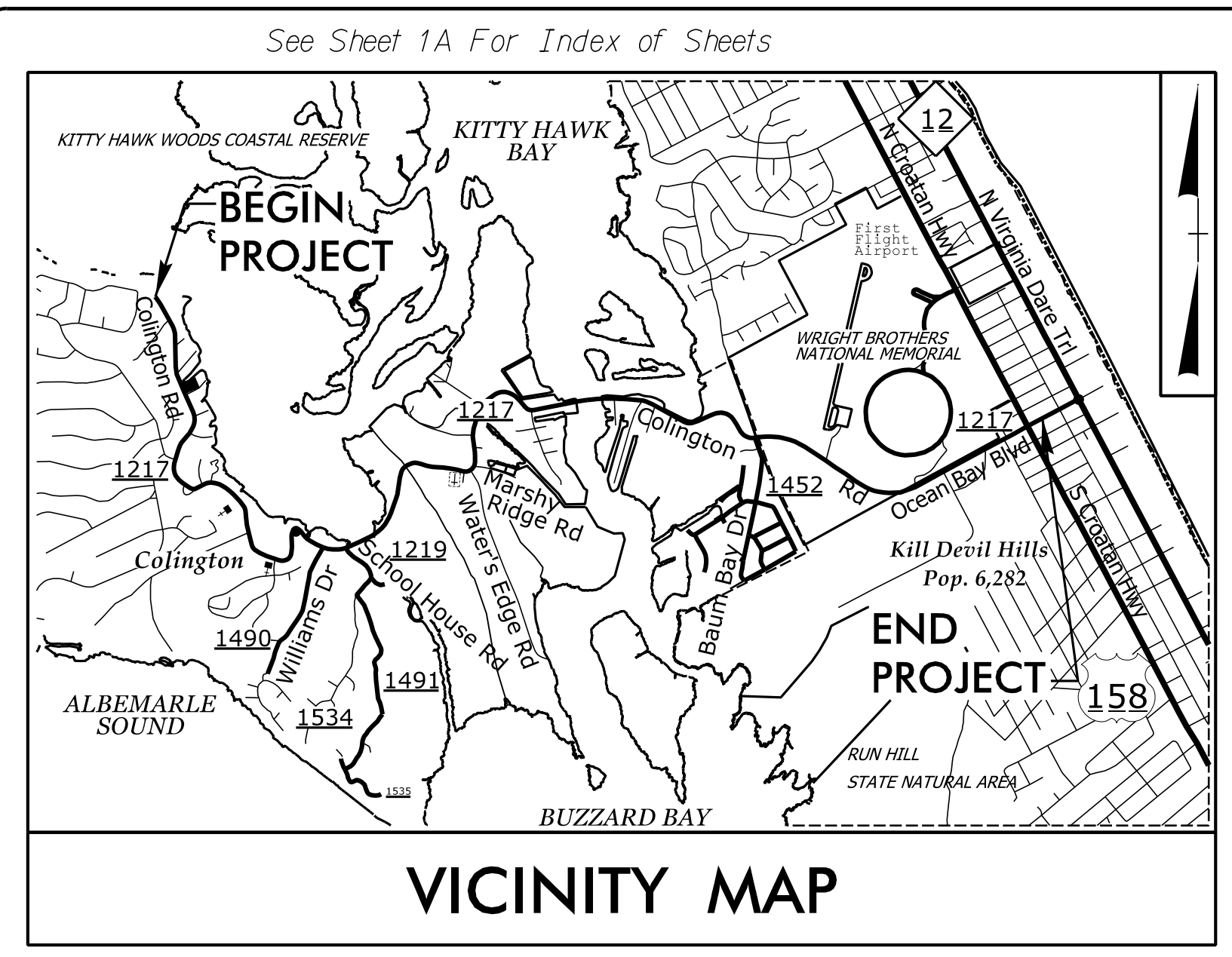


09_08/2019

TIP PROJECT: R-5014

CONTRACT: C204182



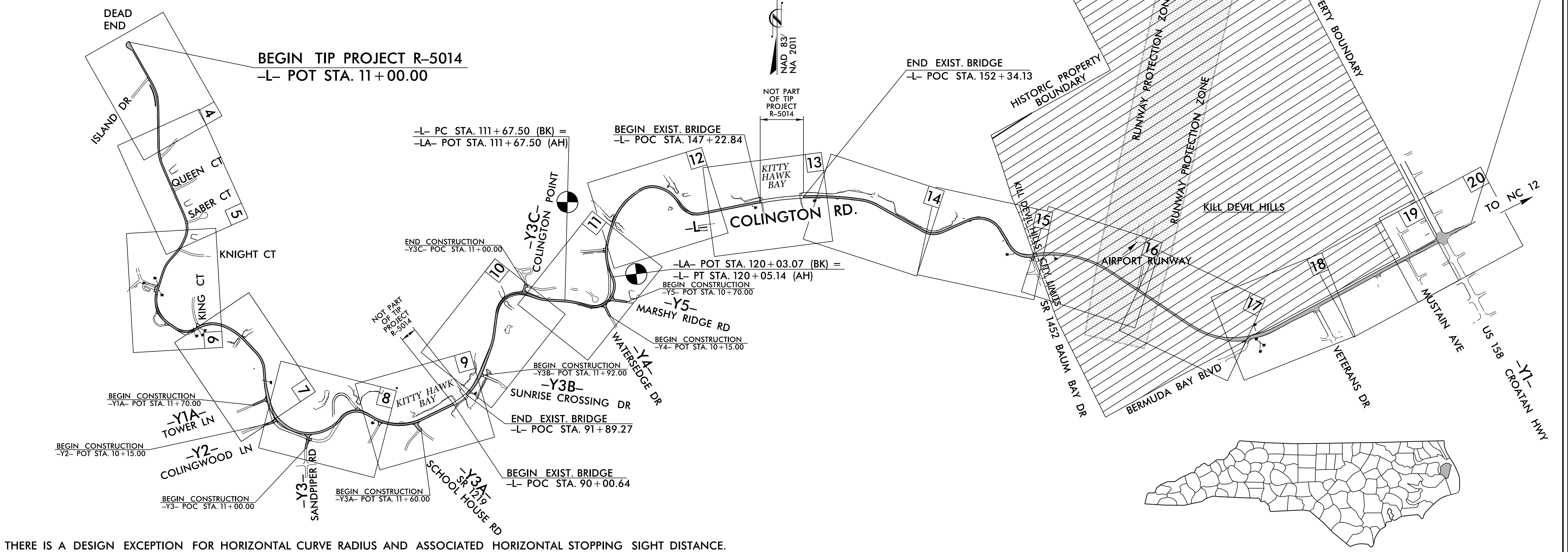
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
DARE COUNTY

**LOCATION: SR 127 (COLINGTON RD.) FROM DEAD END TO US 158
CROATAN HIGHWAY IN KILL DEVIL HILLS**

TYPE OF WORK: GRADING, DRAINAGE, PAVING & SAFETY IMPROVEMENTS

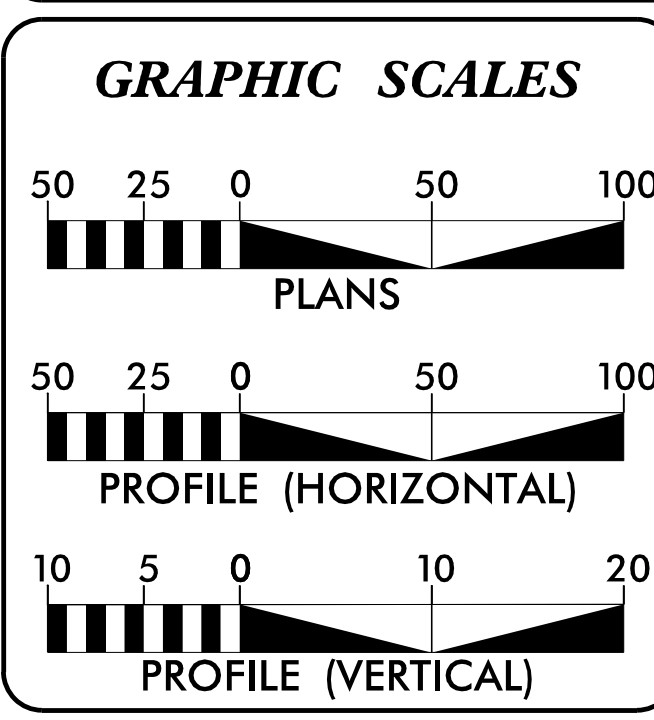
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5014	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
41162.1.1	STP-1217(6)	PE	
41162.2.1	STP-1217(6)	RW, UTL.	
41162.3.1	STP-1217(6)	CONT.	

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**



**END TIP PROJECT R-5014
-L- POT STA. 240+00.00**

THERE IS A DESIGN EXCEPTION FOR HORIZONTAL CURVE RADIUS AND ASSOCIATED HORIZONTAL STOPPING SIGHT DISTANCE.



DESIGN DATA

ADT 2019 =	14,200
ADT 2039 =	19,600
K =	11 %
D =	65 %
T =	3 % *
V =	40 MPH

* TTST = 1% DUAL 2%
FUNC CLASS = LOCAL STATEWIDE TIER

PROJECT LENGTH

TOTAL LENGTH ROADWAY TIP PROJECT R-5014 = 4.204 MILES

Prepared in the Office of:
NIV5
FORMERLY CALIX ENGINEERS & CONSULTANTS
FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

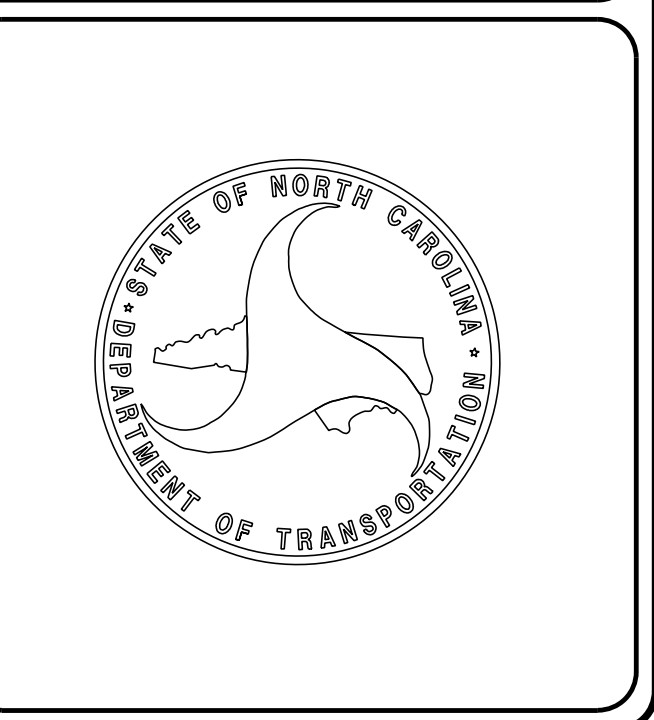
RIGHT OF WAY DATE: SEPTEMBER 18, 2017	JOHNNY BANKS NIV5 PROJECT MANAGER
LETTING DATE: OCTOBER 19, 2021	STEVE DRUM, PE NIV5 PROJECT DESIGN ENGINEER
NCDOT CONTACT:	JENNIFER A. EVANS, PE PROJECT MANAGEMENT - TEAM LEAD

HYDRAULICS ENGINEER

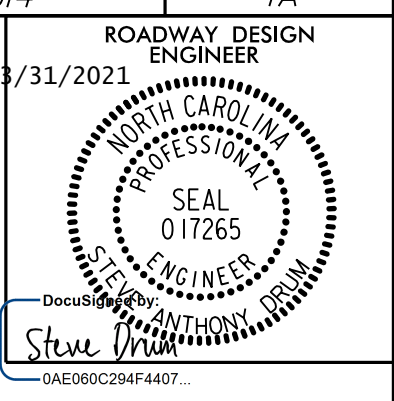
Designed by: **Craig A. Freeman Jr.**, 8/26/2021, P.E.

ROADWAY DESIGN ENGINEER

Designed by: **Steve Anthony Drum**, 8/26/2021, P.E.



STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS



INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, LIST OF STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
1C-1 THRU 1C-4	SURVEY CONTROL SHEETS
2A-1 THRU 2A-4	PAVEMENT SCHEDULE & TYPICAL SECTIONS
2B-1	INTERSECTION DETAIL
2C-1	TYPE III SHOP CURVED STRUCTURE ANCHOR UNIT DETAIL
2C-2	SPECIAL MINIMUM DEPTH DROP INLET DETAIL
2C-3	MINIMUM DEPTH CONCRETE CATCH BASIN DETAIL
2C-4	GUARDRAIL INSTALLATION DETAIL - W BEAM RAIL SECTION
2C-5	GUARDRAIL PLACEMENT - CLEAR SPAN
2C-6	A.T.-1 SYSTEM GUARDRAIL ANCHOR UNIT DETAIL
2C-7	COAL COMBUSTION PRODUCT PLACEMENT DETAIL
2G-1 THRU 2G-3	GEOTECHNICAL DETAILS
3B-1 THRU 3B-2	SUMMARY OF EARTHWORK AND ROADWAY SUMMARIES
3D-1 THRU 3D-6	DRAINAGE SUMMARIES
3G-1	GEOTECHNICAL SUMMARY TABLES
3P-1 THRU 3P-2	PARCEL INDEX SHEET
4 THRU 20	PLAN SHEETS
21 THRU 31	PROFILE SHEETS
TMP-1 THRU TMP-5	TRANSPORTATION MANAGEMENT PLANS
PMP-1 THRU PMP-19	PAVEMENT MARKING PLANS
EC-01 THRU EC-37/CONST.20	EROSION CONTROL PLANS
SIGN-1 THRU SIGN-19	SIGNING PLANS
SIG-1 THRU SIG-M8	SIGNAL PLANS
UC-1 THRU UC-22	UTILITY CONSTRUCTION PLANS
UO-1 THRU UO-13	UTILITIES BY OTHERS PLANS
X-0	CROSS-SECTION INDEX
X-0A THRU X-0B	CROSS-SECTION SUMMARY
X-1 THRU X-112	CROSS-SECTIONS

LIST OF STANDARD DRAWINGS

GENERAL NOTES:	2018 SPECIFICATIONS EFFECTIVE: 01-16-2018 REVISED:
GRADING AND SURFACING OR RESURFACING AND WIDENING:	THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.
CLEARING:	CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD 11.
SUPERELEVATION:	ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 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 STD. NO. 560.02
SIDE ROADS:	THE CONTRACTOR WILL BE REQUIRED TO DO ALL NECESSARY WORK TO PROVIDE SUITABLE CONNECTIONS WITH ALL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PARTICULAR ITEMS INVOLVED.
SUBSURFACE DRAINS:	SUBSURFACE DRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.02 AT LOCATIONS DIRECTED BY THE ENGINEER.
DRIVEWAYS:	DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.02 USING 3 FOOT RADIUS OR RADIUS AS SHOWN ON THE PLANS. LOCATIONS OF DRIVES WILL BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
STREET TURNOUT:	STREET RETURNS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 848.04 USING THE RADIUS 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 FOR THE MAINTENANCE OF TRAFFIC WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.
UTILITIES:	UTILITY OWNERS ON THIS PROJECT ARE DARE COUNTY WATER DEPARTMENT, DOMINION POWER, CENTURYLINK, SPECTRUM, DUKE ENERGY, PIEDMONT NATURAL GAS, KDHWWTP, AND KILL DEVIL HILLS.
RIGHT-OF-WAY MARKERS:	ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.
CURB RAMPS	ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY OTHERS.
	CURB RAMPS ARE SHOWN ON THE PLANS AT APPROXIMATE LOCATIONS. CONSTRUCT ALL CURB RAMPS ACCORDANCE WITH STD 848.05 and/or 848.06.

STANDARD SPECIFICATIONS

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
275.01	Rock Plating
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.02	Method of Shoulder Construction - High Side of Superelevated Curve - Method II
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
DIVISION 8 - INCIDENTALS	
815.02	Subsurface Drain
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
840.14	Concrete Drop Inlet - 12" thru 30" Pipe
840.15	Brick Drop Inlet - 12" thru 30" Pipe
840.16	Drop Inlet Frame and Grates - for use with Std. Dwg 840.14 and 840.15
840.19	Concrete Grated Drop Inlet Type 'D' - 12" thru 36" Pipe
840.24	Frames and Narrow Slot Sag Grates
840.25	Anchorage for Frames - Brick or Concrete or Precast
840.28	Brick Grated Drop Inlet Type 'D' - 12" thru 36" Pipe
840.29	Frames and Narrow Slot Flat Grates
840.31	Concrete Junction Box - 12" thru 66" Pipe
840.32	Brick Junction Box - 12" thru 66" Pipe
840.34	Traffic Bearing Junction Box - for Use with Pipes 42" and Under
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
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
848.02	Driveway Turnout - Radius Type
848.04	Street Turnout
848.05	Curb Ramp - Proposed Curb & Gutter
852.01	Concrete Islands
852.06	Method for Placement of Drop Inlets in Concrete Islands
862.01	Guardrail Placement
862.02	Guardrail Installation
876.02	Guide for Rip Rap at Pipe Outlets

2018 ROADWAY ENGLISH STANDARD DRAWINGS

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

EFF. 01-16-2018
REV.

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS CONVENTIONAL PLAN SHEET SYMBOLS

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	① 23
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	--- WLB ---
Proposed Wetland Boundary	--- WLB ---
Existing Endangered Animal Boundary	--- EAB ---
Existing Endangered Plant Boundary	--- EPB ---
Existing Historic Property Boundary	--- HPB ---
Known Contamination Area: Soil	☠ -S- ☠
Potential Contamination Area: Soil	☠ -S- ☠
Known Contamination Area: Water	☠ -W- ☠
Potential Contamination Area: Water	☠ -W- ☠
Contaminated Site: Known or Potential	☠ ?

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

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

RIGHT OF WAY & PROJECT CONTROL:

Secondary Horiz and Vert Control Point	◆
Primary Horiz Control Point	○
Primary Horiz and Vert Control Point	◆
Exist Permanent Easement 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	○ R W ▲
New Right of Way Line with Concrete or Granite R/W Marker	▲ R W
New Control of Access Line with Concrete CA Marker	△ C A
Existing Control of Access	△ C A
New Control of Access	△ C A
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	--- T ---
Proposed Guardrail	--- T ---
Existing Cable Guiderail	--- T ---
Proposed Cable Guiderail	--- T ---
Equality Symbol	⊕
Pavement Removal	⊠

VEGETATION:

Single Tree	○
Single Shrub	○

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

Hedge	-----
Woods Line	-----
Orchard	○ ○ ○ ○
Vineyard	□ Vineyard

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	--- CONC ---
Bridge Wing Wall, Head Wall and End Wall	--- CONC WW ---
MINOR:	
Head and End Wall	--- CONC HW ---
Pipe Culvert	-----
Footbridge	--- ---
Drainage Box: Catch Basin, DI or JB	□ CB
Paved Ditch Gutter	-----
Storm Sewer Manhole	○ 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	⊠ T
U/G Telephone Cable Hand Hole	○ T
U/G Telephone Cable LOS B (S.U.E.*)	--- T ---
U/G Telephone Cable LOS C (S.U.E.*)	--- T ---
U/G Telephone Cable LOS D (S.U.E.*)	--- T ---
U/G Telephone Conduit LOS B (S.U.E.*)	--- TC ---
U/G Telephone Conduit LOS C (S.U.E.*)	--- TC ---
U/G Telephone Conduit LOS D (S.U.E.*)	--- TC ---
U/G Fiber Optics Cable LOS B (S.U.E.*)	--- T FO ---
U/G Fiber Optics Cable LOS C (S.U.E.*)	--- T FO ---
U/G Fiber Optics Cable LOS D (S.U.E.*)	--- T FO ---

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

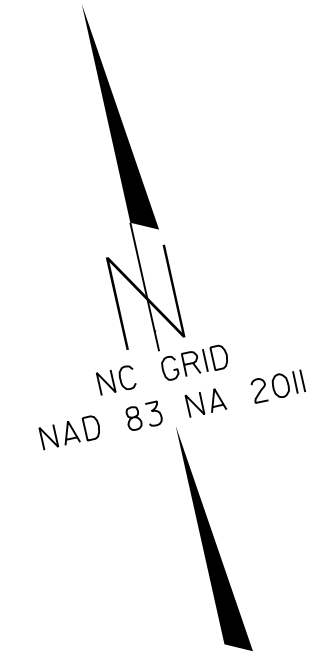
Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	□
Utility Unknown U/G Line LOS B (S.U.E.*)	--- 7U/L ---
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	□ UST
A/G Tank; Water, Gas, Oil	□
Geoenvironmental Boring	⊕
U/G Test Hole LOS A (S.U.E.*)	○
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

SURVEY CONTROL SHEET R-5014

-L- STA 11+00
BEGIN CONSTRUCTION

LOCALIZED PROJECT COORDINATES
N = 842,691.635
E = 2,971,970.4073

NCDOT GPS STATION "R5014 GPS-8"
LOCALIZED PROJECT COORDINATES
N = 841,988.169
E = 2,971,957.317



NCDOT GPS STATION "R5014 GPS-16"
LOCALIZED PROJECT COORDINATES
N = 840,717.158
E = 2,977,711.549

NCDOT GPS STATION "R5014 GPS-15"
LOCALIZED PROJECT COORDINATES
N = 840,209.704
E = 2,977,562.949

NCDOT GPS STATION "R5014 GPS-7"
LOCALIZED PROJECT COORDINATES
N = 841,504.527
E = 2,971,582.261

NCDOT GPS STATION "R5014 GPS-13"
LOCALIZED PROJECT COORDINATES
N = 839,740.307
E = 2,976,469.215

NCDOT GPS STATION "R5014 GPS-14"
LOCALIZED PROJECT COORDINATES
N = 839,614.440
E = 2,977,220.541

NCDOT GPS STATION "R5014 GPS-9"
LOCALIZED PROJECT COORDINATES
N = 839,364.923
E = 2,973,118.726

NCDOT GPS STATION "R5014 GPS-10"
LOCALIZED PROJECT COORDINATES
N = 838,983.511
E = 2,973,499.421

NCDOT GPS STATION "R5014 GPS-12"
LOCALIZED PROJECT COORDINATES
N = 838,416.480
E = 2,975,781.285

NCDOT GPS STATION "R5014 GPS-5"
LOCALIZED PROJECT COORDINATES
N = 838,235.759
E = 2,973,638.848

NCDOT GPS STATION "R5014 GPS-11"
LOCALIZED PROJECT COORDINATES
N = 838,189.588
E = 2,975,224.230

NCDOT GPS STATION "R5014 GPS-6"
LOCALIZED PROJECT COORDINATES
N = 837,674.227
E = 2,972,311.705

CONTROL DATA

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L. STATION	OFFSET
R50147	GPS MON R5014-7		841504.5270	2971582.2610	14.42	23+64.60	743.79 RT
R50148	GPS MON R5014-8		841988.1690	2971957.3170	14.73	17+80.89	354.45 RT
R50149	GPS MON R5014-9		839364.9230	2973118.7260	1.96	54+14.84	17.83 LT
R501410	GPS MON R5014-10		838983.5110	2973499.4210	4.29	59+57.61	17.37 RT
R50145	GPS MON R5014-5		838235.7590	2973638.8480	7.45	66+98.94	84.72 RT
R50146	GPS MON R5014-6		837674.2270	2972311.7050	21.59	66+12.30	1513.14 RT
R501411	GPS MON R5014-11		838189.5880	2975224.2300	3.78	83+86.56	13.71 RT
R501412	GPS MON R5014-12		838416.4800	2975781.2850	13.80	89+85.54	19.71 RT
R501413	GPS MON R5014-13		839740.3070	2976469.2150	2.43	105+32.14	8.54 LT
R501414	GPS MON R5014-14		839614.4400	2977220.5410	4.59	113+00.79	15.03 RT
R501415	GPS MON R5014-15		840209.7040	2977562.9490	5.08	122+95.93	16.82 LT
R501416	GPS MON R5014-16		840717.1580	2977711.5490	2.67	128+20.54	15.94 LT

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "CENTROID1" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 840,300.00(±) EASTING: 2,980,000.00(±) ELEVATION: 6.00(±)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.0000332483 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "CENTROID1" TO -L- STATION 11+00 IS N 73° 24' 49.23" E 8,378.2025

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

NOTES:

THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTP://WWW.NCDOT.GOV/DOH/PRECONSTRUCT/HIGHWAYLOCATION/PROJECT/](http://www.ncdot.gov/DOH/PRECONSTRUCT/HIGHWAYLOCATION/PROJECT/)

THE FILES TO BE FOUND ARE AS FOLLOWS:
TIP R5014_LS_CONTROL.TXT

SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

⊙ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

NOTE: DRAWING NOT TO SCALE

SURVEY CONTROL SHEET R-5014

-L- STA 240+00
END CONSTRUCTION

LOCALIZED PROJECT COORDINATES
N = 840,566.837
E = 2,987,724.6954

NCDOT GPS STATION "R5014 GPS-2"
LOCALIZED PROJECT COORDINATES
N = 840,401.002
E = 2,987,475.393

NCDOT GPS STATION "R5014 GPS-1"
LOCALIZED PROJECT COORDINATES
N = 840,782.732
E = 2,988,176.179

NCDOT GPS STATION "R5014 GPS-18"
LOCALIZED PROJECT COORDINATES
N = 840,550.147
E = 2,981,789.103

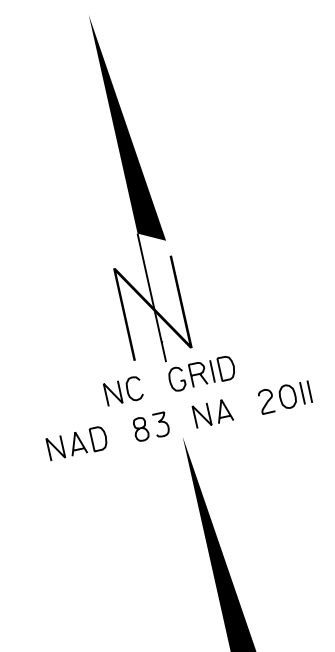
NCDOT GPS STATION "R5014 GPS-3"
LOCALIZED PROJECT COORDINATES
N = 840,851.362
E = 2,979,912.511

NCDOT GPS STATION "R5014 GPS-17"
LOCALIZED PROJECT COORDINATES
N = 840,649.796
E = 2,980,939.748

NCDOT GPS STATION "R5014 GPS-4"
LOCALIZED PROJECT COORDINATES
N = 840,718.607
E = 2,979,090.807

CONTROL DATA

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
R50144	GPS MON R5014-4		840718.6070	2979090.8070	2.78	144+16.88	36.72 RT
R50143	GPS MON R5014-3		840851.3620	2979912.5110	12.78	152+54.83	21.58 RT
R501417	GPS MON R5014-17		840649.7960	2980939.7480	2.30	163+33.17	18.50 RT
R501418	GPS MON R5014-18		840550.1470	2981789.1030	3.26	172+45.69	28.48 RT
R50142	GPS MON R5014-2		840401.0020	2987475.3930	7.61	237+01.84	27.50 RT
R50141	GPS MON R5014-1		840782.7320	2988176.1790	6.93	119+21.95	10544.96 RT



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "CENTROID1" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 840,300.00(ft) EASTING: 2,980,000.00(ft) ELEVATION: 6.00(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.0000332483 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "CENTROID1" TO -L- STATION 11+00 IS N 73 ° 24' 49.23" E 8,378.2025 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

NOTES:

THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTP://WWW.NCDOT.GOV/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.ncdot.gov/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/)

THE FILES TO BE FOUND ARE AS FOLLOWS:
TIP R5014_LS_CONTROL.TXT

SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

⊗ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

NOTE: DRAWING NOT TO SCALE

SURVEY CONTROL SHEET R-5014

FINAL ROW /EASEMENT POINTS (GROUND COORDINATES)

PROJECT REFERENCE NO.	SHEET NO.
<i>R-5014</i>	<i>IC-4</i>
Location and Surveys	

ROW MARKER PERMANENT EASEMENT-E				
ALIGN	STATION	OFFSET	NORTH	EAST
L	43.75.00	-29.67	839662.3721	2972324.8686
L	44.07.00	32.31	839626.3020	2972265.1773
L	44.07.00	49.00	839624.4346	2972248.5925
L	44.50.00	-31.00	839594.9315	2972334.9035
L	45.18.00	64.66	839496.1141	2972268.7924
L	45.25.00	-32.00	839531.4494	2972359.0542
L	46.00.00	-32.00	839474.3465	2972395.6135
L	46.60.00	-34.50	839437.1898	2972434.9619
L	46.60.00	-30.09	839433.8623	2972432.0753
L	46.79.00	61.23	839350.6679	2972389.5729
L	48.73.00	-30.00	839329.0275	2972600.2975
L	48.81.98	64.25	839235.2321	2972587.0539
L	48.98.05	48.88	839246.5839	2972609.5709
L	49.00.00	-30.00	839326.2486	2972692.5294
L	52.71.94	-51.00	839433.4213	2972975.3174
L	53.93.00	-58.00	839410.9002	2973113.3785
L	56.10.00	65.00	839195.9311	2973235.2225
L	56.10.00	35.00	839219.0227	2973254.3740
x L	56.37.00	-54.00	839268.5723	2973333.1866
x L	56.37.00	-40.00	839258.1413	2973323.8488
L	56.50.00	65.00	839171.9460	2973262.5495
L	56.50.00	45.00	839186.6026	2973276.1577
x L	56.62.00	-54.00	839250.2924	2973352.9023
x L	56.62.00	-40.00	839240.1941	2973343.2058
L	68.93.00	-40.00	838194.3405	2973870.9880
x L	68.93.00	-56.00	838208.2141	2973878.9581
L	69.26.00	-56.00	838194.5457	2973904.7434
L	69.26.00	-40.00	838180.1623	2973897.7350
x L	75.09.00	66.00	838176.5367	2974467.6991
x L	75.09.00	55.94	838183.9101	2974460.8485
x L	75.30.07	61.00	838196.7173	2974481.3170
L	84.33.00	50.00	838161.5435	2975278.2633
L	84.33.00	59.00	838152.7195	2975280.0343
x L	103.90.00	40.00	839627.4324	2976386.1391
x L	103.90.00	53.00	839618.9898	2976396.0246
x L	104.20.00	-40.00	839704.3186	2976349.1654
x L	104.24.00	-55.00	839718.5545	2976342.4889
x L	104.25.00	53.00	839639.0208	2976415.5597
x L	104.25.00	40.75	839648.1373	2976407.3701
x L	104.44.00	-50.00	839730.1217	2976364.0546
x L	104.44.00	-40.00	839722.2230	2976370.1874
L	107.90.36	-53.00	839750.3477	2976740.8669
L	109.68.37	-53.00	839715.1162	2976897.4032
L	111.15.00	-38.08	839691.1143	2977042.8220
L	111.15.00	-53.00	839706.0086	2977043.7489
L	121.30.00	-50.00	840032.1541	2977557.3556
L	121.30.00	-40.00	840035.0341	2977566.9319
L	122.47.00	-45.00	840156.7442	2977537.8027
L	123.22.00	-55.00	840237.4983	2977524.9100
L	123.75.00	-51.00	840294.7154	2977532.9365
L	124.32.00	-50.00	840355.5027	2977543.8423
L	125.45.00	-53.00	840468.9894	2977572.0801
L	126.45.00	-45.00	840563.5790	2977608.4814
L	126.70.00	-45.00	840588.7748	2977617.0277
L	126.70.00	-55.00	840592.1555	2977607.6165
x L	126.95.00	-45.00	840613.6493	2977626.4681
x L	126.95.00	-55.00	840617.3640	2977617.1836
x L	127.15.00	-45.00	840633.2963	2977634.6562
L	127.71.00	-40.00	840684.6211	2977664.9417
L	127.71.00	-50.00	840689.3199	2977656.1145
L	138.65.00	80.00	840618.8303	2978509.8959
L	138.65.00	37.00	840657.9633	2978527.7174
L	139.71.00	54.00	840616.0831	2978646.7323
L	141.78.00	39.48	840668.4312	2978857.2448
L	141.78.00	47.00	840661.0576	2978858.7401
L	166.06.00	50.00	840488.8400	2981162.2871
L	166.06.00	40.00	840497.5615	2981167.1795
L	167.55.00	47.00	840417.5715	2981298.3573
L	168.61.00	70.00	840369.5436	2981421.0512
L	172.35.00	58.00	840518.8354	2981791.3537
L	173.72.00	45.00	840574.7809	2981903.6576
L	180.80.00	40.00	840169.4975	2982392.0059
L	180.85.00	65.00	840144.4312	2982386.2386
L	182.05.00	52.70	840125.0752	2982532.3650

ROW MARKER PERMANENT EASEMENT-E				
ALIGN	STATION	OFFSET	NORTH	EAST
LA	115.10.00	55.00	839528.1366	2977427.2836

ROW MARKER PERMANENT EASEMENT-E				
ALIGN	STATION	OFFSET	NORTH	EAST
Y4	10.95.00	-27.69	839531.8379	2977559.7834

* - POINT NOT SET DUE TO INACCESSIBILITY

8/17/19

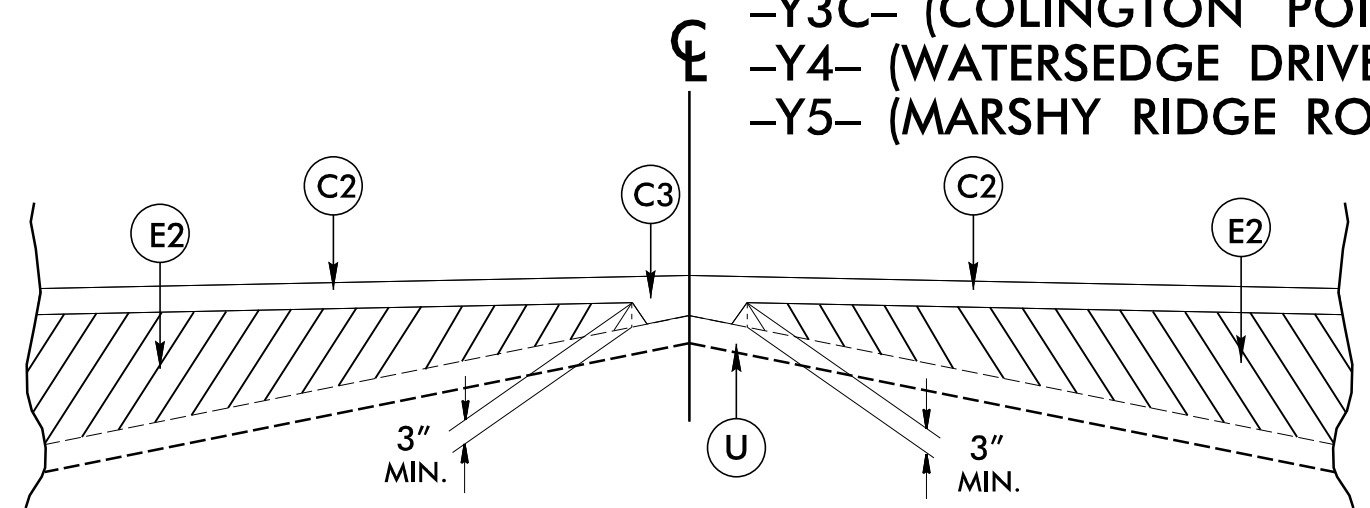
PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN) JANUARY 4, 2019	
C1	PROP. APPROX. 3.0" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1.5" OR GREATER THAN 2" DEPTH.
C4	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
D1	PROP. APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2.5" OR GREATER THAN 4" DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" IN DEPTH TO BE PLACED IN LAYERS NOT GREATER THAN 5.5" IN DEPTH OR LESS THAN 3"
R1	5" MONOLITHIC ISLAND (KEYED IN)
R2	2'-6" CURB & GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	VARIABLE DEPTH MILLING - 0" TO 3"
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL)

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

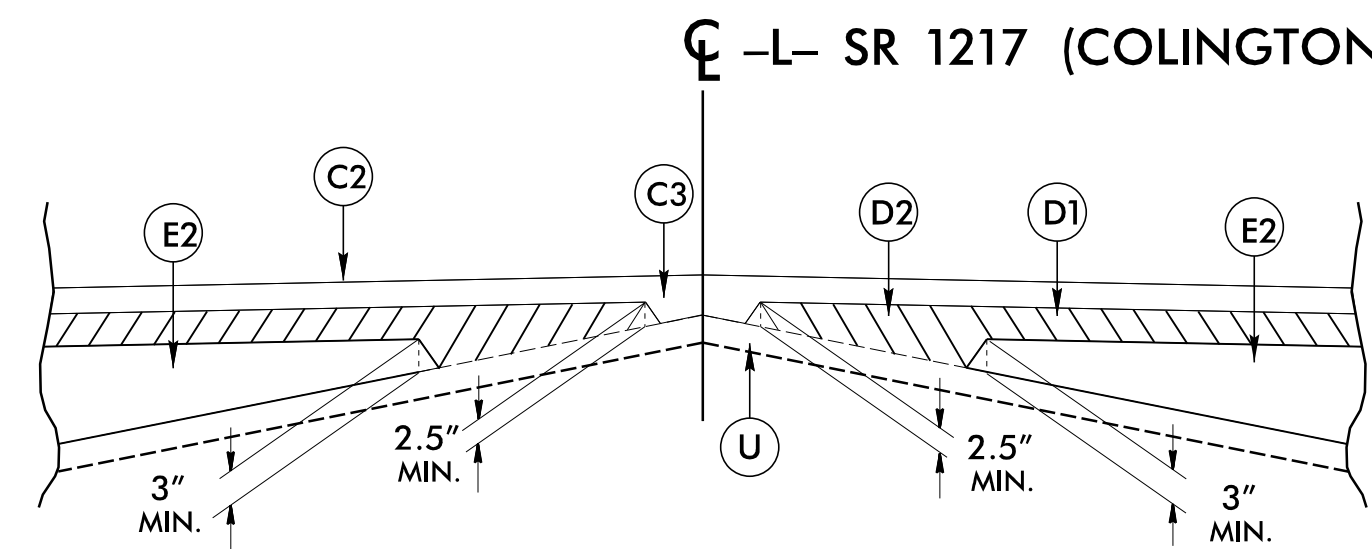
CALYX
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6750 TRYON ROAD
CARY, NC 27518
PHONE: 919.851.1912
CALYXengineers.com
NC License # F-1333
Formerly Mulvey Engineers & Consultants

PROJECT REFERENCE NO. R-5014	SHEET NO. 2A-1
RW SHEET NO.	PAVEMENT DESIGN
ROADWAY DESIGN 1/8/2019 ENGINEER	PAVEMENT DESIGN 1/8/2019 ENGINEER
DocuSigned by: <i>Stephen C. Brown</i>	DocuSigned by: <i>Clark Morrison</i>
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

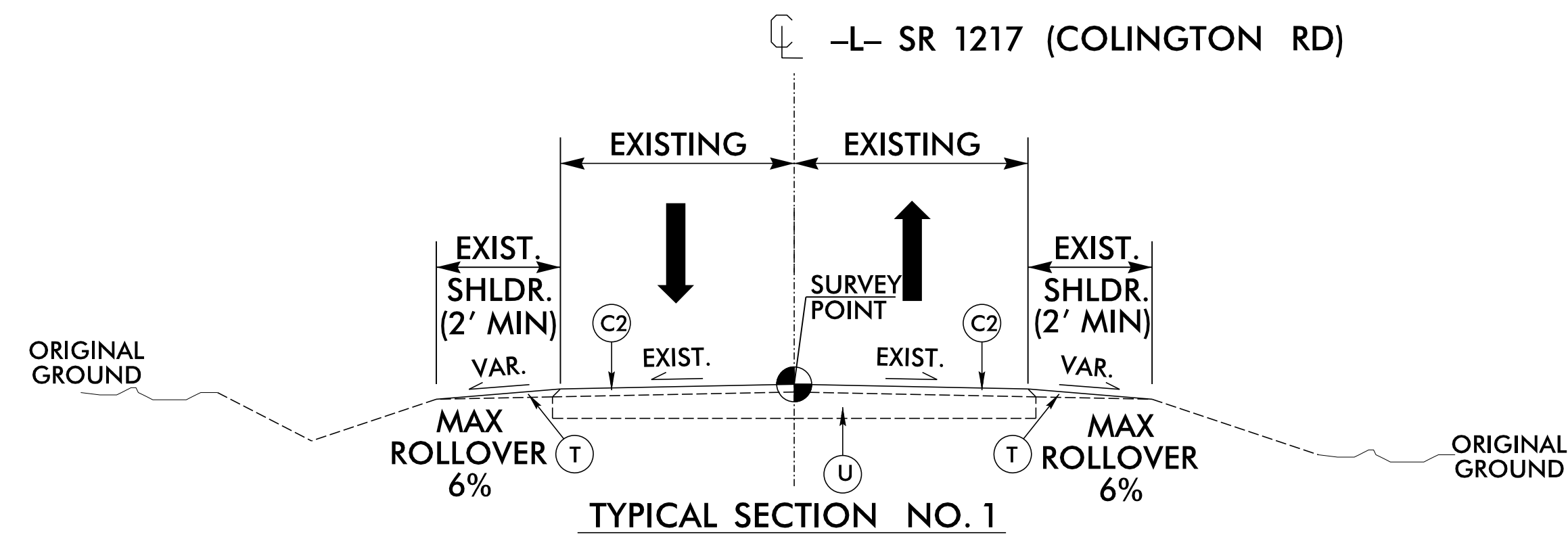
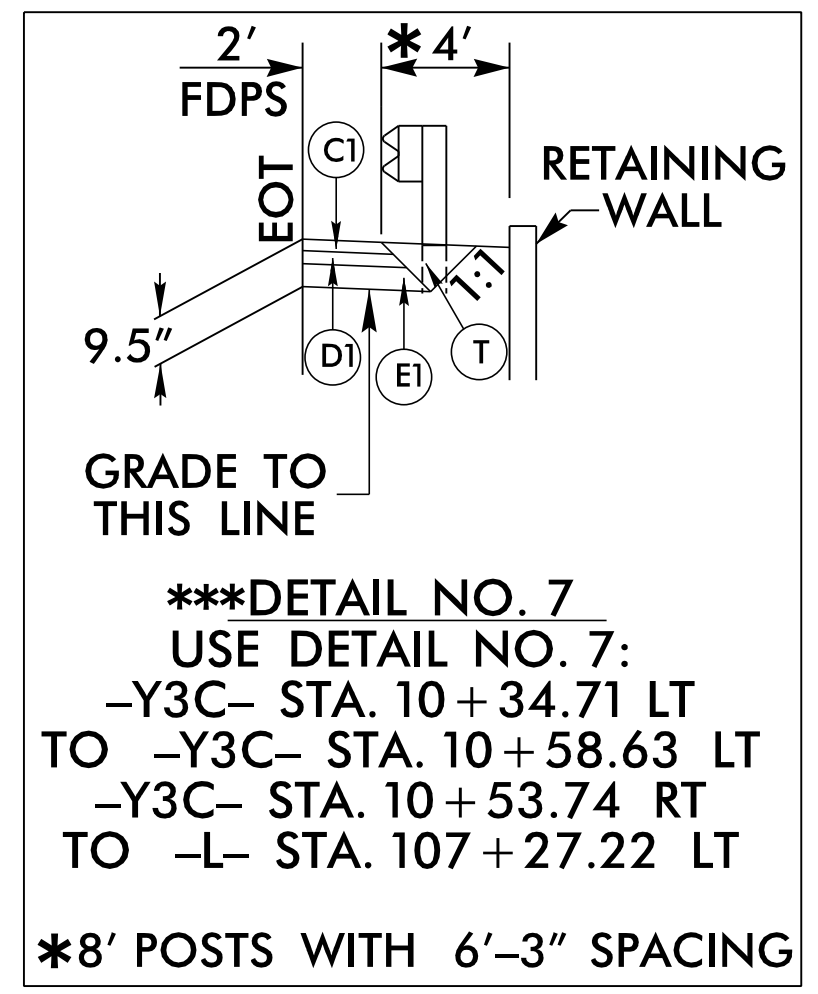
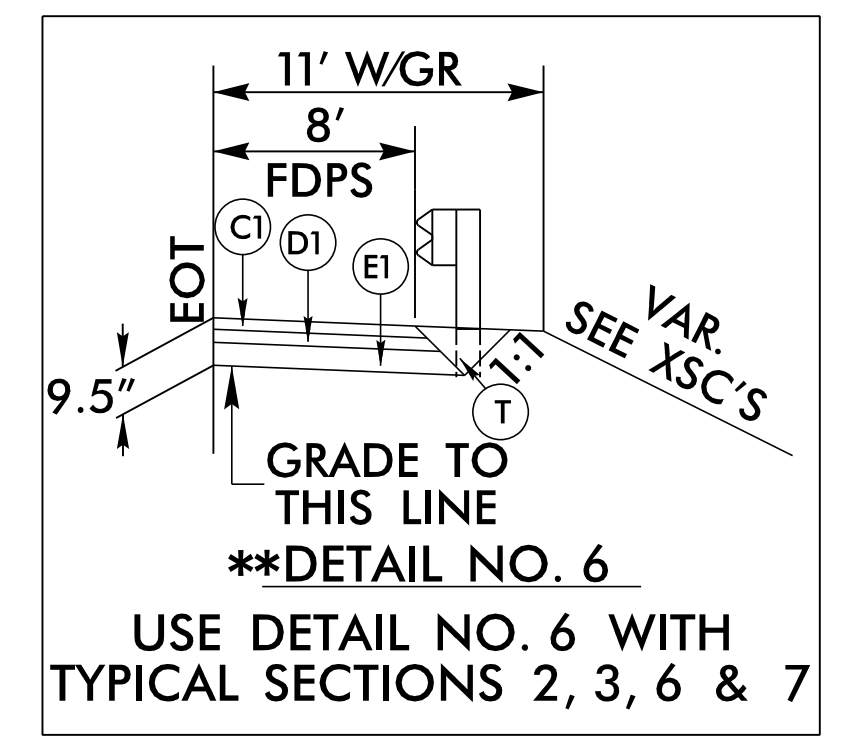
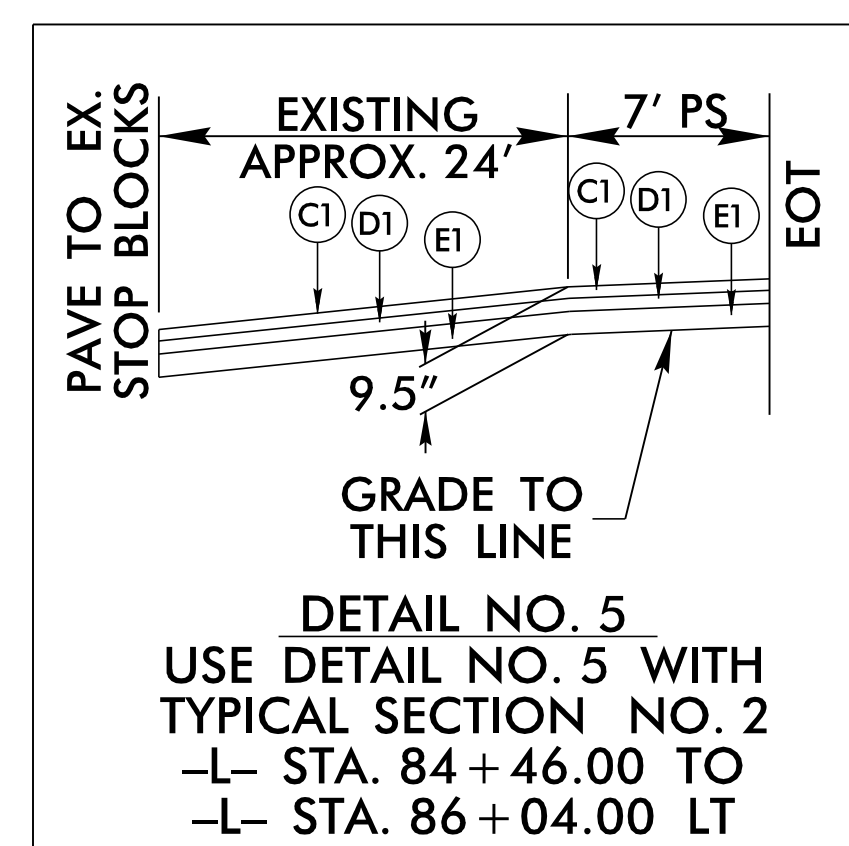
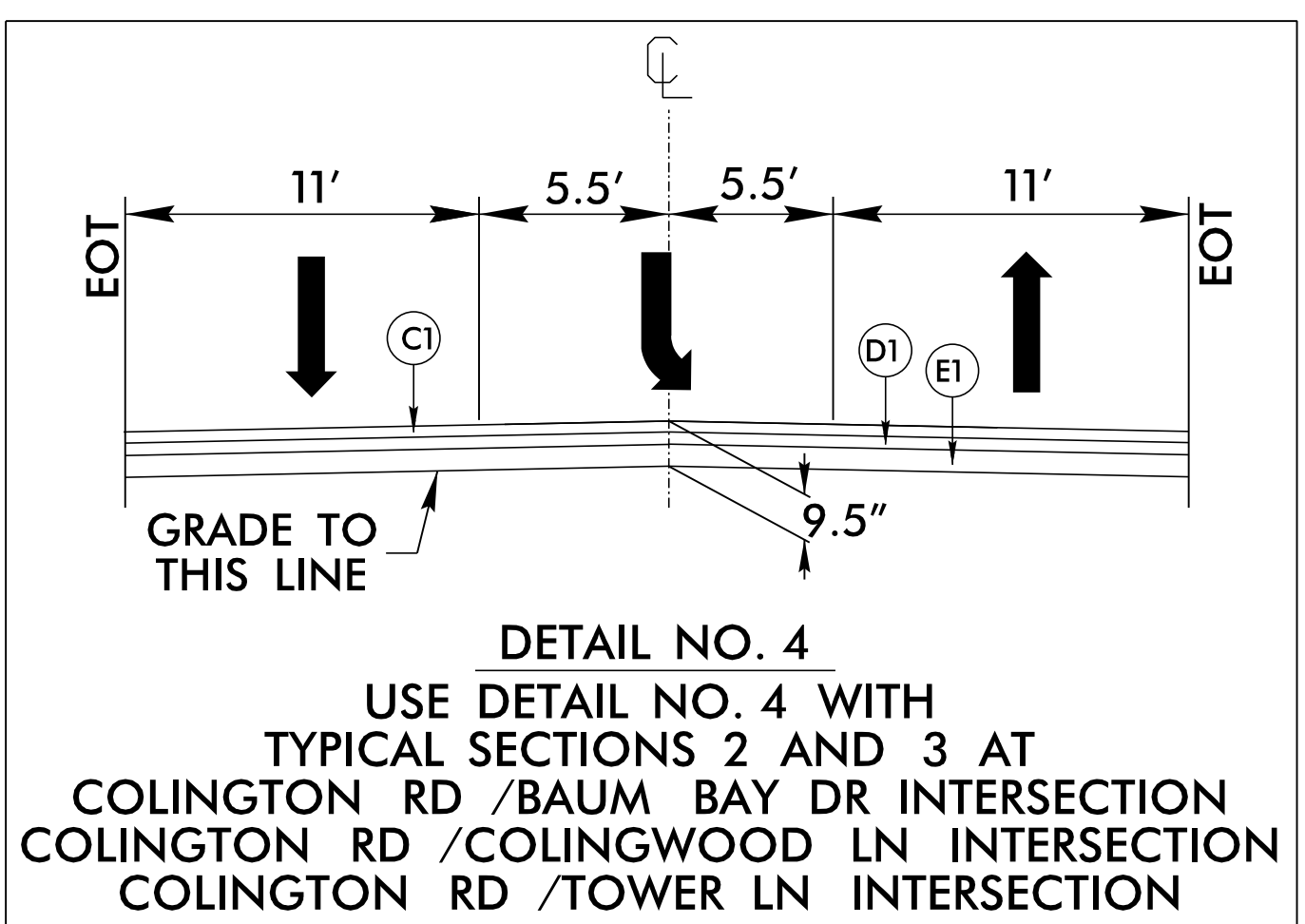
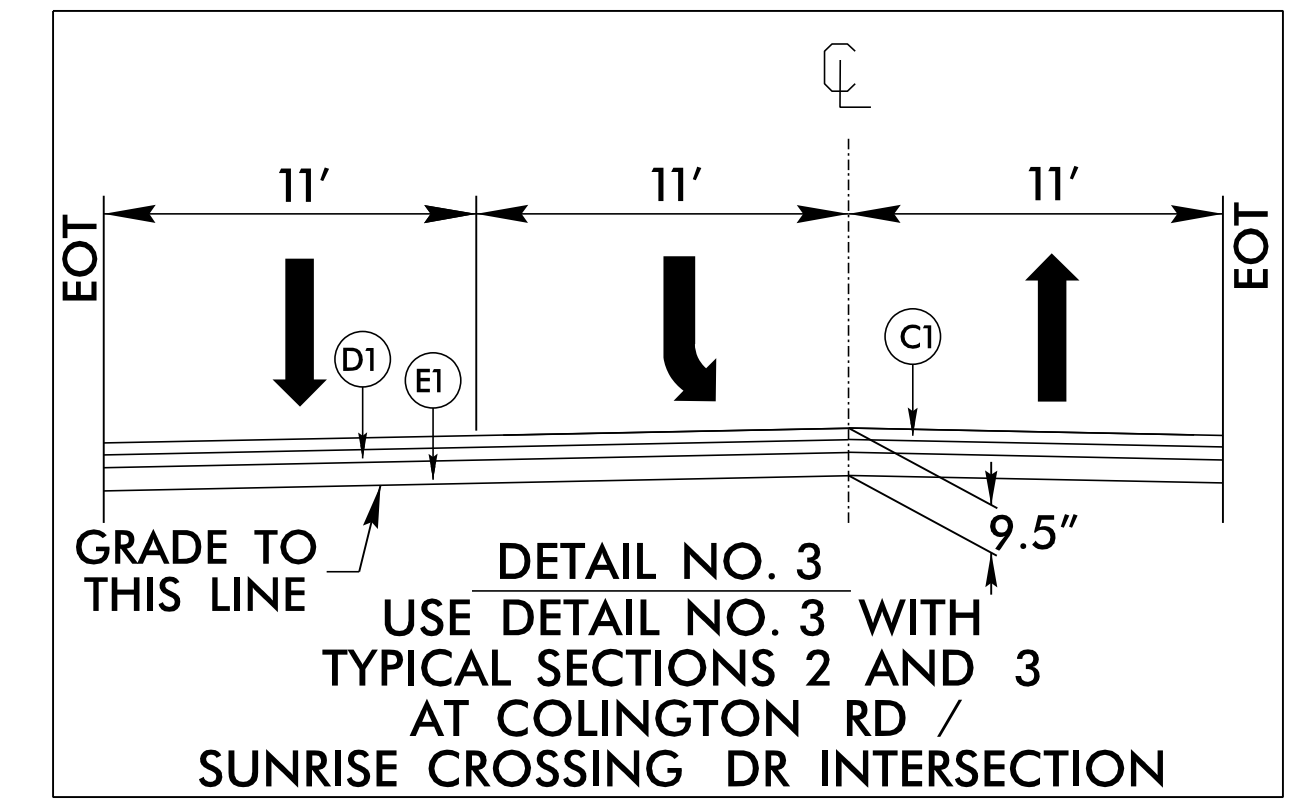
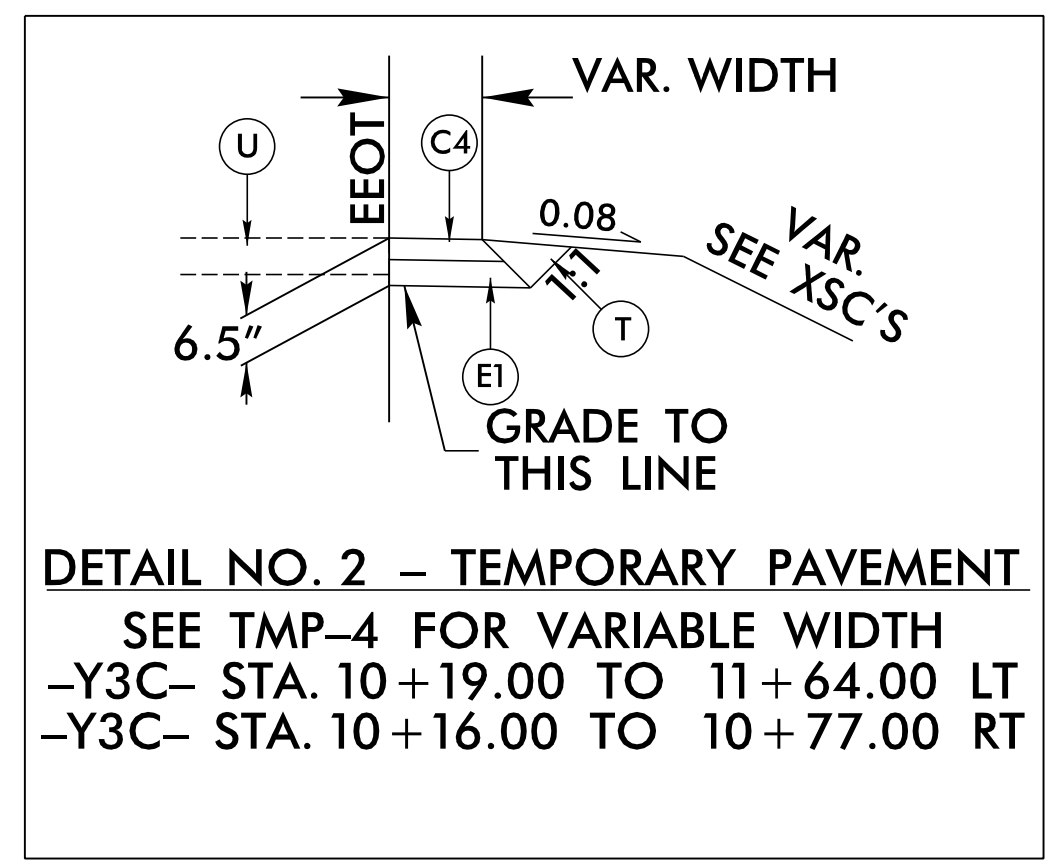
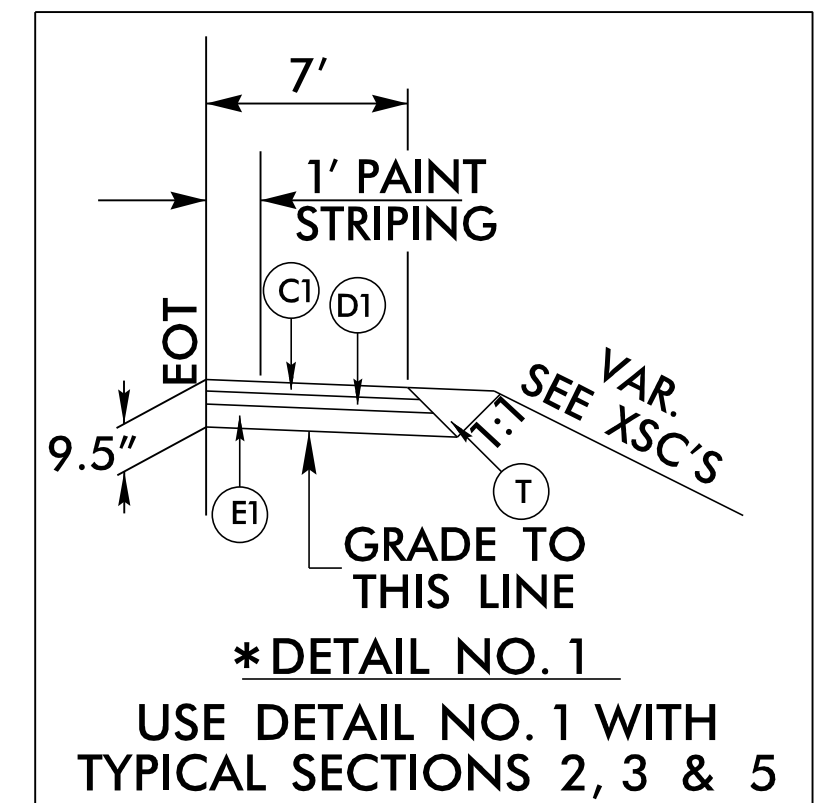
- Y1- (TOWER LANE)
- Y2- (COLINGWOOD LANE)
- Y3- (SANDPIPER DRIVE)
- Y3A- SR 1219 (SCHOOL HOUSE ROAD)
- Y3B- (SUNRISE CROSSING DRIVE)
- Y3C- (COLINGTON POINT)
- Y4- (WATERSEdge DRIVE)
- Y5- (MARSHY RIDGE ROAD)



Detail Showing Method of Wedging



Detail Showing Method of Wedging



USE TYPICAL SECTION NO. 1
-L- STA. 11+00.00 TO -L- STA. 43+10.00
-L- STA. 209+96.72 TO -L- STA. 229+00.00

NOTE:
TRANSITION FROM TYP. 1 TO TYP. 2
-L- STA. 41+98.74 TO 43+10.00.
TRANSITION FROM 2 TO 3 LANES.
TRANSITION FROM TYP. 2 TO TYP. 1
-L- STA. 182+12.50 TO 183+00.00.

REVISIONS

1/8/2019
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smc

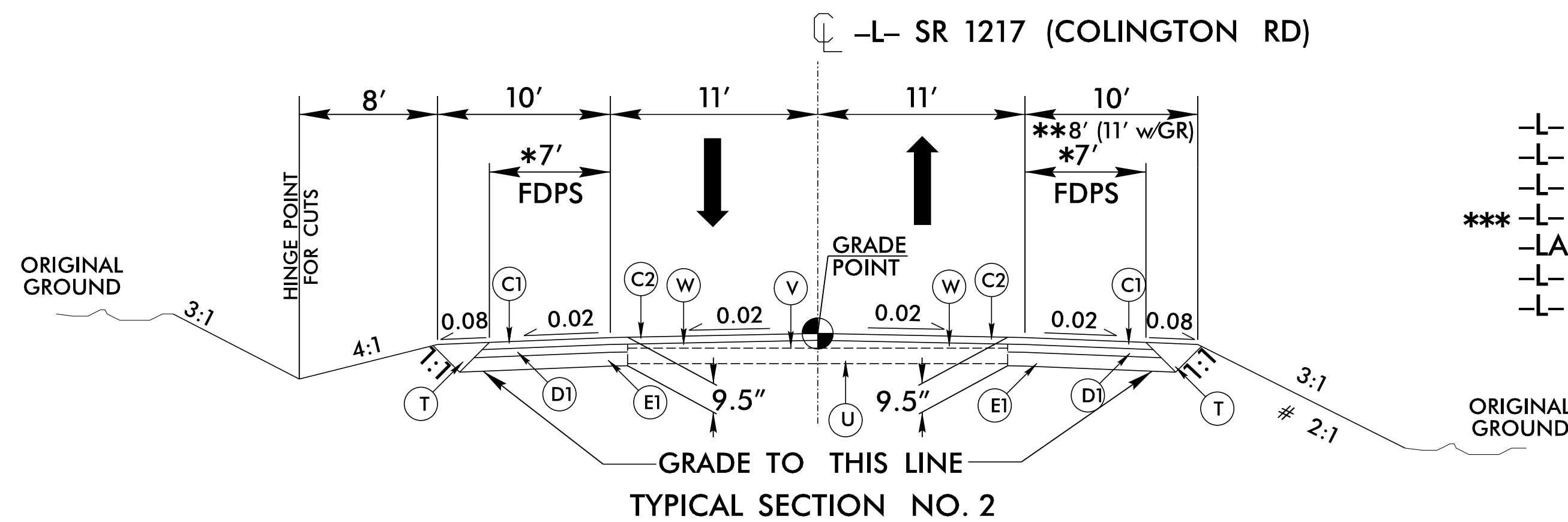
8/17/19

PAV'T SCHEDULE	
C1	3" S9.5B
C2	1 1/2" S9.5B
C3	VAR. S9.5B
C4	2 1/2" S9.5B
D1	2 1/2" I19.0C
D2	VAR. I19.0C
E1	4" B25.0C
E2	VAR. B25.0C
R1	MON. ISLAND
R2	2'-6" C&G
T	EARTH MAT.
U	EX. PAV'T
V	VAR. MILL 0" -3"
W	WEDGING

REVISIONS



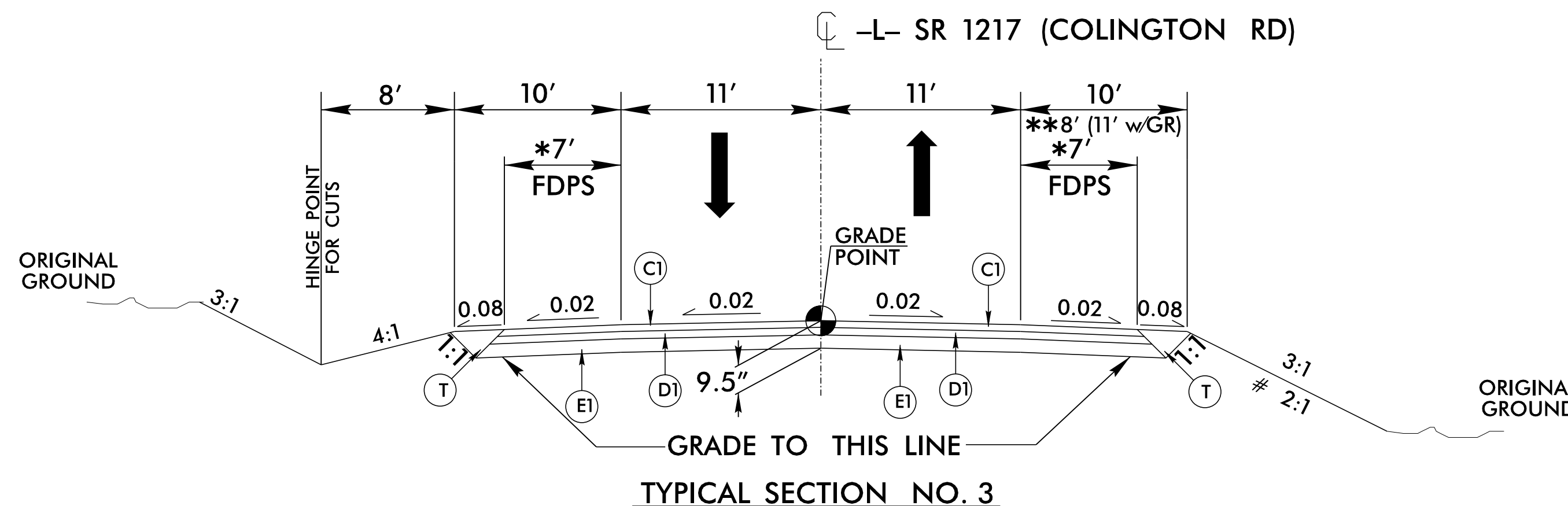
PROJECT REFERENCE NO. R-5014	SHEET NO. 2A-2
RW SHEET NO.	PAVEMENT DESIGN
ROADWAY DESIGN ENGINEER 8/8/2019	PAVEMENT DESIGN ENGINEER 8/8/2019
DocuSigned by: Stephen C. Broude Clark Morrison DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



USE TYPICAL SECTION NO. 2

-L- STA. 43+10.00 TO -L- STA. 48+50.00
 -L- STA. 50+00.00 TO -L- STA. 66+00.00
 -L- STA. 75+25.00 TO -L- STA. 90+00.64 (EXISTING BRIDGE)
 *** -L- STA. 91+89.27 (EXISTING BRIDGE) TO -L- STA. 111+67.50 (EQUALITY)
 -LA- STA. 111+67.50 (EQUALITY) TO -LA- STA. 117+34.00
 -L- STA. 121+00.00 TO -L- STA. 147+22.84 (EXISTING BRIDGE)
 -L- STA. 152+34.13 (EXISTING BRIDGE) TO -L- STA. 182+57.16

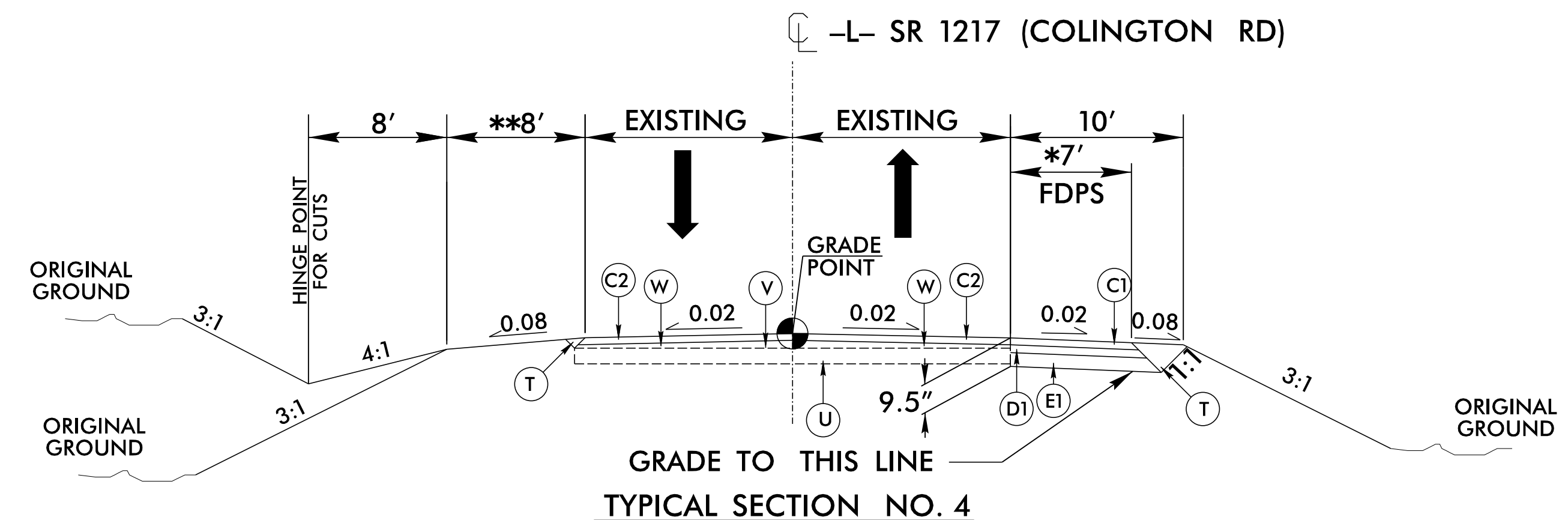
NOTE:
 SEE PLANS FOR TURN LANES AND TAPERS.
 USE DETAILS NO. 1 THRU 5 WITH TYPICAL NO. 2
 MILL AS NEEDED.
 * SEE DETAIL NO. 1
 ** SEE DETAIL NO. 6 WHERE PROP. GUARDRAIL PRESENT
 *** SEE DETAIL NO. 7
 # 2:1 FILL SLOPES USED WHERE ROCK PLATING REQUIRED
 AND SAV (SUBMERGED AQUATIC VEGETATION) PRESENT



USE TYPICAL SECTION NO. 3

-L- STA. 48+50.00 TO -L- STA. 50+00.00
 -L- STA. 66+00.00 TO -L- STA. 75+25.00
 -LA- STA. 117+34.00 TO -LA- STA. 120+03.07 (EQUALITY)
 -L- STA. 120+05.14 (EQUALITY) TO -L- STA. 121+00.00

NOTE:
 SEE PLANS FOR TURN LANES AND TAPERS.
 USE DETAILS NO. 1 & 4 WITH TYPICAL NO. 3
 MILL AS NEEDED.
 * SEE DETAIL NO. 1
 ** SEE DETAIL NO. 6 WHERE PROP. GUARDRAIL PRESENT
 # 2:1 FILL SLOPES USED WHERE ROCK PLATING REQUIRED
 AND SAV (SUBMERGED AQUATIC VEGETATION) PRESENT



USE TYPICAL SECTION NO. 4

-L- STA. 182+57.16 TO -L- STA. 183+00.00

NOTE:
 * SEE DETAIL NO. 1
 ** SEE DETAIL NO. 6 WHERE PROP. GUARDRAIL PRESENT

8/17/2019
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 smc

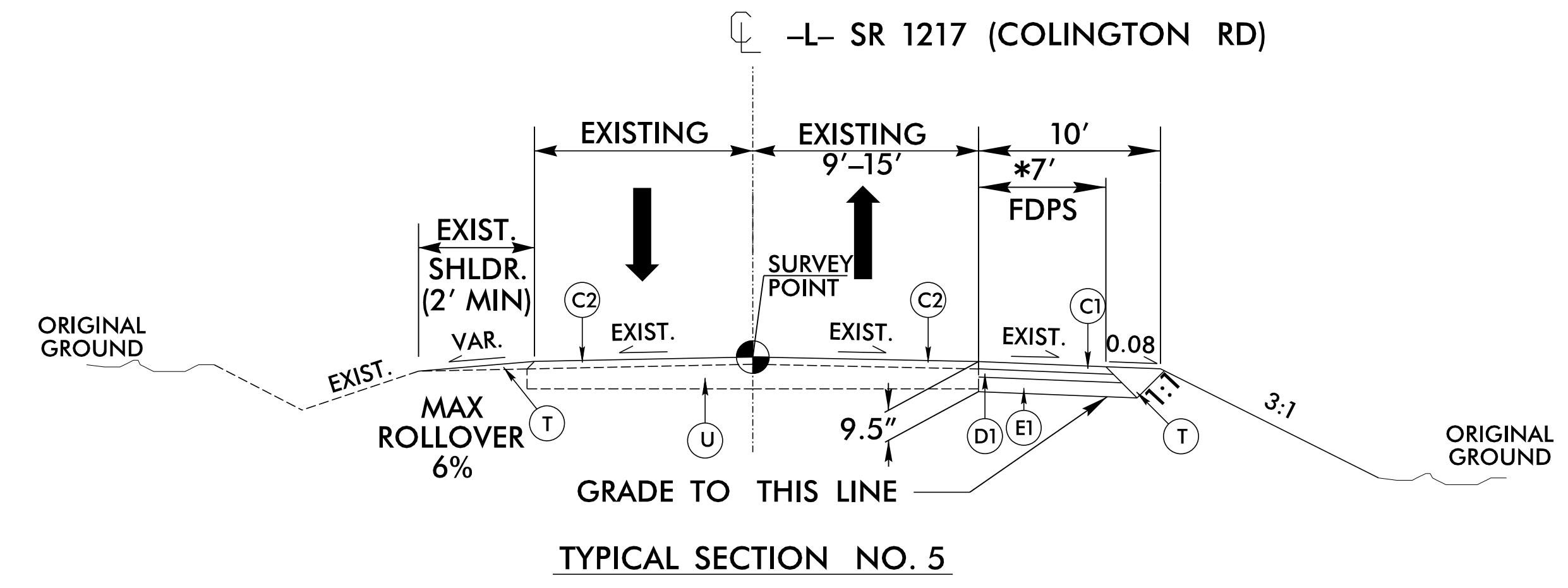
8/17/19

PAV'T SCHEDULE	
C1	3" S9.5B
C2	1 1/2" S9.5B
C3	VAR. S9.5B
C4	2 1/2" S9.5B
D1	2 1/2" I19.0C
D2	VAR. I19.0C
E1	4" B25.0C
E2	VAR. B25.0C
R1	MON. ISLAND
R2	2'-6" C&G
T	EARTH MAT.
U	EX. PAV'T
V	VAR. MILL 0"-3"
W	WEDGING

REVISIONS

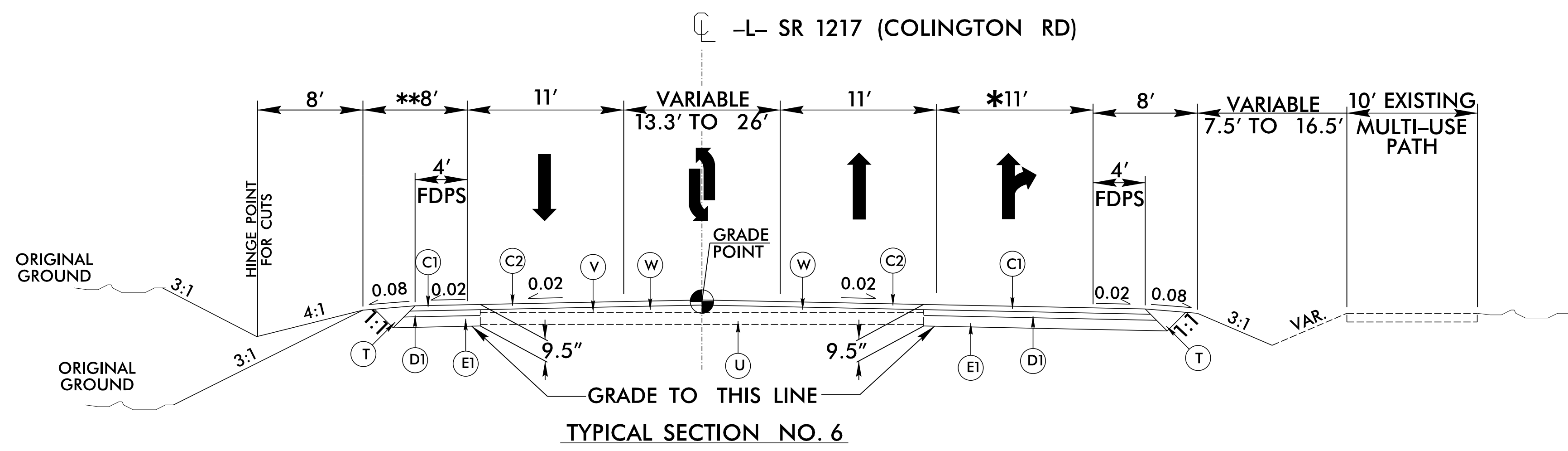
CALYX
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6750 TRYON ROAD
CARY, NC 27518
phone: 919.851.1912
CALYXengineers.com
NC License # F-1333
Formerly Mulkey Engineers & Consultants

PROJECT REFERENCE NO. R-5014	SHEET NO. 2A-3
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER 1/8/2019	PAVEMENT DESIGN ENGINEER 1/8/2019
DocuSigned by: Stephen C. Browde Clark Morrison DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



USE TYPICAL SECTION NO. 5
-L- STA. 183+00.00 TO -L- STA. 209+96.72

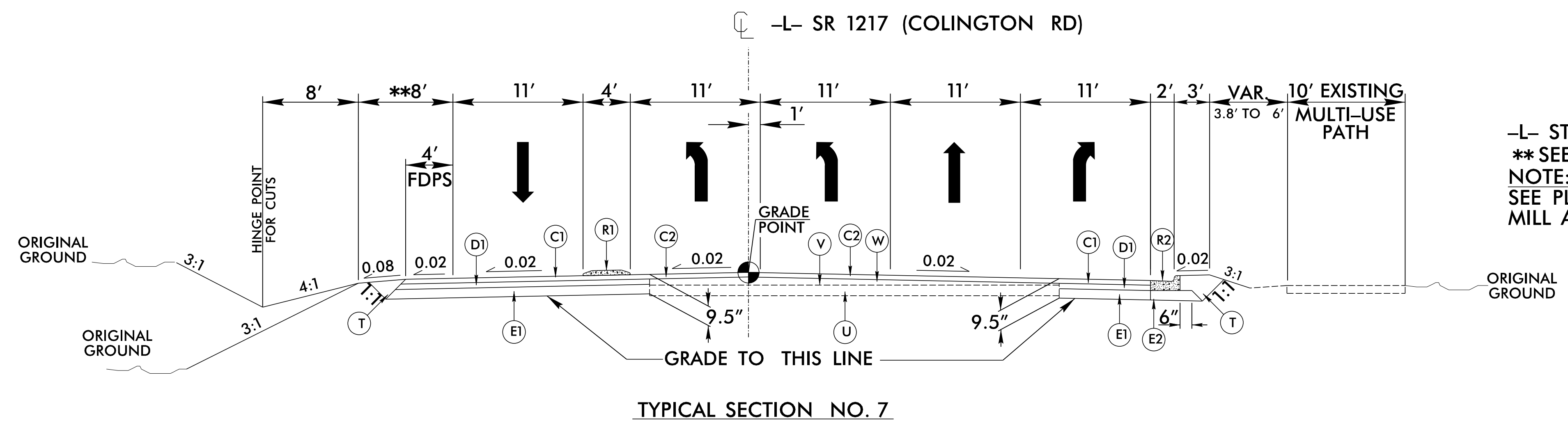
NOTE:
* SEE DETAIL NO. 1
TIE TO EXISTING MULTI-USE PATH USING
4" CONCRETE SIDEWALK AT -L- STA. 195+48.22



USE TYPICAL SECTION NO. 6
-L- STA. 229+00.00 TO -L- STA. 233+32.00

* TRANSITION FROM 0' TO 11'
-L- STA. 229+00.00 TO -L- STA. 230+00.00
** SEE DETAIL NO. 6 WHERE PROP. GUARDRAIL

NOTE:
SEE PLANS FOR TURN LANES AND TAPERS.
MILL AS NEEDED.



USE TYPICAL SECTION NO. 7
-L- STA. 233+32.00 TO -L- STA. 235+77.02
** SEE DETAIL NO. 6 WHERE PROP. GUARDRAIL

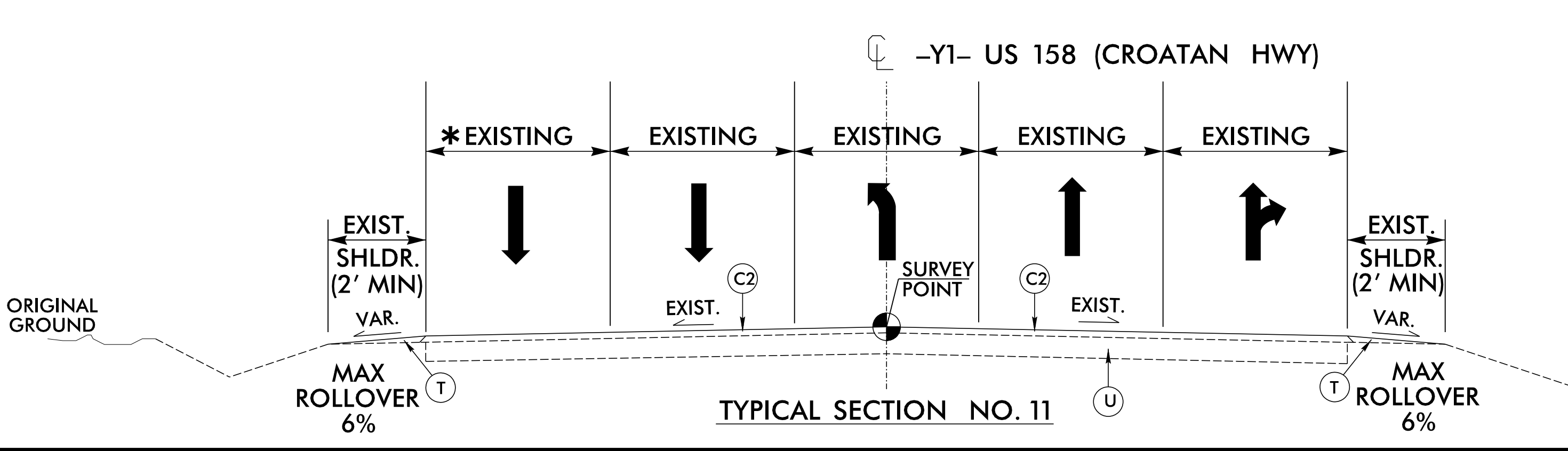
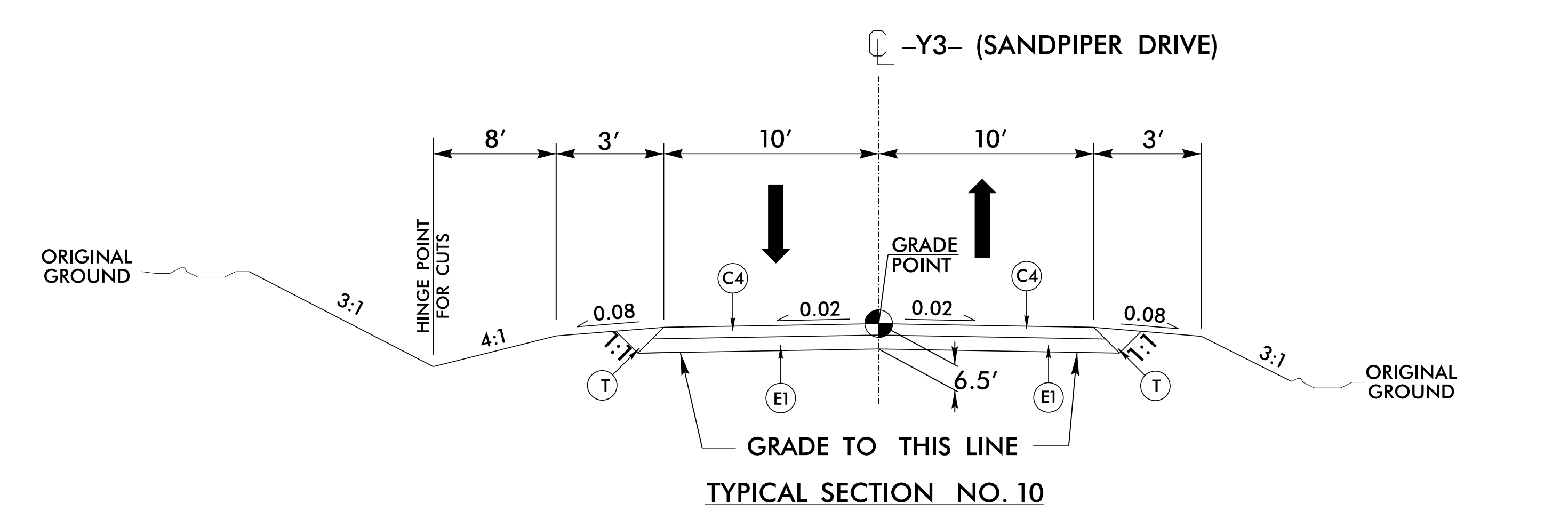
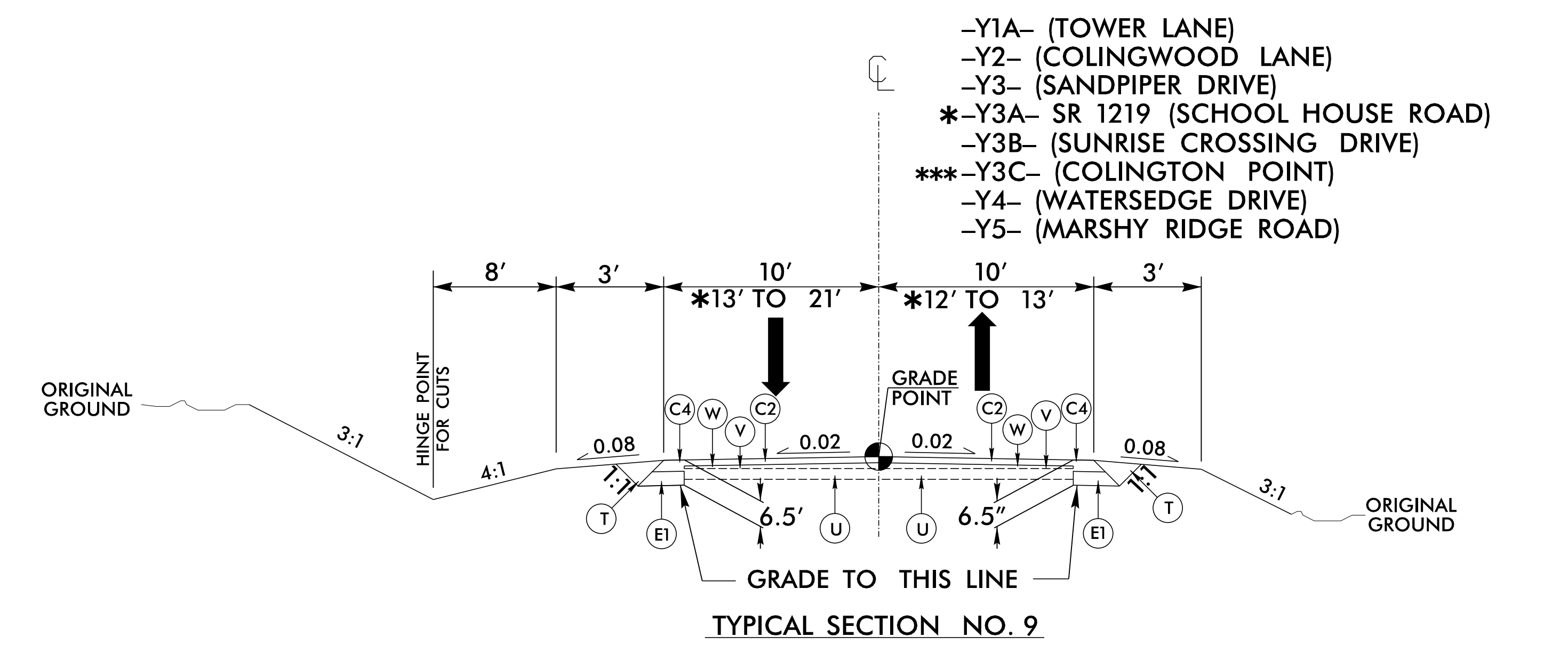
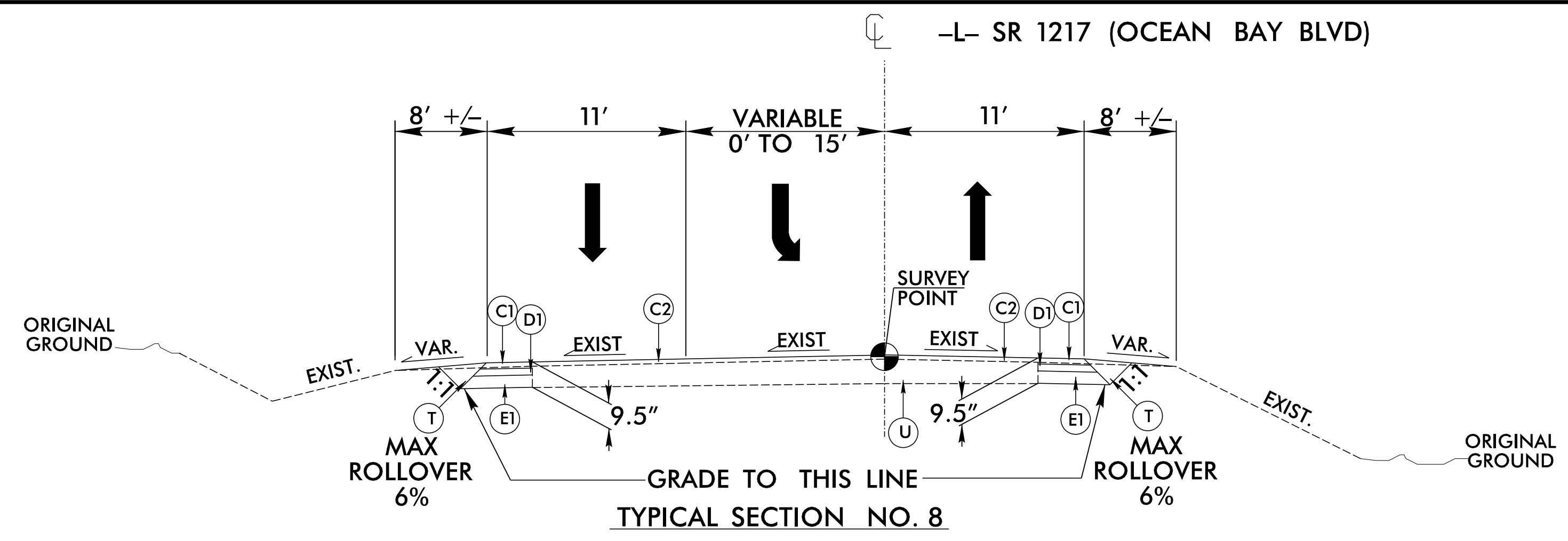
NOTE:
SEE PLANS FOR TURN LANES AND TAPERS.
MILL AS NEEDED.

1/7/2019
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smc

8/17/19

PAV'T SCHEDULE	
C1	3" S9.5B
C2	1½" S9.5B
C3	VAR. S9.5B
C4	2½" S9.5B
D1	2½" I19.0C
D2	VAR. I19.0C
E1	4" B25.0C
E2	VAR. B25.0C
R1	MON. ISLAND
R2	2'-6" C&G
T	EARTH MAT.
U	EX. PAV'T
V	VAR. MILL 0"-3"
W	WEDGING

REVISIONS



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6750 TRYON ROAD
CARY, NC 27518
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CALYXengineers.com
NC License # F-1333
Formerly Mulkey Engineers & Consultants

PROJECT REFERENCE NO. R-5014	SHEET NO. 2A-4
RW SHEET NO.	PAVEMENT DESIGN
ROADWAY DESIGN ENGINEER 1/8/2019	PAVEMENT DESIGN ENGINEER 1/8/2019
<i>Stephen C. Browde</i> SEAL 15759 NORTH CAROLINA PROFESSIONAL ENGINEER	<i>Clark Morrison</i> SEAL 022896 NORTH CAROLINA PROFESSIONAL ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

USE TYPICAL SECTION NO. 8
-L- STA. 236+49.02 TO -L- STA. 240+00.00
NOTE:
SEE PLANS FOR TURN LANES AND TAPERS.

USE TYPICAL SECTION NO. 9
-Y1A- STA. 11+70.00 TO -Y1A- STA. 13+39.82
-Y2- STA. 10+15.00 TO -Y2- STA. 11+34.31
-Y3- STA. 11+00.00 TO -Y3- STA. 12+31.39
*-Y3A- STA. 11+60.00 TO -Y3A- STA. 12+63.62
-Y3B- STA. 11+92.00 TO -Y3B- STA. 12+03.27
***-Y3C- STA. 10+18.02 TO -Y3C- STA. 11+00.00
-Y4- STA. 10+15.00 TO -Y4- STA. 11+56.10
-Y5- STA. 10+70.00 TO -Y5- STA. 12+55.03
NOTE:
SEE PLANS FOR TAPERS.
MILL AS NEEDED.
*** SEE DETAIL NO. 7
*** SEE TMP-4 FOR TEMPORARY PAVEMENT LOCATIONS AND WIDTHS.

USE TYPICAL SECTION NO. 10
-Y3- STA. 12+31.39 TO -Y3- STA. 12+59.93
NOTE:
SEE PLANS FOR TAPERS.

USE TYPICAL SECTION NO. 11
-Y1- STA. 12+16.76 TO -Y1- STA. 13+87.34
*EXCLUSIVE RIGHT TURN LANE ON SOUTHBOUND US 158
NOTE:
SEE PLANS FOR TAPERS.
MILL AS NEEDED.

1/17/2019
R:\Roadway\Proj\19501_4_Rdy_tup.dgn
smr

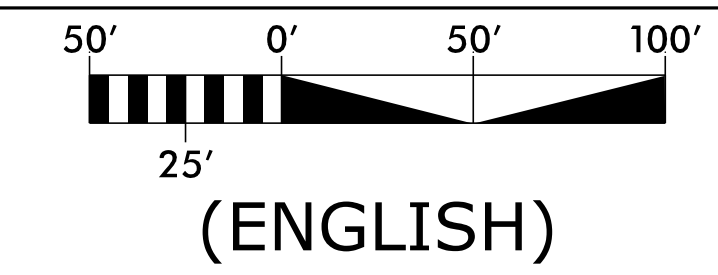
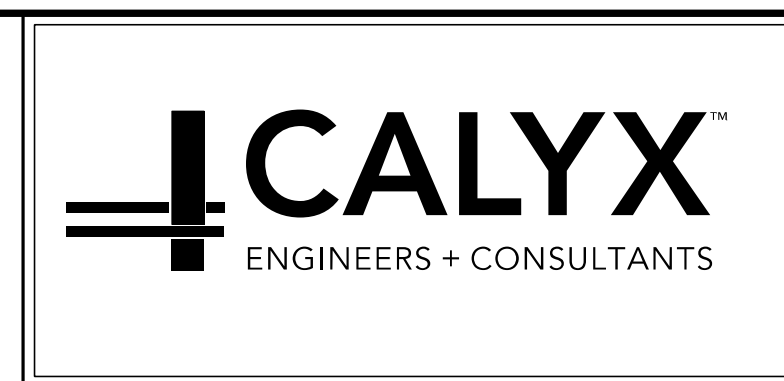
8/17/99

REVISIONS

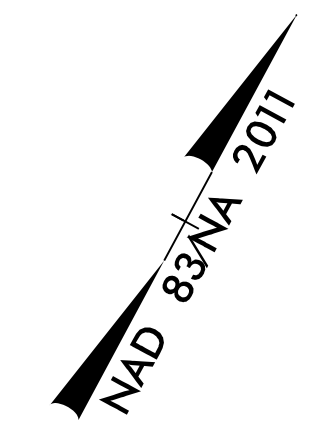
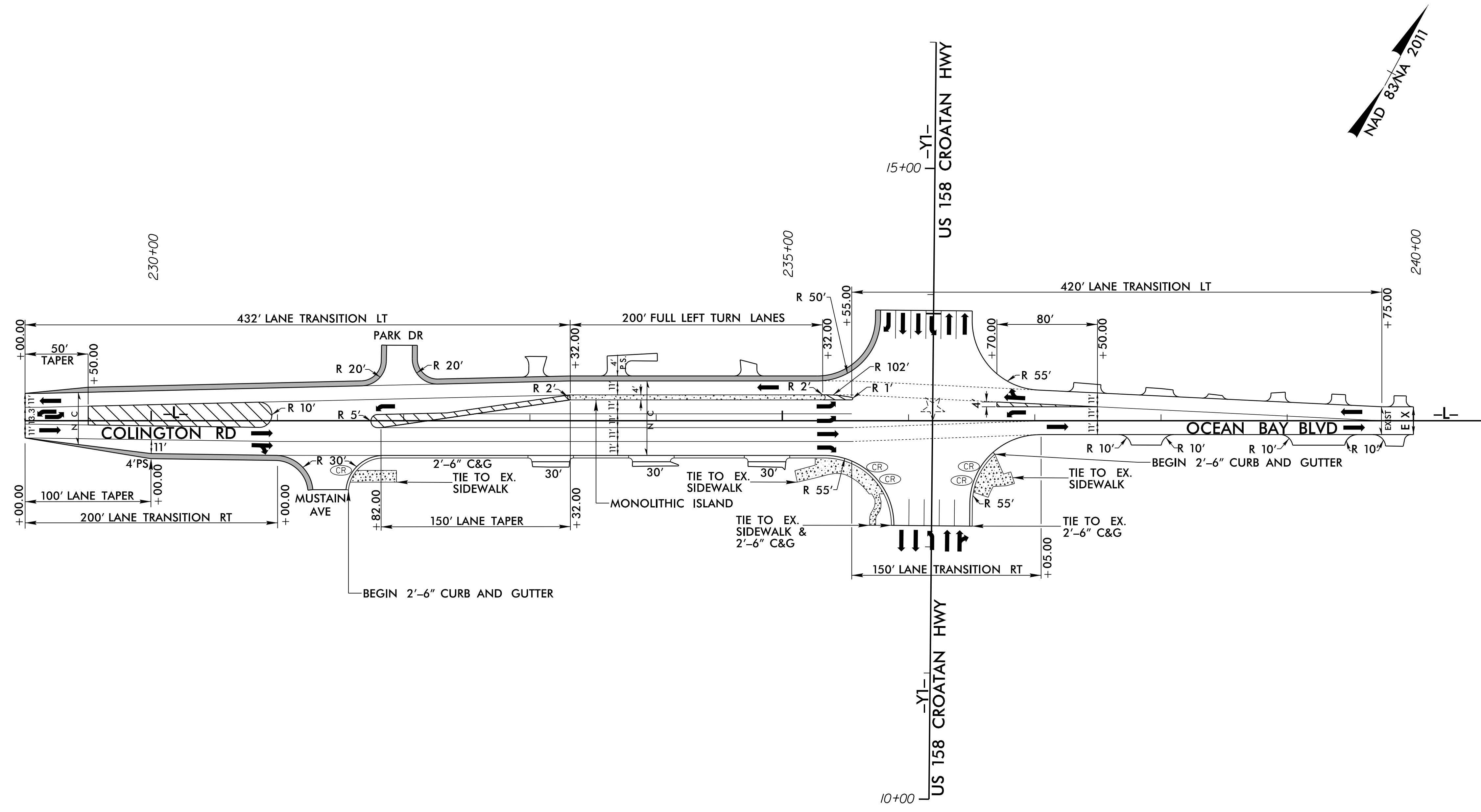
1/1/2018
R:\Roadway\Proj\R5014_rdy_psh_28-1.dgn
C:\Users\cbr\OneDrive\Documents

INTERSECTION DETAIL

-L- (COLINGTON RD / OCEAN BAY BLVD.) &
-Y1- (US 158 CROATAN HWY)



PROJECT REFERENCE NO. R-5014	SHEET NO. 2B-1
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	
1/4/2019	
Documented by: <i>Stephen C. Browde</i>	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



- CURB RAMP
- PROPOSED PAVED SHOULDER
- SIDEWALK / CONCRETE ISLAND
- EXISTING TRAFFIC SIGNAL

NOTES:
 DRIVEWAY RADII ARE 5' UNLESS OTHERWISE NOTED
 SEE SHEETS 19 AND 20 ROADWAY PLANS

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DIVISION OF HIGHWAYS
RALEIGH, N.C.

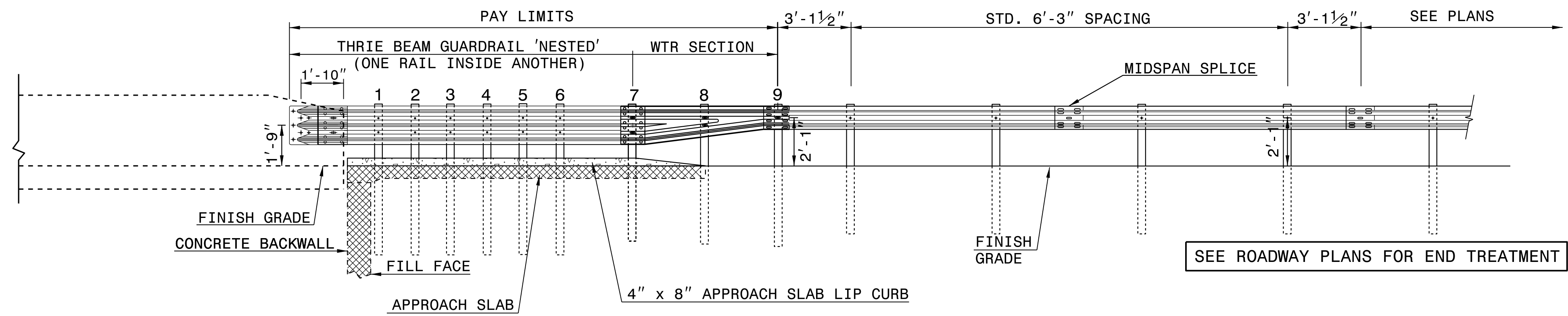
ENGLISH DETAIL DRAWING FOR
**TYPE III - SHOP CURVED
STRUCTURE ANCHOR UNIT**

SHEET 1 OF 1
TYPE III SC

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RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
**TYPE III - SHOP CURVED
STRUCTURE ANCHOR UNIT**

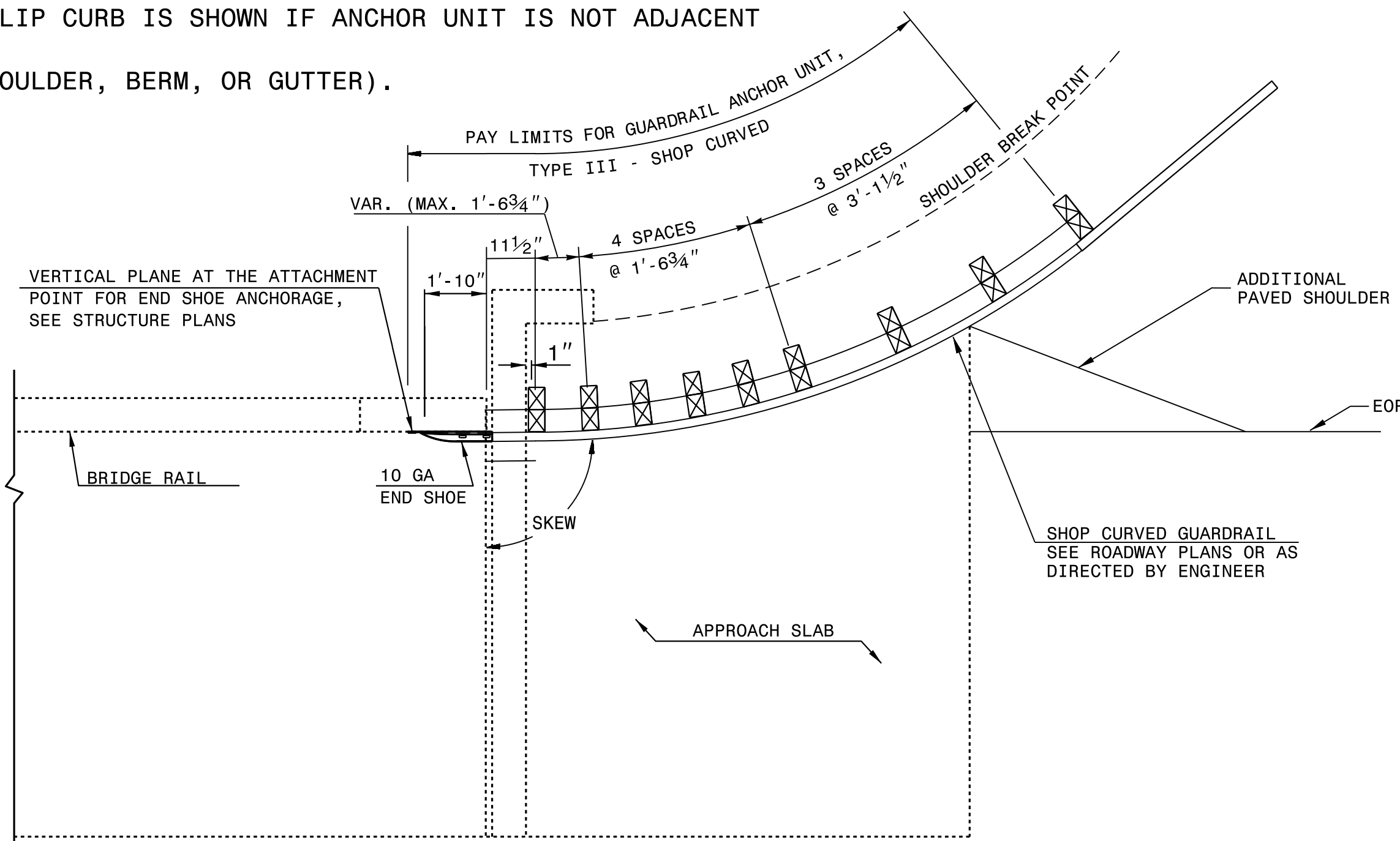
SHEET 1 OF 1
TYPE III SC



ELEVATION

NOTE:

- **POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- *THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11 1/2" IF CONCRETE BACKWALL IS NOT PRESENT.
- SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.
- MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
- USE NO STEEL POSTS WITHIN THE GUARDRAIL ANCHOR UNIT LIMITS.
- LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
- SEE STANDARD 862.03 SHEET 4 FOR POST SECTIONS 1 THRU 9.



PLAN VIEW

**GUARDRAIL ANCHOR UNIT, TYPE III - SHOP CURVED
FOR ATTACHMENT TO RAIL ON BRIDGE**

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UNLESS ALL SIGNATURES COMPLETED

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

SEE PLATE FOR TITLE

ORIGINAL BY: E.E.Ward DATE: 4-4-02
MODIFIED BY: T.S.Spell DATE: 2-01-18
CHECKED BY: DATE:
FILE SPEC.: jhowerton\guardrail\31inguardrail\typeiiiisc.dgn



DocuSigned by:
T.S. Spell
1/4/2019

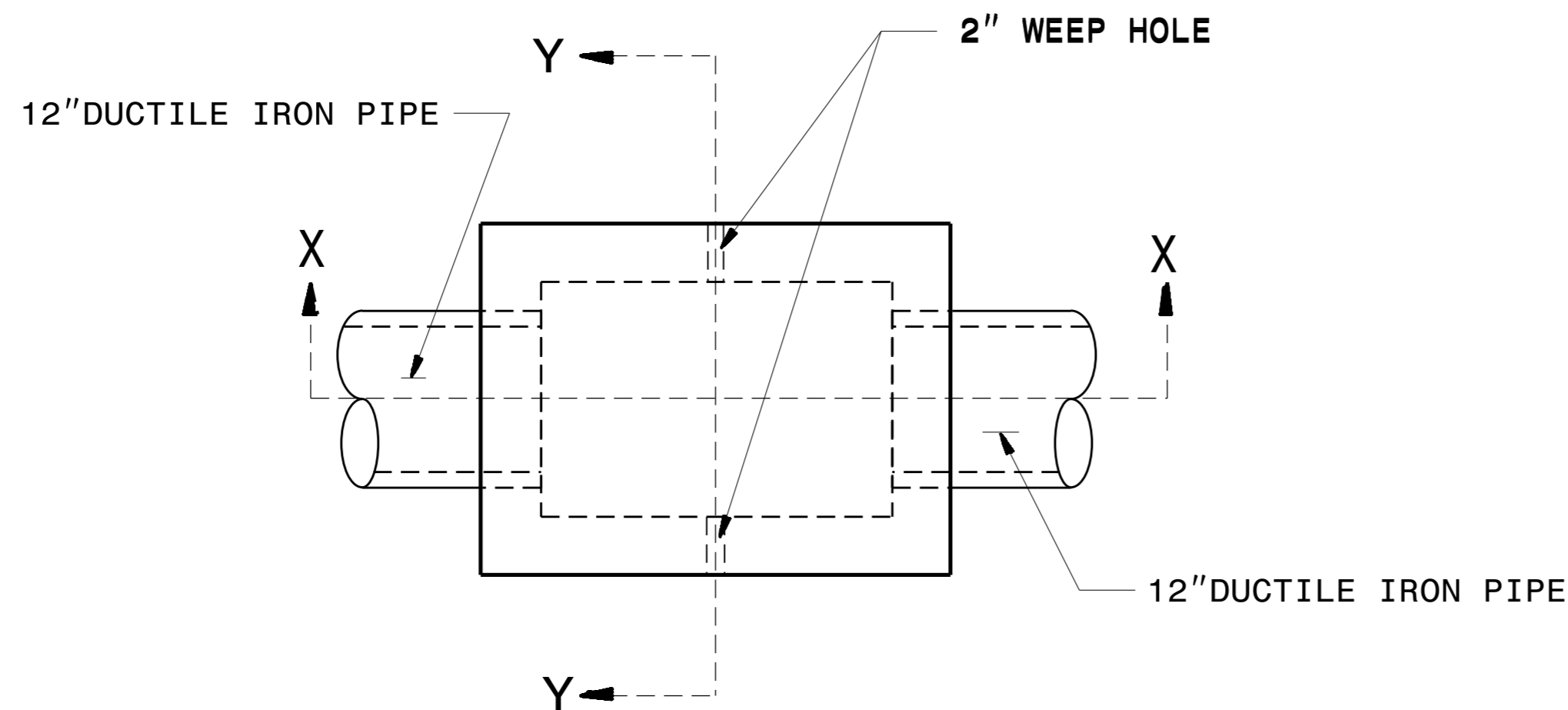
01-FEB-2018 09:49 S:\Contracts\Special Details\jhowerton\Guardrail\31 inch Guardrail\type_iii_sc.dgn jhowerton AT CSD-292595

5/14/99

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

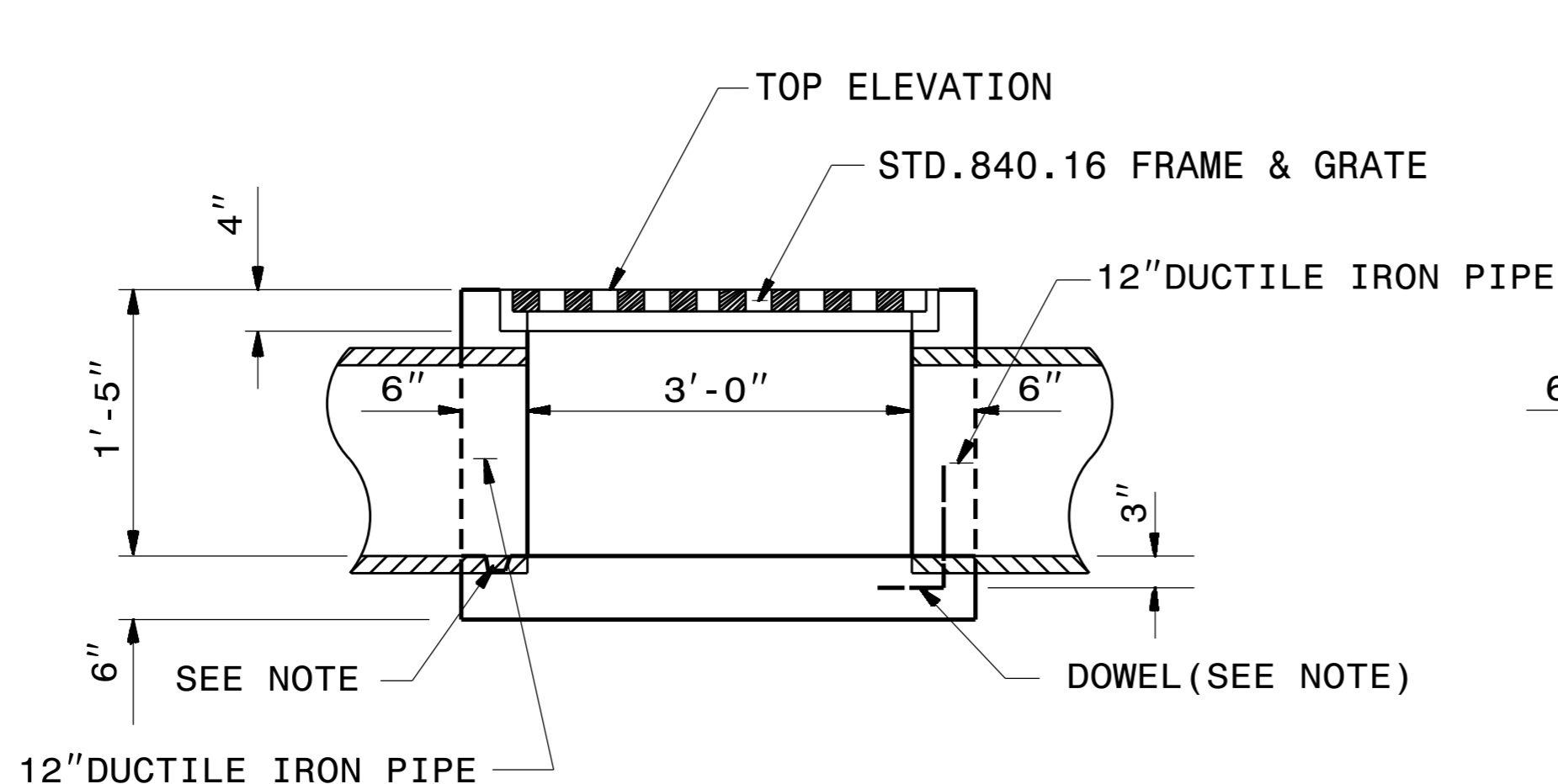
ENGLISH DETAIL DRAWING FOR SPECIAL CONCRETE DROP INLET 12" DUCTILE IRON PIPE

SHEET 1 OF 1 840D14

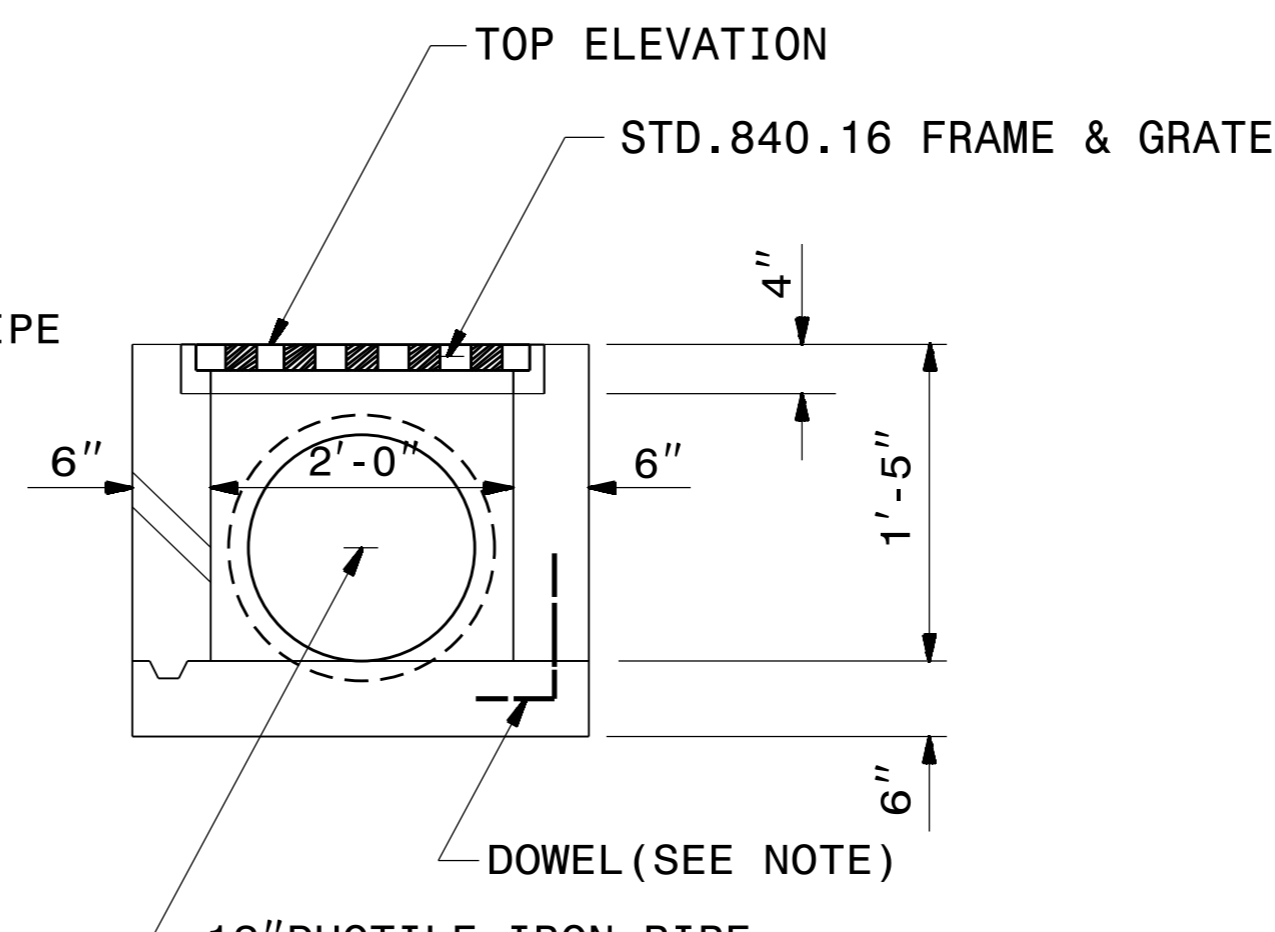


PLAN WITH GRATE & FRAME REMOVED

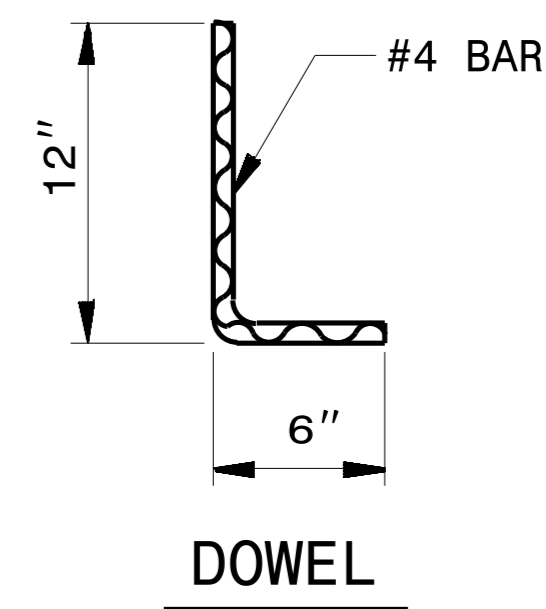
GENERAL NOTES: USE CLASS "B" CONCRETE THROUGHOUT. OPTIONAL CONSTRUCTION - MONOLITHIC POUR 2" KEYWAY OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER. USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB. INSTALL 2" WEEPHOLES AS DIRECTED BY THE ENGINEER. INSTALL STONE DRAINS, OF A MINIMUM OF 1 CUBIC FOOT OF NO. 78M STONE IN A POROUS FABRIC BAG OR WRAP, AT EACH WEEP HOLE OR AS DIRECTED BY THE ENGINEER. CHAMFER ALL EXPOSED CORNERS 1". DRAWING NOT TO SCALE.



SECTION X-X



SECTION Y-Y



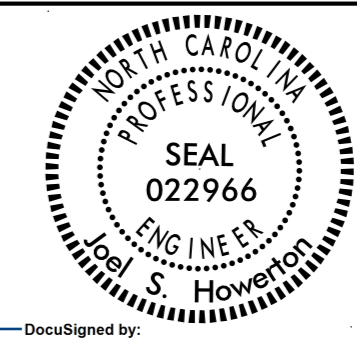
DOWEL

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

ENGLISH DETAIL DRAWING FOR SPECIAL CONCRETE DROP INLET 12" DUCTILE IRON PIPE

SHEET OF 840D14

5/14/99



DocuSigned by: S. Howerton 673F3D17DCDC45F 1/4/2019

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

SPECIAL CONCRETE DROP INLET

ORIGINAL BY: E.E. WARD DATE: 3-4-02 MODIFIED BY: rnbritt DATE: 09-27-2016 CHECKED BY: DATE: FILE SPEC: details/rnbritt/english/rural/r5014_840d14min.dgn

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DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

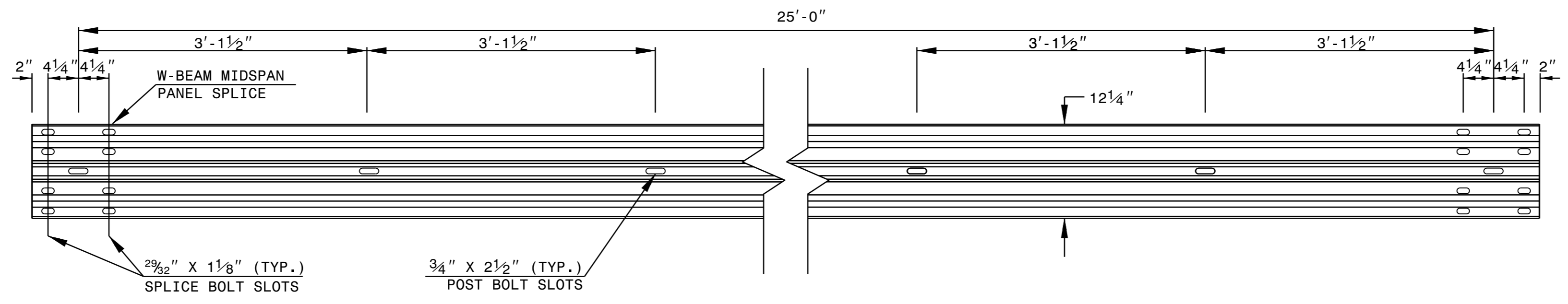
ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 6 OF 8
862D02

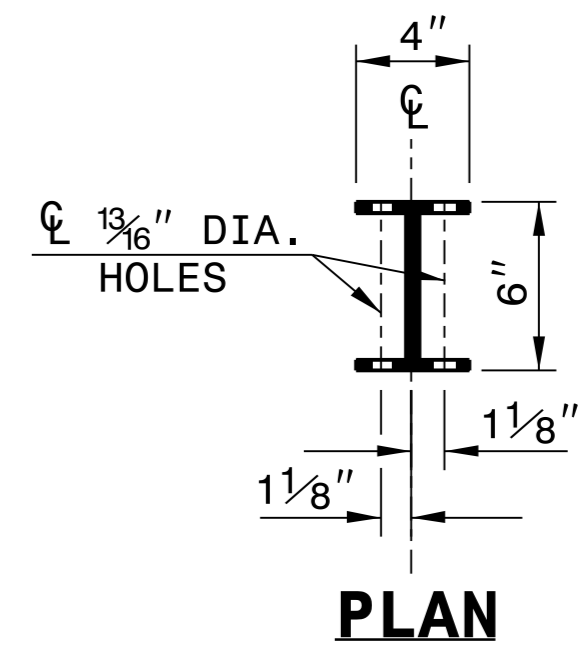
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

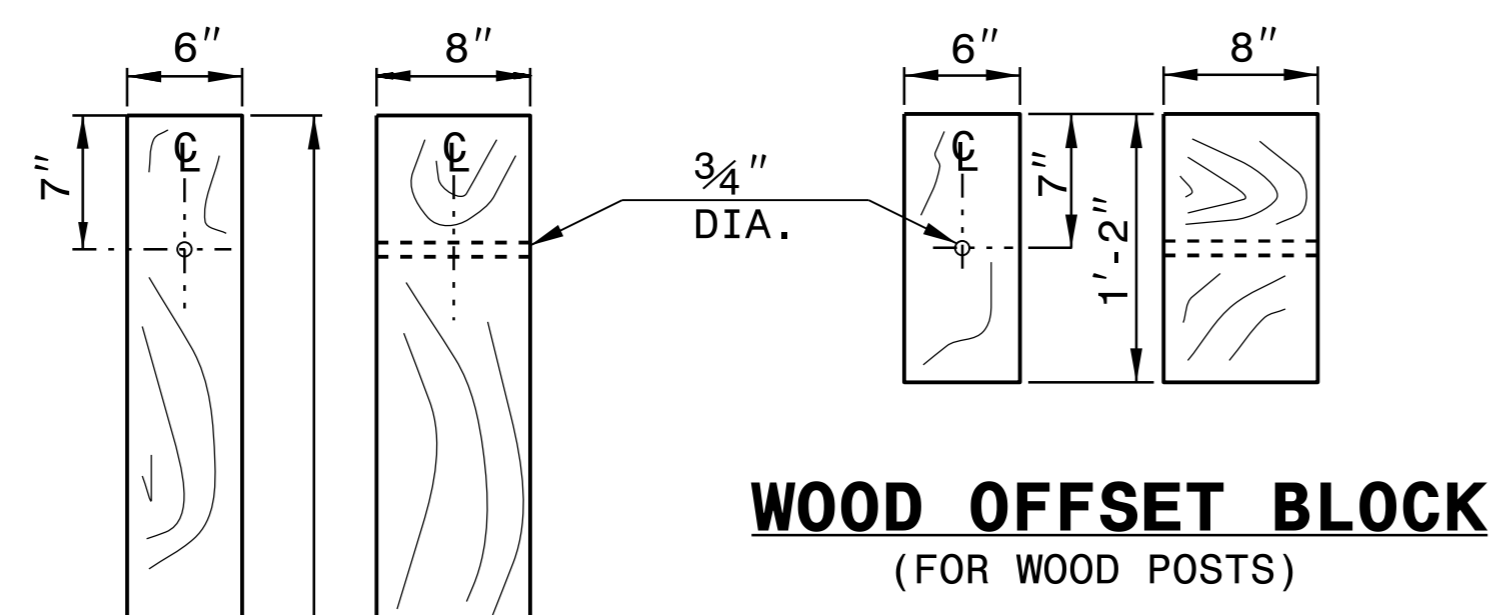
SHEET 6 OF 8
862D02



STANDARD W-BEAM GUARDRAIL



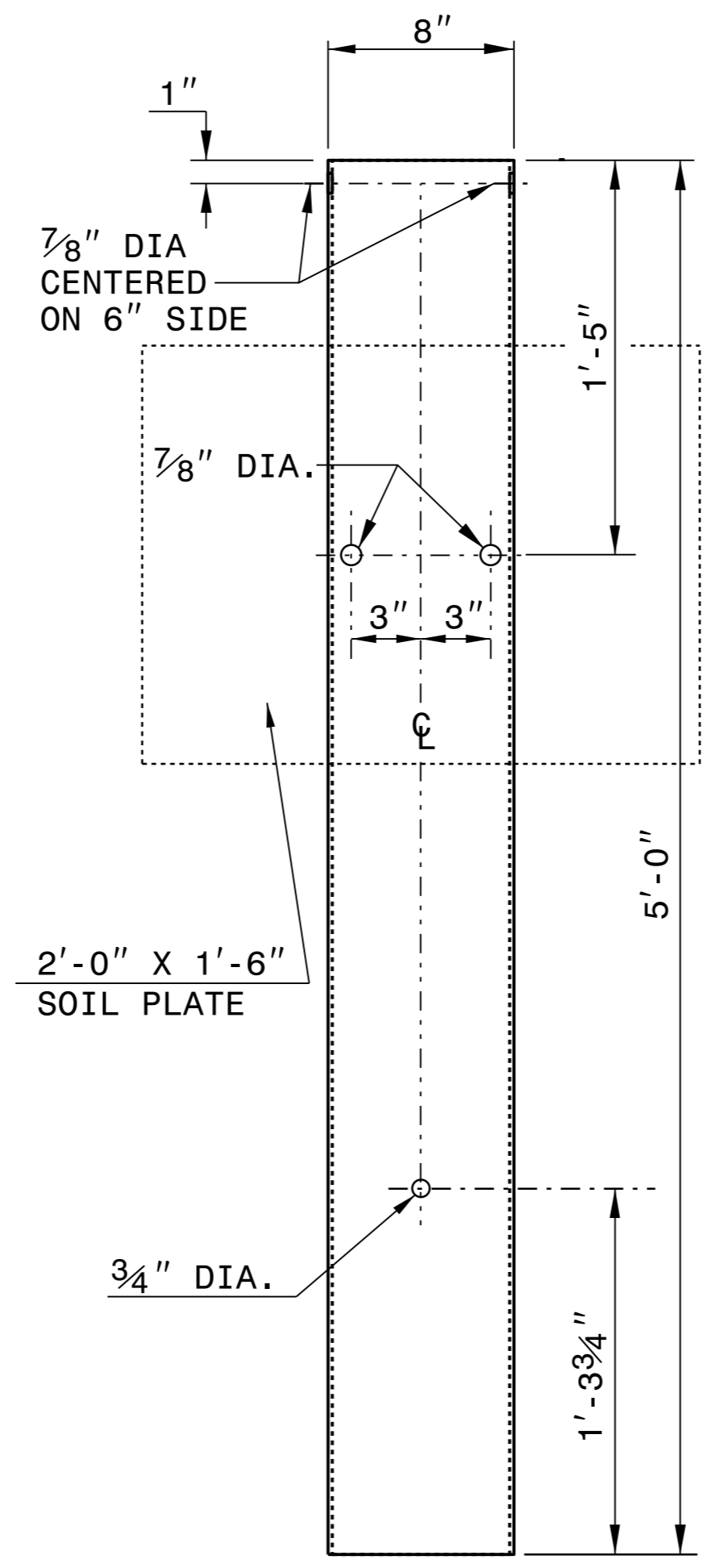
PLAN



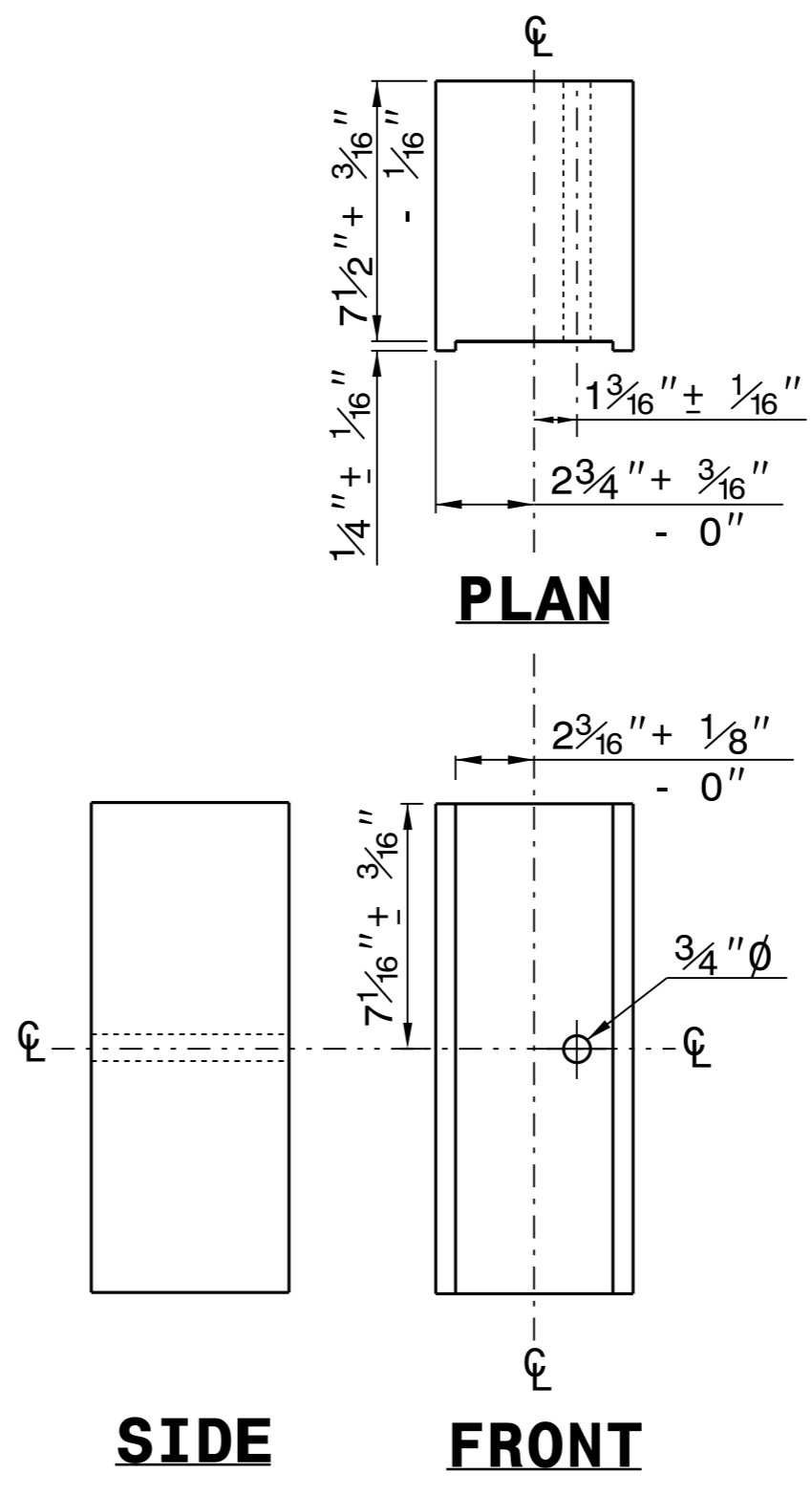
**WOOD OFFSET BLOCK
(FOR WOOD POSTS)**

**STANDARD
LINE POST**

**SHORT WOOD
BREAKAWAY POST**



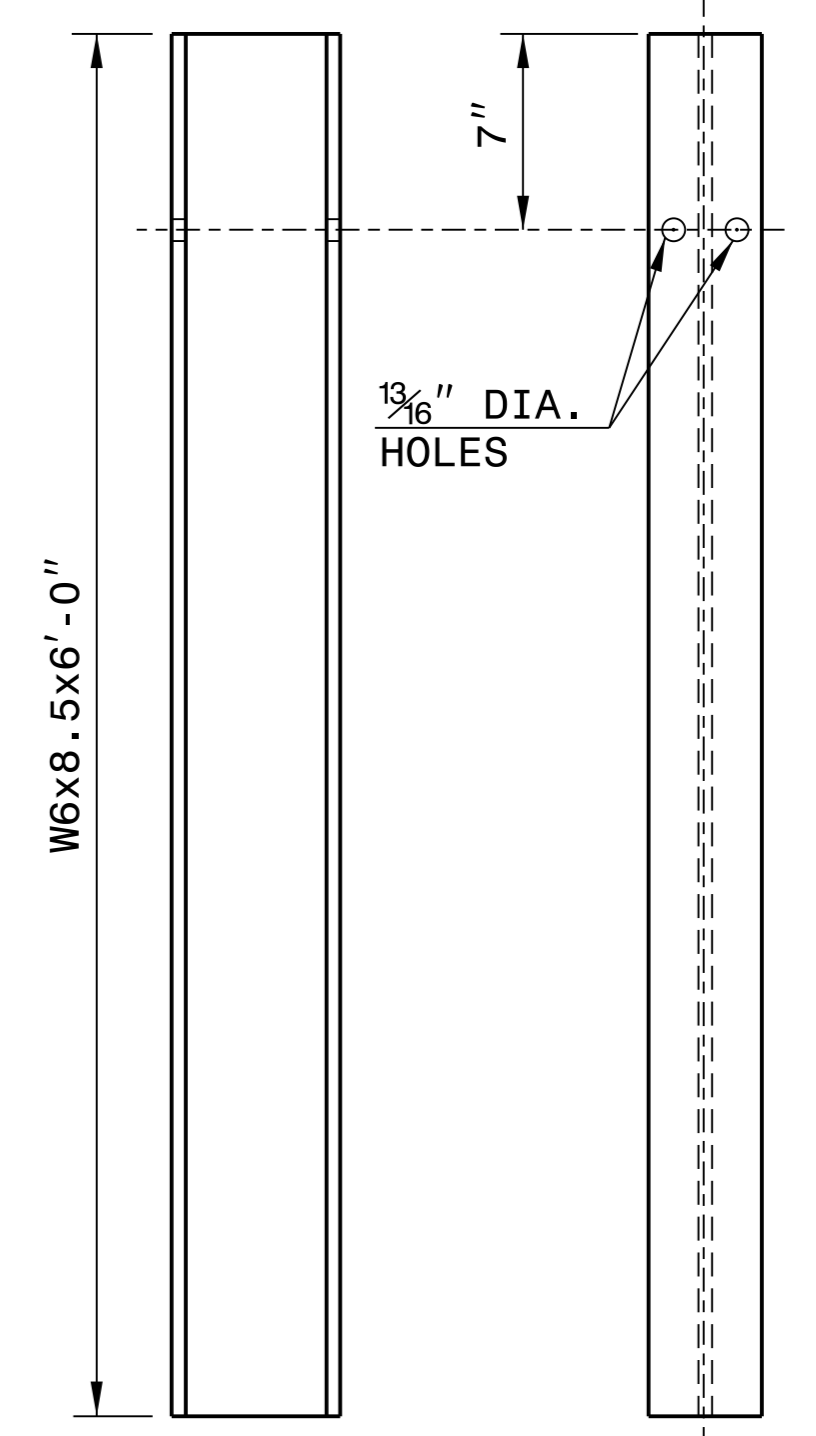
**STEEL TUBE
TS 6"x8"x0.1875"**



SIDE

FRONT

**ROUTED
OFFSET BLOCK**



SIDE

FRONT

"W6" STEEL POST

SYSTEM PARTS



DocuSigned by:
J. Howerton
1/4/2019

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

SEE TITLE BLOCK

ORIGINAL BY: J. HOWERTON DATE: 3-7-2018
MODIFIED BY: DATE: _____
CHECKED BY: DATE: _____
FILE SPEC.: _____

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

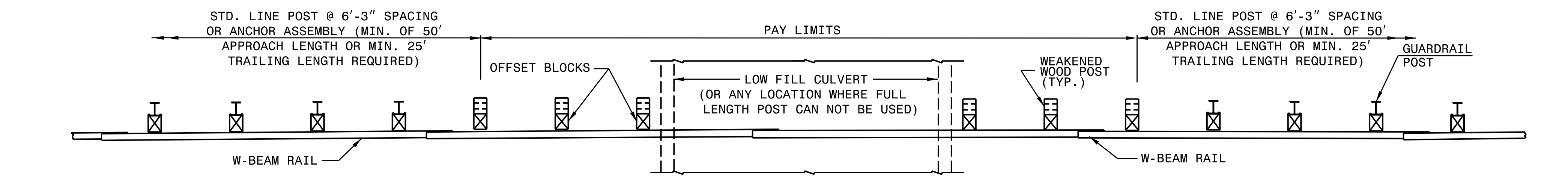
SPECIAL DETAIL FOR
GUARDRAIL PLACEMENT
25'-0" CLEAR SPAN

SHEET - OF -
862D01

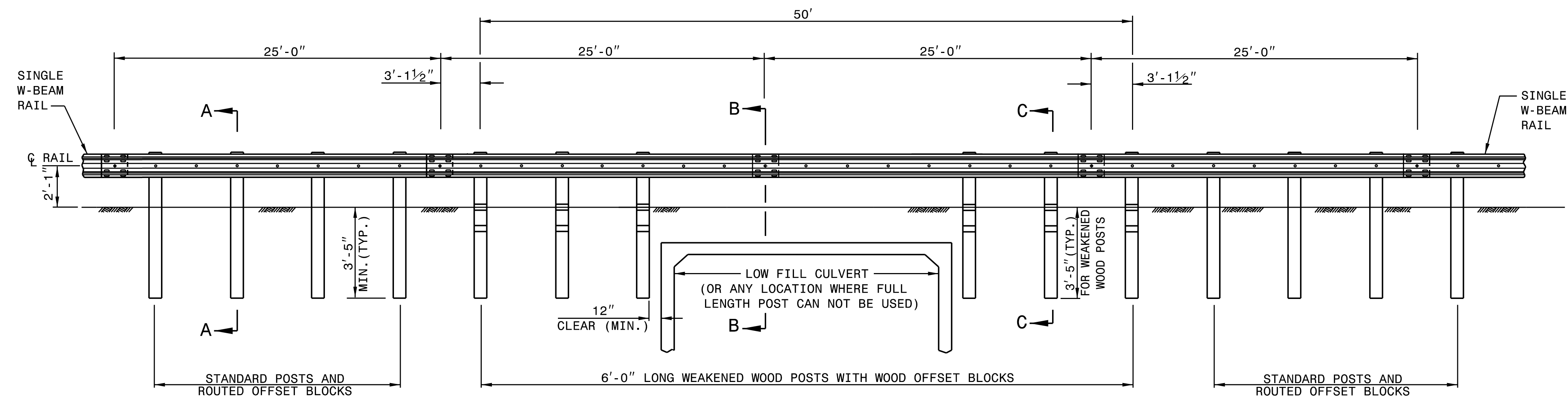
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

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

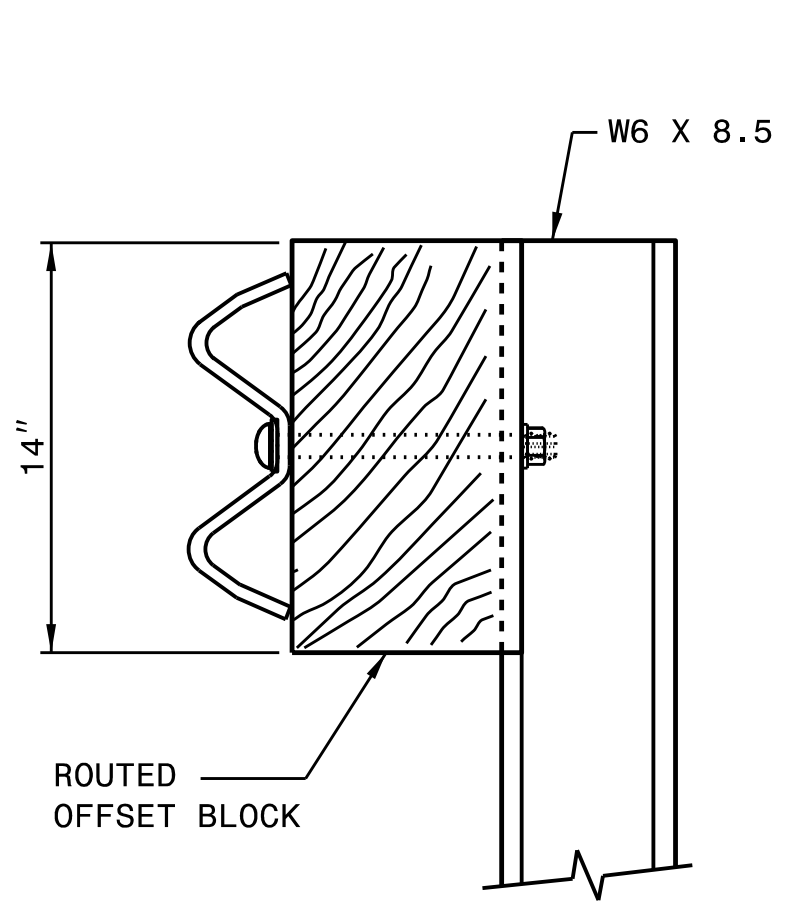
SHEET - OF -
862D01



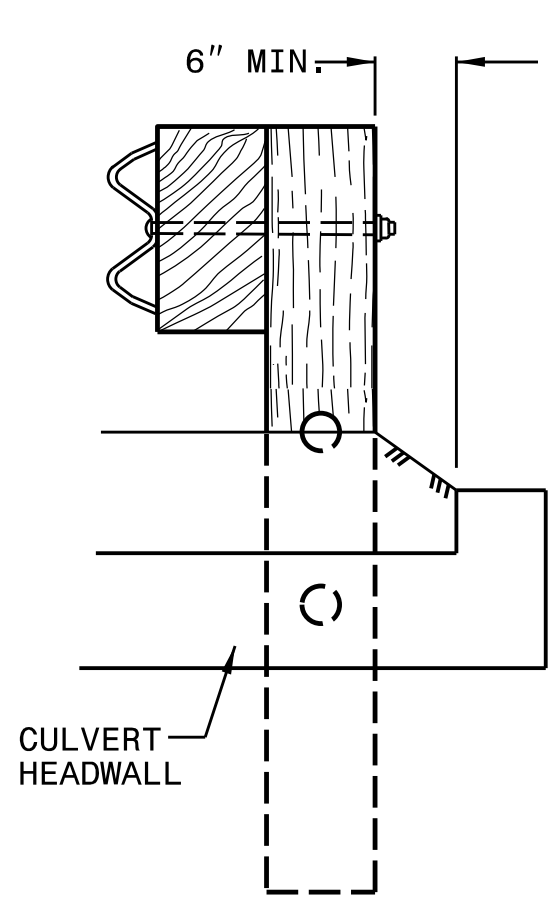
PLAN



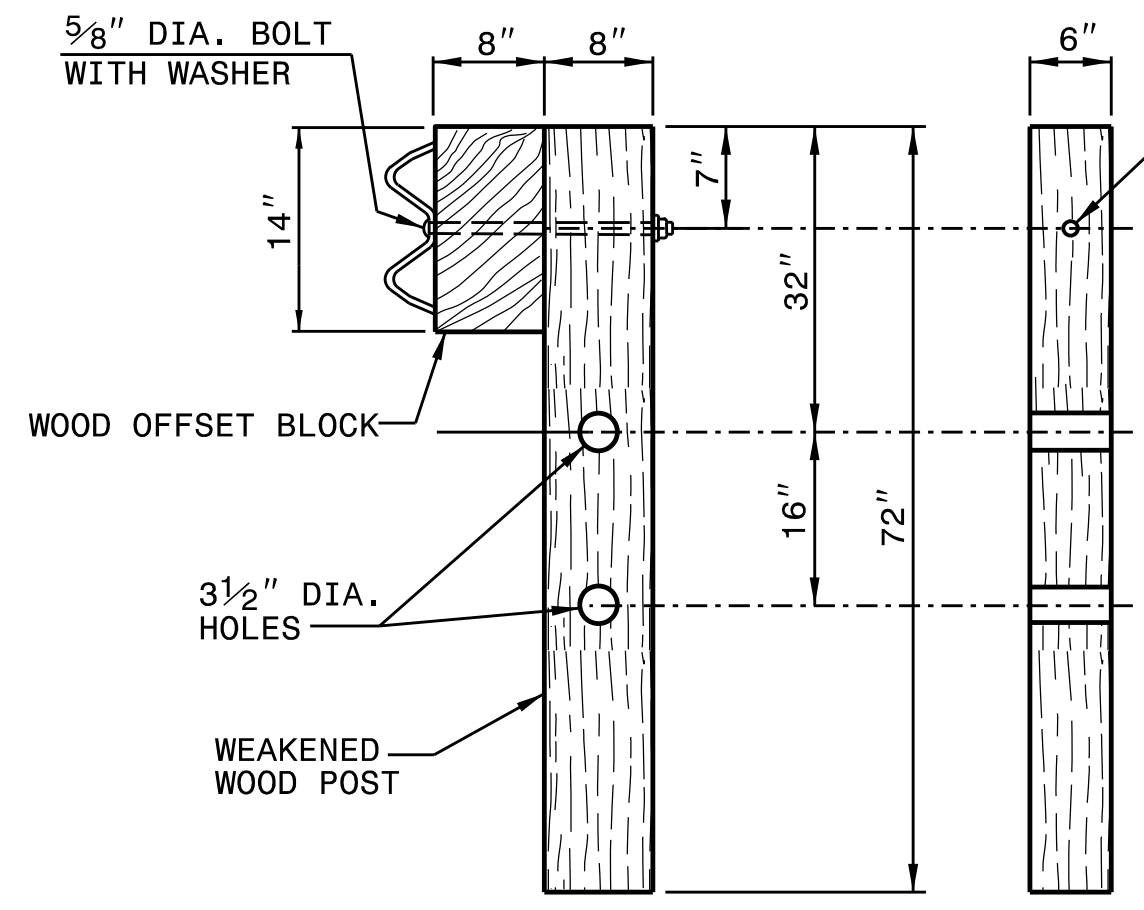
**ELEVATION
25'-0" GUARDRAIL SPAN**



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.



DocuSigned by:
[Signature]
1/4/2019

DOCUMENT NOT CONSIDERED FINAL
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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.: _____	

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

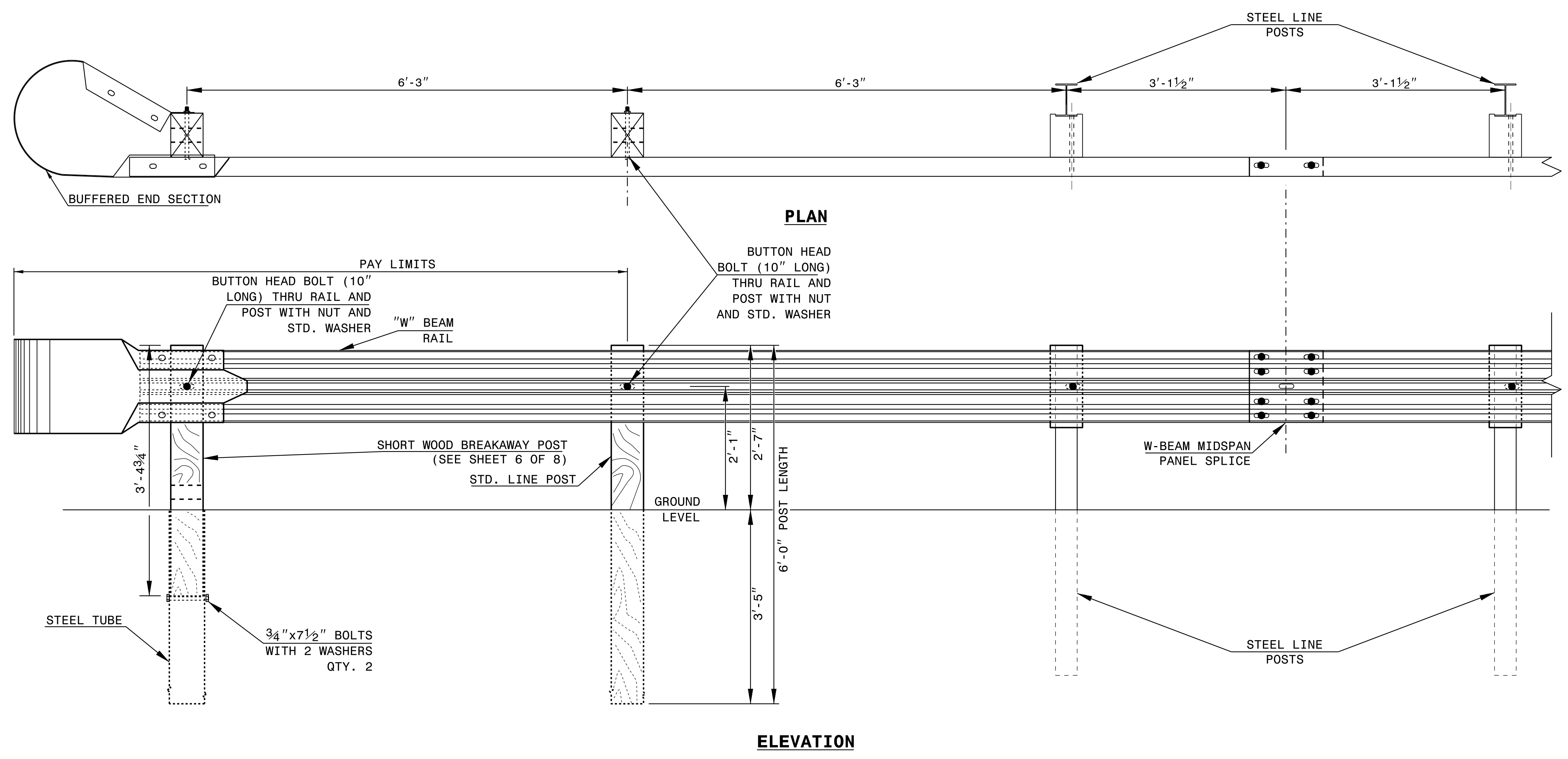
ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET OF

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET OF



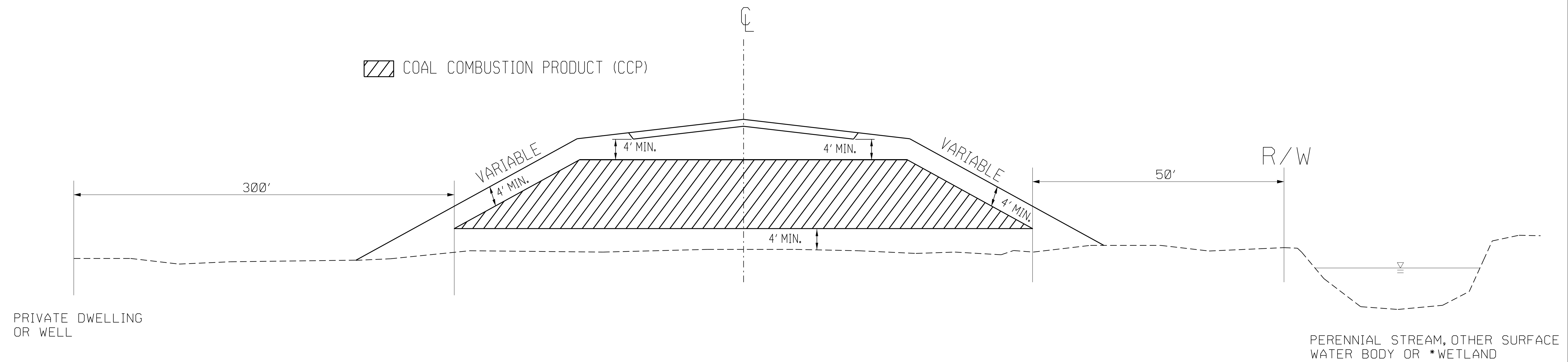
TRAILING END UNIT ASSEMBLY
A.T. - 1 SYSTEM



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.: _____	

COAL COMBUSTION PRODUCT PLACEMENT



PRIVATE DWELLING OR WELL

PERENNIAL STREAM, OTHER SURFACE WATER BODY OR *WETLAND

*(OBTAIN PERMISSION FROM ARMY CORPS OF ENGINEERS)

PLACE CCP IN HATCHED AREA IN ACCORDANCE WITH THE PROJECT SPECIAL PROVISIONS

PLACE CCP A MINIMUM OF 5' ABOVE SEASONAL HIGH GROUND WATER

PLACE AT LOCATIONS AS APPROVED BY THE ENGINEER

PLACE SOIL BORROW MATERIAL ON THE OUTSIDE OF CCP AS EACH LIFT OF CCP IS PLACED

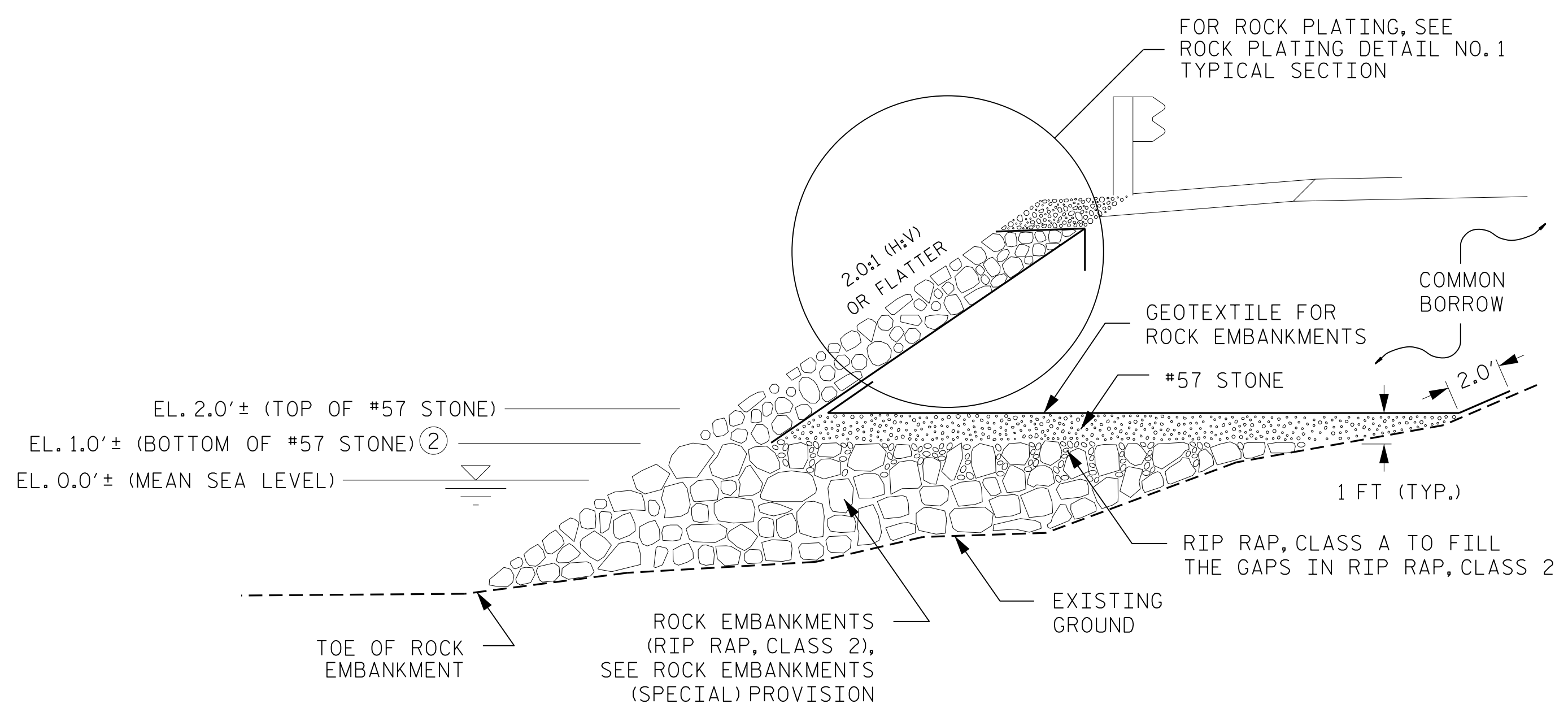
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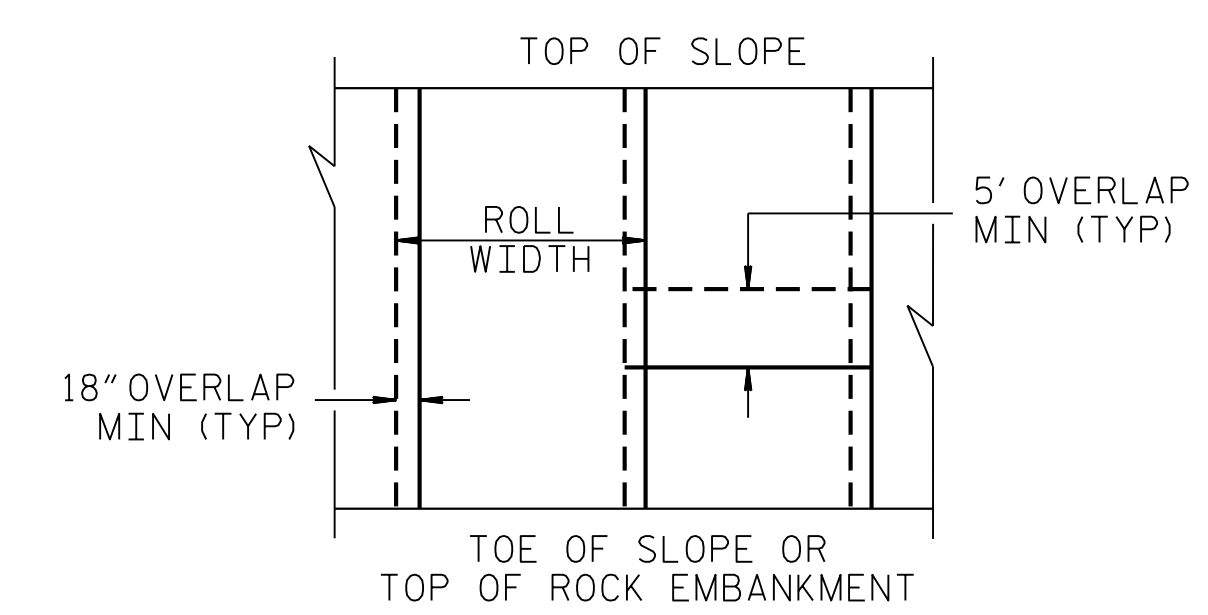
DocuSigned by:
Joe S. Hoverton
1/4/2019

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950 FAX 919-250-4119	
COAL COMBUSTION PRODUCT PLACEMENT DETAIL	
ORIGINAL BY: J.S.H.	DATE: 3/16/15
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC.: joel/coal combustion material detail.dgn	



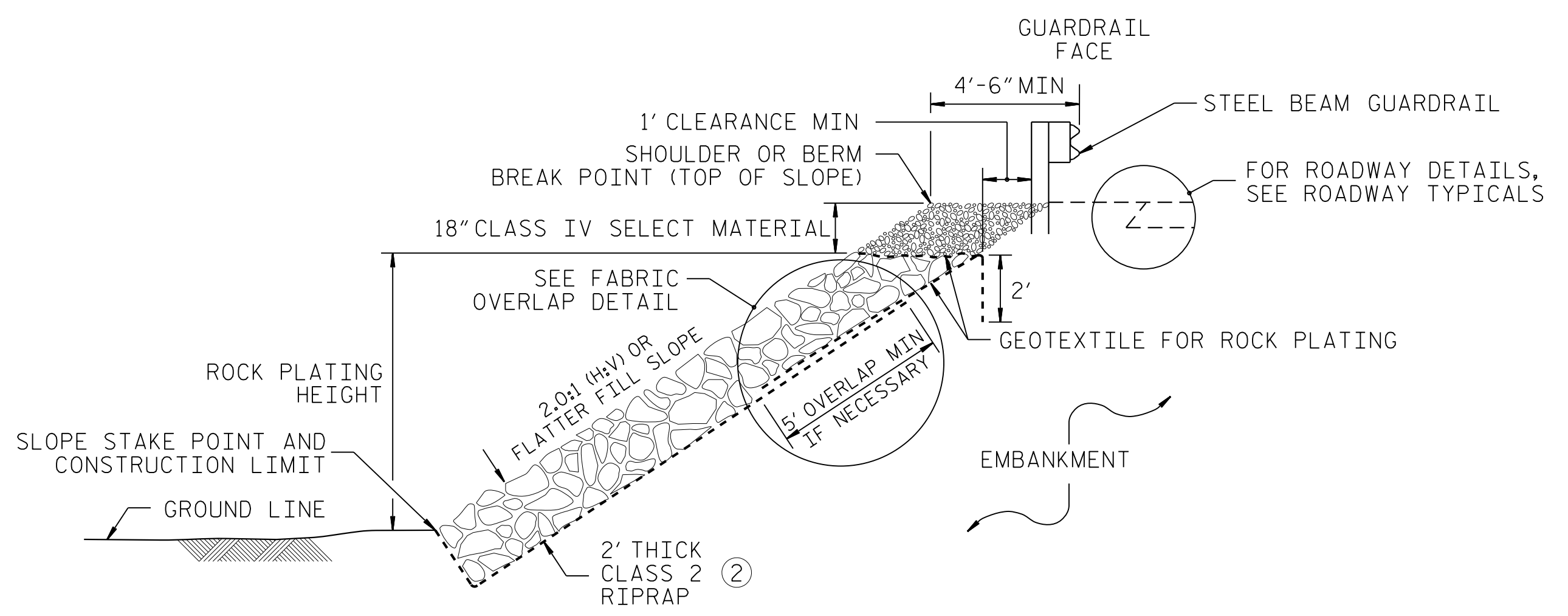
ROCK EMBANKMENT/ROCK PLATING TYPICAL SECTION
NOT TO SCALE



GEOTEXTILE OVERLAP DETAIL
(PLAN VIEW)

ROCK EMBANKMENT			
LINE	BEGIN	END	LT/RT
-L-	56+30±	56+75±	LT
-L-	104+10±	104+65±	LT
-L-	126+70±	127+25±	LT
-L-	163+08±	167+25±	LT

ESTIMATED ROCK EMBANKMENT QUANTITIES	
RIP RAP, CLASS 2	450 TONS
RIP RAP, CLASS A	220 TONS
#57 STONE (SELECT MATERIAL, CLASS VI)	240 TONS
GEOTEXTILE FOR ROCK EMBANKMENTS	600 SY



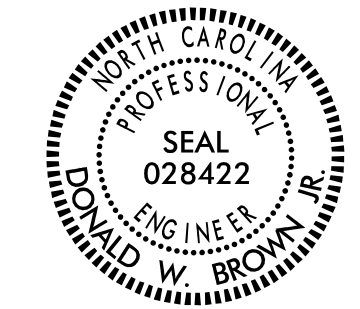
ROCK PLATING DETAIL NO. 1 TYPICAL SECTION
NOT TO SCALE

ROCK PLATING LOCATIONS AND ESTIMATED QUANTITIES ②								
LINE	BEGINNING SLOPE	APPROX. STATION	ENDING SLOPE	APPROX. STATION	LT/RT	ROCK PLATING DETAIL NO.	RIP RAP CLASS*	QUANTITY (SY)
-L-	2.5:1	56+30±	2.5:1	56+75±	LT	1	2	45
-L-	2.5:1	92+85±	2.5:1	96+25±	LT	1	2	340
-L-	2.5:1	104+10±	2.5:1	104+65±	LT	1	2	60
-L-	2.5:1	126+70±	2.5:1	127+55±	LT	1	2	85
-L-	2.5:1	163+08±	2.5:1	173+60±	LT	1	2	750

* USE RIP RAP CLASS 2 ONLY TOTAL = 1,280

NOTES

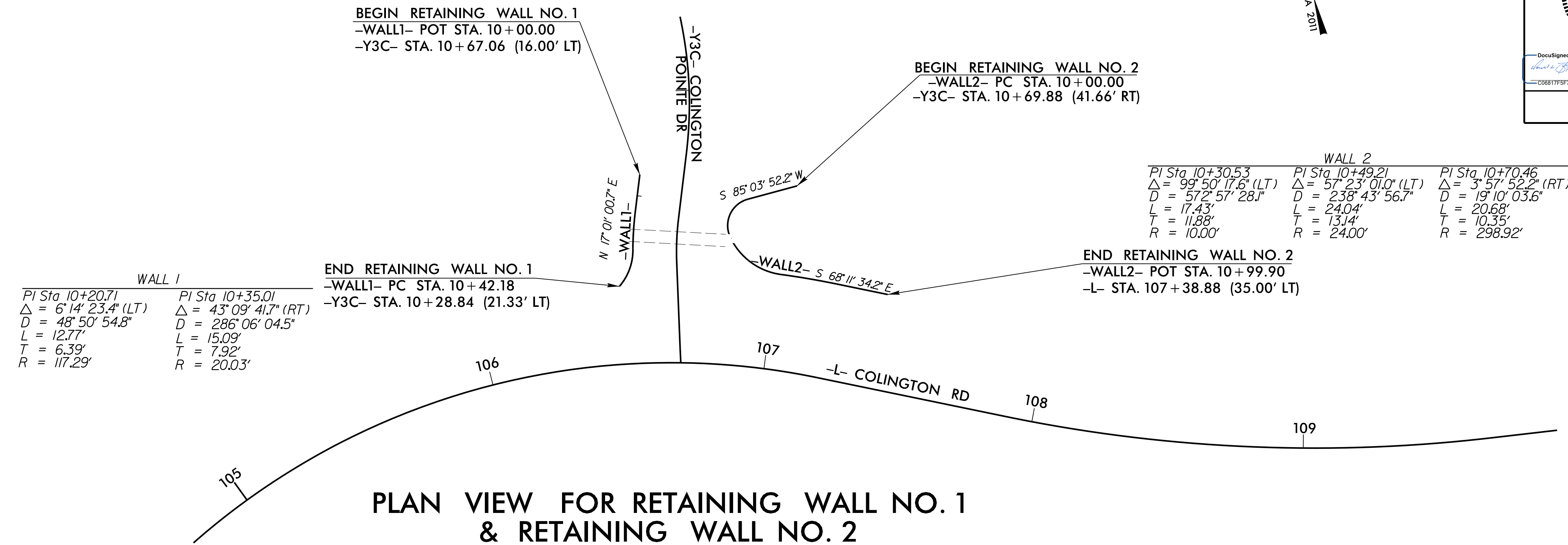
- FOR ROCK EMBANKMENTS, SEE ROCK EMBANKMENTS (SPECIAL) PROVISIONS.
- FOR ROCK PLATING, SEE SECTION 275 OF THE STANDARD SPECIFICATIONS.
- USE CLASS 2 RIP RAP FOR ROCK EMBANKMENTS.
- USE CLASS 2 RIP RAP FOR ROCK PLATING. ②
- INSTALL ROCK EMBANKMENTS USING CLASS 2 RIP RAP AS SHOWN IN THE PLAN OR 1.0 FT ABOVE THE MEAN SEA LEVEL.
- FILL VOIDS IN THE TOP OF ROCK EMBANKMENTS WITH RIP RAP, CLASS A.
- PLACE #57 STONE (SELECT MATERIAL, CLASS VI) 1 FT. (TYP.) ABOVE RIP RAP, CLASS 2 AS SHOWN IN THE PLAN.
- INSTALL GEOTEXTILE FOR ROCK EMBANKMENT ON TOP OF #57 STONE.
- CONSTRUCT ROCK PLATING ABOVE ROCK EMBANKMENTS FROM ELEVATION SHOWN IN THE PLAN OR 1 FT. ABOVE THE MEAN SEA LEVEL TO THE SHOULDER HINGE POINT.
- EXTEND ROCK PLATING TO 2.5:1 (H:V) SLOPE.



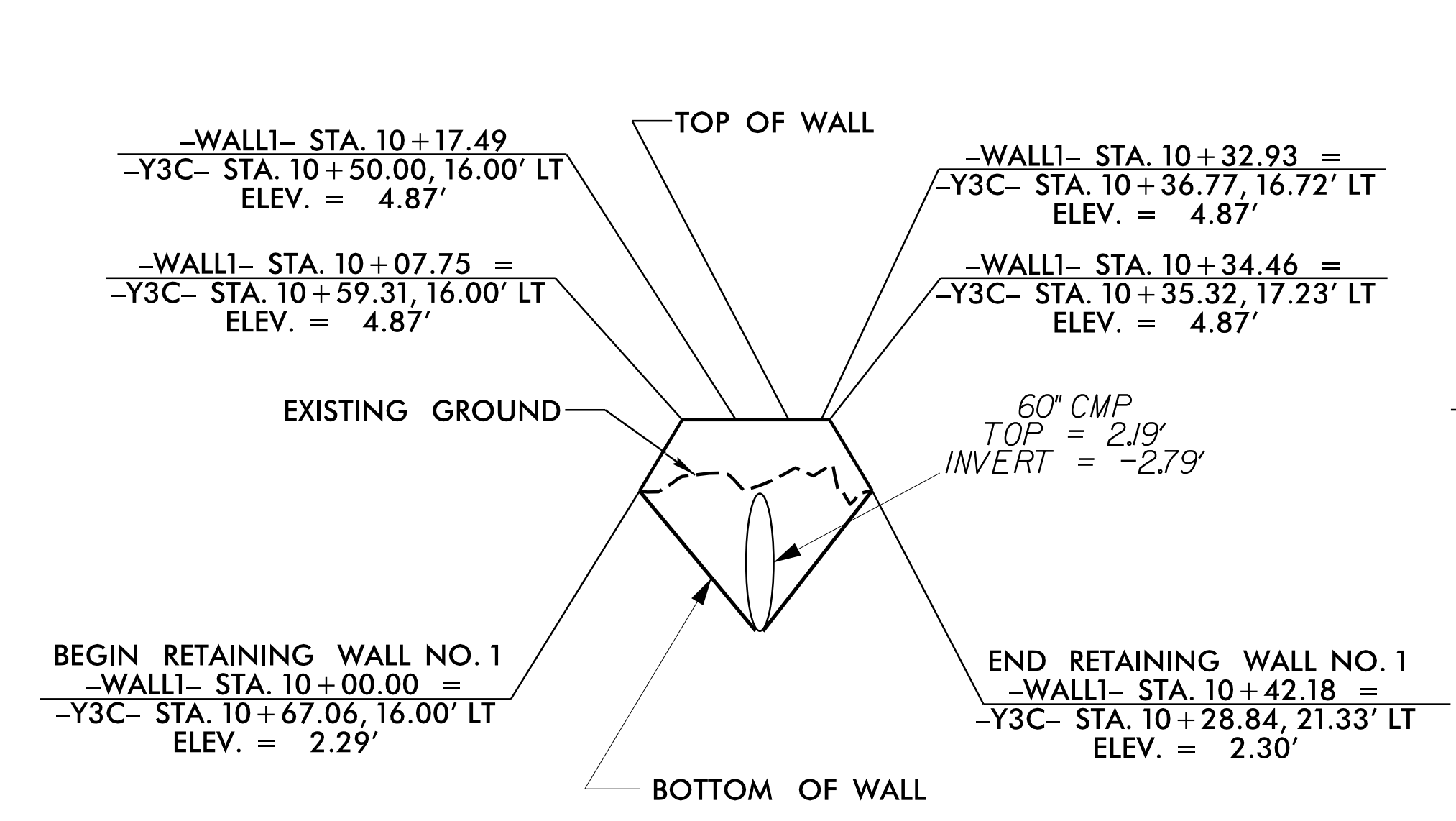
DocuSigned by:
[Signature]

1/2/2019

SIGNATURE DATE SIGNATURE DATE

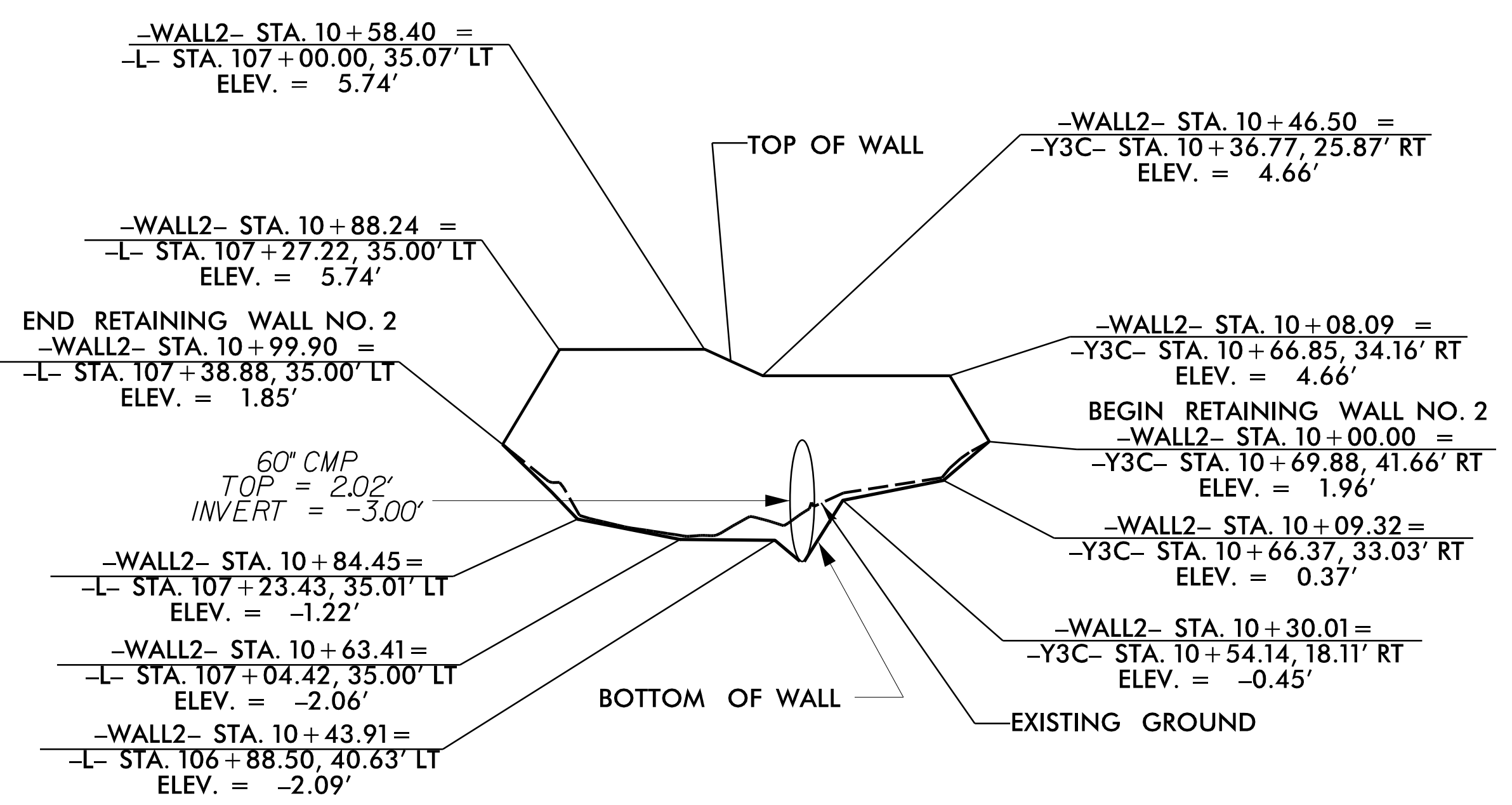


PLAN VIEW FOR RETAINING WALL NO. 1 & RETAINING WALL NO. 2



WALL ENVELOPE FOR RETAINING WALL NO. 1

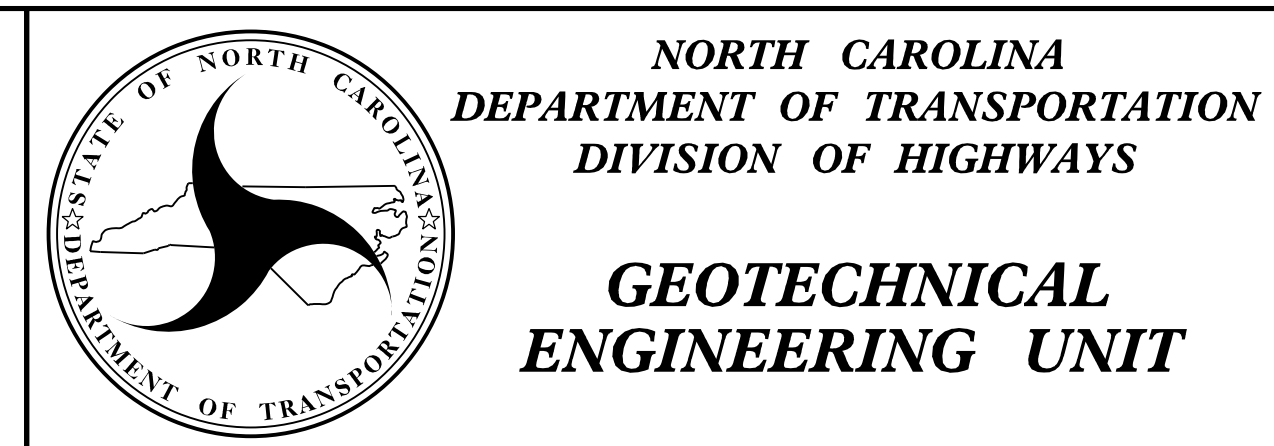
THE WALL ENVELOPE SHOWN DOES NOT ACCURATELY DEPICT THE ACTUAL FACE OF THE WALL.



WALL ENVELOPE FOR RETAINING WALL NO. 2

THE WALL ENVELOPE SHOWN DOES NOT ACCURATELY DEPICT THE ACTUAL FACE OF THE WALL.

ESTIMATED TIMBER WALL QUANTITIES (SQUARE FEET)	
TIMBER RETAINING WALL NO. 1	200
TIMBER RETAINING WALL NO. 2	600



PROJECT NO.: R-5014
DARE COUNTY
STATION: -Y3C- 10+30
SHEET 1 OF 2

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			2G-2
2			4			

PREPARED BY: D. BROWN, PE DATE: 12-12-18
REVIEWED BY: C.T. TANG, PE DATE: 12-12-18

TIMBER RETAINING WALLS - NOTES

FOR TIMBER RETAINING WALLS, SEE TIMBER RETAINING WALL SPECIAL PROVISION.
 FOR STEEL BEAM GUARDRAIL, SEE ROADWAY PLANS AND SECTION 862 OF THE STANDARD SPECIFICATIONS.
 BACKFILL BEHIND RETAINING WALL NO.1 AND NO.2 SHALL BE CLASS VI SELECT MATERIAL IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS 1016-3 OR AT CONTRACTOR'S OPTION USE SELECT GRANULAR MATERIAL, CLASS III.

A SEPARATION GEOTEXTILE IS REQUIRED BETWEEN THE REAR FACE OF THE TIMBER WALL AND THE BACKFILL MATERIAL. A SEPARATION GEOTEXTILE SHALL ALSO BE PLACED BETWEEN EXISTING EMBANKMENT AND BACKFILL MATERIALS IF CLASS VI SELECT MATERIAL IS USED FOR BACKFILL.

BEFORE BEGINNING WALL DESIGN, SURVEY WALL LOCATION AND SUBMIT A REVISED WALL PROFILE VIEW (WALL ENVELOPE) FOR REVIEW. DO NOT START WALL DESIGN OR CONSTRUCTION UNTIL THE REVISED WALL ENVELOPE IS ACCEPTED.

DESIGN RETAINING WALL NO. FOR THE FOLLOWING:

- 1) IN-SITU ASSUMED MATERIAL PARAMETERS BELOW ELEVATION 2 FT:
 UNIT WEIGHT, $\gamma = 120$ PCF
 FRICTION ANGLE, $\phi = 30$ DEGREES
 COHESION, $c = 0$ PSF
- 2) BACKFILL MATERIAL PARAMETERS:
 COARSE (CLASS VI)
 UNIT WEIGHT, $\gamma = 110$ PCF
 FRICTION ANGLE, $\phi = 38$ DEGREES
 COHESION, $c = 0$ PSF
 FINE (CLASS III)
 UNIT WEIGHT, $\gamma = 120$ PCF
 FRICTION ANGLE, $\phi = 34$ DEGREES
 COHESION, $c = 0$ PSF

DESIGN RETAINING WALLS NO.1 AND NO.2 FOR A LIVE LOAD (TRAFFIC) SURCHARGE.

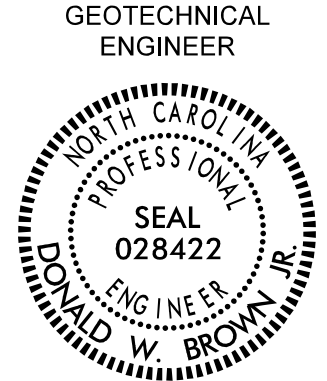
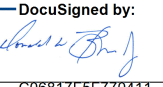
BEFORE BEGINNING TIMBER PILE WALL DESIGN FOR RETAINING WALLS NO.1 AND NO.2, SURVEY WALL LOCATION.

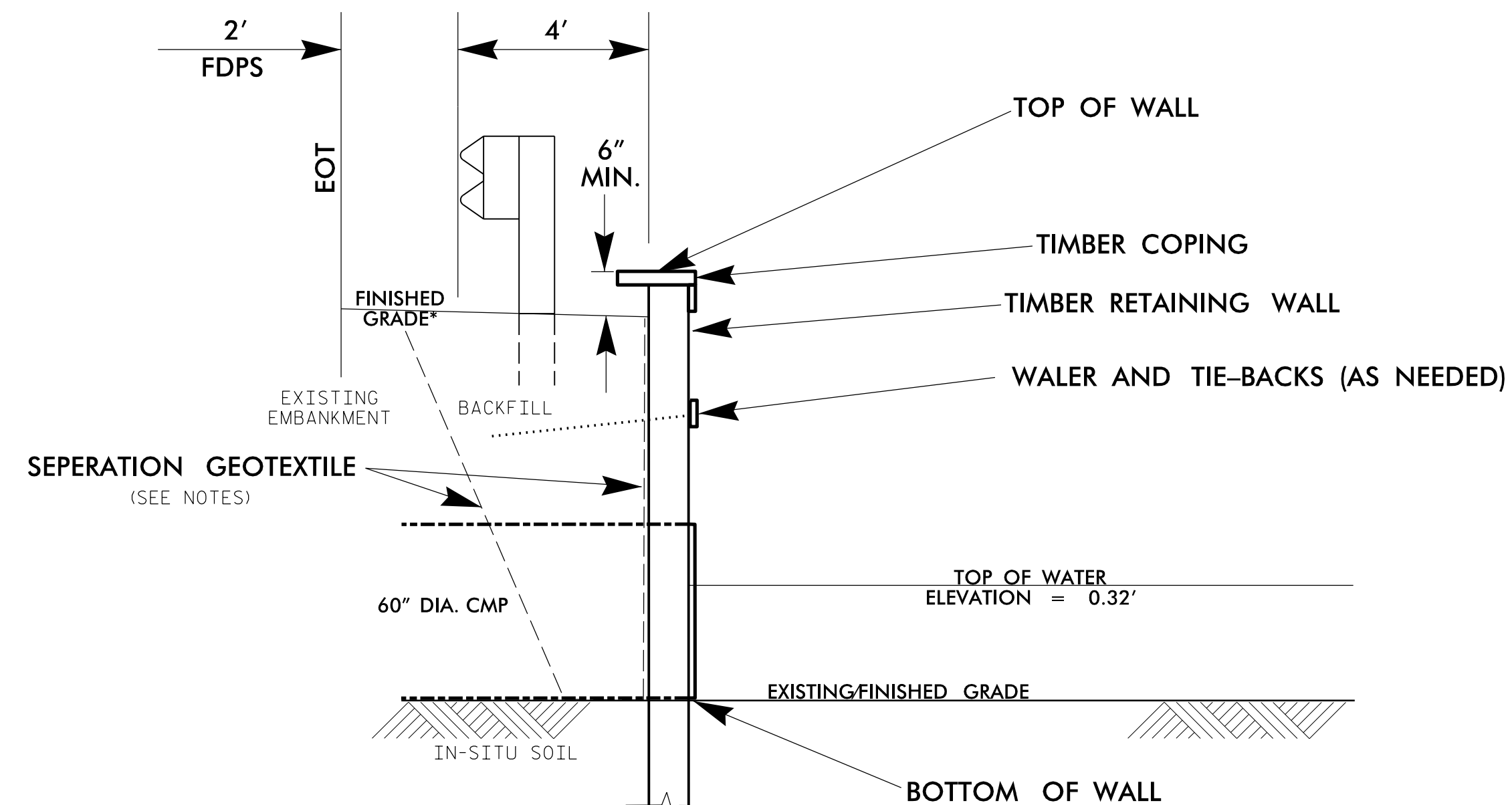
DESIGN RETAINING WALLS NO.1 AND NO.2 FOR A PIPE BEDDING UNDER OR THROUGH THE WALL AS SHOWN. VERIFY PIPE LOCATION AND ELEVATION BEFORE BEGINNING TIMBER WALL DESIGN OR CONSTRUCTION.

EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, GUARDRAIL, FENCE OR HANDRAIL POSTS, PAVEMENTS, PIPES, INLETS OR UTILITIES MAY INTERFERE WITH TIE-BACKS FOR RETAINING WALL NO.1 AND NO.2.

TEMPORARY SHORING IS REQUIRED IN ACCORDANCE WITH THE TEMPORARY SHORING PROVISION. SEE TRAFFIC CONTROL PLANS.

AT THE CONTRACTOR'S OPTION, TEMPORARY SHORING FOR WALL CONSTRUCTION MAY BE USED TO CONSTRUCT RETAINING WALL NO.1 AND NO.2.

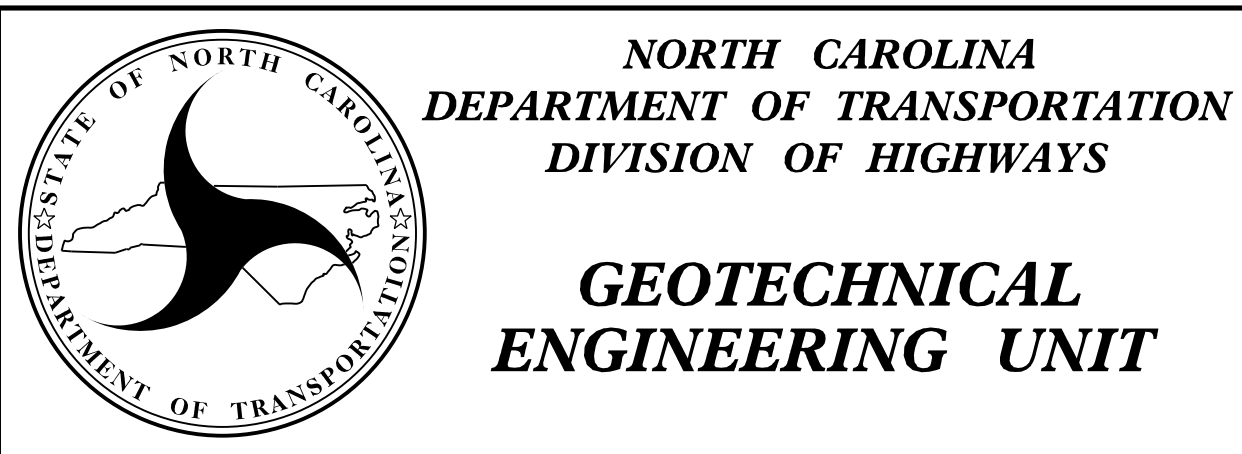
GEOTECHNICAL ENGINEER  SEAL 028422 DONALD W. BROWN, P.E. NORTH CAROLINA	ENGINEER _____ SIGNATURE DATE
DocuSigned by:  1/2/2019 _____ SIGNATURE DATE	_____ SIGNATURE DATE



**TIMBER RETAINING WALL
 TYPICAL SECTION (N.T.S.)**
*SEE ROADWAY PLANS FOR FINISHED GRADE DETAILS.

PROJECT NO.: R-5014
 DARE COUNTY
 STATION: -Y3C- 10+30
 SHEET 2 OF 2

PREPARED BY: D. BROWN, PE	DATE: 12-12-18
REVIEWED BY: C.T. TANG, PE	DATE: 12-12-18



REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

SHEET NO. 2G-3

**RETAINING WALL NO. 1
 & RETAINING WALL NO. 2
 PLAN NOTES & TYPICAL SECTION**

**STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS**

SUMMARY OF EARTHWORK (IN CUBIC YARDS)

Station	Station	Uncl. Excav.	Undercut	Embank. +%	Borrow	Waste
-L- 11+00.00	-L- 43+10.00	41	0	0	0	41
SUBTOTALS:		41	0	0	0	41
-L- 43+10.00	-L- 73+10.00	1,772	2,358	7,969	6,197	2,358
-Y1A- 11+70.00	-Y1A- 13+39.82	23		181	158	
-Y2- 10+15.00	-Y2- 11+34.31	1		35	34	
-Y3- 11+00.00	-Y3- 12+59.93	3		172	169	
SUBTOTALS:		1,799	2,358	8,357	6,558	2,358
-L- 73+10.00	-L- 90+00.64 (BRIDGE)	636	581	3,056	2,420	581
-Y3A- 11+60.00	-Y3A- 12+63.62	4		49	45	
SUBTOTALS:		640	581	3,105	2,465	581
-L- 91+89.27 (BRIDGE)	-L- 111+67.50 (EQUALITY)	1,081		2,692	1,631	20
-Y3B- 11+92.00	-Y3B- 12+03.27	28		1		27
-Y3C- 10+18.02	-Y3C- 11+00.00	2		36	34	
SUBTOTALS:		1,111	0	2,729	1,665	47
-L- 120+05.14 (EQUALITY)	-L- 120+03.07 (EQUALITY)	1,003	10	749		264
-Y4- 10+15.00	-Y4- 11+56.10	3		46	43	
-Y5- 10+70.00	-Y5- 12+55.03	7		117	110	
SUBTOTALS:		1,013	10	912	153	264
-L- 120+05.14 (EQUALITY)	-L- 147+22.84 (BRIDGE)	870	179	2,571	1,761	239
SUBTOTALS:		870	179	2,571	1,761	239
-L- 152+34.13 (BRIDGE)	-L- 183+00.00	1,213	44	3,203	1,990	44
SUBTOTALS:		1,213	44	3,203	1,990	44
-L- 183+00.00	-L- 209+96.72	356		484	128	0
SUBTOTALS:		356	0	484	128	0
-L- 209+96.72	-L- 235+77.02	263		696	433	
SUBTOTALS:		263	0	696	433	0
-L- 236+49.02	-L- 240+00.00	16		0	0	16
SUBTOTALS:		16	0	0	0	16
PROJECT TOTALS:		7,322	3,172	22,057	15,153	3,590
MATERIAL FOR SHOULDER CONSTRUCTION						
LOSS DUE TO CLEARING & GRUBBING						
ADDITIONAL UNDERCUT						
LESS SELECT GRANULAR MATERIAL						
WASTE IN LIEU OF BORROW						
PROJECT TOTALS:						
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT						
GRAND TOTALS:						
SAY:						
Pavement Structure Volume = 2,150 CY						
DDE = 40 CY						

Note: 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.

NCCARRMARTI0

COMPUTED BY: C. F. - NCDOT DATE: 11-14-16
CHECKED BY: E.S.M. - NV5 DATE: 3-17-21

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO. SHEET NO.
R-5014 3D-2

Note: Invert Elevations indicated 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 INCHES & UNDER)

Table with columns: LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, C.A.A. PIPE (15-48), DUCTILE IRON PIPE, R. C. PIPE CLASS IV, ENDWALLS, REINFORCED ENDWALLS, MASONRY, QUANTITIES FOR DRAINAGE STRUCTURES (A, B), FRAME, GRATES, AND HOOD, CONCRETE TRANSITIONAL SECTION, GRAPE TYPE, and REMARKS. Includes a SHEET TOTALS row at the bottom.

ABBREVIATIONS table listing materials and their abbreviations: C.A.A. CORRUGATED ALUMINIUM ALLOY, C.B. CATCH BASIN, C.S. CORRUGATED STEEL, D.I. DROP INLET, G.D.I. GRATED DROP INLET, H.D.P.E. HIGH DENSITY POLYETHYLENE, J.B. JUNCTION BOX, M.H. MANHOLE, N.S. NARROW SLOT, P.V.C. POLYVINYL CHLORIDE, R.C. REINFORCED CONCRETE, T.B.D.I. TRAFFIC BEARING DROP INLET, T.B.J.B. TRAFFIC BEARING JUNCTION BOX, W.S. WIDE SLOT.

REMARKS column for additional project notes and observations.

COMPUTED BY: C. F. - NCDOT DATE: 11-14-16
CHECKED BY: E.S.M. - NV5 DATE: 3-17-21

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO. SHEET NO.
R-5014 3D-6

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

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

Table with columns for LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, C.A.A PIPE, R. C. PIPE CLASS III, IV, V, ENDWALLS, REINFORCED ENDWALLS, MASONRY, DRAINAGE STRUCTURE, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, CONCRETE TRANSITIONAL SECTION, GRADE TYPE, and REMARKS. Includes a grid for data entry and a summary row at the bottom.

ABBREVIATIONS
C.A.A. CORRUGATED ALUMINIUM ALLOY
C.B. CATCH BASIN
C.S. CORRUGATED STEEL
D.I. DROP INLET
G.D.I. GRATED DROP INLET
H.D.P.E. HIGH DENSITY POLYETHYLENE
J.B. JUNCTION BOX
M.H. MANHOLE
N.S. NARROW SLOT
P.V.C. POLYVINYL CHLORIDE
R.C. REINFORCED CONCRETE
T.B.D.I. TRAFFIC BEARING DROP INLET
T.B.J.B. TRAFFIC BEARING JUNCTION BOX
W.S. WIDE SLOT

SHEET TOTALS
PROJECT TOTALS

Summary table with 2 rows and 11 columns containing totals for the sheet and project, including values for line counts and pipe quantities.

COMPUTED BY: JL STONE DATE: 11/18/2016
 CHECKED BY: AEV DATE: 11/01/18

PROJECT NO. R-5014 SHEET NO. 3G-1

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

SUMMARY OF SUBSURFACE DRAINAGE

LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
				CONTINGENCY	2000
				TOTAL LF:	2000

*UD = Underdrain
 *BD = Blind Drain
 *SD = Subsurface Drain

SUMMARY OF ROCK PLATING

LINE	Beginning Slope	Approx. Station	Ending Slope	Approx. Station	Location LT/RT	Rock Plating Detail No. 1/2/3/4	Riprap Class* 1/2/B	SY
-L-	2.5:1	56+30 +/-	2.5:1	56+75 +/-	LT	1	*	45
-L-	2.5:1	92+85 +/-	2.5:1	96+25 +/-	LT	1	*	340
-L-	2.5:1	104+10 +/-	2.5:1	104+65 +/-	LT	1	*	60
-L-	2.5:1	126+70 +/-	2.5:1	127+55 +/-	LT	1	*	85
-L-	2.5:1	163+08 +/-	2.5:1	173+60 +/-	LT	1	*	750
							TOTAL SY:	1,280

*Use Class 1, 2 or B riprap if riprap class is not shown for rock plating location.

SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION

LINE	Station	Station	Aggregate Type ASU/AST	Aggregate Thickness INCHES	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Soil Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
			CONTINGENCY	AST					5000
			CONTINGENCY	ASU	5000	10000	15000		
			CONTINGENCY	ASU	12	500	945	1500	
			TOTAL CY/TONS/SY:		5500	10945	16500*	0	5000

ASU = Aggregate Subgrade, AST = Aggregate Stabilization
 *Total square yards of Geotextile for Soil Stabilization is only the estimated quantity for ASU/AST and may only represent a portion of the geotextile quantity shown in the Item Sheets of the Proposal.

**STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS**

PARCEL INDEX SHEET

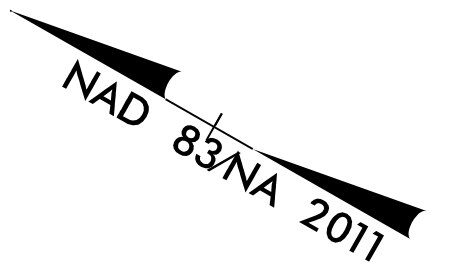
PROJ. REFERENCE NO. R-5014	SHEET NO. 3P-1
--------------------------------------	--------------------------

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
1	6	JEANNE M. LAURO
2	6	CYNTHIA STEVENS
3	6	THOMAS P. MAGNANELLI, SR.
4	6	DEBORAH H. STOKES CLINKSCALES
5	6	DEBORAH STOKES CLINKSCALES
6	6	STEVE P. KING
7	6	JOAN E. CASTEEL
8	6	COLINGTON HARBOUR ASSOCIATION INC
9	6	STEVEN R. HAMM
10	6	JOYCE L. JORDAN
11	6	JOHN W. DEMPEWOLF
12	6	ASHWORTH ONE, LLC
13	6	SANDRA RODRIGUEZ
14	6	CARLYN ANN LAUGHLIN
15	6	ROBBIE PAETOW
16	6	JEFFREY JUSTIN MITCHELL & NATALIE KAYLIN MITCHELL
17	6	MARGARETTE M. UMPHLETT
18	6	CARL E. WORSLEY, JR.
19	6	BEASLEY BEASLEY & BEASLEY
20	6	BJ DEVELOPMENTS
21	6	WILLIAM J. WEATHERLY - NO CLAIM
22	6	BJ DEVELOPMENTS
23	6 & 7	ALAIN J. TTEE PIRRONE & MONIKA C. TTEE PIRRONE
24	7	LEWIS R. BEASLEY & JUNE E. BEASLEY
25	7	NANCY K. BALONIS
26	7	TERRY BEASLEY
27	7	WILLIAM T. CAROON
28	6 & 7	RICHARD A. COHEN
29	7	JOSEPH JONES JR.
30	7	GARY LEE KENNEDY
31	7	HILDA GIFFORD
32	7	JASON B. HILL
33	7	GARLAND H. DUNSTAN, JR.
34	7	SHINGLE LANDING OF COLINGTON CORP
35	7	DARE COUNTY
35A	7	SHINGLE LANDING OF COLINGTON CORP
36	7 & 8	EDWARD G. COLLIER
37	7	ISABEL LOPEZ AND BLANDINA LOPEZ (NO CLAIM)
38	8	LUIS RODRIGEZ JR. (NO CLAIM)
40	7 & 8	HARBRINGER LAND & TIMBER, LLC
41	8	COLINGTON HARBOUR ASSOC.
42	8	NANCY Z. ROTEN
43	8	COLINGTON UNITED CHURCH
44	8 & 9	LIBERTY CHRISTIAN FELLOWSHIP
44A	9	GARY D. CRANE, JR.
45	8 & 9	NORTH BEACH DEVELOPMENT LLC
46	9	JLS PROPERTIES, LLC
47	9	RANDALL WIGGINS
48	9	TANYA TILLET CROW (NO CLAIM)
49	9 & 10	JOHN ROEHRS
50	10	LGI LAND NC, LLC
51	10	AVA COL SOL JOHNSON
52	10	REGINA OUTLAW ZEINER
53	10	JANICE WILLIAMS O'NEAL (NO CLAIM)
54	10	JOHN GIBSON
55	10	AUSTIN KELLY
56	10	CHRISTOPHER K. ARCHER
57	10	GARLAND H. DUNSTAN, JR.
58	10	JASPER DONNIE GAMIEL
59	10	MAYNARD R. OUTLAW

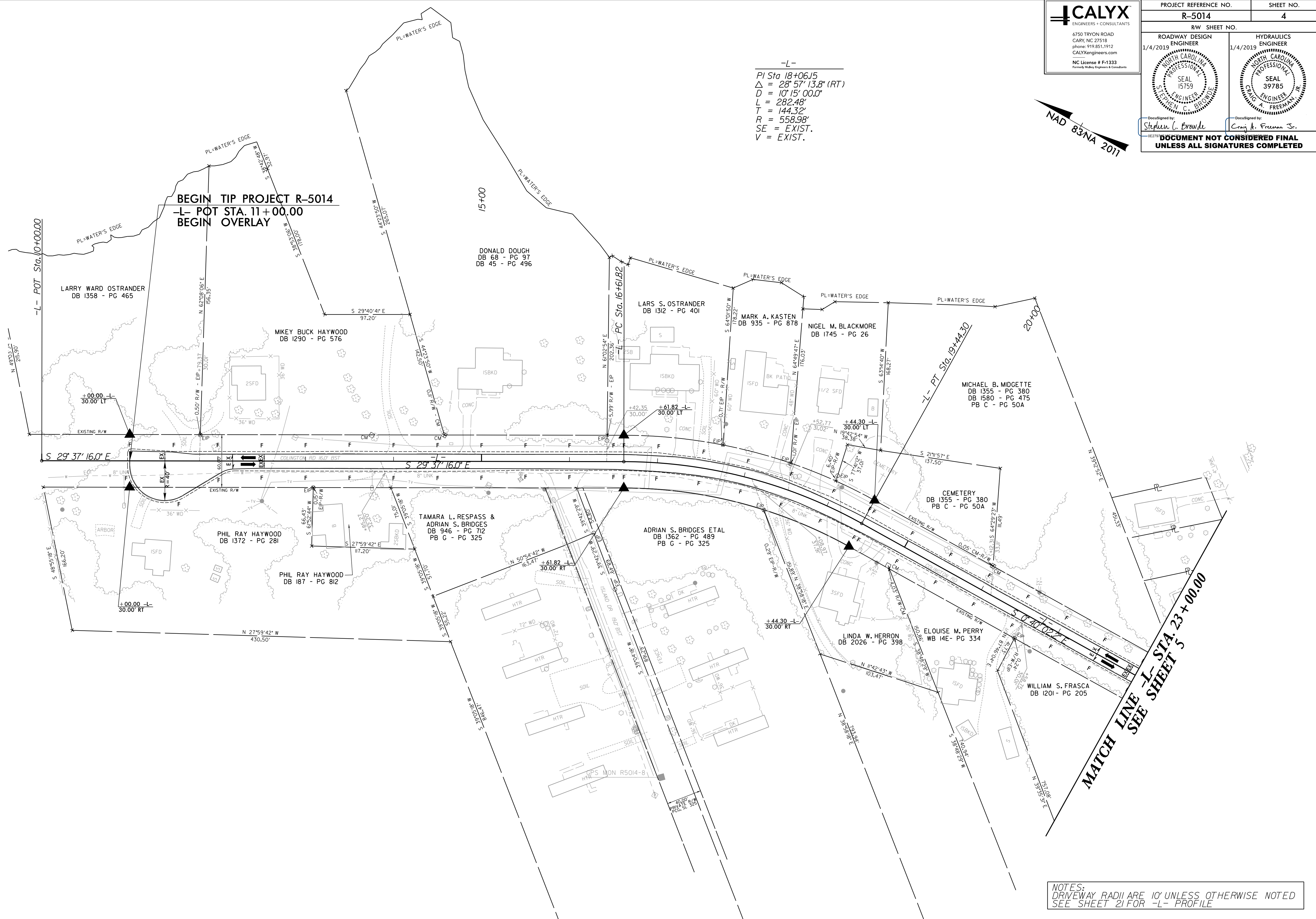
PARCEL No.	SHEET No.	PROPERTY OWNER NAME
60	10	WILLIAM JOSEPH MEYERS, JR.
61	10	AMBER N. DODGE
62	10	COLINGTON VENTURES
63	10	BRANDON BEASLEY
64	10 & 11	ROBERT SHANE MOORE
65	10	COLINGTON POINT DEVELOPERS, LLC
66	10 & 11	COLINGTON POINT DEVELOPERS, LLC
67	11	STANLEY W. MOORE
68	11	MARK D. NUNEMAKER
69	11	CEMETERY
70	11	JUDY M. DEEVER
71	11	JUDY M. DEEVER
72	11	CAROLINA TELEPHONE
72A	11	WATERSEEDGE HOA
73	11	JAMES FRANKLIN MOORE
74	11	MARSHY RIDGE RETREAT
75	11	MILDRED B. BYRUM
76	11	MURRAY EUGENE BRIDGES
77	11	COLLINGTON RD LLC
78	11	CLAUDE H. EURE
79	11	JAMES M. SMITH
80	11	WILLIAM WALTER LADOW, JR.
81	11	SANDRA JEAN LADOW
82	11 & 12	DAVIE L. FLOYD
83	11	JIMMIE D. SUMMERELL
84	11 & 12	CHARLOTTE M. BEASLEY
85	12	JOBY LANE BEASLEY
86	12	LARRY R. PARKER
87	12	LARRY REID PARKER
88	12	GEORGE THOMAS BEASLEY
89	12	HAROLD E. GESSFORD
90	12	CARSON LEE BEASLEY
91	12	SANDRA BEASLEY NEAL
92	12	DARRELL BEASLEY
93	12	DALE BEASLEY
94	12	ADRIAN S. BRIDGES
95	12	JAMIE S. PARKER, SR.
96	12	DAVID C. CREECY
97	12	JERRY M. CREEF
98	12	BILLY CONRAD BEASLEY
99	12 & 13	JAMIE SCOTT PARKER
100	12	ANDREW R. OTTAVIO
101	12	COLINGTON MOBILE HOME PARK
102	12	BILLY CONRAD BEASLEY
103	12 & 13	CHESTER W. SMITH, 3RD
104	13	ROBERT J. LUNDEN
105	14	RALPH DEAN BEASLEY HEIRS
106	14	WALKABOUT LLC
107	14	WALKABOUT LLC
110	14	ARGIE SHULTZ
111	14	J. FRAZIER EDWARD TTEE
112	14	FAY B. MAJOR
113	14	W.E. BENNETT & CHERYL M. JEFFERS
114	14	JASON B. HILL & TANYA N. HILL
115	14	JON MIDGETT CONSTRUCTION, LLC
116	14 & 15	DARE COUNTY
117	15	WALTER WHELESS, ETAL
118	15	GEORGE GARDNER
119	15	1085 COLLINGTON RD LLC
120	15	JIMMIE D. SUMMERELL

CALYX
ENGINEERS - CONSULTANTS
6750 TRYON ROAD
CARY, NC 27518
phone: 919.851.1912
CALYXengineers.com
NC License # F-1333
Formerly Maky Engineers & Consultants

PROJECT REFERENCE NO. R-5014		SHEET NO. 4	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER 1/4/2019		HYDRAULICS ENGINEER 1/4/2019	
Designed by Stephen C. Browde		Designed by Craig A. Freeman Jr.	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



-L-
PI Sta 18+06.15
Δ = 28° 57' 13.8" (RT)
D = 10' 15' 00.0"
L = 282.48'
T = 144.32'
R = 558.98'
SE = EXIST.
V = EXIST.



BEGIN TIP PROJECT R-5014
-L- POT STA. 11+00.00
BEGIN OVERLAY

MATCH LINE -L- STA. 23+00.00
SEE SHEET 5

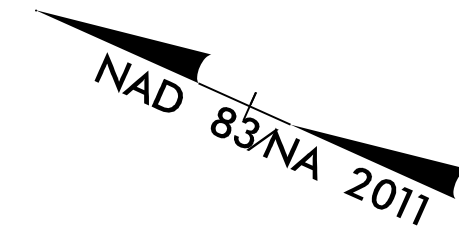
NOTES:
DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED
SEE SHEET 21 FOR -L- PROFILE

8/17/09

1/28/2018 C:\work\proj\RES014_rdy_psh_04.dgn

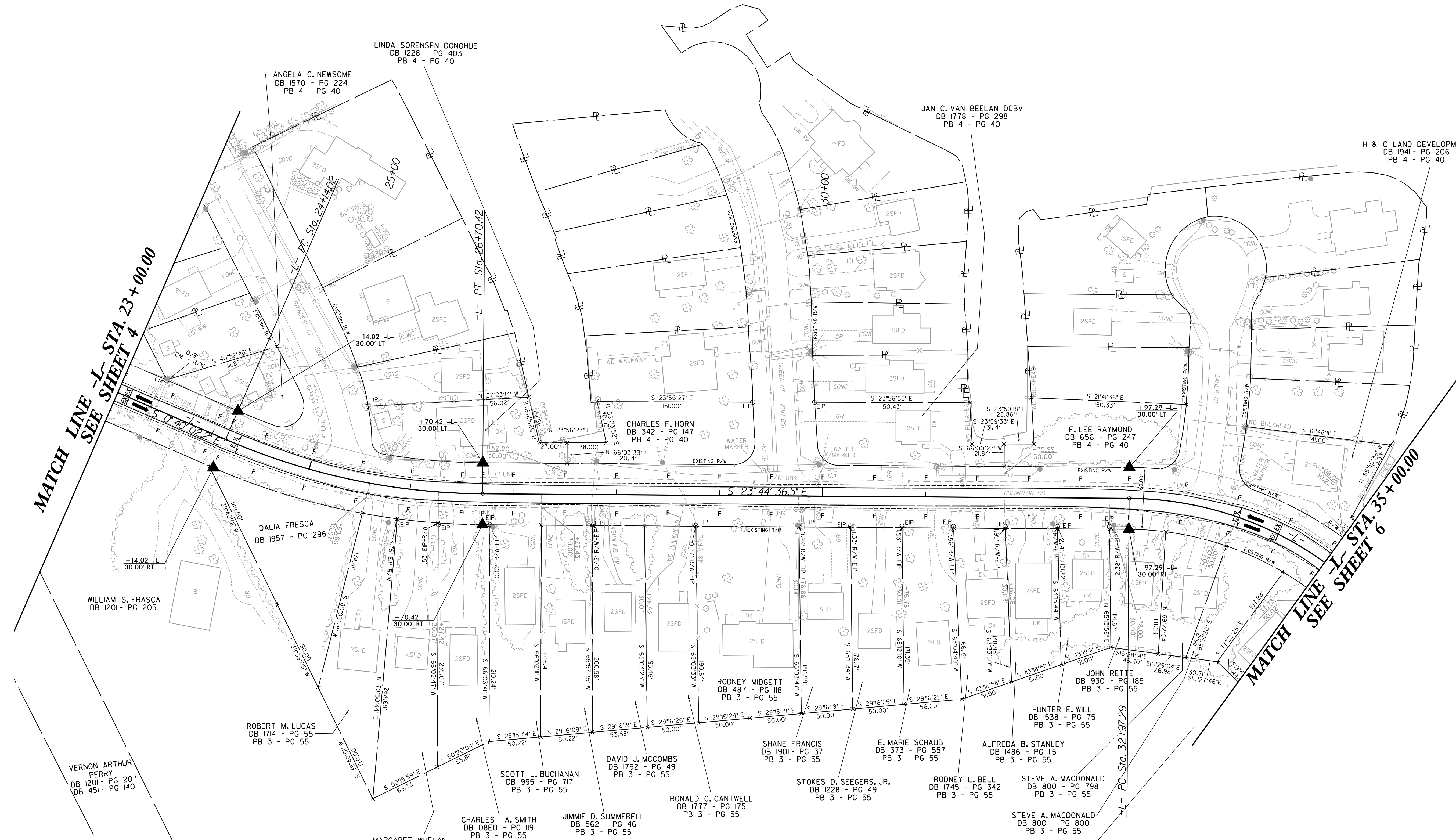
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6750 TRYON ROAD
CARY, NC 27518
phone: 919.851.1912
CALYXEngineers.com
NC License # F-1333
Formerly Maky Engineers & Consultants

PROJECT REFERENCE NO. R-5014		SHEET NO. 5	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER 1/4/2019		HYDRAULICS ENGINEER 1/4/2019	
DocuSigned by: <i>Stephen C. Browde</i>		DocuSigned by: <i>Craig A. Freeman Jr.</i>	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



-L-

PI Sta 25+43.98 $\Delta = 23^{\circ}04'34.3"$ (LT) D = 9'00'00.0" L = 256.40' T = 129.96' R = 636.62' SE = EXIST. V = EXIST.	PI Sta 34+44.90 $\Delta = 48^{\circ}32'06.7"$ (RT) D = 17'30'00.0" L = 277.34' T = 147.61' R = 327.40' SE = EXIST. V = EXIST.
---------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------



**MATCH LINE -L- STA. 23+00.00
SEE SHEET 4**

**MATCH LINE -L- STA. 35+00.00
SEE SHEET 6**

NOTES:
DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED
SEE SHEET 21 FOR -L- PROFILE

8/17/09
12/28/2018
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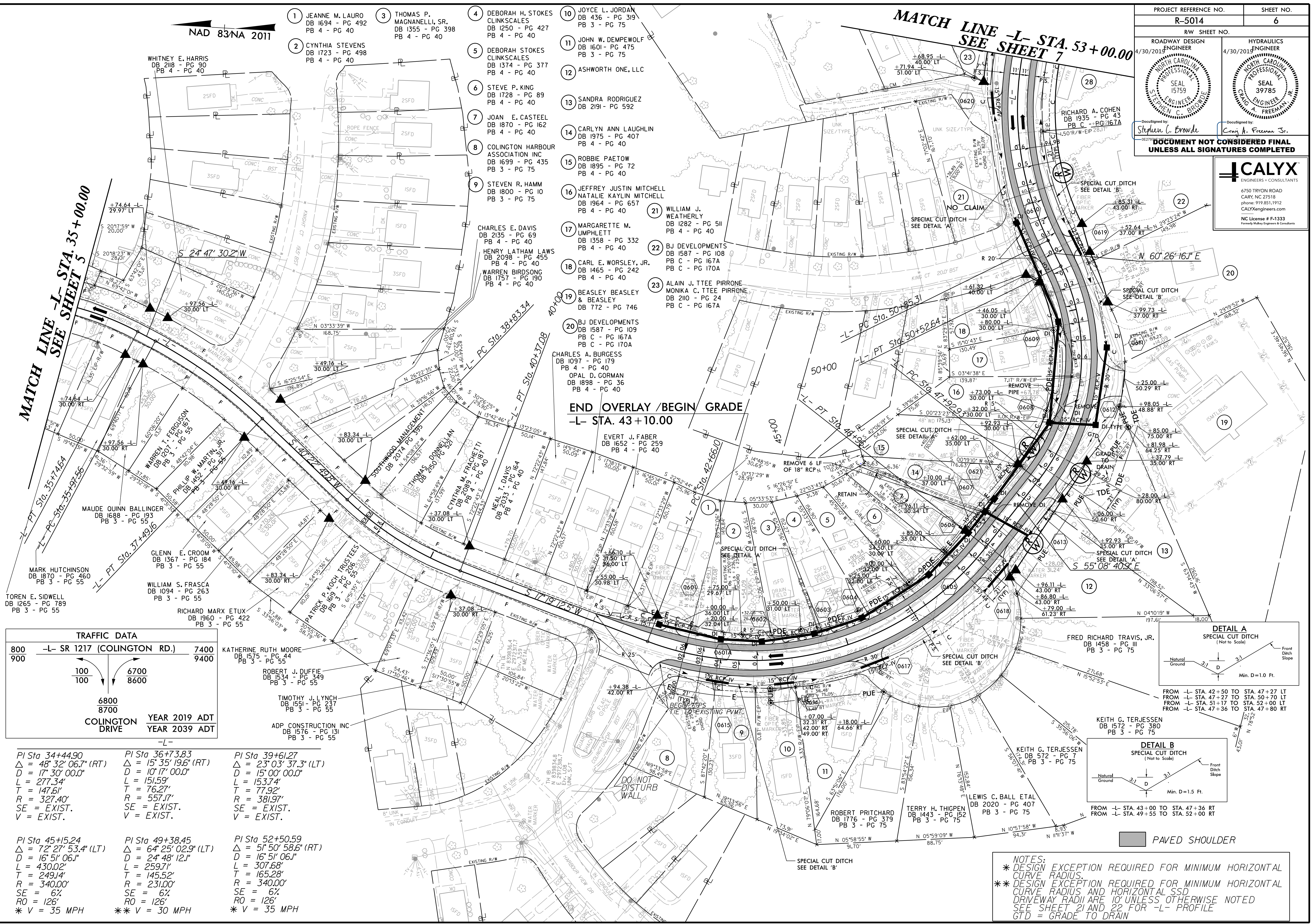
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PROJECT REFERENCE NO. R-5014	SHEET NO. 6
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER 4/30/2019	4/30/2019
DocuSigned by: Stephen C. Browde	DocuSigned by: Craig A. Freeman Jr.

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

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CALYXengineers.com
NC License # F-1333
Formerly Huber Engineers & Consultants



MATCH LINE -L- STA. 35+00.00
SEE SHEET 5

MATCH LINE -L- STA. 53+00.00
SEE SHEET 7

END OVERLAY / BEGIN GRADE
-L- STA. 43+10.00

TRAFFIC DATA

800	-L- SR 1217 (COLINGTON RD.)	7400
900		9400

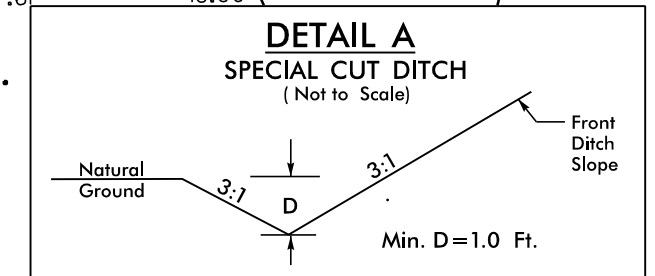
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6800
8700

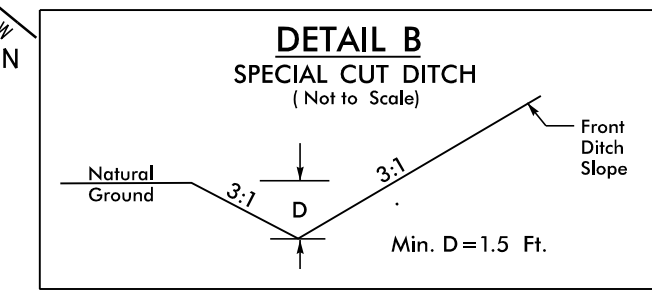
COLINGTON DRIVE

YEAR 2019 ADT	YEAR 2039 ADT

<p>PI Sta 34+44.90 Δ = 48° 32' 06.7" (RT) D = 17' 30" 00.0" L = 277.34' T = 147.61' R = 327.40' SE = EXIST. V = EXIST.</p>	<p>PI Sta 36+73.83 Δ = 15° 35' 19.6" (RT) D = 10' 17" 00.0" L = 151.59' T = 76.27' R = 557.17' SE = EXIST. V = EXIST.</p>	<p>PI Sta 39+61.27 Δ = 23° 03' 37.3" (LT) D = 15' 00" 00.0" L = 153.74' T = 77.92' R = 381.97' SE = EXIST. V = EXIST.</p>
<p>PI Sta 45+15.24 Δ = 72° 27' 53.4" (LT) D = 16' 51" 06.1" L = 430.02' T = 249.14' R = 340.00' SE = 6% RO = 126' * V = 35 MPH</p>	<p>PI Sta 49+38.45 Δ = 64° 25' 02.9" (LT) D = 24' 48' 12.1" L = 259.71' T = 145.52' R = 231.00' SE = 6% RO = 126' * V = 30 MPH</p>	<p>PI Sta 52+50.59 Δ = 51° 50' 58.6" (RT) D = 16' 51" 06.1" L = 307.68' T = 165.28' R = 340.00' SE = 6% RO = 126' * V = 35 MPH</p>



FROM -L- STA. 42+50 TO STA. 47+27 LT
FROM -L- STA. 47+27 TO STA. 50+70 LT
FROM -L- STA. 51+17 TO STA. 52+00 LT
FROM -L- STA. 47+36 TO STA. 47+80 RT



FROM -L- STA. 43+00 TO STA. 47+36 RT
FROM -L- STA. 49+55 TO STA. 52+00 RT

PAVED SHOULDER

NOTES:
* DESIGN EXCEPTION REQUIRED FOR MINIMUM HORIZONTAL CURVE RADIUS.
** DESIGN EXCEPTION REQUIRED FOR MINIMUM HORIZONTAL CURVE RADIUS AND HORIZONTAL SSD.
DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED
SEE SHEET 21 AND 22 FOR -L- PROFILE
GTD = GRADE TO DRAIN

NV5
 NV5 ENGINEERS & CONSULTANTS, INC.
 8750 TRYON ROAD
 CARY, NC 27518
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 NC License # F1333
 Formerly CALVE Engineers & Consultants

PROJECT REFERENCE NO. **R-5014** SHEET NO. **7**

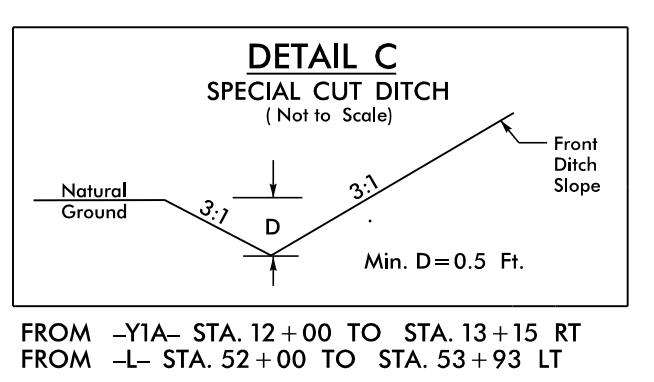
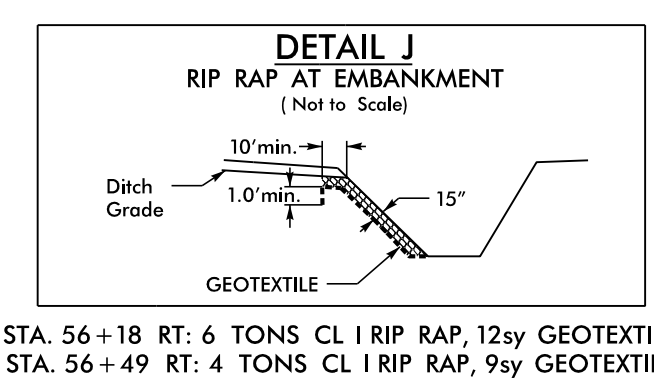
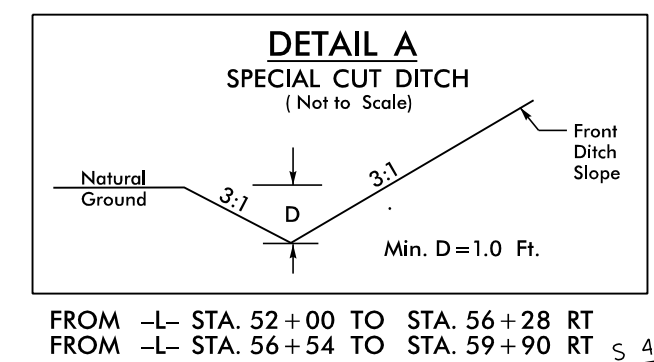
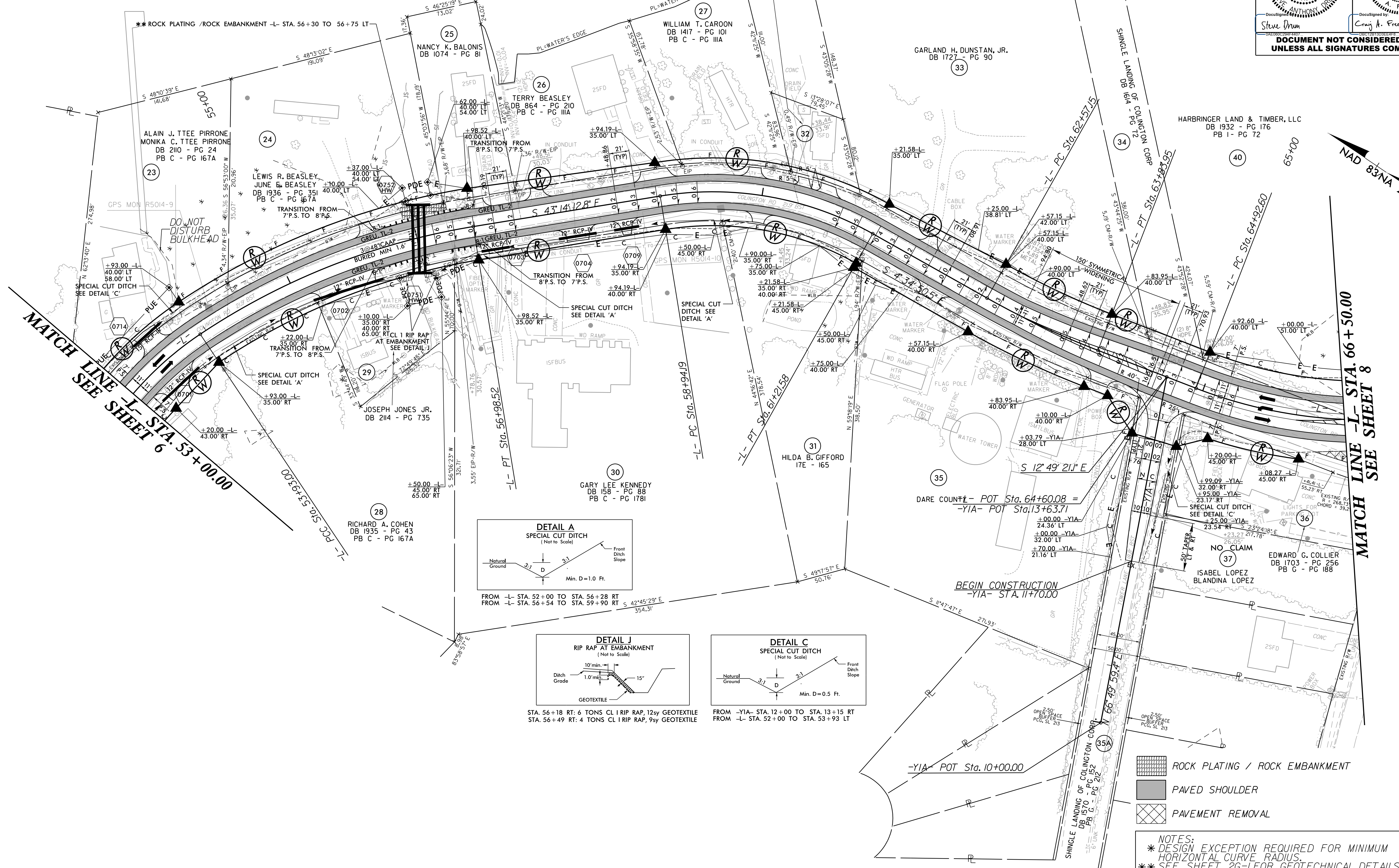
R/W SHEET NO.

ROADWAY DESIGN ENGINEER
 3/31/2021
 NORTH CAROLINA PROFESSIONAL SEAL 017265
 STEVE DRYDEN
 STATE ENGINEER

HYDRAULICS ENGINEER
 4/1/2021
 NORTH CAROLINA PROFESSIONAL SEAL 39785
 CRAIG A. FREEMAN JR.
 STATE ENGINEER

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PI Sta	PI Sta	PI Sta	PI Sta	PI Sta
52+50.59	55+48.13	60+12.41	63+20.66	74+83.10
$\Delta = 51^{\circ}50'58.6"$ (RT)	$\Delta = 24^{\circ}28'32.5"$ (RT)	$\Delta = 38^{\circ}39'22.3"$ (RT)	$\Delta = 8^{\circ}14'30.6"$ (LT)	$\Delta = 127^{\circ}49'20.5"$ (LT)
D = 16'51'06.1"	D = 8'00'39.4"	D = 17'00'00.0"	D = 6'30'00.0"	D = 11'48'48.8"
L = 307.68'	L = 305.53'	L = 227.39'	L = 126.80'	L = 1,082.00'
T = 165.28'	T = 155.13'	T = 118.21'	T = 63.51'	T = 990.50'
R = 340.00'	R = 715.22'	R = 337.03'	R = 881.47'	R = 485.00'
SE = 6%	SE = 6%	SE = 6%	SE = 6%	SE = 6%
RO = 126'	RO = 126'	RO = 126'	RO = 105'	RO = 126'
*V = 35 MPH	V = 45 MPH	*V = 30 MPH	V = 50 MPH	V = 40 MPH



- ROCK PLATING / ROCK EMBANKMENT
- PAVED SHOULDER
- PAVEMENT REMOVAL

NOTES:
 * DESIGN EXCEPTION REQUIRED FOR MINIMUM HORIZONTAL CURVE RADIUS.
 ** SEE SHEET 2G-1 FOR GEOTECHNICAL DETAILS
 DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED
 SEE SHEET 22 AND 23 FOR -L- PROFILE
 SEE SHEET 31 FOR -Y1A- PROFILE

8/17/09

3/31/2021
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PROJECT REFERENCE NO. **R-5014** SHEET NO. **8**

R/W SHEET NO.

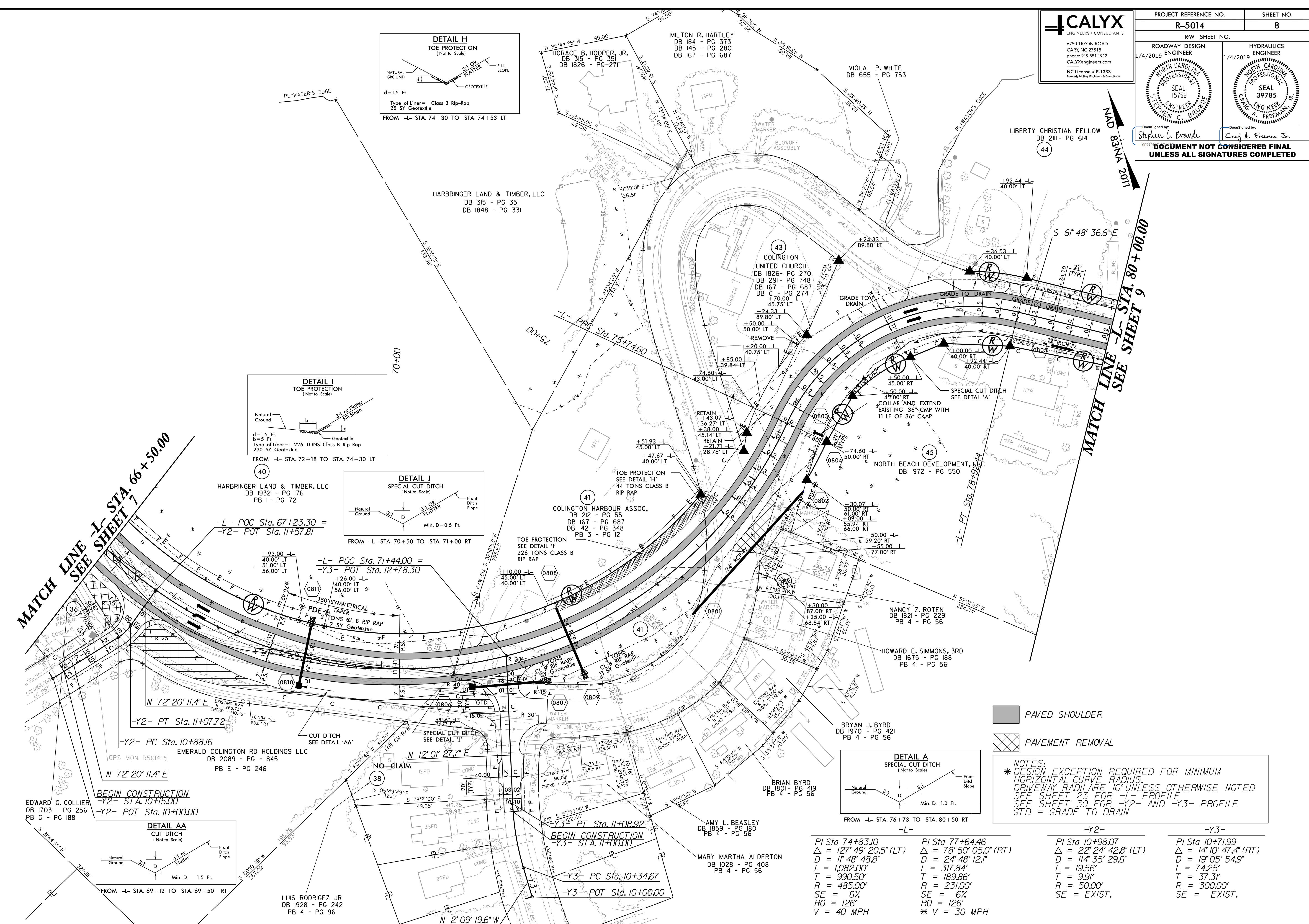
ROADWAY DESIGN ENGINEER
1/4/2019
SEAL 15759
STEPHEN C. BROWDE

HYDRAULICS ENGINEER
1/4/2019
SEAL 39785
CRAIG A. FREEMAN JR.

DocuSigned by:
Stephen C. Browde

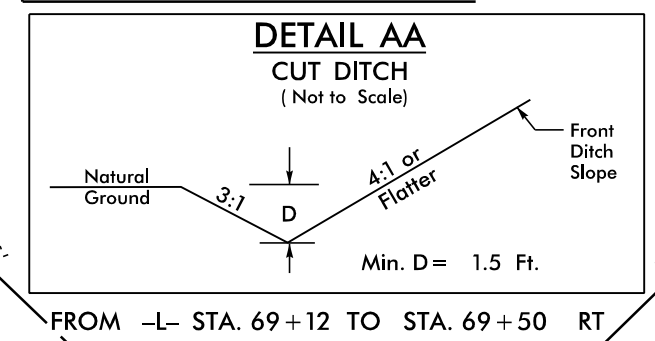
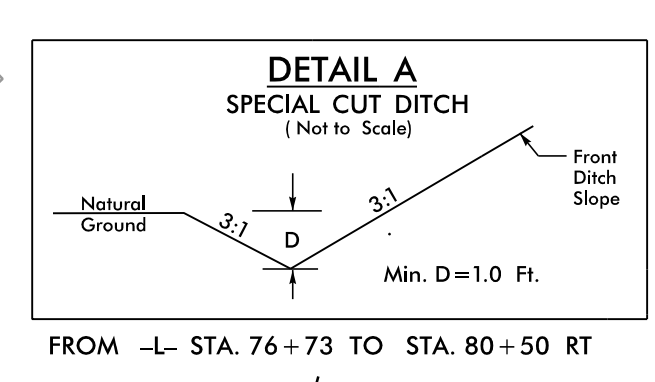
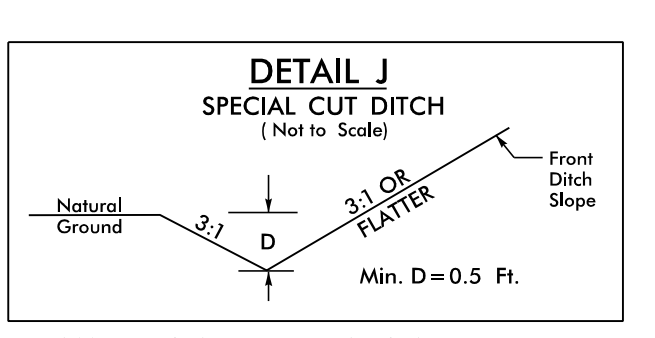
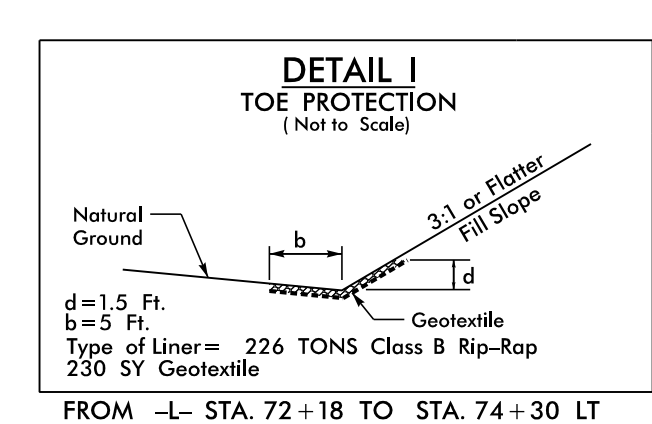
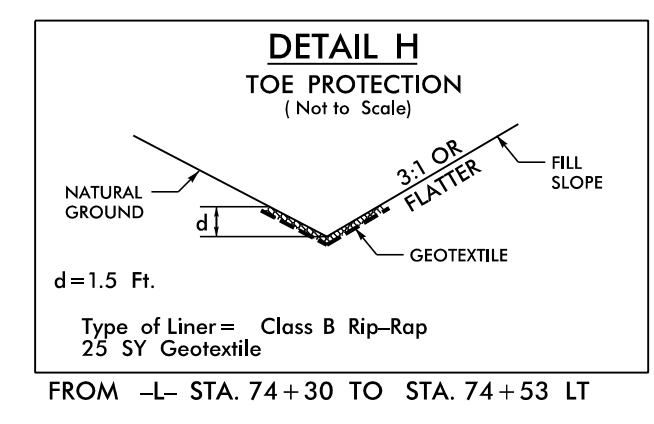
DocuSigned by:
Craig A. Freeman Jr.

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UNLESS ALL SIGNATURES COMPLETED**



**MATCH LINE - L- STA. 66+50.00
SEE SHEET 7**

**MATCH LINE - L- STA. 80+00.00
SEE SHEET 9**



PAVED SHOULDER

PAVEMENT REMOVAL

NOTES:
* DESIGN EXCEPTION REQUIRED FOR MINIMUM HORIZONTAL CURVE RADIUS.
DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED
SEE SHEET 23 FOR -L- PROFILE
SEE SHEET 30 FOR -Y2- AND -Y3- PROFILE
GTD = GRADE TO DRAIN

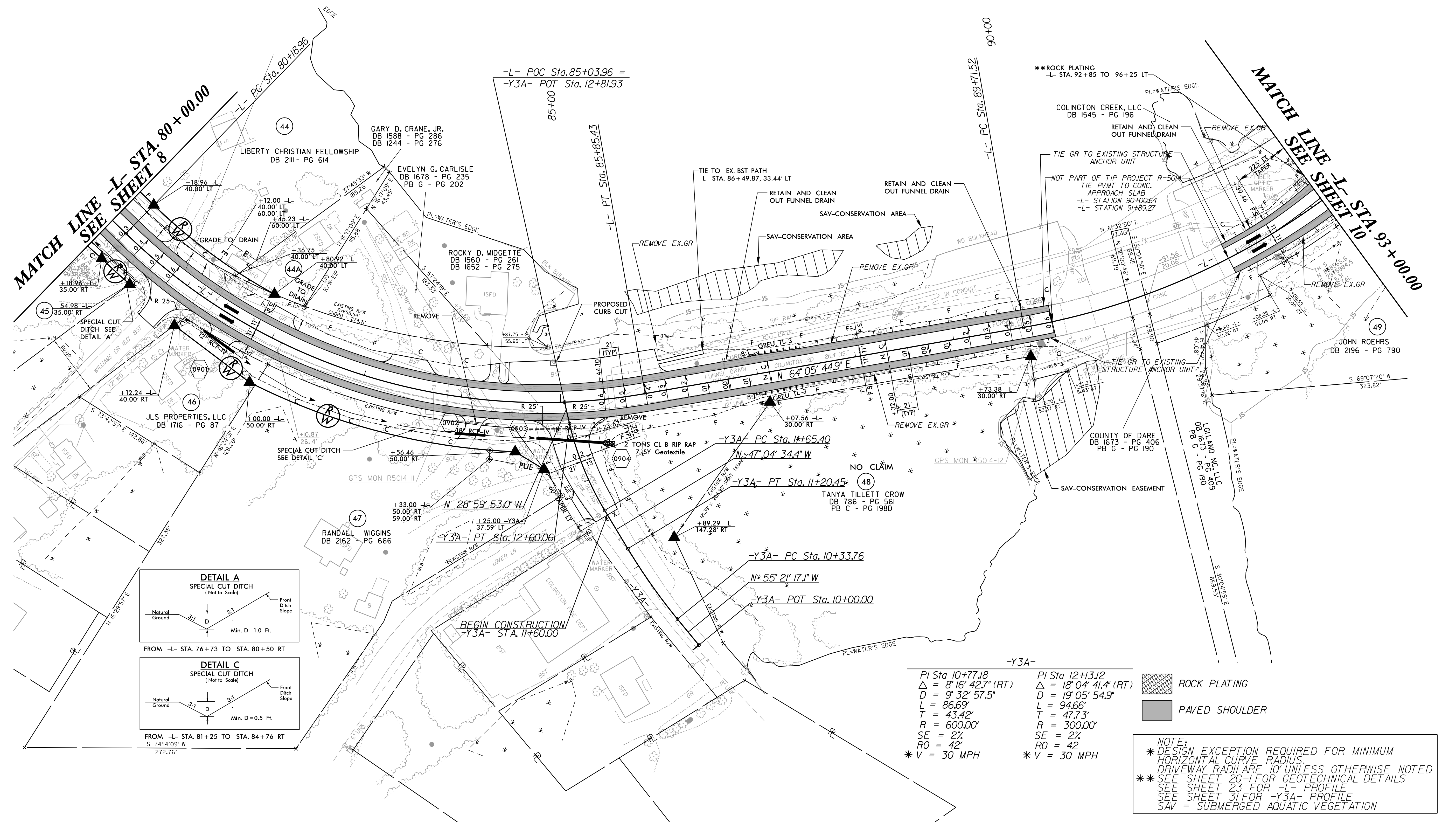
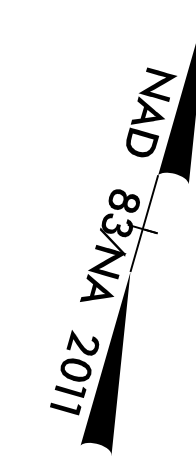
	-Y2-	-Y3-
PI Sta 74+83.10	PI Sta 77+64.46	PI Sta 10+98.07
$\Delta = 127' 49" 20.5" (LT)$	$\Delta = 78' 50" 05.0" (RT)$	$\Delta = 14' 10' 47.4" (RT)$
$D = 11' 48" 48.8"$	$D = 24' 48" 12.1"$	$D = 114' 35' 29.6"$
$L = 1,082.00'$	$L = 317.84'$	$L = 19.56'$
$T = 990.50'$	$T = 189.86'$	$T = 9.91'$
$R = 485.00'$	$R = 231.00'$	$R = 50.00'$
$SE = 6\%$	$SE = 6\%$	$SE = EXIST.$
$RO = 126'$	$RO = 126'$	$SE = EXIST.$
$V = 40 MPH$	$* V = 30 MPH$	

8/17/09
K27, 2018
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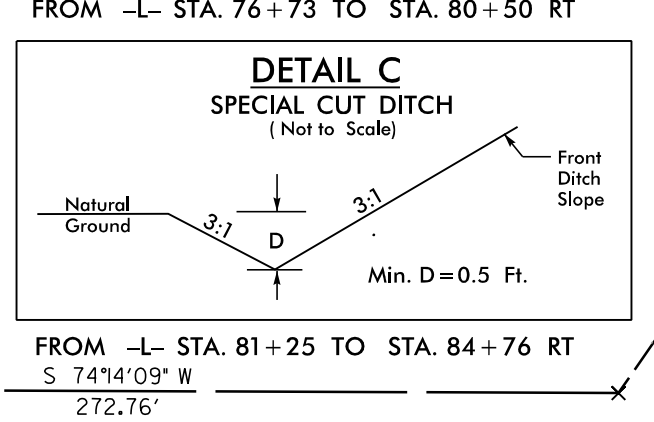
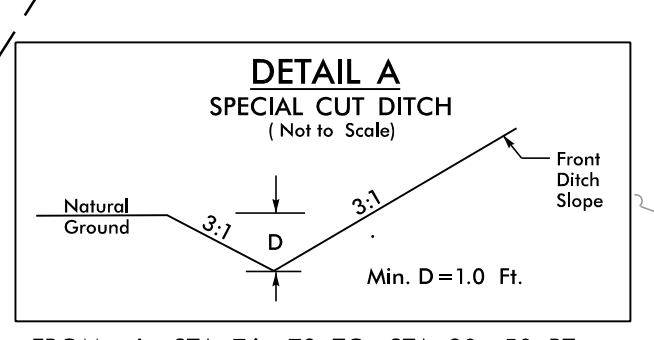
PROJECT REFERENCE NO. R-5014	SHEET NO. 9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER 8/31/2021	HYDRAULICS ENGINEER 4/1/2021
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

-L-
 PI Sta 83+25.29 Δ = 54° 05' 38.6" (LT) D = 9° 32' 57.5" L = 566.47' T = 306.34' R = 600.00' SE = 6% RO = 126' V = 40 MPH
 PI Sta 92+55.51 Δ = 43° 15' 31.2" (LT) D = 8° 00' 00.0" L = 540.73' T = 283.99' R = 716.20' SE = 6% RO = 126' V = 45 MPH

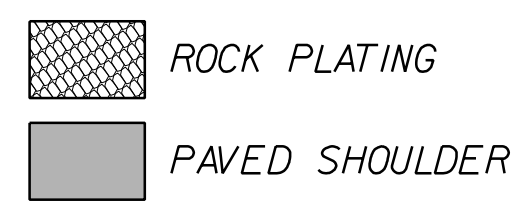


MATCH LINE SEE SHEET 8
 -L- STA. 80+00.00
 -L- PC Sta. 80+18.96

MATCH LINE SEE SHEET 10
 -L- STA. 93+00.00



-Y3A-
 PI Sta 10+77.18 Δ = 8° 16' 42.7" (RT) D = 9° 32' 57.5" L = 86.69' T = 43.42' R = 600.00' SE = 2% RO = 42' V = 30 MPH
 PI Sta 12+13.12 Δ = 18° 04' 41.4" (RT) D = 19° 05' 54.9" L = 94.66' T = 47.73' R = 300.00' SE = 2% RO = 42' V = 30 MPH



NOTE:
 * DESIGN EXCEPTION REQUIRED FOR MINIMUM HORIZONTAL CURVE RADIUS.
 * DRIVWAY RADII ARE 10' UNLESS OTHERWISE NOTED
 ** SEE SHEET 26-I FOR GEOTECHNICAL DETAILS
 SEE SHEET 23 FOR -L- PROFILE
 SEE SHEET 31 FOR -Y3A- PROFILE
 SAV = SUBMERGED AQUATIC VEGETATION

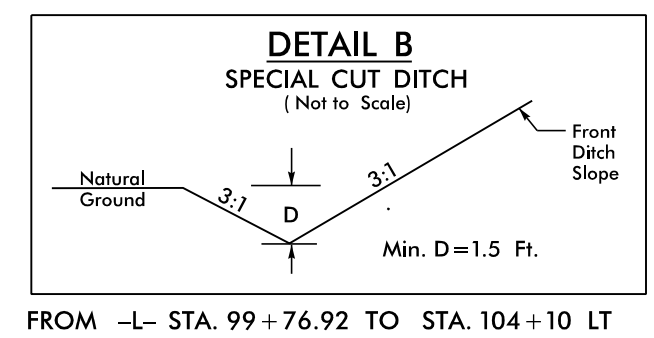
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8.17.19



PROJECT REFERENCE NO. R-5014	SHEET NO. 10
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 3/31/2021	HYDRAULICS ENGINEER 4/1/2021
SEAL 017265 STEVE ANTHONY STATE ENGINEER	SEAL 39785 CRAIG A. FREEMAN JR. STATE ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

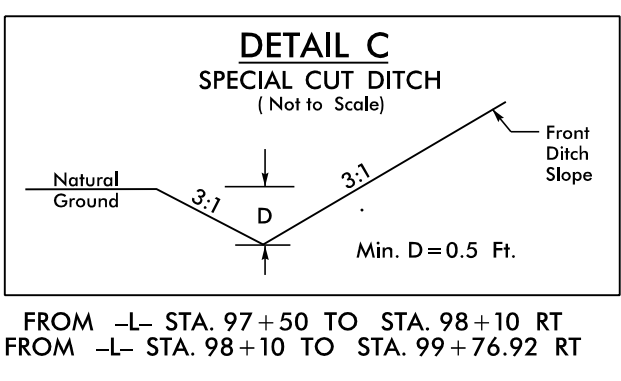
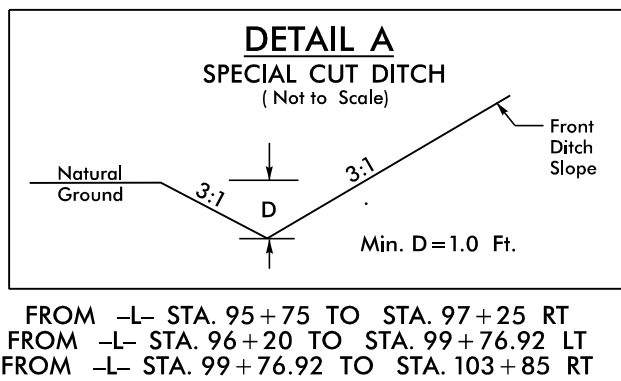
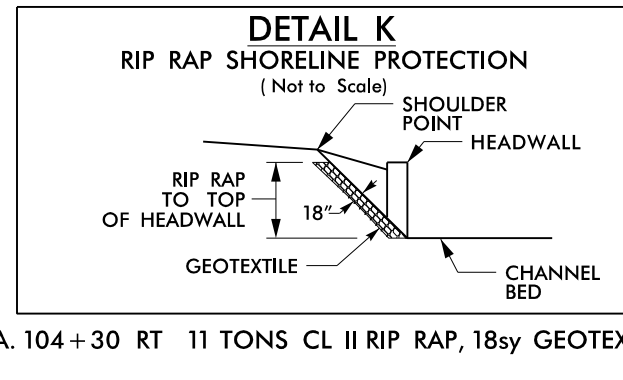
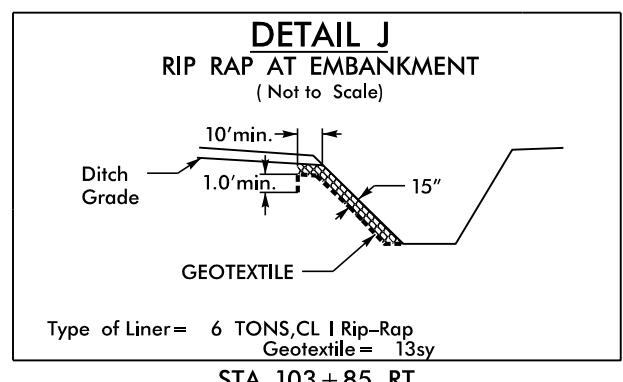
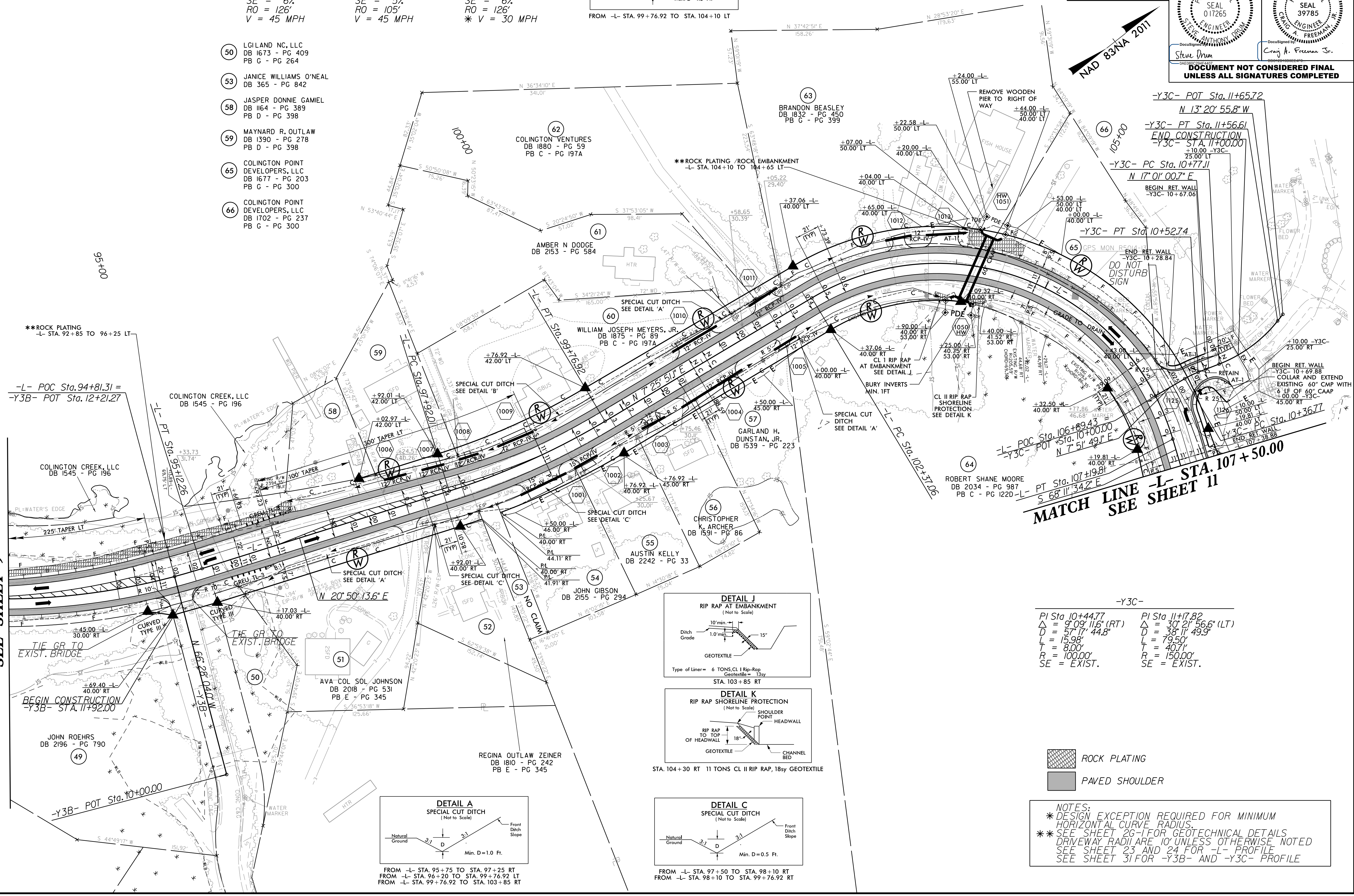
-L-		
PI Sta 92+55.51 Δ = 43°15'31.2" (LT) D = 8'00'00.0" L = 540.73' T = 283.99' R = 716.20' SE = 6% RO = 126' V = 45 MPH	PI Sta 98+84.89 Δ = 13°24'22.6" (LT) D = 7'15'00.0" L = 184.91' T = 92.88' R = 790.29' SE = 5% RO = 105' V = 45 MPH	PI Sta 105+78.55 Δ = 104°22'34.7" (RT) D = 2'37'15.8" L = 482.75' T = 341.49' R = 265.00' SE = 6% RO = 126' * V = 30 MPH



- 50 LGLAND NC, LLC
DB 1673 - PG 409
PB G - PG 264
- 53 JANICE WILLIAMS O'NEAL
DB 365 - PG 842
- 58 JASPER DONNIE GAMIEL
DB 1164 - PG 389
PB D - PG 398
- 59 MAYNARD R. OUTLAW
DB 1390 - PG 278
PB D - PG 398
- 65 COLINGTON POINT DEVELOPERS, LLC
DB 1677 - PG 203
PB G - PG 300
- 66 COLINGTON POINT DEVELOPERS, LLC
DB 1702 - PG 237
PB G - PG 300

MATCH LINE -L- STA. 93 + 00.00
SEE SHEET 9

3/31/2021
R:\Projects\2021\Projects\5014\RDY\psd_10.dgn
E:\Projects\2021\Projects\5014\RDY\psd_10.dgn



-Y3C-	
PI Sta 10+44.77 Δ = 9°09'11.6" (RT) D = 57'17'44.8" L = 15.98' T = 8.00' R = 100.00' SE = EXIST.	PI Sta 11+17.82 Δ = 30°21'56.6" (LT) D = 38'11'49.9" L = 79.50' T = 40.71' R = 150.00' SE = EXIST.

- ROCK PLATING
- PAVED SHOULDER

NOTES:
 * DESIGN EXCEPTION REQUIRED FOR MINIMUM HORIZONTAL CURVE RADIUS.
 ** SEE SHEET 26-1 FOR GEOTECHNICAL DETAILS DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED
 SEE SHEET 23 AND 24 FOR -L- PROFILE
 SEE SHEET 31 FOR -Y3B- AND -Y3C- PROFILE

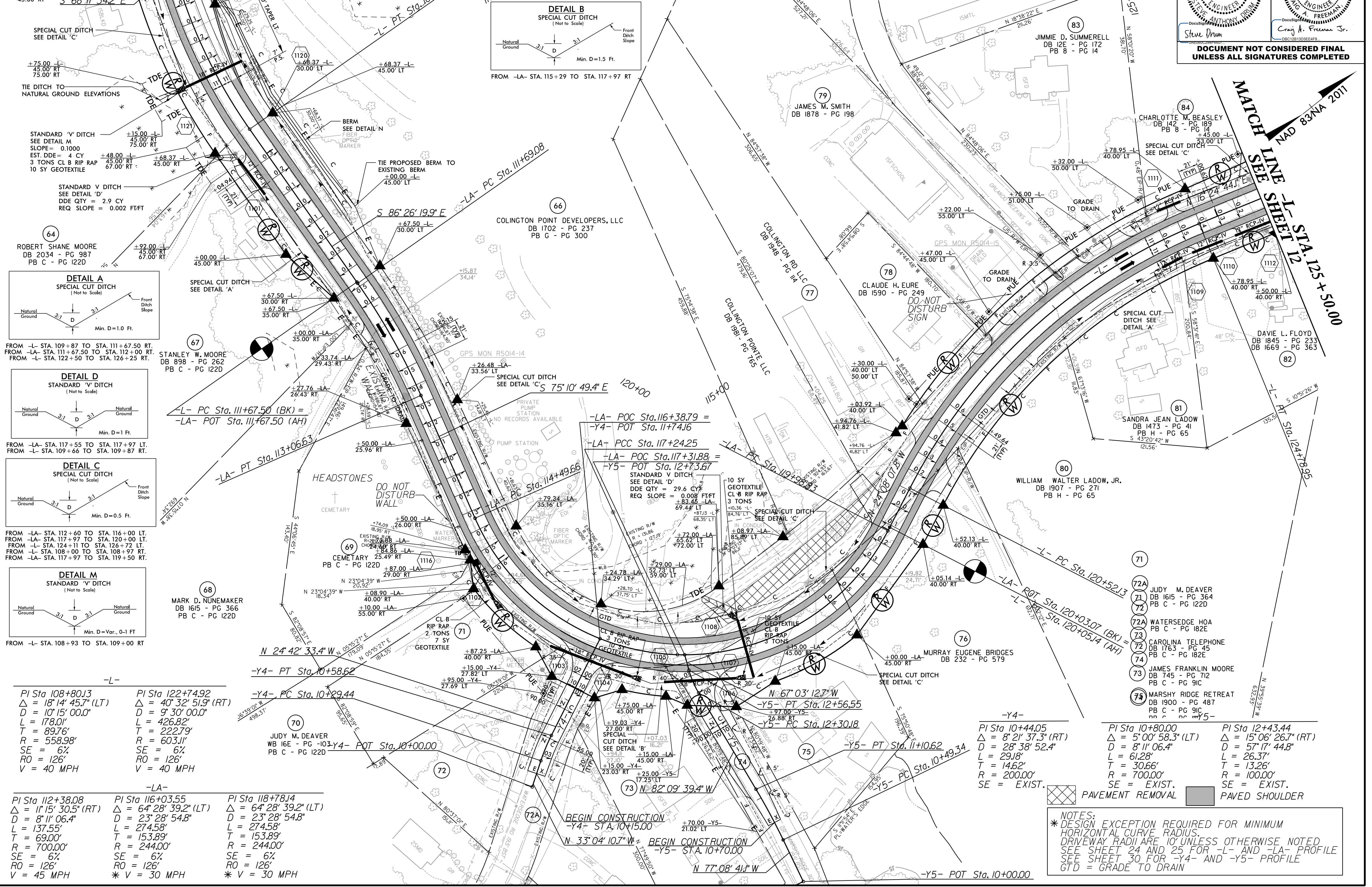
8/17/19

MATCH LINE SEE SHEET 10

-L- STA. 107 + 50.00



PROJECT REFERENCE NO. R-5014	SHEET NO. 11
R/W SHEET NO.	HYDRAULICS
ROADWAY DESIGN ENGINEER 3/20/2017	3/19/2017 ENGINEER
PROF. SEAL 017265 STEVE DRUM	PROF. SEAL 39785 CRAIG A. FREEMAN JR.
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



-L-	-Y4-	-Y5-
PI Sta 108+80.3	PI Sta 108+80.3	PI Sta 108+80.3
Δ = 18° 14' 45.7" (LT)	Δ = 40° 32' 51.9" (RT)	Δ = 40° 32' 51.9" (RT)
D = 10° 15' 00.0"	D = 9° 30' 00.0"	D = 9° 30' 00.0"
L = 178.0'	L = 426.82'	L = 426.82'
T = 89.76'	T = 222.79'	T = 222.79'
R = 558.98'	R = 603.1'	R = 603.1'
SE = 6°	SE = 6°	SE = 6°
RO = 126'	RO = 126'	RO = 126'
V = 40 MPH	V = 40 MPH	V = 40 MPH

-LA-	-LA-	-LA-
PI Sta 112+38.08	PI Sta 116+03.55	PI Sta 118+78.14
Δ = 11° 15' 30.5" (RT)	Δ = 64° 28' 39.2" (LT)	Δ = 64° 28' 39.2" (LT)
D = 8° 11' 06.4"	D = 23° 28' 54.8"	D = 23° 28' 54.8"
L = 137.55'	L = 274.58'	L = 274.58'
T = 69.00'	T = 153.89'	T = 153.89'
R = 700.00'	R = 244.00'	R = 244.00'
SE = 6°	SE = 6°	SE = 6°
RO = 126'	RO = 126'	RO = 126'
V = 45 MPH	* V = 30 MPH	* V = 30 MPH

NOTES:
 * DESIGN EXCEPTION REQUIRED FOR MINIMUM HORIZONTAL CURVE RADIUS.
 DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED.
 SEE SHEET 24 AND 25 FOR -L- AND -LA- PROFILE.
 SEE SHEET 30 FOR -Y4- AND -Y5- PROFILE.
 GTD = GRADE TO DRAIN

3/16/2019 10:45:00 AM \\P:\proj\NRE014_rdy_psh-11.dgn

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 CARY, NC 27518
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 www.NV5.com
 NC License # F1333
 Formerly CALX Engineers & Consultants

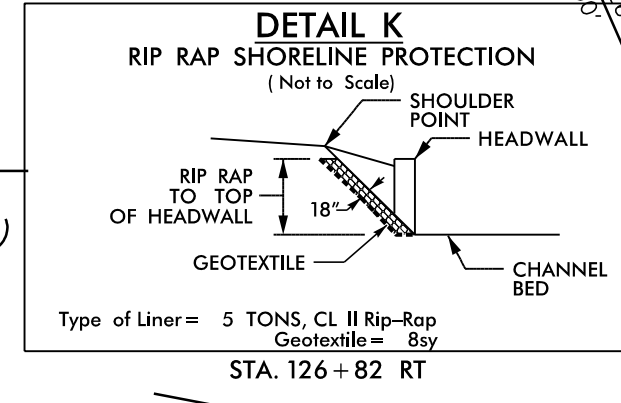
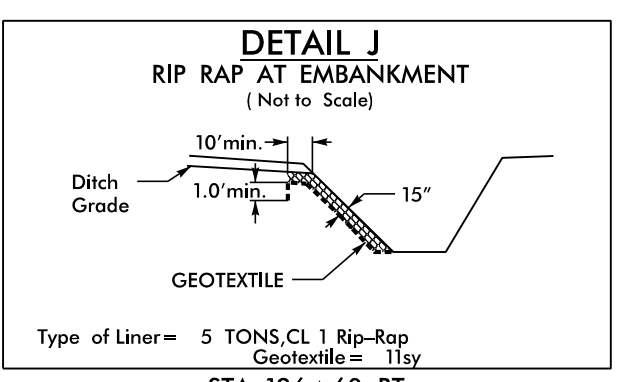
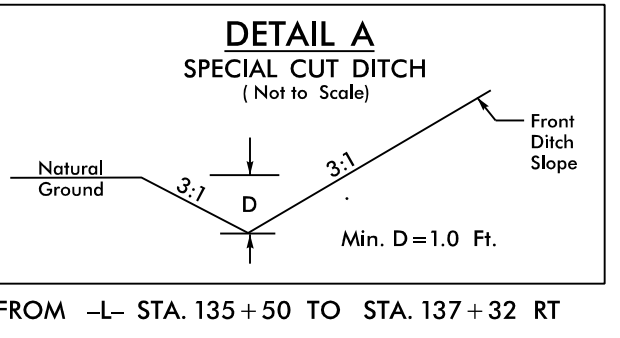
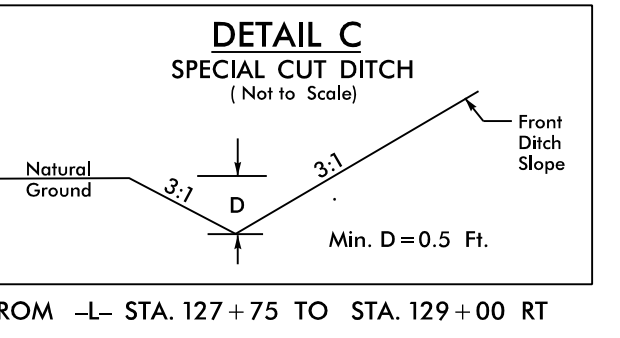
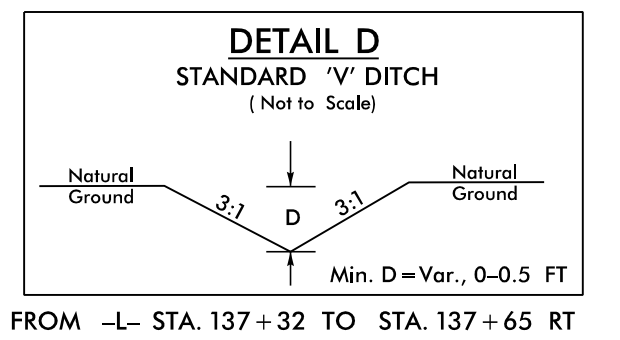
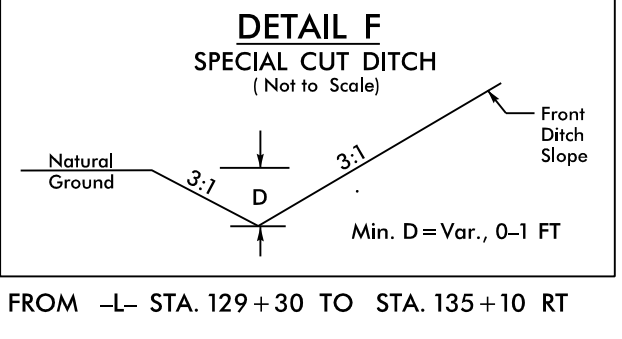
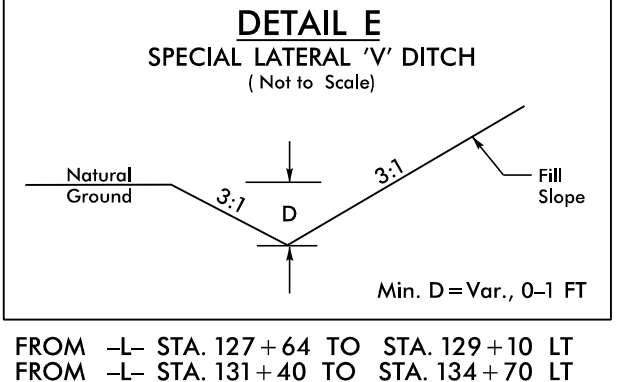
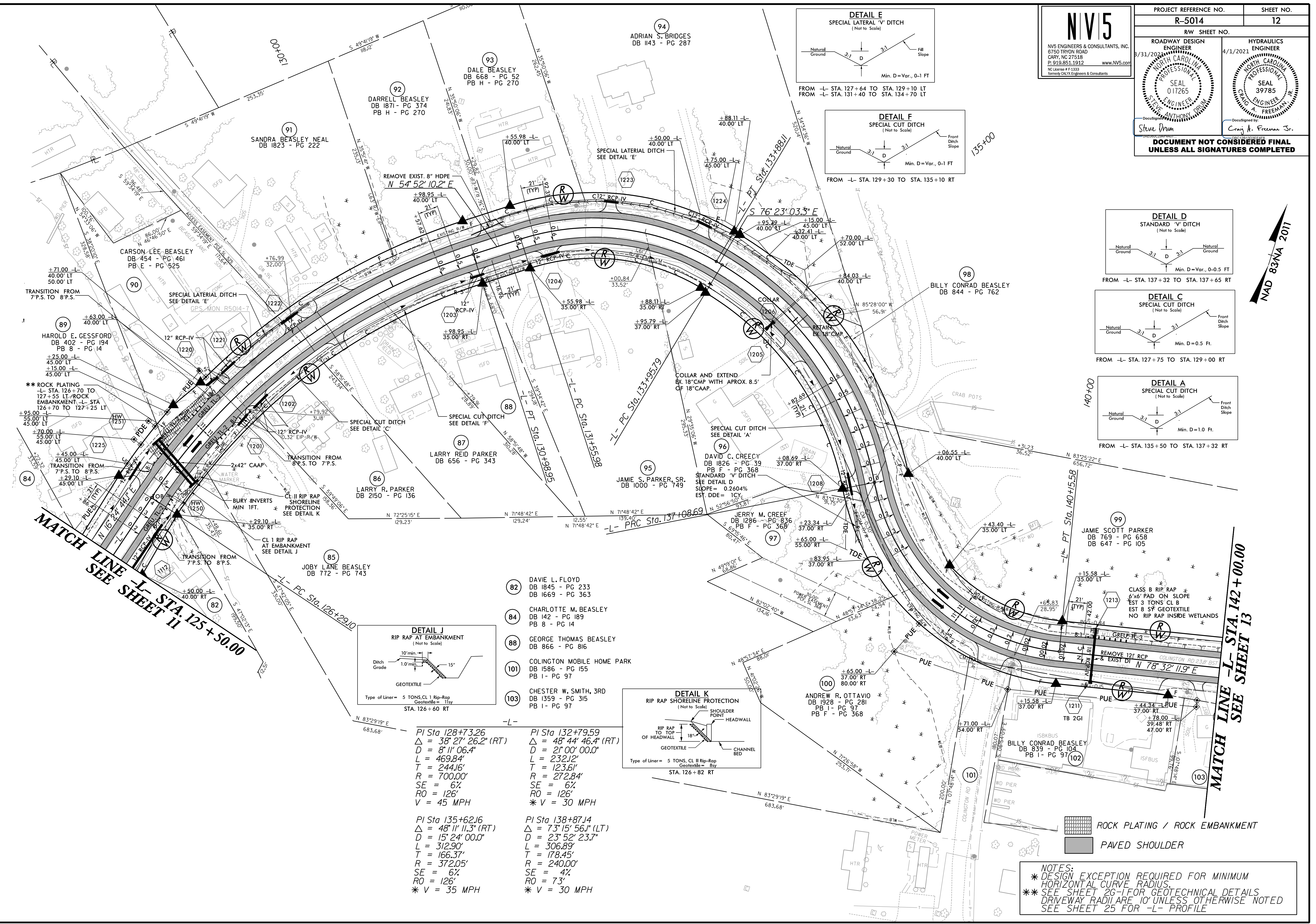
PROJECT REFERENCE NO. **R-5014** SHEET NO. **12**

R/W SHEET NO.

ROADWAY DESIGN ENGINEER
 8/31/2021
 NORTH CAROLINA PROFESSIONAL SEAL 017265
 STEVE DRUM

HYDRAULICS ENGINEER
 4/1/2021
 NORTH CAROLINA PROFESSIONAL SEAL 39785
 CRAIG A. FREEMAN JR.

**DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED**



- 82 DAVE L. FLOYD
DB 1845 - PG 233
DB 1669 - PG 363
- 84 CHARLOTTE M. BEASLEY
DB 142 - PG 189
PB 8 - PG 14
- 88 GEORGE THOMAS BEASLEY
DB 866 - PG 816
- 101 COLINGTON MOBILE HOME PARK
DB 1586 - PG 155
PB 1 - PG 97
- 103 CHESTER W. SMITH, 3RD
DB 1359 - PG 315
PB 1 - PG 97

PI Sta 128+73.26
 $\Delta = 38^\circ 27' 26.2''$ (RT)
 D = 8' 11' 06.4"
 L = 469.84'
 T = 244.16'
 R = 700.00'
 SE = 6'
 RO = 126'
 V = 45 MPH

PI Sta 132+79.59
 $\Delta = 48^\circ 44' 46.4''$ (RT)
 D = 21' 00' 00.0"
 L = 232.12'
 T = 123.61'
 R = 272.84'
 SE = 6'
 RO = 126'
 * V = 30 MPH

PI Sta 135+62.16
 $\Delta = 48^\circ 11' 11.3''$ (RT)
 D = 15' 24' 00.0"
 L = 312.90'
 T = 166.37'
 R = 372.05'
 SE = 6'
 RO = 126'
 * V = 35 MPH

PI Sta 138+87.14
 $\Delta = 73^\circ 15' 56.1''$ (LT)
 D = 23' 52' 23.7"
 L = 306.89'
 T = 178.45'
 R = 240.00'
 SE = 4'
 RO = 73'
 * V = 30 MPH

ROCK PLATING / ROCK EMBANKMENT
 PAVED SHOULDER

NOTES:
 * DESIGN EXCEPTION REQUIRED FOR MINIMUM HORIZONTAL CURVE RADIUS.
 * SEE SHEET 26-1 FOR GEOTECHNICAL DETAILS.
 * DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED.
 * SEE SHEET 25 FOR -L- PROFILE.

NAD 83/NA 2011

MATCH LINE -L- STA. 142+00.00
 SEE SHEET 13

MATCH LINE -L- STA. 125+50.00
 SEE SHEET 11

8/17/19

8/17/2021 10:00 AM Project: R5014_rdy_psh_12.dgn

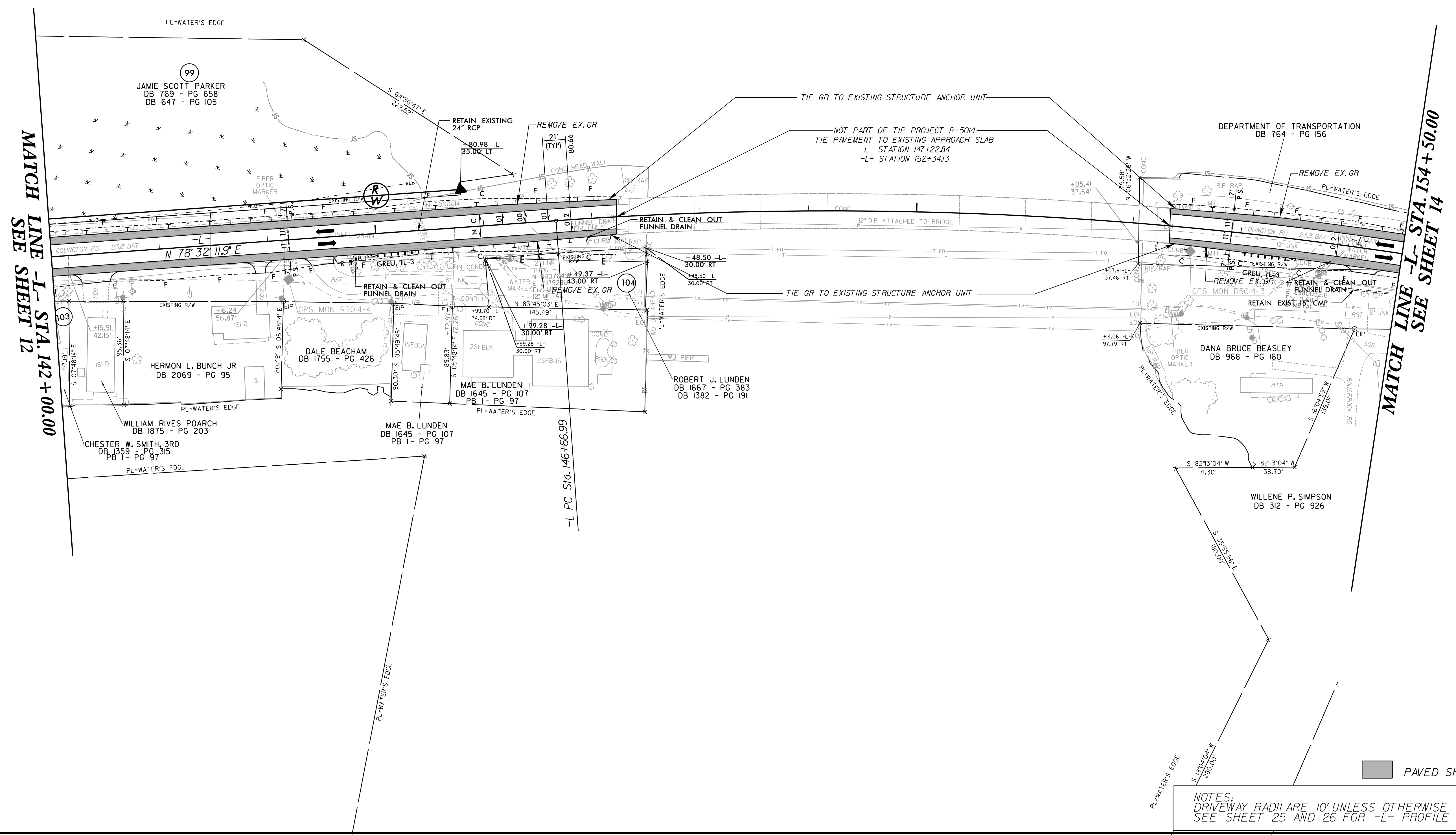
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CARY, NC 27518
phone: 919.851.9192
CALYXEngineers.com
NC License # F-1333
Formerly Maky Engineers & Consultants

PROJECT REFERENCE NO. R-5014		SHEET NO. 13
RW SHEET NO.		
ROADWAY DESIGN 1/4/2019 ENGINEER	HYDRAULICS 1/4/2019 ENGINEER	
Designed by: <i>Stephen C. Browde</i>	Designed by: <i>Craig A. Freeman Jr.</i>	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

-L-
PI Sta 151+21.17
 $\Delta = 14^{\circ} 36' 20.0''$ (RT)
D = 1'37'00.0"
L = 903.44'
T = 454.18'
R = 3,544.07'
SE = 2%
RO = 42'
V = 80 MPH

NAD 83NA 2011



8/18/2018
C:\Users\prowde\OneDrive\Documents\Projects\1905014_rdy_psh_13.dgn
prowde

NOTES:
DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED
SEE SHEET 25 AND 26 FOR -L- PROFILE

PAVED SHOULDER

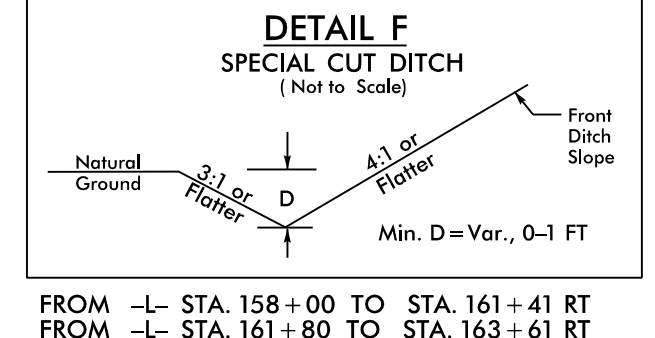
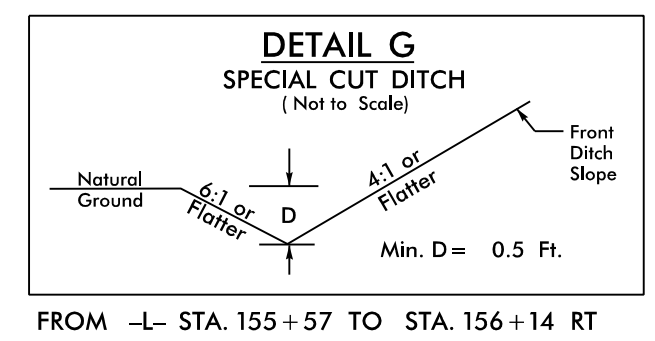
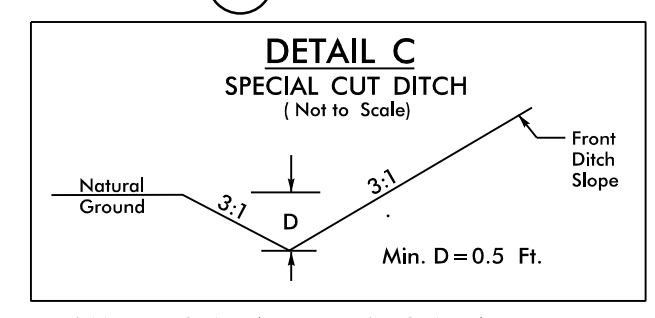
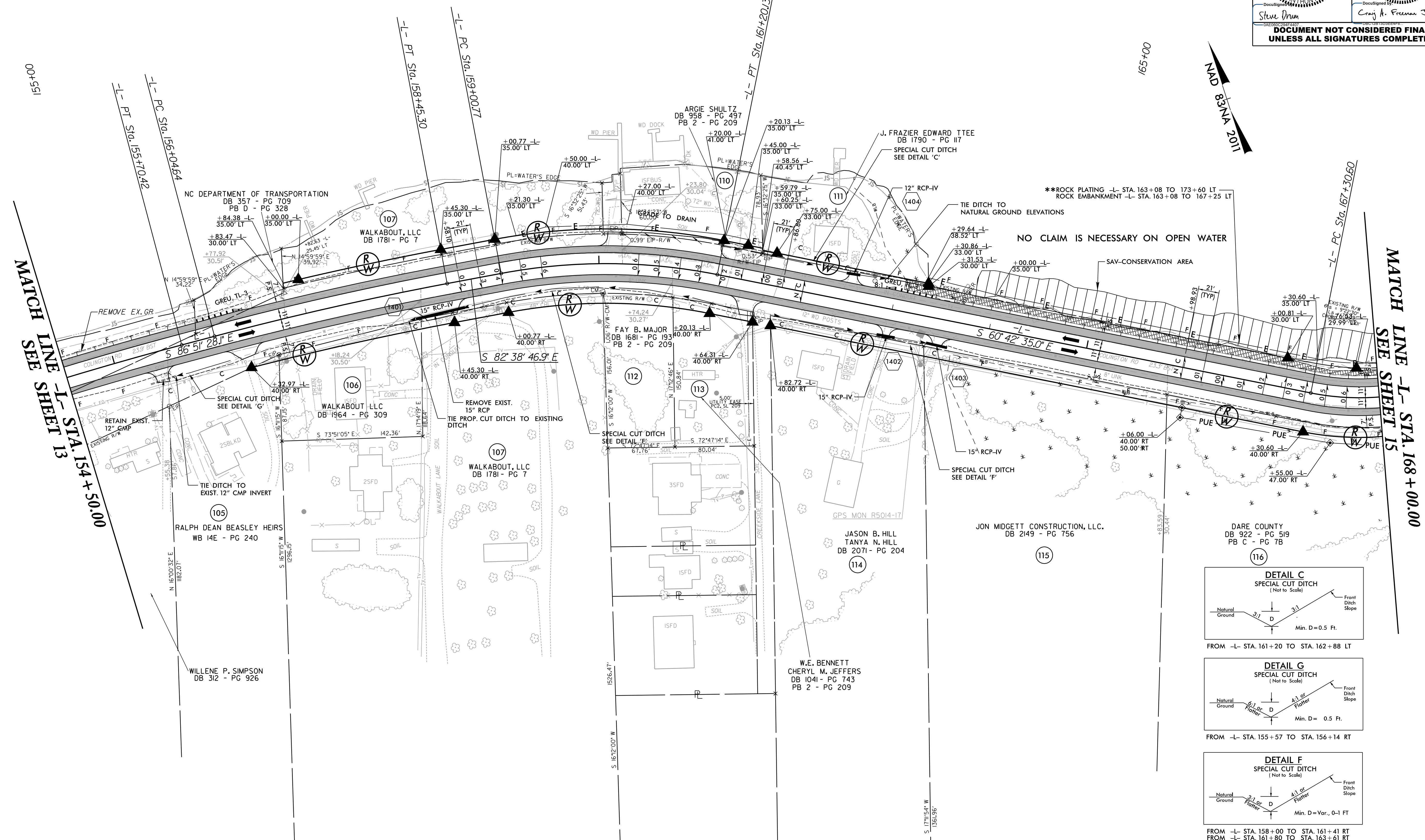
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 8750 TRYON ROAD
 CARY, NC 27518
 P: 919.851.1912 www.NV5.com
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PROJECT REFERENCE NO. R-5014	SHEET NO. 14
R/W SHEET NO.	
ROADWAY DESIGN 8/31/2021 ENGINEER	HYDRAULICS ENGINEER 4/1/2021

SEAL 017265
 SEAL 39785
 Steve Drum
 Craig A. Freeman Jr.

**DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED**

PI Sta 151+21.7 $\Delta = 14' 36" 20.0" (RT)$ $D = 1' 37" 00.0"$ $L = 903.44'$ $T = 454.18'$ $R = 3,544.07'$ $SE = 2\%$ $RO = 42'$ $V = 80 MPH$	PI Sta 157+25.02 $\Delta = 4' 12" 41.2" (RT)$ $D = 1' 45" 00.0"$ $L = 240.65'$ $T = 120.38'$ $R = 3,274.04'$ $SE = 2\%$ $RO = 42'$ $V = 80 MPH$	PI Sta 160+11.81 $\Delta = 2' 56" 11.8" (RT)$ $D = 10' 00" 00.0"$ $L = 219.37'$ $T = 111.04'$ $R = 572.96'$ $SE = 6\%$ $RO = 126'$ $V = 40 MPH$	PI Sta 168+56.10 $\Delta = 53' 18" 40.2" (LT)$ $D = 22' 55" 05.9"$ $L = 232.61'$ $T = 125.49'$ $R = 250.00'$ $SE = 6\%$ $RO = 126'$ $*V = 30 MPH$
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------



- ROCK PLATING / ROCK EMBANKMENT
- PAVED SHOULDER

NOTES:
 * DESIGN EXCEPTION REQUIRED FOR MINIMUM HORIZONTAL CURVE RADIUS AND HORIZONTAL SSD
 ** SEE SHEET 26-I FOR GEOTECHNICAL DETAILS
 DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED
 SEE SHEET 26 FOR -L- PROFILE
 SAV = SUBMERGED AQUATIC VEGETATION

8/17/2021
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 PROJECT: R-5014
 SHEET: 14

8/17/19

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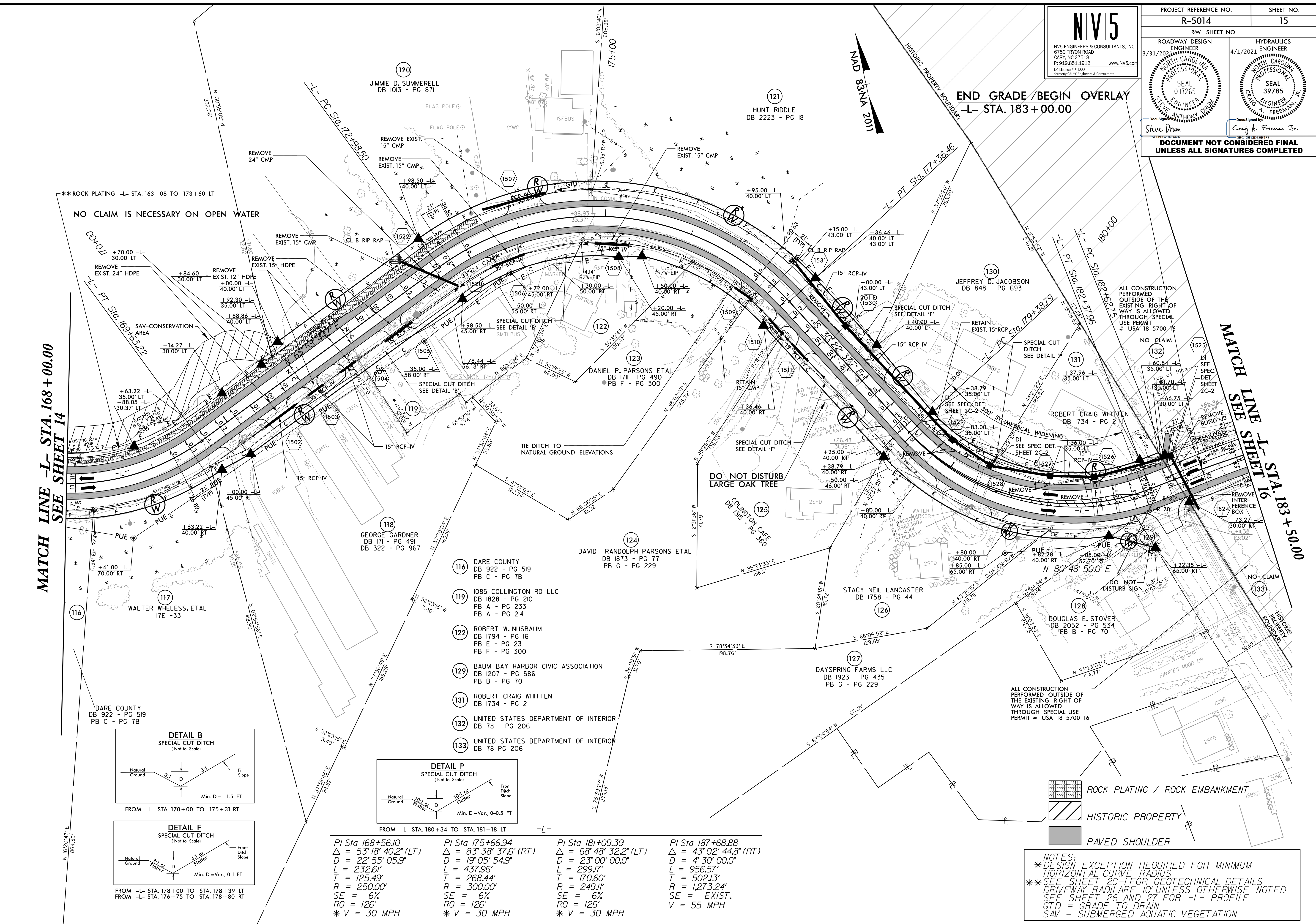
PROJECT REFERENCE NO. **R-5014** SHEET NO. **15**

R/W SHEET NO. **ENGINEER** HYDRAULICS ENGINEER
 3/31/2021 4/1/2021

PROFESSIONAL SEAL 017265
 SEAL 39785

Steve Drum
 Douglass A. Freeman Jr.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



MATCH LINE -L- STA. 168 + 00.00
SEE SHEET 14

MATCH LINE -L- STA. 183 + 50.00
SEE SHEET 16

**ROCK PLATING -L- STA. 163+08 TO 173+60 LT

NO CLAIM IS NECESSARY ON OPEN WATER

REMOVE EXIST. 24" HDPE
REMOVE EXIST. 24" CMP

REMOVE EXIST. 15" HDPE
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REMOVE EXIST. 15" HDPE
REMOVE EXIST. 15" CMP

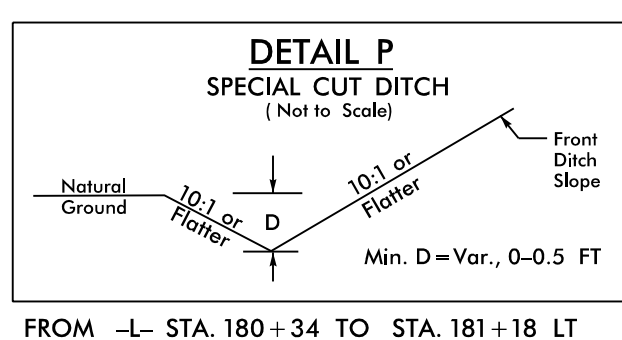
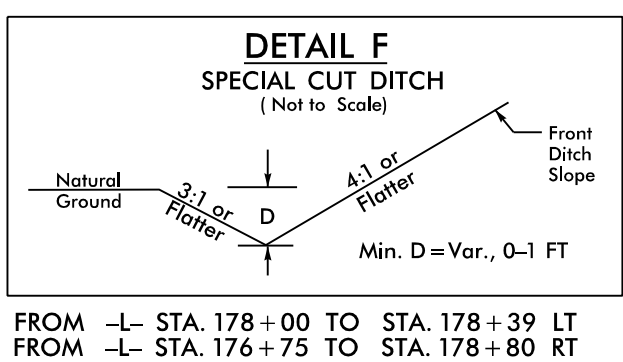
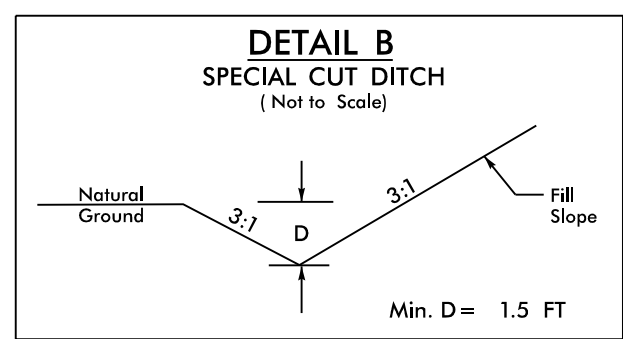
REMOVE EXIST. 15" HDPE
REMOVE EXIST. 15" CMP

REMOVE EXIST. 15" HDPE
REMOVE EXIST. 15" CMP

REMOVE EXIST. 15" HDPE
REMOVE EXIST. 15" CMP

REMOVE EXIST. 15" HDPE
REMOVE EXIST. 15" CMP

REMOVE EXIST. 15" HDPE
REMOVE EXIST. 15" CMP



PI Sta	Delta	D	L	T	R	SE	RO	V
168+56.10	53° 18' 40.2" (LT)	22° 55' 05.9"	232.61'	125.49'	250.00'	6%	126'	30 MPH
175+66.94	83° 38' 37.6" (RT)	19° 05' 54.9"	437.96'	268.44'	300.00'	6%	126'	30 MPH
181+09.39	68° 48' 32.2" (LT)	23° 00' 00.0"	299.17'	170.60'	249.11'	6%	126'	30 MPH
187+68.88	43° 02' 44.8" (RT)	4° 30' 00.0"	956.57'	502.13'	1,273.24'	EXIST.		55 MPH

- ROCK PLATING / ROCK EMBANKMENT
- HISTORIC PROPERTY
- PAVED SHOULDER

NOTES:
 * DESIGN EXCEPTION REQUIRED FOR MINIMUM HORIZONTAL CURVE RADIUS
 ** SEE SHEET 26-1 FOR GEOTECHNICAL DETAILS
 DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED
 SEE SHEET 26 AND 27 FOR -L- PROFILE
 GTD = GRADE TO DRAIN
 SAV = SUBMERGED AQUATIC VEGETATION

3/31/2021
8/17/19

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 8750 TRYON ROAD
 CARY, NC 27518
 P: 919.851.1912 www.NV5.com
 NC License # F-1333
 Formerly CVLW Engineers & Consultants

PROJECT REFERENCE NO. R-5014	SHEET NO. 16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER 3/20/2021 SEAL 017265 STATE ENGINEER	HYDRAULICS ENGINEER 3/19/2021 SEAL 39785 STATE ENGINEER
Steve Drum	Craig A. Freeman Jr.
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

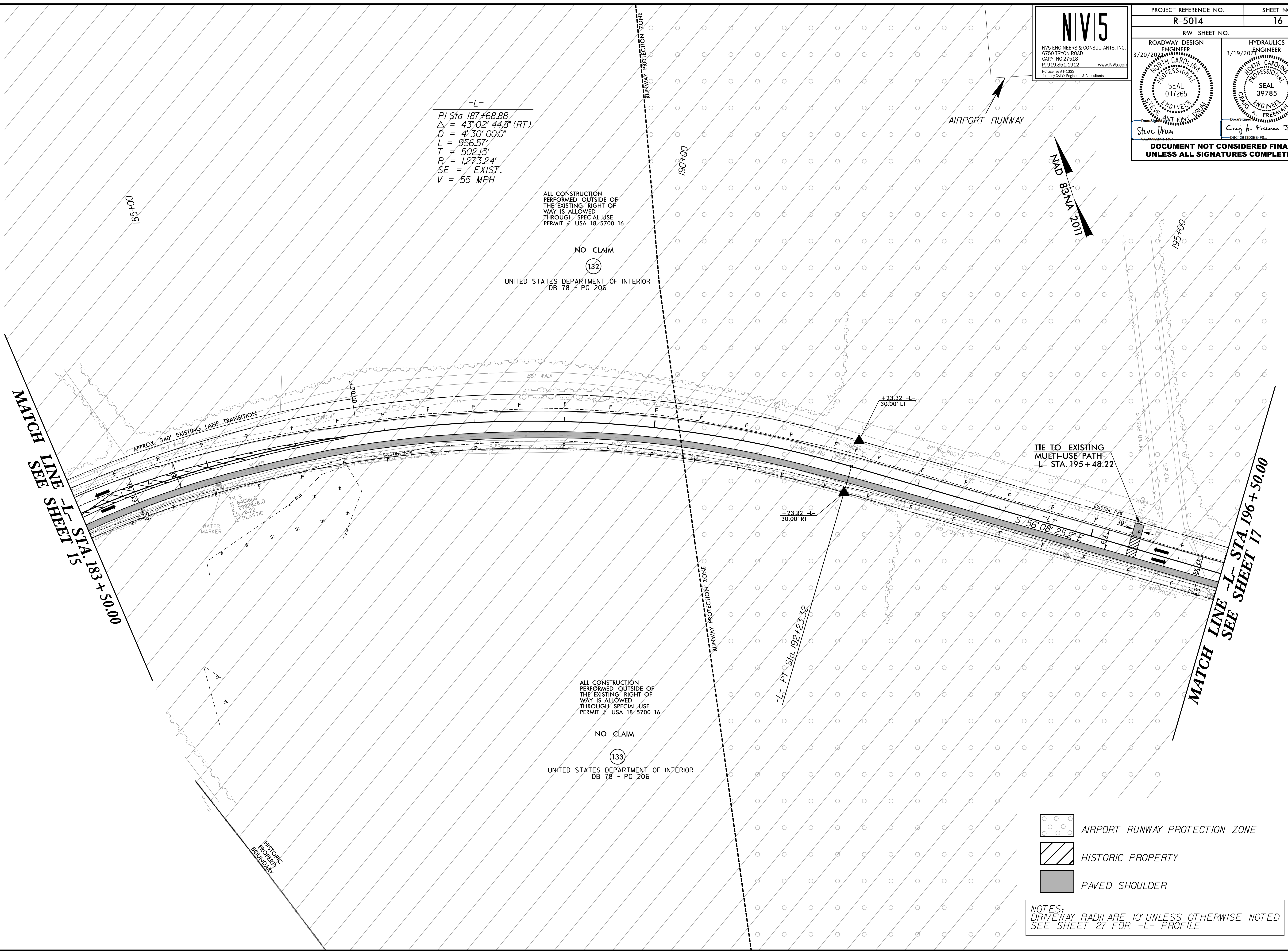
-L-
 PI Sta 187+68.88
 $\Delta = 43^{\circ}02'44.8" (RT)$
 $D = 4^{\circ}30'00.0"$
 $L = 956.57'$
 $T = 502.13'$
 $R = 1,273.24'$
 $SE = EXIST.$
 $V = 55 MPH$

ALL CONSTRUCTION PERFORMED OUTSIDE OF THE EXISTING RIGHT OF WAY IS ALLOWED THROUGH SPECIAL USE PERMIT # USA 18 5700 16

NO CLAIM
 (132)
 UNITED STATES DEPARTMENT OF INTERIOR
 DB 78 - PG 206

ALL CONSTRUCTION PERFORMED OUTSIDE OF THE EXISTING RIGHT OF WAY IS ALLOWED THROUGH SPECIAL USE PERMIT # USA 18 5700 16

NO CLAIM
 (133)
 UNITED STATES DEPARTMENT OF INTERIOR
 DB 78 - PG 206

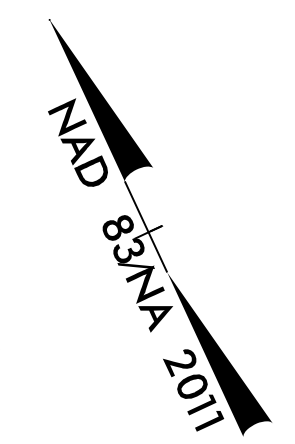


- AIRPORT RUNWAY PROTECTION ZONE
- HISTORIC PROPERTY
- PAVED SHOULDER

NOTES:
 DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED
 SEE SHEET 27 FOR -L- PROFILE

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PROJECT REFERENCE NO. R-5014	SHEET NO. 17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER 3/20/2021 SEAL 017265 STEVE ANTHONY DRUM Professional Engineer	HYDRAULICS ENGINEER 3/19/2021 SEAL 39785 CRAIG A. FREEMAN JR. Professional Engineer
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



-L-
 PI Sta 209+11.27
 $\Delta = 62^{\circ}13'20.7"$ (LT)
 $D = 6^{\circ}05'00.0"$
 $L = 1,022.83'$
 $T = 568.41'$
 $R = 941.85'$
 SE = EXIST.
 V = 50 MPH

ALL CONSTRUCTION PERFORMED OUTSIDE OF THE EXISTING RIGHT OF WAY IS ALLOWED THROUGH SPECIAL USE PERMIT # USA 18 5700 16

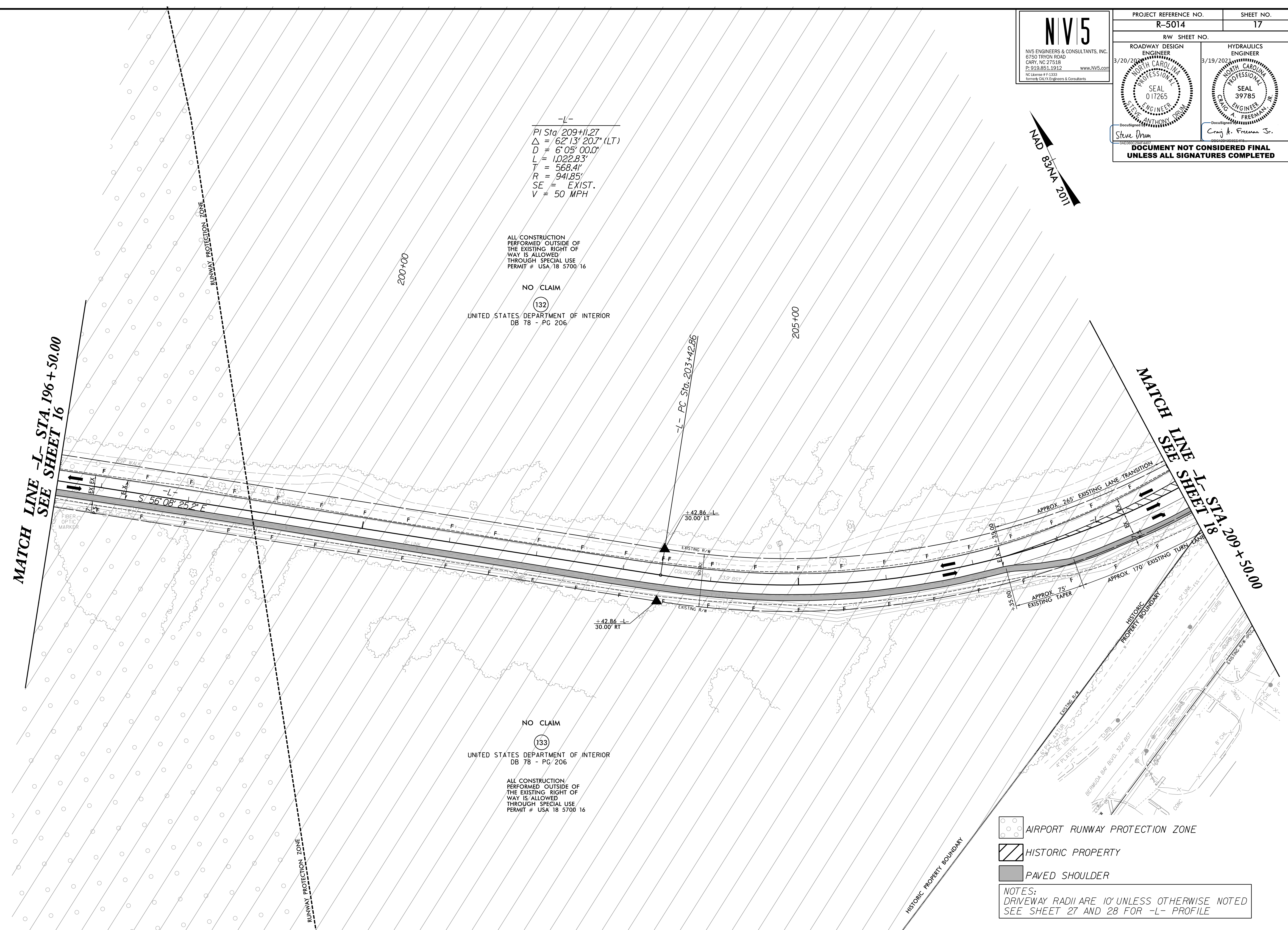
NO CLAIM

(132)
 UNITED STATES DEPARTMENT OF INTERIOR
 DB 78 - PG 206

NO CLAIM

(133)
 UNITED STATES DEPARTMENT OF INTERIOR
 DB 78 - PG 206

ALL CONSTRUCTION PERFORMED OUTSIDE OF THE EXISTING RIGHT OF WAY IS ALLOWED THROUGH SPECIAL USE PERMIT # USA 18 5700 16



- AIRPORT RUNWAY PROTECTION ZONE
- HISTORIC PROPERTY
- PAVED SHOULDER

NOTES:
 DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED
 SEE SHEET 27 AND 28 FOR -L- PROFILE

8/17/99

3/16/2021
 C:\Users\psh\OneDrive\Documents\Projects\17.dgn

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Formerly CALVIN Engineers & Consultants

PROJECT REFERENCE NO. R-5014	SHEET NO. 18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER 3/20/2017	HYDRAULICS ENGINEER 3/19/2017

NORTH CAROLINA PROFESSIONAL SEAL

017265

STEVE DRUM
STATE ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL

39785

CRAIG A. FREEMAN JR.
STATE ENGINEER

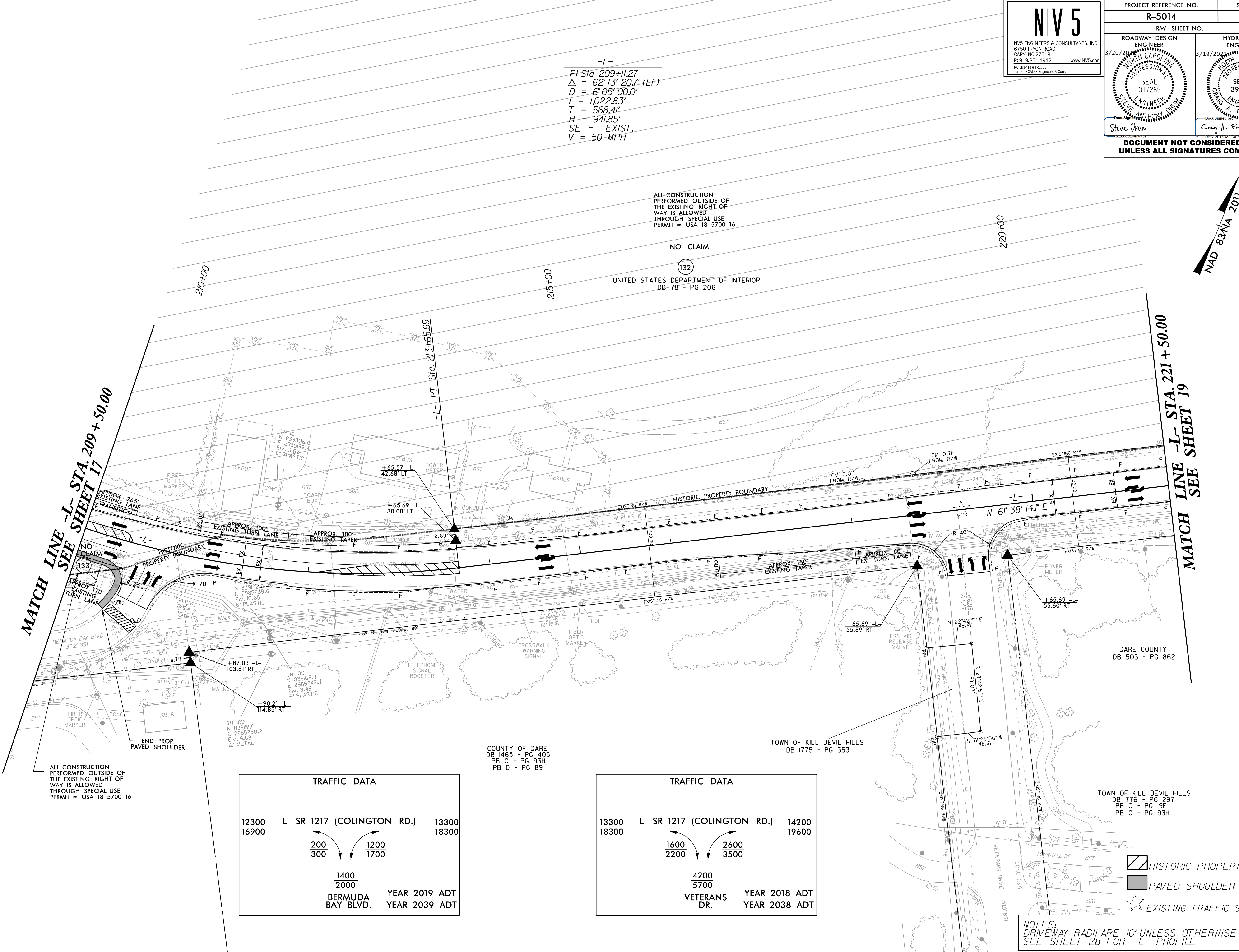
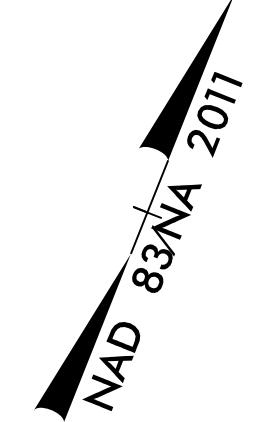
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L-
PI Sta 209+11.27
Δ = 62°13' 20.7" (LT)
D = 6°05' 00.0"
L = 1,022.83'
T = 568.41'
R = 941.85'
SE = EXIST.
V = 50 MPH

ALL CONSTRUCTION PERFORMED OUTSIDE OF THE EXISTING RIGHT OF WAY IS ALLOWED THROUGH SPECIAL USE PERMIT # USA 18 5700 16

NO CLAIM

(132)
UNITED STATES DEPARTMENT OF INTERIOR
DB 78 - PG 206



MATCH LINE -L- STA. 209 + 50.00
SEE SHEET 17

MATCH LINE -L- STA. 221 + 50.00
SEE SHEET 19

ALL CONSTRUCTION PERFORMED OUTSIDE OF THE EXISTING RIGHT OF WAY IS ALLOWED THROUGH SPECIAL USE PERMIT # USA 18 5700 16

COUNTY OF DARE
DB 1463 - PG 405
PB C - PG 93H
PB D - PG 89

TOWN OF KILL DEVIL HILLS
DB 1775 - PG 353

TOWN OF KILL DEVIL HILLS
DB 776 - PG 297
PB C - PG 19E
PB C - PG 93H

TRAFFIC DATA			
12300	-L- SR 1217 (COLINGTON RD.)	13300	18300
16900		18300	
	$\begin{matrix} \swarrow 200 \\ \searrow 300 \end{matrix}$	$\begin{matrix} \swarrow 1200 \\ \searrow 1700 \end{matrix}$	
	1400		
	2000		
	BERMUDA BAY BLVD.		YEAR 2019 ADT
			YEAR 2039 ADT

TRAFFIC DATA			
13300	-L- SR 1217 (COLINGTON RD.)	14200	19600
18300		19600	
	$\begin{matrix} \swarrow 1600 \\ \searrow 2200 \end{matrix}$	$\begin{matrix} \swarrow 2600 \\ \searrow 3500 \end{matrix}$	
	4200		
	5700		
	VETERANS DR.		YEAR 2018 ADT
			YEAR 2038 ADT

- HISTORIC PROPERTY
- PAVED SHOULDER
- EXISTING TRAFFIC SIGNAL

NOTES:
DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED
SEE SHEET 28 FOR -L- PROFILE

8/17/09

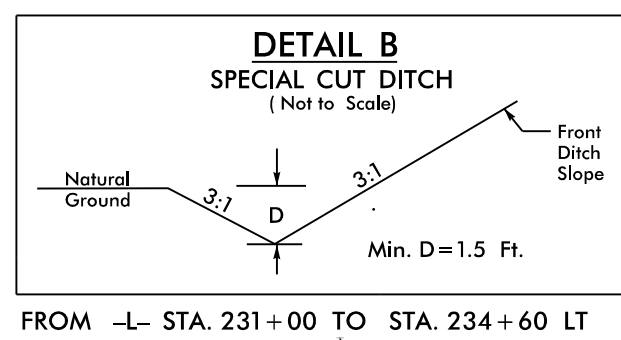
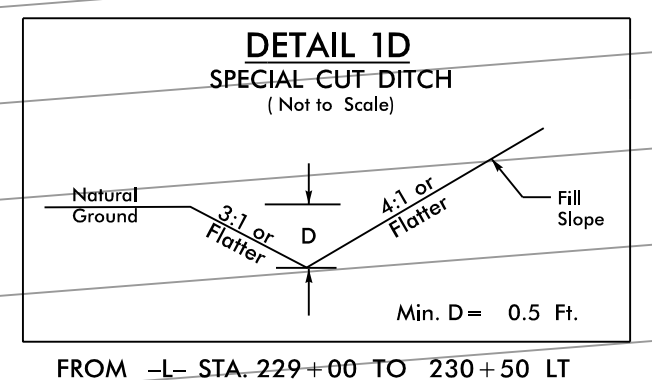
3/16/2017
C:\Users\pcoj\OneDrive\Projects\18.dgn

8/17/09

3/16/2021 10:00 AM Project: RE014_rdy_psh_19.dgn

PROJECT REFERENCE NO. R-5014		SHEET NO. 19	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER 3/20/2021 NORTH CAROLINA PROFESSIONAL SEAL 017265 STEVE DRUM		HYDRAULICS ENGINEER 3/19/2021 NORTH CAROLINA PROFESSIONAL SEAL 39785 CRAIG A. FREEMAN JR.	
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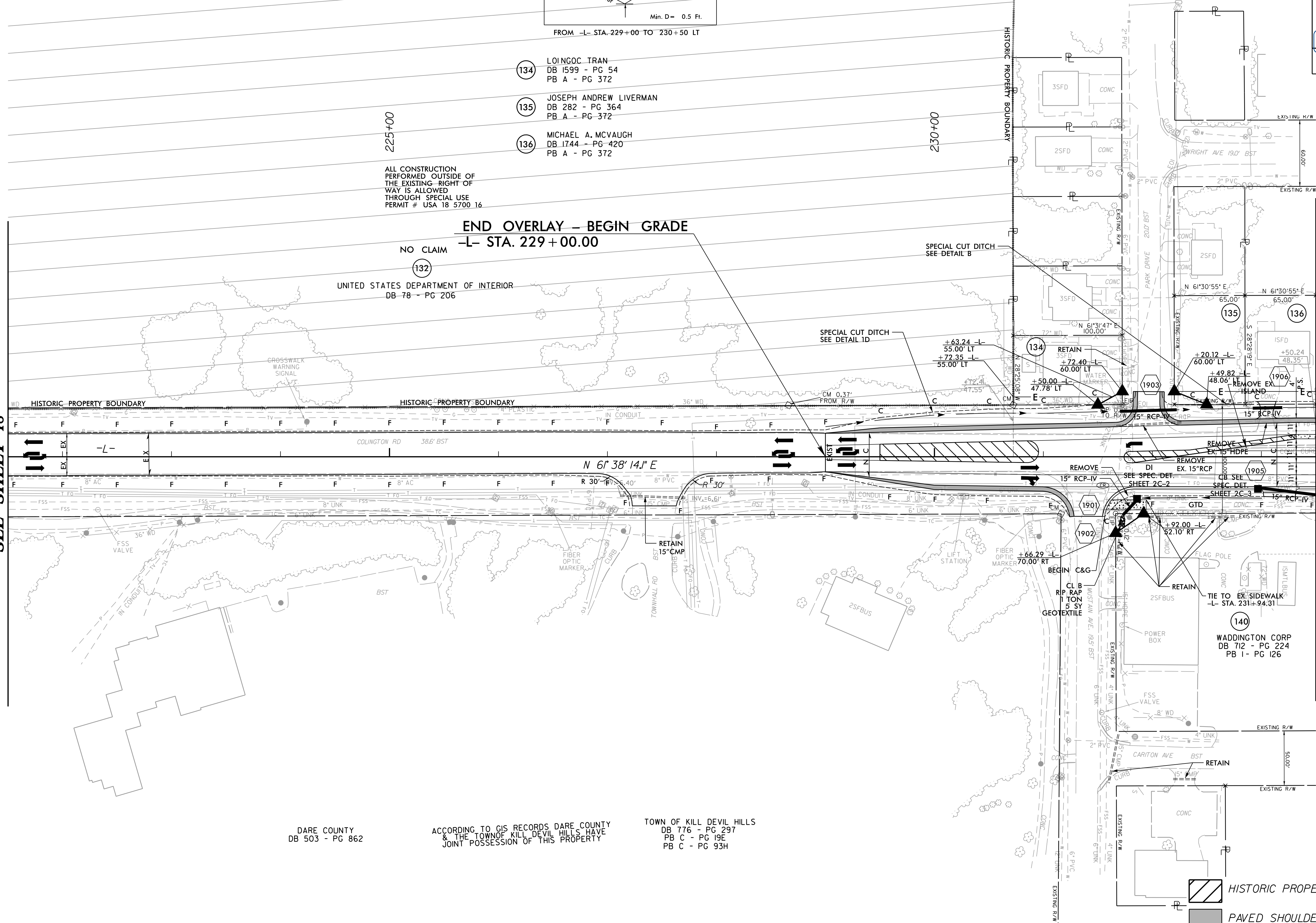
- 134 LOINGOC, TRAN
DB 1599 - PG 54
PB A - PG 372
- 135 JOSEPH ANDREW LIVERMAN
DB 282 - PG 364
PB A - PG 372
- 136 MICHAEL A. MCVAUGH
DB 1744 - PG 420
PB A - PG 372

ALL CONSTRUCTION PERFORMED OUTSIDE OF THE EXISTING RIGHT OF WAY IS ALLOWED THROUGH SPECIAL USE PERMIT # USA 18 5700 16

END OVERLAY - BEGIN GRADE
 -L- STA. 229+00.00

MATCH LINE -L- STA. 221+50.00
SEE SHEET 18

MATCH LINE -L- STA. 233+50.00
SEE SHEET 20



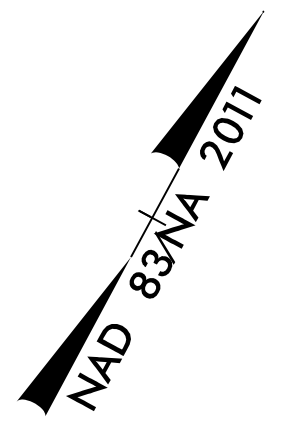
DARE COUNTY
DB 503 - PG 862

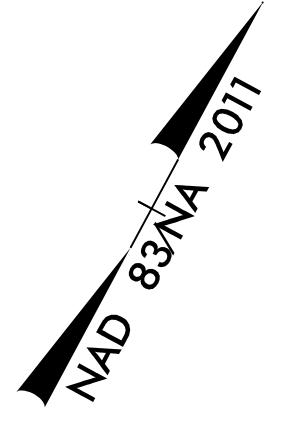
ACCORDING TO GIS RECORDS DARE COUNTY & THE TOWN OF KILL DEVIL HILLS HAVE JOINT POSSESSION OF THIS PROPERTY

TOWN OF KILL DEVIL HILLS
DB 776 - PG 297
PB C - PG 19E
PB C - PG 93H

- HISTORIC PROPERTY
- PAVED SHOULDER
- SIDEWALK / CONCRETE ISLAND
- GTD = GRADE TO DRAIN

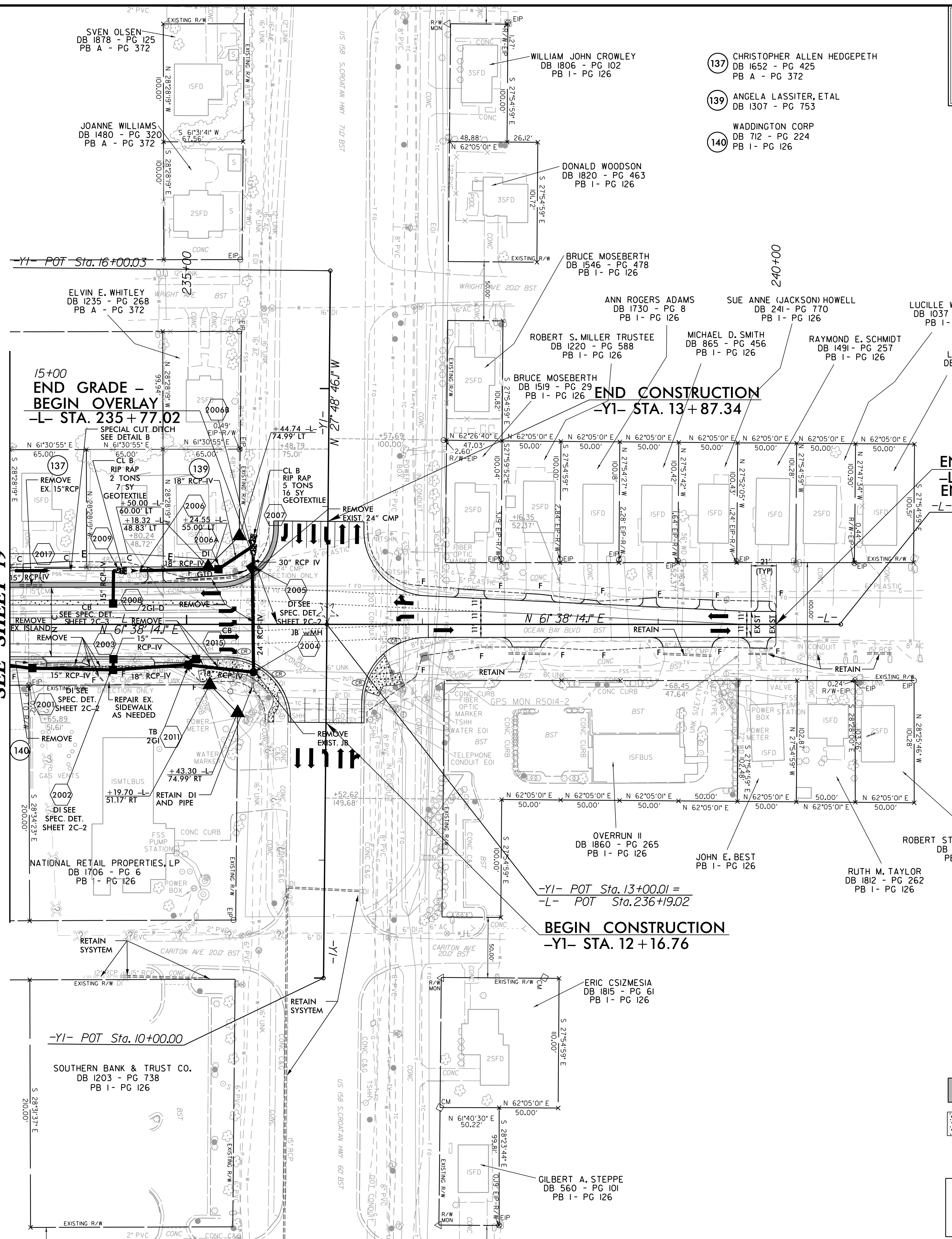
NOTES:
 DRIVEWAY RADII ARE 5' UNLESS OTHERWISE NOTED
 SEE SHEET 28 FOR -L- PROFILE
 SEE SHEET 2B-1 FOR INTERSECTION DETAIL





TRAFFIC DATA	
US 158 S. CROATAN HWY -Y1-	
33400 45000	
SR 1217 COLINGTON RD.	SR 1217 OCEAN BAY BLVD.
12700 17600	2800 3300
6700 9300	635 715
4500 6400	635 715
31300 42100	
-Y1- US 158 S. CROATAN HWY	
YEAR 2019 ADT YEAR 2039 ADT	

MATCH LINE -L- STA. 233 + 50.00
SEE SHEET 19

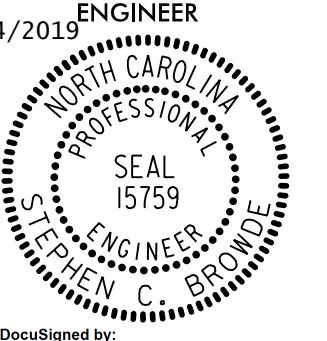
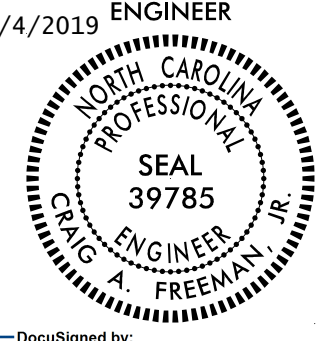


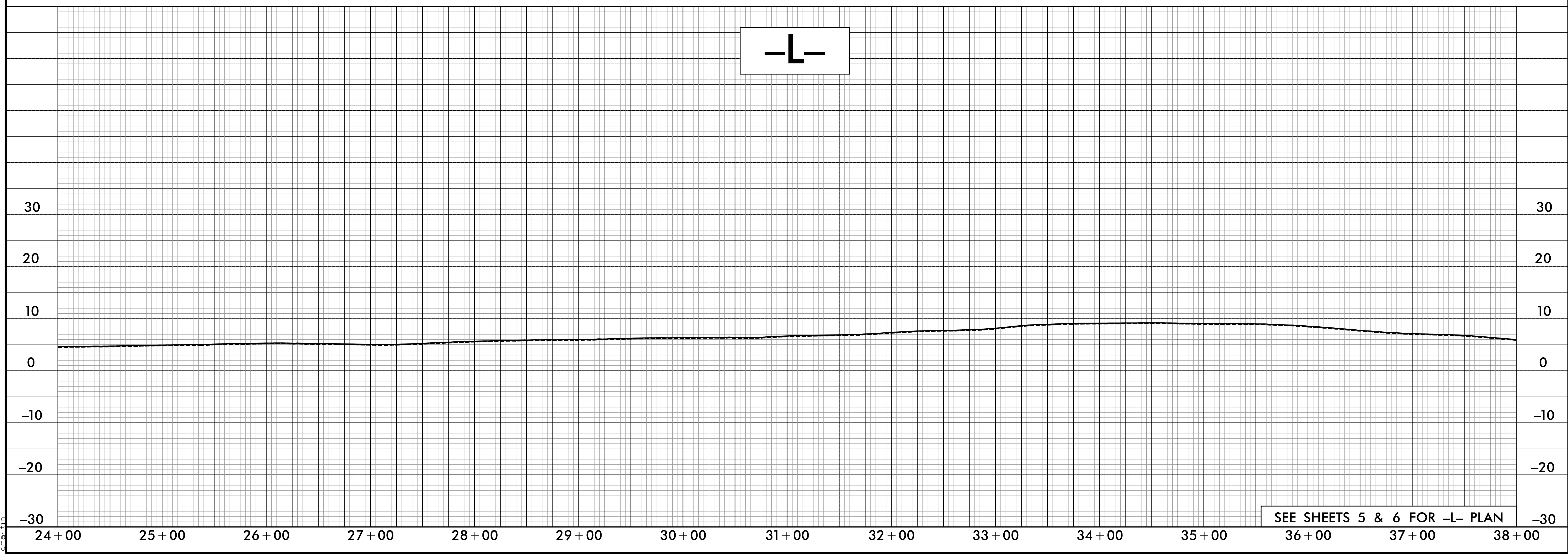
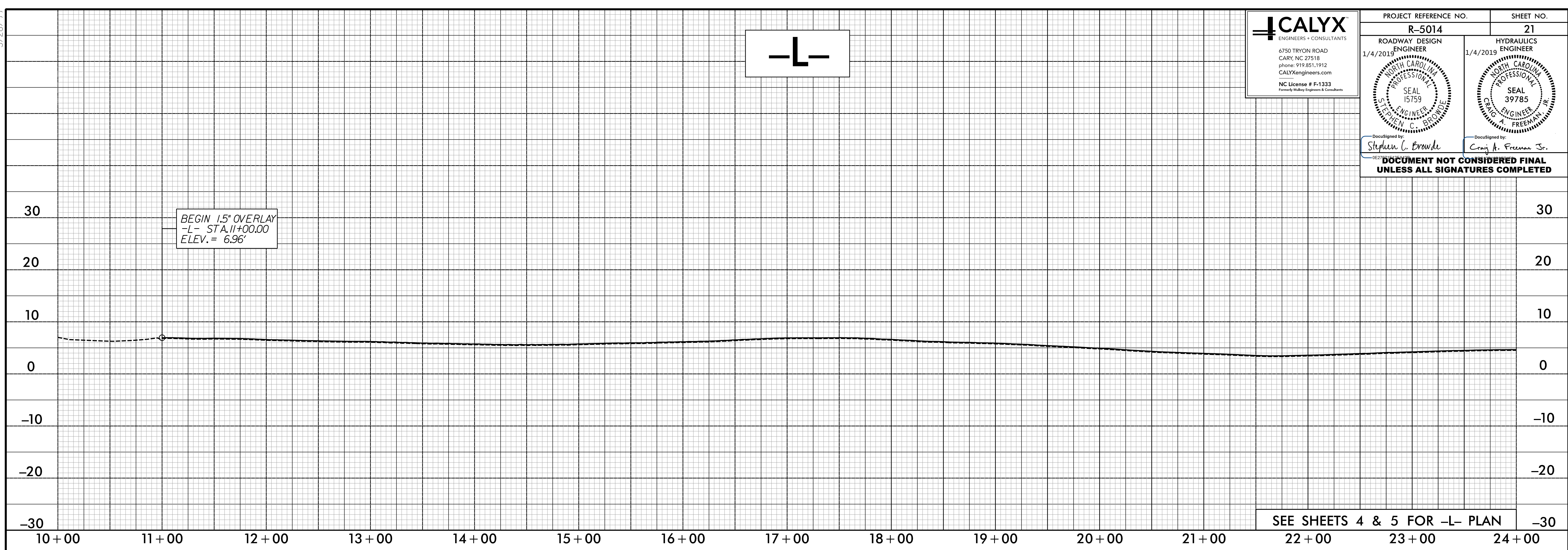
- PAVED SHOULDER
- SIDEWALK / CONCRETE ISLAND
- EXISTING TRAFFIC SIGNAL

NOTES:
DRIVEWAY RADII ARE 5' UNLESS OTHERWISE NOTED
SEE SHEET 28 AND 29 FOR -L- PROFILE
SEE SHEET 29 FOR -Y1- PROFILE
SEE SHEET 2B-1 FOR INTERSECTION DETAIL

5/28/99

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Formerly Huber Engineers & Consultants

PROJECT REFERENCE NO. R-5014	SHEET NO. 21
ROADWAY DESIGN ENGINEER 1/4/2019	HYDRAULICS ENGINEER 1/4/2019
	
DocuSigned by: <i>Stephen C. Browde</i>	DocuSigned by: <i>Craig A. Freeman Jr.</i>
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5/28/19

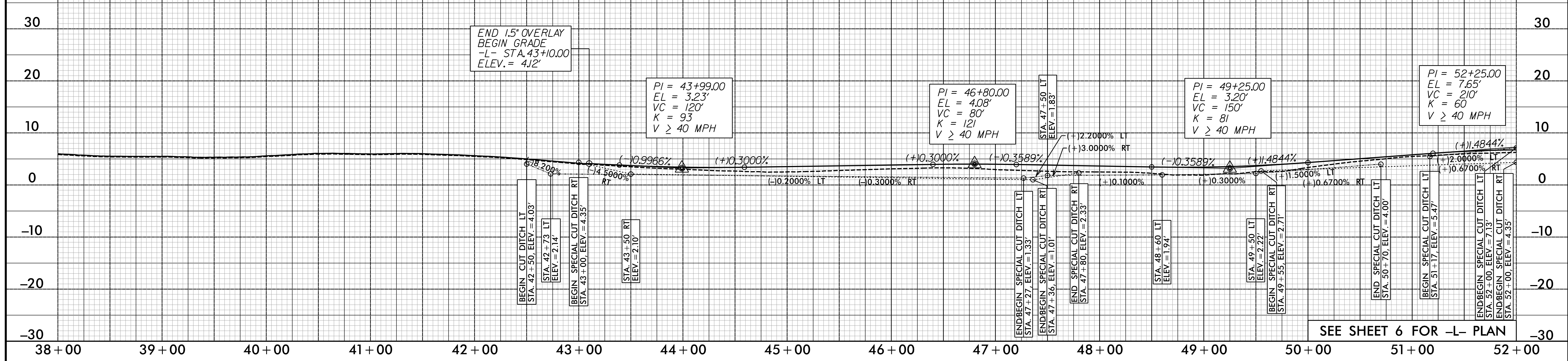
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 CARY, NC 27518
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 NC License # F-5333
 formerly CALYX Engineers & Consultants

PROJECT REFERENCE NO. R-5014	SHEET NO. 22
ROADWAY DESIGN ENGINEER 3/31/2021 NORTH CAROLINA PROFESSIONAL SEAL 017265 STEVEN ANTHONY DROWN	HYDRAULICS ENGINEER 4/1/2021 NORTH CAROLINA PROFESSIONAL SEAL 39785 CRAIG A. FREEMAN JR.

DocuSigned by:
Steven Drown

DocuSigned by:
Craig A. Freeman Jr.

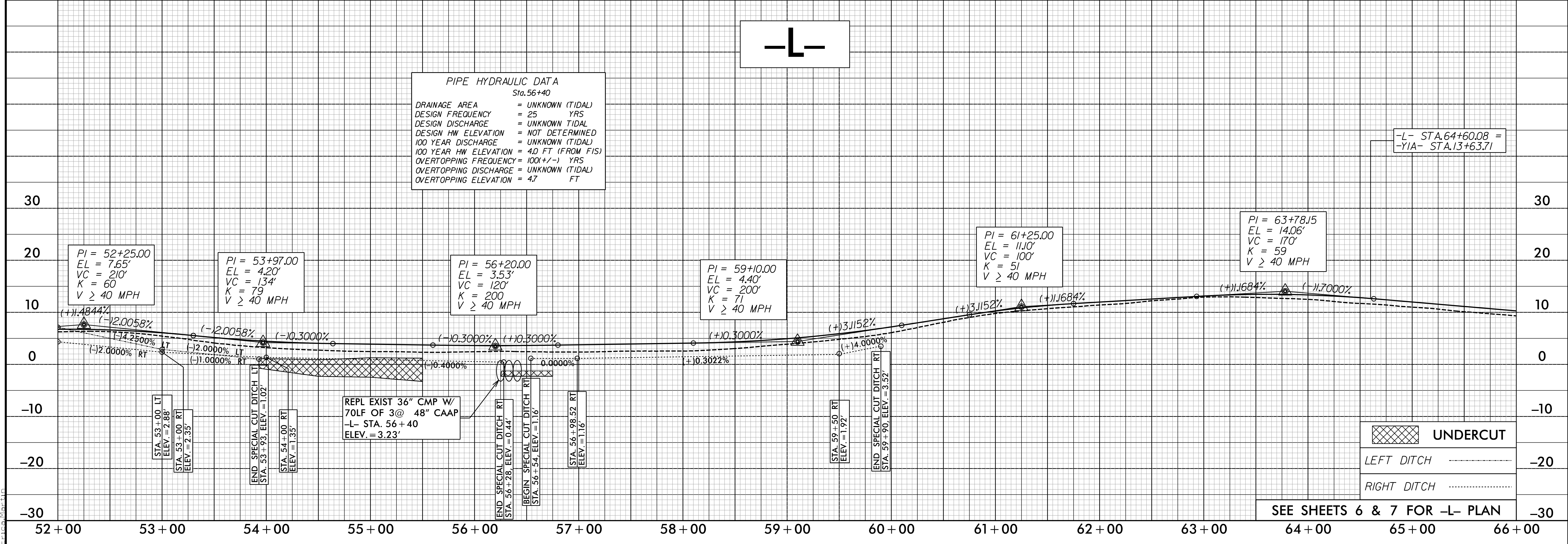
**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**



SEE SHEET 6 FOR -L- PLAN

PIPE HYDRAULIC DATA
Sta. 56+40

DRAINAGE AREA	= UNKNOWN (TIDAL)
DESIGN FREQUENCY	= 25 YRS
DESIGN DISCHARGE	= UNKNOWN TIDAL
DESIGN HW ELEVATION	= NOT DETERMINED
100 YEAR DISCHARGE	= UNKNOWN (TIDAL)
100 YEAR HW ELEVATION	= 4.0 FT (FROM FIS)
OVERTOPPING FREQUENCY	= 100(+/-) YRS
OVERTOPPING DISCHARGE	= UNKNOWN (TIDAL)
OVERTOPPING ELEVATION	= 4.7 FT



REPL EXIST 36" CMP W/
70LF OF 3@ 48" CAAP
-L- STA. 56+40
ELEV. = 3.23'

UNDERCUT

LEFT DITCH
RIGHT DITCH

SEE SHEETS 6 & 7 FOR -L- PLAN

3/21/2021
R:\Projects\N5014_rdy.p1_22.dgn
E:\CADD\Drawings