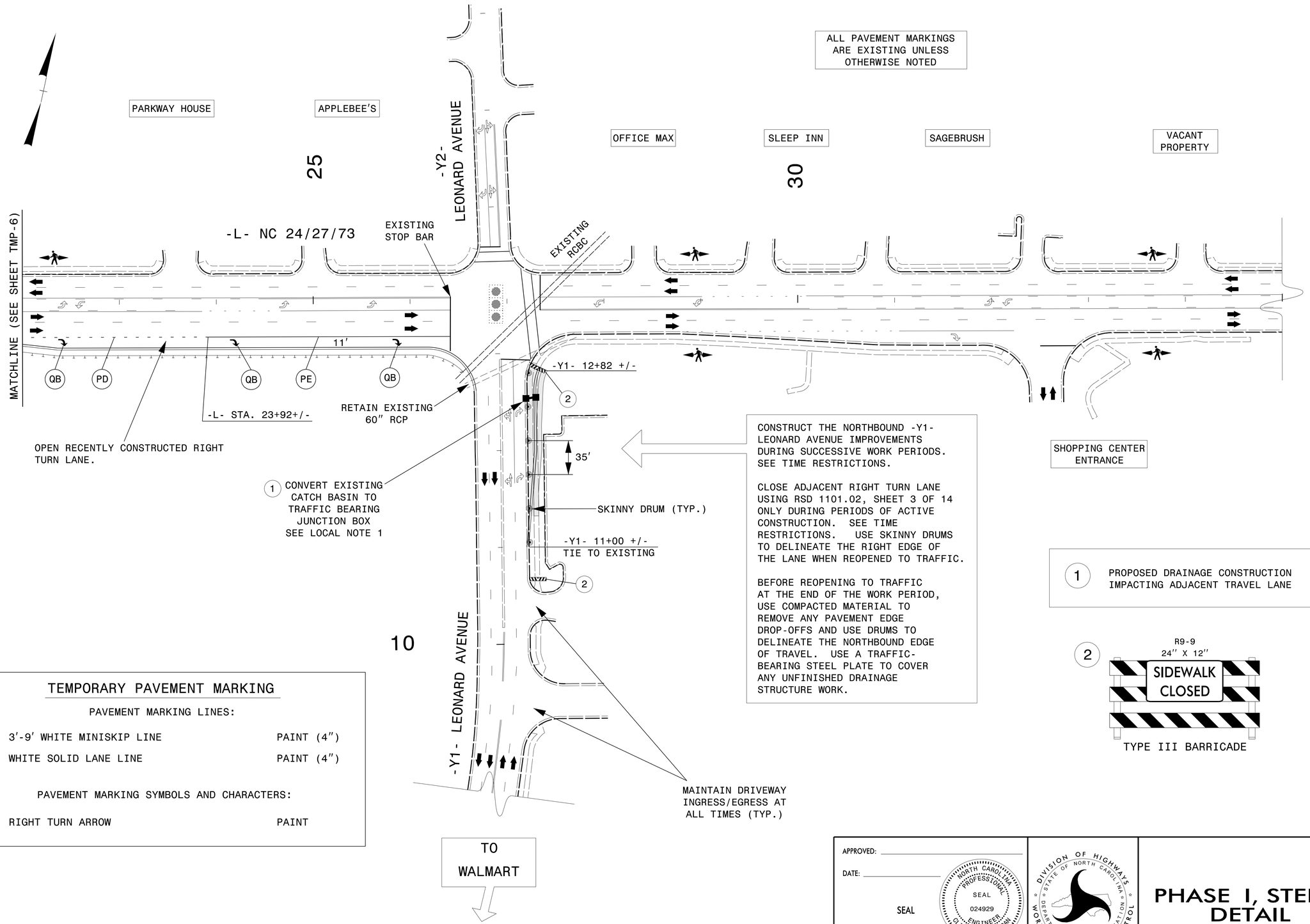
W-5601IN	TMP-7



CONSTRUCT THE NORTHBOUND -Y1- LEONARD AVENUE IMPROVEMENTS DURING SUCCESSIVE WORK PERIODS. SEE TIME RESTRICTIONS.

CLOSE ADJACENT RIGHT TURN LANE USING RSD 1101.02, SHEET 3 OF 14 ONLY DURING PERIODS OF ACTIVE CONSTRUCTION. SEE TIME RESTRICTIONS. USE SKINNY DRUMS TO DELINEATE THE RIGHT EDGE OF THE LANE WHEN REOPENED TO TRAFFIC.

BEFORE REOPENING TO TRAFFIC AT THE END OF THE WORK PERIOD, USE COMPACTED MATERIAL TO REMOVE ANY PAVEMENT EDGE DROP-OFFS AND USE DRUMS TO DELINEATE THE NORTHBOUND EDGE OF TRAVEL. USE A TRAFFIC-BEARING STEEL PLATE TO COVER ANY UNFINISHED DRAINAGE STRUCTURE WORK.

1 PROPOSED DRAINAGE CONSTRUCTION IMPACTING ADJACENT TRAVEL LANE

2

TYPE III BARRICADE

TEMPORARY PAVEMENT MARKING

PAVEMENT MARKING LINES:

PD	3'-9' WHITE MINISKIP LINE	PAINT (4")
PE	WHITE SOLID LANE LINE	PAINT (4")

PAVEMENT MARKING SYMBOLS AND CHARACTERS:

QB	RIGHT TURN ARROW	PAINT

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 160
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

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5/1/2018

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DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

PHASE I, STEP 3 DETAIL

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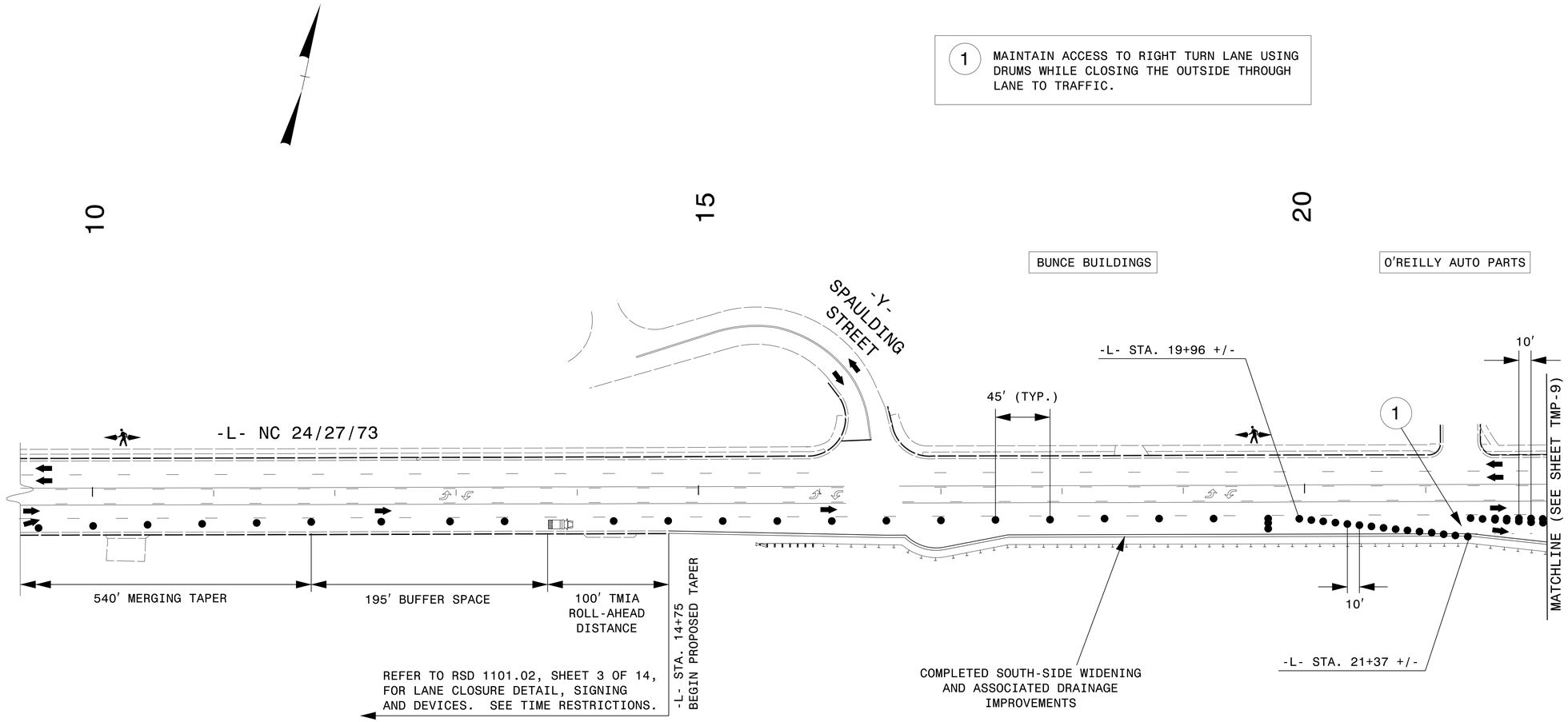
PROJ. REFERENCE NO.	SHEET NO.
W-5601IN	TMP-8

1 MAINTAIN ACCESS TO RIGHT TURN LANE USING DRUMS WHILE CLOSING THE OUTSIDE THROUGH LANE TO TRAFFIC.



ALL PAVEMENT MARKINGS ARE EXISTING

APPROVED: _____

DATE: _____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

5/1/2018

DocuSigned by: Clinton J. Morgan
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DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

PHASE I, STEP 4 DETAIL

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 160
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

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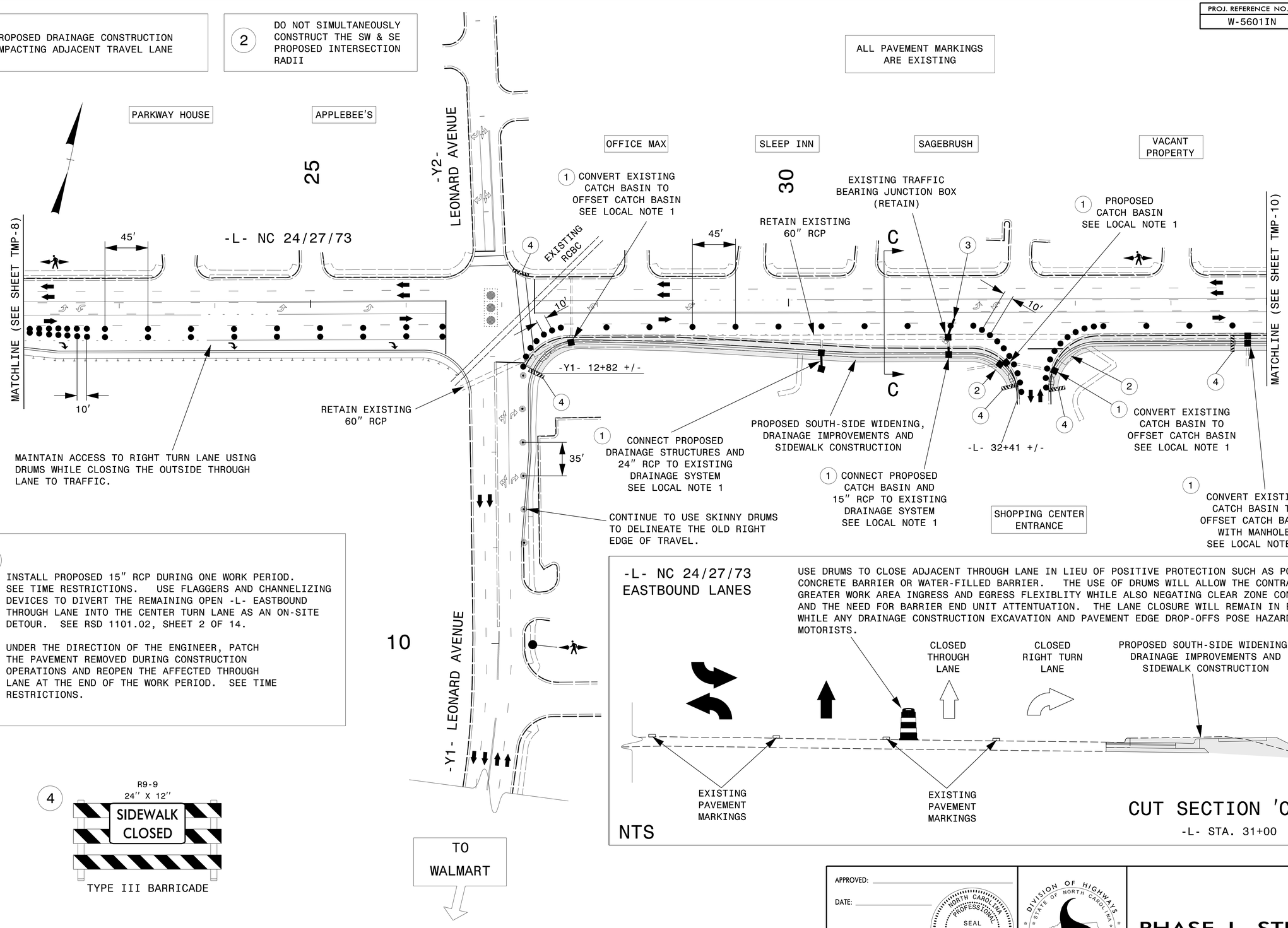
PROJ. REFERENCE NO.	SHEET NO.
W-5601IN	TMP-9

1 PROPOSED DRAINAGE CONSTRUCTION IMPACTING ADJACENT TRAVEL LANE

2 DO NOT SIMULTANEOUSLY CONSTRUCT THE SW & SE PROPOSED INTERSECTION RADII

ALL PAVEMENT MARKINGS ARE EXISTING



3

INSTALL PROPOSED 15″ RCP DURING ONE WORK PERIOD. SEE TIME RESTRICTIONS. USE FLAGGERS AND CHANNELIZING DEVICES TO DIVERT THE REMAINING OPEN -L- EASTBOUND THROUGH LANE INTO THE CENTER TURN LANE AS AN ON-SITE DETOUR. SEE RSD 1101.02, SHEET 2 OF 14.

UNDER THE DIRECTION OF THE ENGINEER, PATCH THE PAVEMENT REMOVED DURING CONSTRUCTION OPERATIONS AND REOPEN THE AFFECTED THROUGH LANE AT THE END OF THE WORK PERIOD. SEE TIME RESTRICTIONS.

4

R9-9
24″ X 12″

TYPE III BARRICADE

-L- NC 24/27/73
EASTBOUND LANES

USE DRUMS TO CLOSE ADJACENT THROUGH LANE IN LIEU OF POSITIVE PROTECTION SUCH AS PORTABLE CONCRETE BARRIER OR WATER-FILLED BARRIER. THE USE OF DRUMS WILL ALLOW THE CONTRACTOR GREATER WORK AREA INGRESS AND EGRESS FLEXIBLITY WHILE ALSO NEGATING CLEAR ZONE CONCERNS AND THE NEED FOR BARRIER END UNIT ATTENTUATION. THE LANE CLOSURE WILL REMAIN IN EFFECT WHILE ANY DRAINAGE CONSTRUCTION EXCAVATION AND PAVEMENT EDGE DROP-OFFS POSE HAZARDS TO MOTORISTS.

NTS

CUT SECTION 'C-C'
-L- STA. 31+00

APPROVED: _____

DATE: _____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

5/1/2018

DocuSigned by: Clinton J. Morgan

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

PHASE I, STEP 4 DETAIL

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 160 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

30-APR-2018 15:15
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PROJ. REFERENCE NO.	SHEET NO.
W-5601IN	TMP-10

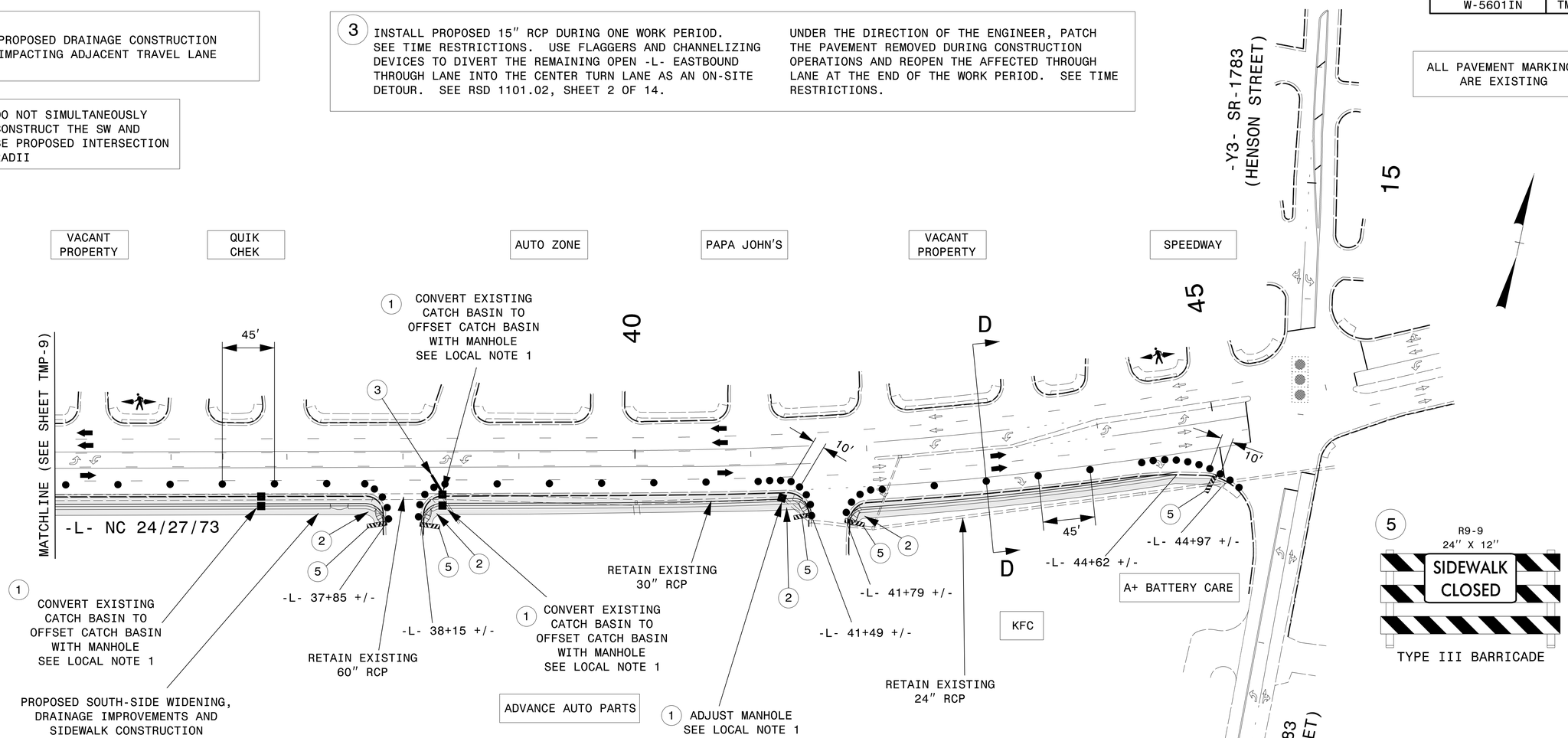
(1) PROPOSED DRAINAGE CONSTRUCTION IMPACTING ADJACENT TRAVEL LANE

(2) DO NOT SIMULTANEOUSLY CONSTRUCT THE SW AND SE PROPOSED INTERSECTION RADII

(3) INSTALL PROPOSED 15″ RCP DURING ONE WORK PERIOD. SEE TIME RESTRICTIONS. USE FLAGGERS AND CHANNELIZING DEVICES TO DIVERT THE REMAINING OPEN -L- EASTBOUND THROUGH LANE INTO THE CENTER TURN LANE AS AN ON-SITE DETOUR. SEE RSD 1101.02, SHEET 2 OF 14.

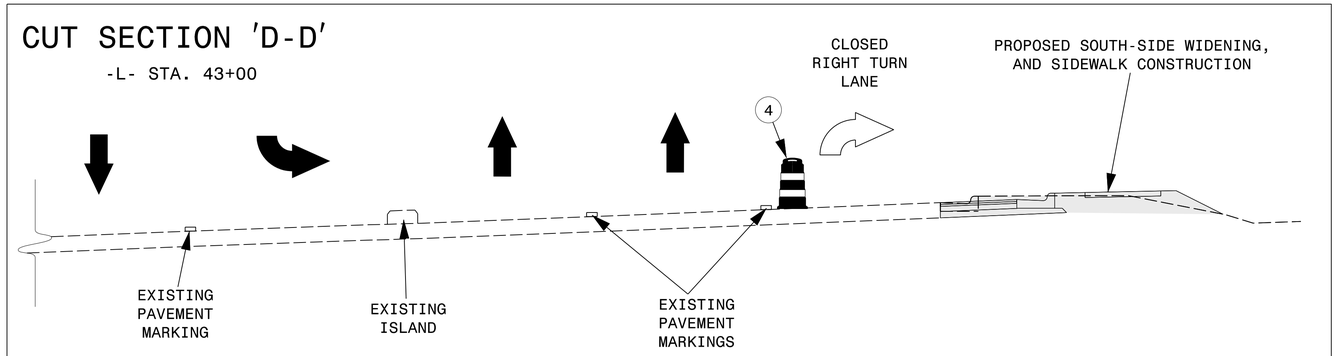
UNDER THE DIRECTION OF THE ENGINEER, PATCH THE PAVEMENT REMOVED DURING CONSTRUCTION OPERATIONS AND REOPEN THE AFFECTED THROUGH LANE AT THE END OF THE WORK PERIOD. SEE TIME RESTRICTIONS.

ALL PAVEMENT MARKINGS ARE EXISTING



CUT SECTION 'D-D'

-L- STA. 43+00



NTS

(4) USE DRUMS TO CLOSE ADJACENT THROUGH LANE IN LIEU OF POSITIVE PROTECTION SUCH AS PORTABLE CONCRETE BARRIER OR WATER-FILLED BARRIER. THE USE OF DRUMS WILL ALLOW THE CONTRACTOR GREATER WORK AREA INGRESS AND EGRESS FLEXIBLITY WHILE ALSO NEGATING CLEAR ZONE CONCERNS AND THE NEED FOR BARRIER END UNIT ATTENTUATION. THE LANE CLOSURE WILL REMAIN IN EFFECT WHILE ANY DRAINAGE CONSTRUCTION EXCAVATION AND PAVEMENT EDGE DROP-OFFS POSE HAZARDS TO MOTORISTS.

APPROVED: _____

DATE: _____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

5/1/2018

DocuSigned by: Clinton J. Morgan

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

PHASE I, STEP 4 DETAIL

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 160 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

30-APR-2018 15:15
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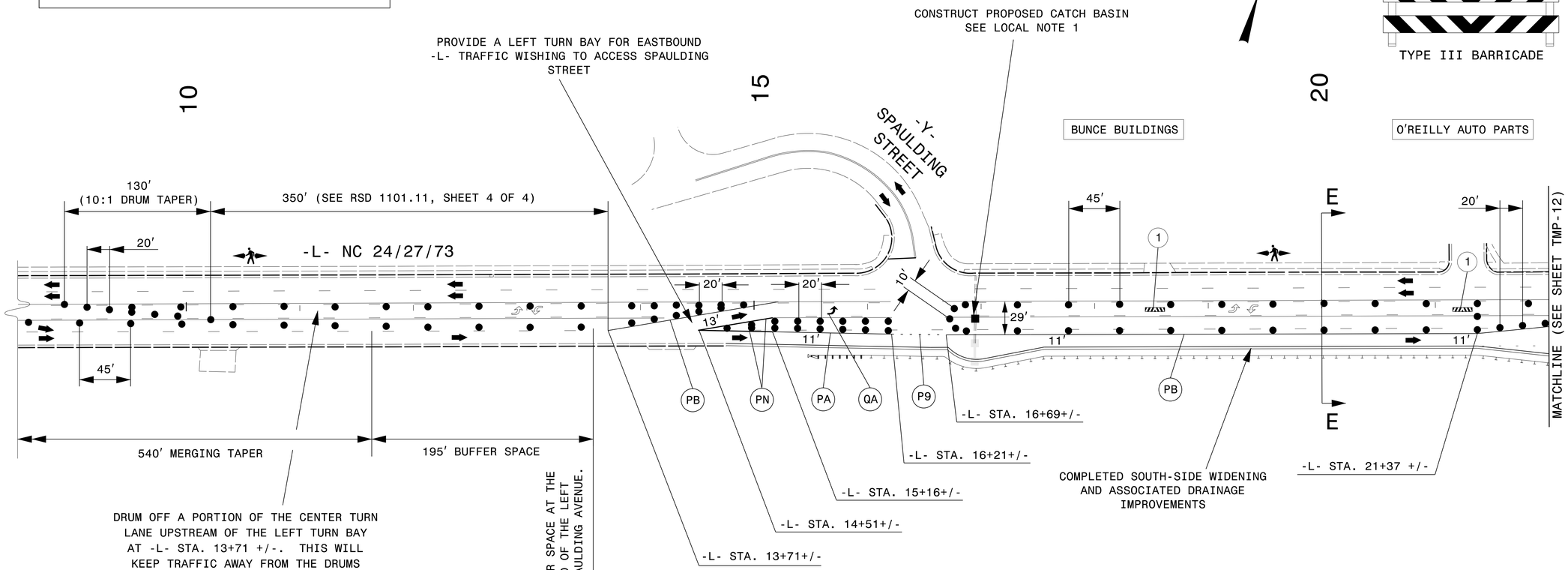
PROJ. REFERENCE NO.	SHEET NO.
W-5601IN	TMP-11

SHIFT EASTBOUND -L- TRAFFIC TO THE NEWLY CONSTRUCTED OUTSIDE LANE IN ORDER TO ACCOMODATE THE -L- MEDIAN DRAINAGE CONSTRUCTION BEGINNING JUST EAST OF SPAULDING AVENUE. SEE THIS SHEET.

ALL PAVEMENT MARKINGS ARE EXISTING UNLESS NOTED OTHERWISE

TYPE III BARRICADE



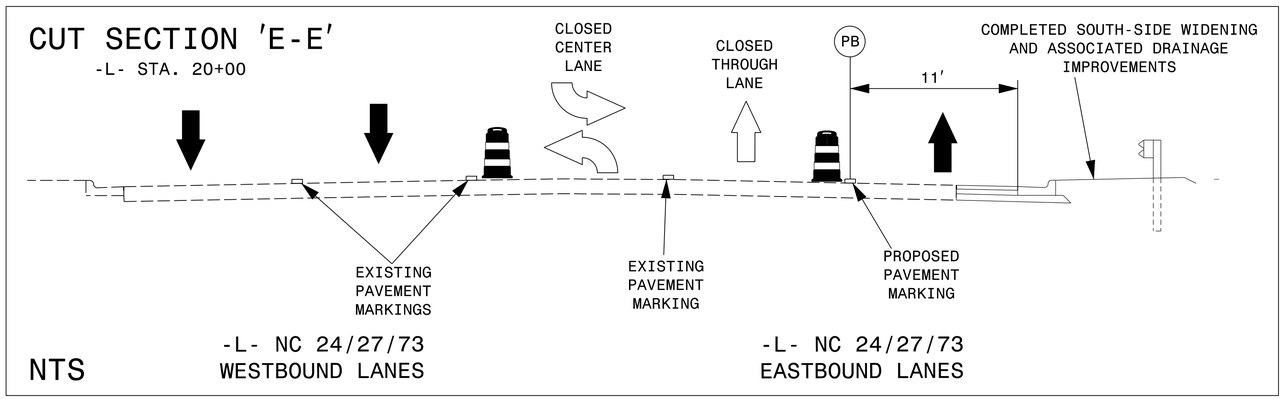
TEMPORARY PAVEMENT MARKING

PAVEMENT MARKING LINES:

PA	WHITE EDGELINE	PAINT (4")
PB	YELLOW EDGELINE	PAINT (4")
PN	WHITE GORE LINE	PAINT (8")
P9	2'-6' YELLOW MINISKIP LINE	PAINT (4")

PAVEMENT MARKING SYMBOLS AND CHARACTERS:

QA	LEFT TURN ARROW	PAINT



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DATE: _____

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NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

5/1/2018

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DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

PHASE II DETAIL

ATKINS
1616 EAST MILLBROOK ROAD, SUITE 160
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

30-APR-2018 15:15
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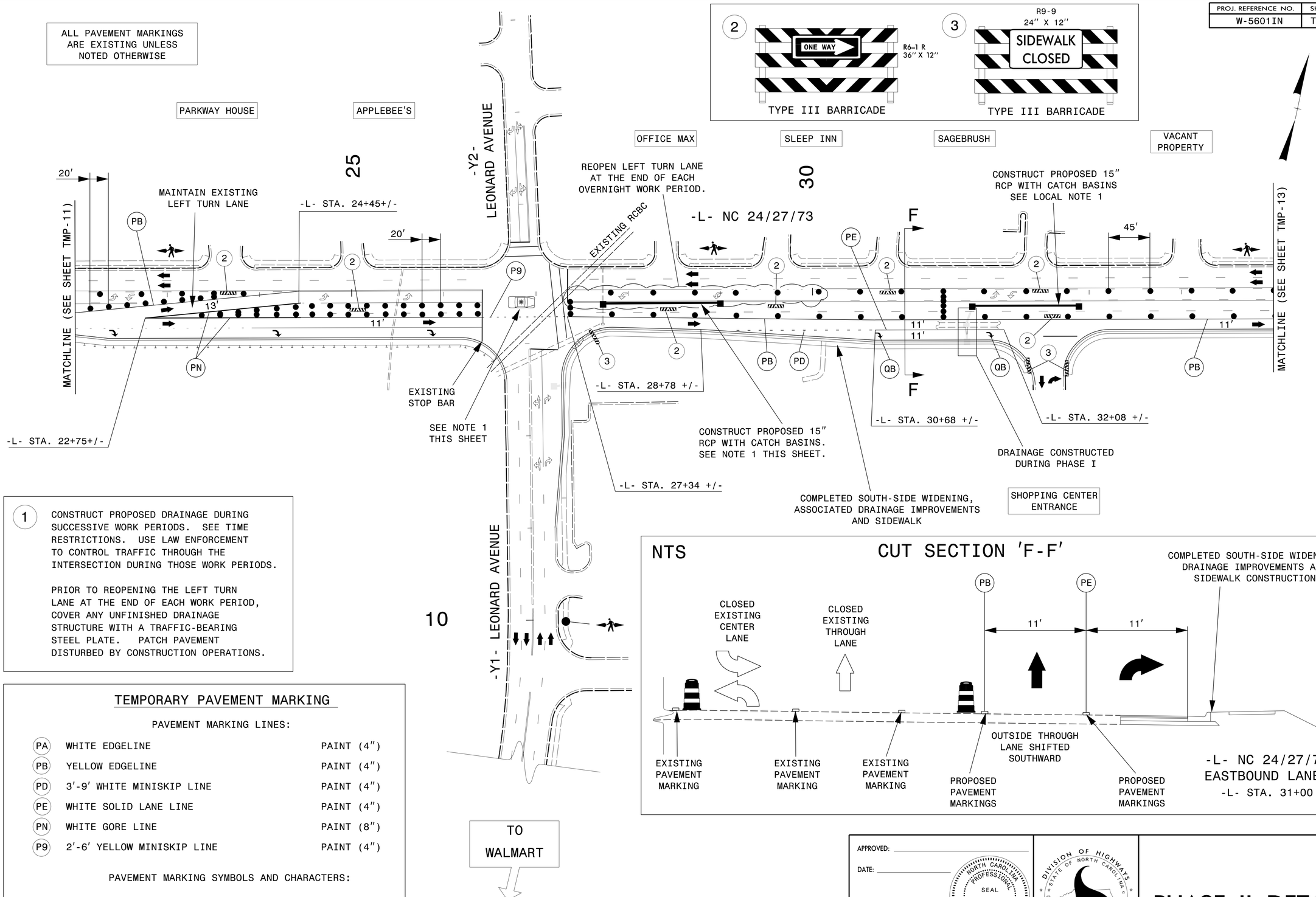
PROJ. REFERENCE NO.	SHEET NO.
W-5601IN	TMP-12

ALL PAVEMENT MARKINGS ARE EXISTING UNLESS NOTED OTHERWISE



1 CONSTRUCT PROPOSED DRAINAGE DURING SUCCESSIVE WORK PERIODS. SEE TIME RESTRICTIONS. USE LAW ENFORCEMENT TO CONTROL TRAFFIC THROUGH THE INTERSECTION DURING THOSE WORK PERIODS.

PRIOR TO REOPENING THE LEFT TURN LANE AT THE END OF EACH WORK PERIOD, COVER ANY UNFINISHED DRAINAGE STRUCTURE WITH A TRAFFIC-BEARING STEEL PLATE. PATCH PAVEMENT DISTURBED BY CONSTRUCTION OPERATIONS.

TEMPORARY PAVEMENT MARKING

PAVEMENT MARKING LINES:

PA	WHITE EDGELINE	PAINT (4")
PB	YELLOW EDGELINE	PAINT (4")
PD	3'-9' WHITE MINISKIP LINE	PAINT (4")
PE	WHITE SOLID LANE LINE	PAINT (4")
PN	WHITE GORE LINE	PAINT (8")
P9	2'-6' YELLOW MINISKIP LINE	PAINT (4")

PAVEMENT MARKING SYMBOLS AND CHARACTERS:

QB	RIGHT TURN ARROW	PAINT

NTS

CUT SECTION 'F-F'

APPROVED: _____

DATE: _____

SEAL

5/1/2018

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

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DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

PHASE II DETAIL

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 160 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

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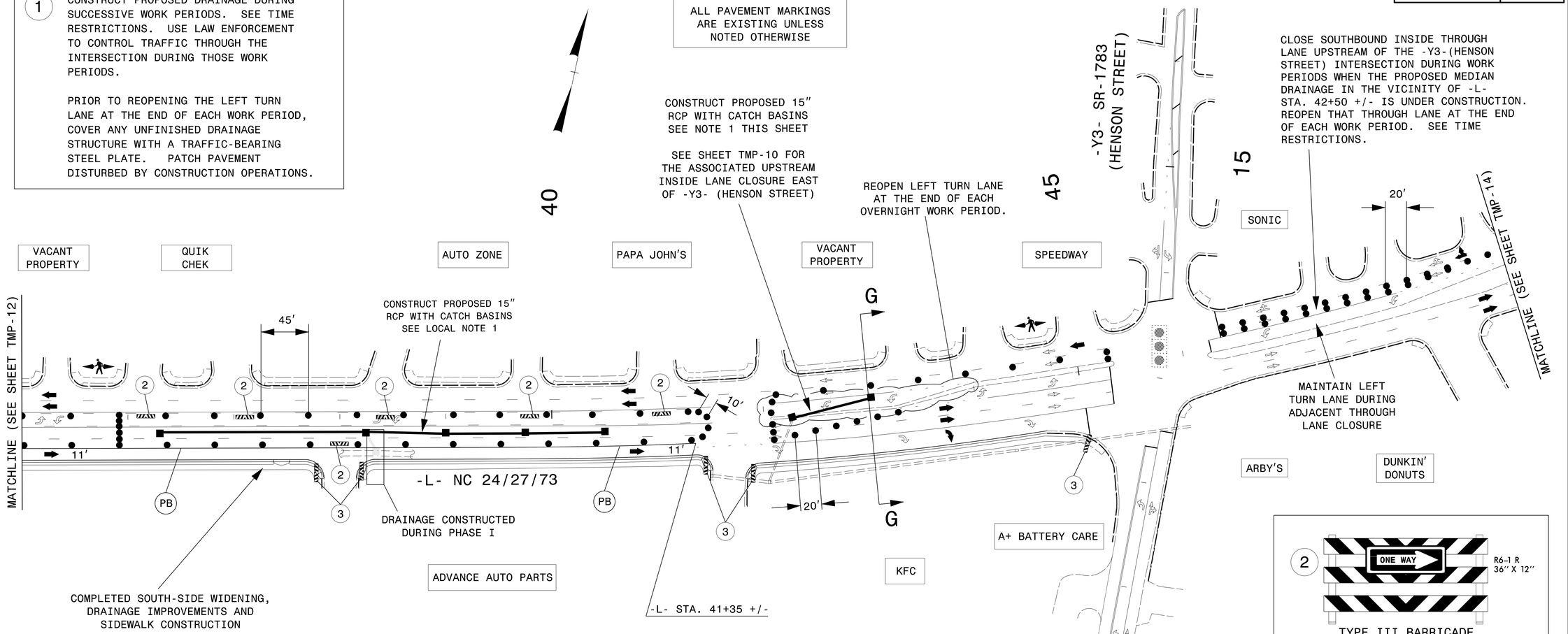
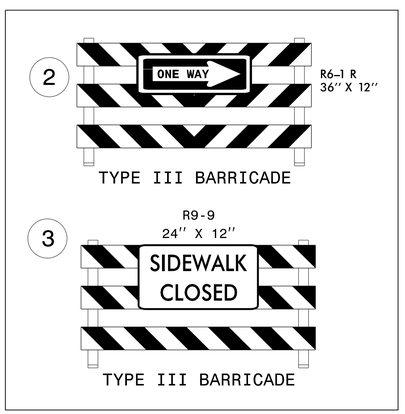
PROJ. REFERENCE NO.	SHEET NO.
W-5601IN	TMP-13

(1) CONSTRUCT PROPOSED DRAINAGE DURING SUCCESSIVE WORK PERIODS. SEE TIME RESTRICTIONS. USE LAW ENFORCEMENT TO CONTROL TRAFFIC THROUGH THE INTERSECTION DURING THOSE WORK PERIODS.

PRIOR TO REOPENING THE LEFT TURN LANE AT THE END OF EACH WORK PERIOD, COVER ANY UNFINISHED DRAINAGE STRUCTURE WITH A TRAFFIC-BEARING STEEL PLATE. PATCH PAVEMENT DISTURBED BY CONSTRUCTION OPERATIONS.

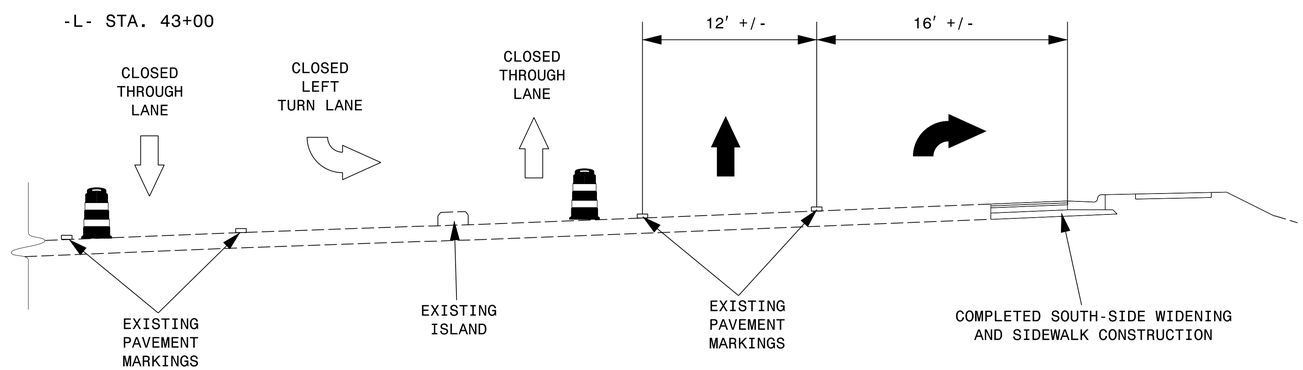
ALL PAVEMENT MARKINGS ARE EXISTING UNLESS NOTED OTHERWISE





CUT SECTION 'G-G'

-L- STA. 43+00



NTS

TEMPORARY PAVEMENT MARKING

PAVEMENT MARKING LINES:

PB	YELLOW EDGELINE	PAINT (4")

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DATE: _____

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5/1/2018

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

DocuSigned by: Clinton J. Morgan

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DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

PHASE II DETAIL

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 160 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

30-APR-2018 15:5
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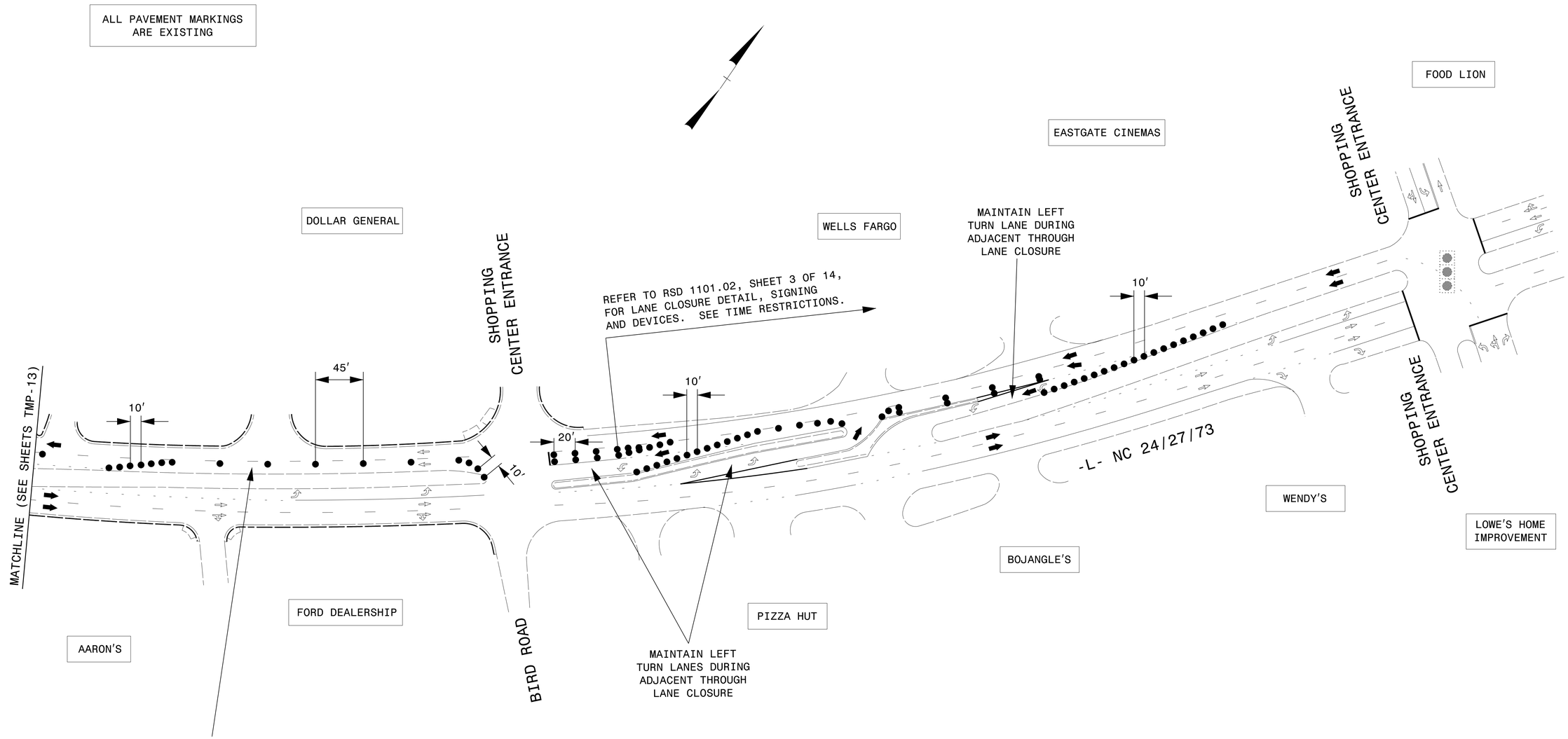
W-5601IN	TMP-14



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WILE2054 AT DIS30019

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 160
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

APPROVED: _____

DATE: _____

SEAL

5/1/2018

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

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EC9820346106486

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PHASE II DETAIL

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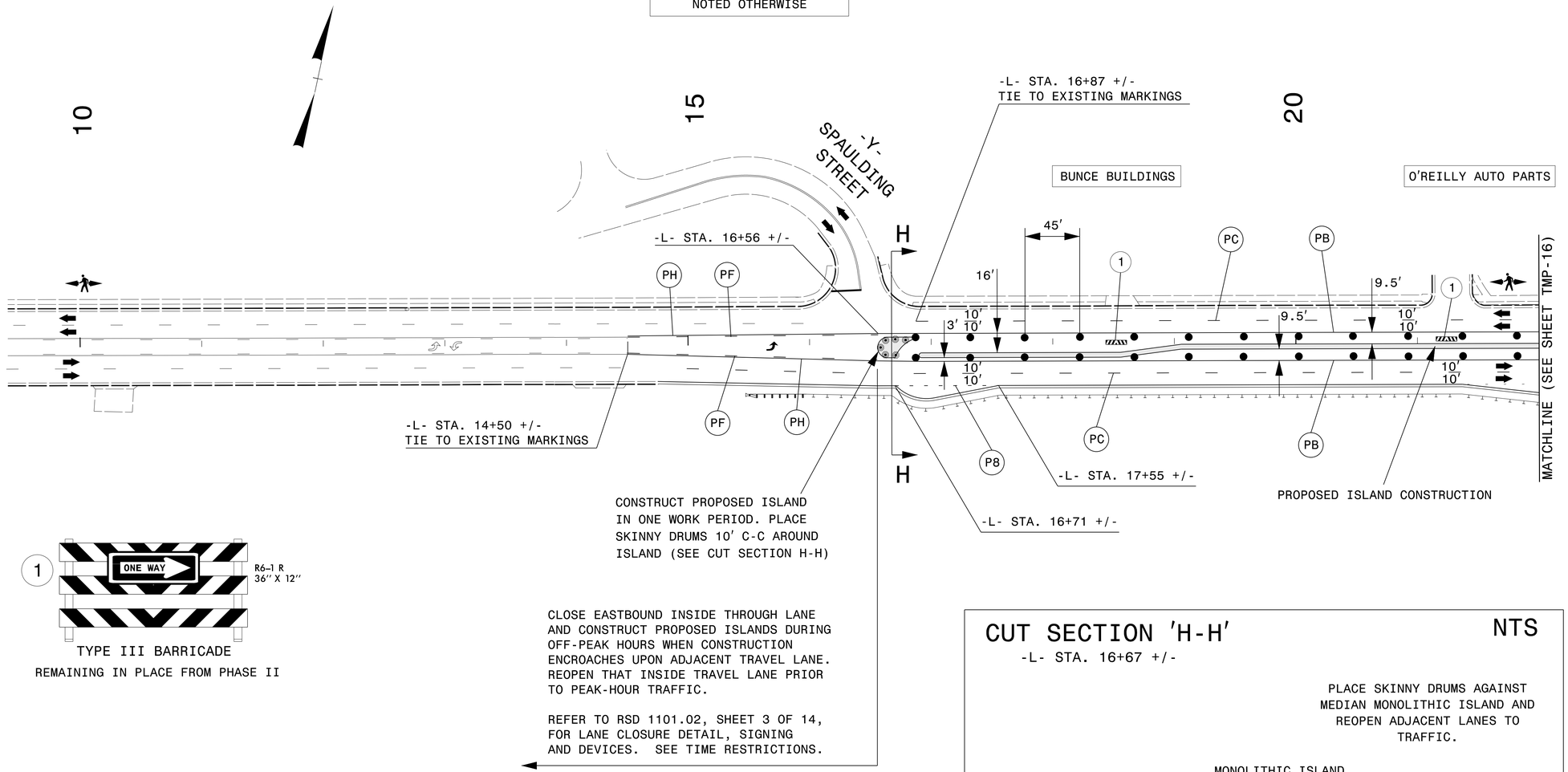
PROJ. REFERENCE NO.	SHEET NO.
W-5601IN	TMP-15

ALL PAVEMENT MARKINGS ARE EXISTING UNLESS NOTED OTHERWISE



CONSTRUCT PROPOSED ISLAND IN ONE WORK PERIOD. PLACE SKINNY DRUMS 10' C-C AROUND ISLAND (SEE CUT SECTION H-H)

CLOSE EASTBOUND INSIDE THROUGH LANE AND CONSTRUCT PROPOSED ISLANDS DURING OFF-PEAK HOURS WHEN CONSTRUCTION ENCROACHES UPON ADJACENT TRAVEL LANE. REOPEN THAT INSIDE TRAVEL LANE PRIOR TO PEAK-HOUR TRAFFIC.

REFER TO RSD 1101.02, SHEET 3 OF 14, FOR LANE CLOSURE DETAIL, SIGNING AND DEVICES. SEE TIME RESTRICTIONS.

TYPE III BARRICADE

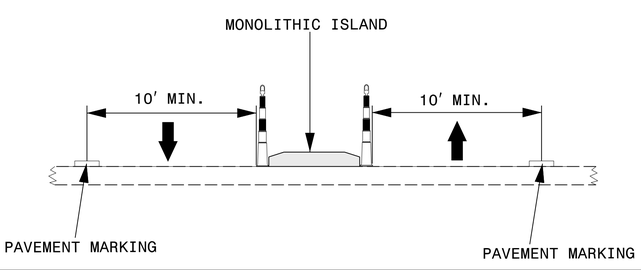
REMAINING IN PLACE FROM PHASE II

CUT SECTION 'H-H'

-L- STA. 16+67 +/-

NTS

PLACE SKINNY DRUMS AGAINST MEDIAN MONOLITHIC ISLAND AND REOPEN ADJACENT LANES TO TRAFFIC.



TEMPORARY PAVEMENT MARKING

PAVEMENT MARKING LINES:

PB	YELLOW EDGELINE	PAINT (4")
PC	10' WHITE SKIP	PAINT (4")
PF	10' YELLOW SKIP	PAINT (4")
PH	SINGLE YELLOW CENTER LINE	PAINT (4")
P8	2'-6' WHITE MINISKIP LINE	PAINT (4")

APPROVED: _____

DATE: _____

SEAL

5/1/2018

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

DocuSigned by: Clinton J. Morgan
EC9803046106485

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

PHASE III DETAIL

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 160
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

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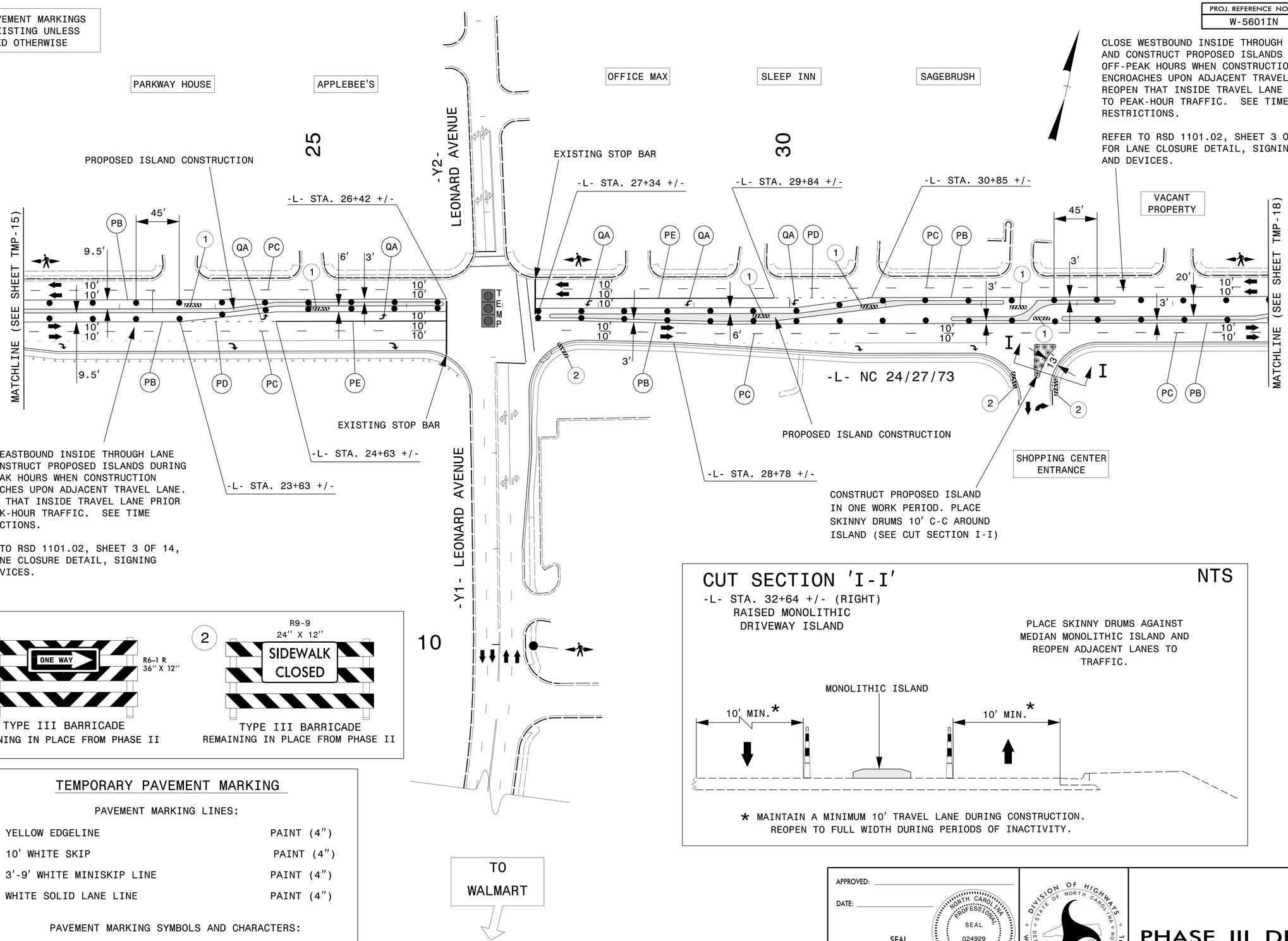
PROJ. REFERENCE NO.	SHEET NO.
W-5601IN	TMP-16

ALL PAVEMENT MARKINGS ARE EXISTING UNLESS NOTED OTHERWISE



CLOSE WESTBOUND INSIDE THROUGH LANE AND CONSTRUCT PROPOSED ISLANDS DURING OFF-PEAK HOURS WHEN CONSTRUCTION ENCROACHES UPON ADJACENT TRAVEL LANE. REOPEN THAT INSIDE TRAVEL LANE PRIOR TO PEAK-HOUR TRAFFIC. SEE TIME RESTRICTIONS.

REFER TO RSD 1101.02, SHEET 3 OF 14, FOR LANE CLOSURE DETAIL, SIGNING AND DEVICES.

CLOSE EASTBOUND INSIDE THROUGH LANE AND CONSTRUCT PROPOSED ISLANDS DURING OFF-PEAK HOURS WHEN CONSTRUCTION ENCROACHES UPON ADJACENT TRAVEL LANE. REOPEN THAT INSIDE TRAVEL LANE PRIOR TO PEAK-HOUR TRAFFIC. SEE TIME RESTRICTIONS.

REFER TO RSD 1101.02, SHEET 3 OF 14, FOR LANE CLOSURE DETAIL, SIGNING AND DEVICES.

CONSTRUCT PROPOSED ISLAND IN ONE WORK PERIOD. PLACE SKINNY DRUMS 10' C-C AROUND ISLAND (SEE CUT SECTION I-I)

1

TYPE III BARRICADE
REMAINING IN PLACE FROM PHASE II

2

TYPE III BARRICADE
REMAINING IN PLACE FROM PHASE II

TEMPORARY PAVEMENT MARKING

PAVEMENT MARKING LINES:

PB	YELLOW EDGELINE	PAINT (4")
PC	10' WHITE SKIP	PAINT (4")
PD	3'-9' WHITE MINISKIP LINE	PAINT (4")
PE	WHITE SOLID LANE LINE	PAINT (4")

PAVEMENT MARKING SYMBOLS AND CHARACTERS:

QA	LEFT TURN ARROW	PAINT

CUT SECTION 'I-I'

NTS

-L- STA. 32+64 +/- (RIGHT)
RAISED MONOLITHIC DRIVEWAY ISLAND

PLACE SKINNY DRUMS AGAINST MEDIAN MONOLITHIC ISLAND AND REOPEN ADJACENT LANES TO TRAFFIC.

* MAINTAIN A MINIMUM 10' TRAVEL LANE DURING CONSTRUCTION. REOPEN TO FULL WIDTH DURING PERIODS OF INACTIVITY.

APPROVED: _____

DATE: _____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

DocuSigned by: Clinton J. Morgan
EC9803D461D64B6

5/1/2018

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PHASE III DETAIL

ATKINS
1616 EAST MILLBROOK ROAD, SUITE 160
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

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PROJ. REFERENCE NO.	SHEET NO.
W-5601IN	TMP-17

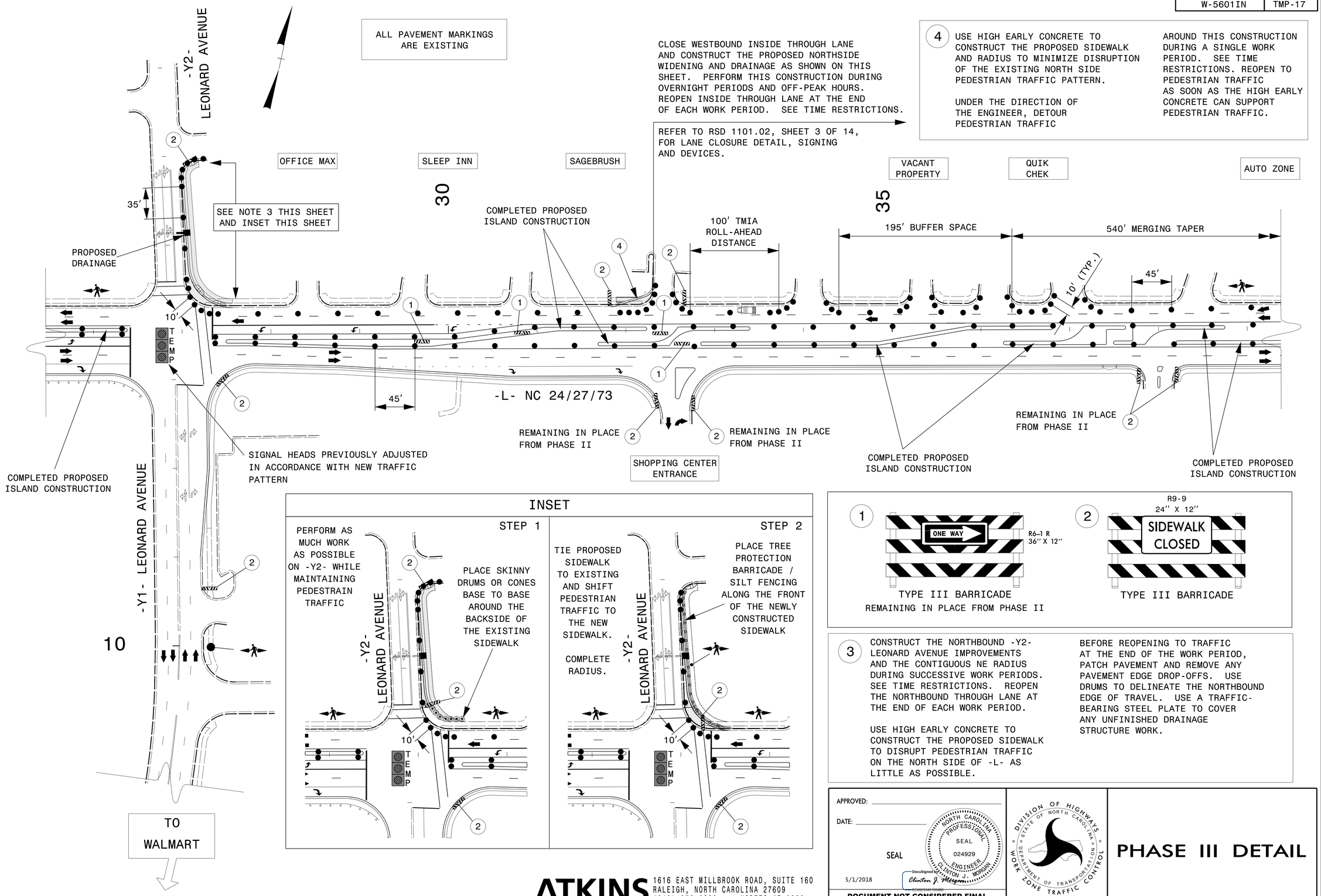
ALL PAVEMENT MARKINGS ARE EXISTING

CLOSE WESTBOUND INSIDE THROUGH LANE AND CONSTRUCT THE PROPOSED NORTHSIDE WIDENING AND DRAINAGE AS SHOWN ON THIS SHEET. PERFORM THIS CONSTRUCTION DURING OVERNIGHT PERIODS AND OFF-PEAK HOURS. REOPEN INSIDE THROUGH LANE AT THE END OF EACH WORK PERIOD. SEE TIME RESTRICTIONS.

REFER TO RSD 1101.02, SHEET 3 OF 14, FOR LANE CLOSURE DETAIL, SIGNING AND DEVICES.

4 USE HIGH EARLY CONCRETE TO CONSTRUCT THE PROPOSED SIDEWALK AND RADIUS TO MINIMIZE DISRUPTION OF THE EXISTING NORTH SIDE PEDESTRIAN TRAFFIC PATTERN.

UNDER THE DIRECTION OF THE ENGINEER, DETOUR PEDESTRIAN TRAFFIC AROUND THIS CONSTRUCTION DURING A SINGLE WORK PERIOD. SEE TIME RESTRICTIONS. REOPEN TO PEDESTRIAN TRAFFIC AS SOON AS THE HIGH EARLY CONCRETE CAN SUPPORT PEDESTRIAN TRAFFIC.



INSET

STEP 1

PERFORM AS MUCH WORK AS POSSIBLE ON -Y2- WHILE MAINTAINING PEDESTRAIN TRAFFIC

PLACE SKINNY DRUMS OR CONES BASE TO BASE AROUND THE BACKSIDE OF THE EXISTING SIDEWALK

STEP 2

TIE PROPOSED SIDEWALK TO EXISTING AND SHIFT PEDESTRIAN TRAFFIC TO THE NEW SIDEWALK.

COMPLETE RADIUS.

PLACE TREE PROTECTION BARRICADE / SILT FENCING ALONG THE FRONT OF THE NEWLY CONSTRUCTED SIDEWALK

3 CONSTRUCT THE NORTHBOUND -Y2- LEONARD AVENUE IMPROVEMENTS AND THE CONTIGUOUS NE RADIUS DURING SUCCESSIVE WORK PERIODS. SEE TIME RESTRICTIONS. REOPEN THE NORTHBOUND THROUGH LANE AT THE END OF EACH WORK PERIOD.

USE HIGH EARLY CONCRETE TO CONSTRUCT THE PROPOSED SIDEWALK TO DISRUPT PEDESTRIAN TRAFFIC ON THE NORTH SIDE OF -L- AS LITTLE AS POSSIBLE.

BEFORE REOPENING TO TRAFFIC AT THE END OF THE WORK PERIOD, PATCH PAVEMENT AND REMOVE ANY PAVEMENT EDGE DROP-OFFS. USE DRUMS TO DELINEATE THE NORTHBOUND EDGE OF TRAVEL. USE A TRAFFIC-BEARING STEEL PLATE TO COVER ANY UNFINISHED DRAINAGE STRUCTURE WORK.

APPROVED: _____

DATE: _____

SEAL

5/1/2018

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

DocuSigned by: Clinton J. Morgan

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DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

PHASE III DETAIL

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 160 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

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PROJ. REFERENCE NO.	SHEET NO.
W-5601IN	TMP-18

TEMPORARY PAVEMENT MARKING

PAVEMENT MARKING LINES:

PB	YELLOW EDGELINE	PAINT (4")
PC	10' WHITE SKIP	PAINT (4")
PD	3'-9' WHITE MINISKIP LINE	PAINT (4")
PE	WHITE SOLID LANE LINE	PAINT (4")

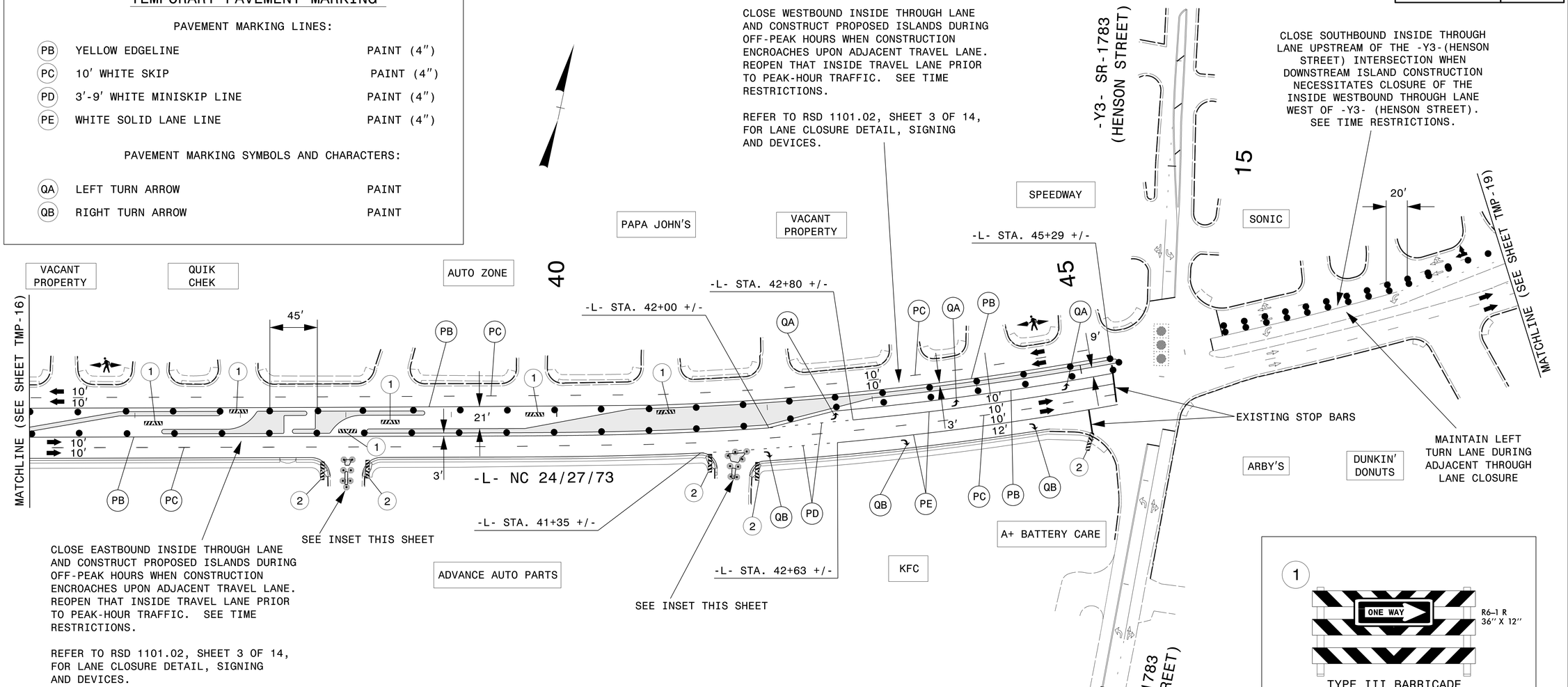
PAVEMENT MARKING SYMBOLS AND CHARACTERS:

QA	LEFT TURN ARROW	PAINT
QB	RIGHT TURN ARROW	PAINT

CLOSE WESTBOUND INSIDE THROUGH LANE AND CONSTRUCT PROPOSED ISLANDS DURING OFF-PEAK HOURS WHEN CONSTRUCTION ENCROACHES UPON ADJACENT TRAVEL LANE. REOPEN THAT INSIDE TRAVEL LANE PRIOR TO PEAK-HOUR TRAFFIC. SEE TIME RESTRICTIONS.

REFER TO RSD 1101.02, SHEET 3 OF 14, FOR LANE CLOSURE DETAIL, SIGNING AND DEVICES.

CLOSE SOUTHBOUND INSIDE THROUGH LANE UPSTREAM OF THE -Y3-(HENSON STREET) INTERSECTION WHEN DOWNSTREAM ISLAND CONSTRUCTION NECESSITATES CLOSURE OF THE INSIDE WESTBOUND THROUGH LANE WEST OF -Y3- (HENSON STREET). SEE TIME RESTRICTIONS.



CLOSE EASTBOUND INSIDE THROUGH LANE AND CONSTRUCT PROPOSED ISLANDS DURING OFF-PEAK HOURS WHEN CONSTRUCTION ENCROACHES UPON ADJACENT TRAVEL LANE. REOPEN THAT INSIDE TRAVEL LANE PRIOR TO PEAK-HOUR TRAFFIC. SEE TIME RESTRICTIONS.

REFER TO RSD 1101.02, SHEET 3 OF 14, FOR LANE CLOSURE DETAIL, SIGNING AND DEVICES.

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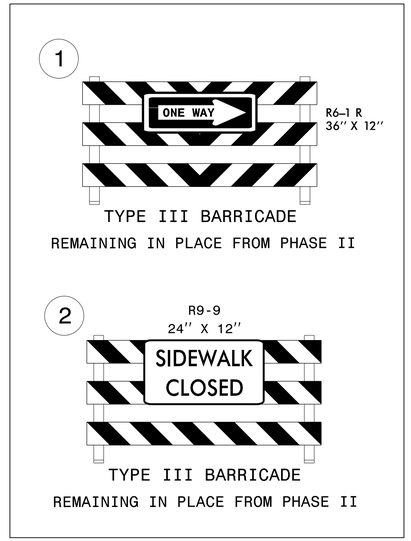
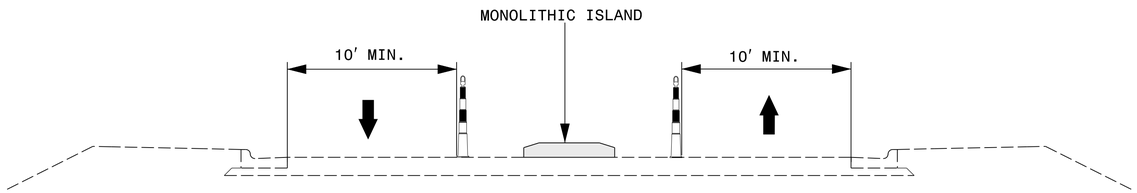


INSET

NTS

DRIVEWAY ISLAND CONSTRUCTION

CONSTRUCT PROPOSED ISLAND IN ONE WORK PERIOD. PLACE SKINNY DRUMS AGAINST MEDIAN MONOLITHIC ISLAND AND REOPEN ADJACENT LANES TO TRAFFIC.



APPROVED: _____

DATE: _____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

DocuSigned by: Clinton J. Morgan

5/1/2018

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PHASE III DETAIL

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 160 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

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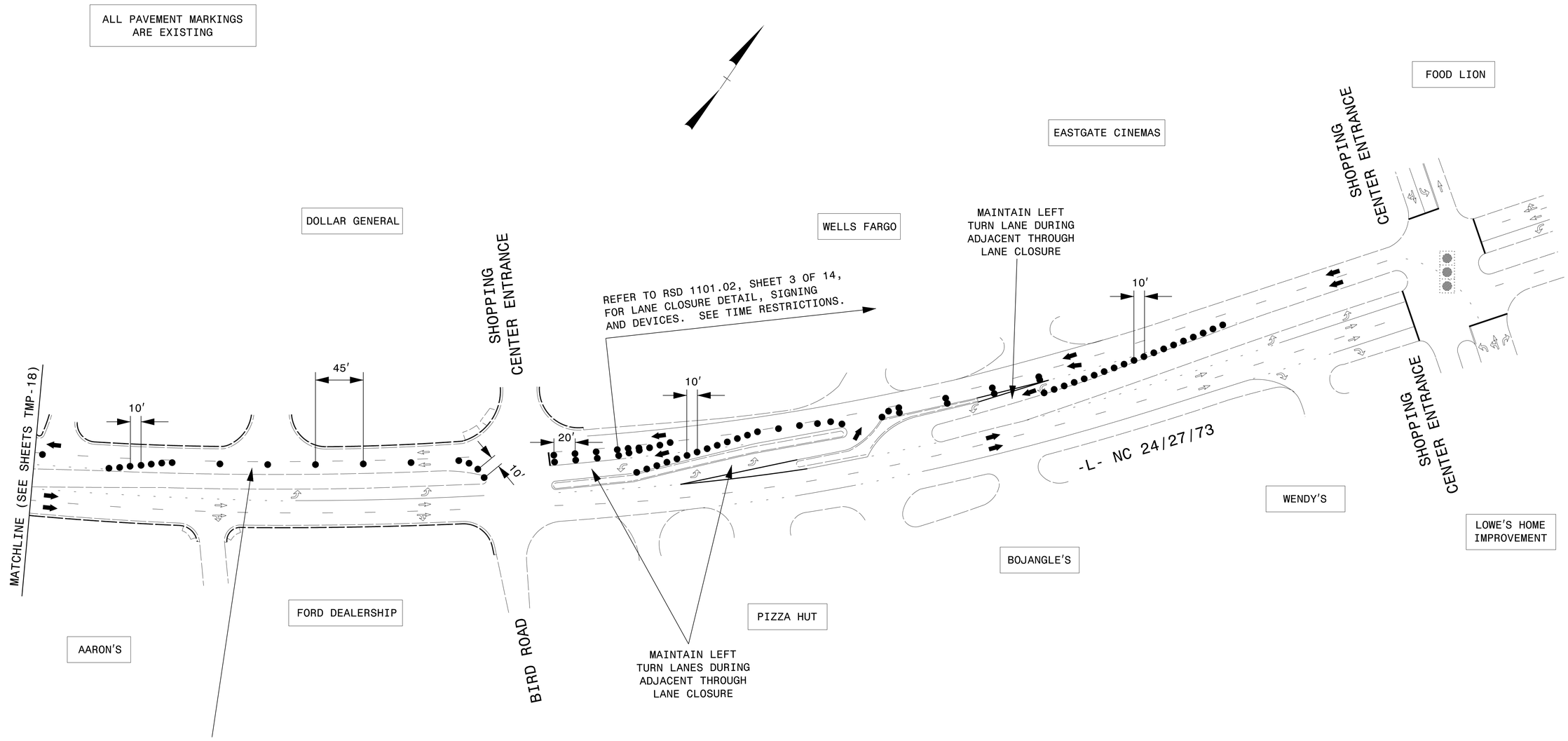

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ATKINS 1616 EAST MILLBROOK ROAD, SUITE 160
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

APPROVED: _____

DATE: _____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

5/1/2018

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DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

PHASE III DETAIL

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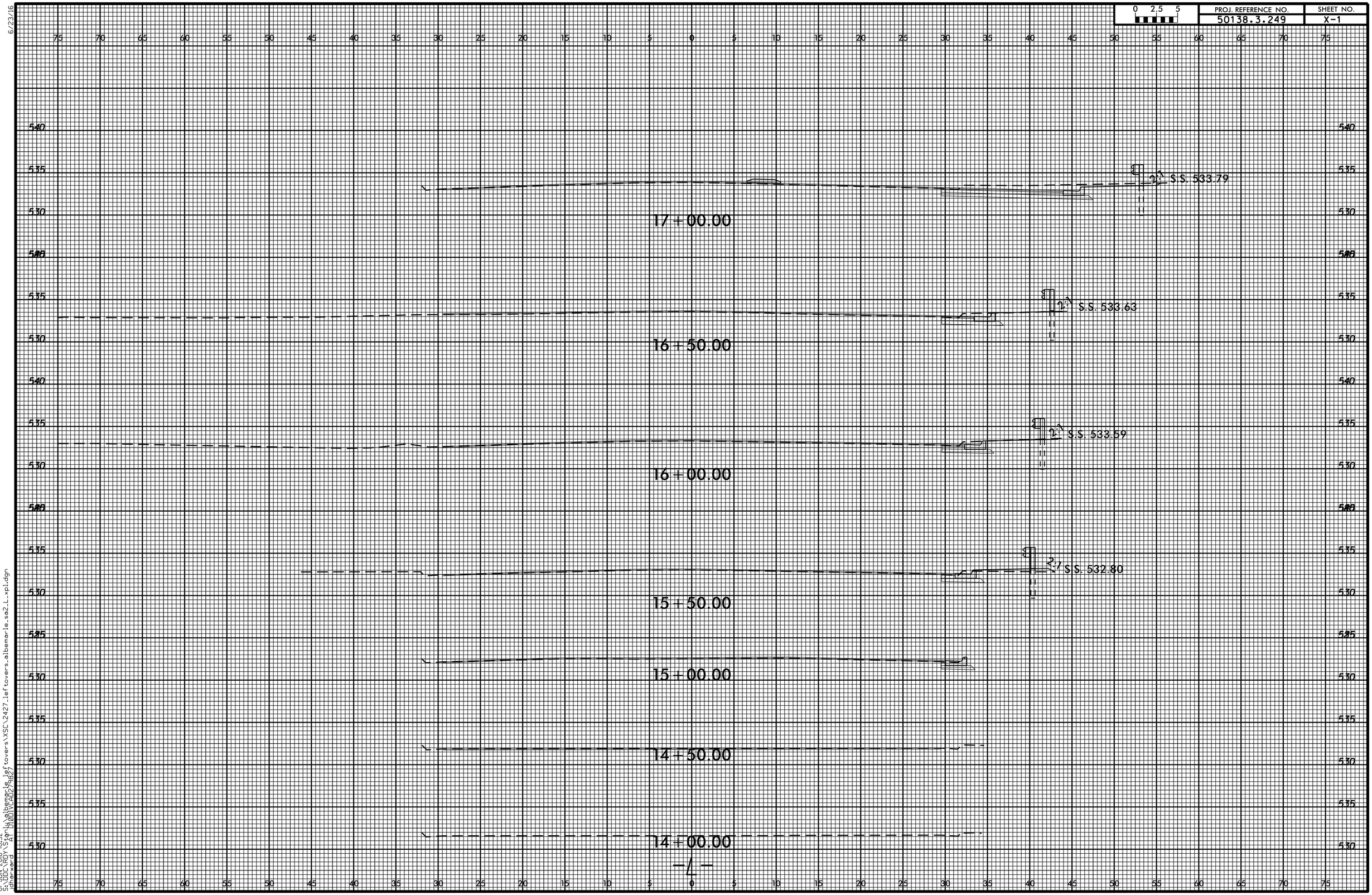

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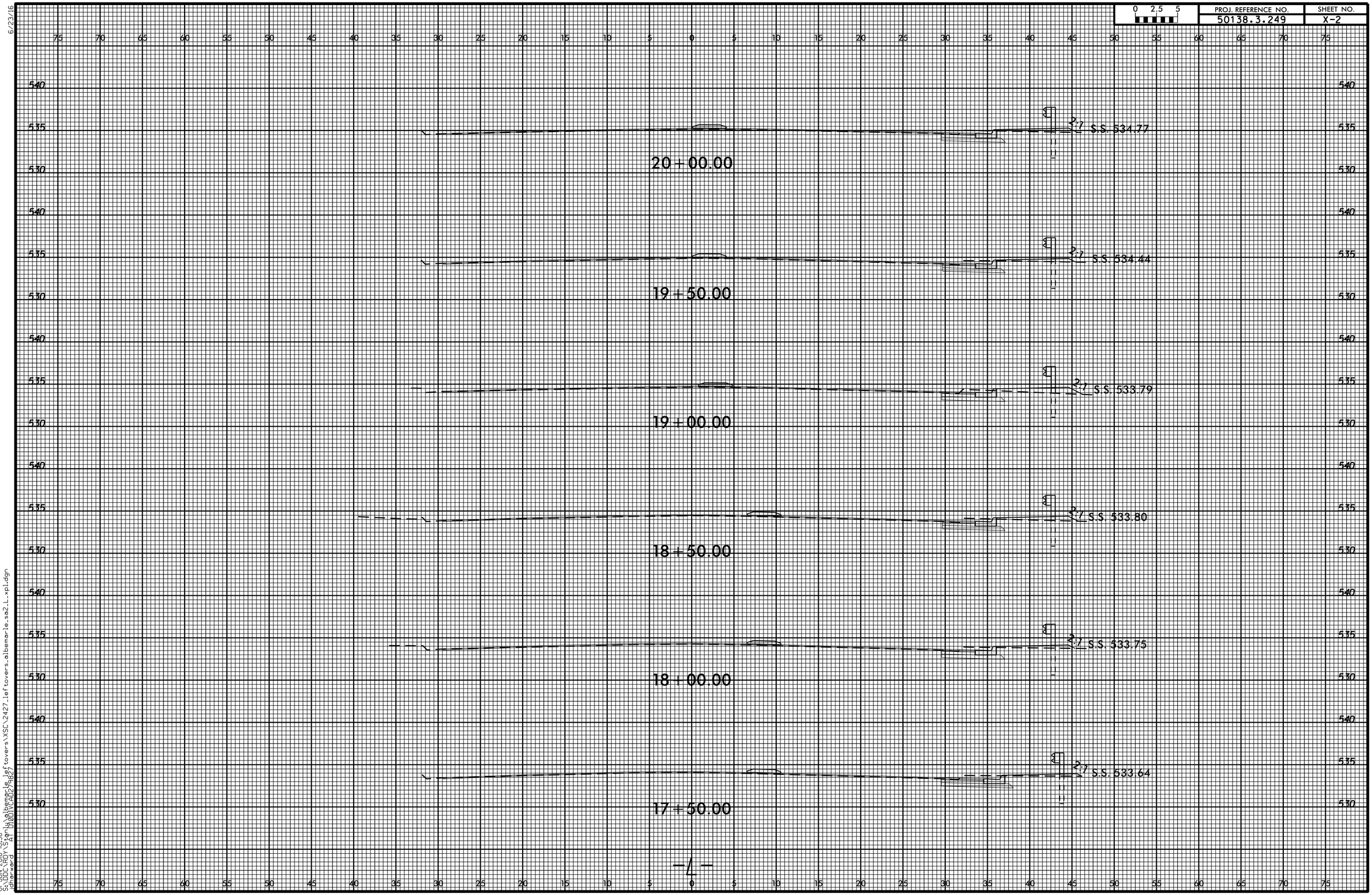

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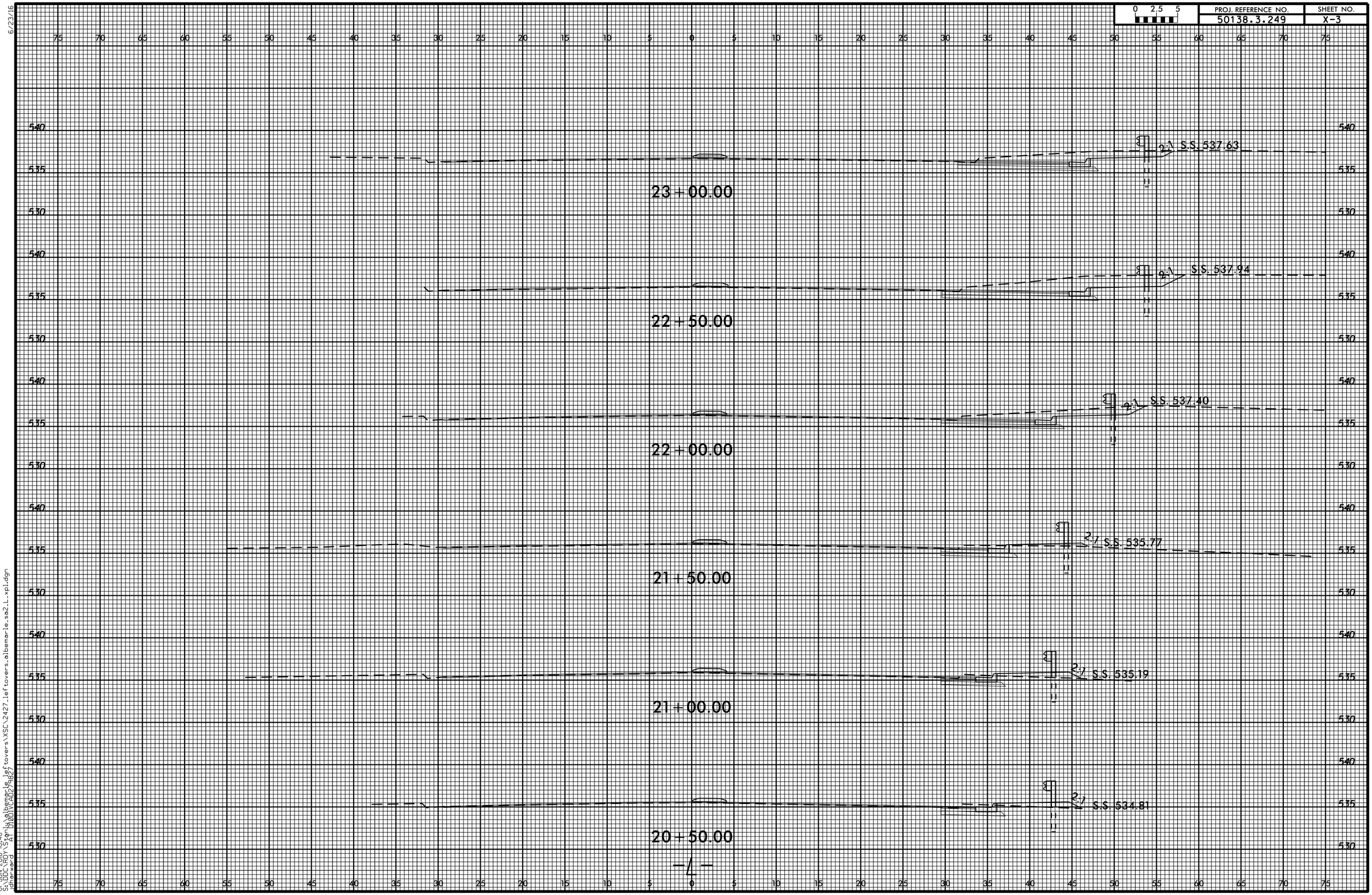

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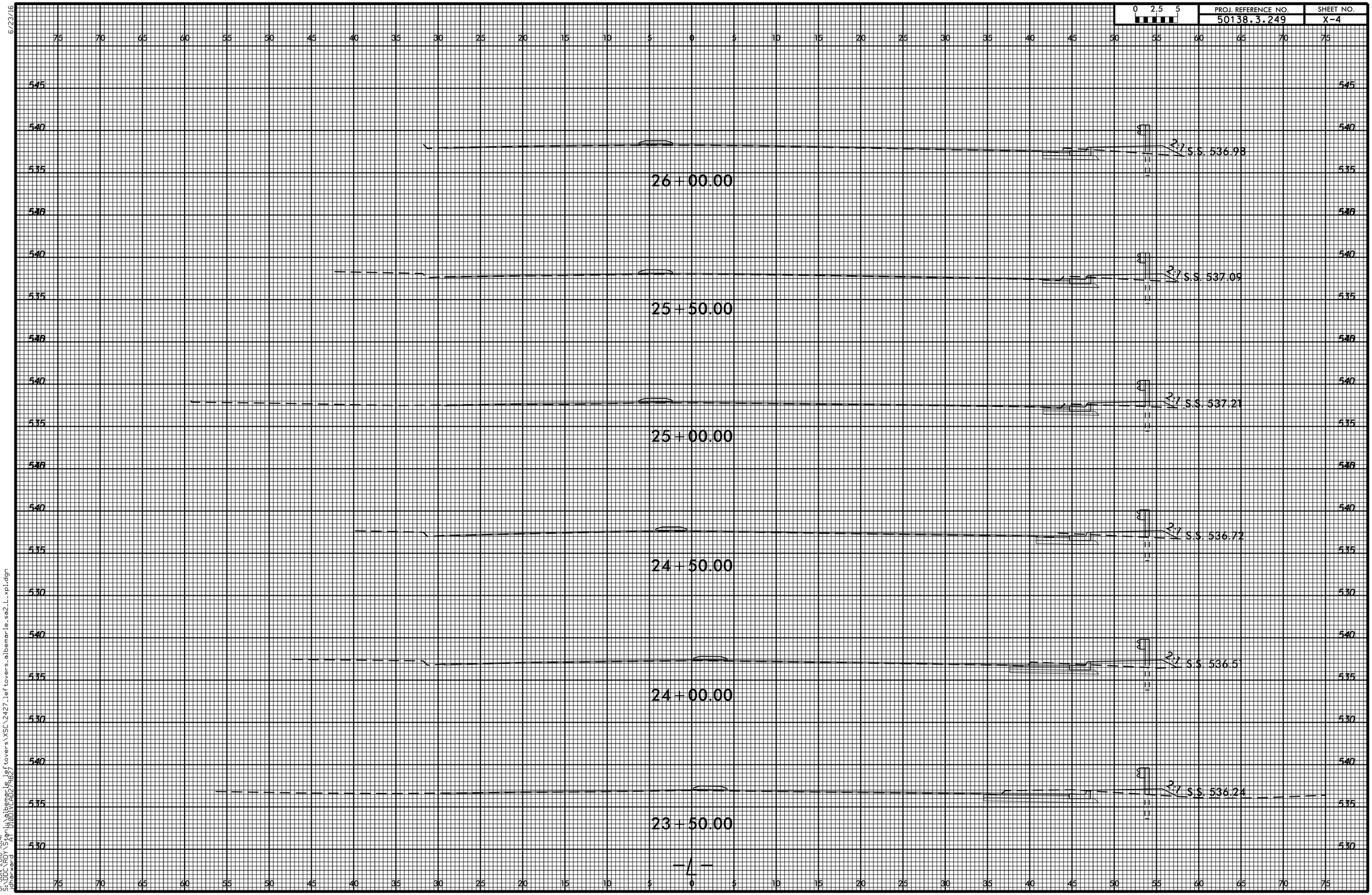

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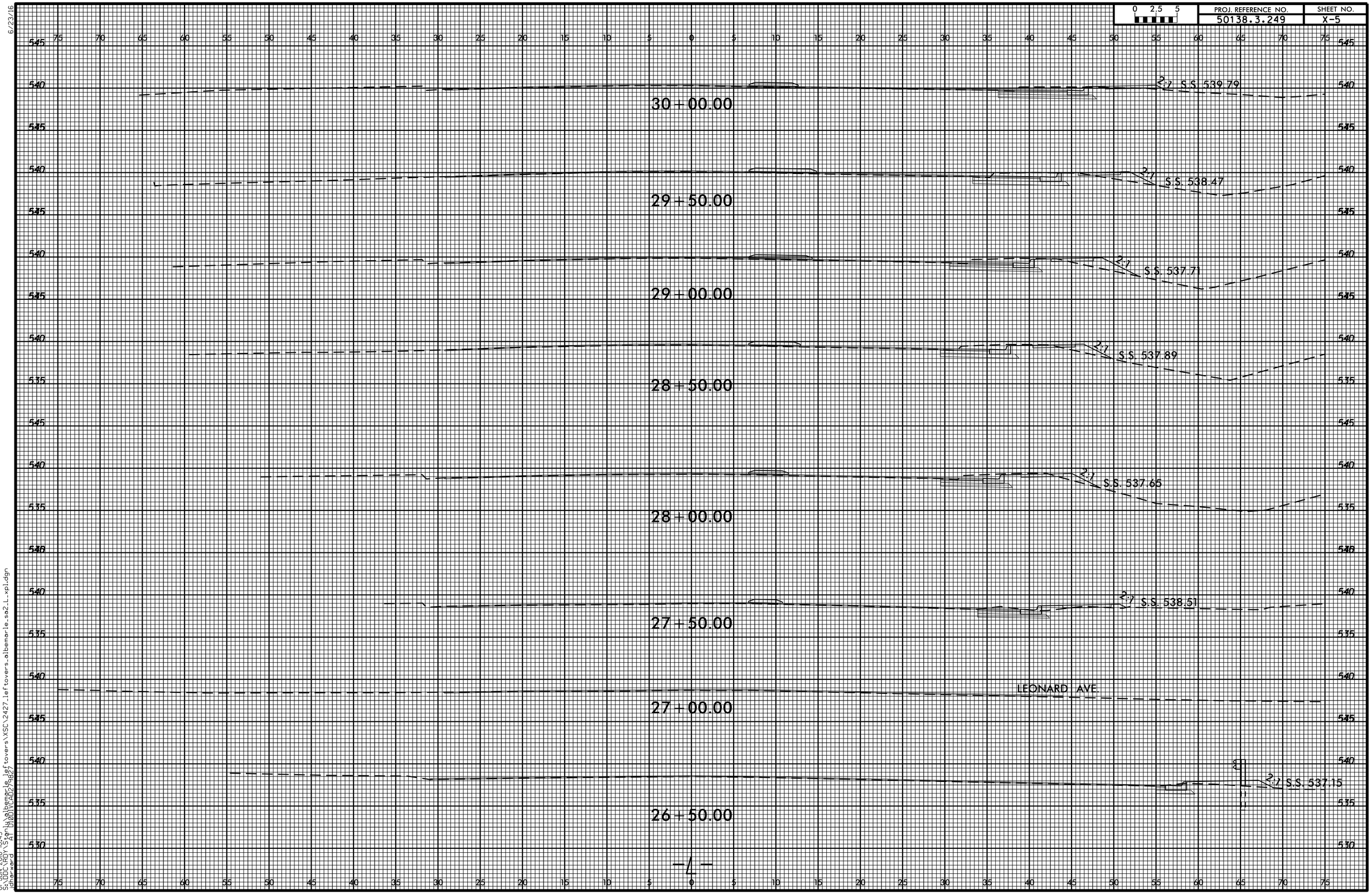

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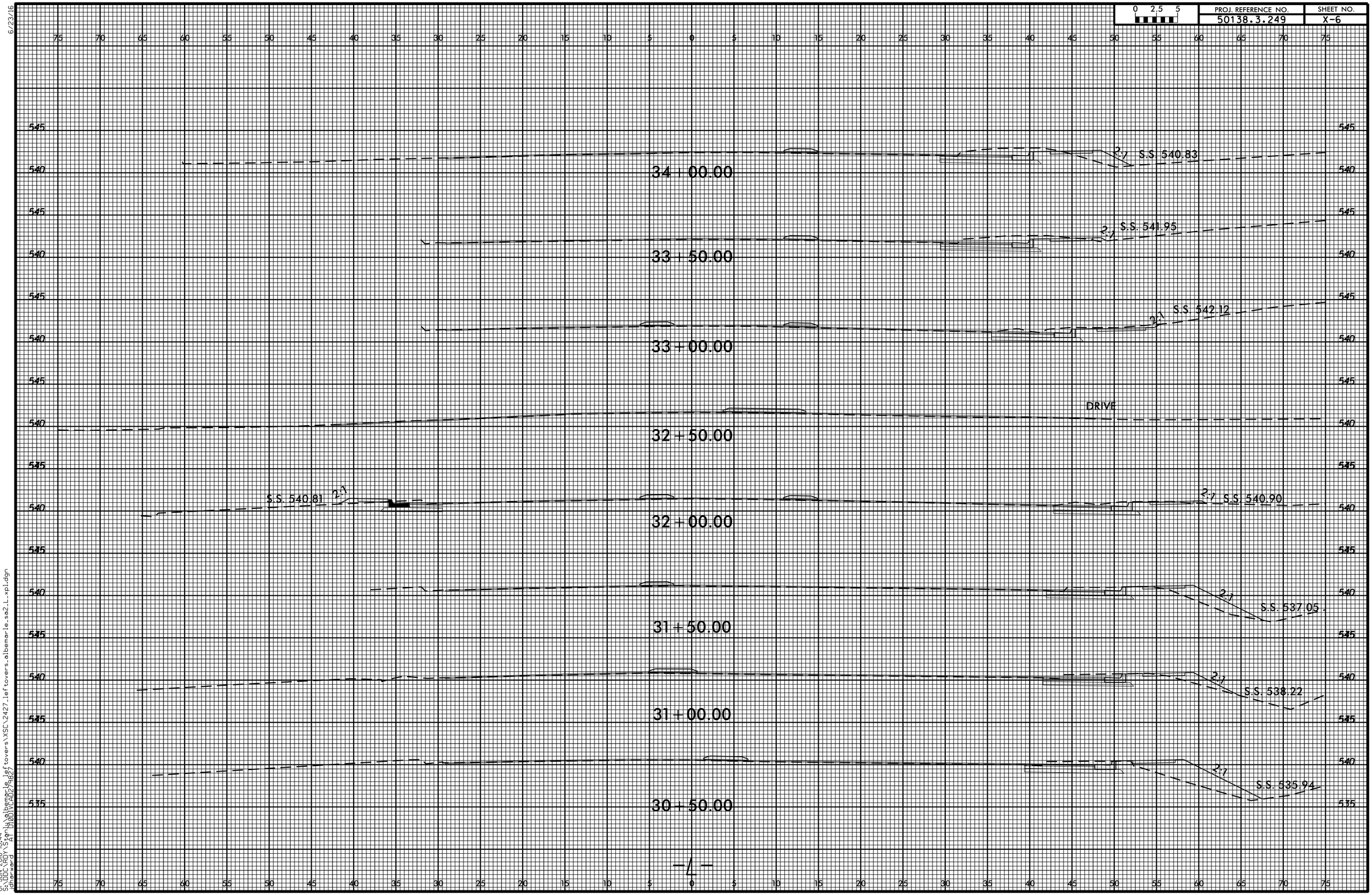

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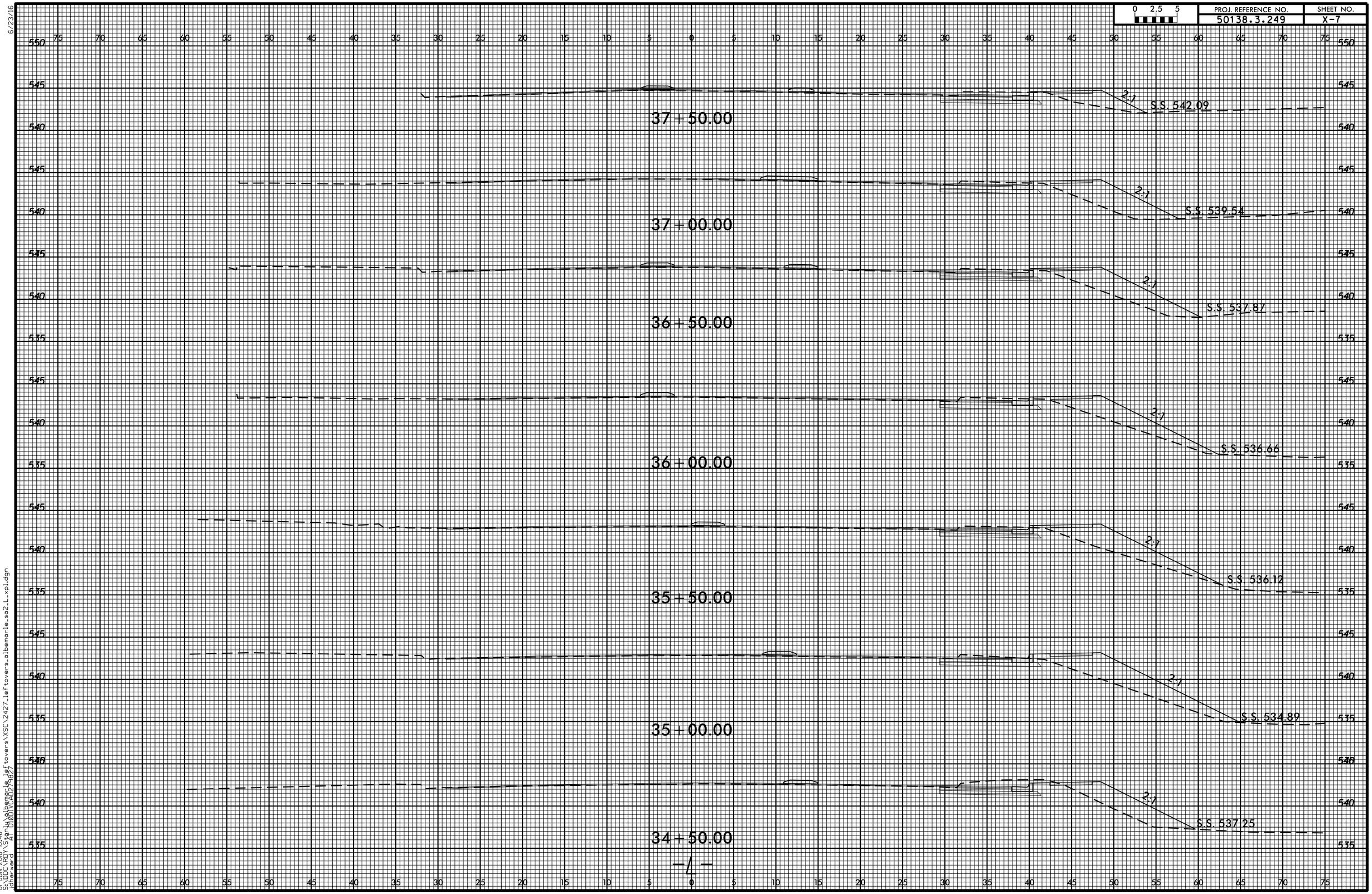

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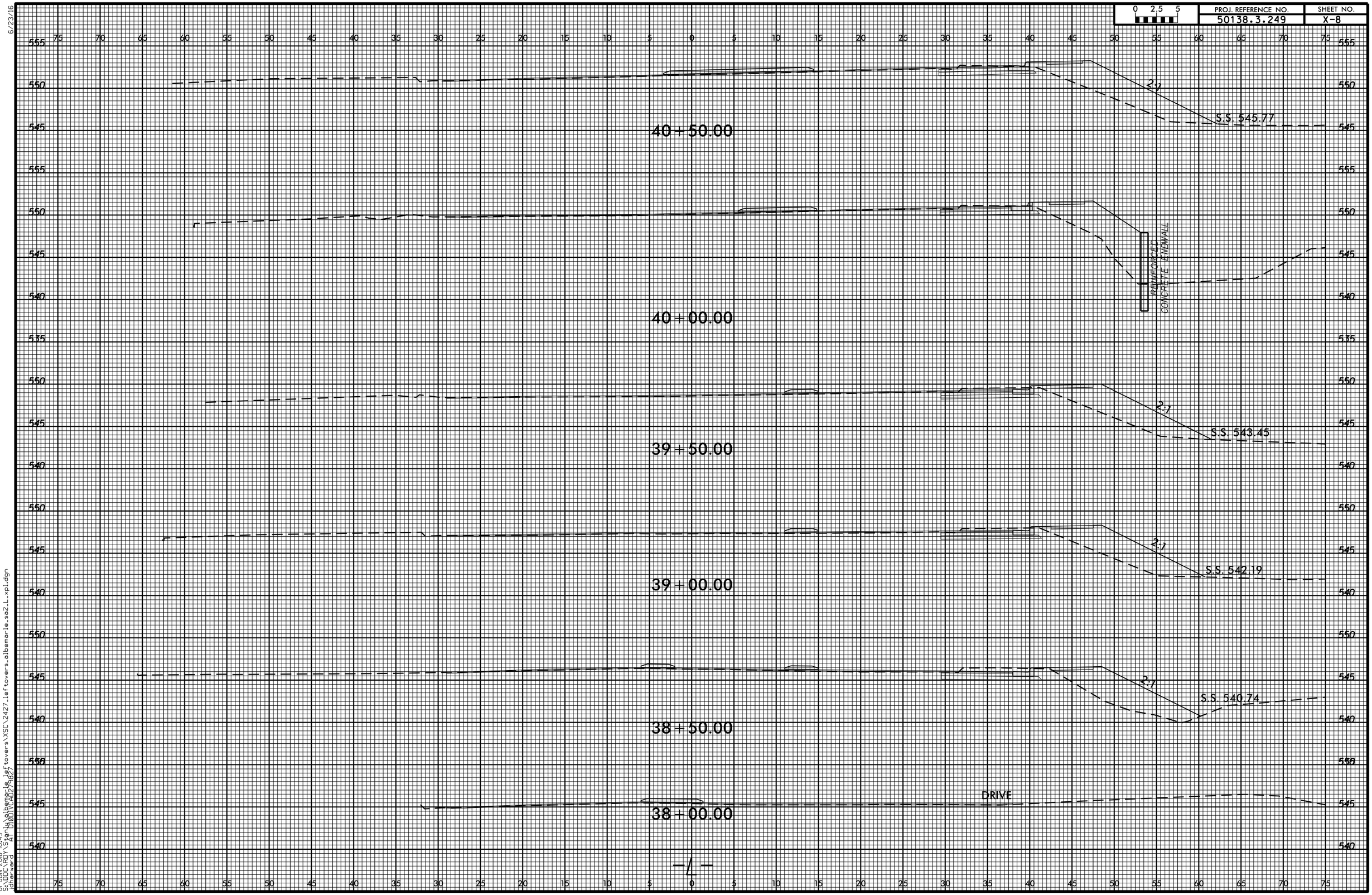

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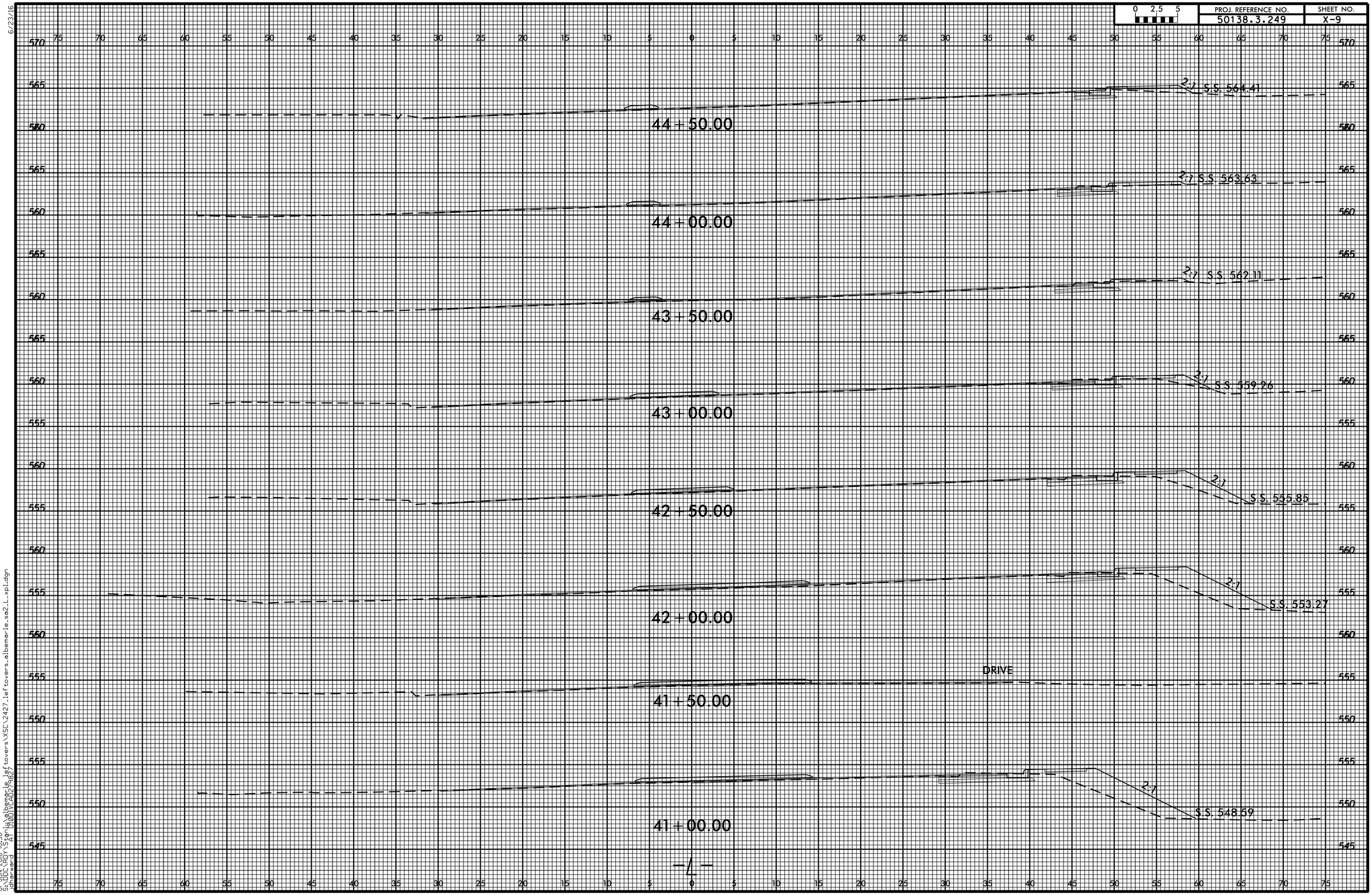

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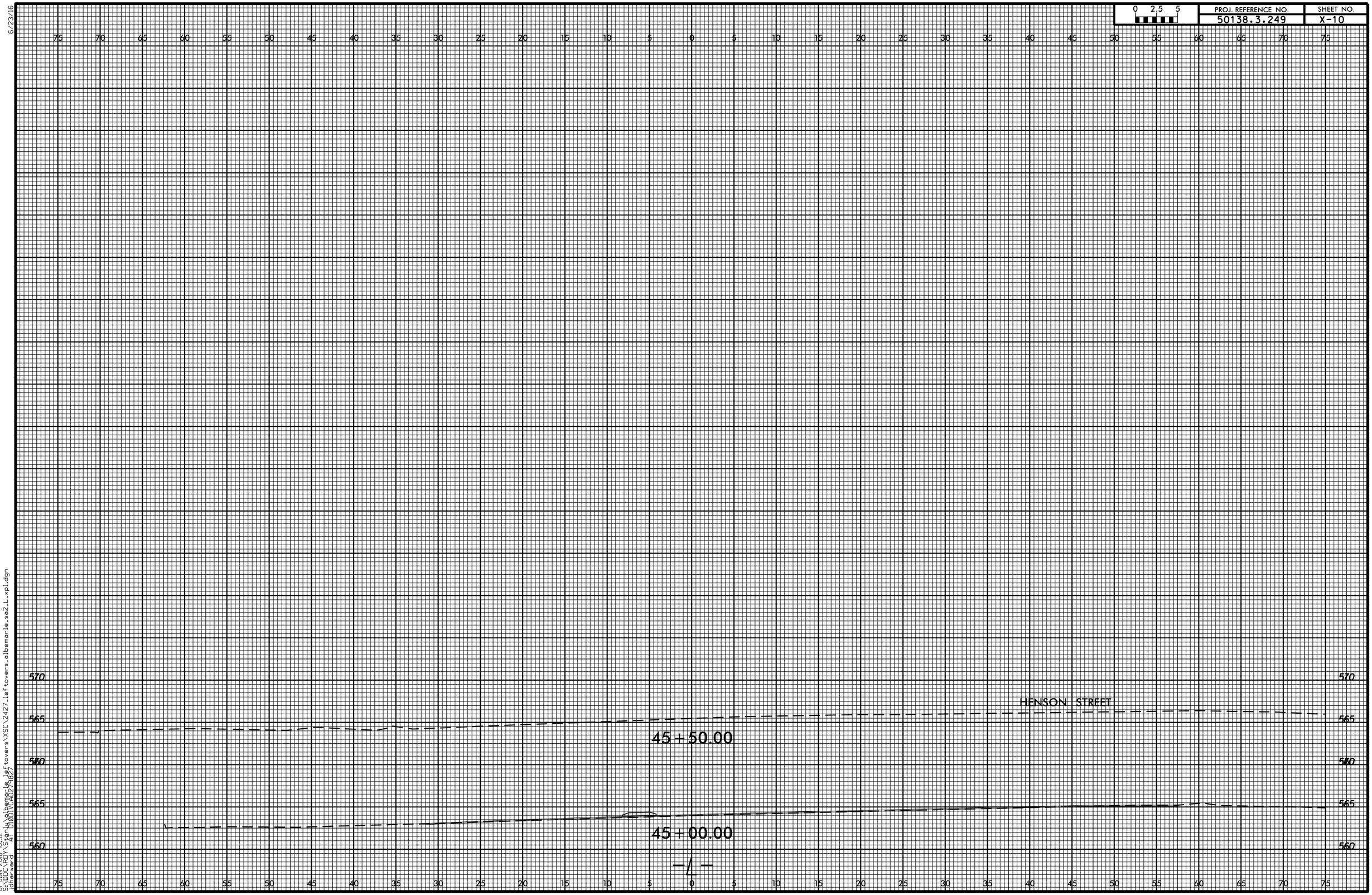

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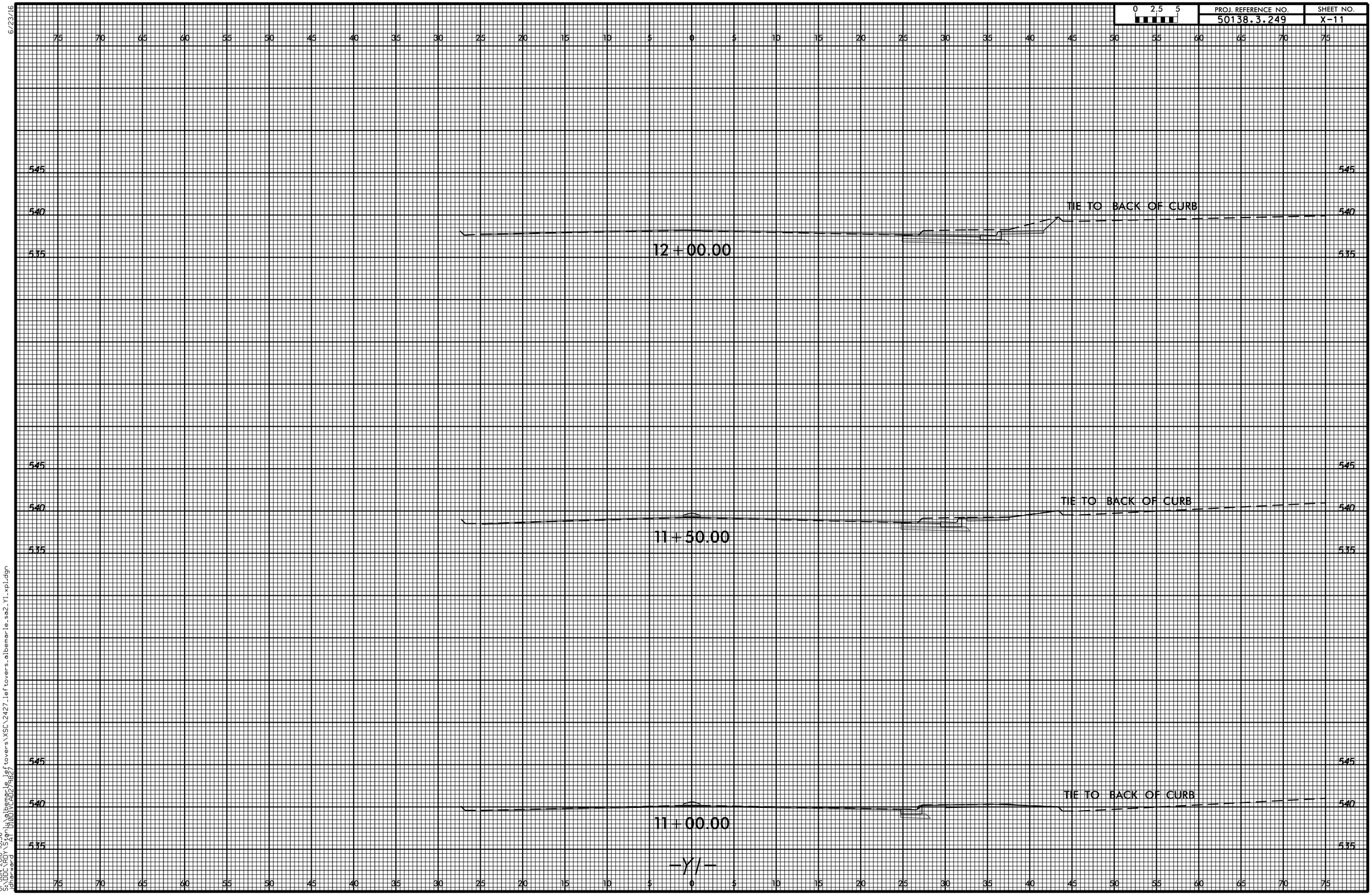

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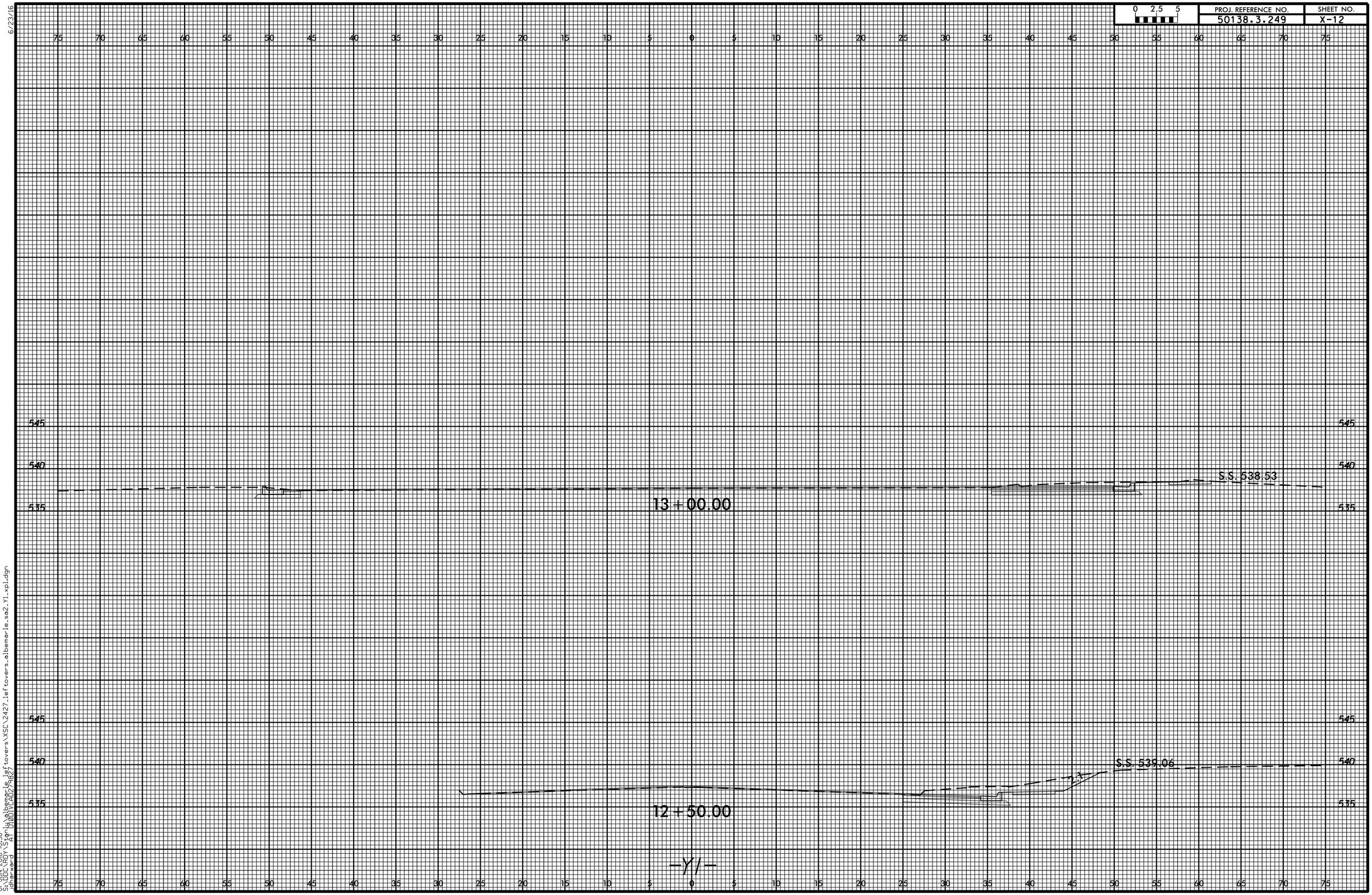

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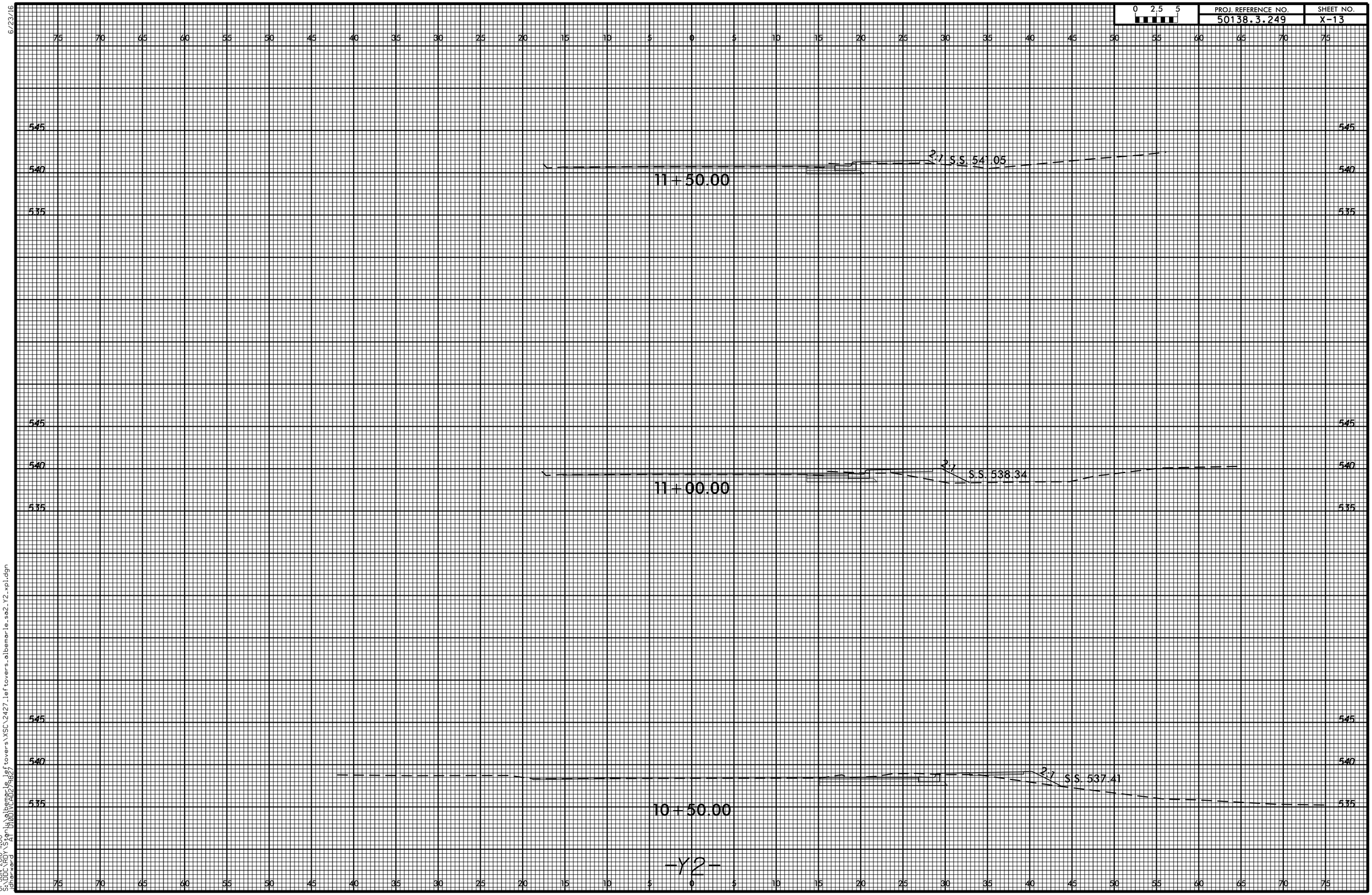

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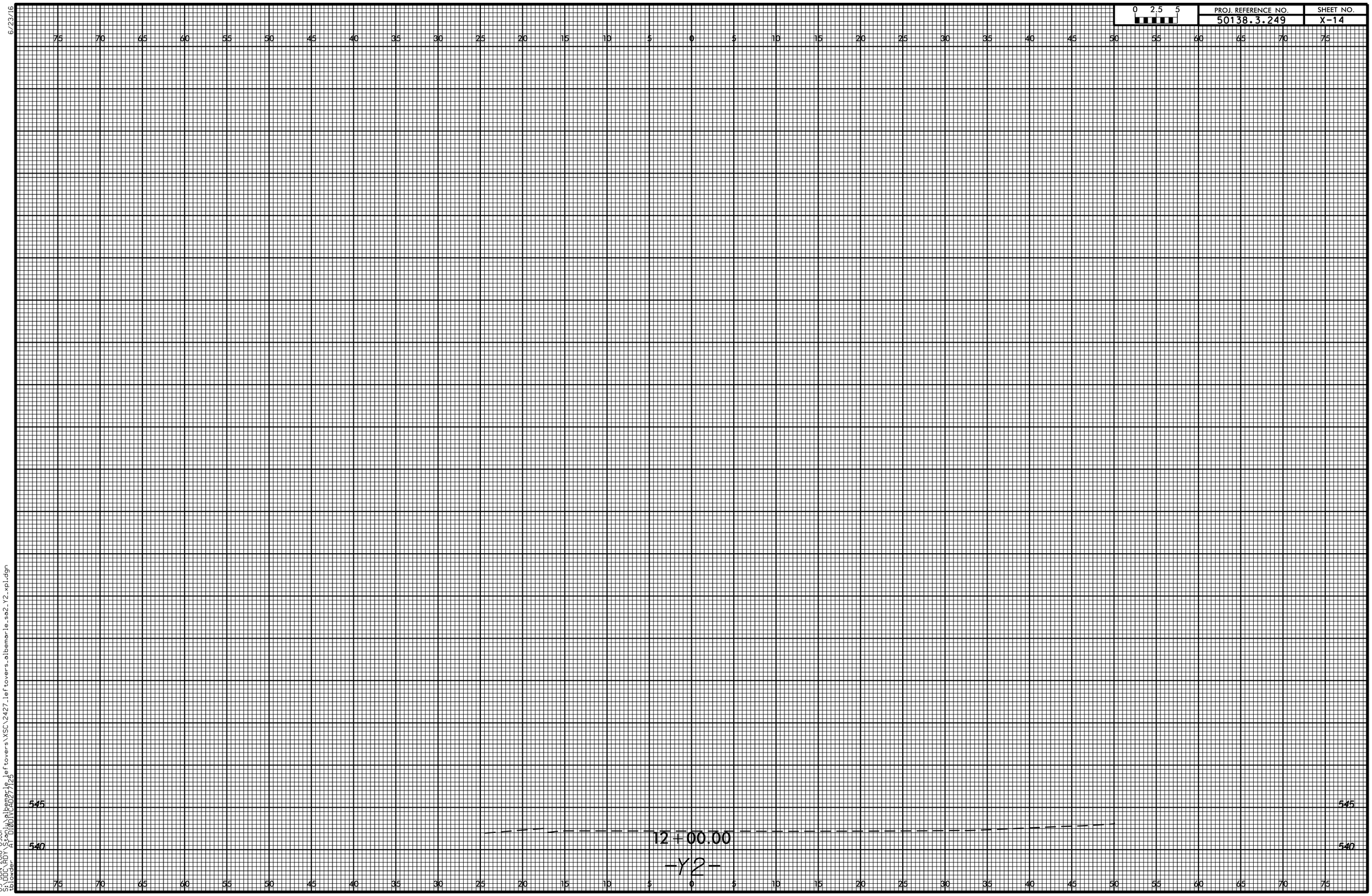

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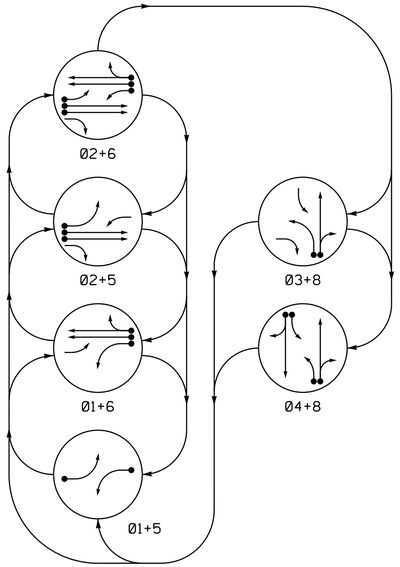
S:\DOC\RDY\Stan\albemarle_leftovers\XSC\2427_leftovers_albemarle_sa2_Y2_xpl.dgn
tblowder AT DDIVCADZ7125

PROJECT REFERENCE NO.	SHEET NO.
W-5601 IN	Sig. 2.0

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

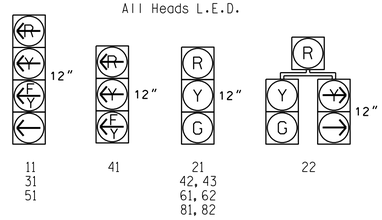
- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

TABLE OF OPERATION

SIGNAL FACE	PHASE 01+5	01+6	02+5	02+6	03+8	04+8	FLASH
11	↚	↚	F Y	F Y	R̸	R̸	Y̸
21	R	R	G	G	R	R	Y
22	R	R	G	G	R/→	R	Y
31	R̸	R̸	R̸	R̸	↚	F Y	R̸
41	R̸	R̸	R̸	R̸	F Y	F Y	R̸
42, 43	R	R	R	R	R	G	R
51	↚	F Y	↚	F Y	R̸	R̸	Y̸
61, 62	R	G	R	G	R	R	Y
81, 82	R	R	R	R	G	G	R

SIGNAL FACE I.D.

All Heads L.E.D.



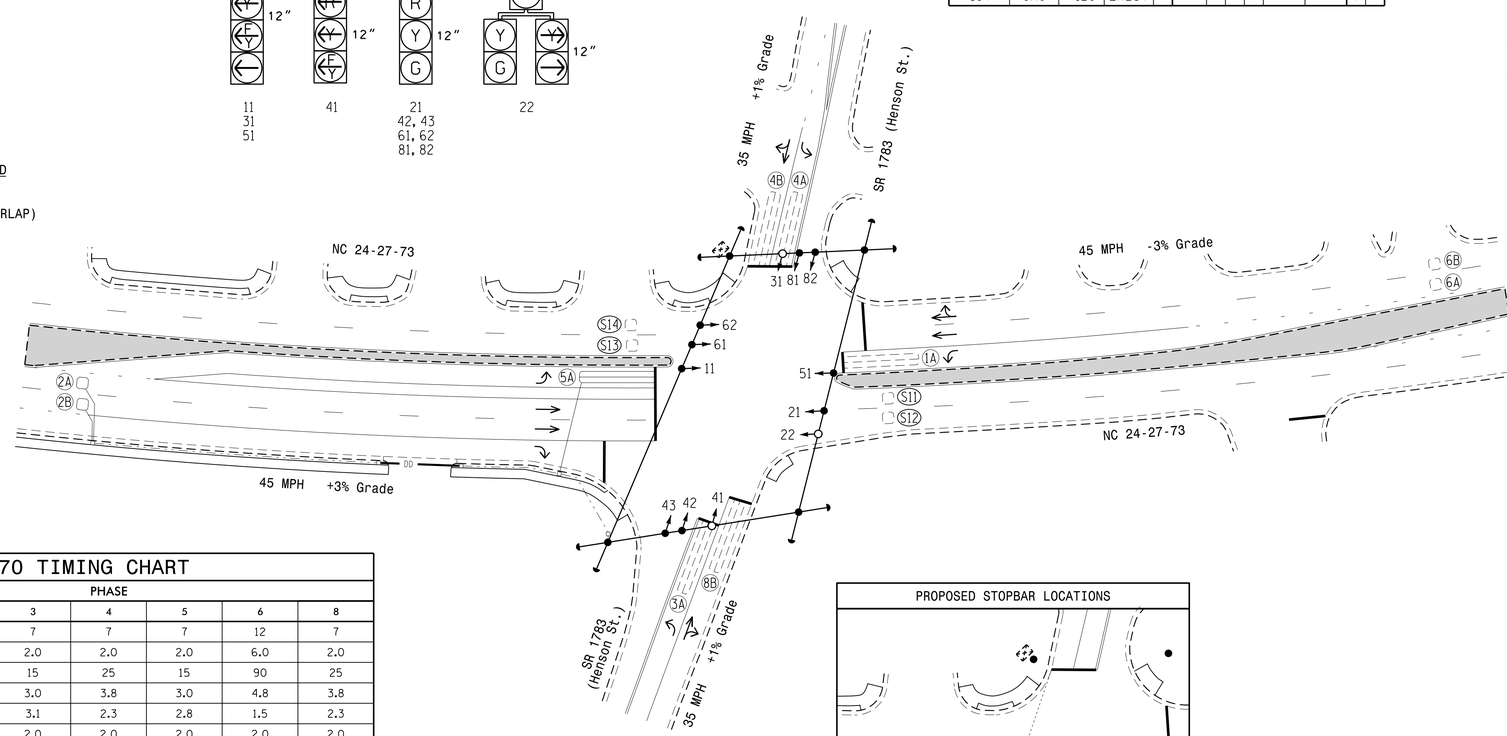
OASIS 2070 LOOP & DETECTOR INSTALLATION CHART

INDUCTIVE LOOPS					DETECTOR PROGRAMMING						
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
1A	6X40	0	2-4-2	-	1	Y	Y	-	-	15	-	-
					6	Y	Y	Y	-	3	-	-
2A	6X6	300	6	Y	2	Y	Y	-	-	-	-	-
2B	6X6	300	6	Y	2	Y	Y	-	-	-	-	-
3A	6X40	0	2-4-2	-	3	Y	Y	-	-	15	-	Y
					8	Y	Y	-	-	3	-	-
4A	6X40	0	2-4-2	-	4	Y	Y	-	-	3	-	-
4B	6X40	0	2-4-2	-	4	Y	Y	-	-	10	-	-
5A	6X40	0	2-4-2	Y	5	Y	Y	-	-	15	-	-
					2	Y	Y	Y	-	3	-	-
6A	6X6	300	EXIST	-	6	Y	Y	-	-	-	-	-
6B	6X6	300	EXIST	-	6	Y	Y	-	-	-	-	-
8B	6X40	0	2-4-2	-	8	Y	Y	-	-	10	-	-
S11	6X6	+120	EXIST	-	-	-	-	-	-	-	Y	-
S12	6X6	+120	EXIST	-	-	-	-	-	-	-	Y	-
S13	6X6	+120	EXIST	-	-	-	-	-	-	-	Y	-
S14	6X6	+120	EXIST	-	-	-	-	-	-	-	Y	-

6 Phase
Fully Actuated
NC 24-27-73 (Bypass East) CLS

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 1 and/or phase 5 may be lagged.
4. Phase 3 may be lagged.
5. Renumber existing signal heads 41 and 42, to 42 and 43, respectively.
6. Reposition existing signal heads numbered 21, 42, 43, 51, 81 and 82.
7. Renumber existing loop 8A to 3A.
8. Set all detector units to presence mode.
9. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
10. Closed loop system data: Controller Asset #: 1055.



LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head With Push Button & Sign	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
	2-in Underground Conduit	
N/A	Right of Way	
	Directional Arrow	
DD	Directional Drill	N/A

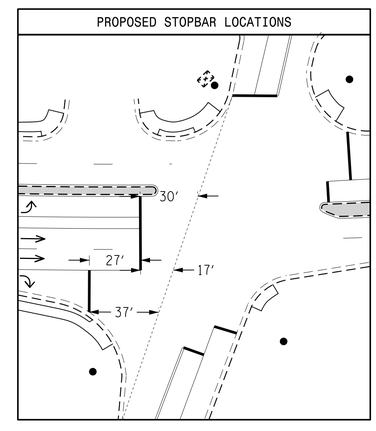
OASIS 2070 TIMING CHART

FEATURE	PHASE 1	2	3	4	5	6	8
Min Green 1 *	7	12	7	7	7	12	7
Extension 1 *	2.0	6.0	2.0	2.0	2.0	6.0	2.0
Max Green 1 *	15	90	15	25	15	90	25
Yellow Clearance	3.0	4.8	3.0	3.8	3.0	4.8	3.8
Red Clearance	3.1	1.5	3.1	2.3	2.8	1.5	2.3
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk 1 *	-	-	-	-	-	-	-
Don't Walk 1	-	-	-	-	-	-	-
Seconds Per Actuation *	-	1.5	-	-	-	1.5	-
Max Variable Initial *	-	34	-	-	-	34	-
Time Before Reduction *	-	15	-	-	-	15	-
Time To Reduce *	-	30	-	-	-	30	-
Minimum Gap	-	3.0	-	-	-	3.0	-
Recall Mode	-	MIN RECALL	-	-	-	MIN RECALL	-
Vehicle Call Memory	-	YELLOW	-	-	-	YELLOW	-
Dual Entry	-	-	-	ON	-	-	ON
Simultaneous Gap	ON	ON	ON	ON	ON	ON	ON

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

This plan supersedes the one signed and sealed on 4/24/2017.

PROPOSED STOPBAR LOCATIONS



Signal Upgrade

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared In the Offices of:
Transportation Mobility and Safety Division
Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

NC 24-27-73
at
SR 1783 (Henson St.)

Division 10 Stanly County Albemarle

PLAN DATE:	April 2018	REVIEWED BY:	T.J. Williams
PREPARED BY:	R.N. Zinser	REVIEWED BY:	

SCALE 0 40 1"=40'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 024393 ENGINEER TIMOTHY J. WILLIAMS

DocuSigned by: T. J. Williams 4/13/2018
PROFESSIONAL ENGINEER DATE

SIG. INVENTORY NO. 10-1055

13-APR-2018 12:19
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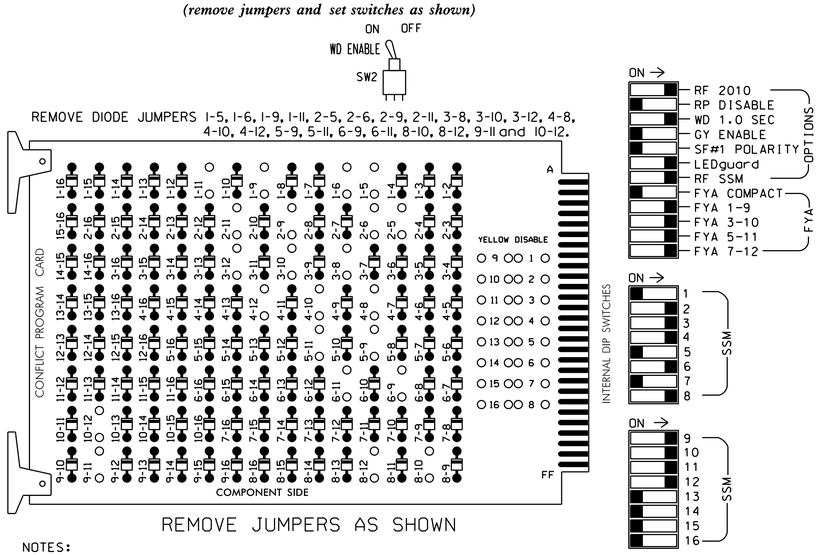
rnzinser

PROJECT REFERENCE NO.	SHEET NO.
W-5601 IN	Sig. 2.1

EDI MODEL 2010ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



NOTES:

1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
2. Make sure jumpers SEL2-SEL5 are present on the monitor board.

■ = DENOTES POSITION OF SWITCH

NOTES

1. To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
2. Ensure that Red Enable is active at all times during normal operation. To prevent Red Failures on unused monitor channels, tie unused red monitor inputs 1,5, 7,13,14,15 & 16 to load switch AC+ per the cabinet manufacturer's instructions.
3. Program phases 4 and 8 for Dual Entry.
4. Enable Simultaneous Gap-Out for all Phases.
5. Program phases 2 and 6 for Variable Initial and Gap Reduction.
6. Program phases 2 and 6 for Startup In Green.
7. Program phases 2 and 6 for Yellow Flash, and overlaps 1 and 2 as Wag Overlaps.
8. The cabinet and controller are part of the NC-24-27-73 (Bypass East) Closed Loop System.

EQUIPMENT INFORMATION

CONTROLLER.....2070
CABINET.....332 W/ AUX
SOFTWARE.....ECONOLITE OASIS
CABINET MOUNT.....BASE
OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
LOAD SWITCHES USED.....S1,S2,S3,S4,S5,S6,S8,
S9,S10,S12,S13
PHASES USED.....1,2,3,4,5,6,8
OVERLAP "A".....1+2
OVERLAP "B".....3+4
OVERLAP "C".....5+6
OVERLAP "D".....8

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S2P	S3		S4	S4P	S5	S6	S6P	S7	S8	S8P	S9	S10	S11	S12	S13	S14
PHASE	1	2	2 PED	3		4	4 PED	5	6	6 PED	7	8	8 PED	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	11★	21,22	NU	22	31★	42,43	NU	51★	61,62	NU	NU	81,82	NU	11★	31★	NU	51★	41★	NU
RED		128			✱	101			134			107							
YELLOW	✱	129				102		✱	135			108							
GREEN		130				103			136			109							
RED ARROW														A121	A124		A114	A101	
YELLOW ARROW				117										A122	A125		A115	A102	
FLASHING YELLOW ARROW														A123	A126		A116	A103	
GREEN ARROW	127			118	118			133											

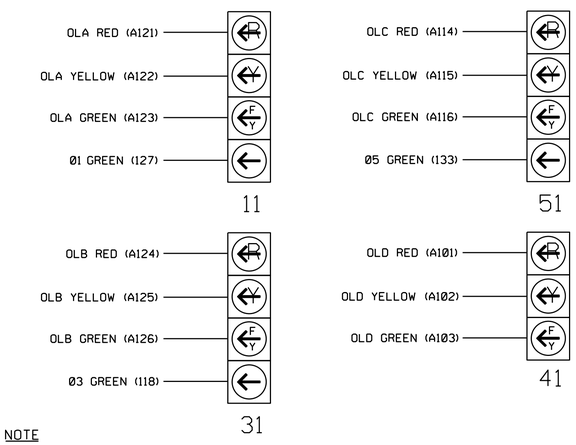
NU = Not Used

✱ Denotes install load resistor. See load resistor installation detail this sheet.

★ See pictorial of head wiring in detail this sheet.

FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



NOTE

The sequence display for signal heads 11, 31 and 51 requires special logic programming. See sheet 2 for programming instructions.

INPUT FILE POSITION LAYOUT

(front view)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE "I" U	Ø1 1A	Ø2 2A	SLOT EMPTY	WIRED INPUT ⊗	Ø3 3A	Ø4 4A	SLOT EMPTY	SLOT EMPTY	SYS. DET. S11	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	FS DC ISOLATOR
FILE "I" L	NOT USED	Ø2 2B			NOT USED	Ø4 4B			SYS. DET. S12					ST DC ISOLATOR
FILE "J" U	Ø5 5A	Ø6 6A	SLOT EMPTY	WIRED INPUT ⊗	SLOT EMPTY	NOT USED	SLOT EMPTY	WIRED INPUT ⊗	SYS. DET. S13	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY
FILE "J" L	NOT USED	Ø6 6B				Ø8 8B			SYS. DET. S14					

EX.: 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE
ST = STOP TIME

⊗ Wired Input - Do not populate slot with detector card

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
1A[1]	TB2-1,2	I1U	56	18	1	1	Y	Y			15
	-	J4U	48	10	26	6	Y	Y	Y		3
2A	TB2-5,6	I2U	39	1	2	2	Y	Y			
2B	TB2-7,8	I2L	43	5	12	2	Y	Y			
3A[2]	TB4-5,6	I5U	58	20	3	3	Y	Y			15
	-	J8U	50	12	28	8	Y	Y			3
4A	TB4-9,10	I6U	41	3	4	4	Y	Y			3
4B	TB4-11,12	I6L	45	7	14	4	Y	Y			10
✱ S11	TB6-9,10	I9U	60	22	11	SYS					
✱ S12	TB6-11,12	I9L	62	24	13	SYS					
5A[3]	TB3-1,2	J1U	55	17	5	5	Y	Y			15
	-	I4U	47	9	22	2	Y	Y	Y		3
6A	TB3-5,6	J2U	40	2	6	6	Y	Y			
6B	TB3-7,8	J2L	44	6	16	6	Y	Y			
8B	TB5-11,12	J6L	46	8	18	8	Y	Y			10
✱ S13	TB7-9,10	J9U	59	21	15	SYS					
✱ S14	TB7-11,12	J9L	61	23	17	SYS					

[1] Add jumper from I1-W to J4-W, on rear of input file.

[2] Add jumper from I5-W to J8-W, on rear of input file.

[3] Add jumper from J1-W to I4-W, on rear of input file.

✱ System detector only. Remove the vehicle phase assigned to this detector in the default programming.

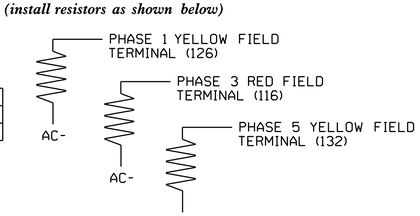
INPUT FILE POSITION LEGEND: J2L
FILE J
SLOT 2
LOWER

LOAD RESISTOR INSTALLATION DETAIL

(install resistors as shown below)

ACCEPTABLE VALUES

VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)



THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 10-1055
DESIGNED: April 2018
SEALED: 4-13-18
REVISED: N/A

This Electrical Detail supersedes the detail sealed on 4-27-17.

Electrical Detail - Sheet 1 of 2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

NC 24-27-73
AT
SR 1783 (Henson St.)

Division 10 Stanly County Albemarle

PLAN DATE: April 2018 REVIEWED BY:
PREPARED BY: James Peterson REVIEWED BY:

REVISIONS	INIT.	DATE

Prepared in the Offices of:
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Traffic Engineering & Signals Management Section
750 N.Greenfield Pkwy,Garner,NC 27529

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 036833 ENGINEER RYAN W. HOUGH

DocuSigned by: Ryan W. Hough 4/18/2018
DATE

SIG. INVENTORY NO. 10-1055

18-APR-2018 07:17
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jtpeterson

PROJECT REFERENCE NO.	SHEET NO.
W-5601 IN	Sig. 2.2

LOGICAL I/O PROCESSOR PROGRAMMING DETAIL
TO PRODUCE SPECIAL FYA-PPLT SIGNAL SEQUENCE

(program controller as shown below)

1. FROM MAIN MENU PRESS '2' (PHASE CONTROL), THEN '1' (PHASE CONTROL FUNCTIONS). SCROLL TO THE BOTTOM OF THE MENU AND ENABLE ACT LOGIC COMMANDS 1, 2, 3, 4, 5, 6, 7, 8 and 9.
2. FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '3' (LOGICAL I/O PROCESSOR).

```
LOGICAL I/O COMMAND #1  (+/-COMMAND#)
IF  ACTIVE PHASE       #1  IS ON
AND RED CLEAR ON PHASE #1  IS ON

SCROLL DOWN

THEN:
SET OUTPUT  ASSIGNMENT #50 ON
SET OUTPUT  ASSIGNMENT #51 OFF
```

NOTE: LOGIC FOR PHASE 1 RED CLEAR WHEN TRANSITIONING FROM PHASE 1 TO PHASE 2 (HEAD 11).

PRESS '+'

```
LOGICAL I/O COMMAND #2  (+/-COMMAND#)
IF  ACTIVE PHASE       #1  IS ON

SCROLL DOWN

THEN:
SET OUTPUT  ASSIGNMENT #52 OFF
```

NOTE: LOGIC FOR SWITCHING FLASHING YELLOW ARROW OFF DURING PHASE 1 (HEAD 11).

PRESS '+'

```
LOGICAL I/O COMMAND #3  (+/-COMMAND#)
IF  YELLOW ON PHASE    #1  IS ON

SCROLL DOWN

THEN:
SET OUTPUT  ASSIGNMENT #51 ON
```

NOTE: LOGIC FOR YELLOW ARROW CLEARANCE FROM PHASE 1 (HEAD 11).

PRESS '+'

```
LOGICAL I/O COMMAND #4  (+/-COMMAND#)
IF  ACTIVE PHASE       #5  IS ON
AND RED CLEAR ON PHASE #5  IS ON

SCROLL DOWN

THEN:
SET OUTPUT  ASSIGNMENT #42 ON
SET OUTPUT  ASSIGNMENT #43 OFF
```

NOTE: LOGIC FOR PHASE 5 RED CLEAR WHEN TRANSITIONING FROM PHASE 5 TO PHASE 6 (HEAD 51).

PRESS '+'

```
LOGICAL I/O COMMAND #5  (+/-COMMAND#)
IF  ACTIVE PHASE       #5  IS ON

SCROLL DOWN

THEN:
SET OUTPUT  ASSIGNMENT #44 OFF
```

NOTE: LOGIC FOR SWITCHING FLASHING YELLOW ARROW OFF DURING PHASE 5 (HEAD 51).

PRESS '+'

```
LOGICAL I/O COMMAND #6  (+/-COMMAND#)
IF  YELLOW ON PHASE    #5  IS ON

SCROLL DOWN

THEN:
SET OUTPUT  ASSIGNMENT #43 ON
```

NOTE: LOGIC FOR YELLOW ARROW CLEARANCE FROM PHASE 5 (HEAD 51).

PRESS '+'

```
LOGICAL I/O COMMAND #7  (+/-COMMAND#)
IF  ACTIVE PHASE       #3  IS ON
AND RED CLEAR ON PHASE #3  IS ON

SCROLL DOWN

THEN:
SET OUTPUT  ASSIGNMENT #47 ON
SET OUTPUT  ASSIGNMENT #48 OFF
```

NOTE: LOGIC FOR PHASE 3 RED CLEAR WHEN TRANSITIONING FROM PHASE 3 TO PHASE 4 (HEAD 31).

PRESS '+'

```
LOGICAL I/O COMMAND #8  (+/-COMMAND#)
IF  ACTIVE PHASE       #3  IS ON

SCROLL DOWN

THEN:
SET OUTPUT  ASSIGNMENT #49 OFF
```

NOTE: LOGIC FOR SWITCHING FLASHING YELLOW ARROW OFF DURING PHASE 3 (HEAD 31).

PRESS '+'

```
LOGICAL I/O COMMAND #9  (+/-COMMAND#)
IF  YELLOW ON PHASE    #3  IS ON

SCROLL DOWN

THEN:
SET OUTPUT  ASSIGNMENT #48 ON
```

NOTE: LOGIC FOR YELLOW ARROW CLEARANCE FROM PHASE 3 (HEAD 31).

LOGIC I/O PROCESSOR PROGRAMMING COMPLETE

OUTPUT REFERENCE SCHEDULE

USE TO INTERPRET LOGIC PROCESSOR

OUTPUT 42 = Overlap C Red
OUTPUT 43 = Overlap C Yellow
OUTPUT 44 = Overlap C Green
OUTPUT 47 = Overlap B Red
OUTPUT 48 = Overlap B Yellow
OUTPUT 49 = Overlap B Green
OUTPUT 50 = Overlap A Red
OUTPUT 51 = Overlap A Yellow
OUTPUT 52 = Overlap A Green

OVERLAP PROGRAMMING DETAIL

(program controller as shown below)

FROM MAIN MENU PRESS '8' (OVERLAPS), THEN '1' (VEHICLE OVERLAP SETTINGS).

```
PAGE 1: VEHICLE OVERLAP 'A' SETTINGS
PHASE:          ¦123456789101112131415 16
VEH OVL PARENTS:¦XX
VEH OVL NOT VEH:¦
VEH OVL NOT PED:¦
VEH OVL GRN EXT:¦
STARTUP COLOR: _ RED  _ YELLOW  _ GREEN
FLASH COLORS:  _ RED  _ YELLOW  X GREEN
SELECT VEHICLE OVERLAP OPTIONS:   (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...Y
GREEN EXTENSION (0-255 SEC).........0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)...0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0
```

NOTICE GREEN FLASH

PRESS '+'

```
PAGE 1: VEHICLE OVERLAP 'B' SETTINGS
PHASE:          ¦123456789101112131415 16
VEH OVL PARENTS:¦  XX
VEH OVL NOT VEH:¦
VEH OVL NOT PED:¦
VEH OVL GRN EXT:¦
STARTUP COLOR: _ RED  _ YELLOW  _ GREEN
FLASH COLORS:  _ RED  _ YELLOW  X GREEN
SELECT VEHICLE OVERLAP OPTIONS:   (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC).........0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)..0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0
```

NOTICE GREEN FLASH

PRESS '+'

```
PAGE 1: VEHICLE OVERLAP 'C' SETTINGS
PHASE:          ¦123456789101112131415 16
VEH OVL PARENTS:¦    XX
VEH OVL NOT VEH:¦
VEH OVL NOT PED:¦
VEH OVL GRN EXT:¦
STARTUP COLOR: _ RED  _ YELLOW  _ GREEN
FLASH COLORS:  _ RED  _ YELLOW  X GREEN
SELECT VEHICLE OVERLAP OPTIONS:   (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...Y
GREEN EXTENSION (0-255 SEC).........0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)...0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0
```

NOTICE GREEN FLASH

PRESS '+'

```
PAGE 1: VEHICLE OVERLAP 'D' SETTINGS
PHASE:          ¦123456789101112131415 16
VEH OVL PARENTS:¦        X
VEH OVL NOT VEH:¦
VEH OVL NOT PED:¦
VEH OVL GRN EXT:¦
STARTUP COLOR: _ RED  _ YELLOW  _ GREEN
FLASH COLORS:  _ RED  _ YELLOW  X GREEN
SELECT VEHICLE OVERLAP OPTIONS:   (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC).........0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)..0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0
```

NOTICE GREEN FLASH

OVERLAP PROGRAMMING COMPLETE

FLASHER CIRCUIT MODIFICATION DETAIL

IN ORDER TO INSURE THAT SIGNALS FLASH CONCURRENTLY ON THE SAME APPROACH, MAKE THE FOLLOWING FLASHER CIRCUIT CHANGES:

1. ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-4 AND TERMINATE ON T2-2.
2. ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-5 AND TERMINATE ON T2-3.
3. REMOVE FLASHER UNIT 2.

THE CHANGES LISTED ABOVE TIES ALL PHASES AND OVERLAPS TO FLASHER UNIT 1.

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 10-1055
DESIGNED: April 2018
SEALED: 4-13-18
REVISED: N/A

This Electrical Detail supersedes the detail sealed on 4-27-17.

Electrical Detail - Sheet 2 of 2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared in the Offices of:
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
ITS & Signals Management Section
750 N.Greenfield Pkwy,Garner,NC 27529

NC 24-27-73
AT
SR 1783 (Henson St.)

Division 10 Stanly County Albemarle

PLAN DATE: April 2018		REVIEWED BY:	
PREPARED BY: James Peterson		REVIEWED BY:	
REVISIONS		INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 036833 ENGINEER RYAN W. HOUGH

DocuSigned by: Ryan W. Hough 4/18/2018
430D20FAA2654C3 DATE

SIG. INVENTORY NO. 10-1055

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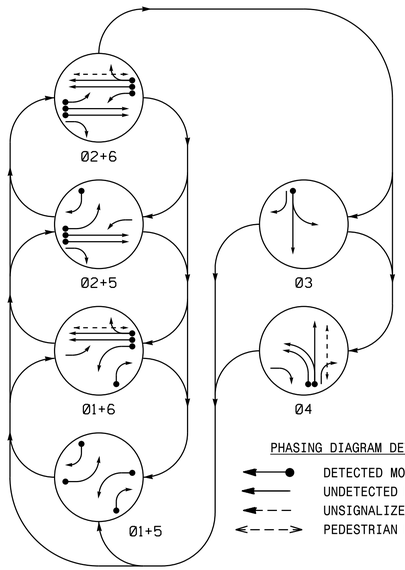
jtpeterson

PROJECT REFERENCE NO.	SHEET NO.
W-5601 IN	Sig. 1.0

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

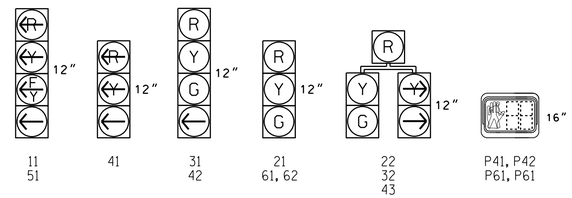
- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

TABLE OF OPERATION

SIGNAL FACE	PHASE 01+5	01+6	02+5	02+6	03	04	FLASH
11	↚	↚	F Y	F Y	R̸	R̸	Y̸
21	R	R	G	G	R	R	Y
22	R	R	G	G	R	R/←	Y
31	R	R	R	R	G	R	R
32	R/←	R	R/←	R	G	R	R
41	R̸	R̸	R̸	R̸	R̸	↚	R̸
42	R	R	R	R	R	G/←	R
43	R/←	R/←	R	R	R	G	R
51	↚	F Y	↚	F Y	R̸	R̸	Y̸
61, 62	R	G	R	G	R	R	Y
P41, P42	DW	DW	DW	DW	DW	W	DRK
P61, P62	DW	W	DW	W	DW	DW	DRK

SIGNAL FACE I.D.

All Heads L.E.D.



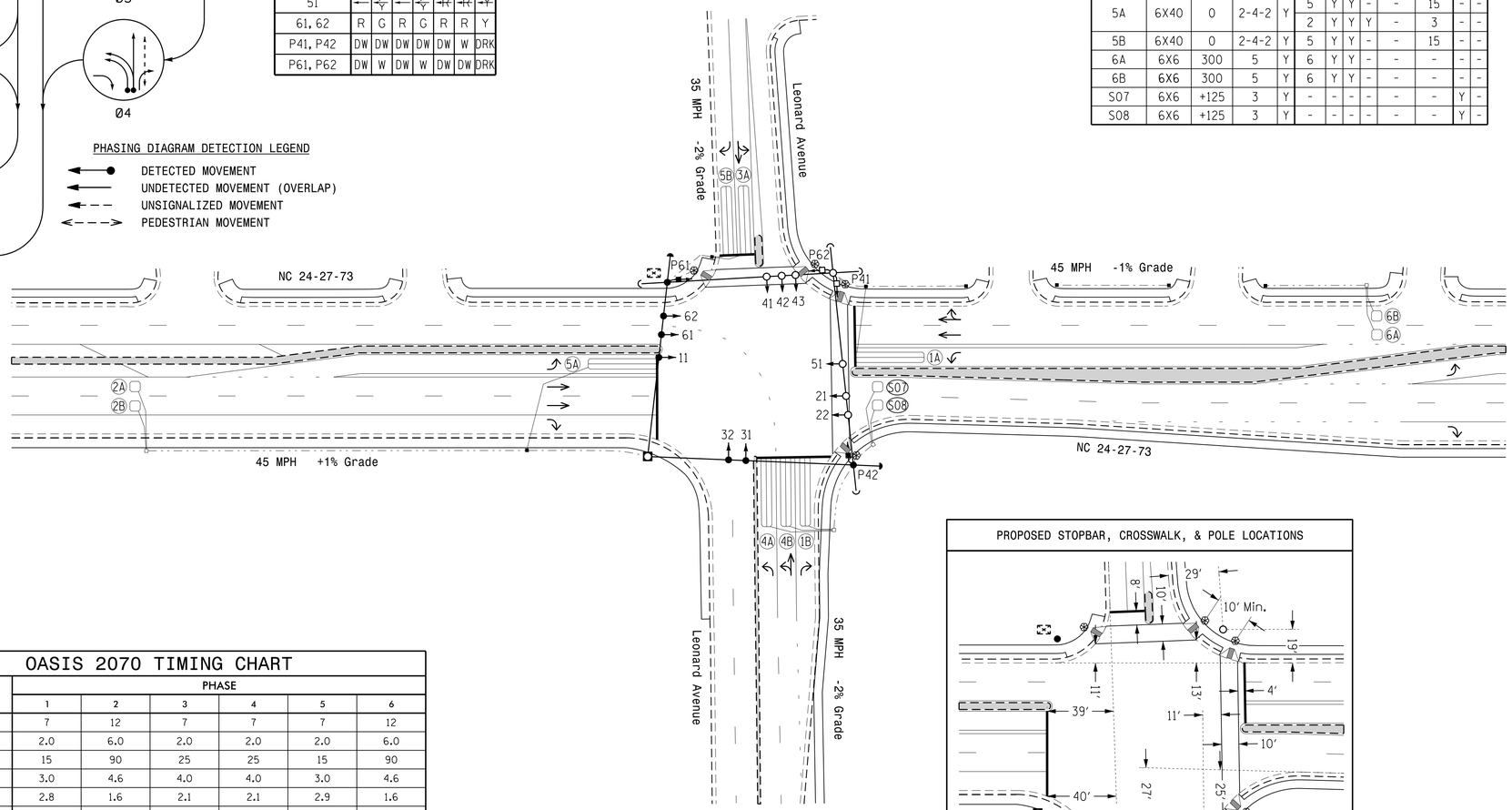
OASIS 2070 LOOP & DETECTOR INSTALLATION CHART

INDUCTIVE LOOPS					DETECTOR PROGRAMMING						
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
1A	6X40	0	2-4-2	Y	1	Y	Y	-	-	15	-	-
					6	Y	Y	Y	-	3	-	-
1B	6X40	0	2-4-2	Y	1	Y	Y	-	-	15	-	-
2A	6X6	300	5	Y	2	Y	Y	-	-	-	-	-
2B	6X6	300	5	Y	2	Y	Y	-	-	-	-	-
3A	6X40	0	2-4-2	Y	3	Y	Y	-	-	-	-	-
4A	6X40	0	2-4-2	Y	4	Y	Y	-	-	-	-	-
4B	6X40	0	2-4-2	Y	4	Y	Y	-	-	-	-	Y
5A	6X40	0	2-4-2	Y	5	Y	Y	-	-	15	-	-
					2	Y	Y	Y	-	3	-	-
5B	6X40	0	2-4-2	Y	5	Y	Y	-	-	15	-	-
6A	6X6	300	5	Y	6	Y	Y	-	-	-	-	-
6B	6X6	300	5	Y	6	Y	Y	-	-	-	-	-
S07	6X6	+125	3	Y	-	-	-	-	-	-	Y	-
S08	6X6	+125	3	Y	-	-	-	-	-	-	Y	-

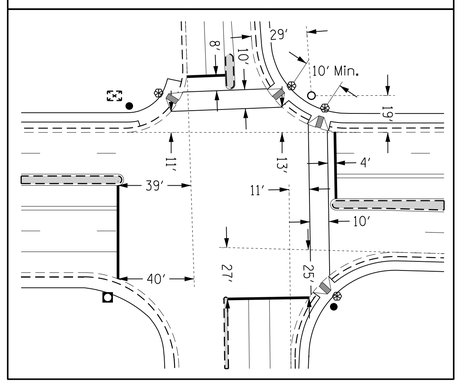
6 Phase
Fully Actuated
NC 24-27-73 (Bypass East) CLS

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 1 and/or phase 5 may be lagged.
4. The order of phase 3 and phase 4 may be reversed.
5. Set all detector units to presence mode.
6. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
7. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
8. Pedestrian pedestals are conceptual and shown for reference only. See sheets P1-P3 for pushbutton location details.
9. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
10. Closed loop system data: Controller Asset #: 1908.



PROPOSED STOPBAR, CROSSWALK, & POLE LOCATIONS



LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head With Push Button & Sign	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
	2-in Underground Conduit	
N/A	Right of Way	
	Directional Arrow	
	Metal Strain Pole	
	Type I Pushbutton Post	

OASIS 2070 TIMING CHART

FEATURE	PHASE 1	2	3	4	5	6
Min Green 1 *	7	12	7	7	7	12
Extension 1	2.0	6.0	2.0	2.0	2.0	6.0
Max Green 1 *	15	90	25	25	15	90
Yellow Clearance	3.0	4.6	4.0	4.0	3.0	4.6
Red Clearance	2.8	1.6	2.1	2.1	2.9	1.6
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0
Walk 1 *	-	-	-	7	-	7
Don't Walk 1	-	-	-	20	-	10
Seconds Per Actuation *	-	1.5	-	-	-	1.5
Max Variable Initial *	-	34	-	-	-	34
Time Before Reduction *	-	15	-	-	-	15
Time To Reduce *	-	30	-	-	-	30
Minimum Gap	-	3.0	-	-	-	3.0
Recall Mode	-	MIN RECALL	-	-	-	MIN RECALL
Vehicle Call Memory	-	YELLOW	-	-	-	YELLOW
Dual Entry	-	-	-	-	-	-
Simultaneous Gap	ON	ON	ON	ON	ON	ON

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

This plan supersedes the one signed and sealed on 4/24/2017.

Signal Upgrade

Prepared In the Offices of:
Transportation Mobility and Safety Division
Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

SCALE 0 40
1"=40'

NC 24-27-73
at
Leonard Avenue

Division 10 Stanly County Albemarle

PLAN DATE: April 2018 REVIEWED BY: T.J. Williams
PREPARED BY: R.N. Zinser REVIEWED BY:

REVISIONS	INIT.	DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 024393 ENGINEER TIMOTHY J. WILLIAMS

DocuSigned by: T. J. Williams 4/13/2018
DATE

SIGNATURE REDACTED
SIG. INVENTORY NO. 10-1908

13-APR-2018 12:55
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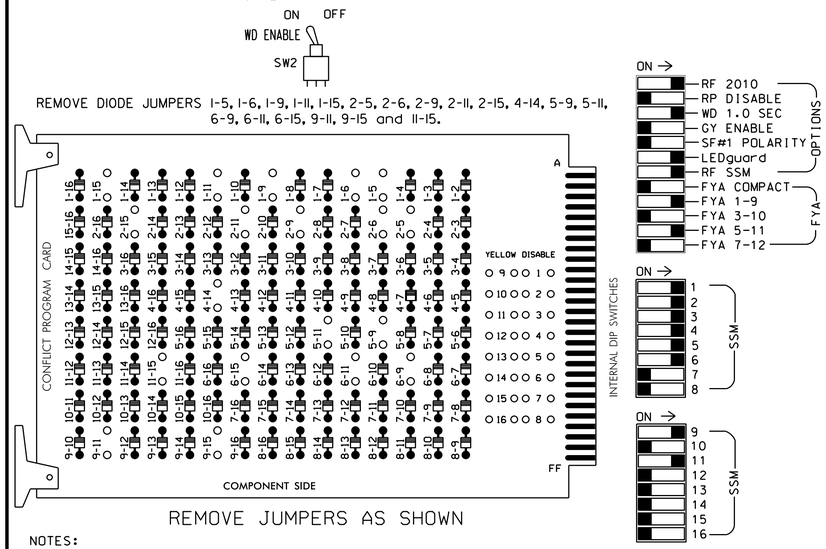
rnzinser

PROJECT REFERENCE NO.	SHEET NO.
W-5601 IN	Sig. 1.1

EDI MODEL 2010ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



REMOVE DIODE JUMPERS I-5, I-6, I-9, I-11, I-15, 2-5, 2-6, 2-9, 2-11, 2-15, 4-14, 5-9, 5-11, 6-9, 6-11, 6-15, 9-11, 9-15 and 11-15.

REMOVE JUMPERS AS SHOWN

NOTES:

1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
2. Make sure jumpers SEL2-SEL5 are present on the monitor board.

■ = DENOTES POSITION OF SWITCH

NOTES

1. To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
2. Ensure that Red Enable is active at all times during normal operation. To prevent Red Failures on unused monitor channels, tie unused red monitor inputs 7,8,10, 12,13,14,15 & 16 to load switch AC+ per the cabinet manufacturer's instructions.
3. Enable Simultaneous Gap-Out for all phases.
4. Program phases 2 and 6 for Variable Initial and Gap Reduction.
5. Program phases 2 and 6 for Start Up In Green.
6. Program phases 4 and 6 for 'STARTUP PED CALL'.
7. Program phases 2 and 6 for Yellow Flash, and overlap 1 as Wag Overlaps.
8. The cabinet and controller are part of the NC 24-27-73 (Bypass East) Closed Loop System.

EQUIPMENT INFORMATION

CONTROLLER.....2070L
CABINET.....332 /W/ AUX
SOFTWARE.....ECONOLITE OASIS
CABINET MOUNT.....BASE
OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
LOAD SWITCHES USED.....S1,S2,S3,S4,S4P,S5,S6,S6P,S9,S12.
PHASES USED.....1,2,3,4,5,6,4PED,6PED.
OVERLAP "A".....1+2
OVERLAP "B".....NOT USED
OVERLAP "C".....5+6
OVERLAP "D".....NOT USED

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1		S2	S2P	S3		S4				S4P	S5		S6	S6P	S7	S8	S8P	S9	S10	S11	S12	S13	S14
PHASE	1		2	2 PED	3		4				4 PED	5		6	6 PED	7	8	8 PED	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	11★	43	21,22	NU	31	32	41	42	43	22	P41, P42	51★	32	61,62	P61, P62	NU	NU	NU	11★	NU	NU	51★	NU	NU
RED		✳	128		116	116		101	101				✳	134										
YELLOW			129		117	117		102	102					135										
GREEN			130		118	118		103	103					136										
RED ARROW							101												A121			A114		
YELLOW ARROW		126					102			102			132						A122			A115		
FLASHING YELLOW ARROW																			A123			A116		
GREEN ARROW	127	127			118		103	103		103		133	133											
✋											104				119									
🚶											106				121									

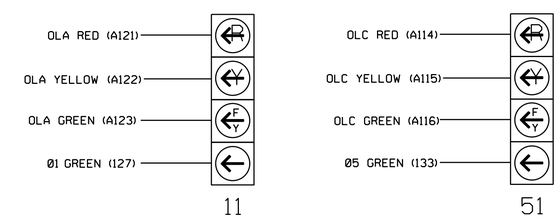
NU = Not Used

✳ Denotes install load resistor. See load resistor installation detail this sheet.

★ See pictorial of head wiring in detail below.

4 SECTION FYA PPLT SIGNAL WIRING DETAIL

(wire signal heads as shown)



NOTE

1. The sequence display for this signal requires special logic programming. See sheet 2 of 2 for programming instructions.

INPUT FILE POSITION LAYOUT

(front view)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE "I"	U	Ø1 1A	Ø1 1B	Ø2 2A	WIRED INPUT ⊗	Ø3 3A	Ø4 4A	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	NOT USED	Ø6 PED DC ISOLATOR	FS DC ISOLATOR
	L	NOT USED	NOT USED	Ø2 2B		NOT USED	Ø4 4B						Ø4 PED DC ISOLATOR	NOT USED	ST DC ISOLATOR
FILE "J"	U	Ø5 5A	Ø5 5B	Ø6 6A	WIRED INPUT ⊗	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SYS. DET. SØ7	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY
	L	NOT USED	NOT USED	Ø6 6B						SYS. DET. SØ8					

EX.: 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE
ST = STOP TIME

⊗ Wired Input - Do not populate slot with detector card

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
1A[1]	TB2-1,2	I1U	56	18	1	1	Y	Y			15
	-	J4U	48	10	26	6	Y	Y	Y		3
1B	TB2-5,6	I2U	39	1	2	1	Y	Y			15
2A	TB2-9,10	I3U	63	25	32	2	Y	Y			
2B	TB2-11,12	I3L	76	38	42	2	Y	Y			
3A	TB4-5,6	I5U	58	20	3	3	Y	Y			
4A	TB4-9,10	I6U	41	3	4	4	Y	Y			
4B	TB4-11,12	I6L	45	7	14	4	Y	Y			
5A[2]	TB3-1,2	J1U	55	17	5	5	Y	Y			15
	-	I4U	47	9	22	2	Y	Y	Y		3
5B	TB3-5,6	J2U	40	2	6	5	Y	Y			15
6A	TB3-9,10	J3U	64	26	36	6	Y	Y			
6B	TB3-11,12	J3L	77	39	46	6	Y	Y			
✳SØ7	TB7-9,10	J9U	59	21	15	SYS					
✳SØ8	TB7-11,12	J9L	61	23	17	SYS					
PED PUSH BUTTONS											
P41,P42	TB8-5,6	I2L	69	31	PED 4	4 PED					
P61,P62	TB8-7,9	I13U	68	30	PED 6	6 PED					

NOTE:
INSTALL DC ISOLATORS IN INPUT FILE SLOTS I12 AND I13.

[1] Add jumper from I1-W to J4-W, on rear of input file.
[2] Add jumper from J1-W to I4-W, on rear of input file.
✳ System detector only. Remove the vehicle phase assigned to this detector in the default programming.

INPUT FILE POSITION LEGEND: J2L
FILE J
SLOT 2
LOWER

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 10-1908
DESIGNED: April 2018
SEALED: 4-13-18
REVISED: N/A

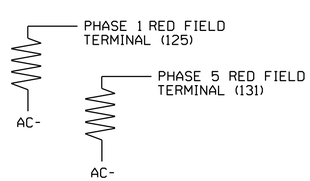
This Electrical Detail supersedes the detail sealed on 4-01-10 and revised on 4-27-17.

LOAD RESISTOR INSTALLATION DETAIL

(install resistors as shown below)

ACCEPTABLE VALUES

VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)



COUNTDOWN PEDESTRIAN SIGNAL OPERATION

Countdown Ped Signals are required to display timing only during Ped Clearance Interval. Consult Ped Signal Module user's manual for instructions on selecting this feature.

ELECTRICAL DETAIL SHEET 1 OF 2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

NC 24-27-73
at
Leonard Avenue

Division 10 Stanly County Albemarle

PLAN DATE: April 2018 REVIEWED BY:
PREPARED BY: James Peterson REVIEWED BY:

REVISIONS	INIT.	DATE

Prepared in the Offices of:
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
Traffic Engineering & Signals Management Section
750 N.Greenfield Pkwy,Garner,NC 27529

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 036833 ENGINEER RYAN W. HOUGH

DocuSigned by:
Ryan W. Hough 4/18/2018
430320FAA26543... DATE

SIG. INVENTORY NO. 10-1908

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rwhough

PROJECT REFERENCE NO.	SHEET NO.
W-5601 IN	Sig. 1.2

LOGICAL I/O PROCESSOR PROGRAMMING DETAIL
TO PRODUCE SPECIAL FYA-PPLT SIGNAL SEQUENCE

(program controller as shown below)

1. FROM MAIN MENU PRESS '2' (PHASE CONTROL), THEN '1' (PHASE CONTROL FUNCTIONS). SCROLL TO THE BOTTOM OF THE MENU AND ENABLE ACT LOGIC COMMANDS 1, 2, 3, 4, 5 AND 6.

2. FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '3' (LOGICAL I/O PROCESSOR).

```
LOGICAL I/O COMMAND #1  (+/-COMMAND#)
IF  ACTIVE PHASE       #1  IS ON
AND RED CLEAR ON PHASE #1  IS ON

SCROLL DOWN

THEN:
SET OUTPUT  ASSIGNMENT #50 ON
SET OUTPUT  ASSIGNMENT #51 OFF
```

NOTE: LOGIC FOR PHASE 1 RED CLEAR WHEN TRANSITIONING FROM PHASE 1 TO PHASE 2 (HEAD 11).

PRESS '+'

```
LOGICAL I/O COMMAND #2  (+/-COMMAND#)
IF  ACTIVE PHASE       #1  IS ON

SCROLL DOWN

THEN:
SET OUTPUT  ASSIGNMENT #52 OFF
```

NOTE: LOGIC FOR SWITCHING FLASHING YELLOW ARROW "OFF" DURING PHASE 1 (HEAD 11).

PRESS '+'

```
LOGICAL I/O COMMAND #3  (+/-COMMAND#)
IF  YELLOW ON PHASE    #1  IS ON

SCROLL DOWN

THEN:
SET OUTPUT  ASSIGNMENT #51 ON
```

NOTE: LOGIC FOR YELLOW ARROW CLEARANCE FROM PHASE 1 (HEAD 11).

PRESS '+'

```
LOGICAL I/O COMMAND #4  (+/-COMMAND#)
IF  ACTIVE PHASE       #5  IS ON
AND RED CLEAR ON PHASE #5  IS ON

SCROLL DOWN

THEN:
SET OUTPUT  ASSIGNMENT #42 ON
SET OUTPUT  ASSIGNMENT #43 OFF
```

NOTE: LOGIC FOR PHASE 5 RED CLEAR WHEN TRANSITIONING FROM PHASE 5 TO PHASE 6 (HEAD 51).

PRESS '+'

```
LOGICAL I/O COMMAND #5  (+/-COMMAND#)
IF  ACTIVE PHASE       #5  IS ON

SCROLL DOWN

THEN:
SET OUTPUT  ASSIGNMENT #44 OFF
```

NOTE: LOGIC FOR SWITCHING FLASHING YELLOW ARROW "OFF" DURING PHASE 5 (HEAD 51).

PRESS '+'

```
LOGICAL I/O COMMAND #6  (+/-COMMAND#)
IF  YELLOW ON PHASE    #5  IS ON

SCROLL DOWN

THEN:
SET OUTPUT  ASSIGNMENT #43 ON
```

NOTE: LOGIC FOR YELLOW ARROW CLEARANCE FROM PHASE 5 (HEAD 51).

LOGIC I/O PROCESSOR PROGRAMMING COMPLETE

OUTPUT REFERENCE SCHEDULE

OUTPUT 42 = Overlap C Red
OUTPUT 43 = Overlap C Yellow
OUTPUT 44 = Overlap C Green
OUTPUT 50 = Overlap A Red
OUTPUT 51 = Overlap A Yellow
OUTPUT 52 = Overlap A Green

OVERLAP PROGRAMMING DETAIL

(program controller as shown below)

FROM MAIN MENU PRESS '8' (OVERLAPS), THEN '1' (VEHICLE OVERLAP SETTINGS).

```
PAGE 1: VEHICLE OVERLAP 'A' SETTINGS
PHASE:          ¦123456789101112131415 16
VEH OVL PARENTS:¦XX
VEH OVL NOT VEH:¦
VEH OVL NOT PED:¦
VEH OVL GRN EXT:¦
STARTUP COLOR: _ RED  _ YELLOW  _ GREEN
FLASH COLORS:  _ RED  _ YELLOW  X GREEN
SELECT VEHICLE OVERLAP OPTIONS:   (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...Y
GREEN EXTENSION (0-255 SEC).........0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)..0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0
```

NOTICE GREEN FLASH

PRESS '+' TWICE

```
PAGE 1: VEHICLE OVERLAP 'C' SETTINGS
PHASE:          ¦123456789101112131415 16
VEH OVL PARENTS:¦    XX
VEH OVL NOT VEH:¦
VEH OVL NOT PED:¦
VEH OVL GRN EXT:¦
STARTUP COLOR: _ RED  _ YELLOW  _ GREEN
FLASH COLORS:  _ RED  _ YELLOW  X GREEN
SELECT VEHICLE OVERLAP OPTIONS:   (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...Y
GREEN EXTENSION (0-255 SEC).........0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)..0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0
```

NOTICE GREEN FLASH

OVERLAP PROGRAMMING COMPLETE

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 10-1055
DESIGNED: April 2018
SEALED: 4-13-18
REVISED: N/A

This Electrical Detail supersedes the detail sealed on 4-01-10 and revised on 4-27-17.

ELECTRICAL DETAIL SHEET 2 OF 2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared In the Offices of:
Transportation Mobility and Safety Division
Traffic Engineering & Signal Management Section
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
750 N.Greenfield Pkwy,Garner,NC 27529

NC 24-27-73
at
Leonard Avenue

Division 10 Stanly County Albemarle

PLAN DATE: April 2018 REVIEWED BY:
PREPARED BY: James Peterson REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 036833 ENGINEER RYAN W. HOUGH

DocuSigned by:
Ryan W. Hough
430320FAA2654C3...
4/18/2018
DATE

SIG. INVENTORY NO. 10-1908

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