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See Sheet 1A For Index of Sheets
 See Sheet 1B For Conventional Symbols
 See Sheet 1C-1 For Survey Control Sheet

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

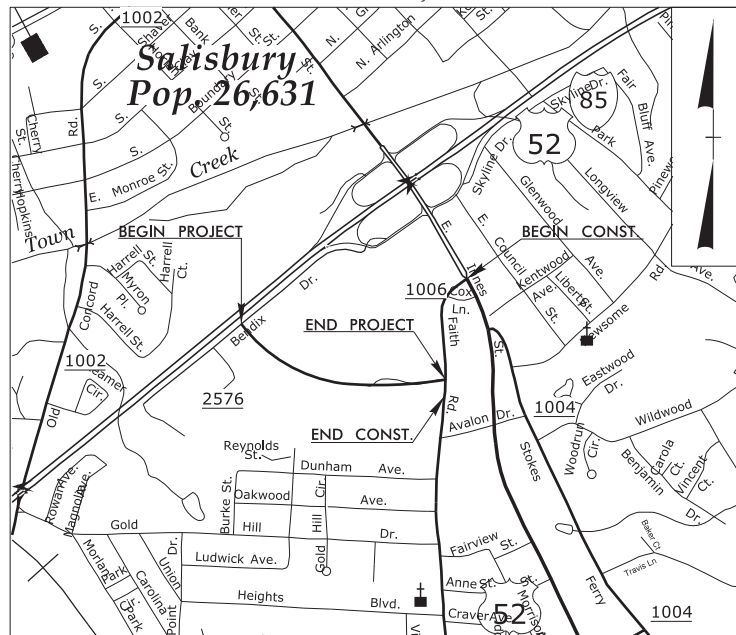
ROWAN COUNTY

**LOCATION: INNES STREET MARKET DRIVE EXTENSION AND
 EXISTING ROAD IMPROVEMENTS FROM SR 2576 (BENDIX DR)
 TO SR 1006 (FAITH RD) IN SALISBURY**

TYPE OF WORK: GRADING, DRAINAGE, CURB AND GUTTER, PAVING AND SIDEWALKS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-5820A	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
44392.1.1		PE	
44392.2.1		RW & UTILITIES	
44392.3.1		CONSTRUCTION	

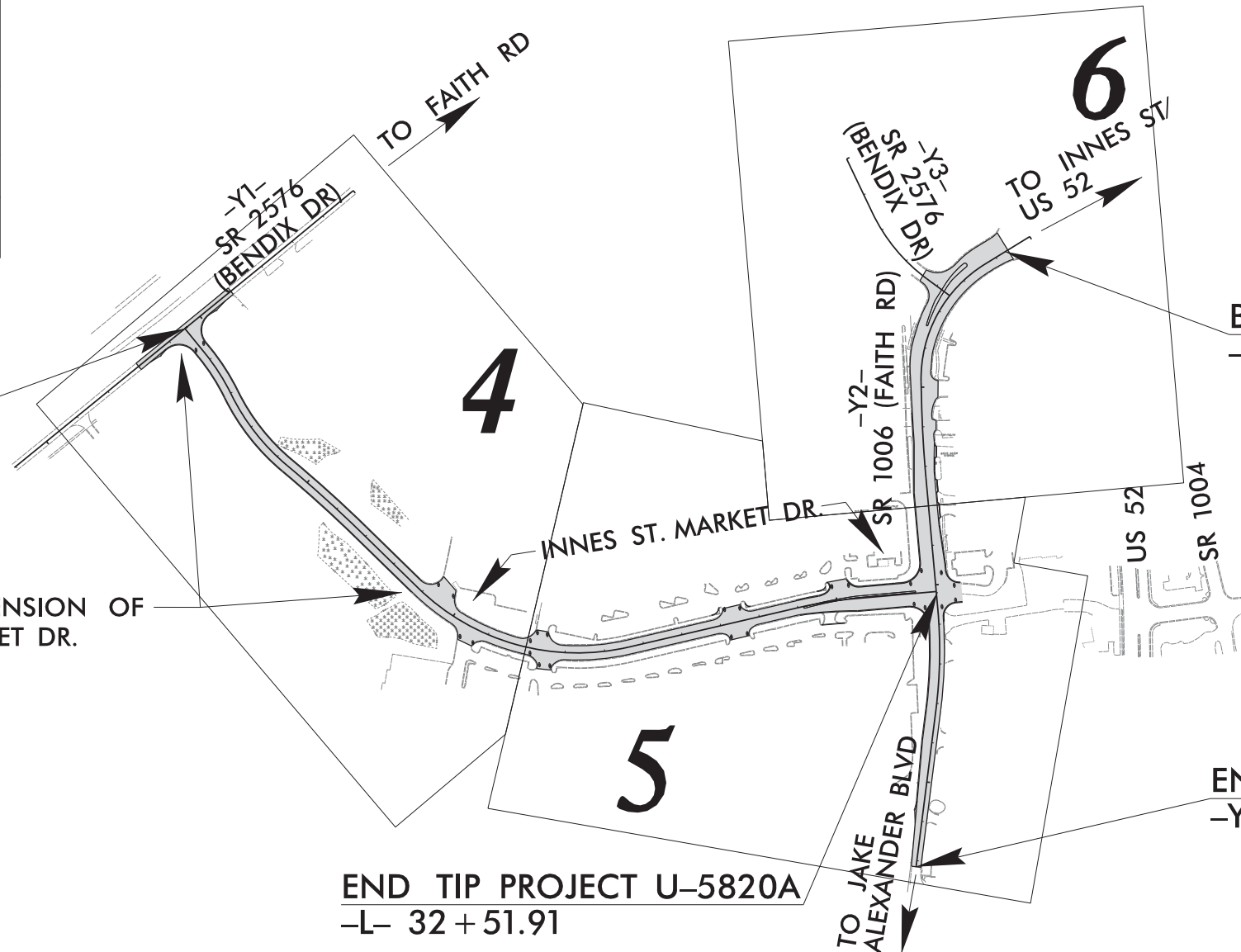
TIP PROJECT: U-5820A



VICINITY MAP

BEGIN TIP PROJECT U-5820A
 -L- 10 + 00.00

PROPOSED EXTENSION OF
 INNES ST. MARKET DR.



END TIP PROJECT U-5820A
 -L- 32 + 51.91

BEGIN CONSTRUCTION
 -Y2- 10 + 72.00

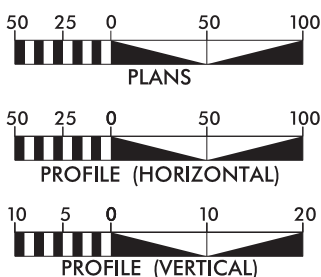
END CONSTRUCTION
 -Y2- 27 + 15.48



DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

CONTRACT: DI00199

GRAPHIC SCALES



DESIGN DATA

ADT 2015 = 13,000 VPD
 V = 40 MPH
 * TTST 1% DUAL 2%
 FUNC CLASS =
 URBAN LOCAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-5820A = 0.426 MILES
 TOTAL LENGTH TIP PROJECT U-5820A = 0.426 MILES

BRETT ABERNATHY, PE, PLS
 NCDOT CONTACT, DIVISION 9



Prepared in the Office of:
 504 Meadowland Drive
 Hillsborough, NC 27278-8551
 Voice: (919) 732-3883
 Fax: (919) 732-6776
 www.summitde.net

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
 APRIL 21, 2017

LETTING DATE:
 APRIL 17, 2018

TRACY N. PARROTT, PE
 PROJECT ENGINEER

BRANDON W. JOHNSON, PE
 PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

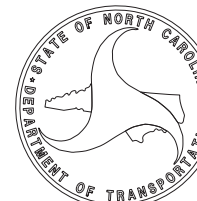
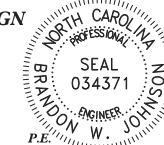
3/21/2018

Drawn by:
 Brandon T. Barham

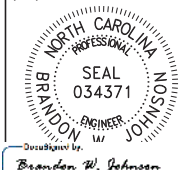

ROADWAY DESIGN ENGINEER

3/21/2018

Drawn by:
 Brandon W. Johnson



8/17/99

PROJECT REFERENCE NO. <i>U-5820A</i>	SHEET NO. <i>1-A</i>
ROADWAY DESIGN ENGINEER 3/21/2018	
	
<i>Brandon W. Johnson</i> <small>DESIGNED BY</small>	
DOCUMENT NOT CONTROLLED UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office of:	 <small>NC FIRM LICENSE No. P-0339 504 Meadowslands Drive Hillsborough, NC 27278 (919) 732-3883 (919) 732-6676 (FAX)</small>

SHEET NUMBER	INDEX OF SHEETS SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
1C-1	SURVEY CONTROL SHEETS
2A-1 THRU 2A-3	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2B-1	ROADWAY DETAILS
2G-1 THRU 2G-4	GEOTECHNICAL DETAILS
3B-1	ROADWAY SUMMARIES
3D-1 THRU 3D-2	DRAINAGE SUMMARIES
3P-1	PARCEL INDEX SHEET
4 THRU 6	PLAN SHEETS
7 THRU 8	PROFILE SHEETS
TMP-1 THRU TMP-6	TRAFFIC MANAGEMENT PLANS
PMP-1 THRU PMP-5	PAVEMENT MARKING PLANS
EC-1 THRU EC-9	EROSION CONTROL PLANS
SIGN-1A THRU SIGN-3	SIGNING PLANS
SIG-1 THRU SIG-39	SIGNAL PLANS
UD-1 THRU UD-4	UTILITIES BY OTHERS PLANS
X-1 THRU X-16	CROSS-SECTIONS

GENERAL NOTES: 2018 SPECIFICATIONS
EFFECTIVE: 01-16-2018
REVISED:

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 III.

SUPERELEVATION:
ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.05 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SIDE ROADS:
THE CONTRACTOR WILL BE REQUIRED TO DO ALL NECESSARY WORK TO PROVIDE SUITABLE CONNECTIONS WITH ALL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PARTICULAR ITEMS INVOLVED.

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

DRIVEWAYS:
DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.02 USING 3 FOOT RADII OR RADII AS SHOWN ON THE PLANS. LOCATIONS OF DRIVES WILL BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

STREET TURNOUT:
STREET RETURNS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 848.04 USING THE RADII NOTED ON PLANS.

GUARDRAIL:
THE GUARDRAIL LOCATIONS SHOWN ON THE PLANS MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHOULD CONSULT WITH THE ENGINEER PRIOR TO ORDERING GUARDRAIL MATERIAL.

RIGHT-OF-WAY MARKERS:
ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY CONTRACT.

CURB RAMPS
CURB RAMPS ARE SHOWN ON THE PLANS AT APPROXIMATE LOCATIONS. CONSTRUCT ALL CURB RAMPS ACCORDANCE WITH STD 848.05 and/or 848.06.

EFF. 01-16-2018
REV.

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, 2018 are applicable to this project and by reference hereby are considered a part of these plans:

STD. NO.	TITLE
DIVISION 2 - EARTHWORK	
200.03	Method of Clearing - Method III
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
275.01	Rock Plating
DIVISION 8 - INCIDENTALS	
838.39	Reinforced Concrete Endwall - for Single 72" Pipe 90 Skew
838.45	Notes for Reinforced Concrete Endwall - Std. Dwg 838.21 thru 838.40
840.01	Brick Catch Basin - 12" thru 54" Pipe
840.02	Concrete Catch Basin - 12" thru 54" Pipe
840.03	Frame, Grates and Head - for Use on Standard Catch Basin
840.14	Concrete Drop Inlet - 12" thru 30" Pipe
840.16	Drop Inlet Frame and Grates - for use with Std. Dwg 840.14 and 840.15
840.20	Frames and Wide Slot Flat Grates
840.31	Concrete Junction Box - 12" thru 66" Pipe
840.34	Traffic Bearing Junction Box - for Use with Pipes 42" and Under
840.37	Steel Grate and Frame
840.45	Precast Drainage Structure
840.46	Traffic Bearing Precast Drainage Structure
840.51	Brick Manhole - 12" thru 36" Pipe
840.52	Precast Manhole - 4', 5' and 6' Diameter
840.53	Precast Manhole with Masonry Base - 12" thru 42" Pipe
840.54	Manhole Frame and Cover
840.72	Pipe Collar
846.01	Concrete Curb, Gutter and Curb & Gutter
848.01	Concrete Sidewalk
848.02	Driveway Turnout - Radius Type
848.04	Street Turnout
848.05	Curb Ramp - Proposed Curb & Gutter
848.06	Curb Ramp - Existing Curb & Gutter
852.01	Concrete Islands
852.06	Method for Placement of Drop Inlets in Concrete Islands
862.01	Guardrail Placement
862.02	Guardrail Installation
876.02	Guide for Rip Rap at Pipe Outlets

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fauibjohns

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	○ EP
Property Corner	-----
Property Monument	□ EDM
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	----- FLW
False Sump	▽

RAILROADS:

Standard Gauge	-----
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 RW Marker	▲ RW
Proposed Control of Access Line with Concrete C/A Marker	▲ C/A
Existing Control of Access	○ C/A
Proposed Control of Access	○ C/A
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	⊕

VEGETATION:

Pavement Removal	▨
Single Tree	☼
Single Shrub	☼
Hedge	-----
Woods Line	-----

Orchard	☼ ☼ ☼ ☼
Vineyard	□ Vineyard

EXISTING STRUCTURES:

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

UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	⊕
Power Line Tower	⊠
Power Transformer	⊠
U/G Power Cable Hand Hole	●
H-Frame Pole	●
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.*)	-----
U/G Water Line LOS C (S.U.E.*)	-----
U/G Water Line LOS D (S.U.E.*)	-----
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.*)	----- TUL
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.

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-5820A	RW01	6

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

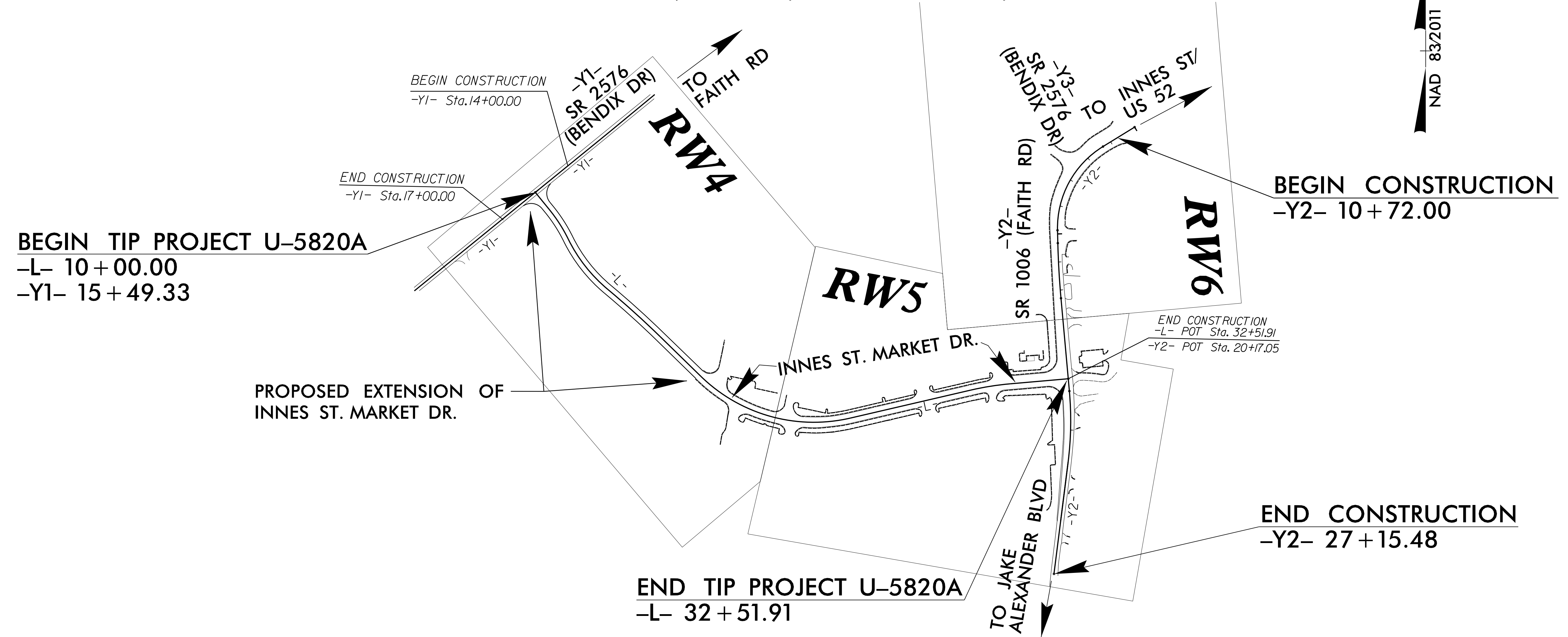
SURVEY CONTROL, EXISTING CENTERLINES,
RIGHT OF WAY, EASEMENTS AND PROPERTY TIES

ROWAN COUNTY

**LOCATION: INNES STREET MARKET DRIVE EXTENSION AND
EXISTING ROAD IMPROVEMENTS FROM SR 2576 (BENDIX DR)
TO SR 1006 (FAITH RD) IN SALISBURY**

TYPE OF WORK: GRADING, DRAINAGE, CURB AND GUTTER, PAVING AND SIDEWALKS

TIP PROJECT: U-5820A



BEGIN TIP PROJECT U-5820A
-L- 10 + 00.00
-Y1- 15 + 49.33

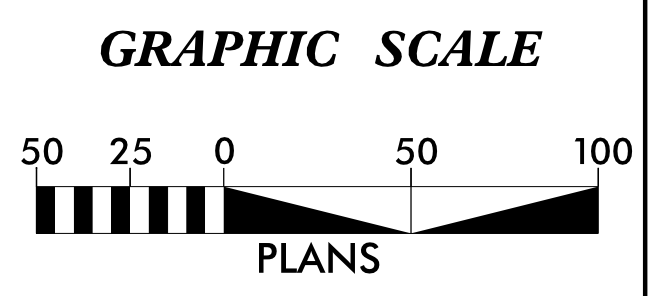
BEGIN CONSTRUCTION
-Y2- 10 + 72.00

PROPOSED EXTENSION OF
INNES ST. MARKET DR.

END TIP PROJECT U-5820A
-L- 32 + 51.91

END CONSTRUCTION
-L- POT Sta. 32+51.91
-Y2- POT Sta. 20+17.05

END CONSTRUCTION
-Y2- 27 + 15.48



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "U5820-2" WITH NAD 83/NSRS 2011 STATE PLANE GRID COORDINATES OF NORTHING: 696,212.499 (ft) EASTING: 1,565,102.734 (ft) ELEVATION: 746.38(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99986643
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "U-5820A-2" TO -L- STATION 10+00.00 IS S 58° 45' 07.68" W, 147.38 (ft)
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

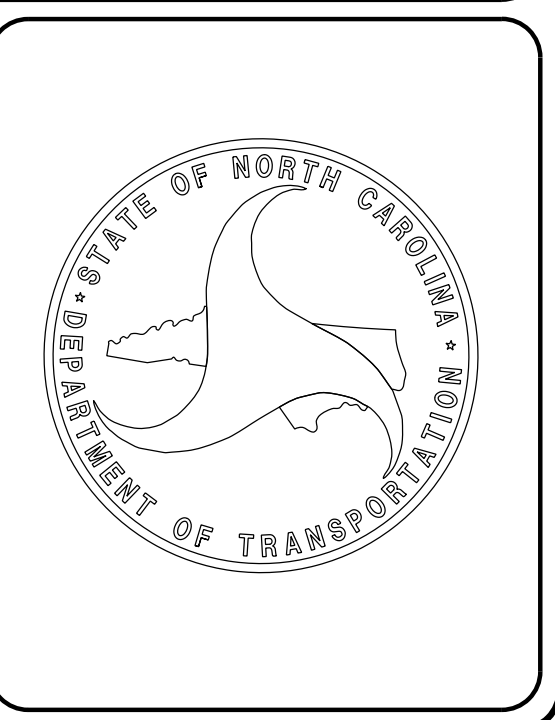
Prepared in the Office of:
DIVISION OF HIGHWAYS
NINTH DIVISION DESIGN/CONSTRUCT
375 SILAS CREEK PARKWAY WINSTON-SALEM, N.C. 27127
2017 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
APRIL 21, 2017

LETTING DATE:
APRIL 17, 2018

PROFESSIONAL LAND SURVEYOR

DocuSigned by:
Jeremy Keaton
4/3/2018
717D7E59649A4499
SIGNATURE:



03-APR-2018 09:07 S:\Project_Development\TIP_P\Projects_U\U-5820A-NewsomeRd\Survey\Control\Sheets\U-5820A_ddc_PWL_tsh.dgn jikeaton AT DW9-294550

SURVEY CONTROL SHEET

W/EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

BENCHMARKS (NAVD 88)

.....

BM#1 ELEVATION = 762.69'
N 695303 E 1567582
CHISELED SQUARE IN TOP OF CONC PARKING LOT CURB, ADJACENT TO A LIGHT POLE WHICH LIES DIRECTLY ACROSS STOKES FERRY RD FROM THE ENTRANCE TO AUTO MAGIC CAR WASH

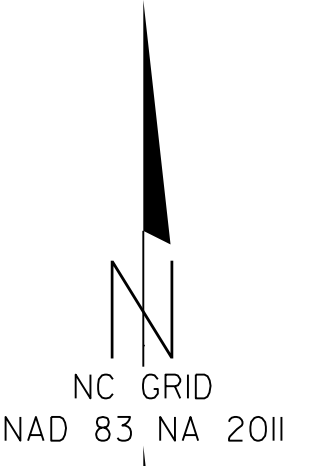
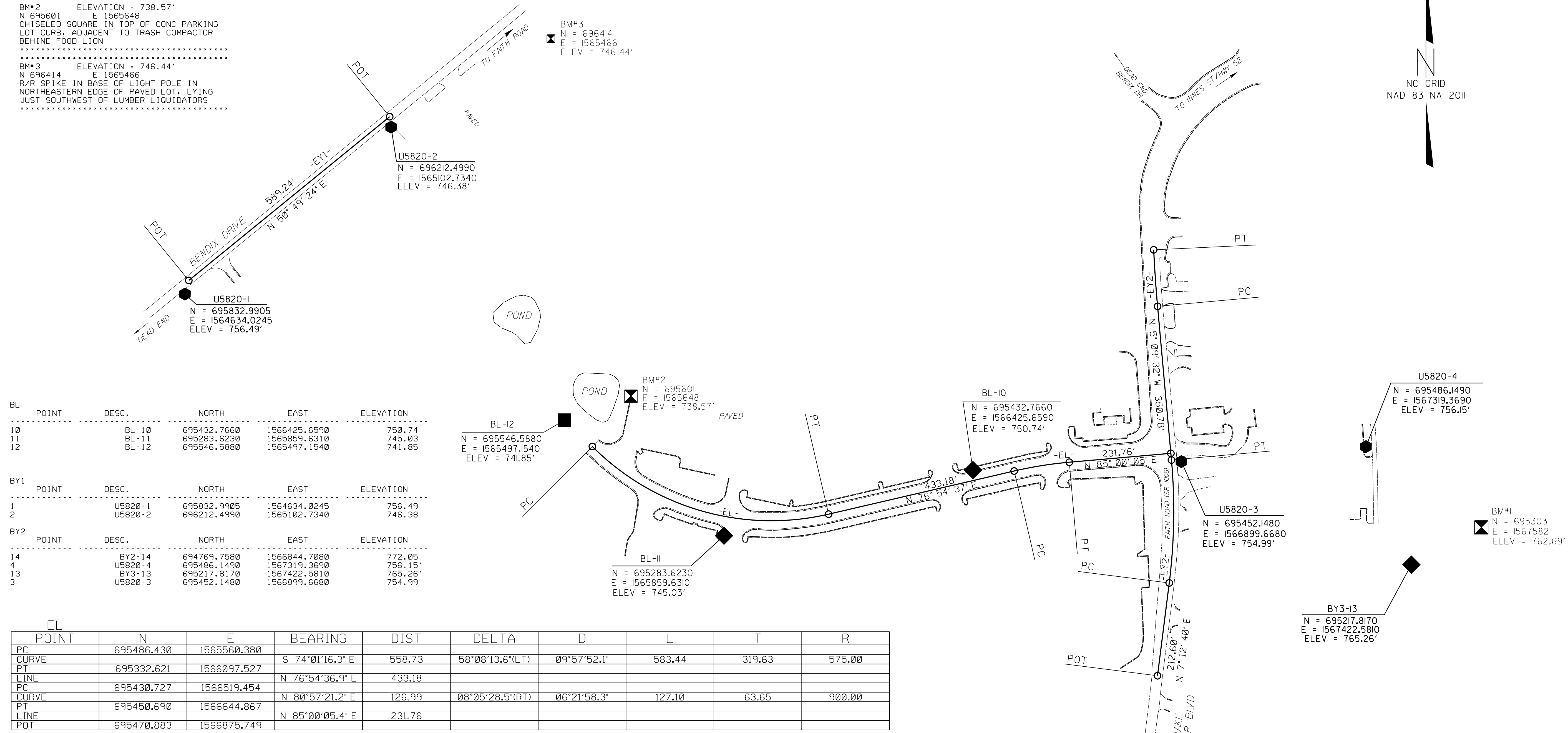
.....

BM#2 ELEVATION = 738.57'
N 695601 E 1565648
CHISELED SQUARE IN TOP OF CONC PARKING LOT CURB, ADJACENT TO TRASH COMPACTOR BEHIND FOOD LION

.....

BM#3 ELEVATION = 746.44'
N 696414 E 1565466
R/R SPIKE IN BASE OF LIGHT POLE IN NORTHEASTERN EDGE OF PAVED LOT, LYING JUST SOUTHWEST OF LUMBER LIQUIDATORS

.....



REVISIONS

BL POINT	DESC.	NORTH	EAST	ELEVATION
10	BL-10	695432.7660	1566425.6590	750.74
11	BL-11	695283.6230	1565859.6310	745.03
12	BL-12	695546.5880	1565497.1540	741.85

BY1 POINT	DESC.	NORTH	EAST	ELEVATION
1	U5820-1	695832.9905	1564634.0245	756.49
2	U5820-2	696212.4990	1565102.7340	746.38

BY2 POINT	DESC.	NORTH	EAST	ELEVATION
14	BY2-14	694769.7580	1566844.7080	772.05
4	U5820-4	695486.1490	1567319.3690	756.15
13	BY3-13	695217.8170	1567422.5810	765.26
3	U5820-3	695452.1480	1566899.6680	754.99

EL POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
PC	695486.430	1565560.380							
CURVE			S 74°01'16.3" E	558.73	58°08'13.6"(LT)	09°57'52.1"	583.44	319.63	575.00
PT	695332.621	1566097.527							
LINE			N 76°54'36.9" E	433.18					
PC	695430.727	1566519.454							
CURVE			N 80°57'21.2" E	126.99	08°05'28.5"(RT)	06°21'58.3"	127.10	63.65	900.00
PT	695450.690	1566644.867							
LINE			N 85°00'05.4" E	231.76					
POT	695470.883	1566875.749							

EY1 POINT	N	E	BEARING	DIST
POT	695863.901	1564642.773		
LINE			N 50°49'23.8" E	589.24
POT	696236.131	1565099.551		

EY2 POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	694965.332	1566845.424							
LINE			N 07°12'40.2" E	212.60					
PC	695176.252	1566872.111							
CURVE			N 01°01'33.9" E	279.53	12°22'12.0"(LT)	04°25'00.0"	280.08	140.58	1297.26
PT	695455.739	1566877.117							
LINE			N 05°09'32.2" W	350.78					
PC	695805.095	1566845.575							
CURVE			N 03°55'47.4" W	128.70	02°27'29.5"(RT)	01°54'35.5"	128.71	64.37	3000.00
PT	695933.494	1566836.755							

- NOTES:
1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
 2. THE SURVEY CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

DRAWING NOT TO SCALE

6/2/09 03:10 APR-2018 09:10 C:\p\c-t\at\11111\11111.dgn U:\projects\UNJ-5820A-NewsomeRd\Survey\Control_Sheets\U-5820a-ddc_rw02c-1.dgn

RIGHT OF WAY, EASEMENT AND PROPOSED ALIGNMENT SHEET

I, Jeremy L. Keaton, a Professional Land Surveyor in the state of North Carolina hereby certify to the best of my knowledge and belief that the following work (Items) (Base map, Compilation, R/W Staking) performed under my responsible charge meet NCDOT Survey Standards as directed in the NCDOT Location & Surveys guidelines and procedures.

I further certify that the data compiled came from available surveys/mapping performed by others and provided to me by NCDOT and do not certify to the accuracy or quality of the individual data sources.

I further certify that the right of way and permanent easement points shown herein and outlined in the tables shown hereon (localized coordinates, station/offset) have been checked and are accurate representations of the right of way and permanent easement points depicted on the corresponding highway plans. I also certify that the right of way and permanent easement points shown herein have been field monumented under my supervision from existing survey control provided by others; that the depicted property data shown herein were surveyed by others; and these monuments denote the right of way and easement boundaries at the time of staking which may be subject to change due to right of way revisions (See deeds for final determination).

Witness my original signature, registration number and seal this 26th day of March, 2018.

DocuSigned by: Jeremy Keaton 4/3/2018 7:17:27 PM L-4487 Professional Land Surveyor PLS * Seal

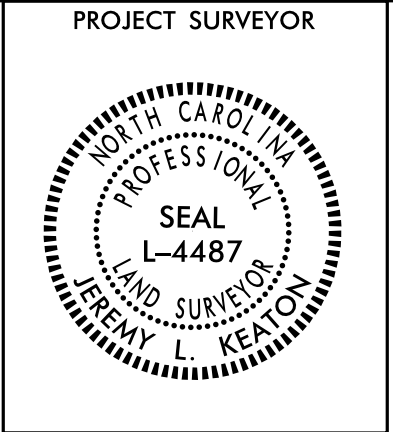


Table with 5 columns: ALIGN, STATION, OFFSET, NORTH, EAST. Rows include stationing from 10+61.00 to 31+95.00 with various offsets.

MARKER EXCEPTIONS: ** PUNCHED HOLE IN CONCRETE *** P/K NAIL

Table with 5 columns: ALIGN, STATION, OFFSET, NORTH, EAST. Rows include stationing from 15+43.00 to 21+30.00.

MARKER EXCEPTIONS: ** PUNCHED HOLE IN CONCRETE

Table with 5 columns: ALIGN, STATION, OFFSET, NORTH, EAST. Rows include stationing from 15+65.00 to 23+57.00.

MARKER EXCEPTIONS: ** PUNCHED HOLE IN CONCRETE *** P/K NAIL

Table with 5 columns: ALIGN, STATION, OFFSET, NORTH, EAST. Rows include stationing from 15+00.00 to 23+57.00.

MARKER EXCEPTIONS: ** PUNCHED HOLE IN CONCRETE

Table with 5 columns: ALIGN, STATION, OFFSET, NORTH, EAST. Rows include stationing from 12+57.00 to 25+52.00.

MARKER EXCEPTIONS: ** PUNCHED HOLE IN CONCRETE *** POINT NOT SET (IN POND)

Table with 5 columns: ALIGN, STATION, OFFSET, NORTH, EAST. Rows include stationing from 31+60.00 to 31+90.00.

DESIGN ALIGNMENTS

Table with 5 columns: TYPE, STATION, NORTH, EAST. Rows include POT, PC, PRC, PT, PC, PT, PC, PT, POT.

Table with 5 columns: TYPE, STATION, NORTH, EAST. Rows include POT, PC, PT, POT.

Table with 5 columns: TYPE, STATION, NORTH, EAST. Rows include POT, PC, PT, PC, PT, PC, PT, POT.

EASEMENT AND R/W MARKER NOTES:

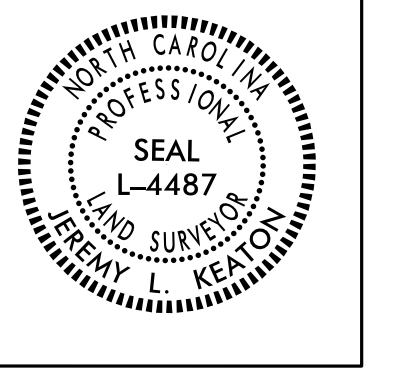
- 1) UNLESS OTHERWISE NOTED, ALL ROW MARKERS HAVE BEEN SET AS 12" SPIKES, TO BE REPLACED DURING CONSTRUCTION WITH CONCRETE MONUMENTS
2) UNLESS OTHERWISE NOTED, ALL PERMANENT EASEMENT MARKERS HAVE BEEN SET AS REBAR WITH ALUMINUM CAP
3) ANY MARKER EXCEPTIONS ARE LISTED BELOW THEIR RESPECTIVE TABLE

NOTES:

- 1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
2. THE SURVEY CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE DIVISION 9 DDC UNIT.

REVISIONS

03_APR-2018_09:04 Project: U:\Projects_U\U-5820A\NewsomeRd\Survey\Control_Sheets\U-5820a-ddc-RW2D-1.dgn



I, Jeremy L. Keaton, a Professional Land Surveyor in the state of North Carolina hereby certify to the best of my knowledge and belief that the following work items (Base map Compilation, R/W Staking) performed under my responsible charge meet NCDOT Survey Standards as directed in the NCDOT Location & Surveys guidelines and procedures.

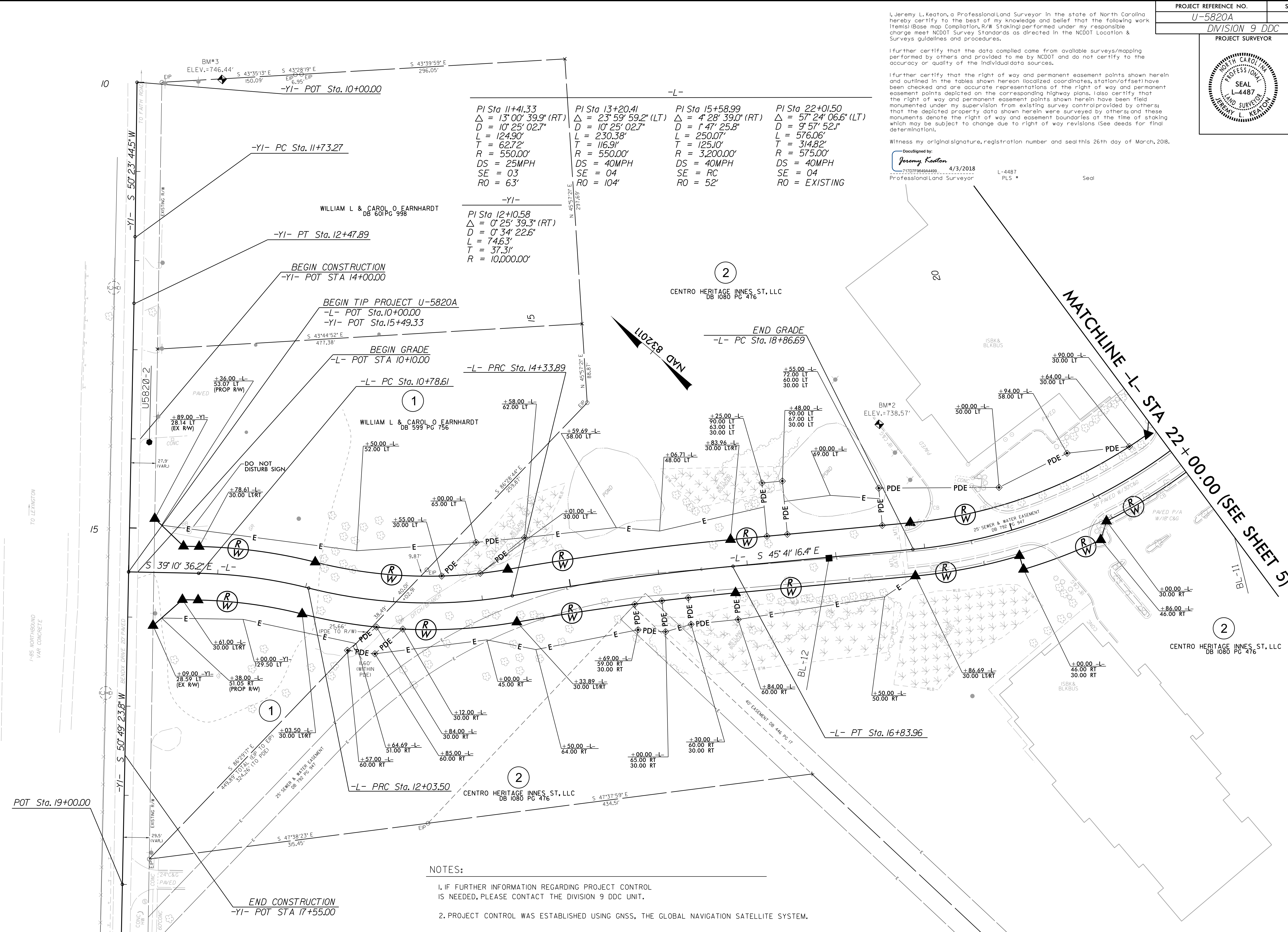
I further certify that the data compiled came from available surveys/mapping performed by others and provided to me by NCDOT and do not certify to the accuracy or quality of the individual data sources.

I further certify that the right of way and permanent easement points shown herein and outlined in the tables shown hereon (localized coordinates, station/offset) have been checked and are accurate representations of the right of way and permanent easement points depicted on the corresponding highway plans. I also certify that the right of way and permanent easement points shown herein have been field monumented under my supervision from existing survey control provided by others; that the depicted property data shown herein were surveyed by others; and these monuments denote the right of way and easement boundaries at the time of staking which may be subject to change due to right of way revisions (see deeds for final determination).

Witness my original signature, registration number and seal this 26th day of March, 2018.

DocuSigned by:
 Jeremy Keaton
 7170796044499 4/3/2018
 Professional Land Surveyor L-4487 PLS Seal

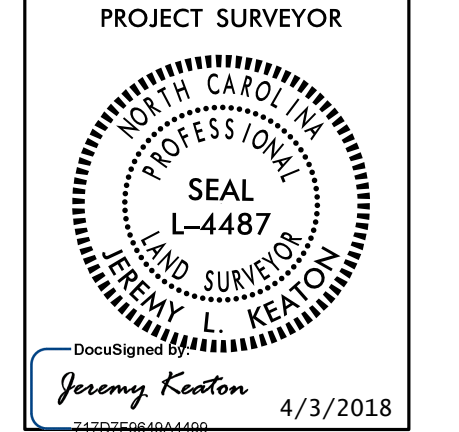
Station	Delta	D	L	T	R	DS	SE	RO
PI Sta 11+41.33	13° 00' 39.9" (RT)	10' 25' 02.7"	124.90'	62.72'	550.00'	25MPH	03	63'
PI Sta 12+05.8	0° 25' 39.3" (RT)	0' 34' 22.6"	74.63'	37.31'	10,000.00'			
PI Sta 13+20.41	23° 59' 59.2" (LT)	10' 25' 02.7"	230.38'	116.91'	550.00'	40MPH	04	104'
PI Sta 15+58.99	4° 28' 39.0" (RT)	1' 47' 25.8"	250.07'	125.10'	3,200.00'	40MPH	04	52'
PI Sta 22+01.50	57° 24' 06.6" (LT)	9' 57' 52.1"	576.06'	314.82'	575.00'	40MPH	04	EXISTING



- NOTES:
- IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE DIVISION 9 DDC UNIT.
 - PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.

REVISIONS

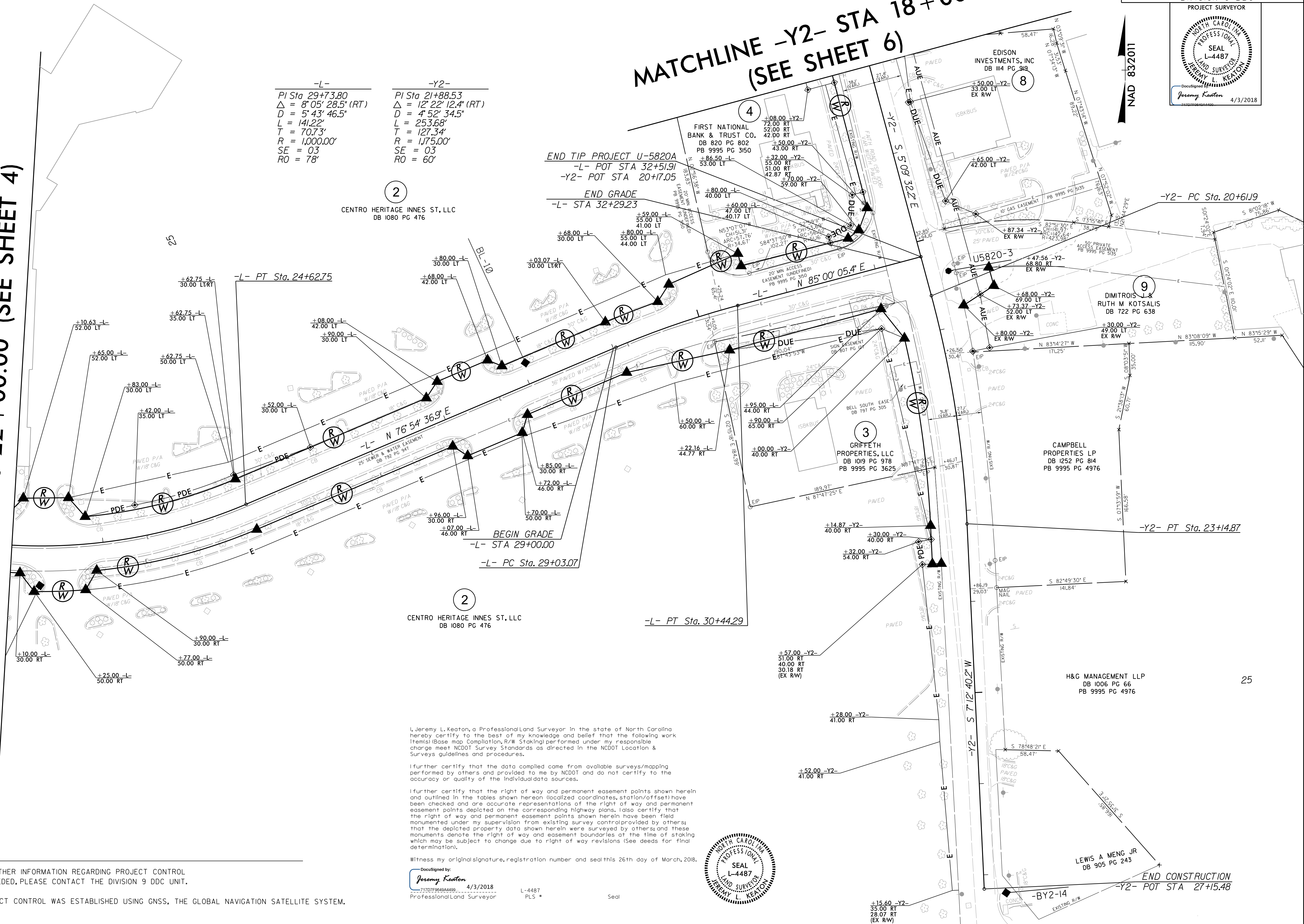
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 1-85 NORTHBOUND VAR CONCRETE
 TO LEVINGTON
 TO FAIRFAX ROAD
 U5820-2
 15
 10
 POT Sta. 19+00.00
 END CONSTRUCTION -YI- POT STA 17+55.00
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 11-TB



**MATCHLINE -Y2- STA 18+00.00
(SEE SHEET 6)**

MATCHLINE -L- STA 22+00.00 (SEE SHEET 4)

-L-	-Y2-
PI Sta 29+73.80	PI Sta 21+88.53
$\Delta = 8^{\circ}05'28.5"$ (RT)	$\Delta = 12^{\circ}22'12.4"$ (RT)
D = 5'43'46.5"	D = 4'52'34.5"
L = 141.22'	L = 253.68'
T = 70.73'	T = 127.34'
R = 1,000.00'	R = 1,175.00'
SE = 03	SE = 03
RO = 78'	RO = 60'



NOTES:

- IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE DIVISION 9 DDC UNIT.
- PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.

I, Jeremy L. Keaton, a Professional Land Surveyor in the state of North Carolina hereby certify to the best of my knowledge and belief that the following work items (base map compilation, R/W Staking) performed under my responsible charge meet NCDOT Survey Standards as directed in the NCDOT Location & Surveys guidelines and procedures.

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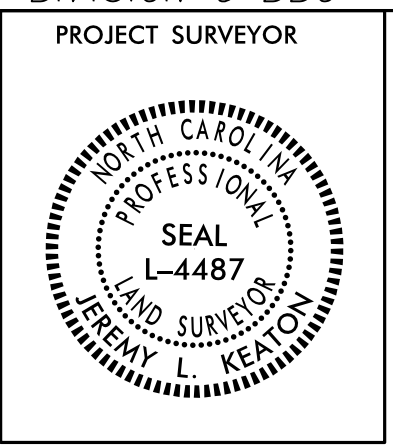
I further certify that the right of way and permanent easement points shown herein and outlined in the tables shown hereon (localized coordinates, station/offset) have been checked and are accurate representations of the right of way and permanent easement points depicted on the corresponding highway plans. I also certify that the right of way and permanent easement points shown herein have been field monumented under my supervision from existing survey control provided by others; that the depicted property data shown herein were surveyed by others; and these monuments denote the right of way and easement boundaries at the time of staking which may be subject to change due to right of way revisions (See deeds for final determination).

Witness my original signature, registration number and seal this 26th day of March, 2018.

DocuSigned by:
Jeremy Keaton
 7170799404499 4/3/2018
 Professional Land Surveyor L-4487 PLS Seal



8/17/99
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 07_APR_2018_09:22
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I further certify that the data compiled came from available surveys/mapping performed by others and provided to me by NCDOT and do not certify to the accuracy or quality of the individual data sources.

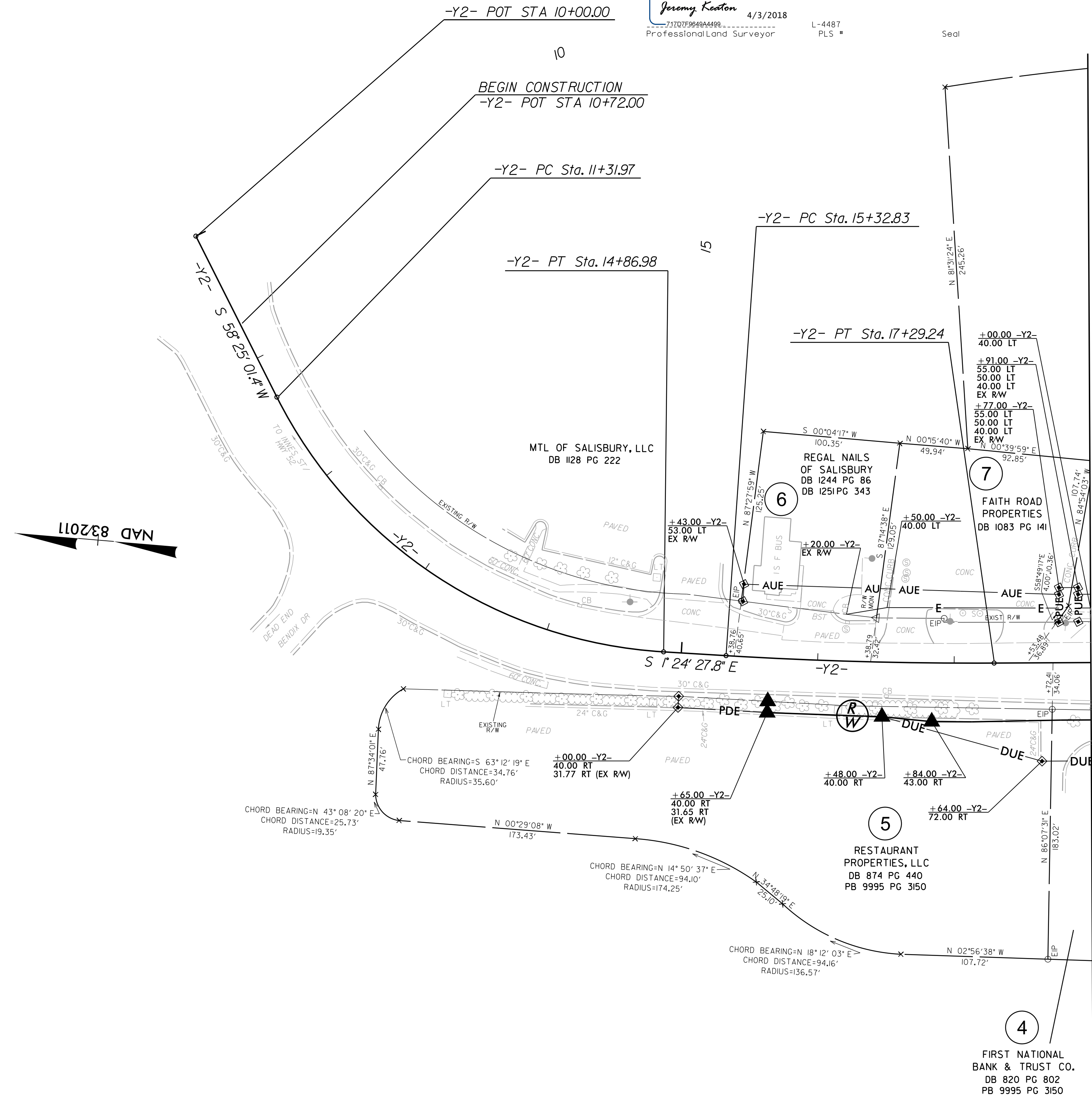
I further certify that the right of way and permanent easement points shown herein and outlined in the tables shown hereon (localized coordinates, station/offset) have been checked and are accurate representations of the right of way and permanent easement points depicted on the corresponding highway plans. I also certify that the right of way and permanent easement points shown herein have been field monumented under my supervision from existing survey control provided by others; that the depicted property data shown herein were surveyed by others; and these monuments denote the right of way and easement boundaries of the time of staking which may be subject to change due to right of way revisions (See deeds for final determination).

Witness my original signature, registration number and seal this 26th day of March, 2018.

DocuSigned by:
Jeremy Keaton
 71707396804499 4/3/2018
 Professional Land Surveyor L-4487 PLS #

-Y2-

PI Sta 13+27.58 Δ = 59° 49' 29.2" (LT) D = 16' 51" 06.1" L = 355.01' T = 195.61' R = 340.00' SE = EXISTING RO = EXISTING	PI Sta 16+31.07 Δ = 3° 45' 04.4" (LT) D = 1' 54" 35.5" L = 196.41' T = 98.24' R = 3,000.00'
---	--



MATCHLINE -Y2- STA 18+00.00
(SEE SHEET 5)

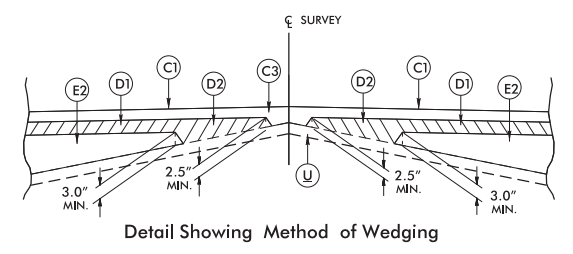
- NOTES:
- IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE DIVISION 9 DDC UNIT.
 - PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.

REVISIONS
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 J. Keaton

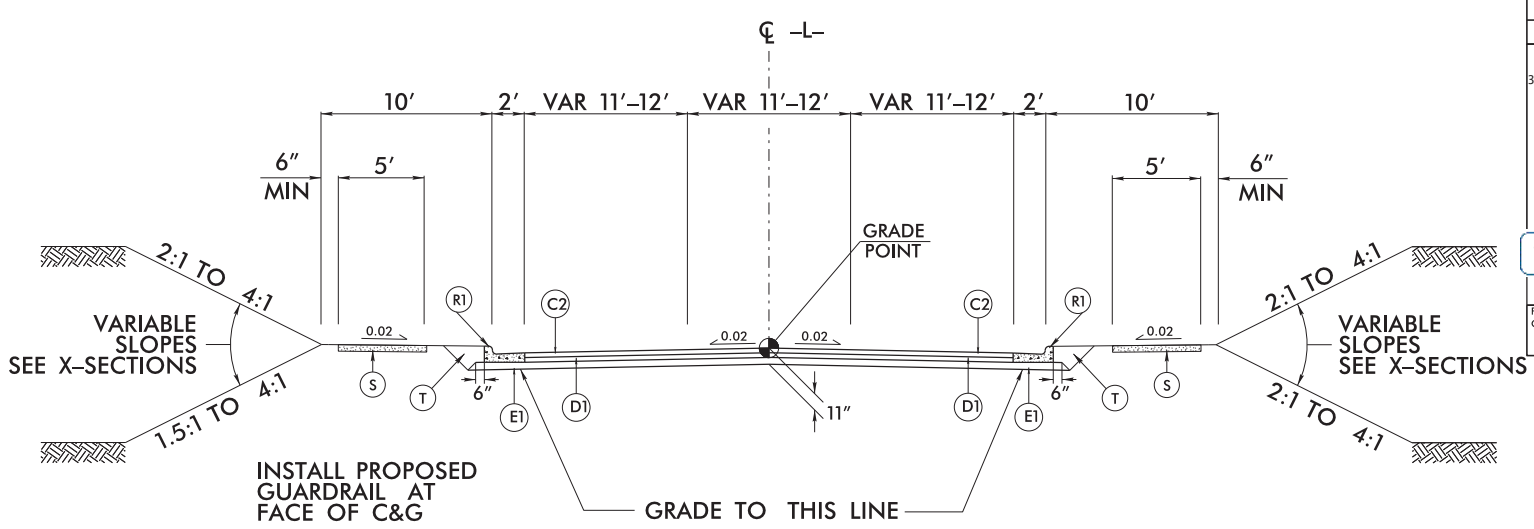
6/2/99

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
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.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
R1	2'-6" CONCRETE CURB AND GUTTER.
R2	EXISTING 2'-6" CURB & GUTTER.
R3	EXISTING 1'-6" CURB AND GUTTER.
R4	5" MONOLITHIC CONCRETE ISLAND (KEYED-IN).
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V	MILLING BITUMINOUS PAVEMENT. 1½" DEPTH.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL)

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



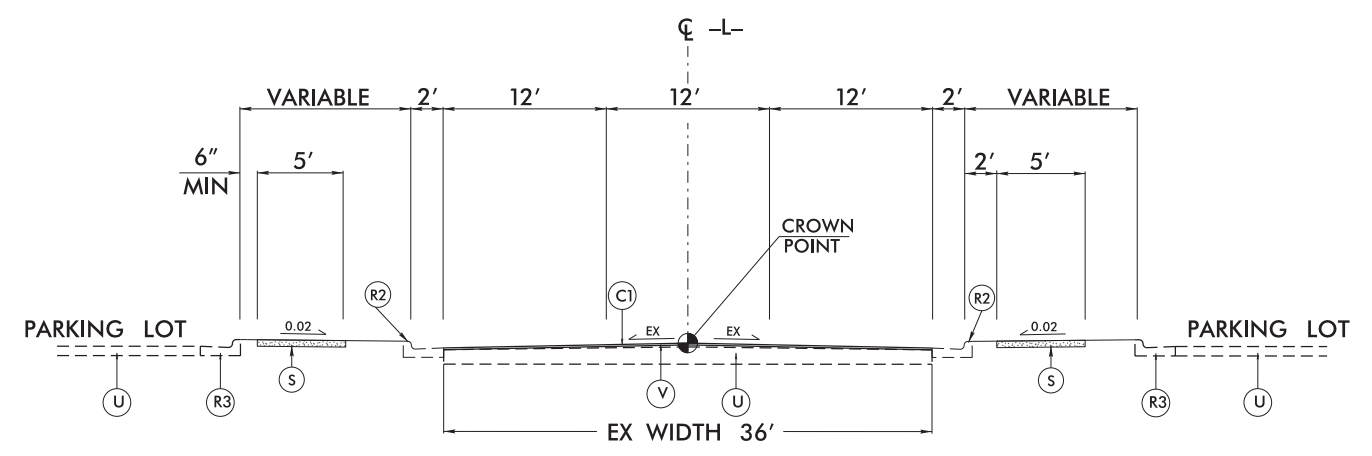
PROJECT REFERENCE NO. U-5820A	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER 3/21/2018	PAVEMENT DESIGN ENGINEER 3/21/2018
Prepared in the Office of: 	
UNLESS ALL SIGNATURES COMPLETED NC FIRM LICENSE No. P-0339 504 Meadows Drive Harrisburg, NC 27578 (919) 732-3883 (919) 732-6676 (FAX)	



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

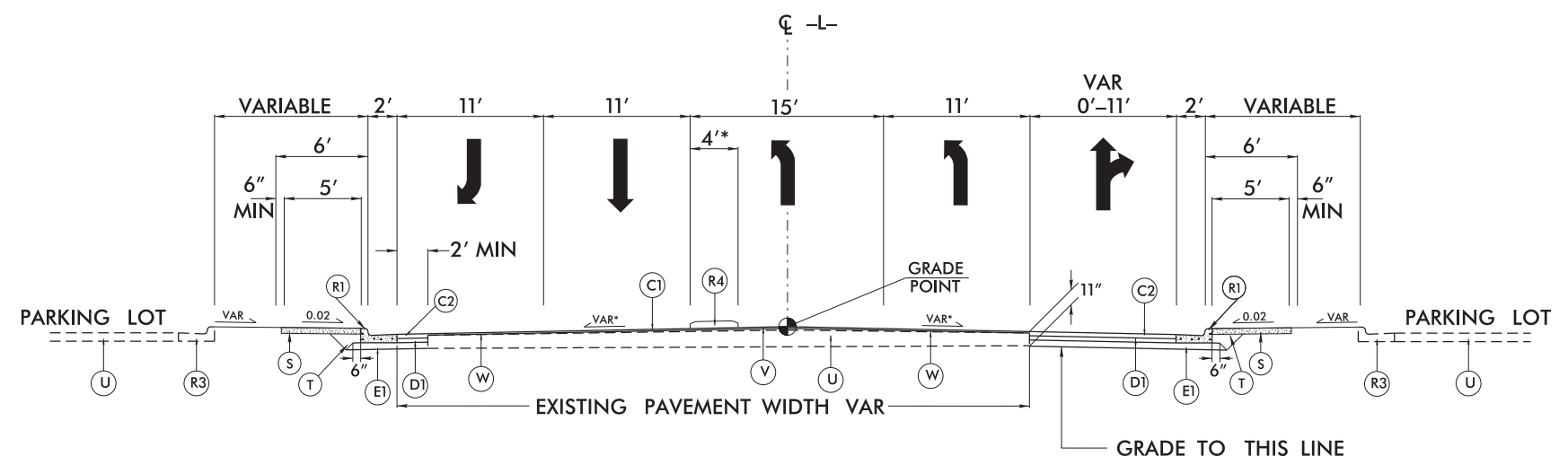
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TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2

-L- STA 18+86.69 TO STA 29+00.00



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3

-L- STA 29+00.00 TO STA 32+29.23


*SEE PLAN SHEETS AND SHEET 2B-1 FOR SUPERELEVATION DESIGN AND CONCRETE ISLAND LOCATION

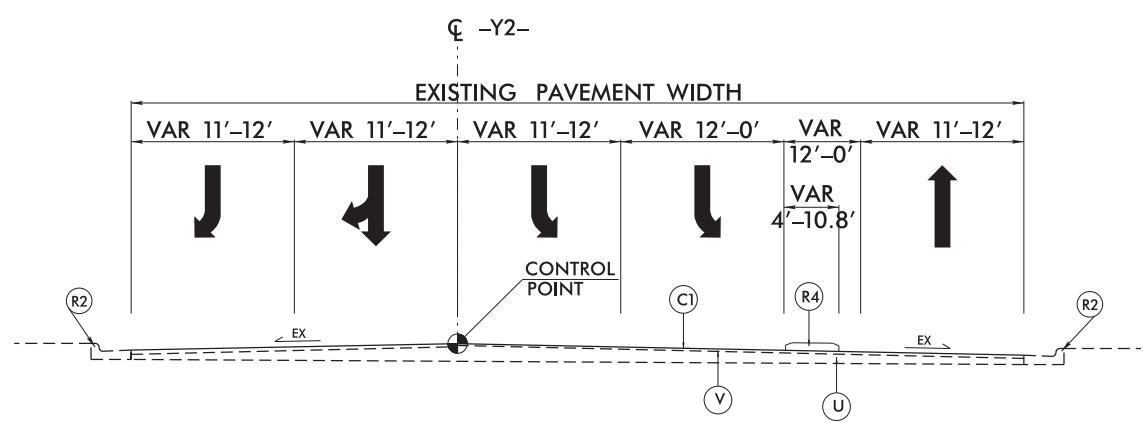
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 068766 RD design
 latibonke

6/2/19

PAVEMENT SCHEDULE	
C1	1 1/2" S9.5C
C2	3" S9.5C
C3	VAR S9.5C
D1	4" I19.0C
D2	VAR I19.0C
E1	4" B25.0C
E2	VAR B25.0C
R1	2'-6" C&G
R2	EX. 2'-6" C&G
R3	EX. 1'-6" C&G
R4	5" CONC MONO ISLAND (KEYED-IN)
S	4" SIDEWALK
T	EARTH MATERIAL
U	EX. PAVEMENT
V	1 1/2" MILLING
W	WEDGING

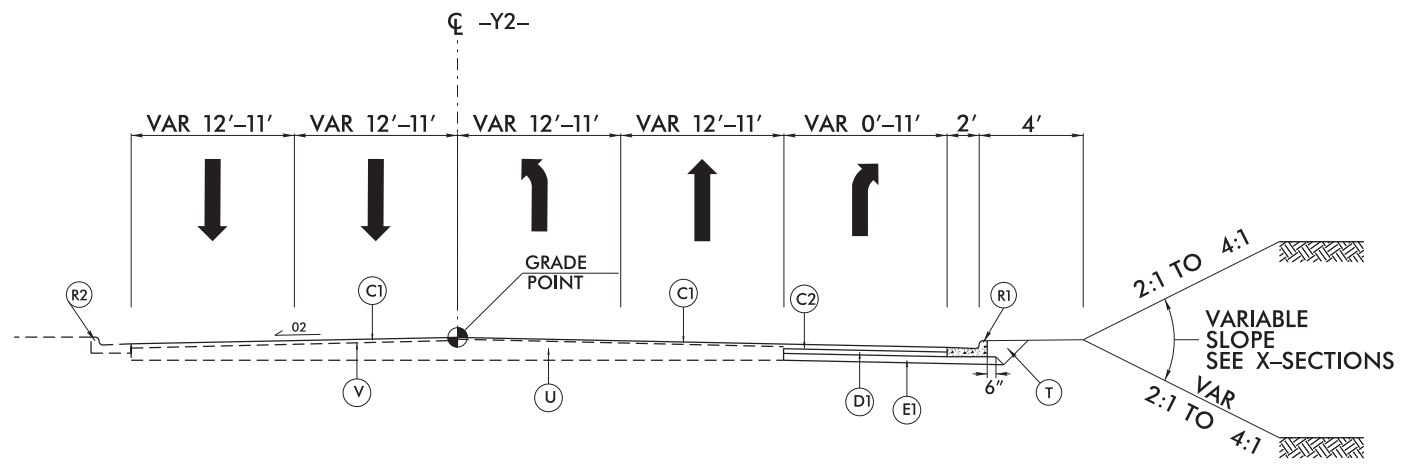
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

PROJECT REFERENCE NO. U-5820A	SHEET NO. 2A-2
ROADWAY DESIGN ENGINEER 3/21/2018 BRANDON W. JOHNSON SEAL 034371	PAVEMENT DESIGN ENGINEER 3/21/2018 WILLIAM A. BLANTON SEAL 025499
DESIGNED BY: Brandon W. Johnson	
DESIGNED BY: William A. Blanton	
UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office of:	 NC FIRM LICENSE No. P-0339 504 Meadowslands Drive Harrisburg, NC 27578 (919) 732-3883 (919) 732-6676 (FAX)



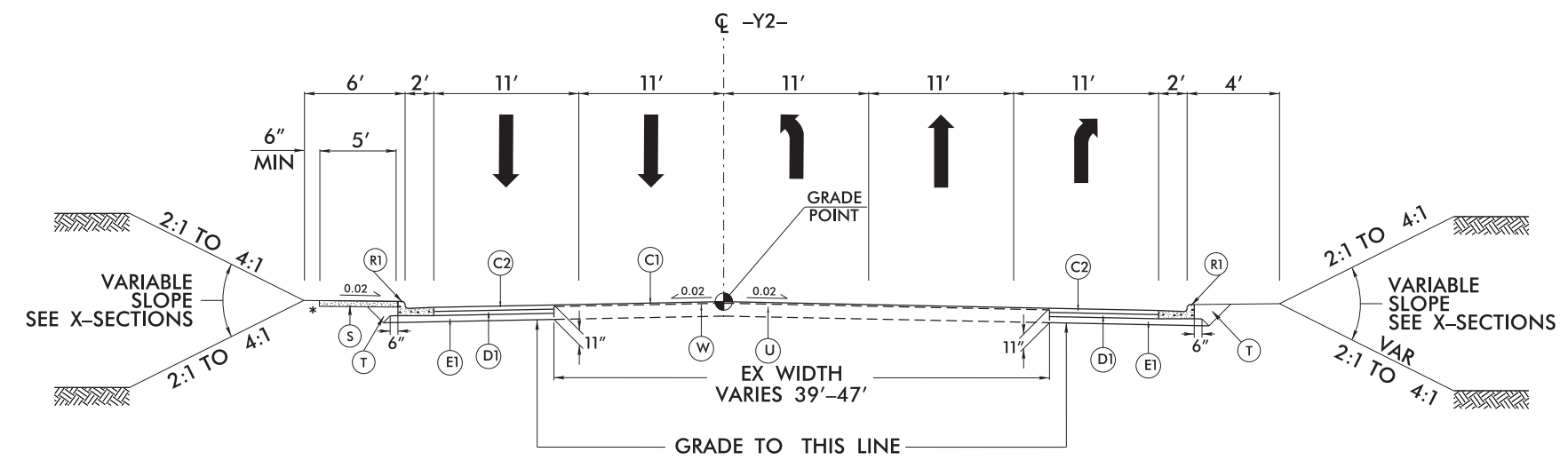
TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4
 -Y2- STA 10+65.00 TO STA 15+63.82
 SEE PLANS FOR LOCATION OF CONCRETE ISLAND AND TURN LANES



TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5
 -Y2- STA 15+63.82 TO STA 17+15.00
 SEE PLANS FOR CURB AND GUTTER LOCATIONS



TYPICAL SECTION NO. 6

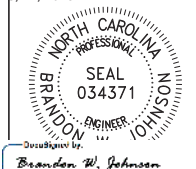
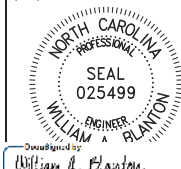

USE TYPICAL SECTION NO. 6
 -Y2- STA 17+15.00 TO STA 20+93.00
 *SEE PLAN SHEET 5 AND 2B-1 FOR LOCATION OF SIDEWALK

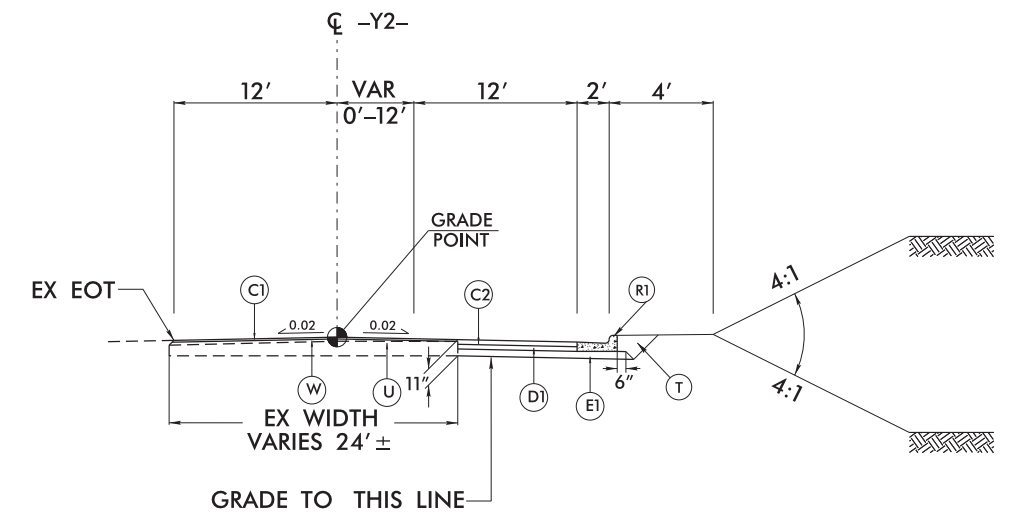
05-MAR-2018 08:56
 U-5820A_P02A.dwg
 laub@shoike.com

6/2/19

PAVEMENT SCHEDULE	
C1	1 1/2" S9.5C
C2	3" S9.5C
C3	VAR S9.5C
D1	4" I19.0C
D2	VAR I19.0C
E1	4" B25.0C
E2	VAR B25.0C
R1	2'-6" C&G
R2	EX. 2'-6" C&G
R3	EX. 1'-6" C&G
R4	5" CONC MONO ISLAND (KEYED-IN)
S	4" SIDEWALK
T	EARTH MATERIAL
U	EX. PAVEMENT
V	1 1/2" MILLING
W	WEDGING

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

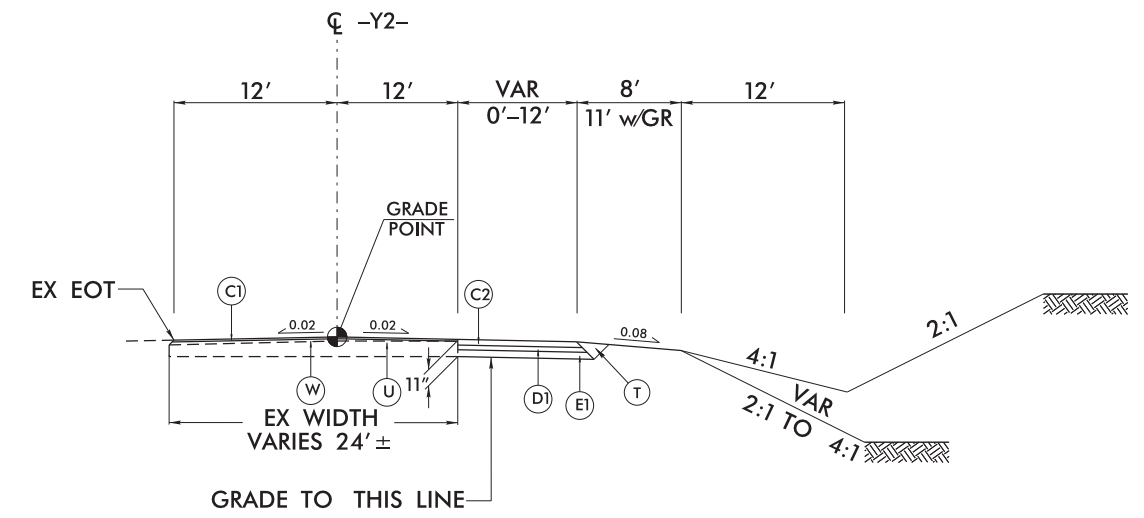
PROJECT REFERENCE NO. U-5820A	SHEET NO. 2A-3
ROADWAY DESIGN ENGINEER 3/21/2018	PAVEMENT DESIGN ENGINEER 3/21/2018
	
Designed by: Brandon W. Johnson	Designed by: William A. Planton
DOCUMENT NOT FOR CONSTRUCTION	
UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office of: 	NC FIRM LICENSE No P-0339 504 Meadowslands Drive Hillsborough, NC 27278 (919) 732-3883 (919) 732-6676 (FAX)



TYPICAL SECTION NO. 7

USE TYPICAL SECTION NO. 7

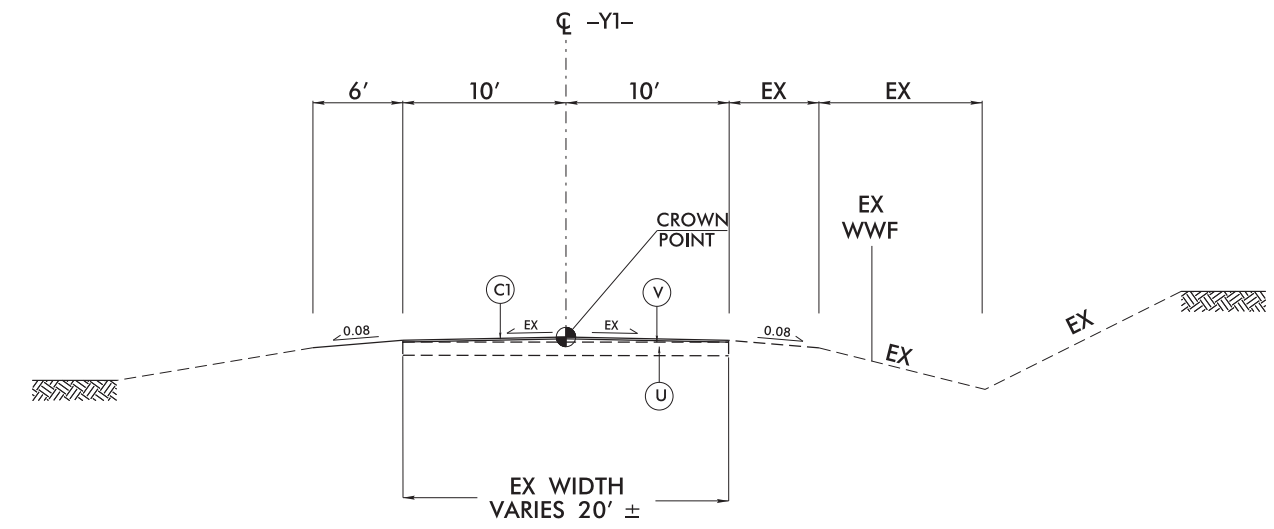
-Y2- STA 20+93.00 TO STA 25+75.00



TYPICAL SECTION NO. 8

USE TYPICAL SECTION NO. 8

-Y2- STA 25+75.00 TO STA 27+15.60



TYPICAL SECTION NO. 9

USE TYPICAL SECTION NO. 9

-Y1- STA 14+00.00 TO STA 17+00.00

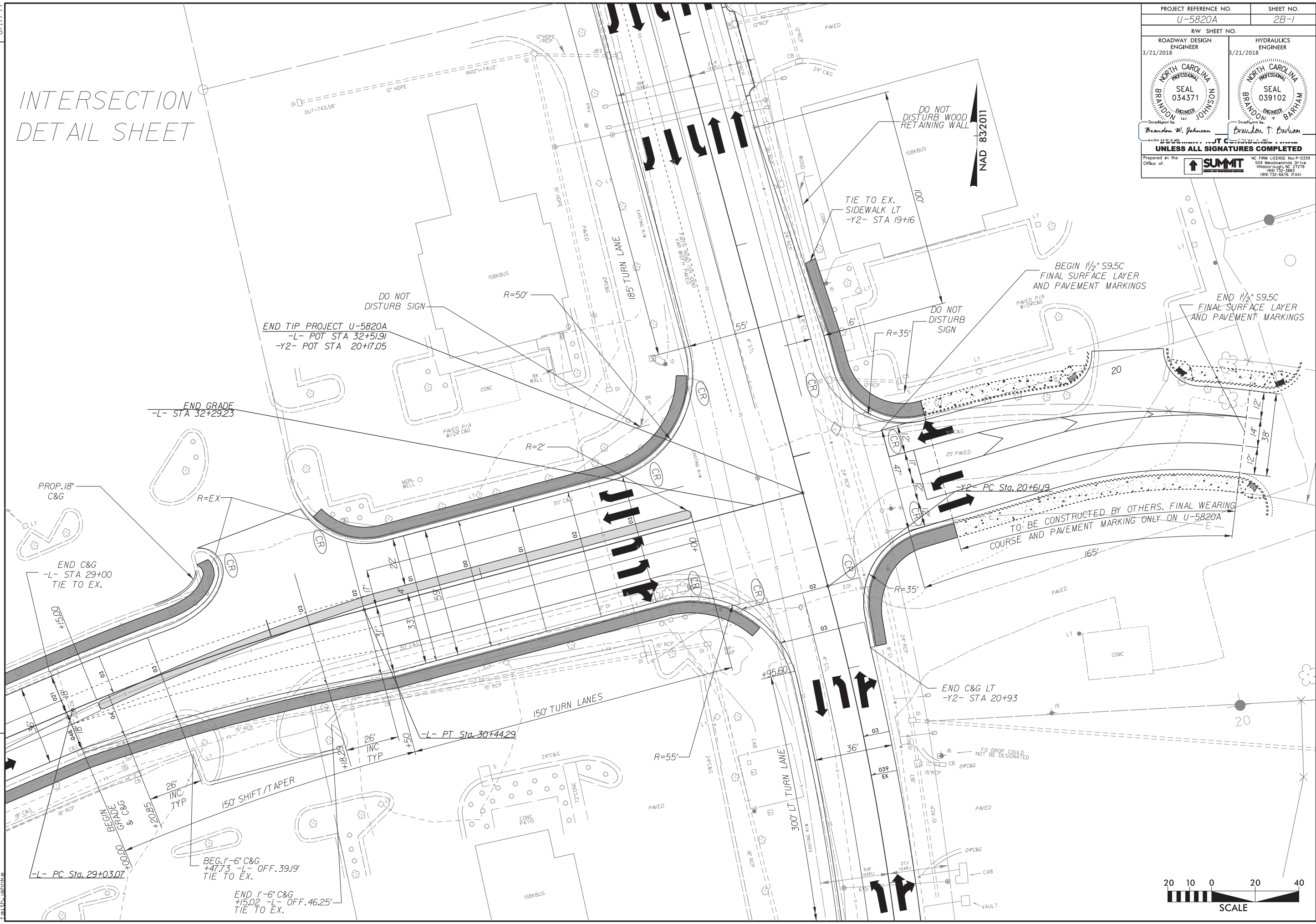
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8/17/99

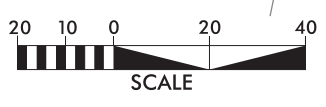
INTERSECTION DETAIL SHEET

PROJECT REFERENCE NO. U-5820A		SHEET NO. 2B-1	
ROADWAY DESIGN ENGINEER 3/21/2018		HYDRAULICS ENGINEER 3/21/2018	
UNLESS ALL SIGNATURES COMPLETED Prepared in the Office of:			

REVISIONS

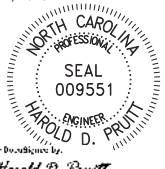



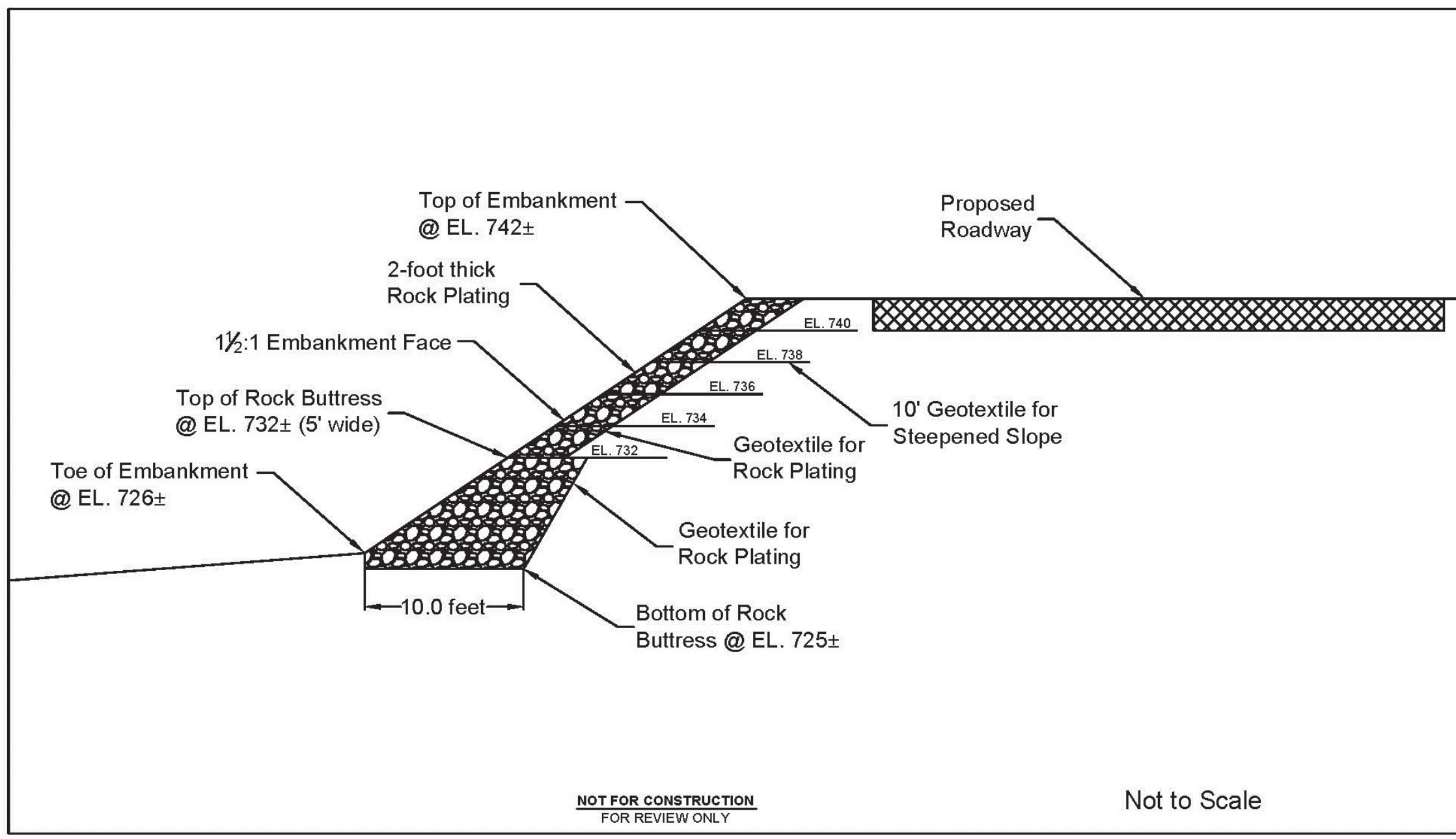
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fau@lebanon.com



8/17/99

REVISIONS

PROJECT REFERENCE NO. <i>U-5820A</i>	SHEET NO. <i>2G-1</i>
RW SHEET NO.	
GEOTECHNICAL ENGINEER 3/21/2018	
	
Prepared in the Office of: 	
NC FIRM LICENSE No. P-0339 504 Meadowlands Drive Hillsborough, NC 27278 (919) 732-2583 (919) 732-6676 (FAX)	



NOT FOR CONSTRUCTION
FOR REVIEW ONLY

Not to Scale

A REINFORCED SOIL SLOPE AND ROCK PLATING SHALL BE PLACED FROM:
 -L- STA. 17 + 75 ± LT TO -L- STA. 18 + 75 ± LT.
SEE REINFORCED SOIL SLOPE SPECIAL PROVISION.

05-MAR-2018 09:09
U-5820A_Geo-pah.dtl.dgn
Lalib,alib

**STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS**

APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, BORROW EXCAVATION, SHOULDER BORROW, FINE GRADING, CLEARING AND GRUBBING, BREAKING OF EXISTING PAVEMENT AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE LUMP SUM PRICE FOR "GRADING".

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

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH		W		ANCHORS									IMPACT ATTENUATOR TYPE 350			SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS						
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	XI MOD	TYPE-III	GREU 350 TL-2	M-350	XIII	CAT-1	VI MOD	BIC	AT-1	EA	G	NG										
-L-	14+35.41	18+74.13	LT	487.50			14+35.41		3'	NA	NA	NA																								
SUBTOTAL				487.50																																
LESS DEDUCTIONS FOR ANCHORS																																				
2 GREU TL-2				-100																																
TOTALS				387.50																																

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

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

STATION	LOCATION (L,R, OR CJ)	STRUCTURE NO.		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	CLASS III R.C. PIPE (UNLESS NOTED OTHERWISE)								C.S. PIPE				STRUCTURAL PLATE PIPE				REINFORCED ENDWALLS		MASSONARY DRAINAGE STRUCTURES CUBIC YARDS	REINF. CONC. FLARED END SECTIONS NO. & SIZE	CORR. STEEL FLARED END SECTIONS NO. & SIZE	REINF. CONC. ELBOWS NO. & SIZE	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	PIPE REMOVAL LIN.FT.	REMARKS					
		FROM	TO					54"	60"	66"	72"	78"	84"					54"	60"	66"	72"	60"	66"	72"											WITH R.C. - C.Y.	WITH C.S. - C.Y.		
-L- 16+53	RT	0416	0417		728.7	728.7																																
-L- 16+53	RT	0416																																				
-L- 16+63	RT	0417																																				
TOTALS																																						

**SUMMARY OF EARTHWORK
IN CUBIC YARDS**

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT + 20%	BORROW	WASTE
-L- STA. 10+11.00 TO 18+87.00	2,446		2,717	271	
-L- STA. 29+00.00 TO 32+29.23	224		36		188
-Y2- STA. 15+64.50 TO 27+15.60	407		512	105	
TOTAL	3,077		3,265	376	
ESTIMATED SHOULDER CONSTRUCTION			288		
LOSS DUE TO CLEARING & GRUBBING	210				
WASTE IN LIEU OF BORROW				-188	
PROJECT TOTALS	3,287		3,553	476	
5% TO REPLACE TOP SOIL				24	
GRAND TOTALS	3,287		3,553	500	
SAY	3,300			500	

CONTINGENCY UNDERCUT = 1,300 CY
 CONTINGENCY SHALLOW UNDERCUT = 100 CY
 SELECT GRANULAR MATERIAL = 950 CY
 CLASS IV SUBGRADE STABILIZATION = 100 TONS

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

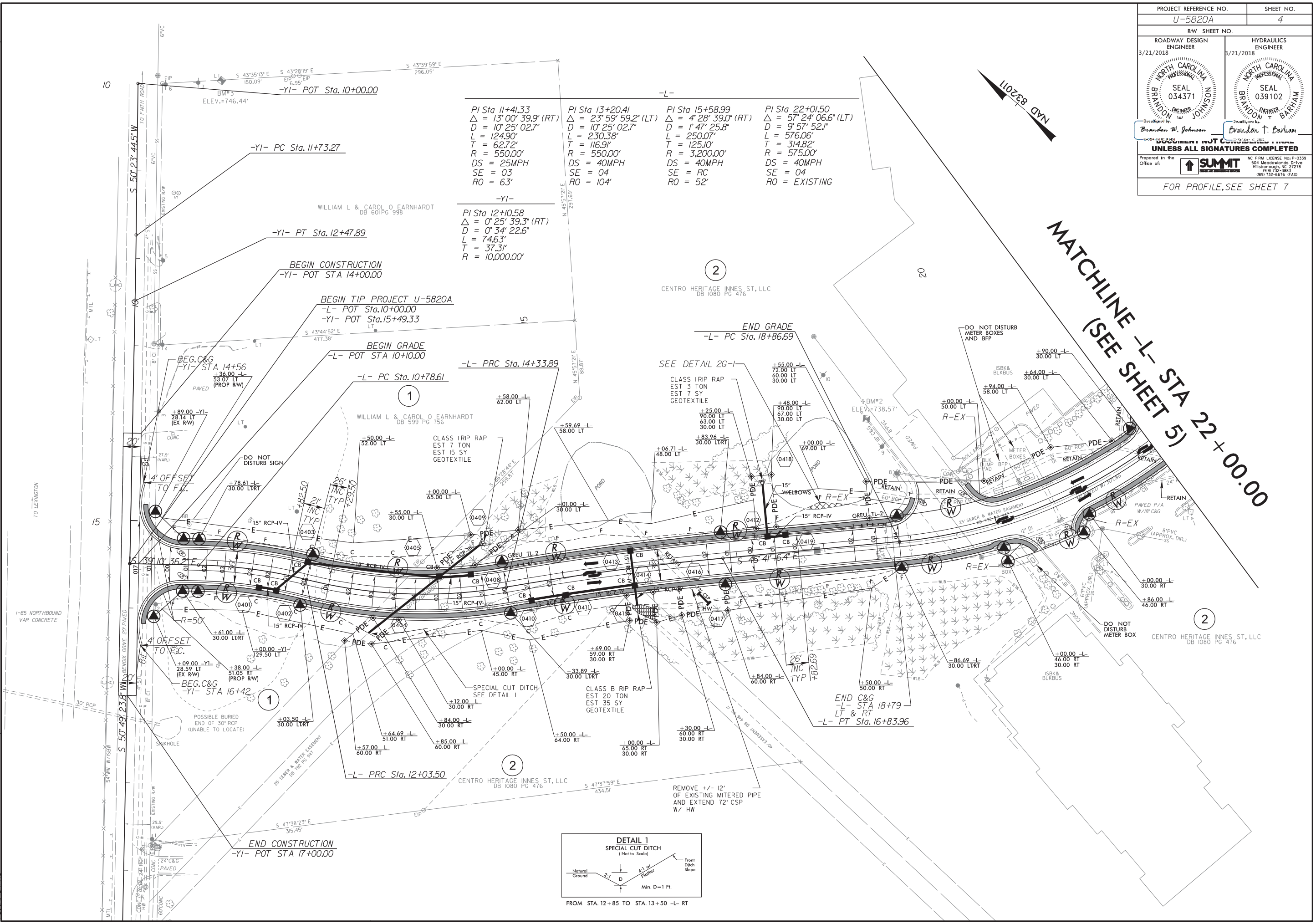
PARCEL INDEX SHEET

PARCEL NO.	OWNER	TYPE	AREA (SF)	AREA (AC)
1	WILLIAM L & CAROL O EARNHARDT DB 599 PG 756	ROW	17461.36	0.401
1	WILLIAM L & CAROL O EARNHARDT DB 599 PG 756	PDE	9.92	0.002
1	WILLIAM L & CAROL O EARNHARDT DB 599 PG 756	TCE	10655.84	0.245
2	CENTRO HERITAGE INNES ST, LLC DB 1080 PG 476	ROW	126127.04	2.900
2	CENTRO HERITAGE INNES ST, LLC DB 1080 PG 476	PDE	15871.18	0.364
2	CENTRO HERITAGE INNES ST, LLC DB 1080 PG 476	TCE	58186.27	1.336
3	GRIFFETH PROPERTIES, LLC DB 1019 PG 987 PB 9995 PG 3625	ROW	3681.63	0.085
3	GRIFFETH PROPERTIES, LLC DB 1019 PG 987 PB 9995 PG 3625	DUE	2069.70	0.048
3	GRIFFETH PROPERTIES, LLC DB 1019 PG 987 PB 9995 PG 3625	TCE	4809.70	0.110
4	FIRST NATIONAL BANK & TRUST CO. DB 820 PG 802 PB 9995 PG 3150	ROW	3023.40	0.069
4	FIRST NATIONAL BANK & TRUST CO. DB 820 PG 802 PB 9995 PG 3150	DUE	1919.69	0.044
4	FIRST NATIONAL BANK & TRUST CO. DB 820 PG 802 PB 9995 PG 3150	TCE	1186.40	0.027
5	RESTAURANT PROPERTIES, LLC DB 874 PG 440 PB 9995 PG 3150	PDE	538.76	0.012

PARCEL NO.	OWNER	TYPE	AREA (SF)	AREA (AC)
5	RESTAURANT PROPERTIES, LLC DB 874 PG 440 PB 9995 PG 3150	ROW	1805.46	0.041
5	RESTAURANT PROPERTIES, LLC DB 874 PG 440 PB 9995 PG 3150	DUE	1777.95	0.041
6	TRUNG VAN NGUYEN & WIFE PHOUNG VIEN NGUYEN DB 1281 PG 71	*AUE	1698.68	0.039
6	TRUNG VAN NGUYEN & WIFE PHOUNG VIEN NGUYEN DB 1281 PG 71	TCE	72.19	0.002
7	FAITH ROAD PROPERTIES DB 1083 PG 141	*AUE	2831.46	0.065
7	FAITH ROAD PROPERTIES DB 1083 PG 141	PUE	142.89	0.003
7	FAITH ROAD PROPERTIES DB 1083 PG 141	TCE	1255.09	0.029
8	EDISON INVESTMENTS, INC DB 1114 PG 919	TCE	393.52	0.009
8	EDISON INVESTMENTS, INC DB 1114 PG 919	DUE	1036.64	0.024
8	EDISON INVESTMENTS, INC DB 1114 PG 919	*AUE	2733.03	0.063
8	EDISON INVESTMENTS, INC DB 1114 PG 919	PUE	209.33	0.005
9	CENTERLANE INNES ST. LLC DB 1280 PG 881	*AUE	1061.28	0.024
9	CENTERLANE INNES ST. LLC DB 1280 PG 881	ROW	897.17	0.021

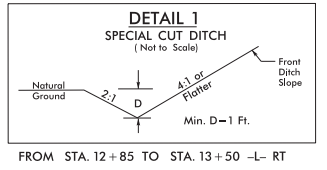
*AUE AREAS WERE CALCULATED FROM EXISTING RW TO AUE BOUNDRIES.
NO DEDUCTIONS WERE MADE FOR TEMPORARY EASEMENTS WITHIN THE AUE.

PROJECT REFERENCE NO. U-5820A	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 3/21/2018	HYDRAULICS ENGINEER 3/21/2018
DESIGNED BY: Brandon W. Johnson	
CHECKED BY: Brandon T. Barham	
UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office of:	
FOR PROFILE, SEE SHEET 7	



PI Sta 11+41.33 $\Delta = 13^{\circ} 00' 39.9''$ (RT) $D = 10^{\circ} 25' 02.7''$ $L = 124.90'$ $T = 62.72'$ $R = 550.00'$ $DS = 25MPH$ $SE = 03$ $RO = 63'$	PI Sta 13+20.41 $\Delta = 23^{\circ} 59' 59.2''$ (LT) $D = 10^{\circ} 25' 02.7''$ $L = 230.38'$ $T = 116.91'$ $R = 550.00'$ $DS = 40MPH$ $SE = 04$ $RO = 104'$	PI Sta 15+58.99 $\Delta = 4^{\circ} 28' 39.0''$ (RT) $D = 1^{\circ} 47' 25.8''$ $L = 250.07'$ $T = 125.10'$ $R = 3,200.00'$ $DS = 40MPH$ $SE = RC$ $RO = 52'$	PI Sta 22+01.50 $\Delta = 57^{\circ} 24' 06.6''$ (LT) $D = 9^{\circ} 57' 52.1''$ $L = 576.06'$ $T = 314.82'$ $R = 575.00'$ $DS = 40MPH$ $SE = 04$ $RO = EXISTING$
--	--	---	---

-YI- PI Sta 12+10.58 $\Delta = 0^{\circ} 25' 39.3''$ (RT) $D = 0^{\circ} 34' 22.6''$ $L = 746.3'$ $T = 37.3'$ $R = 10,000.00'$
--



REVISIONS

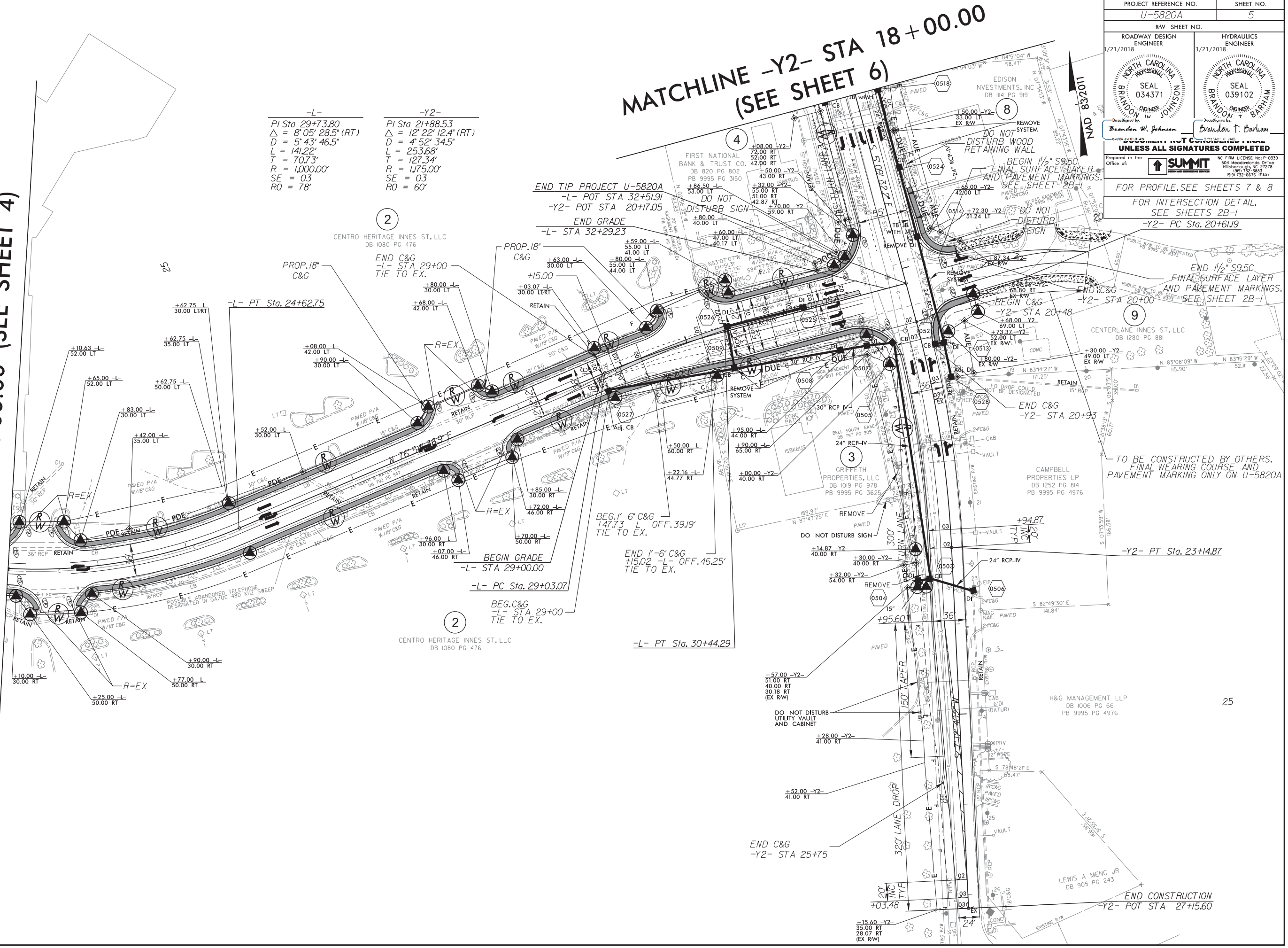
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REVISIONS

21-MAR-2018 09:13
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catb.winnick

MATCHLINE -L- STA 22+00.00 (SEE SHEET 4)



-L-	-Y2-
PI Sta 29+73.80	PI Sta 21+88.53
$\Delta = 8' 05' 28.5''$ (RT)	$\Delta = 12' 22' 12.4''$ (RT)
$D = 5' 43' 46.5''$	$D = 4' 52' 34.5''$
$L = 141.22'$	$L = 253.68'$
$T = 70.73'$	$T = 127.34'$
$R = 1,000.00'$	$R = 1,175.00'$
$SE = 03$	$SE = 03$
$RO = 78'$	$RO = 60'$

MATCHLINE -Y2- STA 18+00.00
(SEE SHEET 6)

PROJECT REFERENCE NO. U-5820A	SHEET NO. 5
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER 3/21/2018	3/21/2018
UNLESS ALL SIGNATURES COMPLETED	
FOR PROFILE, SEE SHEETS 7 & 8	
FOR INTERSECTION DETAIL, SEE SHEETS 2B-1	
-Y2- PC Sta. 20+61.9	

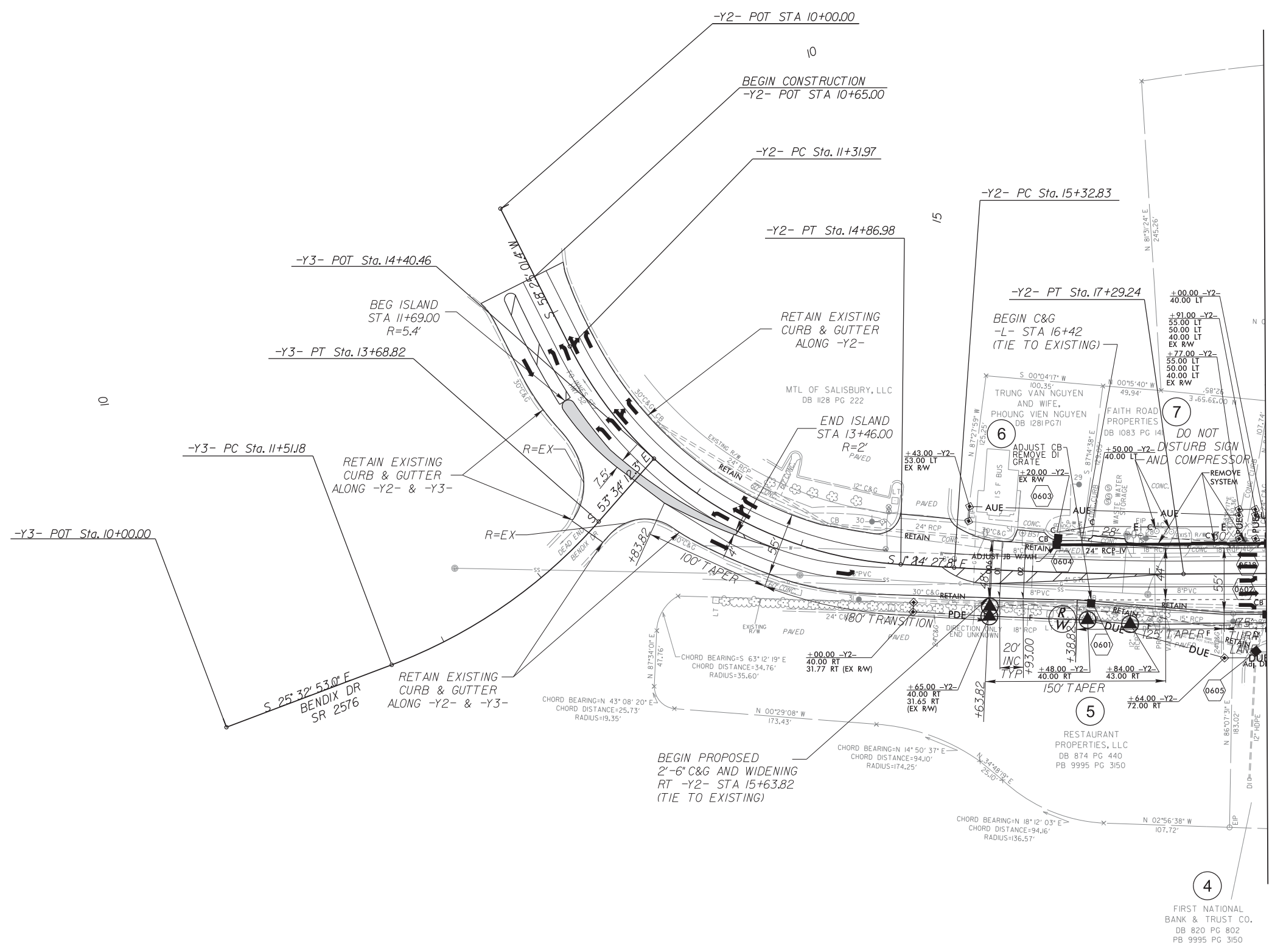
MATCHLINE -L- STA 22+00.00 (SEE SHEET 4)

END CONSTRUCTION
-Y2- POT STA 27+15.60

8/17/99

PROJECT REFERENCE NO. U-5820A	SHEET NO. 6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 3/21/2018	HYDRAULICS ENGINEER 3/21/2018
Prepared in the Office of:	FOR PROFILE, SEE SHEET 8

-Y3-	-Y2-	-Y2-
PI Sta 12+62.22 Δ = 28° 0' 19.3" (LT) D = 12' 52' 31.6" L = 217.64' T = 111.04' R = 445.00' SE = EXISTING RO = EXISTING	PI Sta 13+27.58 Δ = 59° 49' 29.2" (LT) D = 16' 51' 06.1" L = 355.01' T = 195.61' R = 340.00' SE = EXISTING RO = EXISTING	PI Sta 16+31.07 Δ = 3° 45' 04.4" (LT) D = 1' 54' 35.5" L = 196.41' T = 98.24' R = 3,000.00' SE = EXISTING RO = EXISTING

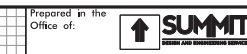


MATCHLINE -Y2- STA 18+00.00
(SEE SHEET 5)

REVISIONS

21-MAR-2018 08:43
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5/28/19



NC P.E. LICENSE No. P-0339
504 Meadowslands Drive
Hillsborough, NC 27278
(919) 732-1843
(919) 732-6676 (FAX)

PROJECT REFERENCE NO. **U-5820A** SHEET NO. **7**

ROADWAY DESIGN ENGINEER
3/21/2018

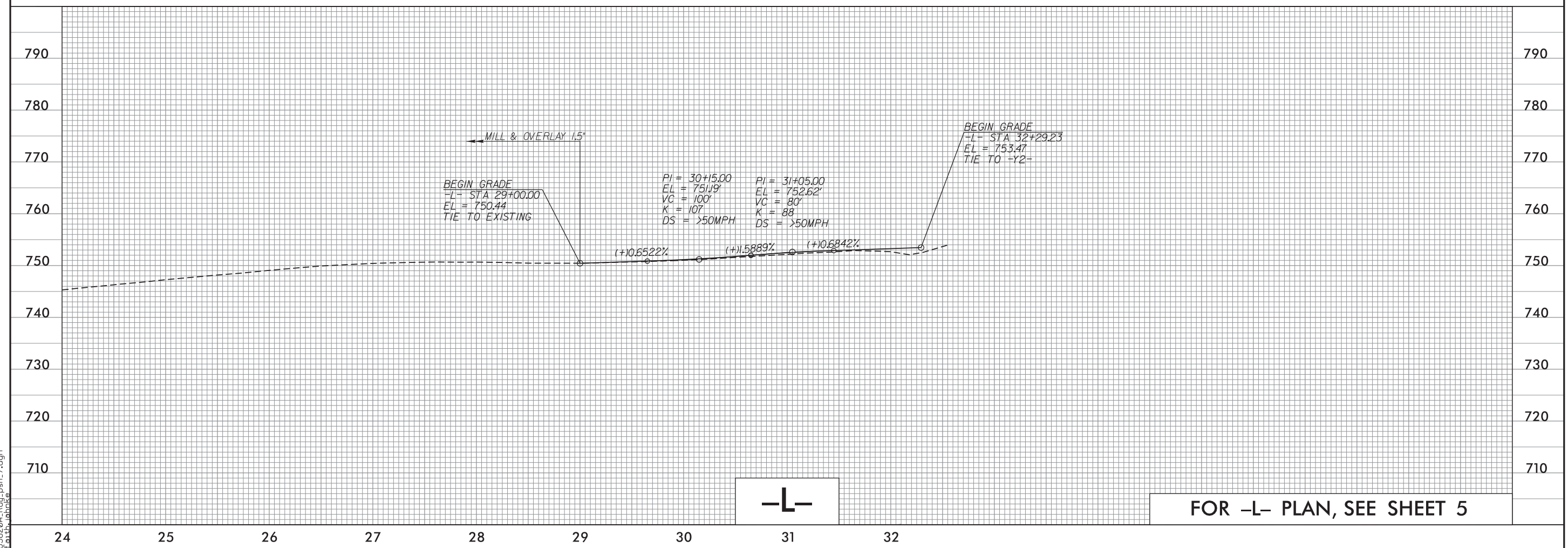
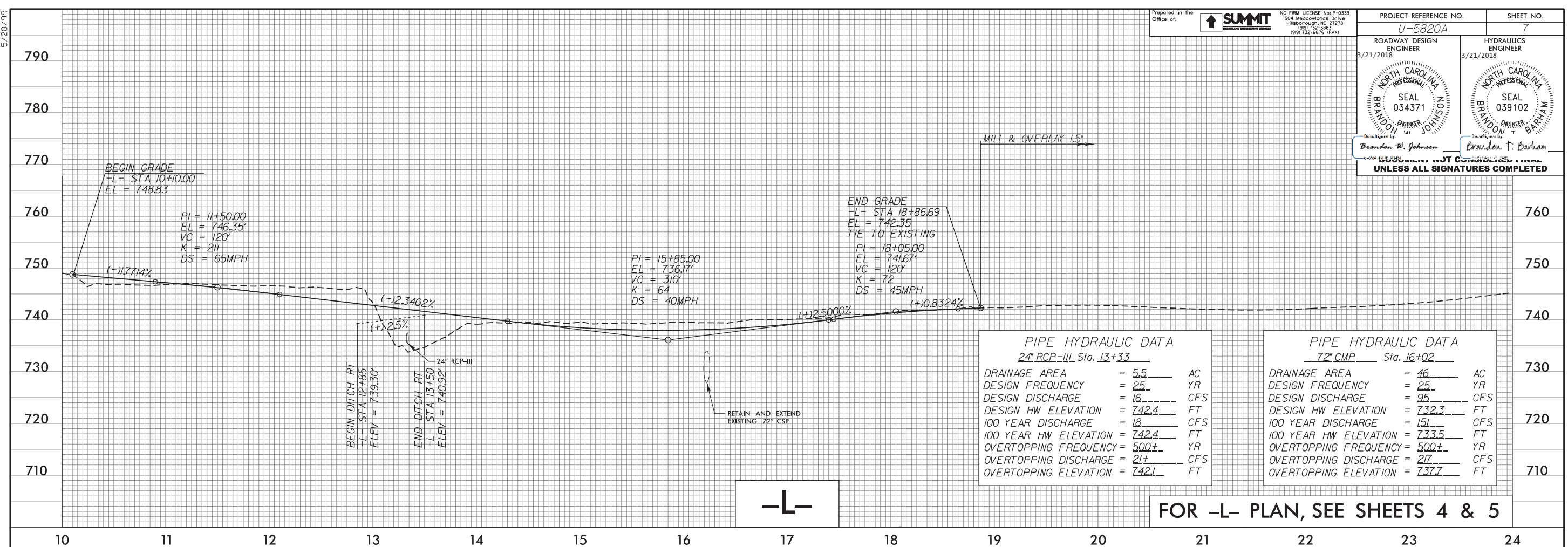
HYDRAULICS ENGINEER
3/21/2018

NORTH CAROLINA PROFESSIONAL SEAL 034371
BRANDON W. JOHNSON
ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 039102
BRANDON T. BARHAM
ENGINEER

Developed by: **Brandon W. Johnson**
Checked by: **Brandon T. Barham**

UNLESS ALL SIGNATURES COMPLETED



05-MAR-2018 08:57
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cah,labhike

5/28/99

Prepared in the Office of: **SUMMIT** NC FIRM LICENSE No. P-0339
524 Meadows Drive Hillsborough, NC 27278
(919) 732-3883 (919) 732-6616 (FAX)

PROJECT REFERENCE NO. **U-5820A** SHEET NO. **8**

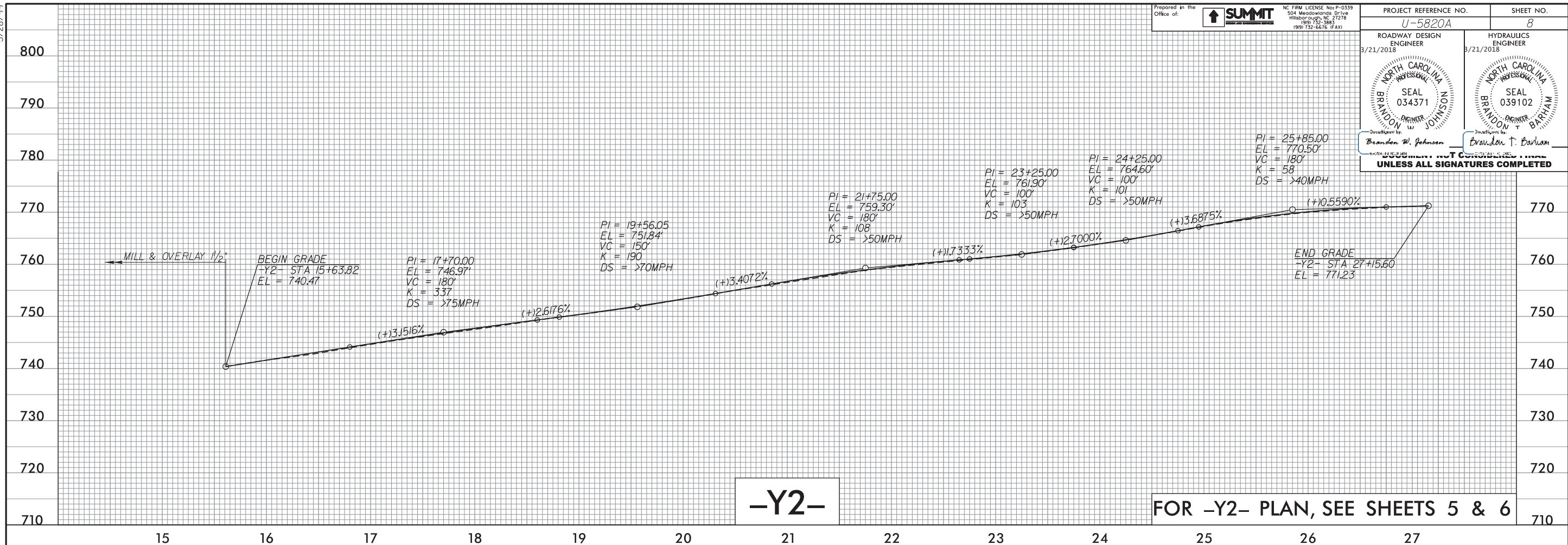
ROADWAY DESIGN ENGINEER 3/21/2018
 HYDRAULICS ENGINEER 3/21/2018

NORTH CAROLINA PROFESSIONAL SEAL
 BRANDON JOHNSON
 ENGINEER
 SEAL 034371

NORTH CAROLINA PROFESSIONAL SEAL
 BRANDON T. BARHAM
 ENGINEER
 SEAL 039102

Drawn by: **Brandon W. Johnson**
 Checked by: **Brandon T. Barham**

UNLESS ALL SIGNATURES COMPLETED



-Y2-

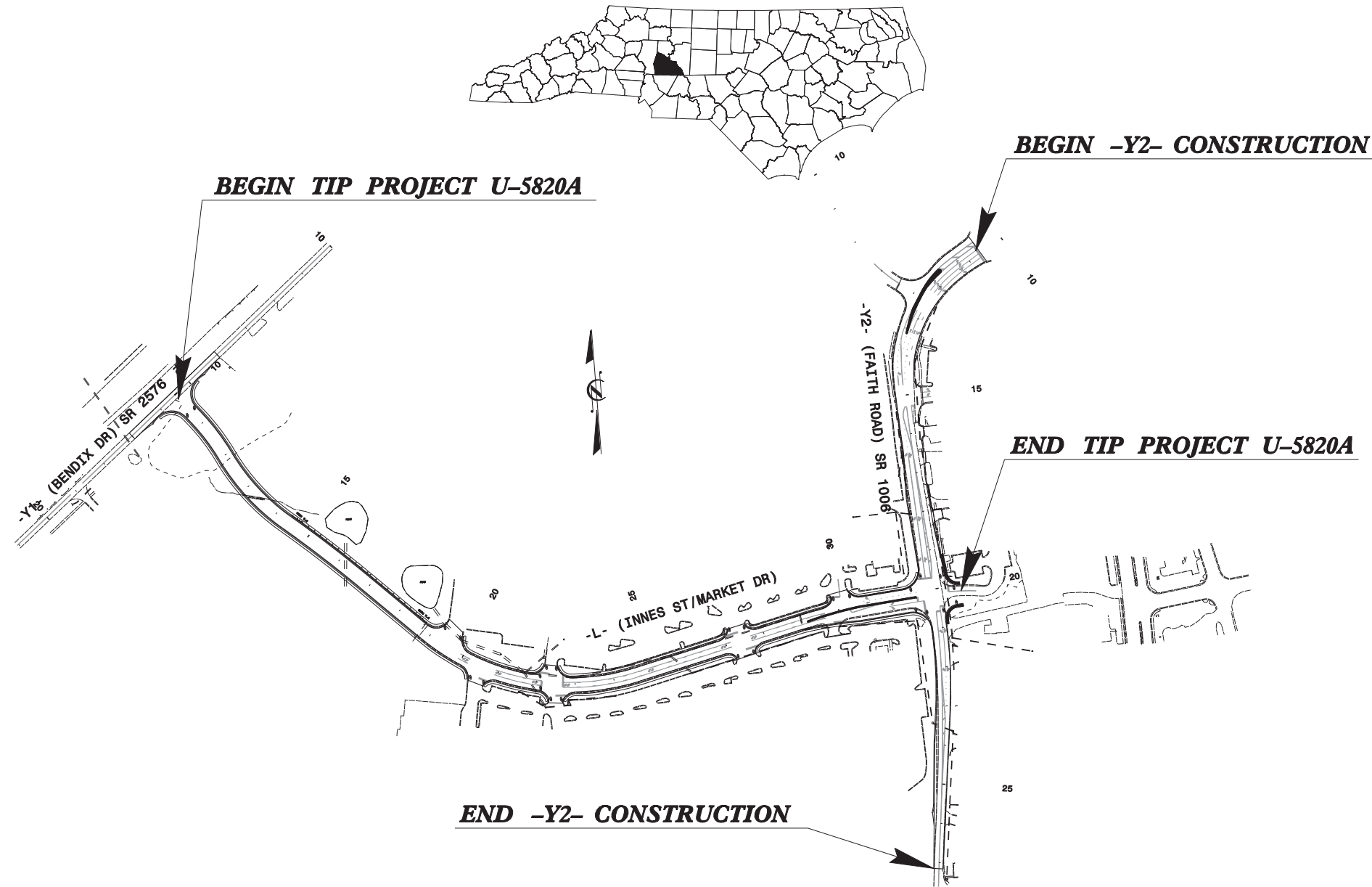
FOR -Y2- PLAN, SEE SHEETS 5 & 6

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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

ROWAN COUNTY



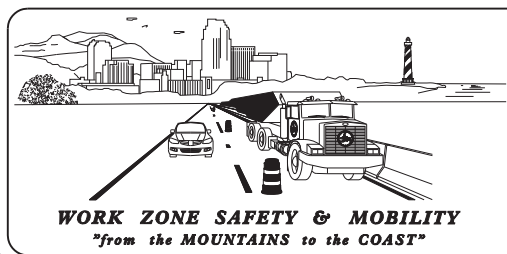
INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND
TMP-2	TRANSPORTATION OPERATIONS PLAN: (GENERAL NOTES AND LOCAL NOTES)
TMP-2A	FAITH ROAD ALTERNATE ROUTE
TMP-3	TEMPORARY TRAFFIC CONTROL PHASING
TMP-4 THRU TMP-6	TEMPORARY TRAFFIC CONTROL PHASE I DETAILS

SHEET NO.
TMP-1

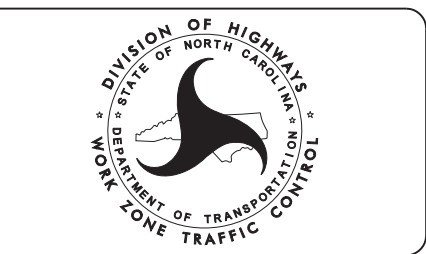
U-5820A

TIP PROJECT:



N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561
750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY)
PHONE: (919) 773-2800 FAX: (919) 771-2745

JOSEPH HUMMER, P.E. STATE TRAFFIC MANAGEMENT ENGINEER
STEVE KITE, P.E. TRAFFIC CONTROL PROJECT ENGINEER
MIKE STEELMAN TRAFFIC CONTROL PROJECT DESIGN ENGINEER
TRAFFIC CONTROL DESIGN ENGINEER



Prepared in the Office of:
PROGRESSIVE DESIGN GROUP, INC.
ENGINEERS • CONSULTANTS

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

APPROVED: _____
DATE: 2/19/2018

SEAL



ROADWAY STANDARD DRAWINGS

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

STD. NO.	TITLE
1101.01	WORK ZONE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1165.01	WORK VEHICLE LIGHTING SYSTEMS AND TMA DELINEATION
1180.01	SKINNY - DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - (PERMANENT AND TEMPORARY)

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- TEMP. SHORING (LOCATION PURPOSES ONLY)

WORK AREA (NEW CONSTRUCTION)

PAVEMENT REMOVAL

MILL AND FILL (OVERLAY)

WEDGING/RESURFACING

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- CONE
- DRUM SKINNY DRUM TUBULAR MARKER
- TEMPORARY CRASH CUSHION
- FLASHING ARROW BOARD
- FLAGGER
- LAW ENFORCEMENT
- TRUCK MOUNTED ATTENUATOR (TMA)
- CHANGEABLE MESSAGE SIGN

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

PAVEMENT MARKERS

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

PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

	APPROVED:	DATE: 2/19/2018		ROADWAY STANDARD DRAWINGS & LEGEND
	SEAL			

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 UNDESIRABLE OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

TIME RESTRICTIONS

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

ROAD NAME	DAY AND TIME RESTRICTIONS
US-52	MON-SUN 6:00AM-10:00PM
-L- (EXISTING MARKET DR)	MON-SUN 7:00AM-9:00AM, 4:00PM-6:00PM
-L- (EXISTING MARKET DR) (MILLING AND PAVING OPERATIONS)	MON-SUN 6:00AM-10:00PM
-Y1- (BENDIX DRIVE)	MON-FRI 7:00AM-9:00AM, 4:00PM-6:00PM
-Y2- (FAITH RD)	MON-FRI 6:00AM-9:00AM, 3:00PM-9:00PM

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

ROAD NAME

"ALL"

HOLIDAY

1. FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
2. FOR NEW YEAR'S, BETWEEN THE HOURS OF 7:00 A.M. DECEMBER 31st TO 6:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 6:00 P.M. THE FOLLOWING TUESDAY.
3. FOR EASTER, BETWEEN THE HOURS OF 7:00 A.M. THURSDAY AND 6:00 P.M. MONDAY.
4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 7:00 A.M. FRIDAY TO 6:00 P.M. TUESDAY.
5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 7:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 6:00 P.M. THE DAY AFTER INDEPENDENCE DAY.
IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 7:00 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 6:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.
6. FOR LABOR DAY, BETWEEN THE HOURS OF 7:00 A.M. FRIDAY AND 6:00 P.M. TUESDAY.
7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 7:00 A.M. TUESDAY TO 6:00 P.M. MONDAY.
8. FOR CHRISTMAS, BETWEEN THE HOURS OF 7:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 6:00 P.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 MANAGEMENT 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 (W8-11) 300 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.

N) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) 300 ft IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

TRAFFIC CONTROL DEVICES

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

P) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

PAVEMENT MARKINGS AND MARKERS

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

ROAD NAME	MARKING PAINT	MARKER
"ALL"		TEMPORARY RAISED

R) 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.

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

T) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

U) TRACE THE EXISTING AND PROPOSED MONOLITHIC ISLAND LOCATIONS WITH PROPER COLOR PAVEMENT MARKINGS PRIOR TO REMOVAL AND INSTALLATION. PLACE DRUMS TO DELINEATE ANY EXISTING AND PROPOSED MONOLITHIC ISLANDS AFTER REMOVAL AND BEFORE INSTALLATION

MISCELLANEOUS

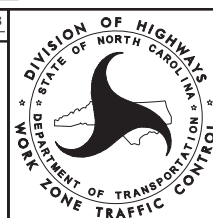
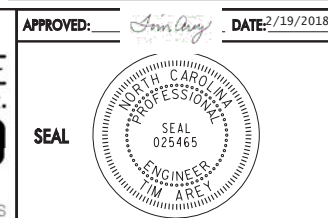
V) LAW ENFORCEMENT MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS AS DIRECTED BY THE ENGINEER. THE DEPARTMENT WILL PROVIDE POLICE CONTROL AT INTERSECTIONS WHEN REQUIRED.

W) ALL CURB RAMP LOCATIONS SHALL BE DERIVED FROM STATIONING SHOWN ON PAVEMENT MARKING PLANS OR AS DIRECTED BY THE ENGINEER IN COORDINATION WITH THE SIGNING AND DELINEATION UNIT.

X) CONTRACTOR SHALL MAINTAIN SIDEWALK ACCESS AT ALL TIMES AS STATED IN THE PHASING. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TEMPORARY SIDEWALKS (CONCRETE, ASPHALT, OR OTHER SUITABLE MATERIAL AS APPROVED BY THE ENGINEER) AT ALL LOCATIONS WHERE THE OPEN PEDESTRIAN TRAVELWAY HAS BEEN REMOVED FOR CONSTRUCTION OPERATIONS (UTILITIES, DRAINAGE, ETC.).

Y) CONTRACTOR OF THIS PROJECT SHALL COORDINATION CONSTRUCTION ACTIVITIES WITH THE CONTRACTOR OF THE ADJACENT U-5820B PROJECT.

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



**TRANSPORTATION
OPERATIONS PLAN
MANAGEMENT STRATEGIES
GENERAL NOTES**

SIGN NUMBER: OSD
 TYPE: D
 QUANTITY: 1
 SIGN WIDTH: 4'-0"
 HEIGHT: 1'-8"
 TOTAL AREA: 6.7 Sq.Ft.

BACKG COLOR: Orange
 COPY COLOR: Black

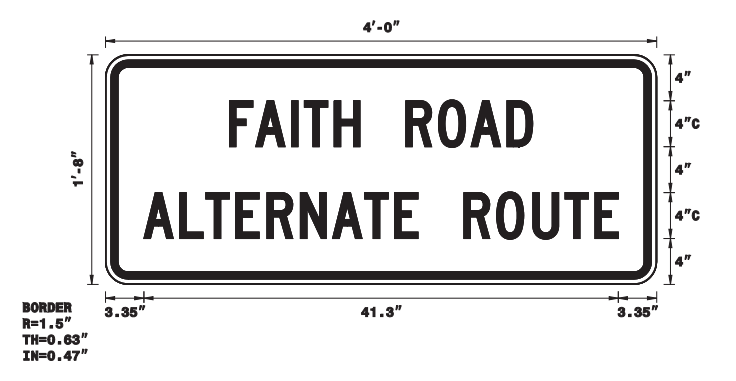
SYMBOL	X	Y	WID	HT

BORDER TYPE: FLUSH
 RECESS: 0.47"
 WIDTH: 0.63"
 RADII: 1.5"

MAT'L: 0.125" (3.2 mm) ALUMINUM

NO. Z BARS:
 LENGTH:

DESIGN BY: none
 PROJECT ID: ID
 CHECKED BY:
 DIV: DIV
 DATE: Jan 10, 2018

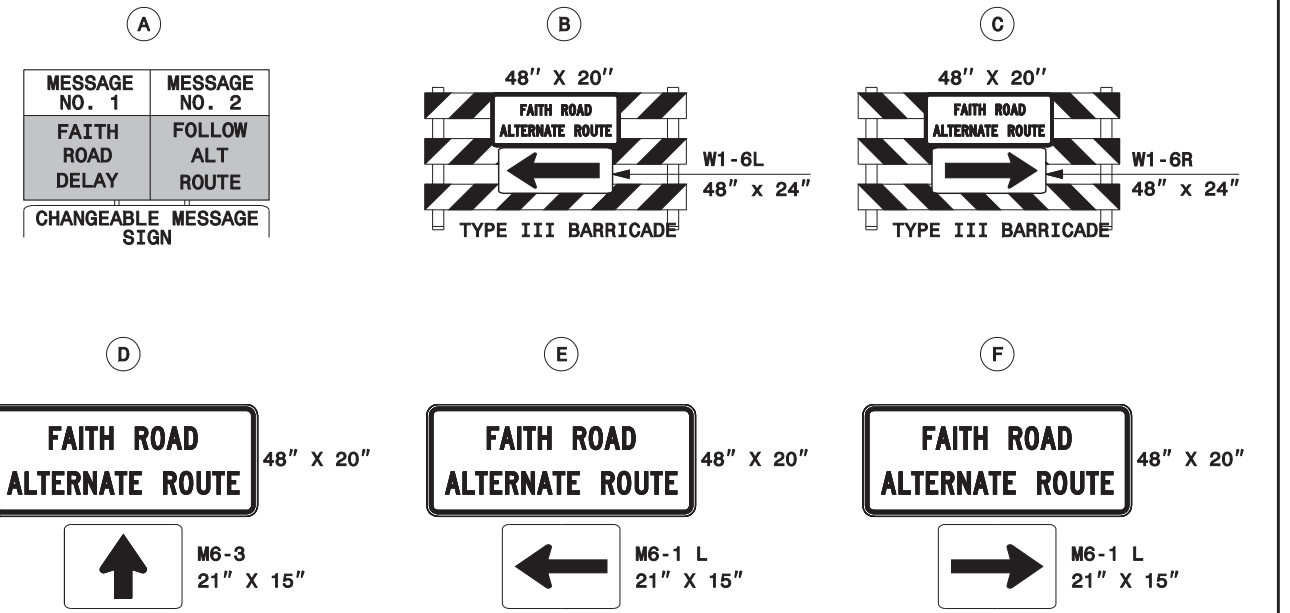
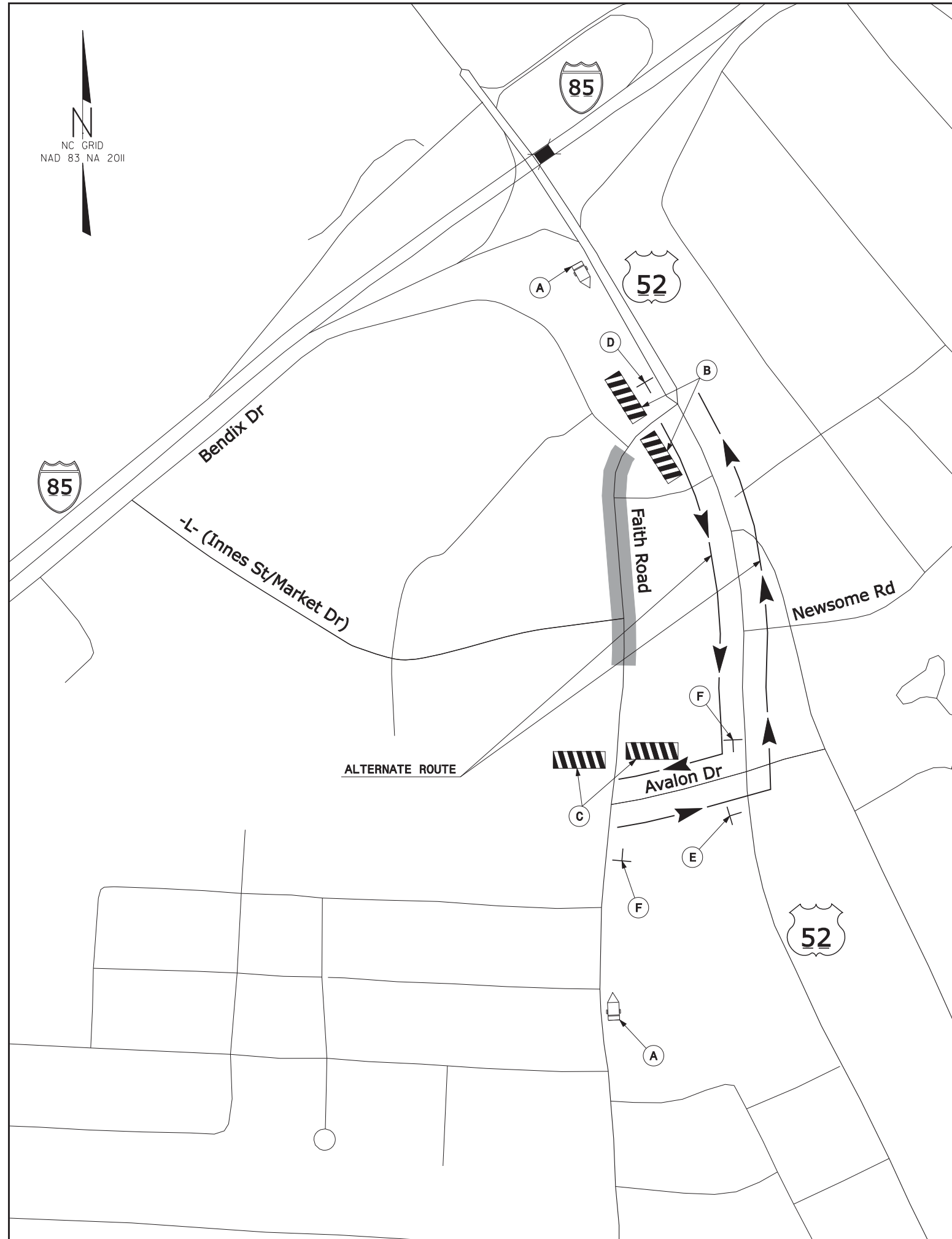


USE NOTES:
 1. Legend and border (except those that are colored black) shall be direct applied Grade B sheeting.
 2. Background shall be Grade A, B, or C reflective sheeting.
 3. Shields; A, B, and C type arrows shall be on 0.032" (0.8mm) aluminum and demountable.
 4. Bottom panel shall be yellow grade C sheeting. Legend shall be direct applied black non-reflective sheeting. Yellow panel is:

Letter spacings are to start of next letter

Letter spacings are to start of next letter																		Series/Size
F	A	I	T	H	R	O	A	D										Text Length
10.8	2.3	3.1	1.1	2.6	2.2	4	2.8	2.6	3.1	2.2	10.8							C 2000
																		26.4
A	L	T	E	R	N	A	T	E	R	O	U	T	E					C 2000
3.3	3.1	2.3	2.6	2.7	2.9	2.6	2.8	2.6	2	4	2.6	3.2	2.6	2	3.3	41.3		

FILENAME: OSD Sign Design
 NORTH CAROLINA D.O.T. SIGN DETAIL



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PROGRESSIVE
 DESIGN GROUP, INC.
 ENGINEERS • CONSULTANTS

APPROVED: *[Signature]* DATE: 2/19/2018
 SEAL
 NORTH CAROLINA PROFESSIONAL ENGINEER
 SEAL 025465
 TM ARE



TRANSPORTATION
 MANAGEMENT PLAN
 FAITH RD ALTERNATE ROUTE

PHASING

PHASE I

STEP 1: INSTALL ADVANCE WORK ZONE WARNING SIGNS ON ALL ROADWAYS WITHIN THE PROJECT LIMITS ACCORDING TO ROADWAY STANDARD DRAWING NO. 1101.01.

STEP 2: BEGIN CONSTRUCTION ON PROPOSED -L- FROM THE -Y1- INTERSECTION TO STA. 18+75+/- -L- AS SHOWN ON SHEET TMP-4. USE ROADWAY STANDARD DRAWING NO. 1101.02 SHEET 1 OF 15 FOR -Y1- TRAFFIC WHEN APPLICABLE AS DESCRIBED IN GENERAL F ON SHEET TMP-2.

USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEETS 1 AND 2 OF 15, BEGIN CONSTRUCTION ON THE PROPOSED WIDENING ALONG THE RIGHT SIDE OF -L- FROM STA. 29+00+/- -L- TO THE FAITH ROAD INTERSECTION AS SHOWN ON SHEET TMP-5.

USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEETS 1 AND 2 OF 15, IN CONJUNCTION WITH THE FAITH ROAD ALTERNATE ROUTE PLAN SHOWN ON SHEET TMP-2A, BEGIN CONSTRUCTION ON THE PROPOSED WIDENING ALONG BOTH SIDES OF FAITH ROAD IN THE LOCATIONS SHOWN IN THE ROADWAY DESIGN PLANS AND ON SHEETS TMP-5 AND TMP-6. ALL TRAFFIC CONTROL DEVICES SHOWN ON SHEET TMP-2A SHALL BE COVERED OR REMOVED DURING PERIODS WHEN LANE CLOSURES ARE NOT ALLOWED ON FAITH ROAD AS OUTLINED IN GENERAL NOTE A ON SHEET TMP-2.

BEGIN CONSTRUCTION ON THE PROPOSED SIDEWALK IMPROVEMENTS ALONG -L- FROM STA. 29+00+/- -L- TO THE FAITH ROAD INTERSECTION AS SHOWN ON SHEETS TMP-4 AND TMP-5. UTILIZE ROADWAY STANDARD DRAWING NO. 1101.02 WHEN APPLICABLE AS DESCRIBED IN GENERAL NOTE F ON SHEET TMP-2.

INSTALL THE PROPOSED TRAFFIC SIGNAL SUPPORTS AND EQUIPMENT AT THE -L-/-Y2- INTERSECTION. ALIGN THE PROPOSED TRAFFIC SIGNAL HEADS TO OPERATE THE EXISTING TRAFFIC PATTERN. ACTIVATE THE PROPOSED TRAFFIC SIGNAL IN THE EXISTING TRAFFIC PATTERN AND REMOVE THE EXISTING TRAFFIC SIGNAL COMPONENTS.

PHASE II

STEP 1: COMPLETE CONSTRUCTION ON PROPOSED -L- NEW LOCATION INCLUDING THE TIE IN WORK AT BENDIX DRIVE AND PROPOSED WIDENING IMPROVEMENTS ALONG EXISTING -L- AND FAITH ROAD AS DESCRIBED IN PHASE I.

STEP 2: USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEETS 1 AND 2 OF 15, PERFORM THE MILL AND FILL OPERATION ALONG EXISTING -L- IN THE LOCATIONS SHOWN ON SHEETS TMP-4, TMP-5 AND THE ROADWAY DESIGN PLANS. INSTALL THE PROPOSED MONLITHIC ISLAND ON -L- IN THE LOCATION SHOWN ON SHEET TMP-5 AND THE ROADWAY DESIGN PLANS. INSTALL PRE MARKINGS ALONG -L- IN THE PATTERN SHOWN IN THE FINAL PAVEMENT MARKING PLANS.

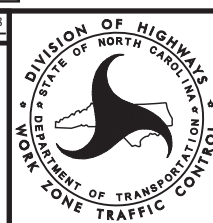
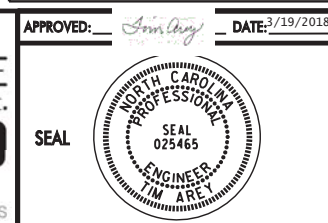
USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEETS 1 AND 2 OF 15, IN CONJUNCTION WITH THE FAITH ROAD ALTERNATE ROUTE PLAN SHOWN ON SHEET TMP-2A, PERFORM THE WEDGING AND RESURFACING OPERATIONS ALONG EXISTING -Y2- IN THE LOCATIONS SHOWN ON SHEETS TMP-5, TMP-6 AND THE ROADWAY DESIGN PLANS. INSTALL THE PROPOSED MONLITHIC ISLAND ON -L- IN THE LOCATION SHOWN IN THE ROADWAY DESIGN PLANS AND INSTALL PRE MARKINGS ALONG -Y2- IN THE PATTERN SHOWN IN THE FINAL PAVEMENT MARKING PLANS. ALL TRAFFIC CONTROL DEVICES SHOWN ON SHEET TMP-2A SHALL BE COVERED OR REMOVED DURING PERIODS WHEN LANE CLOSURES ARE NOT ALLOWED ON FAITH ROAD AS OUTLINED IN GENERAL NOTE A ON SHEET TMP-2.

PHASE III

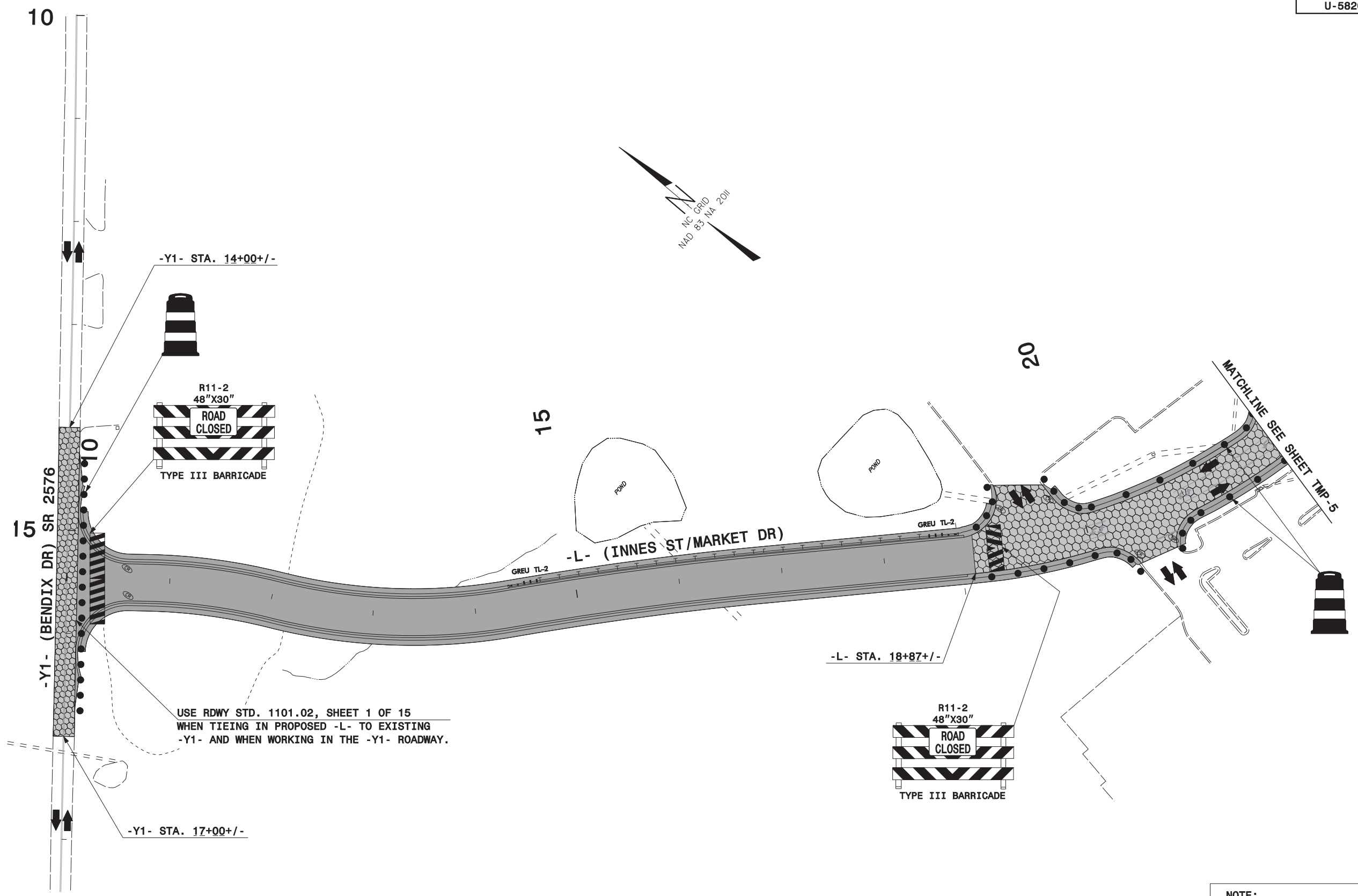
STEP 1: USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEETS 1 AND 2 OF 15, PLACE THE FINAL LAYER OF SURFACE COURSE AND FINAL PAVEMENT MARKINGS AND MARKERS ON ALL ROADWAYS WITHIN THE PROJECT LIMITS AND THE PROPOSED SECTION OF THE PROPOSED SECTION OF THE ADJOINING PROJECT IN THE LOCATIONS IDENTIFIED IN THE ROADWAY PLANS, MODIFY THE PROPOSED TRAFFIC SIGNAL TO THE FINAL PATTERN AT THE -L-/-Y2- INTERSECTION AND PLACE ALL ROADWAYS IN THE FINAL TRAFFIC PATTERN.

STEP 2: REMOVE ALL TRAFFIC CONTROL DEVICES.

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TRANSPORTATION
MANAGEMENT PLAN
WRITTEN PHASING

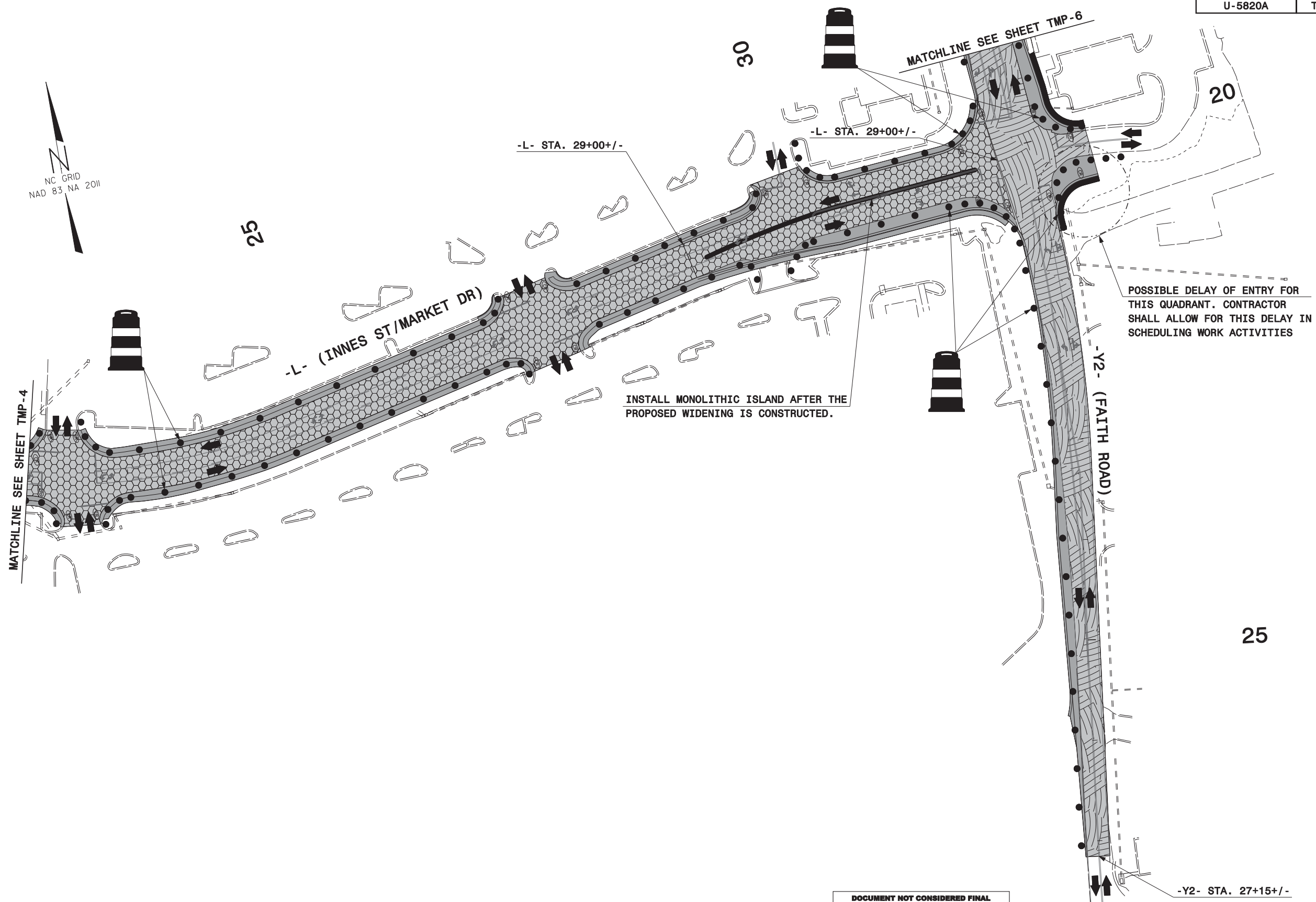


USE RDWY STD. 1101.02, SHEET 1 OF 15
 WHEN TIEING IN PROPOSED -L- TO EXISTING
 -Y1- AND WHEN WORKING IN THE -Y1- ROADWAY.

NOTE:
 ALL PAVEMENT MARKINGS ARE EXISTING
 MARKINGS UNLESS OTHERWISE NOTED

DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

 ENGINEERS • CONSULTANTS	APPROVED: <i>[Signature]</i>	DATE: 2/19/2018	 DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	TRANSPORTATION MANAGEMENT PLAN
	SEAL 			



NOTE:
ALL PAVEMENT MARKINGS ARE EXISTING
MARKINGS UNLESS OTHERWISE NOTED

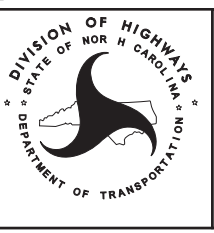
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ENGINEERS • CONSULTANTS

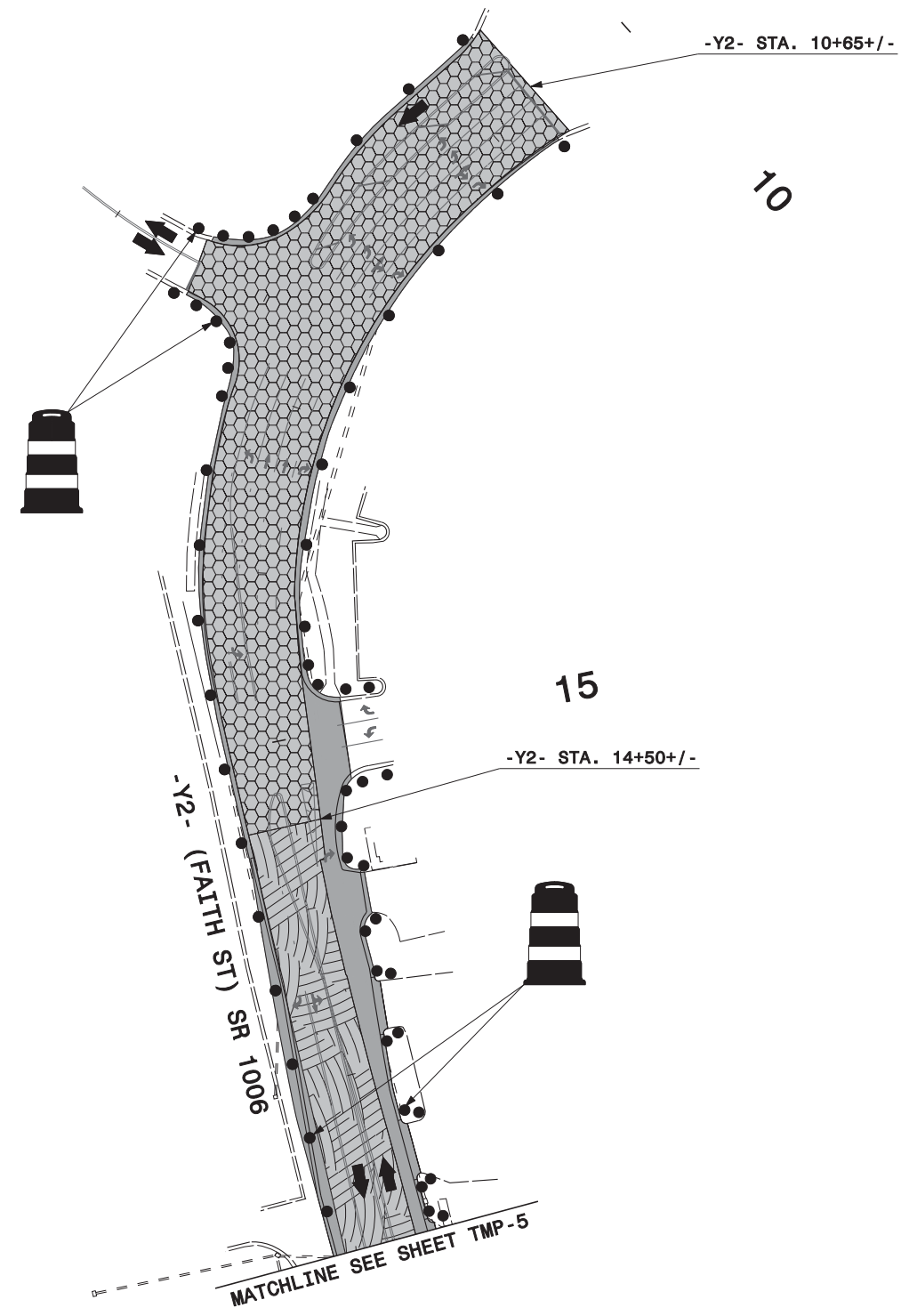
APPROVED: *[Signature]* DATE: 2/19/2018

SEAL

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PROFESSIONAL
ENGINEER
SEAL
025465
TM ARE



**TRANSPORTATION
MANAGEMENT PLAN**



NOTE:
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APPROVED: *[Signature]* DATE: 2/19/2018



SEAL



**TRANSPORTATION
MANAGEMENT PLAN**

**STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION**

**PAVEMENT MARKING PLAN
ROWAN COUNTY
LOCATION: NEW ROUTE FROM SR 2576 (BENDIX RD)
TO SR SR 1006 (FAITH RD) IN SALISBURY**

TIP NO. U-5820A	SHEET NO. PMP-1
APPROVED: 	
DATE: 3/20/2018	
SEAL	
	
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ROADWAY STANDARD DRAWING

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

STD. NO.	TITLE
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTILANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1253.01	RAISED PAVEMENT MARKERS - SNOWPLOWABLE
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

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 |
|-----------|---------------|--------------|
| ALL | THERMOPLASTIC | SNOWPLOWABLE |
- B) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.
- D) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.
- E) STOP BAR LOCATION AT NON-SIGNALIZED INTERSECTIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER.
- F) UNLESS OTHERWISE SPECIFIED, HEATED-IN-PLACE THERMOPLASTIC MAY BE USED IN LIEU OF EXTRUDED THERMOPLASTIC FOR STOP BARS, SYMBOLS, CHARACTERS AND DIAGONALS. IF HEATED-IN-PLACE IS USED, IT SHALL BE PAID FOR USING THE EXTRUDED THERMOPLASTIC PAY ITEM.

PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION
	<u>THERMOPLASTIC (4", 90 MILS)</u>
TA	WHITE EDGELINE
TB	YELLOW EDGELINE
	<u>THERMOPLASTIC (4", 120 MILS)</u>
TC	10 FT. WHITE SKIP
TD	3 FT. - 9 FT./SP WHITE MINISKIP
TE	WHITE SOLID LANE LINE
TF	10 FT. YELLOW SKIP
TH	YELLOW SINGLE CENTER
TI	YELLOW DOUBLE CENTER
	<u>THERMOPLASTIC(8", 90 MILS)</u>
TN	WHITE GORELINE
TO	WHITE DIAGONAL
TP	YELLOW GORELINE
	<u>THERMOPLASTIC(8", 120 MILS)</u>
TQ	WHITE CROSSWALK LINE
	<u>THERMOPLASTIC(24", 120 MILS)</u>
T2	WHITE STOPBAR
	<u>THERMOPLASTIC PAVEMENT MARKING SYMBOLS (90 MILS)</u>
UA	LEFT TURN ARROW
UB	RIGHT TURN ARROW
UC	STRAIGHT ARROW
UD	COMBO.STRAIGHT/LEFT ARROW
UE	COMBO.STRAIGHT/RIGHT ARROW
	<u>THERMOPLASTIC PAVEMENT MARKING CHARACTERS (120 MILS)</u>
UI	ALPHANUMERIC CHARACTER

INDEX

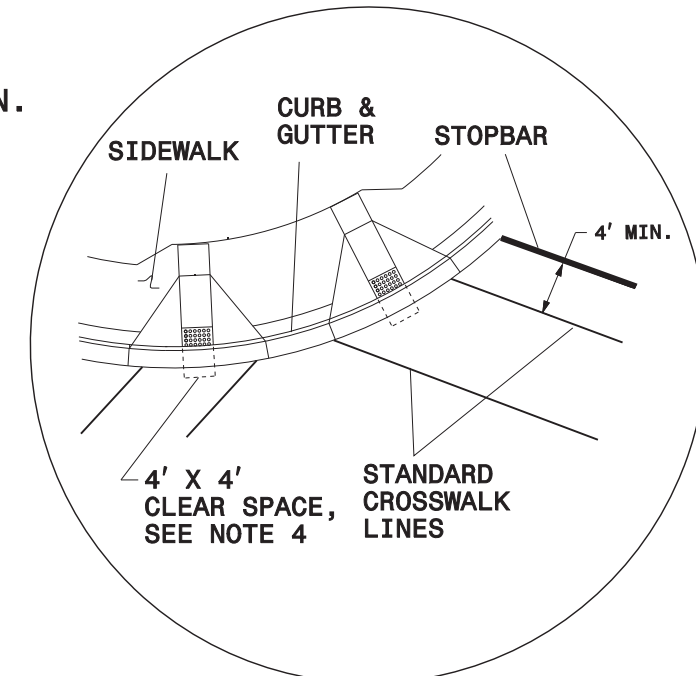
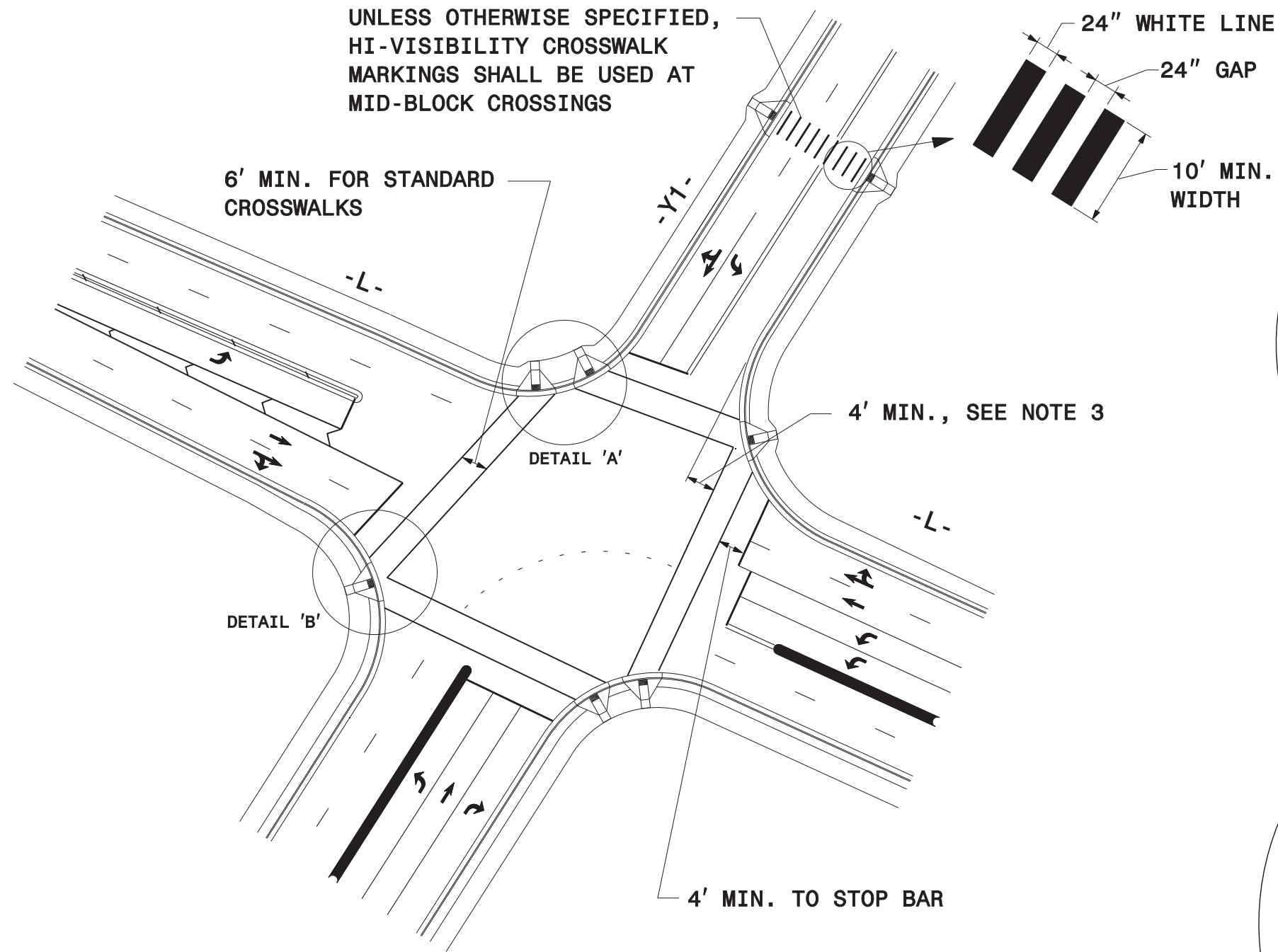
SHEET NO.	DESCRIPTION
PMP-1	PAVEMENT MARKING PLAN TITLE, INDEX, AND GENERAL NOTES SHEET
PMP-2	CROSSWALK PAVEMENT MARKING GUIDANCE DETAIL
PMP-3 THRU PMP-5	PAVEMENT MARKING DETAILS

T.I.P.: U-5820A

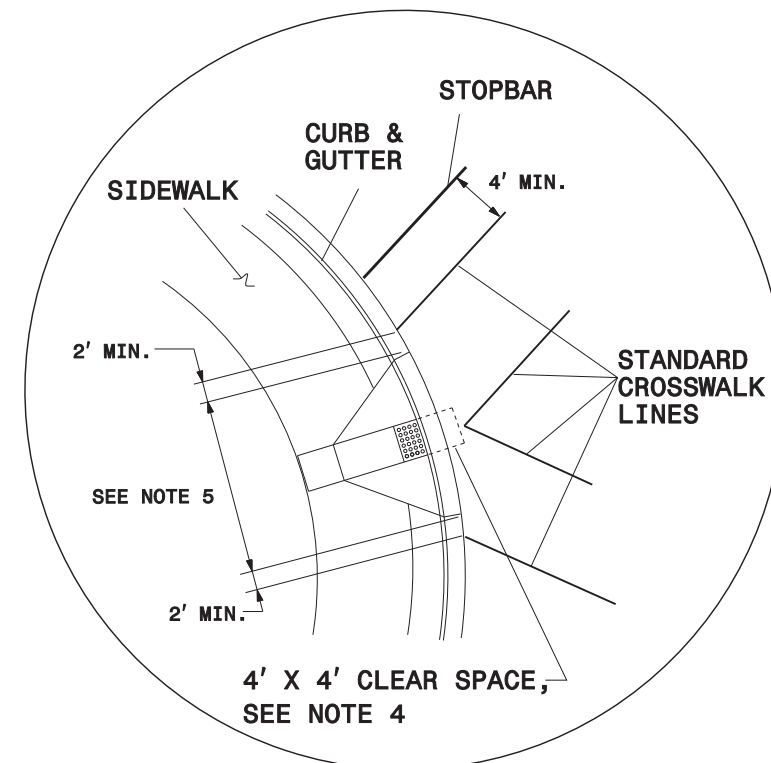
**PLAN PREPARED BY:
PROGRESSIVE DESIGN GROUP, INC.**

<i>Tim Arey, PE</i>	PROJECT ENGINEER
<i>Susan Kunz</i>	PROJECT MANAGER
<i>Larry Ashley</i>	DESIGN ENGINEER





DETAIL 'A'- DUAL CURB RAMPS



DETAIL 'B'- SINGLE DIAGONAL CURB RAMP

GUIDANCE DETAIL FOR CROSSWALK MARKINGS

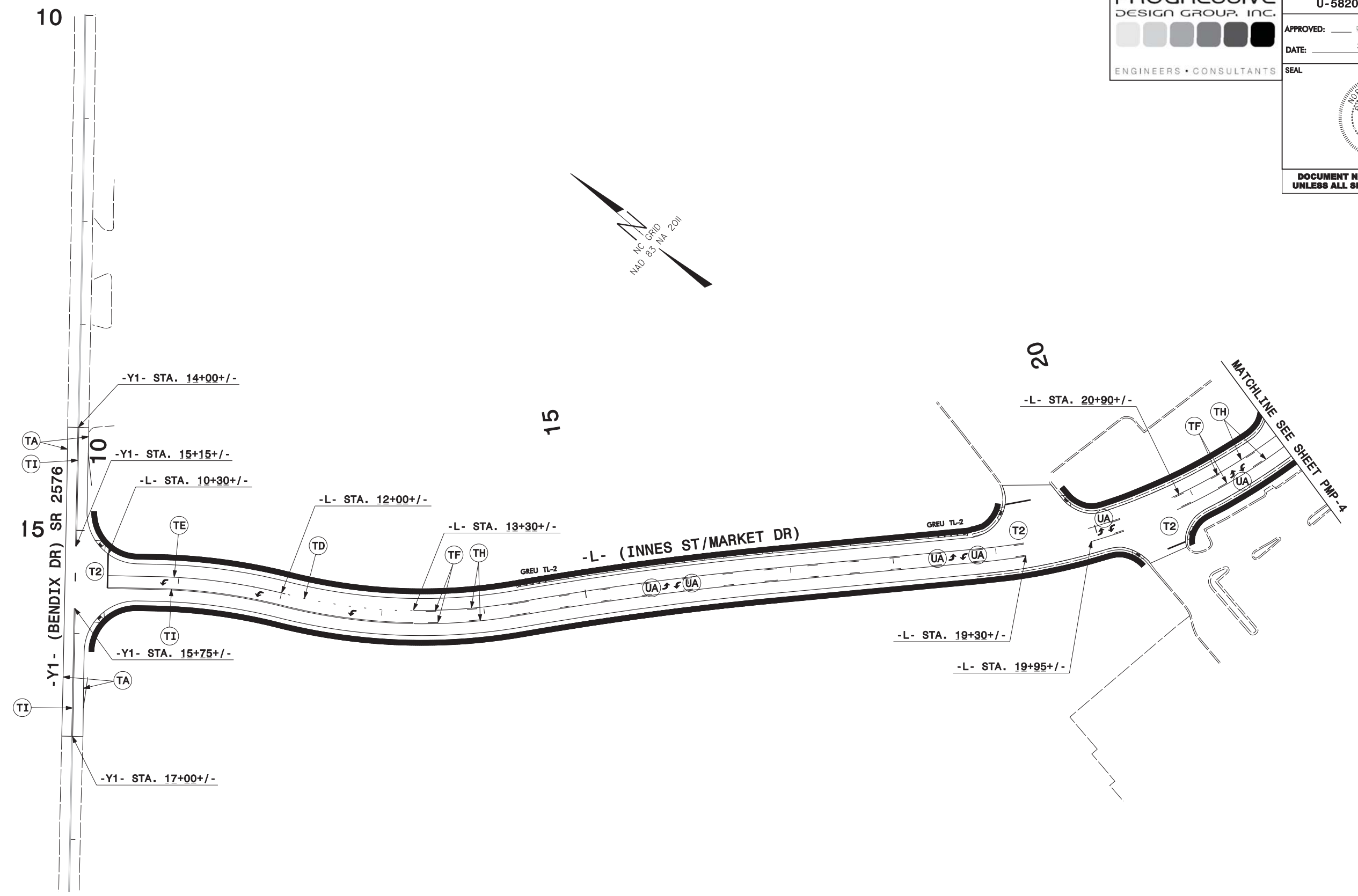
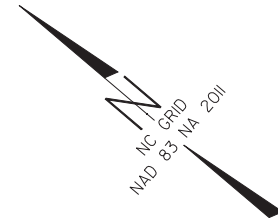
NOTES:

1. USE THE DETAILS ABOVE AND THE FOLLOWING NOTES FOR GUIDANCE IN PLACING CROSSWALK MARKINGS NOT STATIONED ON THE DETAIL SHEETS OR WHEN FIELD ADJUSTMENTS REQUIRED MOVING STATIONED MARKINGS AS DIRECTED BY THE ENGINEER. REFER TO NCDOT ROADWAY STANDARD DRAWINGS, MUTCD AND ADA STANDARDS FOR ADDITIONAL GUIDANCE.
2. THE CROSSWALK MARKINGS SHOWN ON THE ABOVE DETAILS ARE FOR REFERENCE ONLY. ONLY INSTALL CROSSWALK MARKINGS WHERE SHOWN ON THE DETAIL SHEETS OR AS DIRECTED BY THE ENGINEER. THE CROSSWALK MARKING TYPE, STANDARD OR HI-VISIBILITY, SHALL BE INSTALL AS SPECIFIED ON THE DETAIL SHEETS OR AS DIRECTED BY THE ENGINEER.
3. SET BACK DISTANCE FROM INSIDE CROSSWALK MARKING TO NEAREST EDGE OF TRAVEL IS 4' MIN.
4. BEYOND THE BOTTOM GRADE BRAKE, A CLEAR SPACE OF 4' X 4' MINIMUM SHALL BE PROVIDED WITHIN THE MARKINGS.
5. SINGLE DIAGONAL CURB RAMPS WITH FLARED SIDES SHALL HAVE A SEGMENT OF CURB 2 FEET LONG MINIMUM LOCATED ON EACH SIDE OF THE CURB RAMP AND WITHIN THE MARKED CROSSING, SEE DETAIL 'B'.
6. CURB RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE TO THE LATEST NCDOT ROADWAY STANDARD DRAWINGS.

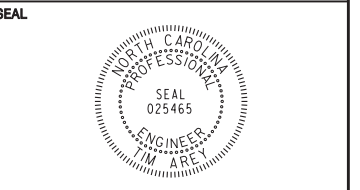
**CROSSWALK PAVEMENT MARKING
GUIDANCE DETAIL**



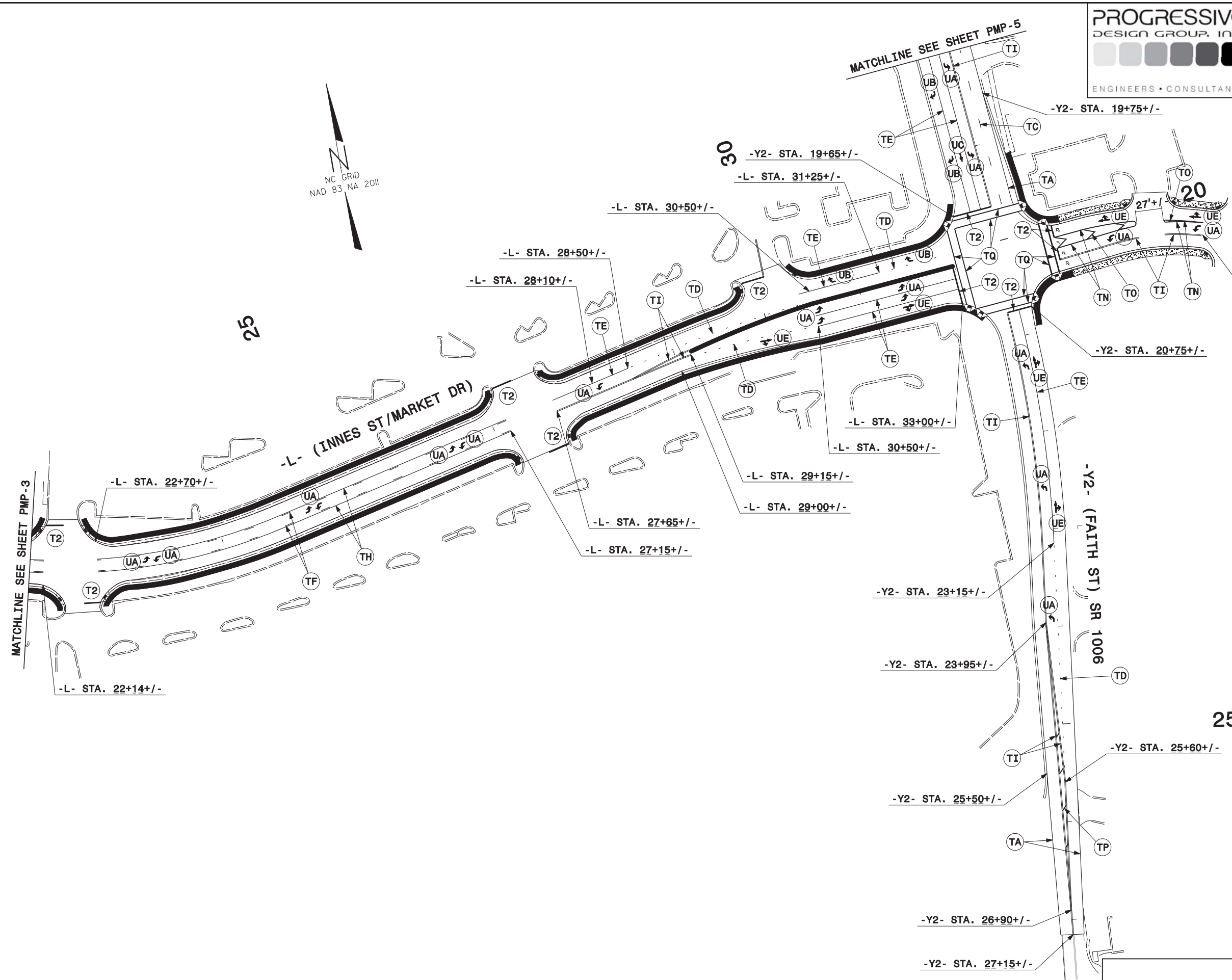
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PAVEMENT MARKING DETAIL

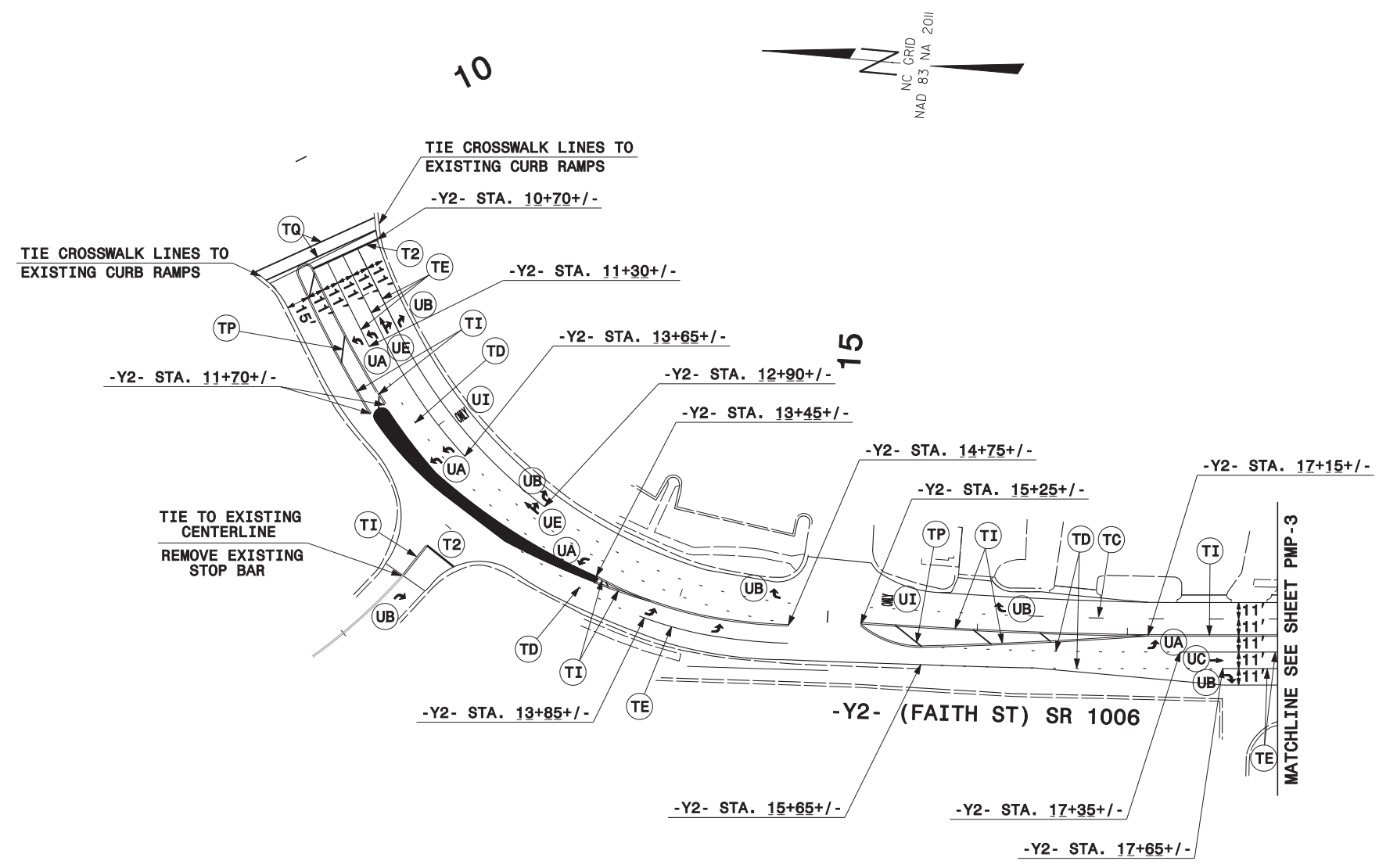


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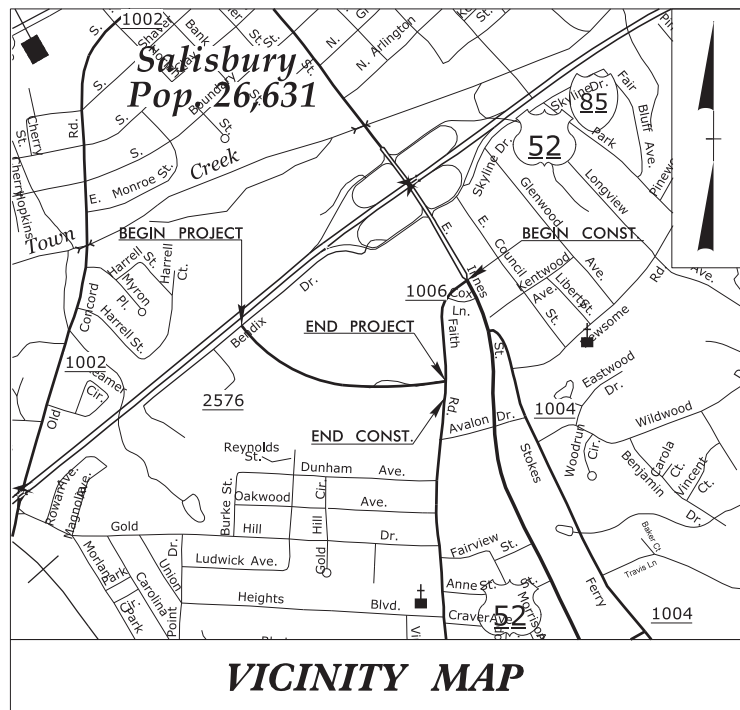
END PROPOSED
PAVEMENT MARKINGS

PAVEMENT MARKING DETAIL



PAVEMENT MARKING DETAIL

TIP PROJECT: U-5820A

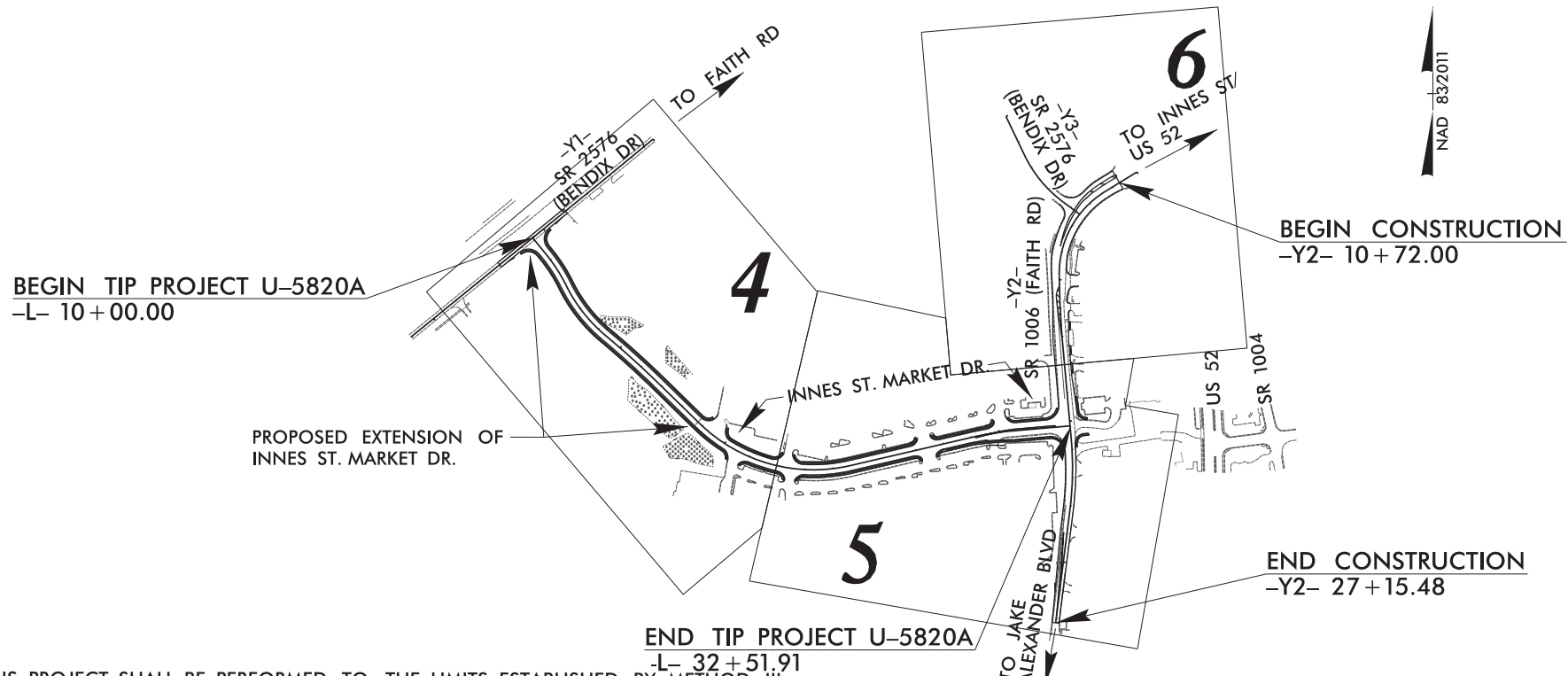


VICINITY MAP

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

LOCATION: INNES STREET MARKET DRIVE EXTENSION AND EXISTING ROAD IMPROVEMENTS FROM SR 2576 (BENDIX DR) TO SR 1006 (FAITH RD) IN SALISBURY

TYPE OF WORK: GRADING, DRAINAGE, CURB AND GUTTER, PAVING AND SIDEWALKS



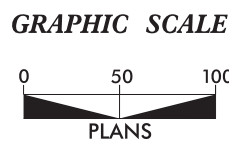
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-5820A	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	no
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	△△△△
1622.01	Temporary Berms and Slope Drains	▽▽▽▽
1630.02	Silt Basin Type B	▨
1633.01	Temporary Rock Silt Check Type-A	▩
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	▩⊗
1633.02	Temporary Rock Silt Check Type-B	▶
	Wattle/Coir Fiber Wattle	⌢
	Wattle/Coir Fiber Wattle with Polyacrylamide (PAM)	⌢⊗
	Wattle/Coir Fiber Wattle Inlet Protection	□
1634.01	Temporary Rock Sediment Dam Type-A	▨▨▨
1634.02	Temporary Rock Sediment Dam Type-B	▨
1635.01	Rock Pipe Inlet Sediment Trap Type-A	⌢
1635.02	Rock Pipe Inlet Sediment Trap Type-B	⌢
1630.04	Stilling Basin	▭
1630.06	Special Stilling Basin	▨
	Rock Inlet Sediment Trap:	
	Type A	A □
	Type B	B □
	Type C	C □
	Skimmer Basin	▭
	Tiered Skimmer Basin	▭
	Infiltration Basin	▭

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



THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 1, 2016 AND ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER RESOURCES.

Prepared in the Office of:
SUMMIT
DESIGN AND ENGINEERING SERVICES
FIRM NO. P-0339
504 Meadowland Drive
Hillsborough, NC 27278-8551
Voice: (919) 732-3883
Fax: (919) 732-6776
www.summitde.net

Designed by:
Dan C. Duffield, PE 3481
NAME LEVEL III CERTIFICATION NO.

Reviewed in the Office of:
ROADSIDE ENVIRONMENTAL UNIT
1 South Wilmington St.
Raleigh, NC 27611

2018 STANDARD SPECIFICATIONS

Reviewed by:
Phil H. Suggs, CPESC

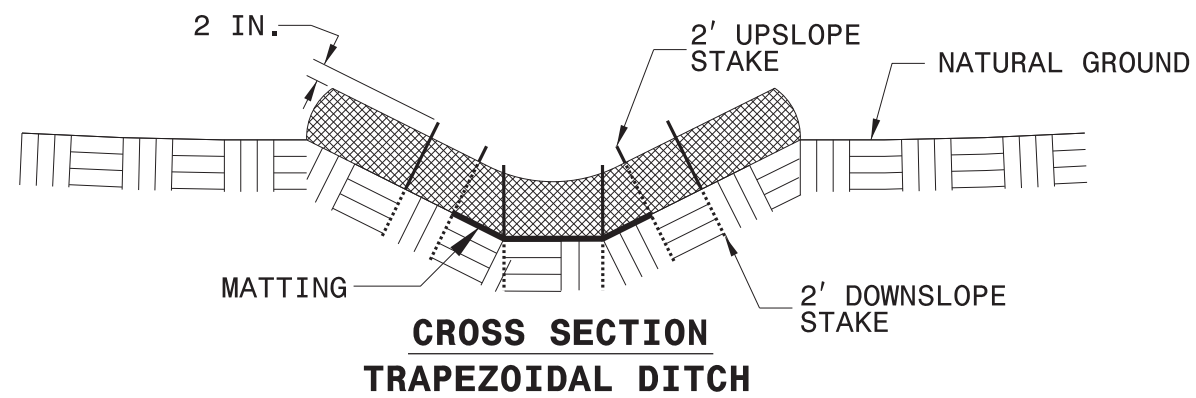
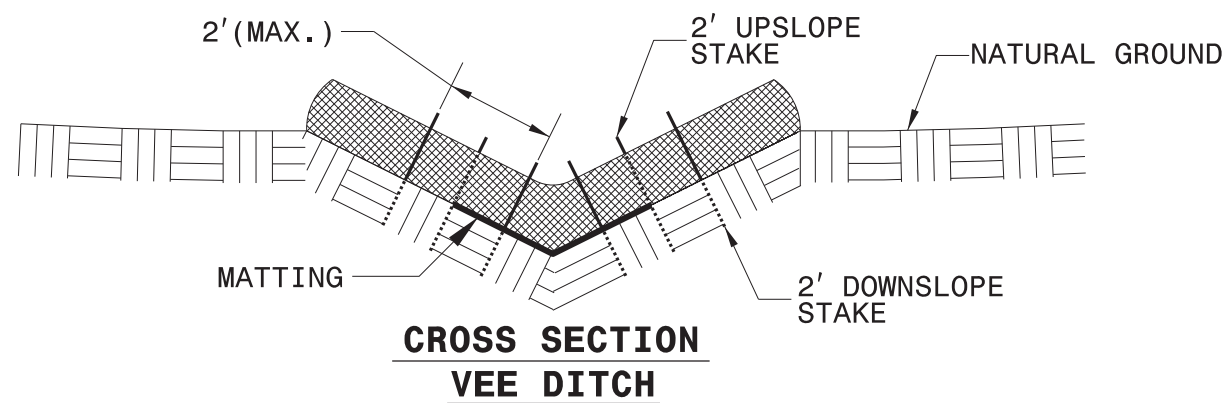
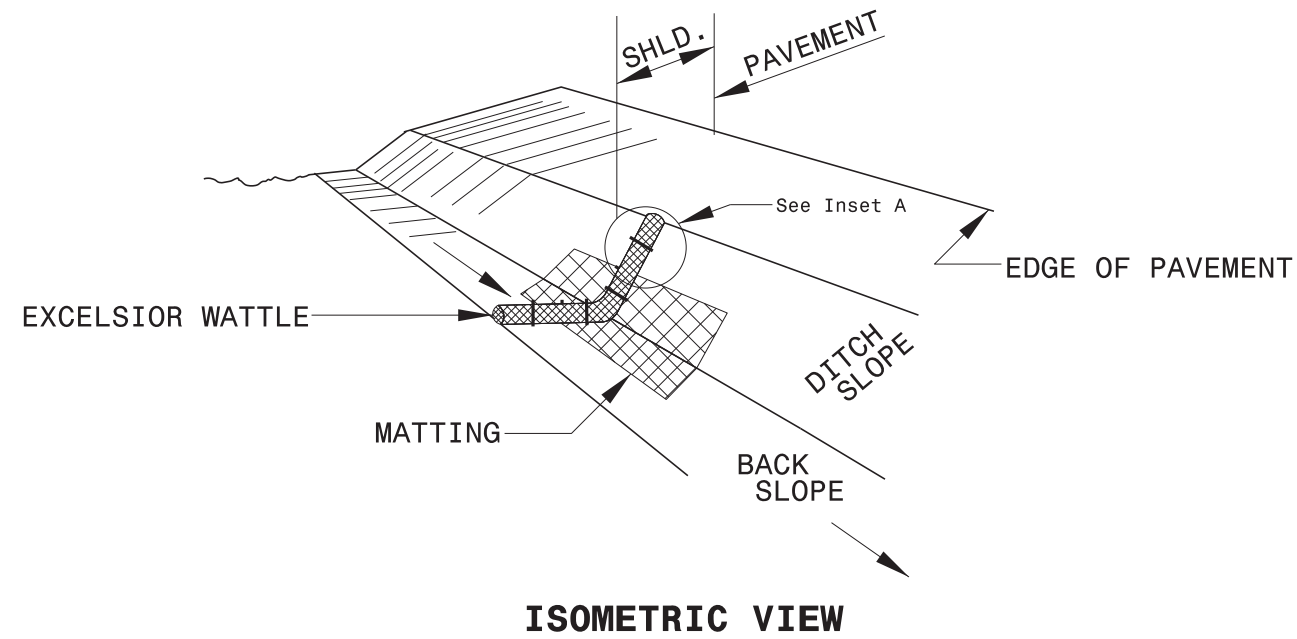
Roadway Standard Drawings

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

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

PROJECT REFERENCE NO. <i>U-5820A</i>	SHEET NO. <i>EC-2</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

WATTLE DETAIL



NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

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

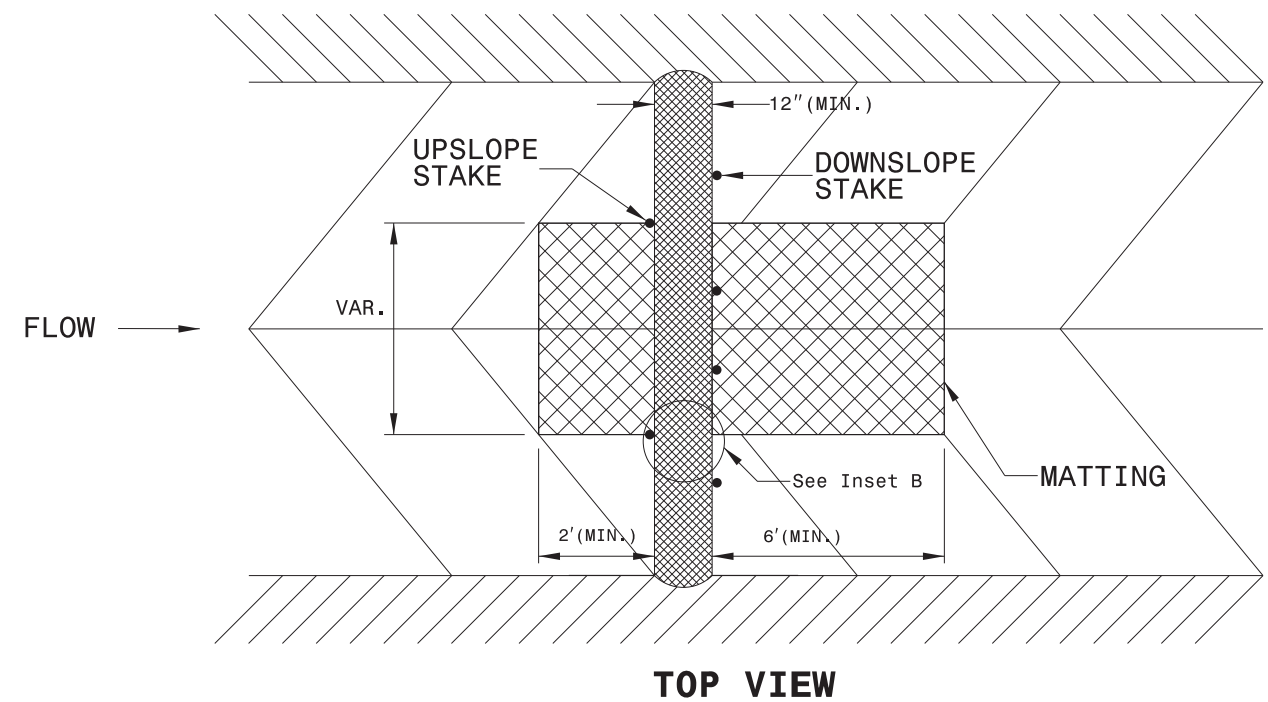
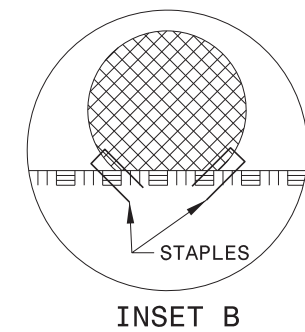
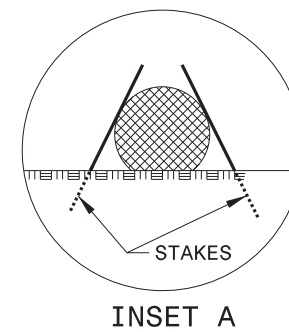
ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

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.

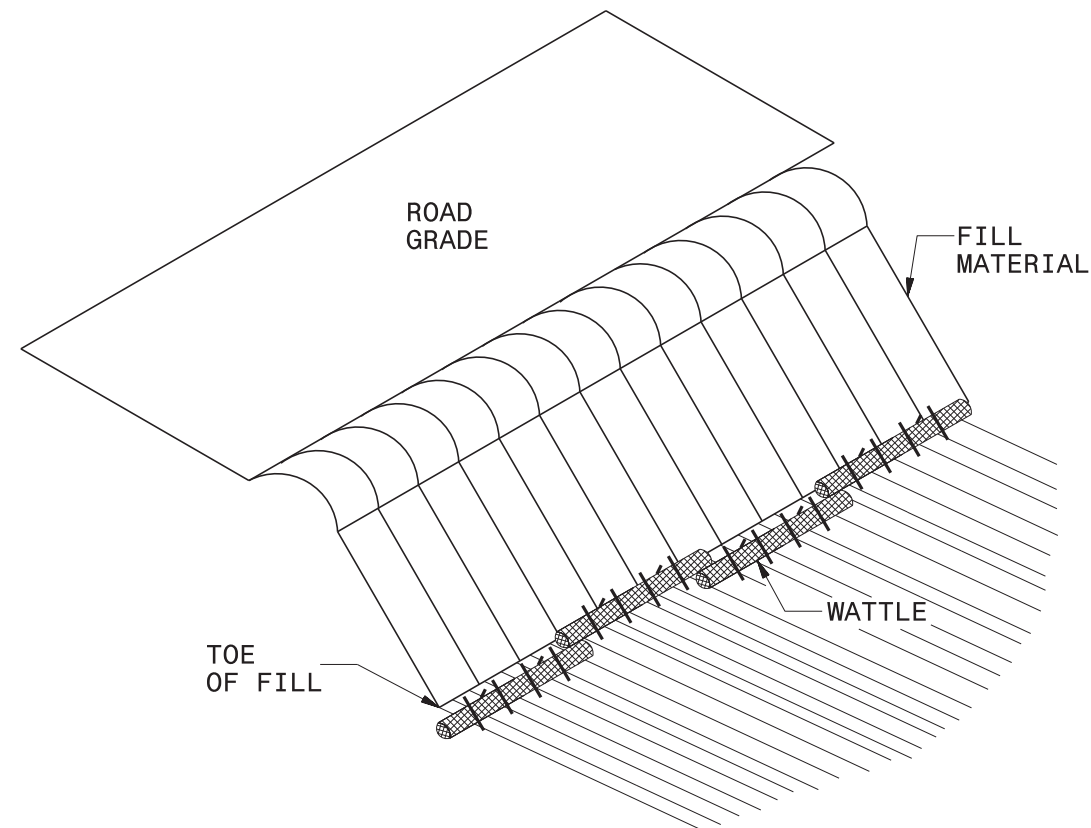
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

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

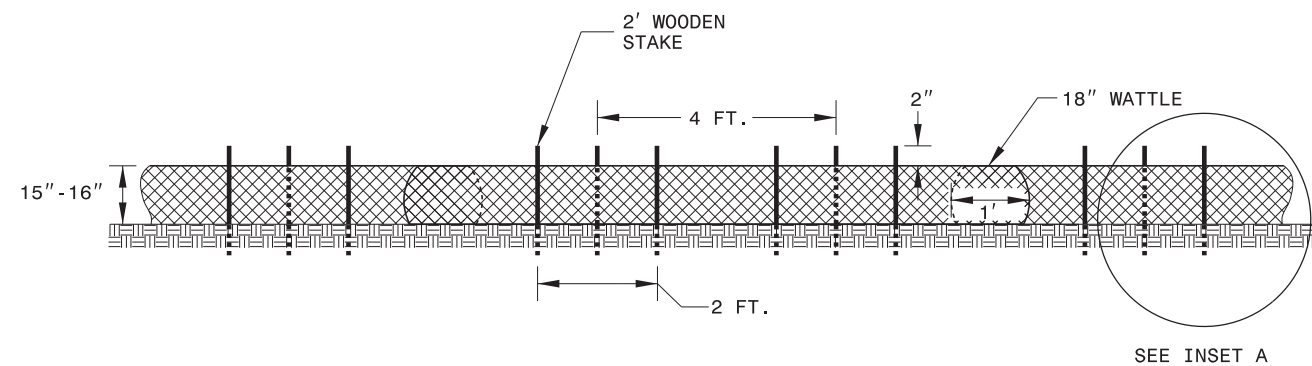


PROJECT REFERENCE NO. U-5820A	SHEET NO. EC-2A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

COIR FIBER WATTLE BARRIER DETAIL



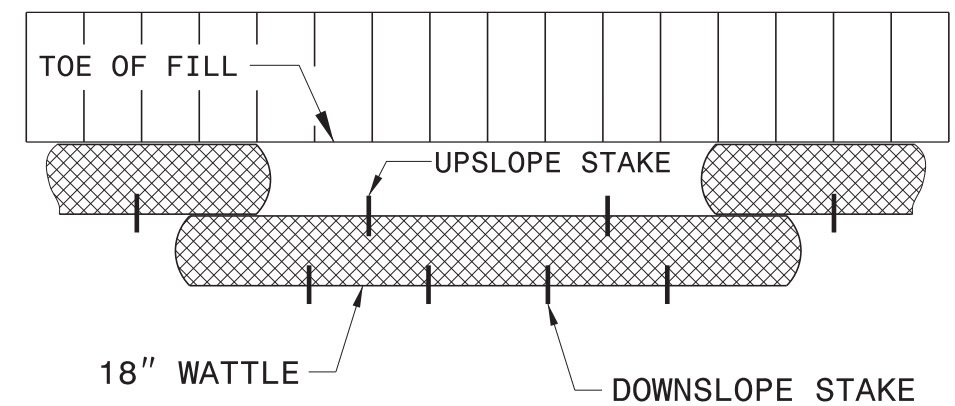
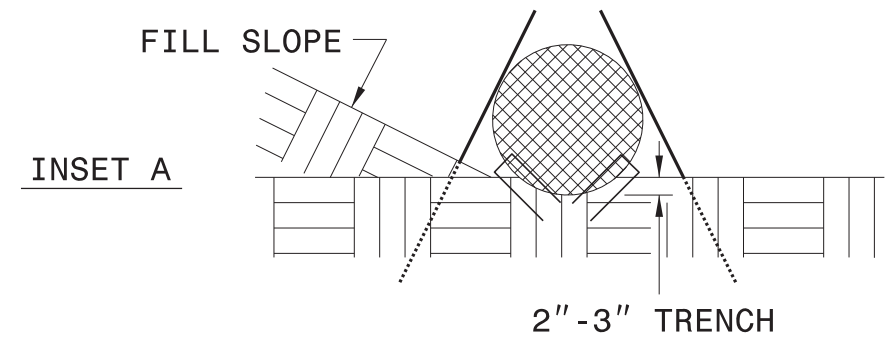
ISOMETRIC VIEW



FRONT VIEW

NOTES:

- USE MINIMUM 18 IN. NOMINAL DIAMETER COIR FIBER (COCONUT) WATTLE AND LENGTH OF 10 FT.
- EXCAVATE A 2 TO 3 INCH TRENCH FOR WATTLE TO BE PLACED.
- DO NOT PLACE WATTLES ON TOE OF SLOPE.
- USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.
- INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.
- 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.
- FOR BREAKS ALONG LARGE SLOPES, USE MAXIMUM SPACING OF 25 FT.




TOP VIEW

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO. <i>U-5820A</i>	SHEET NO. <i>EC-3</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

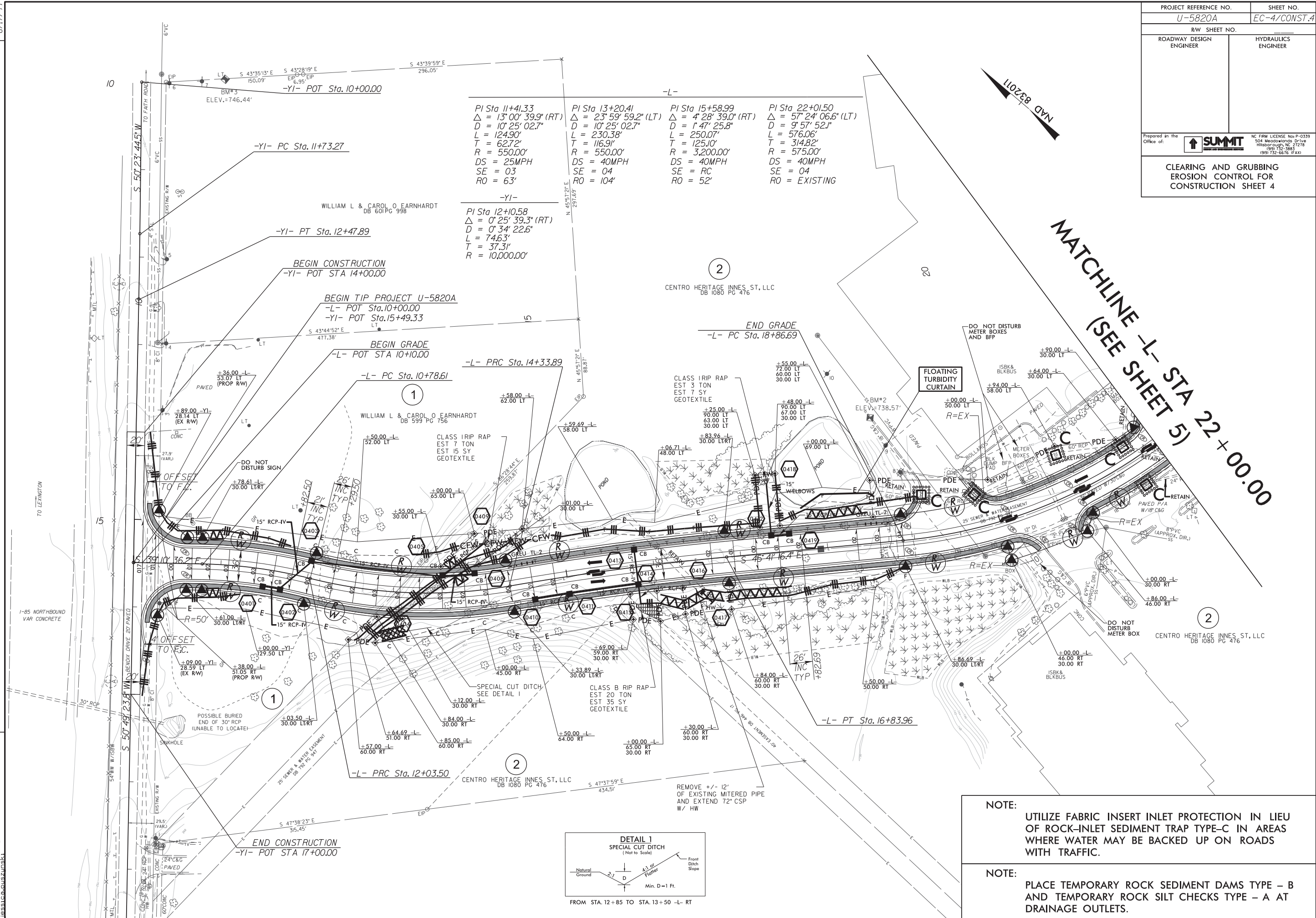
SOIL STABILIZATION TIMEFRAMES

<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.

PROJECT REFERENCE NO.	SHEET NO.
U-5820A	EC-4/CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
Prepared in the Office of: 	
NC FIRM LICENSE No: P-0339 504 Meadowslands Drive Hillsborough, NC 27278 (919) 732-3863 (919) 732-6676 (FAX)	
CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 4	

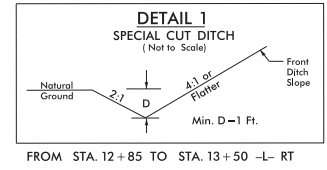
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REVISIONS



PI Sta 11+41.33 $\Delta = 13' 00'' 39.9''$ (RT) $D = 10' 25'' 02.7''$ $L = 124.90'$ $T = 62.72'$ $R = 550.00'$ $DS = 25$ MPH $SE = 03$ $RO = 63'$	PI Sta 13+20.41 $\Delta = 23' 59'' 59.2''$ (LT) $D = 10' 25'' 02.7''$ $L = 230.38'$ $T = 116.91'$ $R = 550.00'$ $DS = 40$ MPH $SE = 04$ $RO = 104'$	PI Sta 15+58.99 $\Delta = 4' 28'' 39.0''$ (RT) $D = 1' 47'' 25.8''$ $L = 250.07'$ $T = 125.10'$ $R = 3,200.00'$ $DS = 40$ MPH $SE = RC$ $RO = 52'$	PI Sta 22+01.50 $\Delta = 57' 24'' 06.6''$ (LT) $D = 9' 57'' 52.1''$ $L = 576.06'$ $T = 314.82'$ $R = 575.00'$ $DS = 40$ MPH $SE = 04$ $RO = EXISTING$
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-YI- PI Sta 12+05.8 $\Delta = 0' 25'' 39.3''$ (RT) $D = 0' 34'' 22.6''$ $L = 74.63'$ $T = 37.31'$ $R = 10,000.00'$
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NOTE: UTILIZE FABRIC INSERT INLET PROTECTION IN LIEU OF ROCK-INLET SEDIMENT TRAP TYPE-C IN AREAS WHERE WATER MAY BE BACKED UP ON ROADS WITH TRAFFIC.

NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

MATCHLINE -L- STA 22+00.00
(SEE SHEET 5)

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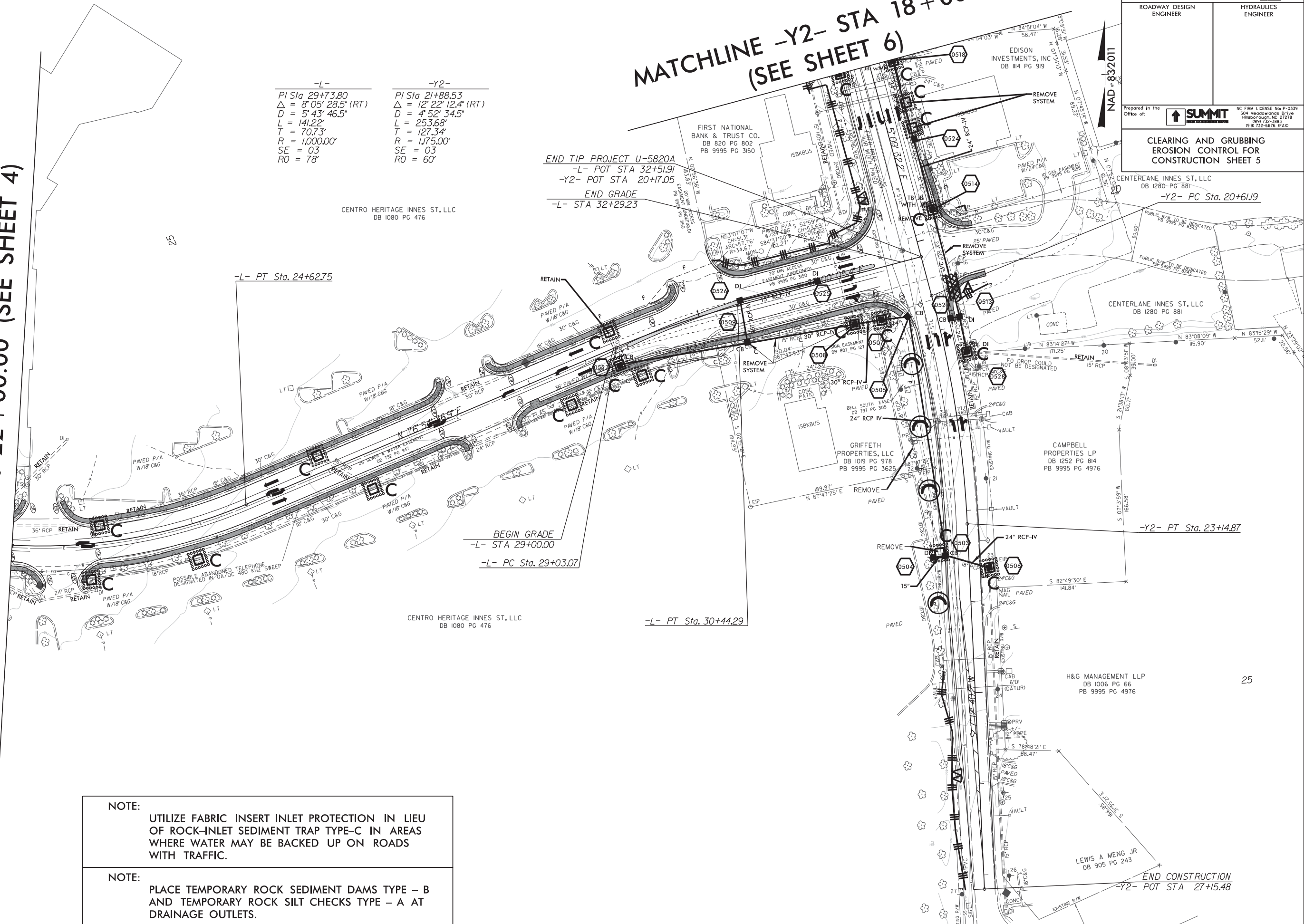
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RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
Prepared in the Office of: SUMMIT NC FIRM LICENSE No: P-0339 304 Meadowslands Drive Hillsborough, NC 27278 (919) 732-3868 (919) 732-6676 (FAX)			
CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 5			

MATCHLINE -Y2- STA 18+00.00
(SEE SHEET 6)

MATCHLINE -L- STA 22+00.00 (SEE SHEET 4)

-L-	-Y2-
PI Sta 29+73.80	PI Sta 21+88.53
$\Delta = 8^{\circ}05'28.5"$ (RT)	$\Delta = 12^{\circ}22'12.4"$ (RT)
D = 5'43'46.5"	D = 4'52'34.5"
L = 141.22'	L = 253.68'
T = 70.73'	T = 127.34'
R = 1,000.00'	R = 1,175.00'
SE = 03	SE = 03
RO = 78'	RO = 60'


END TIP PROJECT U-5820A
-L- POT STA 32+51.91
-Y2- POT STA 20+17.05
END GRADE
-L- STA 32+29.23



- NOTE:** UTILIZE FABRIC INSERT INLET PROTECTION IN LIEU OF ROCK-INLET SEDIMENT TRAP TYPE-C IN AREAS WHERE WATER MAY BE BACKED UP ON ROADS WITH TRAFFIC.
- NOTE:** PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

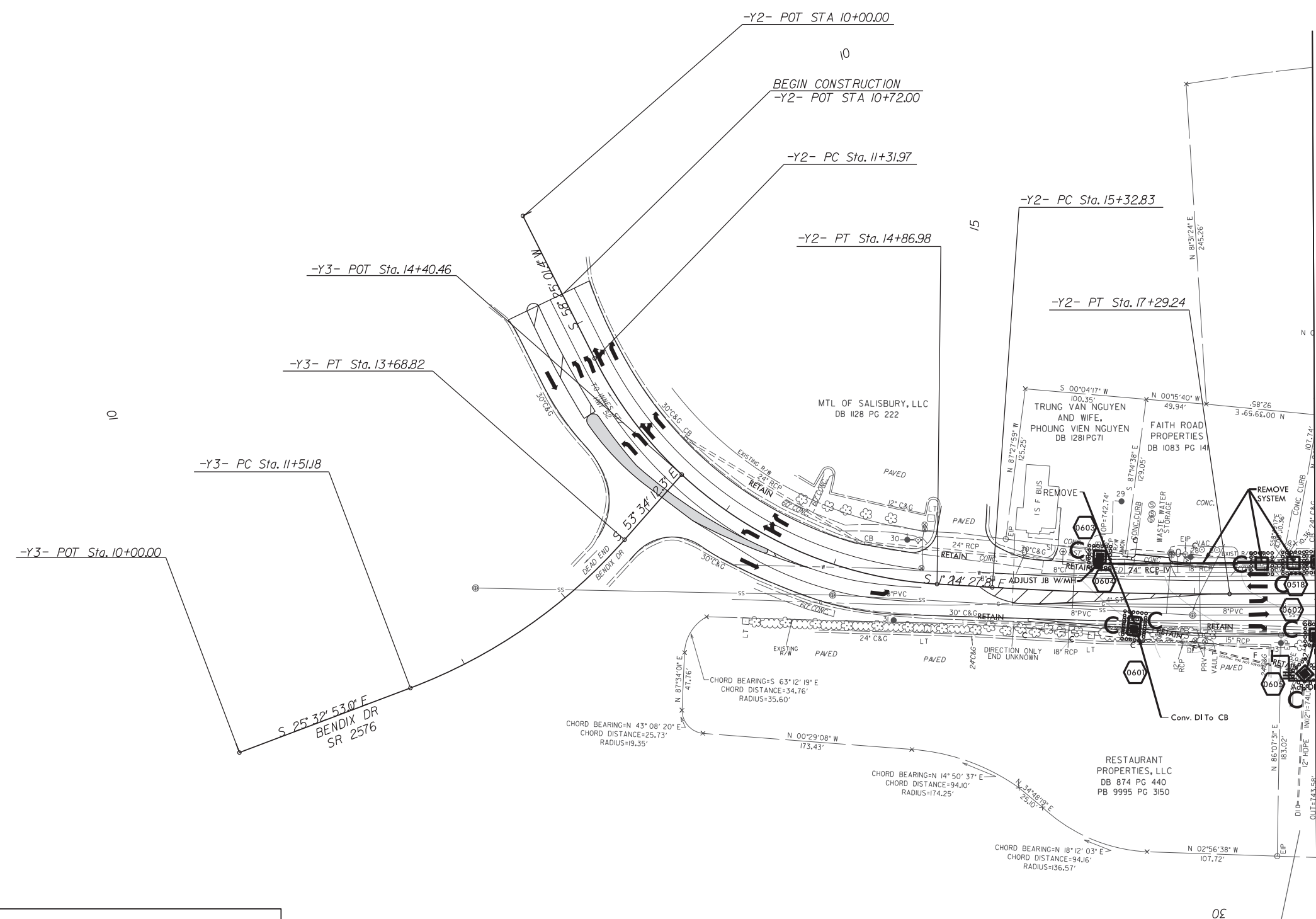
REVISIONS

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PROJECT REFERENCE NO.	SHEET NO.
U-5820A	EC-6/CONST.6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
Prepared in the Office of: 	
<small>NC FIRM LICENSE No. P-0339 504 Meadowslands Drive Hillsborough, NC 27278 (919) 732-3863 (919) 732-6676 (Fax)</small>	
CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 6	

8/17/99

-Y3-	-Y2-
PI Sta 12+62.22	PI Sta 13+27.58
$\Delta = 28^{\circ} 01' 19.3" (LT)$	$\Delta = 59^{\circ} 49' 29.2" (LT)$
D = 12' 52" 31.6"	D = 16' 51" 06.1"
L = 217.64'	L = 355.01'
T = 111.04'	T = 195.61'
R = 445.00'	R = 340.00'
SE = EXISTING	SE = EXISTING
RO = EXISTING	RO = EXISTING

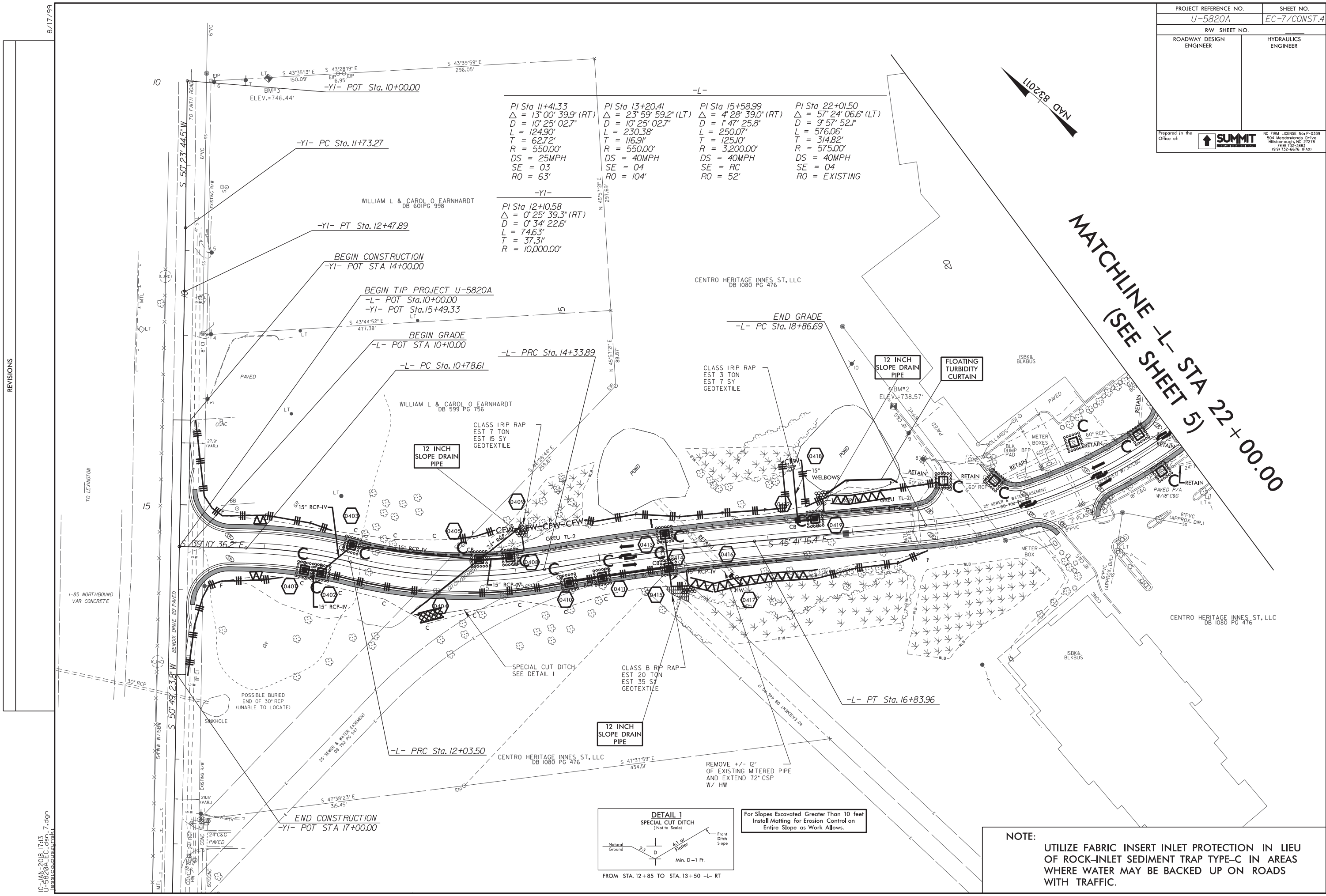


MATCHLINE -Y2- STA 18+00.00
 (SEE SHEET 5)

- NOTE:**
UTILIZE FABRIC INSERT INLET PROTECTION IN LIEU OF ROCK-INLET SEDIMENT TRAP TYPE-C IN AREAS WHERE WATER MAY BE BACKED UP ON ROADS WITH TRAFFIC.
- NOTE:**
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

REVISIONS

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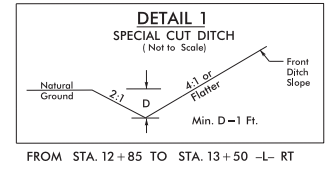


Station	Delta	Diameter	Length	Tangent	Radius	Design Speed	SE	RO
PI Sta 11+41.33	Δ = 13° 00' 39.9" (RT)	D = 10' 25" 02.7"	L = 124.90'	T = 62.72'	R = 550.00'	DS = 25MPH	SE = 03	RO = 63'
PI Sta 12+01.58	Δ = 0° 25' 39.3" (RT)	D = 0' 34" 22.6"	L = 74.63'	T = 37.31'	R = 10,000.00'			
PI Sta 13+20.41	Δ = 23° 59' 59.2" (LT)	D = 10' 25" 02.7"	L = 230.38'	T = 116.91'	R = 550.00'	DS = 40MPH	SE = 04	RO = 104'
PI Sta 15+58.99	Δ = 4° 28' 39.0" (RT)	D = 1' 47" 25.8"	L = 250.07'	T = 125.10'	R = 3,200.00'	DS = 40MPH	SE = RC	RO = 52'
PI Sta 22+01.50	Δ = 57° 24' 06.6" (LT)	D = 9' 57" 52.1"	L = 576.06'	T = 314.82'	R = 575.00'	DS = 40MPH	SE = 04	RO = EXISTING



MATCHLINE -L- STA 22+00.00
 (SEE SHEET 5)

REVISIONS




For Slopes Excavated Greater Than 10 feet
Install Matting for Erosion Control on
Entire Slope as Work Allows.

NOTE:
UTILIZE FABRIC INSERT INLET PROTECTION IN LIEU OF ROCK-INLET SEDIMENT TRAP TYPE-C IN AREAS WHERE WATER MAY BE BACKED UP ON ROADS WITH TRAFFIC.

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8/17/99

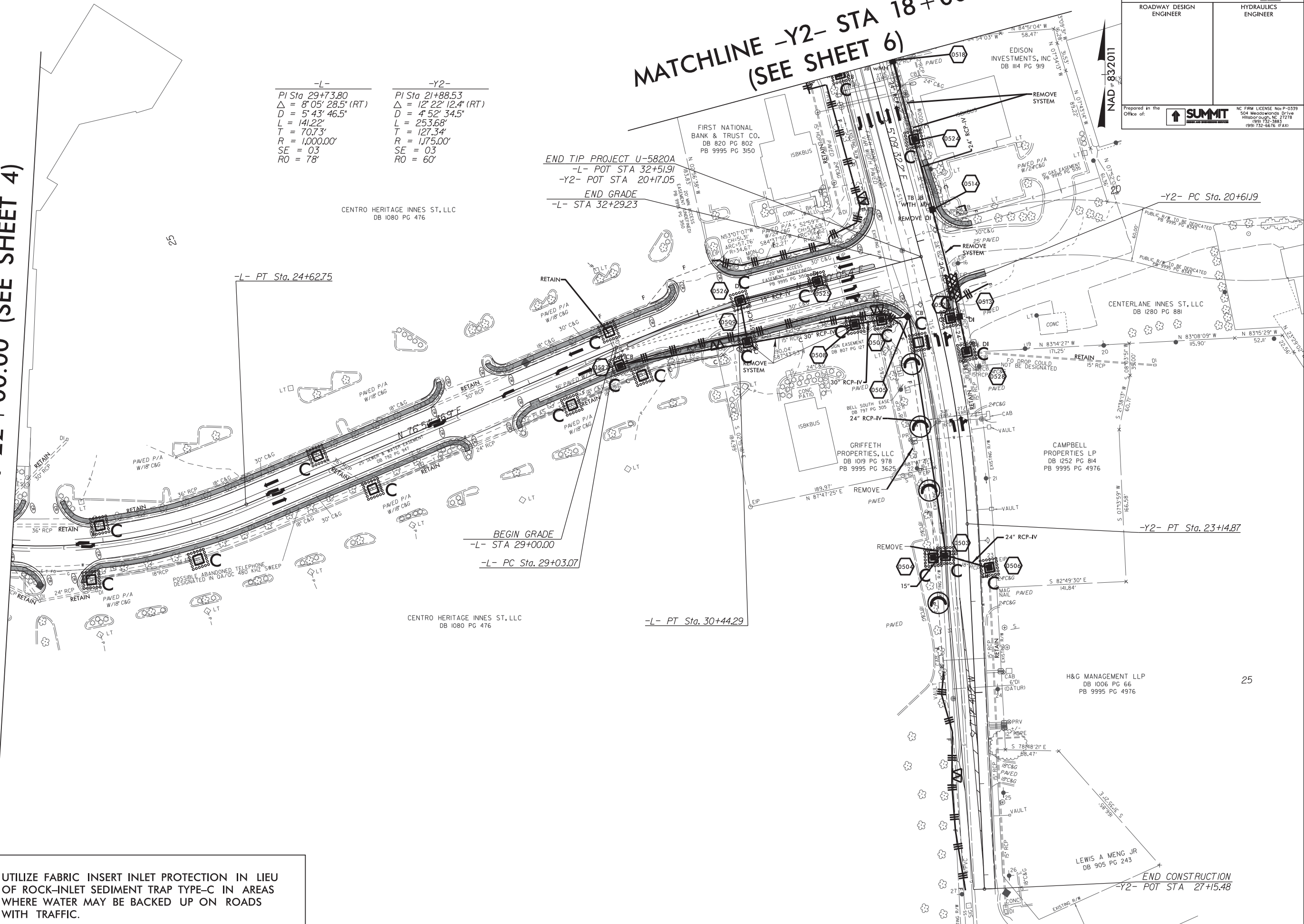
PROJECT REFERENCE NO.	SHEET NO.
U-5820A	EC-8/CONST.5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
Prepared in the Office of:	
	
<small>NC FIRM LICENSE No. P-0339 304 Meadowslands Drive Hillsborough, NC 27278 (919) 732-3868 (919) 732-6676 (FAX)</small>	

MATCHLINE -Y2- STA 18+00.00
(SEE SHEET 6)

-L-	-Y2-
PI Sta 29+73.80	PI Sta 21+88.53
$\Delta = 8^{\circ}05'28.5"$ (RT)	$\Delta = 12^{\circ}22'12.4"$ (RT)
D = 5'43'46.5"	D = 4'52'34.5"
L = 141.22'	L = 253.68'
T = 70.73'	T = 127.34'
R = 1,000.00'	R = 1,175.00'
SE = 03	SE = 03
RO = 78'	RO = 60'

MATCHLINE -L- STA 22+00.00 (SEE SHEET 4)


END TIP PROJECT U-5820A
-L- POT STA 32+51.91
-Y2- POT STA 20+17.05
END GRADE
-L- STA 32+29.23



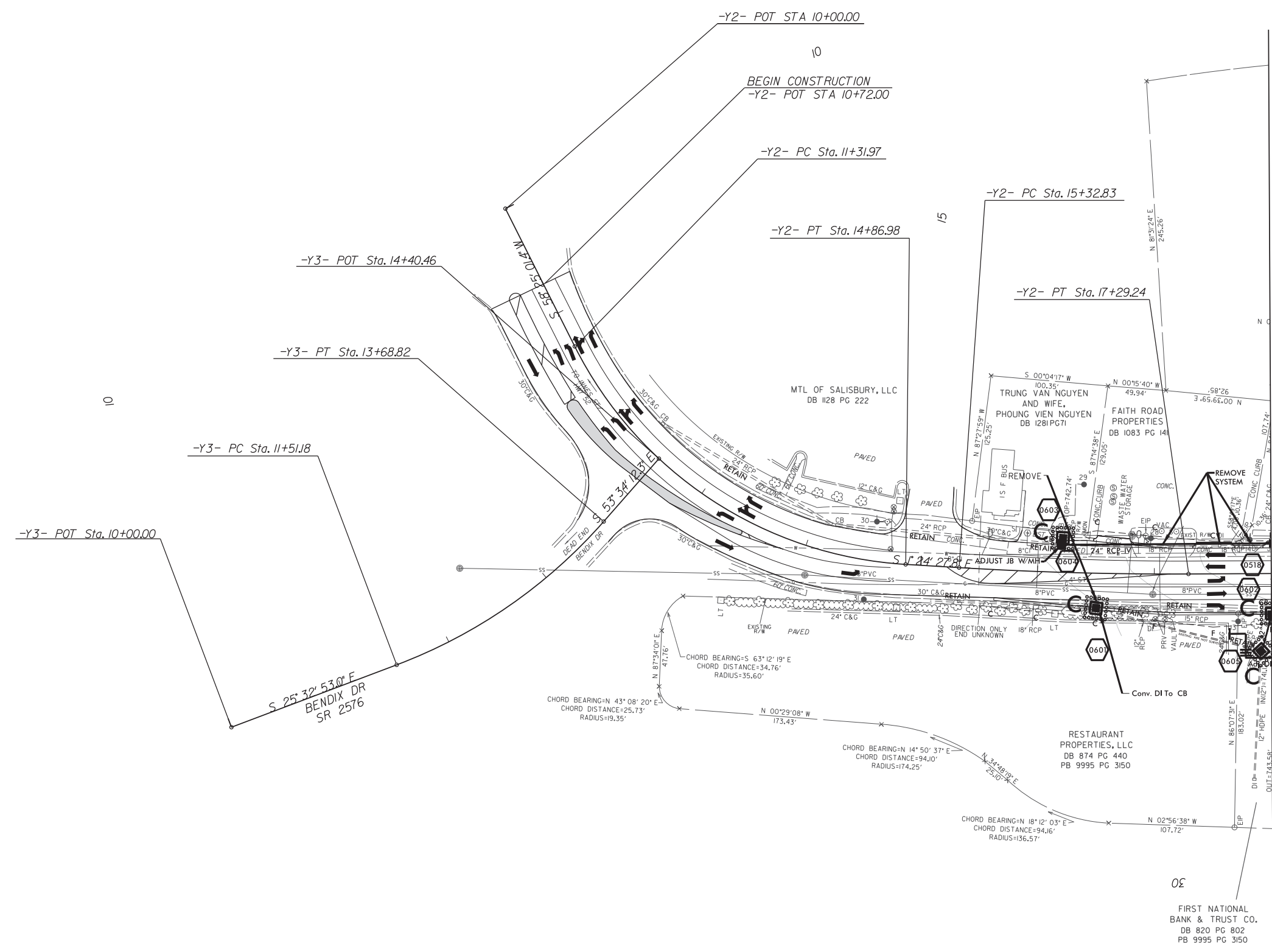
REVISIONS

NOTE:
UTILIZE FABRIC INSERT INLET PROTECTION IN LIEU OF ROCK-INLET SEDIMENT TRAP TYPE-C IN AREAS WHERE WATER MAY BE BACKED UP ON ROADS WITH TRAFFIC.

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PROJECT REFERENCE NO.	SHEET NO.
U-5820A	EC-9/CONST.6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
Prepared in the Office of: 	
<small>NC FIRM LICENSE No. P-0339 504 Meadows Road Hillsborough, NC 27278 (919) 732-3663 (919) 732-6676 (FAX)</small>	

<p>-Y3-</p> <p>PI Sta 12+62.22 $\Delta = 28^{\circ} 01' 19.3"$ (LT) D = 12' 52" 31.6" L = 217.64' T = 111.04' R = 445.00' SE = EXISTING RO = EXISTING</p>	<p>-Y2-</p> <p>PI Sta 13+27.58 $\Delta = 59^{\circ} 49' 29.2"$ (LT) D = 16' 51" 06.1" L = 355.01' T = 195.61' R = 340.00' SE = EXISTING RO = EXISTING</p>	<p>-Y2-</p> <p>PI Sta 16+31.07 $\Delta = 3^{\circ} 45' 04.4"$ (LT) D = 1' 54" 35.5" L = 196.41' T = 98.24' R = 3,000.00' SE = EXISTING RO = EXISTING</p>
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MATCHLINE -Y2- STA 18+00.00
(SEE SHEET 5)

NOTE:
 UTILIZE FABRIC INSERT INLET PROTECTION IN LIEU OF ROCK-INLET SEDIMENT TRAP TYPE-C IN AREAS WHERE WATER MAY BE BACKED UP ON ROADS WITH TRAFFIC.

REVISIONS

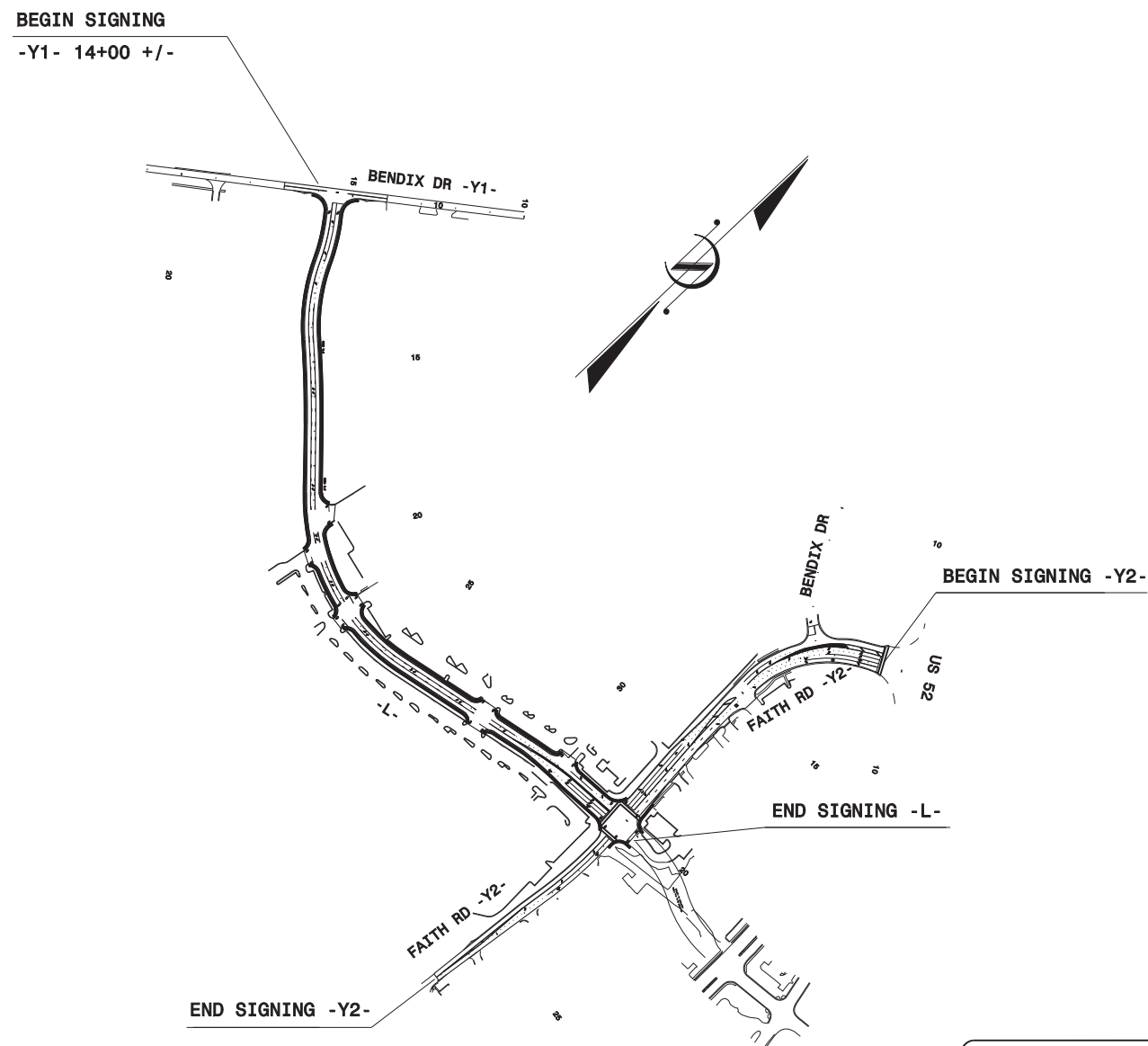
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**STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION**

**SIGNING PLAN
ROWAN COUNTY**

**LOCATION: NEW ROUTE FROM SR 2576 (BENDIX RD)
TO SR SR 1006 (FAITH RD) IN SALISBURY**

T.I.P.: U-5820A



INDEX

SHEET NO.	DESCRIPTION
SIGN-1A	TITLE SHEET
SIGN-1B	SUMMARY OF QUANTITIES, ROADWAY STANDARDS AND NOTES
SIGN-2	TYPE E AND F SIGNS
SIGN-3	SIGNING PLAN SHEET


PLAN PREPARED BY:

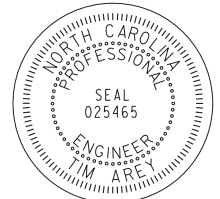
<u>Tim Arey, PE</u>	PROJECT ENGINEER
<u>Susan Kunz</u>	SIGNING PROJECT MANAGER
<u>Larry Ashley</u>	SIGNING DESIGN ENGINEER

Prepared in the Office of:

**PROGRESSIVE
DESIGN GROUP, INC.**

ENGINEERS • CONSULTANTS

APPROVED BY:  _____
DATE: 2/15/2018



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

GENERAL NOTES

- . SIGNS FURNISHED BY STATE
- . CONFIRM IN WRITING AT LEAST 4 MONTHS IN ADVANCE, THE ACTUAL DATE THE DEPARTMENT FURNISHED SIGNS WILL BE REQUIRED.
- . ALL TYPE 'D' SIGNS SHALL BE MOUNTED ON TWO U-CHANNEL POSTS UNLESS OTHERWISE INDICATED ON THE PLANS.
- . IF REMOVAL OR RELOCATION OF SIGNS ON PRIVATE STREET (NON-STATE MAINTAINED) IS REQUIRED DUE TO CONSTRUCTION, THE CONTRACTOR SHALL INFORM THE ENGINEER. THE WORK WILL BE COMPLETED BY OTHERS.
- . WHEN NOT STATIONED OR DIMENSIONED ON PLANS, ALL 'E' AND 'F' SIGNS SHALL BE FIELD LOCATED BY THE ENGINEER
- . WHEN EXISTING SIGNS ARE REMOVED AND INSTALLED ON NEW SUPPORTS, THE RE-ERECTION SHALL IMMEDIATELY FOLLOW THE REMOVAL.
- . THE BACKGROUND FOR TYPE E & F SIGNS SHALL BE TYPE C REFLECTIVE SHEETING.
- . SEE ROADWAY PLANS FOR GUARD/GUIDE RAIL DETAILS.

PROJECT NOTES

- 1 DISPOSE OF SIGN SYSTEM, U-CHANNEL
- 2 RELOCATE SIGN TYPE E SIGN
- 3 DISPOSE OF SUPPORT, U-CHANNEL

SUMMARY OF QUANTITIES


ITEM NO.		ITEM DESCRIPTION	QUANTITY	UNIT
DESC. NO.	SECT. NO.			
4072000000	903	SUPPORTS, 3 LB STEEL U-CHANNEL	620	L.F.
4102000000	904	SIGN ERECTION, TYPE E	21	EA.
4108000000	904	SIGN ERECTION, TYPE F	4	EA.
4116100000	904	SIGN ERECTION, RELOCATE SIGN TYPE E	8	EA.
4155000000	907	DISPOSAL OF SIGN SYSTEM, U-CHANNEL	3	EA.
4192000000	907	DISPOSAL OF SUPPORT, U-CHANNEL	8	EA.

ROADWAY STANDARD DRAWING

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

STD. NO.	TITLE
904.10	ORIENTATION OF GROUND MOUNTED SIGNS
904.50	MOUNTING OF TYPE 'D', 'E' AND 'F' SIGNS ON 'U' CHANNEL POSTS

401 QUANTITY REQ'D 10




R1-1
36" x 36"

MOUNT BELOW SIGN NO. 402
 IN 2 INSTALLATIONS
 (THESE 2 ON TWO "U" POSTS)

ONE "U" POST PER SIGN

405 QUANTITY REQ'D 2




R3-7
36" x 24"

ONE "U" POST PER SIGN

501 QUANTITY REQ'D 2

502




M4-5
1-24" x 12"

M1-4
1-24" x 24"

M6-1
1-21" x 15"

ONE "U" POST PER SIGN ASSEMBLY


402 QUANTITY REQ'D 2



R6-1 (R)
36" x 12"

ONE "U" POST PER SIGN


406 QUANTITY REQ'D 1



W14-2
36" x 36"

ONE "U" POST PER SIGN

503 QUANTITY REQ'D 1




M4-5
1-24" x 12"

M1-4
1-24" x 24"

M6-1
1-21" x 15"

ONE "U" POST PER SIGN ASSEMBLY

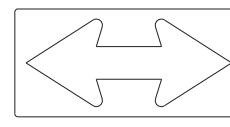
403 QUANTITY REQ'D 4



R4-7
24" x 30"

ONE "U" POST PER SIGN

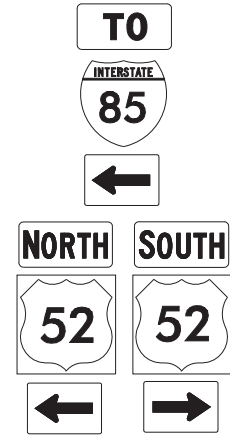
407 QUANTITY REQ'D 1



W1-7
48" x 24"

TWO "U" POSTS PER SIGN

504 QUANTITY REQ'D 1



M4-5
1-24" x 12"

M1-1
1-24" x 24"

M6-1
1-21" x 15"

M3-1
1-24" x 12"

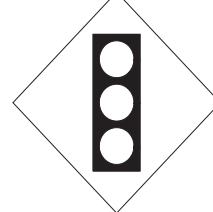
M3-3
1-24" x 12"

M1-4
2-24" x 24"

M6-1
2-21" x 15"

TWO "U" POSTS PER SIGN ASSEMBLY

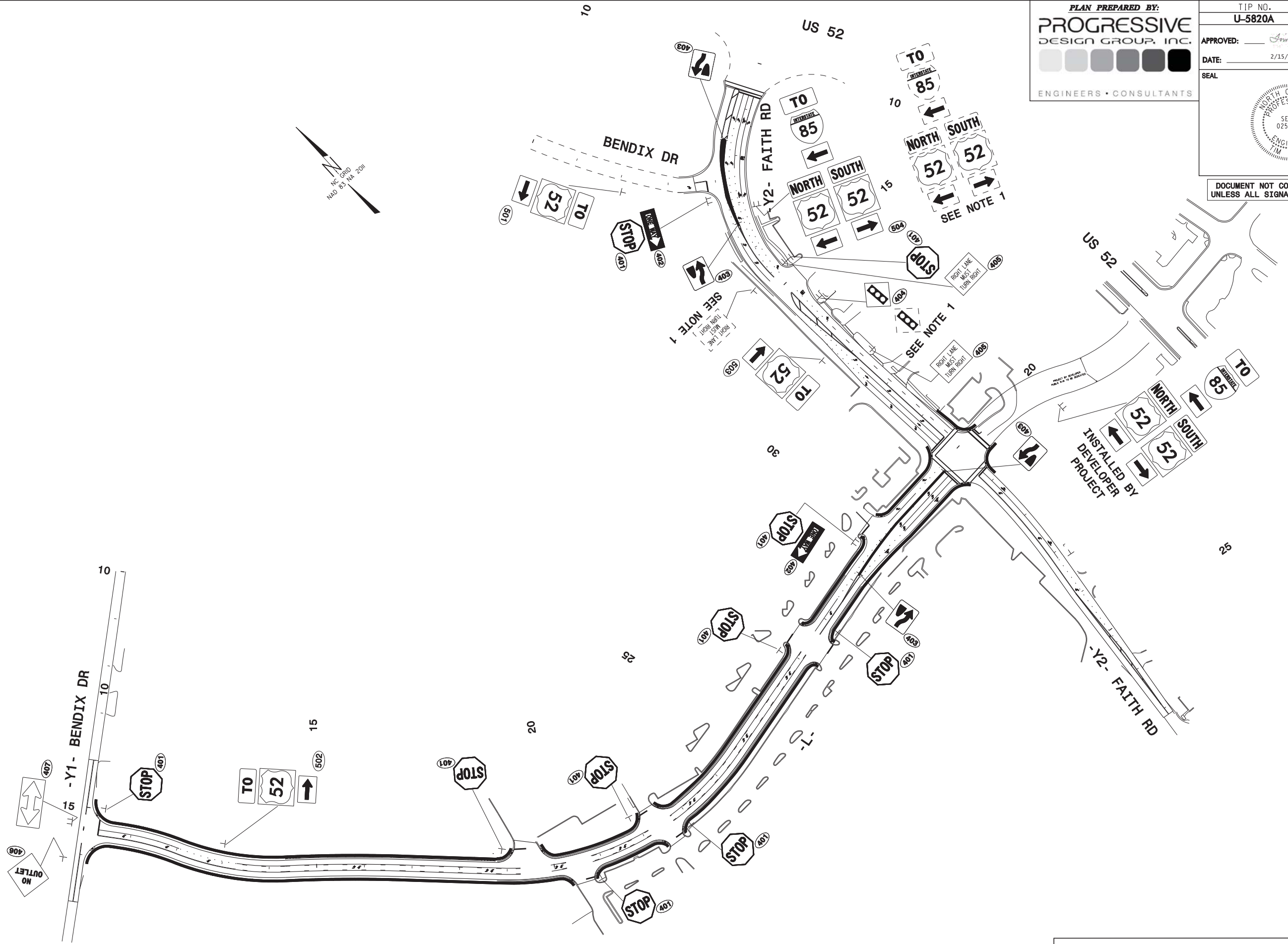
404 QUANTITY REQ'D 1



W3-3
36" x 36"

ONE "U" POST PER SIGN

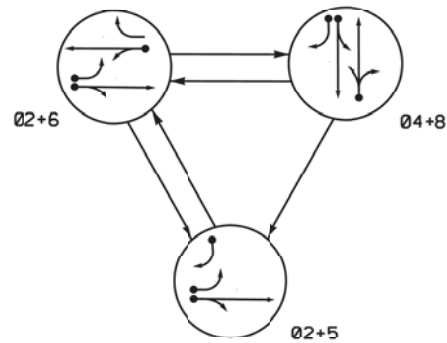
DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED



NOTE: RE-ERECT EXISTING BUS STOP SIGNS TO NEW "U" CHANNEL POSTS AT EXISTING STATION LOCATIONS. THESE SIGNS ARE NOT SHOWN ON PLANS. SEE NOTES 2 AND 3.

SIGNING PLANS

PHASING DIAGRAM



EV PREEMPT PHASES (Medium Priority)



TABLE OF OPERATION

SIGNAL FACE	PHASE				
	02+5	02+6	04+8	PRE 3	FLASH
21,22	G	G	R	G	Y
41	R	R	G	R	R
42	R	R	G	R	R
51	-	F	R	F	-
61,62	R	G	R	G	Y
81,82	R	R	G	R	R

OASIS 2070L LOOP & DETECTOR INSTALLATION CHART

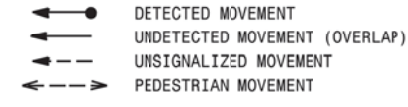
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	DETECTOR PROGRAMMING							
					PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
2A	6X6	70	4	Y	2	Y	Y	-	-	-	-	-
4A	6X40	0	2-4-2	Y	4	Y	Y	-	-	5	-	-
5A	6X40	0	2-4-2	Y	5	Y	Y	-	-	15	-	-
5B	6X40	0	2-4-2	Y	5	Y	Y	-	-	15	-	-
6A	6X5	70	EXIST	-	6	Y	Y	-	-	-	-	-
8A	6X40	+5	2-4-2	-	8	Y	Y	-	-	10	-	-

3 Phase Fully Actuated W/Emergency Vehicle Preemption Salisbury Signal System

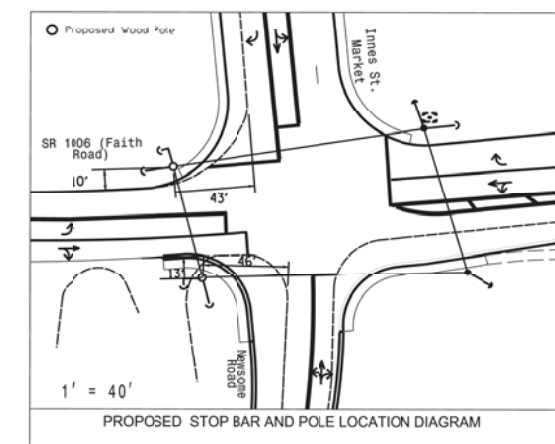
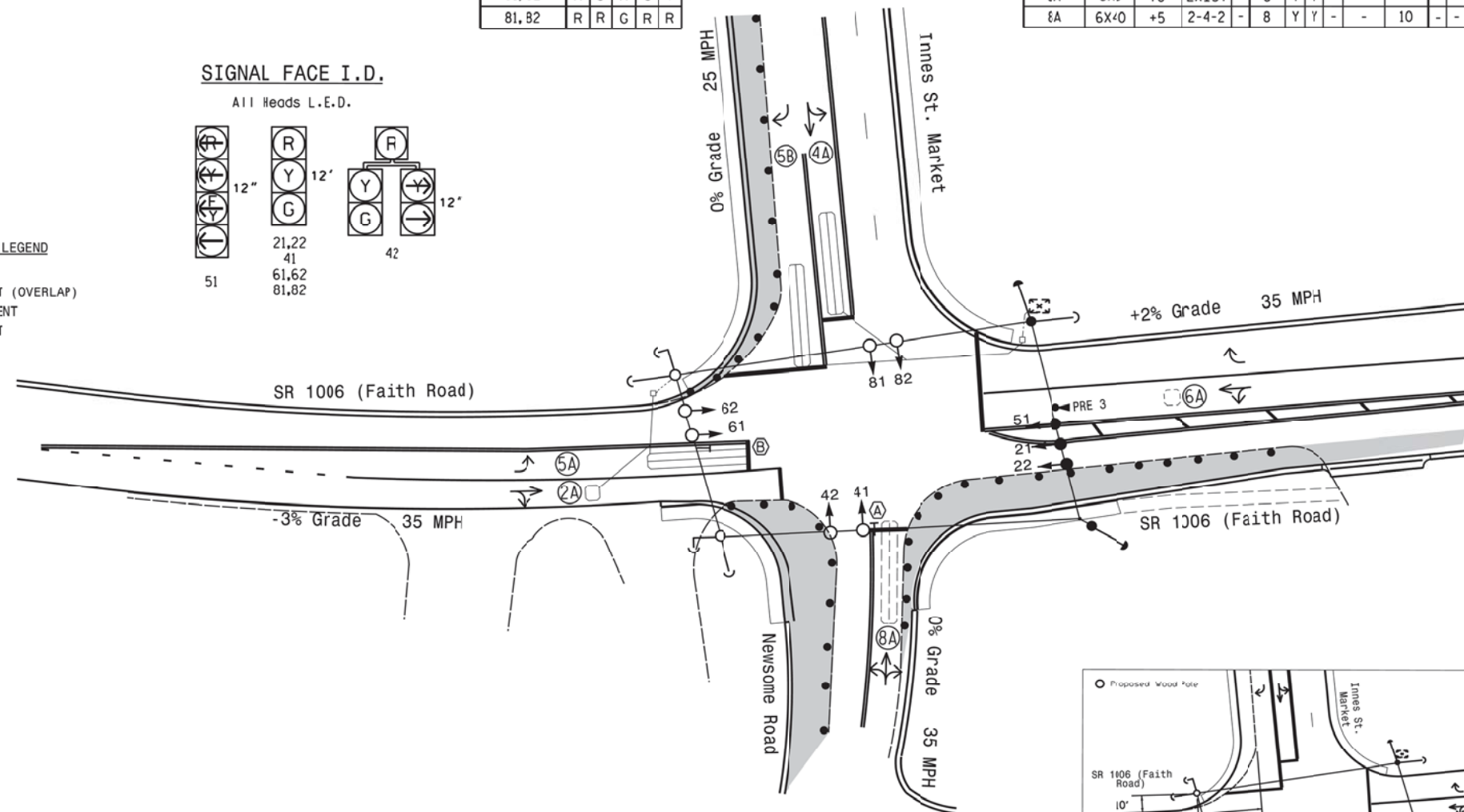
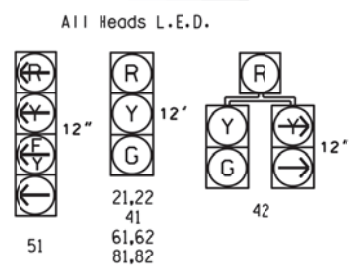
NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Enable Backup Protect for phase 2 to allow the controller to clear from phase 2+6 to phase 2+5 by progressing through an all red display.
- Set all detector units to presence mode.
- Pavement markings are existing.
- This intersection features an optical preemption system. Shown locations of optical detectors are conceptual only.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

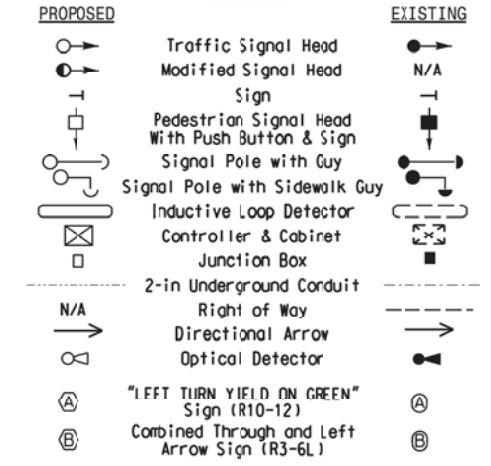
PHASING DIAGRAM DETECTION LEGEND



SIGNAL FACE I.D.



LEGEND



OASIS 2070L TIMING CHART

FEATURE	PHASE				
	2	4	5	6	8
Min Green 1 *	10	7	7	10	7
Extension 1 *	3.0	1.0	1.0	3.0	1.0
Max Green 1 *	45	20	15	45	20
Yellow Clearance	4.1	3.2	3.0	4.1	3.8
Red Clearance	1.5	2.8	2.1	1.5	1.6
Red Revert	5.0	2.0	2.0	2.0	2.0
Walk 1 *	-	-	-	-	-
Don't Walk 1	-	-	-	-	-
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

OASIS 2070L EV PREEMPTION

FUNCTION	PRE 3
Interval 1 - Dwell Green	255
Interval 1 - Dwell Yellow	0.0*
Interval 1 - Dwell Red	0.0*
Interval 5 - Exit Green	1
Interval 5 - Yellow	0.0
Interval 5 - Red	0.0
Exit Phase(s)	2+6
Priority	MED
Delay Time	0.0
Min Green Before Pre	1
Ped Clear Before Pre	0
Yellow Clear Before Pre	0.0*
Red Clear Before Pre	0.0*
Dwell Min Time	10
Dwell Max Time (Minutes)	2
Enable Backup Protection	N
Ped Clear Through Yellow	N
Omit Overlaps	-
Preempt Extend**	2

* 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.

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

Temporary Signal Design Signal Upgrade

Prepared in the Office of:

NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

SR 1006 (Faith Road) at Newsome Road/Innes St. Market

Division 9 Rowan County Salisbury

PLAN DATE: March 2018 REVIEWED BY: E. Sirgany

PREPARED BY: M. Parker REVIEWED BY:

REVISIONS: INIT. DATE

SCALE: 0 30 1" = 30'

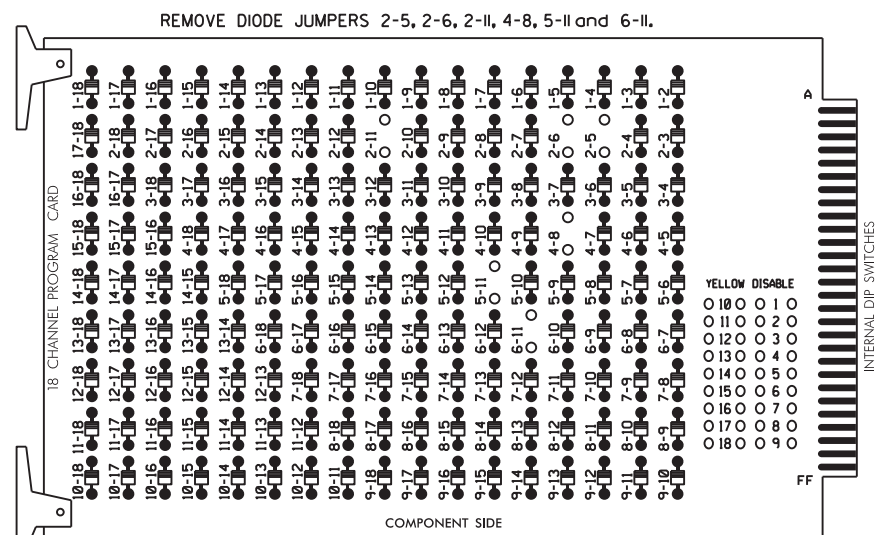
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Edward W. Sirgany 3/27/2018

SIG. INVENTORY NO. 09-1075T

EDI MODEL 2018ECL-NC CONFLICT MONITOR
PROGRAMMING DETAIL

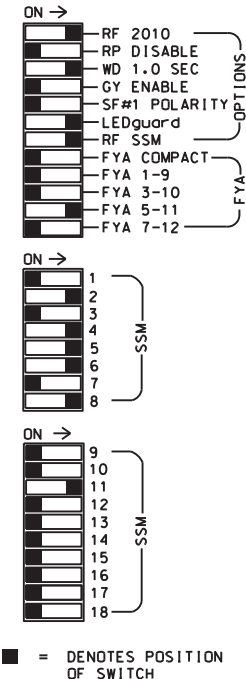
(remove jumpers and set switches as shown)



REMOVE JUMPERS AS SHOWN

NOTES:

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



■ = DENOTES POSITION OF SWITCH

NOTES

1. To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
2. Program phases 4 and 8 for Dual Entry.
3. Enable Simultaneous Gap-Out for all phases.
4. Program phases 2 and 6 for Start Up In Green.
5. Program phases 2 and 6 for Yellow Flash.
6. The cabinet and controller are part of the Salisbury 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.....S2,S5,S7,S8,S11,AUX S4
 PHASES USED.....2,4,5,6,8
 OVERLAP "A".....NOT USED
 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	OLB	SPARE	OLC	OLD	SPARE	
SIGNAL HEAD NO.	NU	21,22	NU	NU	41,42	NU	42	51*	61,62	NU	NU	81,82	NU	NU	NU	51*	NU	NU	
RED	128				101			*	134			107							
YELLOW	129				102				135			108							
GREEN	130				103				136			109							
RED ARROW																		A114	
YELLOW ARROW									132										A115
FLASHING YELLOW ARROW																			A116
GREEN ARROW									133	133									

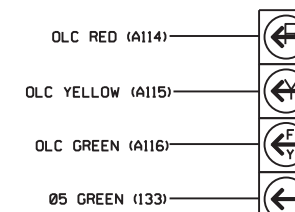
NU = Not Used

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

* See pictorial of head wiring in detail below.

4 SECTION FYA PPLT SIGNAL WIRING DETAIL

(wire signal heads as shown)



51

NOTE

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

BACKUP PROTECTION NOTE

(program controller as shown below)

From Main Menu press '2' (Phase Control), then '1' (Phase Control Functions). Program phase 2 for 'Backup Protect'. Make sure the Red Revert times shown on the Signal Design Plans are programmed in the 'Phase Timing' menu.

INPUT FILE POSITION LAYOUT

(front view)

FILE "I"	1	2	3	4	5	6	7	8	9	10	11	12	13	14
U	S	Ø 2	S	Ø 4	S	S	S	S	S	S	S	S	S	FS
L	DC ISOLATOR	2A	DC ISOLATOR	4A	DC ISOLATOR	DC ISOLATOR	DC ISOLATOR	DC ISOLATOR	DC ISOLATOR	DC ISOLATOR	DC ISOLATOR	DC ISOLATOR	DC ISOLATOR	DC ISOLATOR
U	Ø 5	Ø 5	Ø 6	S	S	Ø 8	S	S	S	S	PRE3	S	S	S
L	5A	5B	6A	DC ISOLATOR	DC ISOLATOR	8A	DC ISOLATOR	DC ISOLATOR	DC ISOLATOR	DC ISOLATOR	Opticom 2 Ch Card	DC ISOLATOR	DC ISOLATOR	DC ISOLATOR
	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED

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

FS = FLASH SENSE
 ST = STOP TIME
 PRE3 = EV PREEMPT

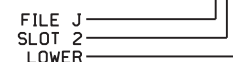
⊗ Wired Input - Do not populate slot with detector card

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
2A	TB2-5,6	I2U	39	1	2	2	Y	Y			
4A	TB4-9,10	I6U	41	3	4	4	Y	Y			5
5A ¹	TB3-1,2	J1U	55	17	5	5	Y	Y			15
	-	I4U	47	9	22	2	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			
8A	TB5-9,10	J6U	42	4	8	8	Y	Y			10

¹Add jumper from J1-W to I4-W, on rear of input file.

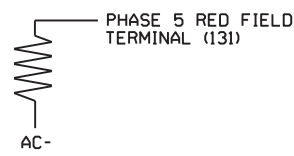
INPUT FILE POSITION LEGEND: J2L



LOAD RESISTOR INSTALLATION DETAIL

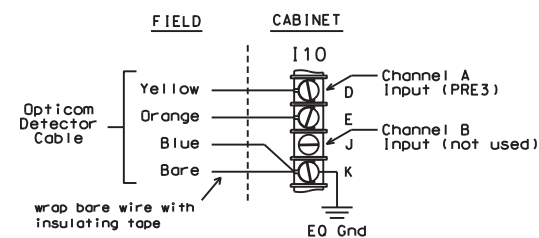
(install resistor as shown below)

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



TYPICAL OPTICOM FIELD WIRE DETAIL

(input file, rear view)



Temporary Signal Design
 Electrical Detail - Sheet 1 of 2

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Prepared in the Office of:



NC FIRM LICENSE No: P-0339
 504 Meadowlands Drive
 Hillsborough, NC 27278
 (919) 732-3883
 (919) 732-6676 (FAX)

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:



750 N. Greenfield Pkwy, Garner, NC 27529

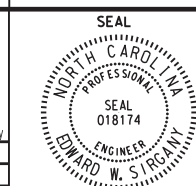
SR 1006 (Faith Road)
 at
 Newsome Road/Innes St. Market

Division 9 Rowan County Salisbury

PLAN DATE: March 2018 REVIEWED BY: E. Sirgany

PREPARED BY: J. Smith REVIEWED BY:

REVISIONS INIT. DATE



Designed by: Edward W. Sirgany 1/27/2018
 DATE
 SIG. INVENTORY NO. 09-1075T

*****SYSTEM *****
 ********** *****
 ********** *****

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

LOGICAL I/O COMMAND #1 (+/-COMMAND#)
IF ACTIVE PHASE #5 IS ON
AND RED CLEAR ON PHASE #5 IS ON

↓
SCROLL DOWN

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

PRESS '+'

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

LOGICAL I/O COMMAND #2 (+/-COMMAND#)
IF ACTIVE PHASE #5 IS ON

↓
SCROLL DOWN

THEN:
SET OUTPUT ASSIGNMENT #44 OFF

PRESS '+'

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

LOGICAL I/O COMMAND #3 (+/-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

**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 Preempt 3.

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
 RED CLEAR BEFORE PRE (0= DEFAULT)....0
 DWELL MIN TIMER (0-255 SEC)10
 DWELL MAX TIMER (0=OFF,1-255MIN) ...2
 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: ABCDEFGHIJKLMNPO
 DWELL INT FLASH YELLOW
 OMIT OVERLAPS:

PROGRAMMING COMPLETE

Program extend time on optical detector unit for 2.0 seconds.

OVERLAP PROGRAMMING DETAIL

(program controller as shown below)

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

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

OVERLAP PROGRAMMING COMPLETE

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 09-1075T
 DESIGNED: March 2018
 SEALED: March 27, 2018
 REVISED: N/A

Temporary Signal Design
 Electrical Detail - Sheet 2 of 2

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ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared in the Office of:



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750 N. Greenfield Pkwy, Garner, NC 27529

SR 1006 (Faith Road)
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Division 9 Rowan County Salsbury
 PLAN DATE: March 2018 REVIEWED BY: E. Sirgany
 PREPARED BY: J. Smith REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL
 NORTH CAROLINA
 PROFESSIONAL ENGINEER
 SEAL
 018174
 EDWARD W. SIRGANI
 Date: 3/27/2018
 Sig. Inventory No. 09-1075T

\$\$\$\$\$SYTIME\$\$\$\$\$
 \$\$\$DOCS\$\$\$\$\$
 \$\$\$USERNAME\$\$\$\$\$

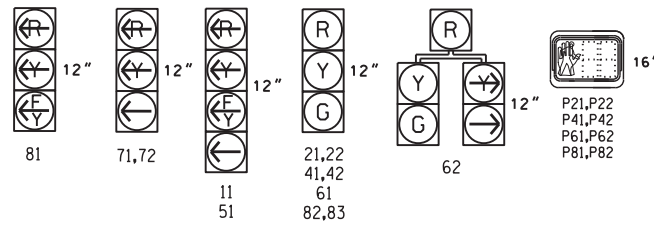
OASIS 2070L EV PREEMPTION

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	4+8
Priority	MED	MED
Delay Time	0.0	0.0
Min Green Before Pre	1	1
Ped Clear Before Pre	10	10
Yellow Clear Before Pre	0.0*	0.0*
Red Clear Before Pre	0.0*	0.0*
Dwell Min Time	7	7
Dwell Max Time (Minutes)	2	2
Enable Backup Protection	N	N
Ped Clear Through Yellow	Y	Y
Omit Overlaps	-	-
Preempt Extend**	2	2

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

SIGNAL FACE I.D.

All Heads L.E.D.



OASIS 2070L LOOP & DETECTOR INSTALLATION CHART

LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	DETECTOR PROGRAMMING					SYSTEM LOOP	NEW CARD	
					PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME			DELAY TIME
1A	6X40	0	2-4-2	Y	1	Y	Y	-	-	*15	-	Y
2A	6X6	70	4	Y	2	Y	Y	-	-	-	-	Y
4A	6X40	0	2-4-2	Y	4	Y	Y	-	-	-	-	Y
5A	6X40	0	2-4-2	Y	5	Y	Y	-	-	*15	-	Y
6A	6X6	70	4	Y	6	Y	Y	-	-	-	-	Y
7A	6X40	0	2-4-2	Y	7	Y	Y	-	-	-	3	Y
7B	6X40	0	2-4-2	Y	7	Y	Y	-	-	-	-	Y
8A	6X40	0	2-4-2	Y	8	Y	Y	-	-	-	3	Y
8B	6X40	0	2-4-2	Y	8	Y	Y	-	-	-	10	Y

* Disable delay during Alternate Phasing Operation.
 ** Disable Phase call for loop(s) during Alternate Phasing Operation.

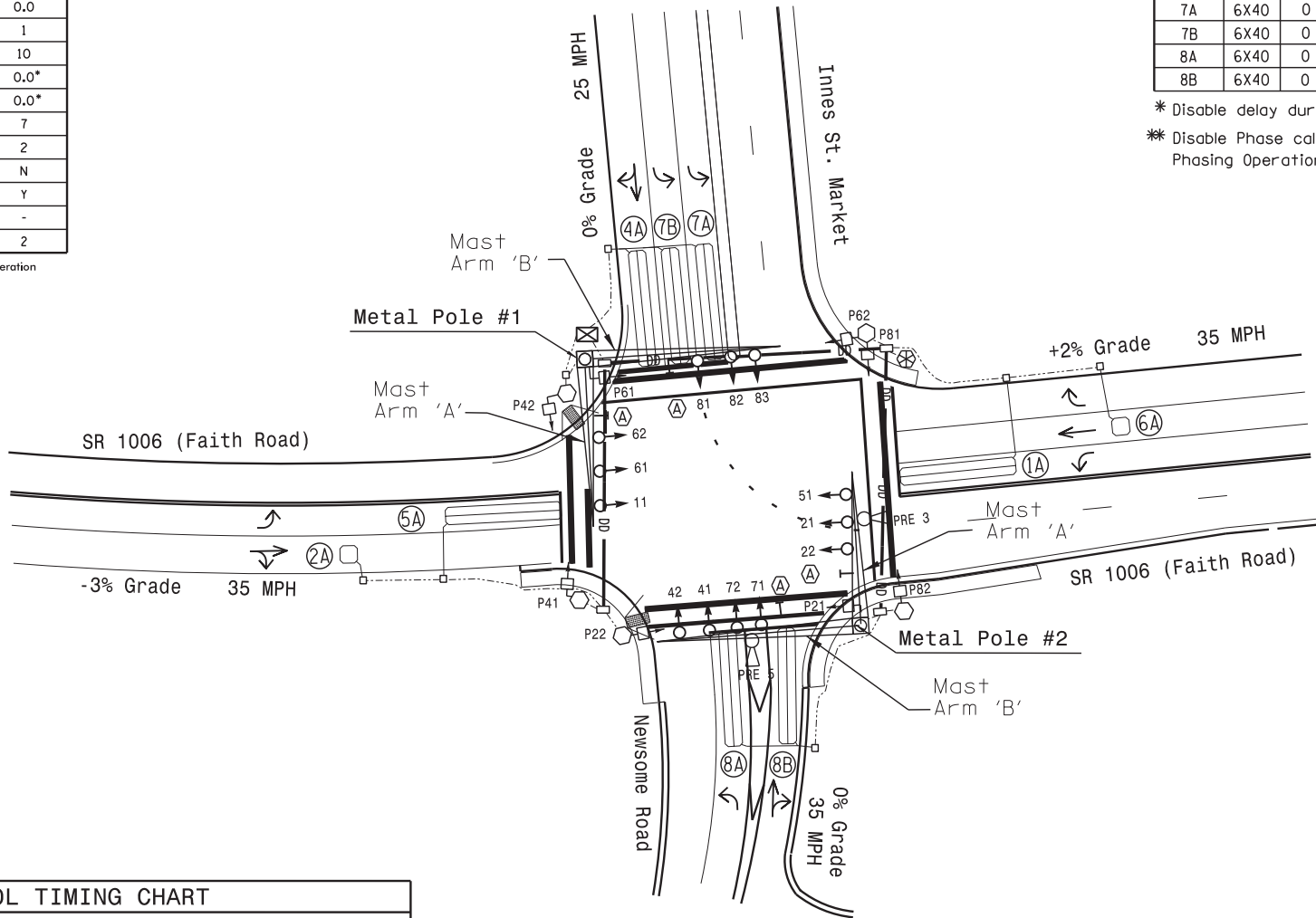
6 Phase Fully Actuated
 W/Emergency Vehicle Preemption
 Salisbury Signal System

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- 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.
- 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.
- This intersection features an optical preemption system. Shown locations of optical detectors are conceptual only.
- The Division (City) 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.

LEGEND

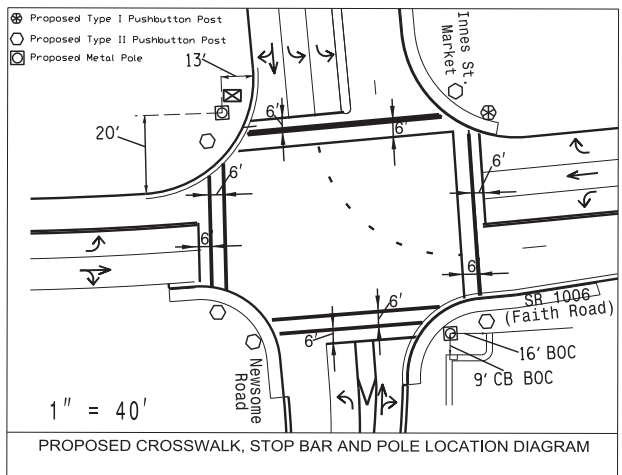
PROPOSED	EXISTING
○ → Traffic Signal Head	● → N/A
⦿ → Modified Signal Head	- Sign
⌋ Pedestrian Signal Head With Push Button & Sign	⌋
⊠ Inductive Loop Detector	⊠
⊞ Controller & Cabinet	⊞
⊟ Junction Box	⊟
⊠ Oversize Junction Box	⊠
--- 2-in Underground Conduit	---
--- Directional Drill	N/A
N/A Right of Way	---
→ Directional Arrow	→
⊗ Optical Detector	⊗
⊞ Metal Pole with Mastarm	⊞
⊞ Type I Pushbutton Post	⊞
○ Type II Signal Pedestal	○
N/A Curb Ramp	⌋
⊞ Street Name Sign (D3-1)	⊞



OASIS 2070L TIMING CHART

FEATURE	PHASE							
	1	2	4	5	6	7	8	
Min Green 1*	7	10	7	7	10	7	7	
Extension 1*	1.0	3.0	1.0	1.0	3.0	1.0	1.0	
Max Green 1*	15	45	20	15	45	15	20	
Yellow Clearance	3.0	4.1	3.8	3.0	4.1	3.0	3.8	
Red Clearance	2.9	2.2	2.4	2.8	2.2	3.5	2.4	
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Walk 1*	-	7	7	-	7	-	7	
Don't Walk 1	-	16	13	-	23	-	18	
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	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.

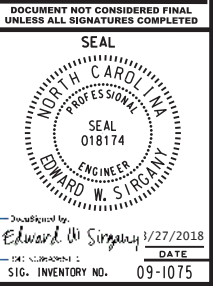


Final Signal Design
 Signal Upgrade - Sheet 1 of 2

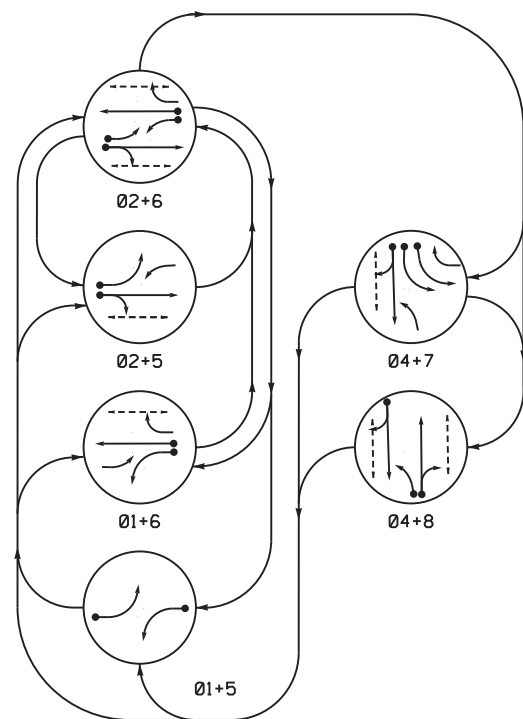
Prepared in the Office of:
SUMMIT
 DESIGN AND ENGINEERING SERVICES
 NC FIRM LICENSE No: P-0339
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 Hillsborough, NC 27278
 (919) 732-3883
 (919) 732-6676 (FAX)

Prepared for the Offices of:
 Transportation Mobility and Safety Division
 DEPARTMENT OF TRANSPORTATION
 Signal Design Section
 750 N. Greenfield Hwy, Garner, NC 27529

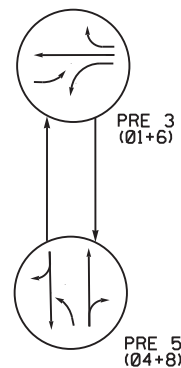
SR 1006 (Faith Road) at Newsome Road/Innes St. Market	Division 9 Rowan County Salisbury
PLN DATE: January 2018	REVIEWED BY: E. Sirgany
PREPARED BY: M. Parker	REVIEWED BY:
REVISIONS	INIT. DATE



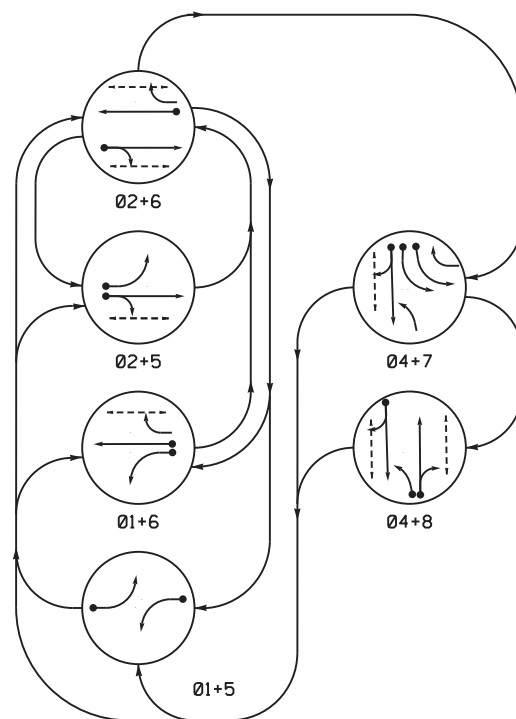
DEFAULT PHASING DIAGRAM



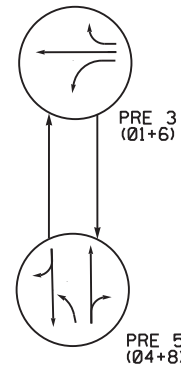
DEFAULT EV PREEMPT PHASES
(Medium Priority)



ALTERNATE PHASING DIAGRAM



ALTERNATE EV PREEMPT PHASES
(Medium Priority)



PHASING DIAGRAM DETECTION LEGEND

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

PHASING DIAGRAM DETECTION LEGEND

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

6 Phase Fully Actuated W/Emergency Vehicle Preemption Salisbury Signal System

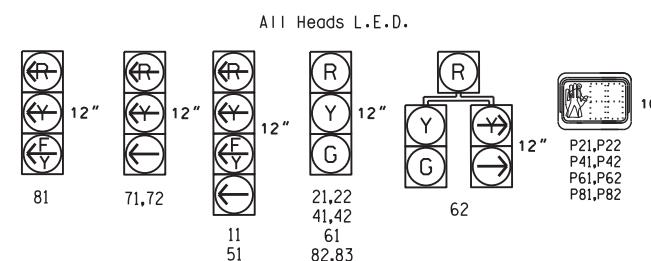
NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 1 and/or Phase 5 may be lagged.
4. Set all detector units to presence mode.
5. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
6. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
7. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
8. Pedestrian pedestals are conceptual and shown for reference only. See sheets P1-P3 for pushbutton location details.
9. This intersection features an optical preemption system. Shown locations of optical detectors are conceptual only.
10. The Division (City) Traffic Engineer will determine the hours of use for each phasing plan.
11. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

DEFAULT PHASING TABLE OF OPERATION									
SIGNAL FACE	PHASE								
	01+5	01+6	02+5	02+6	04+7	04+8	PRE 3	PRE 5	FLASH
11	---	---	F	F	R	R	---	---	Y
21,22	R	R	G	G	R	R	R	R	Y
41,42	R	R	R	R	G	G	R	R	R
51	---	F	---	F	R	R	F	R	Y
61	R	G	R	G	R	R	G	R	Y
62	R	G	R	G	R	R	R	R	Y
71,72	R	R	R	R	---	---	R	R	R
81	R	R	R	R	F	F	R	R	R
82,83	R	R	R	R	R	R	G	R	R
P21,P22	DW	DW	W	W	DW	DW	DW	DW	DRK
P41,P42	DW	DW	DW	DW	W	W	DW	DW	DRK
P61,P62	DW	W	DW	W	DW	DW	DW	DW	DRK
P81,P82	DW	DW	DW	DW	W	W	DW	DW	DRK

ALTERNATE PHASING TABLE OF OPERATION									
SIGNAL FACE	PHASE								
	01+5	01+6	02+5	02+6	04+7	04+8	PRE 3	PRE 5	FLASH
11	---	---	R	R	R	R	---	---	Y
21,22	R	R	G	G	R	R	R	R	Y
41,42	R	R	R	R	G	G	R	R	R
51	---	R	---	R	R	R	R	R	Y
61	R	G	R	G	R	R	G	R	Y
62	R	G	R	G	R	R	R	R	Y
71,72	R	R	R	R	---	---	R	R	R
81	R	R	R	R	F	F	R	R	R
82,83	R	R	R	R	R	R	G	R	R
P21,P22	DW	DW	W	W	DW	DW	DW	DW	DRK
P41,P42	DW	DW	DW	DW	W	W	DW	DW	DRK
P61,P62	DW	W	DW	W	DW	DW	DW	DW	DRK
P81,P82	DW	DW	DW	DW	W	W	DW	DW	DRK

SIGNAL FACE I.D.

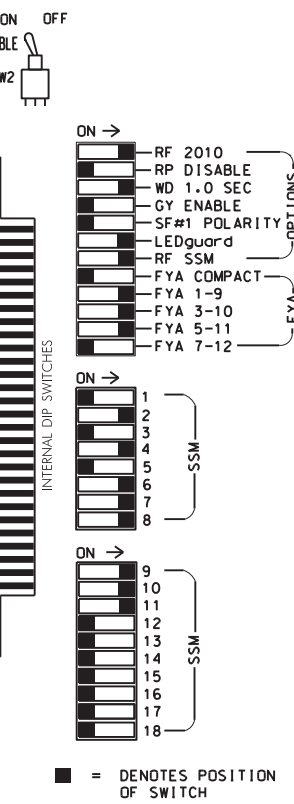
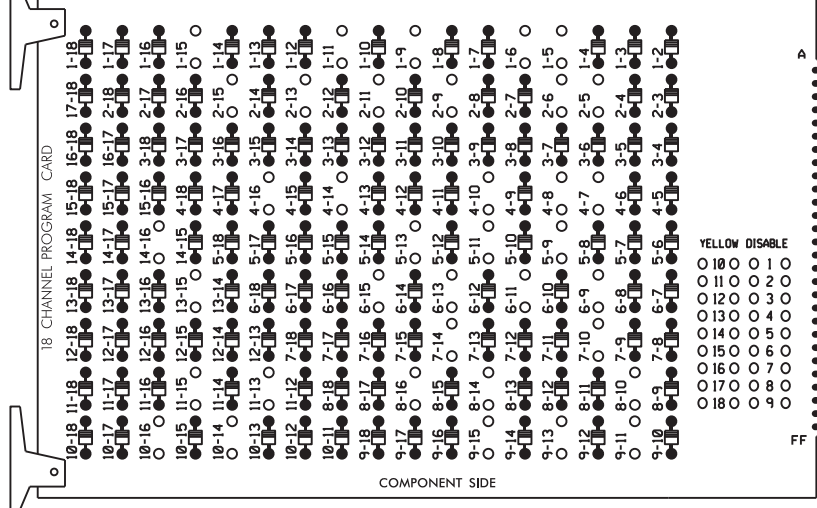


Final Signal Design
Signal Upgrade - Sheet 2 of 2

Prepared in the Office of: NC FIRM LICENSE No: P-0339 504 Meadowlands Drive Hillsborough, NC 27278 (919) 732-3883 (919) 732-6676 (FAX)	Prepared for the Offices of: 750 N. Greenfield Pkwy, Garner, NC 27529	SR 1006 (Faith Road) at Newsome Road/Innes St. Market		SEAL NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 018174 EDWARD W. SIRGANY
		Division 9 Rowan County Salisbury PLAN DATE: March 2018 REVIEWED BY: E. Sirgany PREPARED BY: M. Parker REVIEWED BY:	REVISIONS INIT. DATE	

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, 1-15, 2-5, 2-6, 2-9, 2-11, 2-13, 2-15, 4-7, 4-8, 4-10, 4-14, 4-16, 5-9, 5-11, 5-13, 6-9, 6-11, 6-13, 6-15, 7-10, 7-14, 8-10, 8-14, 8-16, 9-11, 9-13, 9-15, 10-14, 10-16, 11-13, 11-15, 13-15 and 14-16.



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 Start Up in Green.
- Program phases 2, 4, 6 and 8 for 'STARTUP PED CALL'.
- Program phases 2 and 6 for Yellow Flash, and overlaps 1 and 2 as Wag Overlaps.
- The cabinet and controller are part of the Salisbury Signal System.

EQUIPMENT INFORMATION

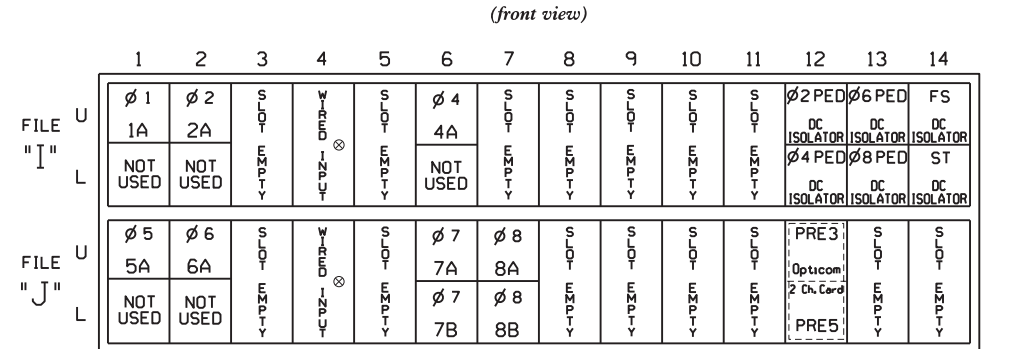
CONTROLLER.....2070L
 CABINET.....332 w/Aux
 SOFTWARE.....ECONOLITE OASIS
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS...18 WITH AUX, OUTPUT FILE
 LOAD SWITCHES USED.....S1,S2,S3,S5,S6,S7,S8,S9,S10,
 S11,S12,AUX S1,AUX S2,AUX S4
 PHASES USED.....1,2,2PED,4,4PED,5,6,6PED,7,
 8,8PED
 OVERLAP "A".....1+2
 OVERLAP "B".....4
 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	OLB	SPARE	OLC	OLD	SPARE	
SIGNAL HEAD NO.	11*	21,22	P21, P22	NU	41,42	P41, P42	51*	61	62	P61, P62	62	71,72	82,83	P81, P82	11*	81*	NU	51*	NU
RED	128			101				134	134			107							
YELLOW	* 129			102		* 135	135					108							
GREEN	130			103		136	136					109							
RED ARROW											122			A121	A124		A114		
YELLOW ARROW											123	123		A122	A125		A115		
FLASHING YELLOW ARROW														A123	A126		A116		
GREEN ARROW	127						133			124	124								
Hand			113		104				119				110						
Person			115		106				121				112						

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

INPUT FILE POSITION LAYOUT



EX.: 1A, 2A, ETC. = LOOP NO.'S
 FS = FLASH SENSE
 ST = STOP TIME
 PRE3 = EV PREEMPT
 * Wired Input - Do not populate slot with detector card

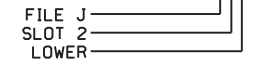
INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
1A ¹	TB2-1,2	I1U	56	18	1	1	Y	Y			15
	-	J4U	48	10*	26	6	Y	Y			
	-	I1U	56	18*	51	1	Y	Y			
2A	TB2-5,6	I2U	39	1	2	2	Y	Y			
4A	TB4-9,10	I6U	41	3	4	4	Y	Y			10
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			
6A	TB3-5,6	J2U	40	2*	6	6	Y	Y			
7A	TB5-9,10	J6U	42	4	8	7	Y	Y			3
7B	TB5-11,12	J6L	46	8	18	7	Y	Y			
8A	TB7-1,2	J7U	66	28	38	8	Y	Y			3
8B	TB7-3,4	J7L	79	41	48	8	Y	Y			10
PED PUSH BUTTONS											
P21,P22	TB8-4,6	I12U	67	29	PED 2	2	PED				
P41,P42	TB8-5,6	I12L	69	31	PED 4	4	PED				
P61,P62	TB8-7,9	I13U	68	30	PED 6	6	PED				
P81,P82	TB8-8,9	I13L	70	32	PED 8	8	PED				

NOTE:
 INSTALL DC ISOLATORS IN INPUT FILE SLOTS 112 AND 113.

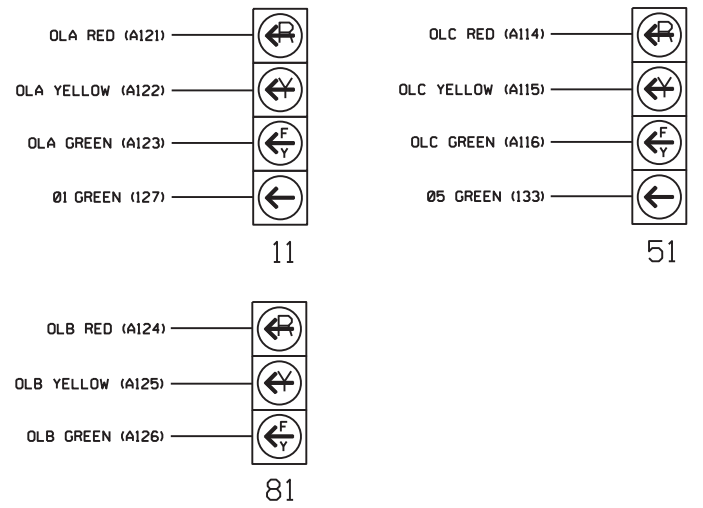
- ¹Add jumper from I1-W to J4-W, on rear of input file.
²Add jumper from J1-W to I4-W, on rear of input file.
 *Input Page 2. See Input Programming sheets 3 of 5 and 4 of 5.

INPUT FILE POSITION LEGEND: J2L



FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)

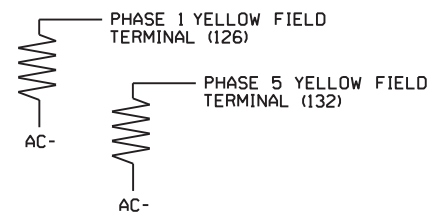


NOTE:
 1. The sequence display for signal heads 11 and 51 requires special logic programming. See sheet 2 for programming instructions.

LOAD RESISTOR INSTALLATION DETAIL

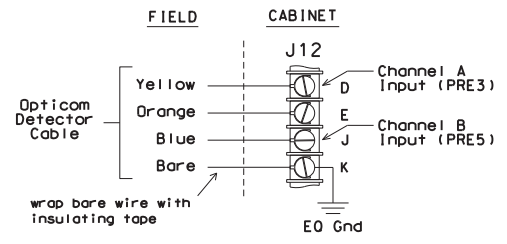
(install resistors as shown below)

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



TYPICAL OPTICOM FIELD WIRE DETAIL

(input file, rear view)



THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 09-1075
 DESIGNED: March 2018
 SEALED: March 27, 2018
 REVISED: N/A

Final Signal Design
 Electrical Detail - Sheet 1 of 5

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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 NC FIRM LICENSE No: P-0339
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Prepared for the Offices of:
 NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 Mobility and Safety Planning
 750 N. Greenfield Pkwy, Garner, NC 27529

SR 1006 (Faith Road) at Newsome Road/Innes St. Market
 Division 9 Rowan County Salisbury
 PLAN DATE: March 2018 REVIEWED BY: E. Sirgany
 PREPARED BY: J. Smith REVIEWED BY:
 REVISIONS INIT. DATE

SEAL
 NORTH CAROLINA PROFESSIONAL ENGINEERS
 SEAL 018174
 EDWARD W. SIRGANY
 DATE 3/27/2018
 SIG. INVENTORY NO. 09-1075

*****SYTIME*****
 *****DOCK*****
 *****SERIAL*****

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 #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 #2 (+/-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 #3 (+/-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 '+'

LOGICAL I/O COMMAND #4 (+/-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 #5 (+/-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 #6 (+/-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
LOGIC I/O PROCESSOR PROGRAMMING COMPLETE

OUTPUT REFERENCE SCHEDULE	
USE TO INTERPRET LOGIC PROCESSOR	
OUTPUT 42	= Overlap C Red
OUTPUT 43	= Overlap C Yellow
OUTPUT 44	= Overlap C Green
OUTPUT 50	= Overlap A Red
OUTPUT 51	= Overlap A Yellow
OUTPUT 52	= Overlap A Green

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 Preempt 3.

PREEMPTION #3 SETTINGS (NEXT:1-10)		
INTERVAL/TIMING	CLEAR/DWELL PHASES	
GRN	YEL	RED
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
RED CLEAR BEFORE PRE (0= DEFAULT)....	0
DWELL MIN TIMER (0-255 SEC)	10
DWELL MAX TIMER (0=OFF,1-255MIN)	2
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?	Y
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:	ABCDEFGHIJKLMNPO
DWELL INT FLASH YELLOW	
OMIT OVERLAPS:	

PRESS 'NEXT' TWICE

PREEMPTION #5 SETTINGS (NEXT:1-10)		
INTERVAL/TIMING	CLEAR/DWELL PHASES	
GRN	YEL	RED
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
RED CLEAR BEFORE PRE (0= DEFAULT)....	0
DWELL MIN TIMER (0-255 SEC)	10
DWELL MAX TIMER (0=OFF,1-255MIN)	2
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?	Y
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:	ABCDEFGHIJKLMNPO
DWELL INT FLASH YELLOW	
OMIT OVERLAPS:	

PROGRAMMING COMPLETE

Program extend time on optical detector unit for 2.0 seconds.

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:	1234567891011213141516
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

PAGE 1: VEHICLE OVERLAP 'B' SETTINGS	
PHASE:	1234567891011213141516
VEH OVL PARENTS:	X
VEH OVL NOT VEH:	
VEH OVL NOT PED:	
VEH OVL GRN EXT:	
STARTUP COLOR: - RED - YELLOW - GREEN	
FLASH COLORS: - RED - YELLOW X GREEN	
SELECT VEHICLE OVERLAP OPTIONS: (Y/N)	
FLASH YELLOW IN CONTROLLER FLASH?..N	
GREEN EXTENSION (0-255 SEC).....	0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)..	0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)..	0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....	0

NOTICE GREEN FLASH

PAGE 1: VEHICLE OVERLAP 'C' SETTINGS	
PHASE:	1234567891011213141516
VEH OVL PARENTS:	XX
VEH OVL NOT VEH:	
VEH OVL NOT PED:	
VEH OVL GRN EXT:	
STARTUP COLOR: - RED - YELLOW - GREEN	
FLASH COLORS: - RED - YELLOW X GREEN	
SELECT VEHICLE OVERLAP OPTIONS: (Y/N)	
FLASH YELLOW IN CONTROLLER FLASH?..Y	
GREEN EXTENSION (0-255 SEC).....	0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)..	0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)..	0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....	0

NOTICE GREEN FLASH

OVERLAP PROGRAMMING COMPLETE

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:	1234567891011213141516
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

NOTICE PAGE 2

PAGE 2: VEHICLE OVERLAP 'B' SETTINGS	
PHASE:	1234567891011213141516
VEH OVL PARENTS:	X
VEH OVL NOT VEH:	
VEH OVL NOT PED:	
VEH OVL GRN EXT:	
STARTUP COLOR: - RED - YELLOW - GREEN	
FLASH COLORS: - RED - YELLOW X GREEN	
SELECT VEHICLE OVERLAP OPTIONS: (Y/N)	
FLASH YELLOW IN CONTROLLER FLASH?..N	
GREEN EXTENSION (0-255 SEC).....	0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)..	0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)..	0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....	0

NOTICE PAGE 2

PAGE 2: VEHICLE OVERLAP 'C' SETTINGS	
PHASE:	1234567891011213141516
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

NOTICE PAGE 2

OVERLAP PROGRAMMING COMPLETE

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 09-1075
DESIGNED: March 2018
SEALED: March 27, 2018
REVISED: N/A

Final Signal Design
Electrical Detail - Sheet 2 of 5

Prepared in the Office of:



NC FIRM LICENSE No. P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

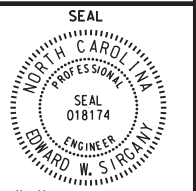
ELECTRICAL AND PROGRAMMING DETAILS FOR:



SR 1006 (Faith Road) at Newsome Road/Innes St. Market

Division 9	Rowan County	Salisbury
PLAN DATE: March 2018	REVIEWED BY: E. Sirgany	
PREPARED BY: J. Smith	REVIEWED BY:	
REVISIONS	INIT.	DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



Checked by: Edward W. Sirgany 3/27/2018
DATE: 3/27/2018
SIG. INVENTORY NO. 09-1075

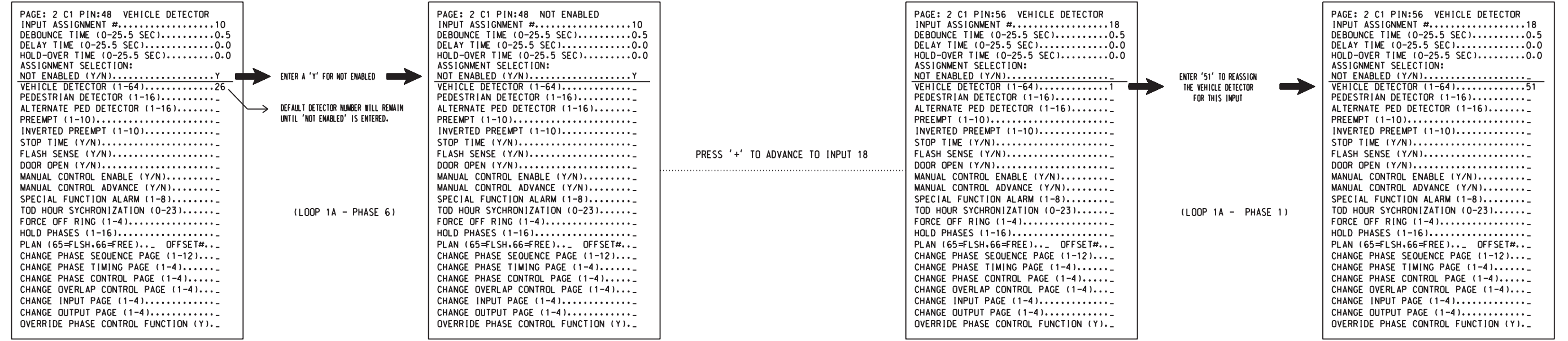
*****SYTIME*****
*****RDON*****
*****SENAME*****

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.

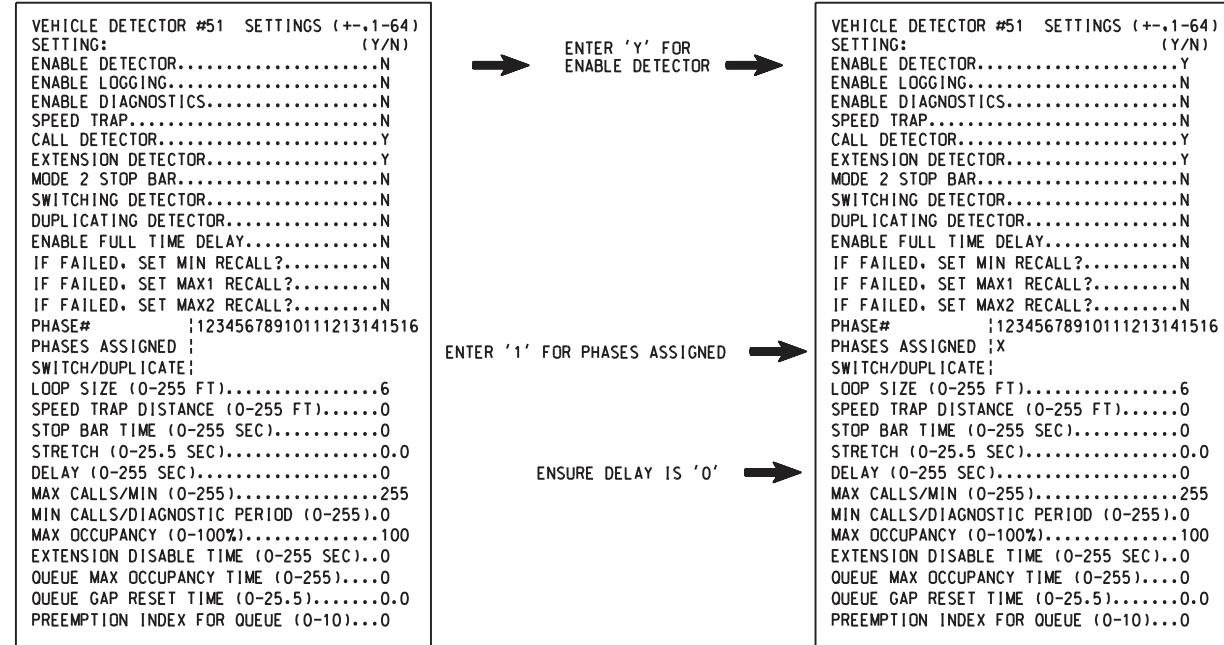


PROGRAMMING COMPLETE

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.



NOTE: DETECTOR IS PROGRAMMED PER THE INPUT FILE CONNECTION AND PROGRAMMING CHART SHOWN ON SHEET 1 OF 5.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 09-1075
DESIGNED: March 2018
SEALED: March 27, 2018
REVISED: N/A

Final Signal Design
Electrical Detail - Sheet 3 of 5

Prepared in the Office of:

NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

Electrical and Programming Details For:

SR 1006 (Faith Road) at Newsome Road/Innes St. Market

Division 9 Rowan County Salisbury

Prepared by: J. Smith
Reviewed by: E. Sirgany

PLANNED DATE: March 2018
REVISIONS: _____ DATE: _____

Sealed by: Edward W. Sirgany 1/27/2018

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SIG. INVENTORY NO. 09-1075

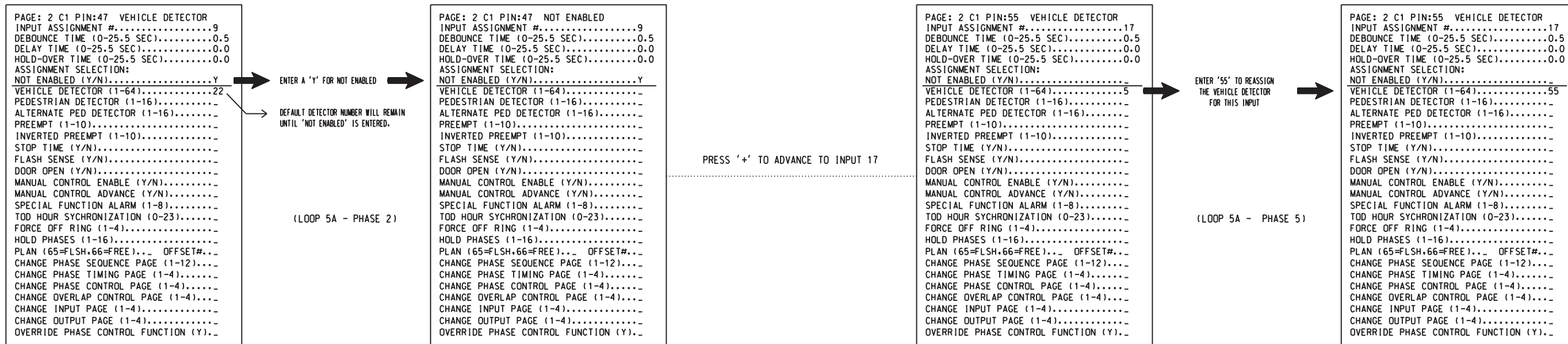
*****SYTIME*****
*****SERIAL*****
*****USER*****

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.

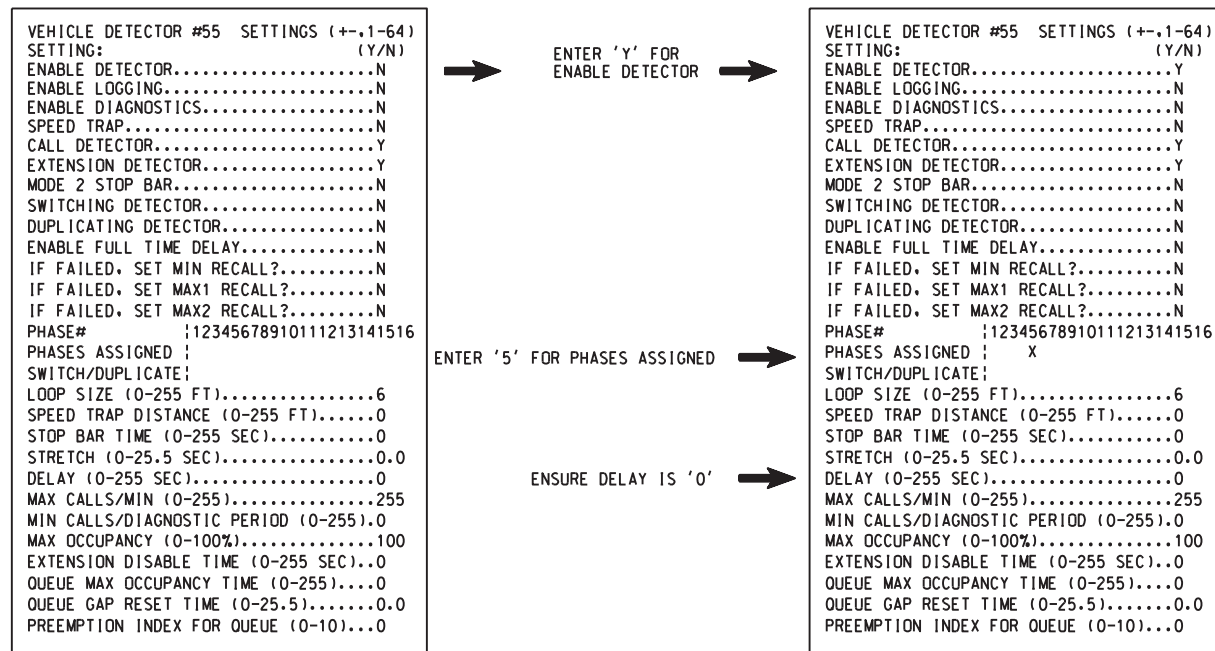


PROGRAMMING COMPLETE

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.



NOTE: DETECTOR IS PROGRAMMED PER THE INPUT FILE CONNECTION AND PROGRAMMING CHART SHOWN ON SHEET 1 of 5.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 09-1075
DESIGNED: March 2018
SEALED: March 27, 2018
REVISED: N/A

Final Signal Design
Electrical Detail - Sheet 4 of 5

ELECTRICAL AND PROGRAMMING DETAILS FOR:		SR 1006 (Faith Road) at Newsome Road/Innes St. Market		
Prepared in the Office of:		Prepared for the Office of:		
NC FIRM LICENSE No. P-0339	504 Meadowlands Drive Hillsborough, NC 27278 (919) 732-3883 (919) 732-6676 (FAX)	Division 9	Rowan County	Salisbury
PLAN DATE: March 2018	REVIEWED BY: E. Sirgany	PREPARED BY: J. Smith	REVIEWED BY:	
REVISIONS		INIT.	DATE	
				DATE: 3/27/2018
SIG. INVENTORY NO.		09-1075		

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

*****SYTIME*****
*****RDON*****
*****SERNAME*****

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.

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.

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: 09-1075
DESIGNED: March 2018
SEALED: March 27, 2018
REVISED: N/A

Final Signal Design
Electrical Detail - Sheet 5 of 5

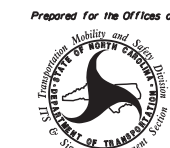
DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

Prepared in the Office of:



NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

ELECTRICAL AND PROGRAMMING
DETAILS FOR:



750 N. Greenfield Pkwy, Garner, NC 27529

SR 1006 (Faith Road)
at
Newsome Road/Innes St. Market

Division 9 Rowan County Salisbury

PLAN DATE: March 2018	REVIEWED BY: E. Sirgany
PREPARED BY: J. Smith	REVIEWED BY:
REVISIONS	INIT. DATE

SEAL
NORTH CAROLINA
PROFESSIONAL
ENGINEER
EDWARD W. SIRGANY

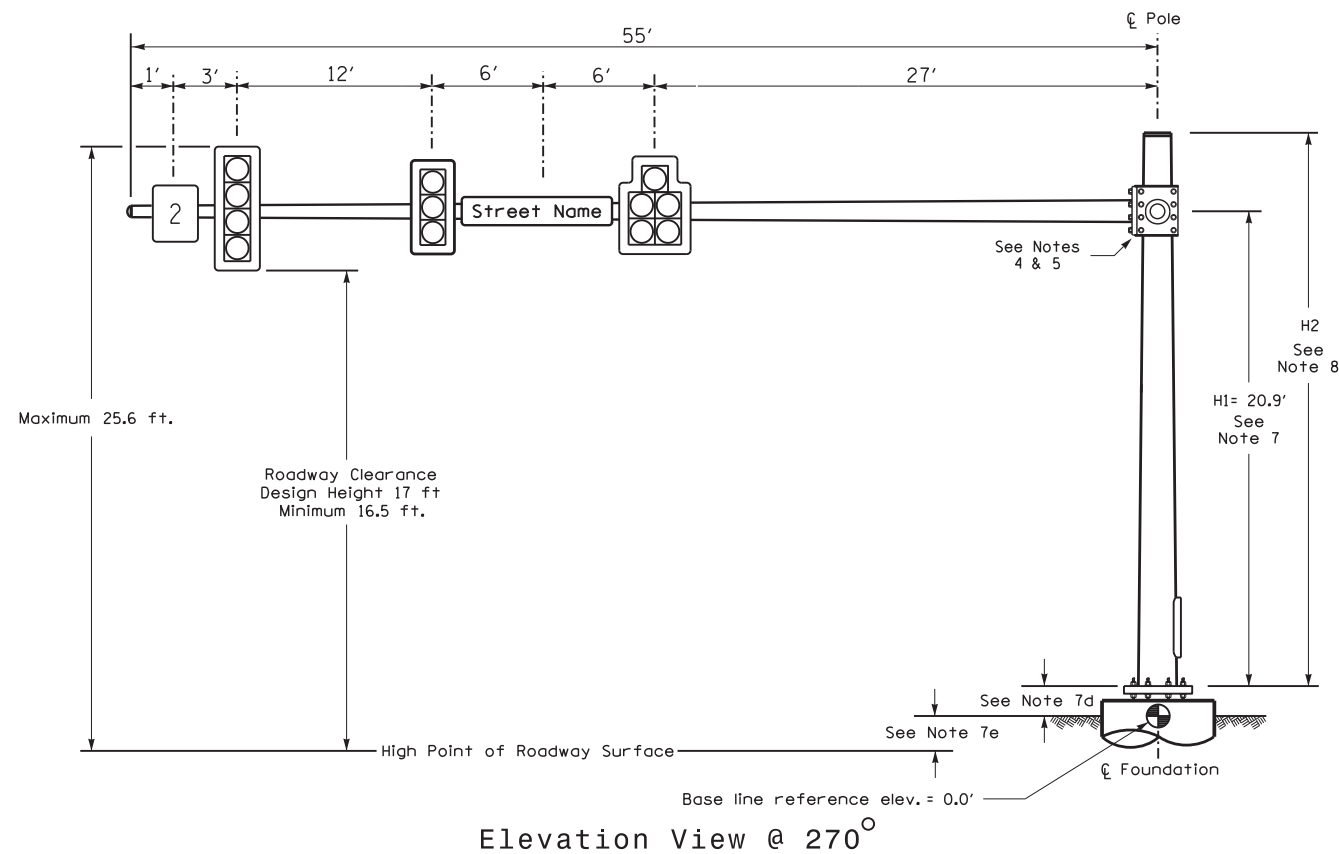
Seal No. 018174

Edward W. Sirgany 3/27/2018
DATE

SIG. INVENTORY NO. 09-1075

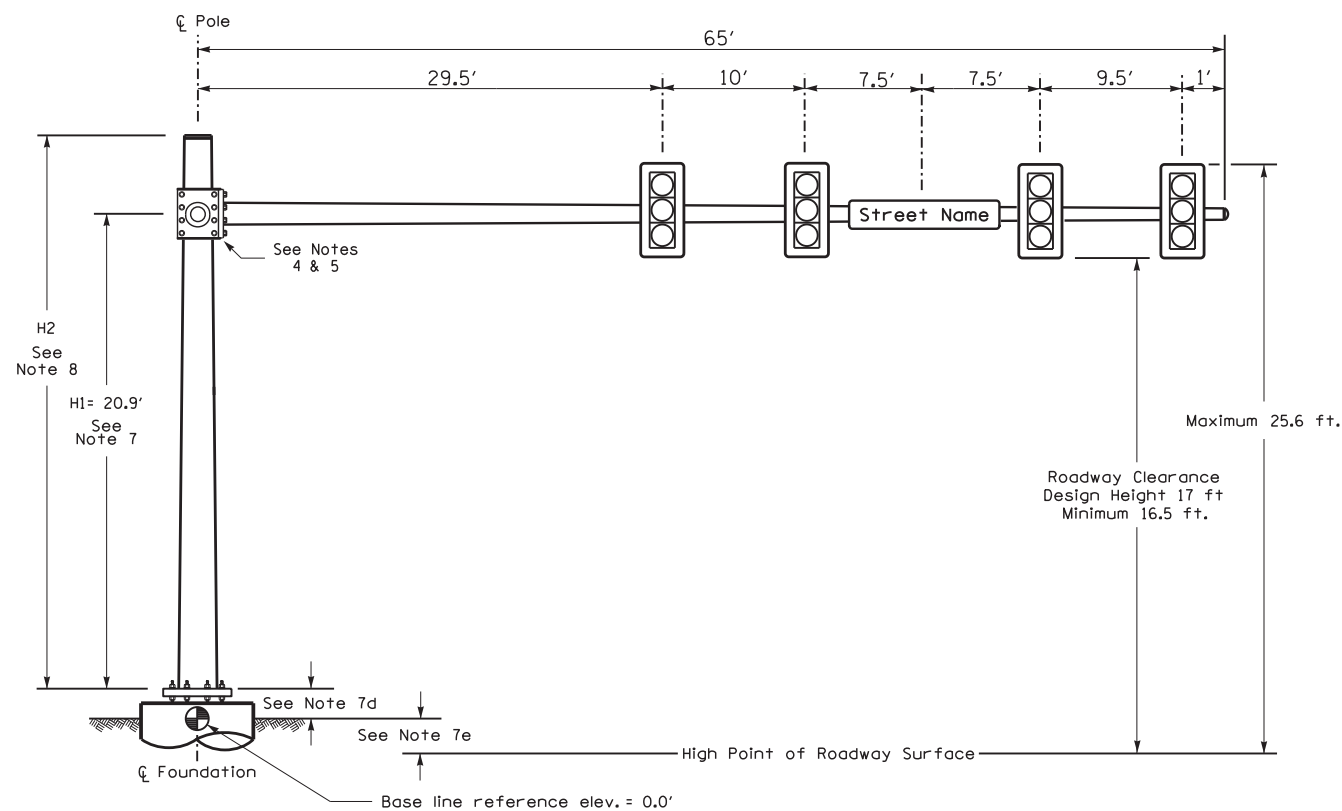
\$\$\$\$\$SYTIME\$\$\$\$\$
\$\$\$\$\$DOCS\$\$\$\$\$
\$\$\$\$\$SERIAL\$\$\$\$\$

Design Loading for METAL POLE NO.1, MAST ARM A



Elevation View @ 270°

Design Loading for METAL POLE NO. 1, MAST ARM B



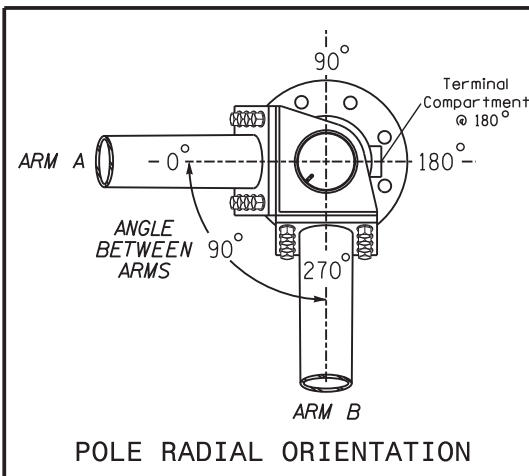
Elevation View @ 0°

SPECIAL NOTE

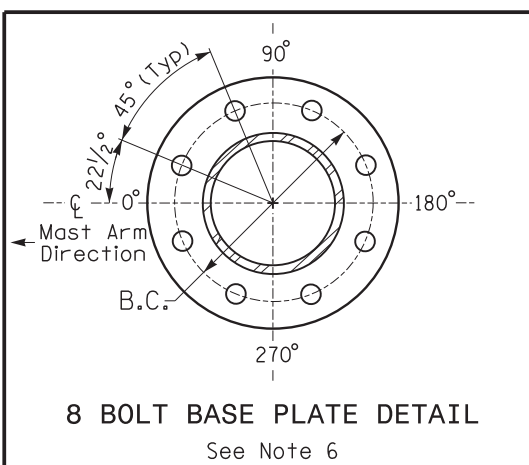
The contractor is responsible for verifying that the mast arm attachment height (H1) will provide the "Design Height" clearance from the roadway before submitting final shop drawings for approval. Verify elevation data below which was obtained by field measurement or from available project survey data.

Elevation Data for Mast Arm Attachment (H1)

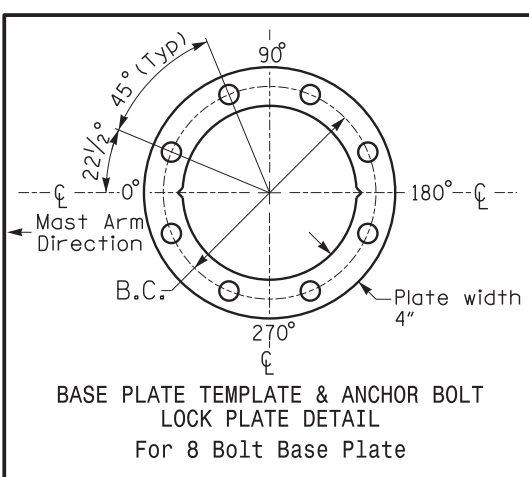
Elevation Differences for:	Arm "A"	Arm "B"
Baseline reference point at ϕ Foundation @ ground level	0.0 ft.	0.0 ft.
Elevation difference at High point of roadway surface	+1.9 ft.	+0.4 ft.
Elevation difference at Edge of travelway or face of curb	+1.3 ft.	+1.0 ft.



POLE RADIAL ORIENTATION



8 BOLT BASE PLATE DETAIL
See Note 6



BASE PLATE TEMPLATE & ANCHOR BOLT LOCK PLATE DETAIL
For 8 Bolt Base Plate

MAST ARM LOADING SCHEDULE

LOADING SYMBOL	DESCRIPTION	AREA	SIZE	WEIGHT
	RIGID MOUNTED SIGNAL HEAD 12"-5 SECTION-WITH BACKPLATE	16.3 S.F.	42.0" W X 56.0" L	103 LBS
	RIGID MOUNTED SIGNAL HEAD 12"-4 SECTION-WITH BACKPLATE	11.5 S.F.	25.5" W X 66.0" L	74 LBS
	RIGID MOUNTED SIGNAL HEAD 12"-3 SECTION-WITH BACKPLATE	9.3 S.F.	25.5" W X 52.5" L	60 LBS
	STREET NAME SIGN RIGID MOUNTED	16.0 S.F.	24.0" W X 96.0" L	36 LBS
	SIGN RIGID MOUNTED	7.5 S.F.	30.0" W X 36.0" L	14 LBS

NOTES

- DESIGN REFERENCE MATERIAL
- Design the traffic signal structure and foundation in accordance with:
 - The 6th Edition 2013 AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, including all of the latest interim revisions.
 - The 2018 NCDOT "Standard Specifications for Roads and Structures." The latest addenda to the specifications can be found in the traffic signal project special provisions.
 - The 2018 NCDOT Roadway Standard Drawings.
 - The traffic signal project plans and special provisions.
 - The NCDOT "Metal Pole Standards" located at the following NCDOT website: <https://connect.ncdot.gov/resources/safety/Pages/ITS-Design-Resources.aspx>
 - DESIGN REQUIREMENTS
 - Design the traffic signal structure using the loading conditions shown in the elevation views. These are anticipated worst case "design loads" and may not represent the actual loads that will be applied at the time of the installation. The contractor should refer to the traffic signal plans for the actual loads that will be applied at the time of the installation.
 - Design all signal supports using stress ratios that do not exceed 0.9.
 - The camber design for the mast arm deflection should provide an appearance of a low pitched arch where the tip or the free end of the mast arm does not deflect below horizontal when fully loaded.
 - A clamp-type bolted mast arm-to-pole connection may be used instead of the welded ring stiffened box connection shown as long as the connection meets all of the design requirements. This requires staggering the connections. Use elevation data for each arm to determine appropriate arm connection points.
 - Design base plate with 8 anchor bolt holes. Provide 2 inch x 60 inch anchor bolts.
 - The mast arm attachment height (H1) shown is based on the following design assumptions:
 - Mast arm slope and deflection are not considered in determining the arm attachment height as they are assumed to offset each other.
 - Signal heads are rigidly mounted and vertically centered on the mast arm.
 - The roadway clearance height for design is as shown in the elevation views.
 - The top of the pole base plate is 0.75 feet above the ground elevation.
 - Refer to the Elevation Data Chart for the elevation differences between the proposed foundation ground level and the high point of the roadway.
 - The pole manufacturer will determine the total height (H2) of each pole using the greater of the following:
 - Mast arm attachment height (H1) plus 2 feet, or
 - H1 plus 1/2 of the total height of the mast arm attachment assembly plus 1 foot.
 - If pole location adjustments are required, the contractor must gain approval from the Engineer as this may affect the mast arm lengths and arm attachment heights. The contractor may contact the Signal Design Section Senior Structural Engineer for assistance at (919) 814-4929.
 - The contractor is responsible for verifying that the mast arm length shown will allow proper positioning of the signal heads over the roadway.
 - The contractor is responsible for providing soil penetration testing data (SPT) to the pole manufacturer so site specific foundations can be designed.

All metal poles and arms should be Federal Standard 595C. Color Chip Number 14036 in color as specified in the project special provisions.

NCDOT Wind Zone 4 (90 mph)

Prepared For the Offices of:

 750 N. Greenfield Pkwy, Garner, NC 27529

SR 1006 (Faith Road) at Newsome Rd/Innes St Market	
PLAN DATE: March 2018	REVIEWED BY: J Smith
PREPARED BY: E Sirgany	REVIEWED BY:
REVISIONS	INIT. DATE

Prepared in the Office of:

 NC FBEM LICENSE No. P-0339
 504 Meadowslands Drive
 Hillsborough, NC 27778
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 (919) 732-6676 (FAX)

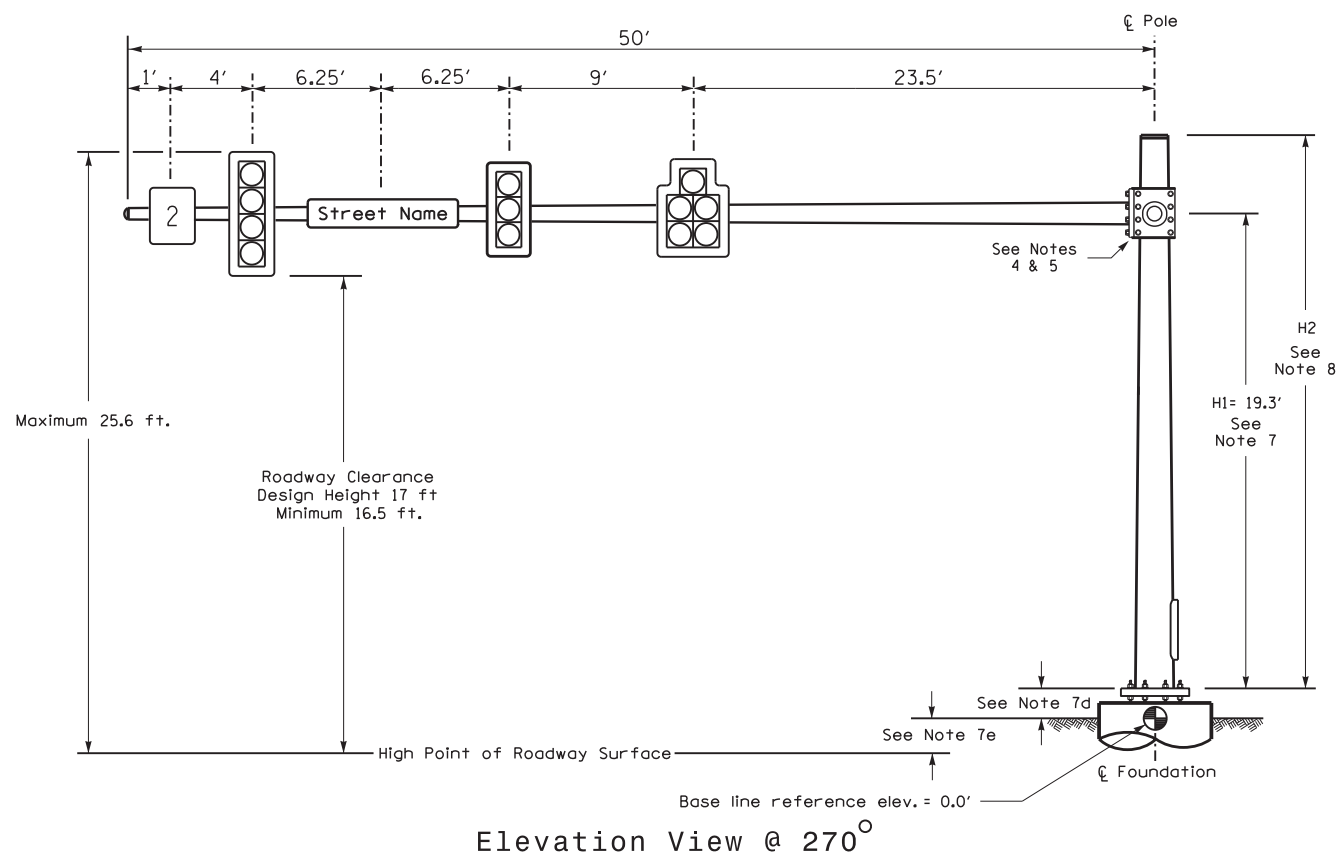
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

 Edward W. Sirgany
 3/27/2018
 DATE
 SIG. INVENTORY NO. 09-1075

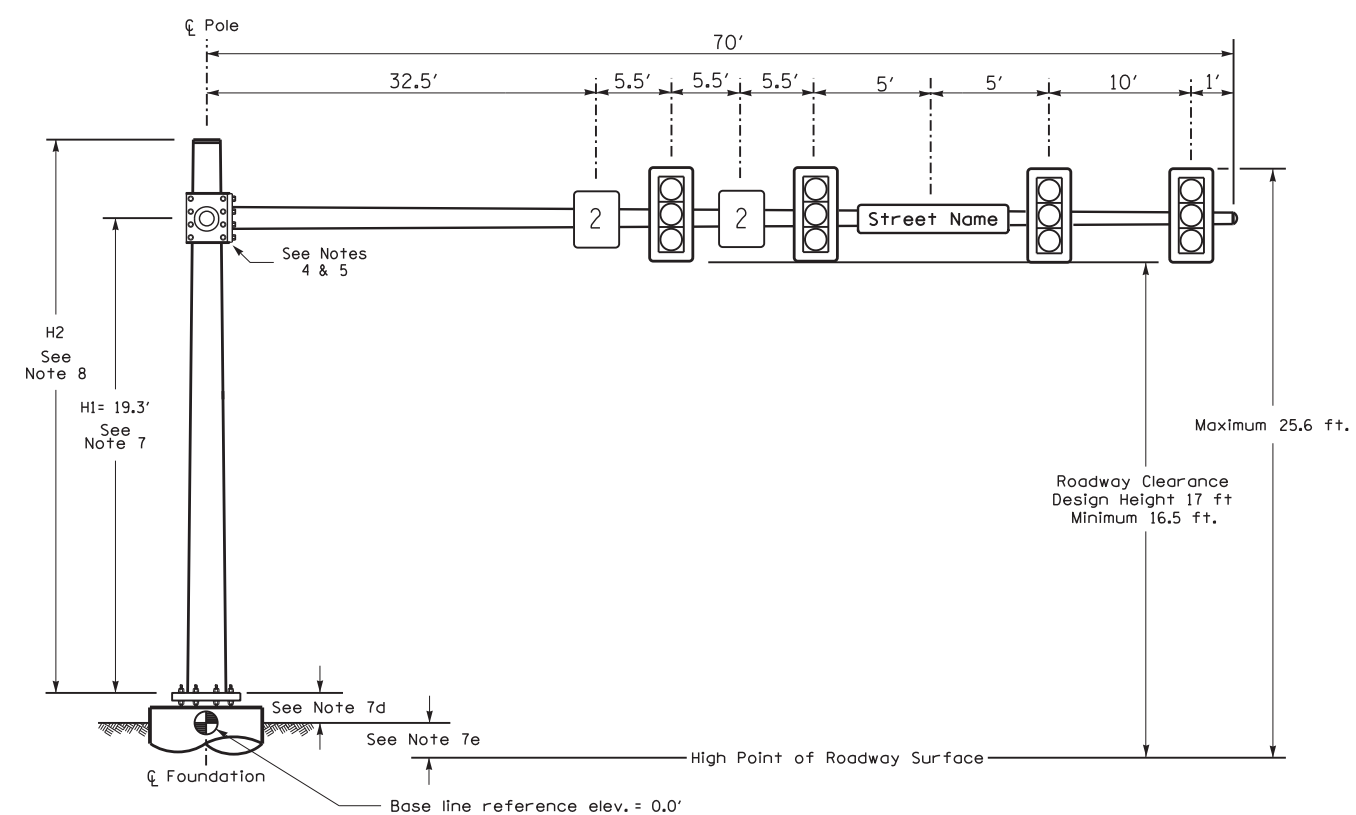
METAL POLE No. 2

Design Loading for METAL POLE NO. 2, MAST ARM A



Elevation View @ 270°

Design Loading for METAL POLE NO. 2, MAST ARM B

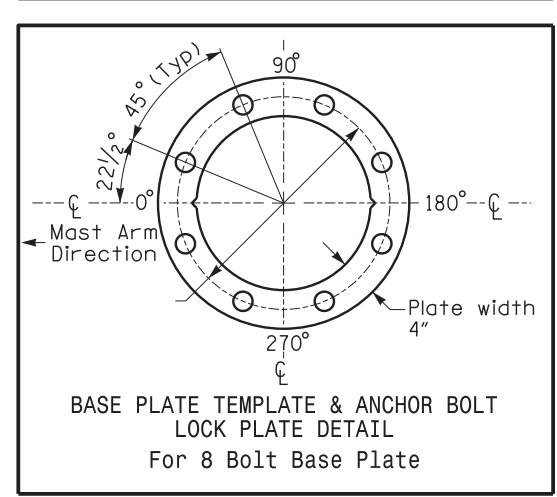
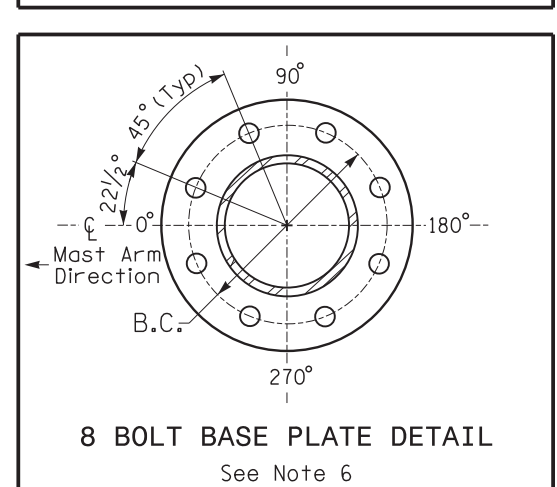
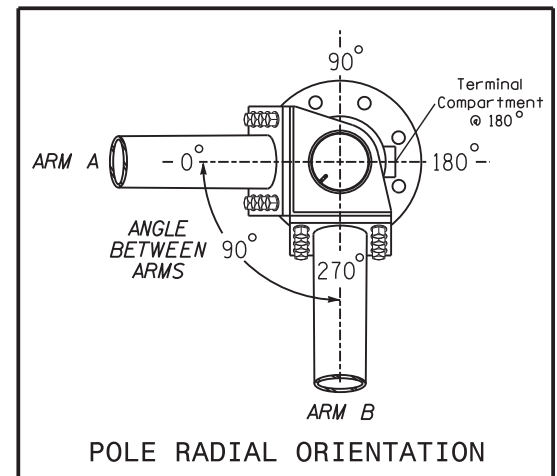


Elevation View @ 0°

SPECIAL NOTE
The contractor is responsible for verifying that the mast arm attachment height (H1) will provide the "Design Height" clearance from the roadway before submitting final shop drawings for approval. Verify elevation data below which was obtained by field measurement or from available project survey data.

Elevation Data for Mast Arm Attachment (H1)

Elevation Differences for:	Arm "A"	Arm "B"
Baseline reference point at ϕ Foundation @ ground level	0.0 ft.	0.0 ft.
Elevation difference at High point of roadway surface	-1.2 ft.	+0.9 ft.
Elevation difference at Edge of travelway or face of curb	-0.9 ft.	0.0 ft.



MAST ARM LOADING SCHEDULE

LOADING SYMBOL	DESCRIPTION	AREA	SIZE	WEIGHT
	RIGID MOUNTED SIGNAL HEAD 12"-5 SECTION-WITH BACKPLATE	16.3 S.F.	42.0"W X 56.0"L	103 LBS
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- DESIGN REFERENCE MATERIAL**
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 - A clamp-type bolted mast arm-to-pole connection may be used instead of the welded ring stiffened box connection shown as long as the connection meets all of the design requirements. This requires staggering the connections. Use elevation data for each arm to determine appropriate arm connection points.
 - Design base plate with 8 anchor bolt holes. Provide 2 inch x 60 inch anchor bolts.
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 - Mast arm slope and deflection are not considered in determining the arm attachment height as they are assumed to offset each other.
 - Signal heads are rigidly mounted and vertically centered on the mast arm.
 - The roadway clearance height for design is as shown in the elevation views.
 - The top of the pole base plate is 0.75 feet above the ground elevation.
 - Refer to the Elevation Data Chart for the elevation differences between the proposed foundation ground level and the high point of the roadway.
 - The pole manufacturer will determine the total height (H2) of each pole using the greater of the following:
 - Mast arm attachment height (H1) plus 2 feet, or
 - H1 plus 1/2 of the total height of the mast arm attachment assembly plus 1 foot.
 - If pole location adjustments are required, the contractor must gain approval from the Engineer as this may affect the mast arm lengths and arm attachment heights. The contractor may contact the Signal Design Section Senior Structural Engineer for assistance at (919) 814-4929.
 - The contractor is responsible for verifying that the mast arm length shown will allow proper positioning of the signal heads over the roadway.
 - The contractor is responsible for providing soil penetration testing data (SPT) to the pole manufacturer so site specific foundations can be designed.

All metal poles and arms should be Federal Standard 595C, Color Chip Number 14036 in color as specified in the project special provisions.

NCDOT Wind Zone 4 (90 mph)

Prepared in the Office of:

SUMMIT
NC FIRM LICENSE No. P-0339
504 Meadows Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL
EDWARD W. SIRGANY
ENGINEER
018174

SR 1006 (Faith Road) at Newsome Rd/Innes St Market

PLAN DATE: March 2018 REVIEWED BY: J Smith
PREPARED BY: E Sirgany REVIEWED BY:

SCALE: 0 N/A
N/A

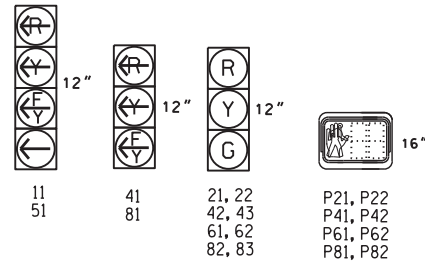
750 N. Greenfield Pkwy, Garner, NC 27529

3/27/2018
DATE

SIG. INVENTORY NO. 09-1075

5 Phase Fully Actuated W/ Emergency Preemption (Salisbury Signal System)

SIGNAL FACE I.D. All Heads L.E.D.



OASIS 2070 LOOP & DETECTOR INSTALLATION CHART												
INDUCTIVE LOOPS				DETECTOR PROGRAMMING								
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
1A	6X40	0	2-4-2	Y	1	Y	Y	-	-	*15	-	Y
2A,2B	6X6	70	5	Y	2	Y	Y	-	-	-	-	Y
4A	6X40	+15	2-4-2	-	4	Y	Y	-	-	3	-	-
4B	6X40	+15	2-4-2	-	4	Y	Y	-	-	10	-	-
5A	6X40	0	2-4-2	Y	5	Y	Y	-	-	*15	-	-
6A,6B	6X6	70	EXIST	-	6	Y	Y	-	-	-	-	-
8A	6X40	0	2-4-2	Y	8	Y	Y	-	-	3	-	Y
8B	6X40	0	2-4-2	Y	8	Y	Y	-	-	10	-	Y

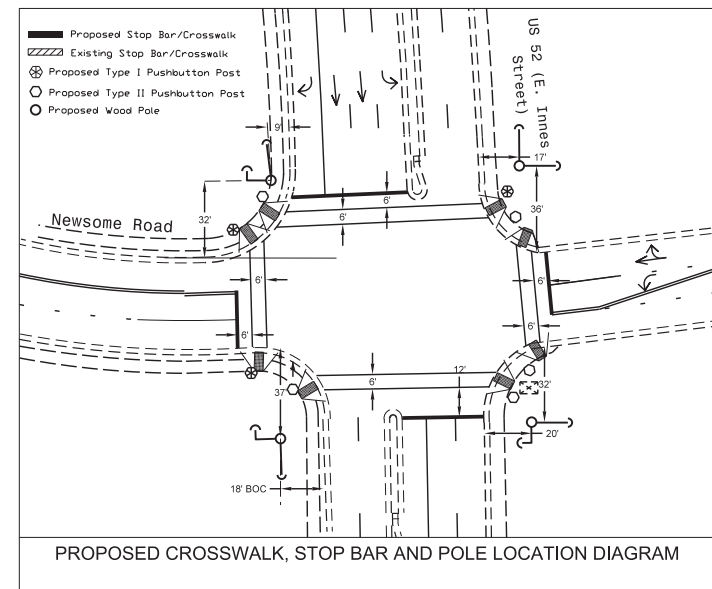
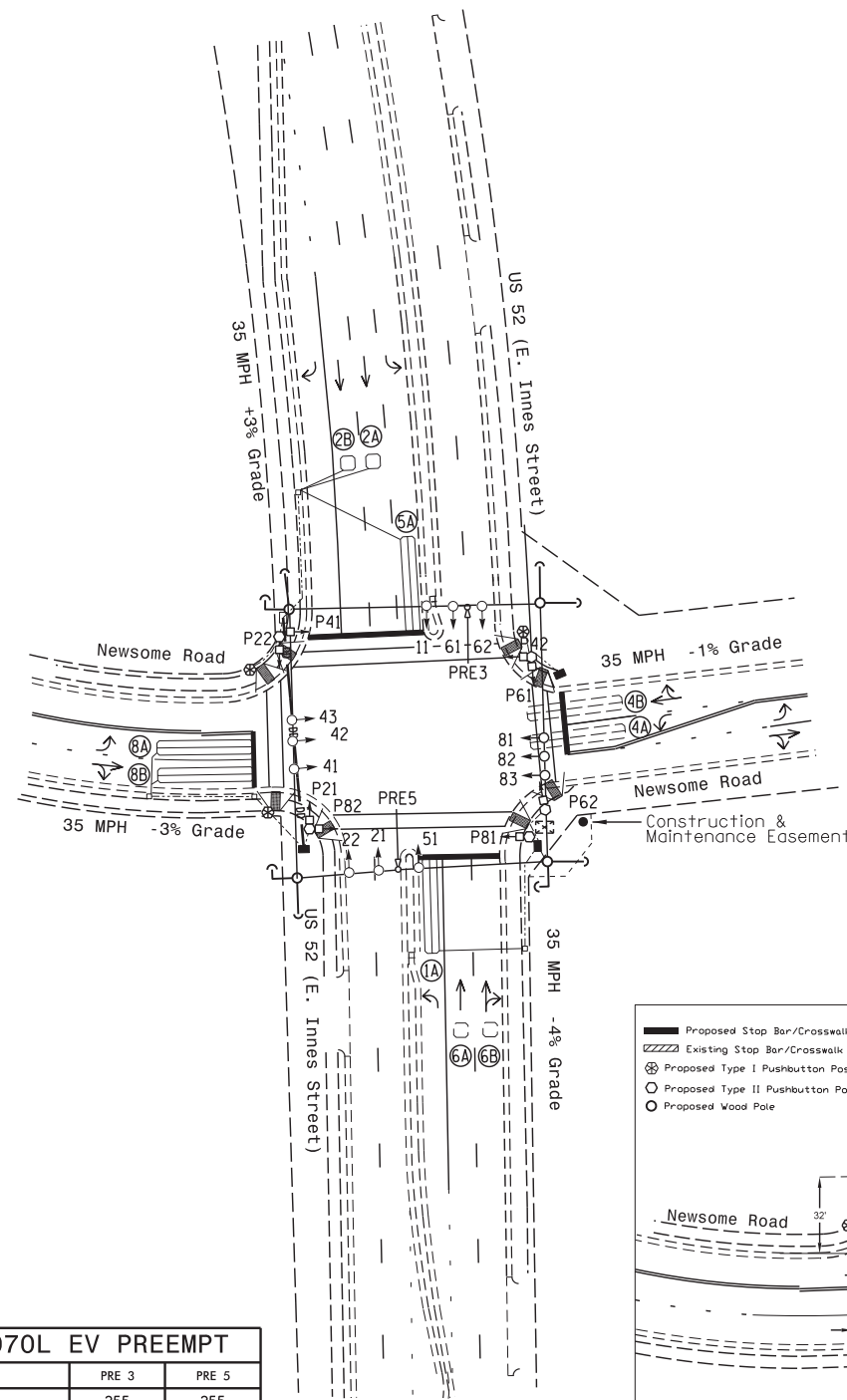
* Disable delay during Alternate Phasing Operation.
 ** Disable Phase call for loop(s) during Alternate Phasing Operation.

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 *	20	45	25	20	45	25
Yellow Clearance	3.0	4.1	4.1	3.0	4.1	4.1
Red Clearance	3.1	2.1	2.4	2.8	2.1	2.4
Walk 1 *	-	7	7	-	7	7
Don't Walk 1	-	10	22	-	8	18
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.

OASIS 2070L EV PREEMPT		
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	MED	MED
Delay Time	0	0
Min Green Before Pre	1	1
Ped Clear Before Pre	10	10
Yellow Clear Before Pre	0.0*	0.0*
Red Clear Before Pre	0.0*	0.0*
Dwell Min Time	7	7
Dwell Max Time (Minutes)	2	2
Enable Backup Protection	N	N
Ped Clear Through Yellow	Y	Y
Omit Overlaps	-	-
Preempt Extend**	2	2

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



NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- 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.
- 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.
- 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.
- This intersection features an optical preemption system. Shown locations of optical detectors are conceptual only.
- The Division (City) 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.

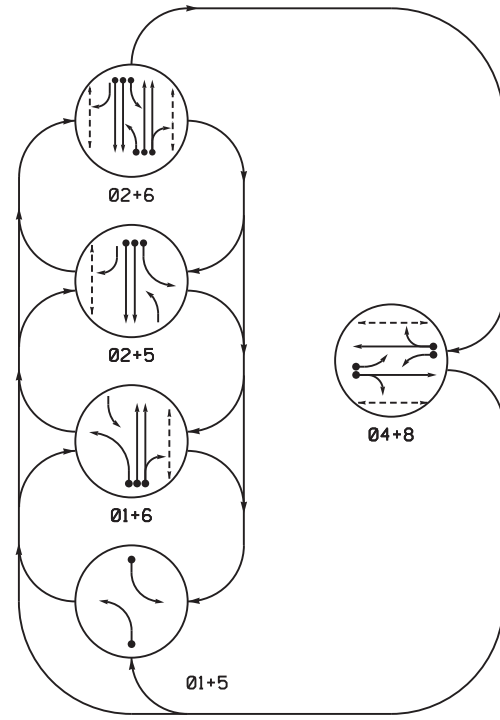
LEGEND

PROPOSED	EXISTING

Temporary Signal Design Signal Upgrade - Sheet 1 of 2

Prepared in the Office of: NC FIRM LICENSE No: P-0339 504 Meadowlands Drive Hillsborough, NC 27278 (919) 732-3883 (919) 732-6676 (FAX)	 SEAL NORTH CAROLINA PROFESSIONAL ENGINEER EDWARD W. SIRGANY 3/27/2018	US 52 (E. Innes Street) at Newsome Road Division 9 Rowan County Salisbury PLAN DATE: March 2018 REVIEWED BY: E. Sirgany PREPARED BY: W. Parker REVIEWED BY:		DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
		SCALE 1"=40' 	REVISIONS INIT. DATE	DATE

DEFAULT PHASING DIAGRAM

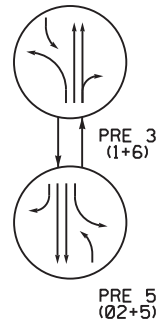


PHASING DIAGRAM DETECTION LEGEND

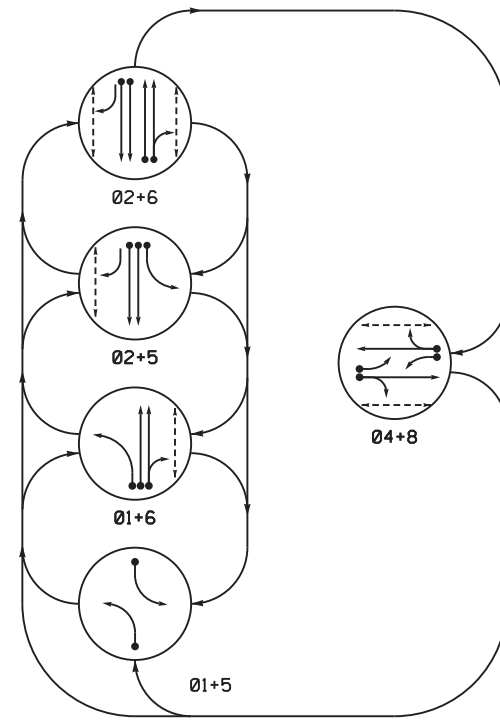
- ←●→ DETECTED MOVEMENT
- ←○→ UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- ←- - -> PEDESTRIAN MOVEMENT

SIGNAL FACE	PHASE							
	01+5	01+6	02+5	02+6	04+8	P1+3	P5+6	FLASH
11	---	---	F	F	---	---	---	---
21,22	R	R	G	G	R	R	G	Y
41	---	---	---	---	F	---	---	---
42,43	R	R	R	R	G	R	R	R
51	---	F	---	F	---	---	---	---
61,62	R	G	R	G	R	G	R	Y
81	---	---	---	---	F	---	---	---
82,83	R	R	R	R	G	R	R	R
P21,P22	DW	DW	W	W	DW	DW	DW	DRK
P41,P42	DW	DW	DW	W	DW	DW	DW	DRK
P61,P62	DW	W	DW	W	DW	DW	DW	DRK
P81,P82	DW	DW	DW	DW	DW	DW	DW	DRK

DEFAULT EV PREEMPT PHASES (Medium Priority)



ALTERNATE PHASING DIAGRAM

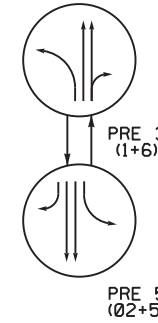


PHASING DIAGRAM DETECTION LEGEND

- ←●→ DETECTED MOVEMENT
- ←○→ UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- ←- - -> PEDESTRIAN MOVEMENT

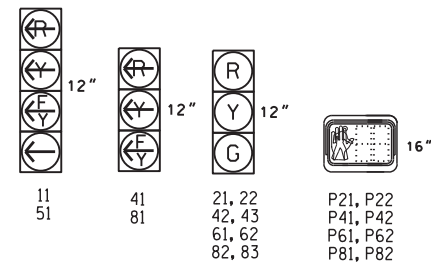
SIGNAL FACE	PHASE							
	01+5	01+6	02+5	02+6	04+8	P1+3	P5+6	FLASH
11	---	---	---	---	---	---	---	---
21,22	R	R	G	G	R	R	G	Y
41	---	---	---	---	F	---	---	---
42,43	R	R	R	R	G	R	R	R
51	---	---	---	---	---	---	---	---
61,62	R	G	R	G	R	G	R	Y
81	---	---	---	---	F	---	---	---
82,83	R	R	R	R	G	R	R	R
P21,P22	DW	DW	W	W	DW	DW	DW	DRK
P41,P42	DW	DW	DW	W	DW	DW	DW	DRK
P61,P62	DW	W	DW	W	DW	DW	DW	DRK
P81,P82	DW	DW	DW	DW	DW	DW	DW	DRK

ALTERNATE EV PREEMPT PHASES (Medium Priority)



SIGNAL FACE I.D.

All Heads L.E.D.



5 Phase Fully Actuated W/ Emergency Preemption (Salisbury Signal System)

NOTES

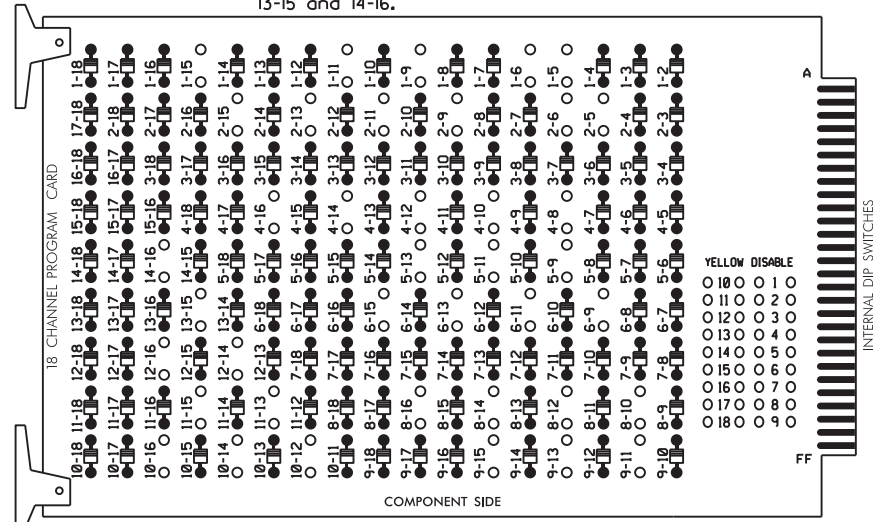
- Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 1 and/or phase 5 may be lagged.
- Set all detector units to presence mode.
- 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.
- 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.
- This intersection features an optical preemption system. Shown locations of optical detectors are conceptual only.
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- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

Temporary Signal Design Signal Upgrade - Sheet 2 of 2

Prepared in the Office of: NC FIRM LICENSE No: P-0339 504 Meadowlands Drive Hillsborough, NC 27278 (919) 732-3883 (919) 732-6676 (FAX)	 Prepared For: US 52 (E. Innes Street) at Newsome Road Division 9 Rowan County Salisbury PLAN DATE: March 2018 REVIEWED BY: E. Sirgany PREPARED BY: M. Parker REVIEWED BY:	DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED SEAL NORTH CAROLINA PROFESSIONAL ENGINEER EDWARD W. SIRGANY 3/27/2018 DATE SIG. INVENTORY NO. 09-1259T

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, 1-15, 2-5, 2-6, 2-9, 2-11, 2-13, 2-15, 4-8, 4-10, 4-12, 4-14, 4-16, 5-9, 5-11, 5-13, 6-9, 6-11, 6-13, 6-15, 8-10, 8-12, 8-14, 8-16, 9-11, 9-13, 9-15, 10-12, 10-14, 10-16, 11-13, 11-15, 12-14, 12-16, 13-15 and 14-16.



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 Start Up In Green.
- Program phases 2, 4, 6 and 8 for 'STARTUP PED CALL'.
- Program phases 2 and 6 for Yellow Flash, and overlaps 1 and 2 as Wag Overlaps.
- The cabinet and controller are part of the Salisbury 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,S5,S6,S7,S8,S9,S11,S12, AUX S1,AUX S2,AUX S4,AUX S5
 PHASES USED.....1,2,2PED,4,4PED,5,6,6PED,8,8PED
 OVERLAP "A".....1+2
 OVERLAP "B".....4
 OVERLAP "C".....5+6
 OVERLAP "D".....8

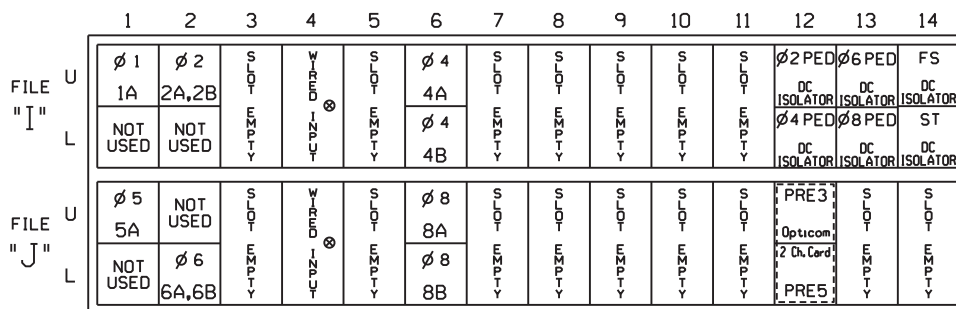
SIGNAL HEAD HOOK-UP CHART

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	P21, P22	NU	42,43	P41, P42	51	61,62	P61, P62	NU	82,83	P81, P82	11	81	NU	51	41	NU	
RED		128			101			134		107									
YELLOW	*	129			102		*	135		108									
GREEN		130			103			136		109									
RED ARROW																A121	A124	A114	A101
YELLOW ARROW																A122	A125	A115	A102
FLASHING YELLOW ARROW																A123	A126	A116	A103
GREEN ARROW	127							133											
Hand				113		104			119		110								
Walking				115		106			121		112								

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

INPUT FILE POSITION LAYOUT

(front view)



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

FS = FLASH SENSE
 ST = STOP TIME
 PRE = PREEMPT

⊗ Wired Input - Do not populate slot with detector card

INPUT FILE CONNECTION & PROGRAMMING CHART

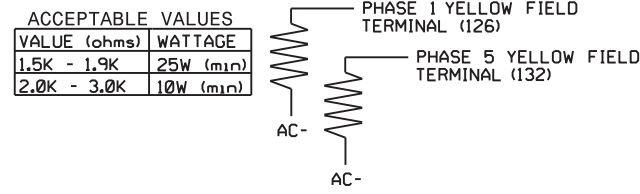
LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
1A ¹	TB2-1,2	I1U	56	18	1	1	Y	Y			15
	-	J4U	48	10★	26	6	Y	Y			
	-	I1U	56	18★	51	1	Y	Y			
2A,2B	TB2-5,6	I2U	39	1	2	2	Y	Y			
4A	TB4-9,10	I6U	41	3	4	4	Y	Y			3
4B	TB4-11,12	I6L	45	7	14	4	Y	Y			10
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			
6A,6B	TB3-7,8	J2L	44	6	16	6	Y	Y			
8A	TB5-9,10	J6U	42	4	8	8	Y	Y			3
8B	TB5-11,12	J6L	46	8	18	8	Y	Y			10
PED PUSH BUTTONS											
P21,P22	TB8-4,6	I12U	67	29	PED 2	2	PED				
P41,P42	TB8-5,6	I12L	69	31	PED 4	4	PED				
P61,P62	TB8-7,9	I13U	68	30	PED 6	6	PED				
P81,P82	TB8-8,9	I13L	70	32	PED 8	8	PED				

NOTE:
 INSTALL DC ISOLATORS IN INPUT FILE SLOTS 112 AND 113.

- Add jumper from I1-W to J4-W, on rear of input file.
 - Add jumper from J1-W to I4-W, on rear of input file.
- *Input Page 2. See Input Programming sheets 3 of 5 and 4 of 5.

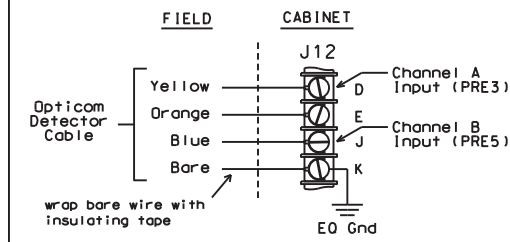
LOAD RESISTOR INSTALLATION DETAIL

(install resistors as shown below)



TYPICAL OPTICOM FIELD WIRE DETAIL

(input file, rear view)

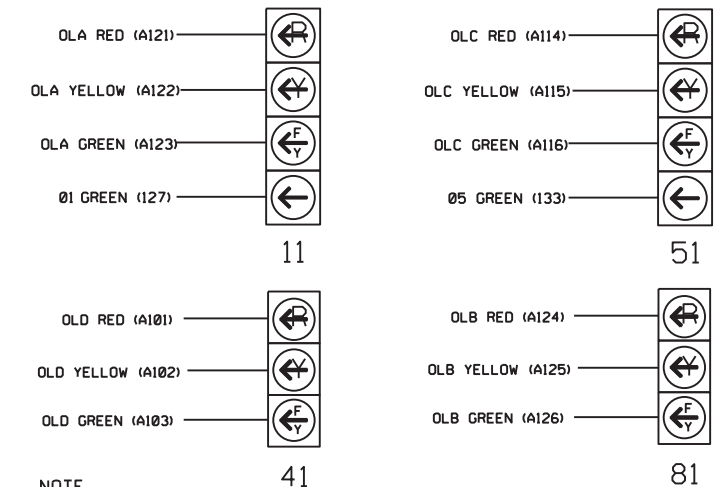


INPUT FILE POSITION LEGEND:



FYA SIGNAL WIRING DETAIL

(wire signal head as shown)



NOTE

- The sequence display for signal heads 11 and 51 require special logic programming. See sheet 2 of 5 for programming instructions.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 09-1259T
 DESIGNED: March 2018
 SEALED: March 27, 2018
 REVISED: N/A

Temporary Signal Design
 Electrical Detail - Sheet 1 of 5

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of:



NC FIRM LICENSE No: P-0339
 504 Meadowlands Drive
 Hillsborough, NC 27278
 (919) 732-3883
 (919) 732-6676 (FAX)

ELECTRICAL AND PROGRAMMING DETAILS FOR:



US 52 (E Innes Street) at Newsome Road	
Division 9	Rowan County
Salisbury	
PLAN DATE: March 2018	REVIEWED BY: E. Sirgany
PREPARED BY: J. Smith	REVIEWED BY:
REVISIONS	INIT. DATE

SEAL
 NORTH CAROLINA PROFESSIONAL ENGINEER
 SEAL 018174
 EDWARD W. SIRGANY
 3/27/2018
 DATE
 SIG. INVENTORY NO. 09-1259T

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 #5 IS ON
AND RED CLEAR ON PHASE #5 IS ON

↓
SCROLL DOWN

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

PRESS '+'

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

LOGICAL I/O COMMAND #2 (+/-COMMAND#)
IF ACTIVE PHASE #5 IS ON

↓
SCROLL DOWN

THEN:
SET OUTPUT ASSIGNMENT #44 OFF

PRESS '+'

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

LOGICAL I/O COMMAND #3 (+/-COMMAND#)
IF YELLOW ON PHASE #5 IS ON

↓
SCROLL DOWN

THEN:
SET OUTPUT ASSIGNMENT #43 ON

PRESS '+'

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

LOGICAL I/O COMMAND #4 (+/-COMMAND#)
IF ACTIVE PHASE #1 IS ON
AND RED CLEAR ON PHASE #1 IS ON

↓
SCROLL DOWN

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

PRESS '+'

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

LOGICAL I/O COMMAND #5 (+/-COMMAND#)
IF ACTIVE PHASE #1 IS ON

↓
SCROLL DOWN

THEN:
SET OUTPUT ASSIGNMENT #52 OFF

PRESS '+'

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

LOGICAL I/O COMMAND #6 (+/-COMMAND#)
IF YELLOW ON PHASE #1 IS ON

↓
SCROLL DOWN

THEN:
SET OUTPUT ASSIGNMENT #51 ON

LOGIC I/O PROCESSOR PROGRAMMING COMPLETE

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

OUTPUT REFERENCE SCHEDULE

USE TO INTERPRET LOGIC PROCESSOR

- 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

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 Preempt 3.

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
 RED CLEAR BEFORE PRE (0= DEFAULT).....0
 DWELL MIN TIMER (0-255 SEC)10
 DWELL MAX TIMER (0=OFF,1-255MIN) ...2
 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?Y
 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: ABCDEFGHIJKLMNPO
 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
 RED CLEAR BEFORE PRE (0= DEFAULT).....0
 DWELL MIN TIMER (0-255 SEC)10
 DWELL MAX TIMER (0=OFF,1-255MIN) ...2
 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?Y
 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: ABCDEFGHIJKLMNPO
 DWELL INT FLASH YELLOW
 OMIT OVERLAPS:

PROGRAMMING COMPLETE

Program extend time on optical detector unit for 2.0 seconds.

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
RED CLEAR (0=PARENT,0.1-25.5 SEC).....0
OUTPUT AS PHASE # (0=NONE, 1-16).....0

NOTICE GREEN FLASH

PRESS '+'

PAGE 1: 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 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
RED CLEAR (0=PARENT,0.1-25.5 SEC).....0
OUTPUT AS PHASE # (0=NONE, 1-16).....0

NOTICE GREEN FLASH

PRESS '+'

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
RED CLEAR (0=PARENT,0.1-25.5 SEC).....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 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
RED CLEAR (0=PARENT,0.1-25.5 SEC).....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.

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?...N
GREEN EXTENSION (0-255 SEC).....0
YELLOW CLEAR (0=PARENT,3-25.5 SEC).....0
RED CLEAR (0=PARENT,0.1-25.5 SEC).....0
OUTPUT AS PHASE # (0=NONE, 1-16).....0

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
RED CLEAR (0=PARENT,0.1-25.5 SEC).....0
OUTPUT AS PHASE # (0=NONE, 1-16).....0

NOTICE PAGE 2

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 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
RED CLEAR (0=PARENT,0.1-25.5 SEC).....0
OUTPUT AS PHASE # (0=NONE, 1-16).....0

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 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
RED CLEAR (0=PARENT,0.1-25.5 SEC).....0
OUTPUT AS PHASE # (0=NONE, 1-16).....0

NOTICE GREEN FLASH

NOTICE GREEN FLASH

OVERLAP PROGRAMMING COMPLETE

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 09-1259T
DESIGNED: March 2018
SEALED: March 27, 2018
REVISED: N/A

Temporary Signal Design
Electrical Detail - Sheet 2 of 5

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of:



NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

ELECTRICAL AND PROGRAMMING DETAILS FOR:



US 52 (E Innes Street)
at
Newsome Road

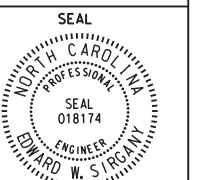
Division 9 Rowan County Salisbury

PLAN DATE: March 2018 REVIEWED BY: E. Sirgany

PREPARED BY: J. Smith REVIEWED BY:

REVISIONS

NO.	DATE	DESCRIPTION



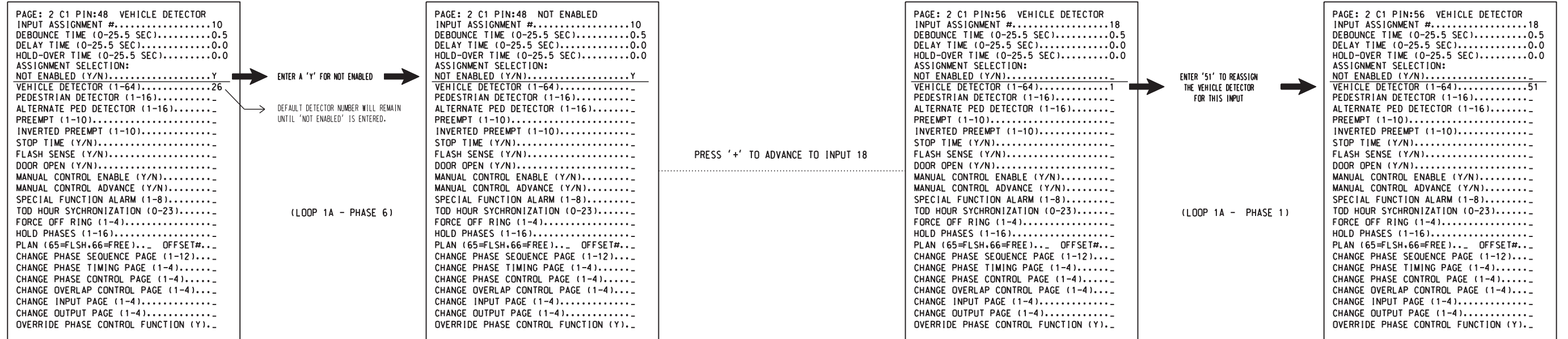
DATE: 3/27/2018
SIGNED: Edward W. Sirgany
SIG. INVENTORY NO. 09-1259T

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.

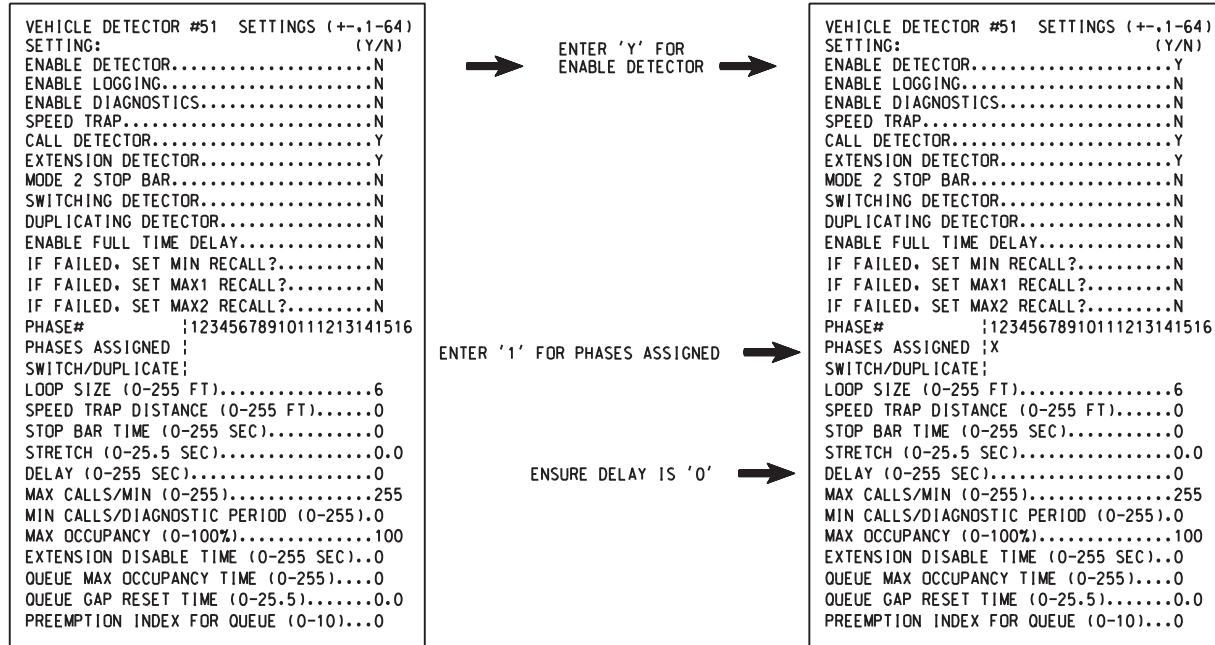
FROM MAIN MENU PRESS '5' (INPUTS). THEN PRESS 'NEXT' TO GET TO INPUT PAGE '2'. PRESS THE '+' KEY UNTIL INPUT 10 IS REACHED.



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 OF 5.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 09-1259T
DESIGNED: March 2018
SEALED: March 27, 2018
REVISED: N/A

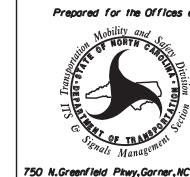
Temporary Signal Design
Electrical Detail - Sheet 3 of 5

Prepared in the Office of:



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Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

ELECTRICAL AND PROGRAMMING DETAILS FOR:



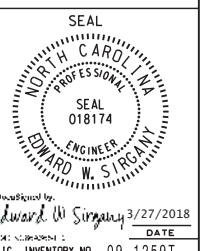
US 52 (E Innes Street)
at
Newsome Road

Division 9 Rowan County Salisbury

PLAN DATE: March 2018 REVIEWED BY: E. Sirgany
PREPARED BY: J. Smith REVIEWED BY:

REVISIONS	INIT.	DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



Checked by: Edward W. Sirgany 3/27/2018
DATE
SIG. INVENTORY NO. 09-1259T

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 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 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 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 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 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 '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 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 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.....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 :
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 '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).....0.0
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
    
```


NOTE: DETECTOR IS PROGRAMMED PER THE INPUT FILE CONNECTION AND PROGRAMMING CHART SHOWN ON SHEET 1 of 5.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 09-1259T
 DESIGNED: March 2018
 SEALED: March 27, 2018
 REVISED: N/A

Temporary Signal Design
 Electrical Detail - Sheet 4 of 5


DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of:



NC FIRM LICENSE No: P-0339
 504 Meadowlands Drive
 Hillsborough, NC 27278
 (919) 732-3883
 (919) 732-6676 (FAX)

ELECTRICAL AND PROGRAMMING DETAILS FOR:



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


US 52 (E Innes Street)
 at
 Newsome Road

Division 9 Rowan County Salisbury

PLAN DATE: March 2018 REVIEWED BY: E. Sirgany
 PREPARED BY: J. Smith REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL



EDWARD W. SIRGANY
 ENGINEER
 SEAL 018174

Reviewed by: Edward W. Sirgany 3/27/2018
 DATE

SIG. INVENTORY NO. 09-1259T

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.

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.

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: 09-1259T
DESIGNED: March 2018
SEALED: March 27, 2018
REVISED: N/A

Temporary Signal Design
Electrical Detail - Sheet 5 of 5

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

Prepared in the Office of:



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Hillsborough, NC 27278
(919) 732-3883
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ELECTRICAL AND PROGRAMMING
DETAILS FOR:



US 52 (E Innes Street)
at
Newsome Road

Division 9 Rowan County Salisbury

PLAN DATE:	March 2018	REVIEWED BY:	E. Sirgany
PREPARED BY:	J. Smith	REVIEWED BY:	

REVISIONS	INIT.	DATE

SEAL

Seal of Edward W. Sirgany, P.E.
3/27/2018
DATE

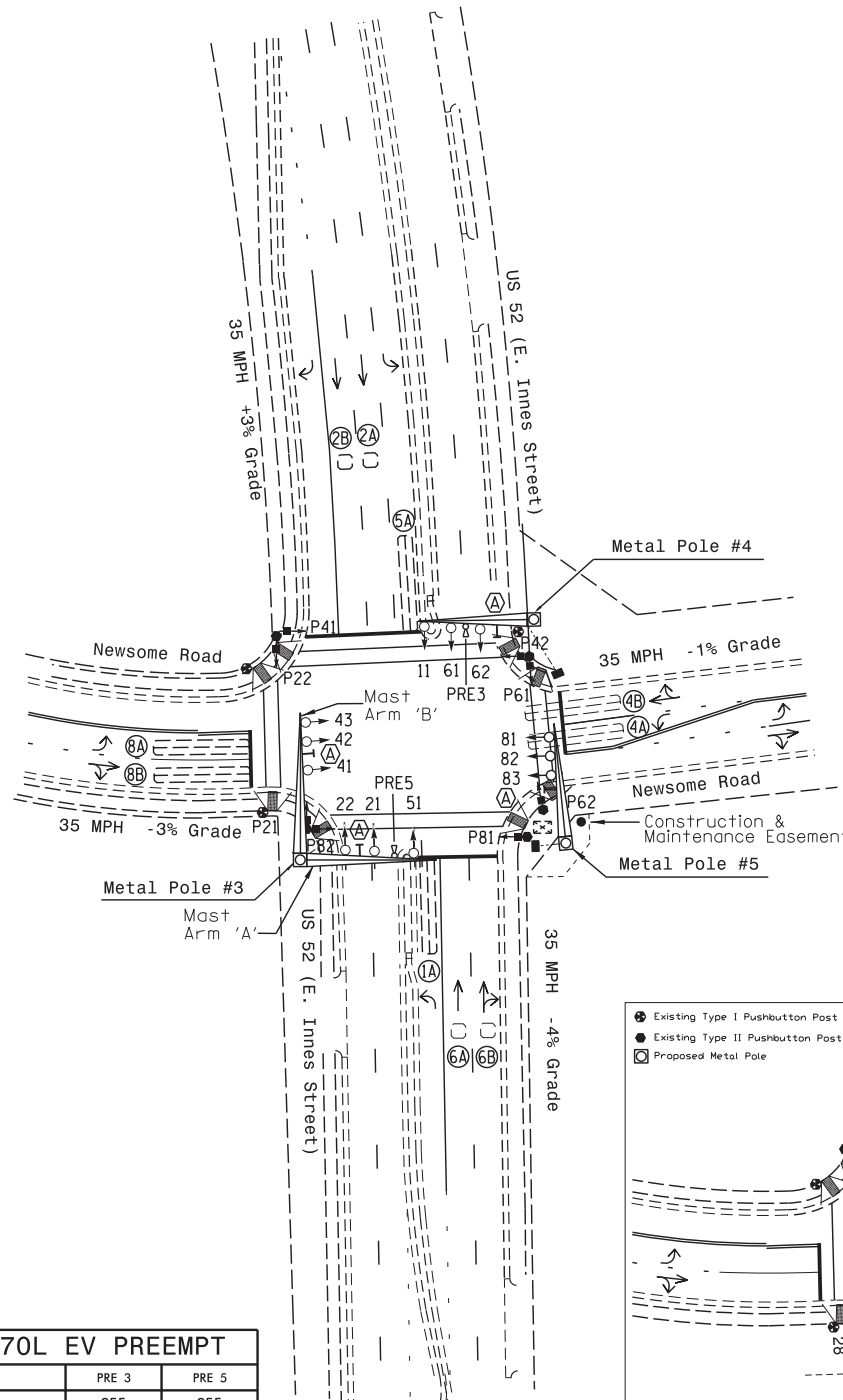
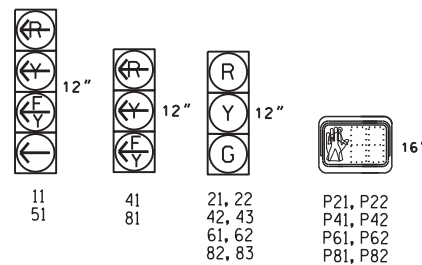
SIG. INVENTORY NO. 09-1259T

OASIS 2070 LOOP & DETECTOR INSTALLATION CHART												
INDUCTIVE LOOPS				DETECTOR PROGRAMMING								
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
1A	6X40	0	2-4-2	-	1	Y	Y	-	-	*15	-	-
2A,2B	6X6	70	EXIST	-	2	Y	Y	-	-	-	-	-
4A	6X40	+15	2-4-2	-	4	Y	Y	-	-	3	-	-
4B	6X40	+15	2-4-2	-	4	Y	Y	-	-	10	-	-
5A	6X40	0	2-4-2	-	5	Y	Y	-	-	*15	-	-
6A,6B	6X6	70	EXIST	-	6	Y	Y	-	-	-	-	-
8A	6X40	0	2-4-2	-	8	Y	Y	-	-	3	-	-
8B	6X40	0	2-4-2	-	8	Y	Y </tr					

* Disable delay during Alternate Phasing Operation.
 ** Disable Phase call for loop(s) during Alternate Phasing Operation.

SIGNAL FACE I.D.

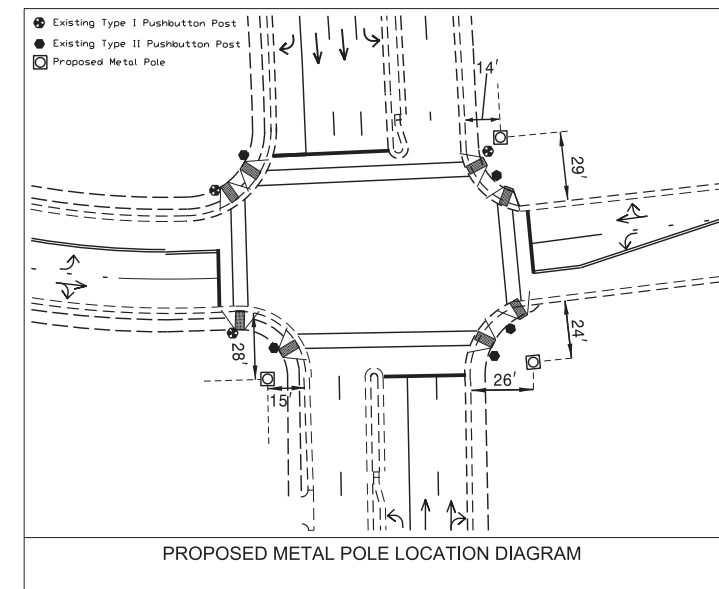
All Heads L.E.D.



5 Phase Fully Actuated W/ Emergency Preemption (Salisbury Signal System)

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018, "Standard Specifications for Roads and Structures" dated January 2018.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 1 and/or phase 5 may be lagged.
4. Set all detector units to presence mode.
5. 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.
6. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
7. Program pedestrian heads to countdown the flashing "DON'T WALK" time only.
8. This intersection features an optical preemption system. Shown locations of optical detectors are conceptual only.
9. The Division (City) Traffic Engineer will determine the hours of use for each phasing plan.
10. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.



PROPOSED		EXISTING	
	Traffic Signal Head		N/A
	Modified Signal Head		N/A
	Sign		N/A
	Pedestrian Signal Head		N/A
	Push Button & Sign		N/A
	Inductive Loop Detector		N/A
	Controller & Cabinet		N/A
	Junction Box		N/A
	Oversize Junction Box		N/A
	2-in Underground Conduit		N/A
	Right of Way		N/A
	Directional Arrow		N/A
	Metal Pole with Mastarm		N/A
	Optical Detector		N/A
	Type I Pushbutton Post		N/A
	Type II Signal Pedestal		N/A
	Curb Ramp		N/A
	Street Name Sign (D3-1)		N/A

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*	20	45	25	20	45	25
Yellow Clearance	3.0	4.1	4.1	3.0	4.1	4.1
Red Clearance	3.1	2.1	2.4	2.8	2.1	2.4
Walk 1*	-	7	7	-	7	7
Don't Walk 1	-	10	22	-	8	18
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.

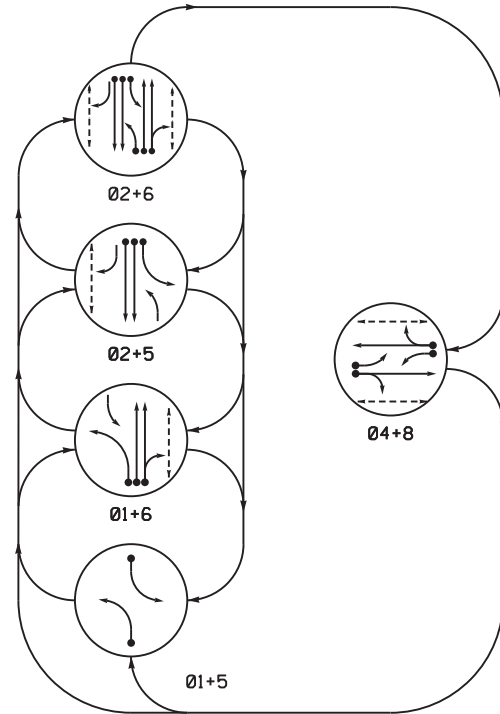
OASIS 2070L EV PREEMPT		
FUNCTION	PRE 3	PRE 5
Interval 1 - Dwell Green	255	255
Interval 1 - Dwell Yellow	0.0*	0.0*
Interval 1 - Dwell Red	0.0*	0.0*
Interval 5 - Exit Green	1	1
Interval 5 - Yellow	0.0	0.0
Interval 5 - Red	0.0	0.0
Exit Phase(s)	2+6	2+6
Priority	MED	MED
Delay Time	0	0
Min Green Before Pre	1	1
Ped Clear Before Pre	10	10
Yellow Clear Before Pre	0.0*	0.0*
Red Clear Before Pre	0.0*	0.0*
Dwell Min Time	7	7
Dwell Max Time (Minutes)	2	2
Enable Backup Protection	N	N
Ped Clear Through Yellow	Y	Y
Omit Overlaps	-	-
Preempt Extend**	2	2

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

Final Signal Design Signal Upgrade - Sheet 1 of 2

Prepared in the Office of: NC FIRM LICENSE No: P-0339 504 Meadowlands Drive Hillsborough, NC 27278 (919) 732-3883 (919) 732-6676 (FAX)	 750 N. Greenleaf Pkwy, Garner, NC 27529	US 52 (E. Innes Street) at Newsome Road		DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED SEAL 018174 EDWARD W. SIRGANY
		Division 9 Rowan County Salisbury PLAN DATE: March 2018 REVIEWED BY: E. Sirgany PREPARED BY: M. Parker REVIEWED BY:	REVISIONS INIT. DATE	

DEFAULT PHASING DIAGRAM

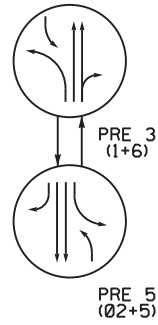


PHASING DIAGRAM DETECTION LEGEND

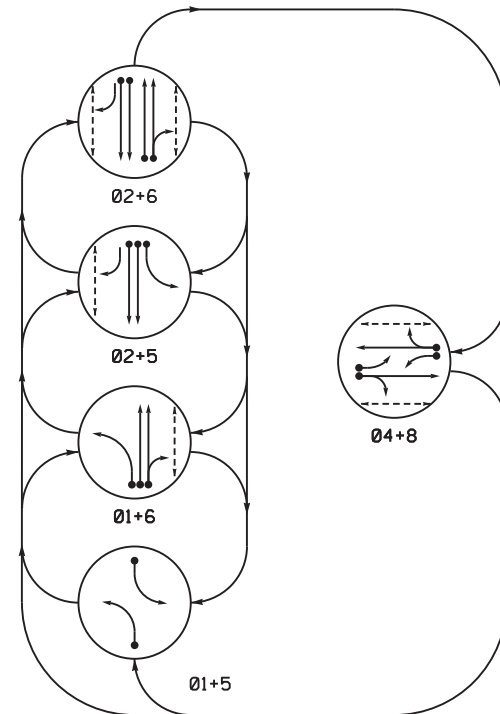
- ←●→ DETECTED MOVEMENT
- ←○→ UNDETECTED MOVEMENT (OVERLAP)
- ←- - -→ UNSIGNALIZED MOVEMENT
- ←- - -> PEDESTRIAN MOVEMENT

SIGNAL FACE	PHASE							
	01+5	01+6	02+5	02+6	04+8	P	P	F
11	-	-	F	F	R	-	F	Y
21,22	R	R	G	G	R	R	G	Y
41	R	R	R	R	F	R	R	R
42,43	R	R	R	R	G	R	R	R
51	-	F	-	F	R	-	F	Y
61,62	R	G	R	G	R	G	R	Y
81	R	R	R	R	F	R	R	R
82,83	R	R	R	R	G	R	R	R
P21,P22	DW	DW	W	W	DW	DW	DW	DRK
P41,P42	DW	DW	DW	DW	W	DW	DW	DRK
P61,P62	DW	W	DW	W	DW	DW	DW	DRK
P81,P82	DW	DW	DW	DW	W	DW	DW	DRK

DEFAULT EV PREEMPT PHASES (Medium Priority)



ALTERNATE PHASING DIAGRAM

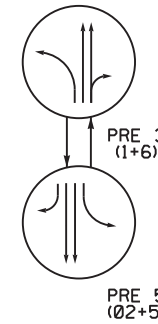


PHASING DIAGRAM DETECTION LEGEND

- ←●→ DETECTED MOVEMENT
- ←○→ UNDETECTED MOVEMENT (OVERLAP)
- ←- - -→ UNSIGNALIZED MOVEMENT
- ←- - -> PEDESTRIAN MOVEMENT

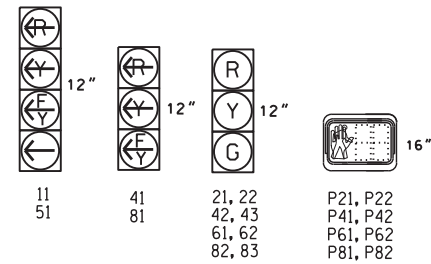
SIGNAL FACE	PHASE							
	01+5	01+6	02+5	02+6	04+8	P	P	F
11	-	-	R	R	R	-	R	Y
21,22	R	R	G	G	R	R	G	Y
41	R	R	R	R	F	R	R	R
42,43	R	R	R	R	G	R	R	R
51	-	R	-	R	R	-	R	Y
61,62	R	G	R	G	R	G	R	Y
81	R	R	R	R	F	R	R	R
82,83	R	R	R	R	G	R	R	R
P21,P22	DW	DW	W	W	DW	DW	DW	DRK
P41,P42	DW	DW	DW	DW	W	DW	DW	DRK
P61,P62	DW	W	DW	W	DW	DW	DW	DRK
P81,P82	DW	DW	DW	DW	W	DW	DW	DRK

ALTERNATE EV PREEMPT PHASES (Medium Priority)



SIGNAL FACE I.D.

All Heads L.E.D.



5 Phase Fully Actuated W/ Emergency Preemption (Salisbury Signal System)

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018, "Standard Specifications for Roads and Structures" dated January 2018.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 1 and/or phase 5 may be lagged.
4. Set all detector units to presence mode.
5. 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.
6. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
7. Program pedestrian heads to countdown the flashing "DON'T WALK" time only.
8. This intersection features an optical preemption system. Shown locations of optical detectors are conceptual only.
9. The Division (City) Traffic Engineer will determine the hours of use for each phasing plan.
10. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

Final Signal Design Signal Upgrade - Sheet 2 of 2

Prepared in the Office of:

NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

Prepared for:

750 N. Greenfield Pkwy, Garner, NC 27529

US 52 (E. Innes Street) at Newsome Road

Division 9 Rowan County Salisbury

PLAN DATE: September 2017 REVIEWED BY: R. Hinshaw
PREPARED BY: L. Boyer REVIEWED BY:

REVISIONS	INIT.	DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

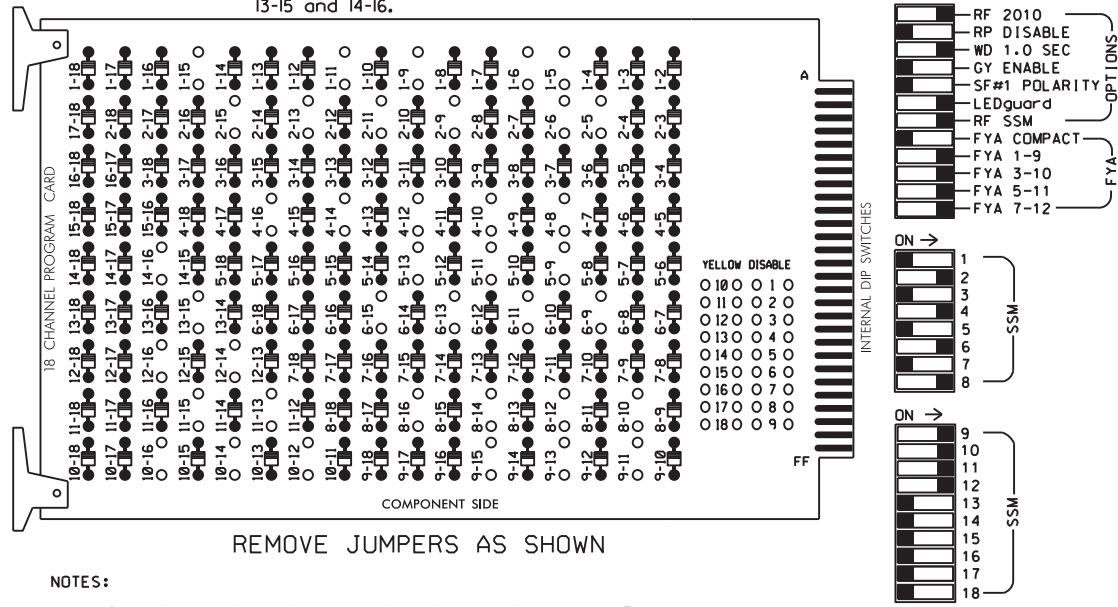
Edward W. Sirojany 3/27/2018

SIG. INVENTORY NO. 09-1259

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, 1-15, 2-5, 2-6, 2-9, 2-11, 2-13, 2-15, 4-8, 4-10, 4-12, 4-14, 4-16, 5-9, 5-11, 5-13, 6-9, 6-11, 6-13, 6-15, 8-10, 8-12, 8-14, 8-16, 9-11, 9-13, 9-15, 10-12, 10-14, 10-16, 11-13, 11-15, 12-14, 12-16, 13-15 and 14-16.



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 Start Up In Green.
- Program phases 2, 4, 6 and 8 for 'STARTUP PED CALL'.
- Program phases 2 and 6 for Yellow Flash, and overlaps 1 and 2 as Wag Overlaps.
- The cabinet and controller are part of the Salisbury 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,S5,S6,S7,S8,S9,S11,S12,
 AUX S1,AUX S2,AUX S4,AUX S5
 PHASES USED.....1,2,2PED,4,4PED,5,6,6PED,8,8PED
 OVERLAP "A".....1+2
 OVERLAP "B".....4
 OVERLAP "C".....5+6
 OVERLAP "D".....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	P21, P22	NU	42,43	P41, P42	51	61,62	P61, P62	NU	82,83	P81, P82	11	81	NU	51	41	NU			
RED		128			101			134				107									
YELLOW	*	129			102		*	135				108									
GREEN		130			103			136				109									
RED ARROW																A121	A124	A114	A101		
YELLOW ARROW																A122	A125	A115	A102		
FLASHING YELLOW ARROW																A123	A126	A116	A103		
GREEN ARROW	127							133													
Hand icon										113			104			119			110		
Walking person icon																115			106	121	112

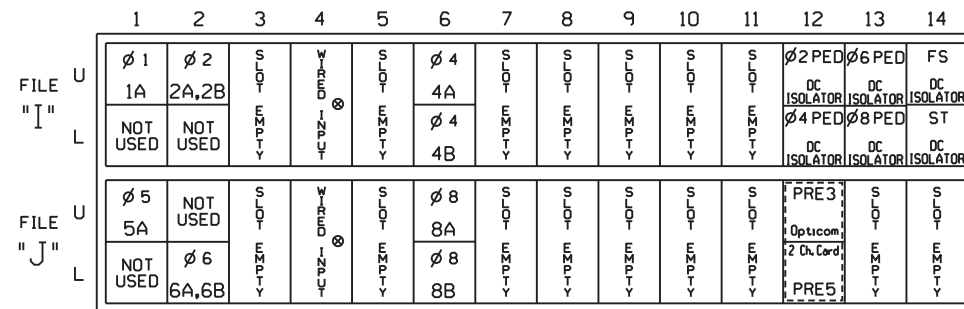
NU = Not Used

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

★ See pictorial of head wiring in detail below.

INPUT FILE POSITION LAYOUT

(front view)



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

FS = FLASH SENSE
 ST = STOP TIME
 PRE = PREEMPT

⊗ Wired Input - Do not populate slot with detector card

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
1A ¹	TB2-1,2	11U	56	18	1	1	Y	Y			15
	-	J4U	48	10*	26	6	Y	Y			
	-	11U	56	18*	51	1	Y	Y			
2A,2B	TB2-5,6	12U	39	1	2	2	Y	Y			
4A	TB4-9,10	16U	41	3	4	4	Y	Y			3
4B	TB4-11,12	16L	45	7	14	4	Y	Y			10
5A ²	TB3-1,2	J1U	55	17	5	5	Y	Y			15
	-	14U	47	9*	22	2	Y	Y			
	-	J1U	55	17*	55	5	Y	Y			
6A,6B	TB3-7,8	J2L	44	6	16	6	Y	Y			
8A	TB5-9,10	J6U	42	4	8	8	Y	Y			3
8B	TB5-11,12	J6L	46	8	18	8	Y	Y			10
PED PUSH BUTTONS											
P21,P22	TB8-4,6	112U	67	29	PED 2	2	PED				
P41,P42	TB8-5,6	112L	69	31	PED 4	4	PED				
P61,P62	TB8-7,9	113U	68	30	PED 6	6	PED				
P81,P82	TB8-8,9	113L	70	32	PED 8	8	PED				

NOTE:
 INSTALL DC ISOLATORS IN INPUT FILE SLOTS 112 AND 113.

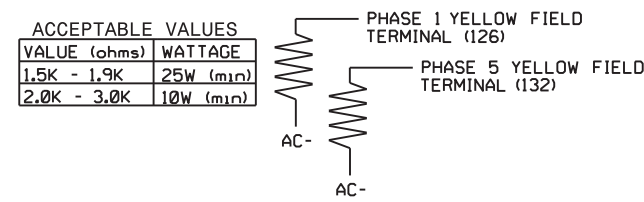
¹Add jumper from 11-W to J4-W, on rear of input file.

²Add jumper from J1-W to 14-W, on rear of input file.

*Input Page 2. See Input Programming sheets 3 of 5 and 4 of 5.

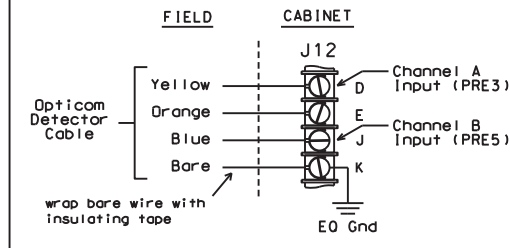
LOAD RESISTOR INSTALLATION DETAIL

(install resistors as shown below)

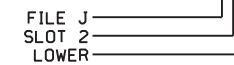


TYPICAL OPTICOM FIELD WIRE DETAIL

(input file, rear view)

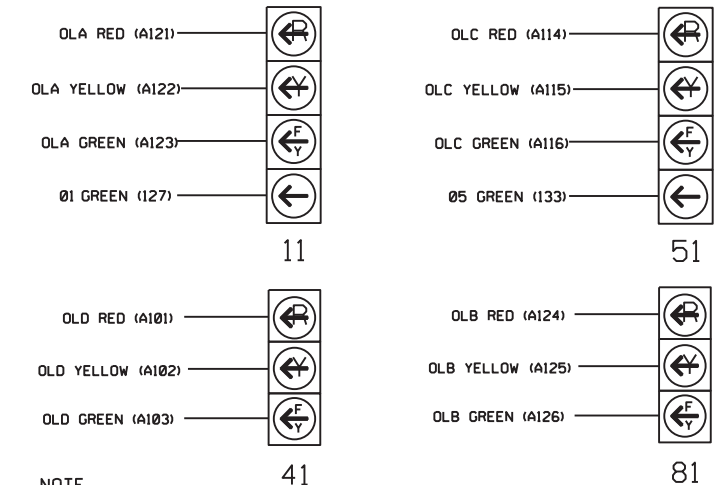


INPUT FILE POSITION LEGEND: J2L



FYA SIGNAL WIRING DETAIL

(wire signal head as shown)



NOTE

- The sequence display for signal heads 11 and 51 require special logic programming. See sheet 2 of 5 for programming instructions.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 09-1259
 DESIGNED: March 2018
 SEALED: March 27, 2018
 REVISED: N/A

Final Signal Design
 Electrical Detail - Sheet 1 of 5

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of:



NC FIRM LICENSE No: P-0339
 504 Meadowlands Drive
 Hillsborough, NC 27278
 (919) 732-3883
 (919) 732-6676 (FAX)

ELECTRICAL AND PROGRAMMING DETAILS FOR:



US 52 (E Innes Street)
 at
 Newsome Road

Division 9 Rowan County Salisbury

PLAN DATE: March 2018 REVIEWED BY: E. Sirgany
 PREPARED BY: J. Smith REVIEWED BY:

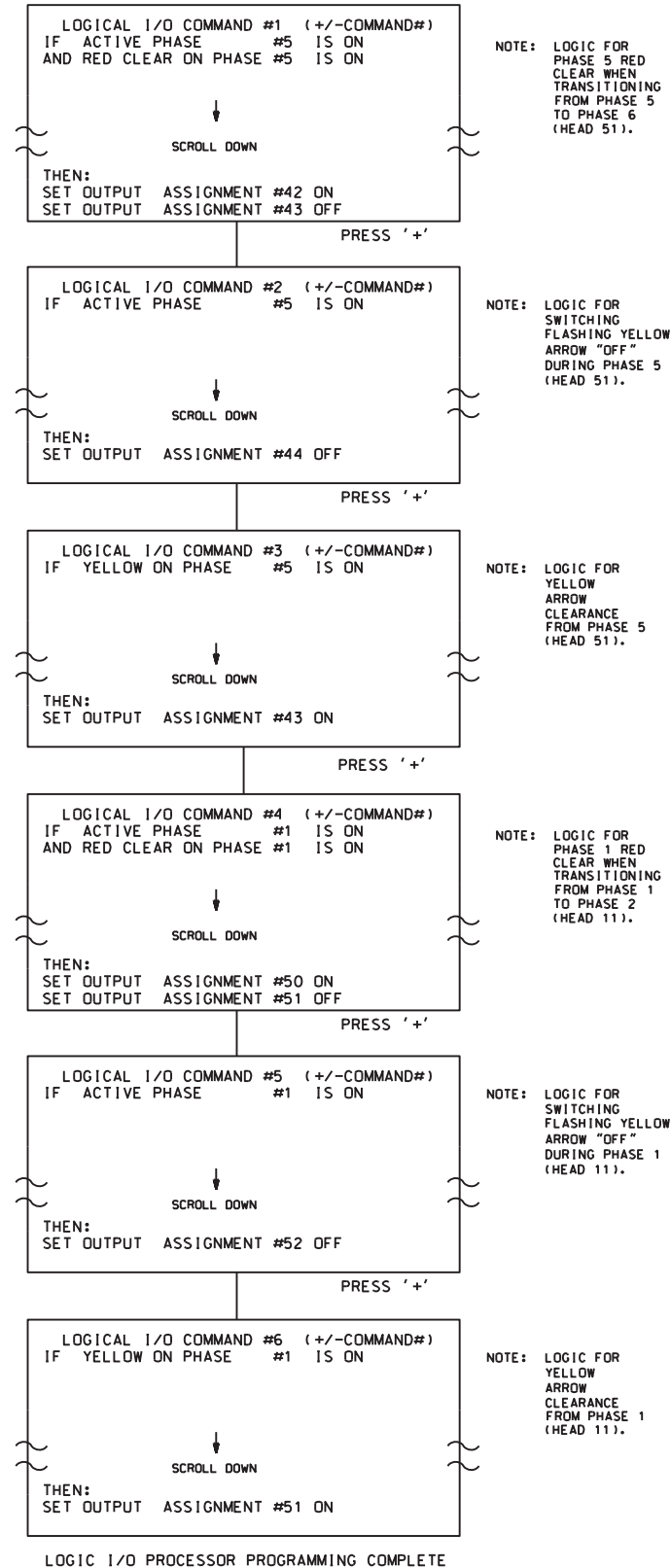
REVISIONS	INIT.	DATE

SEAL
 NORTH CAROLINA PROFESSIONAL ENGINEER
 EDWARD W. SIRGANY
 License No. 018174
 Approved by: Edward W. Sirgany 3/27/2018
 DATE
 Sig. Inventory No. 09-1259

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).



LOGIC I/O PROCESSOR PROGRAMMING COMPLETE

OUTPUT REFERENCE SCHEDULE

USE TO INTERPRET LOGIC PROCESSOR

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

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 Preempt 3.

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
RED CLEAR BEFORE PRE (0= DEFAULT)...	0
DWELL MIN TIMER (0-255 SEC)	10
DWELL MAX TIMER (0=OFF,1-255MIN)	2
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?	Y
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:	ABCDEFGHIJKLMNPD
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
RED CLEAR BEFORE PRE (0= DEFAULT)...	0
DWELL MIN TIMER (0-255 SEC)	10
DWELL MAX TIMER (0=OFF,1-255MIN)	2
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?	Y
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:	ABCDEFGHIJKLMNPD
DWELL INT FLASH YELLOW	
OMIT OVERLAPS:	

PROGRAMMING COMPLETE

Program extend time on optical detector unit for 2.0 seconds.

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

NOTICE GREEN FLASH

PRESS '+'

PAGE 1: VEHICLE OVERLAP 'B' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: X
VEH OVL NOT VEH: X
VEH OVL NOT PED: X
VEH OVL GRN EXT: X
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
RED CLEAR (0=PARENT.0.1-25.5 SEC)....0
OUTPUT AS PHASE # (0=NONE, 1-16)....0

NOTICE GREEN FLASH

PRESS '+'

PAGE 1: VEHICLE OVERLAP 'C' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: XX
VEH OVL NOT VEH: XX
VEH OVL NOT PED: XX
VEH OVL GRN EXT: XX
STARTUP COLOR: - RED - YELLOW - GREEN
FLASH COLORS: - RED - YELLOW X GREEN
SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...Y
GREEN EXTENSION (0-255 SEC).....0
YELLOW CLEAR (0=PARENT.3-25.5 SEC)....0
RED CLEAR (0=PARENT.0.1-25.5 SEC)....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: X
VEH OVL NOT PED: X
VEH OVL GRN EXT: X
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
RED CLEAR (0=PARENT.0.1-25.5 SEC)....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.

NOTICE PAGE 2

PAGE 2: VEHICLE OVERLAP 'A' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: X
VEH OVL NOT VEH: X
VEH OVL NOT PED: X
VEH OVL GRN EXT: X
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
RED CLEAR (0=PARENT.0.1-25.5 SEC)....0
OUTPUT AS PHASE # (0=NONE, 1-16)....0

NOTICE PAGE 2

PRESS '+'

NOTICE PAGE 2

PAGE 2: VEHICLE OVERLAP 'B' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: X
VEH OVL NOT VEH: X
VEH OVL NOT PED: X
VEH OVL GRN EXT: X
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
RED CLEAR (0=PARENT.0.1-25.5 SEC)....0
OUTPUT AS PHASE # (0=NONE, 1-16)....0

NOTICE PAGE 2

PRESS '+'

NOTICE PAGE 2

PAGE 2: VEHICLE OVERLAP 'C' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: X
VEH OVL NOT VEH: X
VEH OVL NOT PED: X
VEH OVL GRN EXT: X
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
RED CLEAR (0=PARENT.0.1-25.5 SEC)....0
OUTPUT AS PHASE # (0=NONE, 1-16)....0

NOTICE PAGE 2

PRESS '+'

NOTICE PAGE 2

PAGE 2: VEHICLE OVERLAP 'D' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: X
VEH OVL NOT VEH: X
VEH OVL NOT PED: X
VEH OVL GRN EXT: X
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
RED CLEAR (0=PARENT.0.1-25.5 SEC)....0
OUTPUT AS PHASE # (0=NONE, 1-16)....0

NOTICE PAGE 2

OVERLAP PROGRAMMING COMPLETE

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 09-1259
DESIGNED: March 2018
SEALED: March 27, 2018
REVISED: N/A

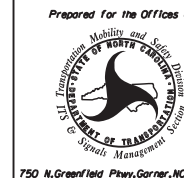
Final Signal Design
Electrical Detail - Sheet 2 of 5

Prepared in the Office of:



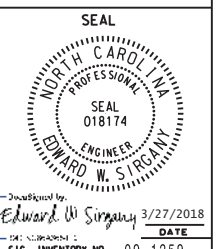
NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

ELECTRICAL AND PROGRAMMING
DETAILS FOR:



US 52 (E Innes Street) at Newsome Road	
Division 9	Rowan County
Salisbury	
PLAN DATE: March 2018	REVIEWED BY: E. Sirgany
PREPARED BY: J. Smith	REVIEWED BY:
REVISIONS	INIT. DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



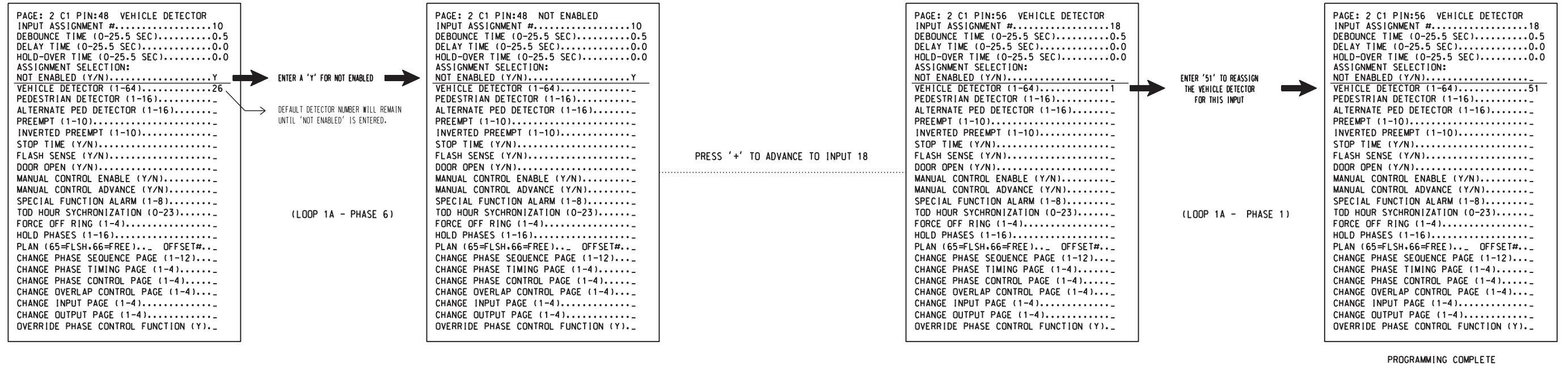
Checked by: Edward W. Sirgany 3/27/2018
DATE
SIG. INVENTORY NO. 09-1259

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.

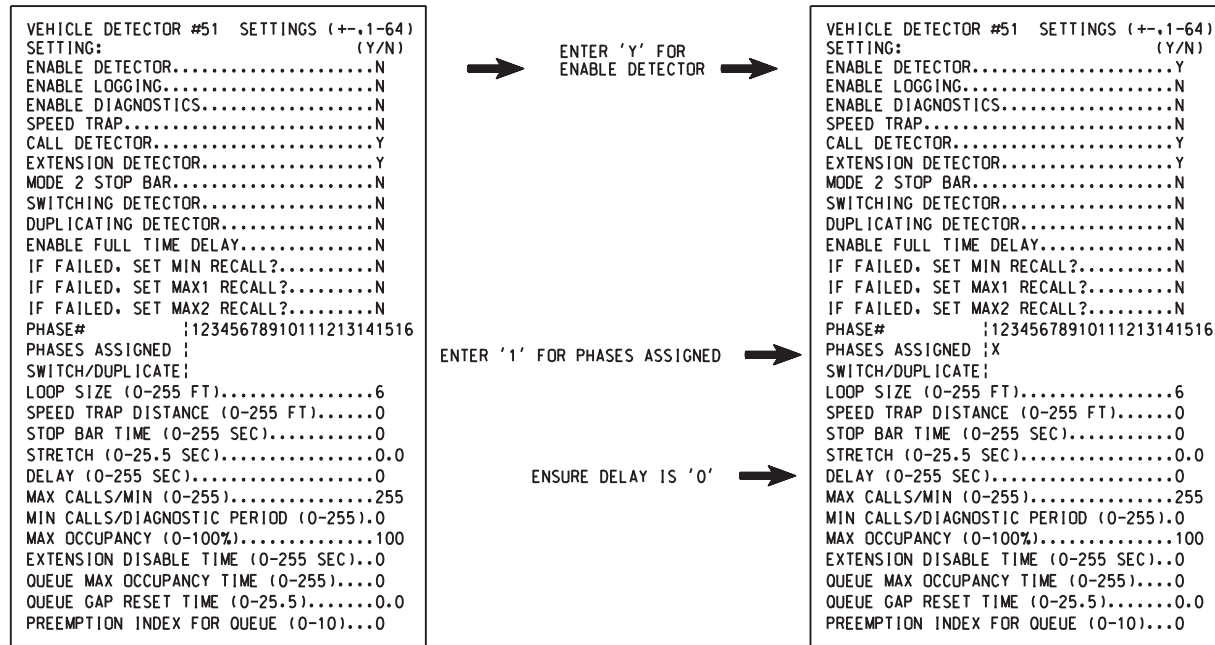
FROM MAIN MENU PRESS '5' (INPUTS). THEN PRESS 'NEXT' TO GET TO INPUT PAGE '2'. PRESS THE '+' KEY UNTIL INPUT 10 IS REACHED.



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 OF 5.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 09-1259
 DESIGNED: March 2018
 SEALED: March 27, 2018
 REVISED: N/A

Final Signal Design
 Electrical Detail - Sheet 3 of 5

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of:

NC FIRM LICENSE No: P-0339
 504 Meadowlands Drive
 Hillsborough, NC 27278
 (919) 732-3883
 (919) 732-6676 (FAX)

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:
 Transportation, Mobility and Safety Division
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION & SAFETY

US 52 (E Innes Street)
 at
 Newsome Road

Division 9 Rowan County Salisbury

PLAN DATE: March 2018 REVIEWED BY: E. Sirgany
 PREPARED BY: J. Smith REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL

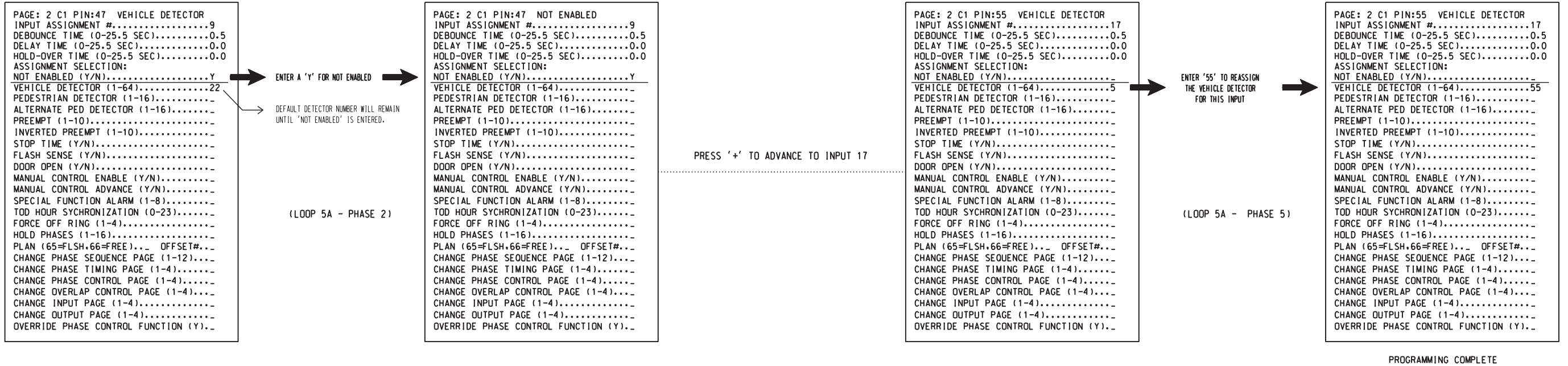
Edward W. Sirgany 3/27/2018
 DATE
 SIG. INVENTORY NO. 09-1259

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.

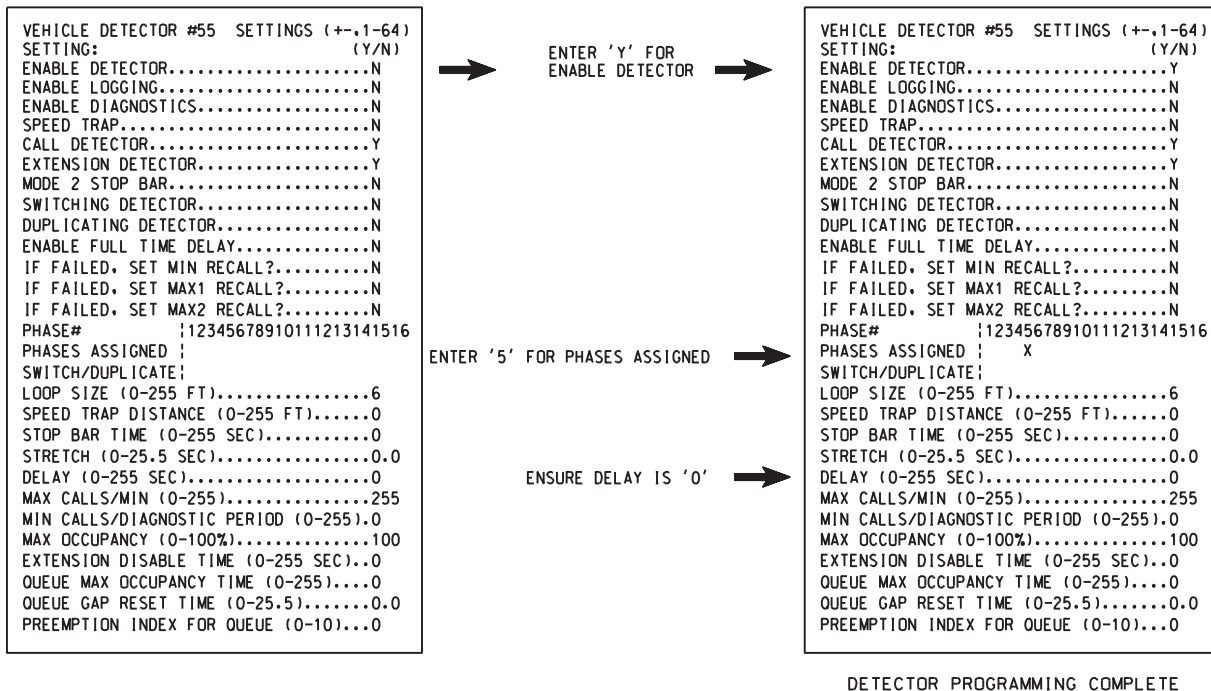
FROM MAIN MENU PRESS '5' (INPUTS), THEN PRESS 'NEXT' TO GET TO INPUT PAGE '2'. PRESS THE '+' KEY UNTIL INPUT 9 IS REACHED.



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 OF 5.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 09-1259
 DESIGNED: March 2018
 SEALED: March 27, 2018
 REVISED: N/A

Final Signal Design
 Electrical Detail - Sheet 4 of 5

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of:

 NC FIRM LICENSE No: P-0339
 504 Meadowlands Drive
 Hillsborough, NC 27278
 (919) 732-3883
 (919) 732-6676 (FAX)

ELECTRICAL AND PROGRAMMING DETAILS FOR:
 Prepared for the Offices of:

 750 N. Greenfield Pkwy, Corner, NC 27529

US 52 (E Innes Street)
 at
 Newsome Road
 Division 9 Rowan County Salisbury
 PLAN DATE: March 2018 REVIEWED BY: E. Sirgany
 PREPARED BY: J. Smith REVIEWED BY:
 REVISIONS INIT. DATE
 Edward W. Sirgany 3/27/2018
 DATE
 SIG. INVENTORY NO. 09-1259

SEAL

 ENGINEER
 EDWARD W. SIRGANY

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.

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.

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: 09-1259
DESIGNED: March 2018
SEALED: March 27, 2018
REVISED: N/A

Final Signal Design
Electrical Detail - Sheet 5 of 5

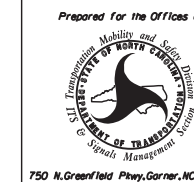
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of:



NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

ELECTRICAL AND PROGRAMMING DETAILS FOR:



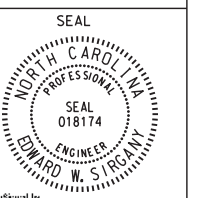
US 52 (E Innes Street)
at
Newsome Road

Division 9 Rowan County Salisbury

PLAN DATE: March 2018 REVIEWED BY: E. Sirgany

PREPARED BY: J. Smith REVIEWED BY:

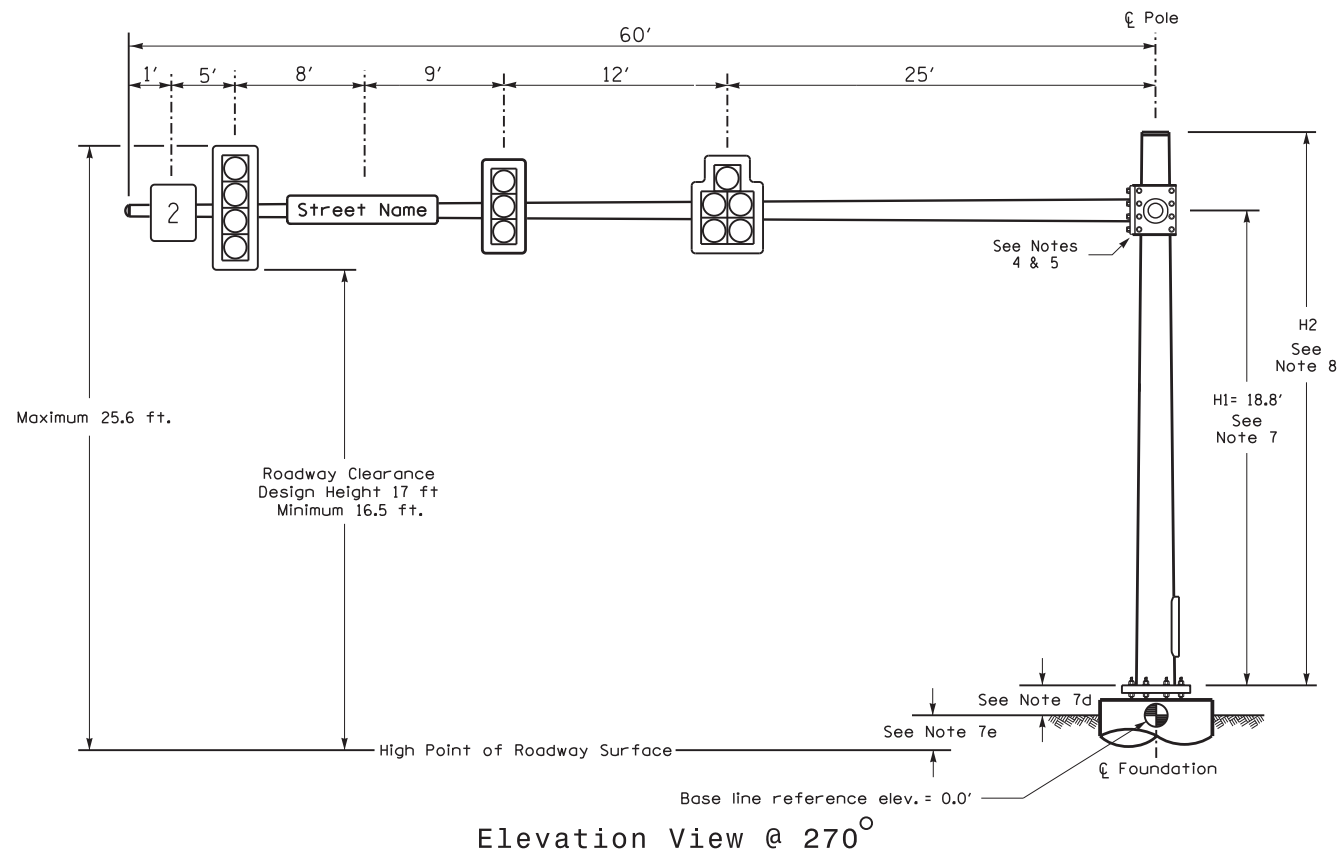
REVISIONS	INIT.	DATE



Signature of: *Edward W. Sirgany* 3/27/2018
DATE
SIG. INVENTORY NO. 09-1259

METAL POLE No. 3

Design Loading for METAL POLE NO.3, MAST ARM A



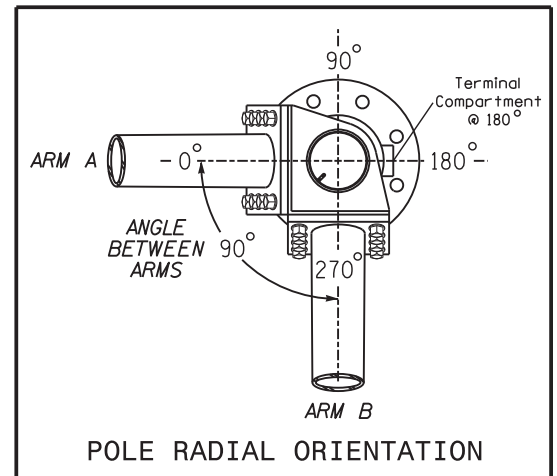
SPECIAL NOTE
The contractor is responsible for verifying that the mast arm attachment height (H1) will provide the "Design Height" clearance from the roadway before submitting final shop drawings for approval. Verify elevation data below which was obtained by field measurement or from available project survey data.

Elevation Data for Mast Arm Attachment (H1)

Elevation Differences for:	Arm "A"	Arm "B"
Baseline reference point at ϕ Foundation @ ground level	0.0 ft.	0.0 ft.
Elevation difference at High point of roadway surface	-0.2 ft.	-2.9 ft.
Elevation difference at Edge of travelway or face of curb	-0.7 ft.	-2.4 ft.

MAST ARM LOADING SCHEDULE

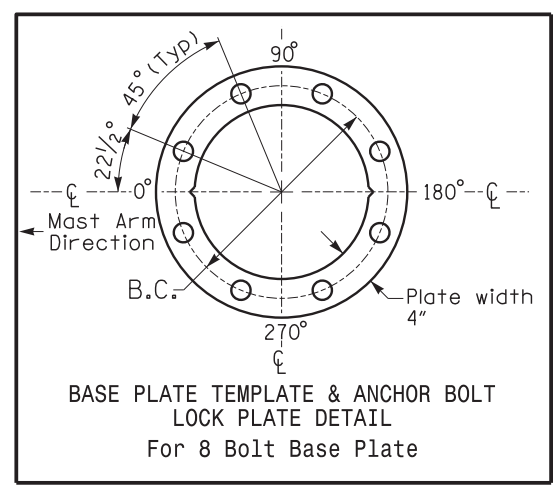
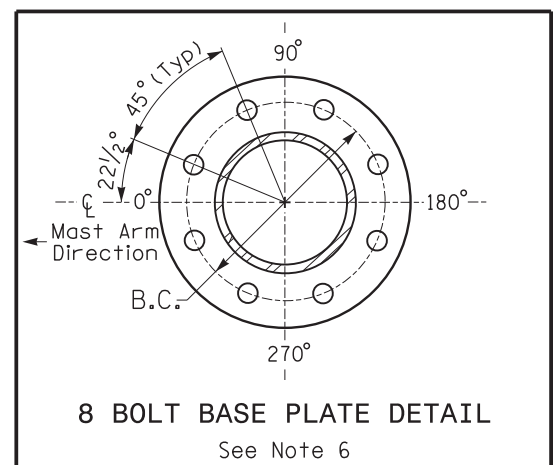
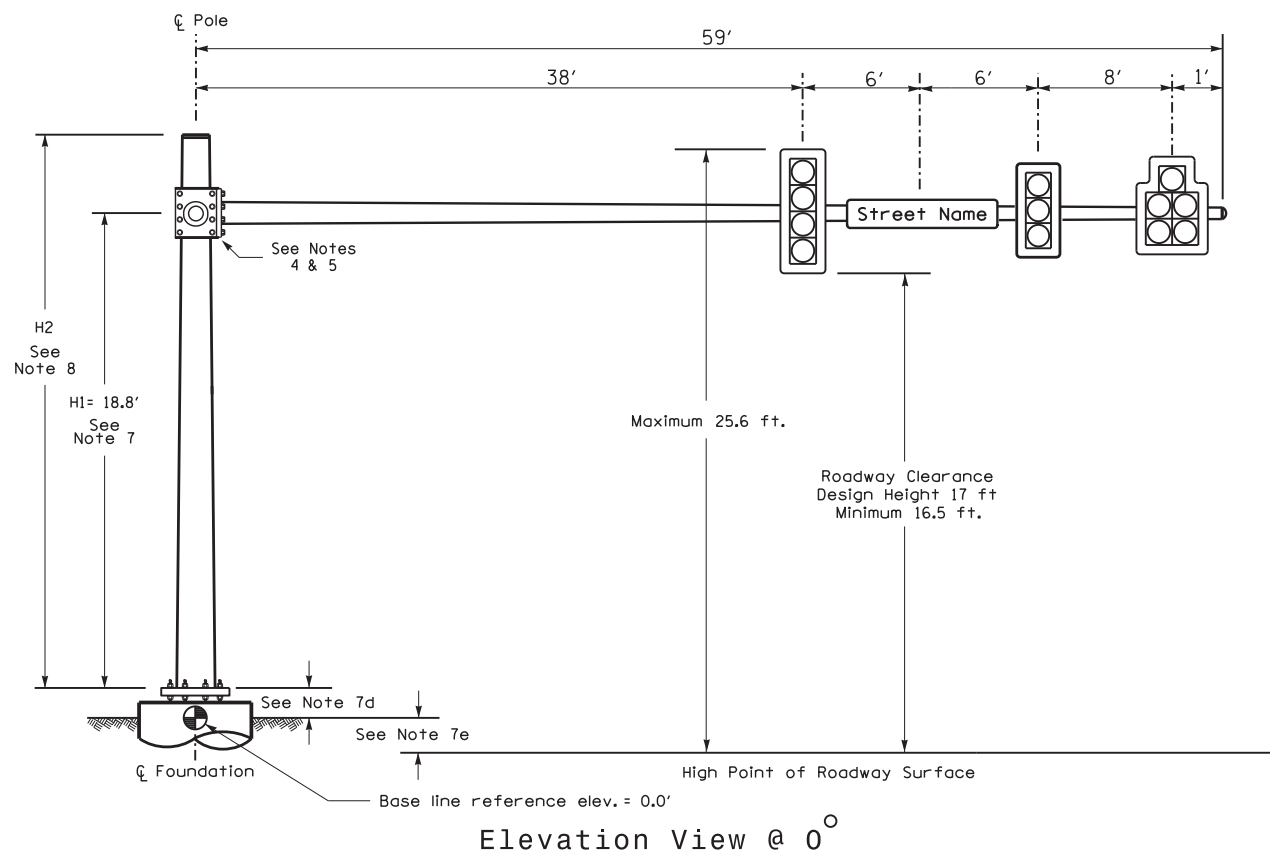
LOADING SYMBOL	DESCRIPTION	AREA	SIZE	WEIGHT
	RIGID MOUNTED SIGNAL HEAD 12"-5 SECTION-WITH BACKPLATE	16.3 S.F.	42.0" W X 56.0" L	103 LBS
	RIGID MOUNTED SIGNAL HEAD 12"-4 SECTION-WITH BACKPLATE	11.5 S.F.	25.5" W X 66.0" L	74 LBS
	RIGID MOUNTED SIGNAL HEAD 12"-3 SECTION-WITH BACKPLATE	9.3 S.F.	25.5" W X 52.5" L	60 LBS
	STREET NAME SIGN RIGID MOUNTED	16.0 S.F.	24.0" W X 96.0" L	36 LBS
	SIGN RIGID MOUNTED	7.5 S.F.	30.0" W X 36.0" L	14 LBS



- DESIGN REFERENCE MATERIAL**
- Design the traffic signal structure and foundation in accordance with:
 - The 6th Edition 2013 AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, including all of the latest interim revisions.
 - The 2018 NCDOT "Standard Specifications for Roads and Structures." The latest addenda to the specifications can be found in the traffic signal project special provisions.
 - The 2018 NCDOT Roadway Standard Drawings.
 - The traffic signal project plans and special provisions.
 - The NCDOT "Metal Pole Standards" located at the following NCDOT website: <https://connect.ncdot.gov/resources/safety/Pages/ITS-Design-Resources.aspx>

- DESIGN REQUIREMENTS**
- Design the traffic signal structure using the loading conditions shown in the elevation views. These are anticipated worst case "design loads" and may not represent the actual loads that will be applied at the time of the installation. The contractor should refer to the traffic signal plans for the actual loads that will be applied at the time of the installation.
 - Design all signal supports using stress ratios that do not exceed 0.9.
 - The camber design for the mast arm deflection should provide an appearance of a low pitched arch where the tip or the free end of the mast arm does not deflect below horizontal when fully loaded.
 - A clamp-type bolted mast arm-to-pole connection may be used instead of the welded ring stiffened box connection shown as long as the connection meets all of the design requirements. This requires staggering the connections. Use elevation data for each arm to determine appropriate arm connection points.
 - Design base plate with 8 anchor bolt holes. Provide 2 inch x 60 inch anchor bolts.
 - The mast arm attachment height (H1) shown is based on the following design assumptions:
 - Mast arm slope and deflection are not considered in determining the arm attachment height as they are assumed to offset each other.
 - Signal heads are rigidly mounted and vertically centered on the mast arm.
 - The roadway clearance height for design is as shown in the elevation views.
 - The top of the pole base plate is 0.75 feet above the ground elevation.
 - Refer to the Elevation Data Chart for the elevation differences between the proposed foundation ground level and the high point of the roadway.
 - The pole manufacturer will determine the total height (H2) of each pole using the greater of the following:
 - Mast arm attachment height (H1) plus 2 feet, or
 - H1 plus 1/2 of the total height of the mast arm attachment assembly plus 1 foot.
 - If pole location adjustments are required, the contractor must gain approval from the Engineer as this may affect the mast arm lengths and arm attachment heights. The contractor may contact the Signal Design Section Senior Structural Engineer for assistance at (919) 814-4929.
 - The contractor is responsible for verifying that the mast arm length shown will allow proper positioning of the signal heads over the roadway.
 - The contractor is responsible for providing soil penetration testing data (SPT) to the pole manufacturer so site specific foundations can be designed.

Design Loading for METAL POLE NO. 3, MAST ARM B



All metal poles and arms should be Federal Standard 595C. Color Chip Number 14036 in color as specified in the project special provisions.

NCDOT Wind Zone 4 (90 mph)

Prepared for the Offices of:

SEAL
EDWARD W. SIRGANI
ENGINEER
1018174

US 52 (E. Innes Street) at Newsome Road

PLAN DATE: March 2018 REVIEWED BY: J Smith
PREPARED BY: E Sirgany REVIEWED BY:

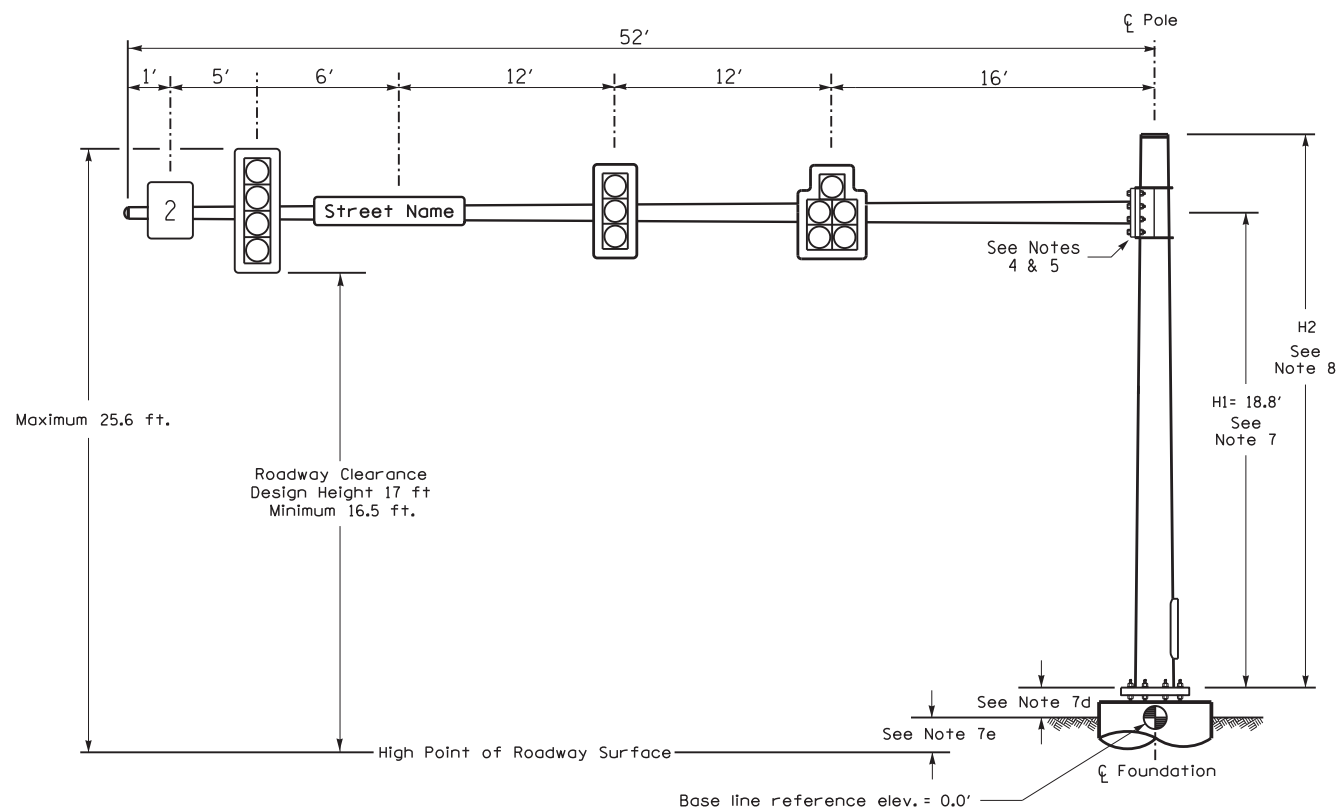
750 N. Greenfield Pkwy, Garner, NC 27529

SCALE: 0 N/A

DATE: Edward W. Sirgany / 27/2018

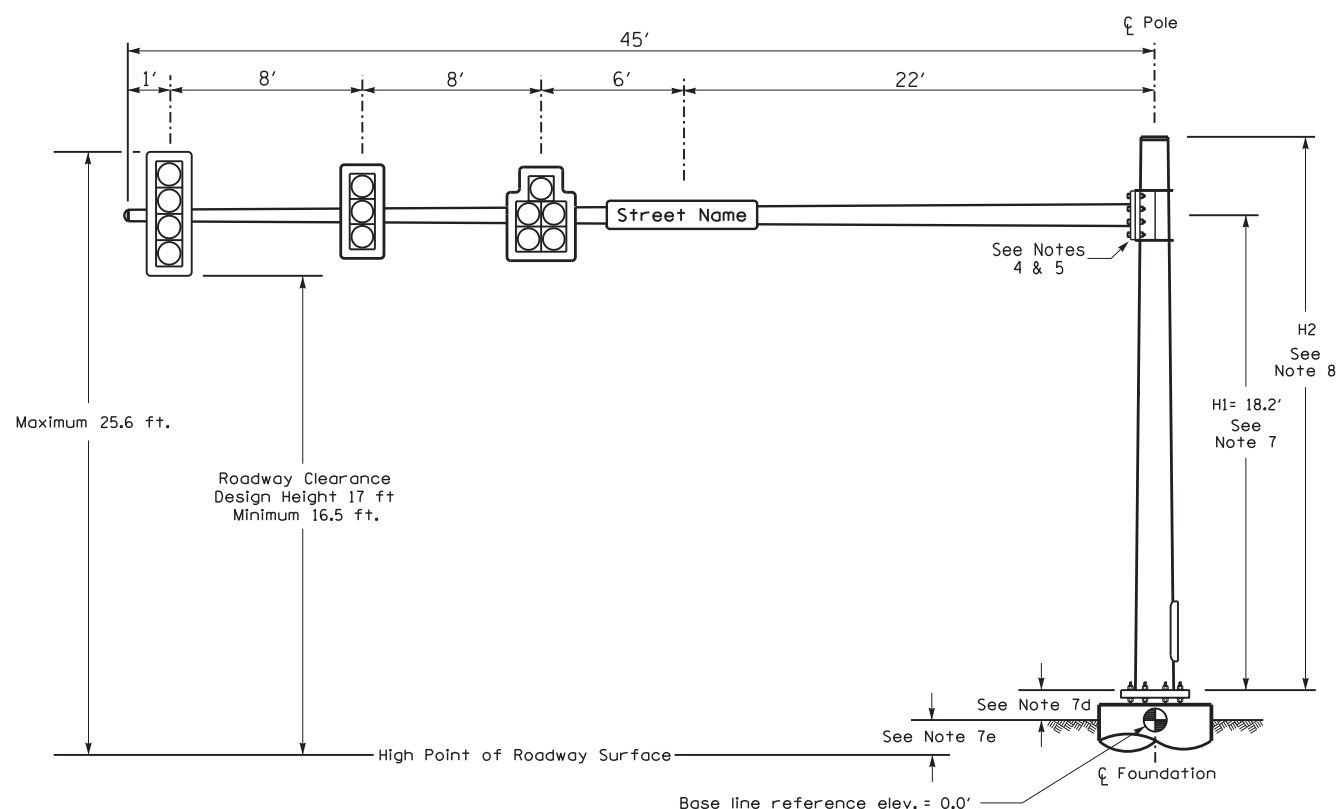
SIG. INVENTORY NO. 09-1259

Design Loading for METAL POLE NO. 4



Elevation View

Design Loading for METAL POLE NO. 5



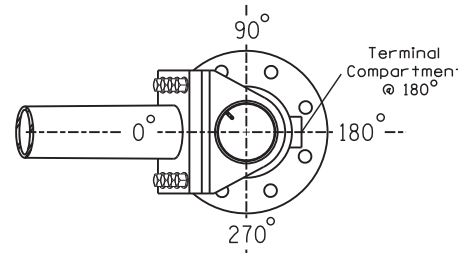
Elevation View

SPECIAL NOTE

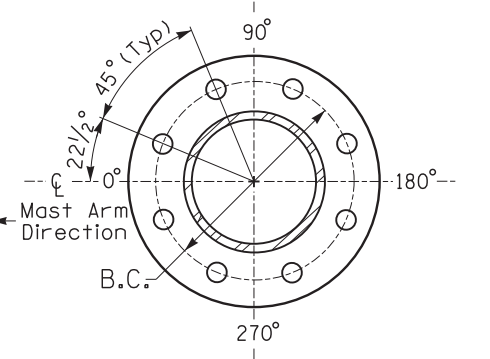
The contractor is responsible for verifying that the mast arm attachment height (H1) will provide the "Design Height" clearance from the roadway before submitting final shop drawings for approval. Verify elevation data below which was obtained by field measurement or from available project survey data.

Elevation Data for Mast Arm Attachment (H1)

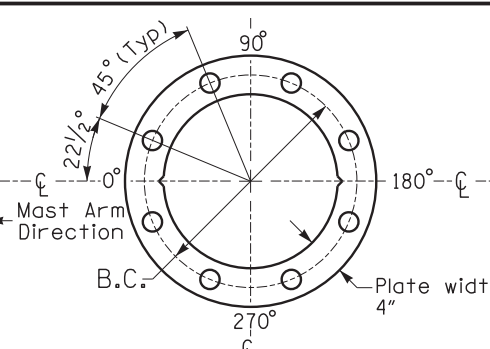
Elevation Differences for:	Pole 4	Pole 5
Baseline reference point at ϕ Foundation @ ground level	0.0 ft.	0.0 ft.
Elevation difference at High point of roadway surface	-2.3 ft.	-2.3 ft.
Elevation difference at Edge of travelway or face of curb	-0.2 ft.	-0.8 ft.



POLE RADIAL ORIENTATION



8 BOLT BASE PLATE DETAIL
See Note 6



BASE PLATE TEMPLATE & ANCHOR BOLT LOCK PLATE DETAIL
For 8 Bolt Base Plate

METAL POLE No. 4 and 5

MAST ARM LOADING SCHEDULE				
LOADING SYMBOL	DESCRIPTION	AREA	SIZE	WEIGHT
	RIGID MOUNTED SIGNAL HEAD 12"-5 SECTION-WITH BACKPLATE	16.3 S.F.	42.0" W X 56.0" L	103 LBS
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	STREET NAME SIGN RIGID MOUNTED	16.0 S.F.	24.0" W X 96.0" L	36 LBS
	SIGN RIGID MOUNTED	7.5 S.F.	30.0" W X 36.0" L	14 LBS

NOTES

- DESIGN REFERENCE MATERIAL
- Design the traffic signal structure and foundation in accordance with:
 - The 6th Edition 2013 AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, including all of the latest interim revisions.
 - The 2018 NCDOT "Standard Specifications for Roads and Structures." The latest addenda to the specifications can be found in the traffic signal project special provisions.
 - The 2018 NCDOT Roadway Standard Drawings.
 - The traffic signal project plans and special provisions.
 - The NCDOT "Metal Pole Standards" located at the following NCDOT website: <https://connect.ncdot.gov/resources/safety/Pages/ITS-Design-Resources.aspx>

DESIGN REQUIREMENTS

- Design the traffic signal structure using the loading conditions shown in the elevation views. These are anticipated worst case "design loads" and may not represent the actual loads that will be applied at the time of the installation. The contractor should refer to the traffic signal plans for the actual loads that will be applied at the time of the installation.
- Design all signal supports using stress ratios that do not exceed 0.9.
- The camber design for the mast arm deflection should provide an appearance of a low pitched arch where the tip or the free end of the mast arm does not deflect below horizontal when fully loaded.
- A clamp-type bolted mast arm-to-pole connection may be used instead of the welded ring stiffened box connection shown as long as the connection meets all of the design requirements. This requires staggering the connections. Use elevation data for each arm to determine appropriate arm connection points.
- Design base plate with 8 anchor bolt holes. Provide 2 inch x 60 inch anchor bolts.
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 - Mast arm slope and deflection are not considered in determining the arm attachment height as they are assumed to offset each other.
 - Signal heads are rigidly mounted and vertically centered on the mast arm.
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 - The top of the pole base plate is 0.75 feet above the ground elevation.
 - Refer to the Elevation Data Chart for the elevation differences between the proposed foundation ground level and the high point of the roadway.
- The pole manufacturer will determine the total height (H2) of each pole using the greater of the following:
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 - H1 plus 1/2 of the total height of the mast arm attachment assembly plus 1 foot.
- If pole location adjustments are required, the contractor must gain approval from the Engineer as this may affect the mast arm lengths and arm attachment heights. The contractor may contact the Signal Design Section Senior Structural Engineer for assistance at (919) 814-4929.
- The contractor is responsible for verifying that the mast arm length shown will allow proper positioning of the signal heads over the roadway.
- The contractor is responsible for providing soil penetration testing data (SPT) to the pole manufacturer so site specific foundations can be designed.

All metal poles and arms should be Federal Standard 595C. Color Chip Number 14036 in color as specified in the project special provisions.

NCDOT Wind Zone 4 (90 mph)

Prepared for the Offices of:

 US 52 (E. Innes Street) at Newsome Road

PLAN DATE: March 2018 REVIEWED BY: J Smith
 PREPARED BY: E Sirgany REVIEWED BY:

750 N. Greenfield Pkwy, Garner, NC 27529

SCALE: 0 N/A
 N/A

SEAL
 NORTH CAROLINA PROFESSIONAL ENGINEER
 EDWARD W. SIRGANY
 018174

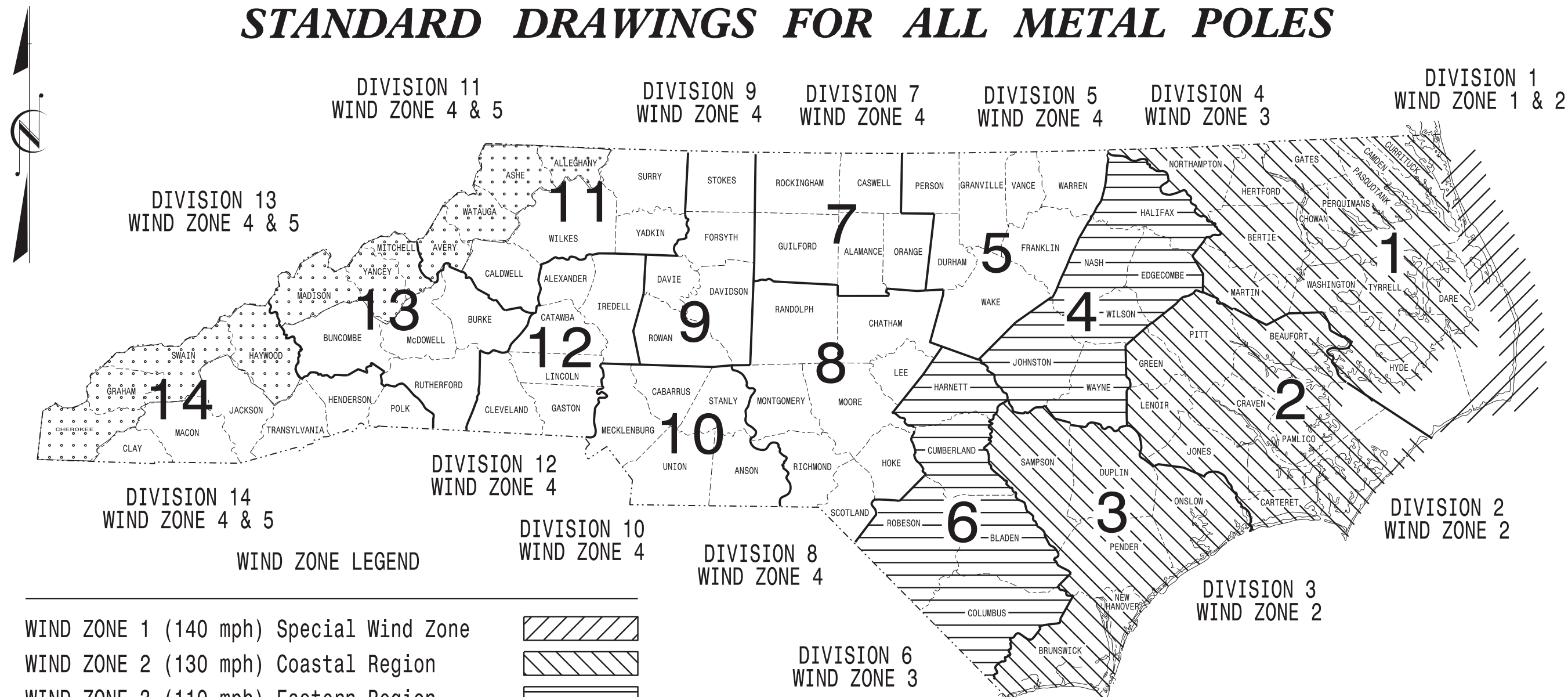
EDWARD W. SIRGANY 3/27/2018
 DATE

SIG. INVENTORY NO. 09-1259

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

PROJECT I.D. NO. U-5820A	SHEET NO. Sig. 29 M1
-----------------------------	----------------------------

STANDARD DRAWINGS FOR ALL METAL POLES



WIND ZONE LEGEND

WIND ZONE 1 (140 mph) Special Wind Zone	
WIND ZONE 2 (130 mph) Coastal Region	
WIND ZONE 3 (110 mph) Eastern Region	
WIND ZONE 4 (90 mph) Central & Mtn. Region	
WIND ZONE 5 (120 mph) Special Wind Zone	

<https://connect.ncdot.gov/resources/safety/Pages/ITS-Design-Resources.aspx>

Prepared in the Offices of:

750 N. Greenfield Pkwy.
Garner, NC 27529

Designed in conformance
with the latest
2015 Interim to the
6th Edition 2013
AASHTO
Standard Specifications for
Structural Supports for
Highway Signs, Luminaires,
and Traffic Signals

DRAWING NUMBER	DESCRIPTION
Sig. M 1	Statewide Wind Zone Map
Sig. M 2	Typical Fabrication Details-All Metal Poles
Sig. M 3	Typical Fabrication Details-Strain Poles
Sig. M 4	Typical Fabrication Details-Mast Arm Poles
Sig. M 5	Typical Fabrication Details-Mast Arm Connection
Sig. M 6	Typical Fabrication Details-Strain Pole Attachments
Sig. M 7	Construction Details-Foundations
Sig. M 8	Standard Strain Pole Foundation-All Soil Conditions

NCDOT CONTACTS:

MOBILITY AND SAFETY DIVISION - ITS AND SIGNALS UNIT

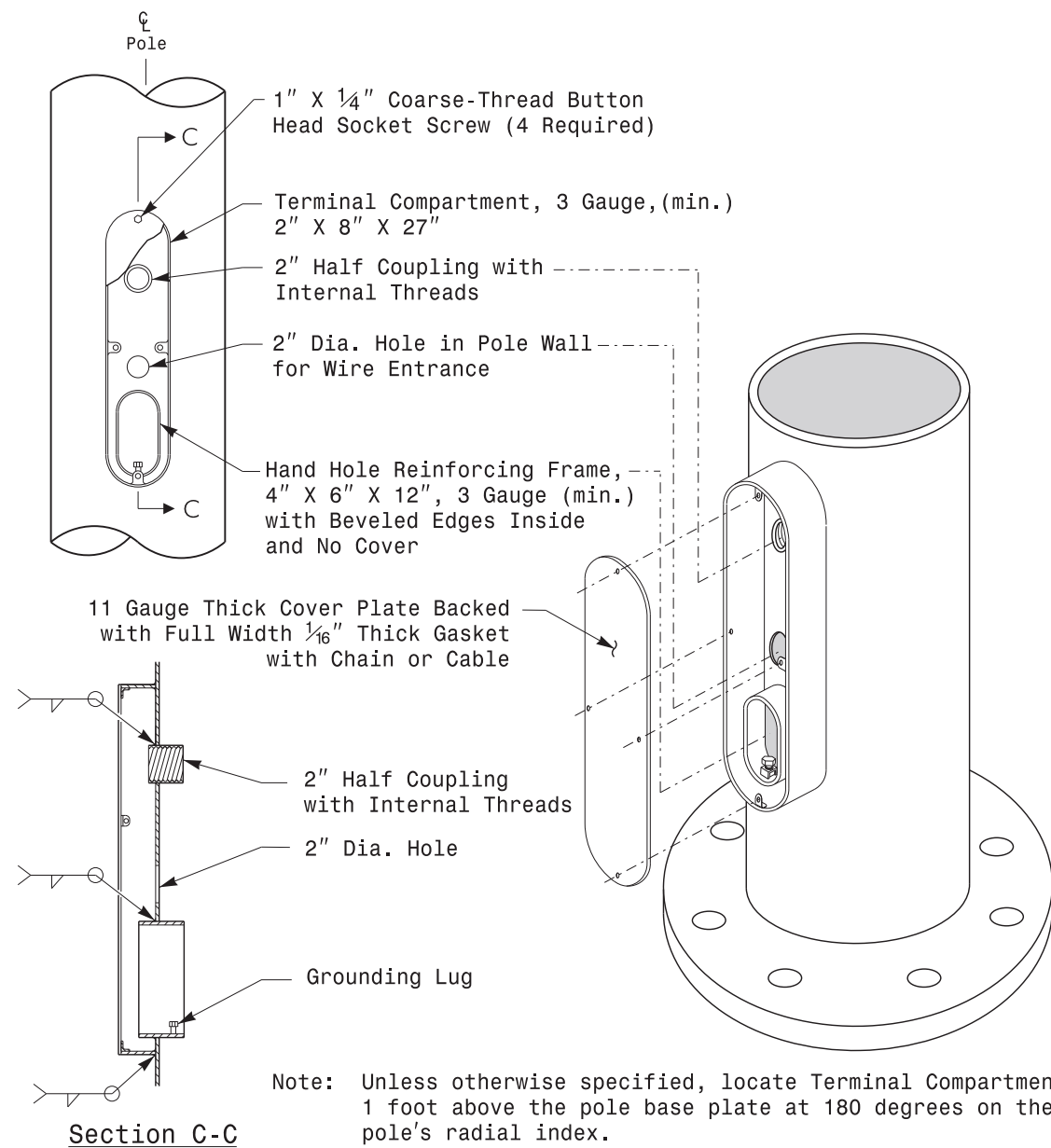
M.M. MCDIARMID, P.E. - STATE ITS AND SIGNALS ENGINEER

J. P. GALLOWAY, P.E. - STATE SIGNALS ENGINEER

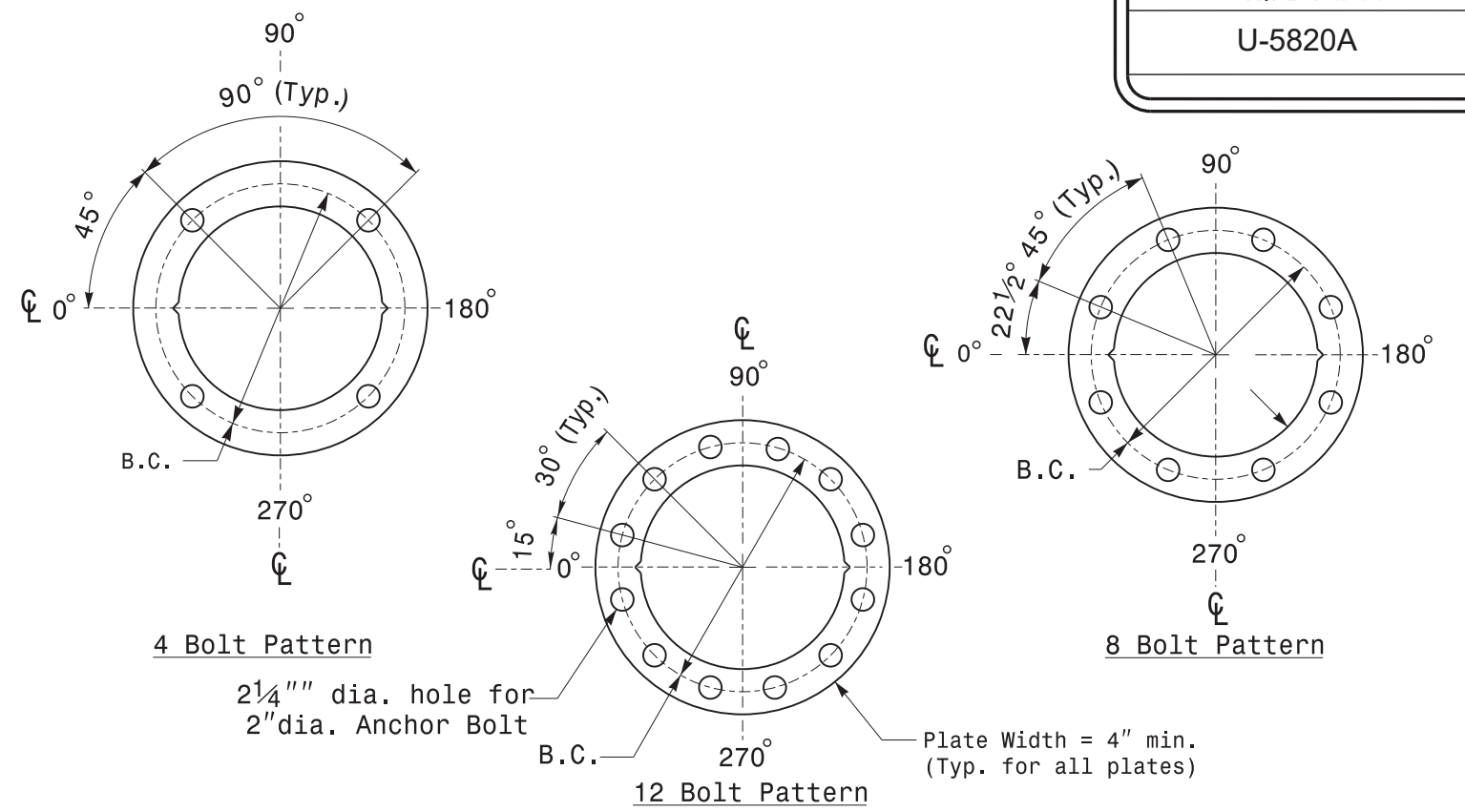
D.C. SARKAR, P.E. - ITS AND SIGNALS SENIOR STRUCTURAL ENGINEER

SEAL

DATE: 10/11/2017



Terminal Compartment Detail



Construct Templates and Plates from 1/4" min. thick Steel. Galvanizing is not required.
Base Plate Template and Anchor Bolt Lock Plate Details

MFG _____	MFG. DATE: MM/YY _____
SHAFT D/T/L/Y _____	SECTION D/T/L/Y _____
ARM-A D/T/L/Y _____	NCDOT SIG. INV. NO. _____
ARM-B D/T/L/Y _____	NCDOT POLE NO. _____
A.B. DIA./B.C./L/Y _____	
NCDOT SIG. INV. NO. _____	
NCDOT POLE NO. _____	

MFG _____	MFG. DATE:MM/YY _____
SECTION D/T/L/Y _____	NCDOT SIG. INV. NO. _____
NCDOT POLE NO. _____	

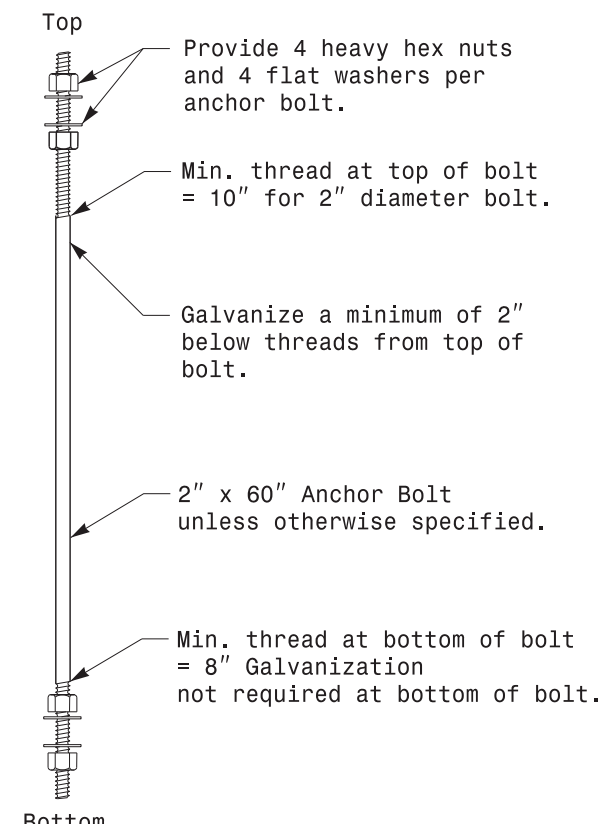
Arm I.D. Tag
(Provide on each section of a multi-section mast arm.)

Shaft I.D. Tag
(Provide on Shaft of Strain Poles and Mast Arm Poles Shaft)

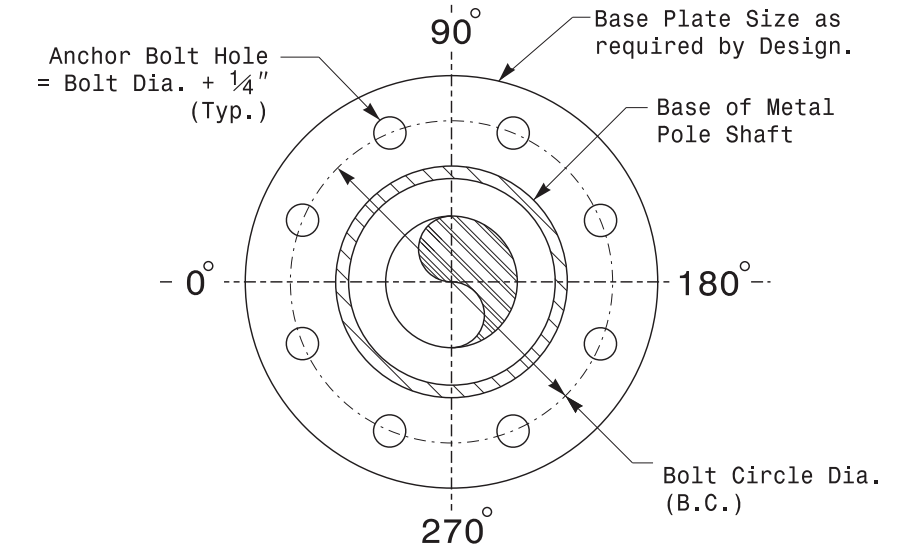
Notes:

- 1) D= Diameter, T= Thickness, L= Length, Y= Yield Strength
- 2) A.B. = Anchor Bolt
- 3) B.C. = Bolt Circle of Anchor Bolts
- 4) If Custom Design, use "NCDOT STANDARD" line for Signal Inv. Number and pole I.D. number
- 5) See drawing M3 and M4 for mounting positions of I.D. tags.

Identification Tag Details



Anchor Bolt Detail



Note: Base plate may be circular, octagonal, square or rectangular in shape.

Typical Base Plate Detail

Prepared in the Offices of:

750 N. Greenfield Pkwy, Garner, NC 27529

Typical Fabrication Details For All Metal Poles			
PLAN DATE: OCTOBER 2017	DESIGNED BY: C.F. ANDREWS		
PREPARED BY: N. BITTING	REVIEWED BY: D.C. SARKAR		
REVISIONS		INIT.	DATE

SEAL

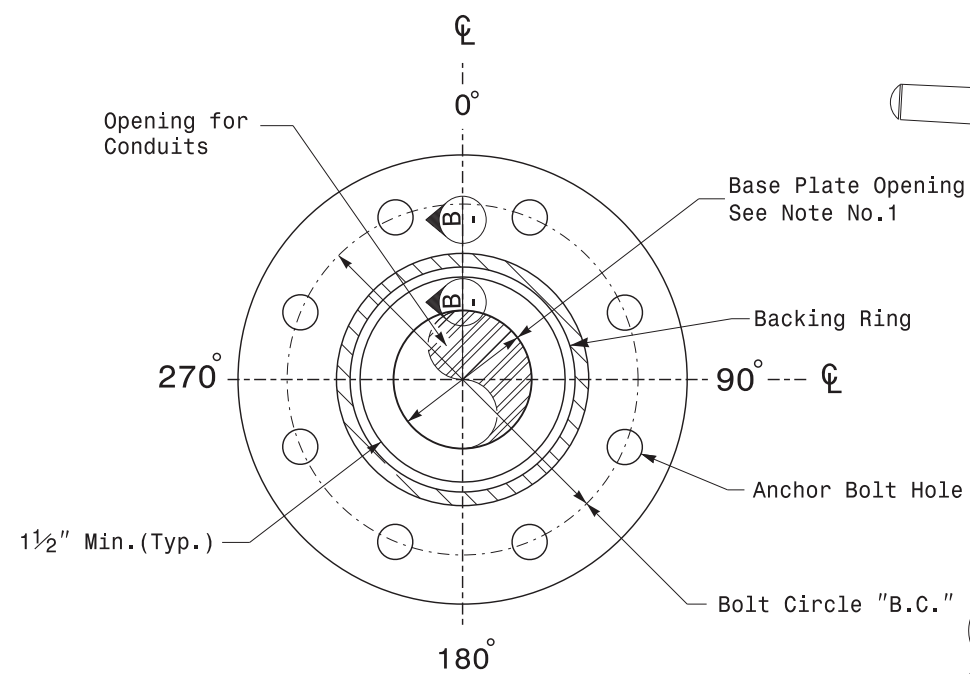
Drawn/Checked by: *Debesh C. Sarkar*
4483328147E+24

10/11/2017
DATE

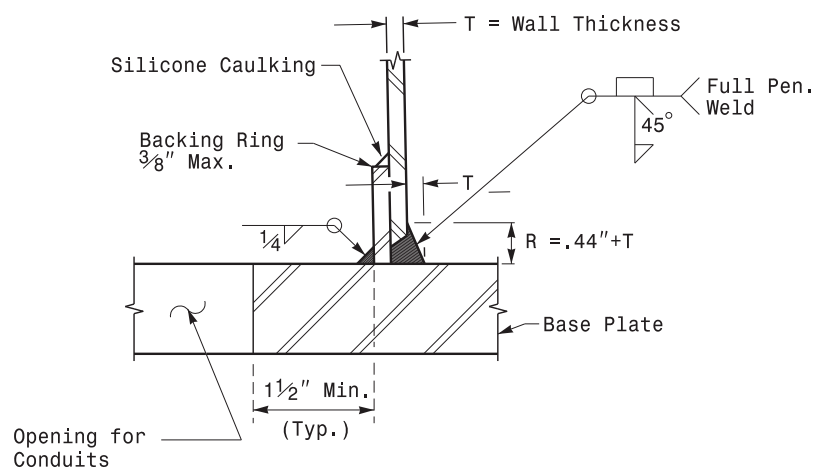
Fabrication Details – All Metal Poles

11-001-2017-08-30 11:53AM U-5820A Signal Design Section Eastern Region 2016-06-20 14:51:42 Sig. M2 Std. Fabrication Details-All Poles.dgn

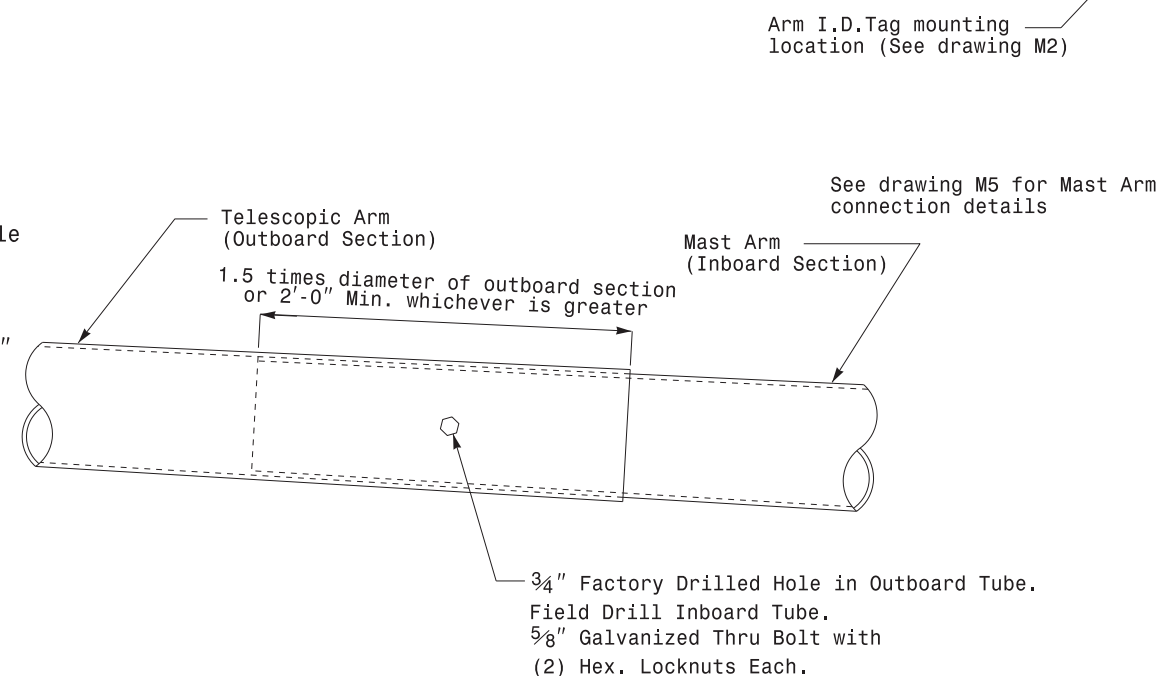
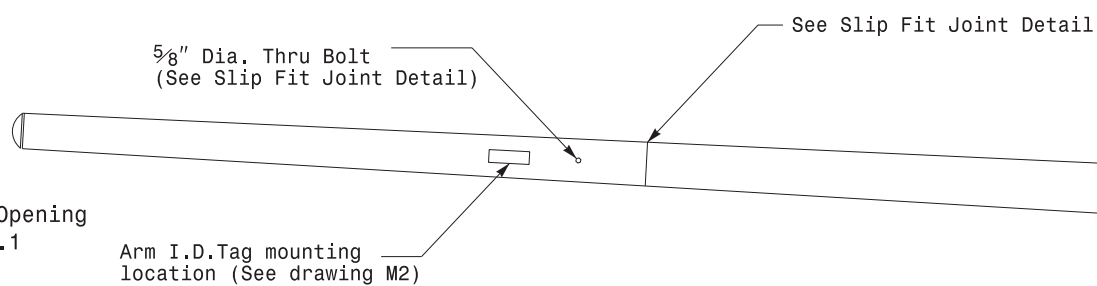
Note:
1. Opening in pole base plate shall be equal to pole base inside diameter minus 3 1/2" but shall not be less than 8 1/2".



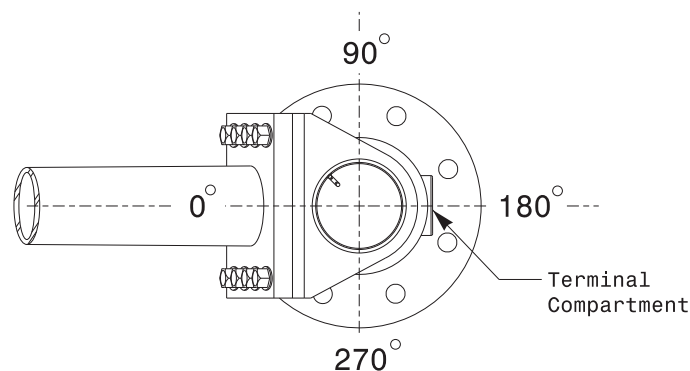
Section A-A
Pole Base Plate Details



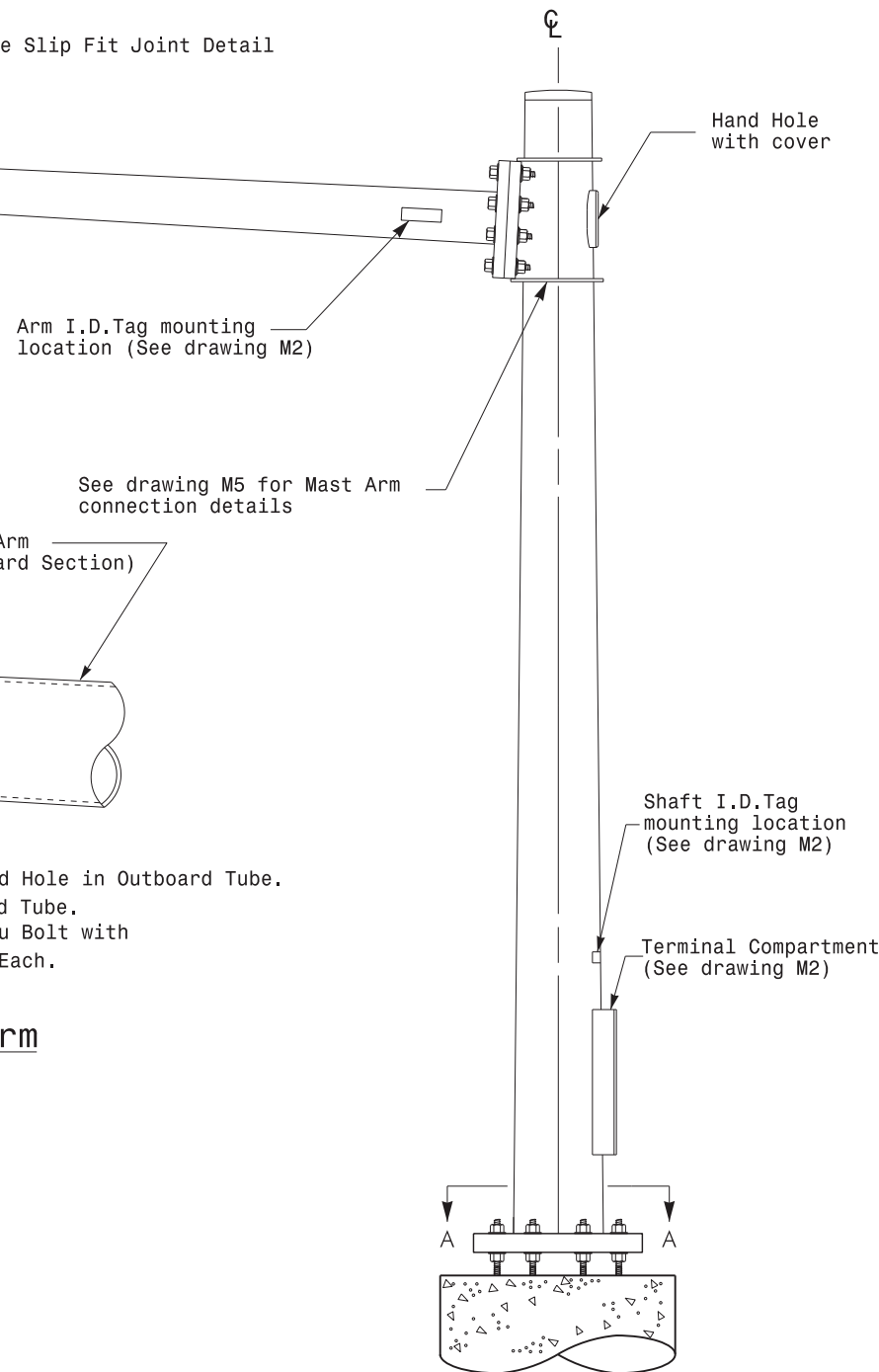
Section B-B
(Pole Attachment to Base Plate)
Full-Penetration
Groove Weld Detail



Slip Fit Joint Detail for Mast Arm



Mast Arm Radial Orientation



Mast Arm Pole

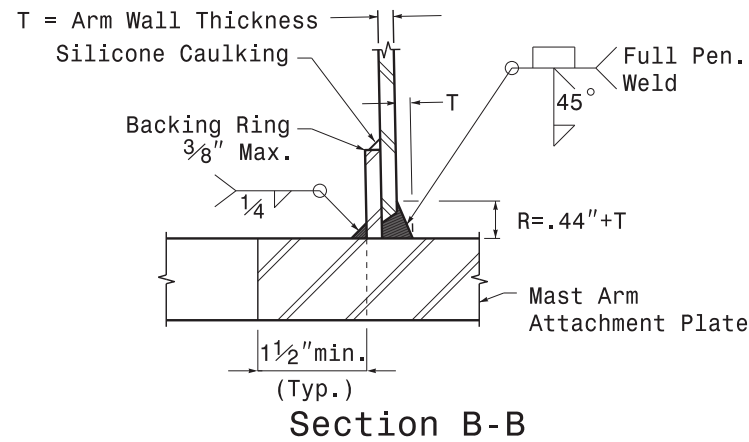
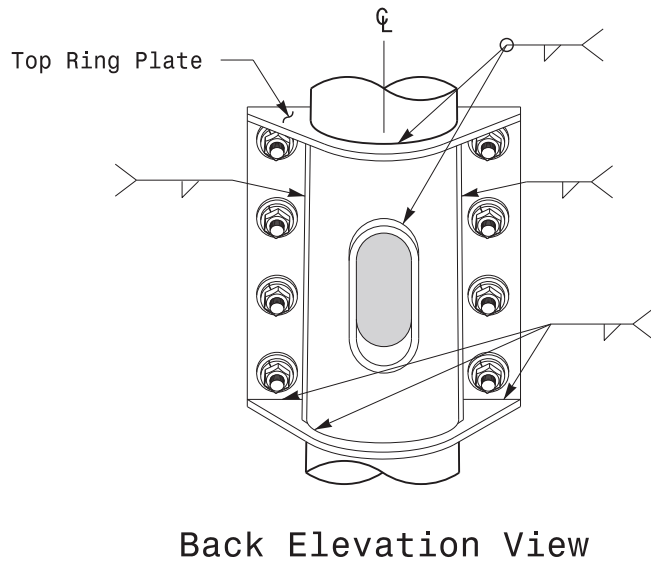
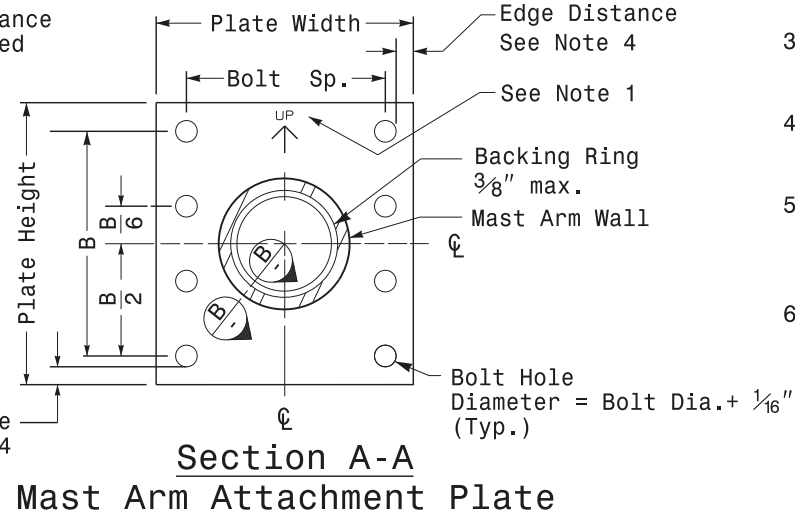
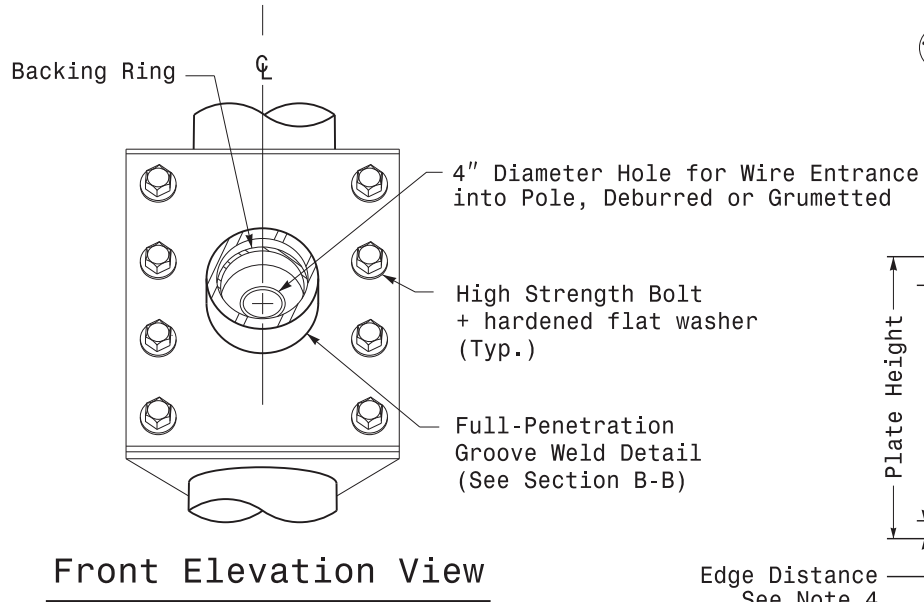
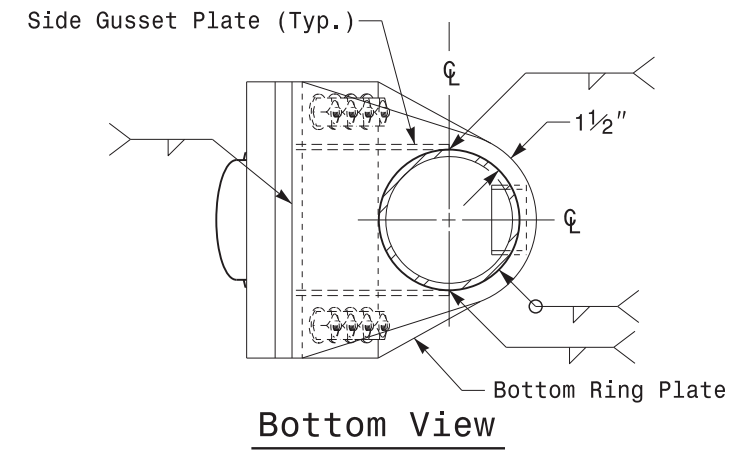
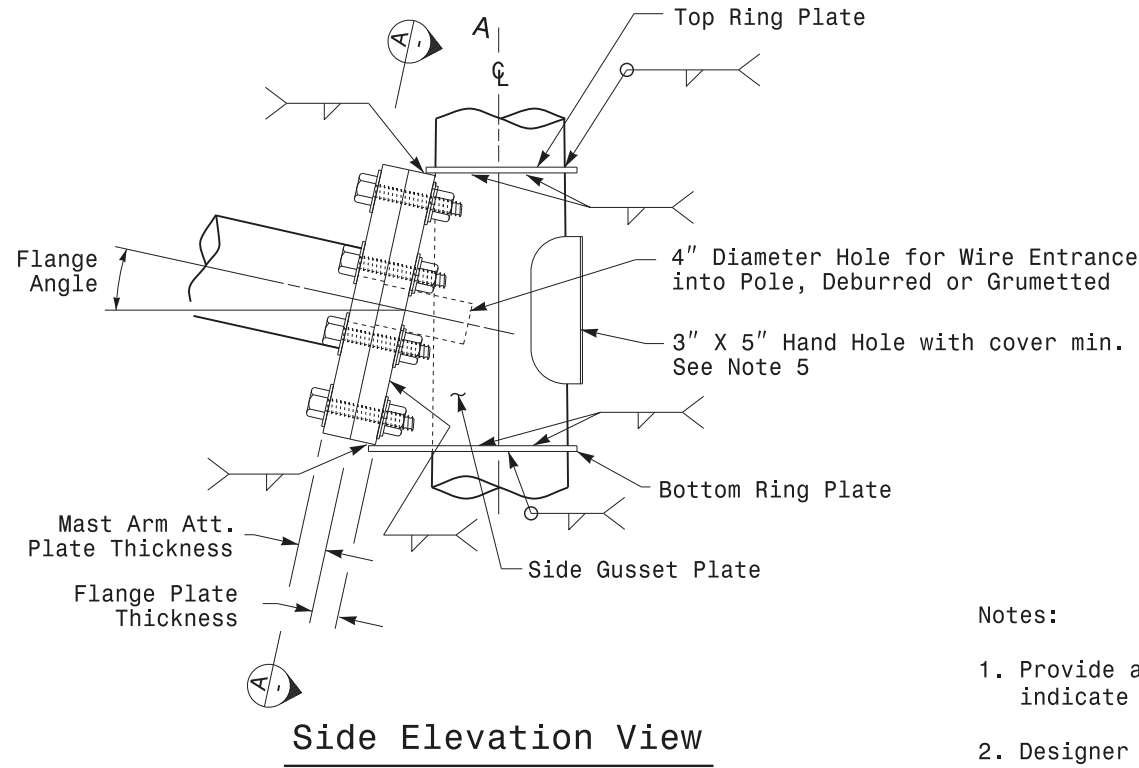
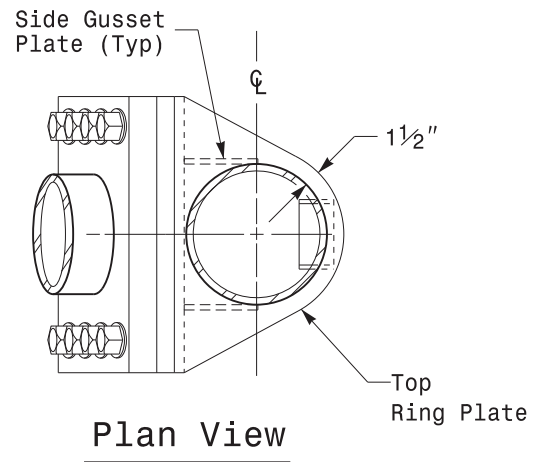
Fabrication Details - Mast Arm Poles

11-OCT-2017 08:33 11-05-2017 15:50:11 5:10:14:65:gnor Design Section Eastern Region M4 Sheets 2016 2014 Sig. M4 Std. Fabrication Detail - Mast Arm Poles.dgn

	Typical Fabrication Details For Mast Arm Poles		SEAL
	PLAN DATE: OCTOBER 2017 PREPARED BY: N. BITTING	DESIGNED BY: K.C. DURIGON REVIEWED BY: D.C. SARKAR	
SCALE: 0 NA NONE	DATE: 10/11/2017		DATE:

Welded Ring Stiffened Mast Arm Connection

PROJECT ID. NO.	SHEET NO.
U-5820A	Sig. 32 M5



Notes:

1. Provide a permanent means of identification above the mast arm to indicate proper attachment orientation of the mast arm.
2. Designer will determine the size of all structural components, plates, fasteners, and welds shown unless they are already specified.
3. Fabricator is responsible for providing appropriate holes at drainage points to drain galvanizing materials.
4. For minimum edge distance follow AISC Table J3.4 and J3.5. For nominal bolt hole size use Table J3.3.
5. Provide upper handhole as necessary when shaft extensions are required for luminaire arms or camera. For poles without luminaires/camera, wiring can be done through the top of pole.
6. Allowable range of flange tilt angle will vary from 0° to as required.

Fabrication Details - Mast Arm Connection

Prepared in the Offices of: 750 N. Greenfield Pkwy, Garner, NC 27529 SCALE: 0 NA NONE	Typical Fabrication Details For Mast Arm Connection To Pole		SEAL NORTH CAROLINA PROFESSIONAL ENGINEER DEBESH C. SARKAR 028094
	PLAN DATE: OCTOBER 2017	DESIGNED BY: C.F. ANDREWS	
	PREPARED BY: N. BITTING	REVIEWED BY: D.C. SARKAR	
	REVISIONS:	INIT. DATE	

11-DEC-2017 08:35:13:550115:Stipolis:signi Design Section:Eastern Region:Sheet:2016#2014 Sig. M5 Std. Connection Fabrication Detail:is-mast Arm Poles.dgn PZ:1/20

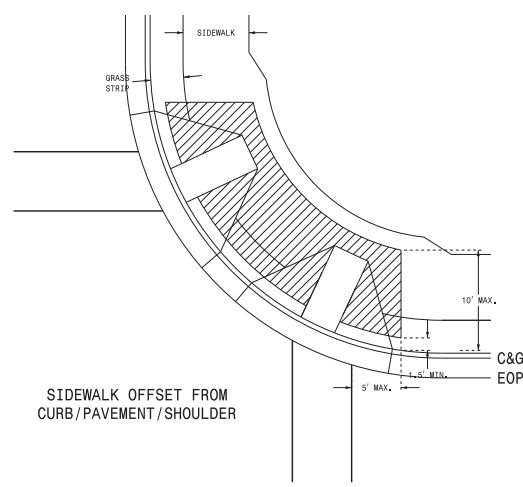
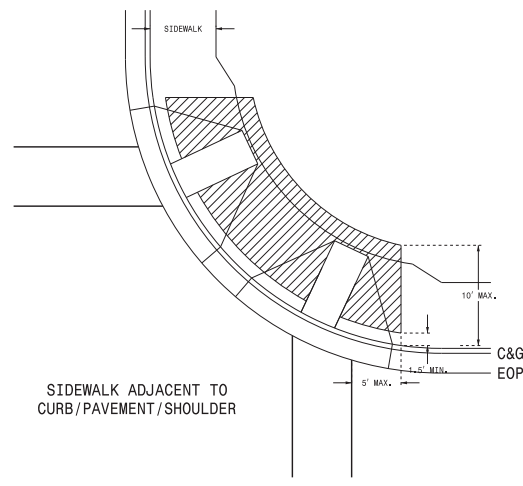
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

06-14

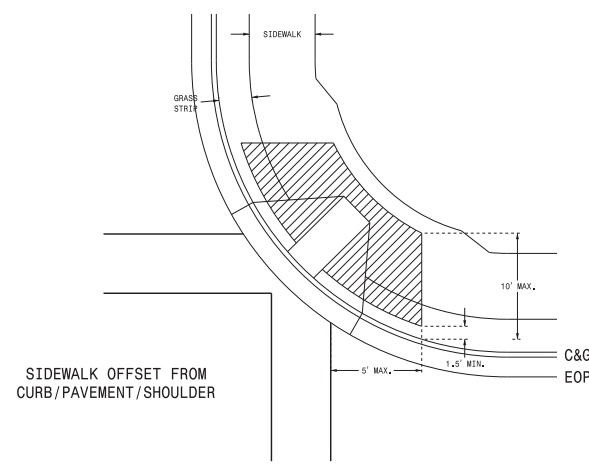
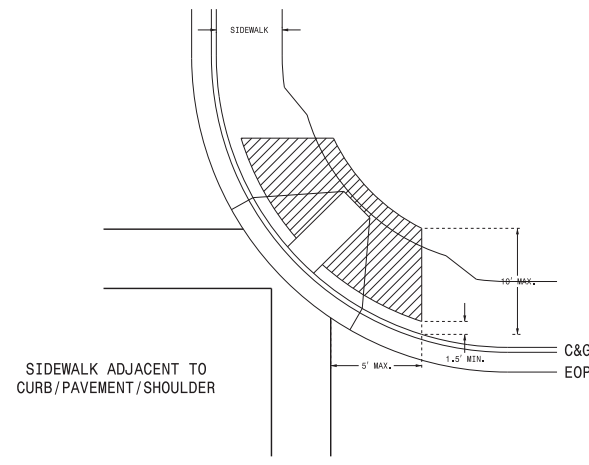
ENGLISH DETAIL DRAWING FOR
PEDESTRIAN PUSHBUTTON LOCATIONS
PLACEMENT DETAIL

SHEET 1 OF 3
1705D01

PUSHBUTTON PLACEMENT
SEPARATE CURB RAMP



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

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DIVISION OF HIGHWAYS
RALEIGH, N.C.

06-14

ENGLISH DETAIL DRAWING FOR
PEDESTRIAN PUSHBUTTON LOCATIONS
PLACEMENT DETAIL

SHEET 1 OF 3
1705D01

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See Plate for Title

Prepared in the Offices of:

750 N. Greenfield Parkway
Garner, NC 27529

SEAL

ROBERT J. ZIEMBA
ENGINEER
026486

6/17/2014
DATE

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

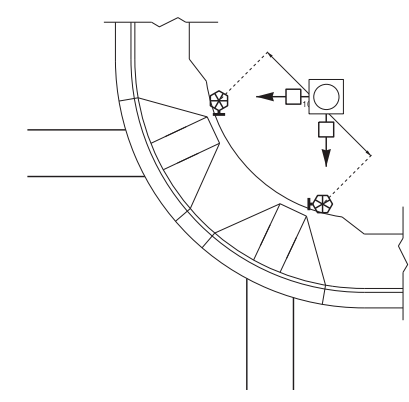
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ENGLISH DETAIL DRAWING FOR
PEDESTRIAN PUSHBUTTON LOCATIONS
PLACEMENT DETAIL

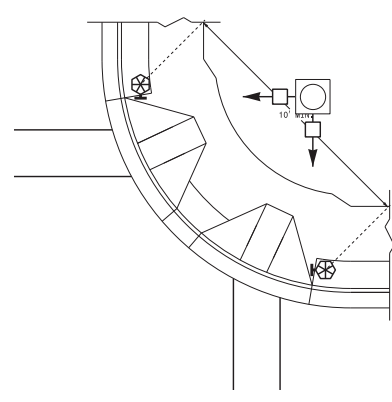
SHEET 2 OF 3
1705D01

TYPICAL PUSHBUTTON LOCATIONS (CASE I)

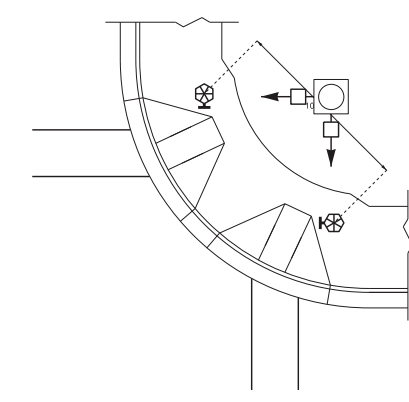
SEPARATE CURB RAMPS W/ TYPE I PEDESTALS



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

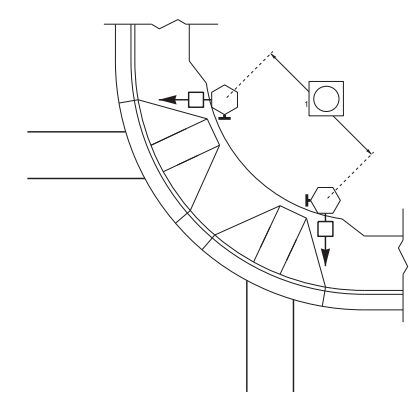


PUSHBUTTON PLACEMENT
IN WIDE SIDEWALK

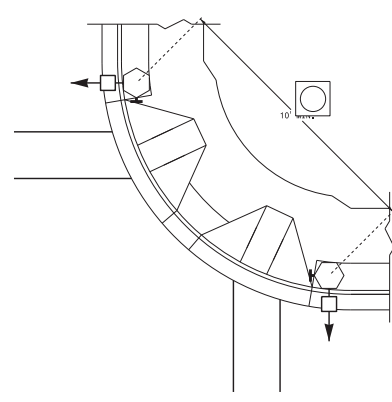
- PROPOSED**
- Signal Pole
 - Type I Pushbutton Post
 - Type II Signal Pedestal
 - Pushbutton & Sign
 - Pedestrian Signal Head
 - Curb Ramp
 - Pushbutton Location Area
- LEGEND**

TYPICAL PUSHBUTTON LOCATIONS (CASE II)

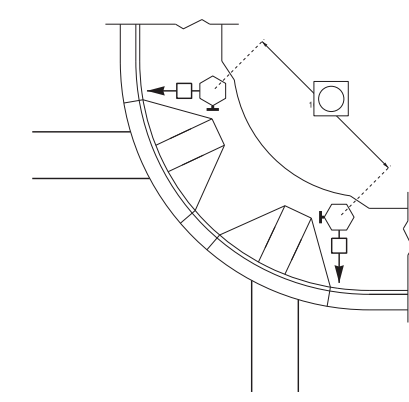
SEPARATE CURB RAMPS W/ TYPE II PEDESTALS



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



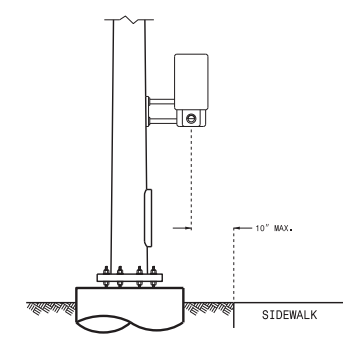
GRASS STRIP PLACEMENT IF BACK
OF SIDEWALK EXCEEDS 10' FROM
CURB OR PAVEMENT/SHOULDER



PUSHBUTTON PLACEMENT
IN WIDE SIDEWALK

OPTIONAL PUSHBUTTON EXTENSION

FACE OF PUSHBUTTON PARALLEL TO
APPLICABLE CROSSWALK



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

06-14

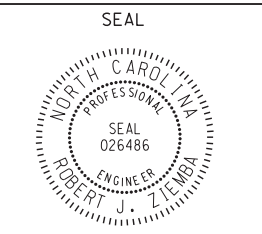
ENGLISH DETAIL DRAWING FOR
PEDESTRIAN PUSHBUTTON LOCATIONS
PLACEMENT DETAIL

SHEET 2 OF 3
1705D01

See Plate for Title



750 N. Greenfield Parkway
Garner, NC 27529



6/17/2014
DATE

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

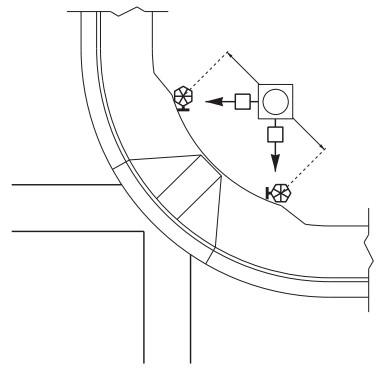
06-14

ENGLISH DETAIL DRAWING FOR
PEDESTRIAN PUSHBUTTON LOCATIONS
PLACEMENT DETAIL

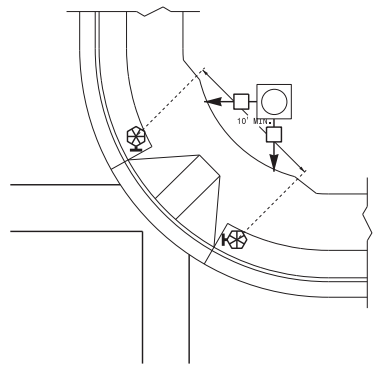
SHEET 3 OF 3
1705D01

TYPICAL PUSHBUTTON LOCATIONS (CASE III)

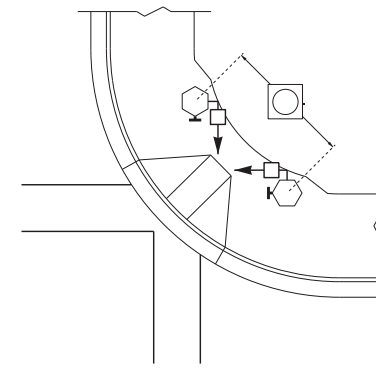
SHARED CURB RAMPS



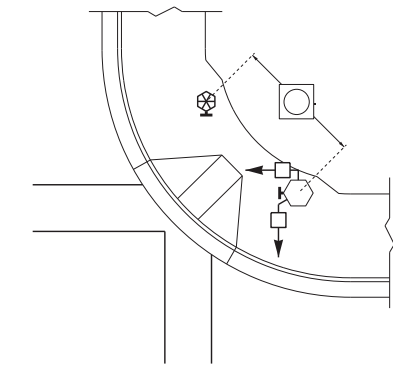
BACK OF SIDEWALK IS WITHIN 10' OF CURB OR PAVEMENT/SHOULDER



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

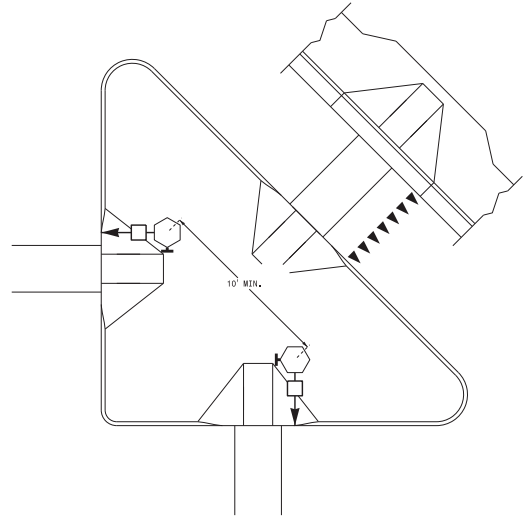


PUSHBUTTON PLACEMENT IN WIDE SIDEWALK (CORRESPONDING PUSHBUTTONS AND SIGNAL HEADS ON DIFFERENT PEDESTALS)

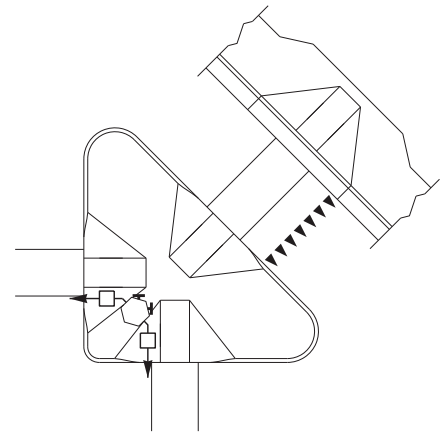


PUSHBUTTON PLACEMENT WITH SHARED TYPE II SIGNAL PEDESTAL AND TYPE I PUSHBUTTON POST

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

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 3 OF 3
1705D01

See Plate for Title

Prepared in the Offices of:

750 N. Greenfield Parkway
Garner, NC 27529

SEAL

Designed by: *Robert J. Ziemba*
6/17/2014
ATE

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 S:\MITSUBISHI\SIGNAL\Signal\Signal Design Section\Central Region\Rob's Files\Ped Stds\Pushbutton Drawings\Pushbutton Plate Drawings\20140617.dgn
 rnz:inscr

- 1 INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE
- 2 INSTALL REA, PE – 38, (FIGURE – 8) SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE
- 3 INSTALL OUTDOOR RATED ETHERNET CABLE
- 4 INSTALL SMFO CABLE
- 5 INSTALL MMFO CABLE
- 6 INSTALL FIBER OPTIC DROP CABLE
- 7 INSTALL TRACER WIRE
- 8 TRENCH OR PLOW
- 9 INSTALL PVC CONDUIT
- 10 INSTALL RIGID, GALVANIZED STEEL CONDUIT
- 11 INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
- 12 INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL
- 13 INSTALL OUTER-DUCT POLYETHYLENE CONDUIT
- 14 INSTALL POLYETHYLENE CONDUIT
- 15 DIRECTIONAL DRILL CONDUIT
- 16 BORE AND JACK CONDUIT
- 17 INSTALL CABLE(S) IN EXISTING CONDUIT
- 18 INSTALL CABLE(S) IN NEW CONDUIT
- 19 INSTALL CABLE(S) IN EXISTING RISER AND INSTALL HEAT SHRINK RETROFIT KIT
- 20 INSTALL CABLE(S) IN NEW RISER
- 21 INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS
- 22 INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
- 23 INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
- 24 INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET
- 25 INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET
- 26 INSTALL BASE MOUNTED SPLICE CABINET
- 27 MODIFY EXISTING SPLICE ENCLOSURE OR SPLICE CABINET
- 28 INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
- 29 INSTALL UNDERGROUND SPLICE ENCLOSURE
- 30 INSTALL AERIAL SPLICE ENCLOSURE
- 31 INSTALL POLE MOUNTED EQUIPMENT CABINET
- 32 INSTALL BASE MOUNTED EQUIPMENT CABINET
- 33 REMOVE EXISTING EQUIPMENT CABINET

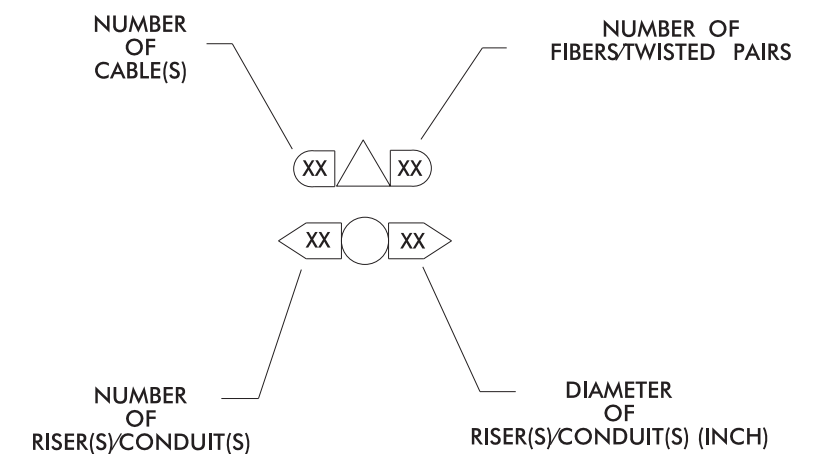
- 34 INSTALL CABINET FOUNDATION
- 35 REMOVE EXISTING CABINET FOUNDATION
- 36 INSTALL DIGITAL CCTV CAMERA ASSEMBLY
- 37 REMOVE EXISTING CCTV CAMERA ASSEMBLY
- 38 INSTALL CCTV CAMERA WOOD POLE
- 39 INSTALL JUNCTION BOX
- 40 INSTALL OVERSIZED JUNCTION BOX
- 41 REMOVE EXISTING JUNCTION BOX
- 42 INSTALL WOOD POLE
- 43 REMOVE EXISTING WOOD POLE
- 44 INSTALL AERIAL GUY ASSEMBLY
- 45 INSTALL STANDARD GUY ASSEMBLY
- 46 INSTALL SIDEWALK GUY ASSEMBLY
- 47 INSTALL MESSENGER CABLE
- 48 REMOVE EXISTING COMMUNICATIONS
- 49 REMOVE EXISTING MESSENGER CABLE
- 50 INSTALL TELEPHONE SERVICE
- 51 INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE
- 52 INSTALL DELINEATOR MARKER
- 53 STORE 30 FEET OF COMMUNICATIONS CABLE
- 54 LASH CABLE(S) TO EXISTING SIGNAL/COMMUNICATIONS CABLE
- 55 LASH CABLE(S) TO EXISTING MESSENGER CABLE
- 56 LASH CABLE(S) TO NEW MESSENGER CABLE
- 57 MODIFY EXISTING ELECTRICAL SERVICE
- 58 INSTALL NEW ELECTRICAL SERVICE
- 59 INSTALL RELOCATED FIELD ETHERNET SWITCH
- 60 REMOVE EXISTING FIBER OPTIC TRANSCEIVER
- 61 BACKPULL EXISTING FIBER OPTIC CABLE
- 62 BOND MESSENGER CABLE TO POLE GROUND
- 63 BOND RISER AND MESSENGER CABLE TO POLE GROUND



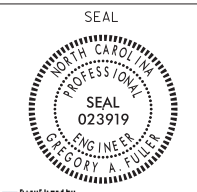
LEGEND

- FO NEW FIBER OPTIC COMMUNICATIONS CABLE
- EX1 EXISTING COMMUNICATIONS CABLE
- REW EXISTING COMMUNICATIONS CABLE TO BE REMOVED
- NEW AERIAL GUY ASSEMBLY
- NEW CONDUIT
- EXISTING CONDUIT
- DD NEW DIRECTIONAL DRILLED CONDUIT
- B&J NEW BORED AND JACKED CONDUIT
- (XX) CABLE NAME
- NEW JUNCTION BOX
- EXISTING JUNCTION BOX
- NEW WOOD POLE
- EXISTING WOOD POLE
- S NEW AERIAL SPLICE ENCLOSURE
- NEW METAL POLE
- EXISTING METAL POLE
- NEW CCTV CAMERA ASSEMBLY
- NEW STANDARD GUY ASSEMBLY
- NEW STANDARD GUY USING EXISTING ANCHOR
- NEW SIDEWALK GUY ASSEMBLY
- NEW CABLE STORAGE RACKS (SNOW SHOES)
- EXISTING CONTROLLER AND CABINET
- EXISTING SPLICE CABINET
- NEW SPLICE CABINET
- SP SIGNAL POLE
- XX-XXXX SIGNAL INVENTORY NUMBER

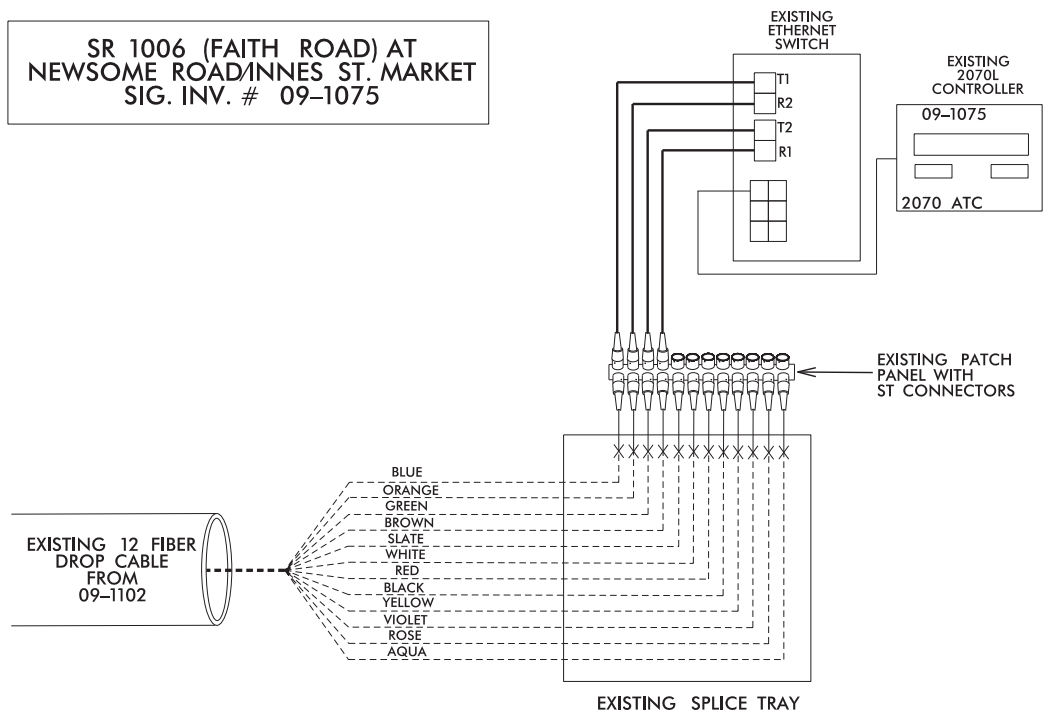
CONSTRUCTION NOTE SYMBOLOGY KEY

- XX INDICATES NUMBER OF CABLES, LOOPS, ETC.
- XX INDICATES NUMBER OF FIBERS PER CABLE, TWISTED PAIRS PER CABLE, ETC.
- XX INDICATES NUMBER OF RISER(S)/CONDUIT(S)
- XX INDICATES DIAMETER OF RISER(S)/CONDUIT(S) (INCH)



<p>Prepared in the Office of:</p> <div style="text-align: center;">  <p>SUMMIT DESIGN AND ENGINEERING SERVICES</p> </div> <p>NC FIRM LICENSE No: P-0339 504 Meadowlands Drive Hillsborough, NC 27278 (919) 732-3883 (919) 732-6676 (FAX)</p>	<p>Prepared for the Offices of:</p> <div style="text-align: center;">  </div> <p>750 N. Greenfield Plaza, Garner, NC 27529</p>	<p style="text-align: center;">SR 1006 (Faith Road) at Newsome Road/Innes St. Market Construction Notes</p> <p style="text-align: center;">Division 09 Rowan County Salisbury</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>PLAN DATE: March 2018</td> <td>REVIEWED BY: T. G. Parker</td> </tr> <tr> <td>PREPARED BY: J. Smith</td> <td>REVIEWED BY: G. A. Fuller</td> </tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>REVISIONS</th> <th>INIT.</th> <th>DATE</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	PLAN DATE: March 2018	REVIEWED BY: T. G. Parker	PREPARED BY: J. Smith	REVIEWED BY: G. A. Fuller	REVISIONS	INIT.	DATE				<p style="text-align: center;">DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p> <div style="text-align: center;">  <p>SEAL GREGORY A. FULLER ENGINEER 023919</p> </div> <p>Documented by: Gregory A. Fuller 3/22/2018 DATE</p> <p>SIG. INVENTORY NO. 09-1075</p>
PLAN DATE: March 2018	REVIEWED BY: T. G. Parker												
PREPARED BY: J. Smith	REVIEWED BY: G. A. Fuller												
REVISIONS	INIT.	DATE											

SR 1006 (FAITH ROAD) AT
NEWSOME ROAD/INNES ST. MARKET
SIG. INV. # 09-1075



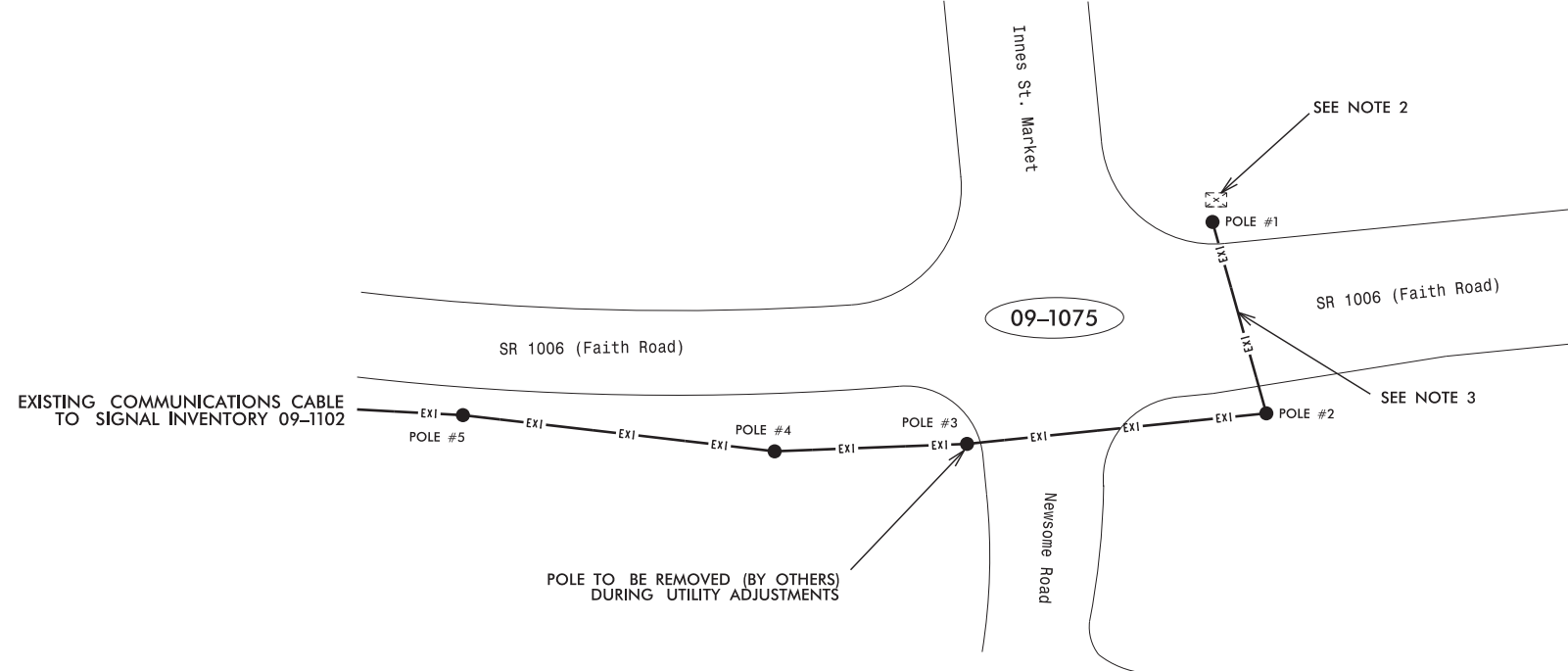
COLOR CODE TIA/EIA 598-C

(1) BLUE	(7) RED
(2) ORANGE	(8) BLACK
(3) GREEN	(9) YELLOW
(4) BROWN	(10) VIOLET
(5) SLATE	(11) ROSE
(6) WHITE	(12) AQUA

LEGEND
X - FUSION SPLICE
O - EXISTING SPLICE
□ - EXPRESS INDIVIDUAL FIBER
EXPRESS - EXPRESS ENTIRE BUFFER TUBE
SPLICE - SPLICE ENTIRE BUFFER TUBE OR MAINTAIN IF EXISTING EXPRESSED

NOTES:
1. FIBER INTERCONNECT CENTER RACKS ARE SCHEMATIC ONLY- ACTUAL EQUIPMENT FORM MAY VARY.
2. ETHERNET SWITCH TERMINATION CONFIGURATIONS ARE GENERIC. CONTRACTOR IS RESPONSIBLE FOR DETERMINING/ENSURING PROPER TERMINATION.
3. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING SPLICING. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER WHERE EXISTING SPLICING IS NOT AS EXPECTED.

EXISTING CABLE ROUTING



NOTES:
1. IDENTIFY THE EXISTING FIBER OPTIC CABLE ROUTING FROM INTERSECTION 09-1102 TO 09-1075.
2. RECORD AND PROVIDE THE ENGINEER DOCUMENTATION OF THE EXISTING SPLICES IN THE EXISTING SIGNAL CABINET PRIOR TO REMOVAL.
3. IDENTIFY SECOND UNTERMINATED CABLE AT "POLE #1" AND BACK-PULL TO "POLE #2." COIL SPARE CABLE AND STORE SECURELY AT "POLE #2." CAP AND SEAL CABLE END.

Prepared in the Office of:

NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

Prepared for the Offices of:

750 N. Greenfield Place, Garner, NC 27529

SR 1006 (Faith Road)
at
Newsome/Innes St. Market
Cable Routing Plans

Division 09 Rowan County Salisbury

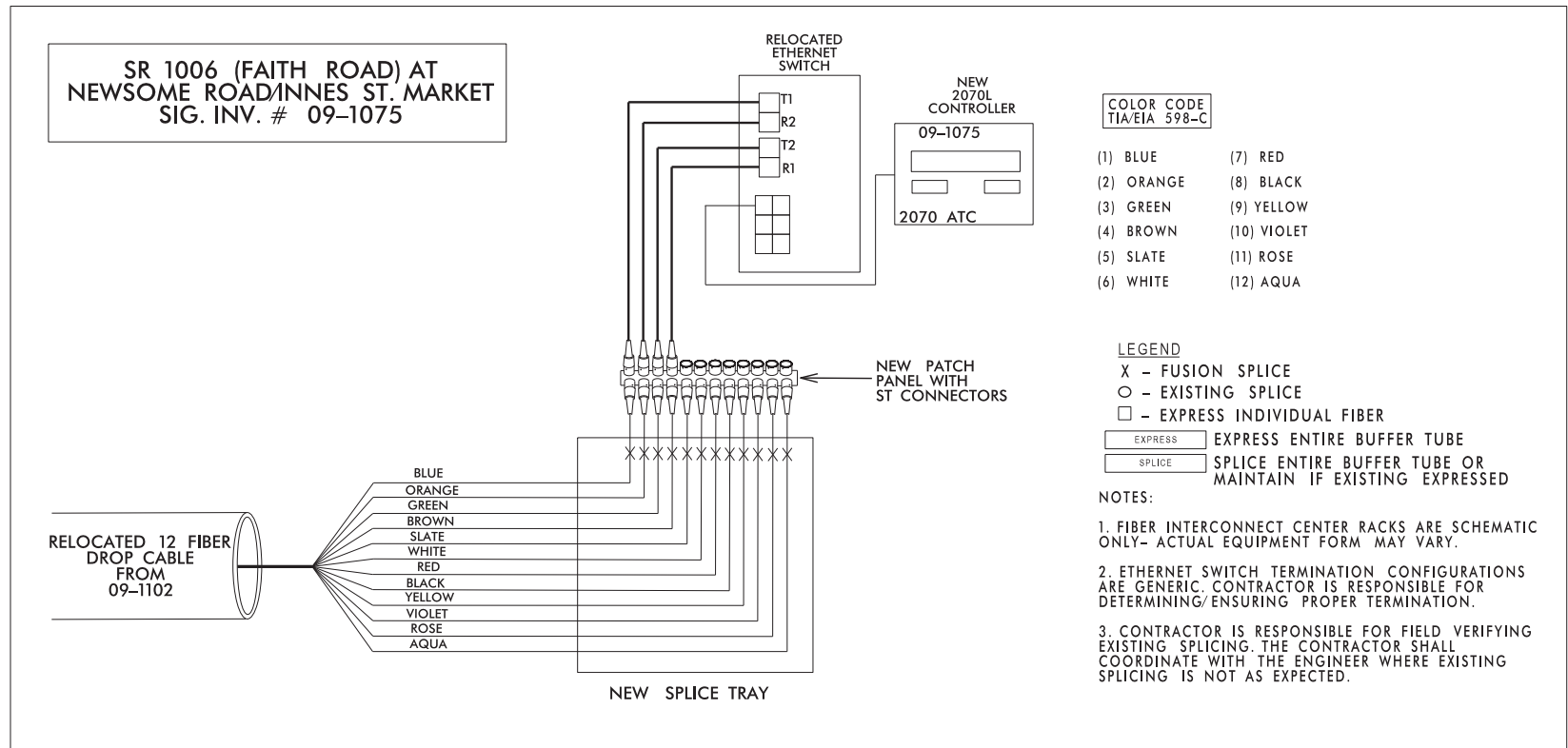
PLAN DATE: March 2018 REVIEWED BY: T. G. Parker
PREPARED BY: J. Smith REVIEWED BY: G. A. Fuller

REVISIONS	INIT.	DATE

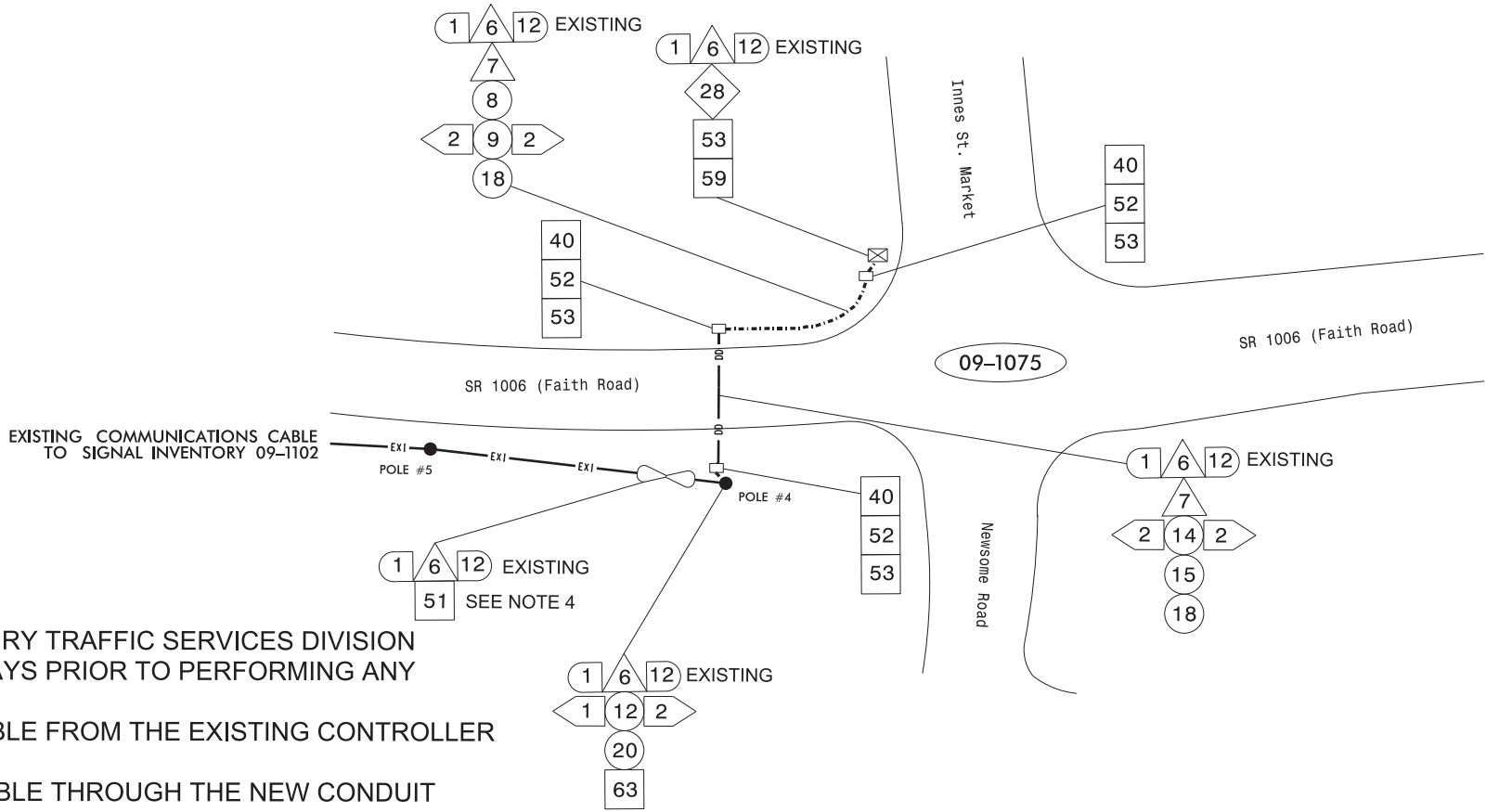
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

DocuSign by Gregory A. Fuller 3/22/2018
DATE: 3/22/2018
SIG. INVENTORY NO. 09-1075



NEW CABLE ROUTING



- NOTES:**
- CONTACT THE CITY OF SALISBURY TRAFFIC SERVICES DIVISION AT (704) 638-5213 AT LEAST 5 DAYS PRIOR TO PERFORMING ANY FIBER OPTIC WORK.
 - BACK-PULL EXISTING DROP CABLE FROM THE EXISTING CONTROLLER CABINET TO "POLE #4."
 - RE-INSTALL EXISTING DROP CABLE THROUGH THE NEW CONDUIT SYSTEM INTO THE NEW SIGNAL CABINET AND TERMINATE. ALL WORK IS NOT COMPLETE UNTIL THE CITY OF SALISBURY HAS VERIFIED THE SIGNAL SYSTEM IS BACK UP AND OPERATIONAL.
 - STORE ANY EXCESS CABLE ON A NEW CABLE STORAGE RACK (SNOW SHOE).
 - FOR INSTALLATION OF CABLE IN THE NEW SIGNAL CABINET, COMPARE SPLICE CONFIGURATION DATA RECORDED PREVIOUSLY TO THE SPLICE PLANS. IF THERE ARE ANY DISCREPANCIES FOR THE EXISTING SPLICES, NOTIFY THE ENGINEER.

Prepared in the Office of:

SUMMIT
DESIGN AND ENGINEERING SERVICES

NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

Prepared for the Offices of:

750 N. Greenfield Pkwy., Garner, NC 27529

SCALE 0 40
1" = 40'

SR 1006 (Faith Road)
at
Newsome/Innes St. Market
Cable Routing Plans

Division 09 Rowan County Salisbury

PLAN DATE: March 2018 REVIEWED BY: T. G. Parker
PREPARED BY: J. Smith REVIEWED BY: G. A. Fuller

REVISIONS	INIT.	DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

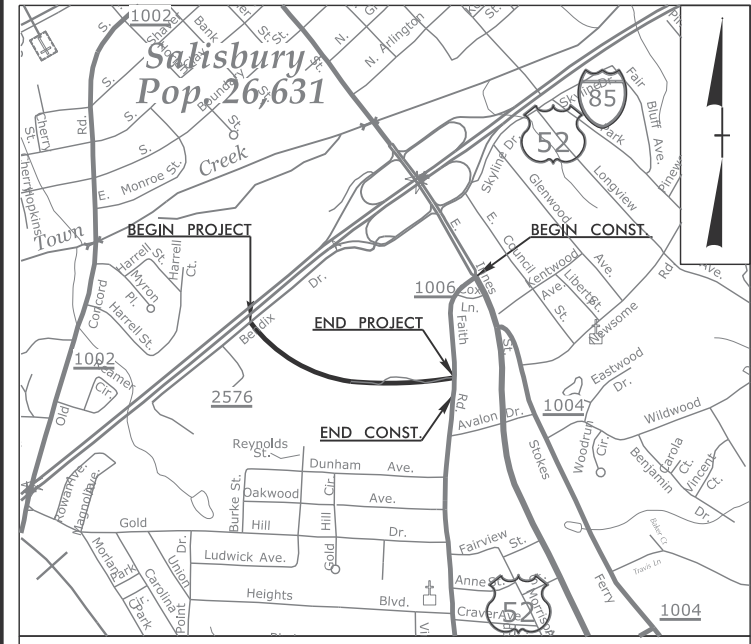
SEAL

Gregory A. Fuller
3/22/2018
DATE
SIG. INVENTORY NO. 09-1075

09/28/99

TIP PROJECT: U-5820A

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols
See Sheet 1C-1 For Survey Control Sheet



VICINITY MAP

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS UTILITIES BY OTHERS PLANS ROWAN COUNTY

**LOCATION: INNES STREET MARKET DRIVE EXTENSION AND
EXISTING ROAD IMPROVEMENTS FROM SR 2576 (BENDIX DR)
TO SR 1006 (FAITH RD) IN SALISBURY**

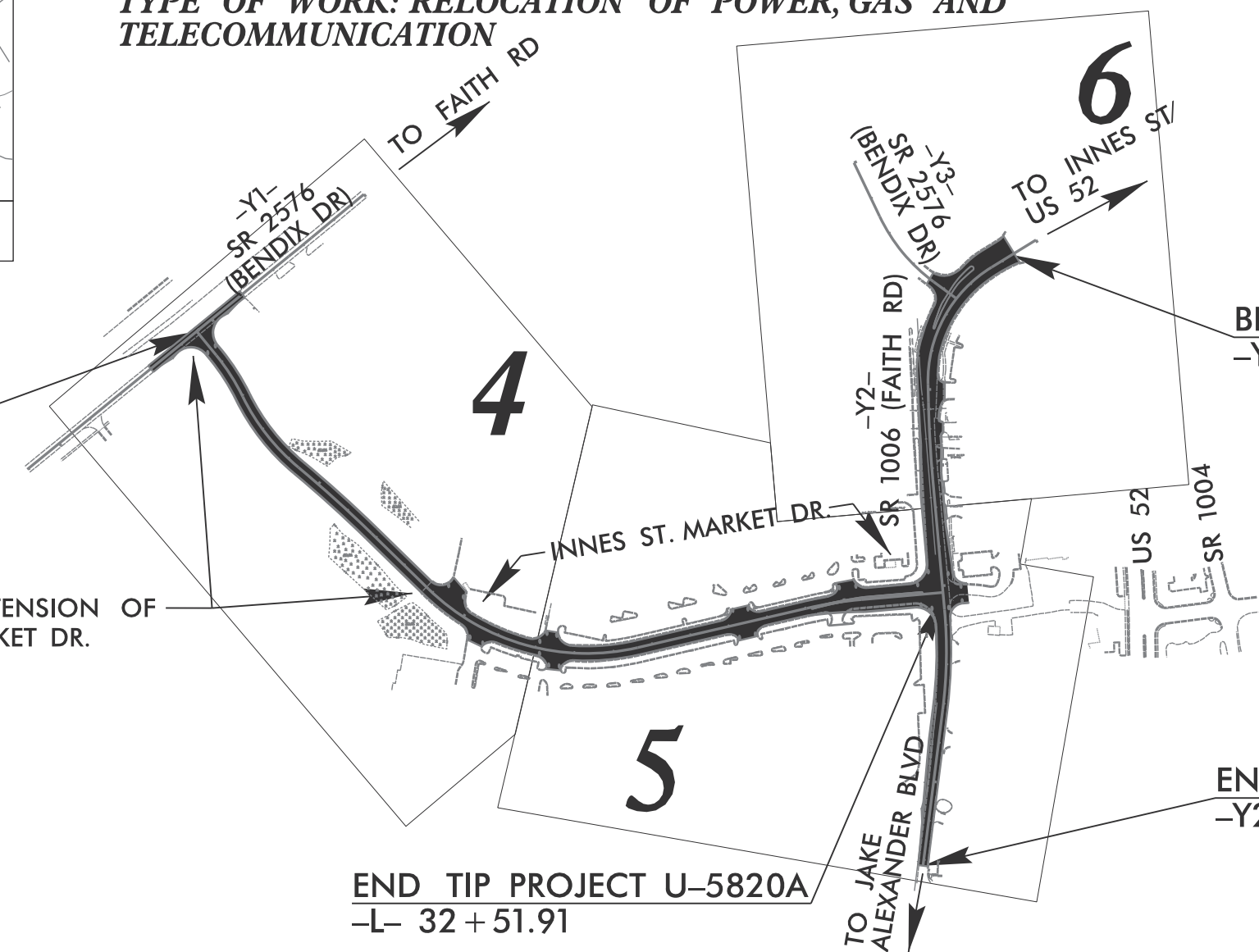
**TYPE OF WORK: RELOCATION OF POWER, GAS AND
TELECOMMUNICATION**

T.I.P. NO.	SHEET NO.
U-5820A	UO-1

NOTE:
ALL UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS.
NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR UTILITY WORK SHOWN ON THIS SHEET.

BEGIN TIP PROJECT U-5820A
-L- 10 + 00.00

PROPOSED EXTENSION OF
INNES ST. MARKET DR.



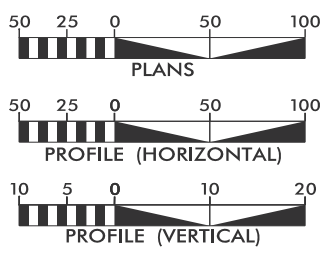
END TIP PROJECT U-5820A
-L- 32 + 51.91

BEGIN CONSTRUCTION
-Y2- 10 + 72.00

END CONSTRUCTION
-Y2- 27 + 15.48



GRAPHIC SCALES




INDEX OF SHEETS

SHEET NO.:	DESCRIPTION:
UO-1	TITLE SHEET
UO-2 THRU UO-4	UBO PLAN SHEETS

UTILITY OWNERS WITH CONFLICTS

- (A) POWER DISTRIBUTION - DUKE ENERGY
- (B) NATURAL GAS - PIEDMONT NATURAL GAS
- (C) TELECOMMUNICATION - AT&T
- (D) TELECOMMUNICATION - FIBRANT


PREPARED IN THE OFFICE OF:



Cardno

CARDNO (NC), INC.
9800 SOUTHERN PINE BOULEVARD
SUITE 1
CHARLOTTE NC 28273
PHONE (704) 927-9700
FAX (704) 529-3272

STEVE TREXLER PROJECT UTILITY COORDINATOR



DIVISION OF HIGHWAYS
UTILITIES UNIT
1555 MAIL SERVICES CENTER
RALEIGH NC 27699-1555
PHONE (919) 707-6690
FAX (919) 250-4151

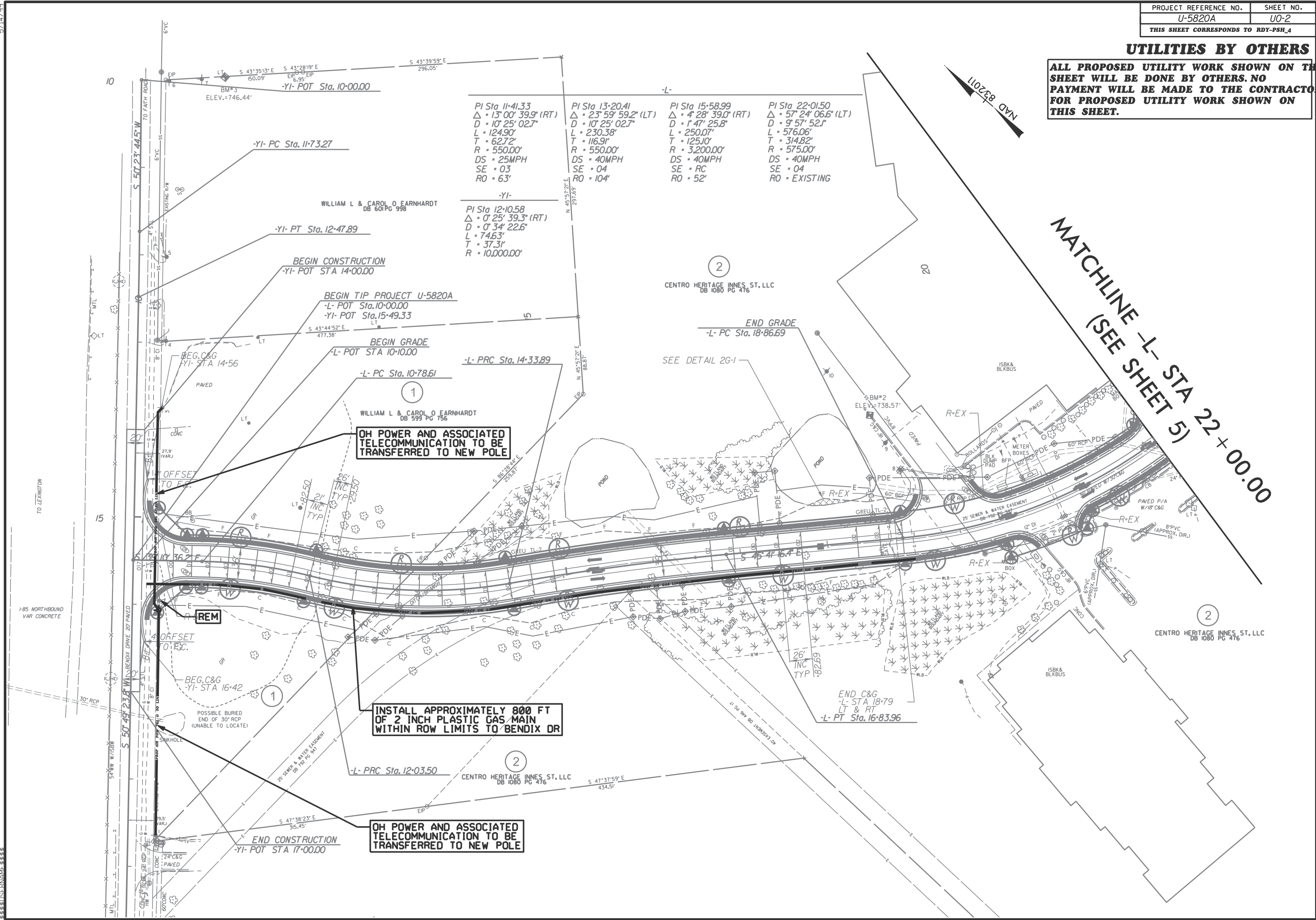
N/A UTILITIES REGIONAL ENGINEER
R. DAVID TRANTHAM UTILITIES ENGINEER
N/A UTILITIES AREA COORDINATOR
T. LYNN BASINGER UTILITIES COORDINATOR

\$\$\$\$\$SYTIME\$\$\$\$\$
\$\$\$\$\$DGN\$\$\$\$\$
\$\$\$\$\$SERNAME\$\$\$\$\$

UTILITIES BY OTHERS

ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR PROPOSED UTILITY WORK SHOWN ON THIS SHEET.

5/14/99



Station	Delta	Diameter	Length	Tangent	Radius	Design Speed	Setback	Right-of-Way
PI Sta 11-41.33	Δ = 13' 00" 39.9" (RT)	D = 10" 25' 02.7"	L = 124.90'	T = 62.72'	R = 550.00'	DS = 25MPH	SE = 03	RO = 63'
PI Sta 12-10.58	Δ = 0' 25' 39.3" (RT)	D = 0' 34' 22.6"	L = 74.63'	T = 37.31'	R = 10,000.00'			
PI Sta 13-20.41	Δ = 23' 59' 59.2" (LT)	D = 10" 25' 02.7"	L = 230.38'	T = 116.91'	R = 550.00'	DS = 40MPH	SE = 04	RO = 104'
PI Sta 15-58.99	Δ = 4' 28' 39.0" (RT)	D = 1' 47' 25.8"	L = 250.07'	T = 125.10'	R = 3,200.00'	DS = 40MPH	SE = RC	RO = 52'
PI Sta 22-01.50	Δ = 57' 24' 06.6" (LT)	D = 9' 57' 52.1"	L = 576.06'	T = 314.82'	R = 575.00'	DS = 40MPH	SE = 04	RO = EXISTING

OH POWER AND ASSOCIATED TELECOMMUNICATION TO BE TRANSFERRED TO NEW POLE

INSTALL APPROXIMATELY 800 FT OF 2 INCH PLASTIC GAS MAIN WITHIN ROW LIMITS TO BENDIX DR

OH POWER AND ASSOCIATED TELECOMMUNICATION TO BE TRANSFERRED TO NEW POLE

MATCHLINE -L- STA 22+00.00
(SEE SHEET 5)

185 NORTHBOUND VAR CONCRETE

C:\TILE\5820A\U0-2\CON\5820A.U0-2.CON

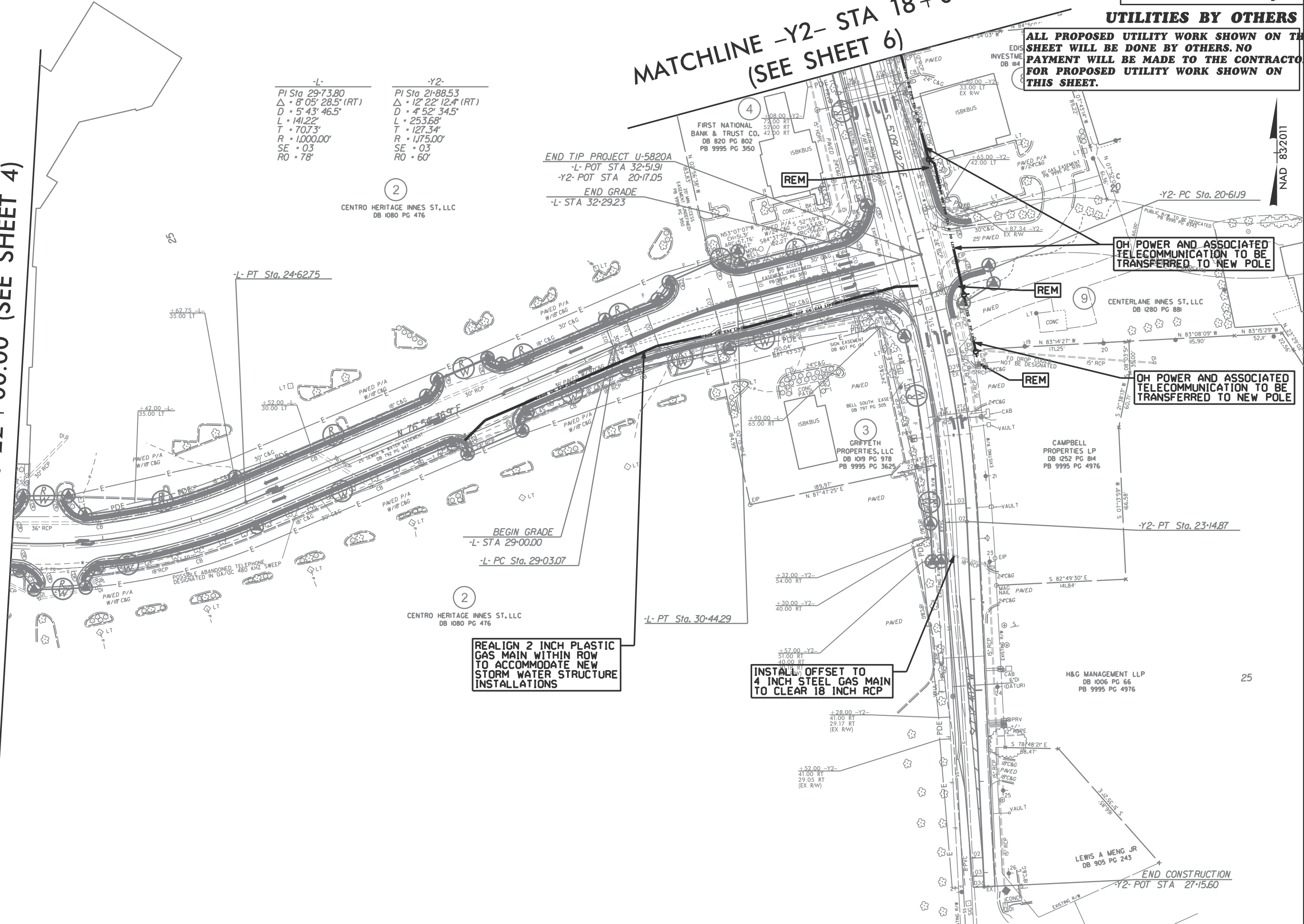
UTILITIES BY OTHERS

ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR PROPOSED UTILITY WORK SHOWN ON THIS SHEET.

**MATCHLINE -Y2- STA 18+00.00
(SEE SHEET 6)**

-L-	-Y2-
PI Sta 29+73.80	PI Sta 21+88.53
Δ = 8° 05' 28.5" (RT)	Δ = 12° 22' 12.4" (RT)
D = 5' 43' 46.5"	D = 4' 52' 34.5"
L = 141.22'	L = 253.68'
T = 70.73'	T = 127.34'
R = 1,000.00'	R = 1,175.00'
SE = 03	SE = 03
RO = 78'	RO = 60'

MATCHLINE -L- STA 22+00.00 (SEE SHEET 4)



END TIP PROJECT U-5820A
 -L- POT STA 32+51.91
 -Y2- POT STA 20+17.05
END GRADE
 -L- STA 32+29.23

2
 CENTRO HERITAGE INNES ST, LLC
 DB 1080 PG 476

3
 GRIFFETH PROPERTIES, LLC
 DB 1019 PG 978
 PB 9995 PG 3625

9

OH POWER AND ASSOCIATED TELECOMMUNICATION TO BE TRANSFERRED TO NEW POLE

OH POWER AND ASSOCIATED TELECOMMUNICATION TO BE TRANSFERRED TO NEW POLE

BEGIN GRADE
 -L- STA 29+00.00
 -L- PC Sta. 29+03.07

2
 CENTRO HERITAGE INNES ST, LLC
 DB 1080 PG 476

REALIGN 2 INCH PLASTIC GAS MAIN WITHIN ROW TO ACCOMMODATE NEW STORM WATER STRUCTURE INSTALLATIONS

INSTALL OFFSET TO 4 INCH STEEL GAS MAIN TO CLEAR 18 INCH RCP

H&G MANAGEMENT LLP
 DB 1006 PG 66
 PB 9995 PG 4976

LEWIS A MENG JR
 DB 905 PG 243

END CONSTRUCTION
 -Y2- POT STA 27+15.60

5/14/99

5/14/99

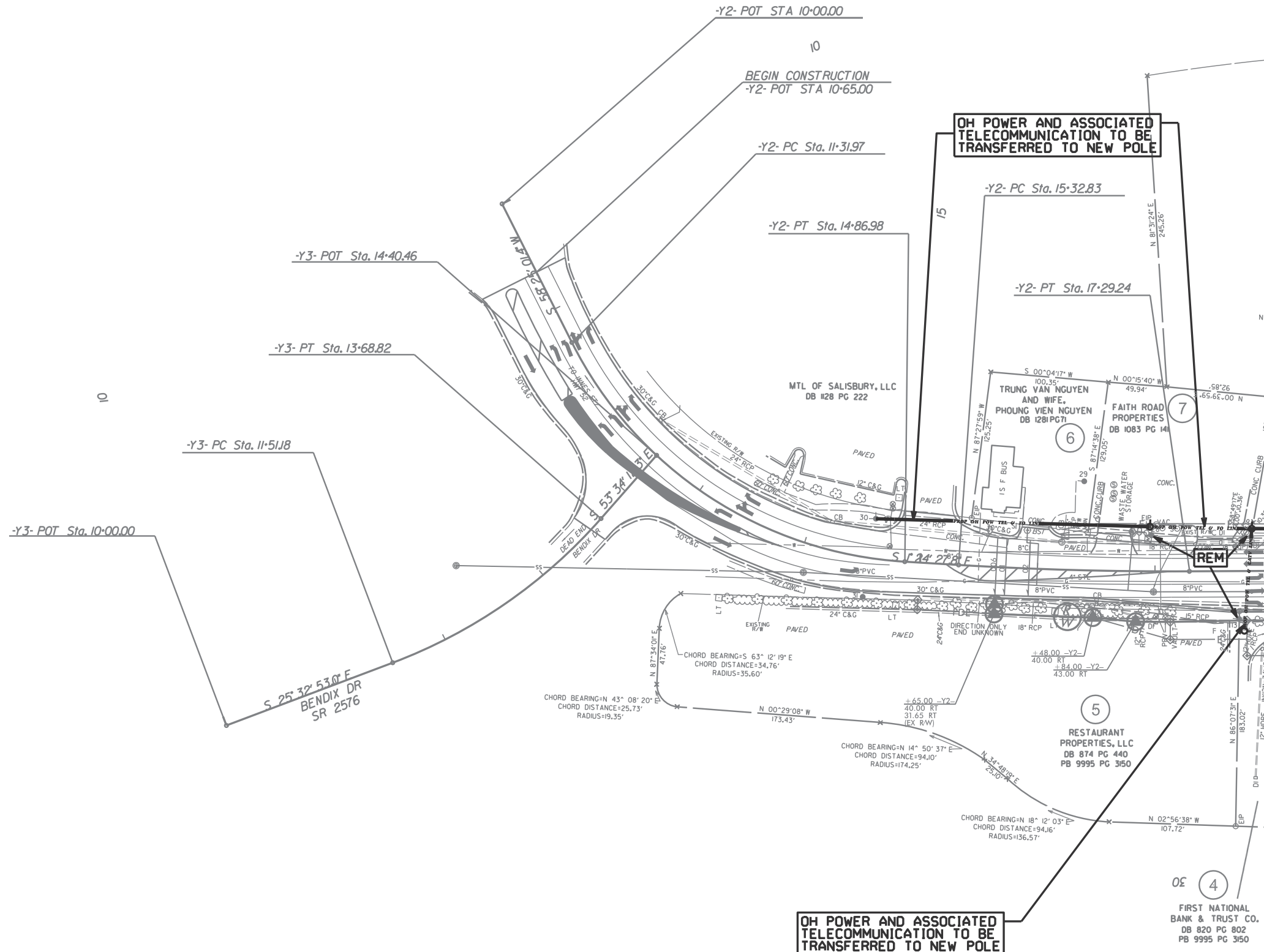
NAD 83/2011

25

UTILITIES BY OTHERS

ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR PROPOSED UTILITY WORK SHOWN ON THIS SHEET.

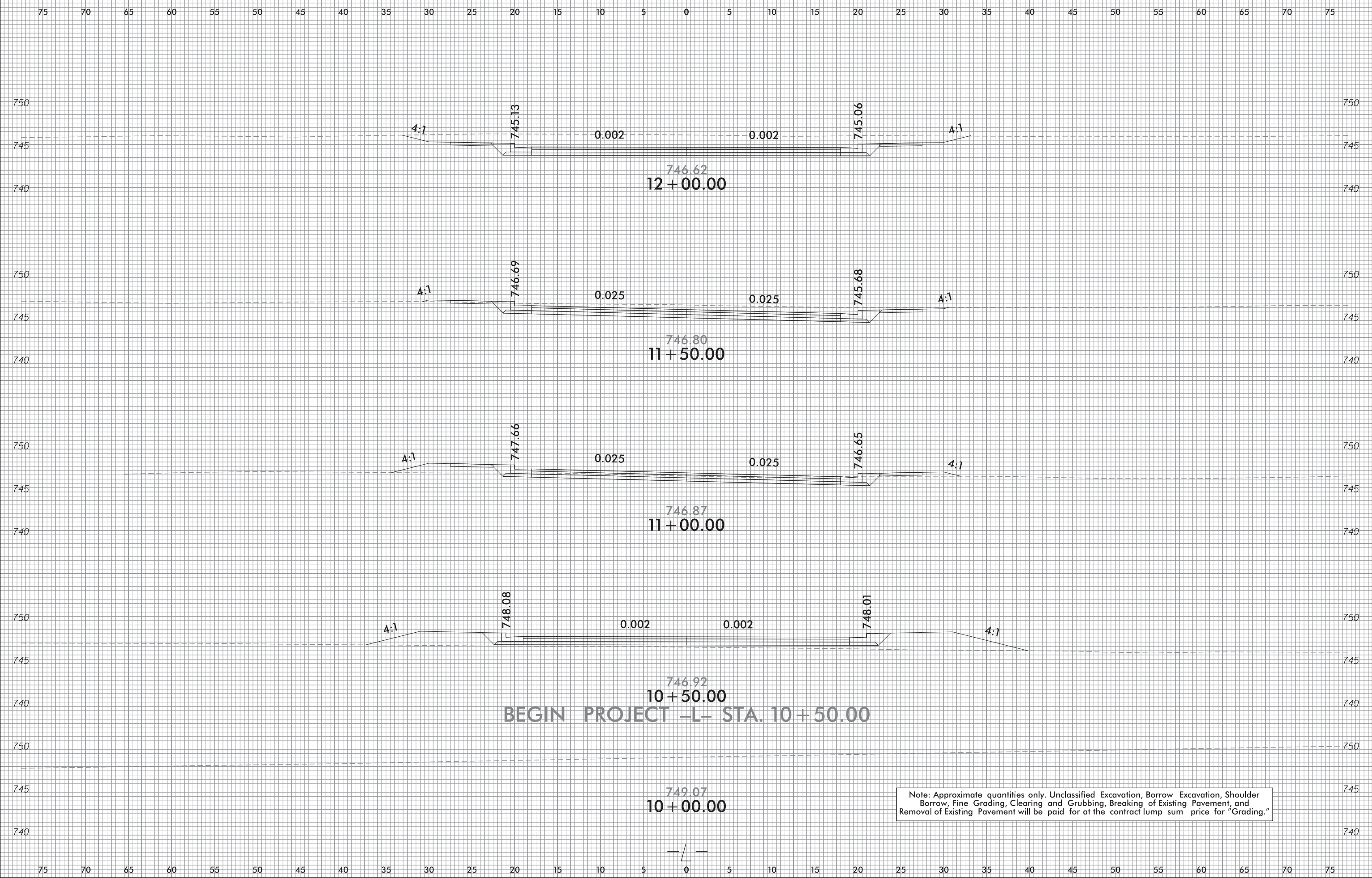
-Y3-	-Y2-	-Y1-
PI Sta 12+62.22	PI Sta 13+27.58	PI Sta 16+31.07
$\Delta = 28^{\circ} 01' 19.3" (LT)$	$\Delta = 59^{\circ} 49' 29.2" (LT)$	$\Delta = 3^{\circ} 45' 04.4" (LT)$
D = 12' 52" 31.6"	D = 16' 51" 06.1"	D = 1' 54" 35.5"
L = 217.64'	L = 355.01'	L = 196.41'
T = 111.04'	T = 195.61'	T = 98.24'
R = 445.00'	R = 340.00'	R = 3,000.00'
SE = EXISTING	SE = EXISTING	
RO = EXISTING	RO = EXISTING	



MATCHLINE -Y2- STA 18+00.00
(SEE SHEET 5)

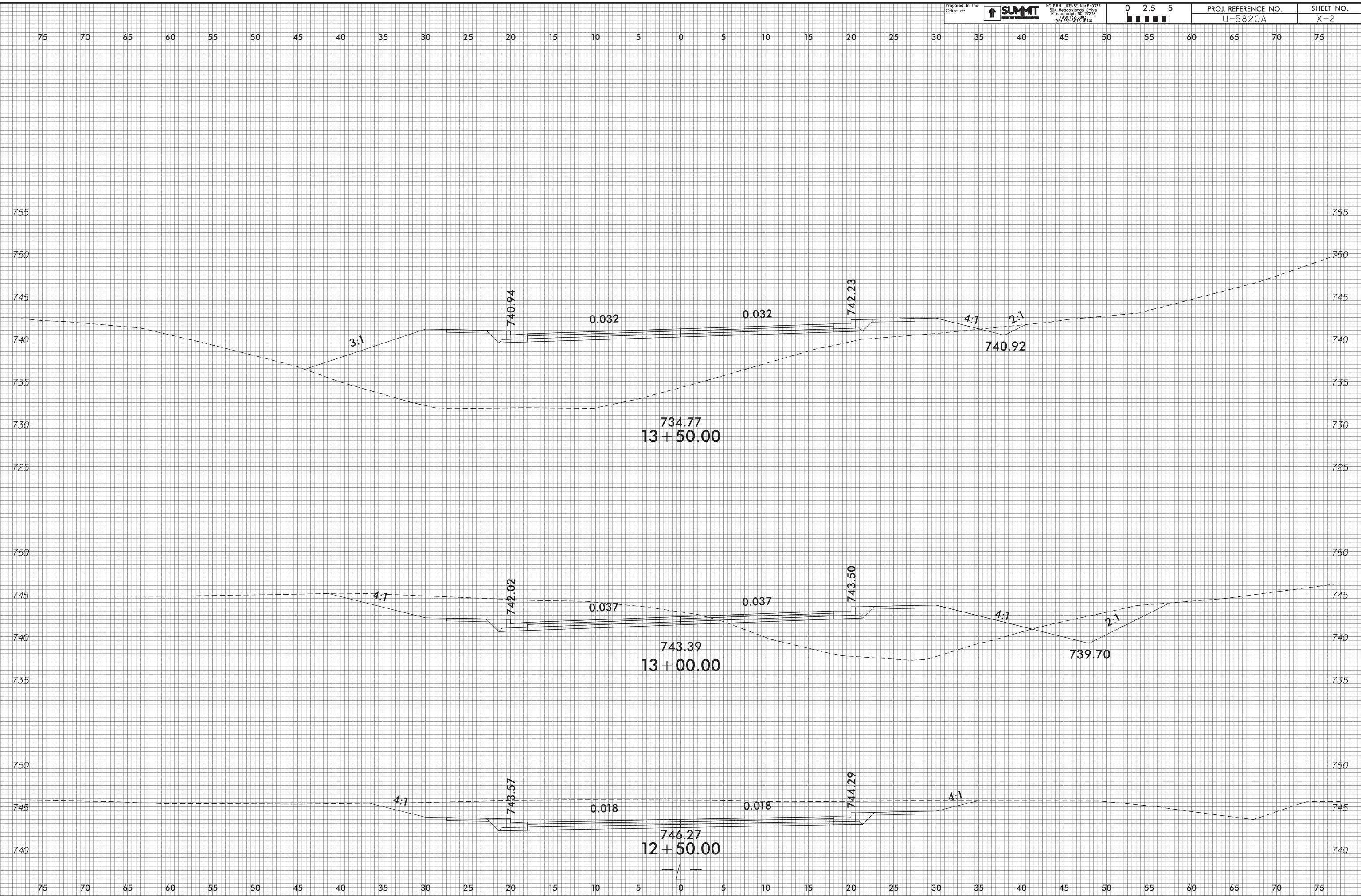
5/14/99

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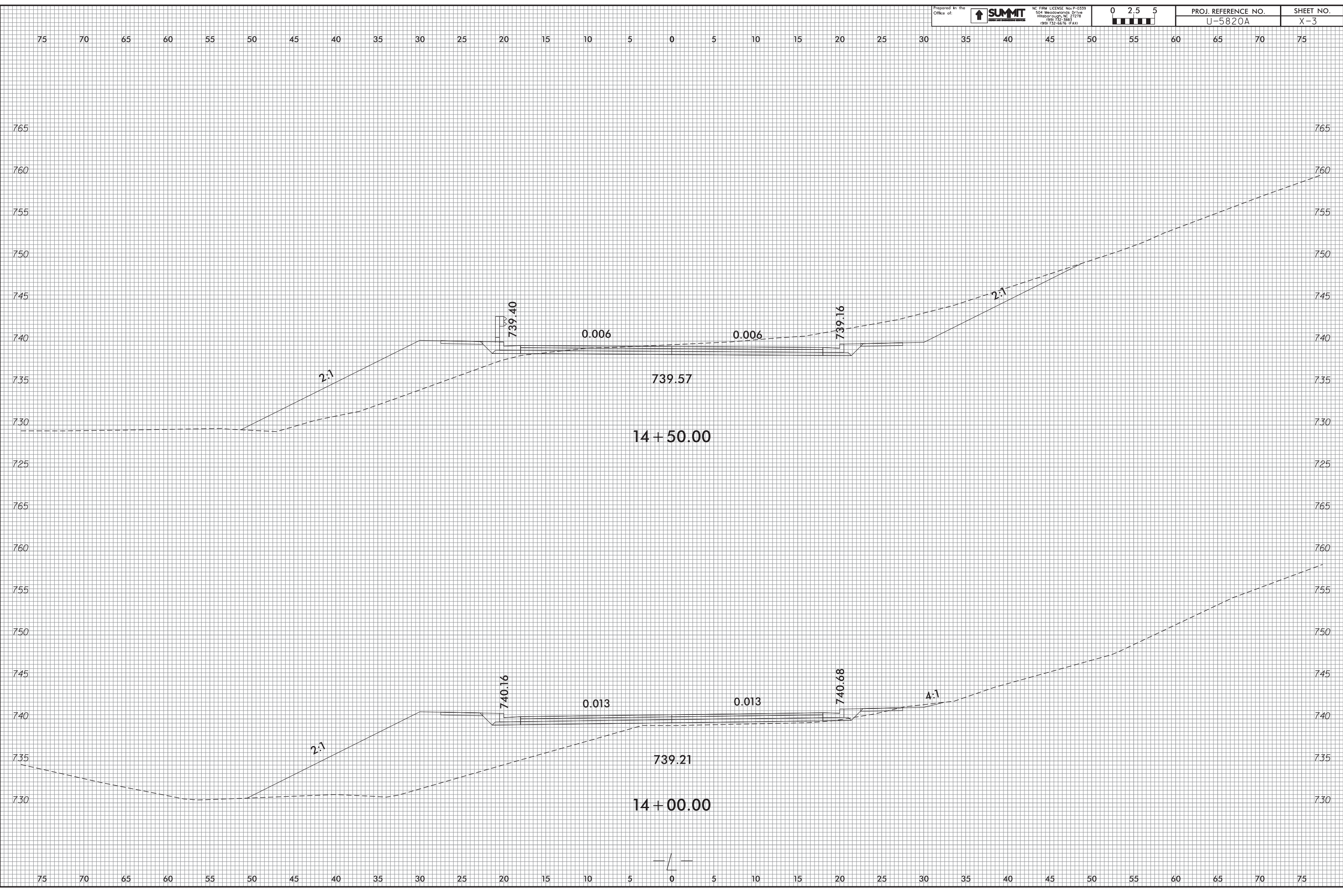


Note: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Shoulder Borrow, Fine Grading, Clearing and Grubbing, Breaking of Existing Pavement, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

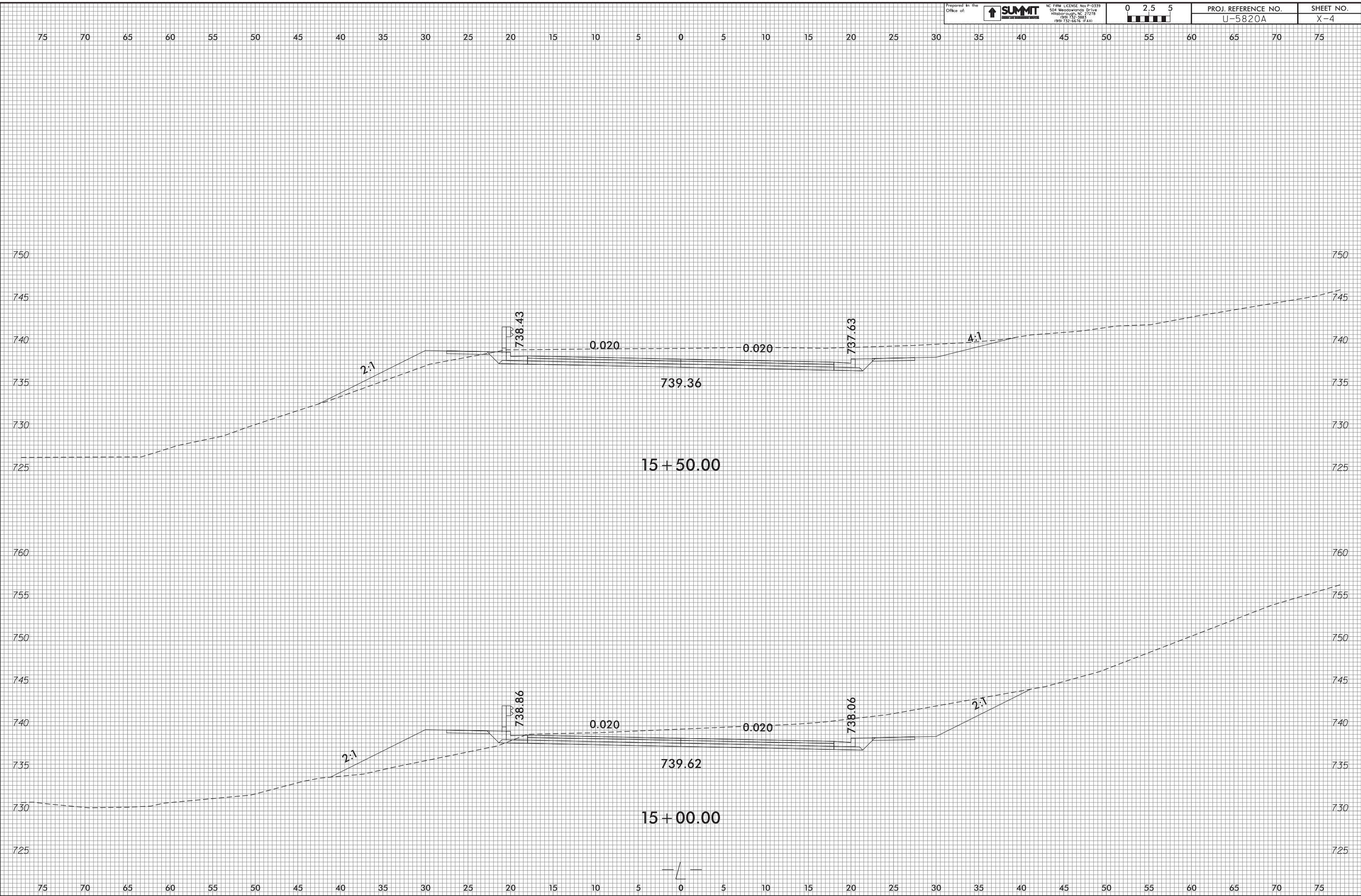
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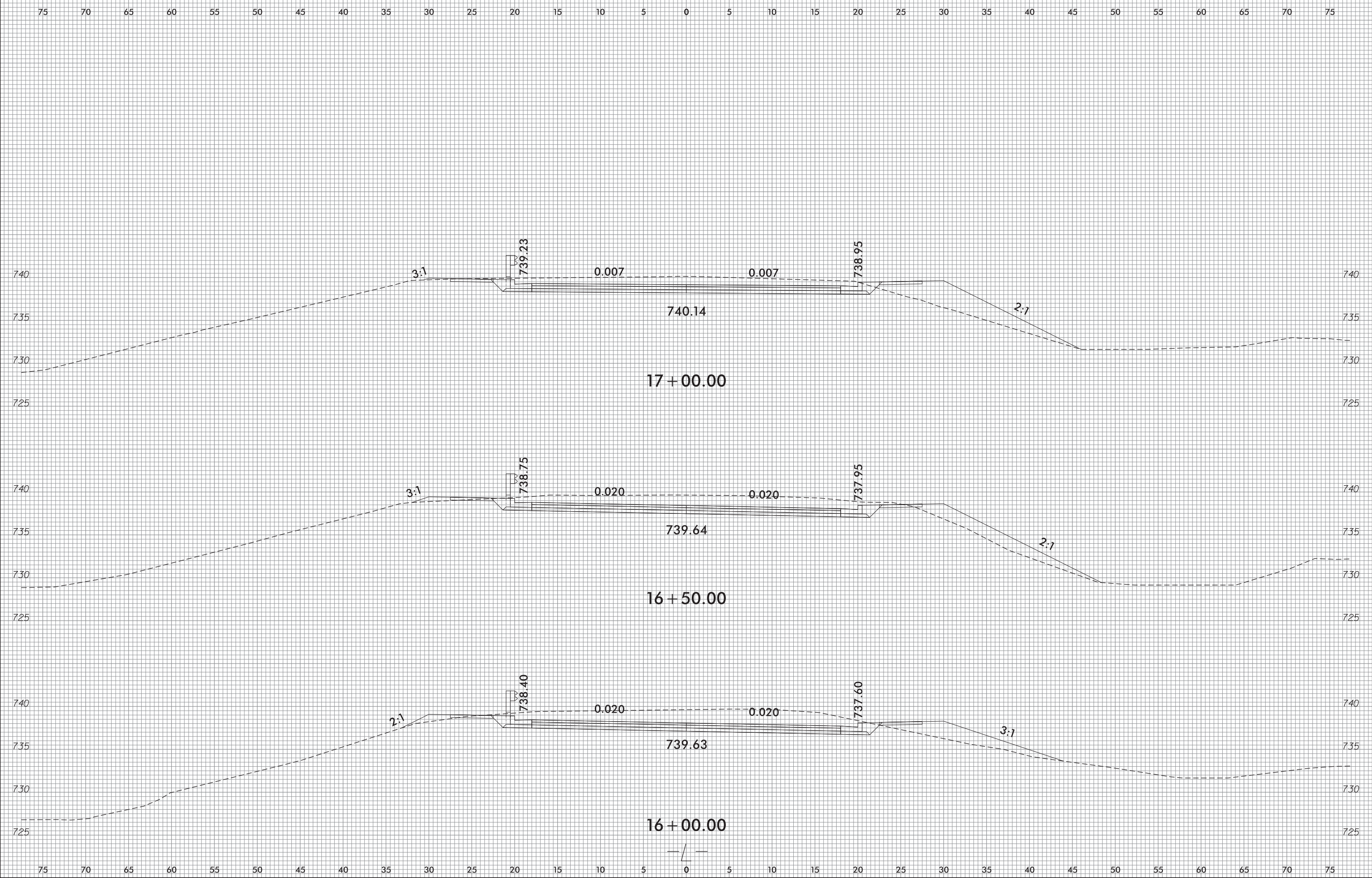


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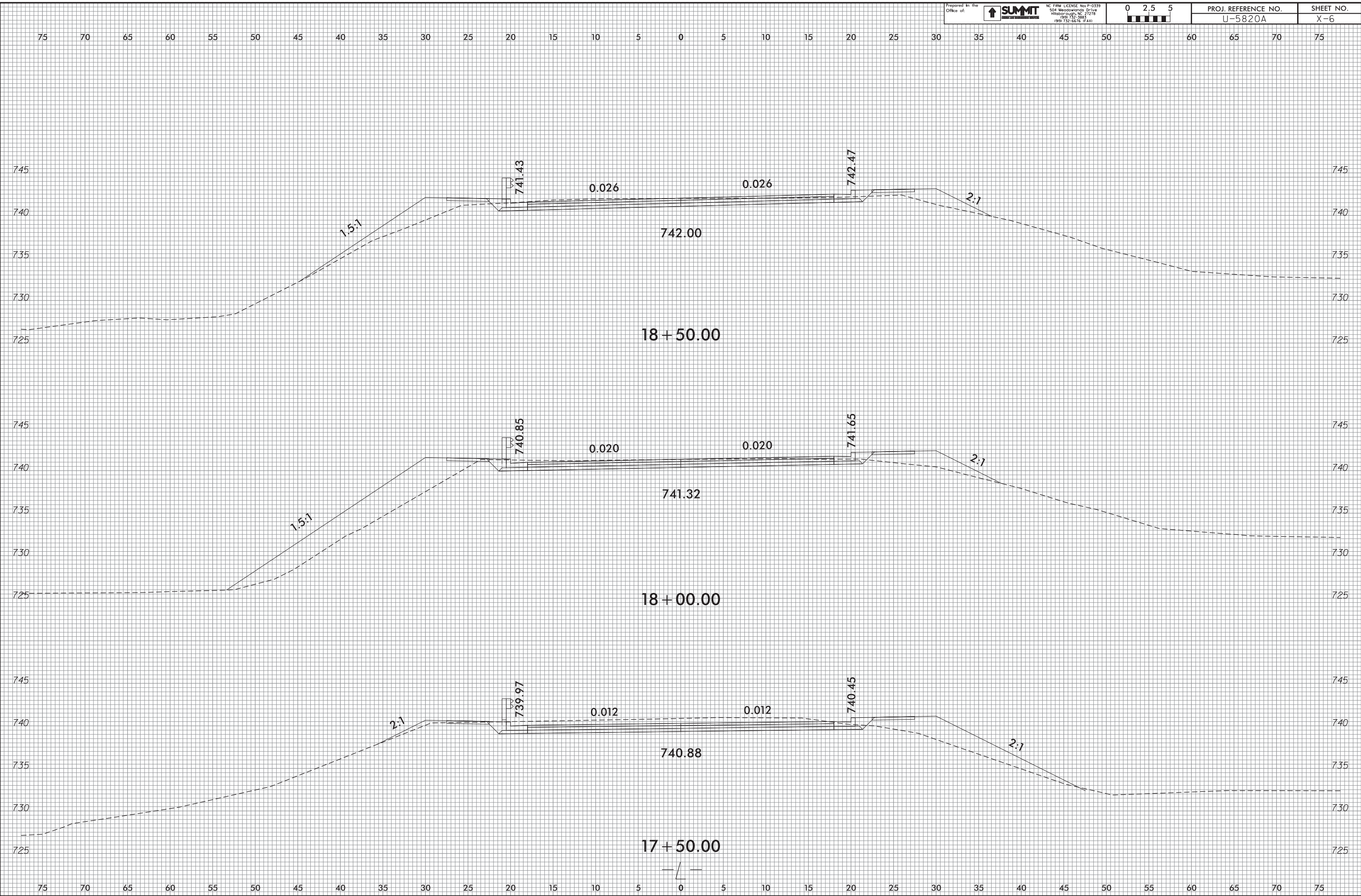


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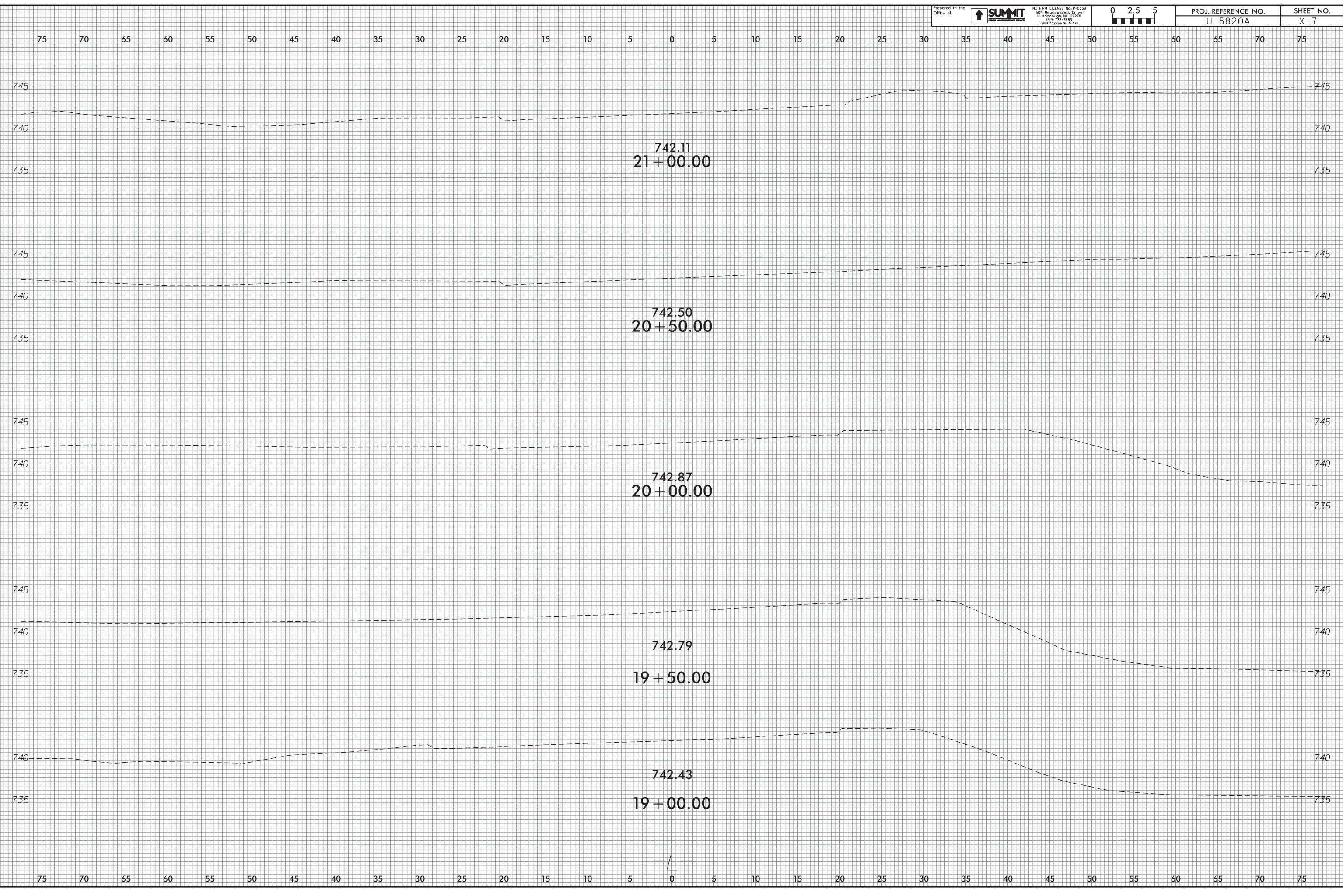




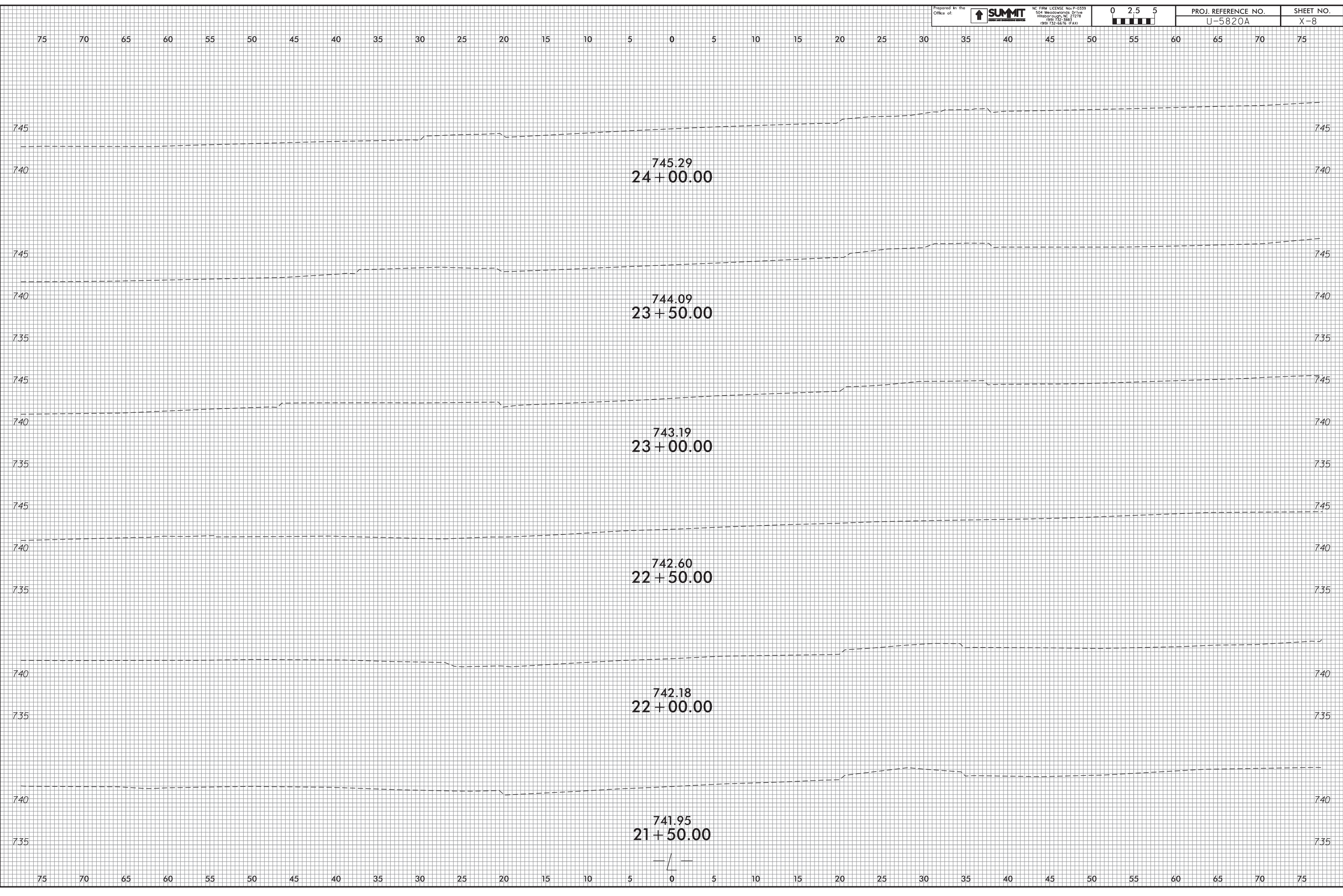
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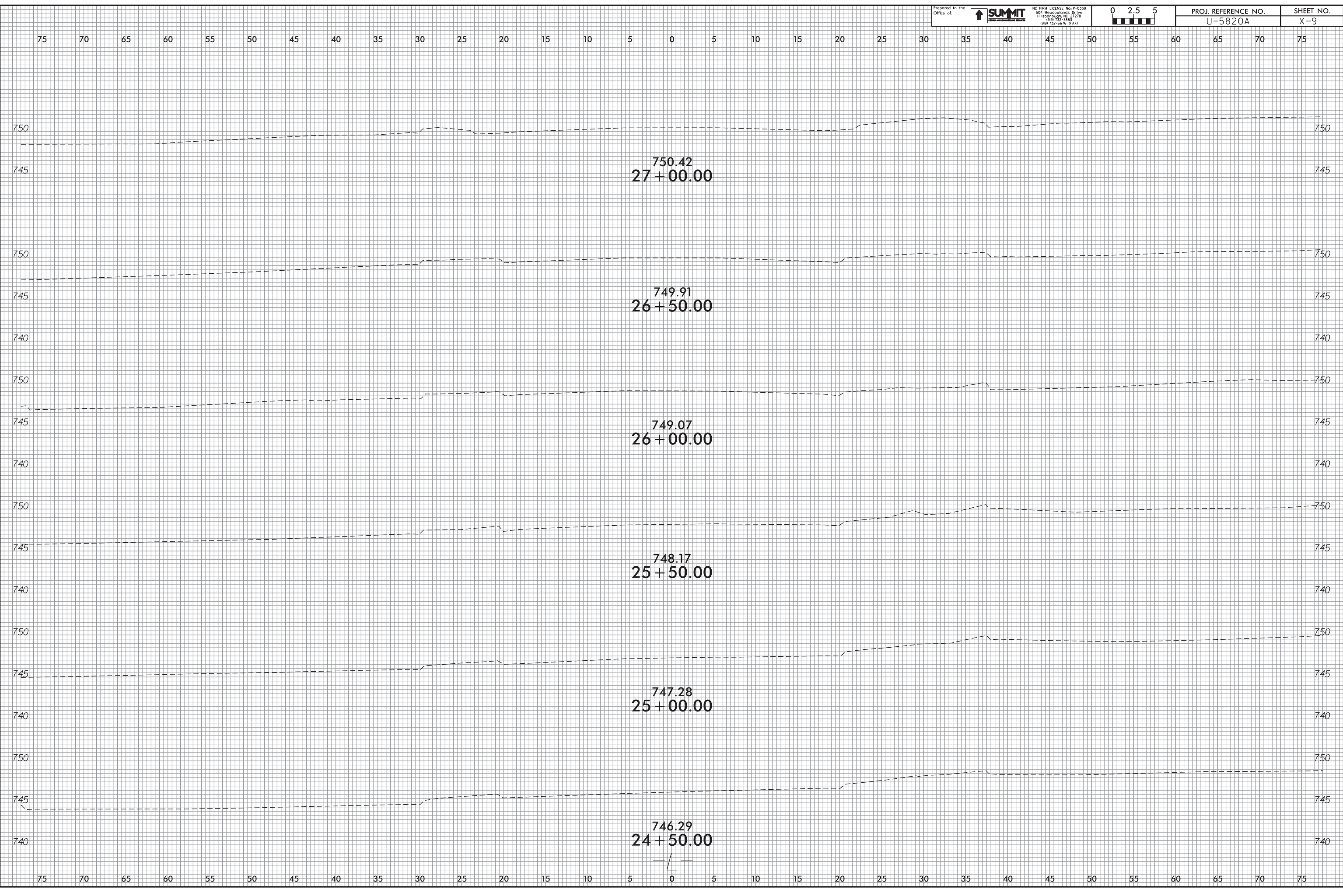
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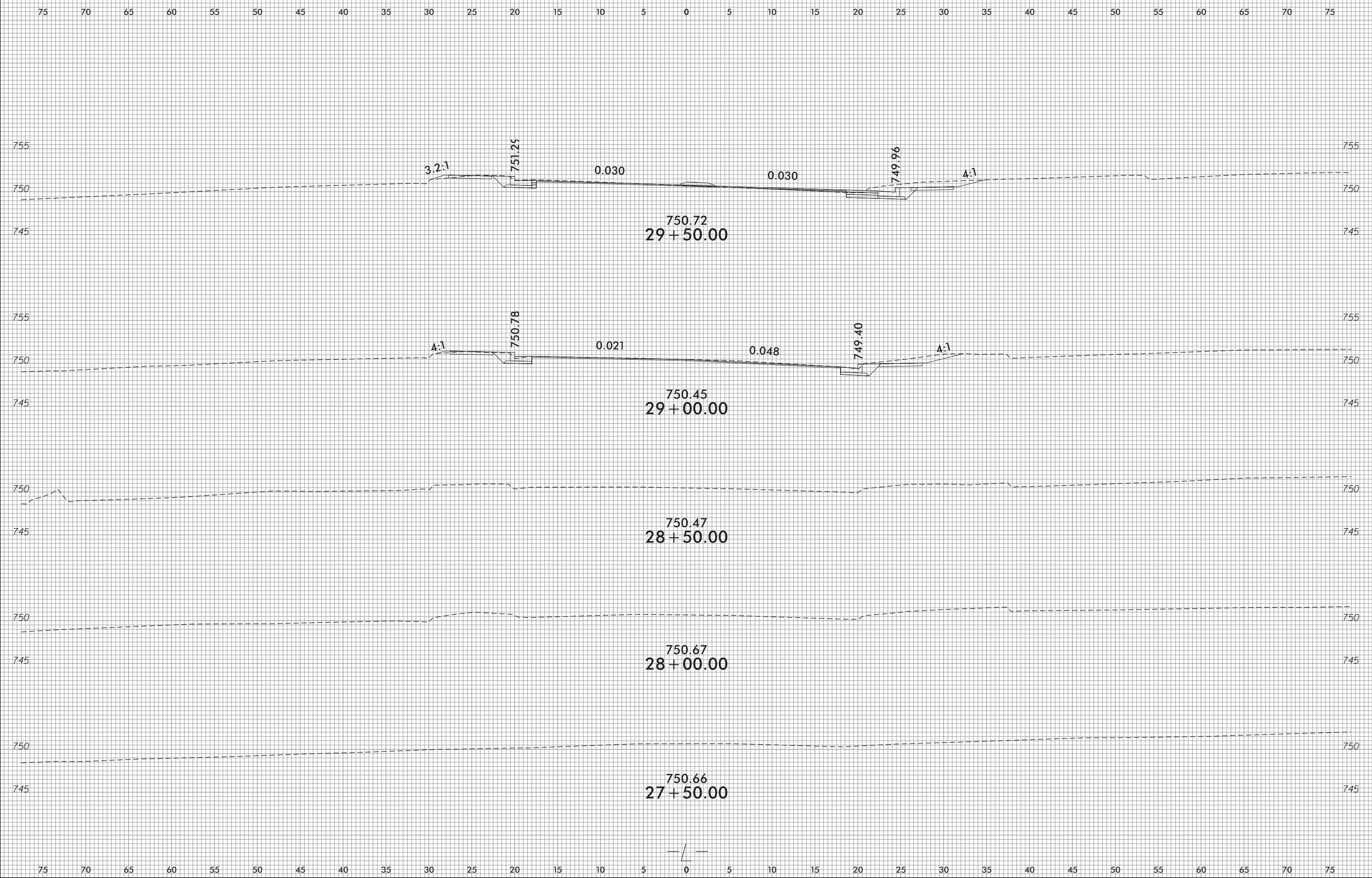


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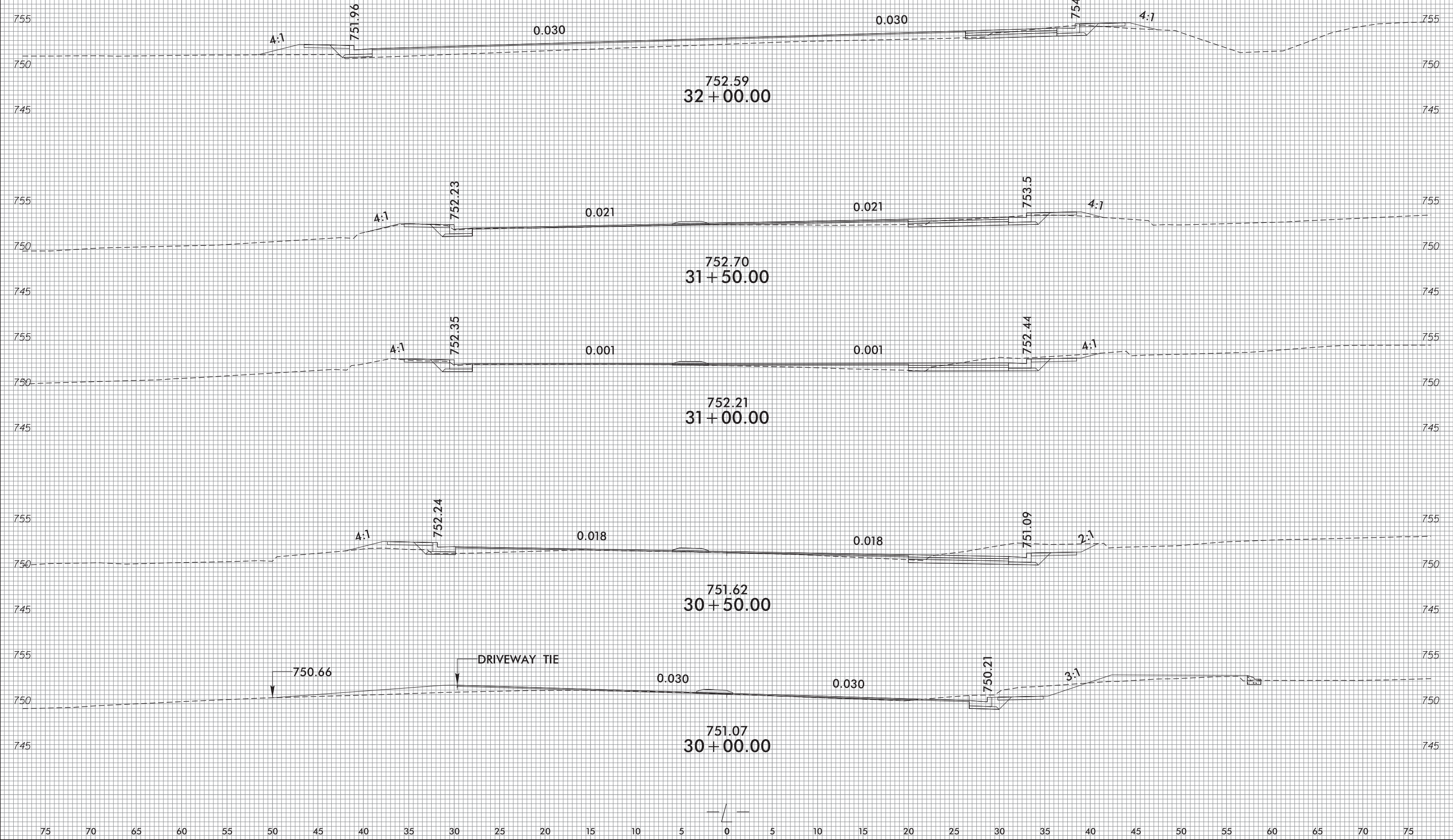


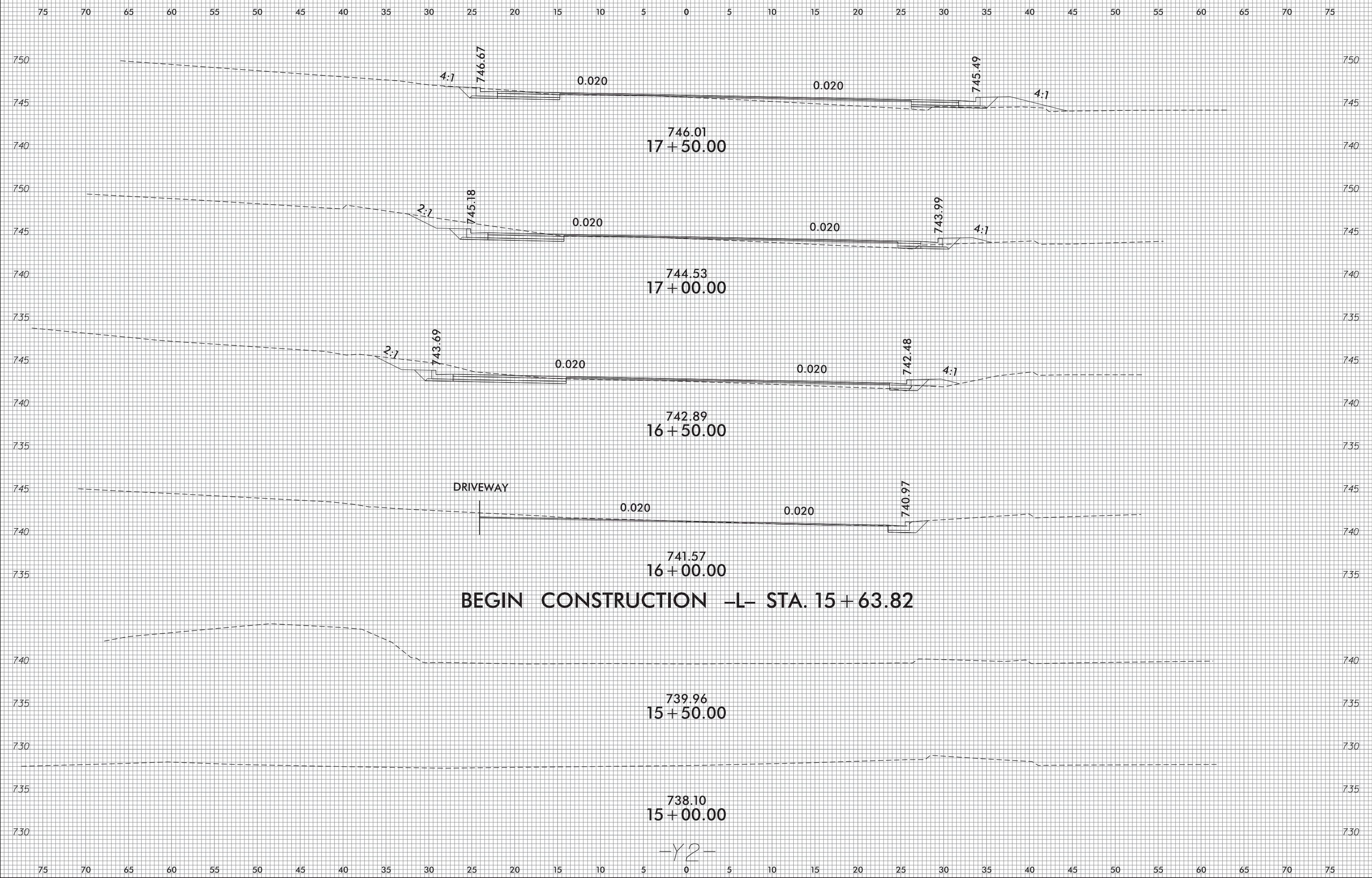


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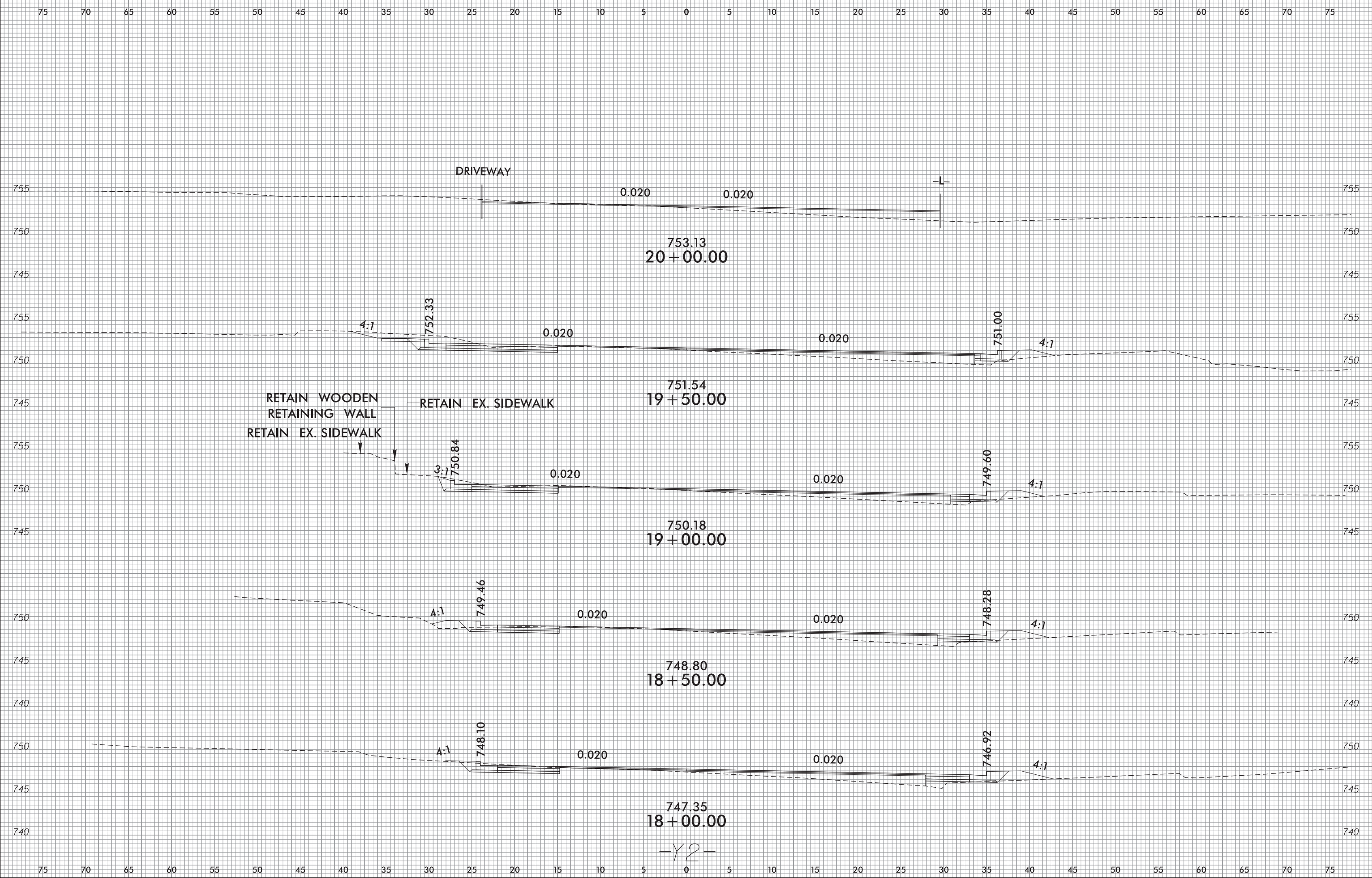
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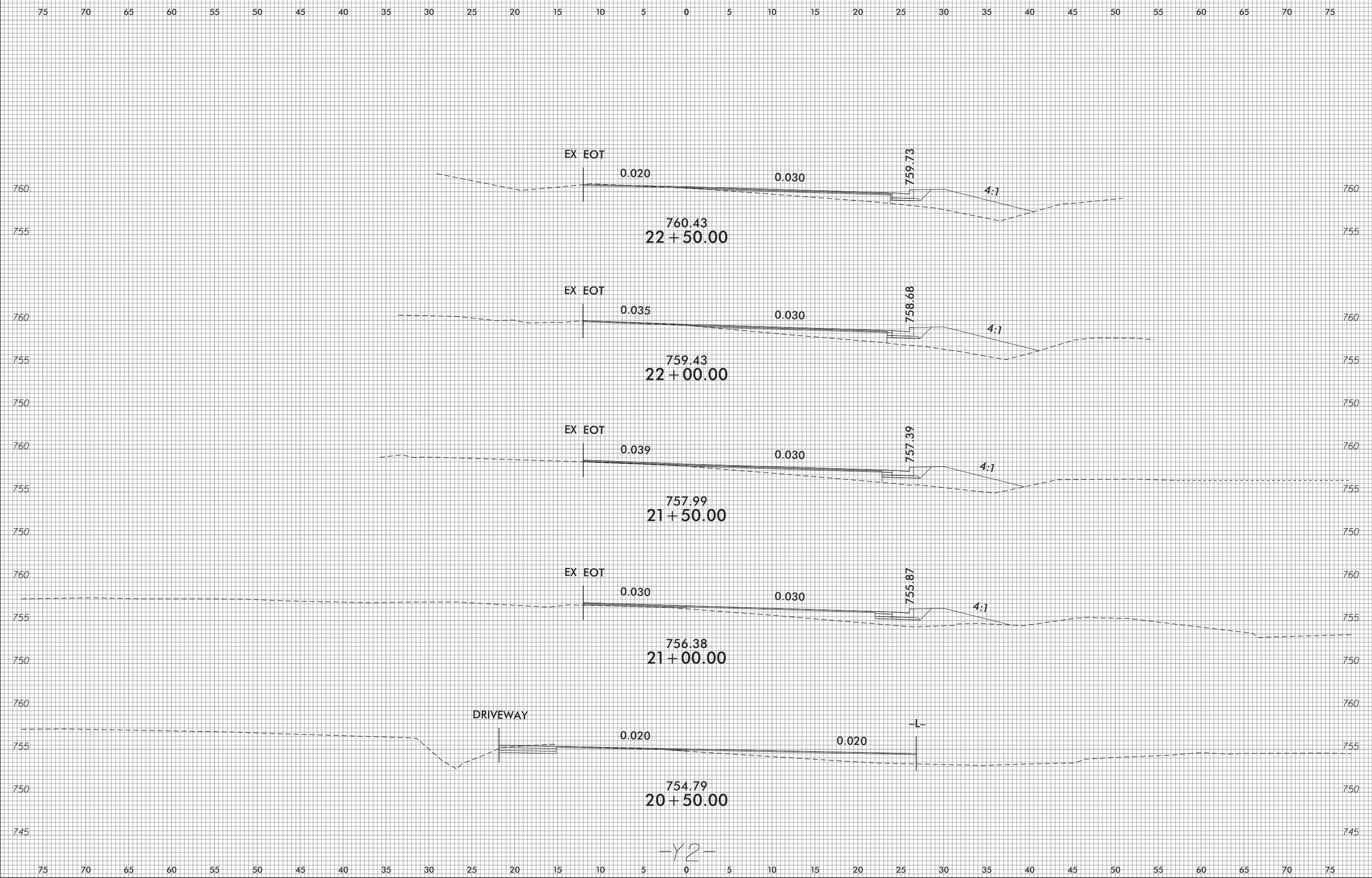


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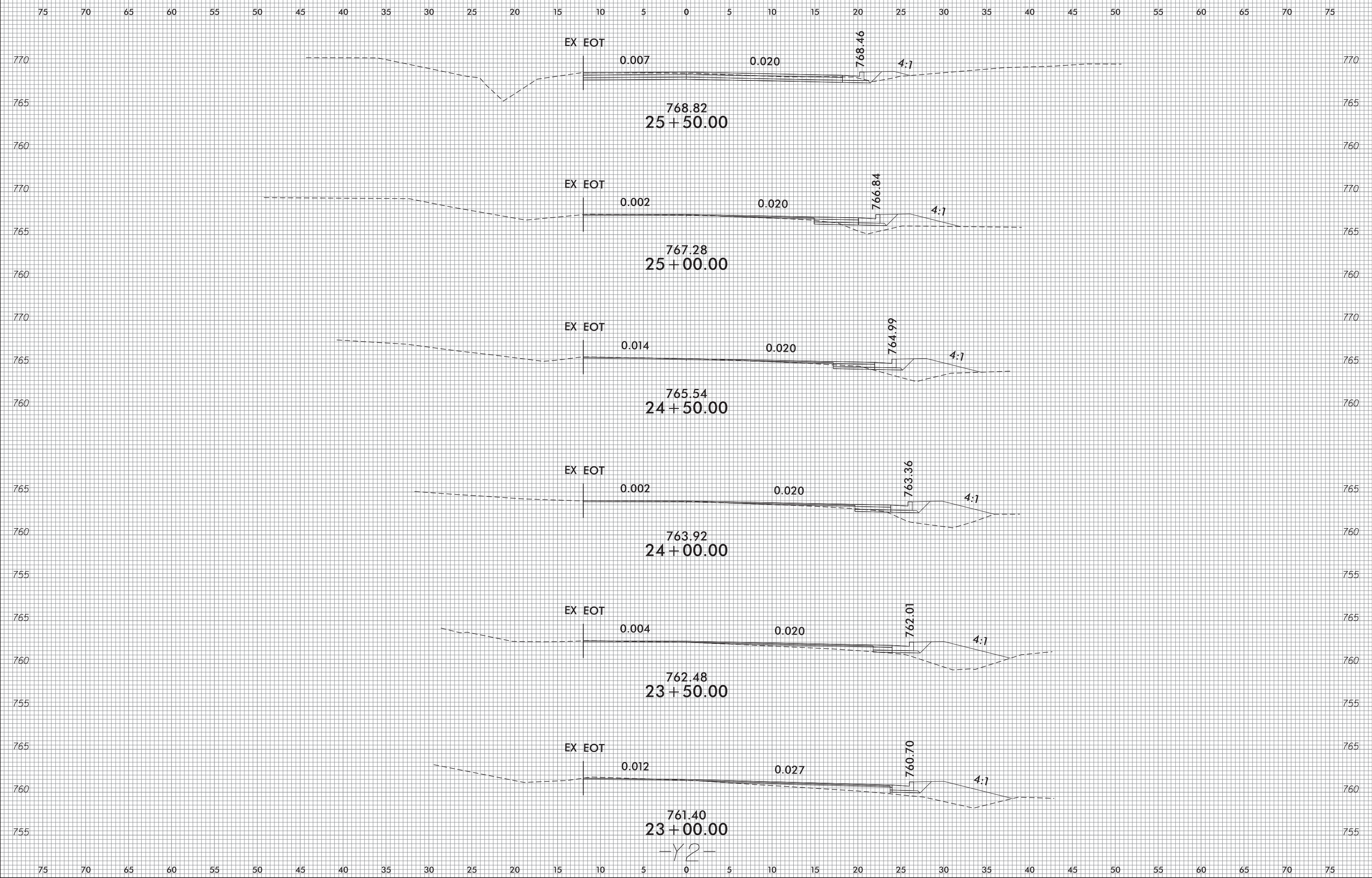
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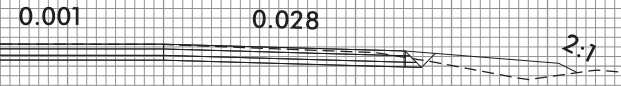


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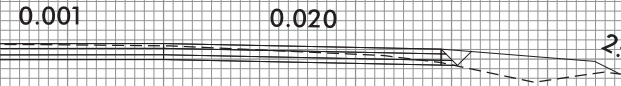
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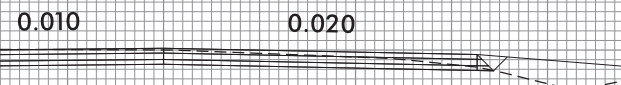
771.13
27+00.00

EX EOT



770.69
26+50.00

EX EOT



770.00
26+00.00

-Y2-

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