09/08/99

TIP PROJECT: R-5207C

CONTRACT: DN00563

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols Sheet

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5207C	1	

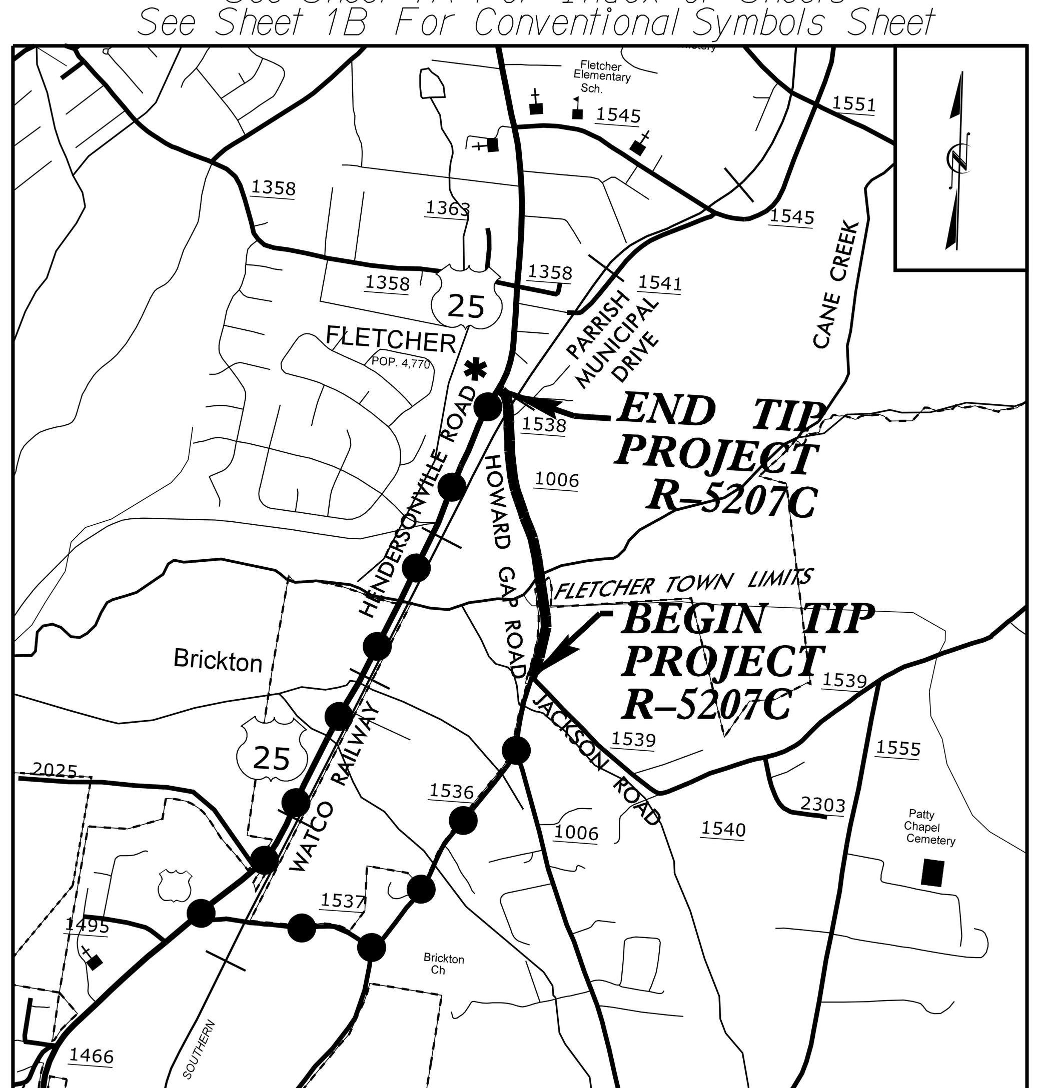
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
45393.1.2		PE
45393.2.5		RW/UTIL.
45393.3.5		CONST.

HENDERSON COUNTY

NAD 83/ NSRS 2007

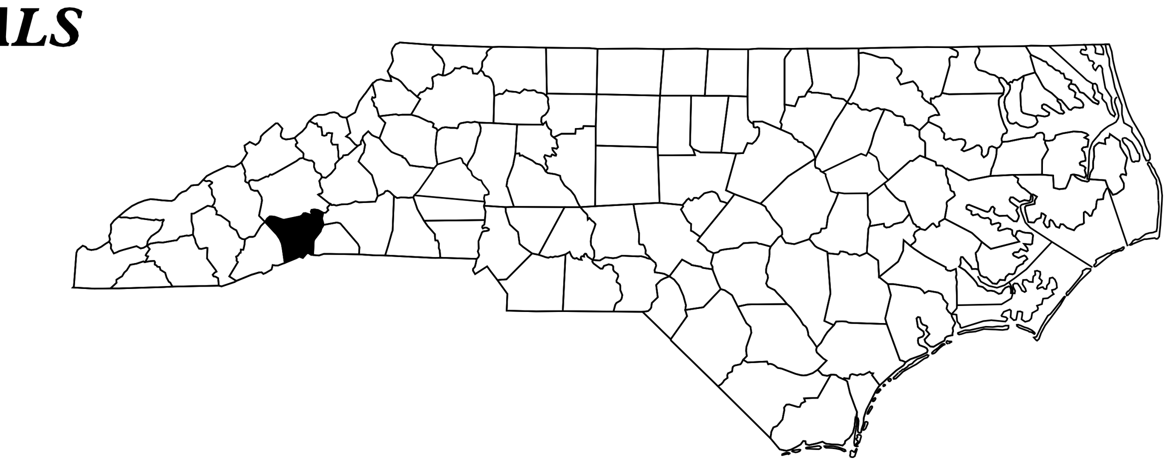
LOCATION: SR 1006 (HOWARD GAP RD) FROM SR 1539 (JACKSON RD.) TO US 25 IN FLETCHER

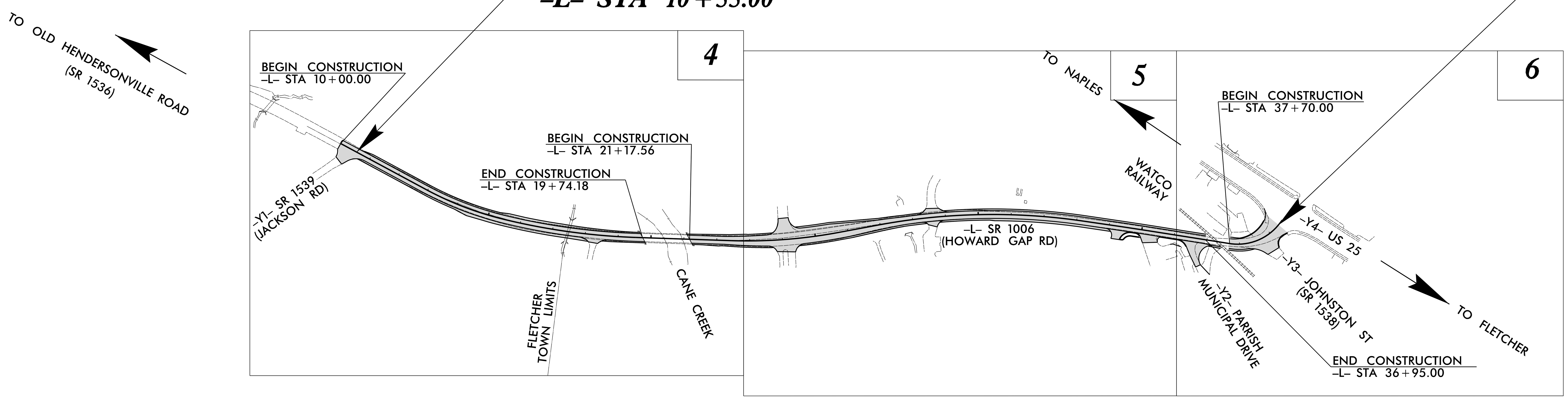
TYPE OF WORK: GRADING, PAVING, DRAINAGE, AND SIGNALS



VICINITY MAP N.T.S

100% PLANS





RS&H

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

THERE IS NO CONTROL OF ACCESS ON THIS PROJECT.

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2014 = 6600

V = 40 MPH

FUNC CLASS = COLLECTOR

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-5207C = 0.545 MILES
LENGTH STRUCTURE TIP PROJECT R-5207C = 0.000 MILES
TOTAL LENGTH TIP PROJECT R-5207C = 0.545 MILES

NCDOT CONTACT:
WANDA H. AUSTIN, PE
DIVISION 14 PROJECT MANAGER

Prepared In the Office of:
RS&H ARCHITECTS-ENGINEERS-PLANNERS, INC.
1520 SOUTH BOULEVARD, SUITE 200
CHARLOTTE, NC 28203

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: OCTOBER 6, 2017

LETTING DATE: FEBRUARY 13, 2018

ALLISON DRAKE, PE
PROJECT ENGINEER

ASHLEY KRONSTEDT, EI
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036188
1/18/2018
SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042357
1/18/2018
SIGNATURE: P.E.

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

16-JAN-2018 10:30
R:\Roadway\Proj\R5207C_Rdy_tsh.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-5207C	1A
RW SHEET NO.	

ROADWAY DESIGN ENGINEER

1/18/2018

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

INDEX OF SHEETS

GENERAL NOTES

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

GRADE LINE:
GRADING AND SURFACING OR RESURFACING AND WIDENING:

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

CLEARING:

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

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.

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH DETAIL ON SHEET 2B-1.

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.

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.

TEMPORARY SHORING:

SHORING REQUIRED FOF THE MAINTENANCE OF TRAFFIC WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.

SUBSURFACE PLANS:

NO SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS.

UTILITIES:

KNOWN UTILITY OWNERS ON THIS PROJECT ARE:

DUKE ENERGY, AT&T COMMUNICATION, PSNC ENERGY, USS, INC., CANE CREEK WATER & SEWER DISTRICT, MSD OF BUNCOMBE COUNTY, CITY OF HENDERSONVILLE, METROPOLITAN SEWERAGE DISTRICT

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

RIGHT-OF-WAY MARKERS:

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

CURB RAMPS:

CURB RAMPS ARE SHOWN ON THE PLANS AT APPROXIMATE LOCATIONS.
CONSTRUCT ALL CURB RAMPS IN ACCORDANCE WITH STD. 848.05 AND/OR 848.06.

STANDARD DRAWINGS

2018 ROADWAY STANDARD DRAWINGS
EFFECTIVE: 01-16-2018

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	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
225.06	Method of Grading Sight Distance at Intersections
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
DIVISION 8 - INCIDENTALS	
838.01	Concrete Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
840.00	Concrete Base Pad for Drainage Structures
840.01	Brick Catch Basin - 12" thru 54" Pipe
840.02	Concrete Catch Basin - 12" thru 54" Pipe
840.03	Frame, Grates and Hood - for Use on Standard Catch Basin
840.34	Traffic Bearing Junction Box - for Use with Pipes 42" and Under
840.45	Precast Drainage Structure
840.46	Traffic Bearing Precast Drainage Structure
840.54	Manhole Frame and Cover
840.66	Drainage Structure Steps
840.72	Pipe Collar
846.01	Concrete Curb, Gutter and Curb & Gutter
848.01	Concrete Sidewalk
848.04	Street Turnout
848.05	Curb Ramp - Proposed Curb & Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
862.04	Anchoring End of Guardrail - B-77 and B-83 Anchor Units
876.02	Guide for Rip Rap at Pipe Outlets

12/2/2016

PROJECT REFERENCE NO.	SHEET NO.
R-5207C	1B

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

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

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin (EIP)
- Computed Property Corner
- Property Monument (ECM)
- Parcel/Sequence Number (123)
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary (WLB)
- Proposed Wetland Boundary (WLB)
- Existing Endangered Animal Boundary (EAB)
- Existing Endangered Plant Boundary (EPB)
- Existing Historic Property Boundary (HPB)
- Known Contamination Area: Soil (S)
- Potential Contamination Area: Soil (S)
- Known Contamination Area: Water (W)
- Potential Contamination Area: Water (W)
- Contaminated Site: Known or Potential

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign (S)
- Well (W)
- Small Mine
- Foundation
- Area Outline
- Cemetery
- Building
- School
- Church
- Dam

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- Jurisdictional Stream (JS)
- Buffer Zone 1 (BZ 1)
- Buffer Zone 2 (BZ 2)
- Flow Arrow
- Disappearing Stream
- Spring
- Wetland
- Proposed Lateral, Tail, Head Ditch (FLOW)
- False Sump

RAILROADS:

- Standard Gauge (CSX TRANSPORTATION)
- RR Signal Milepost (MILEPOST 35)
- Switch (SWITCH)
- RR Abandoned
- RR Dismantled

RIGHT OF WAY & PROJECT CONTROL:

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

ROADS AND RELATED FEATURES:

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

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard (Vineyard)

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

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

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole (P)
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- H-Frame Pole
- U/G Power Line LOS B (S.U.E.*) (P)
- U/G Power Line LOS C (S.U.E.*) (P)
- U/G Power Line LOS D (S.U.E.*) (P)

TELEPHONE:

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

WATER:

- Water Manhole (W)
- Water Meter
- Water Valve
- Water Hydrant
- U/G Water Line LOS B (S.U.E*)
- 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 (C)
- TV Tower
- U/G TV Cable Hand Hole (HH)
- U/G TV Cable LOS B (S.U.E.*) (TV)
- U/G TV Cable LOS C (S.U.E.*) (TV)
- U/G TV Cable LOS D (S.U.E.*) (TV)
- U/G Fiber Optic Cable LOS B (S.U.E.*) (TV FO)
- U/G Fiber Optic Cable LOS C (S.U.E.*) (TV FO)
- U/G Fiber Optic Cable LOS D (S.U.E.*) (TV FO)

GAS:

- Gas Valve
- Gas Meter
- U/G Gas Line LOS B (S.U.E.*) (G)
- U/G Gas Line LOS C (S.U.E.*) (G)
- U/G Gas Line LOS D (S.U.E.*) (G)
- Above Ground Gas Line (A/G Gas)

SANITARY SEWER:

- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line (SS)
- Above Ground Sanitary Sewer (A/G Sanitary Sewer)
- SS Forced Main Line LOS B (S.U.E.*) (FSS)
- SS Forced Main Line LOS C (S.U.E.*) (FSS)
- SS Forced Main Line LOS D (S.U.E.*) (FSS)

MISCELLANEOUS:

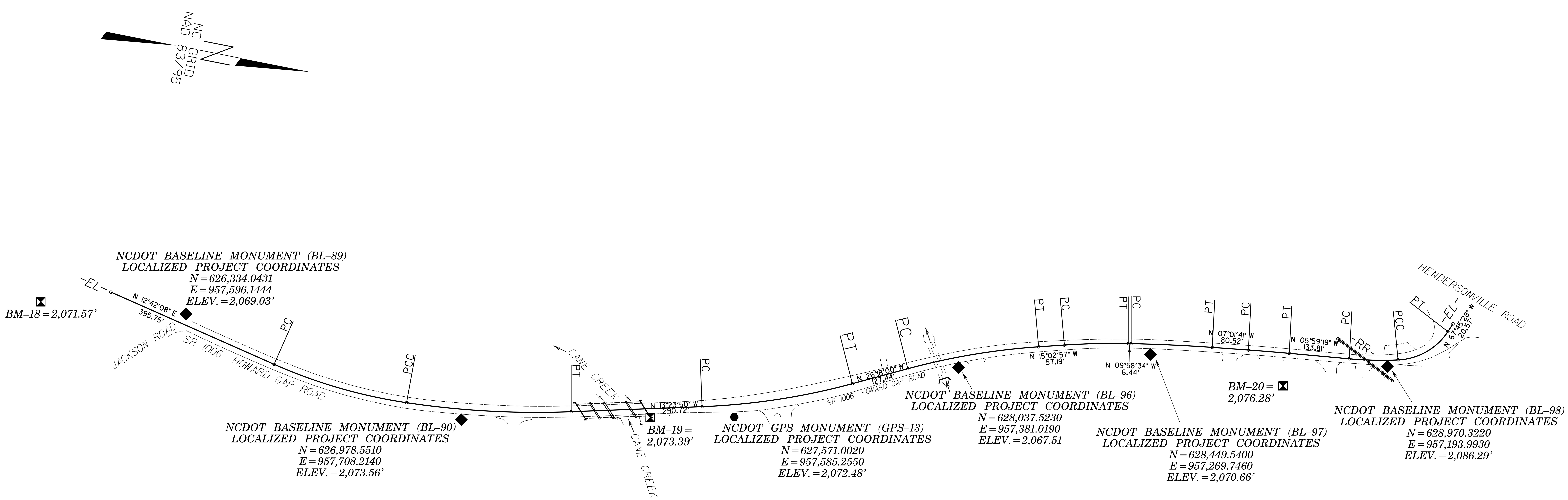
- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box (S)
- Utility Unknown U/G Line LOS B (S.U.E.*) (?UTL)
- U/G Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc. (UST)
- A/G Tank; Water, Gas, Oil
- Geoenvironmental Boring
- U/G Test Hole LOS A (S.U.E.*)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

PROJECT REFERENCE NO.	SHEET NO.
R-5207C	1C-1
Location and Surveys	

SURVEY CONTROL SHEET R-5207C

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

SEE SHEET 1C-3 FOR FURTHER ALIGNMENT DETAILS



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "I-4400 (BL-47)"
WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF
NORTHING: 604761.2970(ft) EASTING: 968222.3840(ft)
ELEVATION: 2156.40(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99977884
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "I-4400 (BL-47)" TO -L- STATION 10+00.00 IS
N 26°16'05.8" W 23,990.51'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

NOTES:

1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
2. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.

REVISIONS

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
R-5207C	1C-2
Location and Surveys	

6/2/99

SURVEY CONTROL SHEET R-5207C

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

BASELINE

BL POINT	DESC.	NORTH	EAST	ELEVATION
89	-BL-89	626334.0431	957596.1444	2069.03
90	-BL-90	626978.5510	957708.2140	2073.56
13	GPS-13	627571.0020	957585.2550	2072.48
96	-BL-96	628037.5230	957381.0190	2067.51
97	-BL-97	628449.5400	957269.7460	2070.66
98	-BL-98	628970.3220	957193.9930	2086.29

BM18 ELEVATION = 2071.57
N 626013 E 957632
8" SPIKE SET IN THE ROOT OF A 16" BIRCH TREE

BM19 ELEVATION = 2073.39
N 627388 E 957622
CHISELED "X" SET ON THE NE END OF CONC. WINGWALL

BM20 ELEVATION = 2076.28
N 628752 E 957281
CHISELED "X" SET ON THE WEST END OF A MASONRY WALL

REVISIONS

NOTE: DRAWING NOT TO SCALE

NOTES:

1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

2. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.

16-JAN-2018 12:52
R:\Roadway\Proj\R-5207c_ls_1c-2.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-5207C	1C-3
Location and Surveys	

SURVEY CONTROL SHEET R-5207C

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

EL

TYPE	NORTH	EAST	BEARING	DISTANCE	DELTA	DOC	LENGTH	TANGENT	RADIUS
POT	626161.224	957580.891							
LINE			N 12°42'07.8" E	395.75					
PC	626547.284	957667.909							
CURVE			N 05°01'06.2" E	305.92	15°22'03.2"(LT)	05°00'30.1"	306.84	154.35	1144.00
PCC	626852.030	957694.669							
CURVE			N 08°01'52.9" W	365.47	10°43'55.1"(LT)	02°55'56.0"	366.00	183.54	1954.00
PT	627213.911	957643.608							
LINE			N 13°23'50.4" W	290.72					
PC	627496.720	957576.247							
CURVE			N 19°50'55.0" W	337.07	12°54'09.1"(LT)	03°49'11.0"	337.79	169.61	1500.00
PT	627813.770	957461.799							
LINE			N 26°17'59.5" W	127.44					
PC	627928.016	957405.335							
CURVE			N 20°40'28.0" W	294.07	11°15'03.0"(RT)	03°49'11.0"	294.55	147.75	1500.00
PT	628203.152	957301.510							
LINE			N 15°02'56.5" W	57.19					
PC	628258.383	957286.660							
CURVE			N 12°30'45.1" W	141.62	05°04'23.0"(RT)	03°34'51.6"	141.67	70.88	1600.00
PT	628396.639	957255.978							
LINE			N 09°58'33.6" W	6.44					
PC	628402.984	957254.862							
CURVE			N 08°30'07.3" W	180.06	02°56'52.5"(RT)	01°38'13.3"	180.08	90.06	3500.00
PT	628581.063	957228.241							
LINE			N 07°01'41.1" W	80.52					
PC	628660.976	957218.389							
CURVE			N 06°30'30.1" W	90.71	01°02'22.1"(RT)	01°08'45.3"	90.71	45.36	5000.00
PT	628751.100	957208.108							
LINE			N 05°59'19.0" W	133.81					
PC	628884.176	957194.148							
CURVE			N 09°51'44.2" W	108.09	07°44'50.3"(LT)	07°09'43.1"	108.17	54.17	800.00
PCC	628990.668	957175.634							
CURVE			N 40°44'48.4" W	127.16	54°01'18.2"(LT)	40°55'32.0"	132.00	71.37	140.00
PT	629087.009	957092.631							
LINE			N 67°45'27.5" W	20.57					
POT	629094.795	957073.592							

RR

TYPE	NORTH	EAST	BEARING	DISTANCE	DELTA	DOC	LENGTH	TANGENT	RADIUS
POT	628850.583	957155.281							
LINE			N 25°39'14.6" E	10.30					
PC	628859.866	957159.740							
CURVE			N 26°31'08.7" E	120.78	01°43'48.2"(RT)	01°25'56.6"	120.78	60.40	4000.00
PT	628967.935	957213.666							
LINE			N 27°23'02.8" E	21.56					
POT	628987.079	957223.583							

NOTE: DRAWING NOT TO SCALE

NOTES:

1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

2. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.

REVISIONS

6/2/99

16-JAN-2018 12:53
R:\Roadway\Proj\R-5207c_ls_1c-3.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-5207C	1D-1
Location and Surveys	

PROPOSED ALIGNMENT CONTROL SHEET R-5207C

L

TYPE	STATION	NORTH	EAST
POT	10+00.00	626274.3463	957604.7941
PC	12+94.64	626561.3842	957671.2922
PCC	15+40.05	626804.8693	957696.3237
PT	19+53.75	627214.4045	957643.4908
PC	22+43.97	627496.7346	957576.2425
PT	25+73.68	627806.5327	957465.3514
PC	26+89.75	627910.8564	957414.4881
PT	33+22.14	628514.5485	957236.1646
PC	34+37.61	628629.1809	957222.2491
PT	35+16.67	628707.7077	957213.1101
PC	37+69.58	628959.0659	957185.1148
PT	39+41.05	629089.4500	957086.6618
POT	39+55.17	629094.7948	957073.5921

NOTES:

1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

2. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.

NOTE: DRAWING NOT TO SCALE

REVISIONS

6/2/99

16-JAN-2018 12:54
R:\Roadway\Proj\r5207c_ls_1d-1.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-5207C	1E-1
Location and Surveys	

RIGHT OF WAY CONTROL SHEET R-5207C

I, Brian Barwatt, a Professional Land Surveyor in the state of North Carolina hereby certify to the best of my knowledge and belief that the following work item(s) (Base map Compilation, Planimetrics, 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 October, 2017.

DocuSigned by:
Brian Barwatt
Professional Land Surveyor — L-4727 PLS # — Seal

PROJECT SURVEYOR
NORTH CAROLINA PROFESSIONAL SEAL L-4727 LAND SURVEYOR BRIAN A. BARWATT

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	23+60.00	-48.19	627593.6954	957499.1454
L	23+80.00	-70.00	627605.1294	957472.4254
L	24+40.00	-70.00	627658.9647	957453.1078
L	24+60.00	-49.49	627684.2977	957465.2510
L	30+68.89	-40.00	628255.8589	957244.6085
L	33+22.14	-40.00	628509.7282	957196.4561
L	34+76.54	-37.52	628663.4975	957180.3831
L	38+45.69	-47.94	629003.3822	957119.4272
L	38+88.71	-55.00	629020.6157	957094.9660
L	36+15.03	45.00	628810.4446	957246.9459
L	33+22.14	45.00	628519.9713	957280.8367
L	30+67.31	45.00	628275.7337	957327.2673

PDE

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	26+45.00	-48.96	627849.1806	957390.0929
L	26+45.00	-60.00	627844.3410	957380.1665
L	27+35.00	-60.00	627926.7623	957340.6002
L	28+20.00	46.72	628047.3511	957404.7646
L	28+20.00	56.00	628050.8354	957413.3611
L	27+96.00	57.79	628029.9990	957423.9001
L	27+93.22	47.30	628023.4374	957415.2726

NOTES:

1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

2. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.

NOTE: DRAWING NOT TO SCALE

REVISIONS

6/2/99

$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$
$$$$$$USERNAME$$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-5207C	2A-1
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
SEAL 042857 ALLISON C. DRAKE 1/18/2018	SEAL 025533 WANDA H. AUSTIN 1/16/2018

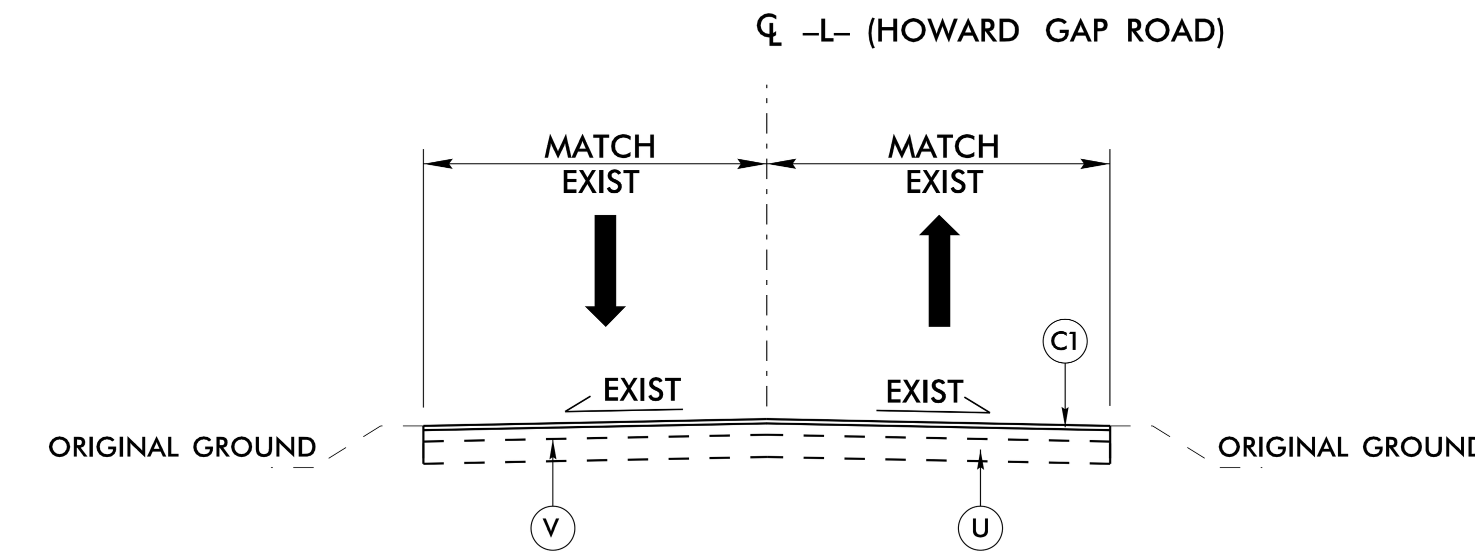
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1.5" OR GREATER THAN 2" IN DEPTH.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 2.5" OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. APPROX. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 4" IN DEPTH OR GREATER THAN 5.5" IN DEPTH.
R1	2'-6" CONCRETE CURB AND GUTTER
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	MILLING EXISTING PAVEMENT
W	WEDGING

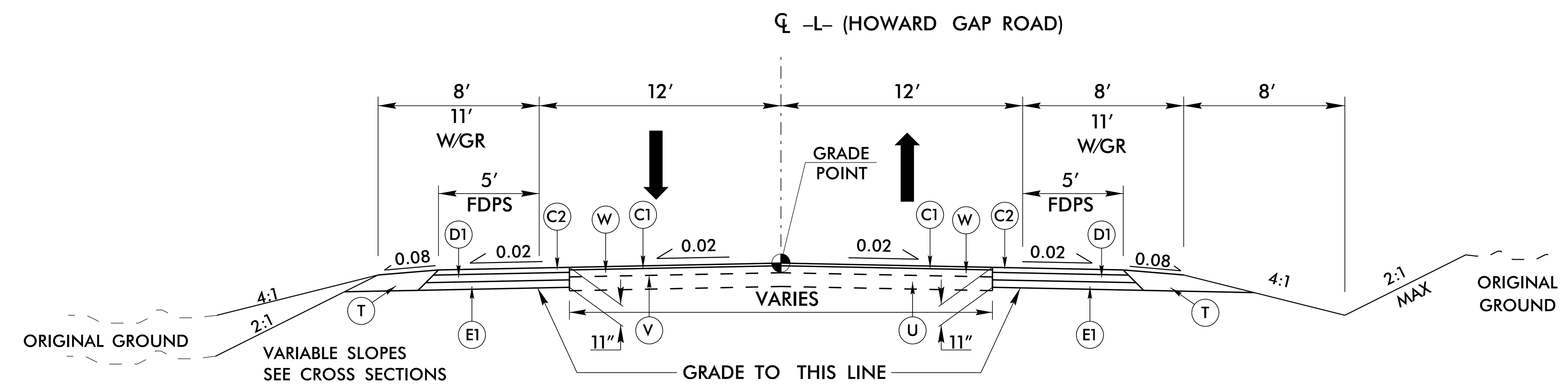
NOTE: ALL PAVEMENT SLOPES ARE 1:1 UNLESS NOTED OTHERWISE



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

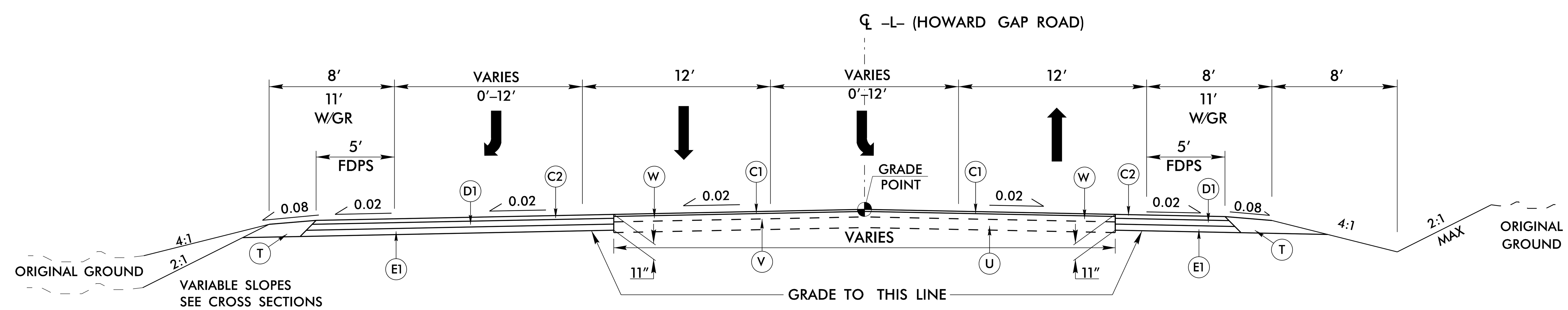
-L- STA. 10+00.00 TO -L- STA. 10+55.00



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2

-L- STA. 10+55.00 TO -L- STA. 19+74.18 (BEGIN BRIDGE)
-L- STA. 21+17.56 (END BRIDGE) TO -L- STA. 22+25.00
-L- STA. 27+73.00 TO -L- STA. 30+28.76

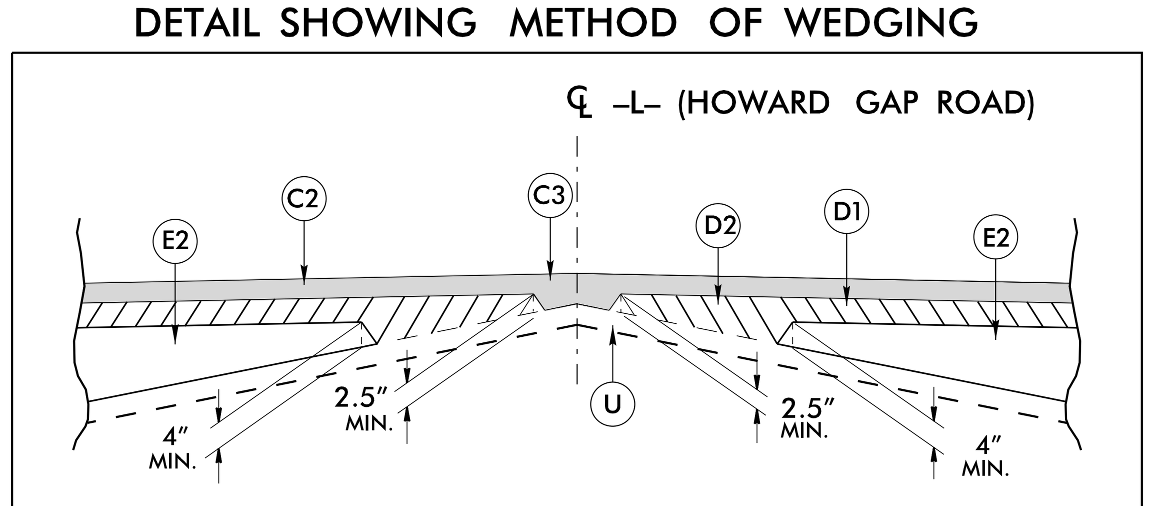


TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3

-L- STA. 22+25.00 TO -L- STA. 27+73.00

DETAIL SHOWING METHOD OF WEDGING



SEE PLANS FOR ALL WEDGING LOCATIONS

PROJECT REFERENCE NO.	SHEET NO.
R-5207C	2A-2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042857 ALLISON C. DRAKE 1/18/2018	NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 025536 WANDA H. AUSTIN 1/16/2018

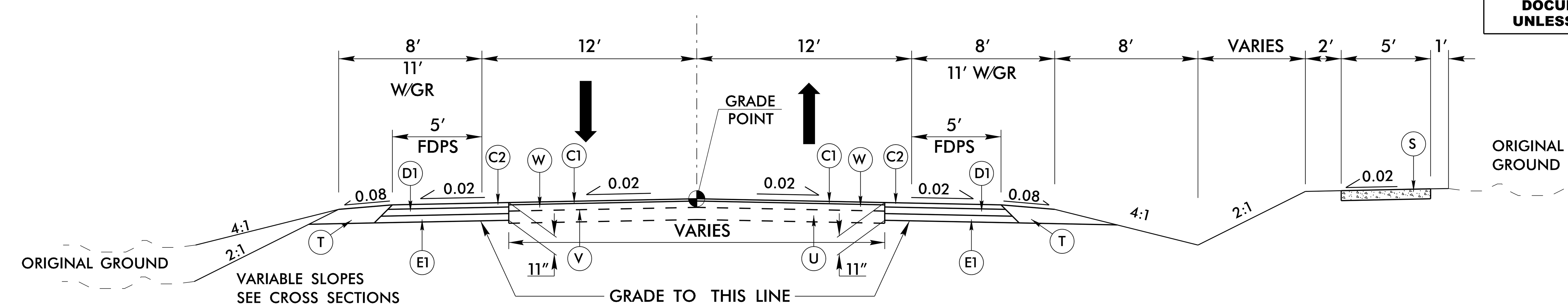
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1.5" OR GREATER THAN 2" IN DEPTH.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 2.5" OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. APPROX. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 4" IN DEPTH OR GREATER THAN 5.5" IN DEPTH.
R1	2'-6" CONCRETE CURB AND GUTTER
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	MILLING EXISTING PAVEMENT
W	WEDGING

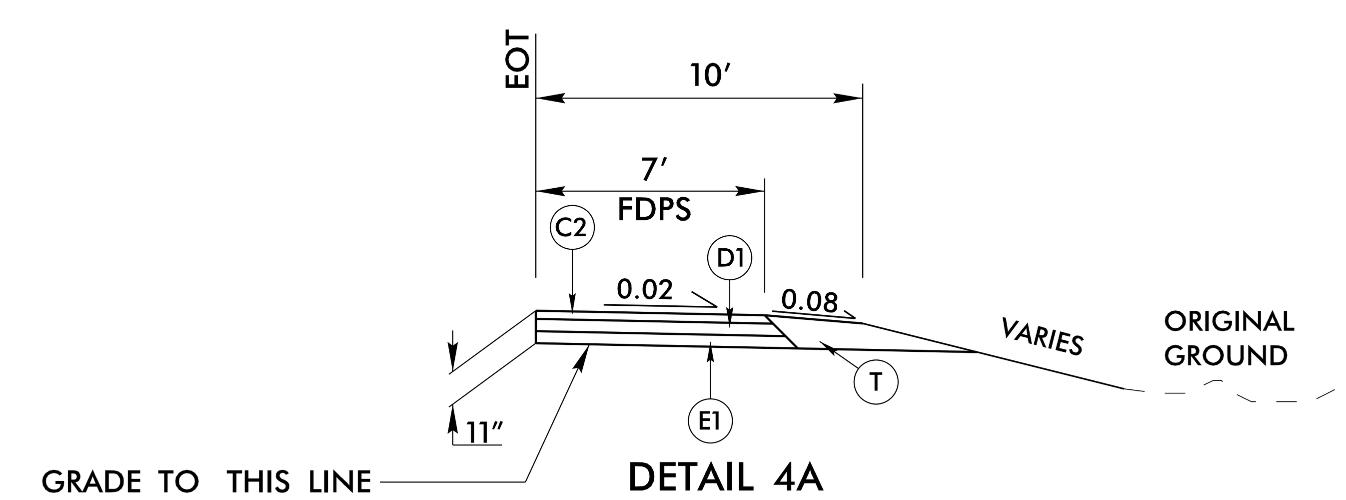
NOTE: ALL PAVEMENT SLOPES ARE 1:1 UNLESS NOTED OTHERWISE



TYPICAL SECTION NO. 4

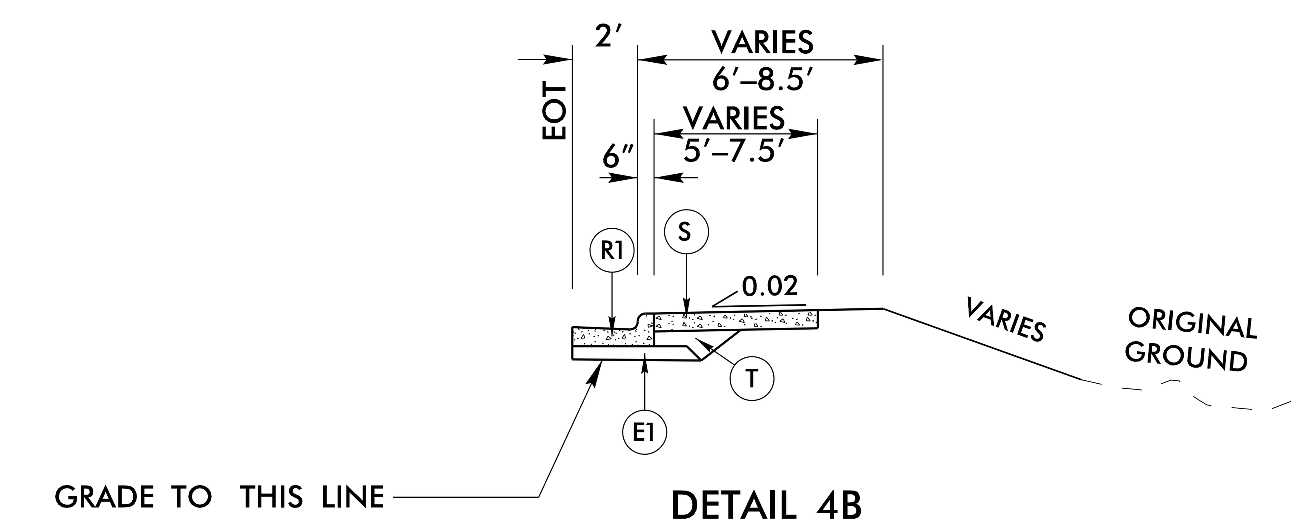
USE TYPICAL SECTION NO. 4

-L- STA. 30+28.76 TO -L- STA. 36+95.00



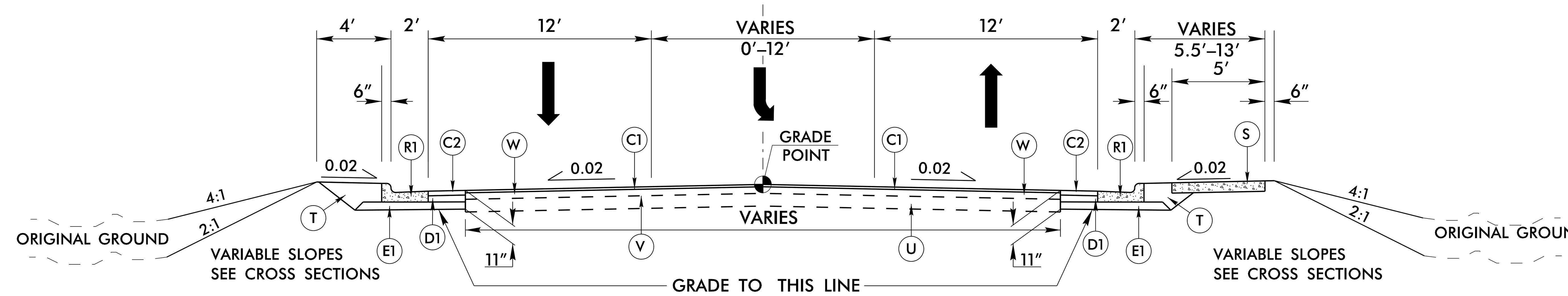
DETAIL 4A

-L- STA. 30+50 TO -L- STA. 34+07 RT



DETAIL 4B

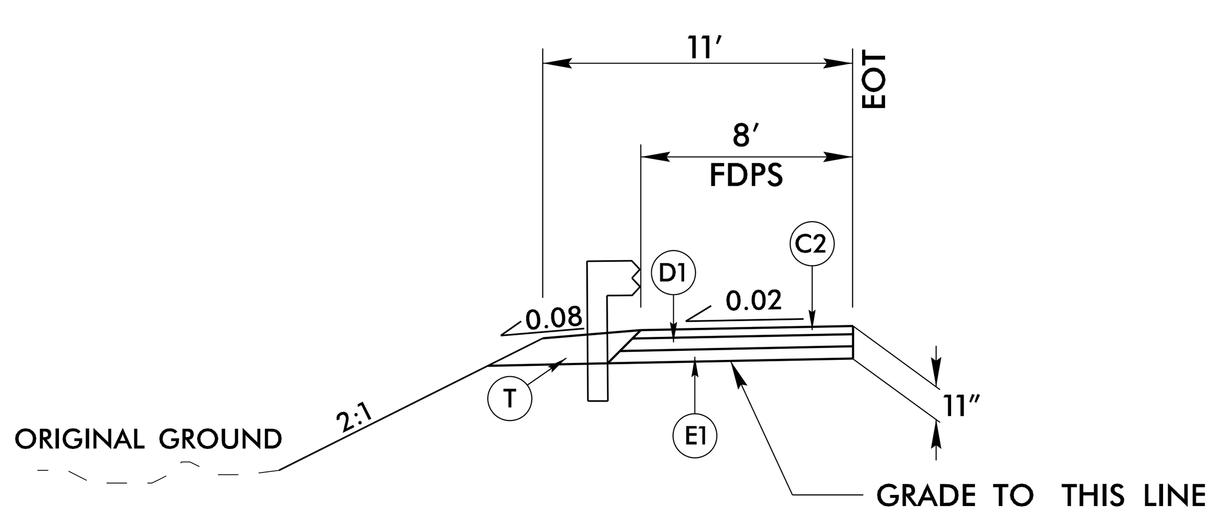
-L- STA. 34+36 TO -L- STA. 36+40 RT



TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5

-L- STA. 37+70.00 TO -L- STA. 39+35.00



DETAIL SHOWING PAVED SHOULDER RELATION TO GUARDRAIL

SEE PLANS FOR LOCATION
USE WITH -L- TYPICAL SECTION

6/2/99

16-JAN-2018 10:08
R:\Roadway\Proj\R5207C_Rdy_typ.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-5207C	2B-1

ROADWAY DESIGN ENGINEER

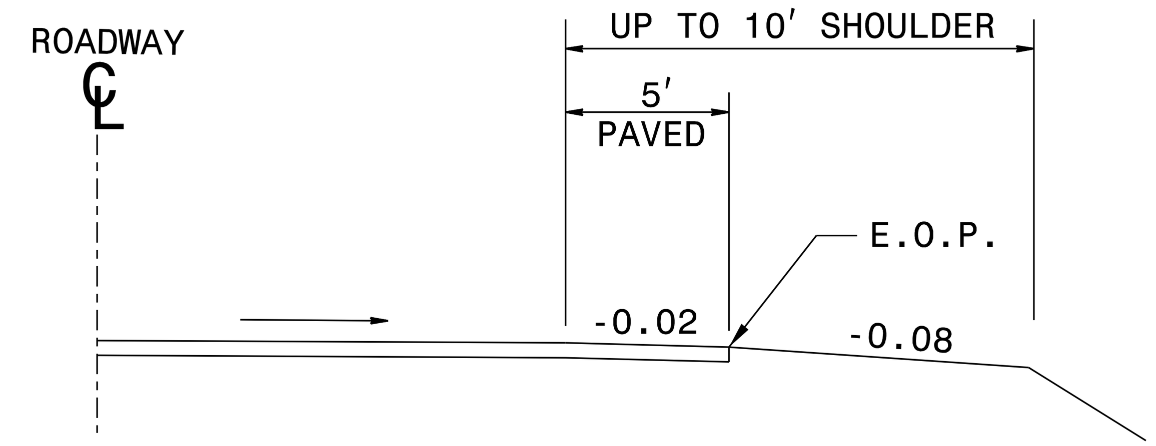
NORTH CAROLINA PROFESSIONAL SEAL 029471 ENGINEER JASON M. TALLEY

1/18/2018

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

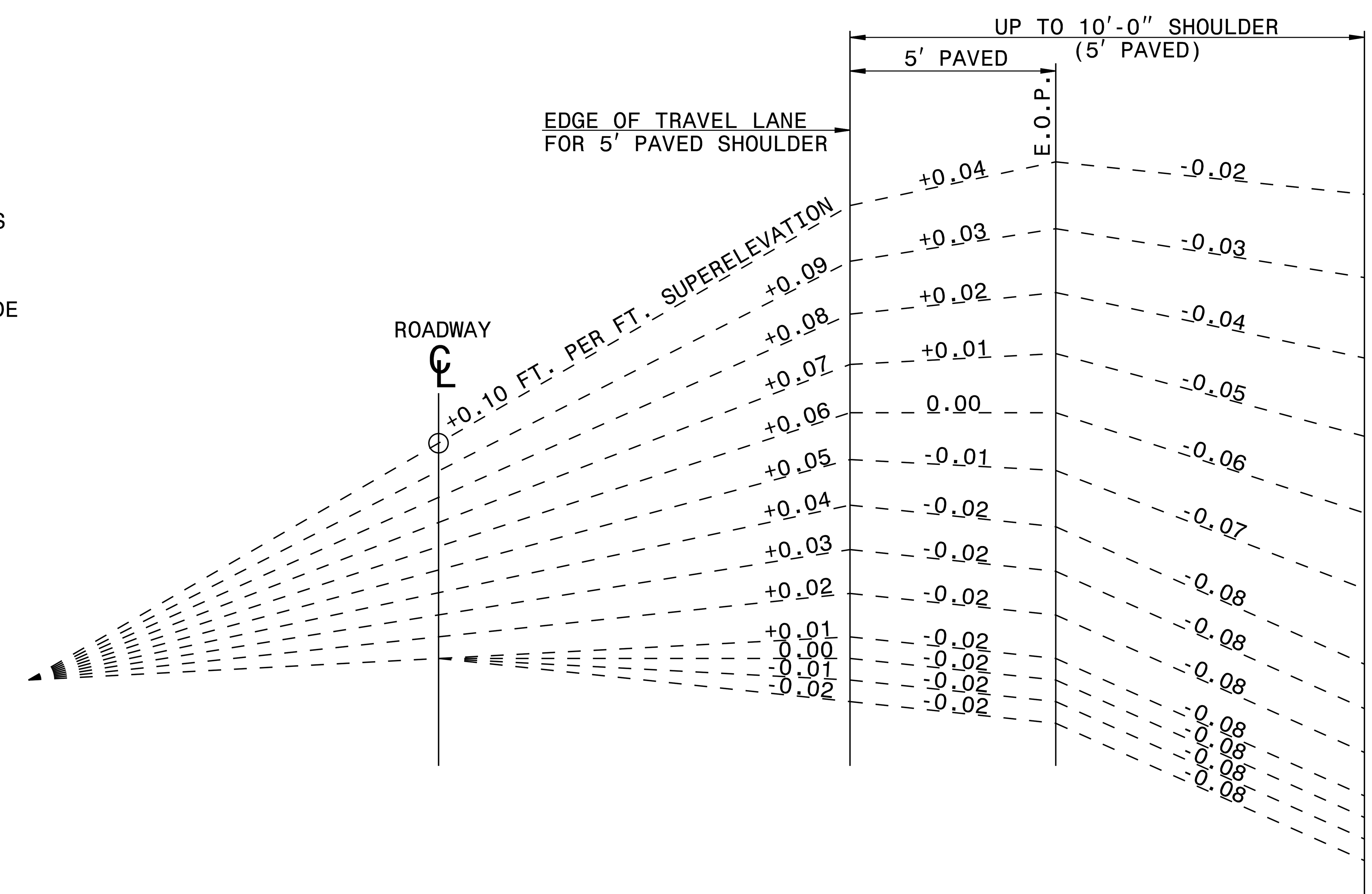
RS&H

NORMAL OUTSIDE SHOULDER SLOPES



NOTE: ON LOW SIDE OF SUPERELEVATED PAVEMENT USE NORMAL SHOULDER SLOPE UNLESS NORMAL SHOULDER SLOPE IS FLATTER THAN SUPERELEVATION, THEN USE SUPER-ELEVATION RATE ON SHOULDER.

NOTE: "ROLL-OVER" ALGEBRAIC DIFFERENCE IN RATES OF CROSS SLOPE NOT TO EXCEED 0.06 AS SHOWN. IF SUPER-ELEVATION IS REVOLVED ABOUT CENTER LINE OF PAVEMENT, SAME APPLIES. ON DIVIDED ROADWAYS, GRADE POINT TO BE AT THE MEDIAN EDGE OF TRAVEL LANE.



SPECIAL DETAIL FOR

METHOD OF SHOULDER CONSTRUCTION

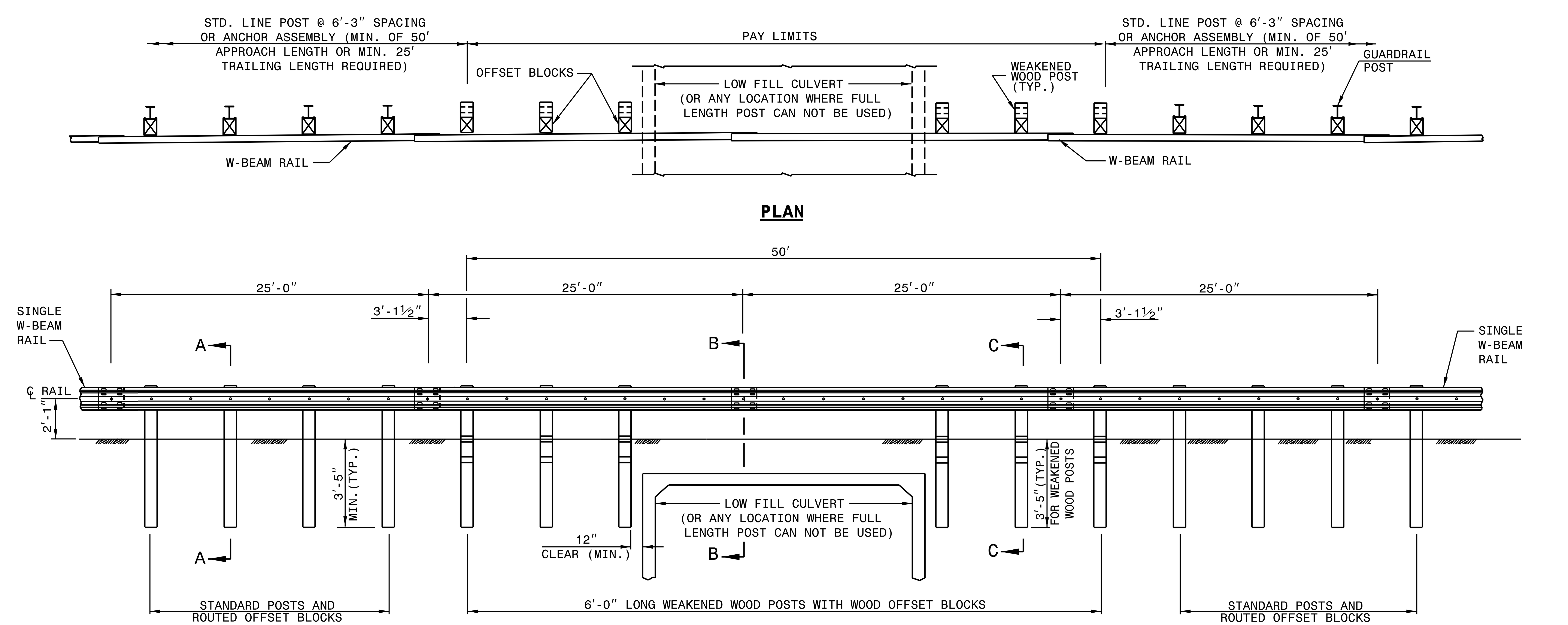
HIGH SIDE OF SUPERELEVATED CURVE

PROJECT REFERENCE NO.	SHEET NO.
R-5207C	2C-1

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

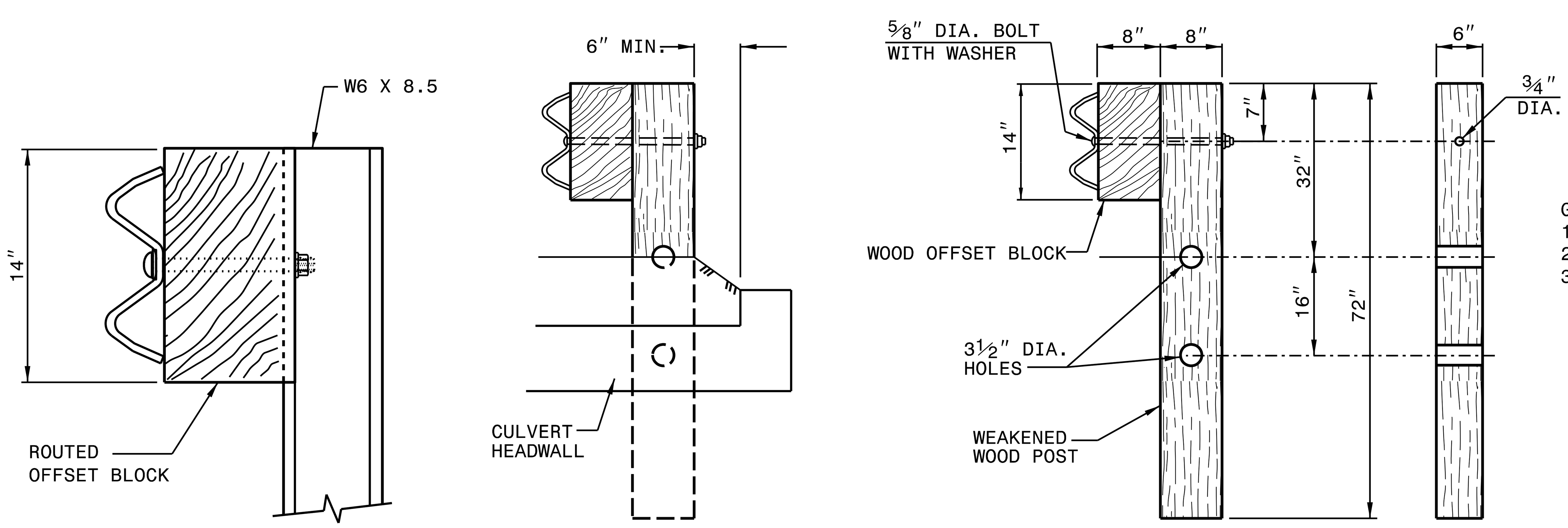
SPECIAL DETAIL FOR
GUARDRAIL PLACEMENT
25'-0" CLEAR SPAN

SHEET - OF -
862D01



PLAN

ELEVATION
25'-0" GUARDRAIL SPAN



SECTION A-A

SECTION B-B

SECTION C-C **FRONT**
WEAKENED WOOD POST

GENERAL NOTES:
1. LAP RAIL IN THE DIRECTION OF TRAFFIC FLOW.
2. SEE ROADWAY PLANS FOR LOCATIONS AND CONTINUATION OF RAIL OR END SECTIONS.
3. MINIMUM DISTANCE OF 5 FEET BEHIND THE GUARDRAIL SHOULD BE CLEAR OF ANY FIXED-OBJECT HAZARDS THAT COULD SNAG AN IMPACTING VEHICLE.

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

SPECIAL DETAIL FOR
GUARDRAIL PLACEMENT
25'-0" CLEAR SPAN

SHEET - OF -
862D01

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER JOEL S. HOWERTON
1/16/2018

CONTRACTS STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

25'-0" CLEAR SPAN GUARDRAIL PLACEMENT

ORIGINAL BY: ______ DATE: ______
MODIFIED BY: ______ DATE: ______
CHECKED BY: ______ DATE: ______
FILE SPEC.:

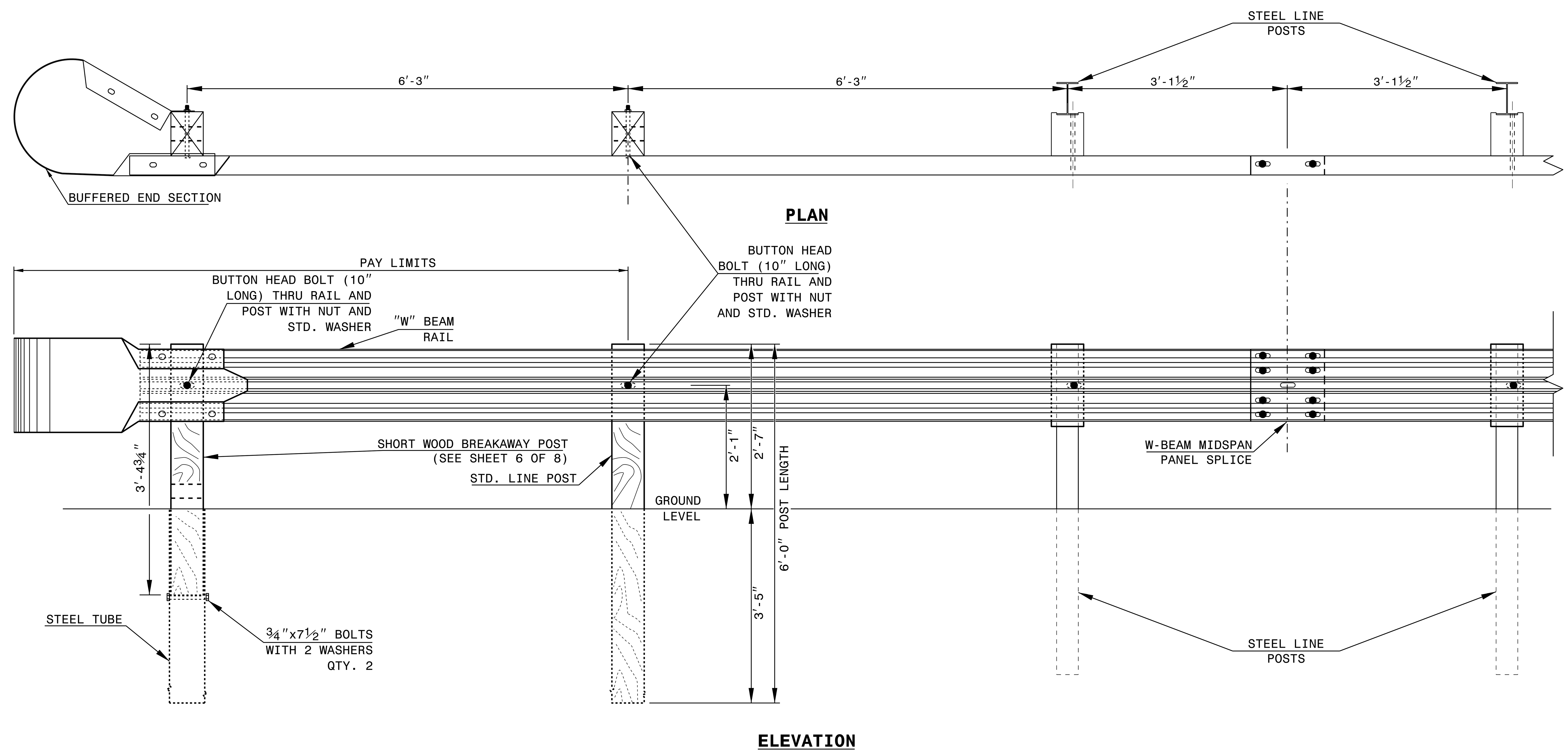
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.	SHEET NO.
R-5207C	2C-2

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET OF



TRAILING END UNIT ASSEMBLY

A.T.-1 SYSTEM

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET OF

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022966 JOEL S. HOWERTON

1/16/2018

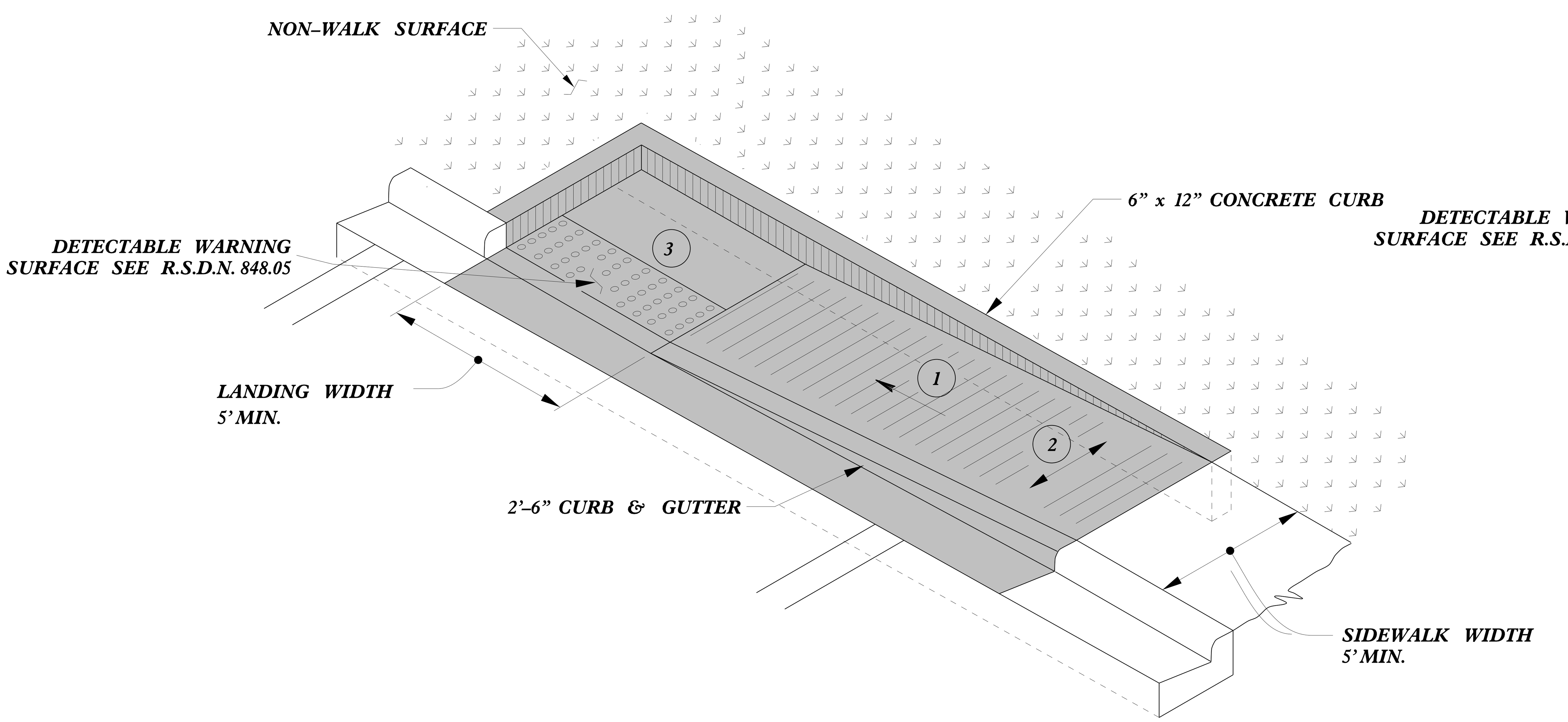
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CONTRACTS STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

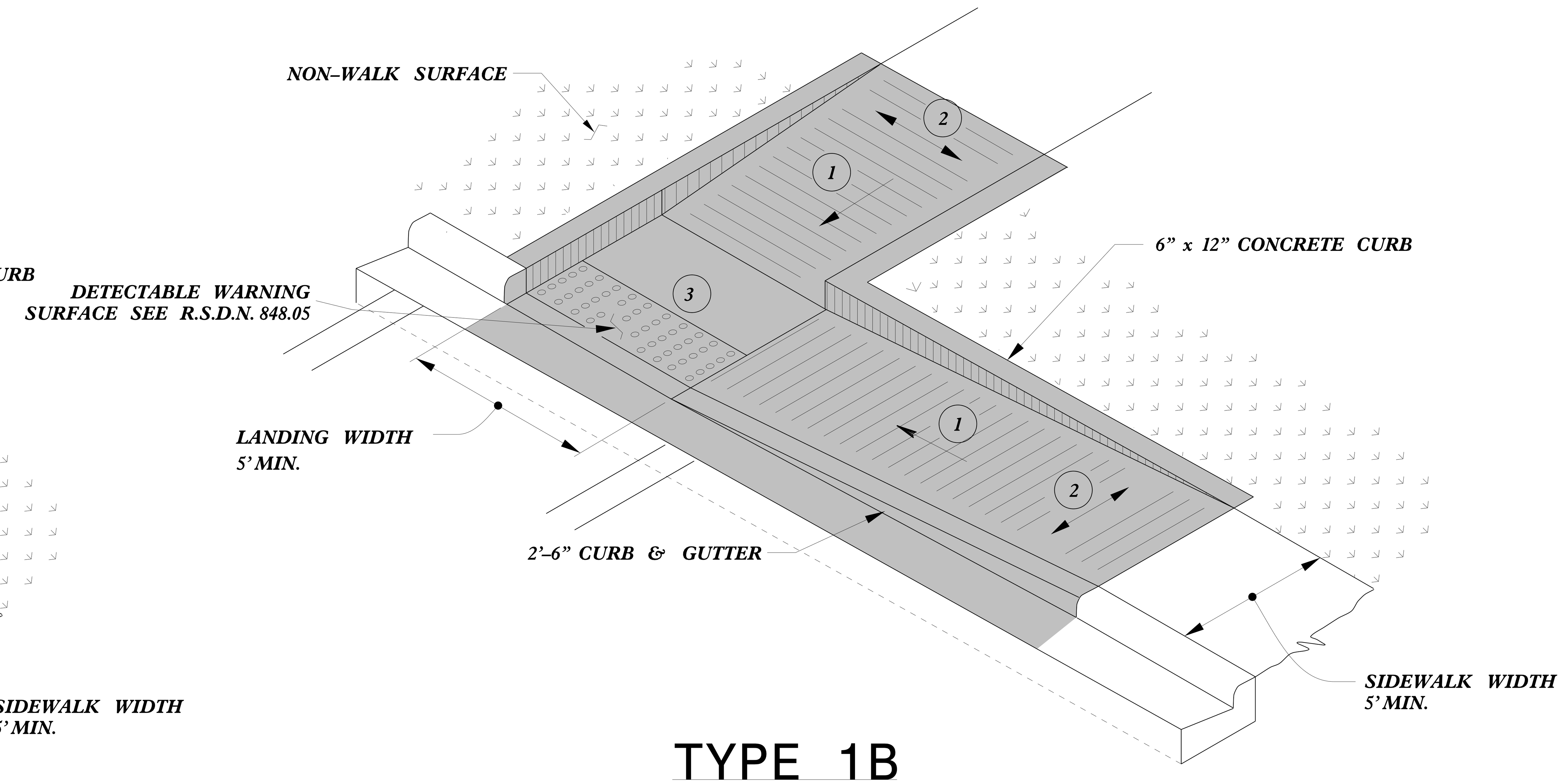
A.T.-1 SYSTEM

ORIGINAL BY:________ DATE:________
MODIFIED BY:________ DATE:________
CHECKED BY:________ DATE:________
FILE SPEC.:________

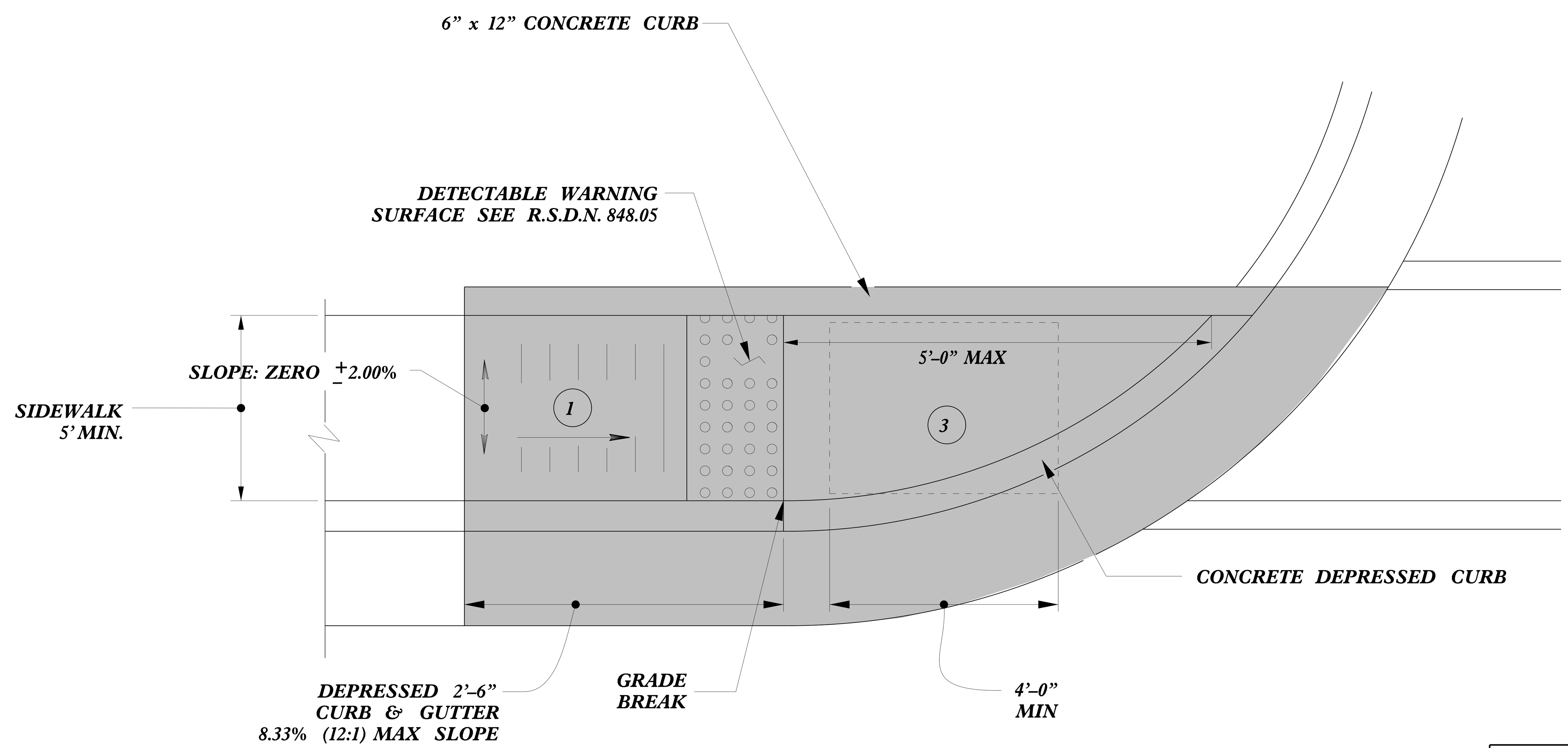
PROJECT REFERENCE NO.	SHEET NO.
R-5207C	2C-3



TYPE 1A



TYPE 1B



TYPE 1

PAY LIMITS FOR 1 CURB RAMP

1. 8.33% (12:1) MAX RAMP SLOPE
2. CROSS SLOPE: 2.00%
3. CURB RAMPS REQUIRE A (4'–0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.

REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL — Joel S. Howerton — 1/16/2018

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

CURB RAMPS

Directional Ramps

ORIGINAL BY: J.S. HOWERTON DATE: 7/7/11
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: stds/2012CurbRamp/CurbRampDetails.dgn

6/21/00

COMPUTED BY: ANK/CMB DATE: 1/5/18
CHECKED BY: JMT/WJW DATE: 1/5/18

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
R-5207C	3B-1

SUMMARY OF EARTHWORK

STATION	STATION	UNCL. EXCAV.	EMBANK. +15%	BORROW	WASTE
-L- 10+55.00 RT	-L- 19+67.23 RT	315	1		314
-L- 21+24.51 RT	-L- 36+20.00 RT	527	45		482
SUBTOTALS:		842	46		796
-L- 10+55.00 LT	-L- 19+67.23 LT	357	7		350
-L- 21+24.51 LT	-L- 36+20.00 LT	1,046	135		911
SUBTOTALS:		1,403	142		1,261
-L- 36+20.00	-L- 36+95.00	6	21	15	
-L- 37+70.00	-L- 39+35.00	100	91		9
SUBTOTALS:		106	112	15	9
MATERIAL FOR SHOULDER CONSTRUCTION				238	
				-253	-253
PROJECT TOTALS:		2,351	538		1,813
GRAND TOTALS:		2,351	538		1,813
SAY:		2,500			

Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD^2
-L-	36+92	37+47	RT	231.50
			TOTAL:	231.50
			SAY:	240

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

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 48" & UNDER)

STATION / SIZE / THICKNESS OR GAUGE	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	30"	36"	42"	48"	C.S. PIPE (UNLESS NOTED OTHRWISE) 12" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109	48" .109	CLASS III R.C.P. (UNLESS OTHERWISE NOTED) 12"	15"	18"	24"	30"	36"	42"	48"	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES * TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL. 'B') PER EACH (0' THRU 5.0')	LIN. *FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G		D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. FRAME WITH GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34	T.B.D.I. FRAME WITH GRATE STD. 840.36	T.B.D.I. FRAME WITH TWO GRATES STD. 840.36	SPRING BOX STD. 840.41	M.H. STD. 840.51 OR 840.53	M.H. FRAME & COVER STD. 840.54	CONV. EXIST. C.B. TO J.B.	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
L 28+55	LT	0501	OUT		2065.60	2065.00																			124																																								52	REMOVE EXISTING 15" HDPE
L 28+49	RT	0502	OUT		2065.00	2064.10																				88																																							80	REMOVE EXISTING 18" CMP
L 26+75	LT	0503	OUT		2064.60	2064.45																			52																																									REMOVE EXISTING 15" CMP
L 38+65	LT	0601		2086.30																																	1	1.10		1	1																									
L 38+89	LT	0602		2086.80																																	1	0.85																	1					1						
		0602	0601		2080.95	2080.30																				28																																								
L 38+12	RT	0604	0603		2082.30	2081.34																32															2.0																											0.656			COLLAR AND EXTEND 30" CSP, STD. 838.01
L 34+31	LT	0605	OUT		2071.20	2071.10																										20																																	20	REMOVE EXISTING 15" HDPE
L 35+80	RT																																																																193	REMOVE EXISTING 12" CMP
TOTALS																				32					176	116						20				2.0	2	2		1	1															1					1			0.656		345	

ABBREVIATIONS

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

"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 STRAIGHT	LENGTH SHOP CURVED	LENGTH DOUBLE FACED	WARRANT POINT APPROACH END	WARRANT POINT TRAILING END	"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH APPROACH END	FLARE LENGTH TRAILING END	W APPROACH END	W TRAILING END	ANCHORS XI MOD	XI	GREU TL-3	M-350	XIII	CAT-1	VI MOD	B-77	AT-1	IMPACT ATTENUATOR TYPE 350 EA	G	NG	SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
-L-	14+37.50	18+00.00	RT.	362.50			N/A	N/A	8.0	11.0	50'	50'	1.0	1.0			2											378.16		MATCH EXISTING GUARDRAIL
-L-	15+59.80	19+66.30	LT.	406.25			N/A	19+66.30	3.7	6.7		50'		1.0			1					1						404.23		BEGIN BRIDGE /MATCH EXISTING GUARDRAIL
-L-	18+46.03	19+84.45	RT.	106.25	43.75		19+84.45	N/A	3.7	6.7												1	1					213.28		BEGIN BRIDGE
-L-	21+07.10	22+88.35	LT.	181.25			21+07.10	N/A	3.7	6.7	50'		1.0				1					1						241.61		END BRIDGE
-L-	21+25.26	22+06.51	RT.	81.25			N/A	21+25.26	3.7	6.7		50'		1.0			1					1						188.83		END BRIDGE
-L-	27+15.82	28+43.99	RT.																									128.47		
-L-	27+09.63	28+35.19	LT.																									128.31		
			SUBTOTALS	1137.5	43.75																						TOTAL	1682.89		
			ANCHOR DEDUCTION	325	6.25																						SAY	1700		
			TOTAL	812.5	37.5																									
			SAY	825	50																									

ANCHOR DEDUCTION
TYPE B-77: 4 @ 18.75' = 75'
TYPE AT-1: 1 @ 6.25' = 6.25'
TYPE GREU TL-3: 5 @ 50' = 250'
GRAND TOTAL = 331.25'
ADDITIONAL GUARDRAIL POSTS = 5

PROJ. REFERENCE NO.	SHEET NO.
R-5207C	3P-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PARCEL INDEX SHEET

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
1	4,5,6	FERNLEAF COMMUNITY CHARTER SCHOOL, INC.
2	5	SANDPAC II, LLC.
3	5, 6	JOHN C. KOENIG
4	6	FLETCHER GUARANY CORP.
5	6	TOWN OF FLETCHER

PARCEL No.	SHEET No.	PROPERTY OWNER NAME

8/17/99

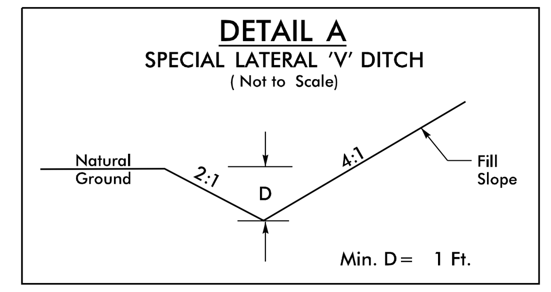
PROJECT REFERENCE NO.	SHEET NO.
R-5207C	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
SEAL 042352 — ALLISON C. DRAKE — 1/18/2018	SEAL 036198 — WILL J. WEATHERSBEE — 1/18/2018

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

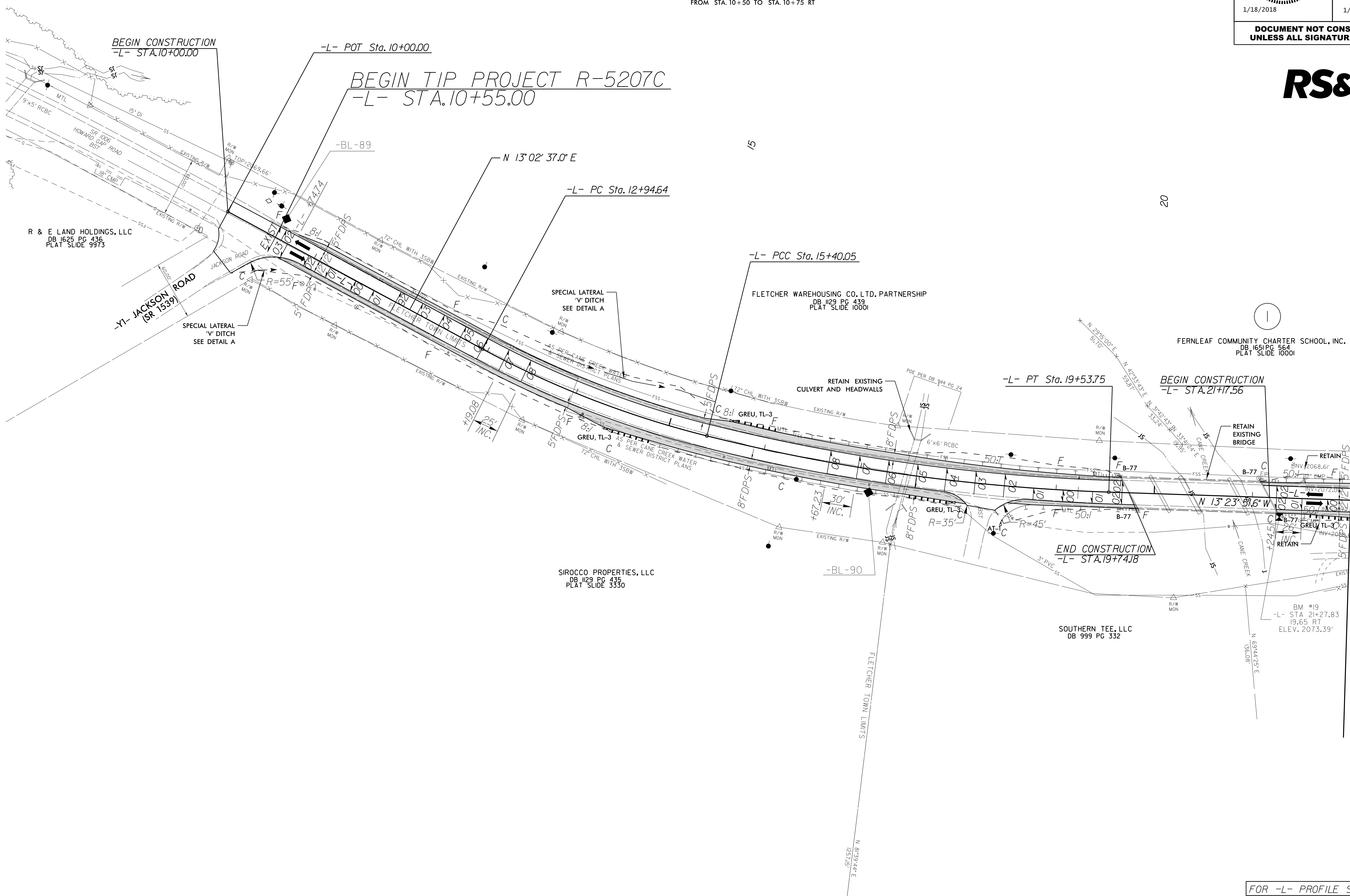
RS&H

-L-

PI Sta 14+17.99	PI Sta 17+47.67
Δ = 14° 20′ 52.3″ (LT)	Δ = 12° 05′ 36.2″ (LT)
D = 5° 50′ 47.4″	D = 2° 55′ 23.7″
L = 245.41′	L = 413.70′
T = 123.35′	T = 207.62′
R = 980.00′	R = 1,960.00′
e = MATCH EXISTING	e = MATCH EXISTING
RO = SEE PLANS	RO = SEE PLANS



FROM STA. 13+50 TO STA. 15+50 LT
FROM STA. 10+50 TO STA. 10+75 RT



FOR -L- PROFILE SEE SHEET 7

04-JAN-2018 12:01
R:\Roadway\Proj\R5207C_Rdy_psh_4.dgn
$$$$USERNAME$$$$

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-5207C	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
SEAL 042954 ALLISON C. DRAKE 1/18/2018	SEAL 026188 WILL J. WEATHERSBEE 1/18/2018

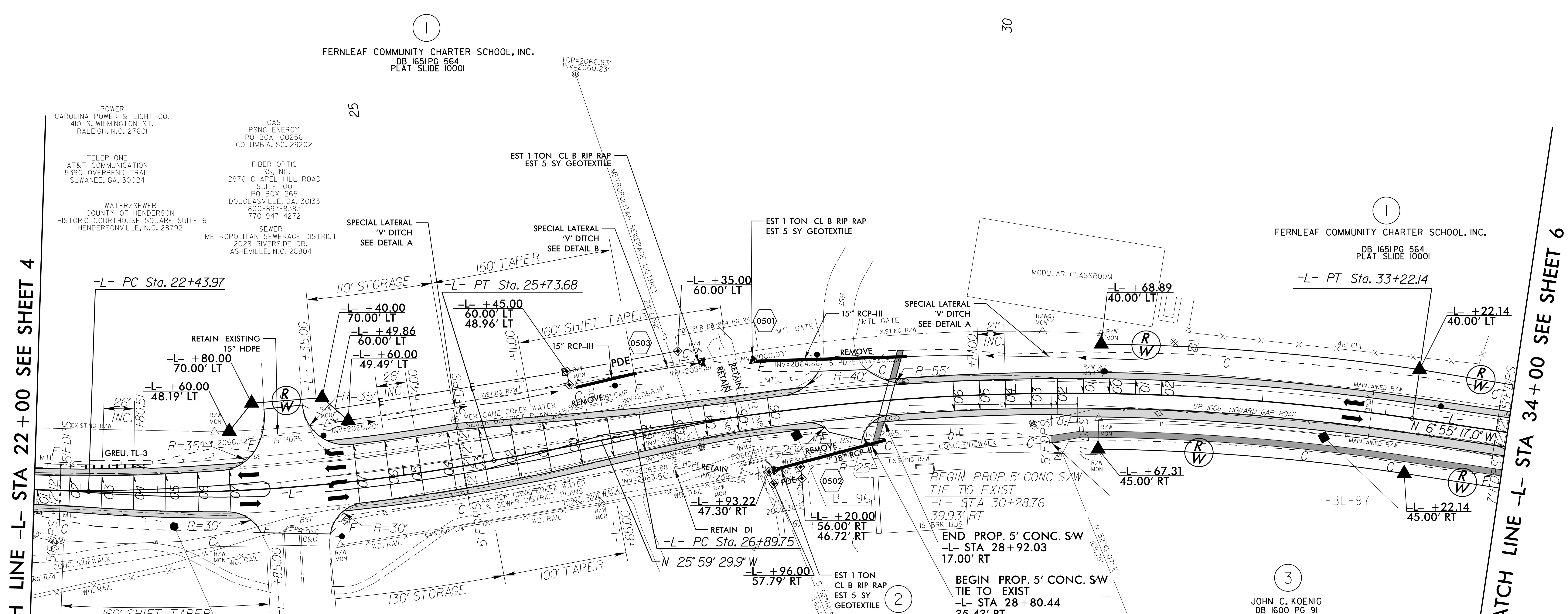
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

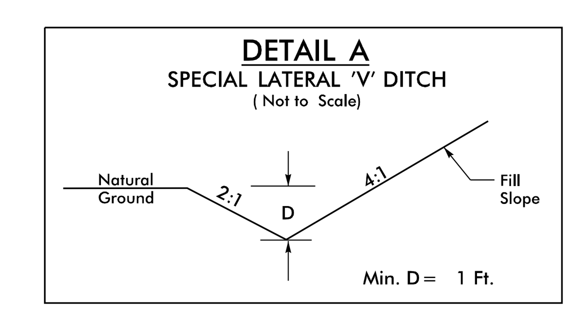
RS&H

-L-

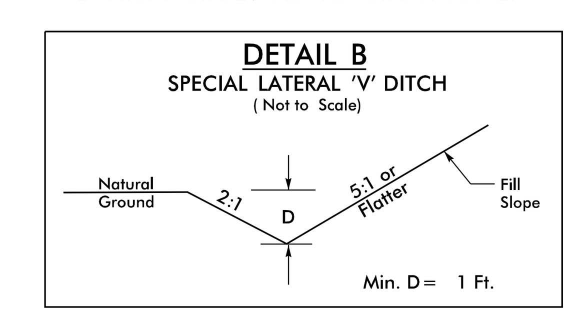
PI Sta 24+09.50	PI Sta 30+08.90
△ = 12° 35' 38.4" (LT)	△ = 19° 04' 12.9" (RT)
D = 3° 49' 11.0"	D = 3° 00' 56.0"
L = 329.71'	L = 632.39'
T = 165.52'	T = 319.15'
R = 1,500.00'	R = 1,900.00'
e = MATCH EXISTING	e = MATCH EXISTING
RO = SEE PLANS	RO = SEE PLANS

NAD 83/NSRS 2007





-L- FROM STA. 24+45 TO STA. 26+50 LT
-L- FROM STA. 29+15 TO STA. 31+00 LT



-L- FROM STA. 27+00 TO STA. 27+53 LT

FOR -L- PROFILE SEE SHEET 7

17-JAN-2018 06:54
R:\Roadway\Proj\R5207C_Rdy_psh_5.dgn
$$$$USERNAME$$$$

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-5207C	6

R/W SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
SEAL 1/18/2018	SEAL 1/18/2018

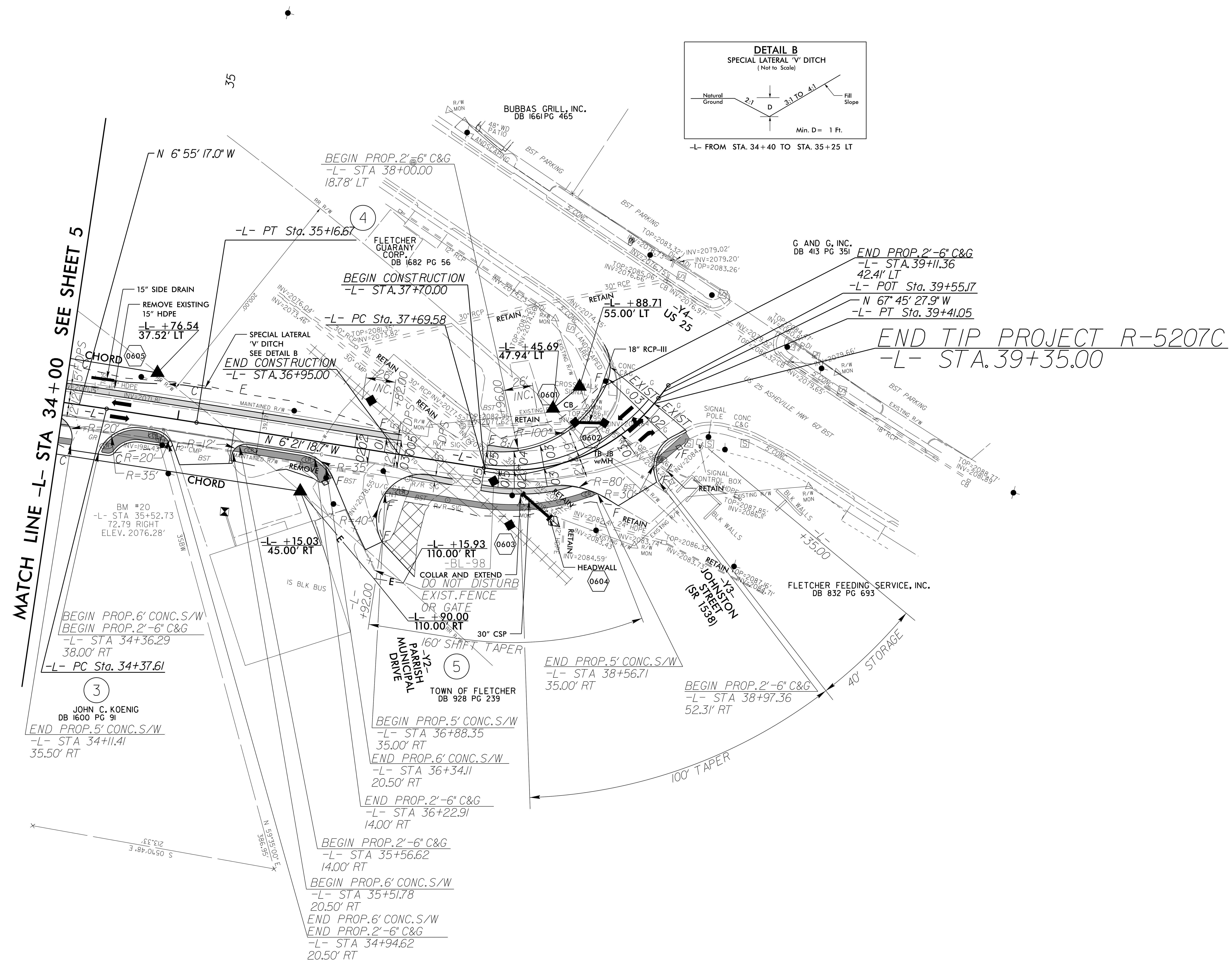
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H

-L-

PI Sta 34+77.14	PI Sta 38+64.59
△ = 0° 33′ 58.3″ (RT)	△ = 61° 24′ 09.3″ (LT)
D = 0° 42′ 58.3″	D = 35° 48′ 35.5″
L = 79.06′	L = 171.47′
T = 39.53′	T = 95.01′
R = 8,000.00′	R = 160.00′
e = MATCH EXISTING	e = MATCH EXISTING
RO = SEE PLANS	RO = SEE PLANS

NAD 83/NSRS 2007



PAVEMENT REMOVAL

FOR -L- PROFILE SEE SHEET 8

17-JAN-2018 07:15
R:\Roadway\Proj\R5207C_Rdy_psh_6.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-5207C	7

ROADWAY DESIGN ENGINEER

SEAL 042357 — ALLISON C. DRAKE — NORTH CAROLINA PROFESSIONAL ENGINEER — 1/18/2018

HYDRAULICS ENGINEER

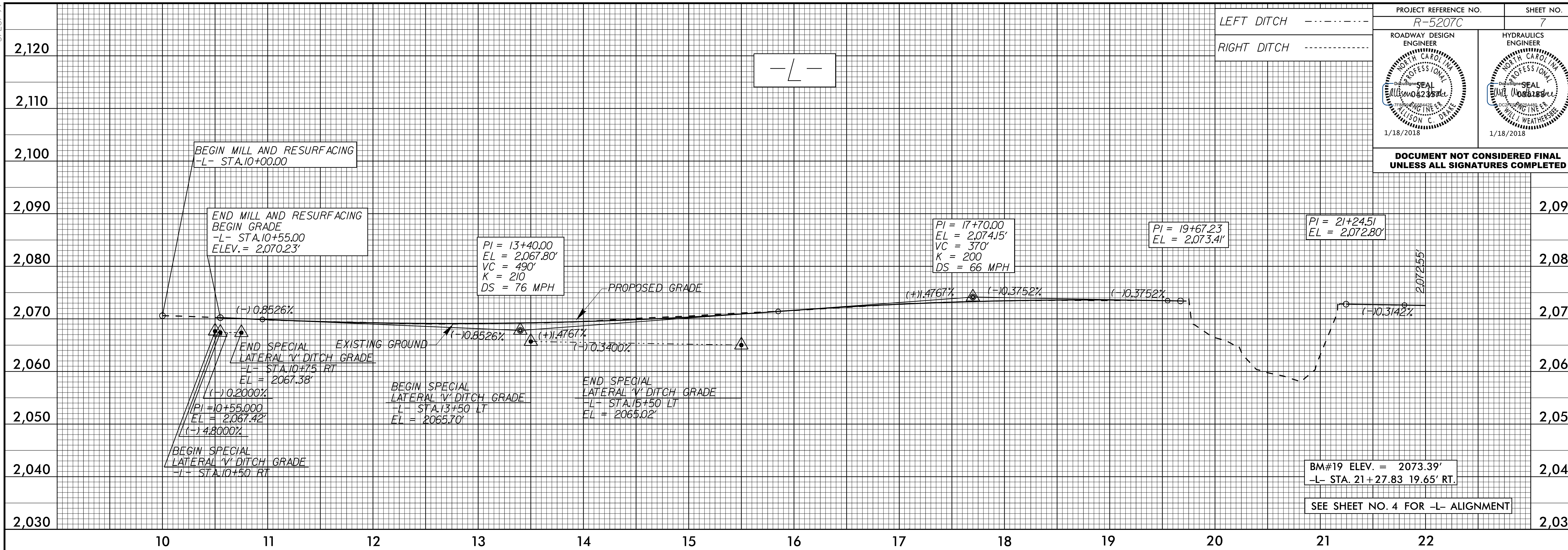
SEAL 035158 — WILLI J. WEATHERS — NORTH CAROLINA PROFESSIONAL ENGINEER — 1/18/2018

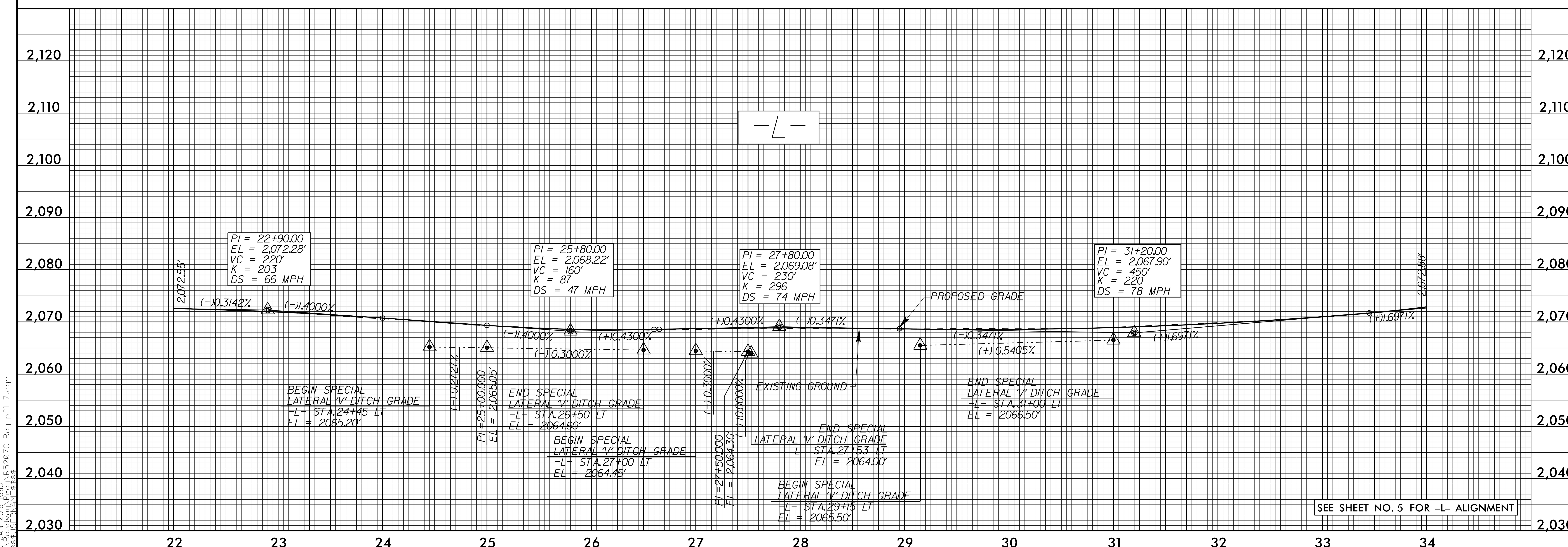
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

LEFT DITCH

RIGHT DITCH

5/28/99





03-JAN-2018 16:15
R:\Roadway\Proj\R5207C_Rdy_pfl_7.dgn
$$$$USERNAME$$$$

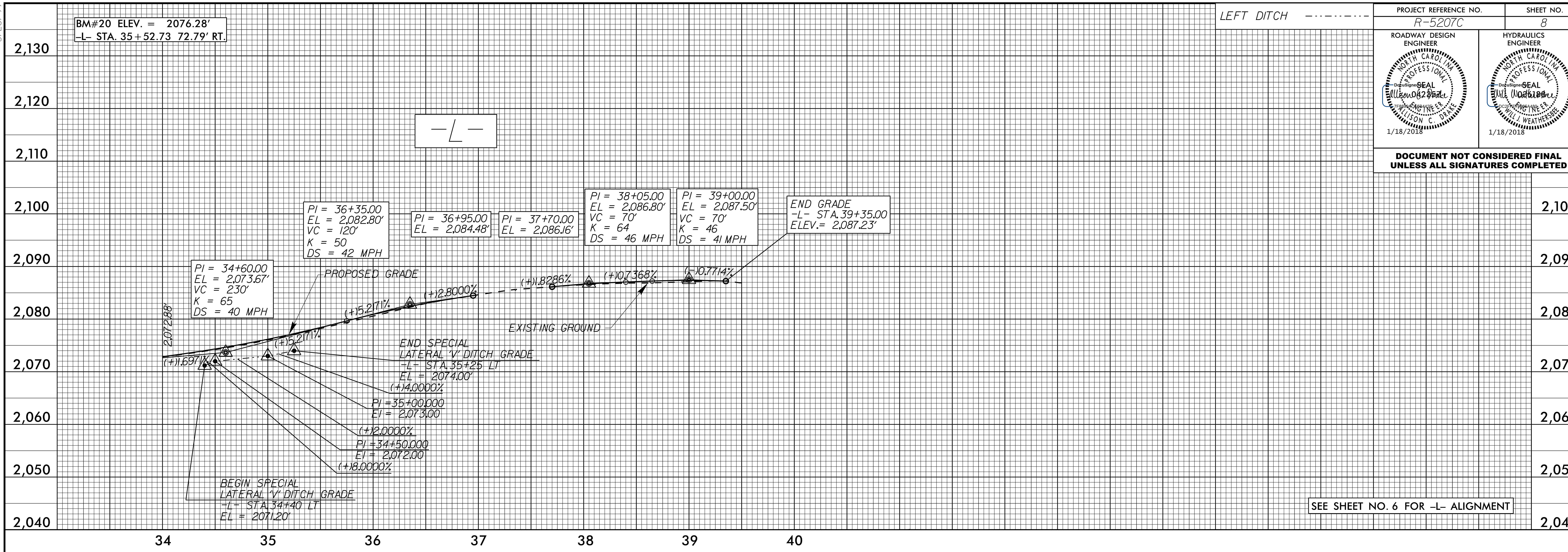
PROJECT REFERENCE NO.	SHEET NO.
R-5207C	8

ROADWAY DESIGN ENGINEER — SEAL 1/18/2018

HYDRAULICS ENGINEER — SEAL 1/18/2018

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

LEFT DITCH



SEE SHEET NO. 6 FOR -L- ALIGNMENT

TIP PROJECT: R-5207C

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5207C	RW-1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
45393.1.2		PE	
45393.2.5		RW/UTIL.	

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

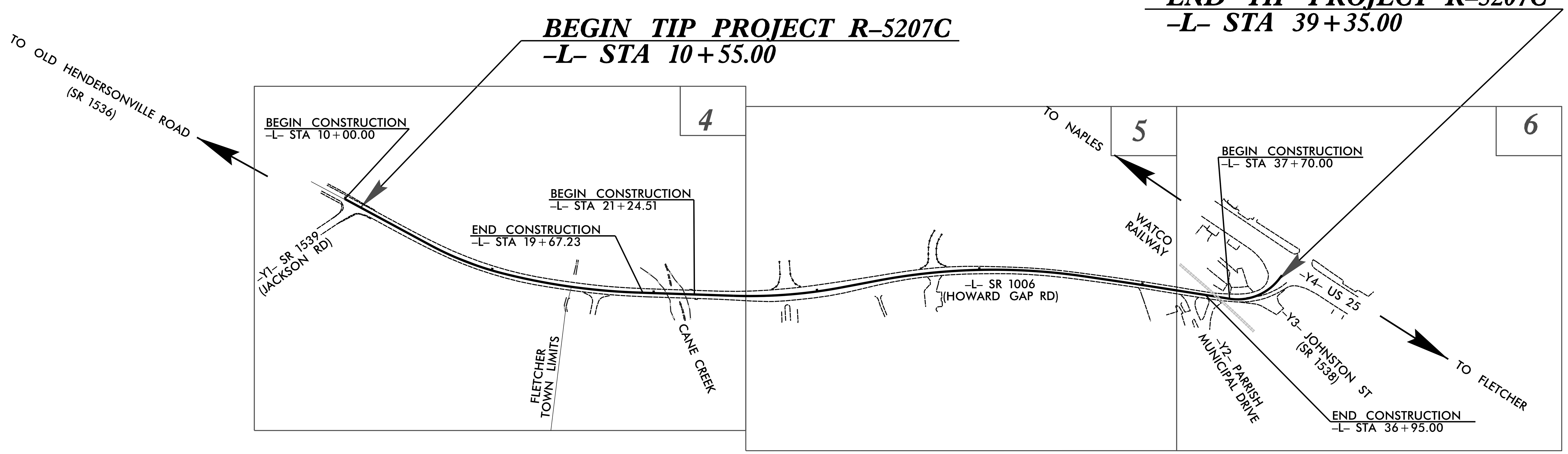
RRIGHT OF WAY, EASEMENTS,
AND PROPERTY TIES

HENDERSON COUNTY

NAD 83/
NSRS 2007

LOCATION: SR 1006 HOWARD GAP RD FROM SR 1539 (JACKSON RD.) TO US 25

TYPE OF WORK: GRADING, PAVING, DRAINAGE, SIGNALS, TRAFFIC CONTROL, SIGNING, PAVEMENT MARKING, AND EROSION CONTROL



GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2014 = 6600

V = 40 MPH

FUNC CLASS = COLLECTOR

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-5207C = 0.545 MILES
LENGTH STRUCTURE TIP PROJECT R-5207C = 0.000 MILES
TOTAL LENGTH TIP PROJECT R-5207C = 0.545 MILES

NCDOT CONTACT:
WANDA H. AUSTIN, PE
DIVISION 14 PROJECT MANAGER

Prepared In the Office of:
RS&H
ARCHITECTS-ENGINEERS-PLANNERS, INC.
1520 SOUTH BOULEVARD, SUITE 200
CHARLOTTE, NC 28203

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
OCTOBER 6, 2017

LETTING DATE:
FEBRUARY 13, 2018

ALLISON DRAKE, PE
PROJECT ENGINEER

ASHLEY KRONSTEDT, EI
PROJECT DESIGN ENGINEER

PROFESSIONAL LAND SURVEYOR

SIGNATURE: P.L.S.

NORTH CAROLINA PROFESSIONAL LAND SURVEYOR
SEAL
L-4727
BRIAN A BARWATT

PROJECT REFERENCE NO.	SHEET NO.
R-5207C	RW-4

Location and Surveys

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-4727 LAND SURVEYOR BRIAN A BARWATT

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

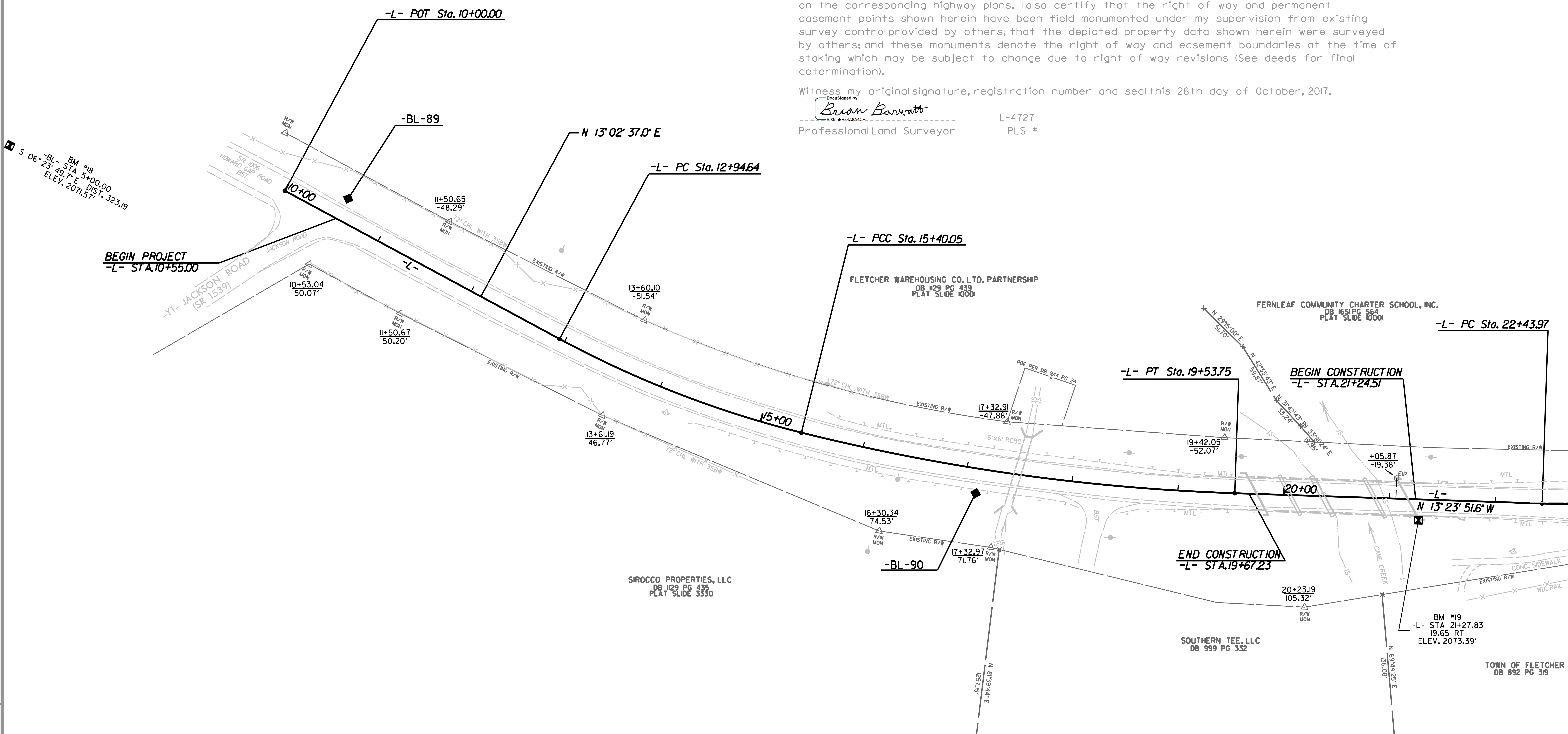
I further certify that the data compiled came from available surveys/mapping performed by others and provided to me by NCDOT and do not certify to the accuracy or quality of the individual data sources.

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 October, 2017.

DocuSigned by: Brian Barwatt

Professional Land Surveyor L-4727 PLS #



REVISIONS

6/2/99

$$$$$SYSTIME$$$$$ $$$$$$DGN$$$$$$ $$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-5207C	RW-5

Location and Surveys

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-4727 LAND SURVEYOR BRIAN A BARWATT

I, Brian Barwatt, a Professional Land Surveyor in the state of North Carolina hereby certify to the best of my knowledge and belief that the following work item(s) (Base map Compilation, Planimetrics, 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.

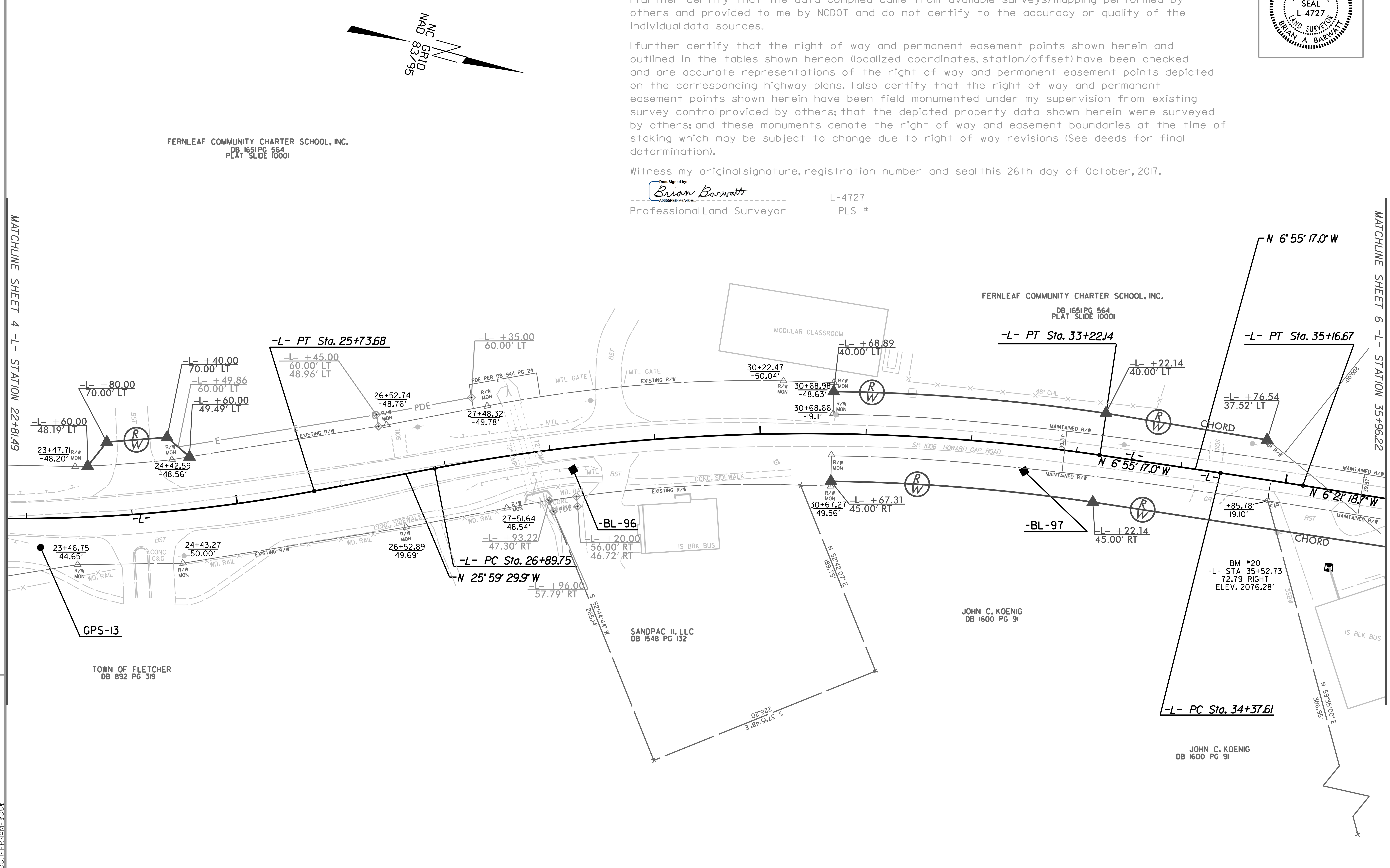
I further certify that the right of way and permanent easement points shown herein and outlined in the tables shown hereon (localized coordinates, station/offset) have been checked and are accurate representations of the right of way and permanent easement points depicted on the corresponding highway 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 October, 2017.

DocuSigned by: Brian Barwatt

Professional Land Surveyor

L-4727
PLS #



REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R5207C	RW-6

Location and Surveys

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-4727 LAND SURVEYOR BRIAN A BARWATT

I, Brian Barwatt, a Professional Land Surveyor in the state of North Carolina hereby certify to the best of my knowledge and belief that the following work item(s) (Base map Compilation, Planimetrics, 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.

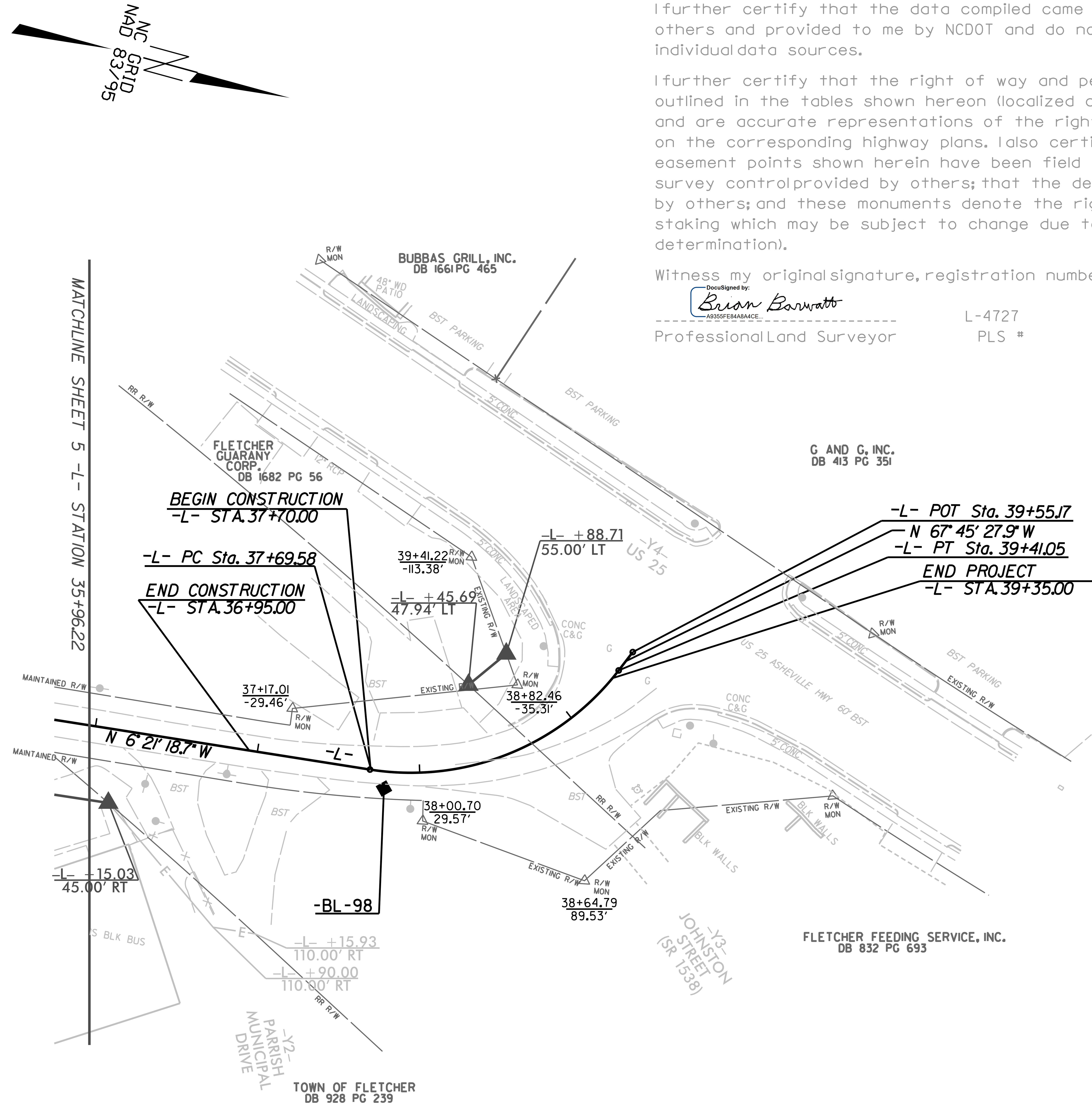
I further certify that the right of way and permanent easement points shown herein and outlined in the tables shown hereon (localized coordinates, station/offset) have been checked and are accurate representations of the right of way and permanent easement points depicted on the corresponding highway 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 October, 2017.

DocuSigned by: Brian Barwatt

Professional Land Surveyor

L-4727
PLS #



REVISIONS

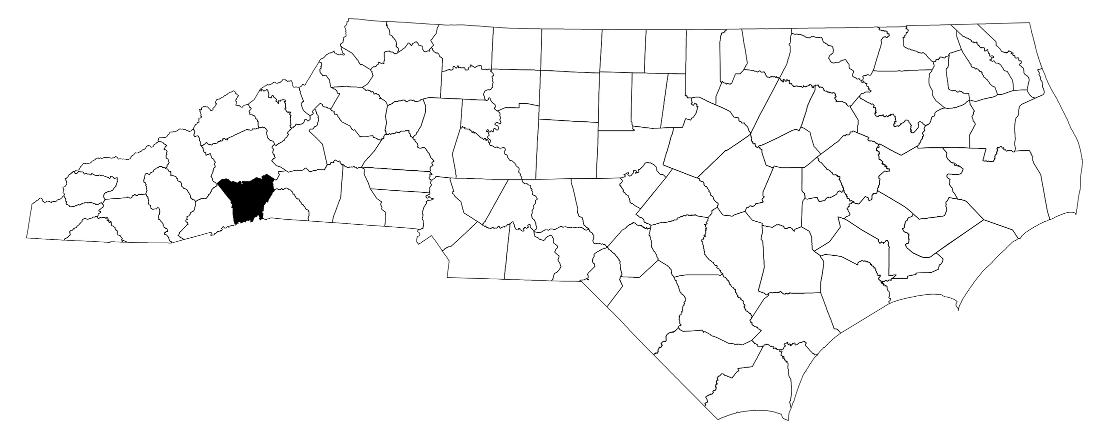
6/2/99

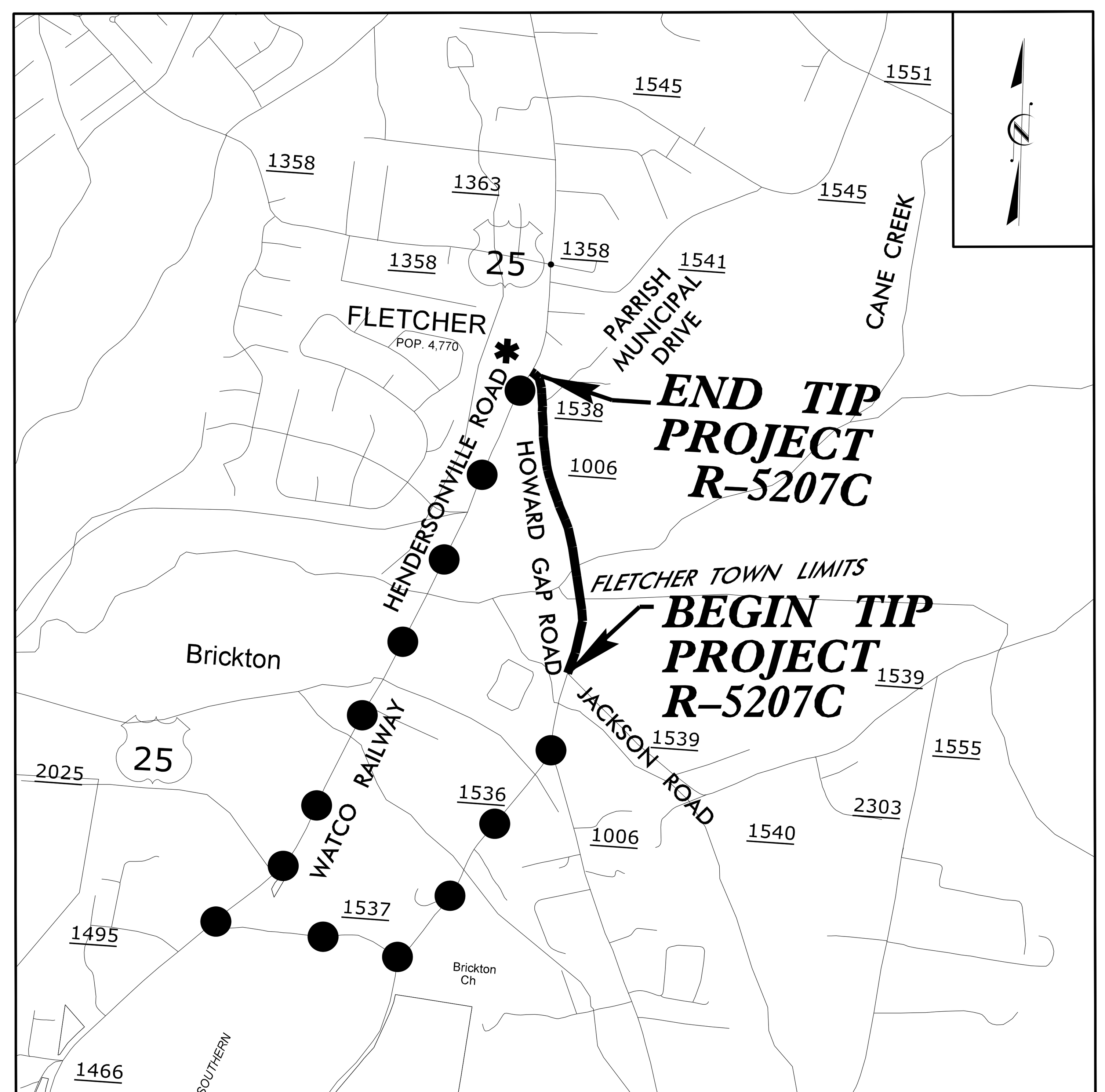
$$$$$$SYSTIME$$$$$$
$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

HENDERSON COUNTY





VICINITY MAP N.T.S

● ● ● ● DETOUR ROUTE

PLANS PREPARED BY:	NCDOT CONTACTS:
ANNIE C. PILZ, PE	WANDA H. AUSTIN, PE PROJECT ENGINEER
SEAN P. KANE, EI	PROJECT DESIGN ENGINEER

INDEX OF SHEETS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PREPARED BY:

RS&H

APPROVED: Annie C. Pilz

DATE: 1/19/2018

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 038700 ANNIE C. PILZ

SHEET NO. TMP-1

TIP PROJECT: R-5207C

PROJ. REFERENCE NO.	SHEET NO.
R-5207C	TMP-1A

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 ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1130.01	DRUM
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTI-LANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1205.11	PAVEMENT MARKINGS - RAILROAD CROSSINGS
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
1253.01	SNOWPLOWABLE RAISED PAVEMENT MARKERS
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

LEGEND

GENERAL

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

SIGNALS

EXISTING
PROPOSED
TEMP TEMPORARY

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

TEMPORARY PAVEMENT MARKING

PA	WHITE EDGELINE	PAINT (4")
PI	YELLOW DOUBLE CENTER	PAINT (4")
PD	3 FT.-9 FT./SP WHITE MINISKIP	PAINT (4")
PE	SOLID WHITE LANE LINE	PAINT (4")
P2	WHITE STOPBAR	PAINT (24")
PP	YELLOW DIAGONAL	PAINT (8")

RS&H

APPROVED: DocuSigned by: Annie C. Pilz 82FB9C0DEB3D48E...

DATE: 1/19/2018

NORTH CAROLINA PROFESSIONAL SEAL 038700 ENGINEER ANNIE C. PILZ

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ROADWAY STANDARD DRAWINGS & LEGEND

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 UNDESIRED 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.

LANE AND SHOULDER CLOSURE REQUIREMENTS

A) 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.

B) 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.

C) 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.

D) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.

E) 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

F) 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.

G) 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) IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

H) NOTIFY THE ENGINEER THIRTY (30) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

I) 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.

J) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.

PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRAFFIC CONTROL PLANS.

K) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.

COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.

L) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

M) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) 100 FT IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

TRAFFIC CONTROL DEVICES

N) 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.

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

PAVEMENT MARKINGS AND MARKERS

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

ROAD NAME	MARKING	MARKER
HOWARD GAP RD.	PAINT	TEMPORARY RAISED

Q) PLACE ONE APPLICATION OF PAINT FOR TEMPORARY TRAFFIC PATTERNS. PLACE A SECOND APPLICATION OF PAINT SIX (6) MONTHS AFTER THE INITIAL APPLICATION AND EVERY SIX MONTHS AS DIRECTED BY THE ENGINEER.

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

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

MISCELLANEOUS

T) LAW ENFORCEMENT MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS AS DIRECTED BY THE ENGINEER.

U) 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.

MANAGEMENT STRATEGY

THE FOLLOWING LISTED STRATEGIES DERIVE FROM DETAILED DESIGN LEVEL ASSESSMENTS OF THE WORK ZONE IMPACTS CONDUCTED DURING THE DEVELOPMENTAL STAGES OF THIS TRANSPORTATION MANAGEMENT PLAN (TMP).

RECOMMENDED MANAGEMENT STRATEGIES RELATIVE TO THIS TMP AREA AS FOLLOWS:

HOWARD GAP RD.

USING A WEEKEND ROAD CLOSURE, CONSTRUCT CONCRETE RAILROAD TUB AND PORTION OF -L- (SR 1006 HOWARD GAP RD).

USING LANE CLOSURES, CONSTRUCT THE RIGHT SIDE OF -L- (SR 1006 HOWARD GAP RD.) INCLUDING WEDGING AND THEN THE LEFT SIDE OF -L- INCLUDING WEDGING.

RS&H

APPROVED: Annie C. Pilz

DATE: 1/19/2018

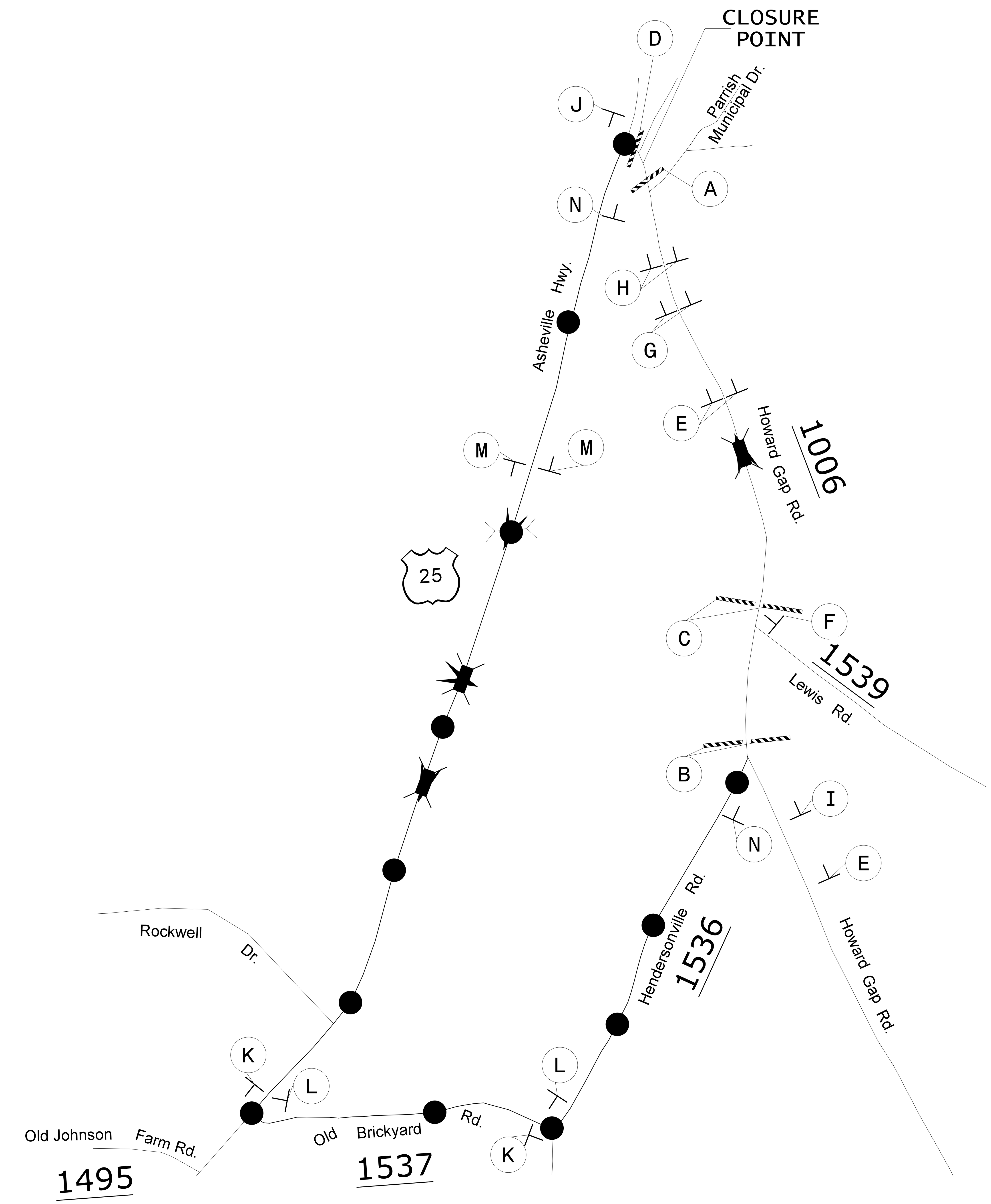
NORTH CAROLINA PROFESSIONAL SEAL 038700 ENGINEER ANNIE C. PILZ

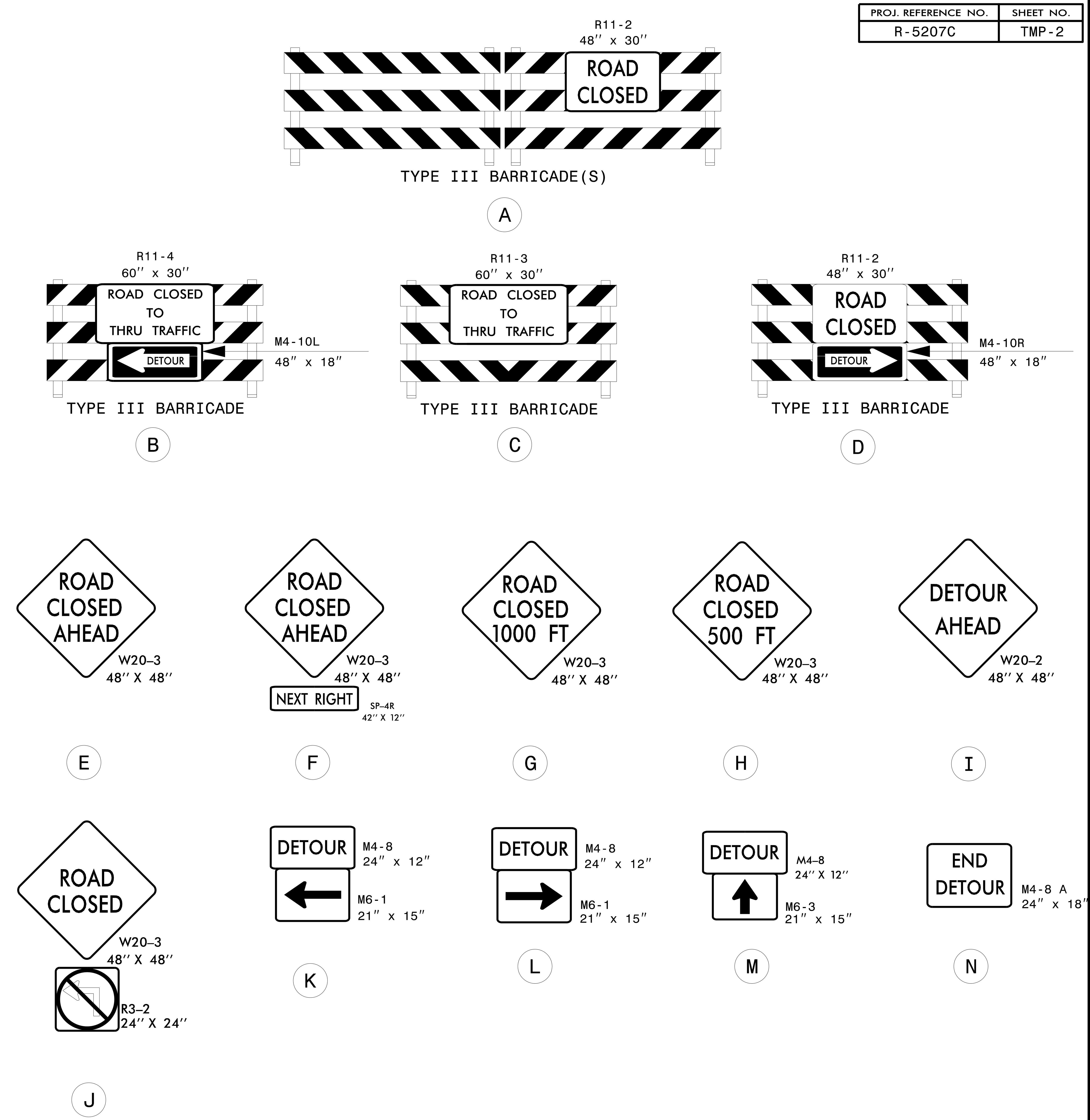
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GENERAL NOTES

1/19/2018
X:\P\103004902_R-5207C_Howard Gap Road\Design\Traffic\TrafficControl\TCP\R5207C_tmp_GN.dgn
User:pilza

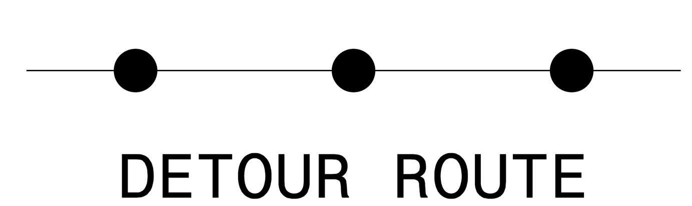
PROJ. REFERENCE NO.	SHEET NO.
R-5207C	TMP-2





NOTES:

- ALL DETOUR SIGN LOCATIONS ARE APPROXIMATE.
- ALL DETOUR SIGNS ARE BLACK ON ORANGE UNLESS OTHERWISE NOTED.
- SEE ROADWAY STANDARD DRAWING NO. 1101.03, SHEET 1 AND 2 OF 9.



1/19/2018
X:\P\I0300490I2_R-5207C_Howard Gap Road\Design\Traffic\TrafficControl\TCP\R5207C_tmp_detour.dgn
User:pilza

APPROVED: DocuSigned by: Annie C. Pilz

DATE: 1/19/2018

NORTH CAROLINA PROFESSIONAL SEAL 038700 ENGINEER ANNIE C. PILZ

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

HOWARD GAP RD. DETOUR

PHASING

PHASE I

USING A WEEKEND ROAD CLOSURE ON –L– (HOWARD GAP RD. SR 1006) AND AN OFF–SITE DETOUR (SEE SHEET TMP–2), CONSTRUCT THE FOLLOWING INCLUDING THE CONCRETE RAILROAD TUB (SEE SHEET TMP–4):

–L– STA. 36+20± TO –L– STA. 37+45±
–L– STA. 37+70± TO –L– STA. 39+35±

REPLACE EXISTING PAVEMENT MARKINGS WITH TEMPORARY PAVEMENT MARKINGS AND RETURN TRAFFIC TO EXISTING TRAVEL PATTERN.

PHASE II

STEP 1

USING RSD 1101.01 (SHEET 3 OF 3), PLACE ALL ADVANCED WORK ZONE WARNING SIGNS.

STEP 2

USING RSD 1101.02 (SHEETS 1 AND 2 OF 15) AND FLAGGERS ON –L– (HOWARD GAP RD. SR 1006), CONSTRUCT THE FOLLOWING INCLUDING ADDITIONAL RAIL WORK (SEE SHEETS TMP–5 THRU TMP–7):

–L– STA 10+54± RT TO –L– STA 19+86± RT
–L– STA 21+27± RT TO –L– STA 36+77± RT

REPLACE EXISTING PAVEMENT MARKINGS WITH TEMPORARY PAVEMENT MARKINGS AND RETURN TRAFFIC TO EXISTING TRAVEL PATTERN AT THE END OF EACH WORK PERIOD.

PHASE III

STEP 1

USING RSD 1101.02 (SHEETS 1 AND 2 OF 15) AND FLAGGERS ON –L– (HOWARD GAP RD. SR 1006), CONSTRUCT THE FOLLOWING INCLUDING ADDITIONAL RAIL WORK (SEE SHEETS TMP–8 THRU TMP–10):

–L– STA 10+54± LT TO –L– STA 19+63± LT
–L– STA 21+05± LT TO –L– STA 36+94± LT

REPLACE EXISTING PAVEMENT MARKINGS WITH TEMPORARY PAVEMENT MARKINGS AND RETURN TRAFFIC TO EXISTING TRAVEL PATTERN AT THE END OF EACH WORK PERIOD.

STEP 2

USING RSD 1101.02 (SHEETS 1 AND 2 OF 15), PLACE FINAL LAYER OF SURFACE COURSE, FINAL MARKINGS AND MARKERS (SEE PAVEMENT MARKINGS PLANS) ON –L– (HOWARD GAP RD. SR 1006). SHIFT TRAFFIC TO FINAL PATTERN AND OPEN ALL LANES.

RS&H

APPROVED: DocuSigned by: Annie C. Pilz 82FB9C0DEB3D48E

DATE: 1/19/2018

NORTH CAROLINA PROFESSIONAL SEAL 038700 ENGINEER ANNIE C. PILZ

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

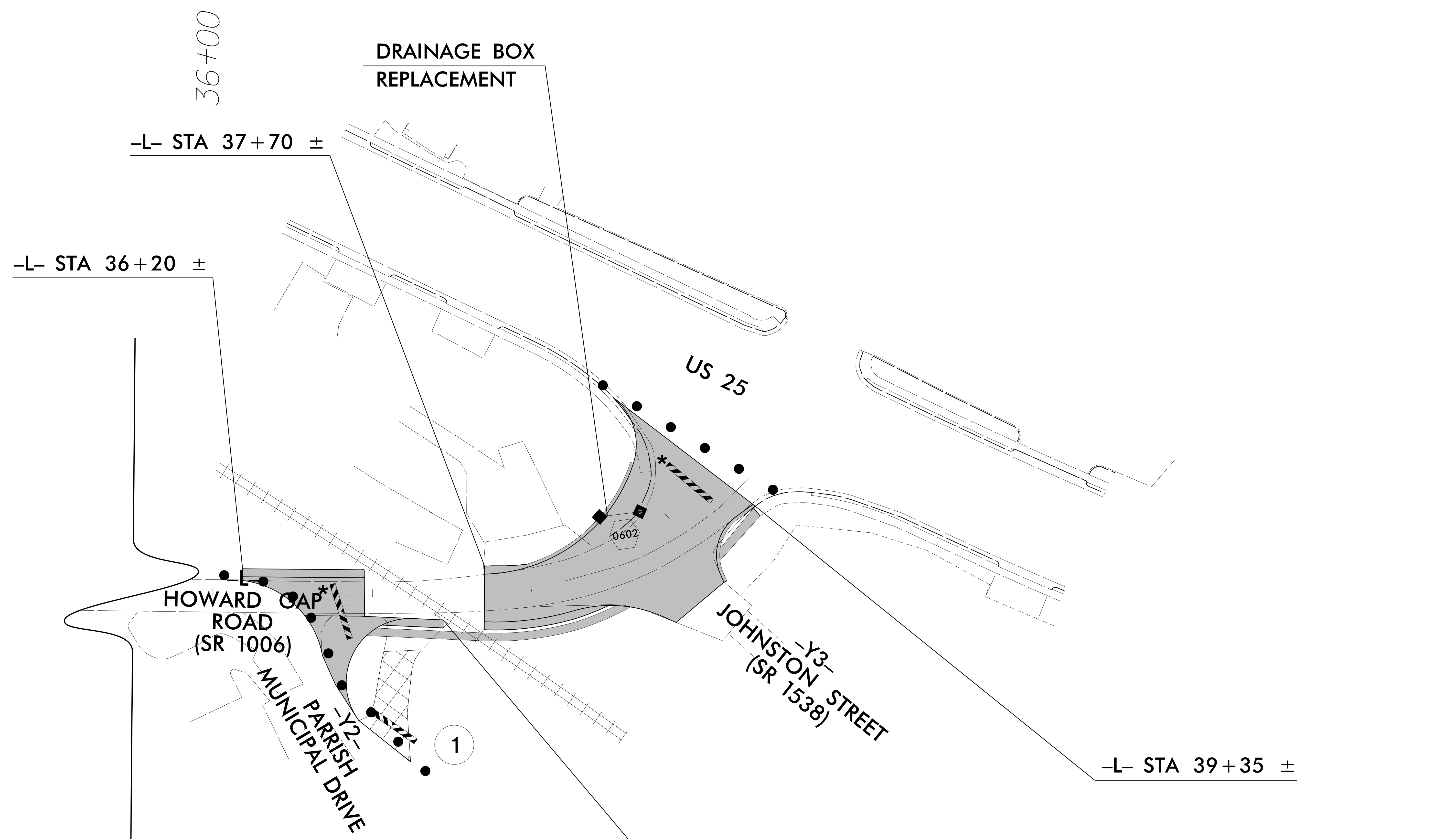
PHASING

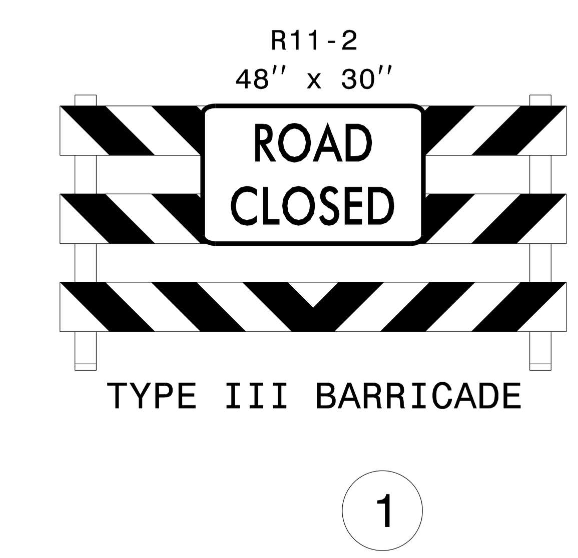
PROJ. REFERENCE NO.	SHEET NO.
R-5207C	TMP-4

NOTES:

* SEE SHEET TMP–2 FOR OFF–SITE DETOUR ROUTE AND SIGNING

–CONCRETE RAILROAD TUB TO BE SET DURING ROAD CLOSURE





RS&H

APPROVED: Annie C. Pilz

DATE: 1/19/2018

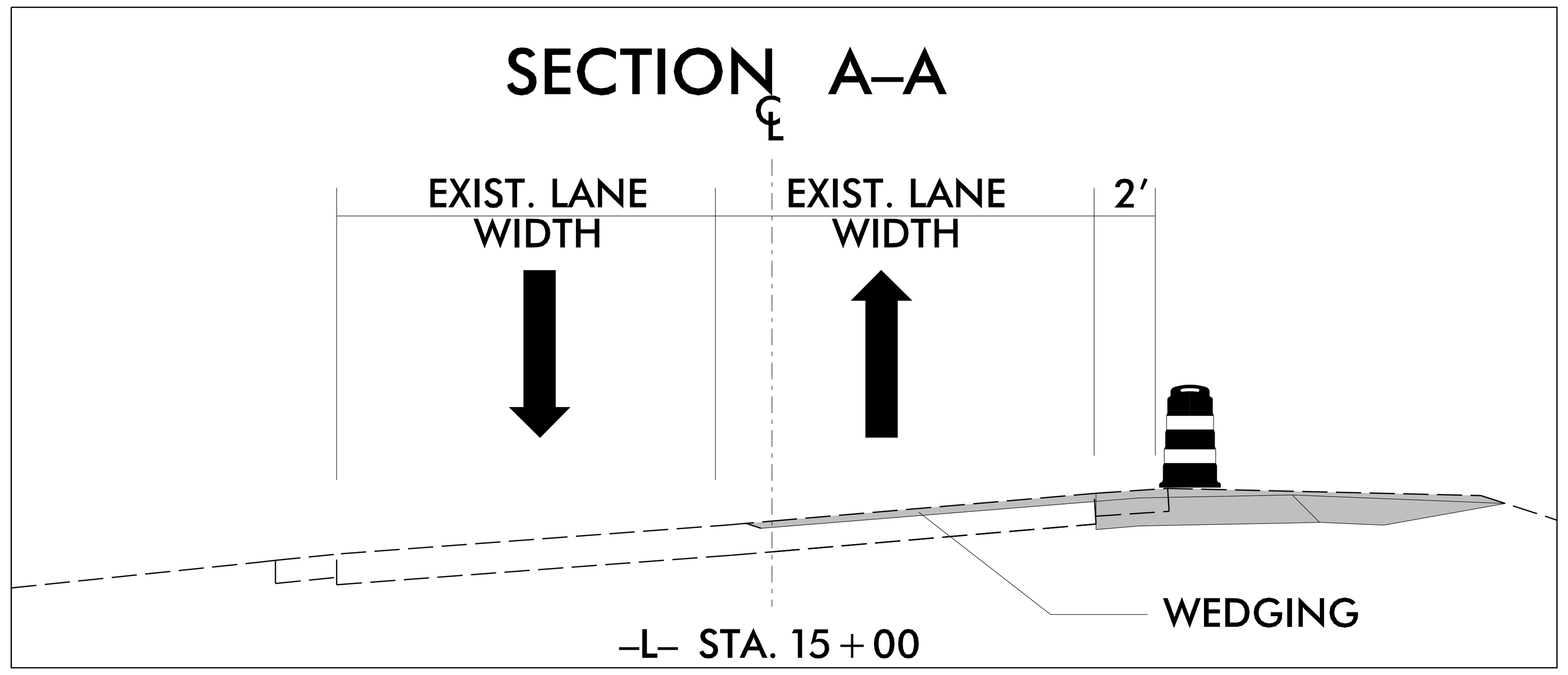
NORTH CAROLINA PROFESSIONAL SEAL 038700 ENGINEER ANNIE C. PILZ

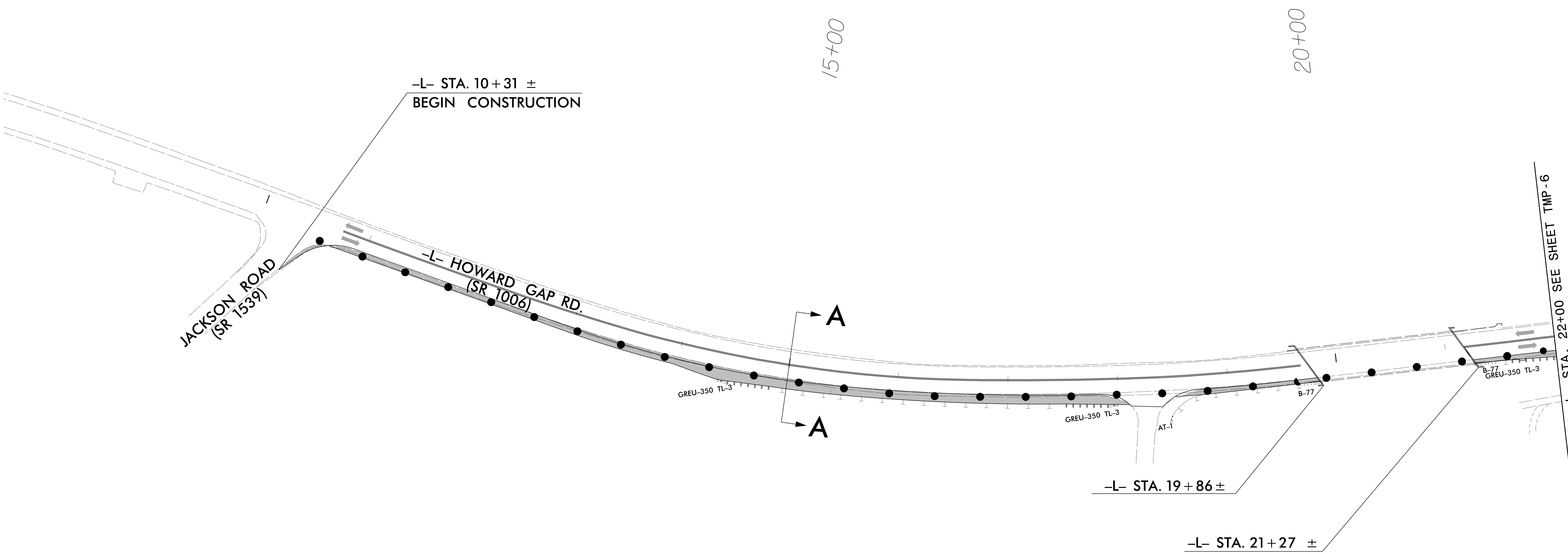
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PHASE I DETAIL

PROJ. REFERENCE NO.	SHEET NO.
R-5207C	TMP-5

NOTES: EXISTING PAVEMENT MARKINGS ARE SHOWN THROUGHOUT PHASE II.





RS&H

APPROVED: Annie C. Pilz

DATE: 1/19/2018

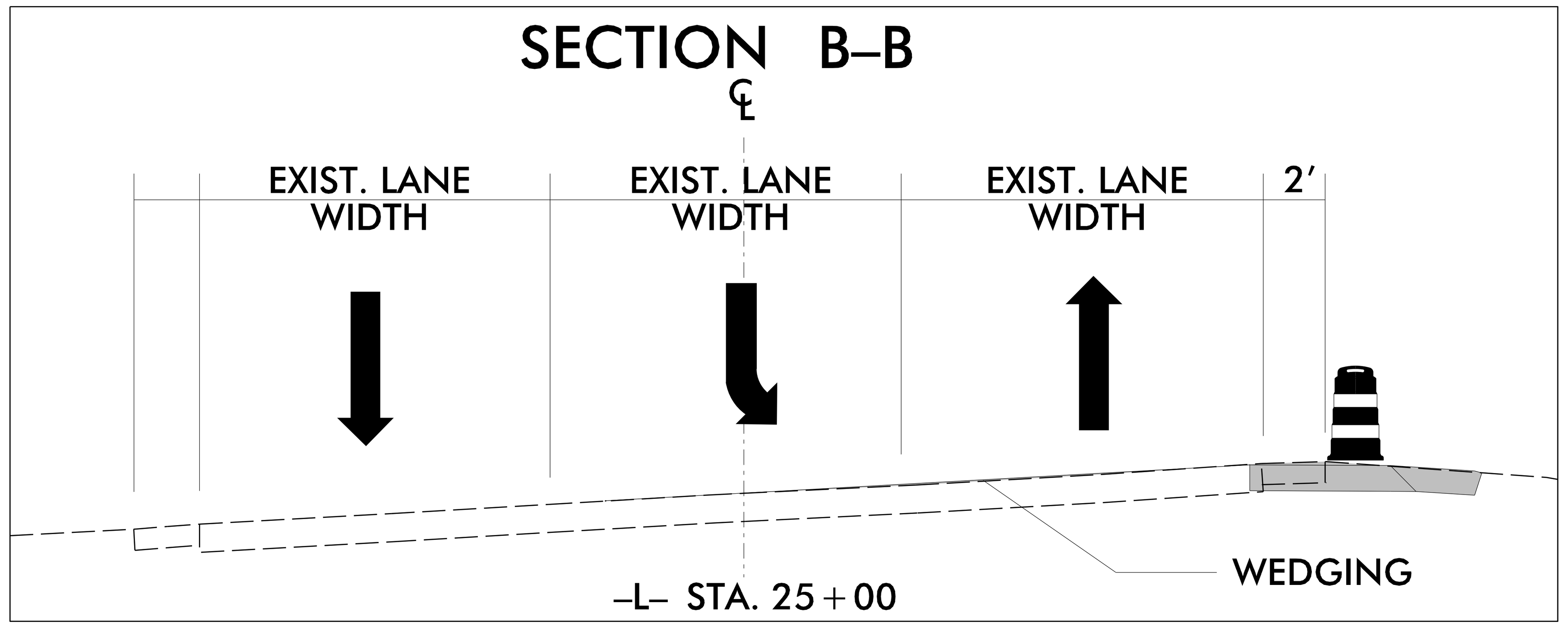
NORTH CAROLINA PROFESSIONAL SEAL 038700 ENGINEER ANNIE C. PILZ

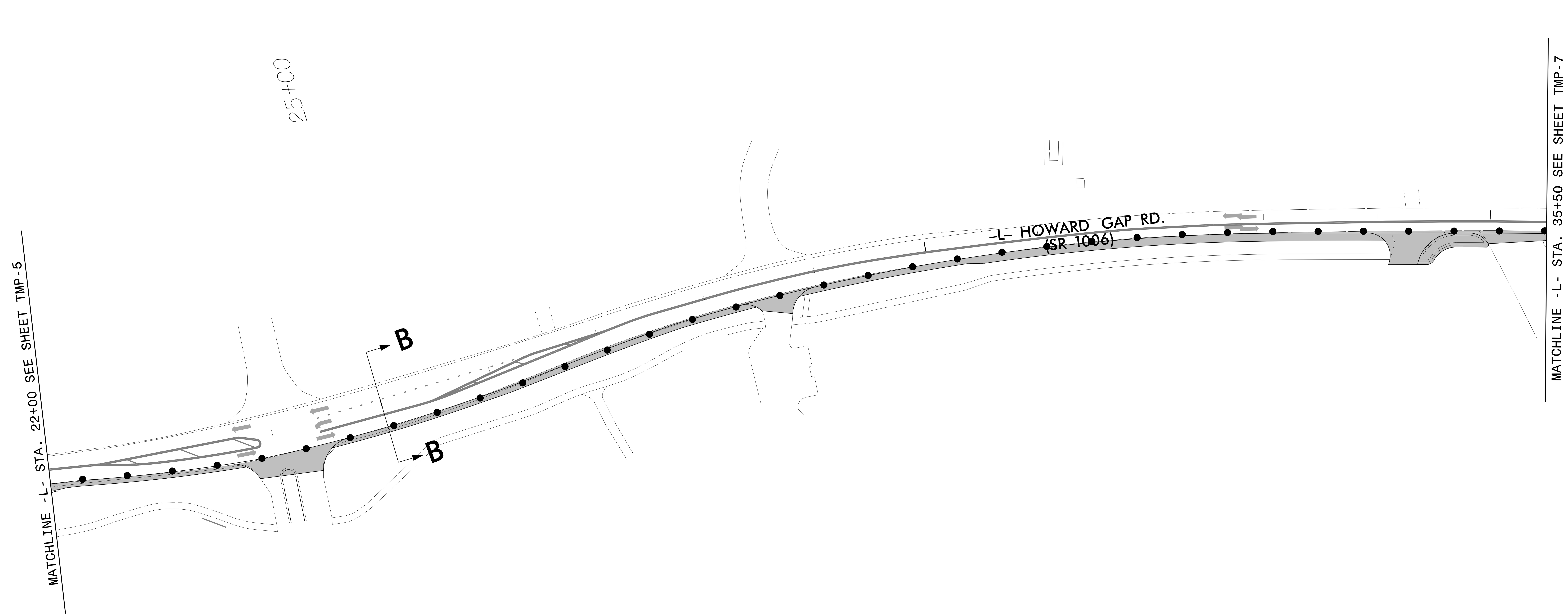
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PHASE II DETAIL

1/19/2018
X:\P\103004902_R-5207C_Howard Gap Road\Design\Traffic\TrafficControl\TCP\R5207C_tmp_pII_dtl_01.dgn
User:pilza

PROJ. REFERENCE NO.	SHEET NO.
R-5207C	TMP-6





RS&H

APPROVED: Annie C. Pilz

DATE: 1/19/2018

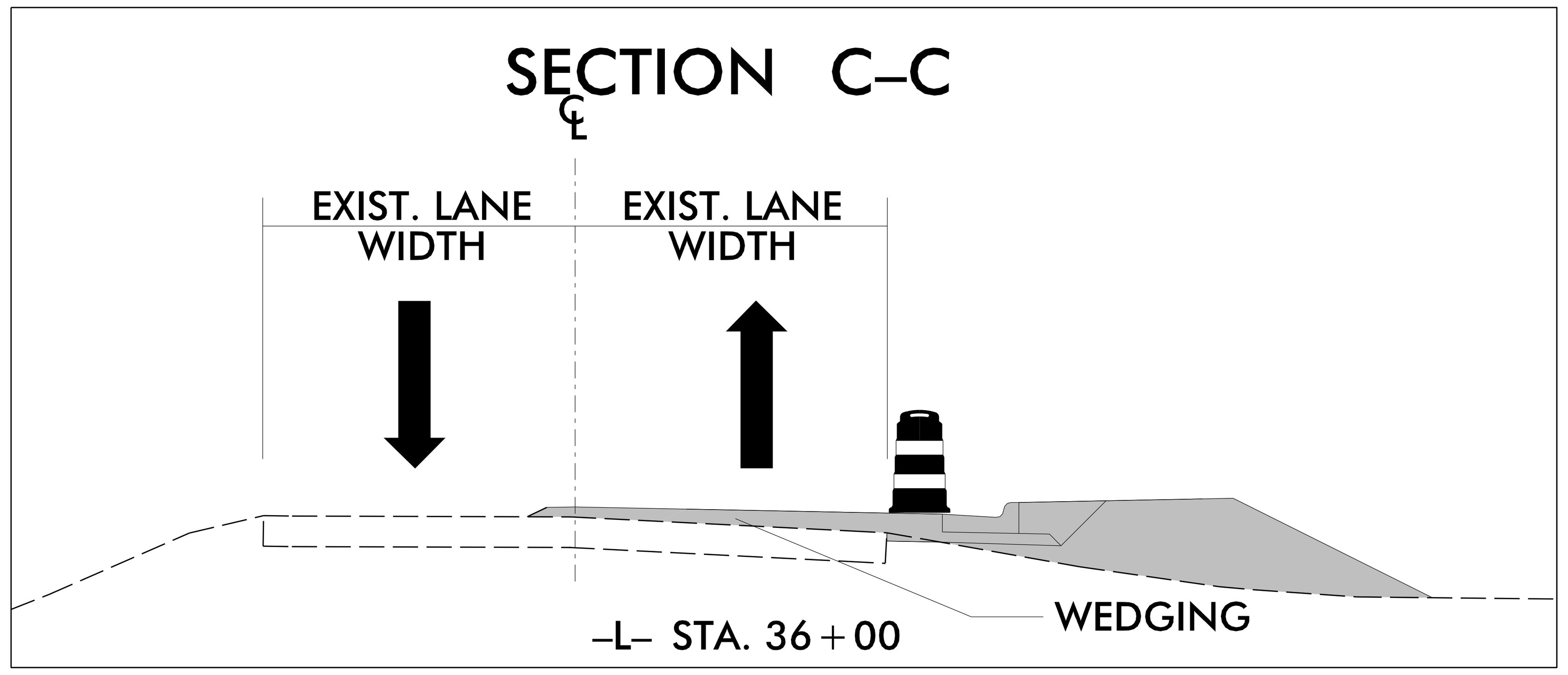
NORTH CAROLINA PROFESSIONAL SEAL 038700 ENGINEER ANNIE C. PILZ

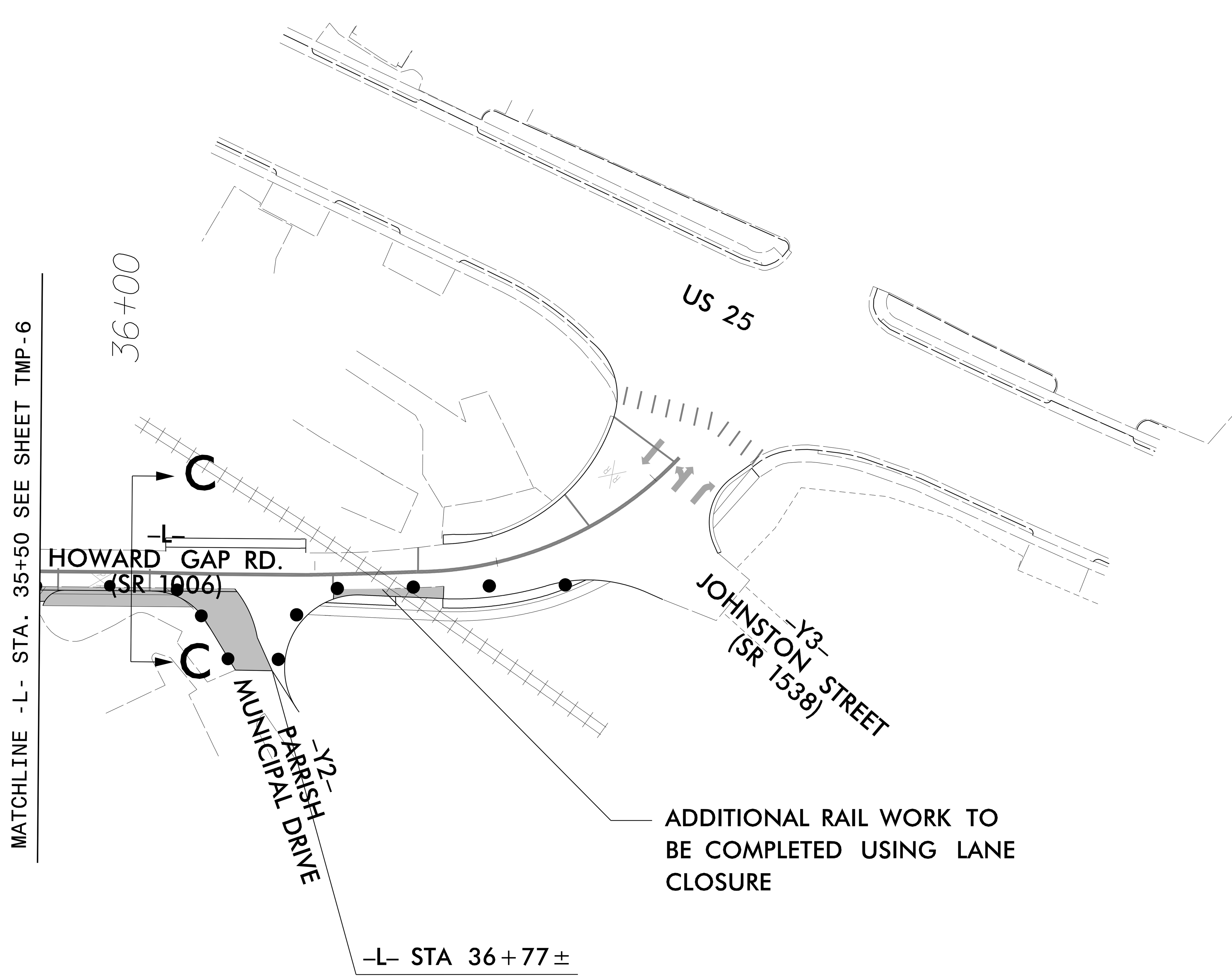
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PHASE II DETAIL

1/19/2018
X:\P\103004902_R-5207C_Howard Gap Road\Design\Traffic\TrafficControl\TCP\R5207C_tmp_pII_dtl_02.dgn
User:pilza

PROJ. REFERENCE NO.	SHEET NO.
R-5207C	TMP-7





RS&H

APPROVED: Annie C. Pilz

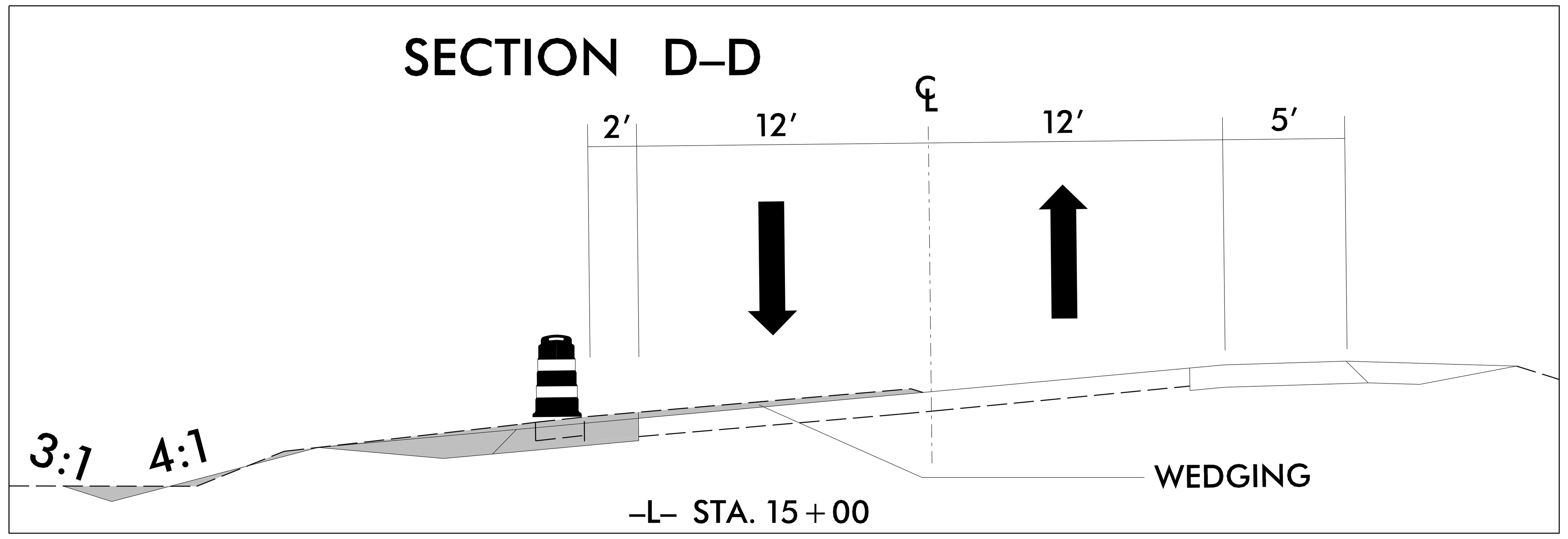
DATE: 1/19/2018

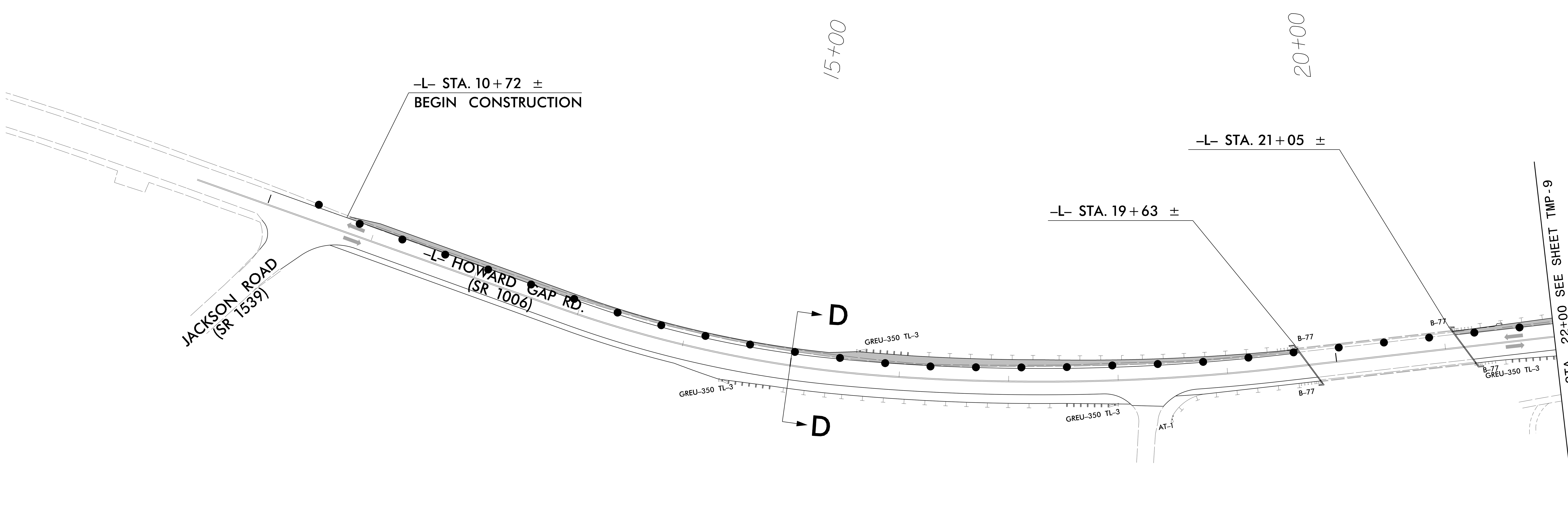
NORTH CAROLINA PROFESSIONAL SEAL 038700 ENGINEER ANNIE C. PILZ

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PHASE II DETAIL

PROJ. REFERENCE NO.	SHEET NO.
R-5207C	TMP-8





RS&H

APPROVED: DocuSigned by: Annie C. Pilz 82FB9C0DEB3D48E...

DATE: 1/19/2018

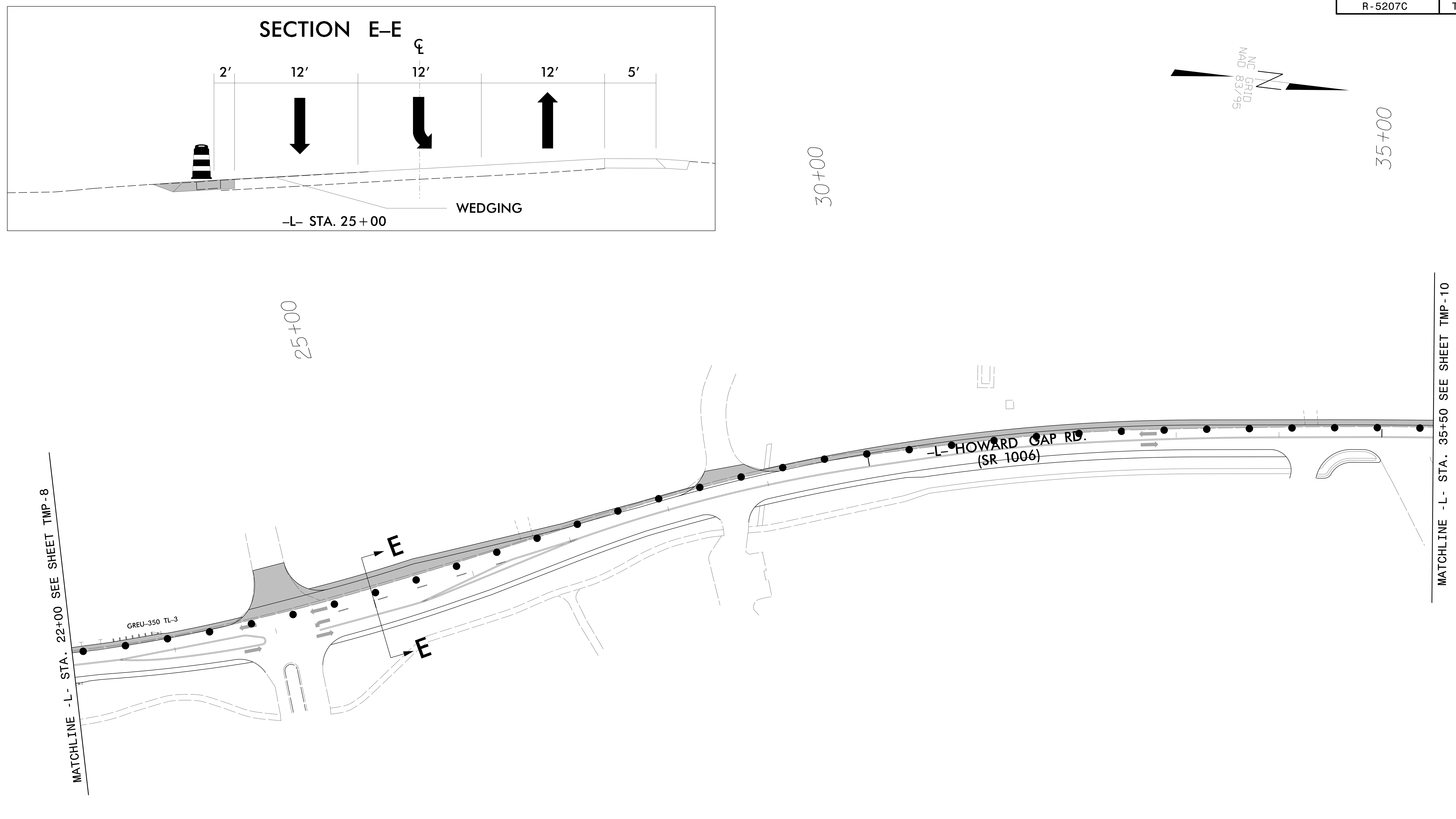
NORTH CAROLINA PROFESSIONAL SEAL 038700 ENGINEER ANNIE C. PILZ

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PHASE III DETAIL

1/19/2018
X:\P\103004902_R-5207C_Howard Gap Road\Design\Traffic\TrafficControl\TCP\R5207C_tmp_piii_dt1_01.dgn
User:pilza

PROJ. REFERENCE NO.	SHEET NO.
R-5207C	TMP-9



RS&H

APPROVED: Annie C. Pilz

DATE: 1/19/2018

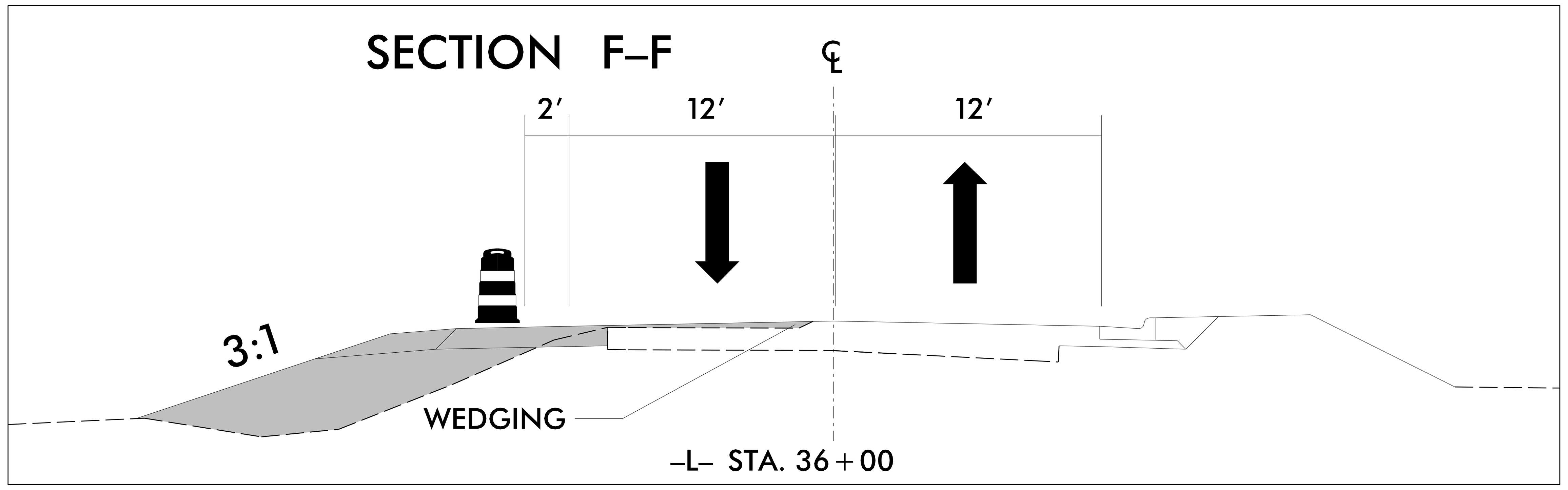
NORTH CAROLINA PROFESSIONAL SEAL 038700 ENGINEER ANNIE C. PILZ

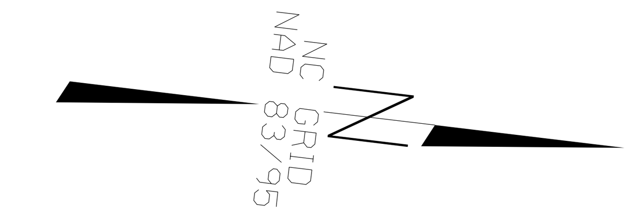
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

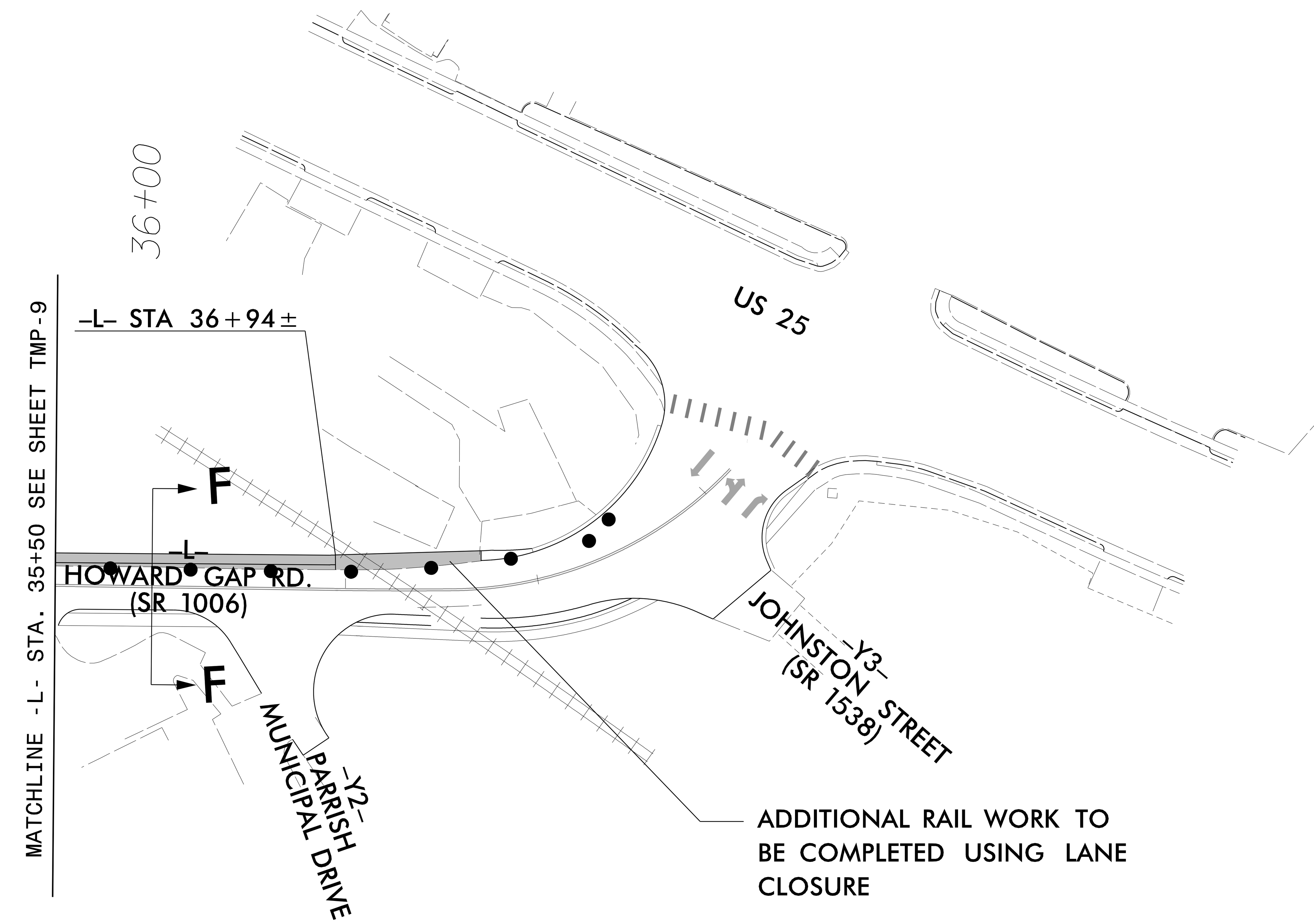
PHASE III DETAIL

1/19/2018
X:\P\1030049012_R-5207C_Howard Gap Road\Design\Traffic\TrafficControl\TCP\R5207C_tmp_ph1_dtl_02.dgn
User:pilza

PROJ. REFERENCE NO.	SHEET NO.
R-5207C	TMP-10







RS&H

APPROVED: Annie C. Pilz

DATE: 1/19/2018

NORTH CAROLINA PROFESSIONAL SEAL 038700 ENGINEER ANNIE C. PILZ

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PHASE III DETAIL

1/19/2018
X:\P\103004902_R-5207C_Howard Gap Road\Design\Traffic\TrafficControl\TCP\R5207C_tmp_pIII_dtl_03.dgn
User:pilza

TIP NO.	SHEET NO.
R-5207C	PMP-1

APPROVED: Annie C. Pilz
DATE: 1/19/2018

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 038700 ENGINEER ANNIE C. PILZ

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

T.I.P.: R-5207C

CONTRACT: DN00563

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLAN
HENDERSON COUNTY

LOCATION: SR 1006 HOWARD GAP RD FROM SR 1539 (JACKSON RD.) TO US 25

INDEX

SHEET NO.	DESCRIPTION
PMP-1	PAVEMENT MARKING PLAN TITLE AND SCHEDULE SHEET
PMP-2 THRU 4	PAVEMENT MARKING DETAILS

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
1205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1205.10	PAVEMENT MARKINGS - SCHOOL AREAS
1205.11	PAVEMENT MARKINGS - RAILROAD CROSSINGS
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
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

PAVEMENT MARKING SCHEDULE

FINAL
PAVEMENT MARKINGS

TA	WHITE EDGELINE	THERMOPLASTIC (4")
TD	3 FT.-9 FT./SP WHITE MINISKIP	THERMOPLASTIC (4")
TE	SOLID WHITE LANE LINE	THERMOPLASTIC (4")
TI	YELLOW DOUBLE CENTER	THERMOPLASTIC (4")
TP	YELLOW DIAGONAL	THERMOPLASTIC (8")
T2	WHITE STOPBAR	THERMOPLASTIC (24")
T8	2 FT.-6 FT./SP WHITE MINISKIP	THERMOPLASTIC (4")
UA	LEFT TURN ARROW	THERMOPLASTIC
UI	ALPHANUMERIC CHARACTER	THERMOPLASTIC
UN	24" YIELD LINE TRIANGLE	THERMOPLASTIC

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	MARKERS
-L- (HOWARD GAP RD.)	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 ON ASPHALT OR CONCRETE ROADWAYS. IF HEATED-IN-PLACE IS USED, IT SHALL BE PAID FOR USING THE EXTRUDED THERMOPLASTIC PAY ITEM.

G) SEE ROADWAY PLANS FOR ALTERNATE CURB RAMP DESIGNS WHEN INDICATED ON PAVEMENT MARKING DETAIL SHEETS.

PLAN SUBMITTED TO: NCDOT DIVISION 14

WANDA AUSTIN, PE — NCDOT DIV 14 PROJECT TEAM LEAD

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PLAN PREPARED BY: RS&H

ANNIE C. PILZ, PE — SIGNING & DELINEATION REGIONAL ENGINEER
SEAN KANE, EI — SIGNING & DELINEATION PROJECT DESIGN ENGINEER/TECHNICIAN

RS&H

1/19/2018
X:\P10\0049012_R-5207C_Howard Gap Road\Design\Traffic\Delineation\R5207C_pmp_title.dgn
User:pilza

TIP NO.	SHEET NO.
R-5207C	PMP-2

APPROVED: DocuSigned by: Annie C. Pilz 82F99C0DEB3D48E

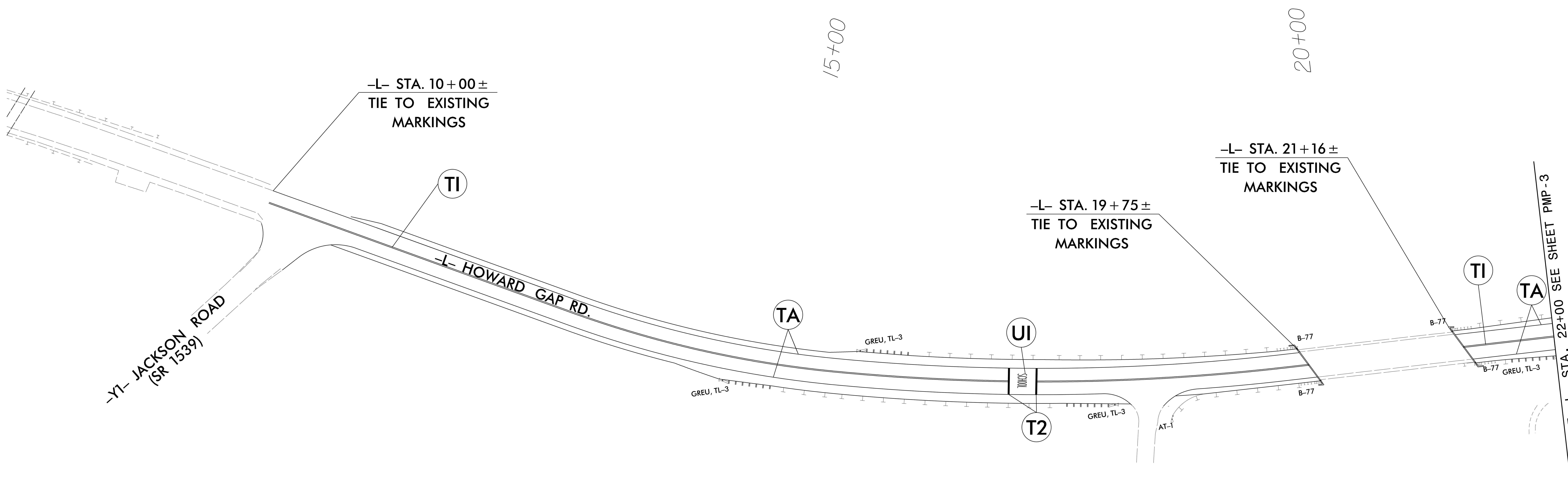
DATE: 1/19/2018

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 038700 ENGINEER ANNIE C. PILZ

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/ NSRS 2007



RS&H

PAVEMENT MARKING DETAIL

TIP NO.	SHEET NO.
R-5207C	PMP-3

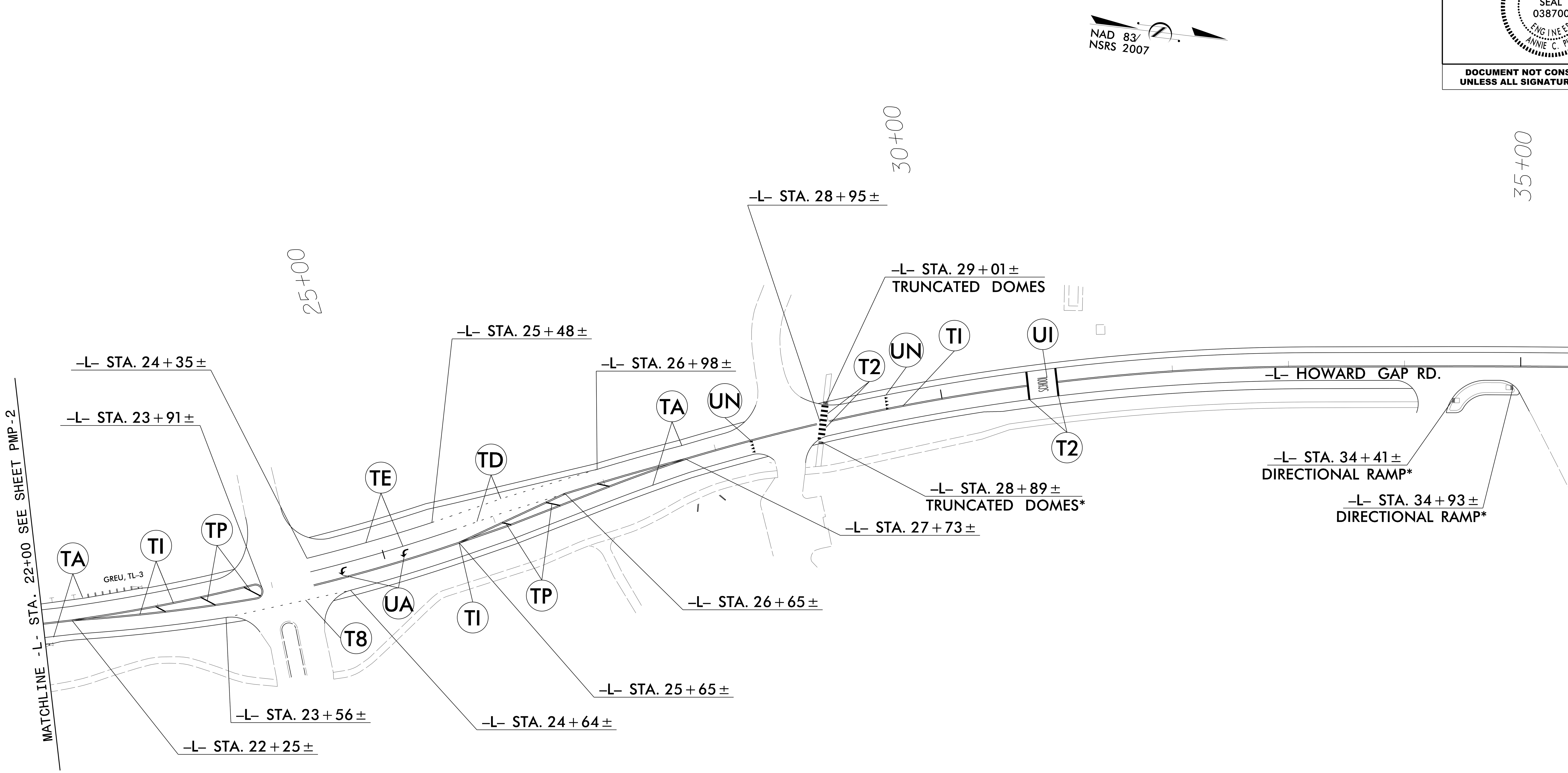
APPROVED: Annie C. Pilz

DATE: 1/19/2018

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 038700 ENGINEER ANNIE C. PILZ

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



* SEE ROADWAY PLANS FOR ALTERNATIVE CURB RAMP DESIGNS

RS&H

PAVEMENT MARKING DETAIL

TIP NO.	SHEET NO.
R-5207C	PMP-4

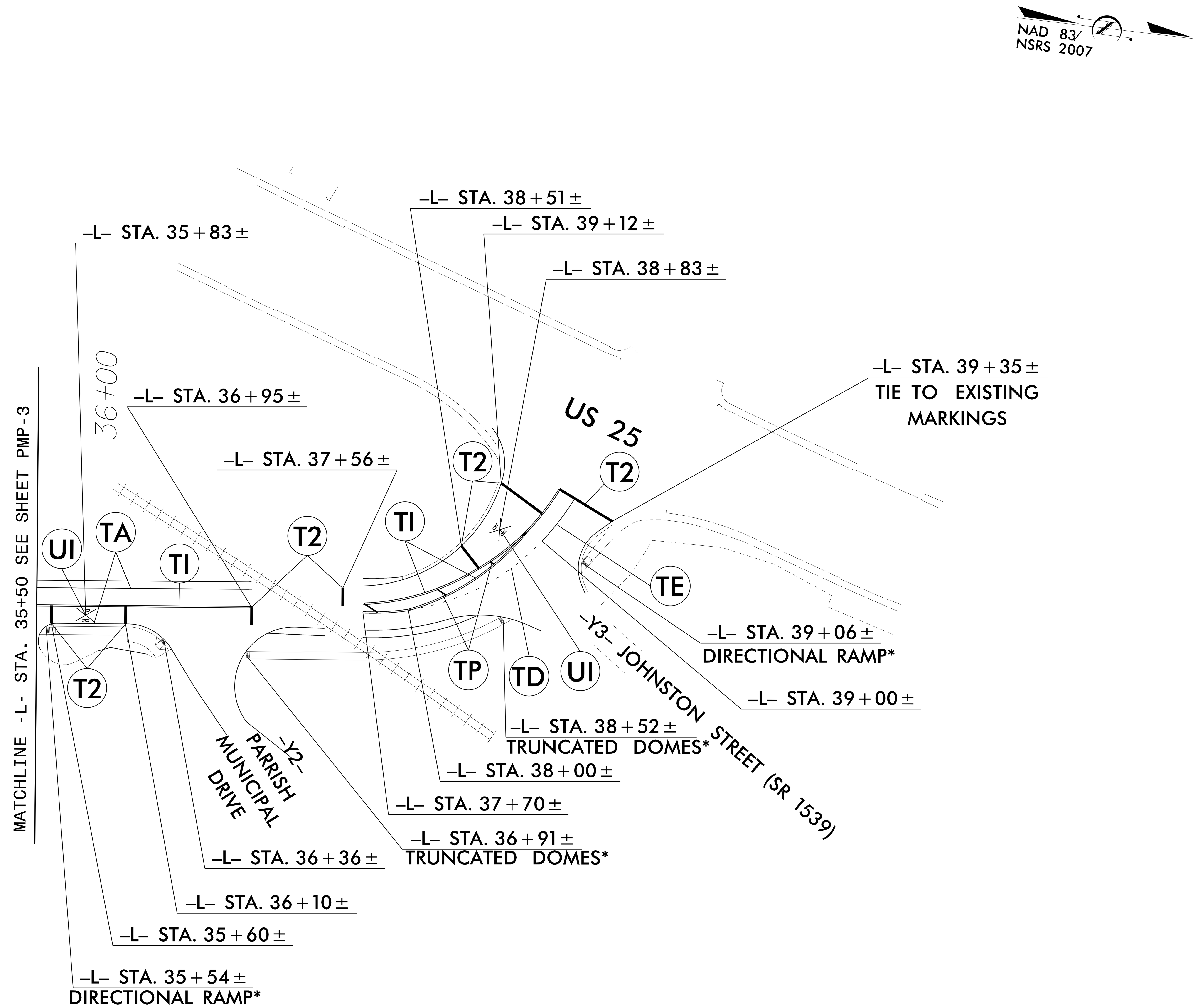
APPROVED: Annie C. Pilz

DATE: 1/19/2018

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 038700 ENGINEER ANNIE C. PILZ

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



* SEE ROADWAY PLANS FOR ALTERNATIVE CURB RAMP DESIGNS

RS&H

PAVEMENT MARKING DETAIL

1/19/2018
X:\P\1030049012_R-5207C_Howard Gap Road\Design\Traffic\Delineation\R5207C_pmp_dtl_03.dgn
User:pilza

TIP PROJECT: R-5207C

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5207C	EC-1	9

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

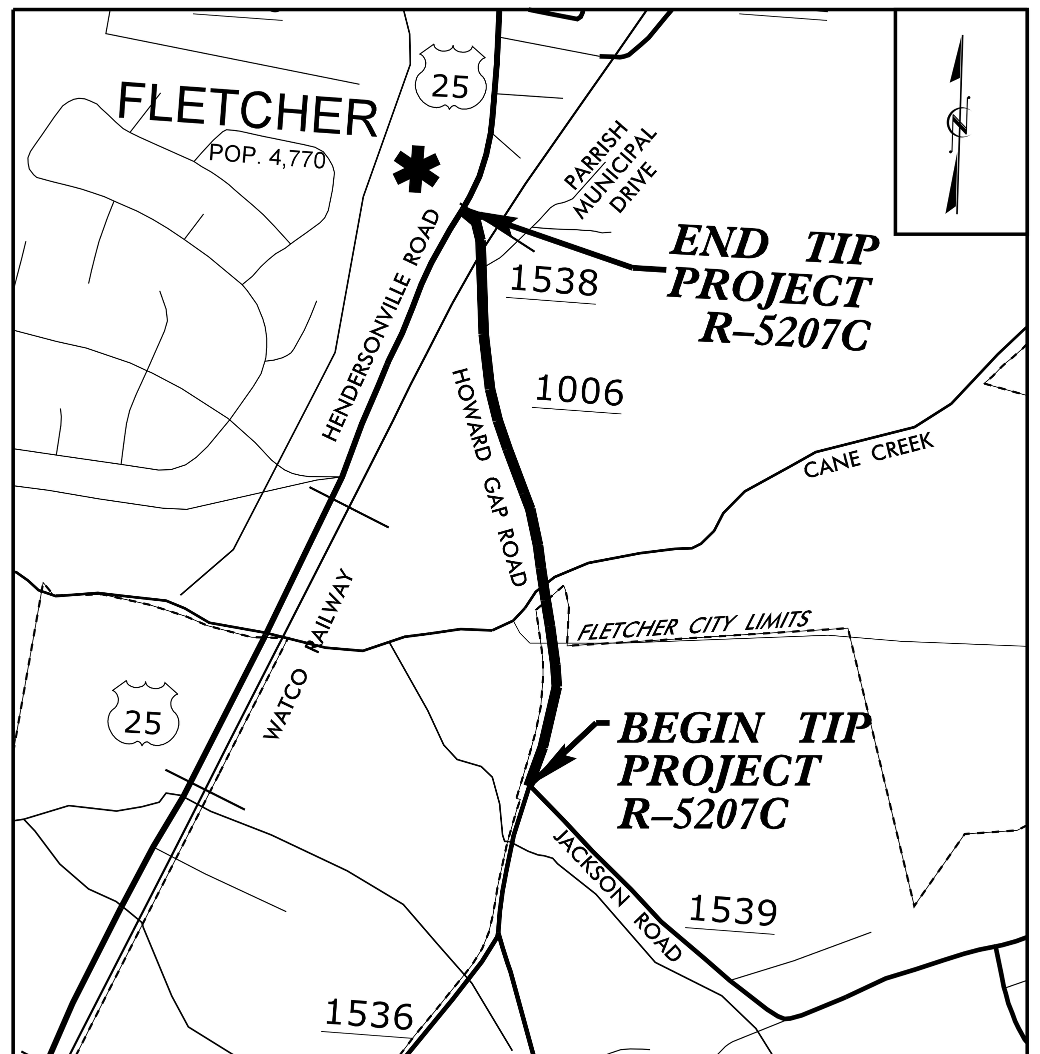
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

NAD 83/95

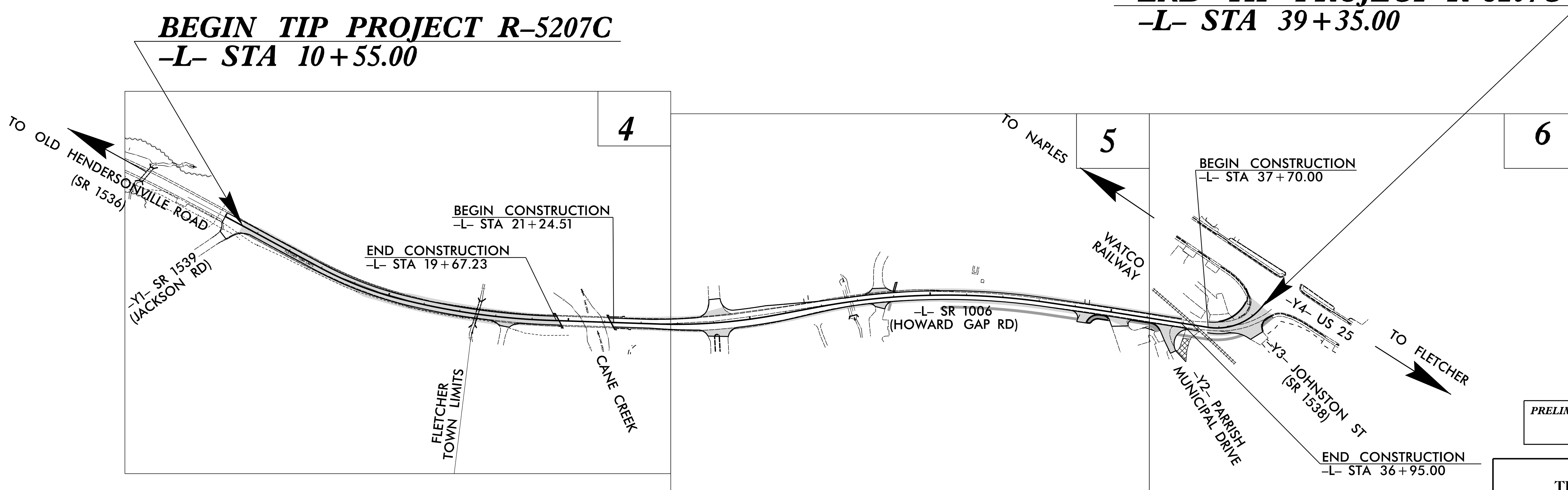
HENDERSON COUNTY

LOCATION: SR 1006 HOWARD GAP RD FROM SR 1539 (JACKSON RD.) TO US 25

TYPE OF WORK: GRADING, PAVING, DRAINAGE, SIGNALS, TRAFFIC CONTROL, SIGNING, PAVEMENT MARKING, AND EROSION CONTROL



VICINITY MAP N.T.S



EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TSD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
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)	
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:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	
	Tiered Skimmer Basin	
	Infiltration Basin	

303(d) IMPAIRED WATER(S) EXIST ON THIS PROJECT

303(d) Impaired Water Zone(s) Exist
From Sta. 20+30 -L-
to Sta. 21+00 -L-
Refer To E. C. Special Provisions for Special Considerations.

ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT

Refer To E. C. Special Provisions for Special Considerations.

RS&H

PRELIMINARY EROSION CONTROL PLANS
SUBMITTAL NO. D-006R
DATE: NOVEMBER 3, 2017

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

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

GRAPHIC SCALE

25 0 50
PLANS

25 0 50
PROFILE (HORIZONTAL)

5 0 10
PROFILE (VERTICAL)

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:

1520 SOUTH BOULEVARD, SUITE 200
CHARLOTTE, NC 28203
(704) 940-4715

2018 STANDARD SPECIFICATIONS

Designed by:

WILL WEATHERSBEE, PE — *3161*
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:

REID WHITEHEAD, PE, CPESC

Roadway Standard Drawings

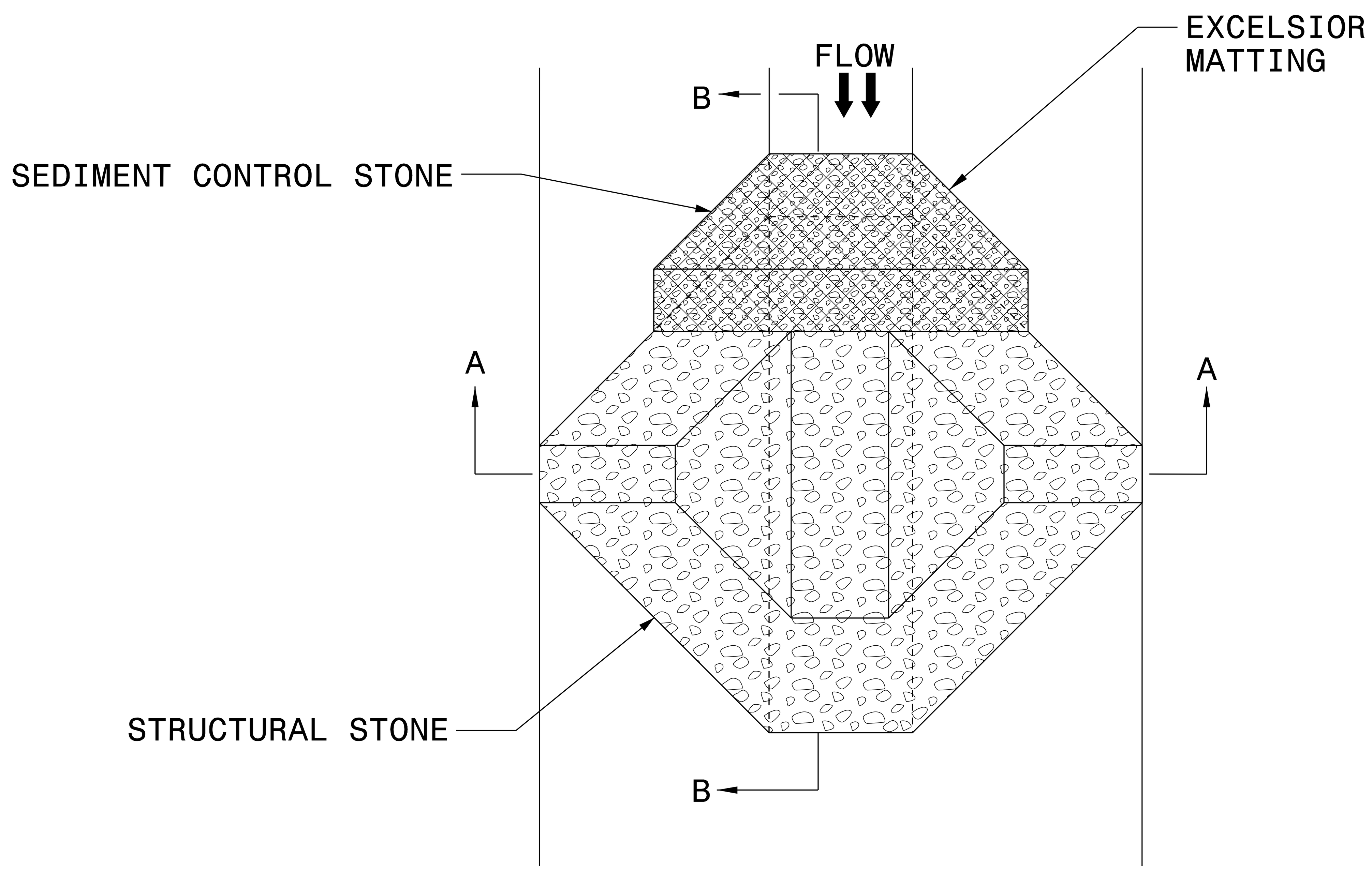
The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2018 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

1605.01 Temporary Silt Fence
1606.01 Special Sediment Control Fence
1607.01 Gravel Construction Entrance
1622.01 Temporary Berms and Slope Drains
1631.01 Matting Installation
1632.03 Rock Inlet Sediment Trap Type C
1633.01 Temporary Rock Silt Check Type A
1633.02 Temporary Rock Silt Check Type B
1635.02 Rock Pipe Inlet Sediment Trap Type B

04-DEC-2017 ... Design\Plan Sheets\R5207C_EC_tsh.dgn $$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-5207C	EC-2
RW SHEET NO.	

TEMPORARY ROCK SILT CHECK TYPE 'A' WITH EXCELSIOR MATTING AND POLYACRYLAMIDE (PAM)



PLAN

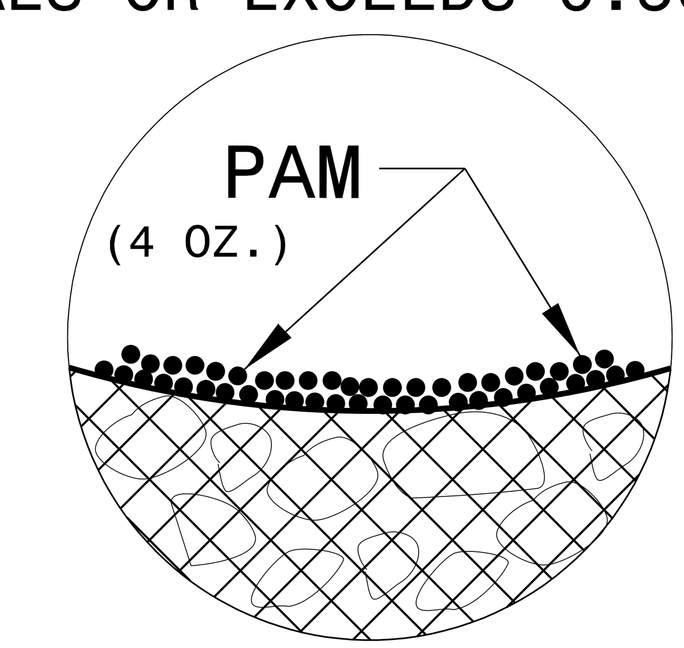
NOTES:

INSTALL TEMPORARY ROCK SILT CHECK TYPE A IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1633.01.

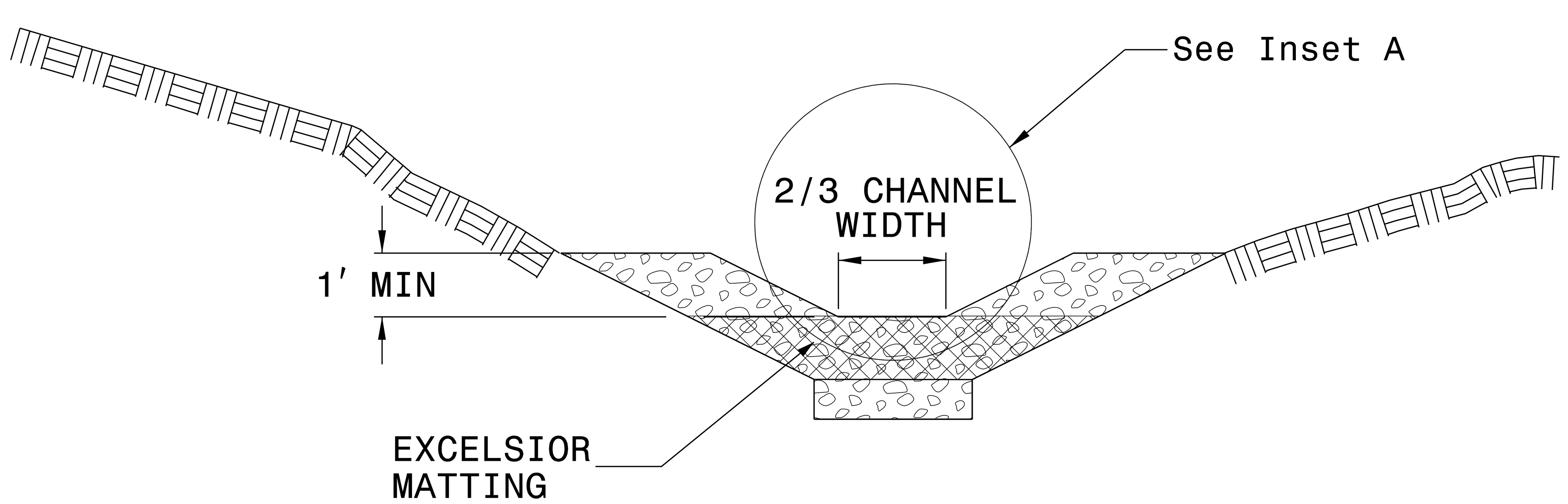
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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

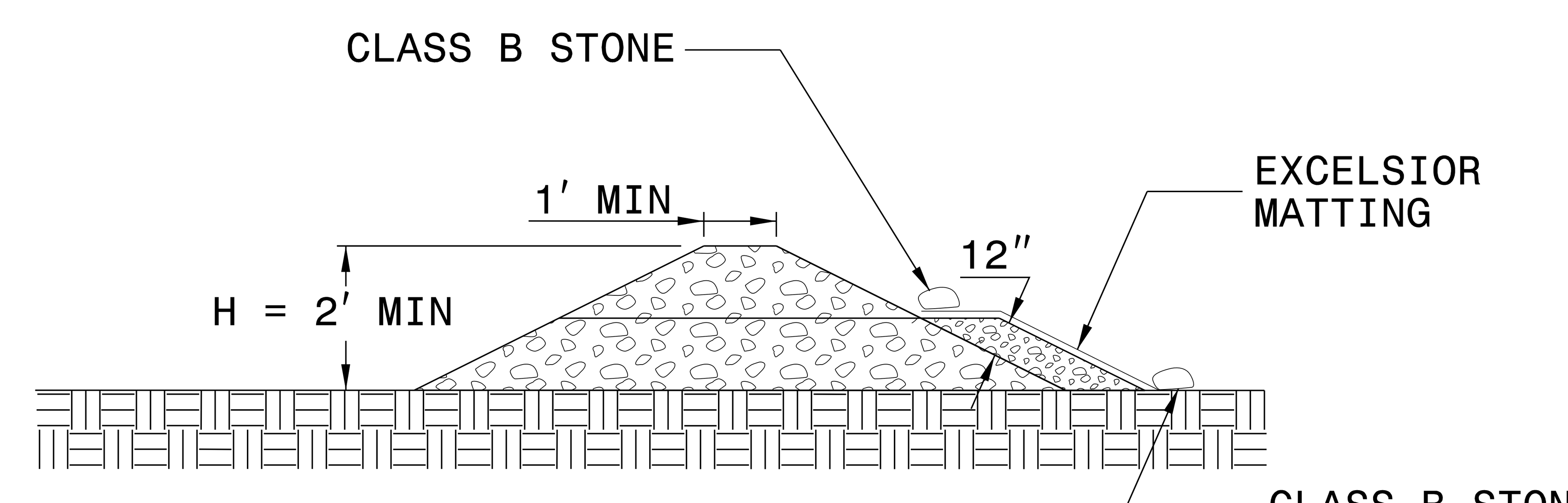
INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION A-A



SECTION B-B

NOT TO SCALE

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

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

04-DEC-2017 10:12
R:\Environmental\Design\Plan Sheets\R-5207C_EC_Details.dgn
$$$$USERNAME$$$$

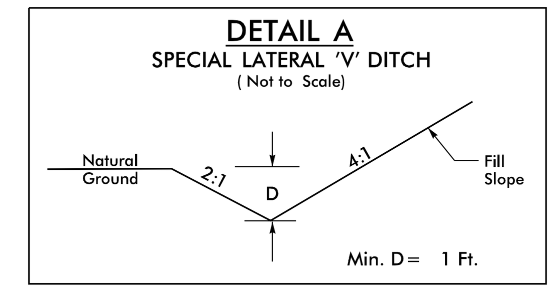
RS&H

NAD 83/95

DETAIL A

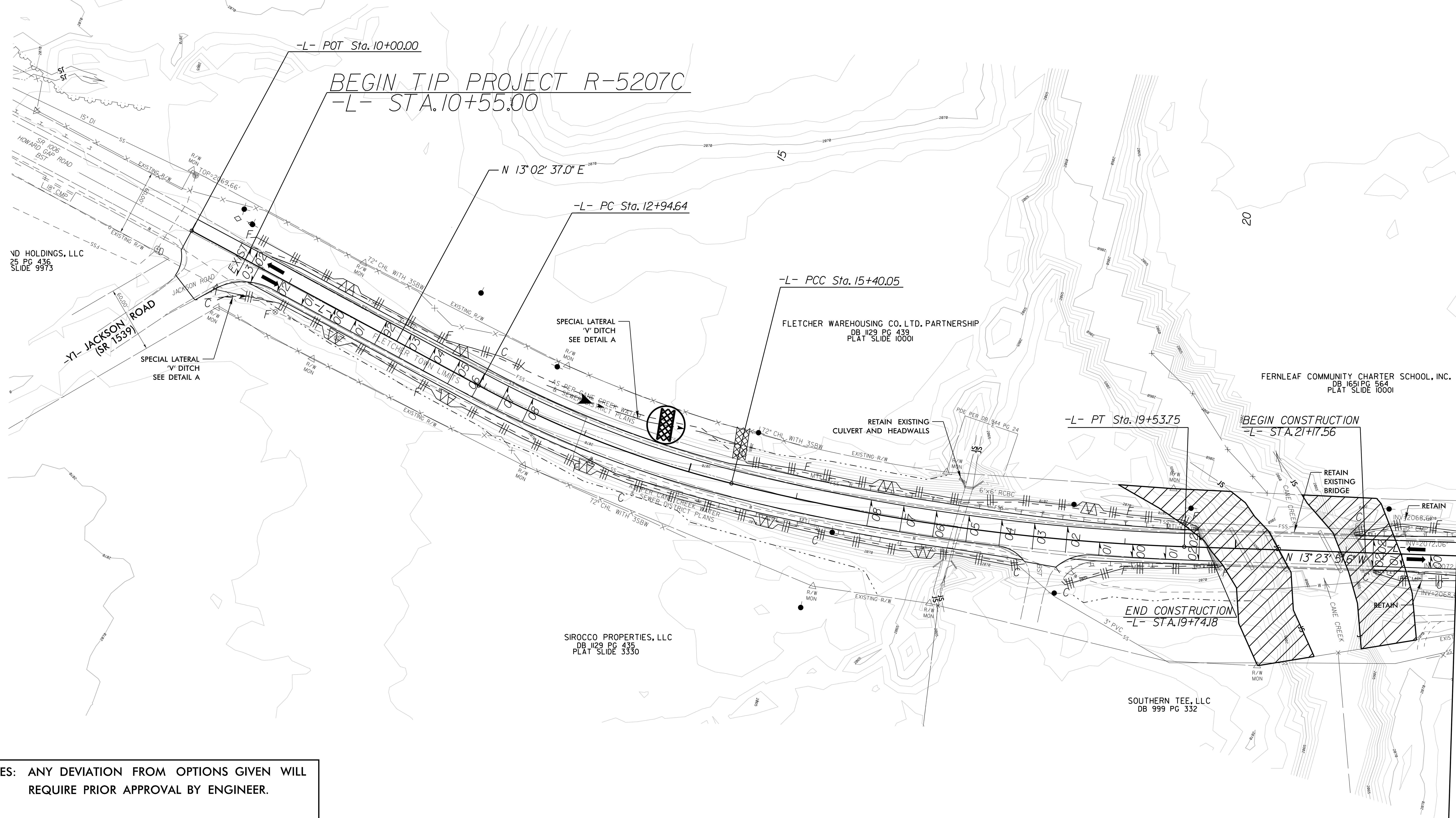
SPECIAL LATERAL 'V' DITCH

(Not to Scale)



FROM STA. 13+50 TO STA. 15+50 LT

FROM STA. 10+50 TO STA. 10+75 RT



NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

ENVIRONMENTALLY SENSITIVE AREA SEE PROJECT SPECIAL PROVISIONS

NOTE: EXCELSIOR OR OTHER MESH TYPE NETTING IS NOT ALLOWED IN OR ON STREAM BANKS

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

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 4

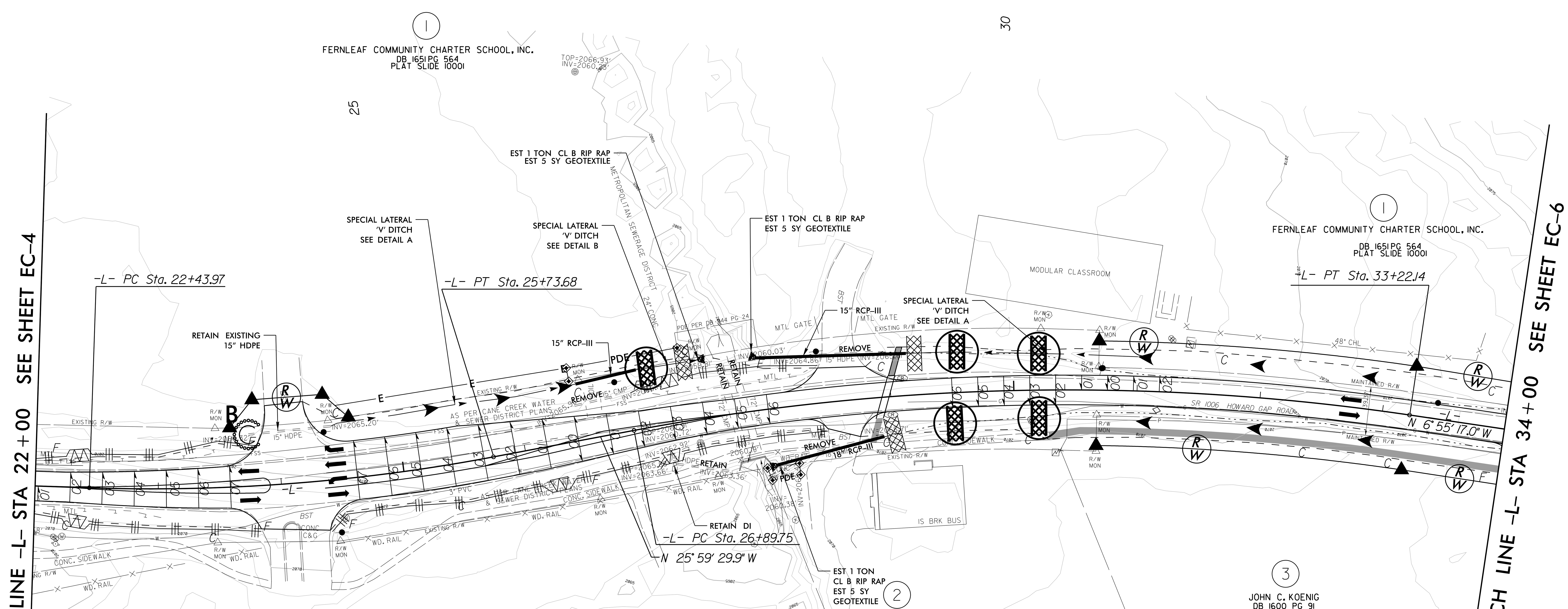
REVISIONS

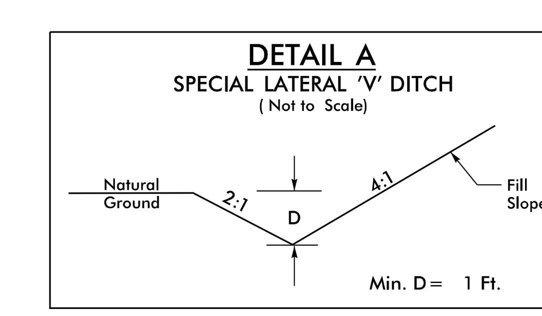
8/17/99

04-JAN-2018 09:20
R:\Environmental\Design\Plan Sheets\R5207C_EC_psh_4.dgn
$$$$USERNAME$$$$

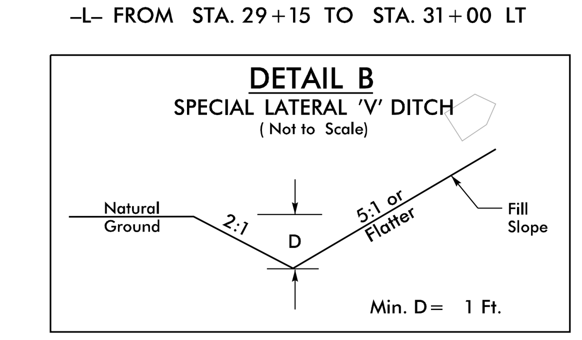
PROJECT REFERENCE NO.	SHEET NO.
R-5207C	EC-5/CONST.5
R/W SHEET NO.	

RS&H





-L- FROM STA. 24+45 TO STA. 26+50 LT
-L- FROM STA. 29+15 TO STA. 31+00 LT



-L- FROM STA. 27+00 TO STA. 27+53 LT

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

NOTE: EXCELSIOR OR OTHER MESH TYPE NETTING IS NOT ALLOWED IN OR ON STREAM BANKS

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

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 5

REVISIONS

8/17/99

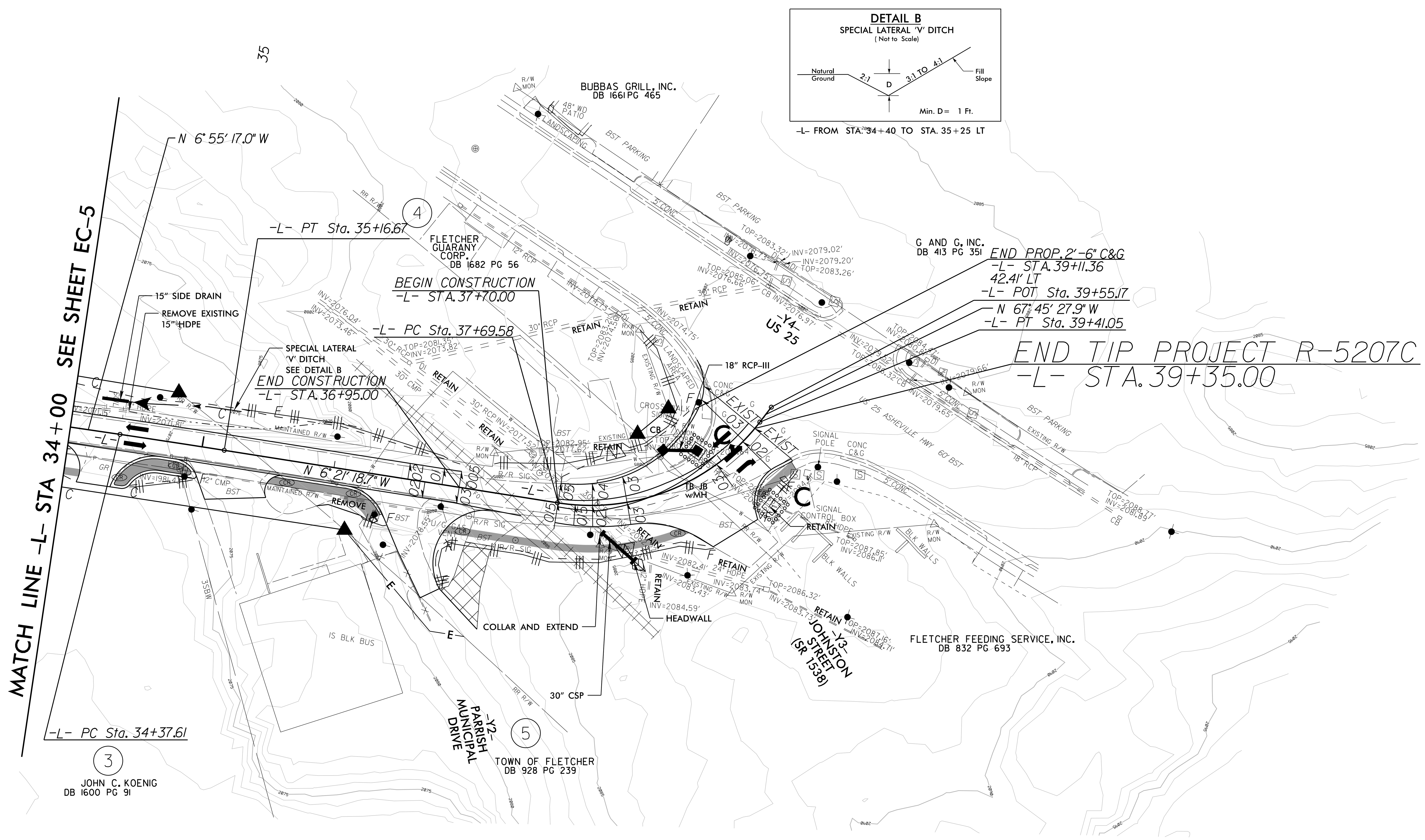
04-JAN-2018 09:26
R:\Environmental\Design\Plan Sheets\R5207C_EC_psh_5.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-5207C	EC-6/CONST.6
R/W SHEET NO.	

NAD 83/95

RS&H

REVISIONS



NOTE:
EXCELSIOR OR OTHER MESH TYPE NETTING IS NOT ALLOWED IN OR ON STREAM BANKS

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

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 6

8/17/99

04-JAN-2018 09:29
R:\Environmental\Design\Plan Sheets\R5207C_EC_psh_6.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-5207C	EC-7/CONST.4
R/W SHEET NO.	

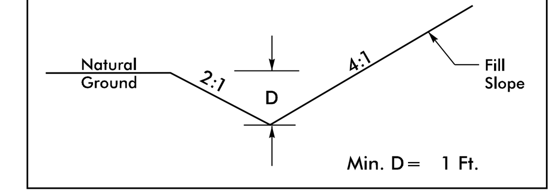
RS&H

NAD 83/95

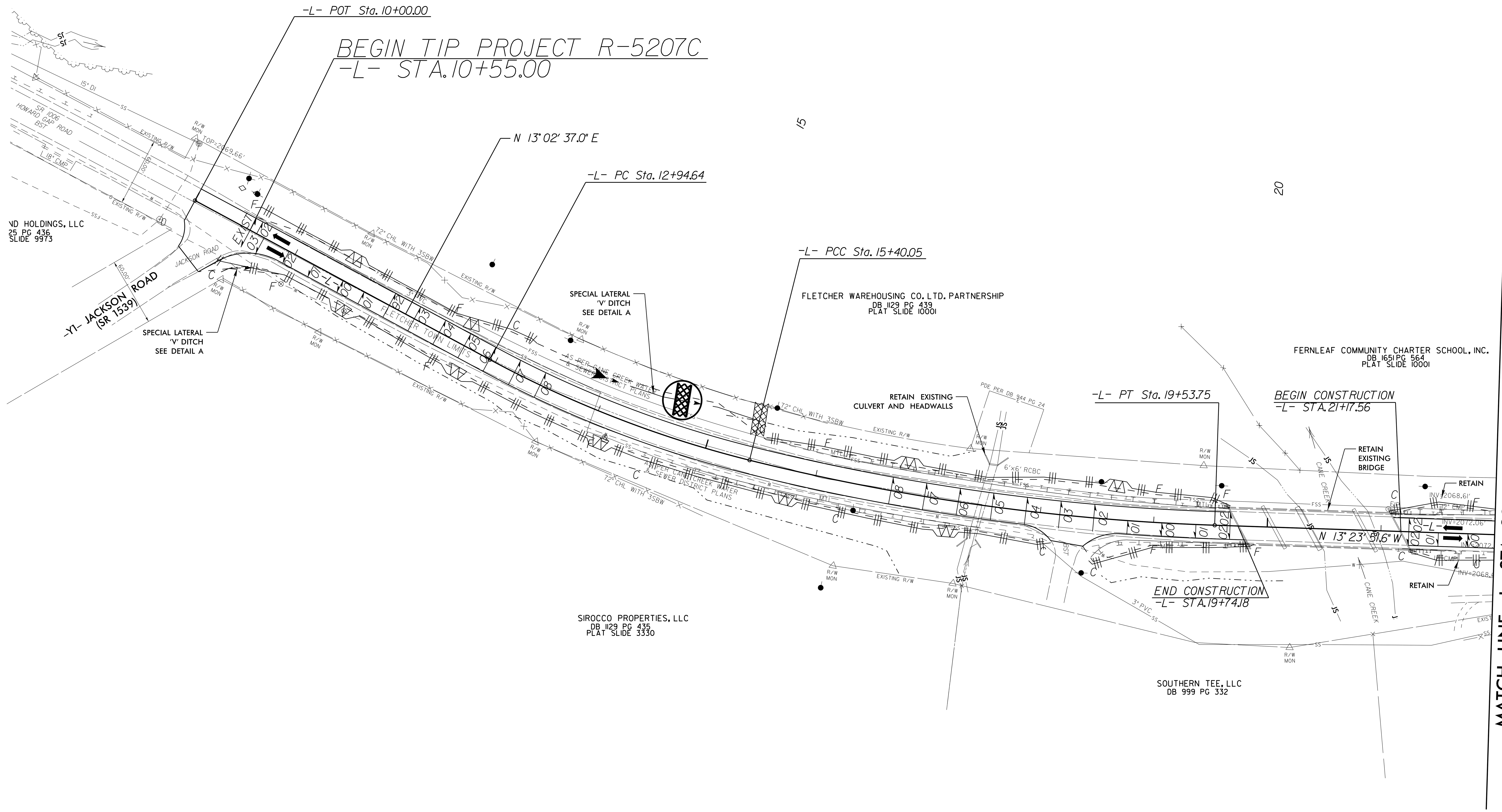
DETAIL A

SPECIAL LATERAL 'V' DITCH

(Not to Scale)



FROM STA. 13+50 TO STA. 15+50 LT
FROM STA. 10+50 TO STA. 10+75 RT



NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

NOTE:
EXCELSIOR OR OTHER MESH TYPE NETTING IS NOT ALLOWED IN OR ON STREAM BANKS

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

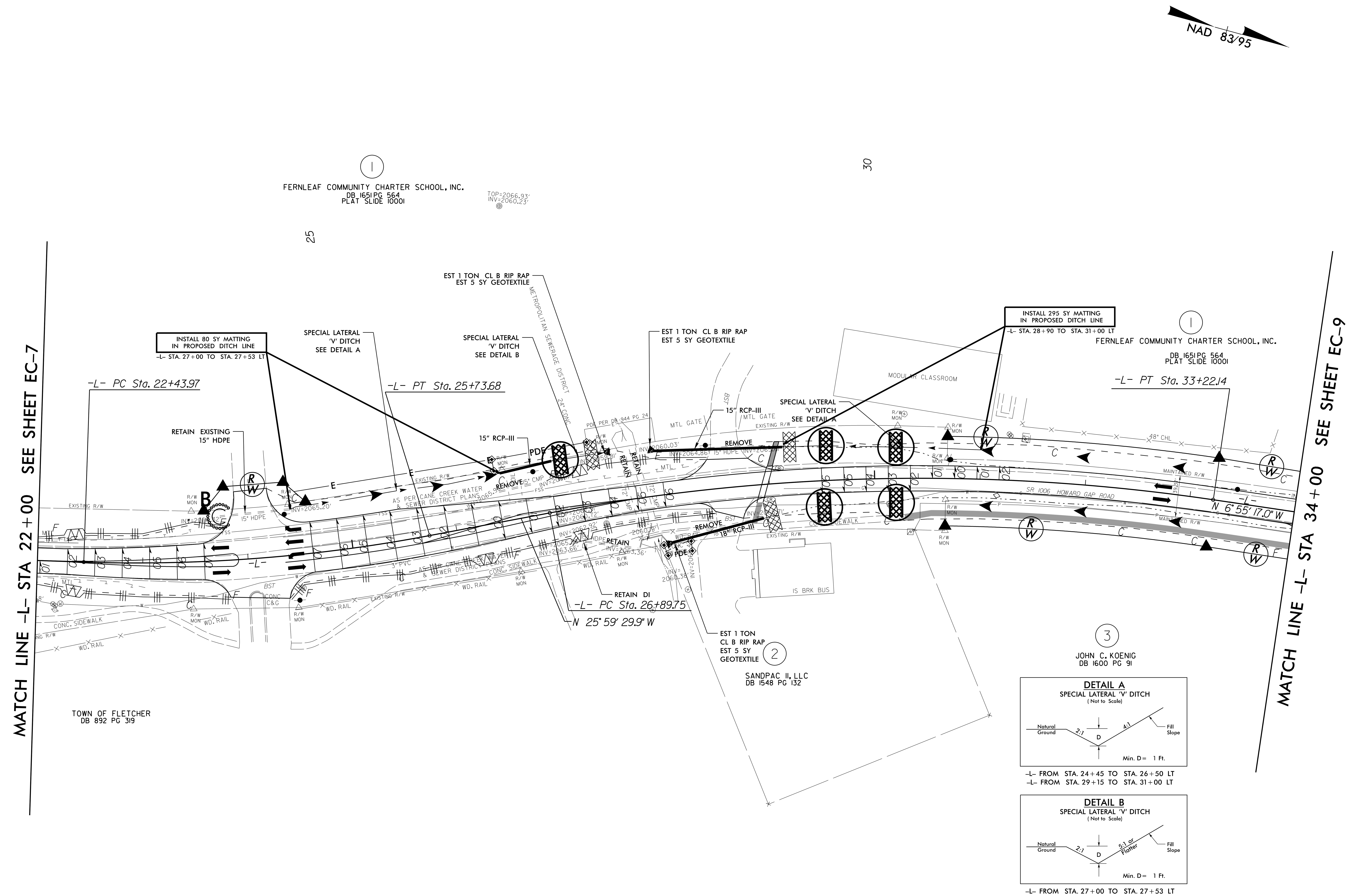
REVISIONS

8/17/99

04-JAN-2018 09:34
R:\Environmental\Design\Plan Sheets\R5207C_EC_psh_7.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-5207C	EC-8/CONST.5
R/W SHEET NO.	

RS&H



NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

NOTE: EXCELSIOR OR OTHER MESH TYPE NETTING IS NOT ALLOWED IN OR ON STREAM BANKS

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

REVISIONS

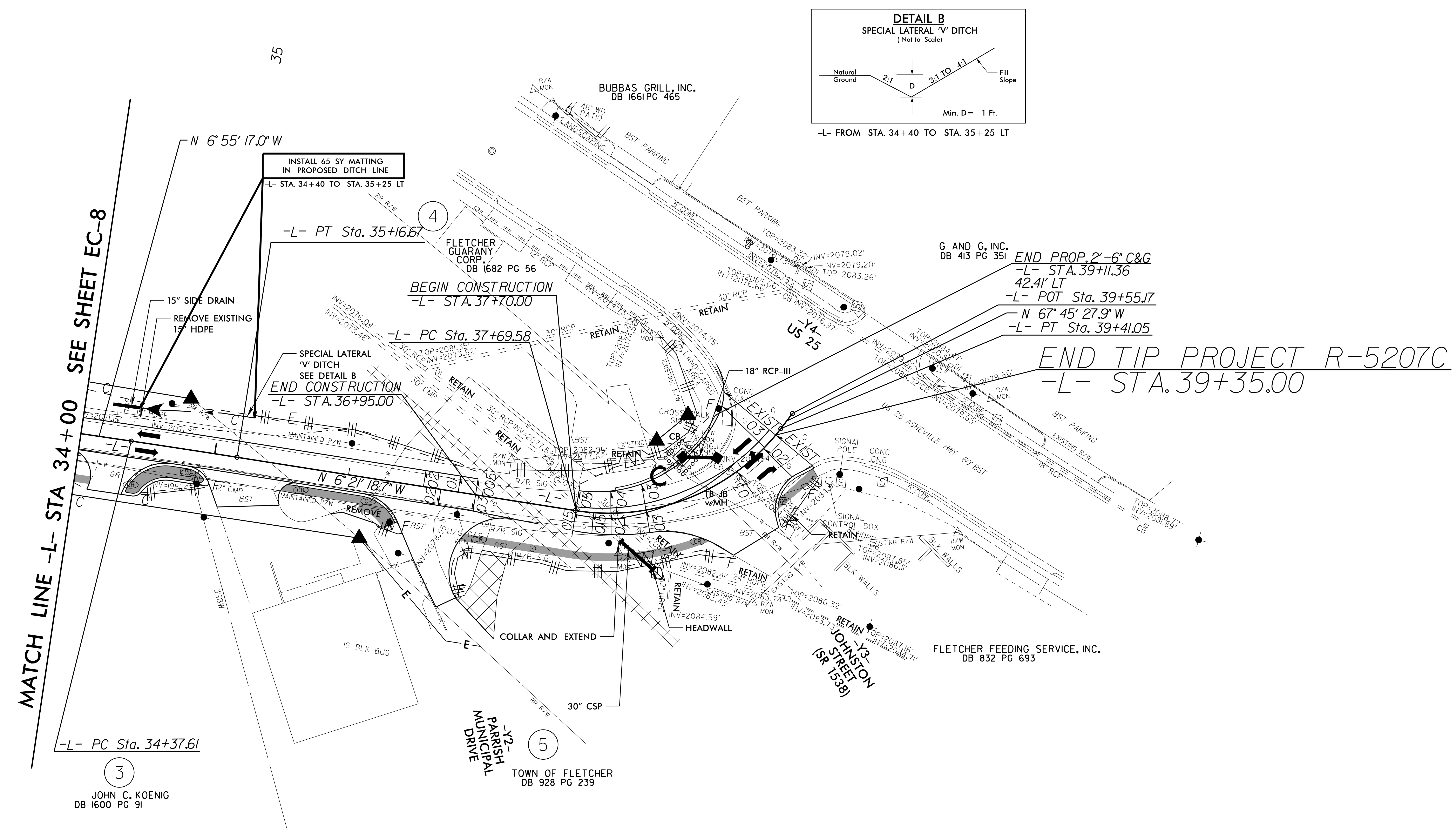
8/17/99

04-JAN-2018 09:35
R:\Environmental\Design\Plan Sheets\R5207C_EC_psh_8.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-5207C	EC-9/CONST.6
R/W SHEET NO.	

NAD 83/95

RS&H



NOTE:
EXCELSIOR OR OTHER MESH TYPE NETTING IS NOT ALLOWED IN OR ON STREAM BANKS

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

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

REVISIONS

8/17/99

04-JAN-2018 09:36
R:\Environmental\Design\Plan Sheets\R5207C_EC_psh_9.dgn
$$$$USERNAME$$$$

T.I.P.: R-5207C

CONTRACT: DN00563

TIP NO.	SHEET NO.
R-5207C	SIGN- 1

APPROVED: Annie C. Pilz
DATE: 1/19/2018

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 038700 ENGINEER ANNIE C. PILZ

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

SIGNING PLAN
HENDERSON COUNTY

LOCATION: SR 1006 HOWARD GAP RD FROM SR 1539 (JACKSON RD.) TO US 25

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
901.70	SIGN STRINGERS AND SUPPORT SPACING
903.10	GROUND MOUNTED SIGN SUPPORTS
904.10	ORIENTATION OF GROUND MOUNTED SIGNS
904.50	MOUNTING OF TYPE 'D', 'E' AND 'F' SIGNS ON 'U' CHANNEL POSTS

INDEX

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
- ALL EXISTING SIGNS ON "U" CHANNEL POST WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND DISPOSED OF UNLESS OTHERWISE NOTED ON PLANS.
- THE BACKGROUND FOR TYPE E & F SIGNS SHALL BE TYPE C REFLECTIVE SHEETING.
- SEE ROADWAY PLANS FOR GUARD/GUIDE RAIL DETAILS.

SUMMARY OF QUANTITIES

ITEM NO.		ITEM DESCRIPTION	QUANTITY	UNIT
DESC. NO.	SECT. NO.			
4072000000	903	SUPPORTS, 3 LB STEEL U-CHANNEL	380	LF
4096000000	904	SIGN ERECTION, TYPE D	1	EA
4102000000	904	SIGN ERECTION, TYPE E	23	EA
4108000000	904	SIGN ERECTION, TYPE F	2	EA
4155000000	907	DISPOSAL OF SIGN SYSTEM, U-CHANNEL	22	EA

PLAN SUBMITTED TO: NCDOT DIVISION 14

WANDA H. AUSTIN, PE — DIV 14 PROJECT TEAM LEAD

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PLAN PREPARED BY: RS&H

ANNIE C. PILZ, PE — PROJECT ENGINEER

MAILE KAWAHAKUI, EI — PROJECT DESIGN ENGINEER

RS&H

1/19/2018
X:\P\1030049012_R-5207C_Howard Gap Road\Design\Traffic\Signing\CADD\Signing Layout Plans\R5207C_sgn_title.dgn
User:pilza

TIP NO.	SHEET NO.
R-5207C	SIGN-2

APPROVED: Annie C. Pilz
DATE: 1/19/2018
SEAL
NORTH CAROLINA PROFESSIONAL SEAL 038700 ENGINEER ANNIE C. PILZ

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TIP NO.	SHEET NO.

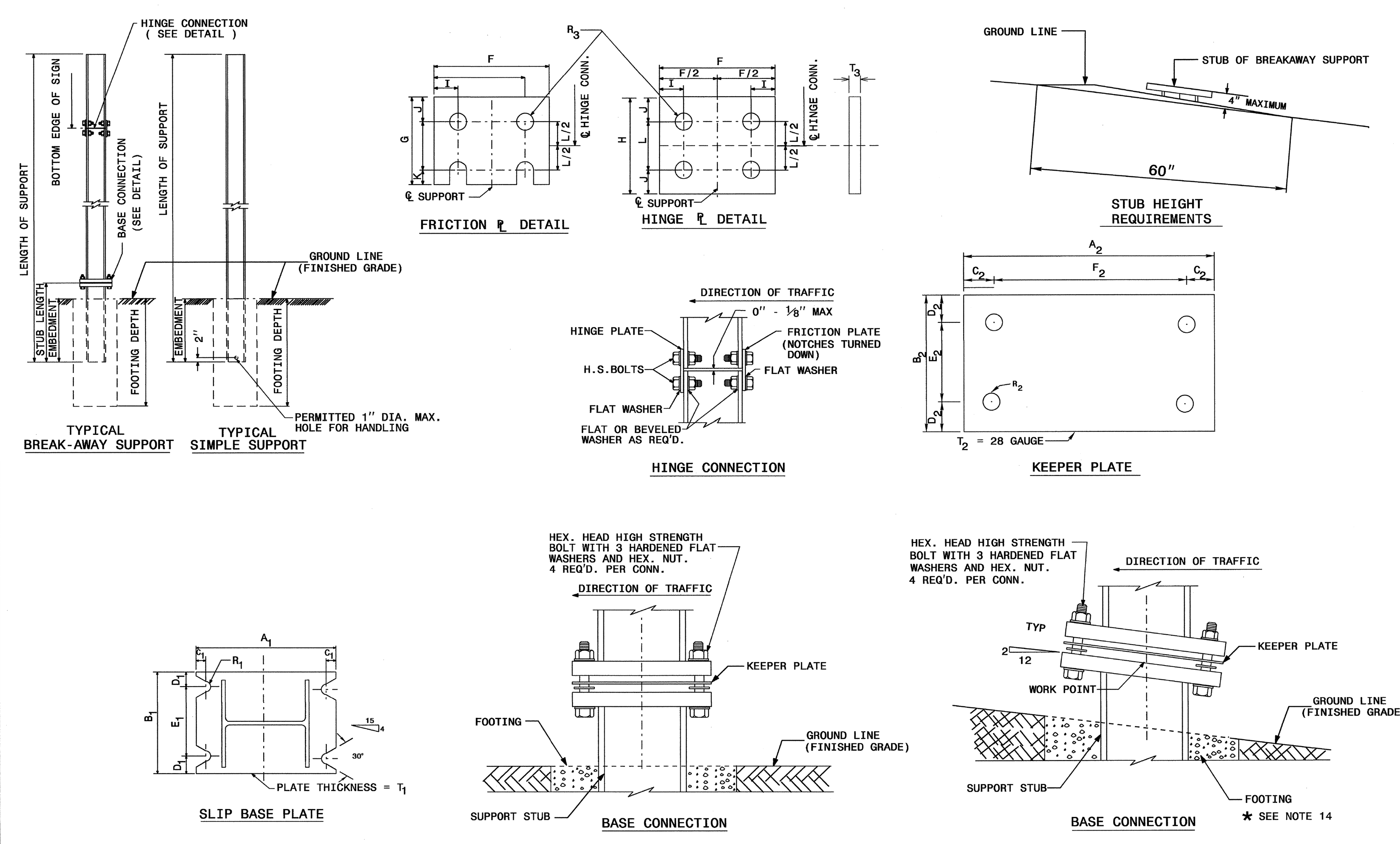
APPROVED: [signature]
DATE: 7/26/13
SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022959 ENGINEER RONALD W. KING

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

1-12

ENGLISH STANDARD DRAWING FOR
GROUND MOUNTED SIGN SUPPORTS

SHEET 1 OF 3
903D10



SEE SHEET 2 OF 3 FOR BASE CONNECTION DATA HINGE CONNECTION DATA & FOUNDATION DATA. SEE SHEET 3 OF 3 FOR GENERAL NOTES.

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

1-12

ENGLISH STANDARD DRAWING FOR
GROUND MOUNTED SIGN SUPPORTS

SHEET 1 OF 3
903D10

REVISED SIGNING
ROADWAY STANDARD DRAWING

RS&H

SIGN SUPPORTS

TIP NO.	SHEET NO.
R-5207C	SIGN-3

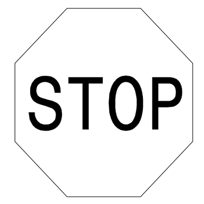
APPROVED: Annie C. Pilz
DATE: 1/19/2018
SEAL

NORTH CAROLINA PROFESSIONAL SEAL 038700 ENGINEER ANNIE C. PILZ

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TYPE "E" SIGNS

401 QUANTITY REQ'D 6



36 X 36
R1-1

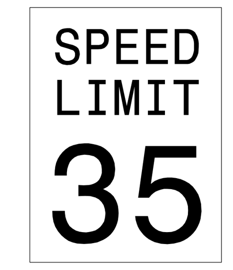
TWO "U" POST PER SIGN

402 QUANTITY REQ'D 1

36 X 36
W3-5

TWO "U" POSTS PER SIGN

403 QUANTITY REQ'D 1



24 X 30
R2-1

ONE "U" POSTS PER SIGN

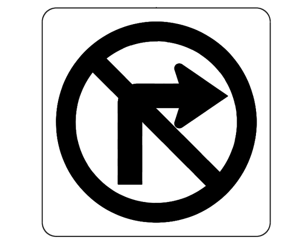
404 QUANTITY REQ'D 2

36 X 36
S1-1

YELLOW/GREEN REFLECTIVE SHEETING

ONE "U" POSTS PER SIGN

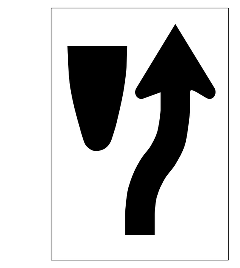
405 QUANTITY REQ'D 1



24 X 24
R3-1

ONE "U" POST PER SIGN

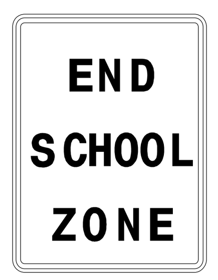
406 QUANTITY REQ'D 1



R4-7
24 X 30

ONE "U" POST PER SIGN

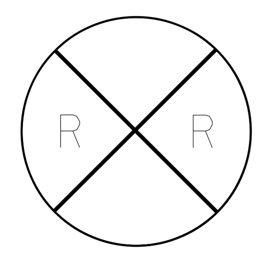
407 QUANTITY REQ'D 2



24 X 30
S5-2

ONE "U" POSTS PER SIGN

408 QUANTITY REQ'D 2



36 Dia.
W10-1

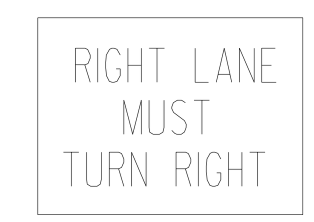
ONE "U" POST PER SIGN

409 QUANTITY REQ'D 1

24 X 30
R8-8

TWO "U" POSTS PER SIGN

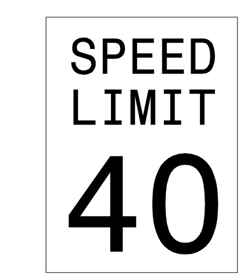
410 QUANTITY REQ'D 1



30 X 30
R3-7

TWO "U" POST PER SIGN

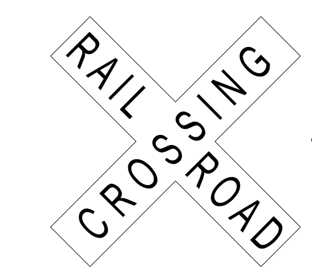
411 QUANTITY REQ'D 1



24 X 30
R2-1

ONE "U" POSTS PER SIGN

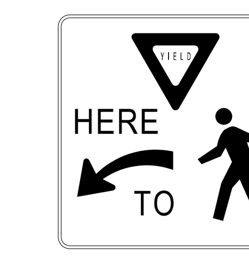
412 QUANTITY REQ'D 2



48 X 9
R15-1

ONE "U" POSTS PER SIGN

413 QUANTITY REQ'D 2



36 X 36
R1-5R

TWO "U" POSTS PER SIGN

414 QUANTITY REQ'D 2

12 X 18
R7-1

ONE "U" POSTS PER SIGN

1/9/2018
X:\P\0300049012_R-5207C_Howard Gap Road\Design\Traffic\Signing\CADD\Signing Layout Plans\R5207C_sgn_esign.dgn
User:pilz

TIP NO.	SHEET NO.
R-5207C	SIGN-3A

APPROVED: Annie C. Pilz

DATE: 1/19/2018

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 038700 ENGINEER ANNIE C. PILZ

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

QUANTITY REQ'D 1

501

24 X 12
M3-1

502

24 X 24
M1-4

TWO "U" POSTS PER SIGN

TYPE "F" SIGNS

1/19/2018
X:\P\030049012_R-5207C_Howard Gap Road\Design\Traffic\Signing\CADD\Signing Layout Plans\R5207C_sgn_Fsign.dgn
User:pilz

TIP NO.	SHEET NO.
R-5207C	SIGN-4

APPROVED: DocuSigned by: Annie C. Pilz 82FB9C0DEB3D48E

DATE: 1/19/2018

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 038700 ENGINEER ANNIE C. PILZ

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SIGN NUMBER: 301
TYPE: D
QUANTITY: 1

BACKG COLOR: Green
COPY COLOR: White

SYMBOL	X	Y	WID	HT

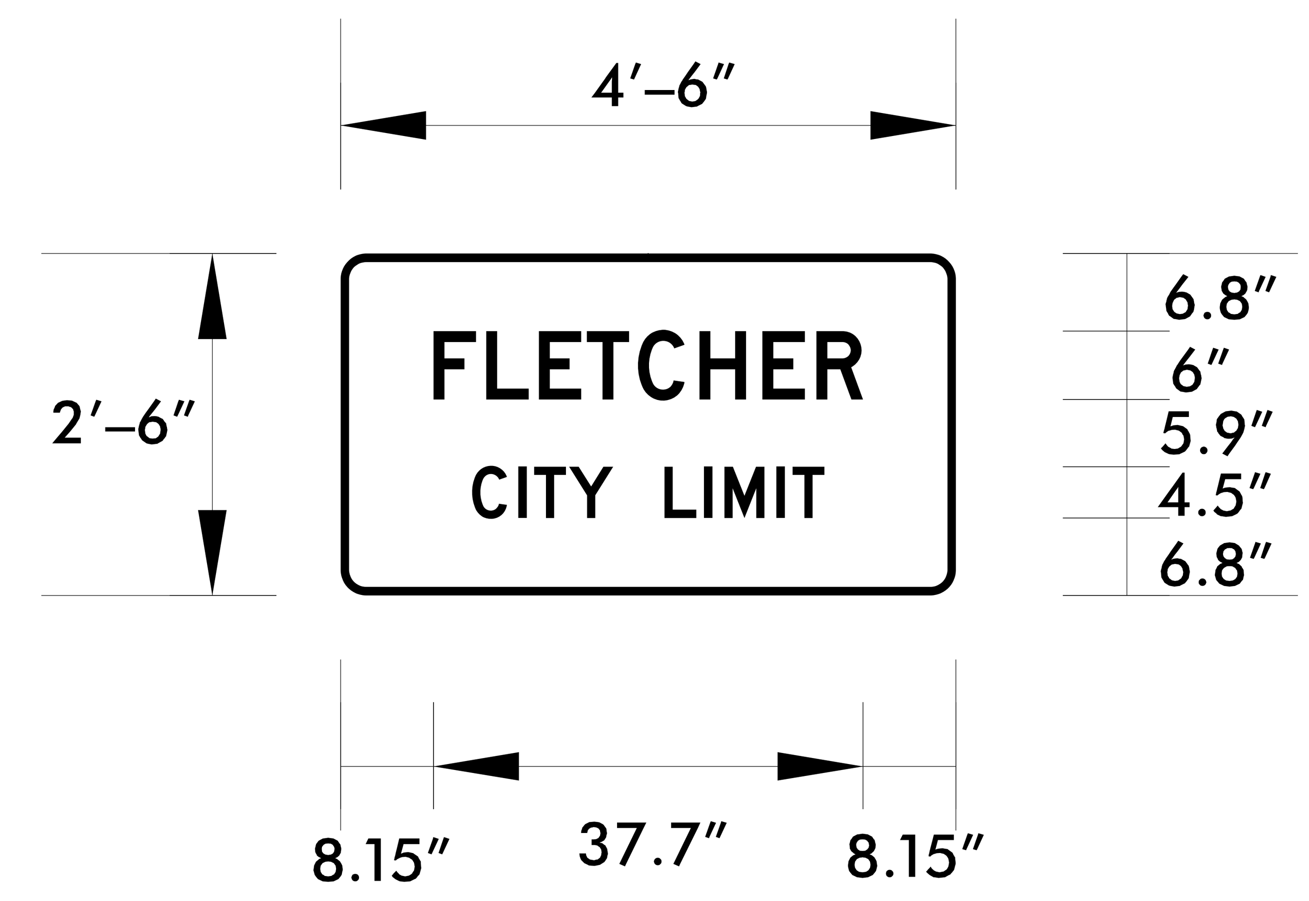
SIGN WIDTH: 4′-6″
HEIGHT: 2′-6″
TOTAL AREA: 11.3 Sq.Ft.

BORDER TYPE: FLUSH
RECESS: 0″
WIDTH: 0.75″
RADII: 2.25″

NO. Z BARS:
LENGTH:

MAT'L: 0.125″ (3.2 mm) ALUMINUM

DESIGN BY: ACP
PROJECT ID: R-5207C
CHECKED BY:
LOCATION: HENDERSON CO.
Oct 20, 2017
DIV: 14



BORDER
R = 2.25″
TH = 0.75″

USE NOTES:

1. Legend and border(except those that are colored black) shall be direct applied Grade B sheeting.
2. Background shall be Grade C reflective sheeting.

Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter

																												Series/Size Text Length
		F	L	E	T	C	H	E	R																			D 2000
	8.2	4.6	4.6	4.2	4.5	5.4	5.5	4.7	4.1	8.2																		37.7
		C	I	T	Y		L	I	M	I	T																	D 2000
	11.5	4	1.4	3.1	3.9	4.5	3.5	1.8	4.6	1.4	2.8	11.5																30.9

FILENAME: R5207C_sgn_exist_guidesign

NORTH CAROLINA D.O.T. SIGN DETAIL

1/9/2018 X:\P\1080049012.R-5207C.Howard Gap Road\Design\Traffic\Signing\CADD\Sign Designs\R5207C_sgn_design_4.dgn User:pilz

SIGN DESIGN

TIP NO.	SHEET NO.
R-5207C	SIGN-5

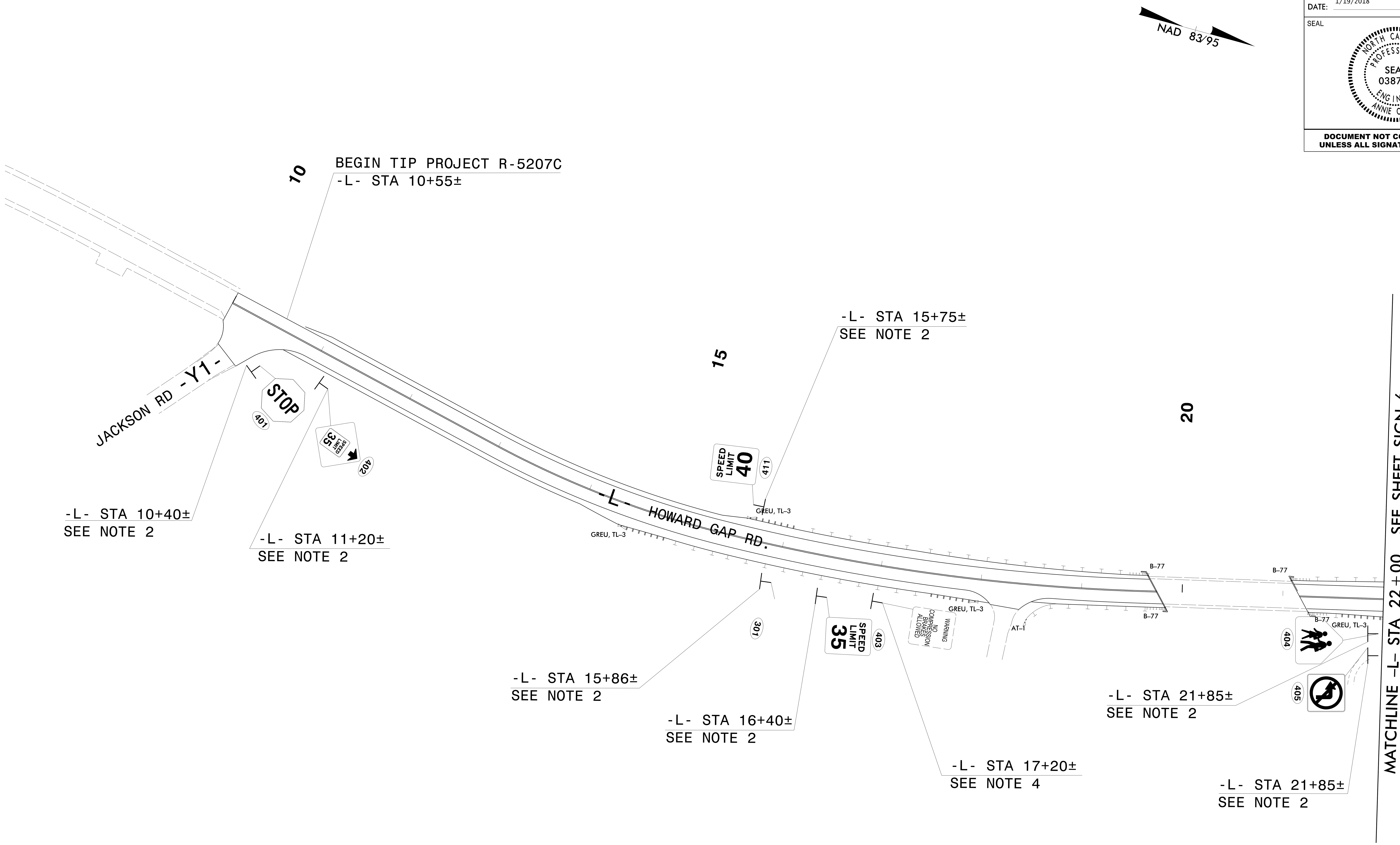
APPROVED: Annie C. Pilz

DATE: 1/19/2018

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 038700 ENGINEER ANNIE C. PILZ

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



PROJECT NOTES

1. DISPOSAL OF SIGN SYSTEM, U-CHANNEL
2. SIGN ERECTION, TYPE D, E, AND F
3. STOCKPILE SIGN SYSTEM, U-CHANNEL
4. SIGN ERECTION, RELOCATE SIGN TYPE D

RS&H

PROPOSED SIGNS

TIP NO.	SHEET NO.
R-5207C	SIGN-6

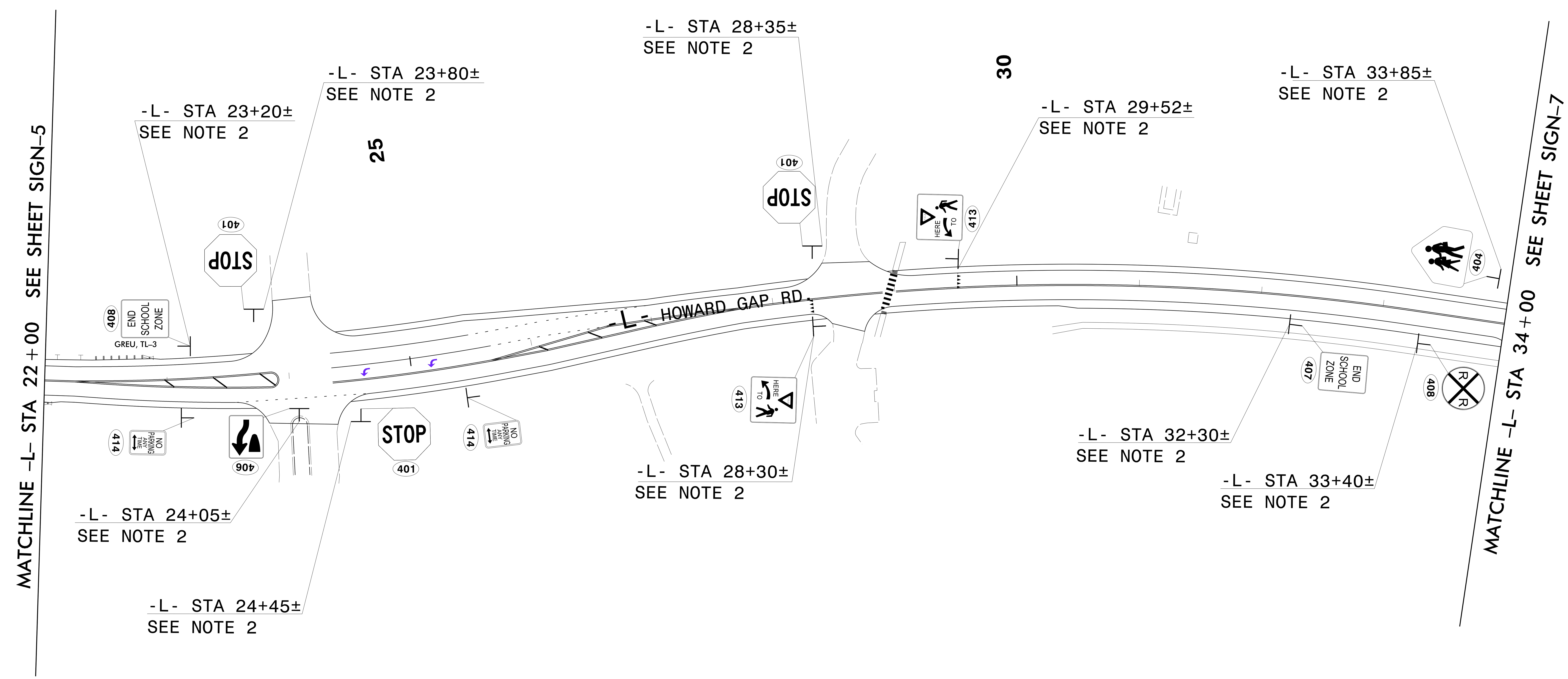
APPROVED: DocuSigned by: Annie C. Pilz 82F89C0DEB3D48E

DATE: 1/19/2018

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 038700 ENGINEER ANNIE C. PILZ

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



PROJECT NOTES

1 DISPOSAL OF SIGN SYSTEM, U-CHANNEL
2 SIGN ERECTION, TYPE D, E, AND F
3 STOCKPILE SIGN SYSTEM, U-CHANNEL
4 SIGN ERECTION, RELOCATE SIGN TYPE D

RS&H

PROPOSED SIGNS

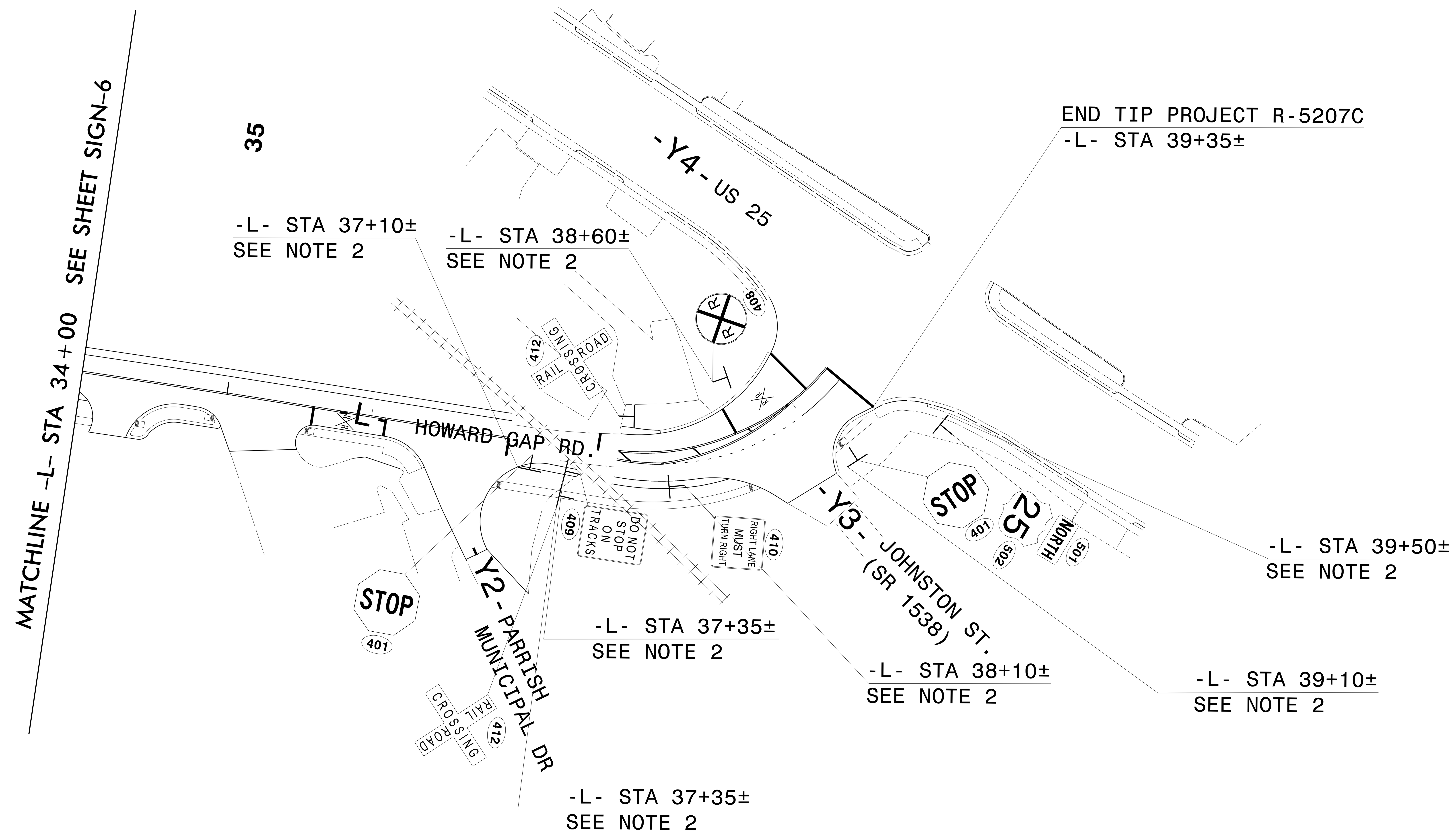
TIP NO.	SHEET NO.
R-5207C	SIGN-7

APPROVED: Annie C. Pilz
DATE: 1/19/2018

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 038700 ENGINEER ANNIE C. PILZ

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/95



1/9/2018 X:\P\0030049012.R-5207C.Howard Gap Road\Design\Traffic\Signing\CADD\Signing Layout Plans\R5207C_sgn_prop_03.dgn User:pilz

PROJECT NOTES

1 DISPOSAL OF SIGN SYSTEM, U-CHANNEL
2 SIGN ERECTION, TYPE D, E, AND F
3 STOCKPILE SIGN SYSTEM, U-CHANNEL
4 SIGN ERECTION, RELOCATE SIGN TYPE D

RS&H

PROPOSED SIGNS

TIP NO.	SHEET NO.
R-5207C	SIGN-8

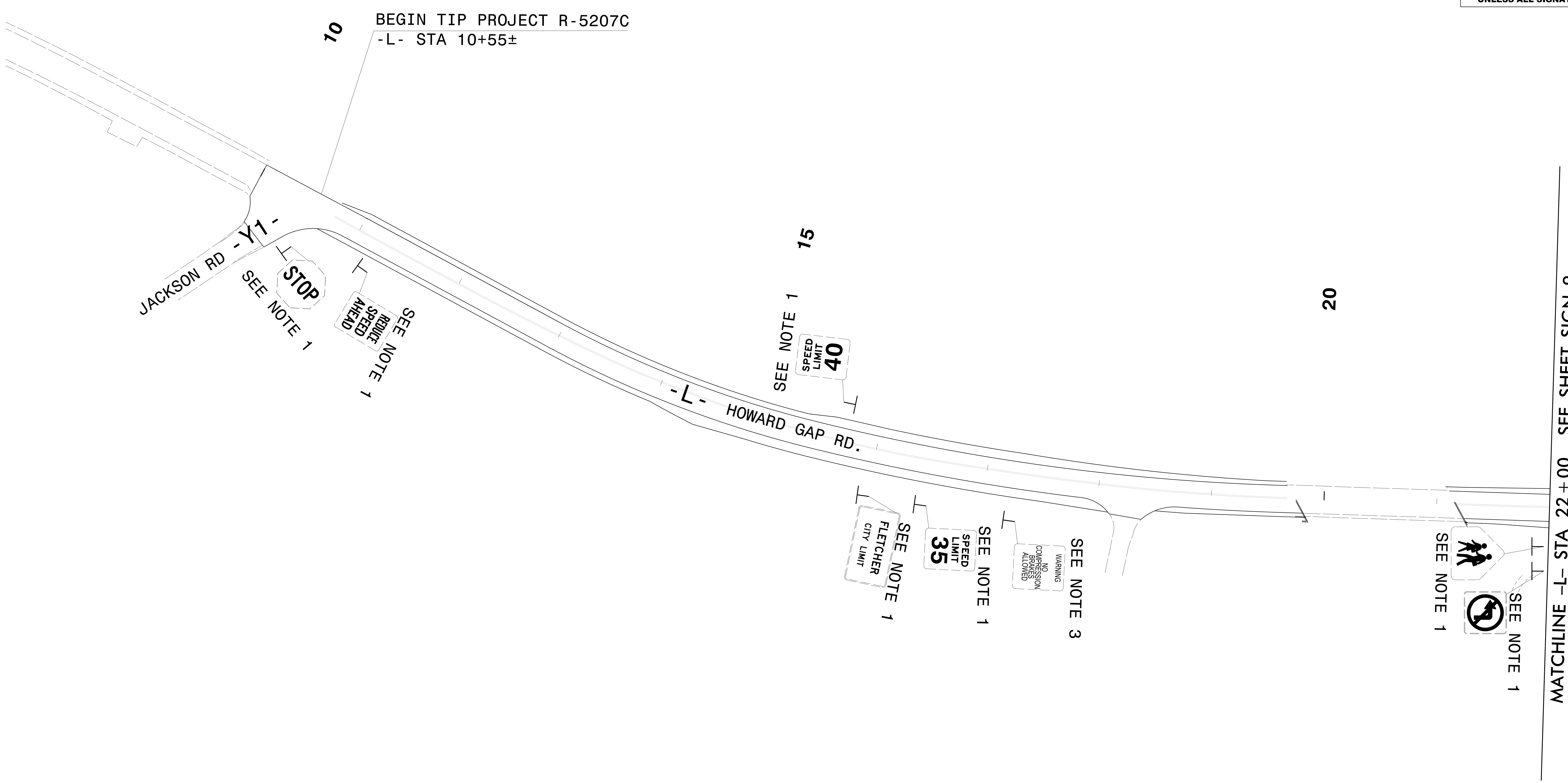
APPROVED: Annie C. Pilz

DATE: 1/19/2018

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 038700 ENGINEER ANNIE C. PILZ

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



PROJECT NOTES

1. DISPOSAL OF SIGN SYSTEM, U-CHANNEL
2. SIGN ERECTION, TYPE D, E, AND F
3. STOCKPILE SIGN SYSTEM, U-CHANNEL
4. SIGN ERECTION, RELOCATE SIGN TYPE D

RS&H

EXISTING SIGNS

TIP NO.	SHEET NO.
R-5207C	SIGN-9

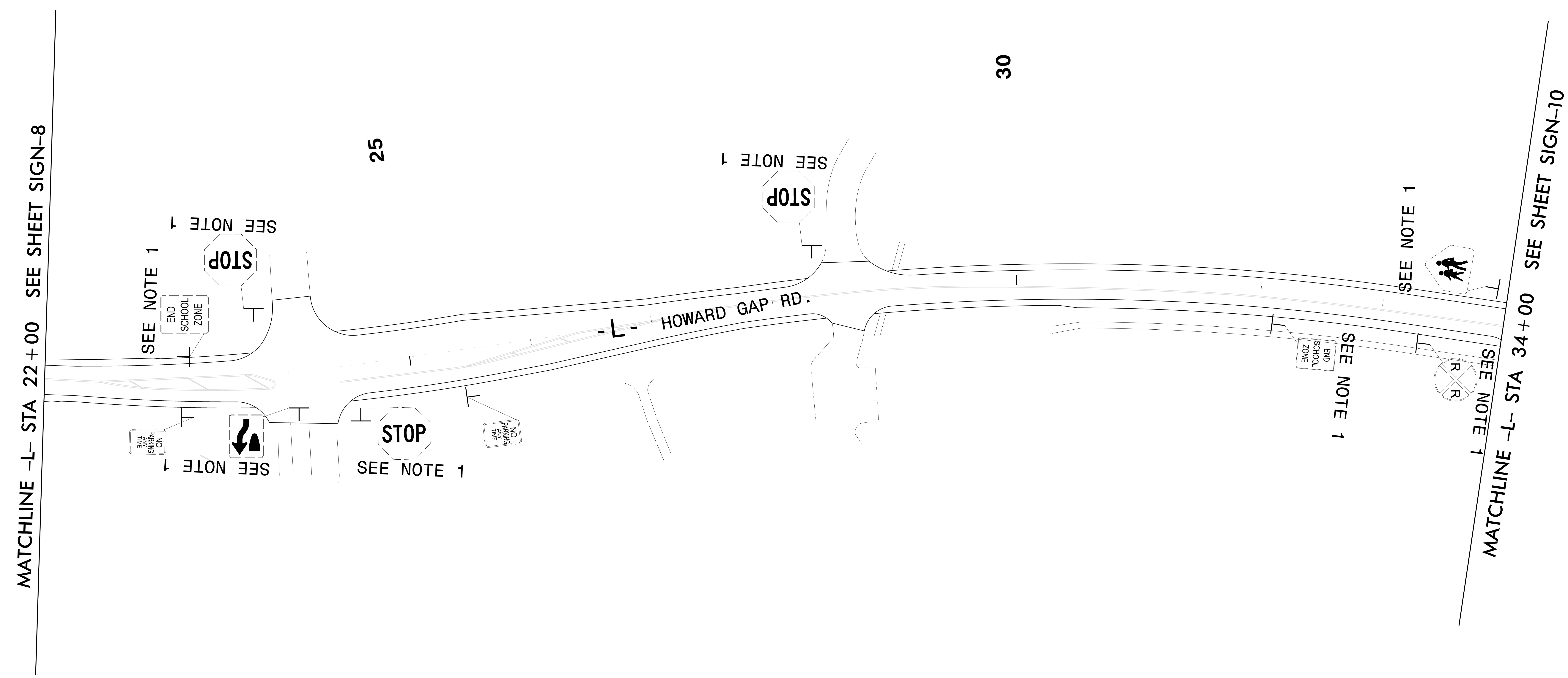
APPROVED: Annie C. Pilz

DATE: 1/19/2018

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 038700 ENGINEER ANNIE C. PILZ

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



PROJECT NOTES

1 DISPOSAL OF SIGN SYSTEM, U-CHANNEL
2 SIGN ERECTION, TYPE D, E, AND F
3 STOCKPILE SIGN SYSTEM, U-CHANNEL
4 SIGN ERECTION, RELOCATE SIGN TYPE D

RS&H

EXISTING SIGNS

TIP NO.	SHEET NO.
R-5207C	SIGN-10

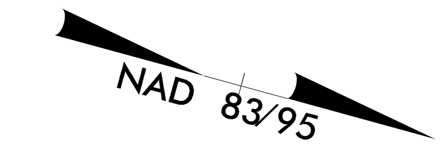
APPROVED: Annie C. Pilz

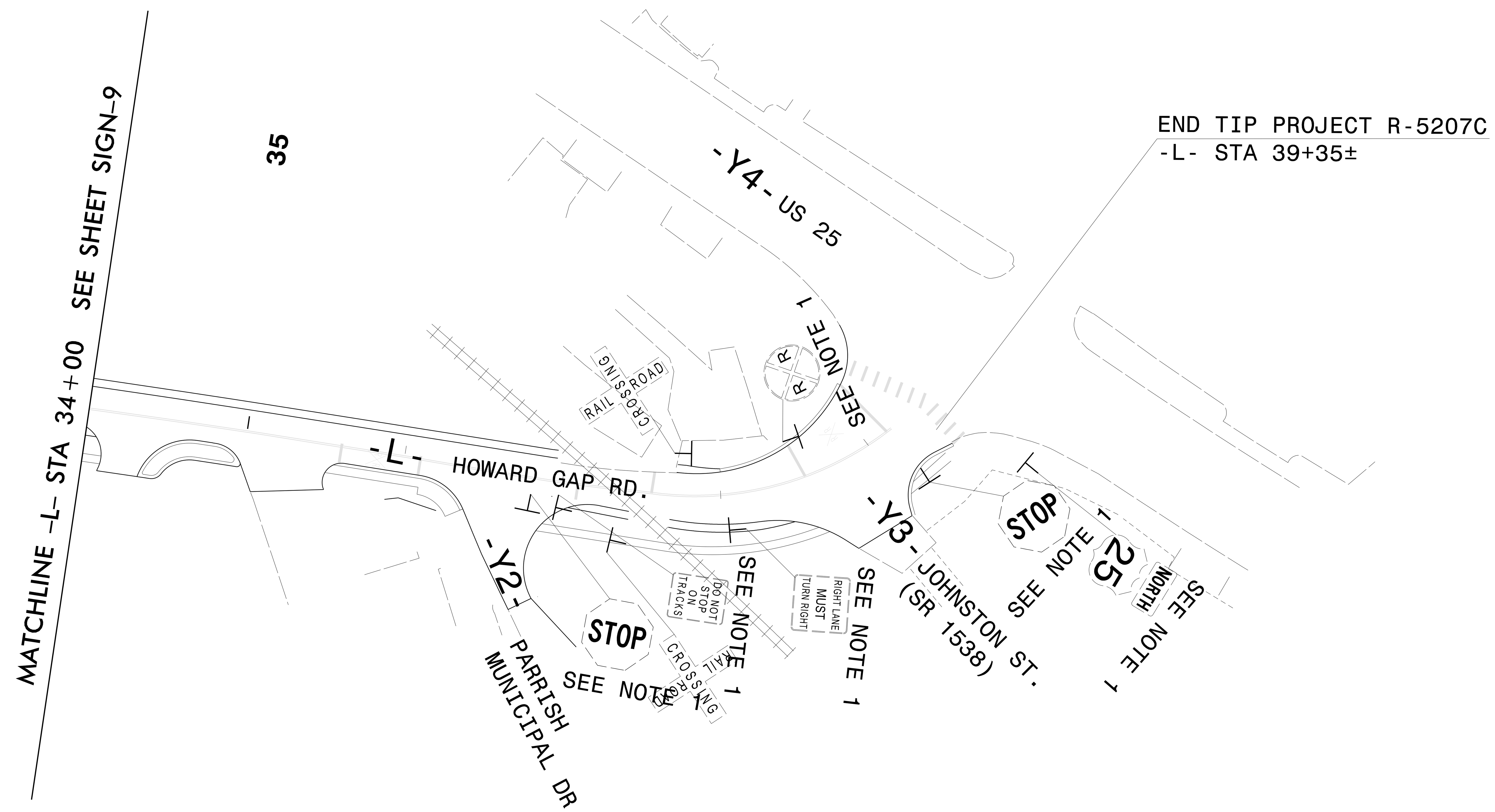
DATE: 1/19/2018

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 038700 ENGINEER ANNIE C. PILZ

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED





PROJECT NOTES

1 DISPOSAL OF SIGN SYSTEM, U-CHANNEL
2 SIGN ERECTION, TYPE D, E, AND F
3 STOCKPILE SIGN SYSTEM, U-CHANNEL
4 SIGN ERECTION, RELOCATE SIGN TYPE D

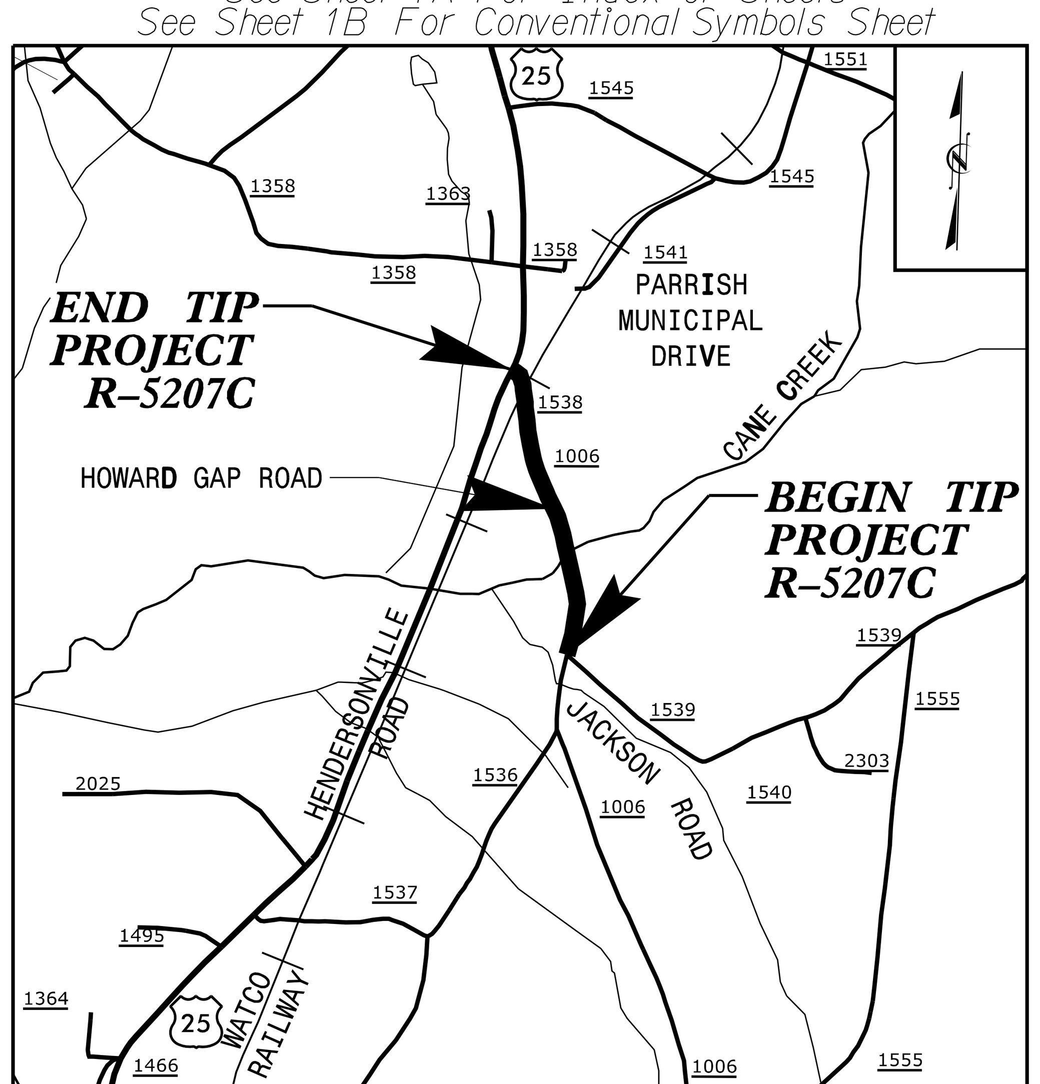
RS&H

EXISTING SIGNS

Project No.	Sheet No.
R-5207C	Sig. 1

TIP PROJECT: R-5207C

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols Sheet



VICINITY MAP N.T.S

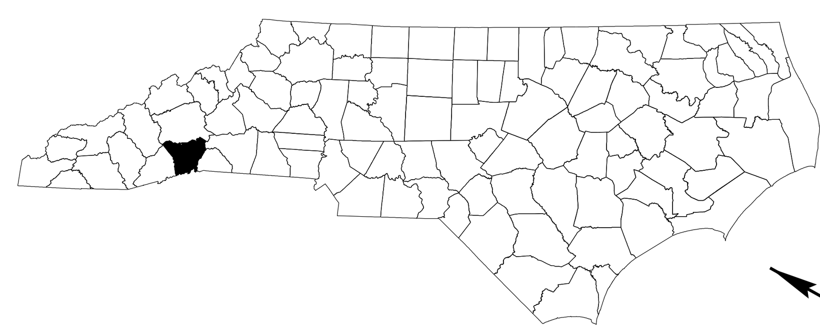
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

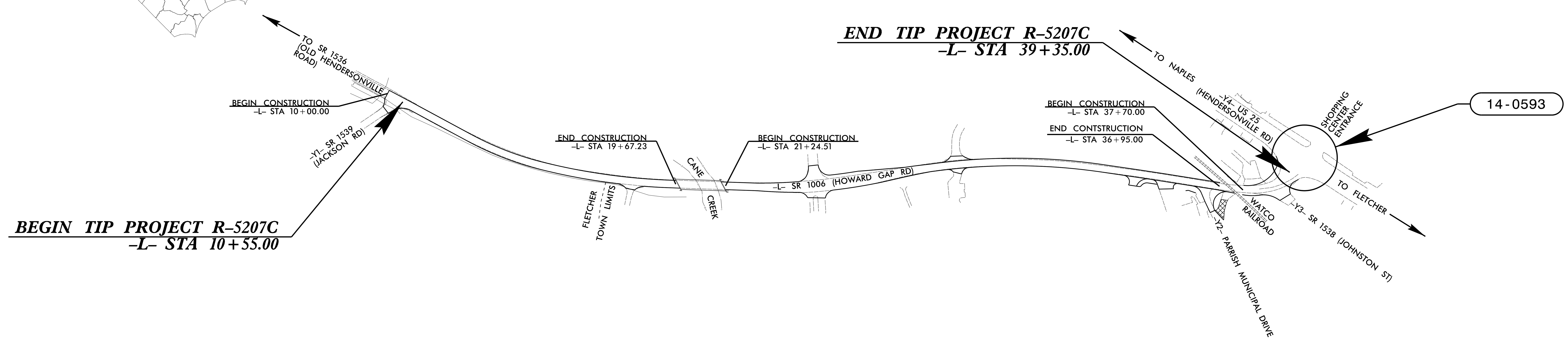
HENDERSON COUNTY

NAD 83/95 NC GRID

LOCATION: US 25 (HENDERSONVILLE ROAD) AT SR 1006 (HOWARD GAP ROAD)/SHOPPING CENTER ENTRANCE

TYPE OF WORK: GRADING, PAVING, DRAINAGE, SIGNALS, TRAFFIC CONTROL, SIGNING, PAVEMENT MARKING, AND EROSION CONTROL





DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.

Index of Plans

Sheet #	Reference #	Location/Description
Sig. 1	N/A	Title Sheet
Sig. 2	N/A	Summary of Quantities
Sig. 3-6	14-0593	US 25 (Hendersonville Road) At SR 1006 (Howard Gap Road)/Shopping Center Entrance
Sig. 7-8	N/A	Revised Standard Drawings

INTELLIGENT TRANSPORTATION AND SIGNALS UNIT

Contacts:

Timothy J. Williams, PE – Western Region Signals Engineer
D. Todd Joyce, PE – Signal Equipment Design Review Engineer

Prepared In the Office of:
RS&H
8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615

Transportation Mobility and Safety Division
ITS and Signals Unit
750 N. Greenfield Parkway, Garner, NC 27529

SIGNALS
SUMMARY OF QUANTITIES
ESTIMATE

ITEM DESCRIPTION	UNITS	QUANTITY
JUNCTION BOX	EA	1
LED BLANKOUT SIGNS	EA	1
CONTROLLERS WITH CABINET (2070E, 332 BASE MOUNTED)	EA	1
DETECTOR CARD	EA	8
SIGN FOR SIGNALS	EA	1
SIGNAL CABLE	LF	140
LEAD-IN CABLE (14-2)	LF	860
INDUCTIVE LOOP SAWCUT	LF	315
UNPAVED TRENCHING (1) (2")	LF	55
UNPAVED TRENCHING (2) (2")	LF	15
UNPAVED TRENCHING (1) (4")	LF	15
TYPE II PEDESTAL WITH FOUNDATION	EA	1
PEDESTRIAN SIGNAL HEADS	EA	1
CABINET BASE EXTENDER	EA	1

RS&H
Prepared in the Office of:
RS&H
ARCHITECTS–ENGINEERS–PLANNERS, INC.
8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
(919) 926-4100

Prepared in the Offices of:
Transportation Mobility and Safety Division
State of North Carolina Department of Transportation
Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

US 25 (Hendersonville Road)
at
SR 1006 (Howard Gap Road)/
Shopping Center Entrance

Division 14 Henderson County Fletcher

PLAN DATE:	January 2018	REVIEWED BY:	J.G. Townsend
PREPARED BY:	S.G. Haynie	REVIEWED BY:	

REVISIONS	INIT.	DATE

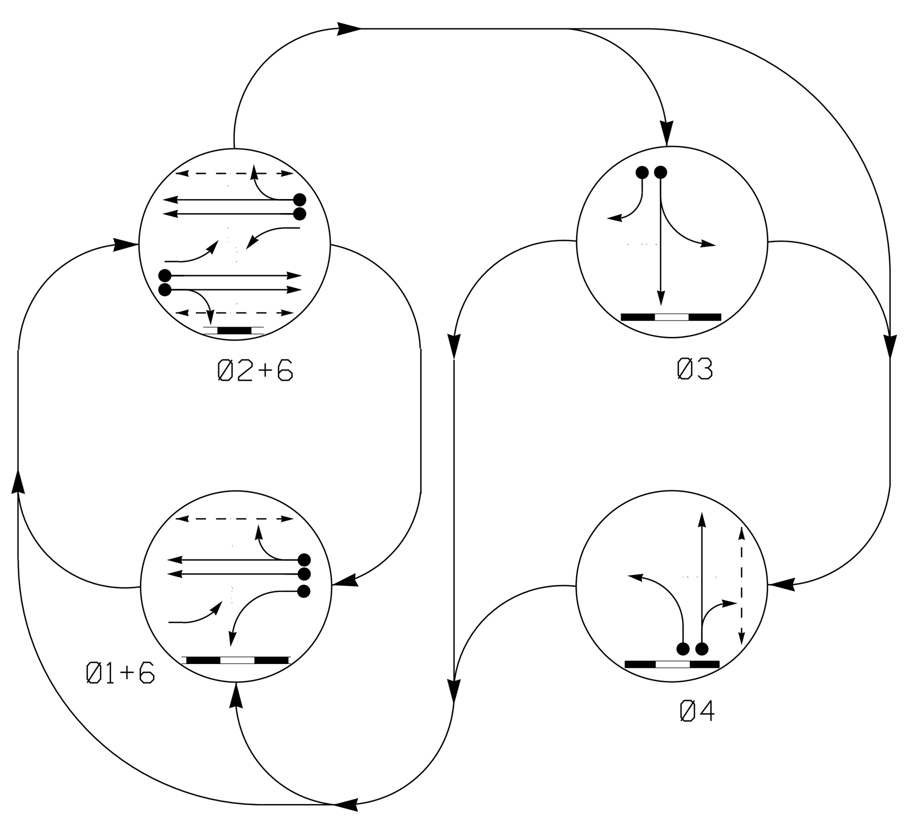
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G. HAYNIE

DocuSigned by:
Steven G. Haynie 1/10/2018
D633DCC9A5D44B6...
SIGNATURE DATE

SIG. INVENTORY NO. 14-0593

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

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

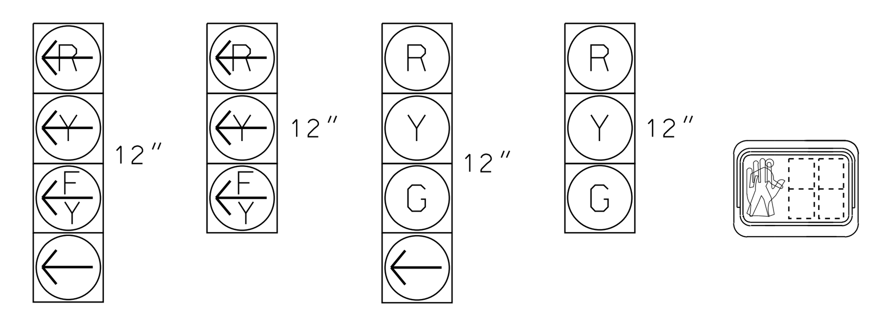
TABLE OF OPERATION

SIGNAL FACE	PHASE Ø1+6	Ø2+6	Ø3	Ø4	RR CLEAR	RR DWELL	FLASH
11	←	F/Y ←	←R	←R	←R	←R	←Y
21	F/Y ←	F/Y ←	←R	←R	←R	F/Y ←	←Y
22,23	R	G	R	R	R	G	Y
31	R	R	G ←	R	R	R	R
32	R	R	G	R	R	R	R
41	R	R	R	G ←	G ←	R	R
42	R	R	R	G	G	R	R
61,62	G	G	R	R	R	G	Y
P21,P22	DW	W	DW	DW	DW	W	DRK
P41,P42	DW	DW	DW	W	DW	DW	DRK
P61, P62	W	W	DW	DW	DW	W	DRK
SIGN Ⓒ	OFF	OFF	OFF	OFF	ON	ON	*

* SEE NOTE 9

SIGNAL FACE I.D.

All Heads L.E.D.



OASIS 2070E 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	6X15	50	3	-	1	Y	Y	-	-	10	-	-
2A	6X6	300	5	-	2	Y	Y	-	-	-	-	-
2B	6X6	300	5	-	2	Y	Y	-	-	-	-	-
3A	6X30	+5	2-4-2	-	3	Y	Y	-	-	3	-	-
3B	6X30	+5	2-4-2	-	3	Y	Y	-	-	10	-	-
4A	6X40	+5	2-4-2	Y	4	Y	Y	-	-	3	-	-
4B	6X40	+5	2-4-2	Y	4	Y	Y	-	-	10	-	-
6A	6X6	300	5	-	6	Y	Y	-	-	-	-	-
6B	6X6	300	5	-	6	Y	Y	-	-	-	-	-
S27	6X6	+150	4	-	——	-	-	-	-	-	Y	-
S28	6X6	+150	4	-	——	-	-	-	-	-	Y	-
S29	6X6	+125	4	-	——	-	-	-	-	-	Y	-
S30	6X6	+125	4	-	——	-	-	-	-	-	Y	-

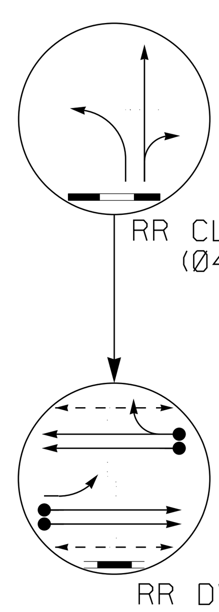
4 Phase
Fully Actuated with Railroad Preemption
US 25 (Hendersonville Rd.) CLS

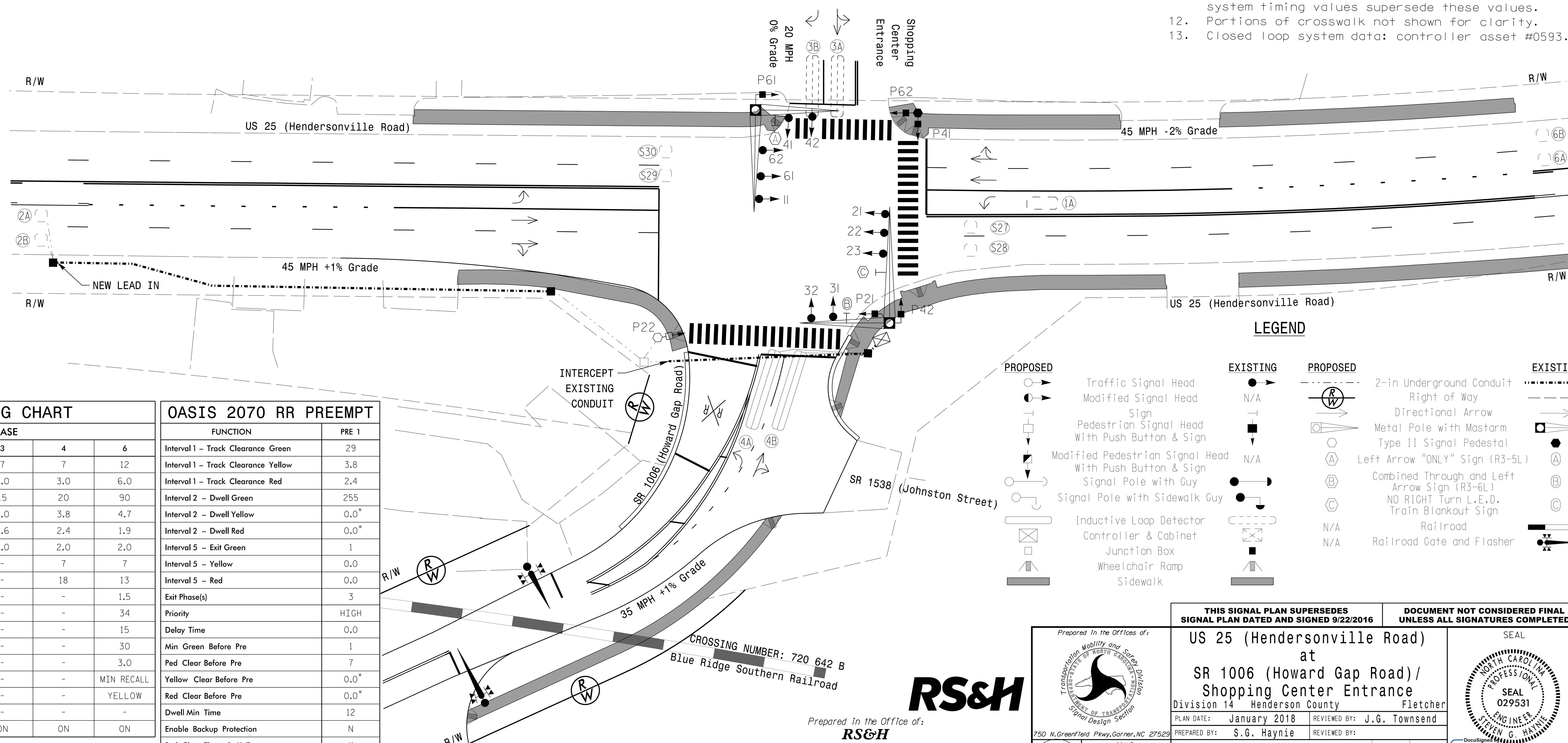
NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
2. This location contains railroad preemption phasing. Do not program signal for late night flashing operation.
3. Phase 1 may be lagged.
4. The order of phase 3 and phase 4 may be reversed.
5. Set all detector units to presence mode.
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. See R-5207C pavement marking plans for new pavement markings.
9. Ensure flashing operation does not alter operation of blankout signs.
10. Program parent phases for Overlap "P" for all phases used in normal operation.
11. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
12. Portions of crosswalk not shown for clarity.
13. Closed loop system data: controller asset #0593.

RAIL PREEMPT PHASES

(High Priority)





LEGEND

PROPOSED		EXISTING	PROPOSED		EXISTING
	Traffic Signal Head			2-in Underground Conduit	
	Modified Signal Head	N/A		Right of Way	
	Sign			Directional Arrow	
	Pedestrian Signal Head With Push Button & Sign			Metal Pole with Mastarm	
	Modified Pedestrian Signal Head With Push Button & Sign	N/A		Type II Signal Pedestal	
	Signal Pole with Guy		Ⓐ	Left Arrow "ONLY" Sign (R3-5L)	Ⓐ
	Signal Pole with Sidewalk Guy		Ⓑ	Combined Through and Left Arrow Sign (R3-6L)	Ⓑ
	Inductive Loop Detector		Ⓒ	NO RIGHT Turn L.E.D. Train Blankout Sign	Ⓒ
	Controller & Cabinet		N/A	Railroad	
	Junction Box		N/A	Railroad Gate and Flasher	
	Wheelchair Ramp				
	Sidewalk				

OASIS 2070E TIMING CHART

FEATURE	PHASE 1	2	3	4	6
Min Green 1 *	7	12	7	7	12
Extension 1 *	3.0	6.0	2.0	3.0	6.0
Max Green 1 *	15	90	15	20	90
Yellow Clearance	3.0	4.7	3.0	3.8	4.7
Red Clearance	3.3	1.9	3.6	2.4	1.9
Red Revert	2.0	2.0	2.0	2.0	2.0
Walk 1 *	-	7	-	7	7
Don't Walk 1	-	19	-	18	13
Seconds Per Actuation *	-	1.5	-	-	1.5
Max Variable Initial *	-	34	-	-	34
Time Before Reduction *	-	15	-	-	15
Time To Reduce *	-	30	-	-	30
Minimum Gap	-	3.0	-	-	3.0
Recall Mode	-	MIN RECALL	-	-	MIN RECALL
Vehicle Call Memory	-	YELLOW	-	-	YELLOW
Dual Entry	-	-	-	-	-
Simultaneous Gap	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 2070 RR PREEMPT

FUNCTION	PRE 1
Interval 1 – Track Clearance Green	29
Interval 1 – Track Clearance Yellow	3.8
Interval 1 – Track Clearance Red	2.4
Interval 2 – Dwell Green	255
Interval 2 – Dwell Yellow	0.0*
Interval 2 – Dwell Red	0.0*
Interval 5 – Exit Green	1
Interval 5 – Yellow	0.0
Interval 5 – Red	0.0
Exit Phase(s)	3
Priority	HIGH
Delay Time	0.0
Min Green Before Pre	1
Ped Clear Before Pre	7
Yellow Clear Before Pre	0.0*
Red Clear Before Pre	0.0*
Dwell Min Time	12
Enable Backup Protection	N
Ped Clear Through Yellow	Y
Omit Overlaps	A, P

* Time defaults to time used for phase during normal operation

RS&H

Prepared In the Office of:
RS&H
ARCHITECTS–ENGINEERS–PLANNERS, INC.
8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
(919) 926-4100

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

SCALE 0 30 1"=30'

THIS SIGNAL PLAN SUPERSEDES SIGNAL PLAN DATED AND SIGNED 9/22/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

US 25 (Hendersonville Road)
at
SR 1006 (Howard Gap Road)/
Shopping Center Entrance

Division 14 Henderson County Fletcher

PLAN DATE: January 2018 REVIEWED BY: J.G. Townsend
PREPARED BY: S.G. Haynie REVIEWED BY:

REVISIONS INIT. DATE

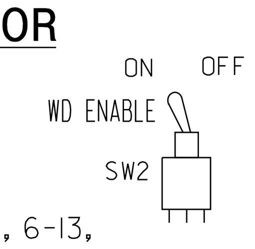
SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G. HAYNIE

DocuSigned by: Steven G. Haynie 1/10/2018
SIGNATURE DATE

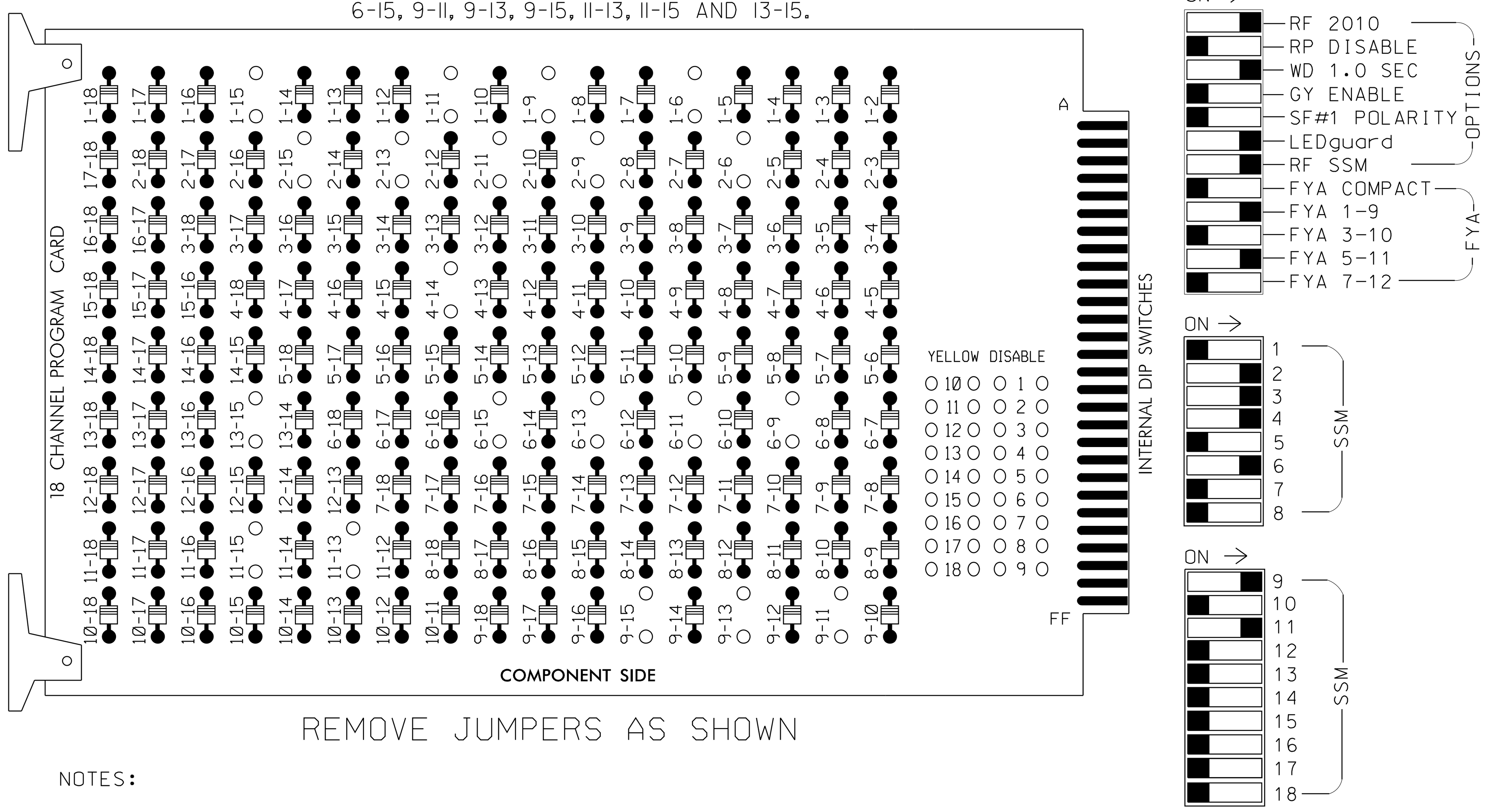
SIG. INVENTORY NO. 14-0593

EDI MODEL 2018ECLip-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



REMOVE DIODE JUMPERS 1-6, 1-9, 1-11, 1-15, 2-6, 2-9, 2-11, 2-13, 2-15, 4-14, 6-9, 6-11, 6-13, 6-15, 9-11, 9-13, 9-15, 11-13, 11-15 AND 13-15.



REMOVE JUMPERS AS SHOWN

■ = DENOTES POSITION OF SWITCH

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. Integrate monitor with Ethernet network in cabinet.

NOTES

1. To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
2. Enable Simultaneous Gap-Out for all phases.
3. Program phases 2 and 6 for Variable Initial and Gap Reduction.
4. Program phases 2 and 6 for Start Up In Green.
5. Program phases 2, 4 and 6 for 'STARTUP PED CALL'.
6. Program phases 2 and 6 for Yellow Flash, and overlap 1 Wag Overlaps.
7. The cabinet and controller are part of the Asheville Signal System.

EQUIPMENT INFORMATION

CONTROLLER.............2070E
CABINET................332 W/ AUX
SOFTWARE...............ECONOLITE OASIS
CABINET MOUNT..........BASE
OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
LOAD SWITCHES USED......S1,S2,S3,S4,S5,S6,S8,S9, AUX S1,AUX S4.
PHASES USED............1,2,3,4,6,2 PED,4 PED,6 PED
OVERLAP "A"............1+2
OVERLAP "B"............NOT USED
OVERLAP "C"............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★	22,23	P21, P22	31	32	41	42	P41, P42	NU	61,62	P61, P62	NU	NU	NU	11★	NU	NU	21★	NU	NU
RED		128		116	116	101	101			134										
YELLOW	✳	129		117	117	102	102			135										
GREEN		130		118	118	103	103			136										
RED ARROW															A121			A114		
YELLOW ARROW															A122			A115		
FLASHING YELLOW ARROW															A123			A116		
GREEN ARROW	127			118		103														
(hand)			113					104			119									
(walking person)			115					106			121									

NU = Not Used

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

★ See pictorial of head wiring in detail this sheet.

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.

INPUT FILE POSITION LAYOUT

(front view)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE "I"	U	Ø 1 1A	Ø 2 2A	SLOT EMPTY	SLOT EMPTY	Ø 3 3A	Ø 3 3B	Ø 4 4A	SLOT EMPTY	SYS. DET. S1	SLOT EMPTY	SLOT EMPTY	Ø2 PED DC ISOLATOR	Ø6 PED DC ISOLATOR	FS DC ISOLATOR
	L	NOT USED	Ø 2 2B			NOT USED	NOT USED	Ø 4 4B		SYS. DET. S2			Ø4 PED DC ISOLATOR	NOT USED	ST DC ISOLATOR
FILE "J"	U	SLOT EMPTY	Ø 6 6A	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SYS. DET. S3	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	PRE1 AC ISOLATOR
	L		Ø 6 6B							SYS. DET. S4					NOT USED

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

FS = FLASH SENSE
ST = STOP TIME

INPUT FILE POSITION LEGEND: J2L
FILE J
SLOT 2
LOWER

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
1A	TB2-1,2	I1U	56	18	1	1	Y	Y	_	___	10
2A	TB2-5,6	I2U	39	1	2	2	Y	Y	_	___	__
2B	TB2-7,8	I2L	43	5	12	2	Y	Y	_	___	__
3A	TB4-5,6	I5U	58	20	3	3	Y	Y	_	___	3
3B	TB4-9,10	I6U	41	3	4	3	Y	Y	_	___	10
4A	TB6-1,2	I7U	65	27	34	4	Y	Y	_	___	3
4B	TB6-3,4	I7L	78	40	44	4	Y	Y	_	___	10
✳ S1	TB6-9,10	I9U	60	22	11	SYS					
✳ S2	TB6-11,12	I9L	62	24	13	SYS					
6A	TB3-5,6	J2U	40	2	6	6	Y	Y	_	___	__
6B	TB3-7,8	J2L	44	6	16	6	Y	Y	_	___	__
✳ S3	TB7-9,10	J9U	59	21	15	SYS					
✳ S4	TB7-11,12	J9L	61	23	17	SYS					
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					

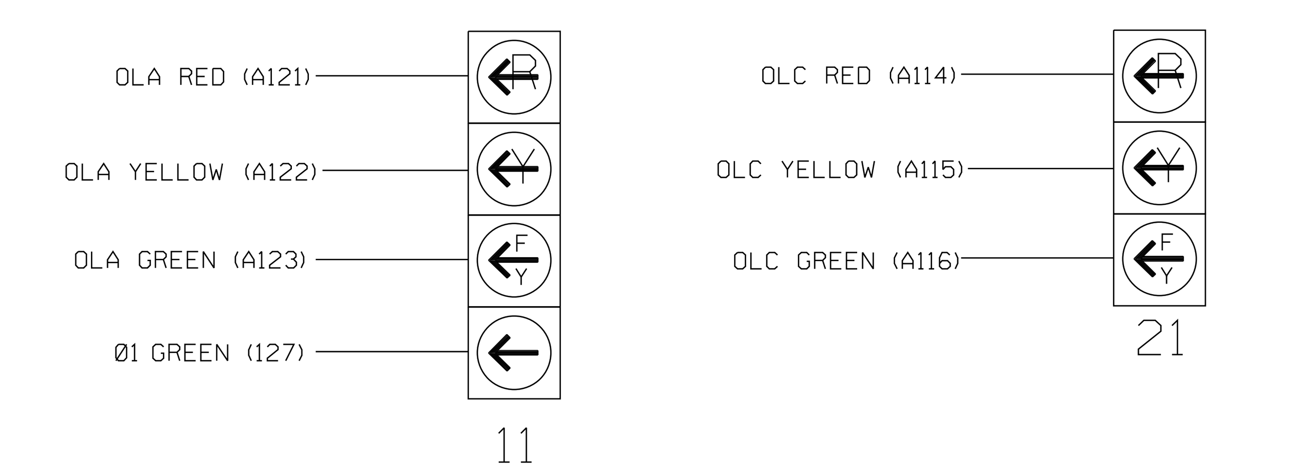
NOTE:
INSTALL DC ISOLATORS IN INPUT FILE SLOTS I12 AND I13.

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

INPUT FILE POSITION LEGEND: J2L
FILE J
SLOT 2
LOWER

FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



NOTE

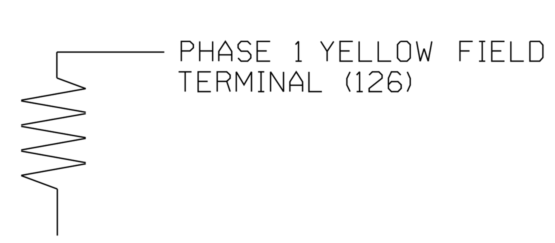
1. The sequence display for signal head 11 requires special logic programming. See sheet 2 of 2 for programming instructions.

THIS ELECTRICAL DETAIL SUPERSEDES THE DETAIL SEALED 10-5-16

LOAD RESISTOR INSTALLATION DETAIL

(install resistor as shown below)

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



THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 14-0593
DESIGNED: January 2018
SEALED: 1-10-2018
REVISED: N/A

Prepared In the Office of:

ROWE ENGINEERING, PLLC
FIRM LICENSE NO. P-1675
5013 OLD ELIZABETH ROAD
RALEIGH, NC 27616
(919)623-5593

Electrical Detail Sheet 1 of 3

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared in the Offices of: Transportation Mobility and Safety Division, State of North Carolina Department of Transportation, Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

US 25 (Hendersonville Road) at SR 1006 (Howard Gap Road)/ Shopping Center Entrance
Division 14 Henderson County Fletcher

PLAN DATE:	January 2018	REVIEWED BY:	J.G. Townsend
PREPARED BY:	John Rowe	REVIEWED BY:	

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 008453 ENGINEER JOHN T. ROWE, JR.
DocuSigned by: John T. Rowe, Jr.
D0847BA0ACA9400...
SIGNATURE 1/15/2018 DATE

SIG. INVENTORY NO. 14-0593

PROJECT REFERENCE NO.	SHEET NO.
R-5207C	Sig. 5

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      #1  IS ON
AND RED CLEAR ON PHASE #1  IS ON

        SCROLL DOWN

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

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

PRESS '+'

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

        SCROLL DOWN

THEN:
SET OUTPUT  ASSIGNMENT #52 OFF
```

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

PRESS '+'

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

        SCROLL DOWN

THEN:
SET OUTPUT  ASSIGNMENT #51 ON
```

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

LOGIC I/O PROCESSOR PROGRAMMING COMPLETE

OUTPUT REFERENCE SCHEDULE

OUTPUT 50 = Overlap A Red
OUTPUT 51 = Overlap A Yellow
OUTPUT 52 = Overlap A Green

OVERLAP PROGRAMMING DETAIL

(program controller as shown below)

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

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

NOTICE GREEN FLASH

PRESS '+' TWICE

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

NOTICE GREEN FLASH

OVERLAP PROGRAMMING COMPLETE

THIS ELECTRICAL DETAIL SUPERSEDES THE DETAIL SEALED 10-5-16

Prepared in the Office of:

ROWE ENGINEERING, PLLC

FIRM LICENSE NO. P-1675
5013 OLD ELIZABETH ROAD
RALEIGH, NC 27616
(919)623-5593

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Electrical Detail Sheet 2 of 3

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 14-0593
DESIGNED: January 2018
SEALED: 1-10-2018
REVISED: N/A

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared in the Offices of: Transportation Mobility and Safety Division, State of North Carolina Department of Transportation, Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

US 25 (Hendersonville Road) at SR 1006 (Howard Gap Road)/ Shopping Center Entrance
Division 14 Henderson County Fletcher

PLAN DATE: January 2018	REVIEWED BY: J.G. Townsend
PREPARED BY: John Rowe	REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 008453 ENGINEER JOHN T. ROWE, JR.

DocuSigned by: John T. Rowe, Jr. D0847BA0ACA9400...
SIGNATURE 1/15/2018 DATE

SIG. INVENTORY NO. 14-0593

RAILROAD PREEMPTION PROGRAMMING DETAIL

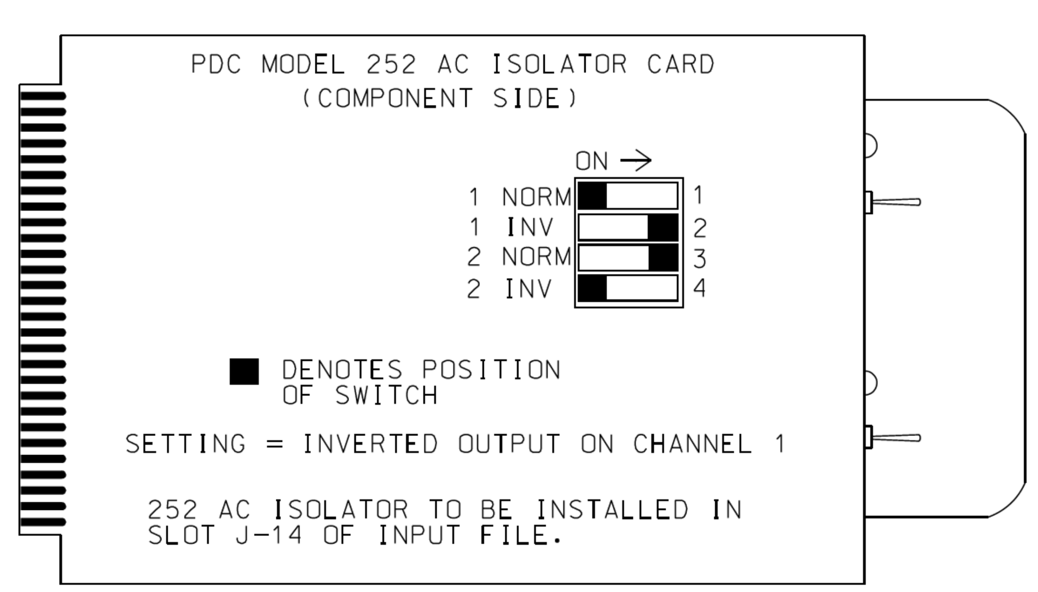
(program controller as shown below)

From Main Menu press 'A' (Preemption), then '1' (Standard Preemptions).

```
   PREEMPTION  #1  SETTINGS (NEXT:1-10)
INTERVAL/TIMING ¦  CLEAR/DWELL PHASES
  GRN YEL  RED  ¦12345678910111213141516
1  29  3.8  2.4 ¦   X
2 255  0.0  0.0 ¦ X   X
3   0  0.0  0.0 ¦
4   0  0.0  0.0 ¦
5   1  0.0  0.0 ¦  X
EXIT CALLS      ¦
                 OPTIONS
PRIORITY (Y/N TO SELECT) ...........HIGH
DELAY TIMER (0-255 SEC) .............0
MIN GREEN BEFORE PRE (0= DEFAULT)....1
PED CLEAR BEFORE PRE (0= DEFAULT)....7
YELLOW CLEAR BEFORE PRE (0= DEFAULT).0.0
RED CLEAR BEFORE PRE (0= DEFAULT)....0.0
DWELL MIN TIMER (0-255 SEC) .........12
DWELL MAX TIMER (0=OFF,1-255MIN) ....0
DWELL HOLD-OVER TIMER (0-255) .......0
LATCH CALL? .........................N
LINK TO NEXT PREEMPT? ...............N
ENABLE BACKUP PROTECTION? ...........N
HOLD CLEAR 1 PHASES DURING DELAY? ...N
FAST GREEN FLASH DWELL PHASES? ......N
PED CLEARANCE THROUGH YELLOW? .......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? .......Y
RE-TIME DWELL INTERVAL? .............N
OVERLAPS:                 ¦ ABCDEFGHIJKLMNOP
DWELL INT FLASH YELLOW    ¦
OMIT OVERLAPS:            ¦ X              X
```

PREEMPT 1 AC ISOLATOR (MODEL 252) OUTPUT PROGRAMMING DETAIL

(set DIP switches as shown below)

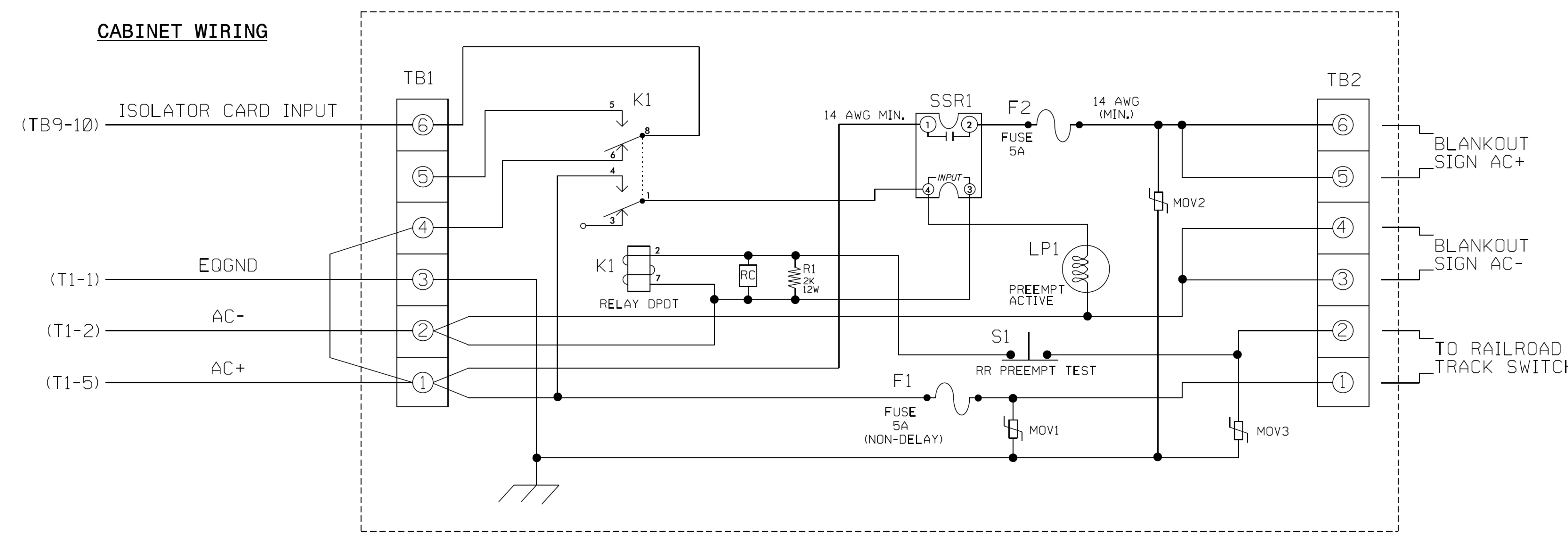


NOTE: IF ANOTHER MANUFACTURER TYPE OF AC ISOLATOR IS USED, OUTPUT PROGRAMMING IS LIKELY NOT TO EQUATE TO THAT SHOWN ABOVE.

RAILROAD PREEMPTION WIRING DETAIL

(wire as shown below)

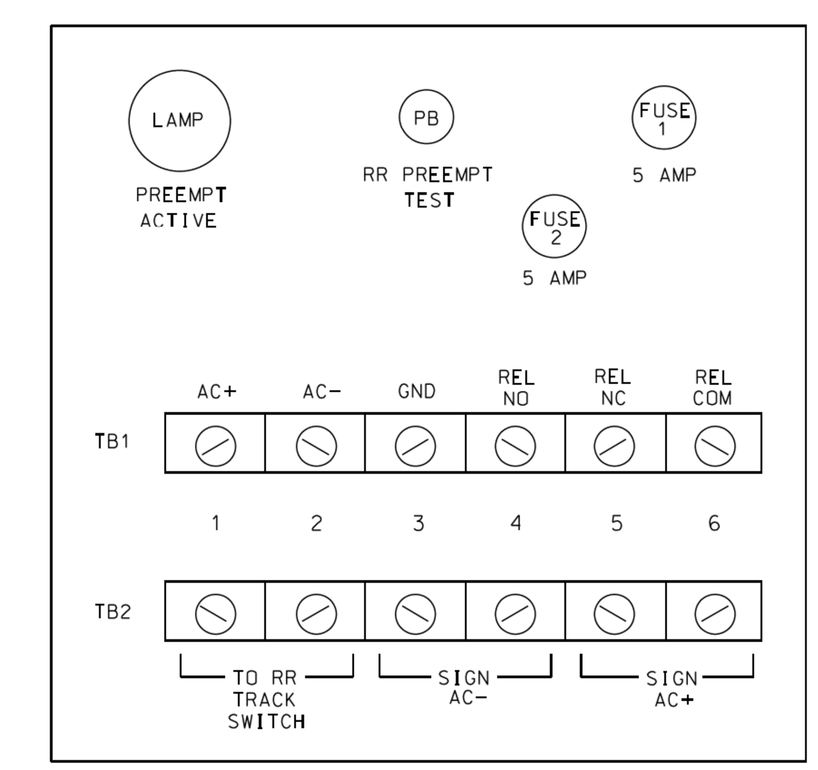
PREEMPTION AND BLANKOUT SIGN CONTROL BOX



NOTES

1. Relay K1 is shown in the energized (Preempt not active) normal operation state.
2. Relay K1 is a DPDT with 120VAC coil with octal base.
3. Relay SSR1 is a SPST (normally open) Solid State Relay with AC input and AC (25 amp) output.
4. AC Isolator Card shall activate preemption upon removal of AC+ from the input (as shown above). To accomplish this set invert dip switch on AC Isolator Card.
5. IMPORTANT!! A jumper must be added between input file terminals J14-E and J14-K if not already present. Also, terminal TB9-12 (on input panel) shall be connected to AC neutral (jumper may have to be added).

FRONT VIEW



THIS ELECTRICAL DETAIL SUPERSEDES THE DETAIL SEALED 10-5-16

Prepared In the Office of:

ROWE ENGINEERING, PLLC
FIRM LICENSE NO. P-1675
5013 OLD ELIZABETH ROAD
RALEIGH, NC 27616
(919)623-5593

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Electrical Detail Sheet 3 of 3

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 14-0593
DESIGNED: January 2018
SEALED: 1-10-2018
REVISED: N/A

ELECTRICAL AND PROGRAMMING DETAILS FOR:

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

US 25 (Hendersonville Road)
at
SR 1006 (Howard Gap Road)/
Shopping Center Entrance

Division 14 Henderson County Fletcher

PLAN DATE: January 2018	REVIEWED BY: J.G. Townsend
PREPARED BY: John Rowe	REVIEWED BY:

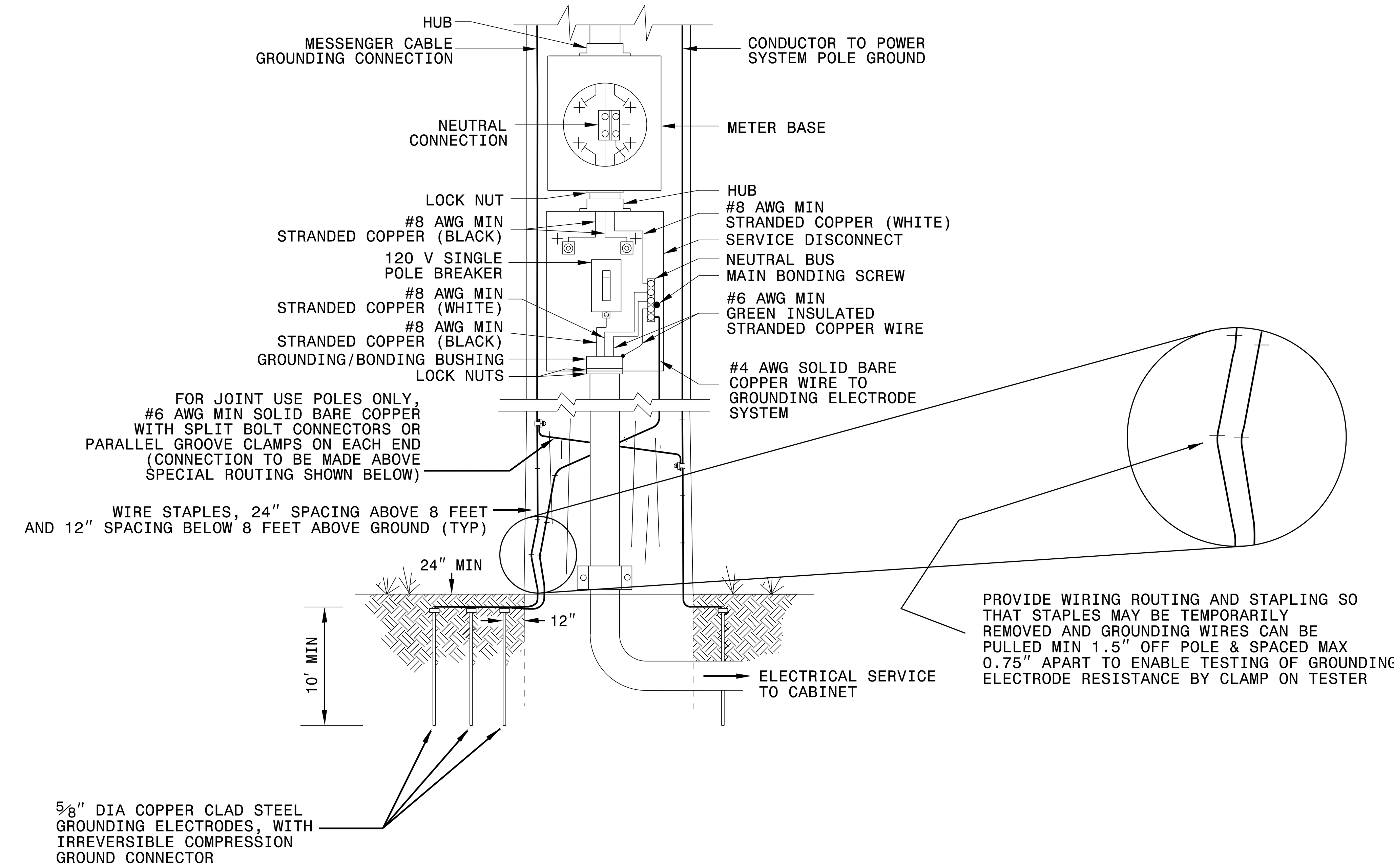
REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 008453 ENGINEER JOHN T. ROWE, JR.
DocuSigned by: John T. Rowe, Jr.
SIGNATURE 1/15/2018 DATE

SIG. INVENTORY NO. 14-0593

1/10/2018
R:\Traffic\Signals\Design\Signals\R5207C_sig_psh_04 05 06_sm_140593.dgn
10:17:18 PM

PROJECT NO.	SHEET NO.
R-5207C	Sig. 7



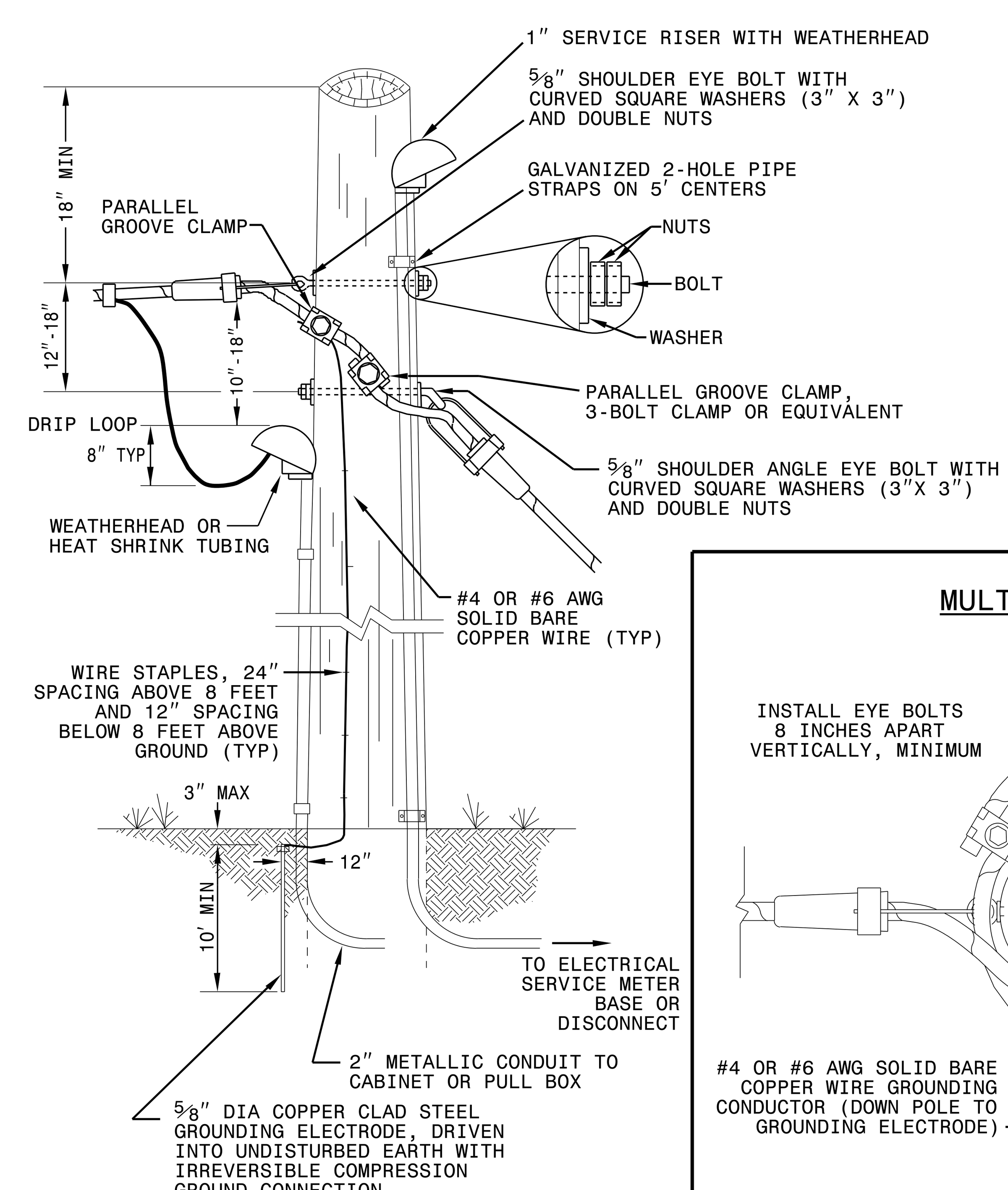
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-18

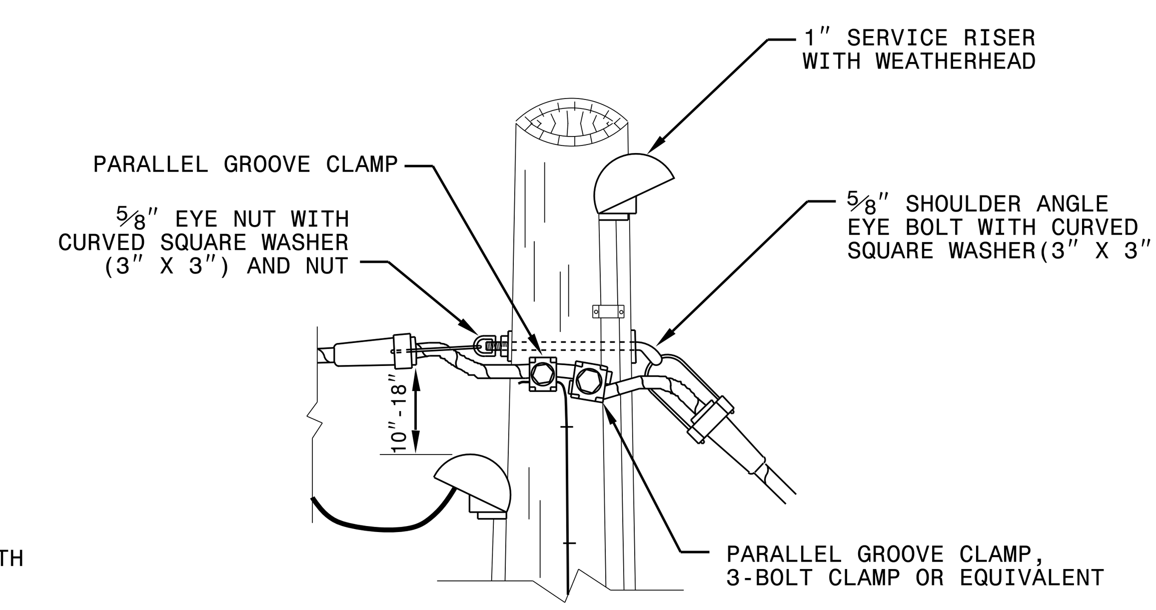
ENGLISH STANDARD DRAWING FOR
ELECTRICAL SERVICE GROUNDING
GROUNDING AND BONDING

SHEET 1 OF 1
1700D01

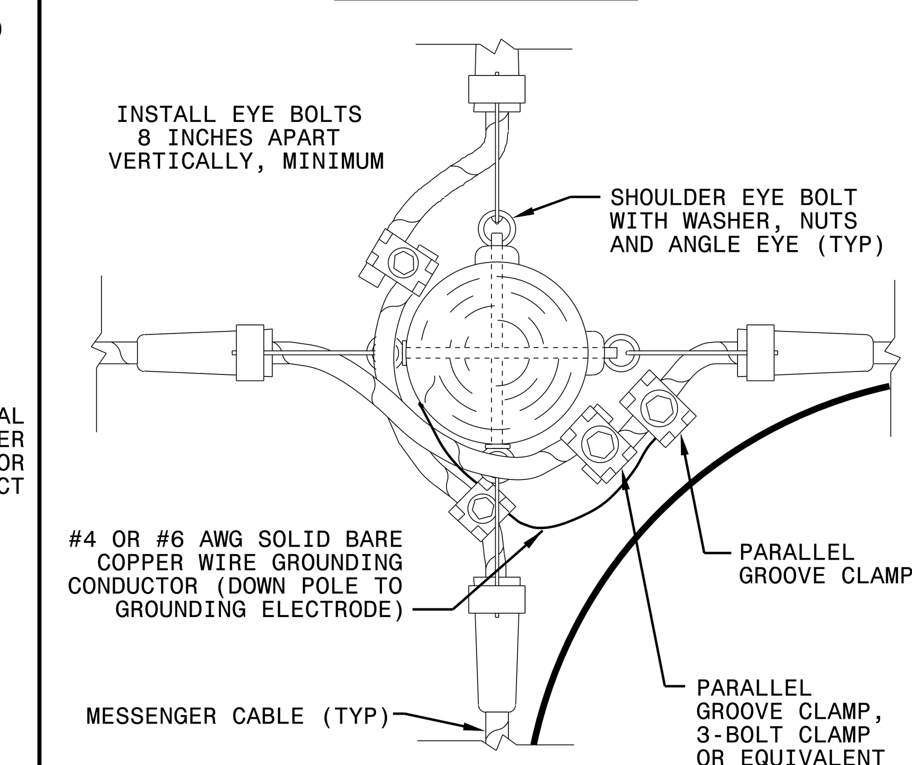
TWO-BOLT METHOD (PREFERRED)



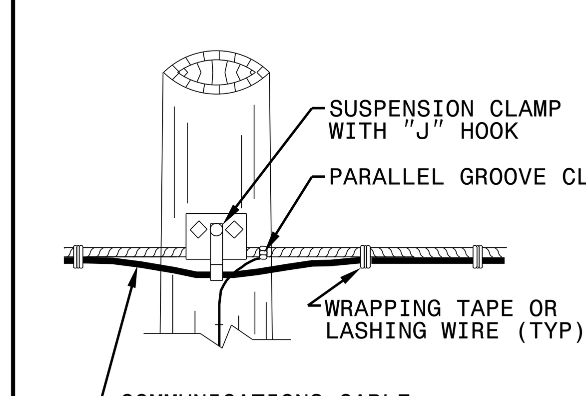
ONE-BOLT METHOD



MULTIPLE SPANS



COMMUNICATIONS CABLE AT INTERMEDIATE POLE



NOTE

FOR CONNECTING MESSENGER TO MESSENGER, USE PARALLEL GROOVE CLAMP, 3-BOLT CLAMP OR EQUIVALENT. FOR CONNECTING COPPER WIRE TO MESSENGER, USE PARALLEL GROOVE CLAMP.

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

1-18

ENGLISH STANDARD DRAWING FOR
WOOD POLES
METHODS OF ATTACHMENT AND GROUNDING

SHEET 1 OF 1
1720D01

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

See Plate for Title

Prepared in the Offices of:

Transportation Mobility and Safety Division
ITS & Signals Unit

750 N. Greenfield Parkway
Garner, NC 27529

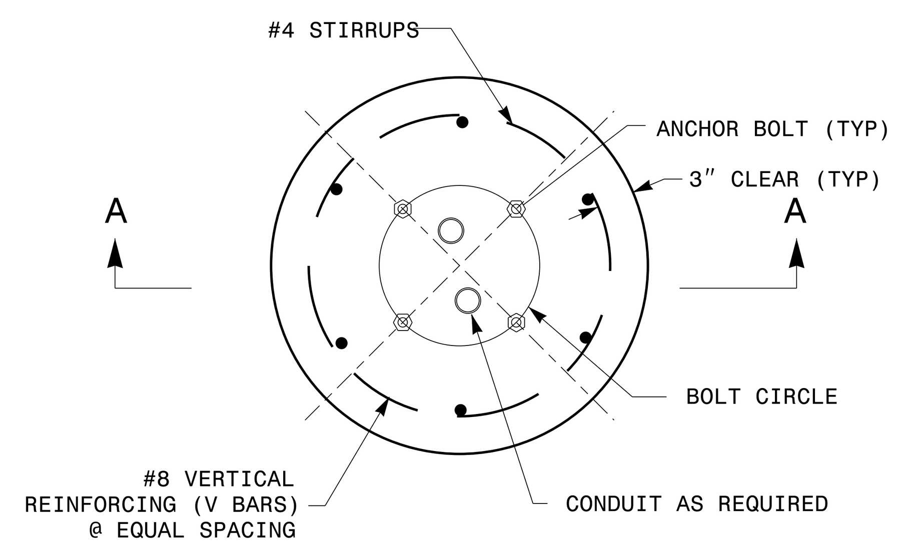
SEAL

NORTH CAROLINA PROFESSIONAL SEAL 032108 ENGINEER MOHD A. ASLAMI

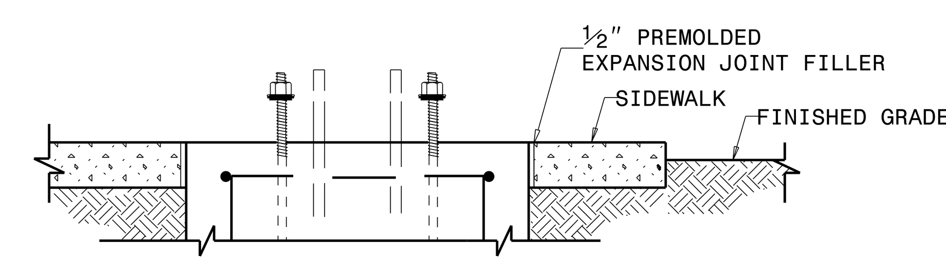
DocuSigned by:
Mohd Aslami
5D9B0BA6DBB6495...

10/11/2017
DATE

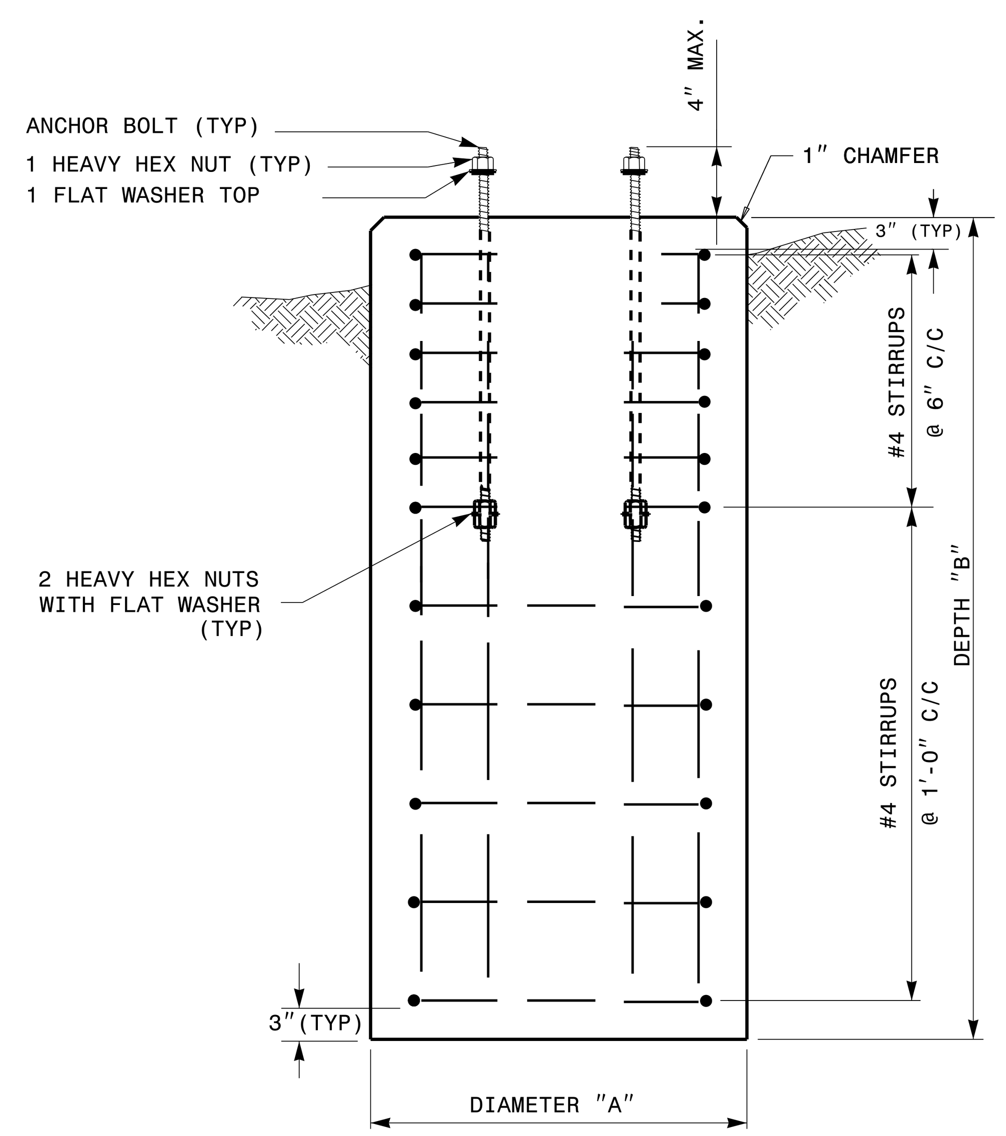
11-OCT-2017 08:56
U:*2018 Std Drawings*Plate Sheets*2018_Plate Sheet .dgn
rwhough



PEDESTAL FOUNDATION - PLAN VIEW

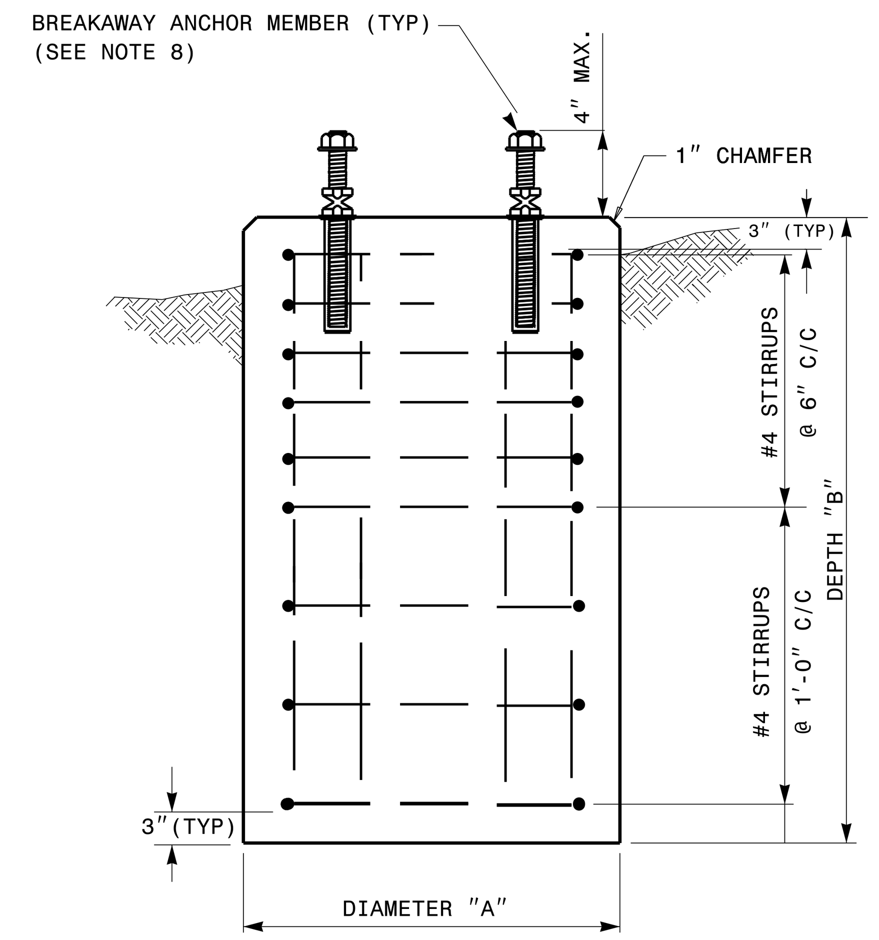


PEDESTAL FOUNDATION DETAILS FOR SIDEWALK



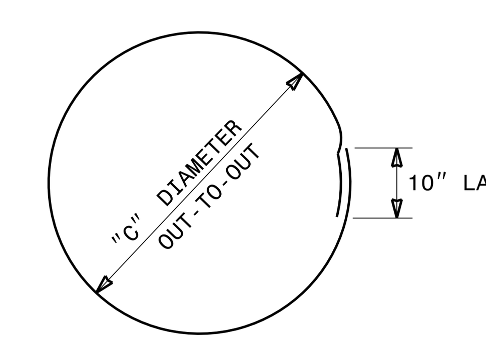
TYPES I, II & III

SECTION A-A



TYPES I & II ONLY

SECTION A-A

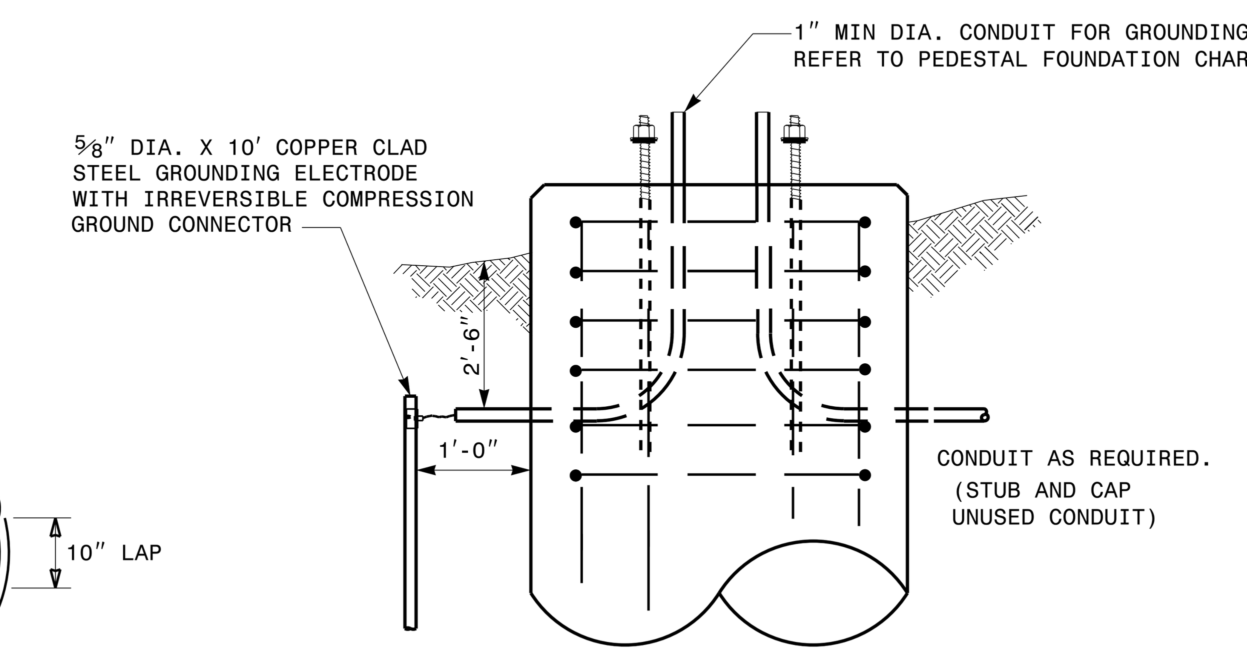


CLOSED HOOPS

NOTES:

1. CAST FOUNDATION AGAINST UNDISTURBED SOIL WHEREVER CONDITIONS PERMIT. IN UNSTABLE SOIL, CAST-IN-PLACE TUBE FORMS ARE ALLOWED WITH APPROVAL.
2. COMPLY WITH APPLICABLE PROVISIONS OF SECTION 825 FOR CONCRETE CONSTRUCTION.
3. USE CLASS "A" CONCRETE THAT MEETS THE REQUIREMENTS OF SECTION 1000 WITH A COMPRESSION STRENGTH AT 28 DAYS OF F'c= 3000 PSI (MIN.).
4. USE ASTM GRADE 60 DEFORMED BARS FOR ALL REINFORCING STEEL.
5. GRADE IS ASSUMED TO BE (8H:1V) OR FLATTER. FOUNDATION SIZE AND DEPTHS ARE BASED ON THE FOLLOWING SOIL DESIGN PARAMETERS:
   A. SANDY TYPE SOIL
   B. NO GROUND WATER WITHIN 5'-0" OF SURFACE ELEVATION
   C. WIND SPEED NOT TO EXCEED 140 MPH

   IF ACTUAL CONDITIONS VARY SUBSTANTIALLY FROM THOSE ASSUMED, THE FOUNDATION DEPTH MAY BE ADJUSTED. IN THIS CASE, CONTACT THE ENGINEER.
6. MAINTAIN AT LEAST 3" COVER ON ALL REINFORCEMENT.
7. ORIENT CONDUIT AS REQUIRED BY THE DESIGN OR AS DICTATED BY FIELD CONDITIONS.
8. USE ADHESIVE ANCHOR FOR THREADED COUPLING INSERT. FOR TYPE I MINIMUM DEPTH NECESSARY IS 0'-4½" AND FOR TYPE II MINIMUM DEPTH NECESSARY IS 0'-6⅝". FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS.



GROUNDING & CONDUIT DETAIL

PEDESTAL FOUNDATION TYPE AND SIZE

TYPE	PEDESTAL DESCRIPTION	SIZE: DIAMETER "A" FT	SIZE: DEPTH "B" FT	SIZE: CONCRETE VOLUME CY	ANCHOR BOLT: DIAMETER (MIN.) IN	ANCHOR BOLT: LENGTH FT-IN	INSTALL GROUNDING SYSTEM (YES/NO)
I	PEDESTRIAN PUSHBUTTON	2'-0"	3'-6"	.41	½	1'-6"	NO
II	NORMAL-DUTY	2'-0"	5'-0"	.58	¾	2'-0"	YES
III	HEAVY-DUTY	2'-6"	7'-0"	1.27	1	4'-0"	YES

REINFORCING STEEL SCHEDULE

TYPE	V-BAR SIZE #	V-BAR QTY	V-BAR LENGTH	V-BAR WEIGHT LBS	STIRRUP SIZE #	STIRRUP QUANTITY VERTICAL SPACING ON 6" CENTERS	STIRRUP QUANTITY VERTICAL SPACING ON 12" CENTERS	STIRRUP QUANTITY TOTAL	STIRRUP LENGTH	STIRRUP DIAMETER "C" FT	STIRRUP OVERLAP MIN.	STIRRUP WEIGHT LBS	TOTAL STEEL WEIGHT LBS
I	8	6	3'-0"	56	4	0	4	4	5'-7"	1'-6"	0'-10"	15	71
II	8	6	4'-6"	86	4	5	3	8	5'-7"	1'-6"	0'-10"	30	116
III	8	6	6'-6"	122	4	7	4	11	7'-2"	2'-0"	0'-10"	53	175

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

1-18

ENGLISH STANDARD DRAWING FOR
PEDESTALS
FOUNDATIONS

SHEET 1 OF 1

1743D01

See Plate for Title

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Offices of:
Transportation Mobility and Safety Division
ITS & Signals Unit
750 N. Greenfield Parkway
Garner, NC 27529

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 028094 ENGINEER DEBESH C. SARKAR

DocuSigned by: Debesh C. Sarkar
44EBE32E147E4C4...
10/11/2017
DATE

TIP PROJECT: R-5207C

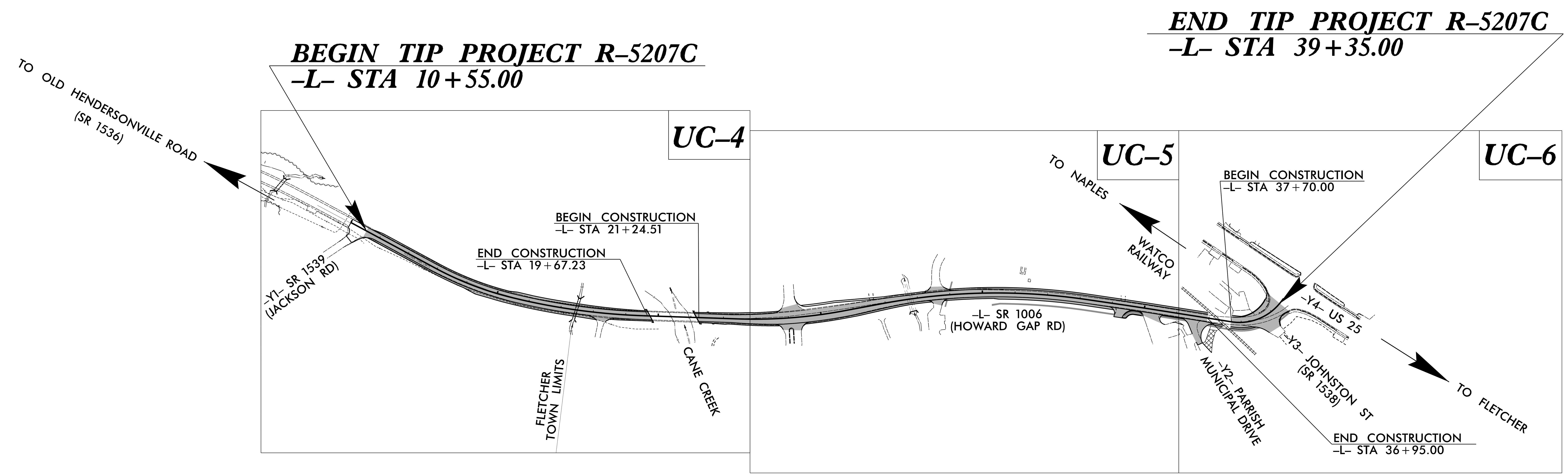
T.I.P. NO.	SHEET NO.
R-5207C	UC-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITY CONSTRUCTION PLANS
HENDERSON COUNTY

LOCATION: SR 1006 HOWARD GAP RD FROM SR 1539 (JACKSON RD.) TO US25

TYPE OF WORK: WATER AND SEWER



DOCUMENT NOT CONSIDERED FINAL UNTIL ALL SIGNATURES ARE COMPLETED

GRAPHIC SCALES

50 25 0 50 100 — PLANS

50 25 0 50 100 — PROFILE (HORIZONTAL)

10 5 0 10 20 — PROFILE (VERTICAL)

INDEX OF SHEETS

WATER AND SEWER OWNERS ON PROJECT

(A) WATER
CITY OF HENDERSONVILLE

(B) SANITARY SEWER
CANE CREEK WATER & SEWER DIST.

PREPARED IN THE OFFICE OF
V&M
Vaughn & Melton
Consulting Engineers
1318-F Patton Ave.
Asheville, NC 28806
828 253 2796

Reece Schuler, PE. PLS	CONSULTANT CONTACT #1
Parker Young	CONSULTANT CONTACT #2

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL
REECE SCHULER
1/15/2018

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

Michael Bight	UTILITIES REGIONAL ENGINEER
Donald Hampton	UTILITIES ENGINEER
Amy Dupree	UTILITIES AREA COORDINATOR
Bob Golding	UTILITIES COORDINATOR

PROJECT REFERENCE NO.	SHEET NO.
R-5207C	UC-2

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES PLAN SHEET SYMBOLS

PROPOSED WATER SYMBOLS

- Water Line (Sized as Shown) — 12" WL
- $11\frac{1}{4}$ Degree Bend
- $22\frac{1}{2}$ Degree Bend
- 45 Degree Bend
- 90 Degree Bend
- Plug
- Tee
- Cross
- Reducer
- Gate Valve — GV
- Butterfly Valve — BV
- Tapping Valve — TGV
- Line Stop — LS
- Line Stop with Bypass — LS/BP
- Blow Off — BO
- Fire Hydrant — PFH
- Relocate Fire Hydrant — RFH
- Remove Fire Hydrant — REM FH
- Water Meter — PWM
- Relocate Water Meter — RWM
- Remove Water Meter — REM WM
- Water Pump Station — PS(W)
- RPZ Backflow Preventer — PRPZ
- DCV Backflow Preventer — PBFP
- Relocate RPZ Backflow Preventer — RRPZ
- Relocate DCV Backflow Preventer — RBFP

PROPOSED SEWER SYMBOLS

- Gravity Sewer Line (Sized as Shown) — 12" SS
- Force Main Sewer Line (Sized as Shown) — 12" FSS
- Manhole (Sized per Note)
- Sewer Pump Station — PS(SS)

PROPOSED MISCELLANOUS UTILITIES SYMBOLS

- Power Pole
- Telephone Pole
- Joint Use Pole
- Telephone Pedestal — TEL PED
- Utility Line by Others (Type as Shown) — PROP O/H POW LINES
- Trenchless Installation — 12" TL INSTALL
- Encasement by Open Cut — 24" ENCAS BY OC
- Encasement — 24" ENCASEMENT
- Thrust Block
- Air Release Valve — AR
- Utility Vault — UV
- Concrete Pier — CP
- Steel Pier — SP
- Plan Note — NOTE
- Pay Item Note — PAY ITEM

EXISTING UTILITIES SYMBOLS

- Power Pole
- Telephone Pole
- Joint Use Pole
- Utility Pole
- Utility Pole with Base
- H-Frame Pole
- Power Transmission Line Tower
- Water Manhole
- Power Manhole
- Telephone Manhole
- Sanitary Sewer Manhole
- Hand Hole for Cable
- Power Transformer
- Telephone Pedestal
- CATV Pedestal
- Gas Valve
- Gas Meter
- Located Miscellaneous Utility Object
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.
- *Underground Power Line
- *Underground Telephone Cable
- *Underground Telephone Conduit
- *Underground Fiber Optics Telephone Cable
- *Underground TV Cable
- *Underground Fiber Optics TV Cable
- *Underground Gas Pipeline
- Aboveground Gas Pipeline — A/G Gas
- *Underground Water Line
- Aboveground Water Line — A/G Water
- *Underground Gravity Sanitary Sewer Line — SS
- Aboveground Gravity Sanitary Sewer Line — A/G Sanitary Sewer
- *Underground SS Forced Main Line
- Underground Unknown Utility Line
- SUE Test Hole
- Water Meter
- Water Valve
- Fire Hydrant
- Sanitary Sewer Cleanout

*For Existing Utilities

- Utility Line Drawn from Record (Type as Shown)
- Designated Utility Line (Type as Shown)

REV: 2/1/2012

5/14/99

10/3/2017 \transportation\30734-02 R-5207C\Utilities\R5207C_UC_tsh.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-5207C	UC-3

DESIGNED BY: RMS	NORTH CAROLINA PROFESSIONAL SEAL 26960 ENGINEER REECE SCHULER
DRAWN BY: NVA	DocuSigned by: Reece Schuler 16634024C7824FC...
CHECKED BY: RMS	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	1/15/2018
UTILITIES ENGINEERING SEC. PHONE:(919)707-6690 FAX:(919)250-4151	UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

UTILITY CONSTRUCTION

GENERAL NOTES:

1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2012.

2. THE EXISTING UTILITIES BELONG TO CITY OF HENDERSONVILLE (WATER) & CANE CREEK WATER AND SEWER DISTRICT (SEWER)

3. ALL WATER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER RESOURCES, PUBLIC WATER SUPPLY SECTION. ALL SEWER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT QUALITY, DIVISION OF WATER RESOURCES, WATER QUALITY SECTION. PERFORM ALL WORK IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODES.

4. THE UTILITY OWNER OWNS THE EXISTING UTILITY FACILITIES AND WILL OWN THE NEW UTILITY FACILITIES AFTER ACCEPTANCE BY THE DEPARTMENT. THE DEPARTMENT OWNS THE CONSTRUCTION CONTRACT AND HAS ADMINISTRATIVE AUTHORITY. COMMUNICATIONS AND DECISIONS BETWEEN THE CONTRACTOR AND UTILITY OWNER ARE NOT BINDING UPON THE DEPARTMENT OR THIS CONTRACT UNLESS AUTHORIZED BY THE ENGINEER. AGREEMENTS BETWEEN THE UTILITY OWNER AND CONTRACTOR FOR THE WORK THAT IS NOT PART OF THIS CONTRACT OR IS SECONDARY TO THIS CONTRACT ARE ALLOWED, BUT ARE NOT BINDING UPON THE DEPARTMENT.

5. PROVIDE ACCESS FOR THE DEPARTMENT PERSONNEL AND THE OWNER'S REPRESENTATIVES TO ALL PHASES OF CONSTRUCTION. NOTIFY DEPARTMENT PERSONNEL AND THE UTILITY OWNER TWO WEEKS PRIOR TO COMMENCEMENT OF ANY WORK AND ONE WEEK PRIOR TO SERVICE INTERRUPTION. KEEP UTILITY OWNERS' REPRESENTATIVES INFORMED OF WORK PROGRESS AND PROVIDE OPPORTUNITY FOR INSPECTION OF CONSTRUCTION AND TESTING.

6. THE PLANS DEPICT THE BEST AVAILABLE INFORMATION FOR THE LOCATION, SIZE, AND TYPE OF MATERIAL FOR ALL EXISTING UTILITIES. MAKE INVESTIGATIONS FOR DETERMINING THE EXACT LOCATION, SIZE, AND TYPE MATERIAL OF THE EXISTING FACILITIES AS NECESSARY FOR THE CONSTRUCTION OF THE PROPOSED UTILITIES AND FOR AVOIDING DAMAGE TO EXISTING FACILITIES. REPAIR ANY DAMAGE INCURRED TO EXISTING FACILITIES TO THE ORIGINAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE DEPARTMENT.

7. MAKE FINAL CONNECTIONS OF THE NEW WORK TO THE EXISTING SYSTEM WHERE INDICATED ON THE PLANS, AS REQUIRED TO FIT THE ACTUAL CONDITIONS, OR AS DIRECTED.

8. MAKE CONNECTIONS BETWEEN EXISTING AND PROPOSED UTILITIES AT TIMES MOST CONVENIENT TO THE PUBLIC, WITHOUT ENDANGERING THE UTILITY SERVICE, AND IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS. MAKE CONNECTIONS ON WEEKENDS, AT NIGHT, AND ON HOLIDAYS IF NECESSARY.

9. ALL UTILITY MATERIALS SHALL BE APPROVED PRIOR TO DELIVERY TO THE PROJECT. SEE 1500-7, " SUBMITTALS AND RECORDS" IN SECTION 1500 OF THE STANDARD SPECIFICATIONS.

LIST OF STANDARD DRAWINGS

1515.01 WATER METER

1515.02 FIRE HYDRANT

1520.01 SEWER CLEAN OUT

1525.06 PRECAST CONCRETE SANITARY SEWER MANHOLE WITH CAST-IN-PLACE BOTTOM

PROJECT REFERENCE NO.	SHEET NO.
R-5207C	UC-4

DESIGNED BY: RMS
DRAWN BY: NVA
CHECKED BY: RMS
APPROVED BY: RMS
REVISED:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

UTILITIES ENGINEERING SEC.
PHONE:(919)707-6690
FAX:(919)250-4151

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL REECE SCHULER

1/15/2018

UTILITY CONSTRUCTION PLANS ONLY

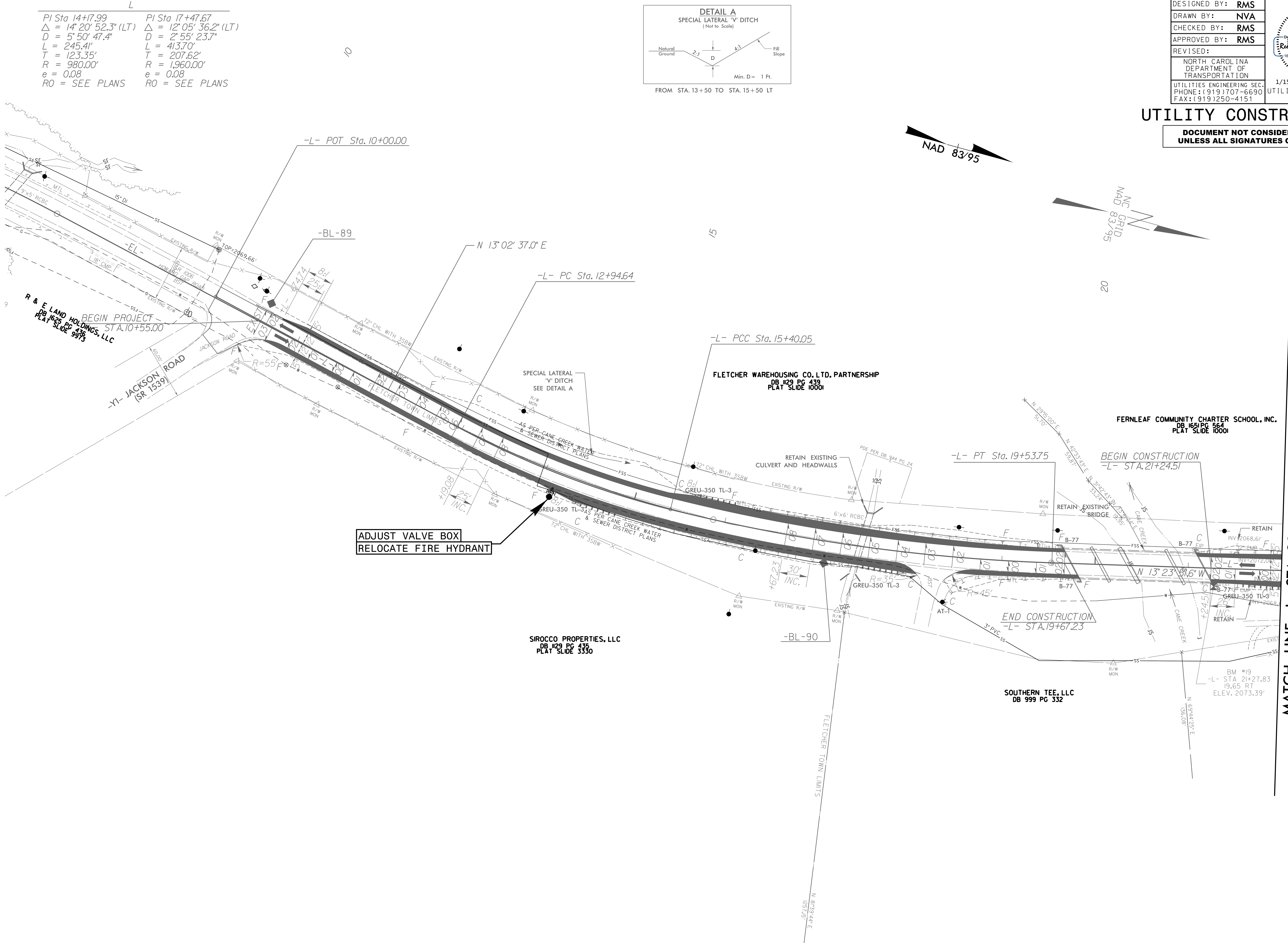
UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

L	
PI Sta 14+17.99	PI Sta 17+47.67
△ = 14° 20' 52.3" (LT)	△ = 12° 05' 36.2" (LT)
D = 5° 50' 47.4"	D = 2° 55' 23.7"
L = 245.41'	L = 413.70'
T = 123.35'	T = 207.62'
R = 980.00'	R = 1,960.00'
e = 0.08	e = 0.08
RO = SEE PLANS	RO = SEE PLANS

DETAIL A
SPECIAL LATERAL 'V' DITCH
(Not to Scale)

FROM STA. 13+50 TO STA. 15+50 LT



10/3/2017
R5207C_UC_4.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-5207C	UC-5

DESIGNED BY: RMS
DRAWN BY: NVA
CHECKED BY: RMS
APPROVED BY: RMS
REVISED:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
UTILITIES ENGINEERING SEC.
PHONE:(919)707-6690
FAX:(919)250-4151

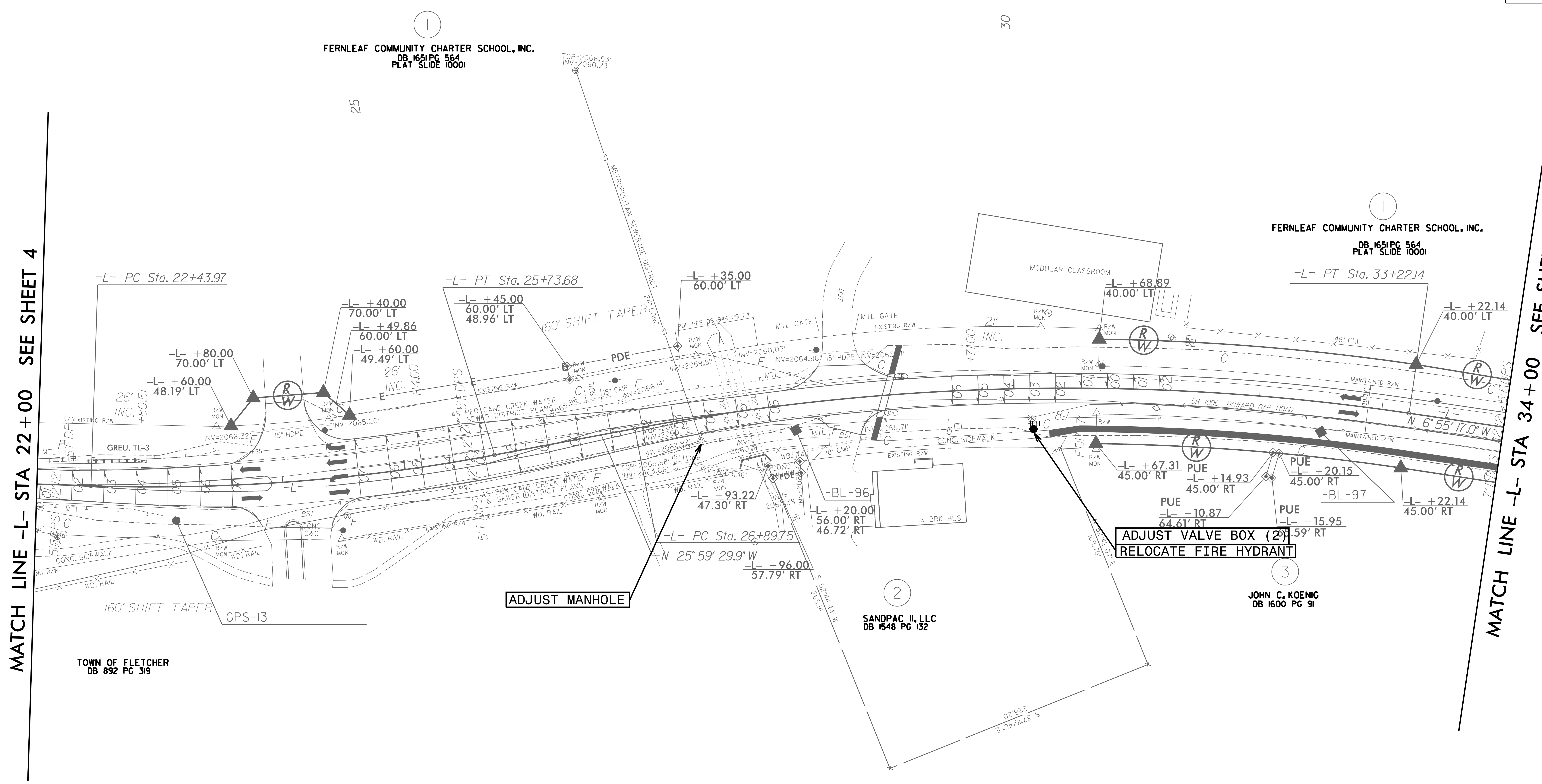
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036060 REECE SCHULER
Reece Schuler
1/15/2018
UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L-

PI Sta 24+09.50	PI Sta 30+08.90
Δ = 12° 35' 38.4" (LT)	Δ = 19° 04' 12.9" (RT)
D = 3° 49' 11.0"	D = 3° 00' 56.0"
L = 329.71'	L = 632.39'
T = 165.52'	T = 319.15'
R = 1,500.00'	R = 1,900.00'
e = MATCH EXISTING	e = MATCH EXISTING
RO = SEE PLANS	RO = SEE PLANS



DocuSign Envelope ID: 42A3CF1C-FA0A-482E-B972-35F9624903FA

PROJECT REFERENCE NO.	SHEET NO.
R-5207C	UC-6

DESIGNED BY: RMS
DRAWN BY: NVA
CHECKED BY: RMS
APPROVED BY: RMS
REVISED:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

UTILITIES ENGINEERING SEC.
PHONE:(919)707-6690
FAX:(919)250-4151

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER REECE SCHULER

DocuSigned by: Reece Schuler 16634024C7824FC...

1/15/2018
UTILITY CONSTRUCTION PLANS ONLY

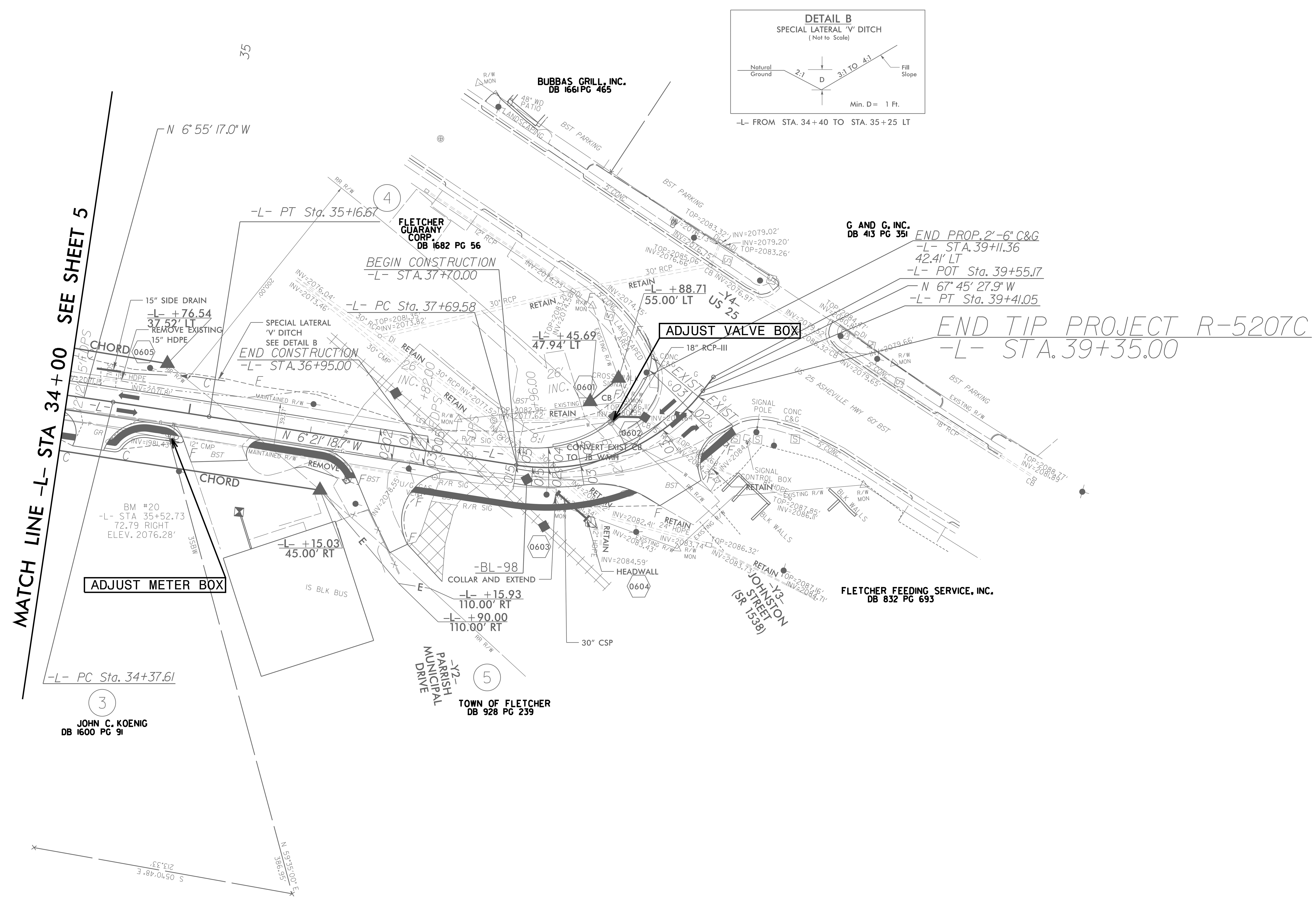
UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/95

-L-

PI Sta 34+77.14	PI Sta 38+64.59
Δ = 0° 33' 58.3" (RT)	Δ = 61° 24' 09.3" (LT)
D = 0° 42' 58.3"	D = 35° 48' 35.5"
L = 79.06'	L = 171.47'
T = 39.53'	T = 95.01'
R = 8,000.00'	R = 160.00'
e = MATCH EXISTING	e = MATCH EXISTING
RO = SEE PLANS	RO = SEE PLANS



TIP PROJECT: R-5207C

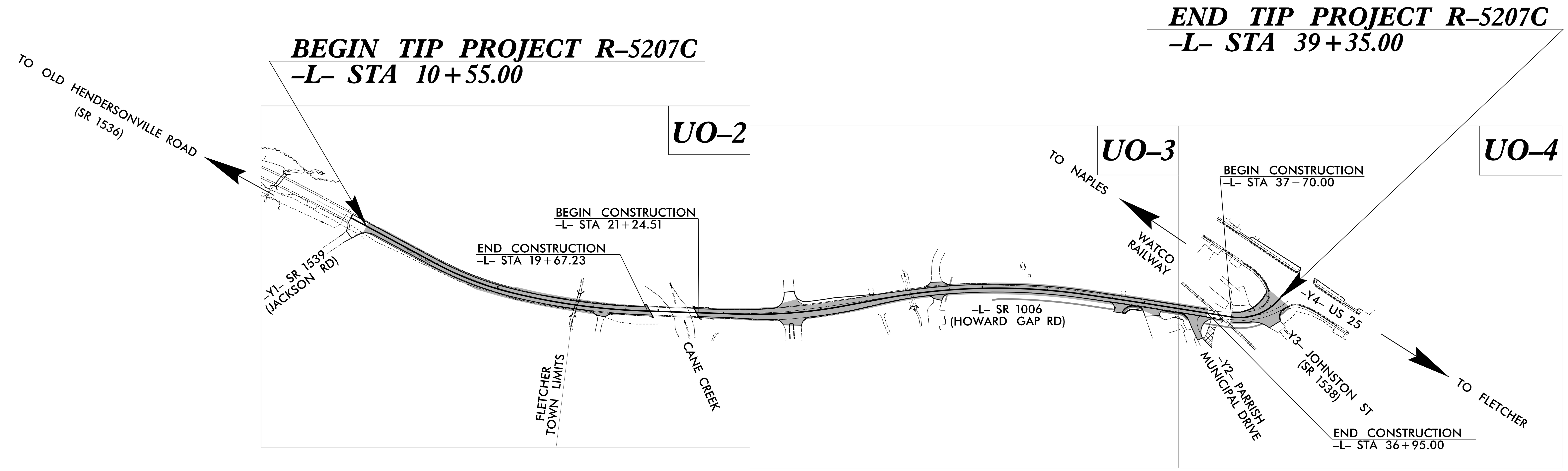
T.I.P. NO.	SHEET NO.
R-5207C	UO-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES BY OTHERS PLANS
HENDERSON COUNTY

LOCATION: SR 1006 HOWARD GAP RD FROM SR 1539 (JACKSON RD.) TO US25

TYPE OF WORK: AERIAL TELEPHONE AND CATV, UNDERGROUND TELEPHONE



GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-2 THRU UO-4	UTILITY BY OTHERS PLAN SHEETS

UTILITY OWNERS ON PROJECT

(A) CATV - MORRIS BROADBAND
(B) TELEPHONE - AT&T

PLANS PREPARED BY:

V&M
Vaughn & Melton
Consulting Engineers
1318-F PATTON AVE.
Asheville, NC 28806
828-253-2796

PREPARED FOR THE OFFICE OF:
DIVISION OF HIGHWAYS
UTILITIES UNIT
UTILITIES ENGINEERING
1555 MAIL SERVICES CENTER
RALEIGH NC 27699-1555
PHONE (919) 707-6690
FAX (919) 250-4151

Roger Worthington, P.E.	UTILITIES SECTION ENGINEER
Reece Schuler, P.E.	UTILITIES SQUAD LEADER PROJECT ENGINEER
Reece Schuler, P.E.	UTILITIES PROJECT DESIGNER

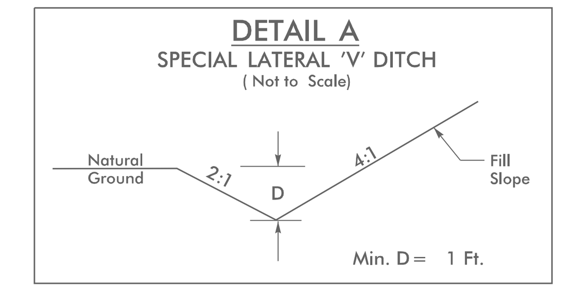
PROJECT REFERENCE NO.	SHEET NO.
R-5207C	UO-2

UTILITIES BY OTHERS

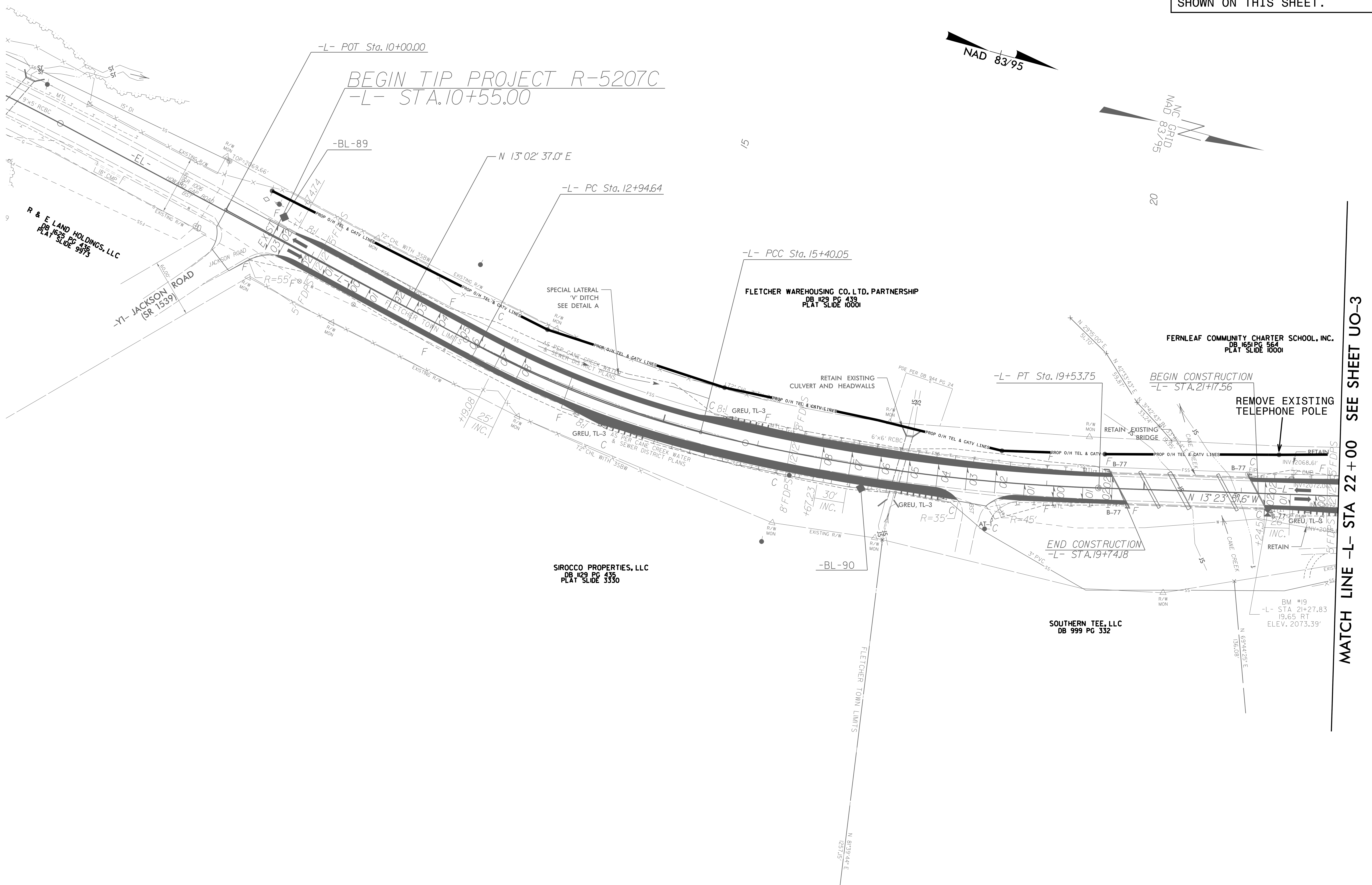
NOTE:
ALL UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR UTILITY WORK SHOWN ON THIS SHEET.

-L-

PI Sta 14+17.99	PI Sta 17+47.67
△ = 14° 20′ 52.3″ (LT)	△ = 12° 05′ 36.2″ (LT)
D = 5° 50′ 47.4″	D = 2° 55′ 23.7″
L = 245.41′	L = 413.70′
T = 123.35′	T = 207.62′
R = 980.00′	R = 1,960.00′
e = MATCH EXISTING	e = MATCH EXISTING
RO = SEE PLANS	RO = SEE PLANS



FROM STA. 13+50 TO STA. 15+50 LT



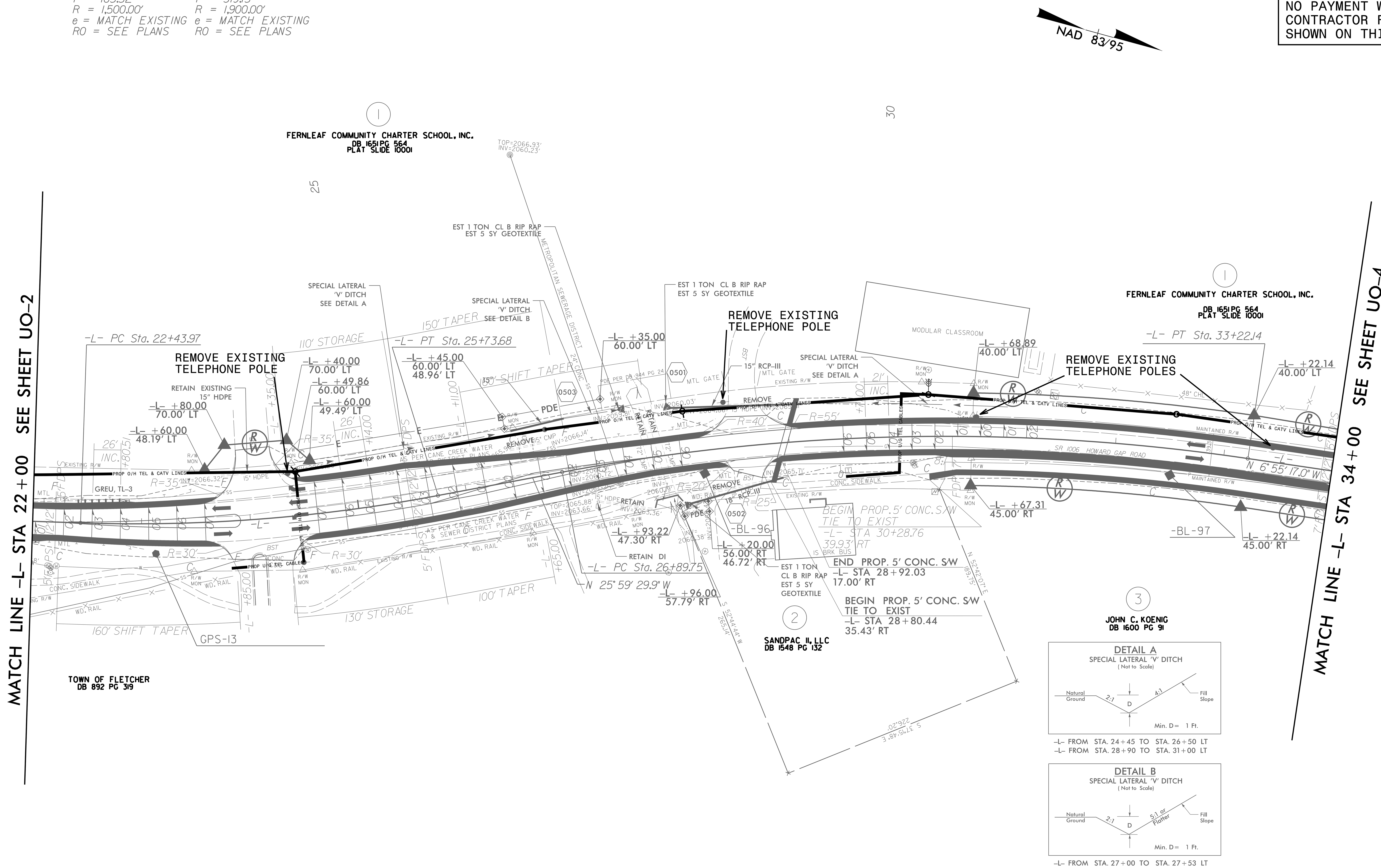
PROJECT REFERENCE NO.	SHEET NO.
R-5207C	UO-3

UTILITIES BY OTHERS

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.

-L-

PI Sta 24+09.50	PI Sta 30+08.90
△ = 12° 35' 38.4" (LT)	△ = 19° 04' 12.9" (RT)
D = 3° 49' 11.0"	D = 3° 00' 56.0"
L = 329.71'	L = 632.39'
T = 165.52'	T = 319.15'
R = 1,500.00'	R = 1,900.00'
e = MATCH EXISTING	e = MATCH EXISTING
RO = SEE PLANS	RO = SEE PLANS



PROJECT REFERENCE NO.	SHEET NO.
R-5207C	UO-4

UTILITIES BY OTHERS

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.

-L-

PI Sta 34+77.14	PI Sta 38+64.59
△ = 0° 33' 58.3" (RT)	△ = 61° 24' 09.3" (LT)
D = 0° 42' 58.3"	D = 35° 48' 35.5"
L = 79.06'	L = 171.47'
T = 39.53'	T = 95.01'
R = 8,000.00'	R = 160.00'
e = MATCH EXISTING	e = MATCH EXISTING
RO = SEE PLANS	RO = SEE PLANS