

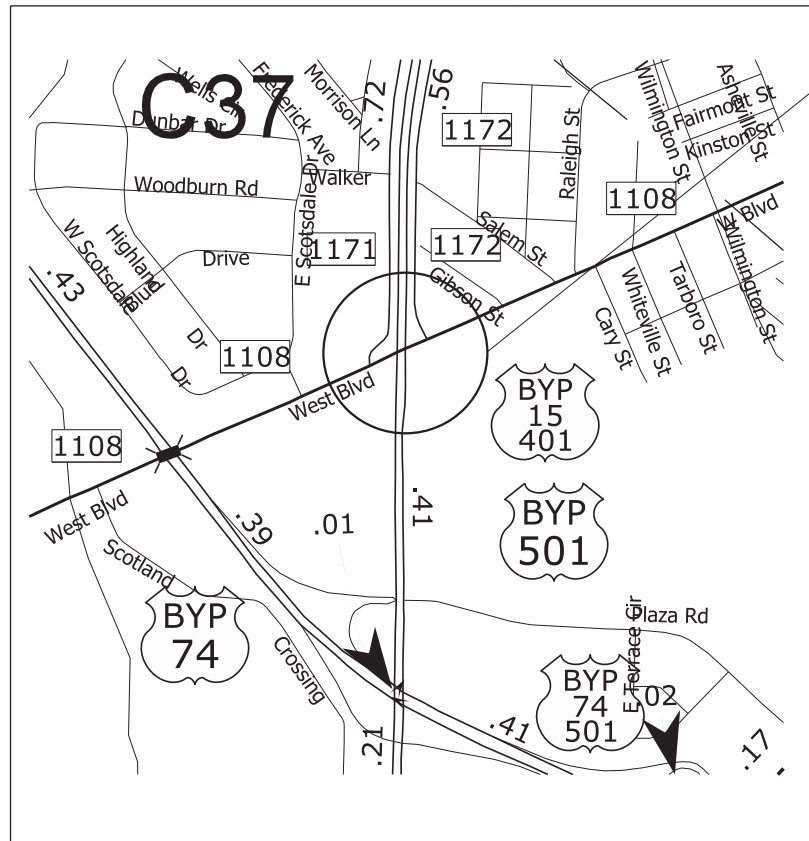
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PROJECT STATE OF NORTH CAROLINA
LOCATION DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	46915	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
46915		PE / CONST	

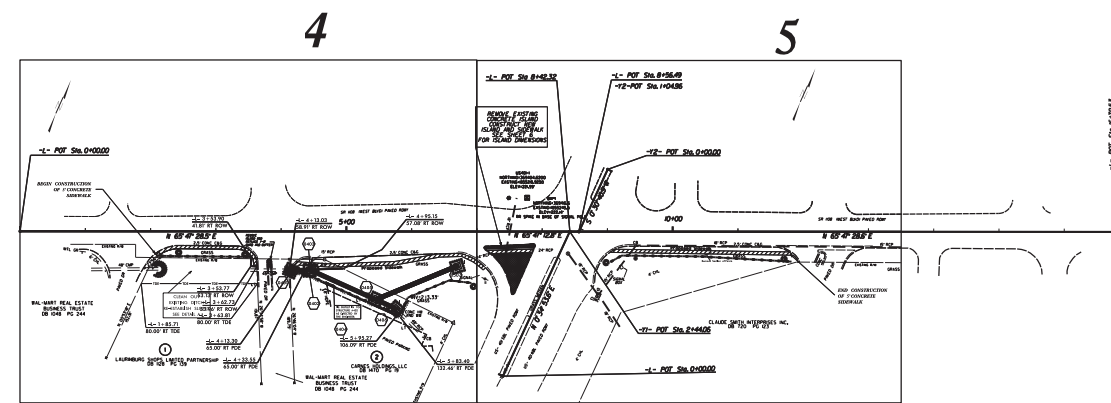


VICINITY MAP

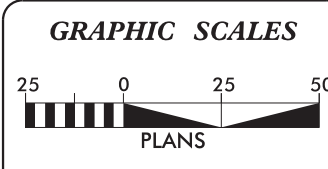
SCOTLAND COUNTY

LOCATION: SR 1108 (WEST BOULEVARD) AT US 401 BYPASS

TYPE OF WORK: GRADING, CONCRETE SIDEWALK, PEDESTRIAN SIGNAL, PAVEMENT MARKINGS, AND DRAINAGE



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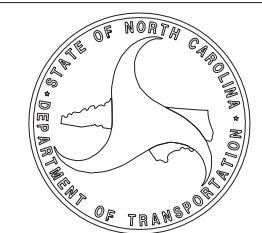


DESIGN DATA
 ADT 2016 = 7500
 V = 45 MPH

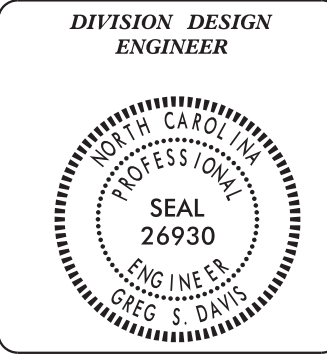
Prepared in the Office of:
DIVISION OF HIGHWAYS
DIVISION 8 DESIGN & CONSTRUCT UNIT
 902 N. SANDHILLS BLVD.
 ABERDEEN NC 28315

PROJECT LENGTH
 ROADWAY: 0.185 MILES
 STRUCTURE: _____ MILES
 TOTAL: 0.185 MILES

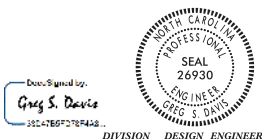
DIVISION OF HIGHWAYS
 2018 STANDARD SPECIFICATIONS
 RIGHT OF WAY DATE: _____
 LETTING DATE:
 FEBRUARY 27, 2018



HYDRAULICS ENGINEER
 SIGNATURE: _____ P.E.
DIVISION DESIGN ENGINEER
 DocuSigned by:
 Greg S. Davis
 1/26/2018
 SIGNATURE: _____ P.E.



PROJECT REFERENCE NO.	SHEET NO.
46915	1-A



1/26/2018

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UNLESS ALL SIGNATURES COMPLETED**

8/17/99

GENERAL NOTES

GRADING AND SURFACING OR RESURFACING AND WIDENING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE THE PROPER TIE-IN.

CLEARING

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01.

UTILITIES

ANY RELOCATION OF EXISTING UTILITIES, WILL BE ACCOMPLISHED BY OTHERS PRIOR TO THE DATE OF AVAILABILITY.

INDEX OF SHEETS

<u>SHEET NUMBER</u>	<u>SHEET</u>
1	TITLE SHEET
1-A	INDEX OF SHEETS
1-B	CONVENTIONAL SYMBOLS
2	DETAIL - CURB RAMPS
2-A	DETAIL - CURB RAMP DETAILS
3	SUMMARY OF QUANTITIES
3-A	EARTHWORK SUMMARY, PAVEMENT REMOVAL, ETC.
3-B	LIST OF PIPES, ETC.
4 THRU 6	PLAN SHEETS
TM-1 THRU TM-2	TRAFFIC MANAGEMENT PLANS
PM-1 THRU PM-2	PAVEMENT MARKING PLANS
EC-1 THRU EC-5	EROSION CONTROL PLANS
SIG. 1.0 THRU SIG. 2.5	SIGNAL PLANS
SIG. P1 THRU SIG. P3	PEDESTRIAN PUSHBUTTON LOCATIONS

2018 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January 16, 2018 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
200.03	Method of Clearing - Method III
300.01	Method of Pipe Installation
840.02	Concrete Catch Basin - 12" thru 54" Pipe
840.03	Frame, Grate and Hood - for Use on Standard Catch Basin
840.14	Concrete Drop Inlet - 12" thru 54" Pipe
840.20	Frames and Wide Slot Flat Grates
840.25	Anchorage for Frames - Brick, Concrete or Precast
840.66	Drainage Structure Steps
840.72	Pipe Collar
846.01	Concrete Curb, Gutter, Curb and Gutter
848.01	Concrete Sidewalk
848.05	Curb Ramp - Proposed Curb and Gutter
848.06	Curb Ramp - Existing Curb and Gutter
852.01	Concrete Islands

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 asdavis AT DIV8-304810

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

12/2/2016

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EIP
Computed Property Corner	-----
Property Monument	□ ECM
Parcel/Sequence Number	②③
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	-WLB-
Proposed Wetland Boundary	-WLB-
Existing Endangered Animal Boundary	-EAB-
Existing Endangered Plant Boundary	-EPB-
Existing Historic Property Boundary	-HPB-
Known Contamination Area: Soil	☠ S ☠
Potential Contamination Area: Soil	☠? S ☠?
Known Contamination Area: Water	☠ W ☠
Potential Contamination Area: Water	☠? W ☠?
Contaminated Site: Known or Potential	☠ ☠?

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	← FLOW
False Sump	◇

RAILROADS:

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

RIGHT OF WAY & PROJECT CONTROL:

Secondary Horiz and Vert Control Point	◆
Primary Horiz Control Point	○
Primary Horiz and Vert Control Point	●
Exist Permanent Easment Pin and Cap	◇
New Permanent Easement Pin and Cap	◆
Vertical Benchmark	⊕
Existing Right of Way Marker	△
Existing Right of Way Line	-----
New Right of Way Line	-----
New Right of Way Line with Pin and Cap	○ R/W
New Right of Way Line with Concrete or Granite R/W Marker	▲ R/W
New Control of Access Line with Concrete C/A Marker	○ C/A
Existing Control of Access	○
New Control of Access	○
Existing Easement Line	-E-
New Temporary Construction Easement	-E-
New Temporary Drainage Easement	-TDE-
New Permanent Drainage Easement	-PDE-
New Permanent Drainage / Utility Easement	-DUE-
New Permanent Utility Easement	-PUE-
New Temporary Utility Easement	-TUE-
New Aerial Utility Easement	-AUE-

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	○

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

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	●
U/G Power Line LOS B (S.U.E.*)	-----P-----
U/G Power Line LOS C (S.U.E.*)	-----P-----
U/G Power Line LOS D (S.U.E.*)	-----P-----

TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊕
Telephone Pedestal	⊕
Telephone Cell Tower	⊕
U/G Telephone Cable Hand Hole	○
U/G Telephone Cable LOS B (S.U.E.*)	-----T-----
U/G Telephone Cable LOS C (S.U.E.*)	-----T-----
U/G Telephone Cable LOS D (S.U.E.*)	-----T-----
U/G Telephone Conduit LOS B (S.U.E.*)	-----TC-----
U/G Telephone Conduit LOS C (S.U.E.*)	-----TC-----
U/G Telephone Conduit LOS D (S.U.E.*)	-----TC-----
U/G Fiber Optics Cable LOS B (S.U.E.*)	-----T FO-----
U/G Fiber Optics Cable LOS C (S.U.E.*)	-----T FO-----
U/G Fiber Optics Cable LOS D (S.U.E.*)	-----T FO-----

WATER:

Water Manhole	⊕
Water Meter	○
Water Valve	⊕
Water Hydrant	⊕
U/G Water Line LOS B (S.U.E.*)	-----W-----
U/G Water Line LOS C (S.U.E.*)	-----W-----
U/G Water Line LOS D (S.U.E.*)	-----W-----
Above Ground Water Line	A/G Water

TV:

TV Pedestal	⊕
TV Tower	⊕
U/G TV Cable Hand Hole	○
U/G TV Cable LOS B (S.U.E.*)	-----TV-----
U/G TV Cable LOS C (S.U.E.*)	-----TV-----
U/G TV Cable LOS D (S.U.E.*)	-----TV-----
U/G Fiber Optic Cable LOS B (S.U.E.*)	-----TV FO-----
U/G Fiber Optic Cable LOS C (S.U.E.*)	-----TV FO-----
U/G Fiber Optic Cable LOS D (S.U.E.*)	-----TV FO-----

GAS:

Gas Valve	◇
Gas Meter	⊕
U/G Gas Line LOS B (S.U.E.*)	-----G-----
U/G Gas Line LOS C (S.U.E.*)	-----G-----
U/G Gas Line LOS D (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
SS Forced Main Line LOS B (S.U.E.*)	-----FSS-----
SS Forced Main Line LOS C (S.U.E.*)	-----FSS-----
SS Forced Main Line LOS D (S.U.E.*)	-----FSS-----

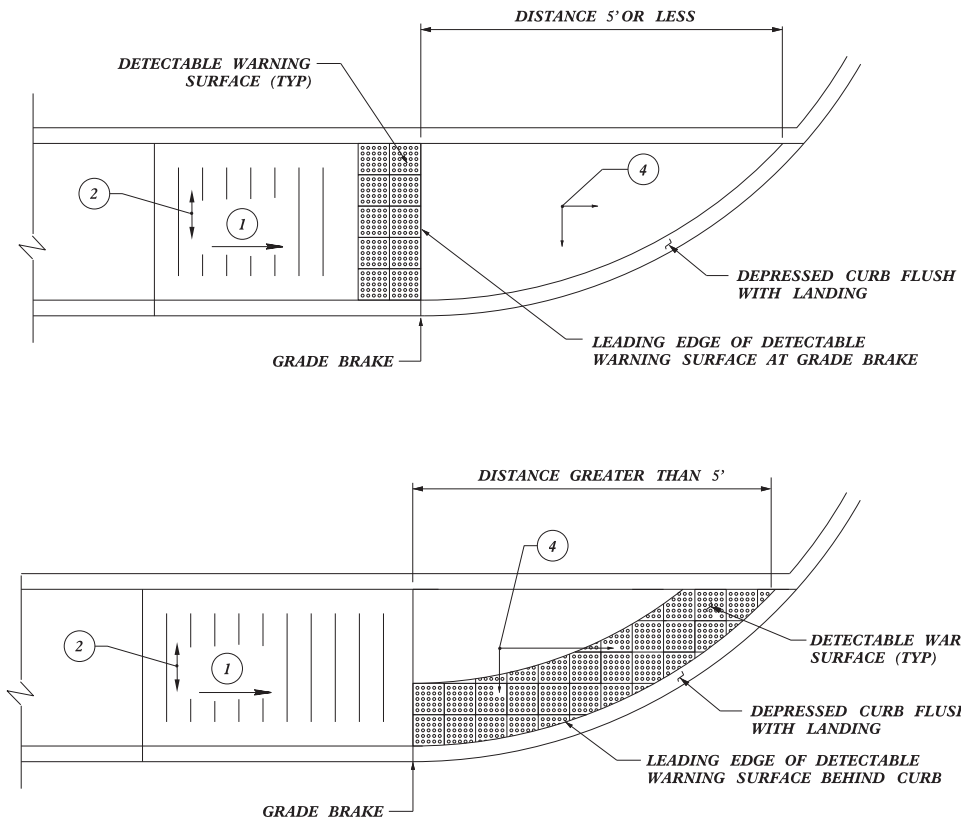
MISCELLANEOUS:

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

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



Drawn/Designed by:
Joel S. Howerton 1/26/2018
STP1810100046P



DETAIL 1

(CONSTRUCTION GUIDANCE FOR CURB RAMPS
WITH A TRIANGULAR LANDING)

CURB RAMP DETAILS

- ① RAMP SLOPE: 8.33% (12:1) MAX.
- ② CROSS SLOPE: 2.00% (50:1) MAX.
- ③ UNLESS OTHERWISE SPECIFIED ON CURB RAMP TYPE DETAIL, CURB RAMPS REQUIRE A 4'-0" X 4'-0" MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% (50:1) WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.
- ④ TRIANGULAR LANDING CROSS SLOPE AND LONGITUDIAL SLOPE: 2.00% (50:1) MAX

REVISIONS

8/17/99

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asda\asda

PROJECT NO.	SHEET NO.	TOTAL NO.
46915	3	

SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	0043000000-N	0318000000-E	0320000000-E	0335000000-E	0335850000-E	0366000000-E	0378000000-E	0402000000-E	0995000000-E	1297000000-E	1519000000-E	1575000000-E	2253000000-E	2286000000-N	2308000000-E	2365000000-N	2374000000-N	2542000000-E	2591000000-E	2605000000-N	2655000000-E
					GRADING	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES	FOUNDATION CONDITIONING GEOTEXTILE	8" DRAINAGE PIPE	8" DRAINAGE PIPE ELBOWS	15" RC PIPE CULVERT, CLASS III	24" RC PIPE CULVERT, CLASS III	48" RC PIPE CULVERTS, CLASS III	PIPE REMOVAL	1.5" MILLING	SURFACE COURSE, S9.5B	ASPHALT BINDER FOR PLANT MIX	PIPE COLLAR	MASONRY DRAINAGE STRUCTURE	MASONRY DRAINAGE STRUCTURE (LF)	FRAME WITH TWO GRATES, STD 840.22	FRAME WITH GRATE & HOOD, STD 840.03, TYPE E	1'-6" CURB & GUTTER	4" CONCRETE SIDEWALK	CONCRETE CURB RAMP	5" MONOLITHIC CONCRETE ISLANDS(KEYED-IN)
					LS	TON	SY	LF	EA	LF	LF	LF	LF	SY	TONS	TONS	CY	EA	LF	EA	EA	LF	SY	EA	SY
46915	Scotland	1	SR 1108 (WEST BLVD)	SIDEWALK AND DRAINAGE IMPROVEMENTS ALONG SR 1108 (WEST BLVD) TO US 401 BUS.	1	40	115	32	2	8	134	164	12	85	15	1	0.3990	5	5.00	4	1	10	460	6	255
TOTAL FOR MAP NO. 1					1	40	115	32	2	8	134	164	12	85	15	1	0.3990	5	5.00	4	1	10	460	6	255
TOTAL FOR PROJ NO. 46915					1	40	115	32	2	8	134	164	12	85	15	1	0.3990	5	5.00	4	1	10	460	6	255
GRAND TOTAL					1	40	115	32	2	8	134	164	12	85	15	1	0.3990	5	5.00	4	1	10	460	6	255

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	3574000000-E	6000000000-E	6006000000-E	6012000000-E	6015000000-E	6036000000-E	6042000000-E	6071010000-E	6071020000-E	6084000000-E	6090000000-E	6108000000-E	6132000000-N	7048500000-E	7060000000-E	7120000000-E	7132000000-E	7288000000-E	7300000000-E	7301000000-E	7324000000-N
					GENERIC FENCING ITEM - REMOVE CHAIN LINK FENCE	TEMPORARY SILT FENCE	EROSION CONTROL STONE, CLASS A	SEDIMENT CONTROL STONE	TEMPORARY MULCHING	MATTING (EROSION CONTROL)	1/4" HARDWARE CLOTH	WATTLE	POLYACRYLAMIDE (PAM)	SEED & MULCHING	SEED FOR REPAIR SEEDING	FERTILIZER TOPDRESSING	GENERIC EROSION CONTROL ITEM - CONCRETE WASHOUT STRUCTURE	PEDESTRIAN SIGNAL HEAD (16", 1 SECTION W/COUNTDOWN)	SIGNAL CABLE	VEHICLE SIGNAL HEAD (12", 3 SECTION)	VEHICLE SIGNAL HEAD (12", 4 SECTION)	PAVED TRENCHING (1 CONDUIT, 2 INCH)	UNPAVED TRENCHING (1 CONDUIT, 2")	DIRECTIONAL DRILL (1 CONDUIT, 2")	JUNCTION BOX (STANDARD SIZE)
					LF	LF	TON	TON	ACR	SY	LF	LF	LB	AC	LB	TON	EA	LF	EA	EA	LF	LF	LF	EA	
46915	Scotland	1	SR 1108 (WEST BLVD)	SIDEWALK AND DRAINAGE IMPROVEMENTS ALONG SR 1108 (WEST BLVD) TO US 401 BUS.	10.00	750	6	30	0.50	1,500	80	75	10	0.50	25	0.50	1	4	1,650	2	2	25	450	75	8
TOTAL FOR MAP NO. 1					10.00	750	6	30	0.50	1,500	80	75	10	0.50	25	0.50	1	4	1,650	2	2	25	450	75	8
TOTAL FOR PROJ NO. 46915					10.00	750	6	30	0.50	1,500	80	75	10	0.50	25	0.50	1	4	1,650	2	2	25	450	75	8
GRAND TOTAL					10.00	750	6	30	0.50	1,500	80	75	10	0.50	25	0.50	1	4	1,650	2	2	25	450	75	8

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	7396000000-E	7408000000-E	7420000000-E	7444000000-E	7456000000-E	7636000000-N	7642200000-N	7684000000-N	7756000000-N	7780000000-N	7901000000-N	4457000000-N	4695000000-E	4697000000-E	4710000000-E	4725000000-E	4850000000-E	4870000000-E	4875000000-N
					1/2" RISER WITH WEATHERHEAD	1" RISER WITH WEATHERHEAD	2" RISER WITH WEATHERHEAD	INDUCTIVE LOOP SAWCUT	LEAD-IN CABLE (14-2 PAIR)	SIGN FOR SIGNALS	TYPE II PEDESTAL WITH FOUNDATION	SIGNAL CABINET FOUNDATION	CONTROLLER WITH CABINET (TYPE 2070L, BASE MOUNTED)	DETECTOR CARD (TYPE 2070L)	CABINET BASE EXTENDER	TEMPORARY TRAFFIC CONTROL	8" X 90 M WHITE THERMO	8" X 120 M WHITE THERMO	24" X 120 M WHITE THERMO	THERMO 24" YIELD TRIANGLE	4" LINE REMOVAL	24" LINE REMOVAL	REMOVAL OF PAVEMENT MARKING SYMBOLS & CHARACTERS
					EA	EA	EA	LF	LF	EA	EA	EA	EA	EA	LS	LF	LF	LF	EA	LF	LF	EA	
46915	Scotland	1	SR 1108 (WEST BLVD)	SIDEWALK AND DRAINAGE IMPROVEMENTS ALONG SR 1108 (WEST BLVD) TO US 401 BUS.	5	1	4	450	2,225	1	4	1	1	8	1	1	260	150	450	4	10	110	4
TOTAL FOR MAP NO. 1					5	1	4	450	2,225	1	4	1	1	8	1	1	260	150	450	4	10	110	4
TOTAL FOR PROJ NO. 46915					5	1	4	450	2,225	1	4	1	1	8	1	1	260	150	450	4	10	110	4
GRAND TOTAL					5	1	4	450	2,225	1	4	1	1	8	1	1	260	150	450	4	10	110	4

**STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS**

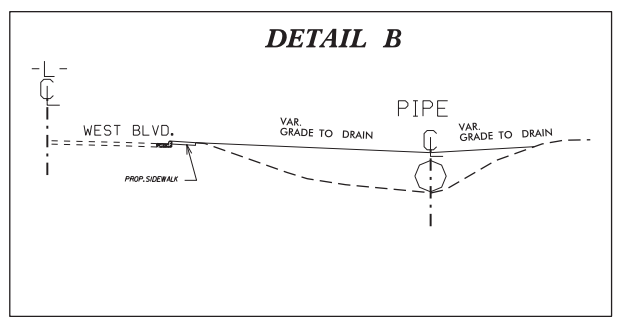
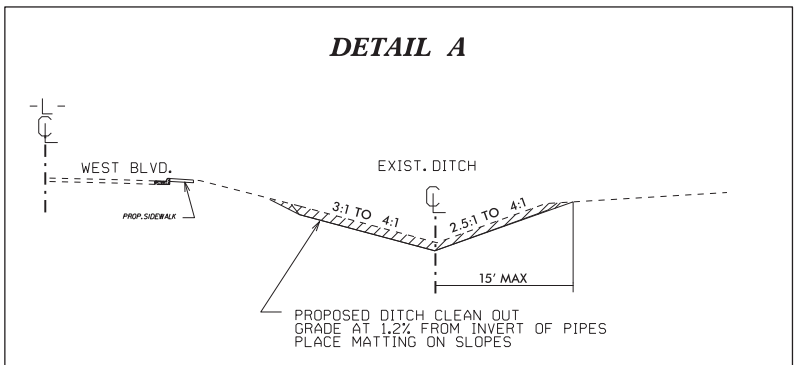
SUMMARY OF EARTHWORK

Station	Station	Uncl. Excav.	Embank. +%	Borrow	Waste
	Est. of borrow for filling in drainage ditch		1135		
	Drainage Ditch Excavation (Ditch A)	75			
SUBTOTAL			1135		
GRAND TOTALS:		75	1135		
SAY:			1135		

CONCRETE REMOVAL SUMMARY

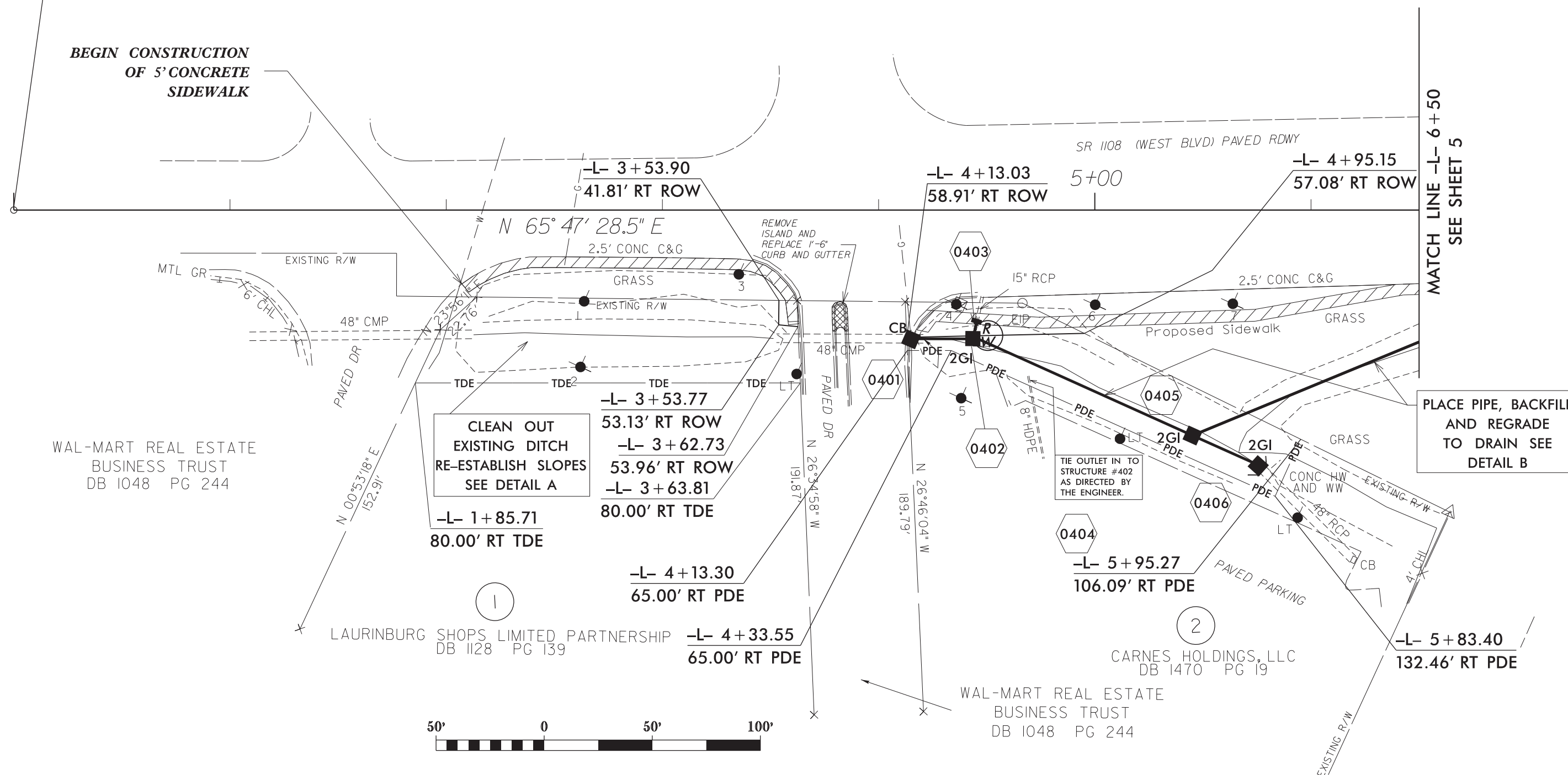
IN SQUARE YARDS

SURVEY LINE	Station	Station	LOCATION LT/RT/CL	CONCRETE REMOVAL
-L-	3+78	3+86	RT	9.6
-L-	7+11	7+90	RT	255
TOTAL:				264.6
SAY:				265



-L- POT Sta. 0+00.00

**BEGIN CONSTRUCTION
OF 5' CONCRETE
SIDEWALK**



MATCH LINE -L- 6+50
SEE SHEET 5

PLACE PIPE, BACKFILL
AND REGRADE
TO DRAIN SEE
DETAIL B



REVISIONS

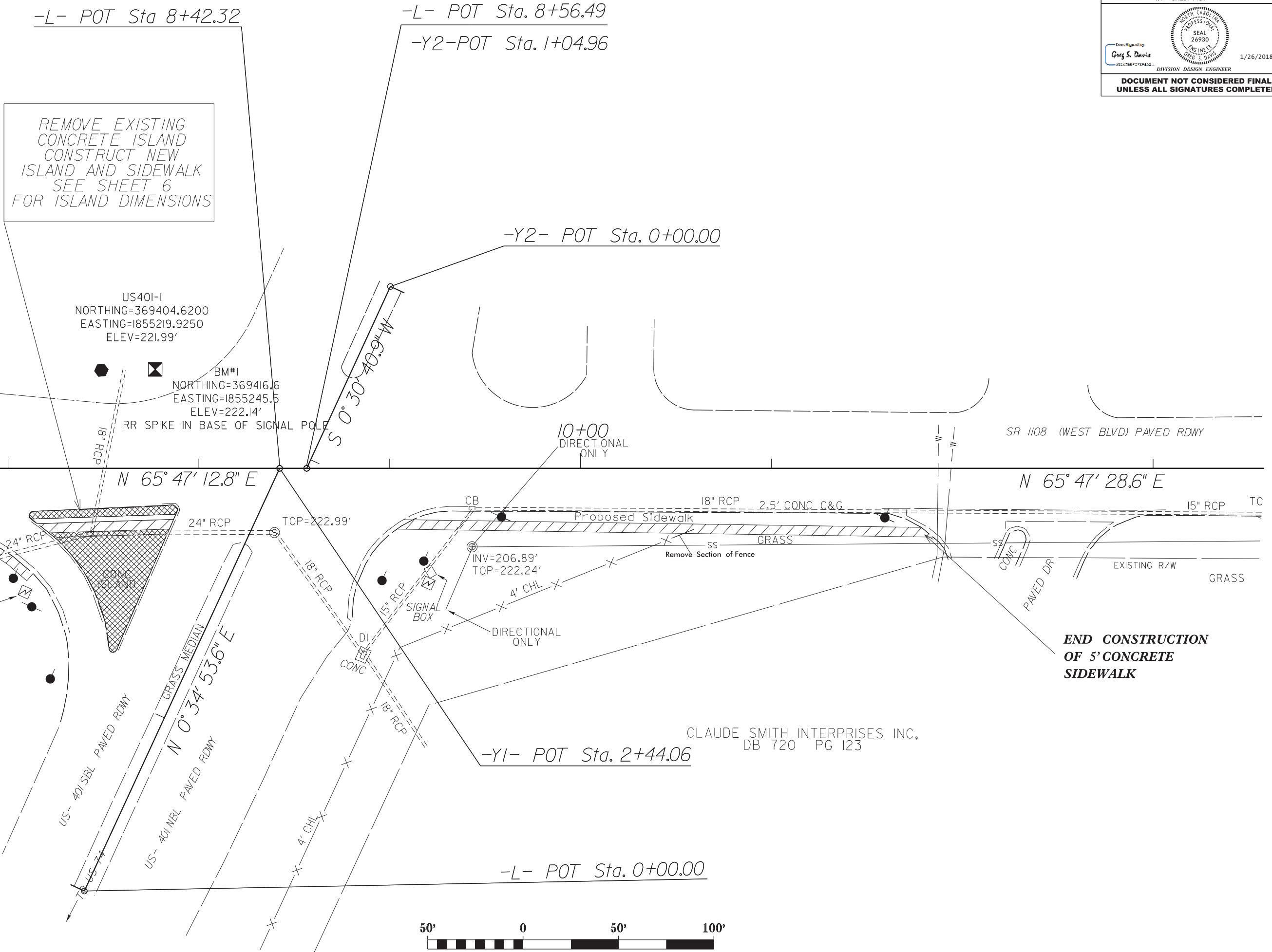
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WAL-MART REAL ESTATE
BUSINESS TRUST
DB 1048 PG 244

LAURINBURG SHOPS LIMITED PARTNERSHIP
DB 1128 PG 139

CARNES HOLDINGS, LLC
DB 1470 PG 19

WAL-MART REAL ESTATE
BUSINESS TRUST
DB 1048 PG 244



REMOVE EXISTING
CONCRETE ISLAND
CONSTRUCT NEW
ISLAND AND SIDEWALK
SEE SHEET 6
FOR ISLAND DIMENSIONS

**END CONSTRUCTION
OF 5' CONCRETE
SIDEWALK**

CLAUDE SMITH INTERPRISES INC,
DB 720 PG 123



MATCH LINE -L- 6+50
SEE SHEET 4

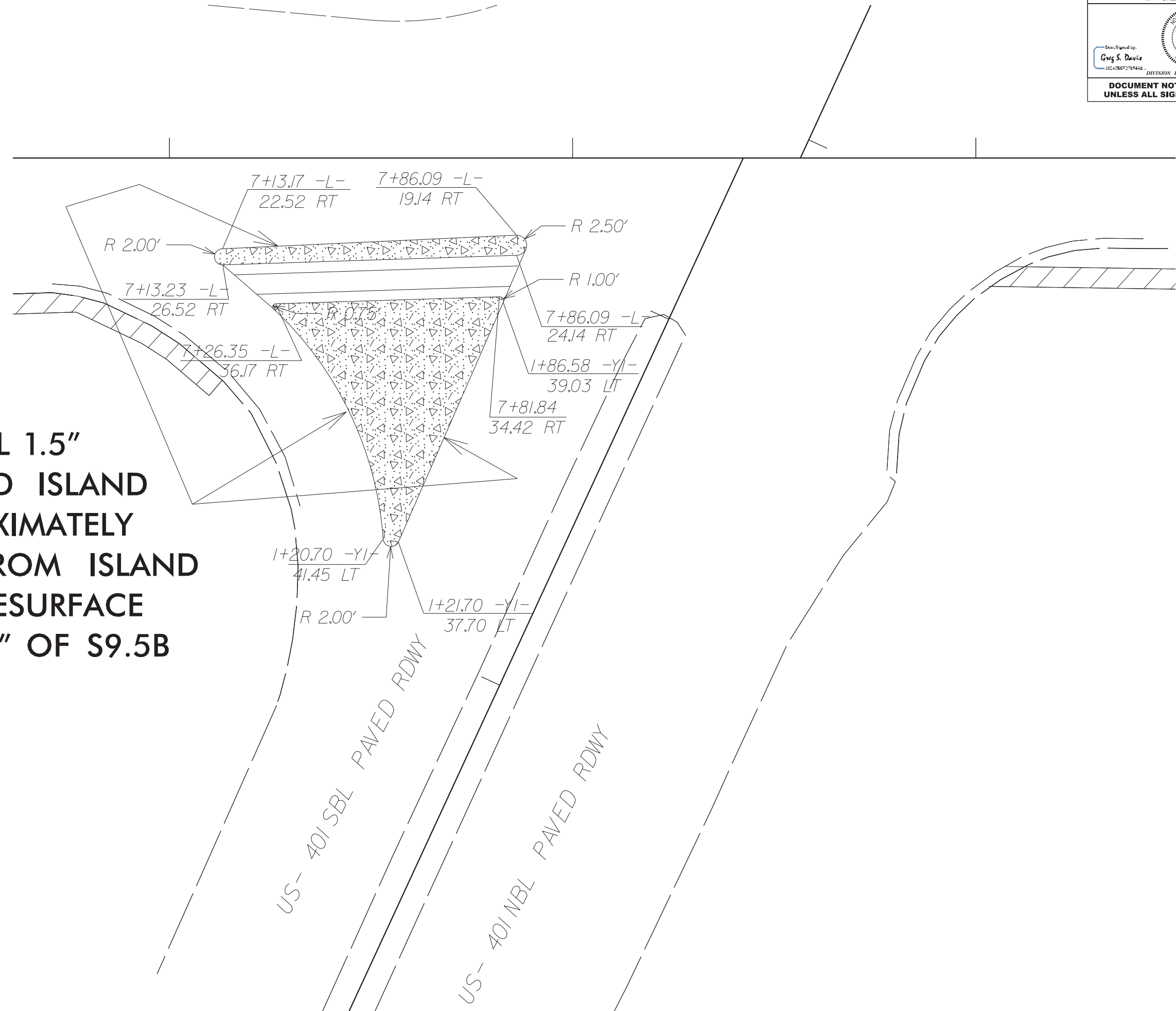
REVISIONS

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REVISIONS

**MILL 1.5"
AROUND ISLAND
APPROXIMATELY
2' TO 3' FROM ISLAND
AND RESURFACE
WITH 1.5" OF S9.5B**



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 asdavis AT DIV8-304810

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 UNDESIRE 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 RESTRICTION
US 401	MONDAY THRU FRIDAY 4:00 PM - 6:00 PM
SR 1108 (WEST BLVD)	MONDAY THRU FRIDAY 4:00 PM - 6:00 PM

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

ROAD NAME

US 401 AND SR 1108 (WEST BLVD)

HOLIDAY

- FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
- FOR NEW YEAR'S, BETWEEN THE HOURS OF 4:00 P.M. DECEMBER 31st TO 8:30 A.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 8:30 A.M. THE FOLLOWING TUESDAY.
- FOR EASTER, BETWEEN THE HOURS OF 4:00 P.M. THURSDAY AND 8:30 A.M. MONDAY.
- FOR MEMORIAL DAY, BETWEEN THE HOURS OF 4:00 P.M. FRIDAY TO 8:30 A.M. TUESDAY.
- FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 4:00 P.M. THE DAY BEFORE INDEPENDENCE DAY AND 8:30 A.M. THE DAY AFTER INDEPENDENCE DAY.

IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 4:00 P.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 8:30 A.M. THE TUESDAY AFTER INDEPENDENCE DAY.
- FOR LABOR DAY, BETWEEN THE HOURS OF 4:00 P.M. FRIDAY AND 8:30 A.M. TUESDAY.
- FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 4:00 P.M. TUESDAY TO 8:30 A.M. MONDAY.
- FOR CHRISTMAS, BETWEEN THE HOURS OF 4:00 P.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 8:30 A.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

C) DO NOT CONDUCT ANY HAULING OPERATIONS AGAINST THE FLOW OF TRAFFIC OF AN OPEN TRAVELWAY UNLESS THE HAULING OPERATION IS PROTECTED BY BARRIER OR GUARDRAIL OR AS DIRECTED BY THE ENGINEER.

LANE AND SHOULDER CLOSURE REQUIREMENTS

- D) 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.
- E) 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.
- F) 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.
- WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 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.
- G) 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 CONTROL PLANS, ROADWAY STANDARD DRAWINGS OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.
- H) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

PAVEMENT EDGE DROP OFF REQUIREMENTS

- I) BACKFILL AT A 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 (W8-1) 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 PATTERN.

TRAFFIC CONTROL DEVICES

- N) SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH), EXCEPT 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY, WHEN LANE CLOSURES ARE NOT IN EFFECT. WHEN SKINNY DRUMS ARE ALLOWED, REFER TO SECTION 1180 OF STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES OR AS SHOWN IN THE PLANS.
- O) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES (DRUMS, CONES OR SKINNY DRUMS) PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.



PAVEMENT MARKINGS AND MARKERS

- P) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

ROAD NAME	MARKING	MARKER
US 401	THERMO	NONE
SR 1108 (WEST BLVD)	THERMO	

- Q) 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.
- R) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- S) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.
- T) TRACE THE EXISTING AND PROPOSED MONOLITHIC ISLAND LOCATIONS WITH PROPER COLOR PAVEMENT MARKINGS PRIOR TO REMOVAL AND INSTALLATION. PLACE DRUMS TO DELINEATE ANY AN EXISTING AND PROPOSED MONOLITHIC ISLANDS AFTER REMOVAL AND BEFORE INSTALLATION
- MISCELLANEOUS
- V) LAW ENFORCEMENT MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS AS DIRECTED BY THE ENGINEER.

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gsdavis AT DIV8-304810

1/26/2018	APPROVED: <u>Greg S. Davis</u> DATE: _____	
		<p>TRANSPORTATION MANAGEMENT PLAN</p> <p>GENERAL NOTES</p>

MANAGEMENT STRATEGIES

- SR 1108 (WEST BLVD) TRAFFIC WILL BE MAINTAINED THROUGH SHOULDER AND LANE CLOSURES.

PHASING

STEP 1:
INSTALL WORK ZONE ADVANCE WARNING SIGNS IN ACCORDANCE WITH NCDOT ROADWAY STANDARD DRAWING NO. 1101.01. WHEN NO WORK IS BEING CONDUCTED FOR A PERIOD LONGER THAN ONE WEEK, REMOVE OR COVER ALL ADVANCE WORK ZONE SIGNS, AS DIRECTED BY THE ENGINEER.

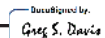


STEP 2:

USING NCDOT STANDARD DRAWING NO. 1101.02 (SHEET 1 OF 15) AND NCDOT STANDARD DRAWING NO. 1101.04 CONSTRUCT SIDEWALK, PEDESTRIAN SIGNAL, AND DRAINAGE IMPROVEMENTS ALONG SR 1108 (WEST BLVD.) AND US 401 AS DIRECTED.

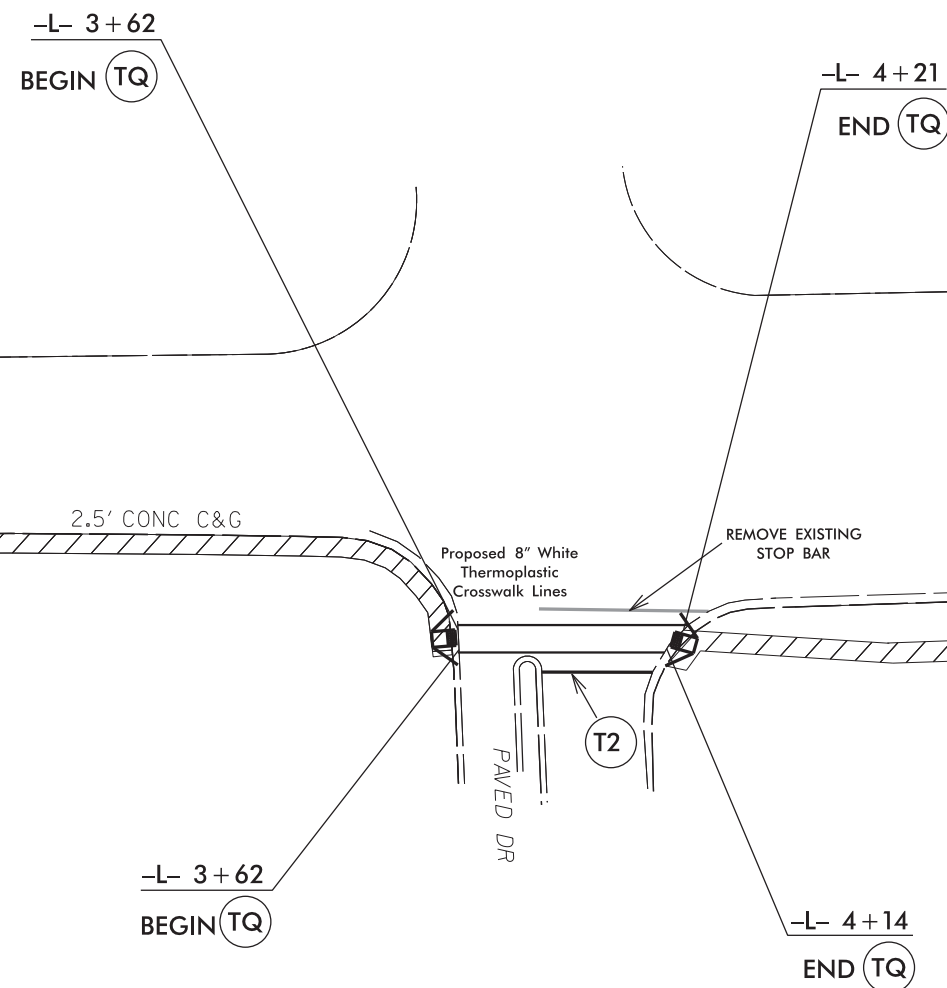
STEP 3:

REMOVE ALL WORK ZONE TRAFFIC CONTROL DEVICES AND OPEN US 401 AND SR 1108 (WEST BLVD) TO NEW PEDESTRIAN IMPROVEMENTS

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gsdavis AT DIV8-304810

APPROVED:  DATE: 1/26/2018 		<h3>TEMPORARY TRAFFIC CONTROL PHASING</h3>
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PROJECT REFERENCE NO. 46915	SHEET NO. PM-1
RW SHEET NO.	
1/26/2018	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
PAVEMENT MARKING LEGEND	
	CRYSTAL / RED PAVEMENT MARKER
	YELLOW / YELLOW PAVEMENT MARKER
	DIRECTION OF TRAFFIC FLOW



MATCH LINE -L- 6+50
SEE SHEET PM-2

REVISIONS

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casdavis

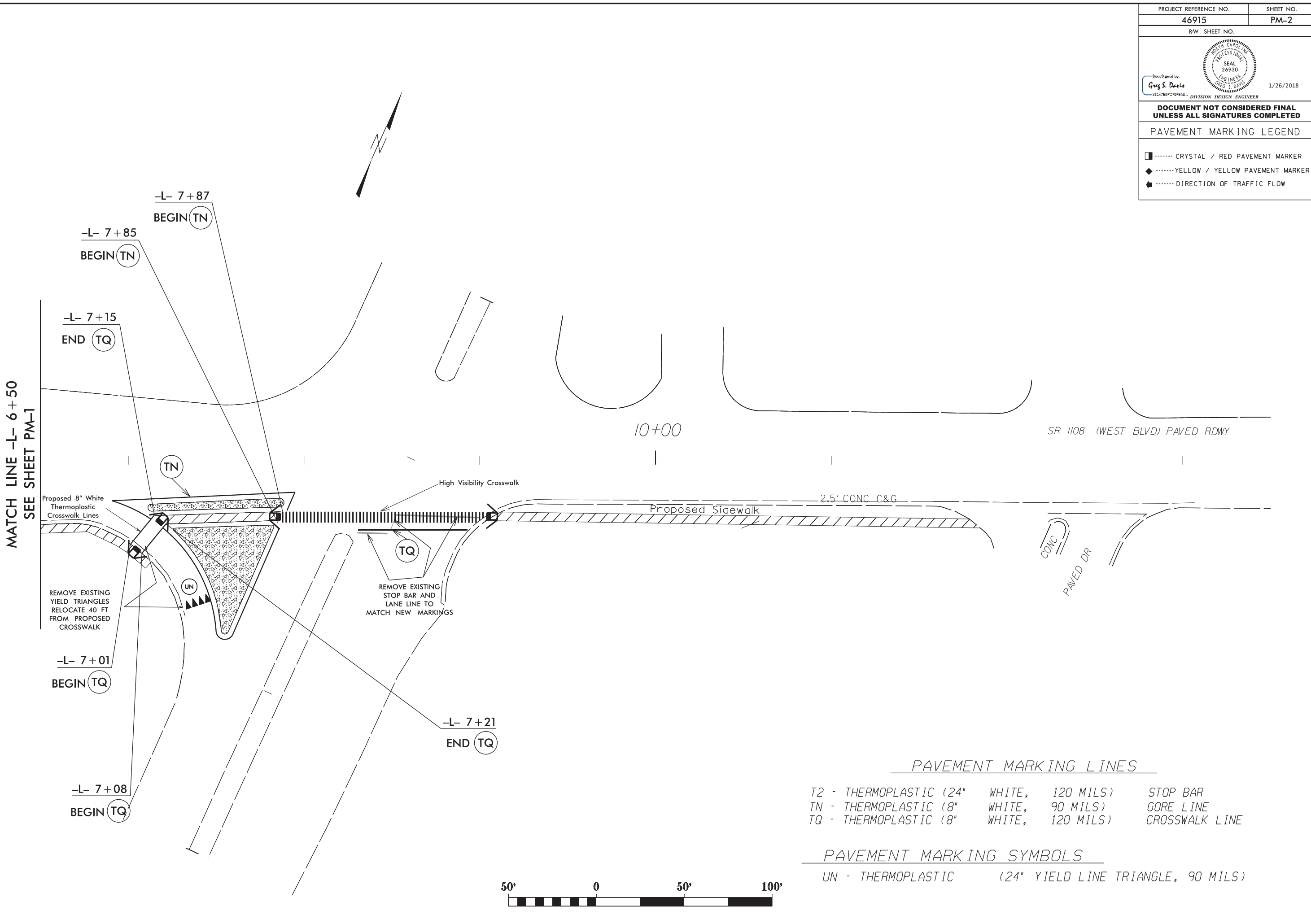


PAVEMENT MARKING LINES

T2 - THERMOPLASTIC (24" WHITE, 120 MILS) STOP BAR
TQ - THERMOPLASTIC (8" WHITE, 120 MILS) CROSSWALK LINE

PROJECT REFERENCE NO. 46915	SHEET NO. PM-2
RW SHEET NO.	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
PAVEMENT MARKING LEGEND	
	CRYSTAL / RED PAVEMENT MARKER
	YELLOW / YELLOW PAVEMENT MARKER
	DIRECTION OF TRAFFIC FLOW

8/17/99
 REVISIONS
 26-JAN-2018 J549
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PAVEMENT MARKING LINES

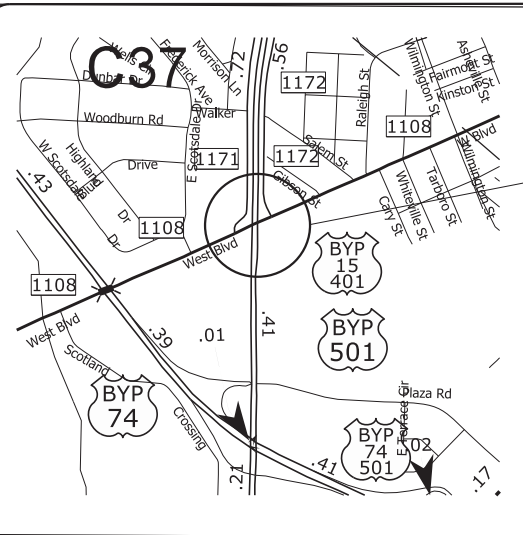
- | | |
|--|----------------|
| T2 - THERMOPLASTIC (24" WHITE, 120 MILS) | STOP BAR |
| TN - THERMOPLASTIC (8" WHITE, 90 MILS) | GORE LINE |
| TQ - THERMOPLASTIC (8" WHITE, 120 MILS) | CROSSWALK LINE |

PAVEMENT MARKING SYMBOLS

- UN - THERMOPLASTIC (24" YIELD LINE TRIANGLE, 90 MILS)



WBS ELEMENT: 46915



VICINITY MAP

PROJECT LOCATION

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

**LOCATION: SR 1108 (WEST BOULEVARD) AT US 401 BYPASS
SOUTH 370+/- WEST OF GIBSON STREET AND
230+/- EAST OF GLASGLOW DRIVE**

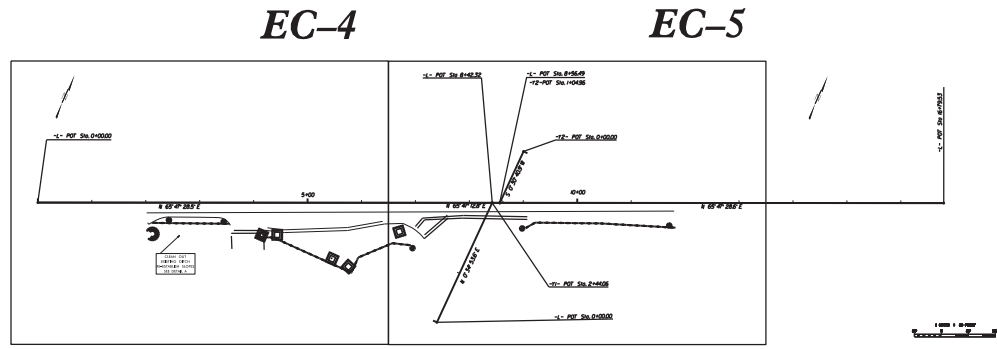
**TYPE OF WORK: GRADING, CONCRETE SIDEWALK, PAVEMENT
MARKINGS, AND DRAINAGE**

These Erosion and Sediment Control Plans comply with the regulations set fourth by the NCG010000 general construction permit effective August 3, 2011 issued by the North Carolina Department of Enviroment and Natural Resources Division of Water Quality.

STATE	WBS ELEMENT	SHEET NO.	TOTAL SHEETS
N.C.	46915	EC-1	
WBS ELEMENT	F.A. PROJ. NO.	DESCRIPTION	

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
	Streambank Reforestation.....	XXXXXX
1650.05	Temporary Silt Ditch.....	TD
1630.05	Temporary Diversion.....	TD
1605.01	Temporary Silt Fence.....	
1606.01	Special Sediment Control Fence.....	XXXXXX
1622.01	Temporary Berms and Slope Drains.....	TBD
1630.01	Riser Basin.....	⊙
1630.02	Silt Basin Type B.....	▨
1633.01	Temporary Rock Silt Check Type-A.....	XXXXXX
1633.02	Temporary Rock Silt Check Type-B.....	▶
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.....	⊕
1636.01	Rock Silt Screen.....	⊕
1630.04	Stilling Basin.....	▭
	Rock Inlet Sediment Trap:	
1632.01	Type A.....	A ⊕ OR ⊕
1632.02	Type B.....	B ⊕ OR ⊕
1632.03	Type C.....	C ⊕ OR ⊕



Prepared By:
J.Howard Reedy, Jr.
Level III #3663
Dec. 31, 2017

PROJECT CONTACTS:
District Engineer
Travis Morgan, PE
Design Design Engineer
Greg S. Davis, PE
Resident Engineer
James A. Dietrich

PROJECT LENGTH
0.185 mi.

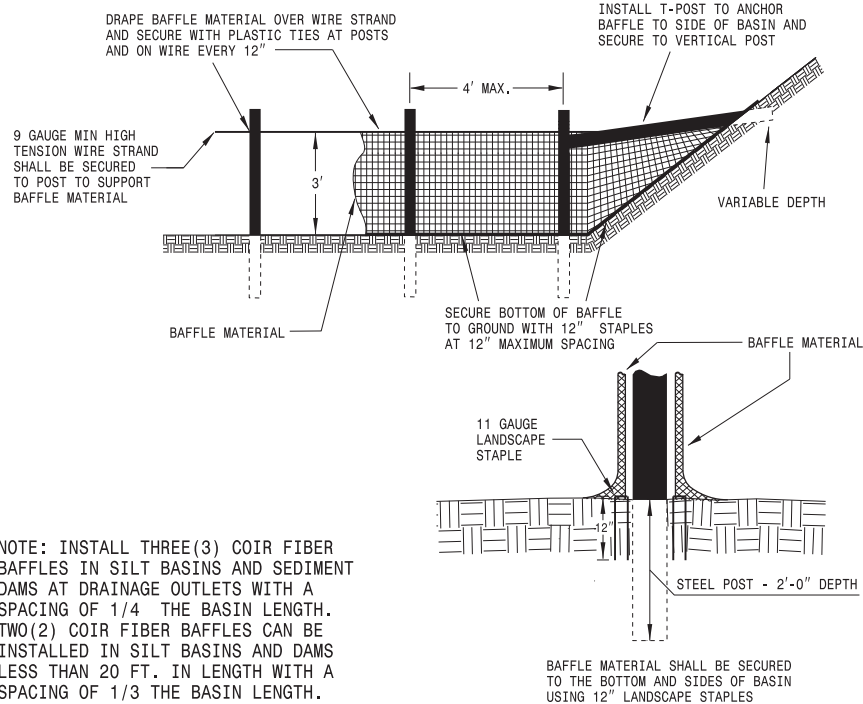
Prepared In the Office of:
DIVISION EIGHT
DIVISION DESIGN & CONSTRUCT UNIT
902 N Sandhills Blvd.
PO Box 1067
Aberdeen, 28315
2012 STANDARD SPECIFICATIONS

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 16, 2018 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

1605.01 Temporary Silt Fence	1632.01 Rock Inlet Sediment Trap Type A
1606.01 Special Sediment Control Fence	1632.03 Rock Inlet Sediment Trap Type C
1622.01 Temporary Berms and Slope Drains	1633.01 Temporary Rock Silt Check Type A
1630.01 Riser Basin	1633.02 Temporary Rock Silt Check Type B
1630.02 Silt Basin Type B	1634.01 Temporary Rock Sediment Dam Type A
1630.03 Temporary Silt Ditch	1634.02 Temporary Rock Sediment Dam Type B
1630.04 Stilling Basin	1635.01 Rock Pipe Inlet Sediment Trap Type A
1630.05 Temporary Diversion	1636.01 Rock Silt Screen

COIR FIBER BAFFLE DETAIL



NOTE: INSTALL THREE(3) COIR FIBER BAFFLES IN SILT BASINS AND SEDIMENT DAMS AT DRAINAGE OUTLETS WITH A SPACING OF 1/4 THE BASIN LENGTH. TWO(2) COIR FIBER BAFFLES CAN BE INSTALLED IN SILT BASINS AND DAMS LESS THAN 20 FT. IN LENGTH WITH A SPACING OF 1/3 THE BASIN LENGTH.

NARRATIVE

1. SOIL TYPE: CLAY X SAND
2. IS THE PROJECT LOCATED IN A HIGH QUALITY WATER ZONE? YES X NO
3. ARE THERE ANY WETLANDS ADJOINING THIS PROJECT? YES X NO

SITE DESCRIPTION

This project is located at the intersection of SR 1108 (West Blvd.) and US 401 Bypass, approximately 0.41 miles north of US 74. The area surrounding this project primarily consists of grassy areas. The drainage consists of roadway ditches that lead to existing ditches and drainage structures.

PROJECT DESCRIPTION

The project will consist of clearing, grading, drainage, and concrete. The major land disturbing activities will consist of clearing and grading within the right of way. Temporary and permanent erosion control measures will be installed.

MAINTENANCE SCHEDULE

1. INSPECT WEEKLY AND AFTER EACH RAINFALL, USE THE DEPARTMENT OF TRANSPORTATION'S EROSION CONTROL INSPECTION REPORT.
2. MAINTAIN EROSION CONTROL DEVICES AS FOLLOWS:
 - A. SILT DITCH - REMOVE SEDIMENT FROM THE FLOW AREA AND REPAIR THE DIVERSION RIDGE - CAREFULLY CHECK OUTLETS AND MAKE TIMELY REPAIRS AS NEEDED.
 - B. SILT FENCE - REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE - AVOID UNDERMINING THE FENCE.
 - C. SLOPE DRAINS - INSPECT THE SLOPE DRAINS AND SUPPORTING DIVERSIONS.
 - D. SEDIMENT BASIN - REMOVE SEDIMENT AND RESTORE THE BASIN TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT ACCUMULATES TO ONE-HALF THE DESIGN DEPTH - CHECK THE EMBANKMENT, SPILLWAYS, AND OUTLET FOR EROSION DAMAGE, AND INSPECT THE EMBANKMENT FOR PIPING AND SETTLEMENT - REMOVE ALL TRASH AND OTHER DEBRIS FROM THE RISER AND POOL AREA.
 - E. CHECK DAM - REMOVE SETTLEMENT ACCUMULATED BEHIND THE DAMS AS NEEDED TO PREVENT DAMAGE TO CHANNEL VEGETATION - ADD STONE TO DAMS AS NEEDED TO MAINTAIN DESIGN HEIGHT AND CROSS SECTION.
 - F. ROCK DAM - REMOVE SEDIMENT AND RESTORE ORIGINAL VOLUME WHEN SEDIMENT ACCUMULATES TO ONE-HALF THE DESIGN VOLUME - CHECK THE STRUCTURE FOR EROSION, PIPING, AND ROCK DISPLACEMENT AFTER EACH SIGNIFICANT RAINSTORM AND REPAIR IMMEDIATELY.
 - G. DROP INLET PROTECTION (TYPE C) - REMOVE SEDIMENT FROM THE POOL AREAS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN.
 - H. SEDIMENT TRAP - REMOVE SEDIMENT AND RESTORE THE TRAP TO ITS ORIGINAL DIMENSIONS WHEN SETTLEMENT HAS ACCUMULATED TO ONE-HALF THE DESIGN DEPTH OF THE TRAP - CHECK THE STRUCTURE FOR DAMAGE FROM EROSION OR PIPING TO ENSURE IT IS A MINIMUM OF 15 FT. BELOW THE LOW POINT OF THE EMBANKMENT.

NOTE: SEDIMENT SHOULD BE PLACED IN DESIGNATED DISPOSAL AREAS AND NOT ALLOWED TO FLOW INTO STREAMS OR DRAINAGE WAYS DURING STRUCTURE REMOVAL.
 NOTE: ALL SEDIMENT TRAPS/BASINS SHALL HAVE COIR FIBER BAFFLES.
 BASINS/TRAPS OVER 10 FT IN LENGTH SHALL HAVE TWO ROWS.
 NOTE: NO PAM TO USED WITH THE LAST BMT (WATTLE)
 AT OUTLET OF THE PROJECT

NOTE: The erosion control measures have been designed to provide a minimum of 43% of the storage calculated using the RUSLE2 analysis. These sections of disturbed area must then be permanently stabilized within 60 days from the time grading begins.

GENERAL CONSIDERATIONS

1. THE LAW REQUIRES INSTALLATION AND MAINTENANCE OF SUFFICIENT EROSION CONTROL PRACTICES TO RETAIN SEDIMENT WITHIN THE BOUNDARIES OF THE SITE. IT ALSO REQUIRES THAT SURFACES BE NON EROSIvE AND STABLE WITHIN 21 DAY'S CALENDAR DAY'S AFTER THE COMPLETION OF ANY PHASE OF GRADING.
2. FIT THE DEVELOPMENT TO THE SITE - FOLLOW THE NATURAL CONTOURS AS MUCH AS POSSIBLE. PRESERVE AND USE NATURAL DRAINAGE SYSTEMS.
3. LIMIT CLEARING AND GRUBBING - CLEARLY DEFINE WORK LIMIT LINES. GRADE TO MINIMIZE CUT-AND-FILL SLOPES. PRESERVE NATURAL BUFFER AREAS, AND LIMIT THE TIME THAT BARE SOIL IS EXPOSED.
4. PROTECT THE SOIL SURFACE - LIMIT THE EXTENT OF DISTURBANCE AND STABILIZE THE SOIL SURFACE IMMEDIATELY. ONCE THE SURFACE HAS BEEN DISTURBED, IT IS SUBJECT TO ACCELERATED EROSION AND SHOULD BE PROTECTED WITH APPROPRIATE COVER, SUCH AS MULCH OR VEGETATION IN AN EXPEDIENT MANNER.
5. SEDIMENT BASINS AND TRAPS - SELECT SITES AND INSTALL SEDIMENT BASINS AND TRAPS BEFORE OTHER CONSTRUCTION ACTIVITIES ARE STARTED. ALSO CONSIDER LOCATIONS FOR DIVERSIONS, OPEN CHANNELS, AND STORM DRAINS AT THIS TIME SO THAT ALL SEDIMENT-LADEN TO RUN OFF CAN BE DIRECTED TO AN IMPOUNDMENT STRUCTURE BEFORE LEAVING THE CONSTRUCTION SITE. INSTALL ALL MEASURES AND RELEASE POINTS PRIOR TO CLEARING AND GRUBBING.
6. ONCE AN AREA IS DISTURBED, IT IS SUBJECT TO ACCELERATED EROSION. EROSION CONTROL CAN BE ACHIEVED BY:
 - * LIMITING THE SIZE OF THE CLEARING AND TIME OF EXPOSURE BY PROPER SCHEDULING.
 - * REDUCING THE AMOUNT OF RUNOFF OvER THE DISTURBED SURFACE.
 - * LIMITING GRADES AND LENGTHS OF SLOPES, AND
 - * RE-ESTABLISHING PROTECTIVE COVER IMMEDIATELY AFTER LAND DISTURBING ACTIVITIES ARE COMPLETED OR WHEN CONSTRUCTION ACTIVITIES ARE DELAYED FOR THIRTY (30) OR MORE WORKING DAY'S
7. STABILIZE CONSTRUCTION ACCESS AREAS, CONSTRUCTION ROADS, AND PARKING AREA DURING INITIAL ACTIVITIES. TRY TO KEEP ROAD GRADES TO A MINIMUM GENERALLY NEVER EXCEEDING 12%.
8. CLEAR BORROW AND WASTE DISPOSAL AREAS AS NEEDED AND PROTECT THEM FROM SURFACE RUNOFF. SLOPE ALL AREAS TO PROVIDE POSITIVE DRAINAGE, AND STABILIZE BARE SOIL SURFACES WITH PERMANENT VEGETATION OR MULCH AS SOON AS FINAL GRADES ARE PREPARED. DIRECT ALL RUNOFF THAT CONTAINS SEDIMENT TO A SEDIMENT-TRAPPING DEVICE. IN LARGE BORROW AND DISPOSAL SITES, SHAPE AND DEEPEN THE LOWER END TO FORM AN IN-PLACE SEDIMENT TRAP.
9. ONLY SEDIMENT-FREE RUNOFF MAY BE DISCHARGED FROM CONSTRUCTION SITES DIRECTLY INTO STREAMS. ENSURE THAT ALL OTHER FLOWS ENTER FROM DESILTING POOLS FORMED BY SEDIMENT TRAPS OR BARRIERS.
10. AREAS ADJOINING STREAMS SHOULD BE LEFT UNDISTURBED AS BUFFERS. WHERE NATURAL BUFFERS ARE NOT AVAILABLE, PROVIDE ARTIFICIAL BUFFERS. WHERE WORK IS REQUIRED ALONG A STREAM, PROVIDE MECHANICAL OR ARTIFICIAL BUFFER (25 FEET MINIMUM REQUIRED).
11. BEFORE MOVING TO NEXT JOB SITE, REVIEW ALL MEASURES FOR EFFECTIVENESS; MAKE ANY ADJUSTMENTS, CLEAR-OUTS, OR REPAIR; CALL ROADSIDE ENVIRONMENTAL DEPARTMENT FOR INSTALLATION OF A DITCH LINER AND SEEDING AND MULCHING OF ALL DISTURBED AREAS.
12. CONTINUE TO CHECK AND MAINTAIN ALL MEASURES AFTER EACH SIGNIFICANT RAINFALL UNTIL ALL DISTURBED AREAS BECOME STABILIZED.
13. FILL IN ALL SILT BASINS AND SILT DITCHES, REMOVE ALL SILT FENCES AND SLOPE DRAINS, REDISTRIBUTE ALL STONE FROM SILT CHECKS, SEDIMENT DAMS, AND SILT SCREENS. SEED AND MULCH DISTURBED AREAS.

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1630.03	Temporary Silt Ditch	
1630.05	Temporary Diversion	
1630.06	Special Stilling Basin	
1632.03	Rock Inlet Sediment Trap Type C	
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	
	Wattle with Polyacrylamide (PAM)	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	

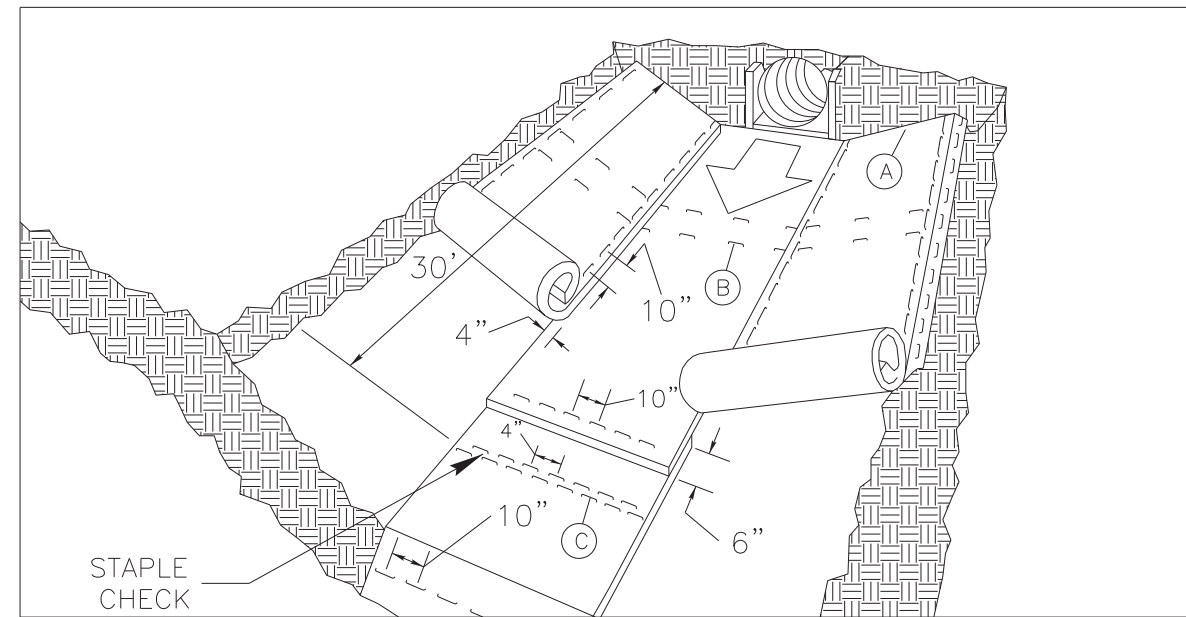
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO. 46915	SHEET NO. EC-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SOIL STABILIZATION TIMEFRAMES

<i>SITE DESCRIPTION</i>	<i>STABILIZATION TIME</i>	<i>TIMEFRAME EXCEPTIONS</i>
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

MATTING INSTALLATION DETAIL



MATTING IN DITCHES

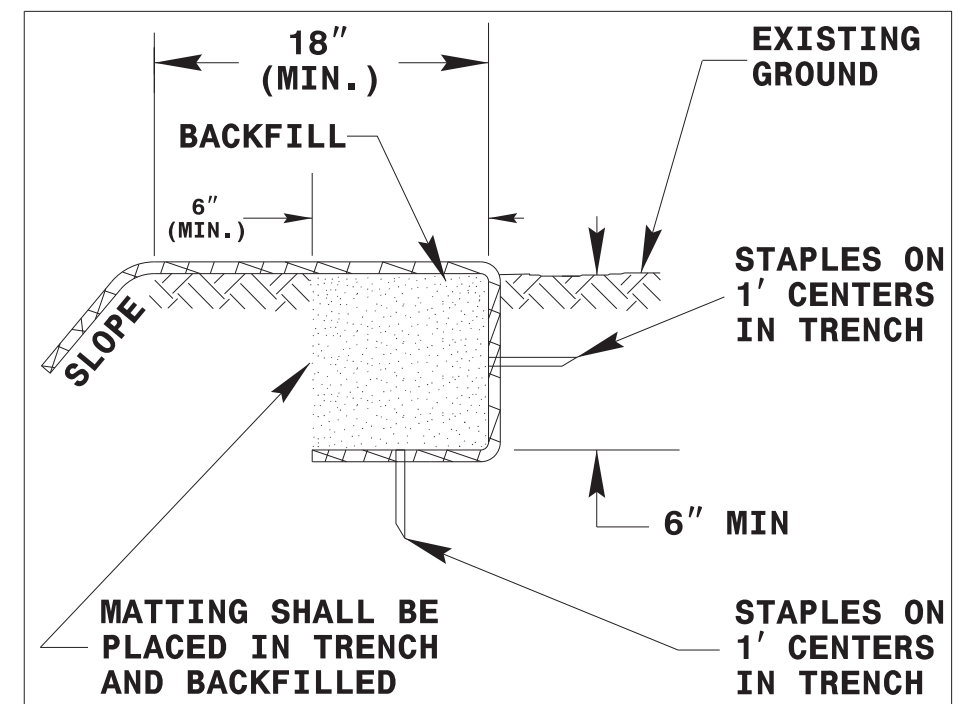
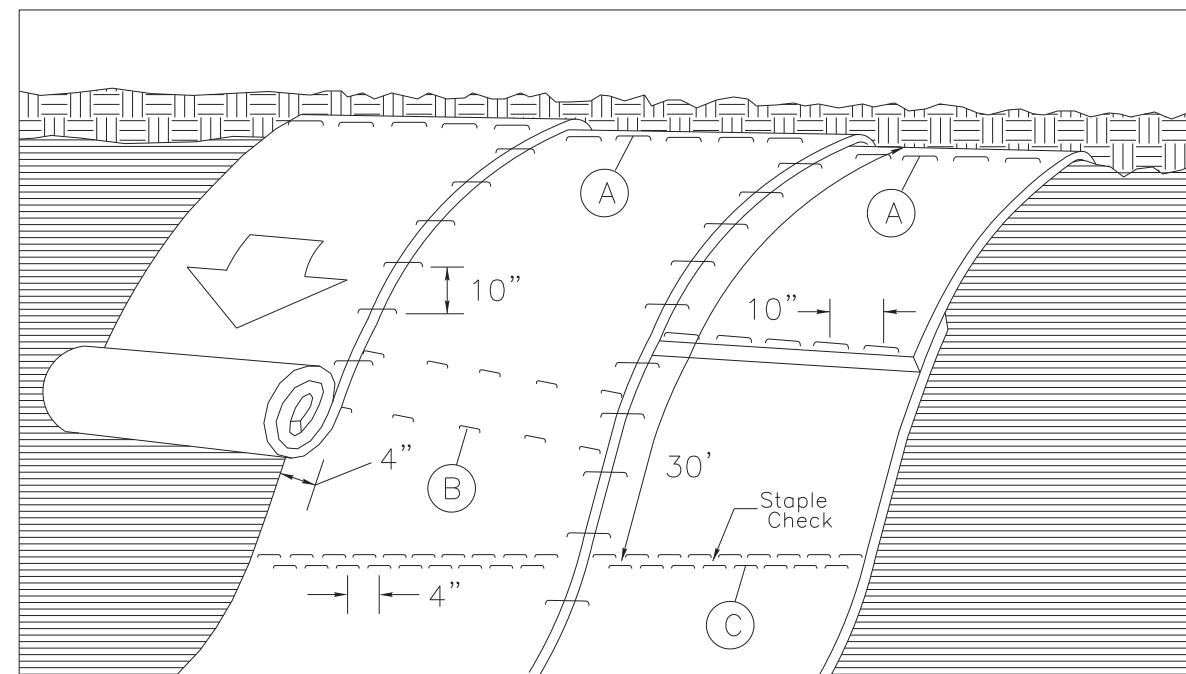


DIAGRAM (A)



MATTING ON SLOPES

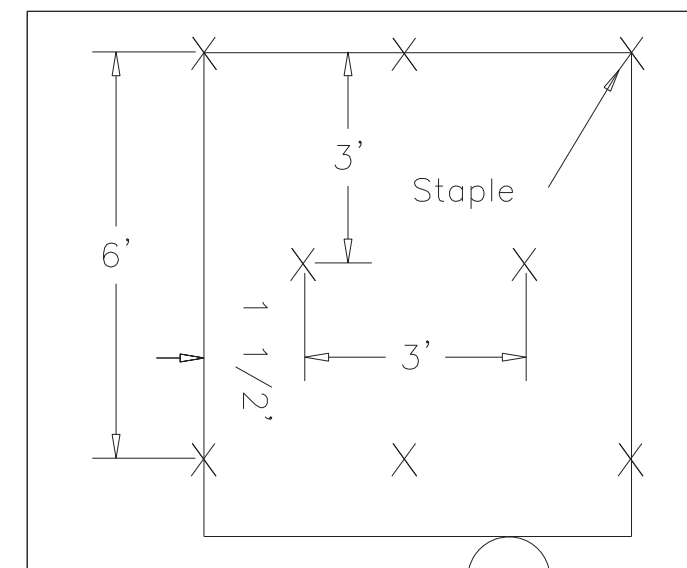


DIAGRAM B

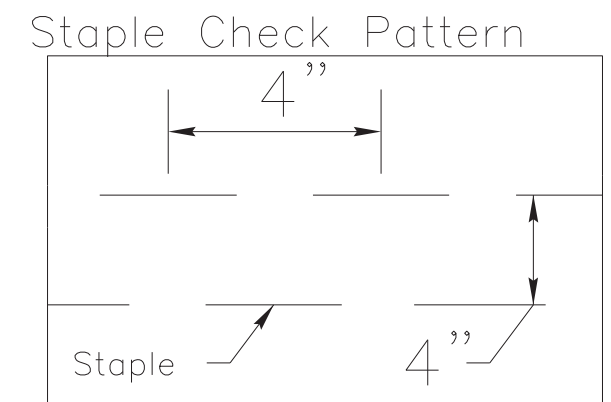


DIAGRAM (C)

NOTES:

THIS DETAIL APPLIES TO STRAW, EXCELSIOR, AND PERMANENT SOIL REINFORCEMENT MAT (PSRM) INSTALLATION.

STAPLES SHALL BE NO. 11 GAUGE STEEL WIRE FORMED INTO A "U" SHAPE WITH A MINIMUM THROAT WIDTH OF 1 INCH AND NOT LESS THAN 6 INCHES IN LENGTH.

8/17/99

-L- POT Sta. 0+00.00

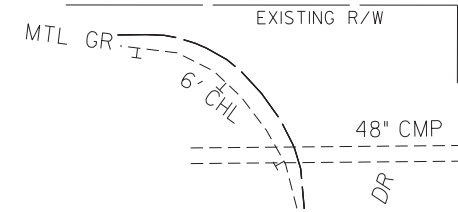
**BEGIN CONSTRUCTION
OF 5' CONCRETE
SIDEWALK**

SR 1108 (WEST BLVD) PAVED RDWY
5+00

N 65° 47' 28.5" E

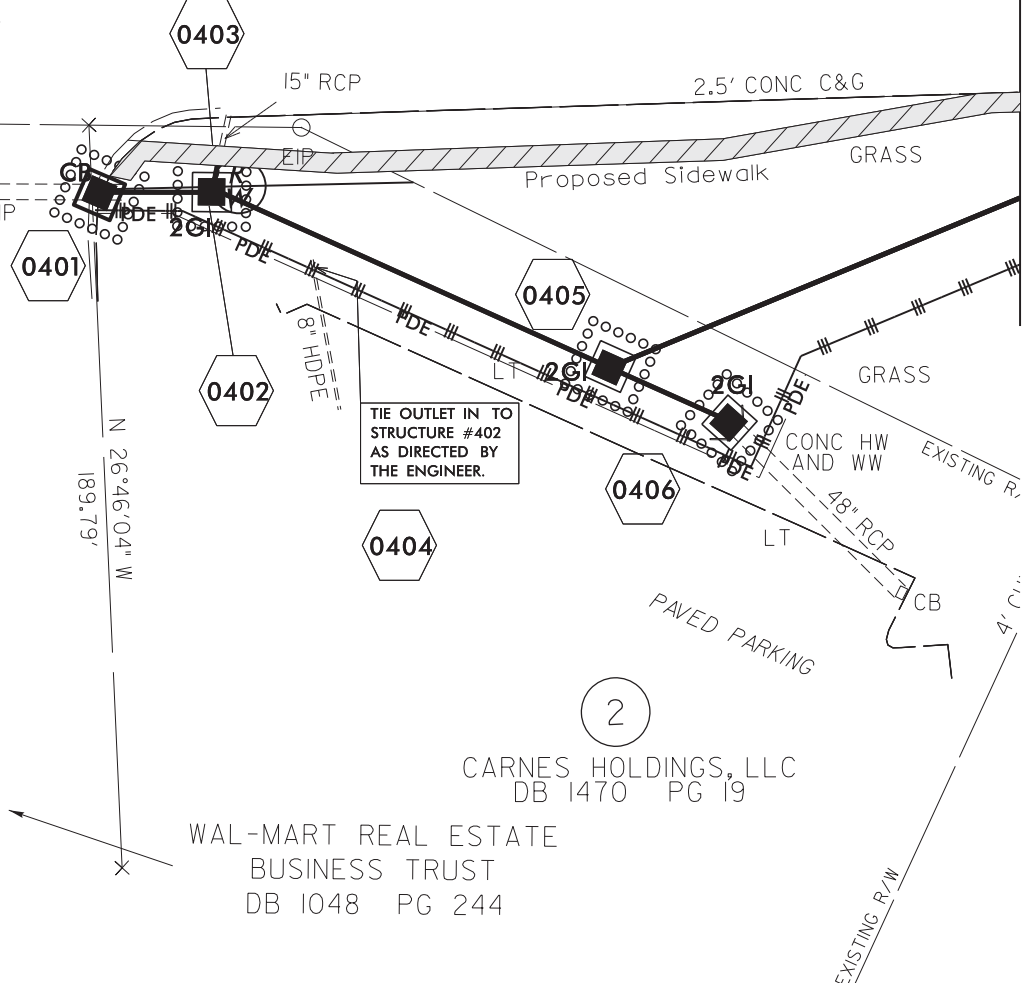
2.5' CONC C&G

REMOVE ISLAND AND
REPLACE 1'-6"
CURB AND GUTTER



EXISTING R/W
48" CMP
PAVED DR

**CLEAN OUT
EXISTING DITCH
RE-ESTABLISH SLOPES
SEE DETAIL A**



0403

0401

0402

0405

0406

0404

WAL-MART REAL ESTATE
BUSINESS TRUST
DB 1048 PG 244

LAURINBURG SHOPS LIMITED PARTNERSHIP
DB 1128 PG 139

WAL-MART REAL ESTATE
BUSINESS TRUST
DB 1048 PG 244

CARNES HOLDINGS, LLC
DB 1470 PG 19

MATCH LINE -L- 6+50
SEE SHEET EC-5

REVISIONS

26-JAN-2018 13:58
24-rdy\scotland\us401\sr-1108\west-b1vd\psh\edp\us401\sr-1108-ecp4.dgn
casdavis AI DIV 8-304810

8/17/99

-L- POT Sta 8+42.32

-L- POT Sta. 8+56.49

-Y2- POT Sta. 1+04.96

REMOVE EXISTING
CONCRETE ISLAND
CONSTRUCT NEW
ISLAND AND SIDEWALK
SEE SHEET 6
FOR ISLAND DIMENSIONS

-Y2- POT Sta. 0+00.00

US401-1
NORTHING=369404.6200
EASTING=1855219.9250
ELEV=221.99'

BM#1
NORTHING=369416.6
EASTING=1855245.5
ELEV=222.14'

RR SPIKE IN BASE OF SIGNAL POLE

S 0°30'40.9"W

10+00

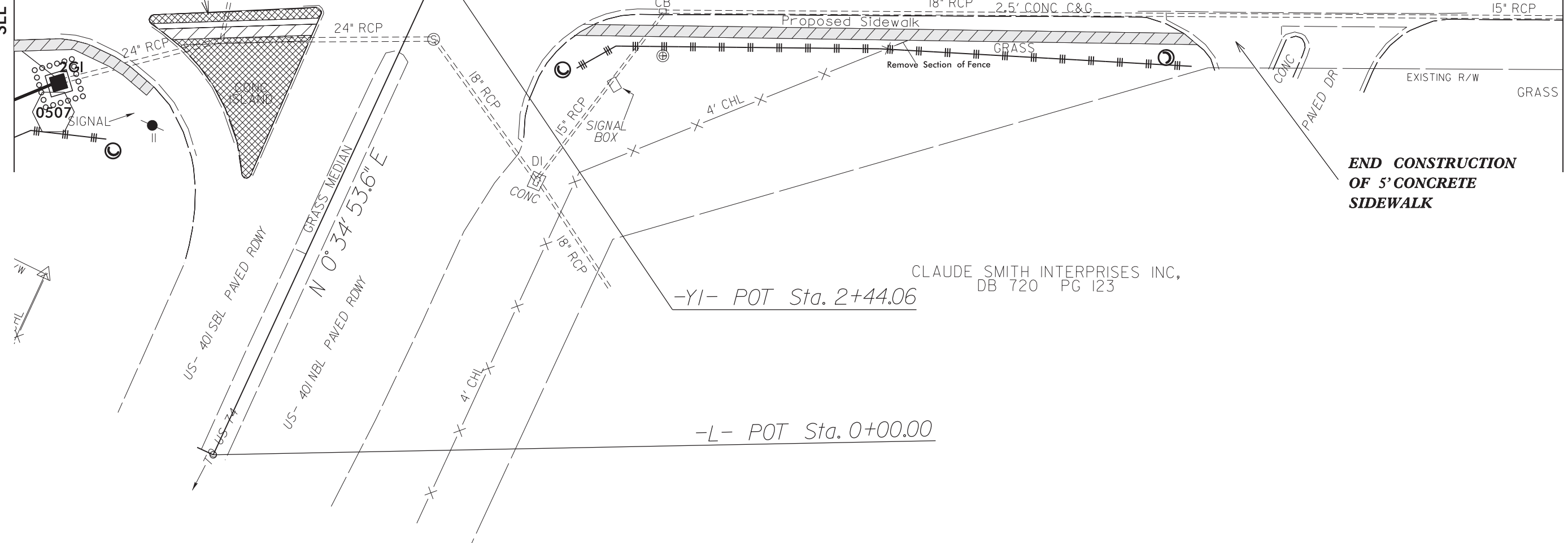
SR 1108 (WEST BLVD) PAVED RDWY

N 65°47'12.8" E

N 65°47'28.6" E

MATCH LINE -L- 6+50
SEE SHEET EC-4

MATCH LINE -L- 5+98
SEE SHEET EC-6



-Y1- POT Sta. 2+44.06

-L- POT Sta. 0+00.00

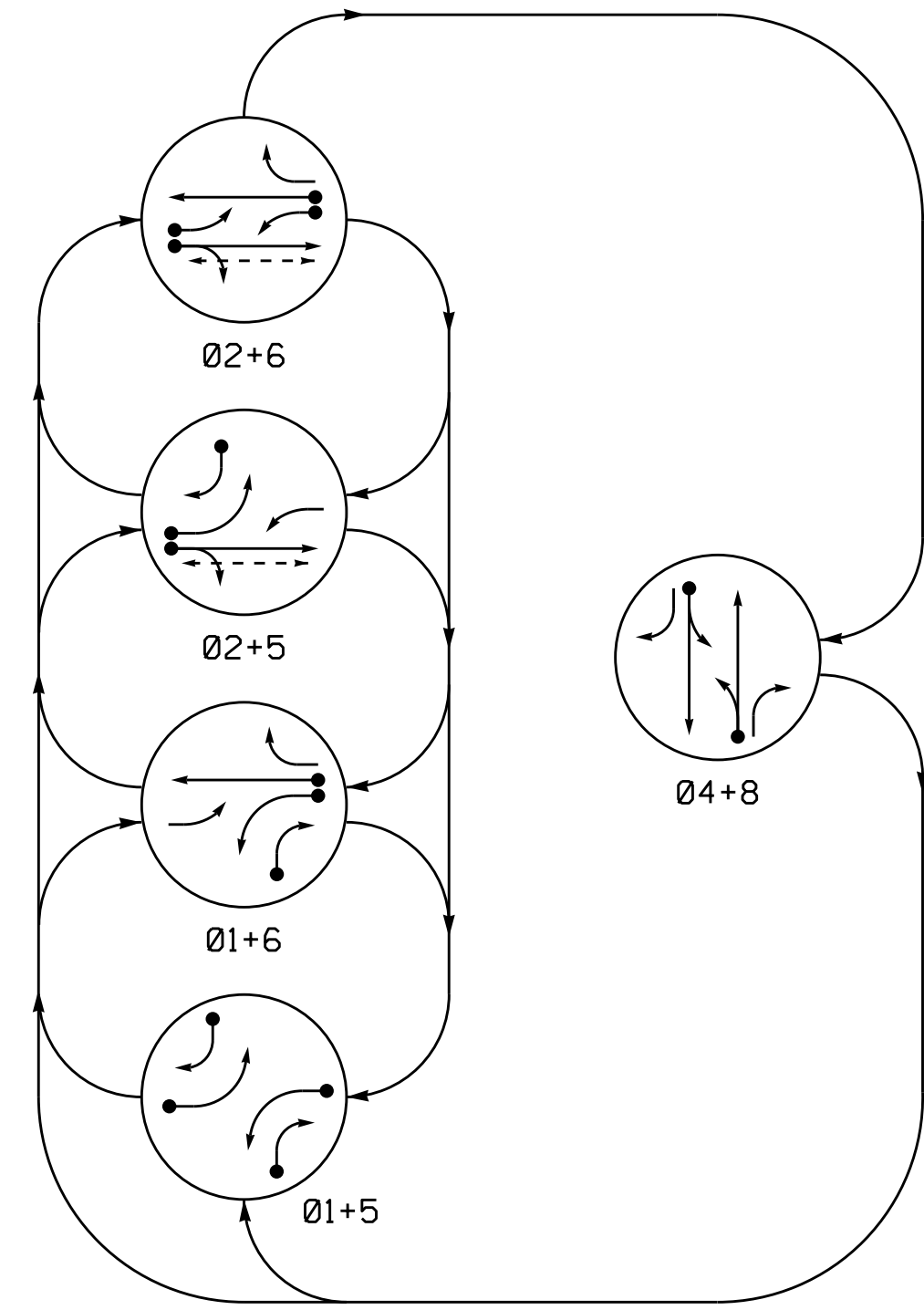
CLAUDE SMITH INTERPRISES INC,
DB 720 PG 123

**END CONSTRUCTION
OF 5' CONCRETE
SIDEWALK**

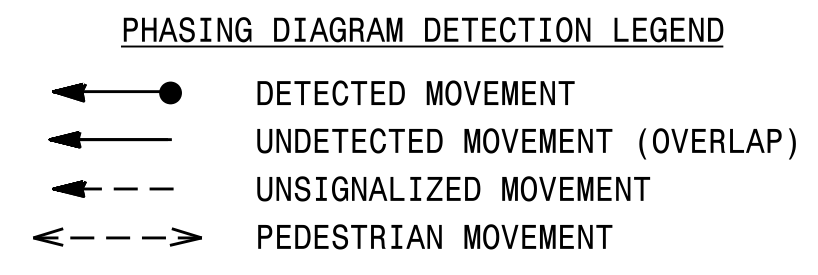
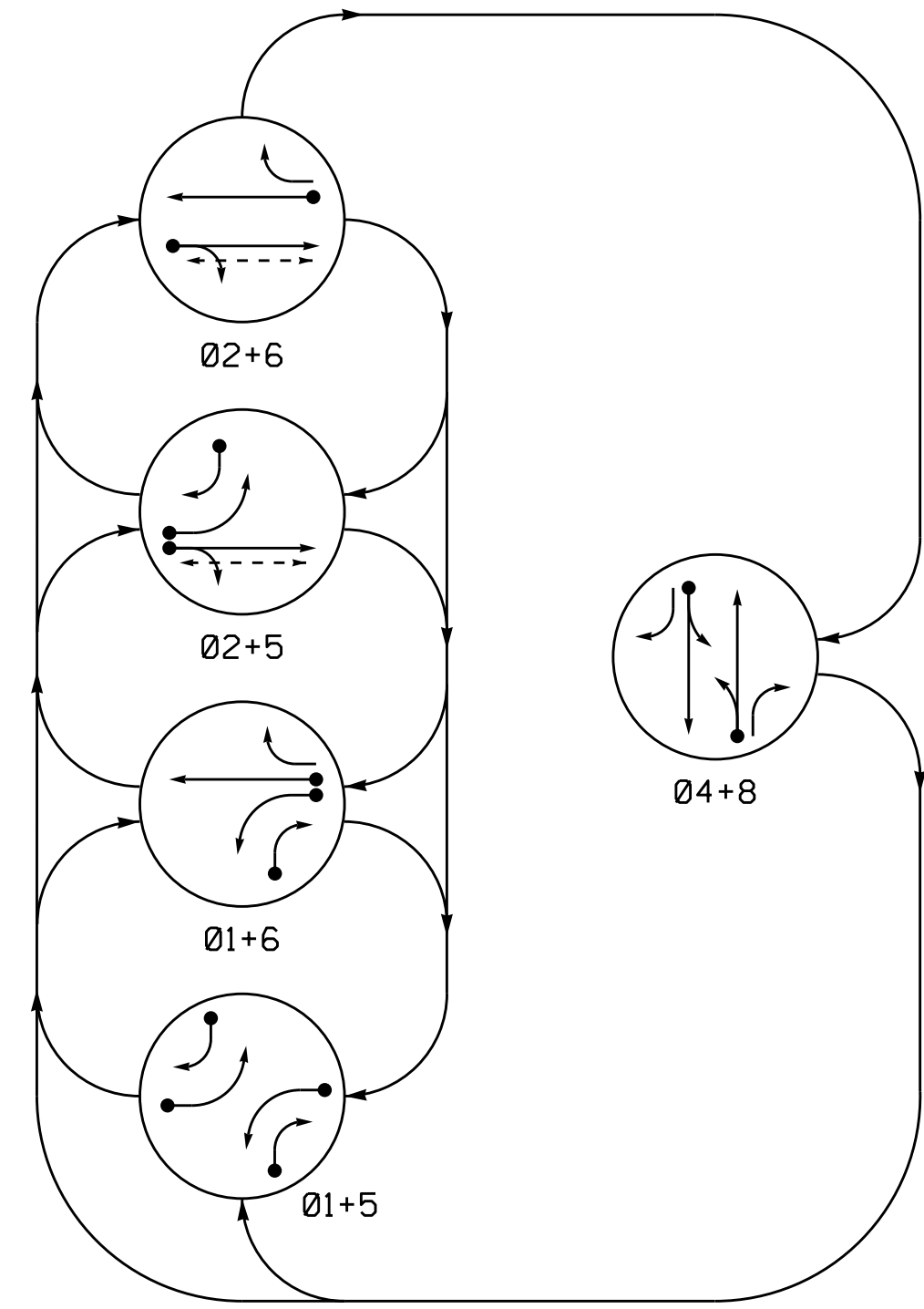
REVISIONS

26-JAN-2018 13:58
24-rdy\scottland\us401\sr-1108(west-blvd)\psh\edp\us401\sr-1108-ecp5.dgn
casdavis AT DIV8-304810

DEFAULT PHASING DIAGRAM



ALTERNATE PHASING DIAGRAM



DEFAULT PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE							
	01+5	01+6	02+5	02+6	04+8	F	H	S
II	←	←	←	←	←	←	←	←
21, 22	R	R	G	G	R	Y		
41	R	R	R	R	G	R		
42	R	R	R	R	G	R		
51	←	←	←	←	←	←	←	←
61, 62	R	G	R	G	R	Y		
81	R	R	R	R	G	R		
82	R	R	R	R	G	R		
P21, P22	DW	DW	W	W	DW	DRK		

W - Walk
DW - Don't Walk
DRK - Dark

ALTERNATE PHASING TABLE OF OPERATION

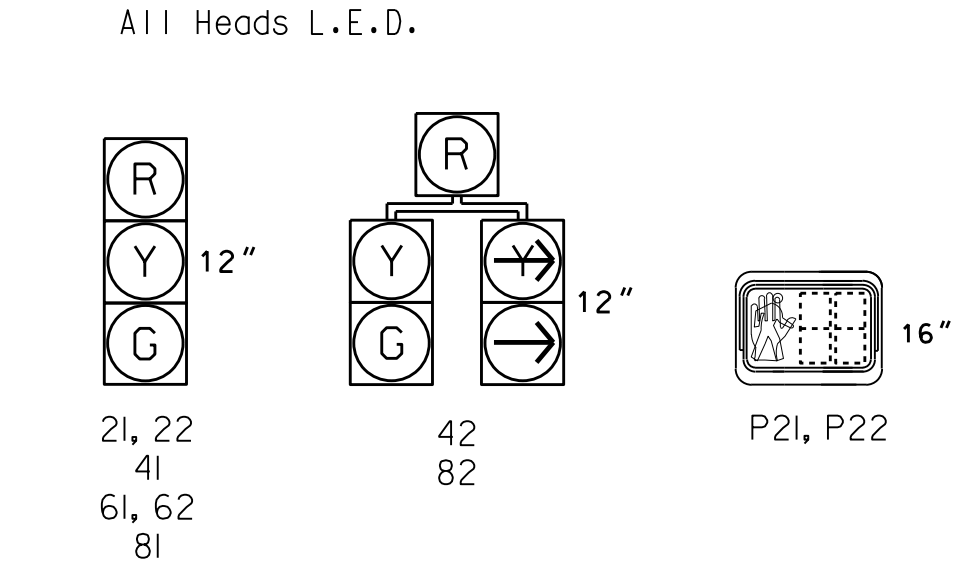
SIGNAL FACE	PHASE							
	01+5	01+6	02+5	02+6	04+8	F	H	S
II	←	←	←	←	←	←	←	←
21, 22	R	R	G	G	R	Y		
41	R	R	R	R	G	R		
42	R	R	R	R	G	R		
51	←	←	←	←	←	←	←	←
61, 62	R	G	R	G	R	Y		
81	R	R	R	R	G	R		
82	R	R	R	R	G	R		
P21, P22	DW	DW	W	W	DW	DRK		

OASIS 2070 LOOP & DETECTOR INSTALLATION CHART

LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	DETECTOR PROGRAMMING							
					PHASE	CALLING	EXTENSION	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD	
IA	6X40	0	2-4-2	-	1	Y	Y	-	-	15 *	-	-
IB	6X40	0	2-4-2	Y	1	Y	Y	-	-	10	-	-
2A	6X6	70	EXISTING	-	2	Y	Y	-	-	-	-	-
4A	6X40	0	2-4-2	-	4	Y	Y	-	-	-	-	-
5A	6X40	0	2-4-2	-	5	Y	Y	-	-	15 *	-	-
5B	6X40	+5	2-4-2	-	5	Y	Y	-	-	10	-	-
6A	6X6	70	EXISTING	-	6	Y	Y	-	-	-	-	-
8A	6X40	0	2-4-2	Y	8	Y	Y	-	-	-	-	-

* Disable Delay During Alternate Phasing Operation.
Disable Phase Call For Loop(s) During Alternate Phasing Operation.

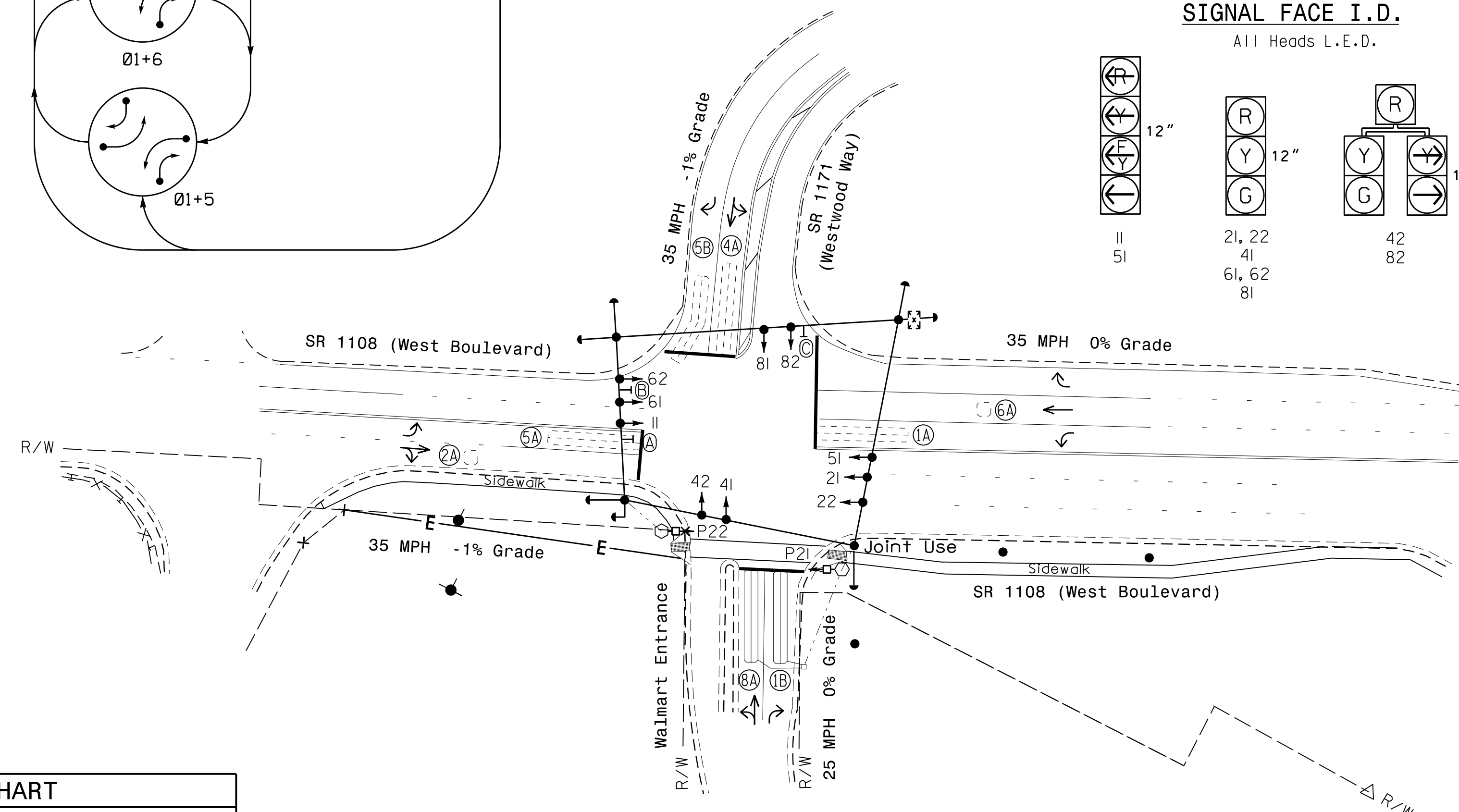
SIGNAL FACE I.D.



5 Phase Fully Actuated US 15-401-501 Bus (Laurinburg) System 1

NOTES

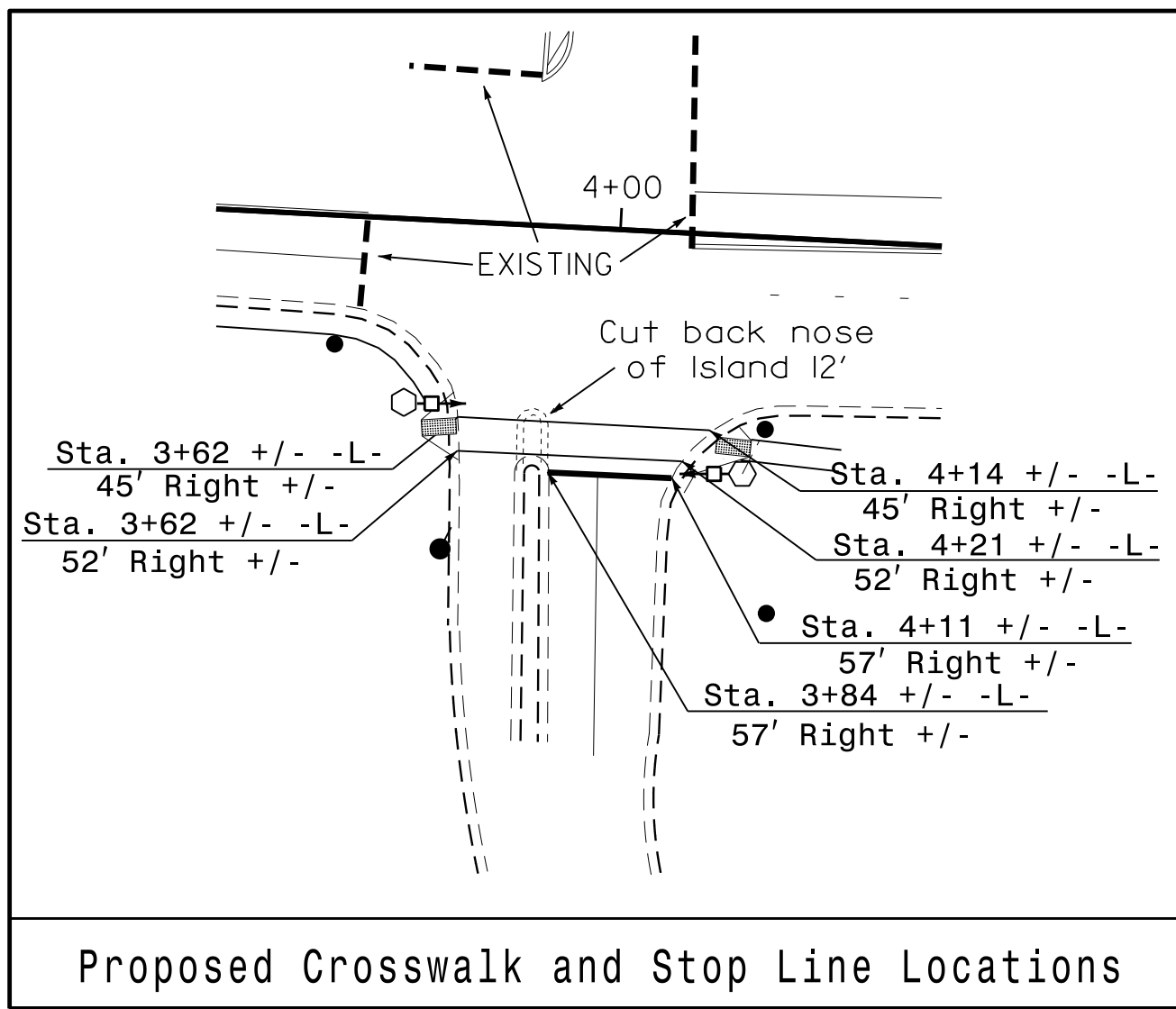
- Refer to "Roadway Standard Drawings NCDOT" dated January 2012 and "Standard Specifications for Roads and Structures" dated January 2012.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 1 and/or phase 5 may be lagged.
- Set all detector units to presence mode.
- Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- Program pedestrian heads to countdown the flashing "Don't Walk" time only.
- Pedestrian pedestals are conceptual and shown for reference only. See sheets P1-P3 for pushbutton location details.
- The Division Traffic Engineer will determine the hours of use for each phasing plan.
- 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 #: 0548.



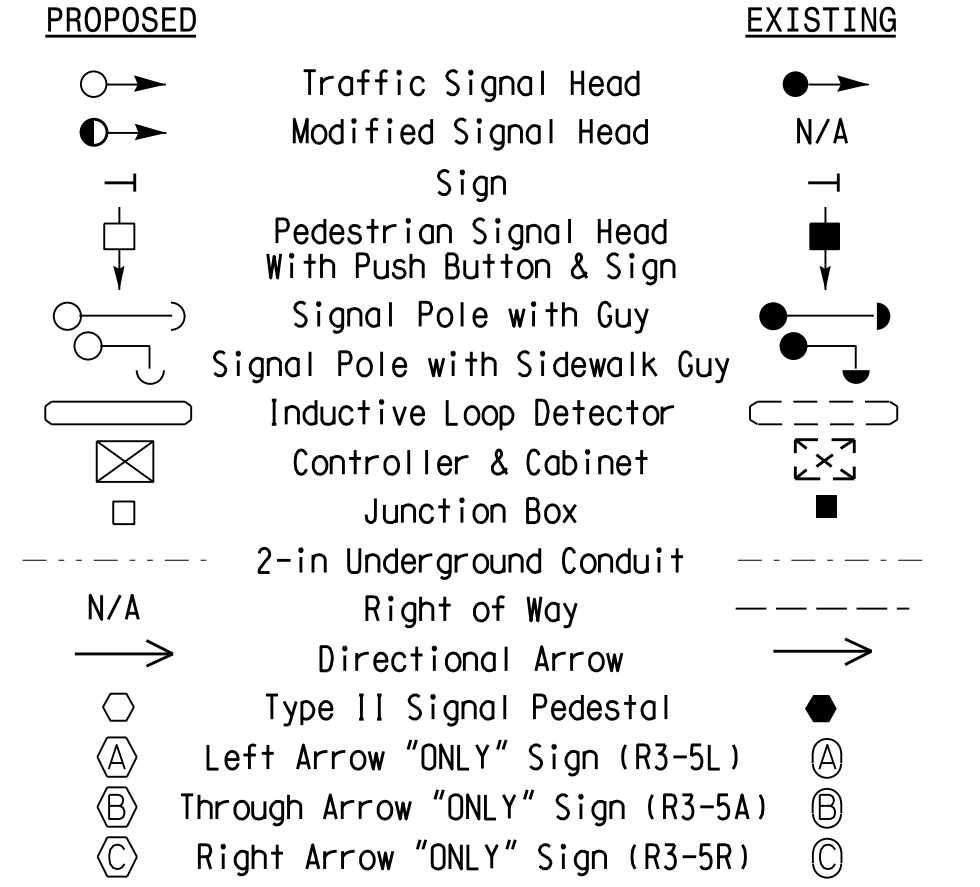
OASIS 2070 TIMING CHART

FEATURE	PHASE							
	1	2	4	5	6	8		
Min Green 1 *	7	10	7	7	10	7		
Extension 1 *	2.0	3.0	2.0	2.0	3.0	2.0		
Max Green 1 *	15	60	25	15	60	25		
Yellow Clearance	3.0	3.9	3.9	3.0	3.9	3.2		
Red Clearance	2.4	1.6	1.6	2.1	1.6	2.5		
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0		
Walk 1 *	-	7	-	-	-	-		
Don't Walk 1	-	12	-	-	-	-		
Dynamic Max/Max 3 *	35	-	-	-	-	-		
Dynamic Max Adjust *	10	-	-	-	-	-		
Seconds Per Actuation *	-	-	-	-	-	-		
Max Variable Initial *	-	-	-	-	-	-		
Time Before Reduction *	-	-	-	-	-	-		
Time To Reduce *	-	-	-	-	-	-		
Minimum Gap	-	-	-	-	-	-		
Recall Mode	-	MIN RECALL	-	-	MIN RECALL	-		
Vehicle Call Memory	-	YELLOW	-	-	YELLOW	-		
Dual Entry	-	-	ON	-	-	ON		
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.



LEGEND



Signal Upgrade

Prepared in the Offices of:

 TRANSPORTATION MOBILITY AND SAFETY DIVISION
 NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 SIGNAL DESIGN SECTION
 750 N. Greenfield Pkwy, Garner, NC 27529

SR 1108 (West Boulevard) at SR 1171 (Westwood Way) / Walmart Entrance
 Division 8 Scotland County Laurinburg
 PLAN DATE: September 2017 REVIEWED BY:
 PREPARED BY: C.E. Carter REVIEWED BY:

REVISIONS: _____ INIT. DATE

9/18/2017
 SEAL 026486
 ENGINEER ROBERT J. ZIEMBA
 DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

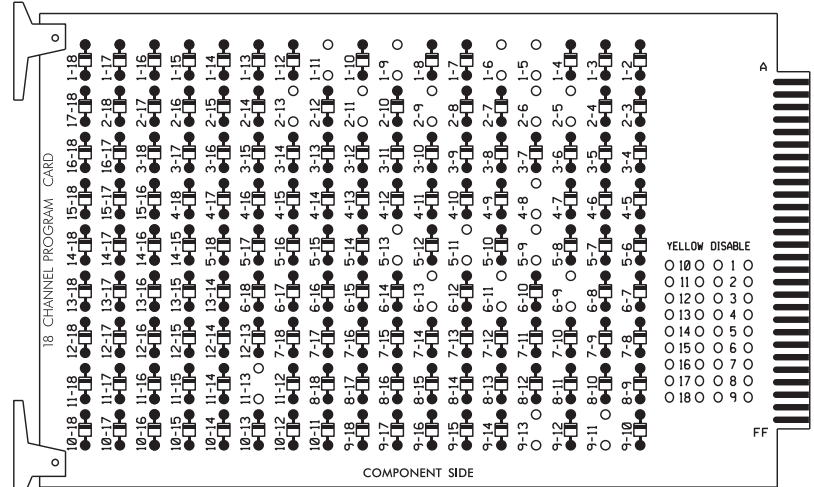
SIG. INVENTORY NO. 08-0548

22-MAR-2018 17:13
 S:\IT\55\UM\15\Sig\15\Sig-Comp\15\15-0548...s1g.dgn, 20170918.dgn
 PZ:terno

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

(remove jumpers and set switches as shown)

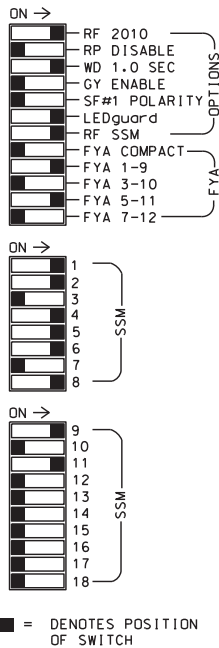
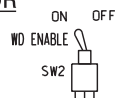
REMOVE DIODE JUMPERS 1-5, 1-6, 1-9, 1-11, 2-5, 2-6, 2-9, 2-11, 2-13, 4-8, 5-9, 5-11, 5-13, 6-9, 6-11, 6-13, 9-11, 9-13 and 11-13.



REMOVE JUMPERS AS SHOWN

NOTES:

- Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
- Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
- Ensure that Red Enable is active at all times during normal operation.
- Connect serial cable from conflict monitor to comm. port 1 of 2070 controller. Ensure conflict monitor communicates with 2070.



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.
- Program phases 4 and 8 for Dual Entry.
- Enable Simultaneous Gap-Out for all Phases.
- Program phases 2 and 6 for Startup In Green.
- Program phase 2 for Startup Ped Call.
- Program phases 2 and 6 for Yellow Flash, and overlap 1 as Wag Overlaps.
- The cabinet and controller are part of the US 15-401-501 Bus (Laurinburg) System 1.

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,S5,S7,S8,S11,AUX S1,AUX S4
 PHASES USED.....1,2,2 PED,4,5,6,8
 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	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	DLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	11	82	21,22	P21, P22	NU	41,42	NU	42	51	61,62	NU	81,82	NU	11	NU	51	NU	NU
RED	*	128			101		*		134		107							
YELLOW		129			102				135		108							
GREEN		130			103				136		109							
RED ARROW													A121			A114		
YELLOW ARROW	126						132						A122			A115		
FLASHING YELLOW ARROW													A123			A116		
GREEN ARROW	127	127					133	133										
Hand																		
Walking Person																		

NU = Not Used
 * Denotes install load resistor. See load resistor installation detail this sheet.
 ★ See pictorial of head wiring in detail this sheet.

INPUT FILE POSITION LAYOUT

(front view)

FILE "I"	1	2	3	4	5	6	7	8	9	10	11	12	13	14
U	∅ 1	∅ 2	-ORS	-ORS	-ORS	∅ 4	-ORS	-ORS	-ORS	-ORS	-ORS	∅ 2 PED	-ORS	FS
L	1A	2A	-ORS	-ORS	-ORS	4A	-ORS	-ORS	-ORS	-ORS	-ORS	DC ISOLATOR	-ORS	DC ISOLATOR
U	NOT USED	NOT USED	-ORS	-ORS	-ORS	∅ 5	-ORS	-ORS	-ORS	-ORS	-ORS	NOT USED	-ORS	ST
L	5A	6A	-ORS	-ORS	-ORS	5B	-ORS	-ORS	-ORS	-ORS	-ORS	DC ISOLATOR	-ORS	DC ISOLATOR
U	NOT USED	NOT USED	-ORS	-ORS	-ORS	∅ 8	-ORS	-ORS	-ORS	-ORS	-ORS	-ORS	-ORS	-ORS
L	5A	6A	-ORS	-ORS	-ORS	8A	-ORS	-ORS	-ORS	-ORS	-ORS	-ORS	-ORS	-ORS
U	NOT USED	NOT USED	-ORS	-ORS	-ORS	∅ 1	-ORS	-ORS	-ORS	-ORS	-ORS	-ORS	-ORS	-ORS
L	5A	6A	-ORS	-ORS	-ORS	1B	-ORS	-ORS	-ORS	-ORS	-ORS	-ORS	-ORS	-ORS

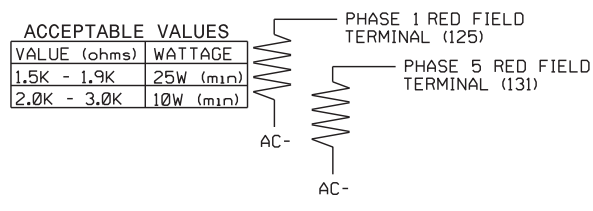
EX.: 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE
 ST = STOP TIME

⊗ Wired Input - Do not populate slot with detector card

LOAD RESISTOR INSTALLATION DETAIL

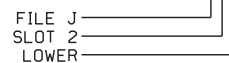
(install resistors as shown below)



INPUT FILE CONNECTION & PROGRAMMING CHART

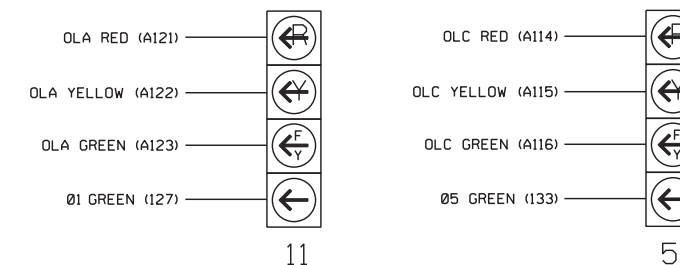
LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
1A ¹	TB2-1,2	I1U	56	18	1	1	Y	Y			15
	-	J4U	48	10★	26	6	Y	Y			
	-	I1U	56	18★	51	1	Y	Y			
1B	TB5-11,12	J6L	46	8	18	1	Y	Y			10
2A	TB2-5,6	I2U	39	1	2	2	Y	Y			
4A	TB4-9,10	I6U	41	3	4	4	Y	Y			
5A ²	TB3-1,2	J1U	55	17	5	5	Y	Y			15
	-	I4U	47	9★	22	2	Y	Y			
	-	J1U	55	17★	55	5	Y	Y			
5B	TB4-11,12	I6L	45	7	14	5	Y	Y			10
6A	TB3-5,6	J2U	40	2	6	6	Y	Y			
8A	TB5-9,10	J6U	42	4	8	8	Y	Y			
PED PUSH BUTTONS											
P21,P22	TB8-4,6	I12U	67	29							

- ¹Add jumper from I1-W to J4-W, on rear of input file.
²Add jumper from J1-W to I4-W, on rear of input file.
 ★ See Input Page Assignment programming details on sheets 3 and 4.
 INPUT FILE POSITION LEGEND: J2L



FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



NOTE

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

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.

THIS ELECTRICAL DETAIL IS FOR
 THE SIGNAL DESIGN: 08-0548
 DESIGNED: September 2017
 SEALED: 9/18/2017
 REVISED:

Electrical Detail - Sheet 1 of 5

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

Prepared in the Offices of:

Division 8 Scotland County Laurinburg

PLAN DATE: September 2017 REVIEWED BY: T. Joyce

PREPARED BY: C. Strickland REVIEWED BY:

REVISIONS INIT. DATE

750 N. Greenfield Pkwy, Garner, NC 27529

SR 1108 (West Boulevard) at SR 1171 (Westwood Way) / Walmart Entrance

Seal of D. Todd Joyce, Engineer, License No. 031001

DATE: 9/20/2017

SIG. INVENTORY NO. 08-0548

**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, 3, 4, 5 AND 6.
- 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

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

SCROLL DOWN

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

PRESS '+'

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

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

SCROLL DOWN

THEN:
SET OUTPUT ASSIGNMENT #52 OFF

PRESS '+'

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

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

SCROLL DOWN

THEN:
SET OUTPUT ASSIGNMENT #51 ON

PRESS '+'

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

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

SCROLL DOWN

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

PRESS '+'

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

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

SCROLL DOWN

THEN:
SET OUTPUT ASSIGNMENT #44 OFF

PRESS '+'

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

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

SCROLL DOWN

THEN:
SET OUTPUT ASSIGNMENT #43 ON

PRESS '+'

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
FOR DEFAULT PHASING**

(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:
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

PRESS '+' TWICE

PAGE 1: VEHICLE OVERLAP 'C' SETTINGS
PHASE: 12345678910111213141516
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?...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

OVERLAP PROGRAMMING COMPLETE

**OVERLAP PROGRAMMING DETAIL
FOR ALTERNATE PHASING**

(program controller as shown below)

FROM MAIN MENU PRESS '8' (OVERLAPS), THEN '1' (VEHICLE OVERLAP SETTINGS). PRESS 'NEXT' TO ADVANCE TO PAGE 2.

PAGE 2: VEHICLE OVERLAP 'A' SETTINGS
PHASE: 12345678910111213141516
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 - 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

PRESS '+' TWICE

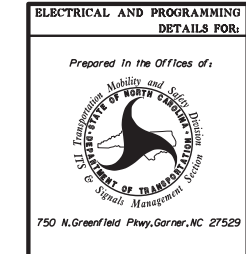
PAGE 2: VEHICLE OVERLAP 'C' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: X
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR: - RED - YELLOW - GREEN
FLASH COLORS: - RED - YELLOW - GREEN

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

OVERLAP PROGRAMMING COMPLETE

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 08-0548
DESIGNED: September 2017
SEALED: 9/18/2017
REVISED:

Electrical Detail - Sheet 2 of 5



Prepared in the Offices of:

SR 1108 (West Boulevard)
at
SR 1171 (Westwood Way)/
Walmart Entrance

Division 8 Scotland County Laurinburg

PLAN DATE: September 2017 REVIEWED BY: T. Joyce

PREPARED BY: C. Strickland REVIEWED BY:

REVISIONS	INIT.	DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

PROFESSIONAL ENGINEER

SEAL 031001

TODD JOYCE

Drawn by: D. Todd Joyce 9/20/2017

DATE

SIG. INVENTORY NO. 08-0548

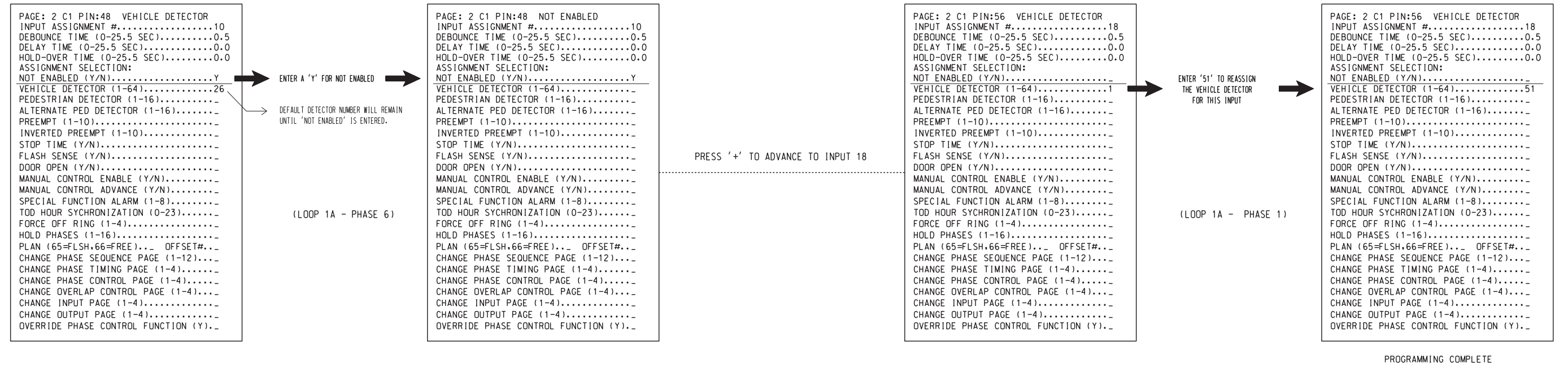
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cestr\ckland

INPUT PAGE 2 ASSIGNMENT PROGRAMMING DETAIL FOR ALTERNATE PHASING - LOOP 1A

(program controller as shown below)

- NOTES: 1. THIS PROGRAMMING APPLIES FOR INPUT PAGE 2 ONLY. INPUT PAGE 1 WILL USE STANDARD DEFAULT SETTINGS. THIS PROGRAMMING IS NECESSARY FOR PROPER DETECTOR OPERATION DURING ALTERNATE PHASING OPERATION.
2. THE FIRST TASK THIS PROGRAMMING ACCOMPLISHES IS THE DISABLING OF INPUT #10 (DETECTOR 26) SO THAT A VEHICLE CALL WILL NOT BE PLACED TO PHASE 6 DURING ALTERNATE PHASING OPERATION. THE SECOND TASK THIS PROGRAMMING ACCOMPLISHES IS THAT IT REASSIGNS DETECTOR 51 TO INPUT #18 SO THAT THE DELAY ON LOOP 1A CAN BE REDUCED FROM 15 SECONDS TO 0 SECONDS.

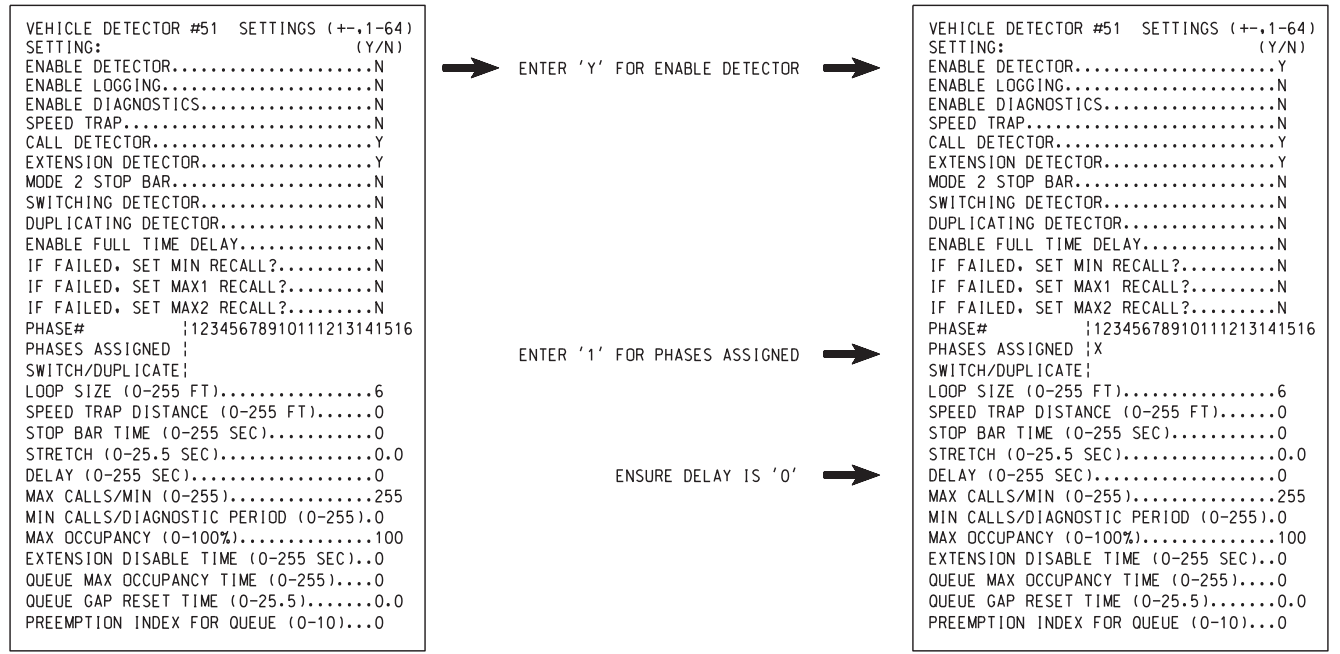
FROM MAIN MENU PRESS '5' (INPUTS), THEN PRESS 'NEXT' TO GET TO INPUT PAGE '2'. PRESS THE '+' KEY UNTIL INPUT 10 IS REACHED.



SPECIAL DETECTOR PROGRAMMING DETAIL - LOOP 1A (ALT.)

(program controller as shown below)

FROM MAIN MENU PRESS '7' (DETECTORS), THEN PRESS '1' FOR VEHICLE DETECTORS. PRESS THE '-' KEY TO GET TO VEHICLE DETECTOR #51.



NOTE: DETECTOR IS PROGRAMMED PER THE INPUT FILE CONNECTION AND PROGRAMMING CHART SHOWN ON SHEET 1.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 08-0548
 DESIGNED: September 2017
 SEALED: 9/18/2017
 REVISED:

Electrical Detail - Sheet 3 of 5

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

Division 8 Scotland County Laurinburg

Prepared in the Offices of:
 C-1 Transportation, Mobility and Safety Division
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 750 N. Greenfield Pkwy, Garner, NC 27529

SR 1108 (West Boulevard) at SR 1171 (Westwood Way) / Walmart Entrance

PLAN DATE: September 2017 REVIEWED BY: T. Joyce

PREPARED BY: C. Strickland REVIEWED BY:

REVISIONS: INIT. DATE

Sealed by: D. Todd Joyce 9/20/2017

SIG. INVENTORY NO. 08-0548

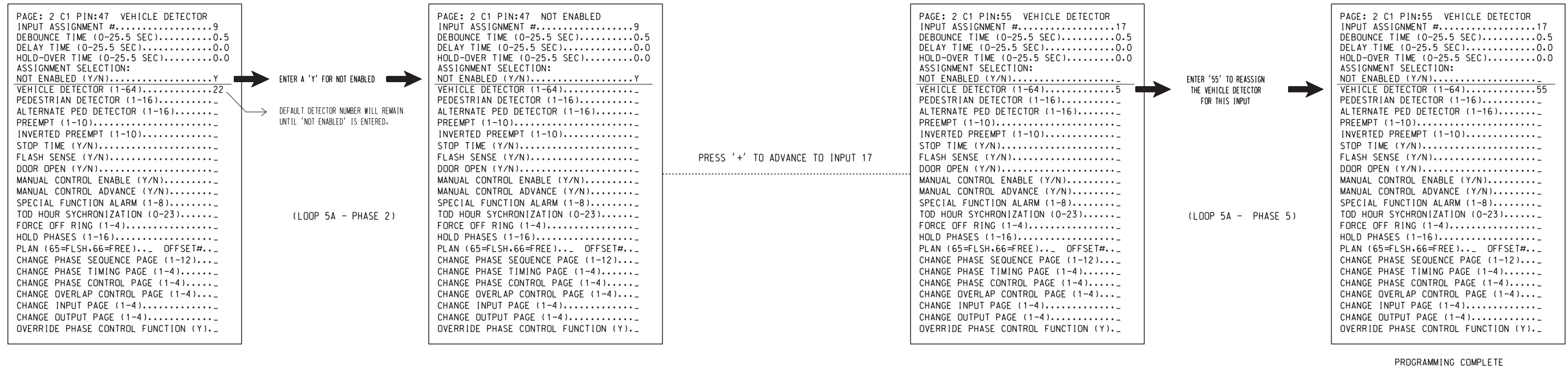
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INPUT PAGE 2 ASSIGNMENT PROGRAMMING DETAIL FOR ALTERNATE PHASING - LOOP 5A

(program controller as shown below)

- NOTES: 1. THIS PROGRAMMING APPLIES FOR INPUT PAGE 2 ONLY. INPUT PAGE 1 WILL USE STANDARD DEFAULT SETTINGS. THIS PROGRAMMING IS NECESSARY FOR PROPER DETECTOR OPERATION DURING ALTERNATE PHASING OPERATION.
2. THE FIRST TASK THIS PROGRAMMING ACCOMPLISHES IS THE DISABLING OF INPUT #9 (DETECTOR 22) SO THAT A VEHICLE CALL WILL NOT BE PLACED TO PHASE 2 DURING ALTERNATE PHASING OPERATION. THE SECOND TASK THIS PROGRAMMING ACCOMPLISHES IS THAT IT REASSIGNS DETECTOR 55 TO INPUT #17 SO THAT THE DELAY ON LOOP 5A CAN BE REDUCED FROM 15 SECONDS TO 0 SECONDS.

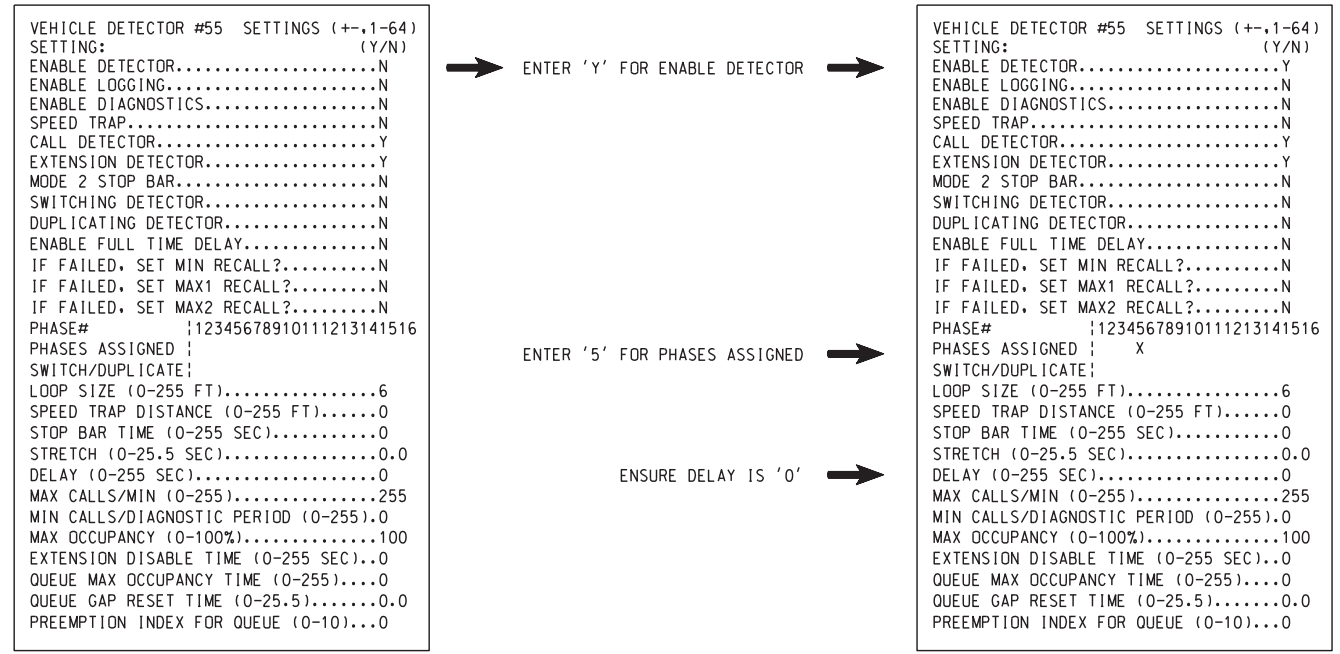
FROM MAIN MENU PRESS '5' (INPUTS), THEN PRESS 'NEXT' TO GET TO INPUT PAGE '2'. PRESS THE '+' KEY UNTIL INPUT 9 IS REACHED.



SPECIAL DETECTOR PROGRAMMING DETAIL - LOOP 5A (ALT.)

(program controller as shown below)

FROM MAIN MENU PRESS '7' (DETECTORS), THEN PRESS '1' FOR VEHICLE DETECTORS. PRESS THE '-' KEY TO GET TO VEHICLE DETECTOR #55.



NOTE: DETECTOR IS PROGRAMMED PER THE INPUT FILE CONNECTION AND PROGRAMMING CHART SHOWN ON SHEET 1.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 08-0548
 DESIGNED: September 2017
 SEALED: 9/18/2017
 REVISED:

Electrical Detail - Sheet 4 of 5

ELECTRICAL AND PROGRAMMING DETAILS FOR: SR 1108 (West Boulevard) at SR 1171 (Westwood Way)/Walmart Entrance

Prepared in the Offices of:

 750 N. Greenfield Pkwy, Garner, NC 27529

Division 8, Scotland County, Laurinburg

PLAN DATE: September 2017 REVIEWED BY: T. Joyce
 PREPARED BY: C. Strickland REVIEWED BY:

REVISIONS	INIT.	DATE

Seal of the State of North Carolina, Professional Engineer, Todd Joyce, License No. 031001, dated 9/20/2017.

SIG. INVENTORY NO. 08-0548

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ALTERNATE PHASING ACTIVATION DETAIL

TO RUN ALT. PHASING DURING COORDINATION - SELECT ALL PAGE CHANGES (AS SHOWN BELOW) WITHIN COORDINATION PLAN PROGRAMMING.

TO RUN ALT. PHASING DURING FREE RUN - PROGRAM PAGE CHANGES (SHOWN BELOW) IN SEPARATE TIME OF DAY EVENTS. IF PAGE 1 IS USED, NO EVENT PROGRAMMING IS NECESSARY FOR THAT PARTICULAR PAGE.

<u>PHASING</u>	<u>INPUTS PAGE</u>	<u>OVERLAPS PAGE</u>
ACTIVE PAGES REQUIRED TO RUN <u>DEFAULT PHASING</u>	1	1
ACTIVE PAGES REQUIRED TO RUN <u>ALTERNATE PHASING</u>	2	2

NOTE: PAGES NOT SHOWN (i.e. sequence, phase control, etc.) SHOULD REMAIN AS '1', OR AS DEFINED BY TIMING ENGINEER.

IMPORTANT: IF ALT. PHASING IS USED DURING FREE RUN AND COORDINATION, DO NOT OPERATE TIME OF DAY PAGE CHANGE EVENTS CONCURRENTLY WITH COORDINATION PLAN EVENTS IN THE EVENT SCHEDULER. (EX. FREE RUN PAGE CHANGE EVENT SHOULD END BEFORE COORDINATION PLAN EVENT STARTS AND VICE-VERSA).

ALTERNATE PHASING PAGE CHANGE SUMMARY

THE FOLLOWING IS A SUMMARY OF WHAT TAKES PLACE WHEN THESE OVERLAP/INPUT PAGE CHANGES ACTIVATE TO CALL THE "ALTERNATE PHASING":

OVERLAPS PAGE 2: Modifies overlap parent phases for heads 11 and 51 to run protected turns only.

INPUTS PAGE 2: Disables phase 6 call on loop 1A and reduces delay time for phase 1 call on loop 1A to 0 seconds.


Disables phase 2 call on loop 5A and reduces delay time for phase 5 call on loop 5A to 0 seconds.

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 08-0548
DESIGNED: September 2017
SEALED: 9/18/2017
REVISED:

Electrical Detail - Sheet 5 of 5

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared in the Offices of:



750 N. Greenfield Pkwy, Garner, NC 27529

**SR 1108 (West Boulevard)
at
SR 1171 (Westwood Way)/
Walmart Entrance**

Division 8 Scotland County Laurinburg


PLAN DATE: September 2017 REVIEWED BY: T. Joyce

PREPARED BY: C. Strickland REVIEWED BY:

REVISIONS	INIT.	DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL



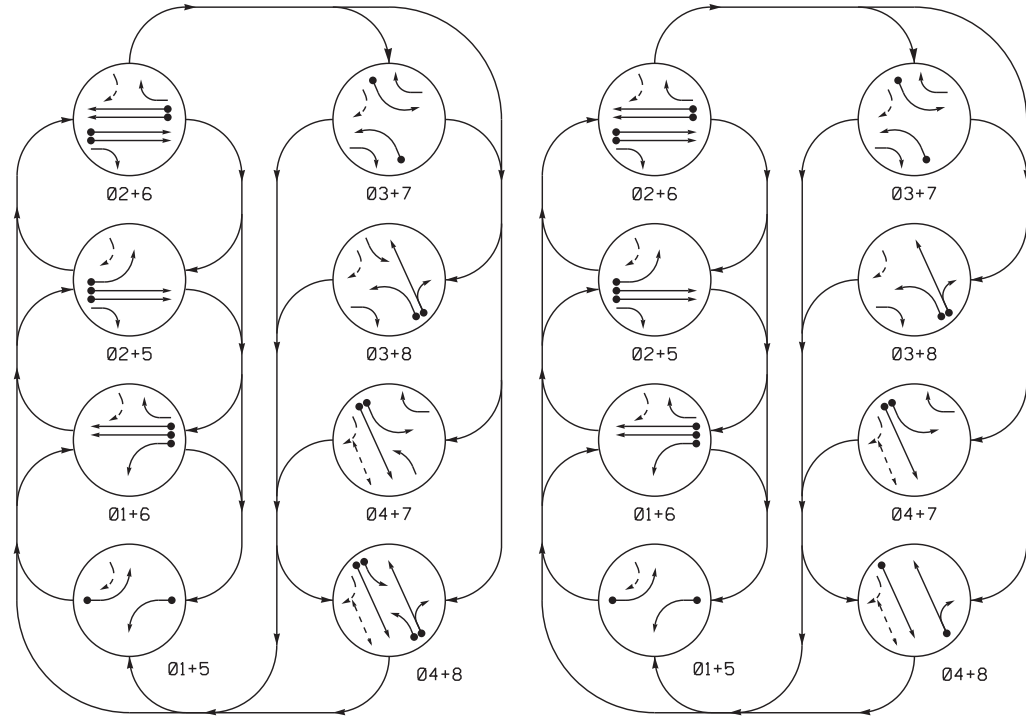
Drawn/checked by:
D. Todd Joyce 9/20/2017

DATE

SIG. INVENTORY NO. 08-0548

DEFAULT PHASING DIAGRAM

ALTERNATE PHASING DIAGRAM



DEFAULT PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE							
	01+5	01+6	02+5	02+6	03+7	03+8	04+7	04+8
11	---	---	---	---	---	---	---	---
21	R	R	G	G	R	R	R	Y
22	R	R	G	G	R	R	R	Y
31	---	---	---	---	---	---	---	---
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	---	---	---	---	---	---	---	---
81, 82	R	R	R	R	R	G	R	G
P41, P42	DW	DW	DW	DW	DW	W	W	DRK

ALTERNATE PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE							
	01+5	01+6	02+5	02+6	03+7	03+8	04+7	04+8
11	---	---	---	---	---	---	---	---
21	R	R	G	G	R	R	R	Y
22	R	R	G	G	R	R	R	Y
31	---	---	---	---	---	---	---	---
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	---	---	---	---	---	---	---	---
81, 82	R	R	R	R	R	G	R	G
P41, P42	DW	DW	DW	DW	DW	W	W	DRK

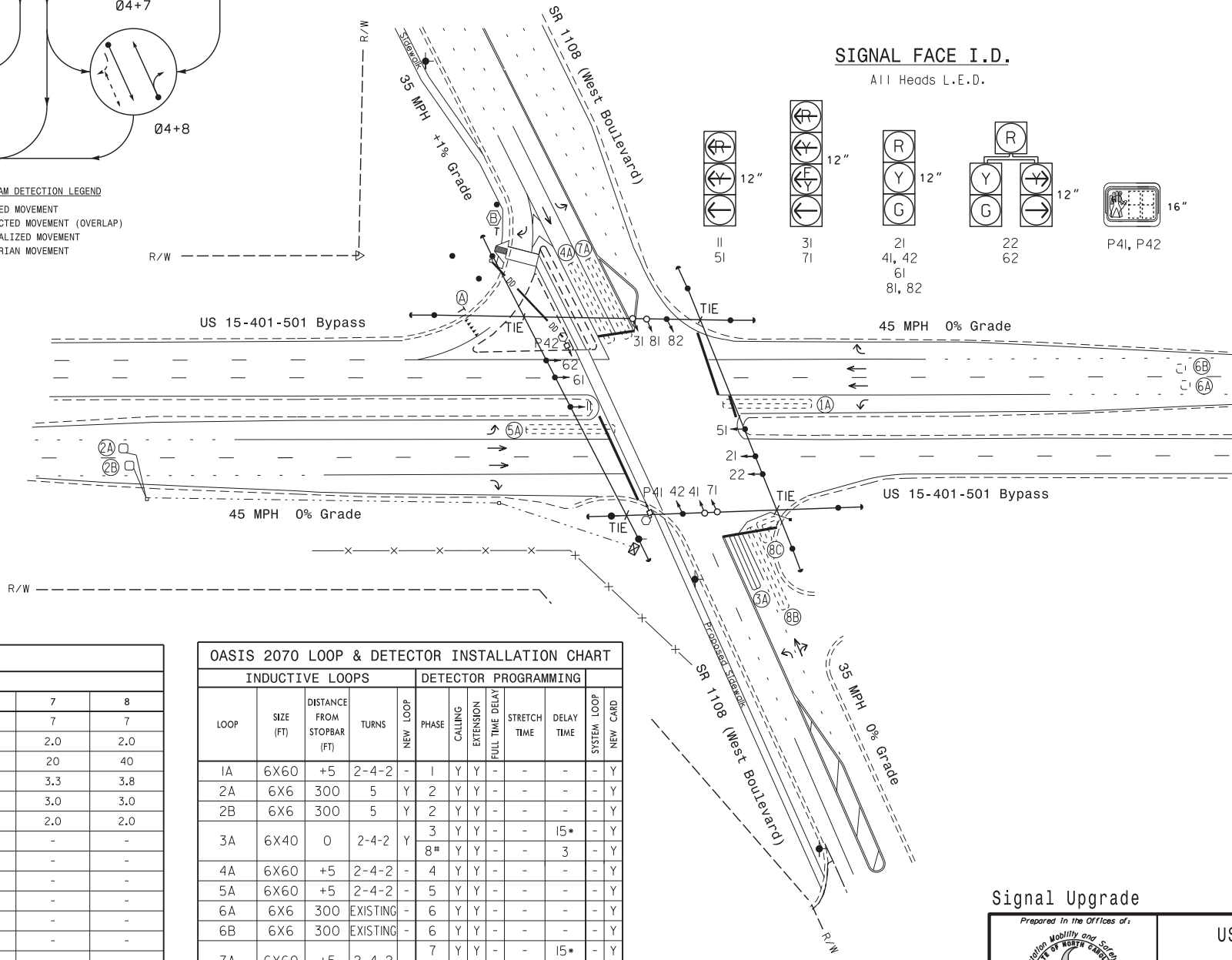
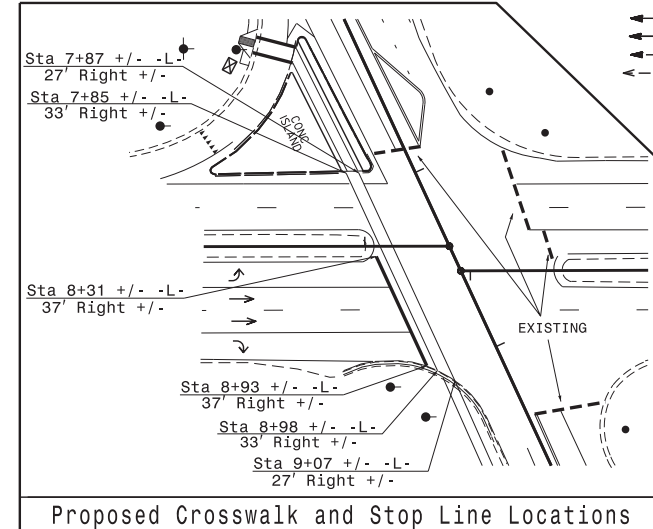
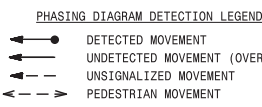
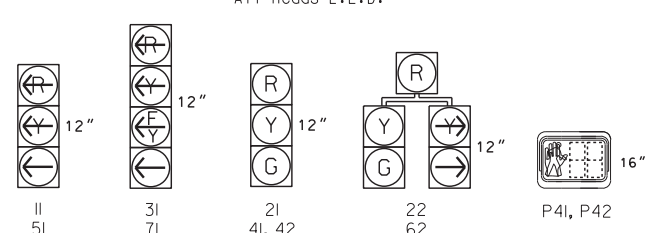
W - Walk
DW - Don't Walk
DRK - Dark

8 Phase Fully Actuated Bus. (Laurinburg) System 1

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.
- In the event of loop replacement, refer to the current ITS and Signals Design Manual and submit a Plan of Record to the Signal Design Section.
- Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- Program pedestrian heads to countdown the flashing "Don't Walk" time only.
- Pedestrian pedestals are conceptual and shown for reference only. See sheets P1-P3 for pushbutton location details.
- Pavement markings are existing.
- The Division Traffic Engineer will determine the hours of use for each phasing plan.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

SIGNAL FACE I.D.



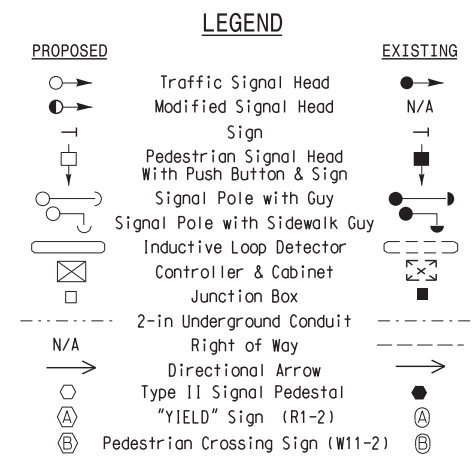
OASIS 2070 TIMING CHART

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	90	20	40	25	90	20	40
Yellow Clearance	3.0	4.5	3.8	3.8	3.0	4.5	3.3	3.8
Red Clearance	2.4	1.2	3.0	3.0	2.6	1.3	3.0	3.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk 1*	-	-	-	7	-	-	-	-
Don't Walk 1	-	-	-	30	-	-	-	-
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	ON

OASIS 2070 LOOP & DETECTOR INSTALLATION CHART

LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	DETECTOR PROGRAMMING									
				NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD	
1A	6X60	+5	2-4-2	-	1	Y	Y	-	-	-	-	-	Y
2A	6X6	300	5	Y	2	Y	Y	-	-	-	-	-	Y
2B	6X6	300	5	Y	2	Y	Y	-	-	-	-	-	Y
3A	6X40	0	2-4-2	Y	3	Y	Y	-	-	15*	-	-	Y
4A	6X60	+5	2-4-2	-	4	Y	Y	-	-	-	-	-	Y
5A	6X60	+5	2-4-2	-	5	Y	Y	-	-	-	-	-	Y
6A	6X6	300	EXISTING	-	6	Y	Y	-	-	-	-	-	Y
6B	6X6	300	EXISTING	-	6	Y	Y	-	-	-	-	-	Y
7A	6X60	+5	2-4-2	-	7	Y	Y	-	-	15*	-	-	Y
8B	6X60	+5	2-4-2	-	8	Y	Y	-	-	5	-	-	Y
8C	6X15X15	+5	2-4-2	-	8	Y	Y	-	-	15	-	-	Y

* Disable Delay During Alternate Phasing Operation.
Disable Phase Call For Loop(s) During Alternate Phasing Operation.



Signal Upgrade

US 15-401-501 Bypass at SR 1108 (West Boulevard)

Division 8 Scotland County Laurinburg

PLAN DATE: September 2017 REVIEWED BY:

PREPARED BY: C.E. Carter REVIEWED BY:

SCALE: 1"=50'

REVISIONS: INIT. DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

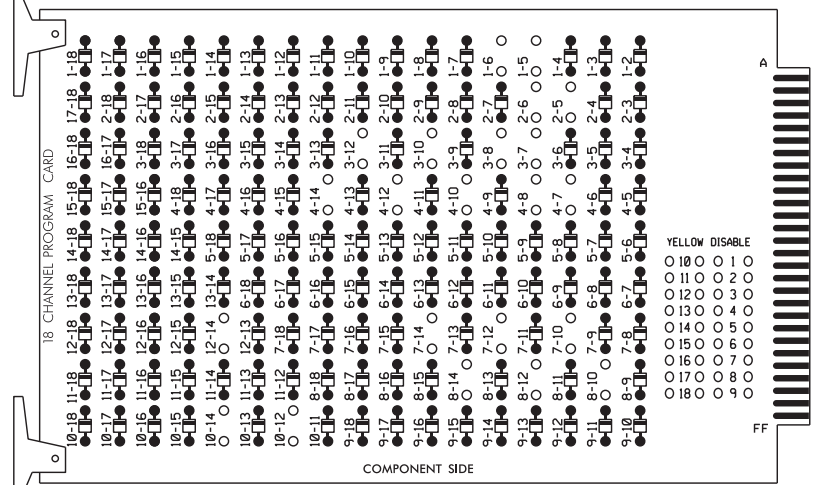
SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER ROBERT J. ZIEMBA

SCALE INVENTORY NO. 08-0015

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EDI MODEL 2018ECL-NC CONFLICT MONITOR
PROGRAMMING DETAIL
 (remove jumpers and set switches as shown)

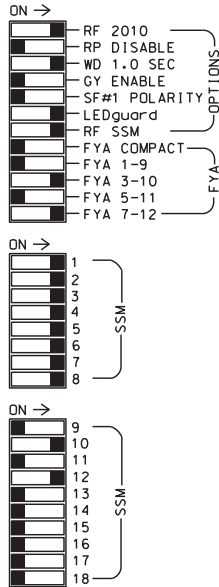
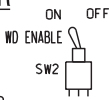
REMOVE DIODE JUMPERS 1-5, 1-6, 2-5, 2-6, 3-7, 3-8, 3-10, 3-12, 4-7, 4-8, 4-10, 4-12, 4-14, 7-10, 7-12, 7-14, 8-10, 8-12, 8-14, 10-12, 10-14 and 12-14.



REMOVE JUMPERS AS SHOWN

NOTES:

- Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
- Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
- Ensure that Red Enable is active at all times during normal operation.
- Connect serial cable from conflict monitor to comm. port 1 of 2070 controller. Ensure conflict monitor communicates with 2070.



■ = DENOTES POSITION OF SWITCH

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.
- 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 Startup In Green.
- Program phase 4 for Startup Ped Call.
- Program phases 2 and 6 for Yellow Flash, and overlap 2 as Wag Overlaps.
- The cabinet and controller are part of the US 15-401-501 Bus. (Laurinburg) System 1.

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,S4,S5,S6,S7,S8,S10,S11,
 AUX S2,AUX S5
 PHASES USED.....1,2,3,4,4 PED,5,6,7,8
 OVERLAP "A".....NOT USED
 OVERLAP "B".....3+4
 OVERLAP "C".....NOT USED
 OVERLAP "D".....7+8

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.	11	21,22	NU	22	31	41,42	P41, P42	51	61,62	NU	62	71	81,82	NU	31	NU	71	NU
RED	128			*	101			134		*	107							
YELLOW	129				102			135			108							
GREEN	130				103			136			109							
RED ARROW	125							131					A124				A101	
YELLOW ARROW	126			117				132		123			A125				A102	
FLASHING YELLOW ARROW													A126				A103	
GREEN ARROW	127			118	118			133		124	124							
Hand								104										
Walking								106										

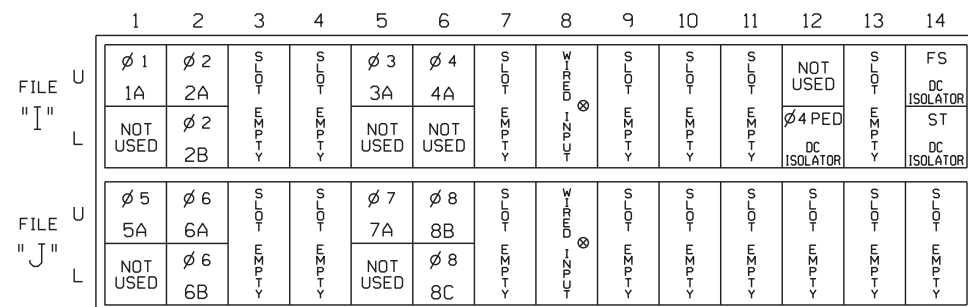
NU = Not Used

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

★ See pictorial of head wiring in detail this sheet.

INPUT FILE POSITION LAYOUT

(from view)



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

FS = FLASH SENSE
 ST = STOP TIME

⊗ Wired Input - Do not populate slot with detector card

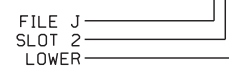
INPUT FILE CONNECTION & PROGRAMMING CHART

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	TB2-1,2	11U	56	18	1	1	Y	Y			
2A	TB2-5,6	12U	39	1	2	2	Y	Y			
2B	TB2-7,8	12L	43	5	12	2	Y	Y			
3A ¹	TB4-5,6	15U	58	20	3	3	Y	Y			15
	-	J8U	50	12★	28	8	Y	Y			3
4A	TB4-9,10	16U	41	3	4	4	Y	Y			
	TB3-1,2	J1U	55	17	5	5	Y	Y			
6A	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 ²	-	J8U	49	11★	24	4	Y	Y			
	-	J5U	57	19★	57	7	Y	Y			
8B	TB5-9,10	J6U	42	4	8	8	Y	Y			5
8C	TB5-11,12	J6L	46	8	18	8	Y	Y			15
PED PUSH BUTTONS											
P41,P42	TB8-5,6	112L	69	31	PED 4	4 PED					

NOTE:
 INSTALL DC ISOLATORS
 IN INPUT FILE SLOT 112.

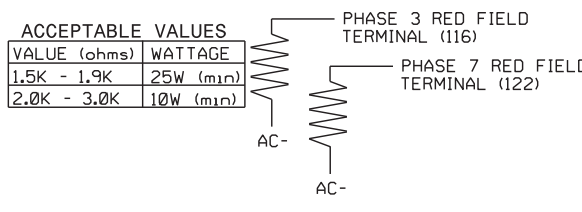
- ¹Add jumper from I5-W to J8-W, on rear of input file.
- ²Add jumper from J5-W to I8-W, on rear of input file.
- ★ See Input Page Assignment programming details on sheets 3 and 4.

INPUT FILE POSITION LEGEND: J2L



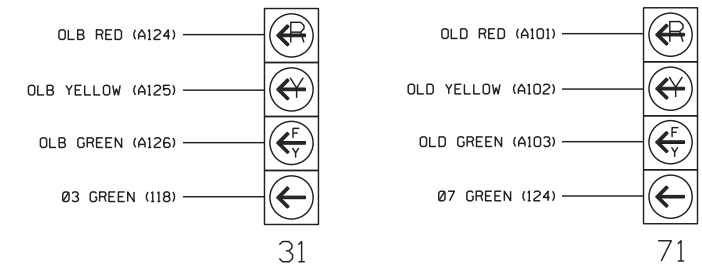
LOAD RESISTOR INSTALLATION DETAIL

(install resistors as shown below)



FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



NOTE

The sequence display for signal heads 31 and 71 requires special logic programming. See sheet 2 for programming instructions.

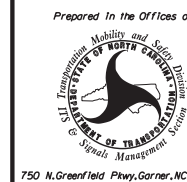
COUNTDOWN PEDESTRIAN SIGNAL OPERATION

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.

THIS ELECTRICAL DETAIL IS FOR
 THE SIGNAL DESIGN: 08-0015
 DESIGNED: September 2017
 SEALED: 9/18/2017
 REVISED:

Electrical Detail - Sheet 1 of 5

ELECTRICAL AND PROGRAMMING DETAILS FOR:



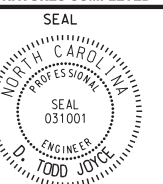
750 N. Greenfield Pkwy, Garner, NC 27529

US 15-401-501 Bypass
 at
 SR 1108 (West Boulevard)

Division 8 Scotland County Laurinburg
 PLAN DATE: September 2017 REVIEWED BY: T. Joyce
 PREPARED BY: C. Strickland REVIEWED BY:

REVISIONS	INIT.	DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

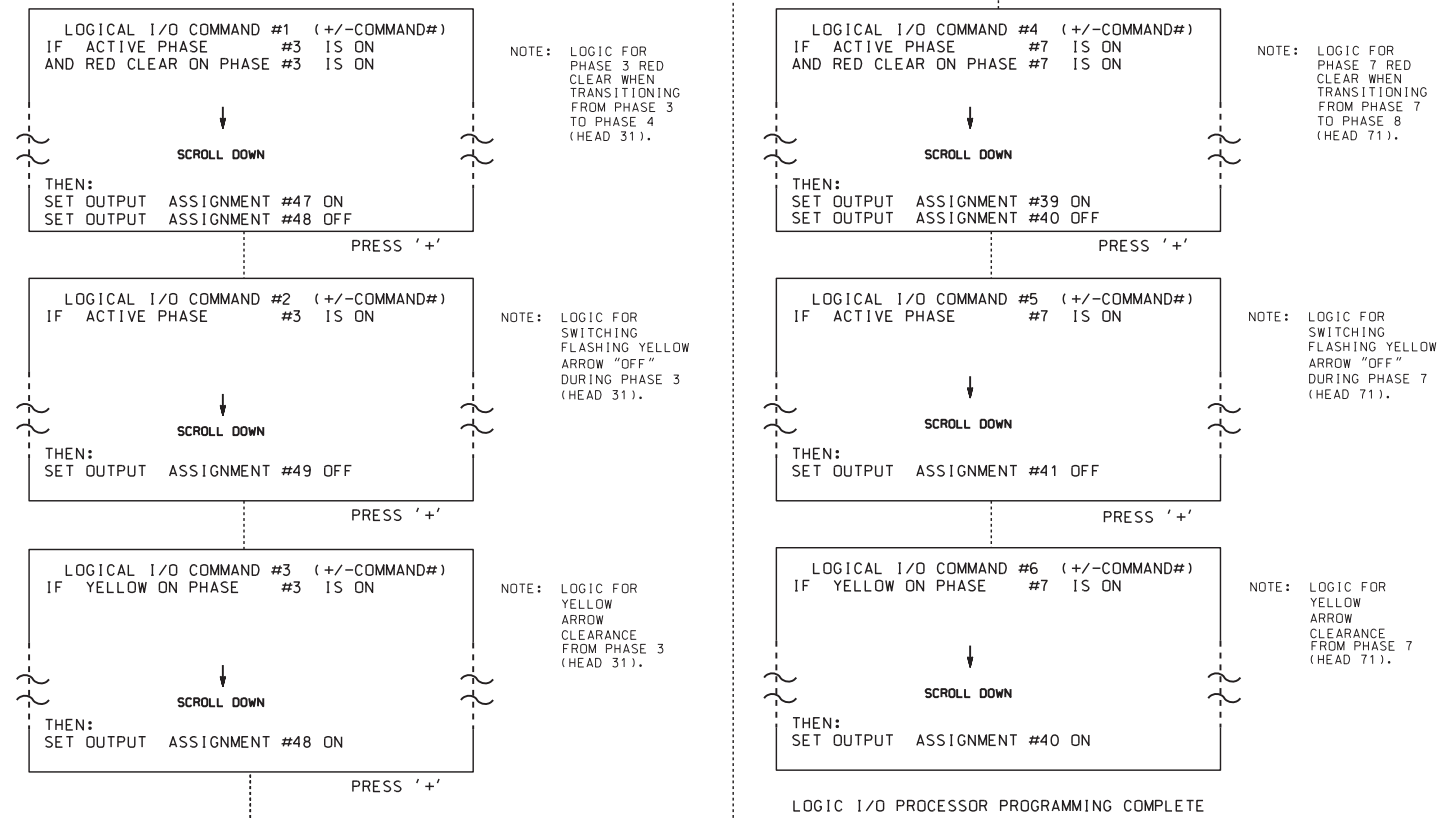


Approved by: D. Todd Joyce
 DATE: 9/20/2017
 SIG. INVENTORY NO. 08-0015

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, 3, 4, 5 AND 6.
- FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '3' (LOGICAL I/O PROCESSOR).



OUTPUT REFERENCE SCHEDULE	
USE TO INTERPRET LOGIC PROCESSOR	
OUTPUT 39	= Overlap D Red
OUTPUT 40	= Overlap D Yellow
OUTPUT 41	= Overlap D Green
OUTPUT 47	= Overlap B Red
OUTPUT 48	= Overlap B Yellow
OUTPUT 49	= Overlap B Green

OVERLAP PROGRAMMING DETAIL FOR DEFAULT PHASING

(program controller as shown below)

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

PRESS '+'

```

    PAGE 1: VEHICLE OVERLAP 'B' SETTINGS
    PHASE: 12345678910111213141516
    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 '+' TWICE

```

    PAGE 1: VEHICLE OVERLAP 'D' SETTINGS
    PHASE: 12345678910111213141516
    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

OVERLAP PROGRAMMING COMPLETE

OVERLAP PROGRAMMING DETAIL FOR ALTERNATE PHASING

(program controller as shown below)

FROM MAIN MENU PRESS '8' (OVERLAPS).
THEN '1' (VEHICLE OVERLAP SETTINGS).
PRESS 'NEXT' TO ADVANCE TO PAGE 2.

PRESS '+'

```

    PAGE 2: VEHICLE OVERLAP 'B' SETTINGS
    PHASE: 12345678910111213141516
    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 - 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 PAGE 2

PRESS '+' TWICE

```

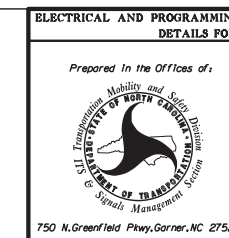
    PAGE 2: VEHICLE OVERLAP 'D' SETTINGS
    PHASE: 12345678910111213141516
    VEH OVL PARENTS: X
    VEH OVL NOT VEH:
    VEH OVL NOT PED:
    VEH OVL GRN EXT:
    STARTUP COLOR: - RED - YELLOW - GREEN
    FLASH COLORS: - RED - YELLOW - GREEN
    SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
    FLASH YELLOW IN 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 PAGE 2

OVERLAP PROGRAMMING COMPLETE

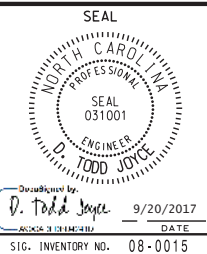
Electrical Detail - Sheet 2 of 5

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 08-0015
DESIGNED: September 2017
SEALED: 9/18/2017
REVISED:



US 15-401-501 Bypass at SR 1108 (West Boulevard)	
Division 8	Scotland County
PLAN DATE: September 2017	REVIEWED BY: T. Joyce
PREPARED BY: C. Strickland	REVIEWED BY:
REVISIONS	INIT. DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



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INPUT PAGE 2 ASSIGNMENT PROGRAMMING DETAIL FOR ALTERNATE PHASING - LOOP 3A

(program controller as shown below)

- NOTES: 1. THIS PROGRAMMING APPLIES FOR INPUT PAGE 2 ONLY. INPUT PAGE 1 WILL USE STANDARD DEFAULT SETTINGS. THIS PROGRAMMING IS NECESSARY FOR PROPER DETECTOR OPERATION DURING ALTERNATE PHASING OPERATION.
2. THE FIRST TASK THIS PROGRAMMING ACCOMPLISHES IS THE DISABLING OF INPUT #12 (DETECTOR 28) SO THAT A VEHICLE CALL WILL NOT BE PLACED TO PHASE 8 DURING ALTERNATE PHASING OPERATION. THE SECOND TASK THIS PROGRAMMING ACCOMPLISHES IS THAT IT REASSIGNS DETECTOR 53 TO INPUT #20 SO THAT THE DELAY ON LOOP 3A CAN BE REDUCED FROM 15 SECONDS TO 0 SECONDS.

FROM MAIN MENU PRESS '5' (INPUTS), THEN PRESS 'NEXT' TO GET TO INPUT PAGE '2'. PRESS THE '+' KEY UNTIL INPUT 12 IS REACHED.

```

PAGE: 2 C1 PIN:50 VEHICLE DETECTOR
INPUT ASSIGNMENT #.....12
DEBOUNCE TIME (0-25.5 SEC).....0.5
DELAY TIME (0-25.5 SEC).....0.0
HOLD-OVER TIME (0-25.5 SEC).....0.0
ASSIGNMENT SELECTION:
NOT ENABLED (Y/N).....Y
VEHICLE DETECTOR (1-64).....28
PEDESTRIAN DETECTOR (1-16).....
ALTERNATE PED DETECTOR (1-16).....
PREEMPT (1-10).....
INVERTED PREEMPT (1-10).....
STOP TIME (Y/N).....
FLASH SENSE (Y/N).....
DOOR OPEN (Y/N).....
MANUAL CONTROL ENABLE (Y/N).....
MANUAL CONTROL ADVANCE (Y/N).....
SPECIAL FUNCTION ALARM (1-8).....
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4).....
HOLD PHASES (1-16).....
PLAN (65=FLSH,66=FREE)... OFFSET#...
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)...
CHANGE PHASE CONTROL PAGE (1-4)...
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4)...
CHANGE OUTPUT PAGE (1-4)...
OVERRIDE PHASE CONTROL FUNCTION (Y)...
    
```

ENTER A 'Y' FOR NOT ENABLED
 DEFAULT DETECTOR NUMBER WILL REMAIN UNTIL 'NOT ENABLED' IS ENTERED.

(LOOP 3A - PHASE 8)

```

PAGE: 2 C1 PIN:50 NOT ENABLED
INPUT ASSIGNMENT #.....12
DEBOUNCE TIME (0-25.5 SEC).....0.5
DELAY TIME (0-25.5 SEC).....0.0
HOLD-OVER TIME (0-25.5 SEC).....0.0
ASSIGNMENT SELECTION:
NOT ENABLED (Y/N).....Y
VEHICLE DETECTOR (1-64).....
PEDESTRIAN DETECTOR (1-16).....
ALTERNATE PED DETECTOR (1-16).....
PREEMPT (1-10).....
INVERTED PREEMPT (1-10).....
STOP TIME (Y/N).....
FLASH SENSE (Y/N).....
DOOR OPEN (Y/N).....
MANUAL CONTROL ENABLE (Y/N).....
MANUAL CONTROL ADVANCE (Y/N).....
SPECIAL FUNCTION ALARM (1-8).....
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4).....
HOLD PHASES (1-16).....
PLAN (65=FLSH,66=FREE)... OFFSET#...
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)...
CHANGE PHASE CONTROL PAGE (1-4)...
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4)...
CHANGE OUTPUT PAGE (1-4)...
OVERRIDE PHASE CONTROL FUNCTION (Y)...
    
```

PRESS '+' TO ADVANCE TO INPUT 20

```

PAGE: 2 C1 PIN:58 VEHICLE DETECTOR
INPUT ASSIGNMENT #.....20
DEBOUNCE TIME (0-25.5 SEC).....0.5
DELAY TIME (0-25.5 SEC).....0.0
HOLD-OVER TIME (0-25.5 SEC).....0.0
ASSIGNMENT SELECTION:
NOT ENABLED (Y/N).....
VEHICLE DETECTOR (1-64).....3
PEDESTRIAN DETECTOR (1-16).....
ALTERNATE PED DETECTOR (1-16).....
PREEMPT (1-10).....
INVERTED PREEMPT (1-10).....
STOP TIME (Y/N).....
FLASH SENSE (Y/N).....
DOOR OPEN (Y/N).....
MANUAL CONTROL ENABLE (Y/N).....
MANUAL CONTROL ADVANCE (Y/N).....
SPECIAL FUNCTION ALARM (1-8).....
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4).....
HOLD PHASES (1-16).....
PLAN (65=FLSH,66=FREE)... OFFSET#...
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)...
CHANGE PHASE CONTROL PAGE (1-4)...
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4)...
CHANGE OUTPUT PAGE (1-4)...
OVERRIDE PHASE CONTROL FUNCTION (Y)...
    
```

ENTER '53' TO REASSIGN THE VEHICLE DETECTOR FOR THIS INPUT

(LOOP 3A - PHASE 3)

```

PAGE: 2 C1 PIN:58 VEHICLE DETECTOR
INPUT ASSIGNMENT #.....20
DEBOUNCE TIME (0-25.5 SEC).....0.5
DELAY TIME (0-25.5 SEC).....0.0
HOLD-OVER TIME (0-25.5 SEC).....0.0
ASSIGNMENT SELECTION:
NOT ENABLED (Y/N).....
VEHICLE DETECTOR (1-64).....53
PEDESTRIAN DETECTOR (1-16).....
ALTERNATE PED DETECTOR (1-16).....
PREEMPT (1-10).....
INVERTED PREEMPT (1-10).....
STOP TIME (Y/N).....
FLASH SENSE (Y/N).....
DOOR OPEN (Y/N).....
MANUAL CONTROL ENABLE (Y/N).....
MANUAL CONTROL ADVANCE (Y/N).....
SPECIAL FUNCTION ALARM (1-8).....
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4).....
HOLD PHASES (1-16).....
PLAN (65=FLSH,66=FREE)... OFFSET#...
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)...
CHANGE PHASE CONTROL PAGE (1-4)...
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4)...
CHANGE OUTPUT PAGE (1-4)...
OVERRIDE PHASE CONTROL FUNCTION (Y)...
    
```

PROGRAMMING COMPLETE

SPECIAL DETECTOR PROGRAMMING DETAIL - LOOP 3A (ALT.)

(program controller as shown below)

FROM MAIN MENU PRESS '7' (DETECTORS), THEN PRESS '1' FOR VEHICLE DETECTORS. PRESS THE '-' KEY TO GET TO VEHICLE DETECTOR #53.

```

VEHICLE DETECTOR #53 SETTINGS (+,-,1-64)
SETTING: (Y/N)
ENABLE DETECTOR.....N
ENABLE LOGGING.....N
ENABLE DIAGNOSTICS.....N
SPEED TRAP.....N
CALL DETECTOR.....Y
EXTENSION DETECTOR.....Y
MODE 2 STOP BAR.....N
SWITCHING DETECTOR.....N
DUPLICATING DETECTOR.....N
ENABLE FULL TIME DELAY.....N
IF FAILED, SET MIN RECALL?.....N
IF FAILED, SET MAX1 RECALL?.....N
IF FAILED, SET MAX2 RECALL?.....N
PHASE# :12345678910111213141516
PHASES ASSIGNED :
SWITCH/DUPLICATE!
LOOP SIZE (0-255 FT).....6
SPEED TRAP DISTANCE (0-255 FT).....0
STOP BAR TIME (0-255 SEC).....0
STRETCH (0-25.5 SEC).....0.0
DELAY (0-255 SEC).....0.0
MAX CALLS/MIN (0-255).....255
MIN CALLS/DIAGNOSTIC PERIOD (0-255).....0
MAX OCCUPANCY (0-100%).....100
EXTENSION DISABLE TIME (0-255 SEC).....0
QUEUE MAX OCCUPANCY TIME (0-255).....0
QUEUE GAP RESET TIME (0-25.5).....0.0
PREEMPTION INDEX FOR QUEUE (0-10).....0
    
```

ENTER 'Y' FOR ENABLE DETECTOR

ENTER '3' FOR PHASES ASSIGNED

ENSURE DELAY IS '0'


```

VEHICLE DETECTOR #53 SETTINGS (+,-,1-64)
SETTING: (Y/N)
ENABLE DETECTOR.....Y
ENABLE LOGGING.....N
ENABLE DIAGNOSTICS.....N
SPEED TRAP.....N
CALL DETECTOR.....Y
EXTENSION DETECTOR.....Y
MODE 2 STOP BAR.....N
SWITCHING DETECTOR.....N
DUPLICATING DETECTOR.....N
ENABLE FULL TIME DELAY.....N
IF FAILED, SET MIN RECALL?.....N
IF FAILED, SET MAX1 RECALL?.....N
IF FAILED, SET MAX2 RECALL?.....N
PHASE# :12345678910111213141516
PHASES ASSIGNED : X
SWITCH/DUPLICATE!
LOOP SIZE (0-255 FT).....6
SPEED TRAP DISTANCE (0-255 FT).....0
STOP BAR TIME (0-255 SEC).....0
STRETCH (0-25.5 SEC).....0.0
DELAY (0-255 SEC).....0.0
MAX CALLS/MIN (0-255).....255
MIN CALLS/DIAGNOSTIC PERIOD (0-255).....0
MAX OCCUPANCY (0-100%).....100
EXTENSION DISABLE TIME (0-255 SEC).....0
QUEUE MAX OCCUPANCY TIME (0-255).....0
QUEUE GAP RESET TIME (0-25.5).....0.0
PREEMPTION INDEX FOR QUEUE (0-10).....0
    
```

DETECTOR PROGRAMMING COMPLETE

NOTE: DETECTOR IS PROGRAMMED PER THE INPUT FILE CONNECTION AND PROGRAMMING CHART SHOWN ON SHEET 1.

Electrical Detail - Sheet 3 of 5

 <p>Prepared in the Offices of: State of North Carolina Department of Transportation 750 N. Greenfield Pkwy, Garner, NC 27529</p>	<p>US 15-401-501 Bypass at SR 1108 (West Boulevard)</p>		<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p> <p>SEAL NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 031001 D. Todd Joyce</p>
	<p>Division 8 PLAN DATE: September 2017 PREPARED BY: C. Strickland</p>	<p>Scotland County Laurburg REVIEWED BY: T. Joyce</p>	

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 08-0015
 DESIGNED: September 2017
 SEALED: 9/18/2017
 REVISED:

Drawn by: D. Todd Joyce 9/20/2017
 DATE
 SIG. INVENTORY NO. 08-0015

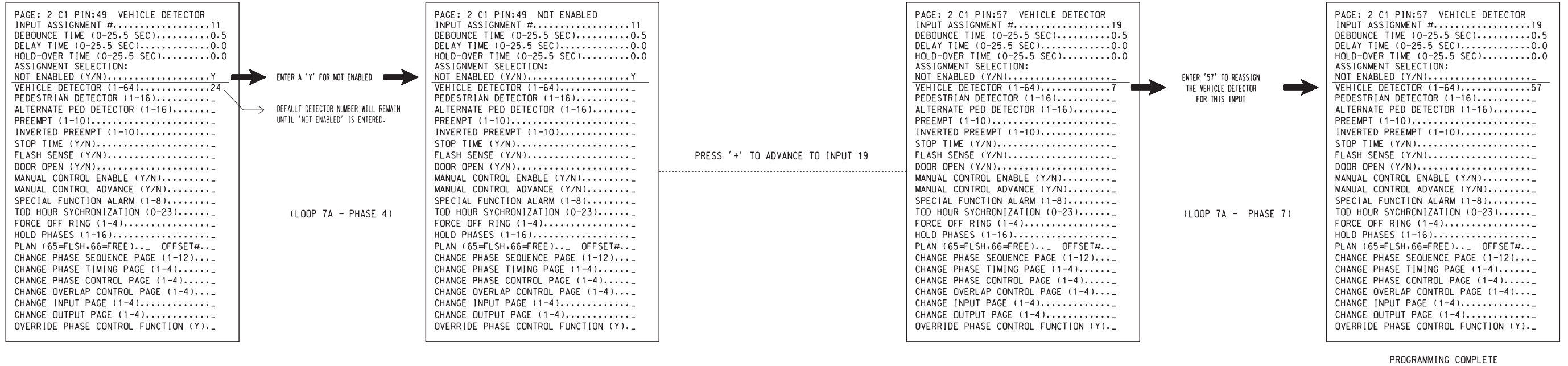
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INPUT PAGE 2 ASSIGNMENT PROGRAMMING DETAIL FOR ALTERNATE PHASING - LOOP 7A

(program controller as shown below)

- NOTES: 1. THIS PROGRAMMING APPLIES FOR INPUT PAGE 2 ONLY. INPUT PAGE 1 WILL USE STANDARD DEFAULT SETTINGS. THIS PROGRAMMING IS NECESSARY FOR PROPER DETECTOR OPERATION DURING ALTERNATE PHASING OPERATION.
2. THE FIRST TASK THIS PROGRAMMING ACCOMPLISHES IS THE DISABLING OF INPUT #11 (DETECTOR 24) SO THAT A VEHICLE CALL WILL NOT BE PLACED TO PHASE 4 DURING ALTERNATE PHASING OPERATION. THE SECOND TASK THIS PROGRAMMING ACCOMPLISHES IS THAT IT REASSIGNS DETECTOR 57 TO INPUT #19 SO THAT THE DELAY ON LOOP 7A CAN BE REDUCED FROM 15 SECONDS TO 0 SECONDS.

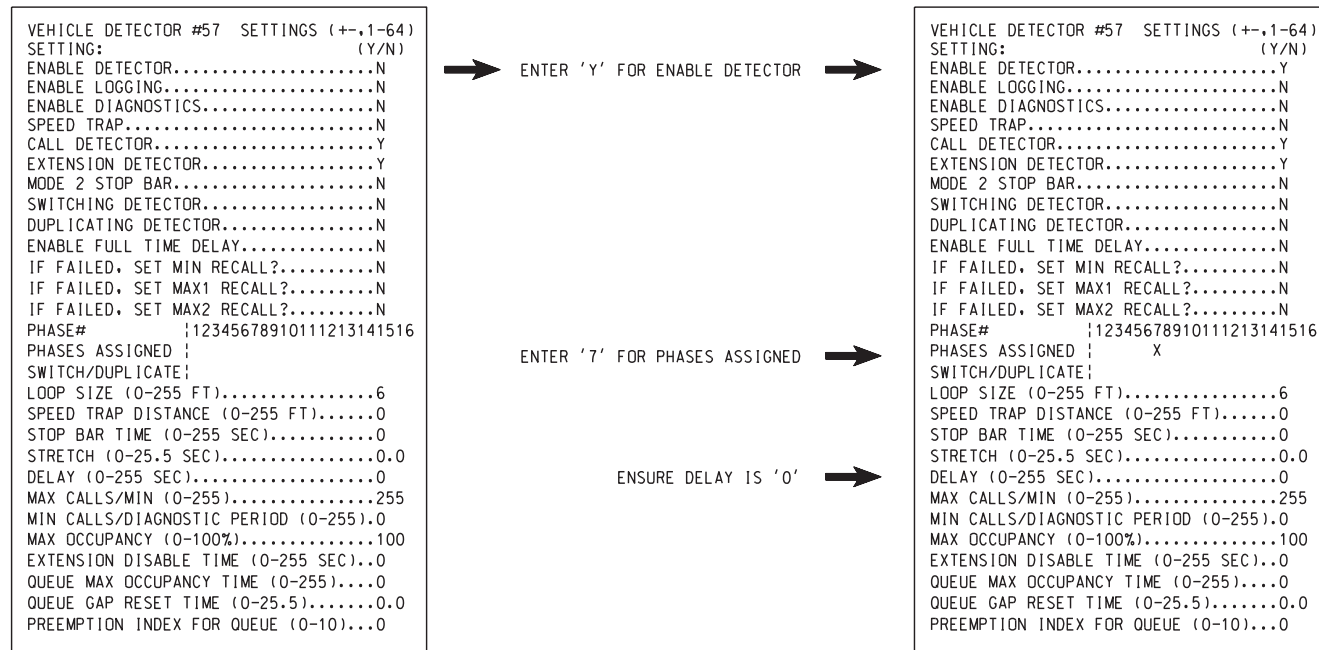
FROM MAIN MENU PRESS '5' (INPUTS), THEN PRESS 'NEXT' TO GET TO INPUT PAGE '2'. PRESS THE '+' KEY UNTIL INPUT 11 IS REACHED.



SPECIAL DETECTOR PROGRAMMING DETAIL - LOOP 7A (ALT.)

(program controller as shown below)

FROM MAIN MENU PRESS '7' (DETECTORS), THEN PRESS '1' FOR VEHICLE DETECTORS. PRESS THE '-' KEY TO GET TO VEHICLE DETECTOR #57.



NOTE: DETECTOR IS PROGRAMMED PER THE INPUT FILE CONNECTION AND PROGRAMMING CHART SHOWN ON SHEET 1.

Electrical Detail - Sheet 4 of 5

US 15-401-501 Bypass at SR 1108 (West Boulevard)

Division 8 Scotland County Laurinburg

Prepared by: C. Strickland
Reviewed by: T. Joyce

Prepared in the Offices of:
Signal Management Systems
750 N. Greenfield Pkwy, Garner, NC 27529

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 08-0015
DESIGNED: September 2017
SEALED: 9/18/2017
REVISED:

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER
TODD JOYCE
031001

9/20/2017
DATE

SIG. INVENTORY NO. 08-0015

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ALTERNATE PHASING ACTIVATION DETAIL

TO RUN ALT. PHASING DURING COORDINATION - SELECT ALL PAGE CHANGES (AS SHOWN BELOW) WITHIN COORDINATION PLAN PROGRAMMING.

TO RUN ALT. PHASING DURING FREE RUN - PROGRAM PAGE CHANGES (SHOWN BELOW) IN SEPARATE TIME OF DAY EVENTS. IF PAGE 1 IS USED, NO EVENT PROGRAMMING IS NECESSARY FOR THAT PARTICULAR PAGE.

<u>PHASING</u>	<u>INPUTS PAGE</u>	<u>OVERLAPS PAGE</u>
ACTIVE PAGES REQUIRED TO RUN <u>DEFAULT PHASING</u>	1	1
ACTIVE PAGES REQUIRED TO RUN <u>ALTERNATE PHASING</u>	2	2

NOTE: PAGES NOT SHOWN (i.e. sequence, phase control, etc.) SHOULD REMAIN AS '1', OR AS DEFINED BY TIMING ENGINEER.

IMPORTANT: IF ALT. PHASING IS USED DURING FREE RUN AND COORDINATION, DO NOT OPERATE TIME OF DAY PAGE CHANGE EVENTS CONCURRENTLY WITH COORDINATION PLAN EVENTS IN THE EVENT SCHEDULER. (EX. FREE RUN PAGE CHANGE EVENT SHOULD END BEFORE COORDINATION PLAN EVENT STARTS AND VICE-VERSA).

ALTERNATE PHASING PAGE CHANGE SUMMARY

THE FOLLOWING IS A SUMMARY OF WHAT TAKES PLACE WHEN THESE OVERLAP/INPUT PAGE CHANGES ACTIVATE TO CALL THE "ALTERNATE PHASING":

OVERLAPS PAGE 2: Modifies overlap parent phases for heads 31 and 71 to run protected turns only.

INPUTS PAGE 2: Disables phase 8 call on loop 3A and reduces delay time for phase 3 call on loop 3A to 0 seconds.

Disables phase 4 call on loop 7A and reduces delay time for phase 7 call on loop 7A to 0 seconds.

FLASHER CIRCUIT MODIFICATION DETAIL


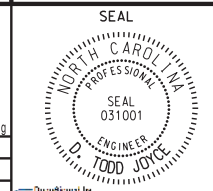
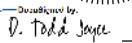
IN ORDER TO ENSURE THAT SIGNALS FLASH CONCURRENTLY ON THE SAME APPROACH, MAKE THE FOLLOWING FLASHER CIRCUIT CHANGES:

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: 08-0015
DESIGNED: September 2017
SEALED: 9/18/2017
REVISED:

Electrical Detail - Sheet 5 of 5

ELECTRICAL AND PROGRAMMING DETAILS FOR: Prepared in the Offices of:  750 N. Greenfield Pkwy, Garner, NC 27529	US 15-401-501 Bypass at SR 1108 (West Boulevard) Division 8 Scotland County Laurinburg PLAN DATE: September 2017 REVIEWED BY: T. Joyce PREPARED BY: C. Strickland REVIEWED BY:	DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED SEAL  SEAL 031001 T. TODD JOYCE ENGINEER									
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REVISIONS	INIT.	DATE									

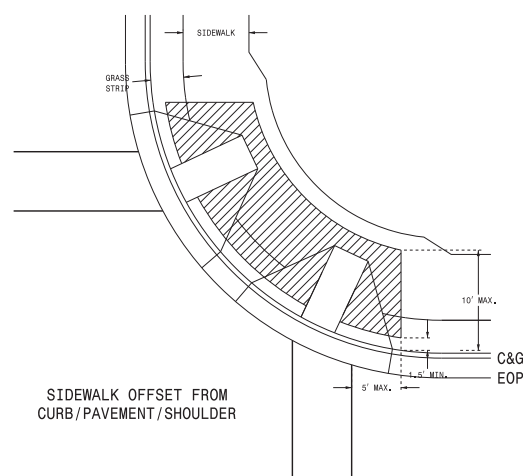
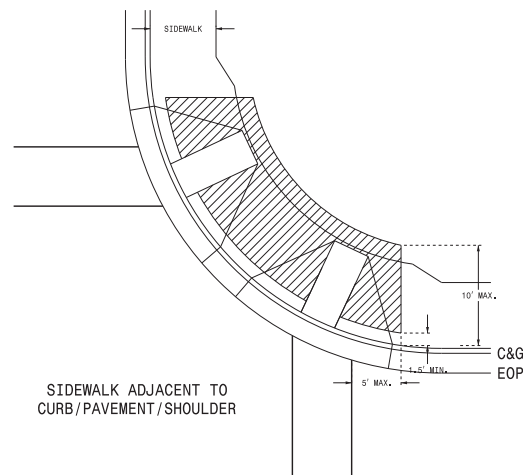
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

06-14

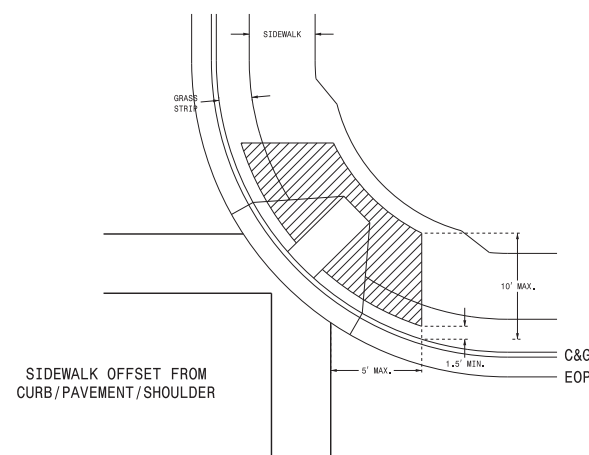
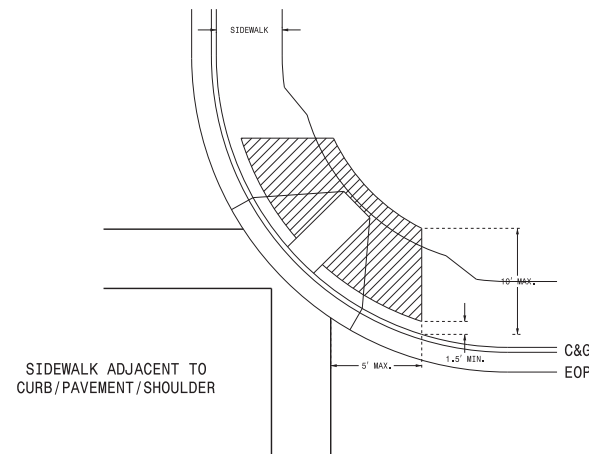
ENGLISH DETAIL DRAWING FOR
PEDESTRIAN PUSHBUTTON LOCATIONS
PLACEMENT DETAIL

SHEET 1 OF 3
1705D01

PUSHBUTTON PLACEMENT
SEPARATE CURB RAMPS



PUSHBUTTON PLACEMENT
SHARED CURB RAMP



- NOTES**
1. Pushbutton pedestals should not be located further than 10 feet from the edge of curb, shoulder, or pavement.
 2. The face of the pushbutton should be parallel to the applicable crosswalk.
 3. Separate pushbuttons used on the same corner should be separated by a distance of at least 10 feet.
 4. Pushbuttons shall be installed adjacent to a level surface with a maximum reach distance of 10 inches.
 5. Maintain 4 feet of clearance around pedestal if located in sidewalk.
 6. Refer to section 1705 of the 2012 NCDOT Roadway Standard Drawings for Pushbutton Assembly details.
 7. Refer to section 1743 of the 2012 NCDOT Roadway Standard Drawings for Pedestal details.
 8. Contact Division Traffic Engineer for pushbutton location approval prior to installation.
 9. Curb ramps are for symbolic use only and may not reflect actual design or field conditions.

PROPOSED

	Signal Pole
	Type I Pushbutton Post
	Type II Signal Pedestal
	Pushbutton & Sign
	Pedestrian Signal Head
	Curb Ramp
	Pushbutton Location Area

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

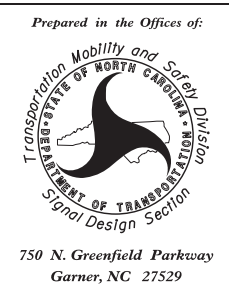
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ENGLISH DETAIL DRAWING FOR
PEDESTRIAN PUSHBUTTON LOCATIONS
PLACEMENT DETAIL

SHEET 1 OF 3
1705D01

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rhz:inscr

See Plate for Title



SEAL

Seal of Robert J. Ziemba, Professional Engineer, License No. 026486, State of North Carolina.

6/17/2014
DATE

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

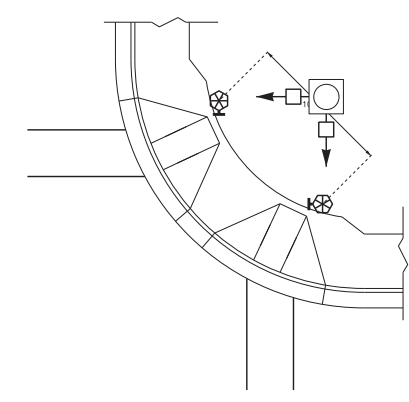
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ENGLISH DETAIL DRAWING FOR
PEDESTRIAN PUSHBUTTON LOCATIONS
PLACEMENT DETAIL

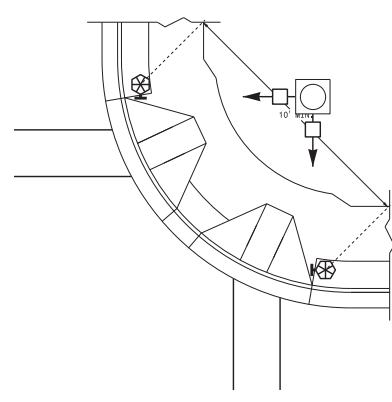
SHEET 2 OF 3
1705D01

TYPICAL PUSHBUTTON LOCATIONS (CASE I)

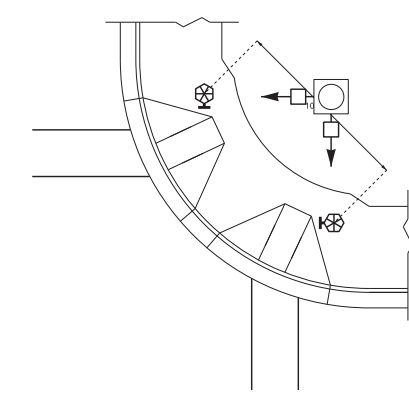
SEPARATE CURB RAMPS W/ TYPE I PEDESTALS



BACK OF SIDEWALK IS WITHIN 10'
OF CURB OR PAVEMENT/SHOULDER



GRASS STRIP PLACEMENT IF BACK
OF SIDEWALK EXCEEDS 10' FROM
CURB OR PAVEMENT/SHOULDER



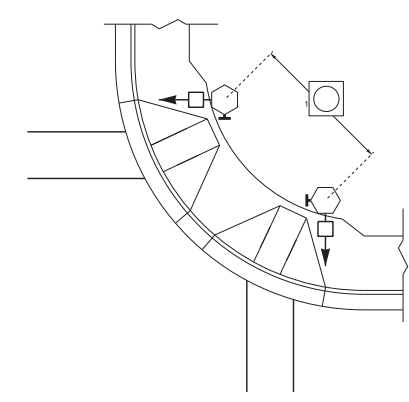
PUSHBUTTON PLACEMENT
IN WIDE SIDEWALK

- PROPOSED**
- Signal Pole
 - Type I Pushbutton Post
 - Type II Signal Pedestal
 - Pushbutton & Sign
 - Pedestrian Signal Head
 - Curb Ramp
 - Pushbutton Location Area

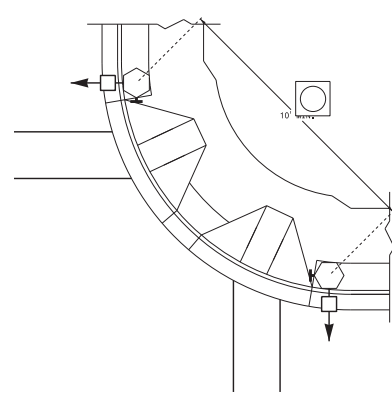
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TYPICAL PUSHBUTTON LOCATIONS (CASE II)

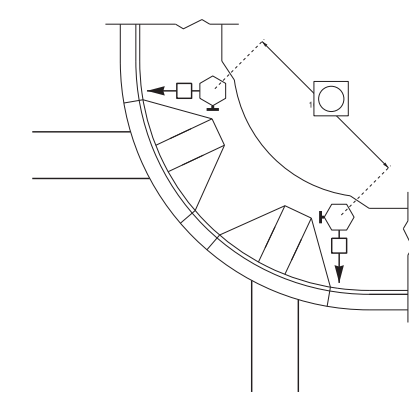
SEPARATE CURB RAMPS W/ TYPE II PEDESTALS



BACK OF SIDEWALK IS WITHIN 10'
OF CURB OR PAVEMENT/SHOULDER



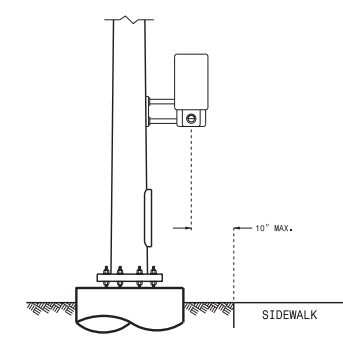
GRASS STRIP PLACEMENT IF BACK
OF SIDEWALK EXCEEDS 10' FROM
CURB OR PAVEMENT/SHOULDER



PUSHBUTTON PLACEMENT
IN WIDE SIDEWALK

OPTIONAL PUSHBUTTON EXTENSION

FACE OF PUSHBUTTON PARALLEL TO
APPLICABLE CROSSWALK



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DIVISION OF HIGHWAYS
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ENGLISH DETAIL DRAWING FOR
PEDESTRIAN PUSHBUTTON LOCATIONS
PLACEMENT DETAIL

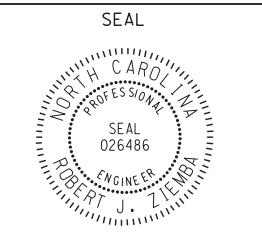
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1705D01

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See Plate for Title



750 N. Greenfield Parkway
Garner, NC 27529



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DATE

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DIVISION OF HIGHWAYS
RALEIGH, N.C.

06-14

ENGLISH DETAIL DRAWING FOR
PEDESTRIAN PUSHBUTTON LOCATIONS
PLACEMENT DETAIL

SHEET 3 OF 3
1705D01

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

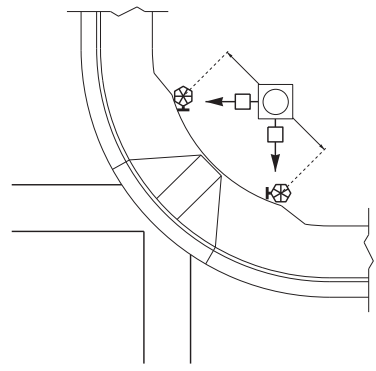
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ENGLISH DETAIL DRAWING FOR
PEDESTRIAN PUSHBUTTON LOCATIONS
PLACEMENT DETAIL

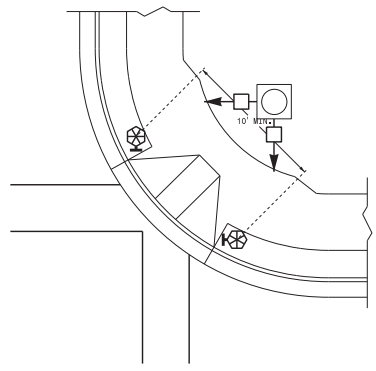
SHEET 3 OF 3
1705D01

TYPICAL PUSHBUTTON LOCATIONS (CASE III)

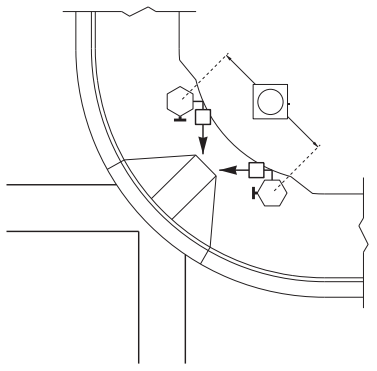
SHARED CURB RAMPS



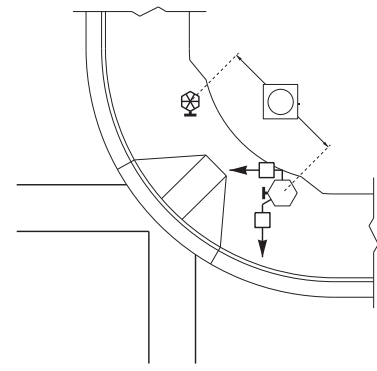
BACK OF SIDEWALK IS WITHIN 10' OF CURB OR PAVEMENT/SHOULDER



GRASS STRIP PLACEMENT IF BACK OF SIDEWALK EXCEEDS 10' FROM CURB OR PAVEMENT/SHOULDER

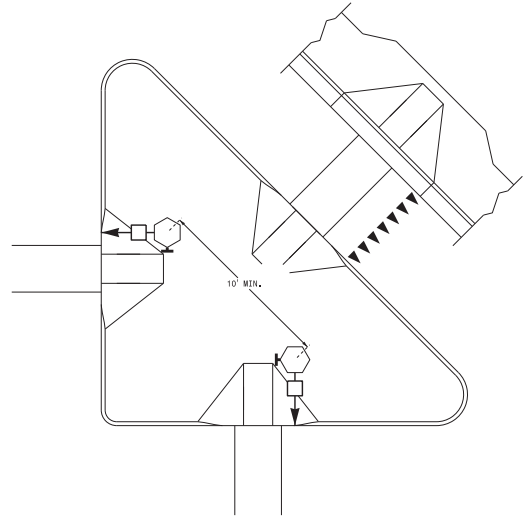


PUSHBUTTON PLACEMENT IN WIDE SIDEWALK (CORRESPONDING PUSHBUTTONS AND SIGNAL HEADS ON DIFFERENT PEDESTALS)

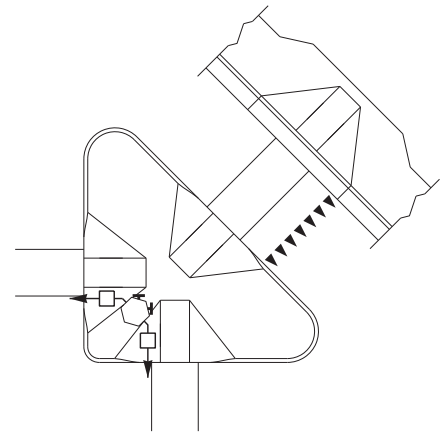


PUSHBUTTON PLACEMENT WITH SHARED TYPE II SIGNAL PEDESTAL AND TYPE I PUSHBUTTON POST

TRAFFIC ISLAND PUSHBUTTON LOCATIONS



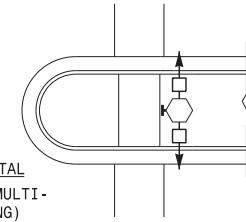
PUSHBUTTON PLACEMENT IN LARGE "PORK CHOP ISLAND" WITH SEPARATE PEDESTALS



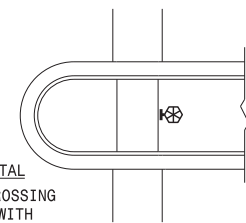
PUSHBUTTON PLACEMENT IN SMALL "PORK CHOP ISLAND" WITH SHARED PEDESTAL

PUSHBUTTON PLACEMENT IN MEDIAN

TYPE II PEDESTAL (FOR STAGED OR MULTI-PHASE CROSSING)



TYPE I PEDESTAL (FOR COMPLETE CROSSING CURB TO CURB WITH OPTIONAL REFUGE)



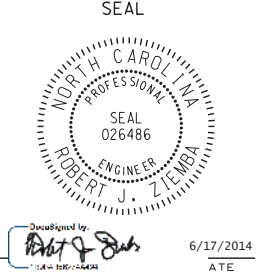
PROPOSED

- Signal Pole
- Type I Pushbutton Post
- Type II Signal Pedestal
- Pushbutton & Sign
- Pedestrian Signal Head
- Curb Ramp
- Pushbutton Location Area

LEGEND

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