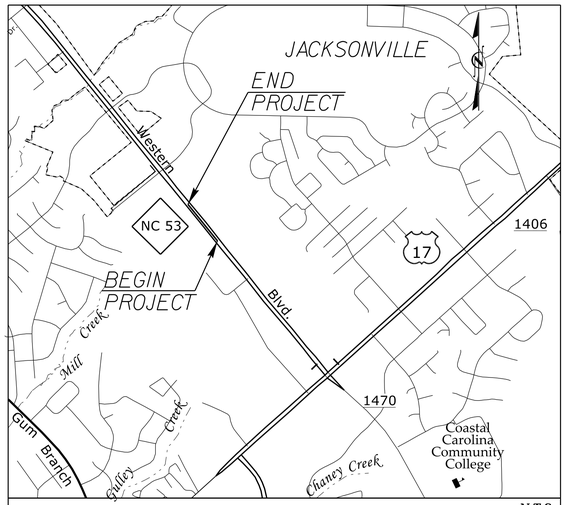
TIP PROJECT: W-5601DB

CONTRACT: DC00132

See Sheet 1-A For Index of Sheets
See Sheet 1-B for Conventional Plan Sheet of Symbols



VICINITY MAP N.T.S.

100% SUBMITTAL

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ONSLOW COUNTY

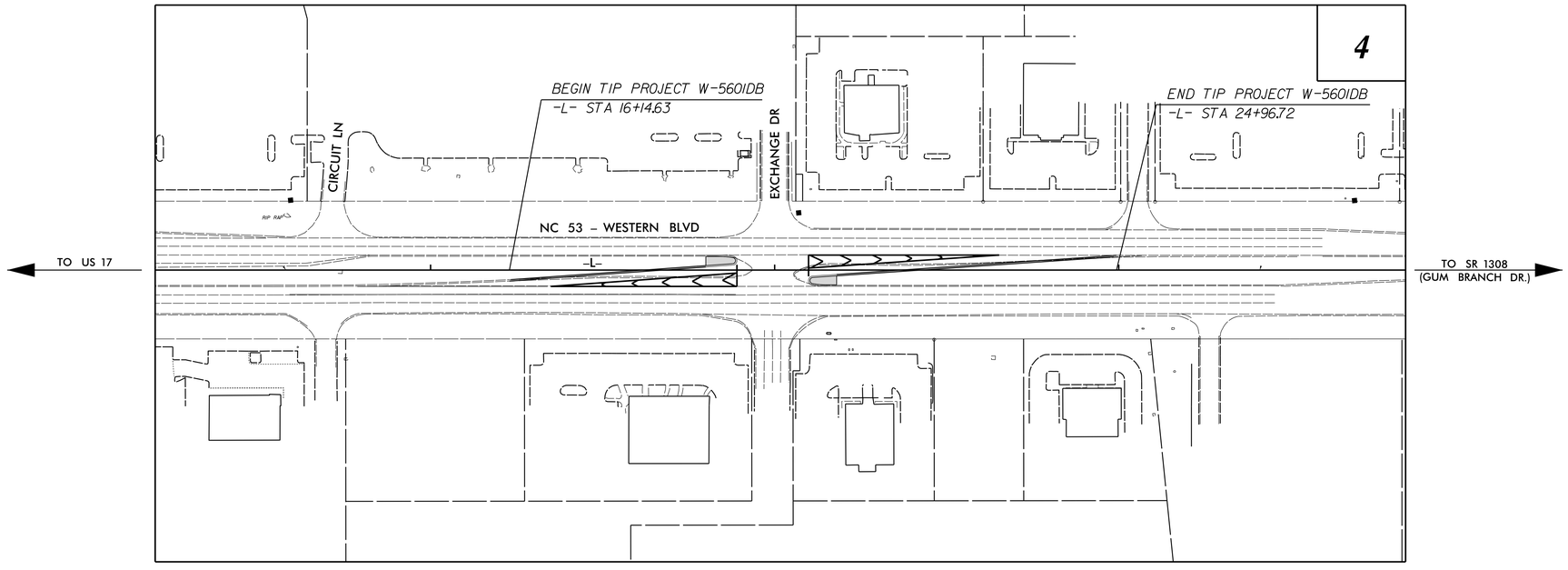
STATE	PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
NC	W-5601DB	1	29

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
50138.3.107	HSIP-0053(019)	CONST.

LOCATION: INTERSECTION OF NC 53 (WESTERN BLVD.) AND LOWES ENTRANCE.

TYPE OF WORK: GRADING, PAVING & DRAINAGE

NAD 83'2001



GRAPHIC SCALES

PLANS: 50 25 0 50 100

PROFILE (HORIZONTAL): 50 25 0 50 100

PROFILE (VERTICAL): 10 5 0 10 20

DESIGN DATA

ADT 2012 = 35000
ADT 2035 =
DHV = 10%
D = 60%
T = 6% *
V = 50 MPH

* TTST 2% DUAL 4%

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT W-5601DB = 0.167 MI.

TOTAL LENGTH OF TIP PROJECT W-5601DB = 0.167 MI.

Prepared in the Office of:
HNTB
HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: FEBRUARY 4, 2014

LETTING DATE: APRIL 21, 2016

W. CRAIG PARKER, P.E.
PROJECT ENGINEER

ROY TELLIER, EI
PROJECT DESIGNER

DAVID B. LEONARD, P.E.
NCDOT CONTACT

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 15764 ENGINEER JAMES A BYRD

DocuSigned by: James A. Byrd P.E.
SIGNATURE: 1/12/2016

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 25474 ENGINEER CRAIG PARKER

DocuSigned by: W. Craig Parker P.E.
SIGNATURE: 1/12/2016

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

$$$$DATE$$$$
08-JAN-2016 12:30
\\rdlw00\projects\49353 Division 3 Environmental Outsourcing\Task Order 31- Western Blvd and Lowes\Roadway\Proj\SS49031Y_rdy_tsh.dgn

04/06/15

PROJECT REFERENCE NO.	SHEET NO.
W-5601DB	1B

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale **S.U.E. = Subsurface Utility Engineering*

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- 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
- Potential Contamination Area: Soil
- Known Contamination Area: Water
- Potential Contamination Area: Water
- 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 — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY:

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

ROADS AND RELATED FEATURES:

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

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard — Vineyard

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert — CONC
- Bridge Wing Wall, Head Wall and End Wall — CONC WW

MINOR:

- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — S
- Storm Sewer — S

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- 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 — T
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- 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 — W
- 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 — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- 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 — S
- Utility Unknown U/G Line LOS B (S.U.E.*) — ?UTL
- U/G Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc. — UST
- 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.

PROJECT REFERENCE NO.	SHEET NO.
W-5601DB	1-A

ROADWAY DESIGN ENGINEER

GENERAL NOTES AND INDEX OF SHEETS

INDEX OF SHEETS

2012 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, 2012 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 – EARTHWORK	
200.02	Method of Clearing – Method II
225.02	Guide for Grading Subgrade – Secondary and Local
DIVISION 3 – PIPE CULVERTS	
300.01	Method of Pipe Installation
DIVISION 5 – SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction – High Side of Superelevated Curve – Method I
DIVISION 8 – INCIDENTALS	
840.00	Concrete Base Pad for Drainage Structures
840.14	Concrete Drop Inlet – 12" thru 30" Pipe
840.15	Brick Drop Inlet – 12" thru 30" Pipe
840.16	Frame & Grates – for Use on Drop Inlet
840.18	Concrete Grated Drop Inlet Type 'B' – 12" thru 36" Pipe
840.22	Frames and Wide Slot Sag Grates
840.27	Brick Grated Drop Inlet Type 'B' – 12" thru 36" Pipe
840.72	Pipe Collar
852.01	Concrete Islands
852.06	Method for Placement of Drop Inlets in Concrete Islands

GENERAL NOTES: 2012 SPECIFICATIONS

EFFECTIVE: 01–17–12
REVISED: 07–30–12

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 A PROPER TIE–IN.

CLEARING:

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

SHOULDER CONSTRUCTION:

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

SUBSURFACE PLANS:

SUBSURFACE DRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.02 AT LOCATIONS DIRECTED BY THE ENGINEER.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE:

ONSLOW WATER & SEWER AUTHORITY

JACKSONVILLE UTILITIES MAINTENANCE

TIME WARNER CABLE

EMBARQ

PROGRESS ENERGY

JONES–ONSLOW EMC

PIEDMONT NATURAL GAS

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

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Raleigh, North Carolina 27609
NC License No: C-1554

PROJECT REFERENCE NO.	SHEET NO.
W-5601DB	2A-1
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 25474 ENGINEER W. CRAIG PARKER

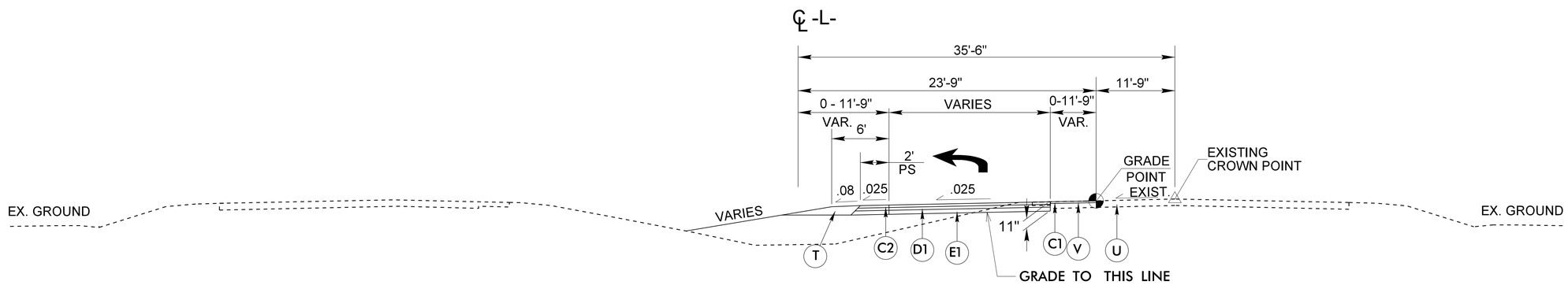
DocuSigned by: W. Craig Parker
697A80C15AED4D2...
1/12/2016

REVISIONS

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1 ½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	R1	5" MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED)
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	T	EARTH MATERIAL.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	U	EXISTING PAVEMENT.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	V	MILLING EXISTING PAVEMENT, 1 1/2" DEPTH

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



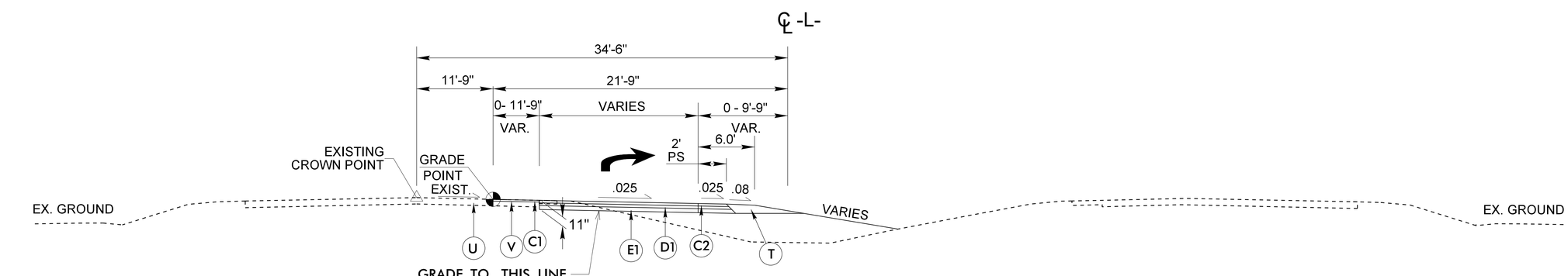
TYPICAL SECTION NO. 1

TYPICAL SECTION NO. 1 FOR
TURN LANE WIDENING
(NORTH BOUND LANES)

-L- STA. 16+14.63 TO -L- STA. 18+37.93 RT

TRANSITION FROM TYPICAL SECTION 1
TO TYPICAL SECTION 3

-L- STA 18+37.93 TO -L STA 19+00.00



TYPICAL SECTION NO. 2

TYPICAL SECTION NO. 1 FOR
TURN LANE WIDENING
(SOUTH BOUND LANES)

-L- STA. 21+83.38 TO -L- STA. 24+96.72 - LT

TRANSITION FROM TYPICAL SECTION 2
TO TYPICAL SECTION 4

-L- STA 20+90.00 TO -L- STA 21+83.38

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HNTB
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NC License No: C-1554

PROJECT REFERENCE NO.	SHEET NO.
W-5601DB	2A-2
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

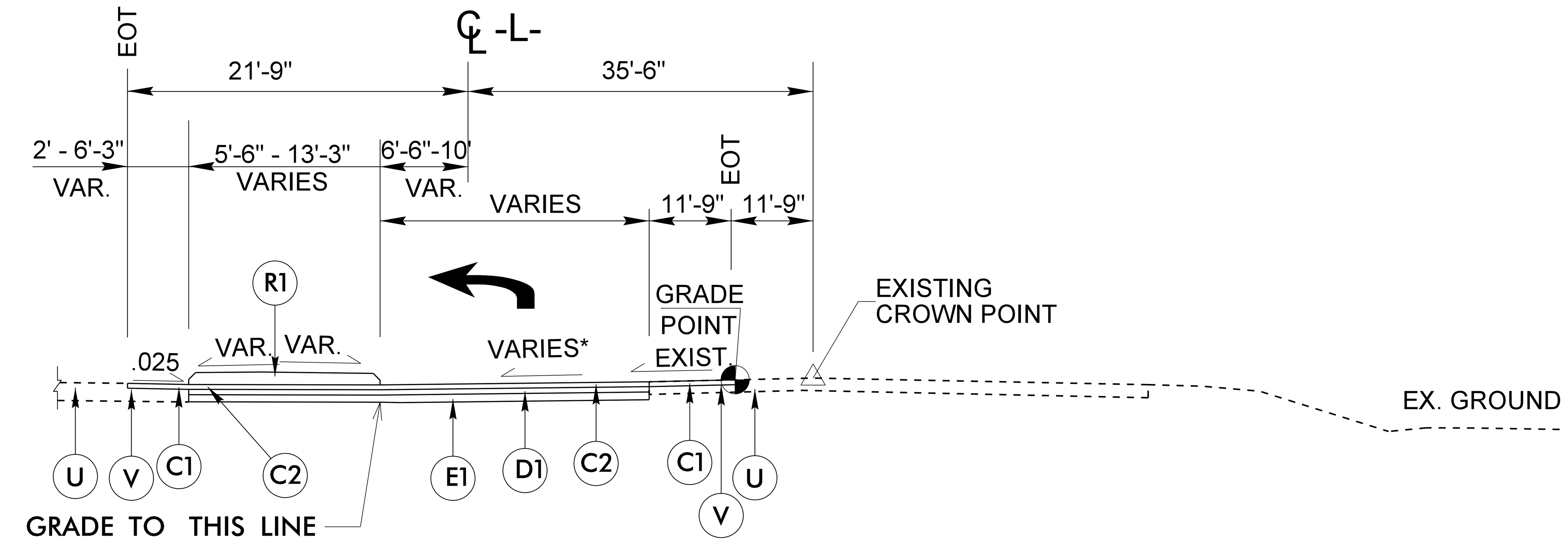
NORTH CAROLINA PROFESSIONAL SEAL 25474 ENGINEER
1/12/2016

PAVEMENT SCHEDULE

C1	PROP. 1 ½" ACSC, TYPE S9.5C,
C2	PROP. 3" ACSC, TYPE S9.5C,
D1	PROP. 4" ACIC, TYPE I19.0C
E1	PROP. 4" ACBC, TYPE B25.0C
R1	5" MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED)
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V	MILLING EXISTING PAVEMENT, 1 1/2" DEPTH

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

NOTE: SEE SHEET 2A-1 FOR FULL PAVEMENT SCHEDULE.

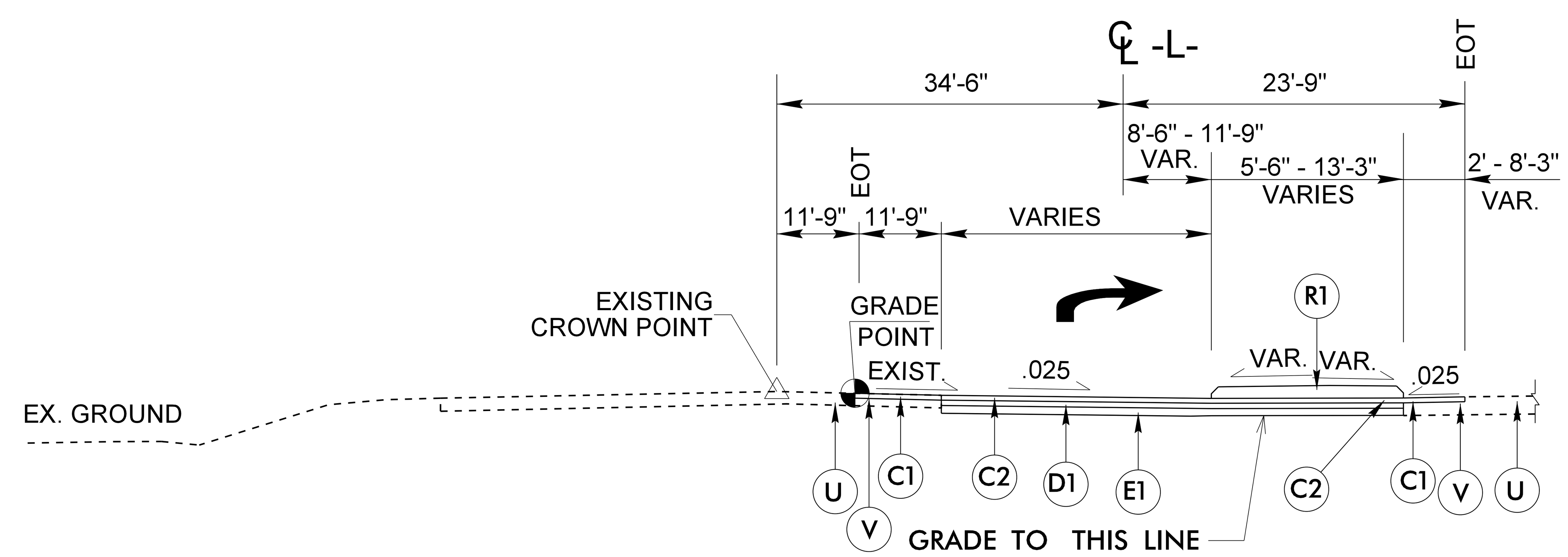


* SEE CROSS-SECTIONS FOR MORE INFORMATION

TYPICAL SECTION NO. 3

TYPICAL SECTION NO. 2 FOR
MONOLITHIC ISLAND LOCATIONS
(NORTH BOUND LANES)

-L- STA. 19+00.00 TO -L- STA. 19+53.51 LT



NOTE: MILL 1 1/2" OF EXISTING PAVEMENT AND RESURFACE WITH
1 1/2" SURFACE COURSE FROM STA. 19+53.51 TO 20+40.57 AT A WIDTH OF 45.5'

TYPICAL SECTION NO. 4

TYPICAL SECTION NO. 2 FOR
MONOLITHIC ISLAND LOCATIONS
(SOUTH BOUND LANES)

-L- STA. 20+40.57 TO -L- STA. 20+90.00 RT

REVISIONS

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PROJECT REFERENCE NO.	SHEET NO.
W-5601DB	3B-1
R/W SHEET NO.	

REVISIONS

DRAINAGE SUMMARY

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	CLASS III R.C. PIPE (UNLESS NOTED OTHERWISE) 15"	18"	24"	QUANTITIES FOR DRAINAGE STRUCTURES TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL. 'B') A	B	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E	F	G	J.B STD. 840.31 OR STD. 840.32	GRATED D.I., TYPE 'B' STD. 840.18 OR 840.27	GRATED D.I., TYPE 'D' STD. 840.19 OR 840.28	FRAME AND GRATE STD. 840.20	FRAME WITH 2 GRATES STD. 840.22	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND w/2 GRATES STD. 840.16	CONVERT EXISTING J.B. TO 2GI	CONVERT EXISTING DI TO JB w/SLAB LID	CONC. COLLARS CL. "B" C.Y. STD 840.72	PIPE REMOVAL LIN.FT.	REMARKS
SIZE											PER EACH (0 THRU 5.0')																	
THICKNESS OR GAUGE											5.0' THRU 10.0'																	
											10.0' AND ABOVE																	
–L– 23+00	CL	0403		46.67							1								1			1						
		0403	0401		43.92	43.26		216																				
–L– 20+82	CL	0401		46.92							1												1	1			4	REMOVE DI
		0401	0402		41.26	43.13		8																				
–L– 20+81	CL	0402																								0.3990		
		0402	0404		EXIST.	EXIST.																						
TOTAL								224			2								1			1	1	1			0.3990		

ABBREVIATIONS

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

SUMMARY OF EARTHWORK

STATION	STATION	UNCL. EXCAV.	EMBANK. +25%	BORROW	WASTE
–L–					
NORTH BOUND LANES					
STA 16+00.00	STA 19+70.00	87	46		41
SOUTH BOUND LANES					
STA 20+25.00	STA 25+00.00	90	80		10
SUBTOTALS:		177	157		
PROJECT TOTALS:					
5% TO REPLACE TOP SOIL ON BORROW PIT					
GRAND TOTALS:		177	157		
SAY:		200			
CLASS IV SUBGRADE STABILIZATION (TONS)		= 4800			
EST. SHALLOW UNDERCUT –L– STA 16+00 TO STA 19+70 –L– STA 20+25 TO STA 25+00 (CY)		= 333			
CONTINGENCY SHALLOW UNDERCUT (CY)		= 500			
CONTINGENCY UNDERCUT (CY)		= 1000			

Note: Approximate quantities only. Unclassified Excavation, Fine Grading, and Removal of Existing Asphalt Pavement will be paid for at the contract lump sum price for "Grading."

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD²
–L–	16+14.63	19+53.95	RT	76
–L–	19+00.00	19+57.22	LT	13
–L–	20+27.38	20+90.00	RT	14
–L–	20+33.88	24+96.72	LT	61
			TOTAL:	164
			SAY:	170

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PROJECT REFERENCE NO.	SHEET NO.
W-5601DB	4
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 25474 ENGINEER
W. [illegible]
1/12/2016

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 15764 ENGINEER
James [illegible]
1/12/2016

NAD 83/2001

REVISIONS

LIMA HOLDINGS, LLC
DB 1438 PG 285
PB 34 PG 187

JOSEPH D. CORPENING
DB 1644 PG 464
MB 38 PG 150

WYATT INVESTMENTS, LLC
DB 1763 PG 364
MB 38 PG 150

FIRE MOUNTAIN RESTAURANTS, INC.
DB 2245 PG 558
MB 38 PG 150

WALTER C. WHITEHURST, JR.
DB 1605 PG 453
MB 34 PG 189
MB 36 PG 65

NORTHEAST PROPERTIES, LLC
DB 1971PG 31
MB 34 PG 189
MB 36 PG 65

WOODROW W. WILLIS, JR., et al
DB 1910 PG 712
MB 36 PG 65

KENNITH P. WHICHARD, JR.
DB 1802 PG 594
MB 42 PG 207

CROSS POINTE DEVELOPERS, LLC
DB 1445 PG 305
MB 36 PG 65

CROSS POINTE DEVELOPERS, LLC
DB 1445 PG 305
MB 36 PG 65

BEGIN TIP PROJECT W-5601DB
-L- STA 16+14.63

END TIP PROJECT W-5601DB
-L- STA 24+96.72

-BYA- 56

-BYA- 32

PROP. 5" MONO. ISLAND (SURFACE MOUNTED)

270.5' LANE TAPER

276.4' LANE TAPER

SEE SHEET 5 FOR -L- PROFILE

$$$$DATE$$$$
08-JAN-2016 12:31
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5/28/99

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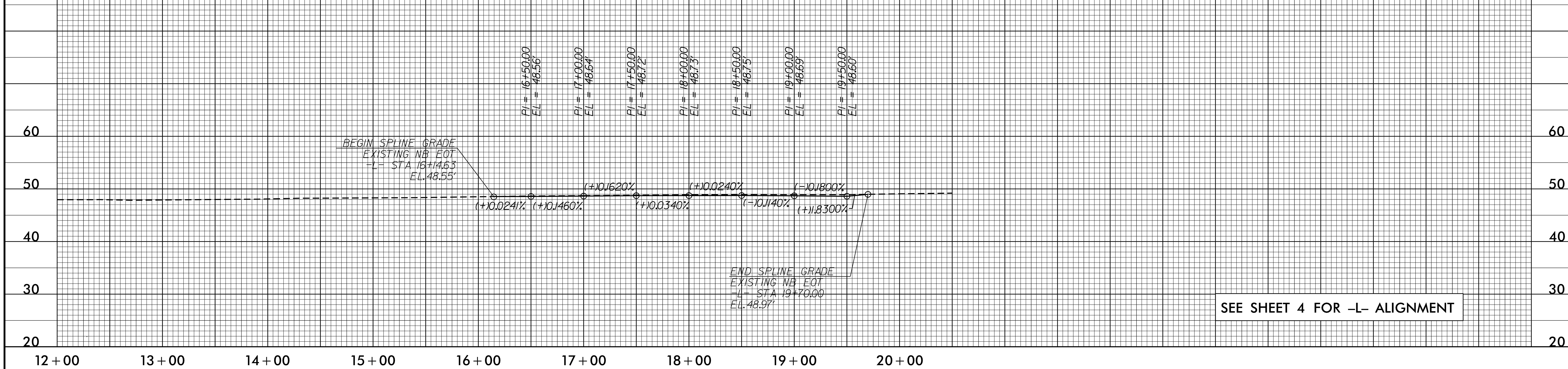
Raleigh, North Carolina 27609
NC License No: C-1554

PROJECT REFERENCE NO.	SHEET NO.
W-5601DB	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 25474 ENGINEER W. CRAIG PARKER — DocuSigned by: W. Craig Parker 697A80C15AED4D2... 1/12/2016	NORTH CAROLINA PROFESSIONAL SEAL 15764 ENGINEER JAMES A. BYRD — DocuSigned by: James A. Byrd 23592959E54F47C... 1/12/2016

23.75′ RIGHT OFFSET -L- EXISTING



SEE SHEET 4 FOR -L- ALIGNMENT

21.75′ LEFT OFFSET -L- EXISTING

SEE SHEET 4 FOR -L- ALIGNMENT

08-JAN-2016 12:31
\ral...\projects\49353 Division 3 Environmental Outsourcing\Task Order 31 - Western Blvd and Lowes\Roadway\Proj\SS4903Y_rdy_pfl sheet.dgn
$$$$USERNAME$$$$

T.I.P.: W-5106DB

CONTRACT: DC00104

TIP NO.	SHEET NO.
W-5106DB	PMP-1

APPROVED: DocuSigned by: Rhonda B. Early F34CAF5AC6BF48A...

DATE: 1/12/2016

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 023521 ENGINEER RHONDA B. EARLY

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLAN

ONSLOW COUNTY

LOCATION: INTERSECTION OF NC 53 (WESTERN BLVD.) AND LOWES ENTRANCE

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE AND MULTI LANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.08	PAVEMENT MARKINGS - SYMBOL AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1250.01	PAVEMENT MARKERS - INSTALLATION & SPACING
1253.01	PAVEMENT MARKERS - SNOWPLOWABLE

INDEX

GENERAL NOTES

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.

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

ROAD NAME	MARKING	MARKER
WESTERN BLVD (-L-)	THERMOPLASTIC	SNOWPLOWABLE

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

C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS THAT HAVE BEEN DAMAGED BY THE END OF EACH DAY'S OPERATION.

D) STOPBARS AT NON-SIGNALIZED INTERSECTIONS ARE TO BE LOCATED A MIN OF 6' FROM THE EDGE OF TRAVEL LANE AND MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER.

E) MARKERS SHALL BE INSTALLED ACCORDING TO THE NCDOT ROADWAY STANDARD DRAWING 1250.01.

LEGEND

GENERAL

DIRECTION OF TRAFFIC FLOW

NORTH ARROW

PROPOSED PVMT. ---------- EXIST. PVMT.

PAVEMENT MARKINGS

PAVEMENT MARKING SYMBOLS

HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
C-1554

PLAN REVIEWED BY: N.C.D.O.T. SIGNING AND DELINEATION UNIT

Katherine Hite, PE DIVISION TRAFFIC ENGINEER

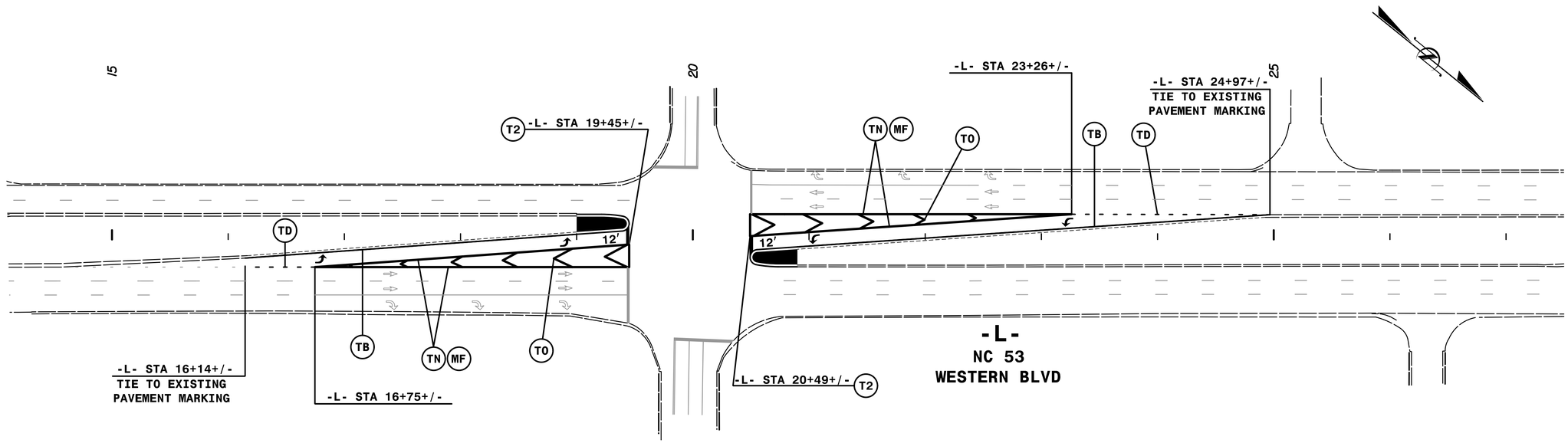
PLAN PREPARED BY: HNTB NORTH CAROLINA

R. B. Early, PE PROJECT ENGINEER

J. A. Phillips PROJECT DESIGNER

8/17/99

PROJ. REFERENCE NO.	SHEET NO.
W-5106DB	PMP-2



FINAL PAVEMENT MARKING SCHEDULE

MATERIAL	SYMBOL	
PAVEMENT MARKING		
THERMOPLASTIC (4″, 90 MILS)		
	TB	YELLOW EDGELINE
THERMOPLASTIC (4″, 120 MILS)		
	TD	WHITE MINISKIP (3′/9′ SP)
THERMOPLASTIC (8″, 90 MILS)		
	TN	WHITE GORELINE
	TO	WHITE DIAGONAL
THERMOPLASTIC (24″, 120 MILS)		
	T2	WHITE STOP BAR
THERMOPLASTIC SYMBOL (90 MILS)		
	UA	LEFT TURN ARROW
PAVEMENT MARKERS		
SNOWPLOWABLE RAISED PAVEMENT MARKERS		
	MF	CRYSTAL & RED

STOP BARS ARE TO BE LOCATED ACCORDING TO SIGNAL PLANS.

REMOVE CONFLICTING PAVEMENT MARKING & SYMBOLS.

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NC License No: C-1554

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APPROVED Signed by: Rhonda B. Early F34CAF5AC68F48A...

DATE: 1/12/2016

NORTH CAROLINA PROFESSIONAL SEAL 023521 ENGINEER RHONDA B. EARLY SEAL

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

TRANSPORTATION MANAGEMENT PLAN

PAVEMENT MARKING DETAIL

...\Traffic\SS4903Y_pmp_pmp02.dgn

12:00:50 PM
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$$$$USERNAME$$$$

TIP PROJECT: W-5106DB

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5106DB	EC-1	4

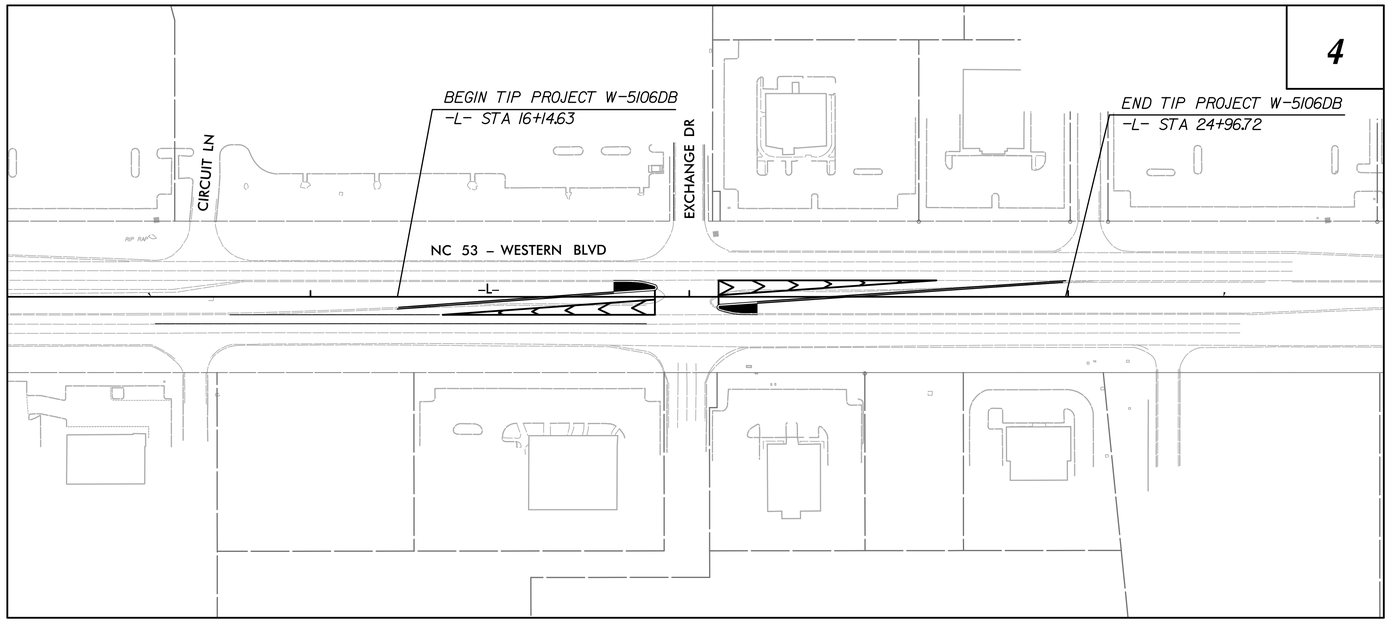
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

LOCATION: INTERSECTION OF NC 53 (WESTERN BLVD.) AND LOWES ENTRANCE.

TYPE OF WORK: GRADING, PAVING & DRAINAGE.



EROSION AND SEDIMENT CONTROL MEASURES

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

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

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

Prepared In the Office of:

HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

2012 STANDARD SPECIFICATIONS

BENTON R. CARROLL, E.I
EROSION CONTROL
LEVEL III
CERTIFICATION #3180

Roadway Standard Drawings

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

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

COIR FIBER WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL

NOTES:

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

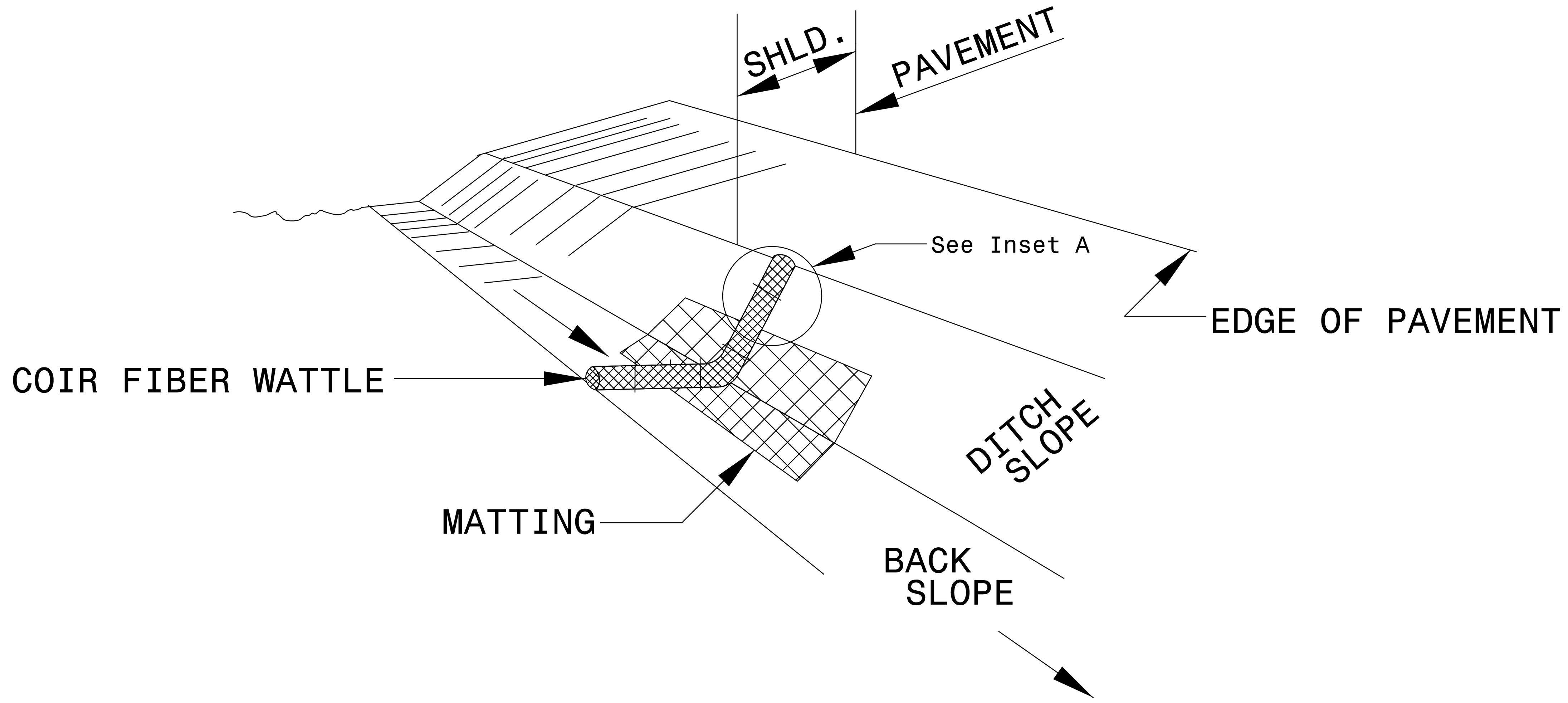
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

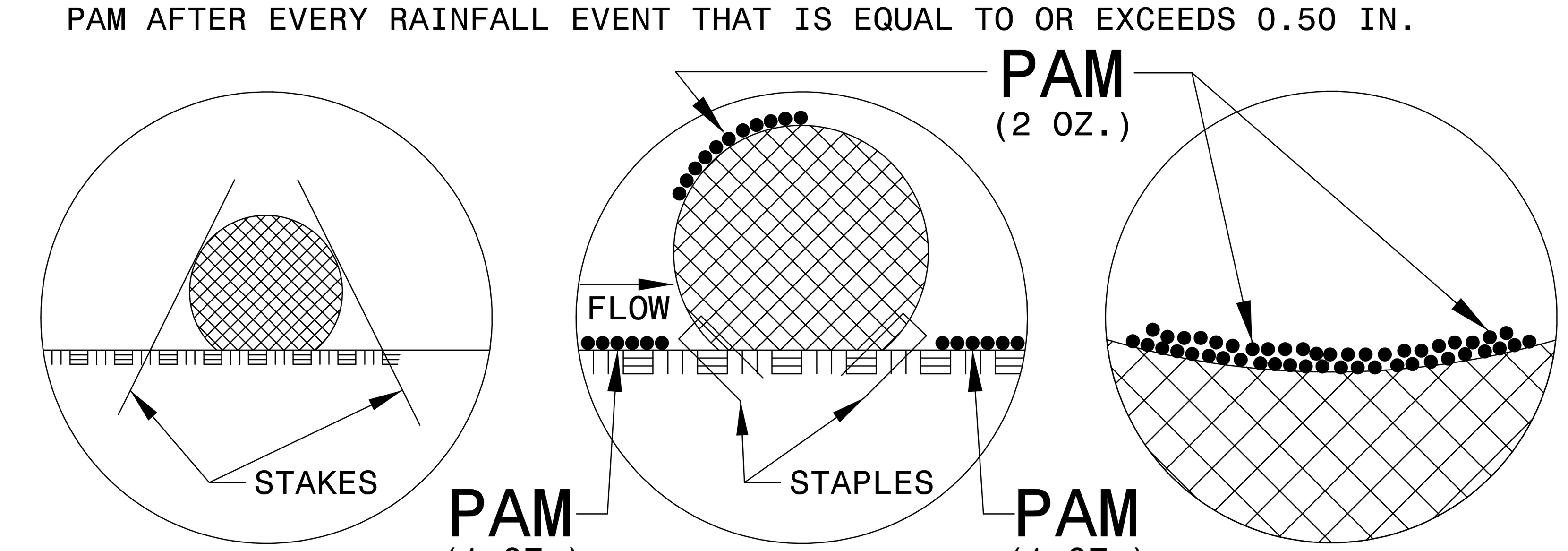
INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

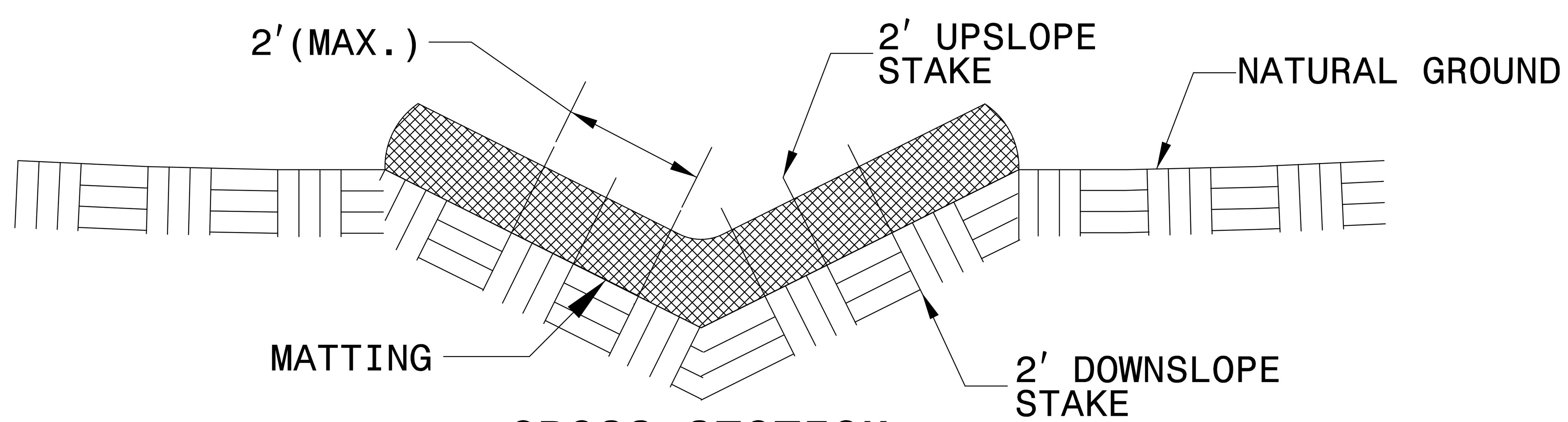
INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.



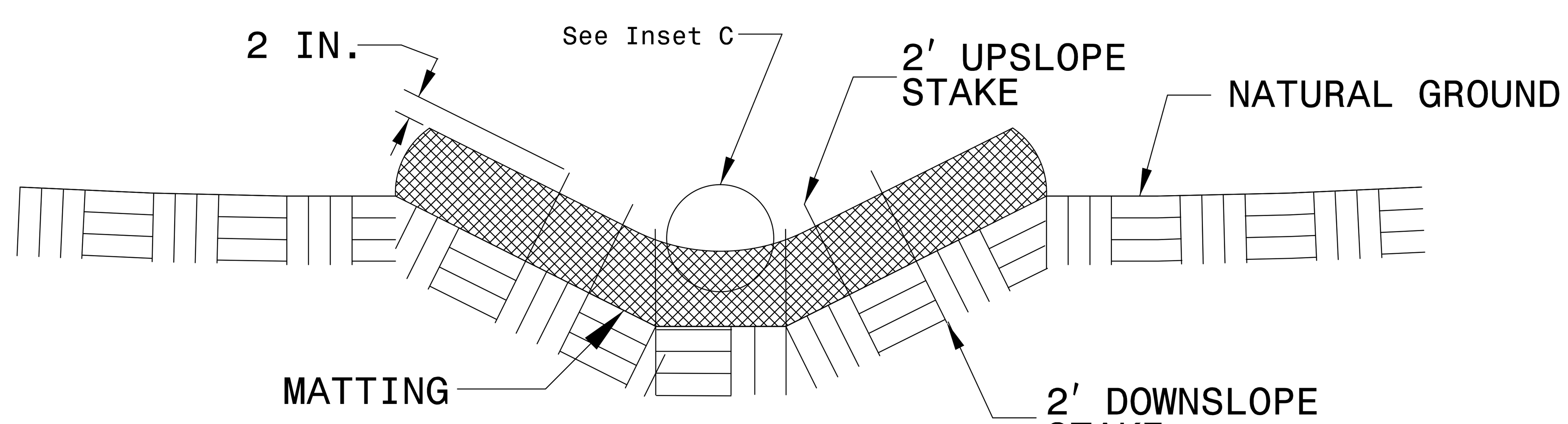
ISOMETRIC VIEW



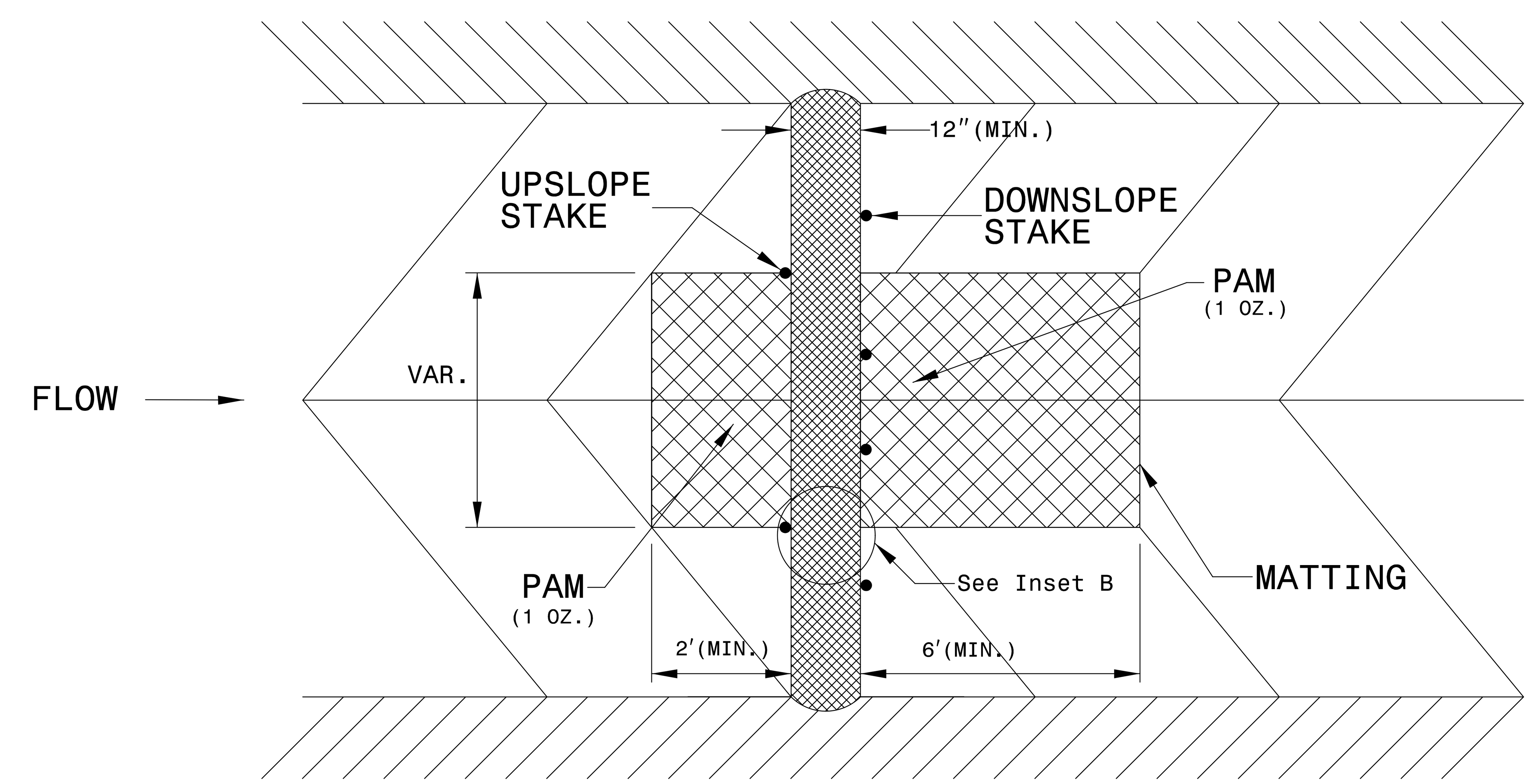
INSET A   INSET B   INSET C



CROSS SECTION VEE DITCH



CROSS SECTION TRAPEZOIDAL DITCH



TOP VIEW

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PROJECT REFERENCE NO.	SHEET NO.
W-5106DB	EC-3

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
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 FOR EROSION CONTROL

SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)	REMARKS
EC-6	-L-	16+15	19+00	CL	260	INSTALL IN PROP. DITCH
EC-6	-L-	20+90	24+90	CL	350	INSTALL IN PROP. DITCH
				SUBTOTAL	610	
				GEOTECHNICAL CONTINGENCY	-	
				TOTAL	610	
				SAY	610	

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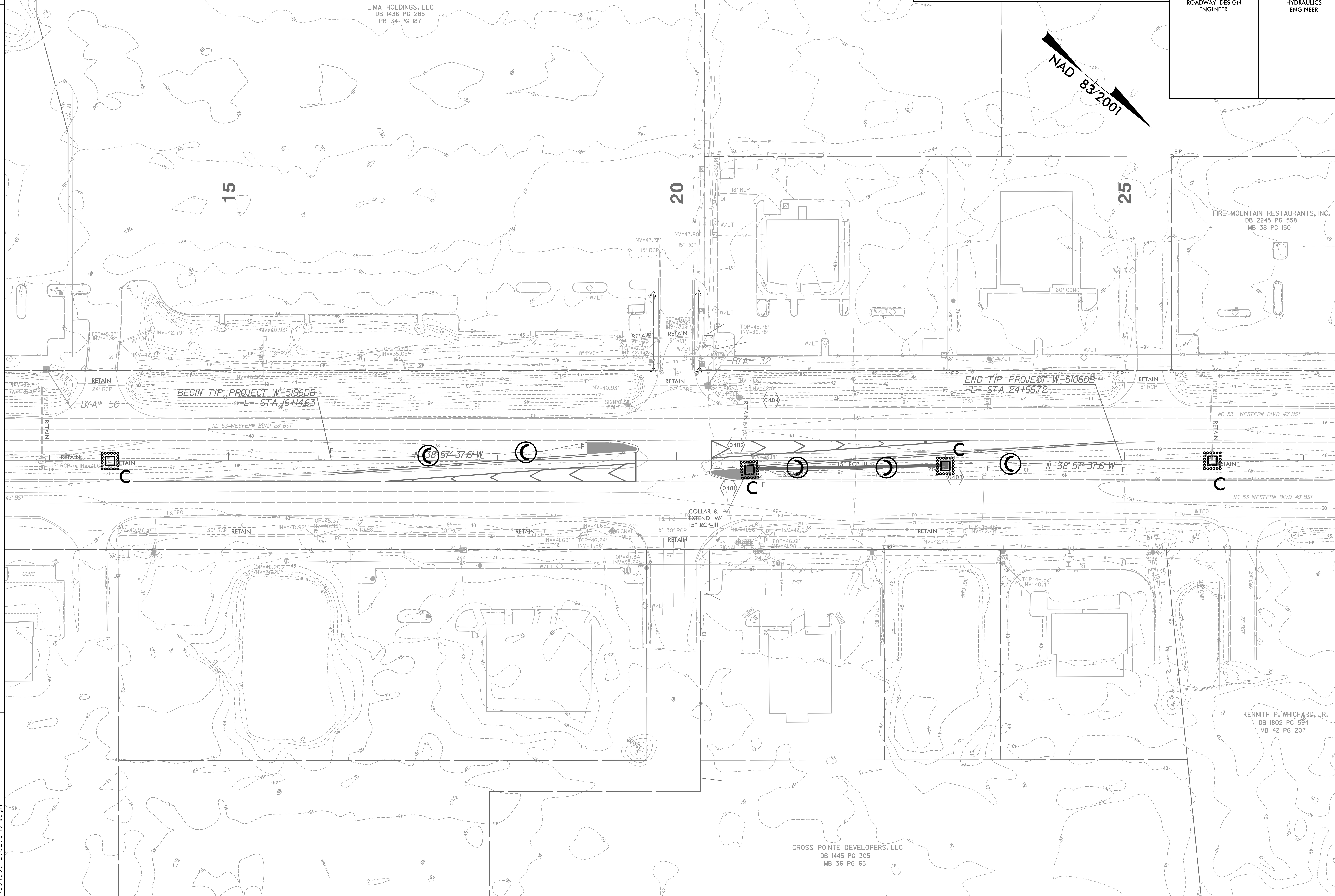
PROJECT REFERENCE NO.	SHEET NO.
W-5106DB	EC-4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



REVISIONS

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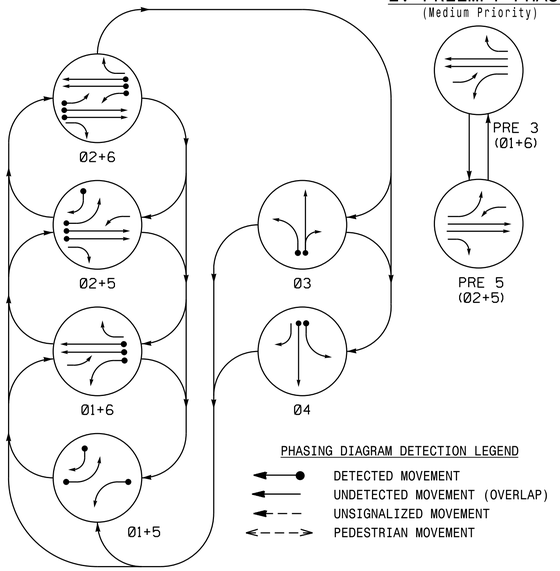
PROJECT REFERENCE NO.	SHEET NO.
W-5601DB	Sig 1.0

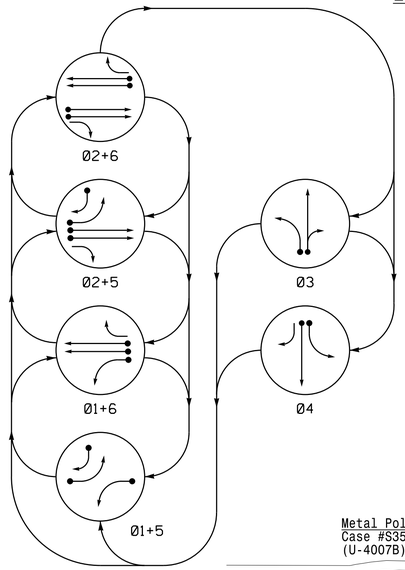
DEFAULT PHASING DIAGRAM



DEFAULT EV PREEMPT PHASES

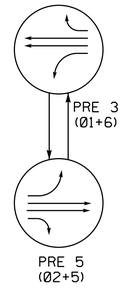
(Medium Priority)

ALTERNATE PHASING DIAGRAM



ALTERNATE EV PREEMPT PHASES

(Medium Priority)



PHASING DIAGRAM DETECTION LEGEND

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

DEFAULT PHASING TABLE OF OPERATION

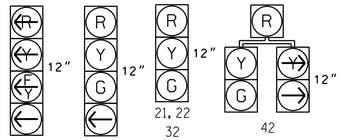
SIGNAL FACE	PHASE 01+5	01+6	02+5	02+6	03	04	PRE3	PRE5	FLASH
11	←	←	F Y	F Y	~~R~~	~~R~~	←	F Y	~~Y~~
21, 22	R	R	G	G	R	R	R	G	Y
31	R	R	R	R	G ←	R	R	R	R
32	R	R	R	R	G	R	R	R	R
41	R	R	R	R	R	G ←	R	R	R
43	R	R	R	R	R	G	R	R	R
42	R →	R	R →	R	R	G	R	R	R
51	←	F Y	←	F Y	~~R~~	~~R~~	F Y	←	~~Y~~
61,62	R	G	R	G	R	R	G	R	Y

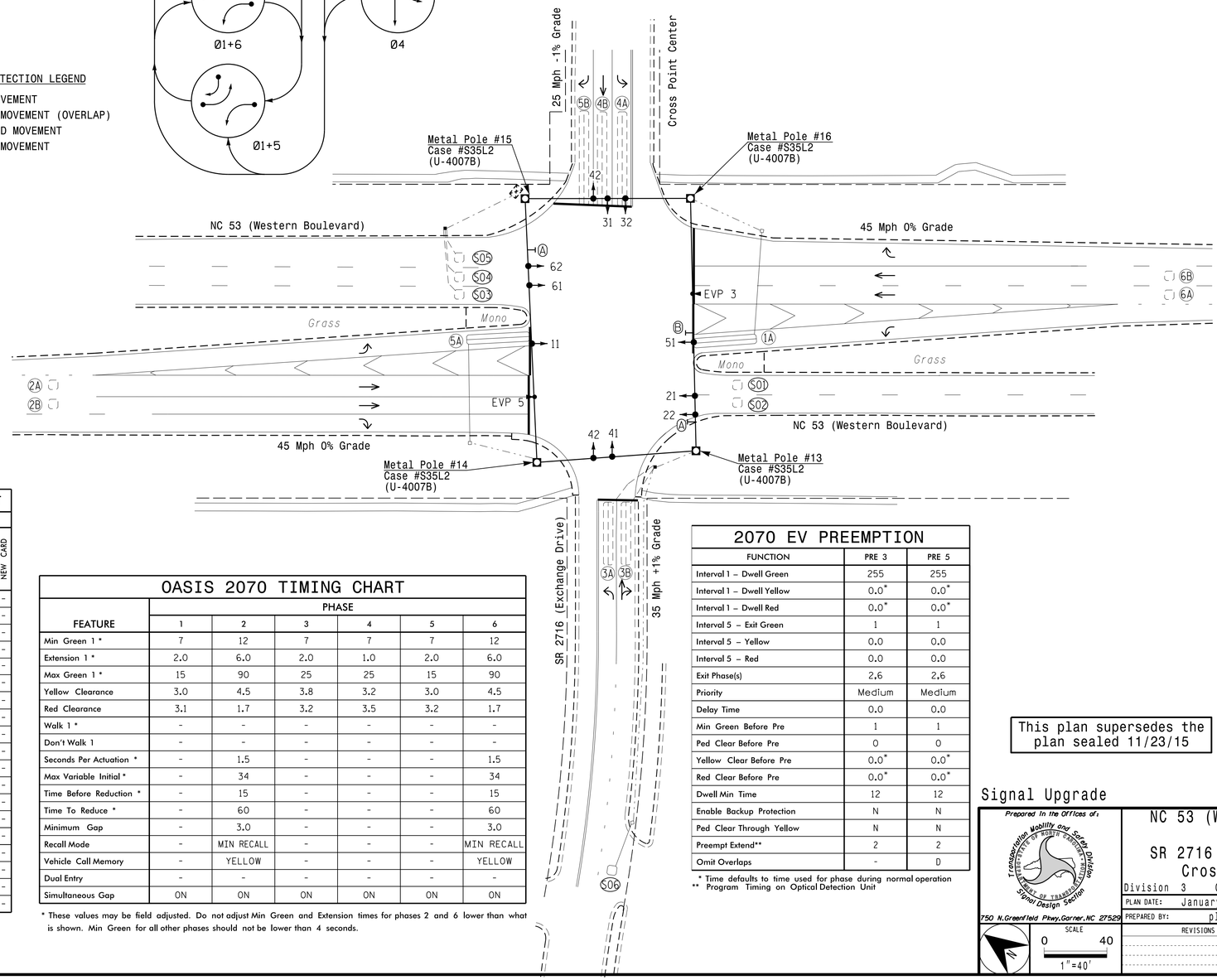
ALTERNATE PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE 01+5	01+6	02+5	02+6	03	04	PRE3	PRE5	FLASH
11	←	←	~~R~~	~~R~~	~~R~~	~~R~~	←	~~R~~	~~Y~~
21, 22	R	R	G	G	R	R	R	G	Y
31	R	R	R	R	G ←	R	R	R	R
32	R	R	R	R	G	R	R	R	R
41	R	R	R	R	R	G ←	R	R	R
43	R	R	R	R	R	G	R	R	R
42	R →	R	R →	R	R	G	R	R	R
51	←	~~R~~	←	~~R~~	~~R~~	~~R~~	~~R~~	←	~~Y~~
61,62	R	G	R	G	R	R	G	R	Y

SIGNAL FACE I.D.

All Heads L.E.D.





OASIS 2070 LOOP & DETECTOR INSTALLATION CHART

INDUCTIVE LOOPS					DETECTOR PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
1A	6X60	+10	2-4-2	-	1	Y	Y	-	-	✳15	-	-
					✳✳6	Y	Y	Y	-	3	-	-
2A	6X6	300	4	-	2	Y	Y	-	-	-	-	-
2B	6X6	300	4	-	2	Y	Y	-	-	-	-	-
3A	6X40	0	2-4-2	-	3	Y	Y	-	-	3	-	-
3B	6X40	0	2-4-2	-	3	Y	Y	-	-	10	-	-
4A	6X60	0	2-4-2	-	4	Y	Y	-	-	3	-	-
4B	6X60	0	2-4-2	-	4	Y	Y	-	-	-	-	-
5A	6X60	+10	2-4-2	-	5	Y	Y	-	-	✳15	-	-
					✳✳2	Y	Y	Y	-	3	-	-
5B	6X60	0	2-4-2	-	5	Y	Y	-	-	15	-	-
6A	6X6	300	4	-	6	Y	Y	-	-	-	-	-
6B	6X6	300	4	-	6	Y	Y	-	-	-	-	-
S01	6X6	+130	4	-	-	-	-	-	-	-	Y	-
S02	6X6	+130	4	-	-	-	-	-	-	-	Y	-
S03	6X6	+145	4	-	-	-	-	-	-	-	Y	-
S04	6X6	+145	4	-	-	-	-	-	-	-	Y	-
S05	6X6	+145	4	-	-	-	-	-	-	-	Y	-
S06	6X6	235	5	Y	-	-	-	-	-	-	Y	-

✳ Disable delay during Alternate Phasing Operation
✳✳ Disable phase 2+6 call for loops 1A and 5A during Alternate Phasing Operation

OASIS 2070 TIMING CHART

FEATURE	PHASE 1	2	3	4	5	6
Min Green 1 *	7	12	7	7	7	12
Extension 1 *	2.0	6.0	2.0	1.0	2.0	6.0
Max Green 1 *	15	90	25	25	15	90
Yellow Clearance	3.0	4.5	3.8	3.2	3.0	4.5
Red Clearance	3.1	1.7	3.2	3.5	3.2	1.7
Walk 1 *	-	-	-	-	-	-
Don't Walk 1	-	-	-	-	-	-
Seconds Per Actuation *	-	1.5	-	-	-	1.5
Max Variable Initial *	-	34	-	-	-	34
Time Before Reduction *	-	15	-	-	-	15
Time To Reduce *	-	60	-	-	-	60
Minimum Gap	-	3.0	-	-	-	3.0
Recall Mode	-	MIN RECALL	-	-	-	MIN RECALL
Vehicle Call Memory	-	YELLOW	-	-	-	YELLOW
Dual Entry	-	-	-	-	-	-
Simultaneous Gap	ON	ON	ON	ON	ON	ON

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

2070 EV PREEMPTION

FUNCTION	PRE 3	PRE 5
Interval 1 – Dwell Green	255	255
Interval 1 – Dwell Yellow	0.0*	0.0*
Interval 1 – Dwell Red	0.0*	0.0*
Interval 5 – Exit Green	1	1
Interval 5 – Yellow	0.0	0.0
Interval 5 – Red	0.0	0.0
Exit Phase(s)	2,6	2,6
Priority	Medium	Medium
Delay Time	0.0	0.0
Min Green Before Pre	1	1
Ped Clear Before Pre	0	0
Yellow Clear Before Pre	0.0*	0.0*
Red Clear Before Pre	0.0*	0.0*
Dwell Min Time	12	12
Enable Backup Protection	N	N
Ped Clear Through Yellow	N	N
Preempt Extend**	2	2
Omit Overlaps	-	D

* Time defaults to time used for phase during normal operation
** Program Timing on Optical Detection Unit

6 Phase
Fully Actuated w/ EV Preempt
Jacksonville Signal System

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2012 and "Standard Specifications for Roads and Structures" dated January 2012.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 1 and/or phase 5 may be lagged.
4. The order of phase 3 and phase 4 may be reversed
5. Set all detector units to presence mode.
6. 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.
7. This intersection features an optical preemption system. Shown locations of optical detectors are conceptual only.
8. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
9. Signal system data: Controller Asset # 0828.

LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
	2-in Underground Conduit	
N/A	Right of Way	
	Directional Arrow	
	Metal Strain Pole	
	Out of Pavement Detector	
Ⓐ	Right Arrow "ONLY" Sign (R3-5R)	Ⓐ
Ⓑ	"U-TURN YIELD TO RIGHT TURN" Sign (R10-16)	Ⓑ

This plan supersedes the plan sealed 11/23/15

Signal Upgrade

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

NC 53 (Western Boulevard)
at
SR 2716 (Exchange Drive)/
Cross Point Center

Division 3 Onslow County Jacksonville

PLAN DATE: January 2016 REVIEWED BY: JG
PREPARED BY: pla REVIEWED BY:

SCALE 0 40 1"=40'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023489 ENGINEER PAMELA L. ALEXANDER

DocuSigned by: Pal Alexander SIGNATURE 1/5/2016 DATE

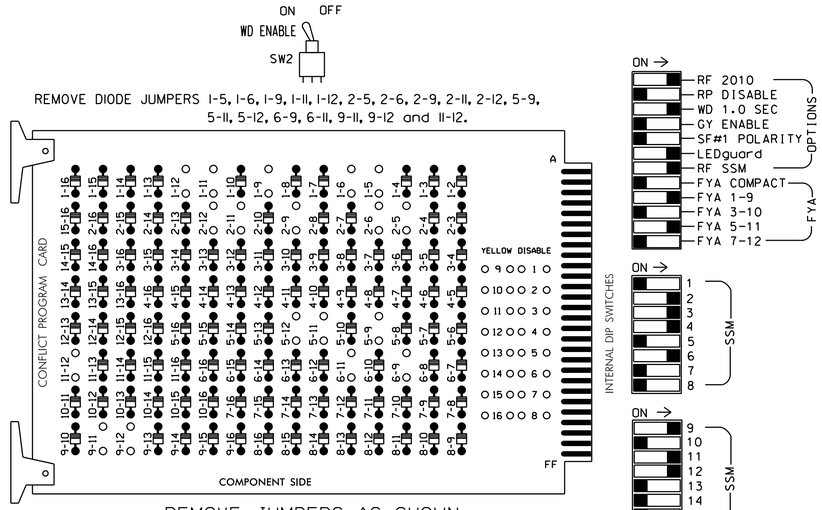
SIG. INVENTORY NO. 03-0828

05-JAN-2016 14:58
S:\TMS\GIS\Projects\Signal Design Section\Eastern Region\Div-03\03-0828\03828_sig_dsn_2016mmdd.dgn
palexander

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

EDI MODEL 2010ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



REMOVE JUMPERS AS SHOWN

NOTES:

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

■ = DENOTES POSITION OF SWITCH

NOTES

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

EQUIPMENT INFORMATION

CONTROLLER.....2070L
CABINET.....332 W/ AUX
SOFTWARE.....ECONOLITE OASIS
CABINET MOUNT.....BASE
OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
LOAD SWITCHES USED.....S1,S2,S3,S4,S5,S6,S9,S12,S13
PHASES USED.....1,2,3,4,5,6
OVERLAP "A".....1+2
OVERLAP "B".....NOT USED
OVERLAP "C".....5+6
OVERLAP "D".....5

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S2P	S3		S4		S4P	S5	S6	S6P	S7	S8	S8P	S9	S10	S11	S12	S13	S14
PHASE	1	2	2 PED	3		4		4 PED	5	6	6 PED	7	8	8 PED	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	11★	21,22	NU	31	32	41	42,43	NU	51★	61,62	NU	NU	NU	NU	11★	NU	NU	51★	42	NU
RED		128		116	116	101	101			134									✳	
YELLOW	✳	129		117	117	102	102		✳	135										
GREEN		130		118	118	103	103			136										
RED ARROW															A121			A114		
YELLOW ARROW															A122			A115	A102	
FLASHING YELLOW ARROW															A123			A116		
GREEN ARROW	127			118		103			133										A103	

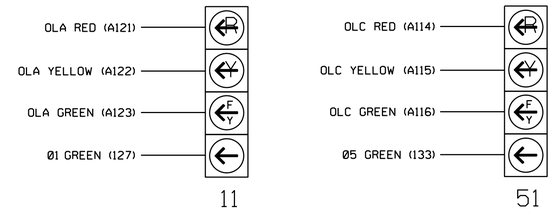
NU = Not Used

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

★ See pictorial of head wiring in detail below.

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.

INPUT FILE POSITION LAYOUT

(front view)

▽2

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE "I"	U	ø1 1A	ø2 2A	ø3 3A	WIRED INPUT ⊗	SLOT EMPTY	ø4 4A	SLOT EMPTY	SLOT EMPTY	SYS. DET. S01	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	FS DC ISOLATOR
	L	NOT USED	ø2 2B	ø3 3B			ø4 4B			SYS. DET. S02					ST DC ISOLATOR
FILE "J"	U	ø5 5A	ø5 5B	ø6 6A	WIRED INPUT ⊗	SLOT EMPTY	SLOT EMPTY	SYS. DET. S05	SLOT EMPTY	SYS. DET. S03	SLOT EMPTY	SLOT EMPTY	PRE3 OPTICAL DETECTOR (2-CHANL) PRE5	SLOT EMPTY	SLOT EMPTY
	L	NOT USED	NOT USED	ø6 6B				SYS. DET. S06		SYS. DET. S04					

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

⊗ Wired Input - Do not populate slot with detector card

FS = FLASH SENSE
ST = STOP TIME
PRE 3,5 = EV PREEMPTS

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
1A[1]	TB2-1,2	I1U	56	18	1	1	Y	Y			15
	-	J4U	48	10★	26	6	Y	Y	Y		3
	-	I1U	56	18★	51	1	Y	Y			
2A	TB2-5,6	I2U	39	1	2	2	Y	Y			
2B	TB2-7,8	I2L	43	5	12	2	Y	Y			
3A	TB2-9,10	I3U	63	25	32	3	Y	Y			3
3B	TB2-11,12	I3L	76	38	42	3	Y	Y			10
4A	TB4-9,10	I6U	41	3	4	4	Y	Y			3
4B	TB4-11,12	I6L	45	7	14	4	Y	Y			
5A[2]	TB3-1,2	J1U	55	17	5	5	Y	Y			15
	-	I4U	47	9★	22	2	Y	Y	Y		3
	-	J1U	55	17★	55	5	Y	Y			
5B	TB3-5,6	J2U	40	2	6	5	Y	Y			15
6A	TB3-9,10	J3U	64	26	36	6	Y	Y			
6B	TB3-11,12	J3L	77	39	46	6	Y	Y			
✳S01	TB6-9,10	I9U	60	22	11	SYS					
✳S02	TB6-11,12	I9L	62	24	13	SYS					
✳S03	TB7-9,10	J9U	59	21	15	SYS					
✳S04	TB7-11,12	J9L	61	23	17	SYS					
✳S05	TB7-1,2	J7U	66	28	38	SYS					
✳S06	TB7-3,4	J7L	79	41	48	SYS					

▽2

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

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

★ See Input Page Assignment programming details on sheets 3-4.

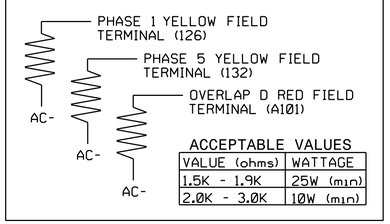
✳ System detector only. Remove the vehicle phase assigned to this detector in the default programming.

INPUT FILE POSITION LEGEND: J2L
FILE J
SLOT 2
LOWER

THIS ELECTRICAL DETAIL SUPERSEDES THE DETAIL SEALED ON 3/19/15 AND REVISED ON 11/25/15.

▽2 THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0828
DESIGNED: January 2016
SEALED: 1/5/2016
REVISED: N/A

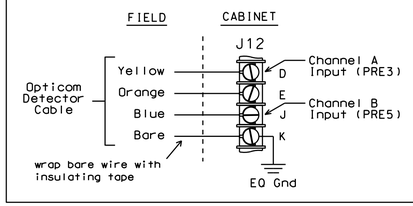
LOAD RESISTOR INSTALLATION DETAIL



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

TYPICAL OPTICOM FIELD WIRE DETAIL

(input file, rear view)



Electrical Detail - Sheet 1 of 6

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISION ▽2 SEAL

NORTH CAROLINA PROFESSIONAL SEAL 036880 ENGINEER KEITH M. MIMS

DocuSigned by: Keith M. Mims 1/7/2016 DATE
2FB0786E8CD34A5...

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared in the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Signals Management Section

750 N.Greenfield Pkwy,Garner,NC 27529

NC 53 (Western Boulevard) at SR 2716 (Exchange Drive)/ Cross Point Center

Division 3 | Onslow County | Jacksonville

PLAN DATE:	March 2015	REVIEWED BY:	JTR
PREPARED BY:	S. Armstrong	REVIEWED BY:	

REVISIONS	INIT.	DATE
▽2 Revised to split side street phasing. (WSA)	DTJ	10/6/15
▽2 Added system detector S06. (WSA) (DTJ 1/6/16)	KMM	1/7/2016

SEAL

Not a certified document as to the Original Document but Only as to the Revisions - This document originally issued and sealed by John T. Rowe, Jr., #008453, on 3/19/15. This document is only certified as to the revisions.

DATE

SIG. INVENTORY NO. 03-0828

05-JAN-2016 06:21
S:\TISAS\PW\TS Signals\Workgroups\Sig Mon\Armstrong\m030828_smele_xxx.dgn
sarmstrong

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

(program controller as shown below)

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

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

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

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

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

PRESS '+'

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

              SCROLL DOWN
 THEN:
 SET OUTPUT  ASSIGNMENT #52 OFF
```

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

PRESS '+'

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

              SCROLL DOWN
 THEN:
 SET OUTPUT  ASSIGNMENT #51 ON
```

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

PRESS '+'

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

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

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

PRESS '+'

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

              SCROLL DOWN
 THEN:
 SET OUTPUT  ASSIGNMENT #44 OFF
```

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

PRESS '+'

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

              SCROLL DOWN
 THEN:
 SET OUTPUT  ASSIGNMENT #43 ON
```

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

LOGIC I/O PROCESSOR PROGRAMMING COMPLETE

OUTPUT REFERENCE SCHEDULE

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

THIS ELECTRICAL DETAIL SUPERSEDES THE DETAIL SEALED ON 3/19/15 AND REVISED ON 11/25/15.

2

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0828
DESIGNED: January 2016
SEALED: 1/5/2016
REVISED: N/A

OVERLAP PROGRAMMING DETAIL

(program controller as shown below)

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

```
 PAGE 1: VEHICLE OVERLAP 'A' SETTINGS
 PHASE:          ¦12345678910111213141516
VEH OVL PARENTS:¦XX
VEH OVL NOT VEH:¦
VEH OVL NOT PED:¦
VEH OVL GRN EXT:¦
STARTUP COLOR: _ RED  _ YELLOW  _ GREEN
FLASH COLORS:  _ RED  _ YELLOW  X GREEN
SELECT VEHICLE OVERLAP OPTIONS:   (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...Y
GREEN EXTENSION (0-255 SEC).........0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)..0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0
```

NOTICE GREEN FLASH

PRESS '+' TWICE

```
 PAGE 1: VEHICLE OVERLAP 'C' SETTINGS
 PHASE:          ¦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
```

NOTICE GREEN FLASH

PRESS '+'

```
 PAGE 1: 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
```

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.

NOTICE 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

NOTICE PAGE 2

```
 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
```

PRESS '+'

NOTICE PAGE 2

```
 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
```

OVERLAP PROGRAMMING COMPLETE

Electrical Detail - Sheet 2 of 6

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISION 2 SEAL

NORTH CAROLINA PROFESSIONAL SEAL 036880 ENGINEER KEITH M. MIMS

DocuSigned by: Keith M. Mims 2F80786E8CD34A5... 1/7/2016 DATE

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared In the Offices of: Transportation Mobility and Safety Division, Signals Management Section, State of North Carolina Department of Transportation

750 N.Greenfield Pkwy,Garner,NC 27529

NC 53 (Western Boulevard) at SR 2716 (Exchange Drive)/ Cross Point Center

Division 3 | Onslow County | Jacksonville

PLAN DATE:	March 2015	REVIEWED BY:	JTR
PREPARED BY:	S. Armstrong	REVIEWED BY:	

REVISIONS	INIT.	DATE
1 Revised to split side street phasing. (WSA)	DTJ	10/6/15
2 Added system detector S06. (WSA) (DTJ 1/6/16)	KMM	1/7/2016

SEAL

Not a certified document as to the Original Document but Only as to the Revisions - This document originally issued and sealed by John T. Rowe, Jr., #008453, on 3/19/15. This document is only certified as to the revisions.

DATE

SIG. INVENTORY NO. 03-0828

PROJECT REFERENCE NO.	SHEET NO.
W-5601DB	Sig. 1.3

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.

```
PAGE: 2 C1 PIN:48  VEHICLE DETECTOR
INPUT ASSIGNMENT #..................10
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).............26
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 SYCHRONIZATION (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 1A - PHASE 6)

```
PAGE: 2 C1 PIN:48  NOT ENABLED
INPUT ASSIGNMENT #..................10
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 SYCHRONIZATION (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 18

```
PAGE: 2 C1 PIN:56  VEHICLE DETECTOR
INPUT ASSIGNMENT #..................18
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).............1
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 SYCHRONIZATION (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 '51' TO REASSIGN THE VEHICLE DETECTOR FOR THIS INPUT

(LOOP 1A - PHASE 1)

```
PAGE: 2 C1 PIN:56  VEHICLE DETECTOR
INPUT ASSIGNMENT #..................18
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).............51
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 SYCHRONIZATION (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 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.

```
VEHICLE DETECTOR #51  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
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 '1' FOR PHASES ASSIGNED

ENSURE DELAY IS '0'

```
VEHICLE DETECTOR #51  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
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.

2 THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0828
DESIGNED: January 2016
SEALED: 1/5/2016
REVISED: N/A

THIS ELECTRICAL DETAIL SUPERSEDES THE DETAIL SEALED ON 3/19/15 AND REVISED ON 11/25/15.

Electrical Detail - Sheet 3 of 6

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISION 2 SEAL

NORTH CAROLINA PROFESSIONAL SEAL 036880 ENGINEER KEITH M. MIMS

DocuSigned by: Keith M. Mims 1/7/2016 DATE
2F80786E8CD34A5...

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared in the Offices of: Transportation Mobility and Safety Division, State of North Carolina Department of Transportation, Signals Management Section

750 N.Greenfield Pkwy,Garner,NC 27529

NC 53 (Western Boulevard) at SR 2716 (Exchange Drive)/ Cross Point Center

Division 3 | Onslow County | Jacksonville

PLAN DATE: March 2015	REVIEWED BY: JTR
PREPARED BY: S. Armstrong	REVIEWED BY:

REVISIONS	INIT.	DATE
1 Revised to split side street phasing. (WSA)	DTJ	10/6/15
2 Added system detector S06. (WSA) (DTJ 1/6/16)	KMM	1/7/2016

SEAL

Not a certified document as to the Original Document but Only as to the Revisions - This document originally issued and sealed by John T. Rowe, Jr., #008453, on 3/19/15. This document is only certified as to the revisions.

DATE

SIG. INVENTORY NO. 03-0828

06-JAN-2016 06:22
S:*ITS Signals*Workgroups*Sig Man*armstrong*030828_sm_ele_xxx.dgn
sarmstrong

PROJECT REFERENCE NO.	SHEET NO.
W-5601DB	Sig. 1.4

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.

```
PAGE: 2 C1 PIN:47  VEHICLE DETECTOR
INPUT ASSIGNMENT #..................9
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).............22
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 SYCHRONIZATION (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 5A - PHASE 2)

```
PAGE: 2 C1 PIN:47  NOT ENABLED
INPUT ASSIGNMENT #..................9
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 SYCHRONIZATION (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 17

```
PAGE: 2 C1 PIN:55  VEHICLE DETECTOR
INPUT ASSIGNMENT #..................17
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).............5
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 SYCHRONIZATION (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 '55' TO REASSIGN THE VEHICLE DETECTOR FOR THIS INPUT →

(LOOP 5A - PHASE 5)

```
PAGE: 2 C1 PIN:55  VEHICLE DETECTOR
INPUT ASSIGNMENT #..................17
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).............55
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 SYCHRONIZATION (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 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.

```
VEHICLE DETECTOR #55  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
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 '5' FOR PHASES ASSIGNED →

ENSURE DELAY IS '0' →

```
VEHICLE DETECTOR #55  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
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.

THIS ELECTRICAL DETAIL SUPERSEDES THE DETAIL SEALED ON 3/19/15 AND REVISED ON 11/25/15.

2

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 03-0828
DESIGNED: January 2016
SEALED: 1/5/2016
REVISED: N/A

Electrical Detail - Sheet 4 of 6

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISION 2 SEAL

NORTH CAROLINA PROFESSIONAL SEAL 036880 ENGINEER KEITH M. MIMS

DocuSigned by: Keith M. Mims 1/7/2016
2F80786E8CD34A5...
DATE

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared in the Offices of: Transportation Mobility and Safety Division, Signals Management Section
750 N.Greenfield Pkwy,Garner,NC 27529

NC 53 (Western Boulevard)
at
SR 2716 (Exchange Drive)/
Cross Point Center

Division 3 | Onslow County | Jacksonville

PLAN DATE: March 2015	REVIEWED BY: JTR
PREPARED BY: S. Armstrong	REVIEWED BY:

REVISIONS	INIT.	DATE
1 Revised to split side street phasing. (WSA)	DTJ	10/6/15
2 Added system detector S06. (WSA) (DTJ 1/6/16)	KMM	1/7/2016

SEAL

Not a certified document as to the Original Document but Only as to the Revisions - This document originally issued and sealed by John T. Rowe, Jr., #008453, on 3/19/15. This document is only certified as to the revisions.

DATE

SIG. INVENTORY NO. 03-0828

06-JAN-2016 06:23
S:*ITS&SU*ITS Signals*Workgroups*Sig Man*Armstrong*030828_sm_ele_xxx.dgn
sarmstrong

PROJECT REFERENCE NO.	SHEET NO.
W-5601DB	Sig. 1.5

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.

PHASING	INPUTS PAGE	OVERLAPS PAGE
ACTIVE PAGES REQUIRED TO RUN DEFAULT PHASING	1	1
ACTIVE PAGES REQUIRED TO RUN ALTERNATE PHASING	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 SUPERSEDES THE DETAIL SEALED ON 3/19/15 AND REVISED ON 11/25/15.

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 03-0828
DESIGNED: January 2016
SEALED: 1/5/2016
REVISED: N/A

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISION SEAL

NORTH CAROLINA PROFESSIONAL SEAL 036880 ENGINEER KEITH M. MIMS

DocuSigned by: Keith M. Mims 1/7/2016 DATE
2FB0786EBCD34A5...

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared in the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Signal Management Section

750 N.Greenfield Pkwy.Garner,NC 27529

NC 53 (Western Boulevard)
at
SR 2716 (Exchange Drive)/
Cross Point Center

Division 3 | Onslow County | Jacksonville

PLAN DATE: March 2015 | REVIEWED BY: JTR
PREPARED BY: S. Armstrong | REVIEWED BY:

REVISIONS	INIT.	DATE
Revised to split side street phasing. (WSA)	DTJ	10/6/15
Added system detector 506. (WSA) (DTJ 1/6/16)	KMM	1/7/2016

SEAL

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DATE

SIG. INVENTORY NO. 03-0828

05-JAN-2016 06:23
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sarmstrong

PROJECT REFERENCE NO.	SHEET NO.
W-5601DB	Sig. 1.6

EMERGENCY VEHICLE PREEMPTION PROGRAMMING DETAIL

(program controller as shown below)

From Main Menu press 'A' (Preemption), then '1' (Standard Preemptions). Press 'NEXT' as needed to advance to Preempts 3 and 5.

```
   PREEMPTION  #3  SETTINGS (NEXT:1-10)
 INTERVAL/TIMING  ¦  CLEAR/DWELL PHASES
   GRN YEL  RED   ¦12345678910111213141516
 1 255  0.0  0.0  ¦X    X
 2   0  0.0  0.0  ¦
 3   0  0.0  0.0  ¦
 4   0  0.0  0.0  ¦
 5   1  0.0  0.0  ¦ X   X
 EXIT CALLS       ¦
               OPTIONS
 PRIORITY (Y/N TO SELECT) ............MED
 DELAY TIMER (0-255 SEC) .............0
 MIN GREEN BEFORE PRE (0= DEFAULT)....1
 PED CLEAR BEFORE PRE (0= DEFAULT)....0
 YELLOW CLEAR BEFORE PRE (0= DEFAULT).0.0
 RED CLEAR BEFORE PRE (0= DEFAULT)....0.0
 DWELL MIN TIMER (0-255 SEC) .........12
 DWELL MAX TIMER (0=OFF,1-255MIN) ....0
 DWELL HOLD-OVER TIMER (0-255) .......0
 LATCH CALL? .........................N
 LINK TO NEXT PREEMPT? ...............N
 ENABLE BACKUP PROTECTION? ...........N
 HOLD CLEAR 1 PHASES DURING DELAY? ...N
 FAST GREEN FLASH DWELL PHASES? ......N
 PED CLEARANCE THROUGH YELLOW? .......N
 INHIBIT OVERLAP GREEN EXTENSION? ....N
 SERVICE DURING SOFTWARE FLASH? ......N
 REST IN RED DURING DWELL INTERVAL? ..N
 FLASH DWELL INTERVAL? ...............N
 ALLOW PEDS IN DWELL INTERVAL? .......N
 RE-TIME DWELL INTERVAL? .............N
 OVERLAPS:                ¦ ABCDEFGHIJKLMNOP
 DWELL INT FLASH YELLOW   ¦
 OMIT OVERLAPS:           ¦
```

PRESS 'NEXT' TWICE

```
   PREEMPTION  #5  SETTINGS (NEXT:1-10)
 INTERVAL/TIMING  ¦  CLEAR/DWELL PHASES
   GRN YEL  RED   ¦12345678910111213141516
 1 255  0.0  0.0  ¦ X  X
 2   0  0.0  0.0  ¦
 3   0  0.0  0.0  ¦
 4   0  0.0  0.0  ¦
 5   1  0.0  0.0  ¦ X   X
 EXIT CALLS       ¦
               OPTIONS
 PRIORITY (Y/N TO SELECT) ............MED
 DELAY TIMER (0-255 SEC) .............0
 MIN GREEN BEFORE PRE (0= DEFAULT)....1
 PED CLEAR BEFORE PRE (0= DEFAULT)....0
 YELLOW CLEAR BEFORE PRE (0= DEFAULT).0.0
 RED CLEAR BEFORE PRE (0= DEFAULT)....0.0
 DWELL MIN TIMER (0-255 SEC) .........12
 DWELL MAX TIMER (0=OFF,1-255MIN) ....0
 DWELL HOLD-OVER TIMER (0-255) .......0
 LATCH CALL? .........................N
 LINK TO NEXT PREEMPT? ...............N
 ENABLE BACKUP PROTECTION? ...........N
 HOLD CLEAR 1 PHASES DURING DELAY? ...N
 FAST GREEN FLASH DWELL PHASES? ......N
 PED CLEARANCE THROUGH YELLOW? .......N
 INHIBIT OVERLAP GREEN EXTENSION? ....N
 SERVICE DURING SOFTWARE FLASH? ......N
 REST IN RED DURING DWELL INTERVAL? ..N
 FLASH DWELL INTERVAL? ...............N
 ALLOW PEDS IN DWELL INTERVAL? .......N
 RE-TIME DWELL INTERVAL? .............N
 OVERLAPS:                ¦ ABCDEFGHIJKLMNOP
 DWELL INT FLASH YELLOW   ¦
 OMIT OVERLAPS:           ¦    X
```

PROGRAMMING COMPLETE

Program extend time on optical detector units for 2.0 sec for EVP3 and EVP5.

THIS ELECTRICAL DETAIL SUPERSEDES THE DETAIL SEALED ON 3/19/15 AND REVISED ON 11/25/15.

2

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0828
DESIGNED: January 2016
SEALED: 1/5/2016
REVISED: N/A

Electrical Detail - Sheet 6 of 6

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISION 2 SEAL

NORTH CAROLINA PROFESSIONAL SEAL 036880 ENGINEER KEITH M. MIMS

DocuSigned by: Keith M. Mims 2F80786E8CD34A5... 1/7/2016 DATE

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared in the Offices of:

Transportation Mobility and Safety Division — State of North Carolina Department of Transportation — Signals Management Section

750 N.Greenfield Pkwy,Garner,NC 27529

NC 53 (Western Boulevard)
at
SR 2716 (Exchange Drive)/
Cross Point Center

Division 3	Onslow County	Jacksonville	
PLAN DATE: March 2015		REVIEWED BY: JTR	
PREPARED BY: S. Armstrong		REVIEWED BY:	

REVISIONS	INIT.	DATE
1 Revised to split side street phasing. (WSA)	DTJ	10/6/15
2 Added system detector S06. (WSA) (DTJ 1/6/16)	KMM	1/7/2016

SEAL

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DATE

SIG. INVENTORY NO. 03-0828

06-JAN-2016 06:24 S:\ITS&SU\ITS Signals\Workgroups\Sig Man\Armstrong\030828_sm_ele_xxx.dgn sarmstrong

PROJ. REFERENCE NO.	SHEET NO.
W-5106DB	X-1A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CROSS-SECTION SUMMARY

Approximate quantities only. Unclassified excavation, fine grading, and removal of existing asphalt pavement will be paid for at the lump sum price for "Grading".

NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT

Station L	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
16+50.00	0	0
17+00.00	9	8
17+50.00	7	9
18+00.00	8	9
18+50.00	9	7
19+00.00	16	4
19+50.00	38	0
20+00.00	0	0
20+50.00	0	0
21+00.00	19	8
21+50.00	9	13
22+00.00	9	10
22+50.00	9	10
23+00.00	9	6
23+50.00	11	3
24+00.00	12	5
24+50.00	12	9

0 5 10	PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
	W-5601DB	X-1	11

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

℄

UNDERCUT EXCAVATION

55
50
45
40

44.73

13+50.00

50
45
40

44.43

13+00.00

50
45
40

44.62

12+50.00

Note: Approximate quantities only. Unclassified Excavation, Fine Grading, and Removal of Existing Asphalt Pavement will be paid for at the contract lump sum price for "Grading."

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

02/03/98

0 5 10	PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
	W-5601DB	X-2	11

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

℄

UNDERCUT EXCAVATION

50
45
40

45.18

15+00.00

50
45
40

44.86

14+50.00

50
45
40

44.78

14+00.00

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

0 5 10	PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
	W-5601DB	X-3	11

UNDERCUT EXCAVATION

℄

S.S.46.22

4:1

0.025

48.56

46.25

16+50.00

45.99

16+00.00

45.84

15+50.00

02/03/98

08-JAN-2016 12:32
Order 31 - Western Blvd and Lowes\Roadway\XSC\SS4903Y-rdy.xpl.L.dgn
Outsor\FIRM_task
$$$$USERNAME$$$$
Incremental

02/03/98

0 5 10	PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
	W-5601DB	X-4	11

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

℄

UNDERCUT EXCAVATION

50
45
40

S.S.47.10
A:1
0.025
48.73
47.23

18+00.00

S.S.46.84
A:1
0.025
48.72
46.76

17+50.00

S.S.46.33
A:1
0.025
48.64
46.41

17+00.00

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

02/03/98

0 5 10	PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
	W-5601DB	X-5	11

UNDERCUT EXCAVATION

℄

48.60
0.025
0.014
48.50
19+50.00

48.6
0.025
47.64
19+00.00

48.75
S.S.47.37
4:1
0.025
47.35
18+50.00

02/03/98

0 5 10	PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
	W-5601DB	X-6	11

UNDERCUT EXCAVATION

48.65

0.025

S.S.47.49

4:1

47.51

21+00.00

48.57

0.025

0.025

S.S.49.19

48.02

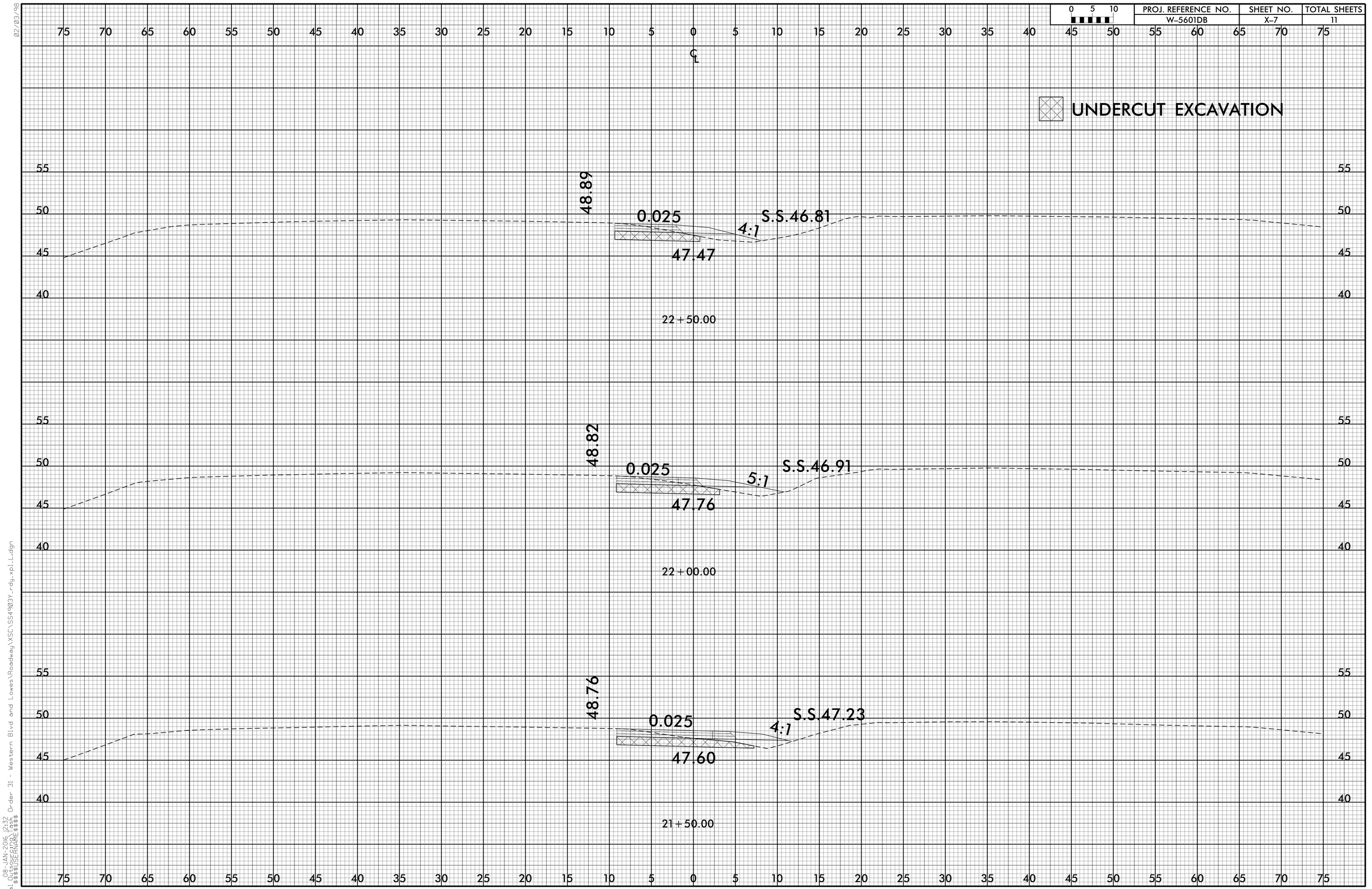
20+50.00

48.42

20+00.00

0 5 10	PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
	W-5601DB	X-7	11

UNDERCUT EXCAVATION



02/03/98

0 5 10	PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
	W-5601DB	X-8	11

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

℄

UNDERCUT EXCAVATION

55 50 45 40

49.30

0.025

4:1

S.S.46.83

47.01

24+00.00

55 50 45 40

49.18

0.025

4:1

S.S.47.04

47.48

23+50.00

55 50 45 40

49.01

0.025

4:1

S.S.46.89

47.50

23+00.00

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

0 5 10	PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
	W-5601DB	X-9	11

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

℄

UNDERCUT EXCAVATION

55
50
45

46.66

25+50.00

47.14

25+00.00

49.42

0.025

5:1

S.S.46.99

47.29

24+50.00

40

02/03/98

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
W-5601DB	X-10	11

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
W-5601DB	X-11	11