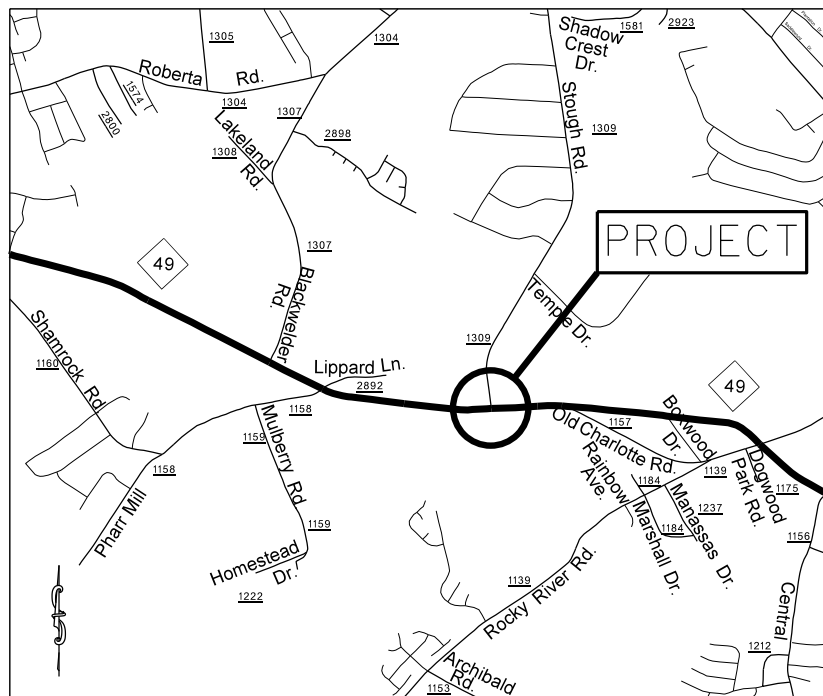


PROJECT: 50138.3.102 TIP:W-5601CW



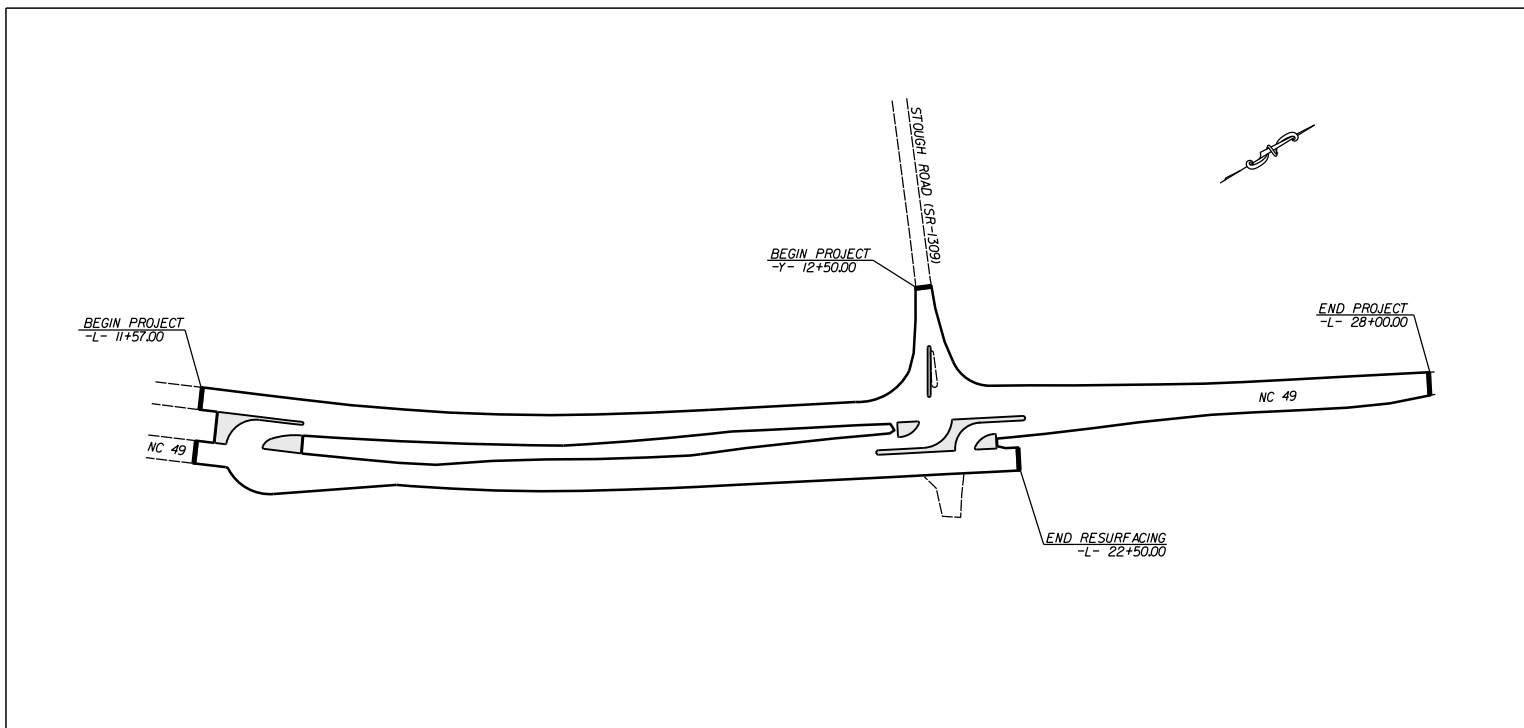
VICINITY MAP NOT TO SCALE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
CABARRUS COUNTY

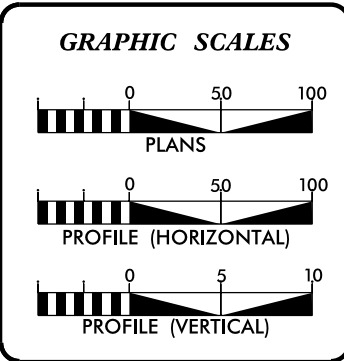
LOCATION: LEFTOVERS AT NC 49 AT STOUGH ROAD (SR 1309)

TYPE OF WORK: GRADING, PAVING, DRAINAGE,
CONCRETE MONOLITHIC ISLAND, TRAFFIC SIGNAL
INSTALLATION, AND THERMOPLASTIC PAVEMENT MARKING.

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	50138.3.102	1	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
50138.1.102	HSIP-0049(034)	P.E.	
50138.2.102	HSIP-0049(034)	RW	
50138.3.102	HSIP-0049(034)	CONST.	



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



DESIGN DATA

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

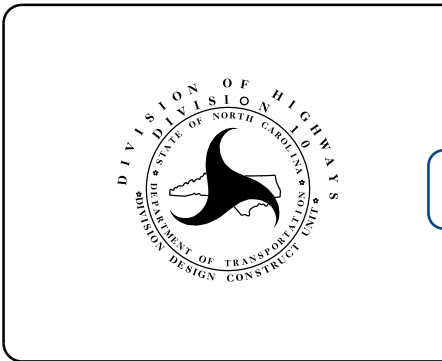
PROJECT LENGTH

LENGTH OF ROADWAY PROJECT 50138.3.102	=	0.31	MILES
TOTAL LENGTH OF STATE PROJECT 50138.3.102	=	0.31	MILES

Prepared in the Office of:
DIVISION OF HIGHWAYS
DIVISION TEN
DIVISION DESIGN / CONSTRUCT UNIT

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: _____	RANDY BOWERS PROJECT ENGINEER
LETTING DATE: SEPTEMBER 21, 2016	DONALD HARWARD PROJECT DESIGN ENGINEER

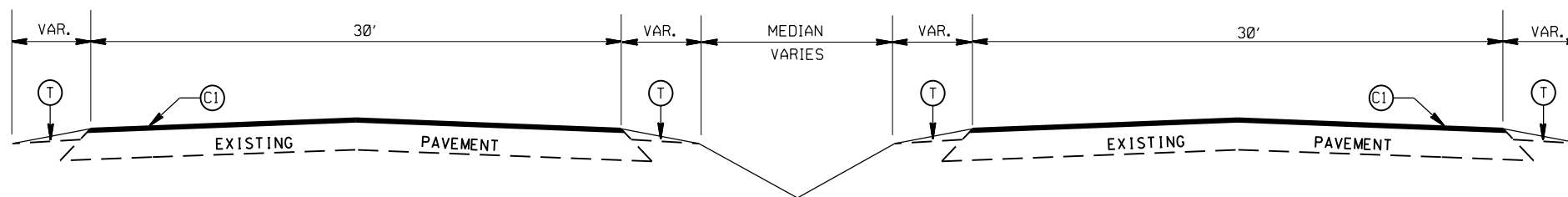


DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

DocuSigned by:
Randy Bowers
52A4A66079864B2...
APPROVED BY
DDC ENGINEER

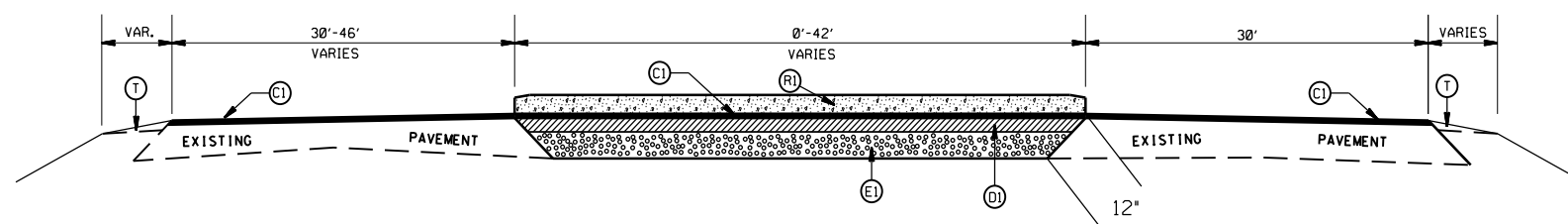
8/29/2016
DATE

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	50138.3J02	2	
F.A. PROJECT NO. HSIP-00490341			



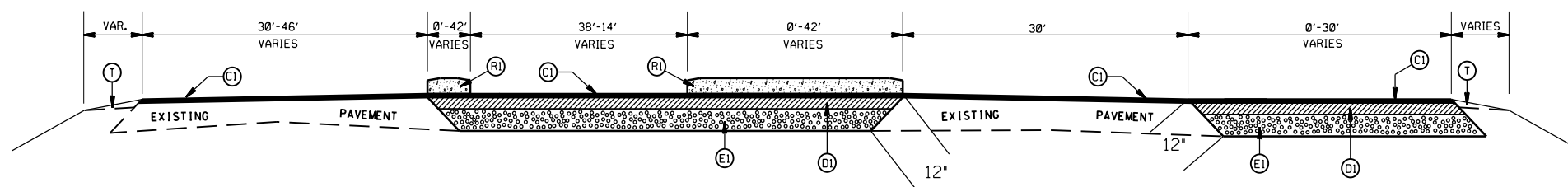
TYPICAL SECTION NO.1

STA 11+50 TO 11+82 -L-



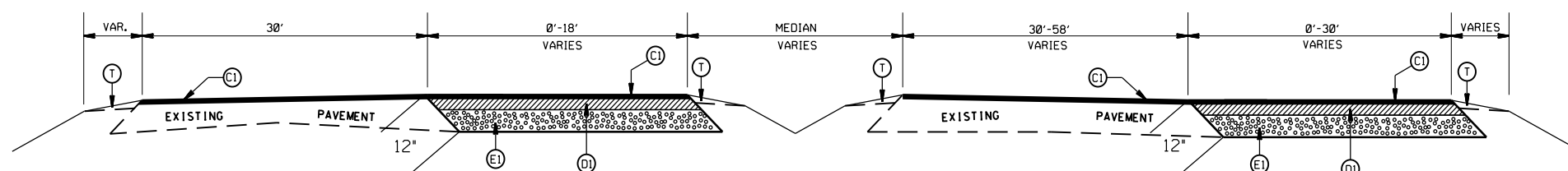
TYPICAL SECTION NO.2

STA 11+82 TO 12+03.31 -L-



TYPICAL SECTION NO.3

STA 12+03.31 TO 12+99 -L-
STA 20+60 TO 22+60 -L-

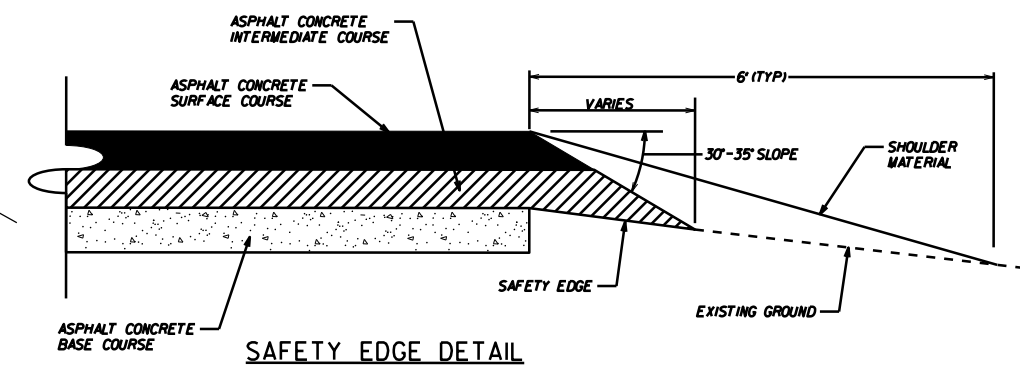


TYPICAL SECTION NO.4

STA 12+99 TO 14+26.54 -L-

PAVEMENT SCHEDULE

(C1)	PROP. APPROX. 1½" ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. WARM MIX
(D1)	PROP. APPROX. 2.5" ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
(E1)	PROP. APPROX. 8.0" ASPHALT CONC. BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
(R1)	PROP. 5" MONOLITHIC ISLAND
(T)	EARTH MATERIAL

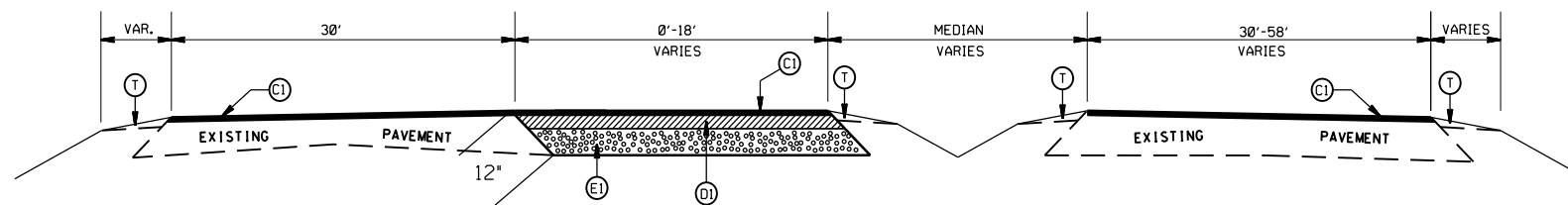


NOTE: INCIDENTAL MILL APPROX. 25' AT EACH TIE IN TO PROVIDE A SMOOTH TRANSITION TO THE EXISTING ASPHALT PAVEMENT.

LEFTOVERS ON NC 49 AT
STOUGH ROAD (SR 1309)

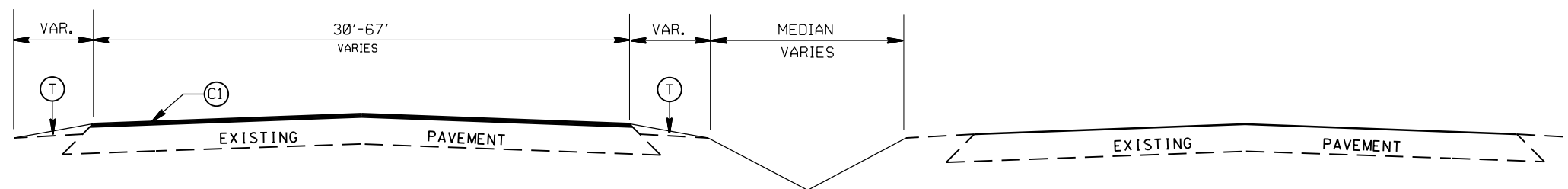
SCALE	r=50'		REVISIONS
DATE	JULY 2016		
DWG. BY	TBL		
DESIGN BY	JDH		
APPROVED	RWB		

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	50138.3102	2A	
F.A. PROJECT NO. HSIP-00490341			



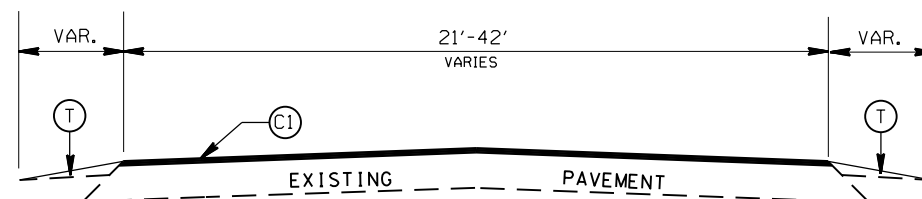
TYPICAL SECTION NO.5

STA 14+26.54 TO 18+70 -L-



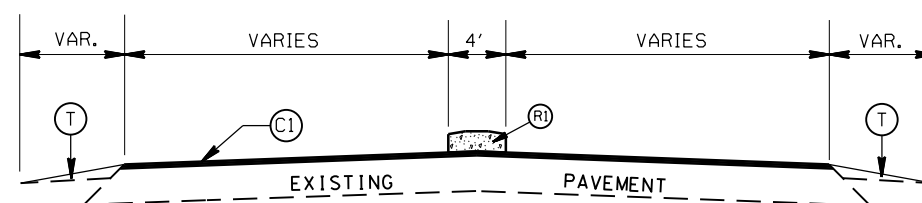
TYPICAL SECTION NO.6

STA 22+60 TO 28+00 -L-



TYPICAL SECTION NO.7

STA 12+50 TO 13+30 -Y-



TYPICAL SECTION NO.8

STA 13+30 TO 13+97 -Y-

PAVEMENT SCHEDULE

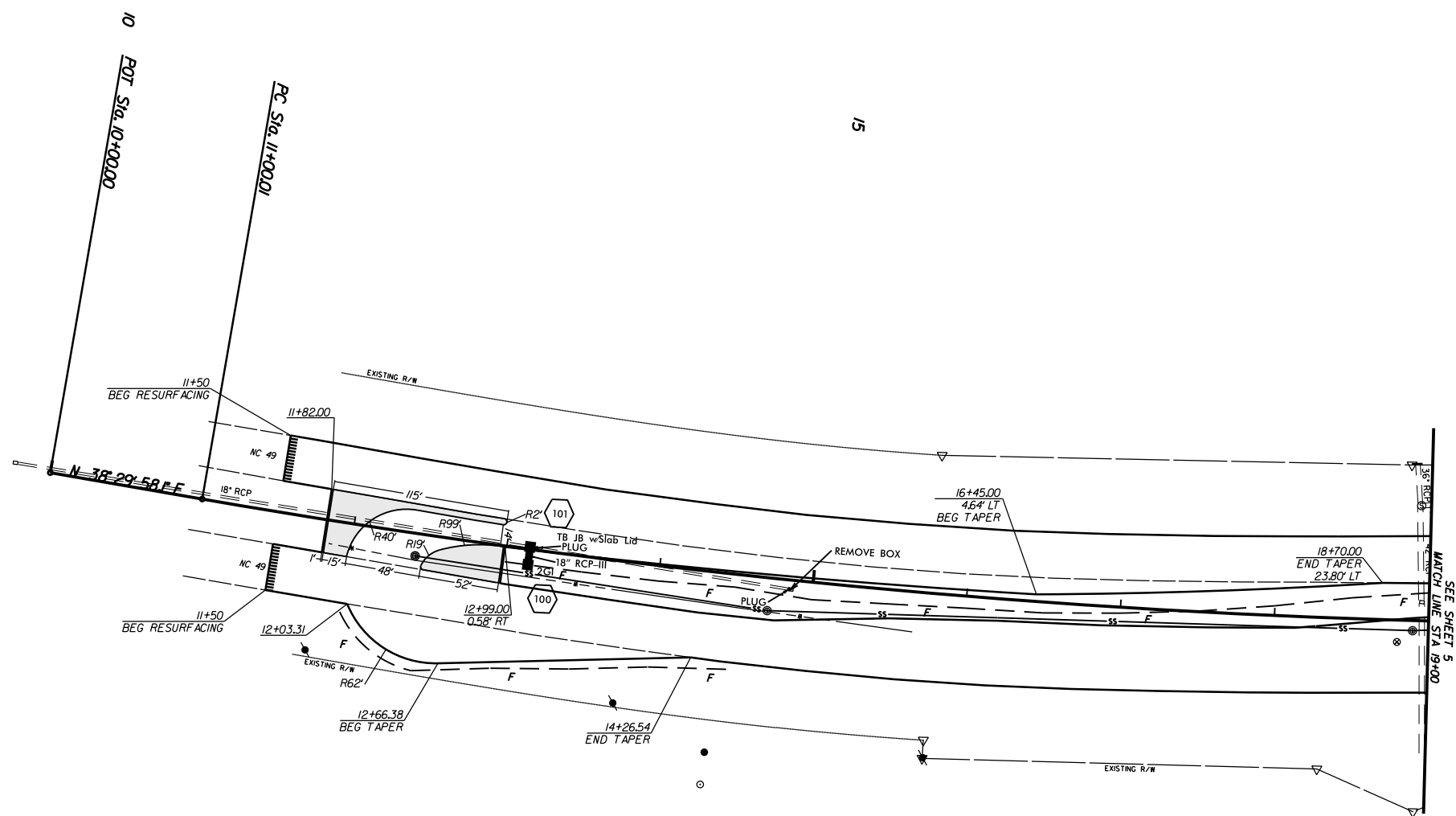
(C1)	PROP. APPROX. 1½" ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. WARM MIX
(D1)	PROP. APPROX. 2.5" ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
(E1)	PROP. APPROX. 8.0" ASPHALT CONC. BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
(R1)	PROP. 5" MONOLITHIC ISLAND
(T)	EARTH MATERIAL

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

LEFTOVERS ON NC 49 AT
STOUGH ROAD (SR 1309)

SCALE	r=50'		REVISIONS
DATE	JULY 2016		
DWG. BY	TBL		
DESIGN BY	JDH		
APPROVED	RWB		


STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	50138.3102	4	
F.A. PROJECT NO. HSIP-00490341			



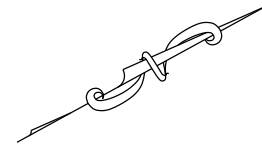
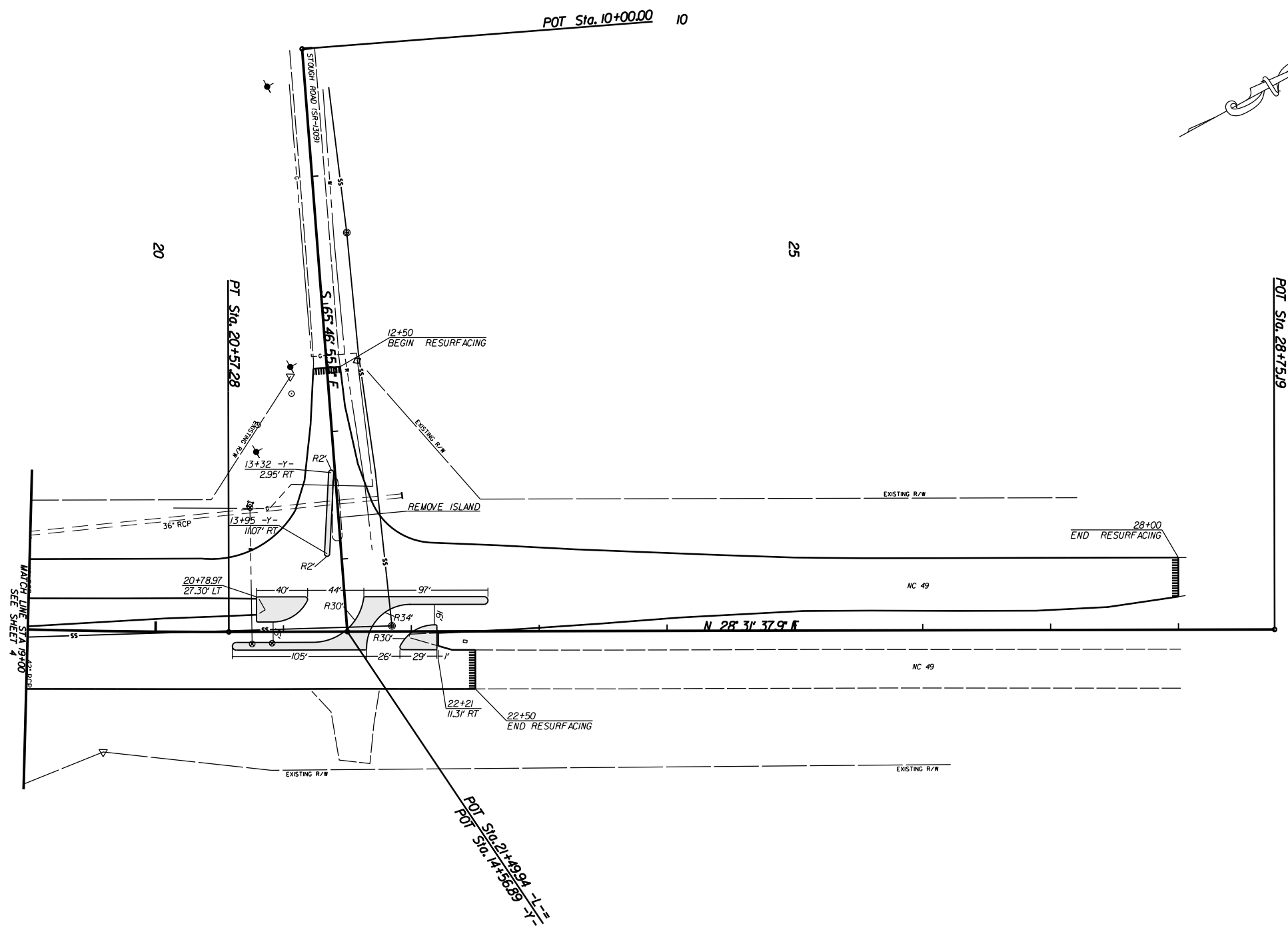
PI Sta 15+79.85
 $\Delta = 9^{\circ} 58' 20.2" (LT)$
 $D = 1^{\circ} 02' 30.3"$
 $L = 957.27'$
 $T = 479.85'$
 $R = 5,500.00'$

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

LEFTOVERS ON NC 49 AT
STOUGH ROAD (SR 1309)


SCALE	1"=50'		REVISIONS
DATE	APRIL 2016		
DWG. BY	TBL		
DESIGN BY	JDH		
APPROVED	RWB		

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	50138.3102	5	
F.A. PROJECT NO. HSIP-00490341			



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

LEFTOVERS ON NC 49 AT
STOUGH ROAD (SR 1309)

SCALE	1"=50'		REVISIONS
DATE	APRIL 2016		
DWG. BY	TBL		
DESIGN BY	JDH		
APPROVED	RWB		

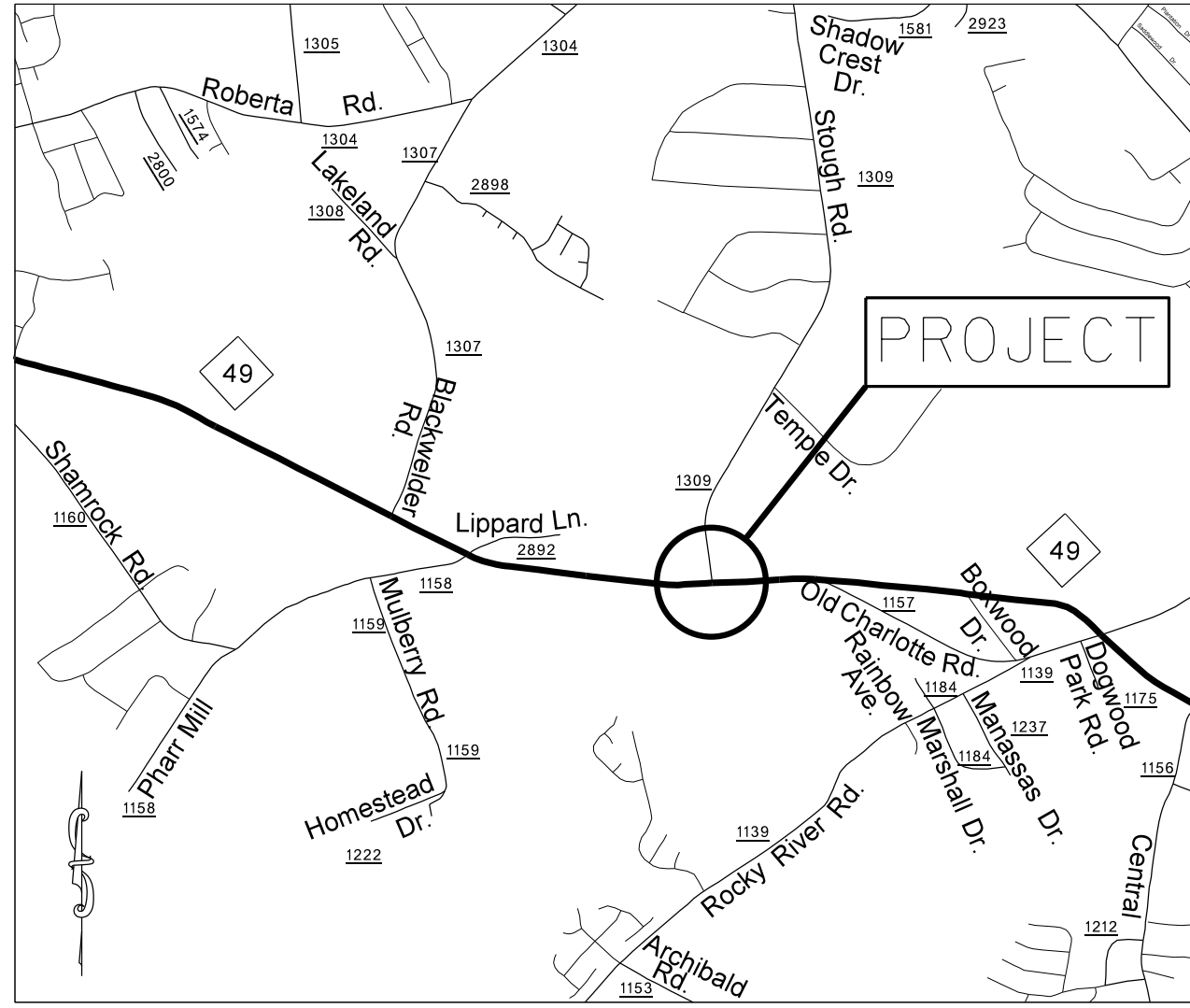
PROJECT: 50138.3.102 TIP: W5601CW

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS
 PLAN FOR PROPOSED
 HIGHWAY EROSION CONTROL

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5601CW	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
50138.1.102	HSIP-0049(034)	P.E.	
50138.2.102	HSIP-0049(034)	RW	
50138.3.102	HSIP-0049(034)	CONST.	

EROSION AND SEDIMENT CONTROL MEASURES

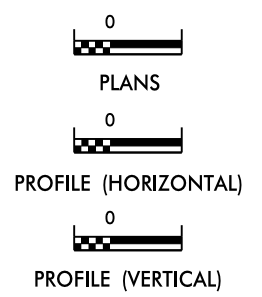
Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	--- TD ---
1630.05	Temporary Diversion	--- TD ---
1605.01	Temporary Silt Fence	--- III --- III --- III ---
1606.01	Special Sediment Control Fence	--- X X X X X X X X X X ---
1622.01	Temporary Berms and Slope Drains	--- T ---
1630.02	Silt Basin Type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



VICINITY MAP NOT TO SCALE

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

GRAPHIC SCALE



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
2012 STANDARD SPECIFICATIONS
 TRAVIS LOWDER 3742
 EROSION CONTROL DESIGNER LEVEL III CERTIFICATION #

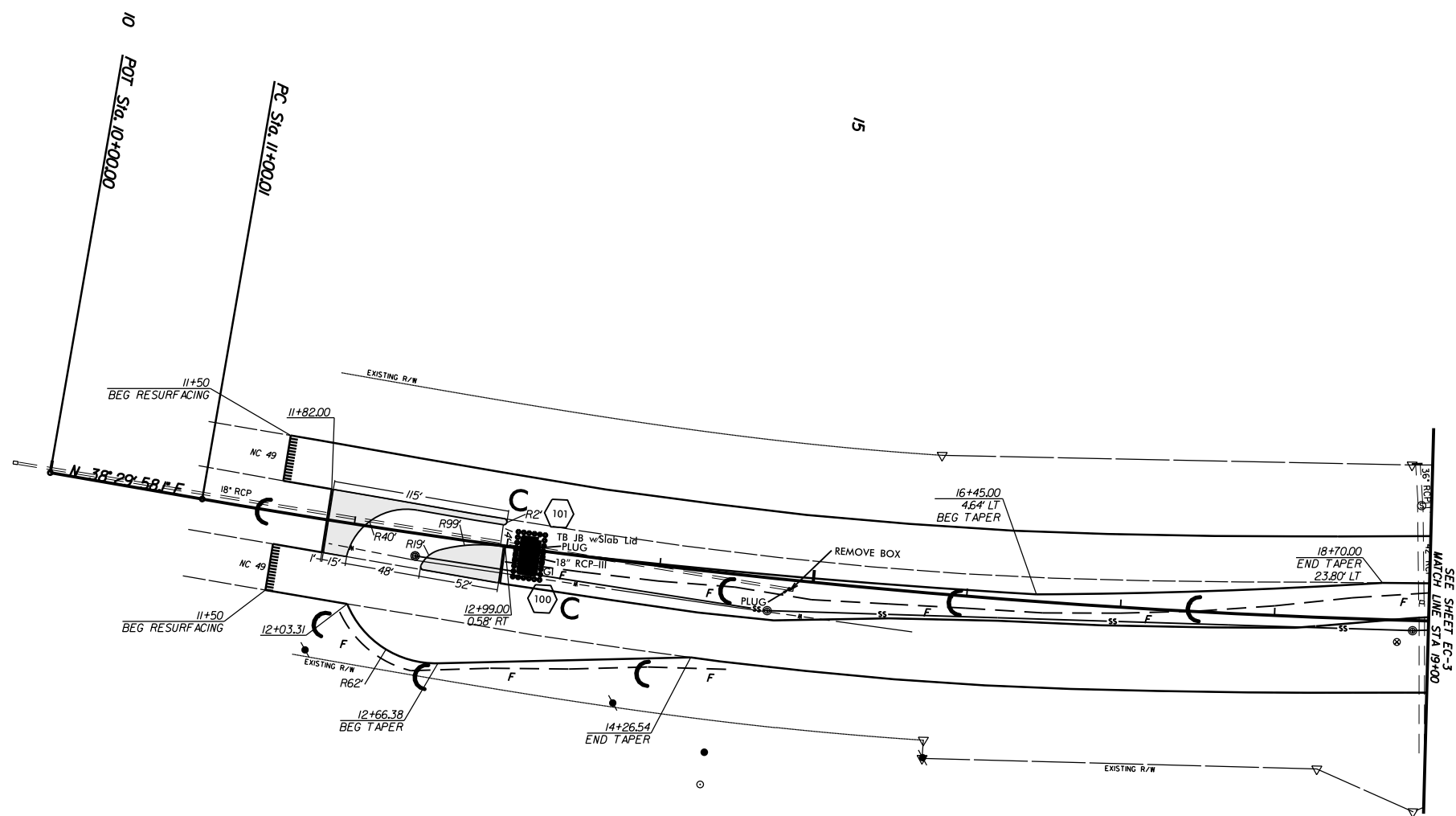
Roadway Standard Drawings

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 revision 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	

P:\US\AUG-2016\1561\1561.dwg AT 11:00:00 AM 8/16/2016


STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	50138.3102	EC-2	
F.A. PROJECT NO. HSIP-00490341			



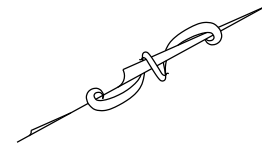
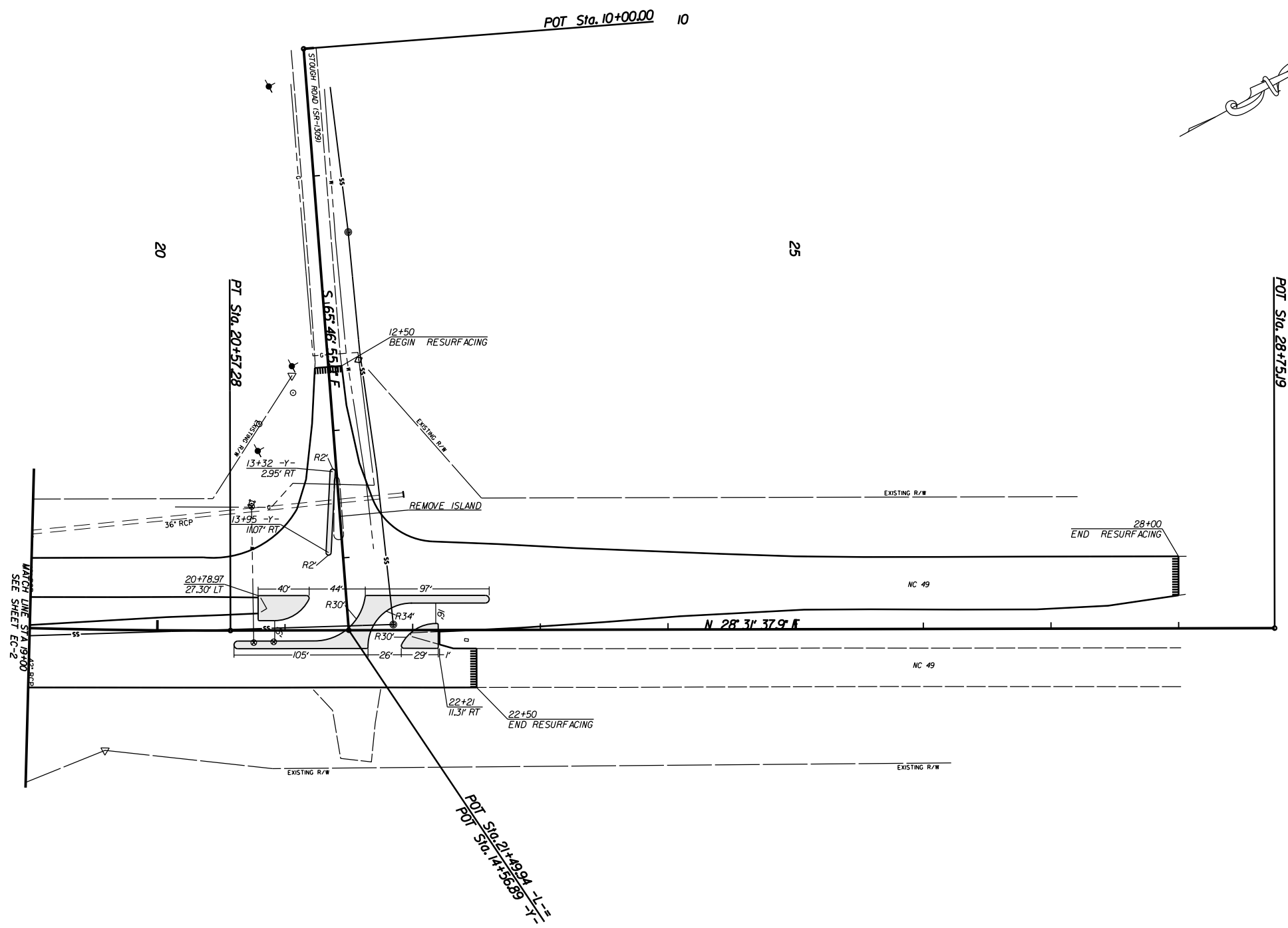
PI Sta 15+79.85
 $\Delta = 9^{\circ} 58' 20.2" (LT)$
 $D = 1^{\circ} 02' 30.3"$
 $L = 957.27'$
 $T = 479.85'$
 $R = 5,500.00'$

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


LEFTOVERS ON NC 49 AT
STOUGH ROAD (SR 1309)

SCALE	1"=50'		REVISIONS
DATE	JULY 2016		
DWG. BY	TBL		
DESIGN BY	JDH		
APPROVED	RWB		

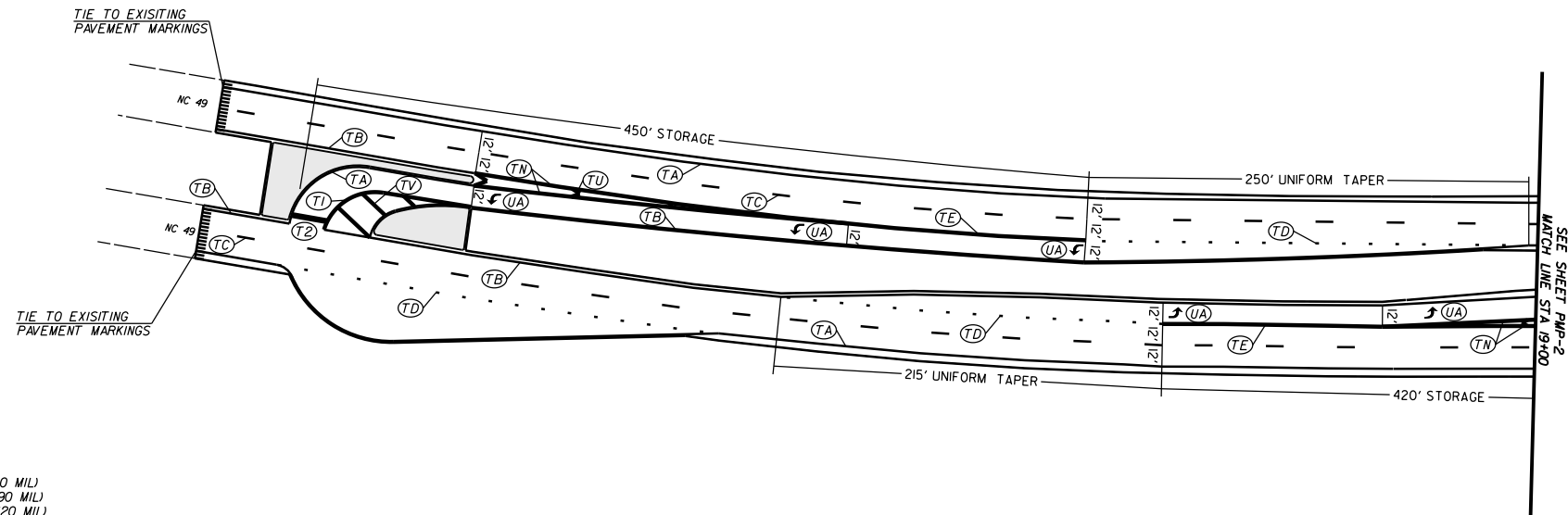
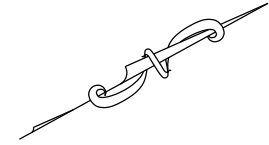
STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	50138.3102	EC-3	
F.A. PROJECT NO.			HSIP-00490341



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

LEFTOVERS ON NC 49 AT STOUGH ROAD (SR 1309)			REVISIONS	
SCALE	1"=50'			
DATE	APRIL 2016			
DWG. BY	TBL			
DESIGN BY	JDH			
APPROVED	RWB			

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	50138.3J02	PMP-1	
F.A. PROJECT NO. HSIP-0049034			



PAVEMENT MARKING SCHEDULE

PAVEMENT MARKING LINES

- | | |
|--|---|
| TA - WHITE EDGELINE (4',.90 MIL) | TU - WHITE DIAGONAL (12',.90 MIL) |
| TB - YELLOW EDGELINE (4',.90 MIL) | TV - YELLOW DIAGONAL (12',.90 MIL) |
| TC - 10FT. WHITE SKIP (4',.120 MIL) | TI - WHITE LINE, RR X (16',.120 MIL) |
| TD - 3FT.-9FT./SP WHITE MINISKIP (4',.120 MIL) | T2 - WHITE STOPBAR (24',.120 MIL) |
| TE - WHITE SOLID LANE LINE (4',.120 MIL) | T3 - WHITE CROSSWALK LINE (24',.120 MIL) |
| TF - 10FT. YELLOW SKIP (4',.120 MIL) | T4 - WHITE RUMBLE STRIP (4',.240 MIL) |
| TH - YELLOW SINGLE CENTER (4',.120 MIL) | T5 - YELLOW RUMBLE STRIP (4',.240 MIL) |
| TI - YELLOW DOUBLE CENTER (4',.120 MIL) | T6 - WHITE EDGELINE (6',.90 MIL) |
| TJ - 10FT. WHITE SKIP (6',.120 MIL) | T7 - YELLOW EDGELINE (6',.90 MIL) |
| TK - 3FT.-9FT./SP WHITE MINISKIP (6',.120 MIL) | T8 - 2FT.-6FT./SP WHITE MINISKIP (4',.120 MIL) |
| TL - WHITE SOLID LANE LINE (6',.120 MIL) | T9 - 2FT.-6FT./SP YELLOW MINISKIP (4',.120 MIL) |
| TM - 10FT. YELLOW SKIP (6',.120 MIL) | T10 - 3FT.-3FT./SP WHITE MINISKIP (12',.120 MIL) |
| TN - WHITE GORELINE (8',.90 MIL) | T11 - 2FT.-6FT./SP WHITE MINISKIP (6',.120 MIL) |
| TO - WHITE DIAGONAL (8',.90 MIL) | T12 - 2FT.-6FT./SP YELLOW MINISKIP (6',.120 MIL) |
| TP - YELLOW DIAGONAL (8',.90 MIL) | T13 - 3FT.-9FT./SP WHITE MINISKIP (8',.120 MIL) |
| TQ - WHITE CROSSWALK LINE (8',.120 MIL) | T14 - 3FT.-9FT./SP WHITE MINISKIP (12',.120 MIL) |
| TR - WHITE SOLID LANE LINE (8',.120 MIL) | T15 - YELLOW SINGLE CENTER (6',.120 MIL) |
| TS - WHITE GORELINE (12',.90 MIL) | T16 - YELLOW DOUBLE CENTER (6',.120 MIL) |
| TT - WHITE SOLID LANE LINE (12',.120 MIL) | T17 - 3FT.-3FT./SP WHITE MINISKIP ENTRANCE LINE (8',.120 MIL) |

PAVEMENT MARKING SYMBOLS

- | | |
|--|--|
| UA - LEFT TURN ARROW (90 MIL) | UU - FISH-HOOK STRAIGHT ARROW (90 MIL) |
| UB - RIGHT TURN ARROW (90 MIL) | UV - FISH-HOOK LEFT/STRAIGHT ARROW (90 MIL) |
| UC - STRAIGHT ARROW (90 MIL) | UW - FISH-HOOK RIGHT/STRAIGHT ARROW (90 MIL) |
| UD - COMBO. LEFT/STRAIGHT ARROW (90 MIL) | UX - FISH-HOOK LEFT/RIGHT ARROW (90 MIL) |
| UE - COMBO. RIGHT/STRAIGHT ARROW (90 MIL) | UY - FISH-HOOK LEFT/RIGHT/STRAIGHT ARROW (90 MIL) |
| UF - COMBO. LEFT/RIGHT ARROW (90 MIL) | UZ - FISH-HOOK W/CIRCLE STRAIGHT ARROW (90 MIL) |
| UG - COMBO. LEFT/RIGHT/STRAIGHT ARROW (90 MIL) | |
| UH - HANDICAP PARKING (90 MIL) | WA - FISH-HOOK W/CIRCLE LEFT ARROW (90 MIL) |
| UI - ALPHANUMERIC CHAR. (120 MIL) | WB - FISH-HOOK W/CIRCLE LEFT/STRAIGHT ARROW (90 MIL) |
| UJ - BICYCLE SYMBOL (90 MIL) | WC - FISH-HOOK W/CIRCLE LEFT/RIGHT/STRAIGHT ARROW (90 MIL) |
| UK - BICYCLE STRAIGHT ARROW (90 MIL) | |
| UL - BICYCLE CHAR. (120 MIL) | MA - PERMANENT RAISED MARKER (YELLOW & YELLOW) |
| UM - 12' YIELD LINE TRIANGLE (90 MIL) | MB - PERMANENT RAISED MARKER (CRYSTAL & RED) |
| UN - 24' YIELD LINE TRIANGLE (90 MIL) | MC - PERMANENT RAISED MARKER (YELLOW & RED) |
| UO - BICYCLE LEFT ARROW (90 MIL) | MD - PERMANENT RAISED MARKER (YELLOW) |
| UP - MERGE ARROW (90 MIL) | ME - SNOWFLOWABLE MARKER (YELLOW & YELLOW) |
| UQ - RAMP ARROW SYMBOL (90 MIL) | MF - SNOWFLOWABLE MARKER (CRYSTAL & RED) |
| UR - SHARROW (90 MIL) | MG - SNOWFLOWABLE MARKER (YELLOW & RED) |
| US - BICYCLE LOOP DETECTOR (90 MIL) | ML - PERMANENT RAISED MARKER (CRYSTAL & CRYSTAL) |
| UT - U-TURN ARROW (90 MIL) | MO - SNOWFLOWABLE MARKER (CRYSTAL & CRYSTAL) |

LEFTOVERS ON NC 49 AT
STOUGH ROAD (SR 1309)

SCALE	1"=50'		REVISIONS
DATE	JULY 2016		
DWG. BY	TBL		
DESIGN BY	JDH		
APPROVED	RWB		

PAVEMENT MARKING SCHEDULE

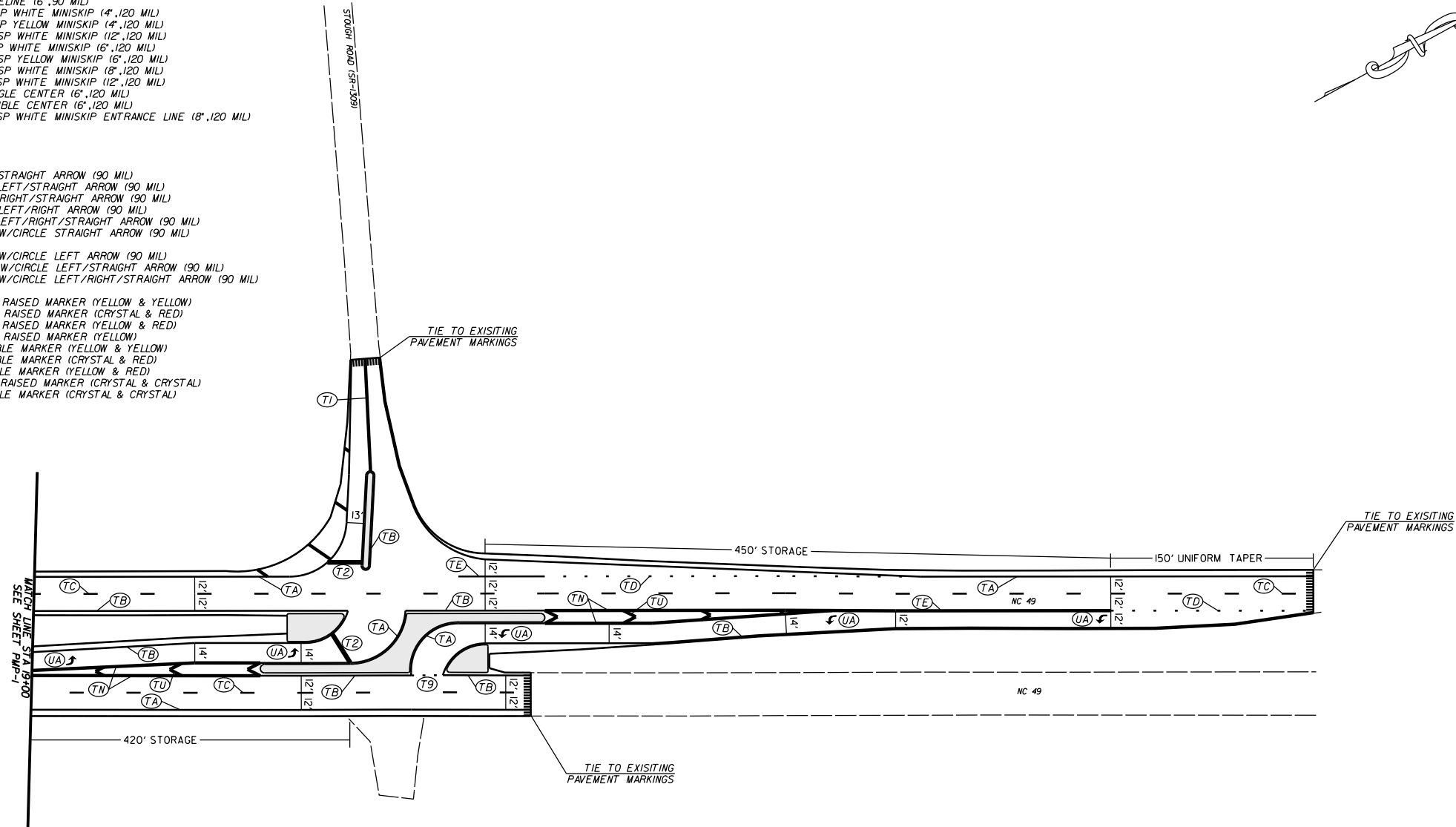
STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	50138.3J02	PMP-2	
F.A. PROJECT NO.			HSIP-0049034

PAVEMENT MARKING LINES

- | | |
|---|--|
| TA - WHITE EDGE LINE (4',90 MIL) | TU - WHITE DIAGONAL (12',90 MIL) |
| TB - YELLOW EDGE LINE (4',90 MIL) | TV - YELLOW DIAGONAL (12',90 MIL) |
| TC - 10FT. WHITE SKIP (4',120 MIL) | T1 - WHITE LINE, RR X (16',120 MIL) |
| TD - 3FT.-9FT./SP WHITE MINISKIP (4',120 MIL) | T2 - WHITE STOPBAR (24',120 MIL) |
| TE - WHITE SOLID LANE LINE (4',120 MIL) | T3 - WHITE CROSSWALK LINE (24',120 MIL) |
| TF - 10FT. YELLOW SKIP (4',120 MIL) | T4 - WHITE RUMBLE STRIP (4",240 MIL) |
| TH - YELLOW SINGLE CENTER (4',120 MIL) | T5 - YELLOW RUMBLE STRIP (4",240 MIL) |
| TI - YELLOW DOUBLE CENTER (4',120 MIL) | T6 - WHITE EDGE LINE (6',90 MIL) |
| TJ - 10FT. WHITE SKIP (6',120 MIL) | T7 - YELLOW EDGE LINE (6',90 MIL) |
| TK - 3FT.-9FT./SP WHITE MINISKIP (6',120 MIL) | T8 - 2FT.-6FT./SP WHITE MINISKIP (4',120 MIL) |
| TL - WHITE SOLID LANE LINE (6',120 MIL) | T9 - 2FT.-6FT./SP YELLOW MINISKIP (4',120 MIL) |
| TM - 10FT. YELLOW SKIP (6',120 MIL) | T10 - 3FT.-3FT./SP WHITE MINISKIP (12',120 MIL) |
| TN - WHITE GORE LINE (8',90 MIL) | T11 - 2FT.-6FT./SP WHITE MINISKIP (6',120 MIL) |
| TO - WHITE DIAGONAL (8',90 MIL) | T12 - 2FT.-6FT./SP YELLOW MINISKIP (6',120 MIL) |
| TP - YELLOW DIAGONAL (8',90 MIL) | T13 - 3FT.-9FT./SP WHITE MINISKIP (8',120 MIL) |
| TQ - WHITE CROSSWALK LINE (8',120 MIL) | T14 - 3FT.-9FT./SP WHITE MINISKIP (12',120 MIL) |
| TR - WHITE SOLID LANE LINE (8',120 MIL) | T15 - YELLOW SINGLE CENTER (6',120 MIL) |
| TS - WHITE GORE LINE (12',90 MIL) | T16 - YELLOW DOUBLE CENTER (6',120 MIL) |
| TT - WHITE SOLID LANE LINE (12',120 MIL) | T17 - 3FT.-3FT./SP WHITE MINISKIP ENTRANCE LINE (8',120 MIL) |

PAVEMENT MARKING SYMBOLS

- | | |
|--|--|
| UA - LEFT TURN ARROW (90 MIL) | UU - FISH-HOOK STRAIGHT ARROW (90 MIL) |
| UB - RIGHT TURN ARROW (90 MIL) | UV - FISH-HOOK LEFT/STRAIGHT ARROW (90 MIL) |
| UC - STRAIGHT ARROW (90 MIL) | UW - FISH-HOOK RIGHT/STRAIGHT ARROW (90 MIL) |
| UD - COMBO. LEFT/STRAIGHT ARROW (90 MIL) | UX - FISH-HOOK LEFT/RIGHT ARROW (90 MIL) |
| UE - COMBO. RIGHT/STRAIGHT ARROW (90 MIL) | UY - FISH-HOOK LEFT/RIGHT/STRAIGHT ARROW (90 MIL) |
| UF - COMBO. LEFT/RIGHT ARROW (90 MIL) | UZ - FISH-HOOK W/CIRCLE STRAIGHT ARROW (90 MIL) |
| UG - COMBO. LEFT/RIGHT/STRAIGHT ARROW (90 MIL) | |
| UH - HANDICAP PARKING (90 MIL) | WA - FISH-HOOK W/CIRCLE LEFT ARROW (90 MIL) |
| UI - ALPHANUMERIC CHAR. (120 MIL) | WB - FISH-HOOK W/CIRCLE LEFT/STRAIGHT ARROW (90 MIL) |
| UJ - BICYCLE SYMBOL (90 MIL) | WC - FISH-HOOK W/CIRCLE LEFT/RIGHT/STRAIGHT ARROW (90 MIL) |
| UK - BICYCLE STRAIGHT ARROW (90 MIL) | |
| UL - BICYCLE CHAR. (120 MIL) | MA - PERMANENT RAISED MARKER (YELLOW & YELLOW) |
| UM - 12" YIELD LINE TRIANGLE (90 MIL) | MB - PERMANENT RAISED MARKER (CRYSTAL & RED) |
| UN - 24" YIELD LINE TRIANGLE (90 MIL) | MC - PERMANENT RAISED MARKER (YELLOW & RED) |
| UO - BICYCLE LEFT ARROW (90 MIL) | MD - PERMANENT RAISED MARKER (YELLOW) |
| UP - MERGE ARROW (90 MIL) | ME - SNOWPLOWABLE MARKER (YELLOW & YELLOW) |
| UQ - RAMP ARROW SYMBOL (90 MIL) | MF - SNOWPLOWABLE MARKER (CRYSTAL & RED) |
| UR - SHARROW (90 MIL) | MG - SNOWPLOWABLE MARKER (YELLOW & RED) |
| US - BICYCLE LOOP DETECTOR (90 MIL) | ML - PERMANENT RAISED MARKER (CRYSTAL & CRYSTAL) |
| UT - U-TURN ARROW (90 MIL) | MO - SNOWPLOWABLE MARKER (CRYSTAL & CRYSTAL) |



LEFTOVERS ON NC 49 AT
STOUGH ROAD (SR 1309)

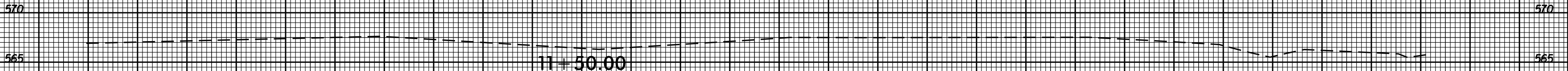
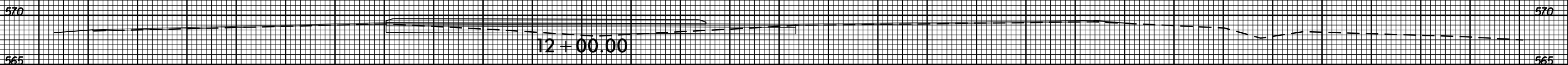
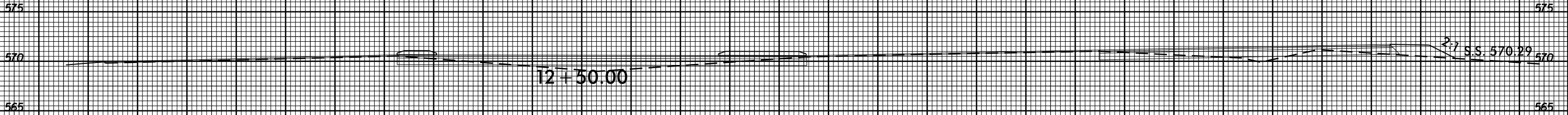
SCALE	1"=50'
DATE	JULY 2016
DWG. BY	TBL
DESIGN BY	JDH
APPROVED	RWB



REVISIONS	



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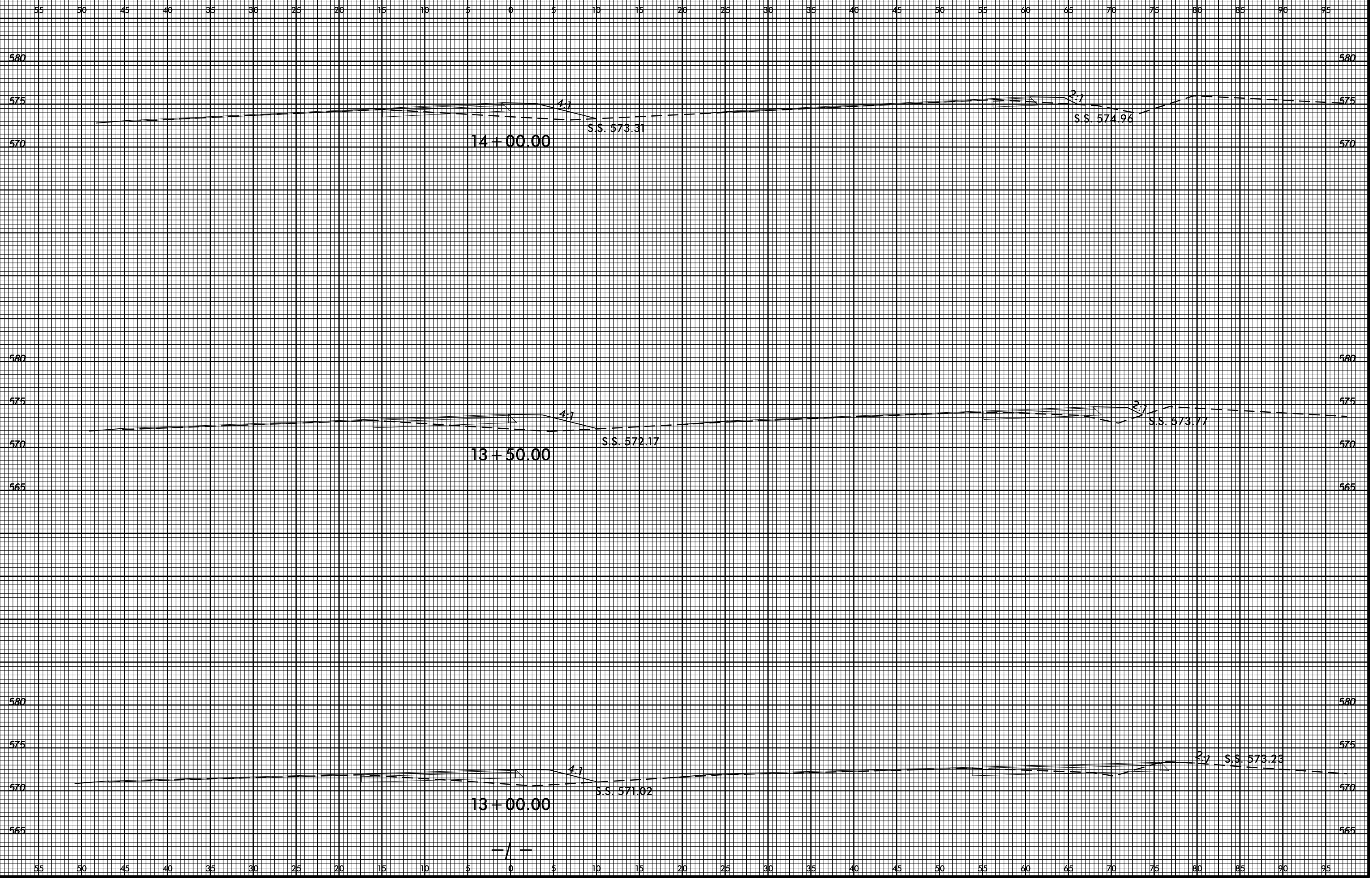
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6/23/16

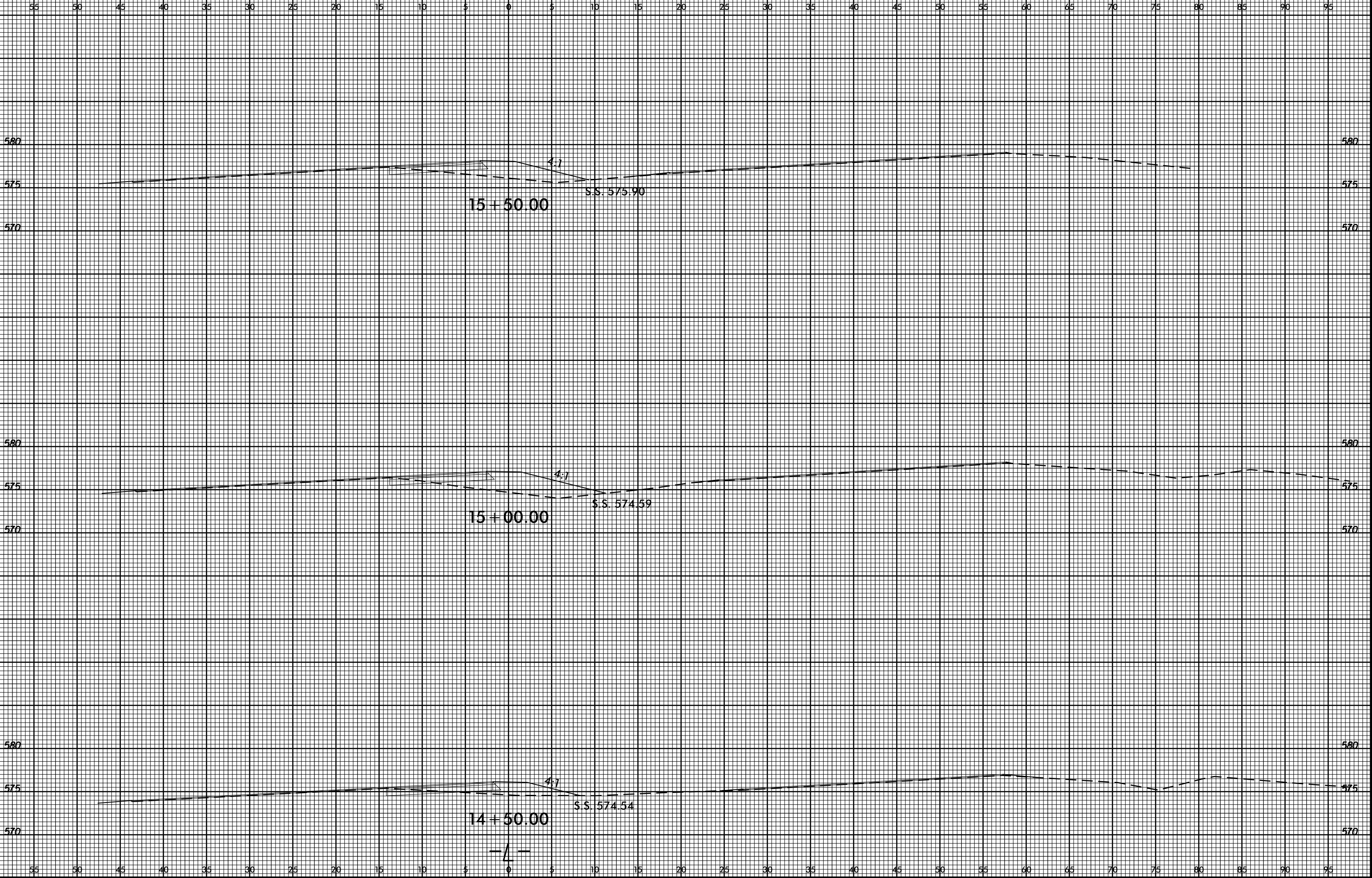


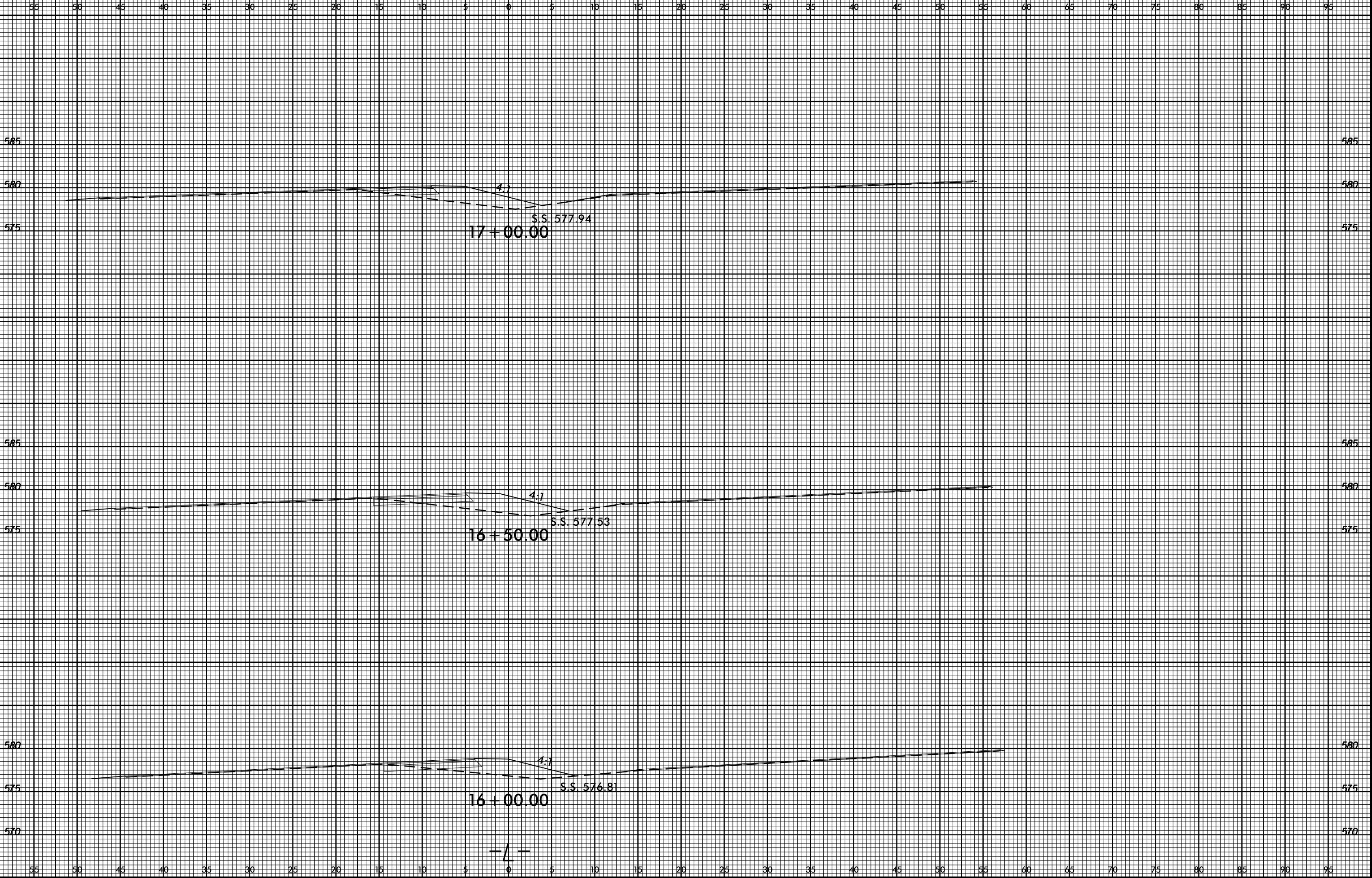
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50138.3.102

SHEET NO.
X-2



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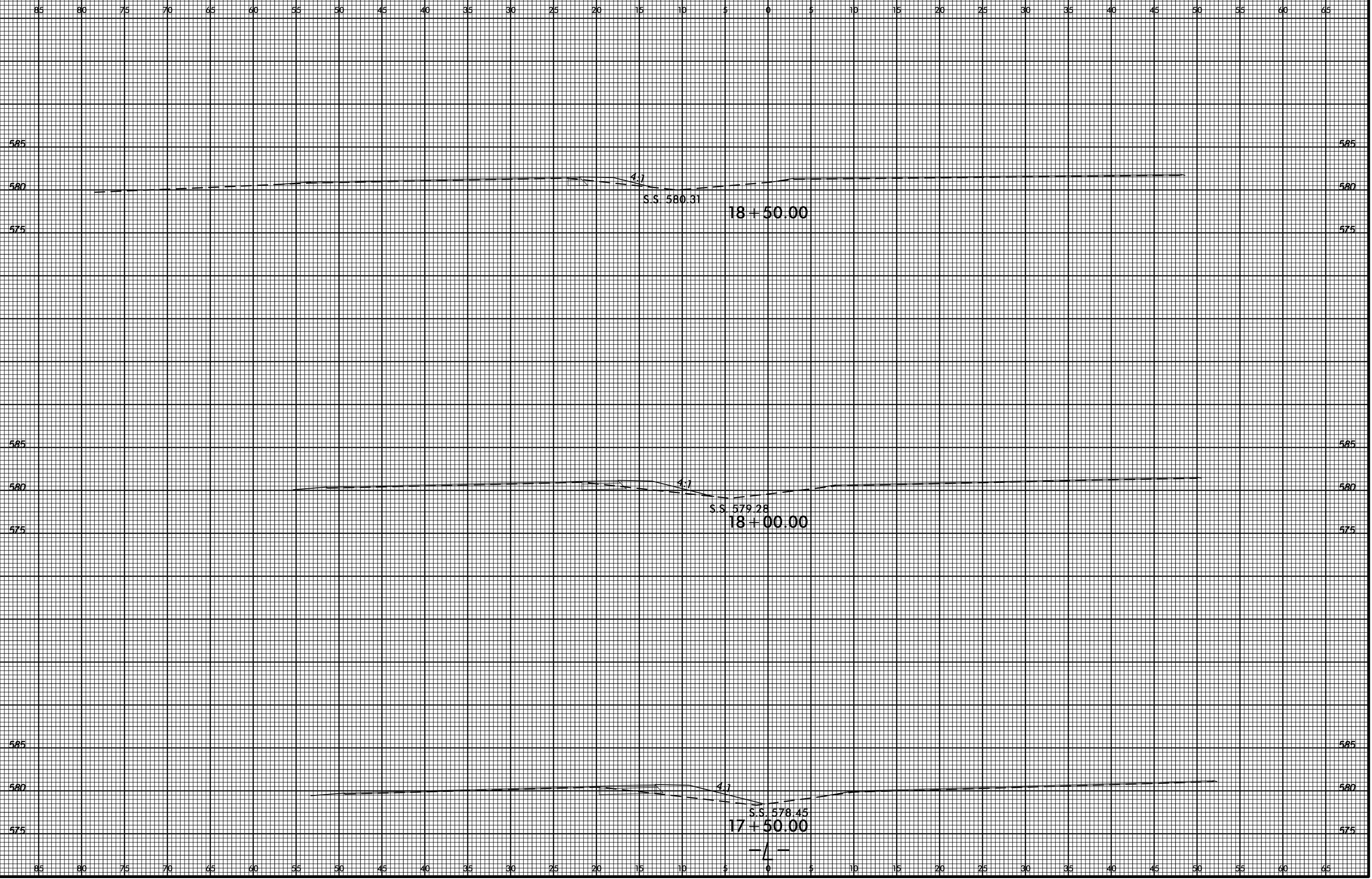


6/23/16



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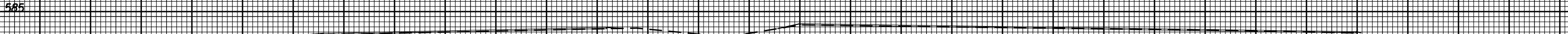
6/23/16



PROJ. REFERENCE NO.
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SHEET NO.
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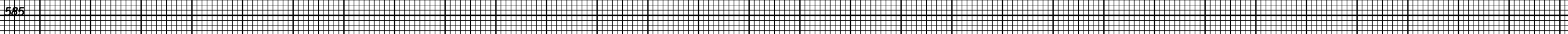
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585 580 575 585 580 575

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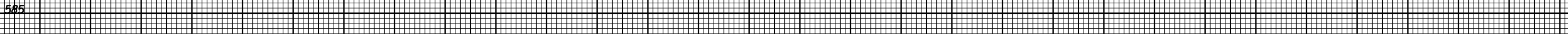
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581.81

19+50.00

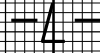


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S.S. 581.42

19+00.00



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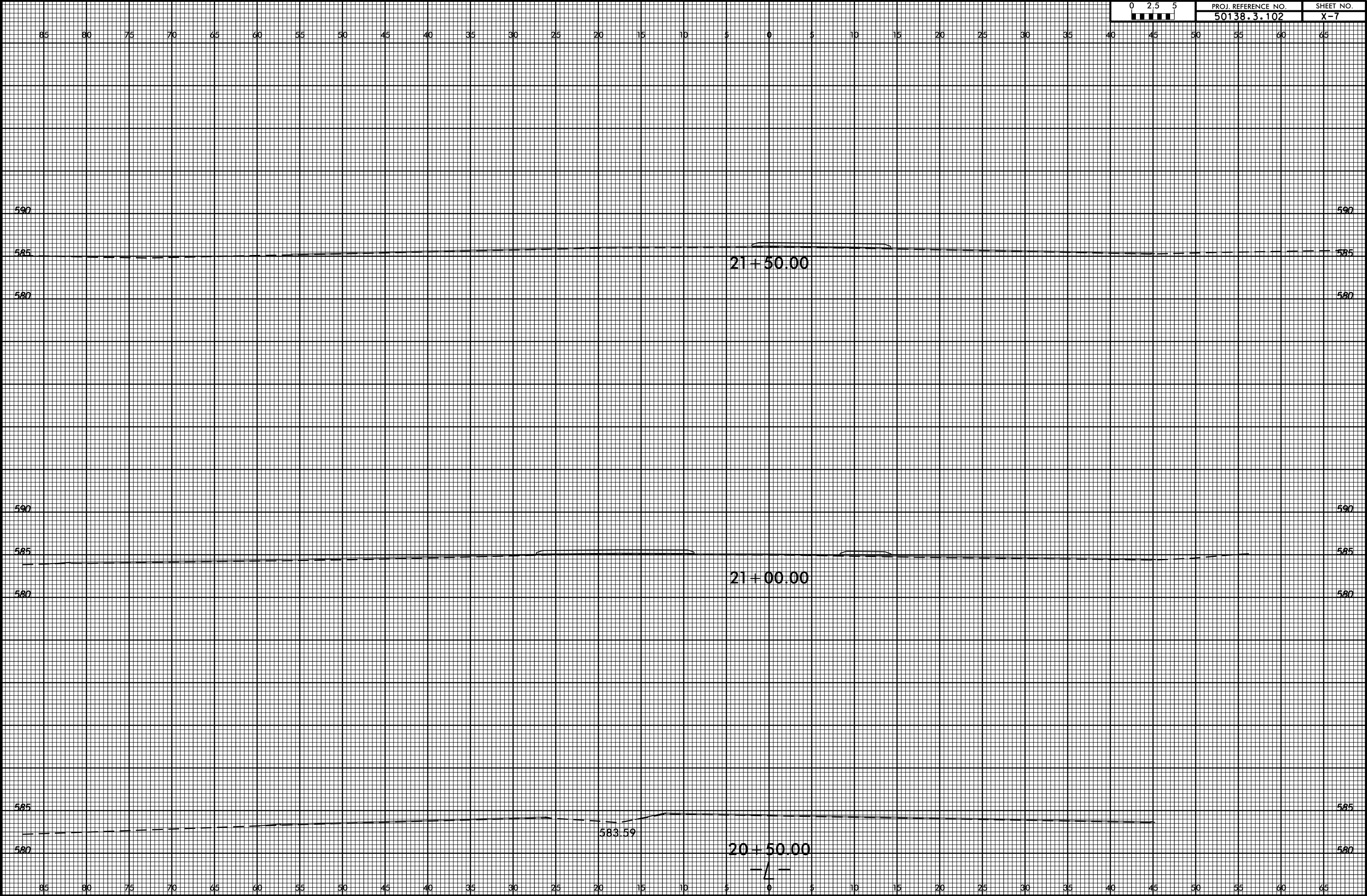
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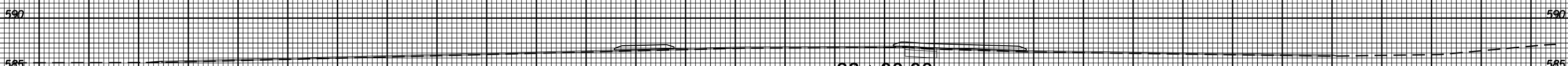
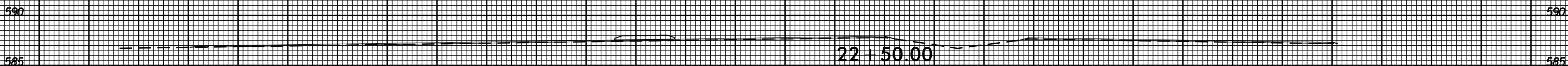
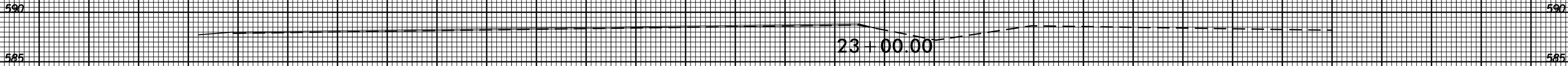
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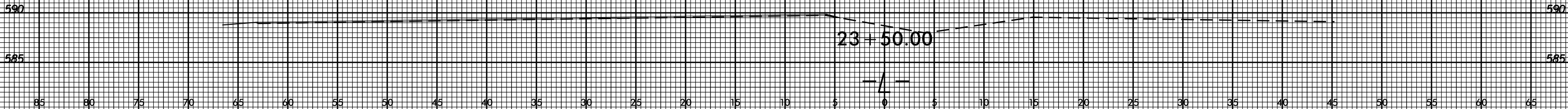
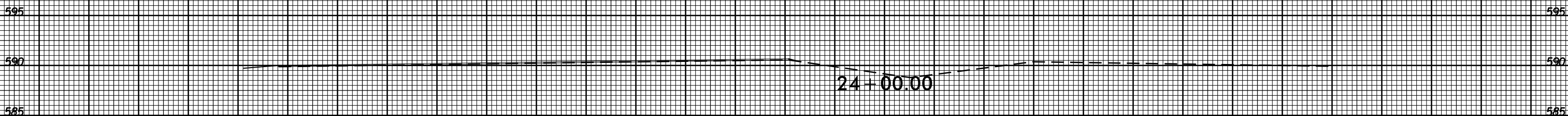
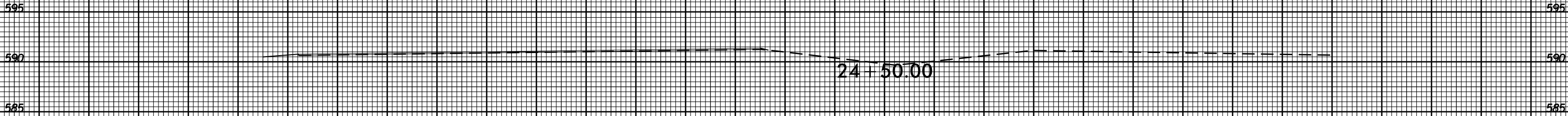
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85 80 75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65



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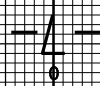
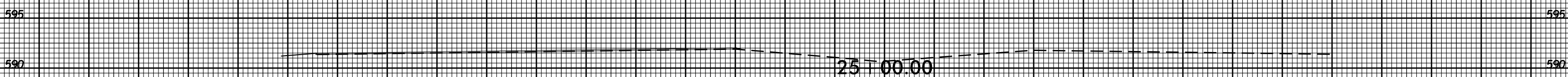
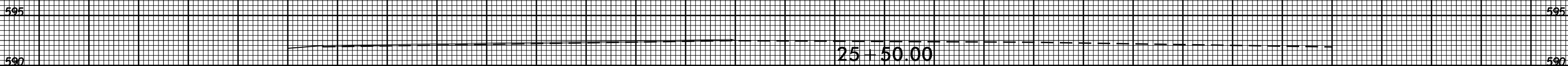
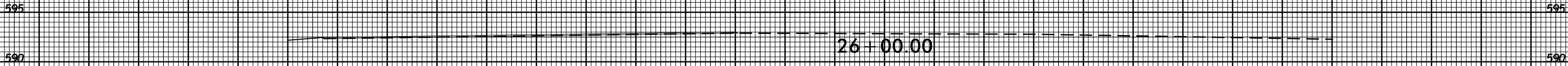
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PROJ. REFERENCE NO.
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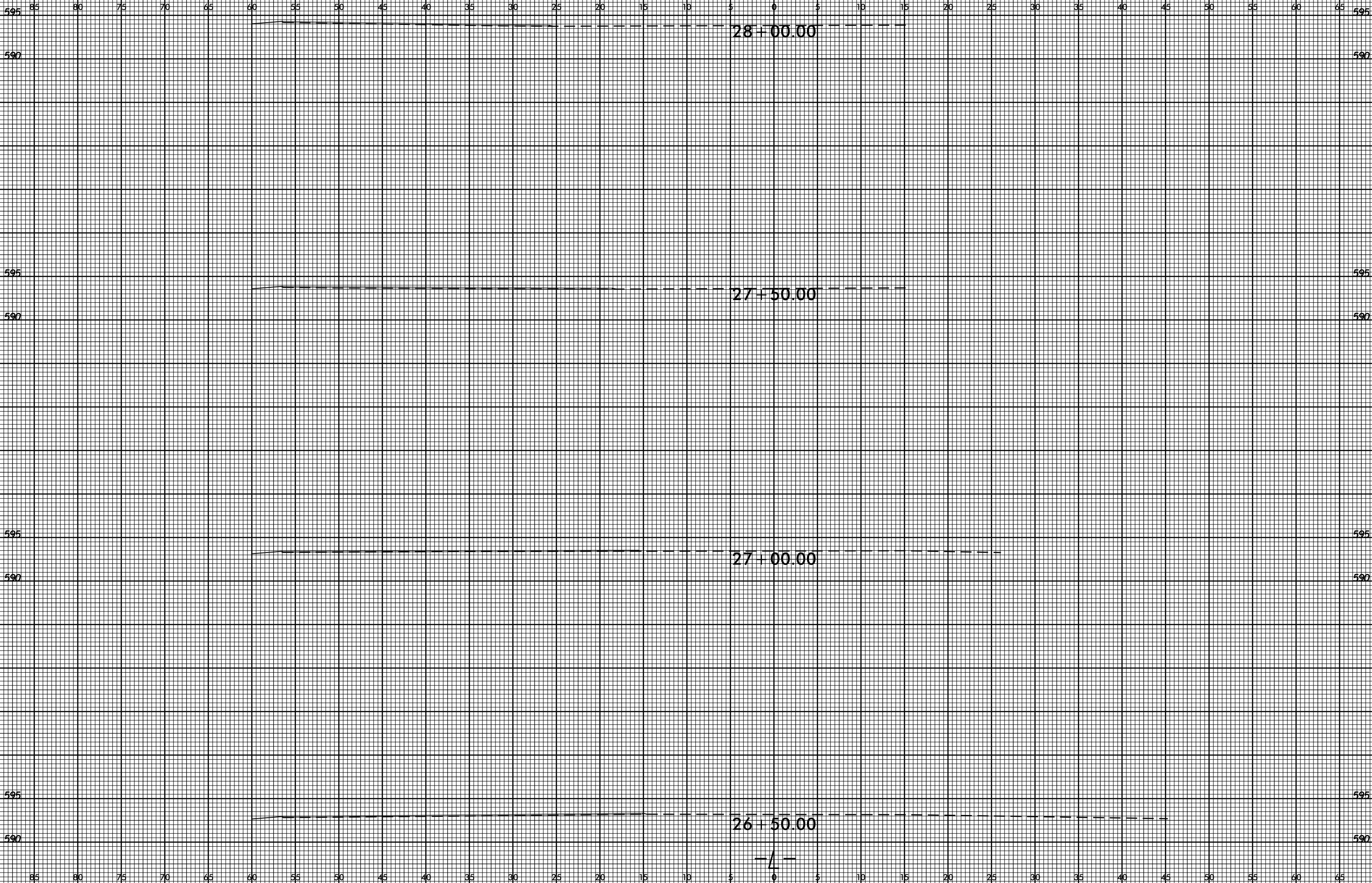
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X-10

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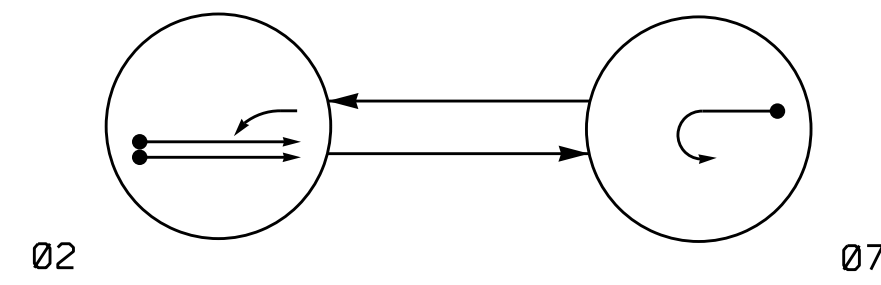


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PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

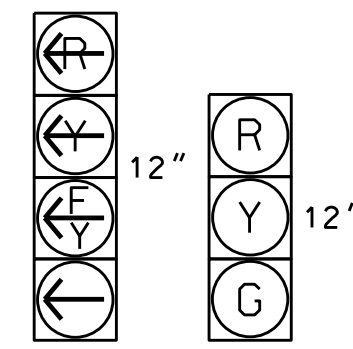
- ←● DETECTED MOVEMENT
- ← UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- ←- - - PEDESTRIAN MOVEMENT

TABLE OF OPERATION

SIGNAL FACE	PHASE		
	02	07	FLIGHT
21, 22	G	R	Y
71, 72	F	Y	Y

SIGNAL FACE I.D.

All Heads L.E.D.



71, 72 21, 22

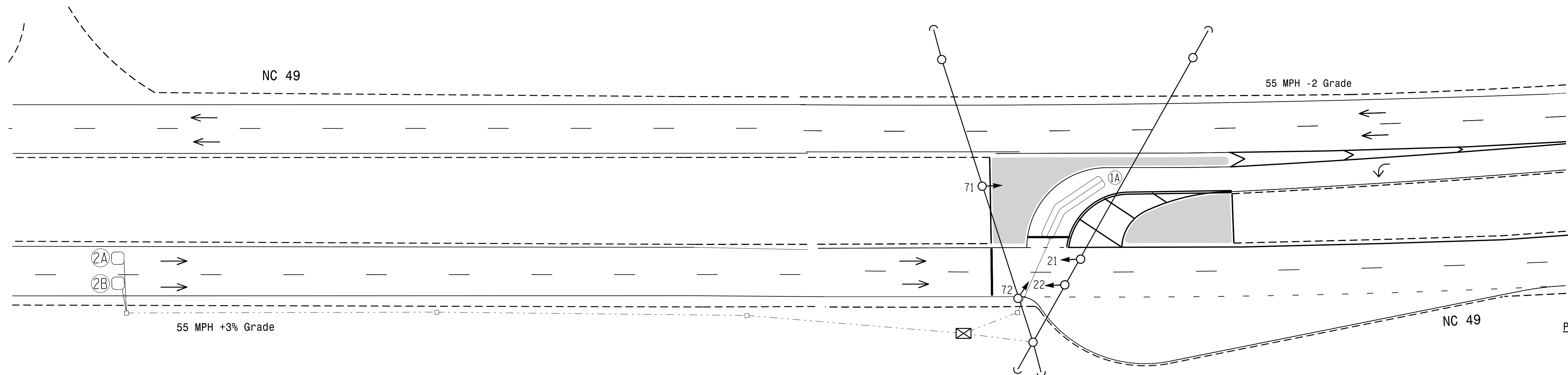
OASIS 2070 LOOP & DETECTOR INSTALLATION CHART

LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	DETECTOR PROGRAMMING				SYSTEM LOOP	NEW CARD	
					PHASE	CALLING	EXTENSION	FULL TIME DELAY			
2A	6X6	420	6	Y	2	Y	Y	-	-	-	Y
2B	6X6	420	6	Y	2	Y	Y	-	-	-	Y
7A	6X40	0	2-4-2	Y	7	Y	Y	-	-	-	Y

2 Phase Fully Actuated NC 49 (Concord) CLS

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2012 and "Standard Specifications for Roads and Structures" dated January 2012.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Set all detector units to presence mode.
4. Maximum times shown in timing chart are for free run operation only. Coordinated signal system timing values supersede these values.
5. Closed loop system data: Controller Asset # 2240.



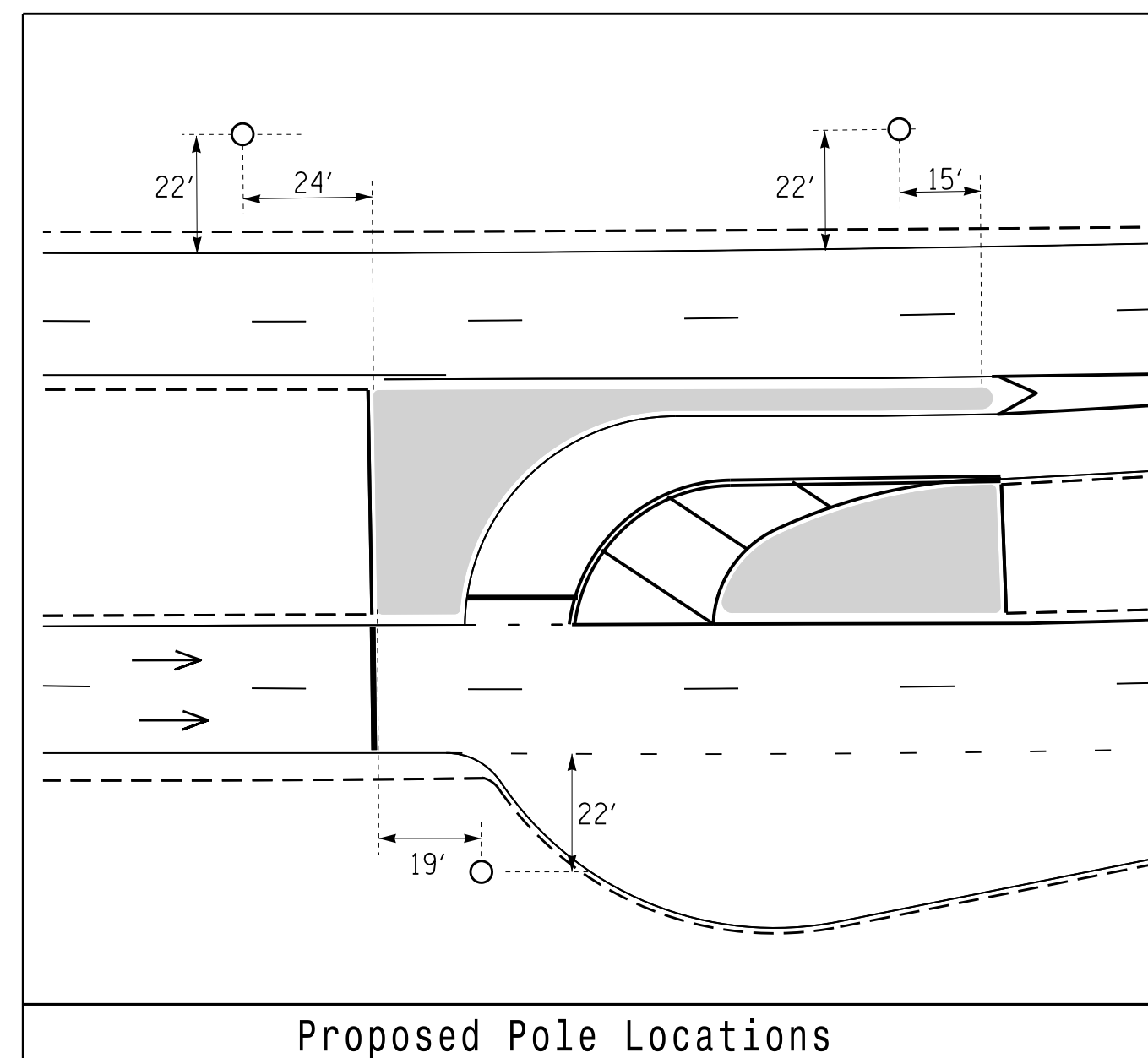
LEGEND

- | PROPOSED | EXISTING |
|----------|----------|
| ○→ | ●→ |
| ○→ | ○→ |
| └ | └ |
| ○└ | ○└ |
| ○└ | ○└ |
| □ | □ |
| □ | □ |
| --- | --- |
| → | → |

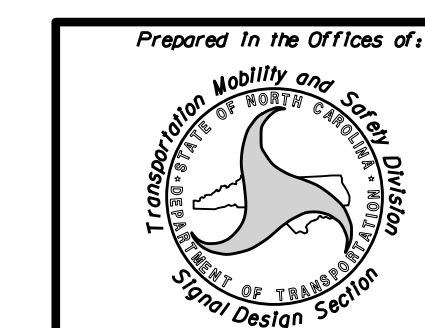
OASIS 2070 TIMING CHART

FEATURE	PHASE	
	2	7
Min Green 1 *	14	7
Extension 1 *	6.0	2.0
Max Green 1 *	90	20
Yellow Clearance	4.9	3.0
Red Clearance	1.0	3.3
Red Revert	2.0	2.0
Walk 1 *	-	-
Don't Walk 1	-	-
Seconds Per Actuation *	1.8	-
Max Variable Initial *	46	-
Time Before Reduction *	15	-
Time To Reduce *	30	-
Minimum Gap	3.4	-
Recall Mode	MIN RECALL	-
Vehicle Call Memory	YELLOW	-
Dual Entry	-	-
Simultaneous Gap	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.



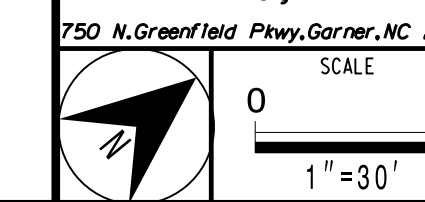
New Installation



NC 49 Northbound at NC 49 Southbound U-Turn
 Division 10 Cabarrus County Concord
 PLAN DATE: July 2016 REVIEWED BY: T. Williams
 PREPARED BY: M. Mahbooba REVIEWED BY:

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL
 NORTH CAROLINA PROFESSIONAL ENGINEER
 S. J. WILLIAMS
 8/15/2016

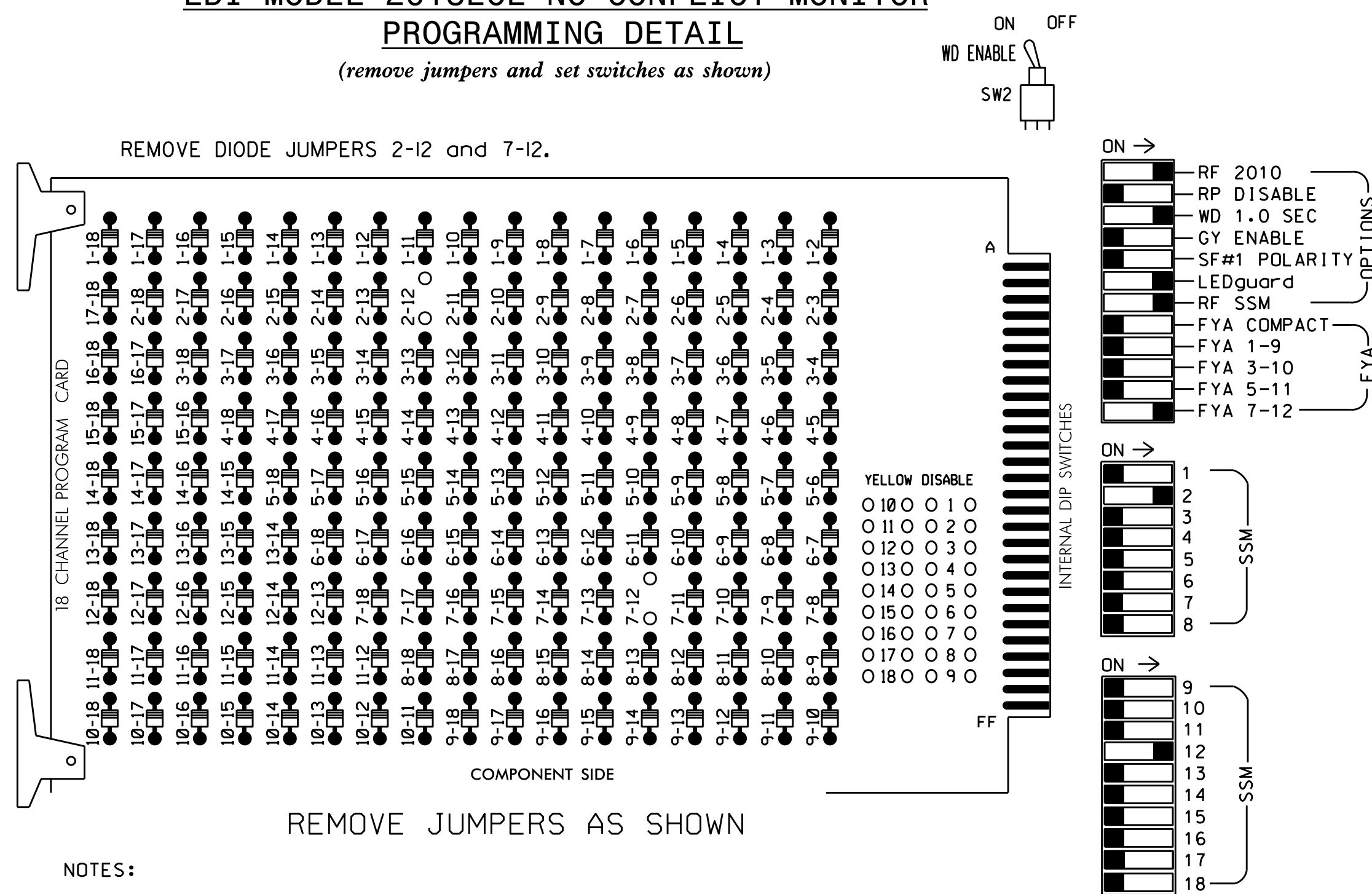


REVISIONS	INIT.	DATE

SIG. INVENTORY NO. 10-2240

**EDI MODEL 2018ECL-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. Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
3. Ensure that Red Enable is active at all times during normal operation.
4. Connect serial cable from conflict monitor to comm. port 1 of 2070 controller. Ensure conflict monitor communicates with 2070.

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. Enable Simultaneous Gap-Out for all phases.
3. Program phase 2 for Variable Initial and Gap Reduction.
4. Program phase 2 for Start Up In Green.
5. Program phase 2 for Yellow Flash.
6. The cabinet and controller are part of the NC 49 (Concord) 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.....S2,S10,AUX S5
 PHASES USED.....2,7
 OVERLAP "A".....NOT USED
 OVERLAP "B".....NOT USED
 OVERLAP "C".....NOT USED
 OVERLAP "D".....2+7

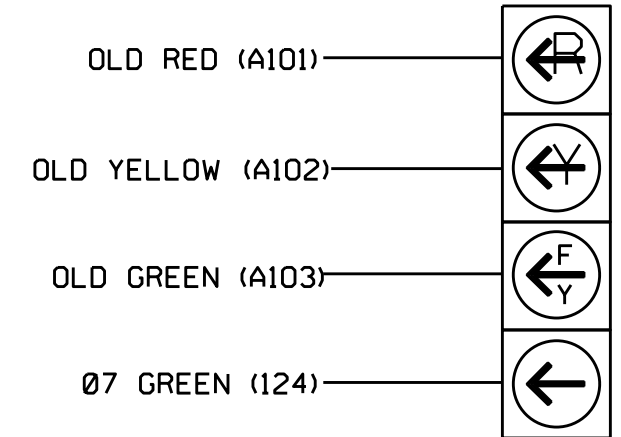
SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16	9	10	17	11	12	18
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.	NU	21,22	NU	NU	NU	NU	NU	NU	NU	71*	NU	NU	NU	NU	NU	NU	71*	NU
RED		128																
YELLOW		129								*								
GREEN		130																
RED ARROW																		A101
YELLOW ARROW																		A102
FLASHING YELLOW ARROW																		A103
GREEN ARROW										124								

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)

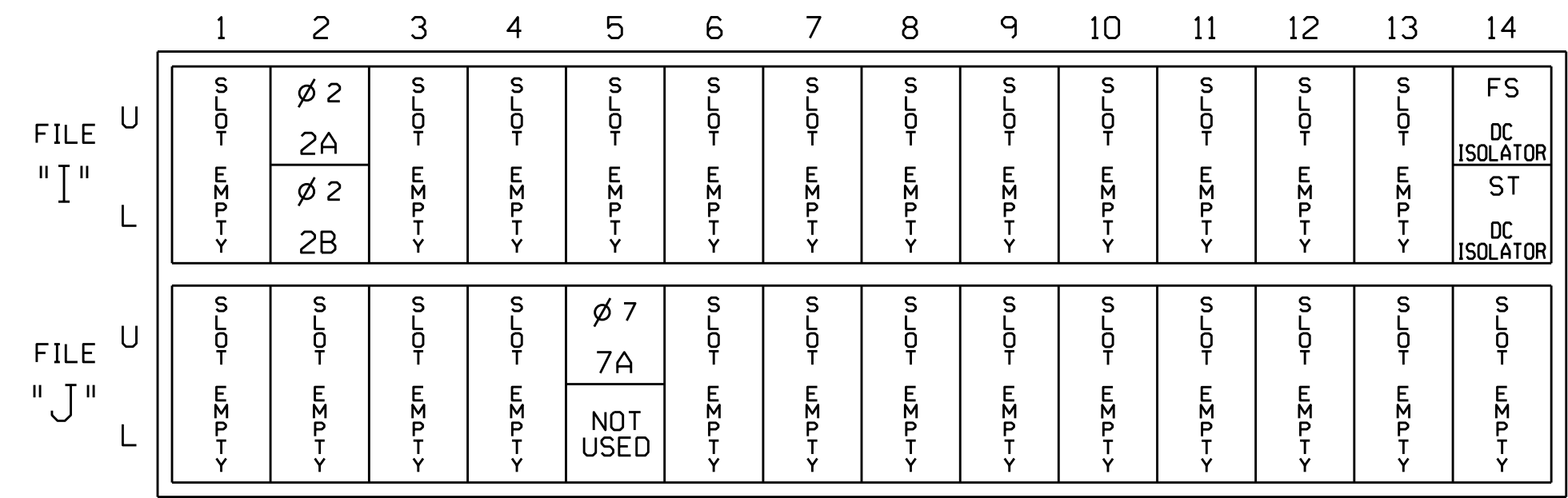


NOTE

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

INPUT FILE POSITION LAYOUT

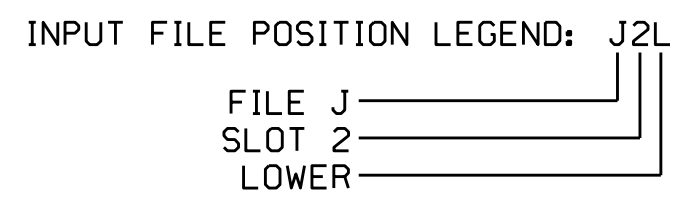
(front view)



EX.: 1A, 2A, ETC. = LOOP NO.'S
 FS = FLASH SENSE
 ST = STOP TIME

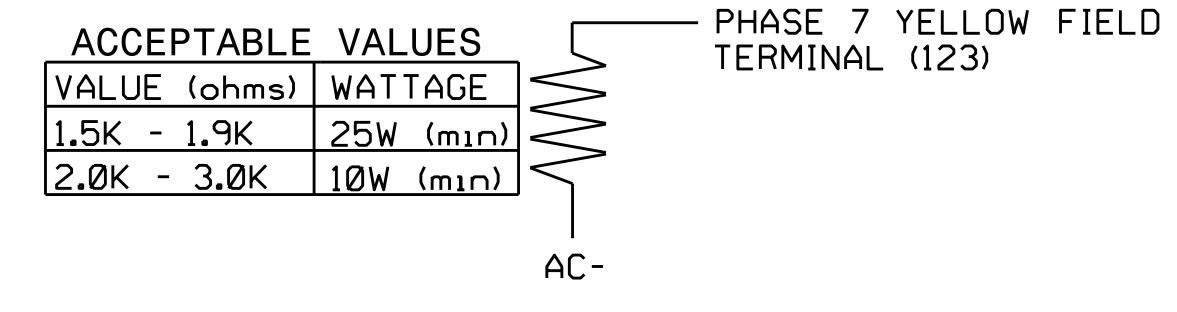
INPUT FILE CONNECTION & PROGRAMMING CHART

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
2A	TB2-5,6	I2U	39	1	2	2	Y	Y			
2B	TB2-7,8	I2L	43	5	12	2	Y	Y			
7A	TB5-5,6	J5U	57	19	7	7	Y	Y			



LOAD RESISTOR INSTALLATION DETAIL

(install resistors as shown below)



THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 10-2240
 DESIGNED: July 2016
 SEALED: 8-15-16
 REVISED: N/A

ELECTRICAL DETAIL SHEET 1 OF 2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Offices of:
 Transpacific Mobility and Safety Solutions
 750 N. Greenfield Pkwy, Garner, NC 27529

NC 49 Northbound at NC 49 Southbound U-Turn
 Division 10 Cabarrus County Concord

PLAN DATE: August 2016 REVIEWED BY:
 PREPARED BY: James Peterson REVIEWED BY:

REVISIONS INIT. DATE

DocuSigned by:
 Keith M. Mims 8/16/2016
 KEITH M. MIMS ENGINEER
 SEAL 036880

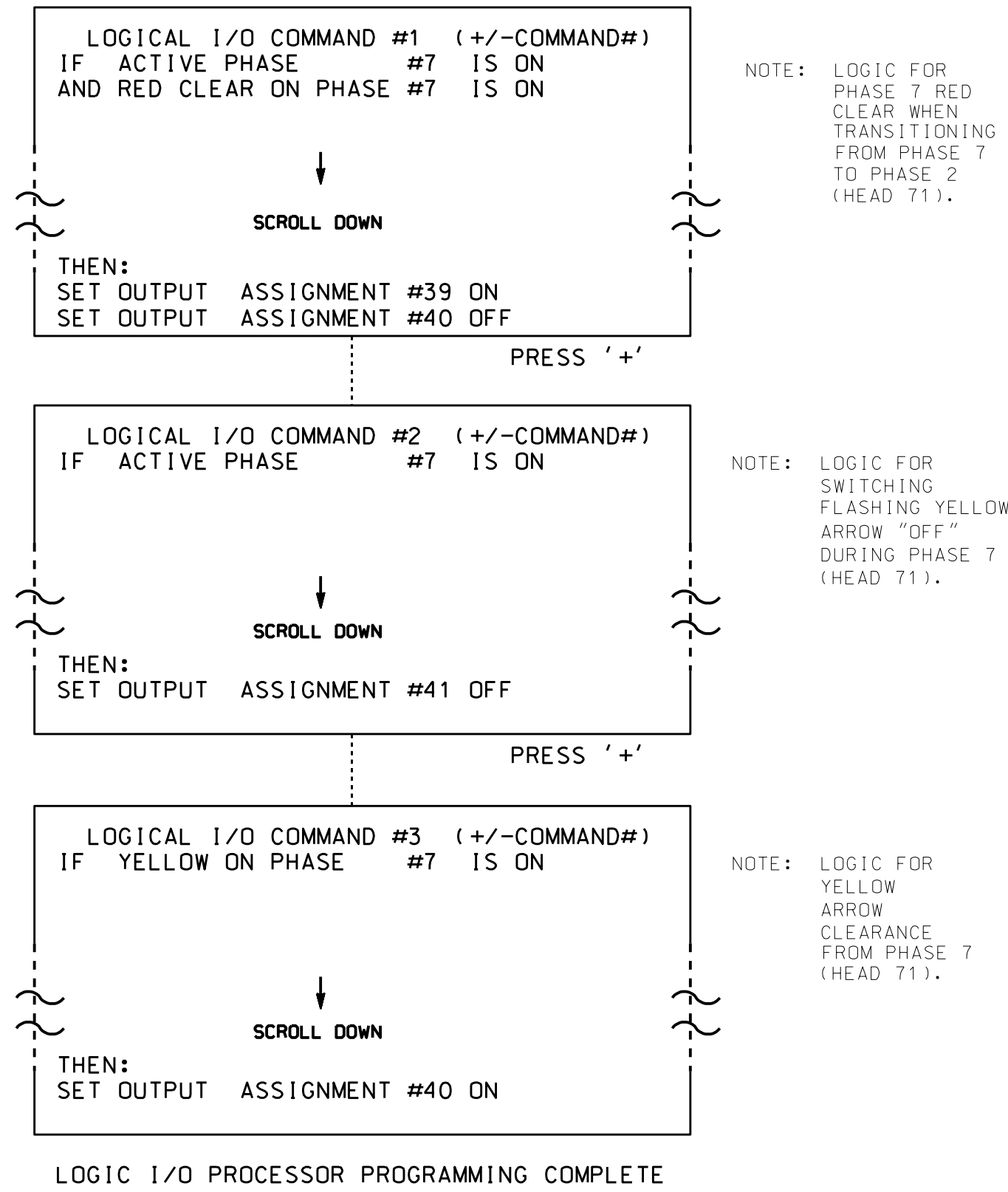
SIG. INVENTORY NO. 10-2240

16-AUG-2016 07:24 S:\TCS\511\15_Sigma\work\grouse\51g_Mob\ Peterson\102240_sml.ele_xxx.dgn J Peterson

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

(program controller as shown below)

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



OUTPUT REFERENCE SCHEDULE

OUTPUT 39 = Overlap D Red
OUTPUT 40 = Overlap D Yellow
OUTPUT 41 = Overlap D Green

**OVERLAP PROGRAMMING DETAIL
*(program controller as shown below)***

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

PRESS '+' THREE TIMES

```

PAGE 1: VEHICLE OVERLAP 'D' SETTINGS
PHASE:          12345678910111213141516
VEH OVL PARENTS: X  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?...Y
GREEN EXTENSION (0-255 SEC)...0.0
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
  
```

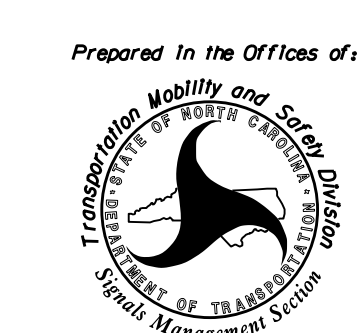
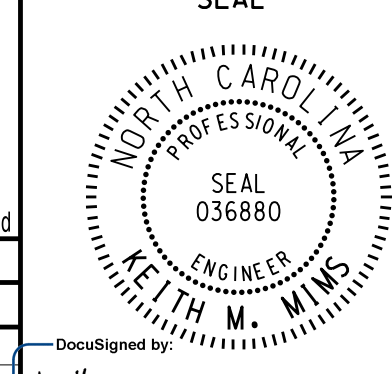
← NOTICE GREEN FLASH

OVERLAP PROGRAMMING COMPLETE

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 10-2240
DESIGNED: July 2016
SEALED: 8-15-16
REVISED: N/A

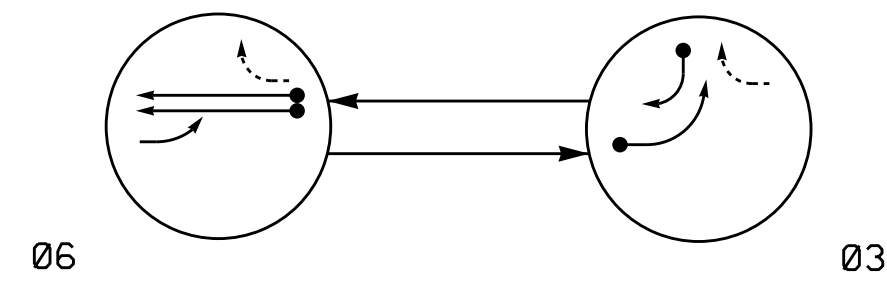
ELECTRICAL DETAIL SHEET 2 OF 2

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

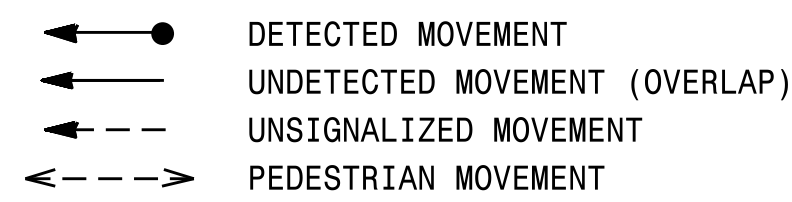
ELECTRICAL AND PROGRAMMING DETAILS FOR: Prepared in the Offices of:  750 N. Greenfield Pkwy, Garner, NC 27529	NC 49 Northbound at NC 49 Southbound U-Turn		SEAL 
	Division 10 Cabarrus County Concord PLAN DATE: August 2016 REVIEWED BY: PREPARED BY: James Peterson REVIEWED BY:	REVISIONS INIT. DATE _____ _____ _____	

16-AUG-2016 07:25
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 J.peterson

PHASING DIAGRAM



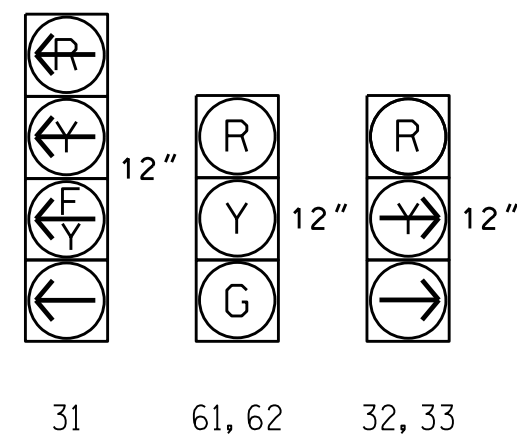
PHASING DIAGRAM DETECTION LEGEND



SIGNAL FACE	PHASE		
	06	03	FLASH
31	F	Y	Y
32, 33	R	Y	R
61, 62	G	R	Y

SIGNAL FACE I.D.

All Heads L.E.D.

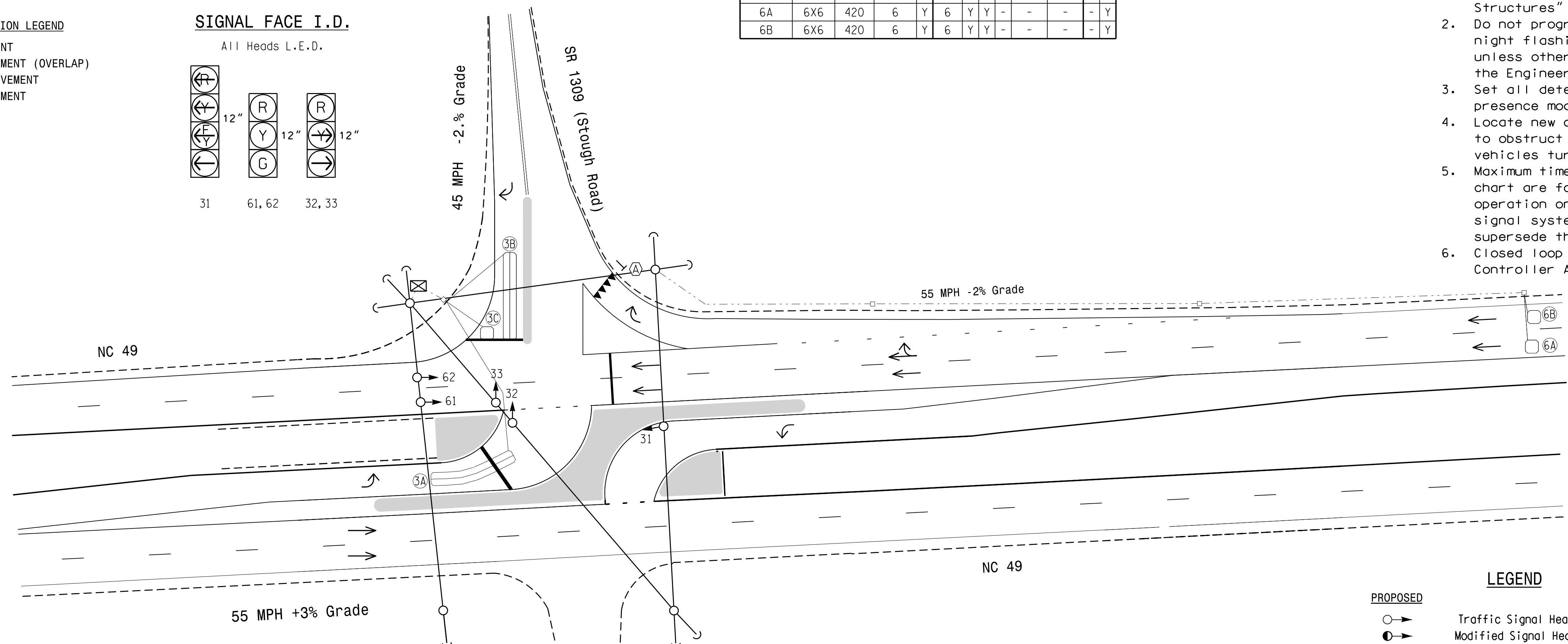


OASIS 2070 LOOP & DETECTOR INSTALLATION CHART												
INDUCTIVE LOOPS					DETECTOR PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	LOOP SYSTEM	NEW CARD
3A	6X40	+10	2-4-2	Y	3	Y	Y	-	-	-	-	Y
3B	6X40	0	2-4-2	Y	3	Y	Y	-	-	10	-	Y
3C	6X40	0	2-4-2	Y	3	Y	Y	-	-	15	-	Y
6A	6X6	420	6	Y	6	Y	Y	-	-	-	-	Y
6B	6X6	420	6	Y	6	Y	Y	-	-	-	-	Y

2 Phase Fully Actuated NC 49 (Concord) CLS

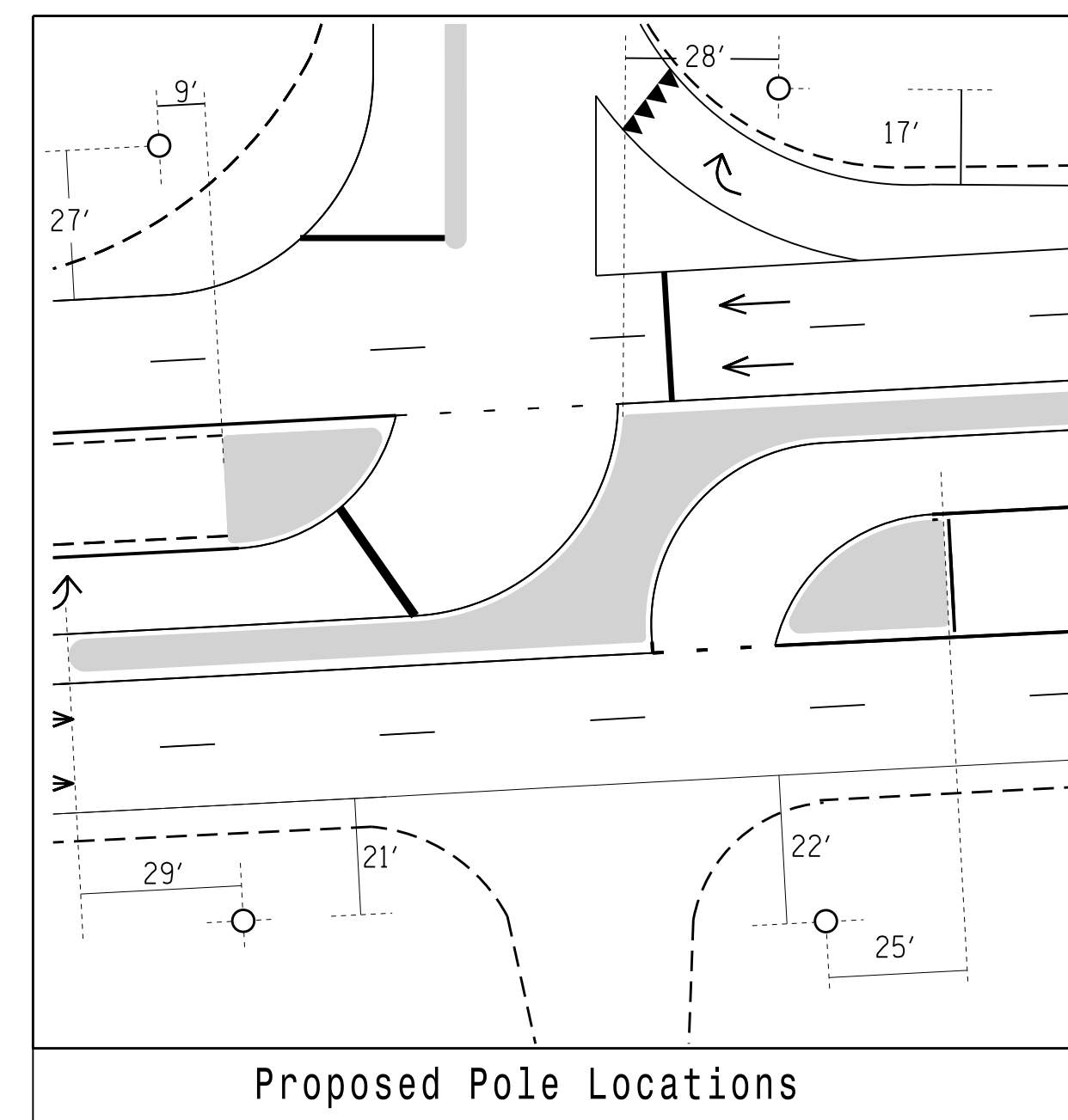
NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2012 and "Standard Specifications for Roads and Structures" dated January 2012.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Set all detector units to presence mode.
- Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
- Closed loop system data: Controller Asset # 2226.

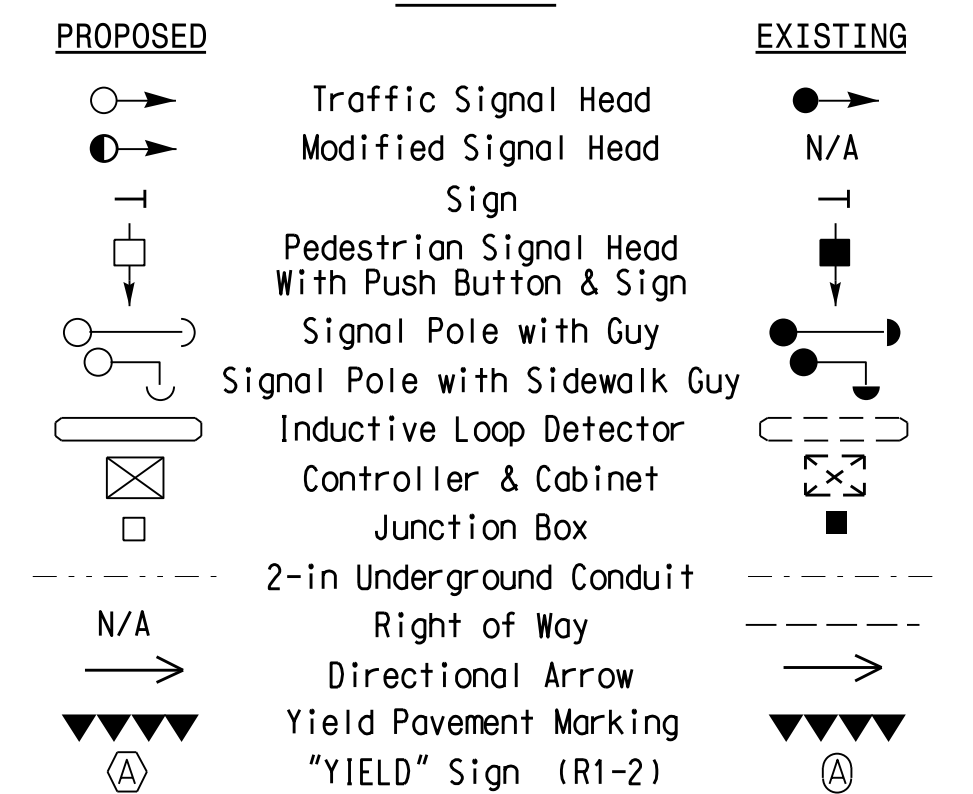


FEATURE	PHASE	
	3	6
Min Green 1 *	7	14
Extension 1 *	2.0	6.0
Max Green 1 *	20	90
Yellow Clearance	3.0	5.4
Red Clearance	2.4	1.0
Red Revert	2.0	2.0
Walk 1 *	-	-
Don't Walk 1	-	-
Seconds Per Actuation *	-	1.8
Max Variable Initial *	-	46
Time Before Reduction *	-	15
Time To Reduce *	-	30
Minimum Gap	-	3.4
Recall Mode	-	MIN RECALL
Vehicle Call Memory	-	YELLOW
Dual Entry	-	-
Simultaneous Gap	ON	ON

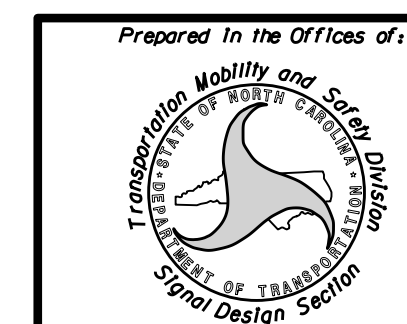
* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.



LEGEND

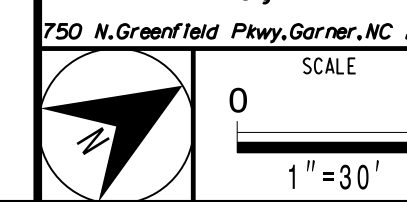
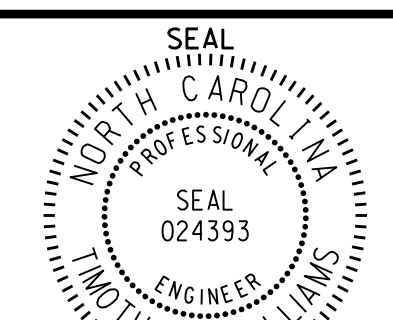


New Installation



NC 49 Southbound at SR 1309 (Stough Road)
 Division 10 Cabarrus County Concord
 PLAN DATE: July 2016 REVIEWED BY: T. Williams
 PREPARED BY: M. Mahbooba REVIEWED BY:

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

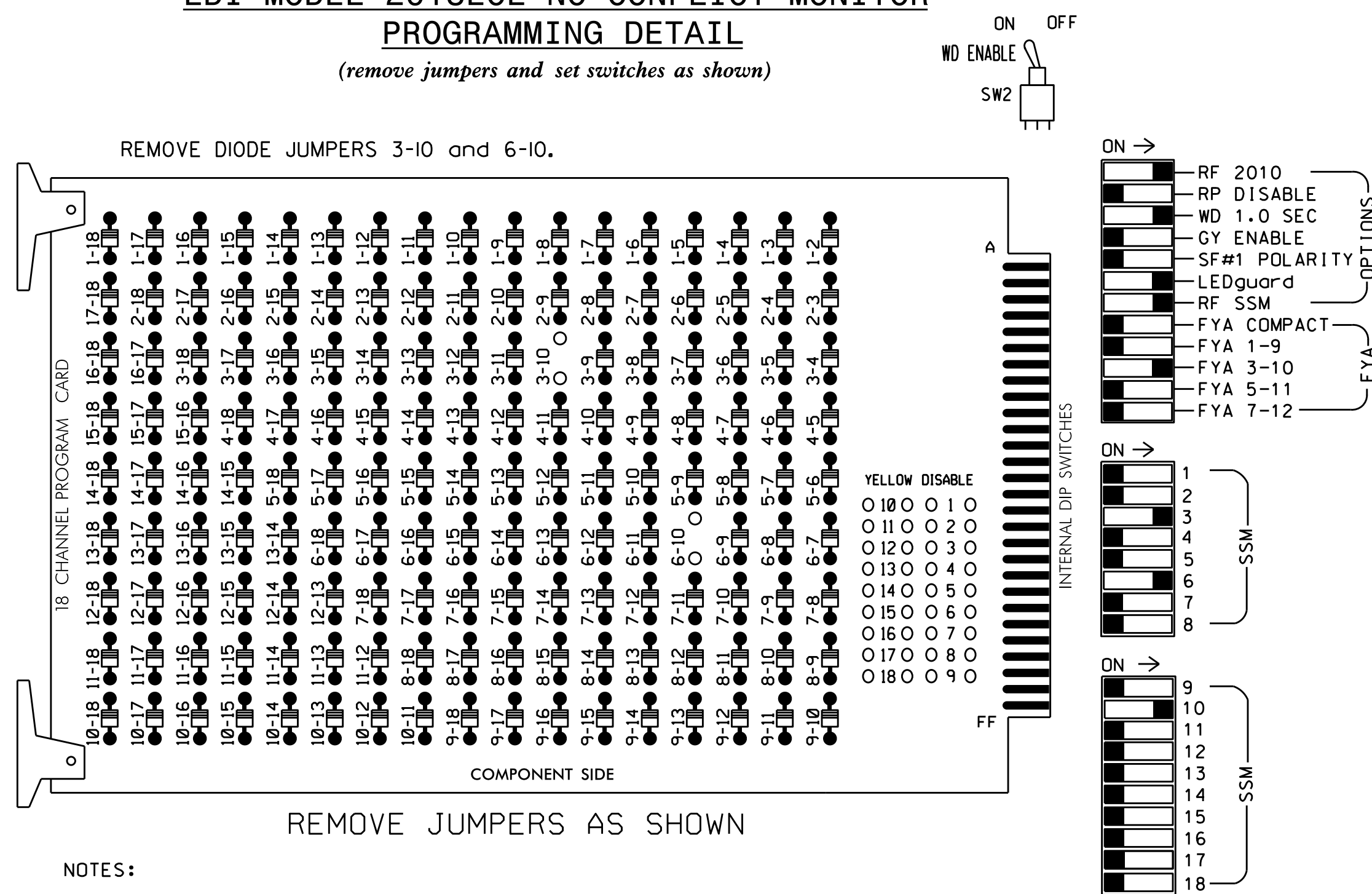


REVISIONS	INIT.	DATE

DocuSigned by: S. J. Williams 8/15/2016
 97AD790E8B34CA DATE
 SIG. INVENTORY NO. 10-2226

**EDI MODEL 2018ECL-NC CONFLICT MONITOR
PROGRAMMING DETAIL**

(remove jumpers and set switches as shown)



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. Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
3. Ensure that Red Enable is active at all times during normal operation.
4. Connect serial cable from conflict monitor to comm. port 1 of 2070 controller. Ensure conflict monitor communicates with 2070.

■ = 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. Enable Simultaneous Gap-Out for all phases.
3. Program phase 6 for Variable Initial and Gap Reduction.
4. Program phase 6 for Start Up In Green.
5. Program phase 6 for Yellow Flash and overlap 2 as Wag Overlaps.
6. The cabinet and controller are part of the NC 49 (Concord) 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.....S4,S8,AUX S2
 PHASES USED.....3,6
 OVERLAP "A".....NOT USED
 OVERLAP "B".....3+6
 OVERLAP "C".....NOT USED
 OVERLAP "D".....NOT USED

SIGNAL HEAD HOOK-UP CHART

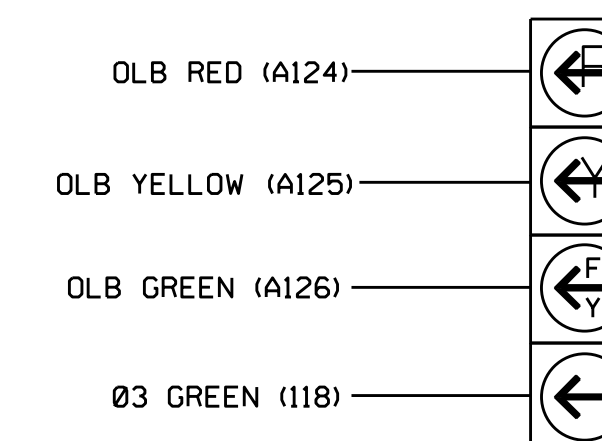
LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16	9	10	17	11	12	18
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	NU	NU	NU	31★	32,33	NU	NU	NU	61,62	NU	NU	NU	NU	31★	NU	NU	NU	NU
RED				116					134									
YELLOW									135									
GREEN									136									
RED ARROW														A124				
YELLOW ARROW				117										A125				
FLASHING YELLOW ARROW														A126				
GREEN ARROW				118	118													

NU = Not Used

★ See pictorial of head wiring in detail below.

4 SECTION FYA PPLT SIGNAL WIRING DETAIL

(wire signal heads as shown)

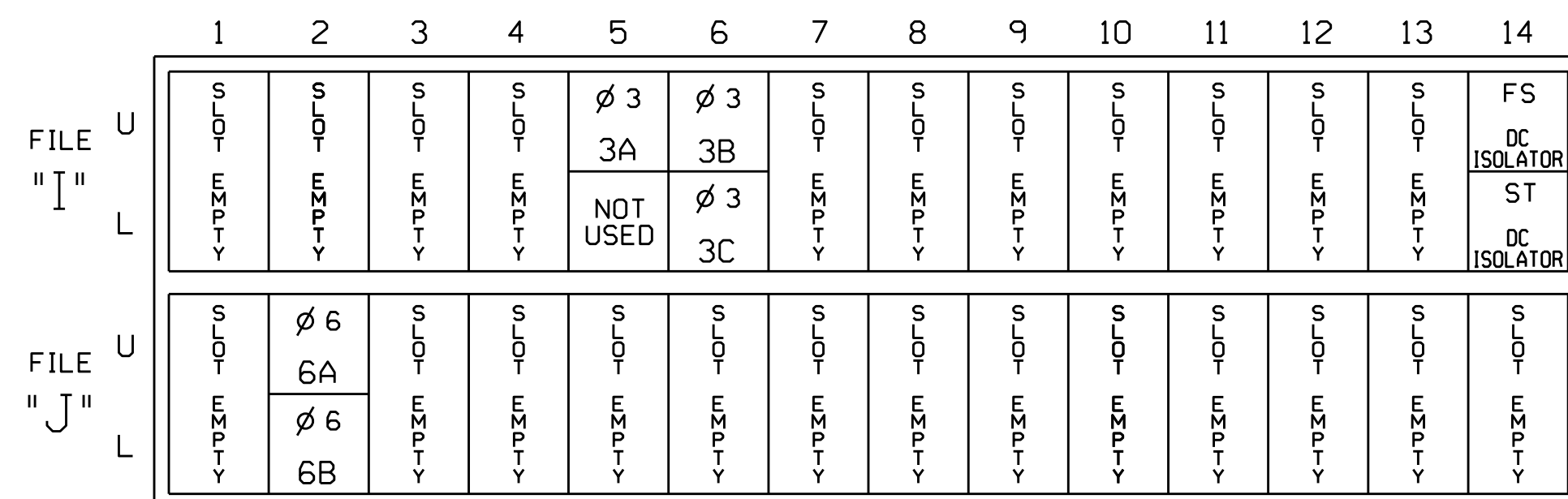


NOTE

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

INPUT FILE POSITION LAYOUT

(front view)



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

FS = FLASH SENSE
 ST = STOP TIME

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
3A	TB4-5,6	I5U	58	20	3	3	Y	Y			
3B	TB4-9,10	I6U	41	3	4	3	Y	Y			10
3C	TB4-11,12	I6L	45	7	14	3	Y	Y			15
6A	TB3-5,6	J2U	40	2	6	6	Y	Y			
6B	TB3-7,8	J2L	44	6	16	6	Y	Y			

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 10-2226
 DESIGNED: July 2016
 SEALED: 8-15-16
 REVISED: N/A

ELECTRICAL DETAIL SHEET 1 OF 2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

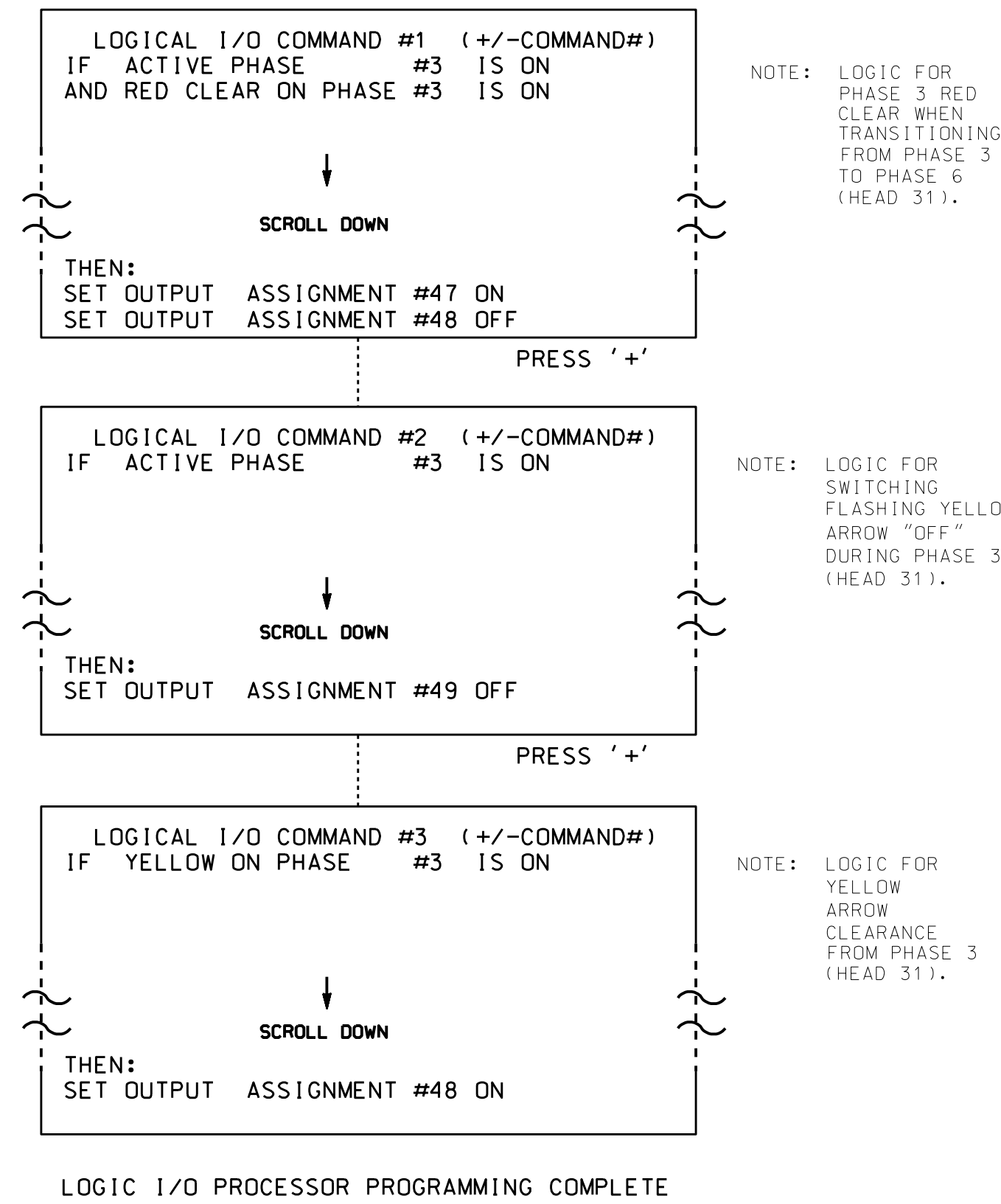
Prepared In the Offices of:

 NC 49 Southbound at SR 1309 (Stough Road)
 Cabarrus County Concord
 Division 10
 PLAN DATE: August 2016 REVIEWED BY:
 PREPARED BY: James Peterson REVIEWED BY:
 REVISIONS INIT. DATE
 Keith M. Mins 8/16/2016
 SEAL 036880
 ENGINEER KEITH M. MINS
 SIG. INVENTORY NO. 10-2226

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

(program controller as shown below)

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



OUTPUT REFERENCE SCHEDULE

OUTPUT 47 = Overlap B Red
OUTPUT 48 = Overlap B Yellow
OUTPUT 49 = Overlap B Green

OVERLAP PROGRAMMING DETAIL

(program controller as shown below)

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

PRESS '+' ONCE

```

PAGE 1: VEHICLE OVERLAP 'B' SETTINGS
PHASE: |12345678910111213141516
VEH OVL PARENTS: | X 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?...Y
GREEN EXTENSION (0-255 SEC)...0.0
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: 10-2226
DESIGNED: July 2016
SEALED: 8-15-16
REVISED: N/A

ELECTRICAL DETAIL SHEET 2 OF 2

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR: Prepared In the Offices of: 750 N. Greenfield Pkwy, Garner, NC 27529	NC 49 Southbound at SR 1309 (Stough Road)		SEAL
	Division 10 Cabarrus County Concord PLAN DATE: August 2016 REVIEWED BY: PREPARED BY: James Peterson REVIEWED BY:	REVISIONS INIT. DATE	

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 J.peterson