

10-NOV-2014 14:09
 H:\DDC\Projects\W-5206AB_Camden and Rockfish Roads\Cumberland Co\Roadway\proj\W5206AB_Rdy_tsh.dgn
 \$\$\$USERNAME\$\$\$

WBS: 45336.3.FD28 TIP PROJECT: W-5206AB

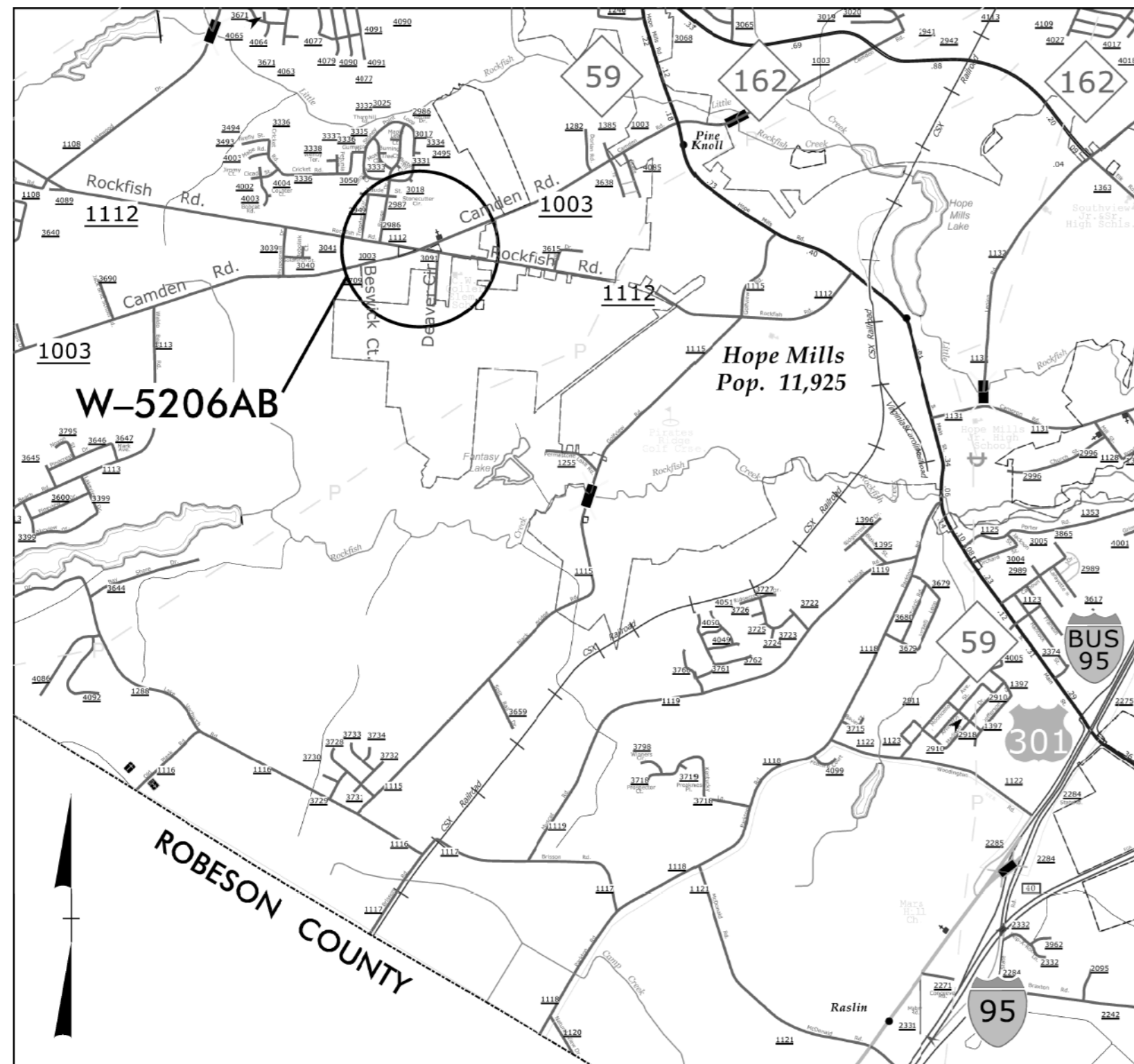
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CUMBERLAND COUNTY

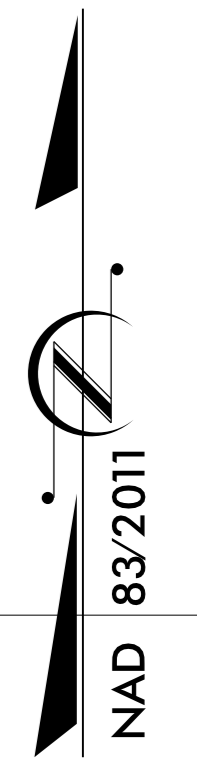
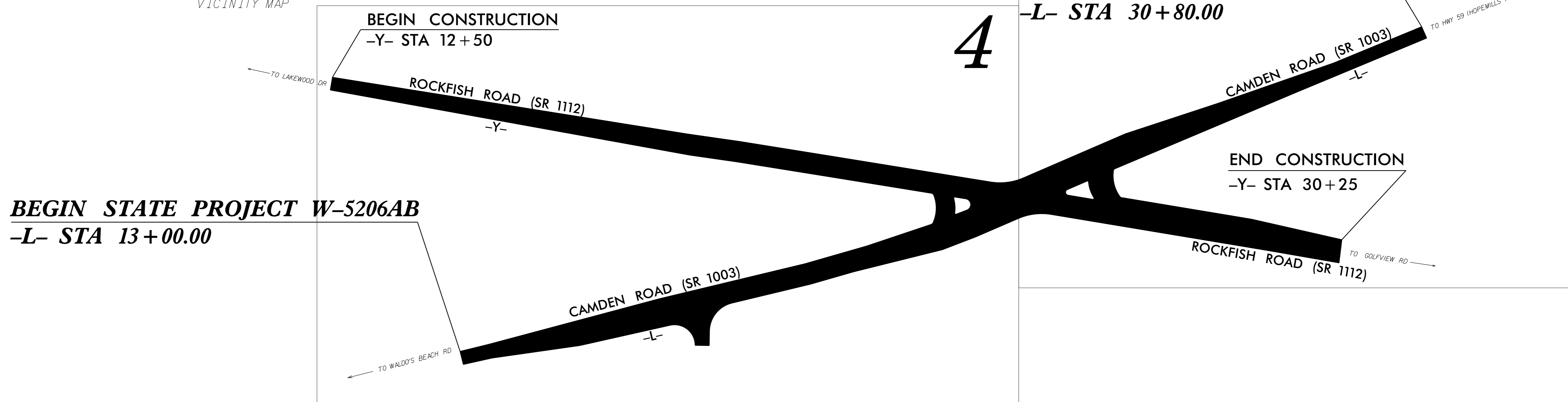
LOCATION: CAMDEN ROAD (SR 1003) AT ROCKFISH ROAD (SR 1112)

**TYPE OF WORK: WIDENING, GRADING, PAVING, CONCRETE ISLANDS,
SIGNAL REVISION AND PAVEMENT MARKINGS**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5206AB	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
45336.1.28	HSIP-1003(129)	P.E.	
45336.2.FD28	HSIP-1003(129)	ROW, UTILS	
45336.3.FD28	HSIP-1003(129)	CONSTR	

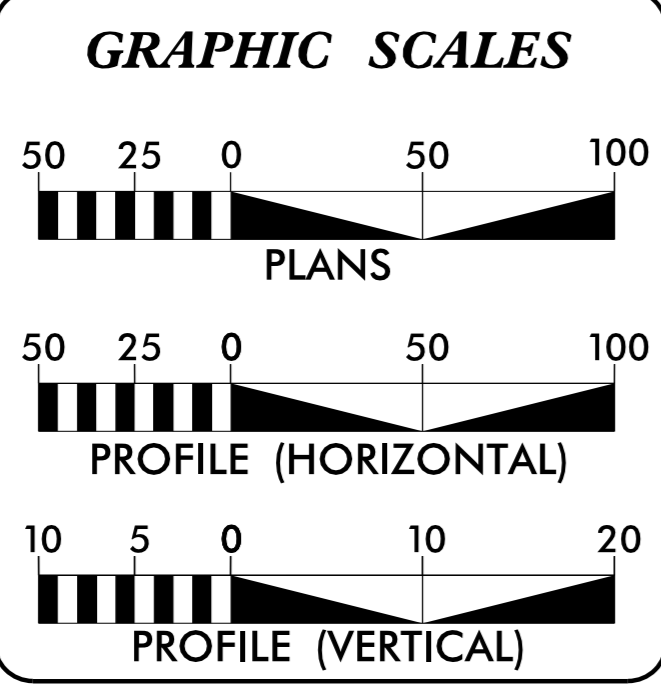


VICINITY MAP



BEGIN STATE PROJECT W-5206AB
-L- STA 13+00.00

5
END STATE PROJECT W-5206AB
-L- STA 30+80.00



DESIGN DATA

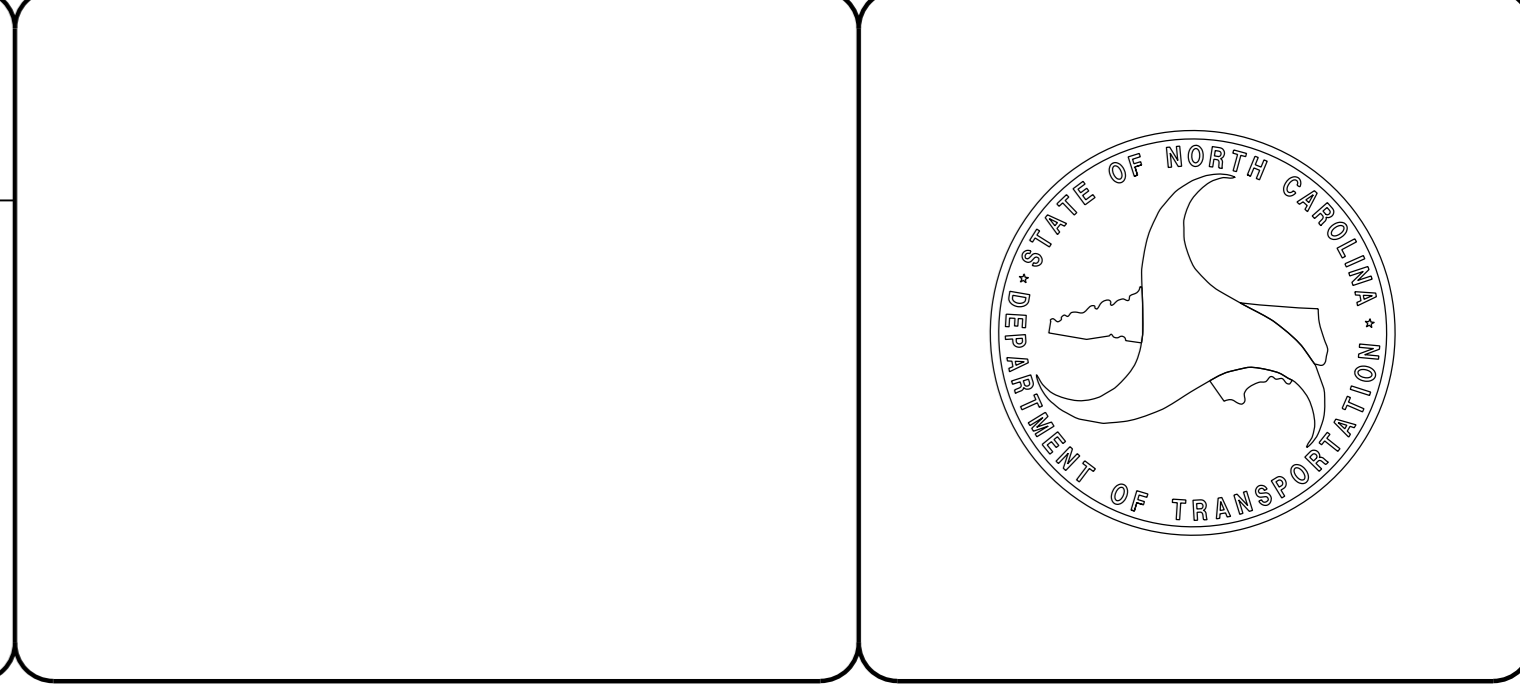
ADT 2012 =	18,000
ADT 2032 =	32,500
V =	50 MPH

PROJECT LENGTH

TOTAL LENGTH OF STATE PROJECT W-5206AB = 0.399mi

Prepared in the Office of:
DIVISION OF HIGHWAYS
431 Transportation Drive, Fayetteville, NC 28301

2012 STANDARD SPECIFICATIONS	SEAN MATUSZEWSKI PROJECT ENGINEER
RIGHT OF WAY DATE: FEBRUARY 26, 2014	NEIL BUTLER PROJECT DESIGN ENGINEER
LETTING DATE: DECEMBER 17, 2014	



12/05/11

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EP
Property Corner	----->
Property Monument	□ ECM
Parcel/Sequence Number	①23
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	--- MLB ---
Proposed Wetland Boundary	--- MLB ---
Existing Endangered Animal Boundary	--- EAB ---
Existing Endangered Plant Boundary	--- EPB ---
Known Soil Contamination: Area or Site	☠
Potential Soil Contamination: Area or Site	☠?

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○ S
Well	○ W
Small Mine	✕
Foundation	▭
Area Outline	▭
Cemetery	▭ †
Building	▭
School	▭
Church	▭
Dam	▭

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	▭
Jurisdictional Stream	--- JS ---
Buffer Zone 1	--- BZ 1 ---
Buffer Zone 2	--- BZ 2 ---
Flow Arrow	←
Disappearing Stream	→
Spring	○
Wetland	✕
Proposed Lateral, Tail, Head Ditch	▭
False Sump	▭

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○ CSX TRANSPORTATION MILEPOST 35
Switch	□ SWITCH
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	----- RW
Proposed Right of Way Line with Iron Pin and Cap Marker	----- RW ▲
Proposed Right of Way Line with Concrete or Granite R/W Marker	----- RW ●
Proposed Control of Access Line with Concrete CA Marker	----- CA
Existing Control of Access	----- CA
Proposed Control of Access	----- CA
Existing Easement Line	--- E ---
Proposed Temporary Construction Easement	--- E ---
Proposed Temporary Drainage Easement	--- TDE ---
Proposed Permanent Drainage Easement	--- PDE ---
Proposed Permanent Drainage / Utility Easement	--- DUE ---
Proposed Permanent Utility Easement	--- PUE ---
Proposed Temporary Utility Easement	--- TUE ---
Proposed Aerial Utility Easement	--- AUE ---
Proposed Permanent Easement with Iron Pin and Cap Marker	◆

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	--- C ---
Proposed Slope Stakes Fill	--- F ---
Proposed Curb Ramp	○ CR
Existing Metal Guardrail	▭
Proposed Guardrail	▭
Existing Cable Guiderail	▭
Proposed Cable Guiderail	▭
Equality Symbol	⊕
Pavement Removal	▭

VEGETATION:

Single Tree	✿
Single Shrub	✿
Hedge	~~~~~
Woods Line	~~~~~

Orchard	✿
Vineyard	▭ Vineyard

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	▭ CONC
Bridge Wing Wall, Head Wall and End Wall	▭ CONC WW
MINOR:	
Head and End Wall	▭ CONC HW
Pipe Culvert	▭
Footbridge	▭
Drainage Box: Catch Basin, DI or JB	▭ CB
Paved Ditch Gutter	-----
Storm Sewer Manhole	○
Storm Sewer	----- S

UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	⊕
Power Line Tower	⊗
Power Transformer	⊗
U/G Power Cable Hand Hole	▭
H-Frame Pole	●
Recorded U/G Power Line	----- P
Designated U/G Power Line (S.U.E.*)	----- P

TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊕
Telephone Booth	▭
Telephone Pedestal	▭
Telephone Cell Tower	⊗
U/G Telephone Cable Hand Hole	▭
Recorded U/G Telephone Cable	----- T
Designated U/G Telephone Cable (S.U.E.*)	----- T
Recorded U/G Telephone Conduit	----- TC
Designated U/G Telephone Conduit (S.U.E.*)	----- TC
Recorded U/G Fiber Optics Cable	----- T FO
Designated U/G Fiber Optics Cable (S.U.E.*)	----- T FO

WATER:

Water Manhole	⊕
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
Recorded U/G Water Line	----- W
Designated U/G Water Line (S.U.E.*)	----- W
Above Ground Water Line	----- A/G Water

TV:

TV Satellite Dish	⊗
TV Pedestal	▭
TV Tower	⊗
U/G TV Cable Hand Hole	▭
Recorded U/G TV Cable	----- TV
Designated U/G TV Cable (S.U.E.*)	----- TV
Recorded U/G Fiber Optic Cable	----- TV FO
Designated U/G Fiber Optic Cable (S.U.E.*)	----- TV FO

GAS:

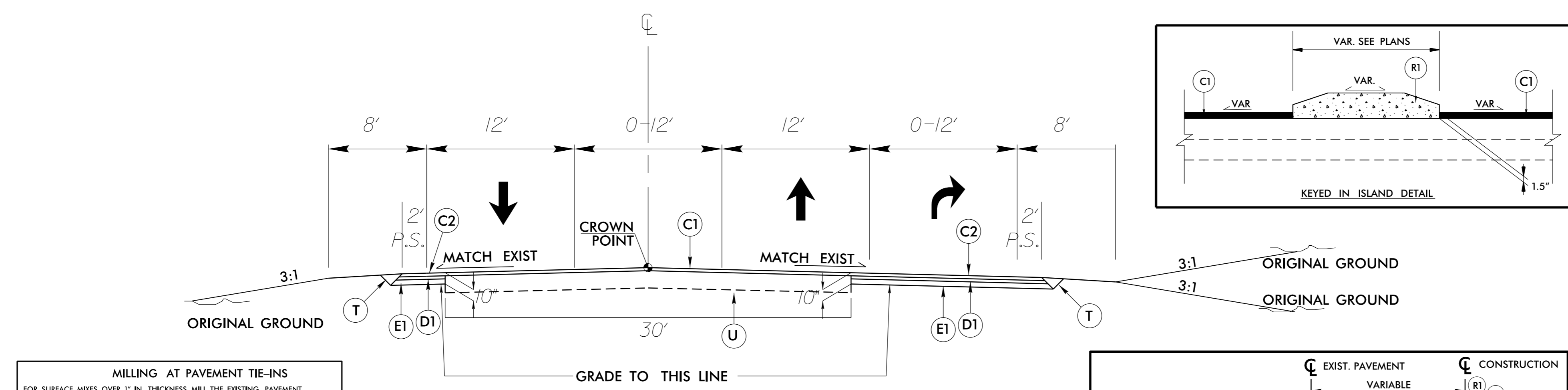
Gas Valve	◇
Gas Meter	⊕
Recorded U/G Gas Line	----- G
Designated U/G Gas Line (S.U.E.*)	----- G
Above Ground Gas Line	----- A/G Gas

SANITARY SEWER:

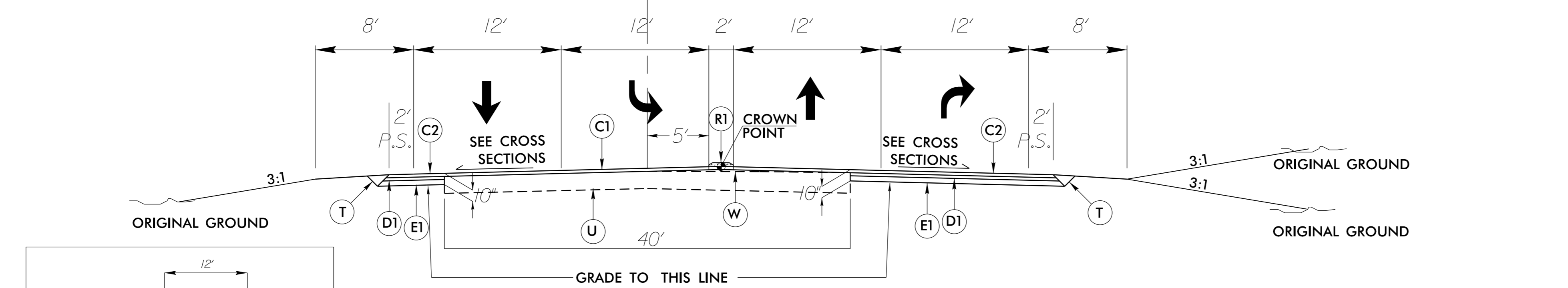
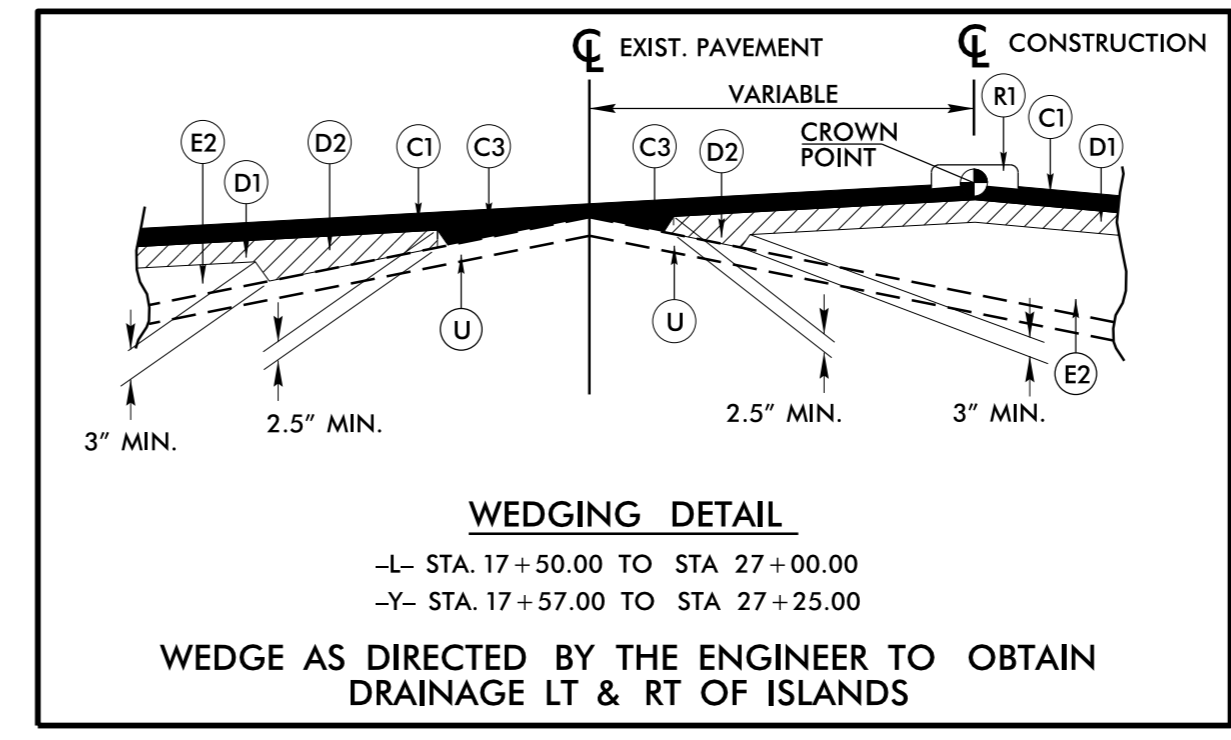
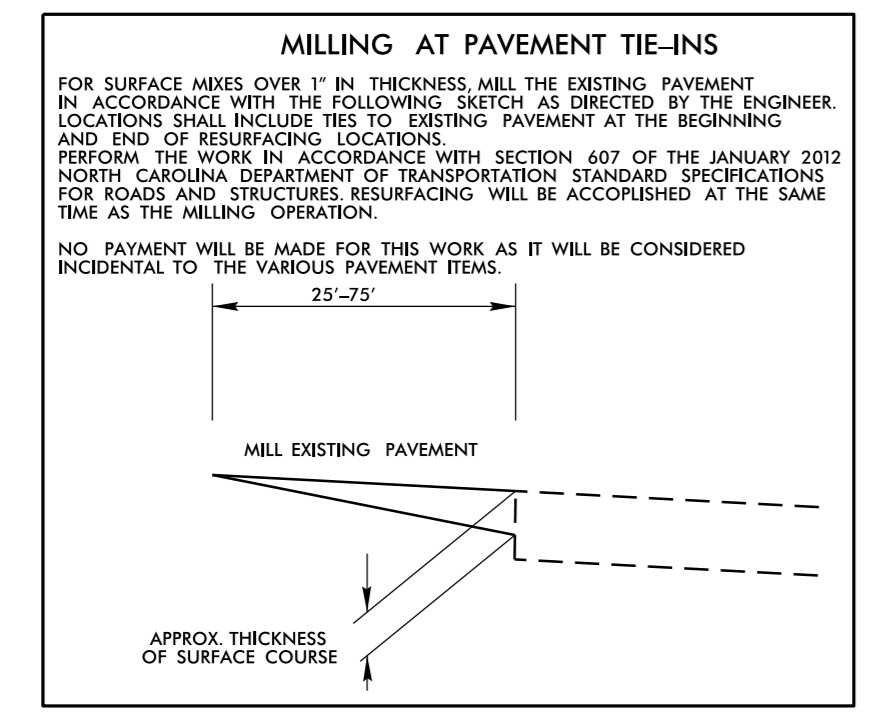
Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	----- SS
Above Ground Sanitary Sewer	----- A/G Sanitary Sewer
Recorded SS Forced Main Line	----- FSS
Designated SS Forced Main Line (S.U.E.*)	----- FSS

MISCELLANEOUS:

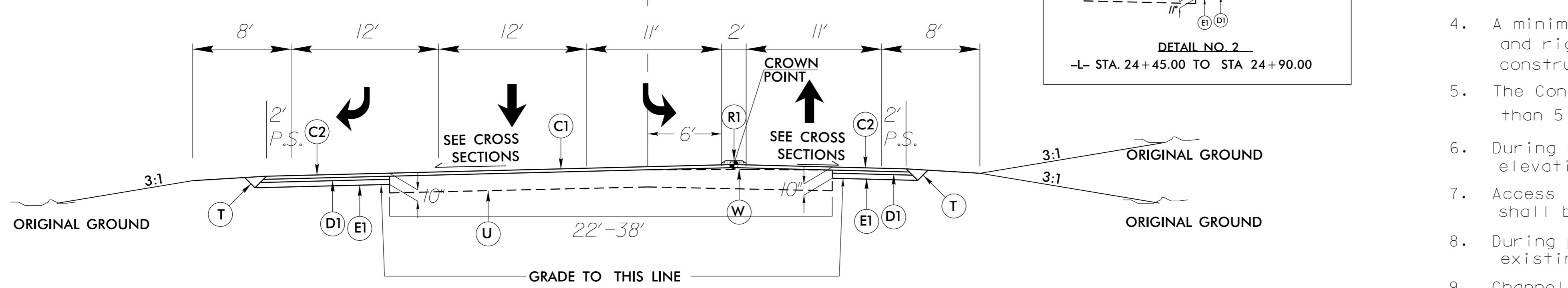
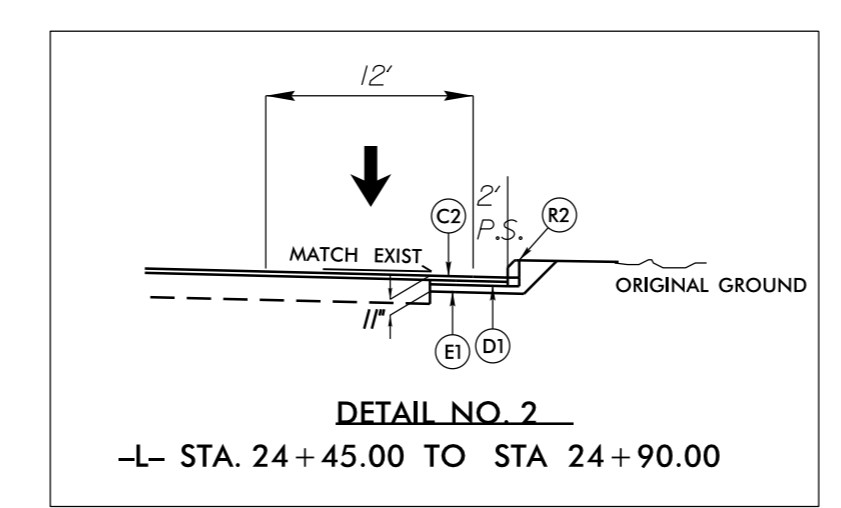
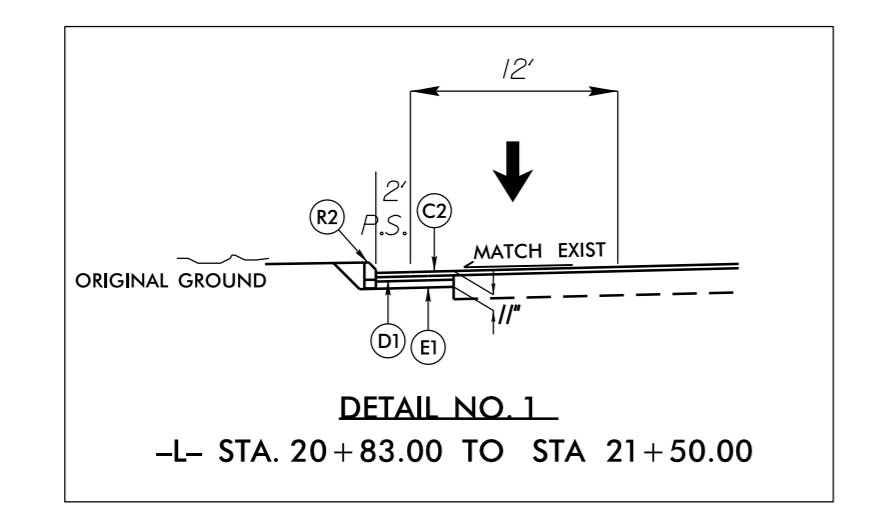
Utility Pole	●
Utility Pole with Base	▭
Utility Located Object	○
Utility Traffic Signal Box	⊕
Utility Unknown U/G Line	----- ?UTL
U/G Tank; Water, Gas, Oil	▭
Underground Storage Tank, Approx. Loc.	▭
A/G Tank; Water, Gas, Oil	▭
Geoenvironmental Boring	⊗
U/G Test Hole (S.U.E.*)	⊗
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.



TYPICAL SECTION NO. 1
 -L- STA. 13+00.00 TO STA 17+50.00



TYPICAL SECTION NO. 2
 -L- STA. 17+50.00 TO STA 22+92.60



TYPICAL SECTION NO. 3
 -L- STA. 22+92.60 TO STA 27+79.28

TRANSITION FROM TYPICAL NO. 3 TO EXISTING
 -L- STA. 27+79.28 TO STA 30+60.00

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 336 LBS. PER SQ. YD.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 2.5" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 3" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH.
R1	5" KEYED IN MONOLITHIC CONCRETE ISLAND. (STD 852.01)
R2	8"x12" CONCRETE CURB (STD 846.01)
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING (SEE DETAIL)

PROJECT NOTES

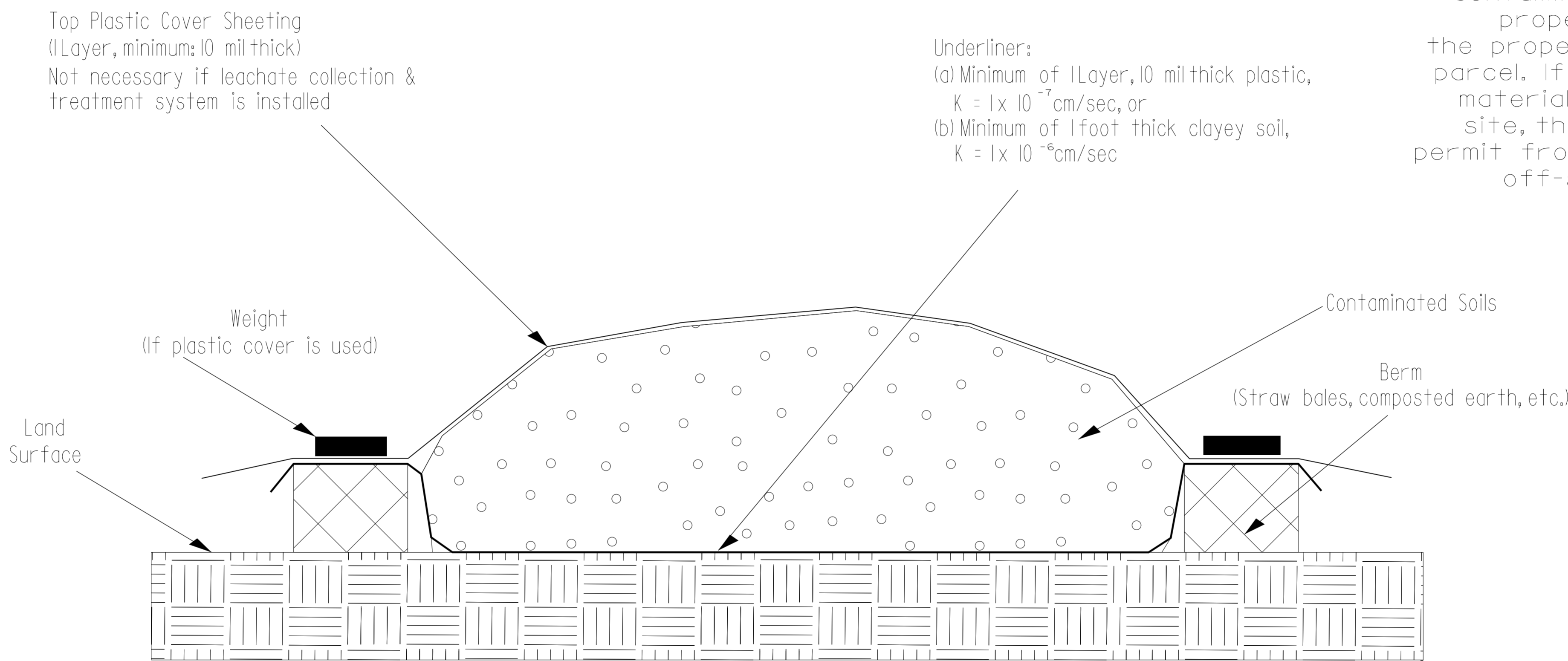
- The Contractor shall not work on both sides of the road simultaneously within the same area.
- Ingress and egress shall be maintained to all businesses and dwellings on the project.
- At the end of each workday, the Contractor shall be required to backfill any area adjacent to existing travelway that has been graded leaving no more than a 1 1/2" drop-off.
- A minimum of two-way, two-lane traffic (plus all existing left and right turn lanes) shall be maintained during periods of construction inactivity.
- The Contractor shall not be allowed to stop traffic for more than 5 minutes at a time in any one direction.
- During periods of construction inactivity, the difference in elevation between lanes shall not exceed 1-1/2 inch.
- Access to police and fire station, fire hydrants, and hospitals shall be maintained at all times.
- During periods of construction inactivity, place cones/drums 3' from existing edge of pavement (travelway) as directed by the Engineer.
- Channelizing devices in work areas shall be spaced not greater than 50' on center in tangent areas, 45' on center in tapers, and 10' on center in radii, and shall be set 3' off the edge of travelway, unless otherwise indicated on plans.
- Contractor to install Erosion Control devices as directed by the Engineer.
- Contractor shall coordinate with the Division Six Traffic Services Unit (910-486-1452) for placement of all pavement markings and signs.

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 6/2/99

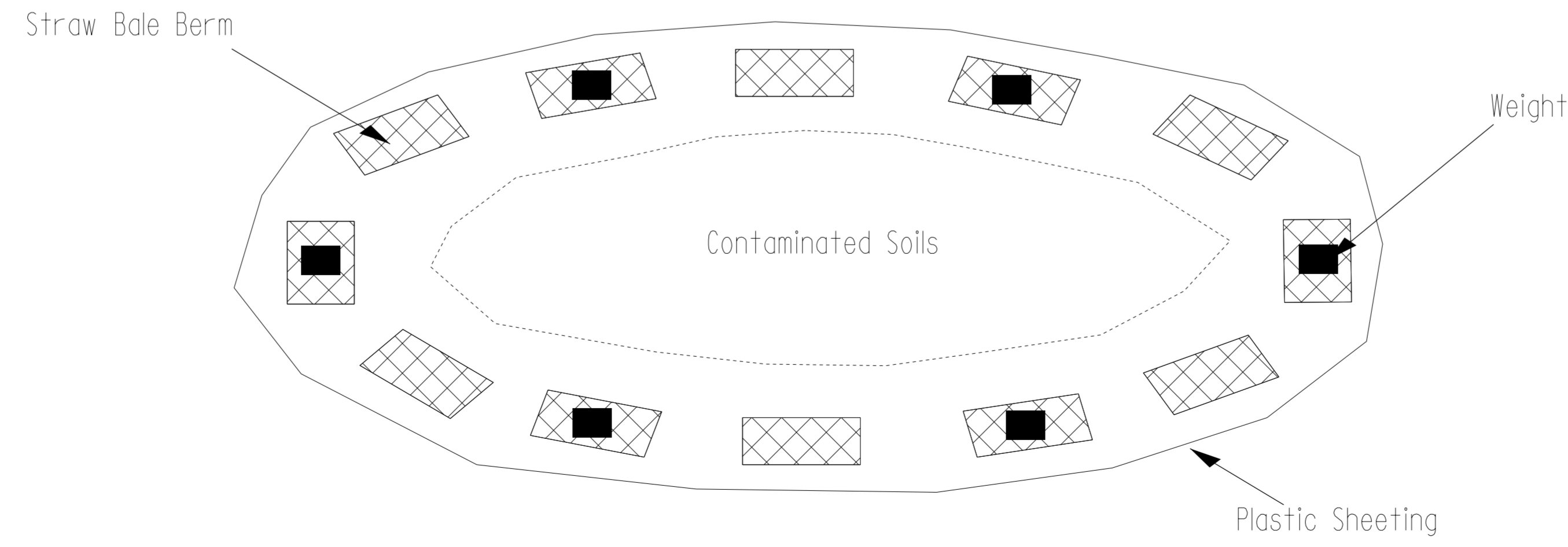
Detail for Temporary Containment of Contaminated Soil

Cross-Section View

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



Map View



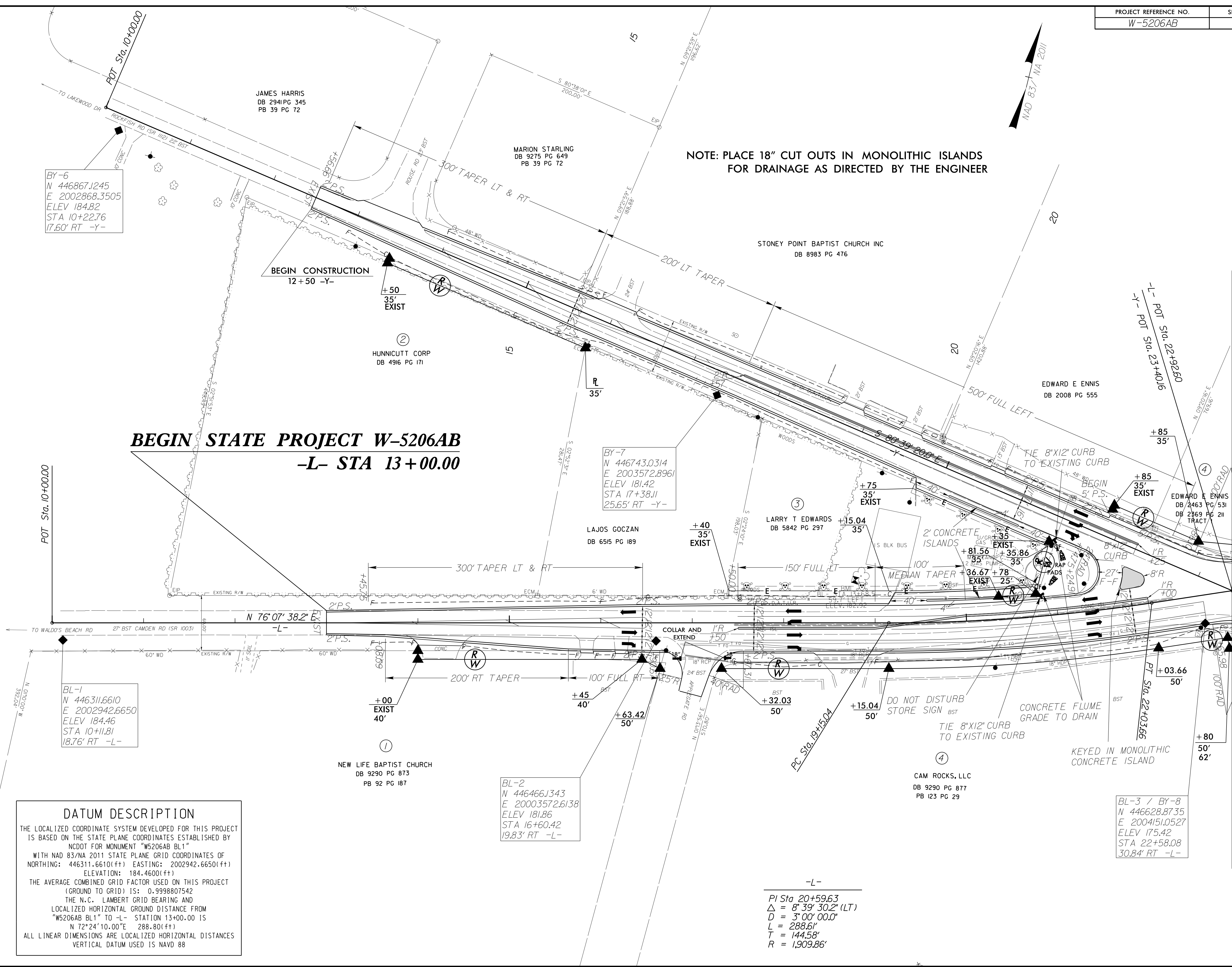
REVISIONS

8/17/99
25-NOV-2014 08:05
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8/17/99

REVISIONS

I:\NOV-2014 15:36 W-5206AB Camden and Rockfish Roads\Cumden\land Co\Roadway\pcoj\W5206AB_Rdy_psh_4.dgn
 31383517.DWG
 31383517.DWG



BY-6
 N 446867.1245
 E 2002868.3505
 ELEV 184.82
 STA 10+22.76
 17.60' RT -Y-

JAMES HARRIS
 DB 294 PG 345
 PB 39 PG 72

MARION STARLING
 DB 9275 PG 649
 PB 39 PG 72

NOTE: PLACE 18" CUT OUTS IN MONOLITHIC ISLANDS
 FOR DRAINAGE AS DIRECTED BY THE ENGINEER

STONEY POINT BAPTIST CHURCH INC
 DB 8983 PG 476

HUNNICUTT CORP
 DB 4916 PG 171

EDWARD E ENNIS
 DB 2008 PG 555

BEGIN STATE PROJECT W-5206AB
-L- STA 13+00.00

BY-7
 N 446743.0314
 E 2003572.8961
 ELEV 181.42
 STA 17+38.11
 25.65' RT -Y-

LAJOS GOCCAN
 DB 655 PG 189

LARRY T EDWARDS
 DB 5842 PG 297

EDWARD E ENNIS
 DB 2463 PG 531
 DB 2369 PG 211
 TRACT

BL-1
 N 446311.6610
 E 2002942.6650
 ELEV 184.46
 STA 10+11.81
 18.76' RT -L-

NEW LIFE BAPTIST CHURCH
 DB 9290 PG 873
 PB 92 PG 187

BL-2
 N 446466.1343
 E 20003572.6138
 ELEV 181.86
 STA 16+60.42
 19.83' RT -L-

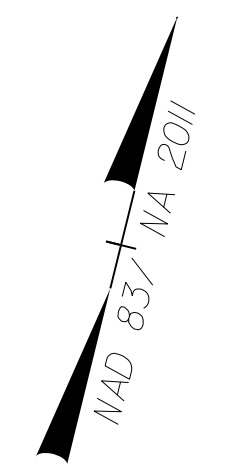
CAM ROCKS, LLC
 DB 9290 PG 877
 PB 123 PG 29

BL-3 / BY-8
 N 446628.8735
 E 2004151.0527
 ELEV 175.42
 STA 22+58.08
 30.84' RT -L-

DATUM DESCRIPTION
 THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "W5206AB BL1" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 446311.6610(ft) EASTING: 2002942.6650(ft) ELEVATION: 184.4600(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998807542 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "W5206AB BL1" TO -L- STATION 13+00.00 IS N 72°24'10.00"E 288.80(ft) ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

-L-
 PI Sta 20+59.63
 $\Delta = 8^{\circ}39'30.2''$ (LT)
 D = 3'00'00.0"
 L = 288.61'
 T = 144.58'
 R = 1,909.86'

MATCHLINE -L- 22 + 92.60 / -Y- 23 + 40.16 SHEET 5



END STATE PROJECT W-5206AB

-L- STA 30+80.00

NOTE: PLACE 18" CUT OUTS IN MONOLITHIC ISLANDS FOR DRAINAGE AS DIRECTED BY THE ENGINEER

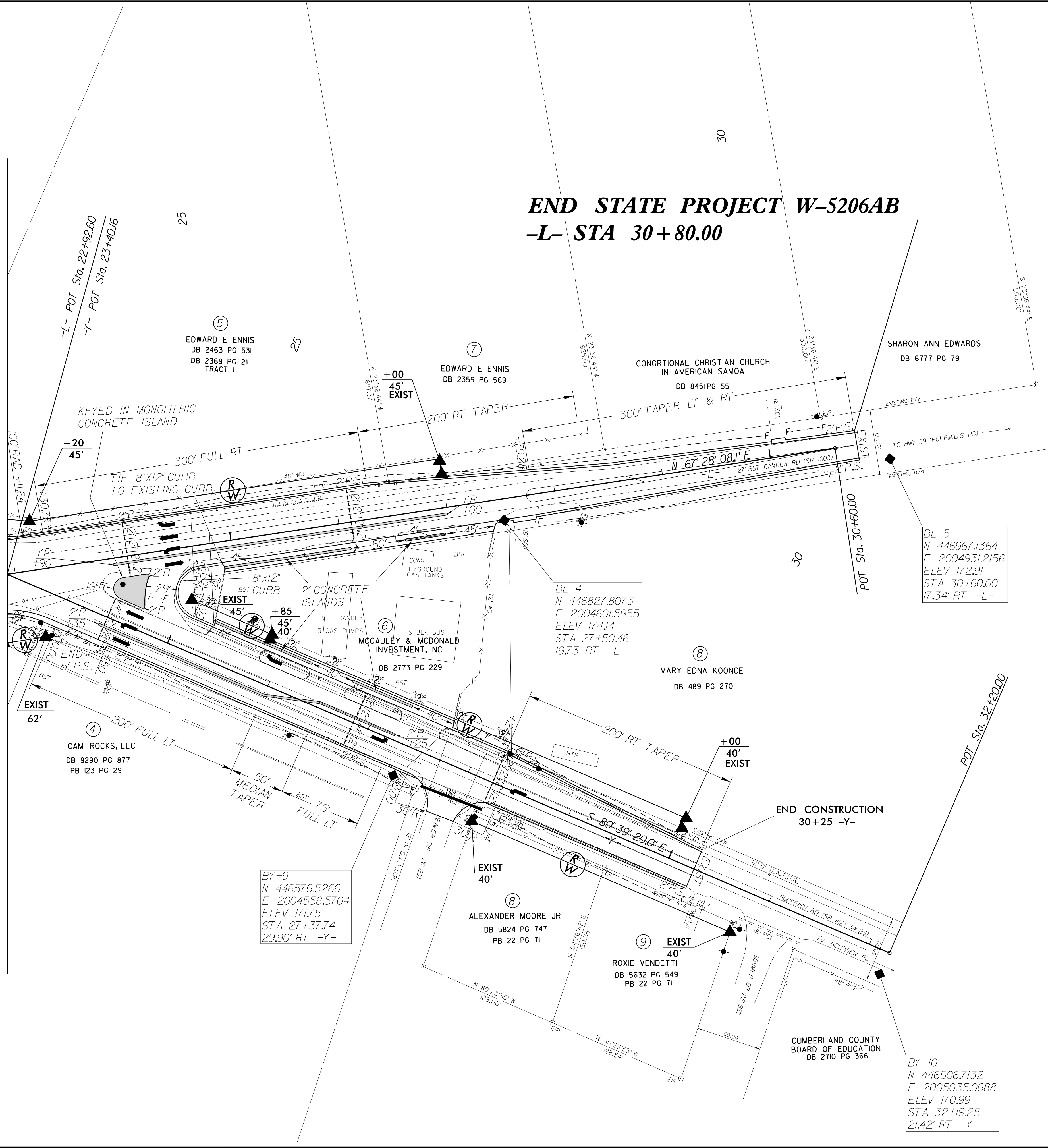
MATCHLINE -L- 22+92.60 /-Y- 23+40.16 SHEET 4

REVISIONS

8/18/14

DRIVEWAYS ON PARCEL 6 WERE INCREASED TO 50' AND 45'

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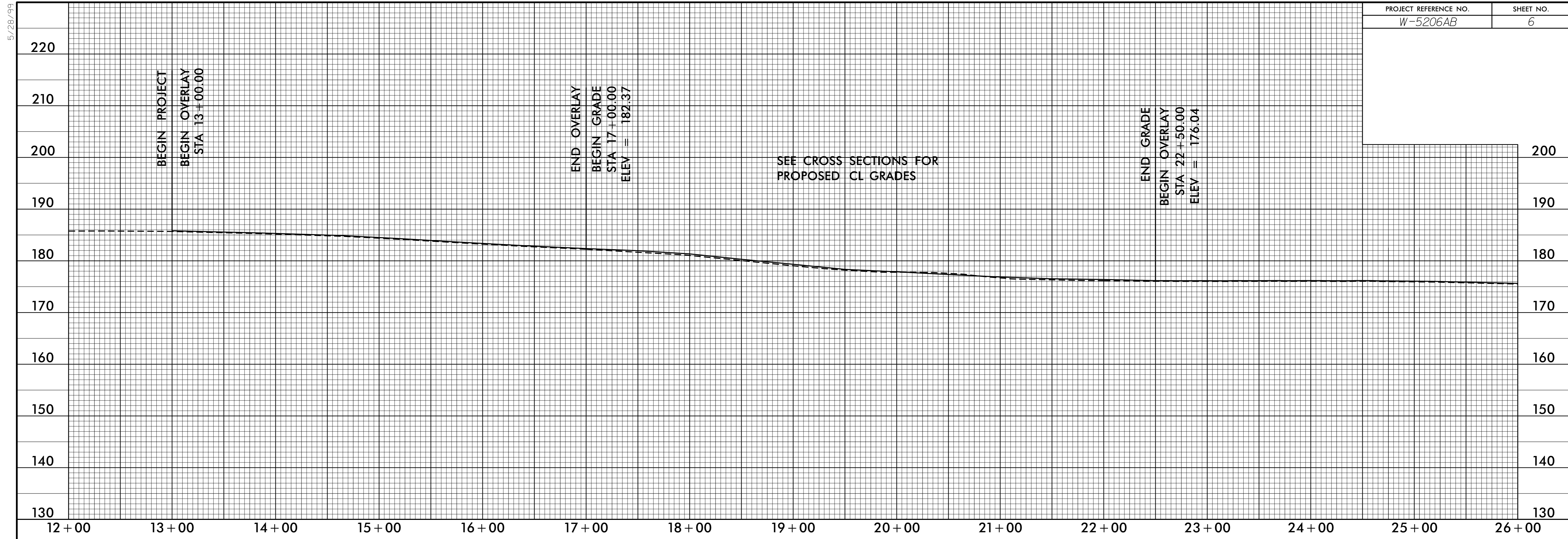
BY-9
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E 2004558.5704
ELEV 171.75
STA 27+37.74
29.90' RT -Y-

BL-4
N 446827.8073
E 2004601.5955
ELEV 174.14
STA 27+50.46
19.73' RT -L-

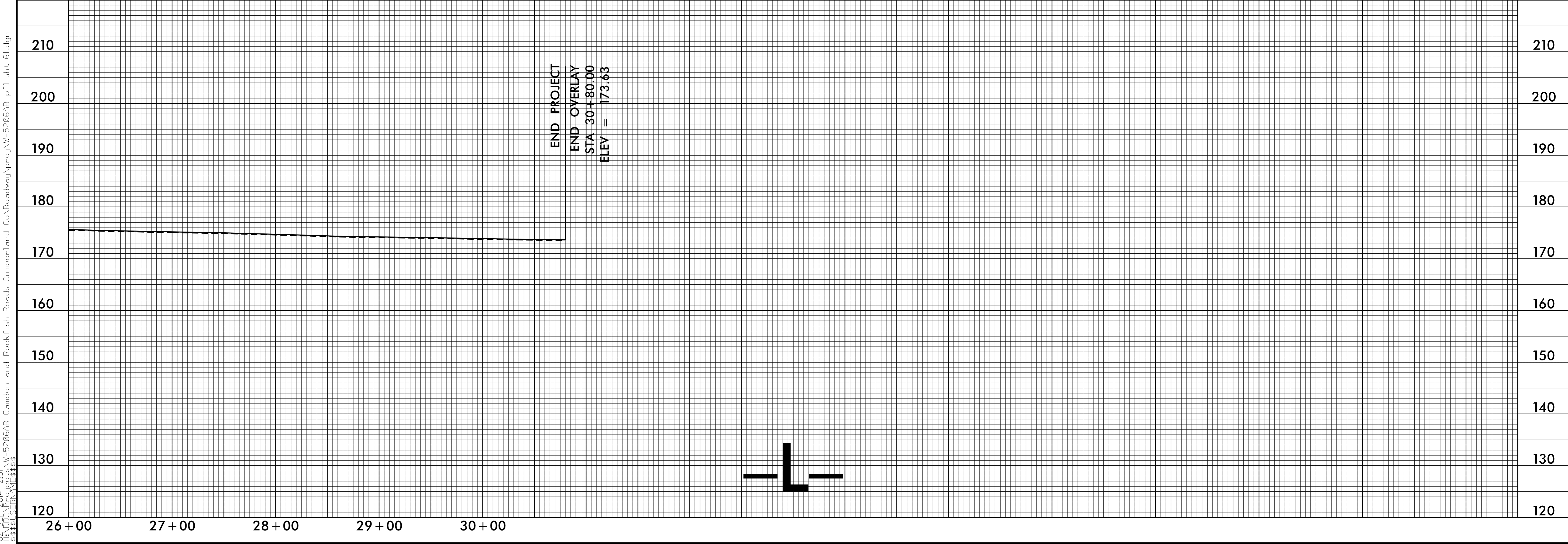
BL-5
N 446967.1364
E 2004931.2156
ELEV 172.91
STA 30+60.00
17.34' RT -L-

BY-10
N 446506.7132
E 2005035.0688
ELEV 170.99
STA 32+19.25
21.42' RT -Y-

5/28/99

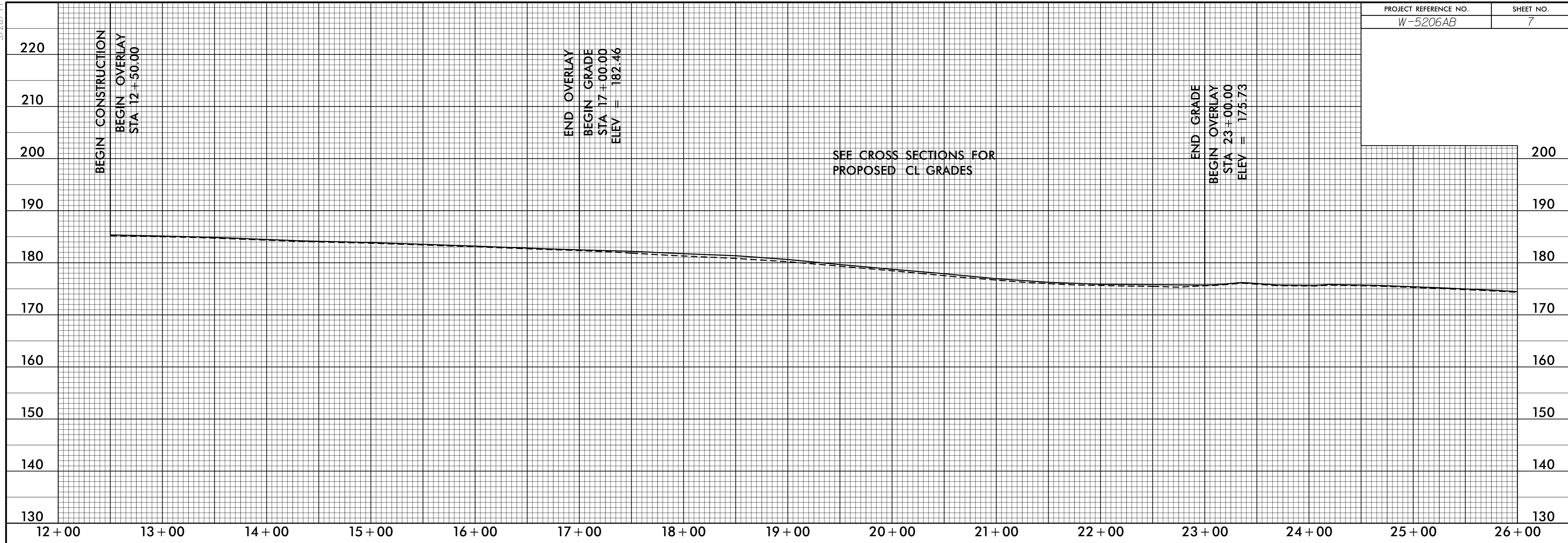


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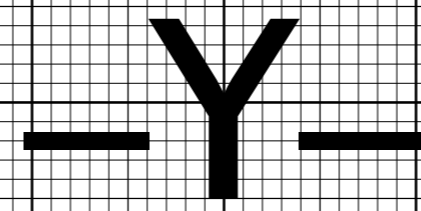
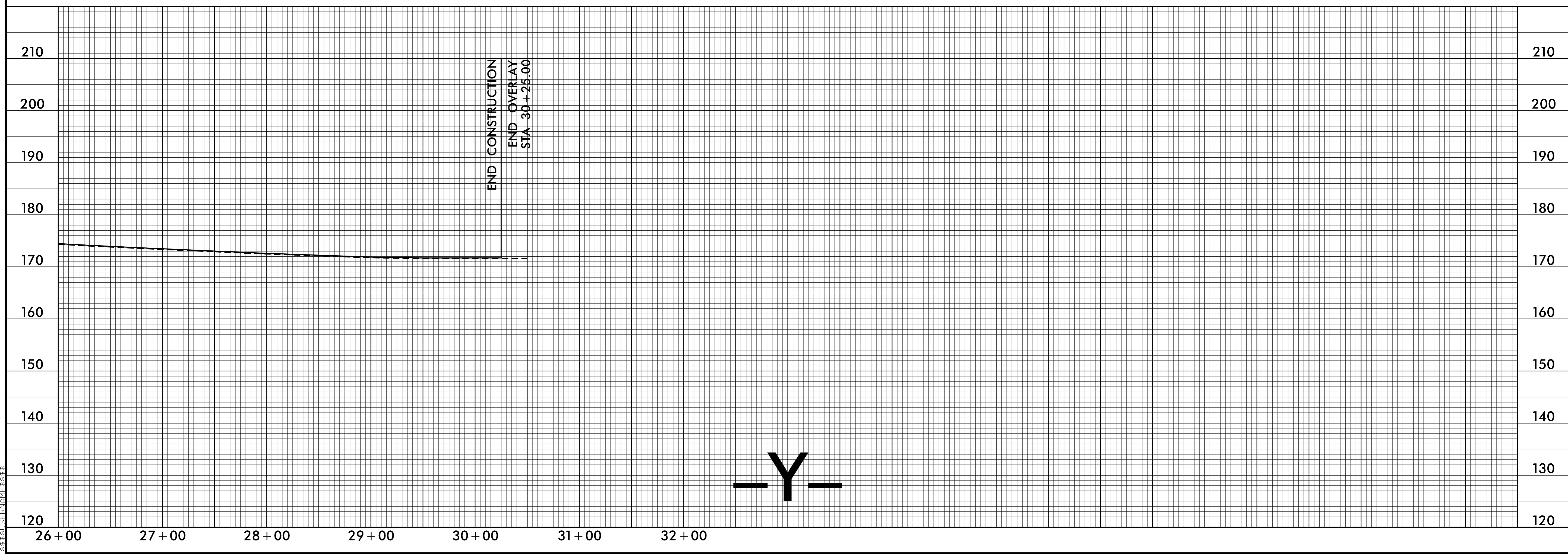


5/28/99

PROJECT REFERENCE NO.	SHEET NO.
W-5206AB	7



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PHASING DIAGRAM

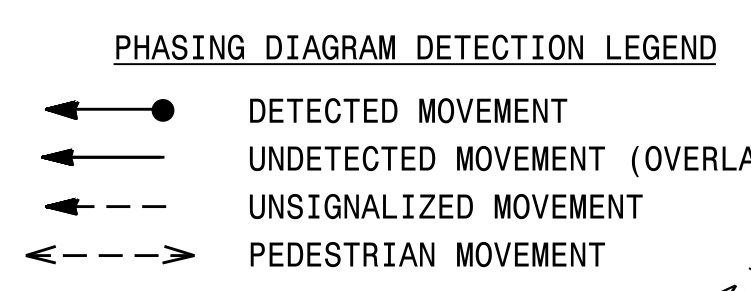
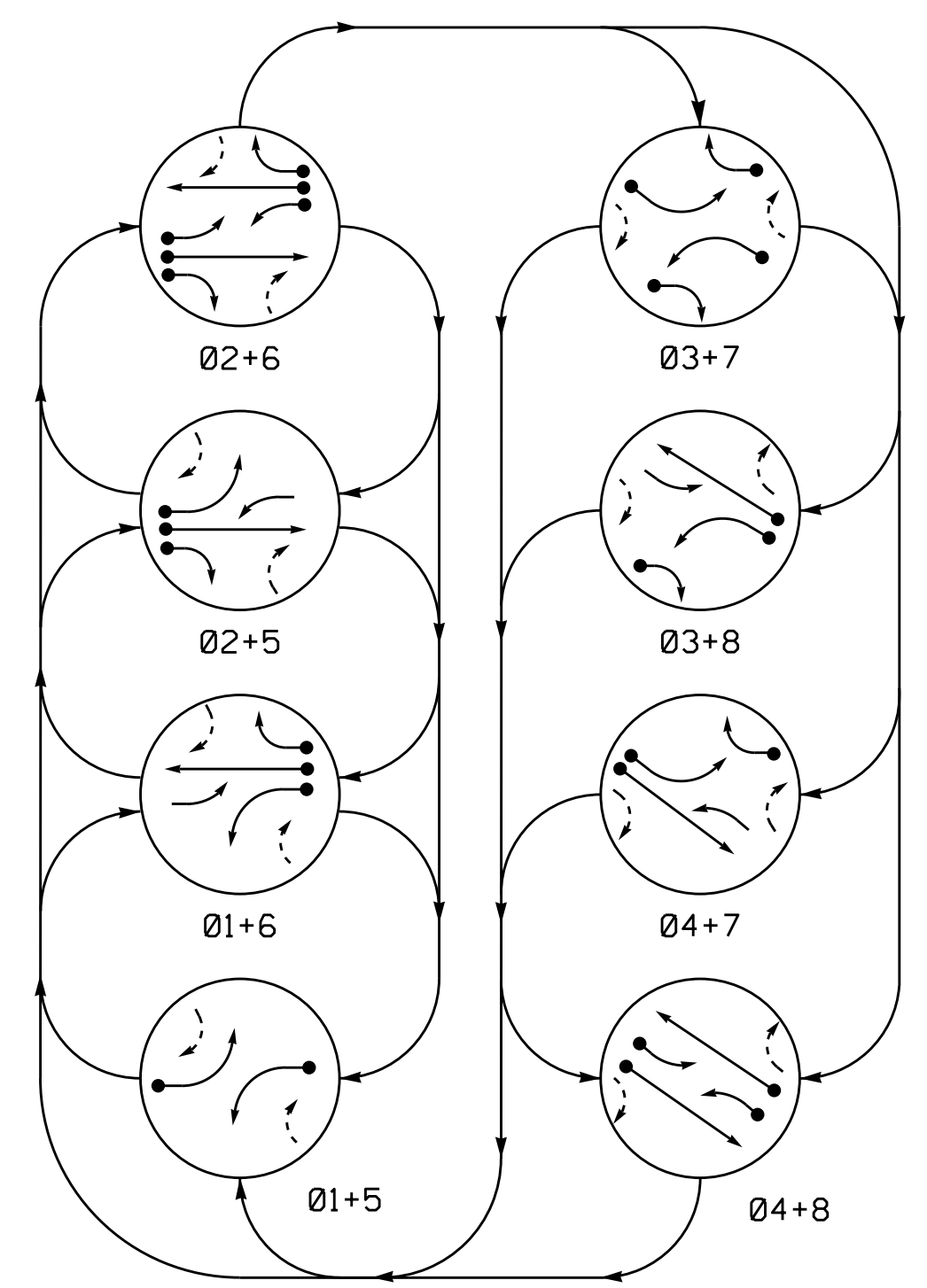
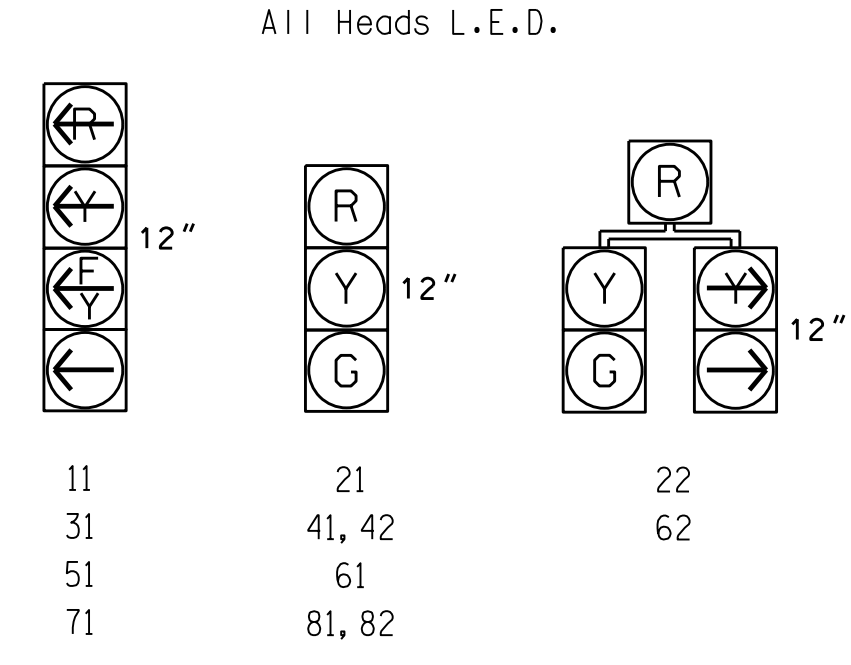


TABLE OF OPERATION

SIGNAL FACE	PHASE							
	Ø1+5	Ø1+6	Ø2+5	Ø2+6	Ø3+5	Ø3+6	Ø4+5	Ø4+6
11	—	—	—	—	—	—	—	—
21	R	R	G	G	R	R	R	Y
22	R	R	G	G	R	R	R	Y
31	R	R	R	R	—	—	—	—
41,42	R	R	R	R	R	R	G	G
51	—	—	—	—	—	—	—	—
61	R	G	R	G	R	R	R	Y
62	R	G	R	G	R	R	R	Y
71	R	R	R	R	—	—	—	—
81,82	R	R	R	R	G	R	G	R

SIGNAL FACE I.D.



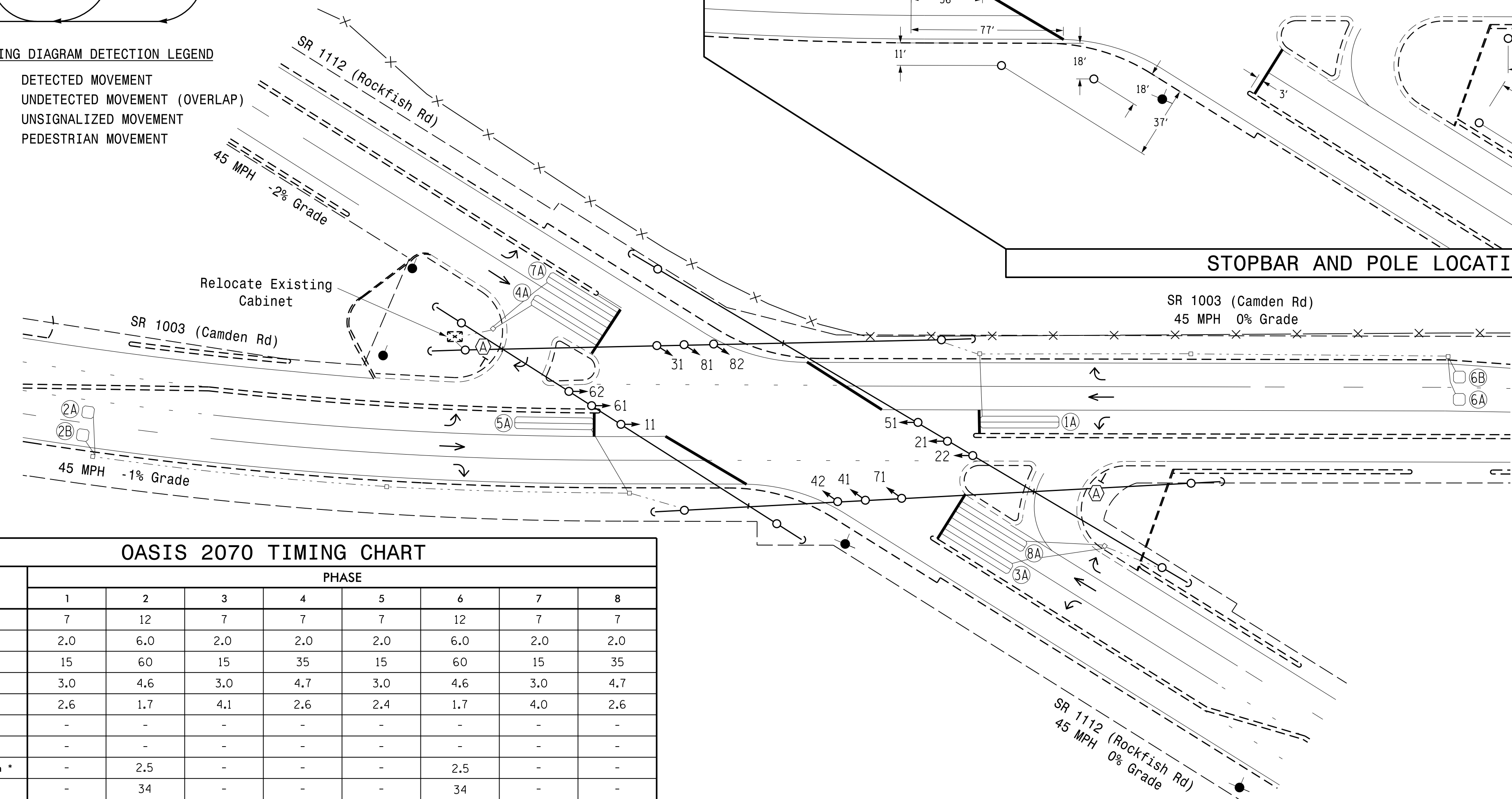
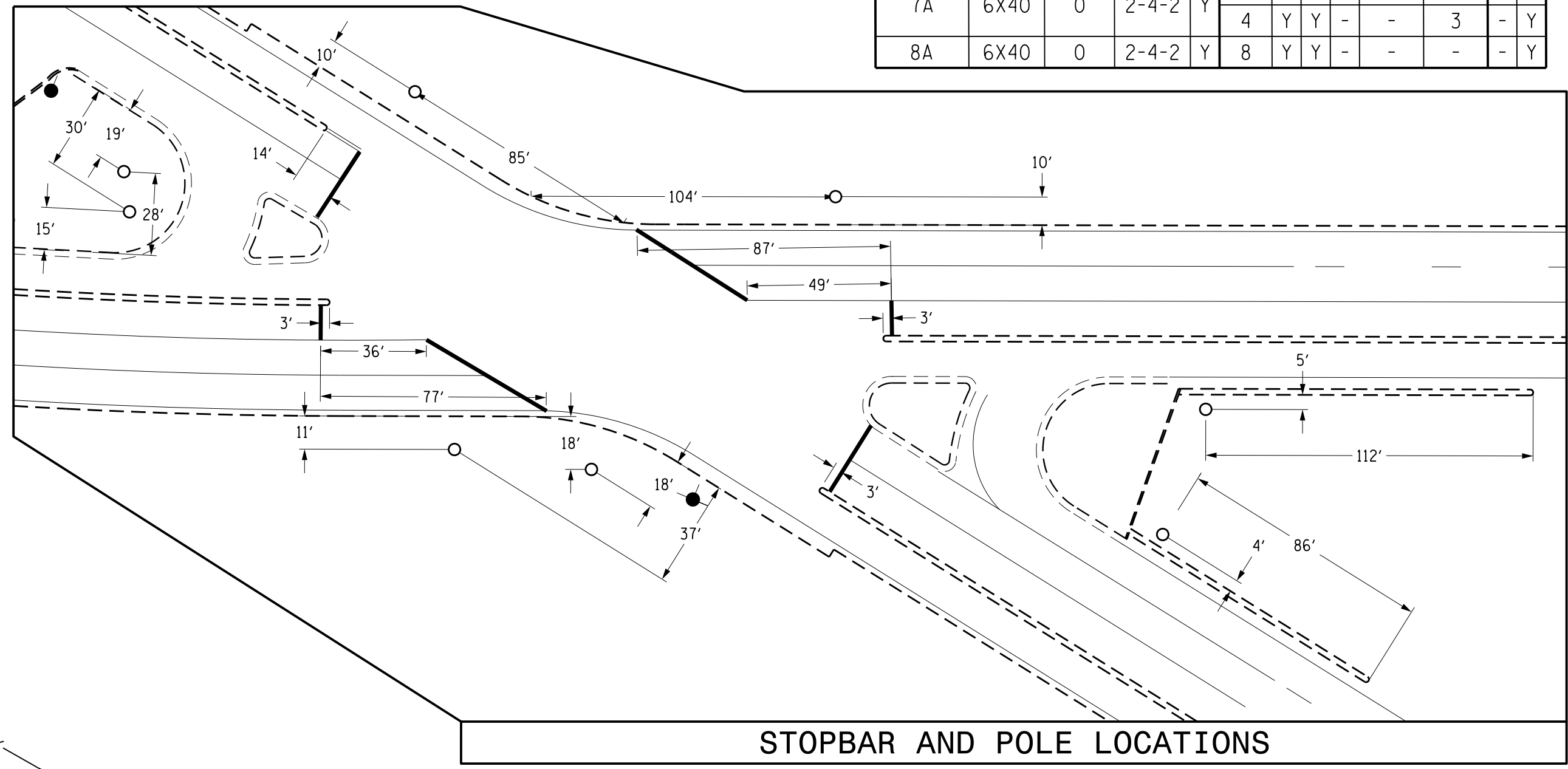
OASIS 2070 LOOP & DETECTOR INSTALLATION CHART

LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	DETECTOR PROGRAMMING							
					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	-	Y
2A	6X6	300	6	Y	2	Y	Y	-	-	-	-	Y
2B	6X6	300	6	Y	2	Y	Y	-	-	-	-	Y
3A	6X40	0	2-4-2	Y	3	Y	Y	-	-	15	-	Y
4A	6X40	0	2-4-2	Y	4	Y	Y	-	-	-	-	Y
5A	6X40	0	2-4-2	Y	5	Y	Y	-	-	15	-	Y
6A	6X6	300	6	Y	6	Y	Y	-	-	-	-	Y
6B	6X6	300	6	Y	6	Y	Y	-	-	-	-	Y
7A	6X40	0	2-4-2	Y	7	Y	Y	-	-	15	-	Y
8A	6X40	0	2-4-2	Y	8	Y	Y	-	-	-	-	Y

8 Phase Fully Actuated Isolated

NOTES

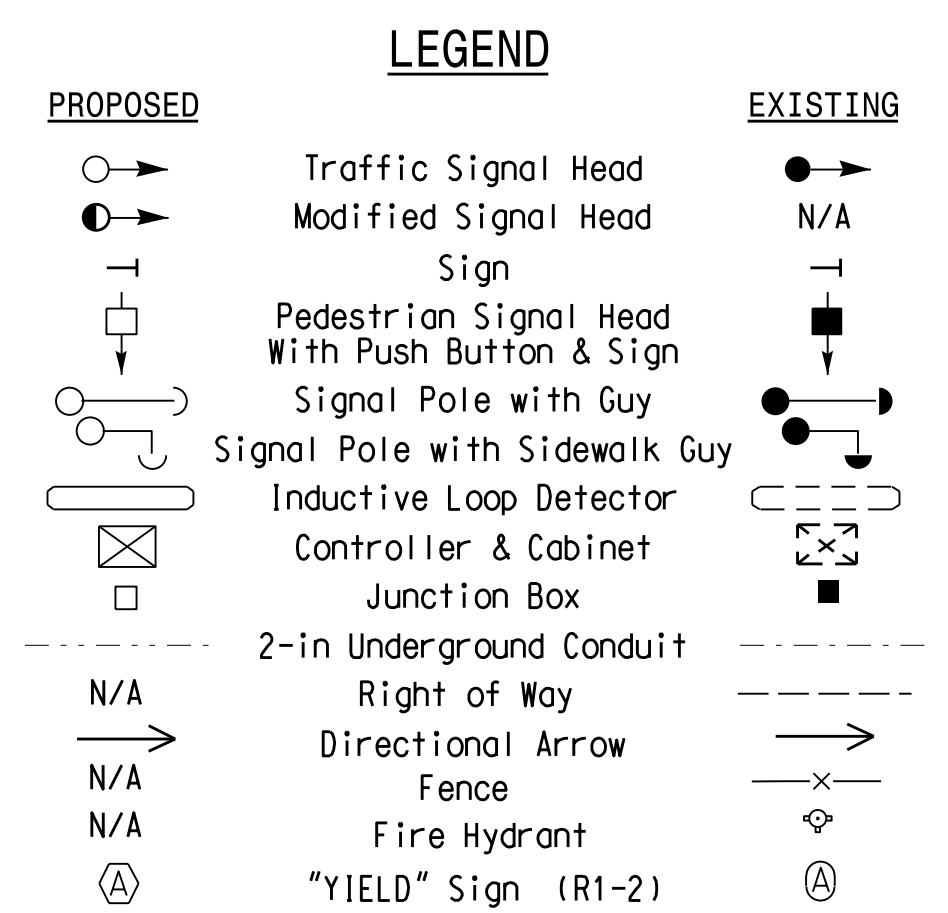
- Refer to "Roadway Standard Drawings NCDOT" dated January 2012 and "Standard Specifications for Roads and Structures" dated January 2012.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 1 and/or phase 5 may be lagged.
- Phase 3 and/or phase 7 may be lagged.
- Set all detector units to presence mode.
- Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.



OASIS 2070 TIMING CHART

FEATURE	PHASE							
	1	2	3	4	5	6	7	8
Min Green 1 *	7	12	7	7	7	12	7	7
Extension 1 *	2.0	6.0	2.0	2.0	2.0	6.0	2.0	2.0
Max Green 1 *	15	60	15	35	15	60	15	35
Yellow Clearance	3.0	4.6	3.0	4.7	3.0	4.6	3.0	4.7
Red Clearance	2.6	1.7	4.1	2.6	2.4	1.7	4.0	2.6
Walk 1 *	-	-	-	-	-	-	-	-
Don't Walk 1	-	-	-	-	-	-	-	-
Seconds Per Actuation *	-	2.5	-	-	-	2.5	-	-
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	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 Plan Sealed April 3, 2014

Signal Upgrade

Prepared In the Offices of:

 TRANSPORTATION MOBILITY AND SAFETY SOLUTIONS
 A DIVISION OF THE STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 Signal Design Section
 750 N. Greenfield Pkwy, Garner, NC 27529

SR 1003 (Camden Road) at SR 1112 (Rockfish Road)

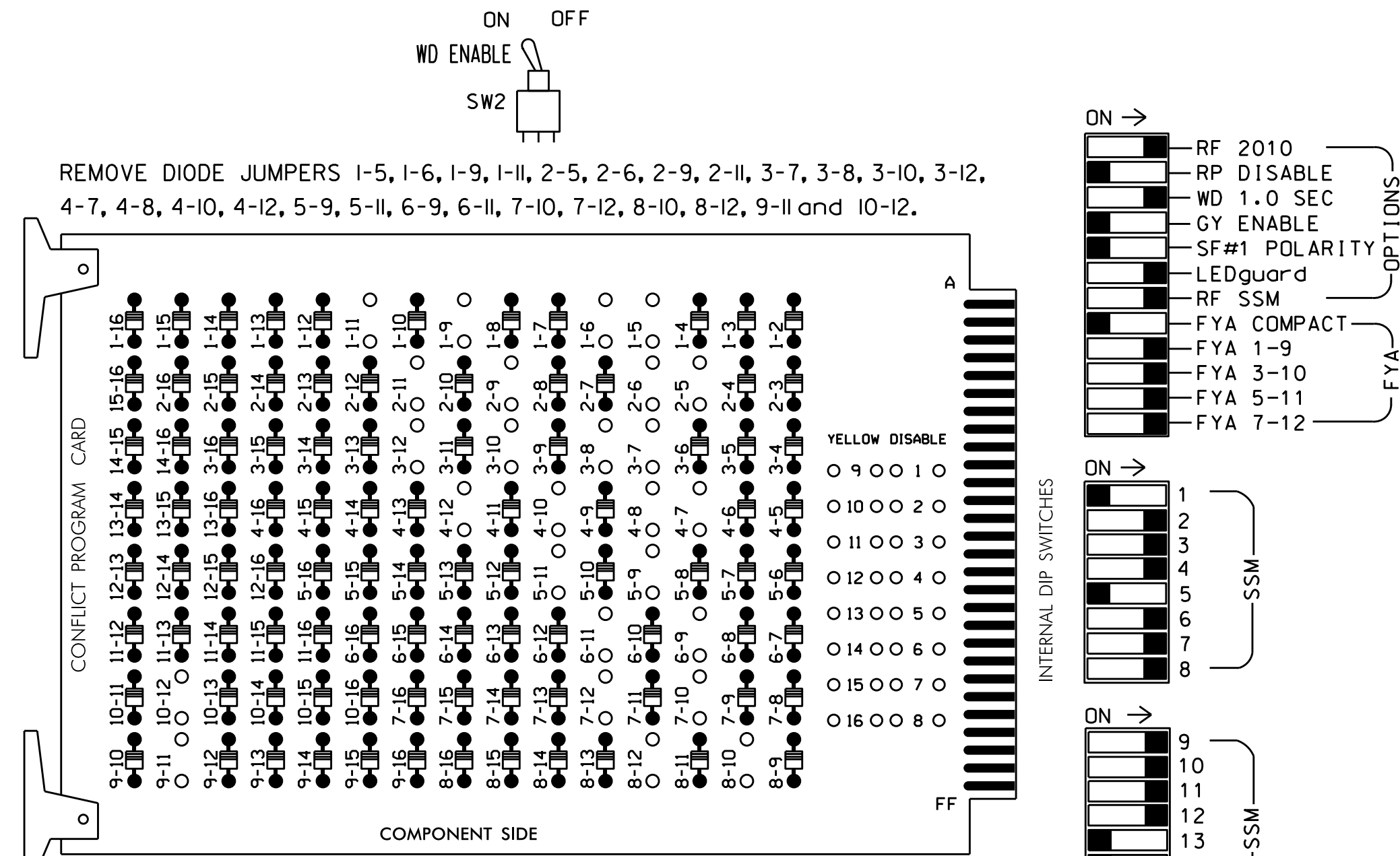
Division 6 - Cumberland County Hope Mills
 PLAN DATE: July 2014 REVIEWED BY:
 PREPARED BY: EM Minshew REVIEWED BY:
 REVISIONS INIT. DATE
 DocuSign by: Jason Gallaway 7/30/2014
 F70EA704B1841D DATE
 SIG. INVENTORY NO. 06-0470

SCALE 1"=40'

30-JUL-2014 08:33
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 Jason Gallaway

EDI MODEL 2010ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

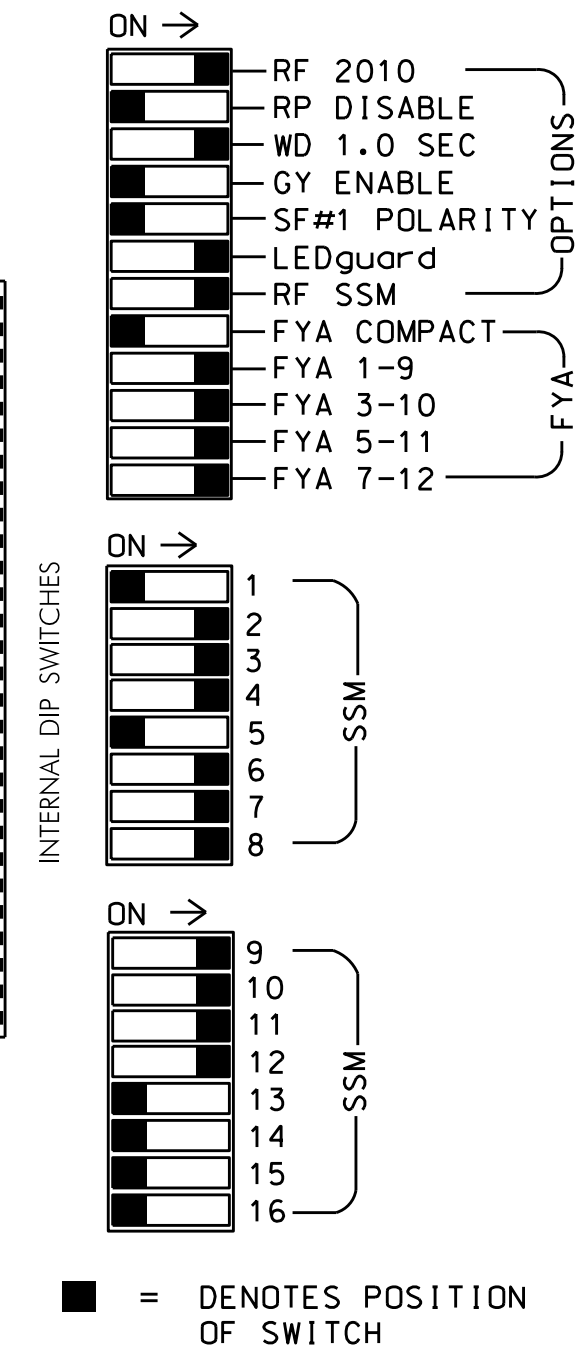


REMOVE DIODE JUMPERS 1-5, 1-6, 1-9, 1-II, 2-5, 2-6, 2-9, 2-II, 3-7, 3-8, 3-10, 3-12, 4-7, 4-8, 4-10, 4-12, 5-9, 5-II, 6-9, 6-II, 7-10, 7-12, 8-10, 8-12, 9-II and 10-12.

REMOVE JUMPERS AS SHOWN

NOTES:

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



■ = DENOTES POSITION OF SWITCH

INPUT FILE POSITION LAYOUT

(front view)

FILE	1	2	3	4	5	6	7	8	9	10	11	12	13	14
U	∅ 1 1A	∅ 2 2A	∅ S TOP	∅ 3 3A	∅ 4 4A	∅ S TOP	∅ S TOP	∅ S TOP	∅ S TOP	∅ S TOP	∅ S TOP	∅ S TOP	∅ S TOP	FS DC ISOLATOR
L	NOT USED	∅ 2 2B	∅ S BOTTOM	NOT USED	NOT USED	∅ S BOTTOM	∅ S BOTTOM	∅ S BOTTOM	∅ S BOTTOM	∅ S BOTTOM	∅ S BOTTOM	∅ S BOTTOM	∅ S BOTTOM	ST DC ISOLATOR
U	∅ 5 5A	∅ 6 6A	∅ S TOP	∅ 7 7A	∅ 8 8A	∅ S TOP	∅ S TOP	∅ S TOP	∅ S TOP	∅ S TOP	∅ S TOP	∅ S TOP	∅ S TOP	∅ S TOP
L	NOT USED	∅ 6 6B	∅ S BOTTOM	NOT USED	NOT USED	∅ S BOTTOM	∅ S BOTTOM	∅ S BOTTOM	∅ S BOTTOM	∅ S BOTTOM	∅ S BOTTOM	∅ S BOTTOM	∅ S BOTTOM	∅ S BOTTOM

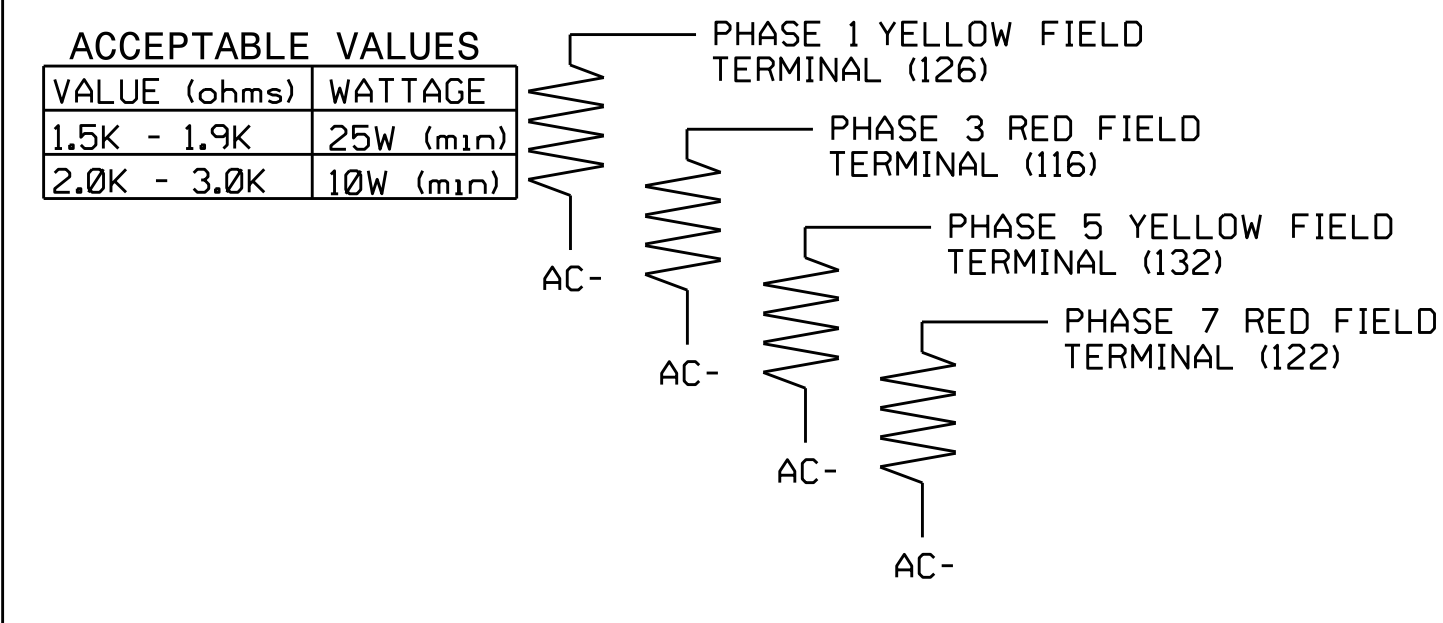
EX.: 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE
ST = STOP TIME

⊗ Wired Input - Do not populate slot with detector card

LOAD RESISTOR INSTALLATION DETAIL

(install resistors as shown below)



NOTES

- 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.
- 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, 13,14,15 & 16 to load switch AC+ per the cabinet manufacturer's instructions.
- Program phases 4 and 8 for Dual Entry.
- Enable Simultaneous Gap-Out for all phases.
- Program phases 2 and 6 for Variable Initial and Gap Reduction.
- Program phases 2 and 6 for Start Up In Green.
- Program phases 2 and 6 for Yellow Flash, and overlaps 1 and 2 as Wag Overlaps.

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★	41,42	NU	51★	61,62	NU	62	71★	81,82	NU	11★	31★	NU	51★	71★	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						123						A122	A125		A115	A102
FLASHING YELLOW ARROW																A123	A126		A116	A103
GREEN ARROW	127			118	118			133		124	124									

NU = Not Used

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

★ See pictorial of head wiring in detail this sheet.

EQUIPMENT INFORMATION

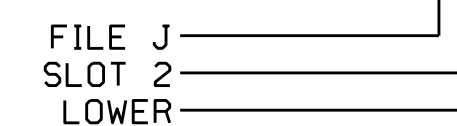
CONTROLLER.....2070L
 CABINET.....332 /W/ AUX
 SOFTWARE.....ECONOLITE OASIS
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
 LOAD SWITCHES USED.....S1,S2,S3,S4,S5,S6,S7,S8,S9,S10,
 S12,S13
 PHASES USED.....1,2,3,4,5,6,7,8
 OVERLAP "A".....1+2
 OVERLAP "B".....3+4
 OVERLAP "C".....5+6
 OVERLAP "D".....7+8

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			
	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			
4A	TB4-9,10	I6U	41	3	4	4	Y	Y			
	TB3-1,2	J1U	55	17	5	5	Y	Y			15
5A ³	-	I4U	47	9	22	2	Y	Y	Y		3
	TB3-5,6	J2U	40	2	6	6	Y	Y			
6B	TB3-7,8	J2L	44	6	16	6	Y	Y			
	TB5-5,6	J5U	57	19	7	7	Y	Y			15
7A ⁴	-	I8U	49	11	24	4	Y	Y			3
	TB5-9,10	J6U	42	4	8	8	Y	Y			

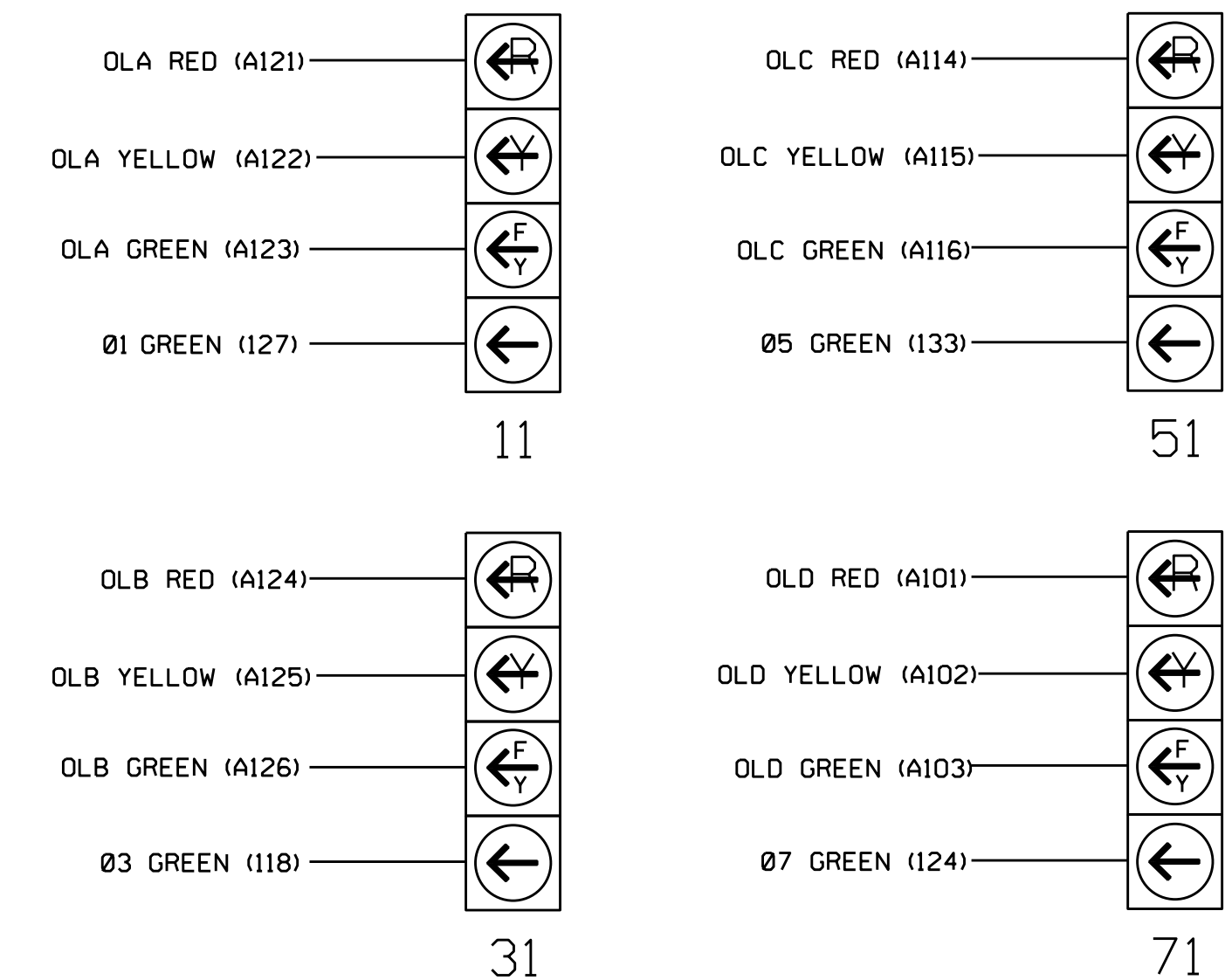
- Add jumper from I1-W to J4-W, on rear of input file.
- Add jumper from I5-W to J8-W, on rear of input file.
- Add jumper from J1-W to I4-W, on rear of input file.
- Add jumper from J5-W to I8-W, on rear of input file.

INPUT FILE POSITION LEGEND: J2L



4 SECTION FYA PPLT SIGNAL WIRING DETAIL

(wire signal heads as shown)



NOTE

- The sequence display for these signals require special logic programming. See sheet 2 of 2 for programming instructions.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 06-0470
 DESIGNED: July 2014
 SEALED: 7/30/14
 REVISED: N/A

THIS ELECTRICAL DETAIL SUPERSEDES THE DETAIL SEALED ON 04/07/14

ELECTRICAL DETAIL SHEET 1 OF 2

ELECTRICAL AND PROGRAMMING DETAILS FOR: Prepared In the Offices of: 750 N. Greenfield Pkwy, Garner, NC 27529	SR 1003 (Camden Road) at SR 1112 (Rockfish Road)		SEAL SEAL 022013 GEORGE C. BROWN
	Division 6 PLAN DATE: July 2014 PREPARED BY: C. Strickland	Cumberland County Hope Mills REVIEWED BY: T. Joyce REVIEWED BY:	

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 C:\Users\strickland\Documents\1112S\SIGNAL\WORKING\060470_sml.e.xxx.dgn

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, 9, 10, 11, AND 12.
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

PRESS '+'

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

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

↓
SCROLL DOWN

THEN:
SET OUTPUT ASSIGNMENT #52 OFF

PRESS '+'

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

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

↓
SCROLL DOWN

THEN:
SET OUTPUT ASSIGNMENT #51 ON

PRESS '+'

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

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

PRESS '+'

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

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

↓
SCROLL DOWN

THEN:
SET OUTPUT ASSIGNMENT #44 OFF

PRESS '+'

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

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

↓
SCROLL DOWN

THEN:
SET OUTPUT ASSIGNMENT #43 ON

PRESS '+'

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

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

PRESS '+'

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

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

↓
SCROLL DOWN

THEN:
SET OUTPUT ASSIGNMENT #49 OFF

PRESS '+'

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

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

↓
SCROLL DOWN

THEN:
SET OUTPUT ASSIGNMENT #48 ON

PRESS '+'

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

LOGICAL I/O COMMAND #10 (+/-COMMAND#)
IF ACTIVE PHASE #7 IS ON
AND RED CLEAR ON PHASE #7 IS ON

↓
SCROLL DOWN

THEN:
SET OUTPUT ASSIGNMENT #39 ON
SET OUTPUT ASSIGNMENT #40 OFF

PRESS '+'

NOTE: LOGIC FOR PHASE 7 RED CLEAR WHEN TRANSITIONING FROM PHASE 7 TO PHASE 8 (HEAD 71).

LOGICAL I/O COMMAND #11 (+/-COMMAND#)
IF ACTIVE PHASE #7 IS ON

↓
SCROLL DOWN

THEN:
SET OUTPUT ASSIGNMENT #41 OFF

PRESS '+'

NOTE: LOGIC FOR SWITCHING FLASHING YELLOW ARROW "OFF" DURING PHASE 7 (HEAD 71).

LOGICAL I/O COMMAND #12 (+/-COMMAND#)
IF YELLOW ON PHASE #7 IS ON

↓
SCROLL DOWN

THEN:
SET OUTPUT ASSIGNMENT #40 ON

PRESS '+'

NOTE: LOGIC FOR YELLOW ARROW CLEARANCE FROM PHASE 7 (HEAD 71).

LOGIC I/O PROCESSOR PROGRAMMING COMPLETE

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: 12345678910111213141516
VEH OVL PARENTS: XX
VEH OVL NOT VEH: XX
VEH OVL NOT PED: XX
VEH OVL GRN EXT: XX
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

PRESS '+'

← NOTICE GREEN FLASH

PAGE 1: VEHICLE OVERLAP 'B' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: XX
VEH OVL NOT VEH: XX
VEH OVL NOT PED: XX
VEH OVL GRN EXT: XX
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)...0.0
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

PRESS '+'

← NOTICE GREEN FLASH

PAGE 1: VEHICLE OVERLAP 'C' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: XX
VEH OVL NOT VEH: XX
VEH OVL NOT PED: XX
VEH OVL GRN EXT: XX
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

PRESS '+'

← NOTICE GREEN FLASH

PAGE 1: VEHICLE OVERLAP 'D' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: XX
VEH OVL NOT VEH: XX
VEH OVL NOT PED: XX
VEH OVL GRN EXT: XX
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)...0.0
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

PRESS '+'

← 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.

OUTPUT REFERENCE SCHEDULE

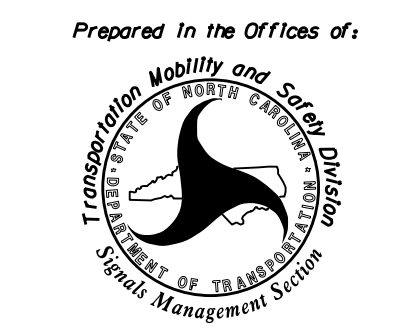
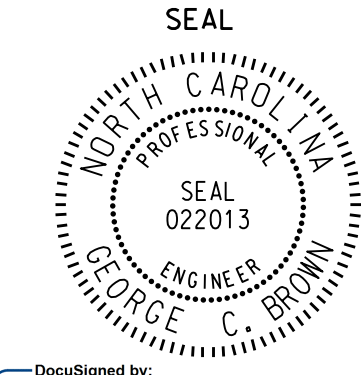
USE TO INTERPRET LOGIC PROCESSOR

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

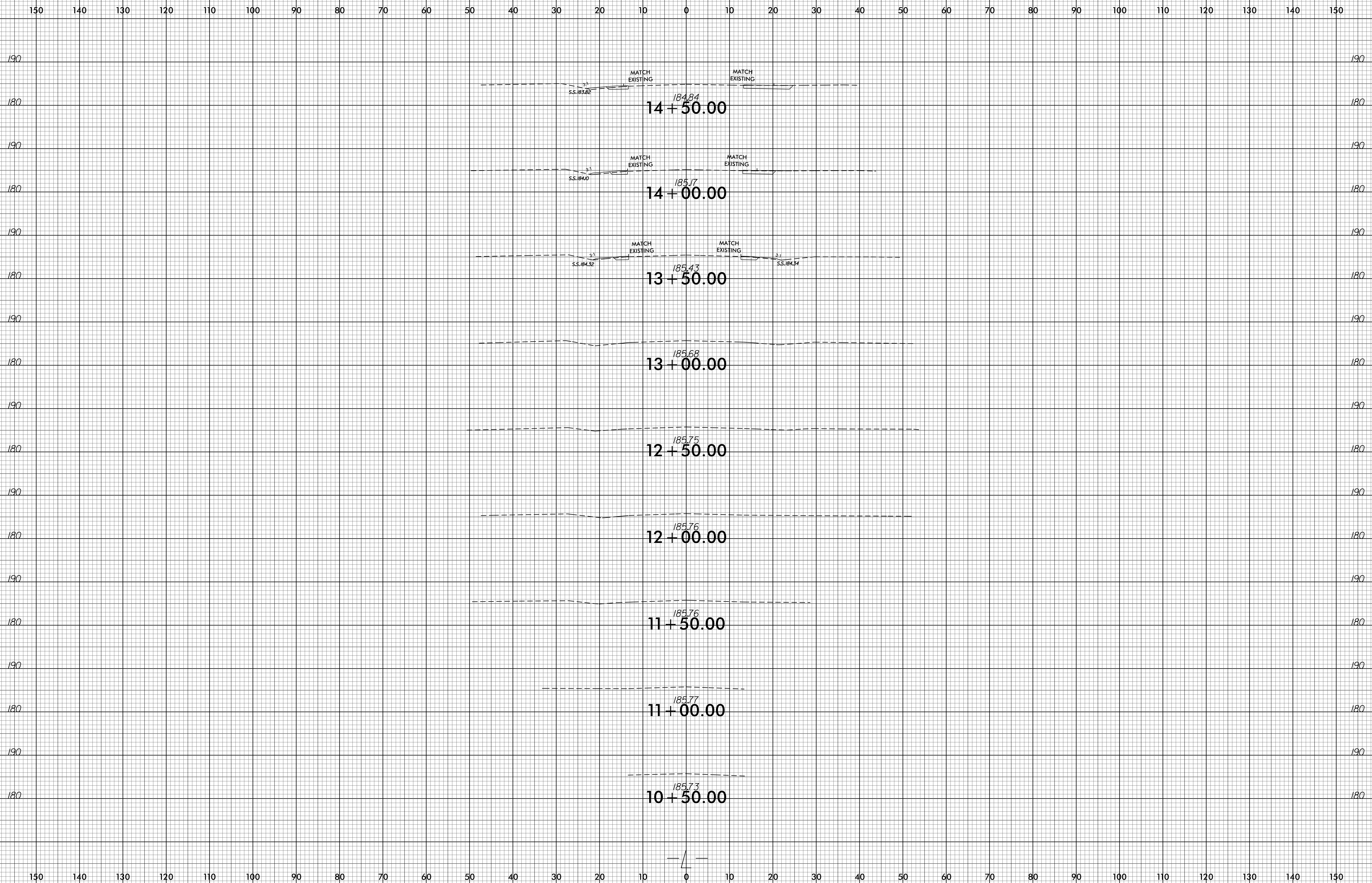
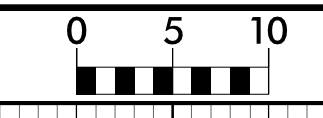
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DESIGNED: July 2014
SEALED: 7/30/14
REVISED: N/A

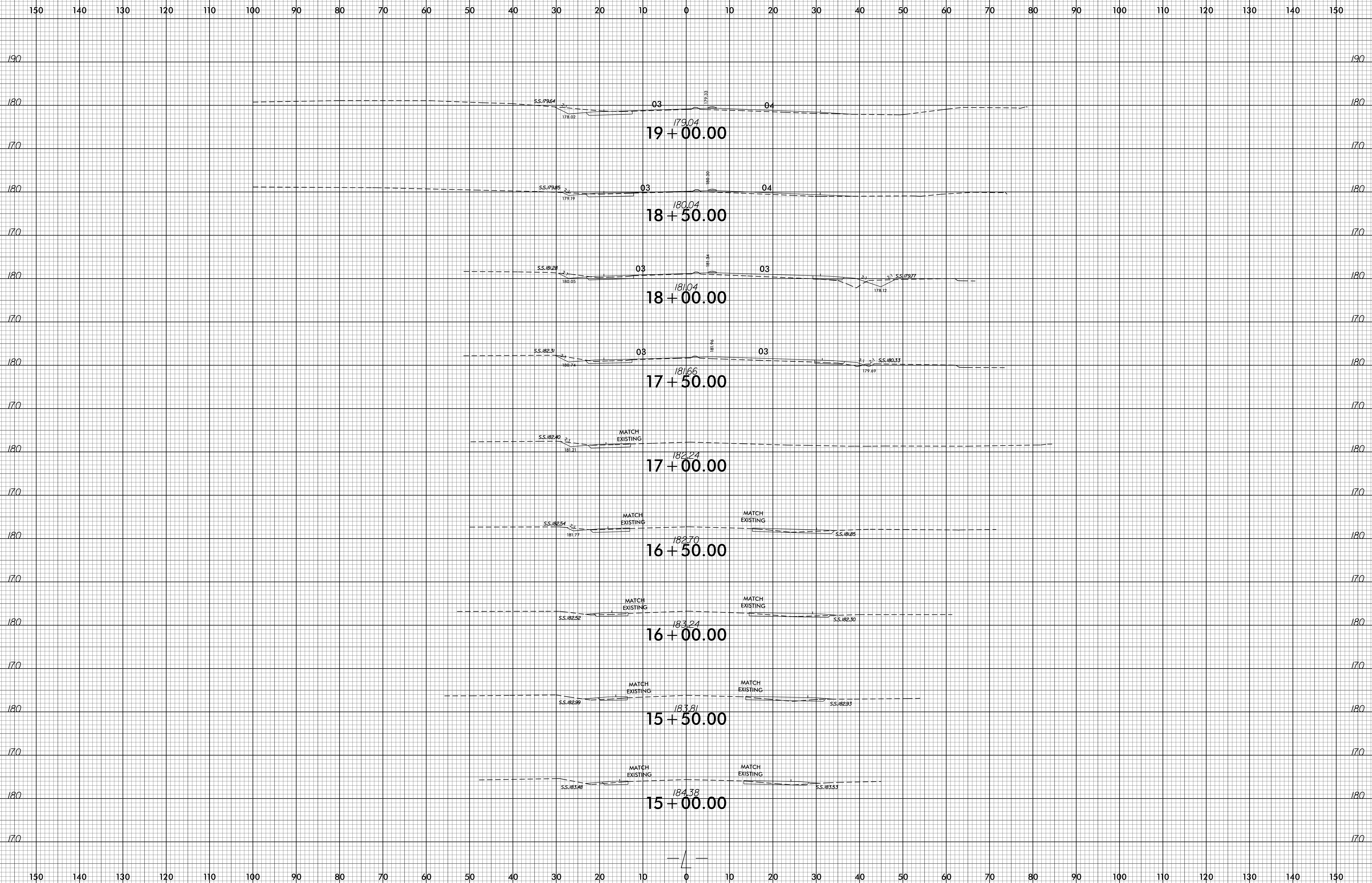
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SEALED ON 04/07/14

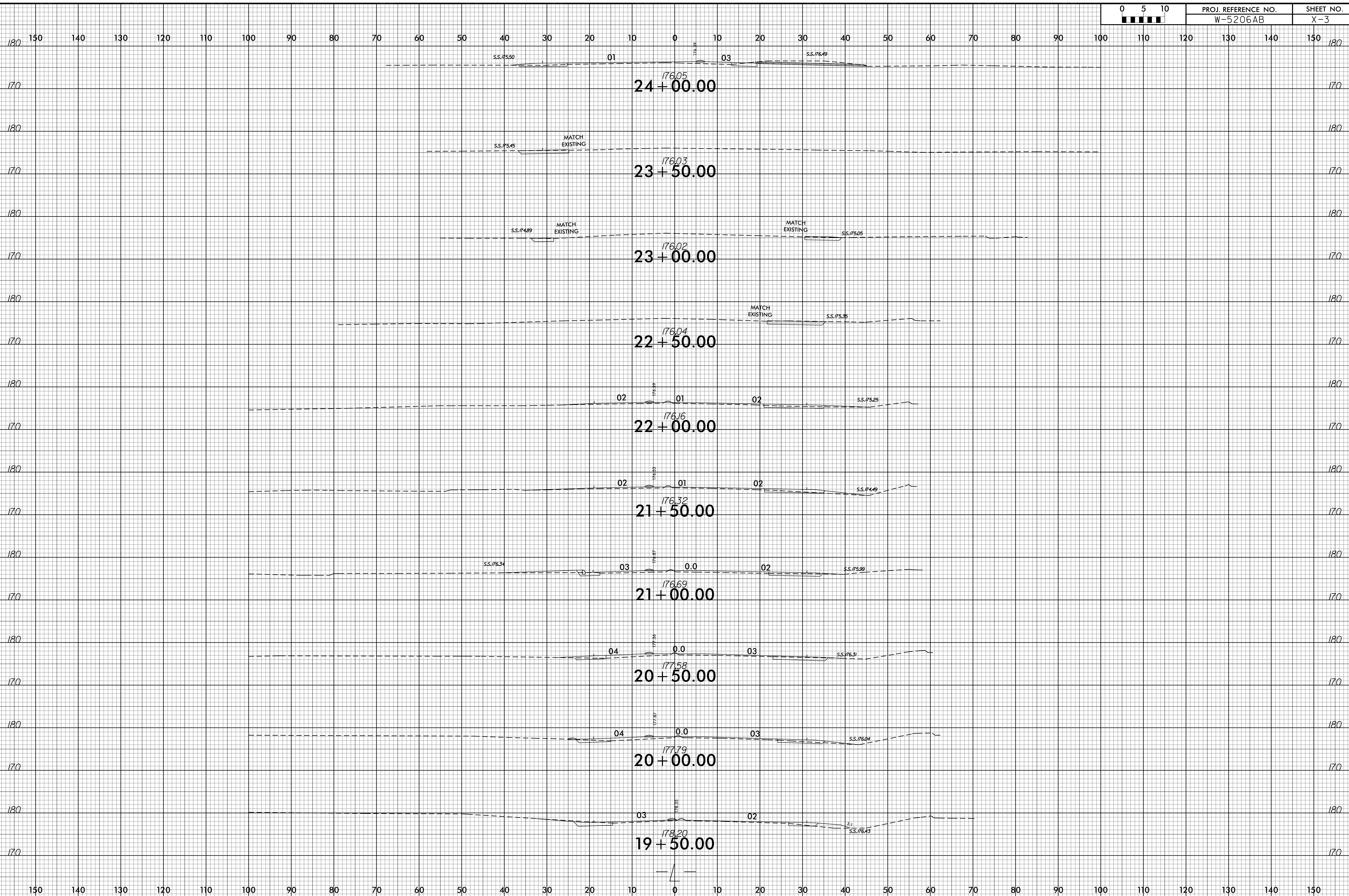
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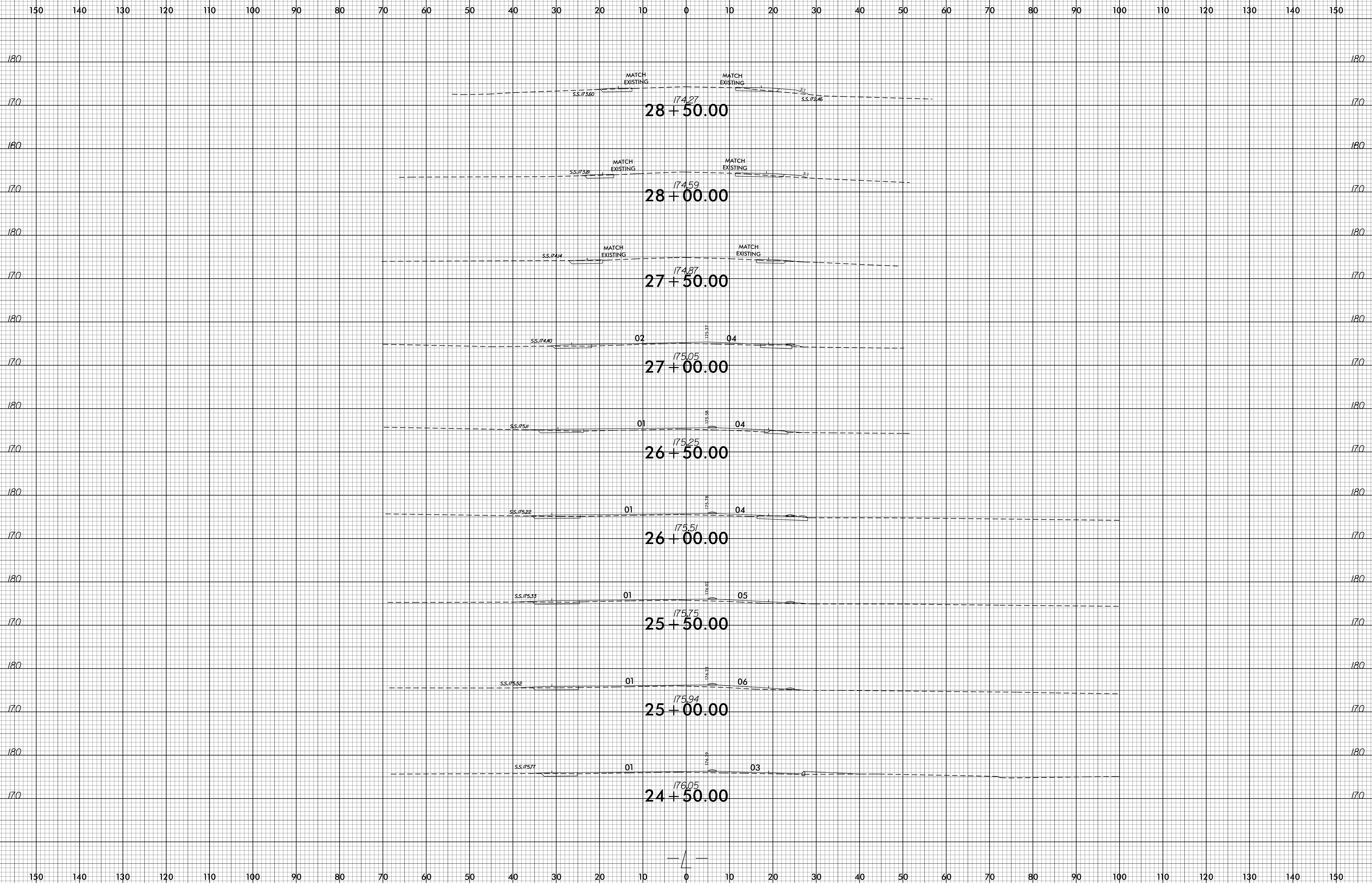
 Prepared in the Offices of: 750 N. Greenfield Pkwy, Garner, NC 27529	DETAILS FOR: SR 1003 (Camden Road) at SR 1112 (Rockfish Road)	SEAL  SEAL 022013 ENGINEER GEORGE C. BROWN
Division 6 Cumberland County Hope Mills PLAN DATE: July 2014 REVIEWED BY: T. Joyce PREPARED BY: C. Strickland REVIEWED BY:	REVISIONS INIT. DATE	DocuSigned by: George C. Brown 8/1/2014 DATE SIG. INVENTORY NO. 06-0470

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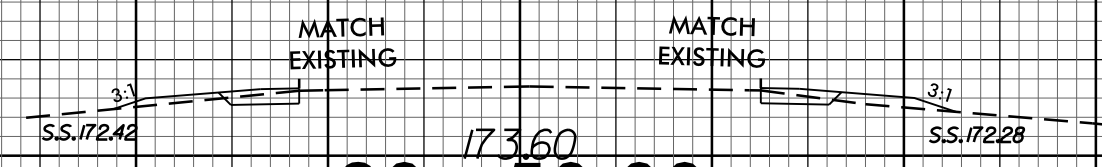


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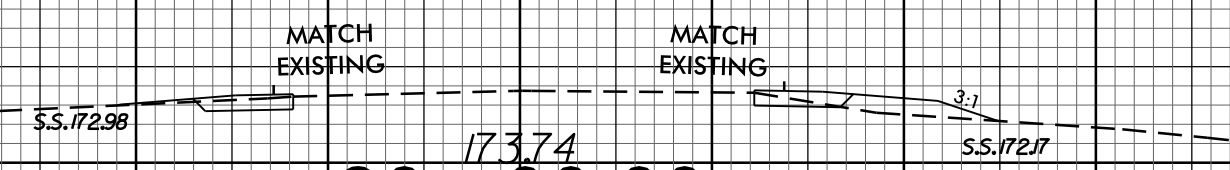
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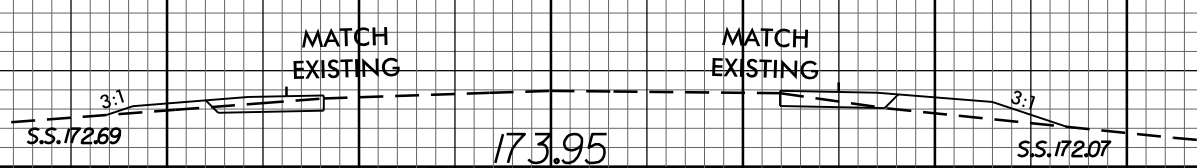
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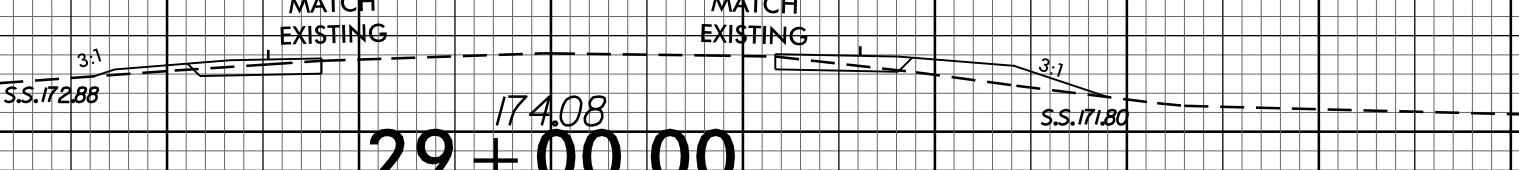
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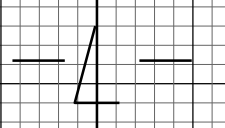
30 + 00.00



29 + 50.00



29 + 00.00



150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

